INTEGRATED STEREO AMPLIFIER

SA-7300

FA
FP
FV
GN

OPERATING INSTRUCTIONS

PIONEER

Your new Pioneer amplifier, model SA-7300, incorporates numerous breakthroughs in circuit design and will serve as the heart of a hi-fi stereo system to satisfy even the most discriminating demands. To make full use of this unit's many features, please study the following instructions carefully.

CONTENTS

SA-7300 FEATURES

Powerful 35W + 35W Output

Hybrid IC circuitry employing dual positive and negative power supplies is incorporated in the power amplifier section. All stages are directly coupled in the OCL circuit design to provide plenty of power at minimized distortion. Output is 35W + 35W in the range of 20Hz~20kHz at 8Ω with both channels driven and 0.3% harmonic distortion.

Precision Designed Equalizer

The equalizer amplifier also utilizes a dual positive and negative power supply and IC circuitry to assure RIAA deviation within ±0.3dB, while a maximum input of up to 200mV (at 1kHz) can be easily handled (at 0.1% harmonic distortion).

High Reliability Protector Circuit

Both relay and electronic circuitry combine to safeguard valuable transistors and speakers in event of malfunction. This special protector circuit also performs a muting function to prevent annoying surge noise when the POWER switch is operated.

Specially Engineered Tone Controls

Advanced CR type tone controls and 2-stage direct coupled amplifier provide highly effective control operation. Regardless of the tone control settings, a flat frequency response can always be obtained by employing the TONE switch. This is convenient for checking cartridge and speaker tone, and evaluating listening room characteristics.

Accept 2 Sets of Tape Decks

Recording and playback jacks are provided for two tape decks, in addition to separate Tape Monitor switches. Extremely convenient tape duplication and editing can be performed if two tape decks are available.

Simple Styling Accents Performance Quality

The clean uncluttered front panel layout avoids a confusing array of unnecessary controls and switches. Modern serene styling is combined with one-glance operational ease.

LINE VOLTAGE AND FUSE

SA-7300 amplifiers are designed to accept different line voltages, according to the country in which they are to be used, although the operation of the various models is the same in every other respect. The line voltage connection is on the rear panel, Fig. A shows the line voltage connection of a model designed to operate at 220V only.
Fig. B shows the line voltage selector and fuse of a model designed to operate at any of five pre-selected voltages (110V, 120V, 130V, 220V, 240V).

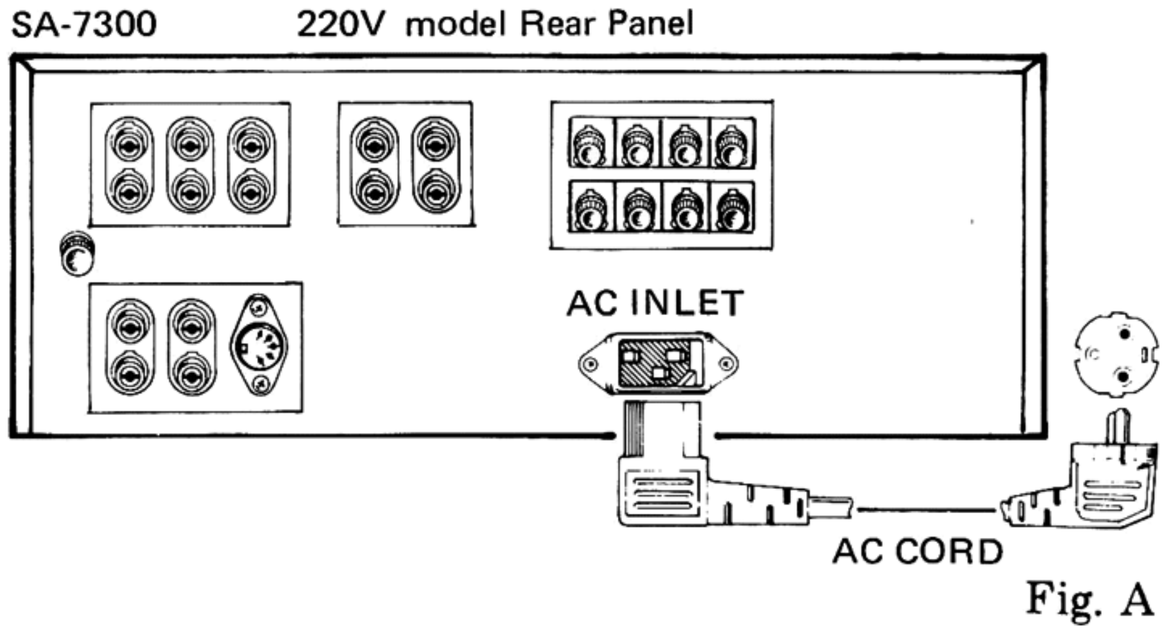


Fig. A

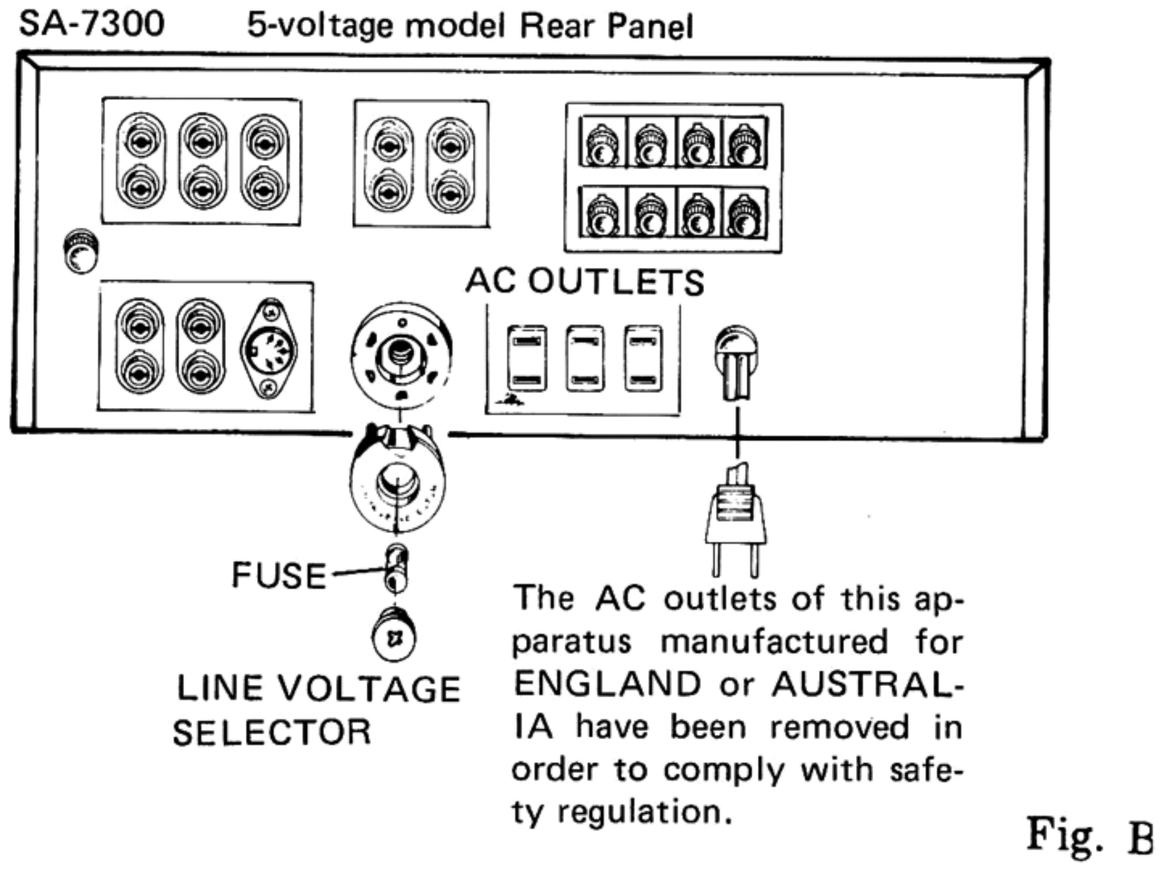


Fig. B

CHANGING LINE VOLTAGE SETTING AND FUSE (5-voltage model).

