

REVEL[®]

PERFORMA³[™]

B112/B110 Subwoofer

Quick Start Guide

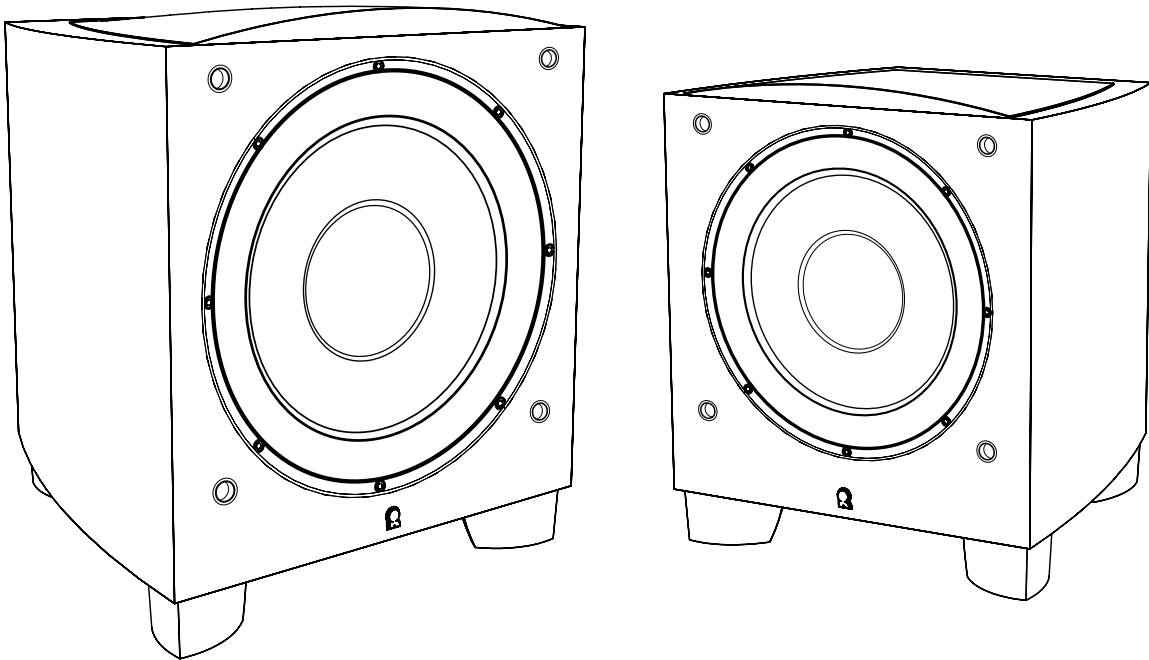


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ABOUT THIS DOCUMENT

This quick-start guide contains all the information you will need to unpack and initially place your Revel Performa3 subwoofer, connect it to the rest of your audio system, turn it on and have a first listen. To take full advantage of all the performance your new subwoofer is capable of delivering, please go to the Revel Web site (www.revelspeakers.com) and download the free *Revel Performa3 Subwoofer User Guide* and the Revel LFO (Low-Frequency Optimization) software. The User Guide and software provide you with an extremely sophisticated way to optimize your subwoofer's performance for your particular installation.

ABOUT REVEL PERFORMA3 SUBWOOFERS

Thank you for purchasing a Revel Performa3 subwoofer. The B112 and B110 are powered by a 1,000-watt RMS (2,000-watt peak) internal amplifier and feature a custom-designed transducer that combines a new level of low frequency nuance and refinement with unprecedented brute-force capabilities in a unit designed for use in the home. Combined with the internal amplifier's large power capability, and the extensive programming and room equalization capability of the companion Revel LFO (Low-Frequency Optimization) programming software, the result is a new standard of superb bass performance and adaptability for home entertainment systems.

The B112 and B110 feature 12-inch and 10-inch versions, respectively, of a brand-new low-frequency transducer that has been designed specifically for use in these two subwoofer models. The primary design goal for this new driver was to produce very low frequencies at extremely high SPL (sound-pressure levels) while at the same time maintaining extremely low distortion – requirements that usually remain mutually exclusive. This new unit maintains a precise engineering balance between the voice coil, spider and surround that produces linear motion of all three for lower distortion by incorporating CAD/FEA optimized high-linearity motor geometry:

- The extremely long (50mm) two-layer copper voice coil gives this transducer a very high X_{max}, dramatically increasing output. A fiberglass voice coil former helps the voice coil withstand high temperatures, reducing power compression and helping increase output. A spacer added at the top of the voice coil former maintains motor geometry, creates a solid attachment joint and prevents deformation of the voice coil at high outputs. The spacer also eliminates the typical single fulcrum point between the spider and cone on the voice coil former, minimizing voice coil rocking modes during hi-power operation.
- A high-temperature Nomex[®] spider features a progressive roll design that evenly distributes mechanical stress, helping keep the cone's motion linear during high-excursion operation.
- A nitril/butylene rubber surround uses patented Plus One[®] technology that increases the transducer's radiating area (S_d), increasing volume displacement and output.

