

**OPERATING  
MANUAL**

**MONACOR**

**STEREOPHONIC  
COMPLETE AMPLIFIER**

**SA-800**

# INSTALLATION

Although your amplifier is so simple to operate any member of your family can operate it to obtain maximum enjoyment, read this entire instruction booklet carefully and thoroughly. You will find it well worth the time.

Before attempting to operate the MONACOR model SA-800, please be sure that all necessary connections are made, before applying power (100/117/220/240 volts – 50/60 cycles only).

The amplifier has been set to a power source voltage of 220 volts. When it is to be used in areas having a different power source voltage, switch the voltage switching tap at the top of the chassis (near the power transformer) to the required power source voltage.

## IMPORTANT:

Do not apply power to the set without making sure both speakers are connected. Failure to do so may result in damage to the set.

## CONNECTIONS TO A STEREO SPEAKER SYSTEM:

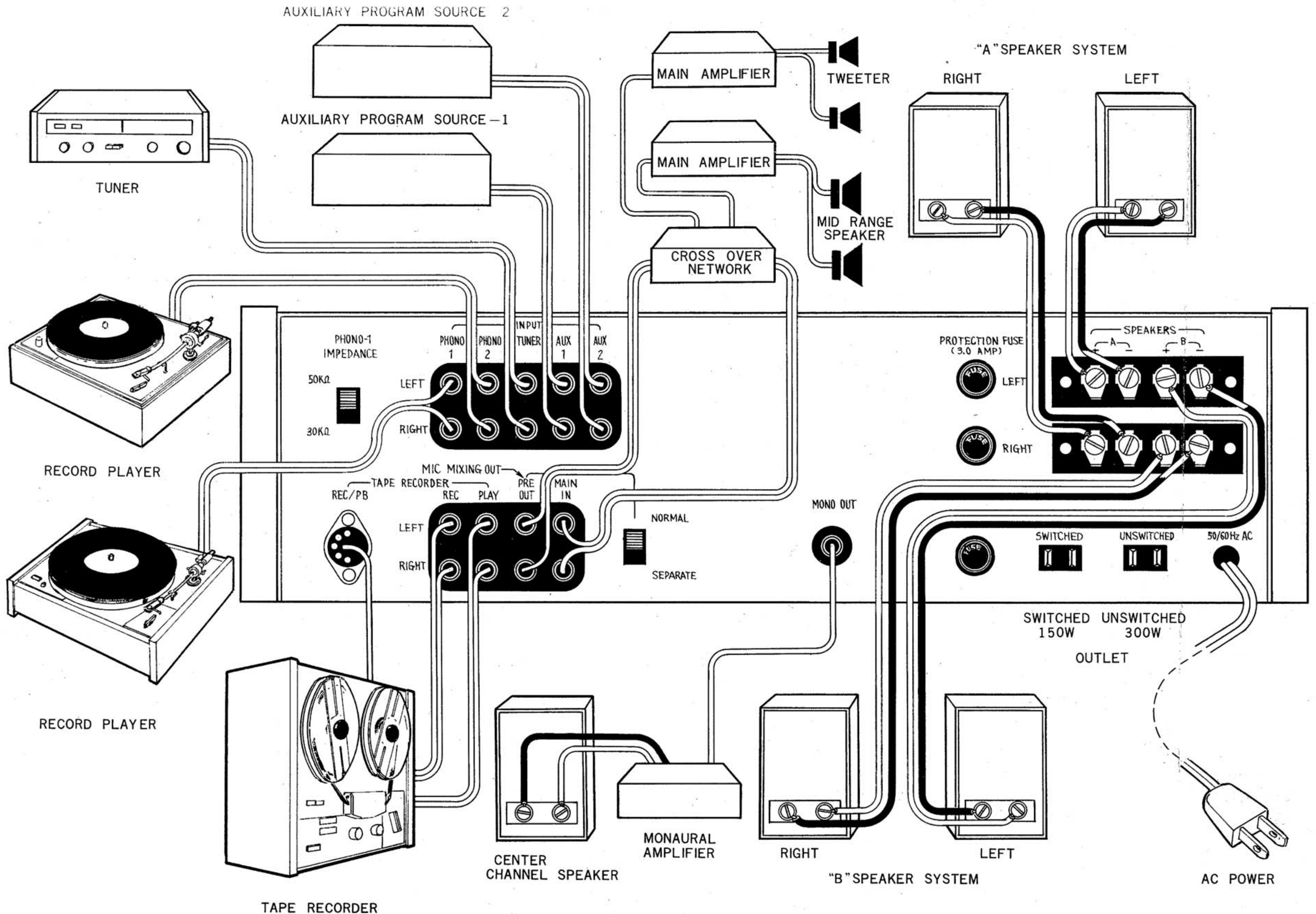
Your amplifier permits you to use two pairs of stereo speakers – one set for your main listening room and another set in any other room you choose. You can select either set of speakers with the SPEAKERS switch located on the front panel.

