



**Audio Note**

*Music's Finest Conductor*

# **AN-E Loudspeaker Owner's Manual**

## **Table of Contents**

Introduction	1
Unpacking Instructions	2
Loudspeaker Placement	3
Connection	4
Warranty Information	7
Running In	8
Care & Maintenance	8
Specifications	9
Contact Information	9

## Introduction

Congratulations on your purchase of a pair of Audio Note™ **AN-E** loudspeakers! We hope and expect that they will give you many years of musical enjoyment and trouble-free listening. And, whether you know it or not, ***you've just struck a blow in the service of Music.***

Far too much of the high-end audio marketplace is occupied by low-efficiency loudspeaker systems – several less-than-ideally-matched drivers and a very complex, (read: life-sucking), crossover – all housed in a cabinet doing its best impression of reinforced concrete or petrified wood. Of necessity, they are paired with high-powered, nearly always solid-state amplifiers in an attempt to jump-start their (and your) hearts. 10 times the power applied to a speaker which is 10dB less efficient will produce the requisite sound pressure level, but what about coherency, full natural micro-, as well as macro-, dynamics, inner detail? What about **LIFE**? What about the musicians' delivery of their and the composer's **EMOTION**? Sorry, they're just not part of the "High Performance Audio" design brief. And **Music** suffers for it.

The design of the **AN-E** Loudspeaker, by contrast, calls for a cabinet made from materials that complement the workings of the chosen drive units. Instead of trying to **kill** the resonances in the cabinet, we tailor the cabinet to place the resonances in frequency bands where they **aid** and **enhance** the operation of the drive units, culminating in a loudspeaker system that makes the most of the preceding amplifier's output.

The drive units employed in the **AN-E** have been developed with our **very** active participation and are manufactured to our specifications.

The crossover is simple – essentially first order – hardwired and incorporates careful location of components, both in relation to each other, and also in relation to the woofer's magnet, which influences the behaviour of the crossover a great deal. The crossover uses air-cored chokes and select bipolar and polypropylene capacitors. (In the Signature models, copper foil, and in the Sogon, silver foil.) The **AN-E** internal cabling consists of varying numbers of either 99.99% pure copper or 99.99% pure silver wire, depending on the exact model. (See specifications.)

This combination of design approach, parts quality and manufacturing process yields an extremely even load characteristic as well as a very flat power/frequency response that remains within tightly controlled limits throughout its working bandwidth.

Each complete loudspeaker is individually adjusted under dynamic operating conditions, using proprietary software, in order to compensate for the slight variations that always exist in drive units and assures precise uniformity of sonic performance. This individual adjustment, and matching to a reference, of each crossover network to each pair of drive units allows an unparalleled degree of sample-to-sample consistency not only within pairs of loudspeakers, but also from one pair to another. ***Each of you're an-E loudspeaker's performance is within 0.4dB of its mate and our reference response curve.*** To the best of our knowledge, no other loudspeaker manufacturer achieves such close matching and tests 100% of its production.

The result? *Maximum efficiency and dynamic behaviour.* And **Life.** And **Emotion.** Retained and delivered with **goose bumps.** ***Your Music will thank you.***

## Unpacking Instructions

To easily remove the loudspeaker from its carton, fold the four bottom flaps outward. Then, holding the inner packing material in place, tip the box over onto its open end and simply lift the carton away.

If there are any signs of shipping damage, inform your dealer **at once**.

Be sure to save the cartons and all packing materials in the event that subsequent sale or repair necessitates re-shipping.

At this time, please fill in the warranty card, putting both serial nos. and the date of purchase on the card. The serial numbers are on the rear of the speakers below the input terminals and on the outside of the packing cartons.

## Loudspeaker Placement

The Audio Note™ **AN-E** is a highly versatile loudspeaker which will provide satisfying performance in most listening environments.

For optimal tonal balance, the **AN-E** should be used on a stand of 24 - 27cm (10 inches) in height, for **best results**, use spiked high-mass stands that can hold the speaker so firmly that even if the top of the speaker is pushed, it will not move at all. Alternatively, light open-frame stands will give decent results provided they have spikes rigidly coupling them to the floor, (through carpet if present.)

