

Improvements in L50 System
As Compared to L36 Decade System

Low Frequency Performance

The reduced bass peaking due to the damping effect of the acoustic resistance shell results in greatly improved transient response characteristics and more natural low frequency reproduction, as well as presenting a smoother impedance load to the driving amplifier.

Woofer Response

More precise specification of cone material as well as modification of dust dome mounting results in a smoother, more extended response, which in conjunction with the action of the crossover network eliminates the response peaks in the midrange and results in a smoother, more accurate sound.

Midrange Transducer

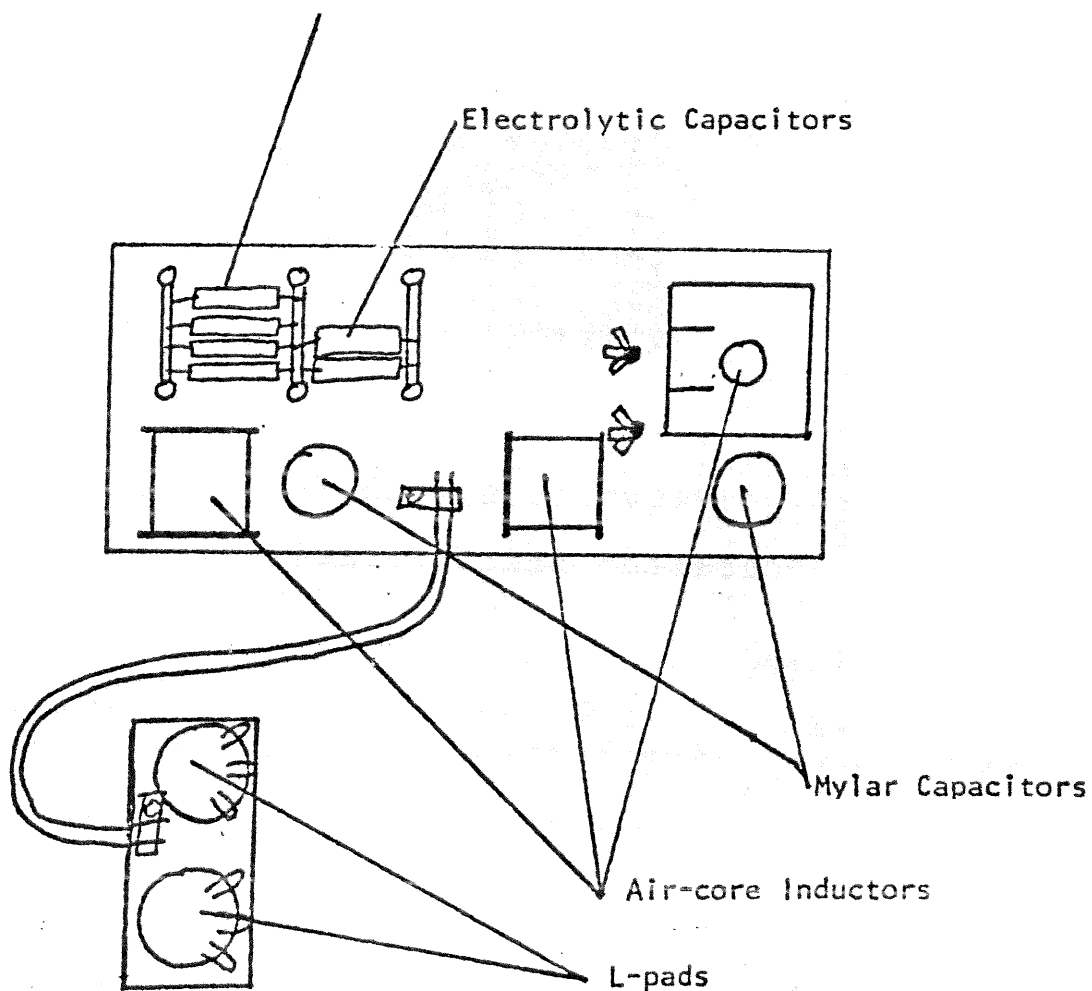
The same device used in the L110, it uses a new, lighter, and stiffer cone material and benefits from a new understanding of cone motion yielded from laser holography research; better transient response with lower distortion results.

