B&W

Instruction Manual

MODEL 801F

B&W Loudspeakers

Introducing Model 801F

Model 801F is B&W's first fully professional monitor loudspeaker, the outcome of four years' research employing totally new developments in measuring design technology. Throughout both design and production Model 801F is a truly "no compromise" product where cost in every instance is secondary to performance.

Model 801F is designed for the professional and the critical home user. Whilst in terms of quality and accuracy of performance their requirements are essentially the same the home user may require a more discrete appearance to the finished product. The top cover, primarily intended for the home user, has therefore been designed as a removable accessory. Instructions for fitting are contained within this manual.

In special locations where it is not possible to ideally place the loudspeaker there is some advantage in reducing the side and rear radiation. This reduction in polar radiation can be easily effected by fitting the Foam Absorbent Cover (FAC/801) specially made for this purpose.

The fact that unaltered standard production samples of Model 801F were, after almost two years of exhaustive tests, chosen by E.M.I. International as their classical music monitor loudspeakers at the London Abbey Road Studios and on location throughout the world is sufficient proof of the unique quality of this product. Whether, as a home listener or a professional user, you choose Model 801F you do so in the certain knowledge that one of the world's largest recording organisations chose this loudspeaker saying that, in their opinion, its reproduction was nearer the original sound than any other system which they had tested.

B&W Model 801F is probably subjected to more quality control and final inspection tests than any other loudspeaker in the world. For your part may we ask you to read the simple instruction manual in order that you may fully enjoy this unique product.

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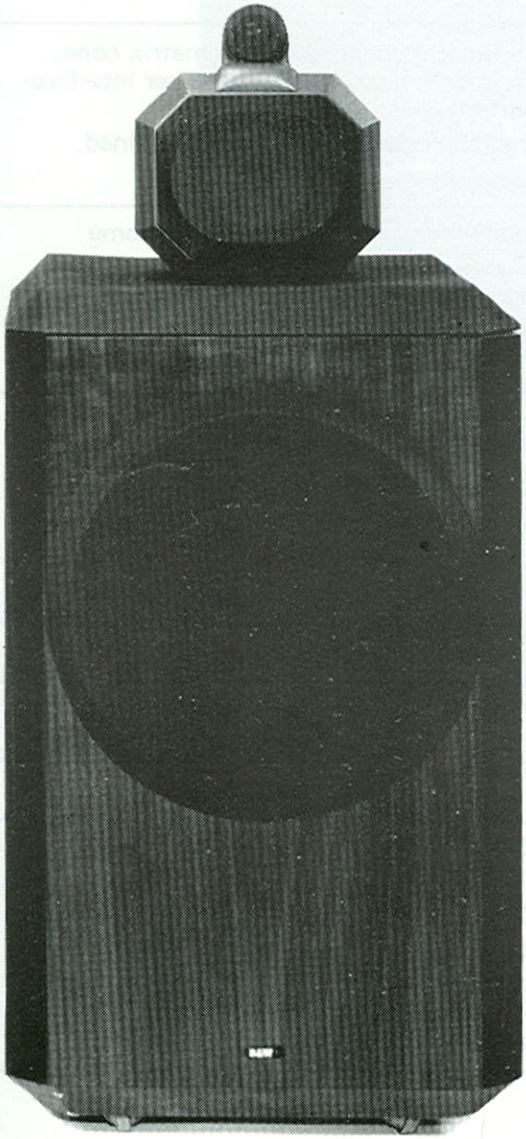
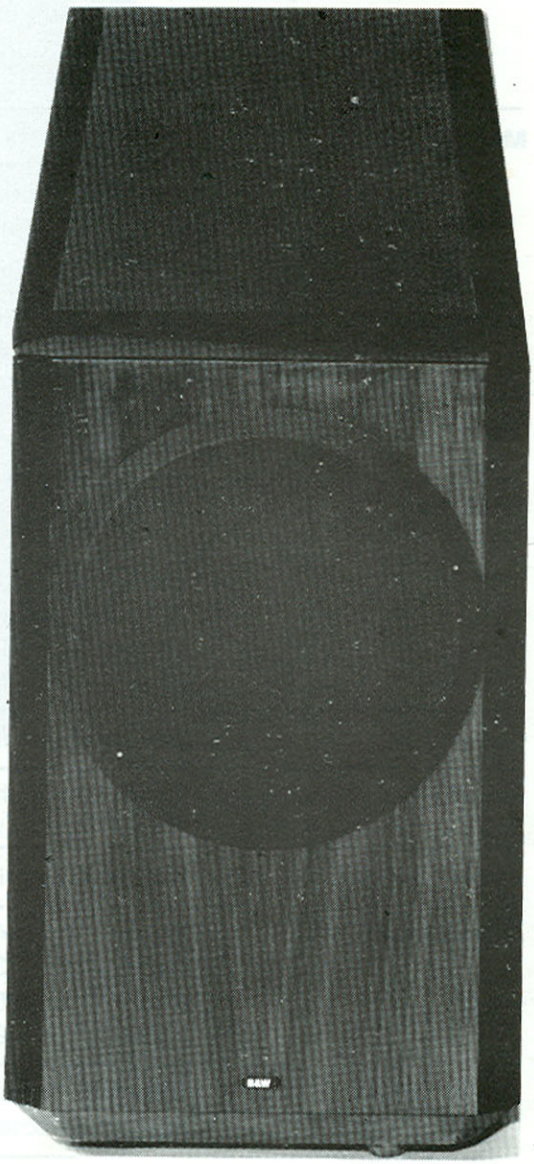


