

Service Manual

**CIRCUIT DESCRIPTIONS
REPAIR & ADJUSTMENTS**



**ORDER NO.
ARP-840-0**

STEREO AMPLIFIER

A-66X (BK)

A-66X

- A-66X [BK] is Black Version of A-66X.
- MODEL A-66X [BK] COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model		Power requirement	Destination
	Black	Silver		
HEZ	○	○	AC220V, 240V (switchable)	European continent
HE	○	○	AC220V, 240V (switchable)	European continent
HB	○	—	AC220V, 240V (switchable)	United Kingdom

- This service manual is applicable to the HEZ, HE and HB types.
- As to the HE and HB types, please refer to pages 26.

CONTENTS

1. SPECIFICATIONS	2	6. EXPLODED VIEW AND PARTS LIST	9
2. FRONT PANEL FACILITIES	3	7. P.C. BOARDS CONNECTION DIAGRAM	13
3. BLOCK DIAGRAM	5	8. SCHEMATIC DIAGRAM	18
4. PACKING	6	9. ELECTRICAL PARTS LIST	23
5. PARTS LOCATION	7	10. FOR HE AND HB TYPES	26

1. SPECIFICATIONS

Amplifier Section

Continuous average power output is 80 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.007% total harmonic distortion.

Continuous Power Output (both channels driven)
 20 Hz to 20 kHz, 0.007%, 6 Ω 90 W + 90 W
 20 Hz to 20 kHz, 0.007%, 8 Ω 80 W + 80 W
 DIN Continuous Power Output (both channels driven)
 1 kHz, 1%, 8 Ω 95 W + 95 W

Dynamic Power
 8Ω/4Ω/2Ω 115W/180W/220W

Total Harmonic Distortion
 20 Hz to 20 kHz, 80 W, 8 Ω 0.007%

Cross-harmonic Distortion (50 Hz : 7 kHz = 4 : 1)
 Continuous power output 0.007%

Output Bandwidth (IHF - both channels driven)
 0.05% 5 Hz to 45 kHz

Damping Factor
 1 kHz 60

Input (sensitivity/impedance)
 PHONO MM 2.5 mV/50 kΩ
 PHONO MC 0.2 mV/100 Ω
 TUNER, CD, TAPE PLAY, VIDEO/AUX
 150 mV/50 kΩ

Overload Level
 PHONO MM 1 kHz, 0.007% 160 mV
 PHONO MC 1 kHz, 0.007% 12 mV

Cartridge load capacity/load impedance
 PHONO MM 220 pF/50 kΩ

Output (level/impedance)
 TAPE REC 150 mV/2.2 kΩ

Frequency Response
 PHONO MM 20 Hz to 20 kHz +0.3 dB
 -0.3 dB
 PHONO MC 20 Hz to 20 kHz +0.5 dB
 -0.5 dB
 TUNER, CD, VIDEO/AUX 5Hz to 100kHz. +0 dB
 -3 dB

Tone Control
 BASS +8 dB 100 Hz
 -8 dB
 TREBLE + 8 dB 10 kHz
 -8 dB

Filter
 LOW (SUBSONIC) 15 Hz 6 dB/oct

Loudness contour (volume control set
 at -30 dB position) +6 dB 100 Hz/+3 dB 10 kHz

Hum and Noise (Short circuited, A network)
 PHONO MM 86 dB
 PHONO MC 70 dB
 TUNER, CD, TAPE PLAY, VIDEO/AUX 105 dB

Hum and Noise (DIN, continuous power/50 mW)
 PHONO MM 74 dB/64 dB
 TUNER, CD, TAPE PLAY, VIDEO/AUX. 84 dB/65 dB

Miscellaneous

Power requirements
 HE model a.c. 220 V ~, 50/60 Hz
 HB, YP models a.c. 240 V ~, 50/60 Hz
 Power Consumption:
 HE, HB, YP models 600 W
 Dimensions 420 (W) x 416 (D) x 134 (H) mm
 16-9/16(W) x 16-3/8(D) x 5-1/4(H) in
 Weight (without package) 10.9 kg/23 lb 15 oz

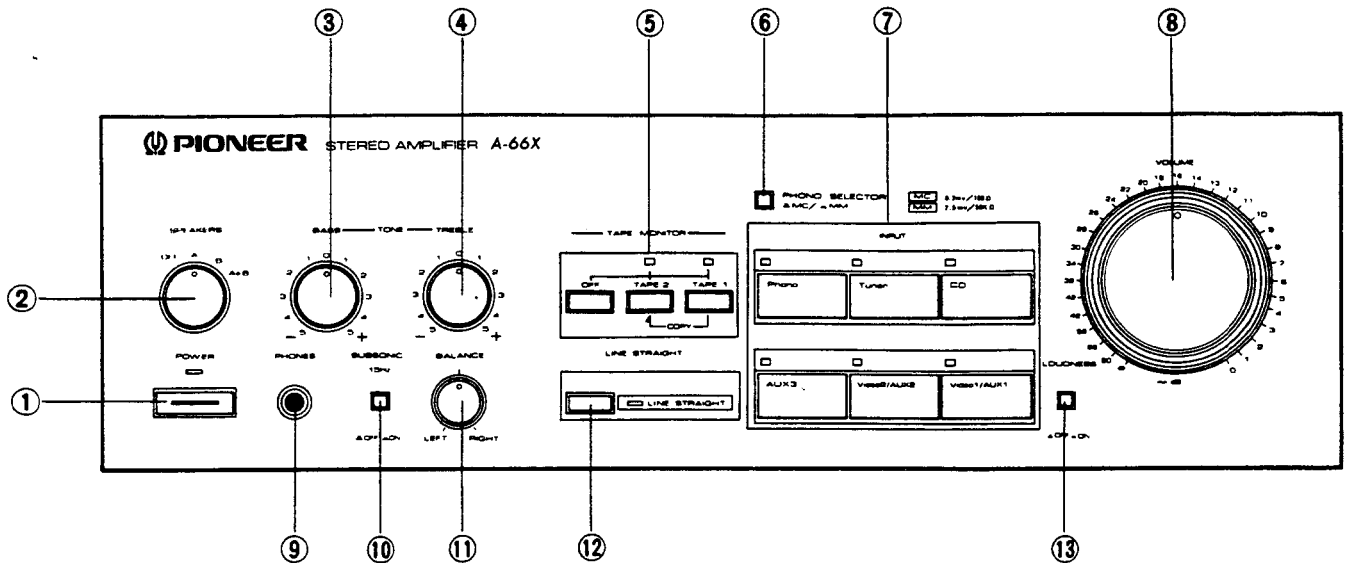
Furnished Parts

Operating Instructions 1

NOTES:

- Specifications and design subject to possible modification without notice due to improvement.
- *Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Claims for Amplifiers.

2. FRONT PANEL FACILITIES



① POWER switch/indicator

Press to turn power to the unit ON and OFF.
 Depressed position (ON): Power is supplied to the unit.
 Released position (OFF): Power to the unit is disconnected.

② SPEAKERS selector switch

Use to select the speaker systems used for playback.
 [OFF]

— No sound is produced from the speaker systems.
 Set to this position when using headphones.

[A]

— Sound is produced from the speaker systems connected to the SPEAKERS A terminals.

[B]

— Sound is produced from the speaker systems connected to the SPEAKERS B terminals.

[A + B]

— Sound is produced from both the speaker systems connected to the SPEAKERS A and SPEAKERS B terminals.

③ BASS tone control

Use to adjust the low-frequency tones. The central "0" 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. This function does not operate when the LINE STRAIGHT switch is in the ON position.

④ TREBLE tone control

Use for adjusting the high-frequency tones.

The central "0" 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.

This function does not operate when the LINE STRAIGHT switch is in the ON position.

⑤ TAPE MONITOR switches/indicators

Use this switch to listen to tape playback, or to listen to the sounds being recorded during tape recording.

[TAPE 1]

— Set to this position to listen to the playback sound of the tape deck connected to the TAPE 1 PLAY terminals, or to monitor the sound being recorded on the tape deck connected to the TAPE 1 REC terminals.

[OFF]

— Leave set in this position when not listening to tape playback.

[TAPE 2]

— Set to this position to listen to the playback sound of the tape deck connected to the TAPE 2 PLAY terminals, or to monitor the sound being recorded on the tape deck connected to the TAPE 2 REC terminals.

⑥ PHONO SELECTOR switch

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

[MC]

– Released position; set to this position when using an MC (moving coil) cartridge

[MM]

– Depressed position; set to this position when using an MM (moving magnet) cartridge, or an MC (moving coil) cartridge with high output of 1 mV or more.

⑦ INPUT switches/indicators

[CD]

– Press when listening to a compact disc playback with a CD player.

[Tuner]

– Press when listening to AM or FM broadcasts with a tuner.

[Phono]

– Press when listening to record playback on a turntable.

[Video 1/AUX 1]

– Press when listening to programs from a component connected to the VIDEO 1/AUX 1 terminals.

[Video 2/AUX 2]

– Press when listening to programs from a component connected to the VIDEO 2/AUX 2 terminals.

[AUX 3]

– Press when listening to programs from a component connected to the AUX 3 terminals.

⑧ VOLUME control

This control is used for controlling the sound volume.

When set to the [∞] position, sound volume is turned off; when set to the [0] position, sound volume is at a maximum.

⑨ PHONES jack

When using headphones, insert their plug into this jack.

⑩ SUBSONIC filter switch

Use this switch when playing records with coarse grooves. [OFF]

– Released position; leave in this position for normal playback.

[15Hz]

– Depressed position; in this position, frequencies of 15Hz and below are cut, thus eliminating super-low-frequency noise caused by coarse record grooves, and thus helping prevent sound distortion.

⑪ 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 LEFT position and if the left side is louder, turn toward the RIGHT position.

⑫ LINE STRAIGHT switch /indicator

By using this switch, the input signals from the various connected peripheral components can be played back through the amplifier's modifying (tone) circuit, or bypassing those circuits.

When the indicator is lighted, the function is ON. Input signals will bypass the modifying circuits and be played back with pure, flat-balanced tone.

When set to OFF, input signals will pass through the modifying circuits before being played back, thus allowing you to adjust bass and treble tone.

⑬ LOUDNESS switch

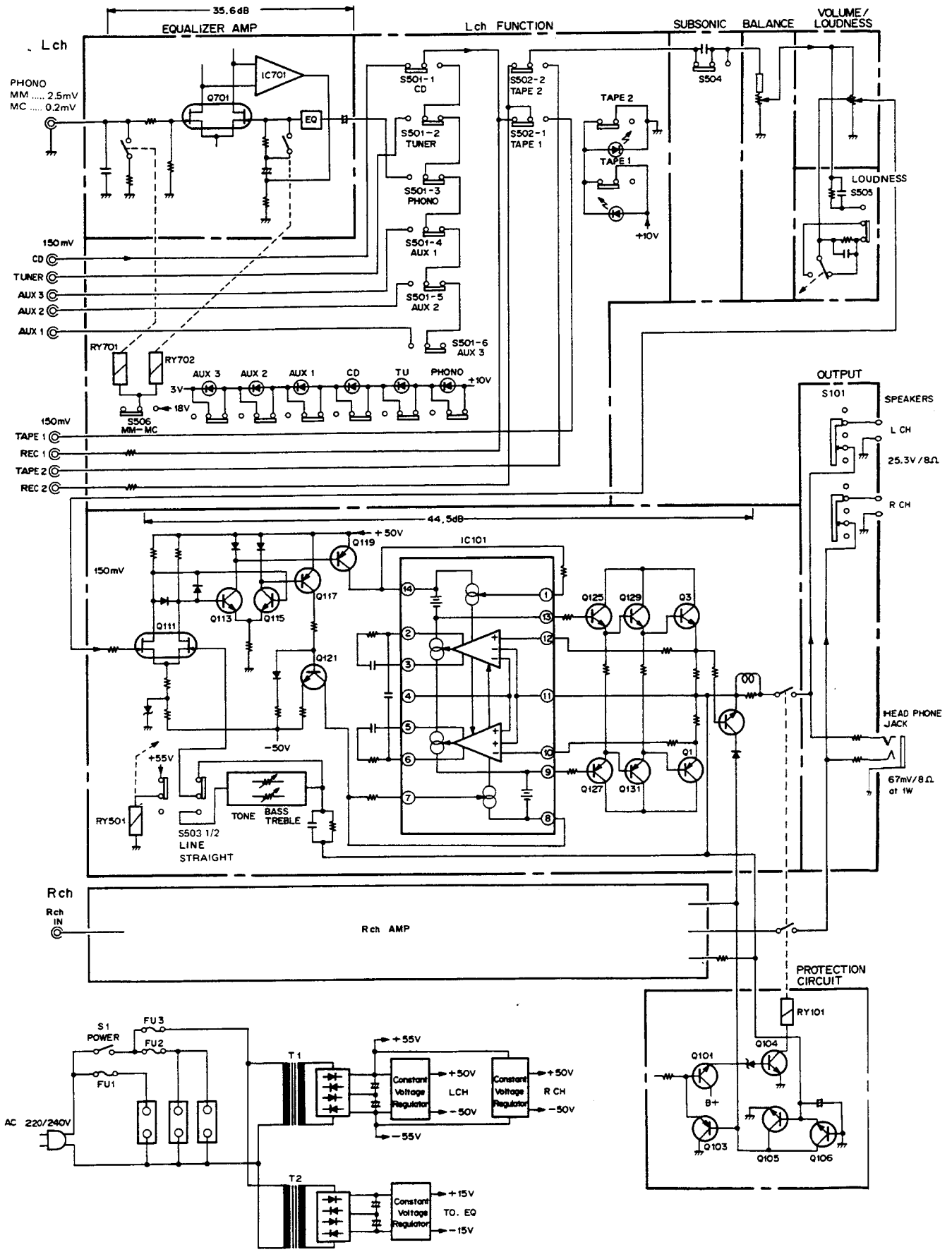
Use when listening at low volume levels.

[OFF] – Released position: Should normally be left in this position.