To remove the fuse, unscrew the fuse cap located in the center of the line voltage selector and withdraw it, together with the fuse. Next, pull the line voltage selector plug out of its socket, rotate it until the cutaway aligns with the appropriate line voltage marked on the back of the unit, then push it back into its socket. It is important to check the rating of the fuse; a 2A fuse should be used with either 220V or 240V, while a 4A fuse should be used for 110V, 120V or 130V operation. If the fuse rating is correct, replace it and screw in the fuse cap.

FUSE REPLACEMENT

When the fuse blows, remove the fuse cap and replace the fuse with a new one. Fig. C.

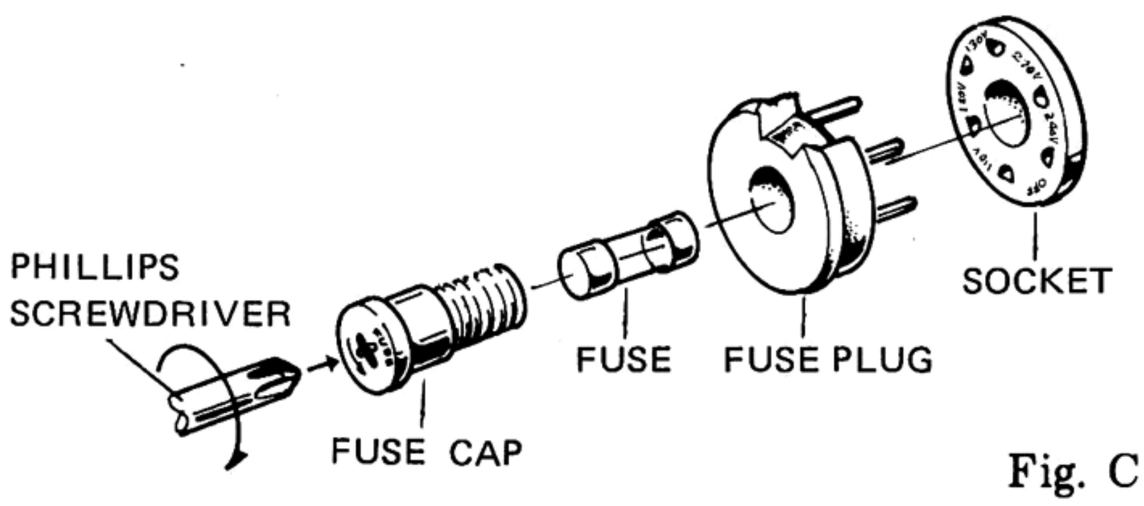
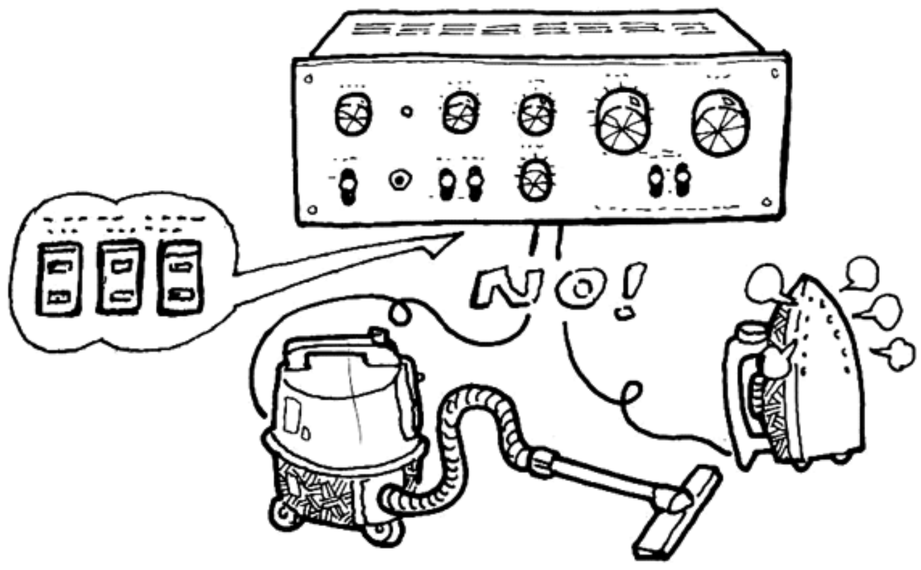


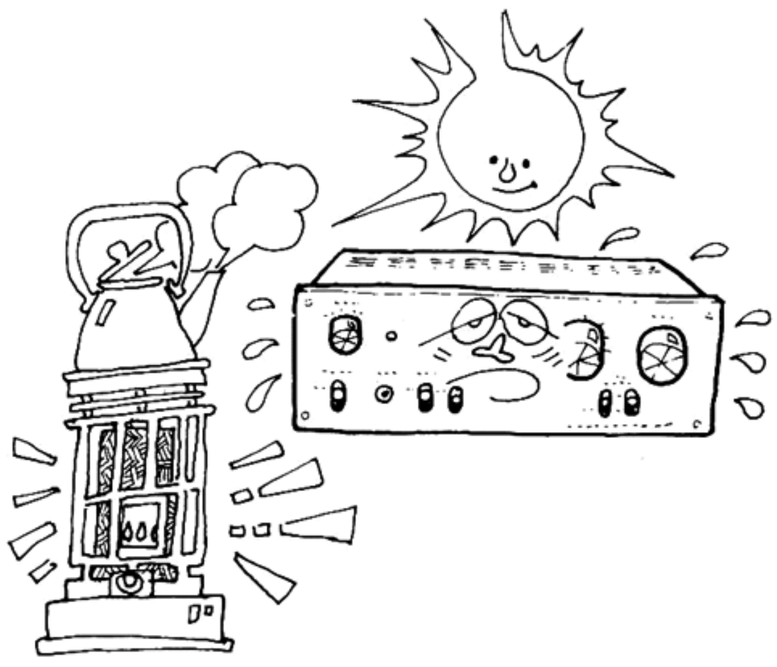
Fig. C

INSTALLATION CAUTIONS

Use care regarding the following points when selecting an installation site for the SA-7300.

