

Service Manual

ORDER NO.
RRV1806

STEREO POWER AMPLIFIER

M-5000

● Refer to the service manual RRV1262 for M-980/KU.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	M-5000		
KUXJN	○	AC120V	
KCXJN	○	AC120V	

● This product is a system(s) component.

This product does not function properly when indepent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.

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.

● Screws adjacent to ▼ mark on the product are used for disassembly.

M-5000/KUXJN, KCXJN and M-980/KU have the same construction except for the following:

Mark	Symbol and Description	Part No.			Remarks
		M-980/KU	M-5000/KUXJN	M-5000/KCXJN	
	Side Pad No. 1 Side Pad No. 2 Front Pad (Protector F) Rear Pad (Protector R) Packing Case	AHA7025 AHA7026 Not used Not used AHD7154	Not used Not used RHA1226 RHA1227 RHG1846	Not used Not used RHA1226 RHA1227 RHG1848	for Packing for Packing
NSP	Operating Instructions (English) Operating Instructions (French) Chassis Front Panel Rear Panel	ARB7040 Not used ANA1491 AMB7203 ANC7208	RRB1174 Not used RNE1874 RAH2822 RNA2190	RRB1174 RRC1007 RNE1874 RAH2822 RNA2190	
NSP	PCB Mold PCB Mold	AMR1525 Not used	Not used AMR2533	Not used AMR2533	
NSP	Binder Binder Screw	AEC-093 Not used Not used	Not used ZCA-BK1 BBZ30P230FMC	Not used ZCA-BK1 BBZ30P230FMC	for the right-Power Amp Module (Exchange Push Rivet for this part)
▲	Power Amp Module AC Power Cord Speaker Button	AXQ7022 ADG1146 AAD4071	AXQ7122 PDG1015 AAD2416	AXQ7122 PDG1015 AAD2416	
▲	65 Label Strain Relief	ORW1069 AEP-113	ORW1069 CM-22C	Not used CM-22C	
NSP	Warranty Card Spacer	ARY1044 Not used	ARY1051 REB1300	ARY1075 REB1300	No. 1

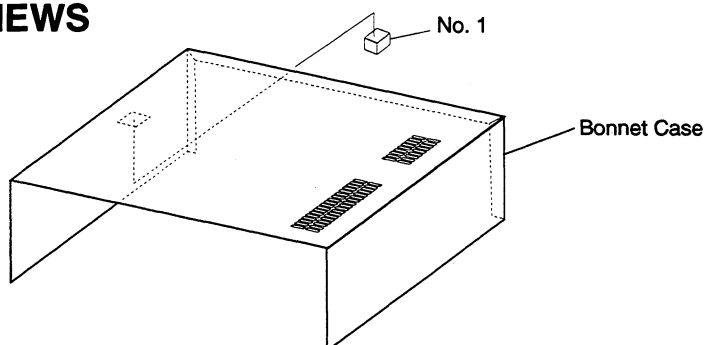
Note : The number in the remarks column correspond to the number on the EXPLODED VIEWS.

● POWER AMP MODULE

AXQ7122 and AXQ7022 have the same construction except for the following:

Mark	Symbol and Description	Part No.		Remarks
		AXQ7022	AXQ7122	
	Heat Sink Bracket Mold A Mold B	ANH7007 ANG1868 AMR2594 AMR2595	ANH7008 ANG7009 AMR7005 AMR7006	

■ EXPLODED VIEWS



Service Manual

STEREO POWER AMPLIFIER

M-980

- Refer to the service manual RRV1262 for M-980/KU.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	M-980		
KUXJ	O	AC120V	
KCXJ	O	AC120V	

- This product is a system(s) component.

This product does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.

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● CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" 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 "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

M-980/KUXJ, M-980/KCXJ and M-980/KU have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		M-980/KU	M-980/KUXJ	M-980/KCXJ	
	Side pad No.1	AHA7025	Not used	Not used	For Packing For Packing
	Side pad No.2	AHA7026	Not used	Not used	
	Front pad	Not used	AHA1665	AHA1665	
	Rear pad	Not used	AHA1666	AHA1666	
	Packing case	AHD7154	RHG1702	RHG1702	
NSP	Operating instructions (French)	Not used	Not used	ARC7060	
	Chassis	ANA1491	RNE1874	RNE1874	
	Rear panel	ANC7208	RNA2020	RNA2020	
NSP	PCB mould	AMR1525	Not used	Not used	
	PCB mould	Not used	AMR2533	AMR2533	
NSP	Binder	AEC-093	Not used	Not used	
	Binder	Not used	ZCA-BK1	ZCA-BK1	
	Power amp module	AXQ7022	AXQ7122	AXQ7122	
	AC power cord	ADG1146	PDG1015	PDG1015	
	Speaker button	AAD4071	AAD2416	AAD2416	
	65 label	ORW1069	ORW1069	Not used	

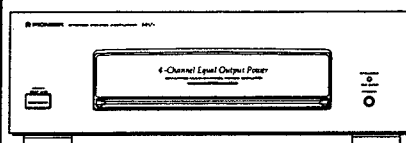
POWER AMP MODULE

AXQ7122 and AXQ7022 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AXQ7022	AXQ7122	
	Heat sink	ANH7007	ANH7008	
	Bracket	ANG1868	ANG7009	
	Mold A	AMR2594	AMR7005	
	Mold B	AMR2595	AMR7006	

Service Manual

PIONEER®
The Art of Entertainment



STEREO POWER AMPLIFIER

M-980

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	M-980		
KU	○	AC120V	
KC	○	AC120V	

- This product is a system(s) component.

This product does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.

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1. SAFETY INFORMATION

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.

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

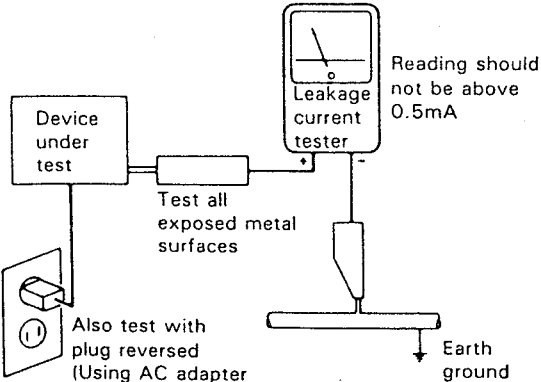
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

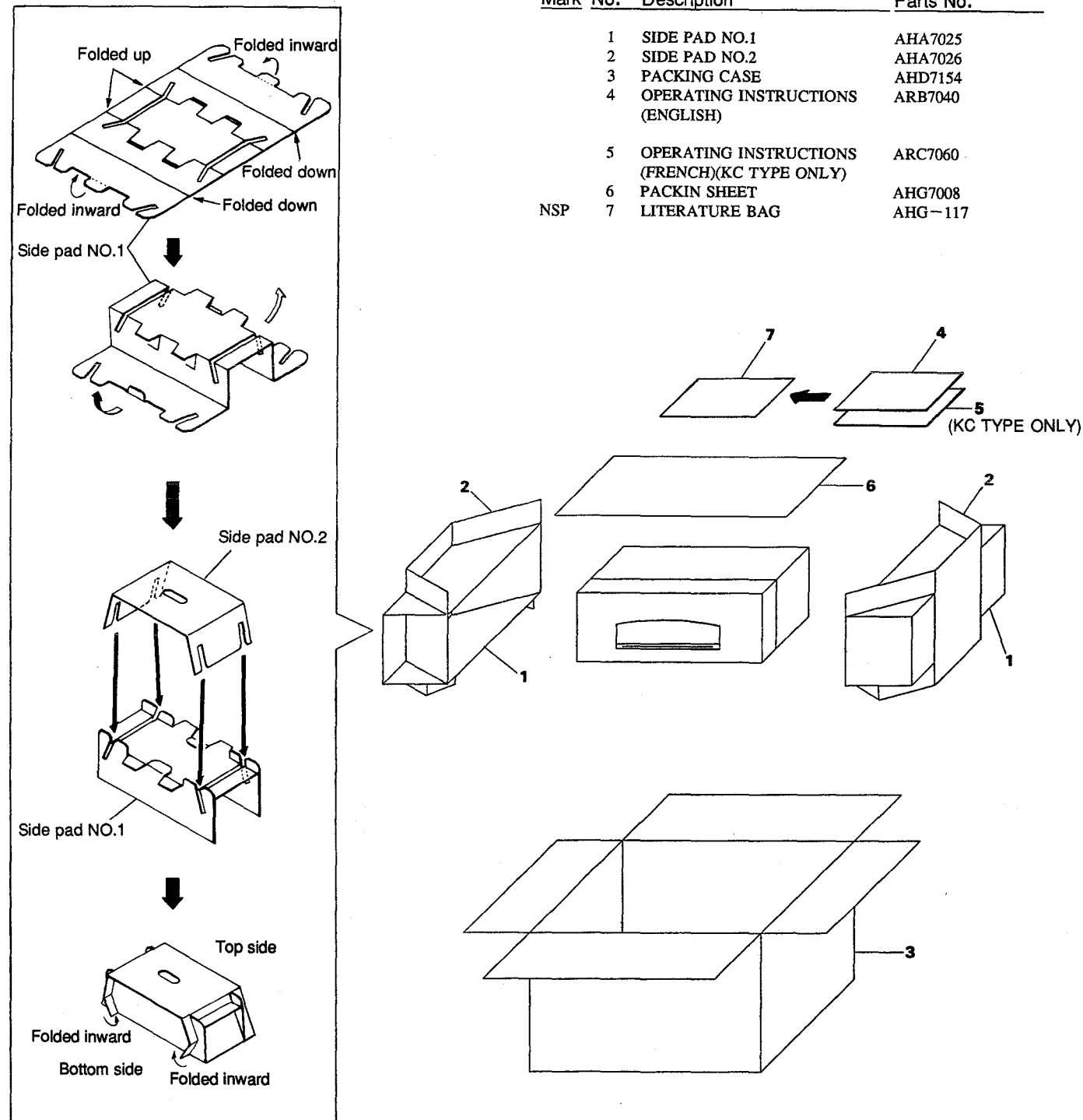
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

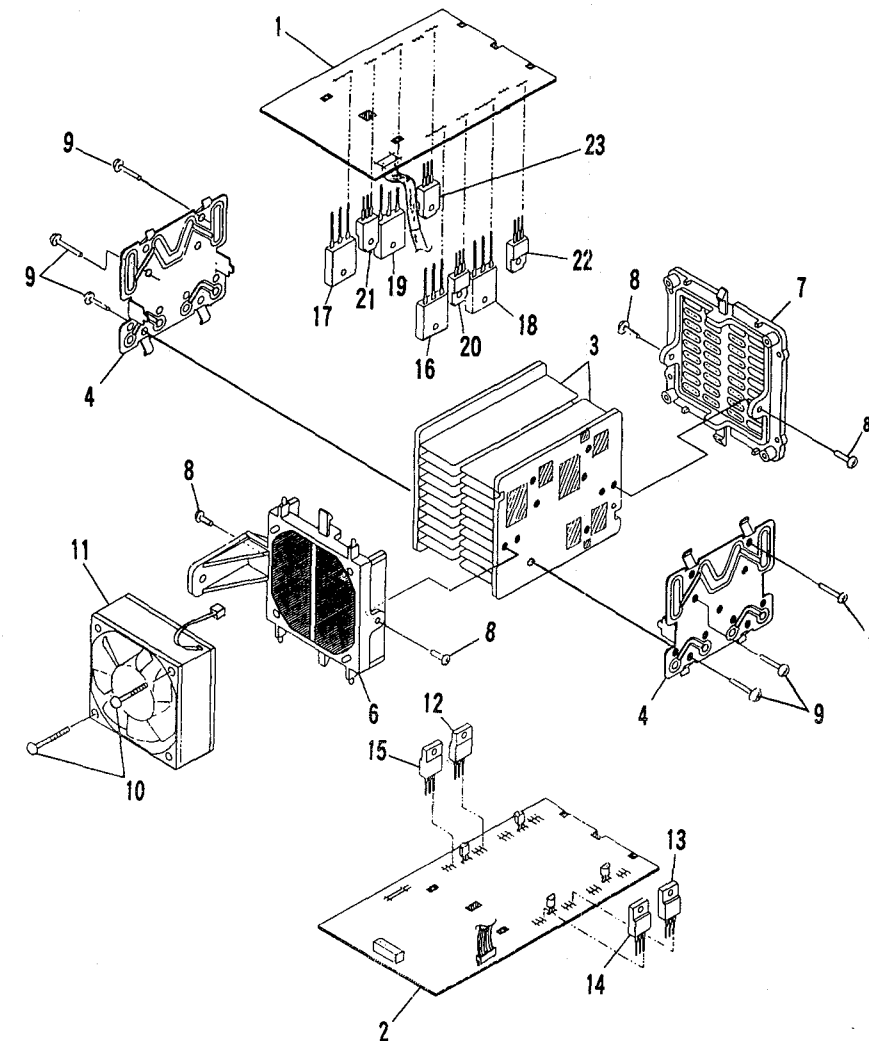
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" 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	SIDE PAD NO.1	AHA7025
	2	SIDE PAD NO.2	AHA7026
	3	PACKING CASE	AHD7154
	4	OPERATING INSTRUCTIONS (ENGLISH)	ARB7040
	5	OPERATING INSTRUCTIONS (FRENCH)(KC TYPE ONLY)	ARC7060
	6	PACKIN SHEET	AHG7008
NSP	7	LITERATURE BAG	AHG-117

