



sound as clear as light

AMT MONITOR



ily rise in pitch. This ringing resonance is constantly re-excited and is heard as a continuous coloration or blurring of the original musical signal.

Most "solutions" merely increase mass and therefore the "overhang" caused by inertia. The instantaneous or quick "rise time" so critical to perfect reproduction is impossible as a result.

Distributing the driving force over the entire surface of the diaphragm eliminates the problem of cone break up or resonance without adding mass to the cone. The Heil air-motion transformer applies this principle simply and effectively. The entire surface of the diaphragm is folded into deep vertical pleats with bonded aluminum conduction strips lining each fold. The conduction strips close or open the folds along their entire length in response to electronic signals sent through the amplifier. Air is "inhaled" and alternately "squeezed" out the open end of the diaphragm as the pleats open or close. Hence the unique bi-polar radiation of sound characteristic of the Heil air-motion transformer.

The Heil air-motion transformer adds absolutely no coloration of its own: no

vibrating energy waves are set up because the moving force is not applied to a single point. In addition, because the walls are 5.3 times as deep as they are wide they impart a five fold increase in velocity as the air is displaced. One short, precise movement of the pleat walls produces a very large, high velocity air movement. Because the Heil's walls must move only a short distance, and because the walls are totally drive supported, they simply cannot distort by flexing, cannot go into resonance.

The effective area of an 8" midrange is reduced by folding into a compact configuration. The Heil's pleats thus have the added advantage of spectacular dispersion by virtue of its small radiating source.

Definitive clarity, freedom from resonance, and full-range dispersion of sound. Sought after by all loudspeaker manufacturers. Achieved by the Heil air-motion transformer.

MSDRANGE/HIGH FREQUENCY DRIVER **

ESS continuously researches new designs in the knowledge that small changes produce dramatic increases in performance.

A slight change in the design of the diaphragm and the focus plates has produced a flatter response, a more clearly defined midrange, a cleaner more bril-

power and beauty

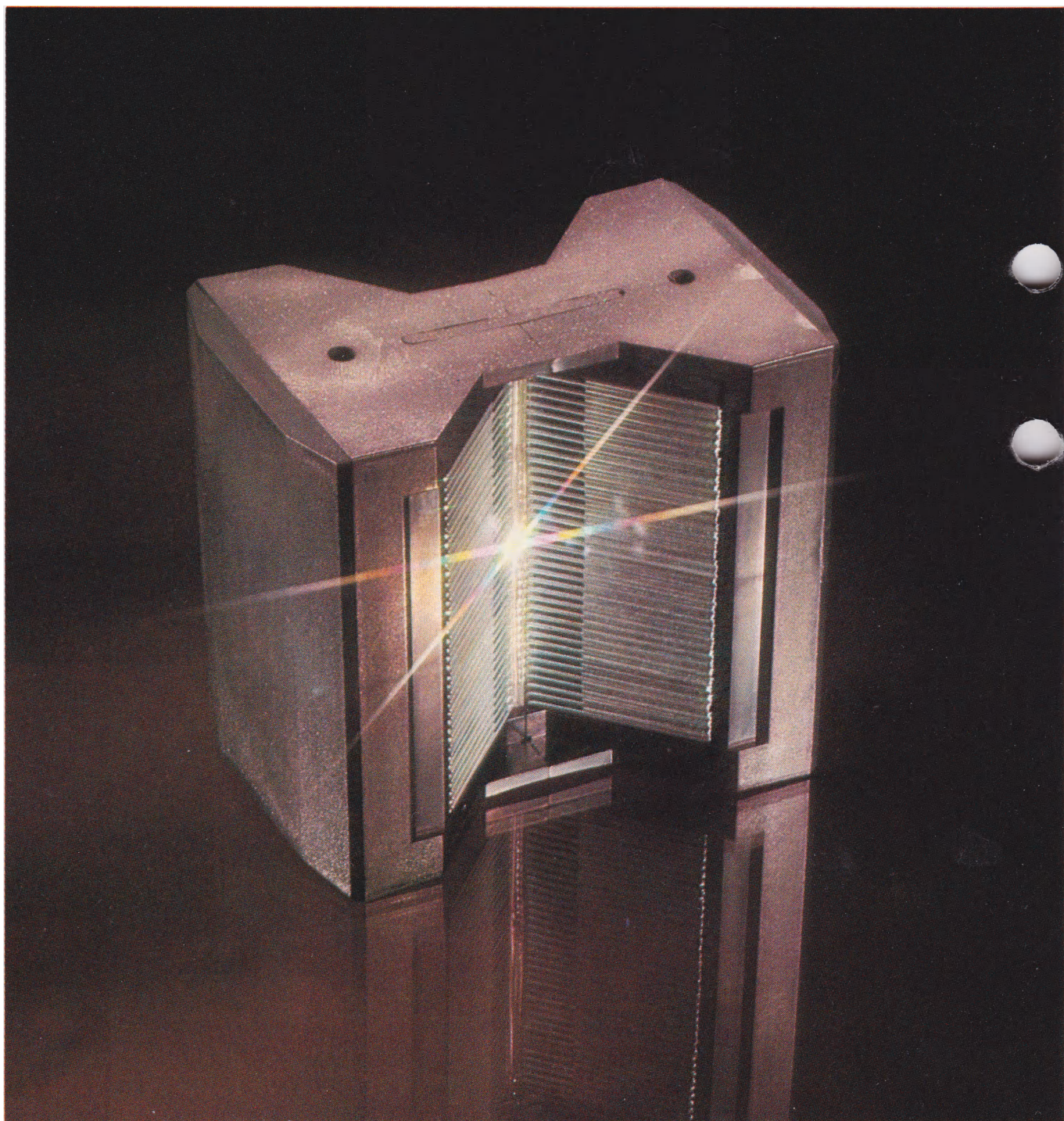
In the ESS amt Monitor, ESS has combined great power handling, high sound pressure level potential, and extraordinary performance in a handsome pedestal engineered to possess great internal volume for augmented deep bass. The result is a loudspeaker which meets the demands of complex programming under heavy loads with great ease and clarity.