High Frequency Device

The new front plate provides a continuous transition from the driver to the baffle panel for a smoother frequency response, and new cone treatments also provide a smoother and more extended response out well in excess of 20kHz.

Crossover Network

A high degree of sophistication, both in number of component parts and design techniques, yields imperceptible transitions, smooth frequency response and wide dispersion, for consistent sound at any position in the listening field and precise, accurate stereo imaging.



The frequency dividing network provides the proper electrical transfer function, which, when combined with the individual transducer's impedance characteristic and acoustic response, produces the smoothest transition between the individual transducers. Crossover points and slopes provide total energy response (consistent angular dispersion characteristics) by utilizing each transducer in its optimum range. Conjugate circuits compensate for impedance variations in the individual drivers. Careful attention is paid to the total system impedance, the load the amplifier must drive.

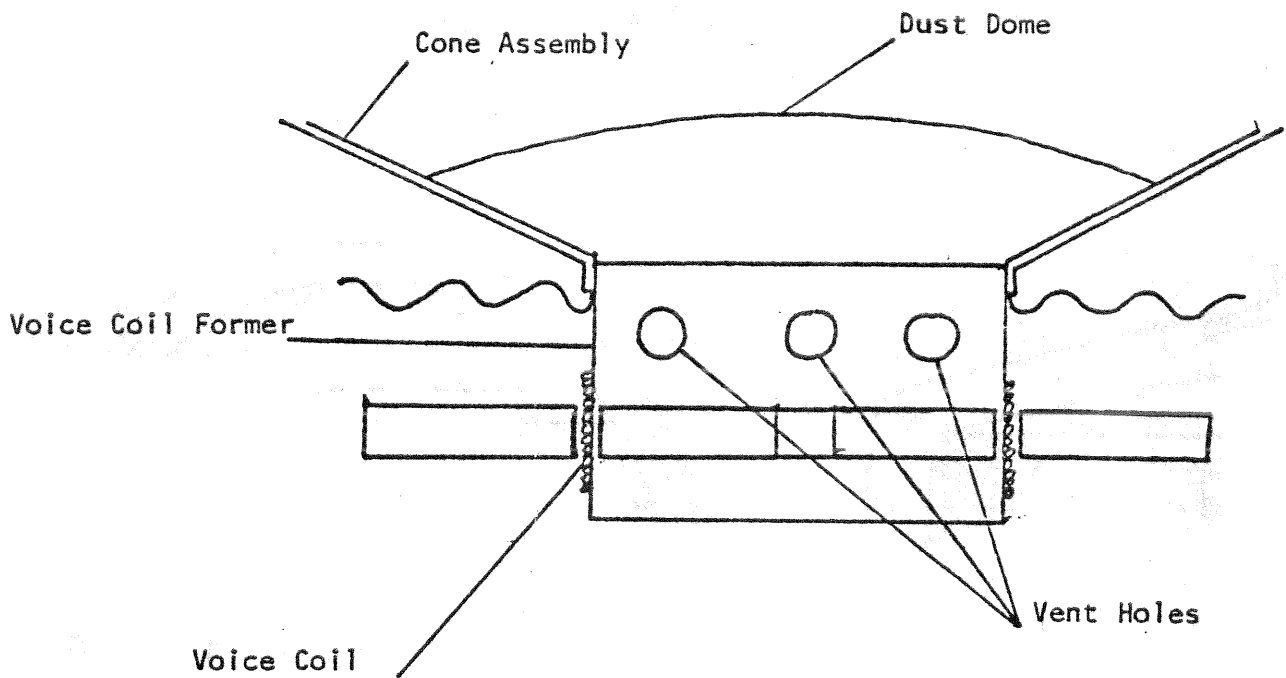
The mylar film capacitors are of the highest quality, 100 volts RMS, 5 amp RMS. They do not change value with temperature, humidity or age. They have very low internal resistance for minimum loss and heat generation.

Electrolytic capacitors are used only in conjugate circuit (impedance modifying configurations, in series with a damping resistor, where tolerance is not as critical and the stability and low loss of a mylar capacitor is not necessary.

The wire-wound resistors are almost purely resistive, with negligible inductive component. Therefore, they only attenuate, they don't roll off (discriminate with frequency), and their high wattage rating insures consistent performance.

