CG3 - CG23

OWNER'S MANUAL

Written by people with limited attention spans

SPEAKERS

800-905-5485
www.rslspeakers.com

Another Owner's Manual (Yawn)

We've tried to make this manual as easy to read and answer a lot of questions (except probably the ones that you'll have) and you can always contact us. We'll be happy to help. If you already know about speakers, be our guest and start enjoying your RSL Speakers.

Since we don't know about your particular audio setup, whether it's home theater or stereo, we've tried to cover all the bases. So feel free to skip around reading only what's of interest.

A Few Words of Introduction

We've been building speakers since 1970. A few years ago, we introduced a home theater system that garnered rave reviews for being the best sound value in at its price. We then embarked upon a mission to provide that same level of sound quality at a more affordable price.

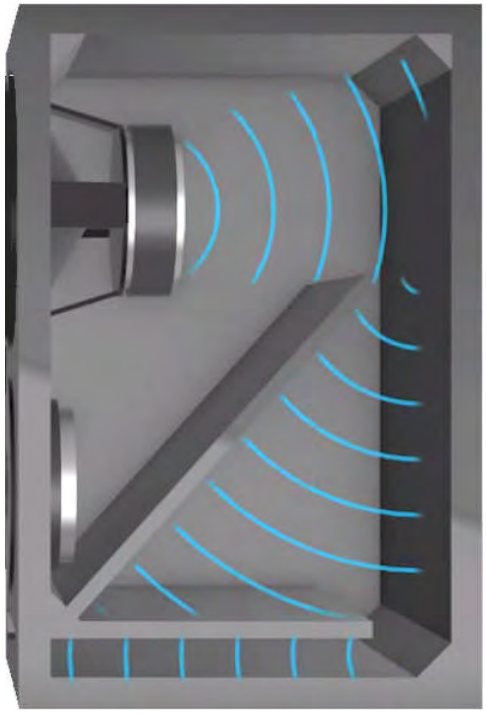
The CG3 and CG23 are the result. It took a lot of testing and comparing with other brands of speakers to make sure that we could offer a product that delivered the highest level of sound in its class. Along with our recently introduced Speedwoofer 10S subwoofer, we're now able to provide speakers that will astonish, especially when considering price. When coupled with a subwoofer, such as our Speedwoofer 10S, you can expect high-end performance.

Compression Guide Technology - Action-Packed History

A 2-way speaker utilizing a dynamic woofer and soft dome tweeter is not unique. However, what make these speakers a game-changer is our exclusive Compression Guide Technology. It's why the CG3 and CG23 sound different from the vast majority of speaker systems. Many speakers try to appeal to the less sophisticated listener by exaggerating certain sounds that result in sound that we call, "in your face." This approach may initially seem impressive, but along with it is a lack of depth or dimensionality in the sound image or soundstage. It can also be fatiguing during extended listening. With RSL's Compression Guide Technology, the sound is less like speakers and more lifelike as if the performance is actually happening in your room. They reproduce whatever sounds are fed to them and don't add 'their take' on them as many speakers do.

A number of years ago, we noticed that almost all speakers (including early RSLs) suffered from a problem. It was that bass notes, when reproduced by speakers was quite different from bass at a live performance. When you'd hear bass live, you would hear various details in the bass as well as feel the impact.

Standard Enclosure



Compression Guide Enclosure

Compression Guide Technology - History - Continued

For example, with a bass guitar, you can feel the pick of the string along with the bass note. With a kick drum, you could hear the wrap of the mallet against the skin of the drum and your body felt the impact. However, with conventional speakers all you'd hear was an ill-defined boom. Back then, the only speakers that seemed to get it right were the big, bulky and expensive transmission-line systems., mostly from England.

We needed to know why there was a disparity between live bass and that reproduced by speakers. After some research, it became apparent that the problem was due to the way the woofer was tuned in the enclosure. As was the case then, just as it is now, 2 tuning methods were used by most speaker companies. In one method the cabinet was completely sealed and is called acoustic suspension or air suspension. In the other method, the cabinet had a calculated opening called a vent or port. The length, width and height of the port was designed to reinforce bass at the lowest frequencies.

The problem with both of these methods is that they rely on system resonance to properly load the woofer. System resonance acts like a spring in that once the note stops, the woofer cone wants to continue vibrating. This results in what we call overhang and results in muddy bass. We spent years trying to lessen the effects of system resonance. Eventually, we found the solution and the results were dramatic. We call it Compression Guide and it was a method of dividing the inside of the speaker enclosure into areas of compression and expansion. As the sound wave passed through these areas, the effects of resonance were greatly reduced.

We discovered that Compression Guide also paid huge dividends in the midrange and treble as well. Bookshelf speakers tuned by Compression Guide exhibited much cleaner and transparent sound with both vocals and music. In comparison, other bookshelf speakers sounded "boxy". Compression Guide also helped the speakers to image more accurately.

CG3 - CG23 Features

- Exclusive Compression Guide Technology Tuning
- Stiff, Kevlar cones with rubber surrounds for high cone excursions without distortion-producing cone breakup.
- Soft dome tweeters for extended, yet smooth treble response.
- High quality crossover components. The crossover, being inside the cabinet is not normally visible and is an area where many companies skimp. The result being higher distortion and deterioration over time. The CG 3 and CG23 use only air core coils and polypropylene capacitors. We do not use distortion producing iron core coils or electrolytic capacitors.
- Rear gold-plated binding posts accept heavy duty wire or banana plugs.
- Luxurious hand-finished black hi gloss enclosures.
- Built in mounting plates attach to the wall with just a screw (CG3). Also has threaded inserts for wall and ceiling mounts (optional) that allow you to aim the speakers.

First Steps

- Be careful when using sharp objects to open boxes. The insertion of a long and/or sharp object such as a blade can damage the components inside. Use of chainsaws, machetes, power tools, explosives, light sabers, and most kitchenware is not recommended. If in doubt, ask mommy to help you.

- Please take a moment to inspect your speakers for damage. If you find any damage that you did not specifically request, please contact us or the shipping company immediately. All components have been inspected when leaving our factory, however damage can occur during shipping.
- **Use caution when using a speaker wall or ceiling mount.** Use of improper bolts can strip out the threaded inserts in the back of the speaker. Do not try to force any bolt into the insert, especially a longer one. Besides being difficult to repair, such damage is not covered under warranty. **The bolt for the CG3 is a 1/4 x 20 thread with a maximum length of 3/8 inch. The bolt for the CG23 is a 3/8 x16 thread with a maximum length of 3/8 inch.** If your bolt is longer you must reduce its effective length by the use of spacers or washers. We offer speaker mounts that come with the proper bolts.
- If possible, we recommend saving all packaging, including boxes, as a convenient means of re-packaging for moving or for sending your speakers in for service.
- The beautiful black finish can be easily scratched when placed on a shelf and moved. Therefore, we recommend installing the small adhesive feet included with the speakers or place them on something soft and non-abrasive.
- Avoid touching the woofer cone or the dome tweeter as this can cause damage.
- Be careful when placing the speakers on stands where they can be knocked over by pets, children , or jealous neighbors.

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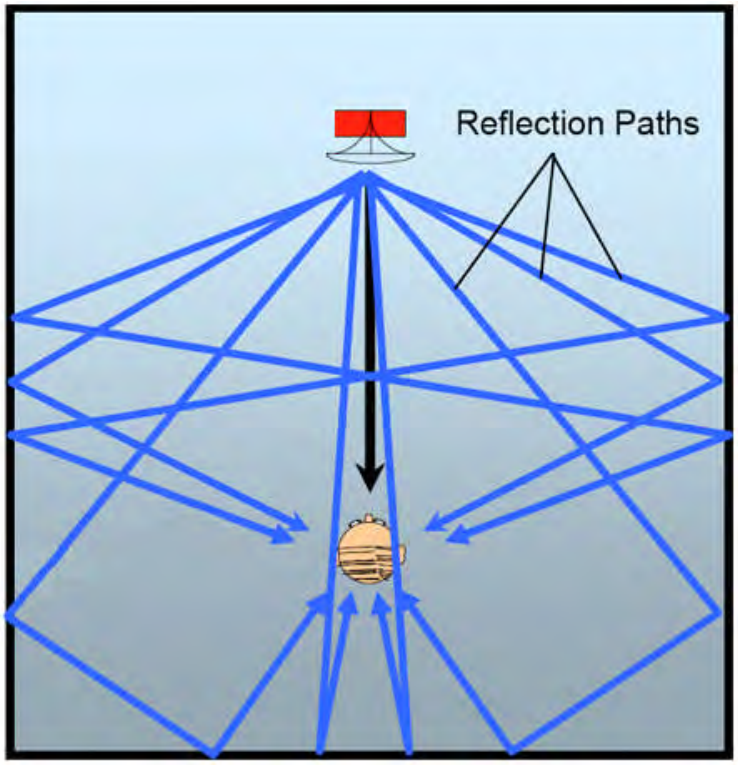
Probably More Than You Want To Know About Room Acoustics



Room acoustics have a major effect on sound quality. If your room has good acoustical qualities, even mediocre speakers can sound pretty good. In turn, if your room has poor acoustics, high-end speakers can sound lacking. Acoustical qualities are determined by the dimensions of your room and the amount of sound-absorbing material present.

