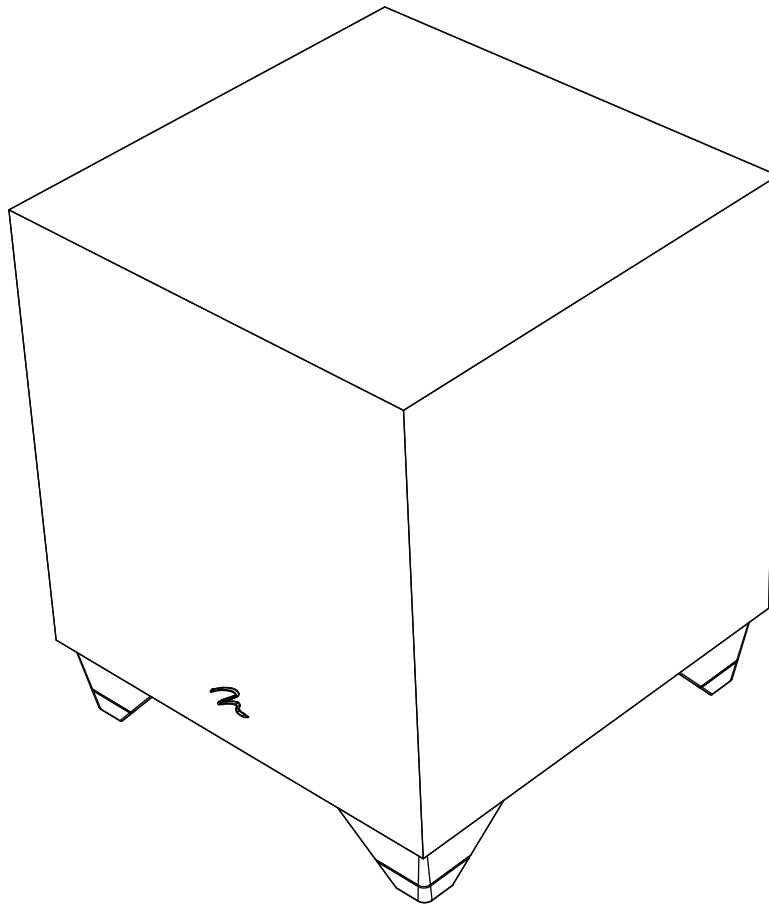


DYNAMO 400

user's manual




MARTIN LOGAN®

OVERVIEW OF CONTROLS AND CONNECTIONS

Controls

Level

Setting the level too high will cause the bass to seem bloated and is the single most common cause of bad sounding subwoofers. A rule of thumb is that the subwoofer should not draw attention to itself, but should simply make the systems low end seem more extended and accurate.

Low-Pass Filter

The Low Pass Filter lets you to adjust the low-pass frequency for the left and right (RCA or speaker level) inputs. If you are using this subwoofer as an LFE channel in a home theater system, set this control to Bypass. The home theater processor will handle the bass management.

If you are using this subwoofer in a 2-channel stereo system, set this control. As a general rule, the Low-Pass Filter should be set at a value approximately equal to (or below) 70% of your main speaker's lowest frequency response. For example, your speaker's frequency response goes down to 43Hz. 70% of 43Hz equals 30.1, so you should set the subwoofer's low pass filter to 30Hz. We advise that once you try the recommended setting using the formula above, you should try the surrounding settings as well. If you are uncertain of your main speaker low-frequency response, start with a setting of 35Hz. You will not harm anything by experimenting with different settings.

Phase

The Phase switch allows you to adjust the phase of the subwoofer to 0 or 180°

The Phase control is entirely dependent on numerous factors including the size and configuration of your listening environment, the placement of the unit, and seating arrangement. Due to the way bass sound waves develop in different rooms there is no rule of thumb for setting phase. For instance, if your room has a peak at the subwoofer crossover area, you may wish to set the phase so the actual acoustic outputs of the subwoofer and main speakers are out of phase. Experiment and try different settings and be patient.

If you are using the subwoofer to augment other MartinLogan products, we suggest starting with the phase set at 0°.

In a system where phase and polarity are properly set, the main speakers and subwoofer should work together and sound as if there is more total bass in the system. If your main speakers and subwoofers are out of phase their sound waves will cancel each other and total bass output in the system will sound decreased.

