

# Service Manual

**CIRCUIT DESCRIPTIONS  
REPAIR & ADJUSTMENTS**



For Service Manuals Contact  
MAURITRON TECHNICAL SERVICES  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
Tel:- 01844-351694 Fax:- 01844-352554  
Email:- enquiries@mauritron.co.uk

**ORDER NO.  
ARP-298-0**

**STEREO AMPLIFIER**

# SA-940

MODEL SA-940 COMES IN SEVEN VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	AC120V only	U.S.A. model
HE	AC220V, 240V (switchable)	European continent model
HB	AC220V, 240V (switchable)	United Kingdom model
S	AC110V, 120V, 220V, 240V (switchable)	General export model
S/G	AC110V, 120V, 220V, 240V (switchable)	U.S. Military model
YP	AC240V only	Australia model
HEZ	AC220V, 240V (switchable)	West Germany model

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**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan  
**PIONEER ELECTRONICS (USA) INC.** 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.  
**PIONEER ELECTRONIC (EUROPE) N.V.** Keetberglaan 1, 2740 Beveren, Belgium  
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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# 1. SPECIFICATIONS

## Amplifier Section

Continuous Power Output is 70 watts\* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.009% total harmonic distortion.

DIN, Continuous Power Output at 1 kHz (both channels driven)	
T.H.D. 1%, 8 ohms	87 watts per channel
Total Harmonic Distortion (20 Hertz to 20,000 Hertz, 8 ohms, from CD/AUX)	
continuous rated power output	No more than 0.009%
70 watts per channel power output	No more than 0.009%
Damping Factor (1,000 Hertz, 8 ohms)	
	60
Input (Sensitivity/Impedance)	
PHONO	2.5 mV/50 kilohms
TUNER, CD/AUX, TAPE PLAY, ADAPTOR IN	150 mV/50 kilohms
Phono Overload Level (T.H.D. 0.1%, 1,000 Hz)	
PHONO	150 mV
Output (Level)	
TAPE REC, ADPTOR OUT	150 mV
Speaker	6 — 16 Ω
Frequency Response	
PHONO (RIAA Equalization)	20 Hz to 20,000 Hz $\pm 0.2$ dB
TUNER, CD/AUX, TAPE PLAY, ADAPTOR	10 Hz to 70,000 Hz $\pm 0.3$ dB
Tone Control	
BASS	$\pm 10$ dB (100 Hz)
TREBLE	$\pm 10$ dB (10 kHz)
Loudness Contour (Volume control set at -40 dB position)	
	+ 6 dB (100 Hz), + 3 dB (10 kHz)
Hum and Noise (IHF, short circuited A network)	
PHONO	86 dB
TUNER, CD/AUX, TAPE PLAY, ADAPTOR IN	102 dB
Hum and Noise (DIN, continuous power/50 mW)	
PHONO	75 dB/61 dB
TUNER, CD/AUX, TAPE PLAY, ADAPTOR IN	88 dB/62 dB

## Miscellaneous

Power Requirements	
KU, KC models	AC 120 Volts, 60 Hz
S, S/G models	~AC 110V/120 V/220 V/240 V (switchable), 50/60 Hz
HB,YP models	a.c. 240 Volts~, 50 Hz
Power Consumption	
KU, KC models	190 Watts (max.)
S, S/G models	160 Watts (max.)
HB,YP models	450 Watts (max.)
Dimensions	
	420 (W) x 98 (H) x 287 (D) mm
	16-9/16 (W) x 3-7/8 (H) x 11-5/16 (D) in
Weight (without package)	
	6.5 kg (14 lb 5 oz)

## Furnished Parts

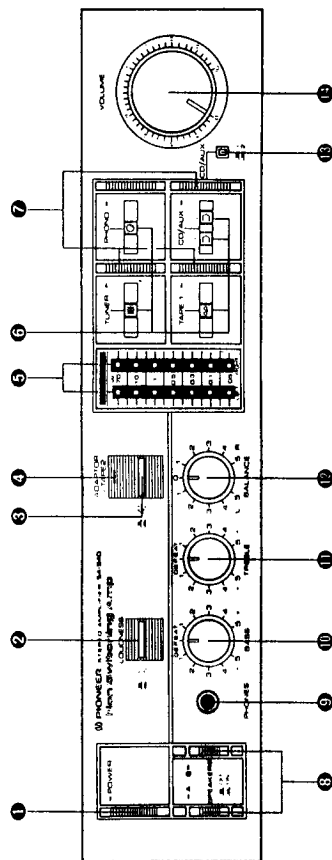
Operating Instructions	1
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### NOTE:

Specifications and design subject to possible modifications without notice.

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## 2. FRONT PANEL FACILITIES



### 1 POWER SWITCH

When this switch is pushed, the power is supplied (the function indicator lights). When it is pushed again, the power is switched off.

### 2 LOUDNESS SWITCH

Push this switch to the "ON" position for low-volume sound listening. The bass and treble are emphasized and you can sit back and listen to a dynamic sound even under low-volume conditions.

### 3 ADAPTOR/TAPE 2 SWITCH

This is used when operating an adaptor (such as a tape creating amplifier) or when playing back a tape in a tape deck connected to the rear panel ADAPTOR/TAPE 2 terminals.

### 4 ADAPTOR/TAPE 2 INDICATOR

This lights when the ADAPTOR/TAPE 2 switch is set to ON.

### 5 OUTPUT POWER INDICATORS

The left and right indicators show the output level (in watts) when a speaker system with an 8-ohm nominal impedance has been connected to the unit. "L" indicates the left channel output level and "R" the right channel.

### 6 FUNCTION INDICATORS

The indicator corresponding to the function switch which has been pushed lights. Each indicator has a symbol: "P" for PHONO, "CD" for CD/AUX, "T" for TAPE 1.

### 7 FUNCTION SWITCHES

**PHONO:** Used when playing records on a turntable connected to the rear panel PHONO terminals.

**TUNER:** Used when listening to broadcasts on the tuner connected to the rear panel TUNER terminals.

**CD/AUX:** Used when operating a TV tuner or compact disc player etc. connected to the rear panel CD/AUX terminals.

**TAPE 1:** Used when playing back tapes in the tape deck connected to the rear panel TAPE 1 terminals.

### 8 SPEAKER SELECTOR SWITCHES

Select the switch that corresponds to the speaker systems through which the sound is to be heard. When the switch is pressed, the sound is heard through the speaker systems selected.

**A:** The sound is heard from the speakers connected to the speaker A terminals on the rear panel.

**B:** The sound is heard from the speakers connected to the speaker B terminals on the rear panel.

No sound will be heard when SPEAKERS A and B switches are both released. This is the position at which the sound can be heard through the headphones.

#### NOTE:

No sound will be heard through the speakers when both the A and B switches are depressed if only one set of speakers has been connected to either the A or B SPEAKERS terminals.

### 9 PHONES JACK

Plug the headphones into this jack securely for private listening.

#### NOTE:

Make it a rule to turn down the volume before plugging in the headphones. A loud sound can hurt your ears.

### 10 BASS CONTROL

This is used to adjust the bass sound.

When rotated clockwise from the center DEFEAT position, the bass is emphasized; when rotated counterclockwise, the bass is attenuated.

### 11 TREBLE CONTROL

This is used to adjust the treble sound.

When rotated clockwise from the center DEFEAT position, the treble is emphasized; when rotated counterclockwise, the treble is attenuated.

### 12 BALANCE CONTROL

This is normally kept at the "0" position. It should be adjusted when the left/right stereo balance has become lopsided. Rotate the control to the left when the right channel sound is too loud; rotate it to the right when the left channel sound is too loud.

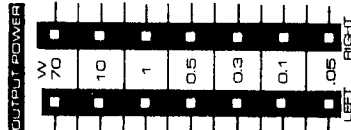
### 13 CD/AUX 1, 2 SELECTOR SWITCH

Use this to select the component which has been connected to the auxiliary (CD/AUX 1, 2) terminals on the rear panel.

### 14 VOLUME CONTROL

This is used to adjust the sound volume of the speakers and headphone. No sound will be heard when the control has been set to the "0" position. Rotate the control clockwise to increase the sound level.

## OUTPUT POWER INDICATORS

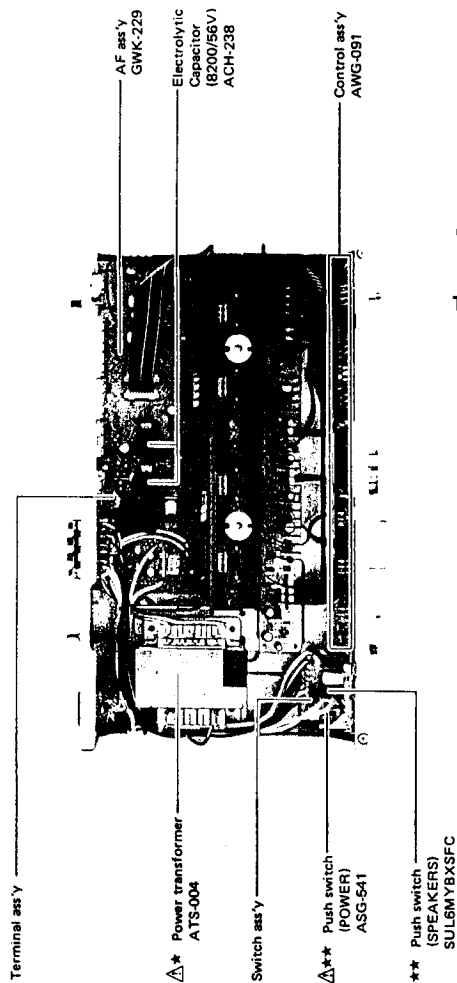
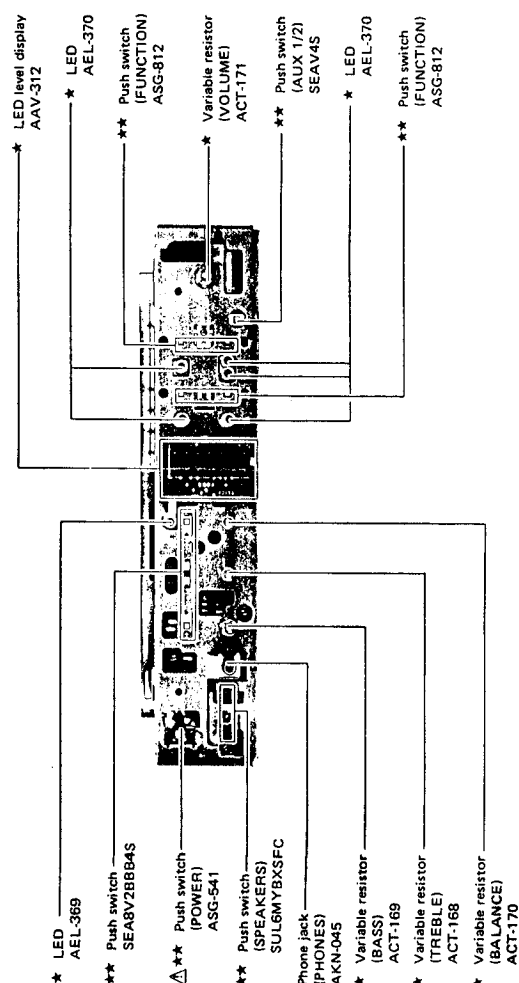
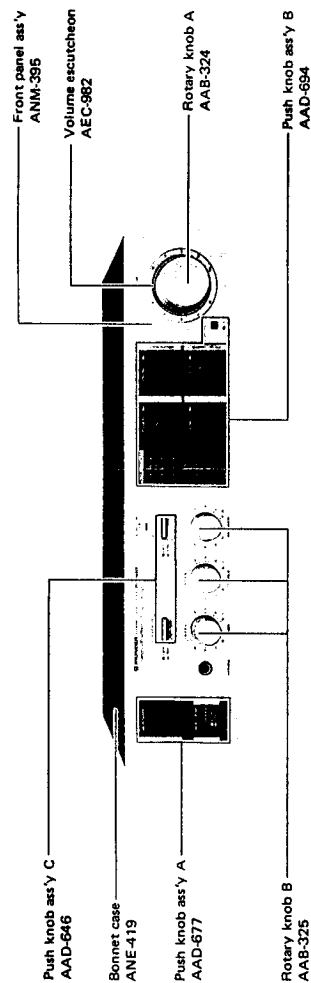


The output power indicators show the output level when speaker systems with a nominal impedance of 8 ohms have been connected to the rear panel speaker terminals. The output level (peak value) is indicated in watts by the scale units. Since a logarithmic compression scale is used, outputs ranging from the weak (0.05 W) to the strong (70 W) can be displayed without selecting the range. During actual play the impedance of the speaker systems changes in accordance with the frequency. For this reason, the value indicated is not an exact representation of the output but only a rough guide.

