B&W

Instruction Manual

MODEL 802

B&W Loudspeakers

Specification

Frequency response	55Hz to 20kHz ±2dB at centre of the listening window at 2m.
Low-frequency system	Closed box acoustic suspension with system resonance of 49Hz and system Q of 0.7 (ie: minus 3dB at resonant frequency).
Dispersion	Vertical: ±1dB over 10° of centre window. Horizontal: +0, −3dB over 60° of centre window, 10Hz to 13kHz.
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 drivers (two)	Diaphragm: 165mm dia. thermo-plastic cone with PVA compound coating. Ultra long-throw suspension. Voice Coil: 38mm dia. high-temperature Nomex. Magnet System: 2.25kg 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	3.00%	1.00%
3rd harmonic: less than	3.00%	1.00%
4th harmonic: less than	0.30%	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

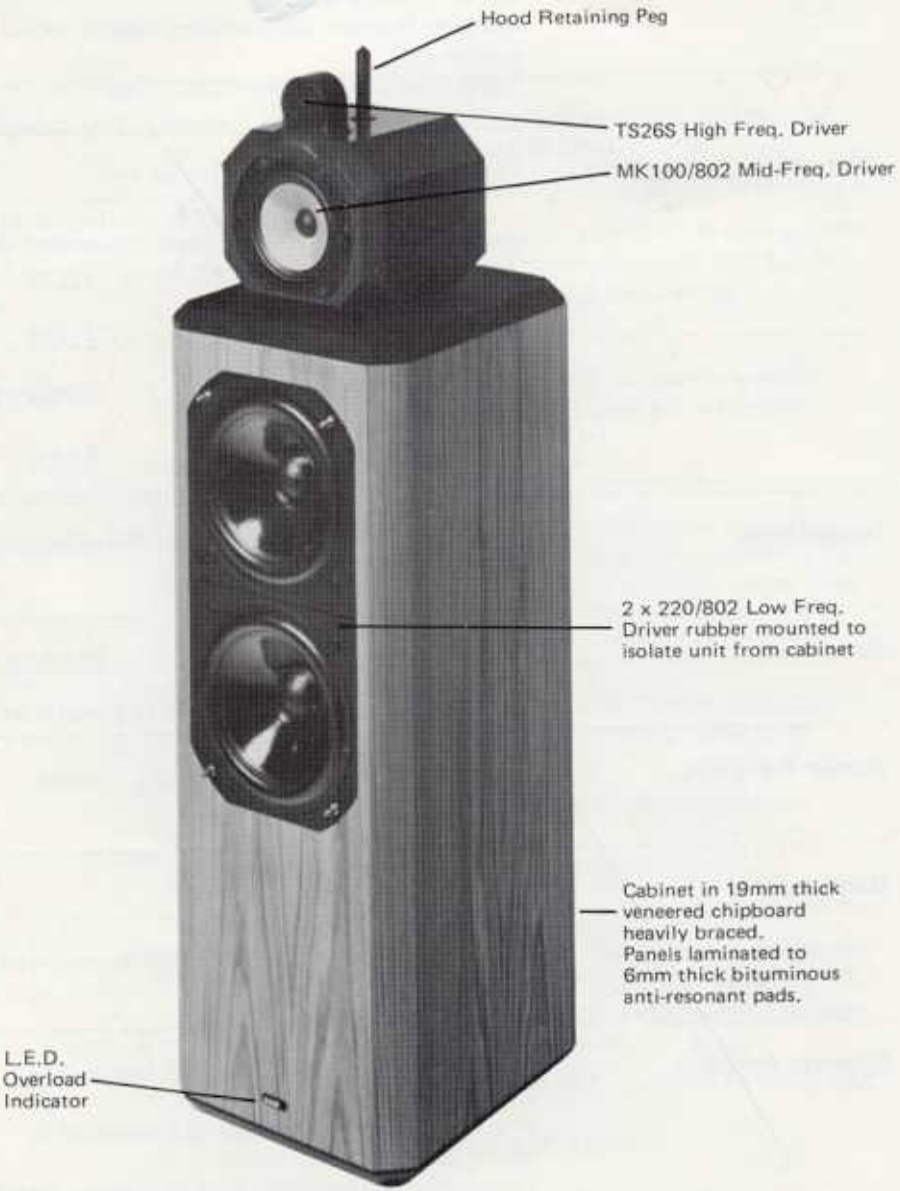
Minimum amplifier 50 watts into 8 ohms.
No upper limit.

Dimensions

Height: 1040mm (41in)
Width: 300mm (11.8in)
Depth: 370mm (14.5in)
Weight: 32kg (70lb)

Cabinet finish

Standard: Selected veneers of teak or walnut.
Special: Selected veneers of rosewood or black ash.
Lacquer: A limited selection of colours hand-finished in exquisite lacquer, are available to order.