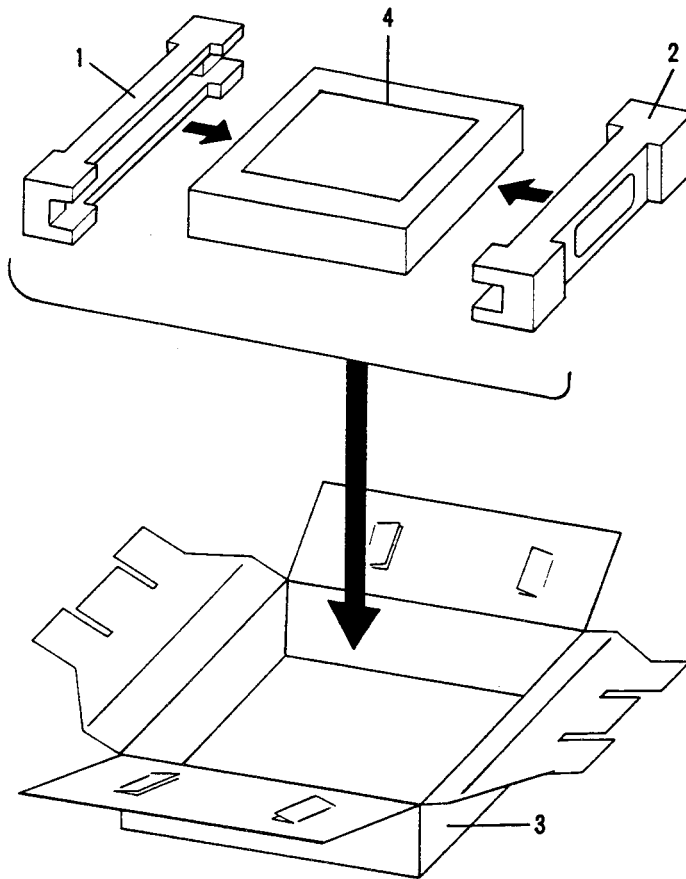
[ON] – Depressed position: Boosts low and high frequencies to give added punch to playback even at low volume.

This function does not operate when the LINE STRAIGHT switch is in the ON position.

3. BLOCK DIAGRAM



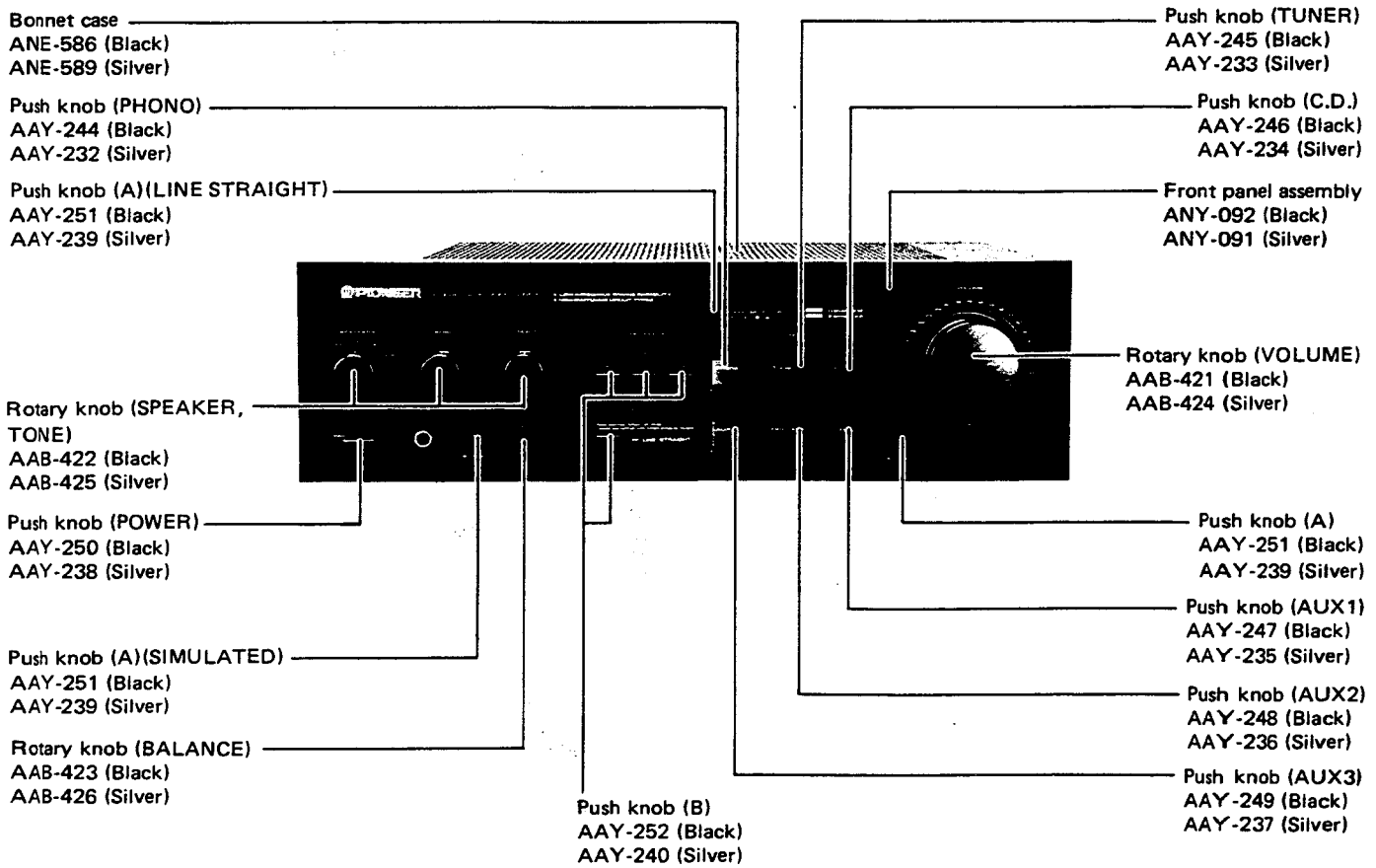
4. PACKING



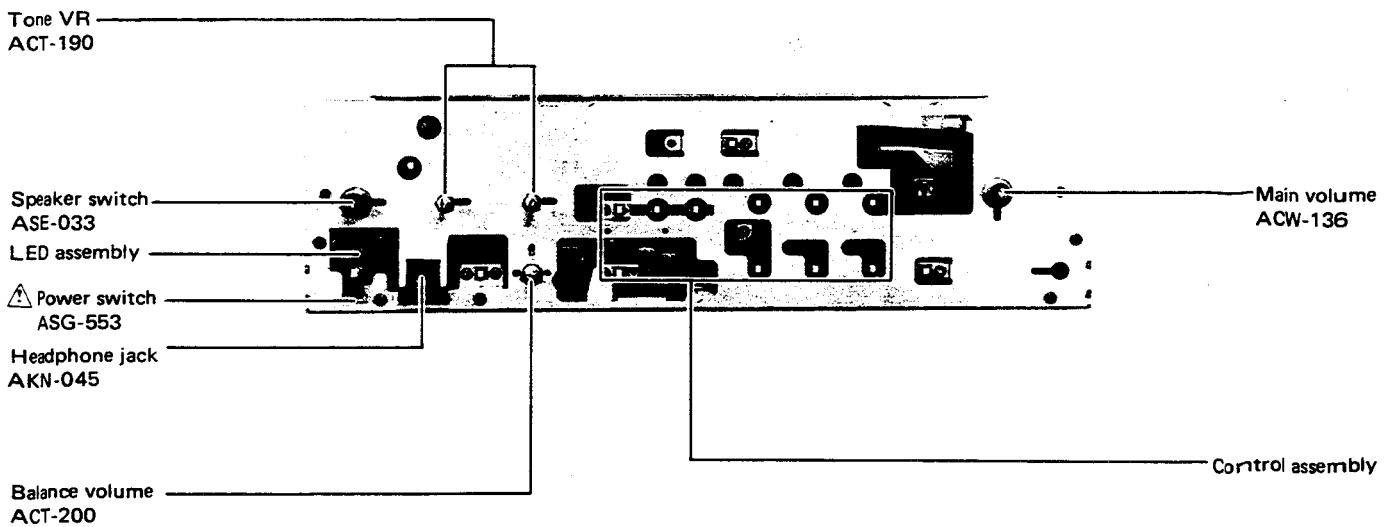
Mark	No.	Part No.	Symbol & Description
	1	AHA-402	Side pad (L)
	2	AHA-403	Side pad (R)
	3	AHE-621	Packing case (Black)
		AHE-620	Packing case (Silver)
	4	ARC-116	Operating instructions

5. PARTS LOCATION

Front Panel View

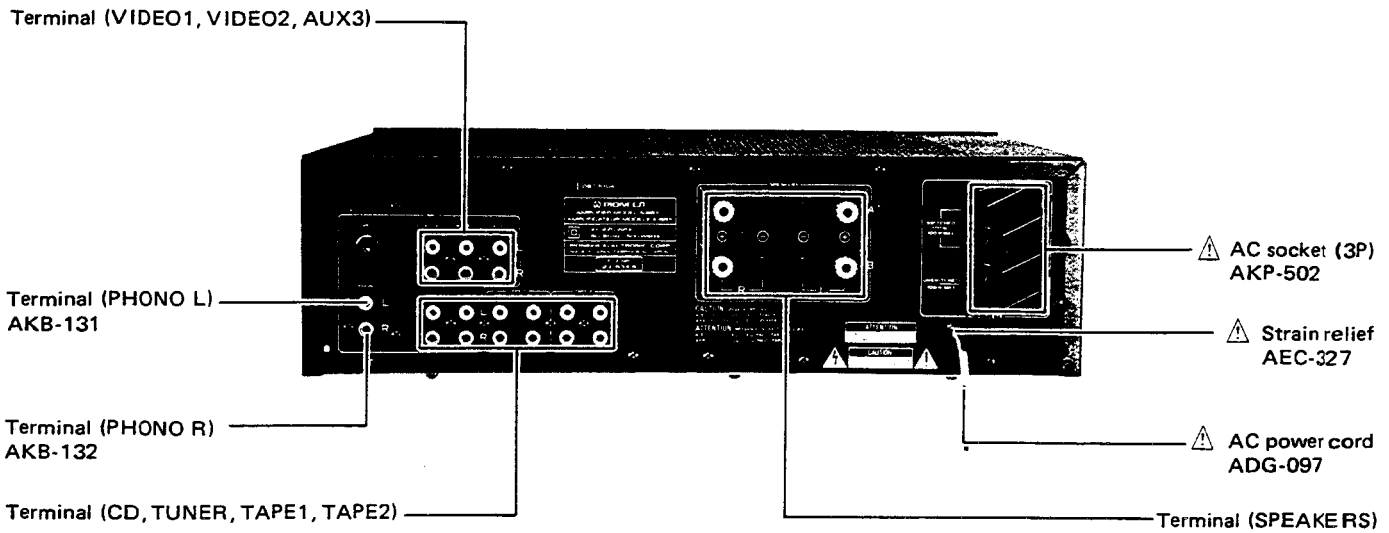


Front View with Panel Removed

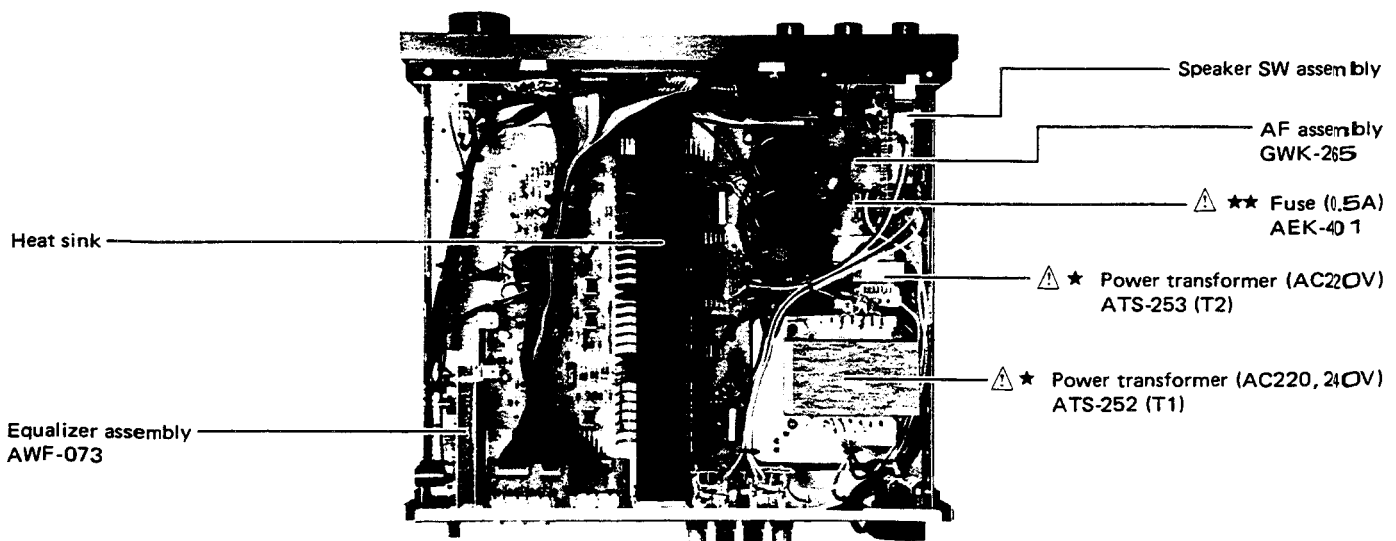


- *Parts without part number cannot be supplied.*
- *The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.*
★★ GENERALLY MOVES FASTER THAN ★.
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Rear Panel View



