

GRUNDIG SERVICE MANUAL

HIFI 

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Service Manual

M 100-CF

Sach-Nr./Part No.
72010-749.85

Zusätzlich erforderliche Unterlagen für den Komplettservice:

Additionally required Service Manuals for the Complete Service:

Service Manual

Sicherheit
Safety

Sach-Nr./Part No.
72010-800.00

M 100-CF



FINEARTS

M 100-CF (9.52324-8150 / G.LG 0450)

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010-800.00, as well as the respective national deviations.

D

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Allgemeiner Teil

Meßgeräte / Meßmittel

Trenntrafo
 NF-Generator
 Frequenzähler
 Tonhöschwankungsmesser
 DC-Voltmeter
 NF-Voltmeter
 Klirranalysator

Beachten Sie bitte das GRUNDIG Meßtechnik-Programm, das Sie unter folgender Adresse erhalten:

GRUNDIG electronics GmbH
 Würzburger Str. 150, D-90766 Fürth/Bay
 Tel. 0911/703-0, Telefax 0911/703-4479

Testcassette 448 A Sach-Nr. 35079-023.00
 Drehmomentcassette 456 Sach-Nr. 35079-014.00
 Bandlaufcassette 457 Sach-Nr. 35079-015.00
 Kopflehre 401 Sach-Nr. 72008-401.00

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General Section

Test Equipment / Aids

Isolating Transformer
 AF Generator
 Frequency Counter
 Flutter Meter
 DC Voltmeter
 AF Voltmeter
 Distortion Analyzer

Please note the Grundig Catalog "Test and Measuring Equipment" obtainable from:

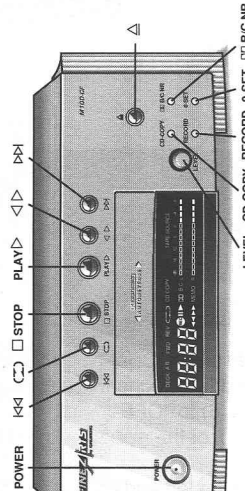
GRUNDIG electronics GmbH
 Würzburger Str. 150, D-90766 Fürth/Bay
 Tel. 0911/703-0, Telefax 0911/703-4479

Testcassette 448 A Part No. 35079-023.00
 Cassette torque meter 456 Part No. 35079-014.00
 Tape transport test cassette 457 Part No. 35079-015.00
 Head gauge 401 Part No. 72008-401.00

Operating Instructions

Note: This chapter contains excerpts from the operating instructions. For further particulars please refer to the appropriate user instructions the part number of which is indicated in the relevant spare parts list.

OPERATING ELEMENTS



Front of the cassette deck

- POWER** \triangleleft \triangleright \triangleleft \triangleright
 - To switch the cassette deck on and off
 - When the unit is in STOP mode, fast winding forward or backward
 - When pressed during playback, MUSIC SEARCH forward music search to the beginning of next tracks) or backward (music search to the beginning of the previous tracks).
- REVERSE MODE SELECTOR**
 - The tape stops at the end of each side.
 - Playback (+ recording) of both cassette sides; after which the tape stops at the end of the second side.
 - Continuous playback of both cassette sides.
 - To stop all functions.
- STOP** \square
 - To stop playback.
- PLAY** \triangleright
 - To select the playback direction (side) of the cassette.
 - Opens and closes the cassette compartment.
- O-SET** \triangle
 - To select the noise reduction system.
 - For setting the tape counter to zero.
- DO B/C NR**
 - To start the recording function.
- CD-COPY**
 - To start the CD-COPY function (recording from CD to cassette).
- LEVEL**
 - For setting the recording level.

GENERAL

HANDLING CASSETTES

- Protect your cassettes from moisture, dust, heat and cold.
- Do not store cassettes near strong magnetic fields (for example, TV sets, speakers, etc.).
- Cassettes should always be returned to their cases when they are not in use.
- Before using a cassette, take up the tape slack by inserting a pencil in one of the cassette sprockets.
- When rewinding, do not force the tape. Rewinding during rewinding, or loose tape could become jammed in the cassette player's drive mechanism.

SWITCHING ON AND OFF

- When you want to switch your cassette deck on, press the **POWER** button. The red light in the middle of the button indicates that the unit is on.
- When the unit is switched off, simply press the **POWER** button again.
- If the mains plug of your cassette deck is connected to one of the **AC OUTLETS** on the amplifier, the **POWER** button of the amplifier serves as the central switch for all units connected to the **AC OUTLETS**.
- After switching on, your unit is always in the STOP mode. The **DO B/C NR** switch and the reverse mode selector \square remain in the setting they were in when the unit was switched off. The fast tape counter position is also stored.

- PLAYBACK** \triangleright can only be started if there is a cassette in the cassette compartment.
- If you press **PLAY** \triangleright , **CD-COPY**, **O RECORD**, \triangleleft \triangleright or \square and the compartment is empty, 7.95 s appears on the display for 1.5 seconds, and then the cassette compartment opens.
- With **DO B/C NR**, select the noise reduction system with which the cassette recording system was made.
- Press the reverse-mode selector \square until \square appears on the display.
- Select the tape travel direction with \triangleleft \triangleright .
- Press **PLAY** \triangleright to start playback.
- The bargraph in the display shows the sound level of the recorded music.
- The deck plays one cassette side and stops automatically at the end.
- If you want to stop the tape before it reaches the end, simply press **STOP**.

- If you want to play both sides of the cassette, press the reverse-mode selector \square until \square appears on the display.
- The deck plays both cassette sides and the tape stops at the end of the second side.

PLAYBACK

TAPE TYPE

You can use ferric oxide (I/Fe), chromium dioxide (II/Co) or metal (ME) cassette tapes. Your unit automatically adapts to the type of tape in the cassette compartment.

INSERTING A CASSETTE

- Press the \triangle button to open the cassette compartment.
- Insert the cassette, with the open side toward the rear of the set, into the compartment.
- Close the compartment by pressing the \triangle button again. The compartment will close when you press the **PLAY** \triangleright button. In this case, playback begins immediately.
- Pressing any of the following buttons also closes the compartment: **STOP**, **RECORD**, \triangleleft \triangleright or \square .

SELECTING THE TAPE SIDE

- If you place a cassette with side A up in the compartment, you should select the direction **FWD** for playback/recording of side A and **REV** for playback/recording of side B.
- The tape travel direction is selected with the button \triangleleft \triangleright .
- The direction is indicated on the display as **FWD** or **REV**.
- After closing the tray the unit always automatically selects the **FWD** direction.

RECORDING

Recording on both sides of a cassette

- Press **RECORD**; the unit switches to **RECORD PAUSE**.
- The **REC** indicator on the display and the **II** symbol light up.
- The bargraph indication on the display shows recording level which can be adjusted with the **LEVEL** control (see Recording level adjustment).
- Select the first side of the cassette onto which you want to record with the button \triangleleft \triangleright .
- Press the reverse-mode selector \square until \square appears on the display.
- Press **RECORD** again to start the recording. You can also press **PLAY** \triangleright to start recording.
- The display shows the **REV** and \triangleright indicators.
- If desired, you can take a recording off, by slowly turning the **LEVEL** back to "0"; to take a recording in from "0" turn up to the desired recording level.

- To interrupt the recording, press **RECORD**. The **II** symbol lights up.
- The unit is now in the **RECORD PAUSE** mode.
- If you want to resume the recording press **RECORD** again.
- It goes out and the \triangleright indicator lights up again.
- The drive automatically changes the side of the cassette after the first side has been recorded; this is followed by recording on the second side.
- Press **STOP** to stop recording at an earlier point.

- To interrupt the recording, press **RECORD**. The **II** symbol lights up.
- The unit is now in the **RECORD PAUSE** mode.
- If you want to resume the recording press **RECORD** again.
- It goes out and the \triangleright indicator lights up again.
- The drive automatically changes the side of the cassette after the first side has been recorded; this is followed by recording on the second side.
- Press **STOP** to stop recording at an earlier point.

Recording on one side of a cassette

- If you only want to record on one side of the cassette, proceed as described under "Recording on both cassette sides", but press the reverse-mode selector \square until \square appears on the display.
- The unit automatically stops recording when the end of the tape is reached.

Cancelling a recording

- Every time a recording is started, the tape position is memorized. **MEMO** lights up on the display.
- If you change your mind about a recording, you can interrupt this recording by pressing the **REVERSE** button (during recording in record pause mode, provided **MEMO** is indicated on the display).
- The deck will stop recording, rewind until the place where the last recording was started and enter the recording pause mode.

Recording level adjustment

- The recording level of your recording should be adjusted. The **REC** indicator on the display shows this means that the loudest passages should not exceed "0" in the recording level (dB) bargraph display (= 100% modulation).
- You can set the correct recording level with the **LEVEL** controller.

Resetting the tape counter

- Press the **O-SET** button, for example at the beginning of a recording, to reset the tape counter to 0.

CD COPY

RECORDING FROM A CD TO A CASSETTE

- The CD-COPY function starts both CD player and cassette deck simultaneously.
- In addition it automatically performs a number of steps to start the recording properly without cutting the start of any music piece.
- Further, the function TAPE EDIT available on the CD player enables automatic adaptation of programme or disc length to the cassette length.
- This function used together with CD-COPY will ensure that no tracks are cut off in the middle during copying of the CD to the cassette.

- There must be a non-protected cassette in the cassette compartment.
- The disc you wish to copy has to be in the CD tray and the desired tracks should be selected.
- Make sure that the audio cables are correctly connected to your amplifier.
- Both units must be connected via RC bus lines.
- Prepare the cassette tape by winding to the desired tape position.
- Select the desired **DO B/C NR** mode with the **DO B/C NR** button.

Before you start the CD COPY function:

- Now press the **CD-COPY** button once.
- The cassette deck will go to **RECORD PAUSE**.
- Select the tape side onto which you want to record with the \triangleleft \triangleright button.
- Select the single or double sided recording with the reverse mode selector \square (one side \square or 2 sides \square).

Starting the CD COPY function

- To start the CD COPY procedure, press **CD COPY** once more.
- If you are positioned at the beginning of a cassette side (press \triangleleft until tape begin is reached), the cassette deck will start recording first in order to take up approx. 6 seconds of tape leader.
- The CD player is first switched to pause and then (after these 6 seconds) starts playing automatically.
- You are not positioned at the beginning of a track, the cassette deck will start recording 4 seconds of blank space.
- The CD player is first switched to pause and then (after 4 seconds) starts playing automatically.

- During the recording procedure you can only use the **STOP** or \triangle **OPEN/CLOSE** buttons on both units. All other functions are deactivated.
- If you change the source on the amplifier you will also interrupt the copy.
- If the CD player is the first unit to stop playback, it automatically sends a corresponding command to the cassette deck, and recording is stopped.
- If the respective side of the cassette reaches the end first, the CD player switches to **PAUSE** mode.

CD COPY without a given tape length

- If you have chosen the tape length with the **EDIT** function on the CD player, the display shows which parts in one side of the cassette. Blank parts following tracks will be recorded on the second side of the cassette (provided \square was selected).

CD COPY with a given tape length

- If you have chosen the tape length with the **EDIT** function on the CD player, the display shows which parts in one side of the cassette. Blank parts following tracks will be recorded on the second side of the cassette (provided \square was selected).

Ausbauhinweise

Vor Beginn von Servicearbeiten ist das Gerät in die Funktion "STOP" zu bringen, der Kopfschlitten ist dann zurückgefahren.

Mechanische Beschädigungen der Bandlauflächen und Führungen können dadurch vermieden werden.

Um bei mechanischen Arbeiten elektrische Bauteile nicht zu zerstören, ist, nachdem der Kopfschlitten zurückgefahren wurde, der Netzstecker aus der Steckdose zu ziehen.

Alle Schrauben, die in Kunststoff eingedreht werden, sollten zuerst soweit gegen den Uhrzeigersinn gedreht werden, bis Sie merken, die Schraube hat den Gewindeanfang gefunden, erst dann ist die Schraube festzudrehen. Dadurch wird vermieden, daß ein neues Gewinde in den Kunststoff geschnitten wird und der Halt der Schraube verloren geht.

1. Gehäuseseitenteile abnehmen

- 2 Schrauben (A) und 2 Schrauben (B) herausdrehen (Fig. 1).
- Seitenteile (C) in Pfeilrichtung (D) schieben und abnehmen.

2. Gehäuseoberteil abnehmen, Fig. 2

- Gehäuseseitenteile abnehmen (siehe Pkt. 1)
- 4 Schrauben (E) und 2 Schrauben (F) (Rückseite) herausdrehen.
- Drücken Sie die beiden Gehäuseseiten etwas nach außen und nehmen Sie das Oberteil in Pfeilrichtung (G) ab.

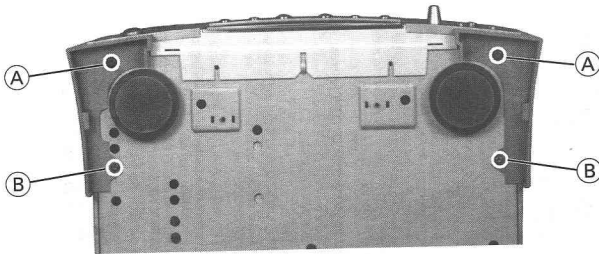


Fig. 1

Disassembly Instructions

Before starting repair works set the tape deck to "STOP" position so that the head carrier is in home position. This is to avoid mechanical damage to the surfaces contacting the tape and the guides.

With the head carrier in home position disconnect the mains plug from the wall outlet to ensure that the electrical components are not damaged during the mechanical repair works.

All the screws which are screwed into plastic parts should be turned counter clockwise first until you notice that the screw has found the first thread.

Then tighten the screw. This preventive measure ensures that no new threads are cut into the plastic material thus deteriorating the good fit of the screw.

1. Removing the cabinet side parts

- Undo 2 screws (A) and 2 screws (B) (Fig. 1).
- Move the side parts (C) in the direction of arrow (D) (Fig. 2) and remove them.

2. Removing the top of the cabinet, Fig. 2

- Remove the cabinet side parts (see para 1).
- Undo 4 screws (E) and 2 screws (F) (on the rear).
- Push the two sides of the cabinet apart by a small amount and remove the top of the cabinet in the direction of arrow (G).

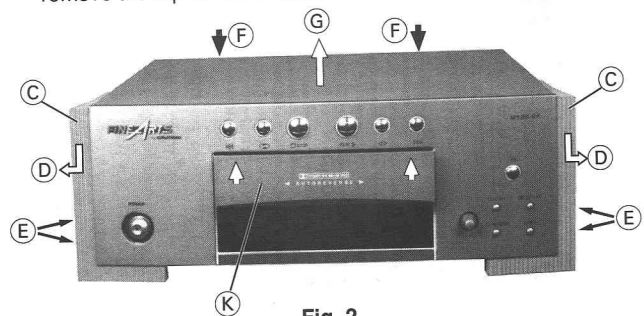


Fig. 2

3. Cassettenmechanik (Loading) ausbauen

- Gehäuseoberteil abnehmen (siehe Pkt. 2).
- 2 Schrauben (H) (Fig. 3) herausdrehen, Trafosteckverbindungen abziehen und Trafo herausnehmen.
- Schublade nach vorne schieben.
- Schubladenabdeckung mit Aluabdeckung (K) nach oben abziehen (Fig. 2).
- 2 Schrauben (L) (kurz) und 2 Schrauben (M) (lang) herausdrehen (Fig. 4).
- Masseleitungen (N) zum Laufwerk und zur Frontblende lösen (Fig. 4).
- Steckverbindungen vom Laufwerk zu den Leiterplatten abziehen (Fig. 5).
- Cassettenmechanik hinten anheben und herausnehmen.

3. Removing the loading and drive mechanisms

- Remove the top of the cabinet (see para 2).
- Undo 2 screws (H), (Fig. 3), unplug the transformer connections and take the transformer out.
- Pull out the drawer.
- Pull out the front of the drawer together with the aluminium plate (K) (Fig. 2) towards the top.
- Undo 2 screws (L) (short) and 2 screws (M) (long) (Fig. 4).
- Unplug the ground connections (N) to the drive mechanism and the front panel (Fig. 4).
- Disconnect the connectors (Fig. 5) from the drive mechanism to the PCBs.
- Raise the loading mechanism on the rear side by a small amount and remove it.

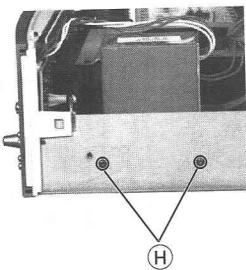


Fig. 3

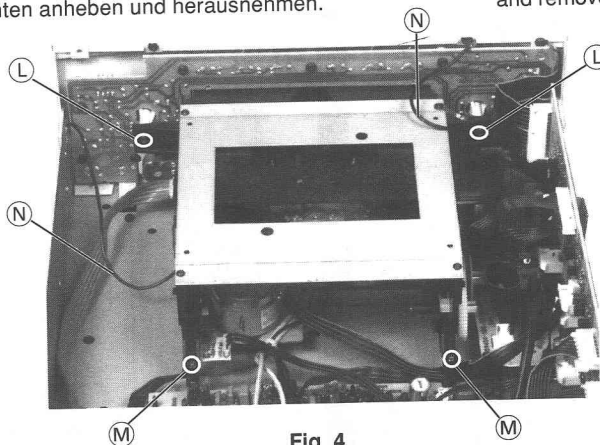


Fig. 4

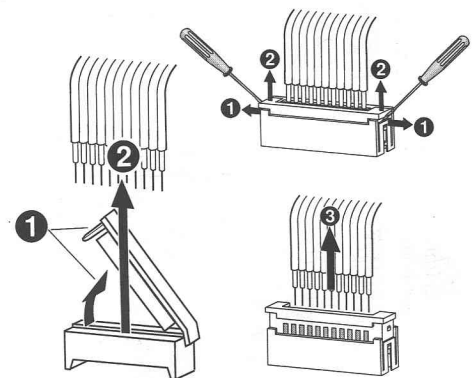


Fig. 5

4. Frontblende (mit Leiterplatten) ausbauen

- Cassettenmechanik ausbauen (siehe Pkt. 3).
- Netzschalter (Fig. 6) in Stellung "AUS" schalten.
- Netzschalterstößel (O) (Fig. 6) nach unten ausrasten.
- Laschen (P) links und rechts der Frontblende sowie 2 Haltezapfen (Q) am Gehäuseboden ausrasten (Fig. 7).
- Frontblende vorsichtig nach vorne abziehen (R).
- Bei Bedarf Steckverbindungen P102 und P413 von den Leiterplatten lösen (Fig. 5).

