

trinity

Owners Manual

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To the owner.

Please return your completed Guarantee Registration Card or use the electronic registration within two weeks of purchase.

For electronic registration please refer to the Wilson Benesch web site to take advantage of Customer Guarantee Registration. You can access the registration area via the **Owners Section**

On the **Home page**

At www.wilson-benesch.com

Every Wilson Benesch loudspeaker is engineered to last a lifetime and the Trinity is guaranteed for five years. This guarantee is non transferable and cannot be transferred to a second owner.

We enjoy hearing from customers about the systems that Wilson Benesch is being used with and any positive or critical comments that you think that we should be aware of. This can be related to the product itself or to the service provided by the dealer or distributor.

Wilson Benesch has designs and manufactures the most advanced technologies for the manufacture of its loudspeakers. A Wilson Benesch investment will not only provide years of pleasure it will also retain its value better than conventional technology loudspeakers

The care and attention offered by the Wilson Benesch dealer network matches the high quality systems that we manufacture. Should you require any further advice about cables, room sighting, upgrades or any other matters relating to audio or AV systems, then the dealers are more than able to respond to and deal effectively with any of these concerns.

We would like to thank you for investing in a Wilson Benesch Loudspeaker.

Important

Please read these instructions before unpacking these loudspeakers.

Wilson Benesch Spikes are fitted. These can be extremely dangerous for the unwary!

During installation two or more people will be required, as the speakers are quite heavy. Never attempt to unpack or install the speakers without assistance as this could result in damage to the speaker or personal injury.

Please observe normal procedures for lifting and correct posture when handling the speakers. Soft fabric gloves are recommended to prevent damage to the high quality finish. Also, it is strongly recommended that all watches and jewellery be removed prior to unpacking.

Patient and careful setting is essential to obtaining the maximum performance from this system.

- Move the speaker still in its packaging to the intended listening position. For further information on positioning, see the **Loudspeaker Positioning** section below.
- Making sure the top of the box has been fully opened and the hardware pack has been removed.
- The speaker is now ready to be removed from the box. Have an assistant help you lift the speaker clear of all the packaging. Stand the speaker on the floor, taking care not to damage the foot. The protective polythene bag can be slippery, so great care must be taken at this stage.
- Once both speakers have been stood up, the bags can be removed and the packaging stored for future use, as it is essential for shipping the system safely.

Wilson Benesch is distributed by the world's finest distributors and dealers. Should you have any problems, they should be able to help you. You can also contact our customer care service by email at any time.

Trinity has been designed to provide wide bandwidth sound that is non fatiguing and accurate. The principal tweeter has been used by Wilson Benesch for over a decade and remains virtually unchanged. In our view this technology is the best possible solution for this particular band of frequencies. The soft dome should be treated with care. Although it will still function extremely well if it is creased it is something that should be avoided. Similarly the Sphere ultrasonic generator should be treated with care. It should not be touched at any time. The surface is gold and it can be cleaned with a cotton bud and Iso-propyle alcohol. Both tweeters will last for tens of years if the domes are treated with care. It is for this reason that we have designed an acoustically transparent grill that is semi-permanent. The grill is attached by magnets. When shipped the grill is bonded to the baffle with a strong, double side visco elastic gasket. We recommend that you keep this grill in place at all times if there is any concern that the tweeters might be affected by other people who are not aware of the nature of the design. The grill can be removed but is not designed to be taken off and replaced over and over again. Because the grill is virtually transparent we recommend that the grill is left in place at all times.

For more information about the design of Trinity please refer to the White Papers on the Wilson Benesch web site at www.wilson-benesch.com

Room acoustics

Acoustics is a complex subject and this text should be treated for what it is, a simple but for some, informative guide. For a more in-depth understanding you

would need to refer to a whole range of texts on the subject.

The most important outcome of this, should be the greater appreciation of the role, played by the room on the overall sound of the audio system.

The air contained within the room is the link between the output of the loudspeaker and your ear. How air behaves is dependent upon the attributes or character of the room. It follows that a better understanding of basic acoustics and what facets cause the most influence in the room will assist in making decisions about the way in which the room and subsequently the system can be improved.

Room types fall between two extremes. A room can be **“dead”** on the one hand (full of highly energy absorbent materials and complex diffusing structures) or very **“lively”** on the other (few reflective surfaces and a high proportion of very reflective, hard, non absorbent surfaces). As so often is the case, a balance of materials is commonly preferable to one extreme or the other. The correct balance is the goal for the end user.

