The Model 3.3 is our flagship loudspeaker: the ultimate expression of NHT's technology and capabilities. More than just another high-priced speaker, the 3.3 is a new kind of speaker, embodying ideas and innovations that transcend present limitations.

This means....
Everything you know is wrong!

(sorry)
The NHT 3.3 was designed with some pretty ambitious goals in mind:

- Overcome the notorious "weak link" of audio... with a speaker as good as modern electronics!
- Extremely flat, smooth response... for a new standard in neutral, transparent sonics!
- Radically new cabinet design... for optimal wave loading at all frequencies!
- Virtually ideal impulse response and radiation pattern... for state-of-the-art imaging!
- Very low distortion and high power handling... for natural dynamics on all types of music!
- Superb, custom-designed drivers... for extension to the limits of human hearing!
The 10 Commandments.

1. Thou shalt begin the tuning ritual in a quiet, enclosed listening room.

2. Thou shalt place the 3.3's directly against the wall behind them, never place them out into the listening room like minimonitors.

3. Thou shalt start with the 3.3's equally spaced from the side walls, and as far apart as thine listening seat is distant.

4. Thou shalt employ a quality solid state amplifier of at least 100 watts per channel.

5. Thou shalt maketh sure the 3.3's are exactly parallel to the side walls, within 1/8 inch.

6. Thou shalt maketh sure the 3.3's are exactly parallel to each other, within 1/8 inch.

7. Thou shalt adjust all the spikes to maketh firm contact with the floor, so that the 3.3 cannot wobble.

8. Thou shalt attempt to tighten the focus of the center image, if needed, by moving the 3.3's farther apart.

9. Thou shalt attempt to widen the soundstage, if needed, by moving the 3.3's closer together.

10. Thou shalt attempt to reduce bass modes, if needed, by moving the 3.3's away from the back wall slightly, (1/2 inch at a time).

Non-believers shall suffer from their stubborness!
Step 1.

Get off to the right start... a good listening room.

Fine-tuning the NHT 3.3's will prove very rewarding sonically. Set up with care, the 3.3 will deliver the kind of spectacularly accurate sound that is both thrilling and addictive. Give them a chance to show their best stuff! First of all, this means putting them into a good, enclosed listening room. These speakers were designed to thrive in the acoustical environment of the listener's home... an open showroom floor just won't do it. The reflection patterns are wrong, the boundaries are wrong; the sound will be wrong.

The finest listening rooms are quiet and uncluttered, softly lit and relaxing to be in. Most often, they employ some degree of sonic "treatment" to eliminate excessive reverberation or slap echo. Contrary to popular belief, a room that is too dead will tend to make speakers sound harsh and unnatural. There will be insufficient reverberant energy to balance the direct sound. On the other hand, a very live room will dominate the speaker's inherent sound, and will degrade imaging and tonal subtlety.

With the 3.3's, listening room size is not critical. With enough amplifier muscle, the speakers can easily fill a 30' x 40' room with "live" sound pressure levels. A 12' x 20' room will seem to expand into a cathedral, with the right recording.
Step 2.

Place the 3.3's directly against the wall behind them.

Tradition and experience have taught us to move our speakers out into the listening room for best performance. Just the opposite is true with the 3.3's. This speaker is designed to work with the wall behind it to provide an optimum and predictable load for the woofer. At the same time, the upper frequency drivers are where they should be: away from nearby reflecting surfaces. The controlled radiation pattern of the 3.3 assures you will hear all the depth and ambience in the recording using this approach.

A good way to think about this is to imagine the 3.3's making their own "corner" for the woofer. This way, the bass level is relatively independant of how close the side walls are, and is always very smooth. So, no matter what the sound is like at first, no matter what your intuition is, leave the speakers against the wall and tune the sound using the various procedures outlined here. Thanks!
Step 3.

Start with the 3.3's equally spaced from the side walls, and as far apart as the listening seat is distant.

Symmetry in a listening arrangement generally benefits imaging and ambience. This simple geometry is a good place to start. The listener's ears should be as far from the tweeters as the speakers are apart. Similarly, each speaker must be precisely the same distance from the wall behind it. From here, a little experimentation will help you find the optimum listening position. Many listening rooms are not perfectly symmetrical. Walls may be partial, or missing, for example. In such cases judgement, trial and error are the best approach. Always try, above all, to keep the listening position centered exactly between the speakers.

Because the wavelengths of high frequency sound are so short, accurate speaker positioning demands the use of a tape measure. Even the most practiced eye can get things wrong, especially with the irregular shape of the 3.3's cabinets. (More about this in Step 5.)
Step 4.

Employ a quality solid state amplifier of at least 100 watts per channel.

NHT recommends the use of solid-state amplifiers with the 3.3. The lower output impedance, and generally lower distortion, will help assure the reproduction accuracy of the speaker is not compromised. And, while the 3.3 is not an inefficient speaker, realizing the dynamic potential of a good recording demands sufficient amplifier power. The extremely low distortion levels of the 3.3 encourages playback at life-like levels, without the problem of listener fatigue. Further, the controlled impedance characteristics of the 3.3 will not stress the current capabilities of quality amplifiers, nor will it place excessive demands on cables.
Step 5.

Make sure the 3.3's are exactly parallel to the side walls, within 1/8 inch.

Most loudspeakers interact to a great degree with the room they are used in. The most successful conventional designs tend to rely on the room to integrate their output, providing a kind of averaging effect on both the frequency and the time domains. This is a mixed blessing. On one hand, it is hard to get imaging and tonality really wrong. Conversely, it is very difficult to get it really right. The smearing effects of the room reflections dominate, the details are blurred, like a soft focus lens.

