



In Wall | In Ceiling Subwoofer Installation Guide

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This guide will lead the installer through the process of installing Savant | Artison RCC Subwoofer Series.

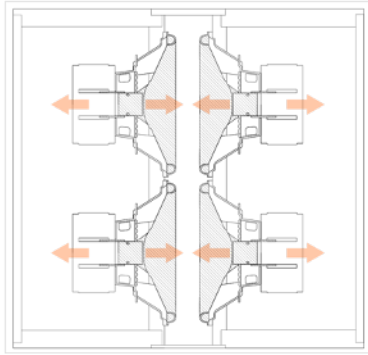
- RCC 1000 Sub Amp for MK2 [RCC1000-SA-MK2]
- Sub 160V2 (Pre Construction) [RCC160-MK2-PC]
- In-Wall Sub 320V2 (Pre Construction) [RCC320-MK2-PC]
- In-Wall Sub 320V2 (Retrofit) [RCC320-MK2-R]

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1. Product Overview

The RCC MK2 Series incorporates the Reactance Cancelling Configuration (RCC) technology, which eliminates resonance in all Savant | Artison subwoofers. Equal and opposite drivers counteract any vibration.






These subwoofers use a pair of 4" x 6" drivers in the smaller design (RCC160-MK2-PC) and 2 pairs of 4" x 6" drivers in the larger designs (RCC320-MK2-PC and RCC320-MK2-R)

1.1. RCC160-MK2-PC

Box Contents

- (2) Sub 160V2 (Pre Construction) [RCC160-MK2-PC]
- (4) L-Shaped Mounting Brackets
- (8) Bracket Screws
- (8) M6 Eye-hooks
- (16) 3 mm Grille Spacers
- (8) Long Spacer Screws
- (2) Rectangular Grille
- (1) Micro Aperture Subwoofer Adapter and Grille Kit
 - (2) Micro Aperture 4 Grille Adapters
 - (2) Micro Aperture Round Grille
 - (2) Micro Aperture /Square Grille
- (1) Installation Guide (this document)

Specifications

Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% Relative Humidity (non-condensing)
Dimensions and Weights without Brackets	
Height	8.19 inch (20.80 cm)
Width	13.94 inch (35.40 cm)
Depth	4.16 inch (10.57 cm)
Weight	Net: x.x lb (x.x kg)
Compliance	
Safety and Emissions	FCC Part 15  CE  C-Tick 
RoHS	Compliant

1.2. RCC320-MK2-PC/RCC320-MK2-R




Box Contents RCC320-MK2-PC

- (1) In-Wall Sub 320V2 (Pre Construction) [RCC320-MK2-PC]
- (4) L-Shaped Mounting Brackets
- (8) Bracket Screws
- (1) Grille
- (1) Installation Guide (this document)

Box Contents RCC320-MK2-R

- (1) In-Wall Sub 320V2 (Retrofit) [RCC320-MK2-R]
- (1) Wall Cut-out Template
- (1) Grille
- (1) Installation Guide (this document)

Specifications




Environmental			
Temperature	32° to 104° F (0° to 40° C)		
Humidity	10% to 90% Relative Humidity (non-condensing)		
Dimensions and Weights without Brackets			
Height	16.54 inch (20.80 cm)		
Width	17.04 inch (35.40 cm)		
Depth	8.94 inch (10.57 cm)		
Weight	Net: 25.2 lb (x.x kg)		
Compliance			
Safety and Emissions	FCC Part 15 	CE 	C-Tick 
RoHS	Compliant		

1.3. RCC1000-SA-MK2

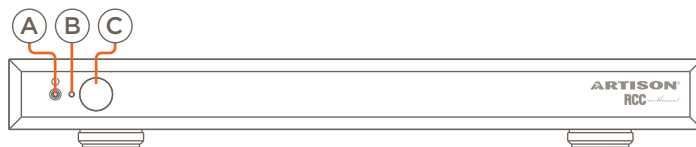
Box Contents

- (1) RCC 1000 Sub Amp for MK2 (RCC1000-SA-MK2)
- (1) IR Remote
- (2) Rack-Mount Ears
- (8) Screws
- (1) Power Cord
- (1) Installation Guide (this document)

