

Tube Current Adjustment Controls. Two such controls, each with a corresponding green LED indicator, are provided -- one for the right channel, one for the left. These controls allow you to adjust, within a pre-set range, the current of each bank of four (4) output tubes -- the advantage being that you will be able to continuously optimize the sonic performance of the tubes as they "age" over their normal lifespan (approximately 2000 hours in normal use).

Rotating these controls in a clockwise (i.e., right-hand) direction increases the current level; counter-clockwise rotation decreases the current level. For optimum performance within the operating parameters of each tube bank, the controls should be rotated -- after about ten (10) minutes of warmup time, with no signal being passed -- until each corresponding LED has reached the approximate center of its "on" region. To the left of this position, current levels will be too low to yield best performance; to the right, the tubes will run at higher current and their life expectancy will be reduced proportionally. Note that the center position may differ between the two controls. This is because the bias-monitoring circuitry of the D125 is sensing the optimum current parameters for each bank of output tubes, and every group of tubes will vary slightly as to their performance characteristics.

To use these controls and put the amplifier in a "standby" mode (i.e., for low current draw when the amplifier is "on" but not in use), simply rotate the controls counter-clockwise. When you are ready to play music, simply adjust the controls to the approximate center of their illuminated region once again.

Tube Current LED Indicators. Normally, the Tube Current Indicators ("TCI") should light within five (5) minutes after the amplifier has been turned on. If an Indicator fails to light within the allotted time, rotate its corresponding adjustment control to the center of the illuminated "on" region. (If the Indicator repeatedly requires readjustment or fails to light at all, turn the Control fully counter-clockwise and contact your authorized Audio Research dealer to arrange for possible service.)

When the amplifier is passing a musical signal, these front panel Current Indicators will remain on during low-level operation. At medium levels, they will flicker. At full power or "clipping," the Indicators will blink out momentarily then re-illuminate when the playback level drops. When no music signal is present, the Indicators should remain lit in their pre-set "On" position.

INSTALLATION

To insure normal component life and safe operation this unit must be operated only in a horizontal (upright) position. Adequate air flow and proper cooling thereby can occur only if there is no restriction below, behind and above the unit.

The five (5) special non-marring elastomer feet provide adequate spacing only from a smooth, hard surface. Never operate the unit while it is sitting on a surface such as a rug or carpet.

If the unit is to be operated in an enclosure such as an equipment rack, make certain that adequate air flow above and below the unit is provided. the "ambient" operating temperature should never exceed 120°F or 49°C. Audio Research Corporation Rack Mount Ventilators (RMV3) should be used above and below each unit. Improper installation will cause premature tube and other component failure and will affect your Warranty, as well as the service life of the unit.

5. The Tube Current Indicator LEDs will normally not illuminate until the amplifier has fully stabilized and the preset current levels have been reached -- normally, the indicators will begin to come on after about two to four (2-4) minutes of warmup time. About ten (10) minutes or more of stabilization time is required for the Current Indicators to indicate in the center of the operating region of the previously set levels. Note that any retrimming of the Current Controls should be done only after the amplifier has fully warmed up and stabilized, to insure maximum sonic performance.

6. Your D125 may function safely within 30 seconds of turn-on, but to achieve acceptable levels of sonic performance, fifteen (15) minutes or so of warmup time is recommended. The amplifier will continue to improve over the first hour or more of operation, as full thermal equilibrium occurs.

7. "Tube Saver" Circuit Operation. In the event of a vacuum-tube defect, excessive subsonic input to the amplifier, a short at the speaker output or other overload, your D125 has a sophisticated protection circuit designed to prevent damage to the amplifier. This protection circuit responds "instantaneously" to the event onset. If the problem is sustained for approximately 10 milliseconds or more, the screen fuse will "blow," and its associated LED will go out. In this event, you should turn the amplifier off, replace the screen fuse with one of the extras provided (see ADJUSTMENT PROCEDURE -- Fuse Replacement), then turn the amplifier on. At this point it would also be advisable to check the eight LED indicators on the main circuit board (they can be seen by looking down through the top of the cover at the rear of the amplifier), to determine whether or not all the tubes are still operating normally. If an LED remains lighted after 5 to 10 minutes, it is an indication that the tube at that location has been seriously weakened and should be replaced (see ADJUSTMENT PROCEDURE -- Tube Replacement).

