

Magneplanar CCR Instruction Manual

The CCR is not a "plug 'n play" center channel speaker. We are here to help if you find the instructions confusing. The enclosed Magnepan Test Disk is a "pass/fail" test to confirm that the setup was done correctly.

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1 Introduction/General Description

Congratulations on your purchase of the Reference Magneplanar CCR Center Channel Loudspeaker. The Magneplanar CCR is modeled after the technology of the MG 20.1 with a 2-way, quasi ribbon midrange and true ribbon tweeter. The performance is appropriate for use with either the MG 3.6 and MG 20.1.

2 Carton Contents

- 1 - CCR Center Channel Loudspeaker
- 1 - Magnepan Wide-Band, Center Channel Pink Noise DVD Test Disc
- 1 - 1 Ohm Resistor
- 1 - 4 Amp Normal Blow Fuse
- 1 - Hex Wrench
- 1 - Speaker Logo
- 3 - Each Felt Pads
- 1 - Each Adjustable Foot
- 1 - Owner's Manual

3 Packaging

Save all packaging. The CCR can be shipped safely only in the original packaging. Should you discard it, packaging is available from Magnepan.

4 Amplification

The CCR is a 3 ohm speaker and should be used with high current amplifiers that are stable with low impedances. Some receivers are capable of driving low impedances, but usually separate amplifiers are built to higher standards and are recommended for use with the CCR.

5 Hookup

The CCR employs a unique, high-current connector. To install speaker cable, simply strip approximately 1/4-inch of insulation from the speaker cable end, insert the cable and tighten the set screw. Cables terminated with banana plugs or pins may also be used. For cable terminated with spade lugs, spade lug adapters are available from your Magneplanar dealer.

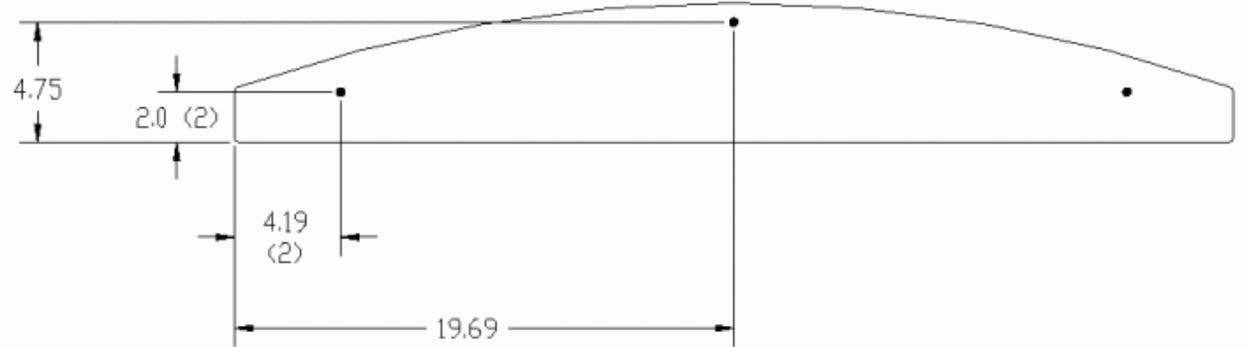
Connect the output of a high pass crossover (such as the Magneplanar XO-2) to the input of the CCR (observing correct polarity). If the CCR is connected directly to the center channel amplifier, the processor must be set on "small" center channel speaker. (See Bass Management and Processor Settings section below for correct settings of the processor.)

6 Installation and Placement

The CCR can be mounted in or on a cabinet or on credenza or shelf. The CCR is a "small" speaker. (Three felt pads are included to prevent marring of the bottom surface.) However, a Magneplanar CC Speaker Stand is available for use with the CCR for use as a full-range, free-standing speaker. The CC Speaker Stand has a built-in Magneplanar bass driver that utilizes the same DiPlanar bass technology as the MG 20.1. If the CC Speaker Stand is not used, some form of adjustable bass management is necessary (See Bass Management and Processor Settings section below.)

