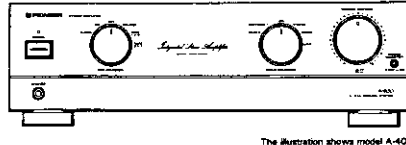


Service Manual

PIONEER
The future of sound and vision.



The illustration shows model A-400.

ORDER NO.
ARP2044

STEREO AMPLIFIER

A-400

A-300

MODEL A-400 AND A-300 HAVE FOLLOWING VERSIONS:

Type	Applicable model		Power requirement	Export destination
	A-400	A-300		
HB	○	○	AC220V, 240V (switchable) *	United Kingdom

* Change the connection of the power transformer lead wire.

- This manual is applicable to the A-400/HB and A-300/HB types.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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1. SPECIFICATIONS

[A-400]

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz)*	
T.H.D. 0.03 %, 8 Ω	50 W + 50 W
T.H.D. 0.05 %, 4 Ω	70 W + 70 W
DIN Continuous power output (both channels driven at 1 kHz)	
T.H.D. 1.0 %, 8 Ω	60 W + 60 W
T.H.D. 1.0 %, 4 Ω	85 W + 85 W
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	70 W/100 W/135 W
Total harmonic distortion *	
20 Hz to 20 kHz, 50 W, 8 Ω	0.03 %
20 Hz to 20 kHz, 70 W, 8 Ω	0.05 %
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
PHONO (MC)	0.2 mV/100 Ω
CD, TUNER, LINE, TAPE	150 mV/50 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.008 % (MM/MC)	150 mV/12 mV
Output level/impedance	
TAPE REC	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz, ± 0.3 dB
PHONO (MC)	20 Hz to 20 kHz, ± 0.5 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz, ± 0.5 dB
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 2.5 mV input/MC, 0.2 mV input)	87 dB/69 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

Power Supply/Miscellaneous

Power requirements	a.c. 240 V ~, 50/60 Hz
Power consumption	520 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm
Weight (without package)	8.0 kg

Accessories

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

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

* *Measured by Audio Spectrum Analyzer.*

[A-300]

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz)*	
T.H.D. 0.03 %, 8 Ω	30 W + 30 W
T.H.D. 0.05 %, 4 Ω	40 W + 40 W
DIN Continuous power output (both channels driven at 1 kHz)	
T.H.D. 1.0 %, 8 Ω	40 W + 40 W
T.H.D. 1.0 %, 4 Ω	60 W + 60 W
Dynamic power output (on EIA dynamic test signal)	
8 Ω/4 Ω/2 Ω	50 W/75 W/90 W
Total harmonic distortion *	
20 Hz to 20 kHz, 40 W, 8 Ω	0.03 %
20 Hz to 20 kHz, 50 W, 8 Ω	0.05 %
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 kΩ
CD, TUNER, LINE, TAPE	150 mV/50 kΩ
PHONO overload level	
1 kHz, T.H.D. 0.02 % (MM)	150 mV
Output level/impedance	
TAPE REC	150 mV/2.2 kΩ
Frequency response	
PHONO (MM)	20 Hz to 20 kHz, ± 0.3 dB
CD, TUNER, LINE, TAPE	5 Hz to 100 kHz, ± 0.5 dB
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 2.5 mV input)	83 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	88 dB/65 dB

Power Supply/Miscellaneous

Power requirements	a.c. 240 V ~, 50/60 Hz
Power consumption	410 W
Dimensions	420 (W) x 352 (D) x 126 (H) mm
Weight (without package)	6.8 kg

Accessories

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

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

* *Measured by Audio Spectrum Analyzer.*

2. EXPLODED VIEWS, PACKING AND PARTS LIST

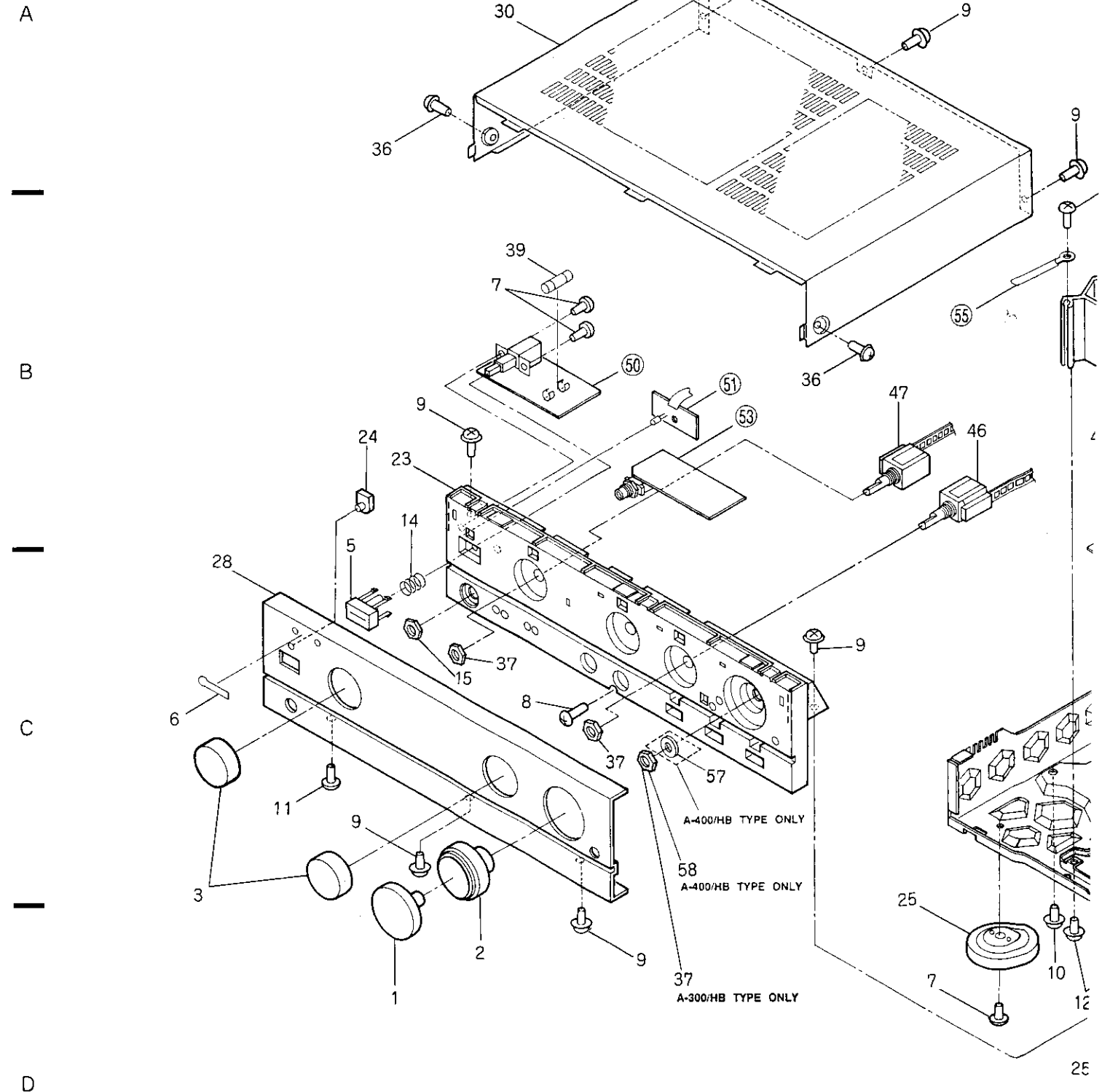
NOTES:

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

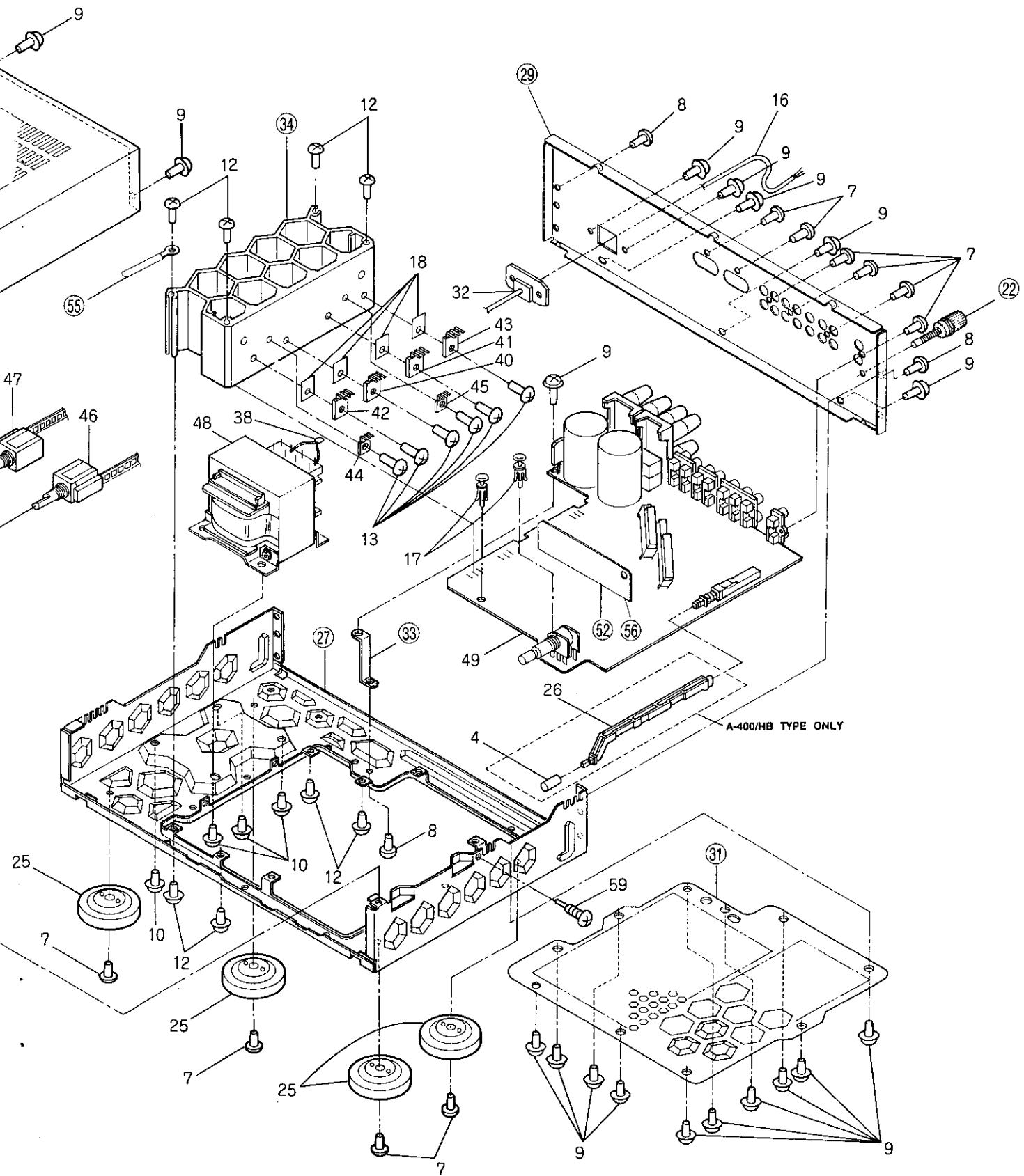
2.1 PARTS LIST

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	ROTARY KNOB L (PLS)	AAB1160		38	C1 CAPACITOR (FOR A-400/HB TYPE)	CQMXA104J100
	2	ROTARY KNOB R (PLS)	AAB1162			C1 CAPACITOR (FOR A-300/HB TYPE)	CQMXA473J100
	3	ROTARY KNOB M (PLS)	AAB1164			FU1 FUSE(T2.5A) (FOR A-400/HB TYPE)	AEK-512
	4	PUSH KNOB C (A-400/HB TYPE ONLY)	AAD1366	Δ	39	FU1 FUSE(T1.6A) (FOR A-300/HB TYPE)	AEK-510
	5	KNOB (POWER)	AAD1535	Δ	40	Q1 TRANSISTOR (FOR A-400/HB TYPE)	2SC3281
	6	NAME PLATE (METAL)	AAM1029	Δ		Q1 TRANSISTOR (FOR A-300/HB TYPE)	2SC3181N
	7	SCREW	ABA-298		41	Q2 TRANSISTOR (FOR A-400/HB TYPE)	2SC3281
	8	SCREW (STEEL)	ABA1009	Δ		Q2 TRANSISTOR (FOR A-300/HB TYPE)	2SC3181N
	9	SCREW (STEEL)	ABA1011	Δ	42	Q3 TRANSISTOR (FOR A-400/HB TYPE)	2SA1302
	10	SCREW (STEEL)	ABA1016	Δ		Q3 TRANSISTOR (FOR A-300/HB TYPE)	2SA1264N
	11	SCREW (STEEL)	ABA1048	Δ	43	Q4 TRANSISTOR (FOR A-400/HB TYPE)	2SA1302
	12	SCREW (STEEL)	ABA1050	Δ		Q4 TRANSISTOR (FOR A-300/HB TYPE)	2SA1264N
	13	SCREW	ABA1082	Δ	44	Q5 TRANSISTOR	2SC4137
	14	SPRING	ABH-052	Δ	45	Q6 TRANSISTOR	2SC4137
	15	NUT	ABN-065		46	S1 SWITCH	ASU1035
Δ	16	AC POWER CORD	ADG1070	Δ	47	S2 SWITCH	ASU1037
	17	RIVET	AEC-441	Δ	48	T1 POWER TRANSFORMER (FOR A-400/HB TYPE)	ATS1279
	18	SHEET	AEE1014	Δ		T1 POWER TRANSFORMER (FOR A-300/HB TYPE)	ATS1278
	19	STYROL PROTECTOR	AHA1335	Δ	49	AF COMPLEX ASS'Y (FOR A-400/HB TYPE)	AWZ2868
	20	PACKING CASE (FOR A-400/HB TYPE)	AHD1865	Δ		AF COMPLEX ASS'Y (FOR A-300/HB TYPE)	AWZ2870
		PACKING CASE (FOR A-300/HB TYPE)	AHD1866		50	POWER SW ASS'Y	
	21	COVER SHEET	AHG1016		51	LED ASS'Y	
	22	TERMINAL SCREW		Δ	52	SHIELD ASS'Y (FOR A-400/HB TYPE)	
	23	PANEL BASE	AMB1651		53	HEADPHONE ASS'Y	
	24	INDICATING LENS	AMR1160	Δ	54	-----	
	25	INSULATOR ASS'Y	AMR2140	Δ	55	BINDER	
	26	ARM (A-400/HB TYPE ONLY)	AMR2142		56	SHIELD ASS'Y (FOR A-300/HB TYPE)	
	27	CHASSIS			57	WASHER (A-400/HB TYPE ONLY)	ABE1018
	28	FRONT PANEL (FOR A-400/HB TYPE)	ANB1399		58	NUTS (A-400/HB TYPE ONLY)	NK90FCU
		FRONT PANEL (FOR A-300/HB TYPE)	ANB1400		59	GND SCREW	ABA1047
	29	REAR PANEL					
	30	METAL BONNET	AZN1799				
	31	BOTTOM PLATE					
	32	AC CORD SPACER	ANG1153				
	33	P.C.B HOLDER					
	34	HEAT SINK					
	35	OPERATING INSTRUCTIONS (E)	ARB1247				
	36	SCREW	BBT30P060FZK				
	37	NUTS (A-300/HB TYPE ONLY)	NK90FZB				

