

DYNAUDIO

Passive Speakers User manual

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Introduction

Welcome, and many thanks for putting your music in our hands.

Back in 1977, Dynaudio's founder, Wilfried Ehrenholz, was dissatisfied by the hi-fi speakers he'd been listening to, so he began the Dynaudio story by building his own: mounting drivers made by other companies in modified off-the-shelf cabinets, and blending the systems with his own crossover designs. But Wilfried still wasn't satisfied. He came to realise that he could only get the speaker performance he aspired to if he designed and made as many components as possible himself. And we all know there's sometimes only one way to get something right: do it yourself.

Your new Dynaudio speakers have a direct link back to Wilfried's commitment to retaining control of all the vital components, design, engineering and manufacture. And that, in today's interconnected and badge-engineered commercial world, makes Dynaudio a very unusual organisation.

The paragraphs and illustrations of Dynaudio user manuals will help you get the best from your speakers and should provide all the guidance you need. But if you have further questions there are extensive support and FAQ resources available via the [Dynaudio website](#).

Dynaudio manuals start with a little housekeeping and a few obligatory notes of caution, and continue with sections on speaker positioning, speaker connections, speakers in use, and speaker care.



CAUTION!

High sound-pressure levels

Listening to high sound pressure levels over extended periods can damage hearing.



CAUTION!

Floor spikes

Some Dynaudio speakers and stands are equipped with floor spikes. Floor spikes can cause injury or damage sensitive surfaces if not handled carefully.



CAUTION!

Speakers on stands

Speakers mounted on floor stands should always be restrained on the stand top-plate by rubber pads or similar adhesive materials. Speakers mounted on stands without top-plate restraint can fall and potentially cause injury.

Note

To maintain the long-term aesthetic quality of your speakers, excessively warm, cold, or humid locations should be avoided. Similarly, direct sunlight or excessive artificial light can affect the colour of the natural wood veneers used on speaker cabinets.

Speaker positioning and installation

At Dynaudio we appreciate that speakers should fit with your environment and lifestyle, not the other way around, so our speakers make no unusual room positioning demands. Even so, every listening room has its own acoustic character and is uniquely furnished, so there are always choices to be made to help ensure that your speakers can give their best. Don't be afraid to experiment with adjusting the speaker positioning, and listening carefully, until you have it just right to your ears.

Speaker positioning

Speaker stands or wall mounting

Dynaudio speakers designed to sit on speaker stands can often also be placed on shelves, wall brackets or furniture units. Speaker stands, however, are likely to provide both the best performance and enable the greatest flexibility in positioning. They will also place the speakers at the correct height – approximately head height when listening. If you'd rather install your speakers on shelves, brackets or furniture units there are a few things to consider:

- Installing speakers on shelves, wall brackets or furniture units will lessen your ability to adjust speaker positioning. Make sure to read the [General Layout](#) paragraphs before deciding on shelf or bracket locations.
- Installing speakers on shelves, wall brackets or furniture units will result in increased bass volume and potentially less focussed stereo images due to reflections from the nearby back wall.
- The height of your speakers is important. They should be positioned approximately at head height when listening. Both speakers of the pair should be mounted at the same height.
- Shelves, brackets and furniture units should be easily able to support the weight of the speakers and be both rigid and non-resonant. Shelves or brackets attached to stud-work and plasterboard walls are unlikely to provide adequate strength or rigidity. If you're unsure of your wall's suitability, or of your ability to install shelf or bracket hardware, check with a qualified professional.
- Furniture that incorporates large unsupported panels might not be suitable for speaker mounting as the vibrations from the speakers can cause sympathetic panel vibrations. Similarly, locating speakers within furniture alcoves can result in a resonant air volume around and behind the speaker that could colour the sound.

Using speaker stands

If your Dynaudio speakers are supplied with stands, or you intend to use alternative Dynaudio stands, please follow the assembly instructions supplied with them. If you have lost the instructions, you can download them free of charge from the [support section of the Dynaudio website](#). Instructions for using the feet supplied with the stands are also available.

