

Line amplifier

Gain: $12.5 \times 22 \text{ dB}$

Bandwidth: $> 1 \text{ MHz}$

Input impedance : $66\text{ k}\Omega$

Output $\rightarrow$: $< 1\Omega$

Current consumption: 80mA (60mA)

Distortion $2V_{rms}$ at 1kHz , 20kHz : $< 0.001\%$

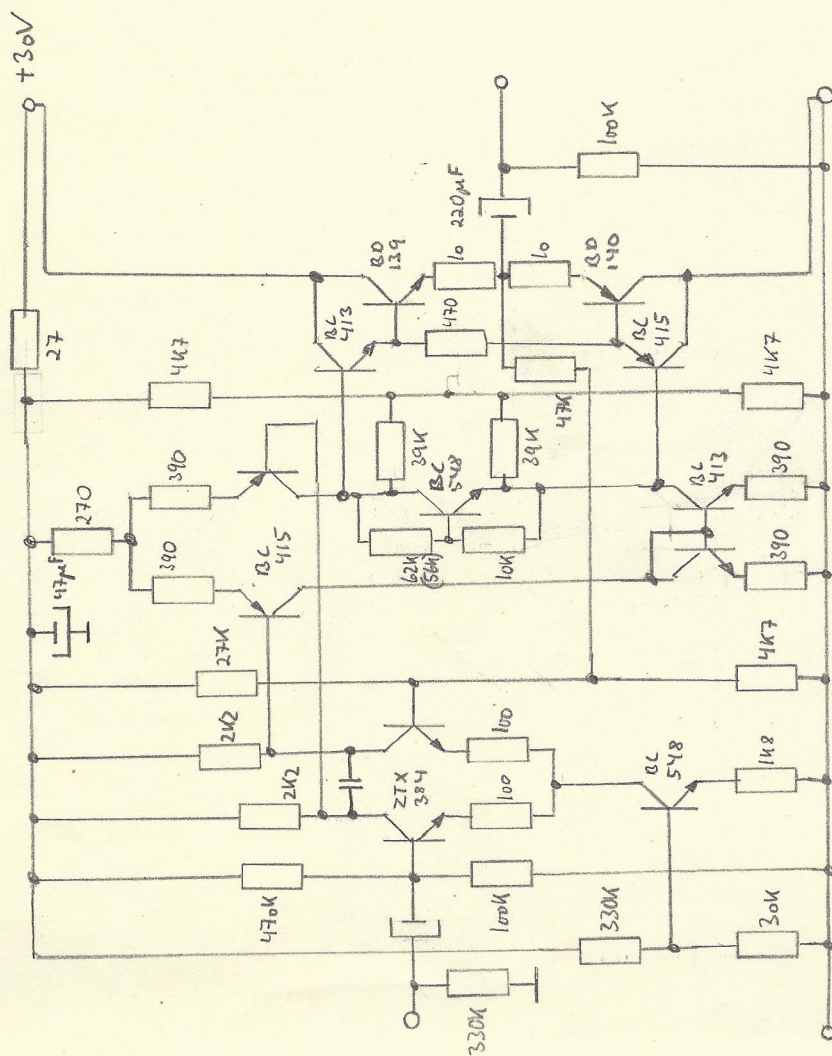
SMPTE-1M -u — : < 0.003%

$$DIM \propto 2V_{p\Omega} : < 0.003\%$$

DIFF: Freq 2Vp : $< 0.005\%$

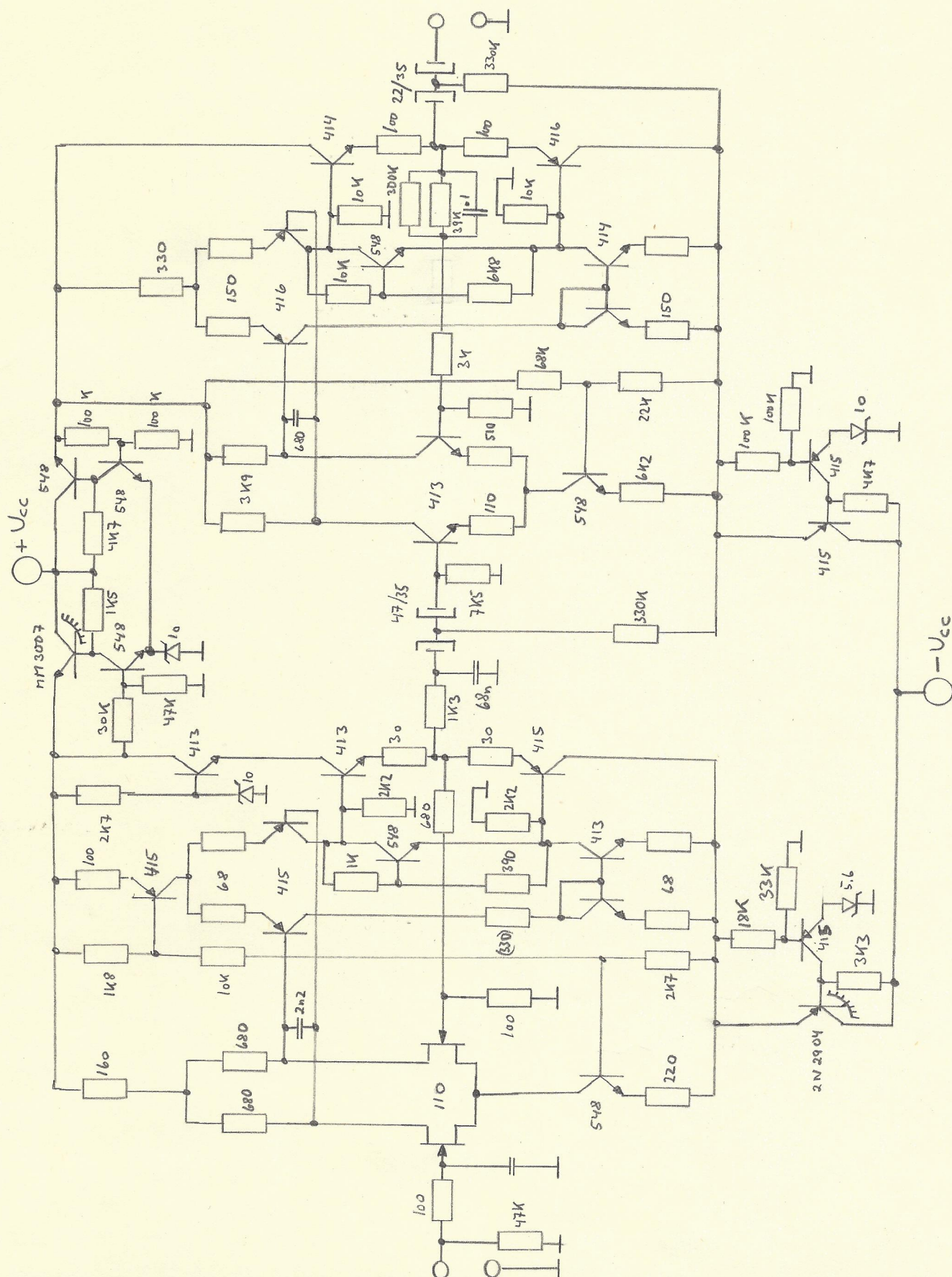
Limit of measurement

Dette linjetrinn er benyttet i første prototype, 1/2-78 til juli 78.



