

REVOX A77

Is it quite useful to describe the REVOX A77? 25 years ago, each recording studio contained two or three of them; to make copies or to generate echoes or to delay the signal sent to the reverberations with plate or springs. Several accessories appeared progressively: plates and cores CCIR or NAB and a kit to use loops of magnetic tape

It left then a model 38 and 19 cm/s CCIR, generalized in the studios and, of course, most interesting, there is a model with 4 tracks stereo (1/4 of track) and a model Dolby B; to avoid both! For our use, model 19-38 is the only interesting one. It is necessary to point out that the Revox A77 is a "dual track" and not a true stereo machine (the difference is in the precise width of each track and the distance between these tracks). It is the same, and it's there that difficulties can arise, for the head alignment which is a dual track and not single track; a small central band must thus not be unobtrusive and undesirable deaf noises can appear at the time a band already has been recorded or magnetized by a continuous-current field.

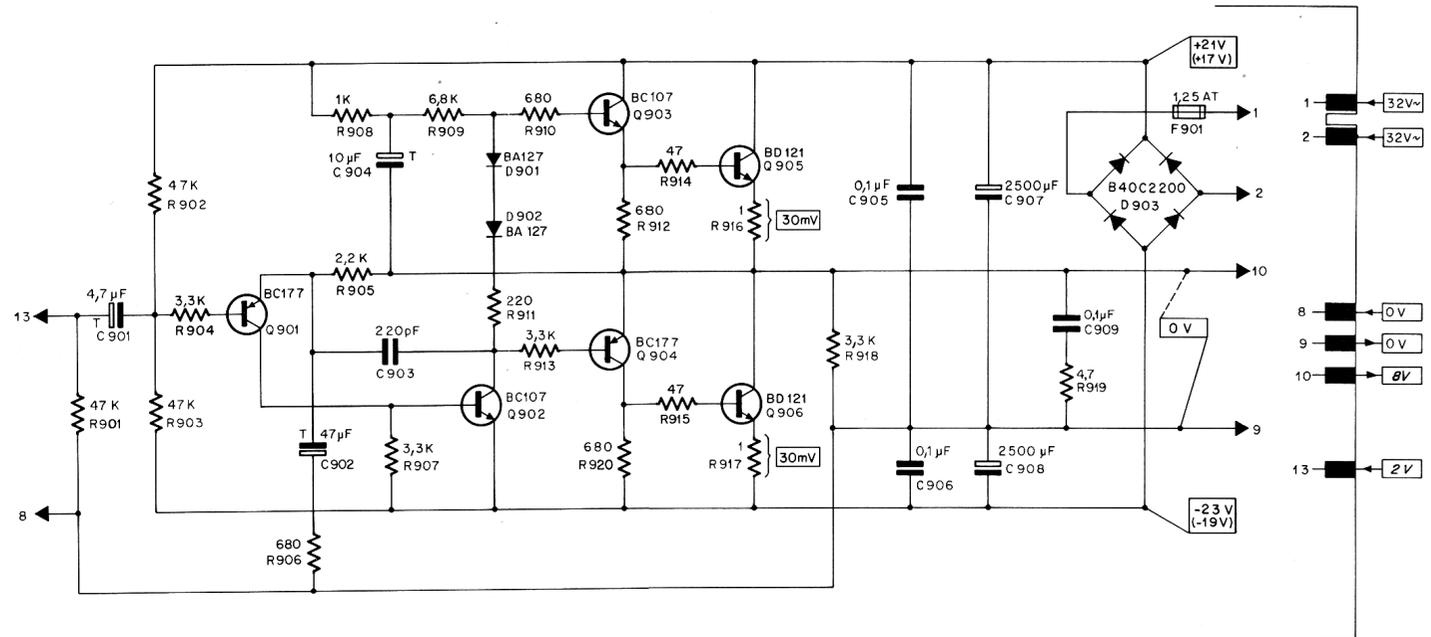
Lastly, do not miss the end of this page: if you are owner of an A77, you will find there, in pdf format, all the electronic diagrams necessary to its repair.

DESIGN FEATURES

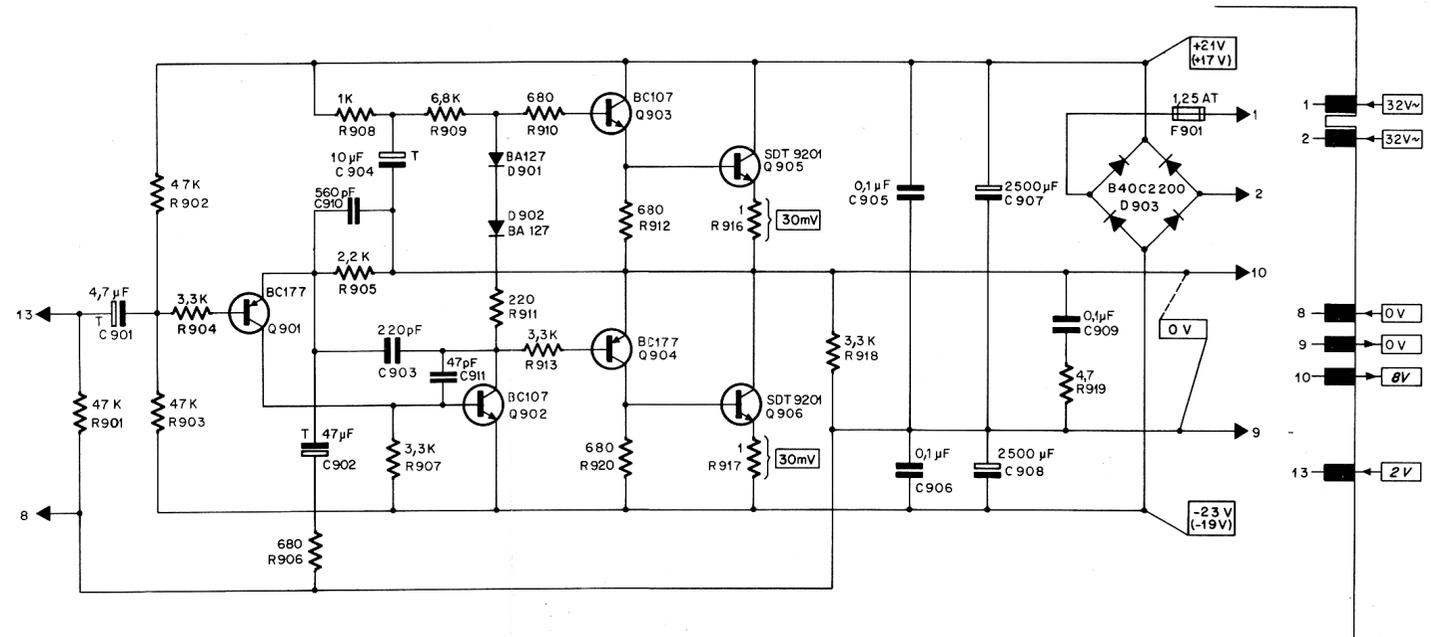
General principle:	mechanism with 3 motors, all electronically controlled	
Tape speeds:	19 cm/s (7 1/2 in/s) 9,5 cm/s (3 3/4 in/s)	±0,2 %
Wow and Flutter:	« ± 0,08 % @ 19 cm/s « ± 0,1 % @ 9,5 cm/s	
Drift:	<= 0,2%	
Diameter of the reels:	maximum 26,5 cm (10 1/2 in)	
Position of operation:	Horizontal or vertical	
Amplifiers:	equipped entirely with transistors with silicon structure double diffusion	
Response curve recording-reading:	30 Hz @ 20 kHz +2/-3 dB 50 Hz @ 15 kHz ± 1 , 5 dB 30 Hz @ 16 kHz +2/-3 dB 50 Hz @ 10 kHz ± 1,5 dB	à 19 cm/s à 9,5 cm/s
Harmonic distortion: (maximum level @ 1 kHz)	<= 2 % @ 19 cm/s <= 3 % @ 9,5 cm/s	
Corrections:	recording NAB, commutable reading NAB or IEC	
Signal ratio/noise: (balanced with filter DC IF)	>= 58 dB @ 19 cm/s >= 56 dB @ 9,5 cm/s	
Retreat of cross talk (@ 1 kHz):	>= 60 dB, mono >= 45 dB, stereo	
Oscillation frequency:	120 kHz, push-pull oscillator	
Inputs per channel:	cinch and jack DIN 5 poles cinch	Microphones commutable LO/HI LOW: 50 @ 600 ohms 0,15 mV HIGH: 100 kohms 2,5 mV RADIO: 33 kohms 2,5 mV AUX: 1 Mohms 35 mV
Outputs per channel:	DIN 5 poles cinch jack	OUTPUT max. 2,5 V / Ri 600 ohms RADIO max. 1,2 V / Ri 2,5 kohms PHONES ear-phones 200 to 600 ohms
remote Control:	all remotely controllable functions by impulses	
Amplifiers of loudspeakers:	plug-in, delivered on request	
Power of exit: (load 8 ohms distortion <= 1 %)	musical power 20 W (10 W per channel) in sinusoidal mode 16 W (8 W per channel)	
Output impedance:	4 to 16 ohms	

Built-in loudspeakers (model bag):	2 loudspeakers per channel (disconnected automatically at the time of the connection of external loudspeakers)
Component: (with the amplifiers of loudspeakers)	54 transistors, 32 diodes, 4 rectifiers with silicon, 1 photo resistor, 4 relays
Power supply:	stabilized
Tensions of the network:	110, 130, 150, 220, 240, 250 V-, 50 and 60 Hz
Consumption:	70 W without the amplifiers of loudspeakers between 70 and 100 W with the amplifiers
Fuses:	0,5 A for 220 to 250 V 1,0 A for 110 to 150 V
Weight:	Approximately 15 kg

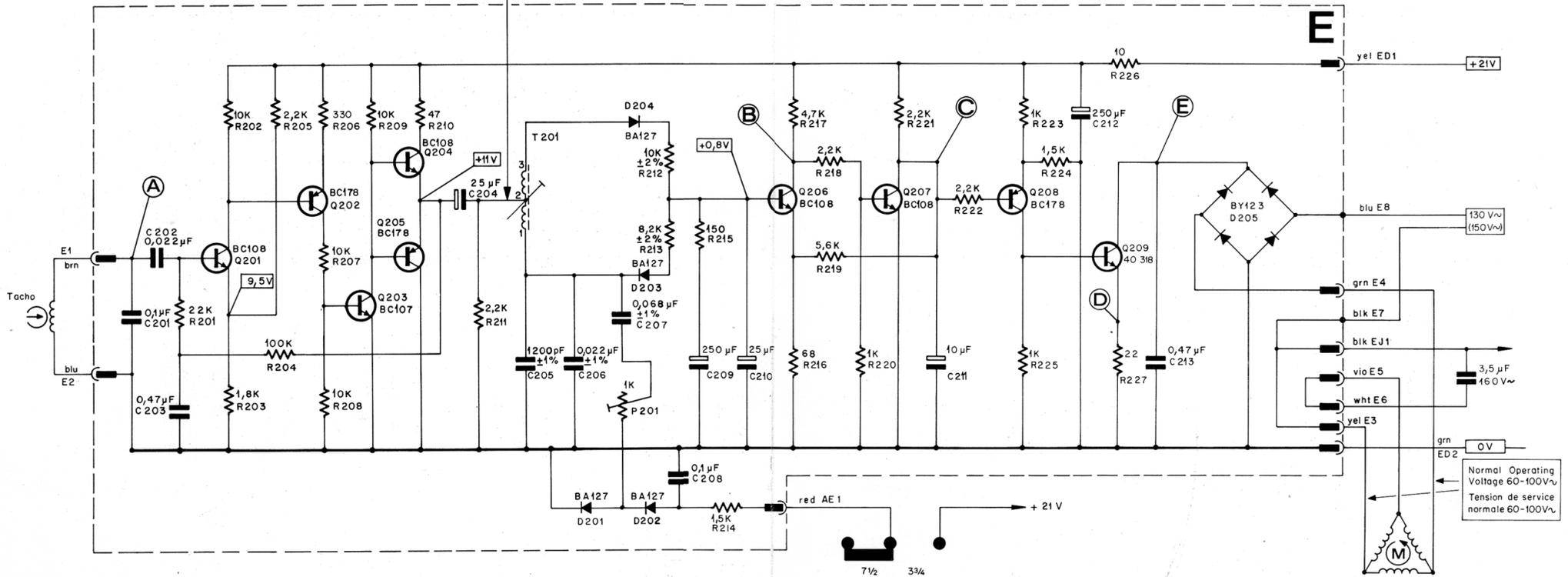
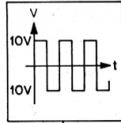
Loudspeaker Amplifier with
Final Transistors BD 121
Amplificateur de haut-parleur
avec transistors de puissance BD 121

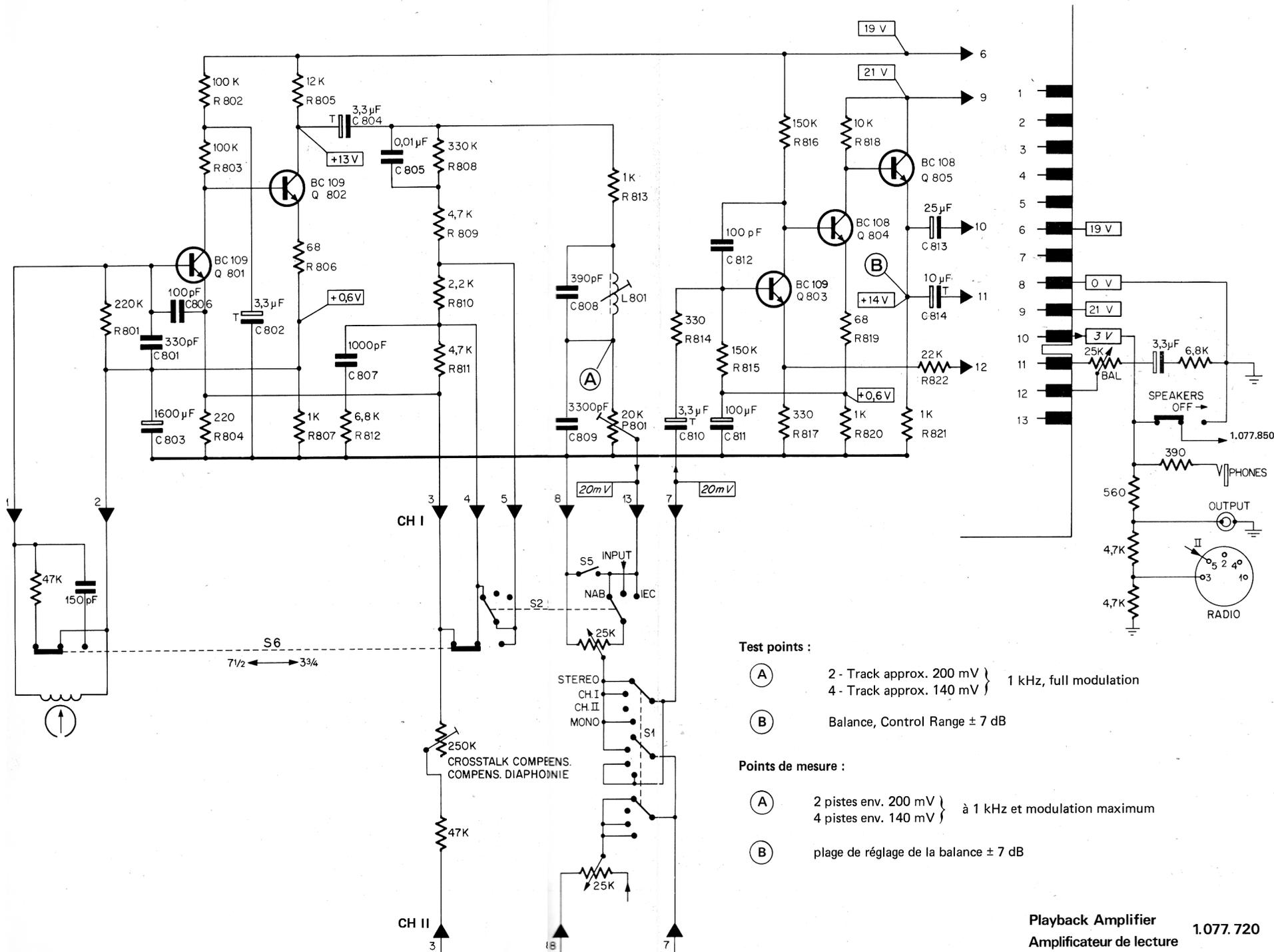


Loudspeaker Amplifier with
Final Transistors SDT 9201
Amplificateur de haut-parleur
avec transistors de puissance SDT 9201



