

ADDITIONAL

 PIONEER®

Service Manual

ORDER NO.
ARP-494-0

STEREO AMPLIFIER

SA-950

MODEL SA-950 COMES IN SEVEN VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
HE	AC220V, 240V (switchable)	European continent model
KU	AC 120V only	U.S.A. model
KC	AC120V only	Canada 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

- The basic performance of the model SA-950 is the same as the model SA-940. Please refer to the SA-940/KU service manual (ARP-298-0) with the exception of this service manual.
- The model SA-950 differs from the model SA-940 in style (color).

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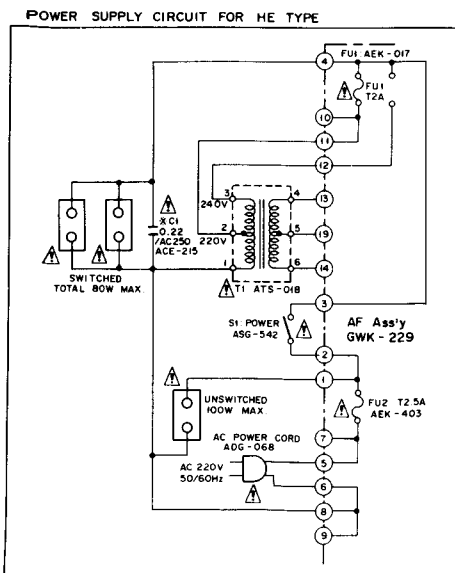
FOR HE TYPE

The SA-950/HE type is the same as the SA-940/KU type with the exception of the following sections.

Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		SA-940/KU	SA-950/HE	
	Front panel ass'y	ANM-395	ANM-547	
	Push knob ass'y A	AAD-677	.....
	Push knob ass'y B	AAD-694	.....
	Push knob ass'y C	AAD-646	.....
	Push knob A (POWER, FUNCTION)	.....	AAD-634	
	Push knob B (SPEAKERS)	.....	AAD-635	
	Push knob D (CD/VIDEO)	.....	AAD-637	
	Push knob C (LOUDNESS, ADAPTOR/ TAPE 2)	.....	AAD-636	
⚠ ★	Power transformer (120V) (220V/240V)	ATS-004	.....
⚠ ★★	FU1 Fuse (5A) (2A)	AEK-308	.....
⚠ ★★	FU2 Fuse (2.5A)	.....	AEK-017	
★★	Q1, Q2 Transistor	2SC2525/A/-B,G,X	2SC3546-O,R	} hfe of Q1~Q4 should have the same value.
★★	Q3, Q4 Transistor	2SA1075/A/-B,G,X	2SA1389-O,R (2SA1075/A/-B,G,X)	
⚠	Push switch (POWER)	ASG-541	ASG-542	
⚠	AC socket (AC OUTLET)	AKP-501	AKP-502	
	AC power cord	ADG-073	ADG-068	
	Operating instructions (English) (English/French/German/Italian)	ARB-544	.....
	Packing case	AHE-217	AHE-300	

