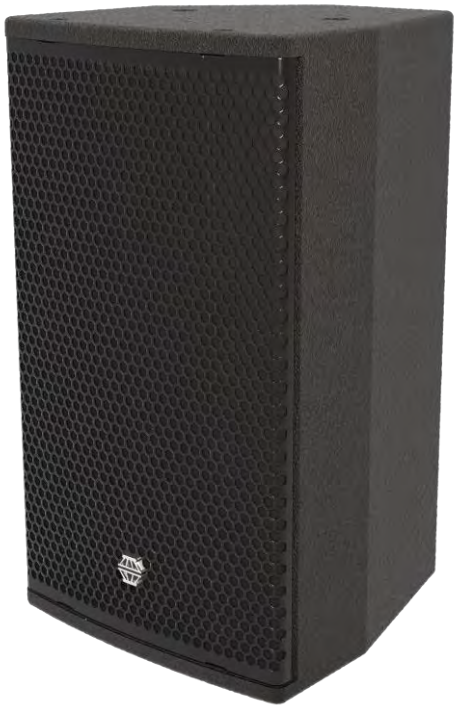


EMS-101X

compact two-way passive fill loudspeaker

Product User Manual
v2 November 2019

EM ACOUSTICS

LOUDSPEAKERS REDEFINED

Contents

DECLARATION OF CONFORMITY

The products contained within this manual conform to the requirements of the EMC Directive 89/336/EEC, amended by 92/31/EEC and to the requirements of the Low Voltage Directive 73/23/EEC amended by 93/68/EEC.

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

RECYCLING

This product and its packaging constitute the applicable product according to the WEEE directive. Please ensure that at the end of the working life of this product, it is disposed of sensibly in accordance with local and national recycling regulations. The packaging supplied with this product is recyclable. Please retain all packaging, however if disposing of this packaging please ensure that you comply with local recycling regulations. These products also all comply to the RoHS Directive 2002/95/EC.

1.0 - Introduction

Thank you for purchasing the highly acclaimed EMS-101X from EM Acoustics. This product has been designed and rigorously tested to give you the utmost in sonic performance and many years of reliable, trouble-free operation. Please take the time to read this user manual thoroughly to ensure you get the best performance from your system and to ensure you set it up correctly and safely. If you have any questions or are in any doubt whatsoever about any aspect of your new product, please do not hesitate to contact us directly or your local EM Acoustics representative.

The EMS-101X is a compact 2-way loudspeaker, intended for a wide variety of discreet applications - from theatrical fills and delays through to corporate A/V and speech reinforcement. The compact enclosure houses a 10" neodymium LF drive unit and a 1" exit HF compression drive unit coupled to a rotatable 90° x 60° constant coverage waveguide, along with an extremely comprehensive passive crossover network. This means the EMS-101X exhibits flat frequency and phase responses without the need of external corrective processing.

This manual contains all the information you should need on topics of set up, amplifier connection and basic service. If you feel we have missed anything, or you have a question not covered by this manual, please visit our website www.emacoustics.co.uk and send us a message or give us a call – we're only too happy to help.

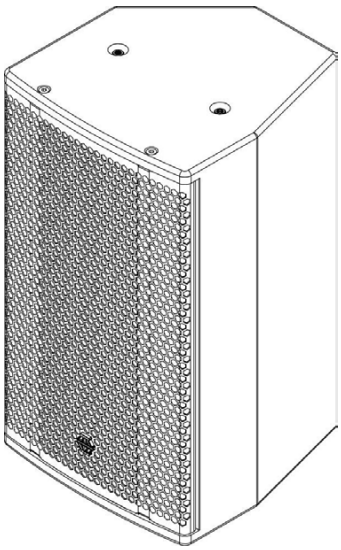
Unpacking

Please take care when unpacking your loudspeaker system. Once unpacked, please inspect each enclosure thoroughly for any transit damage and in the case of any damage please notify your carrier immediately. It is the responsibility of you, the consignee, to instigate any claim. Please retain all original packaging in case of future re-shipment.

2.0 - EMS-101X & Accessories

EMS-101X

Compact passive loudspeaker



FEATURES & BENEFITS

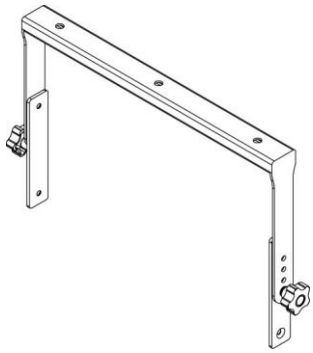
- Signature EM Acoustics "maximum headroom" design approach ensures consistency of performance regardless of SPL level.
- Multiple M8 threaded flying points for temporary and permanent installation.
- Enclosure coated with 3-step polyurethane process - ensuring the cabinets are not only weather resistant but more resilient to impact damage.
- Various rigging accessories available.
- Multi-angle enclosure allows use as a monitor as well as FOH.
- Connections on NL4.
- Single amplifier channel required.

KEY SPECIFICATIONS

ENCLOSURE TYPE:	2-way passive, reflex loaded
DRIVE UNITS:	LF: 10" / HF: 1"
FREQUENCY RESPONSE:	70Hz - 20kHz +/-3dB
NOMINAL DISPERSION1:	90° x 60° rotatable
MAXIMUM SPL:	124dB continuous, 130dB peak
NOMINAL IMPEDANCE:	8 ohms
DIMENSIONS (HxWxD):	510 (20.1) x 289 (11.4) x 300 (11.8) mm/(ins)
NET/SHIPPING WEIGHT:	16/19kg (35/42lbs)

FC-101Xh

Horizontal mounting yoke



The FC-101Xh is a simple and effective means of mounting the EMS-101X in both temporary and permanent applications.

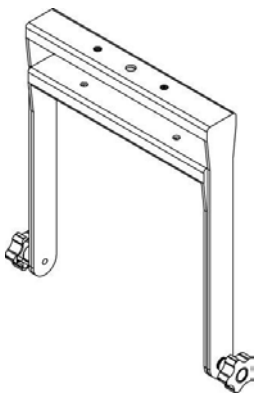
It is secured to the cabinet by means of M8 countersunk bolts into the top and bottom of the loudspeaker to mount it in a landscape format. Multiple 13mm diameter holes are provided for attachment in installation or via a hook clamp or similar.

The FC-101Xh is designed to support one single EMS-101X loudspeaker.

Weight (including fixings) 2.9kg / 6.4lbs

FC-101Xv

Vertical mounting yoke



The FC-101Xv is a simple and effective means of mounting the EMS-101X in both temporary and permanent applications.

It is secured to the cabinet by means of M8 socket head bolts into the top of the loudspeaker to mount it in a portrait format. A single 13mm diameter hole is provided at the top of the cradle for attachment either in installations or via a hook clamp or similar. Two M10 threaded fittings are provided in the top to allow the attachment of a pole adapter, to fit the cradle to a loudspeaker stand.

The FC-101Xv is designed to support one single EMS-101X loudspeaker.

Weight (including fixings) 3.8kg / 8.4lbs

2.1 - Rotating the HF waveguide

The high frequency waveguide of the EMS-101X can be easily rotated to provide appropriate dispersion in both portrait and landscape formats.

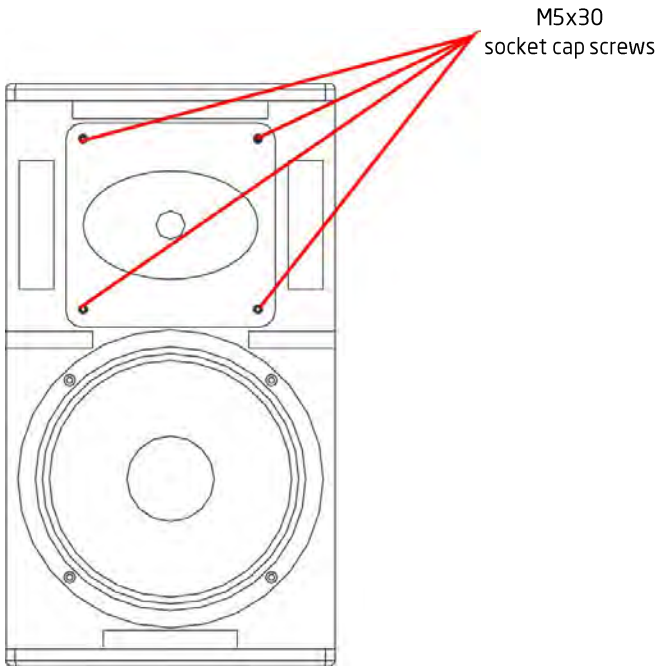
By default, the EMS-101X ships from the factory with the dispersion pattern 90° horizontal x 60° vertical when the loudspeaker is in a portrait format.

