

Service Manual

STEREO AMPLIFIER

SA-500A/KU, KC, FV

NOTE

MODEL SA-500A COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Round label on rear panel	Voltage	Type
KU KC FV	120V only 120V only 5-position selector	UL approved (U.S.A.) CSA approved (Canada) General export model

CONTENTS

1. SPECIFICATIONS	1
2. FRONT PANEL FACILITIES	2
3. CONNECTION DIAGRAM	4
4. BLOCK DIAGRAM	6
5. DISASSEMBLY	
5.1 Metal cover	8
5.2 Front panel	8
5.3 Bottom plate	8
6. PARTS AND PCB LOCATION	9
7. PACKING METHOD AND PART NUMBERS	10
8. SCHEMATIC DIAGRAMS, PCB PATTERNS AND PARTS LIST	
8.1 Unit connection diagram and miscellaneous parts	11
8.2 Head amp unit (W15-032)	19
8.3 Control amp unit (AWG-010)	21
8.4 Main amp unit (AWH-005)	23
8.5 Switch unit (AWS-009)	27

1. SPECIFICATIONS

SEMICONDUCTORS

Transistors	18
Diodes	6
Music Power Output (IHF)	44 watts (4Ω) 36 watts (8Ω)
Continuous Power Output (each channel driven)	16W/16W (4Ω) 13W/13W (8Ω)
Continuous Power Output (both channel driven)	12W/12W (4Ω) 10W/10W (8Ω)
Harmonic Distortion	Less than 0.5% (Continuous power output)
Intermodulation Distortion	Less than 0.7% (Continuous power output)
Power Bandwidth (IHF)	20Hz to 40kHz (8Ω, Har- monic Distortion 0.5%)
Speakers	4 to 16Ω
Damping Factor	40 (8Ω, 1kHz)
Frequency Response (AUX)	30Hz to 50kHz, +1 dB -2 dB
Input Sensitivity/ Impedance	PHONO 1 MAG 2.5mV/50kΩ
(1kHz, for rated output)	PHONO 2 MAG 2.5mV/50kΩ
	TUNER 200mV/100kΩ
	AUX 200mV/100kΩ
	TAPE MONITOR 1,2 200mV/100kΩ
Recording Output	TAPE REC 1,2 (Pin jack) 200mV
	TAPE REC (DIN connector) 30mV

BASS Control	-11 dB, +12 dB/100Hz
TREBLE Control	-10 dB, +9.5 dB/10kHz
Equalization Curve	PHONO: RIAA S.T.D.
Loudness Contour	+10dB/100Hz, +5.5dB/ 10kHz with Volume Con- trol set at -40 dB position.
Hum and Noise (IHF)	PHONO More than 75dB TUNER, AUX More than 90 dB
Channel Separation (1kHz)	PHONO More than 50 dB TUNER, AUX More than 55 dB

MISCELLANEOUS

Power Requirements	120V 60Hz (for 120V volt- age only) or 110V, 120V, 130V, 220V and 240V. (Switchable) 50-60Hz.
Power Consumption	75W (Max)
Dimensions (overall)	13in./330mm (Width) 4-5/8in./118mm (Height) 12-7/16in./316mm (Depth)
Weight	
without package	12lb. 2oz/5.5kg
with package	15lb. 3oz/6.9kg
Furnished Accessories	Pin Plug 2 Speaker Plug 4 Connecting Cords (L,R) 2 Polishing cloth 1 Operating Instructions 1

NOTE: Specifications and the design subject to possible modifications without notice due to improvements



2. FRONT PANEL FACILITIES

BASS & TREBLE CONTROLS

Control bass and treble. Turning each control clockwise from the FLAT position will boost the tone, and turning it counterclockwise will diminish the tone.

SPEAKER SWITCH

This switch is used to select the speaker systems, and also functions as the power switch.

- POWER OFF For turning power off.
- A For turning on the speaker systems connected to the A speaker socket.
- SPKRS OFF For turning all the speaker systems off. Set the switch to this position when listening through the headphones.
- B For turning on the speaker systems connected to the B speaker socket.
- A + B For turning on the speaker systems connected to both the A and B speaker sockets.

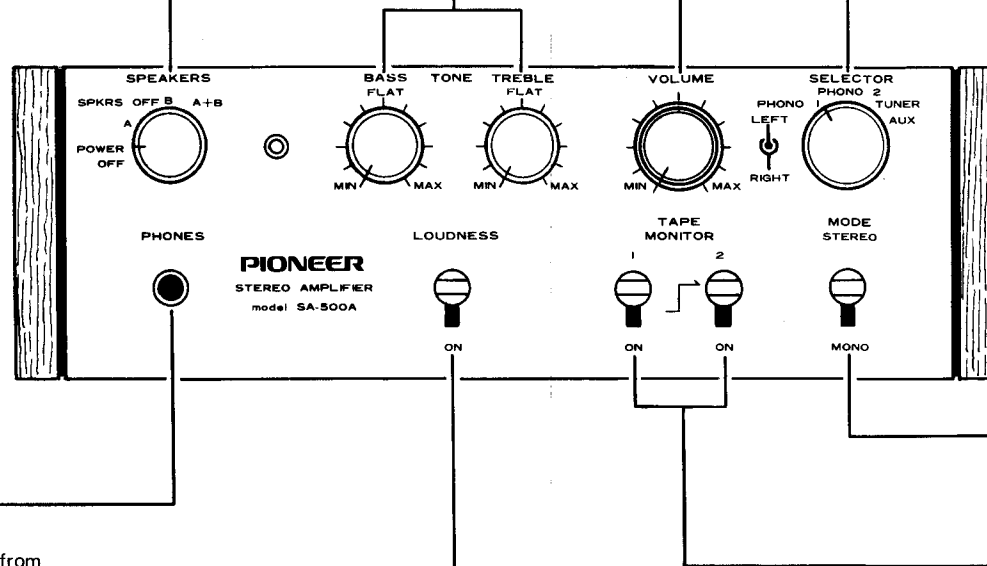
VOLUME CONTROL

This control is used to adjust the volume of sounds from the speaker systems. Turning the control to the right (→) will increase the volume. This volume control is a friction-type control consisting of two knobs. The front knob is for controlling the left channel, and the rear knob is for controlling the right channel. Usually, both knobs turn simultaneously. When adjusting the volume for one channel only or taking a balance between both channels, turn the knob for the channel to be adjusted, holding the other knob by hand.

SELECTOR SWITCH

This selects the program source to be fed into the SA-500A.

- PHONO 1 To use the turntable connected to PHONO 1 jacks.
- PHONO 2 To use the turntable connected to PHONO 2 jacks.
- TUNER For listening broadcasts through the tuner.
- AUX When component unit connected to AUX jacks is used.



PHONES JACK

Use this to plug in stereo headphones. A full selection of high-performance headphones is available from Pioneer.

LOUDNESS SWITCH

To listen to quieter sound, set this to the ON position. This emphasizes the low and high notes. For normal listening, set it to off.

MODE SWITCH

- STEREO When set to STEREO, stereo sound is present.
- MONO When set to MONO, the left and right channel signals are blended most to reproduce a monophonic sound.