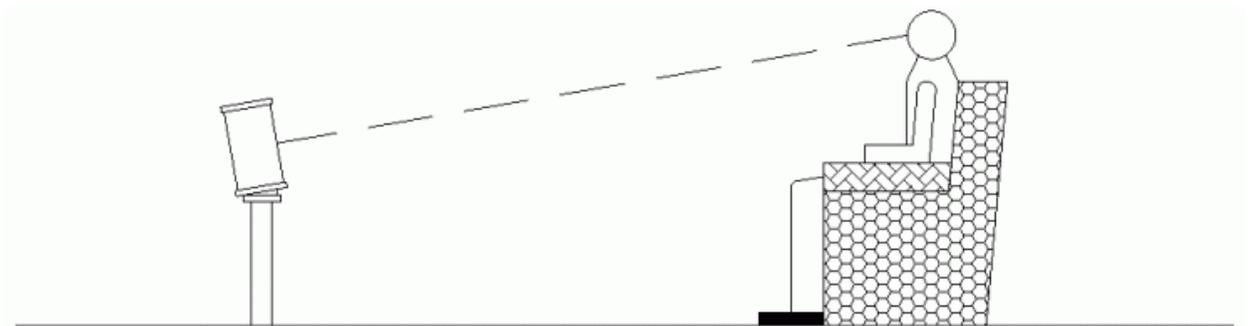
Like all Magneplanars, the CCR is a dipole speaker. We recommend a minimum of 12 inches clearance, measuring from the back of the CCR to the surface behind the CCR. Damping material behind the CCR will help tame unwanted resonances.

For custom installations that require mounting the CCR, 1/4"-20 T-nuts are built into the bottom of the CCR that can be utilized for different custom requirements. A diagram of the T-nut placement is shown below.



7 Phasing

Correct phasing between the tweeter and midrange is accomplished when the speaker is angled relative to the listener as shown below. The enclosed adjustable foot can be used to tilt the CCR upward. Correct phasing between the midrange of the CCR and the bass augmentation provided by the left/right Maggies is best accomplished as part of the BassManagement and Processor Settings.



8 Achieving center channel bass

The CCR is called a "small" speaker due to the limited mid-bass response. The least complicated way to achieve true Maggie sound is with one or two DWM Bass Panels or the CC Speaker Stand. (The more complex method of using the processor's bass management system is explained below.)

The DWM Bass Panel is 2 "voice grids" and crossover within one panel. Wire the amplifier inputs in parallel (plus to plus and minus to minus). Wire the CCR to the "high" output of one of the DWMs (Do not use both "high" outputs). Note-- The resultant impedance will be a nominal 3 ohms. This requires the use of a high-current amplifier.

The DWM Bass Panel should be placed close to equi-distance to the CCR. It is not essential that it be the exact distance, but as close as is practical.

To prevent over-driving the Bass Panel with movies, it may be advantageous to cross over the center channel bass at approximately 40-60 Hz for home theater.

If two Bass Panels are used, the unused sections of both Bass Panels may be used in the same manner as described above.

Getting the midbass/bass for the CCR adjusted correctly is the single most important part of getting the most out of your CCR's performance.

As an owner of a higher quality system, most likely you own a processor with adjustable crossover points for "small" speakers. Set your processor for "small" center channel speaker. Set the center channel crossover point at 200-250 Hz for optimal frequency response or as low as 150 Hz if your processor does not provide up to 200-250 Hz. You will be instructed to turn the subwoofer "off" on your processor. After reading all the instructions below, play the Magnepan Wide-Band Center Channel Pink Noise DVD which is included with your CCR. If the correct procedures are followed, your CCR will give the illusion of a large Magneplanar in the center. If your processor does not have flexible crossover settings, DWM Bass panel or the CC Speaker Stand may be the best option to achieve good center channel bass/midbass.

There is a lack of flexibility with the majority of processors on the market. In the "small" center channel mode, most processors automatically route the center channel bass to the subwoofer. This will not give satisfactory performance with your CCR. The solution is simple; however, this part of the setup has confused a lot of customers. Even if you don't understand initially, go ahead and do as we instruct. And if you need some help, please call. Even though you will probably be using a subwoofer, set your receiver or processor for "no subwoofer." This may seem illogical, but it is necessary for the proper integration of the center channel midrange and bass.

