

# Harbeth. User Guide

Here at Harbeth we are dedicated to reproducing the musicality and warmth of natural sound. With careful use, Harbeth speakers will give you very many satisfying years of listening pleasure, and time will prove your new loudspeakers to be the ultimate audio investment. I warmly welcome you as a customer and encourage you to join the Harbeth User Group and share your experiences with other Harbeth owners who like you, are serious about high fidelity natural sound.

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

## IMPORTANT - LIFTING YOUR NEW HARBETHS FROM THEIR CARTONS

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

## INTRODUCTION

Harbeth loudspeakers are precision instruments. Their cabinets are crafted from a complex interplay of natural and man made materials, every small detail of which exists for a specific acoustic purpose. The incredible resolving ability of the fresh, clean Harbeth sound is a combination of leading-edge science and traditional values. After exercising your new Harbeths for just a few hours they'll be fully ready for a lifetime of enjoyment.

This manual makes a few suggestions for how to extract the best possible performance from your audio system. Your own experience must guide you, and 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 an ongoing relationship between performers, recording engineers, equipment designers, you and your audio dealer. He's there to 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.

## STANDS

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

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

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to prevent the speakers from toppling over and causing injury or damage.

The cabinet may be attached to the stand's top-plate with a small pea-sized ball of 'BluTak', cork or rubber cushioning (ie cones or spikes). Note: only use the absolute minimum amount of BluTak as it will permanently bond to the veneer and cannot be removed. Speaker stands are usually fitted with sharp spiked feet that further improve stability.

Ideally the stands should place 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 lift the speaker further away from the floor which adjusts the bass quality but there is always a compromise between the cosmetics of tall stands, ideal listening height and stability.

Although the reference listening axis is directly facing the front baffle, some users prefer both speakers toed-in towards the listening seat by 5-15°. Adjusting the toe-in alters the balance especially between the mid and high frequencies in your room according to your 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. Playing loud in a large acoustically dry, well furnished room will demand a powerful amplifier. Conversely in a smaller setting listening closer to the speakers, much less power is needed. As an approximation, for normal domestic listening an amplifier of about 45W into 8 ohm per channel rating is a good starting point and 100W into 8 ohm per channel would provide a reserve of power for the louder musical passages if used with care. Be aware that small amplifiers with limited power output may 'clip' when driven hard and as clipping can damage loudspeaker drive units it is not covered by our Warranty. The amplifier's performance can change over time, and it should ideally be tested and recalibrated as its

currency ages.

The amplifier's volume control is just like the zoom lens and lets you bring the performers closer to you. Every sound recording has an optimum loudness; not too close and not too far away so that the scale, perspective, detail and tonal colours are in their correct proportion. Listening at home at a reasonable loudness of around 85dB is considered a long term sensible exposure by health experts and acceptable by many neighbours: Harbeth speakers are uniquely optimised to sound natural and full at that safe 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 QED-like 79-strand cable (or similar) is all you need to get you going. Thin, high resistance cables or exotic cables with a strange construction may exhibit high capacitance and/or inductance characteristics and *definitely* should be avoided as they will produce unpredictable results and could damage your amplifier. Where practicable use the same, shortest-possible cable lengths between amplifier and speakers. Your dealer will be pleased to make-up and supply cables at just the right length, terminated with the most suitable connectors for your equipment and can give you advice on cable selection.

The rear terminal panel of your Harbeth speakers carries red coated and black coded connectors. Some models have two four connectors (permitting a bi-wiring connection arrangement) so the upper pair are connected internally to the tweeter via its crossover network and the lower pair to the woofer through its circuitry. Other models have one single red/black pair of input binding posts. The standard single-wiring connection method is the simplest, safest and quickest method of connecting to your amplifier as shown in Setup A.

Reportedly, the so-called 4mm banana plugs commonly used for connecting speakers to amplifiers can be confused with two-pin mains plugs. Your dealer will be able to advise you whether or not 4mm speaker plugs are acceptable in your country. As an alternative you can use spade connectors or with care, bare wire ends if the surplus wire is trimmed off.

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 in each speaker. 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 continuously along the sheath. Some cables only have a faint coloured identifier printed infrequently so please take care! Incorrect connections will make natural sound reproduction impossible and could damage your amplifier. Always recheck the wiring before powering up the system after making any changes and look out for fine strands of wire that can stray between terminals and cause a short circuit.

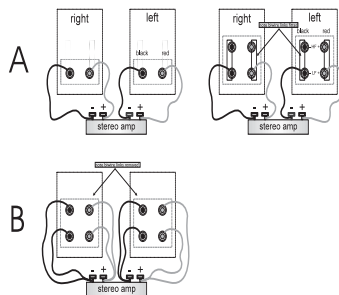
Never allow a (+) conductor to touch (short) against a (-) conductor even for a second as some amplifiers cannot tolerate output short-circuits no matter how brief.

