



# Technical Manual

## STEREO CONTROL AMPLIFIER RC-2000

### TABLE OF CONTENTS

|                                        |    |
|----------------------------------------|----|
| Chassis Layout (Top View) . . . . .    | 2  |
| Chassis Layout (Bottom View) . . . . . | 3  |
| Adjustment . . . . .                   | 4  |
| Specifications . . . . .               | 6  |
| Repair Parts List . . . . .            | 7  |
| Block Diagram . . . . .                | 8  |
| Schematic Diagram . . . . .            | 9  |
| Circuit Board Diagrams . . . . .       | 11 |

### INHALTSVERZEICHNIS

|                                            |    |
|--------------------------------------------|----|
| Chassis-Anordnung (Oberansicht) . . . . .  | 2  |
| Chassis-Anordnung (Unteransicht) . . . . . | 3  |
| Einstellung . . . . .                      | 4  |
| Technische Daten . . . . .                 | 6  |
| Reparaturteilliste . . . . .               | 7  |
| Blockdiagramm . . . . .                    | 8  |
| Schaltungsschema . . . . .                 | 9  |
| Bestückungspläne . . . . .                 | 11 |

### TABLE DES MATIERES

|                                                          |    |
|----------------------------------------------------------|----|
| Installation du châssis (vue de dessus) . . . . .        | 2  |
| Installation du châssis (vue de dessous) . . . . .       | 3  |
| Réglage . . . . .                                        | 4  |
| Caractéristiques . . . . .                               | 6  |
| Liste des pièces de rechange . . . . .                   | 7  |
| Schéma synoptique . . . . .                              | 8  |
| Diagramme schématique . . . . .                          | 9  |
| Diagrammes des plaquettes de circuits imprimés . . . . . | 11 |

Serial No. Beginning  
NB75369

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

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN  
2ND FLOOR, EVERGLORY BLDG., NO. 305, SECTION 3,  
NANKING E. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA  
1055 SAW MILL RIVER ROAD, ARDSLEY, N.Y. 10502, U.S.A.



# Technical Manual

## STEREO CONTROL AMPLIFIER RC-2000

### TABLE OF CONTENTS

|                                        |    |
|----------------------------------------|----|
| Chassis Layout (Top View) . . . . .    | 2  |
| Chassis Layout (Bottom View) . . . . . | 3  |
| Adjustment . . . . .                   | 4  |
| Specifications . . . . .               | 6  |
| Repair Parts List . . . . .            | 7  |
| Block Diagram . . . . .                | 8  |
| Schematic Diagram . . . . .            | 9  |
| Circuit Board Diagrams . . . . .       | 11 |

### INHALTSVERZEICHNIS

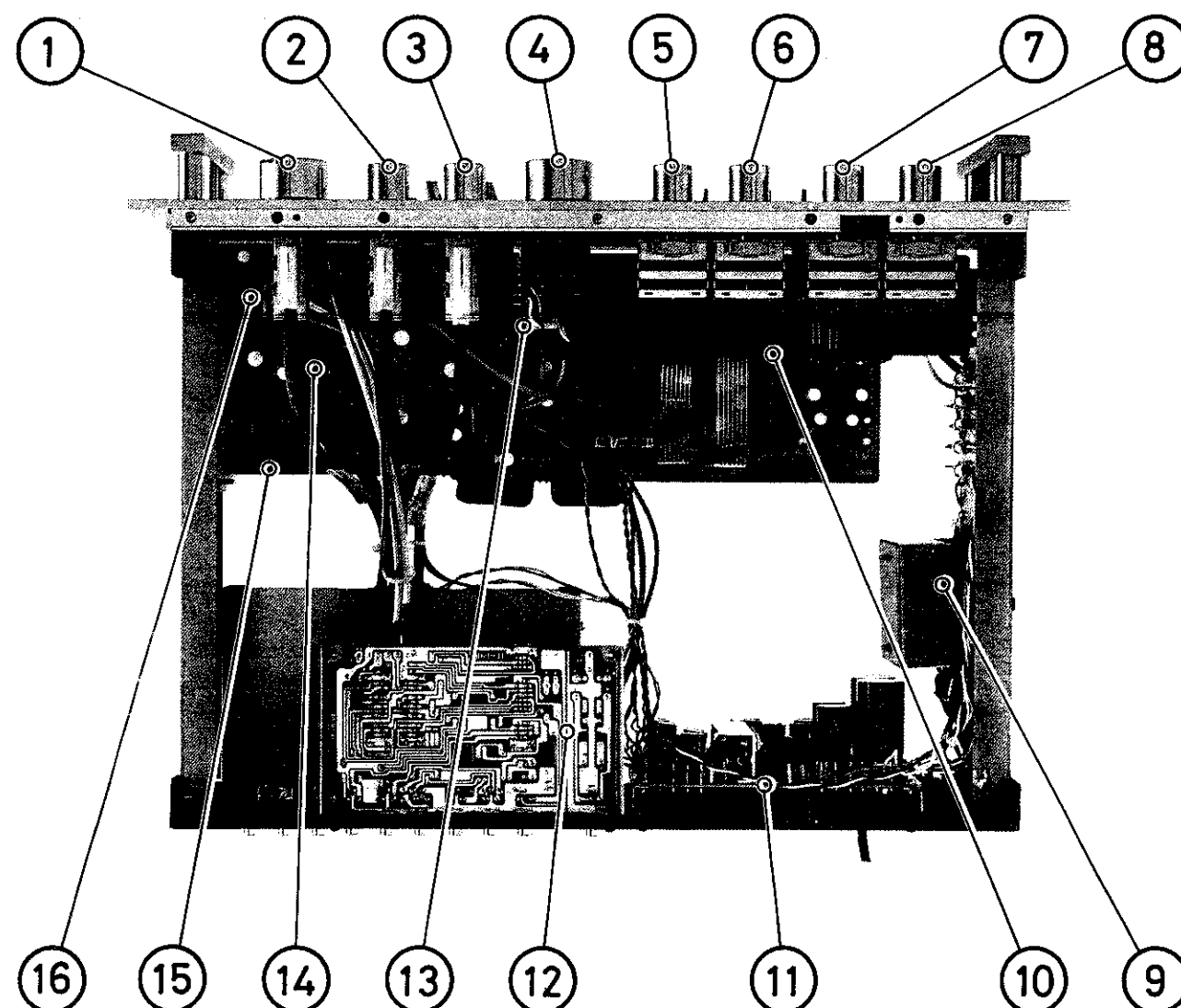
|                                            |    |
|--------------------------------------------|----|
| Chassis-Anordnung (Oberansicht) . . . . .  | 2  |
| Chassis-Anordnung (Unteransicht) . . . . . | 3  |
| Einstellung . . . . .                      | 4  |
| Technische Daten . . . . .                 | 6  |
| Reparaturteilliste . . . . .               | 7  |
| Blockdiagramm . . . . .                    | 8  |
| Schaltungsschema . . . . .                 | 9  |
| Bestückungspläne . . . . .                 | 11 |

### TABLE DES MATIERES

|                                                          |    |
|----------------------------------------------------------|----|
| Installation du châssis (vue de dessus) . . . . .        | 2  |
| Installation du châssis (vue de dessous) . . . . .       | 3  |
| Réglage . . . . .                                        | 4  |
| Caractéristiques . . . . .                               | 6  |
| Liste des pièces de rechange . . . . .                   | 7  |
| Schéma synoptique . . . . .                              | 8  |
| Diagramme schématique . . . . .                          | 9  |
| Diagrammes des plaquettes de circuits imprimés . . . . . | 11 |

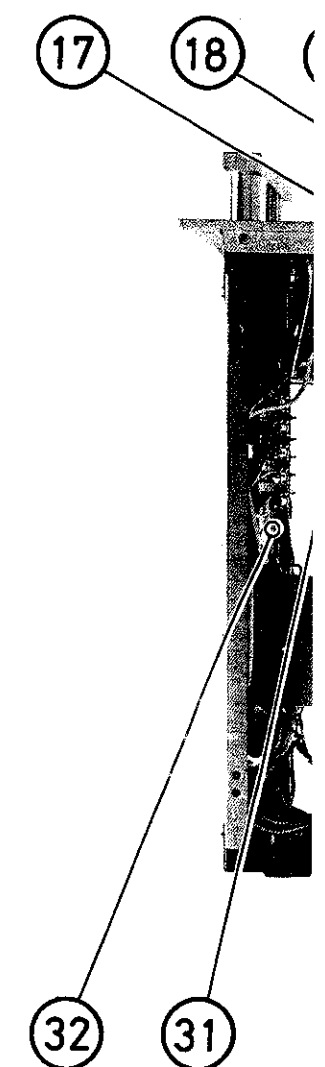
Serial No. Beginning  
NB75369

Chassis Layout (Top View)  
Chassis-Anordnung (Oberansicht)  
Installation du châssis (vue de dessus)



- |                         |                                                  |
|-------------------------|--------------------------------------------------|
| 1. FUNCTION SELECTOR    | 9. POWER TRANSFORMER                             |
| 2. TAPE MONITOR SWITCH  | 10. TONE CONTROL PC BOARD (TC-144)               |
| 3. RECORDING SELECTOR   | 11. POWER SUPPLY PC BOARD (B-136)                |
| 4. VOLUME CONTROL       | 12. SWITCHES AND RELAY PC BOARD (TC-140)         |
| 5. TREBLE CONTROL, R-CH | 13. VOLUME CONTROL PC BOARD (TC-139)             |
| 6. TREBLE CONTROL, L-CH | 14. VR501, DIRECT PHONO AMP DC BALANCE ADJ, L-CH |
| 7. BASS CONTROL, R-CH   | 15. FILTERS AMP PC BOARD (TC-141)                |
| 8. BASS CONTROL, L-CH   | 16. VR502, DIRECT PHONO AMP DC BALANCE ADJ, R-CH |

