

SOLID STATE STEREO AMPLIFIER

SA-5000A

KU
FV



OPERATING INSTRUCTIONS

 **PIONEER**[®]

Thank you for choosing this quality stereo amplifier. You have made a wise choice—we are sure that this hi-fi amplifier connected to other quality audio components, will open up a new world of

FEATURES

WIDER-THAN-AUDIBLE FREQUENCY RESPONSE

Full use of silicon transistors has resulted in extremely wide frequency response and a remarkable absence of sound distortions.

ALL CIRCUITS DESIGNED FOR TOP-PERFORMANCE STABILITY

Each circuit block is arranged on a printed circuit board, a design that assures great operational stability and freedom from breakdowns.

COMPACT DIMENSIONS, YET FULL VERSATILITY

All common program sources can be accommodated: two turntables, AM/FM stereo tuner, two tape decks, plus one auxiliary source. The SA-500A serves as that heart of any, even very elaborate, hi-fi system. Note the double phono inputs (for instant comparison of two phono cartridges, for example) and the double tape deck connectors (for tape-to-tape dubbing).

LINE VOLTAGE AND FUSE

The SA-500A is available in two models: one model operates only on 120V, and the other operates on one of the five line voltages, 110V, 120V, 130V, 220V and 240V. If your SA-500A is the latter model, set the unit to the proper line voltage by following the procedure described below.

CHANGING LINE VOLTAGE SETTING AND FUSE

To remove the fuse, turn the fuse cap located on the line voltage selector in the direction indicated by the 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 position of the selector switch is changed, check the rating of the fuse. A 0.5A fuse is to be used for either 220V or 240V operation and a 1A rating for 110V, 120V or 130V operation. If the rating of the fuse is correct, replace cap. (Fig. 1).

music enjoyment. To familiarize yourself with this amplifier's versatile possibilities and to avoid making mistakes in its operation, please study the following explanations carefully.

ACCEPTS TWO PAIRS OF SPEAKER SYSTEMS

Two pairs of speaker systems can be connected and switched on together or separately. Permits instant speaker listening tests or main-remote installations.

FULL ARRAY OF AUXILIARY CIRCUITS

These include accurate, click-stop type tone controls, a loudness switch for more natural volume contour, plus a tape monitor switch for tape/source monitoring.

FUNCTIONALLY ARRANGED FRONT PANEL

Styled with elegant metal-and-wood accents, the front panel is arranged for easy operation with all controls in logical positions. Moreover, in its exterior styling the SA-500A is a perfect match for the TX-500A AM/FM Stereo Tuner, and this combination will be as pleasing to the eyes as to the ears.

FUSE REPLACEMENT

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

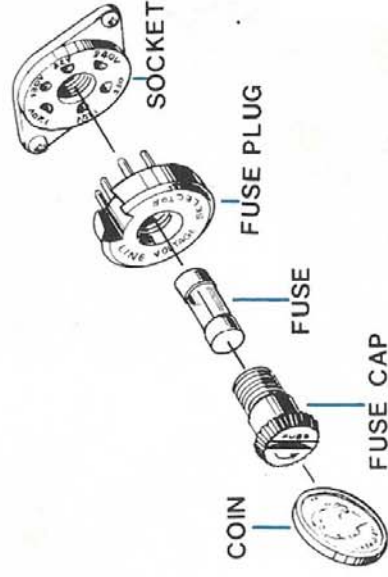


Fig. 1

ASSEMBLING A STEREO SYSTEM

The SA-500A, a stereo amplifier, combines with a stereo speaker system, turntable, AM/FM stereo tuner and tape deck to create a high-performance stereo system (Fig. 2).

COMBINING COMPONENTS

A wide range of Pioneer speaker systems, turntables, AM/FM stereo tuners, tape decks and other stereo components are available. By choosing from this selection, you can construct a high-quality stereo system to suit your budget and taste. The following notes should be used as a guide when combining additional components with the SA-500A.

SPEAKER SYSTEMS

Choose a speaker system with an impedance of between 4 to 16 Ω , a comparatively high sensitivity, a high rated input power and excellent characteristics.

Speaker systems come in various types. Cabinet design can be of the bass-reflex or closed type, and speaker construction varies to give full-frequency range systems, 2-way systems, 3-way systems and so on. There are also bookshelf-type, floor-type, omni-directional-type and various other systems, so be sure to choose one which gives the "sound" that suits you best.

TURNTABLES

Turntables also vary according to drive system (rim-drive, belt-drive), cartridge type (moving-coil, moving-magnet, induced-magnet), piezo-electric system (crystal, ceramic) and type of components used (semi-conductor, photoelectric).

TUNERS

Choose a tuner with excellent characteristics and high stability. For best reception of FM stereo broadcasts, a separate FM antenna is recommended.

TAPE DECKS

Tape decks available on the audio market at present can be generally divided into two types: open-reel and cassette types, each of which can be used with the SA-500A. When buying either type, a high-quality tape deck with built-in preamplifier used for record/playback will be best suited to your requirements.

