

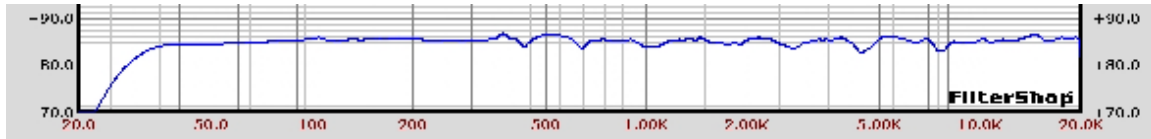
The Phoenix Owners Manual



The Phoenix

Congratulations, you have acquired a truly exceptional loudspeaker. The Phoenix is actually a sound reproducing system including:

- A rock solid enclosure with extensive bracing and damping systems
- Three low distortion 130 watt class AB amplifiers
- An advanced electronic crossover
- A pair of specialized equalizing circuits providing the very flat response shown below



In order to help you get the most from your new speakers please take a few minutes to read this manual.

The response above was measured outdoors with the speaker sitting on the ground. Called a ground plane measurement, it essentially duplicates the response that would be achieved in an anechoic chamber. Since we do not listen to music in an anechoic chamber the Phoenix includes switches to help you tailor the speaker to your own listening environment. See the section on setting switches below.

Speaker Placement:

We recommend that you place your speakers at least 4 feet from the rear wall. The more distance you have from the speakers to the rear wall, the more depth of image you will be able to perceive. It is a psychoacoustic effect that the mind will not produce an image beyond the first visual barrier. It is also very important that there not be any reflective surface within two feet of the front baffles.

Set up your speakers in an equilateral triangle with your head as the first vertices of the triangle. The most important thing is to have exactly the same distance from your head to each of the speakers. Use a tape measure and have a friend help you move the speakers until the distances to each speaker are identical. Aim the speakers in at you so that you can just see a little bit of the inner side of each. Experiment with this. You may find that you like the sound better if the speakers are toed in directly at you. This is the position that tends to produce the most solid image. Some may prefer less toe-in as this will produce a wider stereo image. In any event you should make sure that the speakers have identical switch settings while you are experimenting.

We recommend short stands that elevate the speakers such that the tweeter is at ear level or slightly above ear level. This tends to produce the most realistic image heights. It is also practical to use the speakers sitting on the ground with small blocks used to tip the speaker back so that the tweeter is pointing at the listeners ears. Sitting on the ground like

this will tend to reinforce the bass response and produce a satisfactory balance using less bass equalization, allowing the speaker to play louder before distortion.

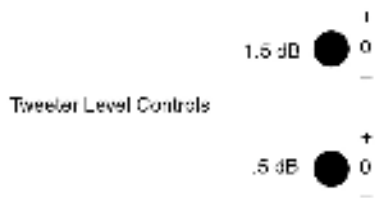
Switch settings:

The Phoenix has settings to allow you to adjust the tweeter level, and the amount of low frequency energy. These are provided to let you tailor your speakers to your listening environment. For example in a highly damped room, it may help to add just a little additional high frequency energy. In a smallish room, where the speakers are moved into the corners, it is generally helpful to cancel the LF boost altogether.

Where to start:

In the average listening environment set the tweeter level switches to 0 dB. (both switches in the center). Set the woofer EQ switch to the low boost mode, (Down) and just listen to your speakers for a couple of days. The woofers in your new speakers need to break in for a few days to achieve their excellent bass response, so delay your critical adjustments until then.

Available Tweeter settings:

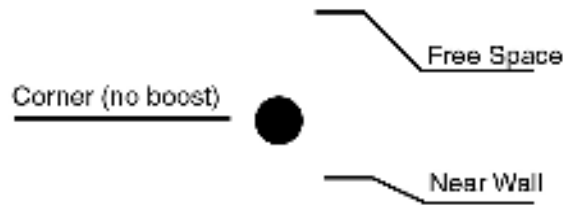


Setting the 1.5 dB switch up adds 1.5 dB of tweeter level. Conversely setting it down subtracts 1.5 dB of tweeter level. A little thought will allow you to select any setting from plus 2 dB to minus 2 dB of tweeter level in ½ dB increments. For example to achieve 1 dB of boost select up on the 1.5 dB switch and down on the .5 dB switch. In the center position the switches have no effect. This is summarized in the chart below.