The coated cellulose/pulp cone and dustcap assembly is vented under the dustcap to aid in the exchange of air, which reduces acoustic losses and increases output.

The transducer's massive magnet assembly (30.6 lb in the B112; 24.3 lb in the B110) features a triple-stacked vented ceramic 5 magnet with flared vents that reduce turbulence, which improves airflow, increases output and reduces distortion. Dual symmetrical magnet shorting rings and an extended top pole create a symmetrical magnetic gap field that increases power handling and reduces power compression further increasing output. A 15mm-thick top plate improves heat and flux distribution for lower distortion.

The cast aluminum frame is fully vented to minimize acoustic losses caused by excessive back pressure. This frame also maintains dimensional stability and precise mechanical tolerances, allowing the transducer to be manufactured and assembled to a high degree of precision.

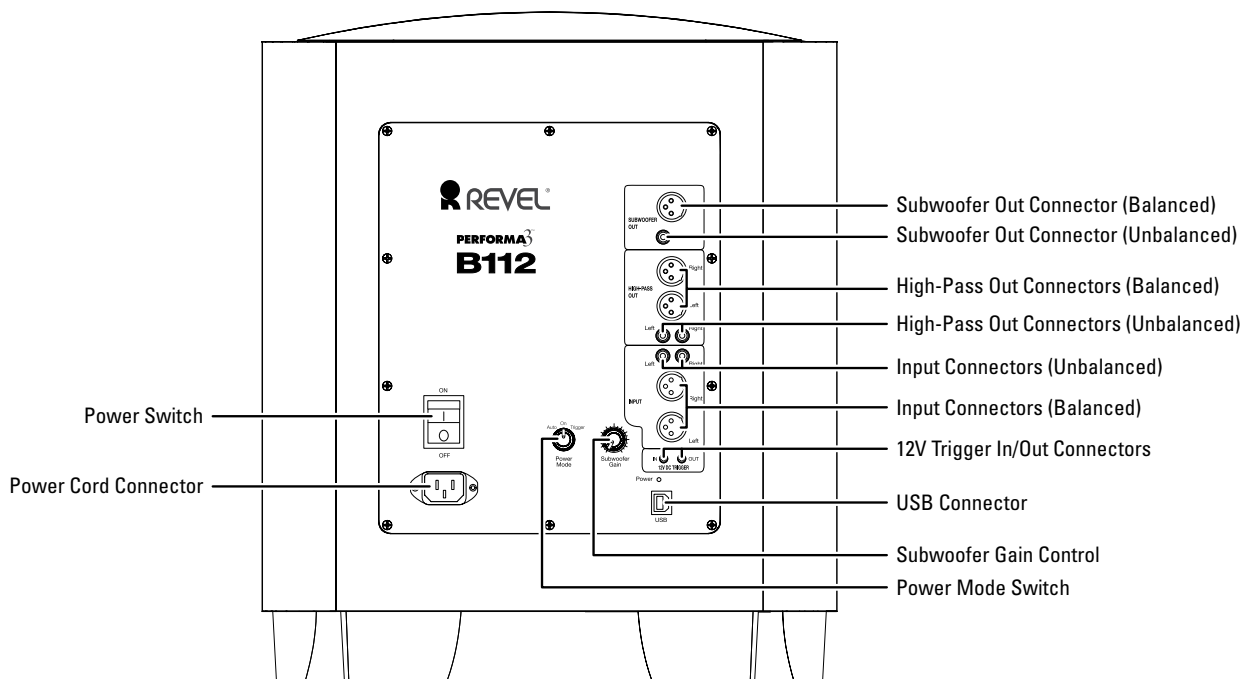
The B112 and B110 enclosures are formed with contiguous wood layers that prevent splitting. They feature strategically-oriented bracing that eliminates the possibility of enclosure-induced coloration. The beautiful, modern enclosure is finished in high-gloss piano black or genuine American walnut in a process (developed and overseen by Italian luxury cabinet makers) that exceeds automotive finish quality.

Your Revel Performa3 subwoofer is designed to be used along with our Revel LFO programming software, which is available as a free download at www.revelspeakers.com. The software configures the DSP processor inside your Performa3 subwoofer, which provides up to ten independent equalization points, each with user-determined frequency, amount of gain/cut and filter Q (bandwidth). This provides you with an extremely sophisticated way to optimize the subwoofer's performance for your particular installation, listening room and seating arrangement. In addition, the software also provides programming for the subwoofer's internal crossover system, as well as speaker delay and polarity settings. All of these processing options can also be independently applied to the subwoofer's left and right high-pass outputs.

During development, every Revel loudspeaker model is compared to competitive models in our unique position-independent double-blind listening lab. This process utilizes the latest psychoacoustic research to assure that these listening tests are valid, enabling us to verify that all Revel loudspeakers are superior to their competitors before they are allowed to go into production.

B112/B110 OVERVIEW

(Note: B112 and B110 rear panels are identical.)