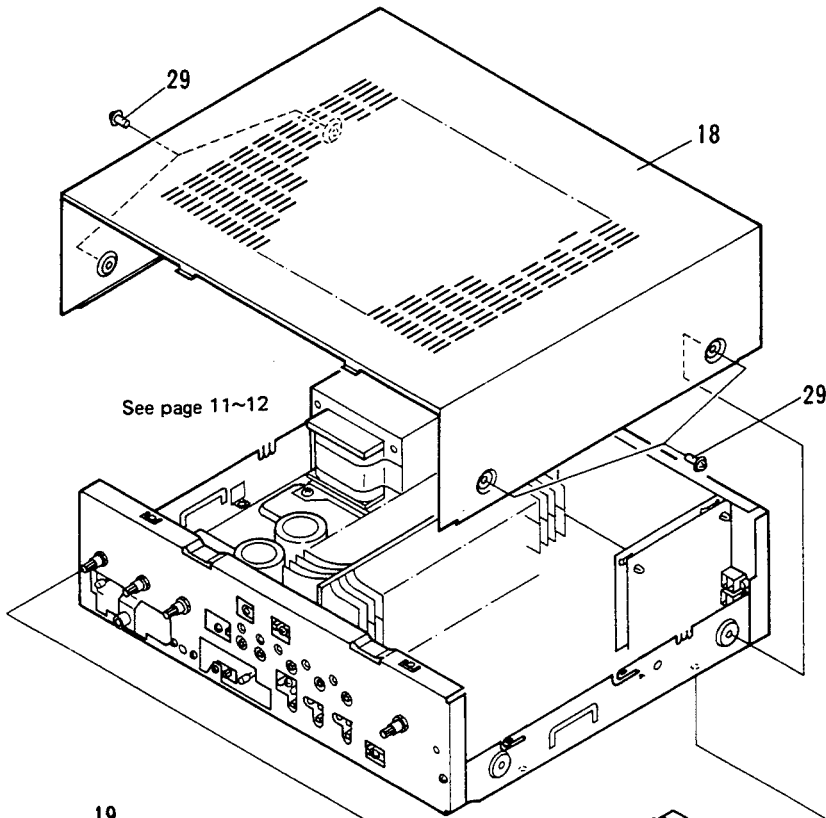
Top View



6. EXPLODED VIEW AND PARTS LIST

Exterior

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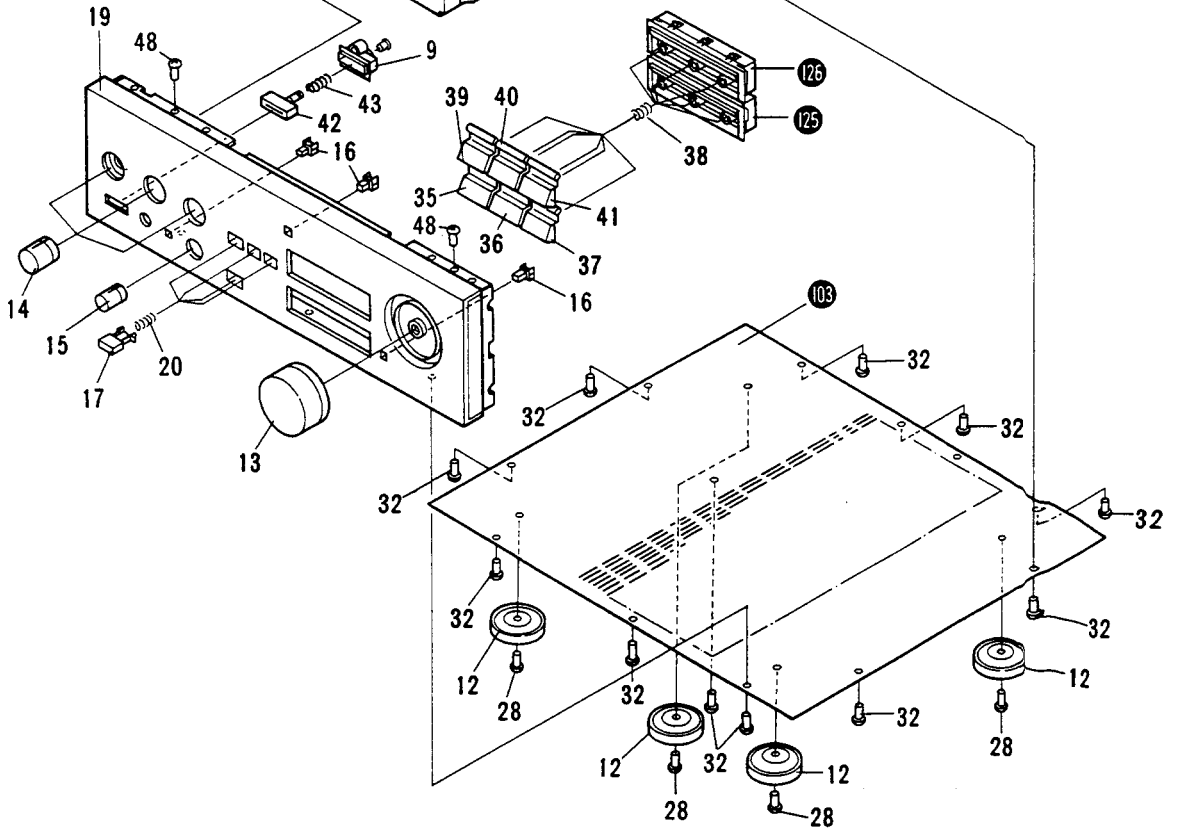


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B

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C



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D

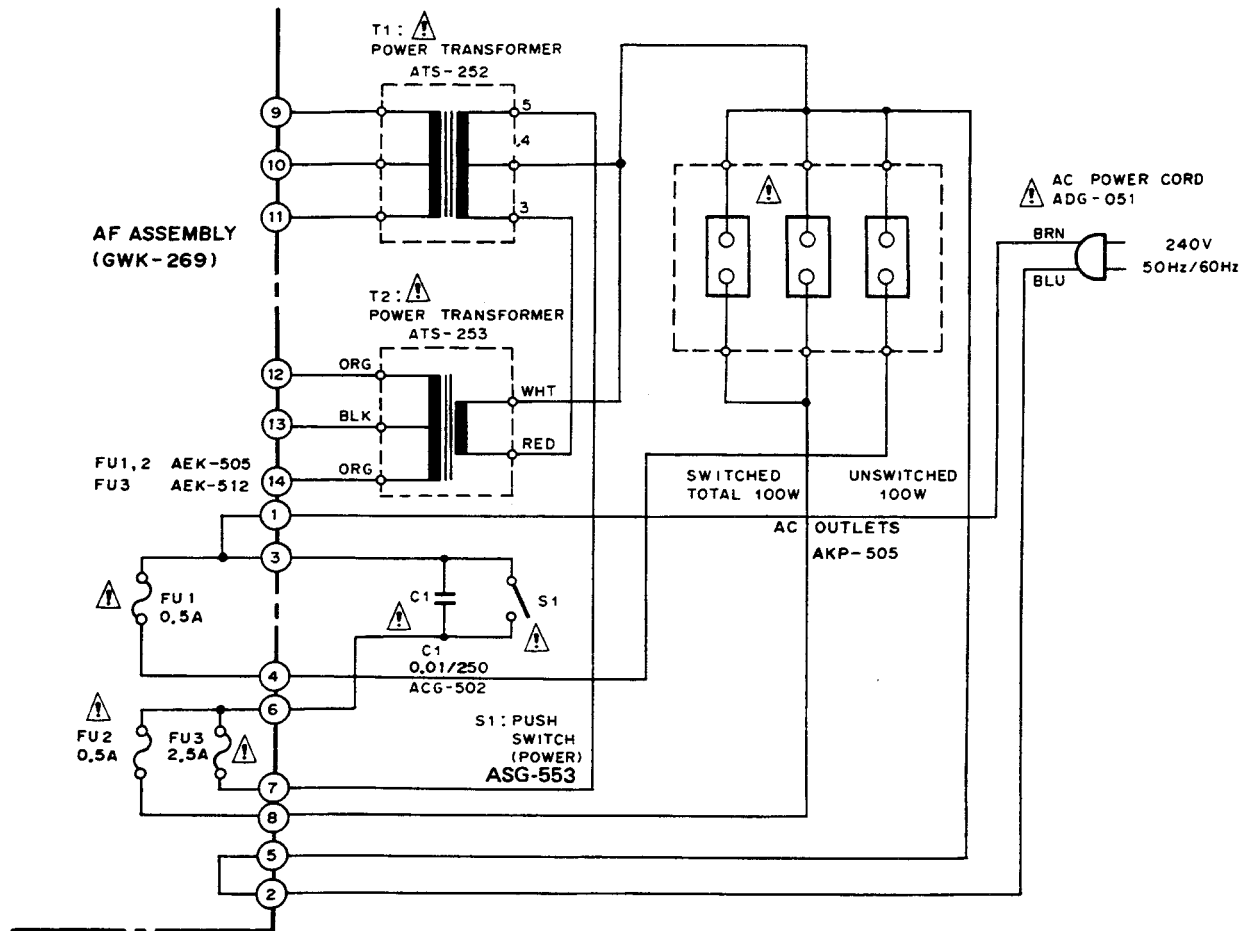
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NOTES:

- Parts without part number cannot be supplied.
- The \triangle 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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.
★★ GENERALLY MOVES FASTER THAN ★.
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AWF-073	Equalizer assembly		37	AAY-247	Push knob (AUX11)(Black)
	2	GWS-576	Control assembly			AAY-235	Push knob (AUX11)(Silver)
	3	GWK-265	AF assembly		38	ABH-159	Coil spring
\triangle ★★	4	2SB1163P-Q (2SB1163P-S)	Q1, Q2 Power transistor*		39	AAY-244	Push knob (PHONO)(Black)
\triangle ★★	5	2SD1718-Q (2SD1718P-S)	Q3, Q4 Power transistor*		40	AAY-232	Push knob (PHONO)(Silver)
						AAY-245	Push knob (TUNER)(Black)
						AAY-233	Push knob (TUNER)(Silver)
*hfe of Q1 - Q4 should have the same value.							
\triangle ★	6	ATS-252	Power transformer (T1) (AC220, 240V)		41	AAY-246	Push knob (CD)(Black)
\triangle ★	7	ATS-253	Power transformer (T2) (AC220V)			AAY-234	Push knob (CD)(Silver)
					42	AAY-250	Power knob (Black)
\triangle	8	AKP-502	AC socket (3P)	\triangle	43	AAY-238	Power knob (Silver)
\triangle ★★	9	ASG-553	Push (POWER)	\triangle	44	ABH-099	Coil spring
\triangle ★★	10	AEK-401	Fuse (0.5A)	\triangle	45	ACE-506	C9 Ceramic capacitor 0.01/AC250V
						ACG-001	C6-C8 Ceramic capacitor 0.01/250V
\triangle ★★	11	AEK-403	Fuse (2.5A)	\triangle	46	ACG-502	C1 Ceramic capacitor 0.01/AC250V
	12	AEP-251	Leg		47	ABA-283	PWB Screw
	13	AAB-421	Rotary knob (VOLUME)(Black)		48	BBZ30P060FMC	Screw
		AAB-424	Rotary knob (VOLUME)(Silver)				
	14	AAB-422	Rotary knob (SPEAKERS)(Black)		101		Terminal (GND)
		AAB-425	Rotary knob (SPEAKERS)(Silver)		102		Panel stay
	15	AAB-423	Rotary knob (BALANCE)(Black)		103		Bottom plate
		AAB-426	Rotary knob (BALANCE)(Silver)		104		Heat sink holder
					105		Heat sink
	16	AAY-251	Push knob (A)(Black)				
		AAY-239	Push knob (A)(Silver)		106		Rear panel
	17	AAY-252	Push knob (B)(Black)		107		Light frame
		AAY-240	Push knob (B)(Silver)		108		Reft frame
	18	ANE-586	Bonnet case (Black)		109		Power switch holder
		ANE-589	Bonnet case (Silver)		110		EQ P.C.B. holder
	19	ANY-092	Front panel assembly (Black)				
		ANY-091	Front panel assembly (Silver)		111		Cushion spacer A
	20	ABH-169	Coil spring		112		Cushion spacer B
\triangle	21	AEC-327	Strain relief		113		P.C.B. support
\triangle	22	AEP-313	Mica sheet		114		Mount plate
	23	ABA-176	Screw		115		Pin jack assembly (A)
	24	ABA-258	Screw				
	25	ABN-028	Nut		116		Headphone jack assembly
					117		Switch assembly
	26	ADG-097	AC power cord		118		Tone volume assembly
	27	BBZ30P060FZK	Screw (3 x 6)		119		Pin jack assembly (B)
	28	BBZ30P080FZK	Screw (3 x 8)		120		Speaker terminal assembly
	29	FBT40P080FZK	Screw (4 x 8)				
	30	NK70FUC	Nut		121		Balance volume assembly
					122		Speaker SW assembly
	31	NK90FUC	Nut		123		LED assembly
	32	VMZ30P060FMC	Screw (3 x 6)		124		Main volume assembly
	33	VTZ40P080FMC	Screw (4 x 8)		125		Push knob assembly (B)(Black)
	34	WA35F100N080	Washer				Push knob assembly (B)(Silver)
	35	AAY-249	Push knob (AUX3)(Black)		126		Push knob assembly (A)(Black)
		AAY-237	Push knob (AUX3)(Silver)				Push knob assembly (A)(Silver)
					127		Power knob assembly (Black)
	36	AAY-248	Push knob (AUX2)(Black)				Power knob assembly (Silver)
		AAY-236	Push knob (AUX2)(Silver)				

Schematic Diagram for HB Type



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 lead from AF assembly terminal No. 7 to T1 as follows:

Voltage	AF assembly Terminal No.	Power Transformer (T1) Terminal No.
240V	7	5
220V	7	3