Hood Retaining Peg
TS26S High Freq. Driver
MK100/802 Mid-Freq. Driver
2 x 220/802 Low Freq. Driver rubber mounted to isolate unit from cabinet
Cabinet in 19mm thick veneered chipboard heavily braced. Panels laminated to 6mm thick bituminous anti-resonant pads.
L.E.D. Overload Indicator

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
Audio connecting plugs
Coin for removing head retaining bolt

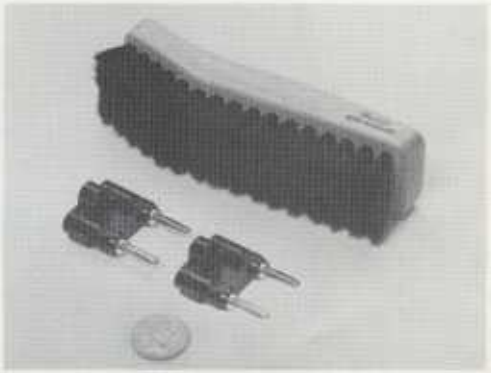


Fig. 4

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).

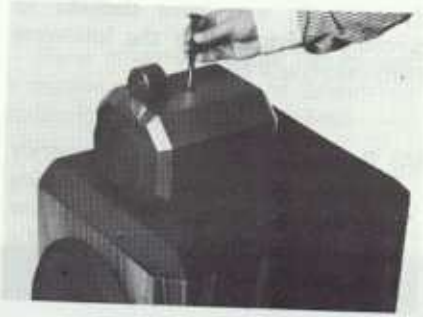


Fig. 7

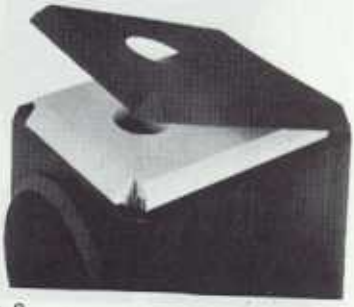


Fig. 9

Fig. 8

Fig. 7

(C) Place fabric cover into position so that the socket on the underside of the head cover fits the peg previously fitted (B). The rear of this head cover is marked with an arrow (Fig7-8).

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

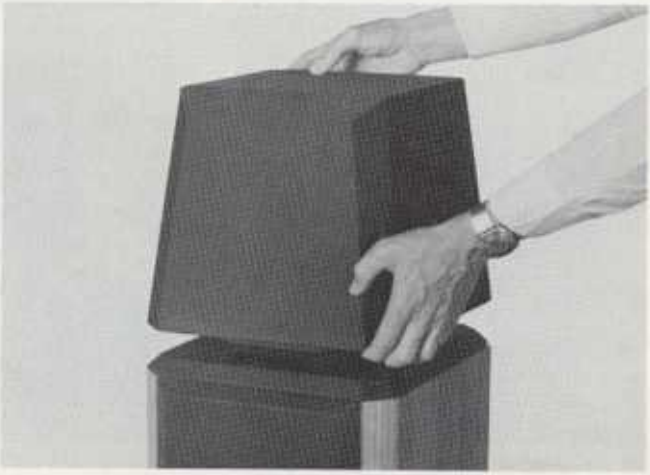


Fig. 8

Should it ever become necessary to remove the head assembly for cleaning or maintenance, proceed as follows:–

1. Using the coin provided in the accessory pack, loosen and remove the head retaining bolt (Figs. 9 and 10).
2. Lift the head assembly and unplug the flexible lead connecting it to the bass chamber (Fig. 11).

Fig. 9

Fig. 10

Fig. 11

Re-assemble the loudspeaker by reversing the order of these instructions. The retaining bolt should be tightened only sufficiently to firmly retain the head, do not over tighten.

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 802 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 minus 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 diffracts 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 ⅓ 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.

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 802 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 802 is fitted with B&W's patented overload protection circuit which is a most sophisticated device making it virtually impossible to accidentally damage your loudspeaker. A.P.O.C. – The Audio Powered Overload Circuit gives three way protection.

(1) Against high transient signals.
(2) Against prolonged thermal conditions which would damage the voice coils of the drivers.
(3) DC isolation against the application of an excessive DC voltage.

A.P.O.C. is completely automatic in operation and because it derives its power from the audio signal no attention is necessary. In the event of an overload condition the small LED red indicator will light up and the audio power to the loudspeaker be severely attenuated. This indicator is located centrally at the bottom of the loudspeaker system as illustrated in (Fig. 13).

Immediately the overload condition is removed the loudspeaker will be restored to normal operation.

Fig. 13

Ancillary Equipment and Source Material

As a discriminating listener, you will not have chosen your Model 802 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 802 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.

Fault Finding and Service

Model 802 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 (see page 15). 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. 14.

Fig. 14