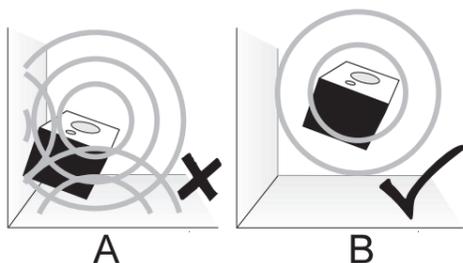


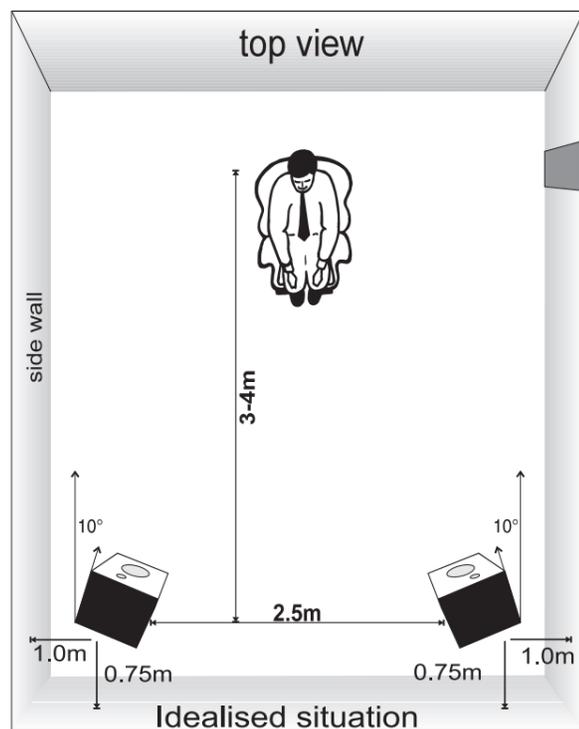
sound waves, and in effect, the speaker becomes acoustically coupled to that surface, just as if it is actually attached to

top view



right-channel speaker in corner

it. The speaker then no longer operates in 'free space' with a predictably flat frequency response but with an elevated low/mid frequency output that, whilst not necessarily unpleasant, adds a lushness to the sound. For the smoothest overall sound place the speakers as far and as asymetrically from the room's wall boundaries as possible. If you want the ultimate sound then thin, flexible plasterboard walls and wooden floors over cavities such as a basement or garage beneath will need acoustic treatment..



Some listeners report that the most natural sound stage is achieved when the speakers are slightly closer together to each other than they are away from the listener as shown above, but you should experiment for yourself.

The ear is particularly troubled by standing waves and echoes which can be identified by moving around your room and loudly clapping your hands. Parallel surfaces such as opposite walls, floor and ceiling encourage and sustain these problem frequencies. However, rearranging curtains, thick carpets, rugs and bookcases can make a dramatic improvement as the sound waves are partially absorbed into the furnishings and lose energy. Pleated curtains across windows

or other troublesome reflective surfaces are an excellent although expensive way of temporarily adjusting the room's acoustics. Optimising your speakers in your room takes time for experimentation but fortunately the ear is forgiving of all but the most severe room acoustic problems.

Although careful adjustments of speaker placement and furnishings is the ideal for a well balanced listening room, good results can be achieved with modern digital signal processing room-correction systems, which when used carefully are a viable and inexpensive way to get the most enjoyment from sub-optimal listening environments.

#### RECORDINGS - WHAT TO LISTEN FOR

Just as you appraise a photograph for lighting, composition and detail, your Harbeth speakers allow you to experience recorded music in a uniquely natural way. You'll frequently hear unexpected details in even your most cherished recordings that you previously did not realise were there. Now, on a first class recording, the naturalness and believability of sound conjures up solid 3D holographic performers in the air between and beyond the speakers. Listen out for the way that the crystalline inner clarity of the Harbeth RADIAL cones really does transport you back in time and space to the recording venue itself.

Serious listeners build a personal library of recordings in which they have confidence in both the performance and the technicalities. Some of the finest recordings and performances were made many years ago on simple equipment and make excellent 'reference' recordings. An updated list of recordings that other Harbeth users consider to show off their Harbeth speakers to best advantage is available on the Harbeth web site. We would like to know what you consider to be a reference recording.

#### CARE FOR YOUR HARBETHS

To keep your Harbeths in good condition all that's necessary is a regular wipe with a *very* slightly damp cloth rinsed in mild detergent suitable for reviving wood. Waxy polishes should be avoided as they choke the pores in the grain. Avoid sunlight, radiators, draughts and smoke and your Harbeth's real-wood veneer will look as good in twenty years as it does now. The grilles are designed to have negligible acoustic effect and should be left in place during listening. They can be cleaned with a soft dry brush, vacuum or if absolutely necessary removed and wiped with a damp cloth. Be careful not to press in or deform the drive units under the grille and of course, take care that the speakers don't topple off their stands.

With our attention to detail during production, Harbeth speakers will give a long trouble free service life if operated at a normal responsible volume level.