To rotate the waveguide:

1. Follow step 1 in the servicing chapter (Chapter 7) to remove the grille.
2. Using a 3mm Allen key, remove the four M5x30 socket cap screws that secure the drive unit. Ensure that you collect both the spring washers and the flat washers as well as the machine screws.
3. Lift the waveguide up from the enclosure to rotate through 90 degrees to the desired orientation - the label on the waveguide describes the orientation.

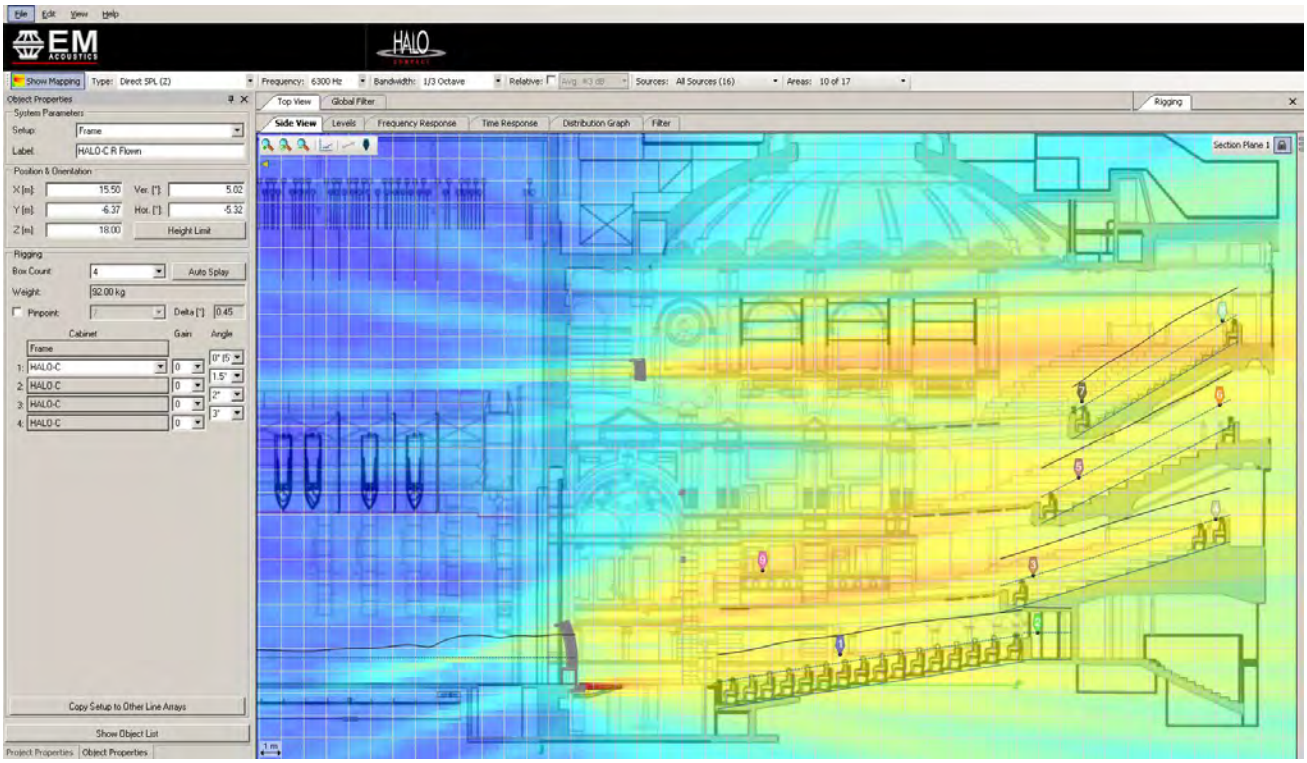
   IMPORTANT NOTE - BE AWARE OF THE CABLE BECOMING TWISTED WITH REGULAR ROTATION. IT IS ALWAYS ADVISABLE TO LIFE THE HF ASSEMBLY OUT AND ENSURE THE CABLE IS NOT OVER-TWISTED.
4. Once in the correct orientation, replace the M5x30 socket cap screws and retighten.
5. Replace the grille.

NOTE: Be careful not to over rotate the Waveguide in one particular direction to avoid over tensioning the cables.



3.0 – Simulation

Ease Focus 3



For acoustic reasons it is advised that users familiarize themselves with Ease Focus 3 – this system provides the user with accurate simulations for setting up EMS-101X loudspeakers.

Ease Focus 3 can be downloaded for free from the AFMG website at http://focus.afmg.eu and is currently available as a stand-alone application for Windows (XP or Higher) only. It can also be downloaded directly from the EM Acoustics website with all the current product files embedded.

Tutorials for Ease Focus 3 are available from with the application itself.

For training on the design and implementation of EMS-101X loudspeakers including the specific use of Ease Focus 3, please contact your local distributor.

4.0 - Safety Considerations

General Considerations in use

Loudspeaker systems are potentially dangerous objects if used incorrectly. Please ensure that you read this section fully, and contact EM Acoustics or your local dealer should you be in any doubt over correct operation procedures.

Personal Injury

Never stand in the immediate vicinity of loudspeakers when in use at high level. Professional loudspeaker systems are capable of producing sound pressure levels which can cause permanent damage to human hearing. Levels in excess of 90dB can cause hearing damage if people are exposed to them over a long period of time, so care and attention must be used for both staff and audience members.

When deploying loudspeaker systems on the ground or when flown, please take careful note of the following important safety considerations:

- Only use accessories and flying hardware supplied or approved by EM Acoustics for flying or transporting loudspeaker systems. Pay close attention to specific instructions, especially those considering maximum load capabilities as detailed in the appropriate user manuals or on the legend labels on the accessories themselves.
- Ensure all additional accessories, fasteners and secondary safeties are of an appropriate size, working load limit and safety factor.
- All loudspeakers and accessories should be regularly inspected for signs of wear and tear, and any damaged parts should be replaced.
- All load bearing parts and assembly bolts on accessories should be regularly checked to ensure they are tight and not worn.

Stand Mounting

When mounting loudspeakers on a stand, please take note of the following important considerations:

- Ensure your stand height is locked off and the tripod legs are positioned so as to be stable.
- Check the weight loading of your stands before attempting to mount the loudspeaker.
- Do not stack a second loudspeaker on top of the stand-mounted one.
- Ensure cables are run so as to leave enough slack to enable neat wiring, and thus reduce the risk of the speaker being pulled over. Loose cables should be covered or taped down wherever possible to reduce trip hazards.
- If stands are being used outdoors, it may be necessary to add ballast to the base of the stand to prevent it toppling over.
- When using poles on top of subwoofer systems, please observe similar precautions.

Ground Stacking

- Ensure that the floor or stage surface can withstand the weight of the system.
- Wherever possible, avoid high stacks and use ratchet straps to secure loudspeakers together. Please also remember that vibrations from subwoofer systems can shake other loudspeakers out of place, which may present a toppling hazard. The use of ratchet straps and non-slip material is recommended to prevent this.

Rigging and Suspension

Please see Chapter 5 for further information on the detailed rigging options for your loudspeaker system.

WARNING: The overhead suspension of loudspeakers is a very serious issue with potentially lethal consequences should anything go wrong. Rigging should only be carried out by experienced personnel following safe working practice. Should you be in any doubt whatsoever, please contact your local dealer who will be able to refer you to a suitable rigging company.

To ensure the highest standards of safety, the following information on array assembly must be exactly followed and understood.

Only use EM Acoustics recommended rigging hardware and accessories, which are specifically designed for the purpose. Do not use these accessories for any other loudspeaker system – the components are specifically designed to work with this product and are not interchangeable with any other EM Acoustics loudspeaker product (unless where specifically stated) or any other loudspeaker system. The use of EM Acoustics accessories with other manufacturers' systems may compromise the safety standards and EM Acoustics is in no way liable for any loss, damage or injury caused by such practice.

Do not modify or alter the EMS-101X loudspeaker or accessories, nor use them in any way other than that described in this manual. Rigging components supplied with the EMS-101X are in no way interchangeable and should not be used as such.

The component parts of the EMS-101X and its accessories should only be assembled in the manner described in this manual, using the fasteners and fixings stated herein. The use of fasteners and methods of assembly not described in this manual may result in an unsafe assembly and as such EM Acoustics will not be responsible for any loss, damage or injury caused by such practice. Welding, drilling or any other means of modifying any part of the flying hardware or permanently fixing components to each other is strictly forbidden.

Rigging assemblies must only be assembled using the appropriate parts and fixings as described in this manual, explicitly following the assembly instructions given herein. Rigging components must only be fixed to the EMS-101X loudspeaker, using the correct cabinet location points, assembly methods and fasteners specifically described within this manual.

Walls, floors and ceilings must be capable of supporting the actual load placed upon them. The rigging hardware must be safely and securely fixed to both the loudspeaker system and the supporting structure.

Secondary Safeties

It is imperative that all loudspeakers flown in any given environment should be provided with a second, independent and properly rated safety suspension point in addition to the principle load bearing means of suspension. Steel wire ropes or steel chains of an approved construction and load rating only may be used as secondary safeties. Plastic covered steel chains may not be used as secondary safeties under any circumstances. Also ensure that all local and national laws are complied with when determining your primary and secondary suspension points.