Room dimensions primarily affect bass response. A room with ideal dimensions will have evenly distributed bass throughout the room. The quality of the bass will be natural and not sloppy. Obviously, you can't do a heck of a lot about the dimensions of your room. Don't worry; few rooms are close to perfect.

The amount of absorptive material in your room affects middle and treble frequencies. Hard surfaces, such as wood or tile floors, walls, can degrade middle and treble frequencies; making them sound harsh, tinny, or hollow. A harsh room; however, can be easily fixed. Materials such as carpet, upholstered furniture, pillows, drapes, and wall treatments are all excellent at absorbing unwanted sound reflections. Therefore, the solution to a harsh room is to add more absorptive materials. If you can't do that, why not invite a lot of friends over and tell them to wear thick jackets or heavy sweaters.

Many acoustical problems can often be minimized by the careful placement of your speakers and subwoofer. In addition, many of today's Audio/Video Receivers provide room correction circuitry, which can provide a dramatic improvement in sound quality. There are several excellent room correction systems found in today's A/V receivers and processors. They include Audyssey and Yamaha's YPAO. Audyssey room correction can be found in several different brands of A/V receivers and processors including Denon and Marantz.

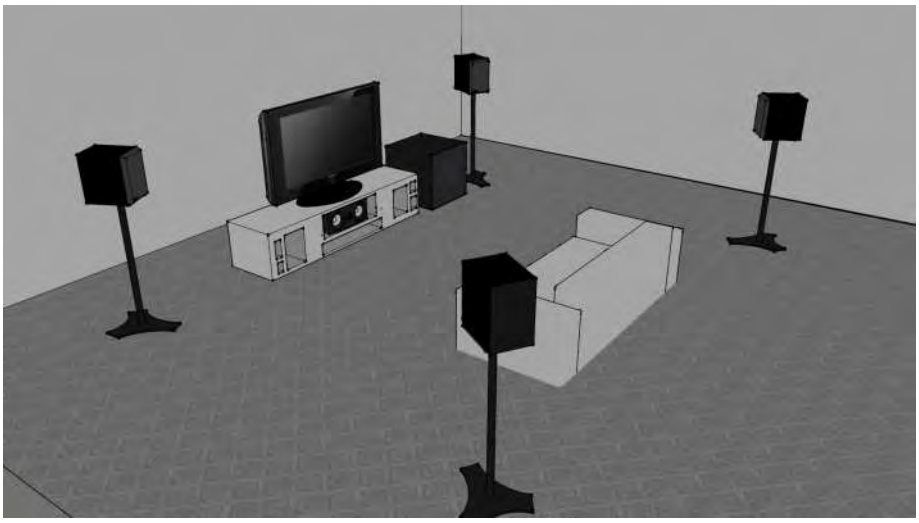
This Section Is Important

(Please read it, unless you're already experienced in placing speakers or you don't have a choice of where your speakers can be located.)

Placement

Correct speaker placement is essential in achieving the best sound. It's surprising how much impact even a small adjustment to a speaker's location can make. We have recommended the locations that generally produce the best results. Remember that every room is acoustically different; affected by its contents, size and shape. While our guidelines can be helpful, always trust your ears as the final authority. Because every room is unique, there is no single rule that suits every one. If you find yourself having difficulties, always feel free to contact us for advice.

Please Note: Even though our diagrams show the speakers on stands, there are other placement options including wall or shelf mounting.



Home Theater Placement

RSL CG3s and CG23s can be placed on speaker stands, shelves, or furniture. They include threaded inserts in the back of their cabinets for wall or ceiling brackets. The CG3s also have a keyhole bracket. Using this allows you to mount them against a wall using only a screw or toggle bolt. **Please note: when using the threaded inserts, use only the proper bolts with the proper lenths. Do not try to force or over-tighten any bolt into the threaded insert!** If you are going to place the speakers on shelves, or furniture; they should be placed at the front edge of the surface. The sound should be able to travel freely in all directions without being obstructed by large surfaces.

Putting speakers inside a cabinet can degrade their sound quality. Making sure to place them at the front edge of the enclosure should help. If you still hear degraded sound, stuff the

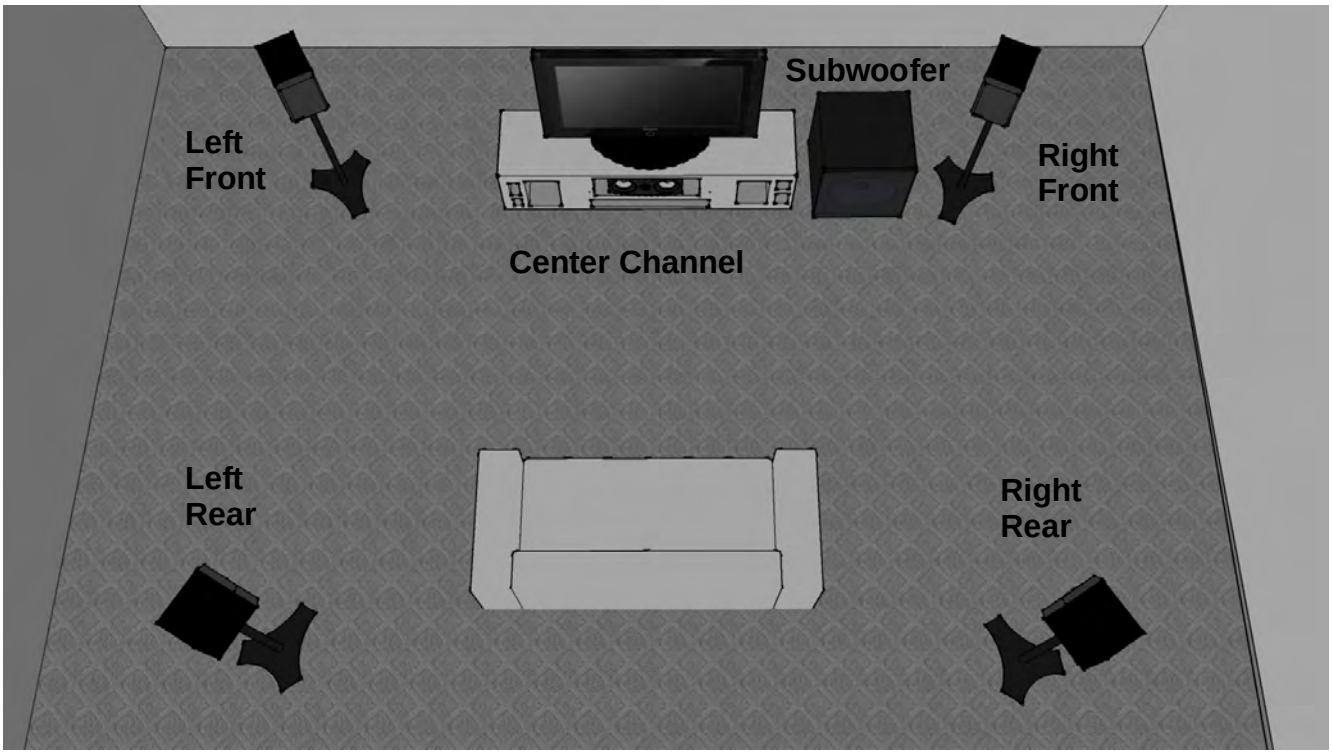
Placement — Continued

The following are guidelines for placement of your speakers in various home theater configurations. They also apply to Dolby^{tm} Atmos and DTS:X^{tm} systems.