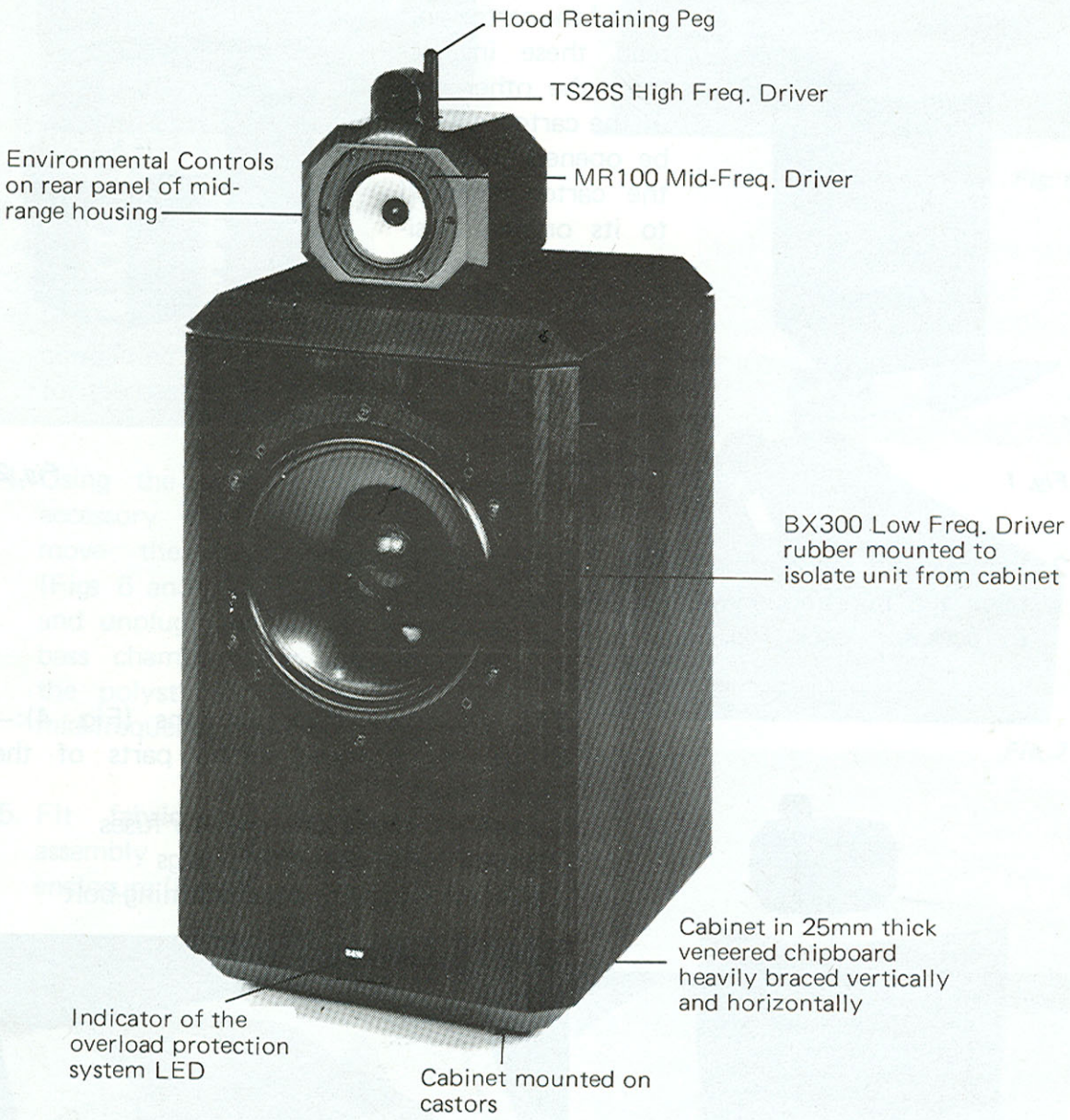


Specification

Frequency response	45Hz to 20kHz ±2dB at centre of the listening window at 2m.
Low-frequency system	Closed box acoustic suspension with system resonance of 37Hz and system Q of 0.7 (i.e. minus 3dB at resonant frequency).
Dispersion	Vertical: ±1dB over 10° of centre window. Horizontal: +0, −3dB over 60° of centre window, 10Hz to 15kHz.
Drive unit configuration	Vertical in-line and corrected for minimum inter-unit time delay. Computer-matched in pairs insuring accuracy typically better than 0.25dB.
Bass driver	Diaphragm: 270mm dia. thermo-plastic cone with PVA compound coating. Ultra long-throw suspension. Voice Coil: 50mm dia. high-temperature Nomex. Magnet System: 4.5kg ceramic.
Mid-range driver	Diaphragm: 100mm dia. aromatic polyamide fibre matrix cone, critically formed and PVA impregnated following a laser interferometry computer-linked pattern. Voice Coil: 25mm dia. phenolic bonded and aluminium lined. Magnet System: Ceramic.
High-frequency driver	Diaphragm: 26mm dia. multi-filament polyester weave dome mechanically damped. Voice Coil: 26mm dia. high temperature epoxy impregnated. Magnet System: high energy nickel cobalt, centre pole. Total moving mass less than 0.3g.
Distortion	For a minimal s.p.l. of 95dB at 1m.

	20Hz–100Hz	100Hz–20kHz
2nd harmonic: less than	2.00%	0.60%
3rd harmonic: less than	1.00%	1.00%
4th harmonic: less than	0.20%	0.10%
5th harmonic: less than	0.30%	0.15%

Impedance	8 ohms nominal throughout entire operating range.
