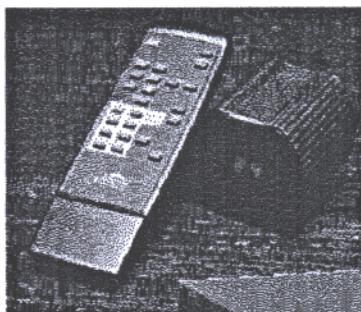


Owner's Manual

Genesis 900 Subwoofer



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Genesis™

The History of the Company

Genesis is a group of individuals who have come together to rethink and reinvent the state of the art in the audio industry. Founded in 1991 by Arnie Nudell and Paul McGowan, the company understands that throughout history, people have recognized the emotional hold which music can exert over the listener, and the indispensable role it plays in our lives. Since we aspire to have that experience in our homes whenever the desire for it arises, we have sought to create products of unsurpassed beauty, performance and craftsmanship so that others would be compelled to bring them into their own homes as well.

In June of 1993, Genesis established new standards for quality, performance and aesthetics for high end audio with the introduction of the Genesis I loudspeaker system. All Genesis audio products conform to an exacting list of criteria established in the design of the Genesis I.

To achieve a standard of excellence, unsurpassed in the industry, Genesis handcrafts each audio product at our modern facility in Vail, Colorado. Only after careful assembly, testing and detailed inspection are these products approved for delivery. All parts are lovingly finished and inspected before packing. Our customers can expect consistent fit and finish because we demand it. As a result, we are confident in offering a 5-year warranty on all audio products.

Genesis would like to welcome you to its elite family of dedicated audiophiles. We invite you to contact us by any means for questions or comments you might have. Our knowledgeable personnel will gladly assist you with anything you need.



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Owner's Manual Genesis 900 Subwoofer

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"Without music, life would be an error."

— Nietzsche, 1888

Introduction

Congratulations! With the purchase of a Genesis 900 you are about to begin years of listening enjoyment. While many companies have rushed to fill the growing home theater market with quick redesigns of existing products, a few companies have taken their time to do it right. Our goal in the design of both a high-end music and home theater product was to set a new standard of performance for both music and video - a benchmark for the industry. After years of designing, listening and redesigning, we have achieved our goal in the Genesis 900 subwoofer.

Based on all new technology in both woofer design and the servo controlled power amplifier, the 900 is a musically accurate design in the tradition of all Genesis reference loudspeakers. So honest is this speaker's performance that the 900 is equally at home in the finest music systems as in home theater applications.

Description and Features

The Genesis 900 is a completely self-contained unit. Included is the woofer amplifier, and an external remote controlled package that handles virtually every function on the woofer including power, volume, low pass, high pass and phase. The Genesis 900 also has the ability to be linked to another 900 woofer. In fact, the 900 can be linked to as many 900's as you wish. When linked, all of the Genesis 900 subwoofers connected together will follow the settings you choose for one subwoofer.

The 15-inch woofer employed in the Genesis 900 subwoofer is a custom designed and proprietary metal cone driver that exhibits great strength and rigidity with little to no cone flexure. The benefits of low cone flexure include, extremely low levels of distortion, and nearly zero break up modes within the useable frequency band.

The heart of the Genesis 900 servo subwoofer system is our exclusive accelerometer based motion feedback servo system. First introduced to high-end audio in 1968 by Amie Nudell in the legendary Infinity Servo Statik One, servo bass systems continue to represent the ultimate in low frequency response today.

The concept of servo bass is fairly simple to understand. It employs, through the use of an accelerometer sensor, active feedback, which constantly monitors the performance of the woofer and electronically compares it to the input, making instantaneous corrections.

Without this feedback loop the mass of the woofer is too great to control properly and distortion occurs. Typical non-servo woofer systems have distortion levels that exceed 10% at even moderate levels. The Genesis servo

bass system reduces this distortion to below one percent at almost any output level.

