

Philips Consumer Electronics Company

A Division of Philips Electronics North America Corp.

MANUAL 1828

Philips Magnavox Model: FW340C3701

Chassis: FW340C/37

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Includes Supplement 1+2

Technical Service Data

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FW340C3701 MODULAR AUDIO SYSTEM



**CLASS 1
LASER PRODUCT**

3122 110 03420

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REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

Visit our World Wide Web Site at <http://www.magnavox.com>

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a **▲** by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol **▲** on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

* Broken Line **— . — . — . —**

FOR PRODUCTS CONTAINING LASER:

DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION - The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

TECHNICAL SPECIFICATIONS (SUBJECT TO MODIFICATION)

General:

AC voltage	: 120V
AC frequency	: 60Hz
Power consumption	: 40W max. @1/10 P rated

Amplifier:

Output power	: 2 x 18W at 3Ω
Headphone	: 3.5mm stereo jack
Frequency response	: 63Hz - 18kHz (-3dB) Limit
Dynamic bass boost	: +12dB ±3dB at 80Hz

Input sensitivity	
Aux/Line	: 350mV ±2dB
Microphone	: 2.5mV ±2dB @1kHz

Equalizer:

80 Hz	: -3.5 ~ 5.5dB
1 kHz	: 1dB
12kHz	: -2 ~ 4dB

Tuner:

FM

Tuning range	: 87.5MHz - 108MHz
Grid	: 100kHz
IF	: 10.7MHz
Aerial input	: 300Ω Click fit
Sensitivity Mono 26dB S/N	: < 7μV
Distortion at RF=1mV, f=75kHz	: 3% (typ. 2%)

IF rejection	: > 60dB
Image rejection	: > 25dB
-3dB Limiting Point	: < 23.5dBf

AM

Tuning range	: 530kHz - 1700kHz
Grid	: 10kHz
IF	: 450kHz ±1kHz
Sensitivity at 26dB S/N	: < 4.0mV/M
Distortion at RF=50mV, m=80%)	: < 5% (typ. 3%)

IF rejection	: > 45dB
Image rejection	: > 28dB

CD Unit:

Frequency response within	: 20Hz - 20kHz at ±3dB
Signal/Noise ratio	: > 80dB (A-weighted)
Distortion at 1kHz	: < 0.5%
Channel unbalance	: < 1dB
Channel crosstalk at 1kHz	: > 50dB
De-emphasis	: 0 or 15/50 μS

Cassette Deck:

Tape speed	: 4.76 cm/sec ± 2%
Wow and flutter	: < 0.4%
Fast-wind time C60	: 130 sec
Bias system	AM/FM : AC 75kHz ±5kHz
Distortion at 250nWb/m	: < 5%
Channel difference at PB	: < 3dB
Channel difference overall	: < 3dB
Channel Separation	: > 24dB at 1kHz
Track Separation	: > 55dB at 1kHz
ALC attack time	: < 300ms
ALC recovery time	: > 10s
Frequency Response	: 80Hz - 12.5kHz within -8dB
Signal to noise ratio ①	: > 43dB
Signal to Hiss ratio ②	: > 48dB
Erase attenuation ③	: > 55dB at 1kHz

① at 250 nW/m FF-weighted

② at 250 nW/m A-weighted

③ use a 1kHz passfilter to minimize the wide band noise component

General Information/Safety Information

General Information

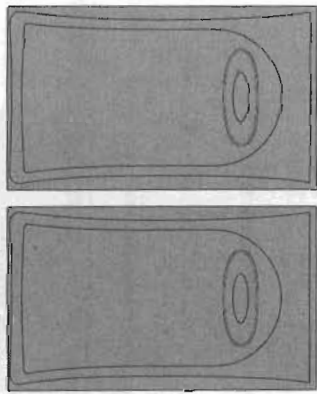
- The typeplate (which contains the serial number) is located at the rear of the set.
 - Recording is permissible if copyright or other rights of third parties are not infringed.
- All unnecessary packaging material has been omitted. We have tried to make the packaging easy to separate into three mono-materials:
 - cardboard (box)
 - expandable polystyrene (buffer)
 - polyethylene (bags, protective foam sheet).
 Please observe the local regulations regarding the disposal of these packaging materials.
 - Your set consists of materials which can be recycled and reused if disassembled by a specialized company. Please follow local regulations on recycling your old set.
 - Do not dispose of dead batteries with your household waste. Dispose of batteries according to local regulations. Note: Switching off the standby mode overnight (with- draw the AC power cord from the wall socket) will save energy.

Safety Information

- Before operating the system, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) of your system is identical with the voltage of your local power supply. If not, please consult your dealer. The type plate is located at the rear of your system.
- When the system is switched on, do not move it around.
- Place the system on a solid base (e.g., a cabinet).
- Place the system in a location with adequate ventilation to prevent internal heat build-up in your system.
- Do not expose the system to excessive moisture, rain, sand or heat sources.
- Under no circumstances should you repair the unit yourself, as this will invalidate the warranty!
- If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the CD unit inside the system. Should this occur, the CD player will not operate normally. Leave the power on for about one hour with no disc in the unit until normal playback is possible.
- Electrostatic discharge may cause unexpected problems. See whether these problems disappear if you unplugging the AC power cord and plug it in again after a few seconds.
- To disconnect the system from the power supply completely, withdraw the AC power cord from the wall socket.

Preparations

Speakers



Accessories (Supplied)

- Remote control
- Batteries (2 x AA size) for remote control
- AM loop antenna
- FM antenna wire
- AC power cord

Accessories (Recommended)

- Philips-Magnavox FB 201 active subwoofer.

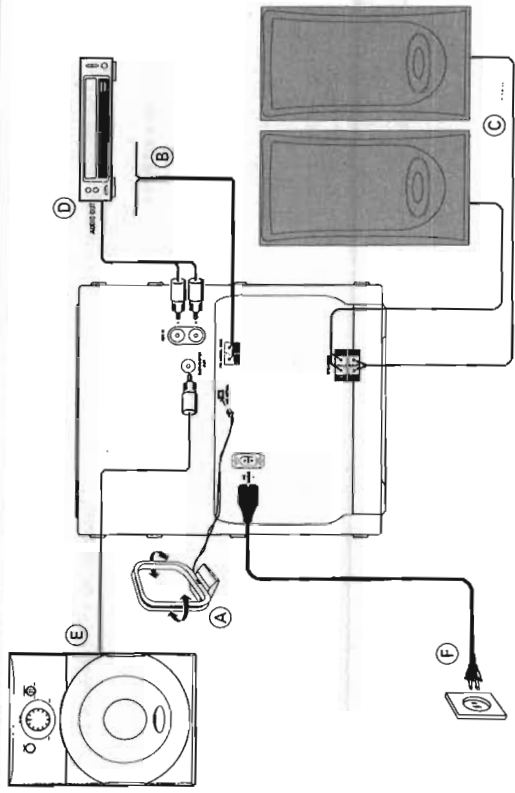
Inserting the batteries into the Remote Control

- Insert the batteries (Type R6 or AA) into the remote control as shown inside the battery compartment.
- To avoid damage from possible battery leakage, remove dead batteries or batteries that will not be used for a long time. For replacement use type R6 or AA batteries.



Preparations

Rear Connection



(A) AM Antenna Connection

Connect the supplied loop antenna to the AM AERIAL terminal. Adjust the position of the AM loop antenna for the best reception.

(B) FM Wire Antenna Connection

Connect the supplied FM wire antenna to the FM 300 Ω terminal. Adjust the position of the FM antenna for the best reception.

Outdoor Antenna

For better FM stereo reception connect an outdoor FM antenna to the FM AERIAL 300 Ω terminal using a 300 Ω dipole wire.

(C) Speaker Connections



- Connect the right speaker to terminal **R**, with the red wire to + and the black wire to -
- Connect the left speaker to terminal **L**, with the red wire to + and the black wire to -
- Clip the stripped portion of the wire as shown.

(D) Connecting other equipment to your system

You can connect TV, Laser Disc or VCR audio left and right outputs to the AUX IN terminals at the rear of the system.

(E) Subwoofer (optional)

You may connect an external active subwoofer (not supplied) to enhance the mini system. The subwoofer is dedicated to reproducing just the low bass effect (e.g. explosions, the rumble of the spacships, etc.). We recommend the Philips-Magnavox FB 201 active subwoofer. Be sure to follow the instructions supplied with the subwoofer unit.

(F) AC Power Supply

After all other connections have been made, connect the AC power cord to the set and then to the wall outlet.

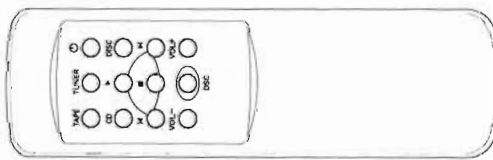
Controls

Remote Control Functions

- First select the source you wish to control by pressing one of the source selection keys on the remote control (e.g., TUNER, CD, or TAPE).
- Then select the desired function (PLAY, NEXT, etc.).

Note:

If any remote control button is pressed, the source icon on the display will flicker. This indicates the remote control signal is received by the set.



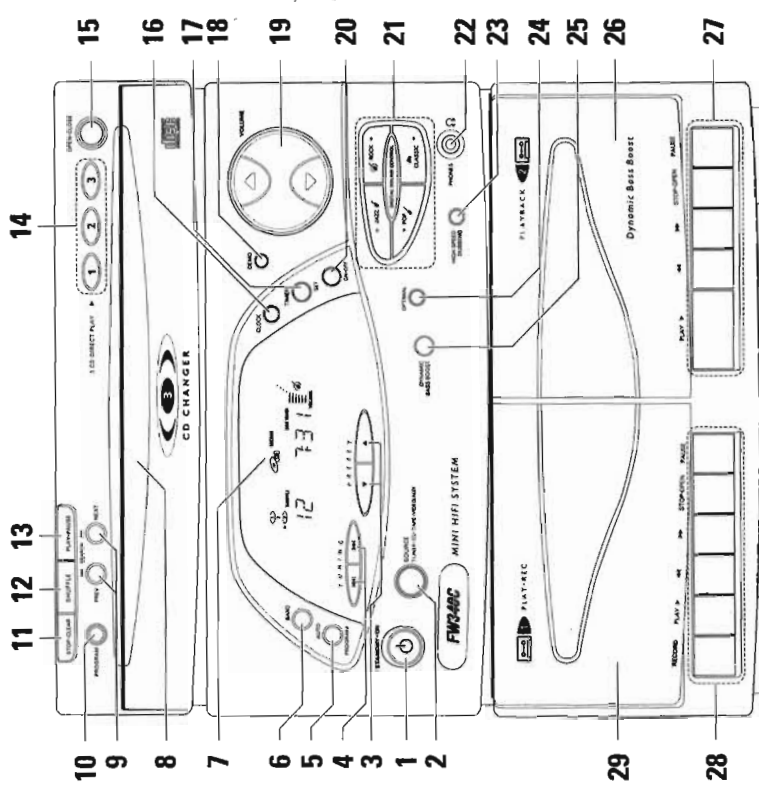
- TUNER** to switch the unit to standby mode.
- TAPE** to select TUNER mode.
- CD** to select TAPE mode.
- ▶** to start play in CD mode.
- DISC** to select and play the desired disc.
- ◀ / ▶** for TUNER to select a lower/higher tuner/preset station.
- for CD to select previous/next CD track.
- to stop CD playback.
- VOL +/-** to adjust the volume.
- DSC** to select the desired sound effect: JAZZ, ROCK, POP, CLASSIC or OPTIMAL.

Front View

- STANDBY-ON** - to switch the set on or to standby mode.
- SOURCE** - to select the following:
TUNER : to switch to Tuner mode.
CD : to switch to CD mode.
TAPE : to switch to Tape mode.
VIDEO/AUX : to switch to VIDEO/AUX mode (for external sources, e.g., TV, Laser Disc, or VCR sound).
- PRESET** **▼** or **▲** - to select a radio station in memory. Also use for clock and timer setting.
- TUNING** **◀◀** or **▶▶** - to tune to radio stations.
◀◀ : lower frequencies
▶▶ : higher frequencies
 Also use for clock and timer setting.
- AUTO PROGRAM** - to program preset stations automatically or manually.
- BAND** - to select the waveband: FM or AM.
- DISPLAY** - to display the current setting of the set.
- CD CAROUSEL TRAY**
- PREV / NEXT** (**◀◀** **SEARCH** **▶▶**) - to skip to the beginning of the current or previous/next track or to search backward/forward.
- PROGRAM** - to program CD tracks.
- STOP-CLEAR** - to stop CD play or to clear a program.
- SHUFFLE** - to play all the available discs and their tracks in random order.
- PLAY-PAUSE** - to start or interrupt CD play.
- 3 CD DIRECT PLAY** **▶** - to select play for each CD tray.
- OPEN-CLOSE** - to open or close the CD carousel tray.
- CLOCK** - to set the clock.
- TIMER SET** - to set the timer.
- DEMO** - to display the various features offered by the system.
- VOLUME** - to adjust the volume level.
- TIMER ON-OFF** - to switch the timer on or off.
- DIGITAL SOUND CONTROL (DSC)** - to select the desired sound effect: JAZZ, ROCK, POP or CLASSIC.
- PHONES** (**📎**) - headphone (ø 3.5mm) jack.

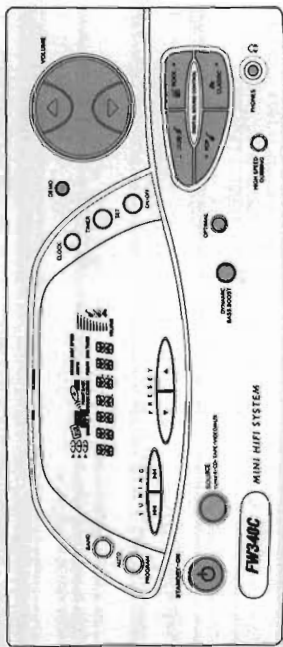
QUICK USE GUIDE (continued)

Controls



- 10**
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 - 24**
 - 25**
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 - 27**
 - 28**
 - 29**
- 23 HIGH SPEED DUBBING** - to dub from TAPE DECK 2 to TAPE DECK 1 at high speed.
 - 24 OPTIMAL** - to select the sound setting that is tuned to the acoustics of the supplied speakers.
 - 25 DYNAMIC BASS BOOST (DBB)** - to switch on bass boost to enhance bass response or to switch off bass boost.
 - 26 TAPE DECK 2**
 - 27 TAPE DECK 2 CASSETTE OPERATION**
 - PLAY** **▶** : to start playback.
 - ◀◀** : to rewind the cassette.
 - ▶▶** : to fast forward the cassette.
 - STOP-OPEN** : to stop playback or to open the cassette compartment.
 - PAUSE** : to interrupt playback
 - 28 TAPE DECK 1 CASSETTE OPERATION**
 - RECORD** : to start recording.
 - PLAY** **▶** : to start playback.
 - ◀◀** : to rewind the cassette.
 - ▶▶** : to fast forward the cassette.
 - STOP-OPEN** : to stop playback or to open the cassette compartment.
 - PAUSE** : to interrupt playback or recording.
 - 29 TAPE DECK 1**

Operating the System



Important:

Before you begin operating the system, complete the preparation procedures. The set is in the standby mode when the AC power plug is connected to the wall socket and "12:00 AM" flashes on the display.

Switching the system ON

- Press **STANDBY-ON** or **SOURCE** (or **CD**, **TUNER** or **TAPE** on the remote control).

Switching the system to standby mode

- Press **STANDBY-ON** again (or \odot on the remote control).

Selecting the sound source

- Press **SOURCE** to select either **TUNER**, **CD**, **TAPE** or **VIDEO/AUX** (or **CD**, **TUNER** or **TAPE** on the remote control).
- The display indicates the selected sound source.

You can also select the sound source directly by selecting the respective **PLAY** button for **CD** and **TAPE** mode or the **PRESET**, **BAND** or **TUNING** button for **TUNER** mode.

Note:

For external source, make sure that you have connected the audio left and right output terminals of the external equipment (TV, VCR or Laser Disc player) to the **AUX IN** terminals at the rear of the set.

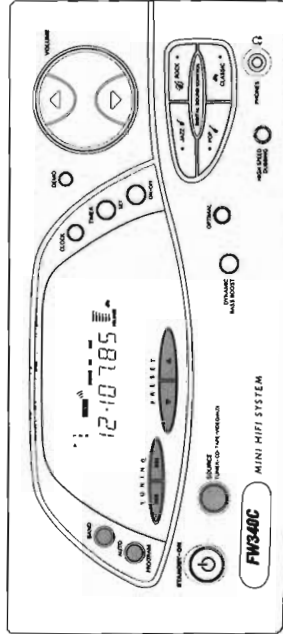
Volume adjustment

Press **VOLUME** \curvearrowright or \curvearrowleft (or press **VOL** $+$ or $-$ on the remote control) to increase or decrease the sound level.

For Personal Listening

Connect the headphones to the H socket (ϕ 3.5 mm). The speakers will be muted.

Tuner



Tuning to radio stations

- 1 Press **SOURCE** (or **TUNER** on the remote control) to select **TUNER**.
- 2 Press **BAND** to select the desired waveband: **FM** or **AM**.
- 3 Press **TUNING** \curvearrowleft or \curvearrowright for more than one second.
 - The display will show "SEARCH" until a station with sufficient signal strength is found.
- Repeat this procedure until the desired station is reached.
- To tune to a weak station, briefly press **TUNING** \curvearrowleft or \curvearrowright until the display shows the right frequency and/or best reception has been obtained.

Storing Preset Stations

You can store up to 20 stations in the memory. When a preset station is selected, the preset number appears next to the frequency on the display.

Automatic programming

- 1 Press **BAND** to select the desired waveband: **FM** or **AM**.
- 2 Press **AUTO PROGRAM** for more than 1 second to start the automatic programming.
 - **PROGRAM** flashes and "AUTO" is displayed.
 - Every available station will be stored automatically. The frequency and preset number will be displayed briefly.
 - It will stop searching when all the available stations are stored or the memory for 20 preset stations is used.

- You can cancel the automatic programming by pressing **AUTO PROGRAM**, **TUNING** \curvearrowleft or \curvearrowright or **PRESET** \curvearrowleft or \curvearrowright .

Note:

If you want to reserve a section of preset numbers, for example preset numbers 1-9, select preset 10 before starting automatic programming. Then only the preset numbers 10 to 20 will be programmed.

QUICK USE GUIDE (continued)

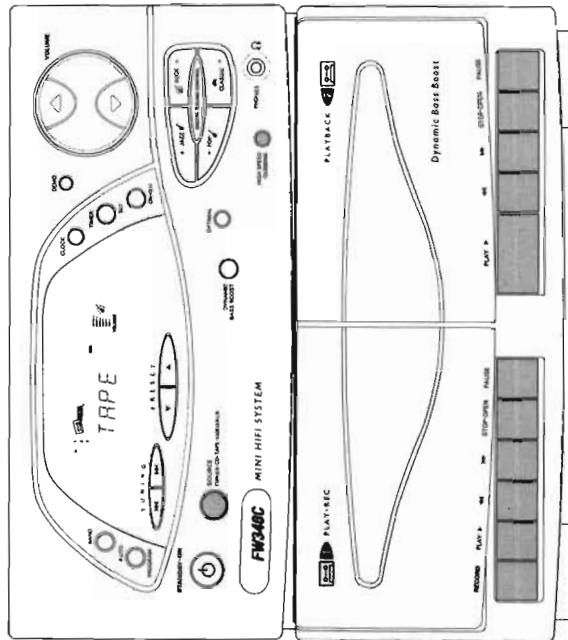
Manual programming

- 1 Press **AUTO PROGRAM** for less than 1 second.
 - **PROGRAM** flashes on the display.
- 2 Press **BAND** to select the desired waveband: **FM** or **AM**.
- 3 Press **TUNING** \curvearrowleft or \curvearrowright to tune to the desired frequency.
- 4 Press **PRESET** \curvearrowleft or \curvearrowright to select a preset number.
- 5 Press **AUTO PROGRAM** again.
 - **PROGRAM** disappears, and the station is stored.
- Repeat the above procedure to store other preset stations.

Tuning to Preset Stations

- Press **PRESET** \curvearrowleft or \curvearrowright (or \curvearrowleft or \curvearrowright on the remote control) to select the desired preset number.
 - The preset number, frequency and waveband appear on the display.

Cassette Deck



Loading a cassette

- Press **STOP-OPEN**.
- The cassette compartment door opens.
- Load the cassette with the open side downward and the full spool to the left.
- Close the cassette compartment door.

Tape Playback

- 1 Press **SOURCE** (or **TAPE** on the remote control) to select **TAPE**.
- 2 Load the cassette into **CASSETTE DECK**.
- 3 Press **PLAY** to start playback.
- 4 Press **STOP-OPEN** to end playback.

Fast Forward/Rewinding

- 1 You can rewind or fast forward the tape by pressing **◀◀** or **▶▶**.
- 2 Press **STOP-OPEN** to stop fast forwarding or rewinding.

Note: It is possible to fast forward or rewind a cassette when the set is in another source mode (e.g., **TUNER**, **CD**, or **VIDEO/AUX** mode).

Continuous playback of two cassettes

- 1 Press **SOURCE** to select **TAPE**.
- 2 Load the cassettes in **TAPE DECK 1** and **TAPE DECK 2**.
- 3 Press **PLAY** on **TAPE DECK 2**.
- 4 Press **PAUSE** on **TAPE DECK 1**.
- 5 Press **PLAY** on **TAPE DECK 1**.
→ Playback will begin with **TAPE DECK 2** and will continue with **TAPE DECK 1** when **TAPE DECK 2** ends.
- 6 Press **STOP-OPEN** if you want to stop playback before the end of the tape in **TAPE DECK 1** or **TAPE DECK 2**.