Subwoofer Out connectors: If you are using more than one Performa3 subwoofer in the system, connect the Subwoofer Out connector to the additional Performa3 subwoofer's Input Connector. Balanced (XLR) and unbalanced (RCA) connectors are available. Both outputs are 0dBv (nominal)/+20dBv (maximum). The XLR output is pin 2 high.

High-Pass Out connectors: Use these connectors to send a high-pass filtered signal to the main (left/right) amplifier's inputs. Balanced (XLR) and unbalanced (RCA) connectors are available. Both outputs are 0dBv (nominal)/+20dBv (maximum). The XLR output is pin 2 high. NOTE: The factory-default high-pass crossover setting is at 80Hz with a 24dB/octave (4th-order) slope. You can change these settings using the Revel LFO programming software. See the *Revel Performa3 Subwoofer User Guide* for more information.

Input connectors: Connect these to the outputs of a stereo preamp or connect a surround processor's subwoofer output to either the left or right input. Balanced (XLR) and unbalanced (RCA) connectors are available. Both inputs are 0dBv (nominal)/+20dBv (maximum). The XLR input is pin 2 high.

12V Trigger In/Out connectors: When the subwoofer's Power Mode Switch is set to "Trigger," the subwoofer will automatically turn on when 5V – 12V is present at the 12V Trigger In connection and will turn off when the voltage at this connection is removed. Whenever the subwoofer is on, a 12V trigger signal is available at its 12V Trigger Out connector for use with additional Performa3 subwoofers, or another triggerable device.

USB connector: To program the subwoofer's room equalization and high-pass and low-pass crossover characteristics, connect this USB Type B receptacle to the USB receptacle of a computer that is running the Revel LFO programming software.

Subwoofer Gain control: Use this control to adjust the volume of the subwoofer relative to the system's other speakers. (The Gain control can be disabled using the Revel LFO programming software.)

Power Mode switch: This switch determines how the subwoofer will turn on and off:

- When this switch is set in the "Auto" position and the Power switch is set to "On," the subwoofer will automatically turn on when it first detects an audio signal at any of its inputs, and will automatically enter the standby mode after it has received no audio signal for a period of time (30 seconds to 120 minutes) you can set using the Revel LFO programming software.
- When this switch is set in the "On" position, the subwoofer will turn on when the Power switch is set to "On" and will remain on until the Power switch is set to "Off."
- When this switch is set in the "Trigger" position and the Power switch is set to "On," the subwoofer will automatically turn on when a voltage is present at the 12V Trigger In connection and will remain on as long as the voltage is present. When the voltage at the 12V Trigger In connection is removed the subwoofer will automatically turn off.

Power switch: When this switch is set to "On," the subwoofer's on/off status is dependent on the setting of the Power Mode switch (see above). When the Power switch is set to "Off" the subwoofer is turned off and cannot turn on automatically.

We suggest setting the Power switch in the "Off" position if you will not be using the subwoofer for a long period of time, such as when you're on vacation.

Power Cord connector: Plug the supplied power cord into this connector and into a working *unswitched* AC power outlet.



SUBWOOFER PLACEMENT CONSIDERATIONS

When using subwoofers within the limited confines of a typical home theater room, the reflections, standing waves and absorptions generated within the room will create peaks and dips in the bass response that can vary greatly depending on where the listeners are located in the room – a listener seated in one location may hear an overabundance of bass created by a response peak at that location, while another listener only a few feet away may hear a considerable lack of bass created by a response dip at that location.

The subwoofers' locations within the room (along with the room's dimensions) also have a profound effect on the creation of these bass response peaks and dips. Careful subwoofer placement alone cannot compensate for all bass response peaks and dips throughout a room, but careful subwoofer placement can eliminate or significantly reduce the largest response dips.

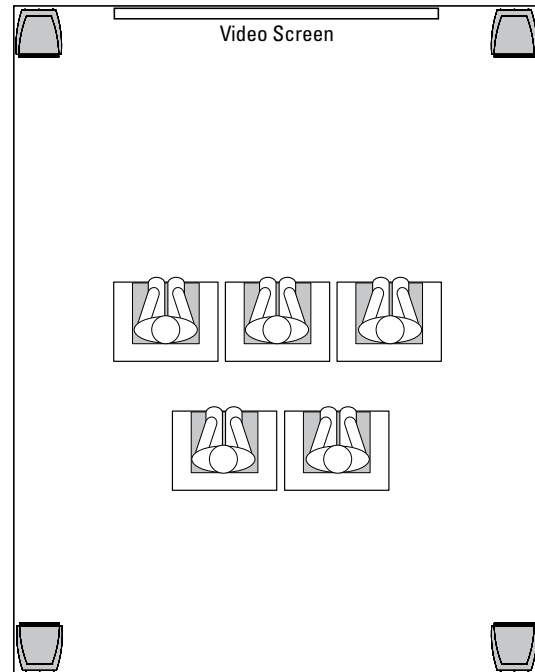
It is important to reduce response dips throughout the room as much as possible via proper subwoofer placement because equalization cannot be used to compensate for large response dips. For example, using equalization in an attempt to restore a 13dB response dip requires that the subwoofer amplifier delivers twenty times the power at that frequency. This can quickly overdrive the subwoofer amplifier into clipping, which will significantly degrade audio quality.