4. Removing the front panel (with PCBs)

- Remove the loading and drive mechanisms (see para 3).
- Set the mains switch (Fig. 6) to "OFF".
- Disengage the push-rod (O) of the mains switch (Fig. 6) towards the bottom side.
- Disengage the lugs (P) on the left and right of the front panel and 2 prongs (Q) on the bottom of the cabinet (Fig. 7).
- Pull the front panel carefully towards the front (R).
- If necessary, disconnect the connectors P102 and P413 from the printed circuit boards (Fig. 5).

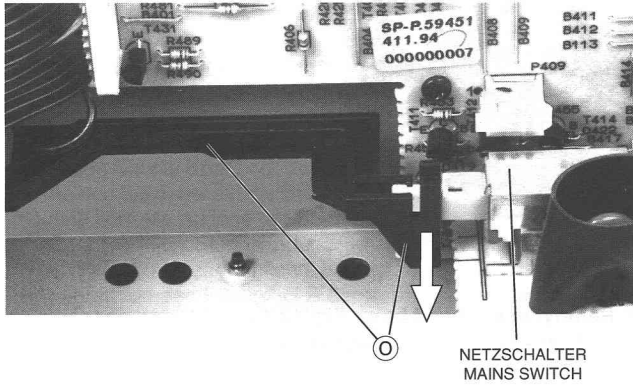


Fig. 6

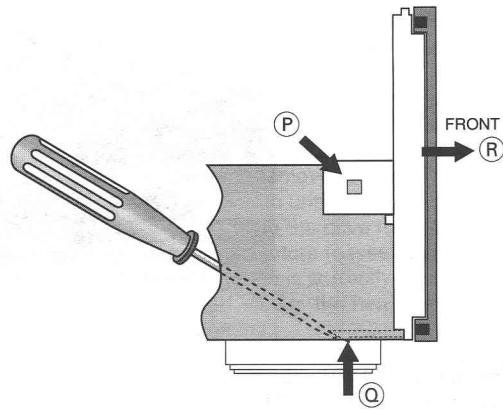


Fig. 7

5. Cassettenschublade ausbauen

- Cassettenmechanik ausbauen (siehe Pkt. 3).
- Cassettenschublade (Z) bis zum Anschlag nach vorne schieben.
- Drücken Sie die beiden seitlichen Arretierungszapfen (A) (Fig. 8 und 9) der Cassetenauflage (T) nach innen und ziehen Sie dabei die Cassettenschublade (Z) nach vorne heraus.
- Der Einbau erfolgt in umgekehrter Reihenfolge. Achten Sie dabei auf den Loadingschalter (B) (Fig. 10), Bruchgefahr!

5. Removing the cassette drawer

- Remove the loading and drive mechanisms (see para 3).
- Move the cassette drawer (Z) to the front stop.
- Pressing the two lateral locking pins (A) (Fig. 8 and 9) on the cassette support (T) inwards withdraw the cassette drawer (Z).
- Refit the cassette drawer in reverse order. Take care of the loading switch (B) (Fig. 10), risk of fracture!

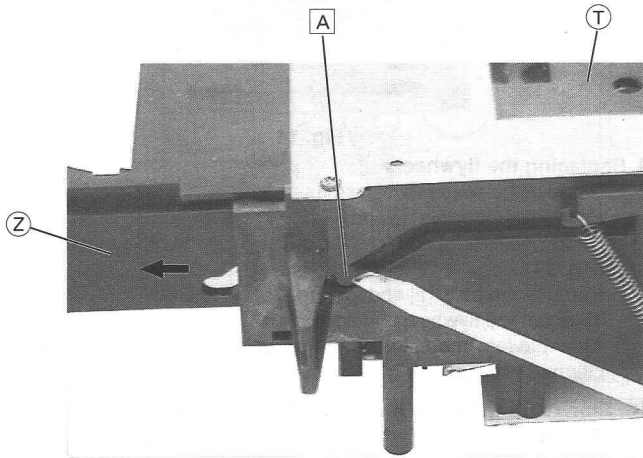


Fig. 8

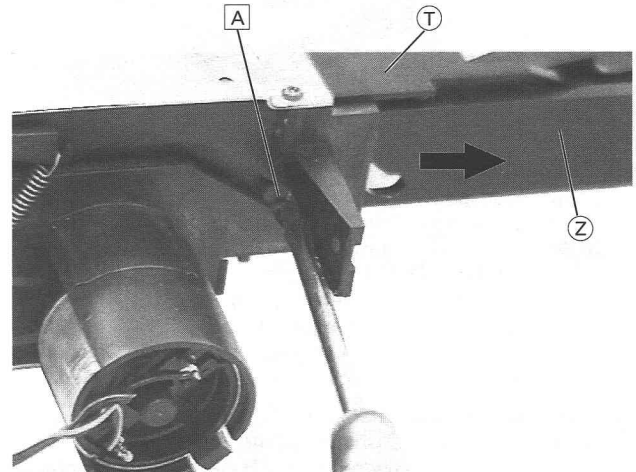


Fig. 9

6. Laufwerk ausbauen, Fig. 11

- Cassettenmechanik ausbauen (siehe Pkt. 3).
- 4 Schrauben (C) herausdrehen. Achten Sie dabei auf die dazugehörigen Vierkantmuttern im Montagerahmen.
- Laufwerk herausnehmen.

5. Removing the drive mechanism, Fig. 11

- Remove the loading and drive mechanisms (see para 3).
- Undo 4 screws (C).
- Take care of the respective square nuts in the mounting frame.
- Take out the drive mechanism.

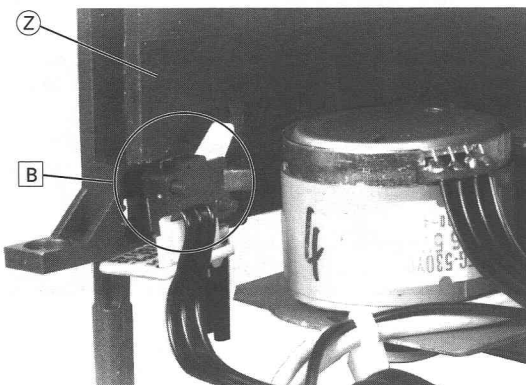


Fig. 10

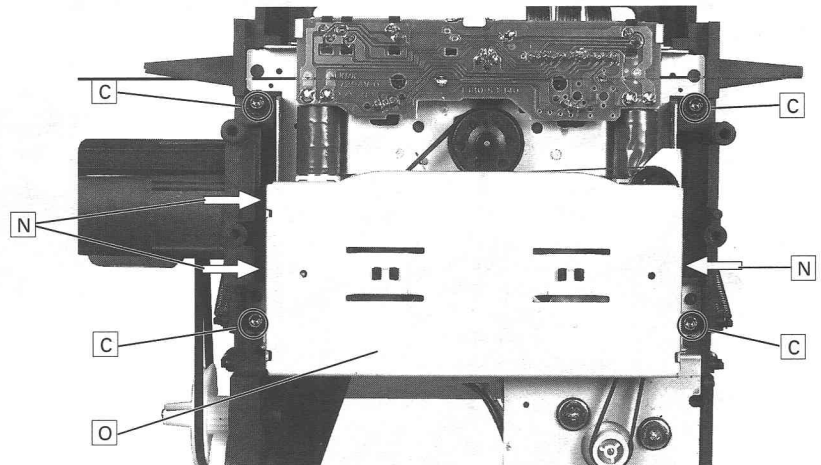


Fig. 11

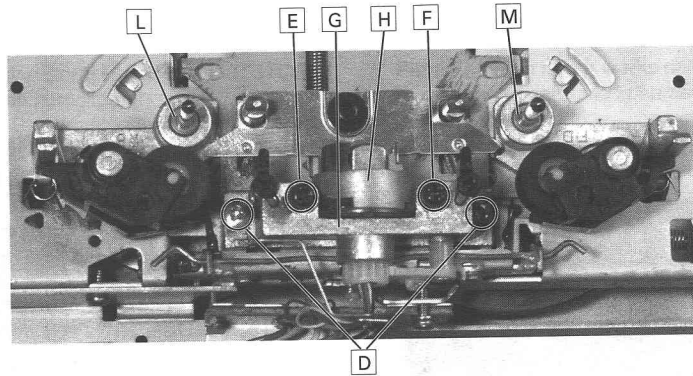


Fig. 12

7. Kopfträger ausbauen, Fig. 12

- Laufwerk ausbauen (siehe Pkt. 6).
- 2 Schrauben **D** herausdrehen.
- Achtung! Die Schrauben **E** und **F** nicht verdrehen, sie dienen zur Kopfspalt- und Bandlaufeinstellung.
- Kopfleitungen ablöten (notieren)
- Kopfträger **G** (mit Kombikopf **H**) abnehmen.

8. Andruckrollenhebel auswechseln, Fig. 13/14

- Laufwerk ausbauen (siehe Pkt. 6).
- Rastnase **I** nach außen drücken und Andruckrollenhebel **J**, **K** nach oben abziehen.

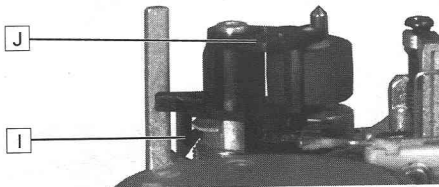


Fig. 13

9. Schwungräder auswechseln

- Laufwerk ausbauen (siehe Pkt. 6).
 - Ölfangscheiben **L** und **M** abziehen (Fig. 12).
 - 3 Schrauben **N** herausdrehen und Laufwerkabdeckung **O** abnehmen (Fig. 11).
 - Riemen **P** und **Q** abnehmen (Fig. 15).
 - Schwungräder **R** und **S** herausnehmen.
- Nach dem Einbau der Schwungräder müssen die Capstanwellen mit Spiritus oder Reinigungsbenzin gereinigt werden.

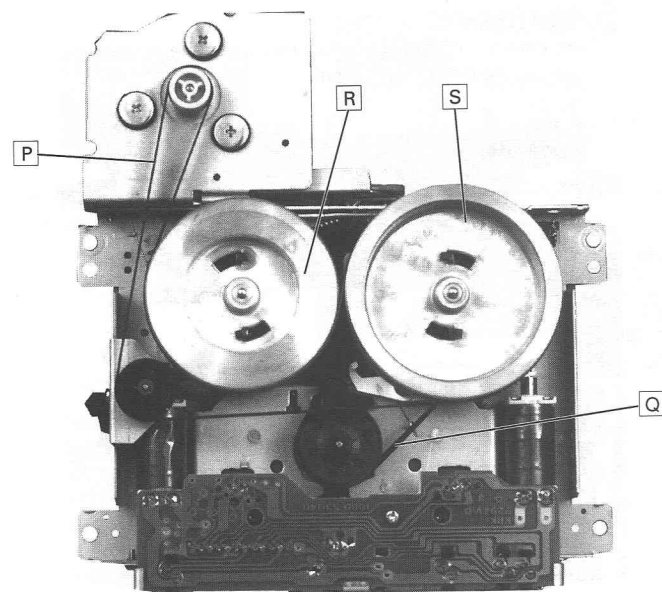


Fig. 15

7. Removing the head base, Fig. 12

- Remove the drive mechanism (see para 6).
- Undo 2 screws **D**.
- Warning! Do not turn the screws **E** and **F**. They are used to adjust the head gap position and the tape transport.
- Unsolder the head connecting leads (mark them).
- Remove the head base **G** (with combi head **H**).

8. Replacing the pressure roller levers, Fig. 13/14

- Remove the drive mechanism (see para 6).
- Press the locking lug **I** outwards and pull off the pressure roller levers **J**, **K**.

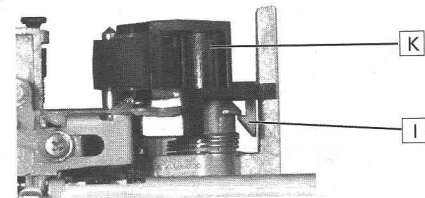


Fig. 14

9. Replacing the flywheels

- Remove the drive mechanism (see para 6).
 - Pull off the oil seals **L** and **M** (Fig. 12).
 - Undo 3 screws **N** and take the cover **O** off the drive mechanism (Fig. 11).
 - Remove the belts **P** and **Q** (Fig. 15).
 - Take out the flywheels **R** and **S**.
- After having fitted the new flywheels the capstans must be cleaned with spirit or cleaning benzine.

10. Removing the drive mechanism circuit board, Fig. 16

- Remove the loading and drive mechanisms (see para 3).
- Undo 2 screws **T** and take out bracket **U**.
- Undo screw **V**.
- Unsolder both servo magnets **W**.
- Remove the circuit board carefully.

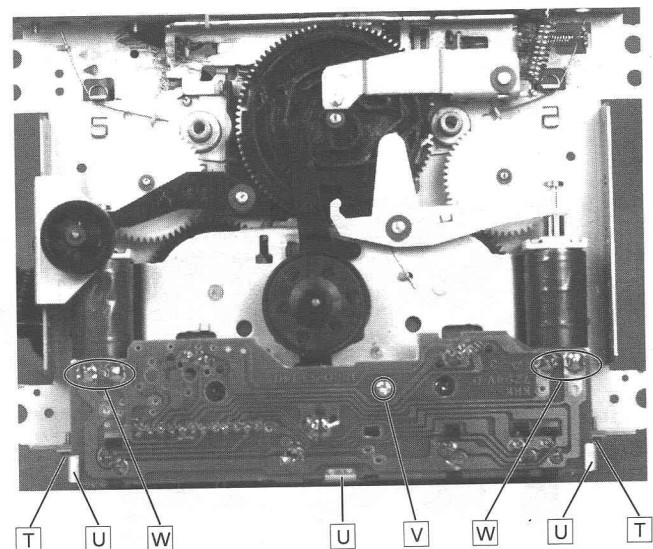


Fig. 16

11. Bandlaufeinstellung

Die Bandlaufeinstellung wird notwendig nach einem Wechsel des Kombikopfes **H** bzw. des Kopfträgers **G** (Fig. 12).

Prüfen Sie den Bandlauf (Bandführungshöhe) mit der Kopflehre 401 (Fig. 17) und einer Bandlaufcassette. Der Schieber A der Kopflehre ist bei diesem Gerät ohne Funktion.

- Gehäuseoberenteil abnehmen, (siehe Pkt. 2).
- 4 Schrauben ① herausdrehen und Cassettenschachthalter ② abnehmen (Fig. 18).
- 2 Federn ③ aushängen und Klappe ④ abnehmen (Fig. 18).
- Cassettenschublade bis zum Anschlag ganz einfahren.
- Legen Sie die Kopflehre auf.
- Achten Sie dabei auf die Bandselektoren (Cassettenfühler) und eine korrekte Auflage der Kopflehre.
- Gerätefunktion: Start ▷ oder Start ◁, d.h. der Kopfschlitten wird in die Richtung der Kopflehre bewegt.
- Führen Sie den Fühlhebel B der Kopflehre zur Bandführungsgabel ⑤ (Fig. 19) bzw. ⑥ (Fig. 20).
- Einstellschrauben ⑦ so verdrehen, daß sich der Fühlhebel B leicht zwischen den Bandführungen ⑤ bzw. ⑥ bewegen läßt. Sind die beiden Bandführungen in der Höhe eingestellt, so muß die Unterkante des Fühlhebels B sich auch leicht über die Unterkante der Kopfgabel ⑧ (Fig. 21) des Kombikopfes schieben lassen (Laufrichtung ▷ und ◁). Der Kombikopf muß dabei senkrecht stehen und darf keine Neigung aufweisen. Der Kopfspiegel muß im rechten Winkel zum Chassis bzw. parallel zur Tonwelle stehen.
- Gerät auf Stop □ schalten.
- Kopflehre abnehmen.

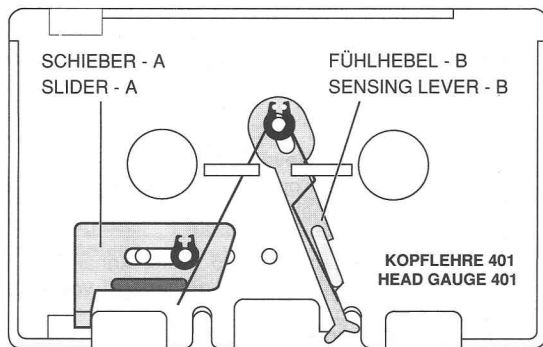


Fig. 17

11. Adjustment of the tape transport

Adjustment of the tape transport is necessary after changing the combi head **H** or the head base **G** (Fig. 12).

Check the tape path (tape guiding height) with the head gauge 401 (Fig. 17) and a tape transport test cassette. The slider A does not have any function with this set.