Sensitivity	1 watt into 8 ohms load for a s.p.l. of 85dB at 1m, sinewave input at 300Hz.
Power handling	Minimum amplifier 50 watts into 8 ohms. No upper limit.
Dimensions	Height: 948mm (37.3in) Width: 432mm (17in) Depth: 560mm (22in) Weight: 49kg (108lb)
Cabinet finish	Standard: Selected veneers of teak or walnut. Special: Selected veneers of rosewood or black ash.


Hood Retaining Peg
TS26S High Freq. Driver
Environmental Controls on rear panel of mid-range housing
MR100 Mid-Freq. Driver
BX300 Low Freq. Driver rubber mounted to isolate unit from cabinet
Cabinet in 25mm thick veneered chipboard heavily braced vertically and horizontally
Indicator of the overload protection system LED
Cabinet mounted on castors

Unpacking and Assembly

It is important to follow these unpacking and assembly instructions carefully.

Fig. 1

1. Having opened the top of the carton and read these instructions the other end of the carton should be opened (Fig. 1), the carton restored to its original position (writing facing upward) and the outer cardboard carton removed. This will reveal the inner polystyrene pack (Fig. 2).

Fig. 2

2. Remove the top section of the polystyrene pack which contains the mid-frequency/high frequency head assembly and the accessory pack (Fig. 3).

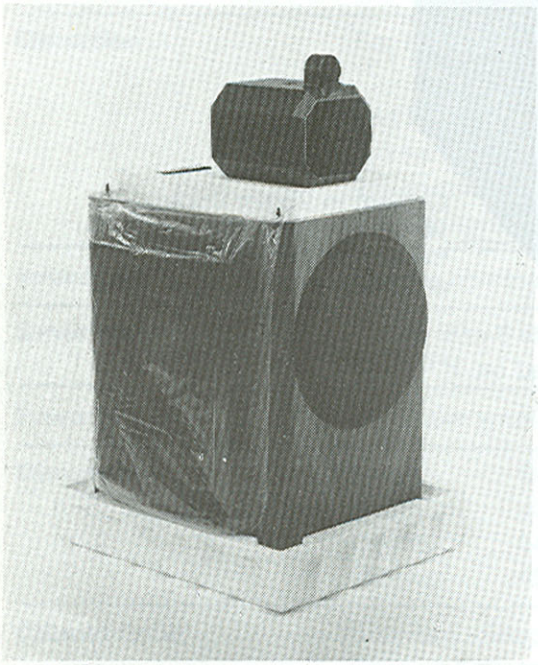


Fig. 3

The Accessory Pack contains (Fig. 4):—
Brush for cleaning fabric parts of the loudspeaker
2 spare 5.0 amp 20mm tubular fuses
2 sets of audio connecting plugs
1 coin for removing head retaining bolt

