

# BØRRESEN C-SERIES

USER GUIDE | C1 / C2 / C3

Rev.1.1 ENG



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## SAFETY INSTRUCTIONS

Avoid bringing external metal objects close to the loudspeaker. The tweeter contains very strong magnets and close contact with metal objects can cause damage.

The loudspeakers may be damaged due to distorted output signals from too weak, defective or overloaded amplifiers. Use only high quality amplifiers and run these within the specified power ratings.

Let the speaker reach room temperature before plugging it in. Condensation may arise in the electronic circuitry when moving the speaker from cold to warm surroundings. Such moisture may damage the speaker's components.

To protect the surface, please wear protective gloves when handling the loudspeaker.

Never use the product in damp environments. Do not insert foreign objects into the speaker's bass reflex ports. Avoid touching the speaker elements.

## MAINTENANCE

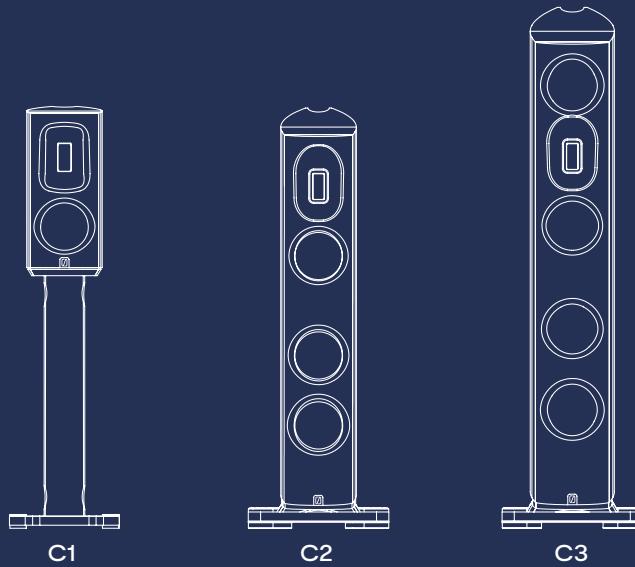
Do not use a vacuum cleaner to remove dust from the loudspeakers elements. Brush it away gently with a soft brush.

Do not use any detergent. It may discolor or the finish.

Clean the surface of the loudspeakers with a firmly wrung, damp cloth.

Do not expose the cabinets to direct sunlight.





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## CONGRATULATIONS

The Børresen audio engineering team are grateful and congratulates you for your choice of the Børresen loudspeakers. We are convinced that you will enjoy the exquisite music experience just as intimate and close as it was originally performed by the artist themselves.

Børresen Acoustics' philosophy is to bring people closer to the music by creating access to great, authentic and emotional music experiences. Børresen believes that everyone deserves these kinds of wonderful moments. The Børresen C series has been designed on the solid foundation of Børresen Acoustics' development traditions, design philosophy and technological know-how.

# ABOUT THE PRODUCT

## Børresen DCC5 Neo driver

### The membrane

Michael Børresen and his team of experts were able to leverage the cutting-edge technology and development process of the Børresen C series membrane. This exclusive membrane was engineered to achieve unparalleled stiffness while minimizing noise. To meet the stringent technological demands for exceptional high-end membrane performance, it was imperative to create, develop and assemble all components in-house.

The C series membrane consists of three layers laminated into a single unit: two layers of spread-tow carbon fiber, with a layer of honeycomb spacers in between. The combination of these materials gives this membrane its unique properties. The spread-tow carbon fiber was designed to provide a skin with optimal stiffness. This unique feature of the membrane reduces sound-disturbing vibrations and resonances to unprecedented levels.

### The magnetic motor system

Børresen uses double copper caps on the pole rings of the C-series magnet motor system to achieve a balance between high flux and low inductance. The use of these double copper caps was adopted from higher profiled Børresen drivers. Copper responds to flux variations, and the effectiveness of these copper rings determines the steepness of the inductance curve and the extent to which electromagnetic resonance is reduced. Consequently, lower inductance results in fewer spikes on the impedance curve, which ultimately reduces the load on the amplifier.

To achieve optimum efficiency, the C-series has two pole rings, which inevitably results in some flux loss and thus, lower efficiency. However, this drawback is compensated by using stronger magnets made from N52 Neodymium – the strongest magnetic material available.

