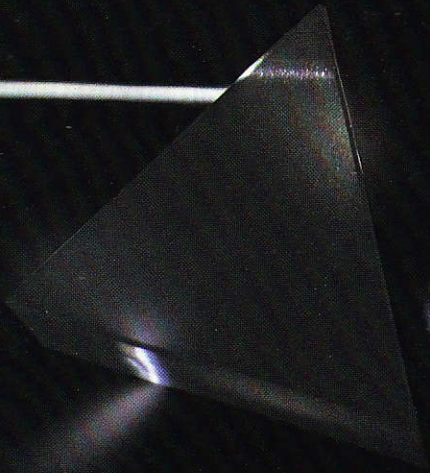


KEF REFERENCE SERIES  
LOUDSPEAKERS

MODEL  
101

AUDIO / LOUD  
SPEAKERS



Model 101 is an amazing loudspeaker.

From the outside, it is a small, simple, elegant box, of only 13½ x 7 x 7½ inches (340 x 180 x 190mm).

But inside, it contains one of the most advanced sound reproduction systems ever developed, with a standard of acoustic performance superior to that of many far larger loudspeakers, and fully justifying its place in the celebrated KEF Reference Series.



Only 7 litres internally (¼ cu ft), the Model 101 gives an amazing standard of beauty, clarity and purity of reproduction.

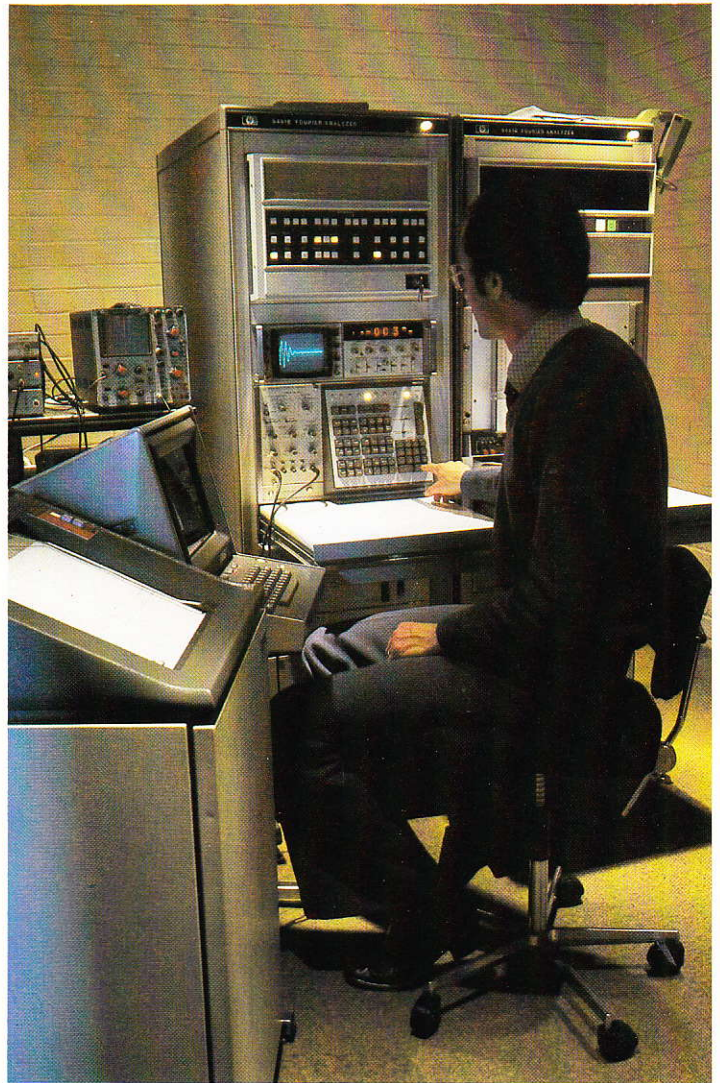
### UNIQUE KEF DESIGN

In developing the Model 101, KEF set out to make a loudspeaker of reference quality, to satisfy the enthusiast whose amplifiers and related equipment are of the highest standard, but who would like to use small unobtrusive loudspeakers.