Chassis Layout  
Chassis-Anordn  
Installation du c

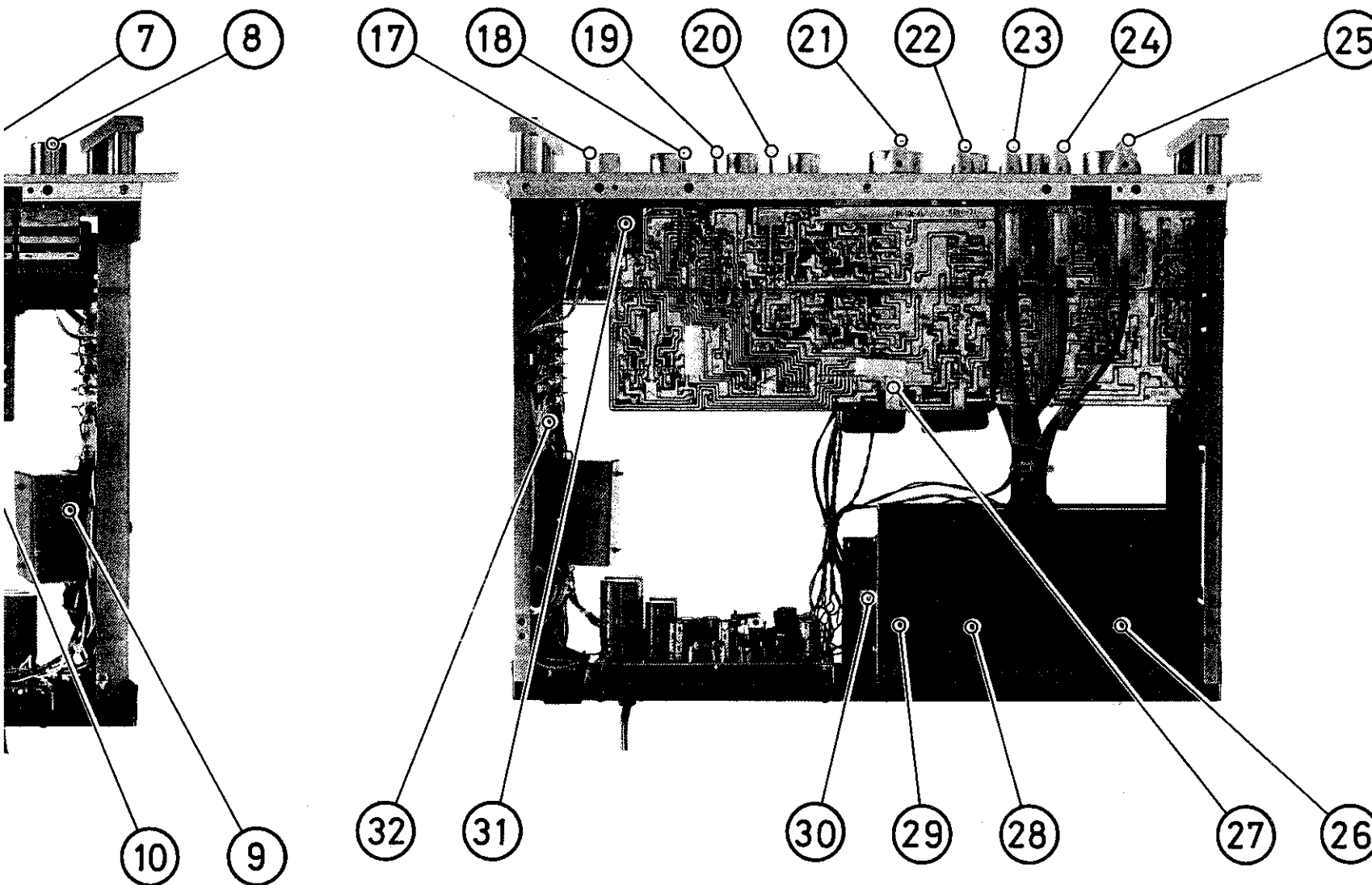


- |                   |
|-------------------|
| 17. POWER SWITCH  |
| 18. BASS TURNOVER |
| 19. TREBLE TURN   |
| 20. MUTING SWITC  |
| 21. BALANCE CON   |
| 22. MODE SWITCH   |
| 23. ADDITIONAL C  |
| 24. LOAD IMPEDAN  |

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

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN  
2ND FLOOR, EVERGLORY BLDG., NO. 305, SECTION 3,  
NANKING E. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA  
1055 SAW MILL RIVER ROAD, ARDSLEY, N.Y. 10502, U.S.A.

Chassis Layout (Bottom View)  
Chassis-Anordnung (Unteransicht)  
Installation du châssis (vue de dessous)



TC-144)  
P-136)  
BOARD (TC-140)  
D (TC-139)  
DC BALANCE ADJ, L-CH  
141)  
DC BALANCE ADJ, R-CH

17. POWER SWITCH  
18. BASS TURNOVER SWITCH  
19. TREBLE TURNOVER SWITCH  
20. MUTING SWITCH  
21. BALANCE CONTROL  
22. MODE SWITCH  
23. ADDITIONAL CAPACITANCE SWITCH  
24. LOAD IMPEDANCE SWITCH

25. PHONO SELECTOR  
26. MC HEAD AMP AND EQUALIZER PC BOARD (PR-111)  
27. TONE AMP PC BOARD (TC-143)  
28. VR 101, PHONO AMP DC BALANCE ADJ, L-CH  
29. VR 102, PHONO AMP DC BALANCE ADJ, R-CH  
30. RY 301, MUTING RELAY  
31. HEADPHONES JACK  
32. FUSES PC BOARD (X-296)

## Adjustment

**Instruments:** Audio Generator, Oscilloscope, AC Voltmeter

First set the potentiometers and switches as follows:

- Power, Muting, Loudness, Filters, Direct Phono and Recording Selector switches → OFF;
- Turnover switch → DEFEAT;
- Tape Monitor Switch → SOURCE;
- Function Selector → PHONO;
- Phono Selector → 1;
- Mode Switch → STEREO;
- Capacitance and Impedance Switches → mid-position;
- Balance, Bass and Treble controls → mid-position;
- Volume control → minimum

## Einstellung

**Instrumente:** Tongenerator, Oszilloskop, Wechselspannungs-Voltmeter

Zuerst stellen Sie die Potentiometer und Schalter wie folgt ein:

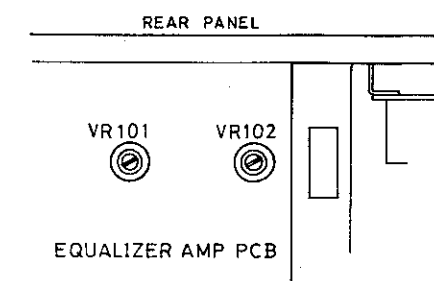
- Netzschalter, Dämpfungsschalter, Loudness-Schalter, Filter-, Phono-Direkteingangs- und Aufnahmewahlschalter → OFF;
- Umkehrschalter → DEFEAT;
- Bandmonitorschalter → SOURCE;
- Eingangswähler → PHONO;
- Phonowähler → 1;
- Betriebsartenschalter → STEREO;
- Kapazität und Impedanzschalter → Mittelstellung;
- Balance-, Tiefen- und Höhenregler → Mittelstellung;
- Lautstärkereger → Minimum

## Réglage

**Instruments:** Générateur d'audio-fréquences, oscilloscope, voltmètre à courant alternatif.

Régler tout d'abord les potentiomètres et commutateurs de la manière suivante:

- Sélecteurs "Power", "Muting", "Loudness", "Filters", "Direct phono" et "Recording" sur OFF;
- Commutateur "Turnover" sur DEFEAT;
- Commutateur "Tape Monitor" sur SOURCE;
- Sélecteur de fonction sur PHONO;
- Sélecteur Phono sur 1;
- Commutateur de Mode sur STEREO;
- Commutateurs de capacité et d'impédance sur la position médiane;
- Commandes d'équilibrage, des graves et des aigües sur la position médiane;
- Commande du Volume sur minimum



CHASSIS BOTTOM VIEW (PORTION)

Fig. 1. Phono Amp DC Balance Adjustment

Abb. 1. Einstellung der Gleichstrombalance des Phonoverstärkers

Fig. 1. Réglage de l'équilibrage courant continu de l'ampli phono

### A. Phono Amplifier DC Balance Adjustment

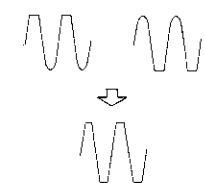
1. Connect AC Voltmeter and Oscilloscope to Tape Monitor Out jack. Connect Audio Generator to Phono-1 jack. Set Power switch to ON (allow 3 to 10 seconds before relay is activated).
2. Feed in 1,000Hz (sine wave) signal from Audio Generator, and gradually raise the input level until output waveform appears clipped on Oscilloscope connected to Tape Out. In this state, adjust potentiometer VR101 (VR102 for R-ch) on Equalizer PC board so that the upper and lower portions of wave are uniformly clipped.

### A. Einstellung der Gleichstrombalance des Phonoverstärkers

1. Schließen Sie das Wechselspannungs-Voltmeter und das Oszilloskop an die Bandmonitor-Ausgangsbuchse an. Schließen Sie den Tongenerator an die Buchse [Phono-1] an. Stellen Sie den Netzschalter auf ON (es dauert 3 bis 10 Sekunden bevor das Relais schaltet).
2. Führen Sie ein 1000 Hz Signal (Sinus) vom Tongenerator zu, und erhöhen Sie allmählich den Eingangspegel, bis die Ausgangswellenform auf dem an die Bandausgangsbuchse angeschlossenen Oszilloskop abgeschnitten erscheint. Stellen Sie in diesem Zustand das Potentiometer VR101 (VR102 für den rechten Kanal) auf der gedruckten Schaltung des Entzerrers so ein, daß die obere und die untere Amplitude gleichförmig abgeschnitten sind.

### A. Réglage de l'équilibrage courant continu de l'amplificateur Phono

1. Brancher le voltmètre à courant alternatif et l'oscilloscope à la prise "Tape Monitor Out". Brancher le générateur d'audio-fréquences à la prise "Phono-1". Placer l'interrupteur d'alimentation sur "ON" (attendre de 3 à 10 secondes que le relais soit mis en action).
2. Envoyer un signal de 1.000Hz (onde sinusoïdale) à partir du générateur d'audio-fréquences et augmenter graduellement le niveau d'entrée jusqu'à ce que la forme de l'onde de sortie soit écrêtée sur l'oscilloscope raccordé à "Tape Out". Dans cet état, régler le potentiomètre VR101 (VR102 pour le canal droit) de la plaquette du circuit de l'égalisateur de façon à ce que les parties inférieure et supérieure de l'onde soient écrêtées uniformément.