Régulation de vitesse - 1.077.725





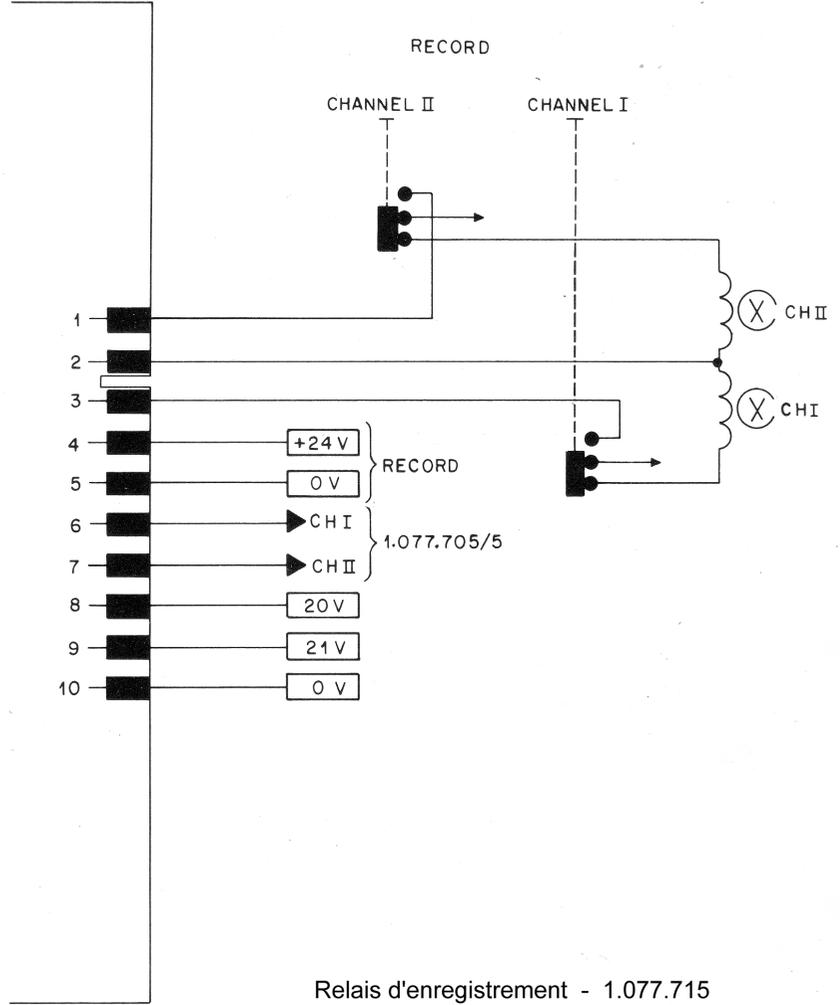
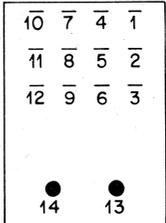
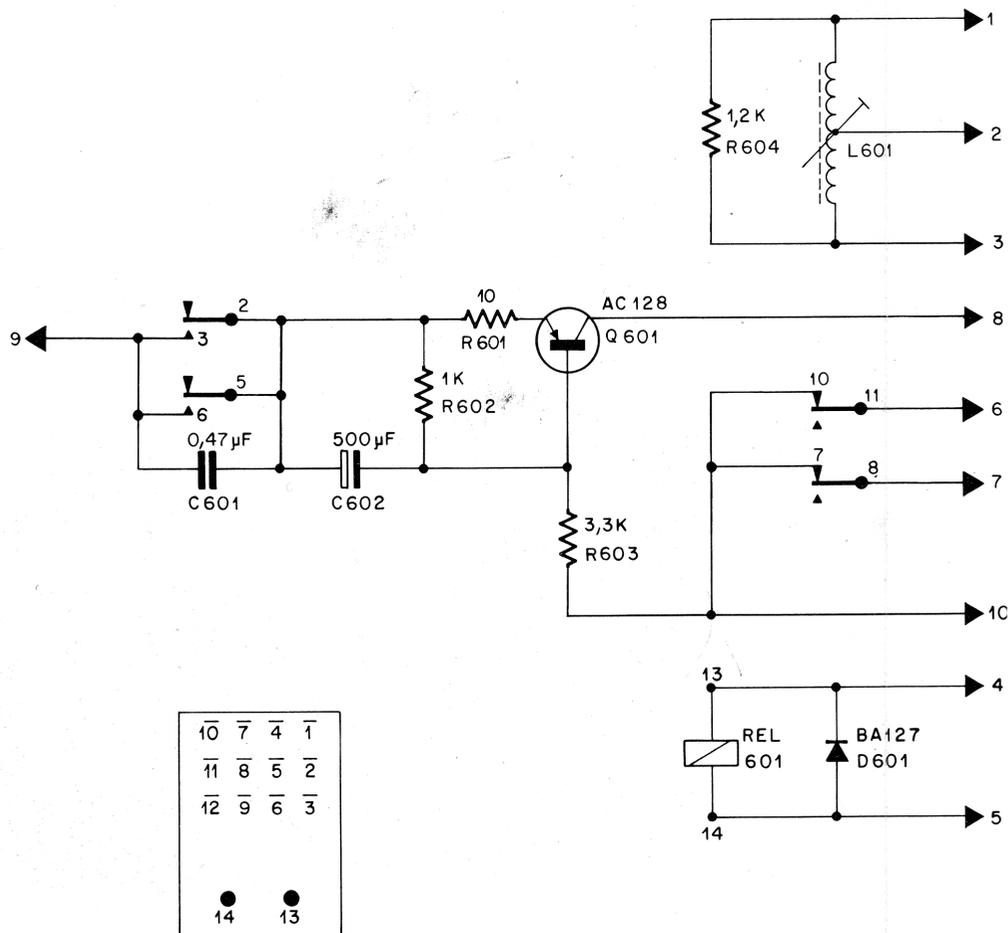
Test points :

- (A) 2 - Track approx. 200 mV } 1 kHz, full modulation
4 - Track approx. 140 mV }
- (B) Balance, Control Range ± 7 dB

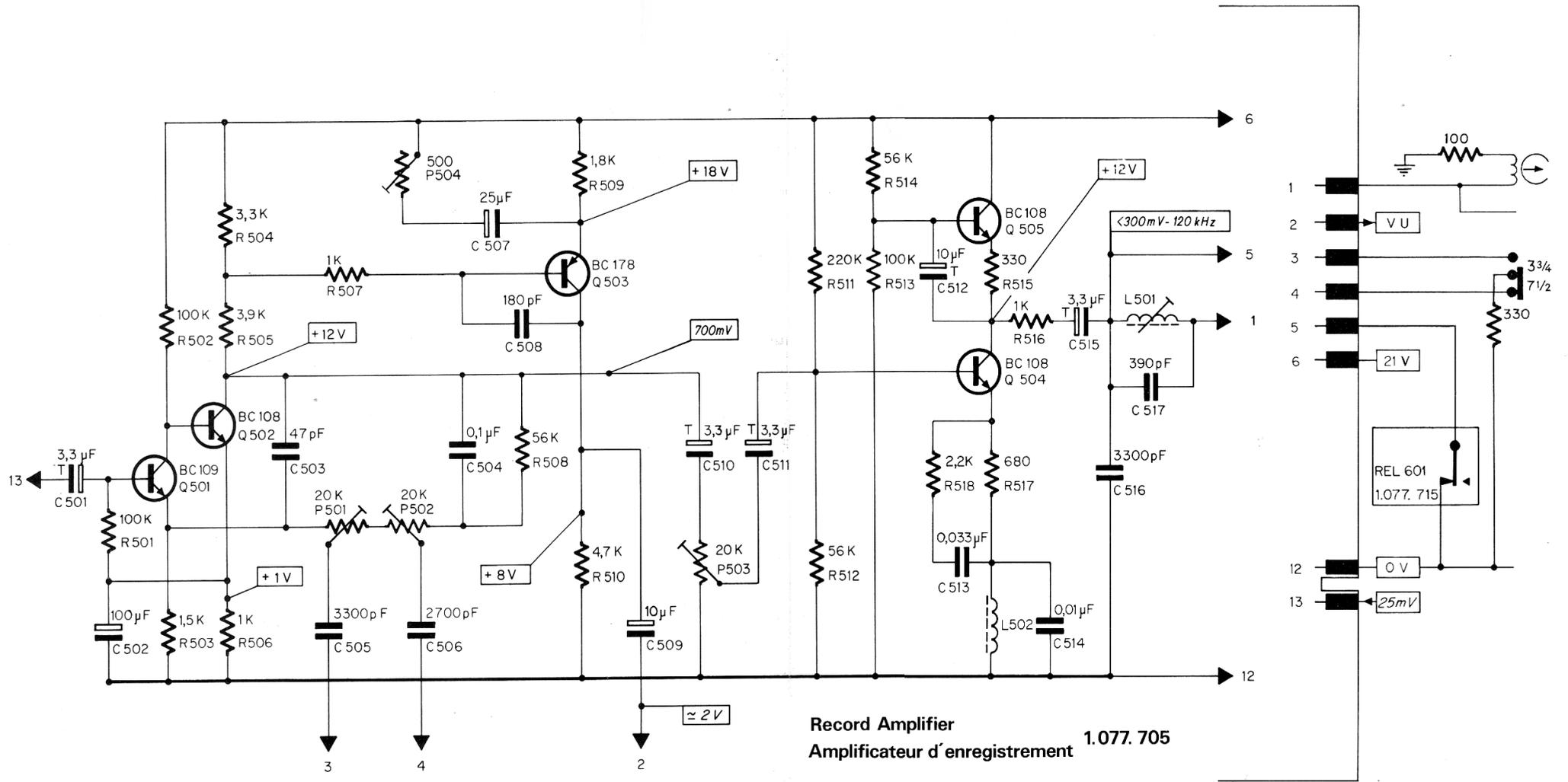
Points de mesure :

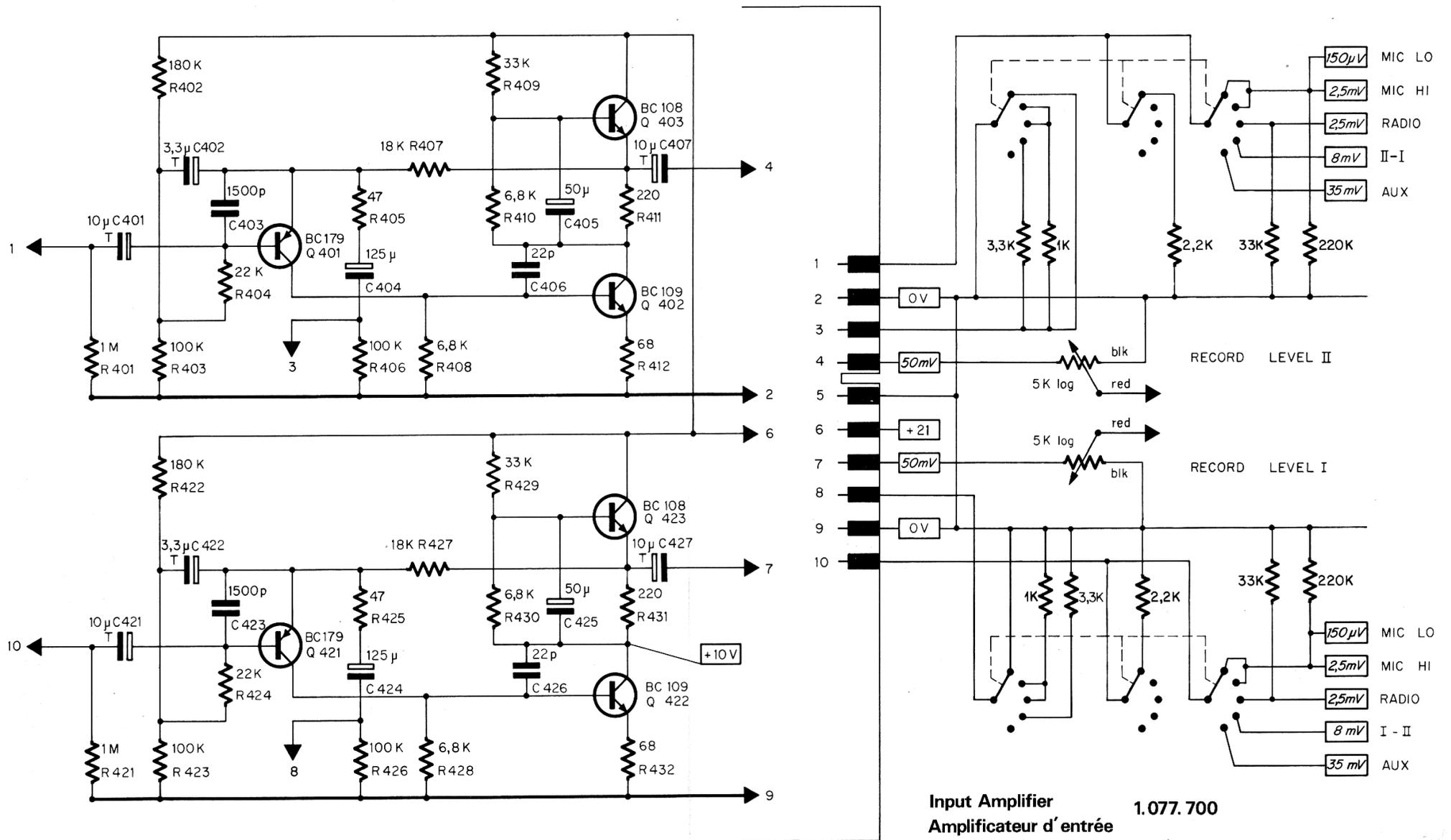
- (A) 2 pistes env. 200 mV } à 1 kHz et modulation maximum
4 pistes env. 140 mV }
- (B) plage de réglage de la balance ± 7 dB

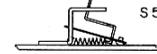
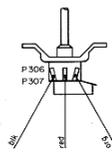
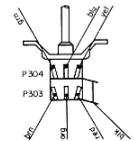
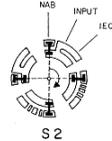
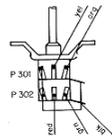
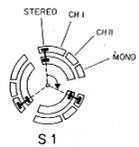
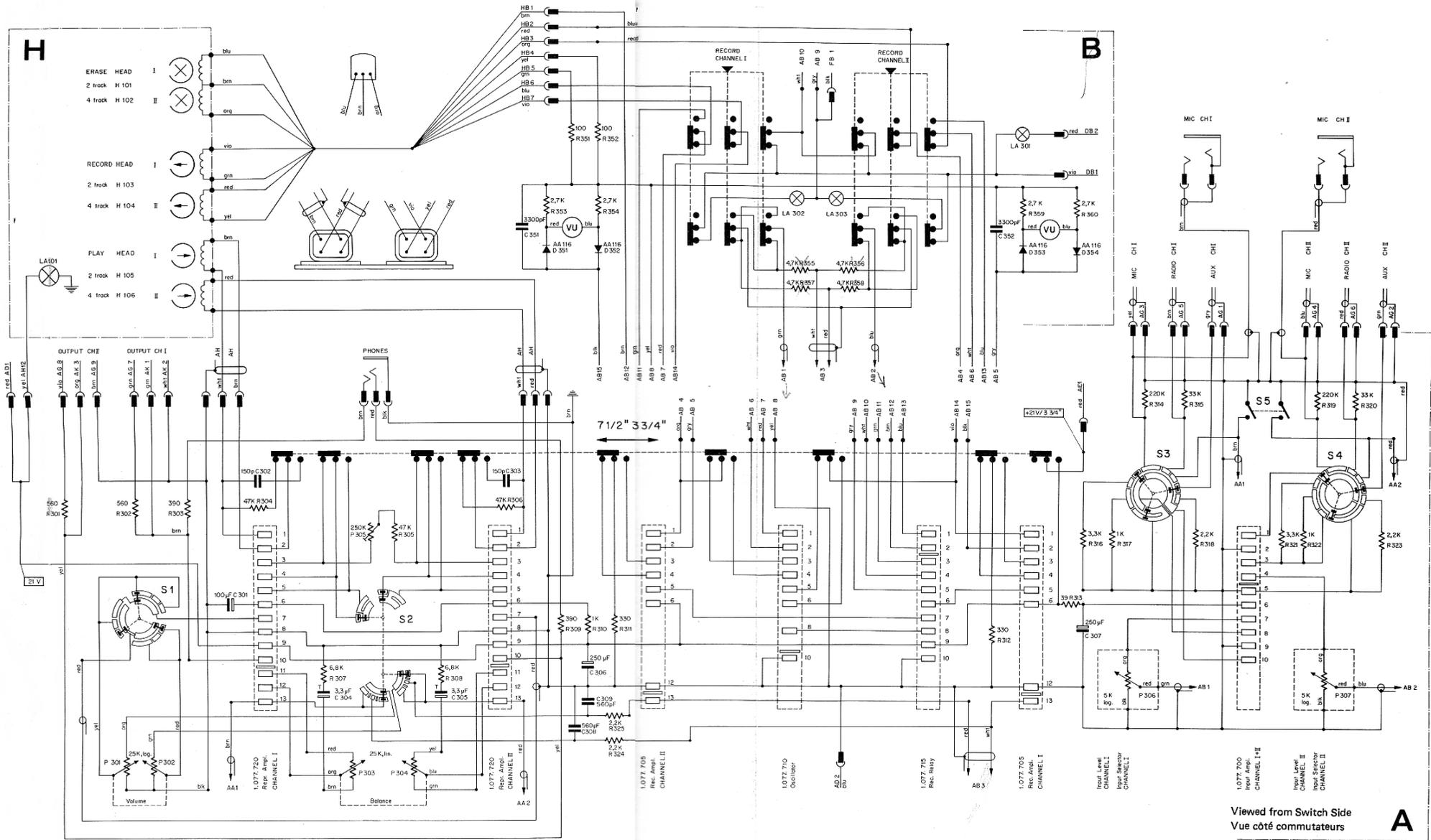
Playback Amplifier
Amplificateur de lecture 1.077.720



Relais d'enregistrement - 1.077.715



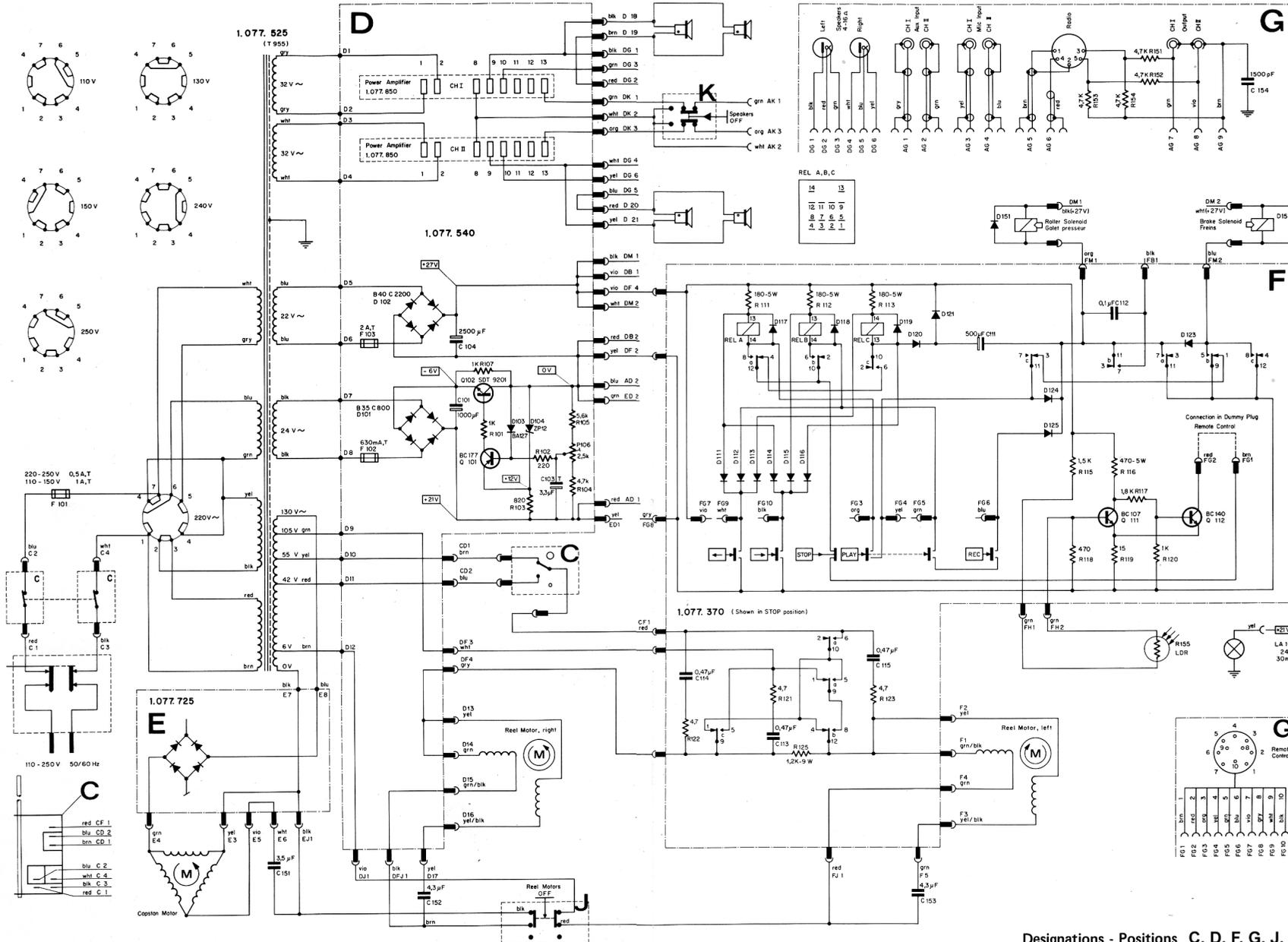




Designations - Positions A,B,H

VU - Meter Board
Plaquette des VU-mètres 1.077.480

Switch Board
Plaquette des commutateurs 1.077.435



Color Code :
Code des couleurs :