For maximum sound quality, it is recommended that matched speakers be used.

The amplifier is equipped with two sets of stereo speaker terminals, A and B and stereo performances can be simultaneously enjoyed at two different places.

A4 ~ 16Ω speaker can be connected to the speaker terminals. Always insure that the speaker polarity (+, -) and left and right channel connections are correct. When the polarities of the two speakers are connected correctly, sound can be distinctly heard from the center when listening to monaural performances (when the sound source is stereo, set the MODE switch to MONO). However, when their polarities are reversed, the low tones will be small and will not be concentrated at the center.

# INTERCONNECTING DIAGRAM



## INPUT, OUTPUT CONNECTIONS:

### 1) RECORD PLAYERS

This unit is incorporated with two pairs of Phono input, and two sets of stereo record player can be connected. When operating PHONO-1 (or PHONO-2), switch the SELECTOR switch to PHONO-1 (or PHONO-2). Both PHONO-1 and PHONO-2 are for magnetic cartridge.

PHONO-1 has a selection of load resistance between 30K ohm and 50K ohm. Use proper resistance according to a cartridge being used. PHONO-2 has a fixed load resistance at 50K ohm.

Crystal or ceramic cartridge can not be used with these PHONO inputs. This case, use AUX input.

### 2) CONNECTING TUNERS

Use the TUNER input for connection to an FM-MPX stereo or an AM-FM-MPX stereo tuner. When use second tuner, connection can be made to AUX input which provides the same sensitivity as the TUNER input.

### 3) TAPE RECORDERS

You may record and play-back with one of your tape recorders which has recording and play-back pre-amplifier. Connect line output of tape recorder to PLAY terminal, line input of tape recorder to REC terminal. It may require four pieces of shielded cables for stereo performance.

In case, your tape recorder has a REC/PB connector, this amplifier and tape recorder can be connected by one piece of recording cable. This type of cable has been standardized by all the manufacturers and you may use any one of them. This case, it may not require each connection to REC and PLAY terminal.

### 4) AUX TERMINAL

This set has two pairs of auxiliary input, AUX-1 and AUX-2 are for high output devices, such as crystal or ceramic cartridge, TV sound, tape player, etc.

### 5) PRE-OUT, MAIN-IN TERMINAL

This unit has output terminal of pre-amplifier and input terminal of main amplifier. By switching, pre-amplifier section and main amplifier section can be either separated or combined. For a normal use, set the switch to NORMAL position which indicates PRE section and MAIN section are combined. At SEPARATE position, PRE and MAIN sections are separated for individual use.

In case, you use a Multi-Channel-Amplifier (system), it may require a filter to be connected between PRE-OUT and MAIN-IN.

This unit enables you to use microphone and mic mixing. In case, you need recording by microphone, connect line input of tape recorder to PRE-OUT terminal and now you can record mic mixing sound.

- NOTE: For normal use, NORMAL-SEPARATE switch must be set at NORMAL position. No sound can be heard from the speakers at SEPARATE position.

### 6) MONO-OUT TERMINAL

This terminal is an output for left and right channel mixed monaural signal. When use a center speaker, connect MONO-OUT terminal through a monaural amplifier.

