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The Martin Experience

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Martin Audio – CINEMA SERIES



This equipment conforms to the requirements of the EMC Directive 89/336/EEC, amended by 92/31/EEC and 93/68/EEC and the requirements of the Low Voltage Directive 73/23/EEC, amended by 93/68/EEC.

Standards Applied	EMC Emission	EN55103-1:1996
	Immunity	EN55103-2:1996
	Electrical Safety	EN60065:1993

1 INTRODUCTION

Thank you for purchasing a Martin Audio Cinema Series, Screen Channel system. As film industry technology produces increasingly wide-ranging digital sound tracks, accommodating ever more complex special effects, traditional 2-way sound reinforcement systems are hard pushed to translate the full movie experience to audiences in the auditorium.

Martin's entry to cinema sound has been nothing short of revolutionary. The adaptation of new 3-way technology by Martin's design team, honed to meet the real demands of cinema installation today, has resulted in the dedicated Martin Audio Cinema Series. The core products, Screen 2, 4, 5 and Screen Sub 1 loudspeakers are built to accommodate the various digital formats of modern film, providing the essentials of low distortion, wide bandwidth and uniform coverage. Martin Audio Surrounds, including the Effect 5, 3 and 3R complete the picture.

Your screen channel system is shipped in two cartons. One carton containing the low frequency section and the second containing the mid/high section, bracket and hardware.

2 UNPACKING

Each Martin Screen Channel System is built to the highest standard and thoroughly inspected before it leaves the factory. After unpacking the unit, examine it carefully for any signs of transit damage and inform your dealer if any such damage is found. It is suggested that you retain the original packaging so that the unit can be repacked at a future date if necessary.

Please note that Martin Audio and its distributors cannot accept responsibility for damage to any returned product through the use of non-approved packaging.

3 ASSEMBLY OF HORN SUPPORT

The horn support (mounting bracket) supplied with your Screen system provides a simple way to mount and install the mid/high horn on top of the low frequency section.

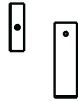


Fig1. Screen 2 horn support

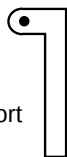


Fig 2. Screen 4 horn support

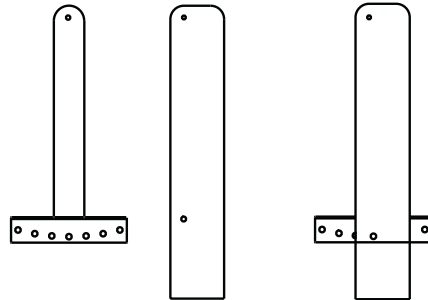


Fig 3. Screen 5 horn support

Assembled

The **Screen 2** support (fig 1) is a two piece support, which combines a driver plate and a U shaped support as shown. You will need to fit the driver plate between the horn and the compression driver using the two compression driver M6 stud fittings.

Then simply attach the plate to the **U** shaped support via the 2 x M6 fixings and then using the M8 thumbwheel/bolt attach the completed assembly to the bass cabinet.

The **Screen 4** support (fig 2) is a one piece **U** shaped support that connects to the horn section with 2 x M6 fasteners and then locates on to the bass section with a single M8 thumbwheel. This arrangement provides simple adjustment of both vertical and horizontal aiming angles. The horn can also be moved backwards and forwards. In position **A**, the horn is close to the screen. In position **B**, the horn mouth is flush with the front of the bass enclosure.

The **Screen 5** support (fig 3) is a two piece support, which combines a saddle support and **U** shaped support as shown. This combination connects to the horn section with 2 x M6 fasteners and then to the bass section (see inset, fig 4. on next page) using two thumbwheels at **C** and **D**. The kidney shape at D offers +/- 10° of horizontal adjustment. Each hole in the saddle section provides adjustment of the vertical aiming angle of the horn in 5° increments.

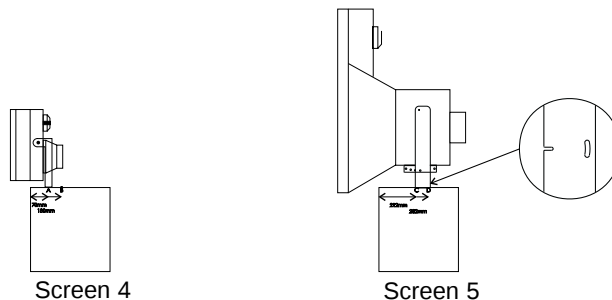


Fig 4. Side view of Screen 4/5 support, showing mounting positions

4 INPUT CONNECTIONS

Screen systems come with input panels mounted on the side of the cabinet for easy access and are configured as follows:

Screen 2P and Screen 4P

The Screen 2P and Screen 4P are single input passive only enclosures. The **Full Range** input is on a single set of binding posts and the output for the mid/high horn is available from the XLR connector adjacent (cable supplied).

