Allnic is for the serious connoisseur only. We believe and strongly recommend that every Allnic owner acquire a small collection of tubes though the various tube dealer networks to service your unit and prevent downtime. Circuit designs at or near "Signature" status are rather complex involving more than a dozen tubes. Today's discussion is to help establish an accurate, logical, thorough and easy to follow step by step process to optimize performance or locate and replace a defective tube or one varying minutely in output from the other tubes in an OTL/OCL design.

The Allnic Meters

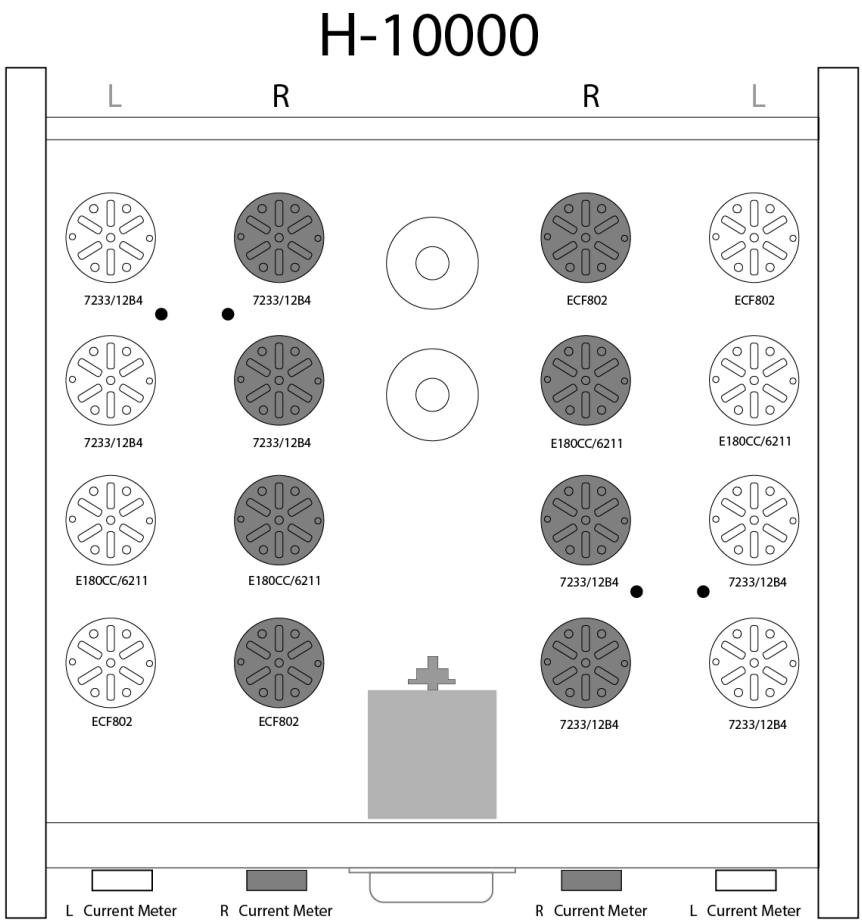
Allnic does not employ VU metering on any of its current or legacy products. The meters are designed to trim current or DC of individual or sets of tubes for optimal performance. In most cases, this feature helps mitigate the need for matched pairs or quads.

CAUTION: When adjusting trim pots to set meter needles to the desired position, stop immediately at the point of resistance. The point of resistance is the design limit of the trim. Any over torque will result in damage and require a complex repair by a technician. Do not incur this expense and downtime: please, **always** respect the trim pot.

Tube Supplies

Please note: Allnic cannot predict the future availability of NOS / used / modern production tubes, and *some legacy models now require rare or extinct tube types.* In the event of a now-extinct tube, Allnic considers a product modification to a comparable tube type, allowing for further years of happy ownership. Please contact your dealer or distributor to assist in first locating the tubes that are difficult to source. At the rare-to-extinct tubes stage, *matched pairs will be nonexistent*. No Allnic model has become obsolete over this issue. Shortages of parts supplies, including tubes, result in a circuit adaptation to maintain the product. This is standard across the industry inclusive of solid-state equipment.