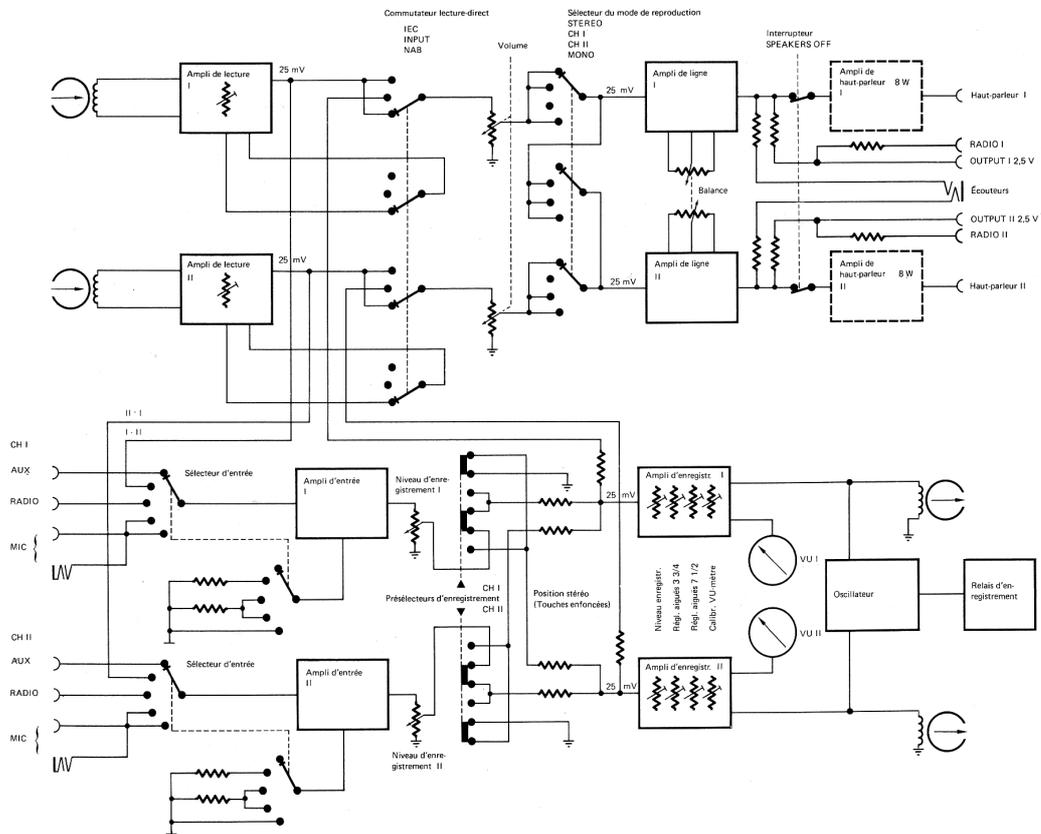
red = red — rouge
 org = orange — orange

yel = yellow — jaune
 grn = green — vert
 blu = blue — bleu
 vio = violet — violet

brn = brown — brun
 gry = gray — gris
 blk = black — noir
 wht = white — blanc

Designations - Positions C, D, F, G, J, K

Tape Drive 1.077.100
Mécanisme (1.077.370, 1.077.525, 1.077.540)

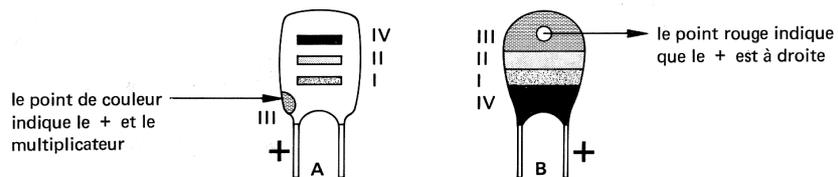


Conditions générales de mesure : (pour les tensions encadrées)

Tensions continues: caractères droits, ex. +18 V voltmètre à résistance interne minimum de 20 kΩ / V

Tensions basse-fréquence: caractères inclinés, ex. 25mV voltmètre à lampes ou à transistors d'au moins 1 MΩ d'impédance d'entrée.

Marquage des condensateurs électrolytiques au tantale



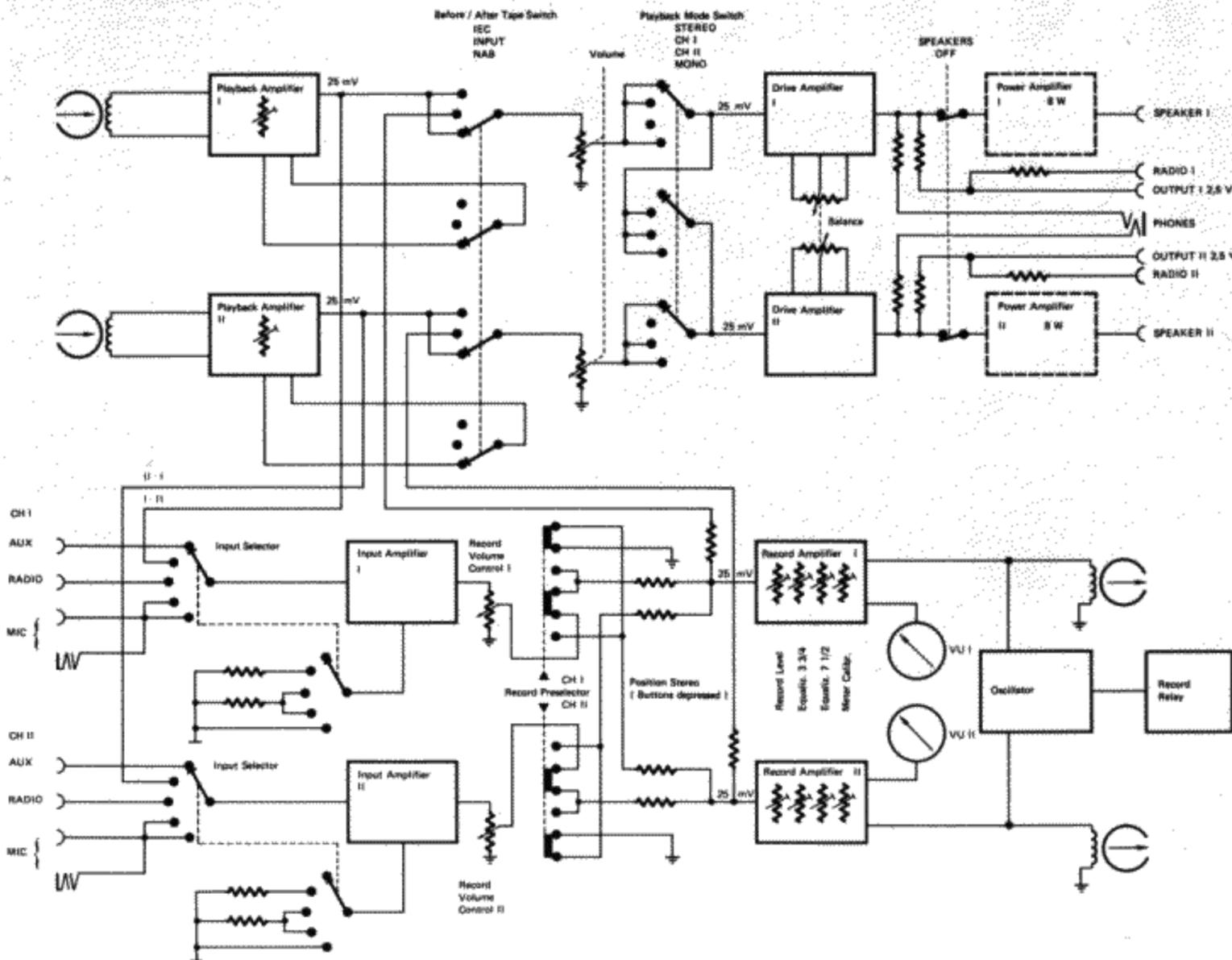
Couleur (rose **)	Capacité en μF			Tension de service IV
	1er chiffre I	2ème chiffre * II	Multipliateur III	
noir	—	0	x 1	10 V
brun	1	1	x 10	—
rouge	2	2	—	—
orange	3	3	—	35 V **
jaune	4	4	—	6 V
vert	5	5	—	15 V
bleu	6	6	—	20 V
violet	7	7	—	—
gris	8	8	x 0,01	25 V
blanc	9	9	x 0,1	3 V

* le 2ème chiffre peut manquer pour le modèle B

** rose = 35 V pour le modèle A

REVOX A77

SET OF SCHEMATICS
SCHALTUNGSSAMMLUNG
RECUEIL DE SCHEMAS



General Measurement Conditions:

Allgemeine Messbedingungen:

Conditions générales de mesure:

(for voltages in rectangular frames)
(für Spannungsangaben in rechteckigen Feldern)
(pour les tensions encadrées)

D.C. Voltages: vertical letters, e.g.
Gleichspannungen: vertikale Schrift, z. B.
Tensions continues: caractères droits, ex.

+12V

Meter internal resistance 20 kΩ/V min.
Messinstrument minimaler Innenwiderstand 20 kΩ/V
Voltmètre à résistance interne minimum de 20 kΩ/V

A.F. Voltages: slant letters, e.g.
Tonfrequenzspannungen: schräge Schrift, z. B.
Tensions basse-fréquence: caractères inclinés, ex.

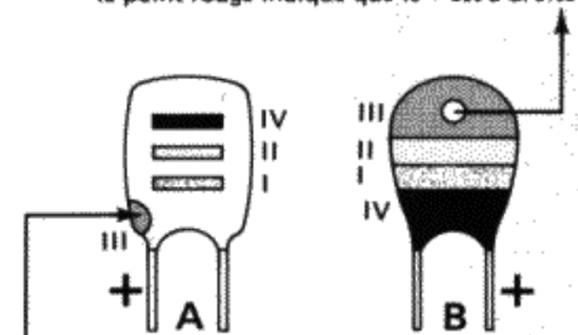
700mV

Meter: Vac, tube or transistor voltmeter 1 MΩ min.
Messinstrument: Röhren- oder Transistorvoltmeter min. 1 MΩ
Voltmètre électronique d'au moins 1 MΩ d'impédance d'entrée

Markings on Tantalum Electrolytic Capacitors
Kennzeichnung der Tantal-Elektrolyt-Kondensatoren
Marquage des condensateurs électrolytiques au tantale

Color Farbe Couleur	Capacitance in μF — Kapazität in μF — Capacité en μF			Working voltage Nennspannung Tension de service
	1st digit 1. Ziffer 1 ^{er} chiffre	2nd digit* 2. Ziffer* 2 ^{ème} chiffre*	Multiplier Multiplikator Multiplicateur	
(pink—rosa—rose**)	I	II	III	IV
black—schwarz—noir	—	0	x1	10 V
brown—braun—brun	1	1	x10	—
red—rot—rouge	2	2	—	—
orange—orange—orange	3	3	—	35 V**
yellow—gelb—jaune	4	4	—	6 V
green—grün—vert	5	5	—	15 V
blue—blau—bleu	6	6	—	20 V
violet—violett—violet	7	7	—	—
gray—grau—gris	8	8	x0,01	25 V
white—weiß—blanc	9	9	x0,1	3 V

Red dot indicates + to the right
Roter Farbpunkt = Pluspol nach rechts
le point rouge indique que le + est à droite