## Safety first!

**Turn off your amplifier BEFORE making any changes to the wiring of your audio system or speakers.**

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

Where four terminals are supplied the bi-wire links must be fitted to bridge the speaker's red-to-red and black-to-black terminals or where only two terminals are fitted, connect to your amplifier like this ....



### Setup B - Bi-wiring for speakers with four rear terminals

First, *remove* the bi-wire links and connect two pairs of cables to each speaker. From the amplifier's red (+) terminal run two conductors to both of the speaker's red terminals. From the amplifier's black (-) terminal connect to both of the speaker's black terminals. You must identify with certainty the polarity of all the conductors at both ends of the cable to avoid confusion. Incorrect wiring will result in a short-circuit with potentially serious consequences to the amplifier.

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 mandates two absolutely identical and calibrated stereo amplifiers wired so that one complete stereo amplifier drives each loudspeaker e.g. the amplifier left channel drives the woofer and the amplifier right channel drives the tweeter. The wiring is complex and the performance of the whole system entirely depends on amplifier characteristics and set-up. Even the smallest variations in gain between the channels of a normal hi-fi amplifier will be enough to alter the relative balance between the bass/mid and high frequencies from what we intended.

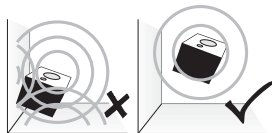
Bi-amping your speakers is specifically excluded from Harbeth's Warranty as it requires test equipment to set-up properly and strict attention to wiring. We regret that we cannot provide detailed advice on bi-amping.

When you have completed your wiring, be sure to route the speaker cables carefully to prevent any others tripping over them.

## SPEAKERS IN THE LISTENING ROOM

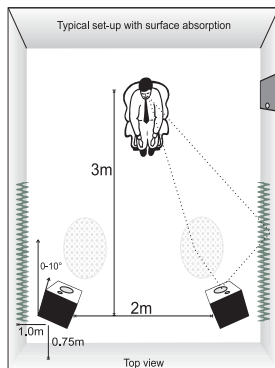
A sonic compromise has to be reached between positioning the speakers unobtrusively near walls or positioned further out in the listening area. When a loudspeaker is close to a boundary wall (floor, ceiling or corner) the speaker becomes

Top view



Right speaker near corner

acoustically coupled to the surface, just as if it is actually attached to 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 lower registers. Well stocked bookcases behind or beside speakers can greatly improve the low frequencies as can an asymmetrical placement of the speakers. Below is an example of a typical set-up.



Some listeners say that the most natural sound stage is achieved when the speakers are slightly closer to each other than they are away from the listener (above) but please experiment for yourself.

The ear does not like standing waves or echoes which you can identify by moving around your room and loudly clapping your hands. Parallel surfaces such as opposite walls, floor and ceiling encourage and sustain these problem frequen-

cies and flexible plasterboard walls and wooden floors over cavities such as a basement or garage may resonate and cause boom. However, curtains, thick carpets, rugs and bookcases positioned at strategic points to minimise reflections in the room (see picture) can make a dramatic improvement in fidelity; pleated curtains on tracks across windows or side walls are an excellent way of temporarily adjusting room acoustics. Optimising your speakers in your room needs experimentation but the general rule is the more absorptive the room, the less the room influences the sound. Fortunately the ear is forgiving of all but the most severe room acoustic problems.

Tone controls and modern digital signal processing room-correction systems can, when used carefully, offer a solution especially in the lower frequencies. They may be of little or no help in the middle and upper frequencies where conventional soft-fabric treatments are the best solution to damping a 'live' room.

## RECORDINGS - WHAT TO LISTEN FOR

Prepare yourself to hear unexpected details in even your most cherished recordings that you previously did not realise were there. Now a first class recording conjures up a solid 3D holographic performance - a curtain of sound - 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. Do bear in mind that almost all recent commercial recordings have been sonically processed to enhance their marketability as may be exposed by the greater resolution of your Harbeth speakers. It is a fact that many of the most natural recordings and performances were produced years ago on simple equipment. Please share your choice of showcase recordings with us on the Harbeth User Group.

## CARE FOR YOUR HARBETHS

To maintain your speakers occasionally wipe over the wood with a slightly damp cloth rinsed in a specialist detergent suitable for wood veneer. Do not use waxy polishes. Please avoid direct sunlight, radiators, draughts, smoke, ozone and other chemicals on or near the cabinets. The special Harbeth SuperGrilles™ should be fitted during listening. They can be cleaned with a soft, dry clean paint brush. Do not press or touch the drive units under or through the grille; if necessary the bass unit can be cleaned with a photographers air-brush not a cloth. Do not clean the tweeter.

## REGISTERING YOUR HARBETHS

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. The ex-factory Warranty can be extended (subject to conditions) by Registering your speakers on the Harbeth website. Finally, thank you: we wish you many years of great listening.

# Harbeth.

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