



Technical Manual

STEREO CONTROL AMPLIFIER RC-5000

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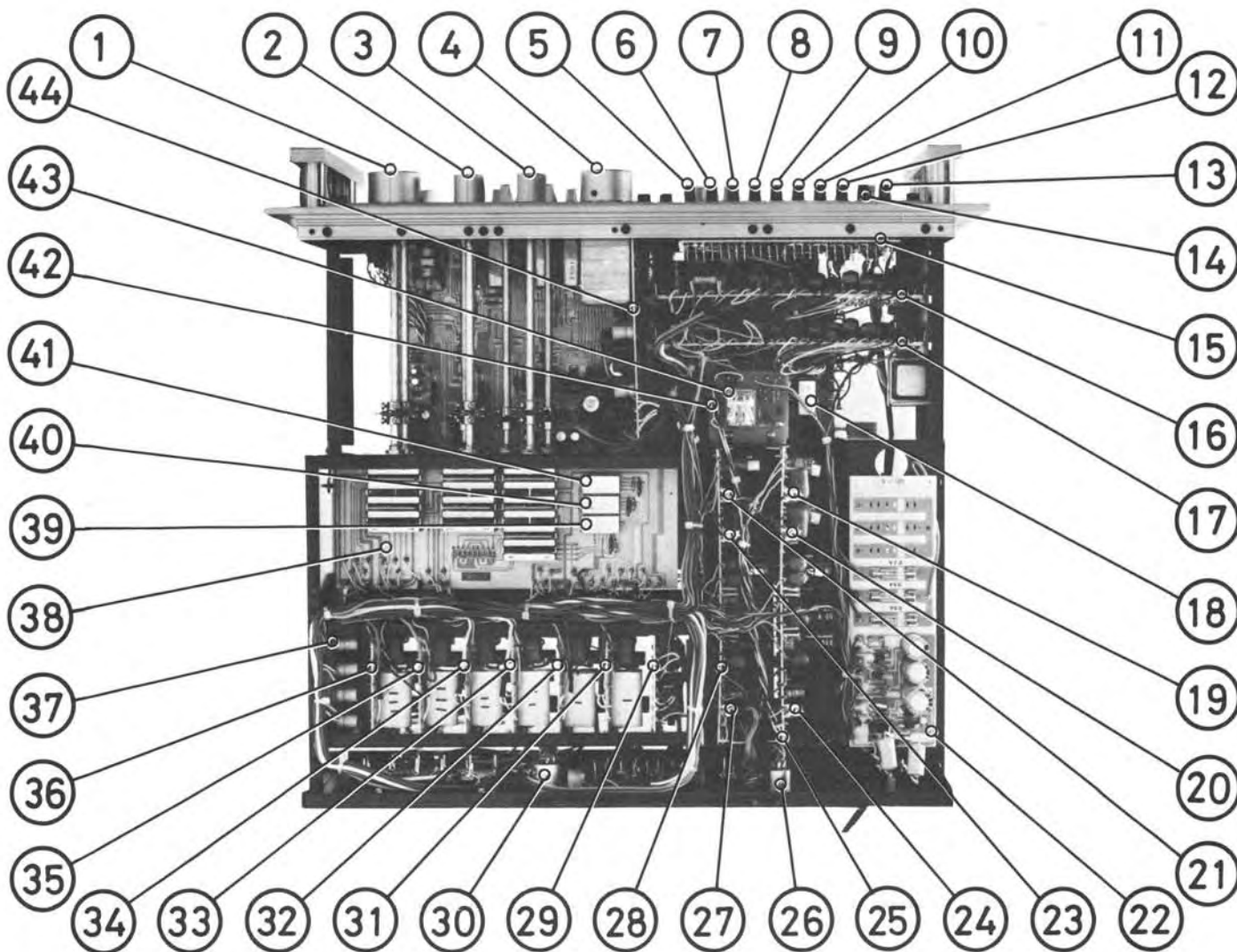
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Serial No. Beginning
NB58581
R32352

Chassis Layout (Top View)

Chassis-Anordnung (Oberansicht)

Installation du châssis (vue de dessus)



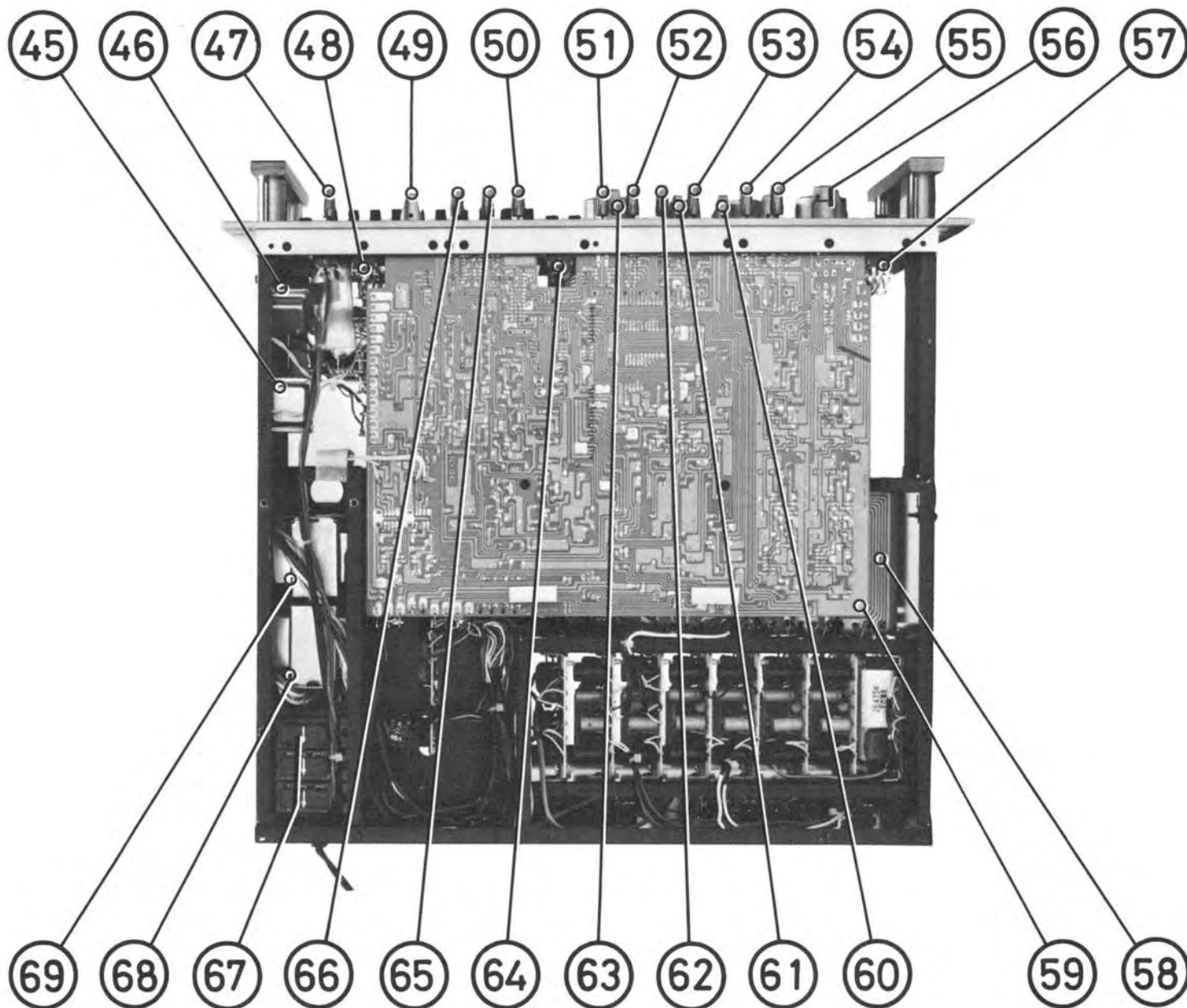
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Chassis-Anordnung (Unteransicht)

Installation du châssis (vue de dessous)



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- 49. S16, PHONES IMPEDANCE SWITCH
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Adjustment Procedures

Instruments: DC Voltmeter, AC Millivoltmeter, Audio Generator, Oscilloscope, 600-ohm non-inductive resistors

Notes:

- 1) Be sure to use high precision instruments.
- 2) The AC Millivoltmeter should be able to read at least -90dB , and fitted up with IHF A-network.
- 3) The Audio Generator should be accurately calibrated for frequency and output level.

A. Adjustment of B Voltage of Phono Amp Power Supply

1. Connect the plus lead of the DC Voltmeter to pin

+B5 on the Power Supply PC board (B-128) and the minus lead to the chassis ground. Set the meter in the 150V range and the polarity to +DC position.

Adjust potentiometer VR901 on the Power Supply PC board (B-128) so that DC Voltmeter reads +60V.

2. Next, connect the plus lead to pin $-B5$, and switch the polarity of the meter to $-DC$ position. (Or connect the minus lead to pin $-B5$, and the plus lead to the chassis ground.)

Adjust potentiometer VR902 on the Power Supply PC board (B-128) so that the DC Voltmeter reads -60V .

Einstellung

Instrumente: Gleichstrom-Voltmeter, Wechselstrom-Millivoltmeter, Tongenerator, Oszillograph, induktions-freie Widerstand (600 Ohm)

Hinweise:

- 1) Verwenden Sie nur Instrumente mit hoher Genauigkeit.
- 2) Das Wechselstrom-Millivoltmeter sollte mindestens -90dB anzeigen und mit einem IHF A Netzwerk ausgestattet sein.
- 3) Die Frequenz und der Ausgangspegel des Tongenerators sollten genau eingestellt sein.

A. Einstellung der B-Spannung des Netzteils für den Phonoverstärker

1. Verbinden Sie das Pluskabel des Gleichstrom-

Voltmeters mit dem Steckerstift +B5 auf der Netzteil-Leiterplatte (B-128) und das Minuskabel mit dem Erdanschluß des Chassis. Das Meter auf den 150V-Bereich und die Polarität auf +DC stellen. Stellen Sie nun das Potentiometer VR901 auf der Netzteil-Leiterplatte (B-128) so ein, daß auf dem Gleichstrom-Voltmeter eine Anzeige von +60V erhalten wird.

2. Das Pluskabel nun an den Steckerstift $-B5$ anschließen und das Voltmeter auf $-DC$ stellen. (Oder das Minuskabel an $-B5$ und das Pluskabel an den Erdanschluß des Chassis anschließen.) Das Potentiometer VR902 auf der Netzteil-Leiterplatte (B-128) so einstellen, daß -60V am Gleichstrom-Voltmeter angezeigt werden.

Processus de réglage

Instruments: Voltmètre à courant continu, millivoltmètre à courant alternatif, générateur d'audio-fréquences, oscilloscope, résistances non inductives de 600 ohms

Remarques:

- 1) S'assurer que seuls des appareils de haute précision sont utilisés.
- 2) Le millivoltmètre à courant alternatif doit pouvoir donner une lecture d'au moins -90dB et doit être équipé d'un réseau IHF A.
- 3) Le générateur d'audio-fréquences doit être étalonné avec précision en ce qui concerne fréquences et niveau de sortie.

A. Réglage de la tension B de l'alimentation de l'ampli phono

1. Brancher le conducteur positif du voltmètre à courant continu à la fiche +B5 de la plaquette du circuit d'alimentation (B-128) et le conducteur négatif à la masse du châssis. Placer le compteur dans la zone 150V et régler la polarité sur la position +DC. Régler le potentiomètre VR901 de la plaquette du circuit d'alimentation (B-128) de façon à ce que la voltmètre à courant continu indique +60V.
2. Raccorder ensuite le conducteur positif à la fiche $-B5$ et commuter le compteur sur la position $-DC$. (Ou encore, connecter le conducteur négatif à la fiche $-B5$ et le conducteur positif à la masse du châssis.) Régler le potentiomètre VR902 de la plaquette du circuit d'alimentation (B-128) de façon à ce que le voltmètre à courant continu indique -60V .

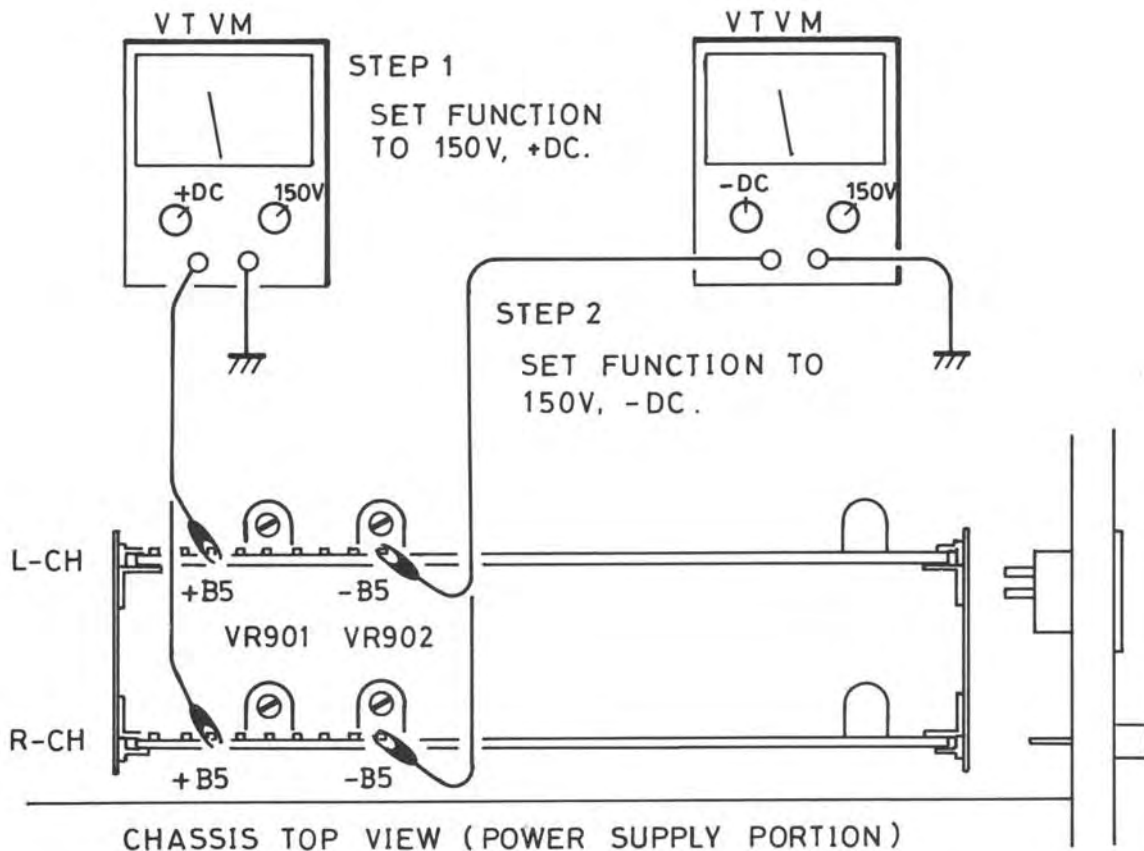


Fig. 1. Voltage Adjustment
 Abb. 1. Spannungseinstellung
 Fig. 1. Réglage de la tension

B. Adjustment of Phase of Cannon Output Amp

1. Connect 600-ohm load resistors to the Cannon Output connector (between pins 2 and 1, and between pins 3 and 1). Short pins 2 and 3, and connect the Oscilloscope across the load resistor. Set AUX-1 Input switch and Pre-Out switch on the rear panel (S17 and S18 in Schematic Diagram) to Cannon J. position.
2. Connect the Audio Generator to AUX-1 Cannon Input connector (across pins 2 and 1, or pins 3 and 1), and feed in 1,000Hz 75mV (sine wave) signal.