- Remove the top of the cabinet, (see para 2).
- Undo 4 screws ① and remove the cassette compartment holder ② (Fig. 18).
- Unhook 2 springs ③ and remove the flap ④ (Fig. 18).
- Push the cassette drawer in until it reaches the rear end stop.
- Place the head gauge on to the drive mechanism.
- Take care of the tape selectors (cassette sensing levers) and ensure that the head gauge is correctly positioned.
- Press Start ▷ or Start ◁, i.e. the head base is moved in the direction of the head gauge.
- Move the sensing lever B of the head gauge towards the tape guide ⑤ (Fig. 19) or ⑥ (Fig. 20).
- Turn the adjustment screws ⑦ so that the sensing lever B moves smoothly between the tape guides ⑤ or ⑥. When the height of both tape guides is correctly adjusted, it must also be possible to move the lower edge of the sensing lever B smoothly over the lower edge of the head guide ⑧ (Fig. 21) (direction ▷ and ◁). The combi head must be in vertical position and must not be tilted. The head face must be perpendicular to the chassis or in parallel with the capstan.
- Press Stop □.
- Remove the head gauge.

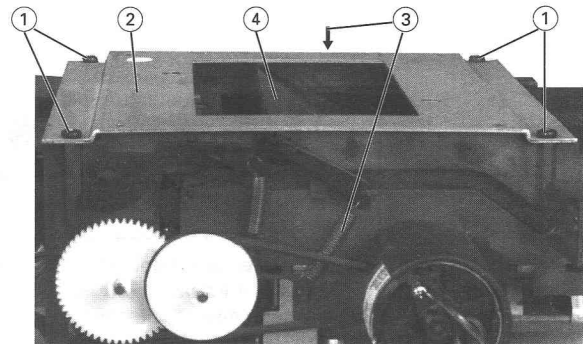


Fig. 18

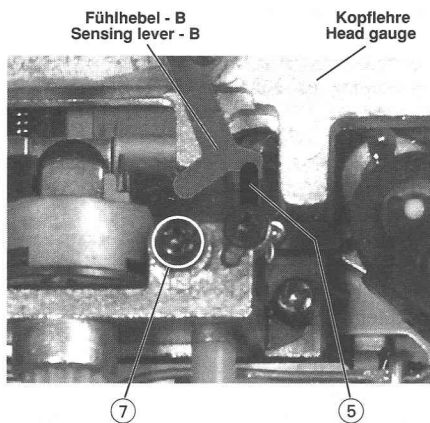


Fig. 19

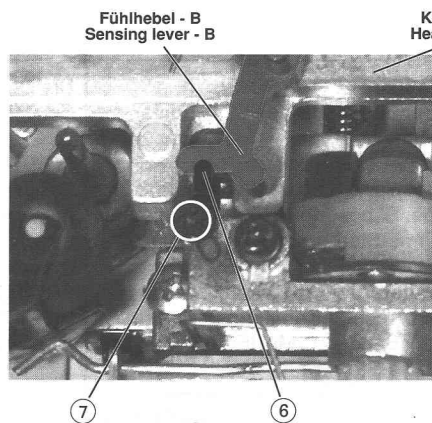


Fig. 20

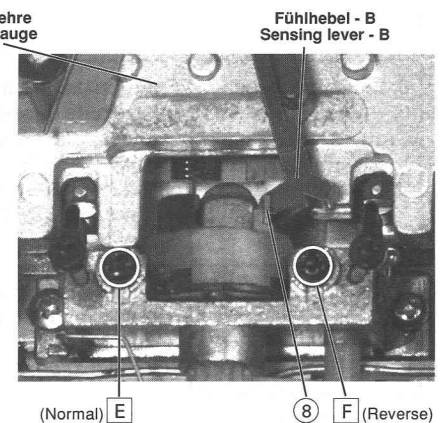


Fig. 21

Vor der Prüfung mit der Bandlaufcassette muß das Laufwerk angeschlossen und das Gerät elektrisch betriebsbereit sein. Die Andruckrolle, die Tonwelle und der Kombikopf müssen frei von Bandabrieb und Schmutz sein.

- Bandlaufcassette (z.B. 457) einlegen.
 - Durch Umspulen der Bandlaufcassette erzeugen Sie einen geräteeigenen Bandwickel.
 - Gerätefunktion: Start ▷ oder Start ◁. Beim Durchlauf der Bandlaufcassette darf das Band nicht an der oberen oder unteren Kante der Kopfgabel des Kombikopfes umknicken. Eine geringe Korrektur des Bandlaufes ist möglich durch Verdrehen der Schrauben ⑦ (Fig. 19/20).
- Nach der Bandlaufeinstellung ist mit einer Testbandcassette die Senkrechtstellung (Azimut) des Kombikopfes zu prüfen und wenn notwendig, mit den Kopfschrauben **E** oder **F** nachzujustieren, siehe > Einstellvorschriften <.

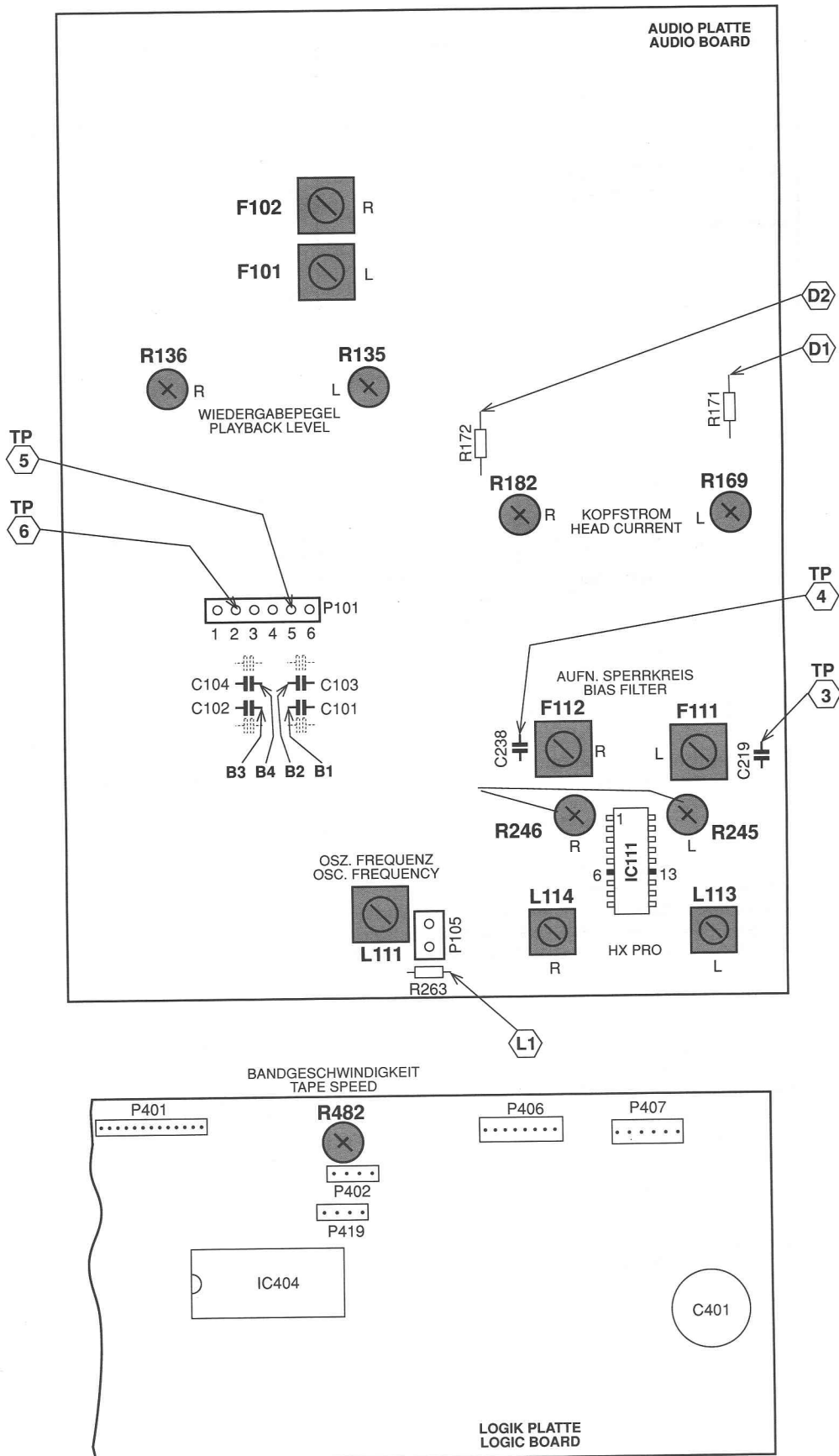
For carrying out the test with the tape transport test cassette, the drive mechanism must be connected and the recorder must be electrically operable.

The pressure roller, the capstan and the combi head must be free of abraded tape material and dirt.

- Insert the test cassette (e.g. 457).
- Wind the test cassette to produce a typical tape roll of this machine.
- Select function: Start ▷ or Start ◁. During this operation the tape must not bend on the upper or lower edge of the guide fork of the combi head. The tape transport can be corrected by a small amount by turning the screws ⑦ (Fig. 19/20).

After adjustment of the tape transport with a test cassette check the head gap position (Azimuth) of the combi head and if necessary re-adjust with the head screws **E** or **F** as described in chapter > Adjustment Procedures <.

Abgleichlageplan Alignment Scheme



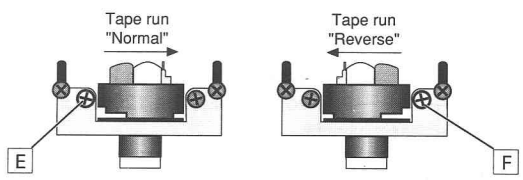
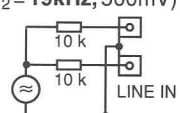


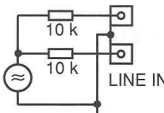
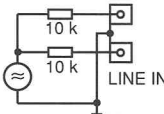
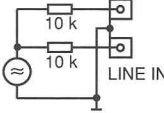
Adjustment Procedures

Measuring instruments/equipment:

Frequency counter, AF voltmeter, DC voltmeter, AF generator, distortion analyzer, wow and flutter meter, Cr test cassette 448 A (Part No. 35079-023.00), torque test cassette 456 (Part No. 35079-014.00).

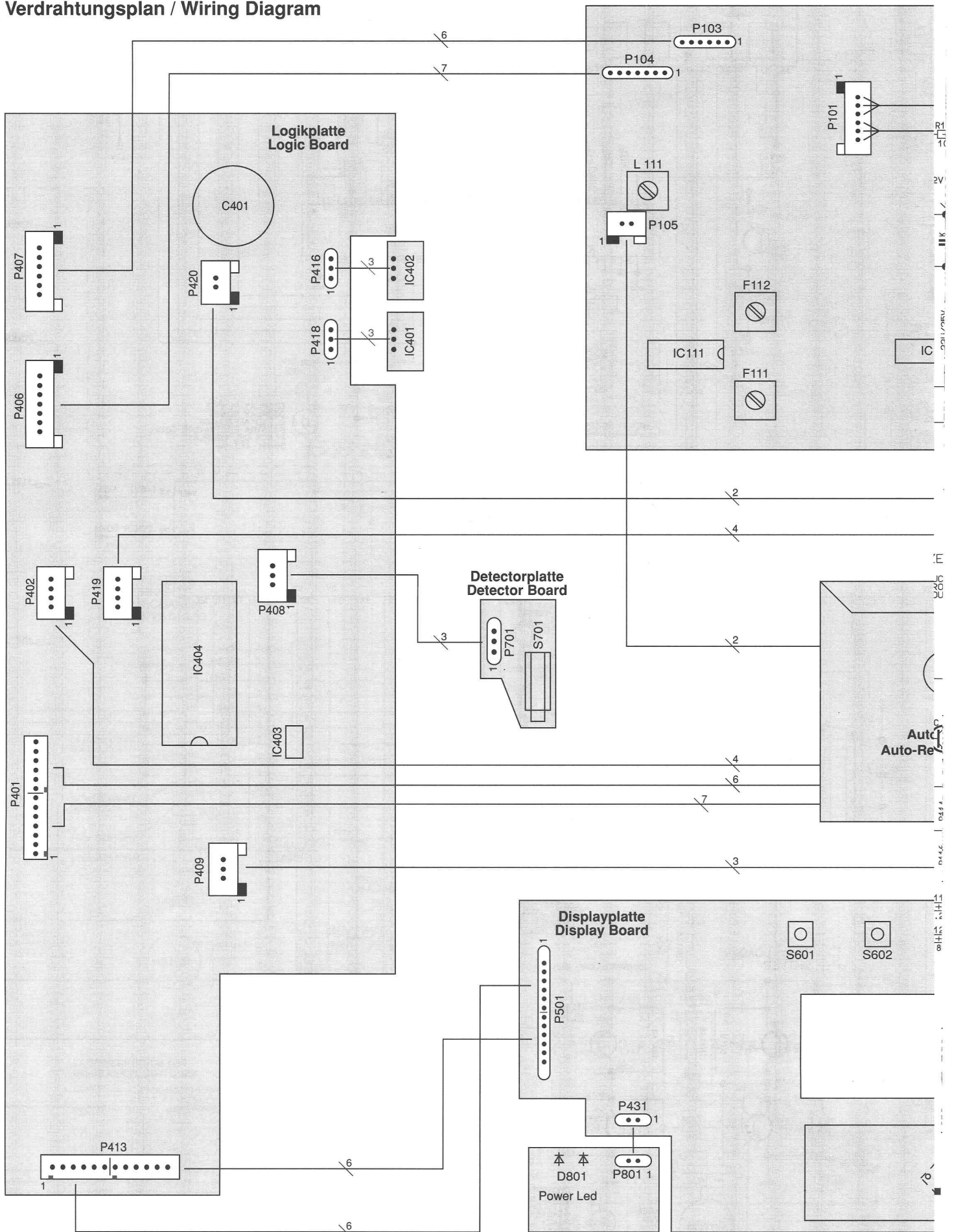
Layout of adjustment controls see page 2 - 3. Adjustment of the tape transport see page 1 - 9.

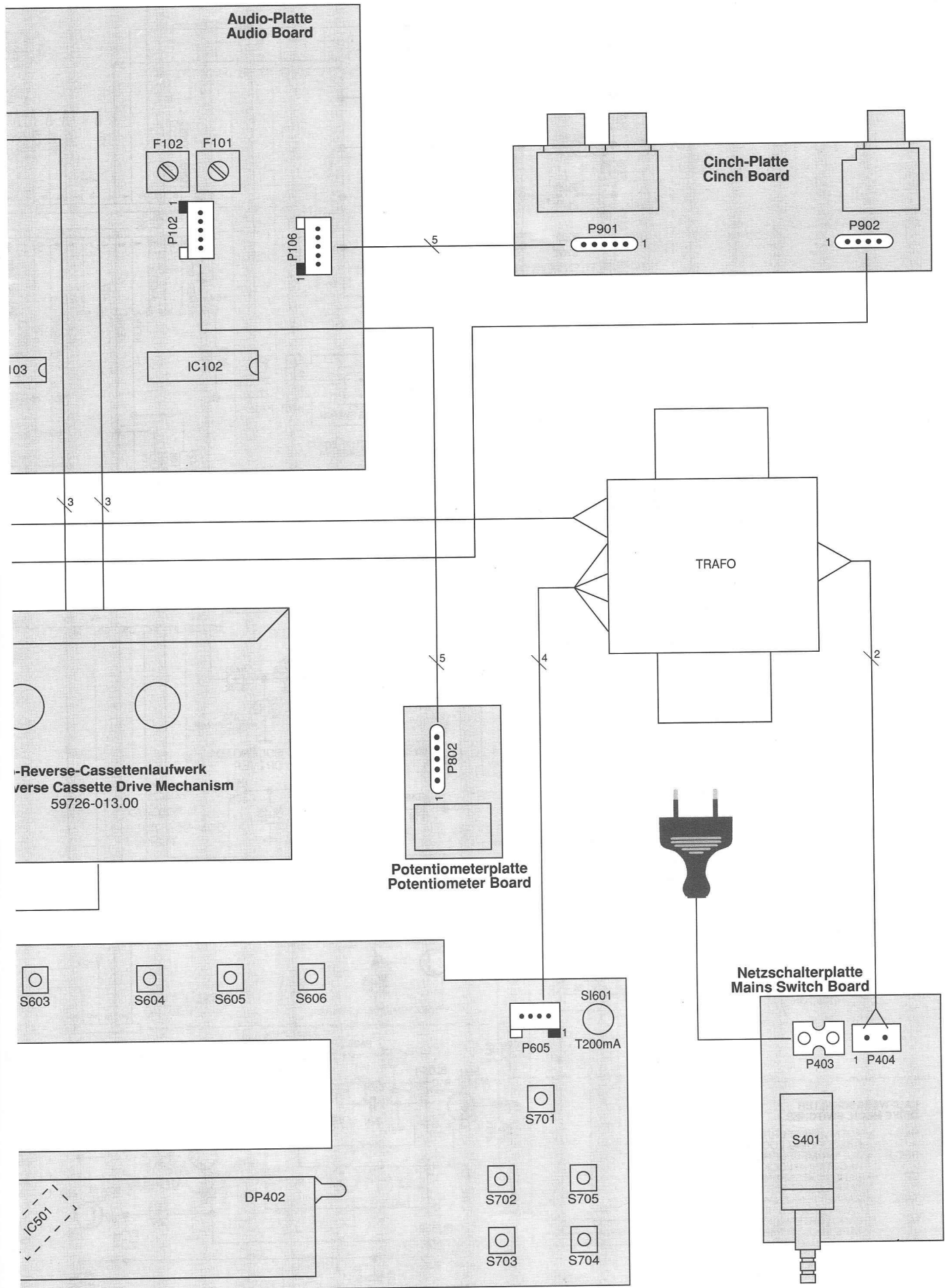
Adjustment	Preparations	Adjustment Procedure
1. Tape speed	Frequency counter to LINE OUT . Insert test cassette 448 A. Play back 3150Hz .	With adjustment control R482 (Logic board) set the frequency to 3150Hz ± 1.0% .
2. Take-up torque on Start	Load the torque test cassette 456 . Function: Start.	On START , the torque should be 30 to 60 x 10 ⁻⁴ Nm ≈ 40g-cm .
3. Wow and flutter	Wow and flutter meter to LINE OUT . Load test cassette 448 A. Play back 3150Hz .	Deviation ≤ 0.1% (IEC wtd). Playback measuring time ≥ 30 seconds.
4. Head gap angle (Azimuth)	Connect AF-voltmeter to LINE OUT L (left channel) or to LINE OUT R (right channel). Load test cassette 448 A, play back 10kHz . 	Tape direction: "Normal" With the head adjustment screw [E] set the left or right channel to maximum level. Then connect the left channel in parallel with the right channel (LINE OUT). By minimum re-adjustment of the head adjustment screw [E] set the output level to maximum . Turn around the test cassette. Tape direction: "Reverse" Adjustment with head adjustment screw [F] is the same as in the "Normal" tape direction.
5. Playback level Reference tape scanning (Dolby level)	AF-voltmeter to test point ○ D1 (left channel) or ○ D2 (right channel). Insert test cassette 448 A. Play back 315Hz (250nWb/m). Dolby off.	Set the playback level with the adjustment controls R135 (left) or R136 (right) to 490mV ± 0.5dB . (LINE OUT ≈ 950mV). When using a test cassette with 200nWb/m set the playback level to 388mV ± 0.5dB . (LINE OUT ≈ 750mV).
6. Erase frequency	Frequency counter to test point ○ L1 (R263). Insert a recordable cassette with ME tape (IEC IV). Function: Record-Start.	The oscillator frequency should be 85kHz ± 10kHz . Adjust with L111 .
7. Erase current	AF-voltmeter to test point ○ L1 (in parallel with R263). Insert a recordable cassette with ME tape (IEC IV). Function: Record-Start.	Erase current: 175mA ± 20% measured at R263 = 175mV ± 20% .
8. HX-PRO	Connect the DC-voltmeter to Pin13 IC111 (left channel) or to Pin6 IC111 (right channel). Insert a recordable cassette with ME tape (IEC IV). Function: Record-Start, Dolby off.	Adjust for minimum DC voltage with L113 at pin13 IC111 (left channel) and with L114 at pin6 IC111 (right channel).
9. Record blocking circuits (bias filter)	Connect the AF-voltmeter to test point ○ TP3 (left channel) or to test point ○ TP4 (right channel) on the audio circuit board. Insert a recordable cassette with ME tape (IEC IV). Function: Record-Start, Level pot. minimum.	Adjust for minimum RF with F111 at test point ○ TP3 (left channel) and F112 at test point ○ TP4 (right channel).
10. MPX-filter (19kHz stereo pilot tone)	Connect the AF-generator ($f_1 = 315\text{Hz}$, $f_2 = 19\text{kHz}$, 500mV) to the LINE IN sockets.  Connect the AF-voltmeter to the test points ○ D1 (left channel) or ○ D2 (right channel). Insert a recordable cassette with ME tape (IEC IV). Function: Record-Start, Dolby off. Dolby off.	Set the level control (RECORD LEVEL) during Record so that at 315Hz the voltage measured at the test points ○ D1 and ○ D2 is $V_o = 388\text{mV}$ (= 0dB). At 19kHz = $V_o \leq 12\text{mV}$ (≤ -30dB). Adjust with F101 (left channel) or F102 (right channel).