## B. Direct Phono Amplifier DC Balance Adjustment

1. Connect AC Voltmeter and Oscilloscope to Output jack. Set Direct Phono switch to ON, and Volume Control to its maximum.
2. Feed 1,000Hz (sine wave) signal from Audio Generator to Phono jack. Gradually raise the input level

## B. Einstellung der Gleichstrombalance des Phono-Direktverstärkers

1. Schließen Sie das Wechselspannungs-Voltmeter und das Oszilloskop an die Ausgangsbuchse an. Stellen Sie den Phono-Direkteingangsschalter auf ON, und drehen Sie den Lautstärkereglern auf Maximum.
2. Führen Sie der Phonobuchse ein 1 000 Hz Signal (Sinus) vom Tongenerator zu. Erhöhen Sie allmäh-

## B. Réglage de l'équilibrage courant continu de l'amplificateur phono direct

1. Raccorder le voltmètre à courant alternatif et l'oscilloscope à la prise de sortie. Placer le commutateur "Direct Phono" sur "ON" et la commande du volume au maximum.
2. Envoyer un signal de 1.000Hz (onde sinusoïdale) à la prise phono à partir du générateur d'audio-fréquences. Augmenter progressivement le niveau

until output waveform appears clipped on Oscilloscope. In this state, adjust potentiometer VR501 (VR502 for R-ch) on Filters Amplifier PC board so that the upper and lower portions of wave are uniformly clipped.

lich den Eingangspegel, bis die Wellenform auf dem Oszilloskop abgeschnitten erscheint. Stellen Sie in diesem Zustand das Potentiometer VR501 (VR502 für den rechten Kanal) auf der gedruckten Schaltung des Filterverstärkers so ein, daß die obere und untere Amplitude gleichförmig abgeschnitten ist.

d'entrée jusqu'à ce que la forme de l'onde de sortie soit écrêtée sur l'oscilloscope. Dans cet état, régler le potentiomètre VR501 (VR502 pour le canal droit) de la plaquette du circuit de l'amplificateur de filtres, de façon à ce que les parties inférieures et supérieures de l'onde soient écrêtées uniformément.

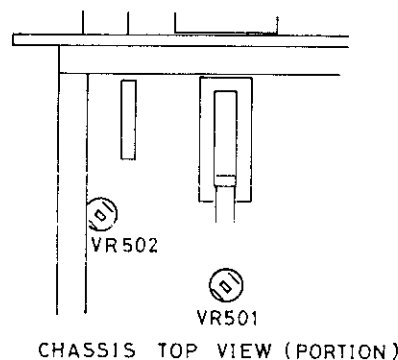


Fig. 2. Direct Phono DC Balance Adjustment

Abb. 2. Einstellung der Gleichstrombalance des Phono-Direktverstärkers

Fig. 2. Réglage de l'équilibrage courant continu phono direct

## To Disconnect or Connect the Wire Between Remote Switch and Control Unit

### 1. Disconnecting the wire

To detach the wire from the remote switch or from the control unit, lift the curved tip of the wire holder while pushing in on the claw-like holder clamp in direction of arrow, using a small screwdriver or the like.

### 2. Connecting the wire

- a. Note that there are two types of wire and control unit, for 3P and 6P switches. Make sure the wire being used is appropriate to the remote switch type in your unit.
- b. Match the position of slider pin and pin groove, then snap-fit the wire holder in place.

## Anschließen oder Entfernen des Kabels zwischen Fernbedienungsschalter und Bedienungseinheit

### 1. Entfernen des Kabels

Zum Abziehen des Kabels vom Fernbedienungsschalter oder der Bedienungseinheit heben Sie die geschwungene Lasche der Kabelhalterung an, während Sie mit einem kleinen Schraubenzieher oder etwas Ähnlichem die Befestigungsklammer in Pfeilrichtung drücken.

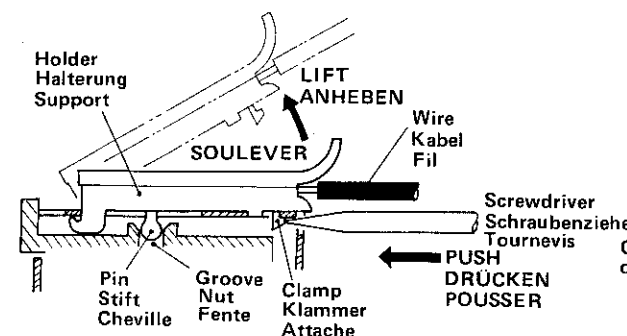
### 2. Anschluß des Kabels

- a. Achten Sie darauf, daß es zwei Typen von Kabel und Bedienungseinheit gibt. Vergewissern Sie sich, daß das verwendete Kabel zu dem Typ des Fernbedienungsschalters Ihres Gerätes paßt.
- b. Bringen Sie Stift und Nut übereinander, und drücken Sie die Kabelhalterung in Position, bis sie einrastet.

## Pour connecter ou déconnecter le fil reliant le commutateur à distance et le bloc de commande

### 1. Pour déconnecter le fil

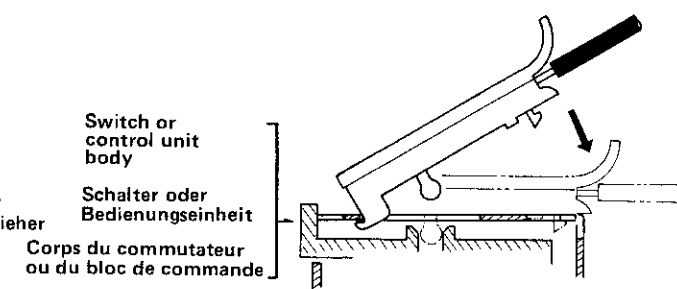
Pour détacher le fil du commutateur à distance ou du bloc de commande, soulever l'extrémité courbe du support du fil tout en poussant l'attache en forme de griffe du support en direction de la flèche, à l'aide d'un petit tournevis ou outil similaire.



Disconnecting the wire  
Entfernen des Kabels  
Pour déconnecter le fil

### 2. Pour connecter le fil

- a. Noter qu'il existe deux types de fil et de bloc de commande, pour commutateurs 3P et 6P. S'assurer de ce que le type de fil employé convient bien au commutateur à distance de l'appareil.
- b. Aligner la cheville du sabot avec la fente puis enfoncer le support du fil pour le bloquer en place.



Connecting the wire  
Anschluß des Kabels  
Pour connecter le fil

## Specifications Technische Daten Caractéristiques

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

- Output Voltage/Impedance (at 1,000Hz)  
Rated Output:  
Pin Jack Output . . . . .150mV/2k $\Omega$   
DIN Socket Output. . . . . 50mV/80k $\Omega$   
Maximum Output:  
Pin Jack (at 0.5% THD) . . . . . 30V
- Harmonic Distortion (at 5V output, 20Hz to 20,000Hz)  
Phono-1, -2 (MAG): . . . . .0.004%  
Phono-3 (MC): . . . . .0.006%
- Phono Equalization (at 20Hz to 20,000Hz)  
Phono-1, -2 RIAA STD. . . . . $\pm 0.2$ dB  
Phono-3 RIAA STD. . . . . $\pm 0.2$ dB
- Hum and Noise (at 1.5V output, IHF A-network)  
Phono-1, 2 . . . . . .75dB  
Phono-3 . . . . . .63dB
- Input Sensitivity/Impedance  
Phono-1 . . . . . .2mV $\pm 1$ dB/0pF, 100pF  
200pF  
35k $\Omega$ , 50k $\Omega$ , 75k $\Omega$   
Phono-2 . . . . . .2mV $\pm 1$ dB/50k $\Omega$   
Phono-3 . . . . . .100 $\mu$ V $\pm 1$ dB/33 $\Omega$
- Crosstalk (at 20,000Hz reverse channel input shorted) . . . . .55dB
- Overload (at 1,000Hz, 0.5% THD)  
Phono-1 . . . . . .400mV  
Phono-2 . . . . . .400mV  
Phono-3 . . . . . .20mV

### B. PREAMPLIFIER SECTION (measured at OUTPUT jack)

- Output Voltage/Impedance (at 1,000Hz)  
Rated Output . . . . .1.5V/300 $\Omega$   
Maximum Output (at 0.5% THD) . . . . .7V/300 $\Omega$
- Harmonic Distortion (20Hz to 20,000Hz at rated output) . . . . .0.008%
- Frequency Response  
+0dB, -1dB . . . . .4Hz to 160kHz
- Hum and Noise (IHF A-network)  
Tuner, AUX . . . . . .95dB  
Tape Monitor-1, -2 . . . . . .95dB  
Residual (Volume Control at minimum) . . . . . .6 $\mu$ V, 100dB

- Input Sensitivity/Impedance  
Tuner, AUX . . . . .150mV/50k $\Omega$   
Tape Monitor-1, -2 . . . . .150mV/50k $\Omega$
  - Overload (at 1,000Hz, 0.5% THD)  
Tuner, AUX . . . . . .15V  
Tape Monitor-1, -2 . . . . . .15V
  - Crosstalk (at 1,000Hz) . . . . .70dB AVE
  - IM Distortion 60Hz:7kHz = 4:1 . . . . .0.01%
- ### C. HEADPHONES AMP SECTION (ref. preamp rated input)
- Harmonic Distortion . . . . .0.3%
  - Frequency Response  
+0dB, -3dB . . . . .20Hz to 40,000Hz
  - Hum and Noise (IHF A-network) . . . . .80dB
  - Output Impedance Low/High . . . . .4 $\Omega$  to 16 $\Omega$
  - Crosstalk (at 10,000Hz) . . . . .40dB
  - Rated Output (at 1,000Hz, rated input) . . . . .100mW/8 $\Omega$  load

### D. CONTROL CHARACTERISTICS

- Bass at 100Hz, turnover 150Hz . . .+5dB, -5dB  
turnover 400Hz . . .+10dB, -10dB
- Treble at 10kHz, turnover 7kHz . . .+5dB, -5dB  
turnover 2.5kHz . . .+10dB, -10dB
- Turnover roll-off  
Bass . . . . .150Hz, 400Hz  
Treble . . . . .7kHz, 2.5kHz
- Loudness (at 100Hz/10kHz) . . .+8dB/+4dB
- Supersonic Filter (at 24kHz) . . .12dB/oct
- Subsonic Filter (at 16Hz) . . .12dB/oct
- Audio Muting . . . . .-15dB $\pm 1$ dB
- Tone Defeat (at 1kHz, IN to OUT) .0dB $\pm 1$ dB

### E. MISCELLANEOUS

- Power Requirements . . . . .120V/60Hz, 220V/50Hz, 240V/50Hz, or 100V, 120V, 220V or 240V/50Hz or 60Hz (switchable)
- Power Consumption . . . . .30W, Max.
- Dimensions (Overall) . . . . .482(W)x148(H)x333(D)mm
- Weight (Net) . . . . .10kg

Note: Specifications and design are subject to possible modification without notice.

