

Tubes

Vintage Glass

Recently I acquired some old Dutch books on electronics which contained the following tube amp schematics:

1. Single-ended 4W amplifier

EF94, EL90

This 4W amp (Fig. 1) has a rather primitive type of tone control. "Laag" means bass, "hoog" treble. The amp was used to amplify the signal of a turntable with a crystal cartridge.¹

Push-pull amplifiers

2. "Fidelio" amplifier

(Fig. 2, Table 1)

ECC83, ECC85, 2 × EL84, 5Y3GT

Power output specified as maximum 10W².

3. 70W versterker

(Fig. 3, Table 2) 2 ×

EF86, ECC40, 4 ×

FIGURE 1: 4W AMPLIFIER.

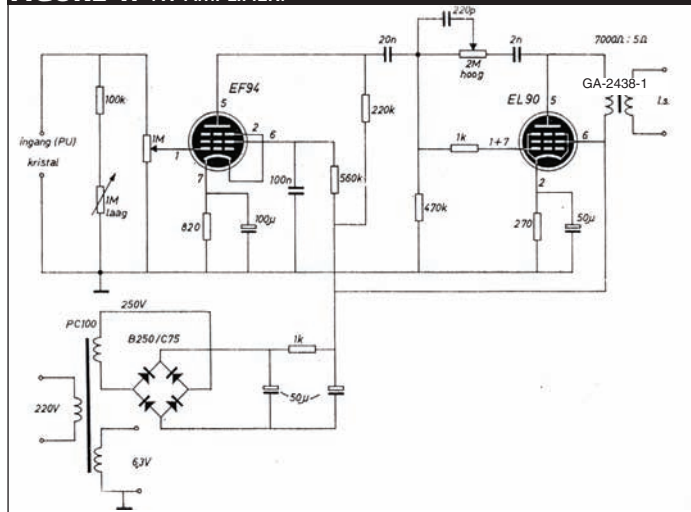


FIGURE 2: 4W FIDELIO AMPLIFIER.