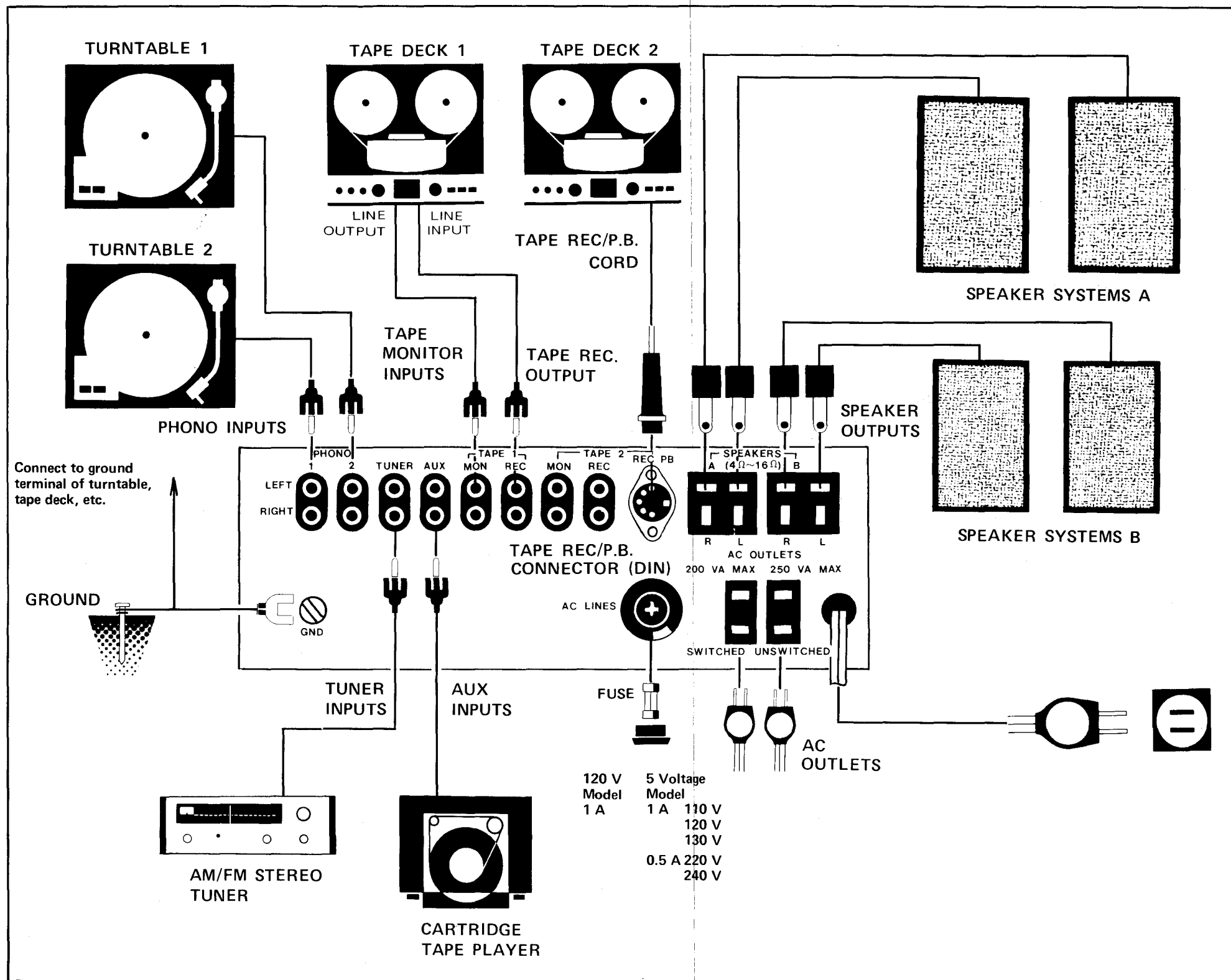
TAPE MONITOR SWITCHES (1 and 2)

These switches are set to ON for test-listening of recording in progress or playback of recorded tapes with tape decks.

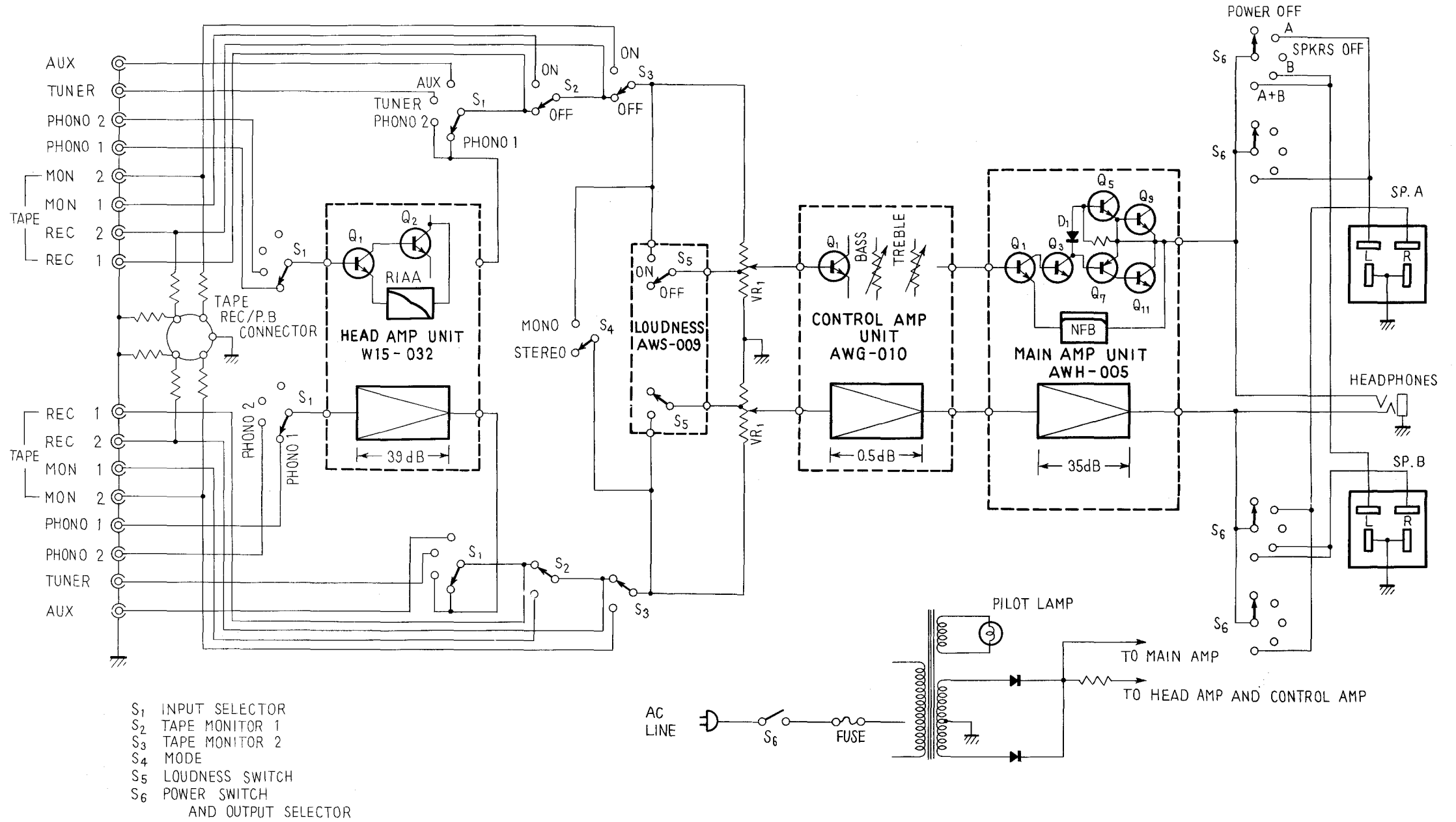
- 1 This switch is set to ON for using a tape deck plugged into TAPE 1 MON jacks and TAPE 1 REC jacks.
- 2 This switch is set to ON for using a tape deck plugged into TAPE 2 MON jacks and TAPE 2 REC jacks or TAPE REC/P.B. connector.

NOTE: For a normal record playback or listening to broadcasts, leave these switches set to the upper position (off position). If the switches are set to ON, sound does not produce from speakers.

3. CONNECTION DIAGRAM



4. BLOCK DIAGRAM



5. DISASSEMBLY

5.1 METAL COVER

Remove 4 screws from sides of the metal cover. Pull the cover backward off the amplifier housing. See photo 1.

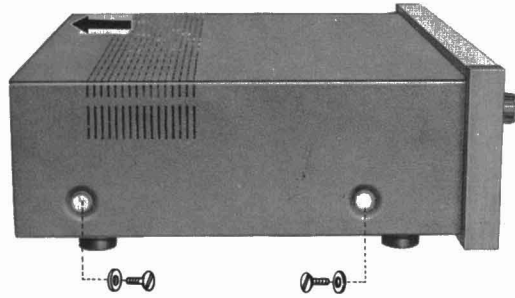


Photo 1

5.2 FRONT PANEL

Pull off all knobs, then remove the nuts and washers from their shafts as in photo 2, and remove 2 screws from the sides of the front panel. (See photo 3.) The front panel can now be removed.

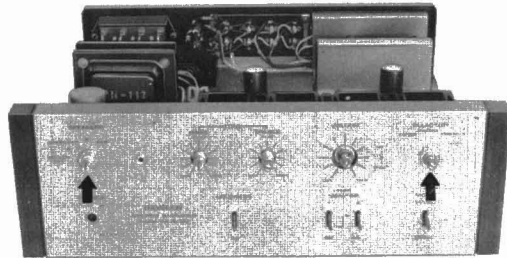


Photo 2

5.3 BOTTOM PLATE

The bottom plate can be removed after loosening the 5 screws. See photo 4.

