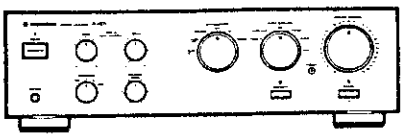
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2480

STEREO AMPLIFIER
A-401

A-401 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
HE	AC220 – 230V, 230V – 240V (switchable)*	
HEWZ	AC220 – 230V, 240V (switchable)*	
KC	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, KC, and SD types.**
- **For HEWZ, KC AND SD types, refer to page 23.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

STEREO AMPLIFIER
A-402

● **Refer to the service manual ARP2480 for A-401.**

CONTENTS

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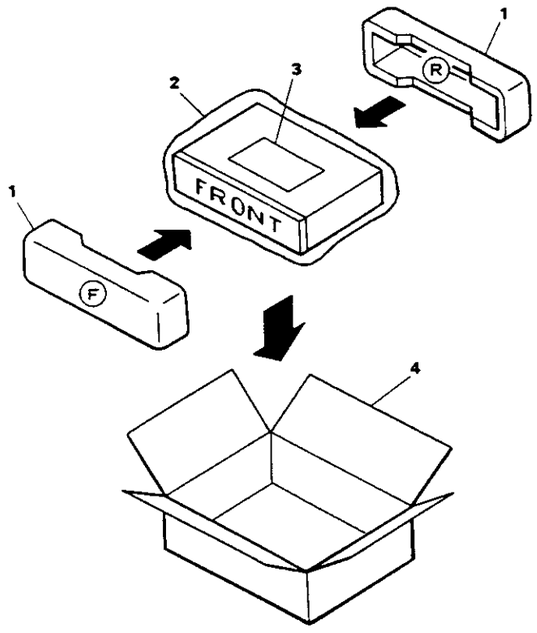
1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:
- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ 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.*