Safety Inspections

Carefully inspect all flying system components prior to use for defects or signs of damage prior to installing or mounting your loudspeaker. If any components damaged or **you suspect them to be damaged, DO NOT USE THEM.**

Regular scheduled tests – which are much more rigorous than visual inspections – of all rigging components must also be carried out. Safety legislation, and test/inspection requirements, will vary from country to country and as such it is the user's responsibility to ensure that local regulations are adhered to. In most cases, annual independent tests & inspections carried out by a suitably approved and qualified inspector will be required.

EM Acoustics recommends detailed logbooks be kept of all inspections and load tests to ensure an accurate record is kept of the testing for each EM Acoustics rigging accessory.

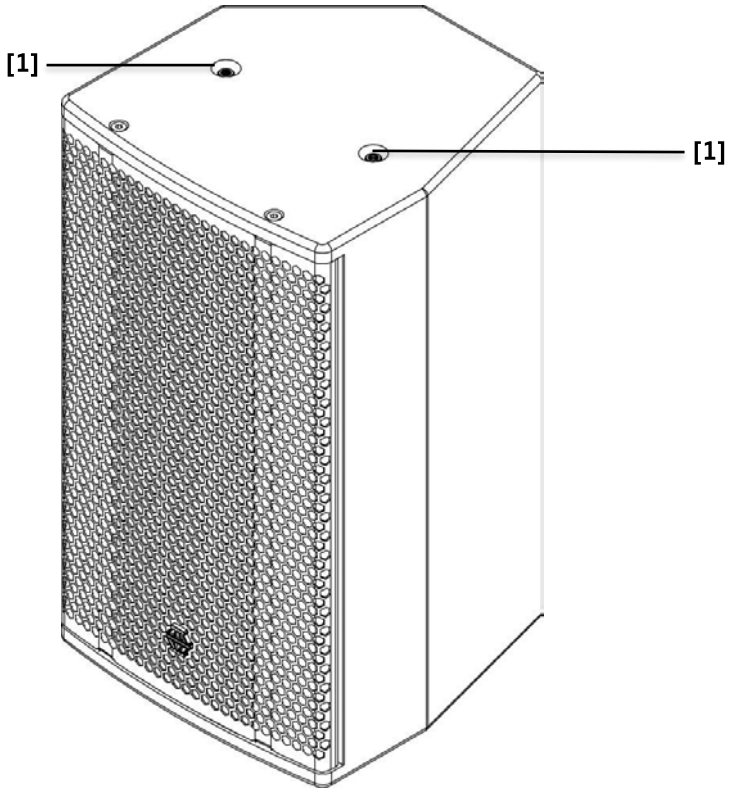
When flying any loudspeaker system, always wear protective headwear, footwear and eye protection in accordance with local regulations.

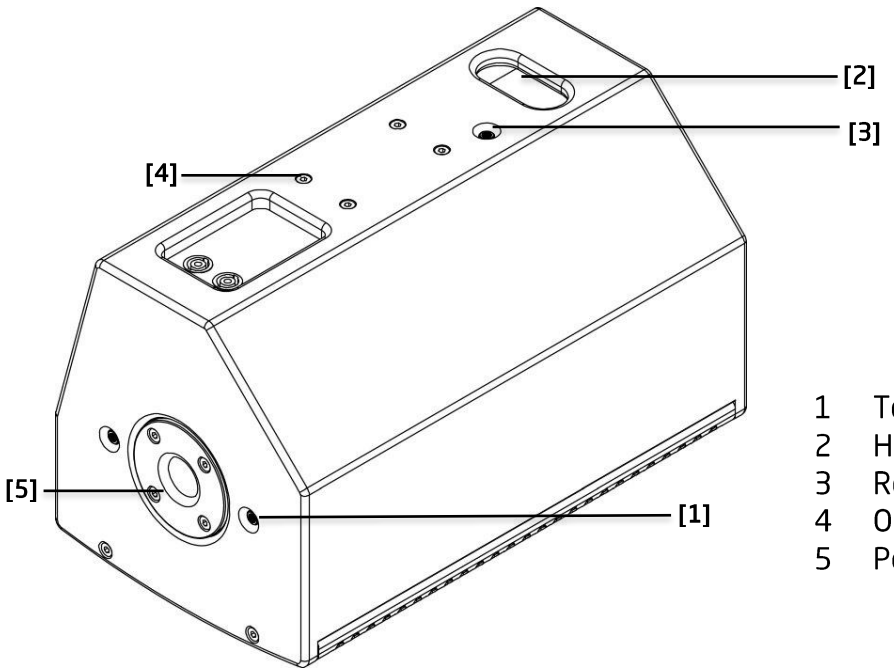
Material Damage from Magnetism

Loudspeakers produce a static magnetic field at all times – even when not in use. Certain devices are susceptible to external magnetism, and as such a safe distance should be maintained to prevent damage. It is recommended that a safe distance of 0.5m (1.5ft) is maintained from loudspeakers when stored, transported and in use, from devices such as computer hard drives, magnetic media, bank cards to remove the risk of corruption. Larger distances may be required for some older cathode ray tube displays.

5.0 - Rigging & Mounting Options

5.1 - EMS-101X Cabinet Overview

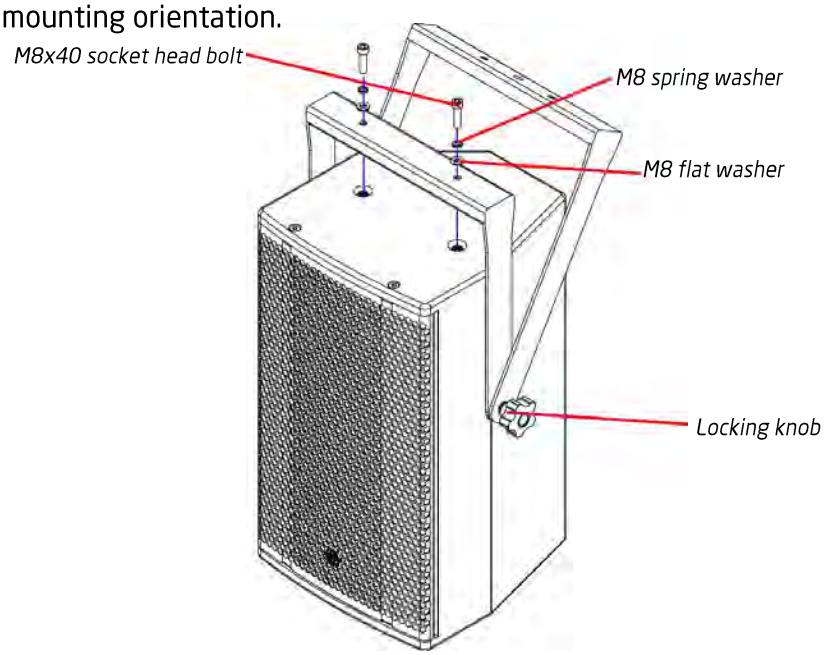




1 Top/Bottom M8 mounting point
2 Handle
3 Rear M8 safety point
4 Omnimount/Powerdrive attachment point
5 Polemount

5.2 - Using the FC-101Xv

The FC-101Xv is intended to mount the EMS-101X vertically - either using a hook clamp or similar from above, or a pole mount adapter to mount on a stand yet allowing enclosure tilt. The procedure for attaching the FC-101Xv to the loudspeaker is the same regardless of the mounting orientation.

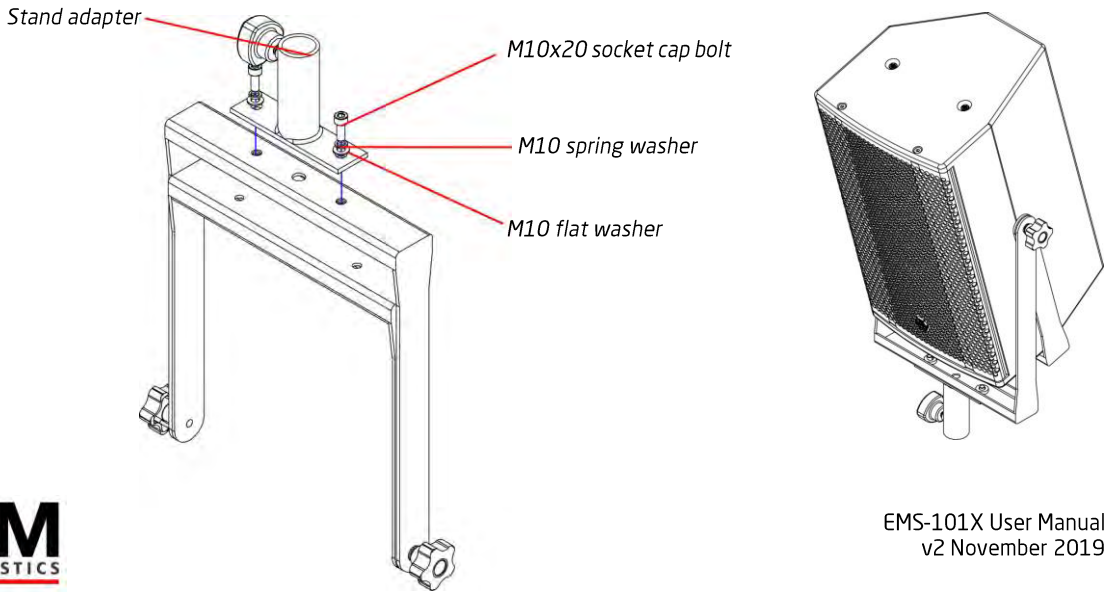


Loosen the locking knobs so that the outer yoke can be rotated relative to the inner yoke, which allows access to the mounting points. Line the yoke up, and using a 6mm Allen key, secure the yoke to the EMS-101X using M8x40 socket head machine screws, with flat and spring washers. Ensure the inner yoke is secure. The tilt angle can then be set with the locking knob.