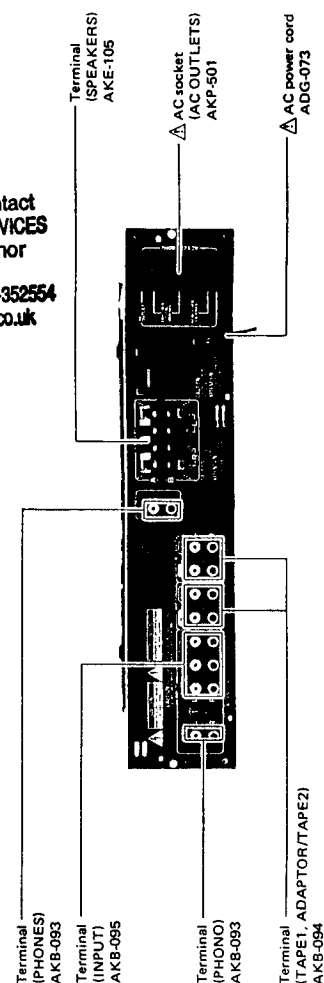
### 3. PARTS LOCATION

#### NOTES:

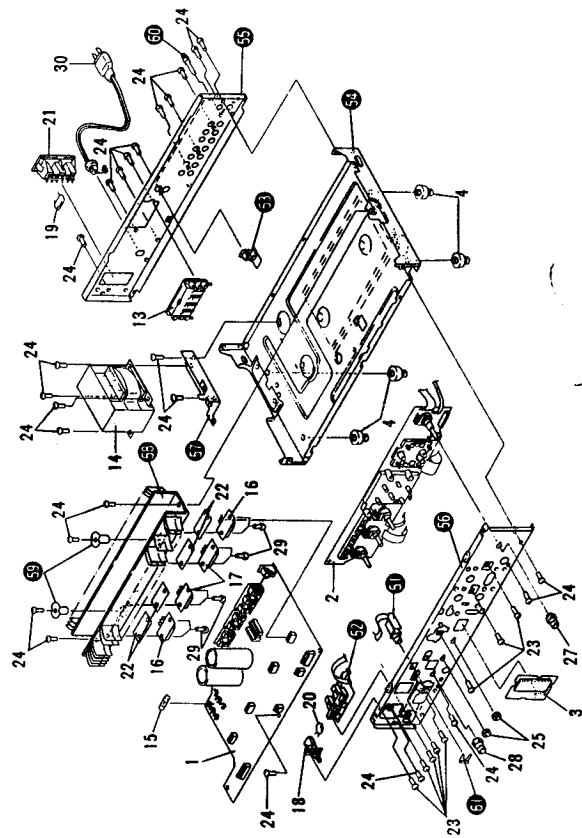
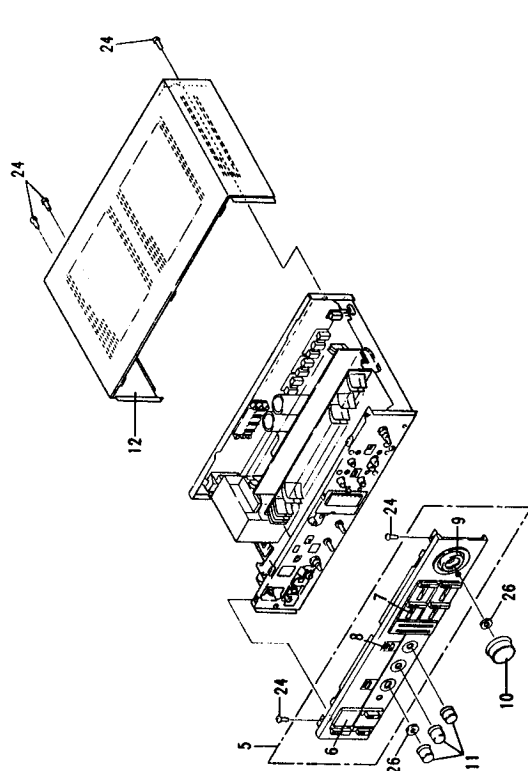
- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated 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.



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# 4. EXPLODED VIEWS AND PARTS LIST

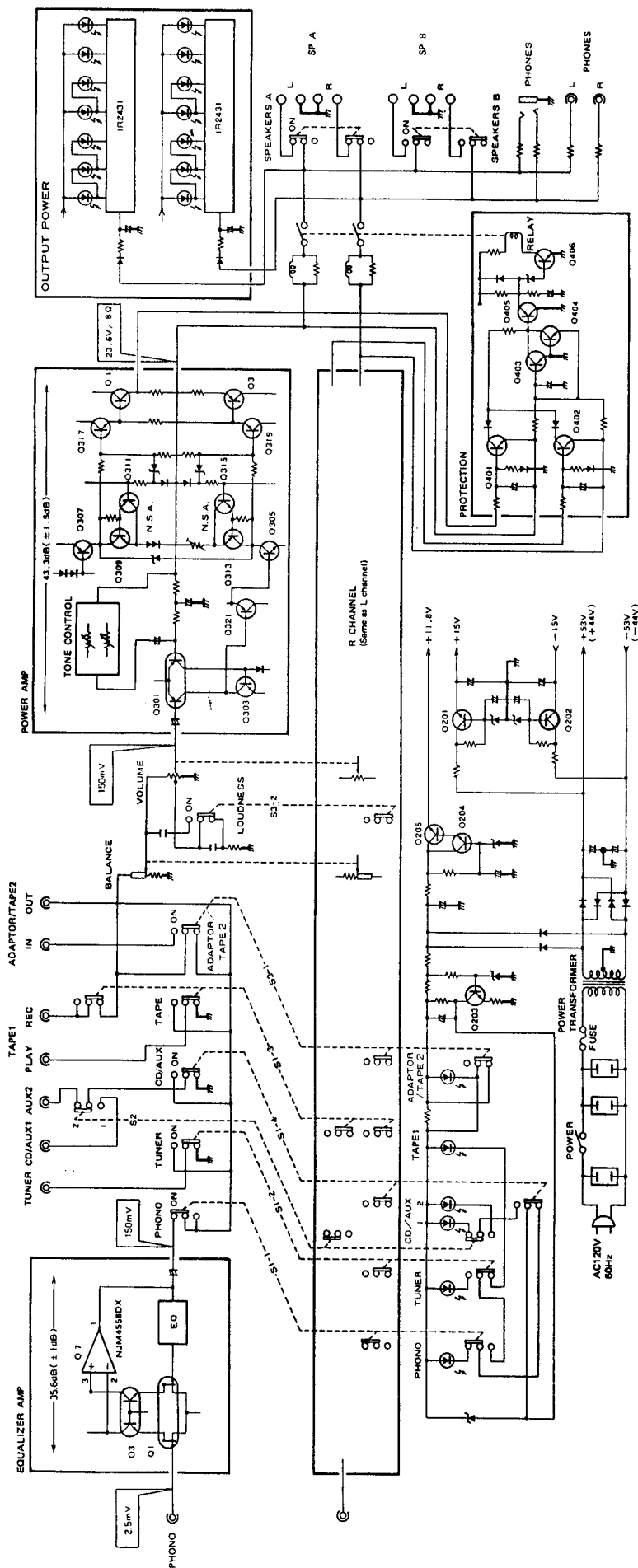


## NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  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.

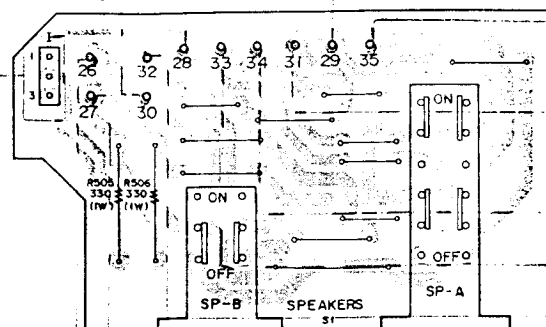
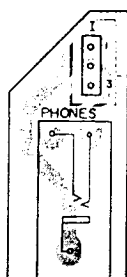
Mark	No.	Part No.	Description
	1.	GWK-229	AF ass'y
	2.	AWG-091	Control ass'y
	3.	AAV-312	LED level display
	4.	AEC-784	Foot ass'y
	5.	ANMI-395	Front panel ass'y
	6.	AAD-677	Push knob ass'y A
	7.	AAD-694	Push knob ass'y B
	8.	AAD-646	Push knob ass'y C
	9.	AEC-982	Volume escutcheon
	10.	AAB-324	Rotary knob A
	11.	AAB-325	Rotary knob B
	12.	ANE-419	Bonnat case
	13.	AKE-105	Terminal (SPEAKERS)
$\Delta$ *	14.	ATS-004	Power transformer
$\Delta$ **	15.	AEK-308	Fuse (5A)
**	16.	2SC2525/A/B*	Transistor
		(2SC2525/A/G)	
		(2SC2525/A/X)	
**	17.	2SA1075/A/B*	Transistor
		(2SA1075/A/G)	
		(2SA1075/A/X)	
		*life should have the same value.	
$\Delta$ **	18.	ASG-541	Push switch (POWER)
$\Delta$ *	19.	ACE-214	Ceramic capacitor
$\Delta$ *	20.	ACG-502	Ceramic capacitor
$\Delta$ *	21.	AKP-501	AC socket (AC OUTLET)
	22.	AEC-756	Mica wafer
	23.	PMZ30P060FMC	Screw (3x6)
	24.	BBZ30P080FZK	Screw (3x8)
	25.	NK70FUC	Nut
	26.	NKX1FUC	Nut
	27.	ABN-074	Guide nut A
	28.	ABN-075	Guide nut B
	29.	ABA-258	Screw
	30.	ADG-073	AC power cord
	51.		Headphone jack ass'y
	52.		Switch ass'y
	53.		Terminal ass'y
	54.		Chassis
	55.		Rear panel
	56.		Panel stay
	57.		Frame
	58.		Heat sink
	59.		Heat cap
	60.		Terminal (GND)
	61.		Mount plate