## Repair Parts List

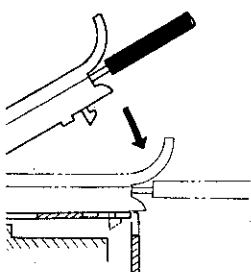
## Reparaturteilliste

## Liste des pièces de

| Schematic Location                                                                        | Part No.  |           |
|-------------------------------------------------------------------------------------------|-----------|-----------|
| TRANSISTORS, DIO                                                                          |           |           |
| Q101, 102, 105<br>106, 111, 112<br>113, 114                                               | 301201180 |           |
| Q103, 104, 107<br>108, 109, 110<br>115, 116                                               |           | 301001149 |
| Q117, 118, 121<br>122, 123, 124<br>131, 132, 509<br>510, 609, 610<br>805, 811             |           |           |
| Q119, 120, 125<br>126, 501, 502<br>503, 504, 517<br>518, 521, 522<br>601, 602, 603<br>604 | 302001118 |           |
| Q127, 128, 129<br>130, 138, 505<br>506, 507, 508<br>605, 606, 607<br>608, 806, 812<br>813 |           | 301001145 |
| Q133, 134, 137<br>511, 512, 611<br>612                                                    |           |           |
| Q135, 136, 139<br>513, 514, 515<br>516, 519, 520<br>613, 614                              | 301001142 |           |
| Q615, 616, 617<br>618                                                                     |           | 301201134 |
| Q801                                                                                      |           |           |
| Q802                                                                                      | 301001156 |           |
| Q803                                                                                      | 301201150 |           |
| Q804                                                                                      | 301001135 |           |
| Q807                                                                                      | 301201165 |           |
| Q808                                                                                      | 301001143 |           |
| Q809                                                                                      | 301201186 |           |
| Q810                                                                                      | 301001155 |           |
| Q814                                                                                      | 301001140 |           |
| D101, 102, 105<br>106, 503, 504<br>603, 604                                               | 300212002 |           |
| D103, 104, 107<br>108, 501, 502<br>601, 602, 804<br>807, 809                              |           | 300212008 |
| D301                                                                                      |           |           |
| D801, 804                                                                                 | 300919022 |           |
| D802, 805                                                                                 | 300919023 |           |
| D803                                                                                      | 300313019 |           |
| D806                                                                                      | 300313013 |           |
| D808                                                                                      | 300919024 |           |
| D001                                                                                      | 300414015 |           |
| IC601, 602                                                                                | 303452166 |           |
| VARIABLE RES                                                                              |           |           |
| VR101, 102                                                                                | 510502173 |           |
| VR401                                                                                     | 525121140 |           |

de commande

s de fil et de bloc de  
rs 3P et 6P. S'assurer  
loyé convient bien au  
appareil.  
c la fente puis enfoncer  
r en place.



wire  
abels  
le fil

50mV/50k $\Omega$   
50mV/50k $\Omega$

5V  
5V  
0dB AVE  
.01%

(ref. preamp rated input)  
.3%

0Hz to 40,000Hz  
0dB  
 $\Omega$  to 16 $\Omega$   
0dB

00mW/8 $\Omega$  load

5dB, -5dB  
10dB, -10dB  
5dB, -5dB  
10dB, -10dB

50Hz, 400Hz  
kHz, 2.5kHz  
8dB/oct  
2dB/oct  
-15dB $\pm$ 1dB  
dB $\pm$ 1dB

20V/60Hz, 220V/50Hz,  
40V/50Hz, or 100V,  
20V, 220V or 240V/  
0Hz or 60Hz (switchable)  
0W, Max.

82(W)x148(H)x333(D)mm  
0kg

subject to possible modifica-

## Repair Parts List

## Reparaturteilliste

## Liste des pièces de rechange

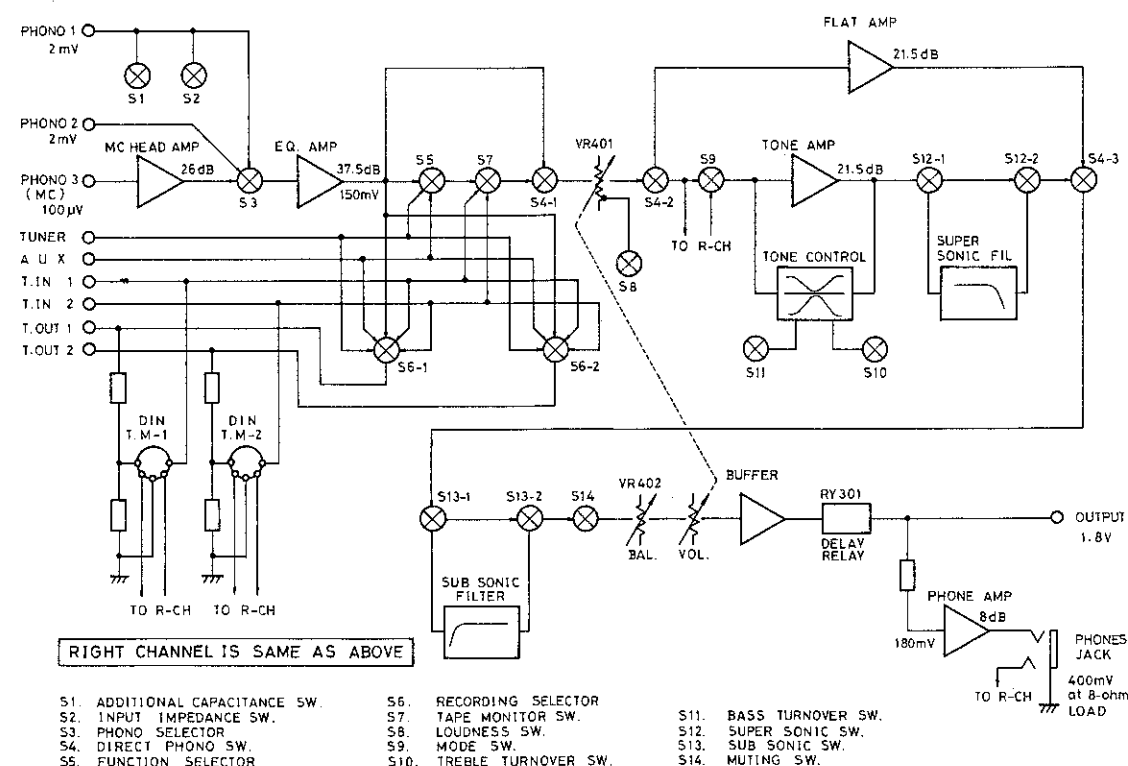
| Schematic Location                                                                        | Part No.  | Description                             |
|-------------------------------------------------------------------------------------------|-----------|-----------------------------------------|
| <b>TRANSISTORS, DIODES AND IC'S</b>                                                       |           |                                         |
| Q101, 102, 105<br>106, 111, 112<br>113, 114                                               | 301201180 | 2SC1844 (E) or (F)                      |
| Q103, 104, 107<br>108, 109, 110<br>115, 116                                               |           |                                         |
| Q117, 118, 121<br>122, 123, 124<br>131, 132, 509<br>510, 609, 610<br>805, 811             |           |                                         |
| Q119, 120, 125<br>126, 501, 502<br>503, 504, 517<br>518, 521, 522<br>601, 602, 603<br>604 | 302001118 | 2SK136 (R) or (S)                       |
| Q127, 128, 129<br>130, 138, 505<br>506, 507, 508<br>605, 606, 607<br>608, 806, 812<br>813 |           |                                         |
| Q133, 134, 137<br>511, 512, 611<br>612                                                    |           |                                         |
| Q135, 136, 139<br>513, 514, 515<br>516, 519, 520<br>613, 614                              | 301001142 | 2SA912 (R) or (S)                       |
| Q615, 616, 617<br>618                                                                     |           |                                         |
| Q801<br>Q802<br>Q803<br>Q804<br>Q807<br>Q808<br>Q809<br>Q810<br>Q814                      |           |                                         |
| D101, 102, 105<br>106, 503, 504<br>603, 604                                               | 300212002 | KB-265, Varistor, (RED)                 |
| D103, 104, 107<br>108, 501, 502<br>601, 602, 804<br>807, 809                              |           |                                         |
| D301<br>D801, 804<br>D802, 805<br>D803                                                    |           |                                         |
| D806<br>D808<br>D001                                                                      | 300313013 | WZ-120, Zener Regulator,<br>12V, 0.5W   |
| IC601, 602                                                                                |           |                                         |
| VR101, 102                                                                                | 510502173 | 100B, Phono Amp DC<br>Balance Adj       |
| VR401                                                                                     | 525121140 | 100KBTx2 plus 50KCx2,<br>Volume Control |
| <b>VARIABLE RESISTORS</b>                                                                 |           |                                         |