The speakers should be coupled to the stand by placing four pea-sized balls of **Blu Tack** on the stand's top and pushing the speaker down onto these so that they are flattened. (We have included some of this **Blu Tack** with the instructions and warranty card.)

The **AN-E** has very wide dispersion which provides a great deal of flexibility in the different rooms and set ups, and despite being a rear ported design it is designed for corner or near wall, much of the set up process is therefore counter-intuitive in that it works in the opposite way to "normal" loudspeaker set up (for example move the speaker CLOSER to the rear wall will normally result in a tightening and deepening of the bass reproduction), so bear that in mind when you do the initial set up and later adjustments.

The AN-E has, as a result of its wide dispersion, a very wide listening window, allowing considerable angling (or toe-in) to provide an evenly distributed energy window between the speakers, by allowing adjustment of early side wall reflections either to adjust the frequency content to coincide and underpin the direct sound, or prevent those reflections from interfering with the direct sound from the speakers. These reflections will greatly affect tonal and stereo balance and even relatively small changes in the speaker's angle and distance to the sidewall can change the room interaction markedly.

To control these reflections, place the outer edges of the speakers as close to the side wall as possible, shortening the time difference between direct sound and first reflections as much as possible. The optimal angle at which the speakers are aimed at the listener varies from room to room. The room size will have a particularly marked influence on the angling and proximity to the side walls, where room layout allows.

The object of the setting up exercise is to find a position where the speakers pressurize the room in a similar way to that of natural instruments, this will restore a much overlooked aspect of music reproduction: the actual pressure generated by instruments, which is one of the main differences between "live" and "reproduced".

Four main options, (presented from most to least desirable, all else being equal), are:

**1.)** Starting with rooms where corner position is available:

Move the speaker to be as close to the side wall as possible, to the point of almost touching the wall, with the speaker 5 – 10 centimeter (2-4 inches) from the rear wall, toe the speakers in to aim 1-2 meters (3-6 feet) in front of the listener, now play a record or CD with some bass content to see how the low frequencies come across, then adjust the speaker angle to get a good and even energy spread between the speakers.

**2.)** Then to rooms with only two real walls available, as a rule always fire down the long length of the room wherever possible, otherwise also follow the clues below,

Place the speaker 5 – 10 centimeters (2-4 inches) from the rear wall, then toe them in to aim almost directly at the listener, especially in large rooms this should be tried, even in corner position, give them a listen, then move the speakers as far apart from each other as the room allows, then play with the distance between the speakers and the angle, to create the best possible balance (compromise) between the bass response and the energy distribution between the speakers, (remember the angle of the speaker to the wall can be anything from a few degrees to 45 degrees or sometimes even more, depending on the distance between the speakers and the distance to the listening position. Lastly try moving the speakers forward 5 centimeters (2 inches) to see how the bass behaves. Adjust the distance to the rear wall to get the bass and deep and even as possible.

**3.)** Now to really difficult rooms, such as rooms where little or no wall space is available or very long and narrow rooms for example,

Position the speaker facing each other, believe it or not the AN-E's dispersion is so good that this position in some rare instances work better than any alternatives, in a narrow long room, the speakers can be positioned using the side walls the way the rear walls are used in 2.) above, but with the speakers at a very steep angle (i.e., sharply toed in), seen from the listening position, then essentially follow the instructions in 2.) above.

**4.)** Lastly rooms where the speaker can only be used free-standing, away from all walls,

Due to our speaker's near wall design requirements this is the least desirable position, as it will not allow pressurization of the room in the way or to the extent we intend, nor will it therefore give you the best frequency balance, however our speakers still sound better than most in this, the most undesirable position, and as a rule the speakers should be angled to cross about a meter in front of the listener and form an equidistant triangle if used this way.

***Needless to say, regardless of how thorough I try to be in these set up instructions, experimentation is vitally important to achieve optimum results in any given environment and over time as you familiarize yourself with the sound of the speakers in your room you will be able to refine and optimize the set up.***

## **Connecting the AN-E**

Before making any connections ***always*** turn off your amplifier!

The length and type of speaker cable used in your system will have an audible effect. The **AN-E** is wired internally with a high quality Audio Note™ cable. It is recommended that you use a similar type of speaker cable in order to maintain the tonal balance and dynamic characteristics that we designed into the **AN-E**.