5.3 - Fitting a pole adapter to the FC-101Xv

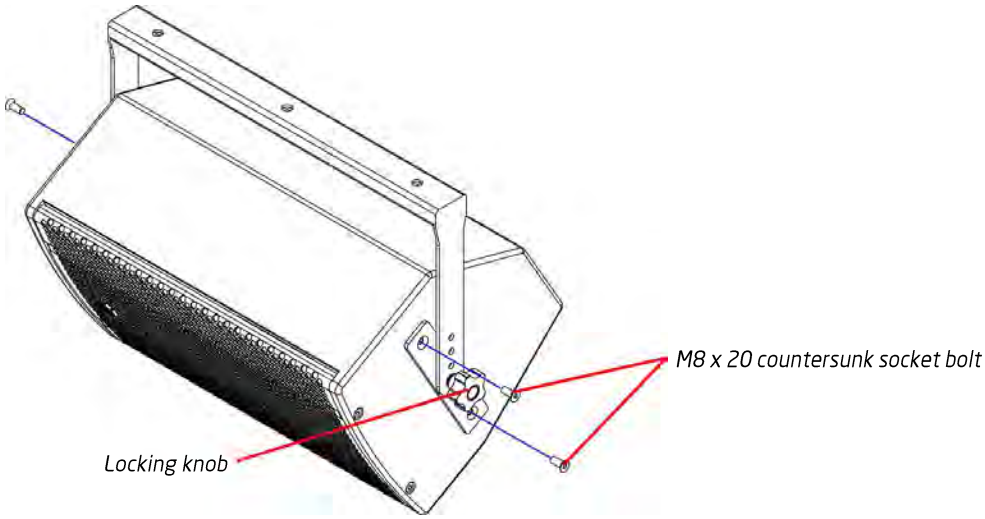
The FC-101Xv has two M10 threaded fittings in the top of the outer yoke, intended to attach a pole mount adapter such as a K&M 24281. This allows the EMS-101X to be mounted on a loudspeaker stand yet still have the option of up or down-tilt.

To fit, simply bolt the adapter to the outer yoke as shown below, and then fit to a stand as normal.



5.4 - Using the FC-101Xh

The FC-101Xh is intended to mount the EMS-101X horizontally. To fit, lie the EMS-101X on its side and loosen the locking knobs so that the mounting plates can be rotated to allow access to the countersunk bolt holes. Line the flying cradle up with the mounting holes and secure to the EMS-101X with M8x20 countersunk socket bolts.

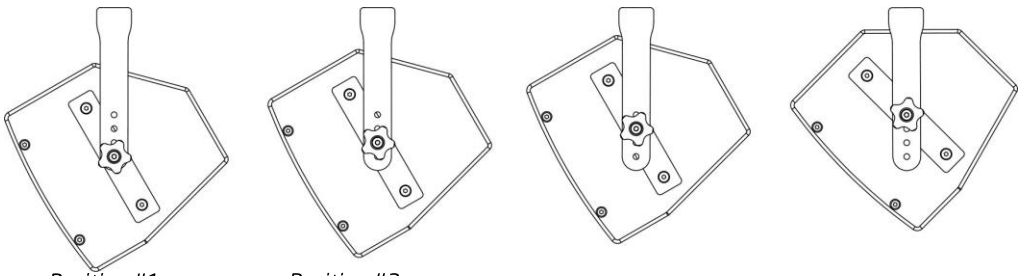


Ensure that all four bolts are properly tightened. Tighten the knobs on both sides to lock the desired angle for the EMS-101X.

Always ensure that a secondary safety is used when suspending any loudspeaker.

5.4.1 - Drop height adjustment on the FC-101Xh

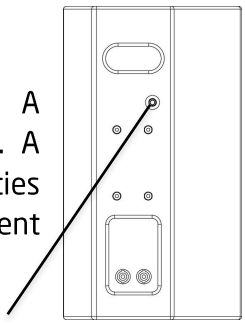
Different location holes for the mounts to pivot in are provided on the FC-101Xh mounting yoke. Position 1 (closest to the end of the yoke arms) allows full 360° rotation of the loudspeaker, and positions 2-4 offer a closer fit to the yoke, but with reduced rotational ability of the loudspeaker itself.



Position #1 *Position #2* *Position #3* *Position #4*

5.5 - Safety Point

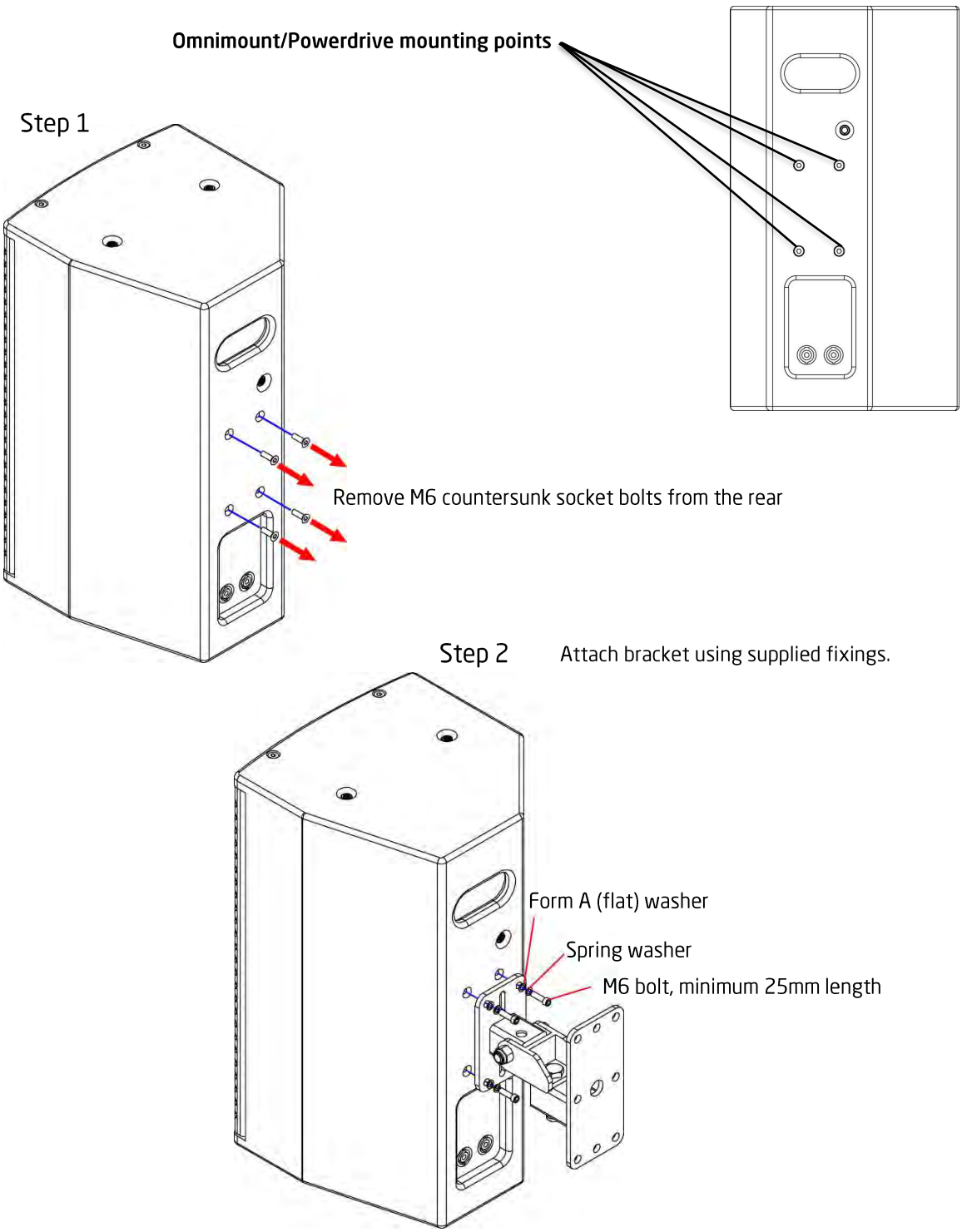
Any flown loudspeaker must always have a secondary safety fitted. A single M8 threaded point is provided on the rear face of the EMS-101X. A simple M8 forged shoulder eyebolt can be screwed into this point. Safeties should always be arranged so that the loudspeaker cannot drop in the event of a primary attachment point failing.



