9A10515500

ESOTERIC

MG-10/MG-20

Loudspeaker System

OWNER'S MANUAL

Before Use

Thank you for choosing Esoteric. Read this manual carefully to get the best performance from this unit.

- Choose the installation location of your unit carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibrations and excessive dust, heat, cold or moisture.
- Keep this manual in a safe place for future reference.

Initial Set Up

MG-10

This model is designed to be placed on a loudspeaker stand. A specially made Esoteric loudspeaker stand is available from your dealer. This stand is supplied with fixing bolts and has fixing holes in the top plate which match up with threaded inserts in the bottom of the MG-10. Screw the loudspeaker firmly to the stand using the fixing bolts and washers provided. Do not overtighten the bolts. If using an alternative loudspeaker stand the height of the stand should be chosen so that the ears of people in the normal listening position are at approximately the same height as the centre of the tweeter. The loudspeaker should be secured to the top plate of the stand by suitable adhesive pads or small balls of Blu-Tack, or by the method recommended by the stand manufacturer.

MG-20

This model is designed for floor mounting on carpet or bare wooden floors. Screw the four carpet piercing spikes (supplied in the accessory pack) into the bottom panel of each cabinet to get the best sound quality, adjusting the length of the spike to ensure stability on uneven floors. Lock the spikes with the locknuts supplied. The spikes are designed to avoid damage to the carpet as they penetrate the woven backing of the carpet. For bare wooden floors the spikes should rest on the metal cups provided to protect the floor. The ideal listening position is where the listener's ears are at approximately the same height as the centre of the tweeter.

MG-20 Optional Accessory Plinth

A specially designed Esoteric Performance Platform is available from your dealer for model MG-20 to improve stability and sound quality. The Platform bolts onto the bottom of the loudspeaker using the threaded inserts provided for the spikes.

Initial Positioning

Locate the loudspeakers so that the favourite listening position is approximately 15° from the front to back axis of each cabinet. The axes of both cabinets should intersect at a point slightly in front of the listening position. Remember that the proximity of the loudspeakers to walls and corners will affect the sound. Some experimentation will probably be needed to fine-tune the stereo image depth and low frequency sound quality. Loudspeaker positions which are close to walls or in room corners have the effect of increasing and unbalancing low frequency sound energy and adjacent reflective walls may upset the stereo image accuracy and width by causing unwanted reflections.

The loudspeakers are designed to be used at least 1m from any sidewall or reflective surface and at least 0.5m away from a rear wall. Only at these distances or greater from side and rear walls will their exceptional stereo image depth capabilities be realised.

Amplifier Matching

Consult the product specification page as this clearly shows the acceptable power range for amplifier matching to your loudspeakers. The high peak power handling of Esoteric loudspeakers permits responsible use with more powerful amplifiers.

As with all loudspeaker systems, power handling is a function of voice coil thermal capacity. Care should be taken to avoid overdriving or overloading the amplifier as this will cause "clipping" or distortion of the output signal. If overload distortion or clipping lasts for any extended period it will cause damage to the loudspeakers.

Generally an amplifier of higher power that is operating well within its power limit and therefore free from distortion will do much less damage to the loudspeaker than a lower power amplifier operating at its power limit producing clipping distortion. Also, a high powered amplifier running at less than 50% to 90% of output power generally sounds a great deal better than a lower powered example struggling to achieve 100%. An amplifier with insufficient drive capability will not allow the full performance of the loudspeakers to be realised.

Cable Choice

Always use the best quality of cable available within your budget. High quality audio signals passing from the amplifier to the loudspeaker are unusual in their demands on the cable. Wide dynamic ranges of greater than 100dB and frequency bandwidth information ranging over 9 octaves have to coexist with the ability to transmit peak currents of at least 10 amps, all without incurring any loss or signal impairment. This is one reason why the sound quality of the information reproduced by the loudspeakers is so dependant on the physical properties of the cables connecting them to the amplifier.