Specifications

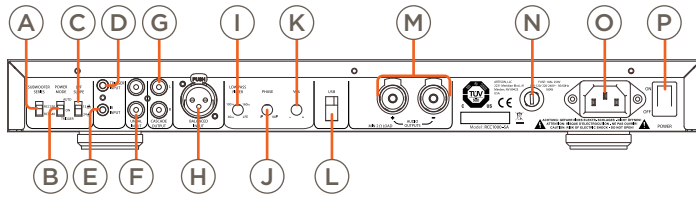
Environmental			
Temperature	32° to 104° F (0° to 40° C)		
Humidity	10% to 90% Relative Humidity (non-condensing)		
Dimensions and Weights			
Height	1.75 inch (4.45 cm)		
Width	19.0 inch (48.26 cm)		
Depth	13.0 inch (33.02 cm)		
Weight	Net: 14.5 lb (6.6 kg)		
Power			
Input Power	110-230 AC Volts, Auto-Sensing Supply		
Idle Power Consumption	38.8W @ 110 V, 26.5 W @ 230 V		
Max Power Consumption	854W @ 110 V, 823W @ 230 V		
Compliance			
Safety and Emissions	FCC Part 15 	CE 	C-Tick 
RoHS	Compliant		

Front Panel



(A) Standby Button	This button will toggle between Standby Mode and ON
(B) Status LED	The LED in the GAIN control will indicate the following: Red - Standby Blue - On using Music EQ, the Music EQ setting provides a full range of deep musical bass to enhance the listening experience. Subsonic Filter is 20 Hz. Red & Blue - On using Movie EQ, the Movie EQ setting adds more volume and upper bass to help recreate the true movie theater experience. Subsonic Filter is 35 Hz.
(C) IR Window	Location of the IR receiver.

Rear Panel



A Subwoofer Series	Selector switch: RCC320 - Used for RCC160 and RCC320 modules. RCC640 - Used for RCC640 module.
B Power Mode	The front panel button is operates Standby function. AUTO - On with Signal Sense, without signal it will stay on for ≈15 minutes. NOTE: The front panel button will not be operable in this mode. ON - Always On. TRIGGER - On with a 12 Volt Trigger. NOTE: The front panel button will not be operable in this mode.
C LPF Slope	Select either: 12 dB/Octave - Acoustic Suspension (Sealed) Artison Front Channels 24 dB/Octave - Bass Reflex (Ported) Artison Front Channels.
D Trigger Input	3.5 mm input to utilize the 12 volt trigger wire from your other equipment, the polarity on the connector can be either way.
E IR Input	3.5 mm input to control the RCC620-SA via an IR control system.
F Unbalanced Input	RCA audio input
G Cascade Output	RCA audio output used to connect an additional amplifier
H Balanced Input	Balanced female XLR input
I Low Pass Filter	Low Pass Filter is the crossover frequency setting. The unit comes from the factory with the 80Hz setting that is recommended for use with Artison Front Channels.
J Phase	The phase of the subwoofer can be adjusted to fine tune the signal coincidence of the subwoofer and the lower frequencies of your LCR Speakers. The unit comes from the factory set at 0°. Adjust the phase, listening for an increase in mid bass in the crossover region. A pink-noise generator or an RTA (Real-time Analyzer) can further analyze your installation.
K Volume	The position of this knob controls the overall gain (volume) of the subwoofer.
L USB	Used for firmware update only.
M Audio Output	Speaker Binding Post connection. All connected subs should be wired in parallel. Supports up to four pair of RCC160-MK2, or four RCC320-MK2.
N Fuse	10AL 250V
O Power Input	110 - 230 AC Volts 50/60Hz , Auto-Sensing Supply
P Power Switch	Toggles the power rails on and off.