Screen 2/4/5B

The Screen 2/4/5B are bi amped driven enclosures. Their main inputs are on a dual set of binding posts for both **Low** and **High** inputs and the output for the mid/high horn is available from the XLR connector adjacent using the cable supplied.

Screen 4T and Screen 5

The Screen 4T and Screen 5 are both tri amped enclosures. Their main inputs are on a triple set of binding posts for **Low**, **Mid** and **High** inputs, the output for the mid/high horn is available from the NL4 connector adjacent using the cable supplied.

Note:

Screen 2/4/5

Speaker terminal connections

HF connections White Wire + terminal
 Grey Wire - terminal

Screen 4/5

Mid connections Brown Wire + terminal
 Blue Wire - terminal

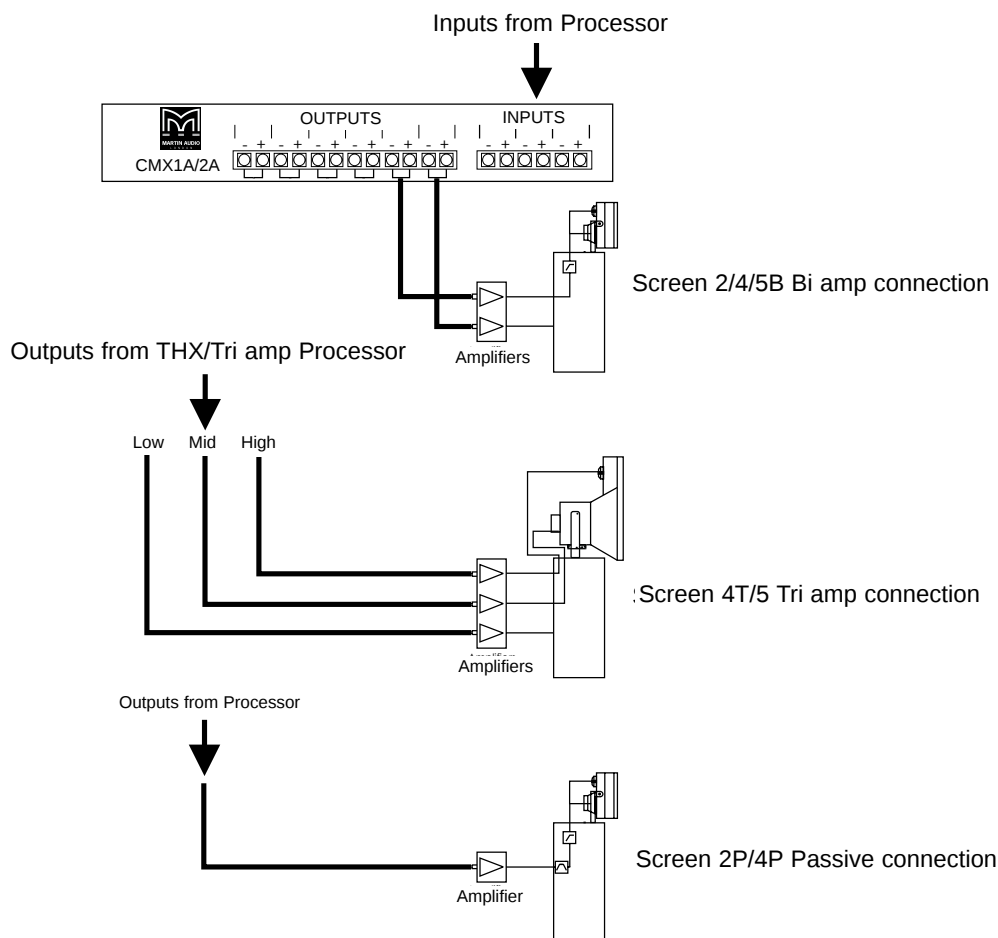
5 SAFETY FIRST

It is important that loudspeaker systems are used in a safe manner. Please take some time to review the following points concerning safe use of Cinema Series Screen 2/4/5 loudspeakers.

Professional loudspeakers are capable of producing extremely high sound levels and should be used with care. Hearing loss is cumulative and can result from levels above 90dB if people are exposed for a long period. Never stand close to loudspeakers driven at high level.