Adjustment	Preparations	Adjustment Procedure
<p>11. Frequency response on Playback</p>	<p>AF-voltmeter to test point D1 (left channel) or test point D2 (right channel). Insert test cassette 448 A. Play back the 250Hz / 12.5kHz frequency recording on the tape. Dolby off</p>	<p>If the levels between V_{of_1} (250Hz) and V_{of_2} (12.5kHz) at D1 and D2 differ by more than + 1.5dB cut the bridges B1 (C101), B2 (C103) left channel, or the bridges B3 (C102), B4 (C104) right channel.</p> $\frac{V_{of_2} (12.5kHz)}{V_{of_1} (250Hz)} = 0 \pm 0.5dB$
<p>12. AF head current adjustment during recording</p>	<p>AF-voltmeter to test point D1 (left channel) or test point D2 (right channel). Insert test cassette 448 A, side B (blank part), Cr IEC II or similar tape. AF-generator to LINE IN sockets. $V_i = 500mV$, $f = 400Hz$. Function: Record-Pause Dolby off - Record-Start - Playback-Start</p> 	<p>With the level control (RECORD LEVEL) set the level at the test points D1 and D2 during recording to 120mV. On playing back the recording made on the cassette recorder, a voltage level of 120mV ± 0.5dB must be present at the test points D1 and D2. If the level differs from the value above re-adjust the head current control R169 (left channel) or R182 (right channel) during recording. When recording on Fe IEC I and Me IEC IV cassettes the voltage must be 120mV ± 1dB.</p>
<p>13. Frequency adjustment during recording</p>	<p>AF-voltmeter to test point D1 (left channel) or test point D2 (right channel). Insert test cassette 448 A, side B (blank part) Cr IEC II or similar tape. AF-generator to LINE IN sockets. $f_1 = 1kHz$, $f_2 = 12.5kHz$, $V_i = 500mV$. Function: Record-Pause Dolby off - Record-Start - Playback-Start</p> 	<p>With the level control (RECORD LEVEL) set the level at the test points D1 and D2 during recording to $V_o = 20mV$. When playing back the recording the levels at the test points D1 and D2 must not differ by more than 0.5dB. If V_{of_2} to V_{of_1} is higher than 0.5dB correct the bias. Re-adjust with R245 left channel, or R246 right channel.</p> $\frac{V_{of_2} (12.5kHz)}{V_{of_1} (1kHz)} = 0dB \pm 0.5dB$
<p>14. Bias voltage</p>	<p>AF-voltmeter with a 1:1000 capacitive voltage divider to test point TP5 (left channel, head connector P101/5) or TP6 (right channel, head connector P101/2). Insert a recordable cassette, Fe, Cr or Me tape. Function: Record-Start</p>	<p>The bias voltage depends on the type of tape and the frequency response setting. Adjustment range: Fe = 8 - 12V CrO₂ = 13 - 19V Me = 25 - 32V</p>
<p>15. Distortion factor</p>	<p>AF-voltmeter to test point D1 (left channel) or test point D2 (right channel). Insert a recordable cassette, Fe, Cr or Me tape. AF-generator to LINE IN sockets. $f = 333Hz$, $V_i = 500mV$. Function: Record-Pause Dolby off - Record-Start</p> 	<p>With the level control (RECORD LEVEL) set the level at the test points D1 and D2 during recording to $V_o = 388mV$. Distortion analyzer to LINE OUT L or LINE OUT R sockets (47kΩ termination). Function: Playback Dolby off Distortion factor measured on playing back the recording made: Fe IEC I $K_3 \leq 1.5\%$ CrO₂ IEC II $K_3 \leq 2.0\%$ Me IEC IV $K_3 \leq 2.0\%$</p>

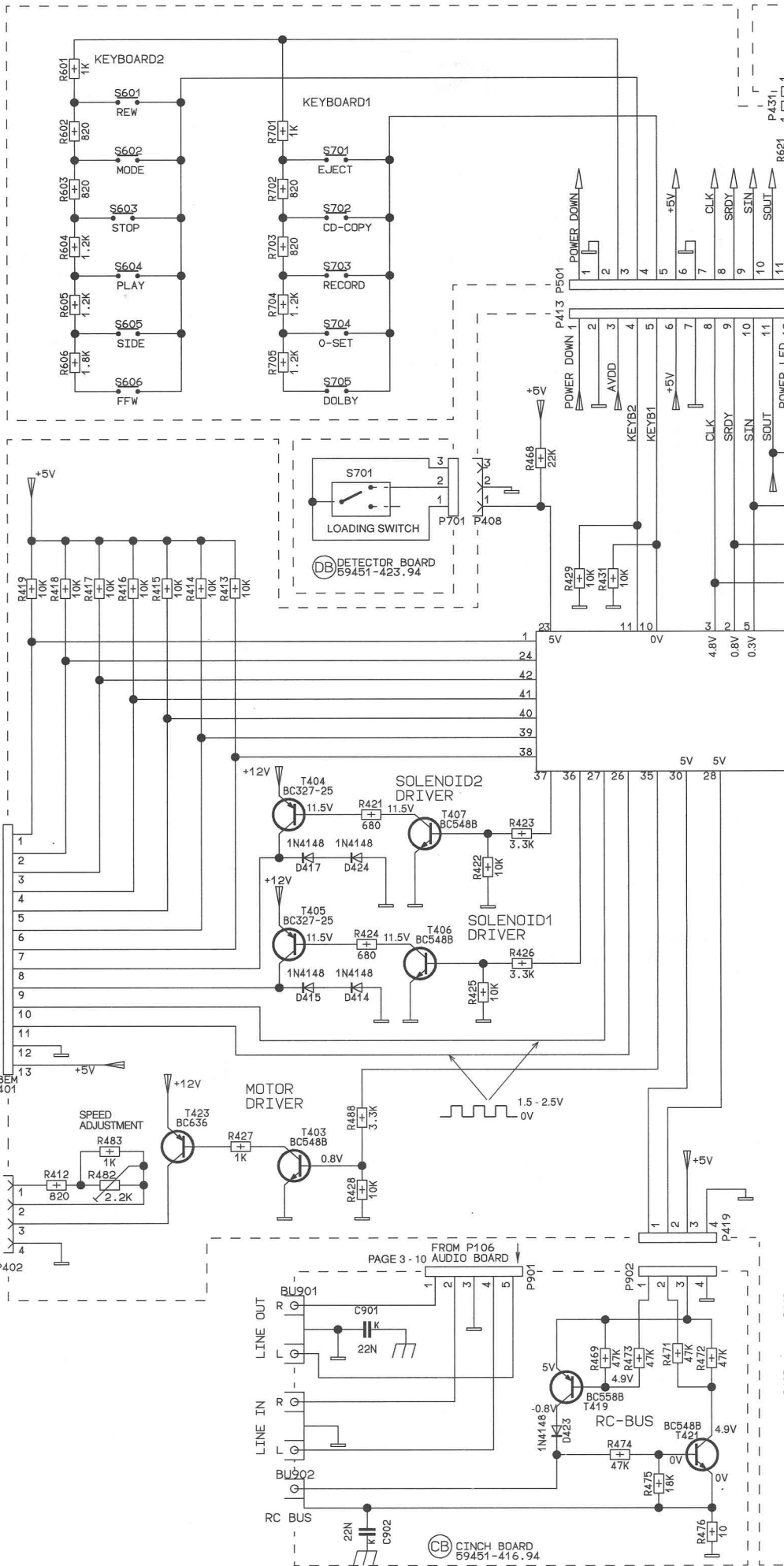
Schaltpläne und Platinenabbildungen / Circuit Diagrams and Layout of PCBs

Verdrahtungsplan / Wiring Diagram





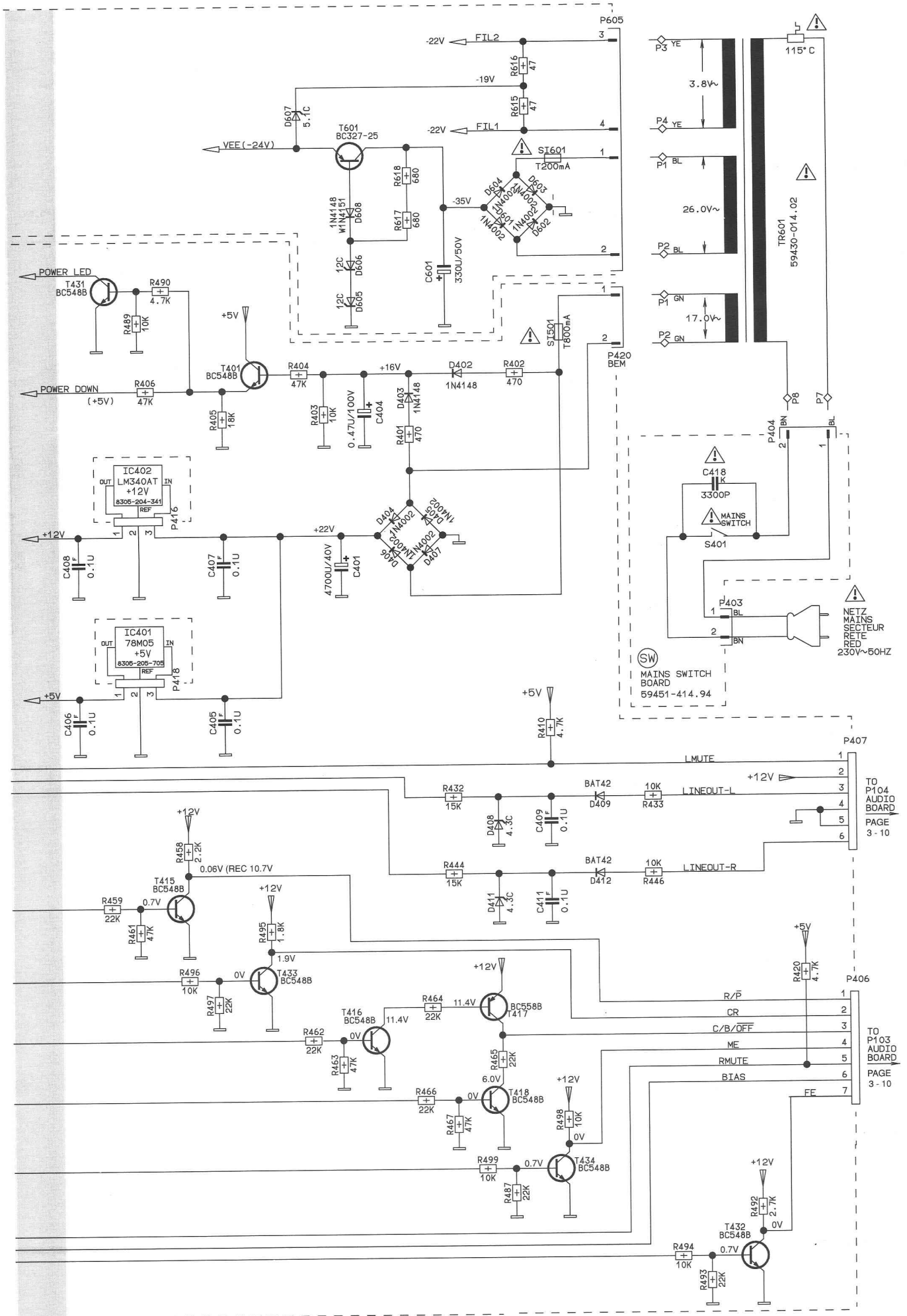
Schaltplan Circuit Diagram M 100-CF Logic



LAUFWERKSCHALTER DRIVE MECH. SWITCHES

- REC-F = AUFNAHMESPERRE "NORMAL" RECORDING LOCK "NORMAL"
- REC-R = AUFNAHMESPERRE "REVERSE" RECORDING LOCK "REVERSE"
- CR = BANDSORTENKENNUNG "CR" TAPE SELECT "CR"
- TAPE = CASSETTENKENNUNG CASS. "LOADED" IDENT.
- ME = BANDSORTENKENNUNG "ME" TAPE SELECT "ME"
- F-MODE = SCHNELLAUFSCHALTER FAST MODE SWITCH
- MODE = KOPFSCHLITTENSCHALTER HEAD CARRIER SWITCH

CB CINCH BOARD
59451-416.94



AENDERUNGEN VORBEHALTEN
 SUBJECT TO ALTERATION
 SOUS RESERVE DE MODIFIC.
 CON RISERVA DI MODIFICA
 RES. EL DERECHO DE MODIFIC.