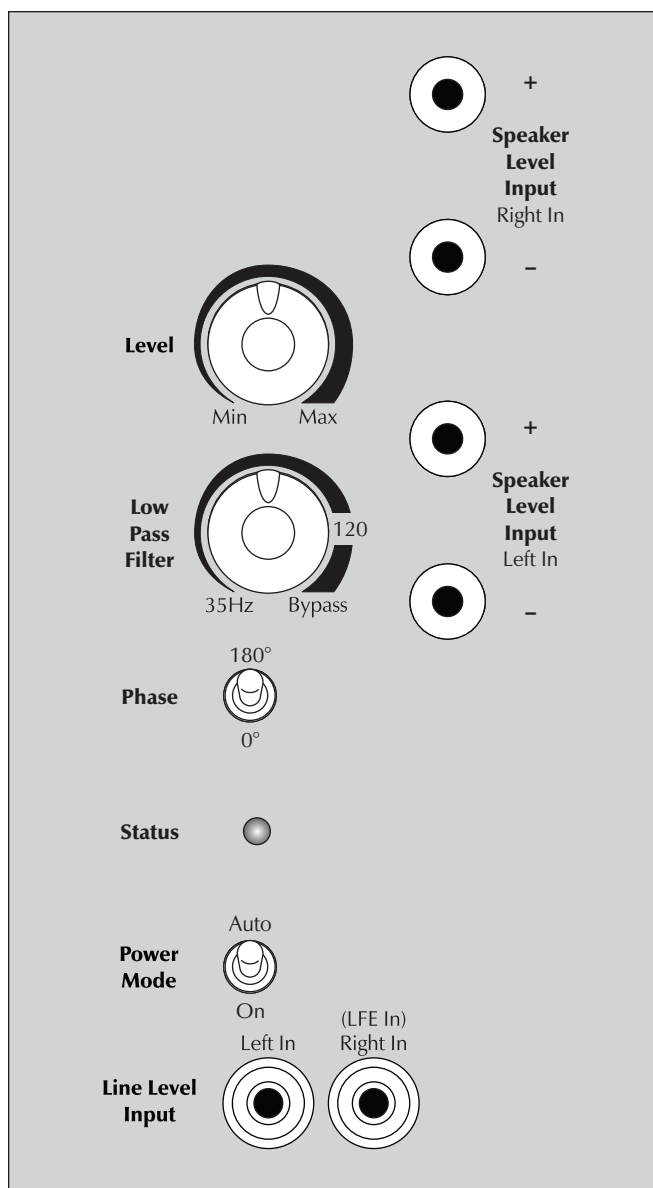


Figure 1. Controls and connections. Connection options vary by model.

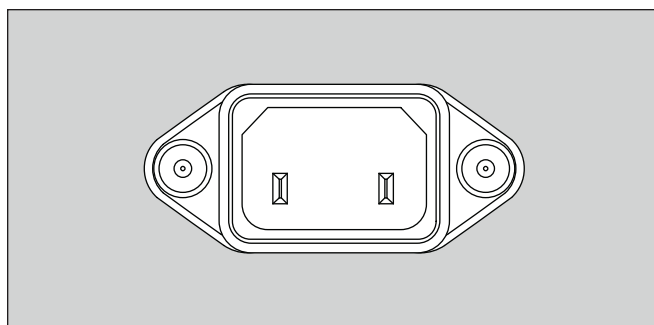


Figure 2. AC Power receptacle

Again, experiment and listen for the smoothest bass without any prominent or absent notes.

Status

Your subwoofer is equipped with a multi-color LED to indicate the current status of the subwoofer.

- **No color:** No power. The subwoofer is not plugged in or has shutdown due to an overload condition. Unplug the subwoofer and plug it back in to correct.
- **White:** Play mode. This indicates the subwoofer detects an audio signal and has automatically switched into play mode.
- **Red:** Standby. The sub has switched into power saving mode.
- **Flashing:** Error. The sub is displaying an error code or waking up from standby.

Power Mode

The Power Mode switch allows control of when the subwoofer turns on and off.

- **Auto:** When set to 'Auto' the subwoofer will turn itself on when detecting an audio signal. After several minutes of inactivity the subwoofer will put itself in standby mode.
- **On:** When set to 'On' the subwoofer will always be on.

Audio Signal Connections

Line Level Input (Left In / Right In)

Connect from the Main Out or Pre Out on your receiver/pre-amp. The setting for the Low-Pass Filter control is applied to the signal received through these inputs.

Line Level Input (LFE In)

Connect from the Sub Out on your A/V processor. Crossover settings for LFE In are controlled through your A/V processor. Set the Low Pass Filter to Bypass.

Speaker Level Input (Left In / Right In)

This set of inputs provides a place to connect the subwoofer using standard speaker cable. To use these connections the speaker cable should be terminated using banana style plugs. The setting for the Low-Pass Filter control is applied to the signal received through these inputs. Please note, do not make connections using both the RCA and Speaker Level Left/Right inputs at the same time.

AC Power Connection



WARNING!

The power cord should not be installed, removed, or left detached from the subwoofer while the other end is connected to an AC power source.

The IEC power cord should be firmly inserted into the AC power receptacle on the rear connection panel of the subwoofer, then to any convenient AC wall outlet. The sub also integrates a signal sensing power supply that automatically switches off after sensing no music signal for several minutes (this will occur when the power switch is set to 'Auto').

Your subwoofer is wired for the power service supplied in the country of original consumer sale. The AC power rating applicable to a particular unit is specified both on the packing carton and on the serial number plate attached to the subwoofer. If you remove your subwoofer from the country of original sale, be certain that AC power supplied in any subsequent location is suitable before connecting and operating the subwoofer. Substantially impaired performance or severe damage may occur to the subwoofer if operation is attempted from an incorrect AC power source.

Break-In

Our custom made woofers require approximately 50 hours of break-in at moderate listening levels before their optimal performance occurs. This will factor in on any critical listening and judgment.