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

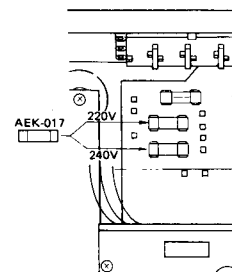


Fig. 1

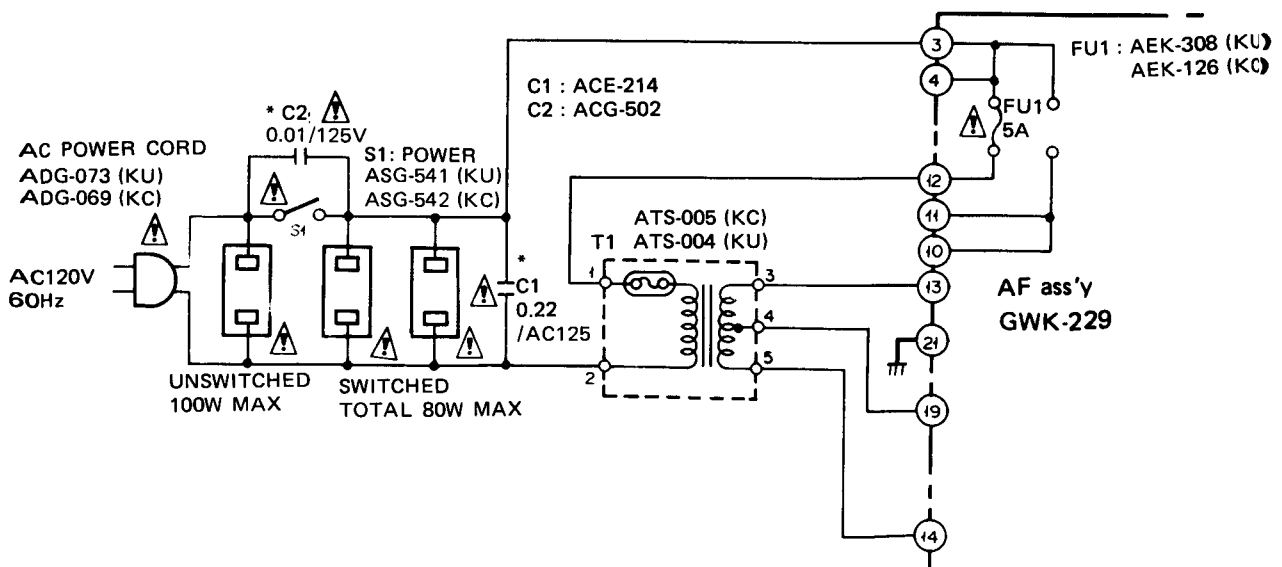
FOR KU AND KC TYPES

- The SA-950/KU, KC types are the same as the SA-940/KU type with the exception of the following sections.

Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.			Remarks
		SA-940/KU	SA-950/KU	SA-950/KC	
	Front panel ass'y	ANM-395	ANM-547	ANM-547	
	Push knob ass'y A	AAD-677	.....	.....
	Push knob ass'y B	AAD-694	.....	.....
	Push knob ass'y C	AAD-646	.....	.....
⚠	★ T1 Power transformer (120V)	ATS-004	ATS-004	ATS-005	
⚠	★★ FU1 Fuse (5A)	AEK-308	AEK-308	AEK-126	
⚠	★★ S1 Push switch (POWER)	ASG-541	ASG-541	ASG-542	
⚠	AC socket (AC OUTLETS)	AKP-501	AKP-501	AKP-504	
⚠	AC power cord	ADG-073	ADG-073	ADG-069	
	Strain relief	.....	.....	AEC-327	
★★	Q1, Q2 Transistor	2SC2525/A/-B,G,X	2SC3546-O,R (2SC2525/A/-B,G,X)	2SC3546-O,R (2SC2525/A/-B,G,X)	hfe of Q1~Q4 should have the same value.
★★	Q3, Q4 Transistor	2SA1075/A/-B,G,X	2SA1389-O,R (2SA1075/A/-B,G,X)	2SA1389-O,R (2SA1075/A/-B,G,X)	
	Operating instructions	ARB-544	ARB-588	ARB-588	
	Packing case	AHE-217	AHE-299	AHE-300	
	Push knob A (POWER, FUNCTION)	.....	AAD-634	AAD-634	
	Push knob B (SPEAKERS)	.....	AAD-635	AAD-635	
	Push knob C (CD/VIDEO)	.....	AAD-637	AAD-637	
	Push knob D (LOUDNESS, ADAPTOR/ TAPE 2)	.....	AAD-636	AAD-636	

Schematic Diagram



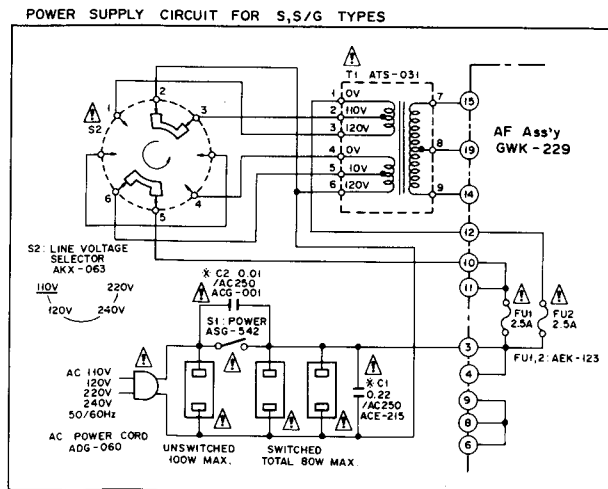
FOR S AND S/G TYPES

The SA950/S, S/G types are the same as the SA-940/KU type with the exception of the following sections.

Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.			Remarks
		SA-940/KU	SA-950/S	SA-950/S/G	
	Front panel ass'y	ANM-395	ANM-547	ANM-547	
	Push knob ass'y A	AAD-677	.....	.....
	Push knob ass'y B	AAD-694	.....	.....
	Push knob ass'y C	AAD-646	.....	.....
⚠ ★	T1 Power transformer (120V) (110V, 120V, 220V, 240V)	ATS-004	.....	.....
⚠ ★★	FU1 Fuse (5A) (2.5A)	AEK-308	.....	.....
⚠ ★★	FU2 Fuse (2.5A)	.....	AEK-123	AEK-123	
★★	Q1, Q2 Transistor	2SC2525/A/-B,G,X	2SC3546-O,R	2SC3546-O,R	hfe of Q1~Q4 should have the same value.
★★	Q3, Q4 Transistor	2SA1075/A/-B,G,X	2SA1389-O,R	2SA1389-O,R	
⚠	S2 Line voltage selector	.....	AKX-063	AKX-063	
⚠	C1 (0.22/AC125V) (0.22/AC250V)	ACE-214	.....	.....
⚠	C2 (0.01/AC125V) (0.01/AC250V)	ACG-502	.....	.....
⚠	Screw (3 x 10)	.....	ACG-001	ACG-001	
⚠	AC power cord	ADG-073	VTZ30P100FZK	VTZ30P100FSK	for line voltage selector
	Operating instructions (English) (Spanish)	ARB-544	ARB-588	ARB-588	
	Packing case	AHE-217	ARC-065	.....
	Push knob A (POWER, FUNCTION)	.....	AHE-300	AHE-300	
	Push knob B (SPEAKERS)	.....	AAD-634	AAD-634	
	Push knob C (CD/VIDEO)	.....	AAD-635	AAD-635	
	Push knob D (LOUDNESS, ADAPTOR/ TAPE 2)	.....	AAD-637	AAD-637	
		.....	AAD-636	AAD-636	

Schematic Diagram



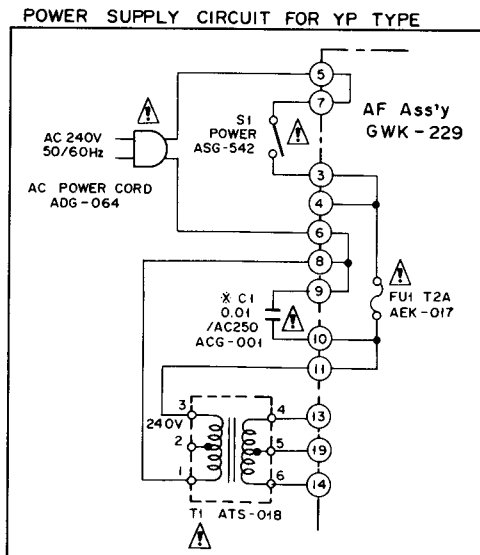
FOR YP TYPE

The SA-950/YP type is the same as the SA-940/KU type with the exception of the following sections.

Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		SA-940/KU	SA-950/YP	
	Front panel ass'y	ANM-395	ANM-547	
	Push knob ass'y A	AAD-677	.....
	Push knob ass'y B	AAD-694	.....
	Push knob ass'y C	AAD-646	.....
⚠ ★	T1 Power transformer (120V) (240V)	ATS-004	.....
⚠ ★★	FU1 Fuse (5A) (2A)	AEK-308	.....
★★	Q1, Q2 Transistor	2SC2525/A/-B,G,X	2SC3546-O,R	} hef of Q1~Q4 should have the same value.
★★	Q3, Q4 Transistor	2SA1075/A/-B,G,X	2SA1389-O,R	
			(2SA1075/A/-B,G,X)	
⚠ ★★	S1 Push switch (POWER)	ASG-541	ASG-542	
⚠	C1 (0.22/AC125V) (0.01/AC250V)	ACE-214	.....
	C2 (0.01/AC125V)	ACG-502	.....
⚠	AC socket (AC OUTLET)	AKP-501	.....
⚠	AC power cord	ADG-073	ADG-064	
	Operating instructions (English)	ARB-544	ARB-588	
	Packing case	AHE-217	AHE-300	
	Push knob A (POWER, FUNCTION)	.....	AAD-634	
	Push knob B (SPEAKERS)	.....	AAD-635	
	Push knob D (CD/VIDEO)	.....	AAD-637	
	Push knob C (LOUDNESS, ADAPTOR/ TAPE 2)	.....	AAD-636	