6 SYSTEM CONNECTIONS

System block diagrams



6.1 Wiring Recommendations

When connecting Screen systems to an amplifier, it is recommended that the return resistance of the cable used is less than one tenth of the nominal impedance of the system or systems in parallel. The table below gives an indication of the maximum permissible cable runs for various conductor cross-sectional areas driving 4, 8 and 16 ohm loads.

<u>Conductor CSA</u>	<u>Maximum Cable Run</u>		
	4 ohms	8 ohms	16 ohms
1.5mm ²	17m	34m	68m
2.0mm ²	22m	44m	88m
2.5mm ²	29m	58m	116m
4.0mm ²	44m	88m	176m
6.0mm ²	66m	132m	264m

6.2 Power Amplifier Requirements

Martin Audio Screen systems are designed to be used with professional power amplifiers capable of producing 400-650 watts per channel into 4 ohms.

Lower power amplifiers than those recommended may be used if care is taken to avoid amplifier clipping, although they will not allow the full performance of the system to be realised. It is important to understand that a low power amplifier driven into clipping is more likely to damage a loudspeaker than a higher power amplifier used within its ratings. This is because music signals have a high peak-to-average "crest" factor. When an amplifier is severely overdriven its output waveform is clipped (its peaks are squared off) - reducing the crest factor. In extreme cases, the waveform can approach that of a square wave. An amplifier is normally capable of producing far more power under these conditions than its undistorted rated power output.

7 CMX1A/CMX2A/CMX3A OPERATION

The CMX1A cinema controller is a 3 input/6 output controller used to optimise the performance of the Martin Audio Screen 4 bi-amped system. The CMX2A is the corresponding controller for the bi-amped Screen 5B. Likewise the CMX3A is the corresponding controller to the Screen 2 bi-amped system.

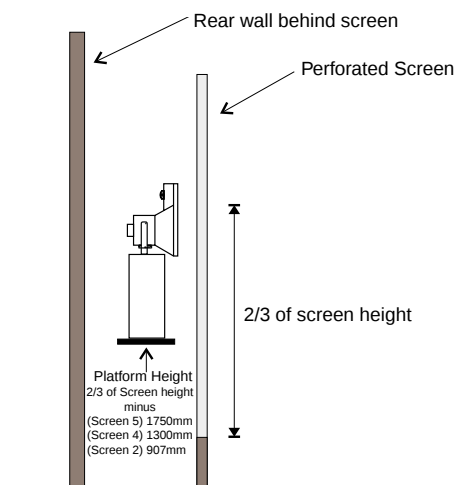
The controller provides the correct crossover, delay and screen compensation equalisation. The nominal through gain of the controller is 0dB at the centre position of the trimpot, plus and minus 6dB of gain variation is available to optimise the relative levels of the bass and mid/high outputs per channel. All six trimpots are accessible through the front panel.

8 SPEAKER PLACEMENT

The following guidelines will help in providing optimal aiming and placement to best match the perceived location of the sound to the picture on the screen.

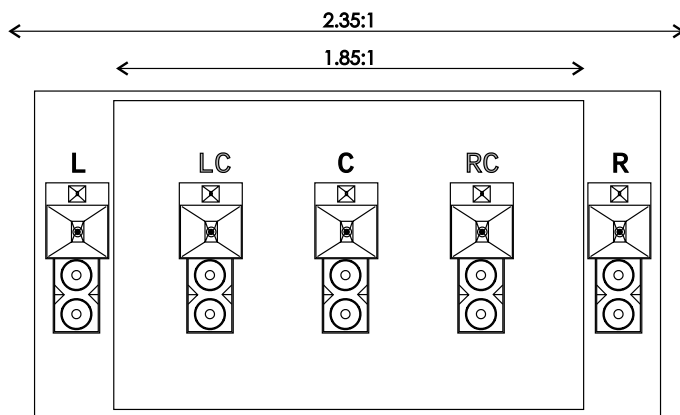
8.1 Vertical Placement

The mid/high horn should be mounted approx. $\frac{2}{3}$ of the total screen height when the screen is masked for the tallest film format. For optimum HF transmission the MF/HF horn should be placed 100mm (4") from the perforated screen.