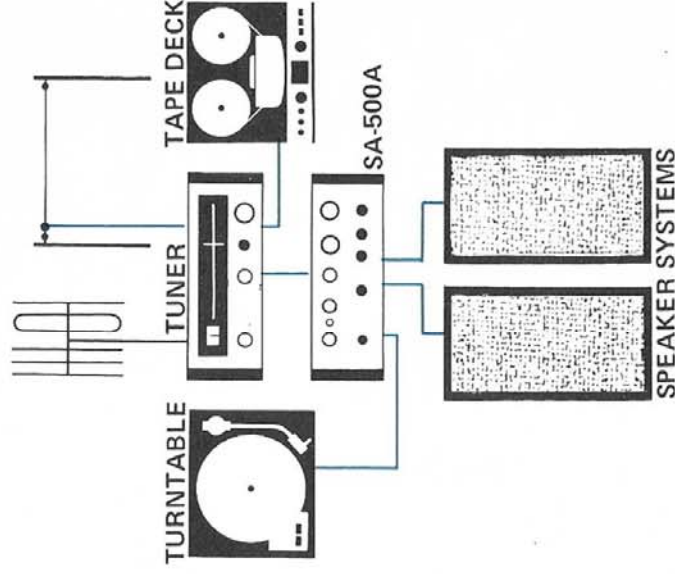


Fig. 2

INSTALLATION

Do not install the SA-500A in the following places:

- In direct sunlight or near heating units.
- In damp, dusty places or where air circulation is poor.
- In vibration-prone, unstable places.
- Do not put inflammables on the upper surface of the unit nor cover a ventilator with its function-preventives.

CONNECTION AND PLACEMENT OF SPEAKER SYSTEMS

CONNECTION

- As shown in Fig. 3, connect the lead wires of the speaker system to the supplied speaker plugs. Be sure to observe the correct polarity and no short between \oplus and \ominus .
- For the main set of speakers, use the A speaker sockets. Connect the right-channel speaker (the right-hand speaker when viewed from the front) to the socket marked R, and the left-channel speaker to the socket marked L.
- For the second set of speakers, use the B speaker sockets. Connect in the same way as for the first set.

NOTE: When using both of speakers simultaneously (with the SPEAKER switch set to A + B), make sure that the impedance of each set is at least 8 Ω .

PLACEMENT

Optimal stereo effect is obtained when the listener is at the vertex of the regular triangle whose base is the line connecting the left and right speakers (approx. 3 ft to 8 ft apart). Wherever possible, place the speakers at the same height; if the difference in height is too great, stereo effect deteriorates.

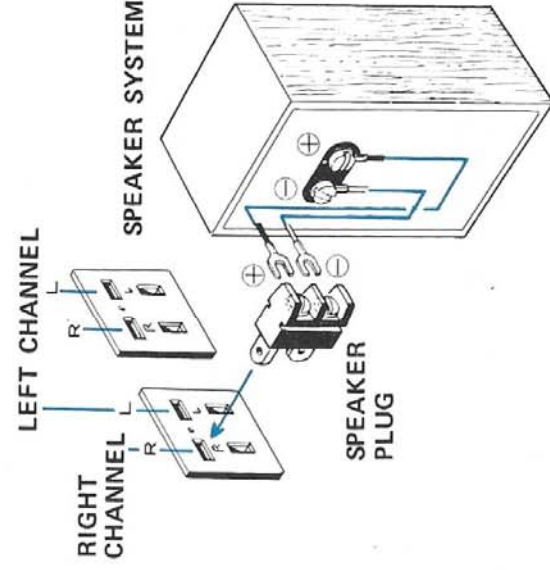


Fig. 3

CONNECTION OF TURNTABLE

- Connect the output from the turntable equipped with moving-magnet phono cartridge to PHONO 1 input jacks. The upper jack is for the left channel, and the lower jack is for the right channel.
- For using two turntables, plug the second turntable into PHONO 2 input jacks.
- For using a turntable equipped with ceramic or crystal phono cartridge, plug the output from the turntable into AUX input jacks.

NOTE: If the plugs of the output cord of the turntable do not fit into the PHONO input jack, replace them with pin plugs, separately available.

CONNECTION OF TUNER

- Plug the output leads of the tuner into the TUNER jacks. The upper jack is for the left channel, the lower jack for the right channel.
- For using two tuners, plug the second one to the AUX jacks.

CONNECTION OF CARTRIDGE TAPE PLAYER

- Plug the output leads into the AUX jacks.

CONNECTION OF TAPE DECKS

Three different types in tape deck are available on the market; open-reel type, cassette type and cartridge type. If your tape deck is equipped with preamplifiers used for recording and playback, the tape deck can be connected directly to the SA-500A.

RECORDING

- Connect the recording input terminals (LINE INPUT) of the tape deck to the TAPE 1 REC jacks of the SA-500A with the aid of a connecting cord. The upper jack is for the left channel, the lower jack for the right channel. Use the connecting cord supplied with the tape deck.