Superb performance is assured by intelligent design and by advanced technology. A full size, free standing Heil air-motion transformer is coupled to a precision engineered 12" cast aluminum Bextrene low frequency transducer and 12" passive radiator for an extremely wide bandwidth from 30-23,000 Hz.

The total impression of the ESS Monitor — visually and aurally — is one of great power, purity and beauty. Excellence observed. Excellence experienced.

HEIL AIR-MOTION TRANSFORMER

Perfection in sound reproduction is achieved by the Heil air-motion transformer through solution of the critical problem known as cone "resonance." In conventional loudspeaker design, the cone or dome is driven at a single central point. The introduction of certain frequencies causes the diaphragm or cone to change shape in response to vibrations set up by the frequency being reproduced. When a second musical signal is introduced, as is inevitable, the diaphragm further tightens and distorts, causing the reproduced signal to stead-



liant high end.

Unseen structural refinements have resulted in an audible gain in signal accuracy — the "fidelity" to nature required by discriminating listeners.

LOW FREQUENCY DRIVER

The 12-inch (30.48 cm) low frequency driver used in the amt Monitor features the same cast aluminum open back frame used in the amt 1b and amt 1b Bookshelf. The basket rigidly supports a 7 lb. 6¼ oz. (3.36 kg) ceramic magnet. The Monitor low frequency transducer differs from the other woofer designs in using an especially light Bextrene cone, vacuum formed to extremely close tolerances. A sine wave cloth surround is v rather than the conventional foam abound to provide a critically stiffer suspension and enhanced mid-bass for this more responsive Bextrene cone. Unlike typical paper pulp cones, Bextrene is a compound that combines un-e—'elled transmission velocity, clean v^Λ/e propagation with low mass and excellent internal damping characteristics.

PASSIVE RADIATOR

The front mounted 12" passive radiator on the amt Monitor is driven by the motional energy of the woofer. The passive radiator operates in the same way as a port except that the velocity of



the passive diaphragm is much lower than that of air rushing through a typical port. As a result, low frequency noise and distortion are lower when using a passive radiator system than in a ported system.

The front mounted radiator permits greater sonic integrity and coherence. And in conjunction with large cabinet volume and the superior 12" Bextrene driver, the entire system delivers over 5 dB of augmented bass below 30 Hz when compared to the amt 1b.