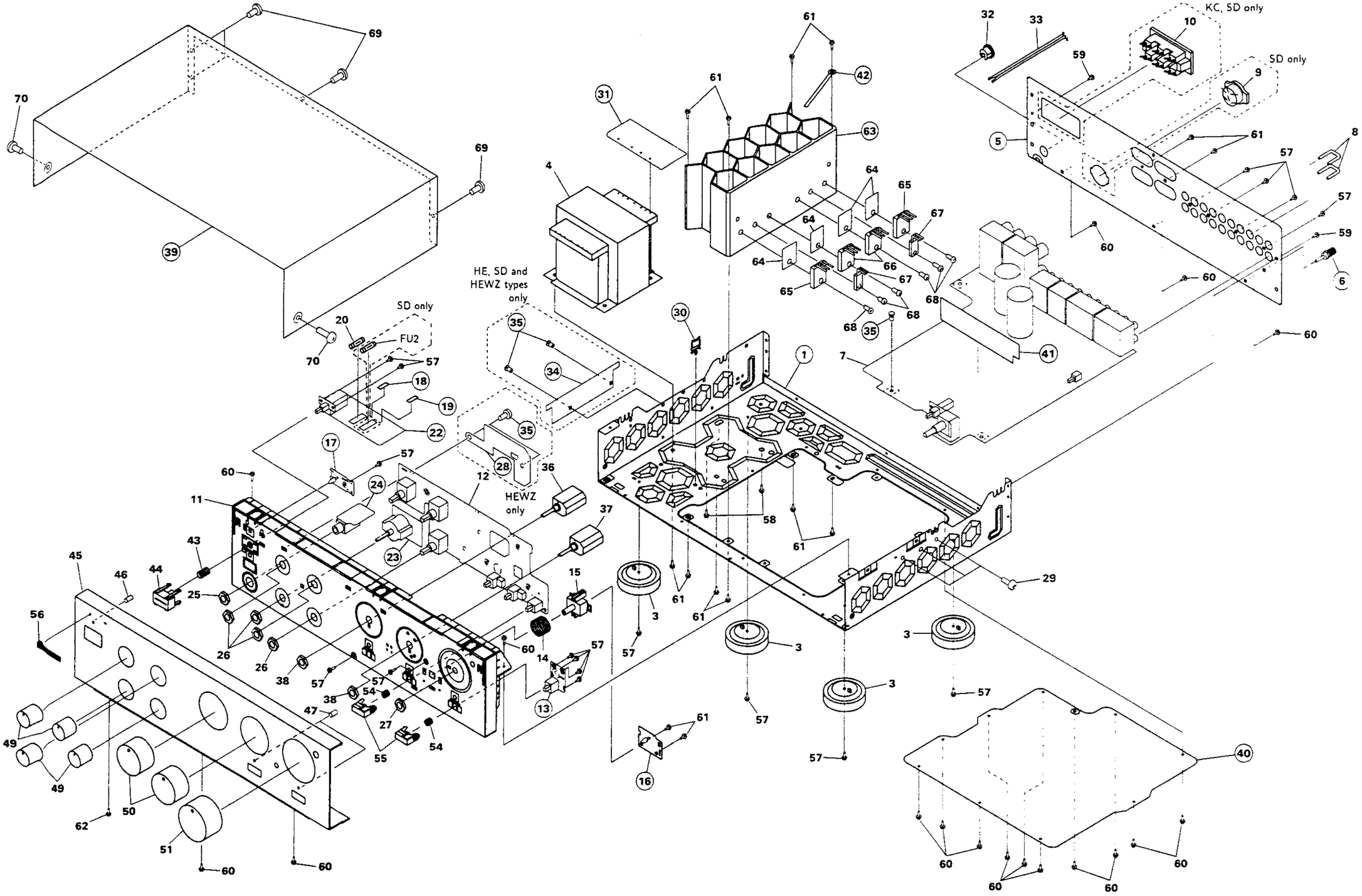
1.1 PACKING

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	AHD2242



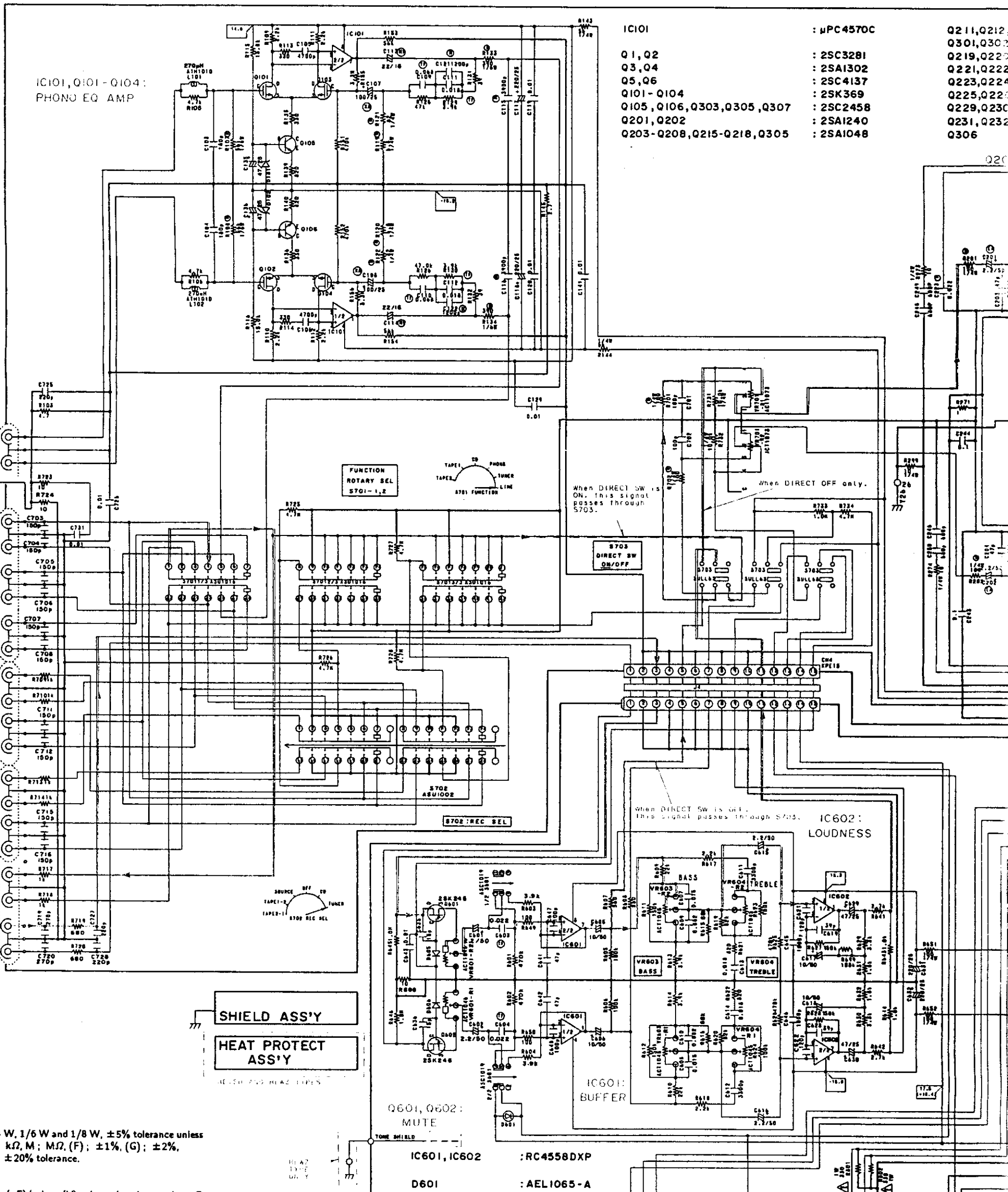
1.2 EXPLODED VIEWS

Mark	No.	Description	Parts No.
	1	Chassis	ANA1065
	2	.....	
	3	Insulator assembly	AMR2140
⚠	4	Power transformer	ATS1346
	5	Rear panel	ANC1547
	6	Earth terminal	AKE−031
◉	7	AF COMPLEX assembly	AWZ4029
	8	Pin jack with plug	AKM1019
⚠	9	Voltage selector(SD only)	AKX−507
⚠	10	3P AC outlet (KC, SD)	AKP−515
	11	Panel base	AMB1961
◉	12	TONE assembly	AWZ4032
	13	MUTE assembly	AWZ4037
	14	Coil spring A	ABH1081
	15	Direct knob assembly	AAD2220
	16	Direct IND. assembly	AWZ4035
	17	LED assembly	AWZ4033
	18	Fuse card	AAX1580
	19	Fuse card	AAX−302
⚠	20	FUSE (FU1, T2.5A)	AEK−512
	21	.....	
	22	POWER SW assembly	AWZ4030
	23	SP. SELECT assembly	AWZ4036
	24	HEAD PHONE assembly	AWZ4031
	25	Nut	ABN−065
	26	Nut	NK90FUC
	27	Nut	NK70FUC
	28	TONE SHIELD (HEWZ only)	ANK1212
	29	Nylon rivet	AEC1256
	30	Wire clip	AEC1388
	31	POWER TRANS assembly	AWZ4039
⚠	32	AC cord stopper	AEC−882
⚠	33	AC power cord	ADG1049
	34	HEAT PROTECT assembly	AWZ4038
	35	Nylon rivet	AEC1160
	36	Remote slide rotary switch	ASU1042
	37	Remote slide rotary switch	ASU1043
	38	Nut	NK90FUC
	39	Bonnet	ANE1147
	40	Bottom plate	ANF1085
	41	SHIELD assembly	AWZ4034
	42	Binder	AEF1004
	43	Coil spring B	ABH−052
	44	Power knob	AAD1984
	45	Front panel	ANB1495
	46	LED lens (ABS)	PNW2019
	47	LED lens	AMR1160
	48	.....	
	49	Rotary knob S	AAB1276
	50	Rotary knob M	AAB1281
	51	Rotary knob L	AAB1277
	52	.....	
	53	.....	
	54	Coil spring B	ABH1082
	55	Push knob	AAD2221
	56	Name plate	AAM1029
	57	Bind B tyte	ABA−298
	58	Screw (4×16)	ABA1016
	59	Screw	ABA1009
	60	Screw B tyte	ABA1011
	61	Screw	ABA1050
	62	Screw	ABA1048
	63	Heat sink	ANH1259
	64	Mica sheet	AEE1014
⚠	65	Transistor (Q3, Q4)	2SA1302
⚠	66	Transistor (Q1, Q2)	2SC3281
⚠	67	Transistor (Q5, Q6)	2SC4137
	68	Screw	ABA1082
	69	Screw	ABA1011
	70	Screw	BBT30P060FZK


KC, SD only
SD only
HE, SD and HEWZ types only
SD only
FU2
HEWZ only

2. SCHEMATIC DIAGRAMS

AF COMPLEX ASS'Y (AWZ4029)



1. RESISTORS :
Indicated in Ω, 1/4 W, 1/6 W and 1/8 W, ±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 50 V except electrolytic capacitor.

3. 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.

4. OTHERS :
➡ ; Signal route
⊘ ; Adjustment point
The ⚠ mark found on some component parts indicates the inportance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

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

5. SWITCHES : (The underline indicates the switch position.)
S 501 : ON - OFF

Line Voltage Selection

Line Voltage can be changed as follows :
1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection of the power transformer primary taps.
4. Stick the line voltage label on the rear panel.

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

Q211,Q212,Q227,Q228,Q237,		D101,D102	: RD7.5ESB2
Q301,Q302	: 2SC1845	D201,D202	: RD2.7ESB1
Q219,Q220	: 2SC2705	D209-D216,D301-D306	: HSS104-02
Q221,Q222	: 2SC3298	D217-D220	: RD15ESB
Q223,Q224	: 2SA1306	D307	: RD22ESB
Q225,Q226	: 2SC2603	D503,D504	: RD18ESB1
Q229,Q230,Q233,Q234,Q238	: 2SA992	D507	: D5SB20F
Q231,Q232	: 2SA1145		
Q306	: 2SC1815		