CONNECTING THE SUBWOOFER AND SETTING CONTROLS

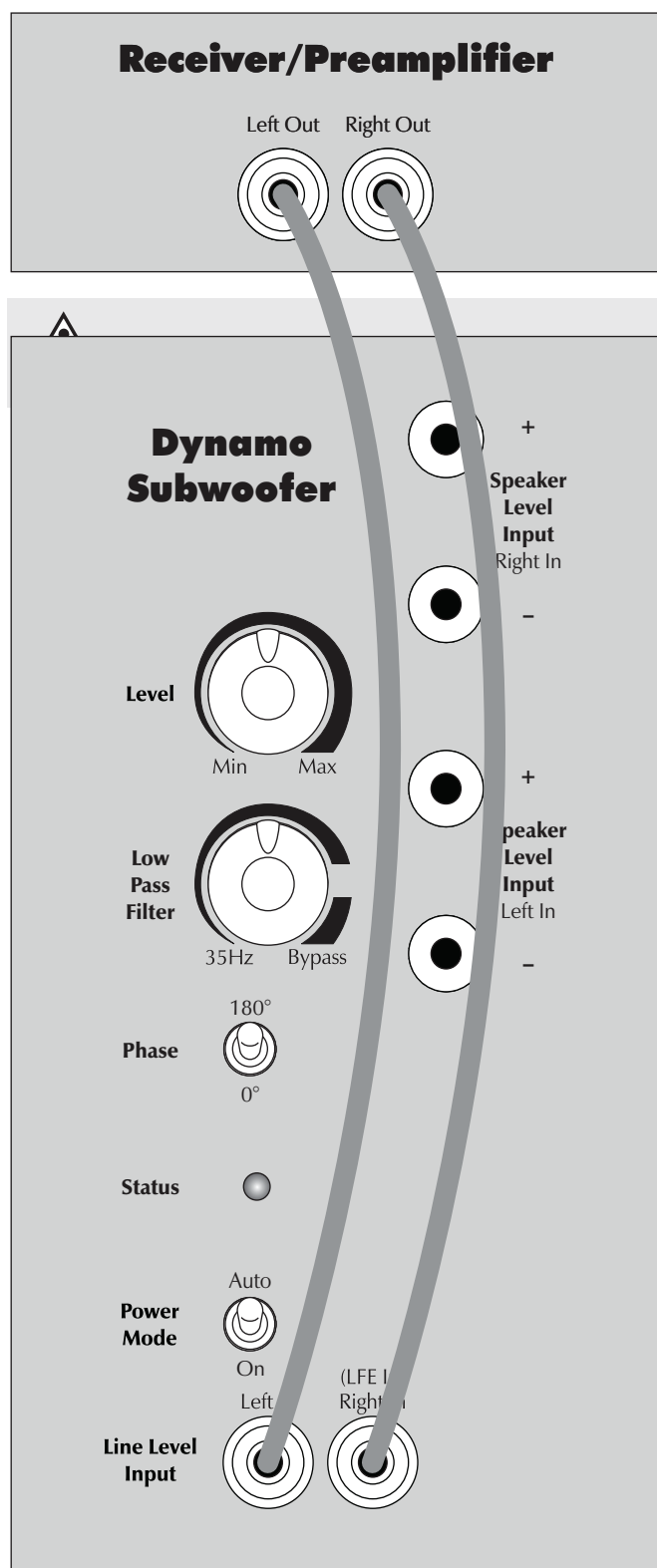


Figure 3. Signal connection for 2-channel mode.

Before Connecting the DYNAMO

MartinLogan developed the DYNAMO subwoofer for easy setup and system integration. Before beginning to connect your subwoofer, please review the controls discussed in the last section. An understanding of these will help speed you along. All signal connections are done on the rear connections panel of the subwoofer. Make certain that all of your connections are tight.



WARNING!

Unplug your subwoofer before making or breaking any signal connections!

2-Channel Mode

This setup is recommended if your subwoofer will be used in a 2-channel only system. When a signal is connected to the subwoofers Left In/Right In, the Low Pass Filter control is active.

Signal Connection:

- 1 Connect the left out/right out from your preamp/receiver to the Left In/Right In of the subwoofer. Use RCA interconnects or speaker level connections, but choose only one connection method—*do not use multiple methods of connection at the same time*. Speaker level connections are discussed in detail later in this manual.

Recommended Control Settings:

- 1 Calculate the number equal to 70% of your main loudspeaker's lowest frequency rating. Set the Low Pass Filter to a setting equal to the resulting number. If the resulting number is lower than 30Hz, set this to 30Hz.
- 2 Play familiar music with bass content. Increase the Volume (level) until the music has deep extended bass. Be careful to avoid levels that become overwhelming.
- 3 Try the Phase and Polarity (Inverted) in different settings until the best blending is obtained. Play familiar music with deep, repetitive bass. Adjust the Phase and Polarity (Inverted) setting so the bass notes seem their loudest and without blur when heard from your typical listening position. If you are augmenting MartinLogan loudspeakers, we suggest you start with Phase set at 0° when experimenting.