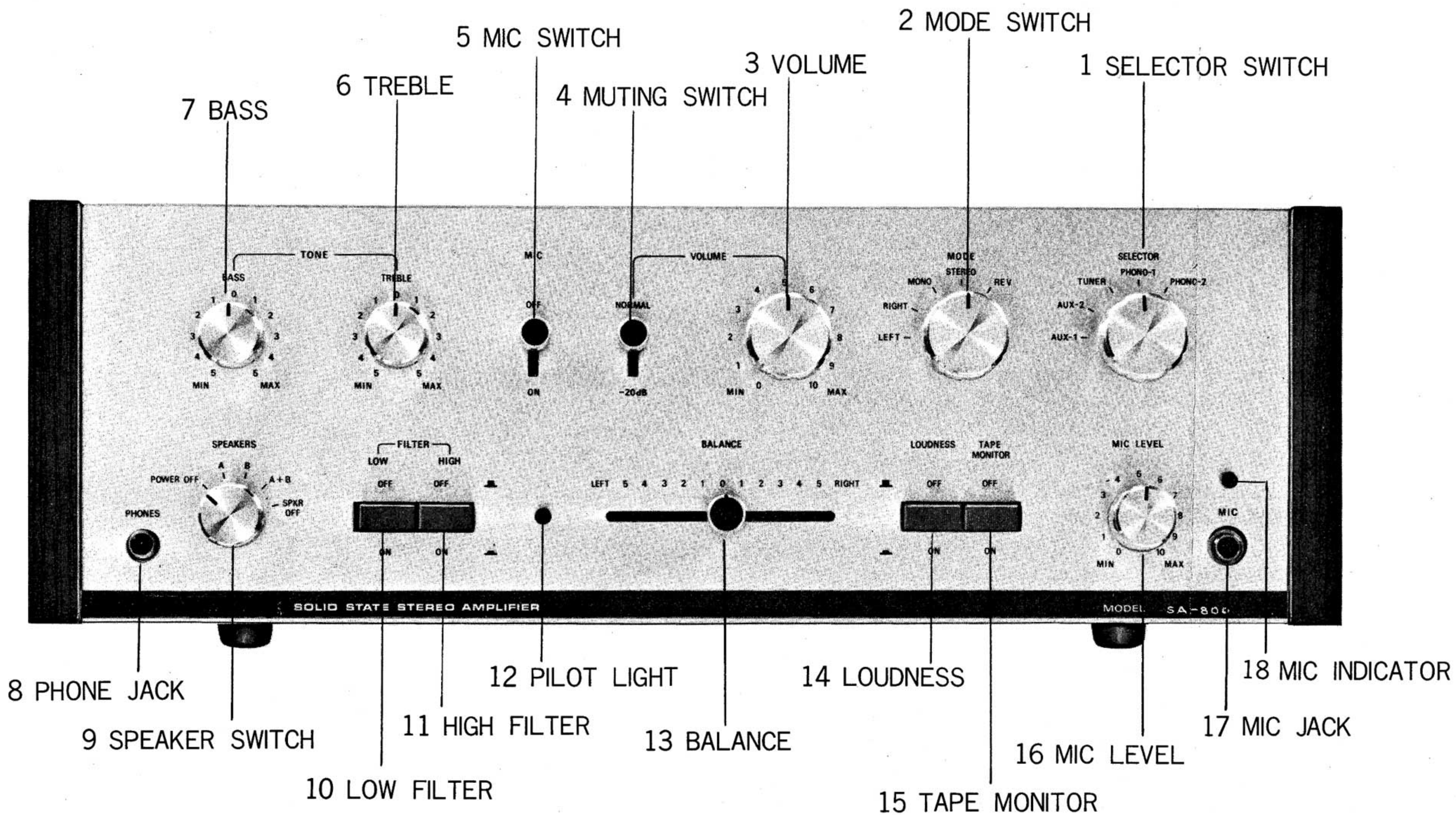
## AUXILIARY POWER OUTPUT CONNECTIONS:

- SWITCHED (150W): This is ganged with the power switch of the amplifier and permits connection of the power source unit for a record player, tape recorder, etc. Up to 150 watts.
- UNSWITCHED (300W): This is not ganged with the power switch of the amplifier and use above 300W is dangerous.

## GROUND TERMINAL CONNECTION:

Use this terminal to ground a connected record player or tape recorder or to provide an earth ground.

# CONTROLS AND FUNCTIONS



# DESCRIPTION AND USE OF CONTROLS

## 1 SELECTOR SWITCH

Each control is used to select the sound source for your system.

- \* AUX: Selects sources connected to the AUX input terminal.
- \* TUNER: Selects sources connected to the TUNER input terminal.
- \* PHONO-1: Selects sources connected to the PHONO-1 input terminal.
- \* PHONO-2: Selects sources connected to the PHONO-2 input terminal.

## 2 MODE SWITCH

This switch is used to switch between stereo and monoaural performances.

- LEFT: The sound entering the LEFT channel is reproduced at both the left and right speakers.
- RIGHT: The sound entering the RIGHT channel is reproduced at both the left and right speakers.
- MONO: The sounds of both the left and right channels are mixed.
- STEREO: Set to this position when listening to stereo performances.
- REV: Set to this position when the sounds from the left and right speakers are reversed when listening to stereo performances.

## 3 VOLUME:

This controls volume of sound. Turn knob clockwise to adjust the level of both channel simultaneously. To adjust one channel only, use the BALANCE control.

## 4 MUTING SWITCH

It reduces volume about 20 dB (about one tenth) by pushing this lever down.

## 5 MIC SWITCH

This lever controls microphone connected to MIC JACK. Push down to operate microphone. This operation has no interference with SELECTOR position, but serves as MIC MIXING.

## 6 TREBLE

This controls high tone characteristics. Center setting is at flat level, clockwise turn increases high tone and counter-clockwise for reverse effect.

## 7 BASS

This controls low tone characteristics. Works as TREBLE control.