2.2 POWER AMP MODULE

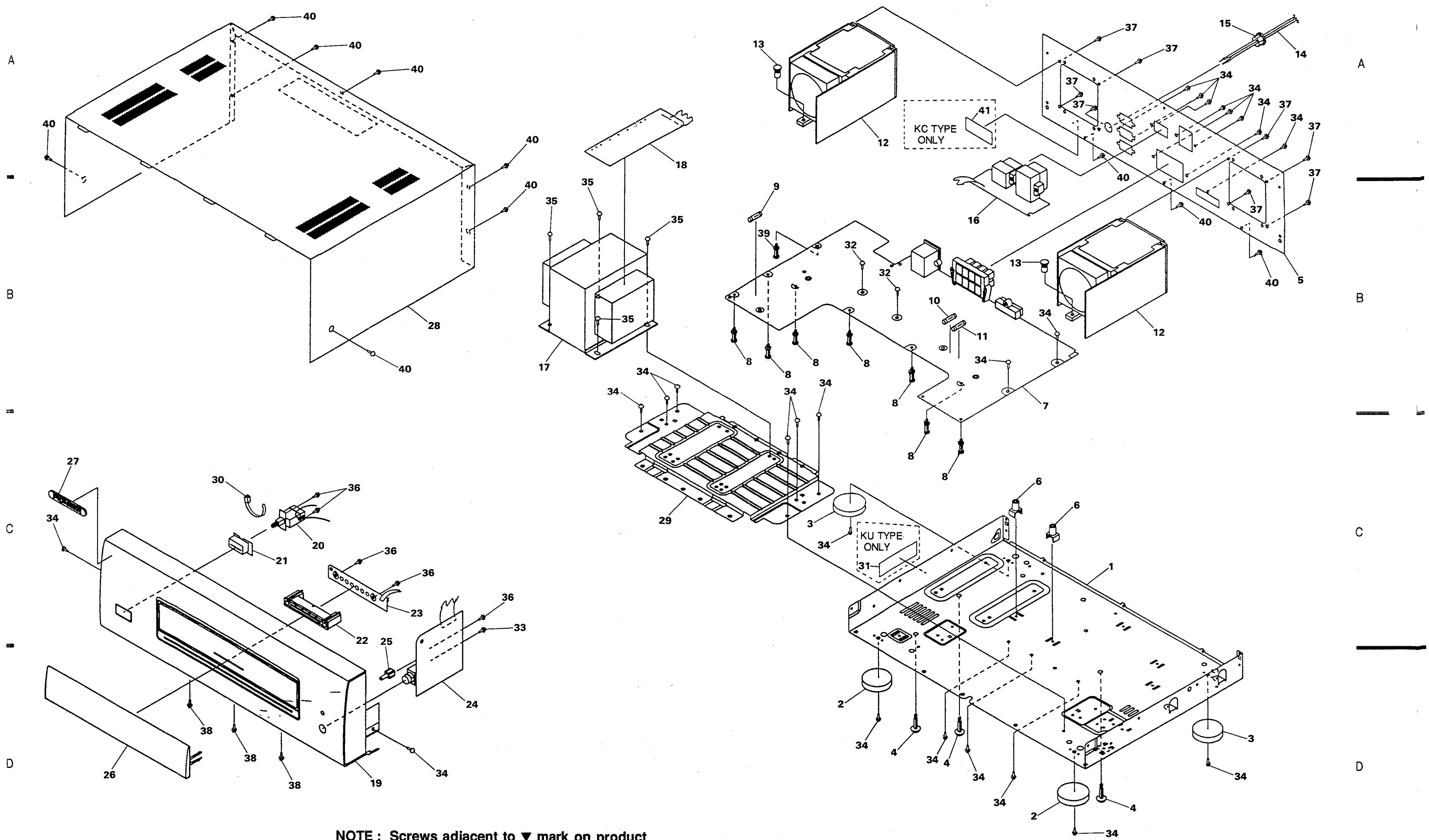


Note: Ensure that silicon grease does not adhere to the MOLD A (No. 6) and MOLD B (No. 7).

Parts List of Power Amp Module

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FRONT 100W ASSY	AWZ7725		13	REGULATOR IC (IC7402)	NJM7912FA
	2	REGULATOR ASSY	AWZ7726		14	REGULATOR IC (IC7403)	NJM7812FAS
	3	HEAT SINK (AL)	ANH7007		15	REGULATOR IC (IC7404)	NJM7805FAS
	4	BRACKET	ANG1868		16	TRANSISTOR (Q7511)	2SA1264N
	5			Δ	17	TRANSISTOR (Q7512)	2SA1264N
	6	MOLD A	AMR2594	Δ	18	TRANSISTOR (Q7513)	2SC3181N
	7	MOLD B	AMR2595	Δ	19	TRANSISTOR (Q7514)	2SC3181N
	8	SCREW (3×10)	ABA1021	Δ	20	TRANSISTOR (Q7503)	2SC4793
	9	SCREW	BBZ30P140FZK		21	TRANSISTOR (Q7504)	2SC4793
	10	SCREW	BPZ30P350FZK		22	TRANSISTOR (Q7509)	2SA1837
	11	FAN MOTOR	AXM7003		23	TRANSISTOR (Q7510)	2SA1837
	12	REGULATOR IC (IC7401)	NJM7812FAS				

2.3 EXTERIOR

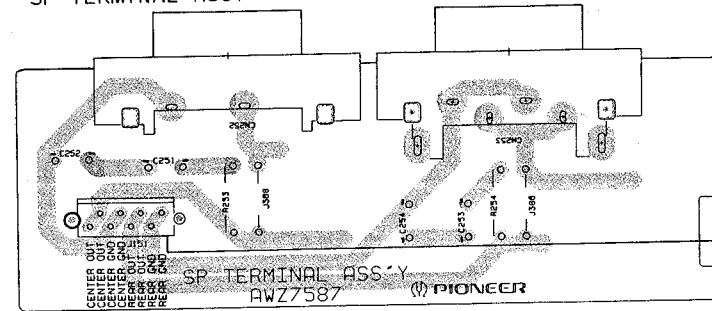


NOTE : Screws adjacent to ▼ mark on product
are used for disassembly.

● This diagram is viewed from the mounted parts side.

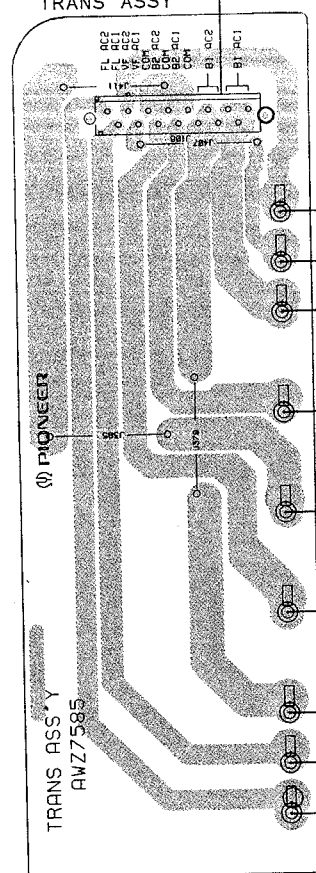
A

SP TERMINAL ASSY



B

TRANS ASSY



C

T1
POWER TRANSFORMER

TO REGULATOR
ASSY
CN7101

1

5

D

AF ASSY

AC IN

NEUTRAL LIVE

PRIMARY

SECONDARY

ATTENTION
POUR LES PRECAUTIONS
CONTINUÉES CONTRE L'INCENDIE,
LES FUSIBLES A REMPLACER
DOIVENT ETRE LES MEMES TYPE MEMES
TYPES VALEURS NOMINALES UNIQUEMENT.

CAUTION
FOR CONTINUED
PROTECTION AGAINST
FIRE HAZARD,
REPLACEMENT FUSES
SHOULD BE OF
THE SAME TYPE AND
RATINGS ONLY.

