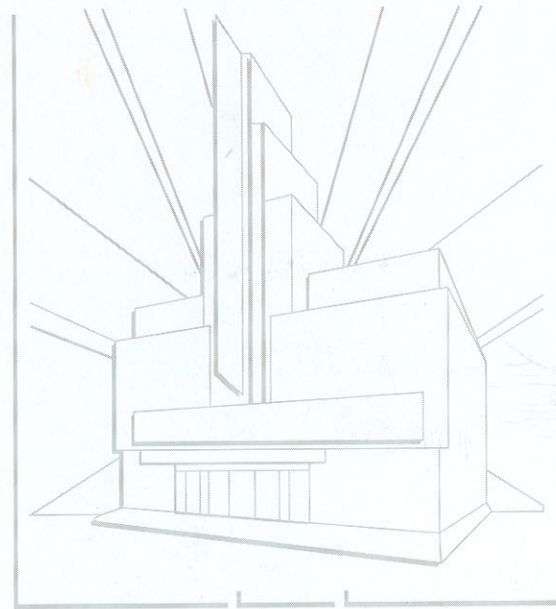


— E&W —  
HOME CINEMA



— THX —  
VIRTUAL ACOUSTIC REALITY

OWNERS HANDBOOK



.....

OWNER'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

DEALER'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

LOUDSPEAKER SERIAL NO. \_\_\_\_\_

FCM8 FRONT CINEMA MONITOR \_\_\_\_\_

PCS8 CINEMA SUBWOOFER \_\_\_\_\_

SCM8 SURROUND CINEMA MONITOR \_\_\_\_\_

.....

# VIRTUAL ACOUSTIC REALITY

## INTRODUCTION

.....

In the early 1980's Lucasfilm initiated the task of upgrading the presentation of motion pictures in theatres. In parallel with improvements in visual quality, the innovative efforts of Dolby Laboratories in the field of sound track reproduction were harnessed to developments in amplification, loudspeakers and acoustic environment, to ensure that cinema sound quality kept pace.

As home video rivalled, then quickly overtook the popularity of cinema, standards of sound reproduction were initially overlooked, with the result that early systems often failed to capture the audio experience which the producer had so

painstakingly created.

By combining specialised developments with a technical standard, the Home THX System seeks to emulate the achievements in theatre sound within the home. This manual describes the system which

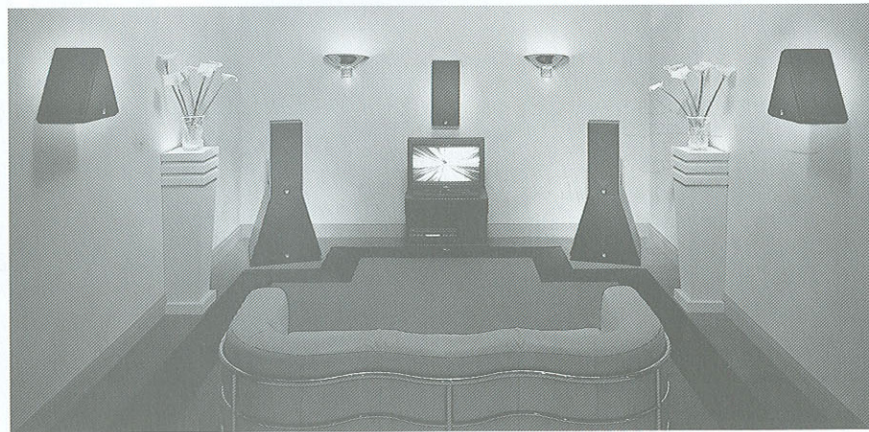
marries the twin ideals of reference monitor sound quality and surround sound excitement.

The system utilises the outputs from a Dolby® Pro Logic decoder to provide, left, centre and right front channels, as well as a mono subwoofer and

left and right surround signals.

THX uniquely derives left and right surround signals from the otherwise mono Pro Logic surround output. The input to the surround speakers is also modified to take into account the differences in the response of the human ear to sound sources in front of, and to the side of the head.

Similar corrections are made to compensate for the differences in acoustics between the film dubbing stage and the typical domestic listening environment.









## THX FRONT SPEAKER SYSTEM

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The directional information placed on a film soundtrack is reproduced by the left, centre and right front loudspeakers.

These systems are required to not only give an accurately balanced sound, but also to 'track' with the visual image.

The Home THX system specifies three identical speakers for the left, centre and right channels,

each of which is built to closely defined parameters of dispersion, frequency response and dynamics.

The B&W FCM8 has been approved for such use by Lucasfilm Ltd, and carries the THX insignia to indicate the specialist nature of the product.

The B&W brand name brings an extra dimension to THX Home Cinema. After 27 years of producing

the highest quality professional and domestic monitors for the reproduction of conventional music, one of the high priorities for the FCM8 was that it should offer the same qualities of balanced, low coloration sound and high information retrieval expected of a high-end B&W audio system.

THE THX FRONT SPEAKER SYSTEM

## THE B&W FCM8 FRONT CINEMA MONITOR

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The requirement for a relatively narrow and well defined vertical dispersion in the THX front systems rules out most conventional loudspeaker driver layouts.