The H-10000 OT/OCL Phono-preamplifier



The **H-10,000 OTL/OCL Signature** has four columns of tubes, numbered left to right 1-4 on the diagram, each with a series of 7233 (or 12B4) tubes. The outer columns 1 and 4 are associated with the left channel, and columns 2 and 3 are associated with the right channel. When trimming (for DC balance) one column, the other column associated with the same channel will also be directly yet mildly affected. Upward adjustment of trim in the intended adjusted column will also cause an upward movement of the other column. This adjustment will NOT affect the other channel unless there is a defective tube that causes erratic behavior and requires replacement. Another sign of a defective tube is when upward trim adjustment of one column causes a downward trend in the other column – an inverse effect.

In the event you are unable to achieve the meter's needle being between the tic marks or resting on either one, first turn trim counterclockwise, wait a minute, and then slowly trim upward and adjust the other column associated with the same channel as necessary. If the meters are again close but not at or between the tic marks, with the unit powered off, switch the positions of the 7233 (or 12B4) in the same column and re-trim. If the affected column has four tubes, repeat the

process with the adjacent tubes at the rear of the column. Finally, try this process with the pair in the other column associated with the same channel.

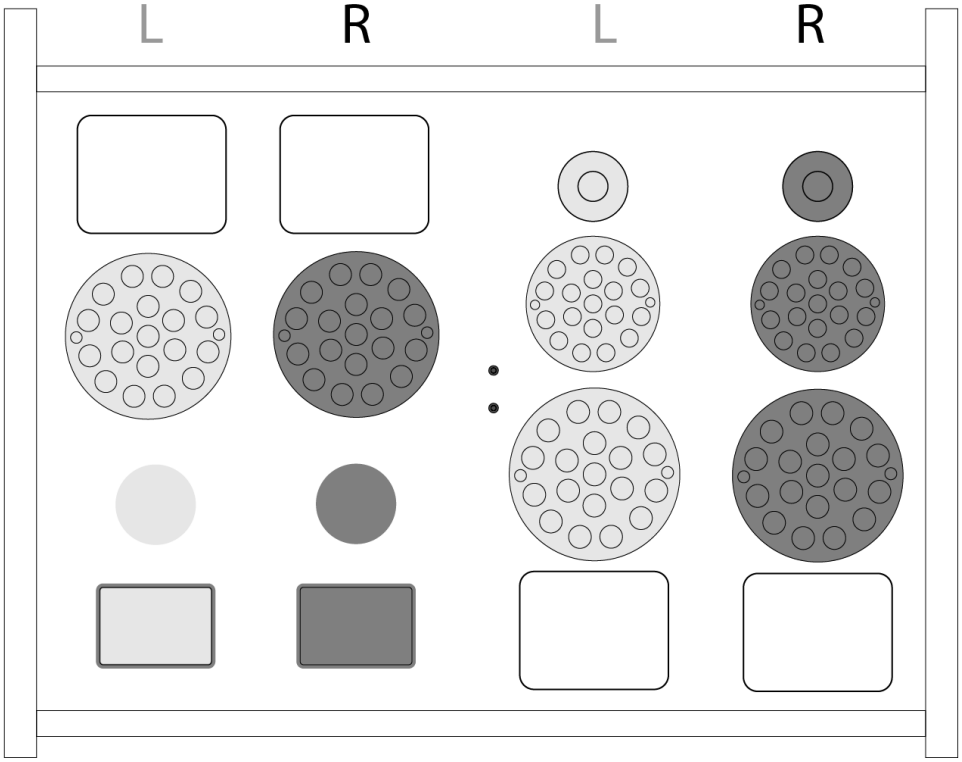
In the event this does not allow proper trim, or there is extreme meter deviation, please power down the unit and start alternating the tubes one at a time to the adjacent column associated with the opposite channel to gain balance or determine the bad tube. If the newly placed tube prevents trim of the opposite channel, the tube is bad.

The trim in this (and other OTL) circuits measure for DC leakage and only involve the 7233 or 12B4. An off meter can create small current leakage and a completely harmless soft, pop noise. In this particular circuit, the range of trim is microvolts, so a “bad” tube means it is out of spec compared to the associated tubes and may perform normally when associated with other sets of tubes or other circuits. It is recommended to have a tube tester or a resource to test tubes.