Recording (TAPE DECK 1)

- 1 Press **SOURCE** to select **TUNER**, **CD** or **VIDEO/AUX**.
- 2 Load a blank cassette into **TAPE DECK 1**.
- 3 Press **RECORD** on **TAPE DECK 1** to start recording.
→ The record flag starts flashing.
- 4 Press **STOP-OPEN** on **TAPE DECK 1** to stop recording.

Note: During recording, it is not possible to listen to another sound source.

Cassette Deck

Dubbing cassettes (from DECK 2 to DECK 1)

- 1 Load the pre-recorded cassette into **TAPE DECK 2** and a blank cassette into **TAPE DECK 1**.
→ Make sure that both cassettes have their full spools to the left.
- For high speed recording, press **HIGH SPEED DUBBING**.
→ **HIGH SPEED** appears on the display.
- 2 Press **PAUSE** on **TAPE DECK 1**.
- 3 Press **RECORD** on **TAPE DECK 1**.
→ **RECORD** appears on the display.
- 4 Press **PLAY** on **TAPE DECK 2**.
→ Recording will start automatically.
- 5 Press **STOP-OPEN** on **TAPE DECK 1** and **TAPE DECK 2** to stop dubbing.



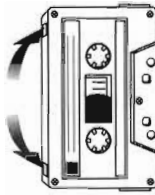
Notes:

- At the end of side A, flip the cassettes to side B and repeat the procedure.
- Dubbing of cassettes is only possible in the **TAPE** mode. To ensure good dubbing, use tapes of the same length.
- During high speed dubbing in **Tape** mode, the sound is reduced to a low volume.

General Information

- For recording, use only an **IEC** type I cassette (normal cassette).
- The tape in the cassette is secured at both ends with leader tape. At the beginning and end of a cassette, nothing will be recorded for six to seven seconds.
- The recording level is set automatically, regardless of the position of **VOLUME**.
- Check and tighten slack tape with a pencil before use. Slack tape may get jammed or may break in the mechanism.
- To prevent accidental recording, break out the tab on the left shoulder of the cassette side you want to protect. To re-record the cassette, cover each hole with cellophane tape.

Erasur Prevention Tabs



- C-120 tape is extremely thin and may be easily deformed or damaged. It is not recommended for use in this unit.
- Store the cassettes at room temperature and do not put them too close to a magnetic field (for example, transformers, TVs or speakers).

CD Changer

Warning!

- 1) This set is designed for conventional CDs. Do not use any accessories like disc stabilizer rings or CD treatment sheets, etc., which may damage the CD mechanism.
- 2) Do not load more than one disc into each tray.
- 3) When the CD changer is loaded with CDs, do not turn over or shake the unit as this may jam the changer mechanism.

You can load up to three discs in the CD changer for continuous play without interruption. In addition to the conventional 12-cm disc, 8-cm discs can be used without an adaptor.

Loading the CD Changer



- 1 Press **SOURCE** (or **CD** on the remote control) to select **CD**.
- 2 Press **OPEN-CLOSE**.
→ The CD compartment slides out.
- 3 Load a disc with the **printed side up** in the right tray.
• You can load another disc in the left tray.
• To load the third disc, press the corresponding **3 CD DIRECT PLAY** button of the empty tray.
→ The CD changer carousel will rotate until the empty tray is at the right hand side and is ready for loading.
→ Playback will always start with the outer right disc tray.
- 4 Press **OPEN-CLOSE** to close the CD compartment.
→ The total number of tracks and the playing time of the last selected disc will appear on the display.

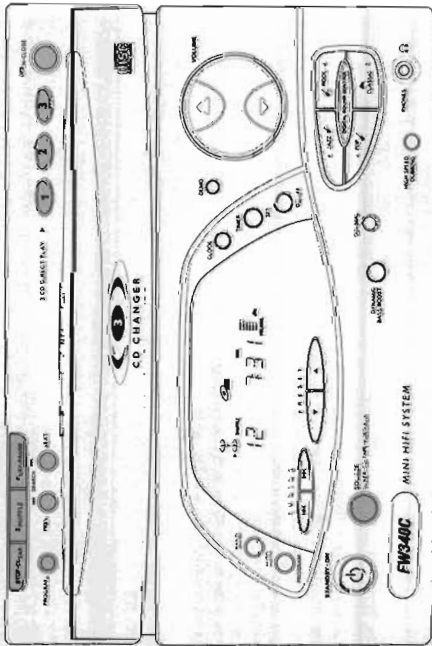
The following display indications will help you to know whether the disc trays are empty or loaded.

- 1 — indicates disc tray 1 is empty.
- 2 — indicates disc tray 2 is loaded with a disc.
- 3 — indicates disc tray 3 is current or selected disc tray.

QUICK USE GUIDE (continued)

CD Changer

CD Changer



Programming Tracks

Programming tracks of a loaded CD is possible when CD playback is stopped. The display will indicate the total tracks stored in the program. Up to 40 tracks can be stored in the memory in any order. When 40 tracks are stored and you attempt to store another track, the display will show "PROGRAM FULL".

- 1 Load the desired discs in the disc trays.
 - 2 Press **PROGRAM** to start programming.
 - The PROGRAM flag flashes on the display.
 - 3 Press the desired disc button to select the disc.
 - 4 Press **PREV** or **NEXT** to select the desired track.
 - 5 Press **PROGRAM** to store the track.
 - 6 Repeat steps 3 to 5 to store other discs and tracks.
- Press **STOP-CLEAR** once to end programming mode.
- The total number of tracks programmed and total playing time appear on the display.

Playing the program

- 1 Press **PLAY-PAUSE** to start program playback.
 - The track number and elapsed playing time of the current track appear on the display.
- 2 Press **STOP-CLEAR** to stop program playback.

Note:

If you press any of the 3 CD DIRECT PLAY buttons, the set will play the selected disc. The stored program will be ignored temporarily. The PROGRAM flag will also temporarily disappear from the display and then reappear when the playback for the selected disc ends.

Reviewing the program

Reviewing of program is only possible when CD playback is stopped.

- Press **PREV** or **NEXT** repeatedly to review the programmed tracks.

Erasing the program (when playback is stopped)

- Press **STOP-CLEAR**.
 - "PROGRAM CLEAR" appears on the display.
- Note:**
The program is also erased when the set is disconnected from the power supply. If the CD carousel is opened, the tracks belonging to the outer two trays will be erased and "CLEAR" will flash on the display once.

Playing a Disc

- 1 Press **PLAY-PAUSE** (or ► on the remote control) to start playback.
 - The disc tray, track number and elapsed playing time of the current track appear on the display.
- To interrupt play, press **PLAY-PAUSE**.
 - The playing time flashes.
- To resume play, press **PLAY-PAUSE** again (or ► on the remote control).
- To stop play, press **STOP-CLEAR** (or ■ on the remote control).

Note:

All the available discs will play once and then stop. When the CD has stopped playing, the set will switch to the standby mode automatically after 15 minutes if no button is pressed.

When the CD tray is closed, you can also play a CD directly by pressing the 3 **CD DIRECT PLAY** ► (1-3) buttons. The CD player will stop at the end of playback of the selected disc.

Selecting a desired track

- 1 Press **PREV NEXT** (◀ or ► on the remote control) until the desired track appears on the display.
- 2 Press **PLAY-PAUSE** (or ► on the remote control) to start playback.
 - The selected track number and elapsed playing time appear on the display.

Selecting a desired track during play mode

- 1 Press **PREV** or **NEXT** (◀ or ►) on the remote control until the desired track appears on the display.
 - The selected track number and elapsed playing time appear on the display.
- If you press ◀ **PREV** once it will skip to the beginning of the current track and play the track again.

Searching for a particular passage during play

- Press and hold **SEARCH** ◀◀ or ▶▶ until the desired passage is located. During the search, the sound is played faster than normal at a reduced volume. Play returns to normal when **SEARCH** ◀◀ or ▶▶ is released.

Shuffle

SHUFFLE - playing all the available discs and their tracks in random order. It can also be used during program mode.

To shuffle all the discs and tracks

- 1 Press **SHUFFLE**.
 - "SHUFFLE" flashes briefly on the display.
 - The source flag, the disc, and the track selected at random appear on the display.
- The discs and the tracks will now be played in random order until you press **STOP-CLEAR**. Press **SHUFFLE** again to resume normal play.
- The source flag disappears from the display.

CD Recording

During CD recording,

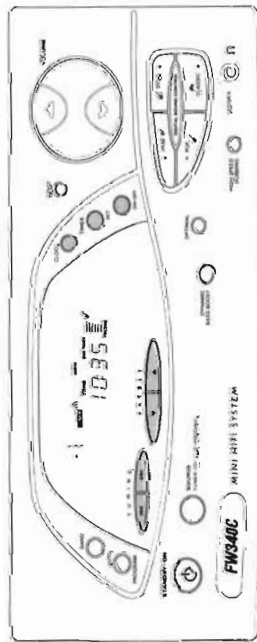
- it is not advisable to fast forward/rewind your cassette in TAPE DECK 2.
- it is not possible to listen to another sound source.

CD Recording

- 1 Load a blank cassette (full spool to the left) into **TAPE DECK 1**.
- 2 Press **SOURCE** to select CD.
- 3 Load a disc into the disc tray.
- 4 Press **PREV** or **NEXT** to select the desired track. If desired, you can program the tracks in the order you want them to be recorded (see Programming Tracks).
- 5 Press **RECORD** on cassette **TAPE DECK 1** to start recording.
 - The record flag flashes on the display.
 - CD starts playing.
- 6 Press **STOP-CLEAR** on the CD compartment and **STOP-OPEN** on cassette **TAPE DECK 1** to stop recording.

Clock Setting

Timer Setting



Setting the clock

The clock uses the 12 hour system, e.g. 1 PM or 12 AM.

1 Press CLOCK.

→ "12:00 AM" starts flashing.

2 Set the hour with PRESET ▼ or ▲.

Set the minute with TUNING ◀◀ or ▶▶.

3 Set the minute with TUNING ◀◀ or ▶▶.

Press CLOCK again to store the setting.

→ The clock starts running.

Note:

- When a power interruption occurs, the clock settings are erased, and "12:00 AM" will flash on the display.

Setting the Timer

- The system can switch on to TUNER or CD mode automatically at a preset time. It can serve as an alarm to wake you up. After half an hour from the preset time, the system will return to the standby mode.
- Before setting the timer, make sure the clock is set correctly.
- The timer works only once for each setting.
- The volume of the timer will be at the last setting before the set is switched to standby mode.**

Timer Setting

1 Press TIMER SET.

→ The TIMER flag flashes.

2 Press PRESET ▲ to select the desired source.

→ The display will switch as follows:

TUNER → CD → TUNER ...

3 Press TIMER SET to confirm your source selection.

→ The display will show "12:00 AM" and "12:00 AM" flashes.

4 Press PRESET ▼ or ▲ to set the hour for the timer to start.

Press TUNING ◀◀ or ▶▶ to set the minutes for the timer to start.

5 Press TIMER SET to store the start time.

→ The TIMER is now set.

→ The TIMER flag remains lit.

Maintenance

Maintenance

Cleaning the Cabinet

- Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

Cleaning Discs

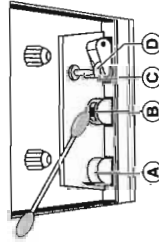
- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.



- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog records.

Cleaning the Heads and the Tape Paths

- To ensure good recording and playback quality, clean the heads (A) and (B), the capstan (C), and pressure roller (D) after every 50 hours of tape operation.



- Use a cotton swab slightly moistened with cleaning fluid or alcohol.

Demagnetizing the heads

- Use a demagnetizing cassette available at your dealer.

QUICK USE GUIDE (continued)

Warning! Under no circumstances should you try to repair the set yourself, as this will invalidate the warranty.

- If a fault occurs, check the points listed below before taking the set for repair.
- Should any problems persist after you have made these checks, consult your nearest dealer or service center.

SYMPTOM	POSSIBLE CAUSE	REMEDY
RADIO RECEPTION		
The STEREO indicator flashes.	The signal is too weak.	Adjust the antenna.
Severe hum or noise.	The signal strength is too weak.	Adjust the antenna.
	The TV or VCR is too close to the stereo system.	Separate the stereo system from the TV or VCR. Connect an external antenna for better reception.
CASSETTE DECK OPERATION		
Recording is not possible.	No cassette in the cassette deck.	Insert a blank cassette into the cassette deck.
	The protection tab has been broken.	Put a piece of clear adhesive tape over the opening.
Recording or playback cannot be made or there is a decrease in audio level.	Dirty tape heads.	See section on cassette deck maintenance.
	Magnetic build-up in the record/playback head.	Use demagnetizing cassette.
Excessive wow or flutter, or sound drop-out.	Contamination of the capstans or pressure rollers.	See section on cassette deck maintenance.
CD PLAYER OPERATION		
"NO DISC" is displayed.	The disc is inserted upside down.	Place CD with printed side up.
	Moisture condensation.	Wait until lens has adjusted to normal room temperature.
	There is no disc in the CD tray.	Insert a CD.
	The CD is dirty, badly scratched or warped.	Replace or clean the CD.
GENERAL		
Set not working.	Set does not react when buttons are pressed.	Press STANDBY-ON to switch the unit off, then switch it on again. Or, unplug the AC power plug from the wall outlet, then plug it in again.
No or poor sound.	Volume is not turned up.	Adjust VOLUME.
	The headphones are connected.	Disconnect the headphones.
	Speakers are not connected or are connected incorrectly.	Check that the speakers are connected correctly. Make sure that the stripped speaker wire is clamped.
Reversed left and right sound.	Speakers are connected incorrectly.	Check the speaker connections and speaker location.
Lack of bass sound or apparently imprecise physical location of musical instruments.	Speakers are connected incorrectly.	Check the speaker connection for proper phasing, red/black wires to red/black terminals.
Clock blinking.	There was a power disruption.	Reset the clock.
Remote control has no effect on the set.	The distance to the system is too large.	Reduce the distance.
	Batteries are inserted incorrectly.	Insert the batteries correctly.
	Batteries are exhausted.	Replace the batteries.
	Wrong sound source is selected.	Select the sound source before pressing the function button.
Timer not working.	Timer not on.	Press TIMER ON/OFF on the set to switch on the timer.
	Dubbing/recording is active.	Stop dubbing/recording.
"PRESS DEMO TO EXIT" is displayed.	Demo mode is switched on.	Press STANDBY-ON or DEMO to switch off the demo.

PCS 90 267

Warning!

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.



Warning!

Invisible laser radiation when open. Avoid direct exposure to beam.

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

PCS 90 115

SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Cassette:

SBC419 Test cassette CrO2	4822 397 30069
SBC420 Test cassette Fe	4822 397 30071
MTT150 Dolby level 200nWb/M	4822 397 30271

Compact Disc:

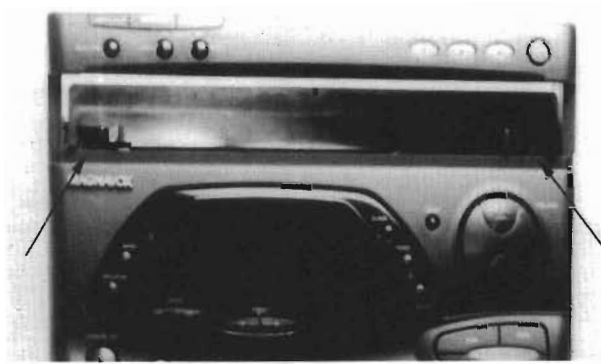
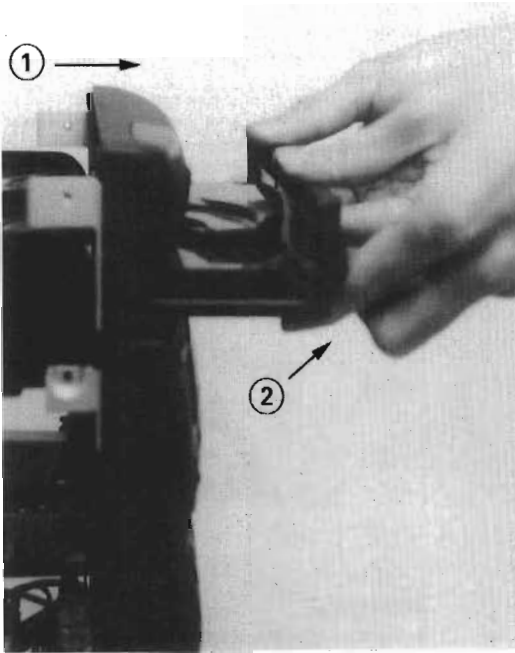
SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

ESD Equipment:

Anti-static table mat - large 1200x650x1.25mm ...	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1MΩ)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Ground cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

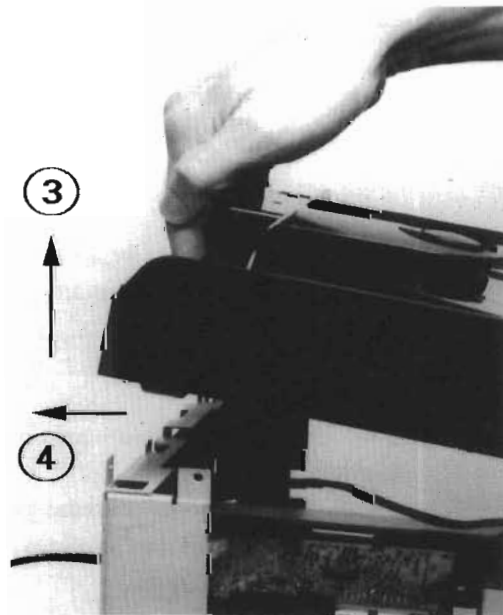
PCS 90 114

DISASSEMBLY



- 1) Remove top cover
- 2) Loosen 3X screws on bottom
- 3) Slide the CD tray out as shown by arrow 1.
- 4) Remove the CD door as indicated.

- 5) Loosen 2X screws from the front panel at the CD tray.

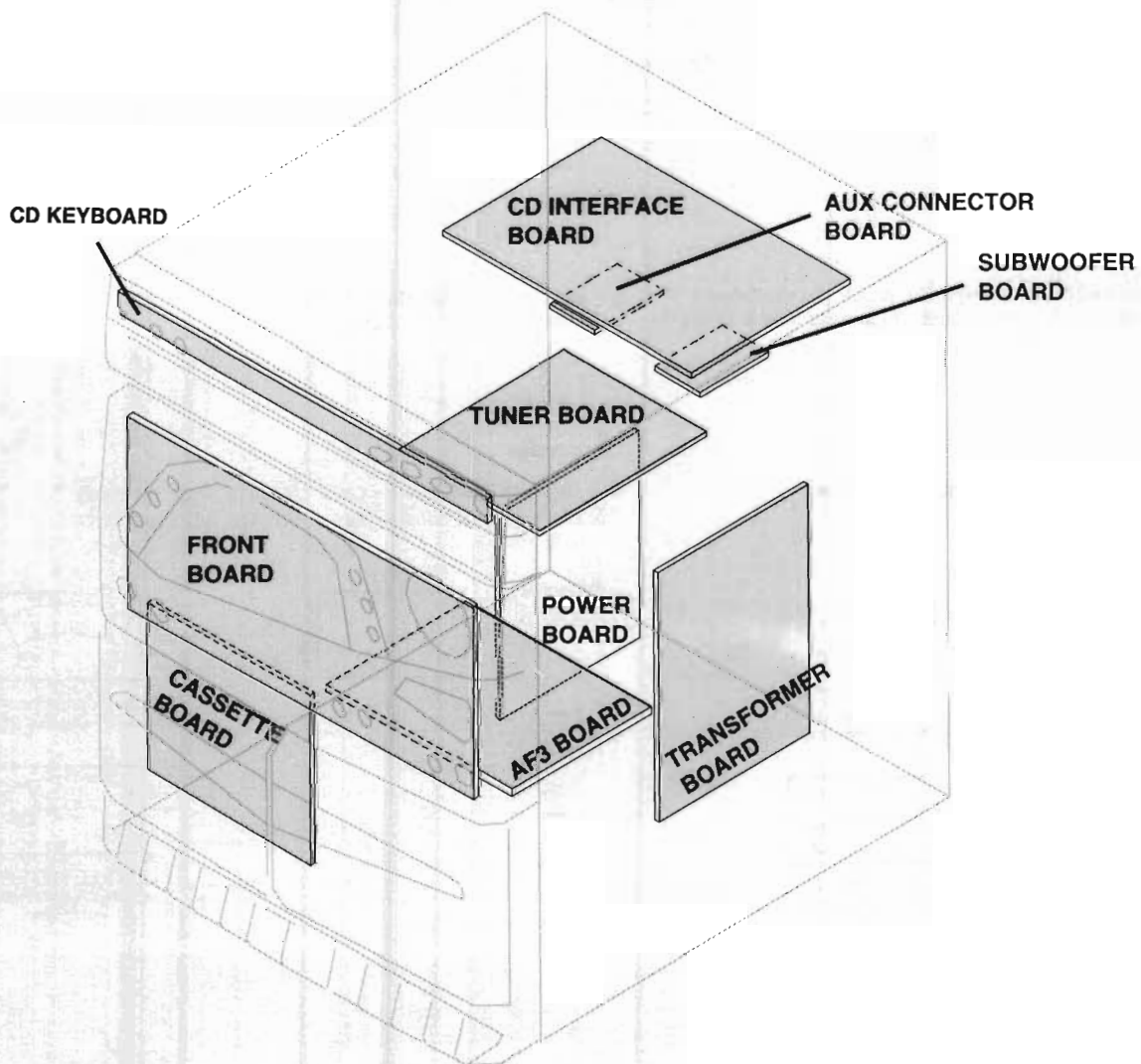


- 6) Lift the CDC module up and remove the module as indicated by arrow 3.