FREQUENCY DIVIDING NETWORK

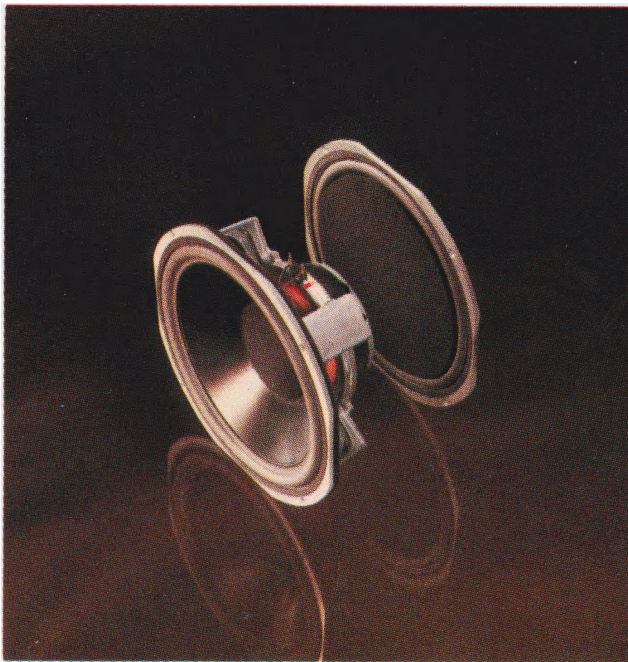
A sophisticated parallel-type 18 dB per octave frequency dividing network at 1,000 Hz assures the proper matching of the large Heil air-motion transformer

and the 12" Bextrene driver. The amt Monitor crossover utilizes a high current, air gap, iron core inductor. The special inductor increases bass and lower midrange definition and aids in the smooth integration of the Heil amt and the Bextrene driver. The 18 dB octave slope integrates both drivers within their optimum range and provides freedom from phase interference which can severely deteriorate mid-range definition.

A Presence/Brilliance Control allows the listener to compensate for acoustical deficiencies that may exist in the environment. Should electronic bi-amplification be desired, the amt Monitor has a built-in bi-amplification provision which automatically bypasses the passive network.

CABINET

The amt Monitor was designed to provide the great interior volume (12% greater than the 1b) required for deep bass in a handsome but reasonably sized enclosure. The volume of the cabinet is contained in its depth in order to present a narrow forward facing surface. The Heil Air-Motion Transformer rests on the enclosure at ear level to permit the excellent bi-polar dispersion characteristics of the Heil to radiate freely in all directions. Raising the woofer off the floor and coupling it to



the front mounted passive radiator makes possible a deep, unified impactful bass and a better integrated, more coherent midrange.

The walnut veneer sides of the enclosure are oiled and waxed to a fine finish, and an acoustically transparent deep brown grille completes the striking effect.

Where a somewhat larger size is no deterrent, where that extra deep bass is sought, where reserves of power with great detail and clarity are demanded, the ESS amt Monitor may be selected with confidence in the certainty that this instrument is not only unexcelled but unmatched. It is, quite simply, the finest loudspeaker made. By ESS. By anyone.

amt MONITOR

SPECIFICATIONS

FULL SYSTEM

| | |
|------------------------------|--|
| POWER CAPACITY | 375 watts (clean music power) |
| NOMINAL IMPEDANCE | 6 ohms minimum |
| DISPERSION | 120° Horizontal, 30° Vertical |
| CROSSOVER FREQUENCY | 1,000 Hz |
| SENSITIVITY | 1 watt input produces 87 dB sound pressure at a distance of 1 meter |
| AMPLITUDE-FREQUENCY RESPONSE | ±3 dB 30-23,000 Hz |

CONTROLS

PRESENCE/BRILLIANCE Continuously variable attenuation from +3 dB to - » from 1,200 Hz to beyond audibility

HEIL AIR-MOTION TRANSFORMER

| | |
|------------------------|---|
| TOTAL RADIATING AREA | 21.5 in. ² (139 cm ²) (equivalent to an 8" cone) |
| SQUARE WAVE RISE TIME | 15 microseconds at 5,000 Hz |
| TRANSFORMATION RATIO | 5.3:1 velocity increase |
| MAGNET ASSEMBLY WEIGHT | 12 lbs. 15 oz. (5.87 kg) |
| FLUX DENSITY | 4,500 Gauss |