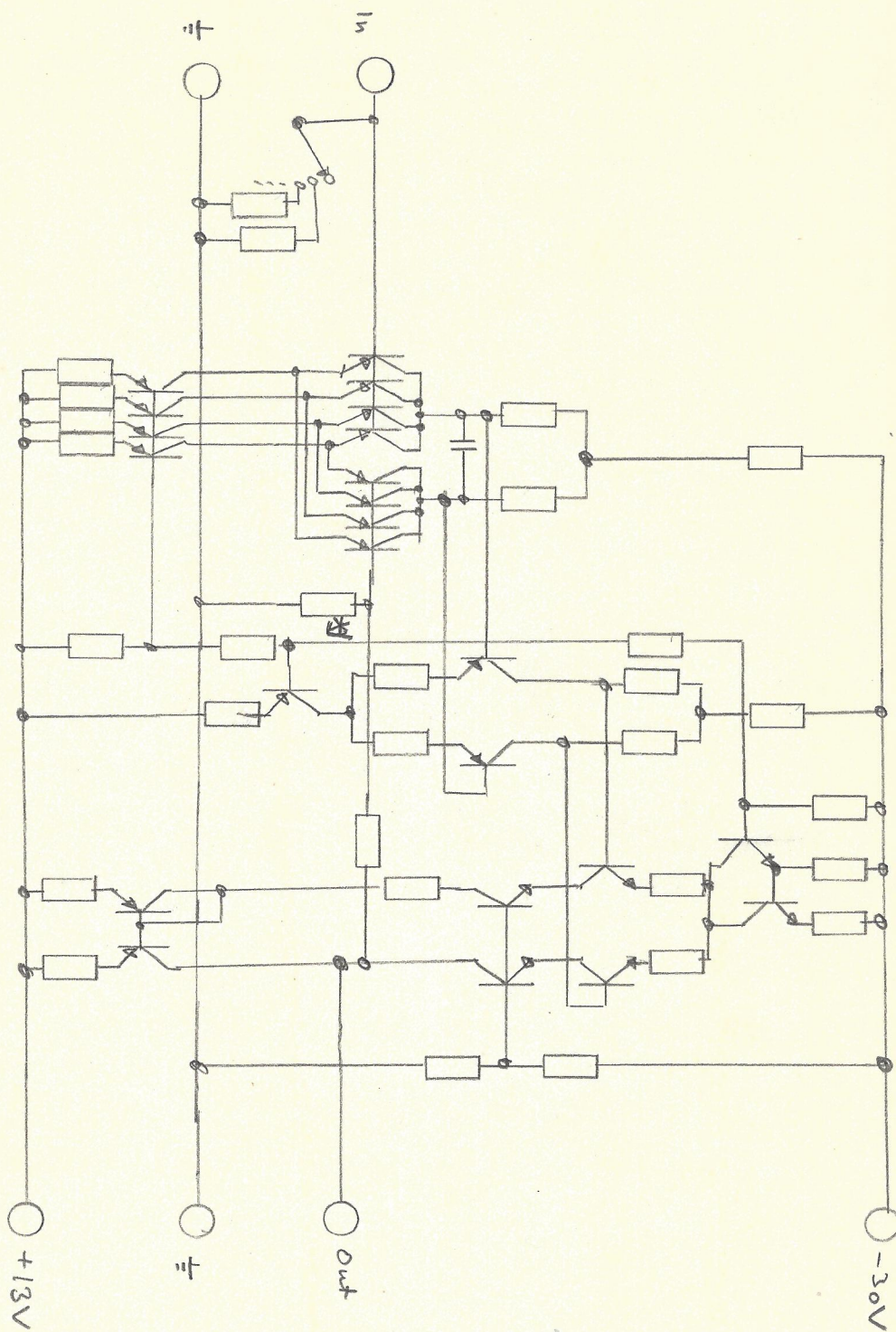
Phono equalization amplifier

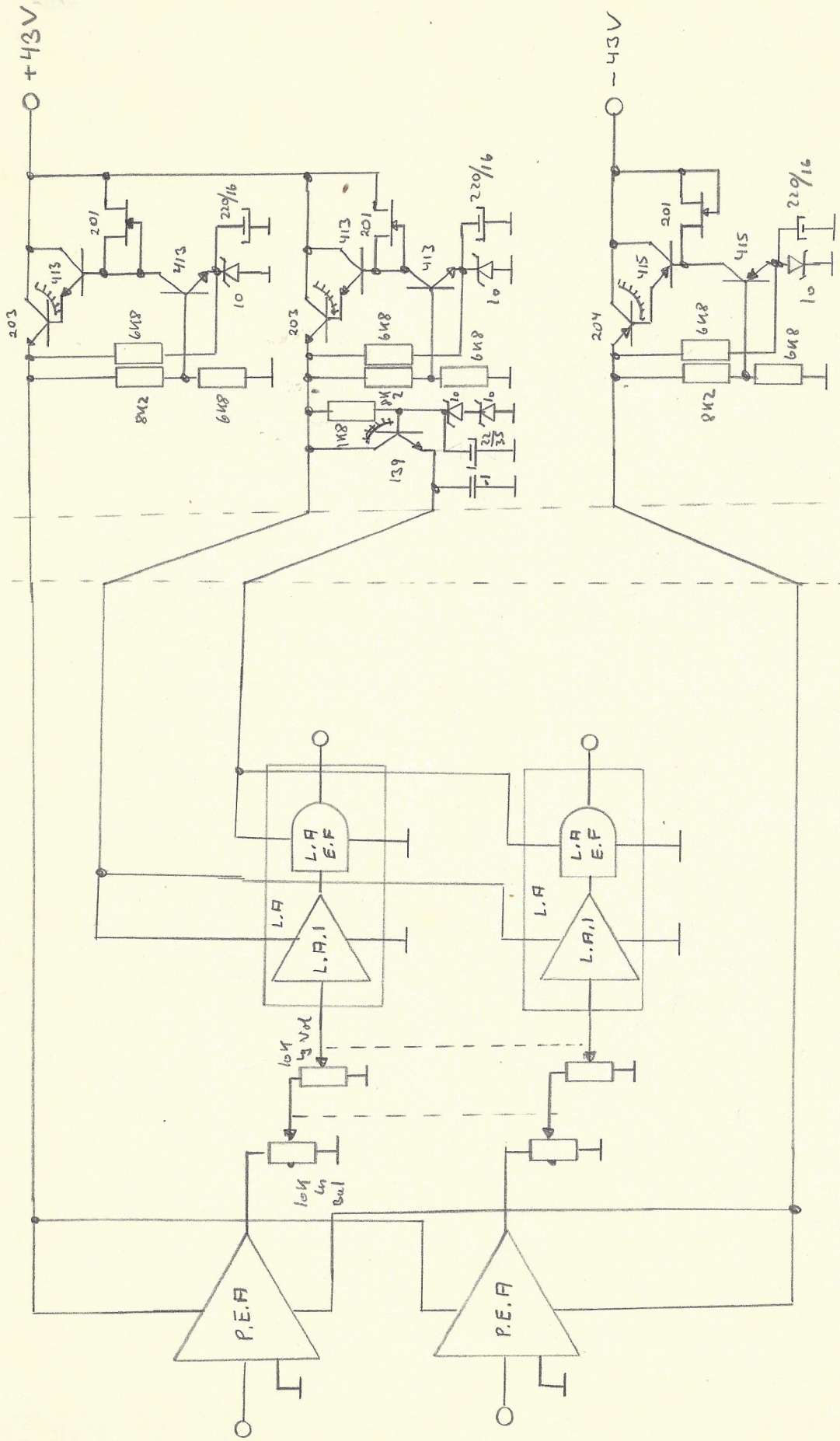
TS 140378



MOVING-COIL HEAD AMPLIFIER

x) se^mc-gain select - audio





Phono equalization amplifier

Gesucht:

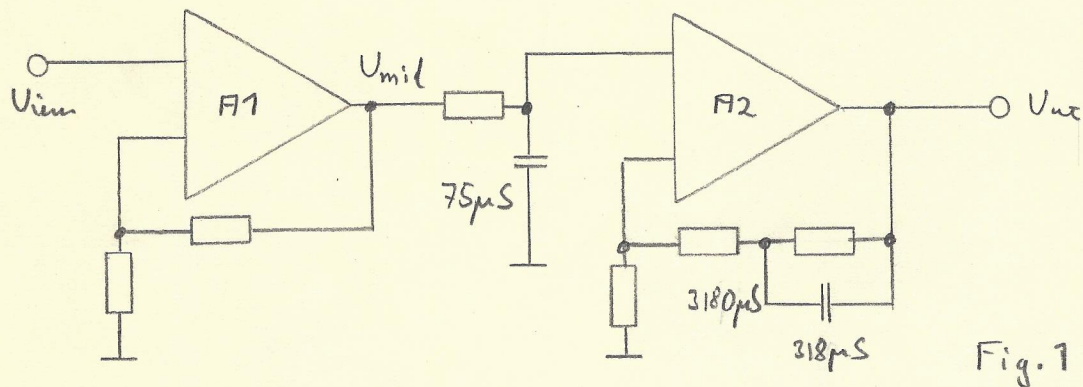


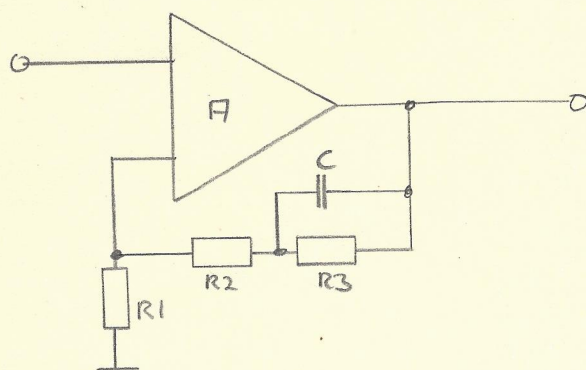
Fig. 1

Nominele inn: $U_{in} = 2mV$

U_{mid} : $15mV$ $A1 \approx 7.5x$

U_{out} : $100mV$ $A2 \approx 7.6x$

Active RIAA-equalization for 3180 μ s pole and 318 μ s zero



Tidskonstantene τ_p og τ_z kan vises å være:

$$\tau_p = \frac{CR_3(R_1(1+A)+R_2)}{R_1(1+A)+R_2+R_3} \quad \text{som skal være } 3180\mu\text{s}$$

$$\tau_z = \frac{CR_3(R_1+R_2)}{R_1+R_2+R_3} \quad \text{som skal være } 318\mu\text{s}$$

