

# MODEL M5-HPA HIGH PASS AMPLIFIER OWNER'S MANUAL

THANK YOU. You are about to experience one of the most unique and sonically rewarding upgrades to your Vandersteen based system. This High Pass Amplifier is a remarkable design meant to not only deliver sonics at the highest level but to realize this with years of reliable service. Each component has been chosen for its sonic relevance, and thus creates a very high-performance solution. Please read this manual carefully and fully understand it before proceeding. If you have any questions please consult with your dealer, or contact the Vandersteen factory before proceeding.

## WARRANTY VOIDING PRECAUTIONS

- IF THE AMPLIFIER CAME IN FROM THE COLD (LESS THAN 50 DEGREES FAHRENHEIT), LET THE ENTIRE ASSEMBLY COME TO ROOM TEMPERATURE TO MINIMIZE CONDENSATION.
- FOR STABILITY REASONS, M5-HPA UNITS WITH SERIAL NUMBERS 310 OR GREATER, YOU MUST USE THE SUPPLIED HIGH PASS INTERFACE SPEAKER CABLE. FOR SERIAL NUMBERS LESS THAN 310, USE SPEAKER WIRES THAT ARE 4 FEET OR LESS IN LENGTH! USING LONGER LENGTHS WILL RESULT IN A NON-WARRANTY ISSUE, WILL RESULT IN BLOWN OUTPUT DEVICES AND EXPENSIVE NON-WARRANTY REPAIR.
- IF YOU ARE ADDING SEPARATE SUBWOOFERS, THEIR CABLES MUST BE FABRICATED AT THE VANDERSTEEN FACTORY. PLEASE CONTACT YOUR VANDERSTEEN DEALER TO PURCHASE.
- DO NOT MOVE THE AMPLIFIER OR POWER IT UP WITHOUT THE COVER ON WITH ALL SCREWS IN PLACE, OR THE PCB COULD BE DAMAGED.
- UNPLUG THE M5-HPA FROM AC FOR 3 MINUTES BEFORE CHANGING THE ROTARY HIGH-PASS SWITCH TO A DIFFERENT FREQUENCY!

## UNPACKING THE M5-HPA

- Remove the power cord and remove the top tray.
- Using the Speaker Output connector and the Logo Recess on the Front Panel, lift the M5-HPA out of the shipping carton.
- Remove the Plastic Bag.
- Determine if you have four sprung footers or two sprung footers and two solid cones. If all four are sprung, install the HRS amplifier footers with the ones marked with the White Dot (less compliant) in the front two threaded inserts and the ones marked with Light Blue Dot (more compliant) into the rear threaded inserts hand tight (it is imperative to get the color coding correct for the amp to sit level and have proper isolation from the floor). If you have two sprung and two solid cones, install the HRS amplifier footers into the rear threaded inserts hand-tight. Ensure the metal and Delrin washers are on the solid cones, as shown in the photo, and install cones into the front threads. Sonic degradation will occur if washers are not as shown or cones and footers are reversed.
- With the feet in place, locate the M5-HPA near the speakers directly on the floor without an amplifier base except for an optional piece of 1-inch granite when used on carpet. Any time a spike sits directly on granite, we recommend our spike shoes (sold separately) for a sonic improvement.



## **PREPARING THE M5-HPA FOR OPERATION (Do not connect the amplifiers to power yet)**

-If the specified high pass is different from 100 Hz (all M5-HPA Amps are set at the factory to 100 Hz when new), remove the 14 screws attaching the cover and lift the cover straight up and off.