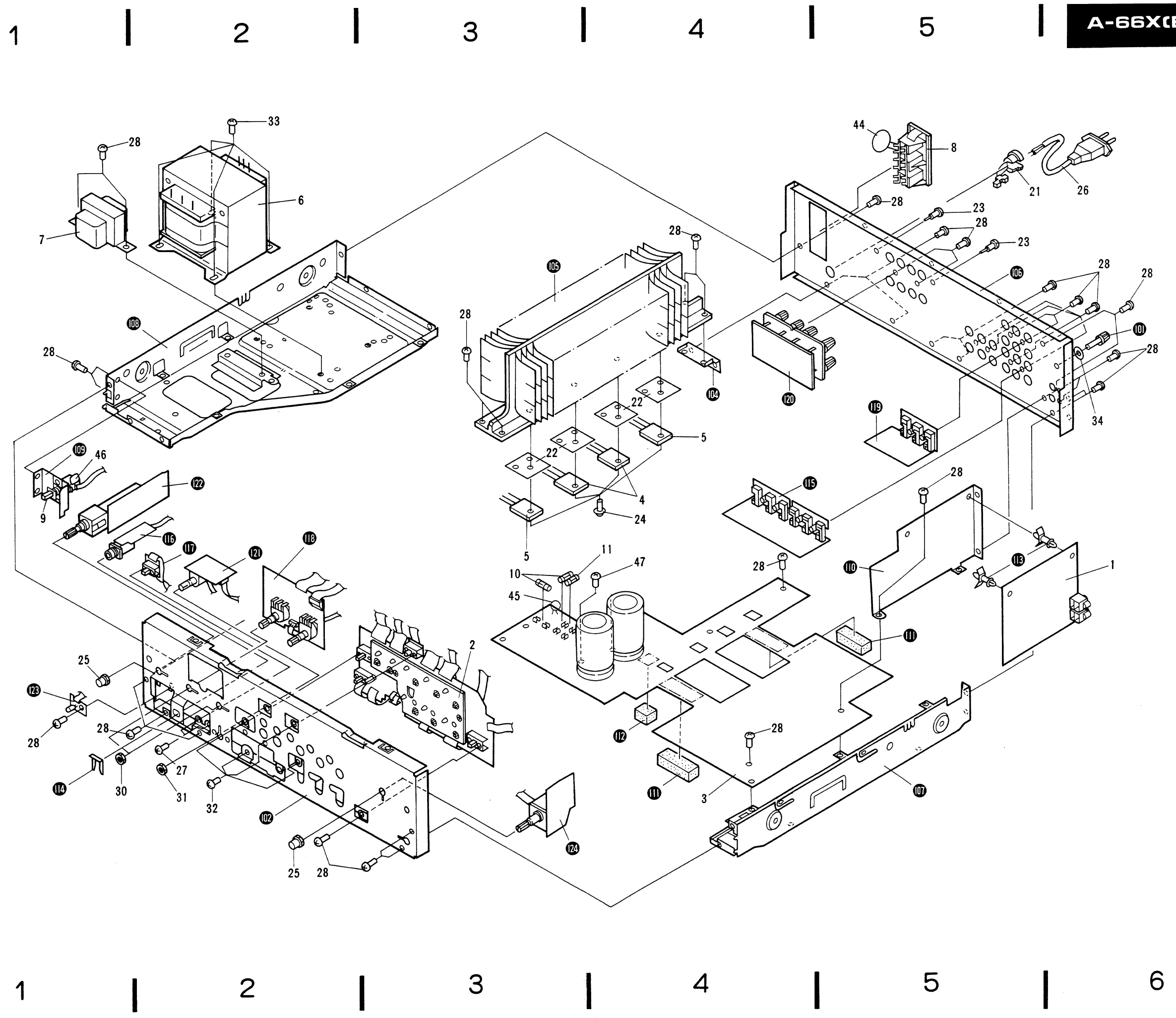
4. Stick the line voltage level on the rear panel.

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

NOTE:

Do not disconnect the lead (RED) from T2 to the T1 power transformer terminal No. 3.

Interior



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6

A

B

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D

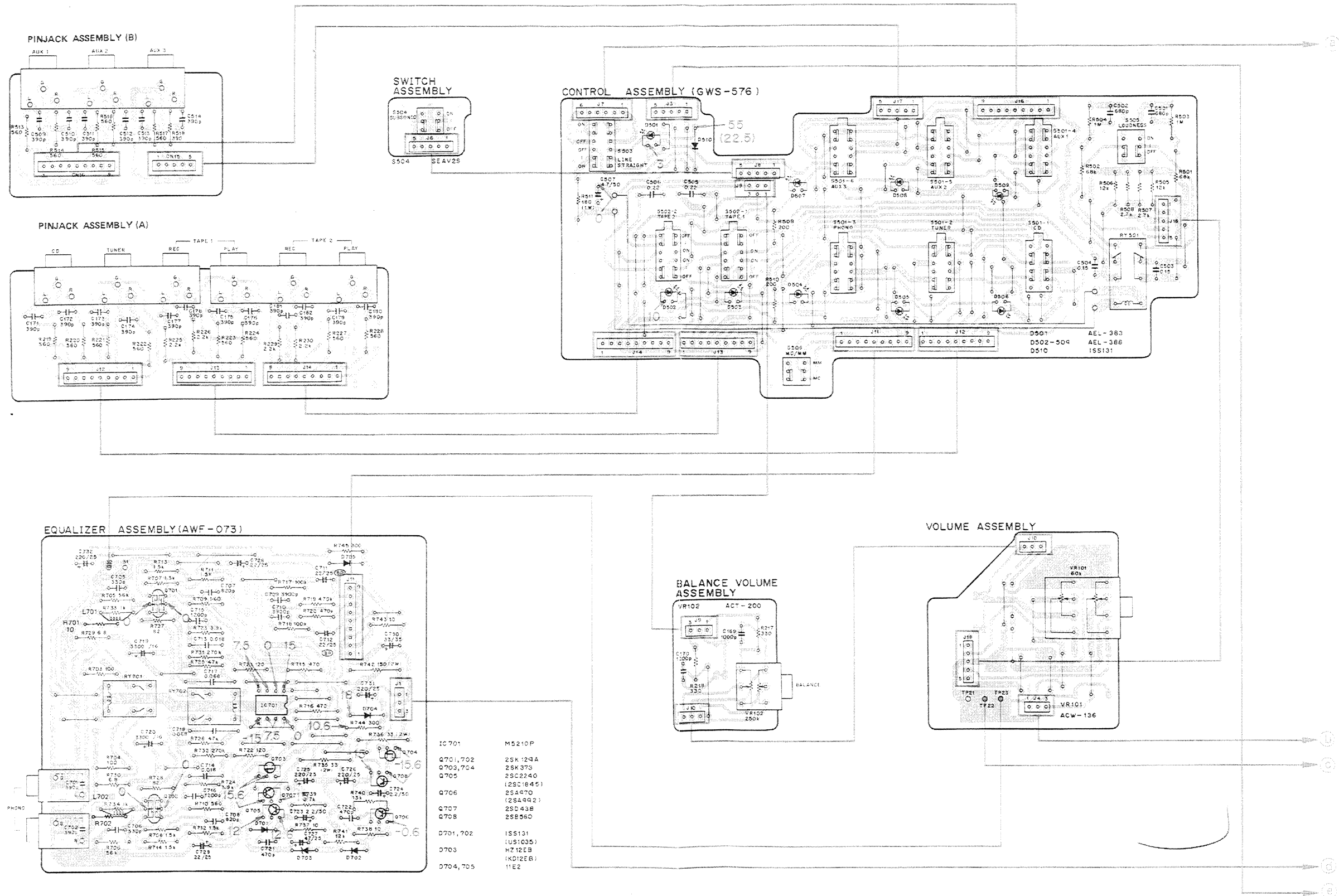
A

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D

7. P.C. BOARDS CONNECTION DIAGRAM



IC 701	M5210P
Q701, 702	2SK 124A
Q703, 704	2SK 373
Q705	2SC 2240
	(2SC 1845)
Q706	2SA 470
	(2SA 402)
Q707	2SC 43B
Q708	2SB 560
Q701, 702	1SS131
Q703	(US1035)
Q704, 705	HZ12EB
	(KD12EB)
	11E2

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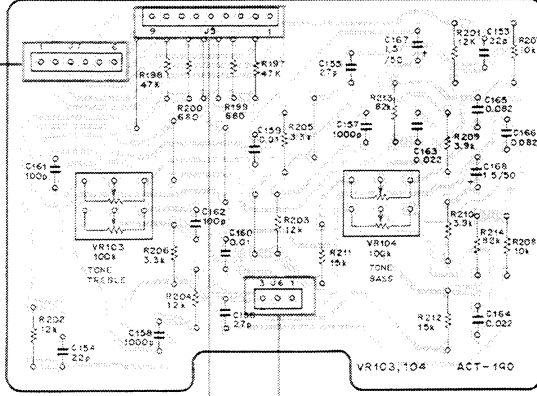
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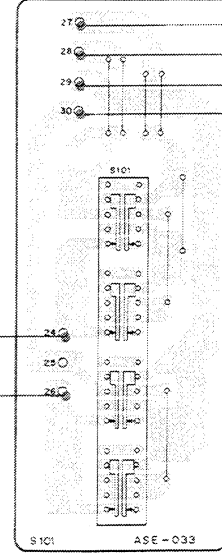
Q111 Q112 Q113 Q114 Q115 Q116 Q117 Q118 Q119 Q120 Q121 Q122 Q123 Q124 Q125 Q126 Q127 Q128 Q129 Q130 Q131 Q132 Q133 Q134 Q135 Q136 Q137 Q138 Q139 Q140 Q141 Q142 Q143 Q144 Q145 Q146 Q147 Q148 Q149 Q150 Q151 Q152 Q153 Q154 Q155 Q156 Q157 Q158 Q159 Q160 Q161 Q162 Q163 Q164 Q165 Q166 Q167 Q168 Q169 Q170 Q171 Q172 Q173 Q174 Q175 Q176 Q177 Q178 Q179 Q180 Q181 Q182 Q183 Q184 Q185 Q186 Q187 Q188 Q189 Q190 Q191 Q192 Q193 Q194 Q195 Q196 Q197 Q198 Q199 Q200 Q201 Q202 Q203 Q204 Q205 Q206 Q207 Q208 Q209 Q210 Q211 Q212 Q213 Q214 Q215 Q216 Q217 Q218 Q219 Q220 Q221 Q222 Q223 Q224 Q225 Q226 Q227 Q228 Q229 Q230 Q231 Q232 Q233 Q234 Q235 Q236 Q237 Q238 Q239 Q240 Q241 Q242 Q243 Q244 Q245 Q246 Q247 Q248 Q249 Q250 Q251 Q252 Q253 Q254 Q255 Q256 Q257 Q258 Q259 Q260 Q261 Q262 Q263 Q264 Q265 Q266 Q267 Q268 Q269 Q270 Q271 Q272 Q273 Q274 Q275 Q276 Q277 Q278 Q279 Q280 Q281 Q282 Q283 Q284 Q285 Q286 Q287 Q288 Q289 Q290 Q291 Q292 Q293 Q294 Q295 Q296 Q297 Q298 Q299 Q300 Q301 Q302 Q303 Q304 Q305 Q306 Q307 Q308 Q309 Q310 Q311 Q312 Q313 Q314 Q315 Q316 Q317 Q318 Q319 Q320 Q321 Q322 Q323 Q324 Q325 Q326 Q327 Q328 Q329 Q330 Q331 Q332 Q333 Q334 Q335 Q336 Q337 Q338 Q339 Q340 Q341 Q342 Q343 Q344 Q345 Q346 Q347 Q348 Q349 Q350 Q351 Q352 Q353 Q354 Q355 Q356 Q357 Q358 Q359 Q360 Q361 Q362 Q363 Q364 Q365 Q366 Q367 Q368 Q369 Q370 Q371 Q372 Q373 Q374 Q375 Q376 Q377 Q378 Q379 Q380 Q381 Q382 Q383 Q384 Q385 Q386 Q387 Q388 Q389 Q390 Q391 Q392 Q393 Q394 Q395 Q396 Q397 Q398 Q399 Q400 Q401 Q402 Q403 Q404 Q405 Q406 Q407 Q408 Q409 Q410 Q411 Q412 Q413 Q414 Q415 Q416 Q417 Q418 Q419 Q420 Q421 Q422 Q423 Q424 Q425 Q426 Q427 Q428 Q429 Q430 Q431 Q432 Q433 Q434 Q435 Q436 Q437 Q438 Q439 Q440 Q441 Q442 Q443 Q444 Q445 Q446 Q447 Q448 Q449 Q450 Q451 Q452 Q453 Q454 Q455 Q456 Q457 Q458 Q459 Q460 Q461 Q462 Q463 Q464 Q465 Q466 Q467 Q468 Q469 Q470 Q471 Q472 Q473 Q474 Q475 Q476 Q477 Q478 Q479 Q480 Q481 Q482 Q483 Q484 Q485 Q486 Q487 Q488 Q489 Q490 Q491 Q492 Q493 Q494 Q495 Q496 Q497 Q498 Q499 Q500 Q501 Q502 Q503 Q504 Q505 Q506 Q507 Q508 Q509 Q510 Q511 Q512 Q513 Q514 Q515 Q516 Q517 Q518 Q519 Q520 Q521 Q522 Q523 Q524 Q525 Q526 Q527 Q528 Q529 Q530 Q531 Q532 Q533 Q534 Q535 Q536 Q537 Q538 Q539 Q540 Q541 Q542 Q543 Q544 Q545 Q546 Q547 Q548 Q549 Q550 Q551 Q552 Q553 Q554 Q555 Q556 Q557 Q558 Q559 Q560 Q561 Q562 Q563 Q564 Q565 Q566 Q567 Q568 Q569 Q570 Q571 Q572 Q573 Q574 Q575 Q576 Q577 Q578 Q579 Q580 Q581 Q582 Q583 Q584 Q585 Q586 Q587 Q588 Q589 Q590 Q591 Q592 Q593 Q594 Q595 Q596 Q597 Q598 Q599 Q600 Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622 Q623 Q624 Q625 Q626 Q627 Q628 Q629 Q630 Q631 Q632 Q633 Q634 Q635 Q636 Q637 Q638 Q639 Q640 Q641 Q642 Q643 Q644 Q645 Q646 Q647 Q648 Q649 Q650 Q651 Q652 Q653 Q654 Q655 Q656 Q657 Q658 Q659 Q660 Q661 Q662 Q663 Q664 Q665 Q666 Q667 Q668 Q669 Q670 Q671 Q672 Q673 Q674 Q675 Q676 Q677 Q678 Q679 Q680 Q681 Q682 Q683 Q684 Q685 Q686 Q687 Q688 Q689 Q690 Q691 Q692 Q693 Q694 Q695 Q696 Q697 Q698 Q699 Q700 Q701 Q702 Q703 Q704 Q705 Q706 Q707 Q708 Q709 Q710 Q711 Q712 Q713 Q714 Q715 Q716 Q717 Q718 Q719 Q720 Q721 Q722 Q723 Q724 Q725 Q726 Q727 Q728 Q729 Q730 Q731 Q732 Q733 Q734 Q735 Q736 Q737 Q738 Q739 Q740 Q741 Q742 Q743 Q744 Q745 Q746 Q747 Q748 Q749 Q750 Q751 Q752 Q753 Q754 Q755 Q756 Q757 Q758 Q759 Q760 Q761 Q762 Q763 Q764 Q765 Q766 Q767 Q768 Q769 Q770 Q771 Q772 Q773 Q774 Q775 Q776 Q777 Q778 Q779 Q780 Q781 Q782 Q783 Q784 Q785 Q786 Q787 Q788 Q789 Q790 Q791 Q792 Q793 Q794 Q795 Q796 Q797 Q798 Q799 Q800 Q801 Q802 Q803 Q804 Q805 Q806 Q807 Q808 Q809 Q810 Q811 Q812 Q813 Q814 Q815 Q816 Q817 Q818 Q819 Q820 Q821 Q822 Q823 Q824 Q825 Q826 Q827 Q828 Q829 Q830 Q831 Q832 Q833 Q834 Q835 Q836 Q837 Q838 Q839 Q840 Q841 Q842 Q843 Q844 Q845 Q846 Q847 Q848 Q849 Q850 Q851 Q852 Q853 Q854 Q855 Q856 Q857 Q858 Q859 Q860 Q861 Q862 Q863 Q864 Q865 Q866 Q867 Q868 Q869 Q870 Q871 Q872 Q873 Q874 Q875 Q876 Q877 Q878 Q879 Q880 Q881 Q882 Q883 Q884 Q885 Q886 Q887 Q888 Q889 Q890 Q891 Q892 Q893 Q894 Q895 Q896 Q897 Q898 Q899 Q900 Q901 Q902 Q903 Q904 Q905 Q906 Q907 Q908 Q909 Q910 Q911 Q912 Q913 Q914 Q915 Q916 Q917 Q918 Q919 Q920 Q921 Q922 Q923 Q924 Q925 Q926 Q927 Q928 Q929 Q930 Q931 Q932 Q933 Q934 Q935 Q936 Q937 Q938 Q939 Q940 Q941 Q942 Q943 Q944 Q945 Q946 Q947 Q948 Q949 Q950 Q951 Q952 Q953 Q954 Q955 Q956 Q957 Q958 Q959 Q960 Q961 Q962 Q963 Q964 Q965 Q966 Q967 Q968 Q969 Q970 Q971 Q972 Q973 Q974 Q975 Q976 Q977 Q978 Q979 Q980 Q981 Q982 Q983 Q984 Q985 Q986 Q987 Q988 Q989 Q990 Q991 Q992 Q993 Q994 Q995 Q996 Q997 Q998 Q999 Q1000