WIDERSTAND/RESISTOR
 RESISTANCE/RESISTENZA/RESISTENCIA

- | | | | |
|--|------------------------------|--|--|
| | KSW 0204 DIN | | DRAHT WIRE BOBINÉE A FILO BOBINADA |
| | MSW 0204 DIN | | METALLOXYDSCHICHT METAL OXIDE A OXYDE METALLIQUE AD OSSIDO METALLICO DE CAPA DE OXIDO METALICO |
| | KSW 0207 DIN | | RAUSCHARM LOW NOISE A SOUFFLE REDUIT A BASSO RUMORE DE BAJO RUIDO |
| | MSW 0207 DIN | | SCHWER ENTLAMMBAR LOW FLAMMABILITY PEU INFLAMMABLE A BASSA INFLAMMABILITA DIFICILMENTE INFLAMMABLE |
| | KSW 0309 DIN
KSW 0411 DIN | | SICHERUNGSWIDERSTAND SAFETY RESISTOR FUSIBLE DI SICUREZZA RESISTENCIA FUSIBLE |
| | KSW 0617 DIN | | |
| | MSW 0309 DIN | | |
| | NTC | | |
| | MSW 0414 DIN | | |

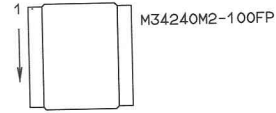
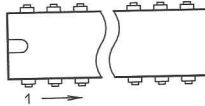
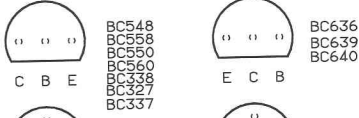
KONDENSATOR/CAPACITOR
 CONDENSATEUR/CONDENSATORE/CONDENSADOR

- | | |
|--|--|
| | ELKO ELECTROLYTIC ELECTROLYTICO ELETTRolitico ELECTROLITICO |
| | TANTAL ELKO TANTALUM ELECTROLYTIC ELECTROLYTIQUE AU TANTALE ELETTRolitico AL TANTALIO ELECTROLITICO DE TANTALO |
| | FOLIE FOIL A FEUILLE A FOGLIA DELAMINA |
| | KERAMIK CERAMIC CERAMIQUE A CERAMICA CERAMICO |
| | GLIMMER MICA AU MICA A MICA DE MICA |
| | VIELSCHICHT MULTILAYER A COUCHES MULTIPLES A PIU' STRATI MULTICAPA |
| | POLYPROPYLEN DE POLIPROPILEND (KS-KP) |

ACHTUNG!
 VORSCHRIFTEN BEIM UMGANG MIT MOS-BAUTEILEN BEACHTEN!
 ATTENTION!
 OBSERVE MOS COMPONENTS HANDLING INSTRUCTIONS WHEN SERVICING!
 ATTENTION!
 LORS DE LA MANIPULATION DES CIRCUITS MOS, RESPECTER LES PRESCRIPTIONS MOS!
 ATTENZIONE!
 OSSERVARE LE RELATIVE PRESCRIZIONI DURANTE I LAVORI CON COMPONENTI MOS!
 ATENCION!
 RESPETAR EL TRATAMIENTO DE COMPONENTS MOS

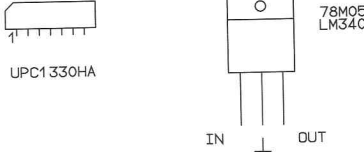
- | | | |
|---------------------------------------|-------------------------------------|------------------------------|
| BK= SCHWARZ BLACK NOIR NEGRO | BN= BRAUN BROWN BRUN MARRONE MARRON | RD= ROT RED ROUGE ROSSO ROJO |
| YE= GELB YELLOW JAUNE GIALLO AMARILLO | GN= GRUEN GREEN VERT VERDE | BU= BLAU BLUE BLEU BLU AZUL |
| VT= VIOLETT VIOLET VIOLETT VIOLETA | GY= GRAU GREY GRIS GRIGIO | WH= WEISS WHITE BLANC BIANCO |
| RS= ROSA PINK ROSE | OR= ORANGE ARANCIONE NARANJA | |

VON OBEN GESEHEN
 TOP VIEW
 VUE DE HAUT
 VISTA DA SOPRA
 VISTO DESDE ARRIBA



M37471M4-616SP
 UPC1297
 XT24C00P
 CXA1330S
 CXA1198

SEITENANSICHT
 FRONT VIEW
 VUE DE FACE
 VISTA DI FRONTE
 VISTO DEL FRENTE



- ⚠ FUER DIE GERÄTESICHERHEIT ABSOLUT NOTWENDIG UND ENTSPRECHEND DEN RICHTLINIEN DES VDE BZW. IEC, IM ERSATZFALL DÜRFEN NUR BAUTEILE MIT GLEICHER SPEZIFIKATION VERWENDET WERDEN.
- ⚠ ABSOLUTELY NECESSARY FOR THE SAFETY OF THE SET, THESE COMPONENTS MEET THE SAFETY REQUIREMENTS ACCORDING TO VDE OR IEC, RESP. AND MUST BE REPLACED BY PARTS OF SAME SPECIFICATION ONLY.
- ⚠ ABSOLUMENT NECESSAIRE POUR LA SECURITE DE L'APPAREIL ET CONFORME AUX REGULATIONS VDE ET IEC. EN CAS DE REMPLACEMENT, N'UTILISER QUE DES COMPOSANTS AVEC LES MEMES SPECIFICATIONS.
- ⚠ NECESSARI PER LA SICUREZZA DELL' APPARECCHIO E SONO CONFORMI ALLE NORMI DI SICUREZZA VDE E IEC. IN CASO DI SOSTITUZIONE IMPIEGARE QUINDI SOLTANTO PEZZI IN RICAMBIO ORIGINALI.
- ⚠ ABSOLUTAMENTE NECESARIO PARA LA SEGURIDAD DEL APARATO Y DE ACUERDO CON LAS NORMAS DE SEGURIDAD VDE O IEC. EN CASO DE SUSTITUCION SUSTITUCION SOLO DEBEN EMPLEARSE COMPONENTES CON LA MISMA ESPECIFICACION.

- SPANNUNGEN MIT VOLTMETER (RI=10M Ω), FALLS NICHT ANDERS ANGEZEIGT, GEGEN MASSE GEMESSEN. MESSWERTE GELTEN BEI 230V NETZSPANNUNG.
- IF NOT OTHERWISE INDICATED ALL VOLTAGES ARE MEASURED AGAINST CHASSIS WITH A VOLTMETER (RI=10M Ω). THE VALUES ARE VALID FOR 230V AC MAINS VOLTAGES.
- SAUF INDICATION CONTRAIRE, LES TENSIONS SONT MESUREES PAR RAPPORT AU CHASSIS AVEC UN VOLTMETRE (RI=10M Ω). LES VALEURS SONT VALABLES POUR UNE TENSION SECTEUR DE 230V CA.
- TENSIONI MISURATE CON VOLTMETRO (RI=10M Ω), SALVE ALTRE INDICAZIONI, RIFERITE A MASSA. I VALORI DI MISURA VALGONO CON TENSIONE DI RETE DI 230V.
- LAS TENSIONES, SIEMPRE QUE NO SE INDIQUE OTRA COSA, SE MIDEN CON RESPECTO A MASA CON VOLTMETRO (RI=10M Ω). LOS VALORES DE MEDIDA SON VALIDOS CON 230V DE TENSION DE RED.

(D)

ABKÜRZUNGEN DER LEITUNGSBEZEICHNUNGEN
 IN DEN SCHALTPLÄNEN

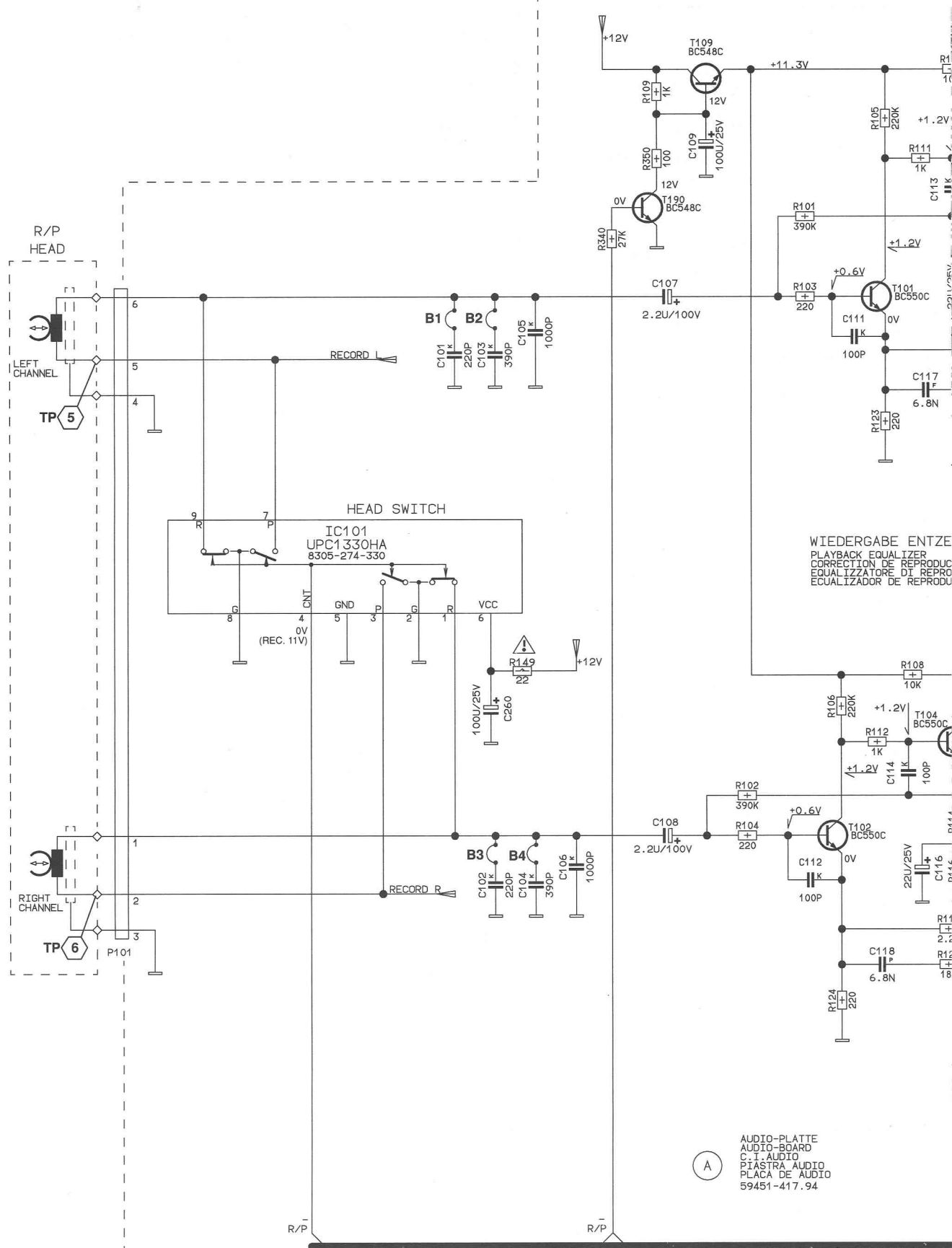
- | | |
|-----------|--------------------------------------|
| AUDIO L | = AUFNAHME LINKER KANAL (NF) |
| AUDIO R | = AUFNAHME RECHTER KANAL (NF) |
| AVDD | = SPANNUNGSVERSORGUNG +5V |
| BIAS | = HF-GENERATOR "EIN" |
| C/B/OFF | = DOLBY-UMSCHALTUNG |
| CLK | = DATENLEITUNG |
| CR | = CR-UMSCHALTUNG |
| FE | = FE-UMSCHALTUNG |
| FIL1 | = DISPLAY-SPANNUNG |
| FIL2 | = DISPLAY-SPANNUNG |
| KEYB1 | = KEYBOARD 1 |
| KEYB2 | = KEYBOARD 2 |
| LINEOUT-L | = AUSGANG LINKER KANAL |
| LINEOUT-R | = AUSGANG RECHTER KANAL |
| LMUTE | = STUMMSCHALTUNG (WIEDERGABE) |
| ME | = ME-UMSCHALTUNG |
| PD | = SPANNUNGSVERSORGUNG +5V |
| R/P | = AUFN./WDG.-UMSCHALTUNG |
| REC-L | = AUFNAHME LINKER KANAL |
| REC-R | = AUFNAHME RECHTER KANAL |
| RECORD L | = AUFNAHME LINKER KANAL (NF + BIAS) |
| RECORD R | = AUFNAHME RECHTER KANAL (NF + BIAS) |
| RMUTE | = STUMMSCHALTUNG (AUFNAHME) |
| SIN | = DATENLEITUNG |
| SOUT | = DATENLEITUNG |
| SRDY | = DATENLEITUNG |
| VEE | = SPANNUNGSVERSORGUNG - 24V |

(GB)

ABBREVIATIONS OF THE LINES IN THE CIRCUIT
 DIAGRAMS

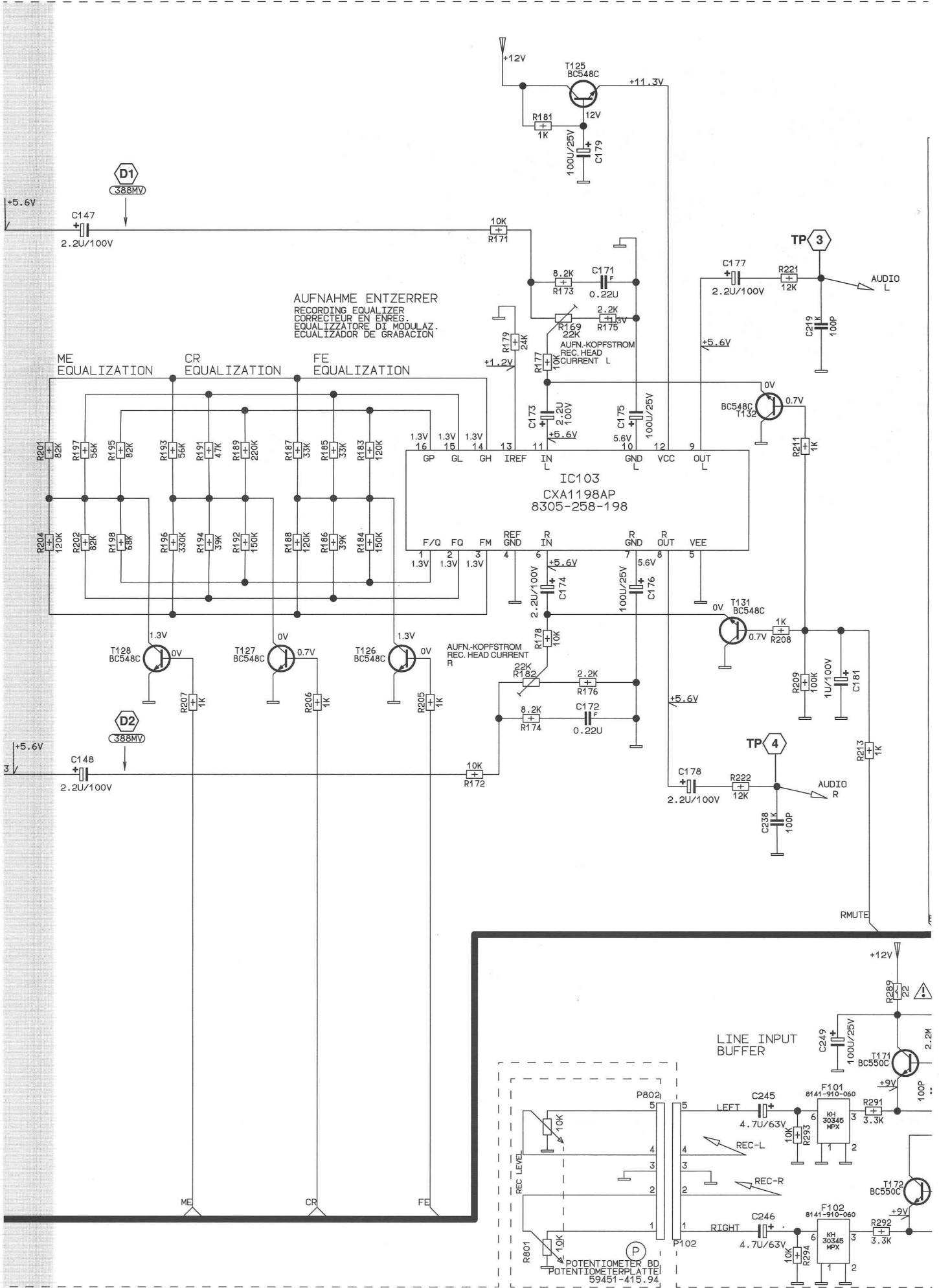
- | | |
|-----------|------------------------------------|
| AUDIO L | = RECORD LEFT CHANNEL (AF) |
| AUDIO R | = RECORD RIGHT CHANNEL (AF) |
| AVDD | = VOLTAGE SUPPLY +5V |
| BIAS | = BIAS GENERATOR "ON" |
| C/B/OFF | = DOLBY SWITCH-OVER |
| CLK | = DATA LINE |
| CR | = CR SWITCH-OVER |
| FE | = FE SWITCH-OVER |
| FIL1 | = DISPLAY VOLTAGE |
| FIL2 | = DISPLAY VOLTAGE |
| KEYB1 | = KEYBOARD 1 |
| KEYB2 | = KEYBOARD 2 |
| LINEOUT-L | = OUTPUT LEFT CHANNEL |
| LINEOUT-R | = OUTPUT RIGHT CHANNEL |
| LMUTE | = PLAYBACK MUTE |
| ME | = ME SWITCH-OVER |
| PD | = VOLTAGE SUPPLY +5V |
| R/P | = RECORD/PLAYBACK SWITCH-OVER |
| REC-L | = RECORD LEFT CHANNEL |
| REC-R | = RECORD RIGHT CHANNEL |
| RECORD L | = RECORD LEFT CHANNEL (AF + BIAS) |
| RECORD R | = RECORD RIGHT CHANNEL (AF + BIAS) |
| RMUTE | = RECORD MUTE |
| SIN | = DATA LINE |
| SOUT | = DATA LINE |
| SRDY | = DATA LINE |
| VEE | = VOLTAGE SUPPLY - 24V |