5.6 - Using Powerdrive or Omnimount fittings

EMS-101X loudspeakers are compatible with Powerdrive Series 75 or Omnimount Series 30 installation brackets.

Using a 4mm Allen key, remove the four M6 countersunk socket head bolts on the rear of the EMS-101X. The mounting bracket can then be attached using the bolts supplied with the bracket - they must be M6 thread, minimum 25mm in length. Ensure flat washers are in contact with the bracket, and the spring washer is in between the bolt head and the flat washer.



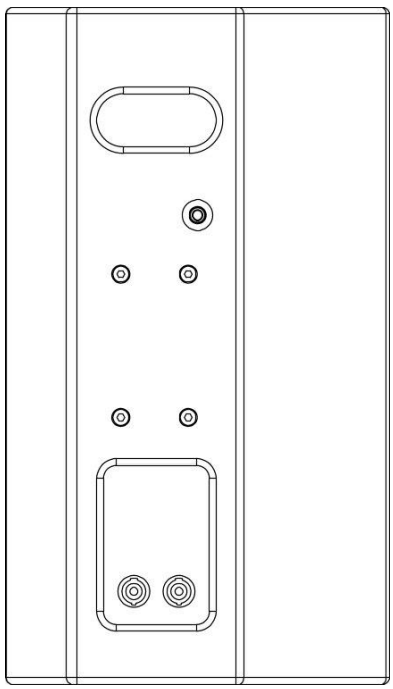
6.0 – Powering the System

The EMS-101X can be powered from any amplifier & DSP combinations with the relevant high & low pass filter, and limiter settings. However, due to the self-contained nature of the package, the use of DQ Series advanced system amplifiers is highly recommended. The use of DQ Series amplifiers provides a neat and flexible system that will encompass all requirements for the system to function correctly, as well as providing user control for room EQ and system alignment.

6.1 - Amplifier and Processing Requirements

6.1.1 - Connections

The EMS-101X requires only a single amplifier channel. Inputs to the EMS-101X enclosure are on Neutrik SpeakON NL4 as illustrated below.



Two-core cable should be used for connecting EMS-101X loudspeakers, and the connections are as follows:

SpeakON connection	1+	1-	2+	2-
Drive unit connection	LF +	LF -	Link Through	Link Through

6.1.3 - Amplifier Requirements

The EMS-101X is a highly efficient loudspeaker, however appropriate available power is critical to ensure full system headroom. It is good practice to ensure that your amplifier can deliver at least double the RMS power handling of the loudspeaker to ensure full headroom, and as such the amplifier requirement is:

Product	RMS Power Handling	Recommended Min. Amplifier Power
EMS-101X	400W @ 8 ohms	800W @ 8 ohms

A loudspeaker is far more likely to be damaged by an under-powered amplifier working too hard, than an over-powered amplifier working well within its limits.

All of the DQ Series advanced system amplifiers can be used to power the EMS-101X.

The following table shows the maximum number of EMS-101X that can be connected per channel on the various different amplifiers:

Amplifier	Max EMS-101X per channel
DQ6	2
DQ10	3
DQ20	4

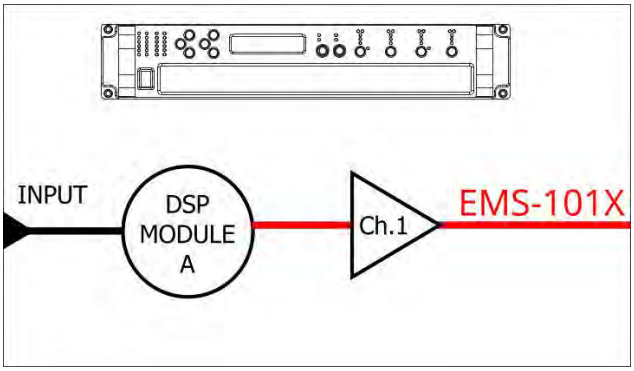
6.1.4 - Processing Requirements

Whilst the EMS-101X is a passive loudspeaker and therefore requires no corrective processing, in all but the lowest SPL applications it does require an active high pass filter and appropriate limiter settings to avoid damage. If not using DQ Series amplifiers, or the DSC48 Digital System Controller, then a suitable DSP system must be used in conjunction with your EMS-101X to prevent damage to the loudspeaker. Check the EM Acoustics website for the most up-to-date DSP settings for the EMS-101X.

6.2 - Presets and Settings

6.2.1 – Standard EMS-101X Preset

When used with a DQ Series amplifier EMS-101X loudspeakers require only a single amplifier channel, and as such the preset recalled will only require one output from your DQ Series amplifier.



6.2.2 - Geometric Delay

Appropriate delay will need to be applied to account for physical location differences between different elements of your system – for example time-aligning subwoofers to the main system. The use of SMAART or similar can make this task a great deal simpler and faster.

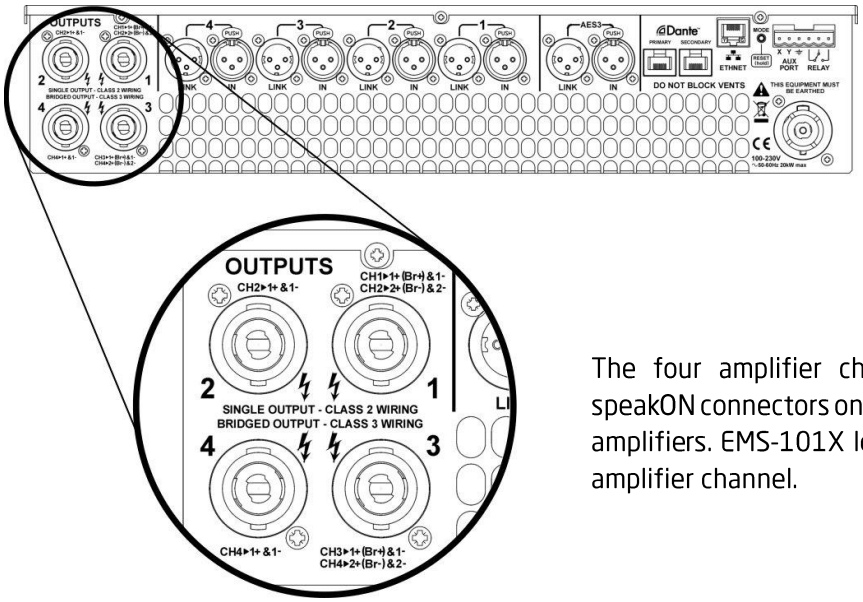
6.2.3 - Applying EQ

The presets are intended to be a starting point for your system and will almost certainly require tuning on-site dependent on room characteristics, the rest of your system design and the system voicing you are aiming for. The EMS-101X is designed with a significant amount of system headroom, so applying EQ is perfectly acceptable within sensible limits.

6.3 - Use with the DQ Series Advanced System Amplifiers

The EMS-101X will perform best when using DQ Series advanced system amplifiers, as not only are they state-of-the-art amplifiers, but the onboard DSP provides appropriate high/low pass filter settings and limiters to get the best from your subwoofers. Please refer to the DQ Series User Manual for detailed information on using the amplifiers and the System Engineer software.

6.3.1 - Connections



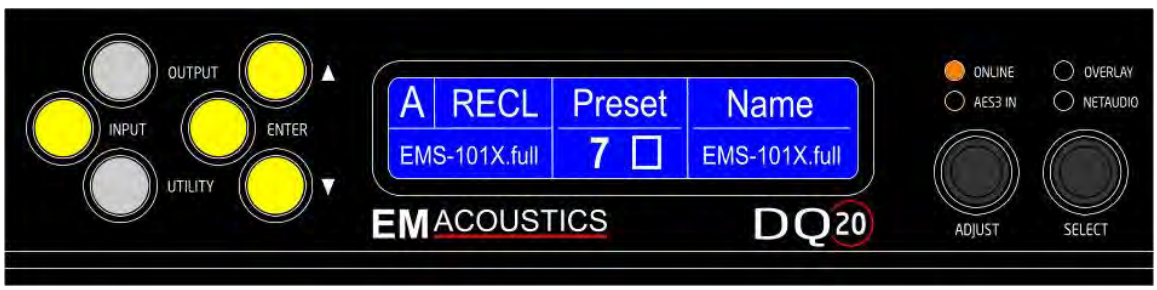
The four amplifier channels appear on four speakON connectors on the rear of the DQ Series amplifiers. EMS-101X loudspeakers require one amplifier channel.