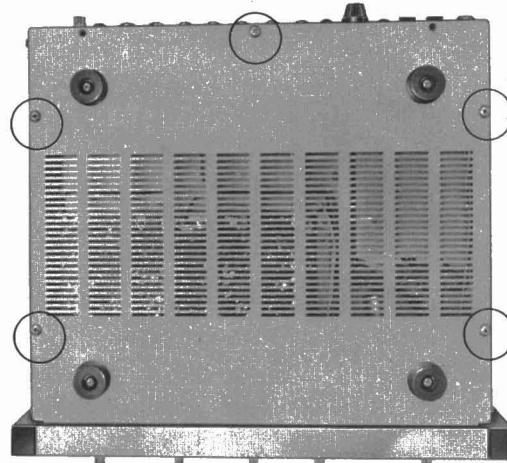


Photo 4

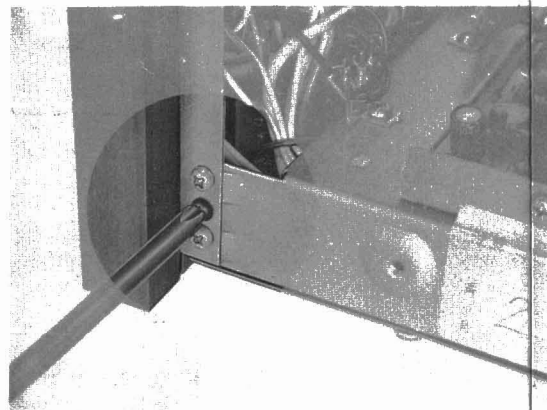
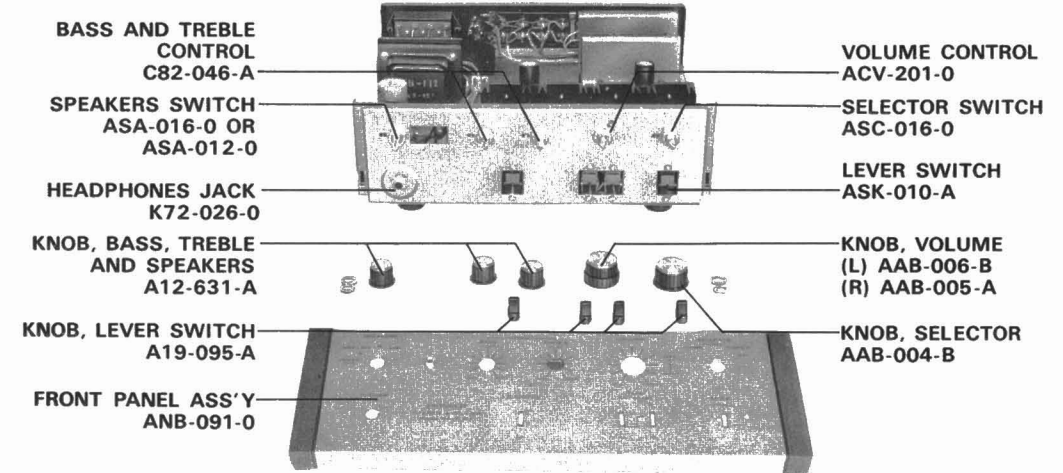