Schematic Diagram



FOR HEZ TYPE

The SA-950/HEZ type is the same as the SA-940/KU type with the exception of the following sections.
Contrast of Miscellaneous Parts

Mark	Symbol & Description	Part No.		Remarks
		SA-940/KU	SA-950/HEZ	
	AF ass'y	GWK-229	GWK-232	
	Front panel ass'y	ANM-395	ANM-547	
	Push knob ass'y A	AAD-677	.....
	Push knob ass'y B	AAD-694	.....
	Push knob ass'y C	AAD-646	.....
⚠ ★	T1 Power transformer (120V) (200V/240V)	ATS-004	.....
⚠ ★★	FU1 Fuse (5A) (2A)	AEK-308	.....
⚠ ★★	FU2 Fuse (2.5A)	.....	AEK-017	
⚠ ★★	S1 Push switch (POWER)	ASG-541	ASG-542	
⚠	C3~C6	.....	CQMA472K50	
⚠	C7	.....	CQMA333K50	
⚠	AC socket (OUTLET)	AKP-501	AKP-502	
	Screw	.....	ABA-115	
⚠	AC power cord	ADG-073	ADG-068	
	Operating instructions (ENGLISH)	ARB-544	.....
	Operating instructions (GERMAN)	.....	ARC-066	
	Packing case	AHE-217	AHE-300	
★★	Q1, Q2 Transistor	2SC2525/A/-B,G,X	2SC3546-O,R	} hef of Q1~Q4 should have the same value.
★★	Q3, Q4 Transistor	2SA1075/A/-B,G,X	2SA1389-O,R (2SA1075/A/-B,G,X)	
	Push knob A (POWER, FUNCTION)	.....	AAD-634	
	Push knob B (SPEAKERS)	.....	AAD-635	
	Push knob D (CD/VIDEO)	.....	AAD-637	
	Push knob C (LOUDNESS, ADAPTOR/ TAPE 2)	.....	AAD-636	