Kretsens forsterkning blir en funksjon av ω og τ h:

$$|A_t|(\omega) = A \cdot \sqrt{\frac{(R_1+R_2+R_3)^2 + (CR_3(R_1+R_2)\omega)^2}{(R_1(1+A)+R_2+R_3)^2 + (\omega CR_3((A+1)R_1+R_2))^2}}$$

Det er bestemt følgende verdier for komponentene i tilbakemeldingsnettverket:

$$R_1 = 510\Omega$$

$$R_2 = 3k\Omega$$

$$R_3 = 34500\Omega \quad (39k/1300k)$$

$$C = 0.1\mu\text{F}$$

Det kan da vises at forsterkningen må være:

$$A = \frac{\tau_p(R_2+R_3) - CR_3 \cdot R_2}{CR_3 \cdot R_1 - \tau_p \cdot R_1} - 1 = \underline{\underline{789.85 \times}}$$

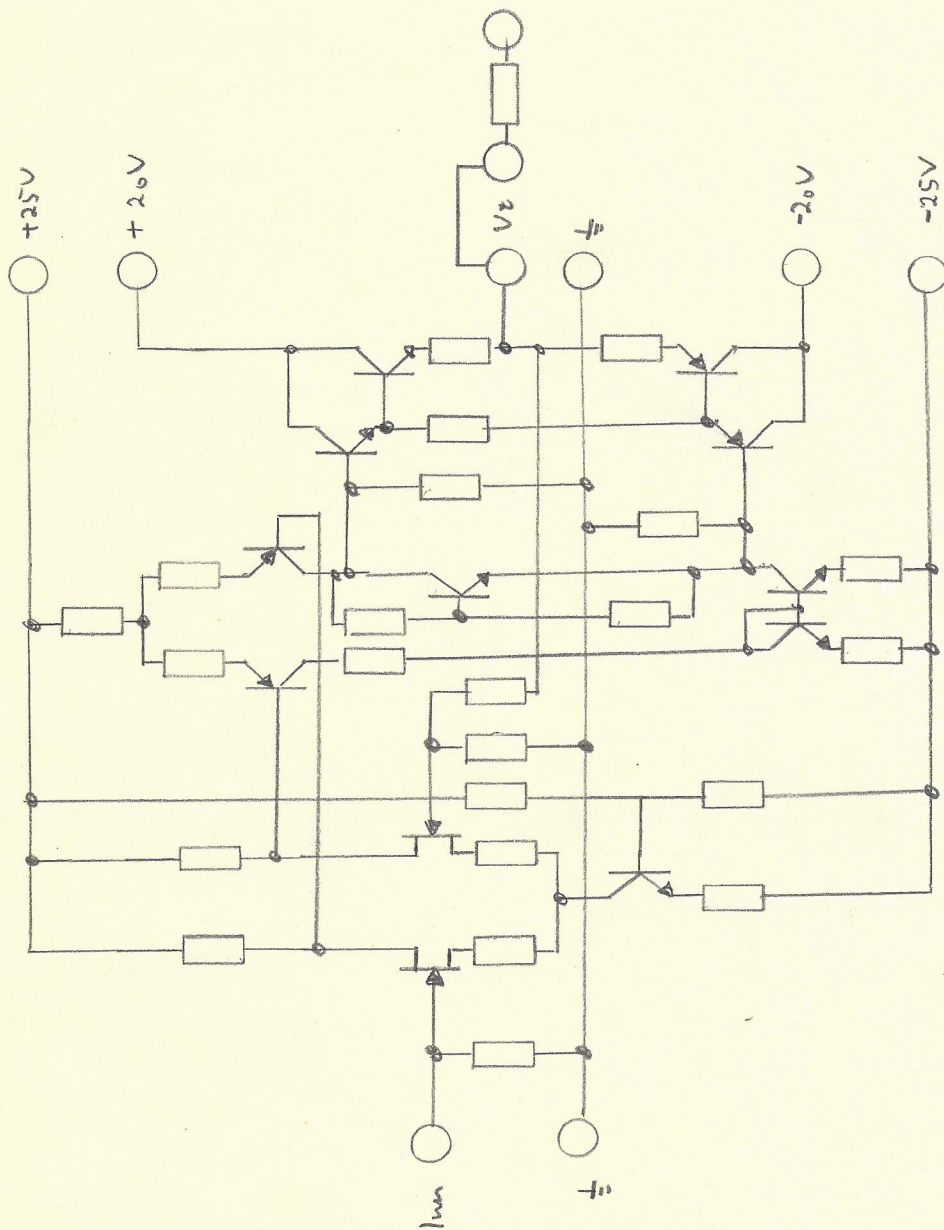
For et avvik på maks 0.05dB gis maks avvik på tidskonstanten τ_p lik 0.5%.