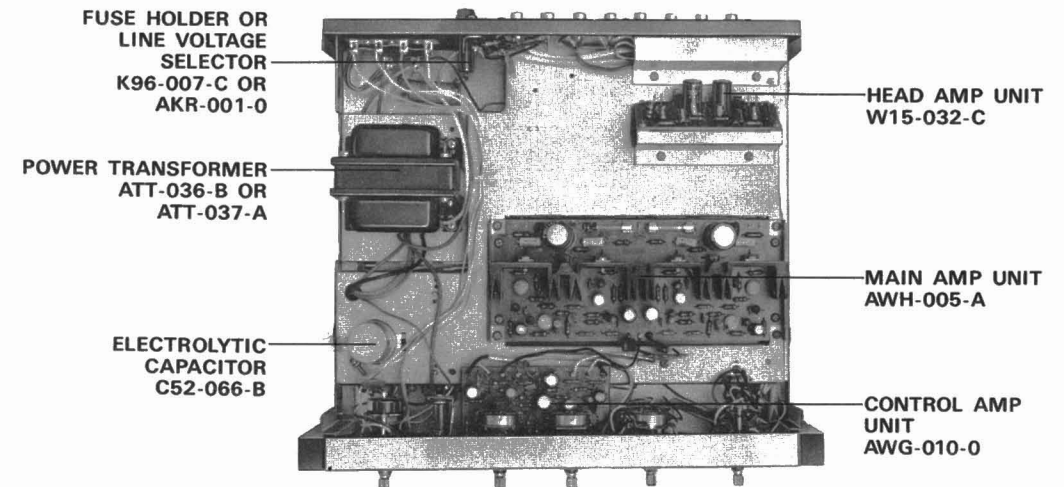
Photo 3

6. PARTS AND PCB LOCATION

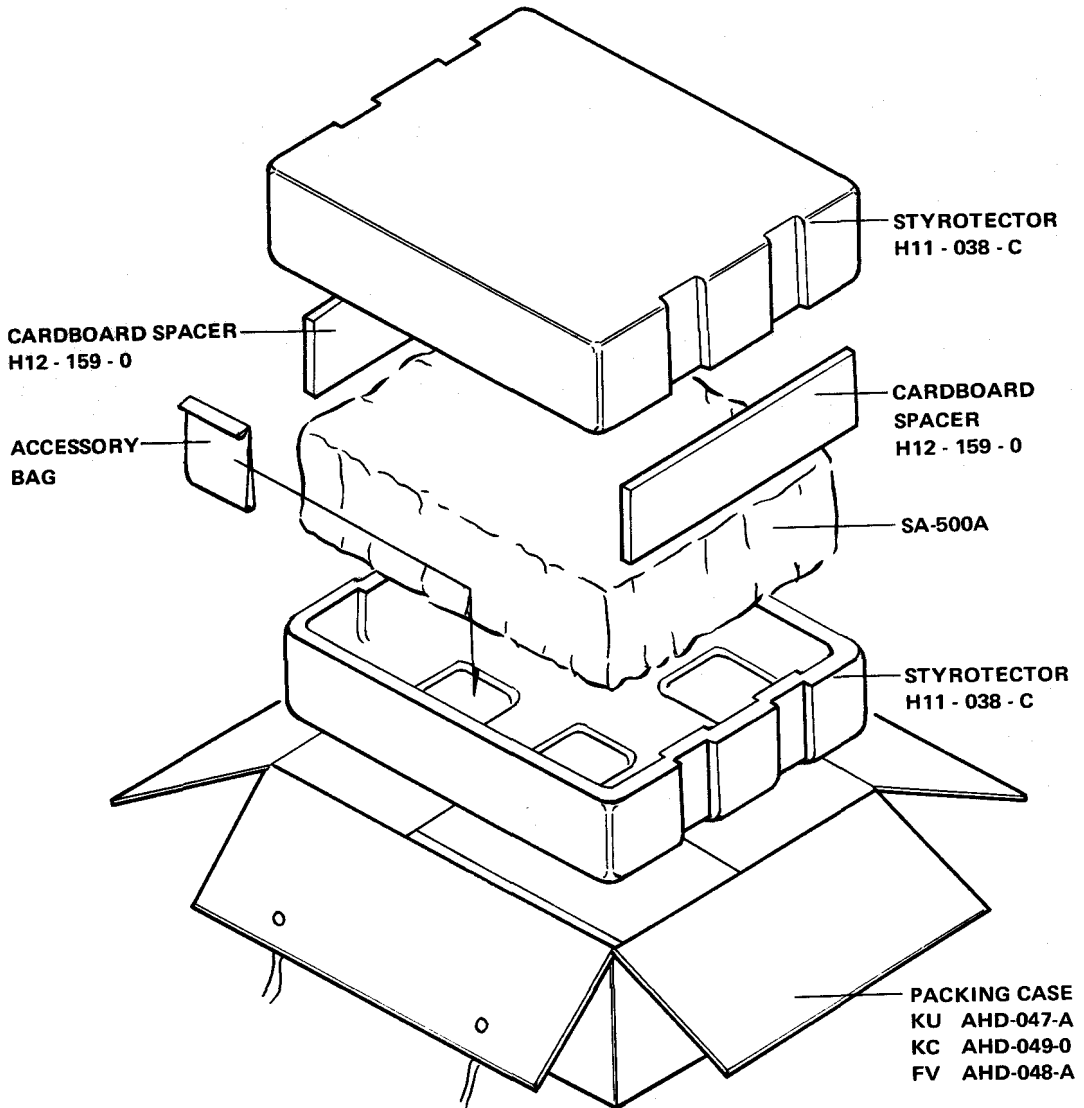
FRONT VIEW



TOP VIEW

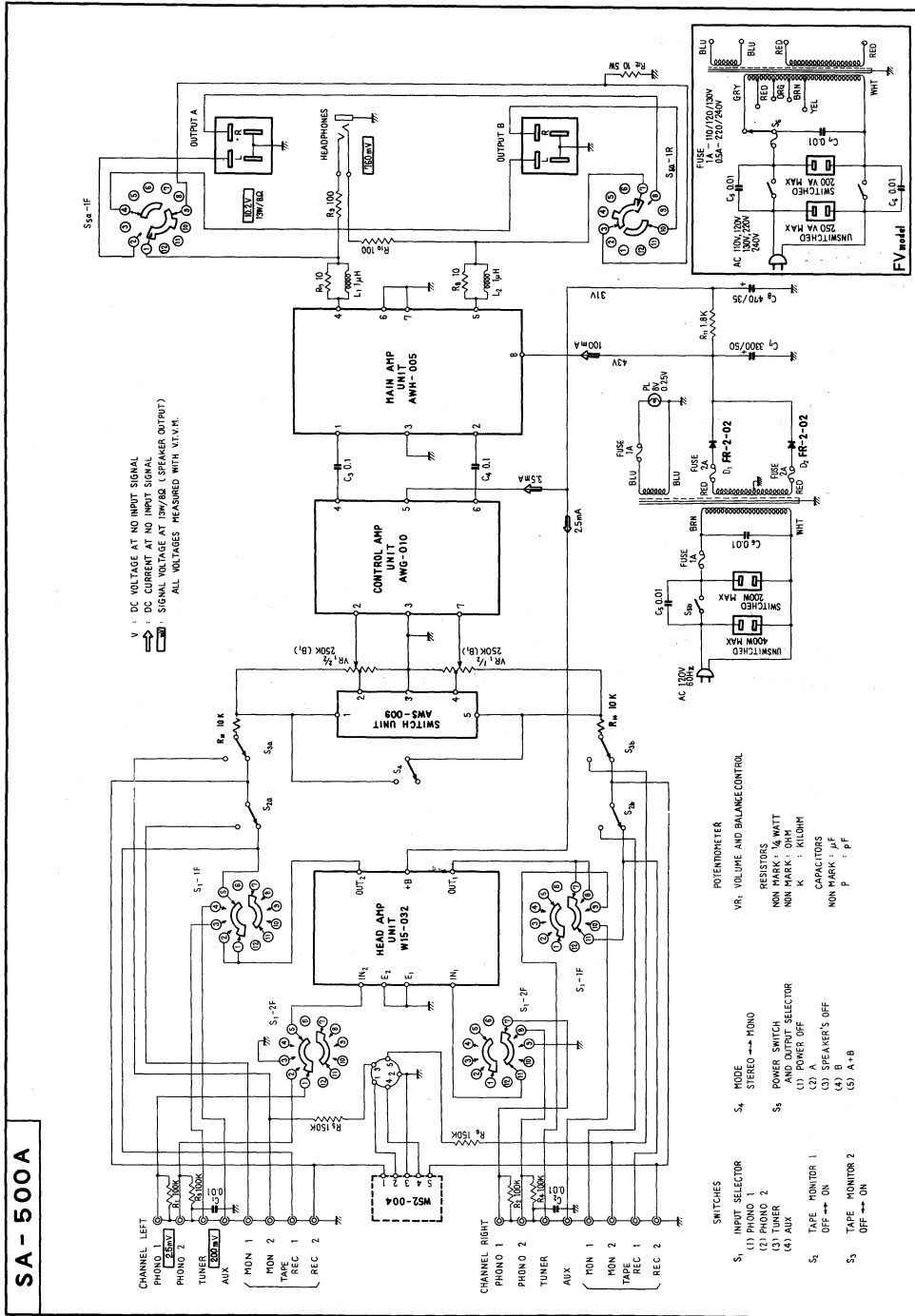


7. PACKING METHOD AND PART NUMBERS



8. SCHEMATIC DIAGRAMS, PCB PATTERNS AND PARTS LIST

8.1 UNIT CONNECTION DIAGRAM AND MISCELLANEOUS PARTS



MISCELLANEOUS PARTS

NOTE

This parts list is for the KU model, the KC or FV model uses some different parts as following pages:
 for KC model 15
 for FV model 17

CAPACITORS

IN μ F UNLESS OTHERWISE NOTED. p: μ Mf.

Symbol	Description	Part No.
C1	Ceramic 0.01 50V	CKDYF 103Z 50
C2	Ceramic 0.01 50V	CKDYF 103Z 50
C3	Mylar 0.1 50V	CQMA 104K 50
C4	Mylar 0.1 50V	CQMA 104K 50
C5	Ceramic 0.01 DC 1.4kV	C43-003-0
C6	Oil paper 0.01 800V	ACE-001-0
C7	Electrolytic 3300 50V	C52-066-B
C8	Electrolytic 470 35V	CEB 47P 35

RESISTORS

IN Ω , $\frac{1}{2}$ W UNLESS OTHERWISE NOTED. k: k Ω , M: M Ω .

Symbol	Description	Part No.
R1	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R2	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R3	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R4	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R5	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R6	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R7	Carbon film 10 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 100J
R8	Carbon film 10 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 100J
R9	Carbon film 100 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 101J
R10	Carbon film 100 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 101J
R11	Carbon film 1.8k $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 182J
R12	Wire wound 10 5W	RT5B 100K
R13	Carbon film 10k	RD $\frac{1}{4}$ PS 103J
R14	Carbon film 10k	RD $\frac{1}{4}$ PS 103J

SWITCHES

Symbol	Description	Part No.
S1	Selector Switch	ASC-016-0
S2	Lever Switch (Tape Mon 1)	ASK-009-A
S3	Lever Switch (Tape Mon 2)	ASK-009-A
S4	Lever Switch (Mode)	ASK-010-A
S5	Speakers Switch	ASA-011-0

SEMICONDUCTORS

Symbol	Description	Part No.
D1	FR2-02 Diode	
D2	FR2-02 Diode	

COILS AND TRANSFORMER

Symbol	Description	Part No.
L1	Power Transformer	ATT-036-B
L2	Choke Coil	ATH-003-0
	Choke Coil	ATH-003-0

POTENTIOMETER

Symbol	Description	Part No.
VR1	Volume Control, 250k-B1	ACV-201-0

OTHERS

Symbol	Description	Part No.
	Head Amp Unit	W15-032-C
	Control Amp Unit	AWG-010-0
	Main Amp Unit	AWH-005-A
	Switch Unit	AWS-009-0
	Front Panel Ass'y	ANB-091-0
	Metal Cover	ANE-006-A
	Knob for Volume (L)	AAB-006-B
	Knob for Volume (R)	AAB-005-A
	Knob for Selector	AAB-004-B
	Knob for Bass, Treble and Speakers	A12-631-A
	Knob for Lever Switch	A19-095-A
	16P Input Terminal Board	AKB-002-0
	4P Ground Terminal	K13-047-0
	Compound Part for Rec Terminal	W52-004-0
	Speaker Socket	K72-031-0
	Spare AC Outlet	AKP-002-0
	Fuse Holder	K96-007-C
	Pilot Lamp Socket	K41-002-B
	5P Connector (DIN)	K93-003-B
	Headphones Jack	K72-026-0
	Pilot Lamp	E22-026-0
	Fuse 1A	E21-033-0
	Foot	M61-017-A
	Fuse 1A for Protection	AEX-004-0
	Fuse 2A for Protection	AEX-002-0

Symbol	Description	Part No.
	Screw for Grounding Screw to fix Metal Cover AC Power Cord Operating Instructions Connection Cord (white)	B11-012-A B11-015-B D11-003-E ARB-040-0 D51-003-B
	Connection Cord (red) Speaker Plug Packing Case Styrofoam Vinyl Bag	D51-004-B K72-007-B AHD-047-A H11-038-C H14-044-0
	Soft Paper Cardboard Spacer	H12-126-A H12-159-0

CAPACITORS

IN μ F UNLESS OTHERWISE NOTED. p: μ μ F.

Symbol	Description	Part No.
C1	Ceramic 0.01 50V	CKDYF 103Z 50
C2	Ceramic 0.01 50V	CKDYF 103Z 50
C3	Mylar 0.1 50V	QOMA 104K 50
C4	Mylar 0.1 50V	QOMA 104K 50
C5	Ceramic 0.01 DC 1.4kV	C43-003-0
C6	Oil paper 0.01 450V	C15-001-0
C7	Electrolytic 3300 50V	C52-066-B
C8	Electrolytic 470 35V	CEB 471P 35

RESISTORS

IN Ω , $\frac{1}{4}$ W UNLESS OTHERWISE NOTED. k: k Ω , M: M Ω .