SECONDARY

PRIMARY

FU101

IC101

Q130

Q131

Q132

Q133

Q118

Q122

Q119-Q121

Q126-Q129

Q117

Q123

Q135

Q125

Q191

Q134

TO FRONT 100W
ASSY CN75

TO REGULATOR
ASSY
CN7101

1

2

3

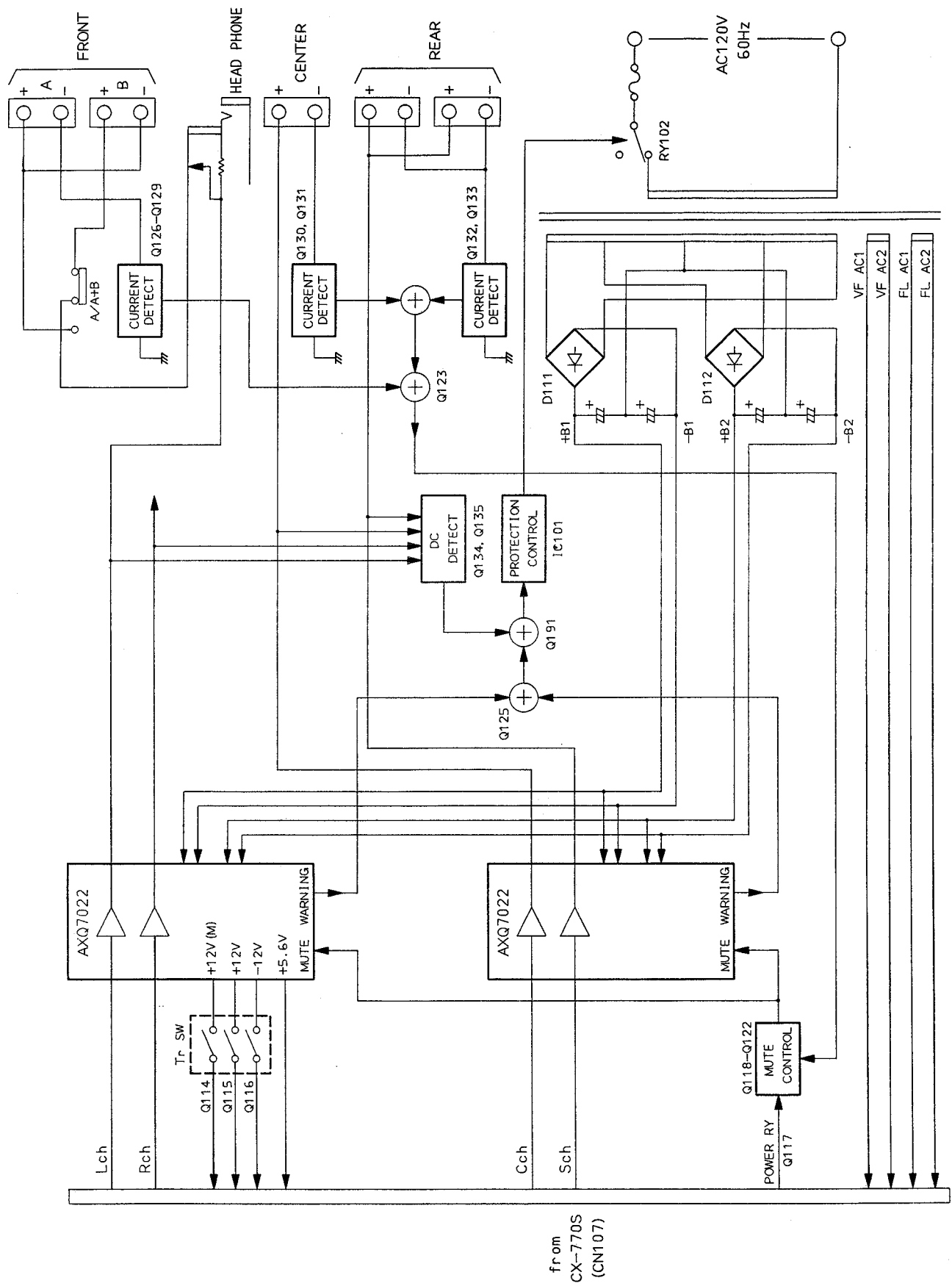
4

5

6

Mark	No.	Description	Parts No.
NSP	1	CHASSIS	ANA1491
	2	INSULATOR (ABS)	PNW1912
	3	INSULATOR ASSY	DXA1490
NSP	4	PCB HOLDER	AEC1583
	5	REAR PANEL	ANC7208
NSP	6	PCB MOLD	AMR1525
	7	AF ASSY	AWZ7584
	8	PCB SUPPORT	AEC1581
△	9	FUSE (FU101, 8A)	AEK1002
△	10	FUSE (FU111, 4A)	AEK1018
△	11	FUSE (FU112, 4A)	AEK1018
	12	POWER AMP MODULE	AXQ7022
	13	PUSH RIVET	AEC7010
△	14	AC POWER CORD	ADG1146
	15	STRAIN RELIEF	AEP-113
NSP	16	SP TERMINAL ASSY	AWZ7587
△	17	POEWR TRANSFORMER (T1)	ATS7047
NSP	18	TRANS ASSY	AWZ7585
	19	FRONT PANEL	AMB7203
△	20	PUSH SWITCH (S101)	ASG-553
	21	POWER BUTTON	AAD7064
	22	INDI. LENS	AAK7075
NSP	23	INDICATOR ASSY	AWZ7588
NSP	24	HEAD PHONE ASSY	AWZ7586
	25	SPEAKER BUTTON	AAD4071
	26	ILLUMI. PANEL	AAK7146
	27	NAME PLATE	PAM1608
	28	BONNET CASE	ANE7054
	29	TRANS FRAME	ANA7019
	30	BINDER	AEC-093
	31	65 LABEL (KU TYPE ONLY)	ORW1069
	32	SCREW	ABA1018
	33	SCREW	ABA1095
	34	SCREW	BBZ30P080FZK
	35	SCREW	BBZ40P080FZK
	36	SCREW	BPZ26P080FMC
	37	SCREW	VPZ30P080FZK
	38	SCREW	ABA7005
	39	PCB SPACER	AEC7021
	40	SCREW	BBT30P080FZK
NSP	41	CSA LABEL (KC TYPE ONLY)	ARW-090

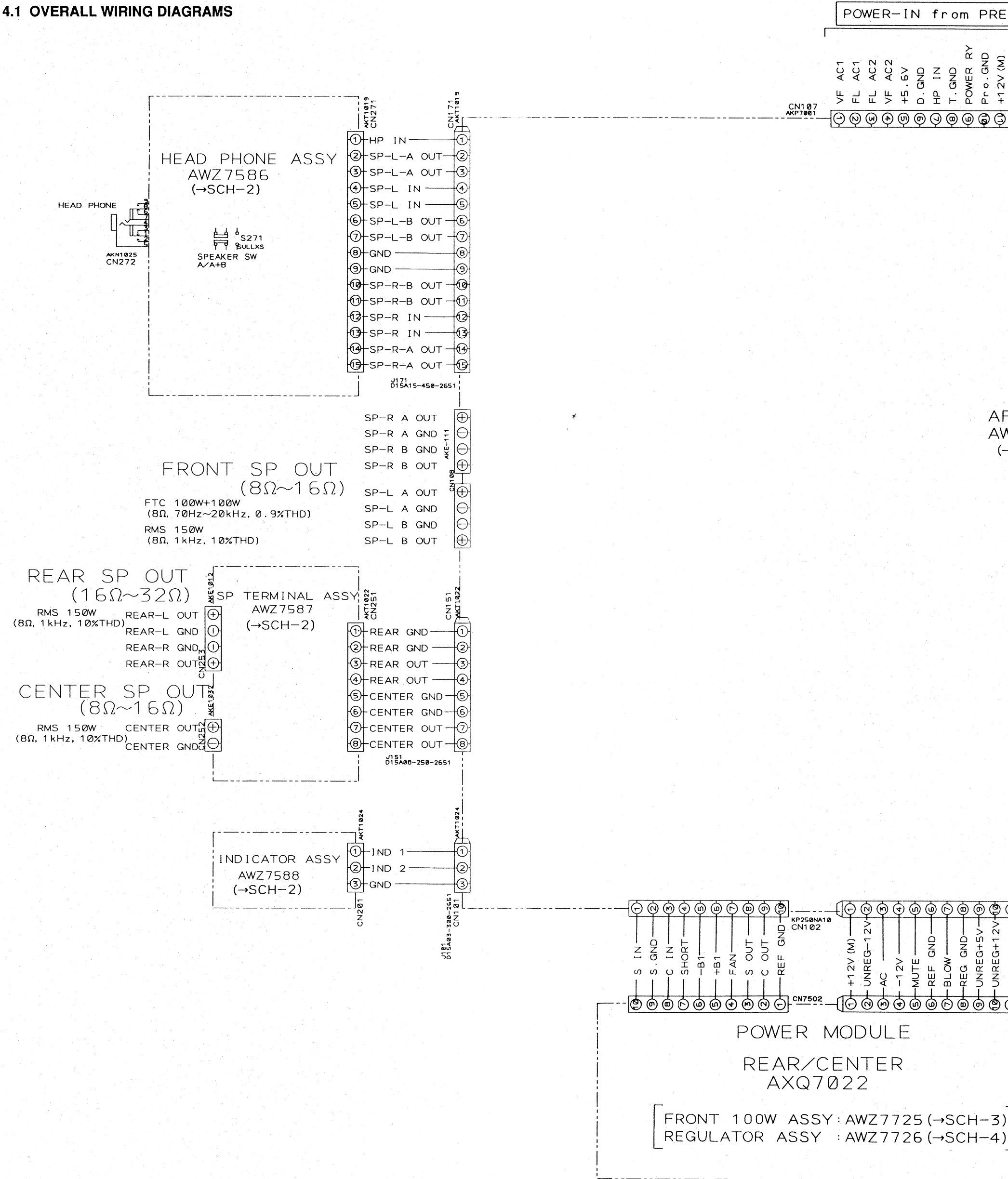
3. BLOCK DIAGRAM



from
CX-770S
(CN107)

4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

4.1 OVERALL WIRING DIAGRAMS



om PRE-OUT TO CX-770S

T. GND
POWER RY
P.O. GND
+12V (M)
+12V
REAR OUT
S. GND
CENTER OUT
-12V
R OUT
F. GND
L OUT

SCH-1

AC OUTLETS

AC120V 60Hz
UNAWICED
TOTAL 200W MAX1.6A
SWICED
100W MAX0.8A

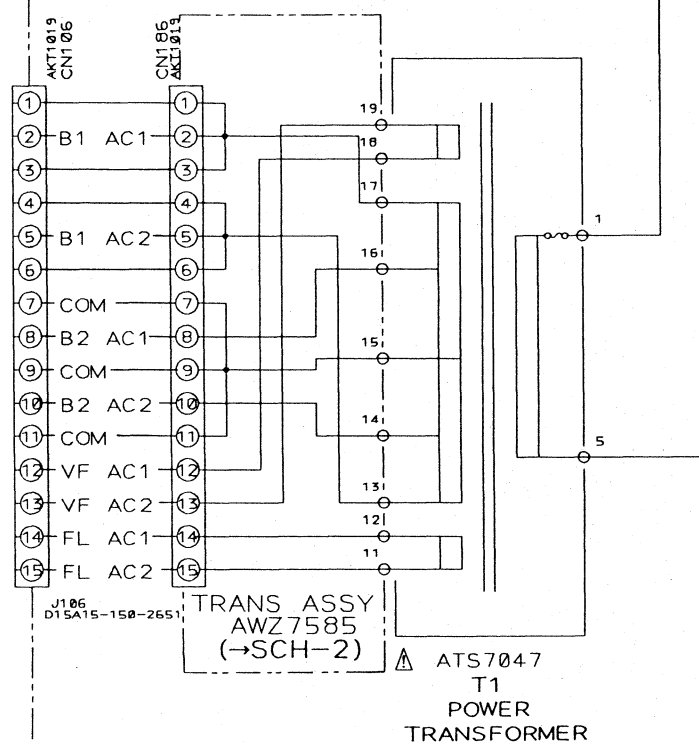
AC POWER CORD
AC120V 60Hz
ADG1146

AF ASSY
AWZ7584
(→SCH-2)

● NOTE FOR FUSE REPLACEMENT

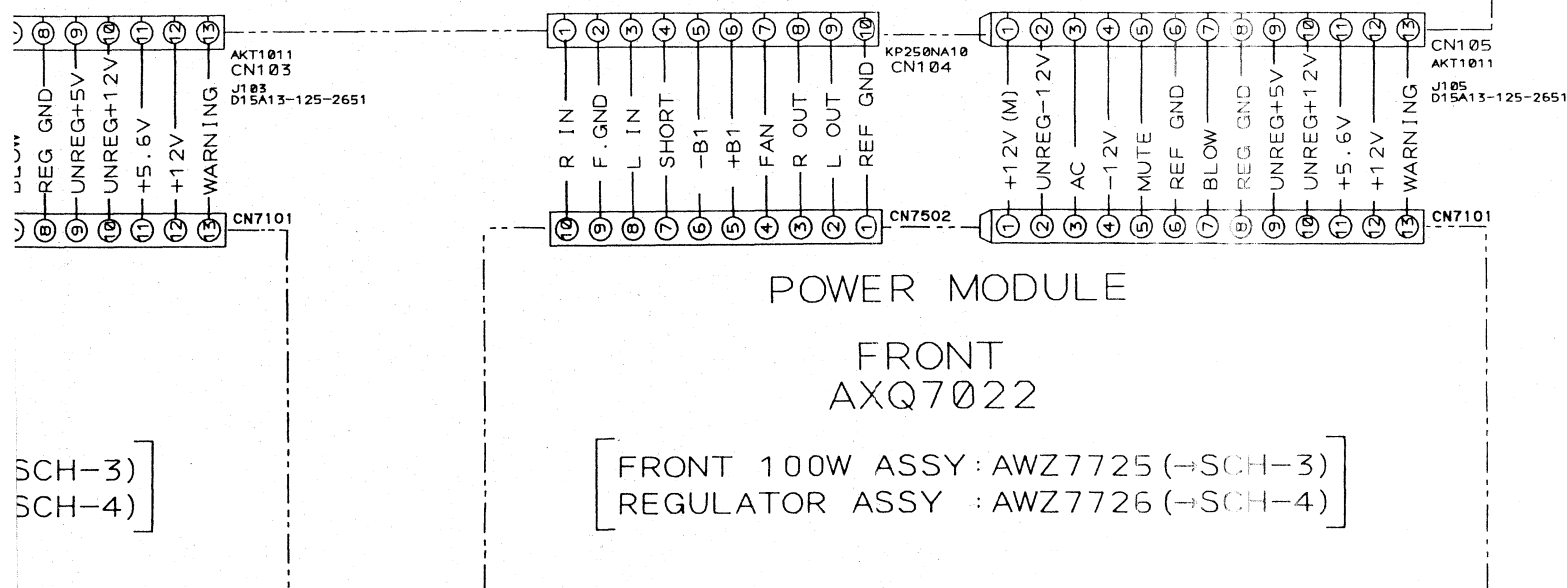
CAUTION—FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,
REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

FU111
AEK1018 (125V, 4A)
FU112
AEK1018 (125V, 4A)



NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

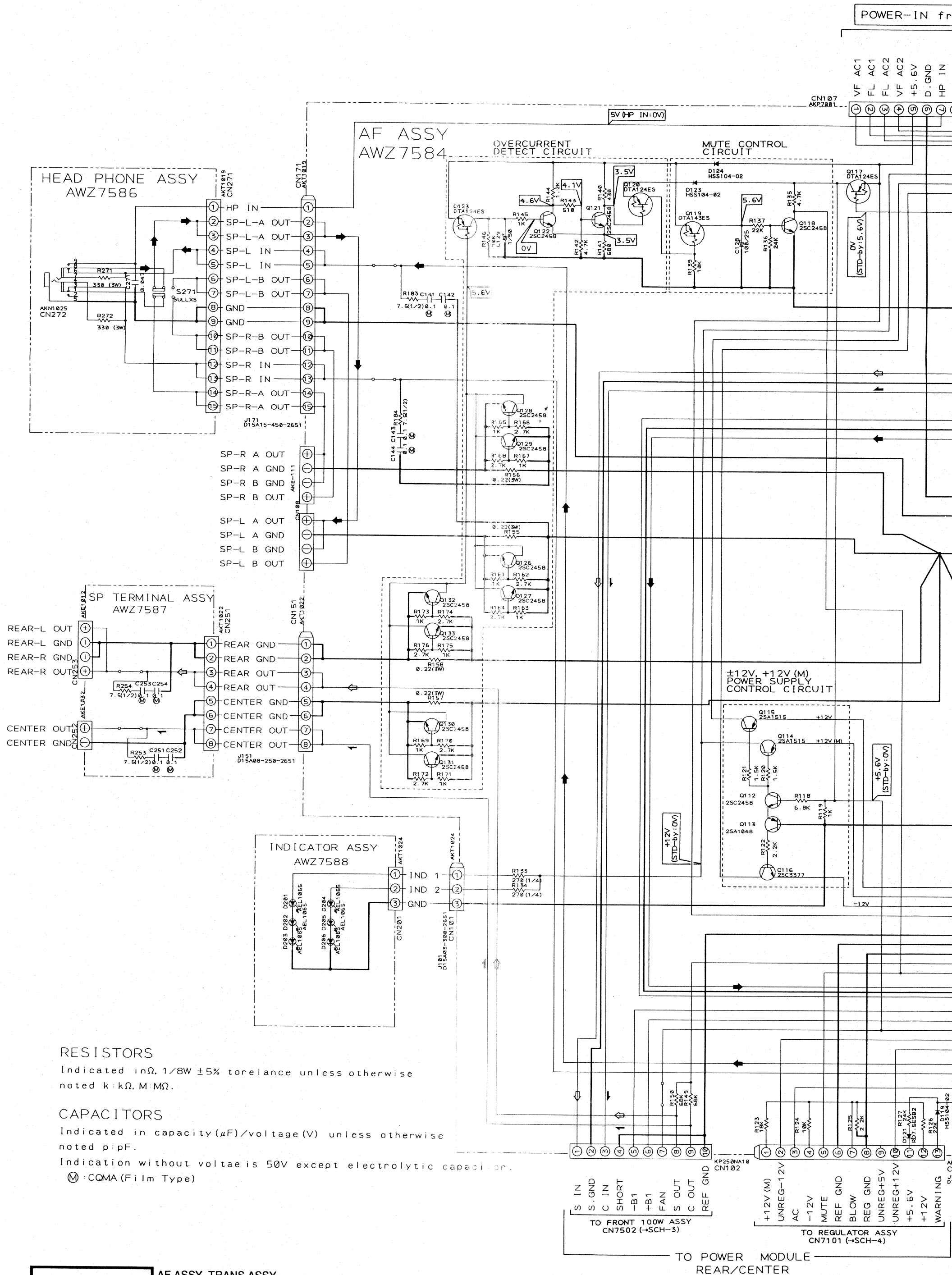
- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**
Unit: k: k Ω , M: M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.
- CAPACITORS:**
Unit: p: pF or μ F unless otherwise noted.
Ratings: capacitor (μ F)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m: mH or μ H unless otherwise noted.
- VOLTAGE AND CURRENT:**
V : Signal voltage at rated output.
or - V :
DC voltage (V) at no input signal unless otherwise noted.
Value in () is DC voltage at rated power.
mA or - mA :
DC current at no input signal unless otherwise noted.
- OTHERS:**
• $\odot$ or $\odot$: Adjusting point.
• $\rightarrow$: Measurement point.
• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES** (Underline indicates switch position):
HEAD PHONE ASSY
S271 : SPEAKERS (Δ / A+B)



OVERALL WIRING DIAGRAMS

SCH-1

4.2 AF, TRANS, HEAD PHONE, SP TERMINAL AND INDICATOR ASSEMBLIES



SCH-2

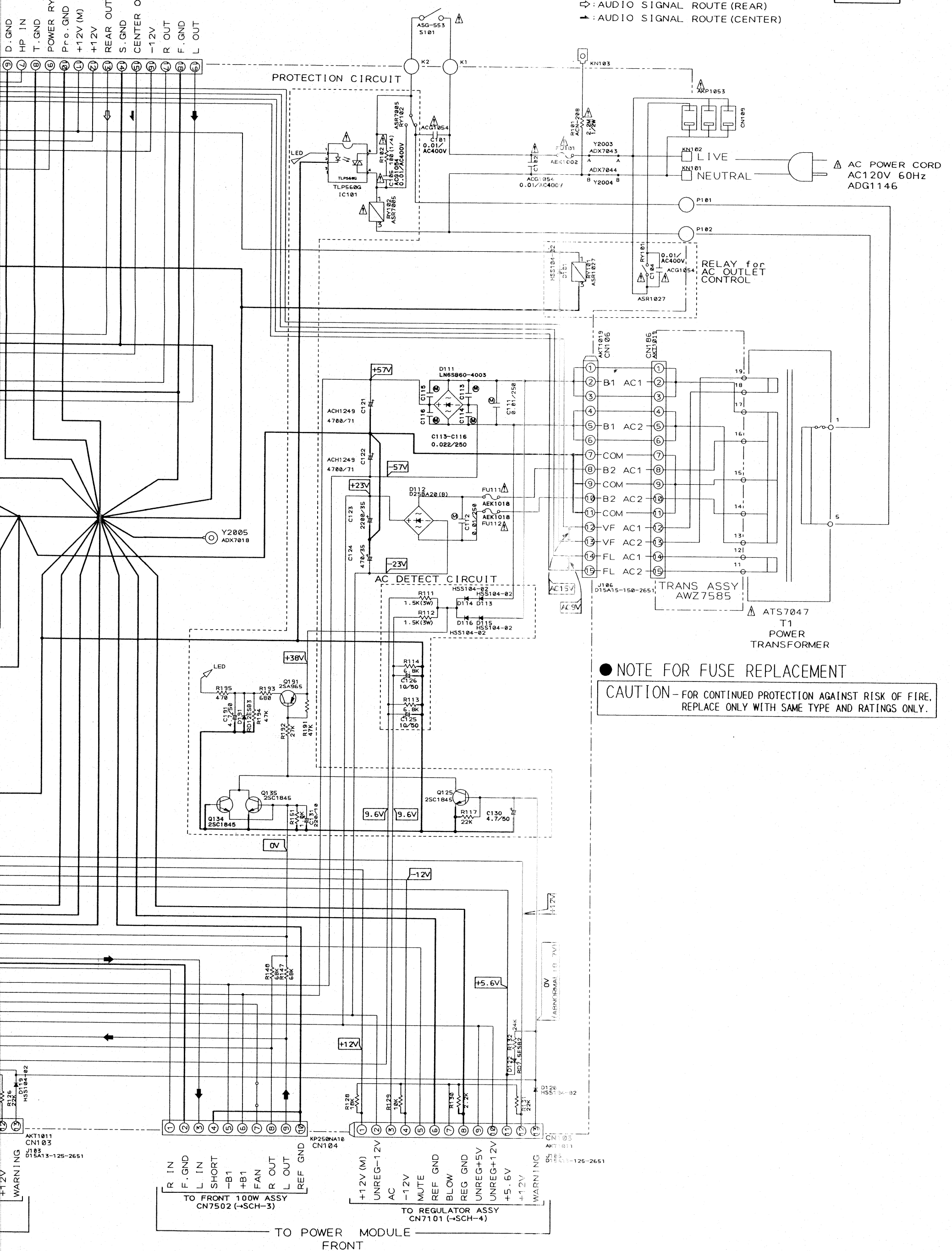
AF ASSY, TRANS ASSY,
HEAD PHONE ASSY,
SP TERMINAL ASSY,
INDICATOR ASSY

N from PRE-OUT TO CX-770S

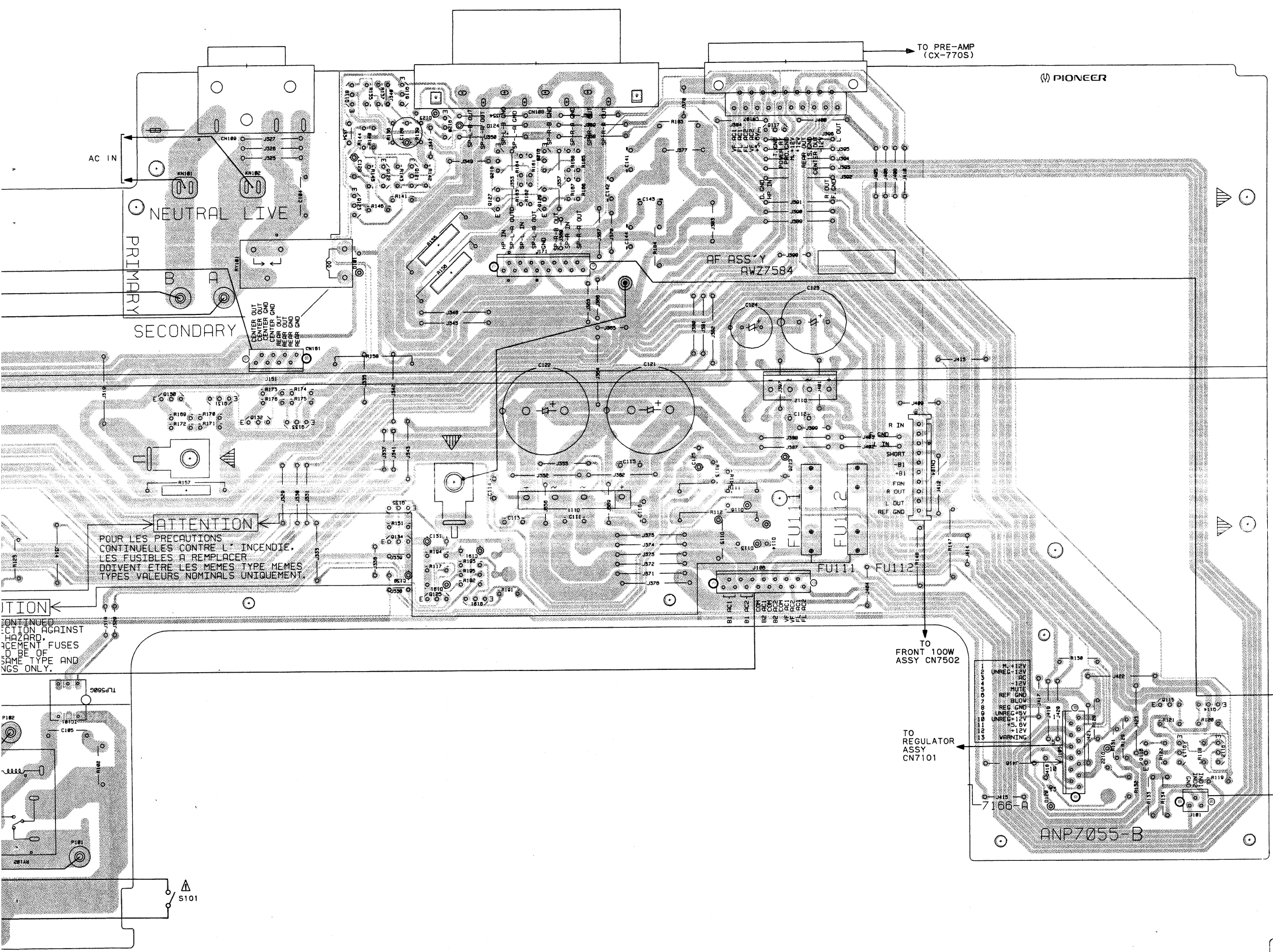
D. GND
HP IN
T. GND
POWER RY
Pro. GND
+12V (M)
+12V
REAR OUT
S. GND
CENTER OUT
-12V
R OUT
F. GND
L OUT

SIGNAL ROUTE
➡: AUDIO SIGNAL ROUTE (FRONT Lch)
⇨: AUDIO SIGNAL ROUTE (REAR)
➡: AUDIO SIGNAL ROUTE (CENTER)

SCH-2



● This diagram is viewed from the mounted parts side.