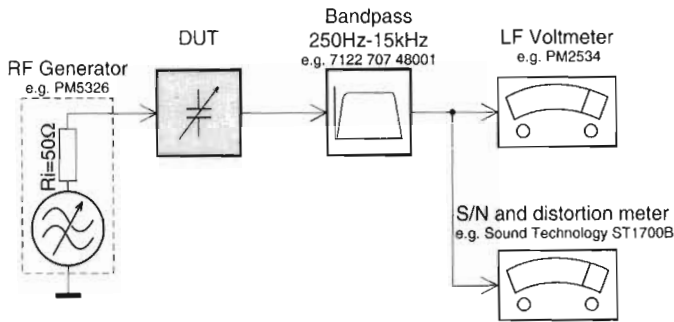
PCS 90 203

LOCATION OF PRINTED CIRCUIT BOARDS



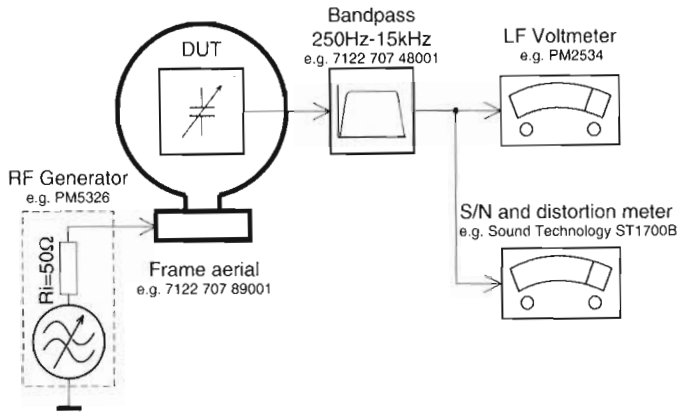
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilot tone (19kHz, 38kHz).

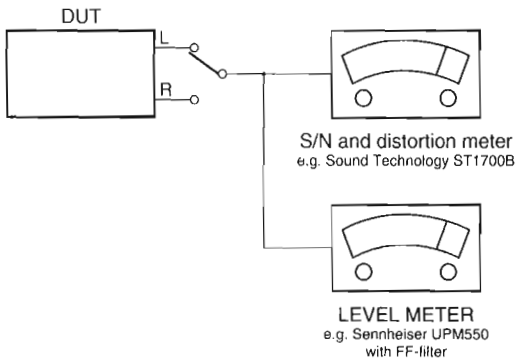
Tuner AM (AM, LW)



To avoid atmospheric interference, all AM measurements must be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

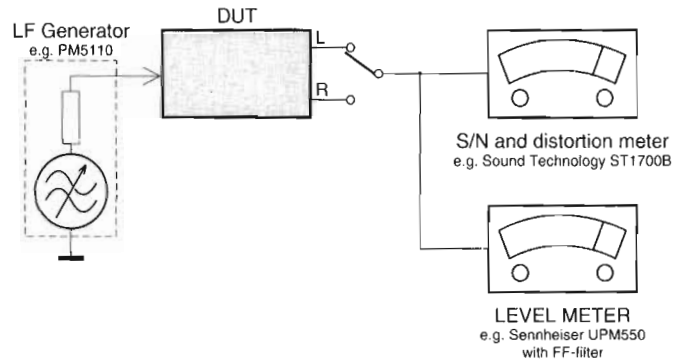
CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069 or Universal Test Cassette **Fe** SBC420 4822 397 30071



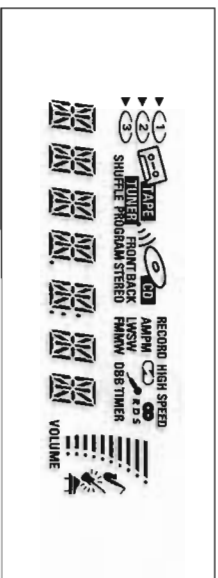
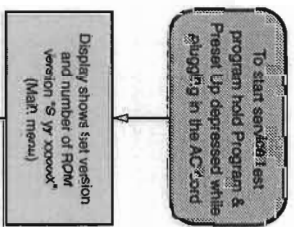
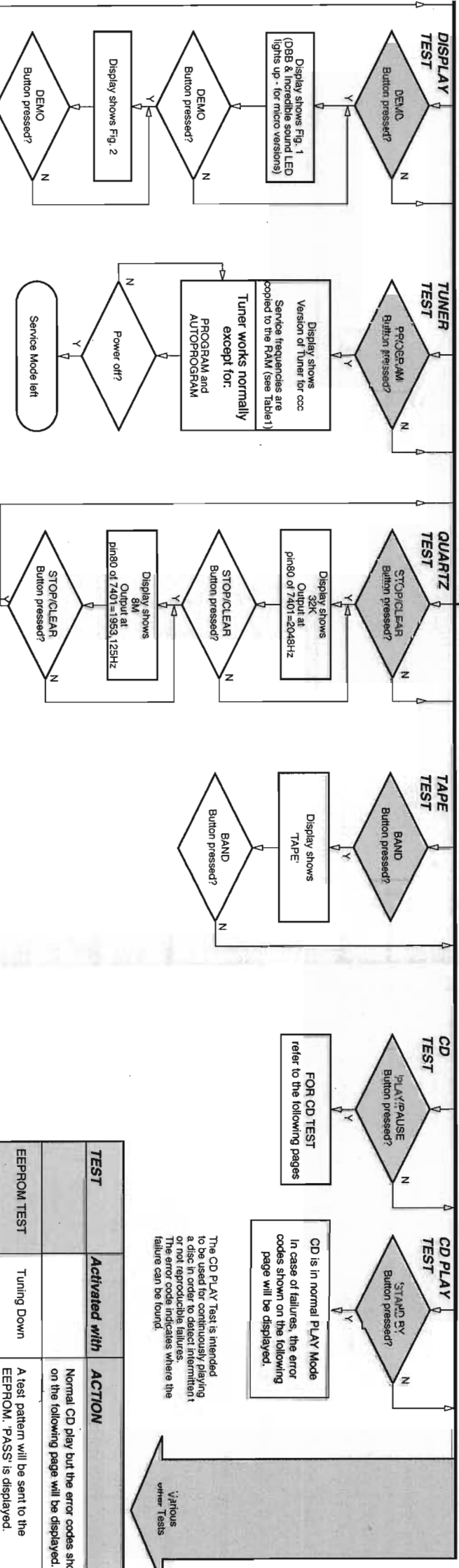


Figure 1



1) S stands for Service Test program
 xy stands for software version number of UP on Front Board (counted from 01 upwards)
 xxxxxx stands for model numbers (NOT APPLICABLE IN SERVICE MODE)



PRESET	Europe "EUR"	East Europe "EAS"	USA "USA"	Oversaa "OSE"	Korea "KOR"
1	87.5MHz	85.81MHz	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	74MHz	530kHz	531/530kHz	531kHz
4	1602kHz	87.5MHz	1700kHz	1602/1700kHz	1602kHz
5	558kHz	531kHz	560kHz	558/560kHz	558kHz
6	1494kHz	1602kHz	1500kHz	1494/1500kHz	1494kHz
7	153kHz	558kHz	98.0MHz	87.5MHz	87.5MHz
8	279kHz	1494kHz	87.5MHz	87.5MHz	87.5MHz
9	198kHz	153kHz	87.5MHz	87.5MHz	87.5MHz
10	98MHz	279kHz	87.5MHz	87.5MHz	87.5MHz
11	87.5MHz	198kHz	87.5MHz	98MHz	98MHz

Table 1

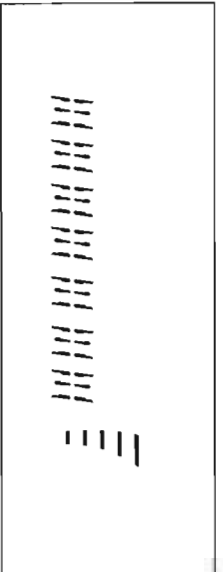


Figure 2

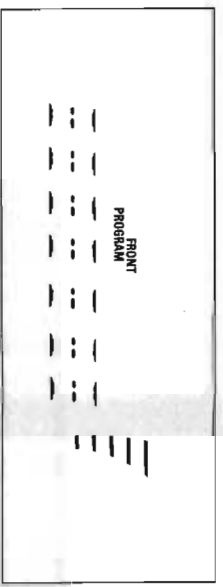


Figure 3

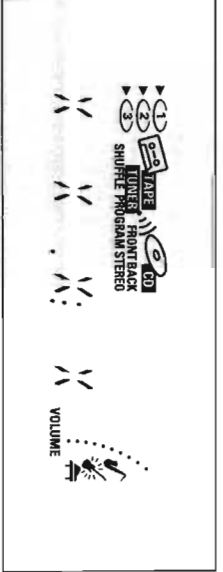


Figure 4



Figure 5

TEST	Activated with	ACTION
EEPROM TEST	Tuning Down	Normal CD play but the error codes shown on the following page will be displayed. A test pattern will be sent to the EEPROM. 'PASS' is displayed. Otherwise ERR will be displayed.
EEPROM CLEAR	Preset Down	Load default data. Display shows NEW for 1 second. Caution! All presets from the customer are lost!
KEY TEST	Preset Up	Key numbers listed on the following page are shown on the display.
FAST CLOCK TEST	DBB	The clock is switched to fast mode. 'FAST' is displayed for 2 sec. Press DBB again to reset the clock to normal. 'NOM' displayed for 2 sec.
LEAVE SERVICE TEST PROGRAM	disconnect AC	

The CD 'PLAY' Test is intended to be used for continuously playing a disc in order to detect intermittent failure codes. The error code indicates where the failure can be found.

Various other Tests

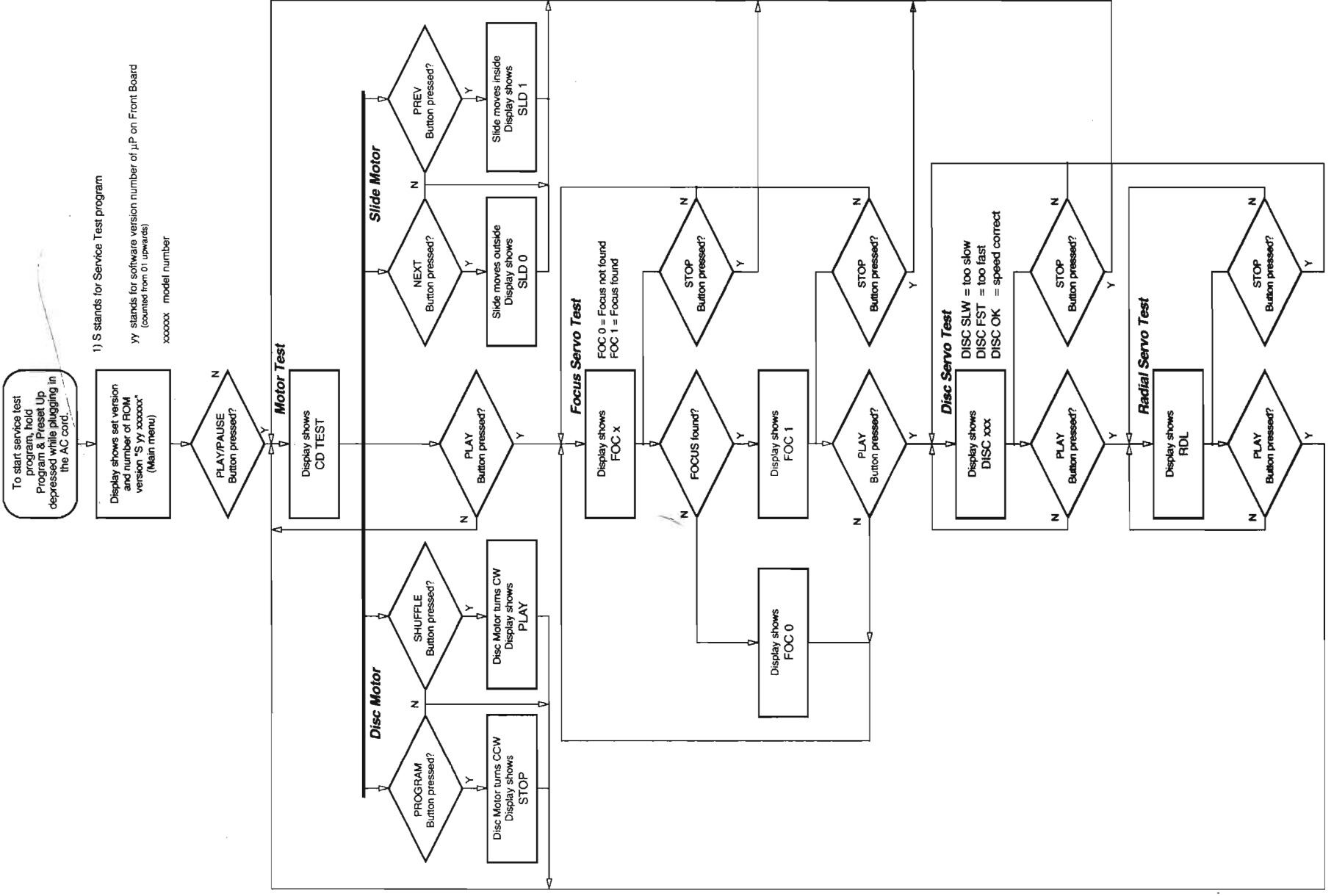
Error number	CD Error description
E 1002	Focus error Triggered when the focus could not be found within a certain time when starting up the CD, or when the focus is lost for more than a certain time during playing the CD.
E 1007	Subcode error (no subcode within certain time)
E 1008	TOC error Triggered when during reading the TOC the lead-in (track nr. 0) is left. This can be caused by a misaligned inner-switch or by a disc with a mispositioned lead-in.
E 1010	Radial error Triggered when the radial servo is not on track for a certain time during playing the CD.
E 1011	Sledge error Generated when the inner-switch did not open within a certain time when the pickup is moved to the inner position.
E 1012	Fatal sledge error Triggered when the inner-switch did not close within a certain time when moving the pickup inside. Inner-switch or sledge motor problem.
E 1013	Turntable motor error Generated when the CD did not reach 75% of speed during startup within a certain time. Disc motor problem.
E 1014	Jump-off track error (too few grooves within time)
E 1020	PLL locked error Triggered when the PLL of the decoder did not lock within a certain time.
E 1070	Carousel blocked in a disc position
E 1071	Carousel blocked in the middle
E 1075	Drawer blocked in the middle
E 1076	Drawer blocked in open or closed state

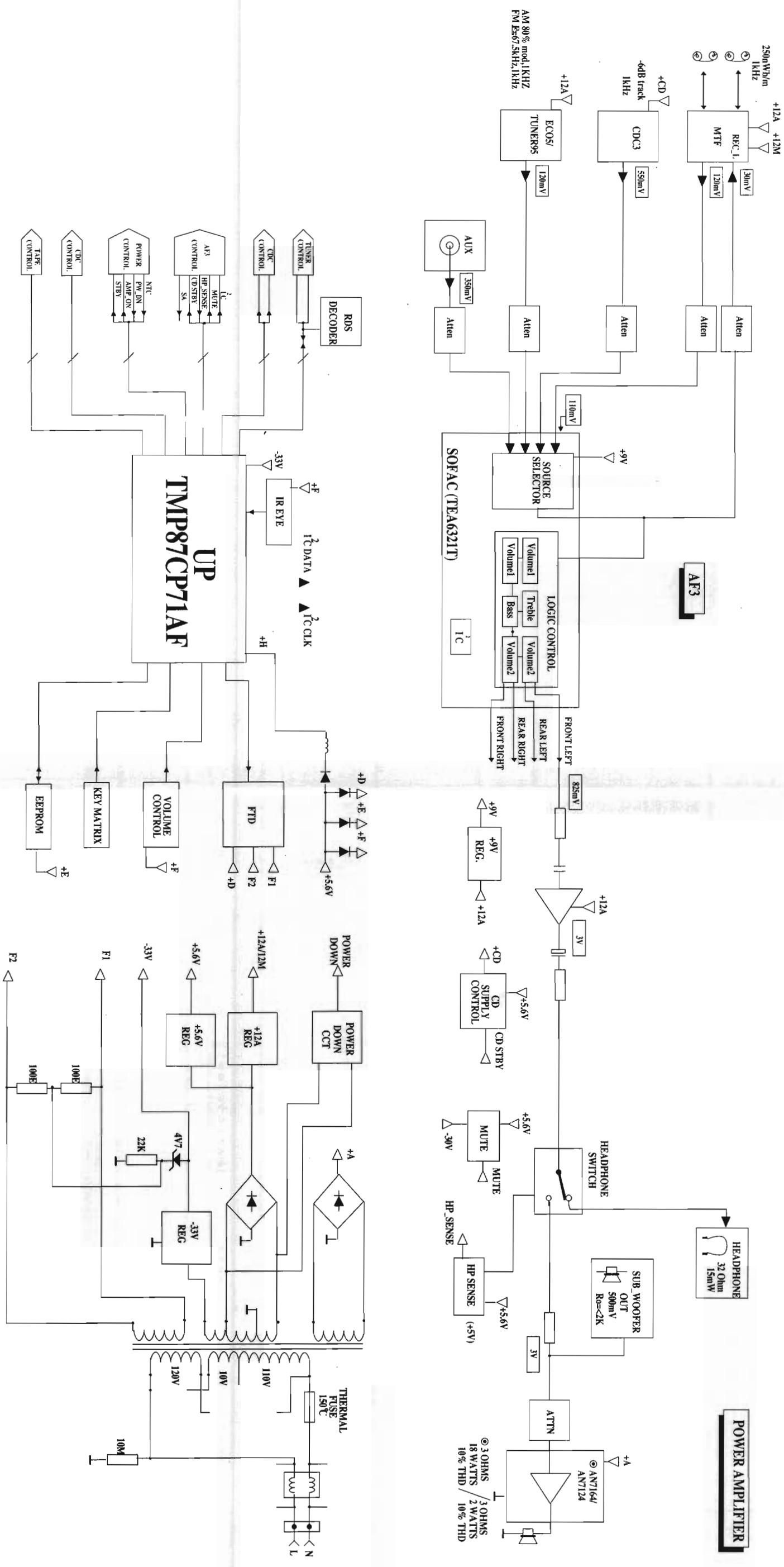
For FW335

Key activated	Display	Key activated	Display	Key activated	Display
Stop/Clear	01	Clock Set	11	Incredible Sound	21
Program (CD)	02	Timer Set	12	Dbb	22
Shuffle	03	Timer On/Off	13	Optimal	23
Search/Prev	04	Demo	14	Jazz	24
Play/Pause	05	Tuning Down	15	Rock	25
Search/Next	06	Tuning Up	16	Pop	26
CD Open/Close	07	Preset Down	17	Classic	27
Program (TU)	08	Preset Up	18	HSD	28
Band	09	Power/Standby	19	any RC keys	RC
RDS Mode	10	Scroll Source	20		