## 5. BLOCK DIAGRAM

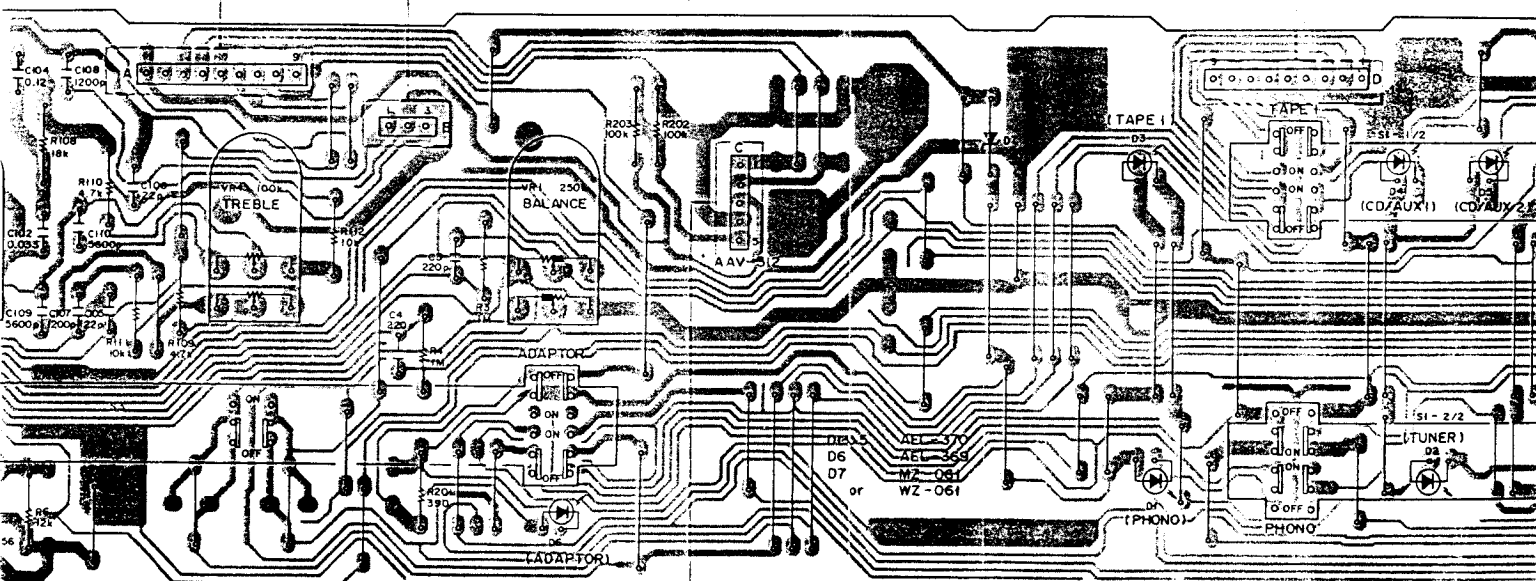




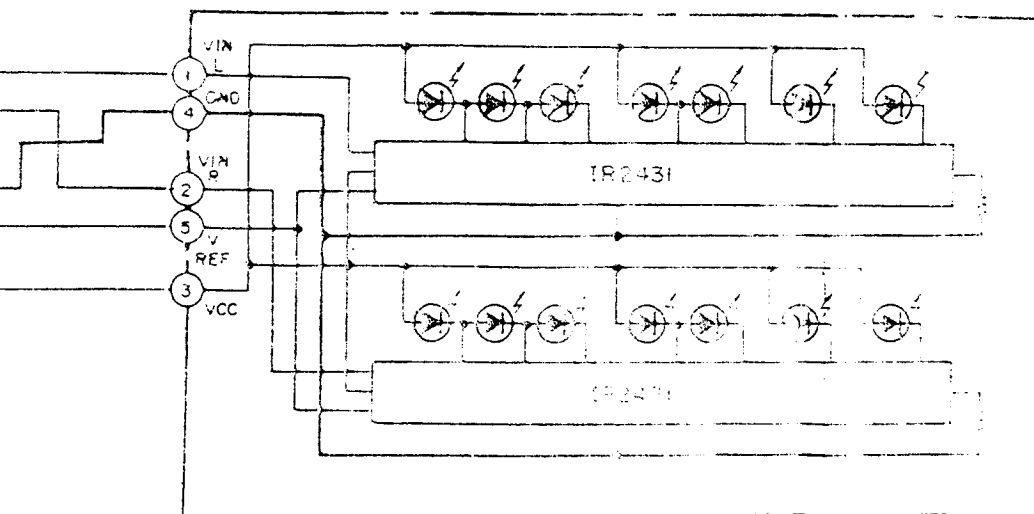
SWITCH Ass'y



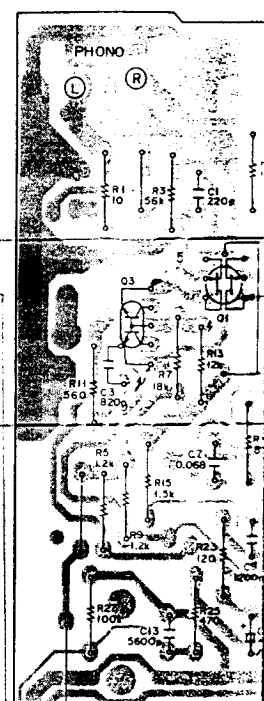
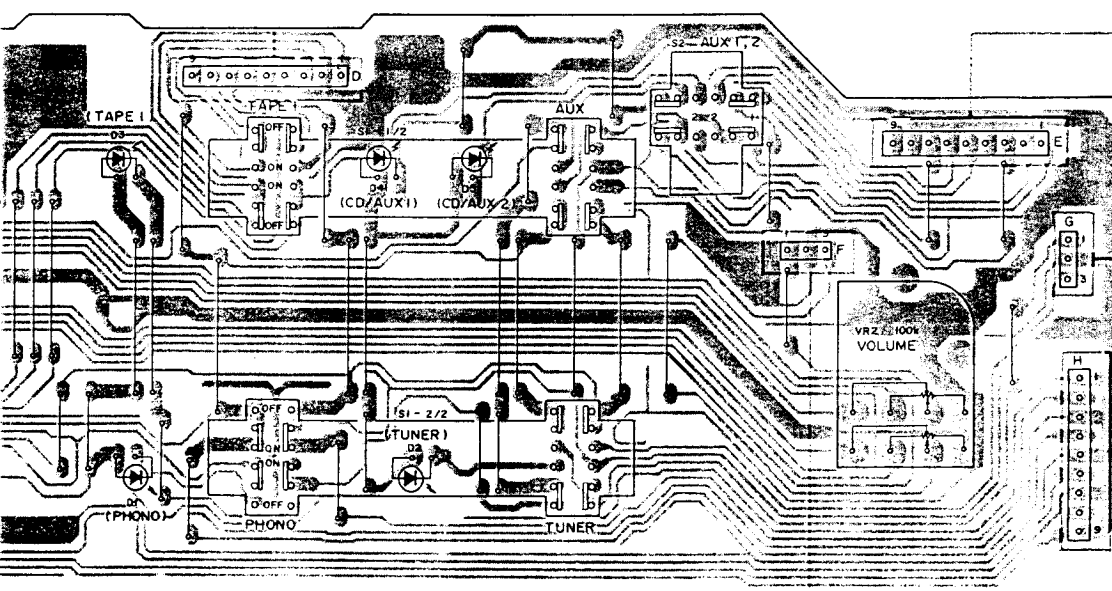
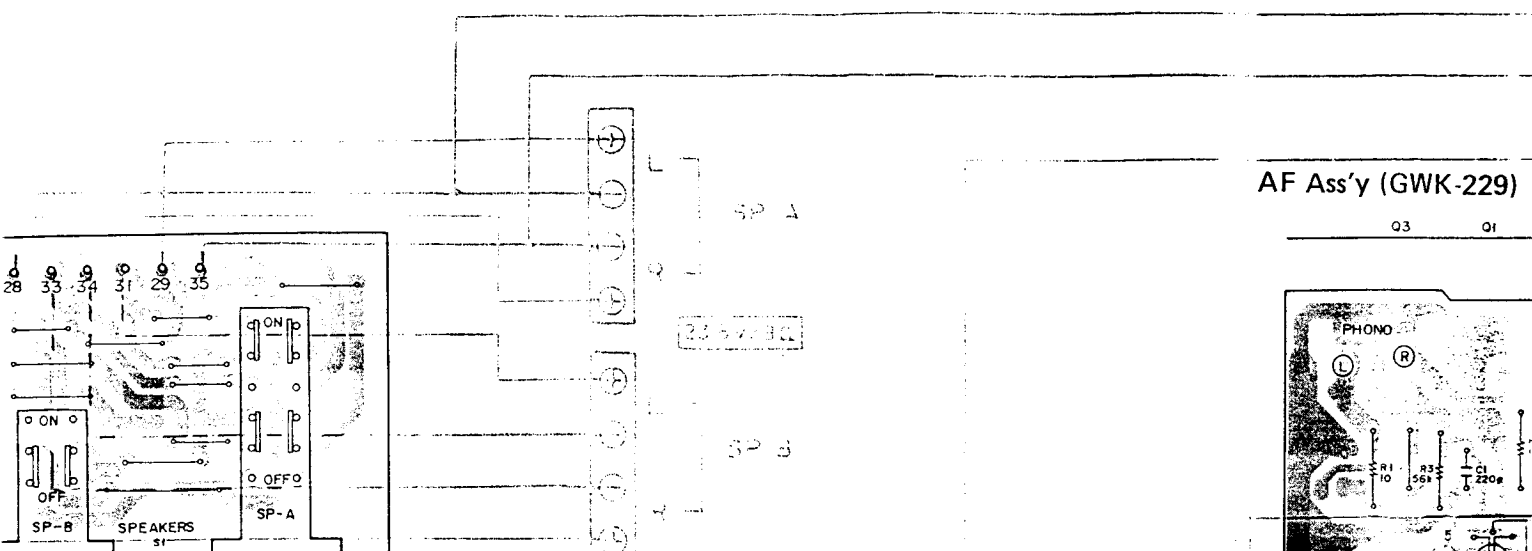
**CONTROL Ass'y (AWG-091)**



