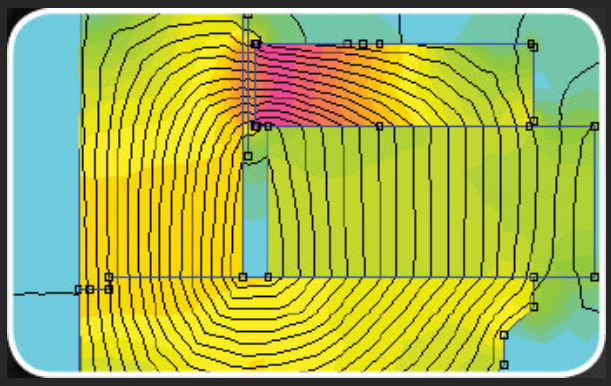
# A.P.S. Ferrite Magnet System (Part II)

Traditionally, ceramic has been the popular material used for loudspeaker magnets. Ordinary ceramic magnets have random particle structure and are relatively inefficient.

***FANE*** professional loudspeakers employ massive rings of advanced A.P.S. Ferrite, a specially developed, precision-engineered magnet material which has a critically aligned uni-directional particle structure and is weight-for-weight, considerably more powerful than ordinary ceramic materials.

***FANE*** magnet systems are precision-assembled using ultra-modern adhesives which are totally resistant to extremes of stress and temperature. Tensile bond strength exceeds 6000 p.s.i.

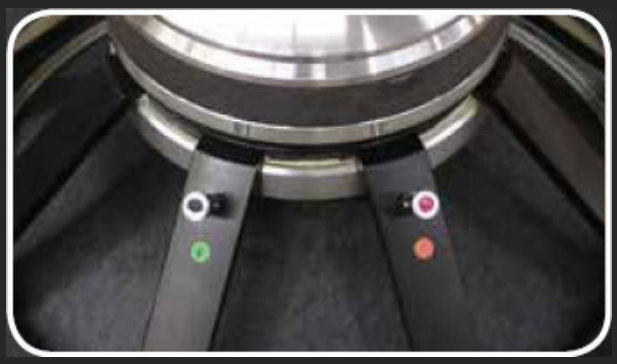


**"The electro acoustic conversion efficiency of a *FANE* A.P.S. professional magnet system is such that it is one of the worlds most effective and powerful drive systems."**

# Chassis Design

***FANE*** professional loudspeaker chassis are constructed from *LM24-BS1490*, a specially developed immensely strong alloy based upon aluminium and also containing scientifically researched and carefully formulated proportions of ten other elements including silicon, iron, copper and titanium one of the strongest materials known to man. Extensive laboratory and field testing under every extreme of climatic condition worldwide, has shown that the hitherto conventional chassis materials are all less than ideal where ultimate uncompromising quality and performance are the objective.

Ordinary aluminium, for example, exhibits certain unsatisfactory mechanical properties, notably in respect of hardness, tensile strength and impact resistance, which can result in chassis deformation or fracture where heavy magnet systems are employed or under rigorous working conditions. Steel would be adequate where smaller magnet systems are



fitted, or where cost saving is a major factor; however, being a magnetic material, a degree of energy loss due to leakage through the chassis is inevitable.

***FANE*** professional design philosophy demands the best without compromise. Research has shown that *LM24-BS1490* fully complies with all the physical and chemical performance criteria required for the ideal chassis material and has the following specific advantages:-

- High strength and tensile stress factors.
- High strength-to weight ratio.
- High impact resistance.

- Low thermal expansion factor.
- High thermal conductivity factor thus aiding power-handling at high levels.
- Is non-magnetic, preventing energy leakage through the chassis.
- Is highly resistant to corrosion, thus being fully suitable for use in atmospheric and climatic conditions worldwide.

***Care in design and convenience for the user.*** Advanced technology and sophisticated engineering combine to produce possibly the strongest, the most practical, the most pleasing chassis ever designed, permitting closer, more precise, tolerances.

