

"TAPE MONI" Recorded tapes are reproduced by connecting line output or monitor terminal of tape recorder. When monitoring while recording, set the Tape Monitor switch "ON" and the sound being recorded comes out from speakers.

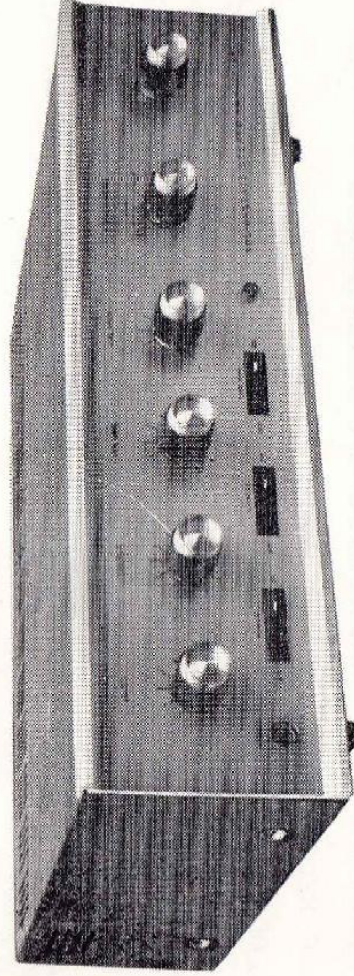
SPECIFICATIONS

OUTPUT PEAK POWER	: 70 watts.
OUTPUT IHFM MUSIC POWER	: 50 watts.
FREQUENCY RESPONSE	: 20 ~ 30,000 cps. \pm 2db.
EQUALIZER	: TAPE : NARTB MAG. : RIAA
OUTPUT IMPEDANCE	: 4 to 16 OHM (O.T.L. CIRCUIT)
HARMONIC DISTORTION	: LESS than 1 %
INPUT SENSITIVITY	: Mag. — 3mV. Tape head — 2mV. Cer. — 300mV. Tuner — 250mV. Aux. — 250mV.
HUM & NOISE.	: more than 50 dB (Mag.) " " 60 dB (Aux.)
CROSSTALK	: more than — 45 dB
VOLUME CONTROL	: Controls Left & Right channels
TONE CONTROLS	: Bass : \pm 10 dB at 100 cps. Treble : \pm 10 dB at 10 Kc.
SELECTOR SWITCH	: TAPE., MAG., CER., TUNER, & AUX.
MODE SWITCH	: REV., STEREO. & MONO.
LOUDNESS SWITCH	: 100 cps. + 6 dB. 10 KC + 6 dB.
AC RECEPTACLE	: Unswitched for changer.
SEMICONDUCTORS	: 14 transistors plus 4 silicon diodes.
POWER CONSUMPTION	: 30 watts (Idling), 50 watts at full power output

SOLID STATE

CHICAGO

70 WATT STEREO AMPLIFIER



HILBERINK
Electronics-Acoustics
P.O. Box 4217
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The Netherlands

OPERATING MANUAL

SOLID-STATE 70 WATT STEREO AMPLIFIER

This amplifier is a high class solid-state stereo amplifier with output peak power of 70 watts, ceramic and stereo recording capability. The amplifier is designed to provide the best possible sound with minimized distortion and better damping.

1. It incorporates OTL (Output Transformerless) circuitry that reproduces sound with minimized distortion and better damping.
2. It starts functioning right after switched on. Because it is transistorized.
3. Due to DB (Diffused Base) type transistors used for power output and UL (Ultra Linear) type transistors used for amplification, its frequency characteristics show minimized distortion and linear response.
4. It is designed for use with Tape Head, Magnetic, Ceramic and Crystal cartridges and Tuner.
5. Simple adjustment is possible for balancing and tone quality, high and low, with the unique help of Balance and Tone Controls.
6. Loudness switch helps obtain dynamic sound with a small volume.
7. Furnished with headphone jack for private listening.
8. Housed in a cabinet of beautiful extrusion front panel with straight-in-line six metal knobs.
9. Consumes little power and generates further less heat.
10. Furnished with tape recorder output terminal that enables to tape record from any sources like tape head, tuner or record player.

INSTALLATION

In order to obtain years of care free satisfaction, the following rules should be strictly observed.

- a) Do not place the unit in the sun, or any heated area.
- b) Do not allow the surrounding temperature to arise over 122 degrees Fahrenheit.
- c) Avoid placing objects on or near the unit, or sufficient ventilation is interfered.
- d) Do not short-circuit the output speaker terminals.

CONNECTING LOUSPEAKERS

First, get two speaker systems ready. For connection, follow the instructions below:—

- a) Connect the lead of the left speaker to + and — terminals, marked "L-SPEAKER".
- b) Connect the lead of the right speaker to + and — terminals, marked "R-SPEAKER".