In case you missed it-- Set your processor for "no subwoofer" and leave your subwoofer turned off until you have completed a successful test with the Magnepan test disk.

Here is how it works -- If you set the processor for "no subwoofer," there is no option for routing the center channel midbass and bass. The processor must send the center channel midbass and bass to the "large" left/right Magneplanars. That is exactly what we intend for you to get the best possible performance from your CCR. Your full-range, left/right Magneplanars will provide the center channel midbass and bass, thereby giving the illusion of a large Magneplanar in the middle. The definition of your left/right Magneplanar bass/midbass is vastly superior to the bass that can be achieved if the center channel bass were routed to the subwoofer.

The usual practice of routing the bass to the subwoofer is less than satisfactory in most installations with Magneplanar center channel speakers. Often there is a significant "hole" in the center channel midbass response when higher crossover points are used. In addition, subwoofers are best suited for augmenting "large" speakers below 40 Hz and are considered "muddy" or of poor quality when higher crossover points are used above 40-60 Hz. At a crossover point of 150-250 Hz, the discontinuity between the CCR's "fast" quasi ribbon midrange and the relatively "slow" subwoofer becomes very obvious. Of course, you probably plan to use a subwoofer for home theater.

To drive your subwoofer with this configuration, install a Y-adapter on both the left and right preamp outputs of the processor. The subwoofer and the power amp will be driven by the same left or right full-range signal. Use the electronic crossover in the subwoofer to set the low pass frequency. Be sure that the left/right "large" Maggies are set for "large" with no roll-off of the bass. Since the signal from the front left/right pre-amp outputs is "full range" (down to 20 Hz), the subwoofer will receive all the deep bass information. When the processor is set for "no subwoofer", the bass from the .1 (LFE) is routed to the "large" front left/right Magneplanars. The LFE bass which is sent to the left/right "large" speakers is in mono. If your subwoofer has only one input, it is not absolutely necessary to drive the subwoofer with both the left and right signal. (Note- The .1 or LFE bass information will NOT damage your left/right Magneplanars.)

The benefits of achieving the illusion of a full-range Magneplanar in the center channel with this hookup technique will be appreciated 100% of the time. But, what about the absence of the .1 channel? All the same bass from explosions, etc. from the .1 channel are on the "full range" or "large" front channels and will be sent to the subwoofer with our recommended hookup.

To prevent "muddy" bass, adjust the subwoofer crossover point and level so it does not overlap with the "full-range" front left/right Magneplanars. The goal of a Magneplanar home theater system is quality over quantity. Excessive deep bass does not enhance realism.

The final steps in checking phase and center channel bass response is to confirm that the front left/right speakers are in-phase with the CCR and that the center channel bass/midbass is in-phase with the CCR. (Again, this can get a little confusing.)

First, using a standard test DVD, confirm that the CCR is in-phase with the front left/right speakers. When in-phase, the audio test signal image will appear between the CCR and either of the front left/right speakers. Then, using the Magnepan DVD test disc, check the phase between the CCR and the center channel bass/midbass provided by the full-range left/right speakers.

Intentionally reverse the phase on the CCR. In some cases, especially if the CCR is not equal-distance to the front left/right speakers, the frequencies between approximately 100-200 Hz may increase with the phase reversed and it will be necessary to operate the CCR in an electrically out-of-phase condition.

Further bass and midbass adjustments can be made to give the illusion of a large Magneplanar in the middle by fine-tuning the crossover point of the CCR and by level adjustments relative to the level of the left/right Maggies.

The Magnepan Test DVD (which is included with your speaker) provides wide-band center channel pink noise, but without the use of a real-time analyzer, most consumers may wonder if the pink noise has the proper balance from bass to mids to highs. However, by playing pink noise through one of the large left/right Maggies, a listener can hear what pink noise should sound like and then use that sound to compare to the pink noise from the CCR to judge if the balance is correct. An instant A-B test can be conducted by switching the processor from "no center" channel speaker to "small center" channel. In the "no center" mode, you will hear the pink noise through your "large" left/right Maggies and this can be compared to the pink noise from the CCR. When the CCR is playing the pink noise, put your ear next to both the left/right speakers to confirm that the "large" speakers are producing the bass for the center channel pink noise. To make an accurate comparison, when listening to the pink noise through the left/right speakers, it is necessary to disconnect one of the left/right speakers. Obviously, two speakers playing pink noise will not sound the same as one speaker. The speaker will have to be reconnected when the CCR is evaluated with pink noise.

