

# PIONEER®



## SOLID STATE STEREO AMPLIFIER MODEL **SA-500**

**CAUTION** Before connecting the line cord to the wall socket, carefully read and follow the instructions described below, to assure the safety of your unit.

- Model SA-500 is set for 240V operation when shipped. If this unit is used in a different line-voltage area, read and follow "LINE VOLTAGE SELECTION AND FUSE" on page 1. Be sure that the line voltage setting on your unit agrees with the line voltage in your area and that the fuse installed in your unit is a proper one.

### INSTALLATION, OPERATING AND SERVICE MANUAL

including PARTS LIST, CIRCUIT DIAGRAMS, AND MOUNTING TEMPLATE.

(FV)



**PIONEER ELECTRONIC CORPORATION**

# PIONEER

## FEATURES OF SA-500

### ● SUPERIOR FREQUENCY RESPONSE:

By the use of all silicon transistors, a flat frequency response with low distortion factor is obtained from bass to treble.

### ● COMPACT BUT VERSATILE:

In addition to the terminals for connection of a record player, tuner and tape recorder, two sets of terminals are provided for connection of auxiliary inputs to permit reproduction of all kinds of program sources.

### ● STABLE CIRCUIT DESIGN:

Separate printed-circuit boards are used for individual unit blocks in order to stabilize operation and minimize the possibility of faults.

### ● VARIOUS ACCESSORY DEVICES:

A mode/tape monitor switch, loudness switch and loud-speaker switch are provided for higher performance.

### ● DESIGN NEWLY DEVELOPED BY PIONEER:

A product of PIONEER's new model series, designed for both luxurious appearance and operational convenience. Also, an AM/FM stereo tuner designed to match the SA-500 in appearance is available separately.

## INSTALLATION OF SA-500

SELECT THE PLACE OF INSTALLATION CONSIDERING THE FOLLOWING

- Avoid a place exposed to direct sunlight, near a space heater or other heat-generating equipment, or poorly ventilated.
- Avoid a dusty or humid place.
- Avoid a place that is unstable or frequently incurs vibration.

## LINE VOLTAGE SELECTION AND FUSE

In order to remove the fuse, turn the fuse cap located on the line voltage selector switch in the direction indicated by an arrow. Then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen through the cut in the edge of the plug.

Whenever the set position of the selector switch is changed, check the rating of the fuse. A 0.5-ampere fuse is to be used for either 220V or 240V operation and a 1-ampere fuse for any of 110V, 117V, or 130V operation. If the rating of the fuse is proper, install the fuse in the fuse cap.

### ● REPLACING OF FUSE

When the fuse is blown, remove the fuse cap and replace the fuse with a new one.

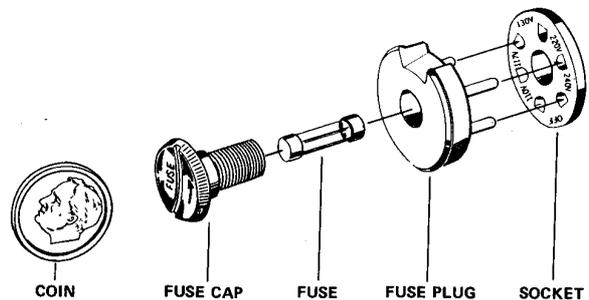


Fig. 1

Take off the fuse cap by turning it with a coin, in the direction indicated by the arrow.



## COMPOSITION OF A STEREO SYSTEM

- The SA-500 is a combination of stereo preamplifier and power amplifier. Combined with a loudspeaker system, record player, AM/FM stereo tuner and tape deck, which are separately available, a stereo system can be composed simply and easily.

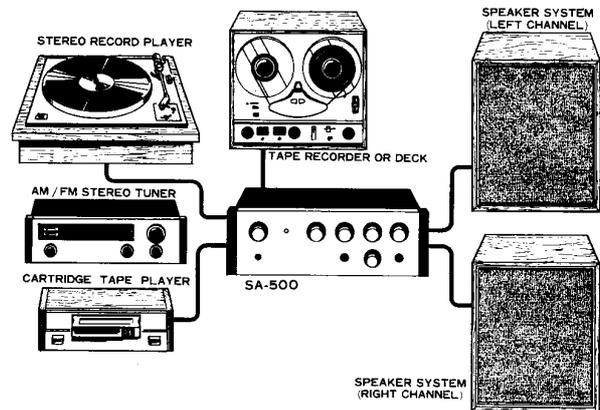


Fig. 2

## COMPONENTS TO BE COMBINED WITH SA-500 INTO STEREO SYSTEM

- Various models of loudspeaker systems, record players, AM/FM stereo tuners and tape decks are sold by PIONEER. By selecting the desired ones from among them and connecting them to the SA-500, a high-performance stereo system can be composed.
- When selecting the components to be used with the SA-500.

### a. LOUDSPEAKER SYSTEM:

Select a loudspeaker system which has an impedance within 4 to 16 $\Omega$ , a comparatively high efficiency (high sensitivity), and excellent characteristics. The cabinet of loudspeaker system comes in two types: Bass reflex type and closed type. Also, by the composition of loudspeakers, there are full-range type, two-way type, three-way and other type loudspeaker systems. Select one which emits sound of your taste.

### b. RECORD PLAYER

Select a record player equipped with a moving magnet (MM) cartridge. If you have a record player with a moving coil (MC) cartridge, it may be connected to the SA-500 by using a head amplifier or matching transformer for that cartridge.

### c. TUNER

Select a tuner having excellent characteristics and high stability. For better reception of FM stereo radio programs, it is recommended to install a separate FM radio broadcast receiving antenna of high performance.

### d. TAPE DECK

Some tape decks do not contain recording and playback preamplifiers. Select a tape deck having such preamplifiers built-in.

## LISTENING ROOM

When components are installed and connected, operate them and listen to the sound reproduced. The tone of reproduced sound is much affected by the size of the room and the arrangement of furniture therein. Sound is apt to fill the room when the ceiling is low and the floor is made of hard material, or when the room has

a small depth and there is a hard wall opposite the loudspeakers. The condition of the former can be much improved by laying a rug on the floor; that of the latter, by hanging a thick and wavy curtain. It is also effective to reflect the sound diffusely by varying the arrangement of the furniture.

## FUNCTIONS OF CONTROLS AND SWITCHES ON FRONT PANEL

### 1. POWER (Power Switch)

To switch the power on, turn the knob to the right (ON position). To switch it off, turn the knob to the left (OFF position). The AC Outlet (17) on the back can also be turned ON or OFF with this knob.

### 2. TREBLE (High Tone Control Knob)

Turn the knob to the right (clockwise) from the FLAT position to boost the treble, and turn the knob to the left (counterclockwise) to attenuate it.

### 3. BASS (Low Tone Control Knob)

Turn the knob to the right from the FLAT position to boost the low tone and turn the knob to the left to attenuate it.

### 4. SELECTOR (Input selector switch)

The switch to select the record player, radio tuner or other output to be fed into the SA-500. TUNER . . . When listening to broadcasts using the tuner.