Front left and right speakers (5.1, 7.1, 7.2 systems)

Both the RSL CG3 and RSL CG23 can be used as the left and right speakers. One speaker should be placed on each side of your television constituting a right and left channel. CG3 speakers should be placed vertically and CG23 speakers can be placed vertically or horizontally. They should be positioned vertically. The ideal distance apart depends on how far back your listening position is. The further back, the further apart they should be. Think of it as a triangle with the apex at a listener's head. The angle pointing to the 2 speakers should be in the neighborhood of 90 degrees. The speakers should be as close in height to your seated ear level as possible. If the speakers cannot be placed at ear level, they should be angled up or down so they point toward the listener's ears.

To ensure the most accurate sound and best imaging, try to place the front speakers at least two feet away from the front walls, side walls, and corners. This is less critical in home theater systems, because the surround speakers tends to move the image out into the room and around you. If your left and right speakers are far apart, you may try angling them in towards the listener. If you're mounting them to the wall, try not to place the right and left channel too close to the side walls or corners of the room. Mounting the right and left channels close to the side walls or corners may add excess emphasis to the bass and lower midrange and decrease the three-dimensional effect of the sound.



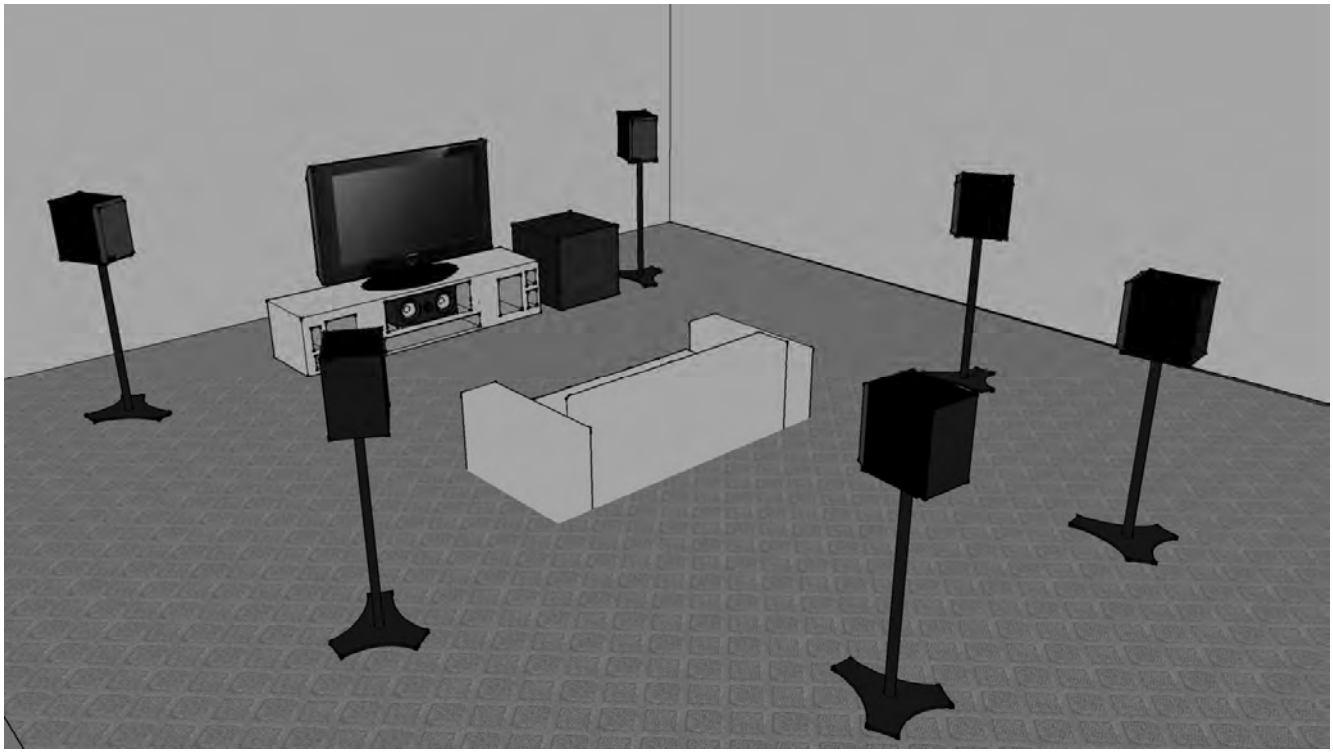
Placement — Continued

Center channel speaker (5.1, 7.1, 7.2 systems)

Placement of your center channel is the most self-explanatory. Either the RSL CG3 or the RSL CG23 can be used as a center channel. The CG3 should stand vertically when used as a center channel while the CG23 can be placed either horizontally or vertically. The center speaker needs to be centered between the left and right speakers and above or below your television. Try to position the center channel as close to your seated ear level as possible. Just as before, it is always a good idea to tilt the center channel up or down to point towards the listening position. If mounting to the wall, try to tilt it so that it points to your listening position. Be careful if placing the center channel directly on top of your TV as many TV's are not designed for this.

Side/rear channel speakers placement (5.1 systems)

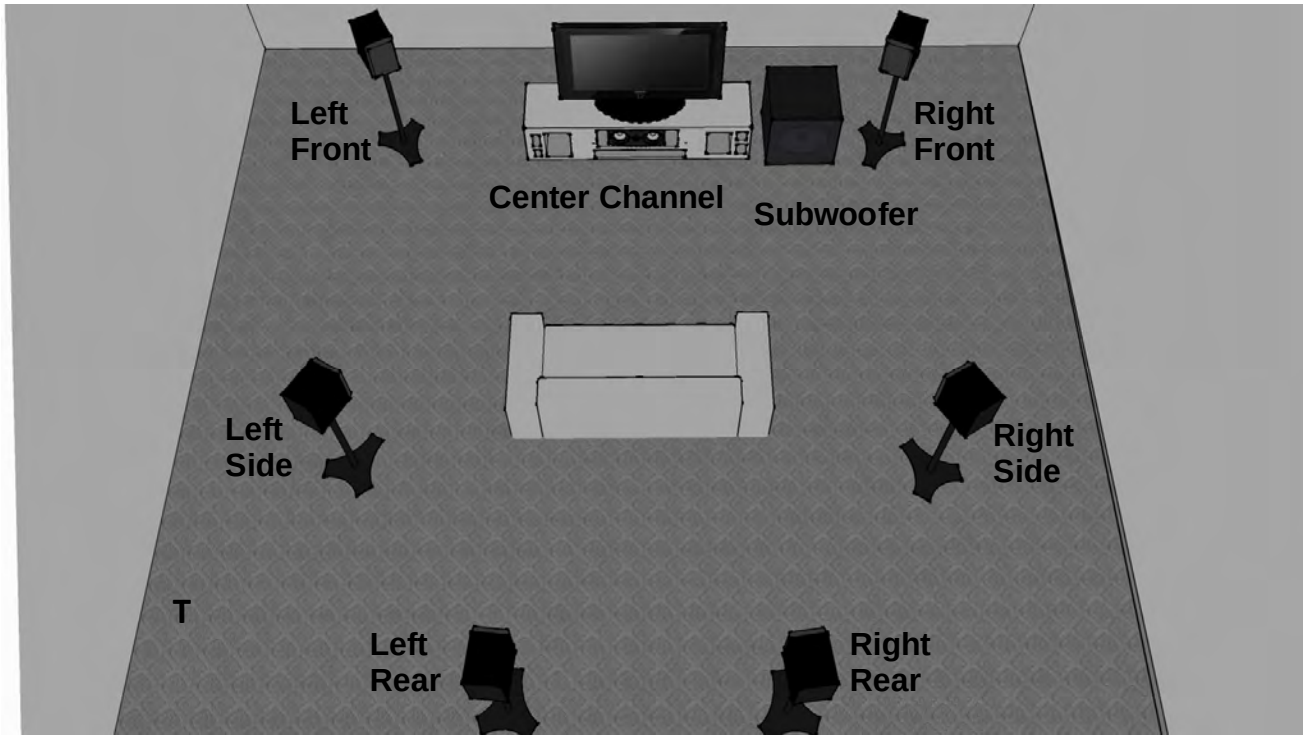
In a 5.1 system the two surround channels should be placed along your side walls slightly behind the listener's seating position. The job of these speakers is to reproduce the sound that would occur along side and behind you. Merely placing them directly along side of the listener will not allow them to create a rear image. These speakers should face inward, toward your seating position. For best results, try to position the speakers at your seated ear level or higher (roughly 5 – 7 ft from the floor). If they are higher than ear level, make sure to angle them down towards the listener.