To comply with THX requirements, the B&W FCM8 uses three HF units in close vertical alignment and two bass-mid drivers positioned above and below this array.

The tweeters are a completely new design utilising ZMF (zero magnetic field) technology with a rare-earth magnet to achieve the compact size necessary for the close spacing. The radiating element is based on the 26mm ceramic coated metal dome used in the 801 Matrix system, and magnetic fluid cools the coil to stabilise its temperature during power surges, minimising compression effects. Sharing the input between three units further enhances the dynamic capabilities, and reduces distortion. The configuration of the rare-earth magnet benefits

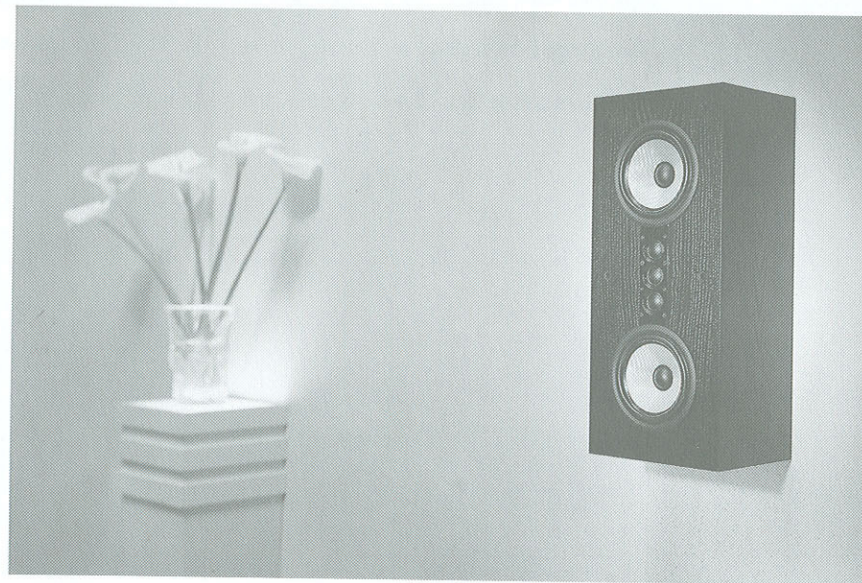
from an inherently low stray magnetic field. The bass-midrange drivers closely follow the design of the Kevlar-coned unit from the widely-acclaimed Silver Signature. They feature 30mm high temperature voice coils on Kapton formers and low hysteresis suspensions for accurate timing. The magnets are low radiation types to allow close proximity to television CRTs.

Of course, having high quality drive units is no advantage if the speaker enclosure then masks the finer nuances of the sound and robs it of hard-won transient performance. Consequently, a Matrix cabinet construction is used in the FCM8 to minimise these effects.

The aim of this manual is to give you an insight into the background, capabilities and use of the speakers. We recommend that you read it fully before you or your dealer sets up the speakers, to ensure that you get the maximum enjoyment from them.

Only a brief glimpse of the technology embodied in the Matrix range is possible within the confines of the manual. However, B&W's research facility,

the source of this technology, is covered in detail in other literature, obtainable from your dealer.





# UNPACKING, INSTALLATION AND AFTERCARE

We suggest that, after unpacking your loudspeakers, you retain the packing in case it is necessary to transport them at a later date. Each carton contains:

- a) One FCM8 loudspeaker
- b) One copy of this owners handbook
- c) One calibration certificate
- d) Two self-adhesive feet
- e) Two isolating grommets
- f) Two M6 bolts
- g) Two M6 washers
- h) One wall-mounting bracket kit

## INSTALLATION

The FCM8 can be set up in a number of ways according to the accompanying speaker systems and the desired room layout. If the speakers are part of a complete B&W THX system, consisting of three FCM8s, two PCS8 subwoofers or ACS8 active

subwoofers, and two SCM8 surround speakers, it is recommended that the left and right FCM8 speakers are mounted on the subwoofers.

For this purpose, the two large grommets supplied with each speaker should be fitted into the holes

at the rear underside of the cabinet, and the self-adhesive feet to the front underside as shown in Fig.1.

Referring to Fig.2, remove the small plastic blanking plugs from the top surface of the

subwoofer, and retain in case you wish to use the subwoofer separately at a later date. The FCM8 cabinet should then be positioned on top of (and level with) the front of the subwoofer, and the M6 bolts and washers used to secure it to the top surface. Do not over-tighten the bolts as they are there for security only, and the acoustic isolation may be impaired if the rubber grommet is crushed.

## STAND MOUNTING

Should the user wish to re-locate the subwoofers, or if a single subwoofer is being used, the left and right speakers should be mounted on stands so that the centre tweeter axis is pointing at the listener's ear level. Generally, this requires the stands to be around 600-650mm from the floor. This adjustment is important owing to the closely defined vertical dispersion characteristics of the speaker (Fig.3).