Although the binding posts on the back of the speakers accept bare wire, we recommend that the cable be terminated with soldered 4mm banana plugs. Even if the distance from the amplifier to each loudspeaker is different, we advise the use of equal lengths of speaker cable to both speakers.

**Correct phasing of the speakers is vital for sound quality.** Your speakers should be wired in phase with each other. Proper phasing will be assured if the speaker cables connect the red speaker input to the plus (+) or "hot" amplifier output terminals, and the black speaker input terminals to the negative (-) or "ground" amplifier output terminals (***see figure 1***). Most speaker cables are marked so that it is possible to distinguish between conductors by the colour of the insulation or by a white stripe or small raised edge along one conductor.

Should you be interested in the absolute phase of your system, a positive voltage at the red terminal of the speaker will cause all drivers to move outward, provided the links are in place.

**Very tight and positive connections are necessary.** Care should be taken to ensure that the connections are neat and that no strands from the two conductors are allowed to touch.

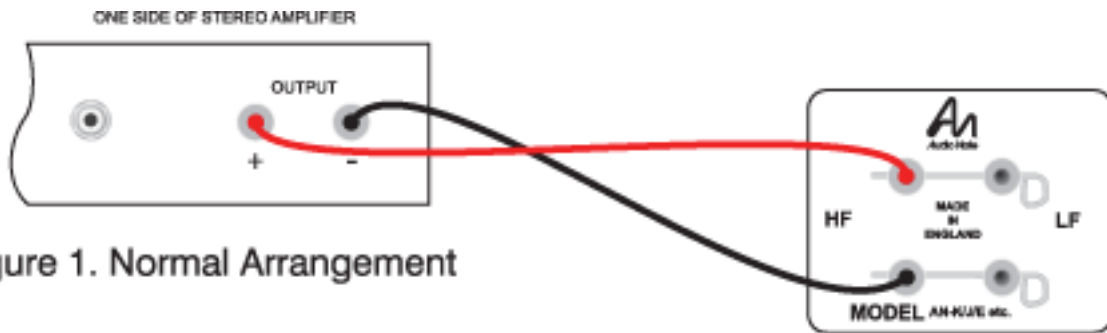


Figure 1. Normal Arrangement

At the rear of each speaker there are two pairs of red and black terminals marked **LF** and **HF**. Your loudspeakers were shipped from the factory with these pairs bridged by connecting links. The input to one pair of terminals will be fed to both sets of terminals.

The facility to split the crossover on the **AN-E** allows the speakers to be operated in a bi-wired or bi-amplifier mode. The crossovers are split by removing the connecting links between the HF and LF terminals on the rear of the speaker.

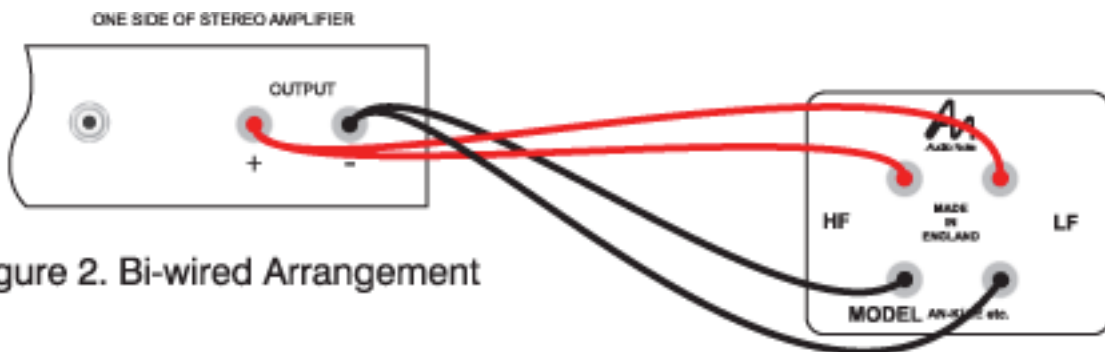


Figure 2. Bi-wired Arrangement

Bi-wiring (*see Figure 2*) involves running two sets of cables to the rear of each speaker so that the LF section of the crossover is fed by one set and the HF section by the other. Both sets of cable are attached together to the corresponding pair of terminals on the back of the amplifier. It is strongly recommended that the same type of speaker cable is used throughout.

