

TIPS FOR SPEAKER PLACEMENT

by Dahl Murphy

There are many things that affect the sound of a hi-fi or home theatre system in a normal domestic environment, but the biggest factor by far is the acoustic properties of the room in which the system is placed. Generally there is not much you can do about the room aside from furnishings, but with care and attention to the placement of the speakers within the room you can maximise sound quality and hence enjoyment.

Start by placing the speakers where you think they look acceptable. If the speakers or their stands have spikes remove them so that you can slide them around easily. This is only temporary. You will replace them after the set up is complete. Make sure that they are each placed an equivalent distance from the wall behind them and angled in toward the listening seat. The seat should be placed midway between the speakers and situated back from an imaginary line drawn between the speakers **(X)** by the distance between the speakers **plus one third of that distance**. For example if the distance between the speakers is 3 metres, place your seat about 4 metres back from the imaginary line. **Please note that this is a guide for most speakers. Some speakers having very wide dispersion characteristics in the midrange frequencies can be placed further apart, putting the listener at the apex of an equilateral triangle created by the speakers and listener.** Measure these distances with a tape measure, **don't guess them**. Also measure the distance to the side walls. If possible make the distance between **each speaker and it's** nearest side wall the same. **(B)** The measurement from the wall behind the speakers **(A)** and from side walls to the speakers should, ideally, not be the same. Take a note of the measurements just in case you've fluked the best position first time round. Play a CD or record that has a reasonably repetitive bass line. Listen for evenness in the bass response. Chances are there will be certain frequencies that sound significantly louder or softer than others. Move the speakers away from and towards the rear wall in increments of about 5 centimetres while listening to the bass response. There will be certain positions where the bass will sound best. Make a note of those positions. Choose the position that sounds best and puts the speakers the greatest distance from the rear wall that you can live with practically. The greater the distance from the rear wall, the more "open" the sound will be. Re-adjust your listening chair to the previously mentioned ratio(s).

Now play a piece of music that features a voice accompanied by instrumentation. Any style of music will do, as long as there is not too many instruments playing. Maintaining the distance from the rear wall, move the speakers inward and outward in 5 centimetre increments. You should notice that the feeling of "focus" on the voice changes. The further apart the speakers are, the less tangible the "image" of the voice becomes. Move the speakers apart until you find it difficult to place the position of the voice accurately. Now move them closer together until the voice "re-focuses". When it does you have reached a good compromise between image size and focus.

Now comes the fun bit. I suggest that you make sure you are alone when you do this part, because if anyone sees you doing it they're going to laugh a lot and they will tell all your friends and they will laugh too. People can be so cruel don't you know.

You need to establish the exact position of the speakers relative to your listening chair and to the room boundaries. This has to be done within a tolerance of 2 to 3 millimetres. Yep...I said millimetres. You can laugh if you like, but wait till you hear the results.

Start by finding the exact midway position between the two speakers. **(C)** Note the distance from this point to the nearest **side** wall. Use this measurement to place your listening chair exactly at the apex of the triangle, formed by the speakers and chair, derived from the ratio(s) mentioned before. **(CL)** Somehow make a mark in the position that your listening chair will go using the measurement that you have just taken. I find a "tech-screw" can be easily inserted to below the level of the carpet pile where it's not easily seen, making a permanent reference point and then partially unscrewed when needed. This of course depends on you having a timber floor below the carpet. If you have a concrete floor or polished floorboards you will have to be a bit more inventive. Having inserted the screw (or a nail which can be removed without damage to carpet) you need to measure the distance from **it to the speakers**. The distance from the screw to the inner edges of the speakers **(D-1)** may be different to that of the outer edges **(D-2)**, depending on the degree of "toe in" that you want your speakers to have. Just be sure that the outer measurements correlate and the inner ones do also. You may have to move one of the speakers slightly to achieve this. By coincidence most tape measures have a little slot in the claw at the start of them that hooks neatly over the head of the before mentioned "tech-screw", making this last measurement a breeze. Neat eh? Now all you have to do is replace the spikes. Carefully mark the perimeter of the speakers with some tape, so that you can place them back accurately after fitting the spikes. I mean, you've come this far, you don't want to botch it now.

After re-positioning the speakers check their positioning with the tape measure. Place your listening chair directly over the screw and hide all of the measurements and implements so that no-one will know what you've been up to, lest you be mocked by your peers.

You now have a properly positioned pair of speakers that will "image" like you won't believe. Guaranteed! One last thing. The ratio of speaker separation to listening chair distance is usually about right, but feel free to experiment as it will change the way you perceive the "sound-stage".

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