PHONO . . . When playing records with a record player

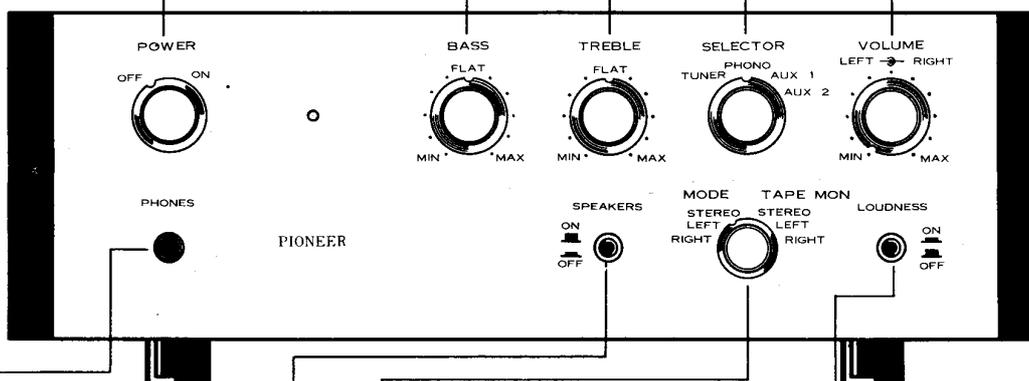
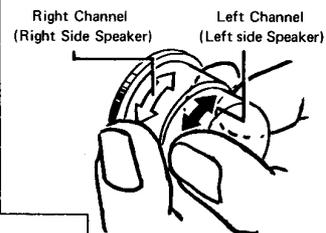
AUX 1 . . . When playing records using a crystal type or ceramic type record player.

AUX 2 . . . When playing a cartridge tape player or when playing back a TV program.

### 5. VOLUME (Volume Control Knob)

The volume is increased by turning the knob to the right and decreased by turning the knob to the left.

Normally, the volume for the right side and left side speakers is adjusted at the same time, but when desiring to adjust the volume of the two speakers separately, hold one of the knobs with one hand, as shown in the drawing, and turn the other knob with the other hand.



### 6. PHONES (Stereo Headphone jack)

Used for connecting the stereo headphone that is sold separately. Stereo sounds can also be enjoyed quietly in the late evening by turning the speaker switch (7) to OFF.

### 7. SPEAKERS (Speaker Switch)

This switch is pushbutton type. The speaker switch will be in the OFF position when the button is pressed down, and no sound will come out of the speaker. The Button will return to the ON position when pressed again and released, and then the sound will be heard from the speaker.

### 8. MODE/TAPE MON (Mode/Monitor Switch)

This serves both as a mode switch and as a tape monitor switch.

MODE side . . . (with the switch to the left of the center position)

STEREO . . . When playing stereo

LEFT . . . . . When playing the input signals of the left channel with the right side and left side speakers.

RIGHT . . . . . When playing the input signals of the right channel with the right side and left side speakers.

TAPE MON side . . . (with the switch to the right of the center position)

STEREO . . . When playing stereo sounds using a tape recorder.

LEFT . . . . . When playing the signals recorded on the left channel with the right side and left side speakers.

RIGHT . . . . . When playing the signals recorded on the right channel with the right side and left side speakers.

### 9. LOUDNESS (Loudness Switch)

The switch is pushbutton type. It will be in the ON position when pressed again and released. When desiring to listen to quieter sounds, press the button to ON position.