Q203,Q204,Q215-Q218,Q231,Q232 : POWER AMP

POWER SW. ASS'Y

POWER TRANS. ASS'Y

POWER SUPPLY SECTION FOR HE AND HEWZ TYPES

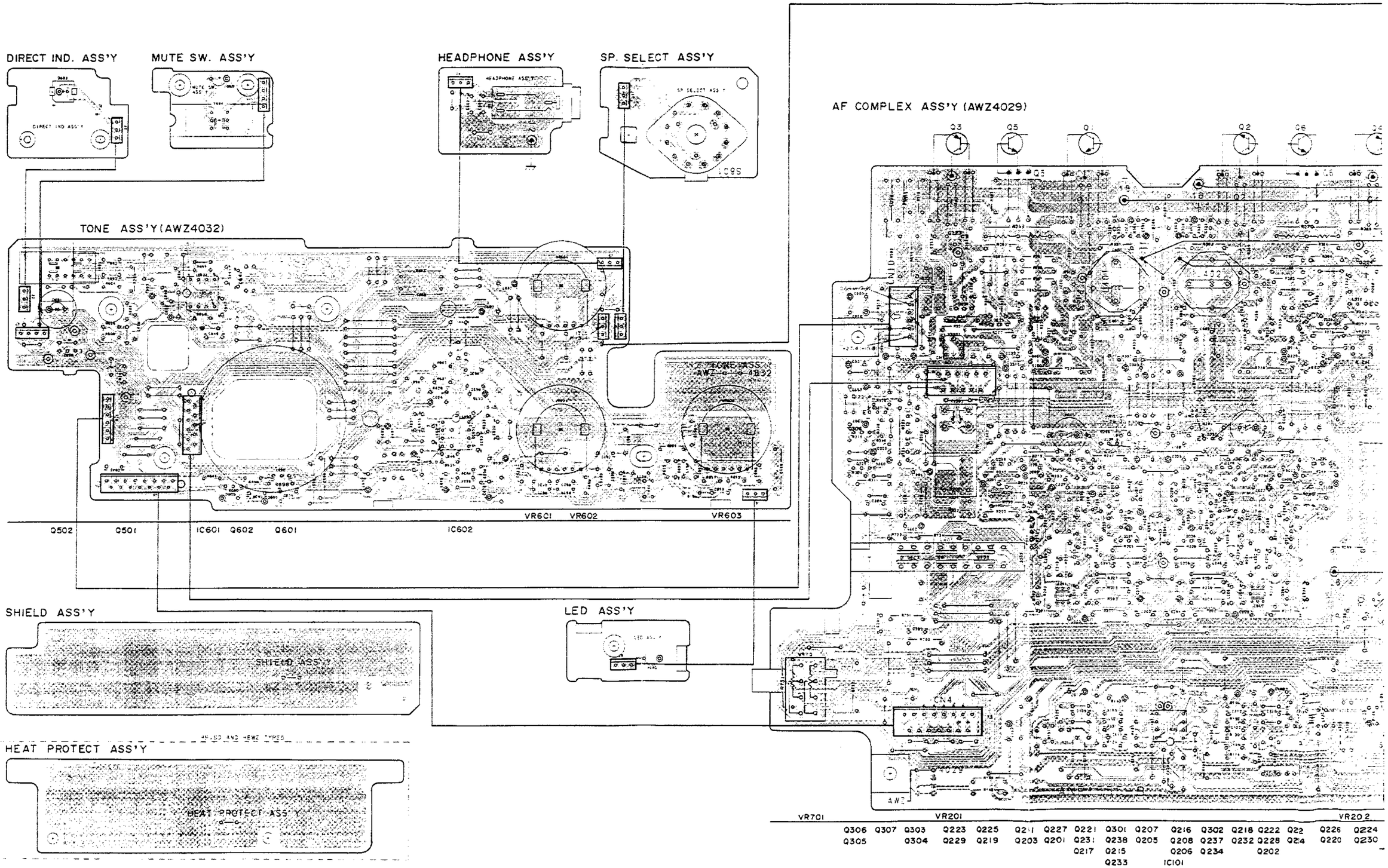
POWER SUPPLY SECTION FOR KC TYPE

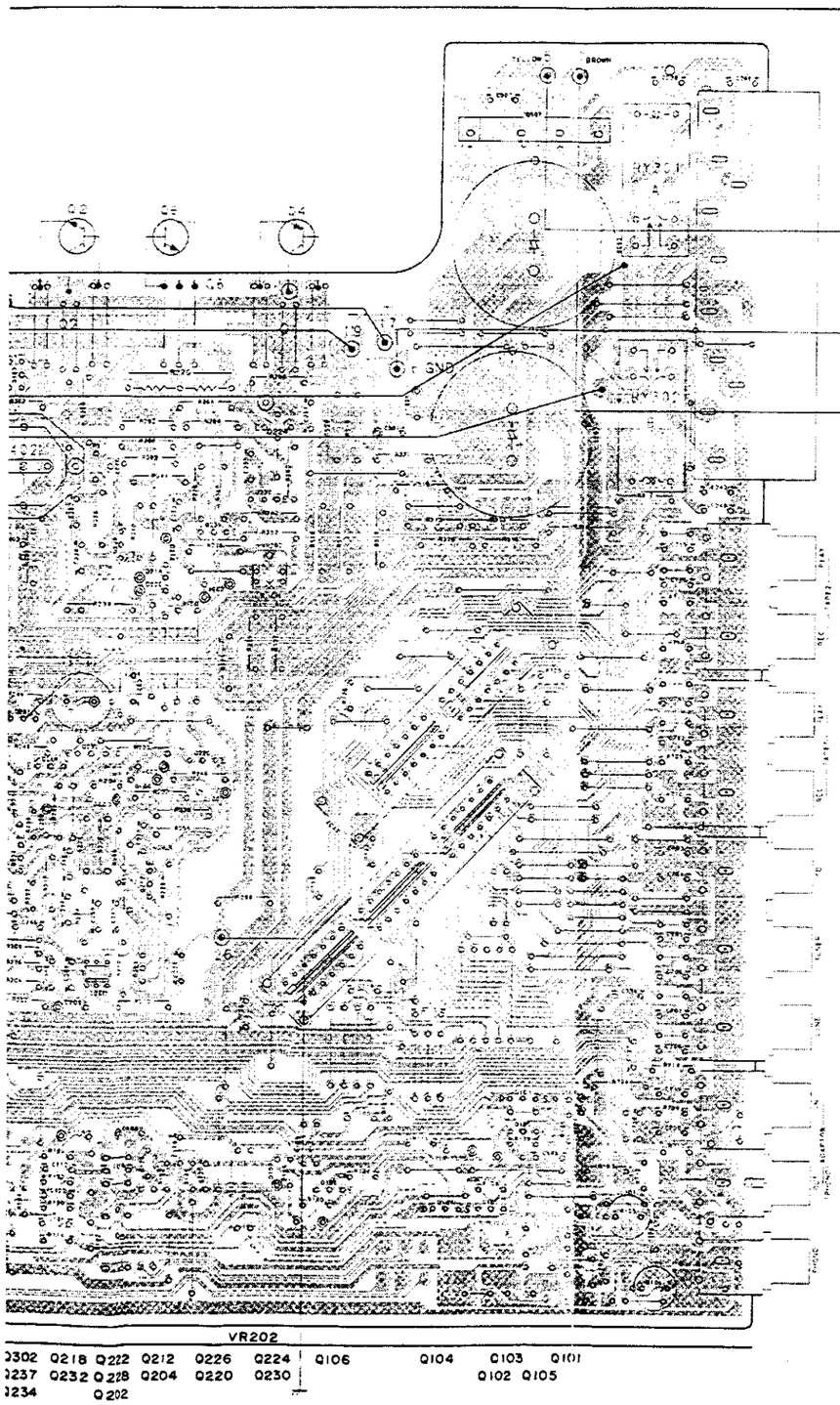
POWER SUPPLY SECTION FOR SD TYPE

LED ASS'Y

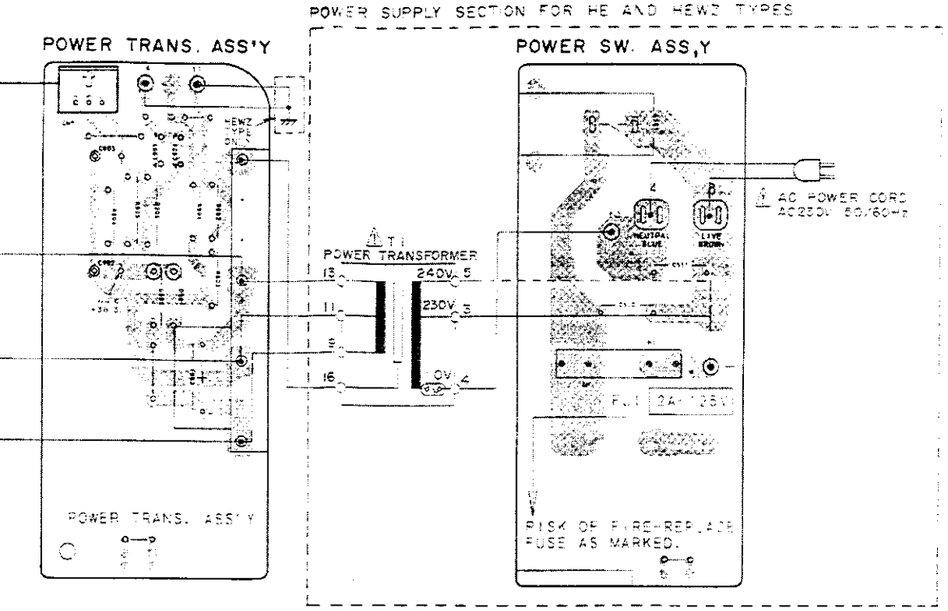
UTE ASS'Y

3. PCB CONNECTIONS DIAGRAMS





POWER SUPPLY SECTION FOR HE AND HEW2 TYPES



NOTE

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.
3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

