"Parallel SE" Amp Voltage Notes

High voltage HT 704VAC (352-0-352)
Heater – 6.59VAC
Rectifier – 5.27VAC

Loaded
5Y3GT, 6V6S (8K Pr Z), 12AX7, EF86

HT voltages
B+ = 415 VDC at reservoir cap (470 peak at startup)
10k node = 343 VDC (436 peak at startup)
22k node = 280 VDC (369 peak at startup)

6V6S
Plate = 406 VDC
Screen = 340 VDC 560R g2 resistor dropping 3V = 0.005A
Cathode = 19.8 VDC (across 472R measured) = .0419A
.0419A *Ia+Ig2* x 386.2V *a-k* = 16W (minus 5.3mA Ig2 = 14W plate dissipation)

12AX7
Driver Stage (280 HT)
Plate = 182 VDC
Cathode = 1.31 VDC

LFO Stage (343 HT)
Plate = 208 VDC
Cathode = 1.94VDC

EF86
(280 HT)
Plate = 120 VDC
Screen = 91 VDC
Cathode = 1.3 VDC

Loaded
5Y3GT, 2 x 6V6S (4K Pr Z), 12AX7, EF86

HT voltages
B+ = 392 VDC at reservoir cap (470 peak at startup)
10k node = 311 VDC (429 peak at startup)
22k node = 241 VDC (362 peak at startup)

6V6S
Plate = 381 VDC
Screen = 307 VDC 560R g2 resistor dropping 3V = 0.007A (2.8W dis in 5W resistor)
Cathode = 18.9 VDC (across 236R measured) = .08A (.04A per tube)
.04A *Ia+Ig2* x 362.1V *a-k* = 14.4W (minus 7mA Ig2 = 12W plate dissipation)

12AX7
Driver Stage (241 HT)
Plate = 147 VDC
Cathode = 1.27 VDC

LFO Stage (311 HT)
Plate = 181 VDC
Cathode = 1.89VDC

EF86
(241 HT)
Plate = 106 VDC
Screen = 80 VDC
Cathode = 1.11 VDC

Comment – like this set up with Celestion G10

High voltage HT 704VAC (352-0-352)
Heater – 6.59VAC
Rectifier – 5.27VAC

Loaded
5U4G, Sovtek 5881/6L6, 12AX7, EF86

HT Voltages
B+ = 429 (Peak inrush 476)
10k node = 367 (Peak inrush 450)
22k node = 293 (Peak inrush 448)

5881/6L6 (4k Pr Z)
Plate = 420
Screen = 361 (450 peak inrush on a 450V cap) 560R g2 dropping 2V = .00357A (3.6mA) 1.3W
Cathode = 28.4 across 472R = 60mA Ia-Ig2 = 56.59mA x 391.6 = 22.1W

12AX7
(293 HT)
Driver Stage
Plate = 183
Cathode = 1.51

LFO Stage
(367 HT)
Plate = 184
Cathode = 1.77

EF86
(293 HT)
Plate = 126
Screen = 96
Cathode = 1.37

Low Voltage HT 560VAC (280-0-280)
Heater – 6.59VAC
Rectifier – 5.27VAC

Loaded
5Y3GT, 6V6S (8K Pr Z), 12AX7, EF86

HT voltages
B+ = 326 VDC at reservoir cap
10k node = 275 VDC
27k node = 209 VDC

6V6S
Plate = 321 VDC
Screen = 272 VDC 560R g2 resistor dropping 3V = 0.005A
Cathode = 16.4 VDC (across 472R measured) = .0347A
.0347A *Ia+Ig2* x 304.6V *a-k* = 10.6W (minus 5.3mA Ig2 = 9.5W plate dissipation)

12AX7
Driver Stage (209 HT)
Plate = 127 VDC
Cathode = 1.23 VDC

LFO Stage (343 HT)
Plate = 155 VDC
Cathode = 1.75 VDC

EF86
(209 HT)
Plate = 92 VDC
Screen = 69 VDC
Cathode = 0.99 VDC

Loaded
5Y3GT, 2 x 6V6S (4K Pr Z), 12AX7, EF86

HT voltages
B+ = 311 VDC at reservoir cap
10k node = 245 VDC
27k node = 189 VDC

6V6S
Plate = 303 VDC
Screen = 244 VDC 560R g2 resistor dropping 3V = 0.0018A
Cathode = 14.6 VDC (across 236R measured) = .0618A (.031A per tube)
.031A *Ia+Ig2* x 288.4V *a-k* = 8.9W (minus 2mA Ig2 = 8.4W plate dissipation)