In almost any room, placing the subwoofers in corners will produce the fewest large bass response dips and will also produce the most large bass response peaks. With the subwoofers so placed, you can then use the Revel LFO programming software's sophisticated room equalization capability to compensate for the response peaks, resulting in superb bass performance.

We strongly recommend that you install multiple subwoofers regardless of the room's size. Even after using the Revel LFO programming software's room equalization to remove the response peaks, installing a single subwoofer will result in the least consistent bass performance throughout the room. Using multiple subwoofers can cancel some room modes at the various listening locations, resulting in much more consistent low frequency sound quality throughout the listening area. Additionally, it is often impossible to locate a single subwoofer such that large response dips, which cannot usually be corrected via equalization, are not present. The use of two or more properly placed subwoofers can almost always eliminate such dips in response.

PLACING FOUR SUBWOOFERS

When installing four subwoofers, place each one in a room corner. In rooms with more than four corners, use the four corners closest to the listening area.

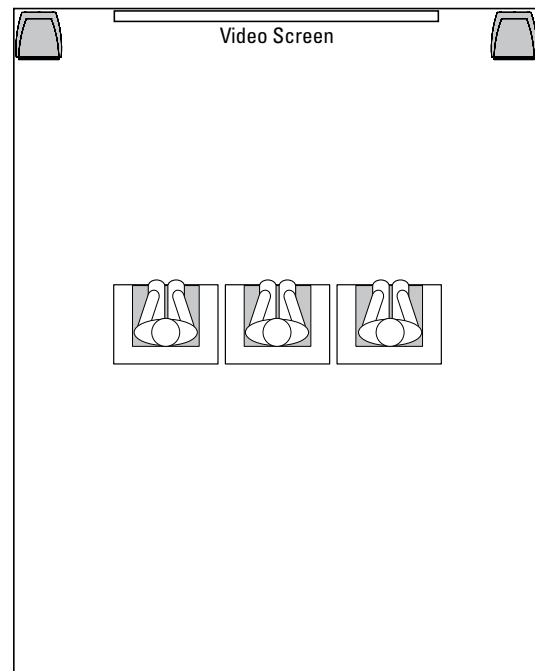


PLACING TWO SUBWOOFERS

Placement of two subwoofers will be determined by your room's seating arrangement.

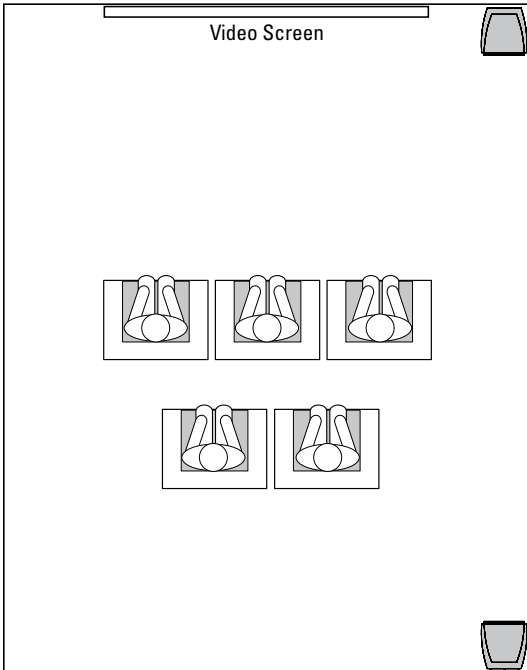
Rooms with a single row of seating

Placing the subwoofers in the two front corners will produce the most consistent bass performance throughout a single row of seating.



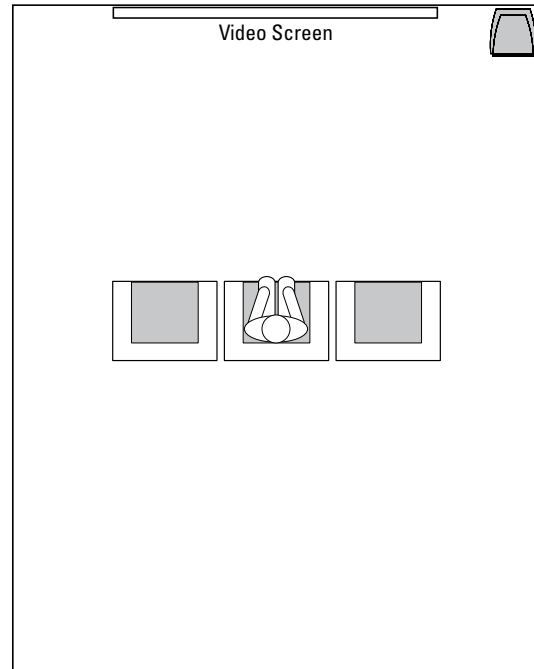
Rooms with multiple seating rows

Placing one subwoofer in a front corner and the other subwoofer in the rear corner on the same side will produce the most consistent bass performance throughout multiple seating rows.