If you intend to use speaker stands from an alternative manufacturer, please follow the assembly instructions supplied with them.

We always recommend that speakers mounted on stands are restrained on the stand-top plate by rubber pads or similar adhesive materials. Speakers mounted on stands without top-plate restraint can fall and potentially cause injury.

General layout – stereo systems

In the majority of cases, stereo speakers should be between 2 m and 4 m (6 ft and 13 ft) apart. If the speakers are too close together, the stereo image will lack scale; if they're too far apart, the image might have a weak central focus. The distance from the loudspeakers to the listening area should be similar to, or slightly more than, their distance apart. The closer the listening area is to the loudspeakers, the closer the speakers can be to each other. Paying attention to the stereo image will help dictate optimum speaker positioning. [Diagram 1](#) illustrates basic speaker positioning.

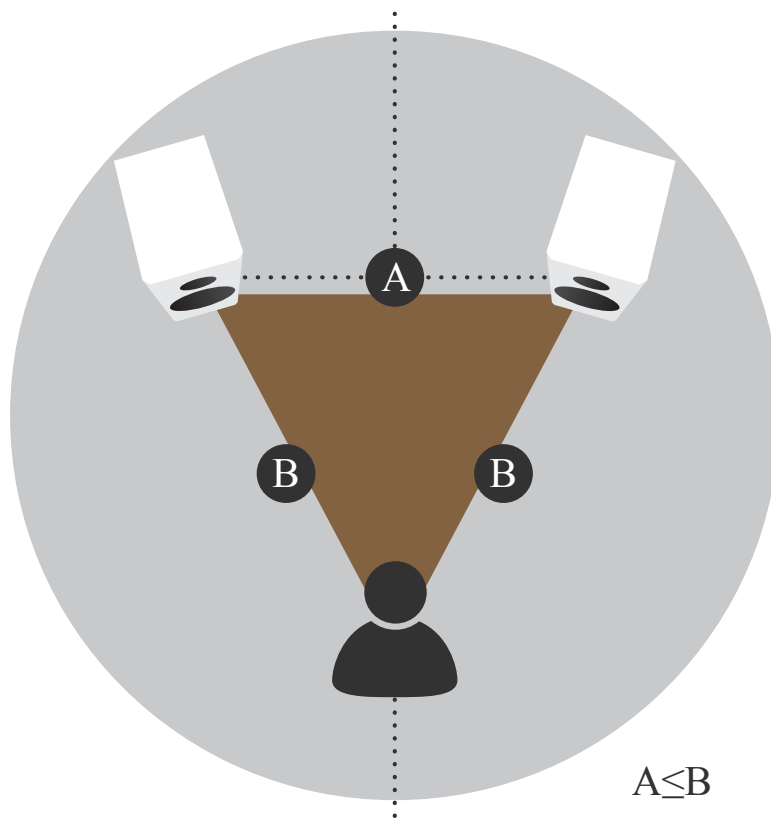


Diagram 1: Basic speaker positioning

General Layout – multi-channel systems

In home-cinema systems, the locations of the centre- and front-channel speakers are the most important. The location of surround-channel speakers is less critical. However, to experience a film soundtrack the way its sound designer intended, the surround-channel speakers should be positioned appropriately. Diagram 2 illustrates multi-channel speaker positioning.

Front-channel speakers

The front-channel speakers in a home-cinema system should be located either side of the screen. The top of the speakers should be approximately level with, or slightly above, the screen's horizontal centre-line, and each speaker should be between 15 cm (6 in) to 60 cm (2 ft) away from the screen's sides. The surround-channel in home-cinema systems tends to stretch stereo images so the front-channel speakers can be located a little closer together than in traditional stereo systems. Front channel audio can also become 'detached' from the video if the speakers are too far apart. [Diagram 2](#) illustrates multi-channel speaker positioning.