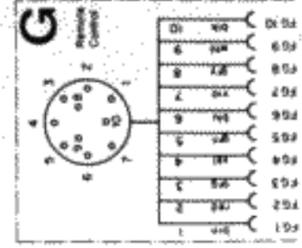
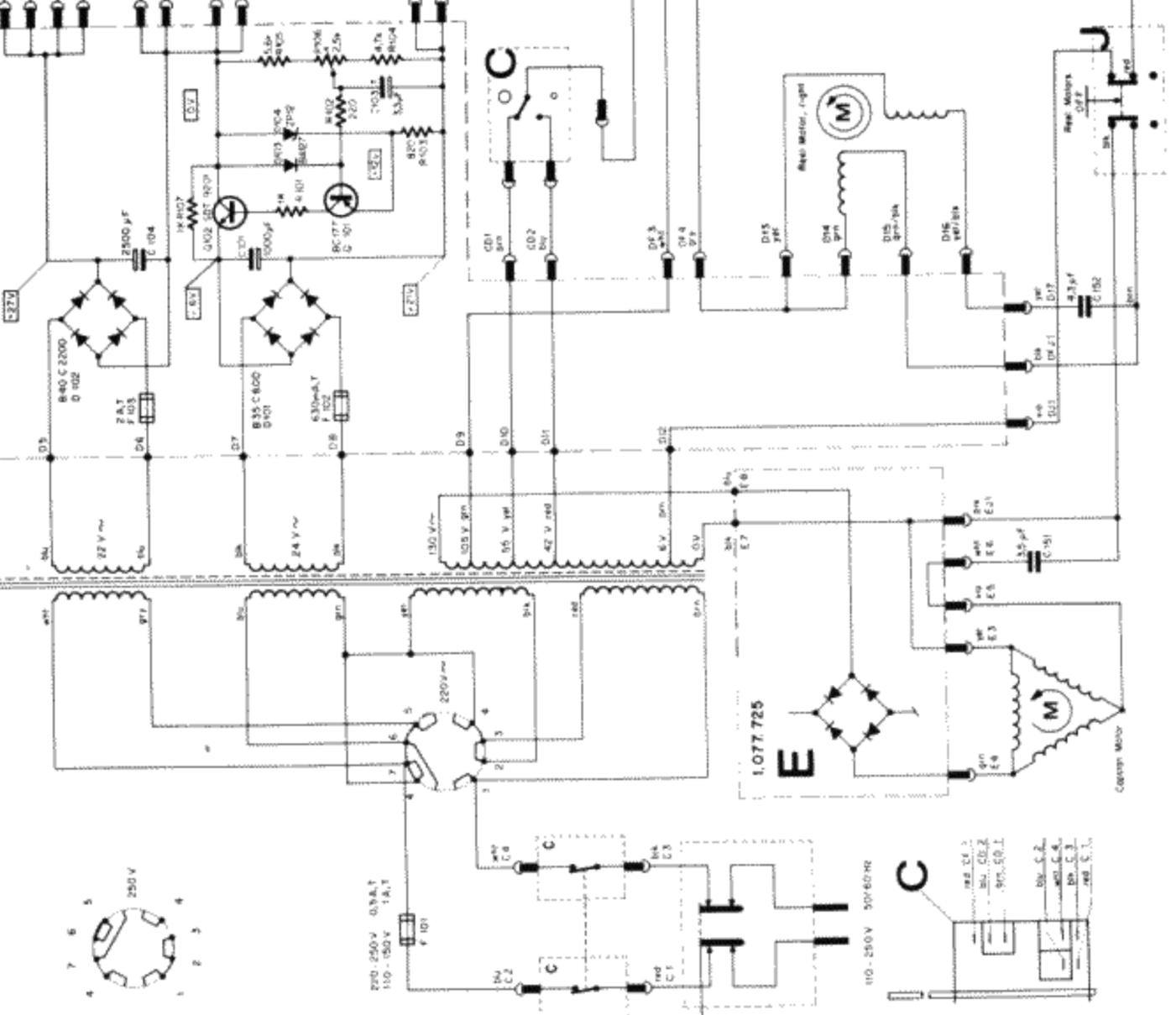
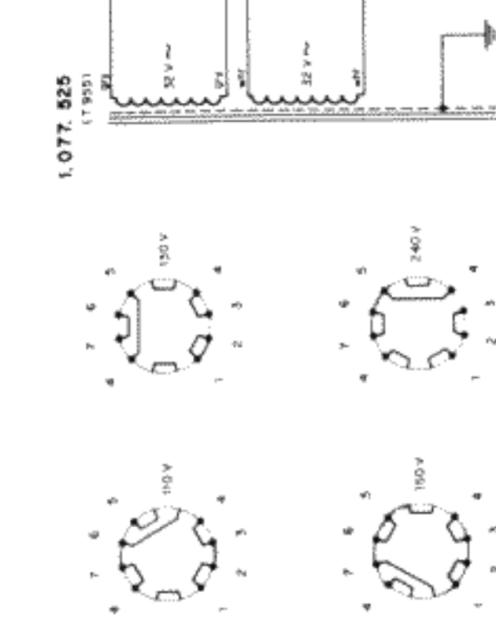
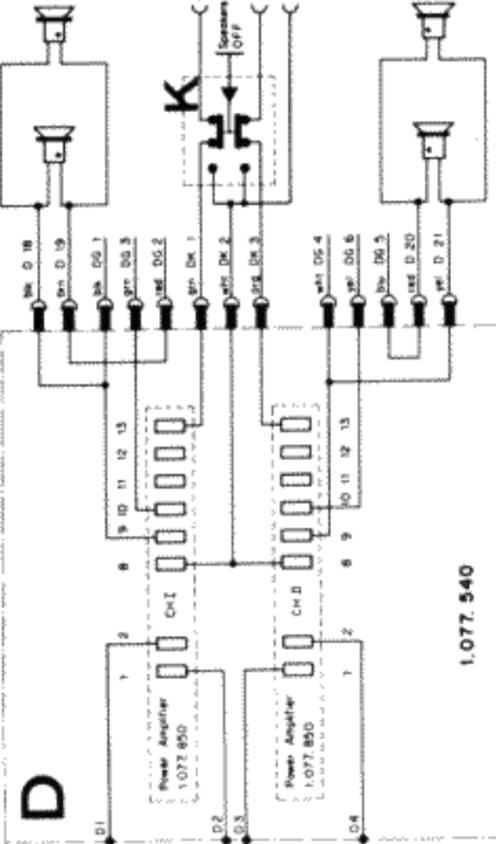
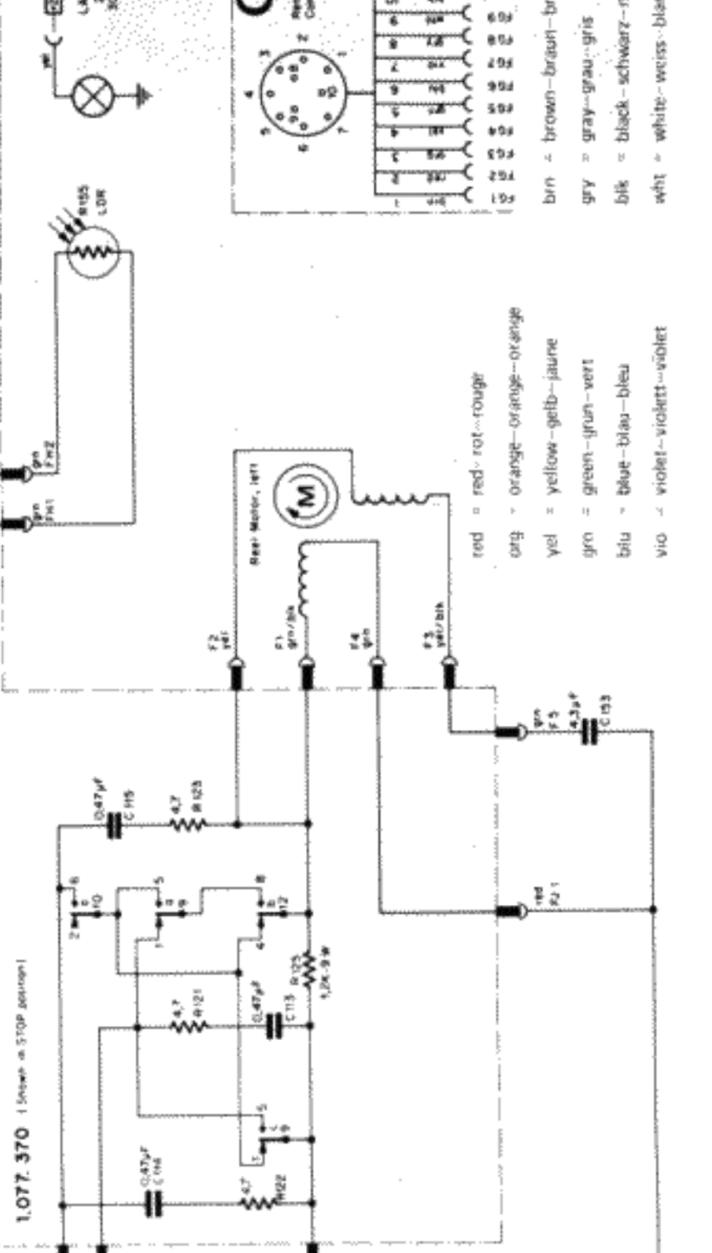
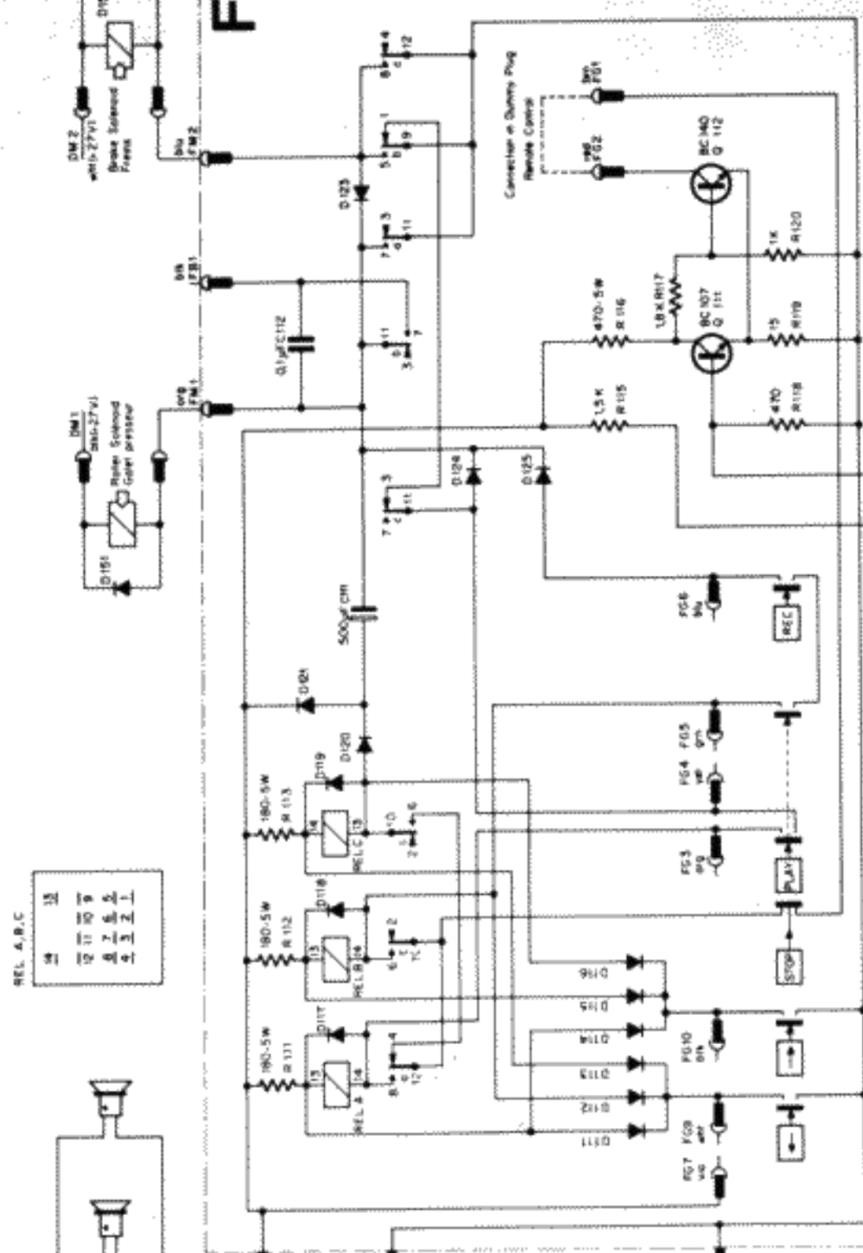
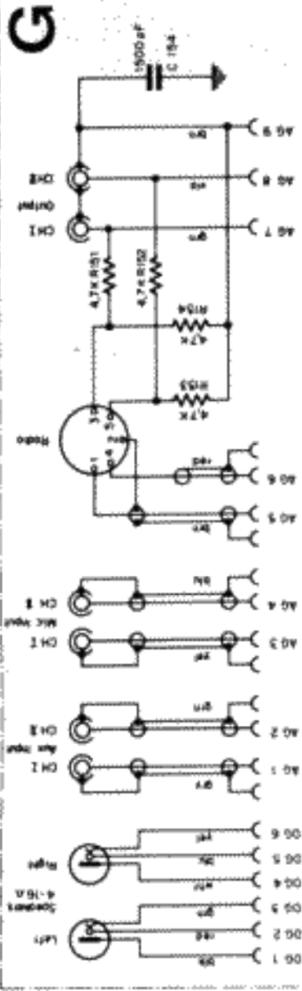
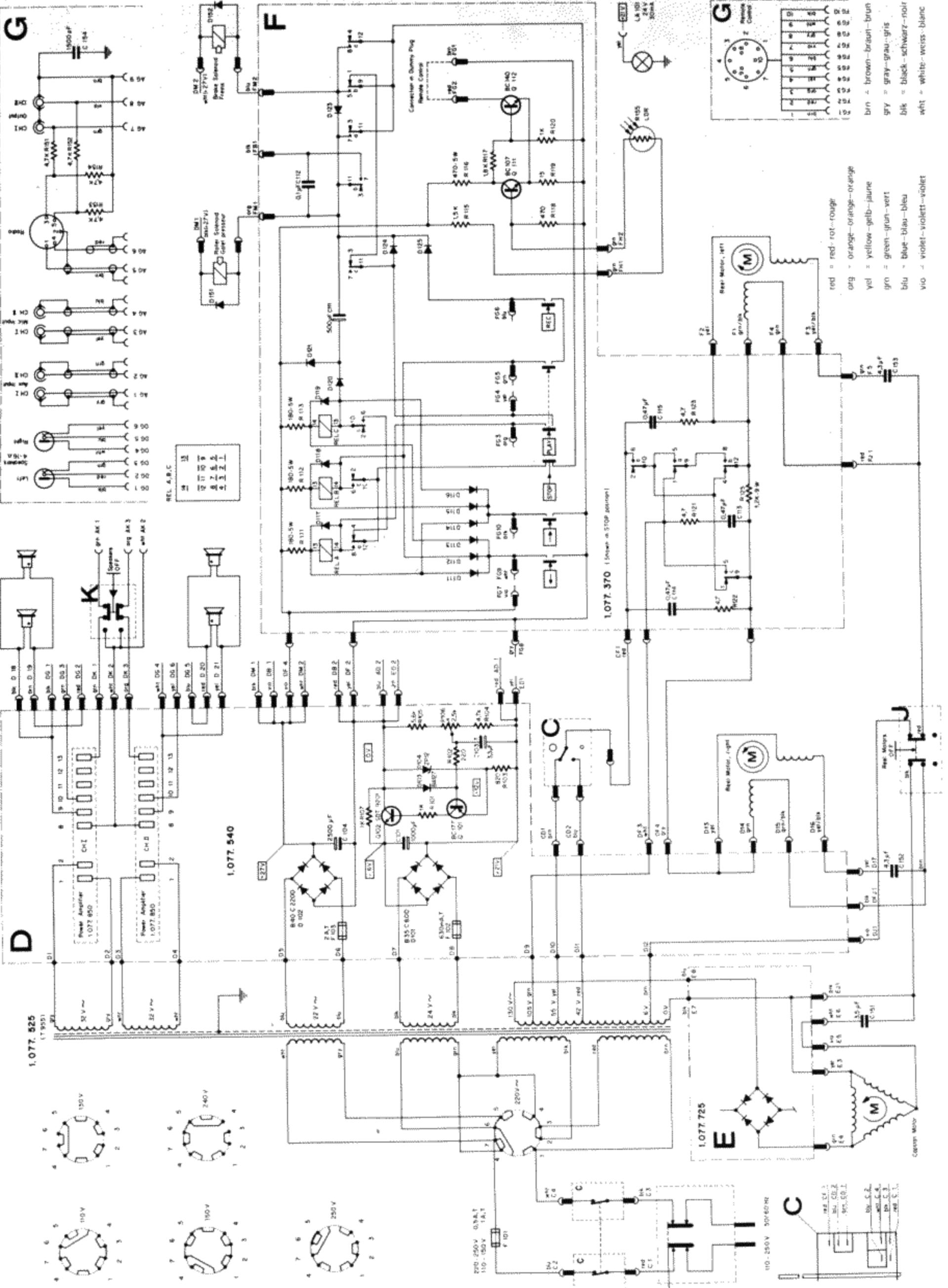
Color dot indicates + and multiplier
Farbpunkt = Pluspol und Multiplikator
le point de couleur indique le + et le multiplicateur

* possibly missing on model B
* Ausführung B: 2. Ziffer nur bei Bedarf
* le 2^{ème} chiffre peut manquer pour le modèle B

** 35 V on model A: pink
** 35 V bei Ausführung A: rosa
** 35 V pour le modèle A: rose

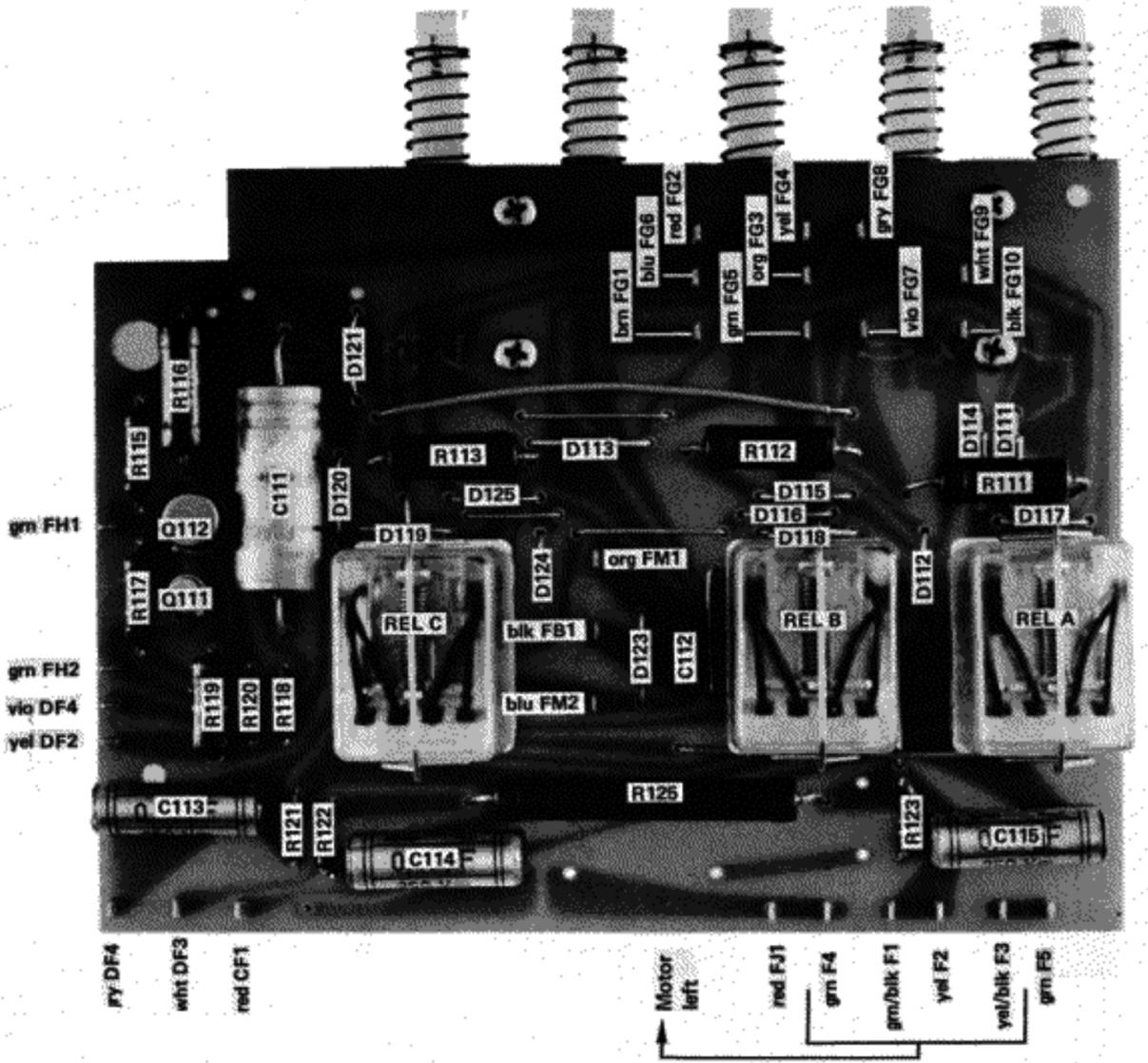
Positions
Positionen C, D, F, G, J, K

Tape Drive
Laufwerk 1.077.100
Mécanisme

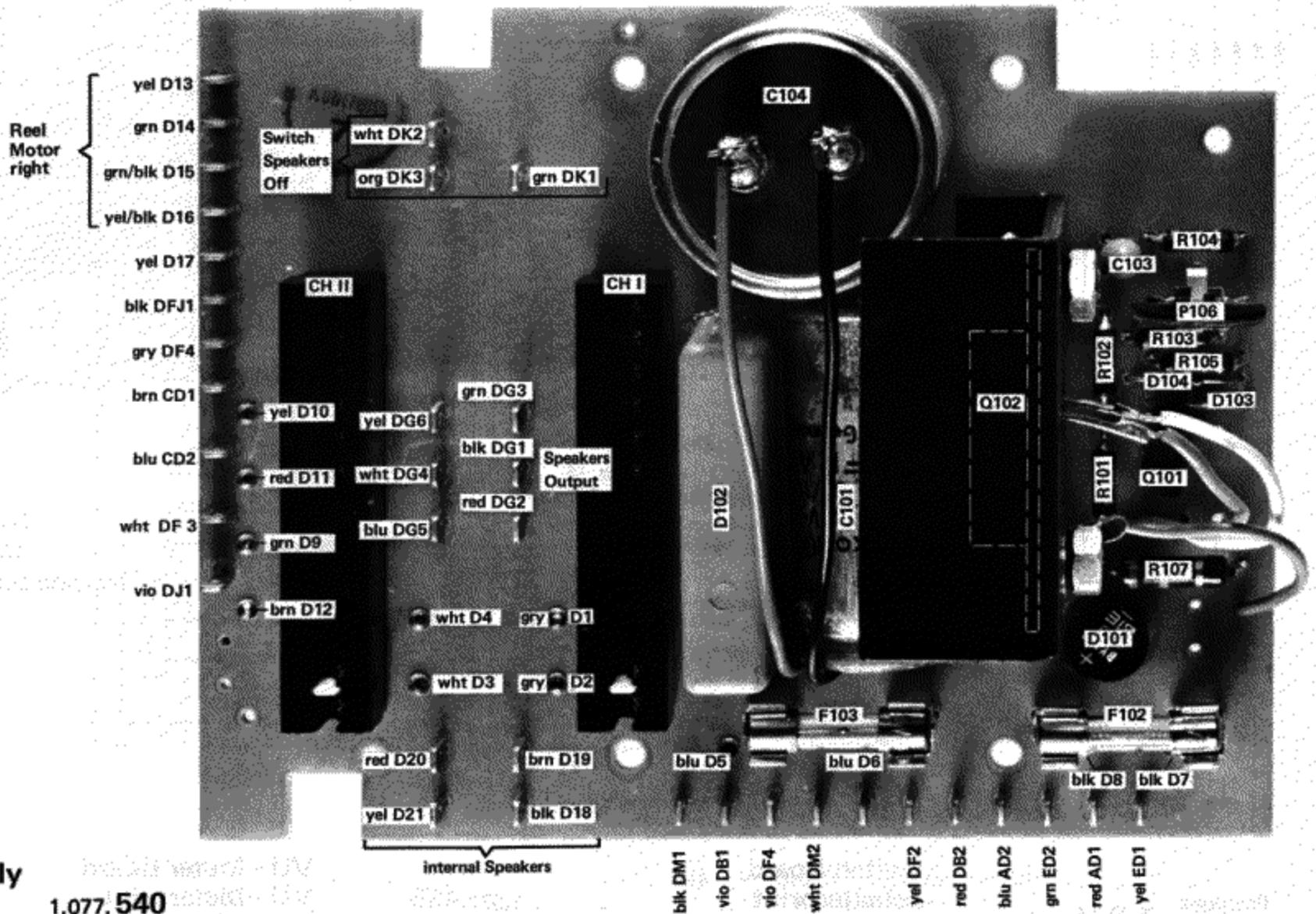


brn = brown-brun-brun
gr = gray-grau-gris
blk = black-schwarz-noir
wht = white-weiss-blanc