B. Phaseneinstellung des Cannon-Ausgangsverstärkers

1. Die Belastungswiderstände (600 Ohm) an den Cannon-Ausgangsanschluß anschließen (zwischen Stifte 2 und 1, und zwischen Stifte 3 und 1). Die Stifte 2 und 3 miteinander verbinden und den Oszillographen an einen Belastungswiderstand anschließen. Den AUX-1-Eingangsschalter und den Pre-Out-Schalter auf der Rückseite (S17 und S18 im Schaltungsschema) auf Stellung Cannon J. stellen.
2. Den Tongenerator an den AUX-1 Cannon-Eingangsanschluß anschließen (an Steckerstifte 2 und 1 oder 3 und 1) und ein 1kHz-75mV-Signal (Sinus) zuführen. Nun das Potentiometer VR903 auf der Cannon-Ausgang und Netzteil-Leiterplatte (B-128) so ein-

Then adjust potentiometer VR903 on the Cannon Output and Power Supply PC board (B-128) so that the output waveform on the scope is minimum.

3. After completing adjustment, open the shorted pin. Connect the AC Voltmeter across 600-ohm load resistor, and make sure the output level at pins 2 and 1, and 3 and 1 is $500\text{mV} \pm 1\text{dB}$.
4. Carry out steps 1 to 3 above for the other channel.

NOTE:

Sound will not come out for about seven seconds due to the relay protection circuit built in to prevent loud pop noise when the Power switch is flipped on.

stellen, daß die Ausgangswelle auf dem Oszillographen möglichst klein ist.

3. Nach dieser Einstellung die kurzgeschlossenen Steckerstifte 2 und 3 voneinander trennen. Das Wechselstrom-Voltmeter an einen 600 Ohm-Belastungswiderstand anschließen und nachprüfen, ob der Ausgangspegel an den Stiffen 2 und 1 (bzw-3 und 1) $500\text{mV} \pm 1\text{dB}$ beträgt.
4. Die Schritte 1 bis 3 für den anderen Kanal durchführen.

Hinweis:

Erst nach etwa 7 Sekunden erscheint ein Ausgangssignal infolge des eingebauten Relais-Schutzkreises zur Verhinderung von sehr lauten Signalen beim Einschalten des Netzschalters.

B. Mise en phase de l'ampli de sortie Cannon

1. Brancher les résistances de charge de 600 ohms à la borne de sortie Cannon (entre les fiches 2 et 1, et entre les fiches 3 et 1). Court-circuiter les fiches 2 et 3 et brancher l'oscilloscope à travers la résistance de charge. Placer le commutateur d'entrée AUX-1 ainsi que le commutateur Pre-Out du panneau arrière (S17 et S18 sur le diagramme schématique) sur la position Cannon J.
2. Raccorder le générateur d'audio-fréquences à la borne d'entrée Cannon AUX-1 (à travers les fiches 2 et 1, ou les fiches 3 et 1); envoyer un signal de 1.000Hz 75mV (onde sinusoïdale). Régler alors le potentiomètre VR903 de la plaquette du circuit de sortie Cannon et du circuit d'alimentation (B128) de façon à ce que

la forme de l'onde de sortie soit réduite au minimum sur l'écran.

3. Après avoir terminé le réglage, libérer la fiche court-circuitée. Brancher le voltmètre à courant alternatif à travers la résistance de charge de 600 ohms et vérifier que le niveau de sortie aux fiches 2 et 1, et 3 et 1, est de 500mV à ± 1 dB.
4. Répéter les opérations 1 à 3 ci-dessus pour l'autre canal.

Remarque:

Le son ne sort pas pendant une durée d'environ 7 secondes à cause du circuit de protection à relais incorporé dans le but d'éviter le choc sonore lorsque l'on actionne le commutateur d'alimentation.

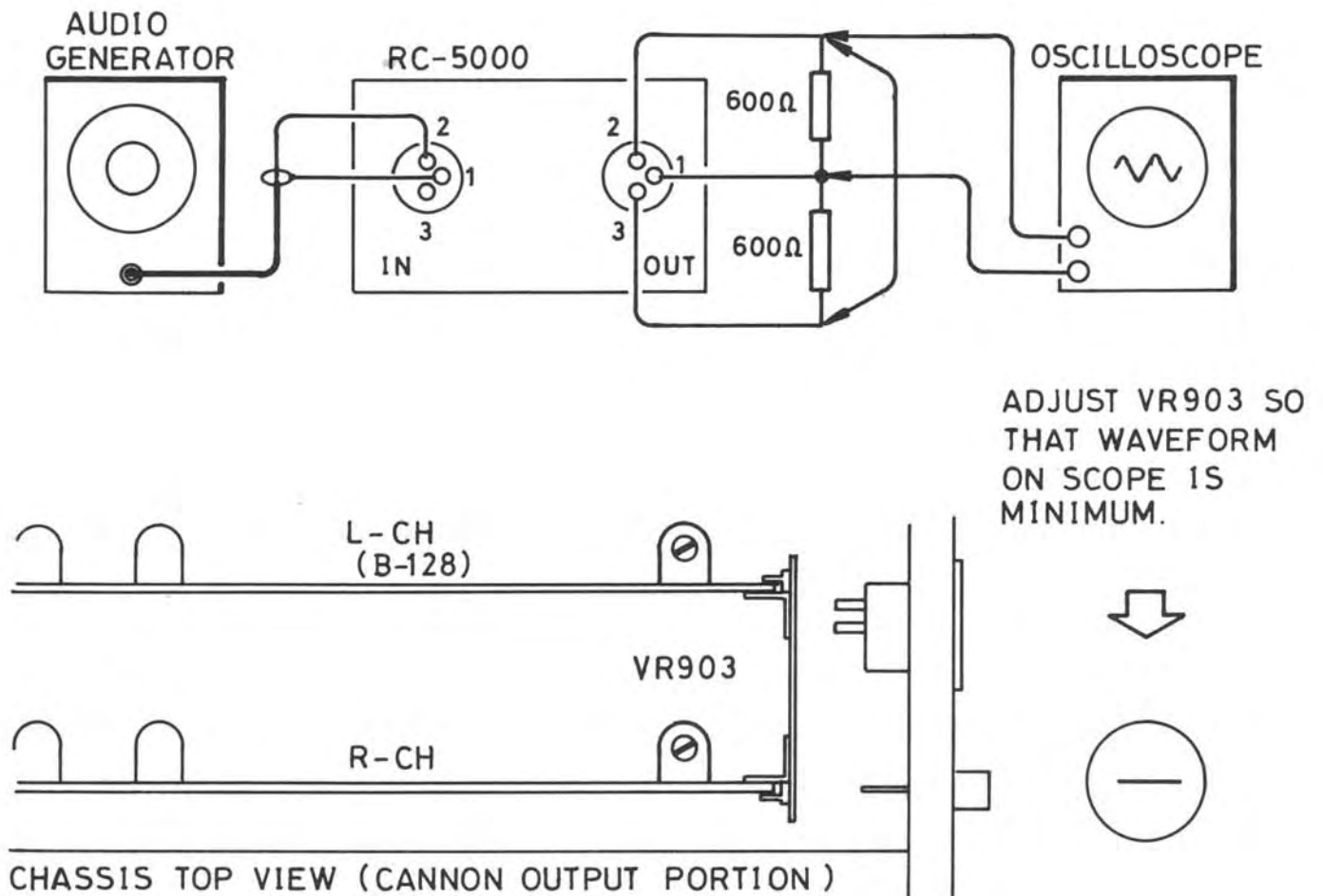


Fig. 2. Phase Adjustment
 Abb. 2. Phaseneinstellung
 Fig. 2. Mise en phase

Specifications

Technische Daten

Caractéristiques

A. PHONO EQUALIZER AMP SECTION (measured at TAPE OUT)

- Output Voltage (at 1kHz)
Rated Output:
Pin Jack Output 150mV
DIN Socket Output 50mV
Maximum Output:
Pin Jack (at 0.5% THD) 30V
 - Harmonic Distortion (at 5V output, 20Hz to 20 kHz)
Phono-1, -2 (MAG): 0.009%
Phono-3 (MC): 0.009%
 - Phono Equalization (20Hz to 20kHz)
Phono-1, RIAA STD. ±0.4dB
Phono-2, -3 RIAA STD. ±0.3dB
 - Hum and Noise (at 1V output, IHF A-network)
Phono-1, -2 75dB
Phono-3 65dB
 - Input Sensitivity/Impedance (at rated output)
Phono-1 (MAG) 2mV to 8mV/±1dB, 15kΩ to 100kΩ (Additional Cap: 0 to 400pF)
Phono-2 (MAG) 2mV±1dB, 50kΩ
Phono-3 (MC) 90μV±1dB, 22kΩ
 - Overload (at 1kHz, 0.5% THD)
Phono-1 450mV to 1,800mV
Phono-2 450mV
Phono-3 15mV
 - IM Distortion, 70Hz:7kHz (4:1) .0012%
- Note:** S/N (measured at Pre-Out Jack, 16Hz Subsonic ON)
Phono-1, -2 63dB
Phono-3 51.5dB

B. PRE AMP SECTION (measured at Pre Out)

- Output Voltage/Impedance
Pin Jack
Rated Output 1V/300Ω
Maximum Output at 0.5% THD 7V
Cannon Connector
Rated Output 1V/600Ω
Maximum Output at 0.5% THD 4.5V
- Harmonic Distortion (at rated output)
Pin Jack Output (20Hz to 20 kHz) 0.01%
Cannon Connector Output (20Hz to 20 kHz) 0.02%
- Frequency Response
Pin Jack Output, +0dB 5kHz to 200kHz
-1dB
Cannon Connector Output, +0dB
-1dB 15Hz to 150kHz
- Hum and Noise (IHF A-network)
Tuner, AUX-1 (Pin Jack), AUX-2 92dB
Tape Monitor-1, -2 92dB
AUX-1 (Cannon Connector) 80dB
Residual (Volume Control at Min.) 10μV/100dB
- Input Sensitivity/Impedance (at rated output)
Tuner, AUX-1 (Pin Jack), AUX-2 150mV±1dB/50kΩ
Tape Monitor-1, -2 150mV±1dB/50kΩ
AUX-1 (Cannon Connector) 150mV±1dB/600Ω
- Overload (at 1kHz, 0.5% THD)
Tuner, AUX-1 (Pin Jack), AUX-2 7V
AUX-1 (Cannon Connector) 7V
- IM Distortion, 70Hz:7kHz (4:1) .005%

C. MIC AMP SECTION (at rated preamp output)

- Harmonic Distortion 0.1%
- Frequency Response, +0dB 25Hz to 20 kHz
-3dB
- Hum and Noise (IHF A-network) .68dB
- Residual Noise (IHF A-network) .32μV/90dB
- Input sensitivity/Impedance 4mV±1dB/600Ω
50kΩ
- Overload (at 1kHz, 0.5% THD) . . 1V

D. HEADPHONE AMP SECTION (at rated preamp input)

- Harmonic Distortion : 0.1%
- Frequency Response, +0dB High Imp: 80Hz to 18kHz
-1dB Low Imp: 70Hz to 35kHz
- Hum and Noise (IHF A-network) .75dB
- Rated Output
(at 1kHz, rated input 20mW/8Ω load
12mW/600Ω load)
- Maximum Output (at 1kHz, 0.5% THD)
Both channels driven 0.5W/8Ω load
Both channels driven 0.35W/600Ω load
- Output Impedance: Low 4Ω to 16Ω
High 600Ω

E. CONTROL CHARACTERISTICS

- Division Frequency
32Hz +12dB ~ -12dB/±1dB
63Hz +12dB ~ -12dB/±1dB
125Hz +12dB ~ -12dB/±1dB
250Hz +12dB ~ -12dB/±1dB
500Hz +12dB ~ -12dB/±1dB
1kHz +12dB ~ -12dB/±1dB
2kHz +12dB ~ -12dB/±1dB
4kHz +12dB ~ -12dB/±1dB
8kHz +12dB ~ -12dB/±1dB
16kHz +12dB ~ -12dB/±1dB
- Loudness-1 at 50Hz +13dB±1dB
10kHz + 6dB±1dB
-2 at 50Hz + 7dB±1dB
10kHz + 3dB±1dB
- High Filter-1 at 12kHz 12dB/oct
-2 at 24kHz 12dB/oct
- Low Filter-1 at 16Hz 12dB/oct
-2 at 4Hz 12dB/oct
- Muting -20dB±1dB
- Tone Defeat
(at 1kHz, IN to OUT) 0dB±1dB
- Volume Difference between Left and Right Channels:
At maximum position 1dB
At 9 to 3 o'clock position 1.5dB