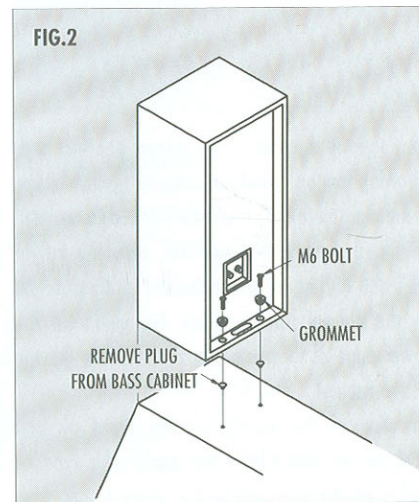
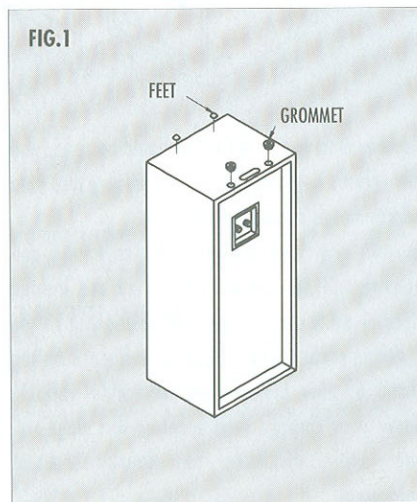
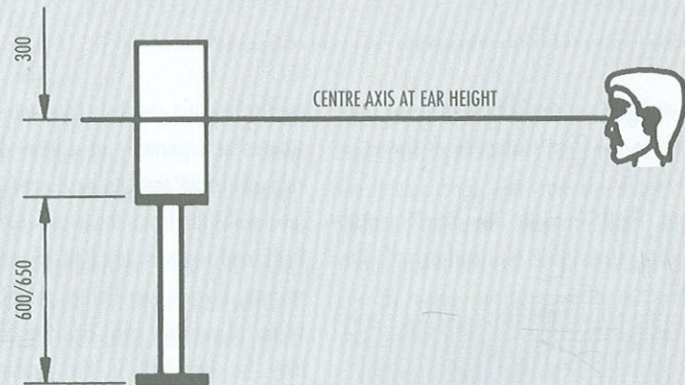


FIG.3



### WALL MOUNTING

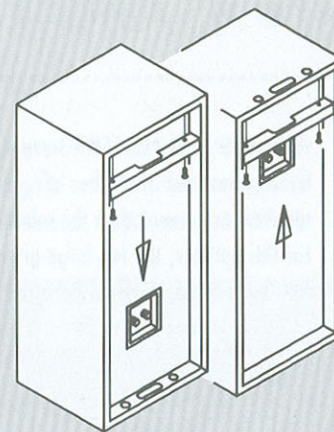
In some situations, the user may wish to place the front speakers on the wall. Whilst this solution is generally acoustically inferior to a free space environment, B&W recognise that it may be unavoidable, and in consequence, include a bracket for this purpose.

The wall mounting bracket is made up of two parts (Fig.4). The FCM8 can be mounted either way up thanks to its symmetrical design. Using the screws supplied, the right-angled plate (a)

may thus be attached to the cabinet at either end, allowing for top or bottom entry of the leads. The remaining plate (b) should be screwed to the wall in the desired lateral position, with the height adjusted so that the centre tweeter is at ear height in the normal listening seat. For guidance, the lower edge of the plate sits 55mm below the top of the cabinet.

In view of the widely varying types of wall construction throughout the world, the type of wall plate fixing is left to the choice of the user.

FIG.4 A.



B.



Number 8 screws or M4 bolts should be used, and the plate contains slots to allow for fine adjustment of position after fitting.

As with any loudspeaker, a better image and balance will be realised when they are located clear of walls and corners. The positioning of the speakers probably has a greater influence on the sound of your system than any other variable under your control. Time spent at this stage will pay great dividends for future listening enjoyment.

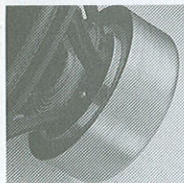
### CENTRE SPEAKER INSTALLATION

The centre speaker can rarely be placed in its ideal position, concentric with the viewing area. In most situations, the only option is to stand it on the floor or a suitable platform, so that the top of the cabinet is just below the bottom of the screen, or alternatively to locate it above the screen. We recommend that where possible, both positions should be evaluated for the best alignment of sounds with the on-screen images. In either case the cabinet should be kept upright, in order to



maintain timbral continuity for sounds which track across the front image.

In common with the left and right speakers, it is important that the centre axis points at the listener's ear level. In view of the possible limitations in vertical placement it may be necessary to tilt the speaker back or forwards in order to achieve the correct alignment.



#### DRIVE UNITS

Two 160mm (6.5in) bass/midrange Kevlar cone, with low-hysteresis surrounds and 30mm (1.25in) high temperature coils.

Three 26mm (1in) high frequency units with ceramic/metal domes, low hysteresis surrounds, Neodymium rare-earth magnets with fluid cooling.

#### FREQUENCY RESPONSE

-3dB at 80Hz and 22kHz

#### DISPERSION

Vertical	-15° window	-3dB from 1kHz to 16kHz
Horizontal	-30° window	+1dB from 20Hz to 10kHz

#### ELECTRICAL CONNECTION

The terminals at the rear of the speaker cabinet are marked red and black. These should be connected to the +(red) and -(black) terminals of the respective left, centre and right power amplifiers.