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

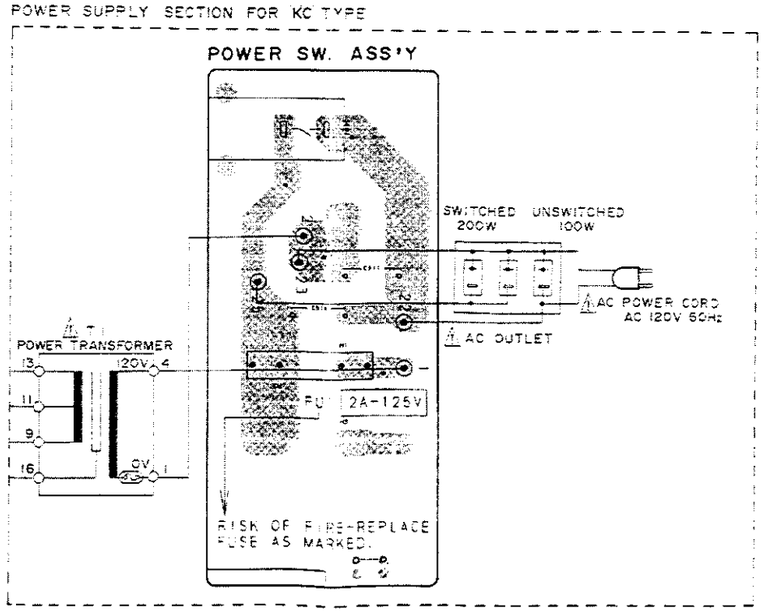
Others

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

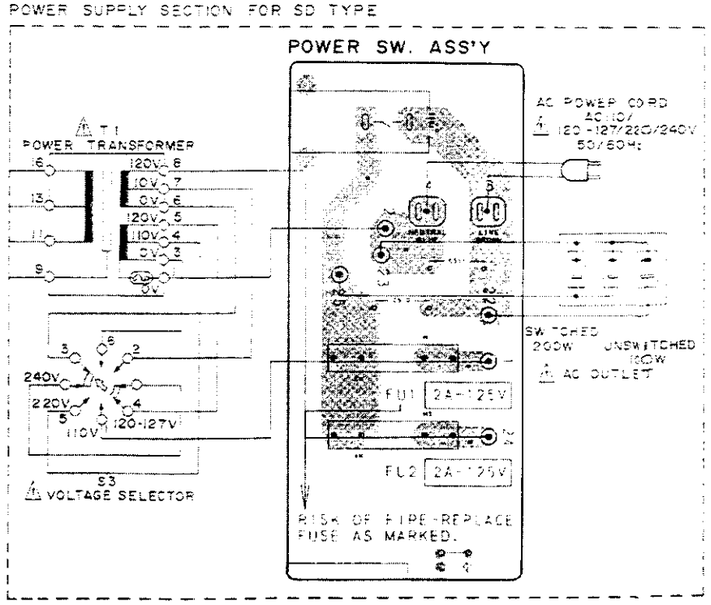
(FOR CANADIAN MODEL ONLY)
Fuse symbols ▮ (fast operating fuse) and/or ▮ (slow operating fuse) on P.C.B. indicate that replacement parts must be of identical designation.

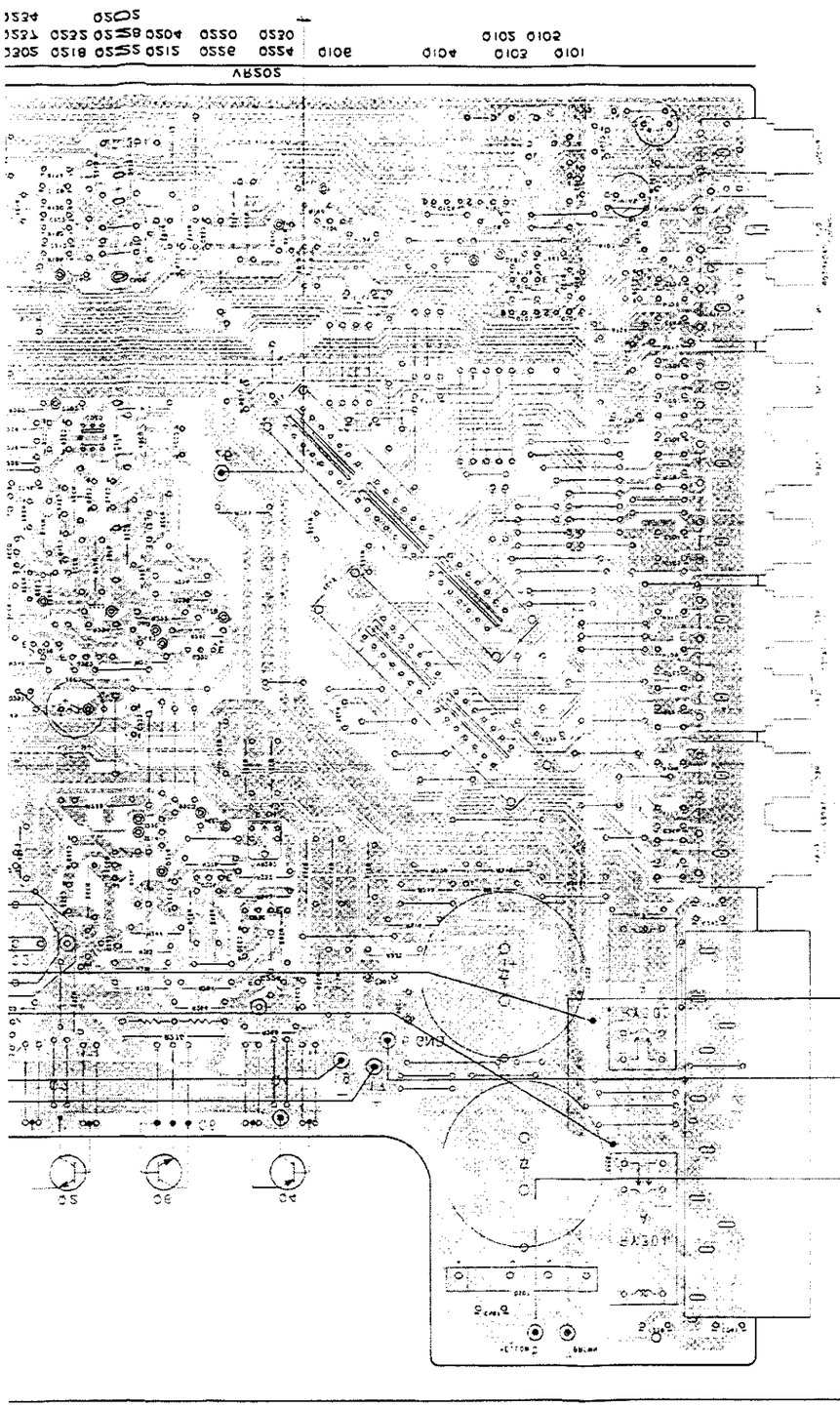
(POUR MODÈLE CANADIEN SEULEMENT)
Sur P.C.I., les symboles de fusible ▮ (fusible de type rapide) et/ou ▮ (fusible de type lent) indiquent que les pièces de remplacement doivent avoir la même désignation.