-Set the High-Pass Rotary Switch located approximately in the middle of the main circuit board (preset to 100Hz) for the desired high-pass frequency. Example: QUATRO / QUATRO CT, MODEL 5, 5A,5A CARBON, SEVEN, SEVEN Mk I,II, Model 7 XTRM = 100Hz. Any speaker using the 2W, 2Wq, SUB THREE, or any other application requiring 80Hz high pass = 80Hz. KĒNTO Carbon is at 200Hz. Five settings are available: 20, 40, 80, 100, and 200 Hz. **DO NOT CHANGE THIS SWITCH SETTING WHILE THE M5-HPA IS PLUGGED INTO AC POWER! Reinstall the cover and all 14 screws. DO NOT TRY TO MOVE THE M5-HPA WITHOUT THE COVER INSTALLED, AS IT IS AN INTEGRAL PART OF THE CHASSIS' INTEGRITY, AND DAMAGE TO THE PCB WILL RESULT.**

-For serial Numbers 310 and above, use the provided HPA interface cable. Hook up the speaker cable, maintaining proper polarity. A few words about speaker cables for serial numbers below 310, as they can be very expensive. Using the M5-HPA near the speaker with 4-foot or shorter speaker cables is mandatory, or non-warranty damage will occur. It also sounds better because one's budget will allow a higher quality cable and bi-wiring if applicable. Long-balanced interconnects cost less and cause less signal degradation as the input impedance is 200k. When doing true bi-wiring, it is best to connect both positive wires and both negative wires into one set of sufficiently large Ring Lug Connectors (available from your VANDERSTEEN DEALER). By removing the Knob of the Cardas speaker connector used on the M5-HPA, the Pressure Block can be removed, allowing an appropriate 1/4-inch Ring Lug to be installed. Reinstall the Pressure Block, which is indexed and will only go on one way.

-Plug in the provided power cord IEC-C20, being careful to pull back the locking mechanism, insert the IEC end into the amplifier, and release the locking mechanism. Connecting or disconnecting the Power Cord without pulling back the locking mechanism will damage the ground connection on the amplifier's power connector.

-Turn on the Circuit Breaker/Power Switch on the back of the M5-HPA. The left LED on the Front Panel should flash red and turn green. If the M5-HPA has been off for any time, wait 20 minutes before pushing the front panel button to go to operate.

## **OPERATION**

-The left LED should be green. Press the Stainless Steel Button, and the left LED goes Blue. If the blue LED does not stay on, wait for 20 minutes and try again, especially if this is the first time after powering the M5-HPA up. On the first use, it should take approximately 8 minutes before it goes blue.

-The Right LED may flicker during operation, which indicates clipping. This is near max power and is not a problem if seen occasionally on peaks. When the Red LED goes from a flicker to steady Red, the protection circuit will see it as a DC offset and kick the Power Switch/Circuit Breaker off. Lower the listening level and reset the M5-HPA.

**IMPORTANT OPTIMAL PERFORMANCE PRACTICE:** The M5-HPA's unique circuit benefits from being put into standby after each listening session. This is true for all Vandersteen Electronics.

## TROUBLESHOOTING

-If the Right LED goes Yellow, this indicates over temp. Check for wires touching at the Amp Output Connector or Speaker Input connector. Check for adequate ventilation.

-If the Right LED goes Cyan, this indicates overcurrent. Check Speaker Wires for shorts. If no shorts are found, this could indicate that the Speakers have too low an impedance for the M5-HPA to operate properly. Buy a Pair of VANDERSTEEN speakers.

-If the Right LED goes Red, this indicates a fatal fault. Try turning the Power Switch/Circuit Breaker on the rear of the M5-HPA.

-After checking Speaker connections and ventilation, if no resolution is found, this indicates a failure of a component in the M5-HPA. Call your Dealer or VANDERSTEEN AUDIO at 559-582-0324 for assistance.

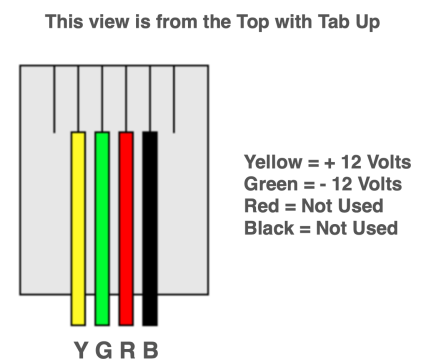
## 12 VOLT TRIGGER

-12-volt DC pulse "ON" 12-volt DC pulse "OFF."