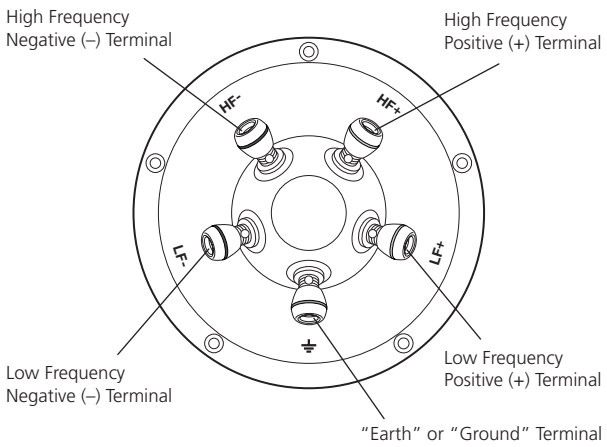
Another reason for special loudspeaker cables concerns Radio Frequency Interference (RFI). There are many very strong Naval and Maritime radio signals availabe nearly everywhere in the world and these can be tuned by simple loudspeaker cables in combination with passive crossover components and voice coil inductance. RFI energy can be fed back into the amplifier output stage circuits, demodulated and find its way into the feedback loop causing considerable loss of sound quality.

Terminal Panel

MG-10 and MG-20 loudspeakers have special internal wiring which connects the grounding terminal on the rear terminal panel to the metal chassis and magnet system of the drive units, thereby screening the voice coils. This effectively shields the voice coils and any interfering RFI picked up inside the loudspeaker. To take advantage of the driver grounding feature and to optimise performance, use a low capacitance shielded or screened loudspeaker cable. The screening termination or drain wire should be connected to the "ground" (green) terminal at the loudspeaker end of the cable and to the ground or chassis connection at the amplifier end of the cable (Figure 1).

If you are not using a screened loudspeaker cable but wish to benefit from the grounding facility, run a single cable between the "ground" (green) terminal on the loudspeaker to the ground or chassis connection on the amplifier.

FIG. 1



Connecting your Loudspeakers

To avoid potential damage to your loudspeaker, ensure that the amplifier is switched OFF prior to connecting or disconnecting any cables. Before switching on double check that all connections are secure and that polarity is correct.

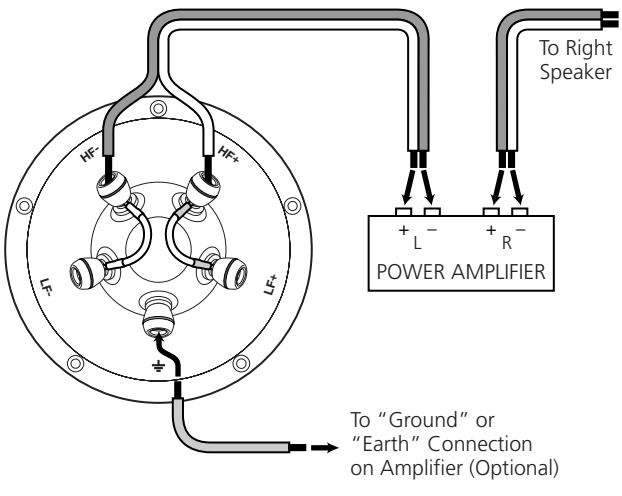
Connection in Single Wire Mode

- Locate the 2 wire links in the accessory pack. Each link has a 4mm sleeve at each end. Referring to Figure 2, Link the HF+ and LF+ terminals and HF- and LF- terminals as shown.
- Take hold of the loudspeaker cable from the amplifier and fit the red (positive) lead into the red (positive) high frequency (HF+) terminal on the loudspeaker.
- The cable at the other (amplifier) end of the lead should be connected to the red (positive) terminal on the amplifier.
- Repeat this operation at the loudspeaker end of the cable for the black (negative) high frequency (HF-) terminal, and then at the other end of the cable connect to the black (negative) terminal on the amplifier.
- Repeat the whole operation for the other loudspeaker.
- Check all connections carefully making sure that red cable connects to red terminal, black to black. If your cable is not colour coded make sure that the positive terminal from the amplifier connects through the appropriate part of the cable to the positive (HF+) terminal on the loudspeaker and the negative terminal on the amplifier connects through the cable to the negative (HF-) terminal on the loudspeaker.

Choosing the HF terminals for single wire mode has been found to give the best sound quality. Note that most loudspeaker cables have directional properties and give their best sound quality when arrows printed on the cable point from the amplifier to the loudspeaker.