LOW FREQUENCY DRIVER

| | |
|--------------------------|---|
| NOMINAL DIAMETER | 12 in. (30.48 cm) |
| CONE MATERIALS | Bextrene |
| MAGNETIC ASSEMBLY WEIGHT | 7 lbs. 6V2 ozs. (3.36 kg) |
| FLUX DENSITY | 10,500 Gauss |
| VOICE COIL | 2 in. (5.08 cm) Copper bonded with high temperature epoxy to an aluminum former |

INSULATION

Single polythermaleze

PASSIVE RADIATOR

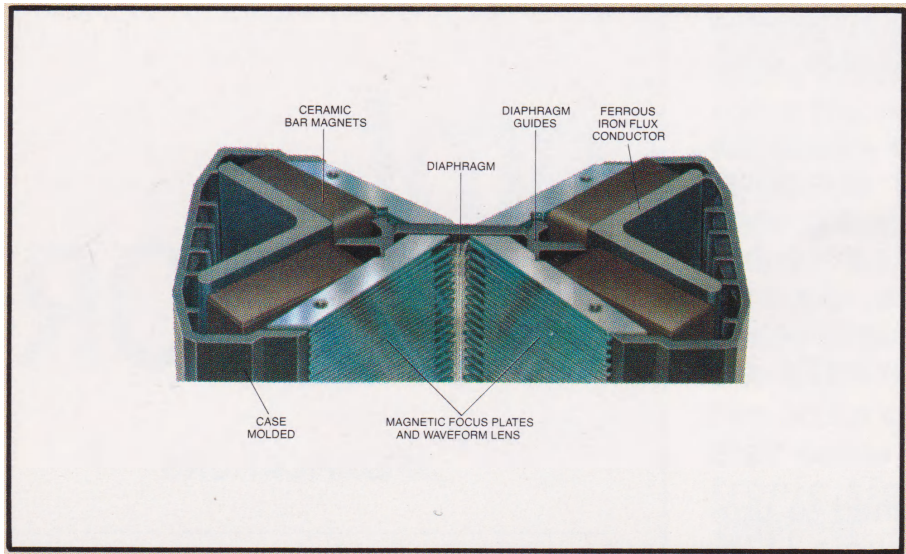
| | |
|--------------------|--|
| NOMINAL DIAMETER | 12 in. (30.48 cm) |
| DIAPHRAGM MATERIAL | .5 in. rigid EPS styrene foam base material laminated to a damping skin of .250" open cell foam. Unitary free air resonance: 5 Hz |

DECOR

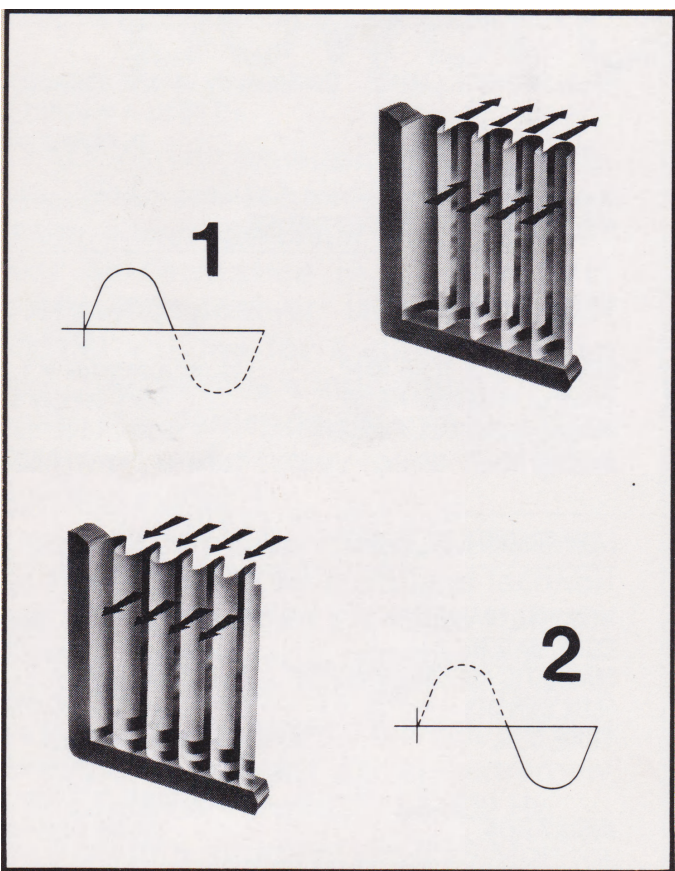
| | |
|-----------------|--|
| FINISH | Oiled Walnut |
| GRILLE COLOR | Black-brown |
| DIMENSIONS | 39.25 in. (99.7 cm) H X 15.63 in. (39.7 cm) WX 15.88 in. (40.3 cm) D |
| SHIPPING WEIGHT | 103.5 lbs. (47 kg) |