## REAR CONNECTIONS OF THE SA-500

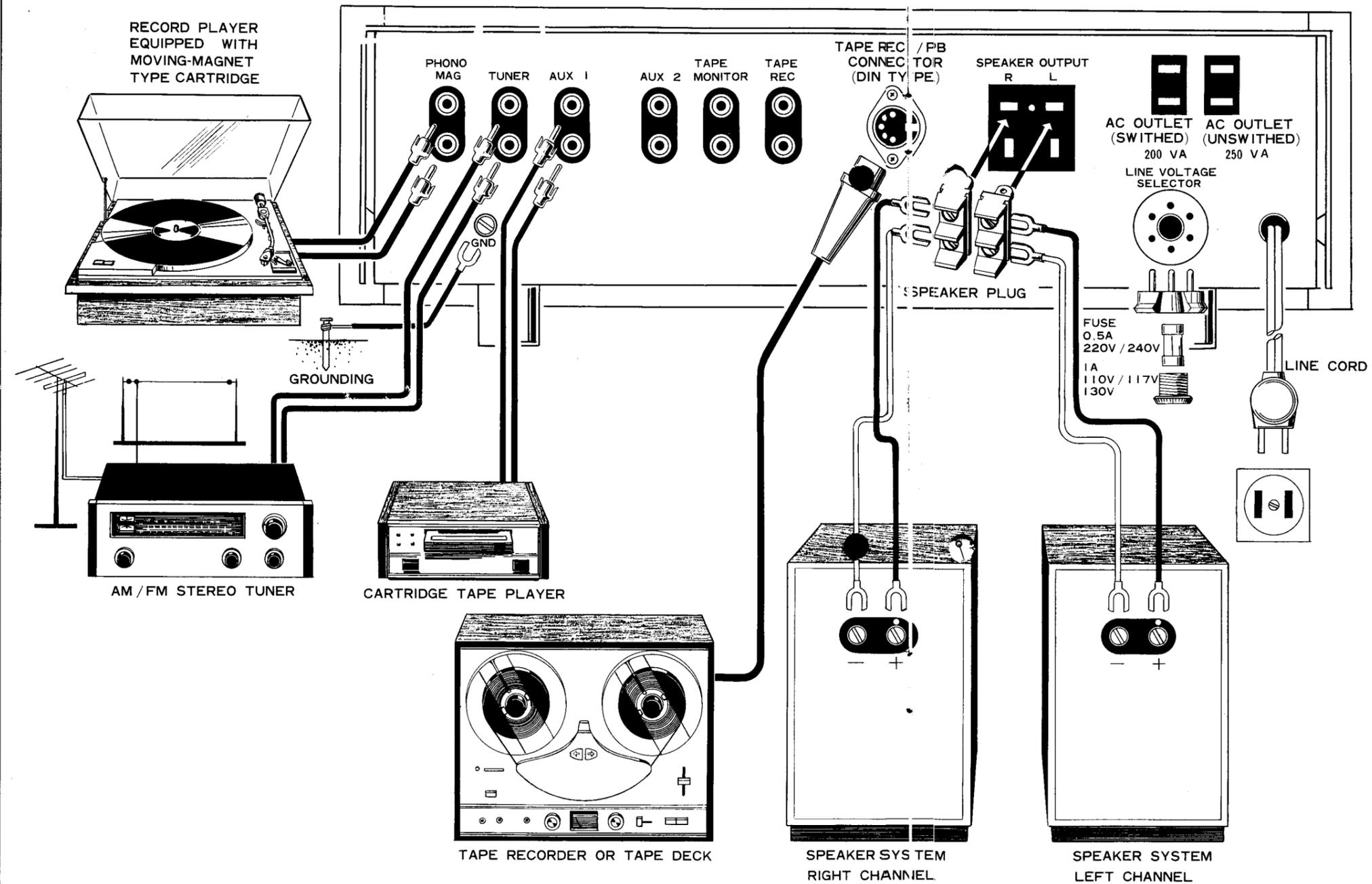


Fig. 3

## CONNECTION AND INSTALLATION OF LOUDSPEAKER SYSTEM

- Connect the leads of the loudspeaker systems as shown in Fig. 4 to the loudspeaker connecting plugs contained in the accessories bag. The plug has two prongs: One is positive (+) and the other is negative (-). Correctly connect loudspeaker terminals to the terminals of the plug as illustrated below. When the plugs are connected to the loudspeaker systems, insert them into the SPEAKER OUTPUT terminals (16) on the rear of the SA-500. To the terminals marked R, connect the loudspeaker system for the right channel; to the terminals marked L, connect the loudspeaker system for the left channel.
- The stereo effect is maximum when the listener is at the vertex of the regular triangle whose base is the line connecting right and left loudspeaker systems to each other (approx. 3.3 feet/1 m to 8.3 feet/2.5 m apart). The heights of both loudspeaker systems should be nearly equal to each other. If they are much different, the stereo effect will be deteriorated.

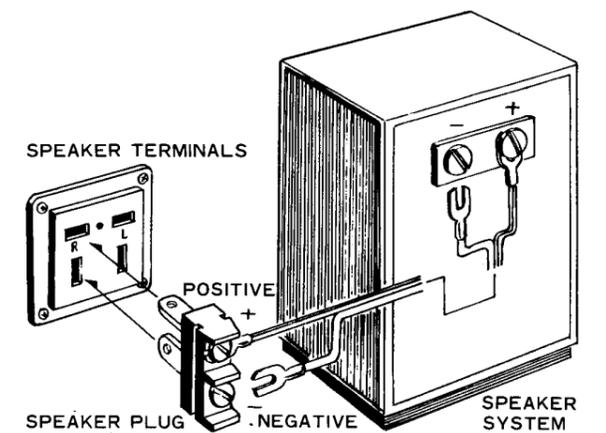
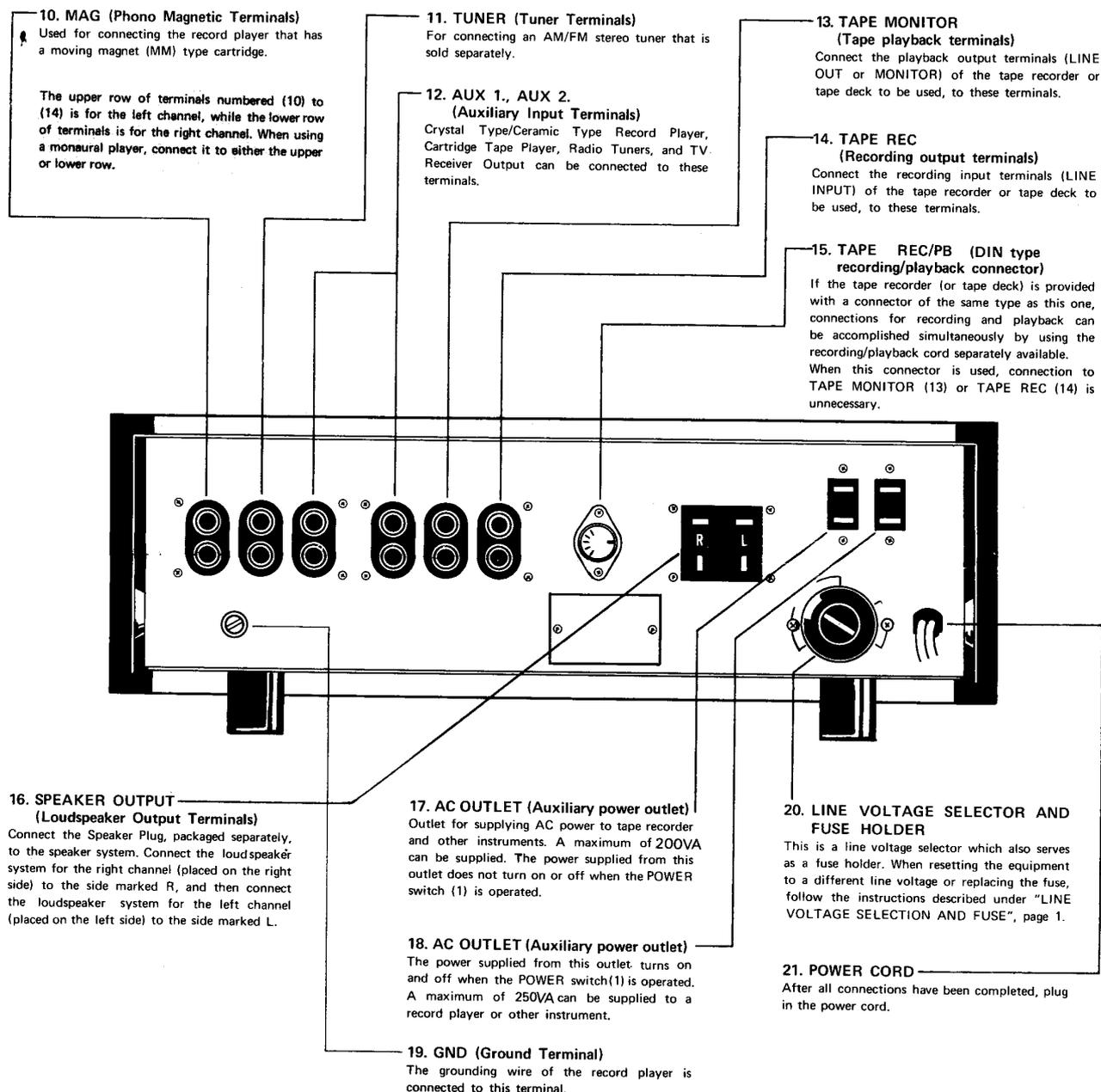


Fig. 4



## FUNCTIONS OF TERMINALS AND SWITCHES ON THE REAR PANEL



## CONNECTION AND OPERATION OF RECORD PLAYER

### CONNECTION

- Connect the output cords of the record player to the MAG terminals (10) on the rear of the SA-500. The upper terminal is for the left channel; the lower terminal is for the right channel. Securely connect the left-channel output cord of the record player to the upper terminal, and the right-channel output cord to the lower terminal. If the plugs provided on the output cords of the record player do not fit the terminals of the SA-500, replace them with the pin plugs contained in the accessories bag.
- If the record player to be used is ceramic or crystal type, connect it to the AUX 1 terminals (12). In case of a monaural record player, it may be connected to either the upper or lower one of the terminals.

### OPERATION

- Set the VOLUME control (5) to the MINimum position. (Fig. 5-A)
- Set the SELECTOR switch (4) to PHONO position. (Fig. 5-B)  
**NOTE:** When using a record player with ceramic or crystal cartridge, set the knob to AUX 1.
- Set the MODE/TAPE MON switch (8) to the MODE STEREO (left-hand side) position. (Fig. 5-C)
- Confirm that the SPEAKERS pushbutton switch (7) is in the On position (the button is projecting).
- Turn On the POWER switch (1) (by rotating the knob clockwise).
- Operate the record player and play a record. Set the sound volume and tone quality as desired by using the VOLUME (5), BASS (3) and TREBLE (2) controls, and LOUDNESS switch (9).