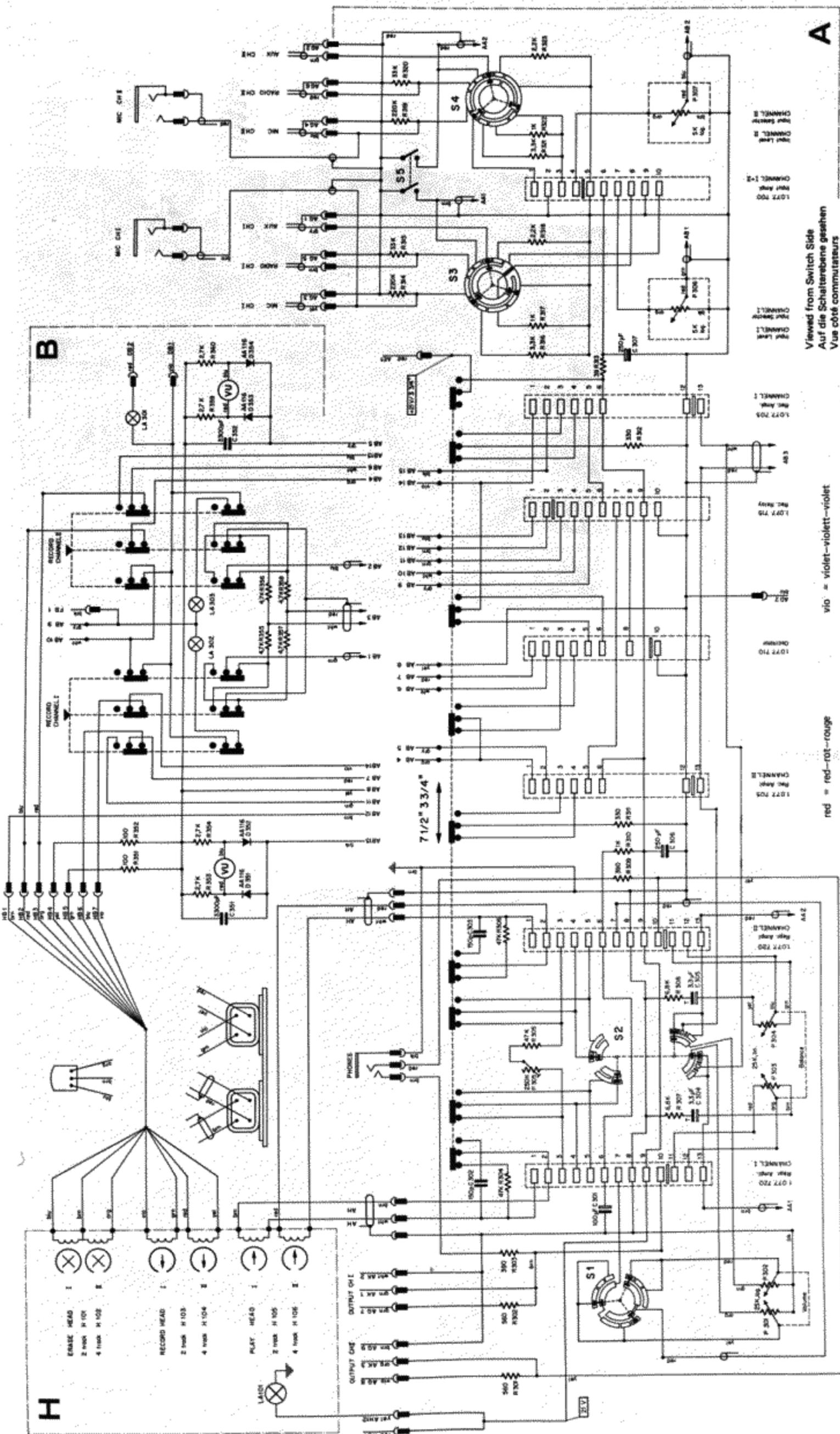
red = red-rot-rouge
org = orange-orange-orange
yel = yellow-gelb-jaune
grn = green-grün-vert
blu = blue-bleu-bleu
vio = violet-violet-violet



Tape Drive Control
Laufwerksteuerung 1.077.370
Commande du mécanisme

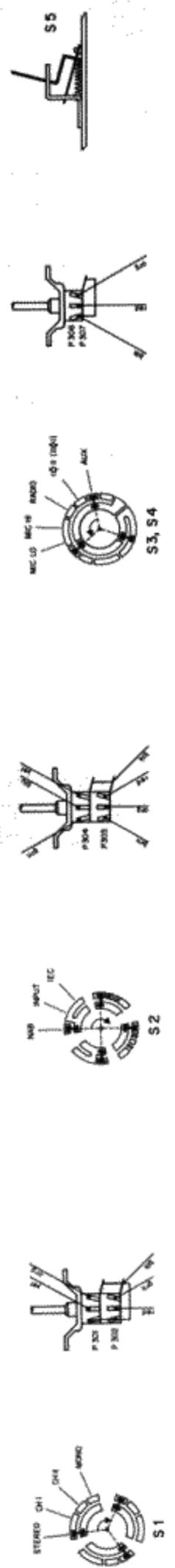


Power Supply
Netzteil 1.077.540
Alimentation



Viewed from Switch Side
Auf die Schalterebene gesehen
Vue côté commutateurs

- red = red-rot-rouge
- org = orange-orange-orange
- yel = yellow-gelb-jaune
- grn = green-grün-vert
- blu = blue-blau-bleu
- vio = violet-violett-violet
- brn = brown-braun-brun
- gry = gray-grau-gris
- bik = black-schwarz-noir
- wht = white-weiß-blanc