Symbol	Description	Part No.
R1	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R2	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R3	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R4	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R5	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R6	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R7	Carbon film 10 $\frac{1}{4}$ W	RD $\frac{1}{2}$ PS 100J
R8	Carbon film 10 $\frac{1}{4}$ W	RD $\frac{1}{2}$ PS 100J
R9	Carbon film 100 $\frac{1}{4}$ W	RD $\frac{1}{2}$ PS 101J
R10	Carbon film 100 $\frac{1}{4}$ W	RD $\frac{1}{2}$ PS 101J
R11	Carbon film 1.8k $\frac{1}{4}$ W	RD $\frac{1}{2}$ PS 182J
R12	Wire wound 10 5W	RT5B 100K
R13		RD $\frac{1}{4}$ PS 103J
R14		RD $\frac{1}{4}$ PS 103J

SWITCHES

Symbol	Description	Part No.
S1	Selector Switch	ASC-016-0
S2	Lever Switch (Tape Mon 1)	ASK-009-A
S3	Lever Switch (Tape Mon 2)	ASK-009-A
S4	Lever Switch (Mode)	ASK-010-A
S5	Speakers Switch	ASA-016-0

SEMICONDUCTORS

Symbol	Description	Part No.
D1	FR2-02 Diode	
D2	FR2-02 Diode	

COILS AND TRANSFORMER

Symbol	Description	Part No.
L1	Power Transformer	ATT-036-B
L2	Choke Coil	ATH-003-0
	Choke Coil	ATH-003-0

POTENTIOMETER

Symbol	Description	Part No.
VR1	Volume Control, 250k-B1	ACV-201-0

OTHERS

Symbol	Description	Part No.
	Head Amp Unit	W15-032-C
	Control Amp Unit	AWG-010-0
	Main Amp Unit	AWH-005-A
	Switch Unit	AWS-009-0
	Front Panel Ass'y	ANB-091-0
	Metal Cover	ANE-006-A
	Knob for Volume (L)	AAB-006-B
	Knob for Volume (R)	AAB-005-A
	Knob for Selector	AAB-004-B
	Knob for Bass, Treble and Speakers	A12-631-A
	Knob for Lever Switch	A19-095-A
	16P Input Terminal Board	AKB-002-0
	4P Ground Terminal	K13-047-0
	Compound Part for Rec Terminal	W52-004-0
	Speaker Socket	K72-031-0
	Spare AC Outlet	K82-014-0
	Fuse Holder	K96-007-C
	Pilot Lamp Socket	K41-002-B
	5P Connector (DIN)	K93-003-B
	Headphones Jack	K72-026-0
	Pilot Lamp	E22-026-0
	Fuse 1A	E21-004-A
	Foot	AEC-012-0
	Fuse 1A for Protection	E21-020-0
	Fuse 2A for Protection	E21-026-0

Symbol	Description	Part No.
	Screw for Grounding	B11-012-A
	Screw to fix Metal Cover	B11-005-C
	AC Power Cord	D11-003-E
	Operating Instructions	ARB-039-0
	Connection Cord (white)	D51-003-B
	Connection Cord (red)	D51-004-B
	Speaker Plug	K72-032-0
	Packing Case	AHD-049-0
	Styrotector	H11-038-C
	Vinyl Bag	H14-044-0
	Soft Paper	H12-126-A
	Cardboard Spacer	H12-159-0
	Pin Plug	K72-015-A

CAPACITORSIN μ F UNLESS OTHERWISE NOTED. p: μ F.

Symbol	Description	Part No.
C1	Ceramic 0.01 50V	CKDYF 103Z 50
C2	Ceramic 0.01 50V	CKDYF 103Z 50
C3	Mylar 0.1 50V	COMA 104K 50
C4	Mylar 0.1 50V	COMA 104K 50
C5	Ceramic 0.01 DC 1.4kV	C43-003-0
C6	Ceramic 0.01 DC 1.4kV	C43-003-0
C7	Ceramic 0.01 DC 1.4kV	C43-003-0
C8	Electrolytic 3300 50V	C52-066-B
C9	Electrolytic 470 35V	CEB 471P35

RESISTORSIN Ω , $\frac{1}{2}$ W UNLESS OTHERWISE NOTED. k: k Ω , M: M Ω .

Symbol	Description	Part No.
R1	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R2	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R3	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R4	Carbon film 100k	RD $\frac{1}{4}$ PS 104J
R5	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R6	Carbon film 150k	RD $\frac{1}{4}$ PS 154J
R7	Carbon film 10 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 100J
R8	Carbon film 10 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 100J
R9	Carbon film 100 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 101J
R10	Carbon film 100 $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 101J
R11	Carbon film 1.8k $\frac{1}{2}$ W	RD $\frac{1}{2}$ PS 182J
R12	Wire wound 10 5W	RT5B 100K
R13	Carbon film 10k	RD $\frac{1}{4}$ PS 103J
R14	Carbon film 10k	RD $\frac{1}{4}$ PS 103J

SWITCHES

Symbol	Description	Part No.
S1	Selector Switch	ASC-016-0
S2	Lever Switch (Tape Mon 1)	ASK-009-A
S3	Lever Switch (Tape Mon 2)	ASK-009-A
S4	Lever Switch (Mode)	ASK-010-A
S5	Speakers Switch	ASA-012-0
S6	Line Voltage Selector	AKR-001-0

SEMICONDUCTORS

Symbol	Description	Part No.
D1	FR2-02 Diode	
D2	FR2-02 Diode	

COILS AND TRANSFORMER

Symbol	Description	Part No.
L1	Power Transformer	ATT-037-A
L2	Choke Coil	ATH-003-0
	Choke Coil	ATH-003-0

POTENTIOMETER

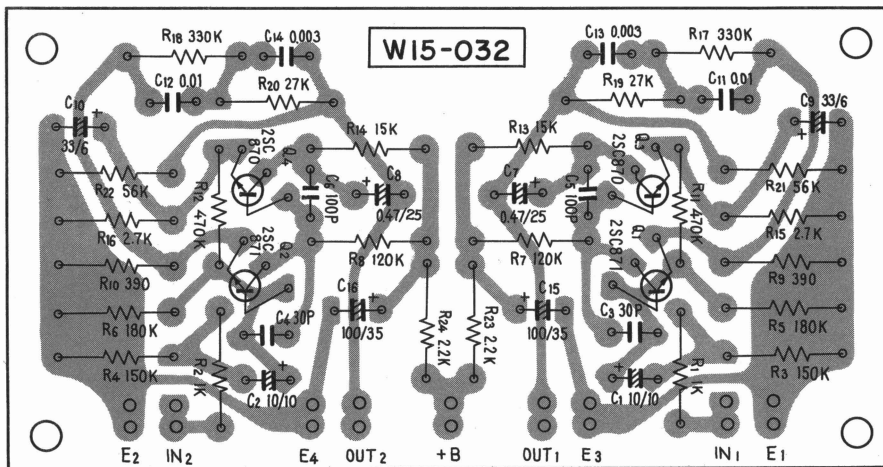
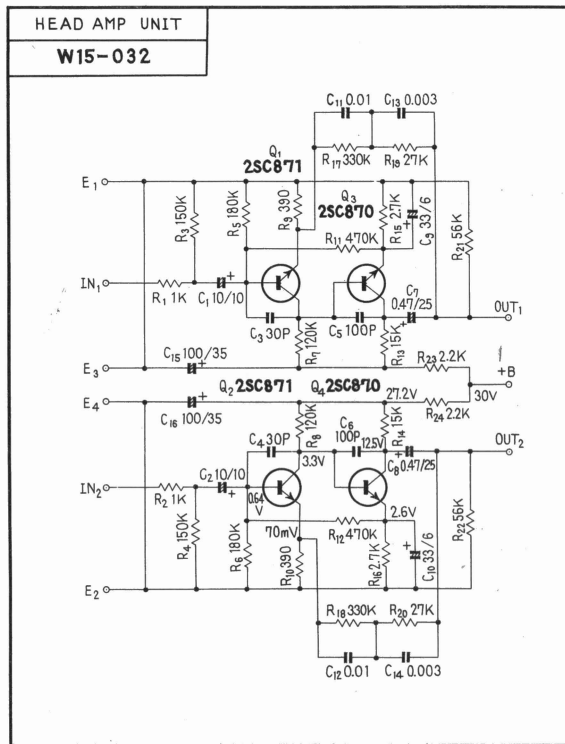
Symbol	Description	Part No.
VR1	Volume Control, 250k-B1	ACV-201-0

OTHERS

Symbol	Description	Part No.
	Head Amp Unit	W15-032-C
	Control Amp Unit	AWG-010-0
	Main Amp Unit	AWH-005-A
	Switch Unit	AWS-009-0
	Front Panel Ass'y	ANB-091-0
	Metal Cover	ANE-006-A
	Knob for Volume (L)	AAB-006-B
	Knob for Volume (R)	AAB-005-A
	Knob for Selector	AAB-004-B
	Knob for Bass, Treble and Speakers	A12-631-A
	Knob for Lever Switch	A19-095-A
	16P Input Terminal Board	AKB-002-0
	4P Ground Terminal	K13-047-0
	Compound Part for Rec Terminal	W52-004-0
	Speaker Socket	K72-031-0
	Spare AC Outlet	K82-014-0
	Pilot Lamp Socket	K41-002-B
	5P Connector (DIN)	K93-003-B
	Headphones Jack	K72-026-0
	Pilot Lamp	E22-026-0
	Fuse 1A	E21-004-A
	Foot	M61-017-A
	Fuse 1A for Protection	E21-020-0
	Fuse 2A for Protection	E21-026-0
	Screw for Grounding	B11-012-A

Symbol	Description	Part No.
	Screw to fix Metal Cover	B11-015-B
	AC Power Cord	D11-003-E
	Operating Instructions	ARB-039-0
	Connection Cord (white)	D51-003-B
	Connection Cord (red)	D51-004-B
	Speaker Plug	K72-007-B
	Packing Case	AHD-048-A
	Styrofoam	H11-038-C
	Vinyl Bag	H14-044-0
	Soft Paper	H12-126-A
	Cardboard Spacer	H12-159-0
	Fuse 0.5A	E21-007-0