Multi-Channel Mode

This setup is recommended if you will use your subwoofer in a dedicated home theater or other multi-channel system. When a signal is connected to the subwoofer's LFE In, the setting for the Low-Pass Filter control is not used. Your processor handles most of the bass management.

Signal Connection:

- 1 Connect the Sub output of the processor to the subwoofer's LFE In.

Recommended Control Settings:

- 1 If your front speakers are large (e.g. full-range floorstanding type speakers) set your processor controls for front speakers to wide, large, or full mode. If your front speakers are small (e.g. bookshelf type speakers) set your processor control for front speakers to narrow, small, or limited mode. Set processor controls for center and effects type speakers to narrow, small, or limited mode. Remember, few center and effects type speakers are designed to go much lower than 70Hz, which means that any bass information in a soundtrack lower than this frequency will normally be lost. When you set your center and effects type speakers to narrow, small, or limited mode, all of the bass lower than the assigned crossover point will be redirected to the subwoofer along with the LFE output—guaranteeing that no bass information from these channels is lost.

Please note: some processors allow the changing of speaker configuration based on source material type. Under these conditions the user may want to run the fronts in narrow, small, or limited mode for multi-channel source material and run the fronts in wide, large, or full mode for 2-channel stereo source material.



WARNING! Based on the performance of most receivers/processors it is recommended that MartinLogan center and effects type speakers not be run in large, wide, or full range mode. Doing so may potentially damage the speaker if the processor attempts to drive the speaker beyond its rated frequency range. This warning also applies to products from other manufacturers.

- 2 With multi-channel source material playing, adjust the Volume (level) control to your preferred level. Be careful to avoid levels that become overwhelming.
- 3 Set the Low Pass Filter to Bypass.

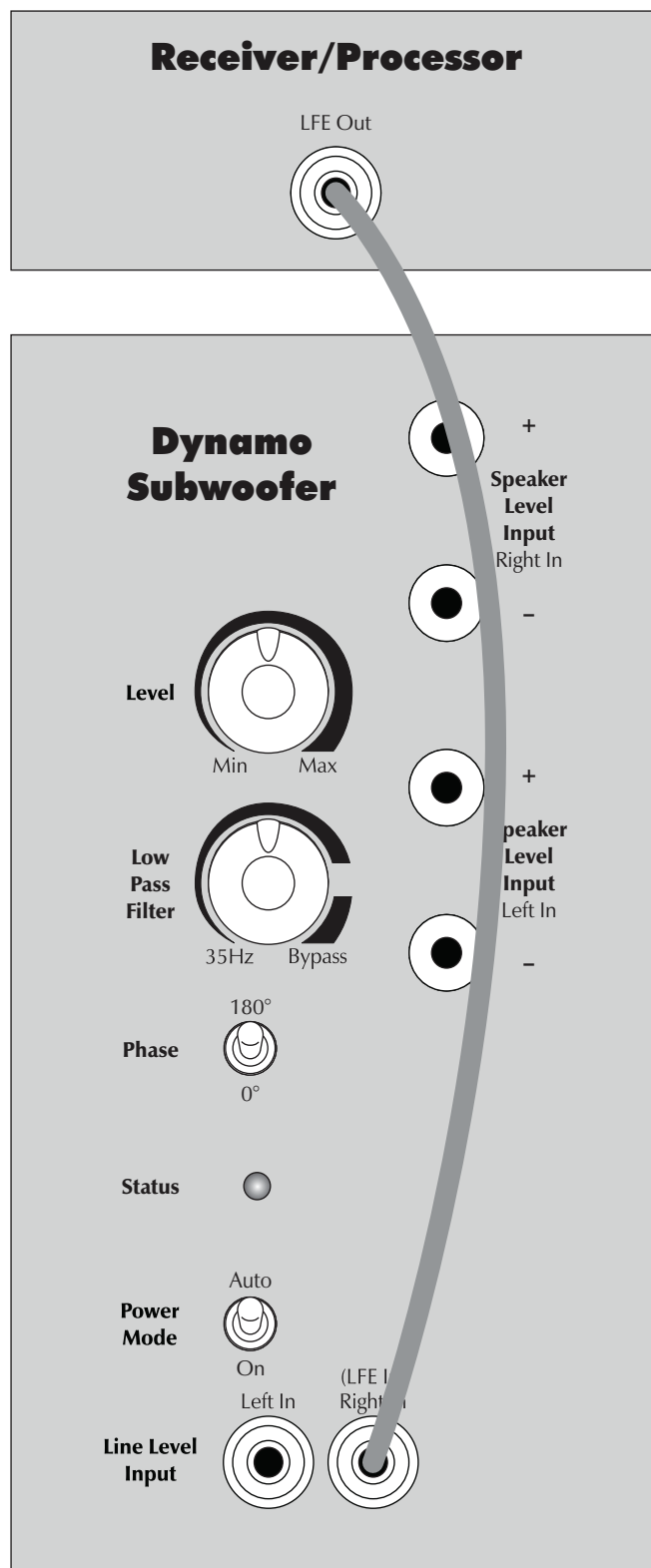


Figure 4. Signal connection for multi-channel mode.