## Børresen RP94 tweeter

Another fundamental element of the Børresen DNA, and thus a natural addition in the C-series, is the Børresen ribbon planar tweeter. The efficiency of this ribbon planar tweeter is an exceptional 94 dB and operates from about 2.5 kHz upwards. The moving mass is extremely low at 0.01 grams. The fully ventilated tweeter has the ability to operate at incredible speed, which is an absolute prerequisite for unlocking the subtlest and finest sonic details of any type of music. The tremendous robustness of this tweeter allows it to handle extremely high transient peaks without causing any ear deafening breakups. Elaborate finite element methods were used to linearize and optimize the magnetic flux field, facilitate driver movement, and ensure high efficiency and excellent linearity.



## Crossover

The Børresen C-series loudspeakers are based on serial crossover networks, which provide the same phase-locked electric current flow to transducers in the filtering region. Although this crossover topology is significantly more difficult to implement, by diverting the out-of-band currents it creates a much more coherent filtering system.

## Structural robustness dressed to impress

Børresen C-series enclosures are built upon internally reinforced robust wood composite material, which is highly effective in eliminating sound distortion; standing waves and external resonances. This unique cabinet material also minimizes the negative impact of mechanical factors, particularly hysteresis. In addition, 1mm-thick carbon fiber panels are applied to the enclosure sides, which significantly raises the rigidity of the model and sound performance it delivers. Glossy white/black side stripes laid on top of the thick carbon layers allow this material to work at its very best, and also greatly contribute to the speaker's unique aesthetic.

## The C1 Loudspeaker stand

The C1 loudspeaker stands are designed to support the Børresen C1 speakers in the best possible way by placing the speakers in the correct height and angle. The stands are made of the same robust wood composite material as the cabinets, creating the perfect synergy between speakers and stands.

As the stands are without iron components any magnetically interference into the loudspeakers crossovers is avoided.

The loudspeaker stands comes with Ansuz Darkz S2t Resonance Controlling devices to be the perfect link between loudspeakers and stands. The stands can even be further upgraded by adding Darkz underneath the matching Darkz Feet.

## Adjustable Feet - C2/C3

To enhance the listening experience to the fullest the speakers come included with Ansuz Darkz S2t and Titanium balls to be inserted into the adjustable feet. This will insure the best mechanical groundning and resonance control.

After inserting the Darkz/Titanium ball into the feet we recommend to check and if necessary adjust the leveling of the speakers. Use a spirit level on the plinth of the speaker to level out the speakers. The plinth must be precise horisontical both front to back and left to right, and rest evenly on all four Darkz.



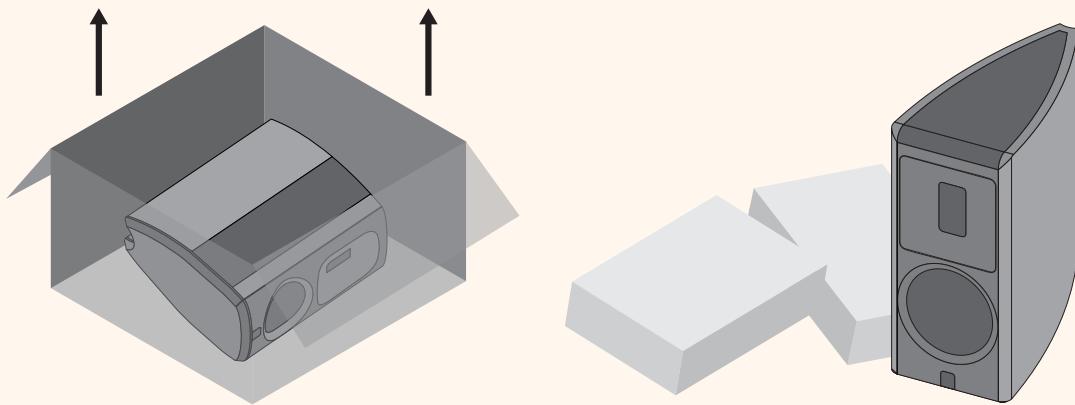
## UNPACKING - C1

Børresen loudspeaker models are protected during transport by stable and secure packaging.

Due to their weight and dimensions, they are shipped in a special, double layer box.

Please consult your Børresen dealer who in most cases will unpack and set up your new product.