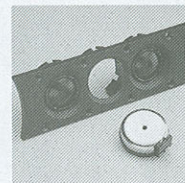
For wall mounting, the base of the speaker cabinet contains a cable entry slot to ensure that the rear face sits neatly against the wall.

The radiating elements used in the FCM8 drive

units are deliberately the same as those in the SCM8 surround speakers, to create a consistent sound field. We therefore recommend that the same amplifiers are used for the front and surround speakers, to avoid tonal imbalance.

Certain power amplifiers cause a polarity reversal between input and output. If you do use different model amplifiers for different parts of the system (front, surround, subwoofer), ensure that the polarity convention is consistent between them.

Relative polarity reversal between the front speakers and subwoofers will result in a loss of energy around the crossover frequency of 80Hz. Polarity reversal between front and surround speakers will result in ill-defined panning of sounds and strange phase effects. Amplifiers carrying the Lucasfilm THX symbol are required to be non-inverting.



## FRONT CINEMA MONITOR FCM8

#### SENSITIVITY

90dB for 2.83v at 1m

#### NOMINAL IMPEDANCE

6Ω (min. 4Ω)

#### CROSSOVER FREQUENCY

3kHz

#### POWER HANDLING

Suitable for amplifiers of continuous output 50-200w into 4Ω

#### INTERNAL VOLUME

19 litres

#### EXTERNAL DIMENSIONS

Height	600mm (23½in)
Width	258mm (10¼in)
Depth	225mm (9in)

#### NET WEIGHT

12.5kg

#### FINISH

Cabinet - Black ash / Grille - Black cloth

#### SPECIAL FEATURES

Approved to Lucasfilm Home THX specifications

Kevlar is a registered trademark of DuPont.

Dolby and Pro Logic are registered trademarks of Dolby Laboratories Licensing Corporation.

Lucasfilm, THX and Home THX are registered trademarks of Lucasfilm Ltd.

The THX logo is used under licence from Lucasfilm Ltd.

## THE THX SUBWOOFER SPEAKER SYSTEM

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The spectral balance of film soundtracks differs from standard music recordings in a number of respects, most significantly in the levels of low frequency energy, particularly in sound effects.

The THX specification therefore requires this part of the spectrum to be handled by a dedicated low frequency system capable of reproducing it at high levels, without audible distortion.

Dolby/THX controllers are typically configured to supply a low-pass output filtered at 80Hz, designed to match in accurately with the high-pass filtered from speaker systems.



## THE B&W PCS8 CINEMA SUBWOOFER

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The Cinema Subwoofer is styled to visually match the B&W FCM8 front speaker system.

It utilises a 300mm long-throw bass driver derived from the Matrix 801 studio monitor, which is reflex-loaded by an 80 litre enclosure.

The driver is modified to give a higher efficiency and greater mechanical power handling, to provide reliable high-level low-frequency performance.

Twin reflex ports radiate from the underside of the cabinet, and feature heavy flaring at both ends, terminated by external and internal baffles,



to minimise the distortion which results from turbulent air flow.

B&W's patented Matrix construction is used to ensure that the cabinet radiation is kept to acceptable levels within its passband, and that cabinet losses which could cause high level compression are minimised.

Recognising that the subwoofers may be used in close proximity to TV sets, the driver motor systems are magnetically shielded using **ZMF** (zero magnetic field) technology.

# UNPACKING, INSTALLATION AND AFTERCARE

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We suggest that after unpacking your loudspeakers, you retain the packing in case it is necessary to transport them at a later date. Each carton contains:

- a) One PCS8 loudspeaker
- b) One copy of this owners handbook
- c) One calibration certificate

## INSTALLATION

The PCS8 can be set up in a number of ways according to the accompanying speaker systems and the size and desired layout of the room. In smaller rooms, one subwoofer may be adequate. The best position should be found by experimentation, but a good starting point would be just to the left or right of the screen. Placement well off centre may give rise to a slight imbalance on certain soundtracks, despite the low 80Hz crossover.

A second system may be added later to give greater

headroom, and with this arrangement more flexibility in positioning is possible, since symmetry can be preserved, and some bass balance adjustment becomes possible. If the speakers are part of a complete B&W THX Home Cinema system, consisting of three FCM8s, two PCS8 subwoofers, and two SCM8 surround speakers, it is recommended that the left and right FCM8 speakers are mounted on the subwoofers. (Assembly instructions are included under the FCM8 section). In this case, the subwoofers should then be placed to the left and right of the screen to optimise the imaging from the front speakers.

In general, proximity to walls and corners will give an increase in bass output, but also a less even response. The resulting boost and cut frequencies will depend on room dimensions and listening position.

Since the position of your speakers has a greater effect on the sound than almost any other variable under your control, we strongly recommend that, where possible, some time is spent experimenting with their

position, as this will pay great dividends for future listening enjoyment.

## ELECTRICAL CONNECTION

The terminals on the base of the speaker cabinet are marked red and black. These should be connected to the +(red) and -(black) terminals of the respective subwoofer power amplifier.