8.2 Horizontal Spacing

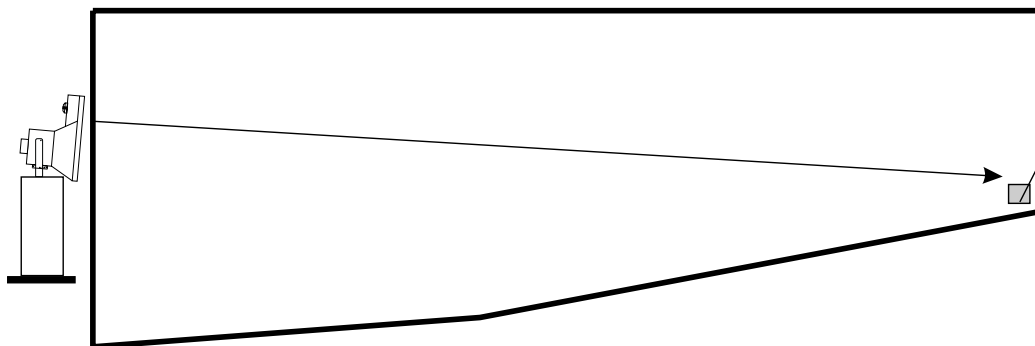
For a 3-channel (L,C,R) system, L and R speaker channels should be placed equidistant from centre of the screen image area, so that they are just inside the screen area when screen is masked for the widest format (typically 2.35:1). Acoustically transparent side masking should be used to prevent blocking of HF when side masking is moved in for "flat" picture format. For 5-channel systems, Left-extra and Right-extra should be placed equidistant between Left and Centre, and Right and Centre.



8.3 Horn Aiming

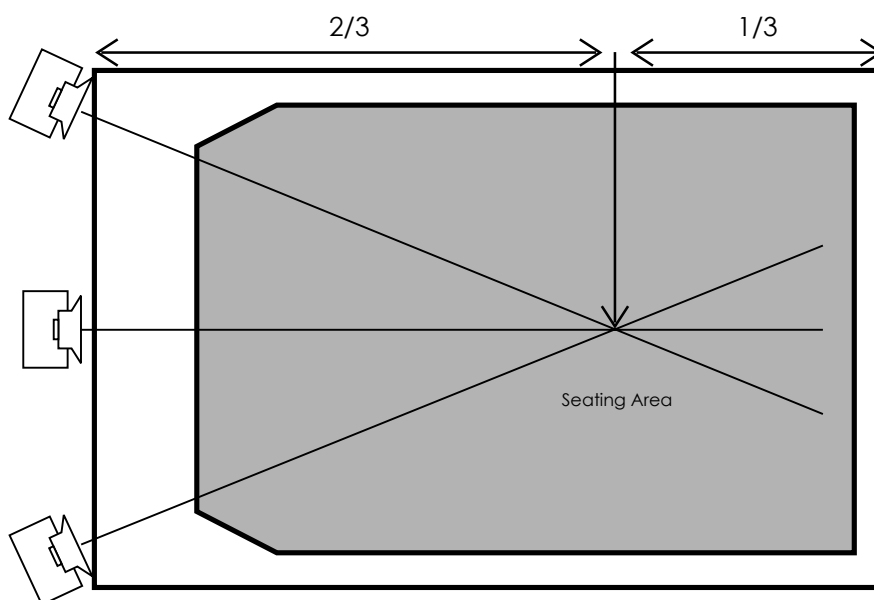
8.3.1 Vertical Plane

In typical cinemas, best coverage is usually attained by aiming the high frequency horn at the last row of seats. In more steeply raked "stadium" style theatres, the horns may not require any tilt at all; in these cases, care should be taken to minimise acoustically reflective surfaces in the rear wall and ceiling surfaces.



8.3.2 Horizontal Plane

All screen speakers should be aimed to converge at a point about $\frac{2}{3}$ of the length of the room.



9 WARRANTY

Martin Audio Cinema Series products are warranted against manufacturing defects in materials or craftsmanship over a period of 5 years from the date of original purchase. During the warranty period Martin Audio will, at its discretion, either repair or replace products which prove to be defective provided that the product is returned in its original packaging, shipping prepaid, to an authorised Martin Audio service agent or distributor.

Martin Audio Ltd. cannot be held responsible for defects caused by unauthorised modifications, improper use, negligence, exposure to inclement weather conditions, act of God or accident, or any use of this product that is not in accordance with the instructions provided by Martin Audio.

Martin Audio is not liable for consequential damages.

This warranty is exclusive and no other warranty is expressed or implied.

This warranty does not affect your statutory rights.