LED LEVEL METER AAV-312

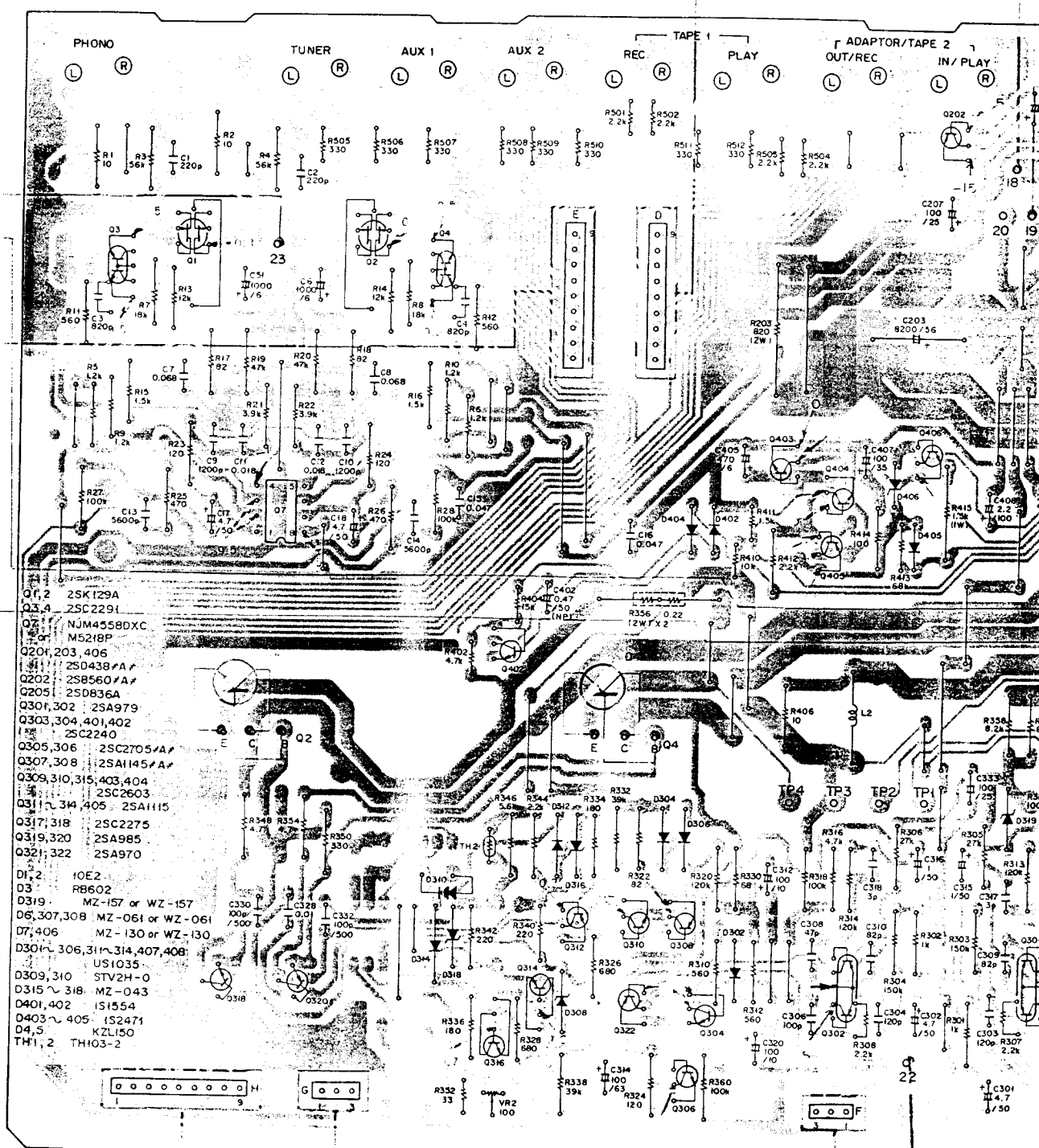


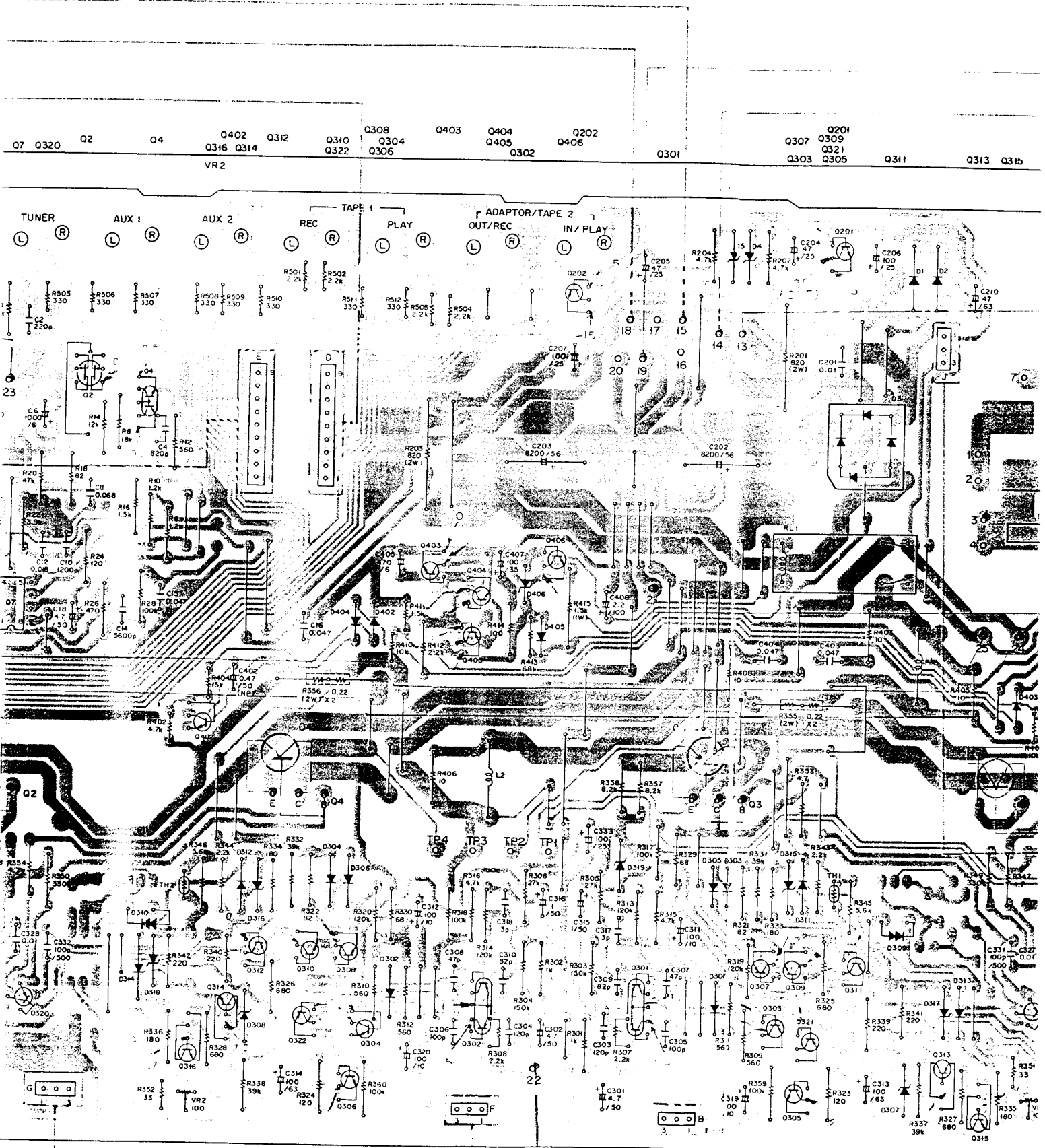




- 01,2 25K129A  
03,4 25C2291  
07 NJM45580XC  
MS218P  
0204,203,406  
250438/A  
0202 258560/A  
0205 25D366A  
0301,302 2SA979  
0303,304,401,402  
25C2240  
0305,306 25C2705/A  
0307,308 25A145/A  
0309,310,315,403,404  
25C2603  
0311,314,405 25A1115  
0317,318 25C2275  
0319,320 2SA985  
0321,322 2SA970  
D1,2 0E02  
D3 RB62  
0319 MZ-157 or WZ-157  
06,307,308 MZ-061 or WZ-061  
07,406 MZ-130 or WZ-130  
0301,306,314,314,407,408  
US1035  
D309,310 STV2H-0  
D315 318 MZ-043  
D401,402 IS1554  
D403 405 IS2471  
D4,5 KZL150  
TH1,2 TH103-2

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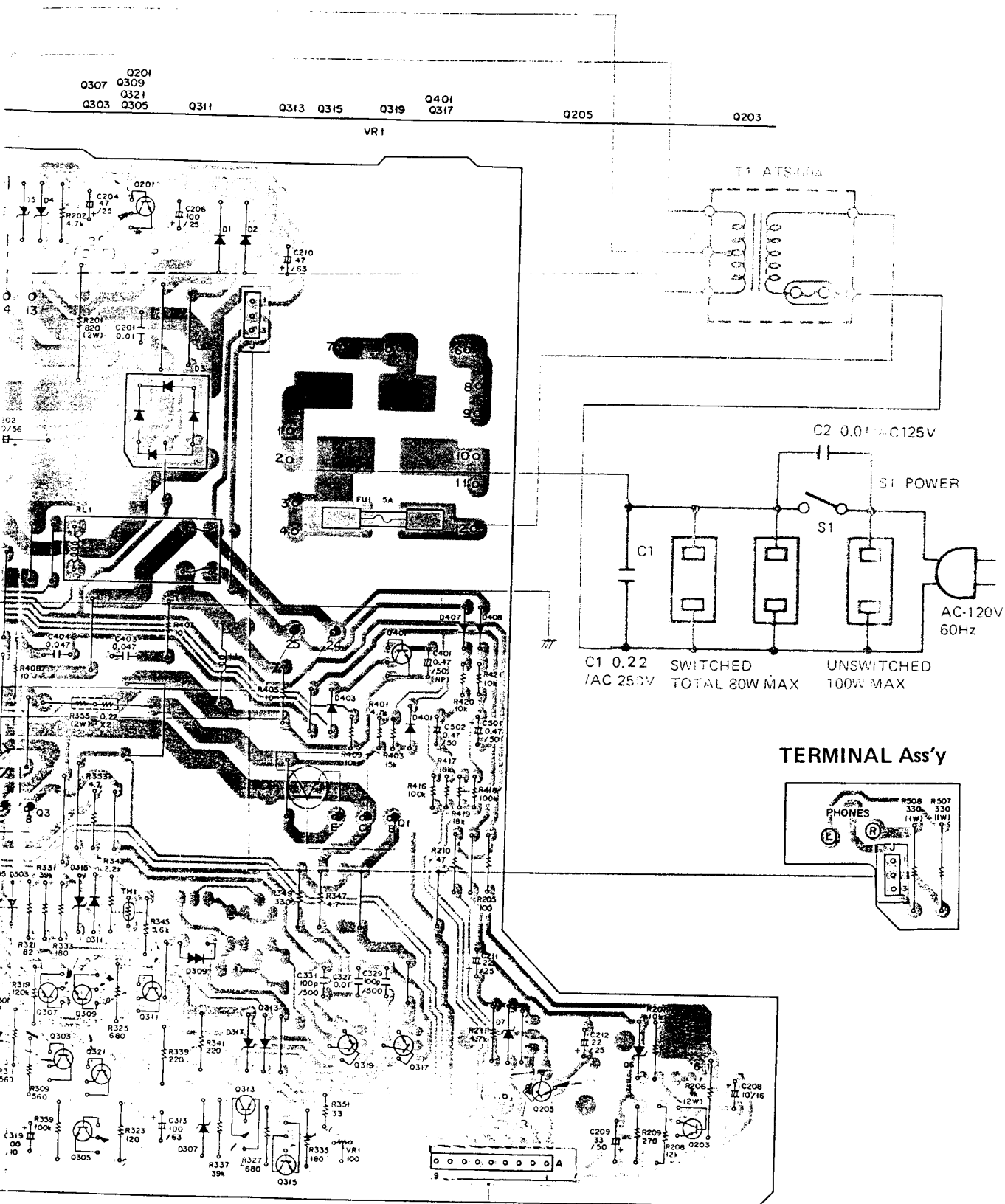