Repair Parts List

Reparaturteilliste

Liste des pièces de rechange

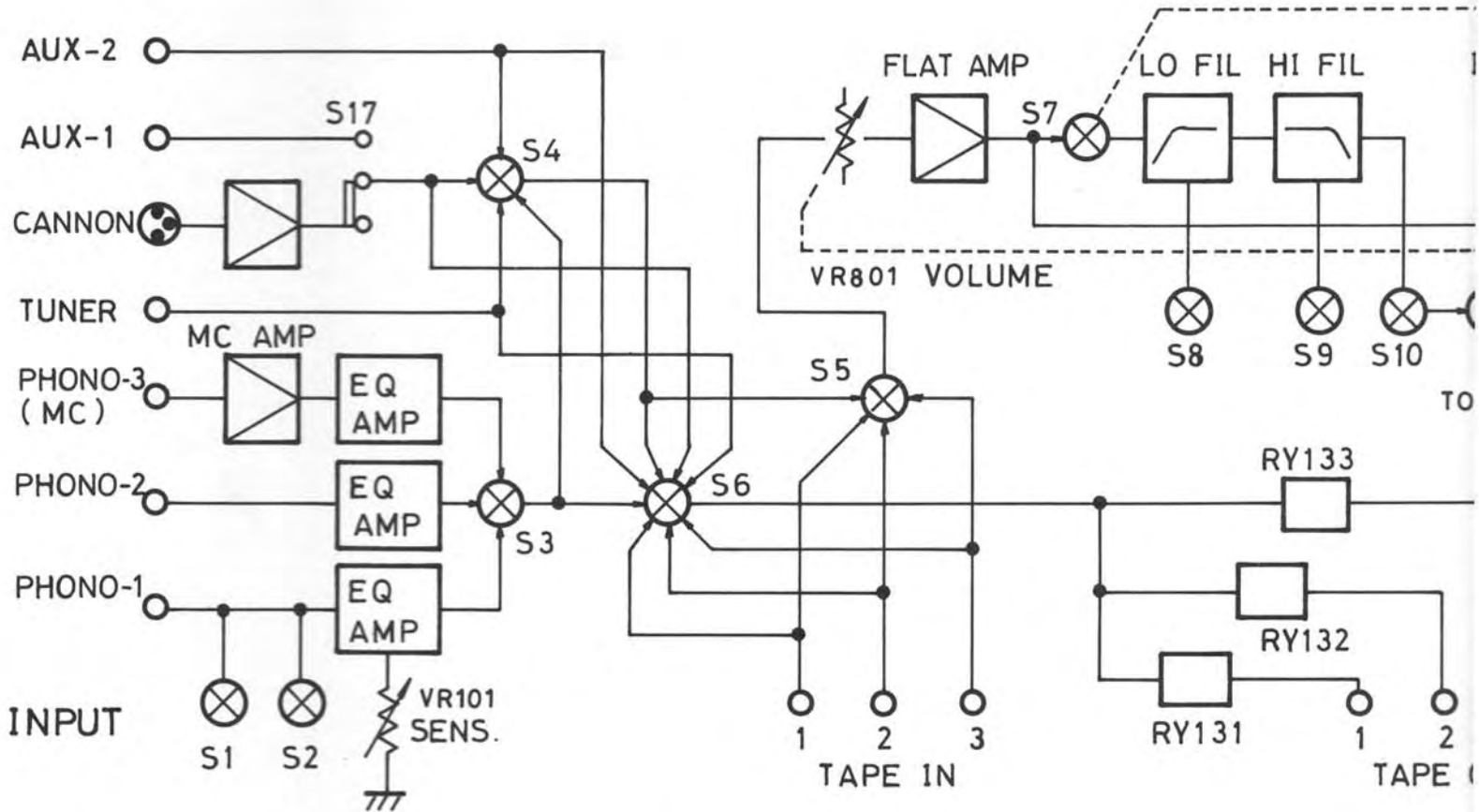
Schematic Location	Part No.	Description										
TRANSISTORS, DIODES AND IC'S												
Q201, 202, 203 204, 209, 210 211, 212, 219 220, 223, 224 225, 226	301201180	2SC1844										
Q205, 206, 207 208, 213, 214 215, 216, 217 218, 221, 222 227, 228			301001149	2SA991								
Q251, 962					301201115	2SC828 (R) or (S)						
Q252					301101123	2SB605 (K)						
Q301, 302, 303 304, 401, 404 5001, 5002, 5005 5006, 5013, 5014 5015, 5016, 633 634, 635, 801 802, 803, 804 807, 808, 809 810, 821, 822 909, 910, 911 912					302001113	2SK68A (L) or (M)						
Q305, 306, 307 308, 313, 314 406, 408, 601 606, 607, 612 613, 618, 619 624, 625, 630 631, 811, 812 813, 814, 819 820, 908, 913 914, 917, 918	301001145	2SA921 (S) or (T)										
Q309, 310, 311 312, 315, 316 317, 318, 403 407, 602, 605 608, 611, 614 617, 620, 623 626, 629, 632 805, 806, 815 816, 817, 818 907, 915, 916			301201171	2SC1980 (S) or (T)								
Q402, 405							302001115	2SK130A (L) or (M)				
Q409							301201164	2SC1885 (R) or (S)				
Q410, 5003, 5004 5009, 5010, 5011 5012, 5017, 5018 636, 823, 824							301001142	2SA912 (R) or (S)				
Q603, 604, 609 610, 615, 616 621, 622, 627 628									301201155	2SC1318 (R) or (S)		
Q901											301201132	2SC1384 (R) or (S)
Q902											301001123	2SA684 (R) or (S)
Q903							301201185	2SC1827 (Y), (G) or (B)				
Q904							301001153	2SA769 (Y), (G) or (B)				
Q905	301201158	2SC1567 (R) or (S)										
Q906	301001135	2SA794 (R) or (S)										
Q961	301201170	2SC1984										
Q963	301301134	2SD571 (K)										
D131 ~ 142 231, 232, 5001 5002, 965	300111010	1S2472										
D201, 202, 803 804, 966			300212002	KB-265								

Schematic Location	Part No.	Description
D301, 302, 401 402, 403, 801 802	300212008	KB-165
D901, 902, 963		
D903, 904	300919022	MI-152, +B Rectifier
D905, 906	300313021	WZ-310, Zener 31V, 0.5W
D961, 962	300919024	SR1K-4, Rectifier
D001	300414014	SEL-105RC, LED, Pilot Lamp
IC5001, 5002, 5003 5004	303452154	TA-7136P, Mic Amp
IC5005, 5006		
IC901	303452179	μ A78M20UC, +B Stabilizer
IC902	303452181	μ A79M20AUC, -B Stabilizer
VARIABLE RESISTORS		
VR101	525101154	1KBx2, Phono-1 Sensitivity Control
VR5001	525101153	50KBx2x2, Mic Mixing Control
VR701 ~ 710	581005047	150KWx2, Acoustic Control
VR801	525121139	55Kx2 + 20Kx2, Volume Control
VR802	525101152	50KMN, Balance Control
VR901, 902	510502141	10KB, Voltage Adj
VR903	510502142	50KB, Cannon Amp Phase Adj
SWITCHES		
S1	601011326	Phono-1 Load Impedance Selector
S2	601011327	Phono-1 Additional Capacitance Selector
S3	601011328	Rhono Selector
S4	601011323	Input Selector
S5	601011322	Monitor
S6	601011321	Rec Out Selector
S7	611001258	Tone Selector
S8, 9	611001259	High Filter, Low Filter
S10, 15	611001256	Mode (L-R) Selector, Muting
S11, 12, 13, 14	611001257	Mic Mode, Loudness, Mode (Mono-Rev), Mic Impedance Selector
S16		
S17, 18	613000022	Cannon Input, Cannon Output
S19	611001247	Power
OTHERS		
RY131, 132, 133 5001, 5002	240111236	Reed Relay, Tape Out, Phones Out, etc.
RY251		
L5001, 5002, 5003 5004, 5005, 901 902	226501141	Coil, 47 μ H
T001, 002		
T003	205001431	Power Transformer for Relay

Schematic Location	Part No.	Description
T004, 005	227111012	Transformer, Phones Output
F961, 962	341221050	Fuse, 0.5A-3AG, for 100V, 120V Areas
	341221025	Fuse, 0.25A-3AG, for 220V, 240V Areas
	345952020	Fuse, 200mAT, for Europe
F963	341221020	Fuse, 0.2A-3AG, for 100V, 120V Areas
	341221015	Fuse, 0.15A-3AG, for 220V, 240V Areas
	345952006	Fuse, 63mAT, for Europe
	626110028	Jack, Headphones, Tape Out-3
	627117826	Jack, Mic
	626110029	Jack, Tape In-3
	624201202	Pin Jack, 2P, Pre Out
	624202204	Pin Jack, 4P, Phono, Tuner, AUX
	624203204	Pin Jack, 4P, Tape Monitor-1, -2
	625001115	DIN Socket, 5P w/Switch, Tape Monitor
	628111122	Cannon Socket 3P F-type
	628111121	Cannon Socket 3P M-type
	648211141	AC Outlet
	796301115	Line Cord, for USA, etc.
	796301125	Line Cord, for Australia
	796301130	Line Cord, for UK
	796301139	Line Cord, for Europe
	111911395	Front Panel Ass'y wo/Handles, (Gold)
	111911402	Front Panel Ass'y wo/Handles, (Black)
	670101115	Handle (Gold)
	670101116	Handle (Black)
	116310215	Knob (Gold), Volume, Input Selector
	116310211	Knob (Gold), Phono Input Selector, Balance
	116310216	Knob (Gold), Tape Monitor, Rec Out
	116310217	Knob (Gold), Phono Sensitivity Selector, etc.
	116310221	Knob (Gold), Mic Mix Level, R-ch
	116310222	Knob (Gold), Mic Mix Level, L-ch
	116310212	Knob (Gold), Loudness, Filter, etc.
	116310165	Knob, Acoustic Control, (White Marker)
	116310226	Knob (Black), Volume, Input Selector
	116310227	Knob (Black), Balance, Phono Input Selector
	116310228	Knob (Black), Tape Monitor, Rec Out
	116310229	Knob (Black), Phono Sensitivity Selector, etc.
	116310230	Knob (Black), Mic Mix Level, R-ch
	116310231	Knob (Black), Mic Mix Level, L-ch
	116310232	Knob (Black), Loudness, Filter, etc.
	116310233	Knob, Acoustic Control (Red Marker)
	770911189	Collar, Handle Mtg (Gold)
	770911205	Collar, Handle Mtg (Black)
	673402018	Foot
	770202007	Shorted Pin Plug, Phono Output

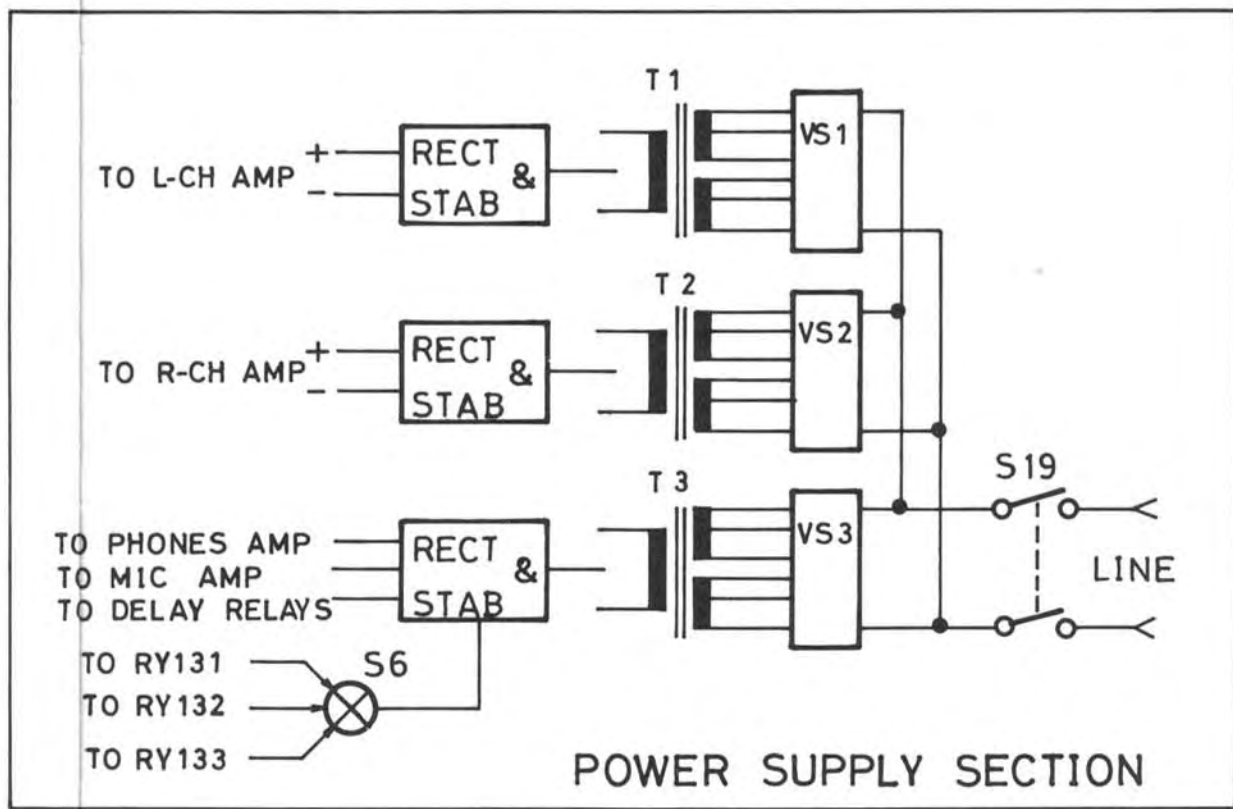
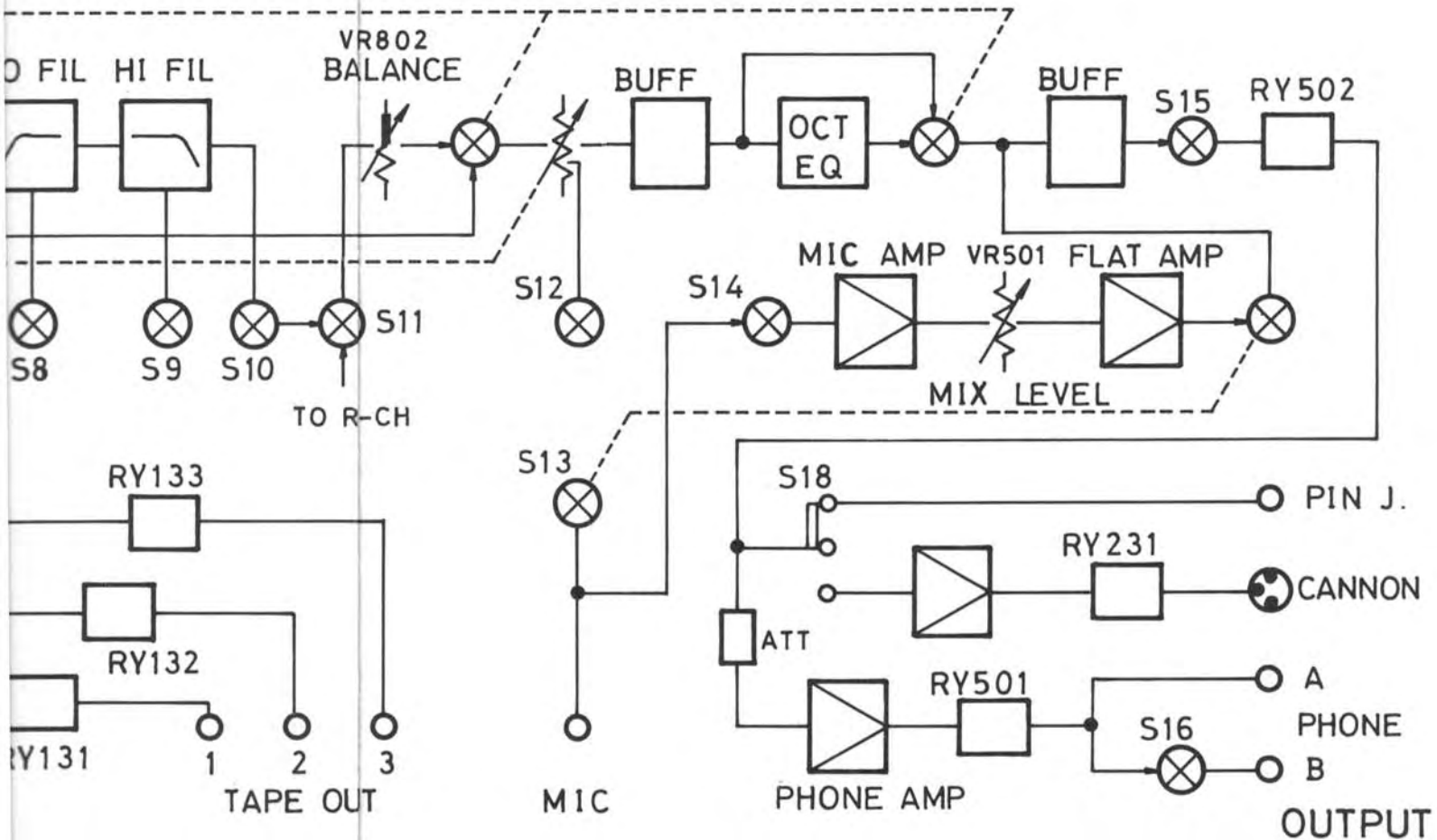
Schematic Location	Part No.	Description
	791001134	Shielded Cord Ass'y, w/Pin Plug (Gold)
	770911209	Cap Screw, M6x40mm (BLZ), Handle Mtg
	770911119	Ground Terminal
	705213004	Screw, +3x4mm, Binding (Ni), Acoustic Control Mtg
	766223008	Screw, +3x8mm, Tap-tight (BLZ), DIN Socket Mtg, etc.
	770911130	Screw, +3x9mm, Pilot Lamp PC Board Mtg
	762213006	Screw, +3x6mm, Oval Countersunk, Cannon Socket Mtg
	725223008	Screw, +3x8mm, Tapping (BLZ), Pin Jack Board Mtg
	766213012	Screw, +3x12mm, Tap-tight, Transistor Mtg, etc.
	766213006	Screw, +3x6mm, Tap-tight (Ni), Power Switch Mtg, etc.
	765224008	Screw, +4x8mm, Tap-tight (BLZ), Power Trans Mtg
	765224010	Screw, +4x10mm, Tap-tight (BLZ), Foot Mtg
	725224010	Screw, +4x10mm, Tapping (BLZ), Bottom Cover Mtg, etc.
	770402207	Nut, Hex, M9
	770402209	Nut, Hex, M12
	770402201	Nut, Hex, M3
	770911144	Nut, Square, M3, Transistor, Mtg
	770402205	Nut, Hex, M7
	770402206	Nut, Hex, M8
	770911147	Plasti Rivet
	770500008	Washer, $\phi 9$
	770500009	Washer, $\phi 12$
	770500014	Teethed Washer, $\phi 3$
	770500001	Washer, $\phi 3$
	770500010	Spring Washer, $\phi 3$
	770500006	Washer, $\phi 7$
	141510161	Phono-1 Amp PC Board Ass'y
	141510162	Phono-2 Amp PC Board Ass'y
	141510163	Phono-3 Amp PC Board Ass'y
	141710295	Mic and Filters Amp PC Board Ass'y
	141810795	Volume Control Amp PC Board Ass'y
	141810796	Phono MC Head-amp PC Board Ass'y
	141810797	Cannon Input Amp PC Board Ass'y
	141810798	Selector Circuit PC Board Ass'y
	141810799	Phono Selector PC Board Ass'y
	141810800	Acoustic Control PC Board Ass'y
	141810801	Octave Equalizer PC Board Ass'y
	141810703	Pilot Lamp PC Board Ass'y
	141810802	Cannon Output and Power Supply PC Board Ass'y
	141810803	Relays Power Supply PC Board Ass'y
	141810804	Cannon Output Relay PC Board Ass'y