8. Make sure the "Mute-Operate" Switch on the rear panel is placed in the "Operate" position.

ADJUSTMENT PROCEDURE

These adjustments are factory set and should not require readjustment except in the event of a circuit malfunction or component replacement. These are not user adjustments and are not usually required when changing tubes.

Adjustment should be attempted only by a qualified technician with 4.5 digit digital voltmeter with .01mV DC resolution (200mV range). (A 3.5 digit DVM may be used on a temporary basis, but servo calibration will be less accurate.)

WARNING. These adjustments involve measurements of circuits that are at 420 Volts DC above chassis potential, with large energy storage. Use extreme care to avoid shock hazard and to avoid damage to the D125 or to your meter due to careless use of test leads. All meter test lead connections must be isolated from chassis or earth ground. Start with the meter on its highest range before making connections, and then select the 200mV DC range.

A. TUBE CURRENT INDICATOR (TCI) CALIBRATION. (See Chart on Page 15 for location of RV4 L, R; RV5 L, R)

1. Remove top and bottom covers.
2. Allow 10-20 minutes warmup to stabilize tube current.
3. Connect DVM between TP2 and TP5 (see Tube Chart on Page 14 for location).
4. Adjust left channel front current control for 62mVDC meter indication.
5. Adjust RV4L so that front current LED just lights.
6. Readjust left channel front current control for 68mVDC meter indication.
7. Adjust RV5L so that front current LED just lights.
8. Repeat for right channel measuring between TP4 and TP5, and adjusting RV4R and RV5R. If LEDs do not light, try adjusting RV4 CCW and RV5 fully CW and try again.

B. SERVO BALANCE CALIBRATION.

1. Install bottom cover so that unit is resting upright on its rubber feet, on a hard surface for normal ventilation. Leave top cover off.
2. Set front current controls in the middle of their operating range.
3. Allow 20-30 minutes undisturbed warmup to fully stabilize tube current and servo circuit temperatures. This is very important for accurate calibration.
4. Connect DVM between TP1 and TP2.
5. Adjust 15 turn trimmer through hole in the left side of the chassis just behind the front panel. Use a small screwdriver with a 0.1" side blade. An insulated screwdriver is not necessary. Adjust for less than 0.1mVDC 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.
6. Repeat for the right channel using TP3 and TP4, and the right side trimmer.

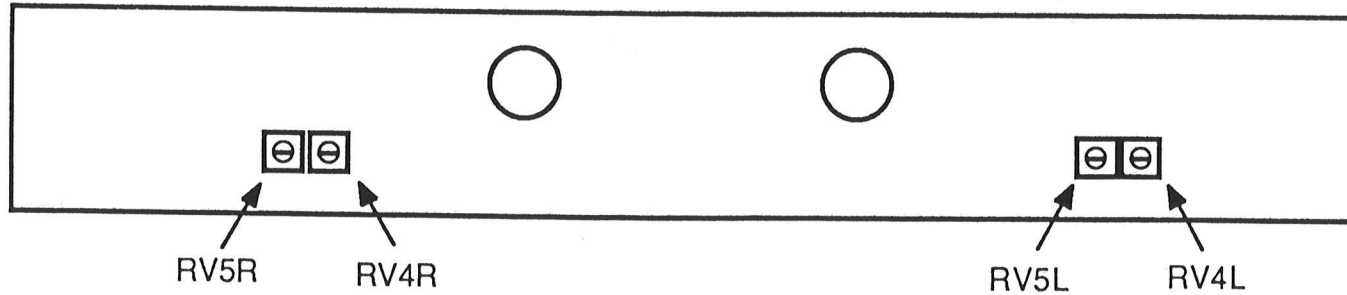
NOTE: There is some interaction between TCI and servo calibrations, so if the unit was badly misadjusted, recheck the entire procedure to insure proper results.

SERVICING

Because of its careful design and exacting standards of manufacture, your D125 amplifier should normally require only reasonable service to maintain its high level of performance. Some authorized Audio Research dealers provide service. Contact Audio Research Customer Service Department for any needed help.

CAUTION: The D125 amplifier contains sufficient levels of voltage and current internally to cause fatal shock. Do not tamper with components or parts inside the unit. Even with the power turned off, a charge remains in the energy storage capacitors for a significant period of time. Refer any needed service to your authorized Audio Research dealer or other qualified technician.