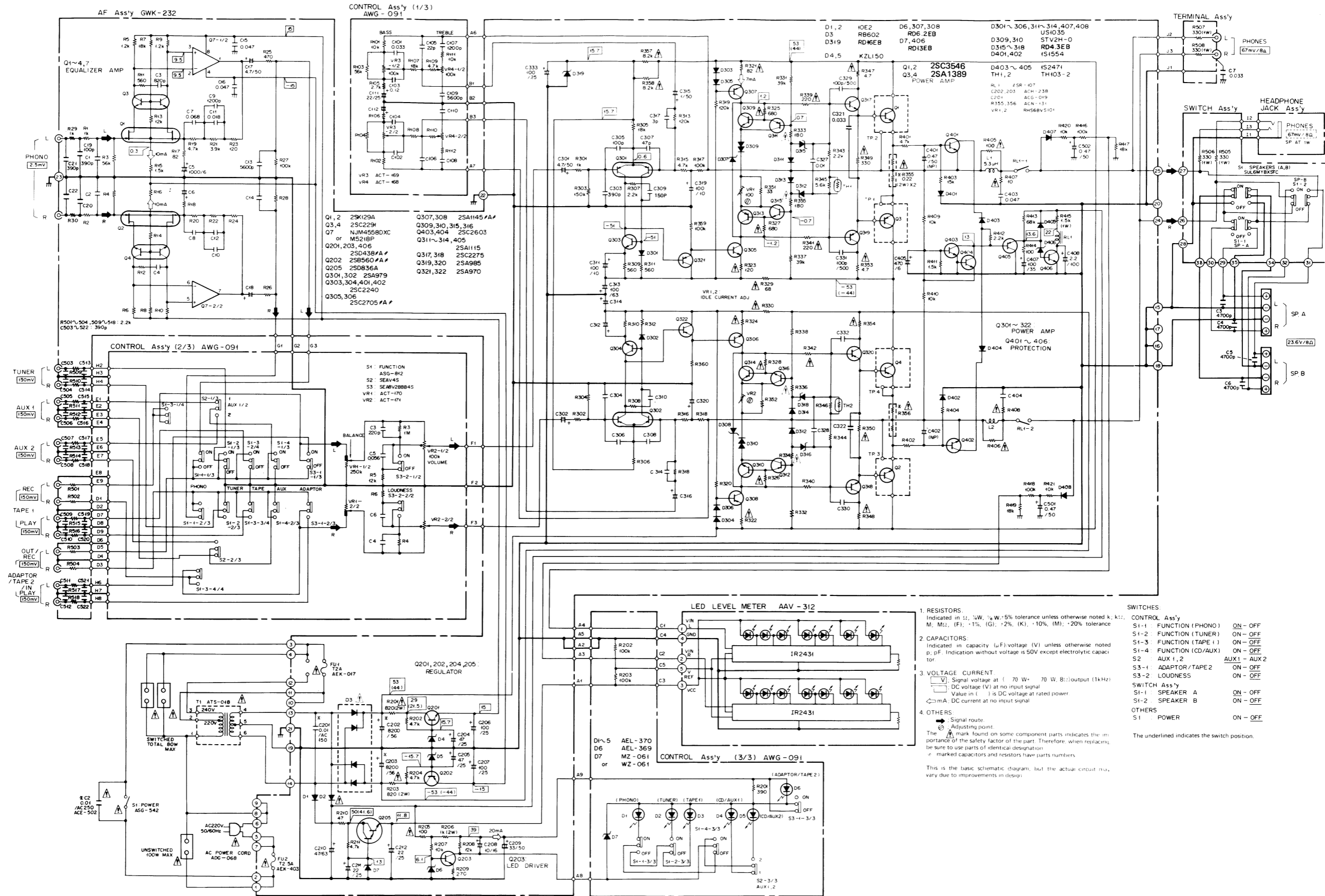
AF Assembly (GWK-232)

The AF assembly GWK-232 (for SA-950/HEZ type) is the same as the GWK-229 (for SA-940/KU type) with the exception of the following parts.

Mark	Symbol & Description	Part No.		Remarks
		GWK-229	GWK-232	
★	D315-D318	MZ-043	RD4.3EB (HZ4.3EB)	
★	D7, D405	MZ-130	RD13EB (HZ13EB)	
	C19, C20	.....	CCDSL 101J 50	
	C1, C2	CCDSL 221J 50	CKDYB 391K 50	
	C21, C22, C503-C522	.....	CKDYB 391K 50	
	C303, C304	CCDSL 121J 50	CKDYB 391K 50	
	C317, C318	CCDSL 060D 50	CCDSL 030C 50	
⚠	R405, R406	RD¼PMFL 100J	RD¼PMFL 101J	
	R1, R2	RD¼PM 100J	RD¼PM 102J	
	R29, R30	.....	RD1/8PM 102J	
	R509-R516	RD1/8PM 331J	RD1/8PM 222J	
	R517, R518	.....	RD1/8PM 222J	

SCHEMATIC DIAGRAM

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



- 1. RESISTORS:**
Indicated in Ω, 10k, 100k, 1M, 5% tolerance unless otherwise noted; k, 10k; M, 1M; (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 (70 W - 70 W, B: output (1kHz)
[Symbol] DC voltage (V) at no input signal
[Symbol] Value in () is DC voltage at rated power
[Symbol] mA, DC current at no input signal
- 4. OTHERS:**
[Symbol] Signal route
[Symbol] Adjusting point
The [Symbol] 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 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/AUX) 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.