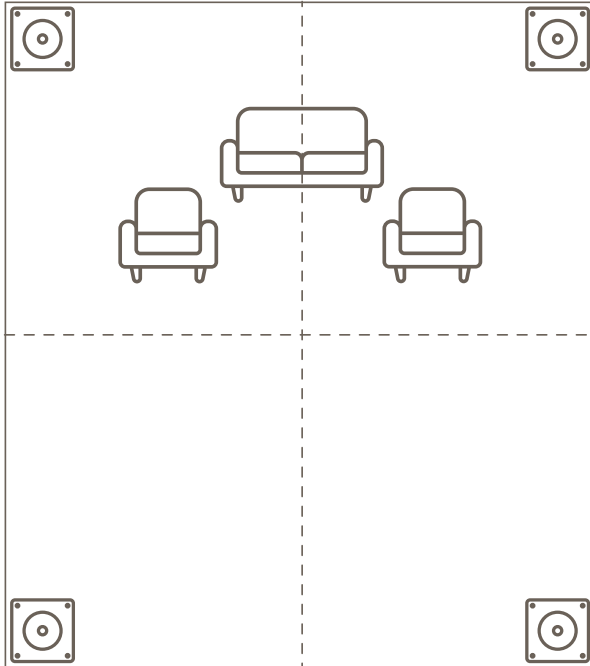
2. Subwoofer Placement

The two primary objectives in setting up a Distributed Bass System are firstly uniformity of sound pressure level (SPL) throughout the operating band, which mid-wall typically accomplishes and secondly system efficiency. However, the mid-wall placement may not be the best solution for system efficiency.

2.1. Corner Placement (4 Subs)

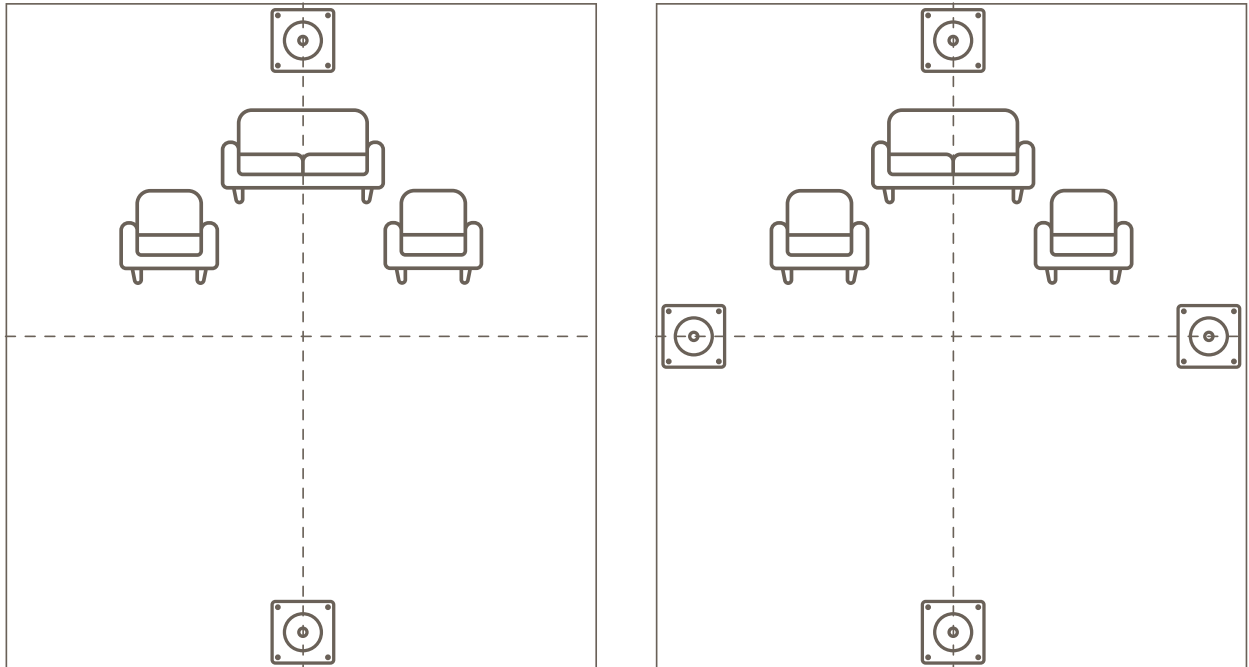
When using four subwoofers, the ideal locations for them in a rectangular room are the corners of the room. Assuming all subwoofers are identical, this placement will achieve up to 9dB - 12dB of increased output when compared to a single-corner loaded subwoofer. Placing the subwoofers in all four corners will reduce standing waves through destructive interference and provide almost as uniform and consistent frequency response as the mid-wall solution.

Used in conjunction with global equalization, this option provides good seat-to-seat uniformity with a huge advantage in efficiency. This allows you to achieve higher levels of performance from a given size subwoofer.