8.2 HEAD AMP UNIT (W15-032)



PARTS LIST OF HEAD AMP UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 10	CEA 100P 10
C2	Electrolytic 10	CEA 100P 10
C3	Ceramic 30p	CCDSL 300K 50
C4	Ceramic 30p	CCDSL 300K 50
C5	Ceramic 100p	CCDSL 101K 50
C6	Ceramic 100p	CCDSL 101K 50
C7	Electrolytic 0.47	CSSA R47M 25
C8	Electrolytic 0.47	CSSA R47M 25
C9	Electrolytic 33	CEA 330P 6
C10	Electrolytic 33	CEA 330P 6
C11	Mylar 0.01	CQMA 103M 50
C12	Mylar 0.01	CQMA 103M 50
C13	Mylar 0.003	CQMA 302M 50
C14	Mylar 0.003	CQMA 302M 50
C15	Electrolytic 100	CEA 101P 35
C16	Electrolytic 100	CEA 101P 35
C17	Ceramic 100p	CCDSL 101K 50
C18	Ceramic 100p	CCDSL 101K 50

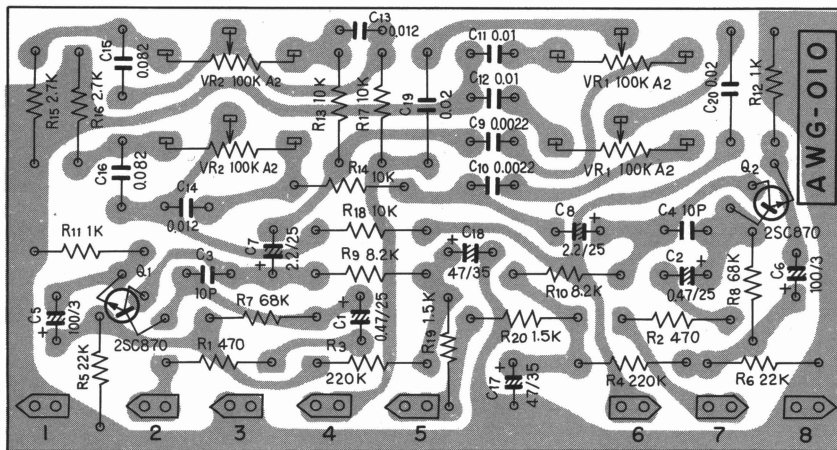
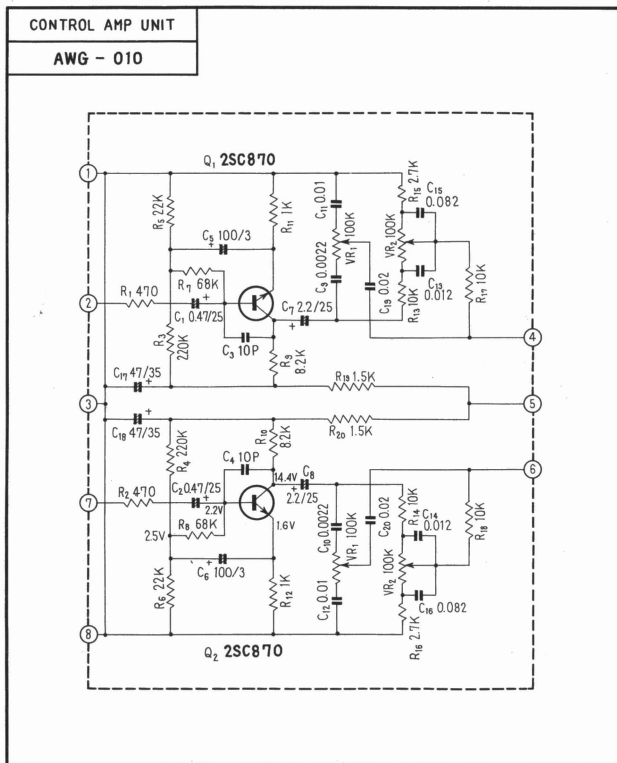
SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC871GR or BL Transistor	
Q2	2SC871GR or BL Transistor	
Q3	2SC870 Transistor	
Q4	2SC870 Transistor	

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 1k	RD $\frac{1}{4}$ PS 102K
R2	Carbon film 1k	RD $\frac{1}{4}$ PS 102K
R3	Carbon film 150k	RD $\frac{1}{4}$ PS 154K
R4	Carbon film 150k	RD $\frac{1}{4}$ PS 154K
R5	Carbon film 180k	RD $\frac{1}{4}$ PS 184K
R6	Carbon film 180k	RD $\frac{1}{4}$ PS 184K
R7	Carbon film 120k	RD $\frac{1}{4}$ PS 124K
R8	Carbon film 120k	RD $\frac{1}{4}$ PS 124K
R9	Carbon film 390	RD $\frac{1}{4}$ PS 391K
R10	Carbon film 390	RD $\frac{1}{4}$ PS 391K
R11	Carbon film 470k	RD $\frac{1}{4}$ PS 474K
R12	Carbon film 470k	RD $\frac{1}{4}$ PS 474K
R13	Carbon film 15k	RD $\frac{1}{4}$ PS 153K
R14	Carbon film 15k	RD $\frac{1}{4}$ PS 153K
R15	Carbon film 2.7k	RD $\frac{1}{4}$ PS 272K
R16	Carbon film 2.7k	RD $\frac{1}{4}$ PS 272K
R17	Carbon film 330k	RD $\frac{1}{4}$ PS 334K
R18	Carbon film 330k	RD $\frac{1}{4}$ PS 334K
R19	Carbon film 27k	RD $\frac{1}{4}$ PS 273K
R20	Carbon film 27k	RD $\frac{1}{4}$ PS 273K
R21	Carbon film 56k	RD $\frac{1}{4}$ PS 563K
R22	Carbon film 56k	RD $\frac{1}{4}$ PS 563K
R23	Carbon film 2.2k	RD $\frac{1}{4}$ PS 222K
R24	Carbon film 2.2k	RD $\frac{1}{4}$ PS 222K

8.3 CONTROL AMP UNIT (AWG-010)



PARTS LIST OF CONTROL AMP UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic	CSSA R47X 25
C2	Electrolytic	CSSA R47X 25
C3	Ceramic	CCDSL 100K 50
C4	Ceramic	CCDSL 100K 50
C5	Electrolytic	CEA 101P 3
C6	Electrolytic	CEA 101P 3
C7	Electrolytic	CSSA 2R2X 25
C8	Electrolytic	CSSA 2R2X 25
C9	Mylar	CQMA 222K 50
C10	Mylar	CQMA 222K 50
C11	Mylar	CQMA 103K 50
C12	Mylar	CQMA 103K 50
C13	Mylar	CQMA 123K 50
C14	Mylar	CQMA 123K 50
C15	Mylar	CQMA 823K 50
C16	Mylar	CQMA 823K 50
C17	Electrolytic	CEA 470P 35
C18	Electrolytic	CEA 470P 35
C19	Mylar	CQMA 203K 50
C20	Mylar	CQMA 203K 50

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC870-BL Transistor	
Q2	2SC870-BL Transistor	