Fortunately, both the 7233 and 12B4 are robust and needing to follow this process is rare. Hopefully by taking these steps, the process will be smooth and efficient.

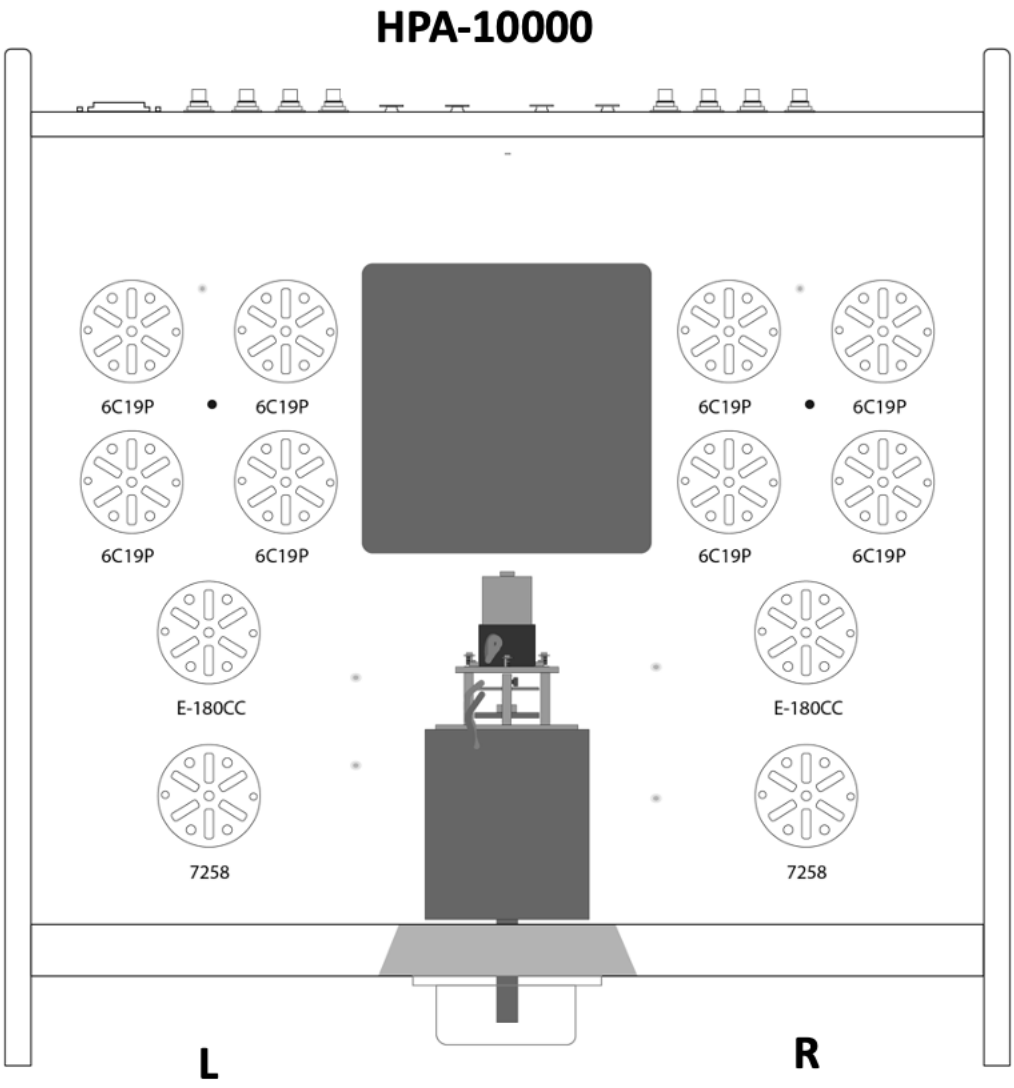
The H-8000 DHT Phono-preamplifier

H-8000

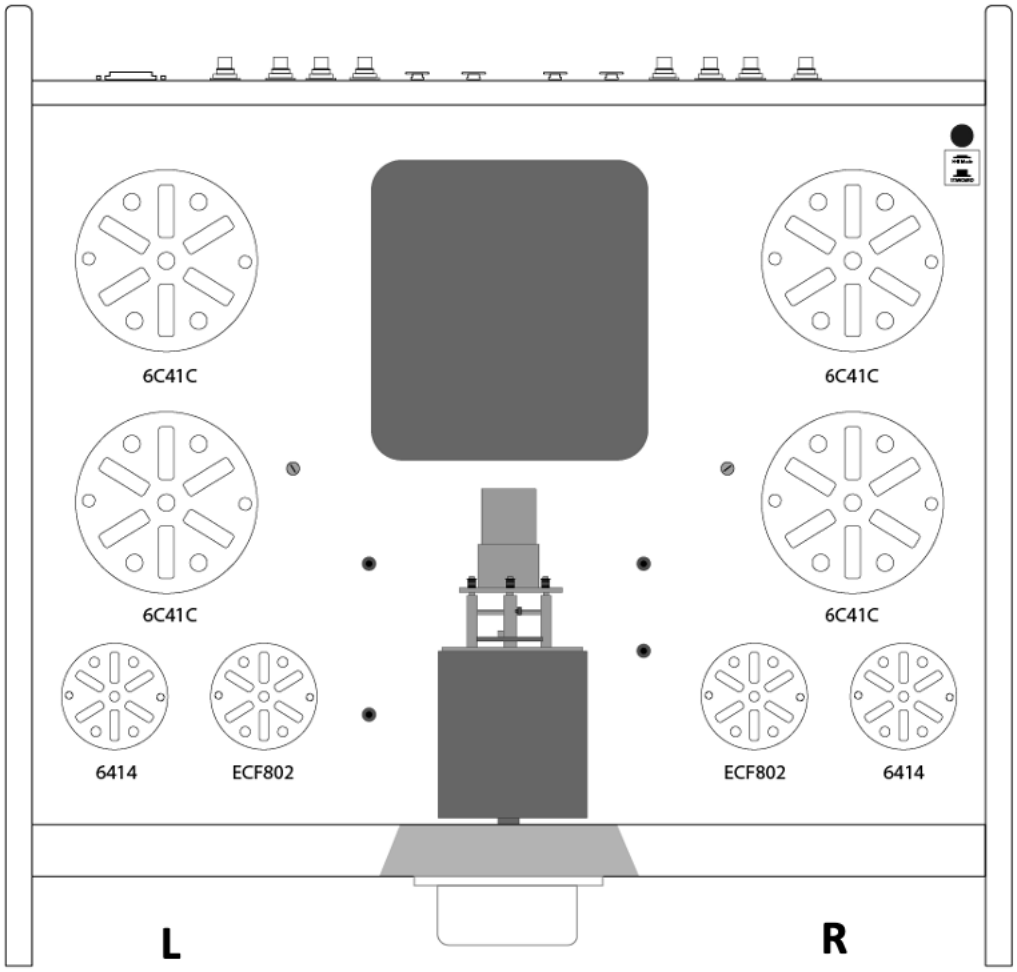


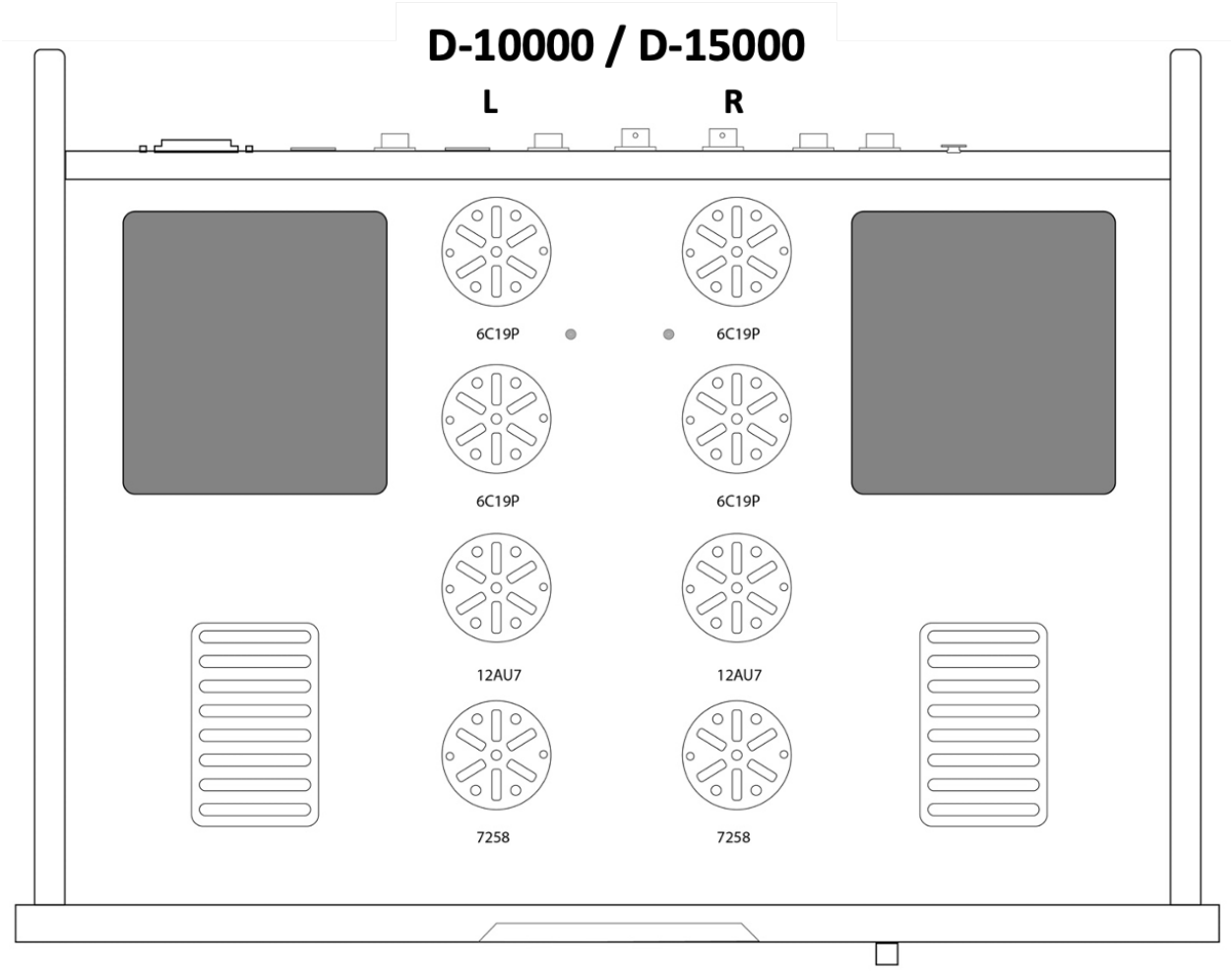
The **H-8000 DHT** is a challenging yet rewarding circuit design because of the nature of DHT-tubes. The H-8000 DHT can be sensitive to AC, RF, EM noises and may require steps to mitigate interference to achieve a quiet circuit. As demonstrated above, on the preamplifier unit the columns of tubes alternate left and right. Since there are two RS242 tubes per channel, on the meter of the affected channel (meters are located on the front of the power supply) a defective or minutely varying tube will cause a leftward deviation by 50% distance from the left tick mark to extreme left on. Power down and switch one RS242 to the column assigned to the opposite channel. If the initially affected meter remains the same and the other meter is also unaffected, repeat the process with the other RS242. The defective tube will affect the meter measuring it. As described above, the failure of a different tube can also cause the meters to behave irregularly, so if switching RS242s does not remedy the issue, the process needs to be continued with the HL2, then 300B, and 5654 tubes until the meters' needles sit properly on or between the tic marks.

The HPA-10000 OTL/OCL and HPA-15000 OTL/OCL Headphone Amplifiers and D-10000, D-15000 OTL/OCL DACs