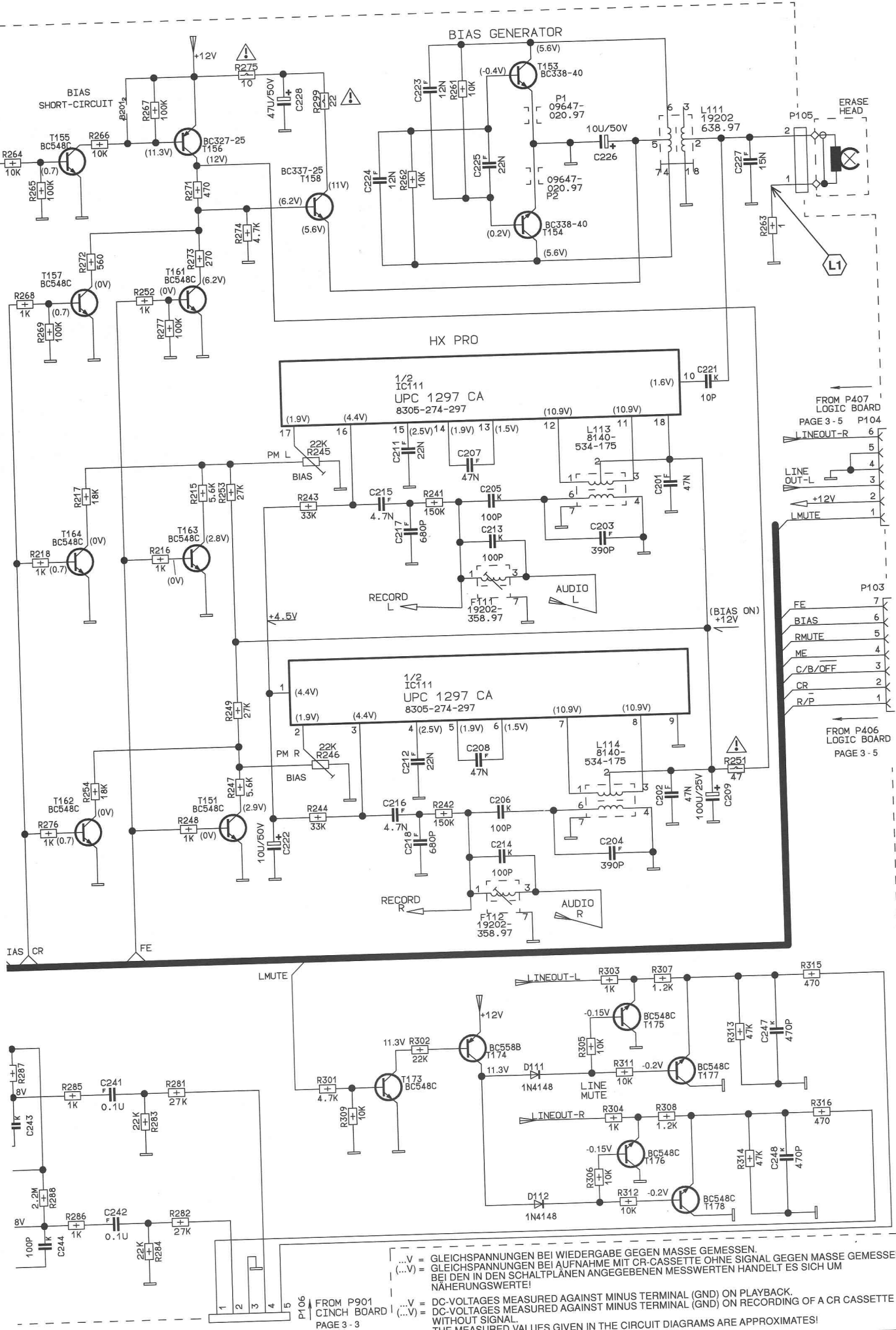
**Schaltplan
Circuit Diagram
M 100-CF
Audio**



WIEDERGABE ENTZE
PLAYBACK EQUALIZER
CORRECTION DE REPRODU
EQUALIZZATORE DI REPR
ECUALIZADOR DE REPR

(A)
AUDIO-PLATTE
AUDIO-BOARD
C. I. AUDIO
PIASTRA AUDIO
PLACA DE AUDIO
59451-417.94





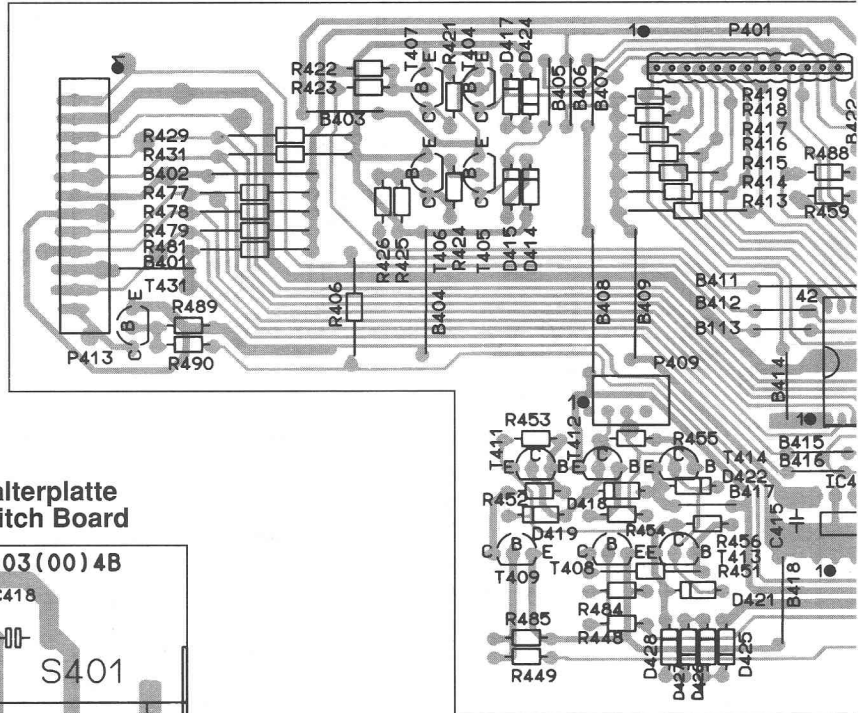
...V = GLEICHSPANNUNGEN BEI WIEDERGABE GEGEN MASSE GEMESSEN.
 (...V) = GLEICHSPANNUNGEN BEI AUFNAHME MIT CR-CASSETTE OHNE SIGNAL GEGEN MASSE GEMESSEN.
 BEI DEN IN DEN SCHALTPLÄNEN ANGEgebenEN MESSWERTEN HANDELT ES SICH UM NÄHERUNGSWERTE!
 ...V = DC-VOLTAGES MEASURED AGAINST MINUS TERMINAL (GND) ON PLAYBACK.
 (...V) = DC-VOLTAGES MEASURED AGAINST MINUS TERMINAL (GND) ON RECORDING OF A CR CASSETTE WITHOUT SIGNAL.
 THE MEASURED VALUES GIVEN IN THE CIRCUIT DIAGRAMS ARE APPROXIMATES!

Leiterplatten / PCBs

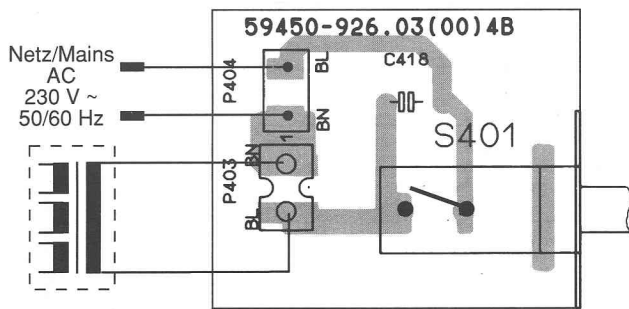
M 100-CF

Bestückungsseite
Component side

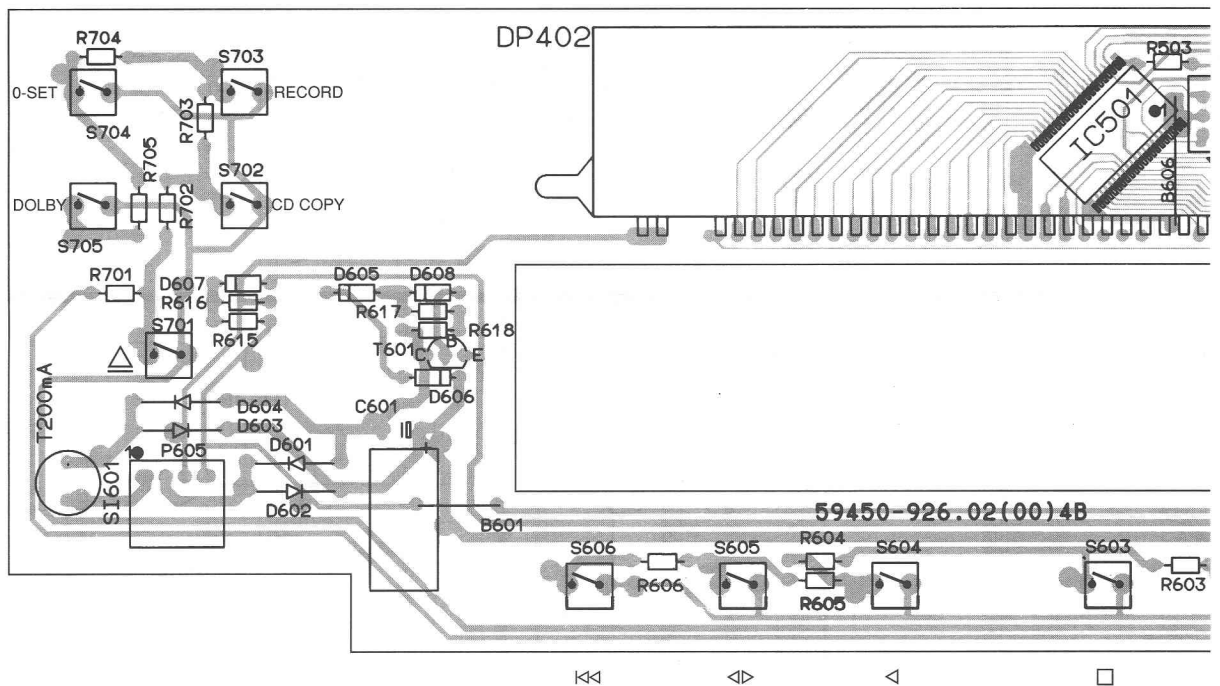
Logikplatte



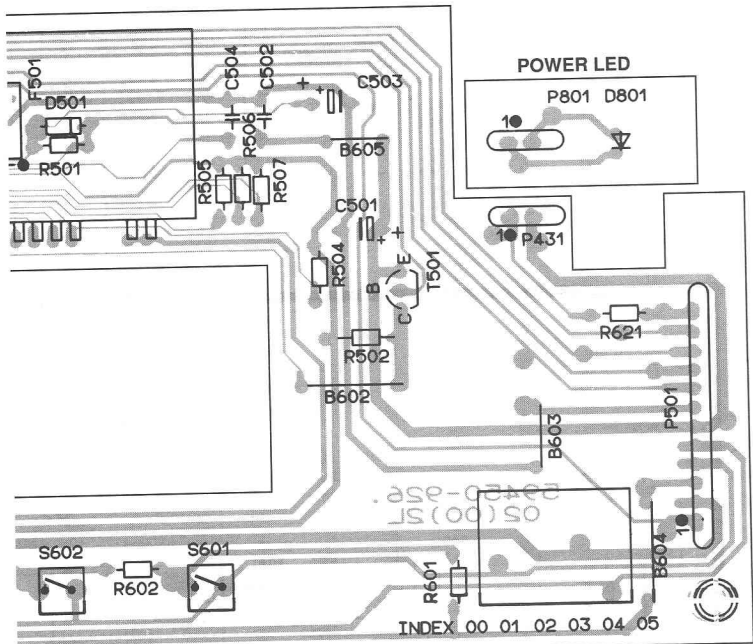
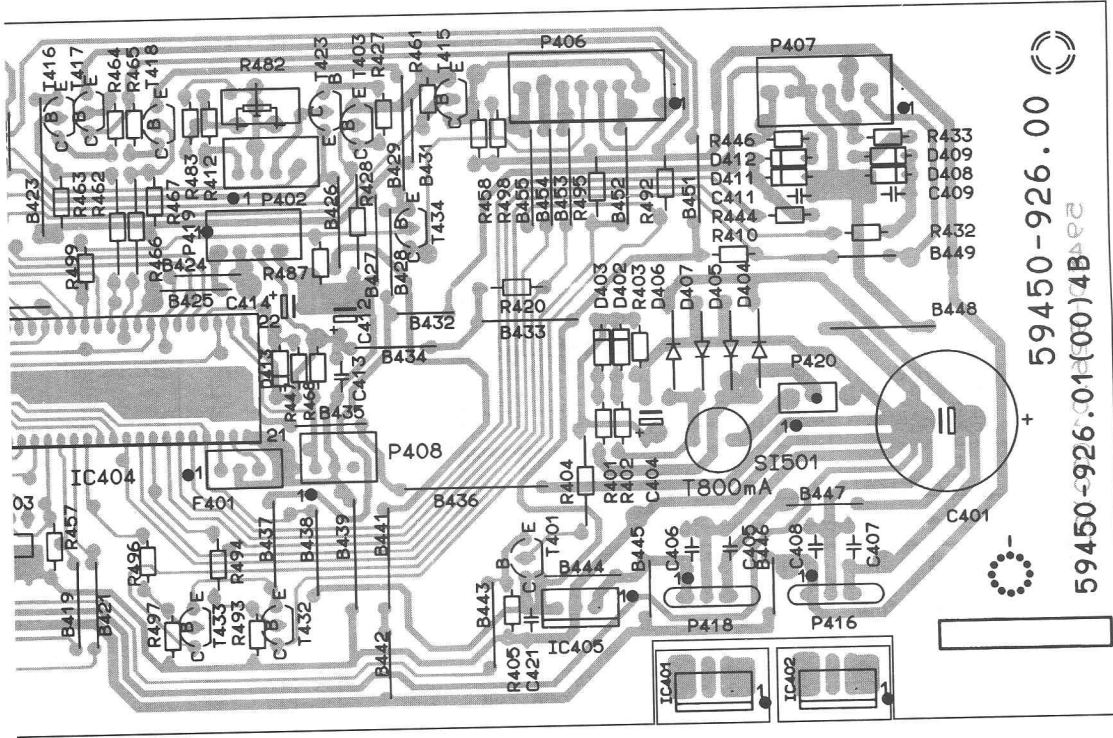
Netzschalterplatte
Mains Switch Board



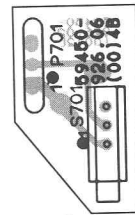
Displayplatte
Display Board



/ Logic Board



Detectorplatte
Detector Board



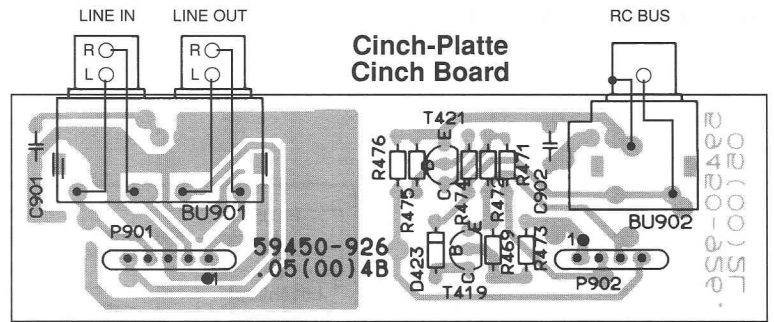
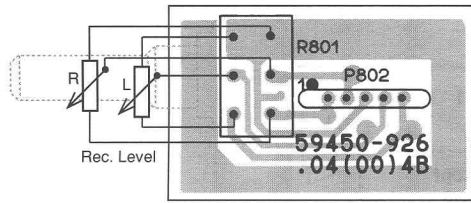
Loading Schalter
Loading Switch
S701