Note: + and — terminals of speaker system must correspond to those of the amplifier. This amplifier is designed so that it reproduces best sound when connected to speaker systems, rated for the impedance of 8 ohms. However, it works satisfactorily on those speaker systems rated for 4 to 16 ohms.

CONNECTING RECORD PLAYER

This amplifier is designed for use with stereo record player of any type of cartridge, i.e., crystal, ceramic and magnetic, and with stereo tape player. Two shielded cables are provided with most stereo record players, and for connection of the cables to this amplifier, follow the instructions below:—

a) Magnetic Cartridge

The left cable, usually marked "L", must be plugged into the jack on the amplifier marked "MAG." of "L-CH.", and the right cable into the jack marked "MAG." of "R-CH."

b) Crystal or Ceramic Cartridge

The left cable, usually marked "L", must be plugged into the jack on the amplifier marked "CER." of "L-CH.", and the right cable into the jack marked "CER." of "R-CH."

CONNECTING TUNER

This is provided with two tuner input jacks for connection with radio receiver. If the tuner to be connected is for monaural reception, only one of the two is used and a shielded jumper cable with pin-plugs on both ends is needed for connection. Insert one pin-plug into "OUTPUT" on the tuner, and the other into the jack marked "TUNER" of "L-CH." or "R-CH." on the amplifier. Then, set the "SELECTOR" switch on the amplifier to "TUNER MONO." and both of the speaker systems will reproduce the broadcast.

For stereo broadcast listening, two shielded jumper cables are needed for connection with an FM Multiplex Tuner. Connect the "OUTPUT" jack at the left on the tuner to the input jack of "L-CH." on the amplifier, and the "OUTPUT" jack at the right to the input jack of "R-CH." on the amplifier. Then, set the "SELECTOR" switch on the amplifier to "TUNER" and "MODE" switch to "STEREO". Refer to the connecting layout on the page 5 for proper connection.

Note: When connecting this amplifier to an FM Multiplex Tuner for stereo broadcast, read through the operating manual attached to the Tuner and make sure of proper connection.

CONTROLS & SWITCHES

"BASS" The bass control boosts low tone when turned clockwise and cuts it when turned counter-clockwise.

"TREBLE" The treble control boosts high tone when turned clockwise and cuts it when turned counter-clockwise.

"BALANCE" ... The balance control balances the sound coming out from both the left and the right speaker systems.

"VOLUME" The volume control adjusts the volume of the sound coming out from both the left and the right speaker systems.

"MODE" The mode control has the following uses:

"STEREO" is for listening to stereo records, tapes or broadcasts. "REV." is for reversing sound from left speaker to right or vice-versa.

"MONO." is for listening to stereo tapes, records or broadcasts. Stereo sound from any sources can be listened to as monaural if the mode switch on this position. "SELECTOR" ... The selector control has the following uses:

"TAPE HD." is for amplifying sound from tape head.

"MAG." is for connection with record player of magnetic cartridge.

"CER." is for connection with record player of crystal or ceramic cartridge.

"TUNER" is for listening to broadcasts.

"AUX." is for listening to sound from other sources than the above mentioned four.

"SPEAKER" When listening to speaker, be sure to set this switch "ON", and "OFF" when plugging headphone into the jack provided at the extreme left on the front.

"POWER" The power switch turns the unit on and off, indicating with the red eye.

"LOUDNESS" ... When listening with the volume putting down, the tone quality on both the high and the low ends sounds unsatisfactory. The loudness switch should be "ON" on such occasion to compensate the tone quality.

"TAPE MONI" ... A Tape Monitor switch that is to be turned "ON" when this amplifier is used with tape recorder for playback or monitoring. This switch should be in "OFF" position when this is used with a record player or with a tape recorder for recording. No sound comes out if this switch is in "ON" position.

PROVISIONS

"TAPE OUT" The line input from a tape recorder is to be connected to the terminal "TAPE OUT" for tape-recording sound from record player or tuner that is used with this amplifier. The signal from the sound sources is always present on both of the terminal tips.

"2A AC" The broken fuse here stops the entire functioning, and check to see the cause for it before replacement of the fuse, which must be rated for 2A.

"PROTECTION 1.5A" ... Each channel on this amplifier, is protected with the "PROTECTION" fuses, both rated for 1.5A, by protecting power transistors. When the speaker output terminals are left short-circuited for a length of time, the protection fuses may be broken, thus protecting power transistors from damage by rush current.

Note: Transistorized amplifiers start functioning immediately after switched on, and rush current may sometimes break the fuse. Even so, it does not mean a damage on the unit. This is more frequent when signal is on the amplifier input, with volume control set to its maximum and switched on.