Block Diagram
 Blockschaltbild
 Schéma synoptique



R-CH SAME AS ABOVE

- | | |
|-------------------------------|------------------------------|
| S1 PHONO-1 LOAD IMP. SELECTOR | S16 PHONES B IMP. SELECTOR |
| S2 PHONO-1 ADD. CAPACITOR SW | S17 CANNON IN SWITCH |
| S3 PHONO INPUT SELECTOR | S18 CANNON OUTPUT SWITCH |
| S4 INPUT SELECTOR | S19 POWER SWITCH |
| S5 MONITOR SWITCH | RY131 TAPE OUT 1 RELAY |
| S6 REC OUT SWITCH | RY132 TAPE OUT 2 RELAY |
| S7 TONE SWITCH | RY133 TAPE OUT 3 RELAY |
| S8 LOW FILTER SWITCH | RY231 CANNON OUT DELAY RELAY |
| S9 HIGH FILTER SWITCH | RY501 PHONES DELAY RELAY |
| S10 MODE SWITCH (1) | RY502 OUTPUT DELAY RELAY |
| S11 MODE SWITCH (2) | |
| S12 LOUDNESS SWITCH | |
| S13 MIC IMPEDANCE SWITCH | VS VOLTAGE SELECTOR |
| S14 MIC MODE SWITCH | |
| S15 MUTING SWITCH | |



Addendum

The following changes have been made on the units with serial numbers from R32452 and NB66158 onward.

1. Resistance value of resistor R825 (R826 for R-ch) used in the Volume Control Amplifier (X-220) circuit is changed from $33k\Omega$ to $22k\Omega$. (Fig. A)

Reason: To prevent deterioration of distortion factor between 40°C and 50°C of ambient temperature.

2. Choke coil (47μ) is added to B circuit for the Cannon Output Amplifier. (Fig. B)

Reason: To improve S/N ratio of the Cannon Output Amplifier.

In the Power Supply PC board, circuit paths between +B2 and +B3, and between -B2 and -B3 are cut off, and choke coils are placed in between respectively.

The same modification has already been made for some of the units with serial numbers smaller than NB66158 and R32452.

Nachtrag

Folgende Veränderungen wurden bei den Geräten mit den Seriennummern R32452 und NB66158 aufwärts vorgenommen.

1. Der Widerstand R825 (R826 für R-Kanal) im Lautstärkereger-Verstärker (X-220) wurde von $33k\Omega$ auf $22k\Omega$ herabgesetzt – (Abb. A)

Grund: Verhinderung von Verschlechterung des Klirrfaktors bei Umgebungstemperaturen von 40° bis 50° .

2. Einbau einer Schutzdrossel (47μ) in den B-Kreis des Cannon-Ausgangsverstärkers – (Abb. B)

Grund: Verbesserung des Signal-Rauschabstandes des Cannon-Ausgangsverstärkers.

In die Stromkreise zwischen +B2 und +B3 und zwischen -B2 und -B3 auf der Netzteil-Leiterplatte wurden jeweils eine Schutzdrossel eingebaut.

Diese Veränderung wurde bereits bei einigen Geräten mit Seriennummern unter NB66158 und unter R32452 vorgenommen.

Addendum

Les modifications suivantes ont été apportées aux appareils portant les numéros de série R32452 et NB66158 et au delà.

1. La valeur de la résistance R825 (R826 pour le canal droit) utilisée dans le circuit amplificateur de commande du volume (X-220) est passée de $33k\Omega$ à $22k\Omega$. (Fig. A)

Raison: Empêcher une détérioration du facteur de distorsion entre 40°C et 50°C de température ambiante.

2. Une bobine d'arrêt (47μ) est adjointe au circuit B de l'amplificateur de sortie Cannon. (Fig. B)

Raison: Amélioration du rapport signal/bruit de l'amplificateur de sortie Cannon.

Sur la plaquette du circuit d'alimentation, les trajectoires de circuit sont coupées entre +B2 et +B3 et entre -B2 et -B3 et des bobines d'arrêt y sont insérées.

Une modification semblable a déjà été apportée à quelques-uns des appareils portant des numéros de série inférieurs à NB66158 et R32452.

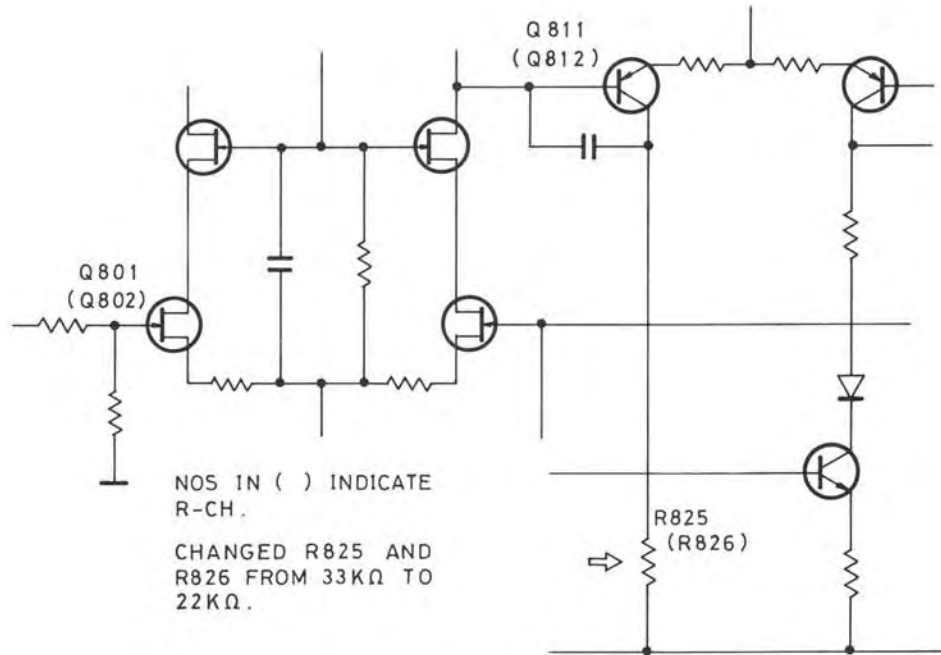


Fig. A. Volume Control Amp Circuit (portion)

Abb. A. Lautstärkereger-Verstärkerkreis (Teil)

Fig. A. Circuit d'amplification de la commande du volume (portion)

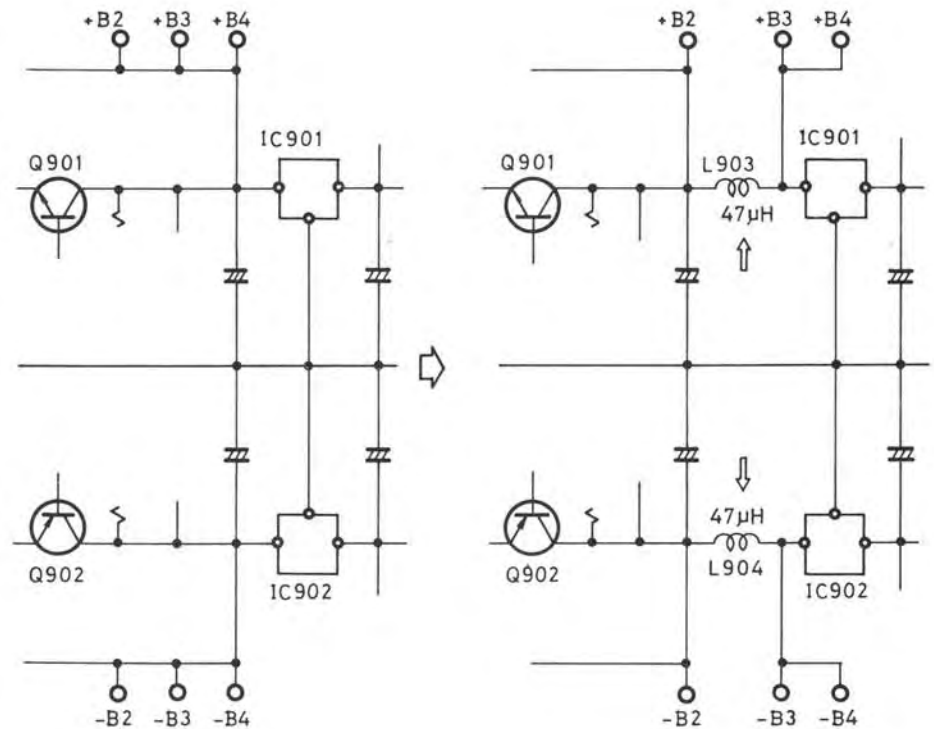
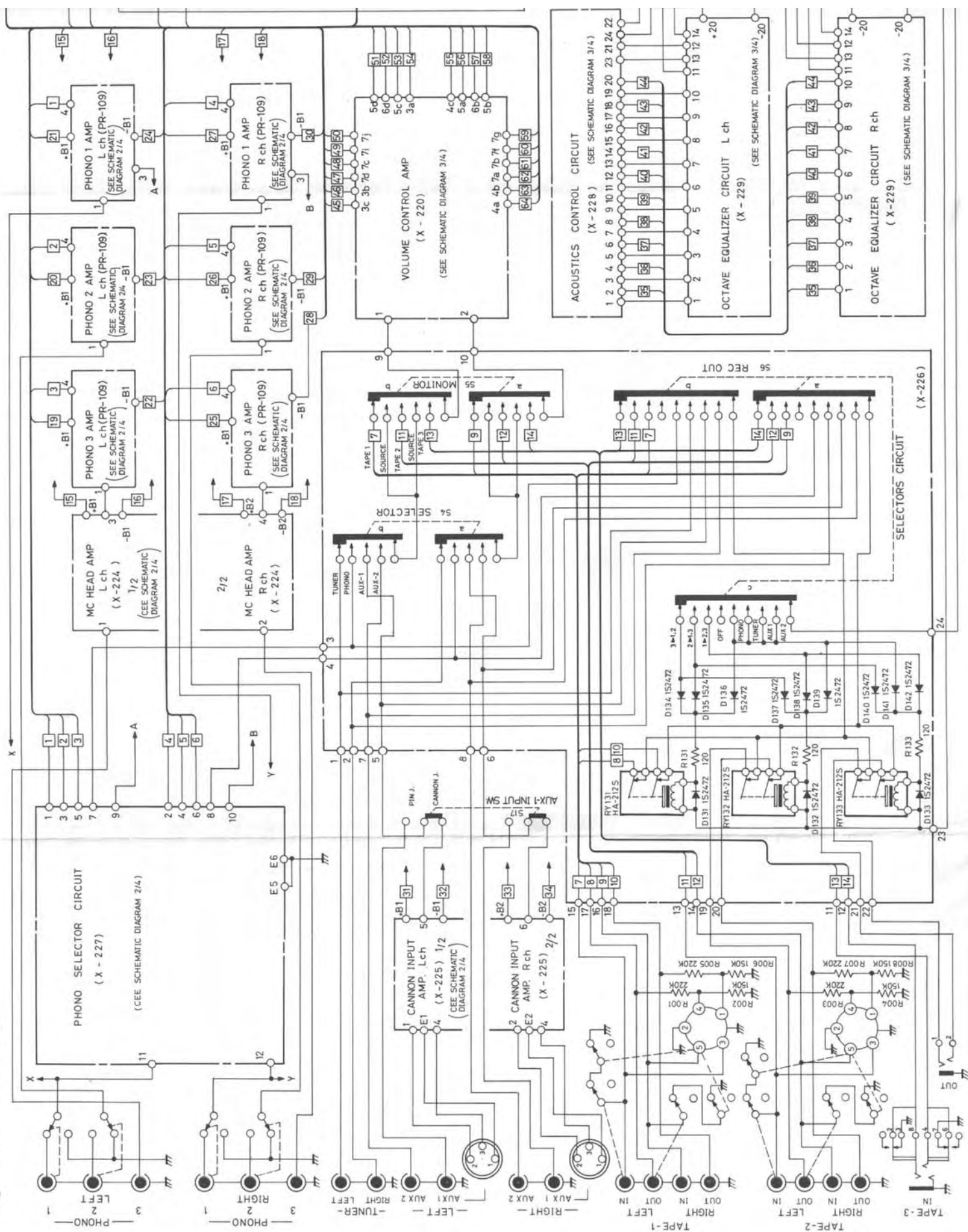


