

MONARCH

SA-450

SOLID STATE INTEGRATED STEREO AMPLIFIER



INSTALLATION AND OPERATING MANUAL



FEATURES :

The MONARCH Model SA-450 is a deluxe integrated solid state stereo amplifier. It is a simple to operate compact and flexible unit with ample power 26 watts Music Power maximum to the speakers. It is provided with Phono, Tuner and Auxiliary input, and a Tape-In and Tape-Out for the tape-recording and monitoring of your favorite programs. Only the selected high quality components have been used for stable and troublefree operation. All silicon transistor circuitry.

HILBERINK
Electronics-Acoustics
P.O. Box 4217
6202 WB MAASTRICHT
The Netherlands

INSTALLATION:

Before attempting to operate the Monarch Model SA-450, please read the following instructions carefully. Only after all necessary connections are made, should the power (117/220/240 volts — 50/60 Hz only) be applied.

SPEAKER CONNECTIONS:

The amplifier has output terminals for connection to speaker system of 4, 8, or 16 ohm impedance. Wherever possible, it is recommended that identical speakers be used for each channel. In all cases, the speaker leads are connected to the single pair of terminals on each channel output strip as shown in hook-up position.

CAUTION:

1. Never short the speaker terminals and never use the speakers of higher or lower impedance than that specified. (Don't use two 4 ohm speakers connected in parallel or two 16 ohm speakers in series).
2. Both speakers must be connected to prevent severe damage to the unit.

STEREO HEADPHONE:

Stereo headphone jack is located at the lower end of the left edge of front panel. Plug in a low impedance stereo headphone, it automatically cuts off speaker system.

INPUT CONNECTIONS:

"MAG" Input:

Connect both leads from your record player to the LEFT and RIGHT "MAG" input jacks on the rear panel.

Note:

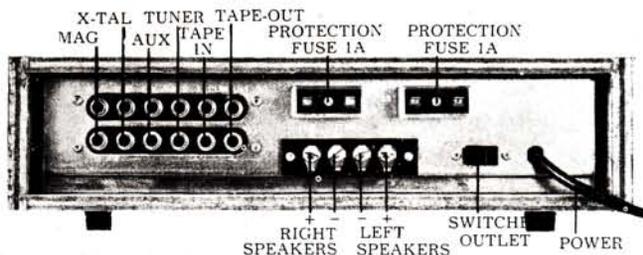
This input terminal should be used only for magnetic or variable reluctance cartridge. Shielded cable should be used for these connections.

"X-TAL" Input:

Connect the output from a high impedance cartridge such as the crystal or ceramic type pickup.

"TUNER," and "AUX" Inputs:

These jacks are to be used with a high level signal or high impedance such as a tape recorder, tuner, and T.V.



HOOK-UP POSITIONS

"TAPE IN"

Connect these jacks to output terminal (high level) of taperecorder with shielded cables.

OUTPUT CONNECTIONS:

"TAPE OUT"

Using shielded cable, connecting the output from these two jacks to the tuner input jacks of your taperecorder will allow simultaneous recording without interference for your listening pleasure.

IMPORTANT:

Do not apply power to this unit without making certain both speakers are connected. Failure to do so may result in severe damage to the unit. If soundless, while pilot light is on, please replace PROTECTION FUSE located on rear panel. Use quick-blow (instrument) fuse 1 AMP. only.

Never connect or remove the speaker or any input plug when the power switch is placed in "ON" position.

OPERATION:

Before applying power to the amplifier, make sure that you have connected your program sources (record player, tuner, etc.) and speakers correctly. Before plugging in the unit be sure to keep the Power Switch, "OFF", and the power source must correspond to the voltage indicated on the name plate.

Power Output	: 26 watts \pm 1 db at 4 ohms
Continuous Power Output	: 8/8 watts rms at 8 ohms
Harmonic Distortion	: 1% (rated output)
Frequency Response	: 30 — 30,000 Hz \pm 1.5 db
Input Sensitivity	: Phono 3 mV
	X-Tal 150 mV
	Tuner 150 mV
	Aux 150 mV
Hum & Noise	: Phono 60 db
	Tuner 70 db
	Aux 70 db
	Tape-Ply 70 db

1. Set the **SELECTOR** to the unit you wish to use and set **VOLUME** control to the center. Normally the **BASS** and **TREBLE** tone control knobs are placed at the center, but depending on the acoustics at the room or personal preference, these knobs may be **Altered** to accentuate or decrease the highs and lows. Also when listening at low volume levels, it is advisable to turn the **LOUDNESS** switch in "ON" position to accentuate the lows which are otherwise ordinarily lost. When listening to worn scratchy records, turning on the **SCRATCH** filter switch, this will add to your listening pleasure.

2. Set power switch in "ON" position to switch on amplifier. Operate your associated equipment (record player, tuner, etc.) and increase amplifier volume controls for desired level of sound.

If you are using a program source with a monophonic output (one cable), set the **MONO-STEREO** switch "MONO". If your program source is stereophonic, set to "Stereo" position.

TAPE RECORDING AND MONITORING

Connect an audio cable from the left channel "TAPE-OUT" jack to the left input (high level) of the tape-recorder. Repeat for the right channel. Also left channel "TAPE-IN" to the left channel output (high level) of the tape-recorder. Repeat for the right channel. To listen to the play-back of recorded tape, place the "TAPE" switch to "ON" position. In this position it automatically bypass 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 taperecorder incorporates a separate play-back head with pre-amplifier, it is possible to listen to the recording a fraction of a second after it is made as a quality check.

SPEAKER PHASING AND BALANCING:

Correct phasing and balancing is important in a stereophonic system. If the speakers are out of phase, they will work in opposition to



CONTROL POSITIONS

each other and there will be a noticeable loss in the frequencies. If the speaker output levels are not equal or balanced initially, there may be an unnatural distribution of sound on a stereo program, resulting in a loss of the stereo effect.

To obtain correct balancing and phasing, use the following procedure.

1. Set the volume for a moderate output and stand at a position equidistant from the speakers.
2. Play a monophonic record containing heavy bass tones. Adjust the balance control so that the sound output from each speaker is roughly the same level.
3. Listen carefully to the sound output and determine the correct phase of the speaker, reversing the "+" "-" terminals of either speaker. The correct or "in-phase" connection will produce the greatest amount of bass and you will also notice that the sound seems to come from an area somewhere between the two speakers.

NOTE:

1. Never reverse the "+" "-" connection when the power is being applied to the unit.
2. If you use identical speakers you should connect the speaker leads according to the speaker terminal positions of both speakers. In this case you can obtain the "in-phase" connection.

Inputs	: Phono (Mag), Phono (X-Tal), Tuner, Aux, Tape-in
Outputs	: Speaker Output (4-16 ohms), Tape-output
Switches	: Selector, Loudness, Tape-Monitor, Mode, Hi-Filter, and Power
Controls	: Volume, Balance, Bass, Treble
Power Source	: 117/220/240 Volts 50/60 Hz
Power Consumption	: 30 watts Max
Dimensions	: 10 1/2" x 4" x 13 1/2"
Weight	: 8 lbs.
Transistor & Diode	: 14-Silicon Transistor 4-Silicon Diodes

