

**Instruction Manual**  
**for**  
*Hsu Research TN1220HO*

## Introduction

Congratulations! You have purchased the world's smallest footprint true powered subwoofer with flat **power** response to below 20 Hz. It fits into the tightest space, or be placed behind cabinets or couches to disappear completely... Talk about spouse acceptance!

The ingenuity of it all lies in the fact that all the high Spouse Acceptance Factor is achieved without any sacrifice in the Audiophile Acceptance Factor: there is no compromise in the sound at all!

In order to get optimum performance from your new purchase, please read this easy-to-follow instruction manual before trying out the subwoofer. It can save you a lot of time and possible unjustified disappointment.

## Unpacking

Note that this subwoofer is very much top heavy. When removing the subwoofer from the box, take this into consideration. If you have a hard floor, place a bath towel or throw rug on the floor. Place the subwoofer on the soft surface, woofer facing down. If you plan to stand up the subwoofer, unscrew the bolts and screw the three spiked feet into the bottom of the subwoofer. Connect the appropriate wires (see section on connection for more details). Lift up the subwoofer and place the subwoofer the right side up. **Note: the feet are designed for vertical forces only! Do not apply large lateral forces.**

If you plan to lay the subwoofer on its side, leave the bolts in place. Connect the appropriate wires (see section on connection for more details). Lay the subwoofer in position. Put some padding between the subwoofer and any hard surface. If necessary, use rubber door stoppers to stop it from rolling around.

Retain all shipping parts in case you need to re-ship the subwoofer. **If you are placing the subwoofer on a hard surface, put a throw rug under the feet, or felt pads, or rubber cups to prevent the feet from buzzing against the hard floor.**

There should be a list of deep bass CDs and a list of deep bass DVDs.

Note that we do not supply any cover for the woofer. You can get a Radio Shack Cat. No. 40-1346 12" metal grille and use double-sided foam tape to stick it to the woofer gasket.

## Connecting to Your System

You will need to get our high-end crossover, amplifier, or bass optimizer to get flat extended bass from the 1220HO. See the respective manuals for hookup and connection details.

## **Placement of Subwoofer and Listener**

This subwoofer is optimized for placement against the front wall, or in a front corner. Depending on the room, other locations may work better. If your couch is up against the back wall, and you can pull it out enough to fit the subwoofer in the back of it, lying on its side, it would also be a good alternative.

One good way to find out a good spot is to put the subwoofer in the listening seat, play pink noise through the subwoofer and move about your room to find a location where you hear the most bass and the most even bass. Place the subwoofer at this location for optimum results.

In general, try to avoid sitting half way between the front and back walls. This is where you get a strong null for your room standing waves. No matter how powerful the subwoofer is, you will not get much bass at these frequencies. For example, for an 18 foot length room, you will not get much 32 Hz.

Do not place it too close to your direct view TV – due to the extremely large magnet, its magnetic shielding is not perfect.

## **Fine Tuning and Trouble-Shooting**

### **Setting Subwoofer Level**

If you would like to adjust for flat response, you may want to get a test CD (such as the Stereophile test CD), and a Radio Shack SPL meter (use "C" weighting position). Adjust so that the average level below the crossover frequency is about the same level as the 4 or 5 frequencies above it. Otherwise adjust for a bass level you prefer. I usually set the bass level somewhat higher than the main speakers partly for loudness compensation since I do not listen at live performance levels. My approach is to set the subwoofer level to the highest level where kick drums, etc., are still tight and non-boomy. My favorite test track for this is the Sheffield Drum Record/Track Record (CD14/20) track 5 (Ron Tutt). I generally tend to set the subwoofer level higher for home theater applications too.

No Bass -- Check the connections to make sure all connections are OK. If still no sound, try connecting the subwoofer to your main amplifier. If you still get no sound, then contact us. The shipper may have damaged the subwoofer.

Scraping/Rubbing Sound -- the woofer is probably damaged during shipment. The woofer has a heavy magnet, and if the shipper dropped the subwoofer during shipping, the voice coil might be out of alignment. Inform the shipper immediately and contact us. The shipment is fully insured. We will give you instructions on what to do.

## **Technical Specification**

### **Subwoofer:**

Frequency Response: +/-1 dB 20 Hz up, to -6dB at crossover (Linkwitz-Riley alignment, assuming that you got our crossover).

Power Handling: 500 W rms 18 Hz up (short term).

Nominal Impedance: 4 ohms.

Sensitivity: 90 dB @ 1m, 2.83V rms in the mid- to upper bass, half space.

Finish: Black knit cloth over the cylinder.

Size: 12 inches in diameter, 51.5 inches high (with spikes).

Shipping Weight: 40 lbs.

Feet: Black-anodized aluminum spiked feet (three).