AF ASSEMBLY (GWK-265)

TONE VOLUME ASSEMBLY



SPEAKER SWITCH ASSEMBLY



3

4

5

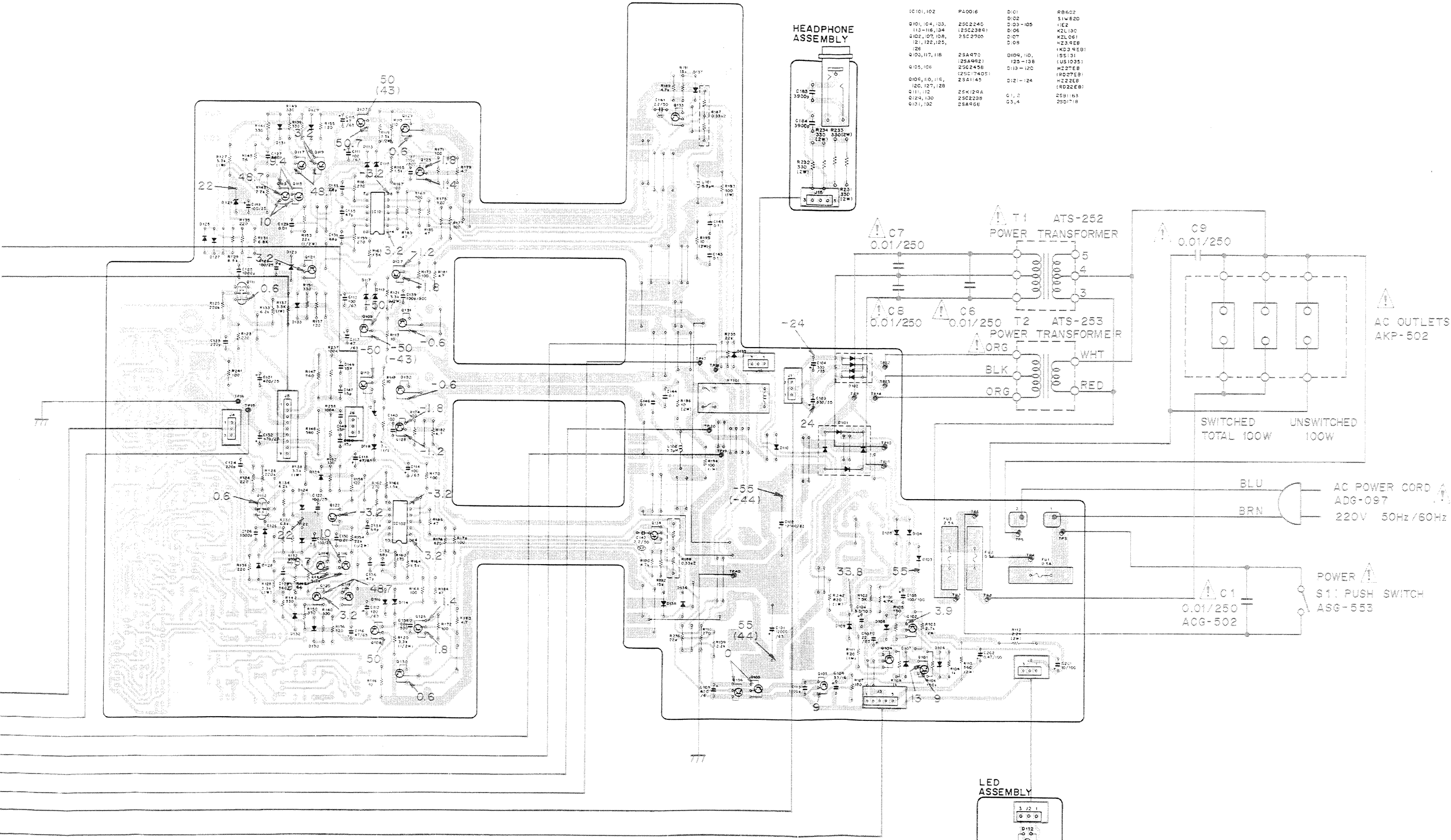
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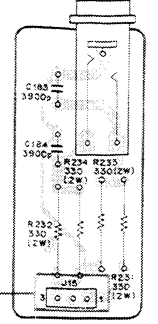
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AF ASSEMBLY (GWK-265)

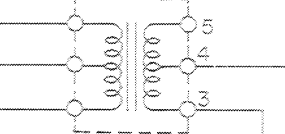


Q101, 104, 103, 113-116, 134 Q102, 107, 108, 121, 122, 123, 126 Q103, 117, 118 Q105, 106 Q104, 110, 114, 120, 127, 128 Q111, 112 Q124, 130 Q121, 132	P40016 25C2245 (25C2386) 25C2705 25A970 25A982 25C2458 (25C17405) 25A1145 25K120A 25C2208 25A908	D101 D102 D103-105 D106 D107 D108 D109 D104, 110, 125-138 D113-120 D121-124 C1, 2 C3, 4	R8652 51W620 1E2 K2L10C K2L061 H235E8 KDC34E81 IS5131 US10351 H207E8 R0207E81 H221E8 R0221E81 25B15E81 25D1718
---	---	---	--

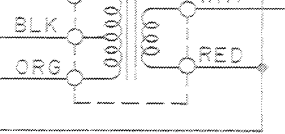
HEADPHONE ASSEMBLY



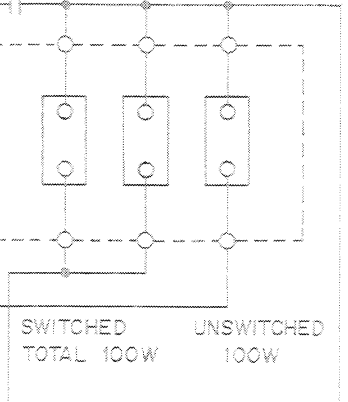
T1 ATS-252 POWER TRANSFORMER



T2 ATS-253 POWER TRANSFORMER



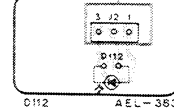
AC OUTLETS AKP-502



AC POWER CORD
ADG-097
220V 50Hz/60Hz

POWER S1: PUSH SWITCH
ASG-553

LED ASSEMBLY



3

4

5

6

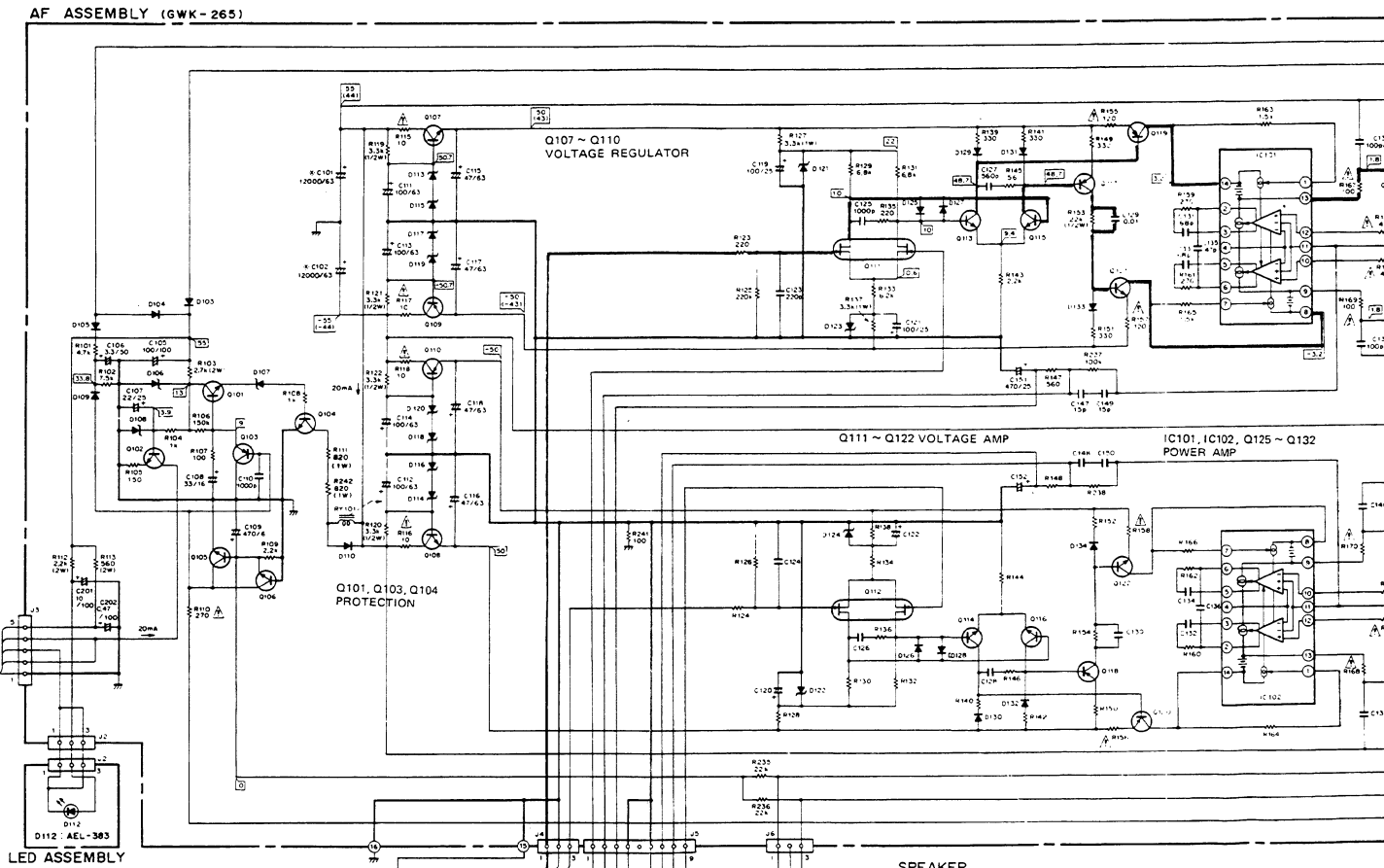
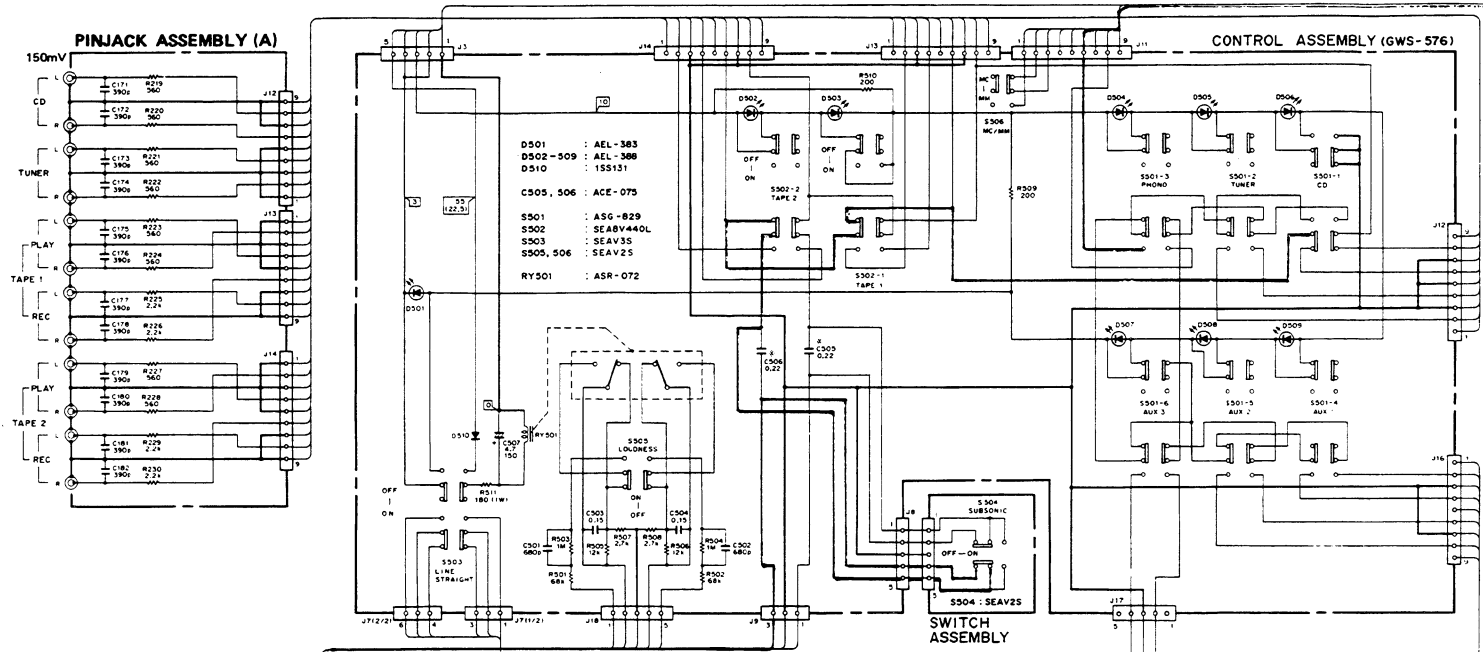
7