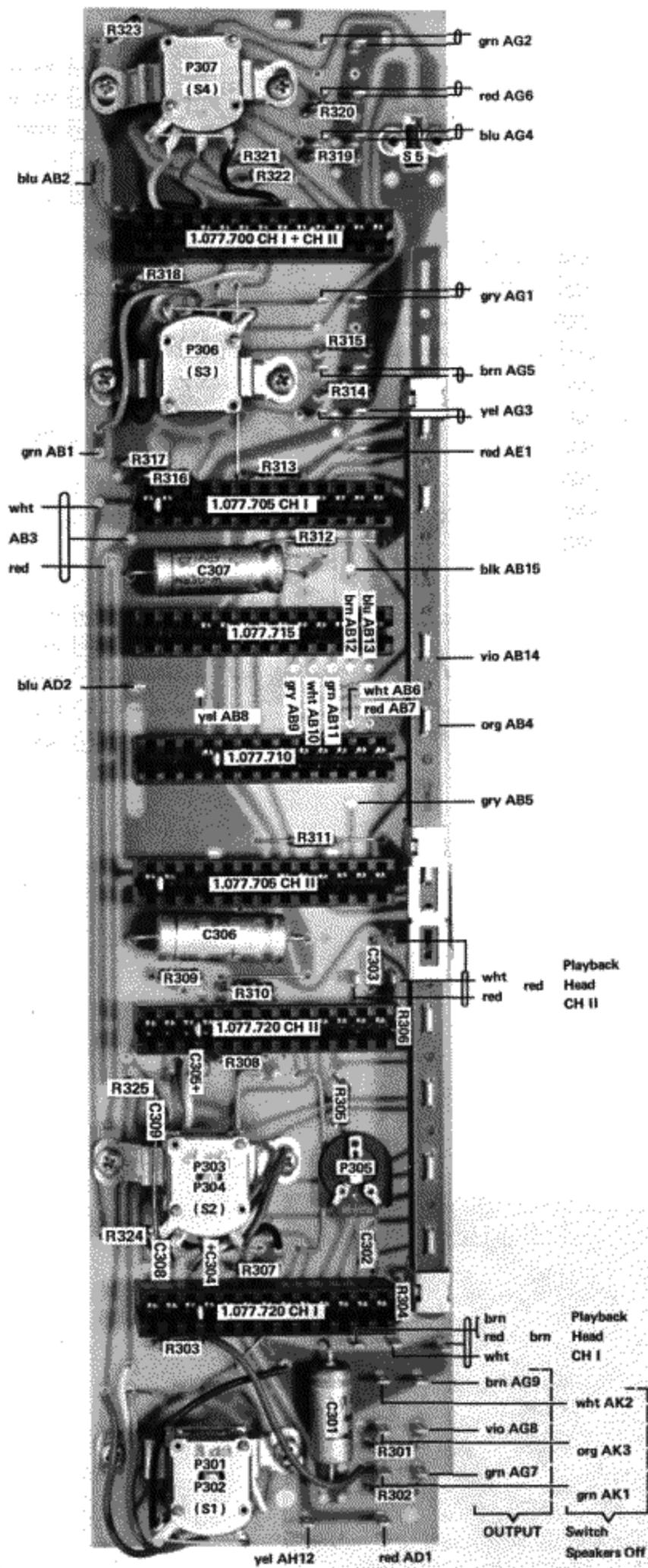
Positions
Positionen A,B,H

Switch Board
Schalterprint
Plaque des commutateurs

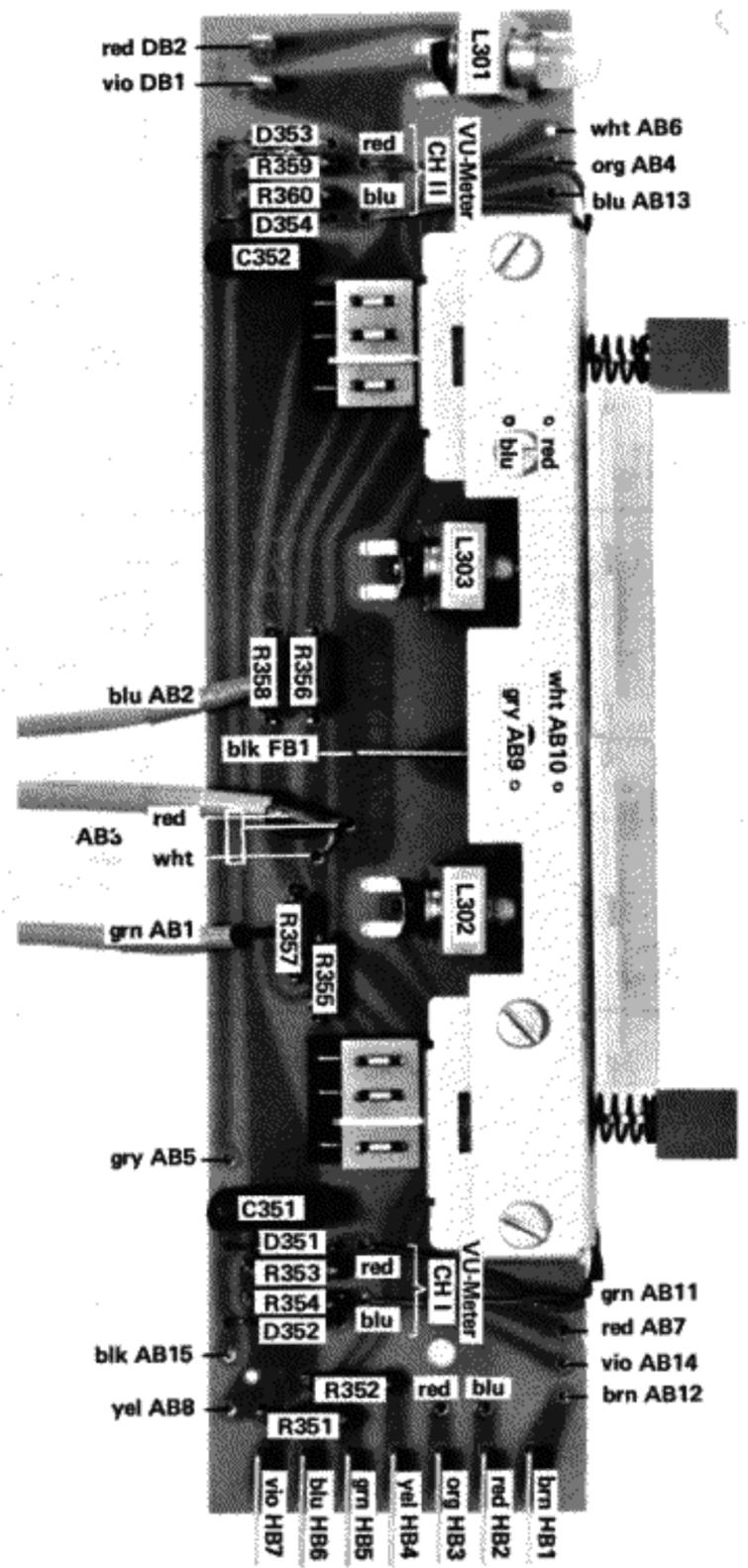
1.077.435

VU - Meter Board
VU - Meterprint
Plaque des VU - mètres

1.077.480



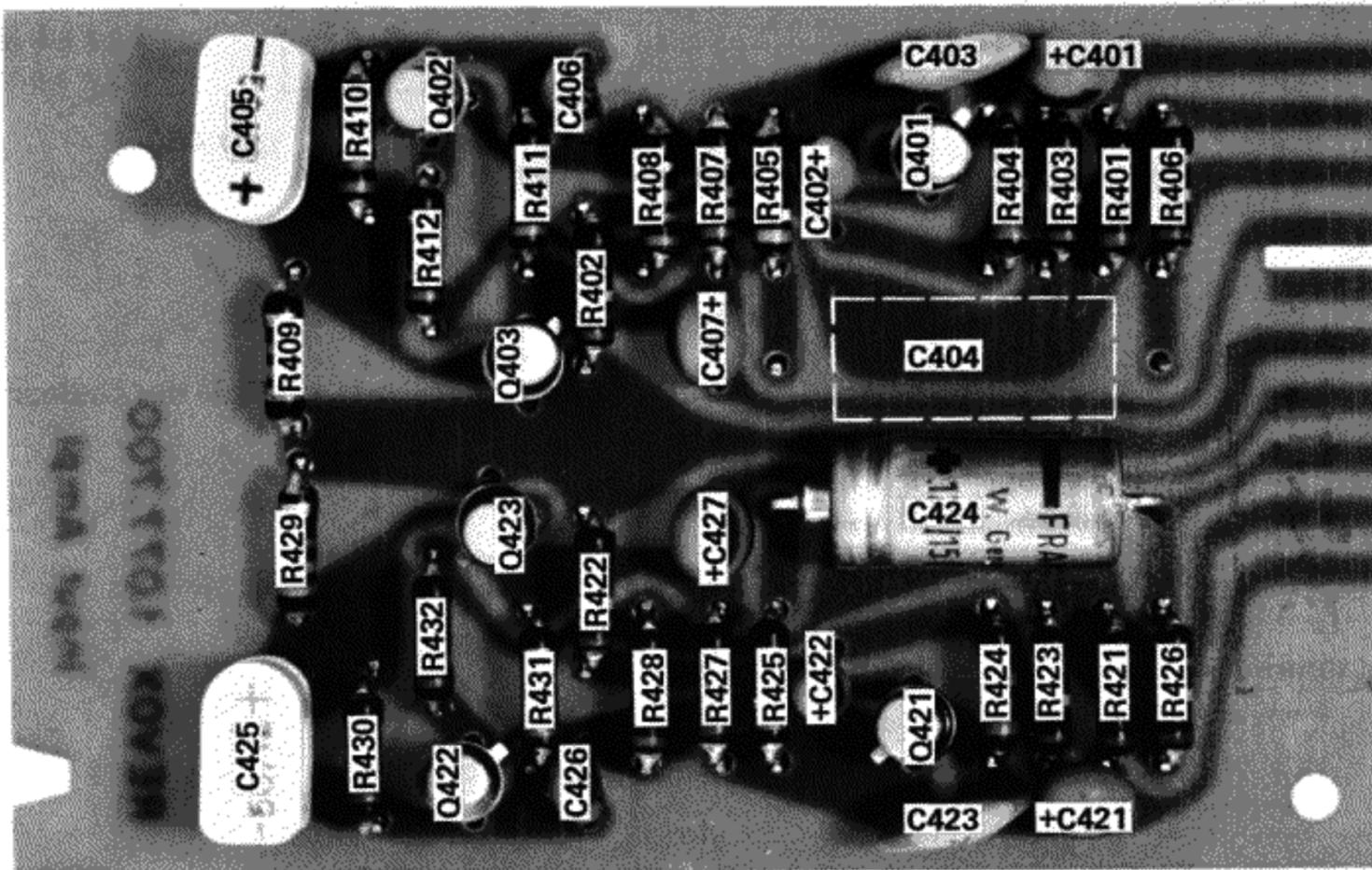
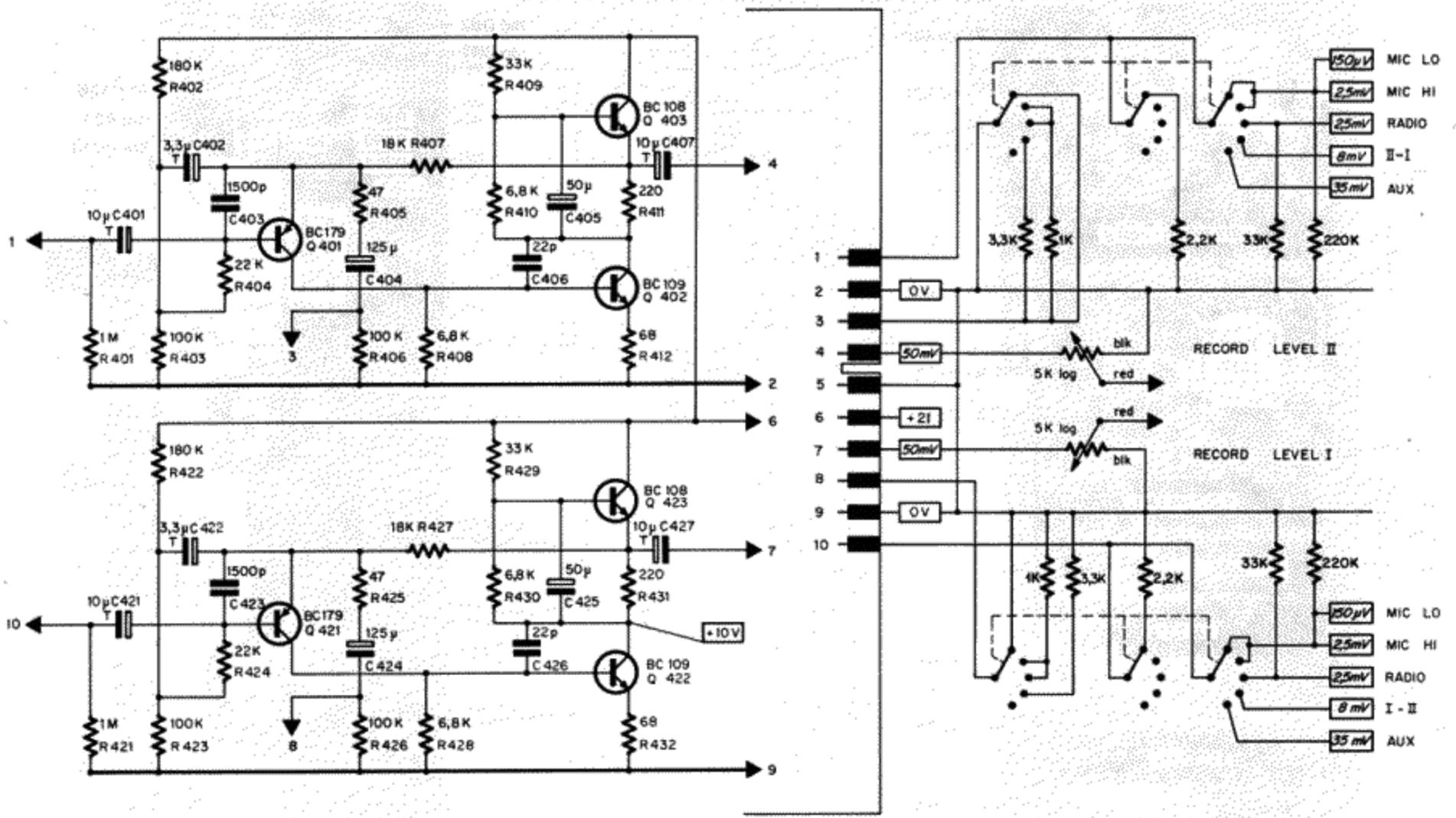
Switch Board
Schalterprint
Plaque des commutateurs 1.077. 435



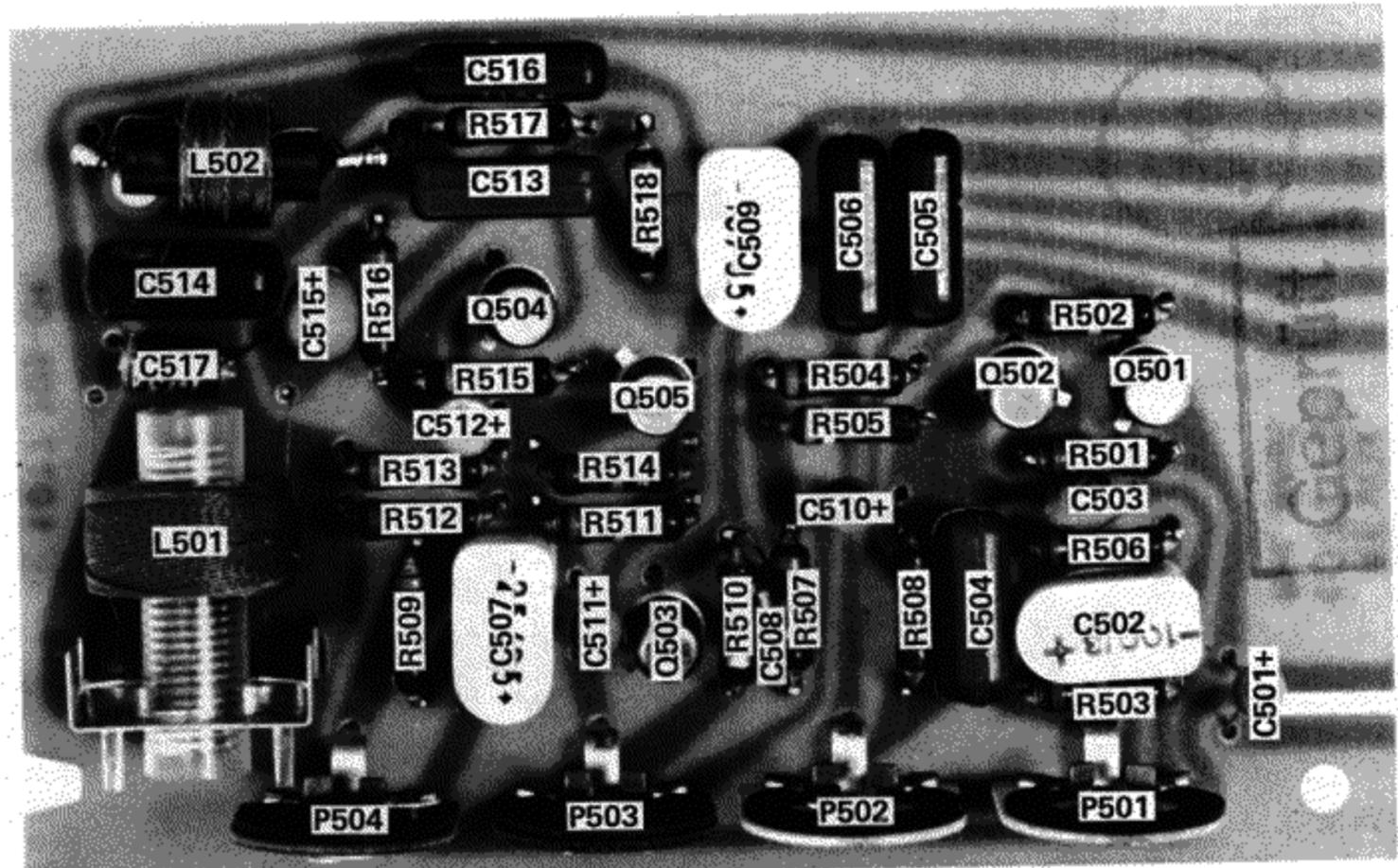
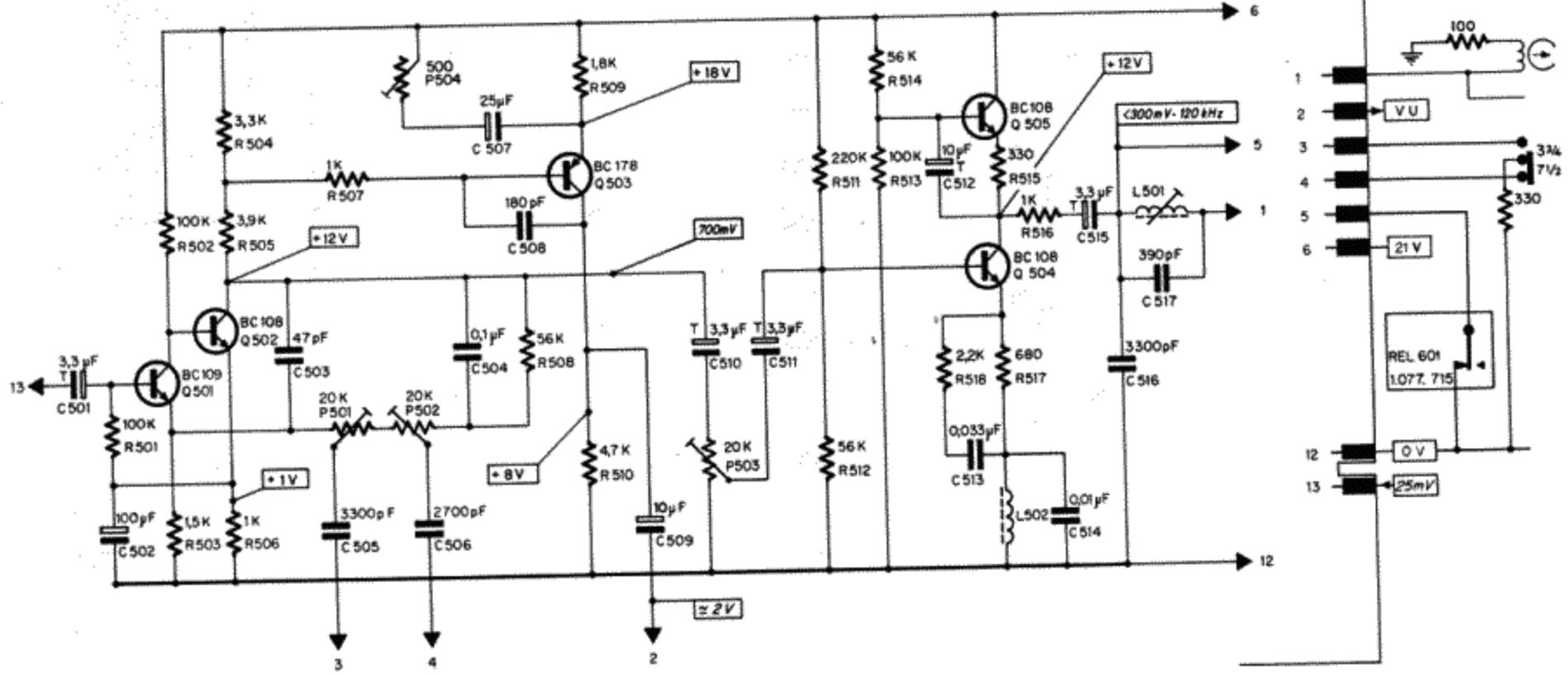
VU - Meter Board
VU - Meterprint
Plaque des VU - mètres 1.077.480

Color Code Farbcode Code des couleurs

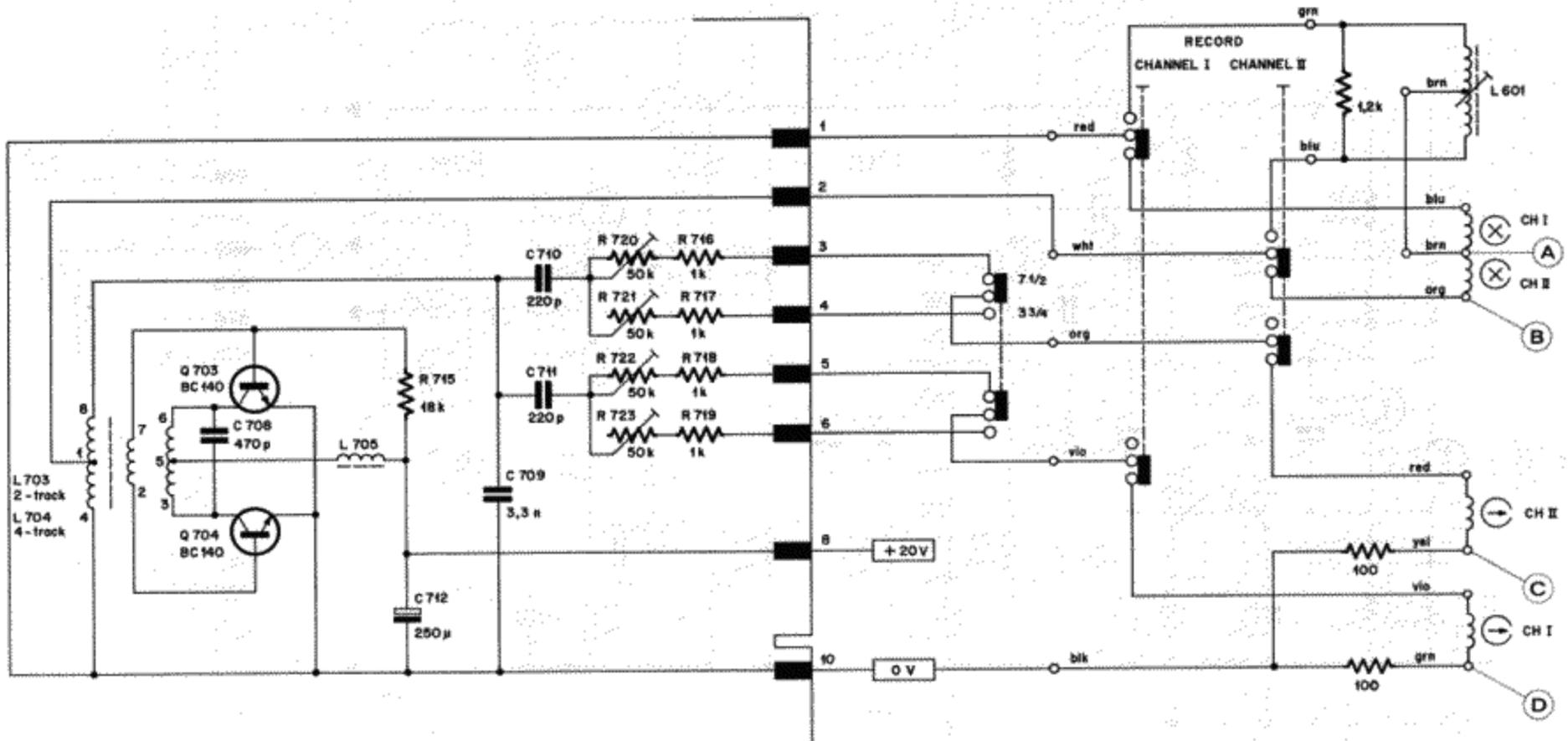
- red = red—rot—rouge
- org = orange—orange—orange
- yel = yellow—gelb—jaune
- grn = green—grün—vert
- blu = blue—blau—bleu
- vio = violet—violett—violet
- brn = brown—braun—brun
- gry = gray—grau—gris
- blk = black—schwarz—noir
- wht = white—weiss—blanc



Input Amplifier
 Eingangsverstärker
 Amplificateur d'entrée
 1.077.700



Record Amplifier
 Aufnahmeverstärker
 Amplificateur d'enregistrement 1.077. 705



Test points Messpunkte Points de mesure	2 - Track 2 - Spur 2 pistes	4 - Track 4 - Spur 4 pistes
(A)	approx. 22V/120 kHz	approx. 18V/120 kHz
(B)	approx. 44V/120 kHz	approx. 36V/120 kHz
(C) + (D)	500 mV/120 kHz 50 mV/ 1 kHz*	400 mV/120 kHz 40 mV/ 1 kHz*

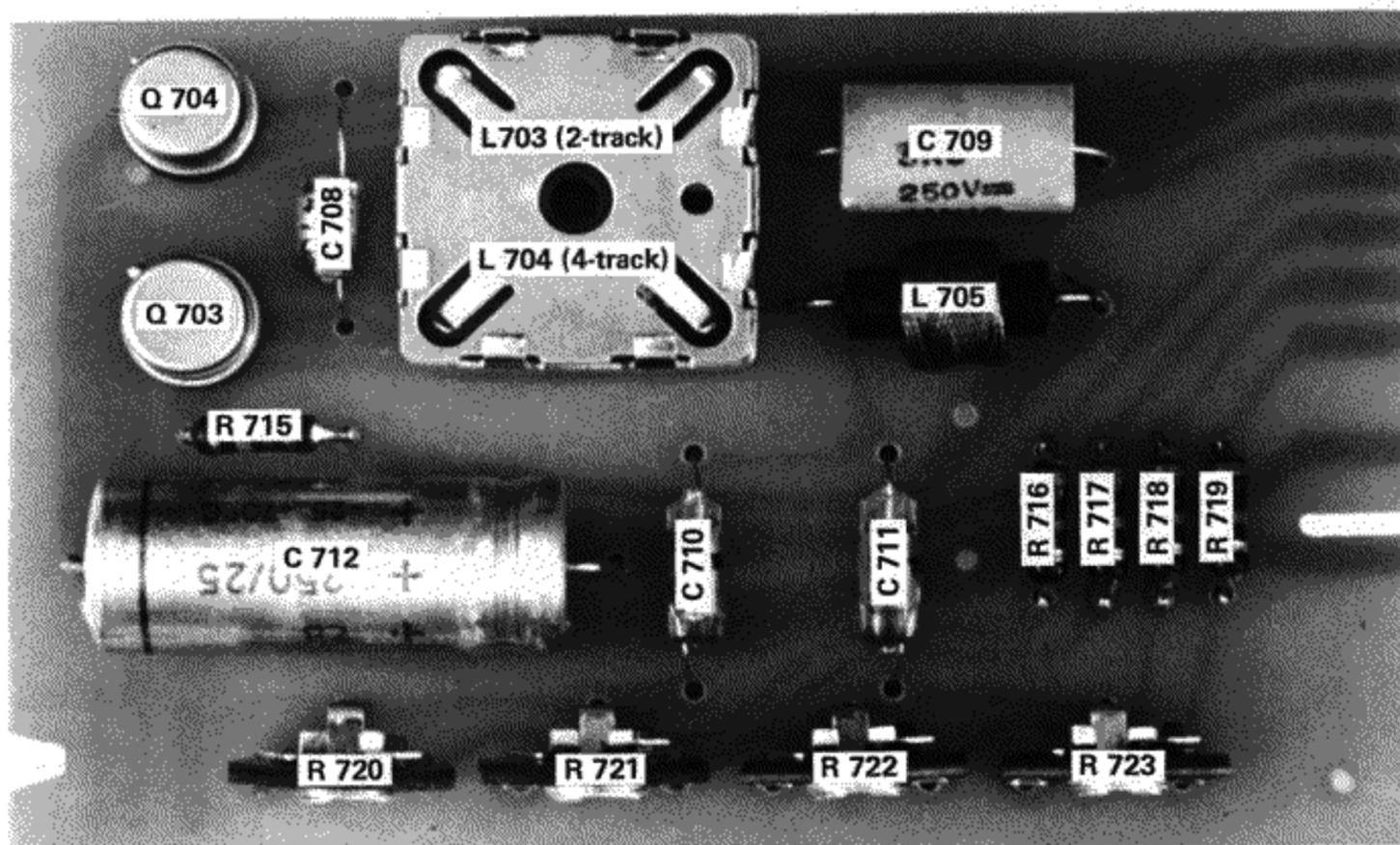
Position " Record - Stereo ", voltages measured against ground (0V)
 Position " Aufnahme Stereo ", Spannungen gemessen gegen Masse (0V)
 Position " enregistrement stéréo ", tensions par rapport à la masse (0V)

