
Model V35

Operating Procedure

1. Make sure you have read and complied with the INSTALLATION and CONNECTION instructions prior to attempting operation.
2. Make sure your V35 is properly connected to a high-current power receptacle via the attached power cord (see CONNECTIONS).
3. Your preamplifier should be "On" and muted and/or set at minimum gain.
4. Turn the POWER switch from "Off" to "Power." The green "Power" LED indicator should glow immediately, and the high voltage LED is dim. Approximately 30 seconds later the green "High Voltage" LED should also light fully, indicating the proper operation of the high-voltage circuits. Three distinct relay clicks may be heard during the start-up. NOTE: If the "Power" or "High Voltage" indicator lamps fail to light, turn the "Power" switch to "Off" and check the appropriate fuses for possible failure. Extra fuses for both powerline and high-voltage circuits are packed with your V35.
5. Your V35 should now operate satisfactorily. However, a full stabilization or warm-up time of approximately one hour is recommended for best sonic performance.

Adjustment Procedure

The V35 utilizes very high quality, commercial and computer grade components which, together with conservative operation of all components and tubes, will provide long service life, if installed and operated within the parameters outlined in this Manual.

The output tubes, for example, are operated with electronically regulated "bias" voltage, that includes compensation for varying plate voltage as the line voltage changes. The resulting output tube current is essentially immune to line voltage variation within the normal range of 105-125VAC, or equivalent export line voltages.

After vacuum tube replacement, it is desirable to make a single internal "bias" adjustment to optimize performance and tube life.

CAUTION: The following internal procedure should not be attempted by the owner unless he is *technically qualified*. There are high voltages within this unit which can be *lethal* under certain conditions. The internal "bias" adjustment should be accomplished by a qualified individual. It is necessary to remove the top and bottom covers from the V35 for this adjustment. The unit should be off before removal of the covers.

Normally, only the output tube idle current (bias voltage) requires adjustment in the V35. Use the plastic alignment tool provided for this adjustment.

The triode output stages of the V35 are partially cathode-coupled "push-pull Class AB₁," utilizing our tightly coupled output transformers which provide low distortion and sonic accuracy.

Output Tube Bias Adjustment

As shipped from the factory, the output "bias" adjustments are set for a nominal 75mA per KT90 tube. Under these idle conditions the tubes are each dissipating approximately 32 watts of their 50 watt rating (42 watt plate, 8 watt screen). This point of operation provides "enriched" Class AB₁, and will satisfy the most critical listener.

For best results, operate and adjust the V35 at 120VAC. Adjustment must be made under zero-signal conditions after at least 15-20 minutes of uninterrupted stabilization time.

A digital voltmeter capable of accurate measurements with 0.1mVDC resolution is preferred for accurate adjustment (must have 3½ digit display). Use the plastic alignment tool provided to make the adjustment. The four test points are accessible from the bottom of the circuit board, near the front edge. Test points TP1, TP2 on the schematic diagram are for tube V5, and TP3, TP4 are for tube V6. (Automatic servo balance circuits take care of tubes V3, V4.)

WARNING. This adjustment involves measurements of circuits that are 420 volts DC above chassis potential, with large energy storage. Use extreme care to avoid shock hazard and to avoid damage to the V35 or to your meter due to careless use of test leads. All meter test leads connections must be isolated from chassis or earth ground. Start with the meter on its highest range before making connections, and then select the 200mVDC range. Do not attempt current measurements.

Adjust the "bias" for an average reading of 37.5mVDC (.0375 Volt DC) between TP1-TP2 and between TP3-TP4. The two readings may differ by up to 10% because of minor variations in tubes.

Servo Balance Calibration

Verify the bias adjustment before setting the servo. The servo adjustments are factory set and should not require readjustment except in the event of a circuit malfunction or component replacement. They are not user adjustments and are not required when changing tubes.

Allow 2-3 hours undisturbed warmup with top and bottom covers in place, to fully stabilize tube currents and servo circuit temperatures. The unit should be in a normal horizontal position, with its rubber feet resting on a hard surface for normal ventilation.

Model V35

Tip the unit vertically on its handles, and remove the bottom cover. Connect a 3½ digit DVM between TP2 and TP5. **WARNING:** high voltage.

Adjust the 15-turn trimmer through the guide on the left side of the chassis. Use the *plastic alignment tool* supplied with the unit (not a metal screwdriver). Adjust for a null of less than 0.2mVDC indication. Response is very slow and it may take 20-30 seconds for the reading to stabilize after adjustment. Some fluctuation is normal, so use the average reading. For best results, the line voltage should be stable at about 120VAC, although the actual line voltage is not critical. Repeat for the right channel, using TP4 and TP6, and the right side trimmer.

Servicing

Because of its careful design and exacting standards of manufacture, your V35 amplifier should normally require only minimal service to maintain its high level of performance.

CAUTION: The V35 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.

The six (6) vacuum tubes inside the V35 are high-quality KT90 and 6FQ7 tubes. Replacement output tubes should be matched for best sonic performance. (Your V35 comes from the factory with a matched set installed.) Reliable, matched, low gas KT90 tubes – such as those available from Audio Research – are strongly recommended for maximum performance and longevity. Check bias adjustment after replacing tubes.

Additional questions regarding the operation, maintenance or servicing of your amplifier may be referred to the Customer Service Department of Audio Research Corporation: (612) 939-0600.

Cleaning

To maintain the visual appearance of your amplifier, occasionally wipe the front panel and top cover surfaces with a soft, damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should *not* be used as they will damage the “brushed” grain of the front panel finish.