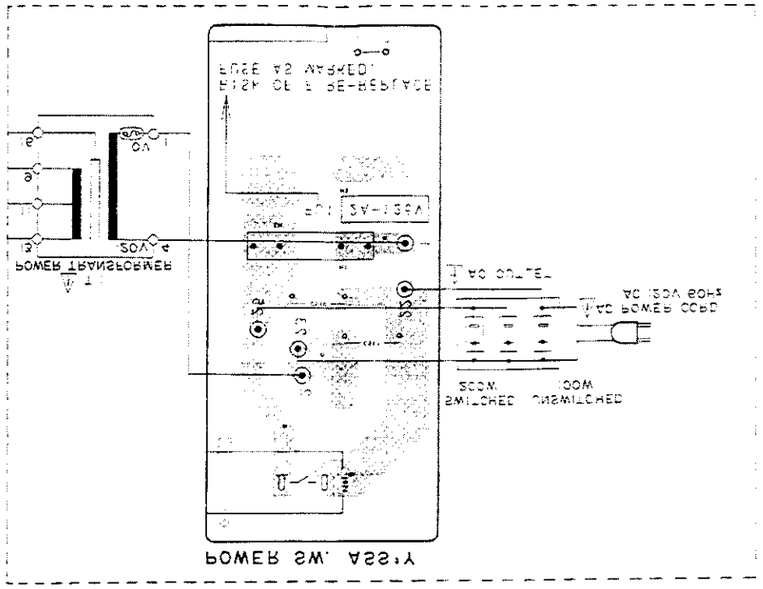
POWER SUPPLY SECTION FOR KC TYPE



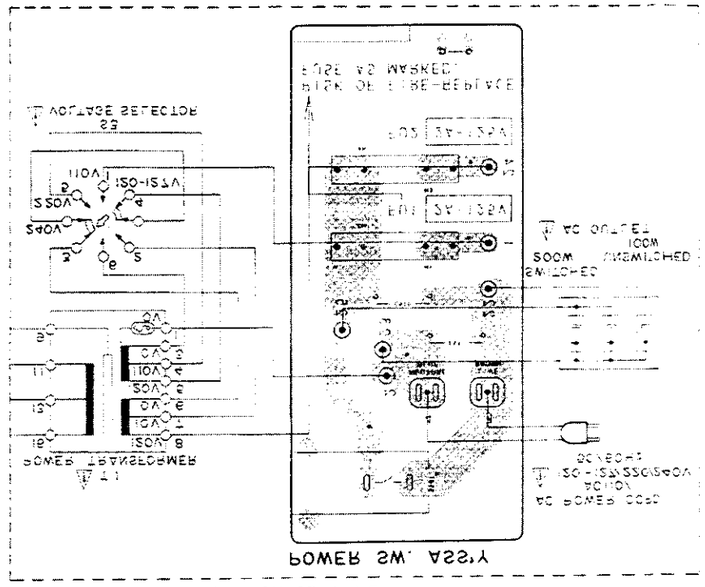
POWER SUPPLY SECTION FOR SD TYPE



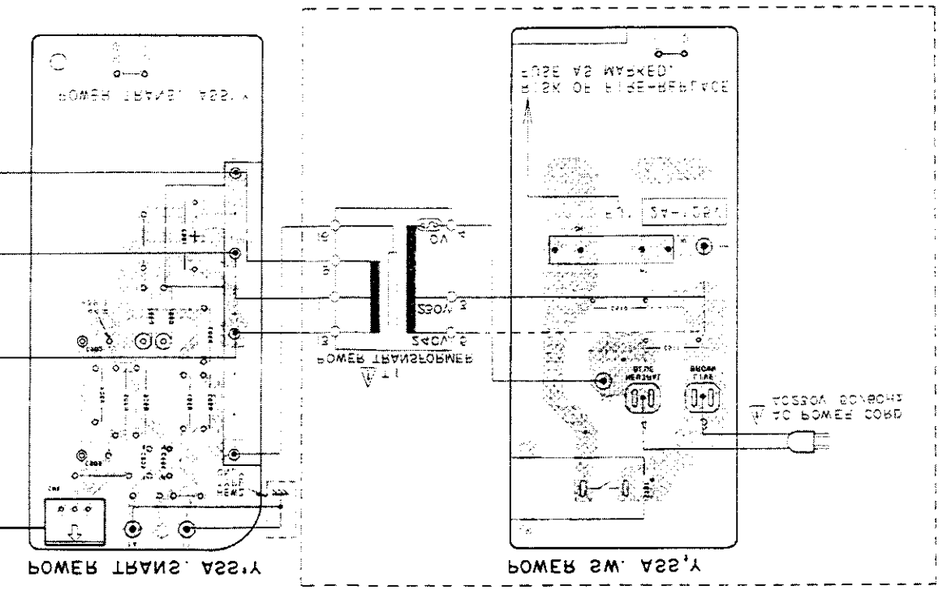




POWER SUPPLY SECTION FOR KC TYPE



POWER SUPPLY SECTION FOR SD TYPE

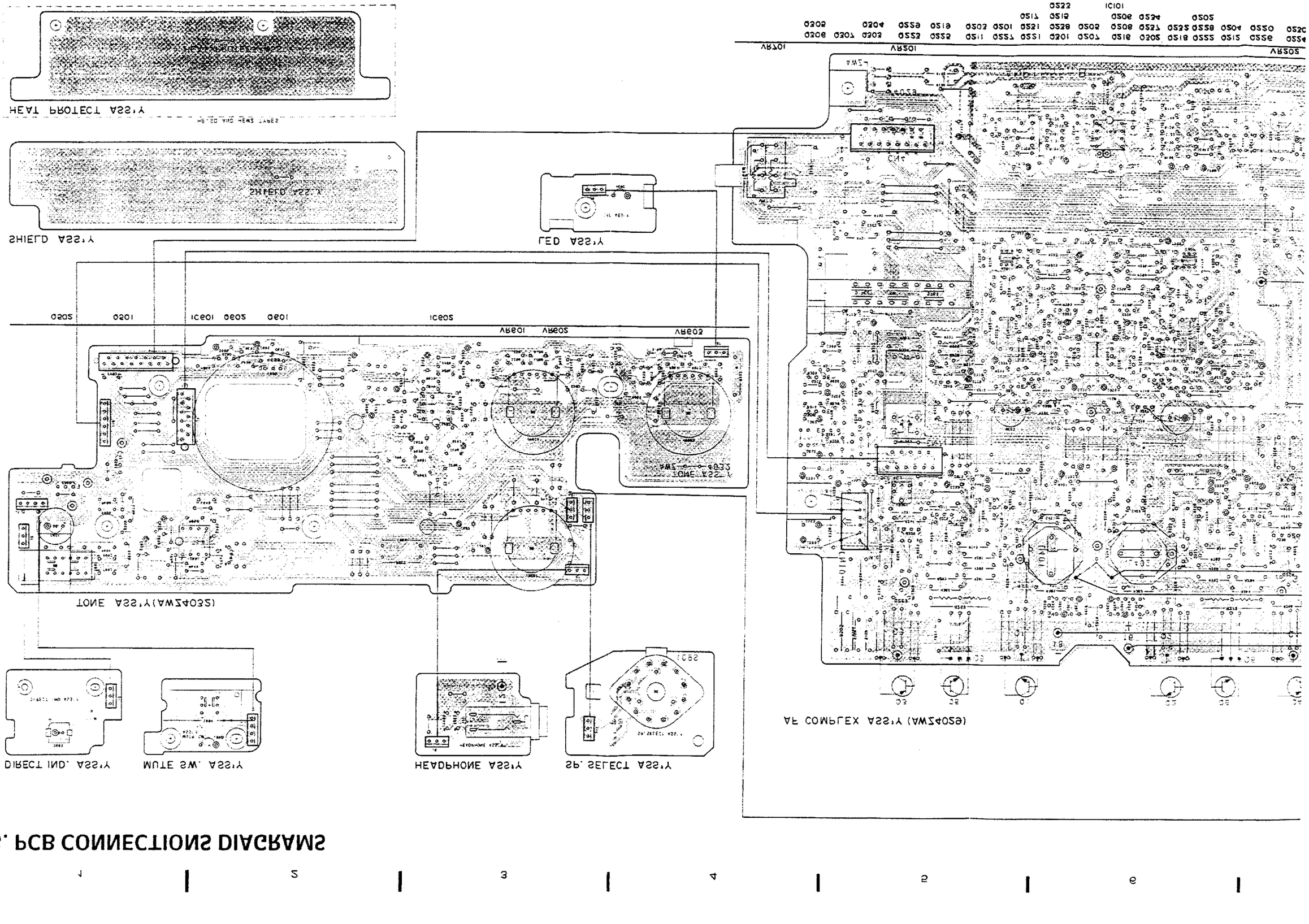


POWER SUPPLY SECTION FOR HE AND HEMZ TYPES

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

TOP-A

3. PCB CONNECTIONS DIAGRAMS



4. 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 ⚠ 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*	*RD1/8PM[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*

LIST OF ASSEMBLIES

Mark	No.	Description	Parts No.
◉		AF COMPLEX ASSY	AWZ4029
		POWER SW ASSY	
		HEAD PHONE ASSY	
◉		TONE ASSY	AWZ4032
		LED ASSY	
		SHIELD ASSY	
		DIRECT IND. ASSY	
		SP. SELECT ASSY	
		MUTE ASSY	
		HEAT PROTECT ASSY	
		POWER TRANS ASSY	

◉AF COMPLEX ASSY(AWZ4029)