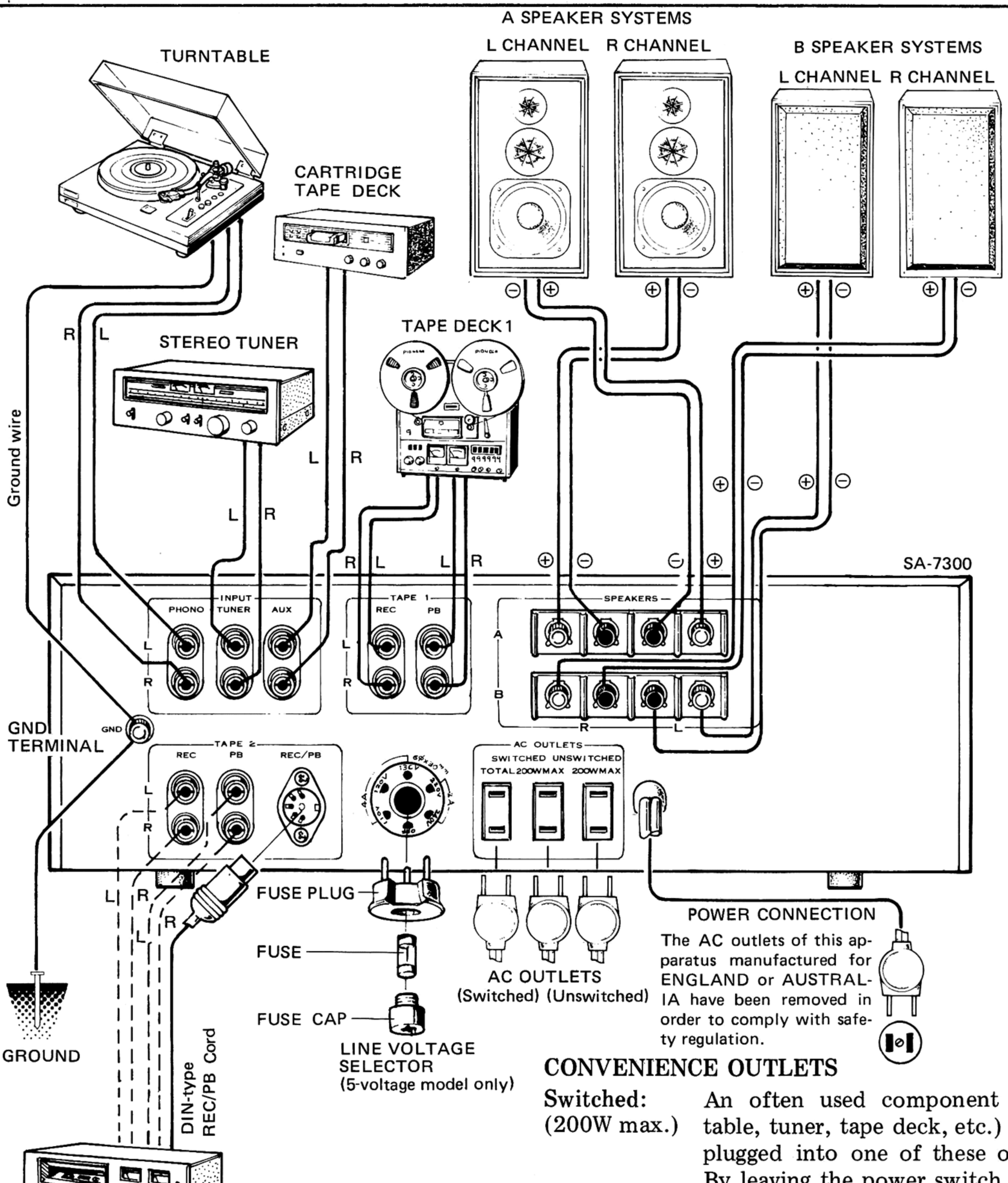


Don't Overload the AC Outlets with High Current Appliances.



Avoid Direct Sunlight or Other Heat Sources.

CONNECTION DIAGRAM



CONVENIENCE OUTLETS

Switched: (200W max.) An often used component (turntable, tuner, tape deck, etc.) can be plugged into one of these outlets. By leaving the power switch of the component in the ON position, power supply to the component will be coupled with the SA-7300 POWER switch operation.

Unswitched: (200W max.) A less often used component which does not required coupled power operation, can be plugged into this outlet.

CONNECTIONS

SPEAKER SYSTEM CONNECTION

The SA-7300 is provided with terminals for connecting 2 sets of stereo speaker systems. If only one set is to be used, connect them to the upper A SPEAKERS terminals (activated at the A SPEAKERS switch position).

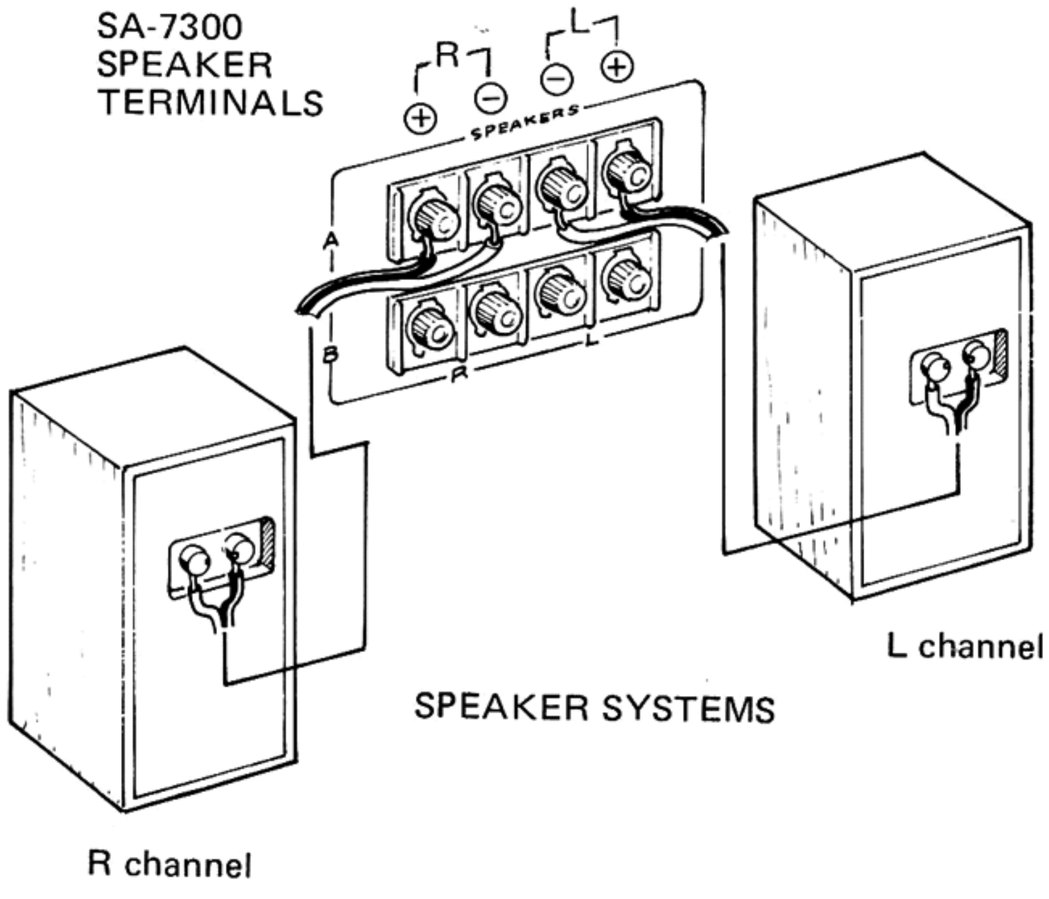


Fig. 1

- As shown in Fig. 1, connect the right (R) channel speaker system (as viewed from the listening position) to the R terminals and the left (L) channel system to the L terminals.
- Carefully observe polarities when connecting. Red terminals are plus + and black terminals minus —. Be sure to connect the plus terminals of the speaker systems to the red + terminals of the SA-7300, and the minus speaker system terminals to the black — terminals of the SA-7300.
- In the same manner, a second set of speaker systems can be connected to the lower B SPEAKERS terminals (activated at the B SPEAKERS switch position).