1. Carefully lay the transport box flat on a plane floor.
2. Remove the straps from the outer carton and pull the lid to reveal the inner box.
3. Open the inner box, do not use knife or sharp instruments to break the tape.  
Take out the included Darkz.
4. Place the Darkz, one in each of the three pits on the stand.
5. Carefully lift the loudspeaker out of the box and place it, fitting the Darkz to the pits beneath the speaker.
6. Check that the Loudspeaker is fixed firmly to the stand/Darkz in a sideways direction.
7. The speakers is not supposed to be fixed in upwards direction.



## UNPACKING - C2

Børresen C2 loudspeakers are protected during transport by stable and secure packaging.

Due to their weight and dimensions, they are shipped in double layer boxes.

We recommend that a team of at least two persons work together to unpack and place the speakers.

**1.** Carefully lay the box flat on a plane floor with the opening upwards.

**2.** Open the outer and inner box. Do not use knife or sharp instruments to break the tape.

**3.** Find and remove the accessories: 1 box containing 4 Darkz, 1 set of jumpers, protective gloves and the user guide.

**4.** Now, lift the box to an upright position.

**5.** Pull the loudspeaker and the protective foam out of the box, sliding it on the bottom foam. Be careful not to tilt.

**6.** Remove the bottom foam by tilting the loudspeaker and then the remaining foam.

**7.** Put the loudspeaker to the position you desire.

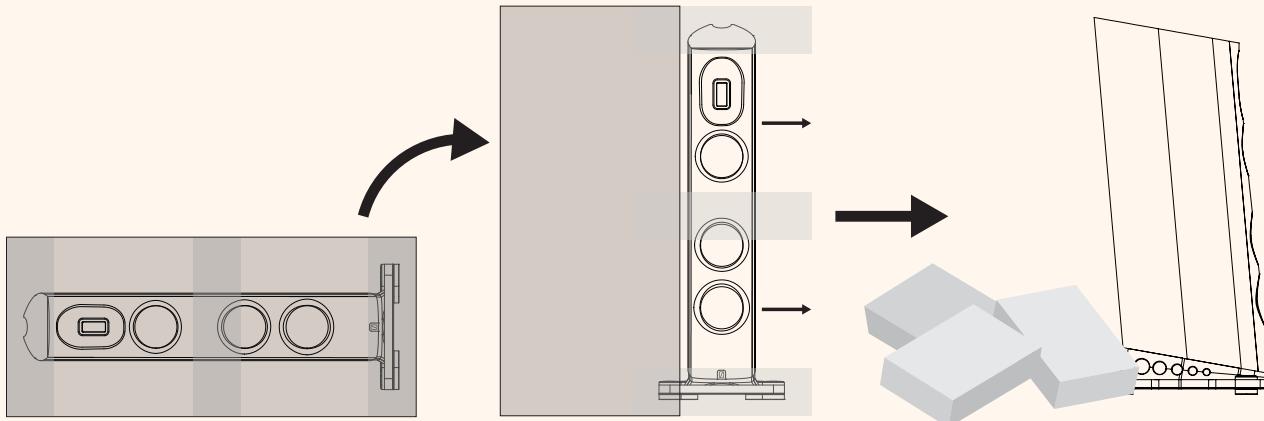
**8.** Put on protective gloves for further handling of the loudspeaker.

**9.** Remove the fabric cover by lifting it up while gently tilting the speaker a bit to loosen it from the speaker's feet.

**10.** Please observe guidelines for positioning and connecting your loudspeakers.

**11.** After about 100 hours of burn in, and the right positions for the speakers has been found, insert the 2 x 4 Darkz into the speaker's feet. Place 3 titanium ball on top of each Dark. Tilt the speakers just enough to be able to slide the Darkz/balls in under the feet. This is a two-person job! observe that the Darkz/balls sink all the way into the feet and that the speakers rest evenly on all Darkz.

**12.** Adjust the feet to bring the speaker to a level position.



## UNPACKING – C3

Børresen C3 loudspeakers are protected during transport by stable and secure packaging.

Due to their weight and dimensions, they are shipped in two flight cases.

We recommend that a team of at least two persons work together to unpack and place the speakers.