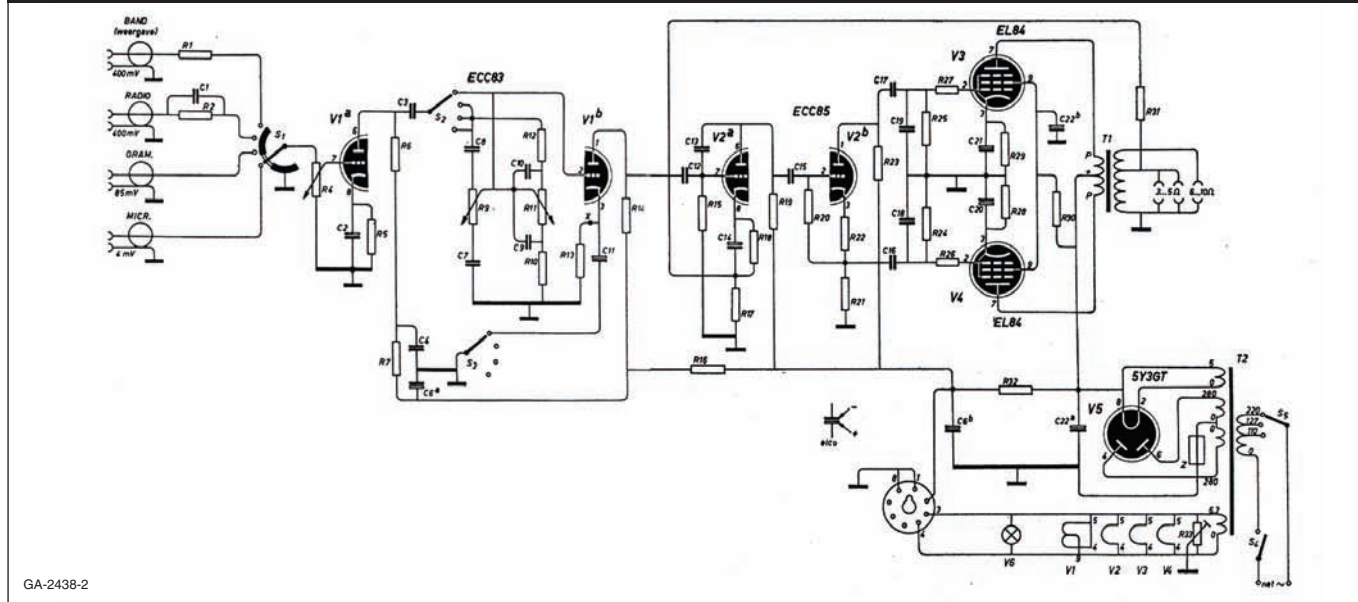


TABLE 1

Schakeling en onderdelen van de fidelio

C1	polystyreen cond. 100pF (Amroh/Mial)
C2-11-14-20-21	elektrol. cond. 100μF/15V (Amroh)
C3-4-12-15	polyester cond. 0.022μF (Amroh)
C6a-b-22a-b	elektrol. cond. 32 + 32μF (Amroh)
C7	polystyreen cond. 5000pF (Amroh/Mial)
C8	polystyreen cond. 250pF (Amroh/Mial)
C9	polystyreen cond. 0.01μF (Amroh/Mial)
C10	polystyreen cond. 1000pF (Amroh/Mial)
C13	polystyreen cond. 50pF (Amroh/Mial)
C16-17	polyester cond. 0.047μF (Amroh)
C18-19	polystyreen cond. 150pF (Amroh/Mial)
Alle	½W weerstanden "Vitrohm"
R1-2	820kΩ ½W
R4	potmeter 220kΩ (Amroh nr. 54.835)
R5	5.6kΩ ½W
R6	22kΩ 1W
R7-14	47kΩ 1W
R9	potmeter 220kΩ m. schak. (Amroh nr. 54.925)
R10	15kΩ ½W
R11	potmeter 1MΩ (Amroh nr. 54.827)
R12	270kΩ ½W
R13	3.9kΩ ½W
R15-20	1MΩ ½W
R16	33kΩ 1W
R17	680Ω ½W
R18-22	2.2kΩ ½W
R19	220kΩ 1W
R21-23	100kΩ 1W
R24-25	470kΩ ½W
R26-27	1kΩ ½W
R28-29	270Ω 1W
R30	2.7kΩ ½W
R31	3.9kΩ ½W
R32	12kΩ 1W
R33	ontbrompotm. 100Ω (Amroh)
S1-2-3	kiesschak. (Amroh 48.086 of 48.118)
S4	netschak. Op R9
S5	spanningsoverzetter (Amroh)
T1	bal. Uitg. Transf. U73U (Amroh)
T2	voed. Transf. P141NN (Amroh)
V1	buis ECC83 (RFT/Amroh)
V2	buis ECC85 (RFT/Amroh)
V3-4	buis EL84 (RFT/Amroh)
V5	buis 5Y3GT
V6	schaalverl. Lampje 6V/0.1A
Z	smeltveilig. 200mA

EL34, 2 × AX50 Power output specified as 70W at 1.2% THD, line input sensitivity 290mV, microphone input sensitivity 1.8mV.³

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REFERENCES

1. From the company *Amroh* (Muiden, The Netherlands).
2. From the book "*Jongens Radio*" (Boys' Radio), which was published in 17 editions between 1948 and 1971 (author M. van Geelkerken).
3. From the company *Philips* (Eindhoven, The Netherlands).