Room attributes that can be easily changed

Like the shape of the room the contents also create the character of any given room. As you would expect, hard surfaces like glass and concrete tend to reflect a broad band of acoustic energy. Complimentary materials that are soft and thick in section such as heavy natural fibre curtains will tend to absorb a broad band of frequencies.

What are Standing waves?

Sound waves reflecting between two parallel walls set up resonance modes when **one half, or a whole multiple of one-half, the wavelength of the sound wave is equal to the distance between the walls.**

These resonance modes are referred to as “**standing waves**”. In loudspeakers with parallel walls these waves will cause distortions. The standing waves in your room will distort the frequency response of your system sympathetically boosting certain frequencies.

If a certain standing wave frequency is acoustically isolated from its modal neighbours, its effect is more likely to be audible and problematic. This can compromise the accuracy of any loudspeaker.

Middle and High Frequency Room Characteristics

The middle and high frequencies are affected more by room contents rather than room shape. The surfaces and how they reflect, absorb or diffuse the acoustic energy will tend to describe the “sound” of a room. Like all energy, acoustic energy cannot be destroyed; it can only be converted into something else or reflected. The shape of the surface will determine how it is reflected and the material will determine whether it is absorbed. All rooms have a particular sound, and to appreciate what influences are present in your room you should be aware of how the objects in your room will respond to sound.

Sound waves behave in the same way as light waves or "rays" and so imagine the driver to be a floodlight.

Reflection: acoustic energy is not converted but reflected in an orderly, predictable fashion.

Diffusion: acoustic energy is dispersed in a random and or disordered fashion.

Absorption: acoustic energy is converted into kinetic energy or heat. All or a majority of the sound energy is "soaked up" or disposed of by the object surface or room boundary.

Bi Amping

The power that is delivered to your loudspeakers will have a direct effect upon the sound of your loudspeakers. You should select the best that you can afford. Separating the systems will deliver benefits that can easily be detected. We would not recommend using different amplifiers on different drivers.

Bi Wiring

Improvements can be heard through separating the energy from each filter in the crossover. Cables vary in construction but a good quality cable should be low in impedance, inductance and capacitance. Do not use cables that act as additional crossover components. Experimentation is crucial in this situation and a cable that works well in one situation / room / with a given amplifier, may not always perform as well when one of these variables are changed.

Two channel loudspeaker positioning

There is no objective criteria that can be used to state precisely where loudspeakers should be positioned. Should any individual or company suggest that there is, they should be regarded as special people and treated with a great deal of caution. In the global scenario, our loudspeakers are driven by unique systems that are selected by the owner because of particular virtues. Every listening room is as individual and unique in character as the owner. Compound this complex picture with the combination of different equipment. Consider the changeability of rooms, if the room is dressed with heavy curtains simply changing the curtains position can alter the whole balance of the system. The only rule is that there are no rules. Like producing good wine, it is the goal that is the only guide. The owner is the pivot in this subtle balancing act.

The goal of high performance audio systems is accurate reproduction. The information, be it in groove or pit format should be transcribed, amplified and converted back into sound energy without the additional views of the audio equipment designer being combined with that translation process.

In order to make the task of positioning the loudspeakers less complex we would like to make the following suggestions. That most valuable commodity, time, is the most important ingredient in this process. Be prepared to make small changes over longer periods of time.

Select four musical passages that you are familiar with, that can fulfil the following tests.

- They should all be stereo recordings.
- Select one with a distinctive and easily heard human voice. Spoken voice is ideal.
- Select one passage with a full orchestra like, The Pines of Rome.
- Select one that is very emotional for you.
- Select one that has a strong rhythm as in the case of dance music.

You should appraise the performance of the loudspeakers according to **your needs** based upon the tests above.

Cinema Systems

There are important factors to assist in setting up loudspeakers for surround fields.

- W.B. One® drive units that are not shielded should not be placed within 750mm of a television (cathode ray tubes). All non-shielded Wilson Benesch speakers should be over one metre from any television.
- The angle from the screen should ideally be between 110 and 130 degrees.

- The loudspeakers should be identical. However Wilson Benesch loudspeakers use identical drive units and tweeters, so it is possible for the system to be comprised of more powerful channels at the front of the room and smaller systems being exploited for the surrounding field.

- The Centre channel is a critical component in any quality cinema system. It handles more than dialogue, which the ear is very sensitive to, as we are all very familiar with what the human voice should sound like.

- All Wilson Benesch loudspeakers can be classified as full range systems.