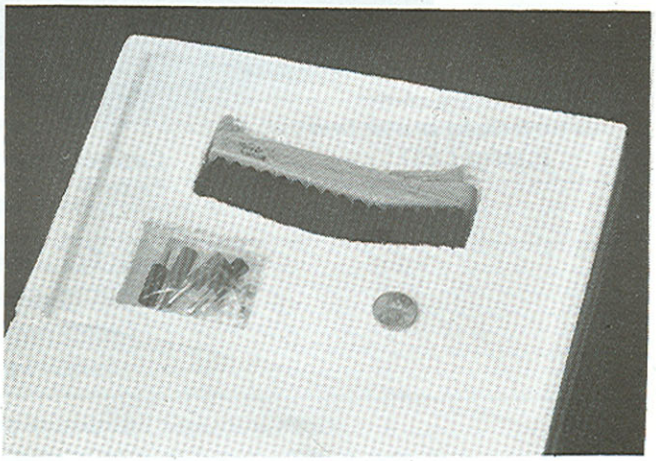


Fig. 4

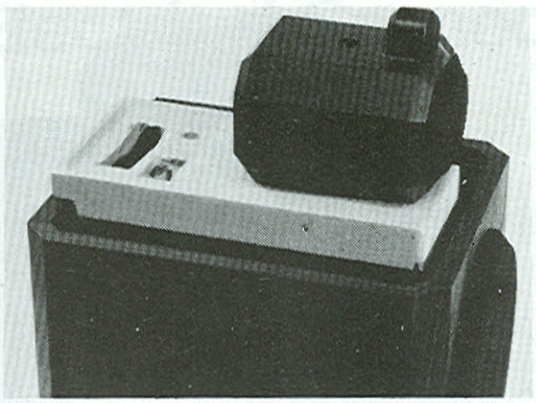


Fig. 5

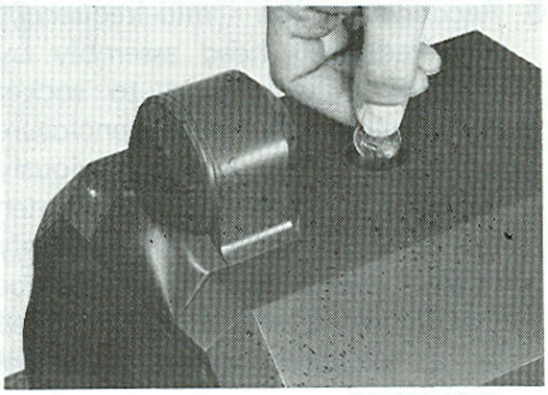


Fig. 6

3. Remove the polythene bag on the left-hand side of the loudspeaker containing the fabric foam cover for the bass enclosure (Fig. 5).

4. Using the coin provided in the accessory pack loosen and remove the head retaining bolt (Figs 6 and 7), lift head assembly and unplug flexible lead from the bass chamber (Fig. 8). Remove the polystyrene block under the mid-frequency head assembly.