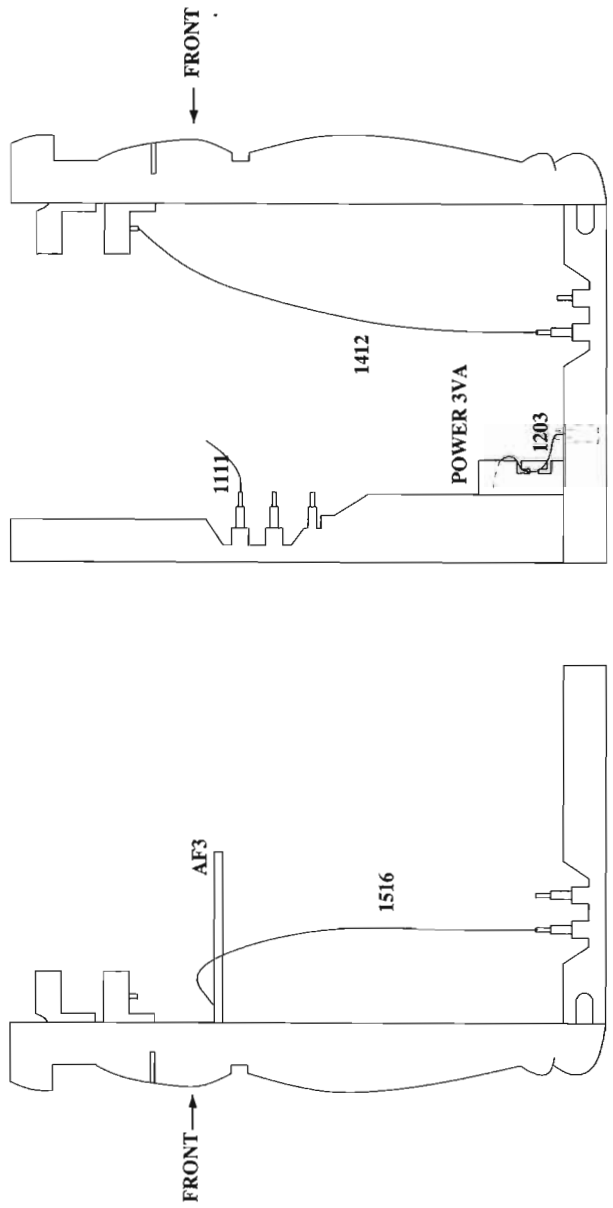
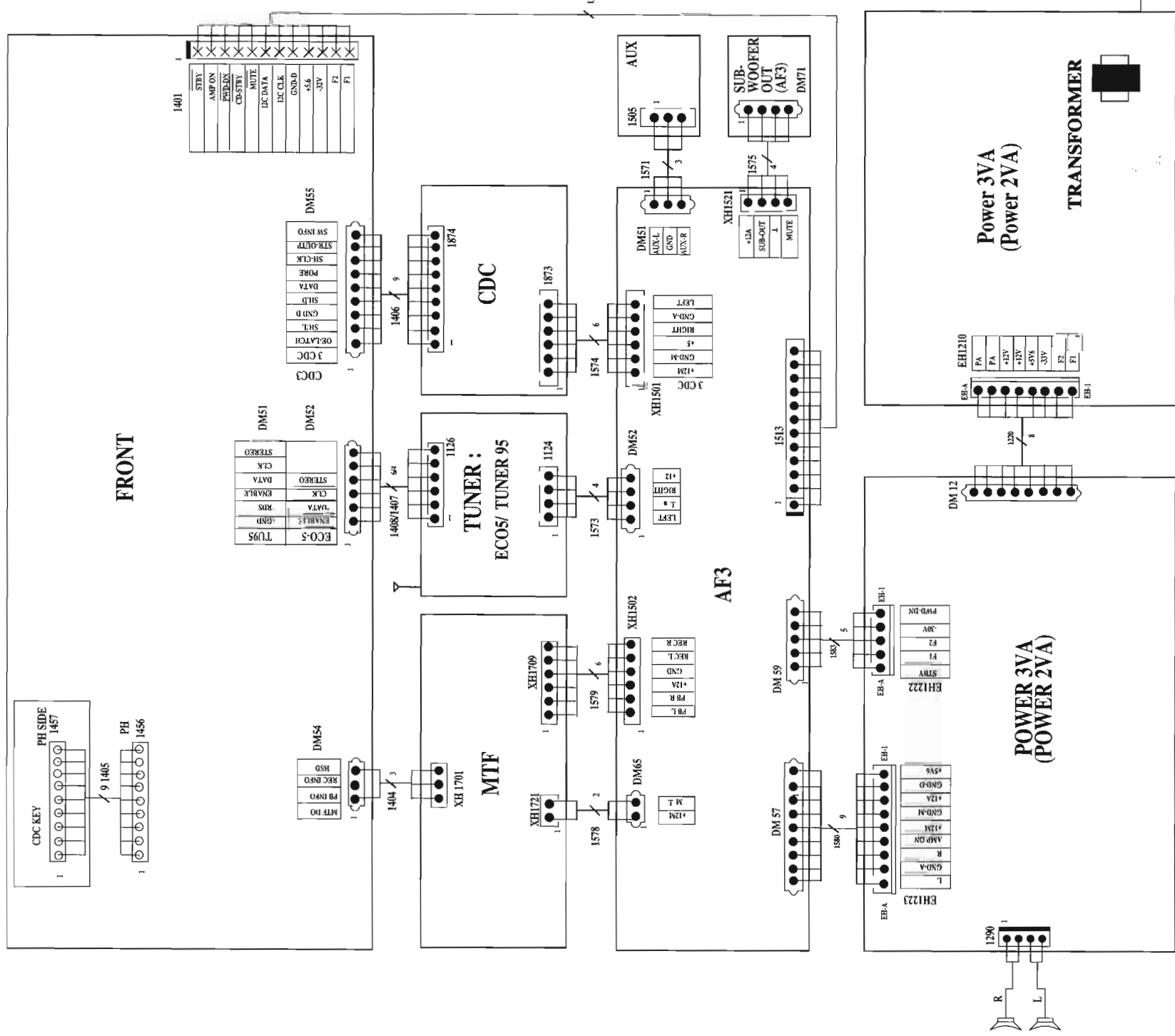
For FW315C/FW340C

Key activated	Display	Key activated	Display	Key activated	Display
Stop/Clear	01	RDS Mode	13	Scroll Source	25
Program (CDC)	02	Clock Set	14	Incredible Stereo	26
Shuffle	03	Timer Set	15	Dbb	27
Search/Prev	04	Timer On/Off	16	Optimal	28
Play/Pause	05	Demo	17	Jazz	29
Search/Next	06	Volume Up	18	Rock	30
Disc 1	07	Volume Down	19	Pop	31
Disc 2	08	Tuning Down	20	Classic	32
Disc 3	09	Tuning Up	21	HSD	33
CD Open/Close	10	Preset Down	22	any RC keys	RC
Program (TU)	11	Preset Up	23		
Band	12	Power/Standby	24		





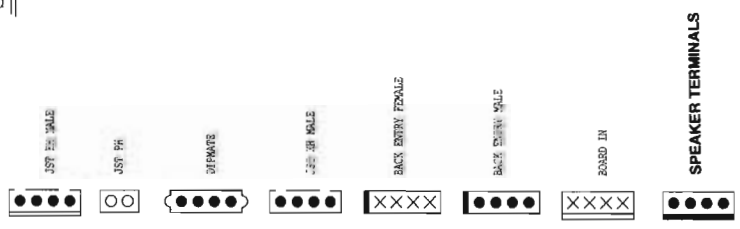
WIRING DIAGRAM



SIDE VIEW OF RIGHT SIDE OF SET

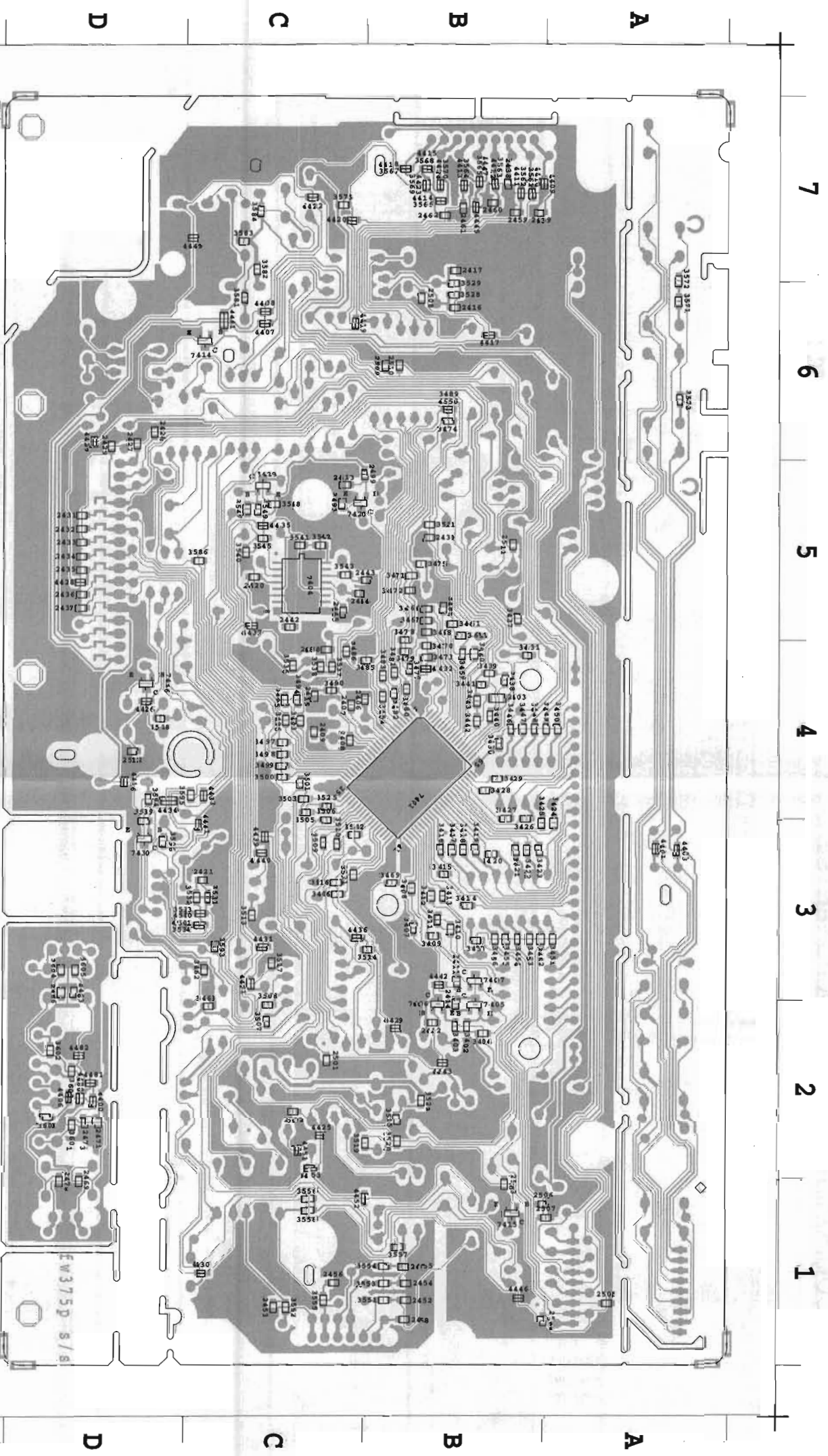
SIDE VIEW OF LEFT SIDE OF SET

ITEM	FROM	TO
1516	AF3 PCB	LUG AT BOTTOM PLATE
1412	INNER SCREW OF CDC LEFT BRACKET	LUG AT BOTTOM PLATE
1111	GND OF 6103 OF TUNER PCB	LUG AT REAR PLATE
1203	POWER 3VA	LUG AT BOTTOM PLATE



FRONT P.C. BOARD

2403	B 4	2429	D 6	2453	C 1	2499	C 5	3406	C 3	3422	B 3	3443	B 4	3462	C 3	3480	B 4	3499	C 4	3517	C 3	3558	D 3	3582	C 7	4401	A 3	4420	C 7	4436	C 3	4482	D 2
2406	C 4	2430	B 5	2454	B 1	2501	C 2	3407	B 3	3423	B 3	3446	B 4	3463	C 2	3481	B 4	3500	C 4	3518	D 4	3558	C 1	3583	C 7	4403	A 3	4421	C 3	4437	C 5	4491	C 6
2407	C 4	2431	D 5	2455	B 1	2502	C 2	3408	B 3	3424	A 3	3447	B 4	3465	B 5	3482	B 4	3501	C 4	3519	B 2	3558	B 7	3584	C 7	4406	D 2	4422	C 7	4439	C 3	4500	C 3
2408	C 4	2432	D 5	2456	C 1	2503	B 1	3409	B 3	3425	B 3	3448	B 5	3466	B 5	3483	B 4	3503	B 2	3520	B 2	3559	C 5	3585	C 5	4407	C 6	4423	B 7	4440	C 3	4501	C 3
2409	C 4	2433	D 5	2458	B 1	2504	B 1	3410	B 3	3426	B 4	3449	A 4	3467	B 5	3484	B 4	3504	C 4	3521	C 3	3559	C 5	3593	C 3	4408	C 6	4424	B 7	4441	C 3	4550	B 6
2411	B 3	2434	D 5	2459	B 1	2505	A 1	3411	B 3	3427	B 4	3450	A 4	3468	B 5	3485	C 4	3505	C 4	3522	B 2	3559	B 7	3594	D 4	4409	B 7	4425	C 2	4442	B 3	7401	B 4
2412	B 2	2435	D 5	2460	B 7	2506	B 1	3412	B 3	3428	B 4	3451	A 3	3469	B 3	3486	B 3	3507	C 2	3523	B 4	3559	C 4	3595	D 4	4410	B 7	4426	D 6	4443	B 2	7404	C 5
2413	C 5	2436	D 5	2461	B 7	2507	A 1	3413	B 3	3429	B 4	3452	B 3	3470	B 4	3488	B 6	3508	C 2	3524	B 6	3559	C 5	3596	D 3	4411	B 7	4427	D 6	4445	B 1	7405	B 2
2414	B 2	2437	D 5	2462	B 7	2508	B 6	3414	B 3	3430	B 4	3453	B 3	3471	B 5	3489	C 4	3509	C 3	3525	B 6	3559	C 5	3597	D 3	4412	B 7	4428	D 5	4446	B 1	7406	B 2
2415	C 4	2438	B 7	2463	D 3	2509	B 6	3415	B 3	3431	B 4	3454	B 3	3472	B 5	3491	C 5	3510	C 3	3526	B 6	3559	C 5	3598	D 3	4413	B 7	4429	B 2	4447	B 7	7407	B 3
2416	B 6	2439	B 7	2464	D 3	2510	B 6	3416	B 3	3432	B 5	3455	B 3	3473	B 5	3492	C 4	3511	B 5	3527	C 3	3559	C 5	3599	D 3	4414	B 7	4430	C 1	4451	C 2	7414	C 6
2417	B 7	2442	C 5	2465	D 1	2511	B 5	3417	B 3	3433	B 5	3456	B 3	3474	B 6	3493	C 4	3512	C 3	3528	C 3	3559	C 5	3600	D 2	4415	B 7	4431	C 3	4451	C 2	7415	B 1
2420	C 5	2443	C 5	2470	D 1	2512	D 4	3418	B 3	3434	B 3	3457	B 3	3475	B 5	3495	C 4	3513	C 3	3529	C 3	3559	C 5	3601	D 2	4416	D 4	4432	B 4	4452	C 1	7416	D 4
2421	C 3	2444	C 5	2471	D 2	3402	B 2	3419	B 3	3440	B 4	3459	B 4	3477	B 5	3497	C 4	3514	B 3	3530	C 4	3559	C 5	3602	D 3	4417	B 6	4433	C 4	4453	C 2	7420	C 5
2427	D 6	2445	C 5	2473	D 2	3403	B 2	3420	B 3	3441	B 4	3460	B 4	3478	B 5	3497	C 4	3515	B 3	3531	C 4	3559	C 5	3603	D 3	4418	B 7	4434	D 4	4480	D 2	7429	C 5
2428	D 6	2452	B 1	2488	C 4	3404	B 2	3421	B 3	3442	B 4	3461	B 5	3479	B 4	3498	C 4	3516	C 3	3532	C 4	3559	C 5	3604	D 2	4419	C 6	4435	C 5	4481	D 2	7430	D 3

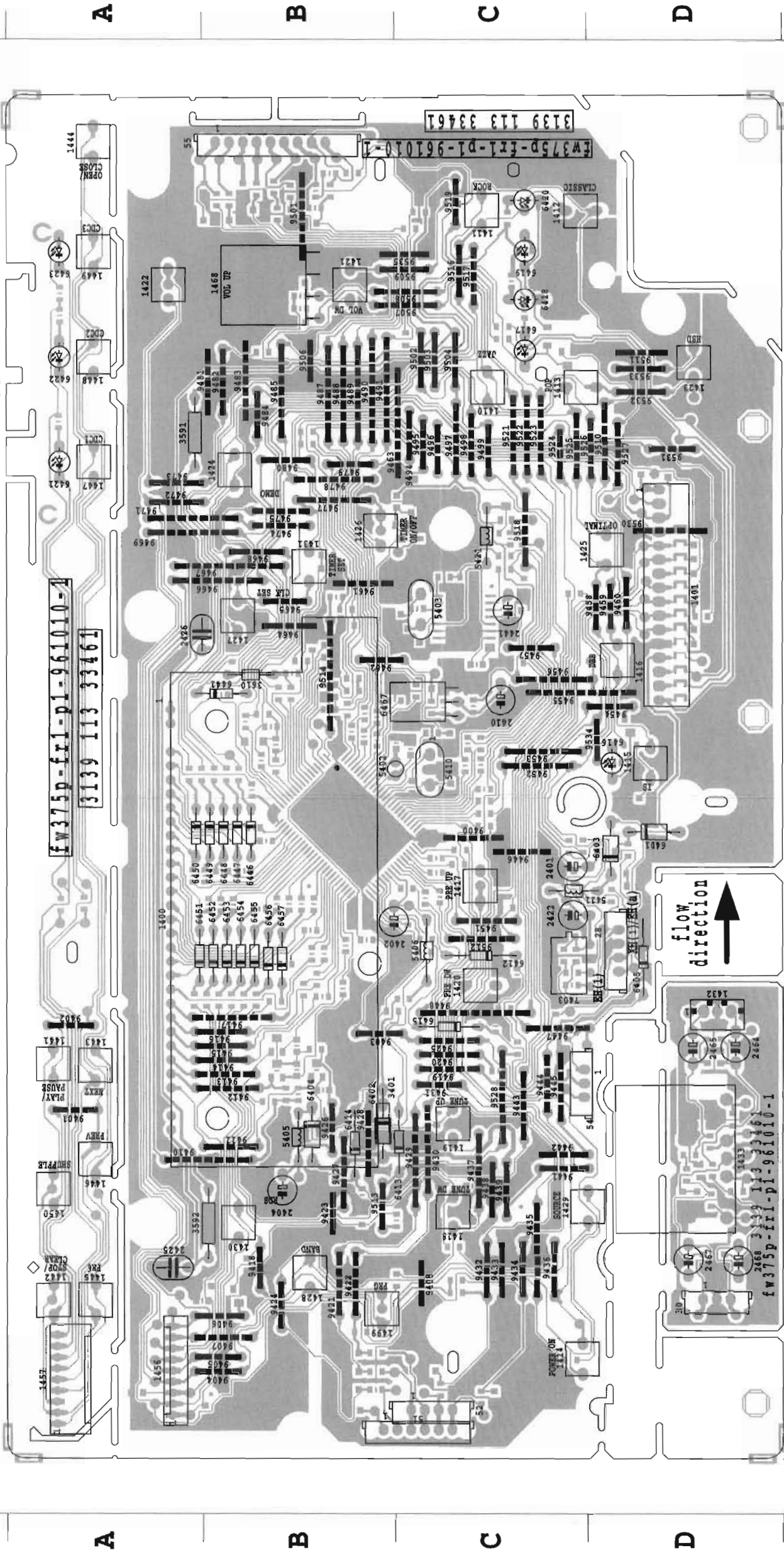


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective partslist.

28 D 3	1414 C 1	1426 B 5	1445 A 1	2404 B 2	6422 A 6	6455 B 3	9407 B 1	9420 C 3	9432 C 1	9445 C 2	9459 D 5	9472 A 5	9485 B 6	9501 B 7	9514 B 5	9528 C 2
30 D 1	1415 D 4	1427 B 5	1446 A 2	2410 C 4	6423 A 7	6456 B 3	9408 C 1	9421 B 1	9433 C 1	9446 C 4	9460 D 5	9473 A 6	9487 B 6	9502 C 6	9516 C 7	9530 D 5
51 C 1	1416 D 5	1428 B 1	1447 A 6	2422 C 3	6412 C 3	6457 B 3	9410 B 2	9422 B 1	9434 C 1	9447 C 3	9461 B 5	9474 B 5	9488 B 6	9503 C 6	9517 C 7	9531 D 6
52 C 1	1417 C 3	1429 D 2	1448 A 6	2425 A 1	6413 C 2	6467 C 4	9411 B 2	9423 B 2	9435 C 2	9448 C 3	9462 B 5	9475 B 5	9489 B 6	9504 C 6	9518 C 5	9532 D 6
54 C 2	1418 C 2	1430 B 2	1449 A 7	2426 B 5	6414 B 2	6474 B 4	9412 B 2	9424 B 1	9436 C 1	9451 C 3	9463 C 6	9477 B 5	9490 B 6	9506 B 6	9519 C 7	9533 D 6
55 B 7	1419 C 2	1431 B 5	1450 A 2	2441 C 5	6415 C 3	6488 B 4	9413 B 2	9425 C 3	9437 C 2	9452 C 4	9464 B 6	9478 B 6	9491 B 6	9507 C 6	9521 C 6	9534 D 4
1400 A 3	1420 C 3	1432 D 3	1456 A 1	2464 D 3	6416 D 4	6449 B 4	9414 B 3	9426 B 2	9438 C 2	9453 C 4	9465 B 5	9479 B 6	9494 C 6	9508 C 7	9522 C 6	9535 C 7
1401 D 5	1421 B 7	1433 D 2	1457 A 1	2465 D 3	6417 C 6	6450 A 4	9415 B 3	9427 B 2	9439 C 2	9454 D 4	9466 B 5	9480 B 6	9495 C 6	9509 C 7	9523 C 6	----
1410 C 6	1422 A 7	1441 A 3	1468 B 7	2468 D 1	6451 C 5	6488 B 3	9416 B 3	9428 B 2	9441 C 2	9455 C 4	9467 B 5	9481 B 6	9496 C 6	9510 D 6	9524 C 6	----
1411 C 7	1423 D 6	1442 A 1	1499 B 1	2469 D 1	6419 C 7	6489 B 4	9417 B 3	9429 C 2	9442 C 2	9456 C 5	9468 B 5	9497 C 6	9511 D 6	9525 C 6	9526 D 6	----
1412 C 7	1424 B 6	1443 A 3	2401 C 4	3401 B 2	6420 C 7	6483 B 3	9405 B 1	9430 C 2	9443 C 2	9457 C 5	9469 A 5	9483 B 6	9498 C 6	9512 C 3	9526 D 6	----
1413 C 6	1425 D 5	1444 A 7	2402 B 3	3591 A 6	6421 A 6	6484 B 3	9406 B 1	9431 C 2	9444 C 2	9458 D 5	9471 A 5	9484 B 6	9499 C 6	9513 B 2	9527 D 6	----

1 2 3 4 5 6 7

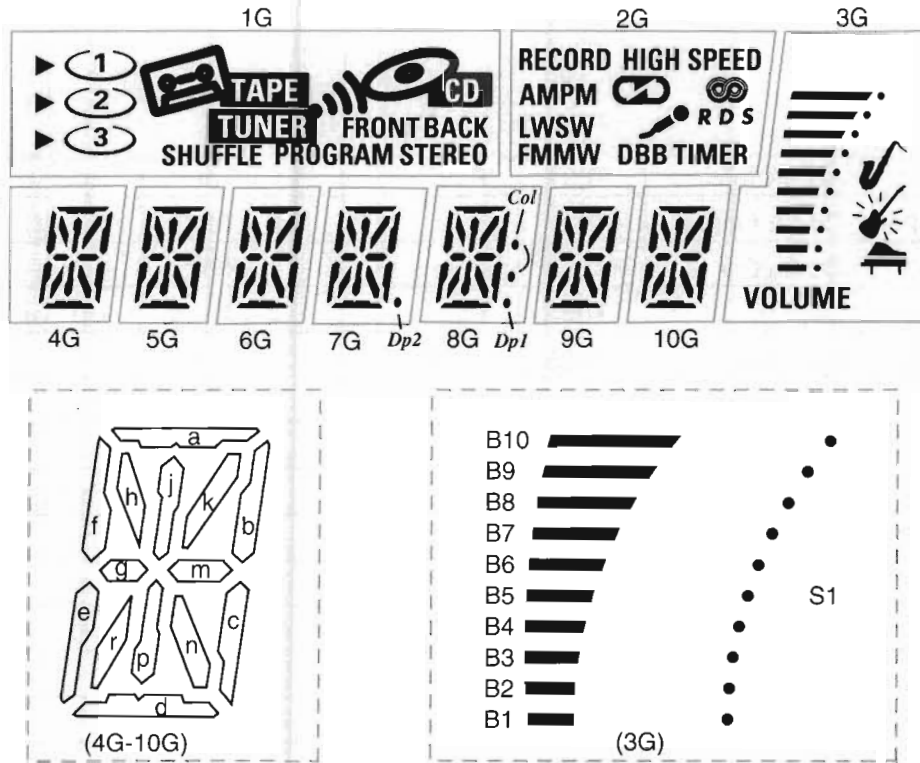
FRONT BOARD COMPONENT LAYOUT COMPONENTSIDE
fw375p/fr1panel-p1-961010-1 mpcb
3139 113 33461



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective partlist.