Select a signal source, such as a CD player; switch on the amplifier and slowly turn up the volume control to check that both loudspeakers are reproducing bass and treble information by listening closely to the woofer and then the tweeter at a low volume setting.

FIG. 2



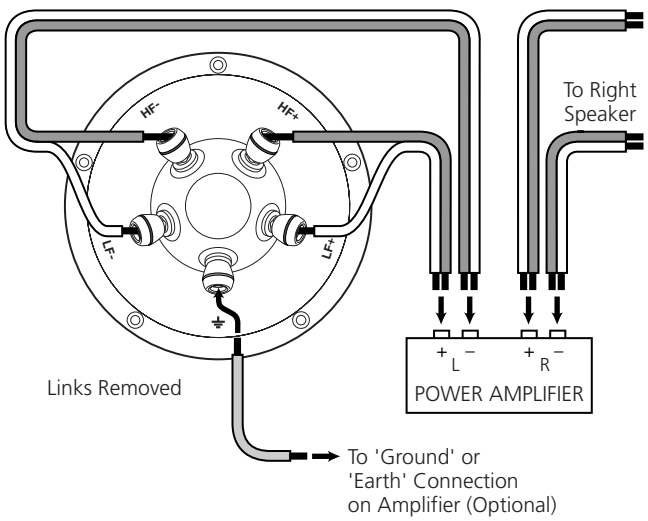
Connection in Bi-Wire Mode

Note: The link cables in the accessory pack are not used for Bi-wire mode.

- Be sure that the amplifier is switched OFF and then prepare the two sets of cabling for each "side" of the system separately.
- Measure and cut four lengths of cable, two lengths for each loudspeaker. Label two of the cable lengths Left LF and Left HF (low frequency and high frequency) then repeat this process with two lengths of cable for the right side, Right LF and Right HF.
- If your amplifier is not equipped with separate output terminals for bass and treble information then, at the amplifier end of the cables, twist the Left LF+ (positive) and the Left HF+ (positive) conductors together. Connect these to the amplifier Left channel positive terminal marked + (plus) or coloured red. Next, twist the Left LF- (negative) and the HF- (negative) cables together and connect them to the amplifier Left channel negative terminal marked - (minus) or coloured black. At the loudspeaker end connect the cables labelled Left LF+ and Left LF- to the left hand loudspeaker LF terminals, ensuring that you note the polarity markings on the cable sheathing. Then proceed to connect the Left HF+ and Left HF- to the HF terminals on the same loudspeaker.
- Repeat this process to connect the right hand loudspeaker to the amplifier right channel output, once again ensuring that polarity is correct throughout.

Switch the amplifier on with the volume control set at its lowest setting. Select a favourite source and slowly turn up the volume to a low level. Check that bass and treble information is being reproduced from both loudspeakers by listening closely to the woofer and then the tweeter at a low volume setting. If there is a problem, switch off the amplifier and recheck the connections.

FIG. 3



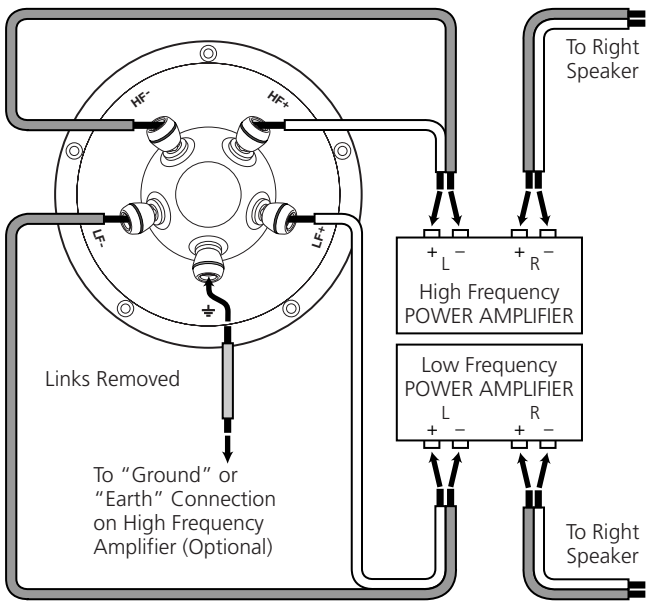
Connection in Bi-Amp Mode

Note: The link cables in the accessory pack are not used for Bi-amp mode. If you are converting from Single-wire mode, remove the link cables now, otherwise amplifier damage could result.