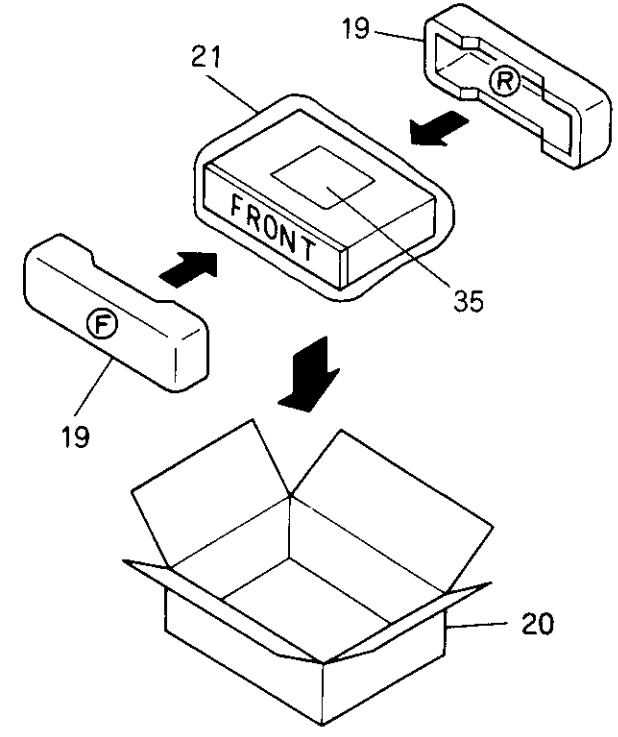
2.2 EXPLODED VIEWS



2.3 PACKING

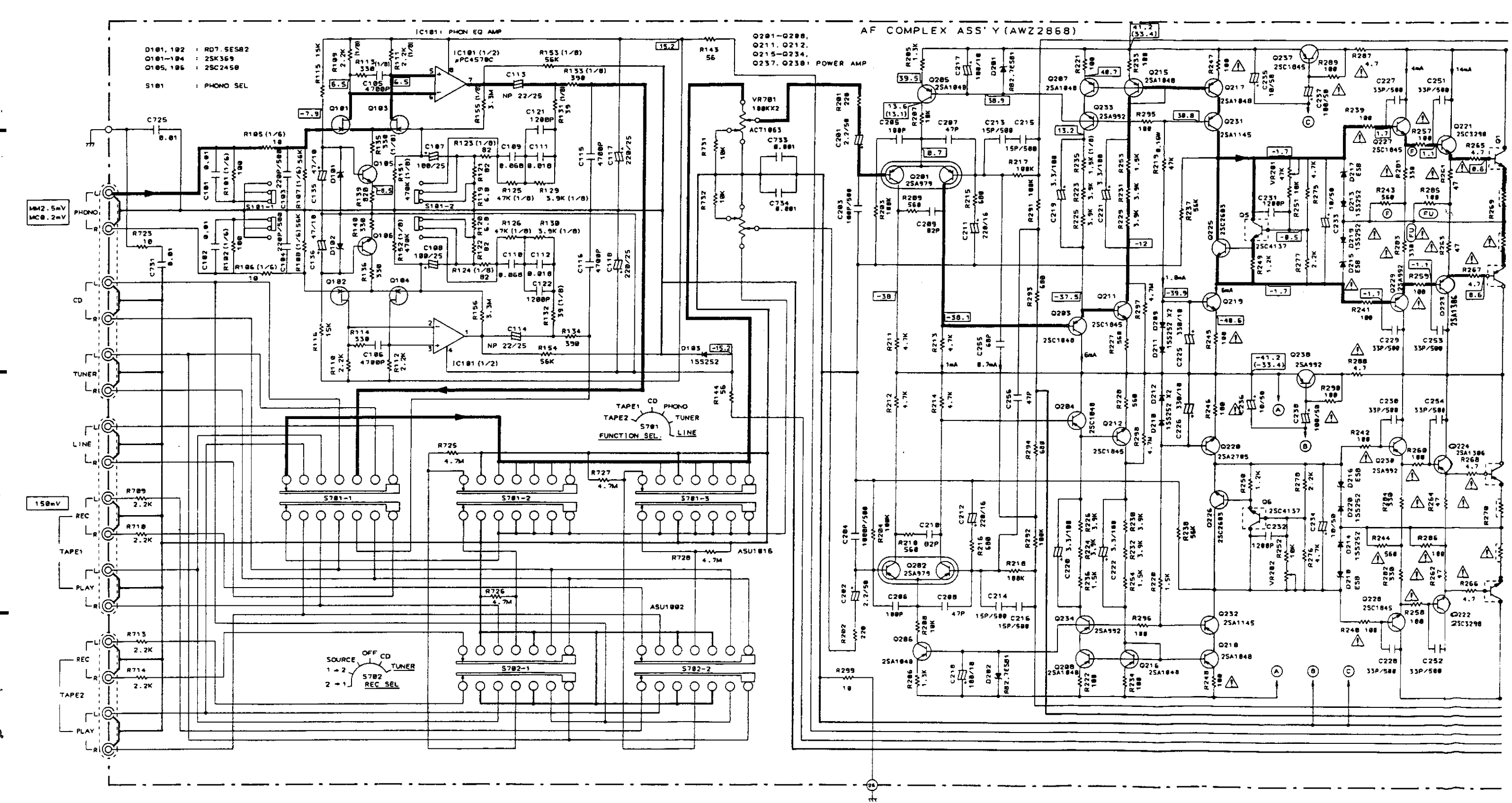


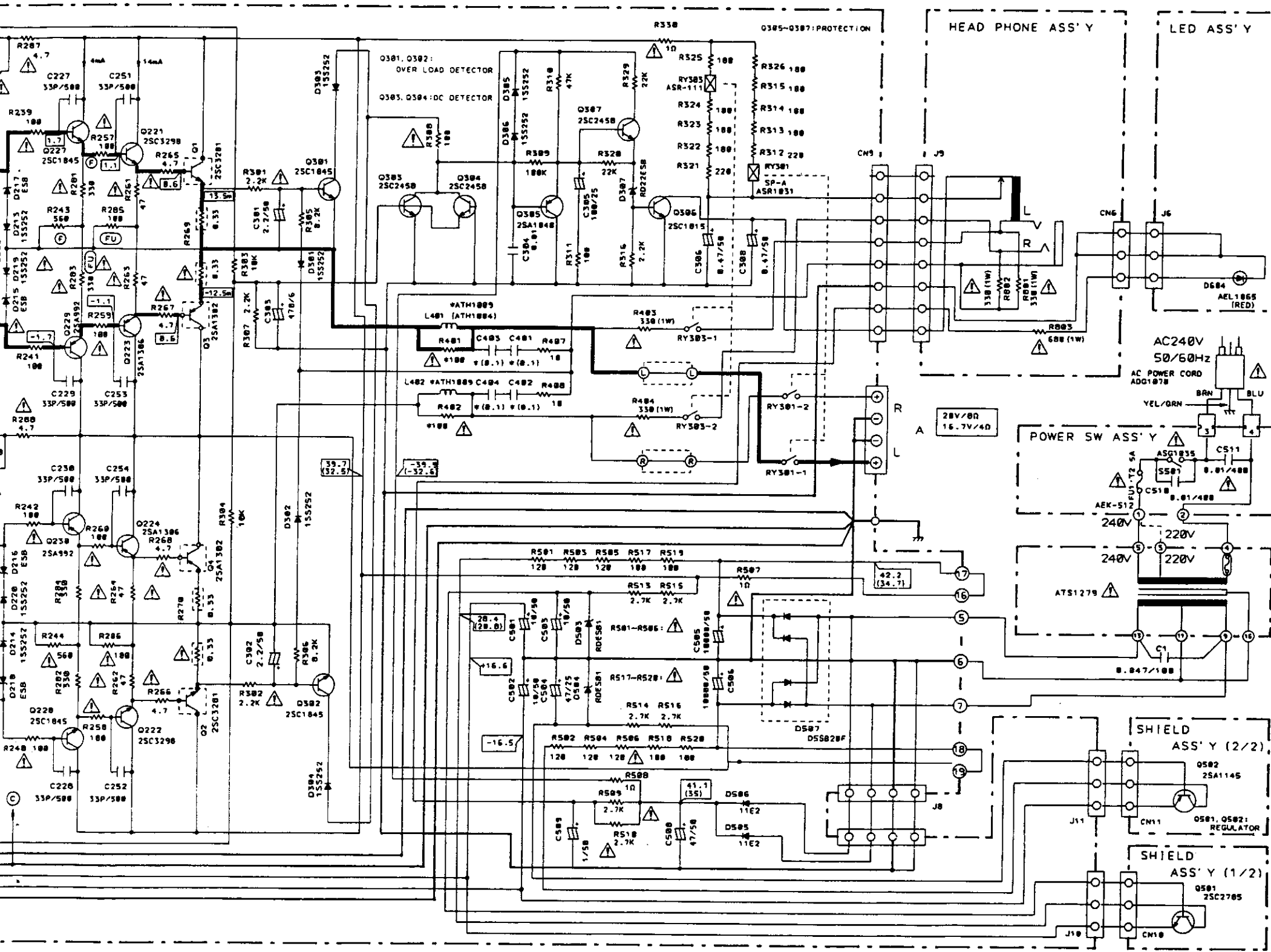
A
—
B
—
C
—
D



5
└

3. SCHEMATIC DIAGRAM (FOR A-400/HB TYPE)





1. RESISTORS:
Indicated in Ω , 1/8, 1/4W, $\pm 5\%$ tolerance unless otherwise noted
K; k Ω , M; M Ω , (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M); $\pm 20\%$ tolerance.
2. CAPACITORS:
Indicated in capacity (μF) / voltage (V) unless otherwise noted p; pF.
Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT:
 - \square V : Signal voltage at (50W + 50W/8 Ω , 70W + 70W/4 Ω) output (1kHz).
 - \square : DC voltage (V) at no input signal.
Value in () is DC voltage at rated power.
 - mA : DC current (V) at no input signal.
 - mV : Signal voltage at FM 400Hz $\pm 75\text{Hz}$ DEV.
4. OTHERS
 - \leftarrow : Signal route.
 - \odot : Adjusting point.
 - The * mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Δ marked capacitor and resistor have parts number.
 - 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)
 - S501 : POWER SW (ON-OFF)
 - S101 : PHONO SEL MM/MC
 - S701 : FUNCTION SEL (TAPE 2 - TAPE 1 - CD - PHONO - TUNER - LINE)
 - S702 : REC SEL (2-1 - 1-2 - SOURCE - OFF - CD - TUNER)

- Line Voltage Selection**
Line voltage can be changed with following steps.
1. Disconnect the AC power cord.
 2. Remove the Bonnet case.
 3. Change the connection of the power transformer lead wire.
 4. Stick the line voltage label on the rear panel.