Dette gir flg. resultater for forsterkningen:

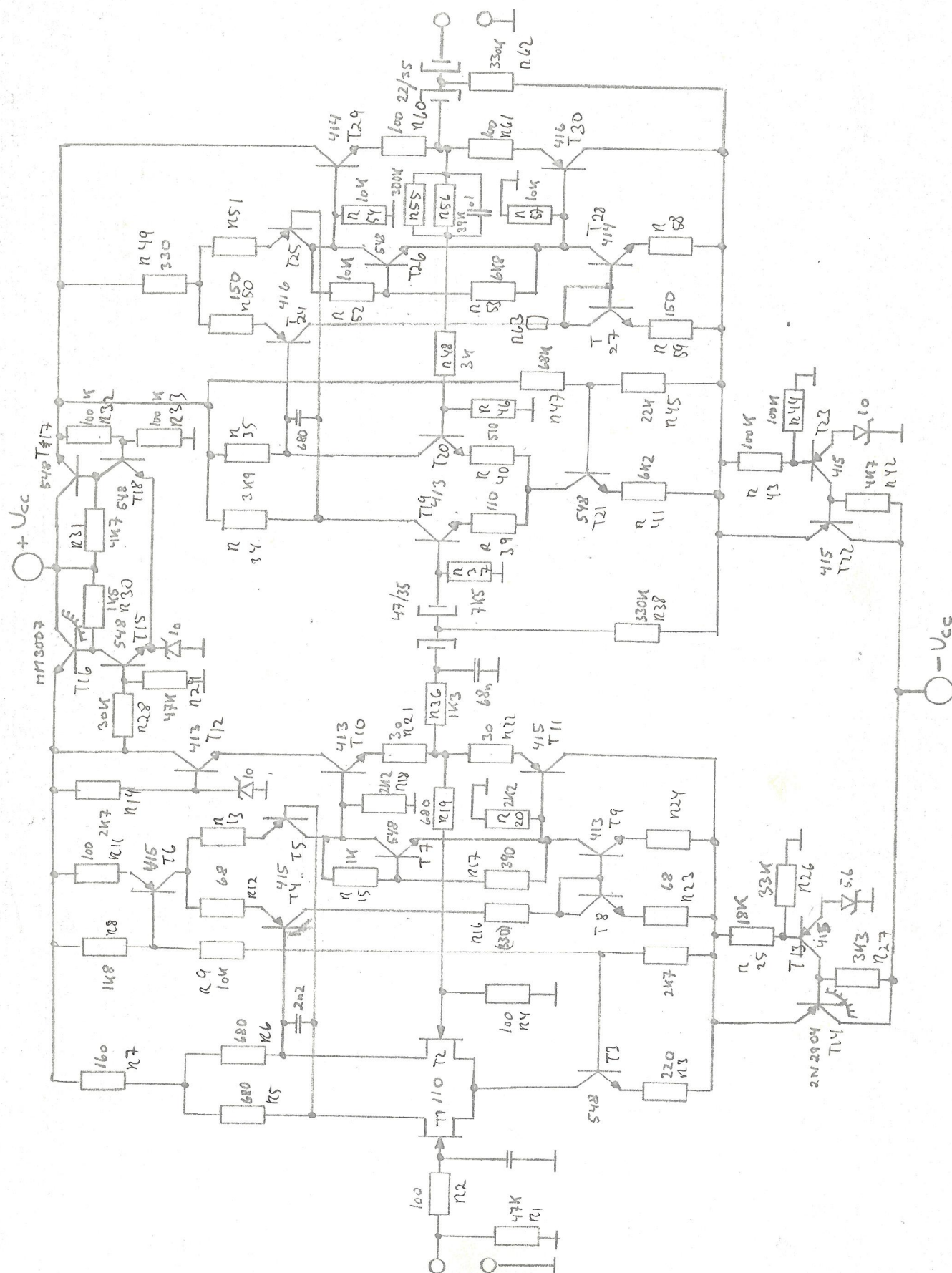
Avvik τ_p	τ_p	A	%
+0.5%	3196 μ s	844.3x	6.9%
0	3180 μ s	789.9x	6.12%
-0.5%	3164 μ s	741.5x	