- 4 Try the Phase in different settings until the best blending is obtained. Play familiar music with deep, repetitive bass. Adjust the Phase so the bass notes seem their loudest and without blur when heard from your typical listening position. If you are augmenting MartinLogan loudspeakers, we suggest you start with Phase set at 0°.
- 5 Use the bass management section of your receiver/processor's speaker setup to set the subwoofer level at an appropriate level. Follow the instructions in your processor's manual to fine-tune the subwoofer level.
- 6 If you have completed steps 1–5 and still have weak or booming bass, experiment with the settings and listen to the result. Try to find a position that sounds correct to you. Experiment by changing the Volume (level). Find a position that gives you deep extended bass and good blending with your main speakers. If you still have weak or booming bass you may want to consider moving your subwoofer and go through these setup steps again (especially if it is located in or near a room corner). Remember, room position has a major impact on overall bass performance.

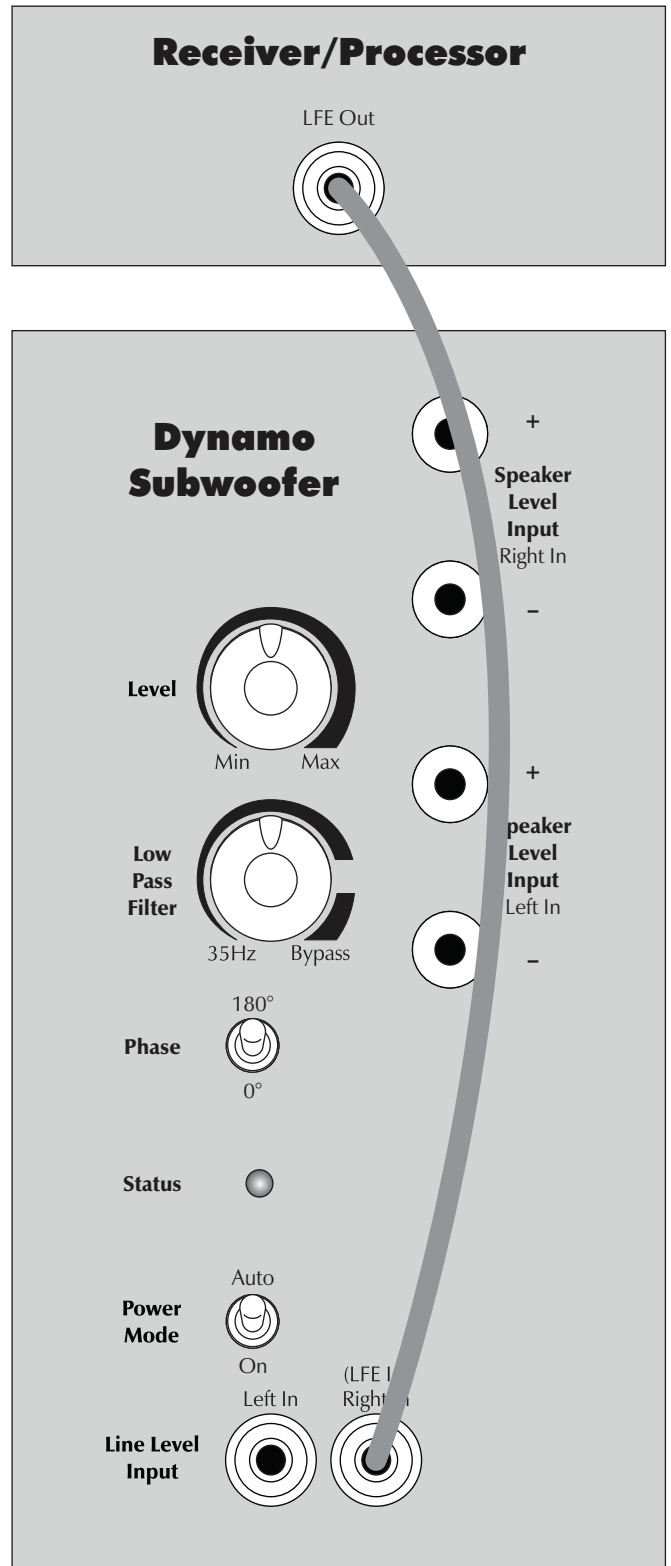


Figure 5. Signal connection for speaker level inputs.

Using Speaker Level Inputs

This connection method is recommended if your subwoofer will be used in a 2-channel only system with full-range front loudspeakers. To connect using Speaker Level Inputs the speaker cable should be terminated using banana style plugs. The Low-Pass Filter is applied to the signal received through these inputs.

Speaker Level Inputs are an alternative to using RCA interconnects. If you use the Speaker Level Inputs do not use RCA at the same time for Left In/Right In connections. If you use the Speaker Level Inputs it is okay to still use RCA for the LFE connection.

Connect the left and right outputs of your amplifier to the sub's Speaker Level Inputs (Left In/Right In). Use quality speaker cable and banana plugs. Be consistent and make sure the positive (+) and negative (–) terminals from your amplifier are attached to the matching positive (+) and negative (–) terminals on the subwoofer.

If your amplifier only has one set of outputs you may connect your amplifier to your speakers as normal and run an additional set of cables from your speakers to the subwoofer's Speaker Level Inputs.