Centre-channel speaker

The centre-channel speaker in a multi-channel home-cinema system can be located either directly above or below the screen on its vertical centre line. If the screen is located relatively high on the wall, the centre-channel speaker should always be located beneath. Diagram 2 illustrates multi-channel speaker positioning.

Surround-channel speakers

Surround-channel speakers in a home cinema system are sometimes described as rear-channel speakers. In 5.1 systems (five speakers and one subwoofer), the surround-channel speakers should in fact be placed either side of the listening area, just above head height. In systems with more than two surround channels, the extra speakers go behind the listening position, so deserve the title 'rear'. Diagram 2 illustrates multi-channel speaker positioning.

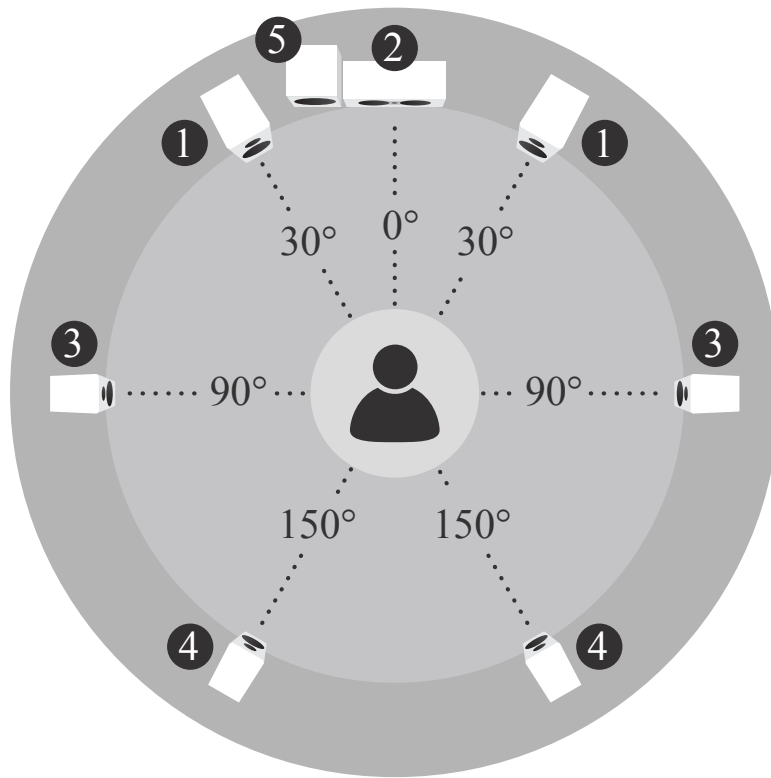


Diagram 2: Multi-channel speaker positioning

Speaker positioning – room effects

Every loudspeaker radiates sound energy not only forward but also to the side and, particularly at lower frequencies, to the rear. As a result, reflections from the room boundaries occur that interfere with the speaker's forward radiation. When loudspeakers are positioned too close to room boundaries their performance is affected.

Even with your speakers placed away from room boundaries, the material and acoustic character of the boundaries will still have an effect on the sound. Try to ensure that immediate surroundings of each speaker have similar acoustic qualities. Different acoustic qualities would be heavy curtains and bare walls, for example. The sound of any speaker will also be influenced by the furniture and other large objects within the listening room, and the material of its construction and wall covering. For example, a large room with little furniture and hard wall surfaces will result in a bright, diffuse sound, while a room with carpet, curtains and soft furnishings will result in a more focussed and less lively sound.

Dynaudio speakers are designed to perform at their best when positioned as far from any walls as possible. Ideally, try to aim for a minimum distance of 50 cm (18 in) from each speaker to any wall. [Diagram 3](#) illustrates room boundary distances.