-If your unit has a constant "ON" 12-volt trigger, an optional Pulse Convertor Module is available via your Vandersteen dealer.

-RJ-11 Cables and splitters are available online in many colors and at a price lower than our parts cost to make them.

-Ensure that the splitters and cables are in phase and match the wiring schematic shown. Otherwise, damage to your electronics will occur.



## DBS JACKS

The M5-HPA has two unidentified DBS jacks to the left of the RJ-11 phone jack. If you chose AudioQuest speaker wires or interconnects, these can be used in place of the battery packs. DO NOT USE A Y ADAPTOR, ONLY ONE DBS PER JACK. You would order the AudioQuest speaker wire or interconnect with the pigtails for the battery pack at the amplifier end. This will provide the voltage required as long as the amplifier is on standby or operating and eliminates the need for the battery pack and inherently replacing the batteries.

## TESTING FOR USE WITH SPEAKERS OTHER THAN VANDERSTEEN

The M5-HPA is a high-pass amplifier with several high-pass optional frequencies. When selecting 20, 40, or 60Hz, the current demands on the amplifier increase, so this should not be used with speakers that are 4 ohms or less. There are no fuses or circuit breakers in the signal path, but the M5-HPA has a very sophisticated protection circuit to protect the speakers and the amplifier. The amp will simply shut down if the protection circuit sees a signal beyond its capability. Try driving any speaker at the desired high-pass frequency at satisfactory levels to assess whether the M5-HPA is compatible and has enough power. Speakers below 6 ohms will not be good candidates. If you use one or two Vandersteen 2W, 2Wq, SUB THREE, or SUB NINE, set the high pass switch to 80Hz and use any speaker you like, i.e., full range planar or small monitor.

## LED INTENSITY

NOTE: THIS OPERATION REQUIRES THE AMPLIFIER TO BE ON. PLEASE USE CAUTION AND HAVE ONE HAND IN A POCKET FOR SAFETY. BE CAREFUL NOT TO TOUCH ANYTHING EXCEPT THE WHITE POT, AS HIGH VOLTAGES ARE PRESENT!

The intensity of the Green LED (Standby) and the Blue LED (Operate) can be adjusted. They are controlled by one pot under the transformer behind the front panel. Remove the cover and look under the large transformer on the left side (facing the front panel) for a white disk with serrations. Turn it carefully for the desired LED brightness. The Green and Blue LED will go up and down together, so match the right and left amplifier's LED intensity for the most important color.

## **SPECIFICATIONS**

- Frequency response: 20Hz, 40Hz, 80Hz, 100Hz, 200Hz to 200KHz -3db (High-pass switch dependent).
- Power: 300 watts 4 ohms, 150 Watts 8 ohms @ 120-volt line.
- Input impedance: 200K Balanced.
- Gain 25db.
- Distortion: .15 @ 300 watts, .01 @ 1 watt.
- Signal to noise: -90db A weighted 2 volts out. -110db full power.
- Power consumption: Standby (green) 20 watts, Operate (blue) 60 watts, maximum power 600 watts.

## **WARRANTY**

A registered Vandersteen M5-HPA High-Pass Amplifier is warranted for 5 years to the original purchaser to be free from defects in material or workmanship, SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS:

- Not used in accordance with the instructions contained in this operation manual.
- Been subject to misuse or abuse.
- Been modified, repaired, or tampered with by anyone not specifically authorized to do so by VANDERSTEEN AUDIO.
- Been subject to inputs in excess of the maximum ratings.
- Suffered physical damage to the structure or components due to accident, neglect, or transportation.
- Act of God.