Placement — Continued

Side/rear channel speakers placement (7.1, 7.2 systems)

7.1 or 7.2 surround sound systems consist of left, right, and center speakers along with two side and two rear speakers. Here, the side speakers should be well spread out and placed to the sides of your seating position. They should face inward, toward your ears. We suggest positioning them to the sides of your seating position as in our diagram. As for the rear speakers, these should be positioned several feet behind your seating position if possible. These speakers should face forward towards your television. They should be spaced roughly a few feet apart; not as far apart as the side speakers (refer to diagram). The rear speakers should be at ear level or elevated a few feet above your seated listening position; approximately 5 – 7 feet from the floor. It is not as critical to angle them down as it is with the other speakers.



Placing your subwoofer (5.1, 7.1 systems)

Your subwoofer is responsible for all of the bass in your movies and music. These low bass frequencies are non-directional. This means that the subwoofer can be placed in a variety of positions and if the subwoofer has a fast transient response (hence the name Speedwoofer) the human ear will perceive the bass as coming from the satellite speakers. Ultimately, the subwoofer can be placed virtually anywhere in the room. As usual though, we have some placement suggestions that will enhance the performance of your subwoofer.

As mentioned in the section on acoustics, bass characteristics are largely determined by your room dimensions. The goal is to have an even distribution of bass at all seating positions. The bass should not be sloppy or muddy, but clearly defined (for example, you should hear the skin of a kick drum, not just the boom). In a problematic room the, bass can be almost non-existent in certain sitting positions, and overwhelming in others.

Placement — Continued

Here are guidelines for placing your subwoofer:

1. We recommend that, if possible, the subwoofer be located somewhere in the vicinity of the front speakers rather than in the rear of your room.

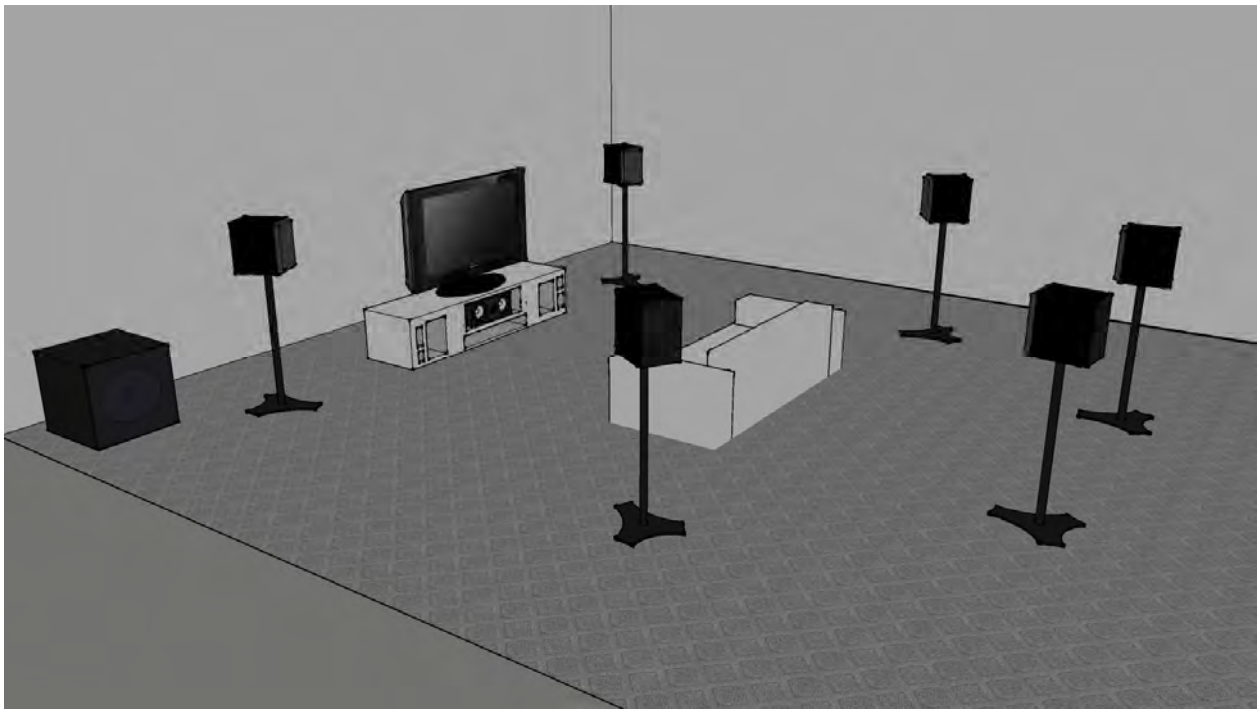
2. Placement near a wall will increase your subwoofer's bass output. Placement near or in a corner will increase it even further.

3. Experimentation is encouraged. Try as many different positions as you like.

4. Play a song or movie with a continuous heavy bass track. Generally we prefer natural bass, perhaps from an acoustic bass or a kick drum. For each position you are trying, walk around the room and hear where the bass is louder and quieter. Pick the position that provides the most even distribution and best quality of bass among your seating positions. Always trust your ear; what sounds best to you is the right choice.

5. Caution: The amplifier on the back of subwoofer creates heat and needs ample ventilation. Do not place the woofer directly against a wall; make sure that there is always a few inches of air space behind the woofer for cooling purposes. Also, be careful when placing the subwoofer in any kind of equipment enclosure. Make sure that there is air space on the top and sides for proper ventilation and to prevent overheating. If the air flow is limited, we strongly suggest cutting holes in your equipment cabinet to allow for adequate ventilation.

For additional suggestions about placing your subwoofer, please consult your subwoofer's owner's manual.