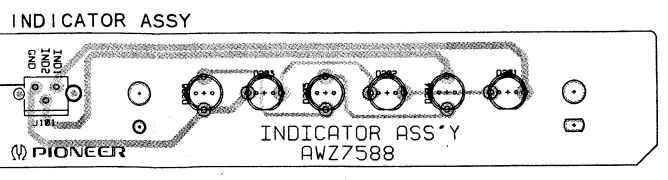
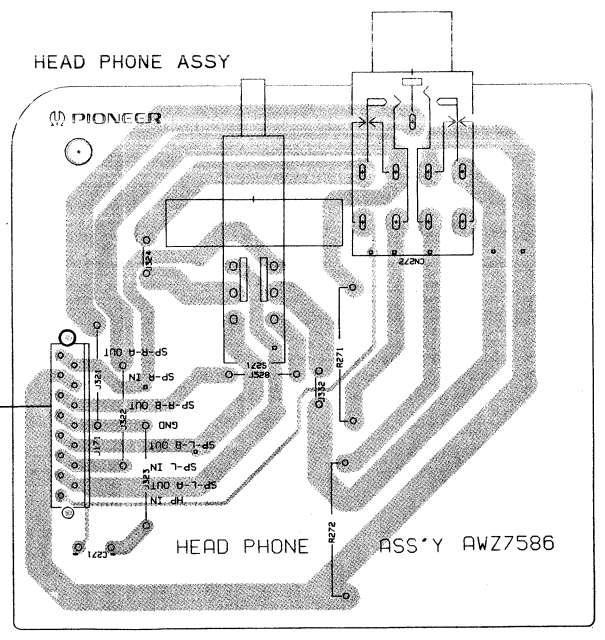


NOTE FOR PCB DIAGRAMS:
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

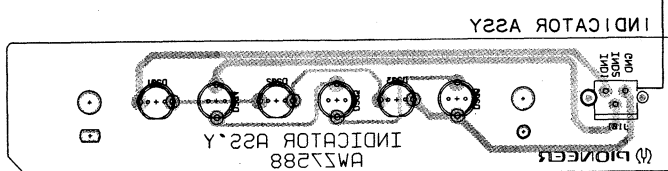
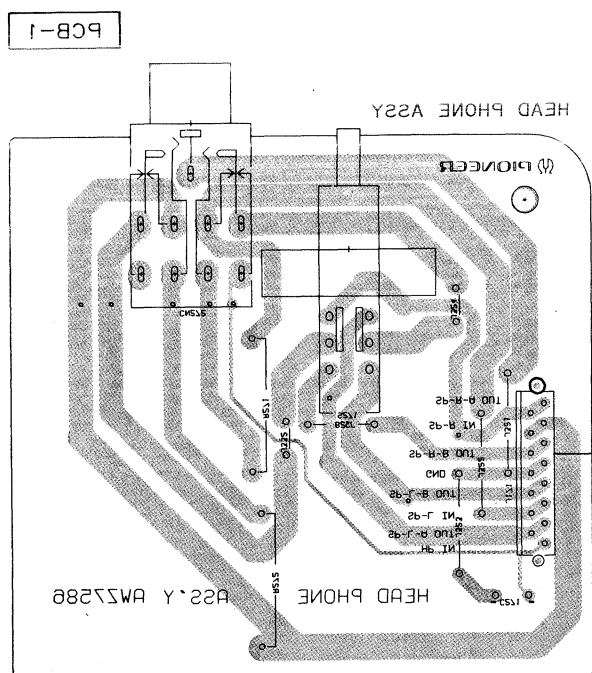
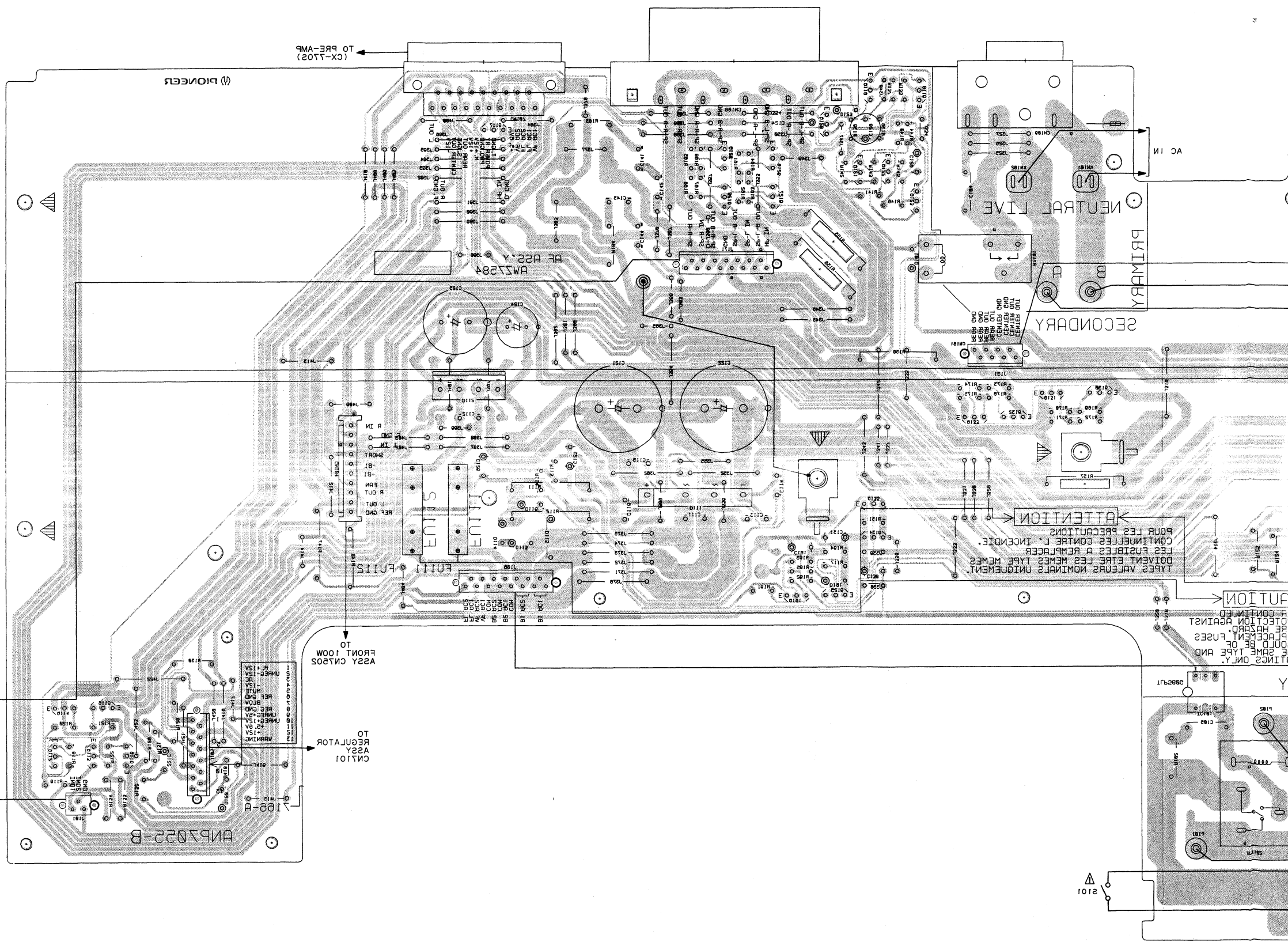
3. The transistor terminal marked with E or shows the emitter.
4. The diode terminal marked with or shows cathode side.
5. The capacitor terminal marked with or shows negative terminal.

PCB-1

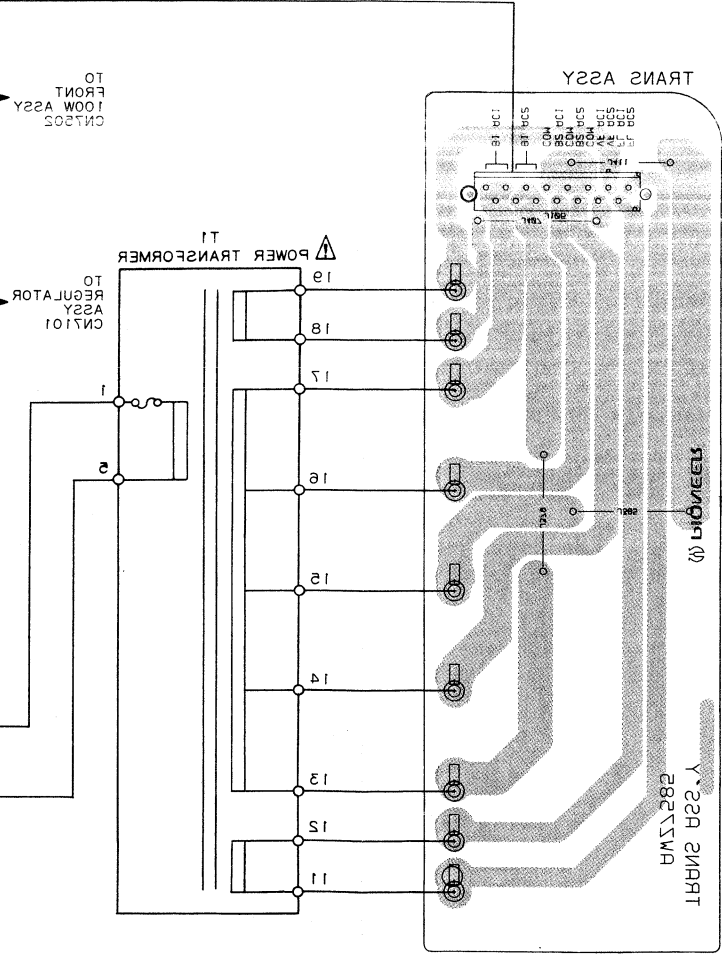
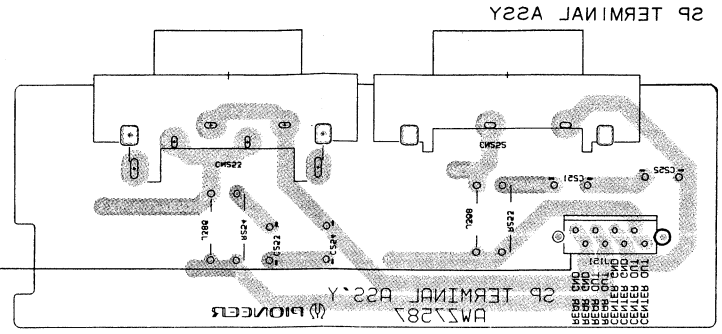
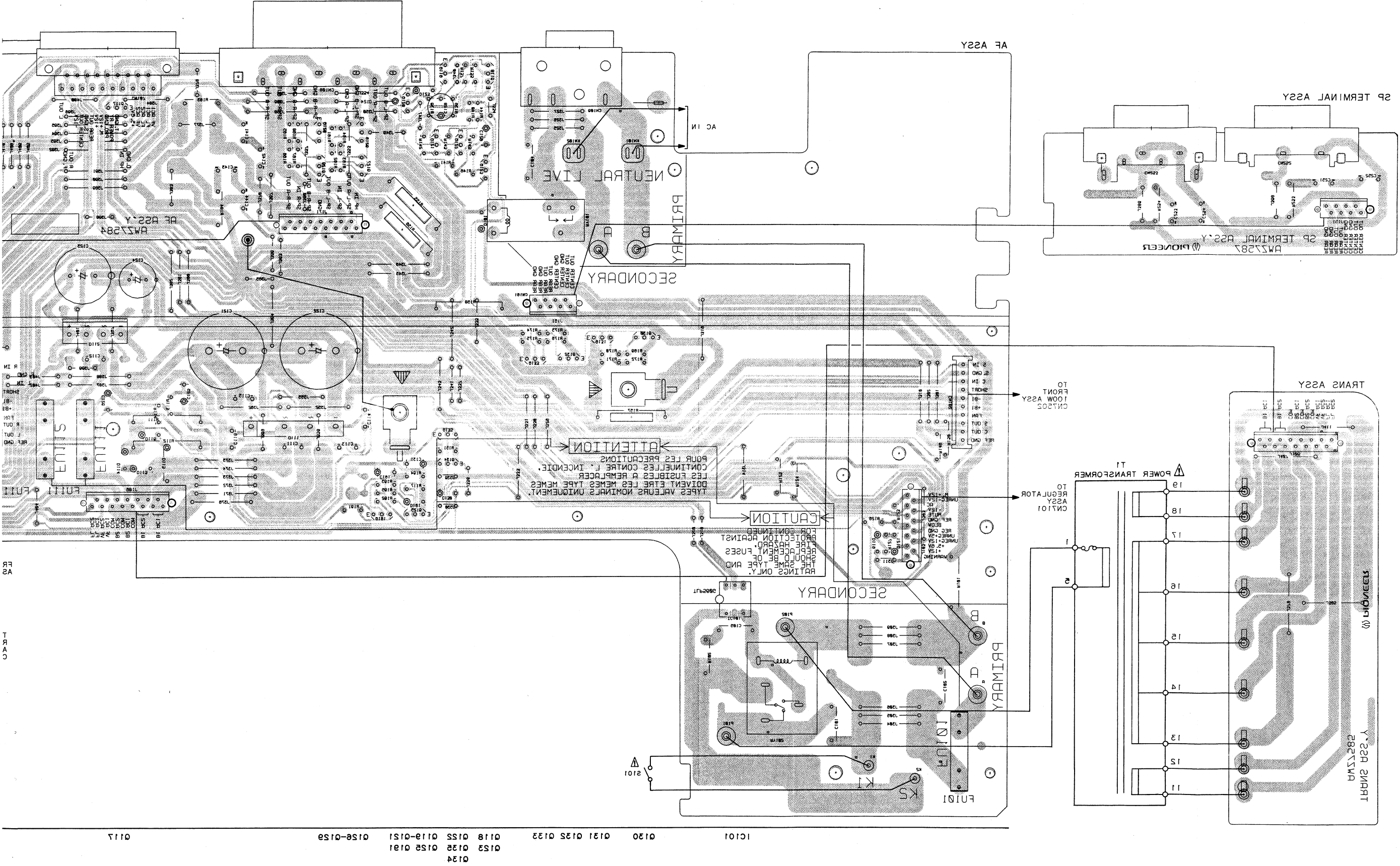