Line amplifier

TS240578



Komponentenummerierung



Oversicht over arbeidspunten

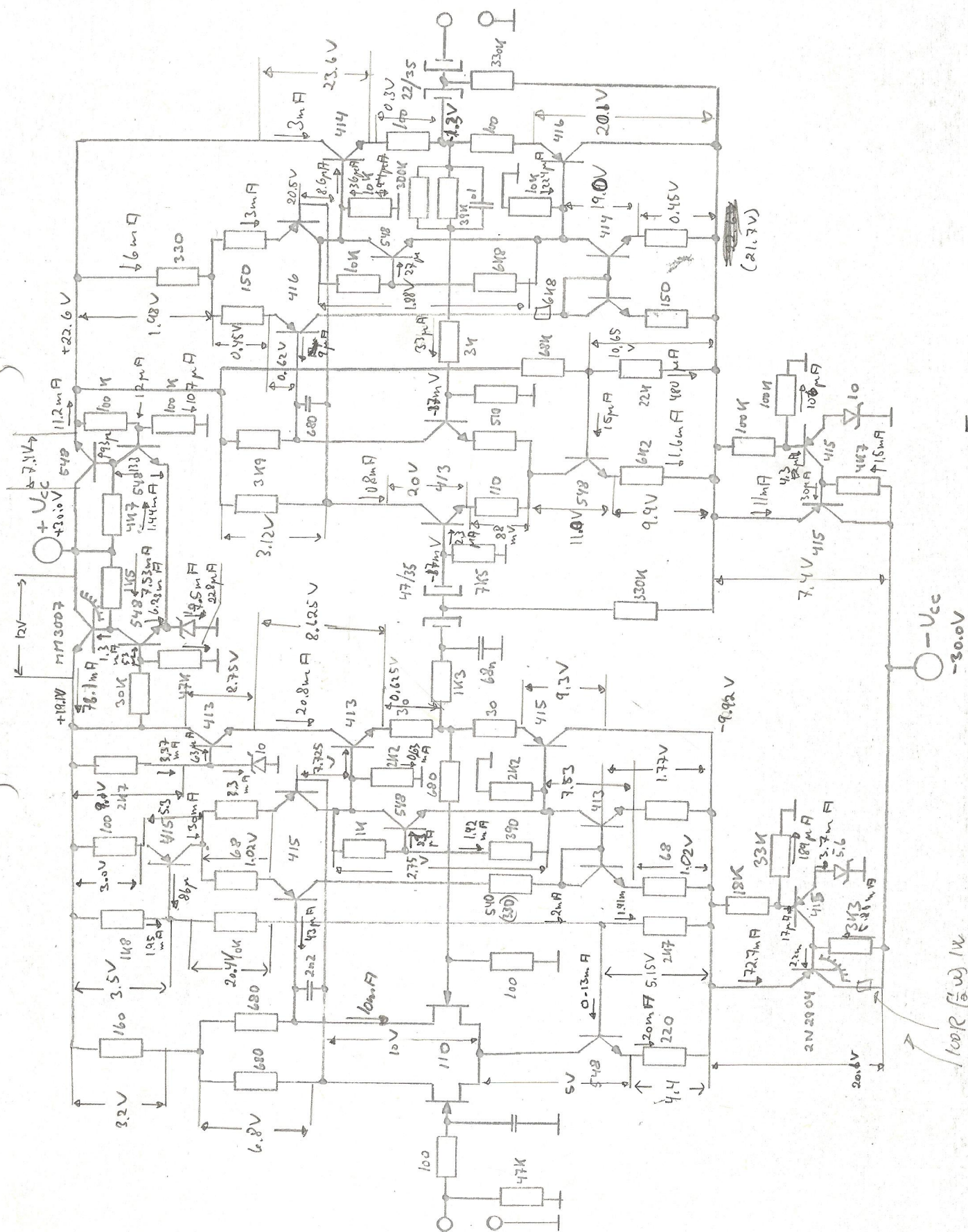
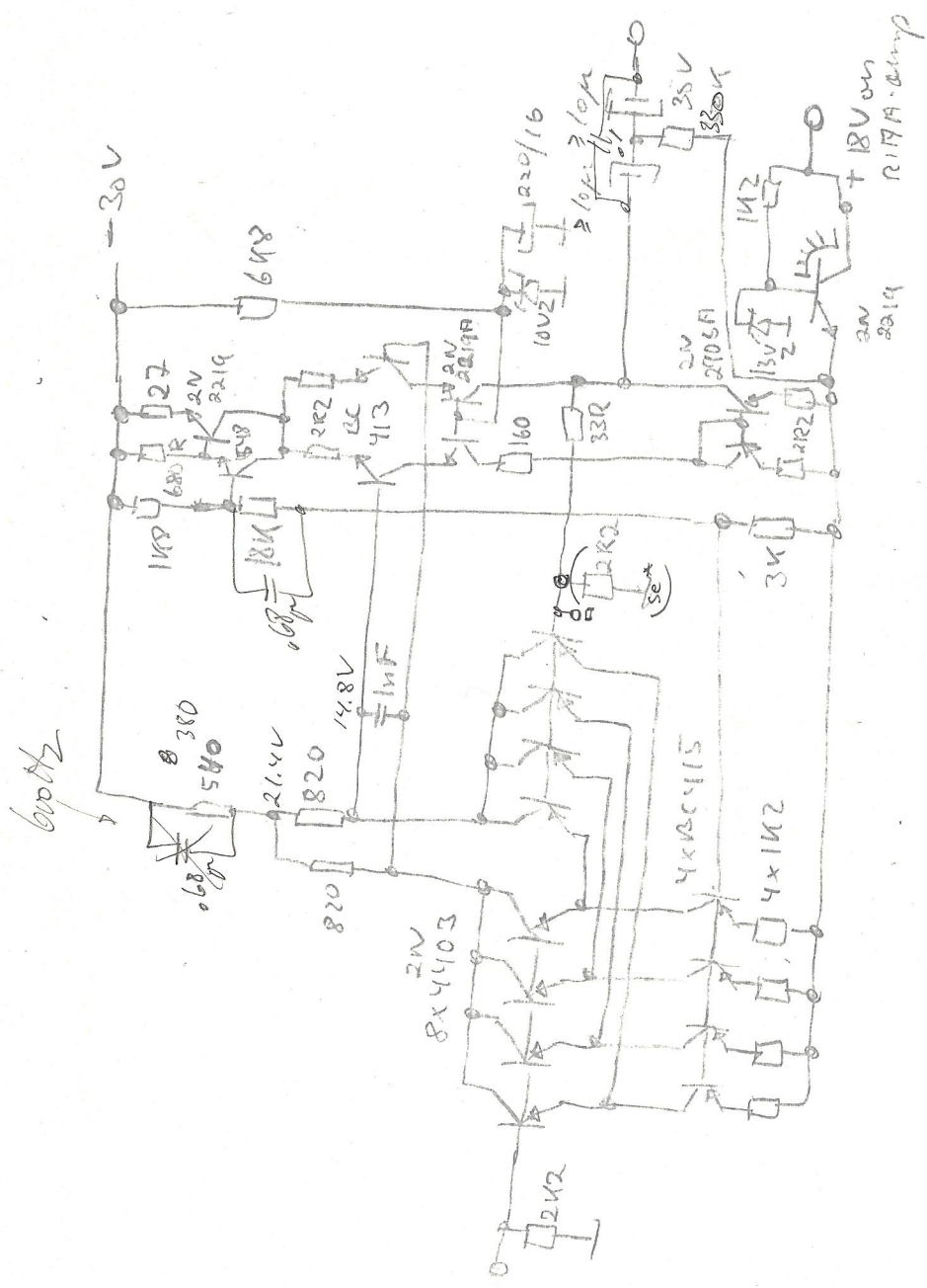


Fig. 2

TS 1/4-78
 Head-amplifier - moving coil p.u. Gain 24dB/16x

Current : 100mA
 Supply : -30V + 18V
 Power : 4.8W



*Se shjehua for "MC-FMP GAIN SELECTOR"
 "AUDIO"

4K 1895
 48°C/W