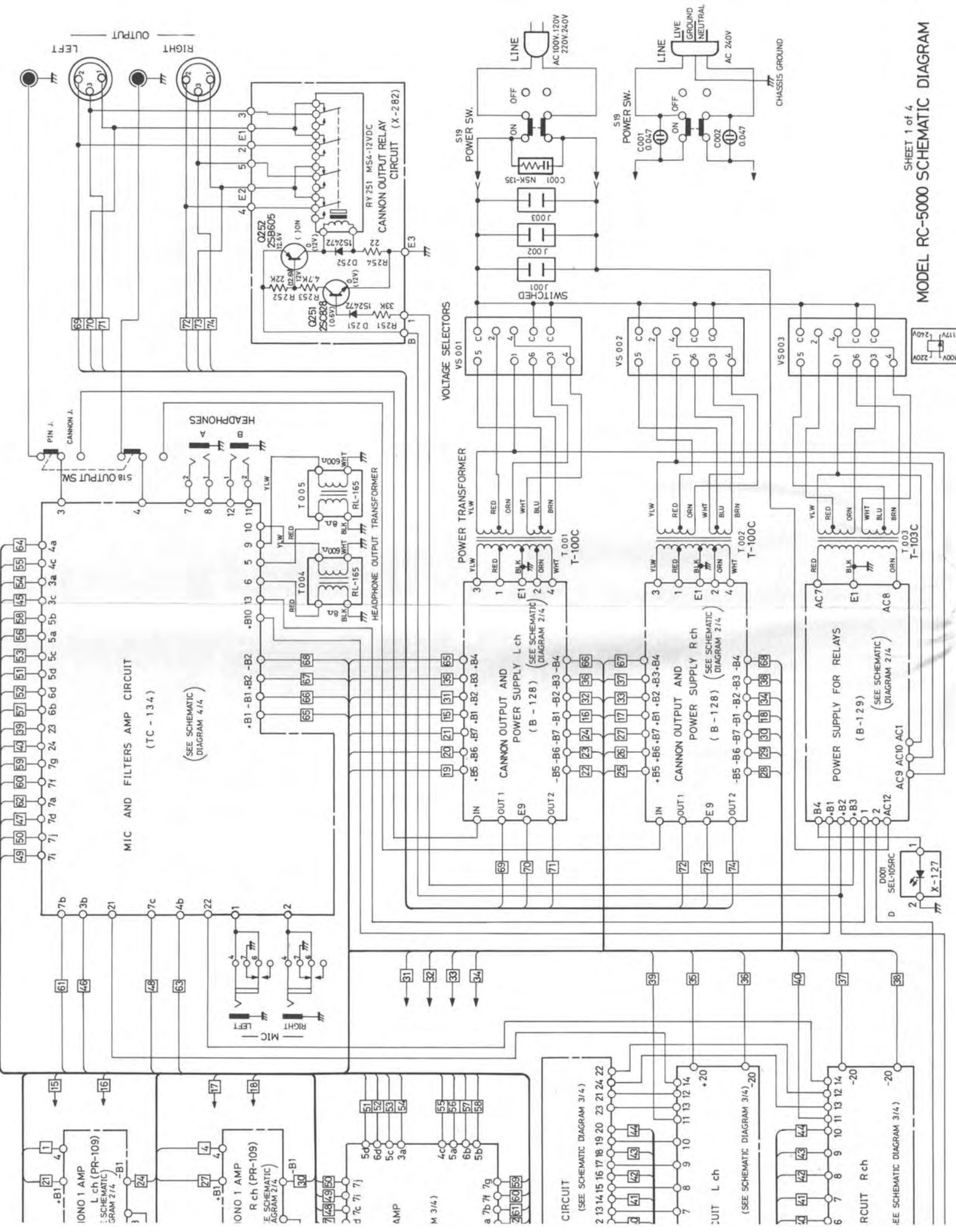
Fig. B. Power Supply Circuit (Portion)

Abb. B. Netzteil (Teil)

Fig. B. Circuit d'alimentation (portion)

Schematic Diagram
Schaltungsschema
Diagramme schématique





MIC AND FILTERS AMP CIRCUIT
(TC - 134)

(SEE SCHEMATIC
DIAGRAM 4/4)

VOLTAGE SELECTORS
VS 001

POWER TRANSFORMER
T-1000

CANNON OUTPUT AND
POWER SUPPLY L ch
(B - 128)

CANNON OUTPUT AND
POWER SUPPLY R ch
(B - 128)

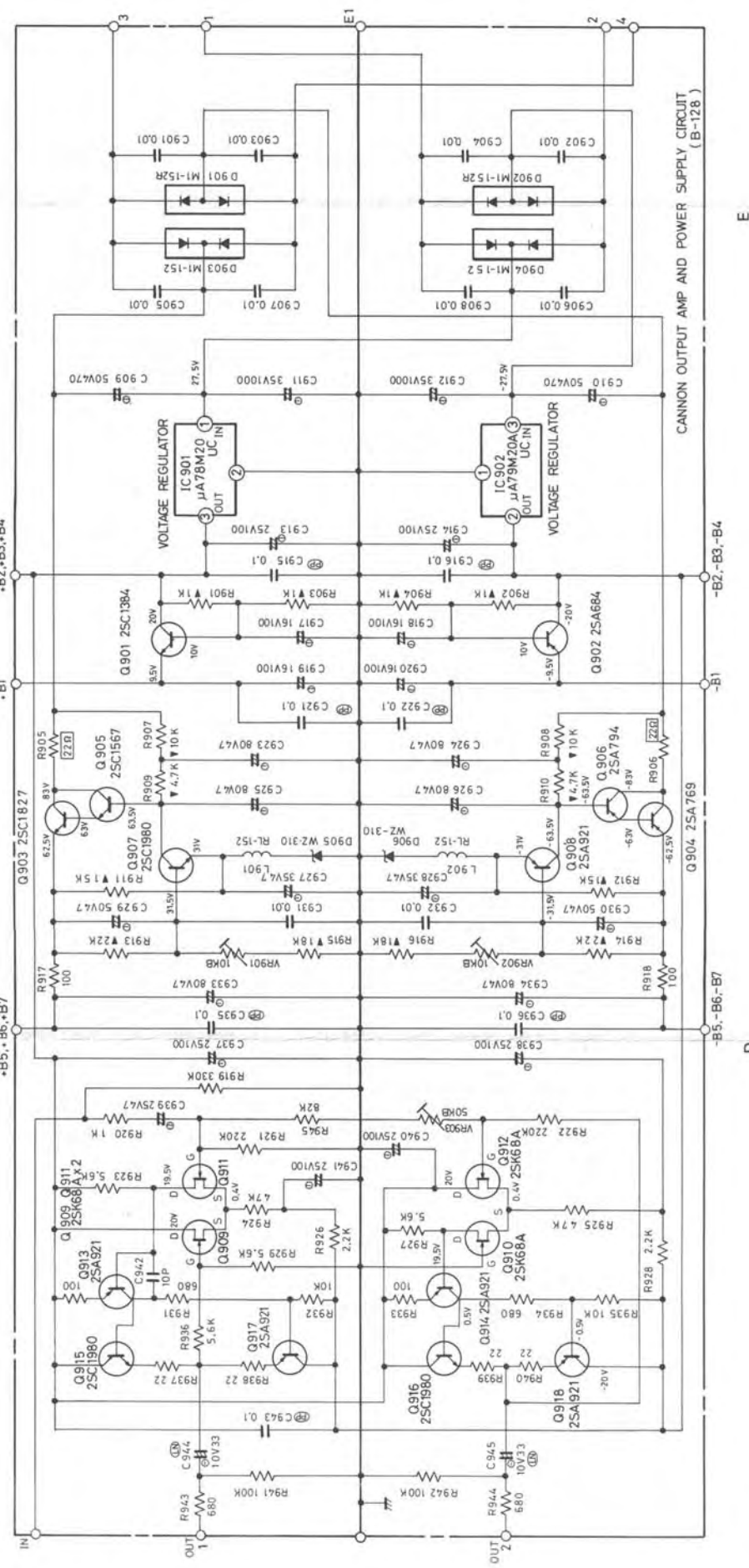
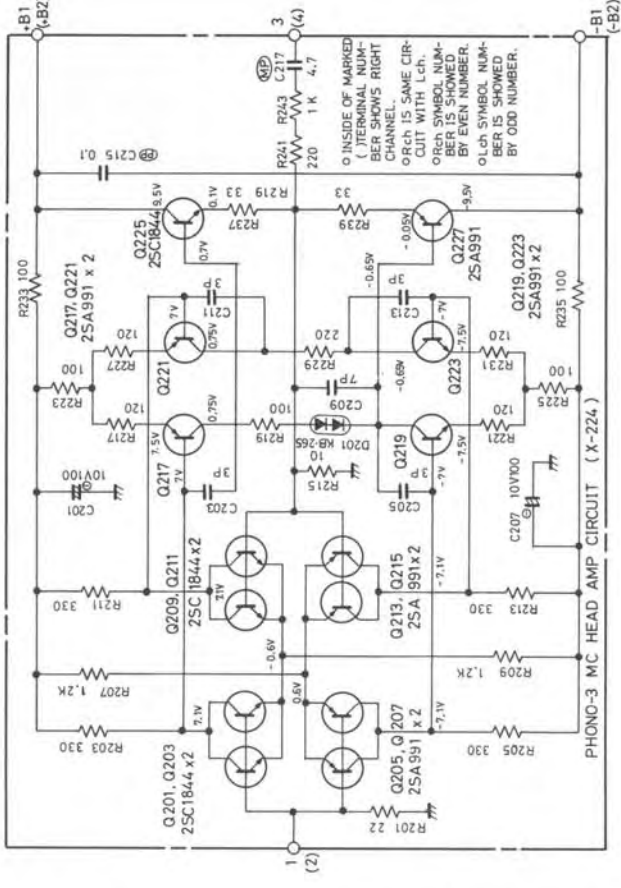
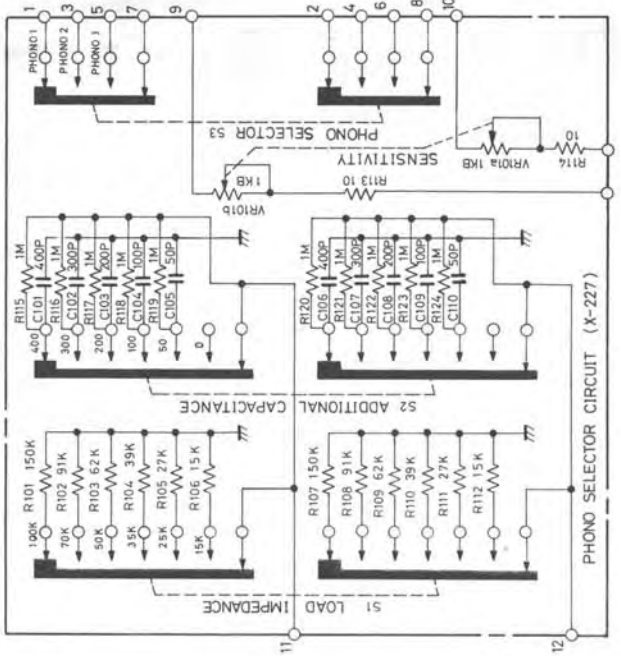
POWER SUPPLY FOR RELAYS
(B-129)

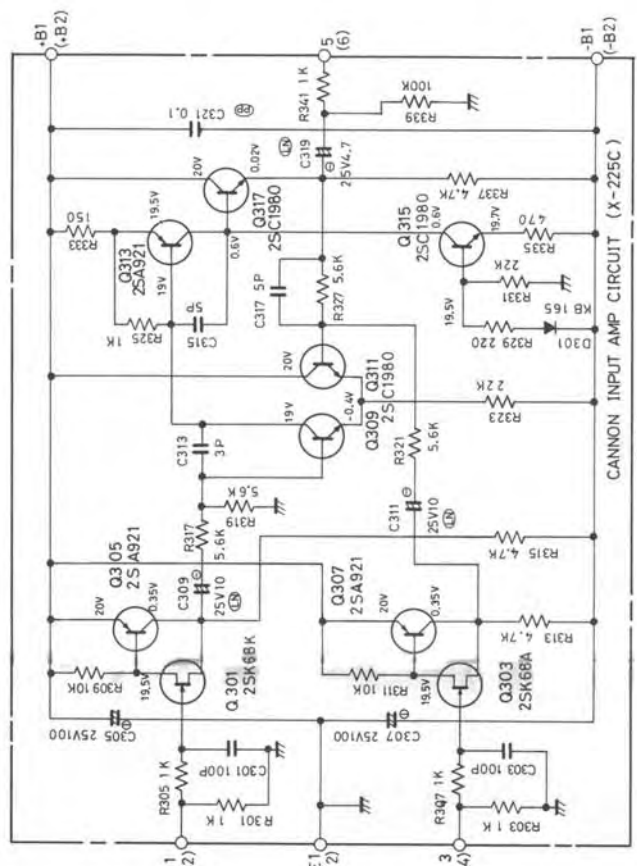
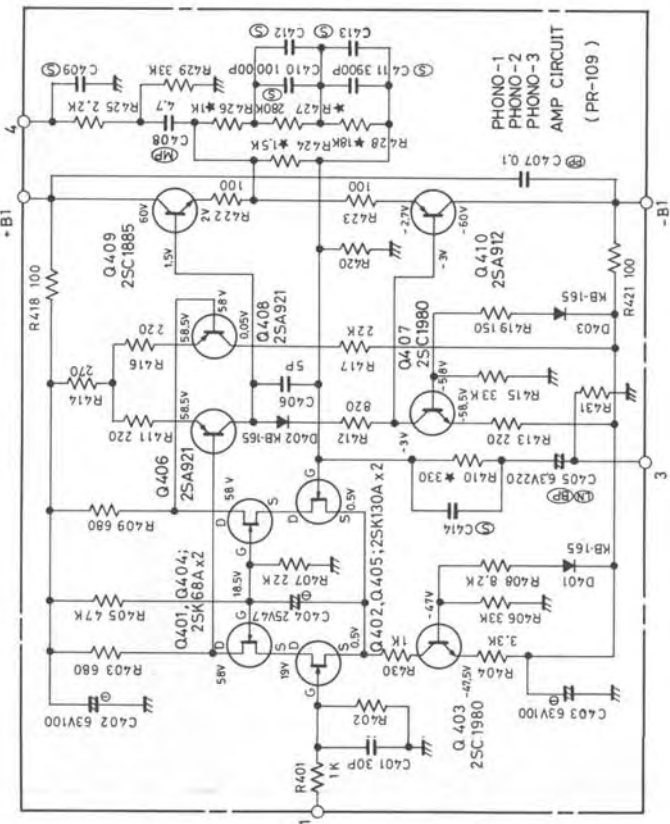
CIRCUIT
(SEE SCHEMATIC DIAGRAM 3/4)

RCUT L ch
(SEE SCHEMATIC DIAGRAM 3/4)

RCUT R ch
(SEE SCHEMATIC DIAGRAM 3/4)







NOTE:
 ● INSIDE OF MARKED () TERMINAL NUMBERS SHOWS RIGHT CHANNEL.
 ● Rch IS SAME CIRCUIT WITH Lch.
 ● Rch SYMBOL NUMBER IS SHOWN BY EVEN NUMBER.
 ● Lch SYMBOL NUMBER IS SHOWN BY ODD NUMBER.