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

A
B
C
D

4. P.C. BOARDS CONNECTION DIAGRAM (FOR A-400/HB TYPE)

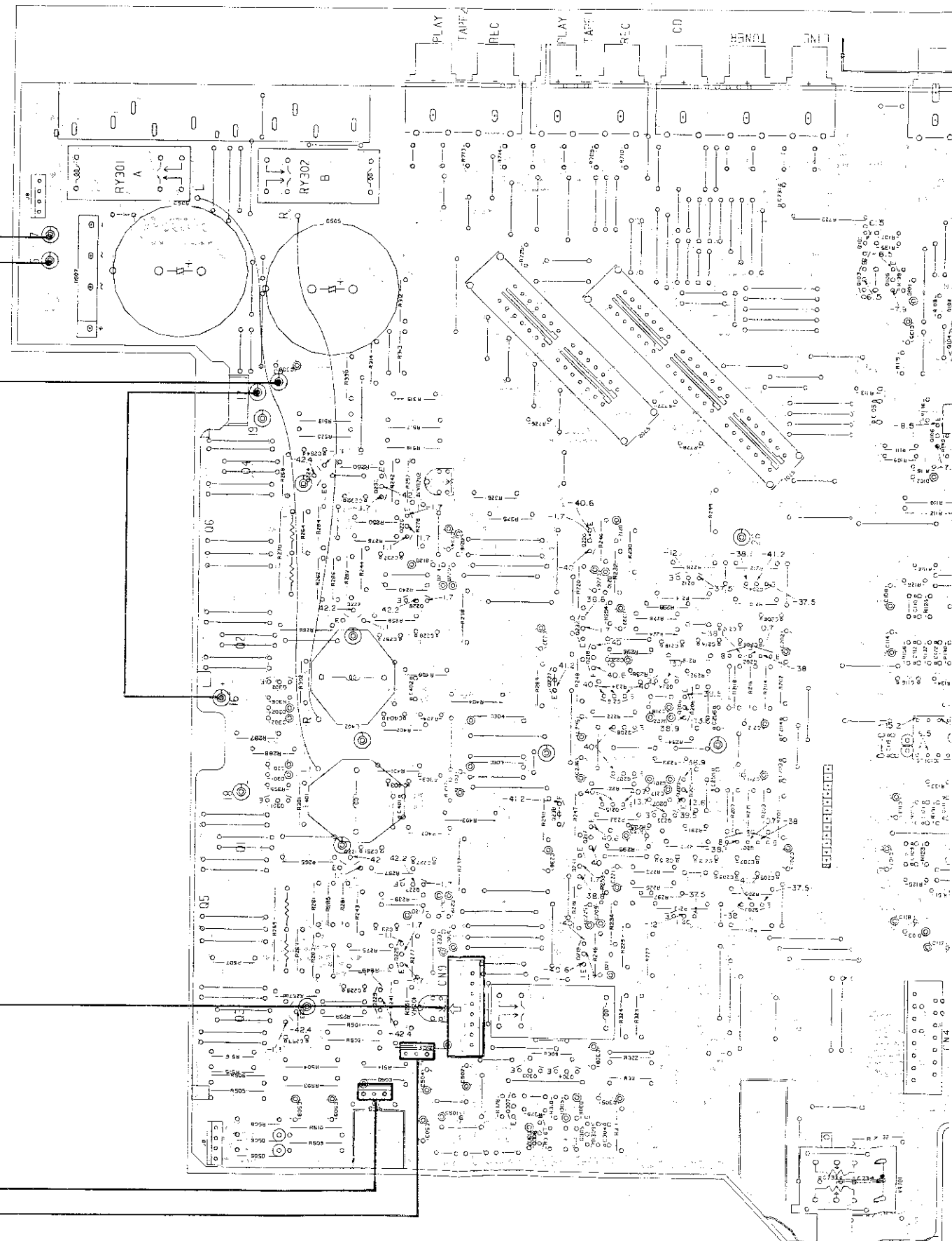
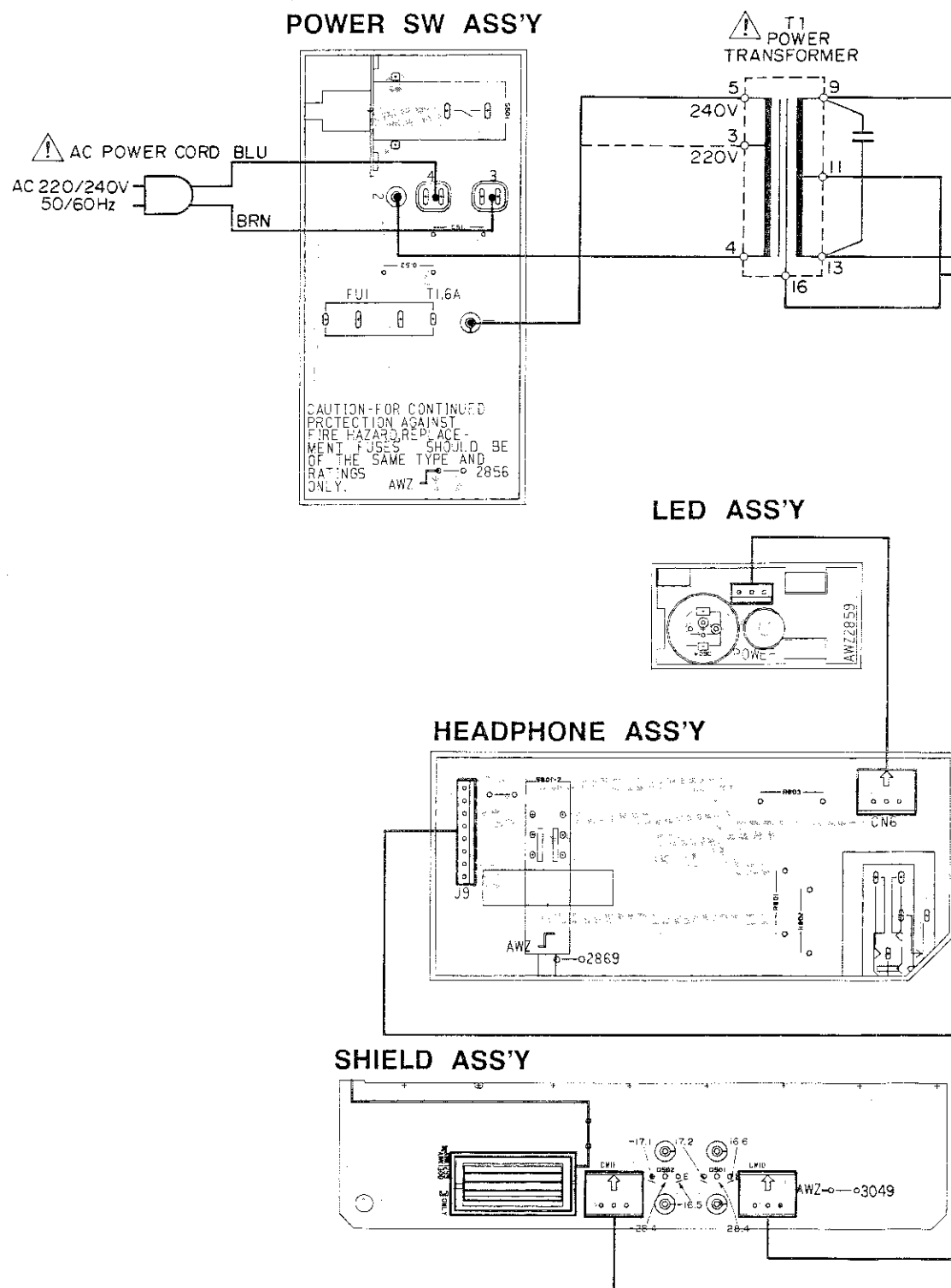
AF COMPLEX ASS'Y (AWZ2868)

A

B

C

D



1

2

3

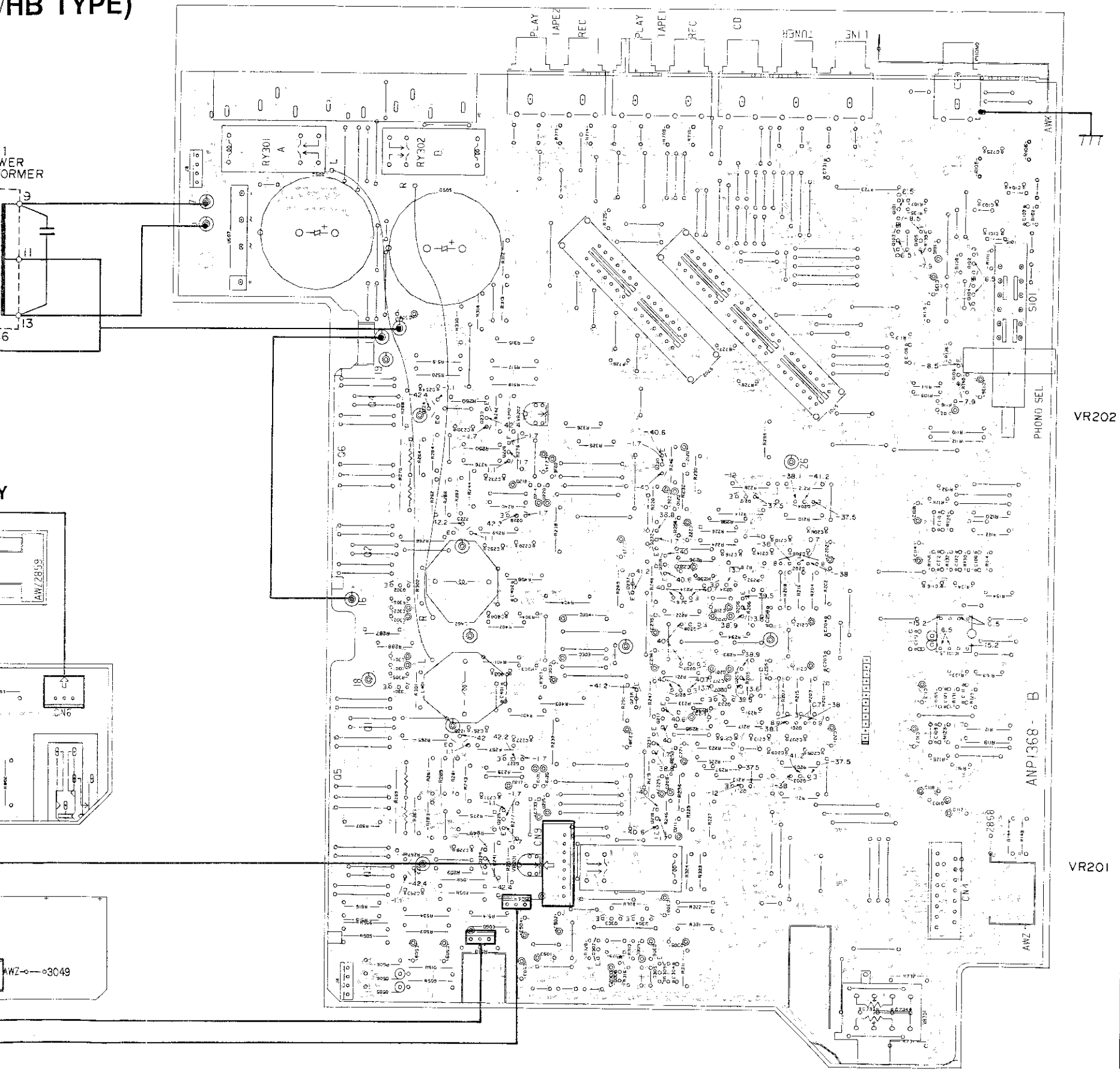
4

5

6

(HB TYPE)

AF COMPLEX ASS'Y (AWZ2868)