PLACING A SINGLE SUBWOOFER

When installing a single subwoofer, be prepared to experiment with different locations to find the one that produces the best results throughout your room's seating area. As in the previous examples, placing the subwoofer in a corner will produce the fewest number of deep response dips, which cannot be corrected with equalization.



We strongly suggest performing measurements (beginning by performing measurements with at least 1/12th-octave resolution) with the subwoofer in each of the room's corners to find the one that produces the most consistent results at the various listening positions in your room. Please see the *Revel Performa3 Subwoofer User Guide* for information about performing in-room measurements.

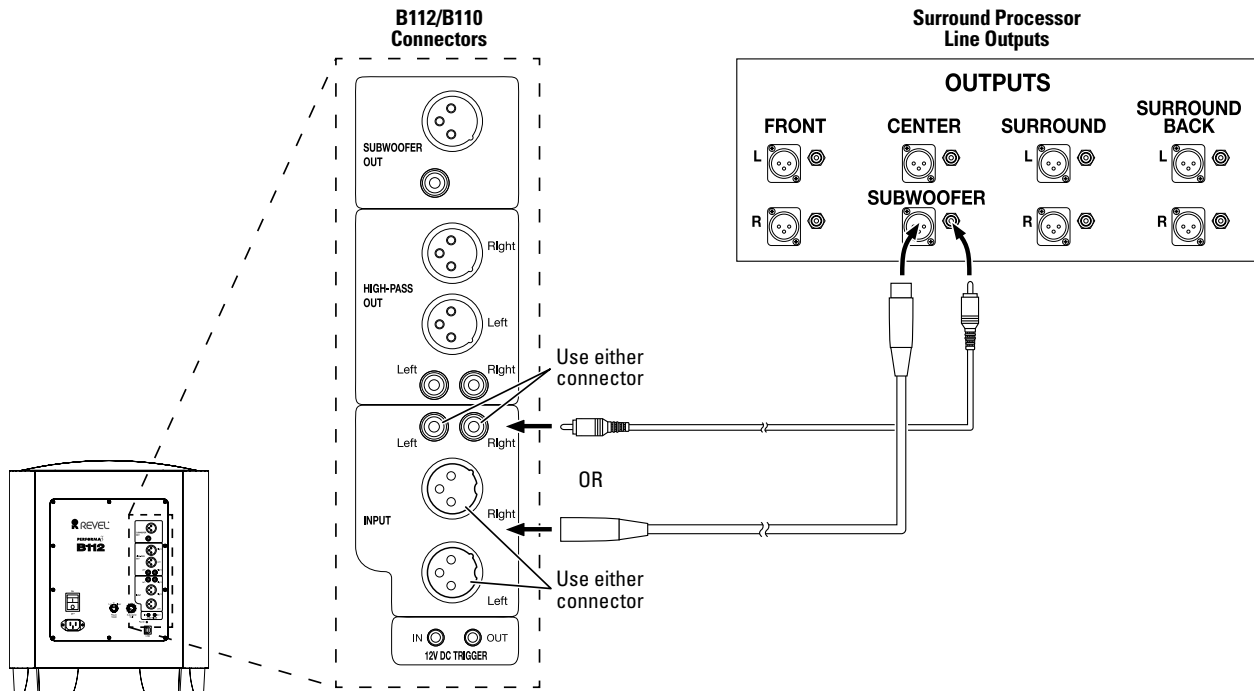
Since wall construction is almost never perfectly identical on opposite walls, common formulas such as placing the subs at 1/4 points rarely work in practice. The best solution is to make high-resolution measurements from the primary listening area while experimenting with speaker placement.

MAKING CONNECTIONS

CAUTION: Never make or break connections unless all system components are powered off.

CONNECTING TO A SURROUND PROCESSOR WITH AN INTERNAL CROSSOVER (FACTORY-DEFAULT)