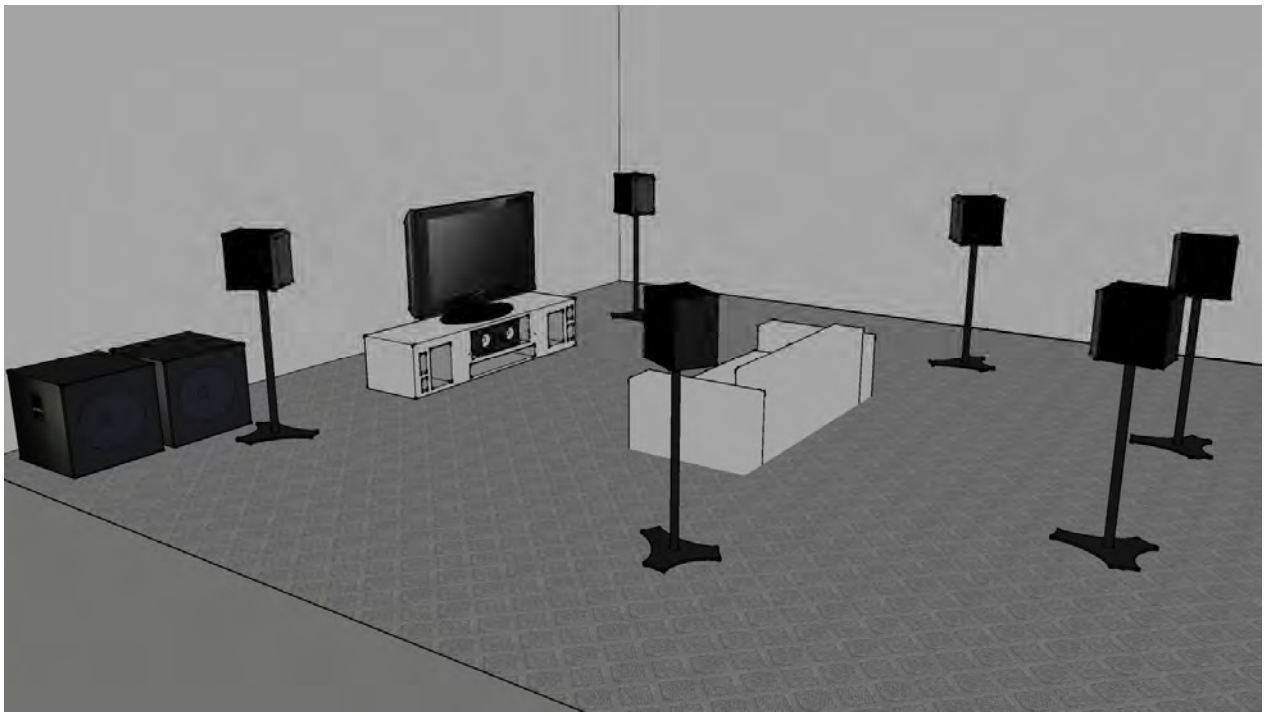


Using Two Subwoofers

When two subwoofers can be useful

Using a high quality subwoofer, such as one of our RSL Speedwoofers, should be sufficient to give you the smile-inspiring impact you want. However, using two subwoofers has certain advantages that we have listed below. This is NOT our attempt to sell you another subwoofer; (unless of course you want a system that will revolutionize your idea of sound and introduce your ears to true harmonic enlightenment) as we do not resort to such tactics.

There are two main reasons for using a second subwoofer. A second subwoofer will greatly increase the bass output and capacity of your home theater system. Let's say you have a an amplifier rated at 100 watts and you wish to increase the volume of a speaker by 3db (a change of 1db is considered to be the least amount a human ear can detect). You would need to have an amplifier rated at double or 200 watts. Adding a second subwoofer near the first can provide up to a 6db increase in bass volume, which is like quadrupling the power (that's huge!). Adding a second subwoofer anywhere in the room will still increase the bass output substantially and the subwoofers will work more effortlessly.



Using 2 Subwoofers In The Same Corner

The other reason to consider two subwoofers is to achieve a smoother, more consistent bass distribution in your home theater. A second subwoofer in a different position can actually fill in those areas of bass deficiency (null points). You should be able to move around the room and try different seating positions. In all of these positions the bass should sound similar, both in quantity and volume.

On the page that follows are suggestions for placing two subwoofers in your home theater.

Suggestions For Placing Two Subwoofers

You are not permitted to read this section unless you are a member in good standing of the Dual Subwoofer Owners Club.

Try the following suggestions in order to arrive at the best positions for your subwoofers:

1.Place both subwoofers towards the front of the room rather than the back.

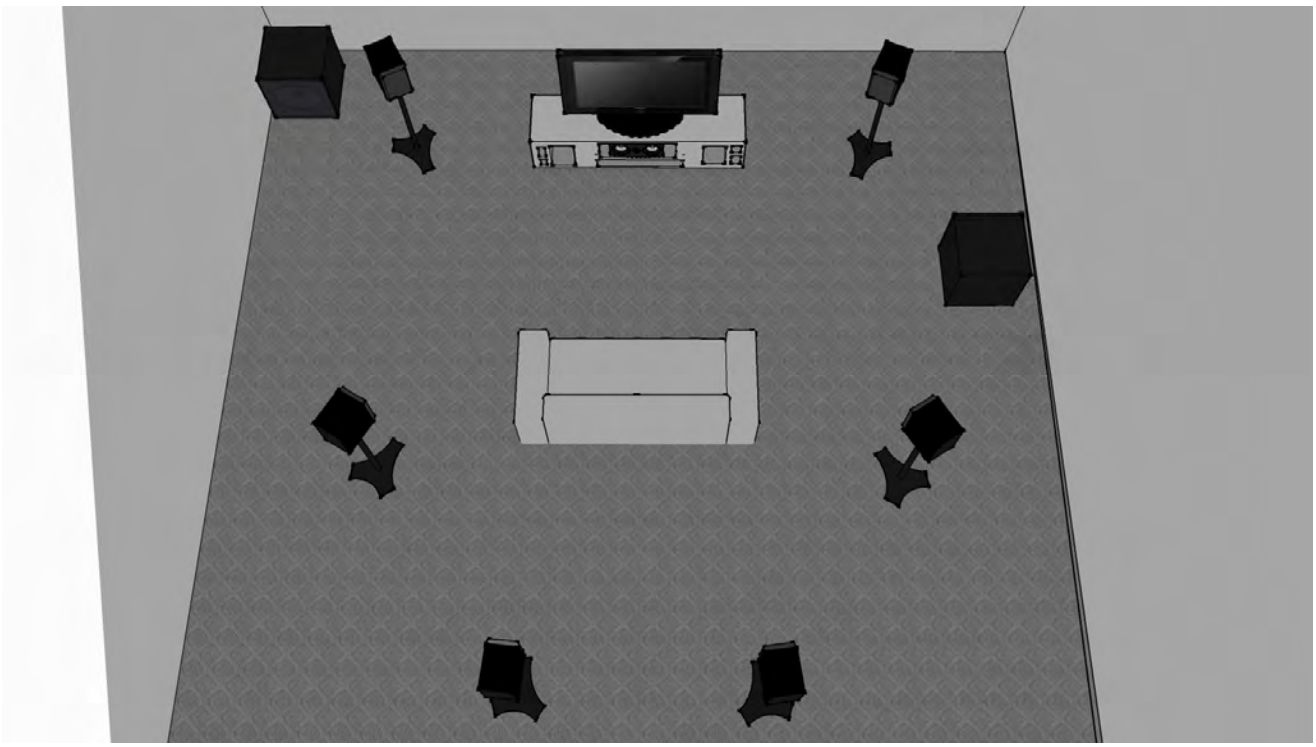
2. Try placing the subwoofers asymmetrically in the room to create the smoothest, most natural bass in all seating positions.

3. Also try positioning both subwoofers in the same side of the room. This can be an effective way of creating smoother bass in some rooms.

4. Place and install (see installation) one subwoofer. Play a movie or song with consistent, repetitive bass. Walk around the room and determine where the bass sounds the weakest and place the second subwoofer at that location.

5. Experiment. The goal is achieving the most even bass distribution throughout your room. Trial and error is never a bad idea. Let your ears be your guide; they know your room better than this manual does.

Aha! We caught you reading this section without authorization. You must now order a second subwoofer immediately or there'll be no desert for you!



Placing 2 Subwoofers Asymmetrically

CG3 And CG23s Stereo Systems

The CG3 and CG23s, when used with a subwoofer such as our Speedwoofer 10S, were designed to deliver reference quality reproduction of music in either a stereo configuration or a home theater surround system.

Important - Protect Your Speakers

No, we don't mean standing in front of them armed with an assault riffle or continuously monitoring them with surveillance cameras. In a home theater system, the A/V receiver or processor protects the speakers in the system by filtering off the bass. It does this in the setup menu when setting the crossover frequencies. It sends the bass below the selected frequencies your subwoofer and the frequencies above the crossover point to your CG3s or CG23s. This is especially important, because your speakers are not designed to handle low bass frequencies. Think of it this way: In the opening scene of Back To The Future, Marty McFly is in Doc Brown's house and cranks up his guitar amplifier way too much, strikes a note, blows the speaker and winds up on the other side of the room. While not as dramatic, we don't want our woofers to get damaged while attempting to launch themselves from your speaker cabinets. The CG3s and CG23s can handle reasonably high amounts of power, but in the frequencies ranges they were designed for, which is 90-100 Hz and up. Frequencies below 90-100 Hz need to be sent to you subwoofer.

In addition to most home theater receivers, many of today's stereo receivers and integrated amplifiers have built in crossovers that you can set to protect your speakers. However, if the receiver or amplifier does not have this feature, all is not lost. There are solutions. We'd be happy to suggest the best solution for your equipment if you'd like to contact us. There are also some solutions listed in our Speedwoofer 10S owner's manual.

Speaking of power, we're often asked about how much power our speakers can handle. Many people don't realize that too little power can be just as harmful as too much power. In a system with limited power, if the user tries to play the speakers louder than the receiver is capable of properly playing, distortion can result. This distortion can be especially harmful to your speakers. The ideal situation is to have more power that is used with reasonable volume.