Q101
Q103
Q105
Q102
Q104

Q106

Q224

Q230

Q226

Q220
Q212
Q204

Q222

Q228

Q232
Q218
Q202
Q237
Q234
Q216
Q206
Q208

Q302

IC101

Q207

Q205

Q301

Q238
Q215
Q233

Q221

Q227

Q217
Q201
Q231
Q203
Q211

Q225

Q219

Q229

Q223

Q303
Q304
Q307
Q306
Q305

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

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

Others

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

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

A

B

C

D

View from soldering side

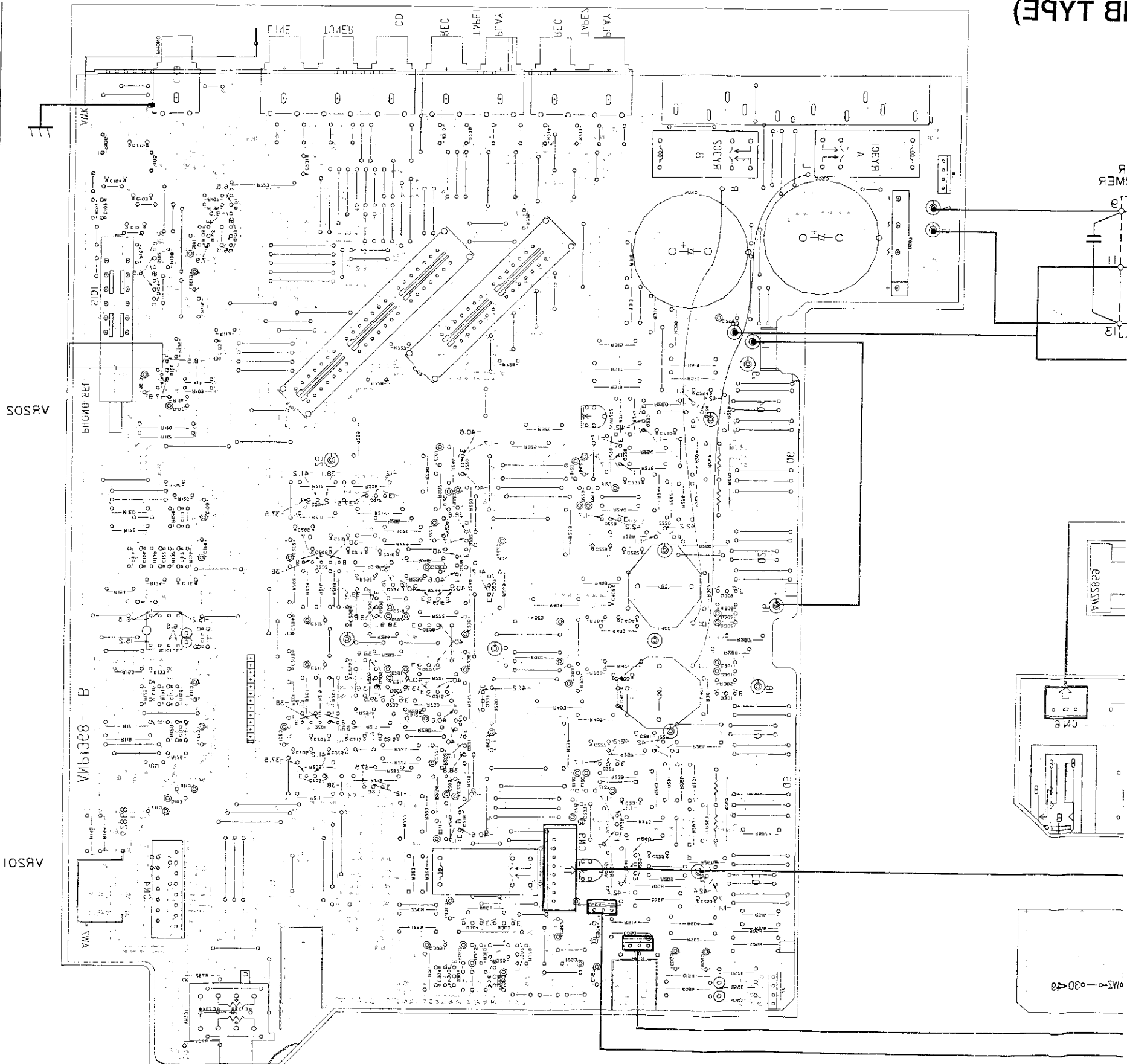
A

B

C

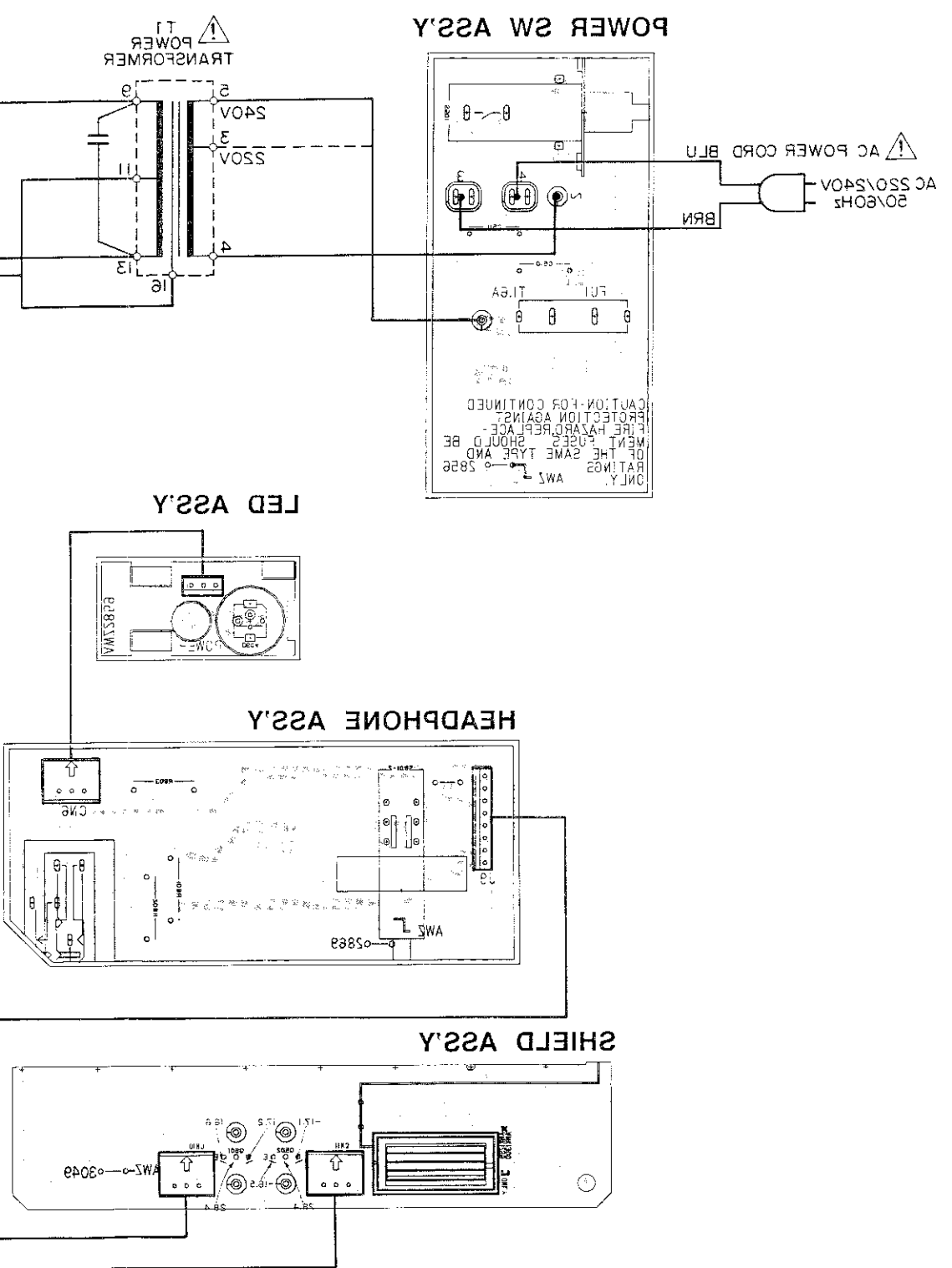
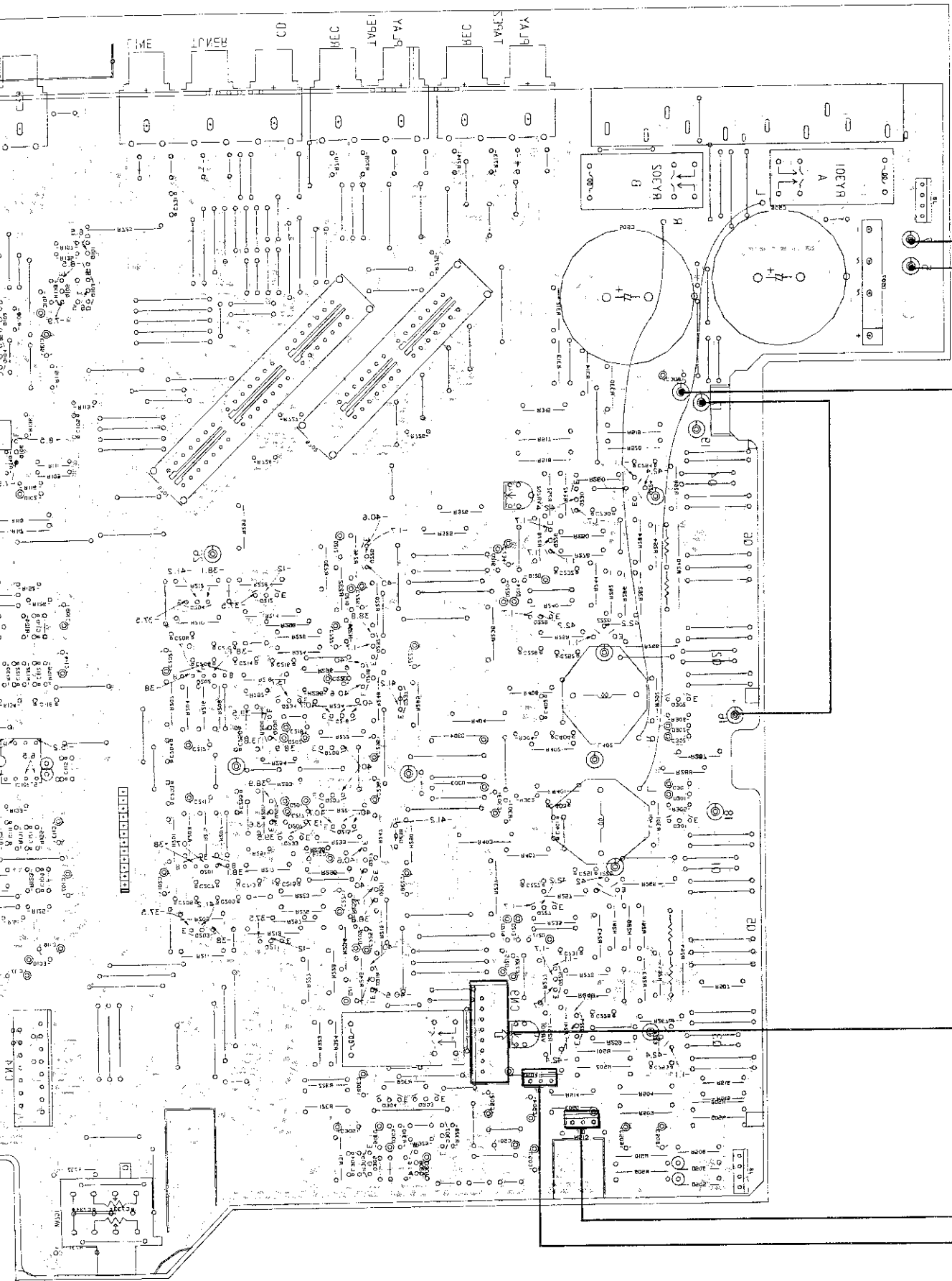
D

- Q101
- Q103
- Q102
- Q105
- Q104
- Q108
- Q554
- Q530
- Q558
- Q550
- Q515
- Q504
- Q555
- Q558
- Q535
- Q518
- Q505
- Q537
- Q534
- Q516
- Q508
- Q508
- Q508
- Q501
- Q502
- Q502
- Q538
- Q518
- Q532
- Q517
- Q501
- Q521
- Q503
- Q511
- Q518
- Q552
- Q558
- Q533
- Q302
- Q304
- Q301
- Q308
- Q302



4.P.C. BOARDS CONNECTION DIAGRAM (FOR A-400\HB TYPE)

AF COMPLEX ASSY (AW35888)

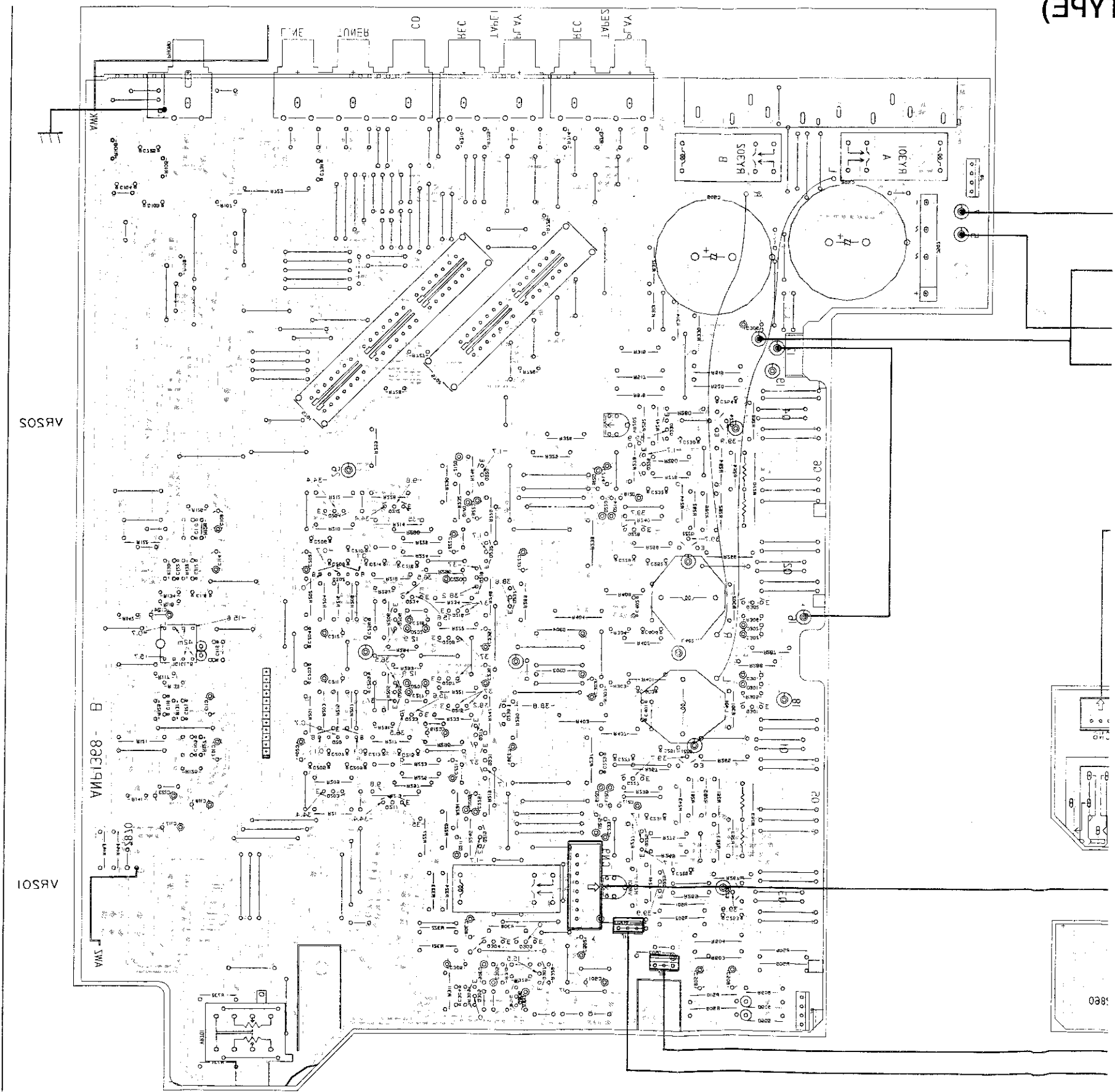


CAUTION - FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPAIRS TO THE FUSES SHOULD BE OF THE SAME TYPE AND RATING.
ONLY AW3 5888

A
B
C
D

(TYPE)

AF COMPLEX ASSY (AW52820)