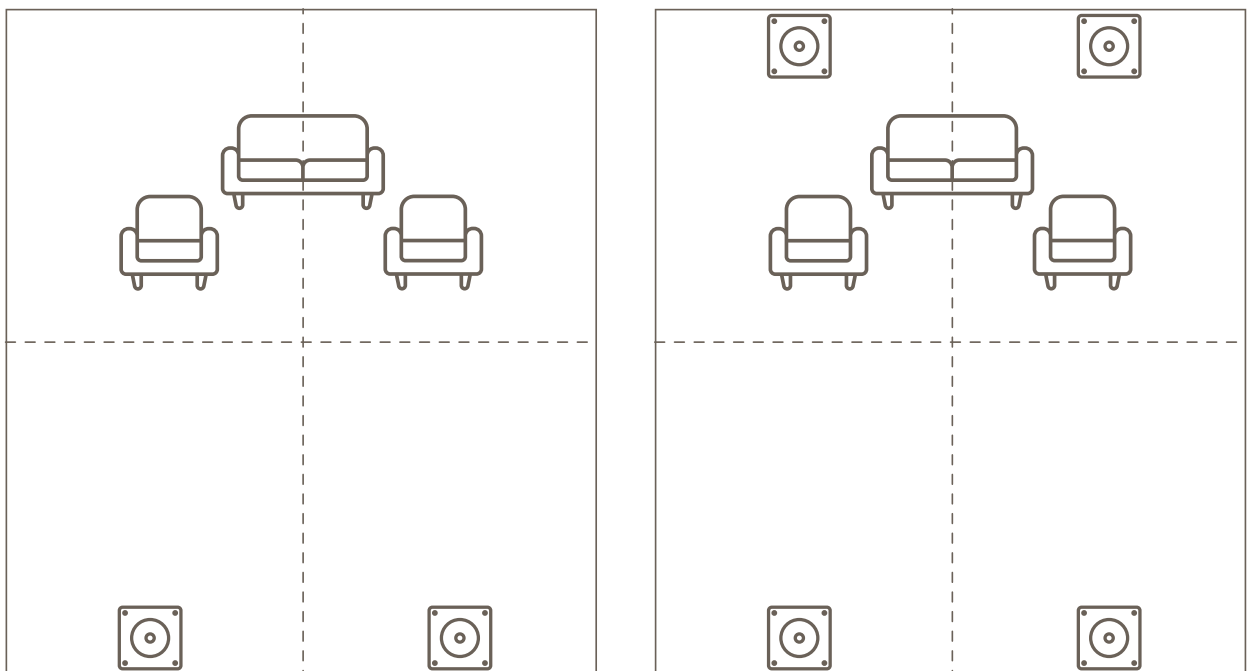
2.2. Mid-Wall Placement (2 or 4 Subs)

For Bass Uniformity with two subwoofers, the ideal locations in a rectangular room are on opposing mid-walls. Two subwoofers configured in such a manner work nearly as well as four subwoofers configured via a 4-Corner Placement. Enhanced bass performance can also be achieved by adding two additional subwoofers mid-wall on the other two walls in the room.



2.3. 1/4 Corner Placement (2 or 4 Subs)

Excellent bass response can also be achieved by placing two subwoofers against the front wall at locations of 1/4 the room width. Many in the home theater audio market have achieved enhanced results placing two additional subwoofers in a similar manner against the back wall. The four subwoofer 1/4 Wall Placement configuration can deliver a comparable frequency response performance as the 4-Corner Placement with nearly as much bass gain as well.



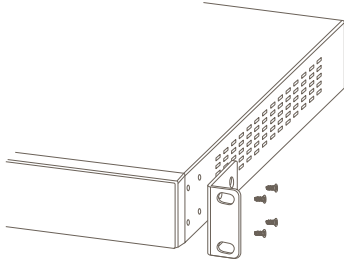
3. Installation

3.1. RCC1000-SA-MK2

The RCC1000-SA-MK2 can be mounted in a 1U rack style enclosure, and is compatible with all standard 19-inch National Electrical Manufacturers Association (NEMA) rack mounts.

Follow the steps below to install the mounting brackets:

1. Remove the feet from the bottom of the device.
2. Align the mounting bracket with the threaded holes on the side of the unit, as shown below.