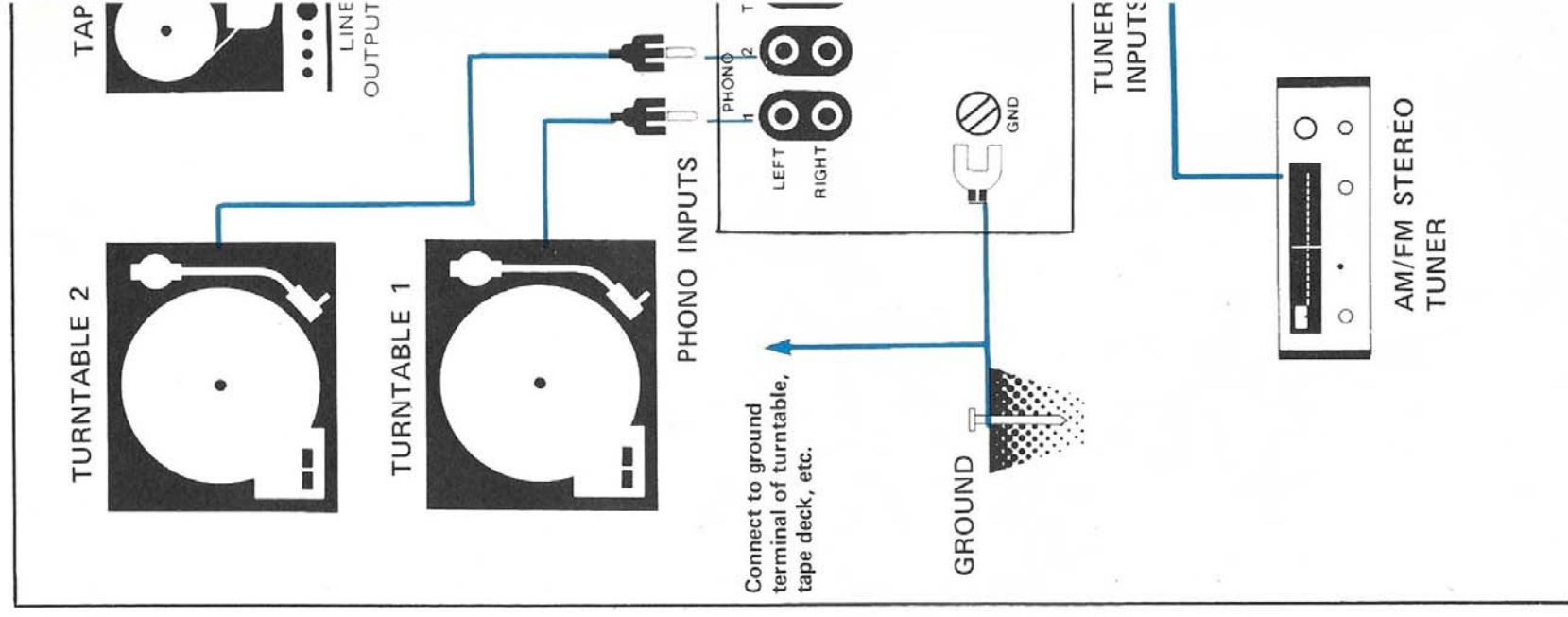
PLAYBACK

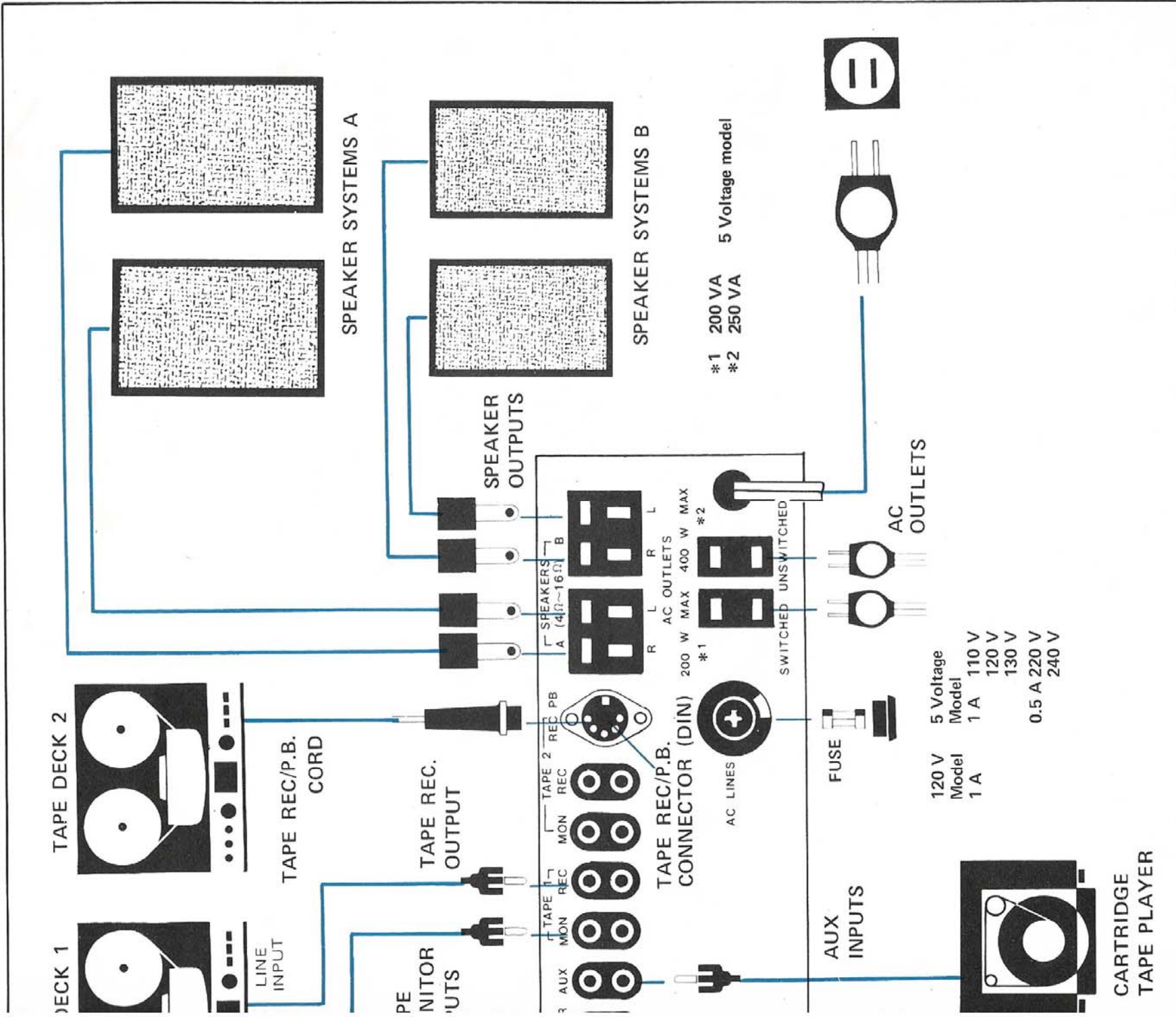
- Connect the playback output terminals (LINE OUTPUT or TAPE MONITOR) of the tape deck to the TAPE 1 MON jacks of the SA-500A with the connecting cord. Connection is the same as for recording.
- With a monophonic tape deck, connect to either the upper or lower jack and set MODE switch to MONO position.