SEMICONDUCTORS

IC101	IC	UPC4570C
Q101–104	N–FET	2SK369
Q105,106	TRANSISTOR	2SC2458
Q201,202	DUAL TRANSISTOR	2SA1240
Q203–208	TRANSISTOR	2SA1048
Q211,212	TRANSISTOR	2SC1845
Q215–218	TRANSISTOR	2SA1048
Q219,220	TRANSISTOR	2SC2705
Q221,222	TRANSISTOR	2SC3298
Q223,224	TRANSISTOR	2SA1306
Q225,226	TRANSISTOR	2SC2603
Q227,228	TRANSISTOR	2SC1845
Q229,230	TRANSISTOR	2SA992
Q231,232	TRANSISTOR	2SA1145
Q233,234	TRANSISTOR	2SA992
Q237	TRANSISTOR	2SC1845
Q238	TRANSISTOR	2SA992
Q301,302	TRANSISTOR	2SC1845
Q303,304	TRANSISTOR	2SC2458
Q305	TRANSISTOR	2SA1048
Q306	TRANSISTOR	2SC1815
Q307	TRANSISTOR	2SC2458
D101,102	ZENER DIODE	RD7.5ESB2
D201,202	ZENER DIODE	RD2.7ESB1
D209–216	DIODE	HSS104–02
D217–220	ZENER DIODE	RD15ESB
D301–306	DIODE	HSS104–02
D307	ZENER DIODE	RD22ESB
D503,504	ZENER DIODE	RD18ESB1
D507	DIODE	D5SB20F

SWITCHES

S701	SWITCH	ASU1016
S702	SWITCH	ASU1002
S703	PUSH SWITCH	SULL6S

RELAYS

RY301,302	RELAY	ASR–112
RY303	RELAY	ASR–111

COILS, FILTERS

L101,102	COIL(270μH)	ATH1010
L401,402	COIL	ATH1053

CAPACITORS

C103,104	CERAMIC CAPACITOR	CCCSL181J50
C105,106	CERAMIC CAPACITOR	CKCYB472K50
C107,108	ELECTROLYTIC CAPACIT	CEXA101M25
C109,110	AUDIO FILM CAPACITOR	CFTXA683J50
C111,112	AUDIO FILM CAPACITOR	CFTXA183J50
C113,114	ELECTROLYTIC CAPACIT	CEANP220M16
C115,116	MYLAR FILM CAPACITOR	CQMA392K50
C117,118	ELECTROLYTIC CAPACIT	CEAS221M25
C119,120	CERAMIC CAPACITOR	CKCYF103Z50
C121,122	MYLAR FILM CAPACITOR	CQMA122J50
C129	CERAMIC CAPACITOR	CKPYX103N25
C135,136	ELECTR.CAPACITOR	CEAS470M25
C141	CERAMIC CAPACITOR	CKCYF103Z50
C201,202	ELECTROLYTIC CAPACIT	CEXA2R2M50
C203,204	CERAMIC CAPACITOR	CCCSL470K500

Mark	No.	Description	Parts No.
	C205－208	CERAMIC CAPACITOR	CCCSL470J50
	C209,210	CERAMIC CAPACITOR	CCCSL221J50
	C211,212	ELECTROLYTIC CAPACIT	CEXA101M50
	C213－216	CERAMIC CAPACITOR	CCCSL120K500
	C217,218	ELECTR.CAPACITOR	CEAS101M10
	C219－222	ELECTR.CAPACITOR	CEAS3R3M100
	C223,224	MYLAR FILM CAPACITOR	CQMA223K250
	C225,226	ELECTR.CAPACITOR	CEAS331M10
	C227－230	CERAMIC CAPACITOR	CCCSL330K500
	C231,232	CERAMIC CAPACITOR	CKCYB122K50
	C233－236	ELECTR.CAPACITOR	CEAS100M50
	C237,238	ELECTROLYTIC CAPACIT	CEAS331M50
	C239－242	MYLAR FILM CAPACITOR	CQMA103K250
	C243,244	CERAMIC CAPACITOR	CKCYX104M25
	C245,246	CERAMIC CAPACITOR	CKCYB681K50
	C247,248	AUDIO FILM CAPACITOR	CFTXA103J50
	C249,250	CERAMIC CAPACITOR	CKCYB681K50
	C251－254	CERAMIC CAPACITOR	CCCSL680K500
	C255	CERAMIC CAPACITOR	CCCSL121J50
	C256	CERAMIC CAPACITOR	CCCSL470J50
	C301,302	ELECTROLYTIC CAPACIT	CEANP4R7M50
	C303	ELECTROLYTIC CAPACIT	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR.CAPACITOR	CEAS101M25
	C306－308	ELECTR.CAPACITOR	CEASR47M50
	C401－404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,502	ELECTR.CAPACITOR	CEAS100M50
	C503,504	ELECTR.CAPACITOR	CEAS470M25
	C505	ELECTROLYTIC CAPACIT	ACH1196
	C506	ELECTROLYTIC CAPACIT	ACH1078
	C507	MYLAR FILM CAPACITOR	CQMA103K250
	C701,702	CERAMIC CAPACITOR	CCCSL101K500
	C703－708	CERAMIC CAPACITOR	CCCSL151J50
	C711,712	CERAMIC CAPACITOR	CCCSL151J50
	C715,716	CERAMIC CAPACITOR	CCCSL151J50
	C719,720	CERAMIC CAPACITOR	CCCSL271J50
	C725	CERAMIC CAPACITOR	CCCSL221J50
	C726	CERAMIC CAPACITOR	CKCYF103Z50
	C727,728	CERAMIC CAPACITOR	CCCSL221J50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	VR201,202	VR(47K)	ACP1045
	VR701	VR	ACT1073
	R107,108	CARBON FILM RESISTOR	RDR1/6PU563J
	R119,120	CARBON FILM RESISTOR	RDR1/4PM6R8J
	R121,122	CARBON FILM RESISTOR	RDR1/4PM820J
	R133,134	CARBON FILM RESISTOR	RDR1/6PU391J
	R143,144	CARBON FILM RESISTOR	RD1/4PM560J
	R201,202	CARBON FILM RESISTOR	RD1/4PM101J
	R203,204	CARBON FILM RESISTOR	RDR1/4PM104J
	R205,206	CARBON FILM RESISTER	RD1/4PM152J
	R207,208	CARBON FILM RESISTOR	RD1/4PM103J
	R209,210	CARBON FILM RESISTER	RD1/4PM152J
	R211－214	CARBON FILM RESISTOR	RD1/4PM562J
	R215,216	CARBON FILM RESISTOR	RDR1/4PM821J
	R217,218	CARBON FILM RESISTOR	RDR1/4PM124J
	R219,220	CARBON FILM RESISTOR	RD1/4PM473J
	R221,222	CARBON FILM RESISTOR	RD1/4PM101J
	R223,224	CARBON FILM RESISTOR	RD1/4PM332J
	R225,226	CARBON FILM RESISTOR	RD1/4PM392J

Mark	No.	Description	Parts No.
	R227,228	CARBON FILM RESISTOR	RD1/4PM561J
	R229,230	CARBON FILM RESISTOR	RD1/4PM392J
	R231,232	CARBON FILM RESISTOR	RD1/4PM332J
	R233,234	CARBON FILM RESISTOR	RD1/4PM101J
	R237,R238	CARBON FILM RESISTOR	RDR1/4PM224J
⚠	R239－242	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R243,244	CARBON FILM RESISTOR	RD1/4PMF561J
⚠	R245－248	FUSLIBLE RESISTOR	RFA1/4PS101J
	R249,250	CARBON FILM RESISTOR	RD1/4PM122J
	R251,252	CARBON FILM RESISTOR	RD1/4PM103J
	R255,256	CARBON FILM RESISTOR	RD1/4PM561J
⚠	R257－260	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R261－264	FUSLIBLE RESISTOR	RFA1/4PS470J
⚠	R265－268	FUSLIBLE RESISTOR	RFA1/4PS4R7J
⚠	R269,270	RESISTOR (0.33, 5W)	ACN1063
	R273,274	CARBON FILM RESISTOR	RD1/4PM100J
	R275,276	CARBON FILM RESISTOR	RD1/4PM472J
	R277,278	CARBON FILM RESISTOR	RD1/4PM222J
⚠	R281－284	FUSLIBLE RESISTOR	RFA1/4PS331J
⚠	R285,286	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R287,288	CARBON FILM RESISTOR	RD1/4PMF4R7J
⚠	R289,290	FUSLIBLE RESISTOR	RFA1/4PS331J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
⚠	R301,302	CARBON FILM RESISTOR	RD1/4PMF222J
⚠	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311	CARBON FILM RESISTOR	RD1/4PM101J
	R312	CARBON FILM RESISTOR	RD1/4PM221J
	R313－315	CARBON FILM RESISTOR	RD1/4PM181J
	R317	CARBON FILM RESISTOR	RD1/4PM221J
	R318－320	CARBON FILM RESISTOR	RD1/4PM181J
	R321	CARBON FILM RESISTOR	RD1/4PM221J
	R322－324	CARBON FILM RESISTOR	RD1/4PM181J
	R325－327	CARBON FILM RESISTOR	RD1/4PM221J
⚠	R330	CARBON FILM RESISTOR	RD1/4PMF010J
⚠	R401,402	CARBON FILM RESISTOR	RD1/4PMFL101J
⚠	R403,404	METAL OXIDE RESISTOR	RS1LMF331J
⚠	R407,408	CARBON FILM RESISTOR	RD1/4PMFL100J
⚠	R501,502	METAL OXIDE RESISTOR	RS1PMF121J
⚠	R503,504	METAL OXIDE RESISTOR	RS1LMF121J
⚠	R505,506	METAL OXIDE RESISTOR	RS1PMF121J
⚠	R507	CARBON FILM RESISTOR	RD1/4PMF010J
	R513－515	CARBON FILM RESISTOR	RD1/4PM272J
⚠	R516	CARBON FILM RESISTOR	RD1/4PMFL272J
⚠	R517－520	METAL OXIDE RESISTOR	RS1PMF101J
	R701,702	CARBON FILM RESISTOR	RDR1/4PM101J
	R731,732	CARBON FILM RESISTOR	RD1/4PM103J
		Other resistors	RD1/8PM□□□J
OTHERS			
	CN4	CONNECTOR(15P)	KPE15
	CN7	CONNECTOR(11P)	KPE11
	CN10	JUMPER CONNECTOR	KPC6
		PIN JACK(4P)	AKB1007
		PIN JACK(6P)	AKB1008
		PIN JACK(6P)	AKB1024
		SPEAKER TERMINAL 8－P	AKE1011