HPA-15000





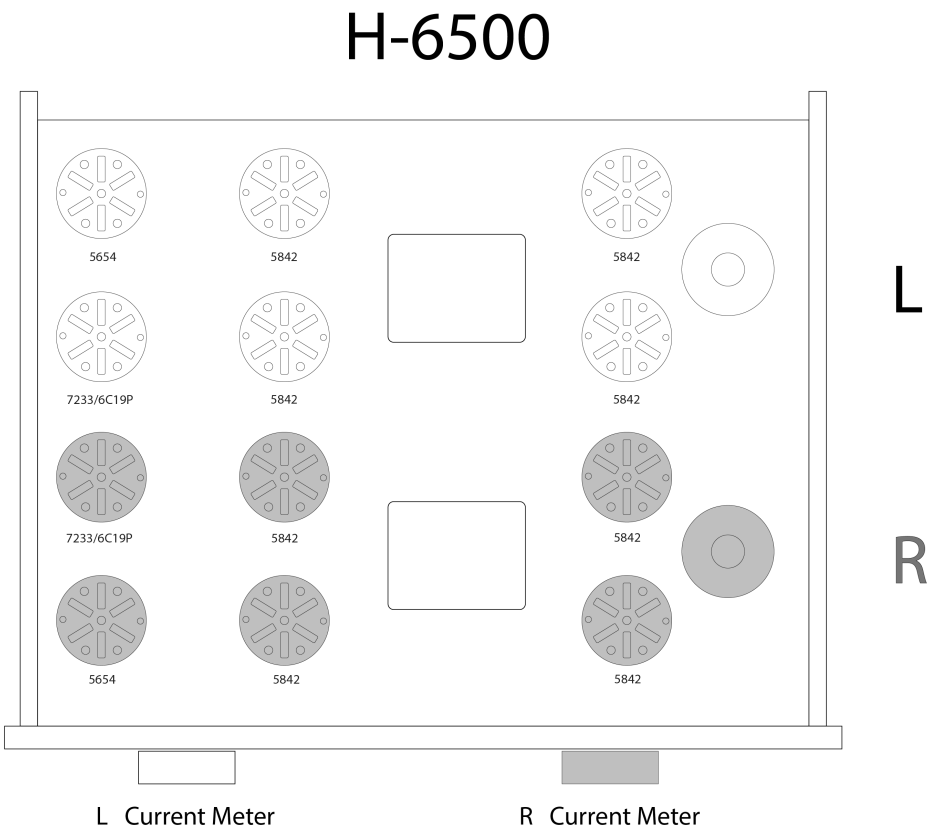
NOTE: First gain stage tube in D-15000 is E80CF not 7258

Above are the tube patterns applicable to the **HPA-10000** and **HPA-15000** as well as the **D-10000** and **D-15000** OTL/OCL devices. All four of these OTL/OCL devices are internal balanced circuits with left and right columns of tubes corresponding to the left and right channels. In the **HPA-10000**, for fine trim adjustment of meter needles that are close to but not on one of or between the tic marks, first power off the unit and on the channel that is most off the mark, switch positions of one pair of 6C19P tubes in the same column and re-trim. If that does not solve the problem, then switch the positions of the pair of tubes in the other column and re-trim. For extreme deviation that is unaffected by trim adjustment, switch one 6C19P at a time to the opposite channel to determine the defective tube. For the **HPA-15000**, the processes are the same, but there is only one pair of 6C41C tubes per channel, so fewer tube switches are required. The processes for the 6C19P tubes in the **D-10000** and **D-15000** are the same as for the 6C41C tubes in the HPA-15000.

The L-10000 OTL/OCL Preamplifier

Please note that the **L-10000** has a dual power supply with the two sides completely isolated from each other. Tube performance in one channel will not affect the other channel in any circumstance.

The H-6500 Phono-preamplifier



Finally, the **H-6500** is not an OTL/OCL design and not complex per se but has an atypical pattern layout and thus a worthy mention. Note the left and right channels mirror each other in a front to back pattern. There is no trim feature, since each tube is set to a fixed value for equivalent performance and longevity. Its meters are only for indication of total current flow. In the case of a meter needle dropping out from between the two tic marks, just switch one 5842 at a time to the opposite channel until the meter deviation affects the opposite channel and replace the defective tube now causing the issue in the channel to which you moved it. Be sure to power off the device each time when switching tubes. When replacing the 5842, please allow the tube to fully cool to prevent tube damage.

Again, this information is just an additional supplement to help in rare situations. Please always refer to your manual and reach out to your regional representative for questions.

If the occasional tube failure, to be expected with all tube gear, is stressful for you or determining which tube failed by using the detailed instructions in the product manual an unacceptable inconvenience, then Allnic, and likely most other vacuum tube equipment, is not your best solution.