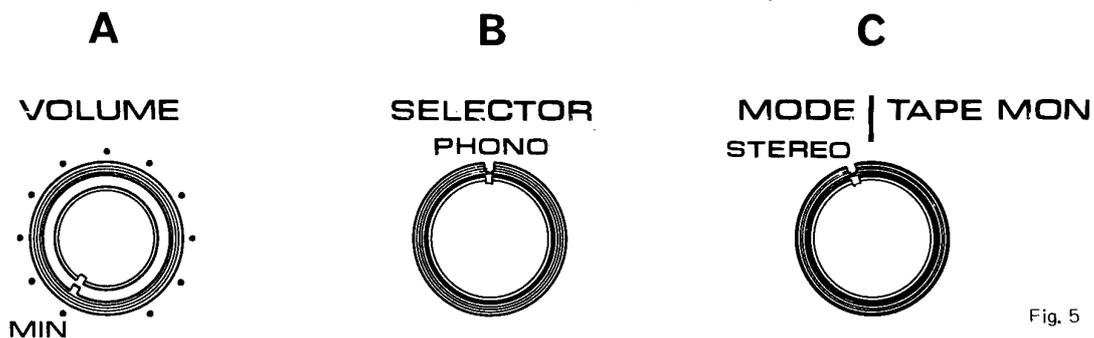


Fig. 5

## CONNECTION OF TUNER AND RECEPTION OF RADIO PROGRAM

### CONNECTION

- Connect the output cord of tuner to the TUNER terminals (11). If the tuner is monaural, connect its output to either one of the upper or lower terminals.
- When using two tuners, connect the output of the second tuner to the AUX 1 (12) or AUX 2 (12) terminals.

### RECEPTION OF RADIO PROGRAM

- Set the SELECTOR switch (4) to the TUNER position.
- Select a desired station by operating the tuner.
- Operation of other controls and switches is identical with that for using a record player.



## CONNECTION AND OPERATION OF CARTRIDGE TAPE PLAYER

- a. Connect the output cord of cartridge tape player to the AUX 1 (12) or AUX 2 (12) terminals.
- b. Set the SELECTOR switch (4) to the AUX 1 or AUX 2 position corresponding to the terminals to which the tape player is connected.
- c. Operation of other controls and switches is identical with that for using a record player.

## CONNECTION AND OPERATION OF TAPE RECORDER OR TAPE DECK

### CONNECTION

- a. If the tape recorder or tape deck to be used is equipped with a record/playback connector (DIN type), connect it to the TAPE REC/PB connector (15) of the SA-500 by using the record/playback cord separately available.
- b. If the tape recorder or tape deck is not equipped with the DIN type connector, connect it to the SA-500 as follows:

#### 1. CONNECTION FOR RECORDING

Connect the recording input terminals (line input) of the tape recorder or tape deck to the TAPE REC terminals (14) of the SA-500 with high-quality shielded wires. The upper one of the TAPE REC terminals is for the left channel; the lower one is for the right channel. When using a monaural tape recorder or tape deck, connect it to either upper or lower one of the terminals.

#### 2. CONNECTION FOR PLAYBACK

Connect the playback output terminals (line output or tape monitor) of the tape recorder or tape deck to the TAPE MONITOR terminals (13) of the SA-500. The connecting procedure is similar to that for recording.

### RECORDING OPERATION

- a. The same signal as that supplied to the loudspeakers always exists at the TAPE REC terminals (14) of SA-500. Operate the SA-500 according to the instructions under "Connection and operation of record player - Operation" or "Connection of tuner and reception of radio program - Reception of radio program."

The VOLUME (5), BASS (3) and TREBLE (2) controls of the SA-500 are ineffective for controlling the sound to be recorded. Use controls provided on the tape recorder or tape deck.

### PLAYBACK OPERATION

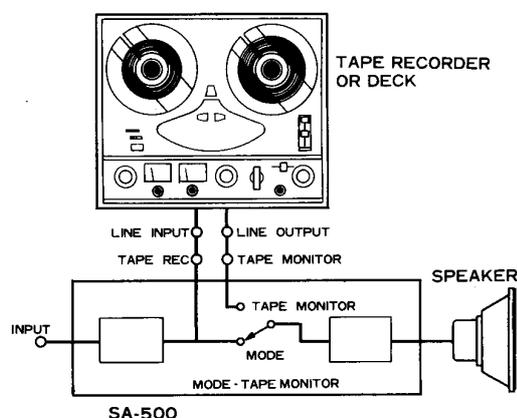
- a. Set the MODE-TAPE MON switch (8) to the TAPE MON STEREO (right-hand side) position. When playing back a monaural-recorded tape or when using a monaural tape recorder or tape deck, set the switch to the TAPE MON LEFT or RIGHT position.
- b. Operation of other controls and switches is similar to that for using a record player.

**NOTE:** For tape playback only, the SELECTOR switch (4) may be in any one of the positions.

### TAPE MONITOR

#### (CHECK OF RECORDING CONDITION)

If the tape recorder or tape deck to be used is provided with a tape monitor device, recording condition can be monitored by connecting it to the SA-500 for recording and playback and changing over the MODE-TAPE MON switch from the MODE side (left-hand side) to a position on the TAPE MON side (right-hand side) while making the recording.



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## SPECIFICATIONS OF THE MODEL SA-500

### • AUDIO SECTION

Circuitry	Single ended push pull
Music Power Output	4 $\Omega$ 44 watts total (H.D. 0.5%, IHF rating) 8 $\Omega$ 36 watts total (H.D. 0.5%, IHF rating)
Continuous Power (each channel driven)	8 $\Omega$ 13W/13W (H.D. 0.5%, 1kHz)
Continuous Power (both channels driven)	4 $\Omega$ 12W + 12W (H.D. 0.5%, 1kHz) 8 $\Omega$ 10W + 10W (H.D. 0.5%, 1kHz)
Harmonic Distortion	Less than 0.5% (at 1 kHz rated output)
Frequency Response	$\pm$ 1 dB, from 20 Hz to 50 kHz (over-all)
Power Bandwidth	20 Hz to 40 kHz (AUX)
Damping Factor	40/8 $\Omega$ (at 1 kHz)
Hum & Noise (at rated output)	MAG: better than 75 dB      AUX: better than 90 dB
Input Impedance and Audio Sensitivity (for rated output)	MAGnetic PHONO: 2.4 mv. 47 k $\Omega$ (1 kHz) TUNER: 193 mv. 100 k $\Omega$ (1 kHz) TAPE MONITOR: 193 mv. 100 k $\Omega$ (1 kHz) AUXiliary: 193 mv. 100 k $\Omega$ (1 kHz)
Output Terminals and Jacks	Speakers: 4 to 16 ohms Stereo headphones jack, Simultaneous tape Recording jacks, equipped with TAPE MONITOR switch, Tape recording/playback jack (DIN type)
Equalization Curves	PHONO: RIAA
Tone Controls (each channel)	BASS: boost 13 dB, cut 13.5 dB (at 50 Hz) TREBLE: boost 8 dB, cut 11 dB (at 10 kHz)
Loudness Contour	Switchable to ON-OFF boost 12 dB at 50 Hz, boost 5.5 dB at 10 kHz, with VOLUME control set at -40 dB

### • POWER SUPPLY, ETC.

Line Requirements	110, 117, 130, 220, 240 volts, (switchable), 50 - 60 Hz, 65 VA, 55 watts. (max) 15 VA, 12 watts (min)
Dimensions	Overall 13", 330 mm (width) 4-5/8", 118 mm (height) 12-5/16", 313 mm (depth)
Weight	Without package 13 lbs. 6 kg with package 17 lbs. 7.7 kg

- The specifications listed above, styling, design are subject to change without notice.



