

BASIS

BASIS AUDIO, INC.

***SYNCHRO-WAVE* POWER SUPPLY**

USER'S GUIDE

Version 3.0

INTRODUCTION

Thank you for purchasing the **BASIS AUDIO SYNCHRO-WAVE Power Supply**. This is the most precise power supply for AC synchronous record player motors ever built.

In order to achieve constant RPM operation from AC synchronous motors, the motor must be provided with two electro-magnetic waves for the two independent coils inside it. These electro-magnetic waves must be shifted in phase relative to one another, so that the motor will start and run in the correct direction to drive the platter. Usually, a single electro-magnetic wave is taken from the available power line and is fed directly into one coil of the motor, and also through a phase shifting capacitor to the other coil. The maximum phase shift with this method is 40 to 60 degrees, and the attenuation of the voltage to this phase-shifted wave is often 25 to 40 percent. While this method is inexpensive and reliable, it results in rough running and “cogging” of the motor. A small but measurable amount of wow and flutter as well as motor hum will be transmitted into the platter through this method. In addition the motor can only run at power main frequency (50 Hz or 60 Hz) even though this speed rarely yields exactly 33 1/3 RPM at the platter.

To achieve the smoothest and quietest motor operation, AC synchronous motors require that the two electro-magnetic waves are exactly equal in voltage and exactly 90 degrees different in phase. Further, the two electro-magnetic waves must be pure sine-waves of one single frequency – no noise, no “modified” sine-wave, and no harmonics.

The **BASIS AUDIO SYNCHRO-WAVE Power Supply** provides these two precise electro-magnetic waves through analog circuitry under digital control - analog circuitry for clean, pure, noise free AC power; and digital control for constant exact speed, speed adjustability, and ease of use. The AC signal is generated internally, at an adjustable frequency, and fed through audiophile quality Class-A amplifiers to the motor. With the **SYNCHRO-WAVE Power Supply** the AC synchronous motor will run so smoothly and quietly, you'll swear it's a DC motor (though the lack of speed hunting inherent in ALL DC motor turntables, will tell you it's not). In addition, the speed of the platter can be changed from 33 1/3 to 45 RPM with a toggle switch, and the speed of the platter can be adjusted in small increments until a strobe disk appears absolutely stationary at either of these two speeds.

With the **BASIS AUDIO SYNCHRO-WAVE Power Supply** wow and flutter are dramatically reduced, and motor hum is almost undetectable, even with your ear right next to the motor box. And best of all, speed stability that is rock solid day after day. A BASIS turntable with the **SYNCHRO-WAVE Power Supply** and *MicroThin* ground belt has been measured with precise test equipment, and found to be far more accurate and speed stable than any turntable available, whether direct drive, belt drive or idler-wheel design.

We are confident that you will come to view your decision to invest in a **SYNCHRO-WAVE Power Supply** as one of the most musically rewarding equipment choices in your audio experience, as well as one of the finest precision machines of any type that you will ever own.

CAUTION

PLUG THIS DEVICE INTO A STANDARD AC
POWER WALL OUTLET ONLY

→ *DO NOT PLUG THE **SYNCHRO-WAVE Power Supply** INTO POWER
CONDITIONERS OR “MODIFIED SINE WAVE” POWER DEVICES.*

The input frequency rating of the **SYNCHRO-WAVE Power Supply** is 50-60 Hz AC. Since many audiophile “Power Enhancement” devices create power factors or add higher harmonics to the 50 or 60 HZ AC power, they can be harmful to the **SYNCHRO-WAVE Power Supply** and the motor it is designed to control. Do not use these devices, as they are unnecessary, and can add noise and distortion which may cause overheating and damage.

The **SYNCHRO-WAVE Power Supply** is equipped for operation with an earth ground provided by the users AC outlet. DO NOT DEFEAT this SAFETY GROUND. The motor is also grounded through internal wiring to this earth ground for your protection.

Ventilation: Provide free air circulation around the product. Do not subject to sources of excessive heat. Do not stack on top of other electronic devices. Excessive heat will shorten the life of the product and may cause the product to self protect and shut down.

Contact your dealer or Basis Audio for more information.

Unpacking and Installing

- 1) To realize the potential of your **SYNCHRO-WAVE Power Supply** and to prevent any damage which would delay your enjoyment please carefully read these instructions before attempting to unpack and connect it to your turntable.
- 2) Open the **SYNCHRO-WAVE Power Supply** carton. The AC power cord for the Power Supply is packed at the rear of the carton. Carefully remove the foam block packing material from the top and sides. The control switches are on the front of the power supply, and must be freed from the foam block packing before removing the power supply from the carton. When all the foam blocks above and around the sides of the power supply have been carefully removed, lift the power supply out of the carton and unwrap the poly bag protecting the finish.
- 3) Place the Power Supply on a shelf of the turntable stand. Connect the special connector on the end of the motor cord to the mating connector on the rear panel of the Synchro-Wave Power Supply. Connect the AC power cord to the Power Supply IEC power connector and the AC power mains.
- 4) Note that the motor has a switch on the top rear of the motor housing (on the side for Debut) for your convenience. For 33 1/3 RPM operation only, you may wish to use this switch to turn your motor on and off, or you may do so with the Power Supply **ON/OFF** toggle switch. For 45 RPM operation, the power supply **ON/OFF** switch will be used. If the motor does not operate when you turn on the Power Supply you may need to activate the switch on the motor housing.
- 5) If your turntable motor has a two speed stepped pulley, you will put the belt on the lower, smaller diameter pulley, and you will not need to move it ever again. **All turntable motors use the 60 Hz pulley with the SYNCHRO-WAVE Power Supply. Even if your power mains is 50 Hz.** This pulley is smaller in diameter than a 50 Hz pulley. If you ordered the power supply wired for 220V a new 60 Hz pulley is packed with the motor.