NOTES: 1. When the tape deck is provided with a DIN type connector, connecting this to the TAPE 2 REC/P.B. connector of the SA-500A through the use of a separately available record/playback cord (Pioneer PP-101) completes both connections.

2. For using two tape decks, plug the second into the TAPE 2 REC and TAPE 2 MON jacks. Connection is similar to that for the TAPE 1 jacks.

CONNECTION DIAGRAM





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.

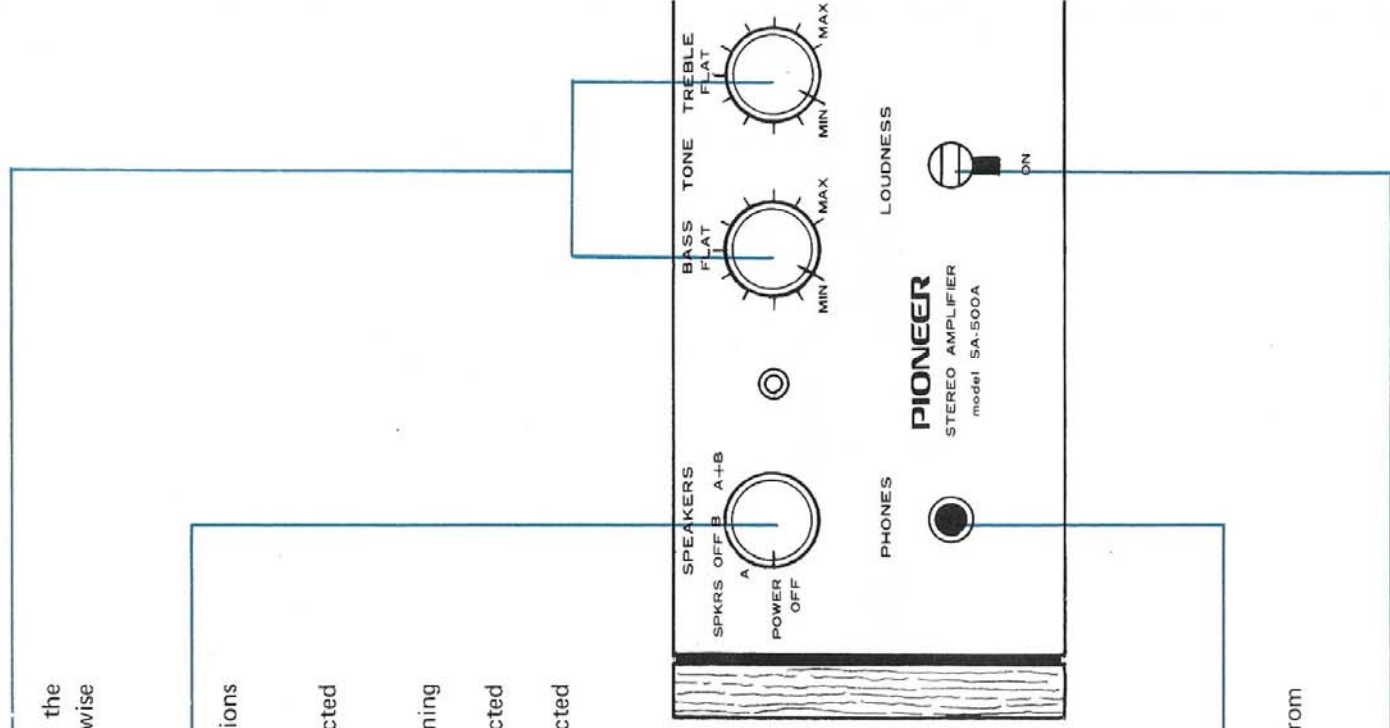
A For turning on the speaker systems connected to the A speaker socket.

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.



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.

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

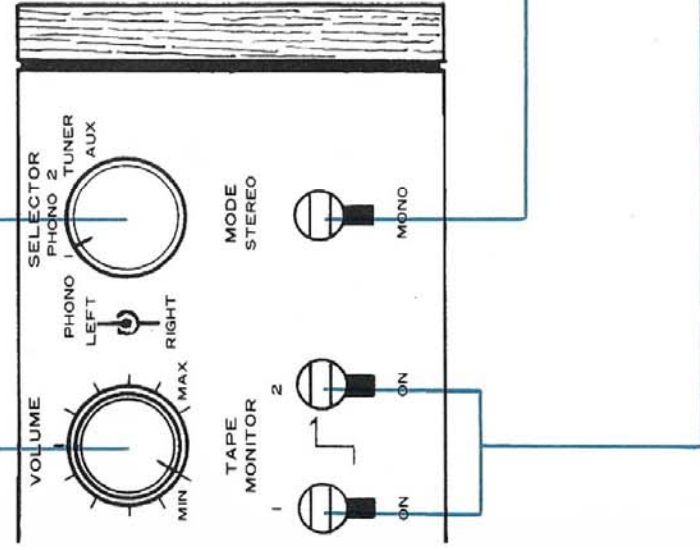
This selects the program source to be fed into the SA-500A.