## PARTS LIST OF SA-500

### CAPACITORS

IN  $\mu\text{F}$ , 10% TOLERANCE UNLESS OTHERWISE

NOTED P:  $\mu\mu\text{F}$

Symbol	Description				Part No.
C5	Mylar	0.1		50V	
C6	"	"		"	
C7	Electrolytic	1000		"	
C8	"	470		35V	
C9	Ceramic	0.01	+80%	D.C.1.4kV	
C10	"	"	-20%	"	

### RESISTORS

IN  $\Omega$ , 10% TOLERANCE,  $\frac{1}{4}$ W UNLESS

OTHERWISE NOTED K:K $\Omega$ , M:M $\Omega$

Symbol	Description				Part No.
R1	Carbon film	100K			
R2	"	"			
R3	"	150K			
R4	"	"			
R7	"	100			
R8	"	"			
R9	"	1.8K			

### DIODES

Symbol	Description	Part No.
D1	SE-05-02	
D2	"	

### SWITCHES

Symbol	Description	Part No.
S1	Input Selector	S13-028-A
S2	Mode Selector	S16-038-C
S4	Speakers switch	S31-018-O
S5	Power Switch	S11-016-A
S6	Line Voltage Selector	S11-018-O

### TRANSFORMERS

Symbol	Description	Part No.
T3	Power Transformer	T52-141-O

### POTENTIOMETER

Symbol	Description	Part No.
VR1	250K $\Omega$ Dual, Volume Control	C87-021-O

### COMPOUND PART

Symbol	Description	Part No.
	for REC terminal	W52-004-O

### MISCELLANEOUS

Symbol	Description	Part No.

HEAD AMP Unit	W15-032-0
CONTROL AMP Unit	W15-033-0
MAIN AMP Unit	W15-055-0
PUSH SWITCH Unit	W15-075-0
Front Panel	M21-293-A
Metal Cover	M33-117-0
Screw, to fix Metal Cover	B11-005-A
Knob, Volume (L)	A12-151-0
Knob, Volume (R)	A12-150-0
Knob, for Selector, Mode, Bass, and Treble	A12-120-A
Knob, for Balance	A12-144-0
Pilot Lamp	E22-006-0
Pilot Lamp socket	K42-003-0
Lense, for Pilot Lamp	A62-045-0
Fuse 0.5A	E21-007-0
Fuse 1A	E21-004-0
Headphone jack	K72-021-B
Connector 5P (DIN type)	K93-003-B
Terminal 6p	K21-013-C
Spare AC Outlet	K82-007-B
Plug, for Speaker	K72-007-B

### HEAD AMP UNIT (W15-032)

#### CAPACITORS

Symbol	Description				Part No.
C1	Electrolytic	10		10V	
C2	"	"		"	
C3	Ceramic	30p		50V	
C4	"	"		"	
C5	"	100P		"	
C6	"	"		"	
C7	Electrolytic	0.47		"	
C8	"	"		"	
C9	"	33		6V	
C10	"	"		"	
C11	Mylar	0.01	$\pm 20\%$	50V	
C12	"	"	"	"	
C13	"	0.003	"	"	
C14	"	"	"	"	
C15	Electrolytic	100		35V	
C16	"	"		"	

#### RESISTORS

Symbol	Description				Part No.
R1	Carbon film	1K			
R2	"	"			
R3	"	150K			
R4	"	"			
R5	"	180K			
R6	"	"			
R7	"	120K			
R8	"	"			
R9	"	390			
R10	"	"			
R11	"	470K			
R12	"	"			
R13	"	15K			
R14	"	"			
R15	"	2.7K			

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R16	Carbon film	"			
R17	"	330K			
R18	"	"			
R19	"	27K			
R20	"	"			
R21	"	56K			
R22	"	"			
R23	"	2.2K			
R24	"	"			

R16	Carbon film	10K			
R17	"	2.7K			
R18	"	"			
R19	"	4.7K			
R20	"	"			
R21	"	1.5K			
R22	"	"			

## TRANSISTORS

Symbol	Description	Part No.
Q1	2SC871 Transistor	
Q2	"	
Q3	2SC870 Transistor	
Q4	"	

## TRANSISTORS

Symbol	Description	Part No.
Q1	2SC870 Transistor	
Q2	"	

## CONTROL AMP UNIT (W15-033)

### CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	0.47		50V
C1	"	"		"
C1	Ceramic	10p		"
C4	"	"		"
C5	Electrolytic	100		3V
C6	"	"		"
C7	"	2.2		35V
C8	"	"		"
C9	Mylar	0.003	± 20%	50V
C10	"	"		"
C11	"	0.01		"
C12	"	"		"
C13	"	"		"
C14	"	"		"
C15	"	0.1		"
C16	"	"		"
C17	Electrolytic	47		35V
C18	"	"		"

## POTENTIOMETERS

Symbol	Description	Part No.
VR2	100K dual Bass control	C82-040-0
VR3	100K dual Treble control	"

## MAIN AMP UNIT (W15-055)

### CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	3.3		25V
C2	"	"		"
C3	Ceramic	100P		50V
C4	"	"		"
C5	Electrolytic	3.3		25V
C6	"	"		"
C7	"	47		"
C8	"	"		"
C9	"	22		"
C10	"	"		"
C11	Ceramic	100P		50V
C12	"	"		"
C13	Electrolytic	100		3V
C14	"	"		"
C15	"	1000		25V
C16	"	"		"
C17	Mylar	0.05	± 20%	50V
C18	"	"	"	"

## RESISTORS

Symbol	Description			Part No.
R1	Carbon film	470K		
R2	"	"		
R3	"	220K		
R4	"	"		
R5	"	22K		
R6	"	"		
R7	"	68K		
R8	"	"		
R9	"	8.2K		
R10	"	"		
R11	"	1K		
R12	"	"		
R13	"	100K		
R14	"	"		
R15	"	10K		

## RESISTORS

Symbol	Description			Part No.
R1	Carbon film	3.3K		
R2	"	"		
R3	"	100K		
R4	"	"		
R5	"	1M		
R6	"	"		
R7	"	150		
R8	"	"		
R9	"	4.7K		
R10	"	"		
R11	"	10K		
R12	"	"		
R13	"	4.7K		
R14	"	"		