5. Fit fabric covered foam top assembly to the top of bass enclosure (Fig. 9).

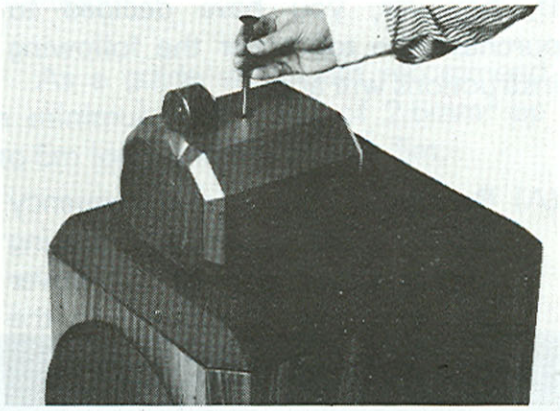


Fig. 7

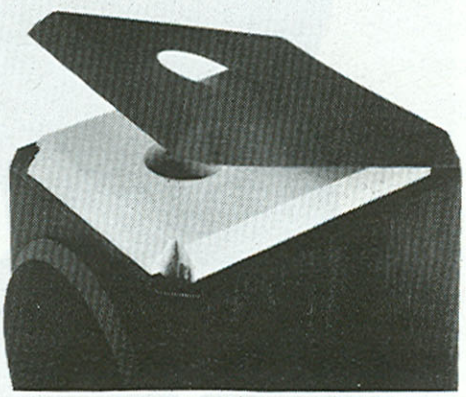


Fig. 9

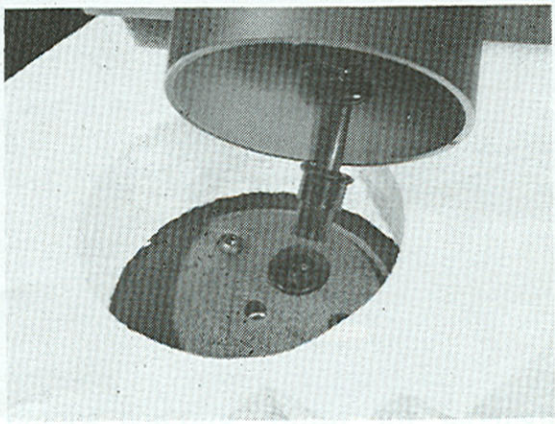


Fig. 8

6. Reconnect the mid-frequency/ high-frequency head assembly by plugging flexible lead to socket on top surface of the bass enclosure and fit the retaining bolt previously removed. It is important to tighten this bolt only sufficiently to firmly retain the head. It should be free to move and may be angled in a horizontal plane for final installation.

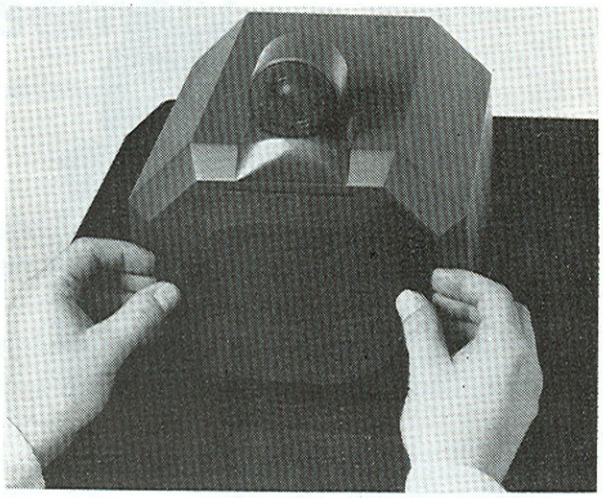


Fig. 10

The above procedure should be repeated for the second loud-speaker then they are ready for use. If, however, you have decided to purchase the top cover the following instructions will apply.

(A) Remove the mid-frequency driver grille cover by placing fingers either side of the cover and withdraw it parallel to the head (Fig. 10).

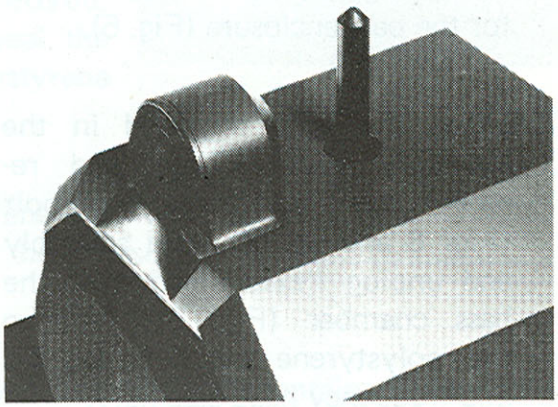


Fig. 11

(B) Fit the head retaining peg by screwing into the threaded socket on the top surface of the mid-frequency head enclosure (Fig. 11).

(C) Place fabric cover into position so that the socket on the under-side of the head cover fits the peg previously fitted (B). The rear of this head cover is marked with an arrow (Fig. 12).

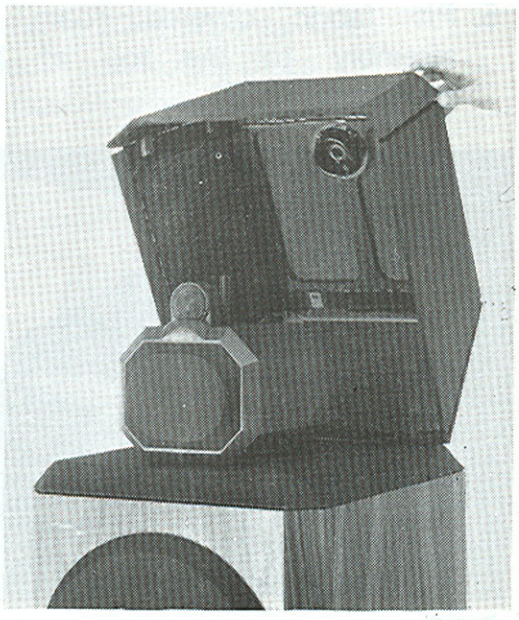


Fig. 12

It is important to retain all packing material for future shipping should this be required.