The impedance of the PCS8 has an  $8\Omega$  minimum value (ie nominally greater than  $8\Omega$ ), which allows two to be safely connected in parallel to any amplifier suitable for  $4\Omega$  loads. If the amplifier is designed for good current delivery, up to 6dB extra output will be available. Alternatively, a second amplifier can be used with the additional subwoofer, with the inputs to the two amplifiers paralleled. This again will give up to a 6dB increase in available power.

We recommend that the same amplifiers are used for the subwoofer, front and surround speakers, to avoid tonal imbalance.

Certain power amplifiers cause a polarity reversal between input and output. If you do use different model amplifiers for different parts of the system (front, surround, subwoofer), ensure that the polarity convention is consistent between them. Relative polarity reversal between the front speakers and subwoofers will result in a loss of energy around the crossover frequency of 80Hz. Polarity reversal between front and surround speakers will result in ill-defined panning of sounds and strange phase effects. Amplifiers carrying the Lucasfilm THX symbol are required to be non-inverting.



# CINEMA SUBWOOFER PCS 8

## SYSTEM TYPE

Damped 4th order reflex tuned at 26Hz

## DRIVE UNIT

One 300mm (12in) Cobex cone bass driver with 50mm (2in) high temperature voice coil, low-hysteresis surround and magnetic shielding.

## FREQUENCY RESPONSE (anechoic)

-3dB at 35Hz

## SENSITIVITY

89dB for 2.83v at 1m (anechoic)

## NOMINAL IMPEDANCE

8 $\Omega$

## POWER HANDLING

Suitable for amplifiers of continuous output 50-200w into 4-8 $\Omega$

## INTERNAL VOLUME

80 litres

## EXTERNAL DIMENSIONS

Height 600mm (23 $\frac{1}{2}$ in)

Width 580mm (22 $\frac{1}{2}$ in)

Depth 598mm (23 $\frac{1}{2}$ in)

## NET WEIGHT

32kg

## FINISH

Cabinet - Black ash / Grille - Black cloth

## SPECIAL FEATURES

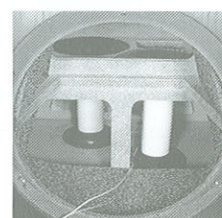
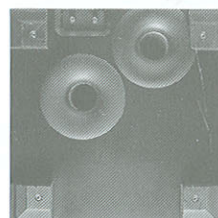
Approved to Lucasfilm Home THX specifications

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Lucasfilm, THX and Home THX are registered trademarks of Lucasfilm Ltd.

The THX logo is used under licence from Lucasfilm Ltd.



# THE THX SURROUND SPEAKER SYSTEM

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These surround speakers conform to the specifications of Lucasfilm's Home THX audio system and differ from most conventional speakers in that they have a dipolar radiation pattern.

The sound is projected mainly in two opposite directions – with drive units mounted on opposite sides of the cabinet. Sound radiated in one direction has the reverse polarity to that radiated in the opposite direction. In a

plane at right angles to these two lobes, the sound is substantially cancelled out. This is the so called null plane. The radiation pattern is symmetrical in the horizontal plane, but the lobes are tilted upwards in the vertical plane. This is a deliberate design feature and is explained in more detail below.

The speakers are used with the null plane directed towards the listeners, who therefore hear very little

direct sound. Most of the sound they hear has been reflected off the surfaces of the room and is diffuse in nature. It is difficult for a correctly seated listener to locate the position of the speakers from the sound alone.

This type of arrangement is essential for the correct reproduction of Home THX, but does not preclude its use with standard Dolby Pro Logic.