The result: improved performance and outstanding reliability.

However, practical performance design is not sufficient. ***FANE*** professional loudspeaker chassis are finished in high quality black enamel and heat treated for permanent durability.

Not just metal-work supporting a cone and magnet, a ***FANE*** professional loudspeaker chassis is a fine example of artistic engineering: well-designed, rigid, durable and aesthetically pleasing.

# Cone Assemblies

Cone design and manufacture is a highly critical and specialised science. Frequency response, tonal characteristic, conversion efficiency and power-handling are some of the vital factors influenced by the design features of the cone. Indiscriminate cone selection on the basis of lowest cost, convenience or easy availability may be the practice of some loudspeaker companies, but not ***FANE***.

Many of ***FANE***'s cones are manufactured in the UK by one of the world's most renowned cone manufacturers, carefully selected for quality and performance without compromise. Each cone is computer designed and each one incorporates every known design parameter to provide optimum performance in the intended application. Factors such as overall mass, wall thickness, continuity of wall thickness, rigidity, texture and profile; vital factors, each one of which is optimised for each individual model.

As ***FANE*** professional cones are of the highest quality and specification, this approach to cone manufacture makes possible the extra-lightweight, ultra-rigid texture required to provide optimum performance from a cone in any application. Not just care in design, but a search for perfection.

> **"The ideal cone will only give ideal performance if it's associated components are correctly designed... Every individual component, no matter how apparently insignificant, is scientifically assessed and calibrated..."**

The ideal cone will only give ideal performance if its associated components are correctly designed. Edge termination, rear suspension, dust caps and domes receive uncompromising attention; every individual component, no matter how apparently insignificant, is scientifically assessed and calibrated to determine what is technically the best for the design objective from thousands of possible permutations; because the whole can only be the sum of the component parts, a factor which is often overlooked, but not in ***FANE*** design laboratories, where the objective is ... Perfection.

# End Product

An engineering masterpiece, the product of a dedicated research team and skilled craftsmen. Beautiful to look at, impressive to handle, convenient to install, totally satisfying to use. Carefully examined and tested at every stage of manufacture, each unit is finally subjected to precisely monitored response checks to ensure consistency of specification and performance in accordance with the reference standard.

All the component parts have been carefully selected, designed and manufactured with optimum performance and total reliability in the intended application as major objectives. For additional security, power ratings are measured in accordance with *E.I.A. Standard RS-426A*, an eight hour test sequence which is substantially more demanding than the usual continuous or R.M.S. sine wave measurements, because the voice-coil has to survive long-term heating at full rated power and additionally the complete driving mechanism is subjected to short duration peaks of up to four times the full power rating, a procedure which can seriously damage or totally destroy the coil or suspension components of ordinary loudspeakers. Whether the model has been designed and recommended for musical instrument, voice, dance clubs, studio or any other purpose, the frequency response characteristic has been carefully contoured for optimum effect. Efficiency will be above average.

***FANE*** are among world leaders in magnet system design; a ***FANE*** A.P.S. ferrite magnet system, allied to the remarkable glass _ bre voice-coil and in conjunction with the closely-machined tolerances made possible by the ultra-rigid chassis, produces S.P.L. _ gures in the order of 3dB higher than would normally be expected. An increase of 3dB results in a doubling of the sound output. In terms of cost per decibel a ***FANE*** professional loudspeaker adds economy to its many other outstanding virtues.

# OEM Design

Throughout our decades of manufacturing history, ***FANE*** has always produced variants of our own range of loudspeakers to suit the particular needs of sound equipment manufacturers.

Our Technical Department have the facility to custom manufacture transducers to your own specifications. Our reputation for client confidentiality and your work with our design team will ensure any loudspeaker we manufacture to your design is not duplicated for another customer. Contact our sales team for more information.

## ***FANE*, the art and soul of loudspeakers.**