Electrical Connection

Connect the loudspeaker to your amplifier by means of either the screw terminals or 4mm plugs. The red terminal on the loudspeaker should be connected to the red terminal on the amplifier, or the connection marked positive.

Correct phasing of stereo loudspeakers is extremely important and incorrect connection will produce a loss of bass and a poor stereo image.

This will be rectified by reversing the connections to one of the loudspeakers.

It is good practice to keep the connecting leads between the power amplifier and speakers as short as possible, and to use a heavy gauge wire to keep the DC resistance to a minimum.

As a guide we would recommend a minimum cable size of 2.5mm^2 up to 5m long, and 4mm^2 over 5m.

Fig. 13

The Listening Room and Positioning your Loudspeakers

The Listening Room

Unlike the professional user the home listener is often limited in choice of the listening room. If, however, a choice is available the following considerations may be helpful.

All enclosed volumes exhibit resonances which, in the case of the listening room, will be essentially determined by the distance between parallel surfaces. The strongest resonances will lie between 30Hz and 180Hz in average domestic room sizes.

The most unsuitable listening room would be one where all dimensions (wall spacing and ceiling height) are similar, since all resonances occur over a narrow band of frequencies. Rooms where all dimensions are different give the most even and natural bass response.

Protuberances and larger items of furniture tend to break up these resonances and, where practical, varying the position of such items can often favourably influence sound reproduction.

Soft furnishings, wall coverings and even pictures influence middle- and high-frequencies. Ideally one should aim to avoid discrete resonances or 'ringing'. An easy test for this problem is a simple hand-clap, if resonances exist there will be a distinct 'overhang' or sustaining of the response which could last between 0.5 and 1 second.

A bookcase, placed on a wall opposite a reflective surface such as a window, will often help to alleviate the problem outlined above. Alternatively, a small panel of acoustic tiles — approximately 120cm x 90cm (4ft x 3ft) — placed on a wall can produce a remarkable improvement.

Both in the geometry of the enclosure design and in the computer optimised crossover and filter network, considerable effort has been employed at the design stage to ensure that cabinet reflections are minimised and that the polar distribution from Model 801F has a balanced and even characteristic.

The centre of the listening axis is approximately in line with the high frequency driver but within plus or minus five degrees in a vertical plane and plus or minud 30 degrees in a horizontal plane there will be no appreciable change in response.

Having at the design stage, taken considerable trouble to ensure that sound defects smoothly around the enclosure it is important to understand that if your loudspeakers are placed close into a corner position reflections will be heard from the wall boundaries. It is recommended therefore that you place the loudspeakers away from corners and if possible with a space of not less than ½ metre (12 inches approx.) from the rear wall.

If space is not a problem then the ideal placing would be 1 metre from the side walls and ½ metre from the rear wall. Model 801F is fitted with free running castors and by listening experiment you may consider moving the loudspeaker into the preferred position prior to serious listening. They may then be pushed back against the wall for convenience and general use.

Generally better stereo imagery is achieved if the loudspeakers are angled slightly so that their axes cross ahead of the listening area. Due to the wide and even dispersion of Model 801F this may in some cases be unnecessary and in any event the mid-range/high-frequency head assembly can be angled independent of the bass enclosure to produce the same effect if visually this is preferred.

Overload Protection

B&W were the first major loudspeaker manufacturer in the world to introduce full electronic protection against damage and overload to their loudspeakers.

The overload protection employed in your 801F is APOC (audio powered overload circuit) and entirely automatic in operation. The principle on which APOC works is an individual sensing of the voltage applied to each drive unit which protects the loudspeaker drivers against DC, thermal and transient overload signals. If any of these parameters are exceeded the red LED indicator will show this as a fault condition, and the output from your loudspeaker will be appreciably attenuated. As soon as the fault has been removed the loudspeaker will automatically return to normal operation. Fig. 14 illustrates the position of the overload indicator.