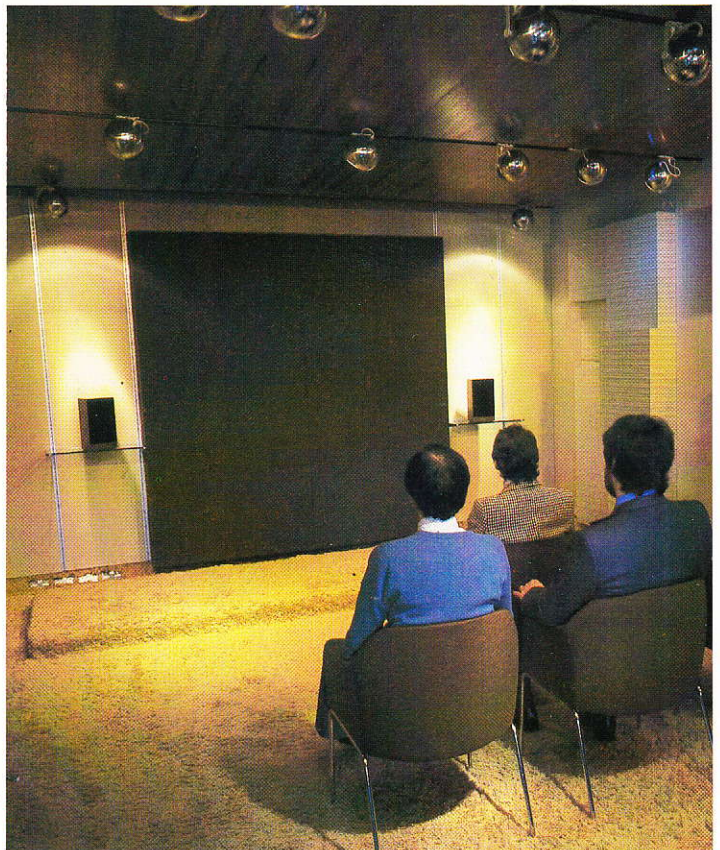
Throughout all stages of design KEF engineers have used the unique 'total system' approach whereby the drive units, the filter networks and the enclosure are studied and developed together, until they give the desired performance.

To assess performance, KEF use extensive 'human-ear' tests by experienced listening panels, as well as the most advanced, computerised digital analysis techniques which can scientifically detect and record many acoustic effects which once were only matters of opinion or even guesswork.

In short, the Model 101 is the product of some of the most careful engineering ever applied to loudspeaker design, and the result is a standard of tonal quality, stereo realism and accurate reproduction (even at high volume) which has probably never been achieved before in a loudspeaker of such small size.



Model 101 prototypes were assessed subjectively by listening panels and objectively by computerised digital analysis to ensure that practical performance corresponded with theoretical prediction.



## BOX SIZE, BASS RESPONSE AND EFFICIENCY

Despite all the ingenious ideas that have been proposed over the years, the laws of physics which govern the relationship between enclosure volume, bass response and efficiency still apply. A small box must either give less bass, or have a lower efficiency. A balanced bass response is necessary for realistic reproduction so in designing the Model 101 we have retained a reasonable bandwidth ( $\pm 2\text{dB}$  from 90-30000Hz and still only  $-10\text{dB}$  at 47Hz) and allowed the efficiency to drop. This need not be a disadvantage providing that the system can be safely operated with amplifiers large enough to provide realistic sound levels.

The Model 101 may be used with amplifiers up to 100 Watts to provide peak listening levels of up to 100dB spl. To obviate the possibility of permanent damage to the system due to overloading under programme or fault conditions, the Model 101 has

been fitted with a novel electronic protection circuit – S-STOP (steady state and transient overload protection).

## S-STOP: STEADY STATE AND TRANSIENT OVERLOAD PROTECTION

S-STOP is a self-powered electronic circuit containing sensors which monitor the input to each drive unit and whenever the safe operating level of either of the drive units is reached, the relay operated attenuator reduces the input to the system to a safe level. A red warning light on the front of the cabinet comes on whenever the system is overloaded, and S-STOP is in operation. S-STOP continues to monitor the amplifier output during overload and automatically restores the full input signal to the loudspeaker when it is safe to do so.



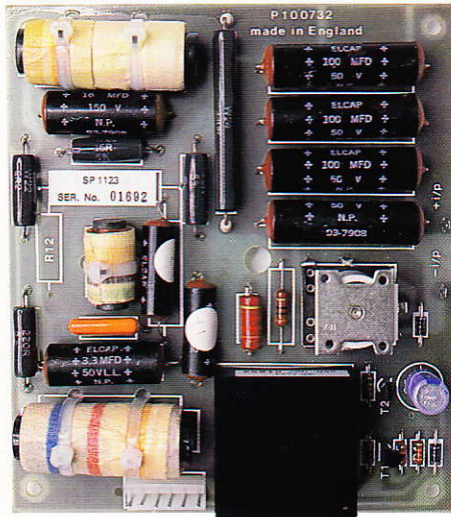
Drive units for every pair of Model 101 loudspeakers are selected and matched by computerised digital testing equipment to ensure that each pair of systems will perform to the same high standards as the prototypes.

## COMPUTER MATCHING AND QUALITY CONTROL

Over recent years KEF have developed computerised digital analysis techniques which correlate closely to objective, 'human-ear' assessments.