**1.** Place the flight box on a level floor.

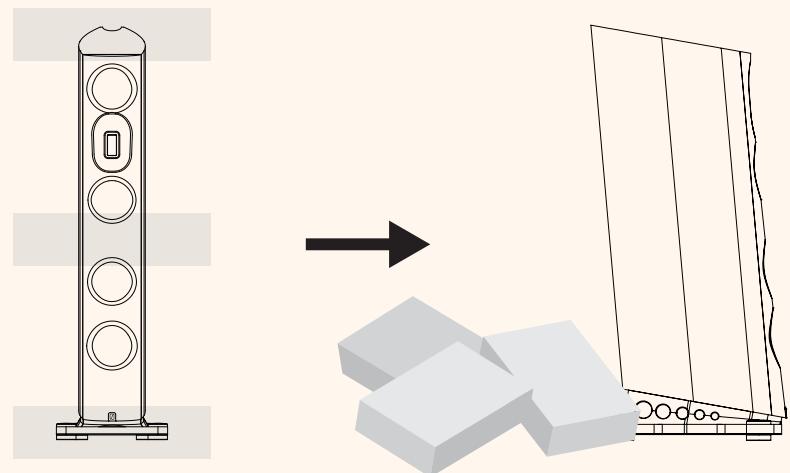
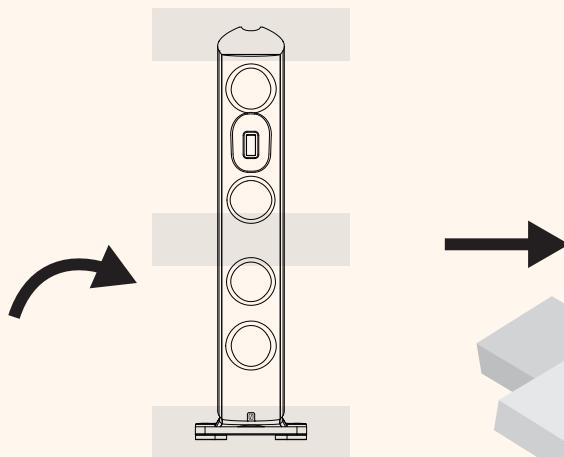
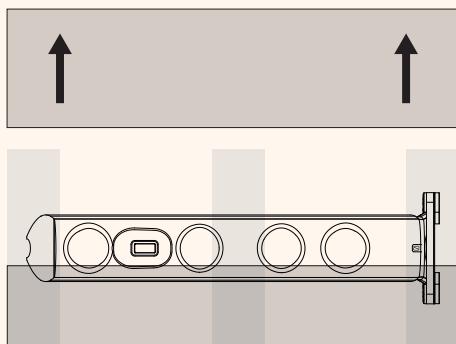
**2.** Open the locks and carefully lift of the top of the flight case in a straight upwards direction.

- 3.** Find and remove the accessory box containing 4 Darkz, 1 set of jumpers, protective gloves and the user guide.
- 4.** Now, lift the loudspeaker out of the flight case. Remove the bottom foam and place it upright on the floor.
- 5.** Remove the rest of the foam.
- 6.** Put the loudspeaker to the position you desire.
- 7.** Put on protective gloves for further handling of the loudspeaker.

**8.** Remove the fabric cover by lifting it up while gently tilting the speaker a bit to loosen it from the speaker's feet.

**9.** Please observe guidelines for positioning and connecting your loudspeakers.

**10.** After about 100 hours of burn in, and the right positions for the speakers has been found, insert the 2 x 4 Darkz into the speaker's feet. Place 3 titanium ball on top of each Dark. Tilt the speakers just enough to be able to slide the Darkz/balls in under the feet. This is a two-person job! observe that the Darkz/balls sink all the way into the feet and that the speakers rest evenly on all Darkz.



## CONNECTING THE SPEAKERS - C1

With every connection system, ensure that the contact is tight and has a proper contact area.

Connectors with gold plating will typically offer the best results and remain corrosion-free.

Please ensure that the positive and negative cables do not make contact with each other.