Finally, thank you: we wish you many years of good listening

# Harbeth

Harbeth Audio Ltd.  
3 Enterprise Park,  
Lindfield, Haywards Heath,  
West Sussex, RH16 2LH, England.  
Tel: 01444 484371 www.harbeth.co.uk



Proudly flying the flag

# Harbeth®

AUDIO

## Owner's Certificate

This certificate confirms that the paired Harbeth loudspeakers with the serial numbers shown below were made precisely in accordance with Harbeth Quality Procedures.

Left speaker

Right speaker

Engineer, on behalf of



www.harbeth.co.uk

Harbeth Audio Ltd.,  
3 Enterprise Park, Lindfield, W. Sussex, RH16 2LH, England.

# Harbeth<sup>®</sup> User Guide

INSTRUCTIONS, HINTS AND  
TIPS FOR GETTING THE  
BEST FROM YOUR  
HARBETH LOUDSPEAKERS



The cabinet may be attached to the stand's top-plate with a small pea-sized ball of "BluTak", cork or rubber cushioning 'dots', cones or spikes. Note: only use the absolute minimum amount of BluTak as it has been known to damage the veneer. The feet of the stands are usually fitted with spikes that further improve stability. Route the speaker cables carefully, to prevent anyone tripping over them.

Ideally you should select stands that put the tweeter approximately level with your ear when seated in your usual listening chair - the so-called 'reference axis' where the frequency response is optimised. Tall stands have the advantage of moving the speaker further off the floor which improves the bass quality but there is always a compromise between the cosmetics of tall stands, ideal listening height and stability.

Although the reference axis is perpendicular to the front baffle, some users prefer to have both speakers toed-in towards the listener by 5-15°. Adjusting the toe-in alters the balance between the low, mid and high frequencies, according to preference.

## AMPLIFIERS, CABLES AND WIRING-UP

Harbeths are designed to present an 'easy' electrical load to the amplifier and will work well with valve (tube), transistor, MOSFET and digital solid-state amplifiers. A large 'dry' well furnished room and dynamic music played loud will demand a big amplifier. Conversely, in a smaller, more intimate listening room where you are closer to the speakers, much less power is needed. As a general rule, for normal domestic use an amplifier of, say, 45W into 8 ohm per channel rating is a good starting point and 100-150W into 8 ohm per channel would provide a reserve of power for the louder musical passages. Be aware that a small amplifier with limited power output will 'clip' when driven too hard and as clipping is destructive of loudspeaker drive units this is obviously not covered by our Warranty. The amplifier's performance can change over time, and it should ideally be tested and recalibrated according to the manufacturer's recommendations.

The volume control on your amplifier has the same function as a telephoto lens in that it can zoom you into the recording. Sound recordings, just like paintings and photographs, have an optimum focus: not too close and not too far away so that the perspective, detail and colours are in balance. Listening to recordings at home is normally at a replay loudness of around 85-95dB and Harbeth speakers are optimised to sound natural and full at this normal listening level.

There are many differing views about interconnect and speaker cables. Your dealer can provide invaluable advice so we'll leave that for you to explore and concentrate here on the basics of hooking-up to your amplifier.

Conventional 79-strand cable (or similar) will make a good initial starting point. Thin high resistance cables and cables with highly capacitive and/or inductive characteristics *definitely should be avoided* as they will produce an unwelcome electrical load and could damage your amplifier. Where practicable, use the same, shortest-possible cable lengths between amplifier and speakers commensurate with safety. Most dealers will be pleased to make-up or order cables to just the right length, terminated with the most suitable connectors for your equipment.

The rear terminal panel of your Harbeth speakers carries red coded and black coded connectors. The upper pair are connected internally to the tweeter via its crossover network and the lower pair to the woofer through its network. We recommend the standard 'single-wiring' connection method as this is the simplest, safest and quickest method of connecting your amplifier as shown in Setup A.

In some countries, it is reported that the so-called 4mm 'banana' plugs commonly used for connecting to audio equipment can be confused with mains plugs. Your dealer will be able to advise you whether or not 4mm speaker plugs are acceptable for connecting speakers to amplifiers. As an alternative you can use spade connectors or with care, bare wire ends.

It is *extremely* important to connect your Harbeths with the proper phase between the left and right channels and in bi-wiring/bi-amping configurations between the woofer and tweeter connections - see later. Wiring-up your speakers is much simpler if you select a clearly colour-coded cable where the 'hot' (+) or 'cold' (-) conductors are unmistakably identified by colour, rib or stripe running down one conductor. Some cables only have a faint coloured identifier printed on one conductor or other and repeated every metre or so in which case take care! Incorrect connections will make natural sound reproduction impossible and could damage your amplifier. Always check and recheck even simple hook ups before powering up the system for the first time and watch out for fine strands of wire that can stray between terminals and cause a short circuit.