Leiterplatten / PCBs

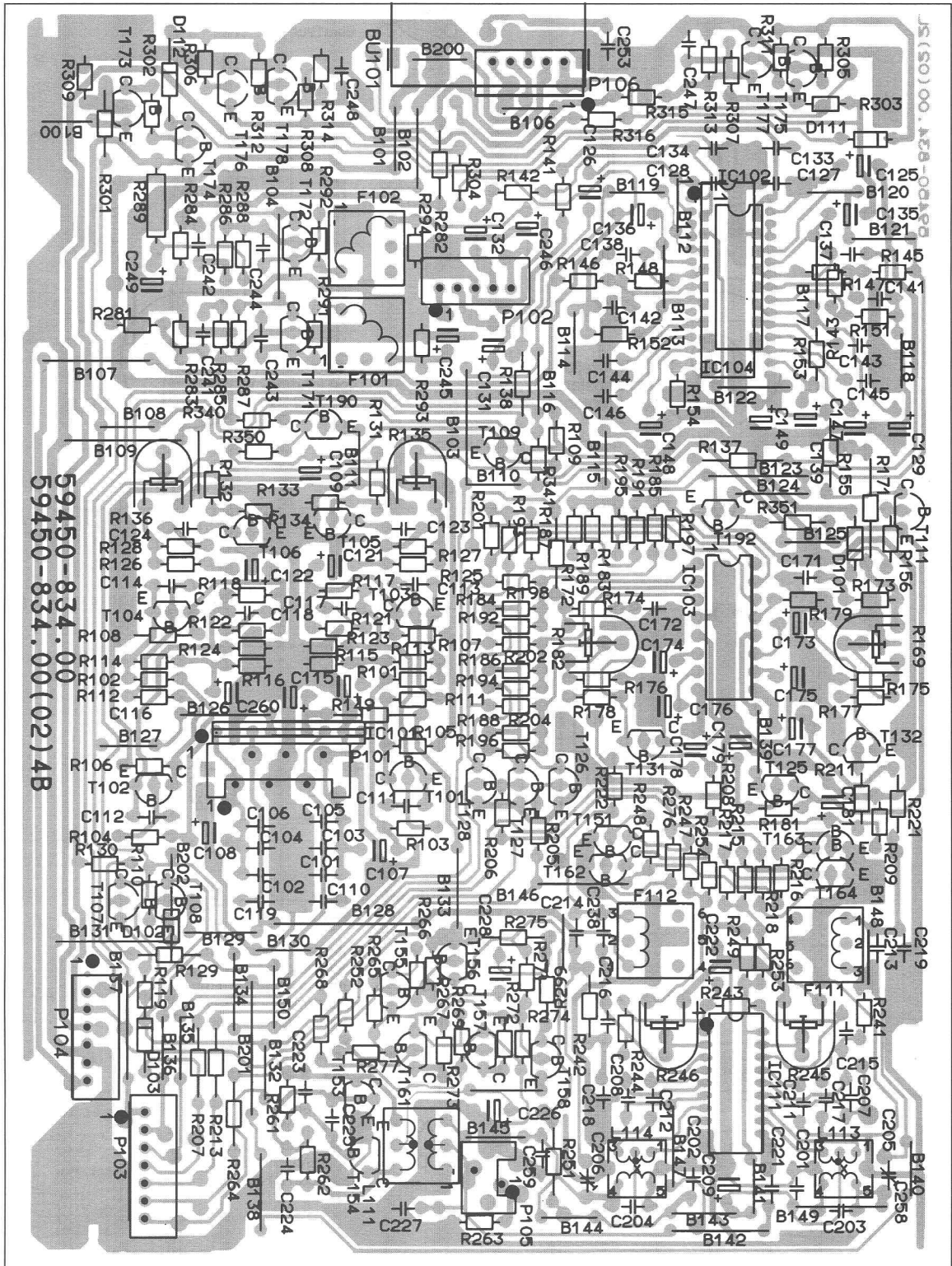
M 100-CF

Bestückungsseite
Component side

Potentiometerplatte
Potentiometer Board

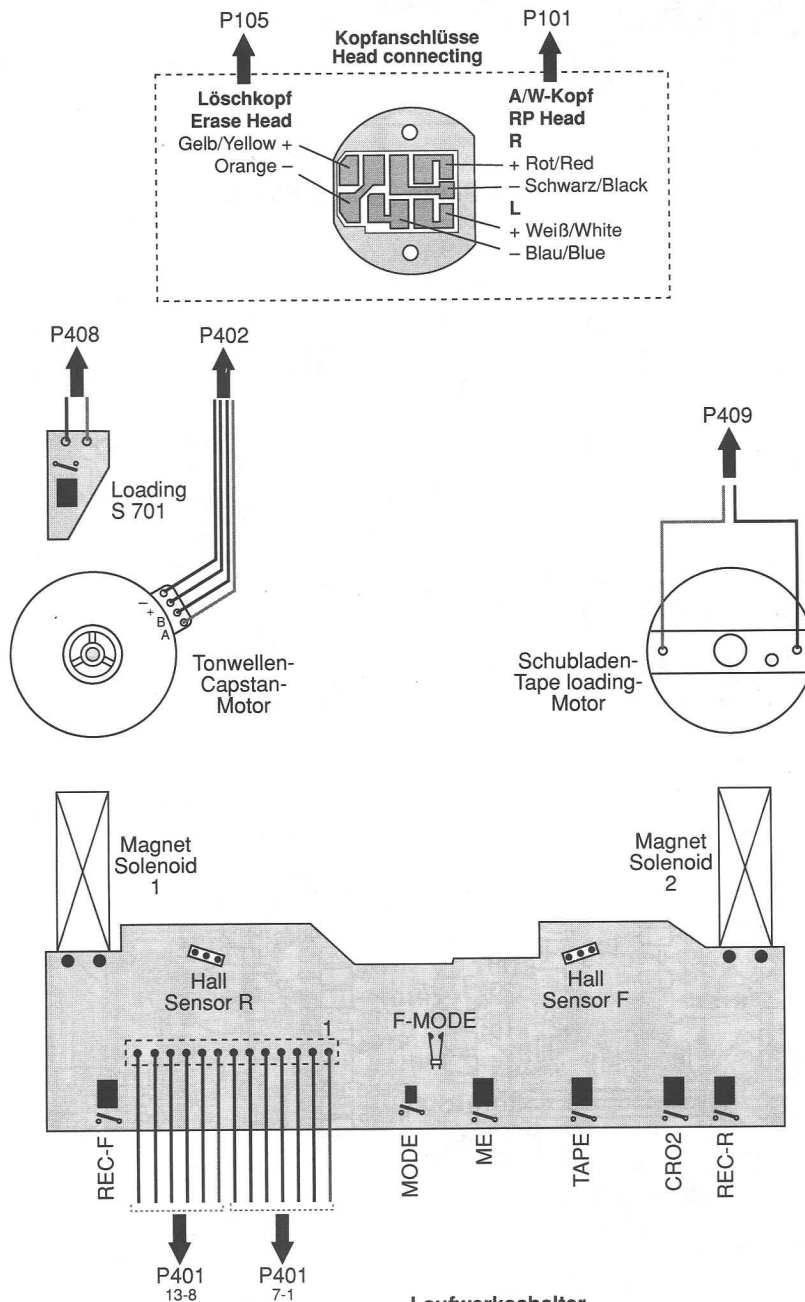


Audio-Platte / Audio Board



Für die tatsächliche Bauteilebestückung ist das Schaltbild maßgebend.
The circuit diagram is relevant for the actual component assembly.

Laufwerk-Verdrahtung Drive Mechanism Wiring

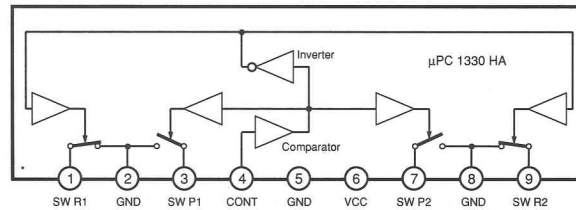


Laufwerkschalter Drive mech. switches

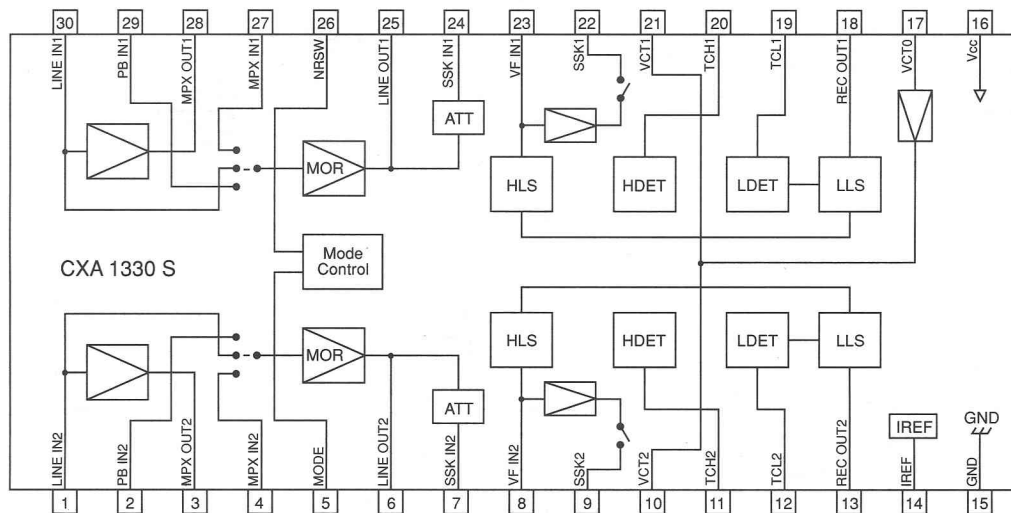
- REC-F = Aufnahmesperre "Normal"
Recording lock "Normal"
- REC-R = Aufnahmesperre "Reverse"
Recording lock "Reverse"
- CRO2 = Bandsortenkenennung "CR"
Tape select "CR"
- TAPE = Kassettenerkennung
Cass. "loaded" ident.
- ME = Bandsortenkenennung "ME"
Tape select "ME"
- F-MODE = Schnellaufschalter
Fast mode switch
- MODE = Kopfschlittenschalter
Head carrier switch

IC Blockdiagramme IC Block Diagrams

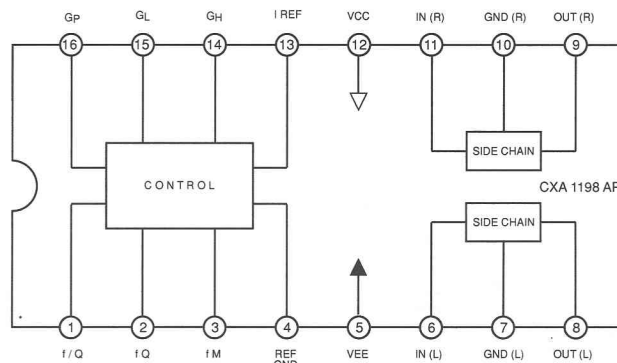
IC 101 μ PC 1330 HA (REC/PB AUDIO HEAD SWITCH)



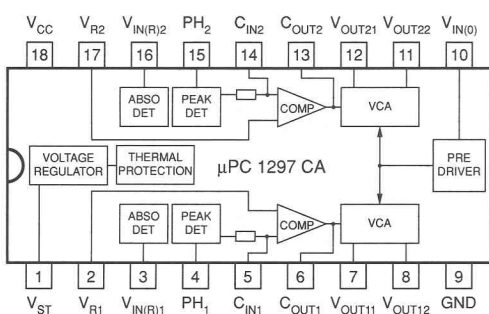
IC 102 CXA 1330 S (DOLBY B/C)



IC 103 CXA 1198 AP (STEREO CASS. DECK RECORDING EQUALIZER)

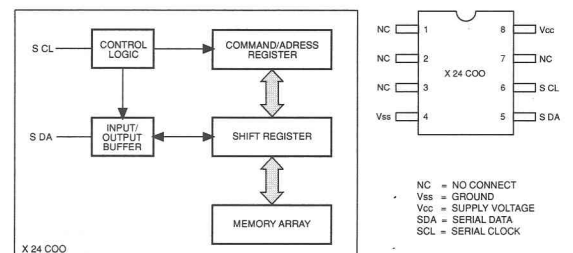


IC 111 μ PC 1297 CA (DOLBY HX-PRO)



NO.	CONNECTION
1	VOLTAGE REGULATOR
2	COMP REF ₁
3	SIGNAL INPUT ₁
4	PEAK HOLD ₁
5	COMP INPUT ₁
6	COMP OUTPUT ₁
7	VCA OUTPUT ₁₁
8	VCA OUTPUT ₁₂
9	GND
10	BIAS OSC INPUT
11	VCA OUTPUT ₂₁
12	VCA OUTPUT ₂₂
13	COMP OUTPUT ₂
14	COMP INPUT ₂
15	PEAK HOLD ₂
16	SIGNAL INPUT ₂
17	COMP REF ₁
18	VCC

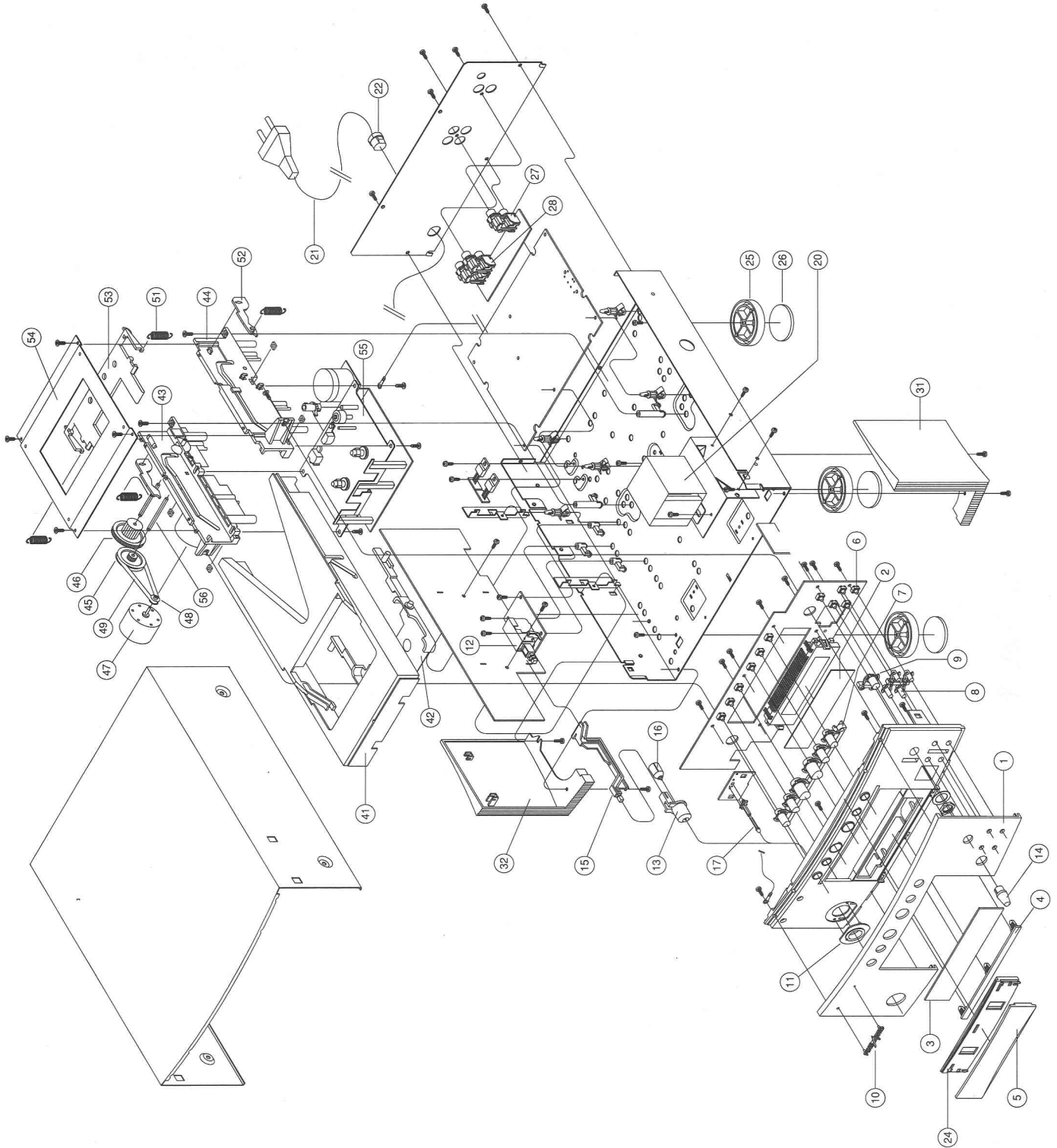
IC 403 X 24 COOP (EPROM)



Explosionszeichnungen und Ersatzteillisten Exploded Views and Spare Parts Lists

Explosionszeichnung / Exploded View M 100-CF

1



GRUNDIG Ersatzteilliste Spare Parts List

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HIFI 

M 100-CF

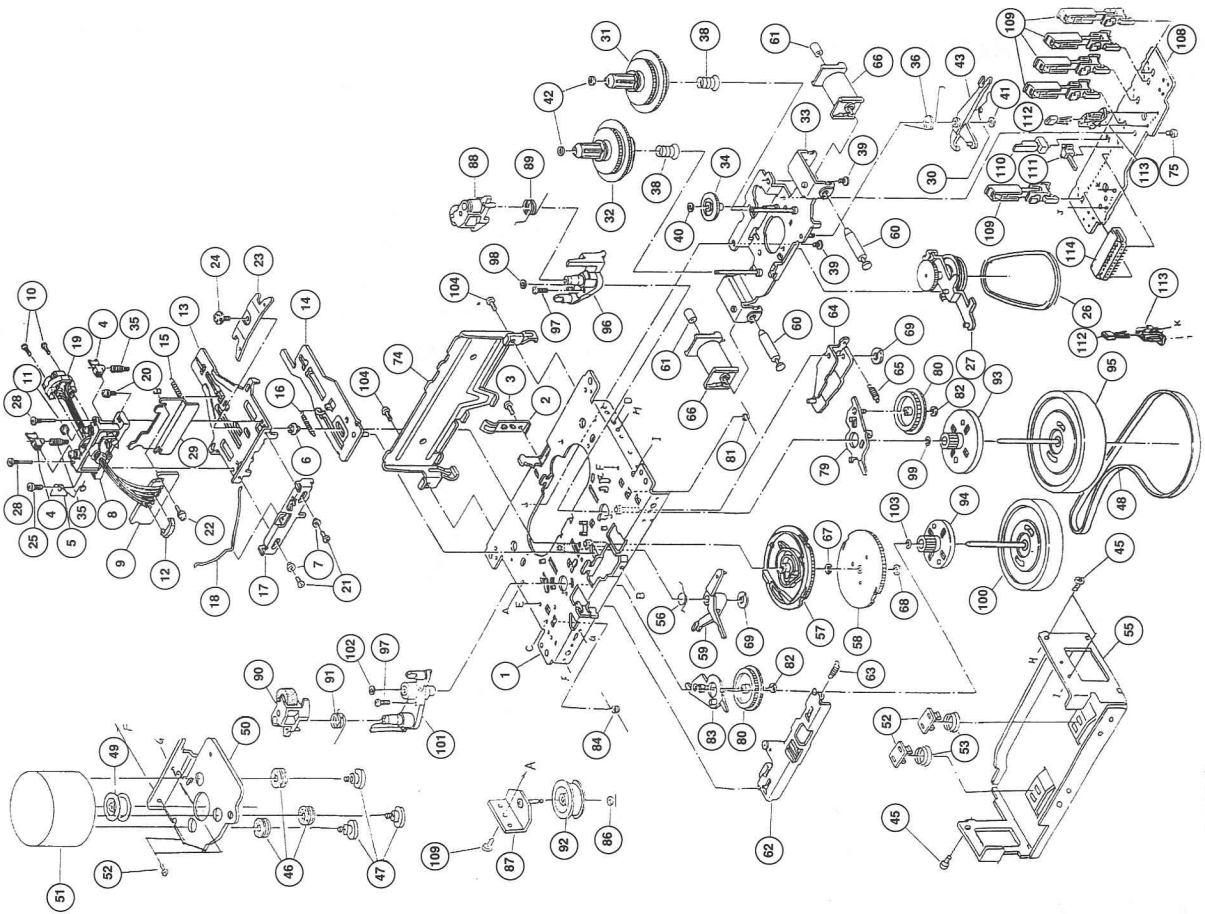
SACH-NR. / PART NO.: 9.52324-8150
BESTELL-NR. / ORDER NO.: GLG 0450 SILBER/SILVER