1 2 3 4 5 6 7

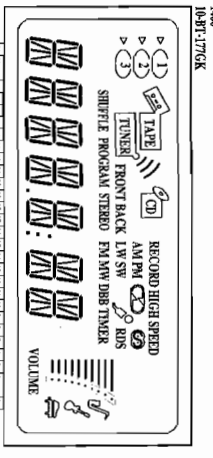
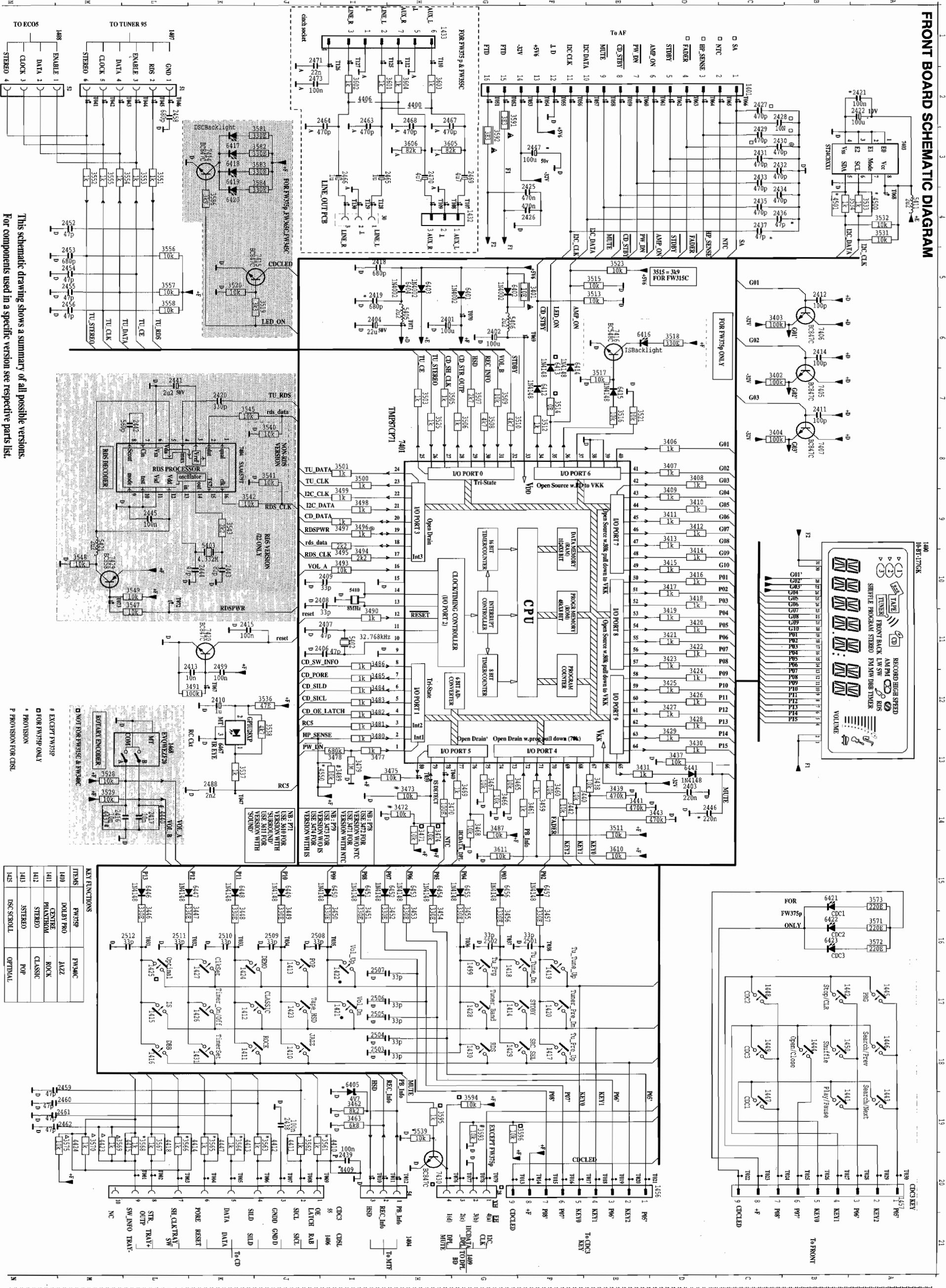
LCD PIN CONNECTION



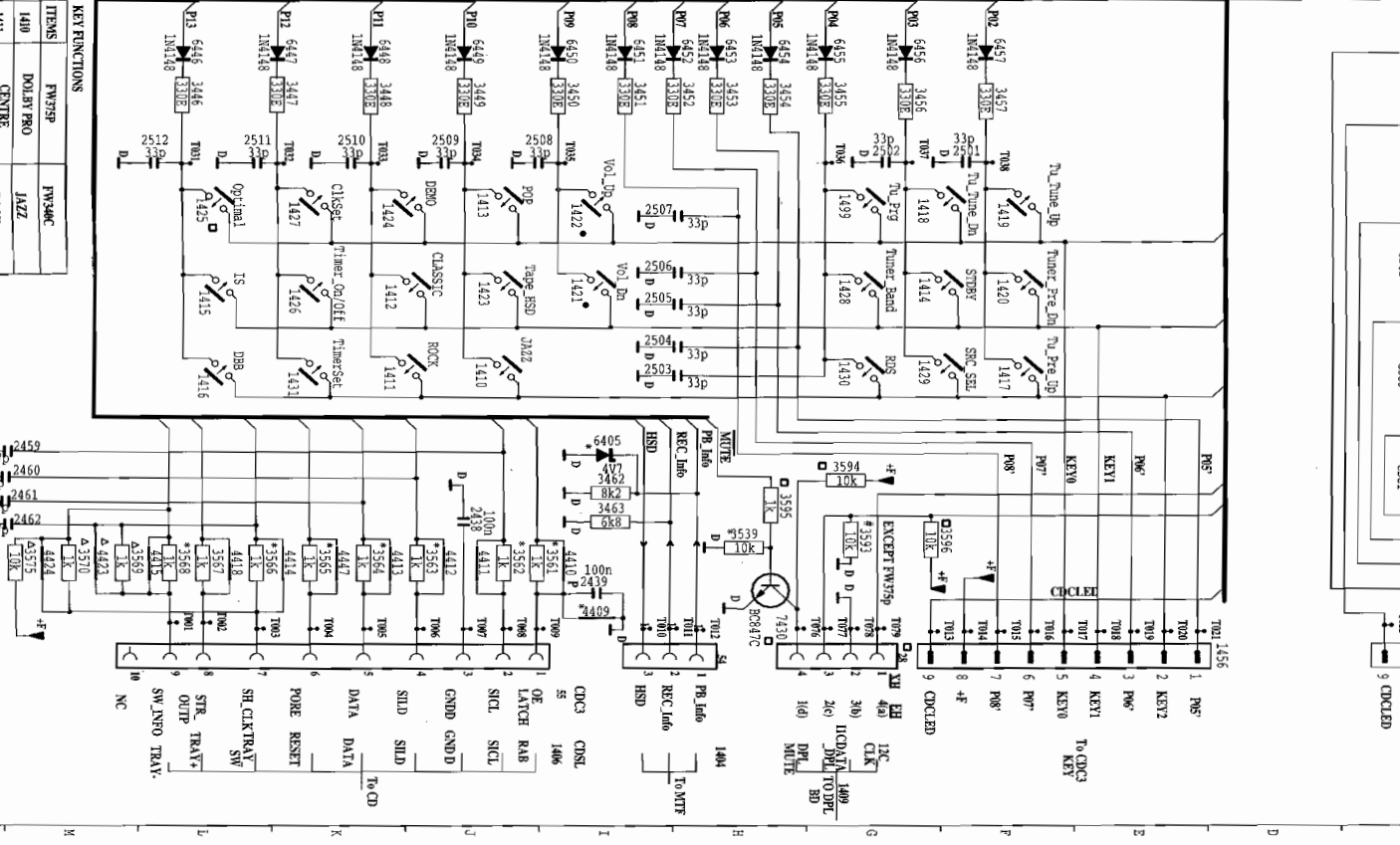
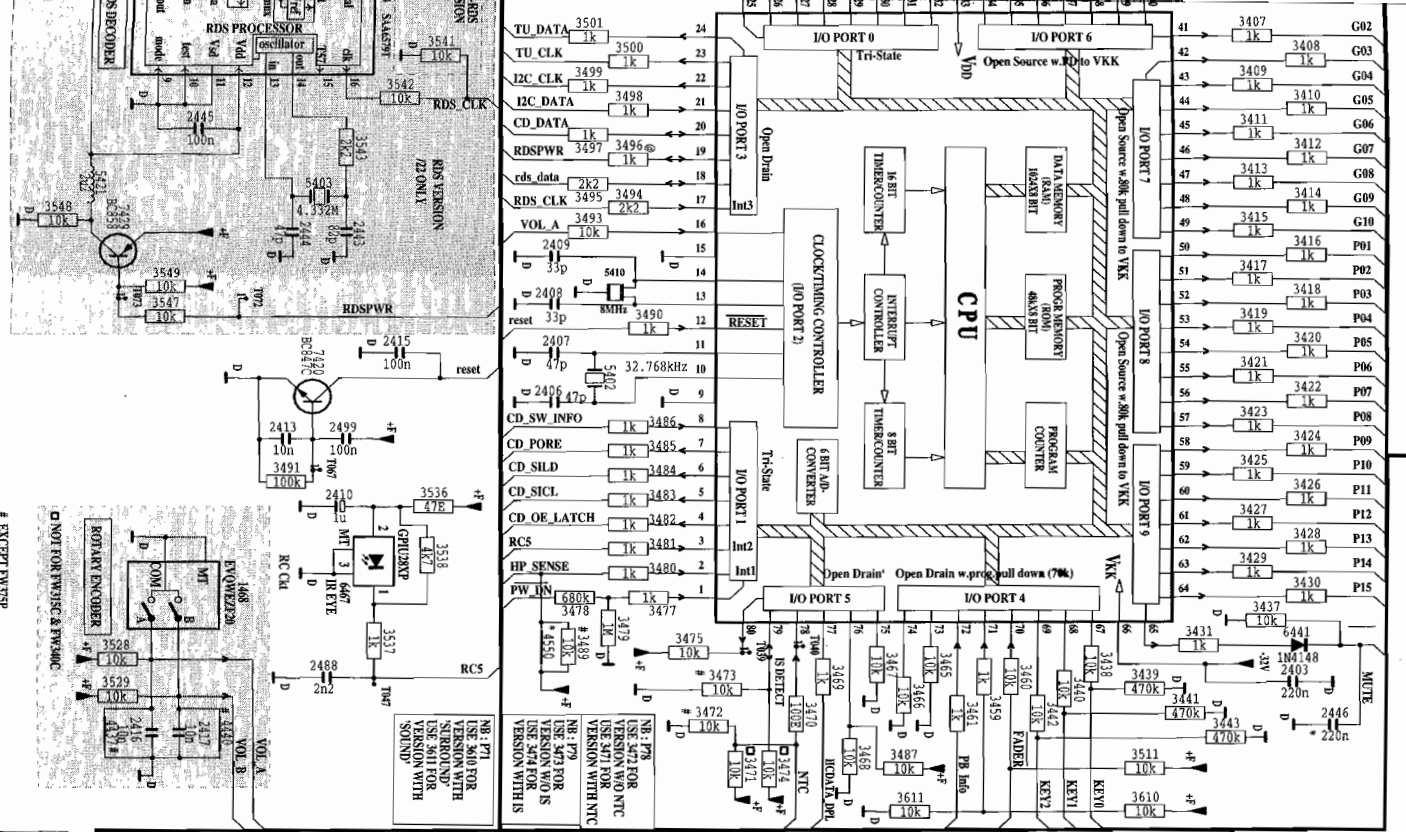
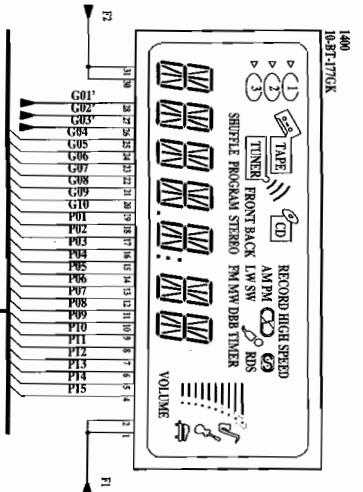
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
P1	▶ (1)	RECORD	B1	a	a	a	a	a	a	a
P2	▶ (2)	HIGH SPEED	B2	h	h	h	h	h	h	h
P3	▶ (3)	AM	B3	j, p	j, p	j, p	j, p	j, p	j, p	j, p
P4	1 2 3	PM	B4	k	k	k	k	k	k	k
P5	◌ (1)	RDS	B5	b	b	b	b	b	b	b
P6	◌ (2)	↔	B6	f	f	f	f	f	f	f
P7	◌ (3)	(B7	m	m	m	m	m	m	m
P8	TAPE)	B8	g	g	g	g	g	g	g
P9	TUNER	🎤	B9	c	c	c	c	c	c	c
P10	CD	LW	B10	e	e	e	e	e	e	e
P11	FRONT	SW	VOLUME	r	r	r	r	r	r	r
P12	BACK	FM	🎸	n	n	n	n	n	n	n
P13	SHUFFLE	MW	🎸	d	d	d	d	d	d	d
P14	PROGRAM	DBB	🎸	-	-	-	Dp2	Dp1	-	-
P15	STEREO	TIMER	🎸	-	-	-	-	col	-	-

MICROPROCESSOR PIN DESCRIPTION

T001	Cd Sw Info	T031	P13	T061	Amp_On
T002	Cd Str Output	T032	P12	T062	Stdby
T003	Cd Sh Clk	T033	P11	T063	-
T004	Cd Pore	T034	P10	T064	Hp Sen
T005	Cd Data	T035	P035	T065	-
T006	Cd Sild	T036	P04	T066	NTC
T007	GND D	T037	P03	T067	-
T008	Cd Sicl	T038	P02	T068	E2prom Sup
T009	Cd OE Latch	T039	-	T069	Vdd
T010	HSD	T040	NTC	T070	+F
T011	Rec_Info	T041	Tu Stereo	T071	+D
T012	Pb_Info	T042	Tu Clk	T072	-
T013	Cdcled	T043	Tu Data	T073	-
T014	+F	T044	Tu Enable	T074	-
T015	P08'	T045	Tu RDS	T075	-
T016	P07'	T046	Tu GND	T076	Mute
T017	KEY 0	T047	-	T077	I2C Data
T018	KEY 1	T048	-	T078	GND
T019	P06'	T049	-	T079	I2C Clk
T020	KEY 2	T050	-		
T021	P05'	T051	FTD (F2)		
T022	Cdcled	T052	FTD (F1)		
T023	+F	T053	-32V		
T024	P08'	T054	+5V6		
T025	P07'	T055	+D		
T026	KEY 0	T056	I2C Clk		
T027	KEY 1	T057	I2C Data		
T028	P06'	T058	Mute		
T029	KEY 2	T059	Cd_Stdby		
T030	P05'	T060	Pw_Dn		

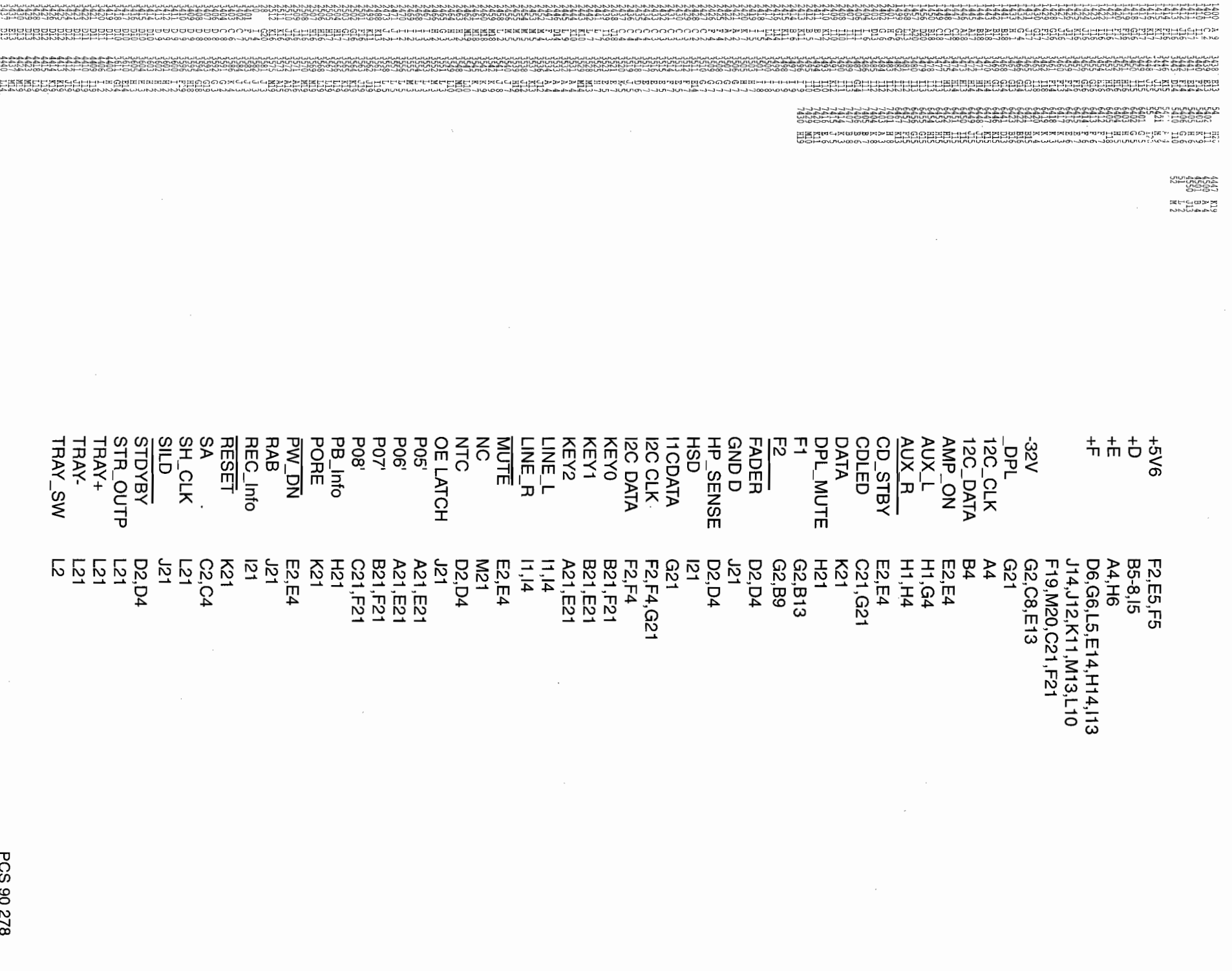


This schematic drawing shows a summary of all possible versions. For components used in a specific version see respective parts list.



- NOT FOR PHYSIC & ELECTRIC
- EXCEPT F.W37SP
- FOR F.W37SP ONLY
- * PROVISION
- P PROVISION FOR CS1L

KEYS	FUNCTIONS
F.W37SP	PHYSIC
DOUBT PRO	JAZZ
CENTRE	ROCK
STEREO	CLASSIC
STEREO	POP
DSC SCROLL	OPTIMAL



- +5V6 F2,E5,F5
- +D B5-8,I5
- +E A4,H6
- +F D6,G6,L5,E14,H14,I13

- 32V J14,J12,K11,M13,L10
- F19,M20,C21,F21
- G2,C8,E13
- G21
- A4
- B4
- E2,E4
- H1,G4
- H1,H4
- E2,E4
- C21,G21
- K21
- H21
- G2,B13
- G2,B9
- D2,D4
- D2,D4
- I21
- G21
- F2,F4,G21
- F2,F4
- B21,F21
- B21,E21
- A21,E21
- I1,I4
- I1,I4
- E2,E4
- M21
- D2,D4
- J21
- A21,E21
- A21,E21
- B21,F21
- B21,F21
- C21,F21
- H21
- K21
- E2,E4
- J21
- I21
- K21
- C2,C4
- L21
- J21
- D2,D4
- L21
- L21
- L21
- L2

- STDYBY
- STR_OUTP
- TRAY+
- TRAY-
- TRAY_SW

TUNER ADJUSTMENT TABLE (ECOS FM/AM AND FM/AM/LW - VERSIONS WITH AM-FRAME AERIAL)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	5130	4	8V ±0.2V
				check		4.3V ±0.5V (1.2V ±0.5V)
AM FM/AM-version, 10kHz grid 530 - 1700kHz	1700kHz	C	1700kHz	5123	1	8V ±0.2V
				check		1.1V ±0.4V
FM/AM - version, 9kHz grid 531 - 1602kHz	1602kHz	C	1602kHz	5123	1	6.9V ±0.2V
				check		1.1V ±0.4V
LW 153 - 279kHz	279kHz	C	279kHz	5122	1	8V ±0.2V
				check		1.1V ±0.4V
AM FM/AM/LW - version, 9kHz grid 531 - 1602kHz	1602kHz	C	1602kHz	5123	1	8V ±0.2V
				check		1.1V ±0.4V
FM/RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
				5131		mod=1kHz Δf=±22.5kHz
VCO						
FM	98MHz, 1mV	A	98MHz	3142	3	152kHz ±1kHz 1)
AM/IF						
AM	450kHz	C	IC 7101 36 220 IC 7101 40 220 100nF	5111	4	symmetric
				5112		
AM AFC		C		5114	2	0 ± 2 mV DC
AM RF 3)						
AM 4) FM/AM/LW and FM/AM version (9kHz grid) 531 - 1602kHz	1494kHz	B	1494kHz	2106	4	symmetric
				5102		
LW	198kHz	B	198kHz	5103	4	symmetric
				2106		
AM FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	B	1500kHz	2106	4	symmetric
				5102		

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna must be used.