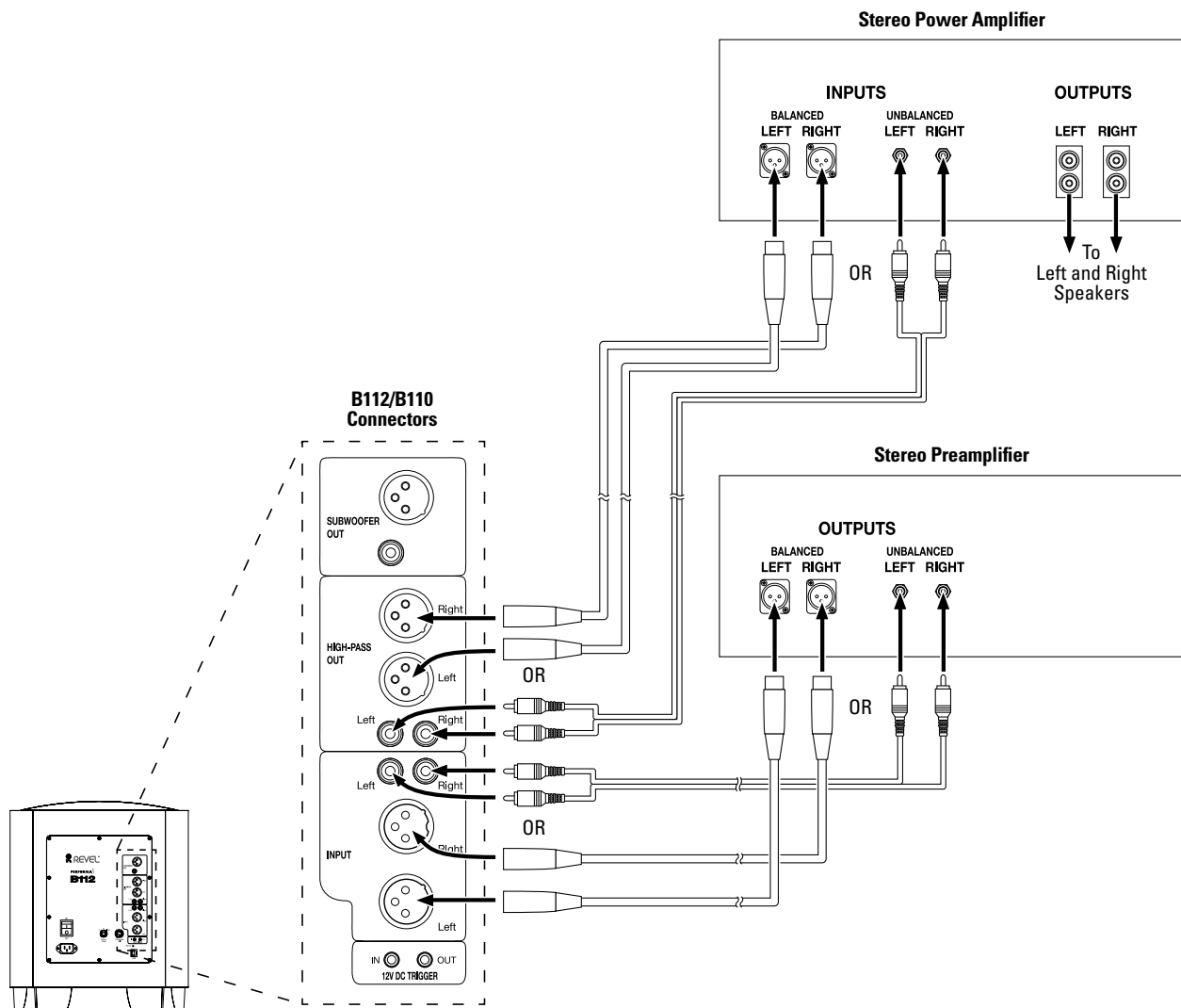
If you are connecting to a surround processor with a low-pass filtered subwoofer output, connect the subwoofer as shown below. You can make either a balanced (XLR) or unbalanced (RCA) connection to either the subwoofer's left or right input connector. To accommodate connection to surround processors with internal crossovers, the B112 and B110 are factory-programmed with their low-pass and high-pass crossover circuits disabled.



CONNECTING TO A STEREO PREAMPLIFIER

If you are connecting to a stereo preamplifier, connect the subwoofer as shown below. You can make either balanced (XLR) or unbalanced (RCA) connections between the preamp and subwoofer, and between the subwoofer and the left/right power amplifier.