# UNPACKING, SURROUND CINEMA MONITOR INSTALLATION AND AFTERCARE

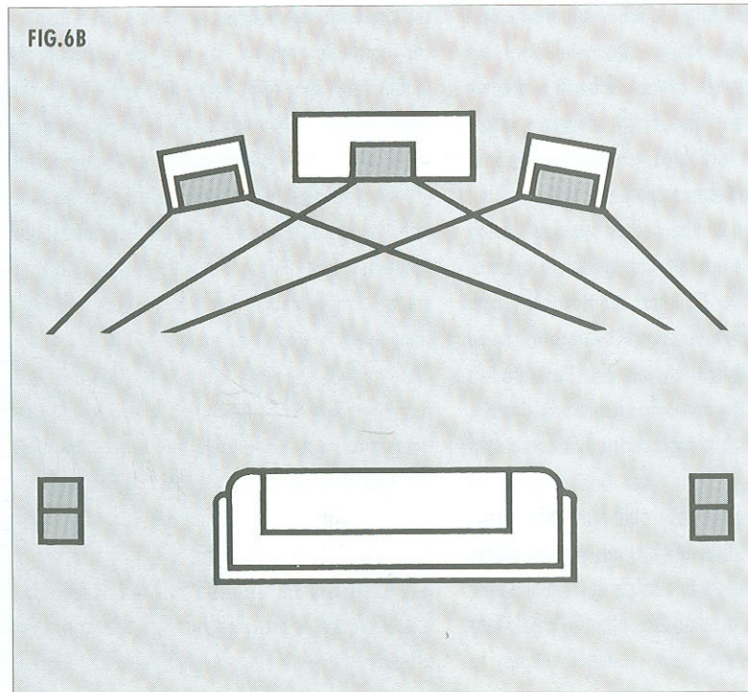
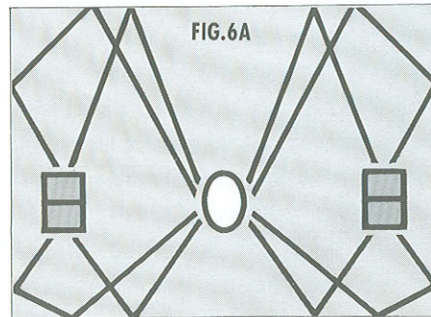
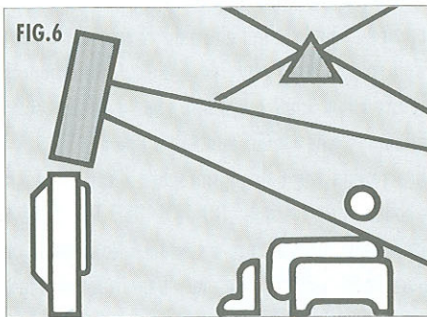
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We suggest that after unpacking your loudspeakers, you retain the packaging in case it is necessary to transport them at a later date. Each carton contains:

- a) Two surround speakers
- b) An accessory pack containing:
  - 2 x No.8 dowel screw
  - 4 x M6 pan head screw
  - 2 x wall bracket
- c) One copy of this owners handbook

## POSITIONING

The surround speakers should ideally be mounted on or close to the side walls of the room and in line with the centre row of listeners (see Fig. 6, 6A & 6B). In order to hear mainly diffuse sound, the level of direct sound to the listeners should be around 10dB or more below the maximum level radiated along the axis of each lobe. The listeners do not therefore need to sit exactly in line with the null plane and a useful null wedge is defined by the solid angle around the null plane where



the attenuation is greater than 10dB.

Due to the triangular shape of the SCM8 speakers, the null wedge is wider below the speakers than above. Mounting the speakers above the head height of the listeners has two beneficial effects. Firstly, the greater angle of the null wedge will cover more rows of seats.

Secondly, off-centre listeners will be at a greater angle below the belt line of the nearer speaker and be in a wider section of its null wedge than is the case for the farther speaker. The resulting higher attenuation of the nearer speaker due to the dipole effect compensates for the lower attenuation due to distance. So for off-centre listeners, the left-right sound balance is more equal and there is less tendency for the sound to concentrate over to one side than would be the case with speakers having a vertically symmetrical polar pattern.

A typical mounting height would be with the base of the speakers 600mm (2ft) or greater above seated head height. At this height it is possible for someone walking around the room to knock into them. The speakers have rounded edges to

prevent serious injury, but nevertheless you may wish to place another piece of furniture beneath them to prevent collision. B&W Loudspeakers Ltd and their appointed agents cannot accept responsibility for any injury or damage caused by collision with the speakers.

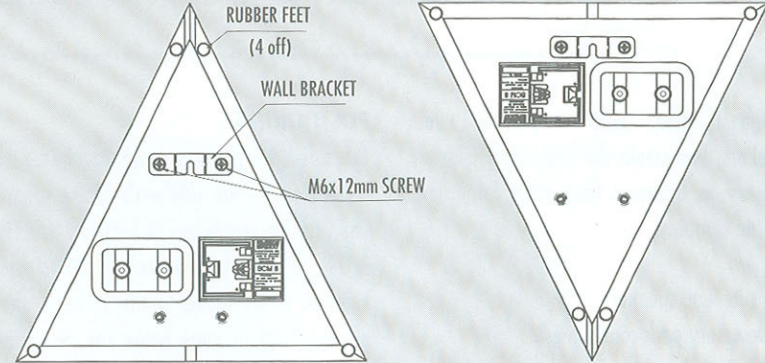
For aesthetic reasons, it may be desirable to mount the speakers near the ceiling. If the speakers are mounted in the normal point-up orientation, the high-frequency sound may not be properly distributed along the surface of the side wall. It may then prove beneficial to mount the speakers point-down. This will, however, give a narrower null wedge and obviate the left-right compensation mentioned above.

Placing the speakers near the floor is not recommended. The absorption characteristics of floor coverings are variable and usually too high to create an optimum reverberant sound field.

#### ATTACHING THE SPEAKERS TO THE WALL

A wall bracket is provided for each speaker in the accessory pack. Having decided the orientation of

FIG.7



the speakers, screw the bracket to the cabinet, with the centre slot pointing downwards, using the M6 screws provided and the top pair of threaded inserts in the side panel (Fig.7).

Attach four self-adhesive rubber feet to the protruding edge of the cabinet, one at each bottom corner and one either side of the top slot. These will reduce the chances of marking the wall and prevent any rattling against it.