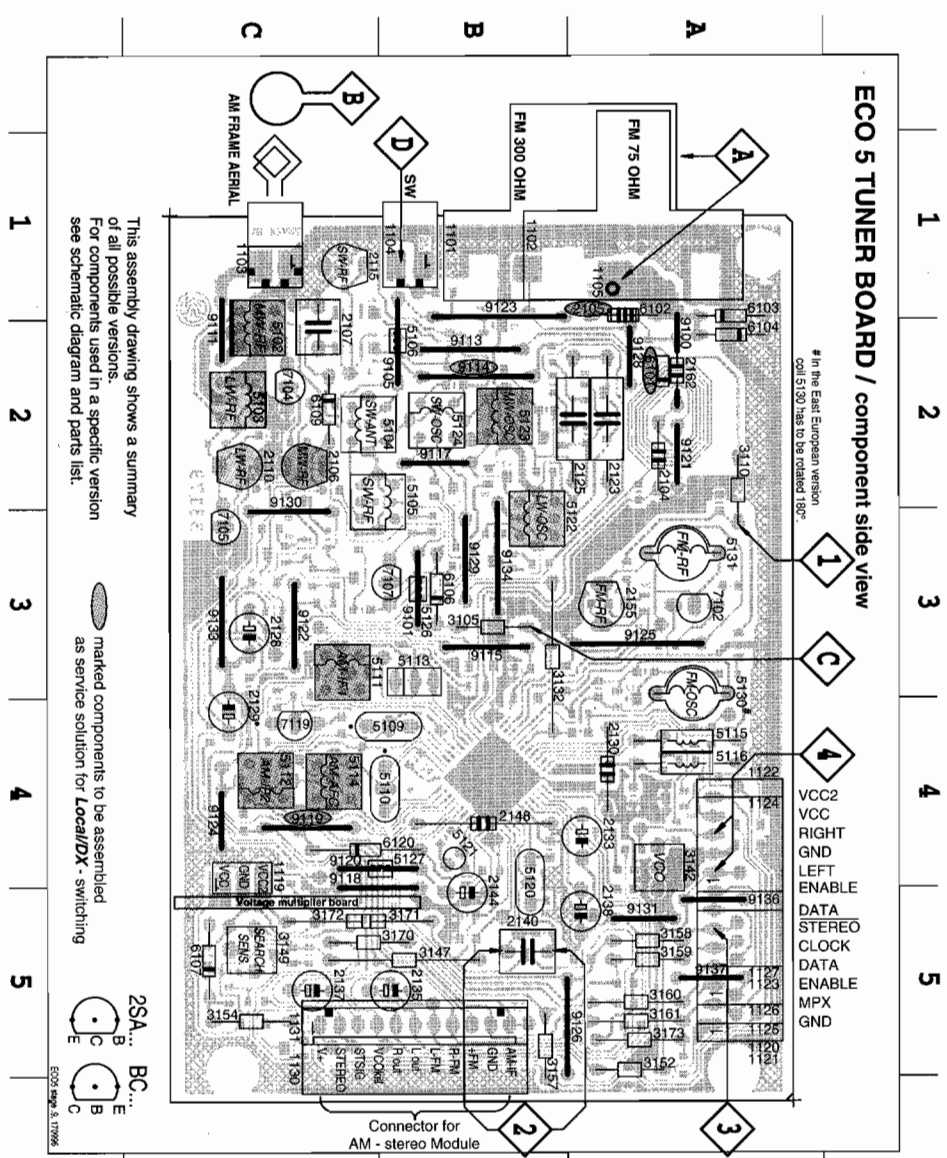
4) AM has to be aligned before LW.

Repeat

PCS 90 140

ECOS 179966

1101	A1	2129	C4	3154	C5	5112	C4	6106	B3	9119	C4
1102	A1	2130	A4	3157	B5	5113	B3	6107	C5	9120	B4
1103	C1	2133	A4	3158	A5	5114	C4	6109	C2	9121	A2
1104	B1	2135	B5	3159	A5	5115	A4	6120	C4	9122	C3
1105	A1	2137	C5	3160	A5	5116	A4	7102	A3	9123	B1
1119	C5	2138	A5	3161	A5	5120	B4	7104	C2	9124	C4
1120	A5	2140	B5	3170	C5	5121	B4	7105	C3	9125	A3
1130	B5	2144	B5	3171	C5	5122	B3	7107	B3	9126	B5
1131	B5	2148	B4	3172	C5	5123	B2	7119	C4	9128	A2
2104	A2	2155	A3	3173	A5	5124	B2	9100	A2	9129	B3
2105	A1	2162	A2	5102	C2	5126	B3	9101	B3	9130	C3
2106	C2	3105	B3	5103	C2	5127	B4	9105	B2	9131	A5
2107	C2	3110	A2	5104	C2	5130	A3	9111	C2	9133	C3
2110	C2	3132	B3	5105	B2	5131	A3	9113	B2	9134	B3
2115	C1	3142	A4	5106	B2	6101	A2	9114	B2	9136	A5
2123	A2	3147	B5	5109	B4	6102	A1	9115	B3	9137	A5
2125	A2	3149	C5	5110	B4	6103	A1	9117	B2		
2128	C3	3152	A5	5111	C3	6104	A2	9118	B4		

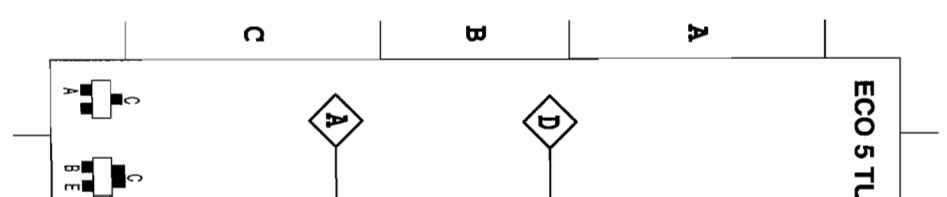


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and parts list.

marked components to be assembled as service solution for Local/DX - switching

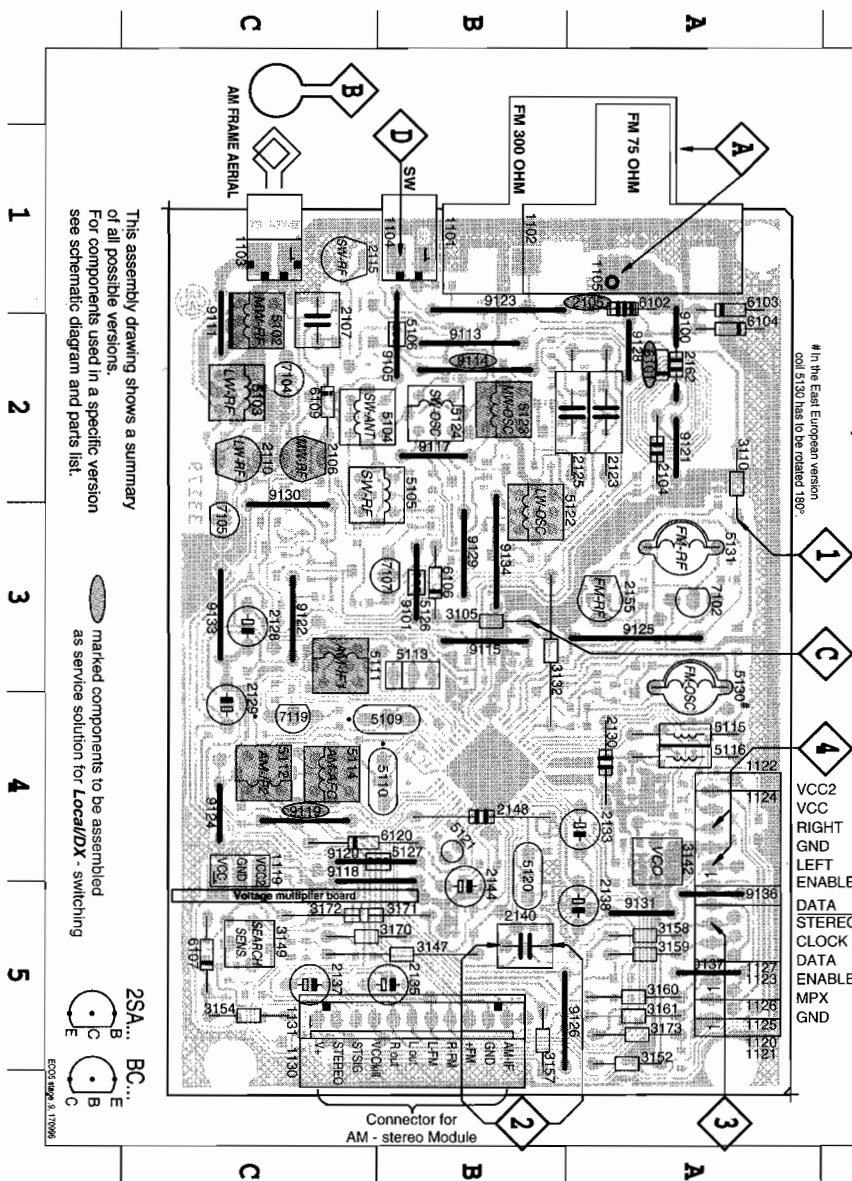
2SA... BC...
A B C E
A B C

ECOS 179966



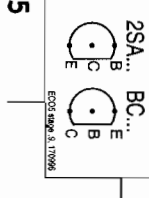
1101	A1	2129	C4	3154	C5	5112	C4	6106	B3	9119	C4
1102	A1	2130	A4	3157	B5	5113	B3	6107	C5	9120	B4
1103	C1	2133	A4	3158	A5	5114	C4	6109	C2	9121	A2
1104	B1	2135	B5	3159	A5	5115	A4	6120	C4	9122	C3
1105	A1	2137	C5	3160	A5	5116	A4	7102	A3	9123	B1
1119	C5	2138	A5	3161	A5	5120	B4	7104	C2	9124	C4
1120	A5	2140	B5	3170	C5	5121	B4	7105	C3	9125	A3
1130	B5	2144	B5	3171	C5	5122	B3	7107	B3	9126	B5
1131	B5	2148	B4	3172	C5	5123	B2	7119	C4	9128	A2
2104	A2	2155	A3	3173	A5	5124	B2	9100	A2	9129	B3
2105	A1	2162	A2	5102	C2	5126	B3	9101	B3	9130	C3
2106	C2	3105	B3	5103	C2	5127	B4	9105	B2	9131	A5
2107	C2	3110	A2	5104	C2	5130	A3	9111	C2	9133	C3
2110	C2	3132	B3	5105	B2	5131	A3	9113	B2	9134	B3
2115	C1	3142	A4	5106	B2	6101	A2	9114	B2	9136	A5
2123	A2	3147	B5	5109	B4	6102	A1	9115	B3	9137	A5
2125	A2	3149	C5	5110	B4	6103	A1	9117	B2		
2128	C3	3152	A5	5111	C3	6104	A2	9118	B4		

ECO 5 TUNER BOARD / component side view



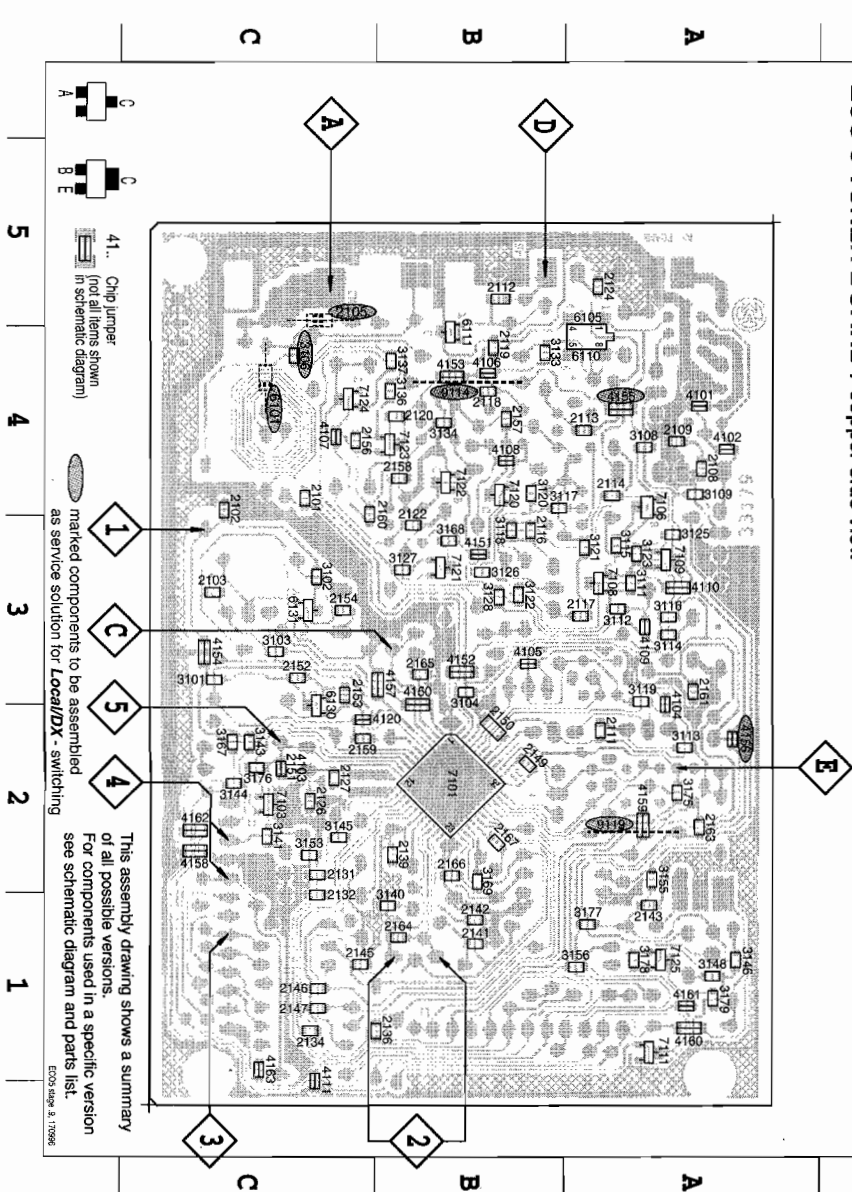
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and parts list.

marked components to be assembled as service solution for Local/DX - switching



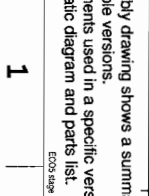
2101	C4	2127	C2	2154	C3	3108	A4	3127	B3	3168	B3	4111	C1	6110	A4
2102	C4	2131	C2	2156	C4	3109	A4	3128	B3	3169	B2	4120	C2	6111	B4
2103	C3	2132	C1	2157	B4	3111	A3	3133	B4	3175	A2	4150	B2	6130	C2
2108	A4	2134	C1	2158	B4	3112	A3	3134	B4	3176	C2	4151	B3	6131	C3
2109	A4	2136	B1	2159	C2	3113	A2	3136	B4	3177	A1	4152	B3	7101	B2
2111	A2	2139	B2	2160	C4	3114	A3	3137	B4	3178	A1	4153	B4	7103	C2
2112	B5	2141	B1	2161	A3	3115	A3	3140	B1	3179	A1	4154	C3	7106	A4
2113	A4	2142	B1	2163	A2	3116	A3	3141	C2	4101	A4	4155	A4	7108	A3
2114	A4	2143	A1	2164	B1	3117	B4	3143	C2	4102	A4	4156	A2	7109	A3
2116	B3	2145	C1	2165	B3	3118	B3	3144	C2	4103	C2	4157	B3	7111	A1
2117	A3	2146	C1	2166	B2	3119	A3	3145	C2	4104	A2	4158	C2	7120	B4
2118	B4	2147	C1	2167	B2	3120	B4	3146	A1	4105	B3	4159	A2	7121	B3
2119	B4	2149	B2	3101	C3	3121	A3	3148	A1	4106	B4	4160	A1	7122	B4
2120	B4	2150	B2	3102	C3	3122	B3	3153	C2	4107	C4	4161	A1	7123	B4
2122	B3	2151	C2	3103	C3	3123	A3	3155	A2	4108	B4	4162	C1	7124	C4
2124	A5	2152	C3	3104	B3	3125	A3	3156	A1	4109	A3	4163	C1	7125	A1
2126	C2	2153	C3	3106	C4	3126	B3	3167	C2	4110	A3	6105	A4		

ECO 5 TUNER BOARD / copper side view

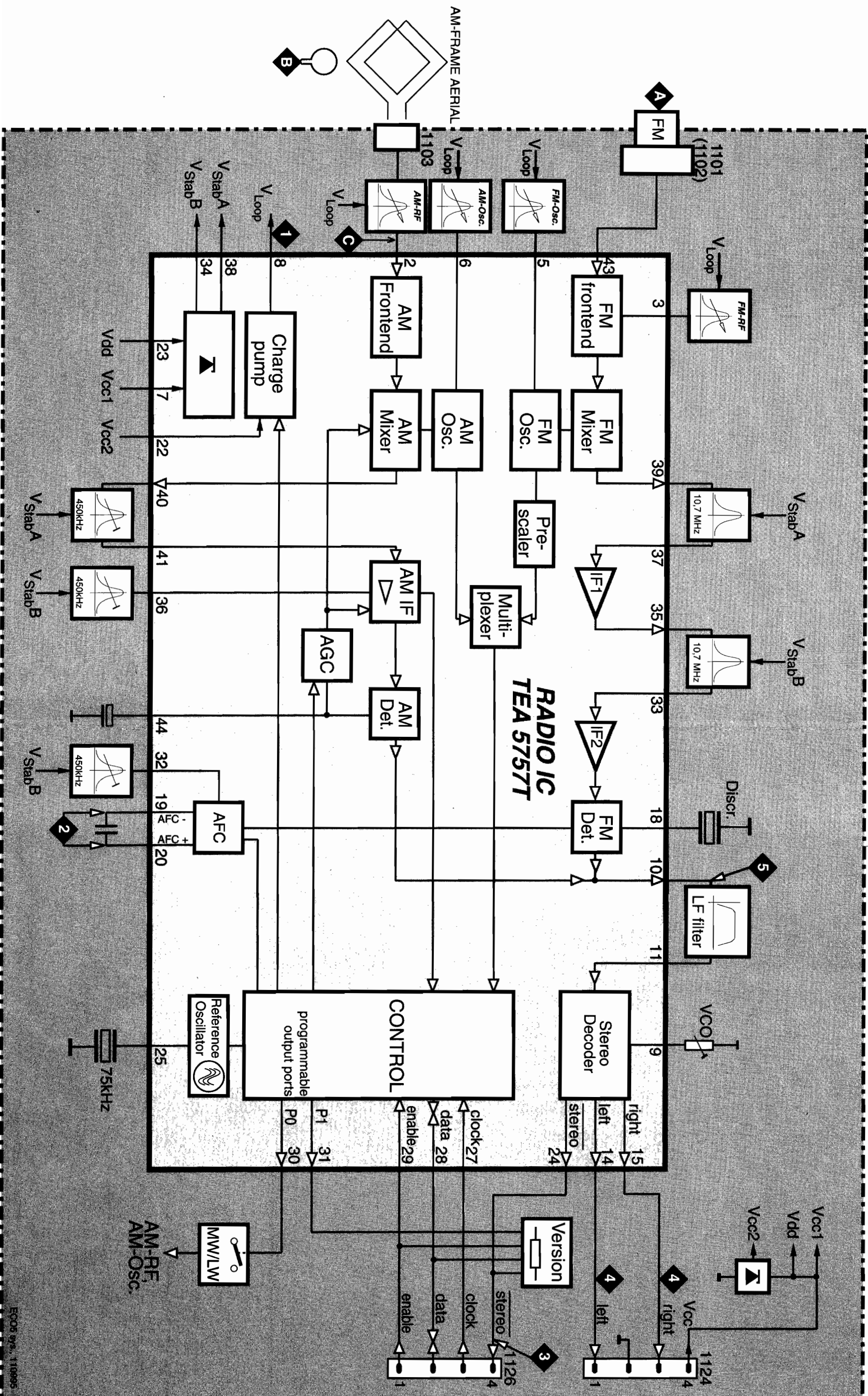


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and parts list.

