

## Mu-Stage Tube Evaluation:

Many Triodes and Pentodes have been tested on the mu-stage preamp and results are summarized in below:

### 1. Triode for V1 – Gain Stage

Tube	Brand	Micro phonic	Listen Test	Result
6DJ8	Amperex	Very Good	Excellent	<b>Excellent</b>
6DJ8	RCA or GE	Good	Good	Good
6DJ8	Tektronix selected	Very Good	Excellent	<b>Excellent</b>
6N23P	Russian <b>used**</b>	Bad	Fair	Bad
5670W	Jan	Bad	Good	Fair
6BQ7A	Sylvania	Fair	Fair	Fair
6021	Sylvania	Very Good	Very Good	Very Good
6111	Raytheon	Very Good	Very Good	Very Good
6N18B-V	Russian	Very Good	Very Good	Very Good
5703	Raytheon	TBD	TBD	TBD
12AV7	RCA	TBD	TBD	TBD
ECC88	Made in England	TBD	TBD	TBD
E88CC	Seimens gold pins	Very Good	Excellent	<b>Excellent</b>
6N23P	Russian ccp NOS	Good	Very Good; failed after 2 hrs	<b>Bad! Quality!</b>
6N23P	Russian OTK NOS	Very Good	Very Good	Very Good

TBD – To be determined

### 2. Pentode for V2 – Cathode Follower stage

Tube	Brand	Micro phonic	Output Level	Result
12GN7	RCA – clear top	Very Good	858mV	Very Good
12GN7	Sylvania – black	Very Good	837mV	Very Good
12GN7	Raytheon – gray	Very Good	714mV	Good
12GN7	Philips ECG - old	Poor	711mV	Poor
12BY7	Sylvania - black	Very Good	720mV	Good
12BY7	GE – old	Bad	710mV	Bad
12BY7	RCA – old	Bad	708mV	Bad
12HL7	Sylvania 1, black	Very Good	837mV	Very Good
12HL7	Sylvania 2 – black	Very Good	820mV	Very Good
12HL7	Zenith – Red	Very Good	840mV	Very Good

Note: Output level is measured at 600 ohm with 6111 while all tubes output level at 100k load are 1Vrms. Thus higher the output level means lower the output impedance and better tube for Mu-stage.