Fig. 14

Environmental Controls

Two environmental controls are provided on Model 801F. These controls are located at the rear of the mid-range/high-frequency enclosure as illustrated in Fig. 15. Their function is as follows:—

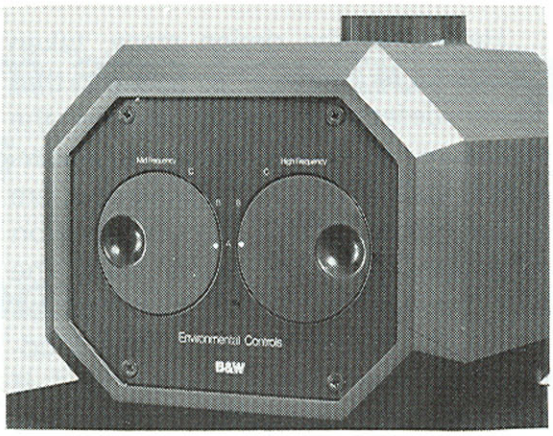


Fig. 15

Mid-frequency

A Flat
B 1.5dB cut from 1 to 3kHz
C 2.5dB cut from 1kHz to 3kHz

High-frequency

A Flat
B 1.5dB lift above 5kHz
C 1.5dB cut above 5kHz

Model 801F is one of the most linear loudspeaker systems in production and in an ideal listening room or studio no control should be necessary. It has been found in practice, however, that although the changes in response are subtle they can be beneficial with some listening conditions or material.

It may be of interest that E.M.I. International prefer these controls in the following positions:—

Mid-frequency . . . . . .B High-frequency . . . . . A

Fitting the Foam Absorbent Cover

As mentioned in the introduction certain special circumstances of environment or speaker location may warrant a reduction in side and rear radiated energy and this can easily be effected by placing the purpose-made foam cover over the mid-range and high-frequency head assembly as shown in Fig. 16. The first arrival information is not changed with this absorber and where it is necessary to locate the loudspeaker immediately adjacent to highly reflective surfaces this accessory may prove worthwhile.

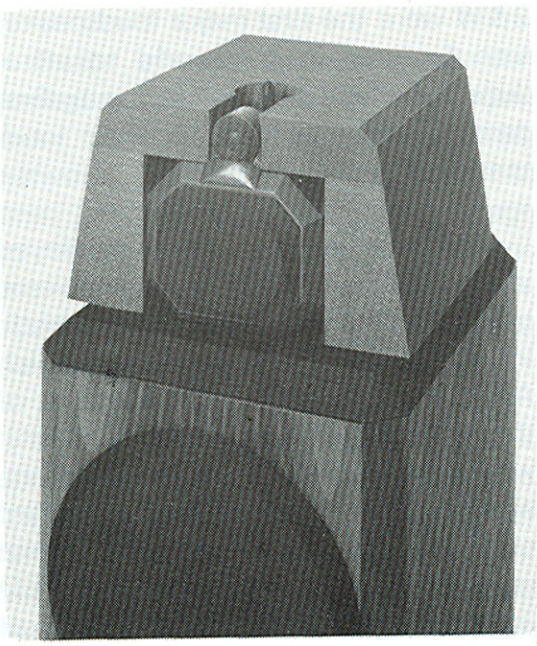


Fig. 16

Ancillary Equipment and Source Material

As a discriminating listener, you will not have chosen your Model 801F loudspeakers without thorough preliminary listening tests. As you will have discovered, far from being the weakest link in the chain — as loudspeakers are so often described — the performance of the Model 801F warrants the best ancillary equipment available in order to realise its full potential.

While we cannot, of course, recommend specific equipment manufacturers, there is a wide range of top-quality components available. Since you have already invested in one of the world's finest speakers, you should therefore pay equal attention to your choice of pick-up arm, cartridge, amplifier, tuner and tape recorder. Differences between them may be subtle but they do exist, and your own listening experience is an invaluable guide.

Reliable advice is always available from a reputable hi-fi specialist, and our own specially-appointed B&W dealers will be pleased to give you expert assistance. Naturally, if it is possible to carry out a listening test in your home, using familiar recordings, this is the best way to ensure lasting satisfaction.

One of the continuing rewards of owning exceptional, high-fidelity equipment is the huge variety of performances from the world's finest artistes that you can enjoy in your own home, both from VHF stereophonic radio transmissions and disc recordings.

FIBRECRETE HEAD

B&W's latest innovation is the use of Fibrecrete in the mid-range head assembly.

Fibrecrete (glass reinforced concrete) is employed for the inner lining while the outer casing is moulded from rigid polystyrene. The result of this unique combination is an improvement of 10dB in the critical 300Hz to 3kHz region, bringing cabinet vibration 60dB below the cone vibration.