6.3.2 - Preset Recall

The EMS-101X preset is pre-installed on the DQ amplifiers, and as such can be used following the normal preset recall procedure. The presets available are:

EMS-101X.full Standard EMS-101X preset

As mentioned above, these presets are intended to be a starting point and additional work may be required depending on the venue, the style of content and the end result you are looking for.



6.4 - System Connectivity

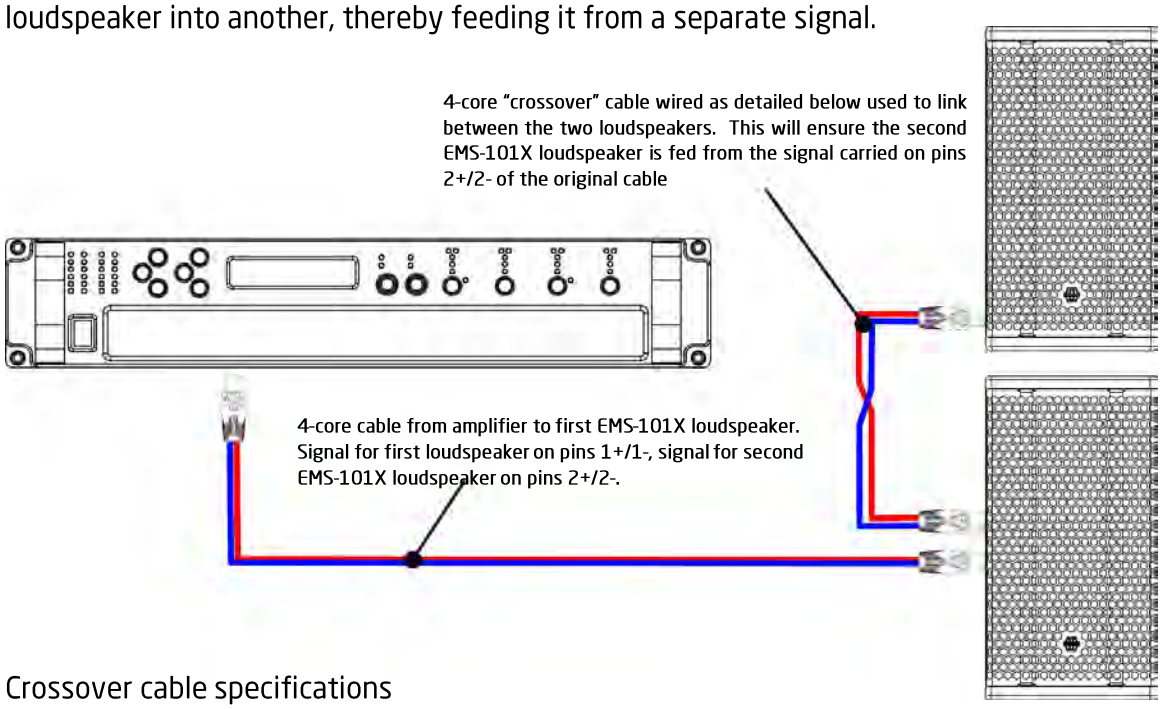
6.4.1 - Cable Length and Specification

All cables add to the system impedance, and as such careful selection is required depending on your amplifier setup and overall system impedance. Cables with a cross sectional area of less than 2.5mm² should not be used. Recommended maximum cable lengths are given below:

Conductor Area	Maximum Recommended Cable Length		
	2 ohms	4 ohms	8 ohms
2.5mm² (14 AWG)	15m	30m	60m
4.0mm² (12 AWG)	20m	40m	80m
6.0mm² (10 AWG)	30m	60m	120m

6.4.2 – Crossover Cable Use

The use of a pin-swap or "crossover" cable can allow for neater cable solutions when sending different amplifier signals to the same location. Because pins 2+/2- are linked through inside all EM Acoustics loudspeakers, using a 4-core cable to one loudspeaker (carrying two different signals) allows a crossover cable to be used to link out of the first loudspeaker into another, thereby feeding it from a separate signal.



Crossover cable specifications

Connector A Pin	Connector B Pin
1+	2+
1-	2-
2+	1+
2-	1-

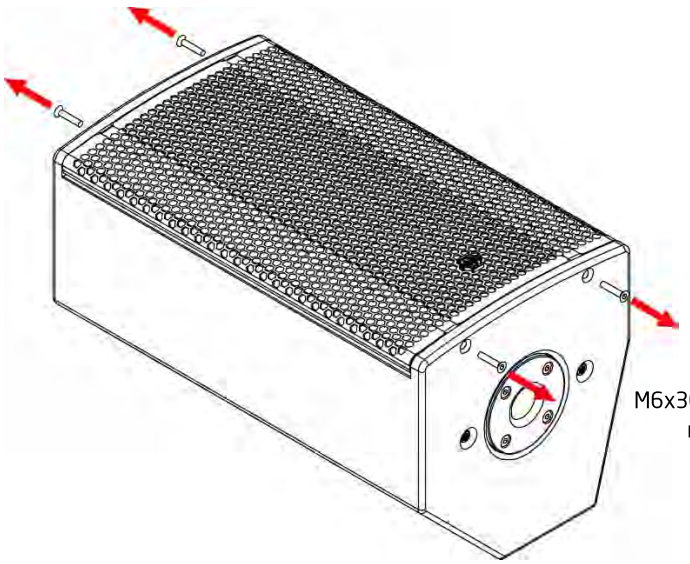
7.0 - Servicing Information

All EMS-101X components can be removed for service purposes if required, using the minimum of tools.

7.1 - EMS-101X: Removing the grille

TOOLS REQUIRED: 4mm Allen key

1. Lie the enclosure on its' back and remove the two M6x30 countersunk socket screws from each end using a 4mm Allen key, and then lift the grille clear of the cabinet.

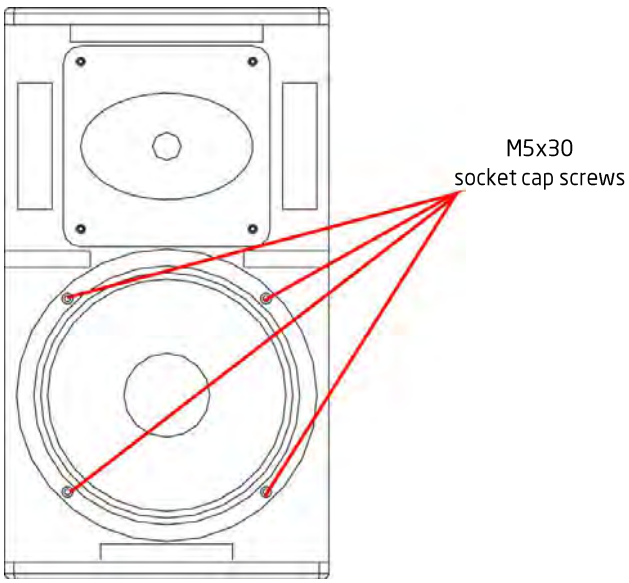


2. To replace the grille, position the grille on the front of the EMS-101X and ensure the threaded fittings on the grille are lined up with the mounting holes - gentle pressure may be required. Replace all of the M6x30 countersunk socket screws and ensure they are all are started in their threads before beginning to tighten. Ensure they are all tightened evenly so that the grille sits straight and does not rattle. Be careful not to over-tighten as this will distort the grille.

7.2 - EMS-101X: Removing the LF drive unit

TOOLS REQUIRED: 4mm Allen key

1. Complete step 7.1 above to remove the grille.
2. Using a 4mm Allen key, remove the four M5x30 socket cap screws that secure the drive unit. Ensure that you collect both the spring washers and the flat washers as well as the machine screws.



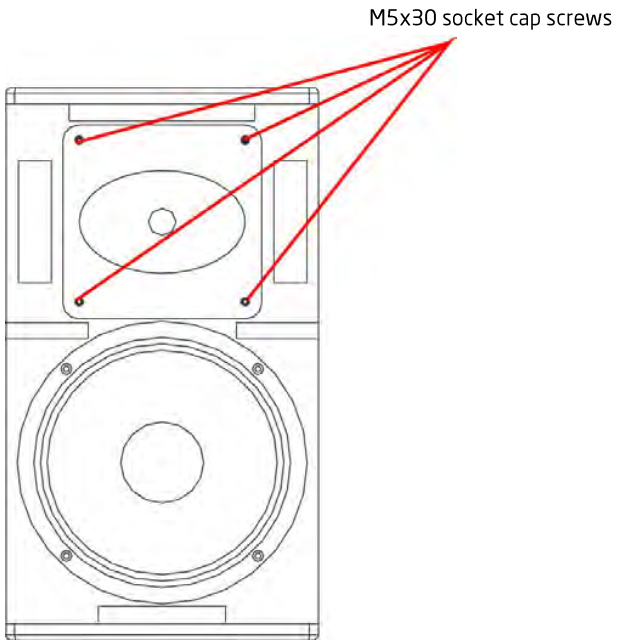
3. Lift the drive unit clear of the mounting hole and disconnect the cables - note the polarity for reconnection (brown to LF positive, blue to LF negative).
4. To replace the drive unit, ensure the 10" gasket is intact and complete - replace if necessary. Reconnect the cables to the drive unit (note the polarity detailed above) and then sit the drive unit into its mounting location, ensuring that the mounting holes line up.
5. Replace the M5x30 socket cap machine screws with their spring washers and flat washers and ensure all machine screws are started in their threads before tightening. Tighten opposing bolts, working around the drive unit until all bolts are appropriately tightened. Be careful not to overtighten as this will distort the drive unit chassis.
6. Replace the grille as described above.