- 0302
- 0303
- 0304
- 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

● View from soldering side

A

B

C

D

9

8

7

6

5

4

9

8

7

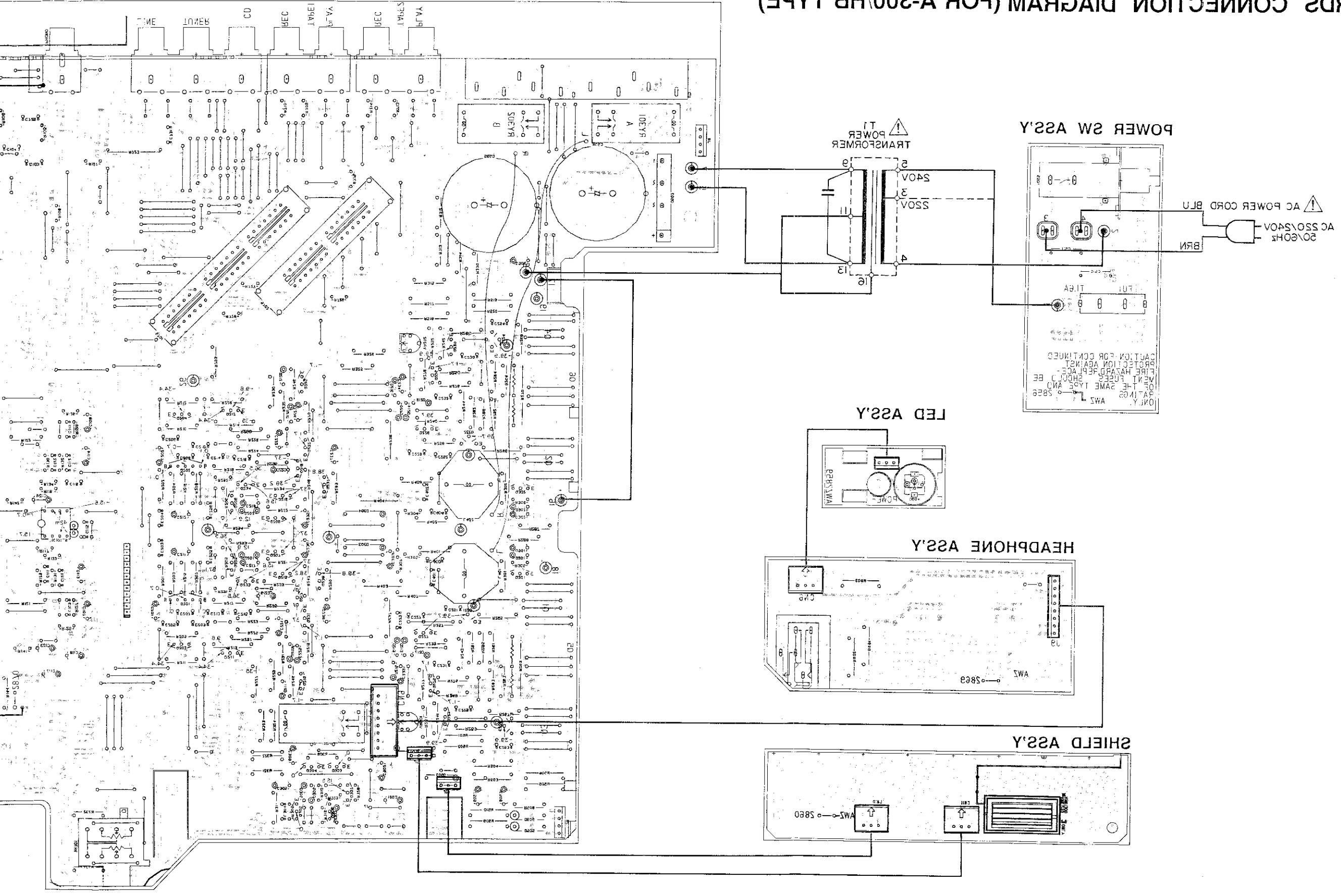
6

5

4

2. P.C. BOARDS CONNECTION DIAGRAM (FOR A-300/HB TYPE)

AF COMPLEX ASSY (AWZ5870)



A

B

C

D

5. P.C. BOARDS CONNECTION DIAGRAM (FOR A-300/HB TYPE)

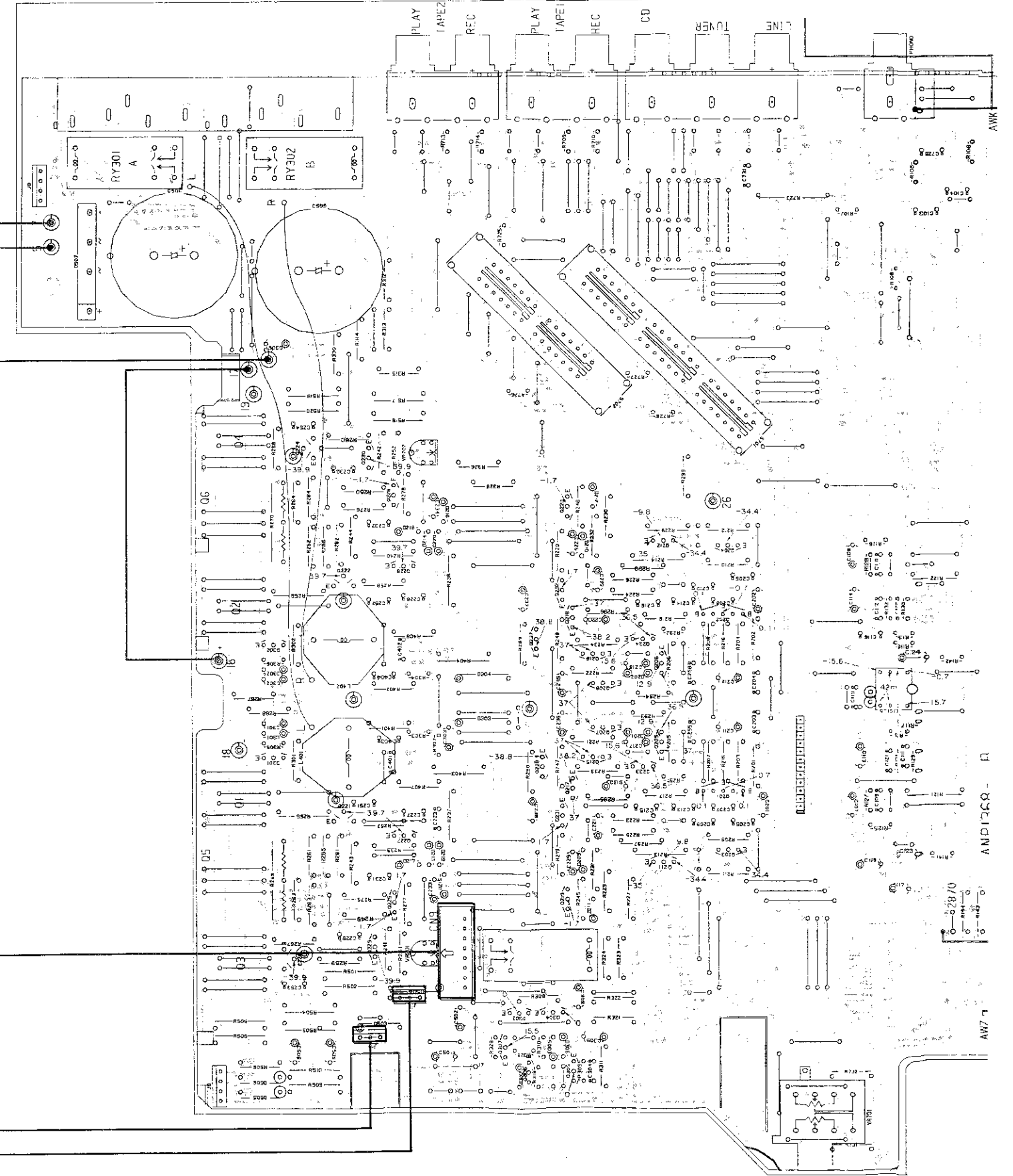
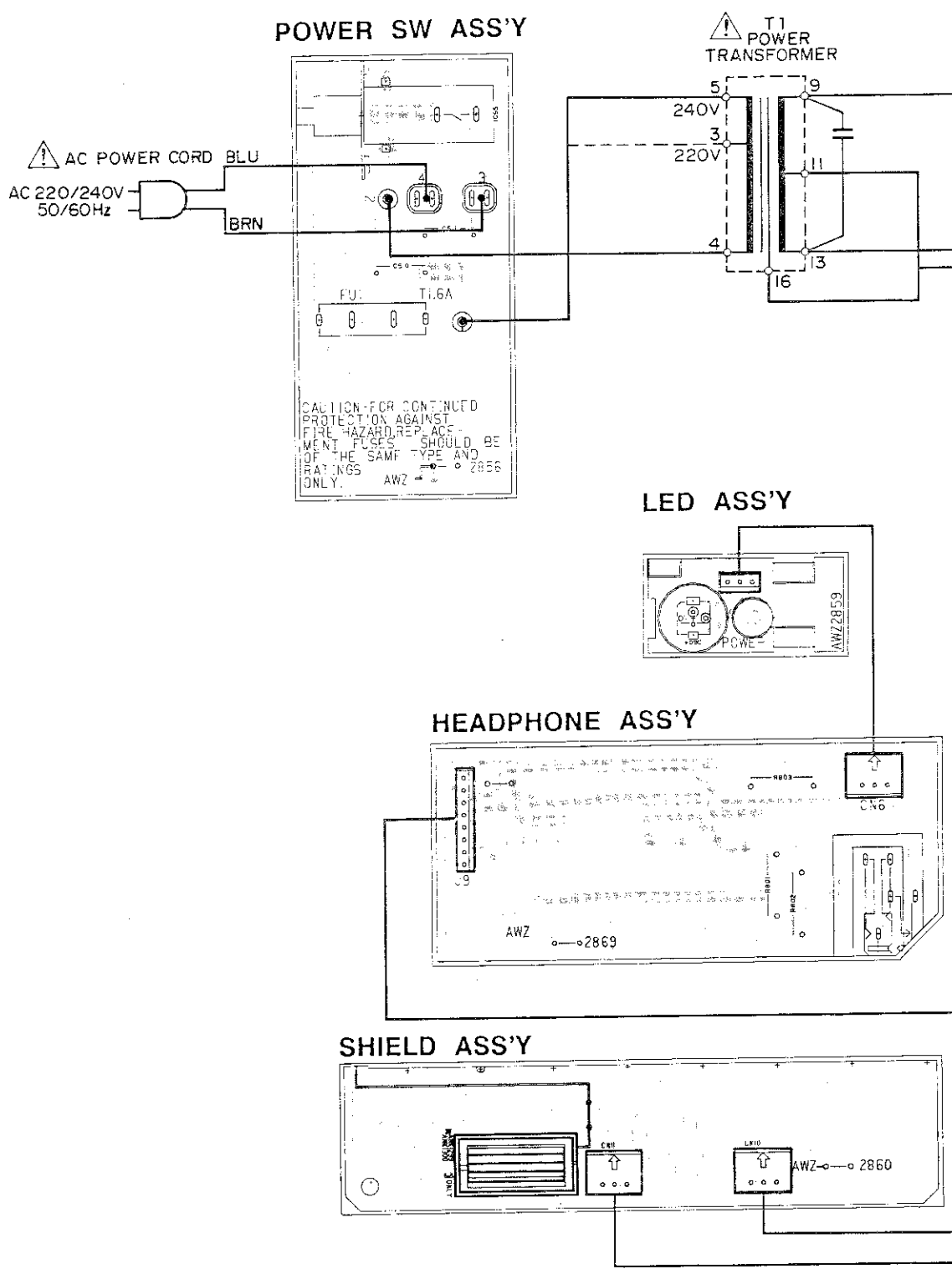
AF COMPLEX ASS'Y (AWZ2870)

A

B

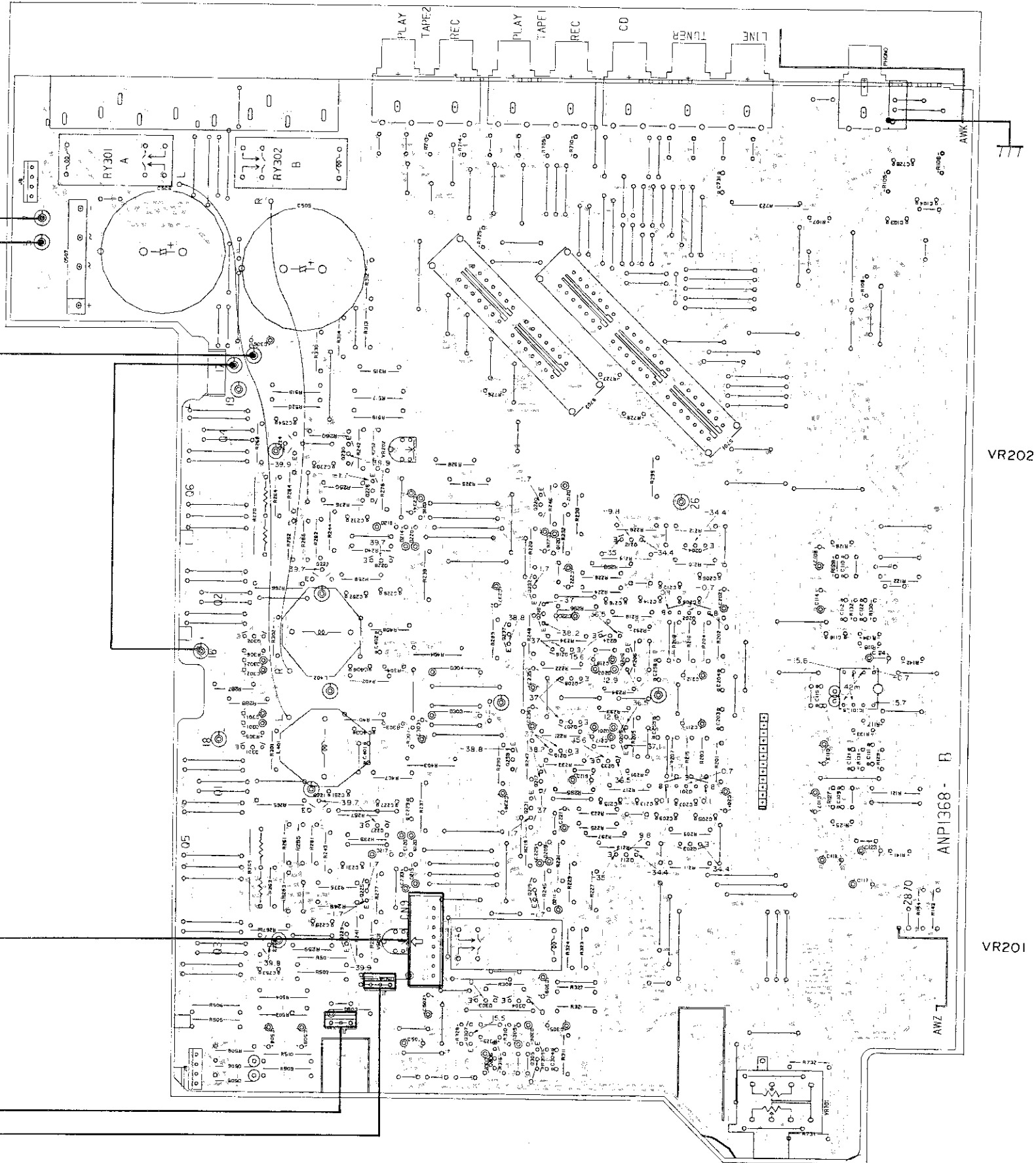
C

D



B TYPE)