IC101 Q130 Q131 Q132 Q133 Q118 Q122 Q119-Q121 Q126-Q129 Q117 Q116 Q115 Q113 Q114 Q123 Q135 Q125 Q191 Q134 Q112

01101	0130	0131 0135 0132	0118 0155	0112-0151	0152-0152	0115	0110 0112 0110 0110 0110
			0152 0132	0152 0131			0110
			0134				



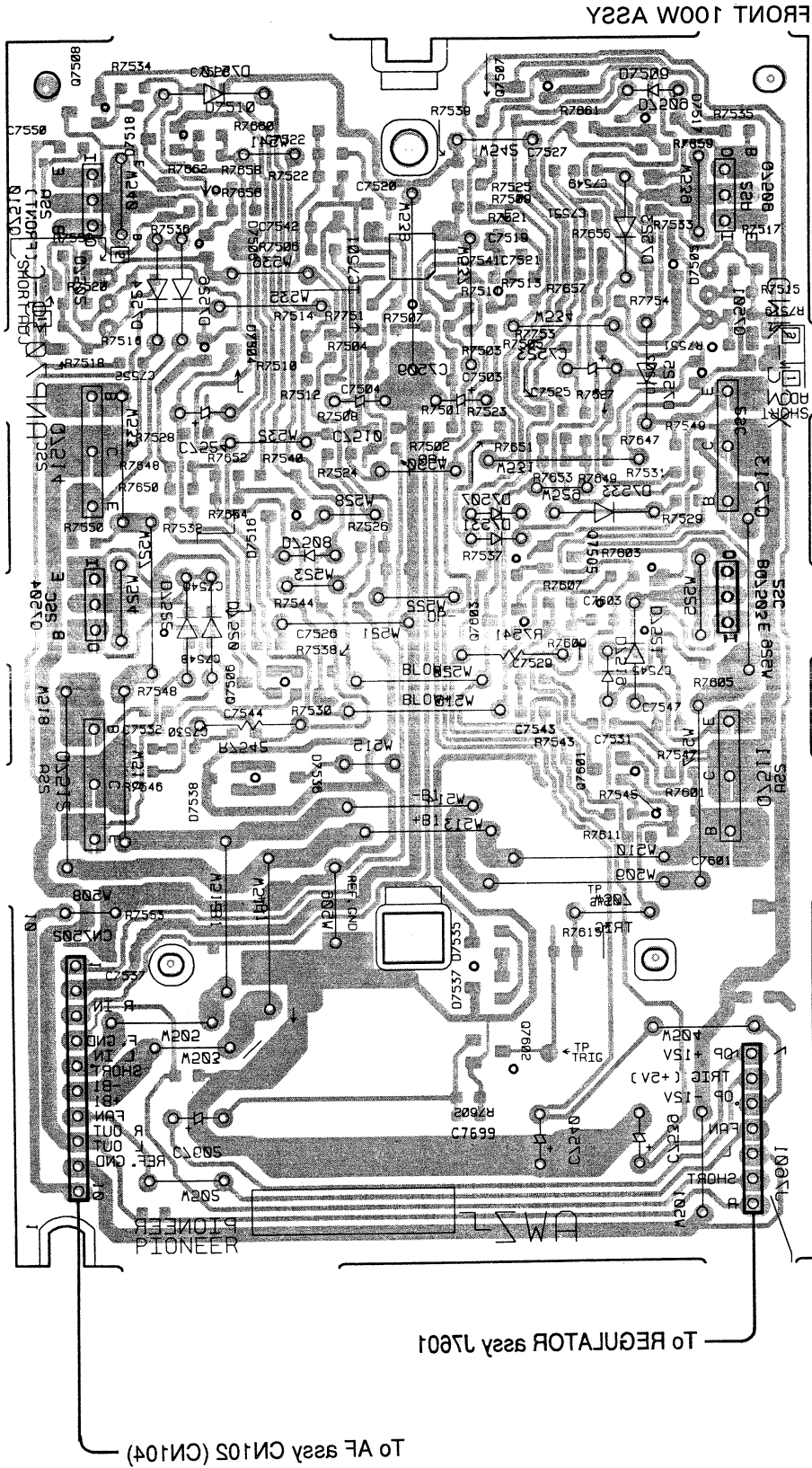
- This diagram is viewed from the foil side.



4.3 FRONT 100W ASSEMBLY

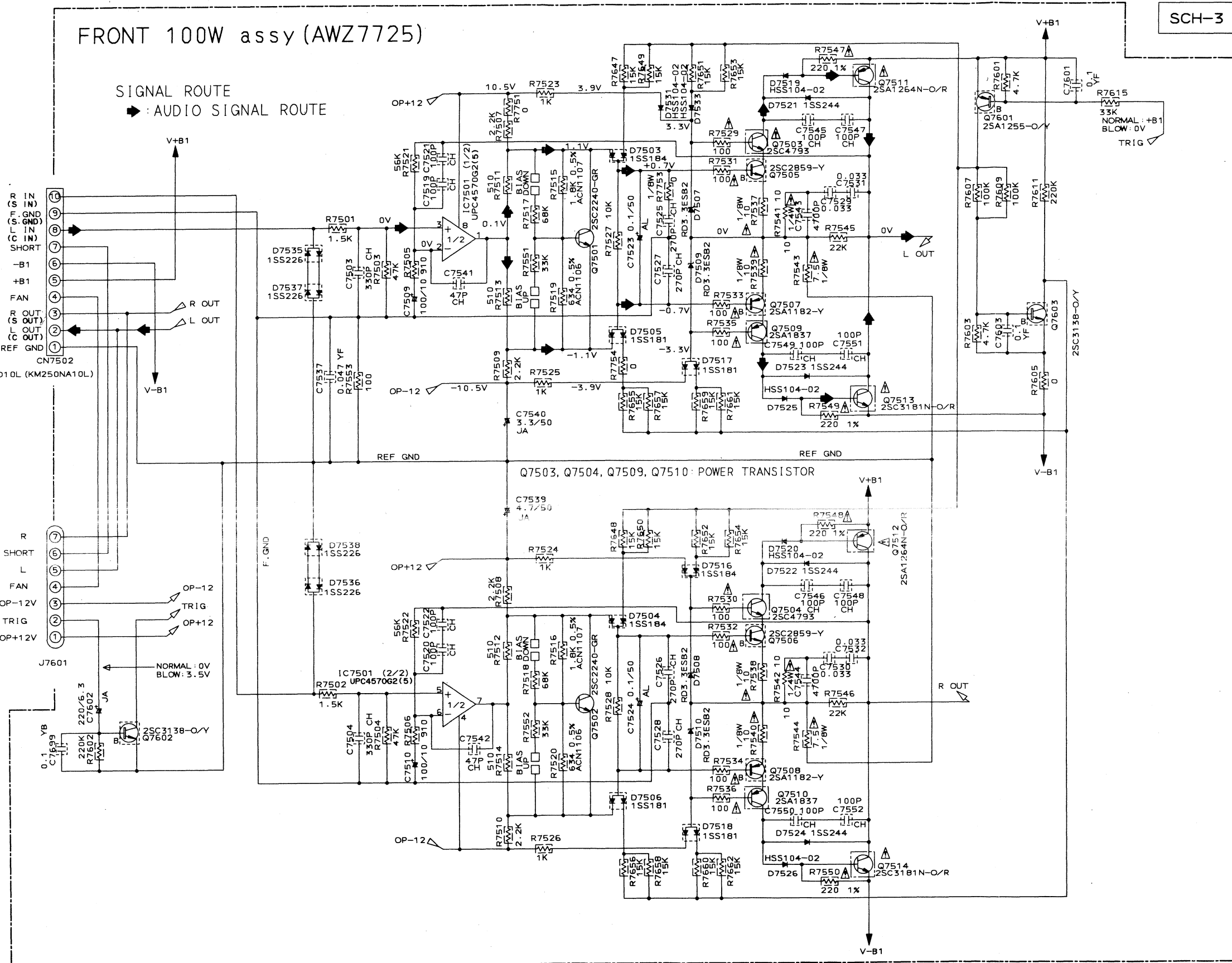
● This diagram is viewed from the foil side.

PCB-3



02508
02507
02506
02510
02501
02505
02513
02514
02502
02503
02504
02506
02511
02515
02505

FRONT 100W ASSY



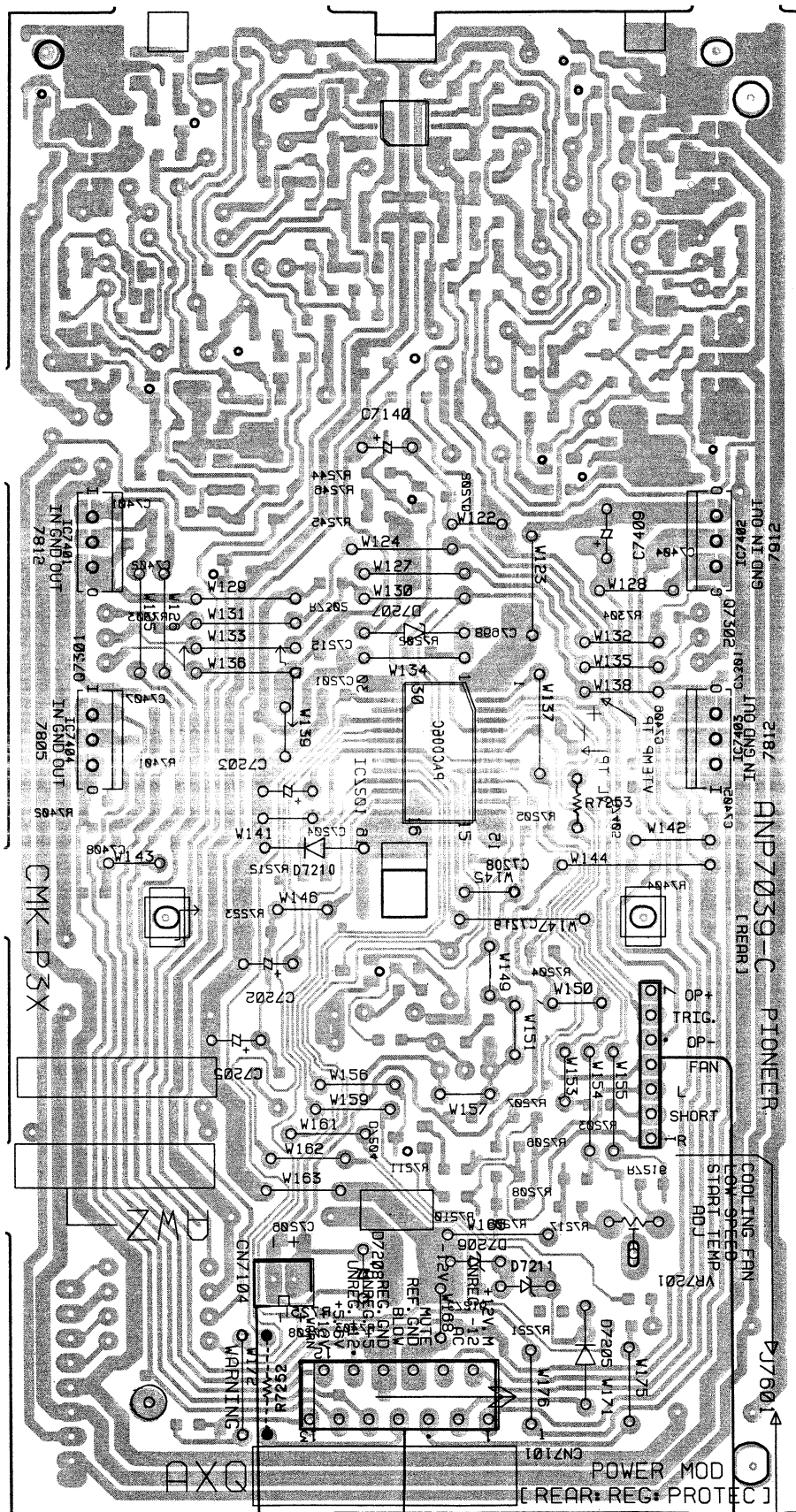
SCH-3

SCH-3

● This diagram is viewed from the mounted parts side.