## 8 PHONE JACK:

Plug stereo headphone into this jack. For private listening, set SPEAKER switch 9 to SPKR OFF position.

## 9 SPEAKER SWITCH

This knob is used to select the desired speakers and to turn the power ON and OFF.

- POWER OFF: Power to the tuner-amplifier is turned off when set to this position. Power is turned on when the knob is turned clockwise from this position.
- A: The left and right A speakers are operated when set to this position.

- **B:** The left and right B speakers are operated when set to this position.
- **A + B:** The left and right A speakers and left and right B speakers are simultaneously operated when set to this position. No sound will be heard when set to this position, when only the A speakers or B speakers are connected.
- **SPKR OFF:** All the connected speakers are turned off when set to this position. Set to this position when using headphones.

## 10 LOW FILTER

This filter eliminates low frequency noise. Depress this button when low frequency noise such as ripple and hum from a turntable is present.

## 11 HIGH FILTER

This filter eliminates high frequency noise. Push-in this button to engage when high frequency noise is observed during reception of FM broadcast and such that produced by scratches on records.

## 12 PILOT LIGHT

When power is applied, pilot lamp lights in red and the set is ready for performance.

## 13 BALANCE

This knob is used to adjust for differences between the volume at the left and right speakers when listening to stereo performances. When this knob is set to the center, the sound from left and right speakers is balanced. However, when the volume at the left and right speakers differs, adjust to obtain the same volume at both speakers by moving this knob to the left or right as required.

## 14 LOUDNESS

The ability of the human ear to hear low and high tones is poor compared to center sounds when the volume is small. The "LOUDNESS" button is used to compensate for this characteristic. Depress this button when the volume is low. The high and low tones will then be amplified.

## 15 TAPE MONITOR

This button is used to monitor the state of recording or playback of a tape. TAPE MONITOR is turned ON when this button is pushed-in to engage and the recorded sounds can be heard from the speaker. TAPE MONITOR is turned OFF when the button is pushed again to disengage and sound before recording can be heard from the speakers. Always set to the OFF position when listening to broadcasts or recorded performances. Otherwise, nothing will be heard from the speakers.

## 16 MIC LEVEL

This controls microphone connected to MIC JACK 17 and adjusts its volume level, without interfering with VOLUME control 3 and clockwise turning increases the volume of microphone.

## 17 MIC JACK

Plug microphone into the MIC JACK. It is recommended to use a dynamic microphone of impedance ranging from 10K ohm to 50K ohm. (Do not use crystal microphone)

## 18 MIC INDICATOR

This indicates microphone in operation. It lights up when MIC switch 5 is pushed down.

# OPERATION

Please make sure before applying power to the set the following points:

- \* All the necessary connections are properly made as per instructions given in the preceding pages, especially speaker connections must be re-checked thoroughly and properly so as not to cause any shorting of the wires. If power be applied in shorting conditions, it may blow protection fuses and result in damage to the output transistors.
- \* Volume control knob must be set at minimum level position.

Turn SPEAKER switch clockwise from POWER OFF position to apply power to the set and PILOT LIGHT 12 lights up in red. If the pilot light fails to light when the unit is turned on, please check the LINE-FUSE located on rear panel.

## LISTENING TO PHONO RECORDS:

Place the "SELECTOR" switch to the PHONO-1 or PHONO-2 position, and the "MODE" switch to the STEREO or MONO position depending upon the type of records being played. "BASS" and "TREBLE" control setting depends upon personal preference. Adjust the "BALANCE" control to obtain proper balance of both speakers. Adjust the "VOLUME" control to the desired volume.

The LOUDNESS control is used to compensate for the apparent loss of low notes at low output levels.

The LOW-FILTER is used to cut out the low frequency variational effects sometimes produced by the record player and the tape recorder.

HI-FILTER is used to cut off noise at play back of a scratched record and during broadcast reception.

## LISTENING TO BROADCAST:

Set the "SELECTOR" switch to TUNER position. Do the same as PHONO RECORD performance for VOLUME, BALANCE, BASS, TREBLE, LOUDNESS AND FILTER.

When use tuner connected to AUX input, please set this to AUX position.

## TAPE RECORDING AND MONITORING:

To listen to the playback of a recorded tape, set the "TAPE-MONITOR" switch to the "ON" position. In this position it automatically by-

passes the "SELECTOR" switch and permits you to listen to tape only. When you are finished with the tape, immediately return the switch to the "OFF" position. Otherwise you will be unable to hear any other program material. If your tape recorder incorporates a separate playback head with preamplifier, it is possible to listen to the recording a fraction of a second after it is made as a quality check. Let us assume that a recording is being made off-the-air. The "SELECTOR" switch will be in the "TUNER" position and the system will be playing the actual broadcast. When the switch is set to "ON", the system will now be playing the tape recording of the broadcast just after it has been recorded. By moving the switch back and forth it is possible to hear whether the recording is equivalent to the actual broadcast.