AF COMPLEX ASS'Y (AWZ2870)



- VR202
- Q224
- Q230
- Q226
- Q220
- Q212
- Q204
- Q222
- Q228
- Q232
- Q218
- Q202
- Q237
- Q302
- Q234
- Q216
- Q206
- Q208
- IC101
- Q207
- Q205
- Q238
- Q215
- Q233
- Q221
- Q217
- Q201
- Q227
- Q231
- Q203
- Q211
- Q225
- Q219
- VR201
- Q229
- Q223
- Q303
- Q304
- Q307
- Q306
- Q305

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

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

Others

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

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

A

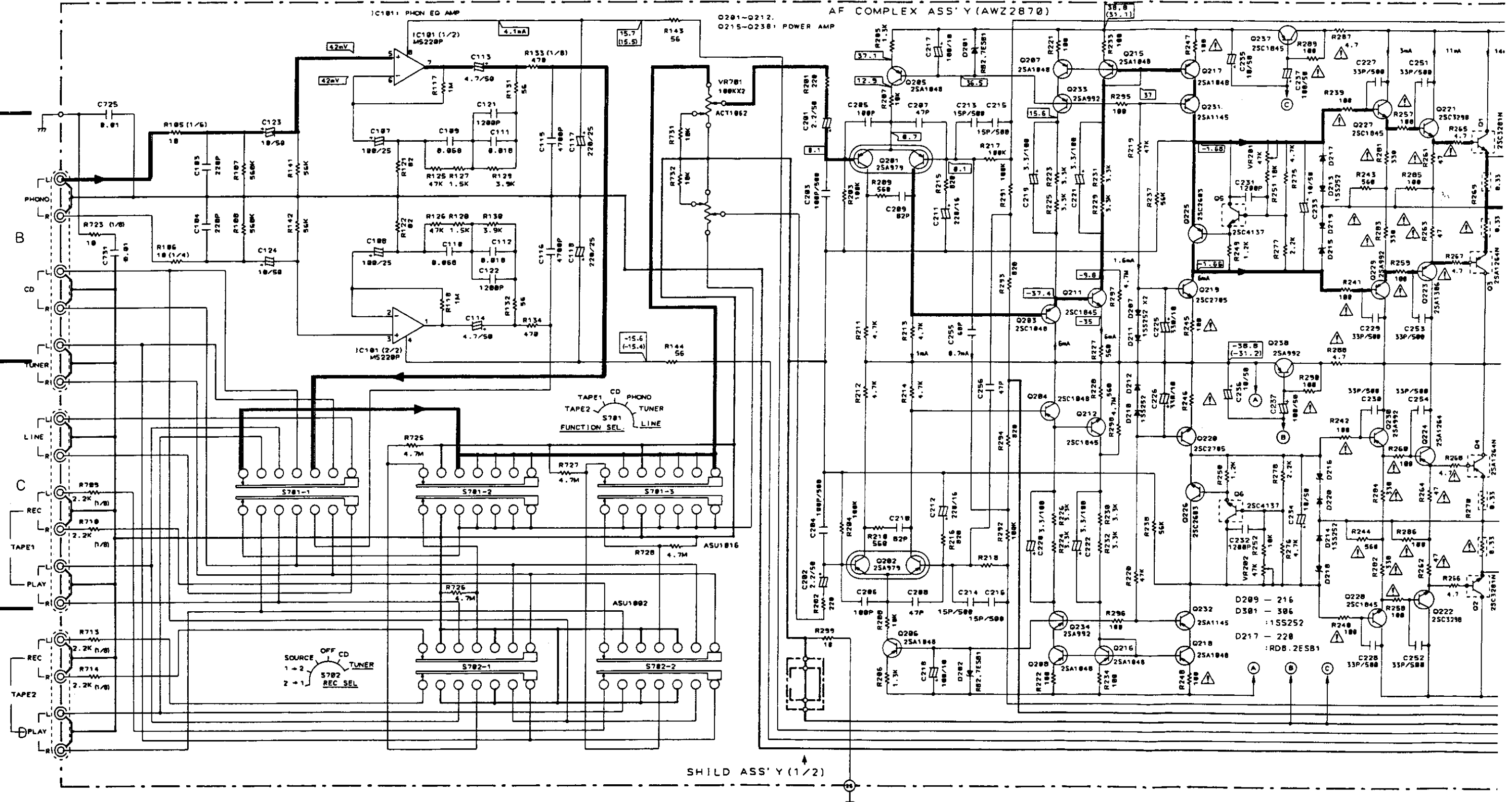
B

C

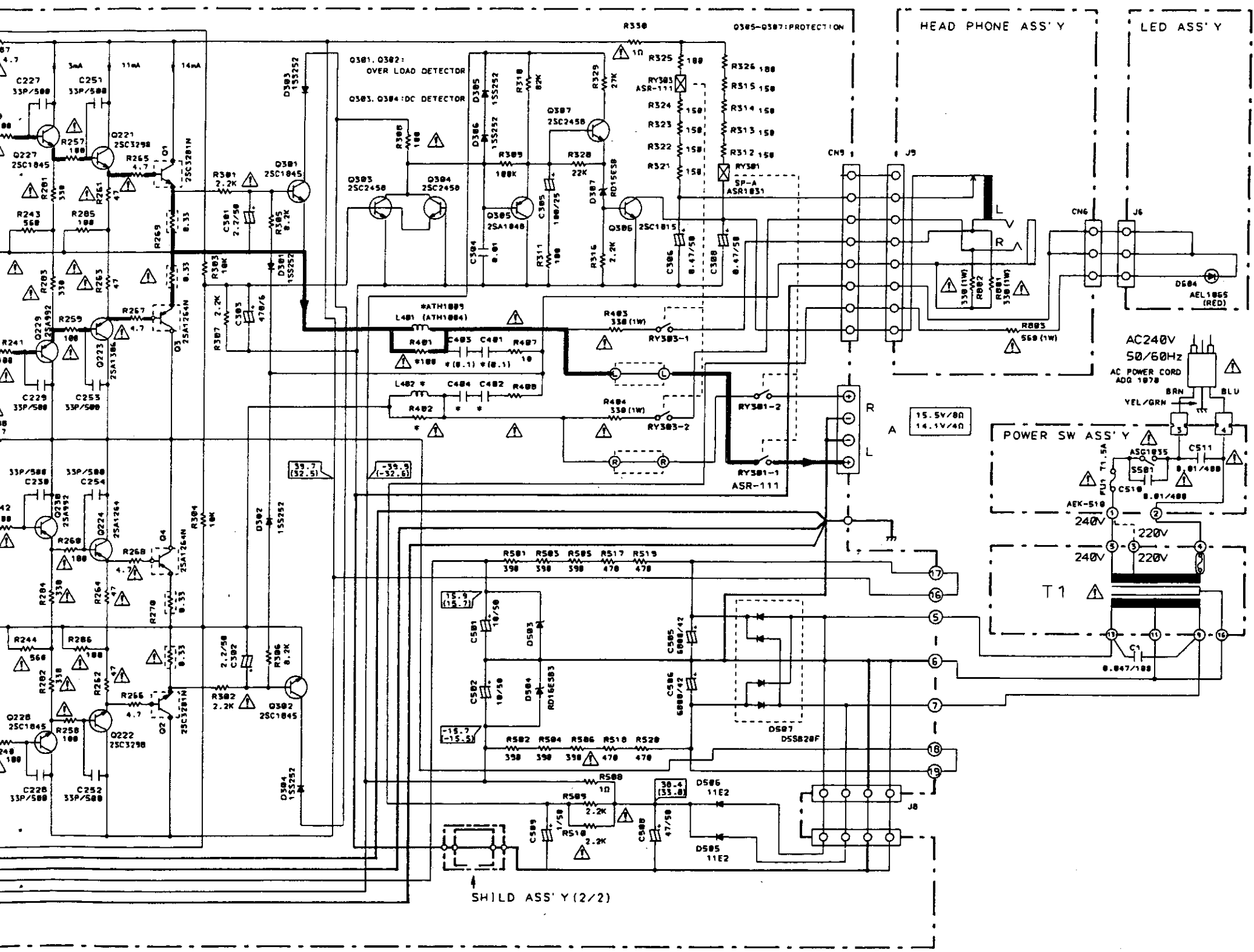
D

6. SCHEMATIC DIAGRAM (FOR A-300/HB TYPE)

A



SHLD ASS'Y (1/2)



1. RESISTORS:
 Indicated in Ω, 1/8, 1/4W, ±5% tolerance unless otherwise noted
 K; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20%
 tolerance.

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

3. VOLTAGE CURRENT:
 [Symbol] : Signal voltage at (30W + 30W/8Ω, 50W + 50W/4Ω)
 output (1kHz).
 [Symbol] : DC voltage (V) at no input signal.
 Value in () is DC voltage at rated power.
 mA : DC current (V) at no input signal.
 mV : Signal voltage at FM 400Hz ± 75Hz DEV.

4. OTHERS
 • [Symbol] : Signal route.
 • [Symbol] : Adjusting point.
 • The * mark found on some component parts indicates the
 importance of the safety factor of the part. Therefore, when
 replacing, be sure to use parts of identical designation.
 • [Symbol] marked capacitor and resistor have parts number.
 • 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)
 S501 : POWER SW (ON-OFF)
 S701 : FUNCTION SEL
 (TAPE 2 - TAPE 1 - CD - PHONO -
 TUNER - LINE)
 S702 : REC SEL
 (2→1 - 1→2 - SOURCE - OFF - CD - TUNER)

A

B

C

D

7. ELECTRICAL PARTS LIST

- NOTES:**
- Parts without part number cannot be supplied.
 - Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex. 1** When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
- | | | | | | | | |
|------|----------------------|----------|---------|---|---|---|---|
| 560Ω | 56 × 10 ¹ | 561..... | RD1/4PS | Ⓜ | Ⓜ | Ⓜ | J |
| 47kΩ | 47 × 10 ³ | 473..... | RD1/4PS | Ⓜ | Ⓜ | Ⓜ | J |
| 0.5Ω | 0R5..... | | RN2H | Ⓜ | Ⓜ | Ⓜ | K |
| 1Ω | 010..... | | RS1P | Ⓜ | Ⓜ | Ⓜ | K |
- Ex. 2** When there are 3 effective digits (such as in high precision metal film resistors).
- | | | | | | | | |
|--------|-----------------------|-----------|---------|---|---|---|---|
| 5.62kΩ | 562 × 10 ¹ | 5621..... | RN1/4SR | Ⓜ | Ⓜ | Ⓜ | F |
|--------|-----------------------|-----------|---------|---|---|---|---|

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
POWER SW ASS'Y							
CAPACITORS							
⚠	C510,C511	CKA (0.01/AC400V)	ACG1002				
SWITCH							
⚠	S501	PUSH SWITCH	ASG1035				
LED ASS'Y							
SEMICONDUCTOR							
	D604	LED (RED)	AEL1065				
SHIELD ASS'Y (FOR A-400/HB TYPE)							
SEMICONDUCTORS							
	Q501	TRANSISTOR	2SC2705		Q219,Q220	TRANSISTOR	2SC2705
	Q502	TRANSISTOR	2SA1145		Q221,Q222	TRANSISTOR	2SC3298
					Q223,Q224	TRANSISTOR	2SA1306
OTHERS							
	CN10,CN11	JUMPER CONNECTOR 3-P	KPC3		Q225,Q226	TRANSISTOR	2SC2603
					Q227,Q228	TRANSISTOR	2SC1845
					Q229,Q230	TRANSISTOR	2SA992
					Q231,Q232	TRANSISTOR	2SA1145
					Q233,Q234	TRANSISTOR	2SA992
HEADPHONE ASS'Y							
RESISTORS							
⚠	R801,R802	METAL OXIDE RESISTOR	RS1PMF331J		Q237	TRANSISTOR	2SC1845
⚠	R803	METAL OXIDE RESISTOR	RS1LMF681J		Q238	TRANSISTOR	2SA992
OTHERS							
	JACK		AKN1022		Q301,Q302	TRANSISTOR	2SC1845
	CN6	JUMPER CONNECTOR 3-P	KPC3		Q303,Q304	TRANSISTOR	2SC2458
AF COMPLEX ASS'Y (AWZ2868) FOR A-400/HB TYPE							
SEMICONDUCTORS							
	IC101	IC	UPC4570C		Q305	TRANSISTOR	2SA1048
	Q101-Q104	N-FET	2SK369		Q306	TRANSISTOR	2SC1845
	Q105,Q106	TRANSISTOR	2SC2458		D101,D102	ZENER DIODE	RD7.5ESB2
	Q201,Q202	TRANSISTOR	2SA979		D103	DIODE	1SS252
	Q203-Q208	TRANSISTOR	2SA1048		D201,D202	ZENER DIODE	RD2.7ESB1
					D209-D216	DIODE	1SS252
	Q211,Q212	TRANSISTOR	2SC1845		D217-D220	ZENER DIODE	RD15ESB
	Q215-Q218	TRANSISTOR	2SA1048		D301-D306	DIODE	1SS252
COILS & FILTERS							
	L401,L402	COIL	ATH1004				
CAPACITORS							
	C101,C102	AUDIO FILM CAPACITOR	CFTXA103J50		D307	ZENER DIODE	RD22ESB
	C103,C104	CERAMIC CAPACITOR	CCCSL221K500		D503,D504	ZENER DIODE	RD18ESB1
	C105,C106	POLYESTER CAPACITOR	CQMXA472J100		D505,D506	DIODE	11E2
	C107,C108	ELECTR. CAPACITOR	CEXA101M25		D507	DIODE	D5SB20F
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50				
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50				
	C113,C114	ELECTR. CAPACITOR	CEXANP220M25				
	C115,C116	POLYESTER CAPACITOR	CQMXA472J100				