The servo controlled woofer amplifier in the Genesis 900 is a unique design employing a G-SAT amplifier. The G-SAT is a revolutionary design called a switching amplifier that can produce tremendous power with exceptional transient response and linear motion. Using this revolutionary technology, the Genesis 900 woofer amplifier is able to deliver a continuous power of 500 watts rms. into the woofer with peak power of over 2200 watts rms. for short periods of time.

Safety Information

Make sure that the Genesis 900 is not plugged into a switched outlet.

Make sure the Genesis 900 is plugged into a wall outlet that is always on.

We recommend not using an extension cord for the AC power. However, if you are forced to use an extension cord, make certain it is as heavy a gauge as possible.

Installation

The Genesis 900 subwoofer system is perfect for both music and video. The setup for either is very similar and the goals should be quite the same too. In our opinion, the end goal of adding a high end subwoofer should be to not "hear" the subwoofer work (in a music system), but rather to add the appropriate amount of low end that is currently missing in your system (it's probably more than you think).

With music, the full frequency range of the orchestra should be reproduced with proper dynamic range and realism, from the lowest notes of a pipe organ to the whack of the timpani or the pluck of the lowest string on a Fender bass.

With video, the same goals should be sought after so the results are both realistic and exciting as the roar of jet planes rumble through your living room and prehistoric creatures shake the earth.

With proper setup and placement, you can achieve both stunning realism and musically correct and natural bass.

Positioning Your 900 in Your Room

Positioning the 900 for Music

If your primary usage of the 900 is in a music system, we recommend you follow this setup guide.

Set the woofer or woofers approximately where you want them in the room. We recommend that the woofers be placed so they fire into the long dimension of the room. As measured from the wall behind the loudspeakers, we suggest placing your Genesis 900's about 10% into the room. Example: if the length of the room is twenty feet (seven and three quarter meters) the 900's should be about two feet (0.6 meters) from the wall behind them although excellent results can be obtained with 900's directly against the wall or near the corner.

We recommend that the 900 be placed behind and to the outside of your main music speakers. If you only have one Genesis 900 subwoofer, we recommend that you place it on the right side. This is not a critical recommendation and you may place the single subwoofer either on the right or the left. We recommended the right (if there is a choice) because it the side where bass instruments or typically located in an orchestra. In any case try to avoid placing the subwoofer in the center of your rear wall, this area will give you the lowest bass output of anywhere in your room.

We suggest you toe in the woofers. This means that you should angle the woofers towards the listener. Point them directly at your listening position. This will help focus the center image for the woofer's higher frequencies.

Positioning the 900 for Video

There are a number of possible positioning schemes for video applications. Our first recommendation is that you visit with the dealer you purchased your video sound system from and get his or her advice.

Typically, in video applications, the front three speakers Left, Right and Center (LCR) speakers are on stands, mounted to the wall, or many times are the same speakers used with your music system with the addition of the center channel. Depending on the availability of space, you may place a pair of Genesis 900's (or a single, although a pair is highly recommended) in the front or the back of the system. If you have a dual-purpose system, music and video, you might consider following the music setup instructions first (if space allows).

It is permissible to place one subwoofer in front and one subwoofer in the rear to increase the "surround effect" in your video system if you wish. The Genesis 900, in a video system environment, will typically be placed fairly close to the wall or in a corner. As with the recommendations for the music system setup, try to not place the subwoofer in the middle of any wall.

Connecting your 900

To a Preamplifier

Use a good quality interconnect cable to connect your preamplifier's output to the low-level inputs on the back of the subwoofer. We strongly recommend that you do not use interconnects longer than 10 feet (3.2 meters) to connect the preamplifier outputs to your Genesis 900 subwoofer. On many preamplifiers, the use of an interconnect that is too long will negatively affect the performance of your preamplifier because of the high capacitance of the cable across the output of your preamplifier. If you must employ a run of cable longer than 10 feet (3.2 meters) we recommend that you use the Genesis 900's high level inputs.