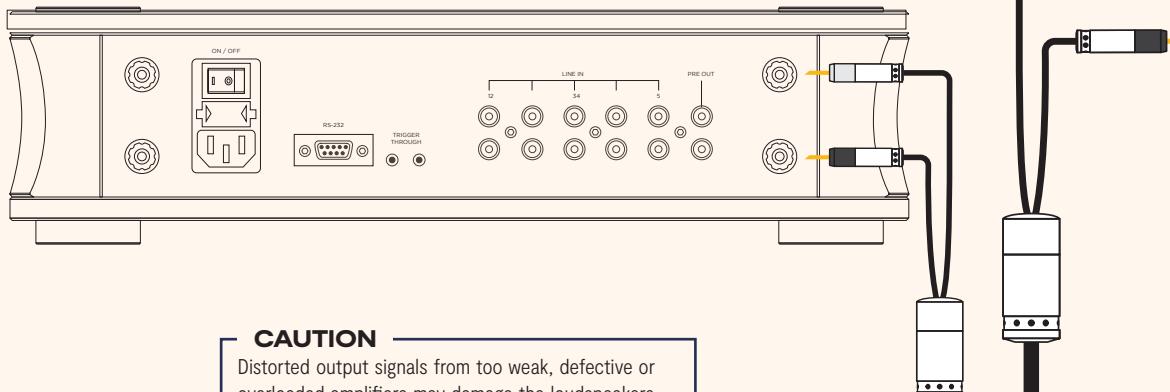
Check the connectors from time to time to make sure that nothing has loosened.

**1.** Connect a two-pole (+/-) loudspeaker cable to the terminals, located at rear of the loudspeaker.

The high quality binding posts can accommodate only 4-mm-plugs ("banana plugs").

The pins can be put directly into the binding post without any tightening necessary.

**2.** Connect the other cable ends to the loudspeaker outputs of your switched off amplifier.



# CONNECTING THE SPEAKERS - C2 / C3

The speakers can be connected in three different configurations:

## 1. Single wiring

Single wiring is the most common principle for connecting the speakers. Since bi-amping is optional for this speaker, you need to connect the included jumper speaker cable to the speaker cable.

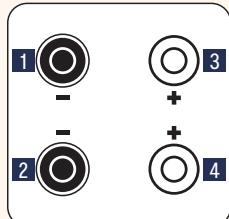
## 2. Bi-wiring

Allows you to use two sets of speaker wires to connect individually to the low bass section (below 150 Hz) and the bass (over 150 Hz)/midrange/tweeter section.

## 3. Bi-amping

This principle allows you to use two sets of speaker wires connected to two stereo amplifiers. It also allows you to use an active crossover\* in front of two stereo amplifiers to optimize the level between the deep bass (below 150 Hz) and bass (over 150 Hz)/mid/high frequencies according to the listening rooms acoustical properties.

\* = we recommend using the Dual Slope Analog Active Crossover found in some Aavik amplifiers.



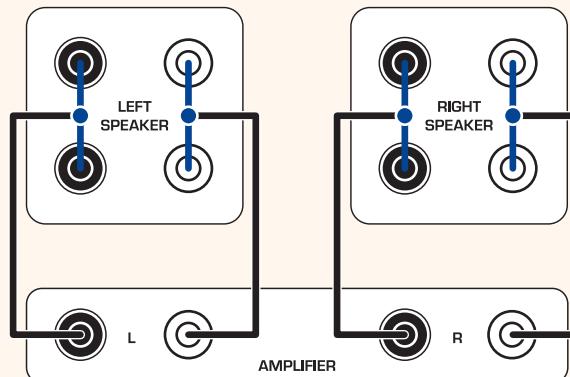
## Single wiring

The C2 & C3 speakers is equipped with two pairs of binding posts. Follow these steps to connect your two-pole (+/-) speaker cables:

**A.** Use the provided jumper cables to connect the speaker cables to the M3 speaker. Connect the included jumper cables to each pole on the speaker cable.

Connect the black marked connectors to minus (-) pole **1** and **2** on the speaker, and the white marked connectors to plus (+) pole **3** and **4** on the speaker.

**B.** Connect the other ends of the speaker cables to the speaker output on your amplifier. Ensure the amplifier is switched off.

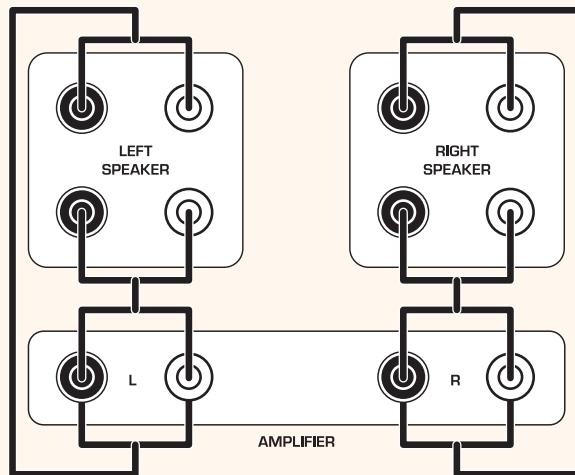


## 2

### Bi-wiring

The C2 & C3 speakers are equipped with two pairs of binding posts. Follow these steps to connect your two sets of two-pole (+/-) speaker cables:

- A. Connect one set of speaker wires to the upper terminals with negative (-) **1 3** to black and Positive (+) to white. Connect the second set of speaker wires to the lower terminals the same way **2 4**.
- B. Connect the other ends of the speaker cables to the speaker output on your amplifier. Ensure the amplifier is switched off.