P.C. BOARD PATTERNS

AF Assembly (GWK-232)

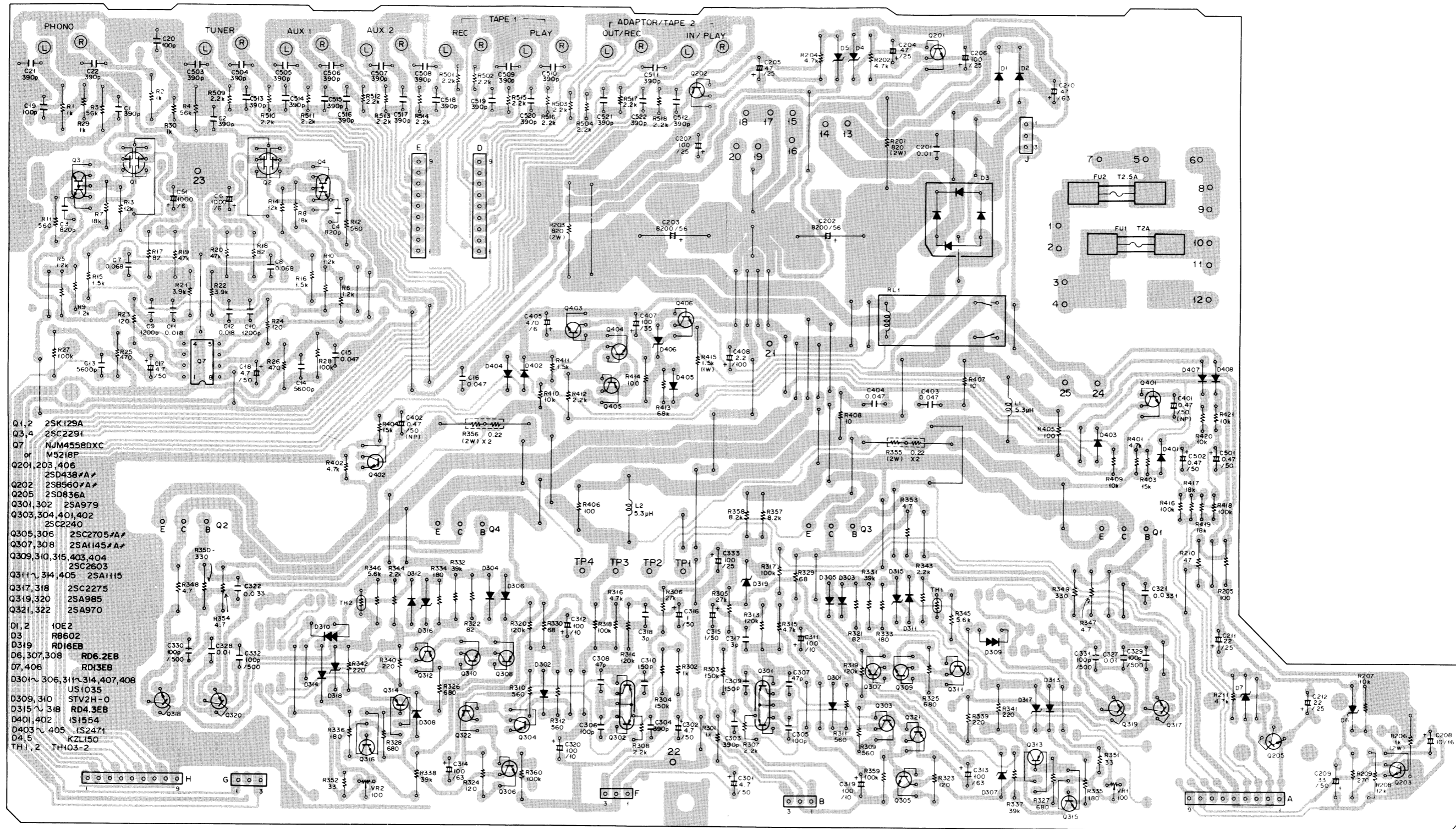
A

A

Q3 Q1 Q318 Q7 Q320 Q2 Q4 Q402 Q312 Q310 Q308 Q304 Q403 Q404 Q202 Q307 Q201 Q309 Q316 Q314 Q322 Q306 Q302 Q405 Q301 Q303 Q305 Q311 Q313 Q315 Q319 Q401 Q317 Q205 Q203

VR2

VR1



B

B

C

C

D

D