POS. NR. POS. NO.	ABB. FIG.	SACHNUMMER PART NUMBER	ANZ. QTY.	BEZEICHNUNG DESCRIPTION	(D)	(GB)
0001.000	1	52324-300.50		FRONTPLATTE ALU		
0002.000	1	56317-400.01		FILTERFOLIE		
0003.000	1	56360-254.01		LINSE DISPLAY		
0004.000	1	55860-280.50		ZIERTEIL FRONT		
0005.000	1	52324-301.50	11	ABDECKUNG OF ALU		
0006.000	1	8134-020-181		TASTENSCHALTER		
0007.000	1	54723-211.50		TASTENSTREIFEN MITTE		
0008.000	1	54723-215.50		KEY STRIP MIDDLE		
0009.000	1	54723-215.50		KEY STRIP RHS		
0010.000	1	59852-019.01		KEY		
0011.000	1	55360-283.50		LOGO FINE ARTS		
0012.000	1	59401-027.00		NETZTEIL NETZRING		
0013.000	1	55360-210.50		NETZSCHALTER		
0014.000	1	52324-221.50		KNOPE NETZ		
0015.000	1	52316-212.00		KNOB		
0016.000	1	52302-250.00		STOFSEL		
0017.000	1	55301-282.00		LED-LINSE		
0018.000	1	59401-031.00		LED-HALTER		
0019.000	1	59430-014.02		DETEKTORSCHALTER		
0020.000	1	8290-991-282		TRAFO		
0021.000	1	09666-451.00		NETZKABEL KPL		
0022.000	1	29303-452.02		STRESS RELIEF		
0023.000	1	52324-240.00		NETZSTECKER-UNTERTEIL KPL		
0024.000	1	59752-068.00	4	ABDECKUNG (SCHUBLADE)		
0025.000	1	59752-068.00	4	FUSS		
0026.000	1	59752-068.00	4	ANTI-RUTSCH FILZ		
0027.000	1	09623-448.02		CINCHBUCHSE 2-POL JALCO		
0028.000	1	09623-449.00		CINCHBUCHSE 4-FACH		
0031.000	1	55360-282.50		ZIERTEIL SEITENTEIL RECHTS		
0032.000	1	55360-281.50		DECORATIVE PART SIDE PANE		
0035.000	1	09641-146.01		HIFI STEREO-TONKABEL		
0037.000	1	59709-060.00		CINCHVERBINDUNGSKABEL		
0041.000	1	52319-240.01		CASSETTENSCHUBLADE		
0042.000	1	52304-246.00		CASSETTENSCHIBE		
0043.000	1	52304-243.00		SCHUBLADENUEHRUNG LINKS		
0044.000	1	52304-244.00		SCHUBLADENUEHRUNG RECHTS		
0045.000	1	52304-241.00		RAD 2		
0046.000	1	52304-242.00		RAD 3		
0047.000	1	59852-002.00		DC-MINI-MOTOR		
0048.000	1	52304-245.00		RAD 1		
0049.000	1	52304-390.00		TREIBRIEMEN		
0050.000	1	52304-247.00		RIEGEL LINKS		
0051.000	1	09619-071.00		ZUGFEDER		
0052.000	1	52304-249.00		RIEGEL RECHTS		
0053.000	1	52304-248.00		ZUGFEDER		
0054.000	1	52304-130.00		CASSETTENSCHIBEL		
0055.000	1	59726-013.00	X	CASSETTENSCHIBEL-HALTER		
0056.000	1	8126-029-877		LW TN 1800 D 303		
				NEEDLE ROLLER GWN 7.02		
				BEDIENUNGSANLEITUNG		
				INSTRUCTION MANUAL		
				52324-941.01		
				72010-749.85		
				X = SIEHE GESONDERTE E-LISTE		
				X = SEE SEPARATE PARTS LIST		

POS. NR. POS. NO.	SACHNUMMER PART NUMBER	BEZEICHNUNG DESCRIPTION
R 182	8792-002-154	ESTR.S6 22 KOHLM LIN
R 245	8792-002-154	ESTR.S6 22 KOHLM LIN
R 246	8792-002-154	ESTR.S6 22 KOHLM LIN
R 251	8766-701-041	ESTR.S6 22 KOHM 5%
R 275	8701-118-025	KSW SI B 10 OHM 5%
R 289	8701-118-033	KSW SI B 22 OHM 5%
R 299	8766-701-033	KSW SI A 22 OHM 5%
R 482	8792-002-140	ESTR.S6 22 KOHLM LIN
R 801	59713-026.00	POTENTIOMETER REC./LEVEL
SI 501	8815-616-205	LOET-SI.-GR 800 MAMT
SI 601	8815-610-026	LOET-SI.-GR 200 MAMT
T 101	8903-259-550	TRANS.BC 550 C SIE/PHI
T 102	8903-259-550	TRANS.BC 550 C SIE/PHI
T 103	8903-259-550	TRANS.BC 550 C SIE/PHI
T 104	8903-259-550	TRANS.BC 550 C SIE/PHI
T 105	8903-207-548	TRANS.BC548C
T 106	8903-207-548	TRANS.BC548C
T 109	8903-207-548	TRANS.BC548C
T 111	8903-273-327	TRANS.BC 327-25
T 125	8903-207-548	TRANS.BC548C
T 126	8903-207-548	TRANS.BC548C
T 127	8903-207-548	TRANS.BC548C
T 128	8903-207-548	TRANS.BC548C
T 131	8903-207-548	TRANS.BC548C
T 132	8903-207-548	TRANS.BC548C
T 151	8903-207-548	TRANS.BC548C
T 153	8902-200-256	TRANS.BC 338-40
T 154	8902-200-256	TRANS.BC 338-40
T 155	8903-207-548	TRANS.BC548C
T 156	8903-273-327	TRANS.BC 327-25
T 157	8903-207-548	TRANS.BC548C
T 158	8903-273-337	TRANS.BC 337-25
T 161	8903-207-548	TRANS.BC548C
T 162	8903-207-548	TRANS.BC548C
T 163	8903-207-548	TRANS.BC548C
T 164	8903-207-548	TRANS.BC548C
T 171	8903-267-550	TRANS.BC 550 C
T 172	8903-267-550	TRANS.BC 550 C
T 173	8903-207-548	TRANS.BC548C
T 174	8903-205-558	TRANS.BC558B
T 175	8903-207-548	TRANS.BC548C
T 176	8903-207-548	TRANS.BC548C
T 177	8903-207-548	TRANS.BC548C
T 178	8903-207-548	TRANS.BC548C
T 190	8903-205-548	TRANS.BC548C
T 401	8903-205-548	TRANS.BC548C
T 403	8903-205-548	TRANS.BC548C
T 404	8903-273-327	TRANS.BC 327-25
T 405	8903-205-548	TRANS.BC548C
T 406	8903-205-548	TRANS.BC548C
T 407	8903-205-548	TRANS.BC548C
T 408	8903-205-548	TRANS.BC548C
T 409	8903-205-548	TRANS.BC548C
T 411	8903-287-639	TRANS.BC 639
T 412	8903-287-639	TRANS.BC 639
T 413	8903-287-640	TRANS.BC 640
T 414	8903-287-639	TRANS.BC 639
T 415	8903-205-548	TRANS.BC548C
T 416	8903-205-548	TRANS.BC548C
T 417	8903-205-558	TRANS.BC558B
T 418	8903-205-548	TRANS.BC548C
T 419	8903-205-558	TRANS.BC558B
T 421	8903-205-548	TRANS.BC548C
T 423	8903-285-636	TRANS.BC 636
T 431	8903-205-548	TRANS.BC548C
T 432	8903-205-548	TRANS.BC548C
T 433	8903-205-548	TRANS.BC548C
T 434	8903-205-548	TRANS.BC548C
T 501	8903-205-558	TRANS.BC558B
T 601	8903-273-327	TRANS.BC 327-25

POS. NR. POS. NO.	SACHNUMMER PART NUMBER	BEZEICHNUNG DESCRIPTION
C 401	8452-996-195	ELKO 4700UF 20% 40V MAX 1
C 418	8660-197-042	SI-KERKOA 3300PF 20%
D 101	8309-720-091	Z DIODE 9.1 C 0.5W
D 102	8309-215-045	DIODE 1N4148
D 103	8309-215-045	DIODE 1N4148
D 111	8309-215-045	DIODE 1N4148
D 112	8309-215-045	DIODE 1N4148
D 402	8309-215-045	DIODE 1N4148
D 403	8309-215-045	DIODE 1N4148
D 404	8309-215-104	DIODE 1N 4002 -GA
D 405	8309-215-104	DIODE 1N 4002 -GA
D 406	8309-215-104	DIODE 1N 4002 -GA
D 407	8309-215-104	DIODE 1N 4002 -GA
D 408	8309-720-043	Z DIODE 4.3 C 0.5W
D 409	8309-198-042	DIODE TYP5 BAT42
D 411	8309-720-043	Z DIODE 4.3 C 0.5W
D 412	8309-198-042	DIODE TYP5 BAT42
D 413	8309-215-045	DIODE 1N4148
D 414	8309-215-045	DIODE 1N4148
D 415	8309-215-045	DIODE 1N4148
D 417	8309-215-045	DIODE 1N4148
D 418	8309-215-045	DIODE 1N4148
D 419	8309-215-045	DIODE 1N4148
D 421	8309-215-045	DIODE 1N4148
D 422	8309-215-045	DIODE 1N4148
D 423	8309-215-045	DIODE 1N4148
D 424	8309-215-045	DIODE 1N4148
D 425	8309-215-045	DIODE 1N4148
D 426	8309-215-045	DIODE 1N4148
D 427	8309-215-045	DIODE 1N4148
D 428	8309-215-045	DIODE 1N4148
D 450	8309-215-045	DIODE 1N4148
D 601	8309-215-104	DIODE 1N 4002 -GA
D 602	8309-215-104	DIODE 1N 4002 -GA
D 603	8309-215-104	DIODE 1N 4002 -GA
D 604	8309-215-104	DIODE 1N 4002 -GA
D 605	8309-720-112	Z DIODE 12 C 0.5W
D 606	8309-720-112	Z DIODE 12 C 0.5W
D 607	8309-720-052	Z DIODE 5.1 C 0.5W
D 608	8309-215-045	DIODE 1N4148
D 801	8309-944-400	LE DIODE TLHR 4400 TFK
DP 402	59740-020.00	FLUORESZENZANZEIGE
F 101	8141-910-060	FILTER 10X10 #60 SIGN9100
F 102	8141-910-060	FILTER 10X10 #60 SIGN9100
F 111	19202-358.97	SPULE 10X10 *
F 112	19202-358.97	SPULE 10X10 *
F 401	8602-331-086	CER.RES.8613 CST 4.0 MGW
F 501	8602-331-076	CER.RES.76 CST 2.5 MG
IC 101	8305-274-330	IC UPC1330HA NEC
IC 102	8305-258-330	IC CXA 1330 S SONY
IC 103	8305-258-198	IC CXA1198AP SONY
IC 401	8305-274-297	IC UPC 1297 CA NEC
IC 402	8305-205-705	IC MC 78 M 05 CT MOT
IC 403	8305-204-341	IC LM 324 AT-12 NSC
IC 404	8305-602-400	IC X 24 C 00P XICOR
IC 501	8305-752-950	SMD IC M94240M2-100FP MI
IC 404	59798-401.00	IC M3741E/ASP PROG.KPL
L 111	19202-638.97	OSZILLATOR SPULE
L 113	8140-534-175	SPULE FX7 175 FARBE 685
L 114	8140-534-175	SPULE FX7 175 FARBE 685
R 135	8792-002-154	ESTR.S6 22 KOHLM LIN
R 136	8792-002-154	ESTR.S6 22 KOHLM LIN
R 149	8701-118-033	KSW SI B 22 OHM 5%
R 155	8701-118-033	KSW SI B 22 OHM 5%
R 169	8792-002-154	ESTR.S6 22 KOHLM LIN

Cassettenlaufwerk
Cassette Drive Mechanism
TN 1800 D 303



TN 1800D_303

GRUNDIG Ersatzteilliste
Spare Parts List



D Btx * 32700 #

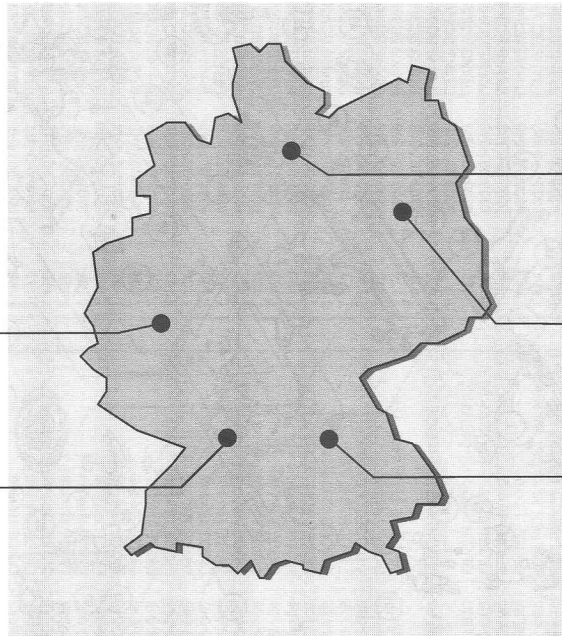
3 / 96 LAUFWERK TN 1800 D 303

SACH-NR. / PART NO.: 59726-013.00

POS. NR. POS. NO.	ABB. FIG.	SACHNUMMER PART NUMBER	ANZ. QUA.	BEZEICHNUNG	DESCRIPTION
0005.000		72008-632.11		FEDER	SPRING
0015.000		72008-632.12		FEDER	SPRING
0016.000		72008-632.13		FEDER	SPRING
0018.000		72008-632.14		FEDER ANDRUCKROLLE	COMBINATION HEAD
0019.000		72008-632.56		KOMBIKOPF	BELT
0026.000		72008-632.15		RIEMEN	CLUTCH CPL.
0027.000		72008-632.15		KUPPLUNG KPL.	WINDING CLUTCH (F)
0031.000		72008-632.17		WICKELKUPPLUNG (F)	WINDING CLUTCH (R)
0032.000		72008-632.18		WICKELKUPPLUNG (R)	GEAR WHEEL
0034.000		72008-632.19		ZAHNRAD	SPRING
0035.000		72008-632.20	2	FEDER	TORSION SPRING
0036.000		72008-632.21		DREHFEDER	SPRING
0038.000		72008-632.22	2	FEDER (R)	RETAINING RING
0040.000		72008-632.23		SICHERUNGSRING	RETAINING RING
0042.000		72008-632.24	2	HEBEL	LEVER
0043.000		72008-632.25		HAUPTRIEMEN	MAIN DRIVE BELT
0048.000		72008-632.26		MOTOR-RIEMENSCHLEIBE	MOTOR PULLEY
0049.000		72008-632.27		MOTOR	MOTOR
0051.000		72008-632.28		DREHFEDER	TORSION SPRING
0056.000		72008-632.29		RAD	WHEEL
0057.000		72008-632.30		NOCKENRAD	CAM WHEEL
0058.000		72008-632.31		HEBEL	LEVER
0059.000		72008-632.32		MAGNETANKER	MAGNET ARMATURE
0060.000		72008-632.33	2	ANSCHLAG	STOPPER
0061.000		72008-632.34		FEDER	SPRING
0063.000		72008-632.35		MAGNET	MAGNET
0066.000		72008-632.36	2	SICHERUNGSRING	RETAINING RING
0068.000		72008-632.37	2	SICHERUNGSRING	RETAINING RING
0069.000		72008-632.38		RAD	WHEEL
0080.000		72008-632.39	2	SICHERUNGSRING	RETAINING RING
0082.000		72008-632.41		LAGERHEBEL	BEARING LEVER
0083.000		72008-632.41		FEDER	SPRING
0084.000		72008-632.42		ANDRUCKROLLE ARM KPL.(F)	PINCH ROLLER CPL. (F)
0088.000		72008-632.43		FEDER	SPRING
0089.000		72008-632.44		ANDRUCKROLLE ARM KPL.(R)	PINCH ROLLER CPL. (R)
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0093.000		72008-632.48		RAD (R)	WHEEL
0094.000		72008-632.49		SCHWUNGRAD (F) KPL.	FLYWHEEL (F) CPL.
0095.000		72008-632.57		SCHWUNGRAD (R) KPL.	FLYWHEEL (R) CPL.
0100.000		72008-632.58		SCHALTER MTS-10250MVJO	SWITCH MTS-10250MVJO
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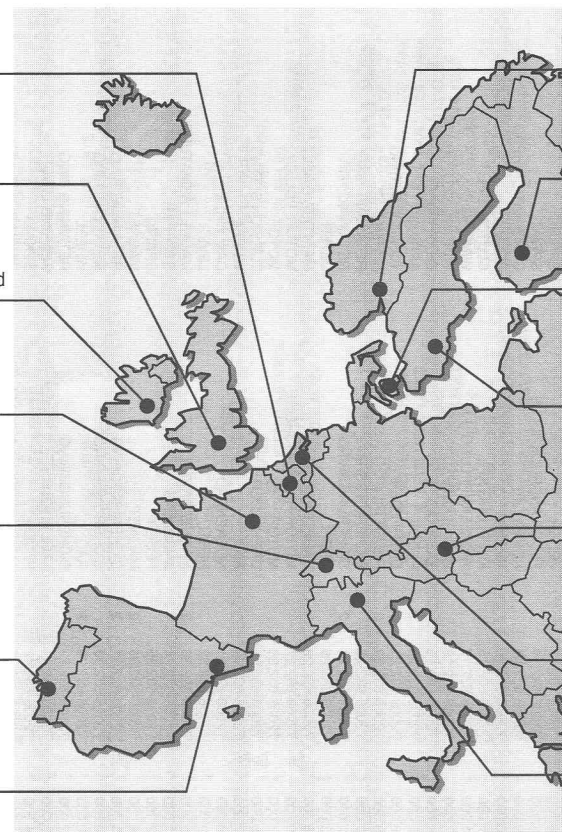
22113 GRUNDIG
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