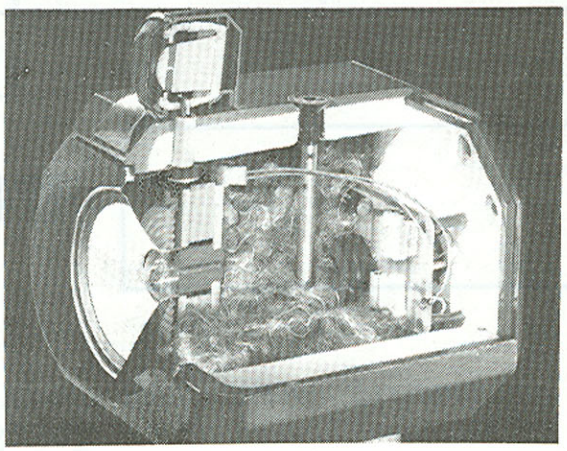


Fig. 17

Fault Finding and Service

Model 801F is one of the most "over engineered" loudspeaker systems in the world and coupled with the B&W patented electronic protection circuitry should give endless years of trouble free service. Throughout the world B&W Loudspeakers have appointed distributors. Should any service problem occur, these distributors will always be pleased to direct you to your nearest B&W Appointed Dealer. In the United Kingdom some 150 dealers have been appointed and a list may be obtained from the factory.

If you should ever wish to remove the grille covers this should be carried out by inserting tip of fingers behind cloth covered grille frame drawing away from cabinet as shown in Fig. 18.

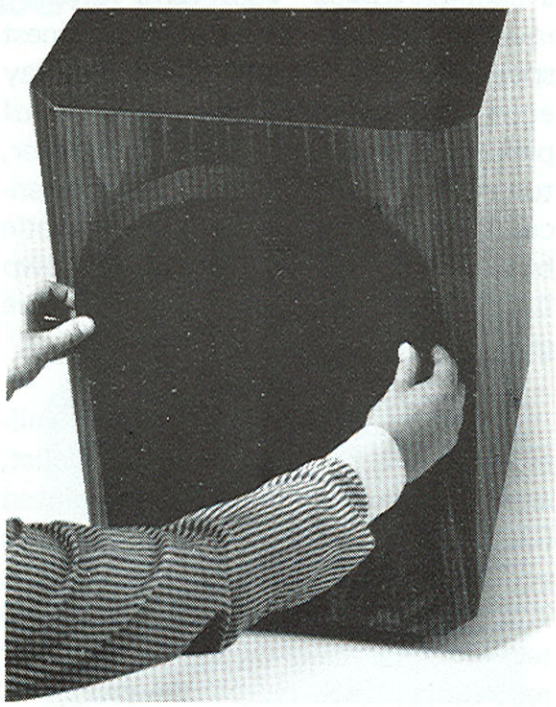


Fig. 18

Guarantee

The apparatus is guaranteed against faulty material and workmanship for a period of two years from the date of purchase subject to the following conditions:

(1) The attached guarantee registration card must be completed and posted to B&W Loudspeakers within 14 days from the date of purchase.

(2) Any claim arising under this guarantee should be made either direct to B&W Loudspeakers, or to the authorised dealer from whom the equipment was purchased and whose name appears on the registration card.

(3) In the event of service being required from B&W Loudspeakers the equipment must be securely packed and despatched to the address below, prepaid and if desired insured by the owner.

(4) Defective component parts (excluding valves, transistors and fuses – which are covered separately by the manufacturers of these components) will be replaced free of charge but labour and cost of transit may be charged at the discretion of B&W Loudspeakers.

(5) This guarantee expressly excludes:
(a) Damage caused by incorrect use of the apparatus.
(b) Loss or damage in transit in either direction.
(c) Contingent and third party liability.

(6) Any service modification or alteration carried out by any person other than the authorised representative of B&W Loudspeakers or their appointed agents renders this guarantee invalid.

(7) No alteration or variation of the guarantee will be recognised.

(8) This guarantee is not transferable.

Purchasers in countries listed return guarantee to company indicated.
UK purchasers return guarantee to:
B&W Loudspeakers Ltd, Meadow Road, Worthing, West Sussex, BN11 2RX

INSPECTION CERTIFICATE

Bass Phase		**Pwr. & Distortion**	
White Noise		**Pen Test**	
Programme		**Appearance**	
Check A.P.O.C.			

MODEL 801F

STEREO PAIR

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