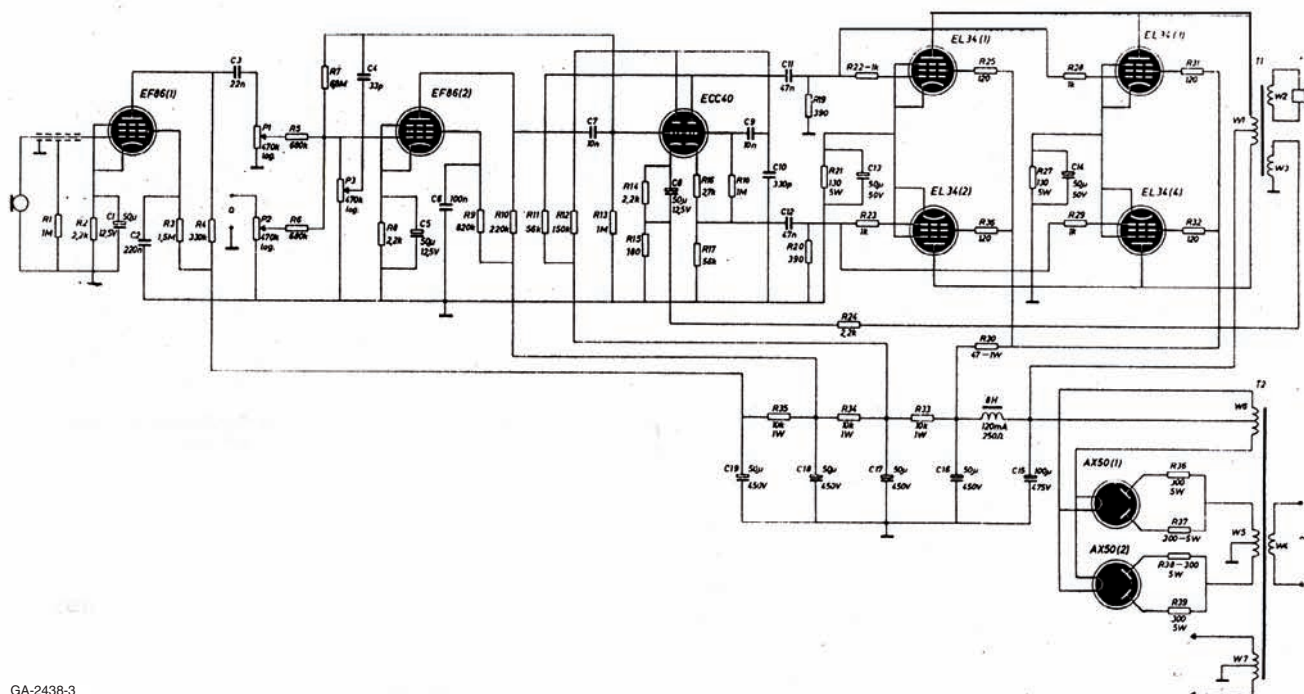
TABLE 2

70W versterker (vervolg)

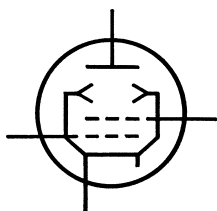
C1-5-8	50μF 12.5V elco koker
C2	0.22μF papier
C3	0.022μF papier
C4	33pF peram.
C6	0.1μF papier
C7-9	0.01μF papier
C10	330pF keram.
C11-12	0.047μF papier
C13-14	50μF 50V elco koker
C15	100μF 475V elco (zie tekst)
C16-17-18-19	50μF 450V elco
	(alle weerstanden 10% 0.5W, tenzij anders aangegeven)
R1-13-18	1MΩ
R2-8-14-24	2.2kΩ
R3	1.5MΩ

R4	330kΩ
R5-6	680kΩ
R7	6.8MΩ
R9	820kΩ
R10	220kΩ
R11-17	56kΩ
R12	150kΩ
R15	180kΩ
R16	2.7kΩ
R19-20	390kΩ
R21-27	130kΩ 5W
R22-23-28-29	1kΩ
R25-26	120Ω
R30	47Ω 1W
R31-32	120Ω
R33-34-35	10kΩ 1W
R36-37-38-39	300Ω 5W
P1-2-3	470kΩ potm. Log.
T-1-2	zie tekst
L1	8H 120mA 250Ω

FIGURE 3: 70W AMPLIFIER.



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