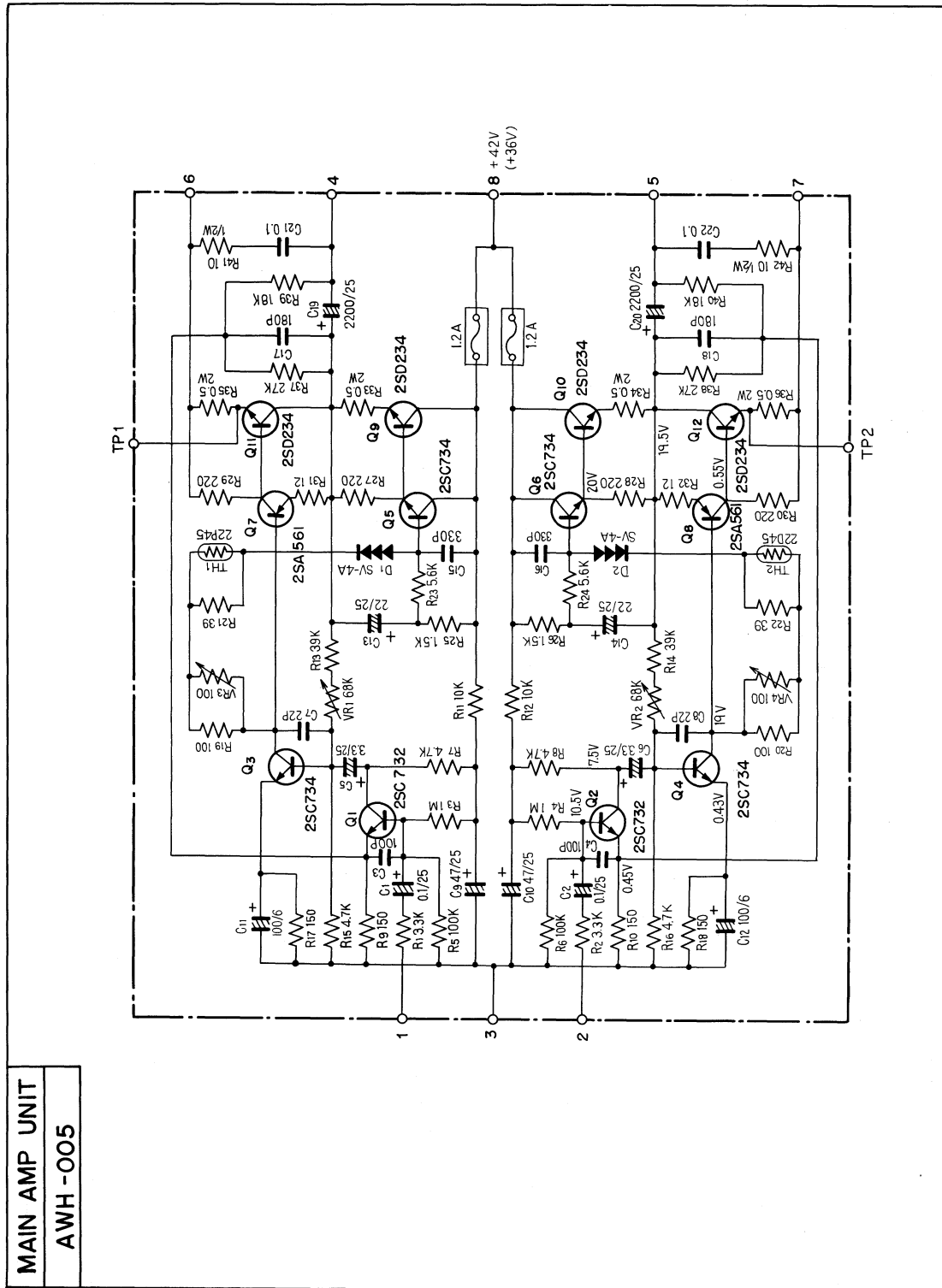
RESISTORS

Symbol	Description	Part No.
R1	Carbon film	RD $\frac{1}{4}$ PS 471J
R2	Carbon film	RD $\frac{1}{4}$ PS 471J
R3	Carbon film	RD $\frac{1}{4}$ PS 224J
R4	Carbon film	RD $\frac{1}{4}$ PS 224J
R5	Carbon film	RD $\frac{1}{4}$ PS 223J
R6	Carbon film	RD $\frac{1}{4}$ PS 223J
R7	Carbon film	RD $\frac{1}{4}$ PS 683J
R8	Carbon film	RD $\frac{1}{4}$ PS 683J
R9	Carbon film	RD $\frac{1}{4}$ PS 822J
R10	Carbon film	RD $\frac{1}{4}$ PS 822J
R11	Carbon film	RD $\frac{1}{4}$ PS 102J
R12	Carbon film	RD $\frac{1}{4}$ PS 102J
R13	Carbon film	RD $\frac{1}{4}$ PS 103J
R14	Carbon film	RD $\frac{1}{4}$ PS 103J
R15	Carbon film	RD $\frac{1}{4}$ PS 272J
R16	Carbon film	RD $\frac{1}{4}$ PS 272J
R17	Carbon film	RD $\frac{1}{4}$ PS 103J
R18	Carbon film	RD $\frac{1}{4}$ PS 103J
R19	Carbon film	RD $\frac{1}{4}$ PS 152J
R20	Carbon film	RD $\frac{1}{4}$ PS 152J