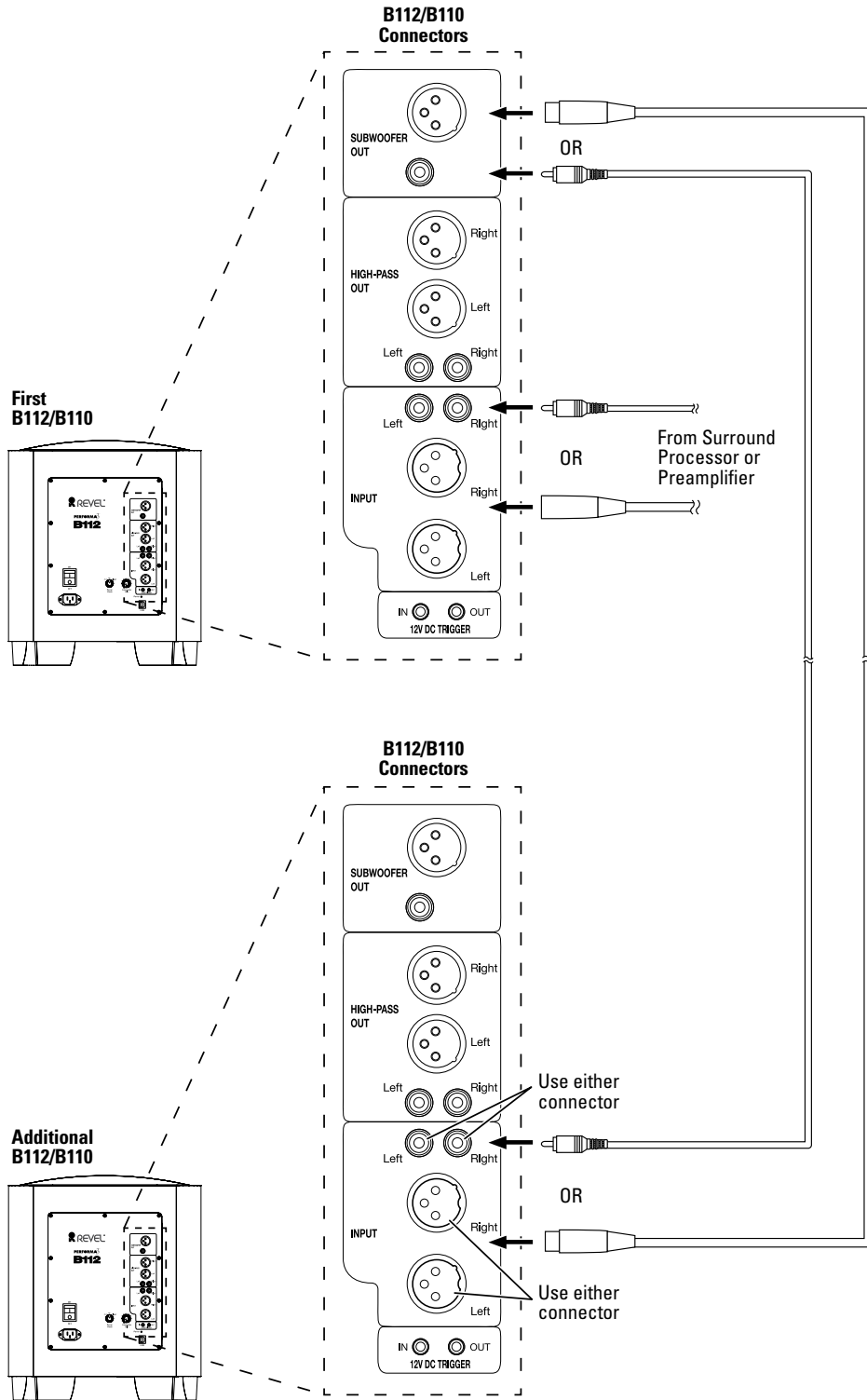
Using this connection method, you must use the Revel LFO programming software to enable the subwoofer's internal crossover circuits, which can provide a high-pass filtered signal to the power amplifier for the left/right speakers via the subwoofer's left/right High-Pass outputs. The Revel LFO programming software provides the same sophisticated room equalization capability for the subwoofer's left and right High-Pass outputs as it does for the subwoofer itself, allowing you to optimize your system's performance to an unprecedented degree.



CONNECTING MULTIPLE SUBWOOFERS

When installing more than one Performa3 subwoofer, connect the first one as shown in the appropriate example above. Connect the additional subwoofers in “daisy-chain” fashion, using the Subwoofer Out connectors and Input connectors, as shown below.

NOTE: Read the *Revel Performa3 Subwoofer User Guide* for information about settings in the Revel LFO programming software that are required when using multiple subwoofers.