| Schematic Location | Part No.  | Description                                                                |
|--------------------|-----------|----------------------------------------------------------------------------|
| VR402              | 525101143 | 100KBHx2, Balance<br>Control                                               |
| VR501, 502         | 510502175 | 330B, Direct Phono<br>Amp DC Balance Adj                                   |
| <b>SWITCHES</b>    |           |                                                                            |
| S1, 2, 3           | 615212263 | Add Capacitance Selector,<br>Load Impedance Selector<br>and Phono Selector |
| S4                 | 614010130 | Direct Phono                                                               |
| S5                 | 615212264 | Function Selector                                                          |
| S6                 | 615212265 | Recording Selector                                                         |
| S7                 | 615212264 | Tape Monitor                                                               |
| S8                 | 614010131 | Loudness                                                                   |
| S9                 | 601011335 | Mode Selector                                                              |
| S10                | 611001270 | Treble Turnover                                                            |
| S11                | 611001269 | Bass Turnover                                                              |
| S12, 13 (1 Set)    | 614020423 | Supersonic and Subsonic                                                    |
| S14                | 611001268 | Muting                                                                     |
| S15, 16, 17, 18    | 601011336 | Bass, Treble Control                                                       |
| S19                | 611001271 | Power (General)                                                            |
|                    | 611001272 | Power (Canadian Type)                                                      |
| <b>OTHERS</b>      |           |                                                                            |
| RY301              | 240111242 | Relay                                                                      |
| T001               | 205001440 | Power Transformer,<br>(Multivoltage Type)                                  |
|                    | 206001440 | Power Transformer,<br>(220V/240V Type)                                     |
| F901               | 341221100 | Fuse, 1A-3AG (Long),<br>for 100V/120V Areas                                |
|                    | 341221050 | Fuse, 0.5A-3AG (Long),<br>for 220V/240V Areas                              |
|                    | 345952050 | Fuse, 500mA (Midget),<br>European Type                                     |
| F902, 903          | 341221050 | Fuse, 0.5A-3AG (Long),<br>Standard Type                                    |
|                    | 34525050  | Fuse, 500mA (Midget),<br>European Type                                     |
| F904, 905          | 341221050 | Fuse, 0.5A-3AG (Long),<br>Standard Type                                    |
|                    | 345952050 | Fuse, 500mA (Midget),<br>European Type                                     |
|                    | 141510164 | MC Head Amp and<br>Equalizer PC Board Ass'y                                |
|                    | 141810814 | Power Supply PC Board<br>Ass'y                                             |
|                    | 141710297 | Filters Amp PC Board<br>Ass'y                                              |
|                    | 141710296 | Switches and Relay PC<br>Board Ass'y                                       |
|                    | 141710299 | Tone Amp PC Board<br>Ass'y                                                 |
|                    | 141710300 | Tone Control PC Board<br>Ass'y                                             |
|                    | 141710298 | Volume Control PC<br>Board Ass'y                                           |
|                    | 654101144 | Remote Control Unit,<br>3P Switch                                          |
|                    | 654101145 | Remote Control Unit,<br>6P Switch                                          |
|                    | 647110002 | Wire Ass'y for 3P<br>Remote Switch                                         |
|                    | 647110003 | Wire Ass'y for 6P<br>Remote Switch                                         |
|                    | 624206202 | Pin Jack Board 2P,<br>PHONO-3                                              |

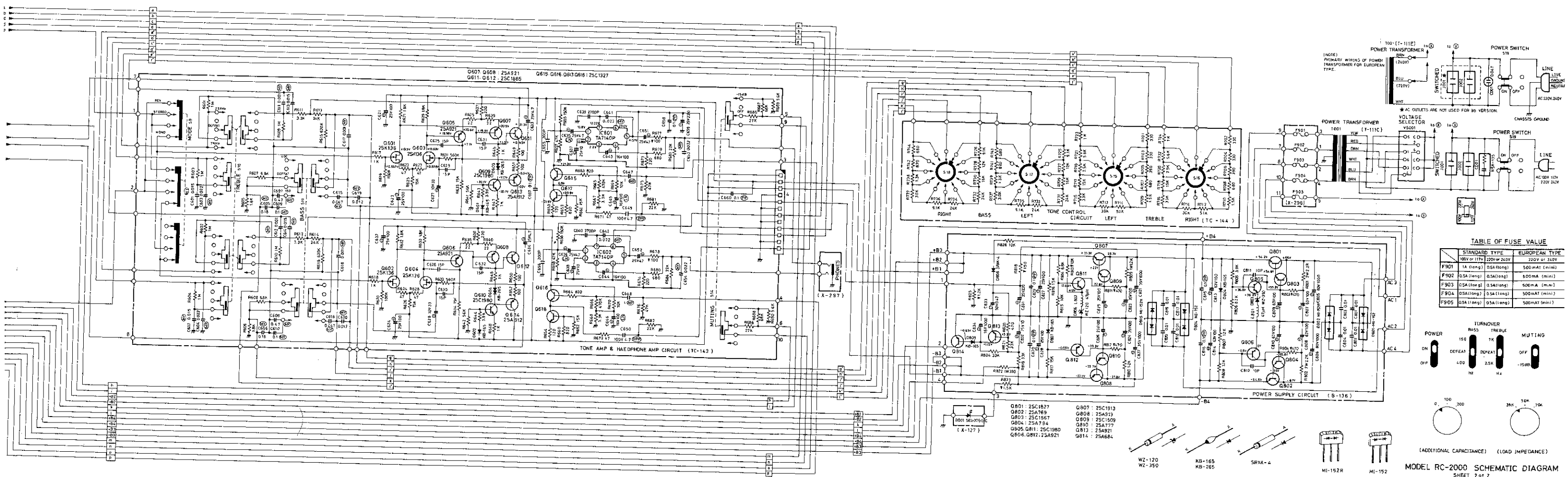
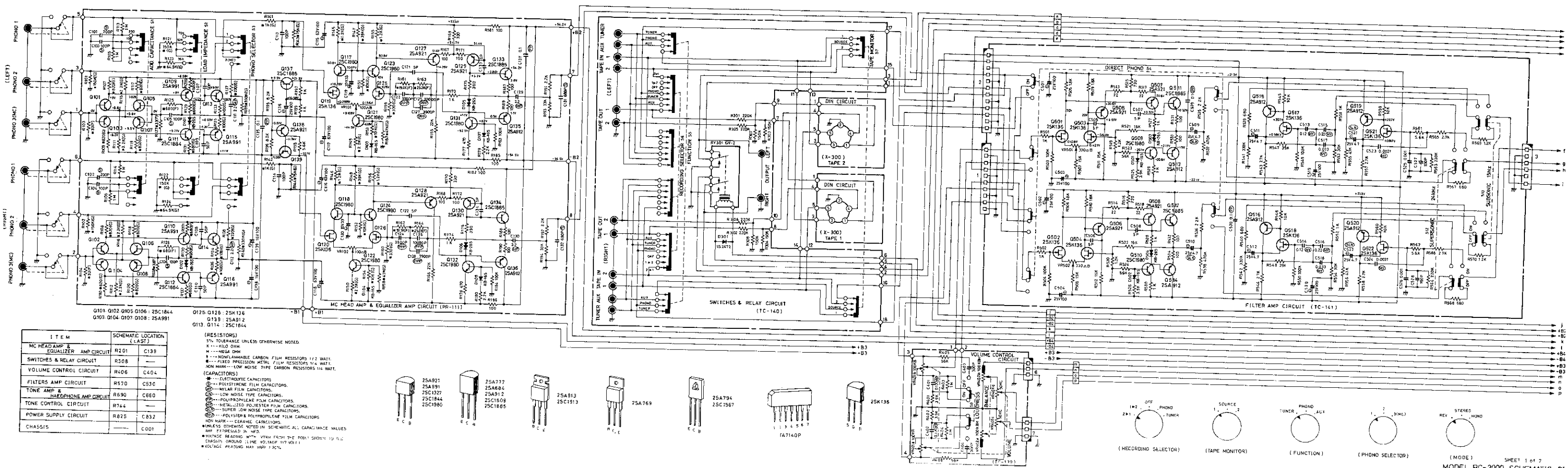
| Schematic Location | Part No.  | Description                                              |
|--------------------|-----------|----------------------------------------------------------|
|                    | 624205204 | Pin Jack Board 4P,<br>PHONO-1 and 2                      |
|                    | 624204202 | Pin Jack Board 2P,<br>OUTPUT                             |
|                    | 624204204 | Pin Jack Board 4P,<br>TUNER, AUX, etc.                   |
|                    | 625001114 | DIN Socket, 5P                                           |
|                    | 648211141 | AC Outlet                                                |
|                    | 626110028 | Phone Jack                                               |
|                    | 648211121 | Voltage Selector (not<br>used on European type<br>units) |
|                    | 111911404 | Front Panel Ass'y with-<br>out Handles                   |
|                    | 124011298 | Bottom Cover                                             |
|                    | 138011294 | Top Cover                                                |
|                    | 670101118 | Handle                                                   |
|                    | 770911216 | Collar, Handle Mtg                                       |
|                    | 673402018 | Foot                                                     |
|                    | 116310235 | Knob, Function, Volume                                   |
|                    | 116310236 | Knob, Balance, Phono<br>Selector                         |
|                    | 116310237 | Knob, Treble, Bass, etc.                                 |
|                    | 116310238 | Knob, Mode, Load<br>Impedance, etc.                      |
|                    | 116310242 | Knob, Turnover, Power,<br>etc.                           |
|                    | 116210046 | Button, Filters, etc.                                    |
|                    | 762213006 | Screw, #3x6mm (Ni),<br>Tap-tight, Oval<br>Countersunk    |
|                    | 76223006  | Screw, #3x6mm (BLZ),<br>Tap-tight, Oval<br>Countersunk   |
|                    | 766213006 | Screw, #3x6mm (Ni),<br>Tap-tight                         |
|                    | 766223008 | Screw, #3x8mm (BLZ),<br>Tap-tight                        |
|                    | 766213010 | Screw, #3x10mm (Ni),<br>Tap-tight                        |
|                    | 766223012 | Screw, #3x12mm (BLZ),<br>Tap tight                       |