R15	Carbon film	47K		
R16	"	"		
R17	"	1.5K		
R18	"	"		
R19	"	3.9K		
R20	"	"		
R21	"	150		
R22	"	"		
R23	"	120		
R24	"	"		
R25	"	220		
R26	"	"		
R27	"	22		
R28	"	"		
R29	"	220		
R30	"	"		
R31	Wire wound	0.5	2W	
R32	"	"	"	
R33	"	"	"	
R34	"	"	"	
R35	Carbon film	33K		
R36	"	"		
R37	"	15K		
R38	"	"		
R39	"	10		
R40	"	"		

C3	Mylar	0.022	50V	
C4	"	"	"	

### RESISTORS

Symbol	Description			Part No.
R1	Carbon film	15K		
R2	"	"		

### SWITCH

Symbol	Description	Part No.
S1	Push switch	S31-018-0

### DIODES AND TRANSISTORS

Symbol	Description	Part No.
D1	SV-3A Vari-stor	
D2	"	
TH1	22D45 Thermistor	
TH2	"	
Q1	2SC458LG Transistor	
Q2	"	
Q3	2SC734Y	
Q4	"	
Q5	2SC734P	
Q6	"	
Q7	2SA561P	
Q8	"	
Q9	2SD130	
Q10	"	
Q11	"	
Q12	"	

### POTENTIOMETERS

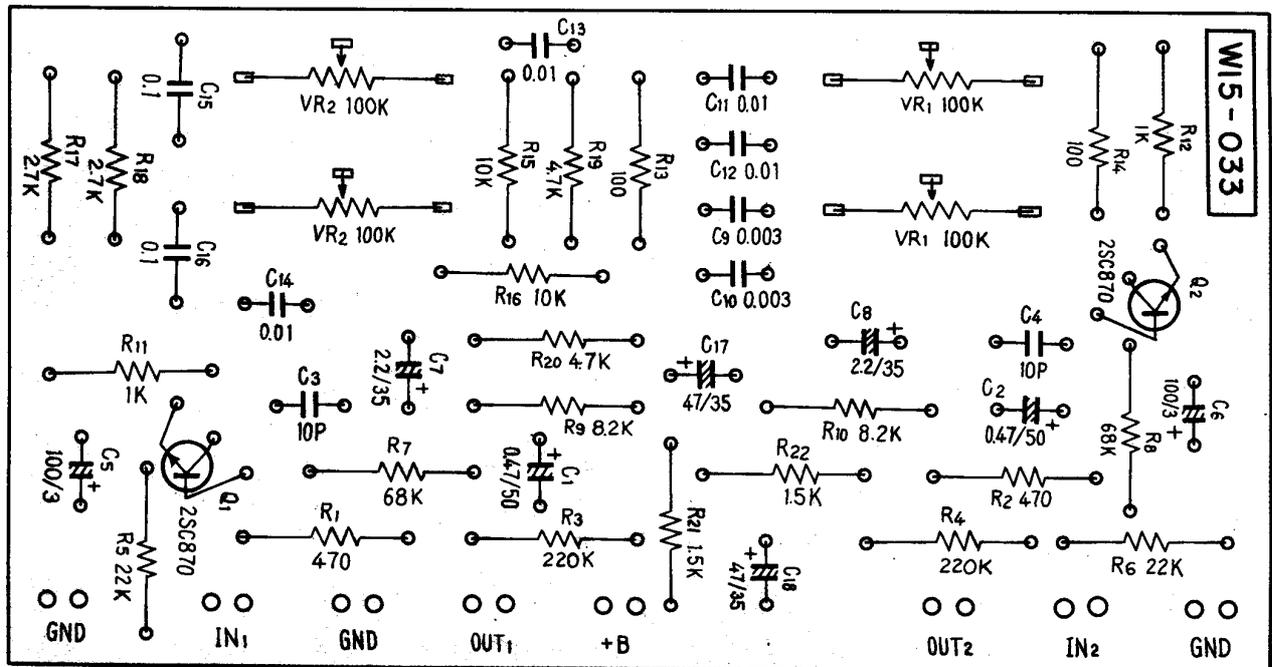
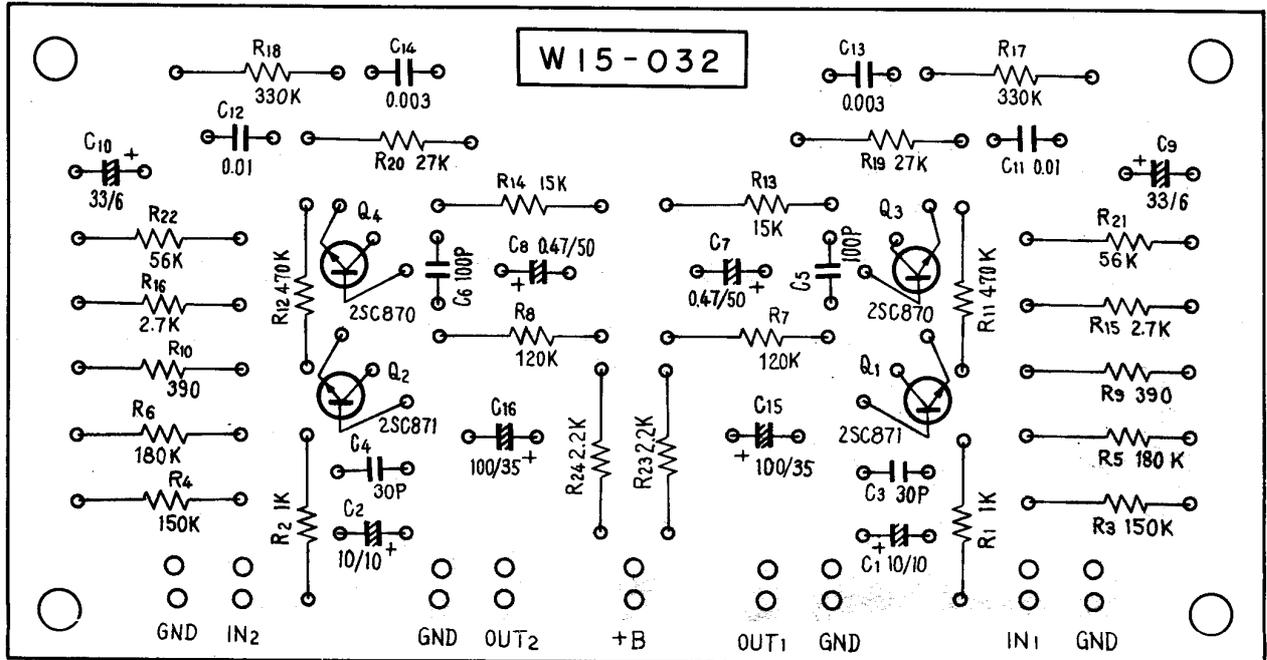
Symbol	Description	Part No.
VR1	30K $\Omega$ (B) Semi-fixed	C92-024-B
VR2	"	"
VR3	100 $\Omega$ (B) Semi-fixed	C92-032-C
VR4	"	"