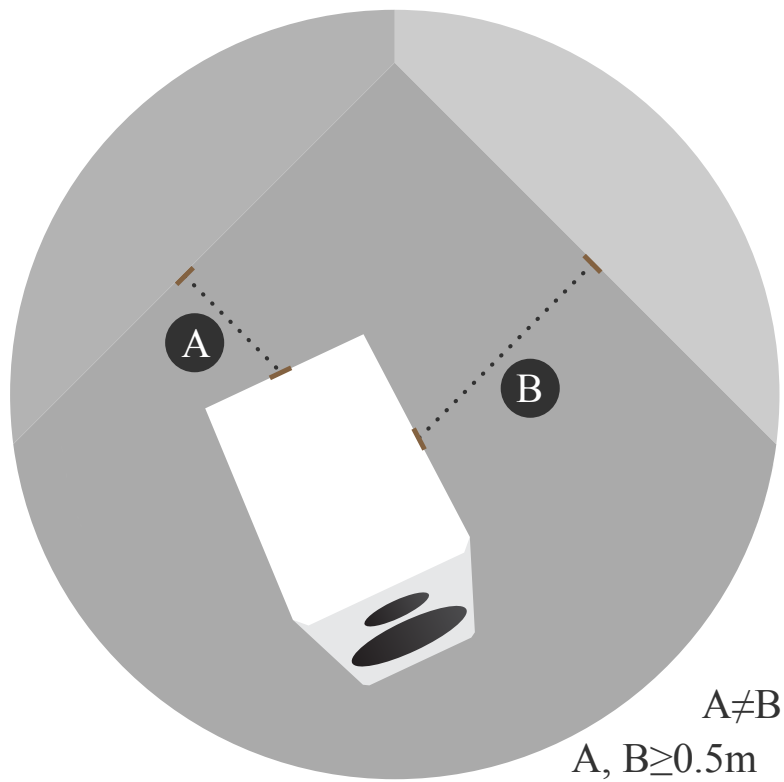


Diagram 3: Distance to walls

Speaker positioning – using port plugs

If your Dynaudio speakers have reflex ports and are supplied with foam plugs, these can be fitted to reduce the bass emphasis that may be apparent if the speakers are placed close to room boundaries. Some Dynaudio port plugs can be split to provide optional levels of bass volume reduction. For mild bass reduction, fit only the outer foam ring by sliding it in the port tube so that it sits just inside the flared port exit – making sure it retains its shape to minimise airflow turbulence. For more extreme bass reduction, fit the complete plug so that the port is blocked. [Diagram 4](#) illustrates the use of port plugs.