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10

11

12



A

B

C

D

10

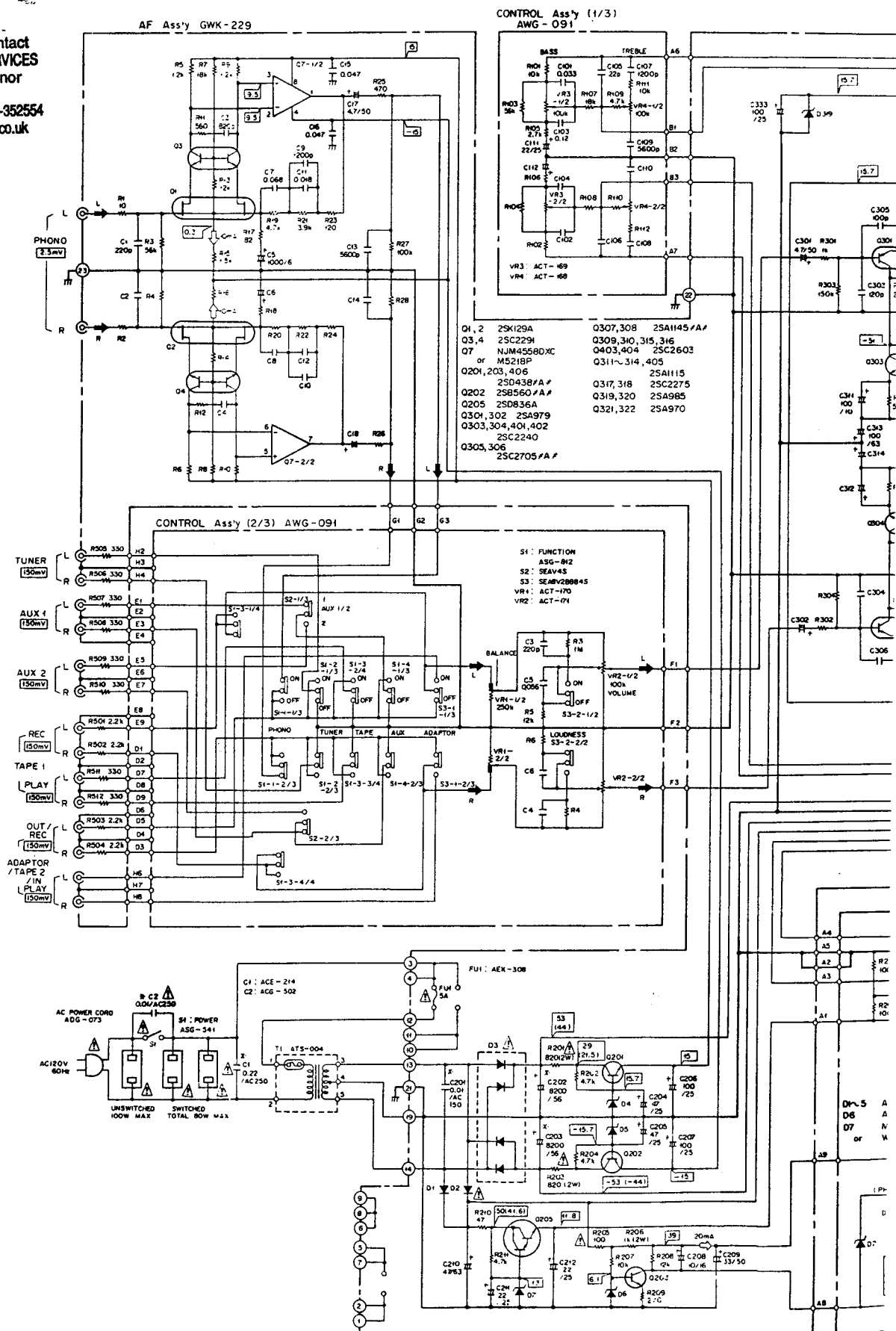
11

12

12

## 7. SCHEMATIC DIAGRAM

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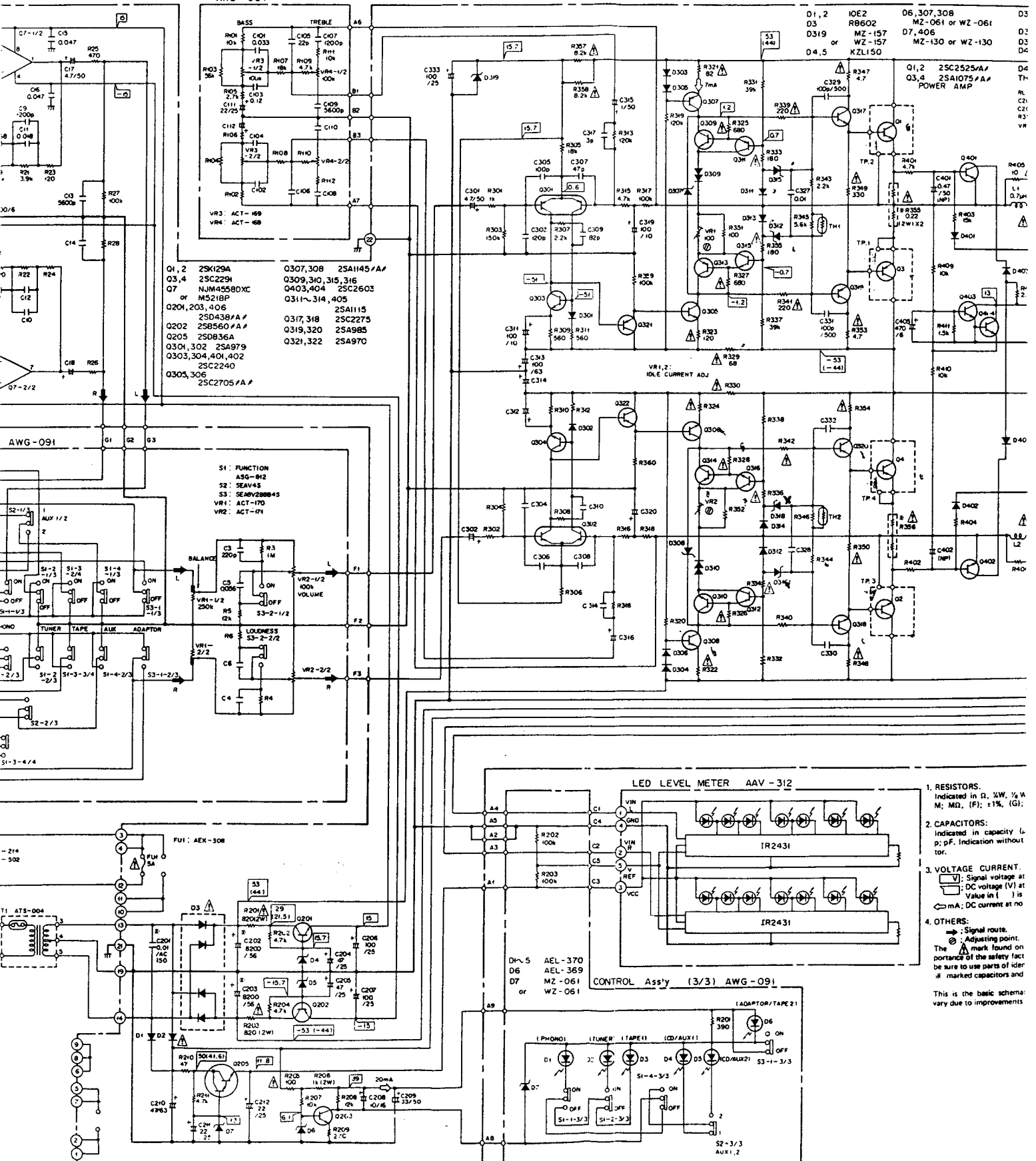


2

3

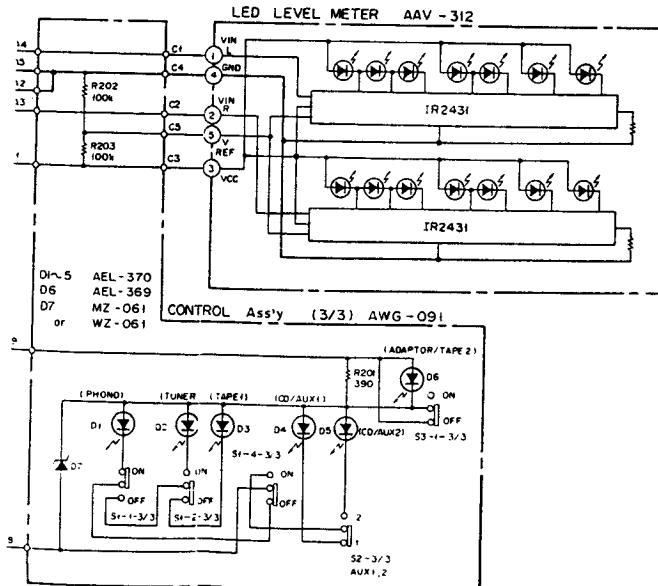
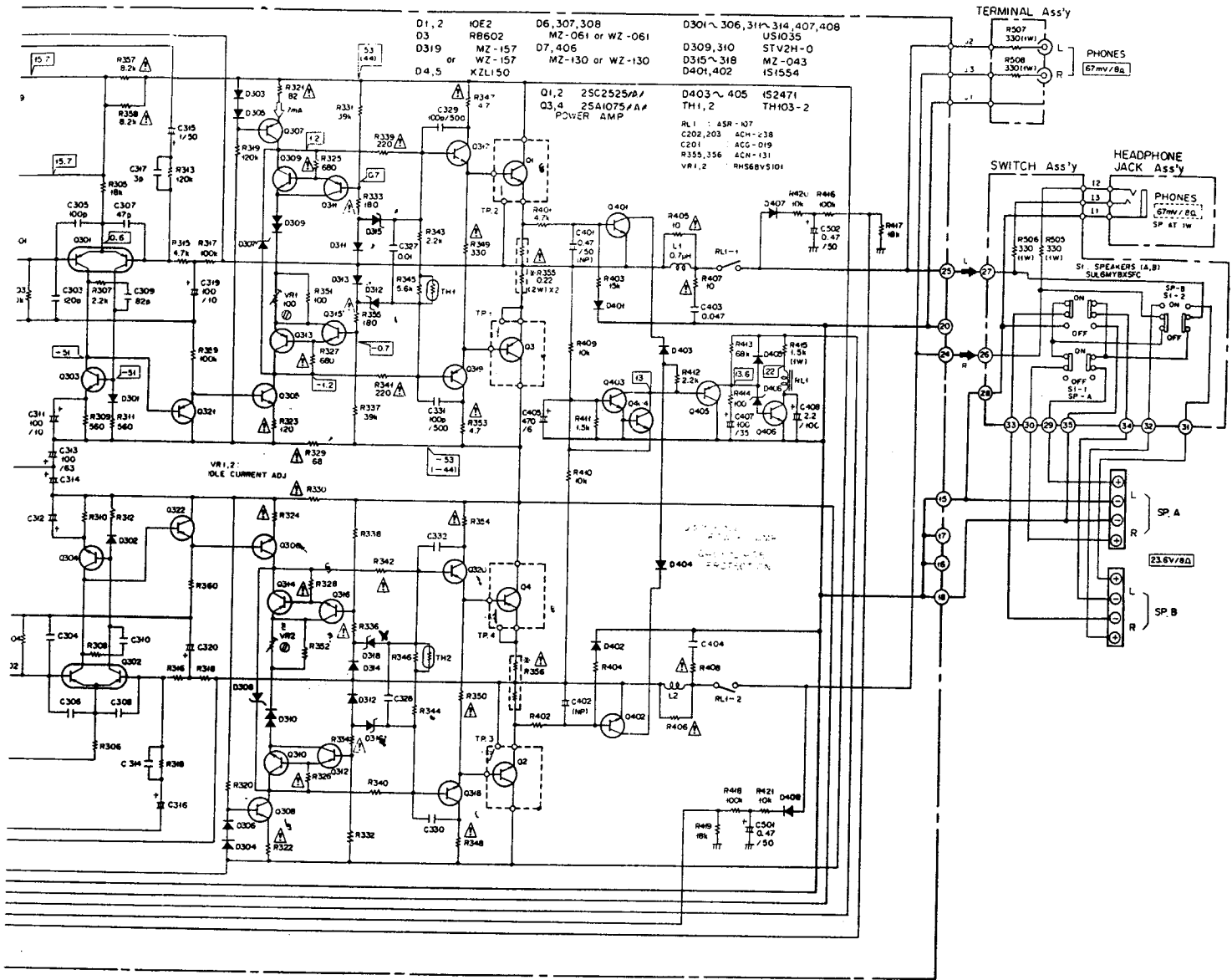
4

GRAM

CONTROL Ass'y (1/3)  
AWG - 091



NOTE:  
The indicated se  
only. Other altern  
are listed in the pa.



- RESISTORS.**  
Indicated in  $\Omega$ ,  $\frac{1}{2}W$ ,  $\frac{1}{4}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k, k $\Omega$ , M, M $\Omega$ , (F);  $\pm 1\%$ , (G);  $\pm 2\%$ , (K);  $\pm 10\%$ , (M);  $\pm 20\%$  tolerance
  - CAPACITORS.**  
Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p, pF. Indication without voltage is 50V except electrolytic capacitor.
  - VOLTAGE CURRENT.**  
[V]: Signal voltage at ( 70 W+ 70 W, 8 $\Omega$ ) output (1kHz)  
[DC]: DC voltage (V) at no input signal  
Value in [ ] is DC voltage at rated power  
[mA]: DC current at no input signal
  - OTHERS:**  
[ ]: Signal route.  
[ ]: 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.  
[ ] marked capacitors and resistors have parts numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

- SWITCHES:**
- CONTROL Ass'y
- S1-1: FUNCTION (PHONO) ON - OFF
  - S1-2: FUNCTION (TUNER) ON - OFF
  - S1-3: FUNCTION (TAPE 1) ON - OFF
  - S1-4: FUNCTION (CD/AUX1) ON - OFF
  - S2: AUX 1, 2 AUX1 - AUX 2
  - S3-1: ADAPTOR/TAPE 2 ON - OFF
  - S3-2: LOUDNESS ON - OFF
- SWITCH Ass'y
- S1-1: SPEAKER A ON - OFF
  - S1-2: SPEAKER B ON - OFF
- OTHERS
- S1: POWER ON - OFF
- The underlined indicates the switch position.





