Replace your dull 6X6

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Aficionados of Rogers radios know that the 6X6 tuning eye tube, found only in Rogers and related radios, is essentially extinct. Few were made, and even fewer survive.

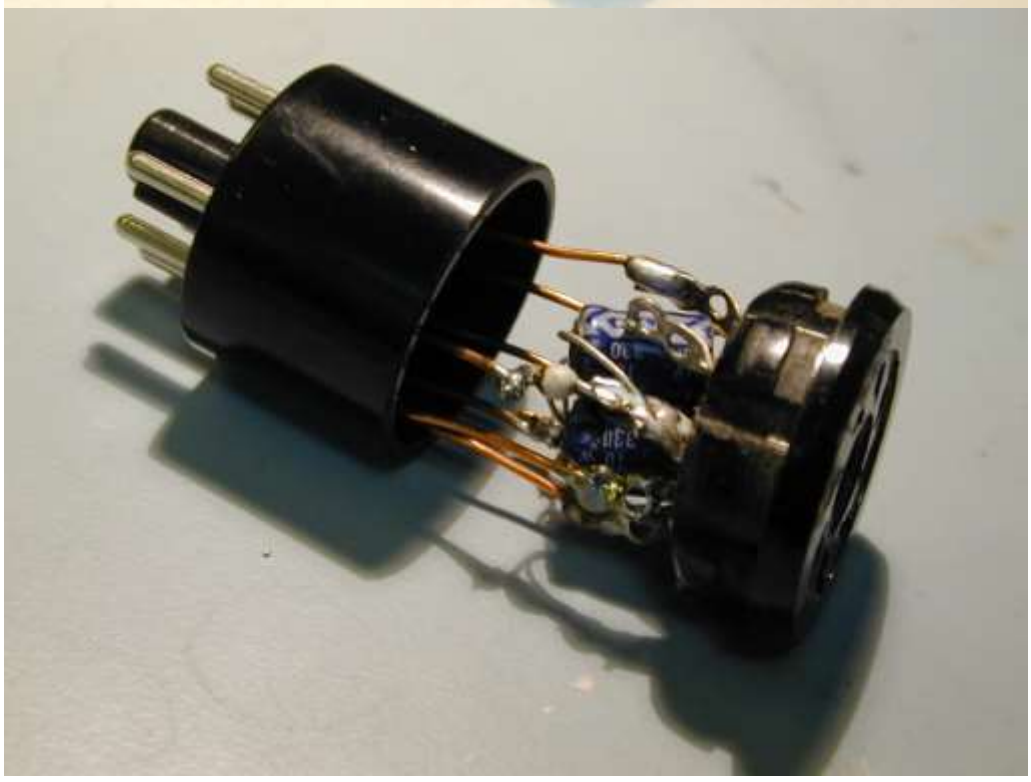
There are other fairly rare octal eye tubes such as the 6CD7/EM34, 6AF7 and 6U5G/EM35 which can not replace the 6X6. There are references that suggest that these tubes have the same base as a 6X6, but this is certainly not true for the 6CD7 and 6AF7, and probably not true for the 6U5G (I do not have one, and references disagree). The difference is that the control grid is exchanged with the target, so replacing a 6X6 with a 6CD7 will probably result in a ruined 6CD7!

There is a tuning eye that is still relatively common because of its wide use in military equipment, the 1629. Unfortunately, it has a 12 volt filament, making it unsuitable as a direct replacement for the 6 volt 6X6. It is, however, possible to devise an adapter that steps the available 6 volt filament supply to 12 volts. This article describes such an adapter. A similar adapter can be made that allows the 1629 to replace the slightly more common 6U5, 6G5, 6N5, 6AB5, and other 6-pin tuning eyes. AES markets a similar adapter, but I have not seen one so I do not know if it works the same way.

The schematic of the adapter is shown in Figure 1, both for a 6X6 adapter and a 6U5 adapter. The 1629 is almost pin-for-pin compatible with the 6X6, so short straight pieces of copper wire connect each pin in the plug straight to each pin in the socket as shown in the photo. Note that the second cathode connection of the 6X6 (pin 6) is not used. On pins 2 and 7, the filament pins, diodes (which themselves tend to be physically strong) are used instead of wires. Adding the two capacitors creates an unusual form of voltage doubler that produces a pulsating DC voltage for the 1629 filament. This form of doubler is used only because it lends itself well to the physical construction of the adapter. The relatively flimsy capacitors fit in the middle of the socket

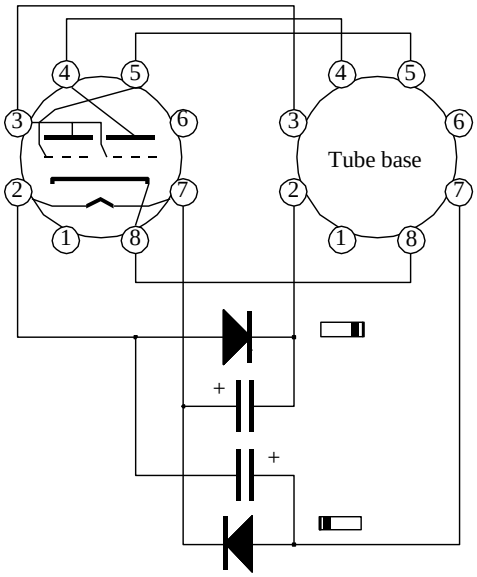
adapter as shown in the photograph. This form of construction results in a very strong, compact module that is very easy to assemble.

The diodes can be any small 1-amp rectifier. The capacitors should be as physically small as possible to fit into the space available. A value of 330uF or 470uF (at 10 volts) produces about the right RMS voltage on the filament. The socket should preferably have no “ears”. A base from a 6-pin or octal tube forms then other half. You should check the space available in the radio receiving the replacement, as there may not enough room to accommodate the additional length.



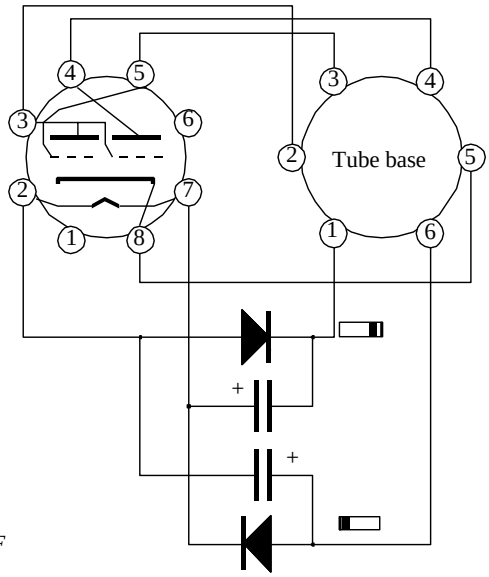
1629

Replaces 6X6



1629

Replaces 6U5/6G5 etc.



Diodes are 1 Amp, low voltage, like 1N4001

Capacitors are 330μF or *470μF 10 Volt*