TOP EDGE

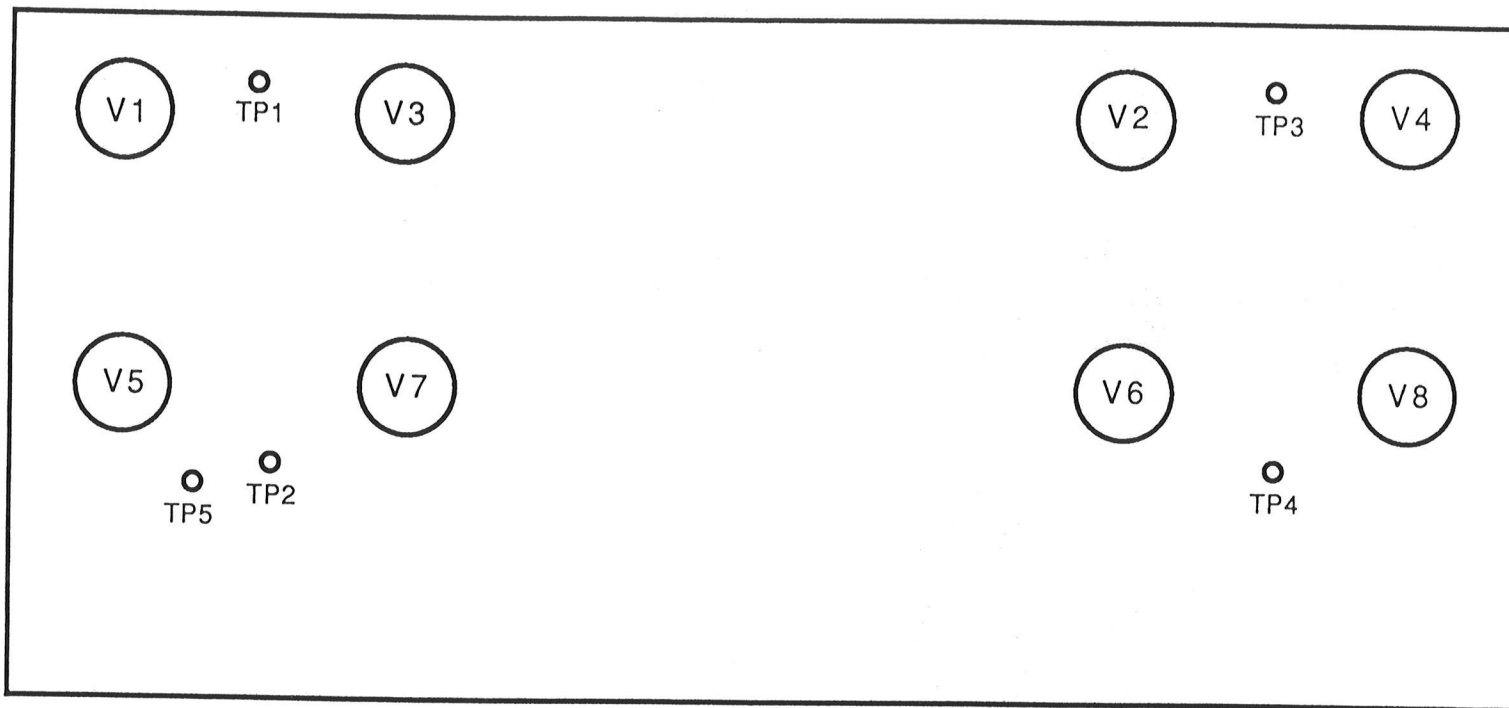


FRONT PANEL CONTROL BOARD

VIEWED FROM THE REAR OF THE AMPLIFIER

DO NOT CHANGE THESE ADJUSTMENT SETTINGS UNLESS YOU HAVE READ AND UNDERSTAND THE INSTRUCTIONS REGARDING THEM FROM THE MANUAL AND HAVE THE NECESSARY TECHNICAL SKILLS AND TEST EQUIPMENT TO PROPERLY ACCOMPLISH READJUSTMENT.

D125 TUBE CURRENT INDICATOR CALIBRATION ADJUSTMENTS LOCATION



D125 TUBE AND TEST POINT LOCATION CHART

MAIN PWB VIEWED FROM THE FRONT OF THE AMPLIFIER

ALL TUBES TYPE 6550 (LOW GAS CONTENT TUBES ARE STRONGLY RECOMMENDED AND ARE AVAILABLE FROM AUDIO RESEARCH CORPORATION)

(BEST SONIC RESULTS AND LONGEST TUBE LIFE WILL OCCUR WHEN V1,V3,V5,V7 AND V2,V4,V6,V8 ARE REASONABLY CLOSELY MATCHED)