PLACEMENT

Subwoofer Position

Generally, subwoofers have the most output when placed in the corner of a room. However, this can also exaggerate the subwoofers output making blending difficult. We recommend starting by placing the subwoofer in a corner. If, after the full range of tuning techniques have been employed, the subwoofer sounds like it has too much upper bass energy try pulling it away from the wall, toward the listening position. This will lessen the reinforcement of these problematic frequencies from the wall and likely smooth out the response. Repeat the tuning techniques with the woofer controls after you move it.

www.martinlogan.com/subsetup

Setting up a subwoofer can be a daunting process. However, equipped with the right knowledge, exceptional results are attainable. To assist in the process of setting up your subwoofer, we've created an online resource to walk you through the process. Here you will find tips and tricks to aid with placement, connection, and setting the controls. Please visit www.martinlogan.com/subsetup.

Ask Your Dealer

Your MartinLogan dealer can suggest many options for optimal subwoofer placement. They also have many tools at their disposal, such as experience, familiarity with the associated equipment, and even sound analysis equipment which may make the task of determining optimal subwoofer placement easier.

Enjoy Yourself

MartinLogan subwoofers are very refined subwoofers and will benefit from care in setup. With the above placement tips in mind you will find, over months of listening, that small changes can result in measurable differences. As you live with your subwoofer, do not be afraid to experiment with positioning until you find the optimal relationship between your room, settings and subwoofer that gives you the best results. Your efforts will be rewarded.

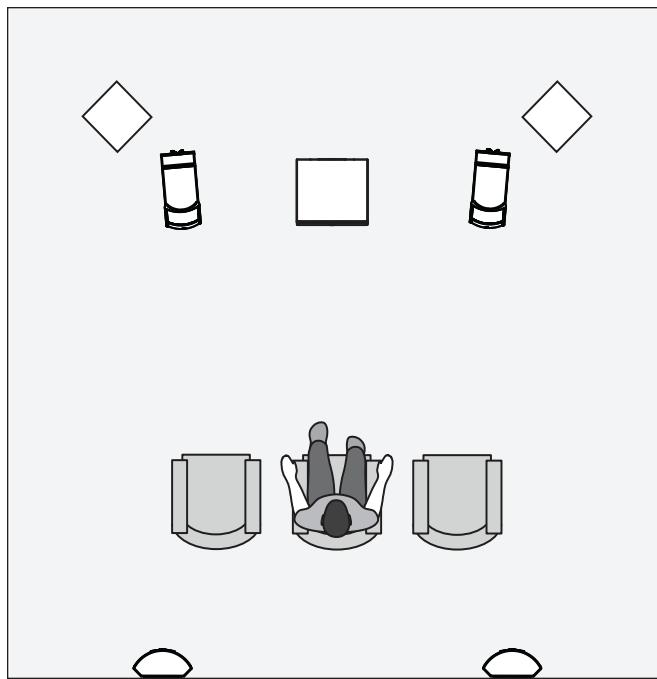


Figure 6. MartinLogan subwoofers as the LFE channels, MartinLogan speakers as front, center, and surround (effects) channels. Note the corner placement of the subwoofers at the front of the listening room.

Your Room

This is an area that requires both a little background to understand and some time and experimentation to attain the best performance from your system. Your room is actually a component and an important part of your system. This component is a large variable and can dramatically add to or subtract from a great sonic experience.

All sound is composed of waves. Each frequency has its own wave size, with the lower, or bass frequencies literally encompassing from 10 feet to as much as 40 feet. Your room participates in this wave experience like a swimming pool with waves reflecting and becoming enhanced depending on the size and shape of the room and the types of surfaces in the room.

Remember that your audio system can actually generate all of the information required to recreate a sonic event in time, space, and tonal balance. Acoustically, the role of an ideal room would be to neither delete nor contribute to that information. However, nearly every room does to some degree.

Terminology

Standing Waves

Sound coming from a speaker bounces around in a room until a pattern emerges—this is called a standing wave. Typically, this is only a problem with frequencies below 100Hz. When this happens different parts of your room experience either an excess or a lack of bass.

Some people believe that having a room without parallel walls will eliminate this effect. The truth is that non-parallel walls only generate different standing wave patterns than those that occur in rectangular rooms.

Usually, you can excite most of the standing waves in a room by putting the subwoofer in a corner. Listening position determines which standing waves you will experience. For instance, if you sit in a corner you will hear most of the standing waves. This can be an overpowering experience. Sitting next to a wall can also intensify the levels of the standing waves that are experienced.

Resonant Surfaces and Objects

All of the surfaces and objects in your room are subject to the frequencies generated by your system. Much like an instrument, they will vibrate and "carry on" in syncopation with the music, and may contribute in a negative way to the sound. Ringing, boominess, and even brightness can occur simply because surfaces and objects are "singing along" with your speakers.

Resonant Cavities

Small alcoves or closet type areas in your room can be chambers that create their own "standing waves" and can drum their own "one note" sounds.

HOME THEATER

It had long been the practice of stereo buffs to connect their television to a stereo system. The advantage was the use of the larger speakers and more powerful amplifier of the stereo system. Even though the sound was greatly improved, it was still mono and limited by the broadcast signal.