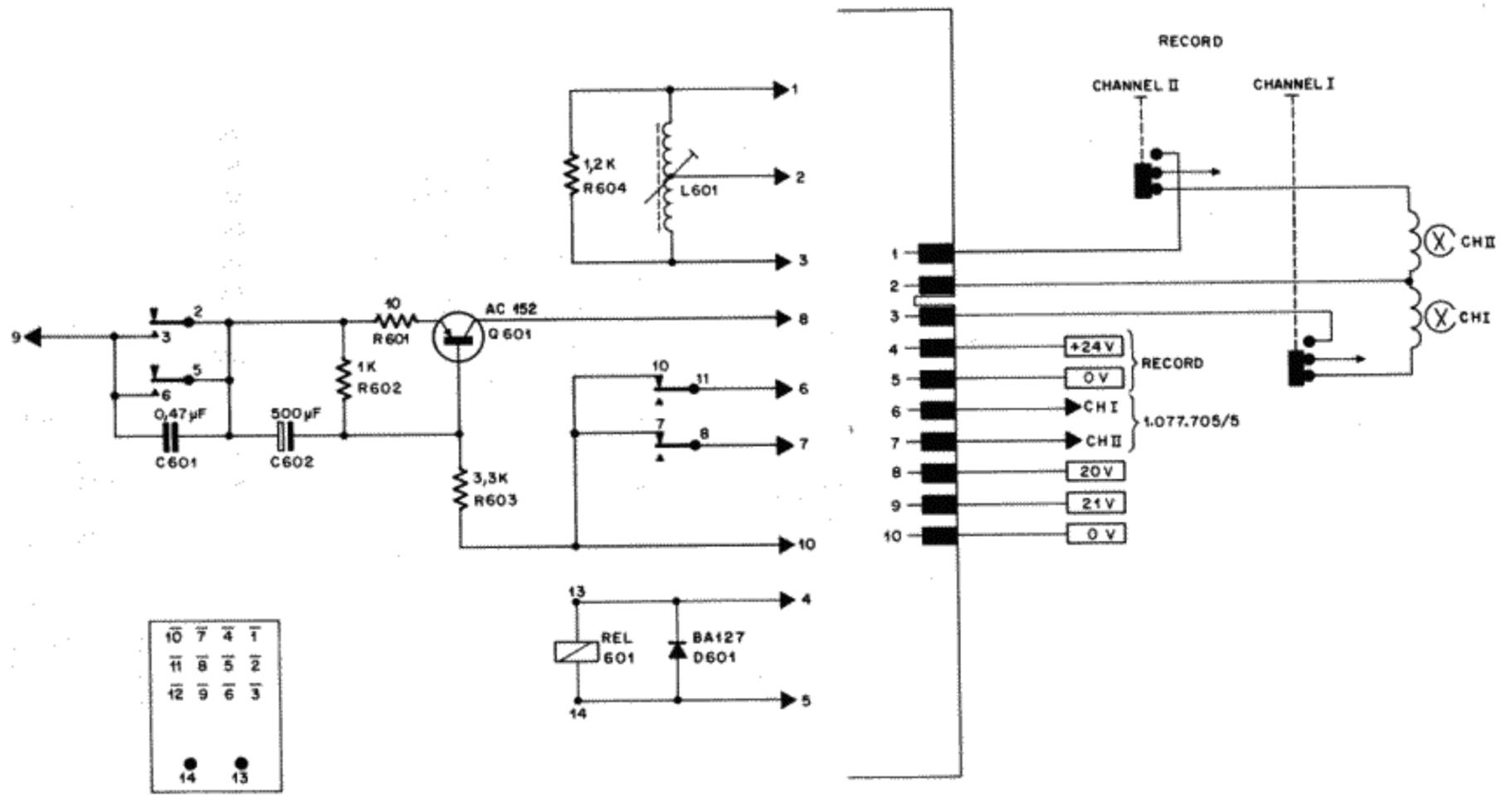
- * AF - Test (oscillator pulled out), full modulation
- * NF - Messung (Oszillator herausgezogen), Vollaussteuerung
- * Mesure BF (oscillateur retiré), modulation à 0 dB

Test values (C) and (D) depend on type and speed of tape; they are to be considered nominal.

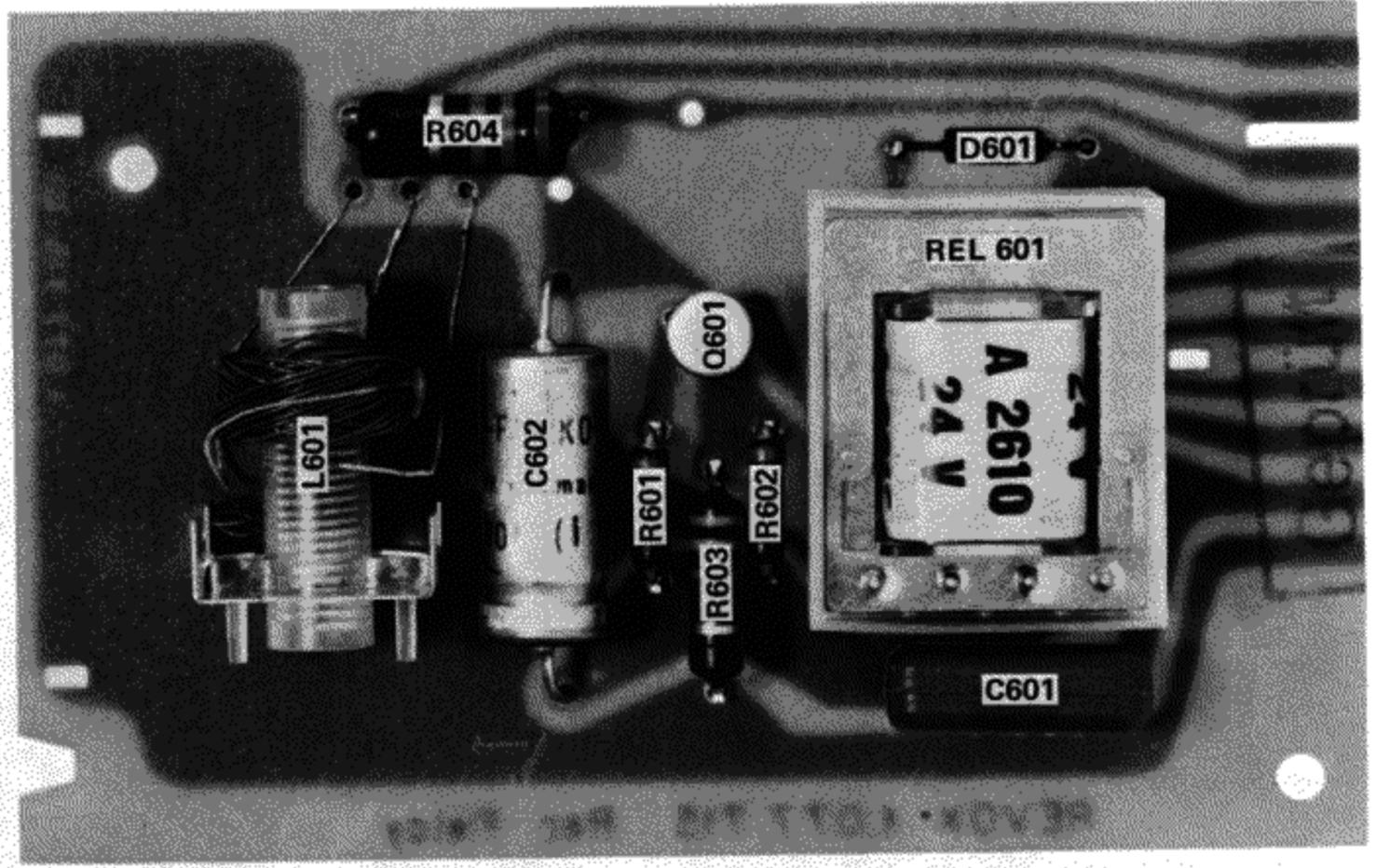
Die Messwerte (C) und (D) sind von der Bandsorte und der Bandgeschwindigkeit abhängig und sind deshalb als Richtwerte zu betrachten.

Les tensions aux points (C) et (D) diffèrent suivant le type et la vitesse de la bande; les valeurs indiquées sont nominales.

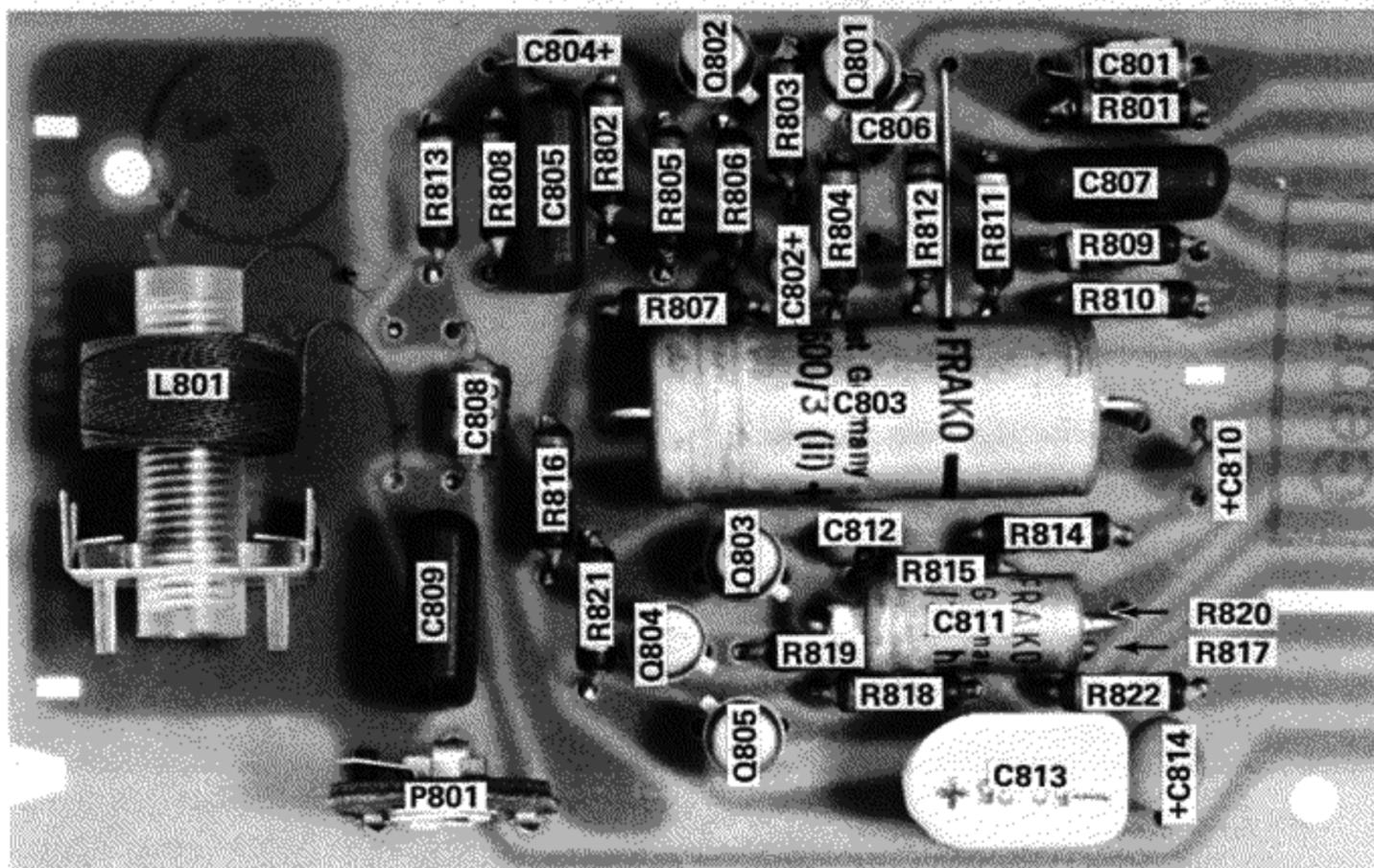
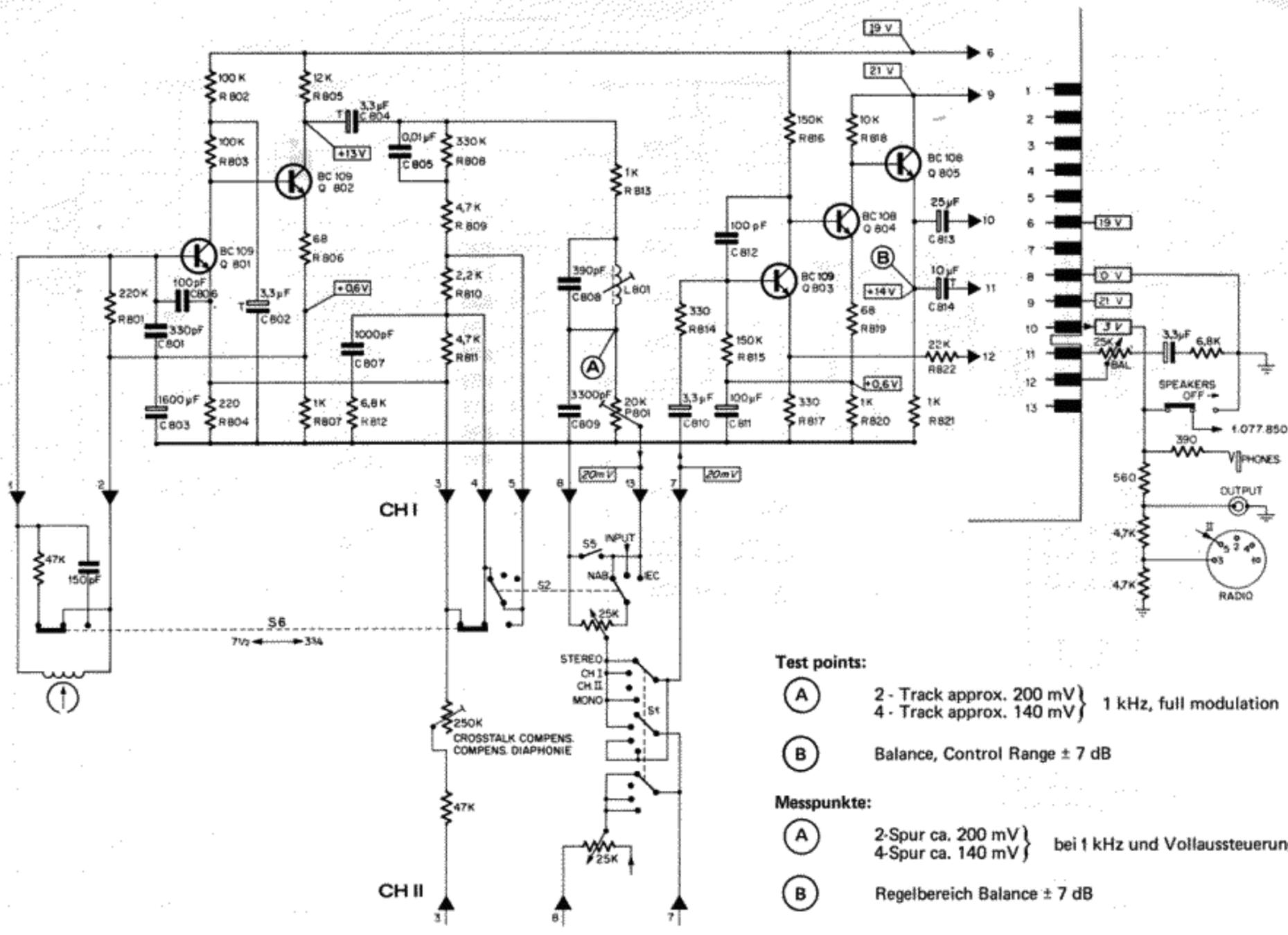




