



The New PX Electrostatic Speaker Technology

During the last year we introduced two new upgrades that will be applied to our products. The first one is associated with our standard technology that we've used for years, and the second one is a totally new technology, developed for our professional products, which will be offered as a new line of products. Speakers incorporating the professional technology will have the suffix PX, which means "Professional Extension". The standard speaker line (non-PX) will still be available. The reason for offering a choice is because the PX technology is approximately 47% more expensive to manufacture, and thus represents a proportional increase in price. The justification of PX technology is that it offers an increase in radiating area of about 14% over the non-PX products and it offers greater transduction efficiency and ruggedness. In addition, the horizontal dispersion of the PX line of speakers is set at 45 degrees to provide greater sensitivity and dynamic range.

The upgrade on non-PX products includes a new stator technology which uses heat-setting insulation on the stators and a 30% increase in the number of stator wires. The heat-set insulation greatly increases the reliability of the product and the increase in stator wire density increases the transduction efficiency of the speakers. Furthermore, a new stator mounting technique provides a cushion mount for the stators in the panel frame, which eliminates much of the stress on the insulation due to the rigors of handling in shipping. Also, a new ultra-thin Teflon-based coating on the membrane eliminates fatigue due to continual high-level signals which produce large membrane excursions. These technical updates provide a significant improvement in both performance and reliability, which is crucial in meeting the greater demands of today's higher average listening levels.

The PX technology provides an even further increase in electrostatic panel performance and reliability. The stators in the PX panels employ a lattice backing to increase their rigidity. The reason for this innovation is that the non-PX stators have a small degree of compliance which permits a slight reactive movement when high-level signals are applied to them. This movement permits the stators to move slightly toward and away from the membrane due to the powerful forces of attraction and repulsion caused by the applied signal. This movement results in a small consequential loss of transduction efficiency. In contrast, the lattice "backbone" virtually eliminates stator movement and thus provides maximum panel efficiency. Resonance, due to stator movement, is also eliminated resulting in greater sound purity. Furthermore, the PX stator wire insulation is an irradiated cross-linked material that provides the most physically and electrically rugged material available in its class. It should be mentioned that the greater thickness of PX stators requires specially designed panel frames. Consequently, non-PX panel frames cannot be updated to the PX technology. However, PX panels are available that directly replace non-PX panels in all earlier models.

Furthermore, the PX panel frames are stronger and stiffer than the non-PX panel frames. This is due in part to heavier frame members, mechanical interlocking of frame members and the use of steel screw fasteners to secure the members together. In addition, the Teflon-supported membrane is used. In brief, the PX panels are designed to meet the greater demands of professional applications, providing a more pure sound field with higher sensitivity and dynamic range and greater reliability than anything heretofore offered by Sound Lab.

1-25-06