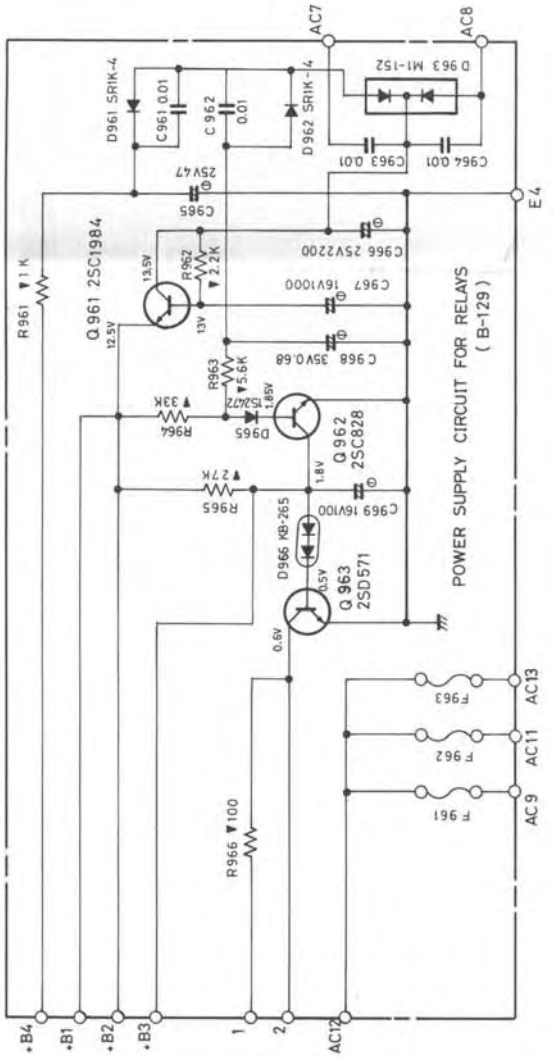
FUSE TABLE OF VALUE

	STANDARD TYPE	EUROPEAN TYPE
F 961	100 or 120V	220 or 240V
F 962	0.5 A (long)	0.25 A (long)
F 963	0.5 A (long)	0.25 A (long)
F 964	0.2 A (long)	0.15 A (long)
F 965	200 mA T (mini)	200 mA T (mini)
F 966	200 mA T (mini)	63 mA T (mini)

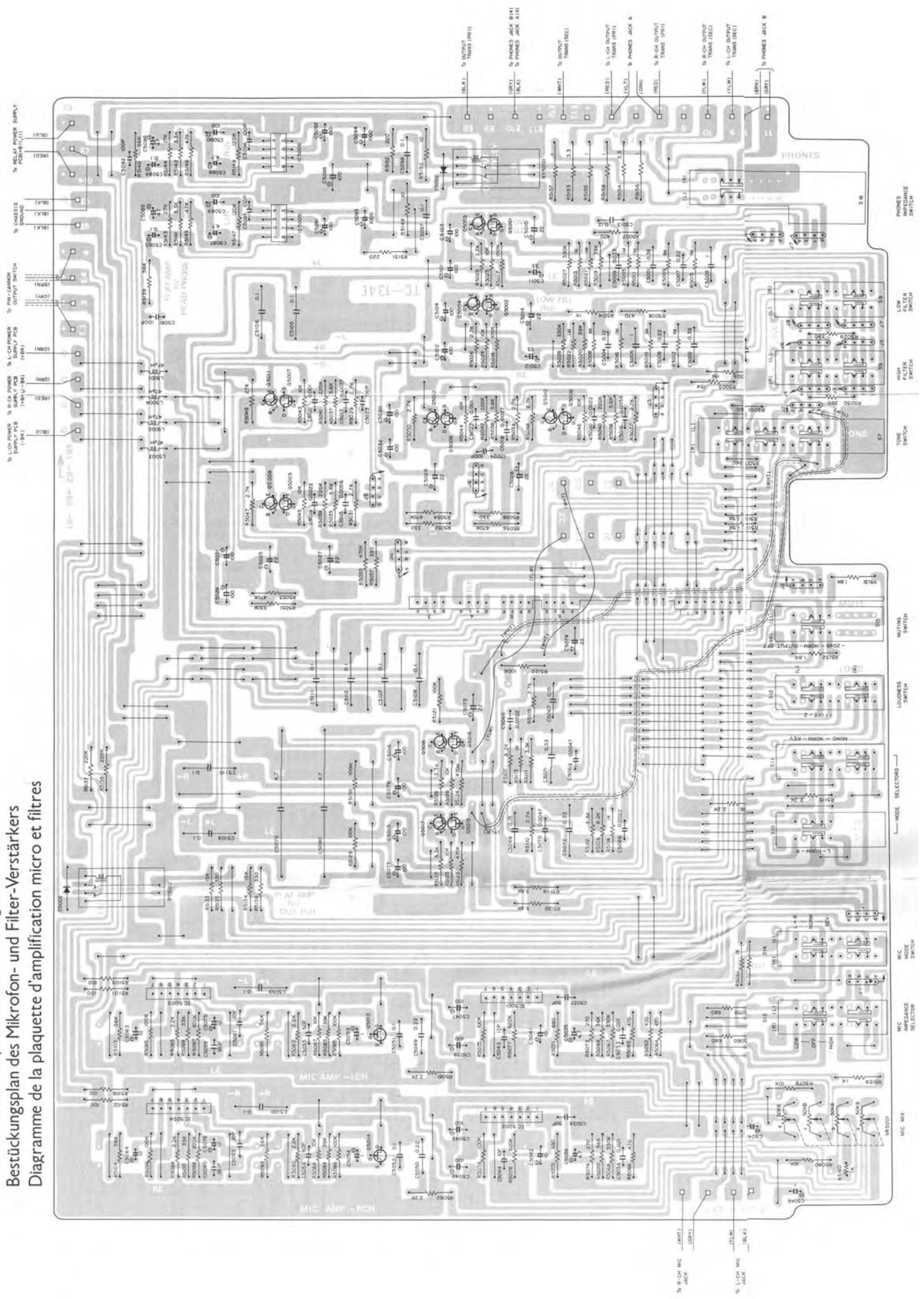
PHONO-1, PHONO-2, PHONO-3 AMP CIRCUIT TABLE OF VALUE

POSITION SYMBOL NO.	PHONO-1	PHONO-2	PHONO-3
R402	330K	56K	330K
R420	10K	3-3K	3-3K
R431	10K	SHORT	SHORT
C412	3500P	4400P	4400P
C413	300P	360P	360P
C414	17800P	NOT USED	NOT USED
C409	3200P	1350P	1350P

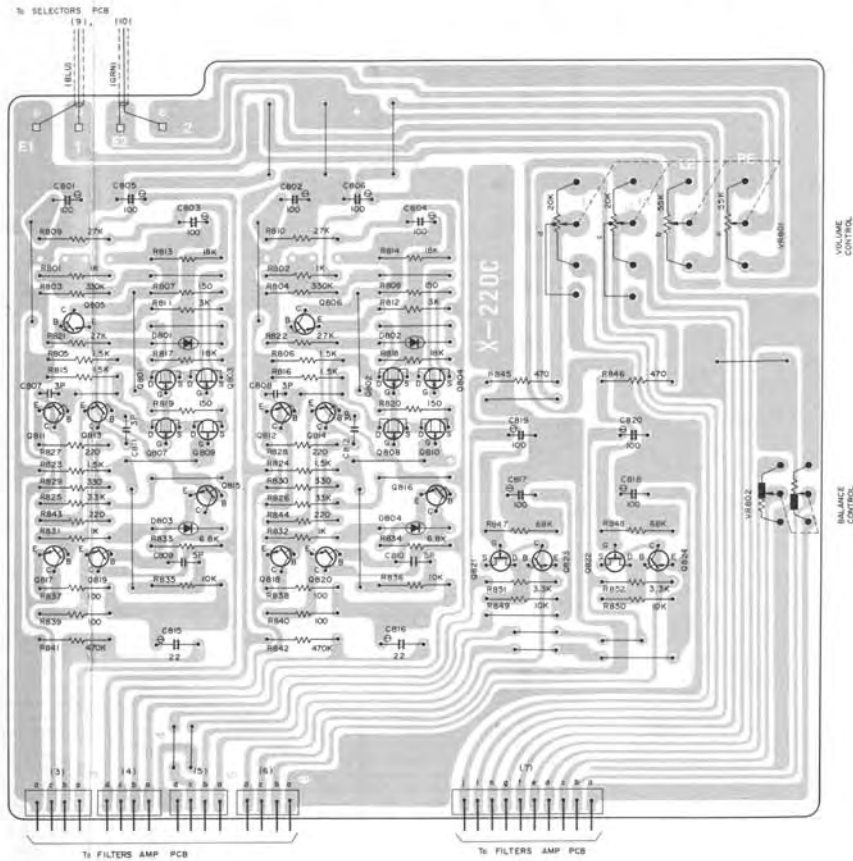
- (RESISTORS)
 5% TOLERANCE UNLESS OTHERWISE NOTED.
 K --- KILO OHM.
 M --- MEGA OHM.
 * --- TEMPERATURE COEFFICIENT RESISTORS.
 ◆ --- NON-INDUCTIVE CARBON FILM RESISTORS 1/2 WATT.
 □ --- PRECISION RESISTORS.
 NON MARK --- LOW NOISE TYPE CARBON RESISTORS 1/4 WATT.
- (CAPACITORS)
 (MY) --- MYLAR FILM CAPACITORS.
 (S) --- POLYSTYRENE FILM CAPACITORS.
 (T) --- TANTALUM CAPACITORS.
 (LN) --- LOW NOISE TYPE CAPACITORS.
 (EP) --- POLYPROPYLENE FILM CAPACITORS.
 (SP) --- BI-POLAR ELECTROLYTIC CAPACITORS.
 (SL) --- SUPER LOW NOISE TYPE CAPACITORS.
 (H) --- ELECTROLYTIC CAPACITORS.
 NON MARK --- CERAMIC CAPACITORS.
 ● UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED IN MFD.
 ● VOLTAGE READING WITH VTVM FROM THE POINT SHOWN TO THE CHASSIS GROUND (LINE VOLTAGE 117 VOLT)
 ● VOLTAGE READING MAY VARY ± 20% .



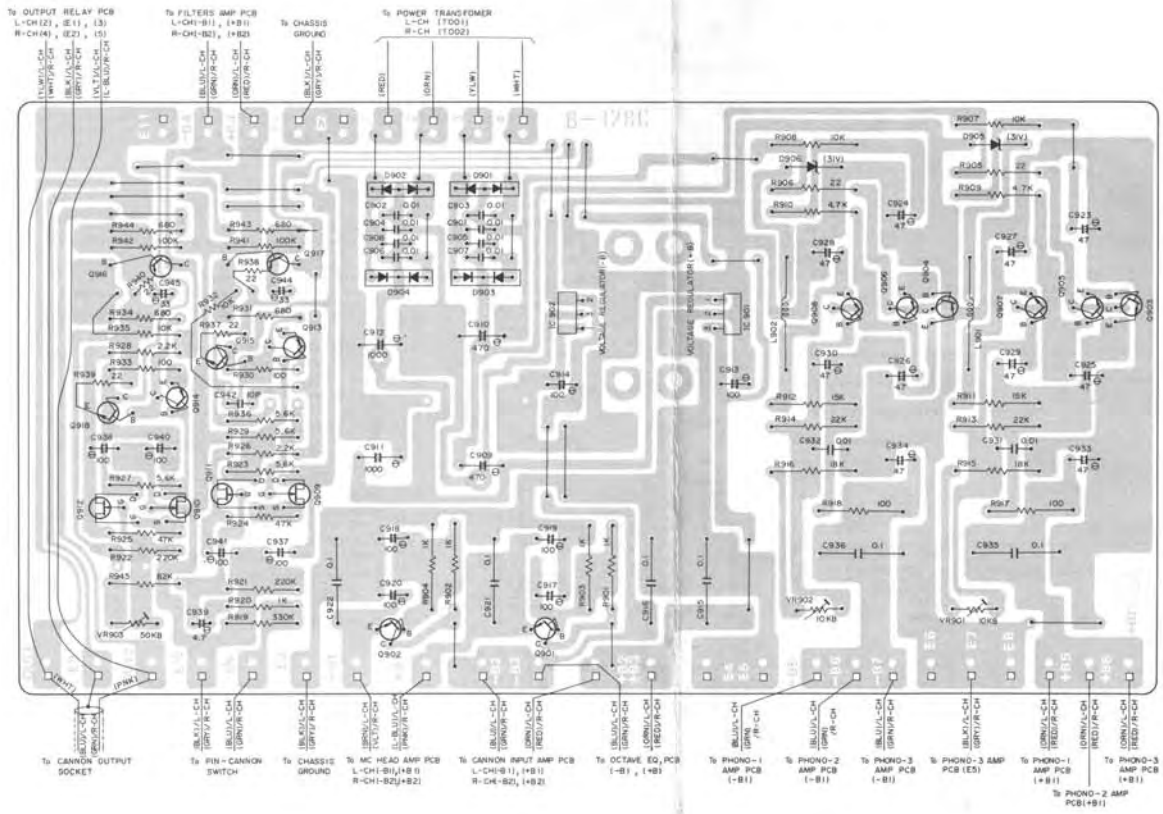
Mic and Filters Amp Circuit Board Diagram
 Bestückungsplan des Mikrofon- und Filter-Verstärkers
 Diagramme de la plaquette d'amplification micro et filtres



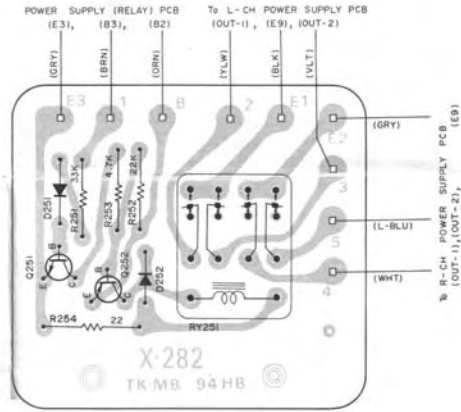
Volume Control Amp Circuit Board Diagram
 Bestückungsplan des Lautstärkereger-Verstärkers
 Diagramme de la plaquette d'amplification de la commande du volume