Mark	No.	Description	Parts No.
POWER SW ASSY			
SWITCHES			
⚠	S501	PUSH SWITCH(ON/OFF)	ASG1035
CAPACITORS			
⚠	C510,511	CKA (0.01/AC400V)	ACG1002
HEAD PHONE ASSY			
CAPACITORS			
	C801,802	CERAMIC CAPACITOR	CKCYB392K50
OTHERS			
		JACK	AKN1002
◉TONE ASSY(AWZ4032)			
SEMICONDUCTORS			
	IC601,602	OP－AMP IC	RC4558DXP
	Q501	TRANSISTOR	2SC2705
	Q502	TRANSISTOR	2SA1145
	Q601,602	N－FET	2SK246
	D601	LED(RED)	AEL1065
	D605,606	DIODE	HSS104－02
SWITCHES			
	S601	PUSH SWITCH	ASG1019
CAPACITORS			
	C601,602	ELECTR.CAPACITOR	CEAS2R2M50
	C603,604	AUDIO FILM CAPACITOR	CFTXA223J50
	C605,606	ELECTR.CAPACITOR	CEAS100M25
	C607,608	CERAMIC CAPACITOR	CKCYX153M25
	C609,610	MYLAR FILM CAPACITOR	CQMA823J50
	C611,612	CERAMIC CAPACITOR	CKCYB332K50
	C613,614	CERAMIC CAPACITOR	CKCYX183M25
	C615,616	ELECTR.CAPACITOR	CEAS2R2M50
	C617,618	ELECTR.CAPACITOR	CEAS100M25
	C619,620	CERAMIC CAPACITOR	CCCSL390J50
	C621,622	CERAMIC CAPACITOR	CCCSL121J50
	C629,630	ELECTR.CAPACITOR	CEAS470M25
	C631,632	ELECTR.CAPACITOR	CEAS221M25
	C635,636	CERAMIC CAPACITOR	CCCSL150J50
	C641,642	CERAMIC CAPACITOR	CCCSL470J50
	C643	CERAMIC CAPACITOR	CKCYF103Z50
	C645,646	CERAMIC CAPACITOR	CKCYB102K50
	C647,648	CERAMIC CAPACITOR	CCCSL101J50
RESISTORS			
	VR601	VARIABLE(100K－BX2)	ACT1046
	VR603	VARIABLE(100K－20AX2)	ACT1045
	VR604	VARIABLE(100K－20AX2)	ACT1045
	R651,652	CARBON FILM RESISTOR	RD1/4PM101J
⚠	R801,802	METAL OXIDE RESISTOR	RS1PMF331J
⚠	R803	METAL OXIDE RESISTOR	RS1LMF681J
		Other resistors	RD1/8PM□□□J

Mark	No.	Description	Parts No.
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
MUTE ASSY			
SEMICONDUCTORS			
	D607	LED(RED)	AEL1065
SWITCHES			
	S604	PUSH SWITCH	ASG1029
HEAT PROTECT ASSY			
		Heat protect assy has no service part.	
POWER TRANS ASSY			
SEMICONDUCTORS			
	D901	DIODE	11E2
	D902	DIODE	11E2
CAPACITORS			
	C901	POLYESTER CAPACITOR	CQMXA104J100
	C902	ELECTR.CAPACITOR	CEAS101M50
	C903	ELECTR.CAPACITOR	CEAS220M50
	C904	POLYESTER CAPACITOR	CQMXA473J100
	C905	CERAMIC CAPACITOR	CKCYF473Z50
RESISTORS			
⚠	R901,902	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R903,904	CARBON FILM RESISTOR	RD1/4PMF010J
⚠	R905,906	METAL OXIDE RESISTOR	RS1LMF272J

5. ADJUSTMENTS

IDLE CURRENT ADJUSTMENT

1. Connect measuring instrument as Fig. 5−1.
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 20mV $^{+\ 3mV}_{-15mV}$.

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

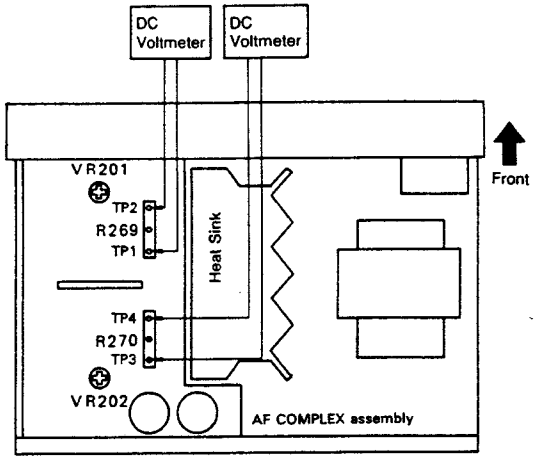


Fig. 5−1 Adjustment Method

A-401

5. REGLAGE

REGLAGE DU COURANT DEWATTE

1. Brancher les fils comme indiqué dans la fig. 5−1.
2. Après la mise sous tension, le moteur dure 5 minutes et n'introduire charge.
3. VR 201 sera réglé dans le canal gauche de manière que les deux tensions de bornes de R269 atteignent 20 mV $\left(^{+\ 3mV}_{-15mV}\right)$.
4. VR 202 sera réglé dans le canal droit de manière que les deux tensions de bornes atteignent 20 mV $\left(^{+\ 3mV}_{-15mV}\right)$.

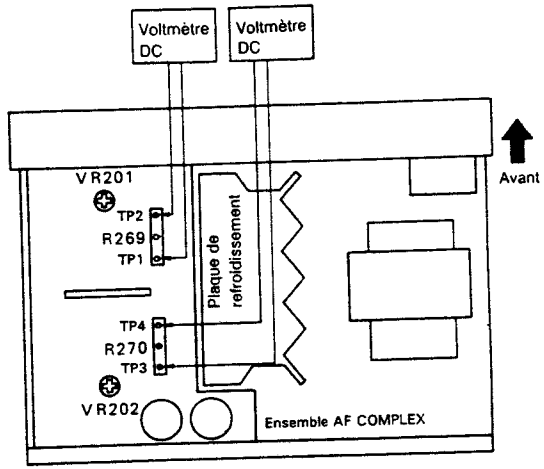


Fig. 5−1 Schéma du réglage

5. AJUSTE

AJUSTE DE LA CORRIENTE DEVATIADA

1. Conecte el cable como lo ilustra la Fig. 5−1.
2. El motor funciona por 5 mintos después de encender la unidad, sin introduzca.
3. El VR201 del canal izquierdo debe ajustarse de modo que la tensión entre ambos bornes de R269 llegue a 20 mV $\left(^{+\ 3mV}_{-15mV}\right)$.
4. El VR202 del canal derecho debe ajustarse de modo que la tensión entre ambos bornes llegue a 20 mV $\left(^{+\ 3mV}_{-15mV}\right)$.