8

9

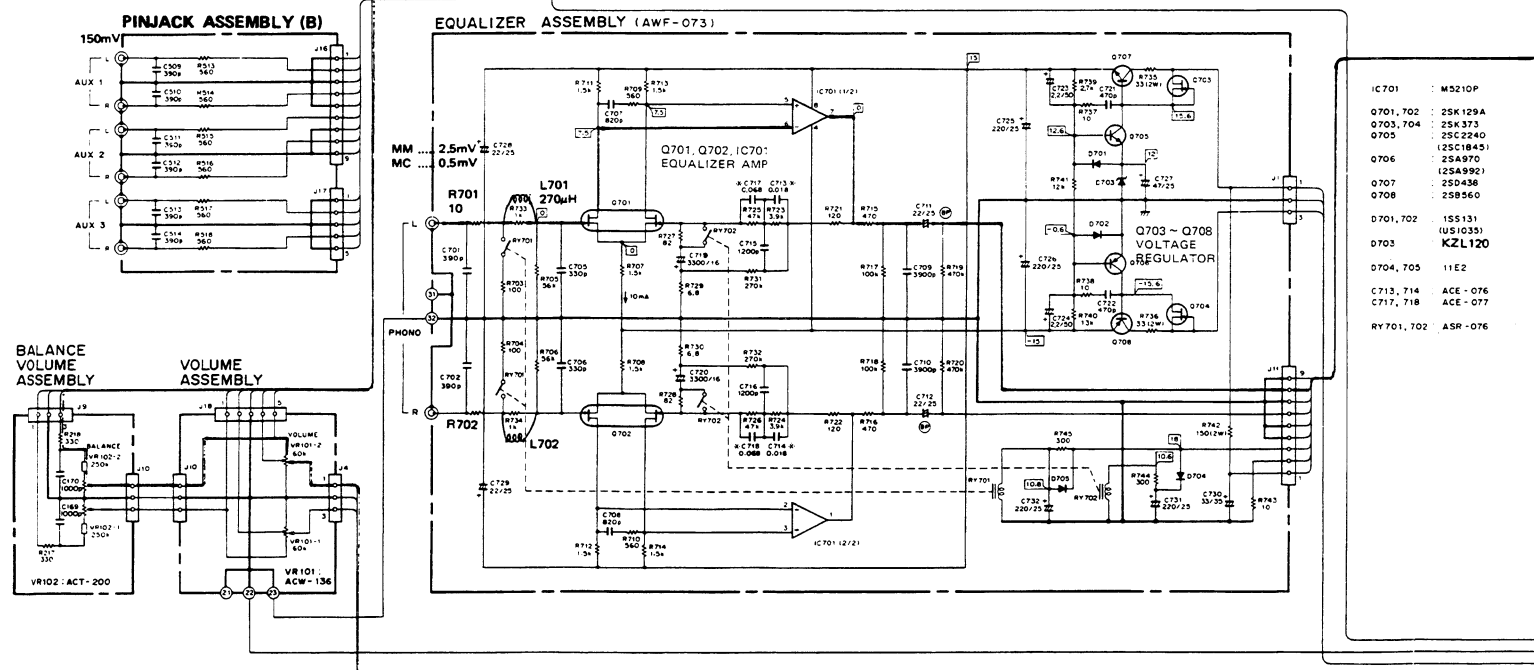
8. SCHEMATIC DIAGRAM

A

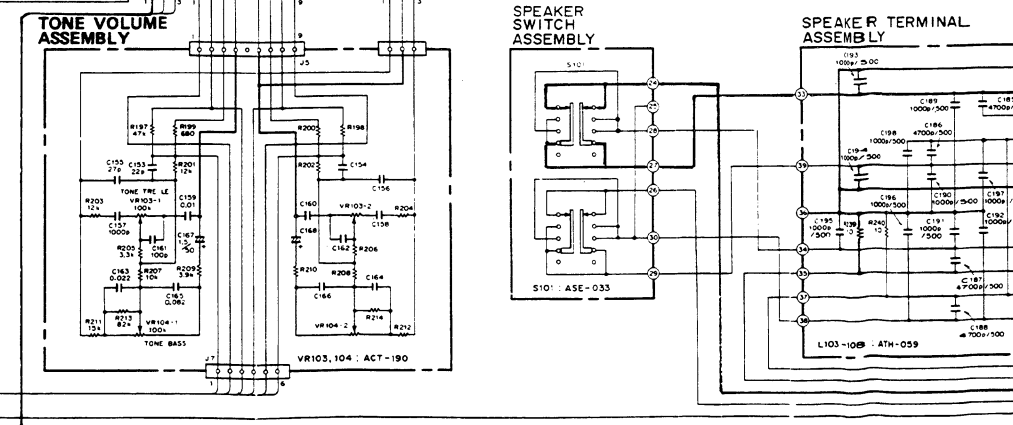


B

C



D



1

2

3

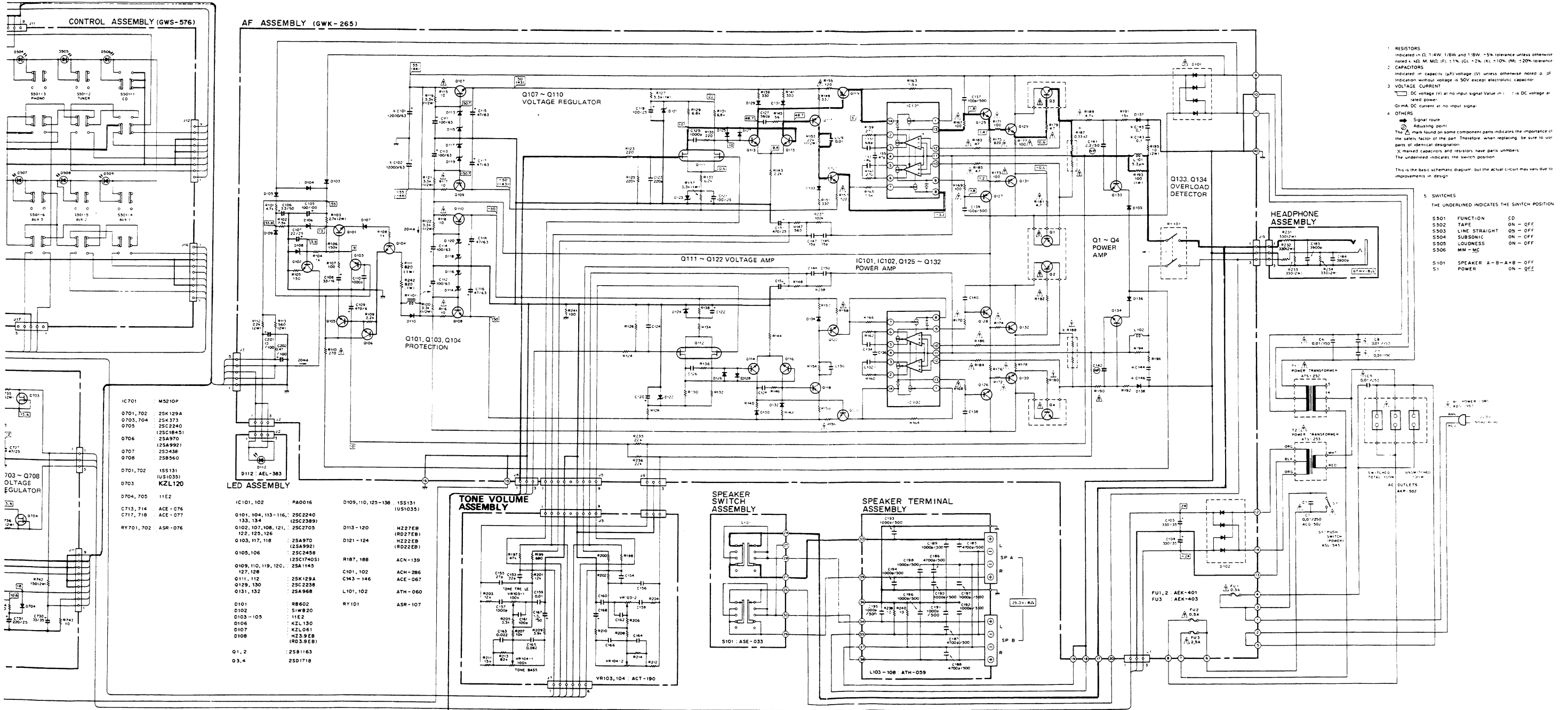
4

5

6

7

NOTE:
 The indicated semiconductors are representative ones only.
 Other alternative semiconductors may be used and are
 listed in the parts list.