marked components to be assembled as service solution for Local/DX - switching



TUNER BOARD ECO 5 systems

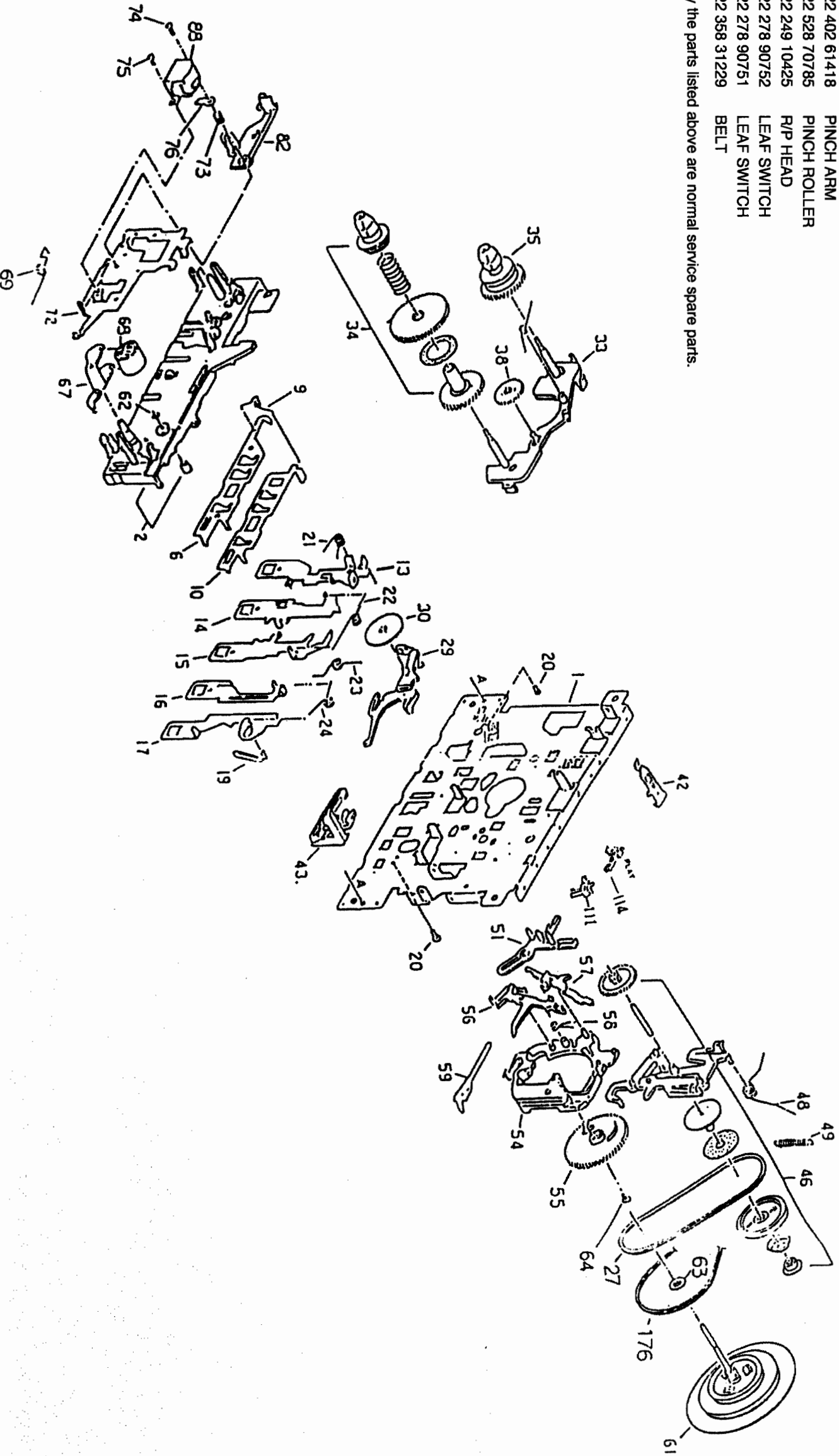


ECO5 9/85, 110995

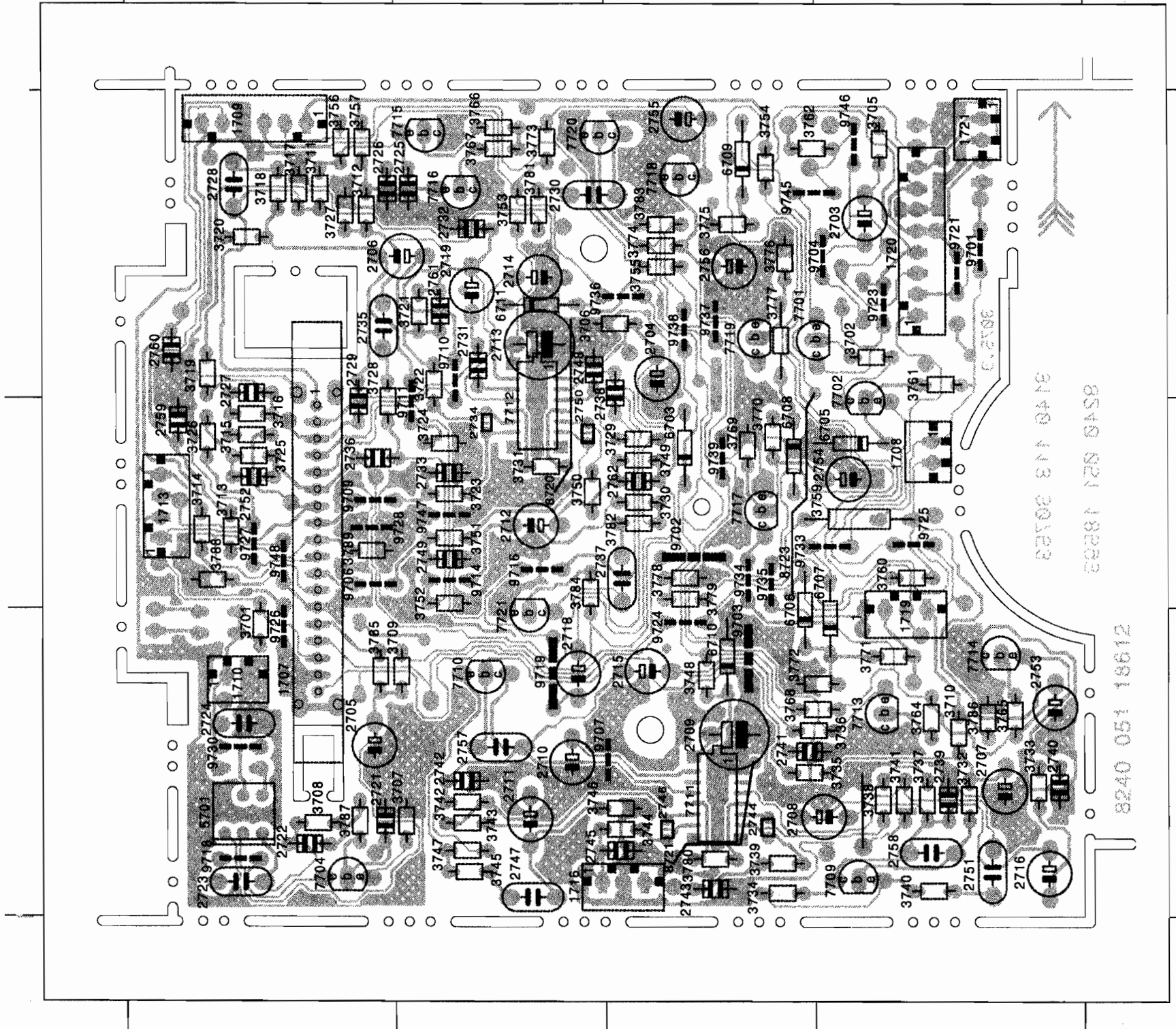
PLAY CASSETTE DECK (A) MECHANISM EXPLODED VIEW AND PARTS LIST

MECHANISM A - PLAYBACK DECK	
27	4822 358 31231 DRIVING BELT
43	4822 403 30811 EJECT LEVER
67	4822 402 61418 PINCH ARM
68	4822 528 70785 PINCH ROLLER
88	4822 249 10425 R/P HEAD
111	4822 278 90752 LEAF SWITCH
114	4822 278 90751 LEAF SWITCH
176	4822 358 31229 BELT

Note: Only the parts listed above are normal service spare parts.



CASSETTE DECK P.C. BOARD



1707 A 2	2752 A 2	3748 C 1	7713 D 1
1708 D 2	2753 D 1	3749 C 2	7714 D 1
1709 A 3	2754 D 2	3750 B 2	7715 B 3
1710 A 1	2755 C 3	3751 B 2	7716 B 3
1713 A 2	2756 C 3	3752 B 2	7717 C 2
1716 C 1	2757 B 1	3753 B 3	7718 C 3
1719 D 1	2758 D 1	3754 C 3	7719 C 3
1720 D 3	2759 A 2	3755 C 3	7720 B 3
1721 D 3	2760 A 3	3756 A 3	7721 B 1
2703 D 3	2761 B 3	3757 A 3	9701 D 3
2704 C 3	2762 C 2	3759 D 2	9702 C 2
2705 A 1	3701 A 1	3760 D 2	9703 C 1
2706 B 3	3702 D 3	3761 D 3	9704 D 3
2707 D 1	3705 D 3	3762 C 3	9706 A 2
2708 D 1	3706 C 3	3764 D 1	9707 C 1
2709 C 1	3707 B 1	3765 D 1	9709 A 2
2710 B 1	3708 A 1	3766 B 3	9710 B 3
2711 B 1	3709 B 1	3767 B 3	9711 B 2
2712 B 2	3710 D 1	3768 D 1	9714 B 2
2713 B 3	3711 A 3	3769 C 2	9716 B 2
2714 B 3	3712 A 3	3770 C 2	9718 A 1
2715 C 1	3713 A 2	3771 D 1	9719 B 1
2716 D 1	3714 A 2	3772 D 1	9721 D 3
2718 B 1	3715 A 2	3773 B 3	9723 D 3
2719 B 3	3716 A 2	3774 C 3	9724 C 1
2721 A 1	3717 A 3	3775 C 3	9725 D 2
2722 A 1	3718 A 3	3776 C 3	9726 A 1
2723 A 1	3719 A 3	3777 C 3	9727 A 2
2724 A 1	3720 A 3	3778 C 2	9728 A 2
2725 B 3	3721 B 3	3779 C 2	9730 A 1
2726 A 3	3722 B 3	3780 C 1	9733 D 2
2727 A 3	3723 B 2	3781 B 3	9734 C 2
2728 A 3	3724 B 2	3782 C 2	9735 C 2
2729 A 2	3725 A 2	3783 C 3	9736 C 3
2730 B 3	3726 A 2	3784 B 2	9737 C 3
2731 B 3	3727 A 3	3785 A 1	9738 C 3
2732 B 3	3728 A 2	3786 D 1	9739 C 2
2733 B 2	3729 C 2	3787 A 1	9745 D 3
2734 B 2	3730 C 2	3788 A 2	9746 D 3
2735 A 3	3731 B 2	3789 A 2	9747 B 2
2736 A 2	3732 D 1	5701 A 1	9748 A 2
2737 C 2	3733 D 1	6703 C 2	8720 B 2
2738 C 3	3734 C 1	6705 D 2	8721 C 1
2739 D 1	3735 C 1	6706 C 1	8723 C 2
2740 D 1	3736 C 1	6707 D 1	
2741 C 1	3737 D 1	6708 C 2	
2742 B 1	3738 D 1	6709 C 3	
2743 C 1	3739 C 1	6710 C 1	
2744 C 1	3740 D 1	6711 B 3	
2745 C 1	3741 D 1	7701 D 3	
2746 C 1	3742 B 1	7702 D 2	
2747 B 1	3743 B 1	7704 A 1	
2748 B 3	3744 C 1	7709 D 1	
2749 B 2	3745 B 1	7710 B 1	
2750 B 2	3746 C 1	7711 C 1	
2751 D 1	3747 B 1	7712 B 2	

1 2 3

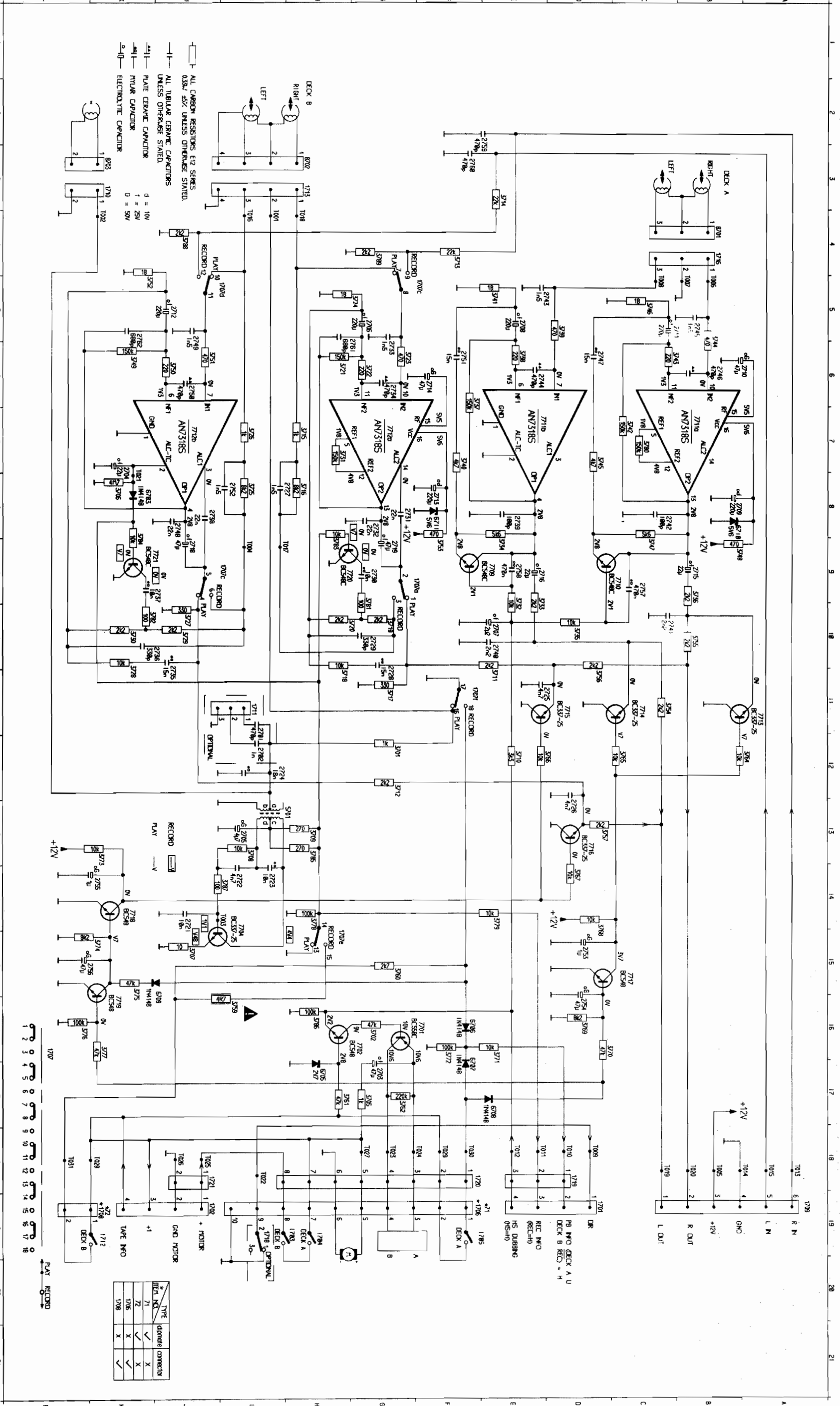
8240 051 18612

8270C 811 0419

82881 128 0458

CASSETTE DECK SCHEMATIC DIAGRAM

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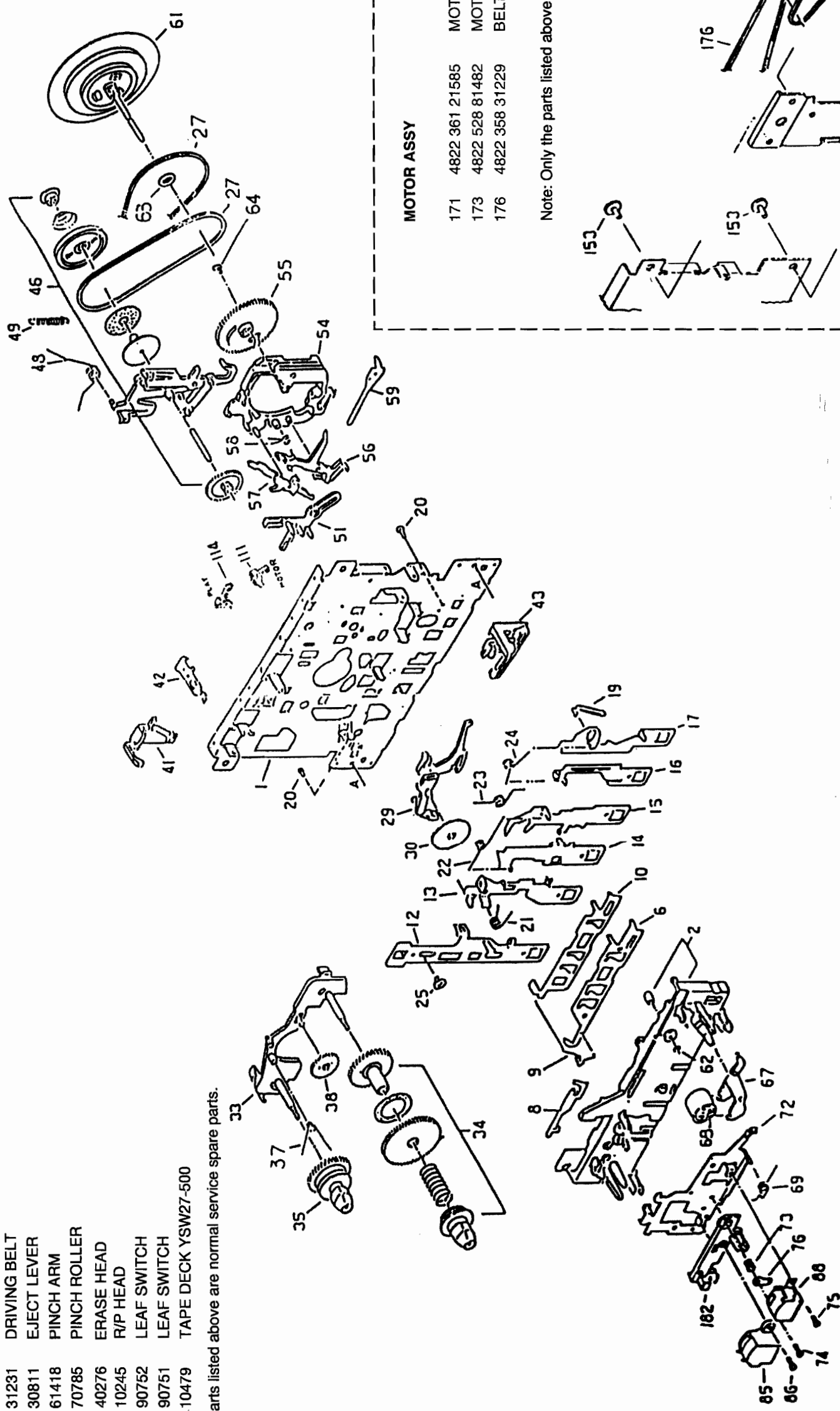
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1796	Diode	1	1796
1797	Diode	1	1797
1798	Diode	1	1798
1799	Diode	1	1799
1800	Diode	1	1800

RECORD/PLAYBACK DECK (B)
MECHANISM AND MOTOR ASSEMBLY
EXPLODED VIEW AND PARTS LIST

MECHANISM B - PLAYBACK DECK

- 27 4822 358 31231 DRIVING BELT
- 43 4822 403 30811 EJECT LEVER
- 67 4822 402 61418 PINCH ARM
- 68 4822 528 70785 PINCH ROLLER
- 85 4822 249 40276 ERASE HEAD
- 88 4822 249 10245 R/P HEAD
- 111 4822 278 90752 LEAF SWITCH
- 114 4822 278 90751 LEAF SWITCH
- 1770 4822 691 10479 TAPE DECK YSW27-500

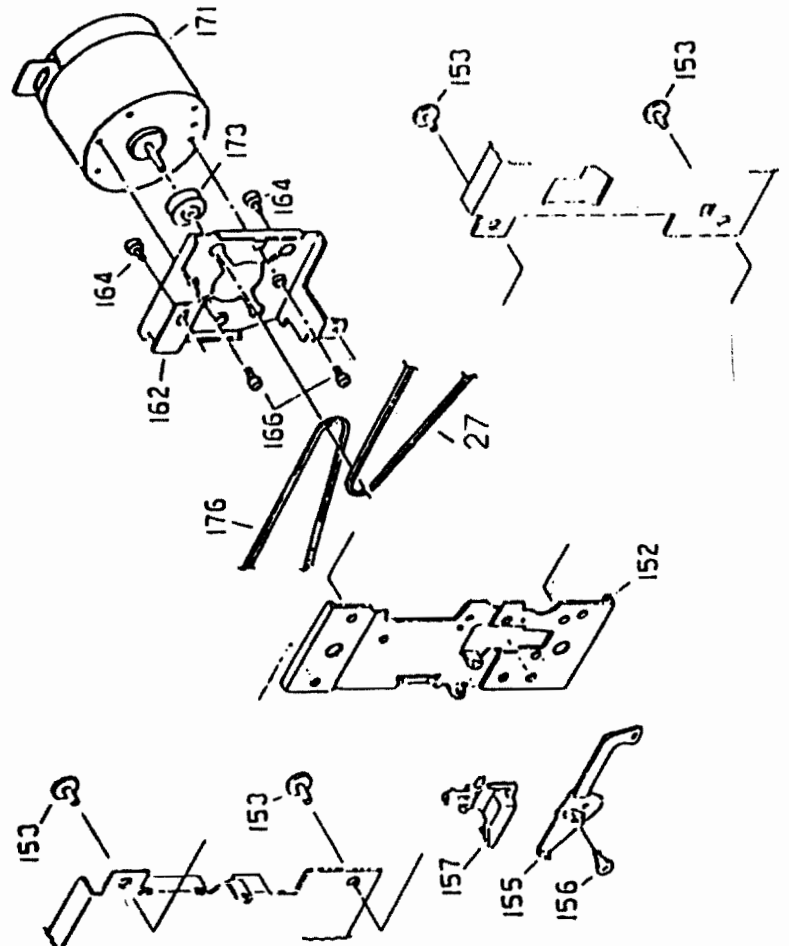
Note: Only the parts listed above are normal service spare parts.