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.	Mark	No.	D
	C117,C118	ELECTR. CAPACITOR	CEXA221M25		R249-R252	CARBON FILM RESISTOR	RD1/4PM		Q229,Q230	TR
	C121,C122	POLYESTER CAPACITOR	CQMXA122J100	⚠	R257-R260	FUSIBLE RESISTOR	RFA1/4PS101J		Q231,Q232	TR
	C135,C136	ELECTR. CAPACITOR	CEAS470M10	⚠	R261-R264	FUSIBLE RESISTOR	RFA1/4PS470J		Q233,Q234	TR
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50	⚠	R265-R268	FUSIBLE RESISTOR	RFA1/4PS4R7J		Q237	TRANSIS
	C203,C204	MICA CAPACITOR	CMA101J500	⚠	R269,R270	RESISTOR (0.33, 5W)	ACN1063		Q238	TRANSIS
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50		R275-R278	CARBON FILM RESISTOR	RD1/4PM		Q301,Q302	TR
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50	⚠	R281-R284	FUSIBLE RESISTOR	RFA1/4PS331J		Q303,Q304	TR
	C209,C210	CERAMIC CAPACITOR	CCCSL820J50	⚠	R285,R286	FUSIBLE RESISTOR	RFA1/4PS101J		Q305	TRANSIS
	C211,C212	ELECTR. CAPACITOR	CEEA221M16	⚠	R287,R288	CARBON FILM RESISTOR	RD1/4PMF4R7J		Q306	TRANSIS
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500	⚠	R289,R290	FUSIBLE RESISTOR	RFA1/4PS101J		Q307	TRANSIS
	C217,C218	ELECTR. CAPACITOR	CEAS101M10		R299	CARBON FILM RESISTOR	RD1/4PM100J		D201,D202	ZE
	C219-C222	ELECTR. CAPACITOR	CEAS3R3M100	⚠	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J		D209-D216	DI
	C225,C226	ELECTR. CAPACITOR	CEAS331M10	⚠	R308	CARBON FILM RESISTOR	RD1/4PMF101J		D217-D220	ZE
	C227-C230	CERAMIC CAPACITOR	CCCSL330K500		R311-R315	CARBON FILM RESISTOR	RD1/4PM		D301-D306	DI
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50		R321-R326	CARBON FILM RESISTOR	RD1/4PM		D307	ZENER
	C233-C236	ELECTR. CAPACITOR	CEAS100M50	⚠	R330	CARBON FILM RESISTOR	RD1/4PMF010J		D503,D504	ZE
	C237,C238	ELECTR. CAPACITOR	CEAS101M50	⚠	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J		D505,D506	DI
	C251-C254	CERAMIC CAPACITOR	CCCSL330K500	⚠	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J		D507	DIODE
	C255	CERAMIC CAPACITOR	CCCSL680J50	⚠	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J		COILS & FILTERS	
	C256	CERAMIC CAPACITOR	CCDSL470J50	⚠	R501-R506	METAL OXIDE RESISTOR	RS1PMF121J		L401,L402	CO
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50	⚠	R507,R508	CARBON FILM RESISTOR	RD1/4PMF010J		CAPACITORS	
	C303	ELECTR. CAPACITOR	CEAS471M6	⚠	R509,R510	METAL OXIDE RESISTOR	RS1LMF272J		C103,C104	CE
	C304	CERAMIC CAPACITOR	CKCYF103Z50		R513-R516	CARBON FILM RESISTOR	RD1/4PM272J		C107,C108	EL
	C305	ELECTR. CAPACITOR	CEAS101M25	⚠	R517-R520	METAL OXIDE RESISTOR	RS1PMF101J		C109,C110	AL
	C306,C308	ELECTR. CAPACITOR	CEASR47M50		R731,R732	CARBON FILM RESISTOR	RD1/4PM103J		C111,C112	AL
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50		OTHER RESISTORS		RD1/8PM		C113,C114	EL
	C501,C502	ELECTR. CAPACITOR	CEAS100M50		SWITCHES				C115,C116	M
	C503,C504	ELECTR. CAPACITOR	CEAS470M25		S101	PUSH SWITCH	ASG1012		C117,C118	EL
	C505	ELECTR. CAPACITOR (10000/5V)	ACH1152		S701	SWITCH	ASU1016		C121,C122	M
	C506	ELECTR. CAPACITOR (10000/5V)	ACH1153		S702	SWITCH	ASU1002		C123,C124	EL
	C508	ELECTR. CAPACITOR	CEAS470M50		OTHERS				C201,C202	EL
	C509	ELECTR. CAPACITOR	CEAS010M50		CN9	JUMPER CONNECTOR	KPC8		C203,C204	CE
	C725	CERAMIC CAPACITOR	CKCYF103Z50		RY301	RELAY	ASR1031		C205,C206	CE
	C731	CERAMIC CAPACITOR	CKCYF103Z50		RY303	RELAY	ASR-111		C207,C208	CE
	C733,C734	CERAMIC CAPACITOR	CKDYF102Z50			PHONO JACK 6-P	AKB1007		C209,C210	CE
						PHONO JACK 6-P	AKB1008		C211,C212	EL
						PHONO JACK 2-P	AKB1059		C213-C216	C
						SPEAKER TERMINAL 4-P	AKE1020		C217,C218	EL
									C219-C222	EI
									C225,C226	EL
									C227-C230	C
									C231,C232	C
									C233-C236	EI
									C237,C238	EI
									C251-C254	C
									C255	CERAM
									C256	CERAM
									C301,C302	EI
									C303	ELECTR
									C304	CERAM
									C305	ELECT
									C306	EL

AF COMPLEX ASS'Y (AWZ2870) FOR A-300/HB TYPE

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
SEMICONDUCTORS							
	IC101	IC	M5220P		Q219,Q220	TRANSISTOR	2SC2705
	Q201,Q202	TRANSISTOR	2SA979		Q221,Q222	TRANSISTOR	2SC3298
	Q203-Q208	TRANSISTOR	2SA1048		Q223,Q224	TRANSISTOR	2SA1306
	Q211,Q212	TRANSISTOR	2SC1845		Q225,Q226	TRANSISTOR	2SC2603
	Q215-Q218	TRANSISTOR	2SA1048		Q227,Q228	TRANSISTOR	2SC1845

Mark	No.	Description	Parts No.
	Q229,Q230	TRANSISTOR	2SA992
	Q231,Q232	TRANSISTOR	2SA1145
	Q233,Q234	TRANSISTOR	2SA992
	Q237	TRANSISTOR	2SC1845
	Q238	TRANSISTOR	2SA992
	Q301,Q302	TRANSISTOR	2SC1845
	Q303,Q304	TRANSISTOR	2SC2458
	Q305	TRANSISTOR	2SA1048
	Q306	TRANSISTOR	2SC1815
	Q307	TRANSISTOR	2SC2458
	D201,D202	ZENER DIODE	RD2.7ESB1
	D209-D216	DIODE	1SS252
	D217-D220	ZENER DIODE	RD8.2ESB1
	D301-D306	DIODE	1SS252
	D307	ZENER DIODE	RD15ESB
	D503,D504	ZENER DIODE	RD16ESB3
	D505,D506	DIODE	11E2
	D507	DIODE	D5SB20F
COILS & FILTERS			
	L401,L402	COIL	ATH1004
CAPACITORS			
	C103,C104	CERAMIC CAPACITOR	CCCSL221J50
	C107,C108	ELECTR. CAPACITOR	CEXA101M25
	C109,C110	AUDIO FILM CAPACITOR	CFTXA683J50
	C111,C112	AUDIO FILM CAPACITOR	CFTXA183J50
	C113,C114	ELECTR. CAPACITOR	CEXA4R7M50
	C115,C116	MYLOR FILM CAPACITOR	CQMA472K50
	C117,C118	ELECTR. CAPACITOR	CEAS221M25
	C121,C122	MYLOR FILM CAPACITOR	CQMA122J50
	C123,C124	ELECTR. CAPACITOR	CEXA100M50
	C201,C202	ELECTR. CAPACITOR	CEEA2R2M50
	C203,C204	CERAMIC CAPACITOR	CCCSL101K500
	C205,C206	CERAMIC CAPACITOR	CCCSL101J50
	C207,C208	CERAMIC CAPACITOR	CCCSL470J50
	C209,C210	CERAMIC CAPACITOR	CCCSL101J50
	C211,C212	ELECTR. CAPACITOR	CEEA221M16
	C213-C216	CERAMIC CAPACITOR	CCCSL150K500
	C217,C218	ELECTR. CAPACITOR	CEAS101M10
	C219-C222	ELECTR. CAPACITOR	CEAS3R3M100
	C225,C226	ELECTR. CAPACITOR	CEAS331M10
	C227-C230	CERAMIC CAPACITOR	CCCSL330K500
	C231,C232	CERAMIC CAPACITOR	CKCYB122K50
	C233-C236	ELECTR. CAPACITOR	CEAS100M50
	C237,C238	ELECTR. CAPACITOR	CEAS101M50
	C251-C254	CERAMIC CAPACITOR	CCCSL330K500
	C255	CERAMIC CAPACITOR	CCCSL680J50
	C256	CERAMIC CAPACITOR	CCDSL470J50
	C301,C302	ELECTR. CAPACITOR	CEAS2R2M50
	C303	ELECTR. CAPACITOR	CEAS471M6
	C304	CERAMIC CAPACITOR	CKCYF103Z50
	C305	ELECTR. CAPACITOR	CEAS101M25

Mark	No.	Description	Parts No.
	C306,C308	ELECTR. CAPACITOR	CEASR47M50
	C401-C404	AUDIO FILM CAPACITOR	CFTXA104J50
	C501,C502	ELECTR. CAPACITOR	CEAS470M25
	C505,C506	ELECTR. CAPACITOR (6800/42V)	ACH1077
	C508	ELECTR. CAPACITOR	CEAS470M50
	C509	ELECTR. CAPACITOR	CEAS010M50
	C725	CERAMIC CAPACITOR	CKCYF103Z50
	C731	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	VR201,VR202	SEMI-FIXED (47K)	ACP1045
	VR701	VARIABLE(100K-20AX2)	ACT1062
	R105,R106	CARBON FILM RESISTOR	RDR1/6PU100J
	R121,R122	CARBON FILM RESISTOR	RDR1/4PM820J
	R133,R134	CARBON FILM RESISTOR	RDR1/6PU471J
	R141,R142	CARBON FILM RESISTOR	RDR1/6PU563J
	R143,R144	CARBON FILM RESISTOR	RD1/4PM560J
	R201-R204	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R205-R214	CARBON FILM RESISTOR	RD1/4PM□□□J
	R215-R218	CARBON FILM RESISTOR	RDR1/4PM□□□J
	R219-R234	CARBON FILM RESISTOR	RD1/4PM□□□J
	R237,R238	CARBON FILM RESISTOR	RDR1/4PM563J
	△ R239-R242	FUSIBLE RESISTOR	RFA1/4PS101J
	△ R243,R244	CARBON FILM RESISTOR	RD1/4PMF561J
	△ R245-R248	FUSIBLE RESISTOR	RFA1/4PS101J
	R249-R252	CARBON FILM RESISTOR	RD1/4PM□□□J
	△ R257-R260	FUSIBLE RESISTOR	RFA1/4PS101J
	△ R261-R264	FUSIBLE RESISTOR	RFA1/4PS470J
	△ R265-R268	FUSIBLE RESISTOR	RFA1/4PS4R7J
	△ R269,R270	RESISTOR (0.33, 5W)	ACN1063
	R275-R278	CARBON FILM RESISTOR	RD1/4PM□□□J
	△ R281-R284	FUSIBLE RESISTOR	RFA1/4PS331J
	△ R285,R286	FUSIBLE RESISTOR	RFA1/4PS101J
	△ R287,R288	CARBON FILM RESISTOR	RD1/4PMF4R7J
	△ R289,R290	FUSIBLE RESISTOR	RFA1/4PS101J
	R299	CARBON FILM RESISTOR	RD1/4PM100J
	R301,R302	CARBON FILM RESISTOR	RD1/4PMF222J
	R308	CARBON FILM RESISTOR	RD1/4PMF101J
	R311-R315	CARBON FILM RESISTOR	RD1/4PM□□□J
	R321-R326	CARBON FILM RESISTOR	RD1/4PM□□□J
	R330	CARBON FILM RESISTOR	RD1/4PMF010J
	R401,R402	CARBON FILM RESISTOR	RD1/4PMFL100J
	R403,R404	METAL OXIDE RESISTOR	RS1LMF331J
	R407,R408	CARBON FILM RESISTOR	RD1/4PMFL100J
	R501-R506	CARBON FILM RESISTOR	RD1/2PM□□□J
	R508	CARBON FILM RESISTOR	RD1/4PMF010J
	R509,R510	METAL OXIDE RESISTOR	RS1LMF222J
	R517-R520	CARBON FILM RESISTOR	RD1/2PM471J
	R731,R732	CARBON FILM RESISTOR	RD1/4PM103J
	OTHER RESISTORS		RD1/8PM□□□J

Mark	No.	Description	Parts No.
SWITCHES			
	S701	SWITCH	ASU1016
	S702	SWITCH	ASU1002
OTHERS			
	CN9	JUMPER CONNECTOR	KPC8
	RY301	RELAY	ASR-111
	RY303	RELAY	ASR-111
		PHONO JACK 4-P	AKB1007
		PHONO JACK 6-P	AKB1008
		PHONO JACK 2-P	AKB1059
		SPEAKER TERMINAL 4-P	AKE1020

**SHIELD ASS'Y
(FOR A-300/HB TYPE)**

No parts supplied with the SHIELD Ass'y.