In the Model 101, these techniques are used extensively not only in design but also in production and quality control, so that the prototype performance achieved in the laboratory and approved by listening panels is available to every user.

Model 101s are produced in pairs which are matched in frequency response to very close tolerances. Every drive unit is individually measured and graded prior to collation, together with other critical components, into acoustically matched sets.



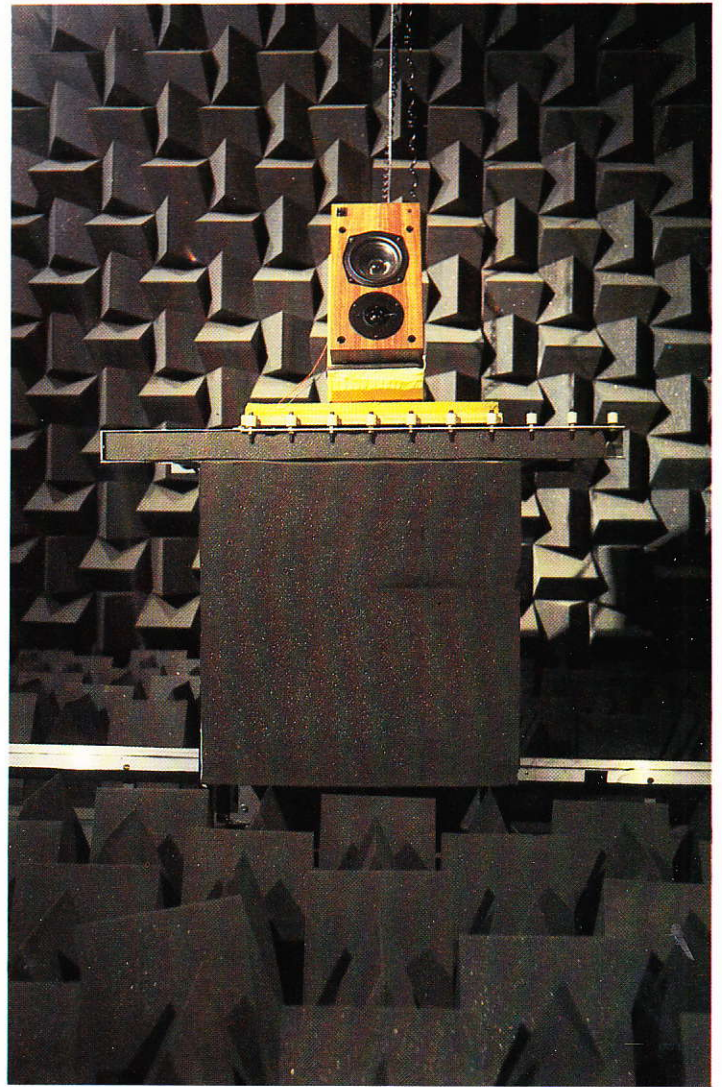
The filter network used in the Model 101 is very complex and is manufactured to close tolerances in electrically matched pairs.

This technique, plus the use of very close tolerances in the electronic components of the filter network, means that every pair of Model 101s has frequency responses matched within 0.5dB. This contributes greatly to the accuracy and sharpness of the stereo image for the listener.

### THE IDEAL LISTENING POSITION

The tonal quality and clarity of reproduction, and in particular the sharpness of the stereo image, are determined by the sound which reaches the listener directly, without being reflected from walls, floor or ceiling.

Accordingly, the vertical in-line arrangement of the drive units and the design of the filter networks in the Model 101 have been arranged so as to direct the most accurate sound to a well-defined listening area, and the frequency response of the Model 101 is maintained within  $\pm 2\text{dB}$  for all listening positions within  $\pm 20^\circ$  horizontally and  $\pm 5^\circ$  vertically from the listening axis. Ideally the speakers should be placed so that the centre of each cabinet is slightly above ear-level and if possible about half a metre away from side or rear walls, to reduce the audible effects of reflected sound.