| Schematic Location | Part No.  | Description                                      |
|--------------------|-----------|--------------------------------------------------|
|                    | 765214008 | Screw, #4x8mm (Ni),<br>Tap-tight, Binding Head   |
|                    | 765224008 | Screw, #4x8mm (BLZ),<br>Tap-tight, Binding Head  |
|                    | 765224012 | Screw, #4x12mm (BLZ),<br>Tap-tight, Binding Head |
|                    | 725223008 | Screw, #3x8mm (BLZ),<br>Tapping                  |
|                    | 770911166 | Screw, #3x8mm (BLZ),<br>Flat Head                |
|                    | 702213008 | Screw, #3x8mm (Ni),<br>Oval Countersunk          |
|                    | 770911209 | Cap Screw, 6x40mm,<br>Handle Mtg                 |
|                    | 770911209 | Cap Screw, 6x40mm,<br>Handle Mtg                 |
|                    | 770911130 | Screw, 3x9mm, LED<br>PC Board Mtg                |
|                    | 770402205 | Nut, M7, Hex                                     |
|                    | 770402206 | Nut, M8, Hex                                     |
|                    | 770402207 | Nut, M9, Hex                                     |
|                    | 770402209 | Nut, M12, Hex                                    |
|                    | 770402201 | Nut, M3, Hex                                     |
|                    | 770402204 | Nut, M6, Hex                                     |
|                    | 770911144 | Nut, M3, Square,<br>Transistor Mtg               |
|                    | 770500002 | Washer, #4 (BLZ), Top<br>Cover Mtg               |
|                    | 770500012 | Spring Washer, #6, Handle<br>Mtg                 |
|                    | 770500003 | Washer, #3 (Ni)                                  |
|                    | 770500010 | Spring Washer, #3                                |
|                    | 770500006 | Washer, #7                                       |
|                    | 770500007 | Washer, #8                                       |
|                    | 770500008 | Washer, #9                                       |
|                    | 770500009 | Washer, #12                                      |
|                    | 770500014 | Teethed Washer, #3                               |
|                    | 770911119 | GND Terminal                                     |
|                    | 648211146 | Fuse Clip, (Long Fuse)                           |
|                    | 648211147 | Fuse Clip, (Midget Fuse)                         |
|                    | 992001111 | Insulation Collar,<br>Transistor Mtg             |

## Block Diagram Blockdiagramm Schéma synoptique

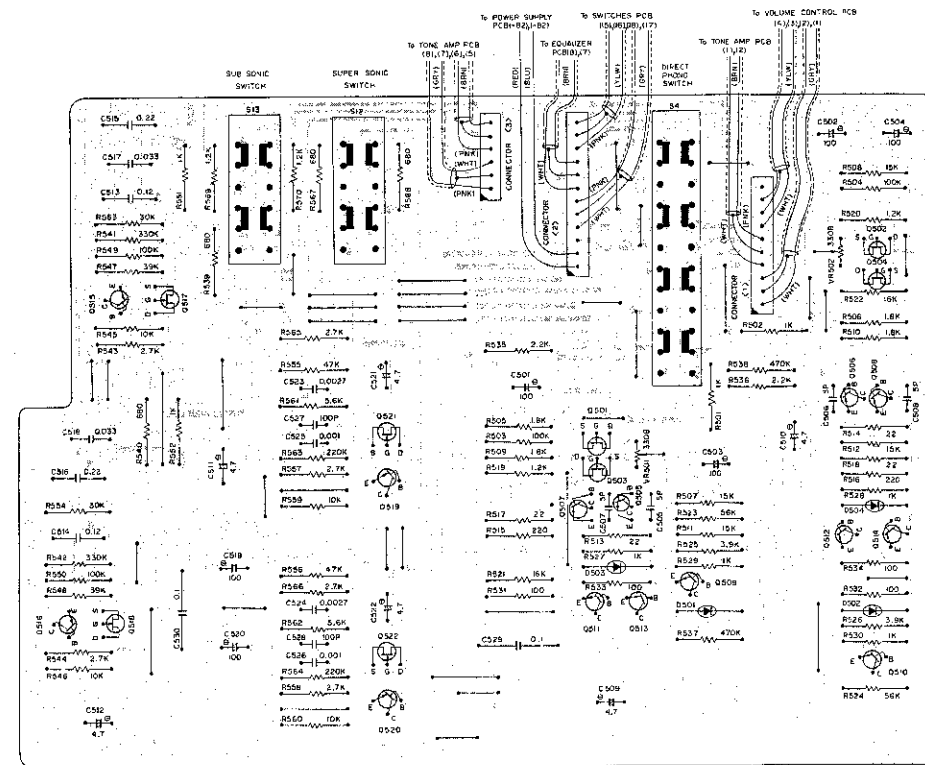
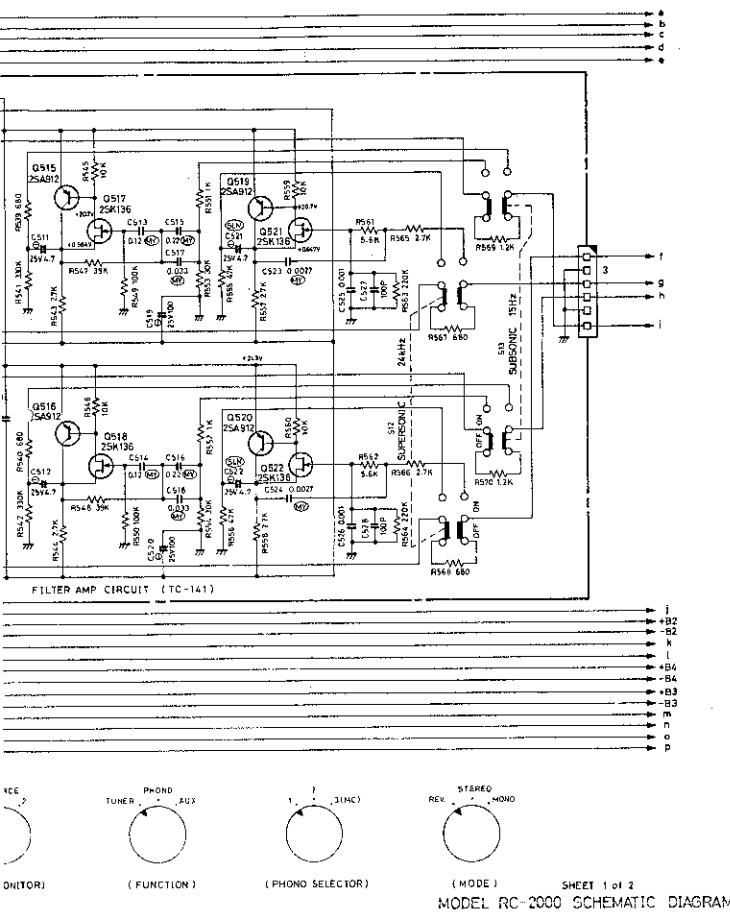


Schematic Diagram  
Schaltungsschema  
Diagramme schématique

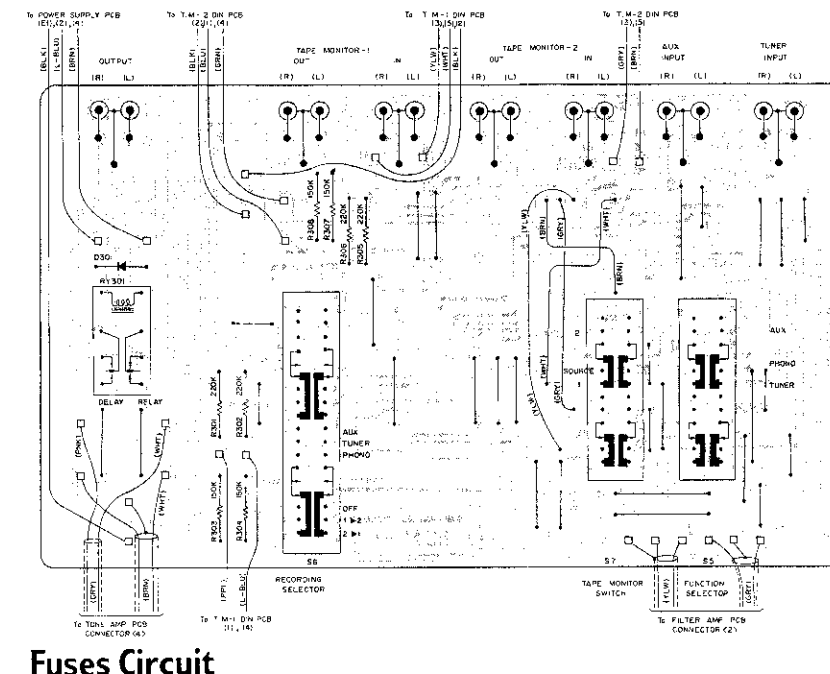


# Circuit Board Diagrams/Bestückungspläne/Diagrammes des plaquettes de circuits imprimés

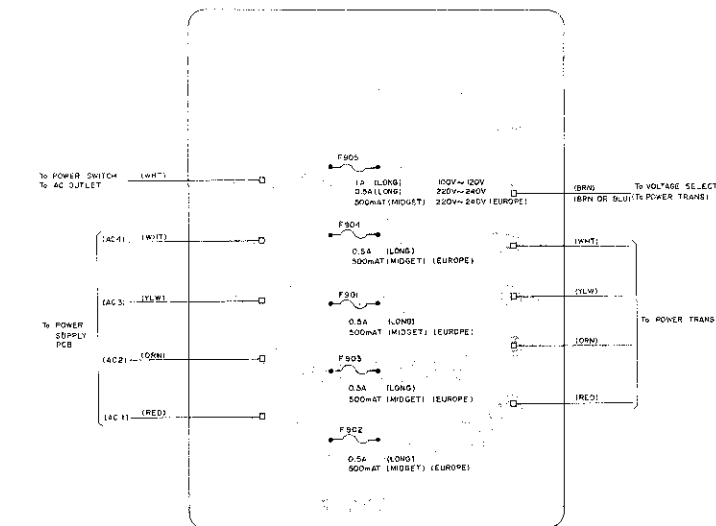
## Filters Amp Circuit Filterverstärker Circuit de l'ampli des filtres