10 TECHNICAL SPECIFICATIONS

SCREEN 2

DRIVERS	1 x 15" (380mm) low frequency 1 x 1" (25mm) exit HF compression driver
FREQUENCY RESPONSE	45Hz-20kHz $\pm$ 3dB
RATED POWER	LF: 550W AES, 2200W peak HF: 60W AES, 240W peak
SENSITIVITY	LF: 98dB 1 Watt/1 metre HF: 110dB 1 Watt/1 metre
CROSSOVER	1.2kHz
IMPEDANCE	LF: 8 ohms HF: 8 ohms
DISPERSION	90 degs horizontal x 90 degs vertical
DIMENSIONS	LF: (W) 650mm x (H) 765mm x (D) 307mm (W) 25.6ins x (H) 30.1ins x (D) 12.8ins HF: (W) 285mm x (H) 344mm x (D) 185mm (W) 11ins x (H) 13.4ins x (D) 7.1ins
WEIGHT	LF: 39kg (86lbs) HF: 4.5kg (9.9lbs)
SHIPPING DIMENSIONS	(W) 700mm x (H) 1000mm x (D) 350mm (W) 27.6ins x (H) 39.4ins x (D) 13.7ins
SHIPPING WEIGHT	47kg (103.6lbs)

SCREEN 4

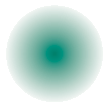
DRIVERS	2 x 15" (380mm) low frequency 1 x 6.5" (165mm) mid horn 1 x 1" (25mm) HF compression driver
FREQUENCY RESPONSE	45Hz-20Hz ± 3dB
RATED POWER	LF: 800 AES, 3200W peak MF/HF: 150W AES, 600W peak
SENSITIVITY	LF: 100dB 1 Watt/1 metre MF/HF: 106dB 1 Watt/1 metre
CROSSOVER	630Hz (active or passive), 3kHz passive
IMPEDANCE	LF: 4 ohms MF/HF: 16 ohms
DISPERSION	90 degs horizontal x 40 degs vertical
DIMENSIONS	LF: (W) 670mm x (H) 1010mm x (D) 470mm (W) 26.4ins x (H) 39.8ins x (D) 18.5ins MF/HF: (W) 490mm x (H) 385mm x (D) 290mm (W) 19.3ins x (H) 15.2ins x (D) 11.4ins
WEIGHT	LF: 61kg (134.5lbs) MF/HF: 9kg (19.8lbs)
SHIPPING DIMENSIONS	LF: (W) 670mm x (H) 1030mm x (D) 490mm (W) 26.4ins x (H) 40.6ins x (D) 19.3ins MF/HF: (W) 610mm x (H) 520mm x (D) 380mm (W) 24ins x (H) 20.5ins x (D) 15ins
SHIPPING WEIGHT	LF: 70kg (154.3lbs) MF/HF: 9kg (19.8lbs)

SCREEN 5

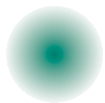
DRIVERS	2 x 15" (380mm) low frequency 1 x 6.5" (165mm) mid horn 1 x 1" (25mm) HF compression driver
FREQUENCY RESPONSE	45Hz-20Hz $\pm$ 3dB
RATED POWER	LF: 800 AES, 3200W peak MF/(HF): 150W AES, 600W peak HF: 60W AES, 240W peak
SENSITIVITY	LF: 100dB 1 Watt/1 metre MF/(HF): 106dB 1 Watt/1 metre HF: 110dB 1 Watt/1 metre
CROSSOVER	420Hz active, 2kHz active or passive
IMPEDANCE	LF: 4 ohms MF/HF: 8 ohms HF: 8 ohms
DISPERSION	90 degs horizontal x 50 degs vertical
DIMENSIONS	LF: (W) 670mm x (H) 1010mm x (D) 470mm (W) 26.4ins x (H) 39.8ins x (D) 18.5ins MF/HF: (W) 720mm x (H) 885mm x (D) 610mm (W) 28.3ins x (H) 34.8ins x (D) 24ins
WEIGHT	LF: 61kg (134.5lbs) MF/HF: 18kg (39.6lbs)
SHIPPING DIMENSIONS	LF: (W) 670mm x (H) 1030mm x (D) 490mm (W) 26.4ins x (H) 40.6ins x (D) 19.3ins MF/HF: (W) 1000mm x (H) 750mm x (D) 840mm (W) 39.4ins x (H) 29.5ins x (D) 33ins
SHIPPING WEIGHT	LF: 61kg (134.5lbs) MF/HF: 18kg (39.7lbs)

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Cinema Series Screen 2/4/5



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User's Guide



ENGLISH



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