REGULATOR ASSY

PCB-3



Q7202
IC7401 IC7402
Q7301 Q7302
IC7404 IC7403
IC7201

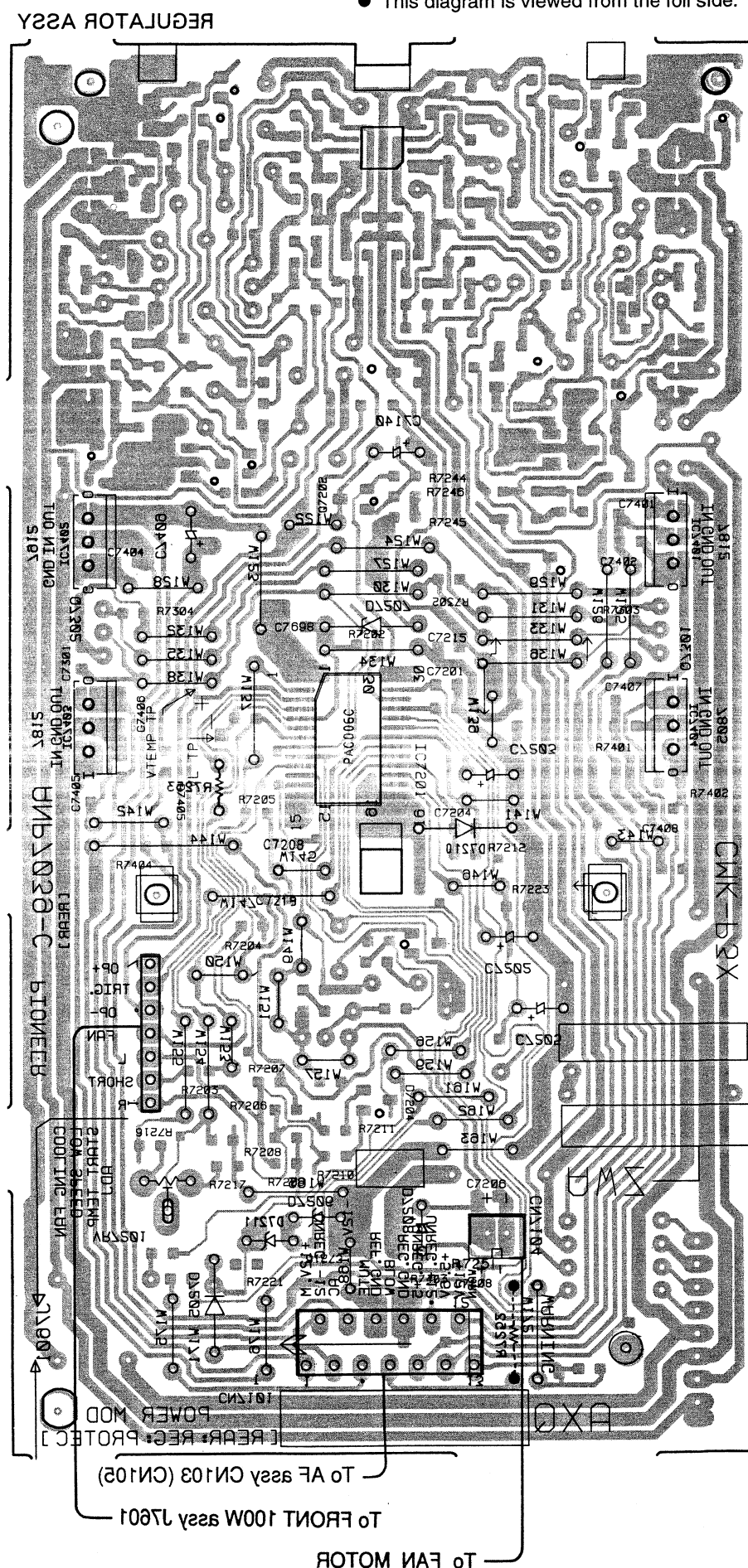
VR7201

To AF assy CN103 (CN105)

To FRONT 100W assy J7601

To FAN MOTOR

- This diagram is viewed from the foil side.



— To FRONT 100Wassy 17601 —

TO FAN MOTOR

PCB-3

REGULATOR ASSY

07505
104701 104705
07305 104701
07305 104701

VAZSOT

1

5. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" 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 "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω	$\rightarrow$	56×10^1	$\rightarrow$	561		RD1/8PM	5 6 1 J
47k Ω	$\rightarrow$	47×10^3	$\rightarrow$	473		RD1/4PS	4 7 3 J
0.5 Ω	$\rightarrow$	0R5				RN2H	0 R 5 K
1 Ω	$\rightarrow$	010				RS1P	0 1 0 K

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

5.62k Ω	$\rightarrow$	562×10^1	$\rightarrow$	5621		RN1/4PC	5 6 2 1 F
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Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES							
		AF ASSY	AWK7166		C131		CEAS221M10
		— AF ASSY	AWZ7584		C123		CEAS222M35
NSP		— TRANS ASSY	AWZ7585		C124		CEAS471M35
NSP		— HEAD PHONE ASSY	AWZ7586	Δ	C130,C191		CEAS4R7M50
NSP		— SP TERMINAL ASSY	AWZ7587		C111,C112		CQMA103K250
NSP		— INDICATOR ASSY	AWZ7588		C141—C144		CQMA104J50
		POWER AMP MODULE	AXQ7022		C113—C116		CQMA223K250
		— FRONT 100W ASSY	AWZ7725	RESISTORS			
		— REGULATOR ASSY	AWZ7726	Δ	R101 (2.2M,1/2W)		ACN—208
					R183,R184		RD1/2PM7R5J
				Δ	R102		RD1/4PM101J
					R133,R134		RD1/4PM271J
					R111,R112		RS3LMF152J
					R155—R158		RS3LMFR22J
					Other Resistors		RD1/8PM J
AF ASSY				OTHERS			
SEMICONDUCTORS				Y2003	BOARDIN READ WIRE		ADX7043
	IC101		TLP560G	Y2004	BOARDIN READ WIRE		ADX7044
	Q113		2SA1048		SPEAKER TERMINAL 8—P		AKE—111
	Q114,Q115		2SA1515		AC OUTLET 3P		AKP1053
	Q191		2SA965		SOCKET(19P)		AKP7001
	Q125,Q134,Q135		2SC1845				
	Q112,Q118,Q121,Q122		2SC2458				
	Q126—Q133		2SC2458				
	Q116		2SC3377				
	Q117,Q120,Q123		DTA124ES				
	Q119		DTA143ES	Δ	H101—H106 FUSE CLIP		AKR1003
					CABLE HOLDER		AKT1011
	D112		D2SBA20(B)		CN102,CN104 10P SOCKET		KP250NA10
	D101,D113—D116,D119,D120		HSS104—02	TRANS ASSY			
	D123,D124		HSS104—02	This assembly has no service part.			
	D111		LN6SB60—4003	HEAD PHONE ASSY			
	D191		RD12ESB3	SWITCHES AND RELAYS			
	D121,D122		RD7.5ESB2		S271		SULLXS
SWITCHES AND RELAYS				CAPACITORS			
Δ	RY101		ASR1027		C271		CKCYF473Z50
Δ	RY102		ASR7005	RESISTORS			
CAPACITORS					R271,R272		RS3LMF331J
Δ	C101,C102,C104,C105		ACG1054	OTHERS			
	C121,C122 (4700,63V)		ACH1249		CN272 JACK		AKN1025
	C129		CEAS010M50				
	C125,C126		CEAS100M50				
	C128		CEAS101M25				

Mark	No.	Description	Parts No.
SP TERMINAL ASSY			
CAPACITORS			
	C251—C254		CQMA104J50
RESISTORS			
	R253,R254		RD1/2PM7R5J
OTHERS			
	SPEAKER TERMINAL 4—P	AKE1012	
CN252	SPEAKER TERMINAL 2—P	AKE1032	
INDICATOR ASSY			
SEMICONDUCTORS			
	D201—D206		AEL1065
FRONT 100W ASSY			
SEMICONDUCTORS			
	IC7501	UPC4570G2(5)	
	Q7507,Q7508	2SA1182	
	Q7601	2SA1255	
	Q7501,Q7502	2SC2240	
	Q7505,Q7506	2SC2859	
	Q7602,Q7603	2SC3138	
	D7505,D7506,D7517,D7518	1SS181	
	D7503,D7504,D7516	1SS184	
	D7535—D7538	1SS226	
	D7521—D7524	1SS244	
	D7519,D7520,D7525,D7526,D7531	HSS104—02	
	D7533	HSS104—02	
	D7507—D7510	RD3.3ESB2	
CAPACITORS			
	C7519—C7522,C7545—C7552	CCSQCH101J50	
	C7525—C7528	CCSQCH271J50	
	C7503,C7504	CCSQCH331J50	
	C7541,C7542	CCSQCH470J50	
	C7523,C7524	CEALR10M50	
	C7509,C7510	CEAS101M10	
	C7602	CEJA221M6R3	
	C7540	CEJA3R3M50	
	C7539	CEJA4R7M50	
	C7699	CKSQYB104K25	
	C7529—C7532	CKSQYB333K50	
	C7543,C7544	CKSQYB472K50	
	C7601,C7603	CKSQYF104Z50	
	C7537	CKSQYF473Z50	
RESISTORS			
	R7519,R7520	ACN1106	
	R7515,R7516	ACN1107	
△	R7541,R7542	RD1/4PMF100J	
△	R7547—R7550	RS1/10S2200F	
	R7753	RS1/8S000J	
△	R7537—R7540	RS1/8S100J	
	R7553	RS1/8S101J	
△	R7543,R7544	RS1/8S7R5J	
	Other Resistors	RS1/10S□□□J	

Mark	No.	Description	Parts No.
OTHERS			
	CN7502	.10P PLUG	KM250NA10L
REGURATOR ASSY			
SEMICONDUCTORS			
	IC7201		PAC006C
	Q7301,Q7302		2SC1815
	Q7202		2SC2712
	D7204		1SS184
	D7205,D7208		HSS104—02
	D7210		RB441Q—40
	D7206,D7211		RD4.7ESB
	D7207		RD5.6ESB2
CAPACITORS			
	C7402,C7406,C7408		ACG1050
	C7204		ACG1051
	C7401,C7405,C7407		ACG1053
	C7409		ACH1150
	C7202	(4.7U,DC35V)	ACH7008
	C7203	(0.33U,DC50V)	ACH7009
	C7140		CEAS010M50
	C7205		CEJA101M10
	C7697		CKDYB103K50
	C7201,C7208,C7219		CKSQYB103K50
	C7301		CKSQYB332K50
	C7206,C7215,C7216,C7404,C7698		CKSQYF104Z50
RESISTORS			
△	R7403—R7405		ACN1104
	R7252		RD1/6PM102J
	R7253		RD1/6PM103J
	R7303		RS1/10S1002F
	R7304		RS1/10S8200F
	VR7201	(22K,0.1W)	RCP1103
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN7101	CONNECTOR(13P)	KPE13

6. ADJUSTMENTS

■ POWER AMP MODULE SECTION (Refer to Fig. 6-1.)

1. Handling Precautions

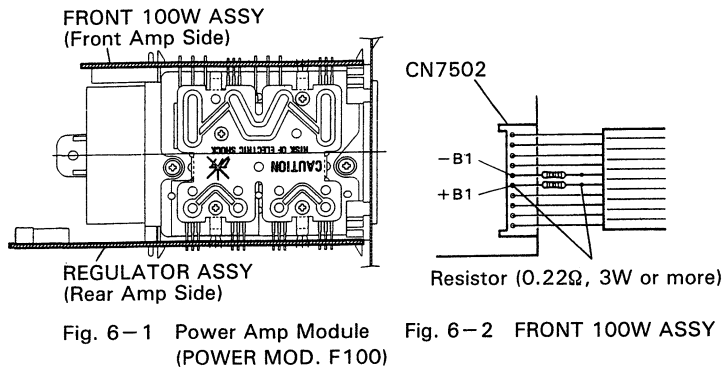
- Since the heat sink and transistor metallic parts are connected to the Front Amp output, make sure they do not contact the GND (chassis) or other circuits.
- Since there is residual high voltage in the Power Amp Module $\pm B1$ (FRONT 100W ASSY) and $\pm B2$ (REGULATOR ASSY) even when the power is OFF, caution should be exercised. (If necessary, the voltage should be discharged).
- When handling the Power Amp Module, make sure you do not touch the fan motor blade.