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 to broadcasts through the tuner.

AUX When component unit connected to AUX jacks is used.



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 will not be produced from speakers.

BEFORE SWITCHING THE POWER ON

Check the following:

1. **VOLUME** control is at **MIN**.
2. **MODE** switch is at **STEREO**.
3. **BASS**, **TREBLE** controls are at **FLAT**.
4. **TAPE MONITOR** switches (1, 2) are set at **off** except for tape playback.

PLAYING RECORDS

1. Set the **SELECTOR** switch to either **PHONO 1** or **PHONO 2**.

NOTE: Set to **PHONO 1** to use the turntable plugged into the **PHONO 1** jacks, and to **PHONO 2** to use the turntable plugged into the **PHONO 2** jacks.

2. Start the turntable.
3. Adjust the volume and tone by means of the **VOLUME**, **BASS** and **TREBLE** controls.

LISTENING TO RADIO BROADCASTS

1. Set the **SELECTOR** switch to **TUNER**. If the tuner in use is plugged into the **AUX** jacks, set to **AUX**.
2. Tune in the station.
3. Adjust the volume and tone as required.

USING A CARTRIDGE TAPE PLAYER

1. Set the **SELECTOR** switch to **AUX**.
2. Start the cartridge tape player.
3. Adjust the volume and tone as required.

A WORD ABOUT ROOM ACOUSTICS

The quality of reproduced sound varies according to the size and shape of the room, the materials of walls, floor and ceiling and the amount and arrangement of furniture. Too harsh or "bright" a sound usually results from too many hard reflecting surfaces, and/or too low a ceiling. This condition is improved by having ample carpet area or covering the wall (especially that facing the speakers) with a thick curtain. On the other hand, too many absorbing surfaces will tend to "soak up" the sound, resulting in a certain "deadness." Furniture may be rearranged to provide irregular reflection of the sound. In any event, the true stereo effect is lost if the two speaker systems are placed too far apart. This may be corrected by angling them slightly toward each other or reducing the distance between them.

USING TAPE DECKS

RECORDING

As shown in Fig. 4, during playing the signal is always present at the TAPE 1 REC and TAPE 2 REC jacks. Operate the SA-500A as explained in the sections "PLAYING RECORDS" and "LISTENING TO RADIO BROADCASTS" on page 8.

NOTE: Adjusting the VOLUME, BASS and TREBLE controls on the SA-500A does not affect the signal present at the TAPE 1 REC and TAPE 2 REC jacks. Recording level must be adjusted on the tape deck itself.

TAPE MONITOR

If the tape deck is of the 3-head type or is fitted with a tape monitor circuit, the recording can be monitored by setting the TAPE MONITOR switch (1, 2) to ON. The recording and playback connections must both be left attached.

PLAYBACK

As shown in Fig. 5, setting the TAPE MONITOR switch 1 to ON permits playback of the tape on tape deck 1, and setting TAPE MONITOR switch 2 to ON permits playback of the tape on tape deck 2. During playback, volume and tone can be adjusted by the VOLUME, BASS and TREBLE controls on the SA-500A. Playback is possible regardless of the position of the SELECTOR switch.

DUPLICATING OR EDITING RECORDING TAPES

With the SA-500A, it is possible to record, say, an FM stereo broadcast and then re-tape the parts of the broadcast one wishes to keep onto a separate tape.

1. Connect two tape decks as shown in Fig. 5.
2. Turn the TAPE MONITOR switch 1 to ON.
3. Play back the record tape on tape deck 1 and record it onto the tape deck 2.
4. You can monitor the tape during recording by setting the TAPE MONITOR switch 2 to ON.

NOTE: Duplicating and editing can be carried out very easily by using a tape deck equipped with a PAUSE switch for the recording side.