NOTE:
If two sets (A & B) of speaker systems are to be used simultaneously, each speaker system must be 8Ω or greater. Possible damage may be incurred if even one of the speaker systems in this case is less than 8Ω.

TURNTABLE CONNECTION

If the turntable is equipped with a moving magnet (MM) type cartridge, its output cord can be connected directly to the L & R PHONO jacks of the SA-7300. Also connect the ground terminal or wire of the turntable to the GND terminal (Fig. 2).

Cartridge Note

Only an MM type cartridge can be directly connected to the SA-7300. Other types of cartridges, due to differences in output voltage and impedance, require an accessory transformer, head amplifier, or adaptor. Refer to the cartridge operating instructions for detailed information.

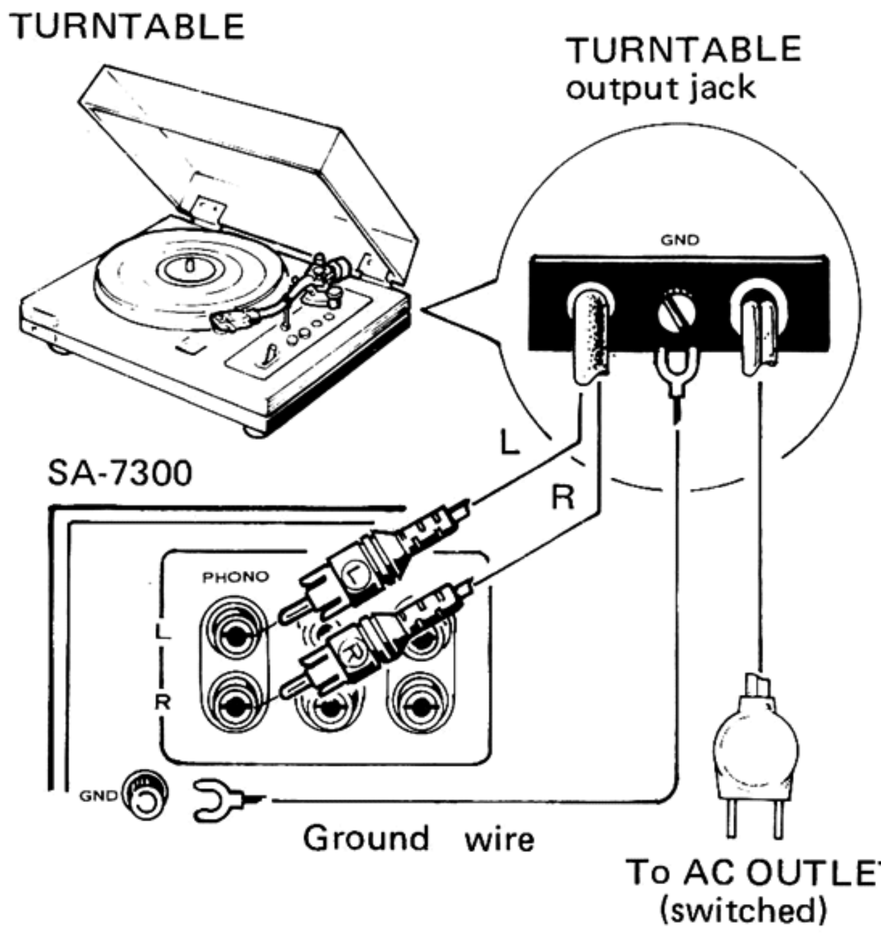


Fig. 2

TUNER CONNECTION

The output cords of a stereo tuner can be connected to the L & R TUNER jacks of the SA-7300.

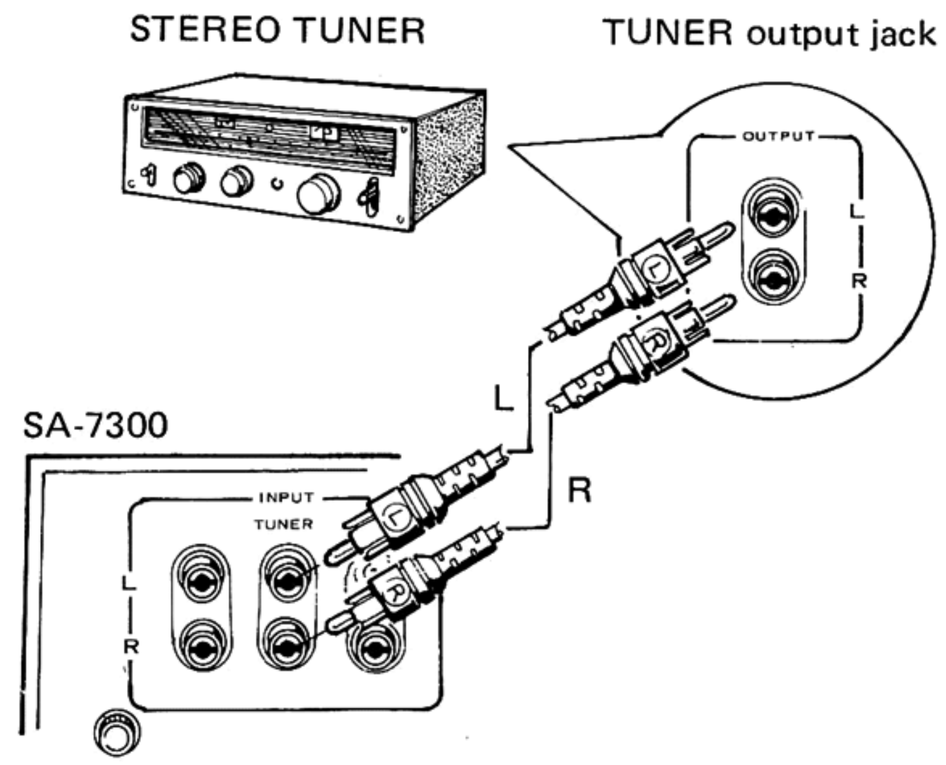


Fig. 3

FRONT PANEL FACILITIES

SPEAKERS SWITCH

Switch for selecting employed speaker systems.

OFF: Speaker sound cut off (when using headphones).

A: Sound obtained from speaker systems connected to the A SPEAKERS terminals.

B: Sound obtained from speaker systems connected to the B SPEAKERS terminals.

A+B: Sound obtained simultaneously from speaker systems connected to the A and B SPEAKERS terminals.

BASS & TREBLE CONTROLS

Low and high frequency tones are respectively adjusted by the BASS and TREBLE controls. Clockwise rotation from center enhances, while counter-clockwise rotation attenuates the corresponding frequency ranges. Setting the TONE switch to OFF disengages these controls to provide a flat frequency response.

PILOT LAMP

Lights to indicate power ON.

VOLUME CONTROL

Adjusts volume from speakers and headphones. Clockwise rotation increases volume.