1.5 dB Switch Setting	Up	Up	Up	Center	Center	Center	Down	Down	Down
.5 dB Switch Setting	Up	Center	Down	Up	Center	Down	Up	Center	Down
Total Adjustment in dB	2	1.5	1	0.5	0	-0.5	-1	-1.5	-2

If your room has little in the way of absorbent furniture drapery or carpeting, your *may* find that you prefer a little less tweeter level, conversely in a very dead room, you may like a little more tweeter. There is no absolutely right setting. High frequency response is a function of the total energy received by your ears, and varies from room to room. Whatever sounds right is right.

Low frequency Equalization:



This switch helps to produce the correct bass level in different acoustic environments. This is one of the great advantages of the powered speaker, and in the paragraphs below I will endeavor to provide the motivation for its action.

First let us consider what happens as a speaker radiates sound. At very low frequencies it radiates sound in all directions. As we approach higher frequencies (where the wavelength is approximately equal to the circumference of the baffle) the baffle tends to reinforce the sound in the forward direction, causing the high frequencies to be enhanced with respect to the bass. The amount of high frequency enhancement is a function of the acoustic environment.

Imagine a speaker floating in outer space (also imagine that there is air in outer space). Listening to the speaker here would produce a minimum of bass. If an infinite floor suddenly appeared, you would hear the bass level increase by 6.02 dB, which is a doubling of pressure. If a rear wall were to appear, the bass would increase again by 6.02 dB. When the space is cut in half the pressure doubles. The same thing would happen if a wall were to appear with the speaker now placed in a corner. This represents 18 dB difference between free space and corner placement. Clearly some ability to adjust for these different environments is a good idea.

In a real room none of these idealized situations occurs, but the effects are clearly audible. Just have a friend pick up one of your speakers while you are listening to some material with substantial bass and you will be convinced. We recommend the following settings, but you must listen and decide for yourself which setting sounds correct.

- In the middle of a large room on stands set the switch up (Free space)
- In a smaller room near the rear wall set the switch Down (Near Wall)
- In a small room on the floor or near the corner set switch in center (no boost)

Again there is no correct setting, but by using the switches and moving the speakers closer to walls and or corners you should be able to experience the excellent bass of the Phoenix.

It should be noted here that powered speakers like the Phoenix typically have vastly more extended bass than their passive counterparts. We trust that you will agree, and would love to hear your thoughts and experiences. Send your comments and questions to info@pteacoustics.com

General information and specifications:

Back panel:

The rear panel of the Phoenix serves as the heat sink for its three class AB amplifiers. The panel is ¼ in thick. It is quite normal for the panel to run quite warm, and should not be a cause for concern. It would not be wise to position the speaker in a way that impairs air-flow around the speaker.

Electronics:

Your Phoenix is composed of very high precision parts. We hand select key capacitors and use .1% tolerance resistors in key positions. All of this leads to speakers that match each other with excellent accuracy. The Op Amps represent current state of the art. The power amplifiers are capable of over 20 amperes peak current. The designer of these circuits has over 20 years experience designing powered loudspeakers.

The scan speak tweeter used in the Phoenix is a favorite in the audiophile community. It employs a double magnet, and is sweet and airy even at high output.

The woofers were chosen for many reasons, but their outstanding characteristic is a flat frequency response and an extended response.

Cabinet:

The cabinet is beautifully built and braced. In order to suppress resonance, special damping materials are applied to the sides of the cabinet. The front baffle is 1.5" thick and the woofers are mechanically isolated from it. The ports are designed for high air velocity without turbulence.

In short we are very proud of the Phoenix and we trust that it will bring you many years of listening pleasure. Enjoy!

Specifications:

Frequency response: 32 to 20 KHz +/- 2 dB

Dimensions: 28 H x 12 W x 15 D

Weight 74 lbs.

RCA input: Input Impedance 5,090 Ohms unbalanced.

XLR input: 14 K ohms balanced .1% matching J Pin 2 Hot

Amplifiers: 3 X 130 watts RMS <.01% THD 20 to 20 KHz
BW > 150 KHz. Output impedance .05 Ohms.

Acoustic output: This is a function of frequency, but in a typical home listening environment a pair of Phoenix loudspeakers will produce levels in excess of 110 dB SPL.