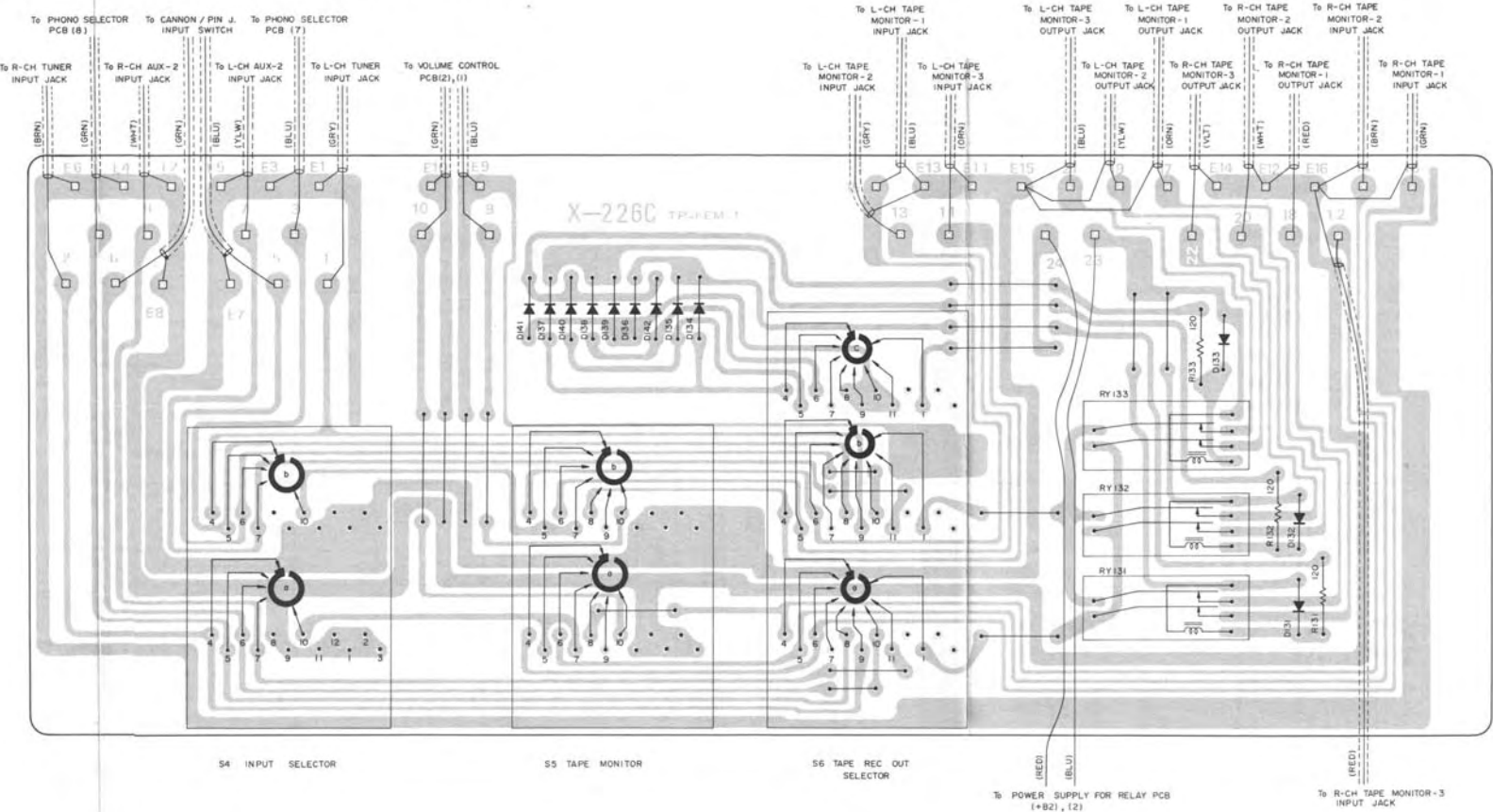
Cannon Output Amp and Power Supply Circuit Board Diagram
 Bestückungsplan des Cannon-Ausgangsverstärkers und des Netzteils
 Diagramme de la plaquette d'alimentation et d'amplification de la sortie Cannon



Cannon Output Relay Circuit Board Diagram
 Bestückungsplan der Cannon-Ausgangsrelais-Schaltung
 Diagramme de la plaqueette du relais de sortie Cannon

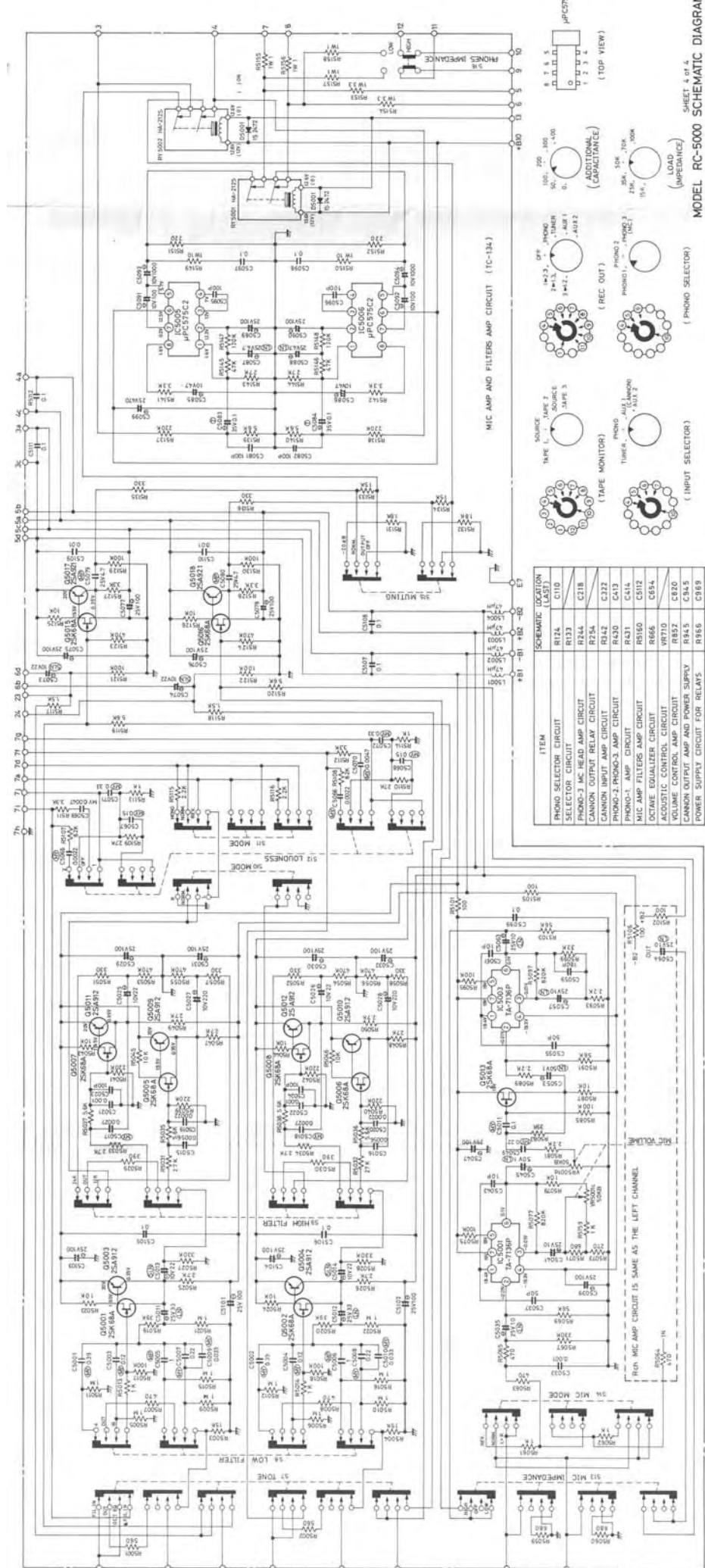


Selectors Circuit Board Diagram
 Bestückungsplan der Wahlschalter-Schaltung
 Diagramme de la plaqueette des sélecteurs



B

C



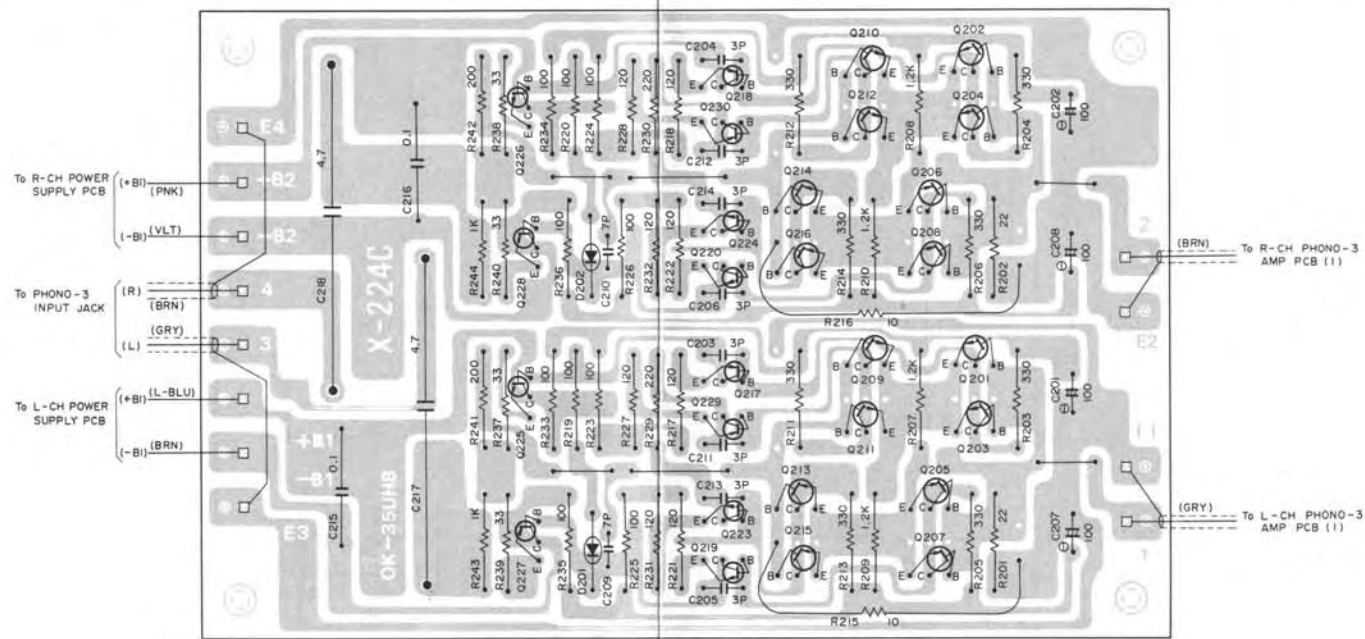
ITEM	SCHEMATIC LOCATION (LAST)
PHONO SELECTOR CIRCUIT	R124 C110
SELECTOR CIRCUIT	R133
PHONO-3 MC HEAD AMP CIRCUIT	R144 C118
CANNON OUTPUT RELAY CIRCUIT	R254
CANNON INPUT AMP CIRCUIT	R242 C122
PHONO-1 AMP CIRCUIT	R230 C113
PHONO-2 AMP CIRCUIT	R241 C114
MIC AMP FILTERS AMP CIRCUIT	R655 C512
SOFTWE EQUALIZER CIRCUIT	R665 C514
VOLUME CONTROL AMP CIRCUIT	V710
ACOUSTIC CONTROL CIRCUIT	R852 C810
CHANGE OUTPUT AMP AND POWER SUPPLY	R245 C316
POWER SUPPLY CIRCUIT FOR RELAYS	R186 C369

MODEL RC-5000 SCHEMATIC DIAGRAM
SHEET 4-41-4

Phono-3 MC Head Amp Circuit Board Diagram

Bestückungsplan des Phono-3-Verstärkers für dynamische Tonabnehmer (MC)

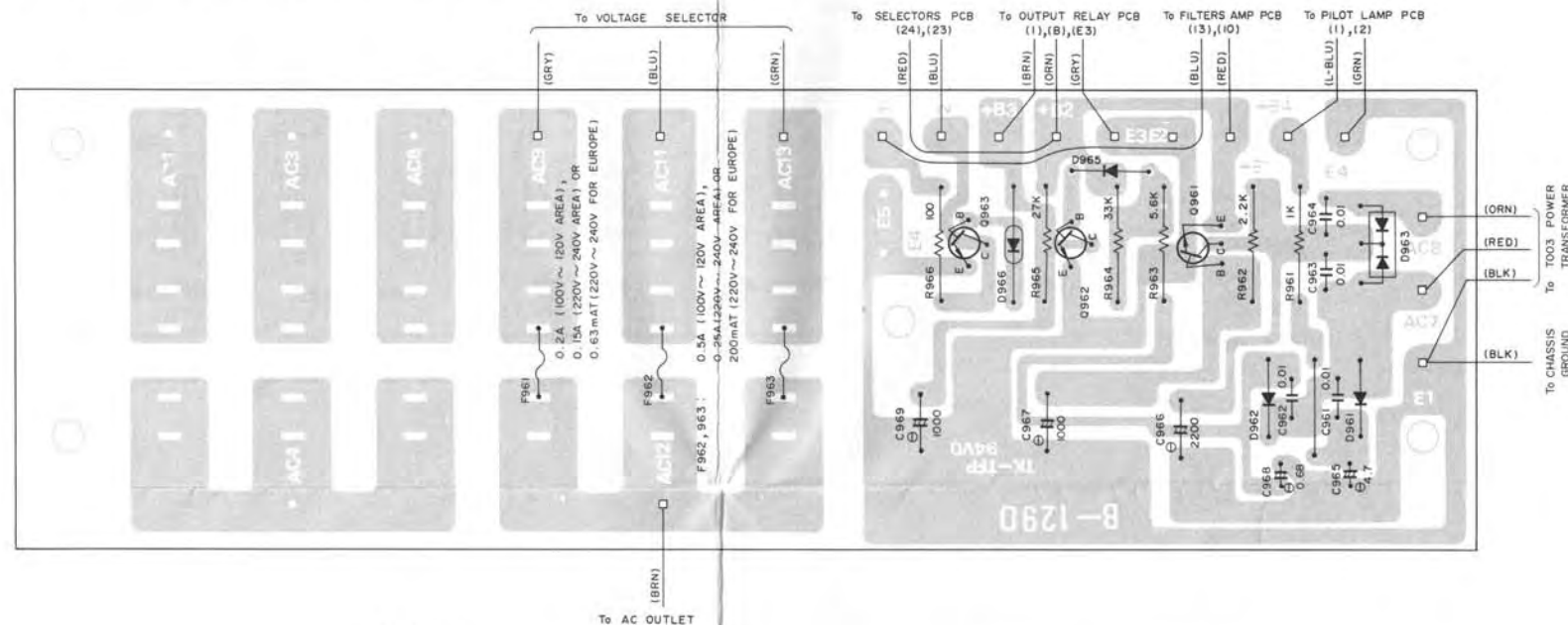
Diagramme de la plaque d'amplification pour cellule à bobine mobile (MC) Phono-3



Power Supply (for Relay) Circuit Board Diagram

Bestückungsplan des Netzteils (für Relais)

Diagramme de la plaque d'alimentation (pour le relais)



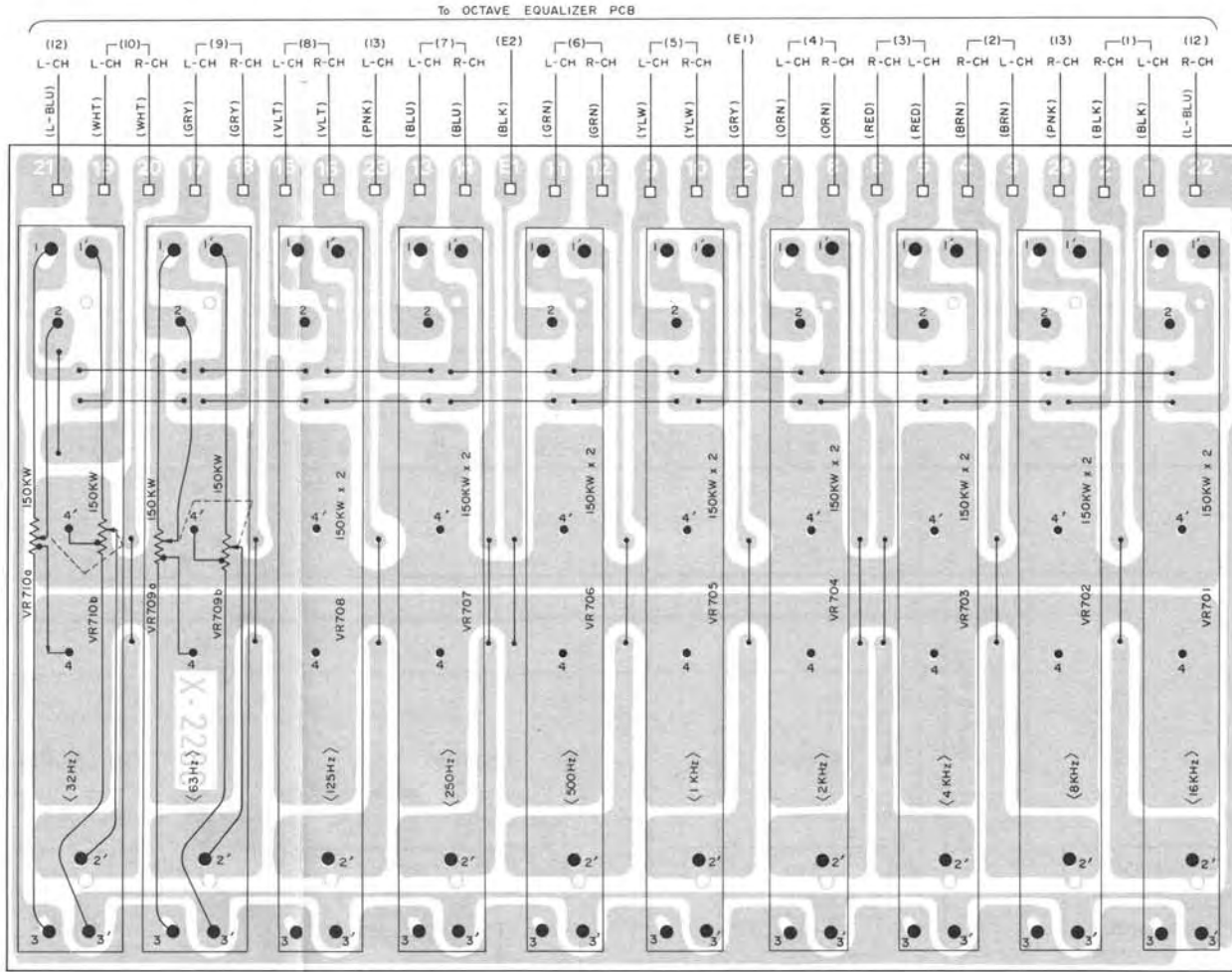
NOTE:

Parts layout of the units with serial numbers from NB58581 to 66157, or from R32352 to 32451 differs with this diagram, but there is no difference in electrical connection between the two layouts.