A special dowel screw is provided, having a captive washer. When the screw is tightened so

that the washer is down to the wall surface, the head of the screw will protrude by the correct amount to hook the wall bracket over. This form of screw enables the tightening of rear expanding wall plugs used for dry wall (plasterboard) construction and may also be used in solid masonry walls with a suitable wall plug.

If screwing through plasterboard directly into a wooden joist or stud, **DO NOT USE THE SCREW PROVIDED**. Instead, use a standard No.8 round or pan head wood screw and penetrate at least



25mm (1in) into the wood when the back of the head is 8mm ( $\frac{3}{16}$ in) clear of the wall surface (see Fig.8).

Do not attempt to mount these speakers onto old fashioned lath and plaster walls which may not carry the weight.

### ELECTRICAL CONNECTION

There is no colour coding or other polarity indication for the terminals on these surround speakers. The correct way round to connect the speakers to your amplifier depends on their orientation with respect to the screen.

In order to preserve the correct total system sound field, it is essential that the radiation lobe that points to the screen has the same polarity as the front speakers.

Irrespective of which side of the room the speakers are placed and which way up they are,

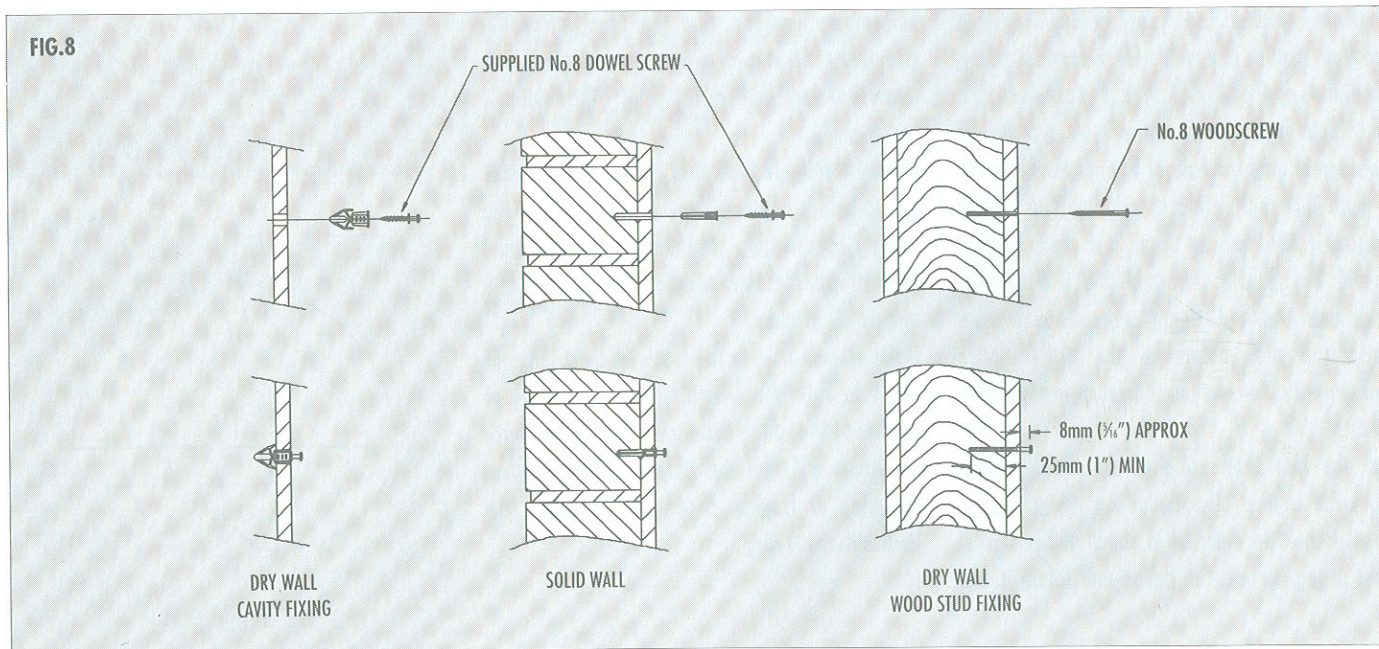
the positive terminal of the amplifier output **MUST** be connected to the speaker terminal nearest the screen (see Fig.6 but note comments under ancillary equipment).

If the speakers are mounted on the wall, use the recess in the side panel to hide any excess cable. The installation appearance will be improved if the cables are chased into the wall surface or fed through the cavity of dry wall construction. However, slots are provided in the cabinet edge for leading out surface mounted cable.

Choose cables that will not unduly alter the frequency response of the speakers. In practice, the type of cable required will depend on the length of run. The loop impedance at all frequencies should be less than  $0.2\Omega$ .

Some cables that have low resistance also have high inductance. This reduces output at high frequencies and dulls the sound. Conversely, cables having high capacitance can cause instability in certain amplifiers.

Seek the advice of your dealer or installer when choosing a suitable cable.



## ANCILLARY EQUIPMENT

These surround speakers are designed and built to the same high standards as the other speakers in the B&W Home Cinema System and will do justice to the best available components.

For full home THX operation a special Dolby Pro Logic decoder with the extended Home THX enhancements is required.