In the late 1970's and early 1980's two new home movie formats became widely available to the public: VCR and laser disc.

By 1985, both formats had developed into very high quality audio/video sources. In fact, the sonic performance of some video formats exceeded audio-only formats. Now, with theater-quality sound available at home, the only element missing was the "surround sound" presentation found in movie houses.

Fortunately, Dolby and DTS encoded DVD's emerged with the same surround sound information encoded on home releases as the theatrical release. Additionally, new high-resolution home-viewing formats such as Blu-ray as well as high-definition content provided via cable or satellite have evolved which include multi-channel encoded audio that is virtually master tape quality. All that is required to retrieve this information is a decoder and additional speakers and amps to reproduce it.

Home theater is a complex purchase and we recommend that you consult your local MartinLogan dealer, as they are well versed in this subject.

Each piece of a surround system can be purchased separately. Take your time and buy quality. No one has ever complained that the movie was too real. The following list and descriptions will give you only a brief outline of the responsibilities and demands placed on each speaker.

Front Left and Front Right

If these speakers will be the same two used for your stereo playback, they should be of very high quality and able to play loudly (over 102 dB) and reproduce bass below 80 Hz.

Center Channel

This is the most important speaker in a home theater system, as almost all of the dialogue and a large portion of the front speaker information is reproduced by the center channel. It is important that the center speaker be extremely accurate and mate well with the front speaker, and that it is recommended for use as a center speaker. This is not the place to cut corners.

Surround Speakers

We recommend (along with the film industry) that the surround speakers play down to at least 80 Hz. Surround speakers contain

the information that makes it appear that planes are flying over your head. Some may suggest that this is the place to save money and purchase small, inexpensive speakers. If you choose to do so, be prepared to upgrade in the future as discrete multi-channel digital encoding is proliferating rapidly and the demands on surround speakers have increased.

Subwoofer

With any good surround system you will need one or more high-quality subwoofers (the .1 in a 5.1, 6.1, or 7.1 channel surround system). Most movie soundtracks contain large amounts of bass information as part of the special effects. Good subwoofers will provide a foundation for the rest of the system.

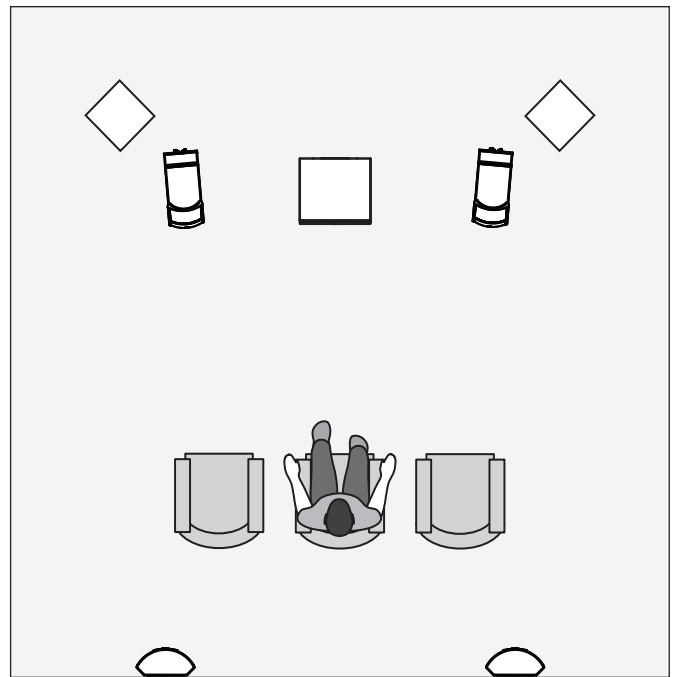


Figure 7. DYNAMO subwoofers as the LFE (effects) channels, MartinLogan speakers as front, center, and surround (effects) channels.

FREQUENTLY ASKED QUESTIONS AND TROUBLESHOOTING

Frequently Asked Questions

How do I clean my subwoofer? Use a dust free cloth or a soft brush to clean your subwoofer.

Is it safe to set things on my subwoofer? While your subwoofer is designed with a durable, stain-resistant surface, we advise you not to set anything on your subwoofer—especially containers holding liquids.

Is there likely to be any interaction between my sub and the television in my Audio/ Video system?

No. Although your sub doesn't use a shielded driver, modern plasma, LCD, and LED television are not susceptible to magnetic interference. We recommend 3 feet between the sub and video components that are susceptible to magnetic fields.

Will my electric bill go 'sky high' by leaving my subwoofer plugged in all the time? No. When the power switch is set to 'Auto' the subwoofer will draw very few watts when idle or in standby mode.

Should I unplug my sub during a thunderstorm? Yes, or before. It's a good idea to disconnect all of your audio/video components during stormy weather.

How do I connect my subwoofer to a receiver with two subwoofer outputs. Receivers and processors with multiple subwoofer outputs usually output the same signal on both outputs. You can connect your subwoofer to either output. If your processor/receiver offers independent control of the inputs, connect your subwoofer to one output and use the receiver/processor's menu to configure the outputs.