Installation

Wire we hear? (This section is important)

Before you start…

Take a moment to read these recommendations.

1. Always shut off the power to all components before installing!
2. Use quality speaker wire. We recommend two-conductor wire with high quality copper. You'll also want to make sure that there is a means of determining polarity (identifying the positive and negative strands).
3. All wire has resistance in it. The thicker the wire, the less resistance it has. The less resistance, the better your speakers will sound. The thickness of the wire should be determined by the length of the wire you are using. For longer lengths, heavier wire should be used. See our table below:

Length of speaker wire (each speaker)	Recommended minimum thickness
Up to 15 feet	16 AWG
15 to 30 feet	14 AWG
Over 30 feet	12 AWG

4. When connecting wire to a terminal, twist the wire strands together so that they all can be neatly inserted into the terminal. **If strands are left loose and make contact with the terminal or a wire of the opposite polarity, they will cause a short and can severely damage your speakers and equipment.**

Phasing

It's critically important that the speakers all work together. To accomplish this, all speakers must be wired in phase.

This means, that for each speaker and for your receiver, every positive wire is correctly connected to a positive (+) terminal and every negative wire is properly connected to a negative (-) terminal. When this is the case, all of your speakers are considered to be "in phase". On our speakers, the positive (+) input terminal is identified with the color red, while the negative (-) input terminal is labeled with black. Your receiver or amplifier will provide identification by plus (+) and minus (-) symbols or by colors also (commonly red for positive and black for negative).

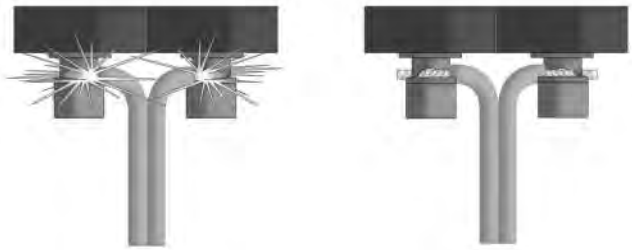
If you are human like some of us, and you inadvertently connect some wires backwards, you will hear the results. Having a speaker out of phase significantly degrades sound quality. In a stereo system, out of phase speakers will sound as if there is a hole in the imaging between the speakers. Voices can sound as if they are far away from you; coming from behind your speakers. Incorrect phasing can also significantly diminish bass response. Therefore, it is important to make sure that the polarity of every connection is consistent.

Installation— Continued

Connecting the speakers

Properly twist wire to eliminate stray strands

Do not allow strands to cause a short



Listed below are the steps for wiring your RSL speakers. For alternative methods or suggestions, please consult the instructions that came with your receiver or amplifier.

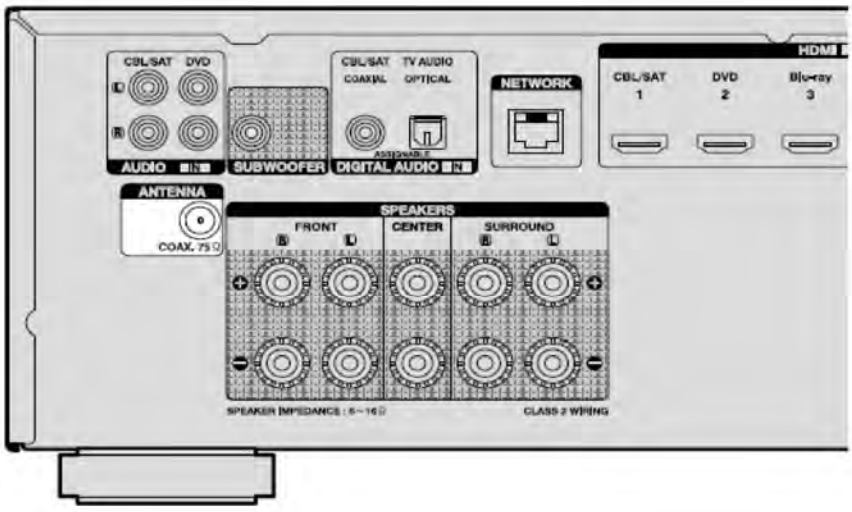
1. Prepare the speaker wire. First, separate the positive and negative strands by splitting the wire insulation down the middle at least a couple of inches. Now strip off about a ½ inch of insulation from each individual wire end to expose the inner copper wire strands. Repeat this process for both ends of each wire. Now, for each separate wire (positive and negative), twist the exposed copper wire strands together. This will keep the copper strands neat and allow the wires to be easily inserted into the speaker's input terminals.

2. To connect the wires, first loosen the input terminals on the back of your speakers by rotating the heads counter clockwise. Next, insert the twisted end of the positive wire into the hole of the positive terminal, and repeat for the negative wire. (Note; all of our terminals are designed to accommodate bare wire or banana plugs.) With both wires inserted, tighten both terminals by rotating each head clockwise until the wires are well secured. Do not overtighten. Be absolutely certain that there are no loose wire strands making contact with the wires or terminals of the opposite polarity. This will cause a short that can severely damage your components.

Installation— Continued

3. With the wires connected to your speakers, connect each wire to the appropriate output terminal on your receiver or amplifier. Repeat this step for each speaker to be hooked up. Your receiver or amplifier will specify which terminals are for which speakers. Remember that the left and right front speakers are the speakers on your left and right when you are facing them. The right and left rear channels are the speakers on your left and right as you are facing the front. As before, make sure that there are no loose wire strands that can make contact with another wire or terminal.

4. Double check your wiring. In home theater systems there is a lot of wiring necessary, making it easy to make a mistake (this happens to the best of us). We highly suggest taking an extra moment to check each connection to make sure all channels are in phase (see Phasing above).



We bought this receiver for half off.

5.1, 7.1 and 7.2 system installation

The illustration above shows the rear of a typical 5.1 A/V receiver. Many current receivers have 7.1 or 7.2 capability. You can use either a 5.1 or 7.2 A/V receiver with your 5.1 system. We suggest you refer to your A/V receiver's owners manual. Hopefully it won't seem like it's written in a foreign language. It will show you your receiver's layout for your speaker connections. Some people will ask: "What does the .1 mean in 5.1 and 7.1?" The number after the decimal place indicates the number of subwoofers. A 5.1 system has 5 speakers plus one subwoofer. A 7.1 system has 7 speakers plus 1 subwoofer. Taken further, a 7.2 system has 7 speakers plus 2 subwoofers. If you see an additional number after the subwoofer number such as 5.2.4, the '4' is the number of Dolby Atmos or DTS:X speakers.

With a 5.1 system, you will connect your front speakers to the left, right, and center speakers to the appropriate speaker connectors. Obviously, the surround speakers will be connected to the surround terminals. With a 7.1 system, you'll connect 2 additional speakers to the back or rear terminals.

All popular brands of receivers have a customer support number where you can receive help setting up and adjusting your system. Check their website for their support number.

Installation— Continued

So, one question that is often asked: “I have a 7.1 or 7.2 receiver. It has 7 amplifiers, but I only have a 5.1 system. What can I use the extra 2 amplifiers for?” Most 7 channel receivers allow you to use the extra 2 amplifiers to power and control a set of stereo speakers either outside or in another room. In addition some receivers have connections for additional speakers in your home theater. These speaker connections can be used for Atmos of DTS:X speakers. So, if you have a 5.1 system and wish to add a pair of speakers, you can make your system into a 7 channel system or a 5 channel system with Atmos or DTS:X. Also, even though your receiver can accommodate 2 subwoofers, it will work just fine with one.

We hope that the above has not been too confusing for you. The bottom line is that a 5.1, 7.1, 7.2, or even a 9.2 A/V receiver will work perfectly with your 5.1 system.

Home Theater Settings And Operation

(This section is not a substitute for reading your A/V receiver’s manual. We’ve been through a few of these ourselves and you have our sympathy.)