7

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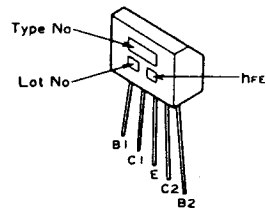
9

SA-940

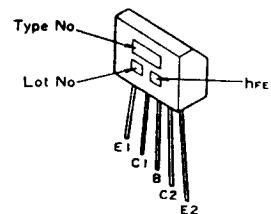
## External Appearance of Transistors and IC's

ductors are representative ones  
semiconductors may be used and

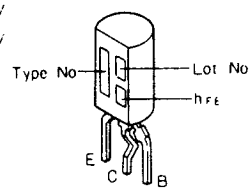
2SA979



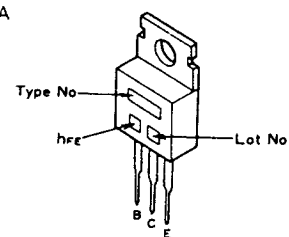
2SC2291



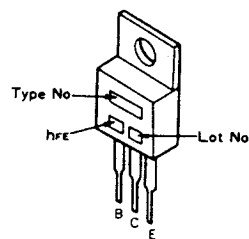
A

2SA1145/A/  
2SC2705/A/

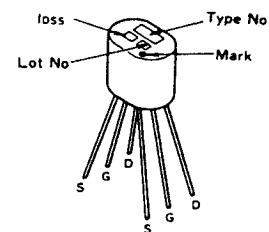
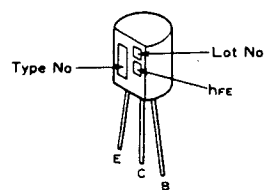
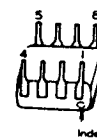
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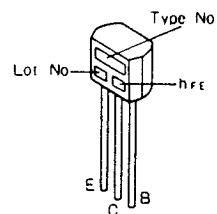
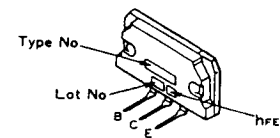
B

2SA985  
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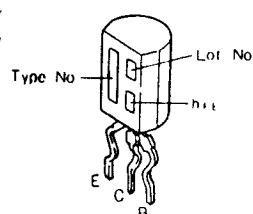
2SK129A

2SA970  
2SC2240NJM4558DXC  
M5218P

C

2SA1115  
2SC26032SC2525/A/  
2SA1075/A/

D

2SB560/A/  
2SD438/A/

7

8

9

17

8. 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<sup>0</sup> 561 ..... RD4PS 561J  
47kΩ 47 × 10<sup>3</sup> 473 ..... RD4PS 473J  
0.5Ω 0R5 ..... RNSH 0R5K  
1Ω 010 ..... RSIP 010K  
Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).  
5.62kΩ 562 × 100 5621 ..... RN4SR 5621F  
• The  $\Delta$  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

Mark	Part No.	Symbol & Description	Mark	Part No.	Symbol & Description
	GWK-229	AF ass'y	**	2SC2705/A/	Q305, Q306
		Headphone jack ass'y	**	2SA985-P* (2SA785-Q)	Q319, Q320
		Switch ass'y	**	2SC2275-P* (2SC2275-Q)	Q317, Q318
		Terminal ass'y		*life of Q317-Q320 should have the same value.	
	AWG-091	LED level display	**	2SD836A	Q205
	AAV-312		**	2S9560/A/	Q202
		Terminal (SPEAKERS)	**	2SD438/A/	Q201, Q203, Q406
	AKE-105	T1 Power transformer (120V)	**	2SA970	Q321, Q322
	** ATS-004	FU1 Fuse (5A)	**	2SC2240	Q303, Q304, Q401, Q402
	** AEK-308		**	2SA1115	Q311, Q312, Q313, Q314, Q405
		Q1, Q2	**	2SC2603	Q309, Q310, Q315, Q316, Q403, Q404
	** 2SC2525/A/-B* (2SC2525/A/-G) (2SC2525/A/-X)	Q3, Q4	$\Delta$	R8602	D3
	** 2SA1075/A/-B* (2SA1075/A/-G) (2SA1075/A/-X)		$\Delta$	10E2	D1, D2
			**	STV2H-O	D309, D310
			**	TH103-2	TH1, TH2
			**	MZ-043	D315, D316, D317, D318
	** ASG-541 (ASG-539)	S1 Push switch (POWER)			D6, D307, D308
	ACE-214	C1 Capacitor (0.22/AC125V)	*	MZ-061 (WZ-061)	D7, D406
	ACG-502	C2 Capacitor (0.01/AC125V)	*	MZ-130	D319
	AKP-501	AC socket (AC OUTLETS)	*	MZ-157 (WZ-157)	D4, D5
	ADG-073	AC power cord	*	KZL150	D301-D306, D311-D314, D407, D408
			*	US1035	D401, D402
			*	1S1554	D403, D404, D405
			*	1S2471	
	AF Assembly (GWK-229)				
	SEMICONDUCTORS				
Mark	Part No.	Symbol & Description	Mark	Part No.	Symbol & Description
**	NJM4558DXC (ME218P)	Q7			
**	2SK129A	Q1, Q2			
**	2SC2291	Q3, Q4			
**	2SA979	Q301, Q302			
**	2SA1145/A/	Q307, Q308			

CAPACITORS

Mark	Part No.	Symbol & Description
	ACH-238	C202, C203 Electrolytic (8200/56V)
	CEA 101M 63L	C313, C314
	CEA 102M 6L	C5, C6
	ACG-019	C201 Ceramic (0.01/AC150V)
	CEANP R47M 50	C401, C402
	CEA R47M 50L	C501, C502
	CEA 100M 16L	C208
	CEA 101M 10L	C311, C312, C319, C320
	CEA 101M 35L	C407
	CEA 101M 25L	C206, C207, C333
	CEA 2R2M 100L	C408
	CEA 330M 50L	C211, C212
	CEA 470M 25L	C204, C205
	CEA 470M 63L	C210
	CEA 471M 6L	C405
	CEANL 010M 50	C315, C316
	CEANL 4R7M 50	C17, C18, C301, C302
	COMA 562K 50	C13, C14
	COMA 103K 50	C327, C328
	COMA 473K 50	C403, C404
	COMA 122J 50	C9, C10
	COMA 183J 50	C11, C12
	COMA 683J 50	C7, C8
	CCDSL 101K 500	C329, C330, C331, C332
	CCDSL 030C 50	C317, C318
	CCDSL 470J 50	C307, C308
	CCDSL 121J 50	C303, C304
	CCDSL 820J 50	C309, C310
	CCDSL 221J 50	C1, C2
	CCDSL 101J 50	C305, C306
	CKDYB 821K 50	C3, C4
	CKDYF 4732 50	C15, C16

RESISTORS

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

Mark	Part No.	Symbol & Description
	ACN-131	R355, R356 Wire wound (0.22/2WXX2)
	RH56SVS101	VR1, VR2 Semifixed (100)
	RS1L 000J	R415
	RS2L 000J	R201, R203, R206
	RD1/8 PM 000J	R307, R308, R351, R352, R401 -R404, R409-R411, R413, R416-R421, R501-R512
$\Delta$	RD% PMF 000J	R210, R333-R336
$\Delta$	RD% PMFL 000J	R321-R328, R347, R348, R353, R354, R357, R358, R405-R408
$\Delta$	RFAX PS 000J	R205, R329, R330, R339-R342, R349, R350
	RD%PM 000J	Other resistors

OTHERS

Mark	Part No.	Symbol & Description
	AKB-093	Terminal
	AKB-094	Terminal
	AKB-095	Terminal
	AKH-017	TR socket
	ASR-107	RL1 Relay
	PB230P060PMC	Screw (3x6)

Headphone Jack Assembly

Mark	Part No.	Symbol & Description
	AKN-045	Phone jack

Switch Assembly

Mark	Part No.	Symbol & Description
	SUL6MYBXSFC	S1 Push switch
	RS1L331J	R505, R506

Terminal Assembly

Mark	Part No.	Symbol & Description
	AKB-093	Terminal
	RS1L331J	R507, R508

Control Assembly (AWG-091)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
*	AEL-370	D1-D5 LED (Green)
*	AEL-369	D6 LED (Orange)
*	MZ-061 (WZ-061)	D7

SWITCHES

Mark	Part No.	Symbol & Description
**	ASG-812	S1 Push switch (FUNCTION)
**	SEA8V28B84S	S3 Push switch (LOUDNESS, ADAPTOR/TAPE2)
**	SEAV4S	S2 Push switch (AUX1/2)

CAPACITORS

Mark	Part No.	Symbol & Description
	CCDSL 221J 50	C3, C4
	COMLA 124K 50	C103, C104
	CGSA 220J 50	C105, D106
	COMA 122K 50	C107, C108
	COMA 562K 50	C109, C110
	COMA 333K 50	C101, C102
	COMA 563K 50	C5, C6
	CEA 220M 25L	C111, C112

9. PAC

Mark	No.
	1.
	2.
	3.

## CAPACITORS

Mark	Part No.	Symbol & Description
	ACH-238	C202, C203
	CEA 101M 63L	Electrolytic (8200/56V)
	CEA 102M 6L	C313, C314
	ACG-019	C5, C6
	CEANP R47M 50	C201 Ceramic (0.01/AC150V)
	CEA R47M 50L	C401, C402
	CEA 100M 16L	C501, C502
	CEA 101M 10L	C208
	CEA 101M 35L	C311, C312, C319, C320
	CEA 101M 25L	C407
	CEA 2R2M 100L	C206, C207, C333
	CEA 220M 25L	C408
	CEA 330M 50L	C211, C212
	CEA 470M 25L	C209
	CEA 470M 63L	C204, C205
	CEA 471M 6L	C210
	CEANL 010M 50	C405
	CEANL 4R7M 50	C315, C316
	COMA 562K 50	C17, C18, C301, C302
	COMA 103K 50	C13, C14
	COMA 473K 50	C327, C328
	COMA 122J 50	C403, C404
	COMA 183J 50	C9, C10
	COMA 683J 50	C11, C12
	CCDSL 101K 500	C7, C8
	CCDSL 030C 50	C329, C330, C331, C332
	CCDSL 470J 50	C317, C318
	CCDSL 121J 50	C307, C308
	CCDSL 820J 50	C303, C304
	CCDSL 221J 50	C309, C310
	CCDSL 101J 50	C1, C2
	CKDYB 821K 50	C305, C306
	CKDYF 473Z 50	C3, C4
		C15, C16

## RESISTORS

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

Mark	Part No.	Symbol & Description
	ACN-131	R355, R356 Wire wound (0.22/2WX2)
	RHS6BV5101	VR1, VR2 Semifixed (100)
	RS1L 000 J	R415
	RS2L 000 J	R201, R203, R206
	RD1/8 PM 000 J	R307, R308, R351, R352, R401 —R404, R409—R411, R413, R416—R421, R501—R512
	RD% PM 000 J	R210, R333—R336
	RD% PMFL 000 J	R321—R328, R347, R348, R353, R354, R357, R358, R405—R408
	RFA% PS 000 J	R205, R329, R330, R339—R342, R349, R350
	RD%PM 000 J	Other resistors

## OTHERS

Mark	Part No.	Symbol & Description
	AKB-093	Terminal
	AKB-094	Terminal
	AKB-095	Terminal
	AKH-017	TR socket
	ASR-107	RL1 Relay
	PBZ30P060PMC	Screw (3x6)
Headphone Jack Assembly		
Mark	Part No.	Symbol & Description
	AKN-045	Phone jack

## Switch Assembly

Mark	Part No.	Symbol & Description
	SUL6MY8XSFC	S1 Push switch
	RS1L331J	R505, R506