Bi-amplifying involves using two stereo or four mono power amplifiers to drive the loudspeakers. When using two stereo power amplifiers, or four monaural amplifiers, it is possible to bi-amplify in three ways:

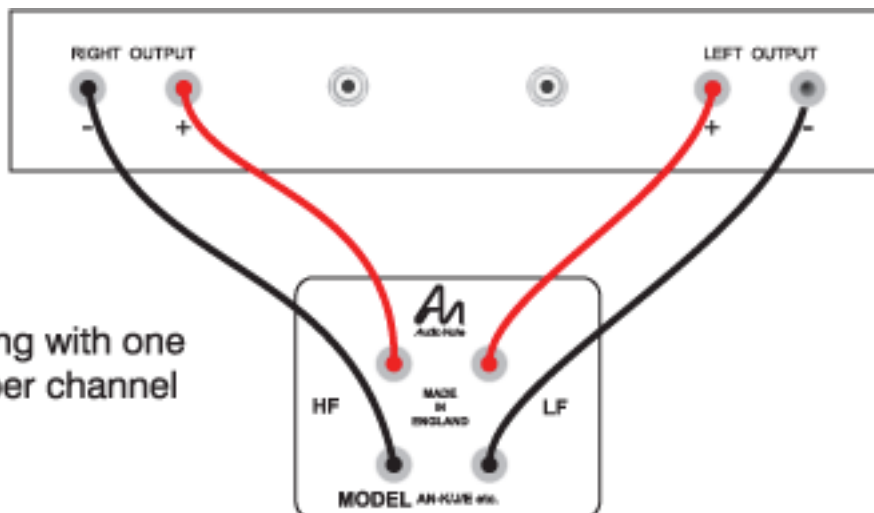


Figure 3. Bi-amping with one stereo amplifier per channel

**Figure 3** shows both channels of a stereo amplifier driving one loudspeaker system. In the illustration, the right channel is driving the HF unit; the left channel drives the LF unit. This would be repeated with the second stereo amplifier and the other loudspeaker system.

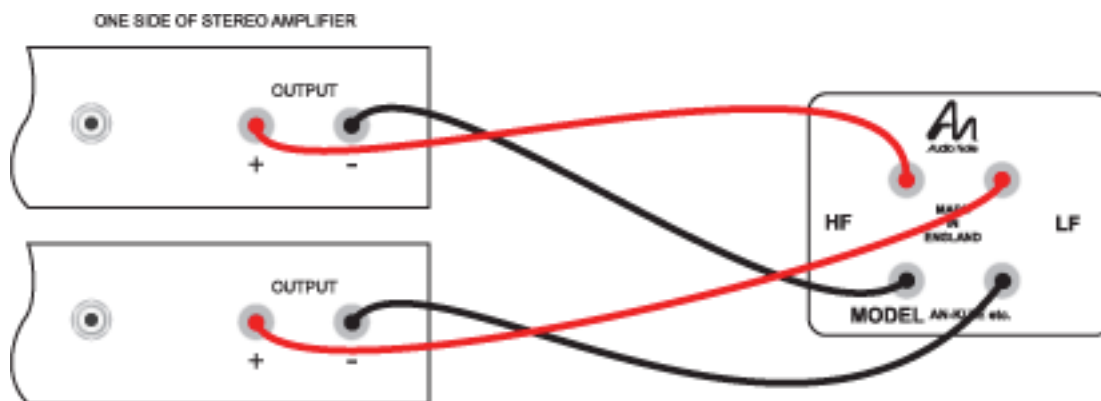


Figure 4. Bi-amping with one stereo amplifier high frequency and one for low frequency drivers.

**Figure 4** shows an alternative method for using two stereo amplifiers to bi-amp your Audio Note™ speakers. both channels of a stereo amplifier driving one loudspeaker system. Using this method,, both channels of one stereo amplifier are used to drive the HF units in the two loudspeakers while both channels of the second stereo amplifier are used to drive the LF units in the two loudspeakers.