L-pads are high power capacity precision wire-wound units which maintain the proper termination to the network elements while allowing variation in the drive level to the mid and high frequency transducers.

Only low resistance 18 gauge wire is used throughout.

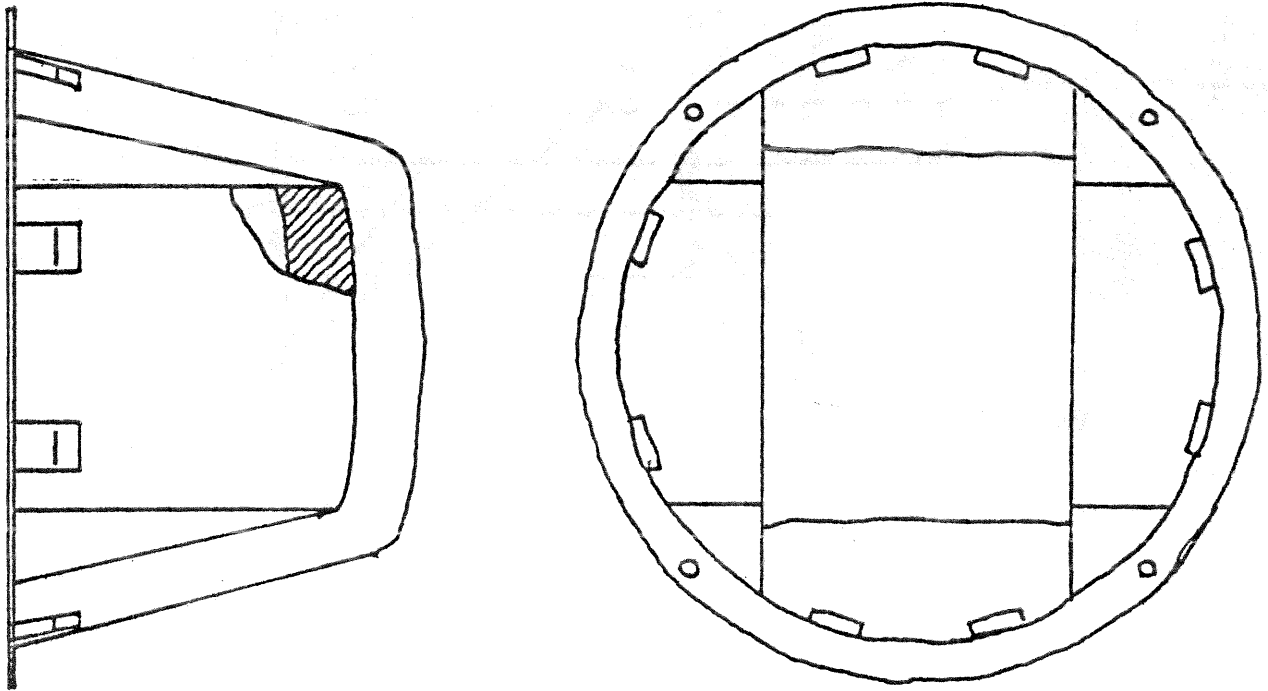


The cone used in the 127A was chosen as the result of research into many different materials, as was the choice of the dust dome size and mounting. Their specific choice, their mounting and interaction as a moving system, yields the smoothest, most extended response.

Long voice coil length (over 1/2 inch) provides for long cone excursion.

Two-inch diameter voice coil and vent holes in voice coil former increase power handling capability.

Acoustic Resistance Shell



The L50 system utilizes an acoustic resistance shell, a basket of acoustical fiberglass formed around the rear of the 127A low frequency loudspeaker. The fiberglass was chosen for its fiber diameter and packing density and provides flow resistance without restricting normal cone movement. Computer analysis and listening evaluations were used to determine the optimum bass response characteristic for the system. The shell provides the proper amount of resistive damping, which together with the driver's physical parameters, enclosure volume, and vent tuning, yields the desired low frequency response. Elegantly simple and yet totally effective.

The shell has the additional benefit of providing a smoother load to the driving amplifier. Without the shell, the system impedance goes through a sharp, high peak, indicating a large reactive component in the load. With the shell, the impedance exhibits only a low, smooth rise, a much easier load for the amplifier to drive.