8. ADJUSTMENT

ADJUSTMENT OF IDLE CURRENT

1. Connect wire as shown in Fig. 8-1.
2. After power ON, aging lasts for 5 mins with no-load.
3. In the Lch VR201 should be adjusted so that both terminal voltages of R269 may attain to 20 mV (± 3 mV).
4. In the Rch VR202 should be adjusted so that both terminal voltages may attain to 20 mV (± 3 mV).

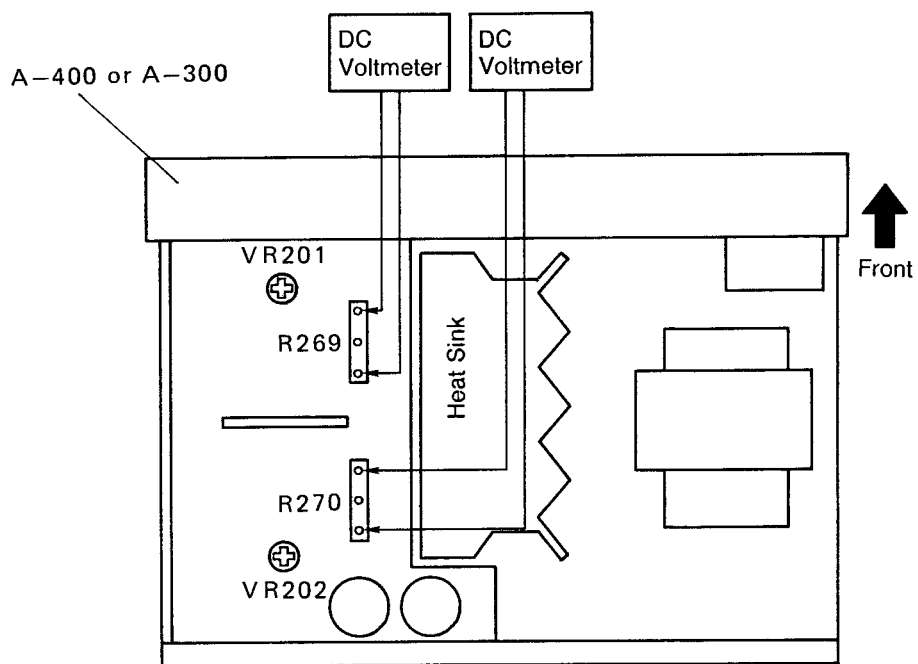


Fig. 8-1 Adjustment Drawing

8. RÉGLAGE

RÉGLAGE DU COURANT DÉWATTÉ

1. Brancher les fils comme indiqué dans la fig. 8-1.
2. Après la mise sous tension, le moteur dure 5 minutes et n'introduire charge.
3. VR 201 sera réglé dans le canal gauche de manière que les deux tensions de bornes de R269 atteignent 20 mV (± 3 mV).
4. VR 202 sera réglé dans le canal droit de manière que les deux tensions de bornes atteignent 20 mV (± 3 mV).

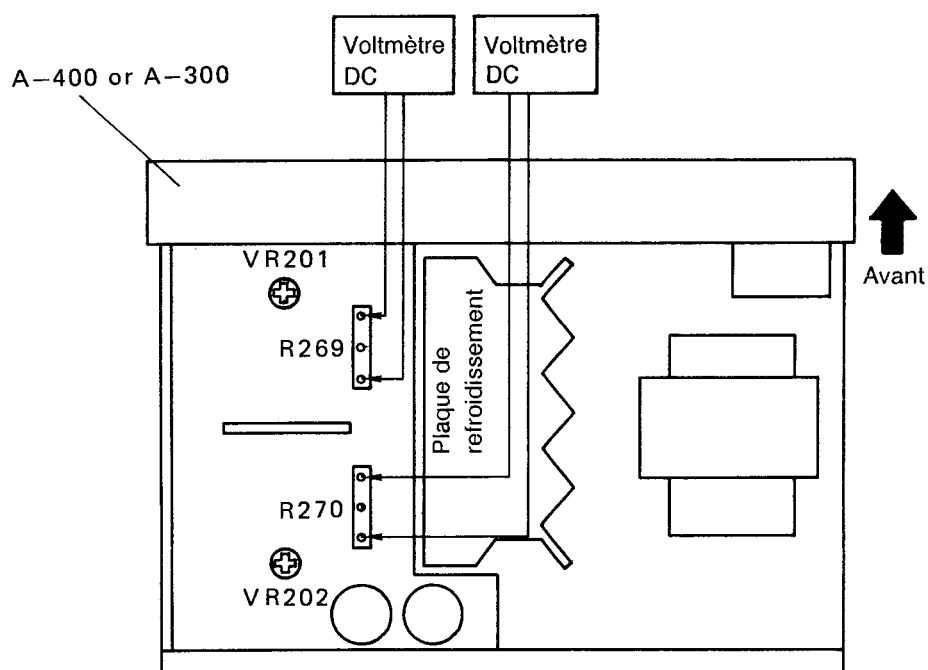


Fig. 8-1 Schéma du réglage

8. AJUSTE

AJUSTE DE LA CORRIENTE DEVATIADA

1. Conecte el cable como lo ilustra la Fig. 8-1.
2. El motor funciona por 5 minutos después de encender la unidad, sin introduzca.
3. El VR201 del canal izquierdo debe ajustarse de modo que la tensión entre ambos bornes de R269 llegue a 20 mV (± 3 mV).
4. El VR202 del canal derecho debe ajustarse de modo que la tensión entre ambos bornes llegue a 20 mV (± 3 mV).

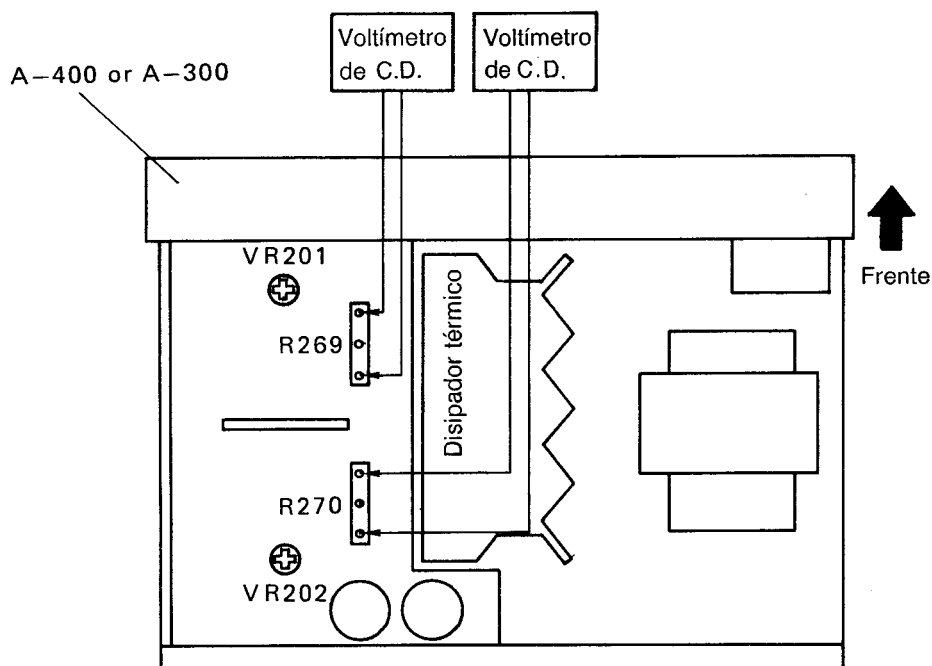
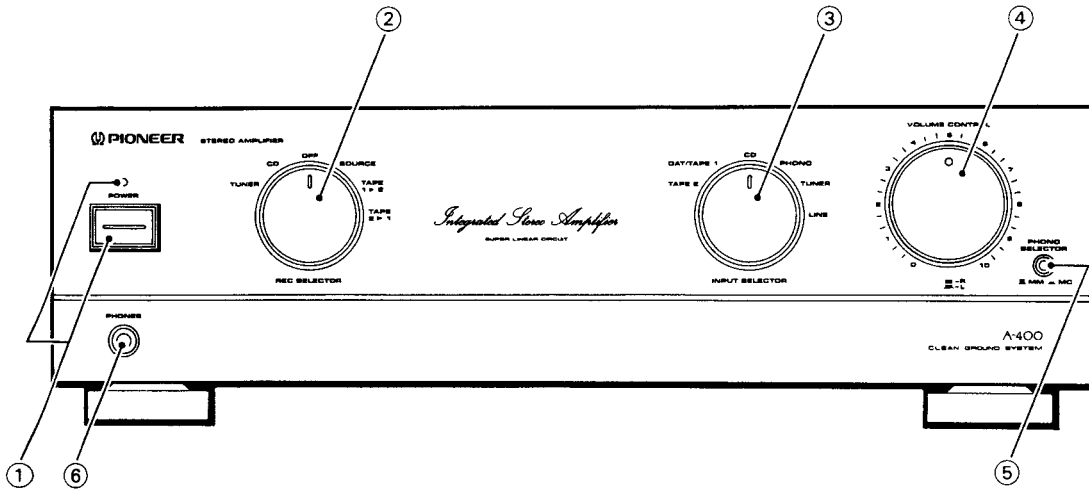


Fig. 8-1 Diagrama de ajuste

9. FRONT PANEL FACILITIES

[FRONT PANEL]

The illustration shows model A-400.



① POWER switch/indicator

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

② 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 the 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.

TAPE 2 ► 1:

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

③ INPUT SELECTOR switch

Use to select the playback source.

LINE:

For playback with a component connected to LINE terminal.

TUNER:

For AM or FM broadcast reception with a tuner.

PHONO:

For record playback with a turntable.

NOTE:

- With the A-300, you can use an MM cartridge or a high-output MC cartridge (over 1 mV).
- According to the type of cartridge used with the A-400, you can select MM or MC with the PHONO SELECTOR switch.

CD:

For compact disc playback with a CD player.

DAT/TAPE 1:

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

TAPE 2:

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

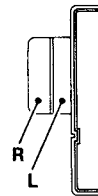
④ VOLUME CONTROL

Use to adjust the volume level.

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

[Example]

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



⑤ PHONO SELECTOR switch (A-400 only)

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

MM (■):

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

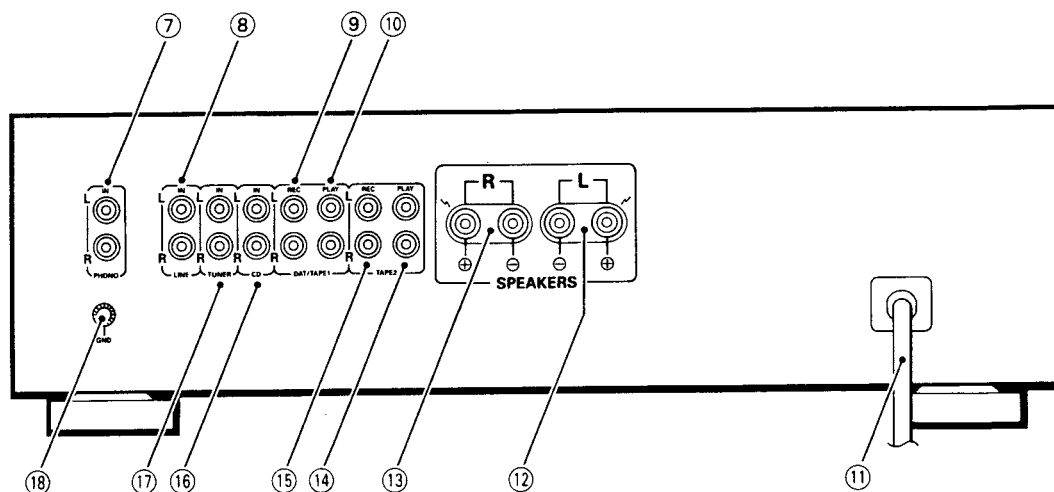
MC (●):

Set to this position when using a moving coil cartridge.

⑥ PHONES jack

When using headphones, insert the plug into this jack. The output to the speakers is cut automatically when connecting headphones.

[REAR PANEL]



⑦ PHONO terminals

⑧ LINE terminals

⑨ DAT/TAPE 1 REC terminals

⑩ DAT/TAPE 1 PLAY terminals

⑪ Power cord

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

⑫ SPEAKERS terminals L (left channel)

⑬ SPEAKERS terminals R (right channel)

⑭ TAPE 2 PLAY terminals

⑮ TAPE 2 REC terminals

⑯ CD terminals

⑰ TUNER terminals

⑱ Turntable ground terminal (GND)