- Configure the subwoofer just for LFE.

Spikes

The spikes are supplied installed so great care should be taken when handling these systems. By careful tests you can adjust the speaker both in terms of toe in, and in terms of angle of position. Should you wish to align the speaker you are advised to arrange for an assistant to assist in this task. The position of the tweeter has been designed to function best for listeners seated in conventional relaxed seating positions. If required, for other situations such as listeners on higher seating or standing, the speakers can be tilted back so as to incline the tweeter. The diffusion of the Sphere is spherical and is not subject to directionality in the same way as the Wilson Benesch tweeter.

Magnet Precautions

The motors used in all Wilson Benesch speakers are built from the most powerful magnetic material in the world, Nd.Fe.B. **Do not bring any metallic objects or sensitive electronic, electro magnetic or mechanical systems into close proximity of these devices, this includes pace makers or other critical devices.**

Terminals

Wilson Benesch recommends the use of 8mm Ring or Spade Connector cable terminations.

The Wilson Benesch spanner should always be used for tightening the rhodium plated nuts. But be careful!

Do not over tighten. the terminals as this may result in damage that will require the system being shipped back to Wilson Benesch. The terminals also allow the use of banana plugs.

Running In (120 hrs)

Seventy hours is an absolute minimum period of running before critical assessments and final positioning can be undertaken.

Surface Finish

Carbon fibre is a unique material with unusual physical and visual characteristics. We like to remain truthful about the fibrous nature of the material as opposed to concealing or obscuring it.

The natural wood components are manufactured using real-wood veneers. They will darken over time and, depending on the climatic and heating conditions will stress relieve. This is a natural phenomenon that may cause slight changes in the dimensions of the wood. These are typically imperceptible.

Care should be taken with the acrylic tops on the Arc and Discovery. A very soft lint free cloth should be used to gently wipe this surface.

Other Adjustments

Under no circumstance should you make any adjustments to the systems parts. Any adjustments not described above as required by the setting up procedure will nullify all guarantees.

Trinity

Technical specifications

The latest loudspeaker to come from Wilson Benesch, provides another glimpse of the future for loudspeaker design, that is in advance of all of its contemporaries. The key objectives were to achieve the most natural sound with the lowest possible noise floor. Close attention has been paid to phase and uncontrolled resonance and bandwidth, with point source characteristics being the guiding principle. The comprehensive list of new technologies that can be found in Trinity are touched on below.

This landmark design sets the agenda in the pursuit of high definition, wide bandwidth sound reproduction. Trinity can be used on its own, or in combination with the Torus system, to achieve the ultimate in terms of high quality, wide bandwidth, high definition sound. It pays homage to the capability of Vinyl source material, as well as the greater bandwidth capability of SACD and DVD Audio formats.

Description	3 way, Wide bandwidth, linear phase, free space, ported enclosure, stand mounted monitor		
Drive units	1 x 170mm (7 in) Wilson Benesch W.B. One MID bass units 1 x 25mm (1 in) Soft dome, hand painted silk, ultra linear Wilson Benesch specification tweeter 1 x Sphere Ultrasonic Generator, Gold plated Ceramic dome advanced tweeter		
Low frequency loading	Double reflex port tuning		
Frequency range	-6dB at 40Hz and 100kHz -3dB at 45Hz and 80kHz		
Frequency response	46Hz to 80kHz +/- 2dB on axis		
Sensitivity	89dB spl at 1metre on axis. 2.83V input		
Impedance	6 Ohms nominal, 4 ohms minimum		
Crossover	No crossover on mid range First order tweeter Selected polypropylene capacitors and air cored inductors are used throughout		
Crossover frequencies	Mid acoustically loaded 5kHz / 20kHz		
Internal wiring	Multi stranded, silver plated copper, PTFE jacketed cable harnesses Soldered connections throughout Shortpath P.C.B. design Links supplied for single or bi-wire applications		
Input connections	Bi-wireable, in-house machined gold plated copper alloy terminals		
Power handling	200W peak unclipped programme		
Maximum spl	111dB at 1 metre		
Dimensions	Height	310mm	Height on stand 1080mm
	Width	230mm	
	Depth	300mm	
Internal volume	12 litres		
Net weight	26kg per speaker		
Finishes available	Standard Finishes available : Regal Silver, Black Red cherry, birds eye maple, Burr walnut, Ebonised Walnut, White Gloss (including stands). High Build Gloss Wood Finishes: Satin Wood Finishes: Cherry, Maple, Oak Stands: Regal or Black.		

