

**MODEL HF 52
50 WATT INTEGRATED
HIGH FIDELITY AMPLIFIER**

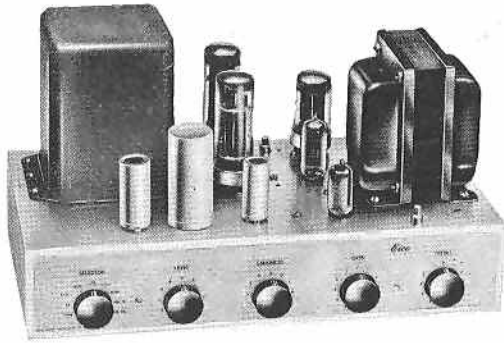
MANUAL OF INSTRUCTIONS



**ELECTRONIC INSTRUMENT CO., INC.
84 Withers St. • Brooklyn 11, N. Y.**

Price \$1.00

HF 52-1



MODEL HF 52

50 WATT INTEGRATED

HIGH FIDELITY AMPLIFIER

general description

GENERAL

The Model HF52 is the least expensive means of achieving the highest audio quality, resulting from high power obtained without distortion throughout the full audio spectrum, virtually absolute stability, and flawless transient response. Despite the fact that the preamplifier-control section is placed on the same chassis with a high power amplifier, engineering of the layout has eliminated any

undesirable couplings. The hum and noise level achieved is on a par with that of well-designed lower power integrated amplifiers and will be found entirely satisfactory even by critical listeners. The output stage and the output transformer, the type of power amplifier circuit, and the power supply components are identical to that used in the Model HF50 power amplifier.

FEATURES

1. Extremely low distortion preamplifier-equalizer circuit, equalizing entirely by feedback. Selection from five equalizations permits correct compensation for practically any microgroove or 78 rpm recording.
2. Extremely low distortion printed circuit feedback bass and treble tone controls. These controls do not affect the volume or interact with each other, and also provide a true "flat" position. Turnover frequency in both bass and treble varies with the degree of boost or cut, making it possible to bring up the extreme lows or extreme highs affecting the mid-range as well.
3. DC superimposed on all tube filaments to eliminate cathode-heater leakage as a source of hum.
4. A Centralab printed-circuit, prewired loudness control (Compentrol) plus a separate level control, both on the front panel, permits an infinite selection of loudness "contours" at any desired listening level. By pre-setting the panel level control as instructed, the loudness control will automatically provide correct Fletcher-Munson loudness compensation at the setting which gives the desired listening level.
5. Four high level and two low-level inputs enable this amplifier to accommodate tv, tape recorder, AM-FM tuner (or separate AM and FM tuners), ceramic or crystal cartridge, as well as any leading magnetic or FM phono pick-up without the necessity of component changes. No cross-talk; selector switch grounds all inputs but one selected.
6. Low impedance cathode follower tape-output unaffected by any controls.
7. The use of a cathode follower at the high level inputs makes it possible to provide the high input impedance required for flat frequency response and high output from the new, high quality, self-equalizing ceramic cartridges.
8. The output of the preamplifier-control section and the input to the power amplifier section have been brought out to separate receptacles on the rear chassis apron for the use of people who wish to employ an electronic cross-over network and an additional amplifier (or amplifiers).
9. The level control is placed at a low-impedance point in the amplifier (after the tone controls) so that the square wave response is unaffected by the level setting. This is possible because the cathode follower input circuit will not distort the signal even at peak signal voltages far in excess of the value of signal that will develop rated output power. Another benefit of this arrangement is a high signal-to-noise ratio in the tone control stage.
10. The power amplifier features a cathode-coupled phase inverter, which provides drive for the output stage from equal and comparatively low impedances and direct coupling from the preceding first voltage amplifier stage. The importance of the cathode-coupled phase inverter is that it provides forced balance over the entire frequency and dynamic range.
11. EL34/6CA7 output pentodes in a push-pull Ultra-Linear output stage operating with fixed bias.
12. Extremely high quality output transformer*, employing grain-oriented steel, extensively interleaved windings, and fully potted in a seamless steel case. 4, 8, and 16 ohm speaker connections are provided. (*Chicago Standard)

13. Heavy-duty power transformer. 125 and 117 volt primary taps permit trouble-free operation in high line voltage areas.

14. Extra-rugged GZ34 rectifier tube with indirectly heated cathode to eliminate high starting voltage on electrolytic filter capacitors, and to delay the application of the full B+ voltage to the amplifier tubes until they have warmed up.

15. Fuse and panel mounted fuse holder.

16. Control of bias voltage for output tubes.

17. DC balance adjustment of output tubes; convenient metering terminals provided.

18. Switched and unswitched convenience outlets.

19. Heavy gauge cadmium plated steel chassis; baked metal-lustre statuary bronze finish. Brushed brass control plate.

20. Premium quality audio and rectifier tube types used exclusively.

21. Optional matching decorative cover.

SPECIFICATIONS

Output Power: 50 watts continuous; 100 watts peak

* IM Distortion (60 & 6000 cps at 4 : 1): below 1% at 50 w; 1/2% at 20 w

* Total Harmonic Distortion: below 1% 20 cps - 20 kc within 1 db of 50 w

* Frequency Response: 1w: ± 0.5 db 6 cps - 60 kc; ± 1.5 db 6 cps - 100 kc
50w: ± 0.5 db 15 cps - 60 kc; ± 1.5 db 15 cps - 100 kc
 ± 0.1 db 20 cps - 30 kc at any level from 1 mw to 50 watts
No peaking or raggedness outside the audio range.

* Square Wave Response: 20 cps - 20 kc essentially undistorted; 3.5 μ s rise-time.

Inverse Feedback: 20 db

Stability Margin: 15 db (virtually absolute stability)

Damping Factor: above 12, 20 cps - 20 kc; 17 at 1 kc.

Speaker Connections: 4, 8, and 16 ohms.

Tone Control Range: at 10 kc - 15 db boost and 15 db cut; at 50 cps - 15 db boost and 15 db cut.

Phono Equalizer Curves: RIAA (New AES, NARTB, ORTHO, RCA), Columbia (original LP), London, American 78, European 78.

Sensitivity: Phono (magnetic) — 8 millivolts for rated output on PHONO LO input; 27 millivolts on PHONO HI input.
Tuner, TV, Tape, Auxiliary — 0.6 volt for rated output.

Input Impedances: PHONO LO & PHONO HI - 47K; AUX, TUN, TV, TAPE - 2.2 meg.

Tape Recorder Output: 1000 ohms; unaffected by tone, loudness, or level controls.

Hum & Noise Level: Mag. Phono — ** 60 db below rated output (RIAA, max. gain, and tone controls set at flat position).
Tuner, etc. — 75 db below rated output (max. gain and tone controls set at flat positions).

Power Source: 117V, 60 cps; draws 150 VA at no signal, 200 VA at signal developing rated 50 w output; 250 VA at signal developing peak 100 w out (overload).

Tubes: 2- EL34/6CA7, 2- ECC83/12AX7, 1- ECC90/6C4, 1- 6CG7, 1- GZ34.

Size: HWD: 8 1/2" X 15" X 10".

Weight: 30 lbs.

* Measured from high level inputs with tone controls set at "flat" positions and loudness control at maximum (no effect).

** Includes effect of 16 db boost at 60 cps due to RIAA compensation.