## Terminal Assembly

Mark	Part No.	Symbol & Description
	AKB-093	Terminal
	RS1L331J	R507, R508

## Control Assembly (AWG-091)

## SEMICONDUCTORS

Mark	Part No.	Symbol & Description
	★ AEL-370	D1—D5 LED (Green)
	★ AEL-369	D6 LED (Orange)
	★ MZ-061	D7
	(WZ-061)	

## SWITCHES

Mark	Part No.	Symbol & Description
	★ ASG-812	S1 Push switch (FUNCTION)
	★ SEAB2BB8AS	S3 Push switch (LOUDNESS, ADAPTOR/TAPE2)
	★ SEAV4S	S2 Push switch (AUX1/2)

## CAPACITORS

Mark	Part No.	Symbol & Description
	CCDSL 221J 50	C3, C4
	COMLA 124K 50	C103, C104
	COSA 220J 50	C105, D106
	COMA 122K 50	C107, C108
	COMA 562K 50	C109, C110
	COMA 333K 50	C101, C102
	COMA 563K 50	C5, C6
	CEA 220M 25L	C111, C112

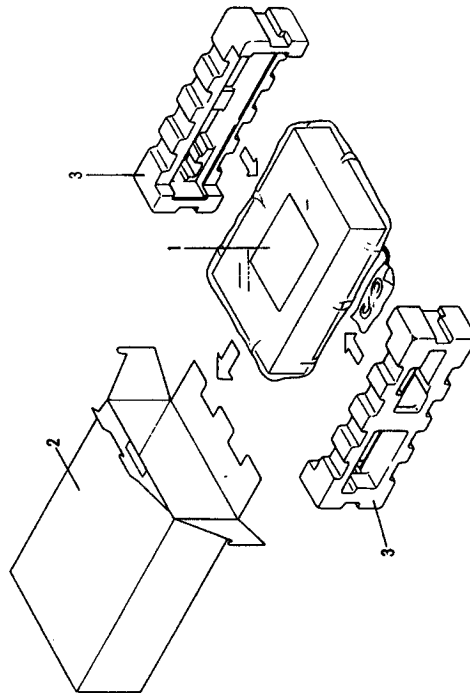
## RESISTOR

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

Mark	Part No.	Symbol & Description
	RD% PM 000 J	R3—R6, R101—R112, R201—R203
	ACT-170	VR1 Variable (BALANCE, 250k)
	ACT-171	VR2 Variable (VOLUME, 100k)
	ACT-169	VR3 Variable (BASS, 100k)
	ACT-168	VR4 Variable (TREBLE, 100k)

## 9. PACKING

Mark	No.	Part No.	Description
	1.	ARB-544	Operating instructions
	2.	AHE-217	Packing case
	3.	AHA-340	Front rear pad



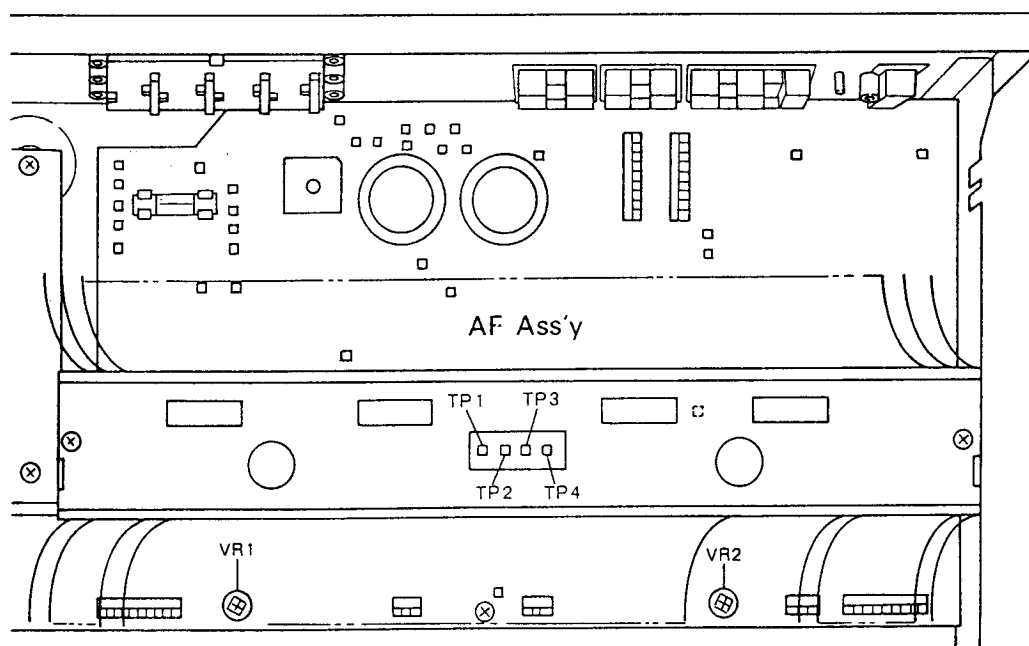
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## 10. ADJUSTMENTS

### Idle Current Adjustment

- Turn VR1 (L) and VR2 (R) fully around in the counter-clockwise direction.
- Without any load or input signal, turn POWER switch ON and let stand for 10 minutes.

Adjustment point	Prescribed value	Measuring terminal
VR1 (L)	8.6mV~21.8mV	TP2 (+) and TP1 (-)
VR2 (R)	8.6mV~21.8mV	TP3 (+) and TP4 (-)



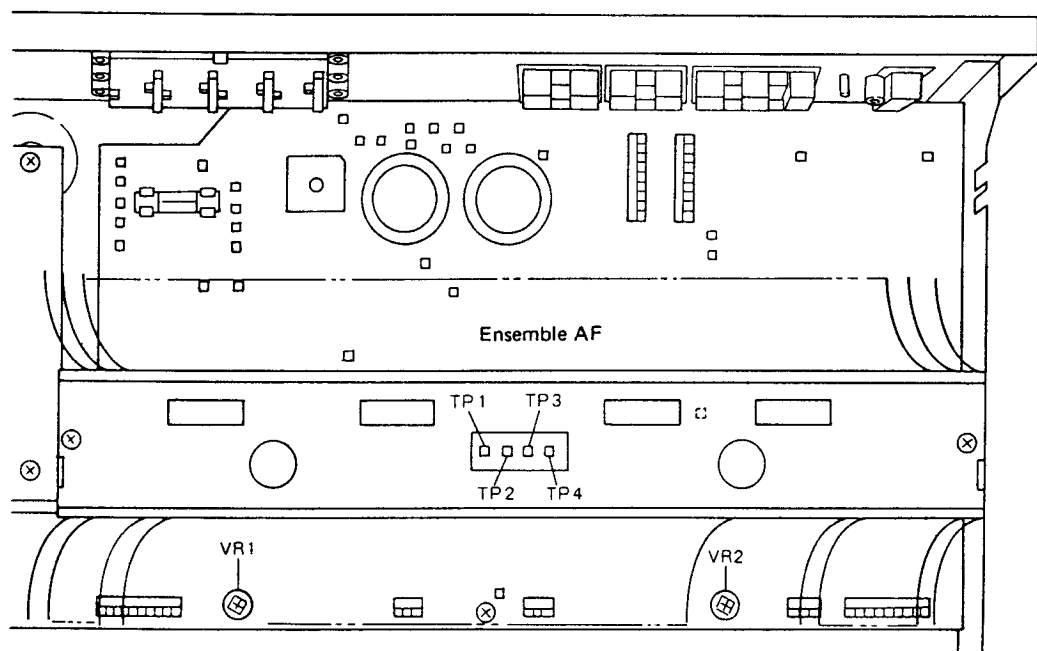
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Email:- enquiries@mauritron.co.uk

## 10. RÉGLAGE

### Réglage du courant déwatté

- Tourner à fond VR1 (L, gauche) et VR2 (R, droite) en sens inverse des aiguilles d'une montre.
- Sans charge ni signal d'entrée, allumer l'interrupteur POWER et le maintenir 10 minutes.

Point de réglage	Valeur prescrite	Terminal de mesure
VR 1 (L)	8,6mV~21.8mV	TP2 (+) et TP2 (-)
VR2 (R)	8,6mV~21,8mV	TP3 (+) et TP4 (-)



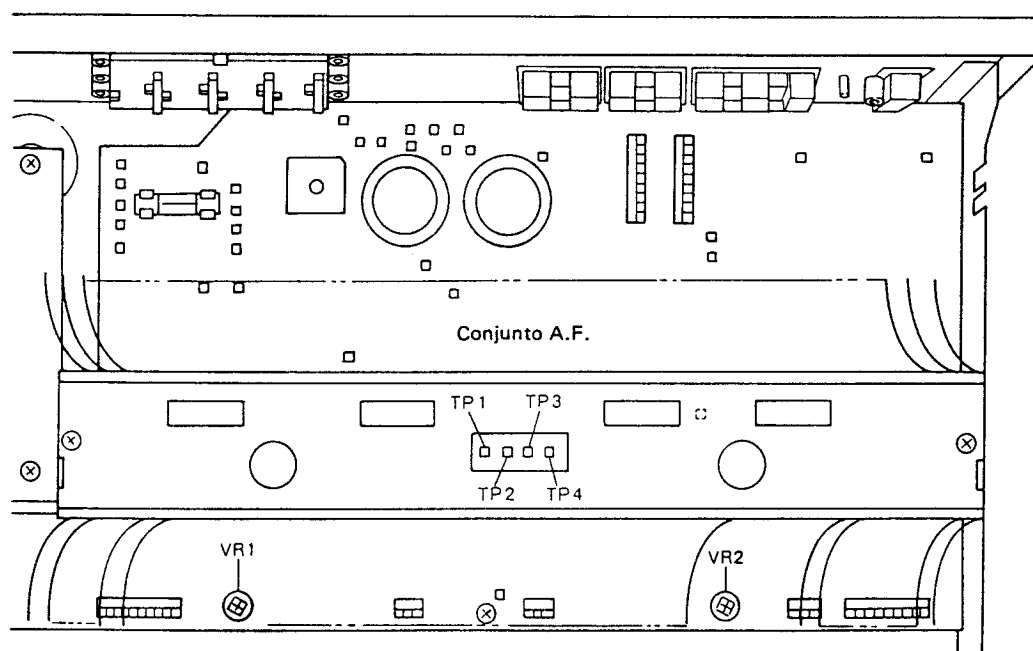
## 10. AJUSTE

### Ajuste de la corriente la corriente devatiada

- Girar la VR1 (L, izquierda) VR2 (R, derecha) totalmente en la dirección hacia la izquierda.
- Sin ninguna carga o señal de entrada, girar el interruptor de la alimentación (POWER) a ON y manténgalo por 10 minutos.

Punto de ajuste	Valor determinado	Terminal de medida
VR1 (L)	8,6mV~21,8mV	TP12 (+) y TP1 (-)
VR2 (R)	8,6mV~21,8mV	TP3 (+) y TP4 (-)

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# SA-348

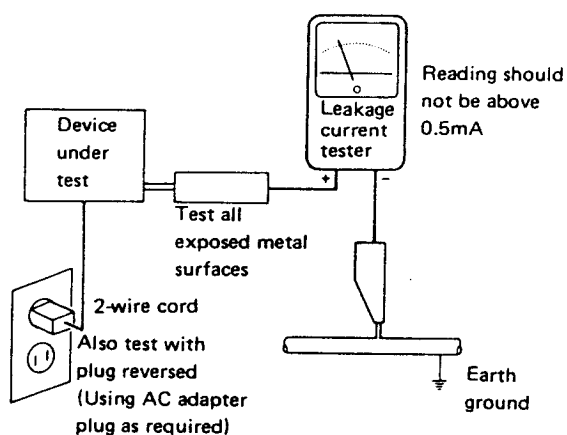
## 11. SAFETY INFORMATION

### 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  $\Delta$  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.