Bi-Amping extends the principle of bi-wiring one stage further. In this connection option separate power amplifiers are used for bass and treble signals in each loudspeaker. Four mono (or two stereo) amplifiers of the same type and identical electronic design are required for a stereo pair of loudspeakers operating in Bi-amp mode.

- Ensure that any cable links between the loudspeaker HF+ and LF+ or HF- and LF- terminals are removed or amplifier damage may result.
- Ensure that correct polarity is maintained throughout.
- If two stereo amplifiers are used (instead of 4 separate amplifiers), it is recommended that one amplifier supply bass information to left and right loudspeakers and the other, the treble information.
- Avoid potential damage to your amplifier - ensure that all connections are secure and the polarity is correct in all wiring.

FIG. 4



Grille Removal

Special acoustically transparent cloth is used in the grille assembly. However for the very best performance, you may wish to remove the grilles. The grille is fixed to the cabinet by dowel pegs mounted in the back face of the grille and sockets mounted in the front of the loudspeaker. The MG-10 has 2 pairs of dowel pegs, top and bottom. The MG-20 has 3 pairs of dowel pegs, top, lower middle and bottom. To remove the grille pull gently on the grill close to each pair of dowel pegs and when movement is detected, move to another pair of dowel pegs. Repeat this operation until all the grille pegs have disengaged with their respective sockets.

Proximity to Televisions & Monitors

Loudspeaker drive units contain powerful magnets. These are capable of generating a substantial magnetic field extending a considerable distance beyond the sidewalls of the loudspeaker enclosure. This field can cause picture distortion if the loudspeakers are placed too close to a television or monitor using a Cathode Ray Tube (CRT).

For this reason, the MG-10 or MG-20 should be placed no closer than 1.0m (3.25 ft.) from a television or monitor using a CRT. If a CRT television or monitor is accidently placed too close to a loudspeaker and the colour values are upset, carry out the de-gaussing procedure by referring to the television or monitor instruction manual. Plasma and LCD screens are not affected by magnetic fields and do not have this problem.

Running In

Like all loudspeakers, the drive units in your Esoteric loudspeakers will take a while to reach optimum performance, as the stresses created in the materials during manufacturing processes relax - especially in the suspension systems. For this reason, it is beneficial to run the system at fairly high levels at normal room temperature, for approximately 20 hours to achieve best results.

The Low Frequency Section

Extraordinary new developments in high temperature deep drawing and pressing of Magnesium foil have led to the development of a cone piston and dust cap of near perfect acoustic qualities. Magnesium offers optimised mass, internal damping, rigidity and a selective speed of sound through the material to give a superb standard of reproduction which is immediately obvious from the first audition of the loudspeaker.

In addition the Magnesium components are treated with a high temperature resistant coating to protect them from oxidation and to enhance the acoustic characteristics. The permanent magnet motor drive system is fitted with two sets of flux control devices which linearise the voice coil inductance and reduce odd order distortion components. Complementary linear front and rear suspension systems complete the low frequency drive unit which is housed in a rigid diecast chassis and connected through a selectively absorbent damping mechanism through to the cabinet bracing structure. The cabinet volume is ported to provide ideal damping and low frequency extension resulting in a very fast and detailed bass response.

The High Frequency Section

The high frequency diaphragm is a similar high temperature deep draw Magnesium pressing but 10 times thinner resulting in an ultra lightweight structure of immense stiffness. The diaphragm is suspended by a miniature roll surround for good damping and low free air resonant frequency and coupled to a rigid aluminium voice coil suspended in a high flux magnetic gap provided by a neodymium magnet structure. The rear of the diaphragm vents through to a damped rear chamber to define the low frequency response of the HF unit and which absorbs the rear acoustic radiation to prevent interference with the main forward facing acoustic energy pattern.

The Crossover Network

During the design of the crossover network the acoustic, mechanical and electrical interactions of the high and low frequency sections have been fully analysed. The crossover is therefore an integral part of the design of the system. The crossover network provides complex equalisation in both amplitude and phase for both LF and HF drive unit and fully integrates the response at the crossover point.