The drive unit moving parts are identical to those used in the FCM8 front speakers, to create a homogenous sound field. For best results, use the same model power amplifiers for the surround speakers as you do for the front speakers to maintain this homogeneity.

Certain power amplifiers cause a polarity reversal between input and output. If you do use different model amplifiers for different parts of the system (front, surround, subwoofer), ensure that the polarity convention is consistent between them. Relative polarity reversal between the front speakers and subwoofers will result in a loss of energy around the crossover frequency of 80Hz. Polarity reversal between front and surround

speakers will result in ill-defined panning of sounds and strange phase effects. Amplifiers carrying the Lucasfilm THX symbol are required to be non-inverting.

## CUSTOMISING

B&W recognise the importance of blending the surround speakers to your decor. The SCM8 speakers feature removable fabric covered panels which may easily be re-covered if you wish.

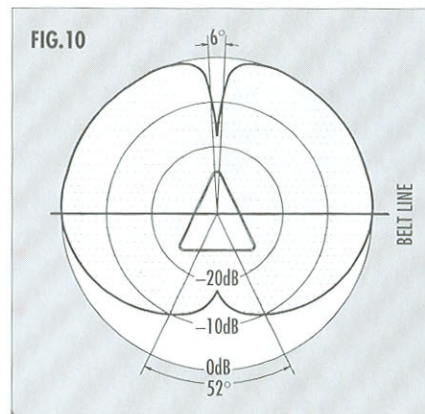
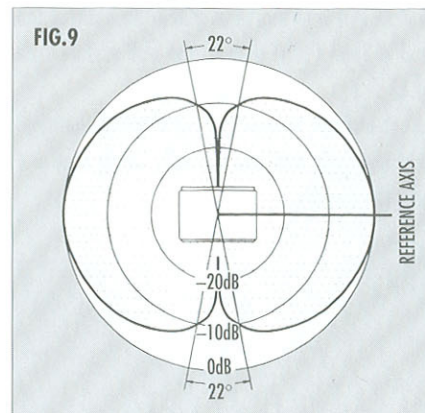
Any replacement fabric should be acoustically transparent and, for ease of fitting, should stretch in both directions. Hold the cloth up to a light source. If light passes through it easily then it should be suitable. Alternatively, listening for grille-cloth induced degradation through pink noise can also determine the grille cloth's transparency. Consult your dealer or installer if in doubt.

Pull the four fabric covered detachable panels from the cabinet. The badge on the triangular panel is held in place by a small rubber O ring over a peg. Detach the badge and retain it and

the O ring for re-use. The fabric is held in place by staples located in a groove at the back of each panel. Run a sharp knife or scalpel along the outer wall of the groove, cutting through the fabric. If you are intending to use a light colour replacement fabric, you may wish to repaint the wooden panels a lighter colour at this stage. Remember, however, that the area where the drive units are may show up as a dark shadow if you use a very light colour paint. White paint is best avoided.

When attaching the new fabric, use a power staple gun to hold it in place. Start at the centres of the straight edges with a mild amount of stretch and then stretch the cloth tightly at the corners to remove all wrinkles.

Make a small hole in the fabric of the triangular panel to refit the badge. If your fabric is of synthetic fibre, using a hot soldering iron to pierce the fabric will seal the fibre ends and prevent laddering or fraying. Secure the badge at the back with the O ring.





# SURROUND CINEMA MONITOR SCM 8

## DESCRIPTION

Wall mounting second-order closed-box system with dipolar radiation characteristics.

## DRIVE UNITS

Two 160mm (6.5in) diameter bass/midrange units with Kevlar cones, low-hysteresis rubber surrounds and 30mm (1.25in) diameter high-power voice coils.

Two 25mm (1in) dome high-frequency units with metal diaphragms, high-power voice coils and magnetic fluid cooling.

## FREQUENCY RANGE

-6dB at 105Hz & 25kHz

## MEAN POWER RESPONSE

120Hz-20kHz  $\pm 3$ dB

## DISPERSION

Figure of eight dipole

## SENSITIVITY

Measured at 1m for input of 2.83v. Averaged over octave band centred on 250Hz. 87dB on reference axis. 84dB mean power. Averaged over frequency range 125Hz-8kHz. 85dB on reference axis. 82dB mean power

## NOMINAL IMPEDANCE

4 $\Omega$

## CROSSOVER FREQUENCY

3kHz

## POWER HANDLING

Suitable for use with amplifiers having a continuous output of 50-200w into 4 $\Omega$

## INTERNAL VOLUME

7.3 litres

## EXTERNAL DIMENSIONS

Height 362mm (14 $\frac{1}{4}$ in)

Width 352mm (14in)

Depth 247mm (9 $\frac{7}{8}$ in) without feet,

251mm (9 $\frac{7}{8}$ in) with feet

## NET WEIGHT

11kg (24lb)

## FINISH

Cabinet - Black texture paint

Removable panels - Black cloth

## SPECIAL FEATURES

Approved to Lucasfilm Home THX specifications. Wall mounting hardware supplied. Customised finish with user selected cloth.

## NOTE

The mean power is calculated from 46 response measurements made at 15° intervals along BL and VBL (see Figs.9 and 10 on page 18).

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