Protecting Your Satellite Speakers

As we’ve mentioned above it is essential to make sure that bass frequencies are properly routed to the subwoofer, not to the satellite speakers. Virtually all A/V receivers provide for this in their setup menu. Some A/V receivers ask you to select the size of your satellite speakers and give you a choice of small or large. In the case of RSL CG3s or RSL CG23, you must choose the “small” setting in order to correctly protect the speakers. Some A/V receivers will have you choose a crossover frequency as well. The recommended crossover frequency is 90-100 Hz. Do not choose a frequency below 90 Hz. Also, set the impedance of all speakers to 6-8 ohms, whichever is higher if given the choice. This is correct for your RSL Speakers. The auto setup using a microphone is useful, however it gets the crossover frequencies wrong and you’ll need to set them to 90-100 HZ after you run the auto setup.

Settings And Operation — Continued

How much volume is enough?

When matched with the appropriate components, your RSL Speaker Systems can play at a very loud volume. Your A/V Receiver or amplifier needs to be capable of delivering a sufficient amount of undistorted power. Strange as it may seem, too low of a power rating on your A/V Receiver or amplifier is more likely to damage speakers than one with a higher power rating. That's because when an amplifier is called on to deliver more power than it was designed for, it will produce distortion called clipping. This distortion is very harmful for speakers.

Using your A/V receiver's setup

Now that you have your system placed and connected you'll setup up your system with the setup menu in your A/V receiver. Please refer to your owner's manual. One setting you may need to set is speaker impedance. If given the choice, set all speakers to 6-8 ohms, whichever is higher. This is correct for your RSL Speakers.

All of your RSLs are eager to pour out their little hearts for your viewing and listening enjoyment. All they ask in return is for you to properly balance them. There are several methods of balancing your speakers. The auto setup in your receiver will probably do an acceptable job. In addition, almost all A/V receivers have the ability to play a test tone through each individual speaker. Usually this noise is either white or pink noise, which sounds like a bunch of hiss. This sound is very handy if you wish to balance the sound manually using your ears, sound level meter or sound level application for your smart phone.

Using your A/V receiver's auto setup

Most current A/V receivers have some sort of automatic setup. They supply a microphone that you place at your main listening positions. Then, they play test tones through each speaker individually (while advising you to maintain silence during this process). Then, the receiver will automatically calculate speaker distance, individual speaker and subwoofer volume, and crossover points. In addition, most receivers employ room correction equalization. In many cases this room correction can improve the sound where the acoustics of the room are less than ideal. You should experiment with it on and off to determine which setting sounds best to you.

Please refer to your A/V receiver's manual and how to use its auto setup feature. As handy as this is, we need to caution you about a few things. First, it will often set the crossover to the wrong frequency. After you do run auto setup, we strongly recommend going into your setup menu and setting every crossover including the subwoofer's to either 90 or 100 Hz.

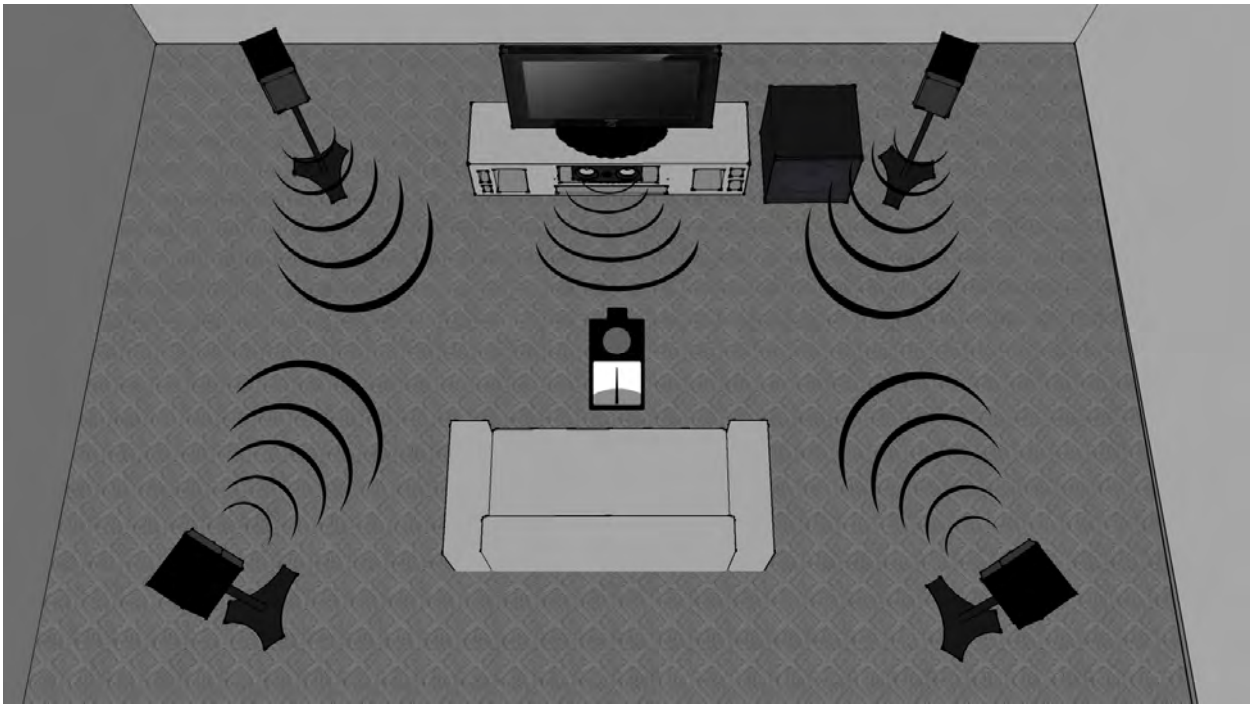
When balancing your speakers, keep the following in mind:

1. The goal is to create a 3 dimensional sound environment all around you. For this you may need to increase the volume of your surround speakers anywhere between 2 and 4 db.

2. We recommend setting the center channel speaker volume 1-2 db higher than the auto-setup. This will help the clarity of dialog.

3. Set the subwoofer strictly by ear. Set the volume control on the subwoofer so that it points to the 12 o'clock position. Play some music with a constant bass track. Then set the subwoofer level in your receiver according to taste.

Settings And Operation — Continued



Balancing your system with a sound level meter

4. When you are done balancing your speakers, play some movie samples to help you make any final adjustments.

5. Trust your ears above all else.

Double check speaker distances

The auto setup will calculate speaker distances to the main listening position. Usually, these measurements will be fairly accurate. However, we suggest getting out the old measuring tape to double check them. Occasionally, we have found them to be inaccurate, especially when wireless speakers or subwoofers are used in the system.

Using a sound level meter or sound level meter app for your smartphone

If you have a sound level meter or sound level meter app for your smartphone or tablet, you can use it to balance your speakers. You will need to choose the appropriate decibel range on the meter. If your meter allows you to choose the weighting, set it to 'C weighting'. Use the meter at your preferred seating position as close to ear level as possible. Make sure to point the meter towards the ceiling. Then, play a test tone through each speaker, one at a time, and note the reading on the meter. Adjust the volume on each speaker so that they are all similar, with the surround and rear speakers being slightly louder front speakers. The center channel speaker should be about 2 db louder than the right and left speakers. In the end, a little experimentation will yield the best results. Trust your ears to make the final judgment.

Settings And Operation — Continued

Tone controls and equalization on your A/V receiver

If your receiver has tone controls, we recommend that you set the bass and treble controls on your A/V receiver to the flat or neutral position. Your RSL Speakers were designed to sound best this way. If you must use your tone controls, use the least amount possible..

A good subwoofer has been engineered to reproduce the entire bass range that is contained in movies and music. If your A/V receiver has a built-in equalizer to boost the bass, please either use it sparingly or avoid it all together. Doing this places an enormous load on the subwoofer amplifier, resulting in a limit on how loud the bass can be played. If you need more bass, please use the volume control on the subwoofer instead.

Other audio/video receiver gadgetry

You don't need us to tell you that today's A/V receivers are rather complex devices that contain loads of built-in features. And the list just keeps growing.

We'd like to caution you about the overuse of the features that alter the sound. If misused they could do more harm than good. It is always better to listen to sound in a more natural state than overly processed. Again, we encourage you to experiment by comparing the sound with these features turned off and on.

If you don't wish to read the entire owner's manual of your audio/video receiver, you're not alone.