Operation

- 1) On the front panel of the **SYNCHRO-WAVE Power Supply** there are four (4) momentary switches labeled from left to right: **ON/OFF**, **33**, **45**, and **+/-**. A single quick push on any of these switches is all that is required to initiate action in the digital controller.
 - a. The **ON/OFF switch** turns the turntable motor on and off, not the power supply itself. The power supply remains powered-up as long as it is plugged in to active power.
 - b. The **33 switch** selects 33 1/3 RPM.
 - c. The **45 switch** selects 45 RPM.
 - d. The **+/- switch** is a speed trim for the 33 and 45 speeds. If a strobe disk shows the platter is running slightly fast, push the switch down momentarily to

decrease the speed slightly. If the strobe disk is slow, push the switch up momentarily to increase speed slightly. The speed adjustment increments are very small, so it may take a number of switch activations to get the platter speed just right. However, once the speed is dialed-in separately for 33 1/3 and 45 RPM, the **SYNCHRO-WAVE Power Supply** *remembers* your speed settings as long as it is powered-up. You should only have to make tiny adjustments thereafter.

- 2) Above the first three switches, is a blue LED to let you know the current status of the **SYNCHRO-WAVE Power Supply**. When the power supply is first plugged in, these LEDs will all come on for a moment as part of self test, and then they will go off.
- 3) To start the turntable motor, select 33 1/3 RPM with the **33 switch** and observe that the blue LED above the **33** switch comes on. Select **ON** and observe that the blue LED above the **ON/OFF** switch comes on. The turntable motor will start and ramp up to 33 1/3 RPM in about three to five seconds. After the speed ramp up is complete, you can adjust the platter speed as desired, if necessary with the **+/- switch**.
- 4) For 45 RPM operation, it is necessary to always leave the switch on the motor itself in the ON position. Use the **ON/OFF** switch on the **SYNCHRO-WAVE** front panel when turning the motor on or off. The **SYNCHRO-WAVE** has a special, gradual ramp-up in speed that is necessary for reliable and consistent starting at 45 RPM. For 45 RPM operation, change to 45 RPM by momentarily selecting the **45** switch. The LED above the **33** switch will go off; the LED above the **45** switch will go on. Select **ON** and observe that the blue LED above the **ON/OFF** switch comes on. The turntable motor will start and ramp up to 45 RPM in about three to five seconds. Again, wait until the speed ramp up is complete, then adjust the platter speed with the **+/-** switch as desired, if necessary.

For 45 RPM operation, leaving the **SYNCHRO-WAVE** in the **ON** condition and using the motor-mounted switch to turn the motor on will often result in failure of the motor to synchronize at 45 RPM.

Care and Maintenance

The **SYNCHRO-WAVE Power Supply** is protected by two **AGC-1** 1 AMP fuses, which are located on the rear panel next to the IEC power connector. If the power supply ever fails to power up when connected to active mains power, disconnect the power cord and check these fuses.

The **SYNCHRO-WAVE Power Supply** has no user adjustments or user-serviceable parts inside the case. If the power supply ever needs service or repair, return it to **BASIS AUDIO**.

**BASIS AUDIO, INC.
LIMITED THREE (3) YEAR WARRANTY**

BASIS AUDIO, INC. warrants the **SYNCHRO-WAVE Power Supply** to be free of defects in workmanship and materials for a period of three years from date of purchase.

Purchaser must submit to **BASIS** within 30 days of purchase the completed, signed, and dated warranty registration form for this warranty to become valid. Failure to provide the warranty registration form to **BASIS** within the thirty day period following purchase shall render this limited warranty void and inapplicable.

This warranty is subject to the following conditions: This warranty applies only to the original purchaser/owner. Warranty is void and not applicable if this product is or has been operated or handled in any way not consistent with the guidelines set forth in the owner's manual.

Warranty is void and inapplicable if the product has been abused/damaged as a result of negligence, or damaged in shipping/handling.

Warranty is void and inapplicable if this product has been modified, repaired or otherwise tampered with by anyone other than **BASIS** or an authorized service representative.

Should this product fail to meet the above warranty, purchaser assumes obligations to re-package said unit and return it to the dealer, **BASIS AUDIO, INC.** or designated service representative at his/her sole expense.

Where the above conditions have been complied with, **BASIS AUDIO, INC.** shall without charges for parts and/or labor repair the defect and return the unit to purchaser **FREIGHT COLLECT.**

Implied warranties related to the above are limited to the duration of this warranty.

Warranty is not extended to cover ANY incidental or consequential costs or damages to the purchaser.

Certain states do not allow limitations on how long an implied warranty lasts, or exclusion or limitation of incidental or consequential damages, so the aforementioned limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.