NOTE: Only for recorders with separate record and playback heads with preamplifier.

## USING MICROPHONE:

- \* Use microphone only  
Turn the VOLUME control counterclockwise to minimum position and put MIC switch ON position, MIC INDICATOR lamp lights up to indicate microphone is ready for performance. Turning MIC LEVEL control knob clockwise to adjust its volume level.
- \* Use as mic mixing  
When SELECTOR switch setting at either PHONO, TUNER or AUX position and any performance on play, you may leave the volume level as it is, and put the MIC switch ON position for mixing purpose with any music performed by means of phono record player, or tuners, along with microphone. This case, set the MUTING switch located next to VOLUME control at -20 dB position and it reduces a level of music or any other performance on play, in order to obtain clear sounding of announce or paging voice.

NOTE: It may result in HOWLING, if overdo MIC LEVEL adjustment or locate microphone too close to speakers.  
It is recommended to use dynamic microphone of impedance ranging from 10K ohm to 50K ohm. Lower impedance one may also be used, however, please note this may decrease its sensitivity. Crystal and ceramic microphone are not recommended.



# SPECIFICATIONS

## Semiconductors:

3-IC's, 25-Silicon Transistors, 7-Silicon Diodes, 2-Silicon Varistors

## Main Amplifier Section:

Circuit: Full direct coupled, semi-complimentary

Output: Power output: 180 watts  $\pm 1$  dB  
Music Power: 150 watts total  
Continuous Power (per Channel):  
40/40 watts @ 8 ohms  
50/50 watts @ 4 ohms

Harmonic Distortion: Less than 0.4% (rated output)

IM Distortion: Less than 0.4% (rated output)

Frequency Response: 5 ~ 70,000Hz  $\pm 1$  dB

Power Bandwidth: 10 ~ 50,000Hz

Input Sensitivity: 500mV (50K ohms)

Speaker Outputs: 2 sets 4 ~ 16 ohms

## Pre-Amplifier Section:

Inputs:

Phono 1	2.5mV	(50, 100K ohms)
Phono 2	2.5mV	(50K ohms)
Tuner	150mV	(50K ohms)
Aux 1	150mV	(50K ohms)
Aux 2	150mV	(50K ohms)
Mic	2.2mV	(22K ohms)
Tape-in	150mV	(50K ohms)
Tape-out	150mV	

Tone Control: Bass  $\pm 14$  dB @ 50 Hz  
Treble  $\pm 12$  dB @ 10 kHz

Loudness:  $\pm 10$  dB @ 50 Hz, +3 dB @ 10 kHz  
(Volume control @ -30 dB)

Filter: Low -10 dB @ 50 Hz (12 dB/Oct.)  
High -10 dB @ 10 kHz (12 dB/Oct.)

Muting: -20 dB

## General:

Hum & Noise: Phono 65 dB  
Mic 65 dB  
Tuner/Aux 75 dB

Residual Noise: 1.0mV @ Minimum Volume

Switches: Selector (Phono-1, Phono-2, Tuner, Aux-1, Aux-2)  
Mode (Left, Right, Mono, Stereo, Reverse)  
Muting, Mic-Mixing (On-Off), Tape-Monitor, Loudness, Low-Filter, High-Filter, & Speakers (w/Power Switch)