2. Adjustment and Confirmation of Idle Current

- Basically, the idle current needs to be confirmed when replacing a power transistor, driver transistor, or bias transistor, or when the entire split board Assy of the Power Amp Module has been replaced.
- Make sure the heat sink has cooled sufficiently before measuring the idle current. (Temperature should be the same as room temperature; 25°C is ideal, if possible.)
- Idle current stipulated value: 3–100mA.

■ Front Amp Side (FRONT 100W ASSY)

Step	Measurement	Item	Remarks
1	Lch side	Insert a resistor (0.22 Ω , 3W or more) in series in the connector CN7502 +B1 (or -B1) line (terminal No. 5 or 6). (Refer to Fig. 6-2.)	For measuring voltage at both sides of resistor
2		Short both sides of C7524.	Do not operate Rch side.
3		Turn the power ON, wait 6 seconds, and then measure the resistance voltage in Step 1.	Lch Idle current $I = V / 0.22 (\Omega)$
4	Rch side	● Same as Step 1 above. ● Short both sides of C7523.	Do not operate Lch side.
5		Turn the power ON under the above conditions, and after 6 seconds measure the resistance voltage in Step 1.	
6	—	If the measured idle current is greater than 100mA, perform the following procedure.	
7	Lch side	Short between the Point A pattern in Fig. 6-3 using solder.	Connect R7517 to R7515 in a parallel circuit.
8	Rch side	Short between the Point B pattern in Fig. 6-3 using solder.	Connect R7518 to R7516 in a parallel circuit.
9	—	After performing Steps 7 and 8, remeasure the idle current and confirm that it is below 100mA.	
10	—	If the measured idle current is below 3mA, perform the following procedure.	
11	Lch side	Short between the Point C pattern in Fig. 6-3 using solder.	Connect R7551 to R7519 in a parallel circuit.
12	Rch side	Short between the Point D pattern in Fig. 6-3 using solder.	Connect R7552 to R7520 in a parallel circuit.
13	—	After performing Steps 11 and 12, remeasure the idle current and confirm that it is greater than 3mA. (Within 3–100mA)	



3. Adjusting the Operating Temperature Setting of the Fan Motor (VR7201)

This adjustment is necessary when IC7401 (+12V regulator), Q7301 and Q7302 (temperature sensors), IC7201 (protection IC), or VR7201 has been replaced, or when the entire split board Assy of the Power Amp Module has been replaced.

■ Adjustment-Related Cautions

- Make sure the heat sink has sufficiently cooled (is the same as room temperature Ta.)
- Once the power has been turned ON, make measurements and adjustments as quickly as possible. (If too much time is taken, the heat sink temperature will rise, and the measurements will deviate from the Ta measurement point.)

■ Adjustment

1. Connect a voltmeter between TEMP and VL (or between IC7201 terminals No.9 and 7). (Refer to Fig. 6-4.)
2. Determine the fan motor operating temperature setting by means of the following formula. (Tolerance is within $\pm 30\text{mV}$.)
Formula: $(75^\circ\text{C} - \text{Ta}) \times 19 (\text{mV})$
Ta: ambient temperature ($^\circ\text{C}$)
3. Adjust VR7201 so that the voltage between TEMP and VL is the value obtained from the above formula.

For example:
when the room temperature is 25°C ,
set value = $(75 - 25) \times 19 (\text{mV})$
= 950mV (tolerance within $\pm 30\text{mV}$).

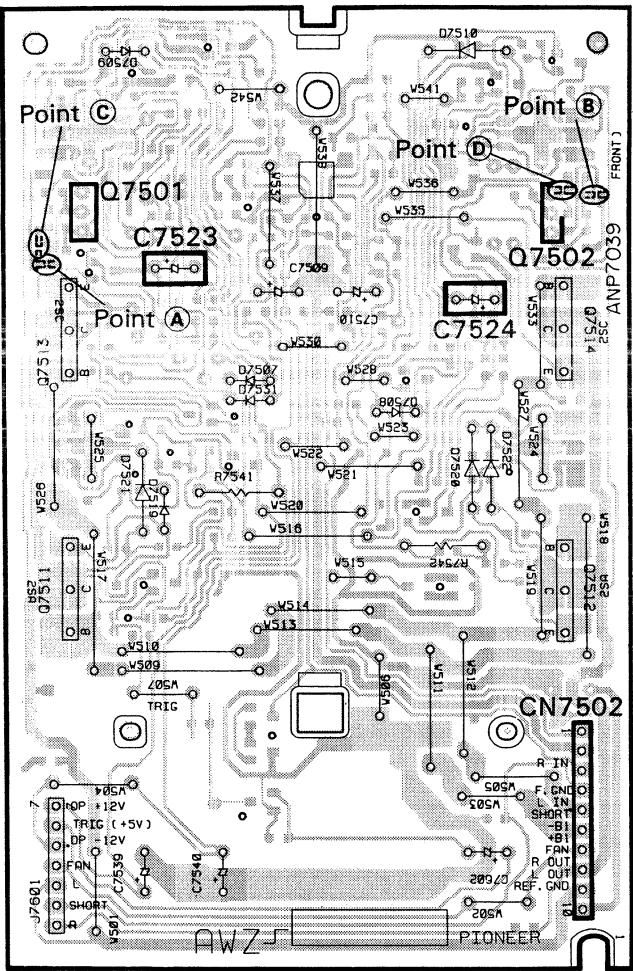


Fig. 6-3 FRONT 100W ASSY

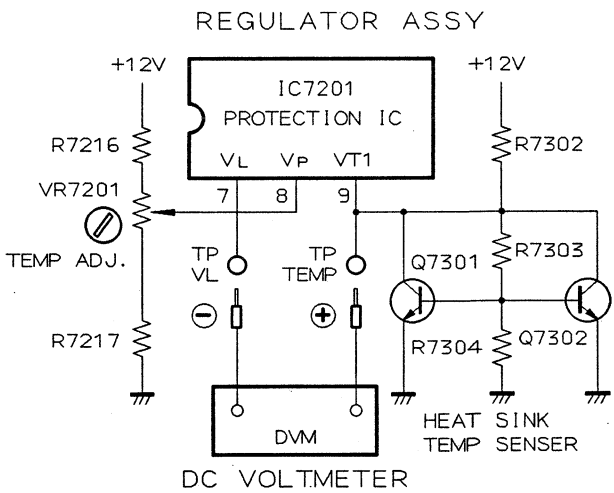


Fig. 6-4 Adjustment of Operating Temperature Setting of Fan Motor

7. CIRCUIT DESCRIPTION

7.1 HOW TO CHECK M-980

As M-980 is controlled from CX-770S, please carry out check in combination with CX-770S.

● How to Check M-980 only.

When checking of the operation of only M-980 is required, the operation can be easily checked according the following procedures.

1. Connect pin 6 (D.GND) and pin 9 (POWER RY) of the CN 107 (external connection connector) on AF ASSY (AWZ 7584).
2. When pressing the power switch of M-980, the set will enter normal operation status. After this, you can carry out check of the operation.

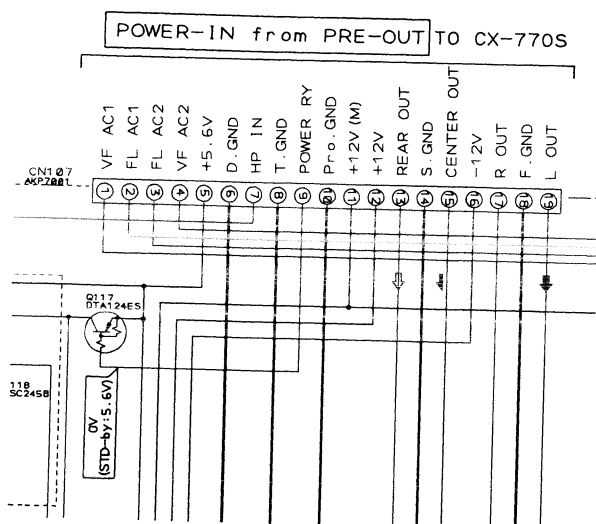


Fig. 1

7.2 OPERATION DESCRIPTION OF PROTECTION CIRCUIT

The contact of relay RY102 is usually set to the "b" position, and the transformer is put into the current conduction state via path ①.

A photo-coupler (IC101) is activated using an LED signal when abnormality occurs (Q125, Q134, and Q135 operate). At that time, the contact of relay RY102 is changed over to the "a" position so as to maintain this state. Therefore, the current conduction to the transformer is cut off because path ② is used. The state of relay RY102 to be maintained is canceled by turning on the power switch (S101) again.

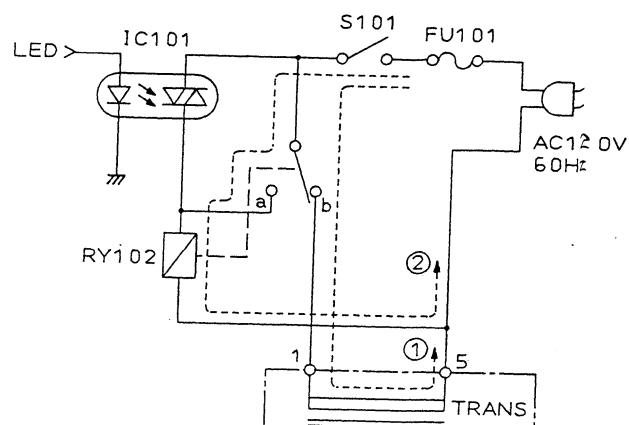


Fig. 2

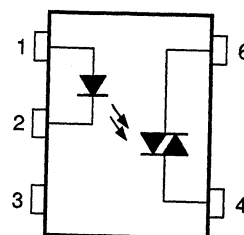
8. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ TLP560G (IC101 : AF ASSY)

● PHOTO COUPLER

● Pin Assignment (Top view)



● Pin Name

- 1 : Anode
- 2 : Cathode
- 3 : Not connected
- 4 : Triode AC switch pin
- 5 : Triode AC switch pin
- 6 : Triode AC switch pin

9. SPECIFICATIONS

[Front], [Center], [Rear]

Continuous Power Output
Stereo (Front Channels) Continuous Average Power
Output is 100 Watts* per channel,
min., at 8 ohms from 70 Hertz to
20,000 Hertz, with no more than
0.9 %** total harmonic distortion.

4-Channel

Front Channels 150 W + 150 W (8 Ω , 1 kHz, 10 % THD)
Center Channel 150 W (8 Ω , 1 kHz, 10 % THD)
Rear Channels 150 W (8 Ω , 1 kHz, 10 % THD)
Input (Sensitivity/Impedance)
PHONO (MM) 5 mV/47 kΩ
CD, VIDEO 200 mV/22 kΩ
Signal-to-Noise Ratio (IHF, short-circuited, A network)
PHONO (MM) 65 dB
CD, VIDEO 80 dB
Graphic Equalizer Frequency Band
..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ±10 dB

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

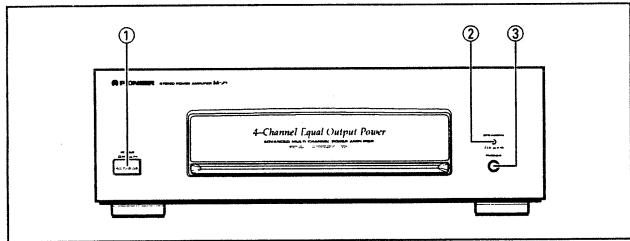
Miscellaneous

Power Requirements AC 120 V, 60 Hz
Power Consumption
M-980 390 W, 500 VA
AC Outlets
Switched x 1 100 W (0.8 A) MAX
Unswitched x 2 200 W (1.6 A) MAX
Dimensions
M-980 420 (W) x 140 (H) x 336 (D) mm
16-9/16 (W) x 5-1/2 (H) x 13-1/4 (D) in
Weight (without package)
M-980 8.9 kg (19 lb 10 oz)

NOTE:
● Specifications and design are subject to possible modifications without notice due to improvements.

10. PANEL FACILITIES

■ POWER AMPLIFIER SECTION



① POWER (OFF/ON) switch
When this switch is OFF, the tuner control amplifier's POWER switch does not function. When this switch is ON, the STANDBY indicator of the tuner control amplifier lights.

② SPEAKERS button (■ A, ▬ A+B)
This is used to select the speaker through which you wish to listen.
■ A : When the speakers connected to A terminals are in use.
▬ A+B : When the speakers connected to A and B terminals are in use.
(There is no sound at this position when speakers are connected only to the A terminals.)
Be sure to use A terminals when you are using one pair of speakers only. No sound will be heard through the speakers when only one pair of speakers are connected to B terminals.

③ PHONES jack
This is a "standard plug-type jack" for headphones.
NOTE:
Sound is not heard from the speakers when headphones are in use.