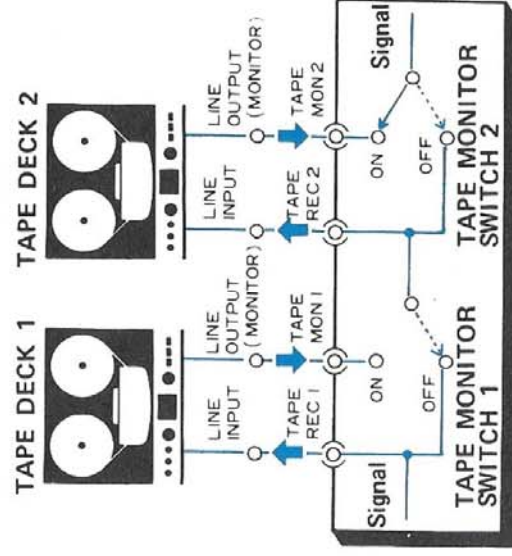


Fig. 4

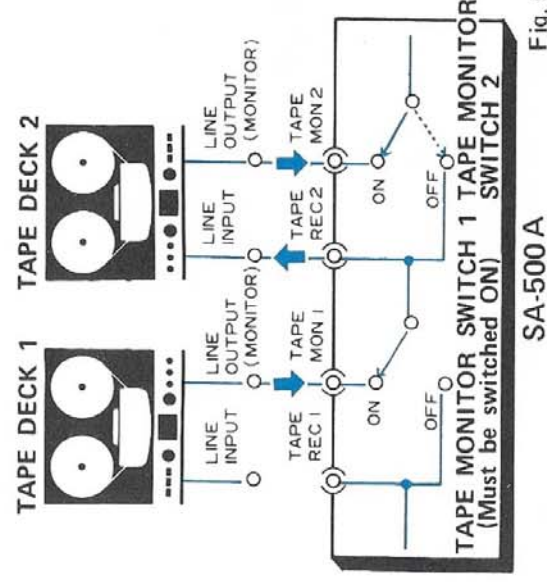


Fig. 5

CONDITIONS FREQUENTLY MISTAKEN FOR MALFUNCTION

Noise: There are a variety of noises relating to the operation of a hi-fi unit. These are generally divided into two types; (1) the unit is faulty (a transistor or part has deteriorated) and (2) an external source is adding to the unit. When a hi-fi unit produces an unpleasant noise, it is often assumed that the unit is faulty, but statistical records indicate that the majority of noises produced in hi-

fi acoustic units result from external sources of noise: Due to the inherent high sensitivity and the high fidelity in reproduction, the unit amplifies and reproduces extraneous noises into definite output noise. If your receiver produces a noise, check according to the following table and trace out the source of noise for the appropriate corrective action.

TO LOCATE THE CAUSE OF TROUBLES, FOLLOW THE CHART BELOW. CHECK NOT ONLY SA-500A BUT ALSO THE TUNER AND/OR TURNTABLE OF THE SYSTEM.

	SYMPTOM	SUSPECTED SOURCE OF NOISE	DIAGNOSIS AND REMEDY
WHEN LISTENING TO BROADCASTS	Continuous or intermittent noise like jijiji or zzzzzz.	<ul style="list-style-type: none"> ●Static (lightning) ●Fluorescent lamp, motor, or thermostat may be in use in house or in the vicinity of the houses. 	In many cases, it is very difficult to remove the source of noise. In order to make the radio input larger than the noise level, set up a good outdoor antenna and make a complete grounding.
	When a station is tuned in, hum is mixed in the program.	<ul style="list-style-type: none"> ●Poor fluorescent lamp, motor or electric heater may be in use in house or near the house. 	Reversing the line plug may occasionally alleviate this noise problem. Usually it is very difficult to eliminate the noise.
	Static noise (in particular, when automobiles run close to the house).	<ul style="list-style-type: none"> ●White noise generated from automobile engines. ●High frequency sewing machine or welding machine being used near your house. 	In an area surrounded by hills or high buildings, the FM input signals are very weak. Thus the noise limiter in the circuit loses its function. Set up an FM outdoor antenna having many director elements.
	Reception or FM stereo program contains more noise than FM mono program.	<ul style="list-style-type: none"> ●Note that the service area covered by an FM stereo broadcast is about 50% of that of a regular mono broadcast. 	Increasing FM input signal may alleviate this problem. Use an exclusive FM outdoor antenna instead of the indoor T-type antenna.
WHEN PLAYING RECORD	Hum of buzz. When switched to radio reception, the noise disappears. Treble is not clear.	<ul style="list-style-type: none"> ●Poor connection of shielded wire (a) ●Jack connection is loose. (b) ●Line cord or fluorescent lamp is near the shielded wire. (c) ●Poor grounding (d) ●HAM transmitting station or TV transmitting station is near your house. (e) 	Correct the conditions stated in (a), (b), (c) or (d). In case of (e), report it to an official activity.
	Output tone quality is poor and mixed with noise.	<ul style="list-style-type: none"> ●Stylus wears out. (a) ●Record wears out. (b) ●Dust adheres to stylus (c) ●Stylus is improperly mounted. (d) ●Stylus pressure is not proper. (d) ●The TREBLE level is too high. 	Check (a) through (e) and correct the condition. Lower the TREBLE level.

WATCH FOR THE FOLLOWING CONDITIONS; THESE ARE ALSO APT TO BE MISTAKEN FOR MALFUNCTION.

	SYMPTOM	SUSPECTED SOURCE OF NOISE	DIAGNOSIS AND REMEDY
	Power is not turned on although the power switch is set to ON.	<ul style="list-style-type: none"> ●Fuse blows. (a) ●Line plug is loose. (b) 	Check (a) and (b) and correct the condition.
	In playing a record, increasing the volume causes howling.	<ul style="list-style-type: none"> ●Distance between the turntable and the speakers is too short. ●The place on which the turntable or speakers are set is unstable. 	Change the distance or rearrange the installation increase of the unit and speakers. (Installing the turntable on a firm, solid stand may alleviate this problem.) Do not enhance the BASS sound level excessively.