7.3 - EMS-101X: Removing the HF drive unit

TOOLS REQUIRED: 4mm Allen key

1. Complete step 7.1 above to remove the grille.

2. Using a 4mm Allen key, remove the four M5x30 socket cap screws that secure the drive unit. Ensure that you collect both the spring washers and the flat washers as well as the machine screws.



3. Lift the drive unit clear of the baffle and disconnect the cables - note the polarity for reconnection (white to positive, yellow to negative).

4. To replace the drive unit, ensure the gasket is intact and complete - replace if necessary. Reconnect the cables to the drive unit (note the polarity detailed above) and then sit the drive unit into its mounting hole, ensuring that the holes line up.

5. Replace the M5x30 socket cap machine screws with their spring washers and flat washers and ensure all machine screws are started in their threads before tightening. Tighten opposing bolts, working around the drive unit until all bolts are appropriately tightened. Be careful not to overtighten as this will distort the drive unit chassis.

6. Replace the grille as described above.

Appendix A - Technical Specifications

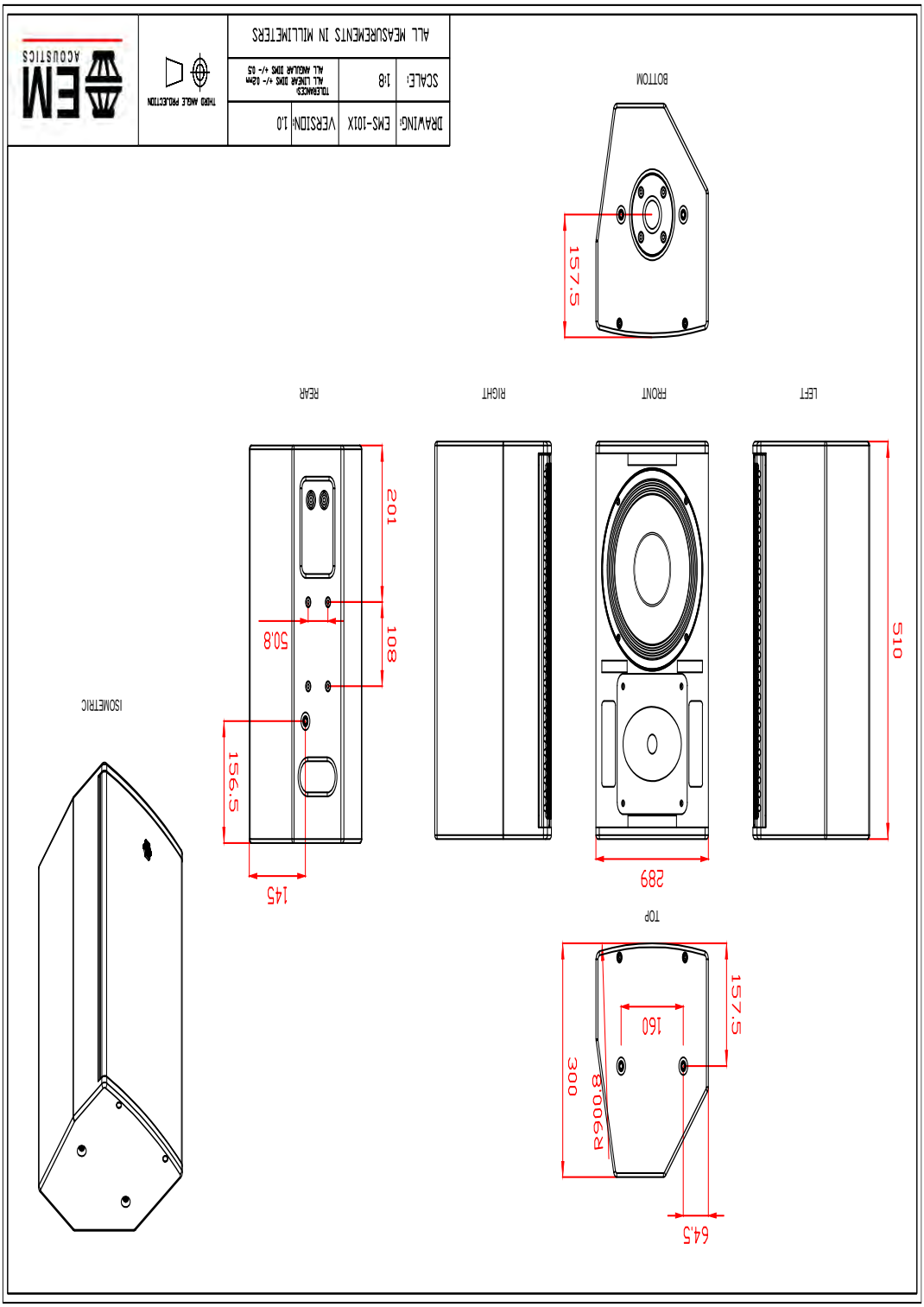
EMS-101X compact passive loudspeaker

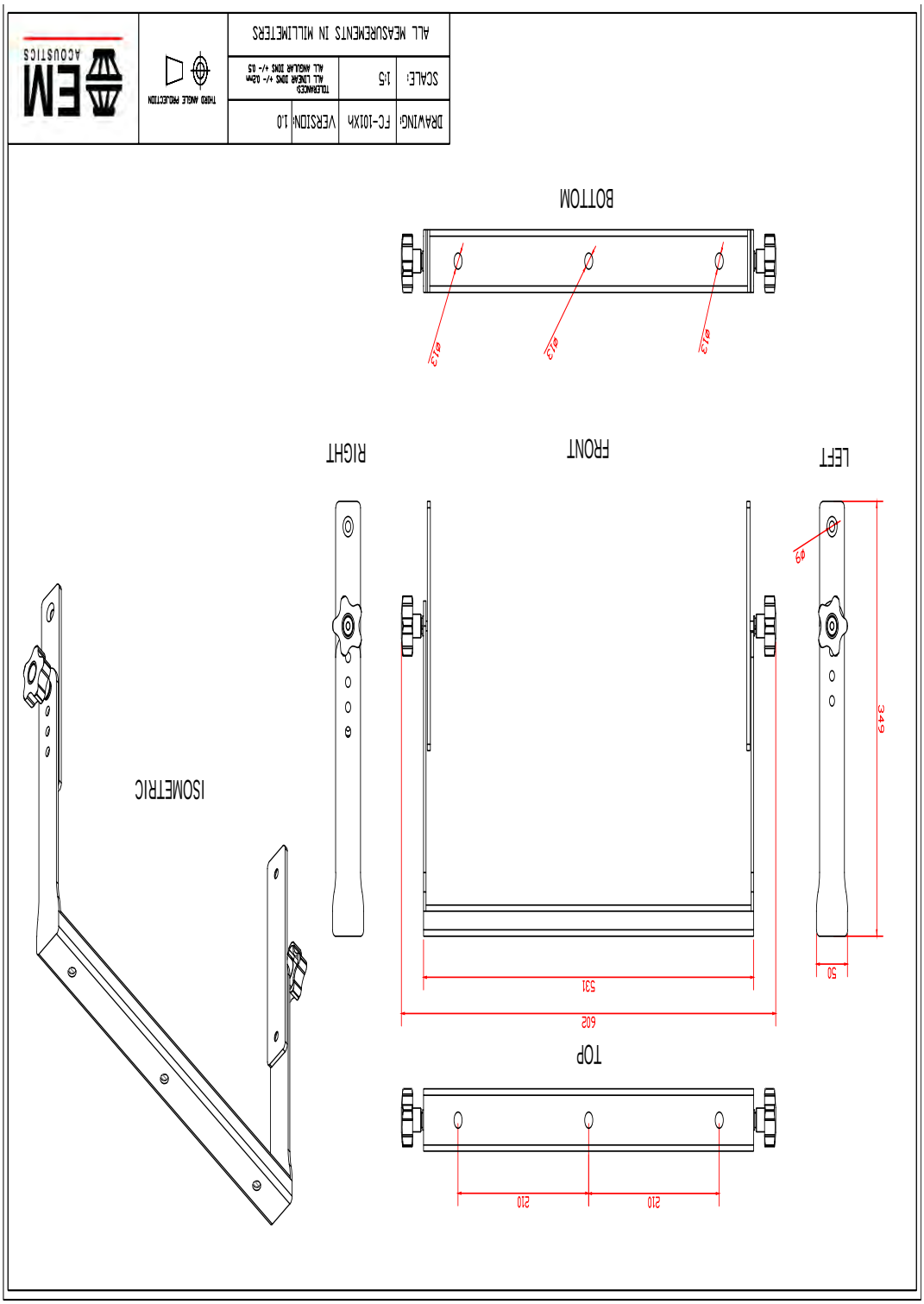
Dimensions (HxWxD):	510 x 289 x 300mm (20.1" x 11.4" x 11.8")
Net/Shipping Weight:	16kg/19kg (35/42lbs)
Frequency Response (+/- 3dB)[1]:	70Hz - 20kHz
Dispersion[3]:	90° x 60° rotatable
Drive Units:	10" (254mm) neodymium LF drive unit 1" (25mm) exit neodymium HF compression drive unit
Power Handling:	LF: 400W RMS, 800W program
Maximum SPL:	120dB continuous, 126dB peak
Nominal Impedance:	8 ohms
Crossover:	Asymmetric internal passive
Enclosures per amp channel:	DQ6: 2 DQ10: 3 DQ20: 4
Connectors:	2 x Neutrik SpeakON™ NL4
Enclosure:	15mm (5/8") multi-laminate birch plywood, rebated, screwed and glued. Finished in impact and weather-resistant polyurethane or white textured paint
Rigging & Hardware:	5 x M8 threaded rigging points. 4 x M6 threaded points for Omnimount™ Series 30/Powerdrive™ Series 75 products
Grille:	Hex punched steel backed with acoustically transparent fabric
Options:	Colours/Weather Protection
Accessories:	FC-101Xv vertical flying cradle FC-101Xh horizontal flying cradle