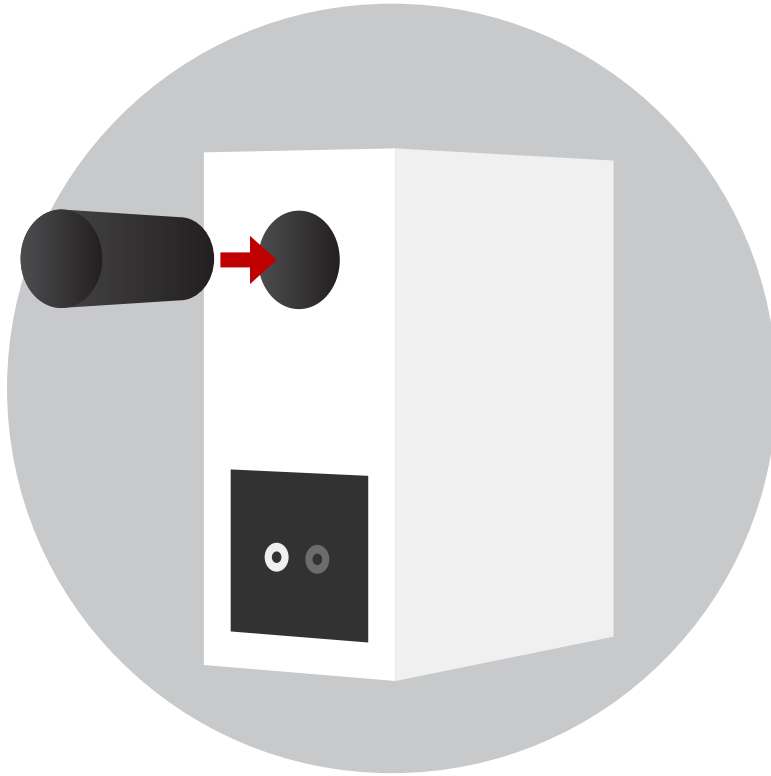


Diagram 4: Reflex port foam plugs

Speaker positioning – inward angle

There is no rule that speakers must be angled inward, but depending on the dimensions and acoustic character of your listening room, it could improve the stereo image focus. Experiment and trust your ears – you'll definitely know when it sounds its best.

Speakers used for front channels in home-cinema systems are less likely to benefit from inward angling as the centre-channel speaker tends to control the central image. [Diagram 5](#) illustrates inward angle.

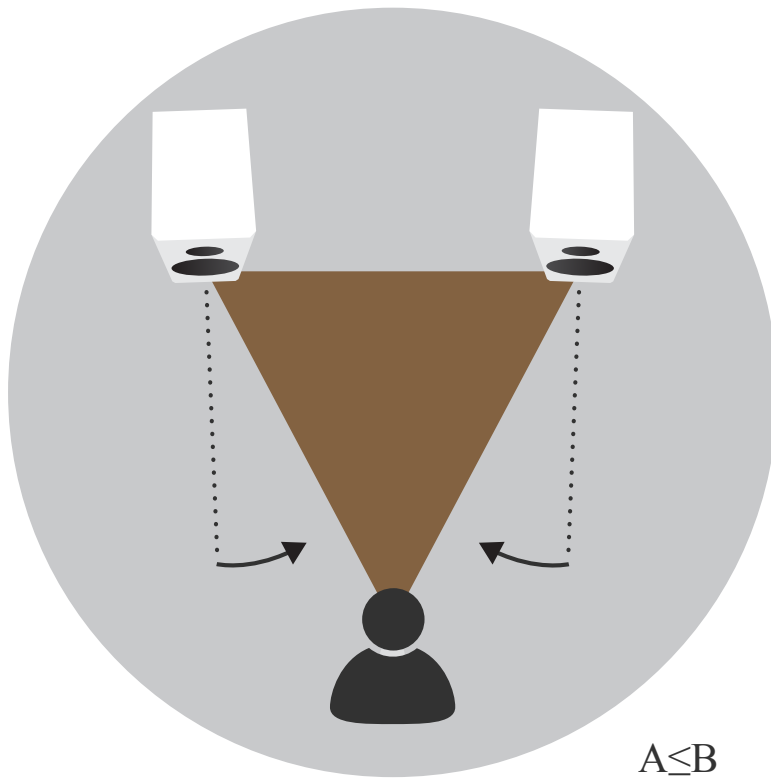


Diagram 5: Angle inwards loudspeakers to improve imaging

Speaker and stand foot options

Dynaudio floor-standing speakers and Dynaudio floor-stands intended for stand-mount speakers are supplied with two foot options: floor spikes and rubber feet. [Diagram 6](#) illustrates the use of floor spikes and rubber feet.