TRIGGER AND POWER CONNECTIONS

Trigger In/Out Connectors

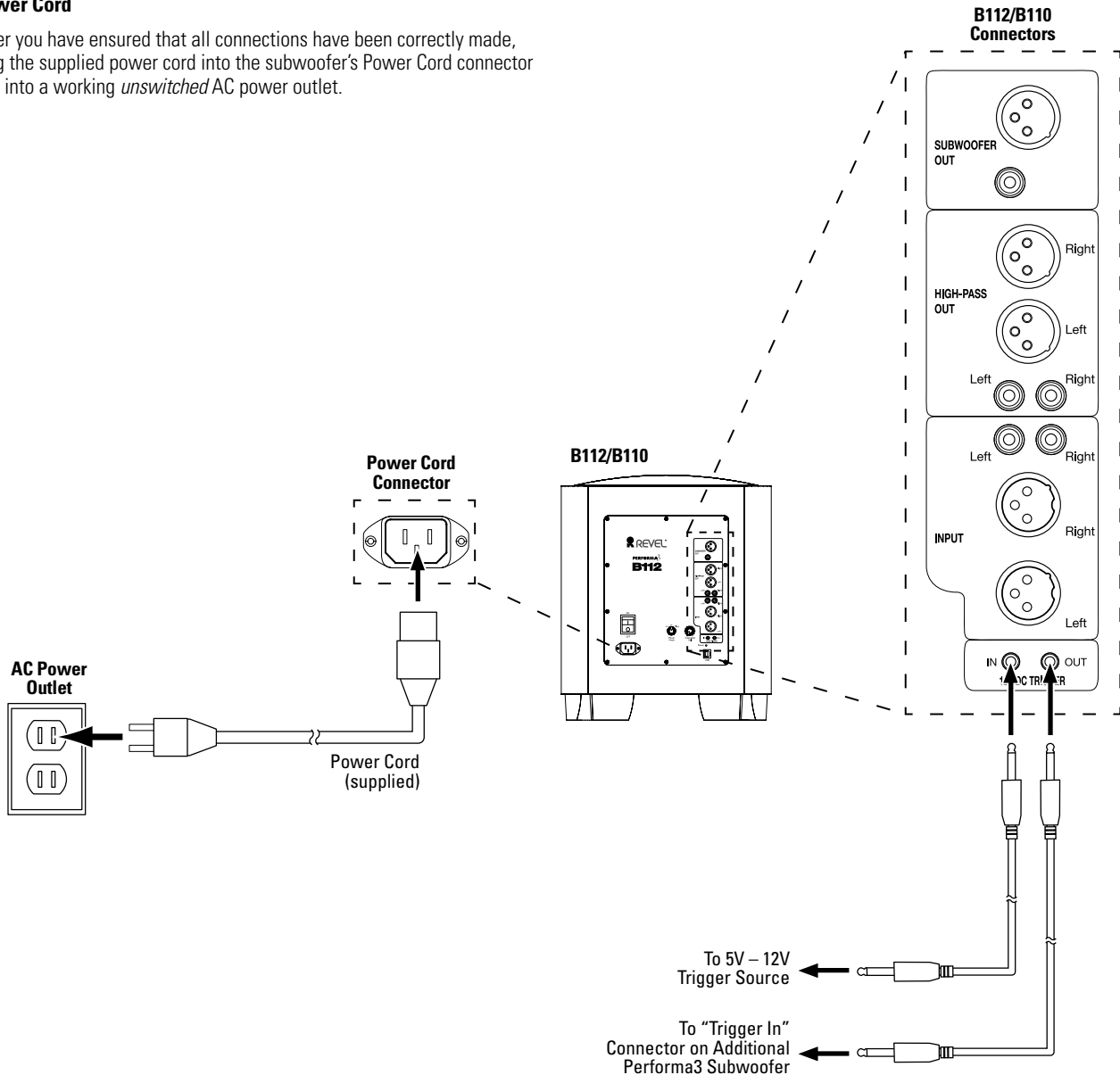
If you want your subwoofer(s) to turn on along with another component that supplies a trigger voltage, use a mono 3.5mm cable (not supplied) to connect the 12V DC Trigger In connector to the trigger voltage out connector of the other component.

To supply a trigger signal to an additional Performa3 subwoofer (or other triggerable device), use a mono 3.5mm cable (not supplied) to connect the 12V DC Trigger Out connector of the first Performa3 subwoofer to the 12V DC Trigger In connector of the next Performa3 subwoofer. Connect additional Performa3 subwoofers this way, in "daisy-chain" fashion.

NOTE: When using the 12V DC Trigger connectors, set the subwoofers' Power Mode switches in the "Trigger" position.

Power Cord

After you have ensured that all connections have been correctly made, plug the supplied power cord into the subwoofer's Power Cord connector and into a working *unswitched* AC power outlet.



CARING FOR YOUR SUBWOOFER

The cabinet's wood veneer finish does not require routine maintenance. Cabinet surfaces that have been marked with dust, fingerprints, or other dirt can be cleaned using a soft cloth – preferably microfiber, and high-quality auto wax. Take care not to come in contact with the transducer.

- Use caution to avoid contacting the rubberized trim on the top of the loudspeaker with auto wax. If necessary, the rubberized trim can be cleaned with denatured alcohol on a microfiber cloth.

To clean the grille, gently vacuum it using a soft-bristled brush vacuum attachment with the vacuum cleaner set to the lowest possible suction.

CAUTION: To prevent cabinet damage, do not use metal polish or a cloth made with steel wool to clean the cabinet. To prevent possible transducer damage, do not apply furniture polish directly to the cabinet.

SPECIFICATIONS

B112/B110

Type:	Powered subwoofer
Low-frequency transducer:	Coated paper/pulp cone (12" – B112; 10" – B110) with 50mm two-layer copper voice coil, vented triple-stacked ceramic 5 magnet assembly and vented die-cast aluminum frame
Amplifier power:	1,000 watts (RMS), 2,000 watts (peak)
Input sensitivity/impedance:	400mV (full power)/20k ohms (balanced); 14k ohms (unbalanced)
Crossover frequency:	50Hz – 200Hz, independent low-pass and high-pass 1st-, 2nd-, 4th-, 8th-order Butterworth, 4th- or 8th-order Linkwitz-Riley (factory-disabled, user-programmable with Revel LFO programming software)
Enclosure type:	Sealed
Inputs:	Balanced (XLR); unbalanced (RCA)
Available finishes:	Piano black; high-gloss genuine American walnut veneer
Dimensions (H x W x D):	
B112:	18-7/16" x 15-15/16" x 16-9/16" (468mm x 404mm x 420mm), with grille
B110:	16-7/8" x 14-5/16" x 13-7/16" (428mm x 364mm x 342mm), with grille
Weight:	
B112:	70.4 lb (31.9kg)
B110:	56 lb (25.4kg)

WARRANTY

Revel Series speakers are warranted against defects. The duration of the speaker's warranty depends on the laws in the country in which it was purchased. Your local Revel retailer can help you determine the length of your warranty.

HARMAN

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