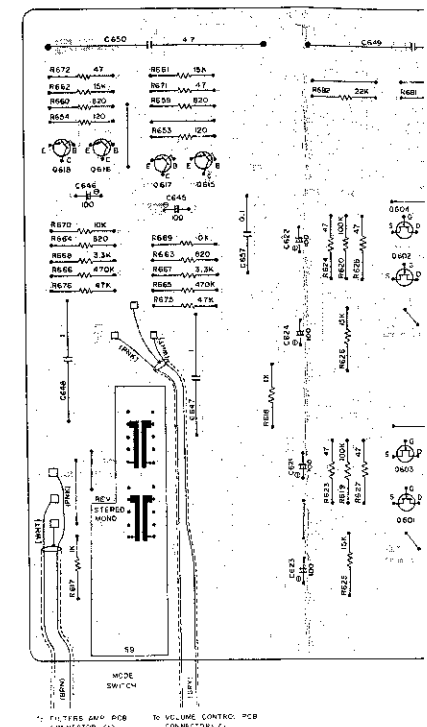
## Switches and Relay Circuit Schalter-und Relaischaltkreis Circuit du relais et des commutateurs



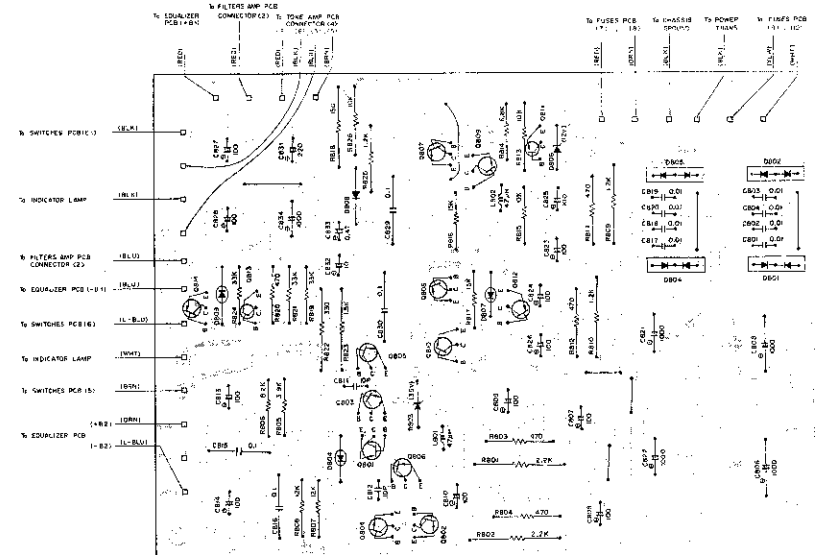
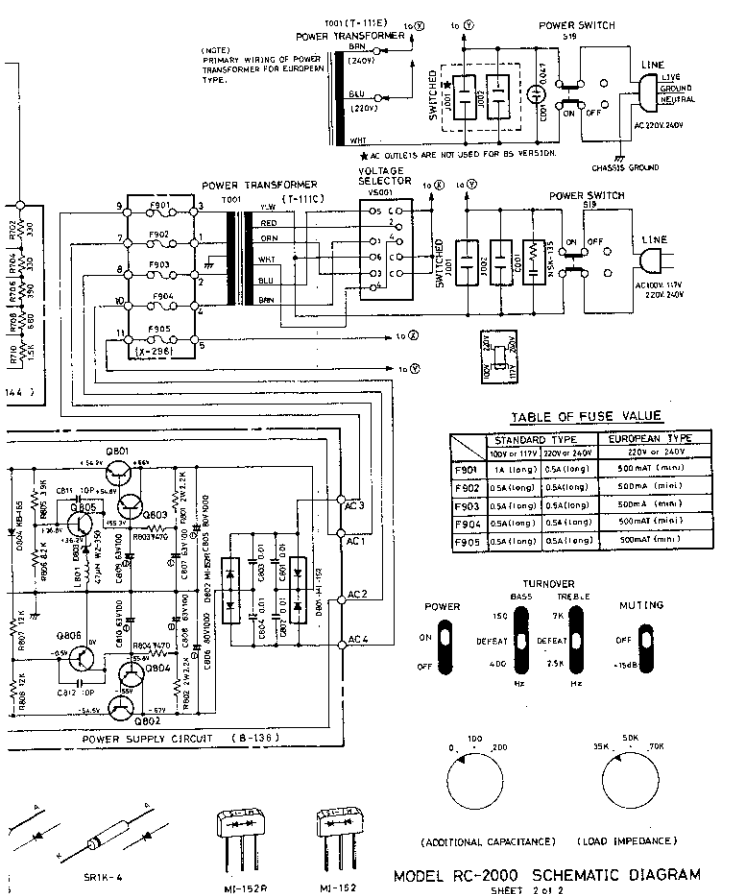
## Fuses Circuit Sicherungsschaltung Circuit des fusibles



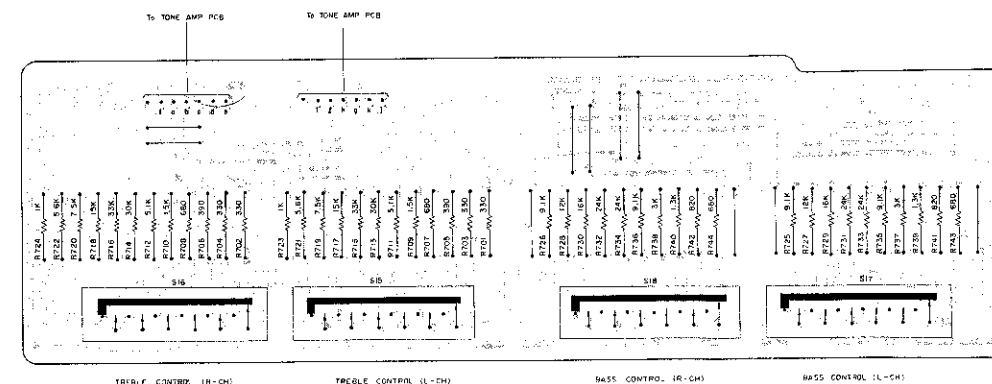
## Tone Amp Circuit Klangregler-Verstärker Circuit de l'ampli de tonalité



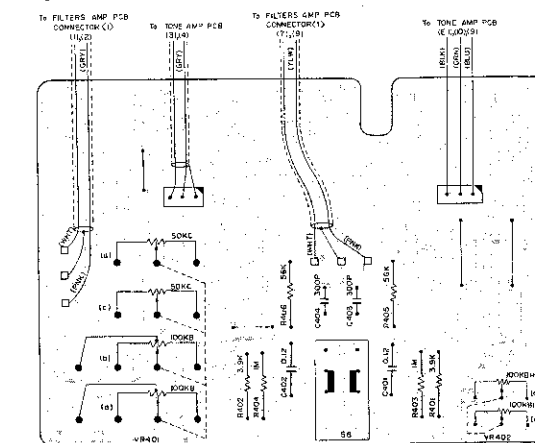
## Power Supply Circuit Spannungsversorgung Circuit d'alimentation



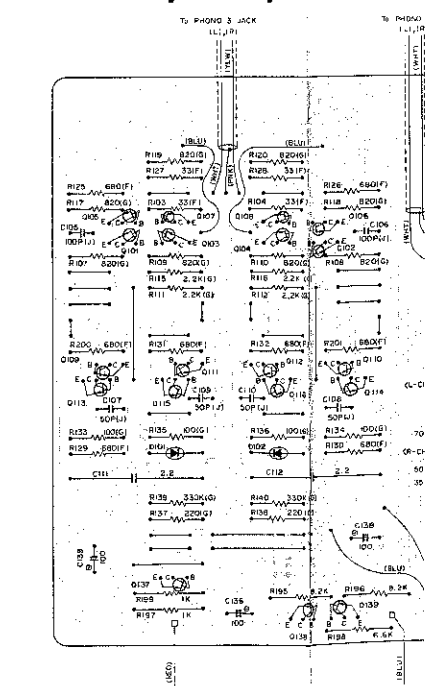
## Tone Control Circuit Klangreglerkreis Circuit de commande de la tonalité



