WHOW III and POW-WHOW III Preliminary User Instructions

ELECTRICAL CONSIDERATIONS: Power amp (built-in)

Before operating the POW-WHOW III 200 watt sub-woofer amplifier a brief review of some of its design features will aid in understanding the operation of the unit.

After the amplifier is plugged into an AC power source the amplifier needs to be switched on and it may be left on at all times. Heat generation at idle is modest, with normal temperatures of about 50 degrees centigrade at the warmest area of the amplifier's heat sink/mounting panel. During loud music, the temperature of the panel will rise moderatly.

An internal servo circuit cancels DC offsets appearing at the speaker outputs. Under normal operating conditions the circuit will also cancel offsets from external sources such as direct coupled preamplifiers. In case of overheating, the amp is thermally protected. The external fuse is a 7 amp slo-blo fuse.

To reduce the possibility of ground loops and associated hum and noise, all interconnected components in a system should be "earth" grounded at one point, through one piece of equipment and it's associated three prong AC plug.

The POW-WHOW should not be plugged into the "switched" outlets of a preamplifier. The surge currents induced during turn on of the amplifier may harm the delicate switch contacts on a preamplifier.

The POW-WHOW is wired for the AC service of the country of original sale. If you operate the amplifier away from the country of original sale or are uncertain of the voltage your amplifier is wired for, contact your dealer or Wilson Audio.

There are two RCA jack inputs on the built-in WHOW amplifier. The red band is a positive polarity input. The white band is a negative polarity input. In one input there needs to be a signal,and in the other there needs to be a shorting plug. If you want to use the negative polarity input, simply change the shorting plug to the positive input. If the shorting plug isnot there, a hum will result.

To run the amp in balanced mode, the wiring should be:

Red input RCA jack to + pin 2 of XLR connector.
White input RCA jack to - pin 3 of XLR connector.
The ground sheath of both jacks should be joined together and connected to pin 1 of XLR.

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INTERCONNECTION OF THE ELECTRONIC CROSSOVER

The electronic crossover unit is supplied with a remote high-current power supply module. The output of the supply module is approximately ± 30 VDC. The internal regulators then provide final

filtration of any RFI which might have been picked up on the cable for the remote supply, as well as precise regulation to ± 18 VDC to power the active circuitry.

IMPORTANT: Always be sure to connect the umbilical connector to the chassis of the electronic crossover and to the power supply unit before plugging the AC cord into the mains.

The rear of the electronic crossover has three (3) sets of signal connectors, in addition to the DC input and chassis ground connectors.

There should be no signal processors between the preamp output and the crossover input. The input impedance is over 100K ohm, so it will not load down the low frequency response of vacuum tube preamps.

HI PASS OUT

The "HI PASS OUT" (passive) routes the signal directly through a 0.31 μf series capacitor bundle, to effect a first order filter (6 dB/octave) to roll off subsonics to the full range speakers.

If you have an amplifier with a higher input impedance, and you want a higher crossover frequency, you can reduce the amount of series capacitance at the "HI PASS OUT." This is done by snipping one of the leads from one or two of the .1 μf (larger) caps. This is accomplished with the chassis top removed.

NOTE: Never snip a lead, or even touch a lead with a tool while the power amplifiers (speakers and Pow-Whow) are on!

AMPLIFIER	(.31 μF)	(.21 μF)	(.11 μF)
Input Impedance	All Three (3) 0.1 μf caps* retained	Remove One of the 0.1 μf caps*	Remove Two of the 0.1 μf caps*
500 K ohms	Approx 1 Hz	Approx 2 Hz	Approx 4 Hz
100 K ohms	5 Hz	8 Hz	15 Hz
50 K ohms	12 Hz	17 Hz	34 Hz
20 K ohms	28 Hz	45 Hz	90 Hz
10 K ohms	55 Hz	78 Hz	150 Hz
3 K ohms	175 Hz	280 Hz	550 Hz

***NEVER remove the 0.01 μf (small) bypass capacitor**

Since the POW-WHOW woofer is rolled-off above 55 Hz, you should not select a high pass roll-off frequency higher than approximately 65 Hz.