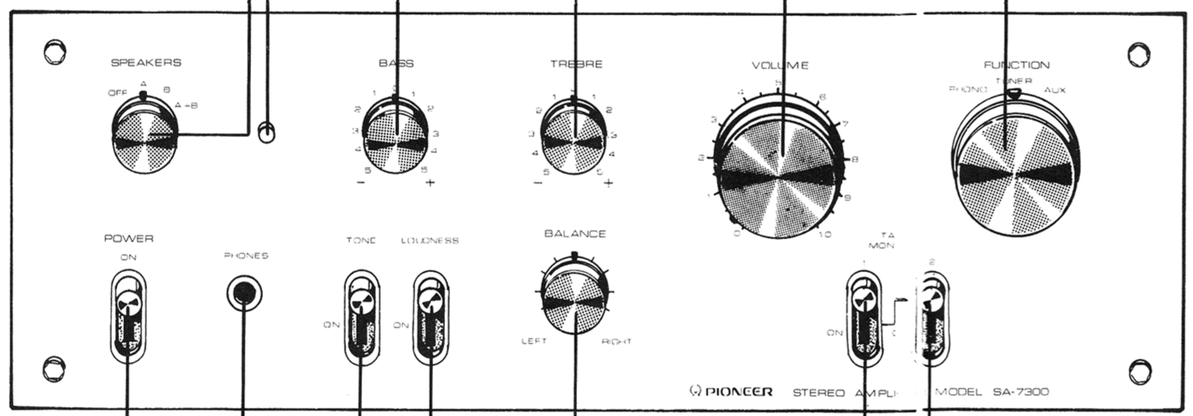
FUNCTION SWITCH

Employ for selecting desired program source.

PHONO: To play records on turntable connected to the PHONO jacks.

TUNER: When employing tuner connected to the TUNER jacks.

AUX: To employ component connected to the AUX jacks.



POWER SWITCH

Set to the upper ON position to turn on AC power.

PHONES JACK

Stereo headphones can be plugged into this jack for private listening. Be sure to insert the plug firmly. Set the SPEAKERS switch to OFF to listen only via headphones.

TONE SWITCH

Normally set this switch to the lower ON position. Tone adjustment can then be performed by employing the BASS and TREBLE controls. At the upper OFF position, the tone control circuit becomes disengaged to provide flat frequency response. This is convenient for testing the tone of the cartridge, speakers, etc. and evaluating listening room acoustics.

BALANCE CONTROL

Adjusts relative volume balance between left and right speaker systems and headphones. Clockwise rotation from center decreases left channel volume, while counter-clockwise rotation decreases right channel volume.

LOUDNESS SWITCH

Set switch to ON to enhance low and high frequencies when listening at low volume.

The human ear possesses differing response to sound at high and low volume levels. This switch compensates for these characteristics.

TAPE MONITOR SWITCHES

1: Set this switch to ON for playing a tape or monitoring a recording via a tape deck connected to the TAPE 1 jacks.

2: Set this switch to ON when playing a tape or monitoring a recording via a tape deck connected to the TAPE 2 jacks (or DIN REC/PB jack).

- Set both of these switches to the upper OFF position when not employing tape decks. Signal from source selected by the FUNCTION switch will be interrupted if switches are left in the ON position.
- When recording with 2 tape decks simultaneously, avoid operating the TAPE MONITOR 1 switch. This can cause interruption of the signal to the TAPE 2 deck (see Fig. 8).

OPERATION

Before turning on the POWER switch, set the other controls and switches as follows:

- Volume control to 0.
- Both TAPE MONITOR switches to OFF (upper position).
- BASS & TREBLE controls to 0 (center position).
- SPEAKERS switch to A, B, or A+B according to connected speaker systems.

OPERATING TURNTABLE

1. Set FUNCTION switch to PHONO.
2. Operate turntable and play a record.
3. Gradually turn the VOLUME control and set for desired listening level. Adjust tone with the BASS and TREBLE controls.

Turntable Handling Cautions

- Avoid turning off the power while the stylus is in contact with the record.
- Use care not to jar or impart shock to the turntable while a record is being played. The stylus can jump the grooves and the record may be damaged.
- Howling can result if the turntable is located too close to the speaker system. Provide adequate spacing when installing.

OPERATING TUNER

1. Set FUNCTION switch to TUNER.
2. Operate tuner and tune in desired station.
3. Gradually turn the VOLUME control and set for desired listening level. Adjust tone with the BASS and TREBLE controls.

PROTECTOR CIRCUIT DESCRIPTION

- About 3 to 8 seconds will elapse after turning on the power before sound is obtained from the speakers. This is due to the operation of the protector circuit which also performs a muting function. Its purpose is to prevent an annoying surge sound when the power is turned on and to protect the speakers in event DC current appears in the output.
- If speaker sound becomes interrupted during play and a relay clicking noise develops, speaker terminal shorting or overload (such as when using a speaker of less than 4 ohms impedance) is indicated. The protector circuit automatically functions to guard power amplifier and speakers from damage. After inspecting and correcting the difficulty, the self-resetting circuit will return to normal operation.

TAPE DECK CONNECTIONS

The SA-7300 is provided with recording and playback jacks for two tape decks, plus an additional DIN jack in the TAPE 2 circuit.

Playback Connections

Connect the LINE OUTPUT jacks of a tape deck to the TAPE 1 PB L & R jacks of the SA-7300. If a second deck is to be used, connect its LINE OUTPUT jacks to the TAPE 2 PB jacks. Use care to connect L to L and R to R when performing these connections.

NOTE:
If using 2 decks, carefully perform the connections for each deck at a time. Cross connections, ie: a particular tape deck connected partially to both TAPE 1 and TAPE 2 jacks, can cause operating difficulties.

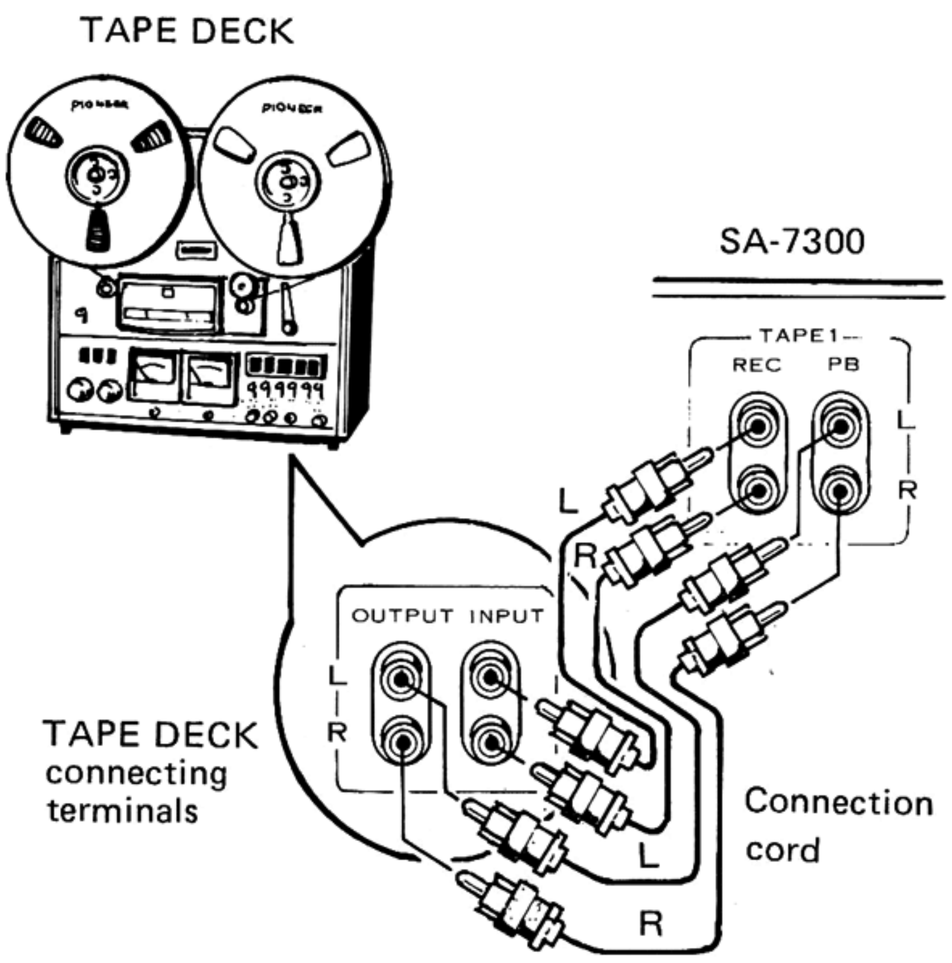


Fig. 4

Recording Connections

The signal for recording is present at the TAPE 1 and TAPE 2 REC jacks. Connect the TAPE 1 REC jacks to the LINE INPUT jacks of a tape deck. If a second tape deck is available, the TAPE 2 REC jacks can be connected to the LINE INPUT jacks of that deck. Use care to connect L to L and R to R when performing these connections.