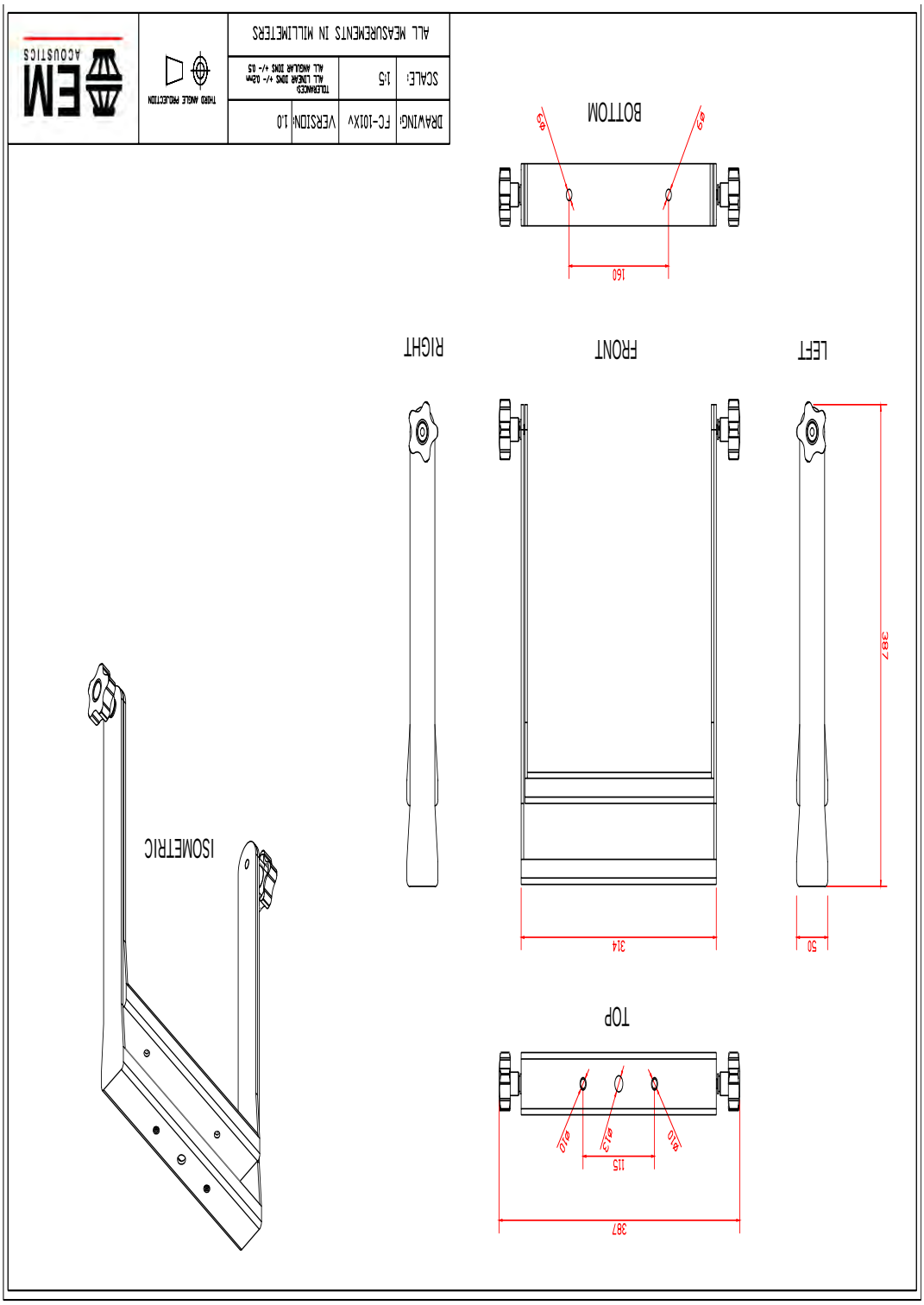
Notes on measurement conditions:

[1]Measured on-axis at 2m in an anechoic environment and referenced to 1m. [2]Measured in half-space at 2m with 4W sine wave input and referenced to 1m. [3]Nominal dispersion, measured in an anechoic environment and averaged over stated bandwidth. [4]Calculated and verified by subjective listening test of familiar program material.

Appendix B – Technical Drawings




ALL MEASUREMENTS IN MILLIMETERS
DRAWING: FC-101Xh
SCALE: 1:5
VERSION: 1.0
THIRD ANGLE PROJECTION
ACOUSTICS
BOTTOM
FRONT
RIGHT
LEFT
ISOMETRIC
TOP
Ø13
Ø13
Ø13
9°
349
50
531
602
210
210


ALL MEASUREMENTS IN MILLIMETERS
DRAWING: FC-101X\
VERSION: 1.0
SCALE: 1:5
TOLERANCED
ALL LINEAR DIMS +/- 0.5mm
ALL ANGULAR DIMS +/- 0.5
THIRD ANGLE PROJECTION
EM ACOUSTICS
BOTTOM
89
89
160
LEFT
FRONT
RIGHT
387
314
50
TOP
87.5
87.5
87.5
115
387
ISOMETRIC

Appendix C – Spare Parts List

Order Code	Description
01A034	DU-1003 replacement 10" neodymium LF drive unit
01B001	CDU-1001A replacement 1" neodymium HF compression drive unit
04A062	RFG-101 replacement grille/fabric for EMS-101X
07A040	PX-101 replacement passive crossover assembly for EMS-101X

Appendix D – Warranty Information

Limited Warranty

This EM Acoustics loudspeaker product is warranted to the original end-user purchaser and all subsequent owners for a period of **five (5) years** from the original date of purchase.

Warranty Coverage

This warranty covers defects in materials and workmanship. It does not include:

- Damage or failure caused by accident, misuse, neglect, abuse or modification by any person other than an authorised EM Acoustics representative.
- Damage or failure caused by operating the loudspeaker product contrary to the instructions contained within this manual.
- Damage caused during shipment.
- Claims based on any misrepresentation by the seller.
- Products which contain anything other than the original components (or EM Acoustics factory supplied spare parts).
- Products on which the serial number has been removed, altered or defaced.

Returning your EM Acoustics loudspeaker

Should your EM Acoustics loudspeaker develop a fault, please return it (freight prepaid) in its original packaging, along with proof of purchase to your local dealer or to:

EM Acoustics (Returns Department), Building 19.11, Dunsfold Park, Cranleigh, Surrey, GU6 8TB, UK

including a description of the suspected fault. Serial numbers must be quoted in all correspondence relating to the claim. EM Acoustics or its representatives are in no way liable for any loss or damage in transit, and hence it is recommended that the sender insure the shipment. EM Acoustics will pay for return freight should the repair be covered under warranty.

EM Acoustics' liability is to the replacement or repair (at our discretion) of any defective components, and as such are not liable for any incidental and consequential damages including (without limitation) injury to persons, damage to property or loss of use.

This warranty is exclusive and no other warranty is expressed or implied. This warranty is also in addition to – and in no way detracts from – your statutory rights as a consumer.