If the full range speakers are Wilson Audio Tiny Tots (WATT), we would suggest 20 Hz to 55 Hz, depending on the type of music and loudness requirements. With the WATT's, some overlap in response

is desirable for system blend.

NOTE: We recommend that the chassis of the electronic crossover be positioned near your preamp to minimize the length of interconnect going from the preamp.

"L.F. OUT"

The low pass (active) outputs are mono below 55 Hz. This is in accordance with experiments we have conducted which show no deterioration of the stereo effect if the channel mixing takes place below 70 Hz.

The level of this output is controlled by the front panel knob. When the POW-WHOW is used with the WATT's, the front panel level control setting will probably be optimum somewhere between the "1:30" to "2:30" position. (Referenced to a clock face).

The POW-WHOW must be turned off whenever signal connections are made or broken at its input.

ROOM PLACEMENT

Very low frequency response is perceptually non-directional, especially in rooms of reasonable dimensions (i.e. less than 20 meters by 20 meters). Therefore the options for placement of the WHOW are much broader than for full range speakers.

It should be kept in mind that low frequency output from a speaker is increased when it is placed near a boundary, such as a wall, and in a more opaque fashion.

A great benefit of a separate subwoofer is that it allows you to place the full range speakers where their midrange performance will be at their best (away from any walls), while at the same time placing the woofer where its low frequency response will be its best (near a wall).

Remember to experiment with the relative phase between the WHOW and full range speakers. Select a recording with full mid to upper bass (50 to 120 Hz) content. Solo 9 foot grand piano, pipe organ or synthesizer work best. Listen carefully and alternate between normal and reversed polarity of the WHOW. Select the position which giver you the fullest sound, with the best blend of lower bass to upper bass.

The WHOW was designed to be used and enjoyed as a fine piece of functional furniture. It's output characteristics allow it to produce satisfying low frequency energy anywhere in the room. Yet its mass and rigidity allow it to act as a support for delicate lamps, vases or valuable artifacts.

Good Listening

GENERAL WHOW SET-UP RECOMMENDATIONS

1) Port away from listener.

2) WHOW driver (not cabinet) asymmetrically positioned in relationship with satellite speakers. (If cabinet is symmetrically positioned -- long axis facing listener -- between satellite speakers, the WHOW driver will be asymmetrically placed).

3) Where at all possible, position the WHOW out of the "grunge region" (this is established by ear) or the WHOW will present a feed forward sort of mid-bass, psychoacoustically deleting the lowest octave.

- More simply put

  A - If the satellites have a leaner than "normal" mid-bass, the WHOW can be 2-4 Feet behind them.

  B - If the mid-bass is "normal" then WHOW can be placed at Z axis -- 0 to -2 feet.

  C - If the mid-bass is warm, consider first repositioning the satellites or treating the room and then choosing "A" or "B."

4) Correct phase and amplitude determination -- this is best decided with satellite and subwoofer playing together.

A - Listening - there is generally always one phase that will produce mid-bass and no lower octave while the other will do the reverse. Choose the phase that produces the lower octave and reposition the WHOW (usually front to back by 2" increments) while varying GSB volume (VERY SLIGHTLY) until lower octave (16-32) is tonally balanced with mid-bass (32 - apx 80).

B - Sine wave (1/3 octave warble tones preferable) these are somewhat tricky (albeit easier to quantify than "A") because all rooms have wave development paths that can put the listening position at a disadvantage (null point or resonance point) on a single frequency basis. However, if "averages" can be made (by walking around the room for each frequency) this process can be more easily repeated. "Walking around the room" to ascertain overall bass balance is perfectly appropriate in rooms of dimensions <70 feet (height, width & depth) since every frequency in the low bass will choose, as it were, an entirely different path for development. This can work only if point #3 is correctly followed.