
Model VTM200

It is important sonically that your entire system be connected so that the audio signal arriving at the speakers has correct, or "absolute" polarity (i.e., non-inverted). Connect the black or "-" speaker terminal to the wire that connects to the "0" terminal on the VTM200. Connect the red or "+" speaker terminal to the wire that connects to the "4", "8" or "16" ohm impedance terminal on the VTM200. Use the best available speaker cables and tighten all connections securely to ensure best sonic results.

MATCHING: It is important to use as close as possible an impedance match between the amplifier and speaker for optimum transfer of power to the speaker with minimum distortion. In the case of speaker systems with significant variations in impedance throughout the frequency spectrum, such as most electrostatic types, the best impedance match should be determined by listening.

Connect the VTM200 input to the preamplifier or electronic crossover, using only the highest grade of audio interconnect cables. To avoid sonic degradation use the shortest practical length of cables.

AC POWER CONNECTIONS: It is essential that the VTM200 amplifier be connected to a wall AC power receptacle, or a similar heavy-duty source. If it is connected to convenience receptacles shared by preamplifiers, etc., the full sonic capabilities of both the VTM200 and the preamplifier may be compromised. Furthermore, the proper control of start-up and shut-down surges may not occur unless the Power switch on the front of the VTM200 is actually used for on/off control of the amplifier (or use of remote turn-on/off option). The AC power source for the VTM200 amplifier should be capable of supplying 10 amperes for 100 or 120 volt units, or 5 amperes for 220 or 240 volt units.

For the very best performance on domestic 100 or 120 volt circuits, the VTM200 should be connected to its own AC power circuit branch, protected by a 15 amp (or greater) breaker, or by connecting a pair of VTM200s to a single 20 amp breaker if two separate 15 amp breakers aren't available. The preamplifier and other audio equipment should be connected to a different power circuit and breaker. Avoid the use of extension cords. If they must be used on a temporary basis, use 12-gauge or heavier cords.

The VTM200 utilizes a compatible grounding system that generally does not require a "ground lifter" adapter plug on the AC power cord to minimize hum. The detachable power cord on your VTM200 has a standard three-prong grounding plug to provide maximum safety when it is connected to a ground wall receptacle. If there is any question regarding the safety of grounding procedures, be certain to seek competent help with the installation.

If electronic crossovers or other AC powered equipment is used with the VTM200 it may be necessary to use "ground

lifter" adapters on the power plugs of that equipment to minimize system hum. Generally, the lowest hum is achieved when the only direct connection between audio common "ground" and true earth ground occurs in the preamplifier, through its grounded power cord. Other equipment in the system should have some form of isolation to prevent ground loops and associated hum.

Always place the Power On-Off switch on the panel of the VTM200 in the "Off" position before connecting the power line cord to AC power.

Remote Turn-on Connections

The VTM200 has a built-in 12VDC remote turn-on/off circuit for operation by a master control system in a home theater or large audio system. Use a 3.5mm (.140") diameter mono mini-plug to connect to the +12V IN jack on the rear of the VTM200. Two identical paralleled jacks are provided to allow chaining connections to control two VTM200s or other equipment.

The +12V IN jack should be connected to the +12VDC output of the master control system, using a continuous +12VDC signal at 12mA per VTM200 for the duration of amplifier on-time. Do not use a momentary or data pulse control signal.

The front power rocker switch on the VTM200 must be off to use the remote turn-on. The front power rocker switch may still be used when the remote turn-on is connected, but the remote will not turn the VTM200 off if the front power rocker switch is left on. The front power rocker switch will not turn the VTM200 off if the remote system is on.

The +12VDC remote jacks have polarity protection, so they will not operate if a -12VDC signal is accidentally connected, or if the control wires are reversed. The 12V remote relay in the VTM200 has click suppression to protect circuits in the master control system.

Use of Controls, Operating and Bias Adjustment/Check Procedure

1. Make sure you have read and complied with the INSTALLATION AND CONNECTION instructions prior to attempting operation.
2. Make sure your VTM200 is properly connected to a high-current power receptacle via the attached power cord (see CONNECTION instructions) with the power switch in the "Off" position. Make certain the cord is firmly pushed in the rear panel socket.
3. Set the bias switch on the rear of the amplifier to the "Operate" position.
4. Your preamplifier should be "On" and muted and/or set at minimum gain.

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5. Turn the Power switch from "Off" to "On." The green power LED indicator should glow immediately. Note: If the power indicator LED fails to light, turn the Power switch to "Off" and check the appropriate fuse for possible failure. An extra fuse for A.C. power and two internal fuses are included with your VTM200.
6. Your VTM200 should now operate satisfactorily. However, a full stabilization or warm-up time of approximately one hour is recommended for best sonic performance.
7. Choose fan speed based on the amplifier's environment: "Low" for a normal temperature room, or "High" if the area is warmer than normal. Cooler operation through proper ventilation and higher fan speed will maximize tube life.

BIAS ADJUSTMENT/CHECK PROCEDURE: After about 20 minutes of operation the VTM200 will have fully stabilized to allow output tube bias adjustment and check. Note that it is not necessary to repeat the following tube bias adjustment and check procedure each time the amplifier is turned on. It should be repeated occasionally, however, to determine that all of the power output tubes are operating normally. Should any tube fail to adjust within the normal range specified for it on the rotary switch on the rear of the amplifier, that tube is faulty, and should be replaced.

To adjust/check output tube bias (after allowing at least 20 minutes of warm-up), first set the bias switch to "Set Bias V1" and use a small screwdriver to set the bias potentiometer labeled "V1" (on the right side of the rear panel) to read within the specified range of 062-068 (065 ± 003) on the 3-digit bias display next to the bias switch. Allow a few seconds for the numbers to stabilize at each meter position before taking a reading.

Next, without making further bias pot adjustments, rotate the bias switch counter-clockwise through the V3 and V5 "Check" positions. The bias reading for each of these tube positions should read within the specified 057-073 range on the bias meter. If any tube should fail to be within its specified range, it should be replaced.

Now rotate the bias switch to "Set Bias V2" and repeat the above (065 ± 003) adjustment/check procedure just completed for V1, but adjusting the V2 bias potentiometer.

Likewise, making no further bias pot adjustments, rotate the bias switch clockwise through the V4 and V6 "Check" positions to check their bias (within 057-073 range) just as for V3 and V5.

When all six output tubes indicate bias within their specified range, return the bias switch to the "Operate" position to resume playing the amplifier.

Servicing

Because of its careful design and exacting standards of manufacture, your VTM200 amplifier should normally require only minimal service to maintain its high level of performance.

CAUTION: The VTM200 amplifier contains sufficient levels of voltage and current to be *lethal*. Do not tamper with a component or part inside the unit. Even with the power turned off, a charge remains in the energy storage capacitors for some time. Refer any needed service to your authorized Audio Research dealer or other qualified technician.

Replacement vacuum tubes may be obtained through your authorized retailer or directly from Audio Research Customer Service. For best performance, the 6550C output tubes should be a matched set of six.

Additional questions regarding the operation, maintenance or servicing of your amplifier may be referred to the Customer Service Department of Audio Research Corporation at 763-577-9700 (CST).

Cleaning

To maintain the new appearance of this unit, occasionally wipe the front panel and top cover with a soft, damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution or dilute isopropyl alcohol may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should *not* be used as they will damage the anodized finish of the front panel. A small, soft paint brush is effective in removing dust from bevels, the recessed nameplate and other features of the front panel.