Controls: Volume, Bass, Treble, Balance, Mic-Level

Pre-Amp Output: Yes

Main Amp Input: Yes

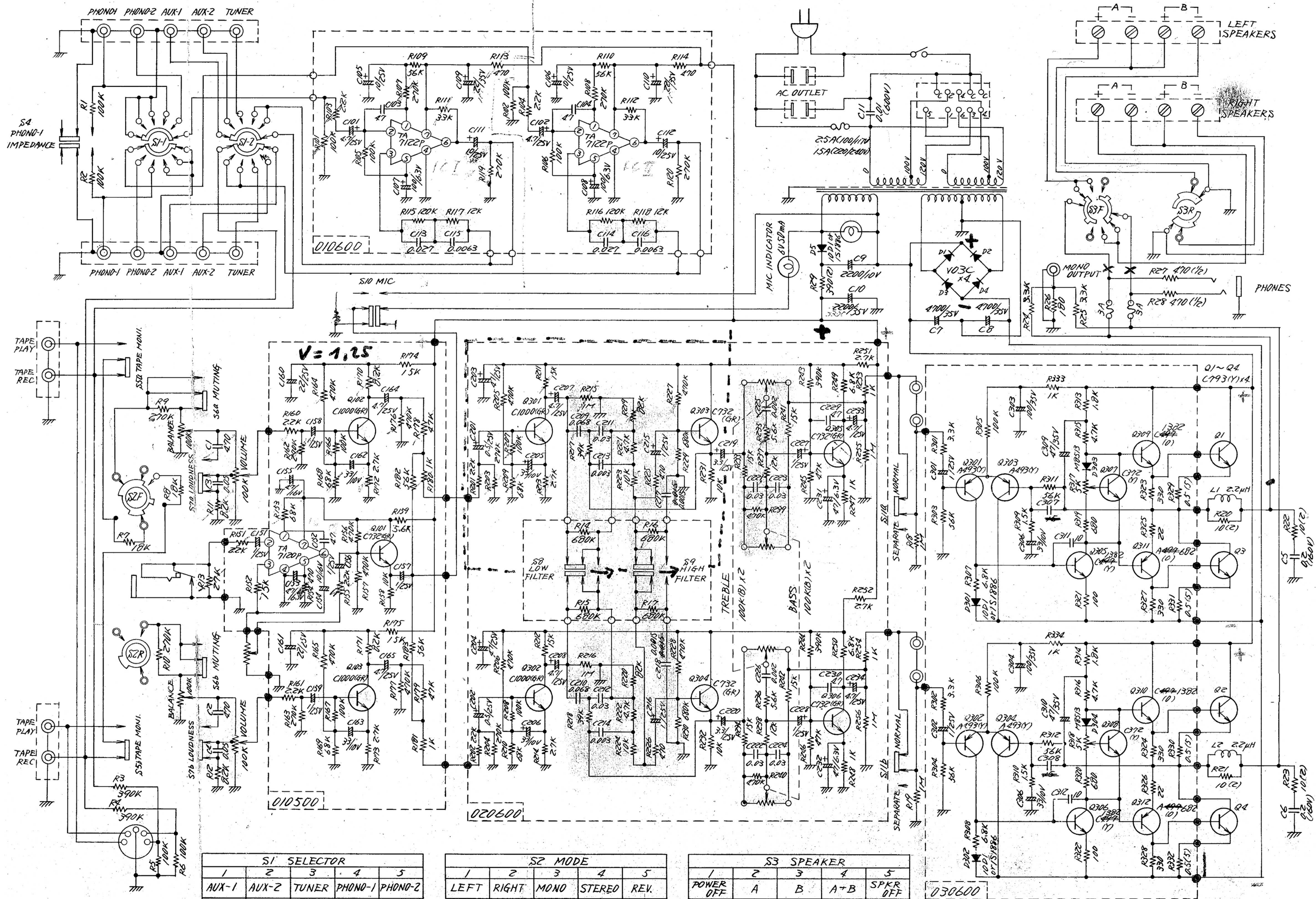
Mic Mixing: Yes

Center Channel Output: Yes

Power Source: 117V, 50/60 Hz AC or 100/117/  
220/240V, 50/60 Hz AC

Dimensions: 16"(W) x 5-1/8"(H) x 11-1/2"(D)

# SCHEMATIC DIAGRAM



S1 SELECTOR				
1	2	3	4	5
AUX-1	AUX-2	TUNER	PHONO-1	PHONO-2

S2 MODE				
1	2	3	4	5
LEFT	RIGHT	MONO	STEREO	REV.

S3 SPEAKER				
1	2	3	4	5
POWER OFF	A	B	A+B	SPKR OFF



MONACOR

## SA-800 MONACOR Stereo-Verstärker

Ein besonders hochwertiger Stereo-Verstärker mit allen Vorverstärkern (Integr. Schaltkreise) und außergewöhnlich reichhaltigen Anschluß- und Bedienungsmöglichkeiten. Sehr kleiner Klirrfaktor bei besonders hoher Ausgangsleistung durch direktgekoppelte Si-Endstufen. Neuartige Mikrofoneinmisch-Schaltung und Lautstärkeabschwäch-Schalter.

**Installation:** Das Gerät wird vom Werk aus für 220/240 V, 50/60 Hz geliefert. Prüfen Sie dies vor Anschluß des Gerätes durch Kontrolle der Beschriftung über dem Netzschnurausgang nach. Für andere Spannungen kann der SA-800 intern geändert werden.

Das Gerät soll erst nach erfolgtem Lautsprecheranschluß in Betrieb gesetzt werden.

**Lautsprecher:** Es können zwei Stereo-Lautsprecherpaare (Paar A und Paar B) angeschlossen werden; für beste Qualität sollte jedes Paar untereinander gleich sein. Jeder Lautsprecher muß eine Impedanz von 4-16  $\Omega$  aufweisen (größte Leistung bei 4  $\Omega$ ).