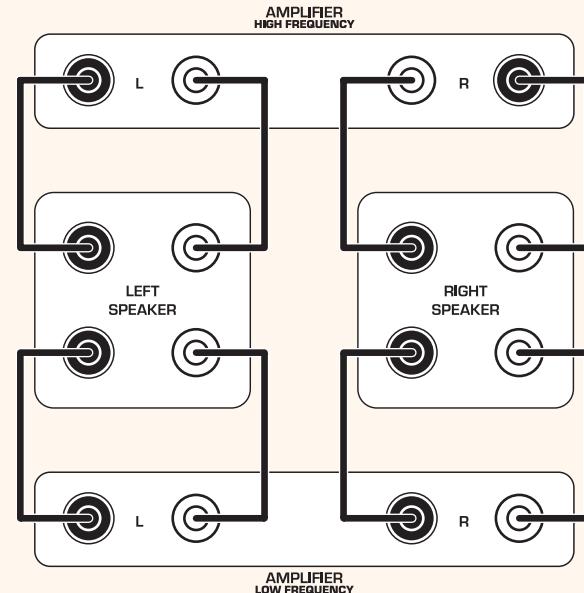


## 3

### Bi-amping

Connect the speakers to two power amplifiers using two sets of speaker cables for each speaker.

- A. Connect the black marked connectors to minus (-) pole **1** and **2** on the speaker, and the white marked connectors to plus (+) pole **3** and **4** on the speaker.
- B. Connect the other ends of the speaker cables to the speaker output on your amplifiers. Ensure the amplifiers are switched off.



# POSITIONING

The sound from loudspeakers depends very much on the room and on the way they are set up. Please consult your dealer for advice on how to set up your Børresen loudspeakers in your home.

These guidelines are general and will give you a good starting point for further experimenting in finding out what is just the right setup for your room.

## **A** The distance from the side walls to the loudspeakers

The Børresen loudspeakers are not that sensitive in regard to getting to close to sidewalls. A distance of about 15 cm will be enough. Too short a distance to the side walls is likely to increase the amount of bass.

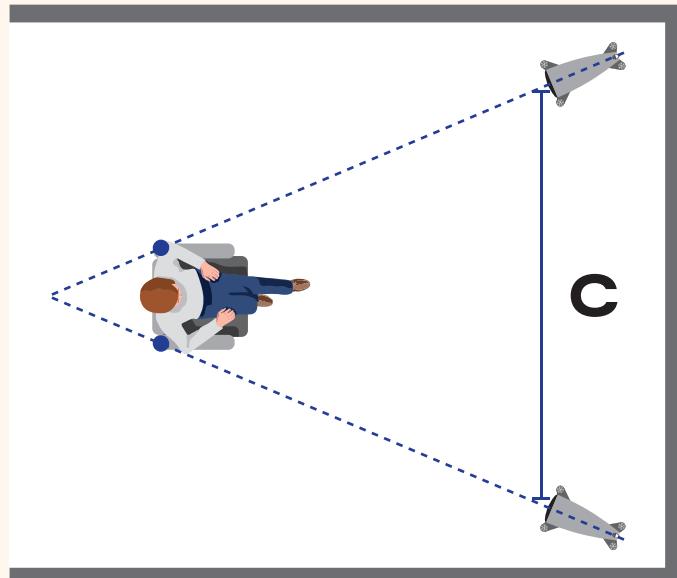
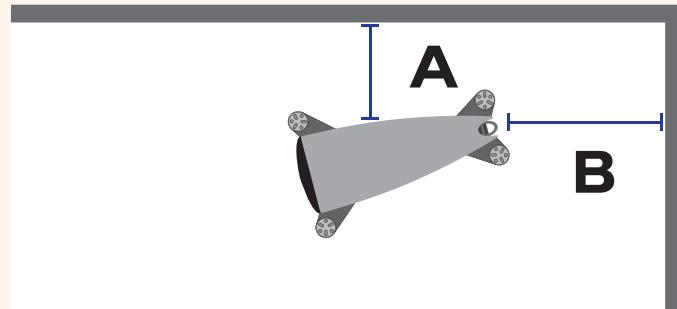
## **B** The distance between the rear of the loudspeakers and the wall behind them

Start with a distance of 50 cm. This distance should be exactly the same for both loudspeakers. Try the loudspeakers out with music you know and find out what distance gives the best sound.