DIN REC/PB Jack Connection

Many tape decks are provided with a DIN type recording/playback jack which allows both recording and playback connections to be performed via a single cord. Employ a separately sold PIONEER PP-101 to connect this type of deck to the TAPE 2 DIN REC/PB jack of the SA-7300. In this case, do not connect any equipment to the TAPE 2 pin type REC & PB jacks.

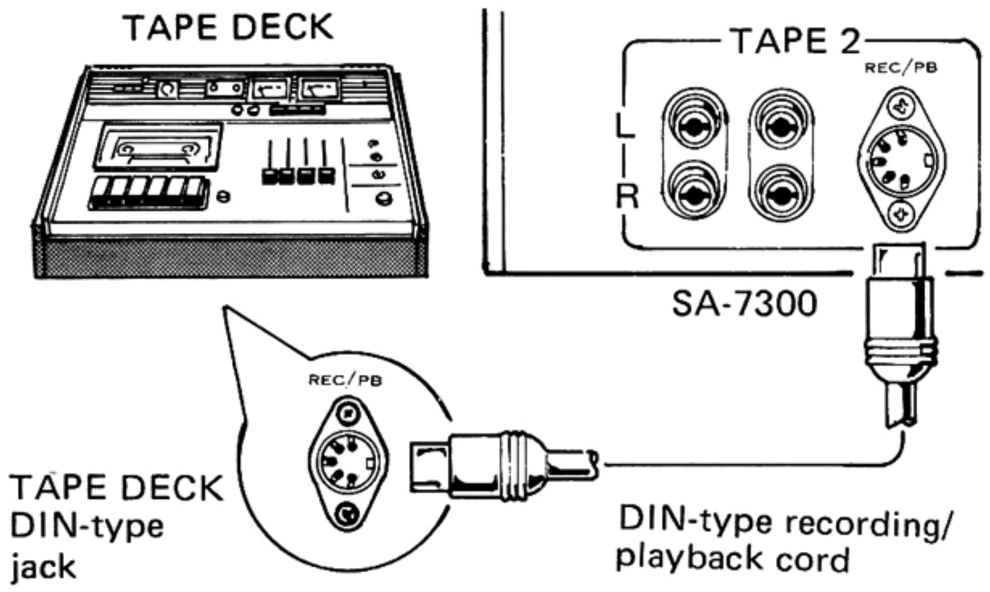


Fig. 5

AUXILIARY COMPONENT CONNECTION

An auxiliary source component, such as a cartridge tape deck, second stereo tuner, TV sound tuner, etc. can be connected to the AUX L & R jacks. The upper jack is for the left (L) channel and the lower for the right (R) channel.

OPERATING AUX COMPONENT

1. Set FUNCTION switch to AUX.
2. Operate component connected to the AUX jacks.
3. Gradually turn the VOLUME control and adjust for desired listening level. Adjust tone with the BASS and TREBLE controls.

Fig. 6

OPERATING TAPE DECK

TAPE PLAYBACK

1. Set appropriate TAPE MONITOR switch to ON: 1 if using tape deck connected to the TAPE 1 jacks, or 2 if using deck connected to the TAPE 2 (or DIN REC/PB) jacks.
2. Operate tape deck for playback.
3. Gradually turn the VOLUME control and adjust for desired listening level. Adjust tone with the BASS and TREBLE controls.

NOTE:
With the TAPE MONITOR switch set to ON, tape playback can be performed regardless of the FUNCTION switch setting.

TAPE RECORDING

The program source selected by the FUNCTION switch is always present at the REC jacks.

1. Set FUNCTION switch according to program source to be recorded.
2. Operate selected component.
3. Employ tape deck controls to adjust recording level, then proceed with recording.

RECORDING MONITOR

If the employed tape deck is equipped with 3 heads or other monitoring facility, the recording conditions can be monitored from the speakers by setting the TAPE MONITOR switch to ON. Both TAPE REC and TAPE PB connections must be performed in this case.

TAPE DUPLICATION

Two tape decks can be employed for composing personalized music tapes. The TAPE MONITOR switches and 2 sets of TAPE jacks allow the desired portions only of a previously recorded tape to be transferred to a second tape. A personal tape library can be compiled in this manner.

1. Connect 2 tape decks to the TAPE 1 & 2 jacks as shown in Fig. 9 .

< Following Refers to Duplicating from TAPE 1 Deck onto TAPE 2 Deck >

2. Set prerecorded tape onto TAPE 1 deck, and unrecorded tape onto TAPE 2 deck.
3. Operate TAPE 1 deck for playback and TAPE 2 deck for recording.
4. Recording conditions can be monitored by setting TAPE MONITOR 2 switch to ON.