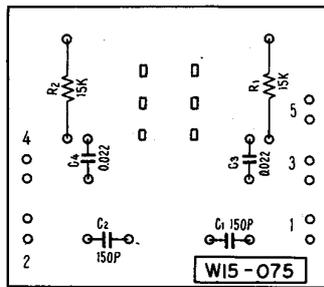
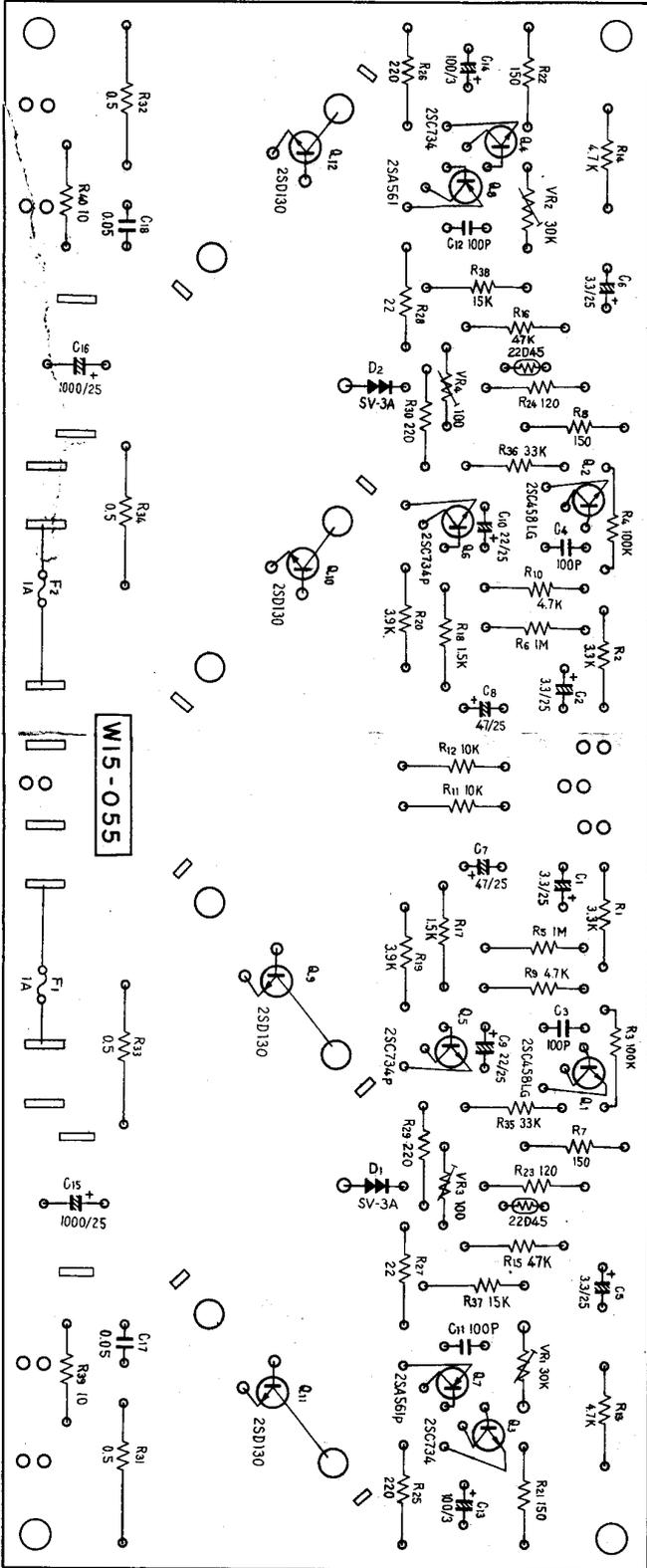
### PUSH SWITCH UNIT (W15-075) CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	15p	50V	
C2	"	"	"	