Beachten Sie, daß alle linken Lautsprecher auf der oberen Leiste angeklemt werden und berücksichtigen Sie die angegebenen (+ und -) Polaritätsangaben. Wurde ein Lautsprecher mit falscher Polarität angeschlossen, so klingt das entsprechende Paar (in Mono betrieben) in den Tiefen dünn.

### Eingangs- und Ausgangsanschlüsse

1) Plattenspieler: Es sind zwei Eingänge für magnetische Plattenspieler (Phono 1 und Phono 2) vorhanden; die notwendigen Entzerrer nach RIAA sind in IC-Technik eingebaut. Für den Eingang Phono 1 kann die Eingangsimpedanz je nach verwendetem Magnetsystem mit dem danebenliegenden Schiebeschalter zwischen 30 und 50 k $\Omega$  geändert werden. Phono 2 hat einen festen 50 k $\Omega$ -Eingang.

Kristall- oder Keramikplattenspieler können nur über die Eingangsbuchsen AUX 1 (Reserve 1) oder AUX 2 (Reserve 2) betrieben werden.

2) Tuner: FM- oder AM/FM-Stereoempfänger können an dieser Buchse angeschlossen werden; bei mehreren Empfängern sind die Buchsen AUX zusätzlich verwendbar, da diese Eingänge die gleiche Empfindlichkeit aufweisen.

3) TAPE: Anschluß für ein Tonbandgerät. Die Aufnahme wird nur vom Eingangswahlschalter Selector des Gerätes beeinflusst.

4) Tape OUT (After Mic mixing): Zusätzlicher Ausgang für Tonbandaufnahme, wobei hier alle Regler des Gerätes in Funktion sind, d. h. die Aufnahme beeinflussen. Insbesondere kann hier auch die Mikrofoneinmischschaltung für die Aufnahme eigener Ansagen, Halbplayback, etc. verwendet werden.

5) PRE OUT (Vorverstärkerausgang) und 6) MAIN IN (Endstufeneingang): Steht der danebenliegende Schiebeschalter in der Stellung NORMAL, so sind (für normalen Betrieb) Vor- und Endverstärker miteinander verbunden, d. h. auch beide Buchsen. Wird der Schiebeschalter in Stellung SEPARATE gebracht, so werden die Verstärkerzüge aufgetrennt, und zwischen diese beiden Buchsen sind zusätzliche Geräte einschleifbar. Beispiel: Eingang eines Hallgerätes mit PRE OUT verbinden, Ausgang des Hallgeräts mit MAIN IN verbinden. Auch andere Geräte wie etwa spezielle Filter, z. B. Hörspielentzerrer sind hier einfügbar.

6) Buchsen AUX 1 und AUX 2: Hier sind zusätzliche hochpegelige Eingänge, wie Keramikplattenspieler, 2. Tonband, Fernsehton etc. anschließbar.

7) MONO OUT: An dieser Buchse sind beide Kanäle zu MONO zusammengemischt entnehmbar, z. B. für einen Mittenlautsprecher bei großer Lautsprecherbasis. Da an dieser Buchse keine Leistung vorhanden ist, muß für einen Mittenlautsprecher ein zusätzlicher, kleiner Endverstärker verwendet werden (Mono).

**Netzausgänge:** Am Netzausgang SWITCHED steht die verwendete Netzspannung zum Einschalten von Geräten dann zur Verfügung, wenn der SA-800 eingeschaltet wird; der Ausgang ist mit max. 150 W belastbar.

An dem Netzausgang UNSWITCHED steht ständig (solange die Netzschnur mit Spannung versorgt ist) Netzspannung zur Verfügung; Belastbarkeit max. 300 W.

**Sicherungen:** Die Sicherung LINE FUSE ist die Haupt-Netzsicherung; die beiden Sicherungen Protection Fuse sichern die Endverstärkerausgänge gegen Lautsprecherkurzschluß ab.

Über die Klemmschraube GROUND können bei etwaigem Brummen Masseverbindungen hergestellt werden.

### Bedienungselemente

1) Mit dem Wahlschalter Selector kann einer der 5 Eingänge angewählt werden.

2) Betriebsartenschalter MODE: In der Stellung LEFT wird nur der linke Kanal auf allen Lautsprechern abgehört, in der Stellung RIGHT nur der rechte Kanal auf allen Lautsprechern. In der Stellung MONO sind beide Kanäle zusammengemischt hörbar, in der Stellung STEREO normaler Stereobetrieb, in der Stellung REV auch Stereobetrieb, jedoch linker und rechter Kanal miteinander vertauscht.

3) VOLUME: Lautstärkeregler für beide Kanäle.

4) NORMAL/ -20 db: Zusätzlicher Lautstärkeschalter, der in der Stellung -20 db den Lautstärkepegel um 20 db (1/10) absenkt (z. B. bei Mikroeinmischung).