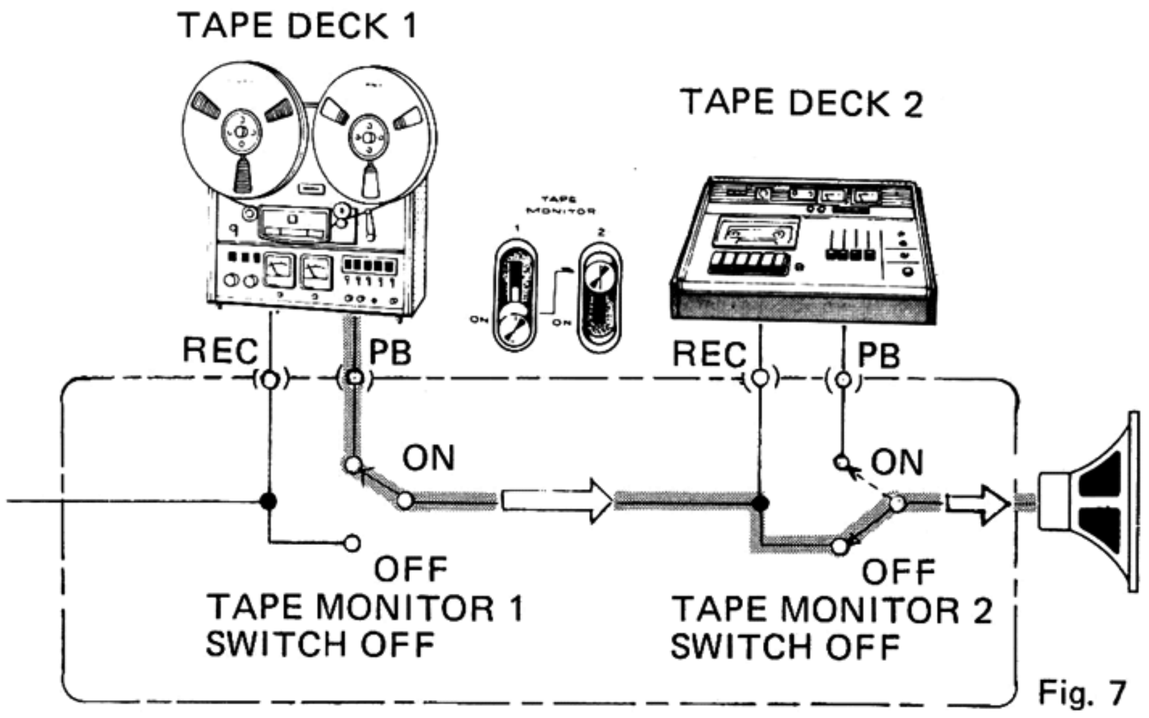


Fig. 7

Tape Playback: TAPE MONITOR 2 switch must be OFF, and TAPE MONITOR 1 switch ON to play tape on TAPE 1 deck. Signal enters PB jacks and proceeds in arrow direction to be amplified and transferred to the speakers. Set TAPE MONITOR 2 switch to ON to play tape with TAPE 2 deck.

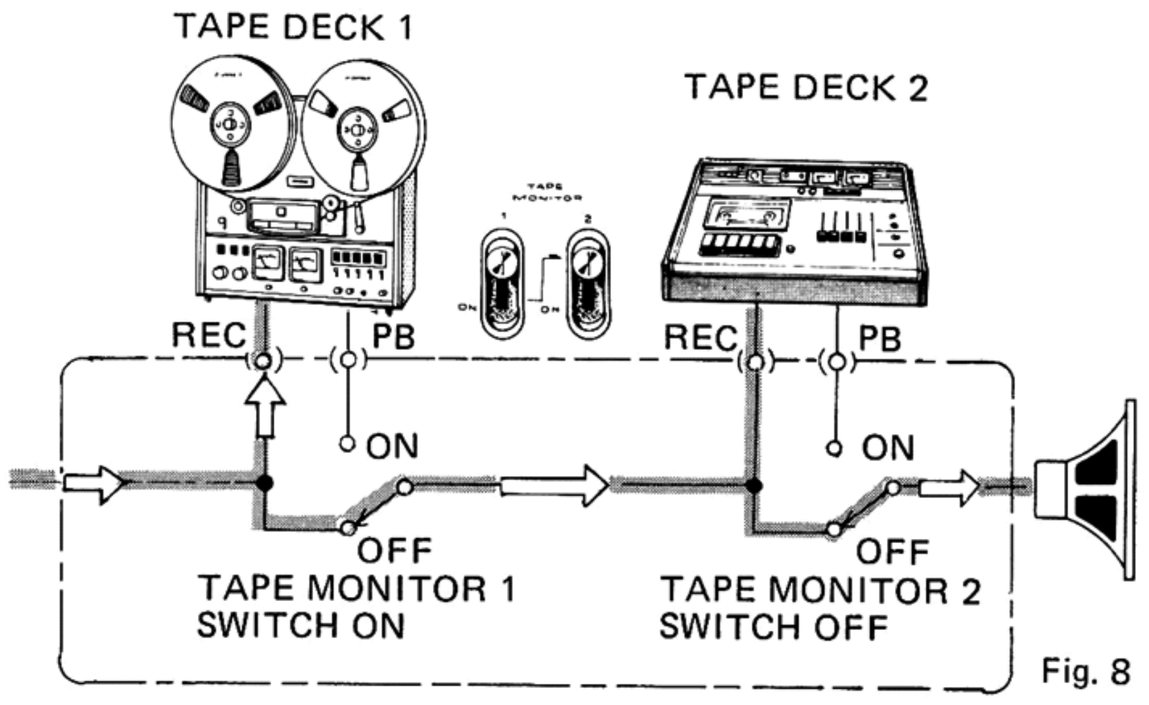


Fig. 8

Tape Recording: Signal selected by the FUNCTION switch appears at the TAPE 1 REC jacks. If TAPE MONITOR 1 switch is set to OFF, the same signal also appears at the TAPE 2 REC jacks. Simultaneous recording with 2 tape decks can be performed in this case.

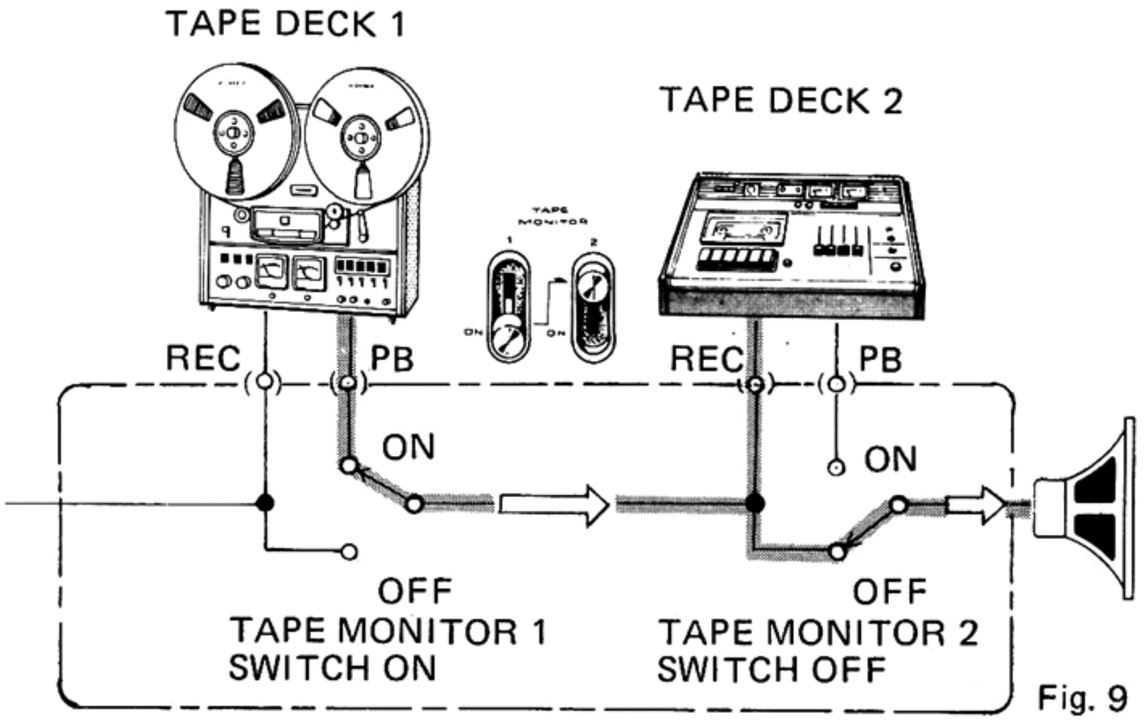
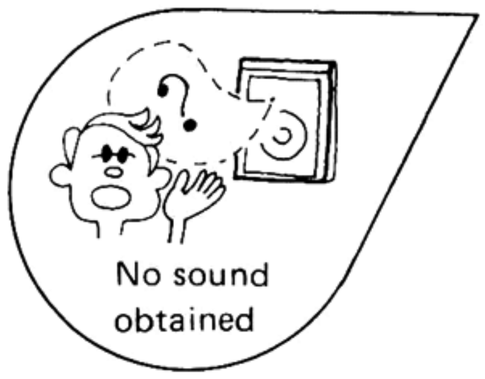


Fig. 9

Duplication: With the TAPE MONITOR 1 switch set to ON, the TAPE 1 deck playback signal proceeds in the arrow direction where it can be recorded by TAPE 2 deck. While listening to the sound from the speakers, operate TAPE 2 deck controls (PAUSE button, etc.) in order to record only the desired signal.