Connect the input of the woofer amplifier to the output of your preamplifier. If your preamplifier does not have two outputs, use a "Y" connector to split the signal. The Genesis servo subwoofer amplifier presents high impedance that is a very easy load for your preamplifier and can easily be used with the "Y" connector with no degradation to your main signal.

To an Amplifier

To connect the high level inputs of the Genesis 900 subwoofer, take the output of your power amplifier and, using a good quality speaker cable, connect it to the binding posts on the back of the Genesis 900 subwoofer. You may also take the signal off of the back of your main loudspeaker terminals if this is more convenient. Using the high level inputs to feed the Genesis 900 power amplifier will not degrade the sound quality of either your main system or the Genesis 900 subwoofer. Make sure that you maintain proper polarity. This means that the plus (+) terminal of your amplifier must be connected to the plus (+/red) terminal on the back of the Genesis 900 (red with red, and black with black).

To a Video Processor

When connecting the amplifier to a video processor you will notice two sets of RCA inputs on your Genesis 900 Subwoofer, one marked audio and the other video. The video inputs bypass the 900's built in crossover to take advantage of your video processor's built in filtered subwoofer output. Hence, volume is the only feature that remains operational via the 900 controls in video mode.

Connecting Only One Subwoofer?

If you are using only one subwoofer, connect both the left and right low level or high level inputs into the one Genesis 900 subwoofer. The Genesis 900 will automatically create the appropriate mono signal.

Remote Control

The Genesis 900 subwoofer is fully remote controlled. Functions such as volume, low pass, high pass, phase and power are available. *You must first connect the external remote control housing before operating the Genesis 900 and the remote.*

Connect the Remote Housing

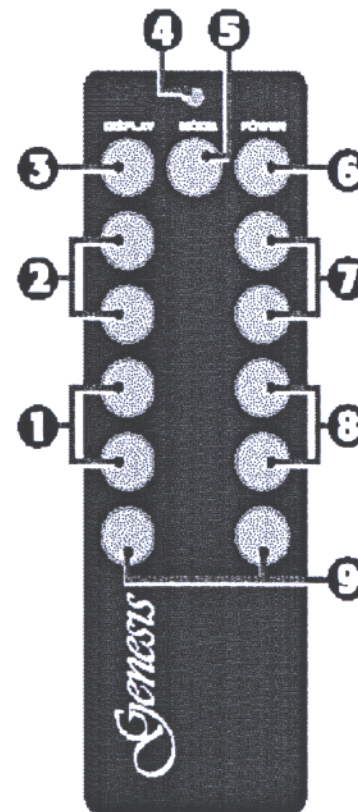
Using the included 6-pin connecting cable (similar to an S-video cable) hook up the remote control housing. On the back of the housing there is the input connector. Attach one end of the cable here. On the back of the Genesis 900 subwoofer, there are two similar inputs in the lower left-hand corner of the amplifier. One is marked "main" and the other is marked "slave". Plug into the one marked "main".

If you wish to use the link feature of the 900, you will need to purchase another connecting cable from your dealer. After procuring the cable, plug one end of the cable into the remaining input marked "slave" and the other end of the cable into the second Genesis 900 subwoofer's input marked "main". You can daisy chain as many woofers as you wish in this manner. Only the first Genesis 900 subwoofer will have the remote display enclosure.

Remote Operations

- 1 HP stands for High Pass. The high pass feature allows you to control how *low* the woofer plays. The remote housing displays the high pass in Hz; you can vary the high pass from 16Hz to 30Hz.
- 2 PHS stands for Phase. The phase feature allows you to control the degree of phase shift in 5-degree increments; there is a variance range from 0 to 180 degrees.
- 3 Display, the display button, when pushed, turns the display on the remote housing on or off. Note: this will not turn off the subwoofer's main power and all of your settings will be saved.
- 4 Mode light, displays which mode you are using on the remote, either red or green.
- 5 Mode button, changes the mode which you are using on the remote. When pushed the mode light will display either a red light or a green light. When using the subwoofer you will want to be in the red light mode. The red lettering on the remote corresponds to the red mode light as well as the green light, which corresponds to the green lettering. Note: the green mode is only used for the Genesis "Digital Lens," an anti-jitter device.