Specifications derived from anechoic chamber tests using B & K equipment at California State University Sacramento.

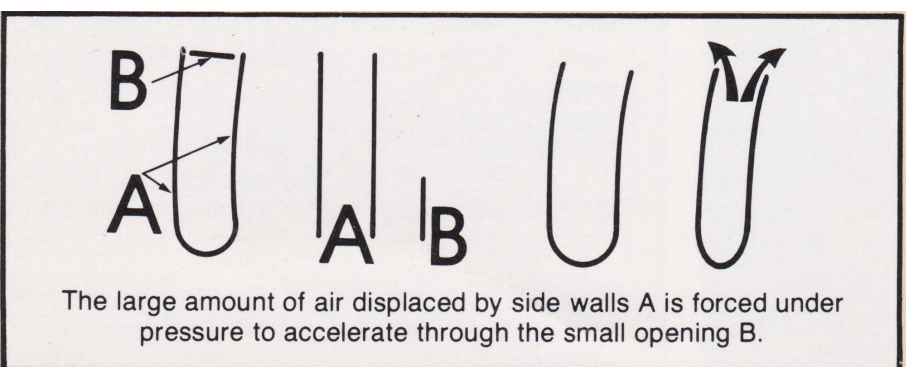
It is the goal of all loudspeaker manufacturers to perfect a device that is not subject to the physical limits of a solid cone or dome. This goal is attained through the revolutionary design of the Heil air-motion transformer. In the amt Monitor frequencies above 1,000 Hz to beyond audibility are reproduced by a full size Heil air-motion transformer known as the "Great" Heil both for its size and capabilities. A schematic drawing makes evident the uniqueness of this innovative design.



The motions of the Heil air-motion transformer's pleats and the corresponding sine waves are pictured below. In the first phase of the diaphragm movement, the pleats contract toward the front as the musical sine wave rises. The action is completed as the sine wave reverses causing the pleats to contract in the opposite direction. The alternating "squeeze-inhale" effect of the pleat action results in the bi-polar character of the transducer.