5) MIC-Schalter: Mit diesem Schalter wird in Stellung ON das an der Buchse MIC angeschlossene Mikrofon eingeschaltet.

6) TREBLE (Höhen)- und 7) BASS (Tiefen)-Regler: Normalstellung 0, zur Anhebung und Absenkung von Höhen und Tiefen.

8) PHONES: Kopfhörerbuchse für einen 8  $\Omega$ -Stereokopfhörer.

9) SPKRS: Netzschalter, kombiniert mit Lautsprecherwahlschalter. In der Stellung POWER OFF ist das Gerät ausgeschaltet, in allen anderen Stellungen eingeschaltet. Stellung A: Betrieb nur über das Lautsprecherpaar A, Stellung B: nur Lautsprecherpaar B eingeschaltet, Stellung A+B: Beide Lautsprecherpaare sind in Betrieb, in Stellung SPKR OFF sind alle Lautsprecher abgeschaltet, so daß nur Abhören mit Kopfhörern möglich ist.

- 10) LOW-Filter: Bei Drücken dieser Taste wird das Tiefenfilter, z. B. zur Unterdrückung von Plattenspielerrumpeln eingeschaltet.
- 11) HIGH-Filter: Bei Drücken dieser Taste wird das Höhenfilter, z. B. zur Unterdrückung von Plattenrauschen eingeschaltet.
- 12) Skalenlampe: Leuchtet nach Einschalten des Gerätes am Lautsprecherwahlschalter auf.
- 13) Balance: Balanceregler, Normalstellung auf der Raststellung 0.
- 14) LOUDNESS: Bei Drücken dieser Taste wird die lineare Lautstärkeregelung auf gehörrichtige Lautstärkeregelung umgeschaltet. Für leises Abhören wichtig, da hierbei die Tiefen und etwas die Höhen angehoben werden.
- 15) TAPE MONITOR: Bei Drücken dieser Taste wird nur die Tonbandwiedergabe abgehört; bei allen anderen Programmen darf diese Taste nicht gedrückt sein. Da im nichtgedrückten Zustand gleichzeitig das zur Tonbandaufnahme gehende Programm gehört wird, kann mit dieser Taste bei Tonbandgeräten mit getrennten Köpfen Vorband/Hinterbandkontrolle vorgenommen werden.
- 16) MIC LEVEL: Mikrofonregler, steuert die Lautstärke eines Monomikrofons, das in beide Kanäle eingemischt werden kann (wenn Mikrofonschalter eingeschaltet ist).
- 17) Buchse MIC: Mikrofonbuchse für ein hochohmiges (10-50 k $\Omega$ ), dynamisches Mikrofon zur Einmischung in jedes angewählte Programm.
- 18) Anzeigelampe neben der MIC-Buchse leuchtet auf, wenn der Mikrofonschalter 5) eingelegt wurde.

## Technische Daten

**Endverstärker** direkt gekoppelt, semi-komplimentär

Ausgangsleistung	: Musikleistung	2 x 90 W
	: Sinusdauerleistung	2 x 50 W/8 $\Omega$ 2 x 60 W/4 $\Omega$
Klirrfaktor und Intermodulation	: < 0,4 %	bei Sinusdauerleistung
Frequenzbereich	: 5 Hz - 70 000 Hz	$\pm$ 1 db
Leistungsbandbreite	: 10 - 50 000 Hz	
Eingangsempfindlichkeit	: 500 mV/50 k $\Omega$	
Ausgangsimpedanz	: 2 Paare, je 4-16 $\Omega$	

## ~~Vorverstärker~~

Eingangsempfindlichkeit	: Phono 1 : 2,5 mV/30 oder 50 k $\Omega$ Phono 2 : 2,5 mV/50 k $\Omega$ Tuner/AUX 1/AUX 2/Tonband: 150 mV/50 k $\Omega$ Mikrofon: 2,2 mV/22 k $\Omega$
Ausgänge	: Tonband: 150 mV PRE OUT: 500 mV
Höhen/Tiefenregler	: $\pm$ 14 db/50 Hz, $\pm$ 12 db/10 kHz
Gehörrichtige Lautstärke	: + 10 db/50 Hz, + 3 db/10 kHz
Höhen/Tiefenfilter	: - 10 db/50 Hz (12 db/Okt.) - 10 db/10 kHz (12 db/Okt.)
Abschwächschalter	: - 20 db
Brumm- und Rauschabstand	: Phono/Mikrofon - 65 db, sonst - 75 db
Stromversorgung	: 220/240 V / 50/60 Hz
Abmessungen	: Breite 41 cm, Tiefe 29 cm, Höhe 13 cm