- 6 Power, the power button turns the subwoofer on and off; remember that you do not lose your settings when turning the power off when the settings are saved; procedures for saving your settings are described in 9.
- 7 Volume, increases and decreases the volume of the subwoofer.
- 8 LP stands for low pass. The low pass feature allows you to control how *high* the woofer plays. The remote housing displays the high pass in Hz; you can vary the high pass from 35Hz to 120Hz.
- 9 Mem 1 and Mem 2, these buttons are used for saving your settings (changes in low pass, high pass, phase and volume) on the subwoofer. Once you are satisfied with the settings you have made, hold down Mem 1 for four seconds (until the screen flashes once on the remote housing unit). Once the screen flashes you know that you have saved your settings. Anytime you need to return to those settings, push Mem 1 and it will jump back those exact settings. The same procedure is used to save settings on Mem 2. Ideally you should save your music settings on Mem 1 and your video settings on Mem 2, or vice versa.



At this point, you can turn on the woofer amplifier 6. Using the remote control, turn on the subwoofer amplifier by pointing the remote control at the small remote enclosure. Adjust the phase 2 to 40 with the button marked "phase" on the remote control. Next, adjust the low pass filter 3. Set this to 85 using the button marked "low pass". Next, adjust the volume to 30 to begin with. The volume will always flash to identify itself. Make sure the woofer works by playing some music.

Once you have adjusted the subwoofer and are happy with its settings, you may remove the remote enclosure and its connecting cable from the Genesis 900 subwoofer system if you wish. The Genesis 900 will remember the settings and will even retain the setting information in the event of a power failure. Keep the link cable connected however, if you want to make changes to all of the woofers in the chain.

Fine Tuning the Sound Using the Remote Features

Music is the best way to begin your setup procedure. We suggest that video sources be used only after you have setup the system to properly reproduce music.

We suggest that you start with a single vocal with instrumental accompaniment because the sound of the human voice is more easily recognizable than many instruments and is the least complex sound to deal with.

Volume – Turn the volume control ⑦ of the Subwoofer amplifier up or down until the voice sounds correct. Concentrate on the mid-bass regions (as opposed to the very low bass in your recording) to achieve a natural blend. The voice and the music accompaniment should sound as if it were “cut from one cloth,” not separate.

High Pass and Low Pass ① ③ –These control features will raise or lower the frequency cutoff point of the woofer. If you find that the sound is “thin or lacking in the mid bass and that turning the volume of the woofer amplifier up to “thicken” the sound creates too much low bass, then this is a good indication that you may want to turn the low pass filter up ③ to a higher number instead. This will extend the upper bass regions without affecting the low bass level.

Volume – Next, set the woofers using more than just a voice. Select some music that you know to have good deep bass. Using the volume control on the servo amplifier’s remote control set the woofers for a natural and powerful bass sound. Use a symphonic piece of music if you can, or use a natural bass instrument for your guide. Try to make it sound real. You may have to return to the vocal to make sure you have not gone to far in one direction.

High Pass and Low Pass ① ③ –If, at this point, it does not have enough mid bass, turn the low pass number to a higher position or, alternately, position the main speakers closer together in order to achieve better mid bass coupling between the main speakers. If it sounds too “fat” turn the low pass control down or adjust the volume. At this point it is suggested to use the low pass filter control until you get to a refinement stage.

Adjusting the Low Bass – With the speakers positioned in the recommended placement, low bass in the room should not be a problem.