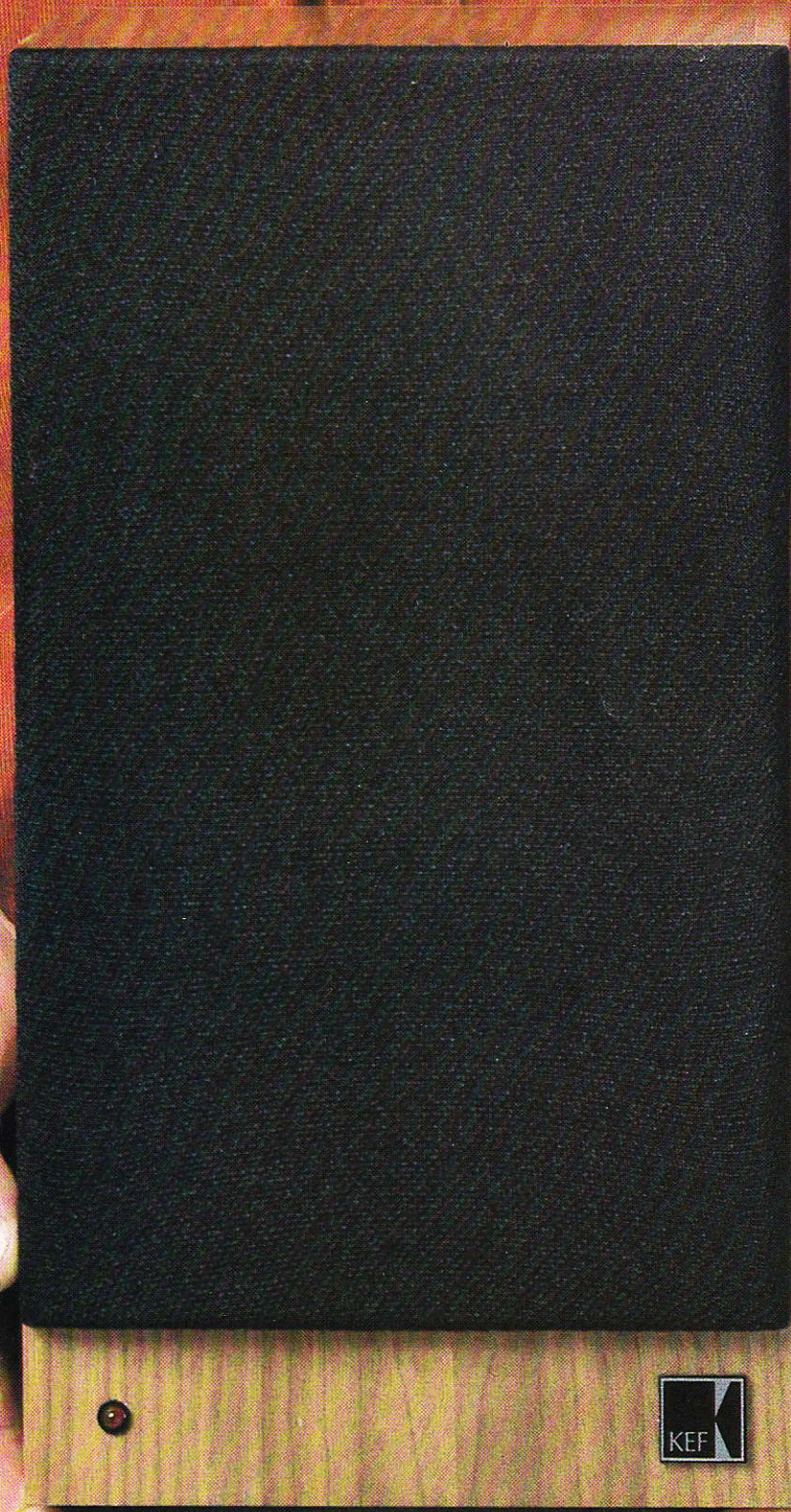
Final testing of Model 101 loudspeakers using the KEF digital impulse technique. Frequency response and other data are stored in digital form for every pair produced.



Listening tests are carried out in an acoustically treated production control studio.

## The Amazing Model 101

Breathtaking stereophonic realism, superb tonal quality, plus a standard of technical accuracy never before achieved in a loudspeaker of such small size.



<b>Specification</b>	Dimensions	340 x 180 x 190mm
	Weight	5.6kg net each (12.5kg packed per pair)
	Colour	Cabinet: Teak or Walnut (Rosewood finish or Black at extra cost )
		Fabric Grille: Black
	Enclosure type	Closed box
	Internal volume	6.7 litres
	Nominal impedance	8 ohms
	Minimum amplifier requirement	20W into 8 ohms
	Programme rating	100W
	Power handling capacity	System protected against fault conditions when used with any amplifier up to 100W
	Characteristic sensitivity level	81dB spl at 1m on measuring axis for pink noise input of 1W
	Maximum output	100dB spl on programme peaks under typical listening conditions
	Frequency range	90Hz to 30kHz $\pm 2$ dB at 2m on measuring axis ( $-10$ dB at 47Hz and 40kHz)
	Directional characteristics	Horizontal: within $\pm 2$ dB of axial response up to 20kHz for $\pm 20^\circ$
		Vertical: within $\pm 2$ dB of axial response up to 20kHz for $\pm 5^\circ$
	Distortion	Second Harmonic: less than 1% from 120Hz to 20kHz Third Harmonic: less than 1% from 70Hz to 20kHz measured at 1m on measuring axis at mean spl of 90dB, anechoic conditions

KEF reserve the right to incorporate developments and amend the specification without prior notice, in line with continuous research and product improvement.



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