How do I connect my sub to a 2-channel system? Your subwoofer is designed to connect to either 2-channel or multi-channel systems (or both) and offers connections and controls for either scenario. Please review the "Connecting the Subwoofer and Setting Controls" section of this manual for details.

My receiver has one sub output jack, but my sub has two (or three) inputs. Which input should I use? In most installations you will connect the receiver/processor's sub output to the subwoofer's LFE In (or Right In/LFE In in the case of the DYNAMO 400). DYNAMO subs offer flexible connection options to accommodate other scenarios. These are all outlined in the "Connecting the Subwoofer and Setting Controls" section of this manual.

Where should I place the subwoofer in my room?

We recommend starting by placing the subwoofer in a corner. Generally, subs have the most output when placed in the corner of a room. However, this can also exaggerate the sub output making it difficult to blend with the main speakers. Additional adjustments may be necessary. Please refer to the "Placement" section of this manual or www.martinlogan.com/subsetup for more details.

Troubleshooting

No Output

- Check that all components are plugged in and turned on.
- Check all interconnecting cables.
- Check that the subwoofer is connected to the sub out (or other appropriate output) on the receiver/processor/amplifier.
- Check that subwoofer output is enabled in the receiver/processor's setup menu.
- Make sure the sub's level control is not turned down.
- If the problem persists, contact your dealer.

Muddy Bass

- Check placement. Try moving the subwoofer closer to the front and side walls.
- Check the type of feet that are being used. Try installing the ETC spikes.
- Decrease the volume level.
- Check your processor setup.
- If the problem persists, contact your dealer.

Hums or Unusual Sounds

- Turn the subwoofer off, unplug all signal inputs, turn the subwoofer back on and turn up the level. If the problem disappears, the hum is originating elsewhere in your system.
- Connect the sub to the same AC circuit as the receiver/processor.
- If operating in wireless mode, move the sub away from microwave ovens and/or any devices that use wireless technology.
- If the problem persists, contact your dealer.

GENERAL INFORMATION

Warranty and Registration

Your subwoofer is provided with an automatic Limited 90 Day Warranty coverage. You have the option, at no additional charge, to receive Limited 3-Year Warranty coverage. To obtain the Limited 3-Year Warranty coverage you need to register your product with MartinLogan. For your convenience MartinLogan offers online warranty registration at www.martinlogan.com. Please retain your original sales receipt from an authorized MartinLogan dealer or distributor for proof of warranty terms and proof of purchase.

MartinLogan may not honor warranty service claims unless we have a completed warranty registration on file!

Service

Should you be using your MartinLogan product in a country other than the one in which it was originally purchased, we ask that you note the following:

1. The appointed MartinLogan distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.
2. Should a MartinLogan product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest MartinLogan distributor, subject to that distributor's local servicing policies, but all cost of repairs (parts, labor, transportation) must be born by the owner of the MartinLogan product.
3. If, after owning your subwoofer for six months, you relocate to a country other than the one in which you purchased your subwoofer, your warranty may be transferable. Contact MartinLogan for details.

SPECIFICATIONS*

DYNAMO 400*

System Frequency Response.	30–200 Hz \pm 3 dB. Anechoic in LFE mode.
Woofer	8" (20.3cm) high-excursion, inverted surround, polypropylene cone in a stamped steel basket with extended throw driver assembly. Ported.
Amplifier	75 watts (150 watts peak)
Controls (backplate).	
Level.	Min–Max
Low-Pass Filter (Frequency)	35–120Hz, Bypass
Phase	0°, 180°
Power Mode	On, Auto
Inputs (Line Level RCA)	Left and Right/LFE
Inputs (Speaker Level)	Left and Right via banana jacks
Input (Impedance).	RCA: 8,300 Ohms Speaker Level: 2,000 Ohms (red to black)
Power Draw.	Typical: 20W, Max: 90W, Idle: 4W, Standby: 0.5W
Feet	Rubber
Weight.	28.5 lbs. each (12.9 kg)
Size (HxWxD, Down-Firing Orientation).	15.2 x 13.3 x 13.8 inches (38.5 x 33.7 x 35.1 cm)

* Specifications are subject to change without notice.



WARNING! Do not use your DYNAMO subwoofer outside of the country of original sale—voltage requirements vary by country. Improper voltage can cause damage that will be potentially expensive to repair. The DYNAMO subwoofer is shipped to authorized MartinLogan distributors with the correct power supply for use in the country of intended sale. A list of authorized distributors can be accessed at www.martinlogan.com or by emailing info@martinlogan.com.



MISE EN GARDE! N'utilisez pas le caisson de sous-graves DYNAMO à l'extérieur du pays où il a été acheté à l'origine – les exigences en matière de tension varient d'un pays à l'autre. Une tension inappropriée peut causer des dommages potentiellement dispendieux à réparer. Le caisson de sous-graves DYNAMO est expédié aux distributeurs MartinLogan autorisés avec l'alimentation électrique appropriée pour une utilisation dans le pays où la vente est prévue. Une liste des distributeurs autorisés est disponible sur le site Web www.martinlogan.com ou en envoyant un courriel à l'adresse info@martinlogan.com.



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