Because the 3.3's are designed to radically reduce these room effects, the importance of the setup geometry is increased.... more detail is resolved. For example, left and right channel signal arrival times at the listener's ears can now be matched to within microseconds. This means fractions of an inch of position become audible.

The effects that an eighth of an inch can have will surprise even the most experienced loudspeaker experts. They certainly surprised us! Again, do not overlook the use of a tape measure, and be sure to frequently check the speakers for all position details during the setup procedure.
Step 6.

Make sure the 3.3's are exactly parallel to each other, within 1/8 inch.

All the discussion in "Step 5" applies here to an even greater extent. Consider the 3.3's a mirror to the original recording. Any "tilt" of the mirror will distort the reflected image. Each time either speaker is moved during the setup process, the parallelism of the speakers must be checked. This gets tedious. It is worth it. Measure the separation between the front of the left and right speakers, and adjust rear separation to match within 1/8". This assures that the wave arrival angles of the sound will be correct.
Step 7.

Adjust all the cones to make firm contact with the floor, so that the 3.3 cannot wobble.

Try wiggling the top of each speaker. Check each cone, and unscrew as needed until all are making firm contact with the floor. (Of course, do not unscrew any cone too far!) The top of the speaker should now be pretty stable. This is a good time to be sure that the top of the speaker is level, not tilted, both front to back and side to side. This can be done by eye, but a spirit level is the quick and easy way.
Step 8.

If needed, tighten the focus of the center image, by moving the 3.3's farther apart.

Intuition tells us that moving speakers closer together will tighten the center image, but this is not how the math of stereo reproduction works out. Until the speakers become much too far apart, and the center image is lost, space will tend to tighten the center image. Be sure to try a variety of recordings when making imaging decisions. If your preamp has a mono switch, use it.

Yes, we said this before.... it's important!

The effects that an eighth of an inch can have will surprise even the most experienced loudspeaker experts. Use a tape measure, and be sure to frequently check the speakers for parallelism and placement symmetry during the setup procedure.
Step 9.

If needed, attempt to widen the soundstage by moving the 3.3's closer together.

This part of the process is really the opposite of step 8. Spaciousness and image focus have to be balanced by using judgement, experience and a variety of recordings. When the speakers are correctly placed, the stereo image will "lock-in" noticeably. It will be stable for a wide variety of listening positions, and depth will be heard on good recordings.
Step 10.

If needed, reduce bass modes by moving the 3.3's away from the back wall slightly.

Because the 3.3 can reproduce frequencies down to the lower limits of human hearing, it is sometimes impossible to avoid stimulating one of the primary resonance modes of the listening room. Don't jump to this conclusion using recordings you have only heard on speakers with 30+ Hz cutoffs, or with subwoofers that have been adjusted in level by ear alone. The problem is simple: the majority of recordings on the market, even so-called "audiophile" ones, incorporate some degree of bass boost. There are very, very few studio monitors that go as flat and as low as the 3.3's.

However, if a variety of recordings indicate that bass modes are a problem, moving the speakers out from the wall behind them can help. Do this 1/2" at a time. Generally, if the problem persists when the speakers are 8" out from the wall, another 2 feet won't make much difference.
Common Problems.

Lack of deep bass.
✓ Move the speakers fully against the wall behind them.
✓ Check to be sure all stabilizer cones are seated firmly on the floor.
✓ Check the walls for solidity. Place the 3.3's in front of the most solid wall.

Image restricted between the speakers.
✓ Move the speakers closer together.
✓ Try one of NHT's recommended recordings.
✓ Make sure top of speakers are level, front to back.

Depth of image lacking, or vague center image.
✓ Move the speakers farther apart.
✓ Try one of NHT's recommended recordings.
✓ Make sure top of speakers are level, not tilted, front to back and side to side.
✓ Try varying the seating height of listener.

Harsh upper-mid and treble.
✓ Have the speakers been broken-in for 30 minutes on normal music?
✓ Try one of NHT's recommended recordings.
✓ Eliminate any major side-wall and or floor reflections just in front of listener.
Disc Recommendations.

For musical naturalness.
- Fairfield Four, "Standing in The Safety Zone", WEA
- Muddy Waters, "Folk Singer", Mobile Fidelity (Gold)
- Miles Davis, "Kind of Blue", Sony MasterSound (Gold)
- Handel, "Water Music", The English Concert, Archive

For pinpoint imaging.
- Harry Connick, Jr. Trio, "Lofty's Roach Soufflé", Columbia
- Los Lobos, "Kiko", Slash/WEA
- Jimi Hendrix, "Electric Ladyland", (MCA CD)

For natural ambience.
- Ry Cooder/V.M. Bhatt, "A Meeting By The River", Water Lily
- King and Moore, "Potatoe Radio", Just Records
- Julianne Baird, "The English Lute Song", Dorian

For frequency extension.
- Jim Brock, "Tropic Affair", Reference Recordings
- Moussorgsky, "Pictures At An Exhibition", Dorian

For enhanced ambience.
- Roger Waters, "Amused To Death", Columbia
- Jeff Beck, "Guitar Workshop", Epic

For musical dynamics.
- Trilock Gurtu, "Usfret", CMP
- James Horner, "Willow", Virgin Movie
- White Zombie, "La Serpiente", Geffen

For image depth.
- "Jazz At The Pawnshop", Proprins
- Bizet, "Carmen", Erato