# PIONEER

## PRINTED CIRCUIT BOARD

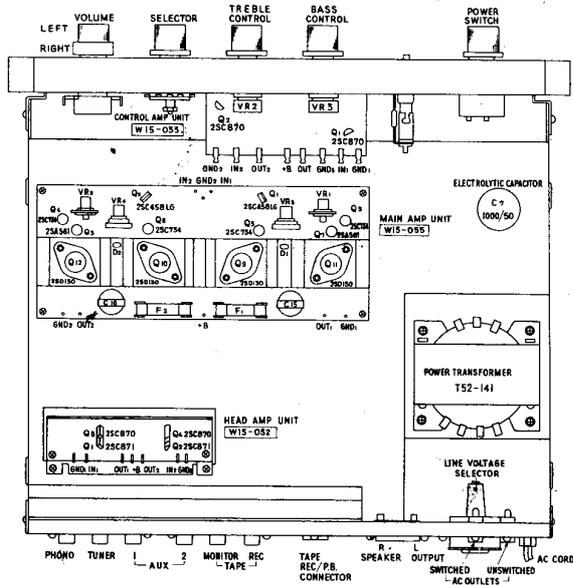




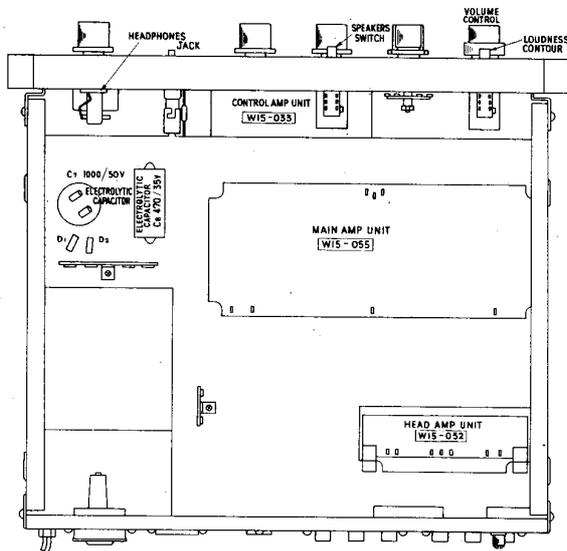
# PIONEER

## PARTS LAYOUT

### TOP VIEW



### BOTTOM VIEW



## PIONEER ELECTRONIC CORPORATION

15-5, 4-Chome, Ohmori-nishi, Ohta-ku, Tokyo, Japan

PIONEER ELECTRONICS U.S.A. CORPORATION

140 Smith St., Farmingdale, L.I., N.Y. 11735, U.S.A.

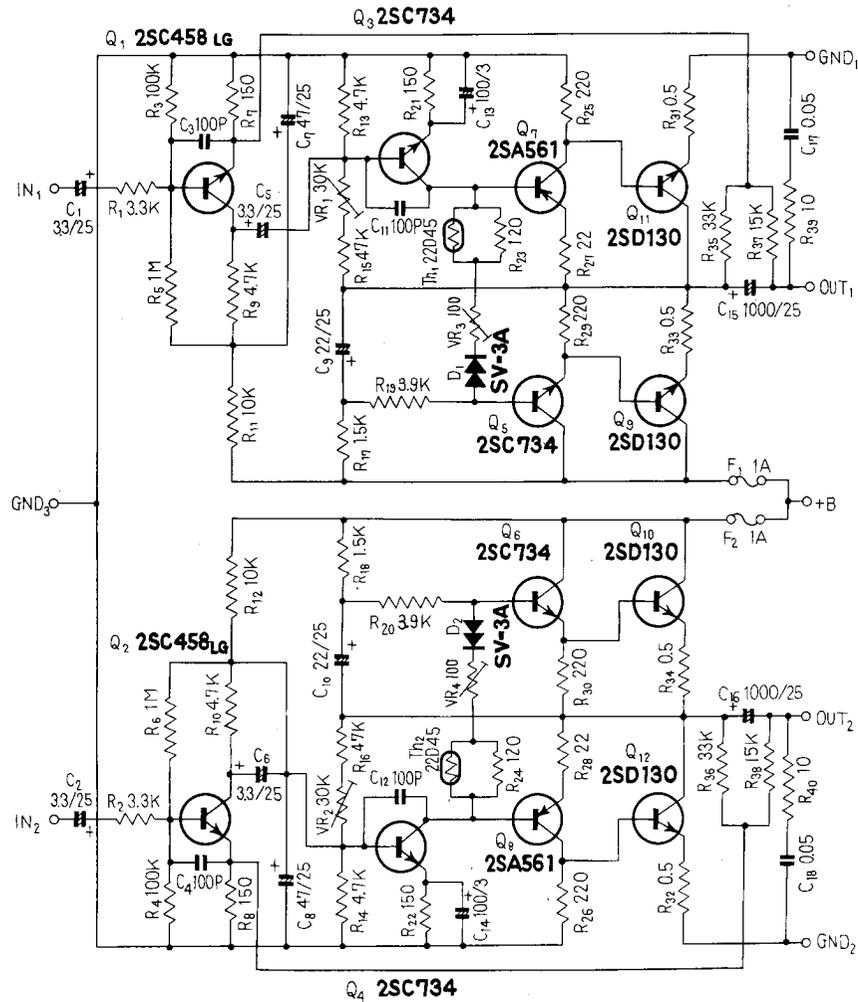
PIONEER ELECTRONIC (EUROPE) AG.

59, Forch Strasse, 8032 Zurich, Switzerland



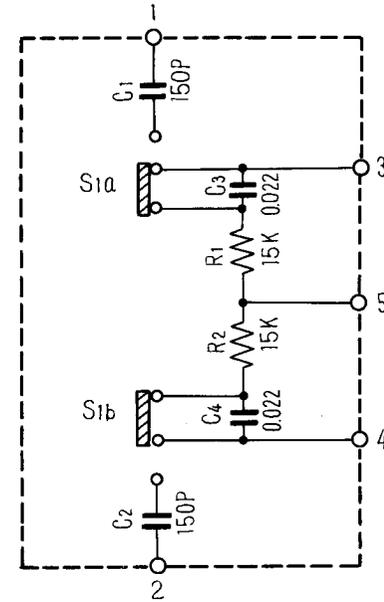
MAIN AMP UNIT

W15 - 055

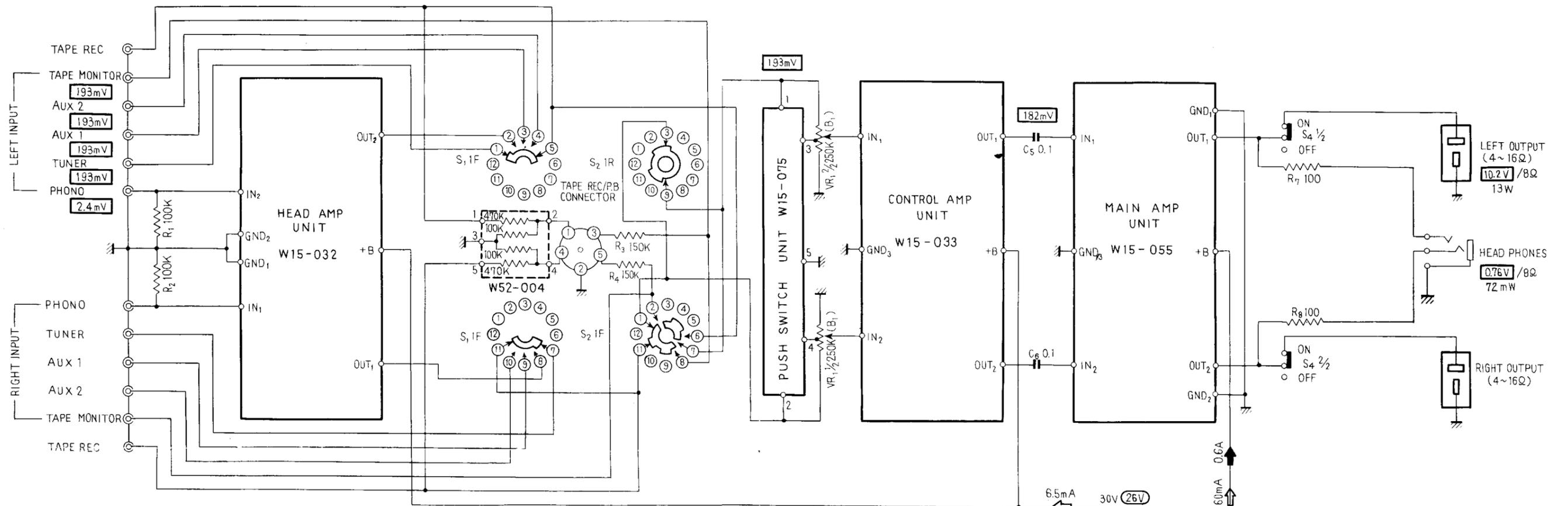


PUSH SWITCH UNIT

W15 - 075



# SA-500



S<sub>1</sub>: INPUT SELECTOR

- (1) TUNER
- (2) PHONO
- (3) AUX 1
- (4) AUX 2

S<sub>2</sub>: MODE SELECTOR

- |            |            |
|------------|------------|
| MODE       | TAPE MON   |
| (1) RIGHT  | (4) STEREO |
| (2) LEFT   | (5) LEFT   |
| (3) STEREO | (6) RIGHT  |

RESISTORS

- NON MARK: OHM
- K: KILOHM
- M: MEGOHM

PUSH SWITCH

- S<sub>4</sub> SPEAKERS ON ↔ OFF
- S<sub>5</sub> POWER SWITCH ON ↔ OFF
- S<sub>6</sub> LINE VOLTAGE SELECTOR

POTENTIOMETERS

- VR<sub>1</sub> VOLUME CONTROL
- VR<sub>2</sub> TREBLE CONTROL
- VR<sub>3</sub> BASS CONTROL

CAPACITORS

- NON MARK: μF
- P: μμF

- V DC VOLTAGE AT NO INPUT SIGNAL
- DC VOLTAGE AT MAX INPUT SIGNAL
- DC CURRENT AT NO INPUT SIGNAL
- DC CURRENT AT MAX INPUT SIGNAL
- SIGNAL VOLTAGE AT 11W/8Ω (SPEAKER OUTPUT)

ALL VOLTAGES MEASURED WITH V.T.Y.M.

ITEM NO.	VACANT
R <sub>1</sub> ~ R <sub>3</sub>	R <sub>5</sub> R <sub>6</sub>
C <sub>1</sub> ~ C <sub>10</sub>	C <sub>1</sub> ~ 4