Acoustic Control Circuit Board Diagram

Bestückungsplan der Tonregler-Schaltung

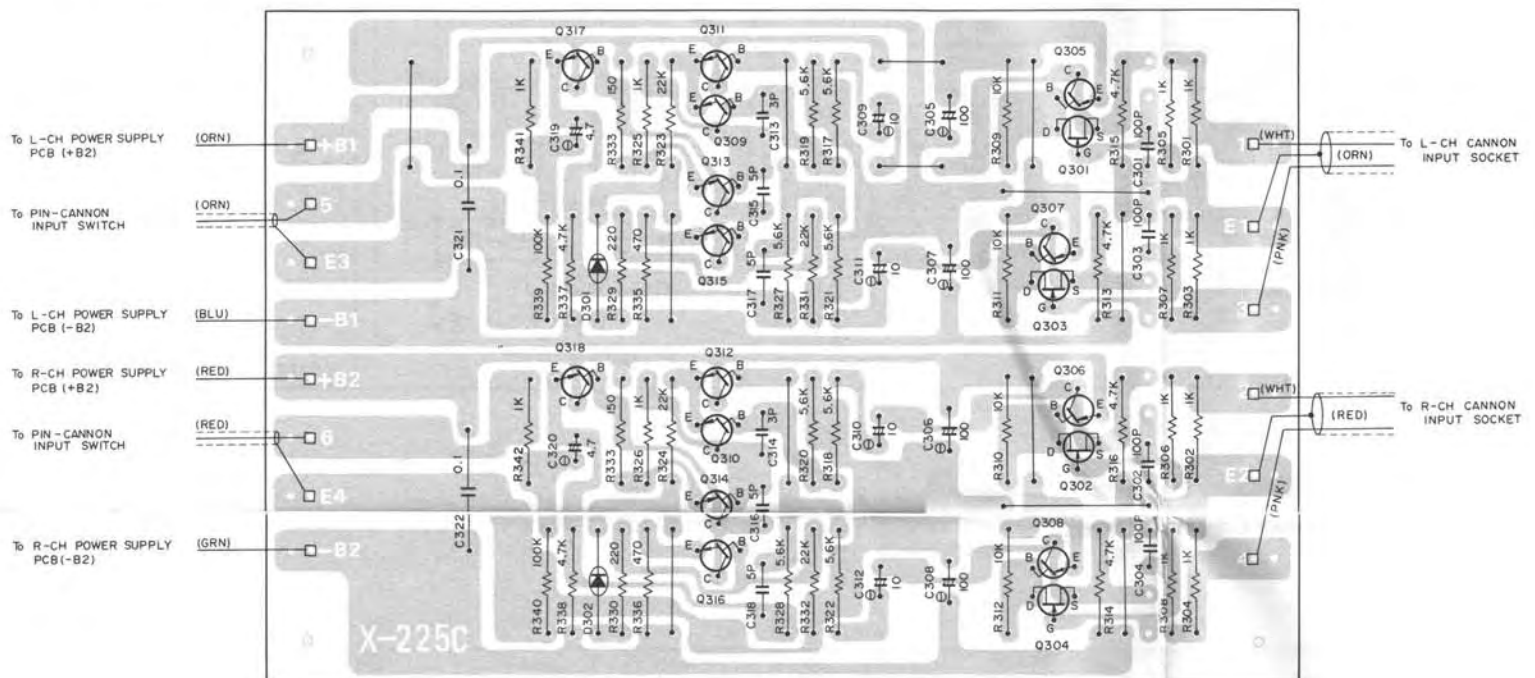
Diagramme de la plaquette de commande acoustique



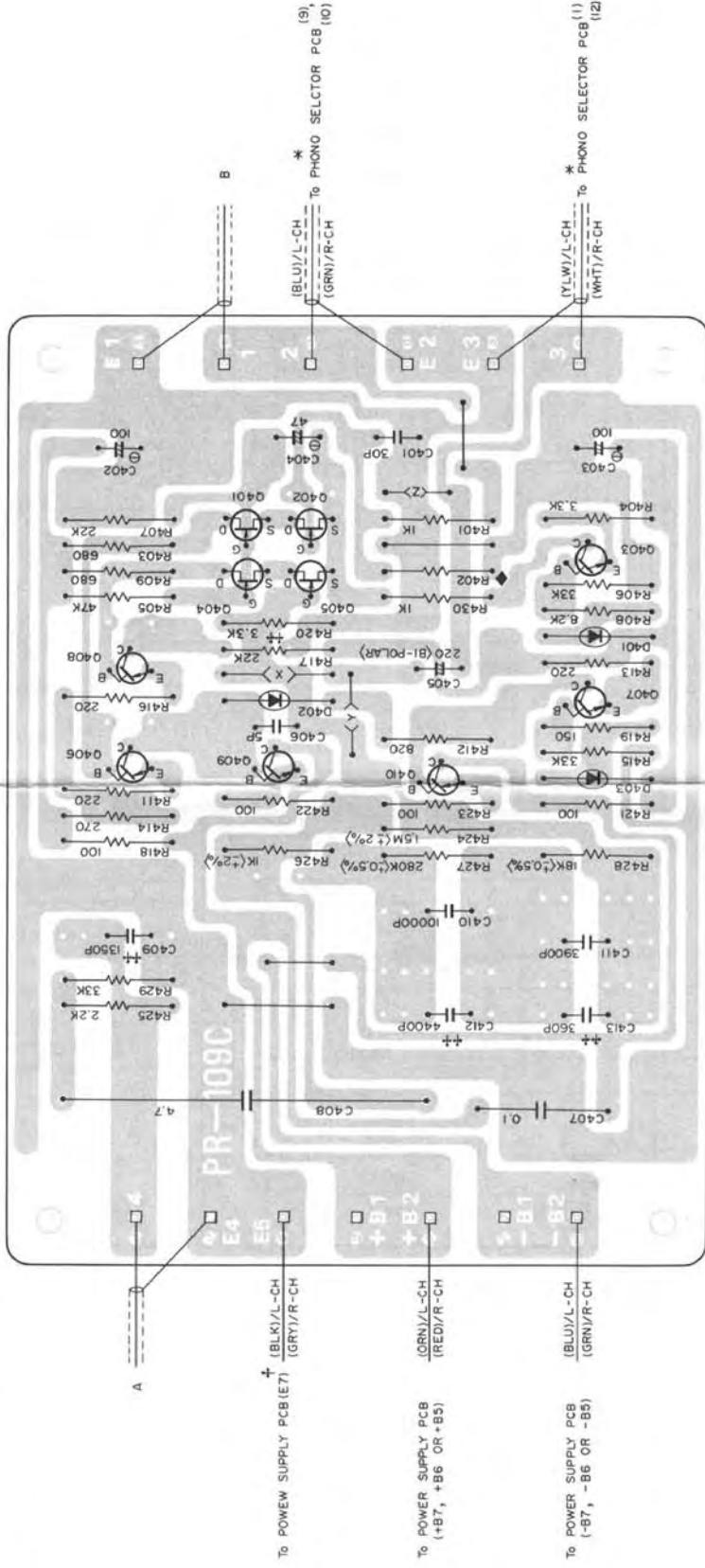
Cannon Input Amp Circuit Board Diagram

Bestückungsplan des Cannon-Eingangsverstärkers

Diagramme de la plaquette d'amplification de l'entrée Cannon



Phono-1, -2, -3 Amp Circuit Board Diagram Bestückungsplan des Verstärkers für Phono-1, -2, -3 Diagramme de la plaquette d'amplification de Phono-1, -2 et -3



NOTES:

1. <X>: Phono-1, ... C414, 17,800pF
 Phono-2, -3 ... R410, 330Ω
 <Y>: Phono-1, ... R431, 10kΩ
 Phono-2, -3 ... Nil
 <Z>: Phono-1, ... R431, 10kΩ
 Phono-2, -3 ... Shorted
2. ††C409 → 3,200pF (Phono-1)
 C412 → 4,400pF (Phono-1)
 C413 → 300pF (Phono-1)
 R420 → 10kΩ (Phono-1)
 R402 → 330kΩ(G) (Phono-1, -3)
 → 56kΩ(G) (Phono-2)
3. (*) applies to Phono-1 circuit only.
4. (*) applies to Phono-1 circuit only.
5. Shielded wire A is not grounded (not connected to E4) for Phono-3 circuit.
6. † applies to Phono-3 circuit only.

CH	PHONO-1		PHONO-2		PHONO-3	
	L	R	(1): L-ch	(2): R-ch	(3): L-ch	(4): R-ch
A	BLU	GRN	YLW	WHT	GRY	BRN
B	BLU	GRN	YLW	WHT	YLW	WHT

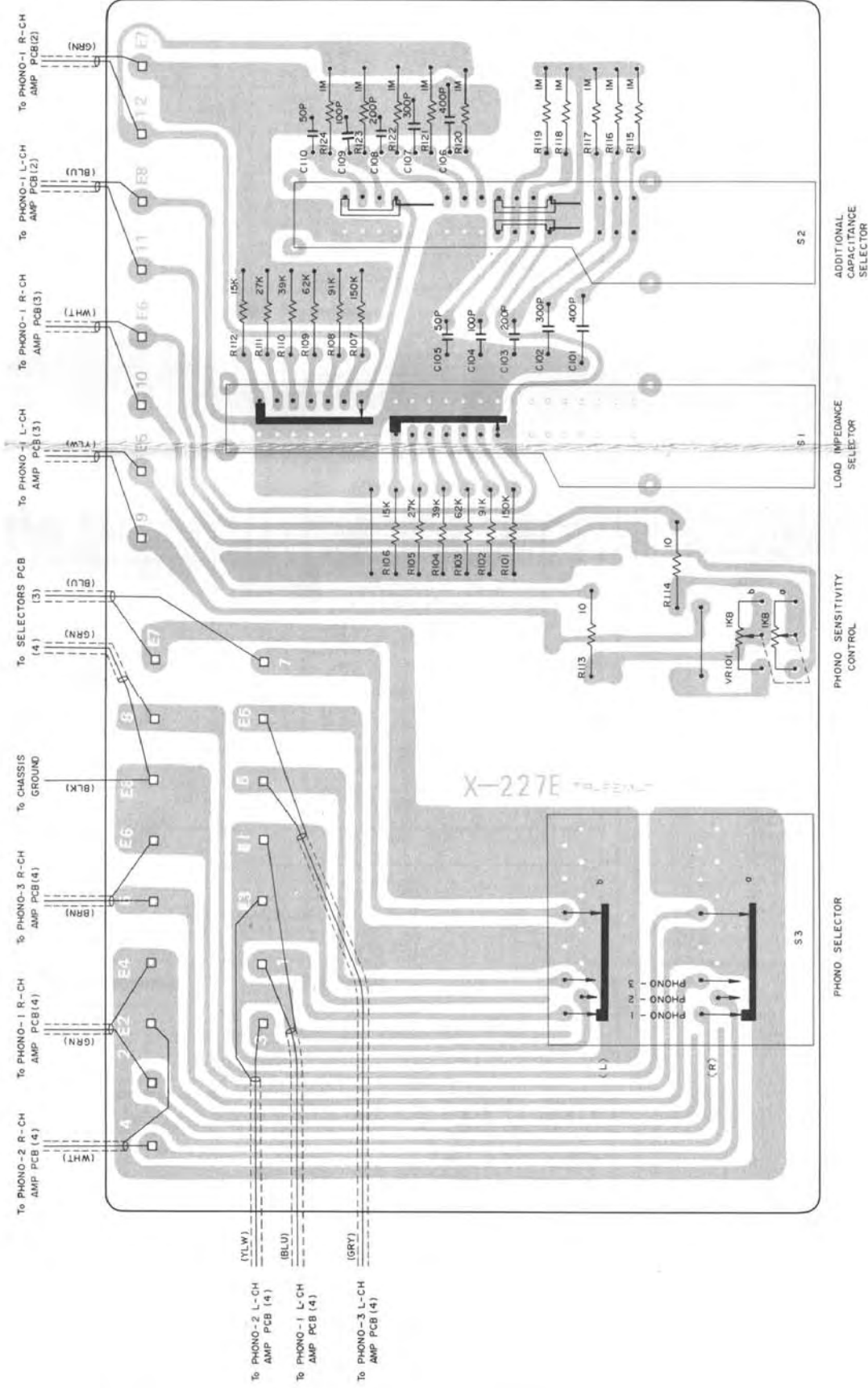
To Phono Selector PCB (1)
 (2): L-ch (3): R-ch

To Phono-2 Input Jack
 (3): L-ch (4): R-ch

To Phono Selector PCB (1)
 (2): L-ch (3): R-ch

To MC Head Amp PCB
 (3): L-ch (4): R-ch

Phono Selector Circuit Board Diagram
 Bestückungsplan der Phonowahlschalter-Schaltung
 Diagramme de la plaquette du sélecteur Phono



THE ROTEL CO., LTD.
ROTEL ELECTRONICS CO., LTD.
ROTEL OF AMERICA, INC.

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
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 NANKING E. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA
 1055 SAW MILL RIVER ROAD, ARDSLEY, N.Y. 10502, U.S.A.