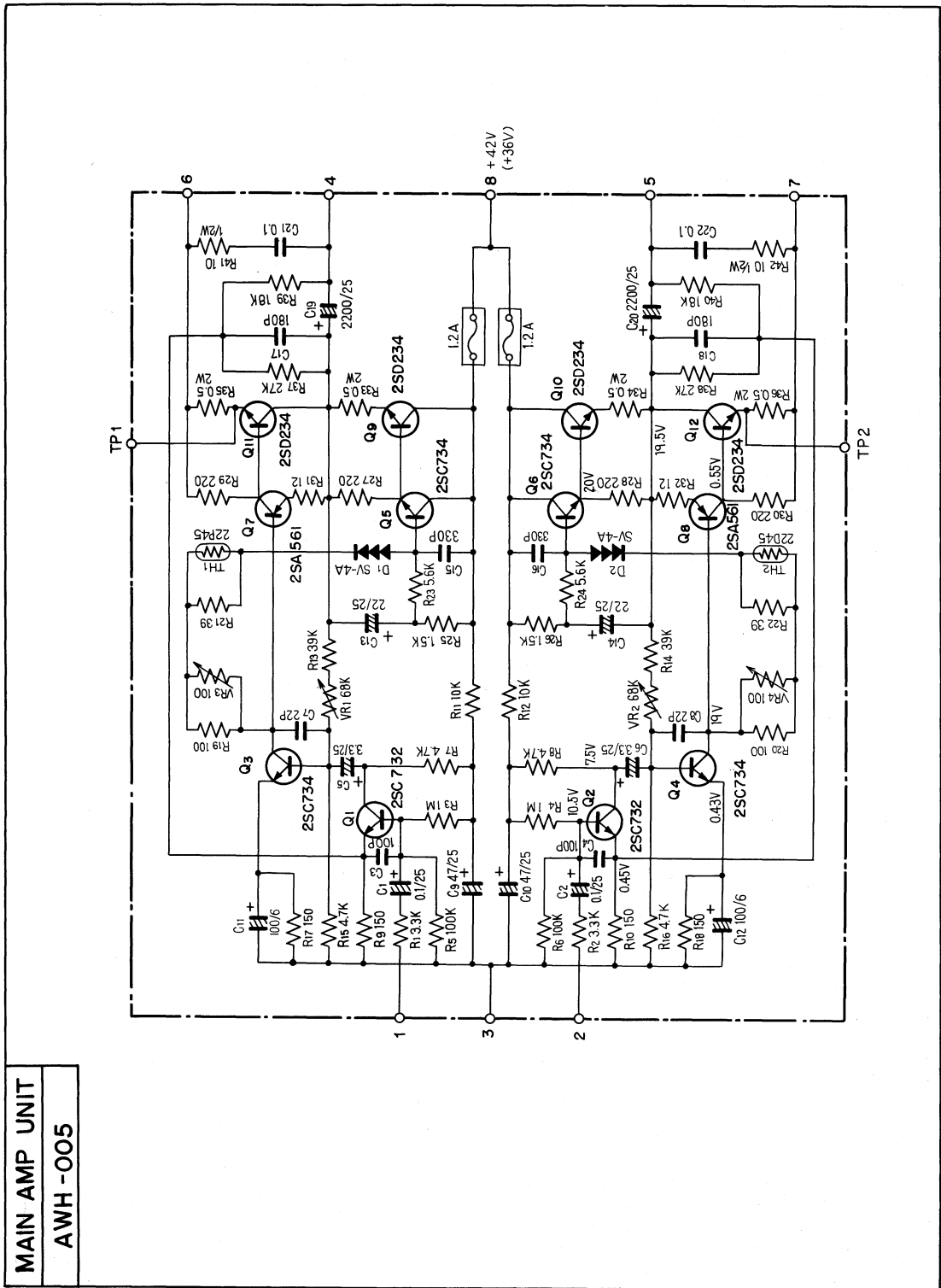
POTENTIOMETERS

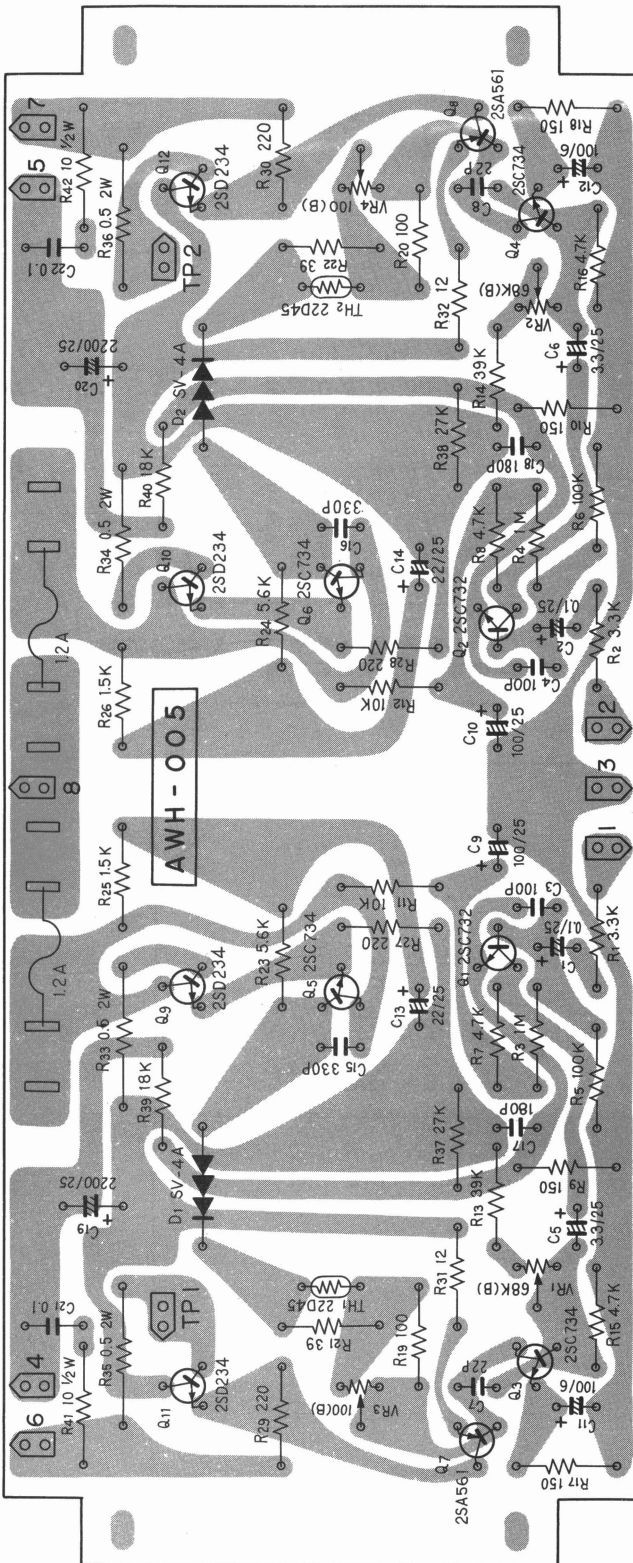
Symbol	Description	Part No.
VR1	100k-A2 dual	C82-046-A
VR2	100k-A2 dual	C82-046-A

8.4 MAIN AMP UNIT (AWH-005)



8.4 MAIN AMP UNIT (AWH-005)





PARTS LIST OF MAIN AMP UNIT

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic	CSSA 0R1X 25
C2	Electrolytic	CSSA 0R1X 25
C3	Ceramic	CCDSL 101K 50
C4	Ceramic	CCDSL 101K 50
C5	Electrolytic	CEA 3R3P 25
C6	Electrolytic	CEA 3R3P 25
C7	Ceramic	CCDSL 220K 50
C8	Ceramic	CCDSL 220K 50
C9	Electrolytic	CEA 470P 25
C10	Electrolytic	CEA 470P 25
C11	Electrolytic	CEA 101P 6
C12	Electrolytic	CEA 101P 6
C13	Electrolytic	CEA 220P 25
C14	Electrolytic	CEA 220P 25
C15	Ceramic	CKDYB 331K 50
C16	Ceramic	CKDYB 331K 50
C17	Ceramic	CCDSL 181K 50
C18	Ceramic	CCDSL 181K 50
C19	Electrolytic	CEA 222P 25
C20	Electrolytic	CEA 222P 25
C21	Mylar	COJMA 104M 50
C22	Mylar	COJMA 104M 50

RESISTORS

Symbol	Description	Part No.
R1	Carbon film	RD¼PS 332J
R2	Carbon film	RD¼PS 332J
R3	Carbon film	RD¼PS 105J
R4	Carbon film	RD¼PS 105J
R5	Carbon film	RD¼PS 104J
R6	Carbon film	RD¼PS 104J
R7	Carbon film	RD¼PS 472J
R8	Carbon film	RD¼PS 472J
R9	Carbon film	RD¼PS 151J
R10	Carbon film	RD¼PS 151J
R11	Carbon film	RD¼PS 103J
R12	Carbon film	RD¼PS 103J
R13	Carbon film	RD¼PS 393J
R14	Carbon film	RD¼PS 393J
R15	Carbon film	RD¼PS 472J
R16	Carbon film	RD¼PS 472J
R17	Carbon film	RD¼PS 151J
R18	Carbon film	RD¼PS 151J
R19	Carbon film	RD¼PS 101J
R20	Carbon film	RD¼PS 101J
R21	Carbon film	RD¼PS 390J
R22	Carbon film	RD¼PS 390J
R23	Carbon film	RD¼PS 562J
R24	Carbon film	RD¼PS 562J
R25	Carbon film	RD¼PS 152J

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	2SC732 Transistor	
Q2	2SC732 Transistor	
Q3	2SC734-Y or GR Transistor	
Q4	2SC734-Y or GR Transistor	
Q5	2SC734 Transistor	
Q6	2SC734 Transistor	
Q7	2SA561 Transistor	
Q8	2SA561 Transistor	
Q9	2SA561 Transistor	
Q10	2SD234 Transistor	
Q11	2SD234 Transistor	
Q12	2SD234 Transistor	
D1	SV-4A Varistor	
D1	SV-4A Varistor	
TH1	22D45 Thermistor	
TH2	22D45 Thermistor	

OTHERS

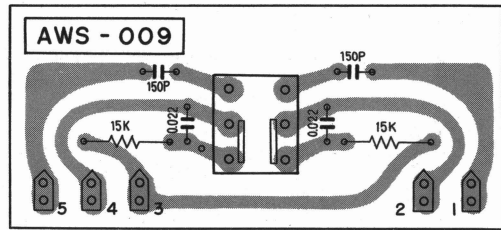
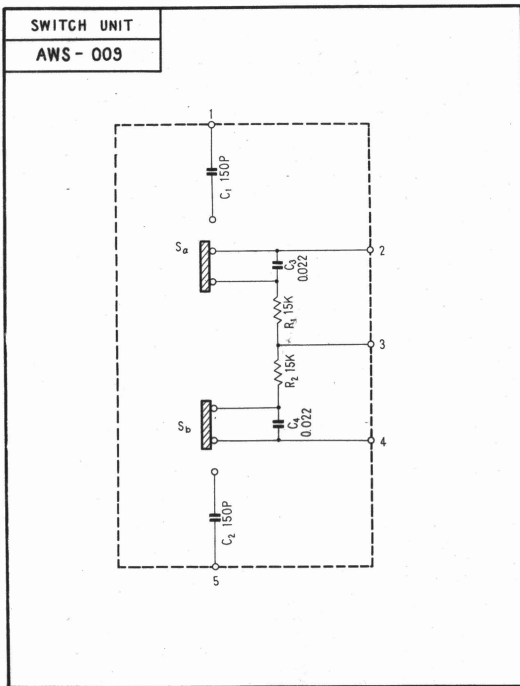
Symbol	Description	Part No.
	Insulating spacer Insulating screw Fuse 1.2A for protection	E32-102-0 ABB-001-0 AEK-010-0

Symbol	Description	Part No.
R26	Carbon film 1.5k	RD $\frac{1}{4}$ PS 152J
R27	Carbon film 220	RD $\frac{1}{4}$ PS 221J
R28	Carbon film 220	RD $\frac{1}{4}$ PS 221J
R29	Carbon film 220	RD $\frac{1}{4}$ PS 221J
R30	Carbon film 220	RD $\frac{1}{4}$ PS 221J
R31	Carbon film 12	RD $\frac{1}{4}$ PS 120J
R32	Carbon film 12	RD $\frac{1}{4}$ PS 120J
R33	Metal oxide 0.5	2W RN2H 0R5K
R34	Metal oxide 0.5	2W RN2H 0R5K
R35	Metal oxide 0.5	2W RN2H 0R5K
R36	Metal oxide 0.5	2W RN2H 0R5K
R37	Carbon film 27k	RD $\frac{1}{4}$ PS 273J
R38	Carbon film 27k	RD $\frac{1}{4}$ PS 273J
R39	Carbon film 18k	RD $\frac{1}{4}$ PS 183J
R40	Carbon film 18k	RD $\frac{1}{4}$ PS 183J
R41	Carbon film 10	RD $\frac{1}{4}$ PS 100J
R42	Carbon film 10	RD $\frac{1}{4}$ PS 100J

POTENTIOMETERS

Symbol	Description	Part No.
VR1	68k-B, Semi-fixed	ACP-002-0
VR2	68k-B, Semi-fixed	ACP-002-0
VR3	100-B, Semi-fixed	C92-063-0
VR4	100-B, Semi-fixed	C92-063-0

8.5 SWITCH UNIT (AWS-009)



PARTS LIST OF SWITCH UNIT

CAPACITORS

Symbol	Description	Part No.	
C1	Ceramic 150p 50V	CCDSL 151K 50	
C2	Ceramic 150p 50V	CCDSL 151K 50	
C3	Mylar 0.022 50V	CQMA 223K 50	
C4	Mylar 0.022 50V	CQMA 223K 50	

RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 15k	RD¼PS 153J	
R2	Carbon film 15k	RD¼PS 153J	

SWITCH

Symbol	Description	Part No.	
S1	Lever Switch (Loudness)	ASK-011-A	

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