If you are having trouble getting similar pink noise sound from the CCR as compared to the large left/right Maggies, the problem might be the level setting (with respect to the left/right speakers), or the crossover setting and the phasing between the CCR and the left/right speakers. Turn the subwoofer "off" for the purposes of this test to allow concentration on creating a "large" Maggie in the middle. Keep in mind that due to the fact that center channel speakers

are often placed in less-than-ideal acoustical environments, exactly duplicating the left/right Maggies is not possible unless the same acoustical rules are followed as the left/right speakers.

To make a final adjustment of the center channel bass and midbass level, turn the volume of the center up or down. This may seem confusing, but, it works like this-- If you turn the overall level of the center channel up, the center channel bass will be reduced. To increase the center channel bass, it is necessary to LOWER the overall center channel level. You may wonder how that is possible. Well, it is a quirk of how the bass management is structured. Many consumers turn the center volume up because they have trouble hearing the dialog, the net effect is less center channel bass/midbass.

You have control over 3 parameters to create the illusion of a large Maggie in the middle--

- 1) Crossover point.
- 2) Level setting with respect to the left/right speakers.
- 3) Phase. You will need to remember all three as you fine-tune your CCR.

We have had a number of reports that the automatic equalization systems built into some processors have had less-than-desirable results with Magneplanars. We are investigating this further, but, apparently the equalization systems are not compatible with our recommended hookup procedure. We recommend that you defeat the automatic EQ system and manually make any needed frequency adjustments.

9 Full-Range Operation

The CCR is a "small" speaker and if free-standing operation is desired, the DWM Bass Panel or the CC Speaker Stand can be used with the CCR to provide full-range Magneplanar center channel performance. However, the best center channel bass and midbass performance may be obtained by using the Bass Panel to fine-tune the front left/right speakers and using your bass management system to send the center channel bass to the front left/right speakers.

10 Service and Shipping

In the unlikely event you should need service for your CCR Loudspeaker, we recommend you return it through your dealer. He is experienced in providing service and can assist you if the speaker must be returned to the factory. If you determine you need to return it directly to Magnepan, call for a return authorization and ship the speaker freight prepaid to:

Include a note describing the nature of the problem. Please include your name, address, and a daytime telephone number.

Magnepan, Incorporated
1645 Ninth St.
White Bear Lake, MN 55110
1-800-474-1646

CCR Ribbon Tweeter Installation

If the CCR is shipped by ground transportation, the ribbon will be installed in the CCR. The tweeter will be removed from the speaker only in the event of an air shipment.

1. Remove 4 screws attaching terminal plate.
2. Remove screws holding rear panel
3. The CCR ribbon tweeter has a white dot at one end of the frame for determining polarity. Install the ribbon so the end with the white dot can be attached to the brown wire.
4. Install screws holding the tweeter frame. The tweeter magnets are very powerful. Use caution to keep magnetic objects from being pulled into the magnets.
5. Connect the wires to the terminals at both ends of the tweeter.
6. Reinstall the back panel and terminal plate.

11 Specifications

System Description:	Curved, two-way quasi ribbon midrange, with true ribbon tweeter
Midrange Radiating Area:	213 sq. inches
Frequency Response:	200 Hz-40 kHz +- 3 db
Recommended Power:	See Frequently Asked Questions
Sensitivity:	88 db, 2.83v, 1 Meter, 500Hz
Impedance:	3 Ohms
Crossover Frequency:	200Hz-40 kHz
Dimensions:	Width- 39.5 inches, Height- 15 inches, Depth- 5.5 inches
Warranty:	Three years on speaker, one year on tweeter, to original owner
Weight:	27 lbs.