3. Secure with the included Bracket Screws.
4. Repeat steps 1 and 2 for the other side of the device.

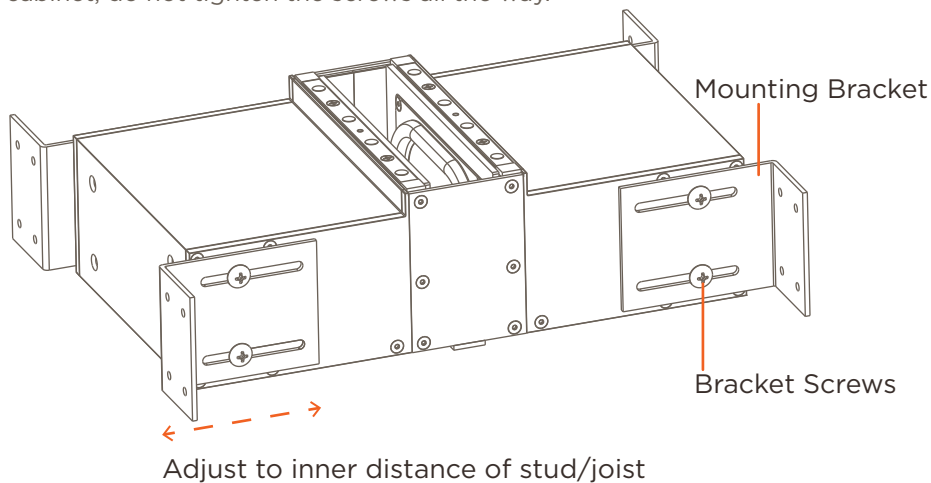
3.2. RCC MK2 Subs (Pre-Construction)

The RCC MK2 Subs was designed to be installed into a 2 x 4 stud wall with a minimum of 16" on center spacing before the drywall is applied to the stud wall. The subwoofer is not impacted by cabinet orientation and can be used either vertically or horizontally. The classical rule for subwoofer placement is that the subwoofer should be placed near the same wall the front channels are located, at one-third of the total distance of the wall. When using multiple subwoofers, see the Sub Placement section for more information.

Install in Wall

The module comes with the Pre-Construction Paint/Debris Shield in place. **DO NOT REMOVE** this shield until after the room painting is completed and the environment is free of dust. The subwoofer can be installed with the slot opening horizontal or vertical.

1. Align and attach the 4 L-Shaped Mounting Brackets to the tapped holes in the aluminum sides of the cabinet, do not tighten the screws all the way.



2. Adjust the brackets to span the width of the inner distance of the stud bay, and tighten the screws.
3. Attach the brackets to the studs.
4. Attach any grille spacers needed for the thickness of wall board to be used.
IMPORTANT! Do not use the M4x23 screws unless there is three(3) or more spaces are in use. If the longer screws are used with less than 3 spaces the screws will puncture the driver.

Install in Cabinetry

The module comes with the Pre-Construction Paint/Debris Shield in place. **DO NOT REMOVE** this shield until after the room painting is completed and the environment is free of dust. The subwoofer module can also be concealed inside of any piece of furniture or built-in cabinetry. The unit can be installed face-down inside a cabinet and direct the subwoofer's energy down through the bottom of the cabinet; directly into the room or out through venting in the cabinet's baseboard.

Dimensions for the hole cut-out are 342 x 78 mm (13.5" x 3.1"). Please note the thickness of the cabinet wall must at least be 0.5" if the grille is going to be visible.

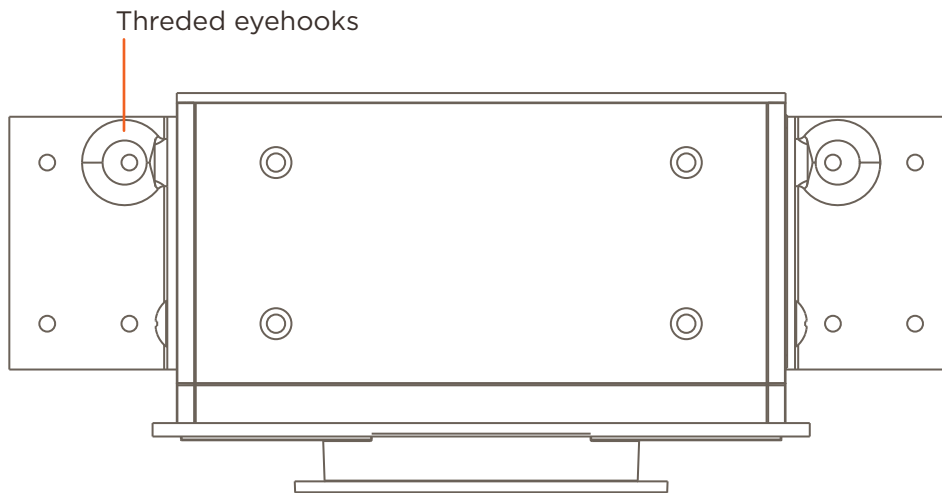
When venting the output of the subwoofer through a built-in cabinet's baseboard, please reference the points below:

- Please allow for a minimum of 50 sq in of total open area in the baseboard. If less open area is provided the subwoofer will be restricted and may cause noise through the vent.
- Rounded corners will also minimize air noise.
- The subwoofer is not affected by variations in shape or number of vents, as long as the minimum total open area is maintained.

Install in Ceiling

The subwoofer module can also be installed in joist bays. Minimum distance between studs must accommodate the module dimensions of 342 mm (13.4") x 354 mm (13.9").

Gripple®-Type Suspension Systems - The included threaded eyehooks allow for suspended system installations using commonly available Gripple® hanging hardware (not included).



⚠ IMPORTANT! Refer to the manufacturers' Carrying Capacity of the Gripple® Fasteners used

⚠ CAUTION! Gripple type installation must be done by a qualified person(s) using safe rigging standards. Use equipment only in accordance with the manufacture's instructions.

Install in Furniture

Due to the modules thin form factor, the unit can also be hidden underneath or behind furniture. Minimum clearance height is 127 mm (5.0").

3.3. RCC MK2 Subs (Retrofit)

The RCC320-R was designed to be installed into a 2 x 4 stud wall with a minimum of 16" on center spacing. The subwoofer module is not impacted by cabinet orientation and can be used either vertically or horizontally. The classical rule for subwoofer placement is that the subwoofer should be placed on the same wall the front channels are located, positioned at one-third of the total distance of the wall. When using multiple subwoofers, consult with your dealer or custom installer for best placement options.

The minimum mounting depth for the RCC320-R is 97.5 mm (3.8"), i.e. a 2x4 stud is 3.5" deep, plus 1 layer of 0.5" or 0.625" thick drywall. The maximum drywall thickness the RCC320-R can dog clamps can accept is 41 mm (1.6").

1. Use the provided Cut-out Template to mark the desired wall location. The cut out dimensions are 344 mm (13.6") H x 363 mm (14.3") W.
2. Use a stud finder to check the location and make a small exploratory hole first to be sure that no piping, wall studs, or electrical wires will interfere with the placement of the module.
3. Using 2 conductor speaker wire, run between the subwoofer amplifier and the subwoofer module. Use 16 gauge stranded speaker wire for run lengths under 15 m (50') and 14 gauge for runs over 15 m (50').
4. Once the hole is cut and test fitted with the module. Connect the bare speaker wire ends to the spring loaded binding posts. Be sure to orient the terminal cup towards the direction the speaker wire comes, as there will not be room to manage the speaker wire behind the module.
5. Install the RCC320-R into the cut-out made in the wall and carefully tighten the four dog leg clamps on the RCC320-R using a #2 Philips Head. If using an electric screwdriver, be sure to use a low to medium torque setting.
6. The grille for the RCC320-R is held in place by magnets. Simply position the grille over the front of the module.

3.4. Painting the Grille & Trim

- The Grille and Trim Ring can be painted separately from the rest of the subwoofer module.
- Be sure to carefully remove the thin fabric scrim cloth from the interior of the grille. The scrim is not to be painted. Replace scrim cloth after painting is completely dry. If the scrim does not adhere to the grille, use a spray adhesive to reattach.
- DO NOT get paint on the speaker baffle or speakers. Paint can damage these components which would VOID your Warranty.

3.5. Wire Gauge - 8 Ohm System

In an 8-ohm system the total wire resistance should be less than 10% of the speaker impedance. The speakers are nominally 8 ohms impedance, so your total wire resistance should be no more than 0.8 ohms.

In simple terms, the extra resistance from the wire will have a very negative affect on the sound quality of the subwoofer. The sound can be less dynamic, definition of bass frequencies can be reduced, and in extreme cases, the high frequencies can be attenuated. Amplifier power is also wasted in the wire, reducing the maximum output level of the system.

Please refer to the following chart when deciding on the appropriate wire gauge for your installation.