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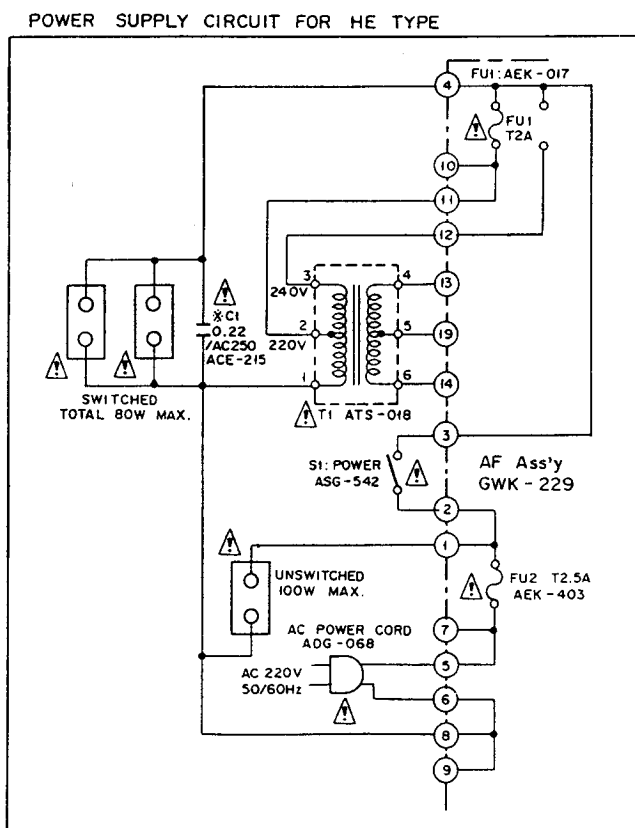
## 12. FOR HE TYPE

The HE type is the same as the KU type with the exception of the following sections.

### Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		KU type	HE type	
⚠ ★	T1 Power transformer (120V) (220V/240V)	ATS-004	.....	<b>For Service Manuals Contact</b> <b>MAURITRON TECHNICAL SERVICES</b> <b>8 Cherry Tree Rd, Chinnor</b> <b>Oxon OX9 4QY</b> <b>Tel:- 01844-351694 Fax:- 01844-352554</b> <b>Email:- enquiries@mauritron.co.uk</b>
⚠ ★★	FU1 Fuse (5A) (T2A)	AEK-308	.....	
⚠ ★★	FU2 Fuse (T2.5A)	.....	AEK-017	
⚠ ★★	S1 Push switch (POWER)	ASG-541	ASG-542	
⚠	C1 (0.22/AC125V)	ACE-214	.....	
⚠	(0.22/AC250V)	.....	ACE-215	
⚠	C2 (0.01/AC125V)	ACG-502	.....	
⚠	AC socket (AC OUTLETS)	AKP-501	AKP-502	
⚠	AC power cord	ADG-073	ADG-068	
	Operating instructions (English)	ARB-544	.....	
	(English/French/German/Italian)	.....	ARE-066	
	Packing case	AHE-217	AHE-192	

### Schematic Diagram



### Line Voltage Selection

Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Take out the fuse (AEK-017) from the fuse assembly.
4. Re-install the fuse in the correct voltage indication (see Fig. 1).
5. Stick the line voltage label on the rear panel.

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

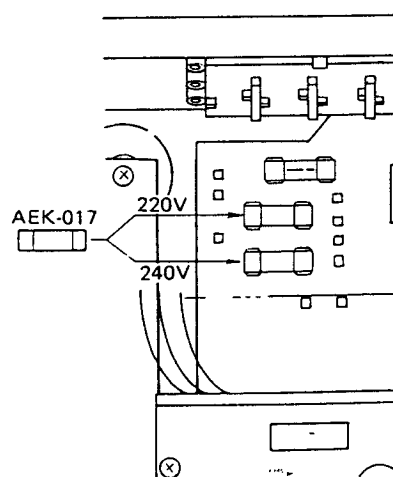


Fig. 1

## 13. FOR HB TYPE

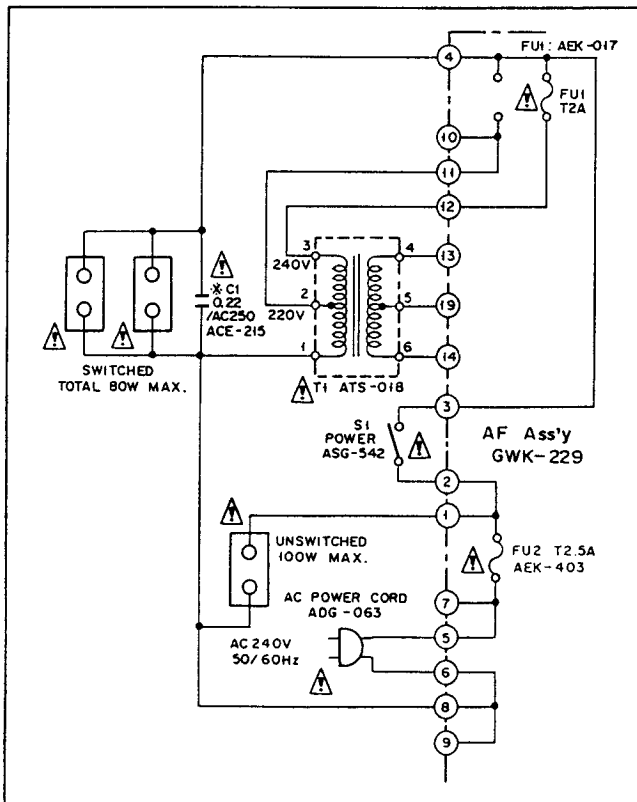
The HB type is the same as the KU type with the exception of the following sections.

### Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		KU type	HB type	
⚠ ★	T1 Power transformer (120V) (220V/240V)	ATS-004	.....	
⚠ ★★	FU1 Fuse (5A) (T2A)	AEK-308	.....	
⚠ ★★	FU2 Fuse (T2.5A)	.....	AEK-017	
⚠ ★★	S1 Push switch (POWER)	ASG-541	ASG-542	
⚠	C1 (0.22/AC125V)	ACE-214	.....	
⚠	(0.22/AC250V)	.....	ACE-215	
⚠	C2 (0.01/AC125V)	ACG-502	.....	
⚠	AC socket (AC OUTLETS)	AKP-501	AKP-505	
	AC power cord	ADG-073	ADG-063	
	Operating instructions (English)	ARB-544	ARB-544	
	Packing case	AHE-217	AHE-192	

### Schematic Diagram

POWER SUPPLY CIRCUIT FOR HB TYPE



### Line Voltage Selection

Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Take out the fuse (AEK-017) from the fuse assembly.
4. Re-install the fuse in the correct voltage indication (see Fig. 1).
5. Stick the line voltage label on the rear panel.

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

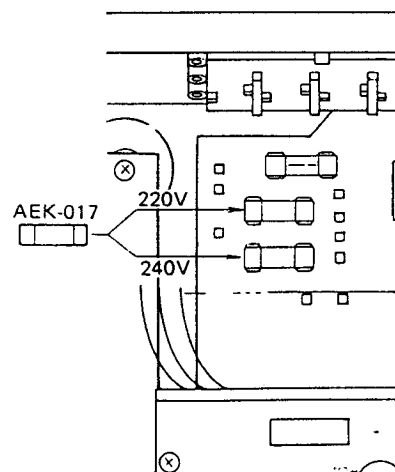


Fig. 1

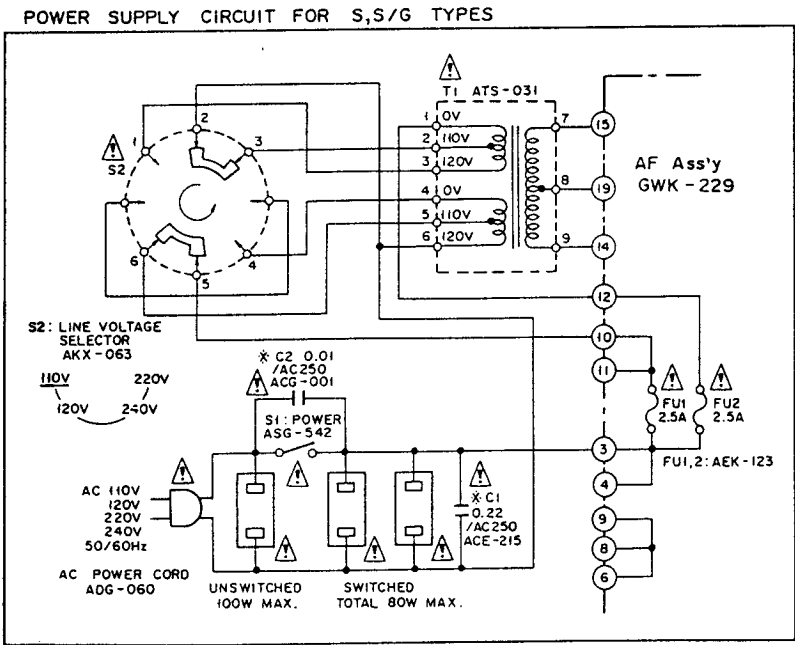
# 14. FOR S AND S/G TYPES

The S and S/G types are the same as the KU type with the exception of the following sections.

## Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.			Remarks
		KU type	S type	S/G type	
⚠ ★	T1 Power transformer (120V) (110V, 120V, 220V, 240V)	ATS-004	..... ATS-031	..... ATS-031	for line voltage selector
⚠ ★★	FU1 Fuse (5A) (2.5A)	AEK-308	..... AEK-123	..... AEK-123	
⚠ ★★	FU2 Fuse (2.5A)	.....	AEK-123	AEK-123	
⚠	S2 Line voltage selector	.....	AKX-063	AKX-063	
⚠	C1 (0.22/AC125V)	ACE-214	.....	.....	
⚠	(0.22/AC250V)	.....	ACE-215	ACE-215	
⚠	C2 (0.01/AC125V)	ACG-502	.....	.....	
	(0.01/AC250V)	.....	ACG-001	ACG-001	
⚠	AC power cord	ADG-073	ADG-060	ADG-060	
	Screw (3x10)	.....	MTZ30P100FZK	MTZ30P100FZK	
	Operating instructions (English)	ARB-544	ARB-544	ARB-544	
	(Spanish)	.....	ARC-049	.....	
	Packing case	AHE-217	AHE-192	AHE-192	

## Schematic Diagram



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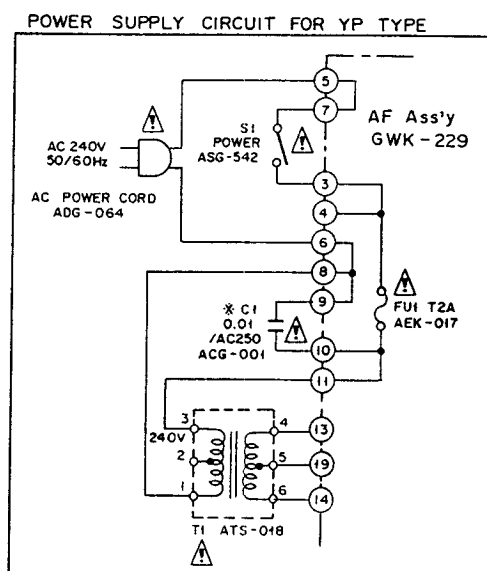
## 15. FOR YP TYPE

The YP type is the same as the KU type with the exception of the following sections.

### Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		KU type	YP type	
⚠ ★	T1 Power transformer (120V) (240V)	ATS-004	..... ATS-018	
⚠ ★★	FU1 Fuse (5A) (2A)	AEK-308	..... AEK-017	
⚠ ★★	S1 Push switch (POWER)	ASG-541	ASG-542	
⚠	C1 (0.22/AC250V)	ACE-214	.....	
	(0.01/AC250V)	.....	ACG-001	
⚠	C2 (0.01/AC125V)	ACG-502	.....	
⚠	AC socket (AC OUTLETS)	AKP-501	.....	
⚠	AC power cord	ADG-073	ADG-064	
	Packing case	AHE-217	AHE-192	

### Schematic Diagram



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