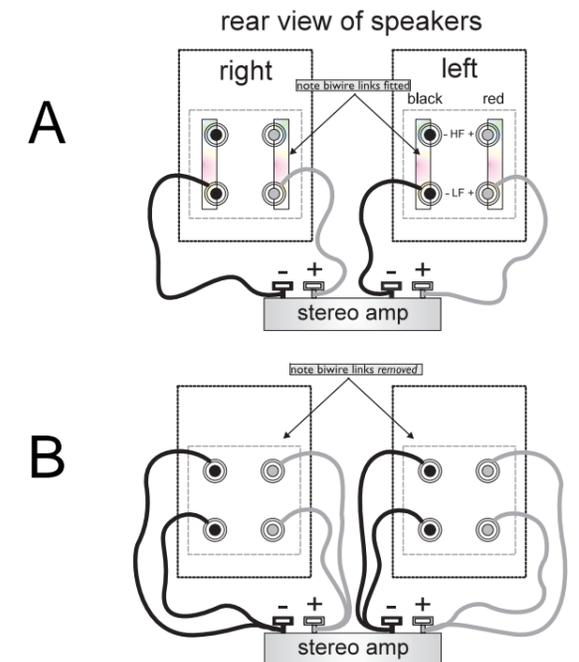
Never allow a (+) conductor to touch (short) against a (-) conductor even briefly as some amplifiers cannot tolerate output short-circuits no matter how brief.

### Safety first!

**Turn off your amplifier BEFORE making any changes to the wiring-up of your speakers.**

## Setup A - Single-wiring (preferred standard method)

Both of the supplied links must be fitted to bridge the speaker's red-to-red and black-to-black terminals. In this standard mode, we suggest that you use the lower red and black terminals to connect to the amplifier.



## Setup B - Bi-wiring

First, *remove* the bi-wire links and connect two pairs of cables to each speaker. From the amplifier's red (+) terminal connect one pair of cables to both of the speaker's red terminals. From the amplifier's black (-) terminal connect to both of the speaker's black terminals. We *strongly* recommend that you identify the polarity of all the conductors and clearly mark the (+) and/or (-) conductors at both ends of the cable to avoid confusion. Incorrect wiring will result in a short-circuit with potentially serious consequences.

*Bi-amping (not shown)* is the most complex arrangement. It is *essential* to remove all four bi-wire links before setting-up for bi-amping which requires two absolutely identical and calibrated stereo amplifiers wired so that one complete stereo amplifier drives each loudspeaker (e.g. the left channel amp. drives the woofer and the right channel drives the tweeter). The wiring is complex and the performance of the whole system totally depends on amplifier characteristics and correct connection. Even the small variations in gain between channels of hifi amplifiers will be enough to alter the relative balance between the bass/mid and high frequencies. Bi-amping is specifically excluded from Harbeth's loudspeaker warranty as it requires test equipment to set-up properly and strict attention to wiring. We regret that we cannot provide detailed advice on bi-amping.

## SPEAKERS IN THE LISTENING ROOM

In practice, under domestic conditions, a compromise has to be reached between the speakers being positioned unobtrusively near walls or ideally positioned well out into the listening area. When a loudspeaker is close to a wall, floor, ceiling or in a corner, those surfaces act as efficient reflectors of

Here at Harbeth we are dedicated to reproducing the real-life sound that the performers and recording engineers intended. With careful use, Harbeth speakers will give you very many satisfying years of listening pleasure, and time will prove your new speakers to be the ultimate audio investment. I warmly encourage you to join the User Group and share your experiences with other Harbeth users who like you, are serious about high fidelity natural sound.

Alan A. Shaw, Managing Director and Designer, Harbeth UK.

## INTRODUCTION

Harbeth loudspeakers are precision instruments. Their cabinets conceal a complex interplay of natural and man made materials, every small detail of which exists for a specific acoustic purpose regardless of cost. The incredible low-level resolution guarantees that the fresh, clean Harbeth sound is truly the last word in accuracy. After exercising for just a few hours your Harbeths will be fully ready for use.

This manual makes a few suggestions on how to extract the best possible performance from your audio system. Your own experience may differ somewhat, but what really matters is what sounds best to you in your room, with your music, your taste and your equipment. Don't hesitate to turn to the User Group for help and advice.

Musical appreciation is a partnership between performers, recording engineers, equipment designers, you and your audio dealer who'll help you to get the best from your hi-fi and has the time and the skills to experiment. Keep an open mind as to new musical avenues, equipment and accessories. Above all, trust *your own ears and judgement*.

## IMPORTANT - LIFTING YOUR NEW HARBETHS FROM THEIR CARTONS

**Before you attempt to lift out the speaker(s), please take note of the carton staples running top to bottom along one edge of the carton. Open the top flaps of your carton, remove the packing cap and take care to avoid contact between the staples and speaker cabinet. Retain the packing in a dry place.**

## STANDS

Harbeth speakers are at their best when used in 'free-field' conditions. This implies that the speakers are raised off the floor and away from adjacent surfaces as far as possible by using stands made from a rigid and non-resonant material, such as wood or sand-filled steel tubing. If you have children or animals be sure to put safety first as our speakers are heavy. The top-plate of the stands must be adequately large and the stands must be solid and stable to prevent the speakers from toppling over and causing injury or damage.