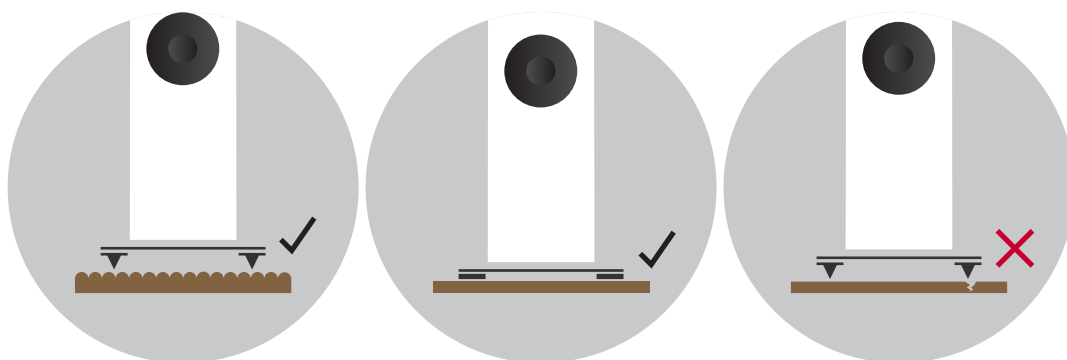


Diagram 6: Use of floor spikes and rubber feet

Spikes are designed for use on carpets and rugs. They pierce the carpet to rest on the floor surface beneath, providing the speaker or stand with a solid foundation. When using floor spikes ensure that the spike length

extends enough that the bottom of the speaker or stand is well clear of the carpet.

Spikes can also be used on non-carpeted floors with metallic discs (such as coins) placed between the spike tips and the floor. In this case the length of spike extending beneath the speakers or stands should be minimised.

The rubber feet are for when speakers or stands are used on uncovered wooden or tile floors. Make sure the length of foot adjustment extending beneath the speakers or stands is minimised.

Spikes or rubber feet should be adjusted so that the speakers or stands are vertical and don't rock.

Always take great care when installing floor spikes or when moving speakers or stands with floor spikes fitted.

Never tilt a speaker or stand with floor spikes or rubber feet fitted so that its entire weight rests on one or two spikes or feet.

Speaker connections

The type of speaker cable you use can affect audio performance. While it isn't absolutely necessary to use specialised cables, in general quality speaker cable will give the best results. In any case, the cable used should have a conductor cross-sectional area of at least 1.5 mm² – and performance may begin to suffer if cable length exceeds a maximum of around 15 m. The cable length to each speaker of a stereo pair should be approximately the same.

Your Dynaudio retailer will be able to offer advice on speaker cable that will suit both your electronics and your Dynaudio speakers.

Your Dynaudio speakers' connection terminals can accommodate stripped cables, 4 mm banana plugs or cable spades. Emit series speakers support only stripped cables and banana plugs. Most modern amplifiers incorporate terminals that provide similar connection options.

Begin by connecting the cable to the terminals on the speaker cabinet. Ensure that conductors marked 'positive' are connected to the positive (red) speaker terminals and that cable conductors marked 'negative' are connected to the negative (black) speaker terminals. The process of speaker connection varies depending on the type of cable connectors in use:

- **4 mm plugs:** Insert the plugs directly into the end of the speaker terminals. The terminals don't need to be tightened, but it's good practice to do it anyway to minimise any chance of mechanical buzzing.
- **Stripped cables:** Fully unscrew the speaker terminals and insert the stripped cable ends into the holes through the terminal posts. Make sure that no stray cable strands are left free. It will help to twist the stripped cable strands together. Tighten the terminals down securely onto the stripped cable. It's good practice to check terminals for tightness soon after they are initially tightened and occasionally thereafter.
- **Cable spades:** Fully unscrew the speaker terminals and position each cable spade arm either side of a terminal post. Secure the cable spades by securely tightening the terminals. It's good practice to check terminals for tightness soon after they are initially tightened and occasionally thereafter.

Once cables are connected to the speakers, they can be connected to the amplifier speaker output terminals. Make sure the amp is switched off, connect the cables from the left speaker to the left-channel amplifier terminals and the cables from the right speaker to the right-channel amplifier terminals. For multi-channel home-cinema systems with surround- and centre-channel outputs, connect each speaker to the appropriately marked amp terminals.

Ensure in every case that cable conductors marked “positive” are connected to the positive (red) amplifier and speaker terminals and that cable conductors marked “negative” are connected to the negative (black) amplifier and speaker terminals.

[Diagram 7](#) illustrates speaker connections.