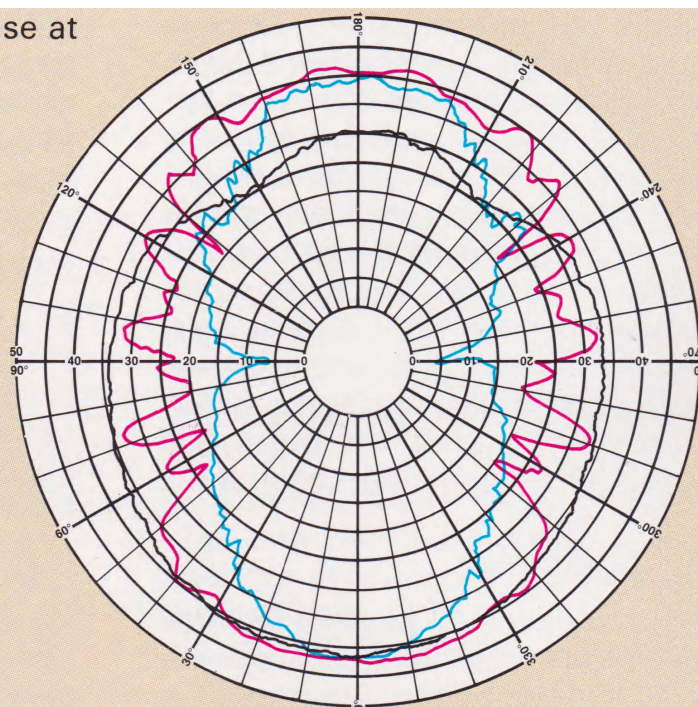


The "squeezing" action of the pleats are viewed from above. The side walls of the pleats (A) force a large amount of air to accelerate under pressure through the small opening (B). The folds are 5.3 times as deep as they are wide, resulting in a five fold increase in air velocity.

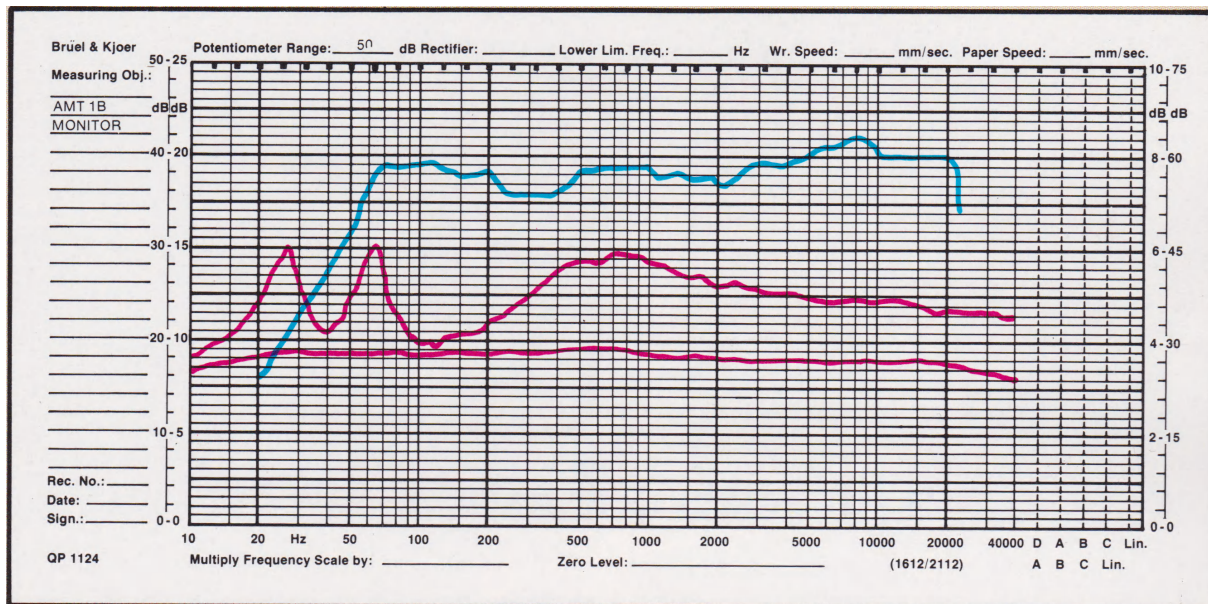


Inside the ESS Heil air-motion transformer

Polar response at 500 Hz
5,000 Hz
16,000 Hz



Polar response curves at a range of frequencies reveal the ability of the Heil air-motion transformer to maintain a solid expanse of stereo imagery at all frequencies by virtue of an exceptionally broad horizontal dispersion pattern. A spacious sound stage is thus assured from any point in the listening field.



Response Curve **Impedance Curve**

A typical frequency response curve is characteristically linear and broad. An impedance curve displays the dual impedance representative of passive radiator systems. A relatively flat impedance is indicative of the efficient performance of the Heil air-motion transformer.

ESS 9613 oates drive
sacramento, california 95827

LITHOGRAPHED IN U.S.K.

Loud and Proud

HIFIGOTEBORG.se a



Sound As Clear As Light™



WANT TO RELAX TO BEAUTIFUL
MUSIC

WELCOME

WE HAVE GOOD HIFI AT YOUR
SERVICE

PLEASE WAIT HERE & A MEMBER
OF OUR TEAM WILL BE WITH
YOU SHORTLY.

Or press finger HERE