

# Testing 300B Valves on a B&K 606 Tester

Neville Roberts

**This article describes how to test 300B valves on a B&K Dyna-Jet Valve Tester Model 606. The technique described should also work with any emission-type valve tester that does not have a UX4 socket and no information on testing 300B valves.**

Having been fortunate enough to acquire a B&K Dyna-Jet Valve Tester Model 606, I wanted to be able to test 300B valves that are used in my Hi-Fi power amplifier, but unfortunately this valve tester does not have the necessary setup data to test these valves. Nor does it have a UX4 socket that is required for plugging in a 300B! This is often the case with more recent valve testers as the UX4 base was associated with older valve types. However, the process described here should work with other emission-type testers that do not test 300Bs.

The first task is to find a way of connecting a 300B valve to the tester. The other job is to work out suitable settings on the tester to enable the 300B to be checked.

As a starting point, a friend of mine has a Heathkit TC-3 valve tester, which is also an emission tester. However, the TC-3 does test 300Bs and has a UX4 socket. This enabled me to test a couple of 300Bs – one that was brand new and one that had been in use for some time, but was still operational. The used 300B had been replaced as it didn't sound quite as good as when new and was probably halfway through its life.

On the TC-3, the new 300B only measured about 70 on the 0-100 scale, but still well in the 'Good' zone. The used 300B showed about 55, which was in the yellow zone, but not in the red 'Bad' area.

Looking at the switch setup data for the TC-3, I noted that there were similar settings for the 300B to those required for a 6L6 beam tetrode. Of course, a 300B valve is a directly heated triode and the 6L6 is an indirectly heated tetrode. Furthermore, a 300B has a 5V heater and a 6L6 has a 6.3V heater. Finally, the 300B has a 4-pin UX4 base and a 6L6 has an octal base (in common with many other valves). However, the operating conditions are close enough for the purposes of testing between the two valves and therefore this was used as a starting point.

It was noted that emission testers check two or three conditions: shorts between the electrodes, cathode emission and possibly grid emission (which is a sign of a leaky or gassed valve). So, to test a directly heated triode, what is required is to connect the heater circuit to the filament supply, the grid to the control grid connection ( $g_1$ ) of a 6L6 and the anode to the anode connection. It was clear that the way forward was to make an adapter to convert an octal base used by a 6L6 to a UX4 used by a 300B.

## Making an Adapter

What was required was a UX4 socket and an octal plug to fit into the valve tester. Of course, UX4 sockets are now easily available as these are required for the increasing number of high-end audio amplifiers that use 300B valves. Also fortunately, octal plugs are still available as they have been widely used as interconnecting plugs.

To make the adapter, connect the UX4 socket to the octal plug as per the following table:

Octal Pin	UX4 Pin
1	n/c
2	1
3	2
4	n/c
5	3
6	n/c
7	4
8	n/c

n/c = No Connection



The UX4 to Octal Adapter

