

Parts List for ST-70 Mod:

Quantities listed are total required the amplifier.

10/24/01

ST70 Amplifier Circuit Schematic

| Ref Des. | Value | Description | Quantity |
|-----------------|------------|------------------|-----------------------------|
| R16,R17 | 15Ω | Holco H4 | 4 |
| R4 | 49.9Ω | Holco H4 | 2 (Use instead of 47.5Ω) |
| R18,R19 | 100Ω | Roederstein MK3 | 4 |
| R1 | 221Ω | Holco H4 | 2 |
| R5,R12,R15 | 1KΩ | Holco H4 | 6 |
| R3 | 1.21KΩ | Holco H4 | 2 |
| R9,R10 | 2.21KΩ | Holco H4 | 4 |
| R11 (see notes) | 27.4KΩ | Roederstein MK3 | 2 |
| R12 (see notes) | 29.5KΩ | Roederstein MK3 | 2 |
| R7 2W!!! | 33.2KΩ | Roederstein MK8 | 2 |
| R6 (see notes) | 47KΩ | Holco H4 | 2 |
| R2 | 100KΩ | Holco H4 | 2 |
| R20,R21 | 100KΩ | Roederstein MK3 | 3 total (2 x R21, 1 x R20) |
| R13,R14 | 121KΩ | Holco H4 | 4 |
| R8 | 1MΩ | Holco H4 | 2 |
| C1 (see notes) | 22pF-100pF | Polystyrene 600V | 2 each Compensation cap. |
| C2 | 0.1uF/600V | REL RT/RTX | 2 |
| C4,C5 | 0.1uF/600V | REL RTX/TFT | 4 |
| C6 (A/B) | 20uF/630V | Solen | 2 total |
| V1 | 12AX7LPS | Sovtek | 1 |
| V2 | ECC82 | JJ | 2 |
| V3,V4 | EL34EH | Electro-Harmonix | 4 (Matched!!!) |

High Voltage Supply Schematic

| | | | |
|--------------|---------------|------------------|---|
| C1,C2 | 47uF/630V | Solen | 2 total |
| C3,C4 | 100uF/100V | Nichicon, etc | 2 |
| R1,R6 | 4.75K/2W | Roederstein MK8 | 2 |
| R3,R4,R5,R6 | 10K/2W | RV4 Locking pots | 2 Ohmite or eq. Newark Electronics, Sager.. |
| D1 | 1N4004/HF4004 | Diode | 1 Use HF series if avail. |
| V1 See notes | 5AR4/GZ34 | Ruby Tubes | 1 |

Filament Supply Schematic

| | | | | |
|----------------|-------------|----------|---|-----------------------------|
| D1-D5 | 1N4002 | Bridge | 5 | Or 1 + >2A/100PIV Bridge |
| C1 | 4700uF/25V | Nichicon | 1 | |
| C2 | 47uF/25V | Nichicon | 1 | |
| U1 | 7812 | /TO-220 | 1 | 1.5A regulator |
| Heatsink | 5°C/W | max | 1 | |
| Thermal Grease | Radio Shaft | | | Small tube |

Notes:

1. Use of R6 and C1 is not required or recommended for triode only operation.
2. Amplifier may be switched between triode and UL with dpdt – however use of switch may degrade sonics.
3. R11 and R12 should be as close to the recommended values as possible for proper balance.
4. Voltages indicated are with the stock Dyna transformer.
5. Purchase Solen film capacitors directly from Solen, Canada. Save money, see: <http://www.solen.ca>
6. Most other parts may be purchased directly from Michael Percy at: <http://www.bainbridge.net/percyaudio>
7. Schematics are fuzzy when printed so I am including the pcx files as well. Use PhotoImpact Viewer to view and print these. <http://www.ulead.com> Look for the free viewer.
8. Double check the parts list against the schematics for possible omissions..
9. Treat the Holco's with care, do not bend close to body with some sort of strain relief between bending point and body.
10. Nos tubes sound better, but the recommendations above are good sounding.
11. Try Vampire RCA jacks.
12. Try Cardas Speaker jacks or Edison Price Music Posts for speaker outputs.
13. Use a good toggle switch in place of the stock slide switch..