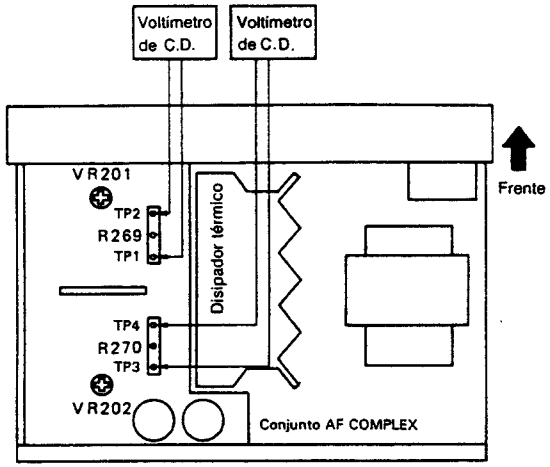


Fig. 5−1 Diagrama de ajuste

6. FOR HEWZ, KC AND SD TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Part 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.*

A-401/HEWZ, KC, SD and A-401/HE have the same construction except for the following :

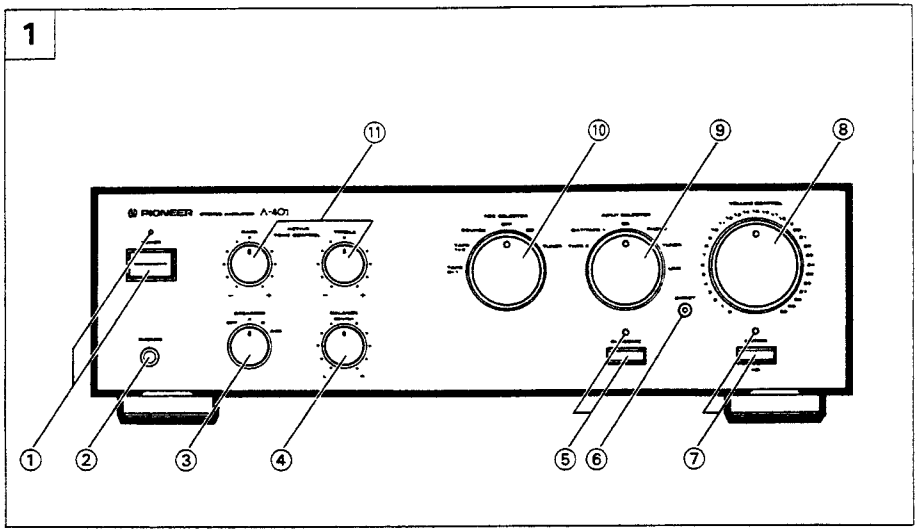
Mark	Symbol & Description	Part No.				Remarks
		HE type	HEWZ type	KC type	SD type	
⚠	AC power cord	ADG1049	ADG1049	ADG1058	ADG1051	
⚠	AC cord stopper	AEC−882	AEC−882	AEP−113	AEC−882	
⚠	Fuse (FU1, T2.5A/250V)	AEK−512	AEK−512	.....	.....	
⚠	Fuse (FU1, 5A)	.....	.....	AEK−308	.....	
⚠	Fuse (FU1, FU2, 2.5A/125V)	.....	.....	.....	AEK−123	
⚠	3P AC outlet	.....	.....	AKP−515	AKP−515	
	Packing case	AHD2242	AHD2242	AHD2244	AHD2242	
	Insulator assembly	AMR2140	AMR2140	AMR2141	AMR2140	
⚠	Power Transformer	ATS1346	ATS1346	ATS1288	ATS1289	
⚠	Voltage selector (AC110/120−127/220/240V)	.....	.....	.....	AKX−507	
	HEAT PROTECT assembly	Non supply	Non supply	.....	Non supply	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1227	.....	.....	.....	
	Operating instructions (English, French)	.....	.....	ARE1228	ARE1228	
	Operating instructions (Spanish)	.....	.....	.....	ARC1335	
	Operating instructions (German)	.....	ARC1333	.....	.....	

HEAT PROTECT ASSEMBLY

HEAT PROTECT assemblies of HEWZ, SD and HE types consist of the same components.

7. PANEL FACILITIES

1



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.

⑤ SUBSONIC filter switch/indicator
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.

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.

⑦ MUTING switch/indicator
Use to temporarily cut sound volume.

ON: The indicator lights.
The sound is cut off.

OFF: The indicator goes off.
The sound will return to its previous volume.

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.

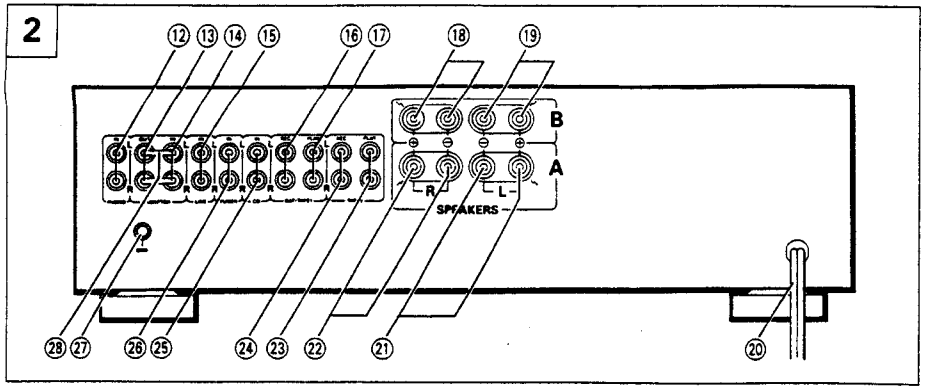
TREBLE tone control
Use to adjust the high-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

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.

2



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**

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

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**

8. SPECIFICATIONS

Amplifier Section

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*
DIN Continuous power output (both channels driven at 1 kHz)
T.H.D. 1.0 %, 8 Ω ..... 70 W + 70 W
T.H.D. 1.0 %, 4 Ω ..... 100 W + 100 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 %*

** Above specifications are applicable when power supply is 230 V.*

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. 0.008 % (MM) ..... 150 mV
Output level/impedance
TAPE REC, ADAPTOR OUTPUT ..... 150 mV/1 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)
Filter (SUBSONIC) ..... 17 Hz (12 dB/oct.)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input) ..... 93 dB*
CD, TUNER, LINE, TAPE ..... 108 dB*
Signal-to-Noise ratio (DIN, continuous power/50 mW)
PHONO (MM) ..... 74 dB/63 dB*
CD, TUNER, LINE, TAPE ..... 88 dB/65 dB*
MUTING ..... −∞

Power Supply/Miscellaneous

Power Requirements ..... a.c. 220 − 230 Volts, 50/60 Hz
Power Consumption ..... 550 W
Dimensions ..... 420 (W) x 347 (D) x 126 (H) mm
Weight (without package) ..... 8.1 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.

PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
ARP2745

STEREO AMPLIFIER

A-402

● **Refer to the service manual ARP2480 for A-401.**

A-402 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
SD	AC110V, 120 – 127V, 220V, 240V (switchable)	

● **This manual is applicable to A-402/SD.**

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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
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PIONEER ELECTRONICS AUSTRALIA PTY.LTD. 178-184 Boundary Road, Braeside Victoria 3195, Australia TEL: [03] 580-9911

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *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.*

A-402/SD and A-401/SD have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		A-401/SD	A-402/SD	
	Name plate (METAL)	AAM1029	AAM1058	
	Front panel	ANB1495	ANB1570	
	Front rear pad	AHA1335	.....	
	Pad (For front)	.....	AHA1596	
	Pad (For rear)	.....	AHA1597	
NSP	Rear panel	ANC1549	ANC2104	
	Sub pad	AHB1099	.....	
	Packing case	AHD2413	AHD2592	
	Operating instructions (English)	.....	ARB1433	
	Operating instructions (Spanish)	ARC1335	ARC1426	
	Operating instructions (English, French)	ARE1228	.....	