Greater distance = weaker bass, more precise bass, better precision and bigger sound stage. Shorter distance = more and softer bass, and a smaller sound stage.

## **C** The distance between the loudspeakers and the listener

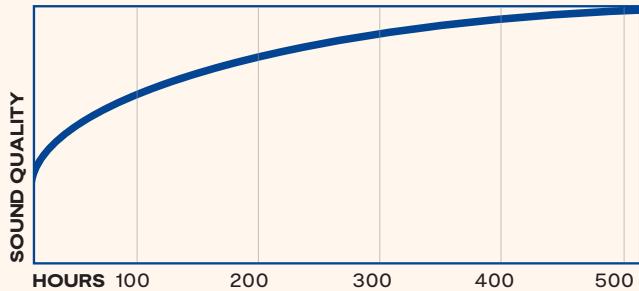
The ideal distance between the loudspeakers is not less than 3 metres. Put the loudspeakers in an angle making the center point at the listeners shoulders. The lines should cross about one meter behind the listeners head, meaning that the listener should just be able to see the two inner sides of the speakers.



## BURN IN

All new high quality loudspeakers need a certain period of burn in time. As Børresen loudspeakers uses long-stroke bass driver with natural rubber surrounds, the loudspeakers needs at least 50 – 100 hours of actual music playing at decent sound level.

You will notice a gradual improvement in sound quality. No particular precautions need to be taken during those hours.



## RECOMMENDED PRODUCTS

### **Ansuz loudspeaker cables**

Børresen recommends using high-end Ansuz speaker cables with the C-series speaker. These cables are designed to deliver pure signal flow, reducing resistance, induction, and noise floor for an authentic soundstage. As Børresen speakers and Ansuz cables are developed and designed by the same team, they share the same DNA and a unique synergy that ensures a seamless and exceptional sound reproduction experience.

### **Ansuz Darkz resonance control**

The Børresen C-series comes equipped with Ansuz Darkz S2t resonance controlling devices. The speakers can be further upgraded by using even higher quality Darkz like Darkz T2 – T2 Supreme. The C1 loudspeaker stands are prepared for adding Ansuz Darkz underneath the feet for further upgrade.

Ansuz Darkz are designed to mechanically ground vibrations and by doing so eliminate resonances. It is the natural and authentic sound that Ansuz Darkz devices are designed to preserve. There is no alteration of the authentic sound reproduction which, when using conventional grounding materials, often make the sound unnaturally cold and harsh.