A

B

C

D

Schematic Diagram for HE Type

1

2

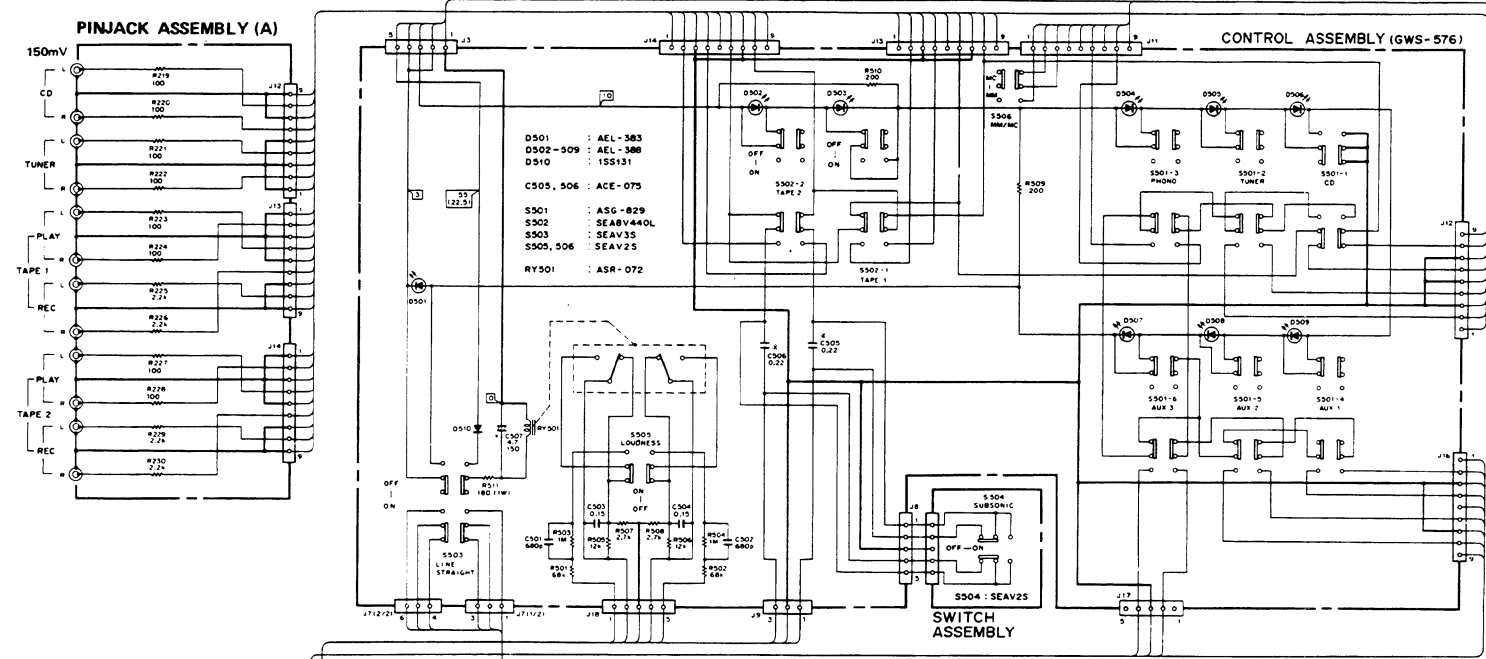
3

4

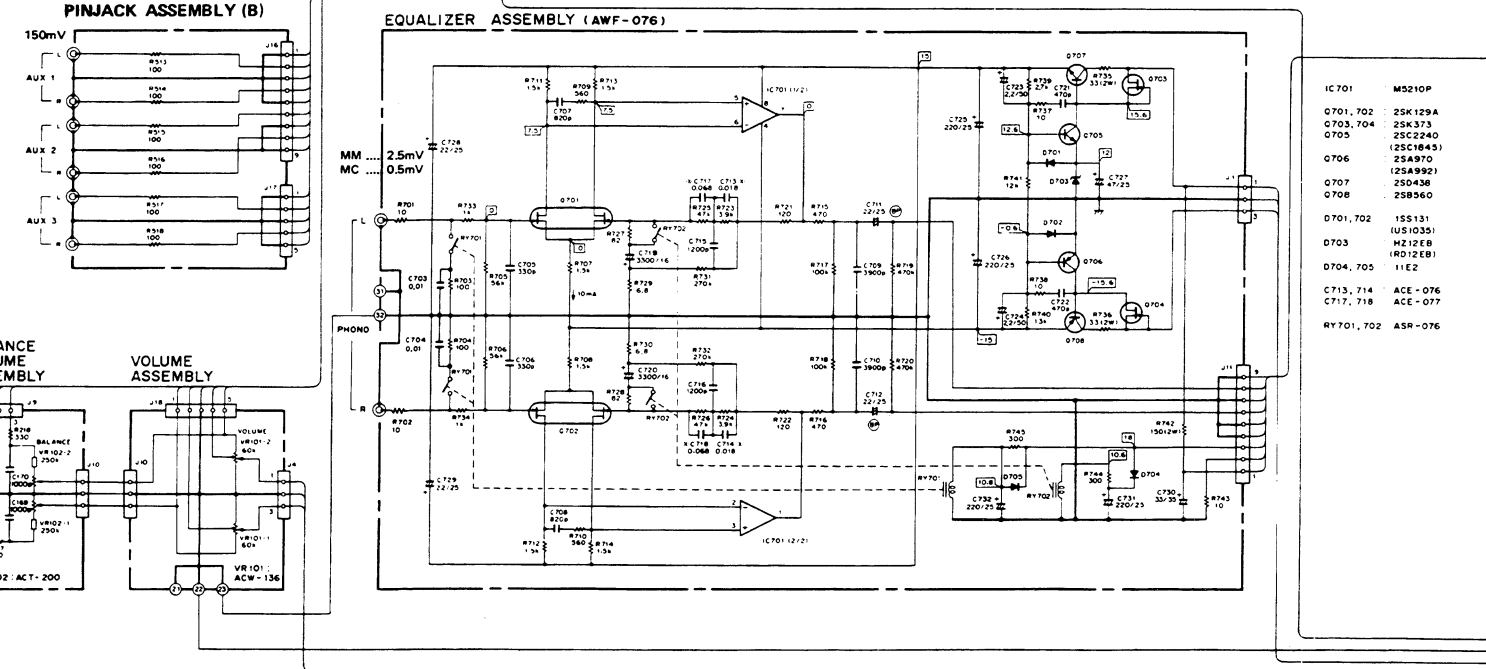
5

6

A



B



C

D

1

2

3

4

5

6

A-66X(BK)/HE, HB, A-66X/HE

P.C. Board Patterns for HE, HB Types

3

4

5

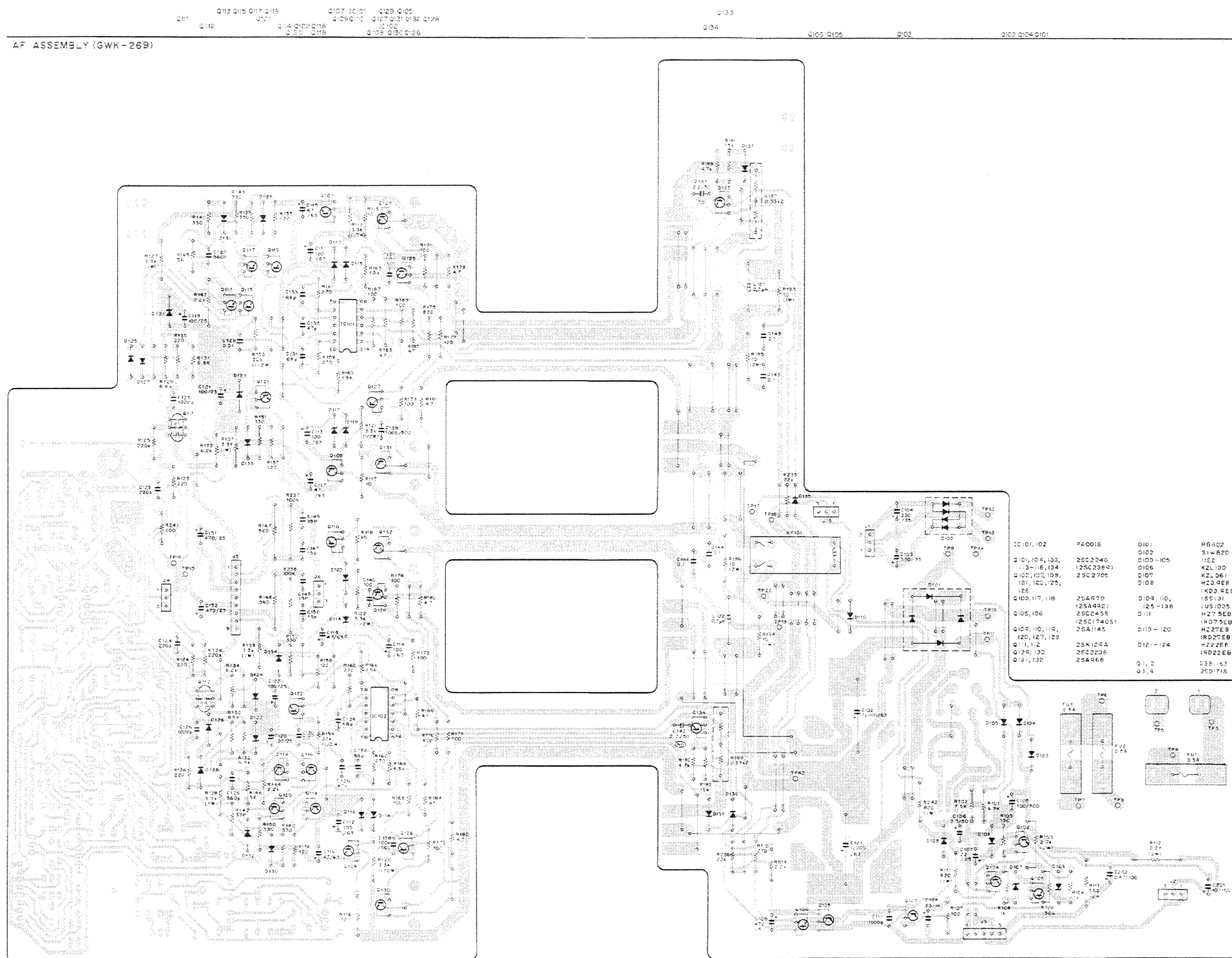
6

A

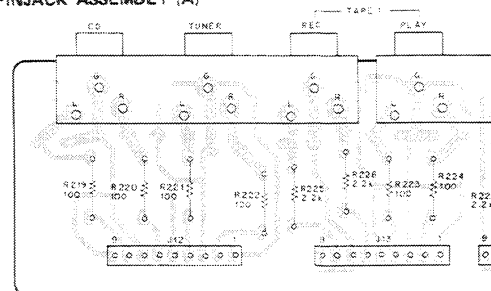
B

C

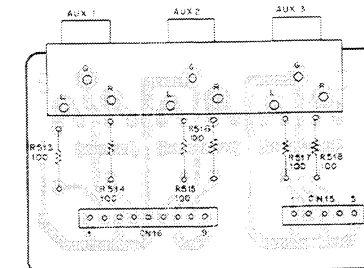
D



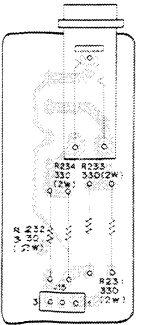
PINJACK ASSEMBLY (A)



PINJACK ASSEMBLY (B)



HEADPHONE ASSEMBLY



1

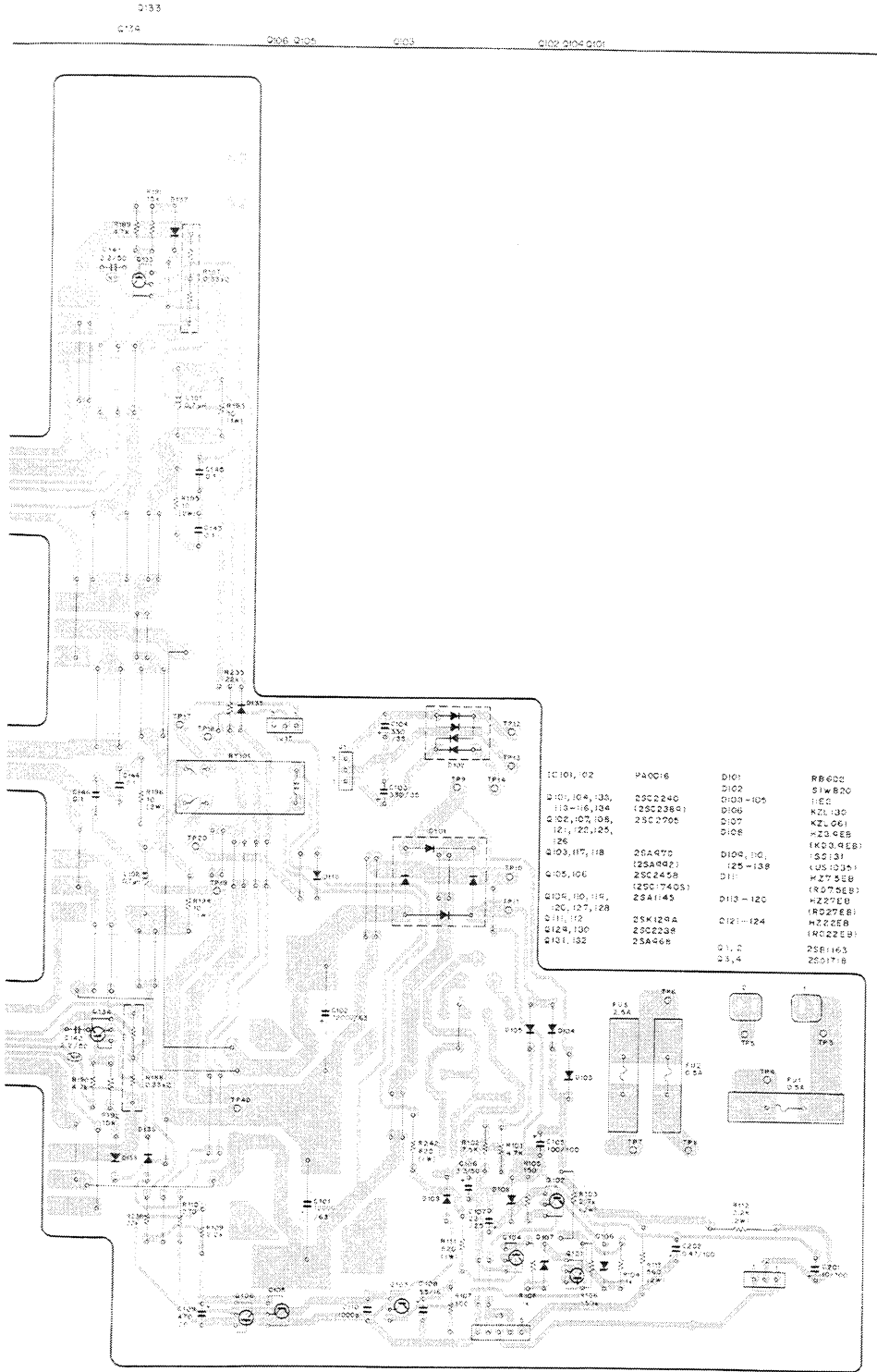
2

3

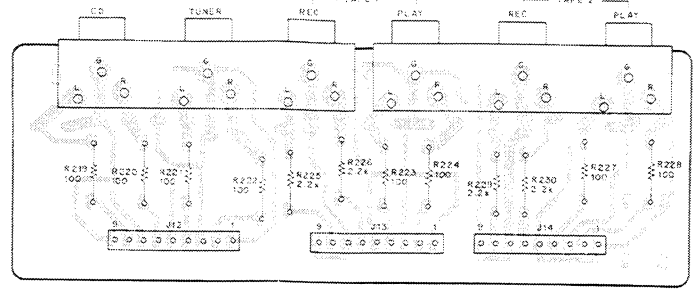
4

5

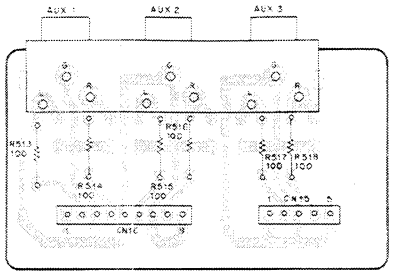
6



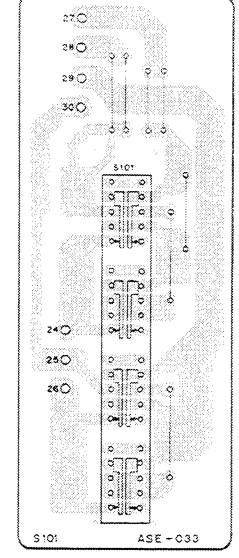
PINJACK ASSEMBLY (A)



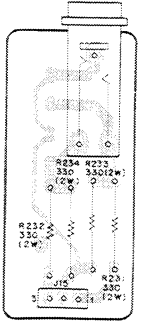
PINJACK ASSEMBLY (B)



