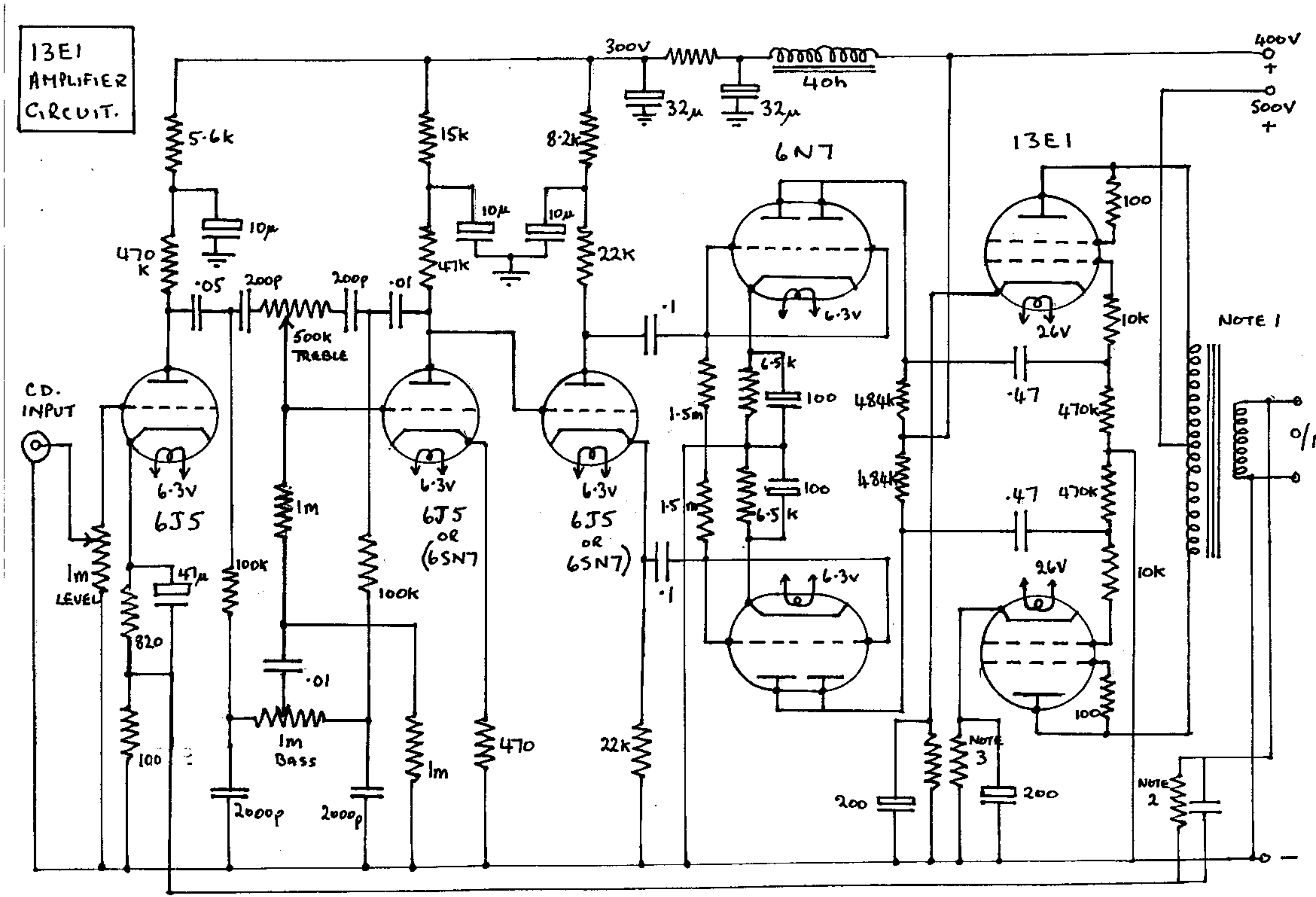
13E1
AMPLIFIER
CIRCUIT.
C.D.
INPUT
1m
LEVEL
6·3v
6J5
470
K
5·6k
10μ
·05
200p
500k
TREBLE
200p
·01
15k
47k
10μ
10μ
8·2k
22K
300V
32μ
32μ
40h
400V
+
500V
+
1m
·01
1m
Bass
2000p
2000p
100k
100k
820
100
47μ
6J5
or
(6SN7
6J5
or
6SN7)
470
1m
22k
·1
·1
6N7
6·3v
1·5m
1·5m
6·5k
6·5k
100
100
484k
484k
·47
·47
470k
470k
10k
10k
100
100
13E1
26V
26V
NOTE 1
NOTE 2
NOTE 3
200
200
O/P
–

ALL TRIODE STEREO AMPLIFIER

USING 13EI AS OUTPUT VALVES.

INPUT: STANDARD CD DECK.

OUTPUT: VARIABLE UP TO 52 WATTS PER CHANNEL.

CIRCUIT DESCRIPTION

The input amplifier (6J5) is RC coupled to the audio amplifier (6J5 or half 6SN7) via a tone control network, the audio amplifier is directly connected to the phase splitter (6J5 or other half of 6SN7) which is RC coupled to the output driver (paralled 6N7), the 6N7 provides enough drive for the push pull class AB triode connected 13E1's in whatever mode they are run.

VALVE REQUIREMENTS (stereo)

6 x 6J5, 4 x 6N7, 4 x 13E1 or 2 x 6J5, 2 x 6SN7, 4 x 13E1.

Information on Transformer Impedance, Power Output and Power Requirements are listed below.

Cathode Resistor Value Per Valve	Output Transformer Impedance Anode - Anode	Power Output	Anode Current Per Valve (No Signal)
780 ohms	3.6 K ohms	52 watts	110 mA
1000 ohms	4.0 K ohms	43 watts	90 mA
1160 ohms	4.0 K ohms	33 watts	82 mA
1380 ohms	4.6 K ohms	30 watts	70 mA
1600 ohms	5.5 K ohms	28 watts	60 mA

The above information was compiled from extensive tests on the 13E1, for the purpose of obtaining the above data a tone source sine wave of 1 kilocycle at a level of 1 volt provided the input, the Power Output was measured across an 8 ohm load using an oscilloscope and analogue meter. Measurement was taken at a point just before any distortion to the sine wave occured. Our amplifier was constructed to provide a power output of 33 watts.

Notes on Circuit Diagram.

The circuit diagram refers to the Left Channel only, the Right Channel being identical. The Power supply diagram is not included but a copy of the unstabilised one used by Billington Export is available on request.

Refer to the following circuit diagram:

Note 1. Use the table above to determine the impedance of the output transformer.

Note 2. If Negative Feedback is required experiment with resistors and low value capacitors. Negative Feedback is essential when using large speakers as damping is required to reduce the back EMF produced by the speaker coils.

Note 3. Refer to the above table for Cathode Resistor values.

Note 4. For stereo amplifier use 10K but this may have to be varied if instability is apparant.

WARNING. THE 13E1 RUNS VERY HOT, USE EXTREME CARE WHEN HANDLING.

VALUE TYPE 13E1 TRIODE CONNECTED.