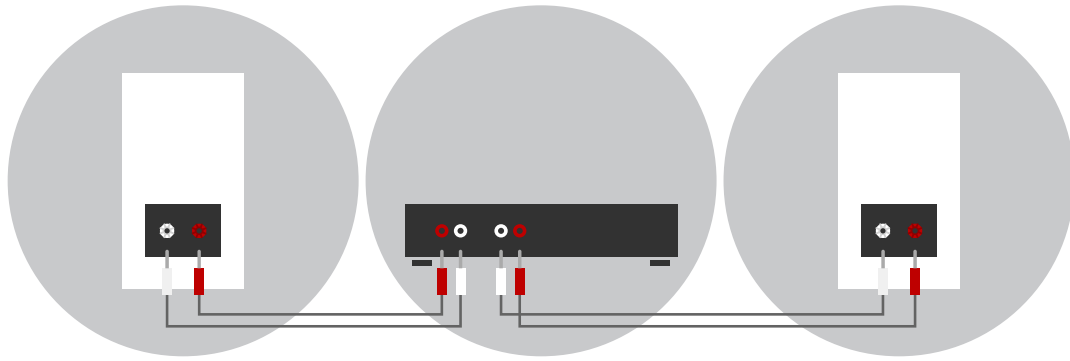


Diagram 7: Basic speaker positioning

Using and caring for speakers

Amplifier power and speaker power handling

Every Dynaudio speaker has a power-rating specification, and we always suggest using this for guidance on maximum amplifier power. As a rough guide we suggest a minimum amplifier power of around 20% of a speaker's power rating per channel to ensure the amp can drive hard without producing potentially speaker-damaging distortion. Your Dynaudio retailer will always be able to offer advice on suitable amplifiers for your speakers.

The golden rule is to reduce the volume if ever the sound becomes distorted. Distortion is a sure sign that damage to either speakers or amplifier is likely.

Speaker grilles

Many Dynaudio speakers have removable front grilles. Their use is really a matter of personal preference, but there are a few factors to consider. First, drive-unit diaphragms, especially tweeters, are delicate and can easily be damaged by inquisitive fingers. If you have young children, grilles are probably best left fitted. Second, even though grilles are designed to have a minimal influence on performance, the sound quality of your speakers may be marginally improved without them. We suggest removing the grilles for serious listening and replacing them at other times.

Some Dynaudio speaker grilles are attached magnetically while others use plastic plugs and corresponding sockets. In either case, grilles are removed simply by gently pulling them away from the cabinet front panel. Grille replacement is the reverse procedure.

Running-In

The moving parts of a newly manufactured Dynaudio loudspeaker have been acoustically checked after production, but nevertheless are not as flexible as they need to be for optimum results to be realised. The higher the quality of any driver system, the more demanding the loudspeaker will be regarding time for running in the system.

A newly unpacked Dynaudio loudspeaker therefore requires several weeks running/ playing to reach its optimum performance capability. After that period, a couple of minutes before every listening session will be helpful to "warm up" the loudspeakers.

Care and maintenance

Dynaudio speakers don't require any special treatment apart from the kind of care that you would invest in any valuable items in your home.

Use a soft, dry or very slightly damp cloth to clean the cabinet and other non-functional components. You should always avoid touching the tweeter dome. Dust can be removed from bass and midrange driver diaphragms using a soft brush. Fabric grilles are best cleaned with a soft brush. We do not recommend use of any cleaning or polishing fluids or sprays.

Warranty

Dynaudio provides a transferable limited manufacturer's warranty. This warranty only covers faults or defects in materials and production. Damage caused as a result of abuse, misuse or defective electronics isn't covered.

All warranty claims must be accompanied by a copy of the original purchase invoice, and warranties are only valid in the country or market of original origin or distribution. Should warranty service be required, it must be arranged for in the country of purchase by an authorised Dynaudio dealer.

DYNAUDIO

Passive Speakers

Designed and engineered by Dynaudio Labs in Denmark

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