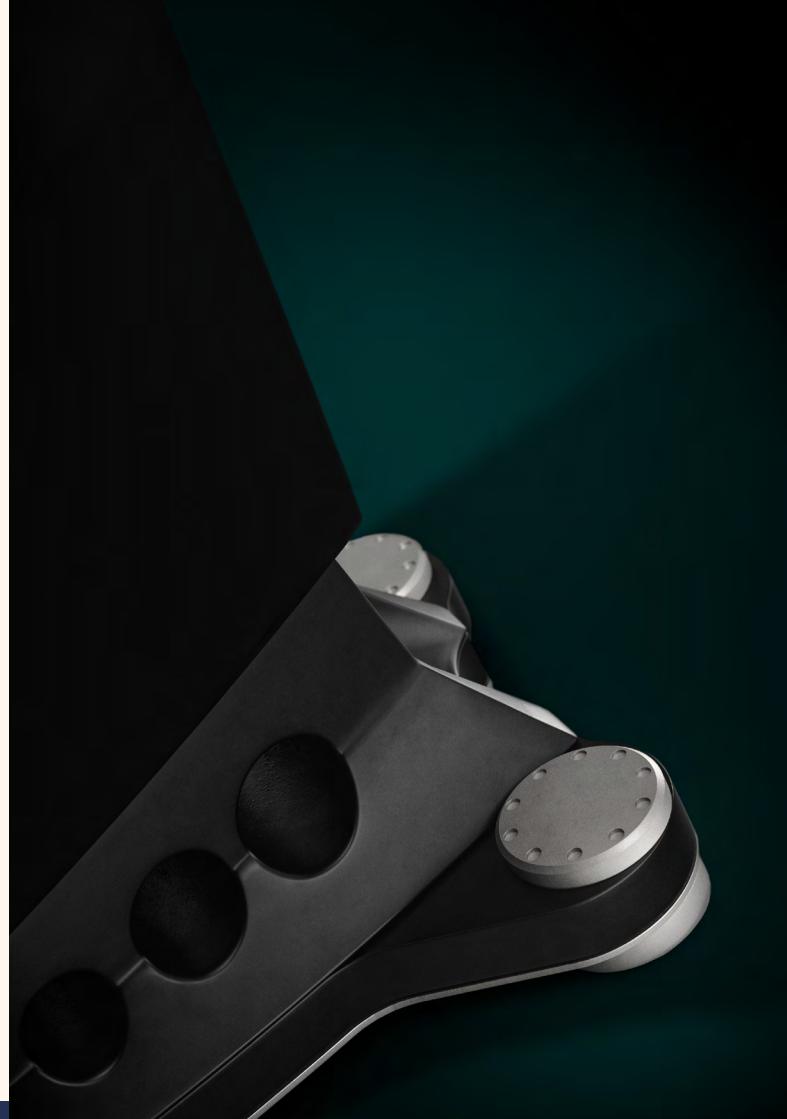
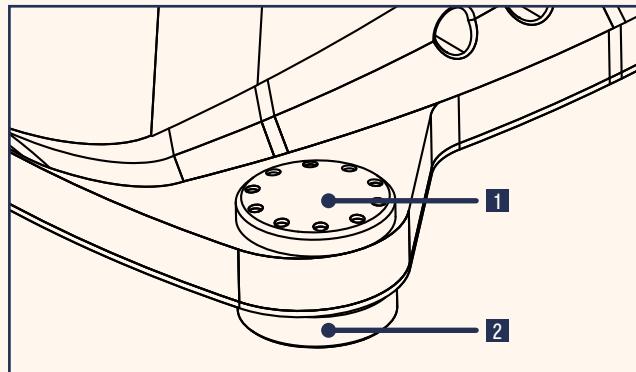
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## ADJUSTING THE FEET - C2/C3

**Note:** Tilting the speaker is necessary during this process, so we recommend two people for safe and precise adjustments.

### To adjust the feet:

1. Loosen the top disc of the feet **1** by turning it counterclockwise .
2. Turn the base that touches the floor **2** clockwise  to lower it and counterclockwise  to raise it, carefully leveling the speaker.
3. Retighten the top discs **1** by turning it clockwise  to secure the adjustment.



## SPECIFICATIONS

	C1	C2	C3
<b>DIMENSIONS</b> Width x Depth x Height	Speaker: 469 x 204 x 430mm Stand: 705 x 297 x 433mm  Speaker: 18,5 x 8 x 16,9inches Stand: 27,7 x 11,7 x 17inches	Speaker: 380 x 440 x 1135mm 15 x 17,3 x 44,7inches	Speaker: 380 x 560 x 1415mm 15 x 22 x 55,7inches
<b>WEIGHT</b>	18kg / 39lbs - Stand: 6,5kg / 14lbs	43.8kg / 96.5lbs	68kg / 150lbs
<b>FREQUENCY RESPONSE</b>	45Hz – 50KHz	35 – 50KHz	25 – 50KHz
<b>SENSITIVITY</b>	87 dB/1W	88 dB/1W	88 dB/1W
<b>IMPEDANCE</b>	> 6 Ohm	> 6 Ohm	> 6 Ohm
<b>RECOMMENDED AMP.</b>	> 50 W	> 50 W	> 50 W
<b>TWEETER</b>	1 x Børresen RP94	1 x Børresen RP94	1 x Børresen RP94
<b>BASS/MIDRANGE DRIVER</b>	1 x Børresen DCC5 Neo driver	1 x Børresen DCC5 Neo driver	2 x Børresen DCC5 Neo driver
<b>BASS DRIVER</b>		2 x Børresen DCC5 Neo driver	2 x Børresen DCC5 Neo driver
<b>FINISH</b>	Black or white high gloss	Black or white high gloss	Black or white high gloss



We would love to hear about your experience with this product.  
Don't hesitate to contact us with feedback or questions.

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