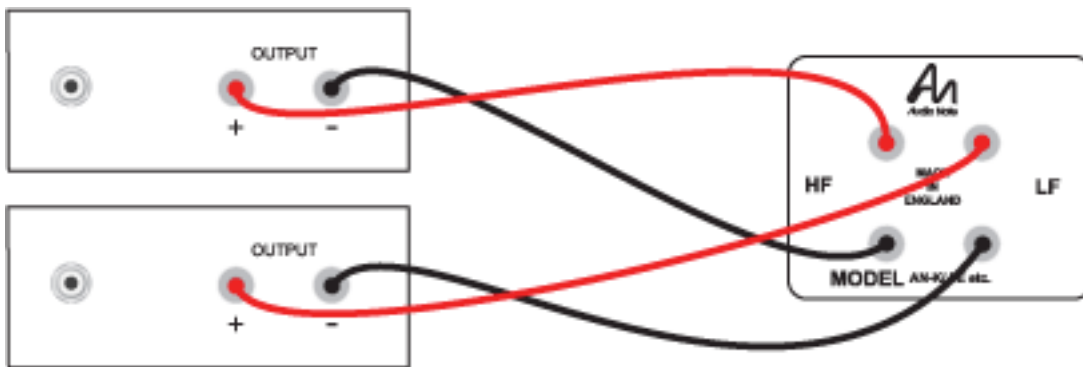


Figure 5. Bi-amping with four monoblocks.

Lastly, as shown in **Figure 5**, four separate monaural amplifiers can be used, with each amplifier driving a single loudspeaker driver. (Only the connections for one loudspeaker are shown. Repeat for the other channel.)

**PLEASE NOTE:** Care must be taken when connecting the pre-amplifier inputs to make sure that each loudspeaker receives either the Right or the Left channel input and not a mix of the two. It is advisable to use amplifiers of a similar quality and input sensitivity when bi-amping Audio Note™ loudspeakers.

## Warranty Information

**Save your purchase receipt!** Your Audio Note™ **AN-E** loudspeakers are warranted against faulty workmanship and material failure for 5 years from date of purchase. The warranty is fully transferable, **provided the original receipt for the purchase can be produced.**



## Running-in Period (or Great Expectations)

While we fully expect your **AN-E** loudspeakers to produce beautiful music, they may not do so from the first moment out of the box. Don't be alarmed; it's perfectly normal.

Dynamic loudspeakers have a running in period, during which the drive units "loosen up" – mainly consisting of the suspension working its way up to full, normal working compliance. During this period, it may sound somewhat dry, bright and constricted. That's because the bass unit will not display its full lower bandwidth and the tweeter will sound slightly brighter than normal at the outset, and to a lessening degree throughout the running-in period. As the suspension of both drivers "softens up", the fullness of the bass and the smoothness of the treble will start to emerge and the sound that has earned the E its enviable reputation will be revealed.

We expect the **AN-E** to have a running in period of about 100 hours – for the average listener, this takes about a month, based on three hours of listening per day. This period can however vary considerably due to factors such as, music types, listening volume and type of amplification used. (Loud heavy metal or Mahler symphonies are especially effective!)

If the rest of your system is of commensurate quality, you may notice that when you haven't played your **AN-E's** for a week or longer, they seem to experience a lesser version of this running-in process again. Everything will be completely back to normal within 5 to 10 hours.

## Care and Maintenance of your AN-E loudspeakers

Care should be taken when using the loudspeakers with very high-powered amplifiers. Although the **AN-E** is reasonably tolerant and has high power handling, it is also very efficient and therefore requires considerably less power than other similarly priced loudspeakers. If audible distortion occurs the amplifier or the loudspeaker is being overloaded and damage is likely to result.

Should you be unfortunate enough to experience failure of a drive unit, either by accident or misuse, please ensure that it is replaced with an original Audio Note™ drive unit replacement kit and that the relevant parts of the crossover are also replaced. This will preserve the extremely tight driver and crossover component matching established in manufacturing, and thereby maintain the speaker's performance.

The durable finish of your speakers will maintain its appearance for many years with minimal attention. Wiping your cabinet down with a damp, lint free cloth is all the general cleaning that is required. We recommend that you annually wax the veneered surface of your speakers.

Keep the speakers away from radiators or other heat sources and avoid prolonged exposure to direct sunlight.