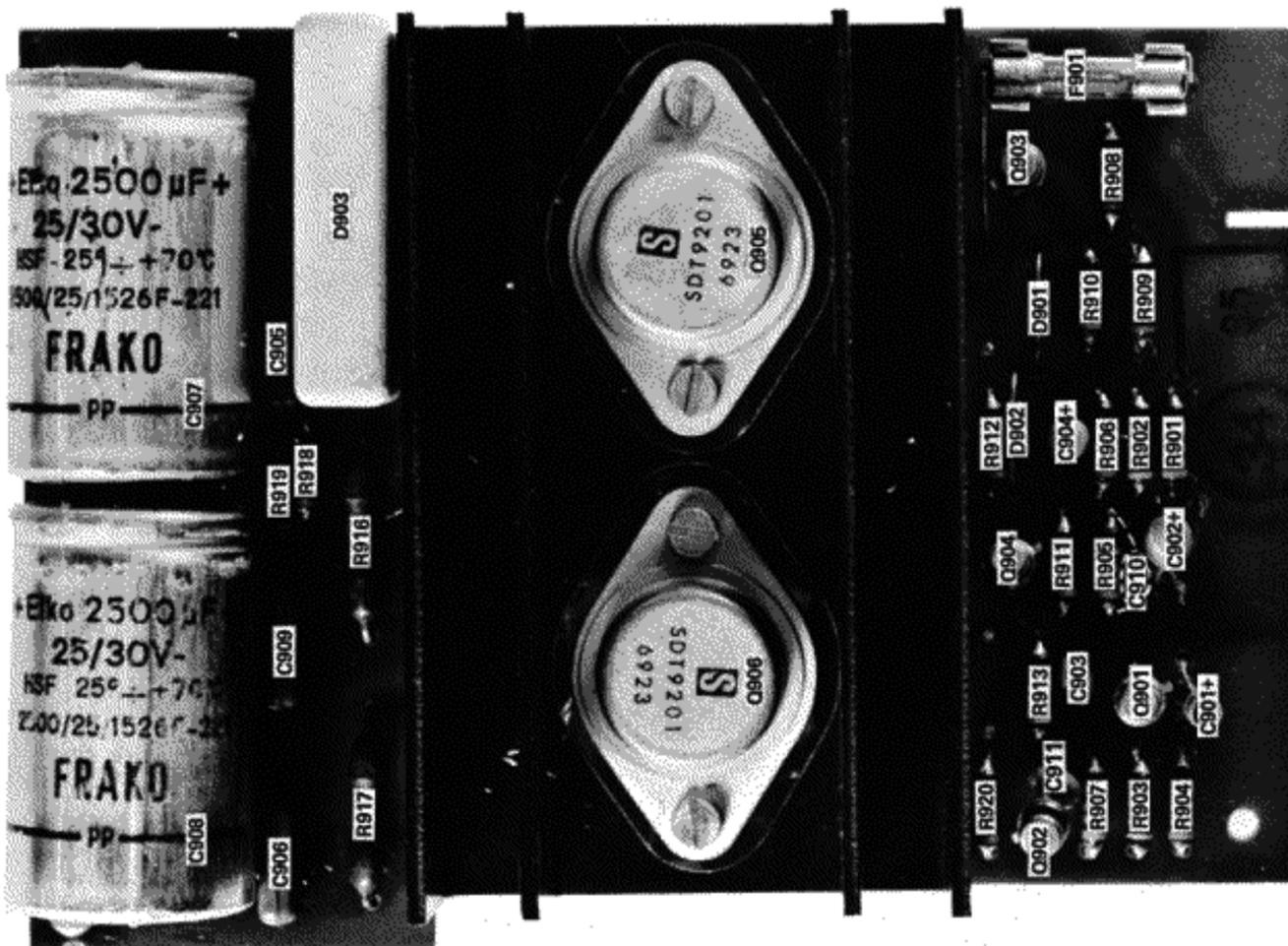
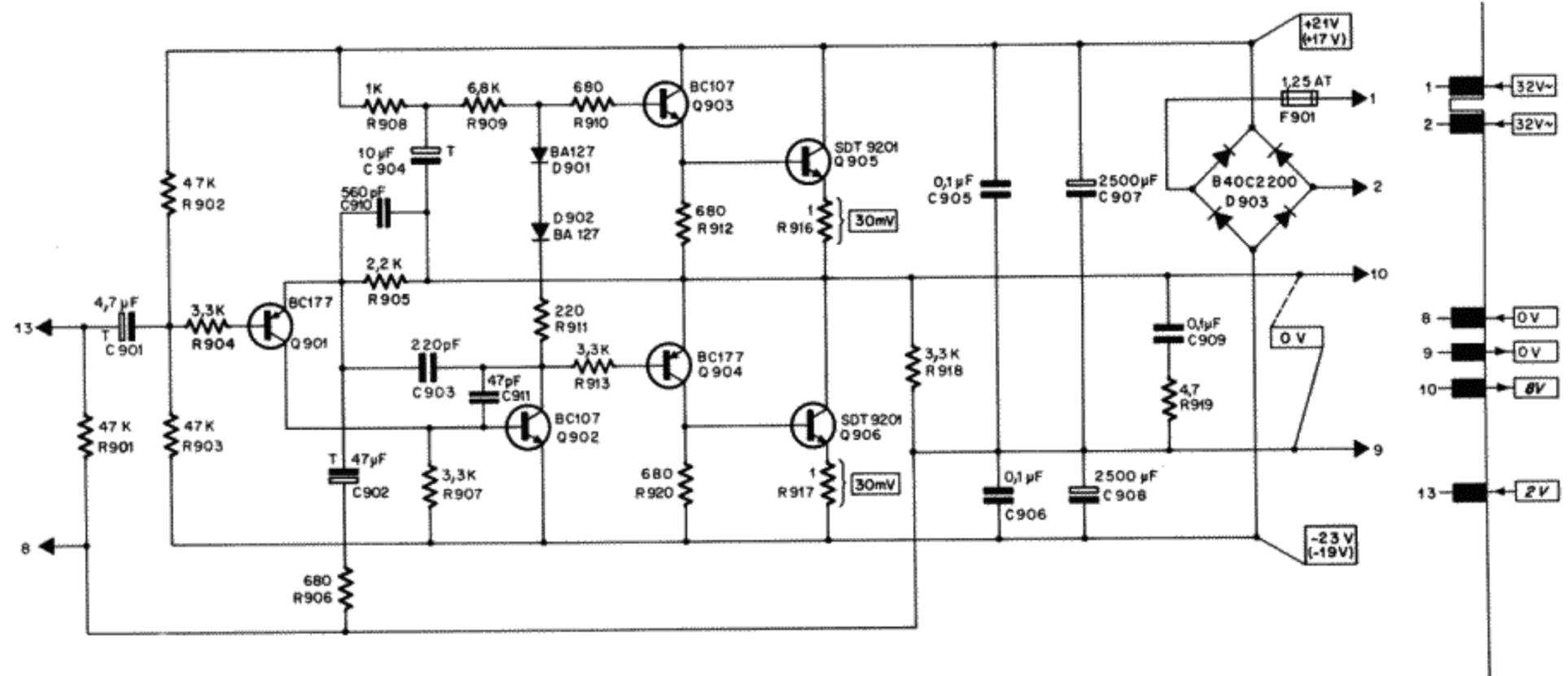
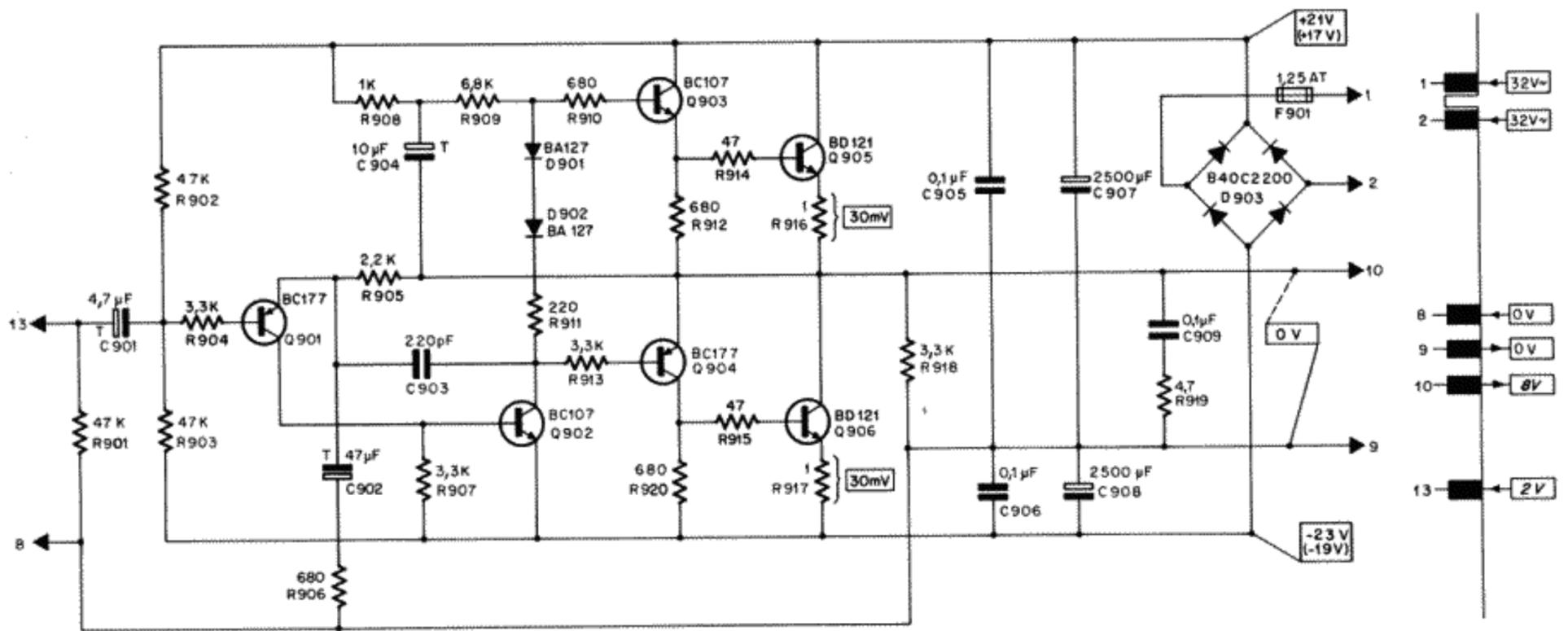
10	7	4	1
11	8	5	2
12	9	6	3
●	●		
14	13		



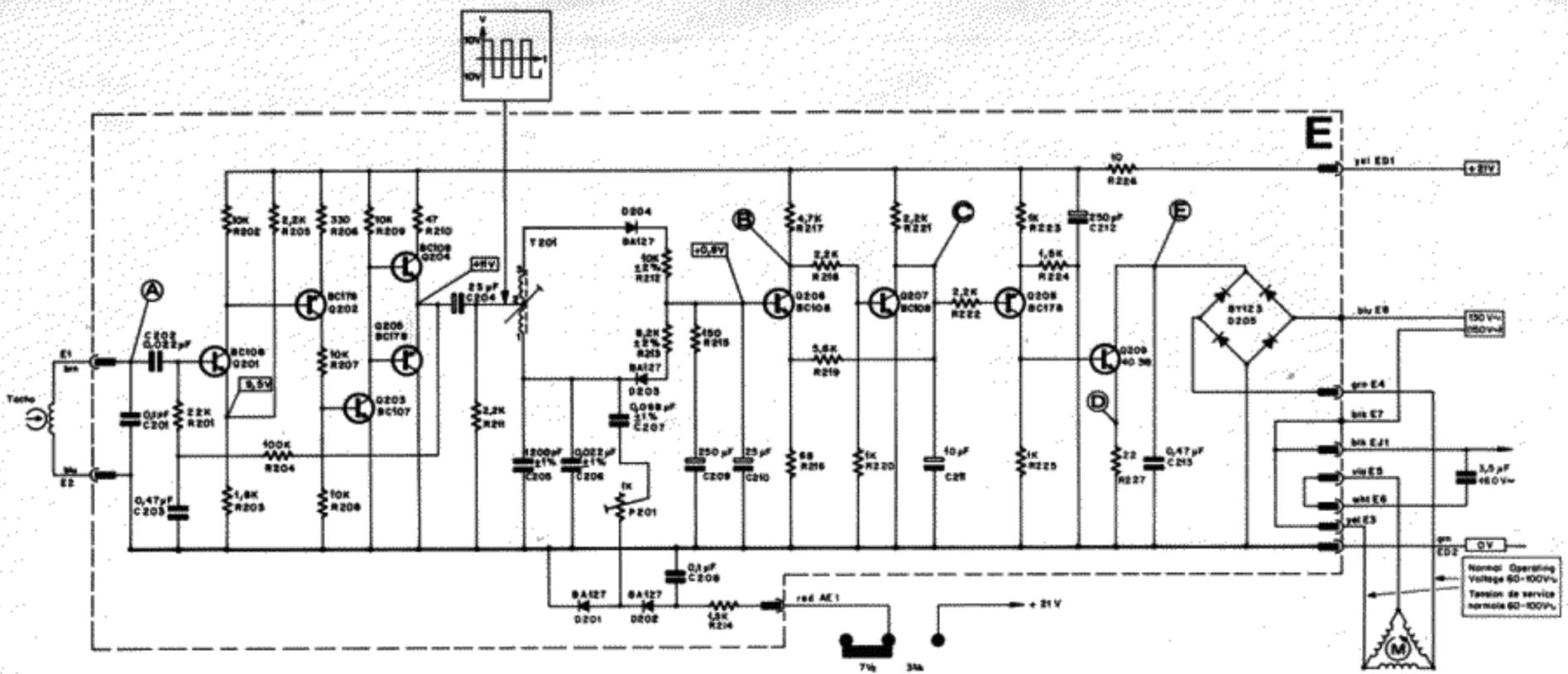
Record Relay
 Aufnahmerelais
 Relais d'enregistrement
 1.077.715



Playback Amplifier
 Wiedergabeverstärker 1.077.720
 Amplificateur de lecture

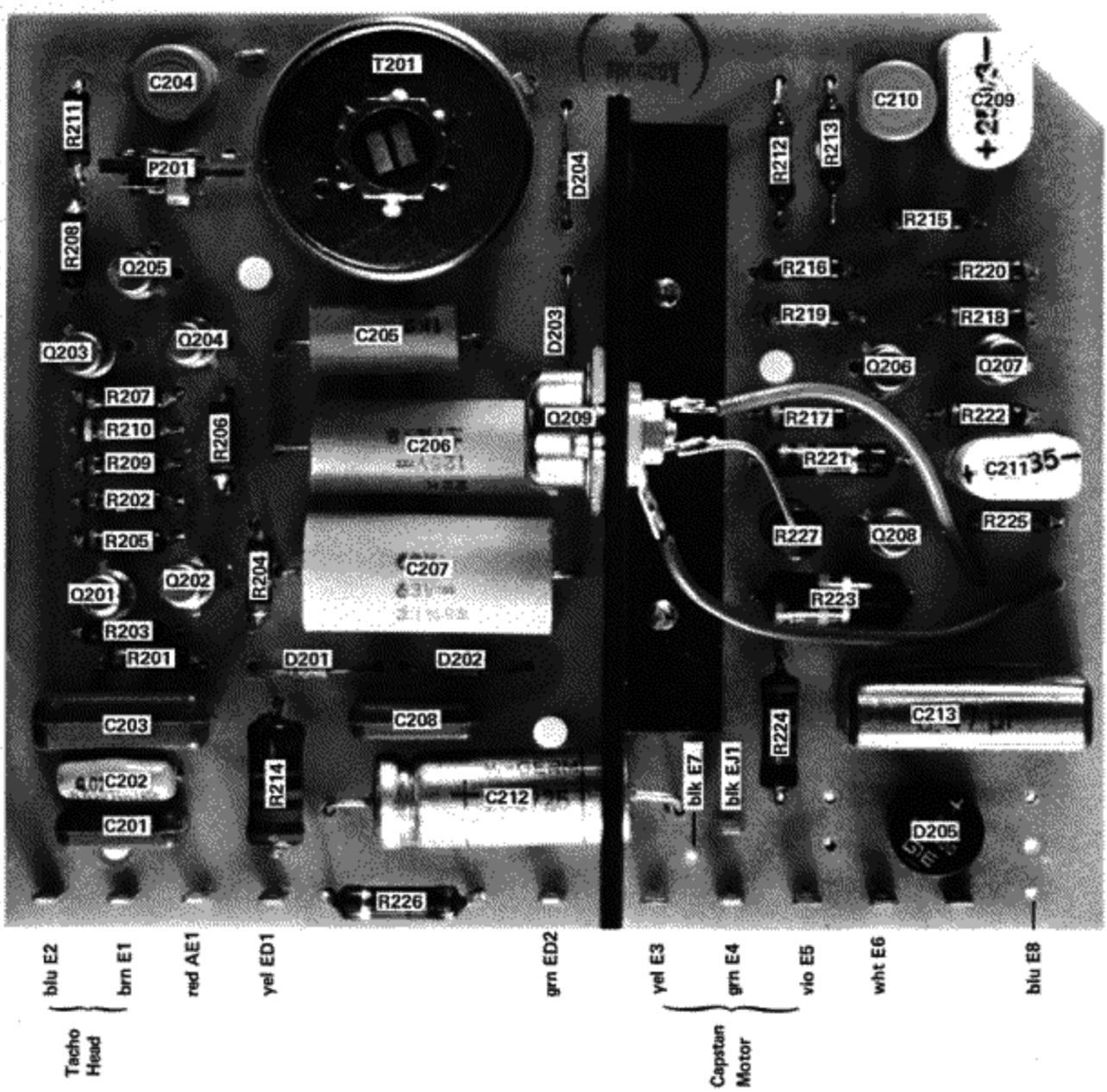


Loudspeaker Amplifier
 Lautsprecherverstärker
 Amplificateur de haut - parleur 1.077. 850



(A) 35 - 50 mV_{eff} (800 Hz = 3 3/4 in/s)

(B)	(C)	(D)	(E)	
7,5	0,4	3	5	Start (full voltage on motor, Q 209 saturated) Anlauf (volle Spannung am Motor, Q 209 in Sättigung) Démarrage (toute la tension au moteur, Q 209 saturé)
2	10	1	80	Operation (nominal values, depend on motor loading) Betrieb (Richtwerte, abhängig von der Belastung am Motor) Marche (valeurs nominales dépendant de la charge du moteur)
0,8	15	0	200	Speed higher than nominal (no voltage on motor, Q 209 cut off) Drehzahl höher als Solldrehzahl (keine Spannung am Motor, Q 209 gesperrt) Vitesse supérieure à la vitesse nominale (pas de tension au moteur, Q 209 bloqué)



Voltages in volts, measured against ground (0V) with a 20 kΩ/V DC - meter
Spannungen in Volt, gemessen gegen 0V DC-Instrument 20 kΩ/V
Tensions en volts mesurées par rapport à la masse (0V) avec un voltmètre DC de 20 kΩ/V de résistance interne.

Position E

Speed Control
Drehzahlregelung 1.077.725
Régulation de vitesse