	50 ft (15 m)	100 ft (30 m)	150 ft (45 m)	200 ft (60 m)	250 ft (76 m)	300 ft (91 m)
20 Gauge	0.86 ohms	1.73 ohms	2.59 ohms	3.45 ohms	4.32 ohms	5.18 ohms
18 Gauge	0.65 ohms	1.30 ohms	1.94 ohms	2.59 ohms	3.24 ohms	3.89 ohms
16 Gauge	0.43 ohms	0.84 ohms	1.28 ohms	1.71 ohms	2.14 ohms	2.56 ohms
14 Gauge	0.27 ohms	0.54 ohms	0.81 ohms	1.08 ohms	1.35 ohms	1.62 ohms
12 Gauge	0.17 ohms	0.34 ohms	0.51 ohms	0.68 ohms	0.85 ohms	1.02 ohms

3.6. Wiring Subwoofers in Parallel

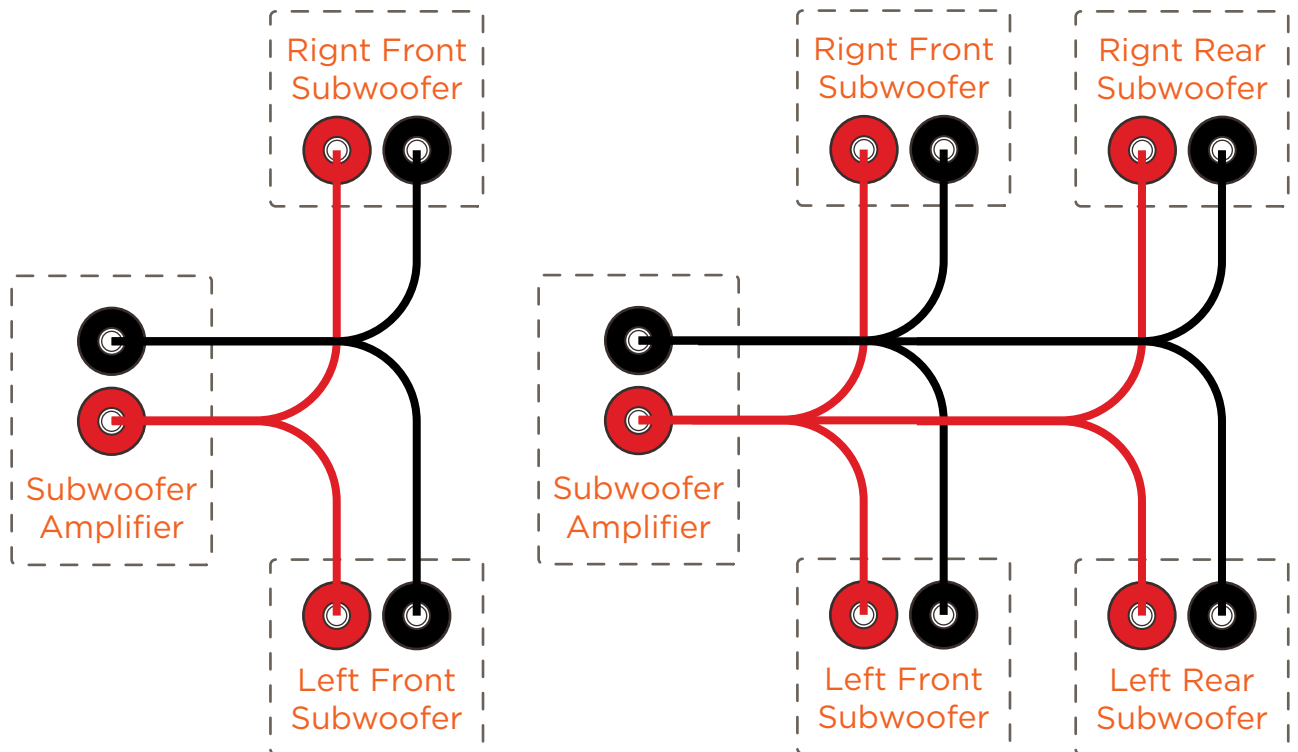
Parallel wiring means that the connection ends of each device are connected to the same things — plus to plus, and minus to minus. Using multiple RCC MK2 subwoofers can be connected in parallel to one RCC1000-SA amplifier.

The RCC1000-SA Subwoofer amplifier has the ability to drive multiple RCC MK2 subwoofers for a truly distributed bass system. All subwoofers wired in parallel back to single output of the RCC1000-SA amplifier. See the list below for the maximum number of Subwoofers that can be driven by a single RCC1000-SA amplifier.