SPECIFICATIONS

SEMICONDUCTORS

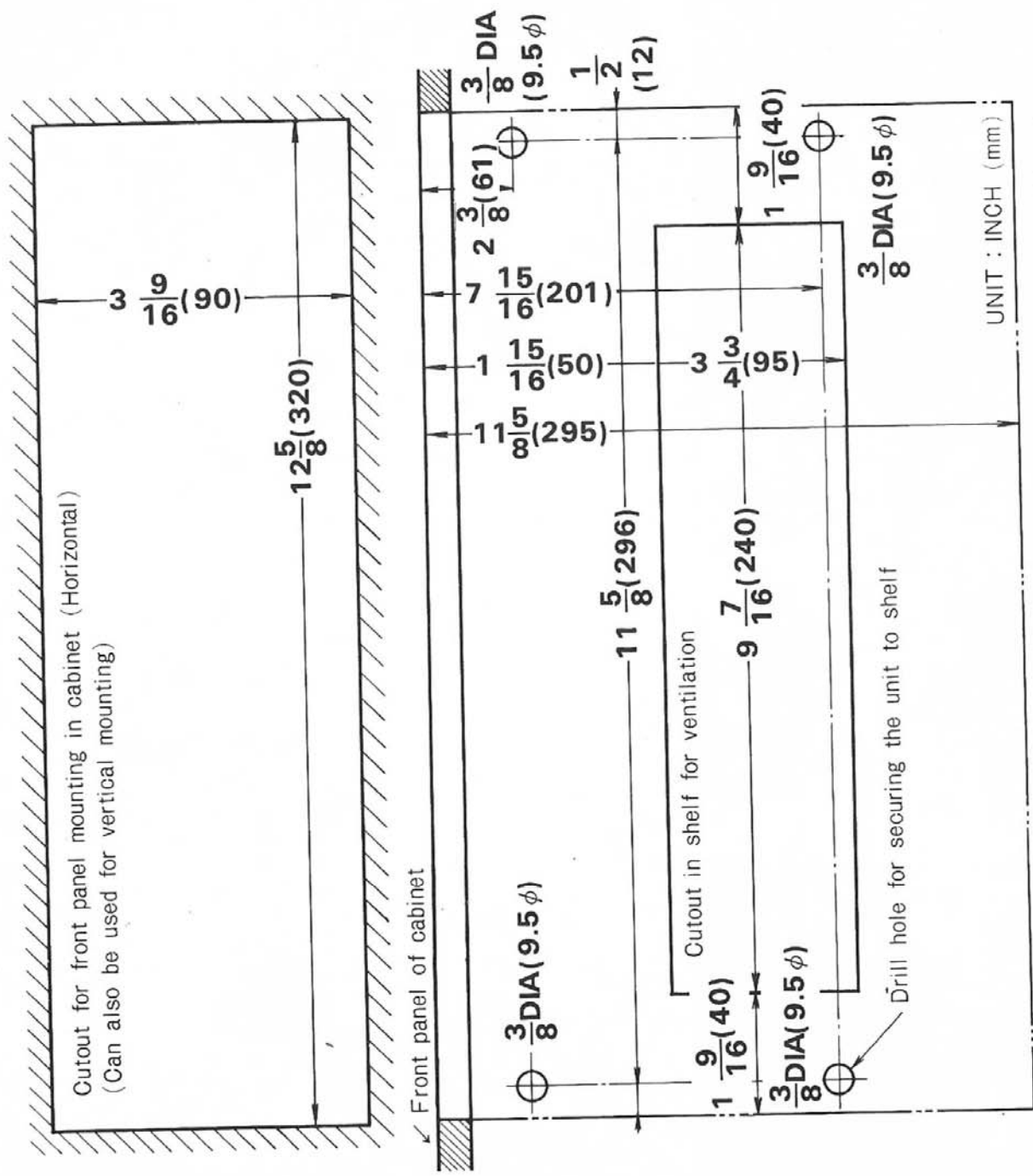
Transistors	18
Diodes	6
Music Power Output (IHF)	44 watts (4 Ω) 36 watts (8 Ω)
Continuous Power Output (each channel driven)	16W/16W (4 Ω) 13W/13W (8 Ω)
Continuous Power Output (both channel driven)	12W/12W (4 Ω) 10W/10W (8 Ω)
Harmonic Distortion	Less than 0.5% (Continuous power output)
Intermodulation Distortion	Less than 0.7% (Continuous power output)
Power Bandwidth (IHF)	20Hz to 40kHz (8 Ω , Harmonic Distortion 0.5%)
Speakers	4 to 16 Ω
Damping Factor	40 (8 Ω , 1kHz)
Frequency Response (AUX)	30Hz to 50kHz, +1 dB -2 dB
Input Sensitivity/Impedance (1kHz, for rated output)	PHONO 1 MAG 2.5mV/50k Ω PHONO 2 MAG 2.5mV/50k Ω TUNER 200mV/100k Ω AUX 200mV/100k Ω TAPE MONITOR 1, 2 200mV/100k Ω TAPE REC 1, 2 (Pin jack) 200mV TAPE REC (DIN connector) 30mV
Recording Output	
BASS Control	-11dB, +12 dB/100Hz
TREBLE Control	-10dB, +9.5 dB/10kHz
Equalization Curve	PHONO: RIAA S.T.D.
Loudness Contour	+10dB/100Hz, +5.5dB/10kHz with Volume Control set at -40dB position.
Hum and Noise (IHF)	PHONO More than 75dB TUNER, AUX More than 90dB PHONO More than 50dB TUNER, AUX More than 55dB
Channel Separation (1kHz)	