TROUBLE ? PLEASE CHECK

In event of difficulty, check the equipment and connections as shown below. Many cases of apparent malfunction can be traced to misoperation or faulty connection. If the trouble cannot be corrected, contact the nearest PIONEER Service Center or Authorized Service Station.



Headshell properly installed ?

Is operation correct ?

Properly connected to TAPE 1 & 2 jacks ?

Is operation correct ?

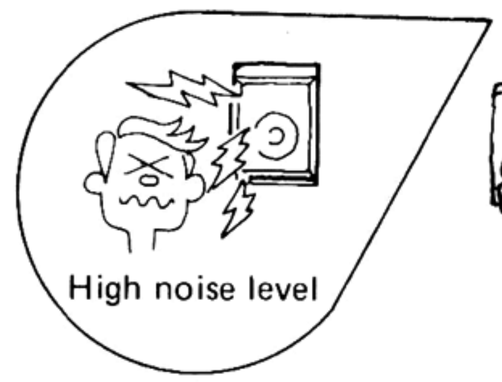
Is sound recorded on the tape ?

SPEAKERS switch position ?

Speaker terminal connections ?

TAPE MONITOR switch positions ?
(On when listening to tape)

FUNCTION switch position ?



Record dirty or scratched ?
Is turntable grounded ?

Interference from other electrical appliances ?

Ground disconnected ?

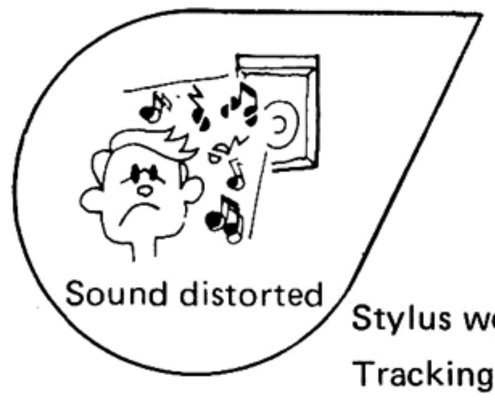
Amateur station audible (contact service)

Install antenna properly

TREBLE too high ?

Connections defective ?
(plugs & jacks)

Noise recorded on tape ?
Heads dirty ?



Stylus worn ?
Tracking force correct ?
Headshell loose ?
Vibration being picked up ?

BASS/TREBLE too high ?

Antenna direction ?

Station properly tuned in ?

Distorted sound recorded on tape ?
Output level too high ?

VOLUME too high ?

SPECIFICATIONS

Semiconductors

IC(s) 4
Transistors 20
Diodes 16

Amplifier Section

Circuitry: 1-stage differential amplifier
Direct coupled OCL

Continuous Power Output
20 ~ 20kHz (Both channels driven):
35W + 35W (8Ω)
40W + 40W (4Ω)
1kHz (Both channels driven): 40W + 40W (8Ω)
45W + 45W (4Ω)
Total Harmonic Distortion (20 ~ 20kHz)
(Continuous Rated Power Output):
No more than 0.3%
(20W Power Output, 8Ω): No more than 0.08%
(1W Power Output, 8Ω): No more than 0.05%
Intermodulation Distortion
(Continuous Rated Power Output):
No more than 0.3%
(20W Power Output, 8Ω): No more than 0.08%
(1W Power Output, 8Ω): No more than 0.05%
Power Bandwidth
(IHF, Both channels driven): 5Hz ~ 60kHz (T.H.D. 0.3%)
Output: Speaker: A, B, A+B
Headphone: Low impedance
Damping Factor
(20Hz ~ 20kHz, 8Ω): 25
Input Sensitivity/Impedance
PHONO: 2.5mV/50kΩ
TUNER: 150mV/50kΩ
AUX: 150mV/50kΩ
TAPE PB 1,2: 150mV/50kΩ
TAPE PB 2 (DIN connector): 150mV/50kΩ
PHONO Overload Level (T.H.D. 0.1%):
200mV (1kHz)
Output Level/Impedance:
TAPE REC 1,2: 150mV
TAPE REC 2 (DIN connector): 30mV/80kΩ
Frequency Response
PHONO (RIAA equalization): 30Hz ~ 15kHz ±0.3dB
TUNER, AUX, TAPE PB: 10Hz ~ 50kHz $\pm^{0}_{1.0}$dB
Tone Control
BASS: ±9dB (100Hz)
TREBLE: +8dB, −6dB (10kHz)
Loudness Contour (Volume control set at −40dB position)
+8dB (100Hz), +5.5dB (10kHz)
Hum & Noise (IHF, short circuited, A Network)
PHONO: 70dB
TUNER, AUX, TAPE PB: 90dB

Miscellaneous

Power Requirements: AC 220V 50/60Hz
or 110, 120, 130, 220, 240V (switchable) 50/60Hz
Power Consumption: 270W
310W (Manufactured for England, Australia or 220V model)
AC Outlets: 2 (switched), 1 (unswitched)
(5 line voltage model only)
Dimensions: 350(W) x 125(H) x 282(D)mm
13-3/4 x 4-15/16 x 11-1/8 in.
Weight: 7.5kg

Furnished Parts

Operating Instructions: 2
Fuse 2A: 1 (5-line voltage model only)
4A: 1 (5-line voltage model only)

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

〈76E02M212B〉

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Printed in Japan 〈ARB-150-C〉

AF ASS'y AWK-050 (5 - Voltage models)
AWK-049 (220V only models)

SWITCHES

S_1 : FUNCTION SWITCH
1. PHONO
2. TUNER
3. AUX

S_2 : TAPE MONITOR 1
SOURCE → TAPE P.B.

S_3 : TAPE MONITOR 2
SOURCE → TAPE P.B.

S_4 : TONE SWITCH
OFF → ON

S_5 : LOUDNESS
OFF → ON

S_6 : SPEAKER SELECTOR
1. SP OFF
2. SP A
3. SP B
4. SP A + B

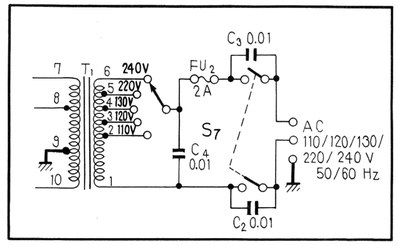
S_7 : POWER SWITCH
OFF → ON

S_8 : RELAY
ON → OFF

RESISTORS
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED K: kΩ M: MΩ

CAPACITORS
IN μF UNLESS OTHERWISE NOTED P : pF

NOTES
□ : SIGNAL VOLTAGE NECESSARY FOR OBTAINING 37W/8Ω OUTPUT POWER (1k Hz).
V : DC VOLTAGE AT NO INPUT SIGNAL.
V : DC VOLTAGE AT 37 WATTS x2 OUTPUTS.
⇦ A : DC CURRENT AT NO INPUT SIGNAL.



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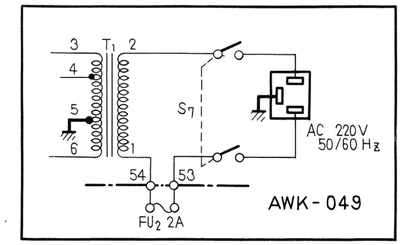

POWER SUPPLY (220V only model)