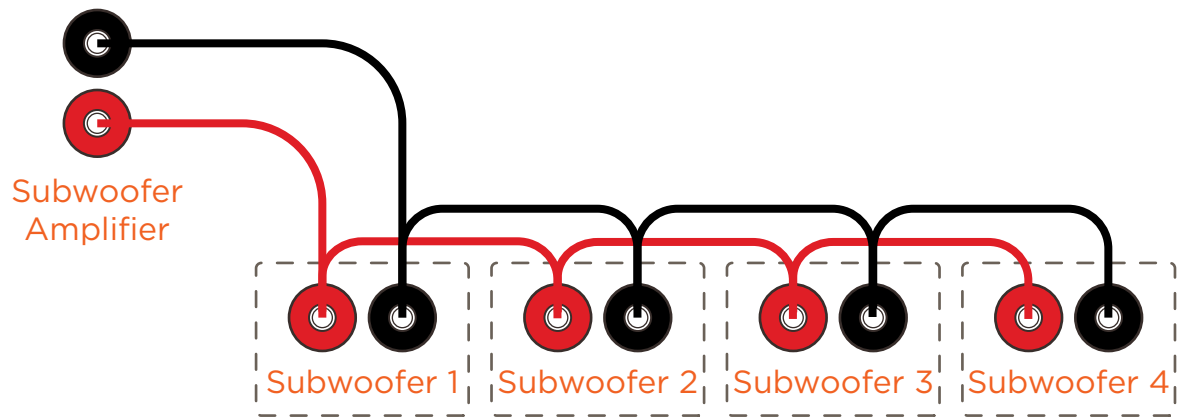
- 4 - RCC160-MK2-PC pairs (8 Subs)
- 4 - RCC320-MK2-xx (4 Subs)
- 2 - RCC640-xx (2 Subs)

IMPORTANT! Because of DSP changes mixing MK2 subwoofers with the earlier generation on a single amplifier is not recommended.

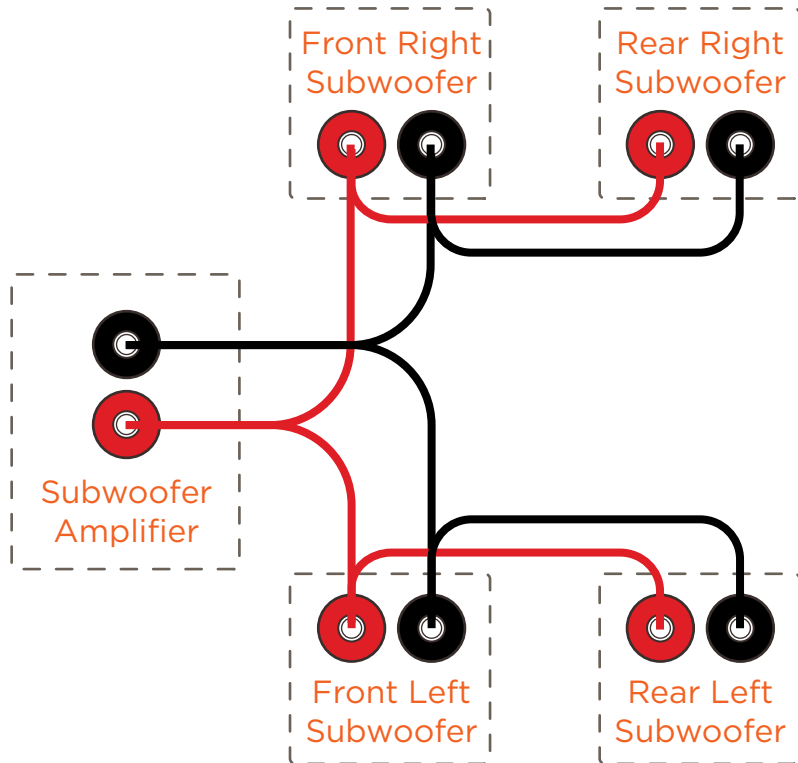
Best practice wiring is to have all subwoofers with a direct wire back to the amplifier. The wiring examples below shows two/four subwoofers with direct wiring.



Subwoofers can be daisy chained together. Below is an example of how this is wired.



The example below shows a combination of the two wiring method.



Notes