MISCELLANEOUS

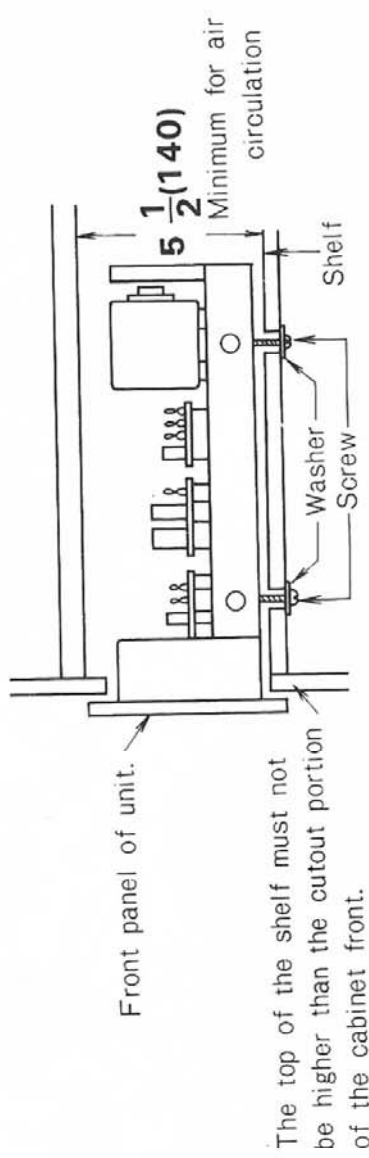
Power Requirements	120V 60Hz (for 120V voltage only) or 110V, 120V, 130V, 220V and 240V. (Switchable) 50-60Hz.
Power Consumption	75W (Max)
Dimensions (overall)	13in./330mm (Width) 4-5/8in./118mm (Height) 12-7/16in./316mm (Depth)
Weight without package with package	12lb. 2oz/5.5kg 15lb. 3oz/6.9kg
Furnished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

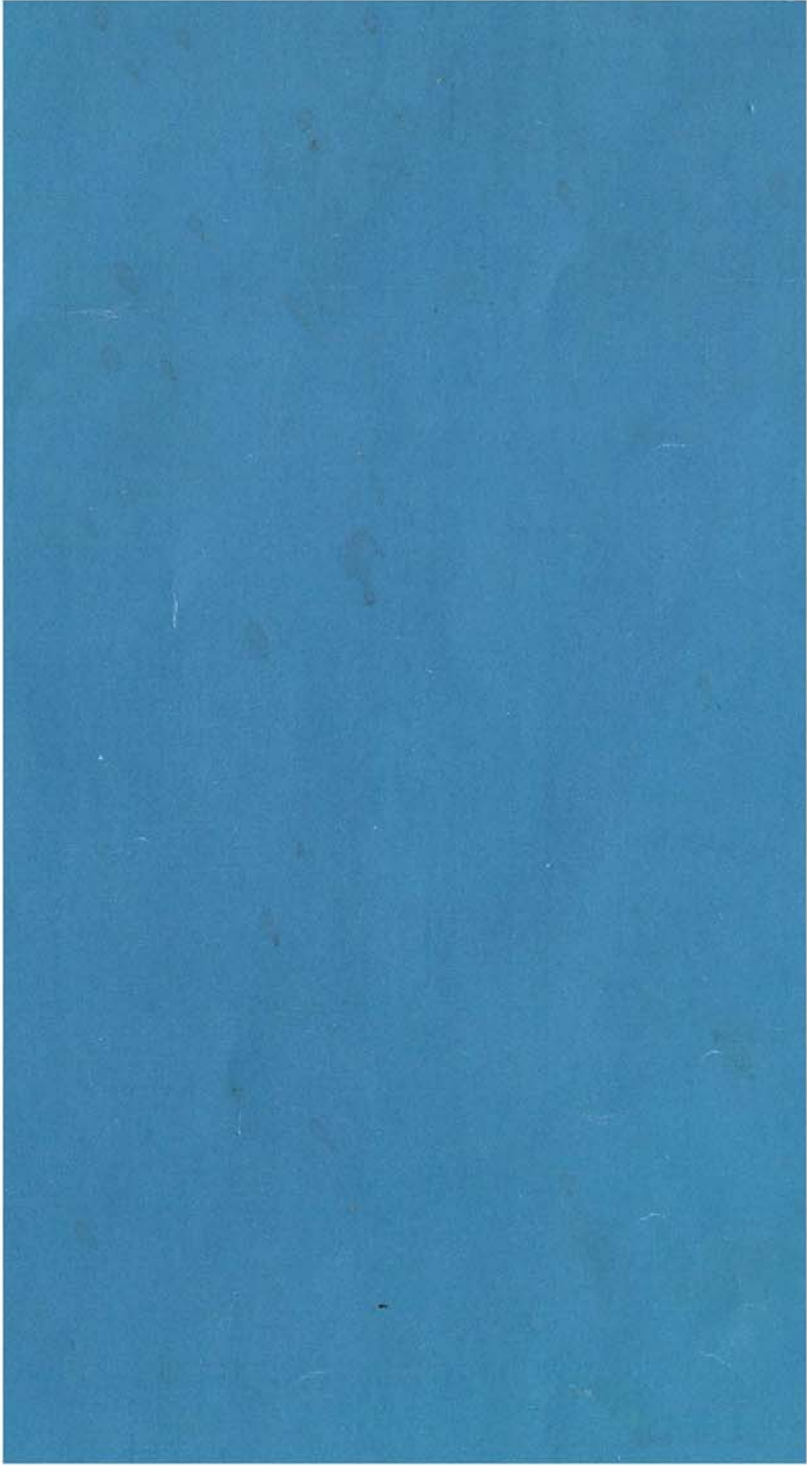
NOTE: Specifications and the design subject to possible modifications without notice due to improvements

MOUNTING TEMPLATE



Remove the four feet on the bottom plate of the unit





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PRINTED IN JAPAN
<ARB-039D>

<73E06Y012B>

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