However, we think it's valuable is to learn about the different surround modes such as Dolby™ PL (Pro-Logic), Dolby Digital, Dolby True HD, DTS™, DTS HD Master Audio, Dolby Atmos, and DTS:X, etc. Sometimes, a DVD or Blu-Ray disc will present you with choices. Knowing these modes and selecting the best one will give you the best sound.

Many Audio/Video receivers also include simulated modes, which artificially simulate acoustical environments of concert halls, night clubs, or churches. We do not recommend using these artificial modes.

Subwoofer settings

The goal of a properly set up subwoofer is to produce tight, controlled bass without sacrificing the teeth chattering impact many of you enjoy. The most common mistake people make is setting the subwoofer to play too loudly. The subwoofer should always blend seamlessly with the satellite speakers rather than being intrusive. If you desire more bass, try placing the RSL Speedwoofer in a corner.

Care And Maintenance

Caring for your RSL Speakers is relatively easy. They do not require much on your part. We have listed the most important dos and don'ts below.

1. Clean your speakers using a soft, moist (Windex or water is recommended) cloth, preferably microfiber or something lint-free. Do not put speakers in the washing machine or dish washer.

2. Scratches can sometimes be buffed out of gloss finishes using a mild car polish.

3. Be very gentle when cleaning the front of your speakers, especially the woofers and tweeters. Try not to exert any pressure on them.

4. Liquid and speakers don't mix. Be careful with liquids or beverages near your speakers. We do not recommend placing any flowers or plants that require watering on top of the speakers. Watering you speakers will not make them grow.

5. Treat your speakers as if they were vampires. Please keep them away from direct sunlight and heat sources to protect their finish.

6. If you operate the speakers with the grilles off, please make sure that the woofers and tweeters do not come in contact with anything, such as fingers, paws, or claws as they can be damaged.

7. RSL speakers are not designed for use in applications such as sound reinforcement, public address, or musical instruments (these are not covered under the warranty). So the next time you hire a DJ for your party, make sure our speakers will not be used (don't worry, our feelings won't be hurt).

8. Over time, wires connected to speakers and other components can loosen. If a wire loosens and touches the wire of opposite polarity, your system will short and your audio components could be damaged. Periodically check to make sure all connections are sufficiently tight.

9. Just about every owner's manual tells you to save your boxes. We know it's a hassle, but the boxes can come in handy if you move or your speakers need service.

10. Do not expose your speakers to extremely hot or cold temperatures. We know it can be difficult to part from your RSL speakers when its vacation time, but please refrain from subjecting them to beach activities, water sports, treacherous hikes, skiing (especially with moguls), or arctic cruises, etc…

11. Keep your speakers happy. They enjoy praise. Periodically tell them how much you enjoy their sound and compliment them in front of your friends.

With very little effort, they should provide you with many years of enjoyment.

Specifications

RSL CG3

Woofer: 4” with Ferrite Magnet, Kevlar Cone
Tweeter: 1” Silk Dome, Ferrite Magnet
Frequency Response: 100-20,000 Hz ± 3db
Recommended Impedance setting for amplifiers: 6 or 8 ohms (whichever is higher)
Sensitivity: 86 db SPL @ 1 watt, 1 meter distance
Recommended Power: 25-125 watts
(Please note the following: this rating is for use above 100 HZ. Amplifiers up to 150 watts can be used if care is taken not to operate them at maximum volume)
Crossover Frequency: 2,500 Hz
Crossover Slope: 12 db/octave
Crossover Parts: Air core coil, Polypropylene capacitors, Gold Plated binding posts
Tuning Method: Compression Guide^{tm}
System Resonance: 87 Hz
Threaded Insert Bolt Size: 1/4 x 20, maximum length 3/8 inch.
Weight: 6 lbs.
Dimensions: H: 9 1/2” W: 5 1/16” D: 6 3/8 “(Without grille 6”)

RSL CG23

Woofers: Dual 4” with Ferrite Magnet, Kevlar Cone
Tweeter: 1” Silk Dome, Ferrite Magnet
Frequency Response: 85-20,000 Hz ± 3db
Recommended Impedance setting for amplifiers: 6 or 8 ohms (whichever is higher)
Sensitivity: 88 db SPL @ 1 watt, 1 meter distance
Recommended Power: 25-125 watts
(Please note the following: this rating is for use above 100 HZ. Amplifiers up to 150 watts can be used if care is taken not to operate them at maximum volume)
Crossover Frequency: 2,500 Hz
Crossover Slope: 12 db/octave
Crossover Parts: Air core coil, Polypropylene capacitor, Gold Plated binding posts
Tuning Method: Compression Guide^{tm}
System Resonance: 75 Hz
Threaded Insert Bolt Size: 3/8 x 16, maximum length 3/8 inch.
Weight: 10 lbs.
Dimensions: H: 6” W: 16” D: 6 3/8 “(Without grille 6 ”)

Troubleshooting

As much as we try, like most instruction manuals, we'll probably address every problem except the one you're experiencing. We're consumers ourselves and we don't like it when we call for support and they direct us to their websites's FAQs, which are usually no help at all. Maybe FAQ really means Forget Any Quality. So, call or email us. We may even be helpful.

No Sound from Speakers

1. Double check all wire connections. Make sure all wires, cables, and power cords are securely attached to their terminals.

2. Confirm that your home theater receiver or amplifier is turned on. Duh!

3. Determine the following: if the volume control is set to the minimum, if your system has been muted, or if headphones are plugged in.

4. Double check all wire connections. If a loose wire strand is touching another wire strand or terminal of opposite polarity, you will hear significant distortion or no sound at all.

5. Check any settings or features in your receiver that you may have inadvertently activated.

6. Make sure no foreign objects or liquids have made their way into the speaker.

No Sound from One Speaker

If all wires and cables are properly and securely attached, your receiver is turned on, the volume is ample, but one or more speakers have no sound, try substituting the wire from a working speaker. This will determine if the source of the problem is the speaker, or elsewhere.

Distorted Sound from Speakers

1. Check to see if the volume control has been set too high. Your speakers were designed to play loudly, however all speakers have limits. Too much volume can create distortion. If the volume is lowered and you still hear distortion, the speaker may be damaged and require service.

2. Double check all wire connections. If a loose wire strand is touching another wire strand or terminal of opposite polarity, you will hear significant distortion or no sound at all.

Weak Stereo Imaging (A Hole in the Middle) or Weak Bass

Make sure that all speakers are in phase. Check to be sure that all positive (+) wires are properly connected to positive (+) terminals and that all negative (-) wires are correctly connected to negative (-) terminals. One wrong connection can adversely affect the sound. Trust us, we know (we've made this mistake ourselves many times).

Peace Of Mind Warranty

We've worked countless hours without food, sleep, or television to build speakers that will serve you well for many years. However, in the unlikely event a speaker fails and it's our fault, we'll fix it for free.

Speakers are warranted for 5 years; electronics are warranted for 2 years.

Here are the terms (our lawyers made us do this):

RSL warranties your speakers for a period of 5 years from the date of purchase. We warranty our subwoofer amplifiers for a period of 2 years from the date of purchase. Our products are warranted to be free of defects in original materials and workmanship. Our warranties apply to the original purchaser. To obtain warranty service, we ask you to help us out with the following:

1. Be able to furnish a copy of your sales invoice. However, if you can't find it, we'll do our best to fire up the computer and, if Windows doesn't crash again, we'll look it up for you.

2. Return authorization must first be obtained by contacting us before sending your speakers to us. They must be properly packed.

3. Our speakers were designed for residential stereo or home theater use and must be used in this manner. They were not specifically designed for public address, musical instrument amplification, or other commercial or high intensity applications. Such use is not covered under warranty.

4. Speakers returned under the terms of the warranty will be repaired or replaced at our option. We will pay for shipping the repaired product back to you if you live in the Continental U.S. You are responsible for prepaying the shipping to us. Speakers that have been abused, operated improperly, improperly packed, tampered with, insulted or opened (without our prior permission) will not be repaired under warranty. This warranty does not cover damage caused by the use of faulty or improper audio/video components.

5. This is the total warranty. There are no other warranties, expressed or implied. No responsibility is assumed for any incidental or consequential damages. We are not responsible for your neighbors overstaying their welcome at your house to listen to your new home theater system. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

If you require service please contact us through our website or by phone (we promise to be nice about it, even if you did something silly}.

RSL SPEAKERS

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