All components are high precision, low-loss and thermally stable. Very high quality specially damped and treated audio grade polypropylene capacitors are used for the high frequency feed. Large, low hysteresis laminated iron core inductors avoid distortion and saturation effects. The individually hard wired components are laid out to minimise inter component coupling and are placed well away from the driver magnetic field. Van den Hul high purity silver-plated copper wiring is used throughout the internal connections in the loudspeaker.

Care of the Cabinet

The cabinet carcass is constructed from 15mm birch plywood with a 30mm birch plywood front baffle. Carefully selected solid hardwood mouldings and veneers have been hand finished to exacting standards. The wood should only be cleaned with a dry cloth or with a light application of quality non-silicone furniture polish, taking care not to get polish on the grille cloth or any part of the HF and LF drive units.

In common with all solid wood furniture, exposure to extremes of heat, cold and varying humidity will cause the wood to ease slightly. Therefore it is recommended that the loudspeaker is protected from environmental extremes to guard against any such occurrence. Any wood will change colour when subjected to the UV content of ambient light. Although the cabinet is protected by an anti ultra violet lacquer, a light veneer such a Cherry will darken naturally over time to a rich natural golden colour.

Faultfinding

Esoteric loudspeakers are designed and manufactured to be reliable. When a fault occurs in a hi-fi system the effect is always heard through the loudspeakers although they may not be the source of the fault. It is important to trace the cause of the problem as accurately as possible. A fault heard on one source only (for example CD or Phono for instance) is most unlikely to be a loudspeaker problem. Loudspeakers do not in themselves generate hum, hiss or rumble although high quality, wide bandwidth loudspeakers may emphasise such problems.

Quality

The manufacture of Esoteric loudspeakers follows a policy of stringent quality control procedures using sophisticated measurement facilities. All drive units are designed and manufactured specifically for the MG-10 and MG-20 models. All incoming parts are thoroughly tested to ensure that they are as specified. Not only is all data computerised, but rigorous testing procedures during construction ensure every loudspeaker meets or exceeds our exacting standards.

Caution

The high peak power handling of Esoteric loudspeakers will allow responsible use with larger amplifiers on wide dynamic range material. Take care with any amplifier, irrespective of power output, to avoid abnormal conditions such as switch on surges or output overload (clipping) that may result in peaks of power measuring greatly over the rated output.

Technical Specifications

MG-10

Dimensions (H x W x D)	440 x 216 x 271 mm (17-5/16 x 8-1/2 x 10-11/16")
Enclosure Volume	13 litre (7/16 cu.ft.)
Enclosure Type	Reflex
Enclosure Weight	7.5 kg (16-1/2 lbs)
Cabinet Construction	High density birch plywood Internally crossbraced and heavily damped
Recommended Amplifier Power	20 to 120 watt per channel
Power Rating	75 watt RMS 300 watt peak
Sensitivity	87.5 dB for 2.83 volt at 1 metre, half space
Nominal Impedance	6 ohm
Minimum Impedance	3.8 ohm
Frequency Response (-6dB)	41 Hz - 44 kHz
Crossovere Frequency	1.9 kHz
Crossover Type	2nd order LF, 3rd order HF. Bi-Wired, Hard-Wired passive, low loss.
Driver Type	165mm (6-1/2") magnesium cone LF 25mm (1/2") magnesium dome HF

MG-20

Dimensions (H x W x D)	1060 x 216 x 271 mm (41-3/4 x 8-1/2 x 10-11/16")
Enclosure Volume	21.5 litre (3/4 cu.ft.)
Enclosure Type	Reflex
Enclosure Weight	15 kg (33 lbs)
Cabinet Construction	High density birch plywood Internally crossbraced and heavily damped
Recommended Amplifier Power	20 to 170 watt per channel
Power Rating	90 watt RMS 360 watt peak
Sensitivity	89 dB for 2.83 volt at 1 metre, half space
Nominal Impedance	6 ohm
Minimum Impedance	3.7 ohm
Frequency Response (-6dB)	38 Hz - 44 kHz
Crossovere Frequency	1.9 kHz
Crossover Type	2nd order LF, 3rd order HF. Bi-Wired, Hard-Wired passive, low loss.
Driver Type	2 x 165mm (6-1/2") magnesium cone LF 25mm (1/2") magnesium dome HF

For European Customers

Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

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This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number Serial number

0207·MA-1204A