12AX7
Driver Stage (189 HT)
Plate = 113 VDC
Cathode = 1.06 VDC

LFO Stage (245 HT)
Plate = 139 VDC
Cathode = 1.57 VDC

EF86
(189 HT)
Plate = 84 VDC
Screen = 62 VDC
Cathode = 0.87 VDC

Low Voltage HT 560VAC (280-0-280)
Heater – 6.59VAC
Rectifier – 5.27VAC

Loaded
5Y3GT, 6F6G (8K Pr Z), 12AX7, EF86

HT voltages
B+ = 327 VDC at reservoir cap
10k node = 239 VDC
27k node = 187 VDC

6F6G (Sylvania – coke bottle shape US Made)
Plate = 326 VDC
Screen = 238 VDC 560R g2 resistor dropping 1V = 0.0017A
Cathode = 15.8 VDC (across 472R measured) = .0334A
.033A *Ia+Ig2* x 310.3 *a-k* = 10.2W (minus 5.3mA Ig2 = 9.7W plate dissipation)
12AX7
Driver Stage (187 HT)
Plate = 111 VDC
Cathode = 1.0 VDC

LFO Stage (238 HT)
Plate = 138 VDC
Cathode = 1.6 VDC

EF86
(187 HT)
Plate = 83 VDC
Screen = 62 VDC
Cathode = 0.9 VDC

Comment – An old Sylvania coke-bottle 6F6G I found in an antique shop – getter looks good still. The tube makes the power output quite a bit lower than any 6V6 combination and there is a sweet clean harmonic distortion

Loaded
5U4GB, 6L6 (4K Pr Z), 12AX7, EF86

HT voltages
B+ = 333 VDC at reservoir cap
10k node = 285 VDC
27k node = 222 VDC

6L6G
Plate = 326 VDC
Screen = 283 VDC 560R g2 resistor dropping 2V = 0.004A
Cathode = 20.4 VDC (across 472R measured) = .0432A
.0432A *Ia+Ig2* x 305.6V *a-k* = 13.2W (minus 4mA Ig2 = 13.0W plate dissipation)

12AX7
Driver Stage (222 HT)
Plate = 134 VDC
Cathode = 1.21 VDC

LFO Stage (285 HT)
Plate = 166 VDC
Cathode = 1.78 VDC

EF86
(222 HT)
Plate = 98 VDC
Screen = 73 VDC
Cathode = 1.02 VDC

Comment: Best sounding trem with this configuration

Low Voltage HT 560VAC (280-0-280)
Heater – 6.59VAC
Rectifier – 5.27VAC

Loaded
5U4GB, 6V6S (8K Pr Z), 12AX7, EF86

HT voltages
B+ = 339 VDC at reservoir cap
10k node = 289 VDC
27k node = 223 VDC

6V6S
Plate = 338 VDC
Screen = 288 VDC 560R g2 resistor dropping 1V = 0.0017A
Cathode = 17.7 VDC (across 472R measured) = .0375A
.0375A *Ia+Ig2* x 320.3V *a-k* = 12W (minus 5.3mA Ig2 = 11.5W plate dissipation)

12AX7
Driver Stage (223 HT)
Plate = 134 VDC
Cathode = 1.21 VDC

LFO Stage (285 HT)
Plate = 166 VDC
Cathode = 1.78 VDC

EF86
(223 HT)
Plate = 99 VDC
Screen = 73 VDC
Cathode = 1.02 VDC
Comment - Like this set-up with the Celestion G10

Loaded
5U4GB, 2 x 6V6S (4K Pr Z), 12AX7, EF86

HT voltages
B+ = 326 VDC at reservoir cap
10k node = 258 VDC
27k node = 200 VDC

6V6S (each ~)
Plate = 319 VDC
Screen = 257 VDC 560R g2 resistor dropping 1V = 0.0017A
Cathode = 15.6 VDC (across 236R measured) = .0661A (2 x 6V6S)
.033A *Ia+Ig2* x 303.4V *a-k* = 10W (minus 5.3mA Ig2 = 9.5W plate dissipation)

12AX7
Driver Stage (200 HT)
Plate = 119 VDC
Cathode = 1.1 VDC

LFO Stage (258 HT)
Plate = 147 VDC
Cathode = 1.64 VDC

EF86
(200 HT)
Plate = 89 VDC
Screen = 66 VDC
Cathode = 0.92 VDC

Comment - Like this set-up with the Celestion G10