## Volume Control Circuit Lautstärkereger Circuit de commande du volume

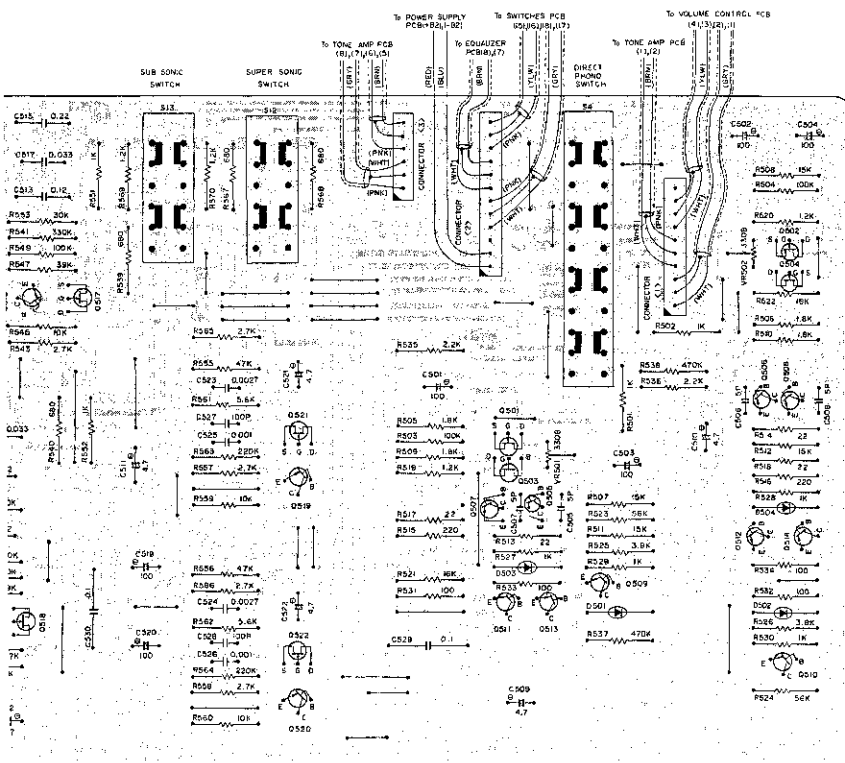


## MC Head Amp and Equalizer Vorverstärker für dynamische Circuit de l'ampli d'égalisation électrodynamique

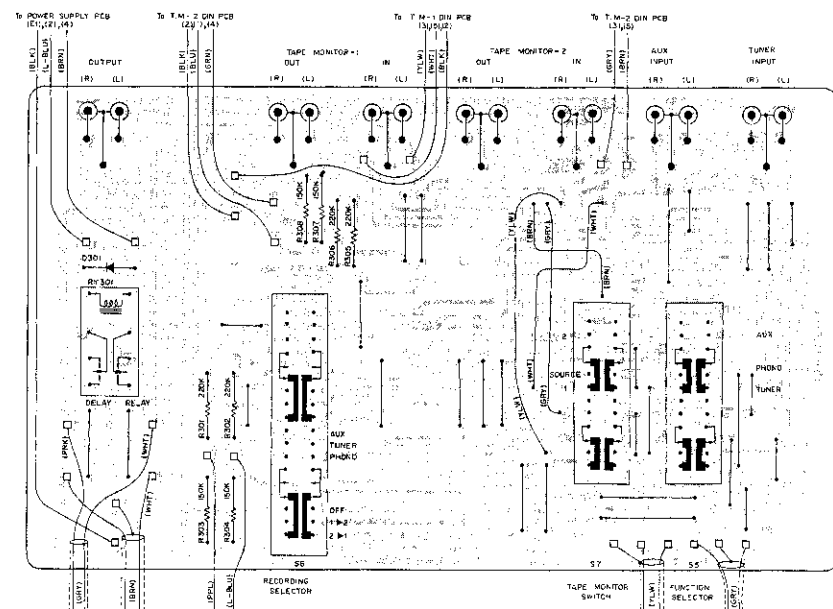


# Board Diagrams / Bestückungspläne / Diagrammes des plaquettes de circuits imprimés

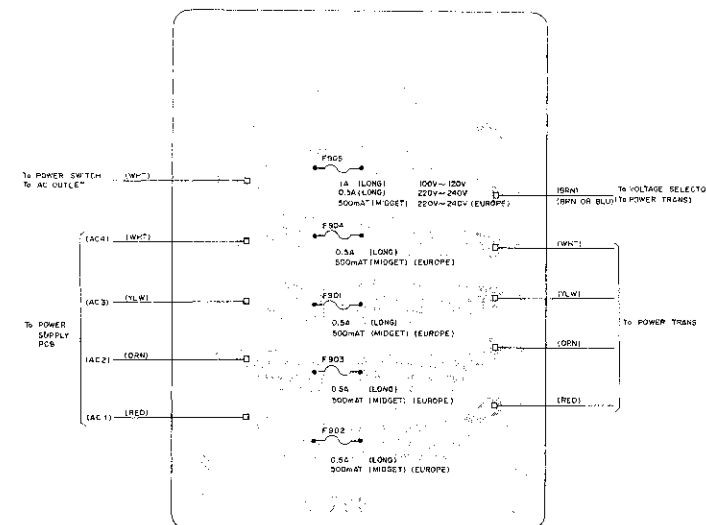
## s Amp Circuit Filterverstärker Circuit de l'ampli des filtres



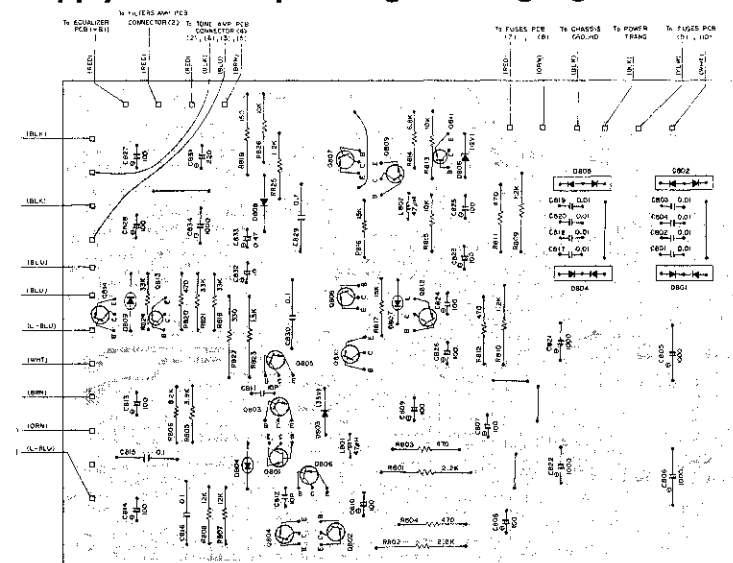
## Switches and Relay Circuit Schalter- und Relaischaltkreis Circuit du relais et des commutateurs



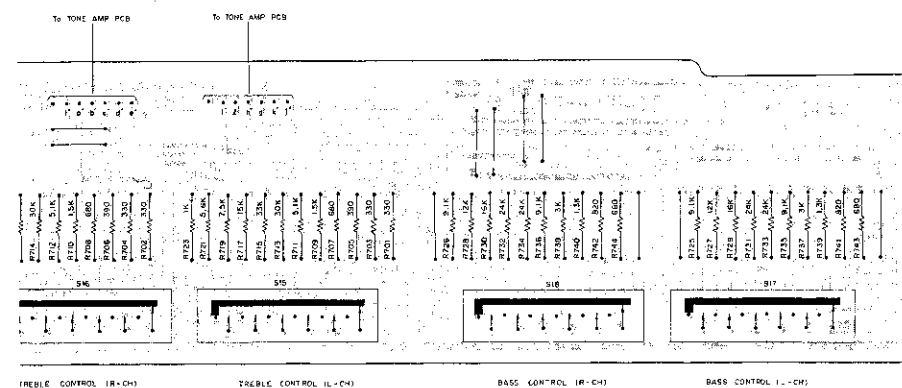
## Fuses Circuit Sicherungsschaltung Circuit des fusibles



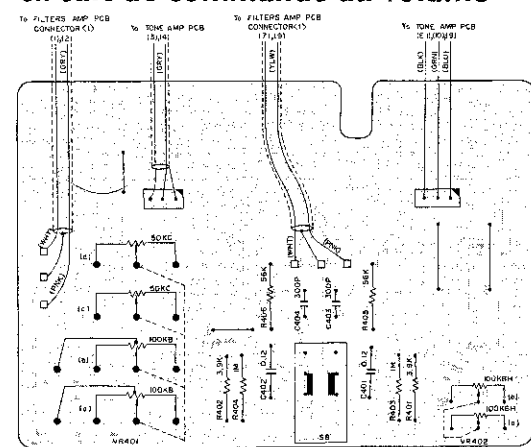
## Supply Circuit Spannungsversorgung Circuit d'alimentation



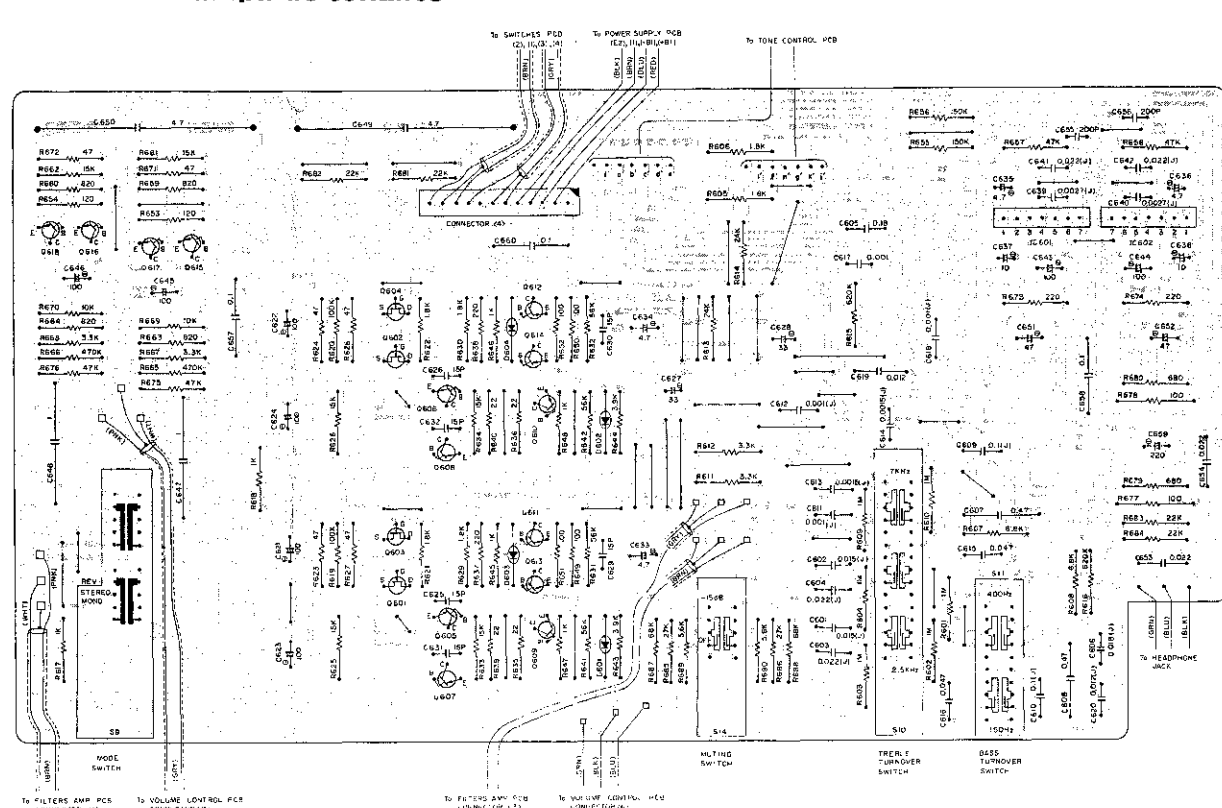
## Control Circuit Reglerkreis Circuit de commande de la tonalité



## Volume Control Circuit Lautstärkereger Circuit de commande du volume



## Tone Amp Circuit Klangregler-Verstärker Circuit de l'ampli de tonalité



## MC Head Amp and Equalizer Amp Circuit Vorverstärker für dynamische Tonabnehmer (MC) und Entzerrer-Verstärker Circuit de l'ampli d'égalisation et de l'ampli de tête de lecture électrodynamique