Should your bass be overpowering, simply turn the volume down on the remote control. Too little, and the opposite will apply. If the use of this control causes other problems (such as too much or too little mid bass) you can alternately position the woofers closer to the rear wall (more bass) or farther away from the rear wall (less bass).

Phase Control – We suggested in the beginning of this manual to set the phase to forty degrees. Now that you have roughed the system in, you may want to experiment with different phase angles.

Using the remote control you can adjust the woofer’s phase angle in five-degree increments ②.

The changes are subtle and they affect the imaging and soundstage. Listen carefully to the positioning (in acoustic space) of the orchestral players as you change the phase control. You may notice small shifts in their apparent relationship to the other members of the orchestra. Do not expect them to actually move. Expect minute changes in the soundstage, the apparent width of the stage, your ability to distinguish individual players etc. If you reach a phase shift of ninety degrees you have probably gone too far.

Care and Maintenance

Cleaning and Care For the Cabinets

When cleaning the cabinets we recommend using a soft cotton cloth and a non-wax based furniture polisher. If you live in a dry climate we recommend cleaning your Genesis 900 cabinets on a regular basis, every two or three months, to ensure the wood in good condition.

Cleaning the Metal Woofer Cone

When cleaning the cabinets we recommend using a terry cloth and window cleaner. Not cleaning the cone will not affect the woofer’s performance or cause problems for you in the future. However, if you do decide to clean the woofer cone be very gentle and try not to put too much pressure on any one side.

Troubleshooting

If you find there isn’t enough deep bass, your first remedy is the volume control on the woofer amplifier. This has several limitations. First, turned up too high, you may get some distortion on very low frequencies. Secondly, you may make the mid bass produced by the top of the woofer out of proportion with the mid bass produced by the bottom of the mid bass coupler. This would tend to sound “boomy” in the mid bass regions.

A good rule of thumb is to first set the volume control of the subwoofer for proper mid bass rather than “low” bass. The theory is, if the mid bass is correct, then the low bass should be very close to correct. If the mid bass is proper and the low bass is still not right, here are some other suggestions:

A: Push the main speakers back towards the rear wall. This will increase the coupling of the main loudspeaker's woofers to the room. Do this procedure in small increments (approximately one inch at a time) and return often to the recordings you have used to adjust the front to back depth and soundstage properties of your system. It is easy, yet unproductive, to go too far in one direction.

B: A good balance between proper low bass extension and a deep and spacious soundstage needs to be established to optimize your new speaker's performance.

C: It should be noted that when you originally setup your main loudspeakers, you most likely made placement decisions based on the quality of imaging and proper bass levels. We would advise you to now think in terms of re-positioning your main speakers strictly from imaging and tonal balance, and let your new 900 subwoofers take care of the bass.

Note: *Should your woofer amplifier unexpectedly turn off and you are unable to turn it back on, you may have overheated the amplifier. It will take up to thirty minutes for the amplifier to turn back on. Be patient. The cause for this is too much volume. Refer to the section on increasing the low frequency response of your speakers without turning up the volume control.*

Fine tuning an audio or video system is an art that will take time and patience. It can be one of the more rewarding learning experiences you will have in the pursuit of music or video and their enjoyment.

One of the best pieces of advice we can offer is that you take advantage of the ear's ability to identify similarities in sound. This ability is useful in fine tuning your system because if every recording you listen to (or every video you watch) has a similarity of sound (too much or too little of a certain frequency for instance) then you can be fairly certain that you have yet to perfect your setup. Keep at it and remember to enjoy your music and video as you work on perfecting your setup.

Technical Specifications

Cabinet Dimensions	19.5"H x 22"W x 20"D
Weight	85 lb.
Frequency Response	± 3 dB, 20Hz to 120Hz
Amplifier	500 watts
Woofer	15" metal cone
Low pass	-3 dB variable from 70Hz to 120Hz
High pass	-3 dB variable 16Hz to 30Hz
Phase	Continuously variable in 5 degree increments, from 0 to 180 degrees