SPEAKER SWITCH ASSEMBLY



HEADPHONE ASSEMBLY



A

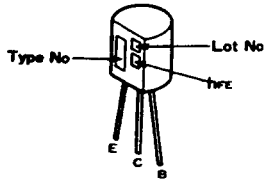
B

C

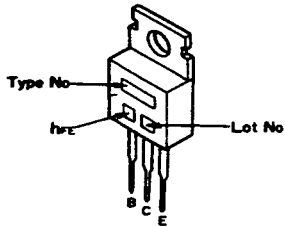
D

External Appearance of Transistors and ICs

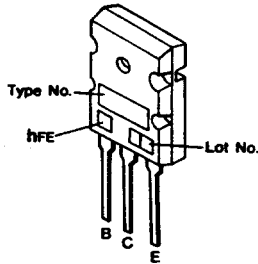
2SA970
2SC2240



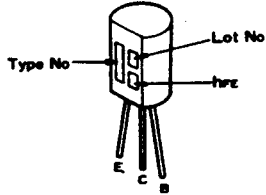
2SA968
2SC2238



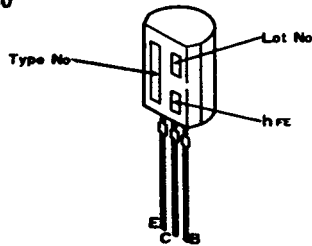
2SB1163P
2SD1718P



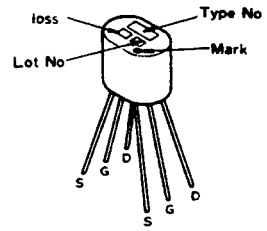
2SA1145
2SC2705



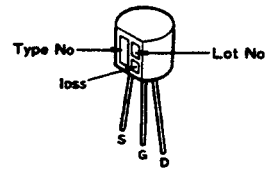
2SB560



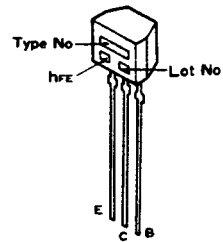
2SK129A



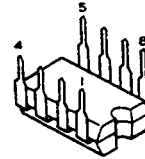
2SK373



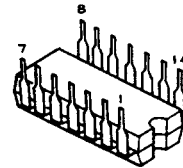
2SC2458



M5210P



PA0016



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 lead from AF assembly terminal No. 7 to T1 as follows:

Voltage	AF assembly Terminal No.	Power transformer (T1) Terminal No.
220V	7	3
240V	7	5

4. Stick the line voltage level on the rear panel.

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

NOTE:

Do not disconnect the lead (RED) from T2 to the T1 power transformer terminal No. 3.

9. ELECTRICAL PARTS LIST

NOTES:

- 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	RD¼PS	561J
47kΩ	47 × 10 ³	473	RD¼PS	473J
0.5Ω	0R5		RN2H	055K
1Ω	010		RS1P	010K

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

5.62kΩ	562 × 10 ¹	5621	RN¼SR	5621F
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- 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.

- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.

★★ GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Equalizer assembly	AWF-073
	Control assembly	GWS-576
	Switch assembly	non supply
	Pin jack assembly (A)	non supply
	AF Assembly	GWK-265
	Tone volume assembly	non supply
	Speaker switch assembly	non supply
	Pin jack assembly (B)	non supply
	Headphone assembly	non supply
	Volume assembly	non supply
	LED Assembly	non supply
	Balance volume assembly	non supply
	Speaker terminal assembly	non supply

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
Δ ★★	Q1, Q2	2SB1163P-Q* (2SB1163P-S)
Δ ★★	Q3, Q4	2SD1718P-Q* (2SD1718P-S)

* hfe of Q1 - Q4 should have the same value.

CAPACITORS

Mark	Symbol & Description	Part No.
Δ	C9 (0.01/AC250V)	ACE-506
Δ	C6, C7, C8 (0.01/AC250V)	ACG-001
Δ	C1 (0.01/AC250V)	ACG-502

OTHERS

Mark	Symbol & Description	Part No.
Δ ★★	T1 Power transformer (AC220V, 240V)	ATS-252
Δ ★★	T2 Power transformer (AC220V)	ATS-253

Mark	Symbol & Description	Part No.
Δ ★★	AC Socket 3P (AC OUTLETS)	AKP-502
Δ	S1 Push switch (POWER)	ASG-553
Δ ★★	FU1, FU2 Fuse (0.5A)	AEK-401
Δ ★★	FU3 Fuse (2.5A)	AEK-403
Δ	AC Power cord	ADG-097

Equalizer Assembly (AWF-073-A)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D703	KZL120
★★	IC701	M5210P
★	D701, D702	1SS131
★	D704, D705	11E2
★★	Q706	2SA970
★★	Q708	2SB560
★★	Q705	2SC2240
★★	Q707	2SD438
★★	Q701, Q702	2SK129A
★★	Q703, Q704	2SK373

RELAY

Mark	Symbol & Description	Part No.
★★	RY701, RY702	ASR-076

COIL

Mark	Symbol & Description	Part No.
	L701, L702	ATH-132

CAPACITORS

Mark	Symbol & Description	Part No.
	C713, C714 (0.018μF)	ACE-076

Mark	Symbol & Description	Part No.
	C717, C718 (0.068μF)	ACE-077
	C723, C724	CEAS2R2M50
	C728, C729	CEAS220M25
	C725, C726, C731, C732	CEAS221M25
	C730	CEAS330M35
	C727	CEAS470M25
	C711, C712	CEXANP220M25
	C719, C720	CEYA332M16
	C705, C706	CKCYB331K50
	C721, C722	CKCYB471K50
	C707, C708	CKCYB821K50
	C701, C702	CKDYB391K50
	C715, C716	CQMA122J50
	C709, C710	CQMA392J50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R723 - R726	RDR1/4PM□□□□F
	R727 - R730	RDR1/4PM□□□J
	R701 - R722, R731 - R734,	RD1/4PM□□□J
	R737 - R741, R743 - R745	
	R742	RS2LMF151J
	R735, R736	RS2LMF330J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal (PHONO L)	AKB-131
	Terminal (PHONO R)	AKB-132

Control Assembly (GWS-576)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D501 (LINE STRAIGHT)	AEL-383
★	D502 - D509 (TAPE2, TAPE1, PHONO TUNER, CD, AUX3, AUX2, AUX1)	AEL-388
★	D510	1SS131

SWITCHES, RELAY

Mark	Symbol & Description	Part No.
★★	S501 (FUNCTION)	ASG-829
★★	RY501	ASR-072
★★	S505, S506 (LOUDNESS, MM-MC)	SEAV2S
★★	S503 (LINE STRAIGHT)	SEAV3S
★★	S502 (TAPE)	SEA8V440L

CAPACITORS

Mark	Symbol & Description	Part No.
	C505, C506 (0.22μ)	ACE-075
	C507	CEAS4R7M50
	C501, C502	CKDYB681K50
	C503, C504	CQMA154K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R501 - R510	RD1/4PM□□□J
	R511	RSILMF181J

OTHERS

Mark	Symbol & Description	Part No.
	Screw	PMZ30P060FZK

Switch Assembly

SWITCH

Mark	Symbol & Description	Part No.
	S504 (SUBSONIC)	SEAV2S

Pin Jack Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C509 - C514	CKDYB391K50

RESISTORS

Mark	Symbol & Description	Part No.
	R513 - R518	RD1/4PM561J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal (VIDEO1, VIDEO2, AUX3)	AKB-117

Tone Volume Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C161, C162	CCCSL101J50
	C153, C154	CCCSL220J50
	C155, C156	CCCSL270J50
	C167, C168	CEAS1R5M50
	C157, C158	CQMA102J50
	C159, C160	CQMA103J50
	C163, C164	CQMA223J50
	C165, C166	CQMA823J50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR103, VR104 (TONE BASS, TREBLE)	ACT-190
	R197 - R214	RD1/4PM □□□J

AF Assembly (GWK-265)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D121 - D124	HZ22EB
★	D113 - D120	HZ27EB
★	D108	HZ3.9EB
★	D107	KZL061
★	D106	KZL130
★★	IC101, IC102	PA0016
△ ★	D101	RB602
★	D102	SIWB20
★	D109, D110, D125 - D138	1SS131
★	D103 - D105	11E2
★★	Q109, Q110, Q119, Q120, Q127, Q128	2SA1145
★★	Q131A, Q132A	2SA968
★★	Q103, Q117, Q118	2SA970
★★	Q129A, Q130A	2SC2238
★★	Q101, Q104, Q113 - Q116, Q133, Q134	2SC2240
★★	Q105, Q106	2SC2458
★★	Q102, Q107, Q108, Q121, Q122, Q125, Q126	2SC2705
	Q111, Q112	2SK129A

RELAY

Mark	Symbol & Description	Part No.
★★	RY101	ASR-107

COIL

Mark	Symbol & Description	Part No.
	L101, L102 (5.3μH)	ATH-060

CAPACITORS

Mark	Symbol & Description	Part No.
	C143 - C146 (0.1μ/150V)	ACE-067
	C101, C102 (12000/63V)	ACH-286
	C137 - C140	CCCSL101K500
	C135, C136	CCCSL470J50
	C131 - C134	CCCSL680J50
	C141, C142	CEANP2R2M50
	C202	CEASR47M100
	C201	CEAS100M100
	C105	CEAS101M100
	C119 - C122	CEAS101M25

Mark	Symbol & Description	Part No.
	C111 - C114	CEAS101M63
	C107	CEAS220M25
	C106	CEAS3R3M50
	C108	CEAS330M16
	C103, C104	CEAS331M35
	C115 - C118	CEAS470M63
	C109	CEAS471M6
	C151, C152	CEYA471M25
	C110, C125, C126	CKCYB102K50
	C127, C128	CKCYB561K50
	C147 - C150	CMA150J500
	C129, C130	COMA103K50
	C123, C124	CQSXA221J160

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R187, R188	ACN-139
	R147, R148, R237, R238	RDH1/4P □□□J
	R119 - R122, R153, R154	RD1/2PM □□□J
△	R175, R176	RD1/4PMFL821J
△	R189, R190	RD1/4PMF472J
	R101, R102, R104 - R109, R123 - R126, R129 - R136, R139 - R146, R149 - R152, R159 - R166, R191, R192, R235, R236, R241	RD1/4PM □□□J
△	R110, R115 - R118, R155 - R158, R167 - R174, R177 - R186, R127, R128, R137, R138, R193, R194, R242, R111	RFA1/4PS □□□J
	R103, R112, R113, R195, R196	RSILMF □□□J
		RS2LMF □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Screw	PBZ30P06OFMC

Speaker Switch Assembly

SWITCH

Mark	Symbol & Description	Part No.
★★	S101 (SPEAKERS)	ASE-033

Pin Jack Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C171 - C182	CKCYB391K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R219 - R230	RD1/4PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal (CD, TUNER, TAPE1, TAPE2)	AKB-117

Balance Volume Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C169, C170	CQMA102J50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR102 (MAIN VOLUME) R217, R218	ACT-200 RD1/4PM331J

Volume Assembly

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR101 (BALANCE)	ACW-136

LED Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★	D112 (POWER)	AEL-383

Headphone Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C184, C193	CKDYB392K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R231 - R234	RS2LMF331J

OTHERS

Mark	Symbol & Description	Part No.
	Jack (PHONES)	AKN-045

Speaker Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C189 - C198 C185 - C188	CKCYB102K500 CKDYB472K500

RESISTORS

Mark	Symbol & Description	Part No.
	R239, R240	RD1/4PM100J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal (SPEAKERS)	AKE-052

10. FOR HE AND HB TYPES

- Parts without part number cannot be supplied.
- The \triangle 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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.
★★ GENERALLY MOVES FASTER THAN ★.
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

A-66X/HE and HB types are the same as the A-66X [BK]/HEZ type except for following sections.

Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.			Remarks
		HEZ type	HE type	HB type	
	AF assembly	GWK-265	GWK-269	GWK-269	
	Pin jack assembly (A)	Non supply	Non supply	Non supply	
	Headphone assembly	Non supply	Non supply	Non supply	
	Speaker terminal assembly	Non supply	.....	.....
	Equalizer assembly	AWF-073	AWF-076	AWF-076	
	Pin jack assembly (B)	Non supply	Non supply	Non supply	
	8P speaker terminal	.....	AKE-055	AKE-055	
\triangle	AC outlets	AKP-502	AKP-502	AKP-505	
\triangle ★★	FU1, F2 Fuse (0.5A)	AEK-401	AEK-401	.....
\triangle ★★	FU1, F2 Fuse (0.5A)	.....	.....	AEK-505	
\triangle ★★	FU3 Fuse (2.5A)	AEK-403	AEK-403	.....
\triangle ★★	FU3 Fuse (2.5A)	.....	.....	AEK-512	
	Operating instructions (German)	ARC-116	.....	.....
	Operating instructions (English/French/German/Italian)	.....	ARE-159	.....
	Operating instructions (English)	.....	.....	ARB-713	
\triangle	Strain relief	AEC-327	AEC-882	AEC-882	
\triangle	AC power cord	ADG-097	ADG-041	ADG-051	
\triangle	C6 - C8 Ceramic capacitor (0.1/250V)	ACG-001	.....	.....
\triangle	C9 Ceramic capacitor (0.1/250V)	ACE-504	.....	.....

AF Assembly (GWK-269)

The AF Assembly (GWK-269) is the same as the (GWK-265) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		GWK-265	GWK-269	
	L101, L102 Coil R193, R194	ATH-060 RS1LMF101J	ATH-110 RS1LMF100J	

Pin Jack Assembly (A)

The Pin Jack Assembly (HE and HB types) are the same as the (HEZ type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HEZ type	HE and HBtypes	
	C171 – C182 R219 – R228	CKCYB391K50 RD1/4PM561J	..... RD1/4PM101J	

Headphone Assembly

The Headphone Assembly (HE and HB types) are the same as the (HEZ type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HEZ type	HE and HB types	
	C183, C184	CKDYB392K50	.....

Pin Jack Assembly (B)

The Pin Jack Assembly (HE and HB types) are the same as the (HEZ type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HEZ type	HE and HBtypes	
	C509 – C514 R513 – R518	CKDYB391K50 RD1/4PM561J	..... RD1/4PM101J	

Equalizer Assembly (AWF-076)

The Equalizer Assembly (AWF-076) is the same as the (AWF-073) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWF-073	AWF-076	
	C701, C702 C703, C704 L701, L702 R733, R734	CKDYB391K50 ATH-132 RD1/4P102J	..... CQMA103J50	