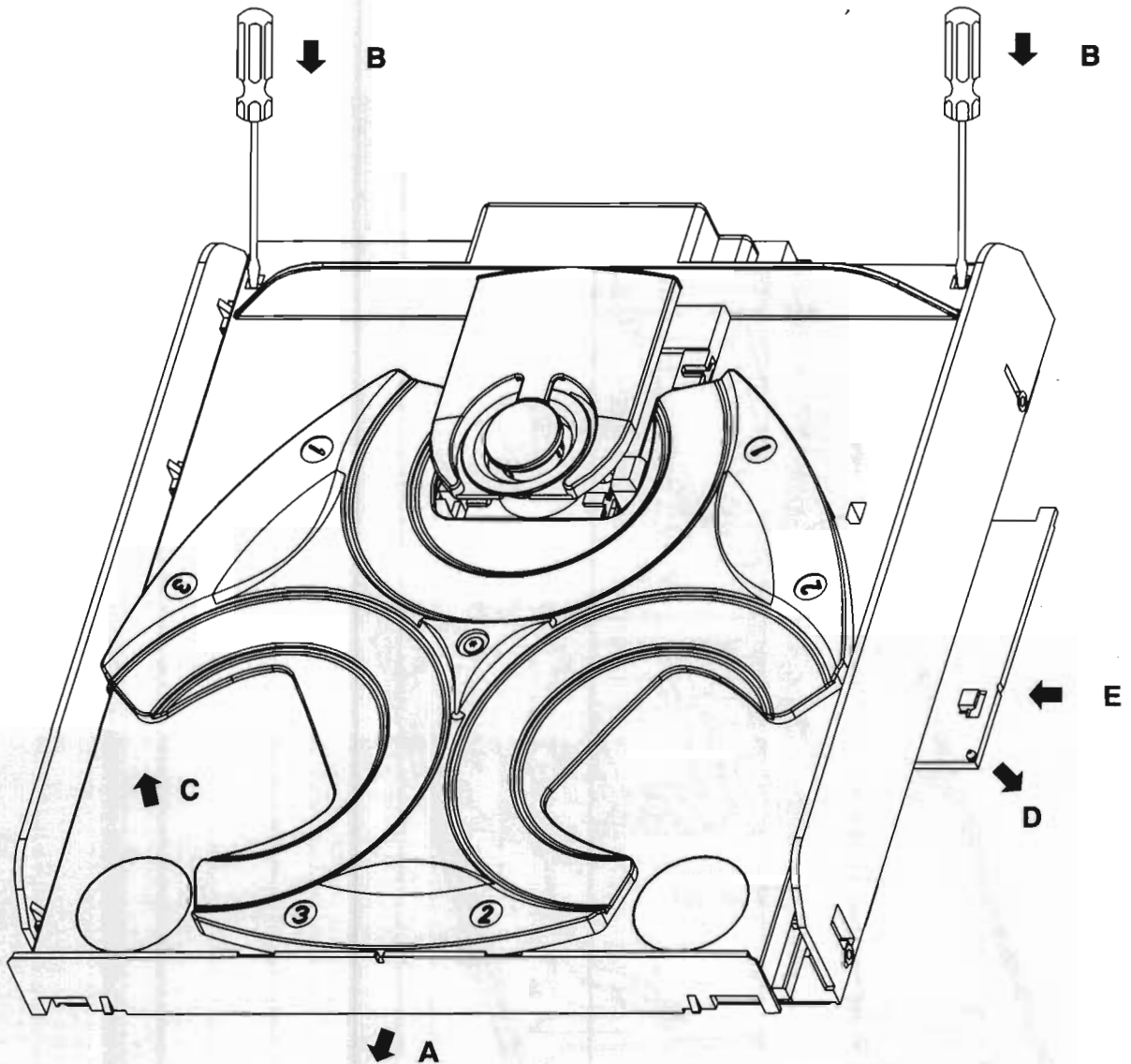
MOTOR ASSY

- 171 4822 361 21585 MOTOR
- 173 4822 528 81482 MOTOR PULLEY
- 176 4822 358 31229 BELT

Note: Only the parts listed above are normal service spare parts.



DEMOUNTING HINTS

**DEMOUNTING OF DRAWER**

- A Pull drawer outward
- B Unlock drawer with screwdriver
- C Lift drawer to demount from chassis

DEMOUNTING OF FLEX PLATE

- D Lift plate to unlock pin from bottom plate
- E Move plate inward to demount from bottom plate

SERVICING HINTS

REPLACEMENT OF CDM-12.1

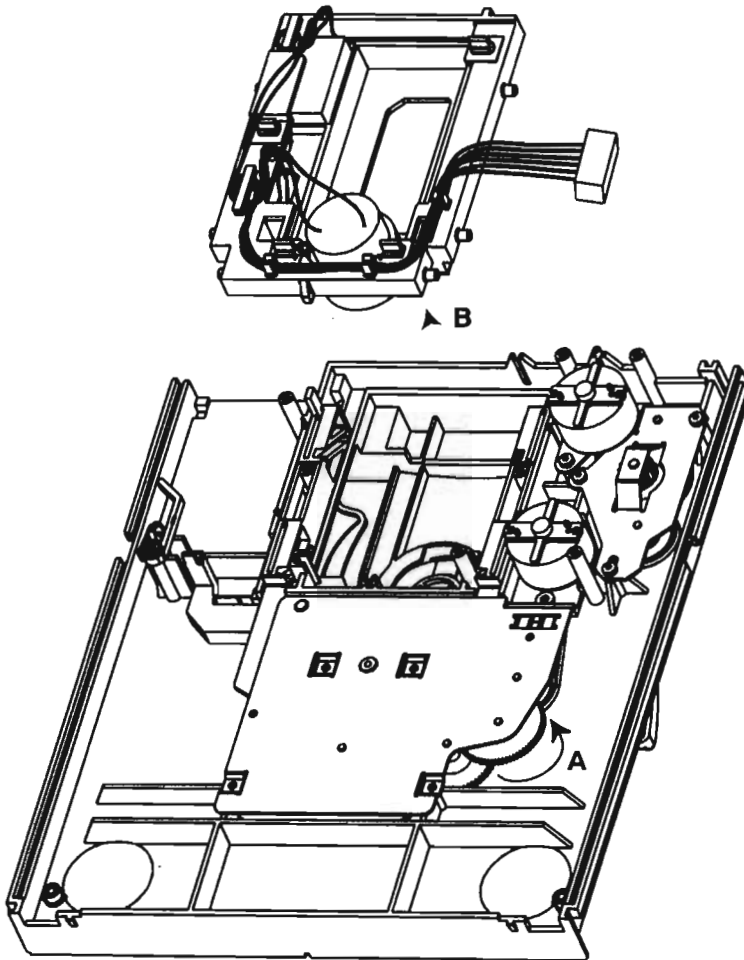
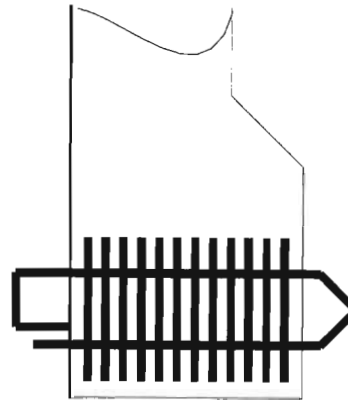
See also exploded view of changer mechanism.

1. Demount flex plate (140).
2. Demount printboard: remove 6 screws and desolder lips of tray motor and carousel motor.
3. Disconnect flexfoil and JST connector of CDM from PCB. Put paper clip on flexfoil to protect CDM against laser damage.
4. Remove 2 screws 107 and 108 and demount CDM locks 105 and 106.
5. Turn gearwheel 42 of disc-change-mechanism by finger to move CDM-support into upper position (position of carousel between 2 discs during changing). **A**
6. Demount CDM-support 95. **B**

Note: 140, 105, 106, etc., refers to CDC Exploded Views 1 & 2.

7. Replace CDM 100. The wire tree of JST connector must be desoldered and resoldered on the new CDM.

CDM flex foil



MOUNTING OF CAROUSEL

1. Turn gearwheel 42 of disc change mechanism by finger until CDM is in play position.
2. Mount carousel 115 so that disc is positioned right on the turntable. Carousel position number doesn't matter.

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CDM-ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. REFER TO SAFETY MEASURES:

- TURN OFF POWER SUPPLY
- ESD PROTECTION

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps must be made when replacing the CDM mechanism:

1. Disconnect old CDM flexfoil from printed board
2. Connect paperclip to CDM flexfoil to short-circuit flexfoil (fig. 1)
3. Short-circuit printed board with **brass-sheet (4822 321 11197)** plugged into the flexfoil connector (fig. 2)
4. Remove old CDM mechanism
5. Position new CDM mechanism in its studs
6. Remove short-circuit from printed board connector
7. Remove short-circuit from flexfoil of new CDM
8. Connect new flexfoil to print connector (fig. 3)

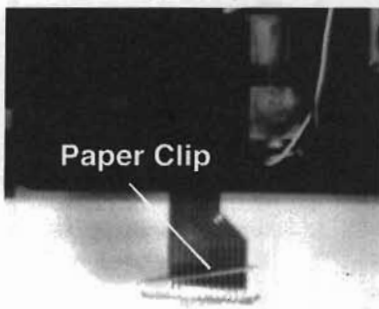


fig. 1

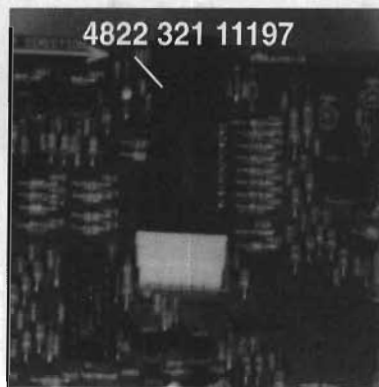


fig. 2

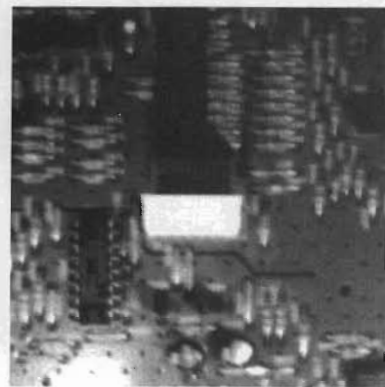
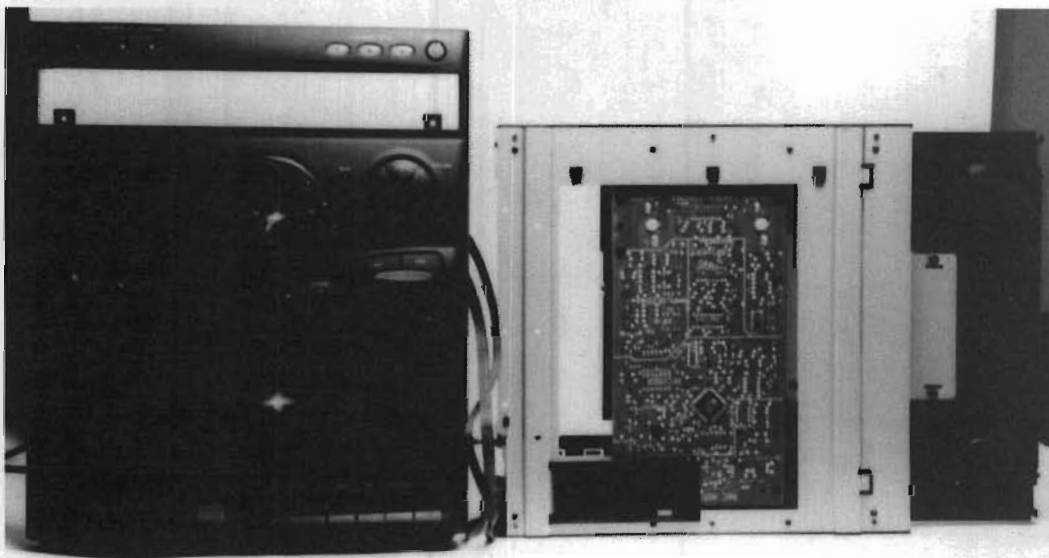


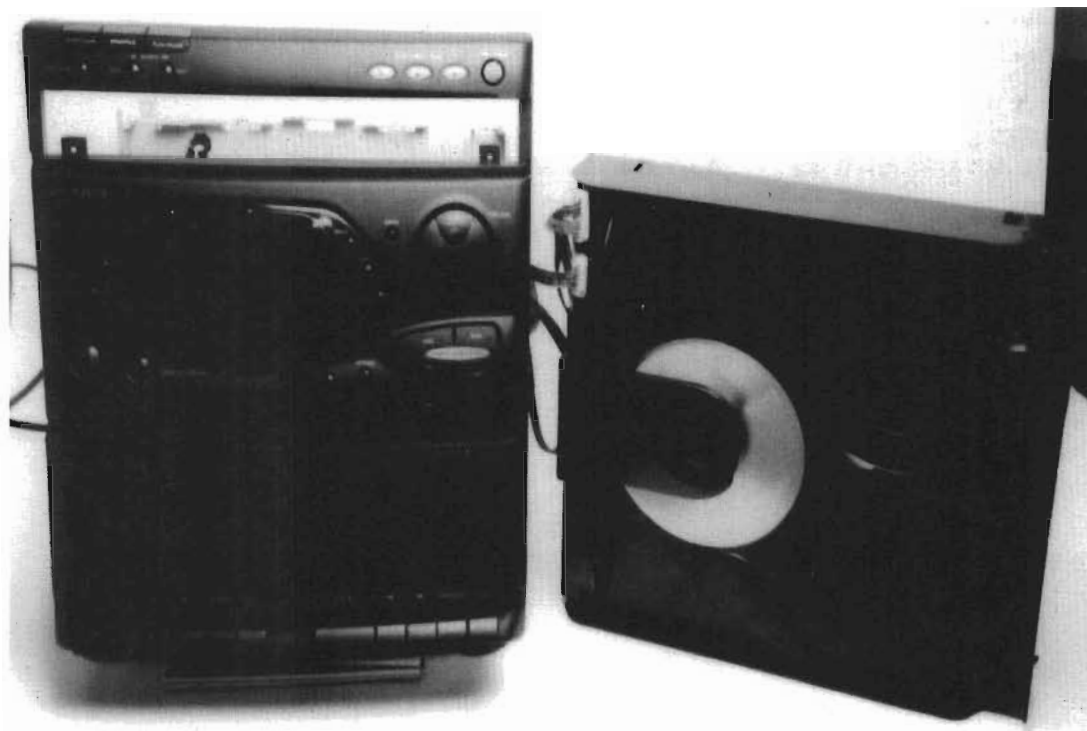
fig. 3

Service Position for CDC module



- 1) Follow the dismantling sequence shown on page 12 before coming to service position A.

CD SERVO SERVICE HINTS (continued)



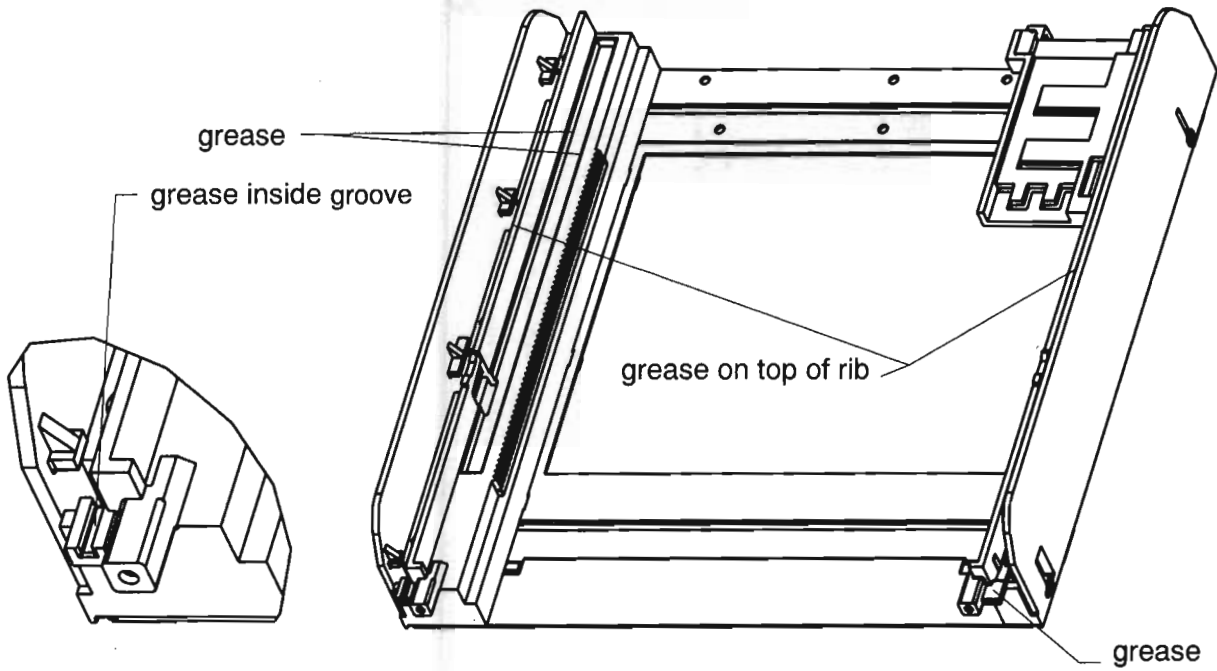
2) Service position B



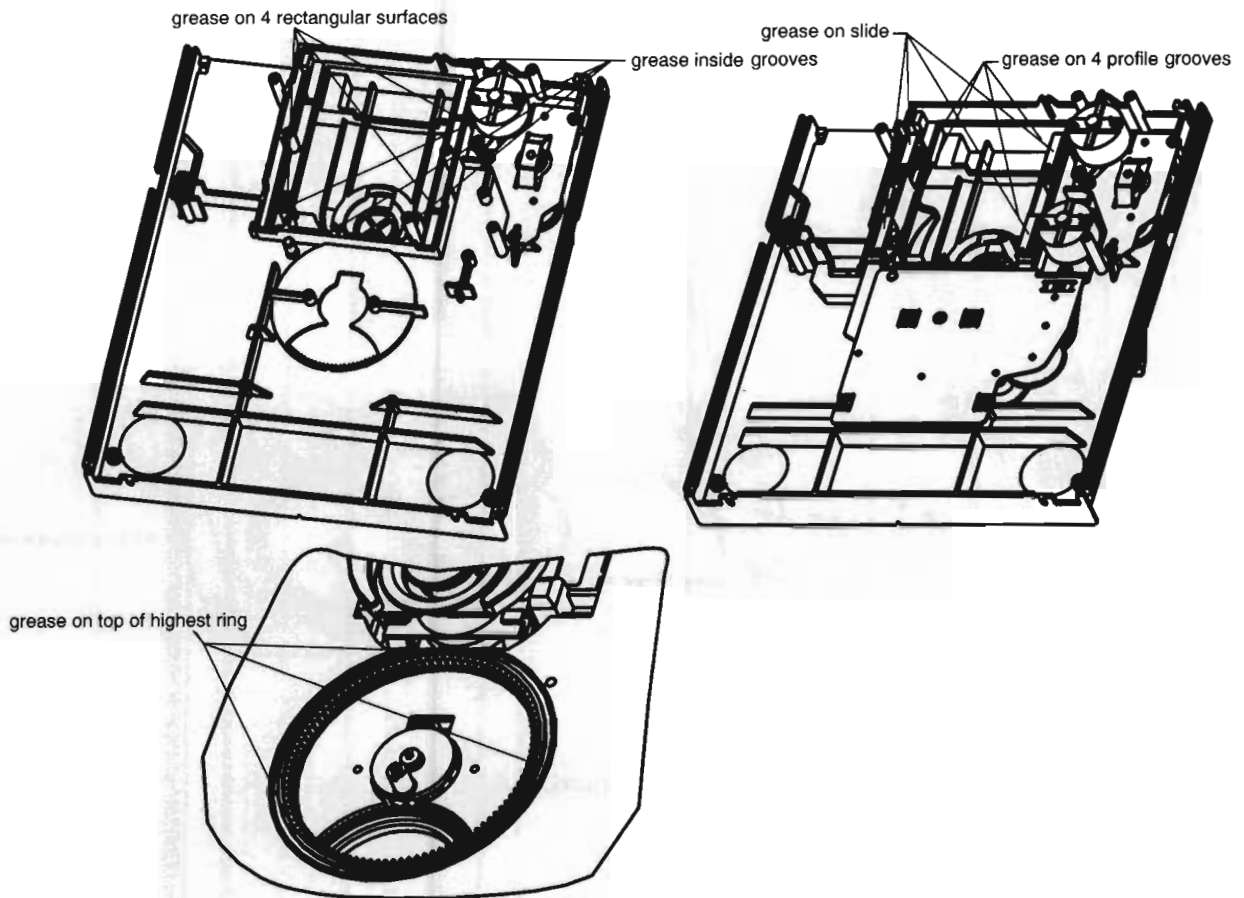
2) Service position C

LUBRICATING INSTRUCTIONS

CHASSIS

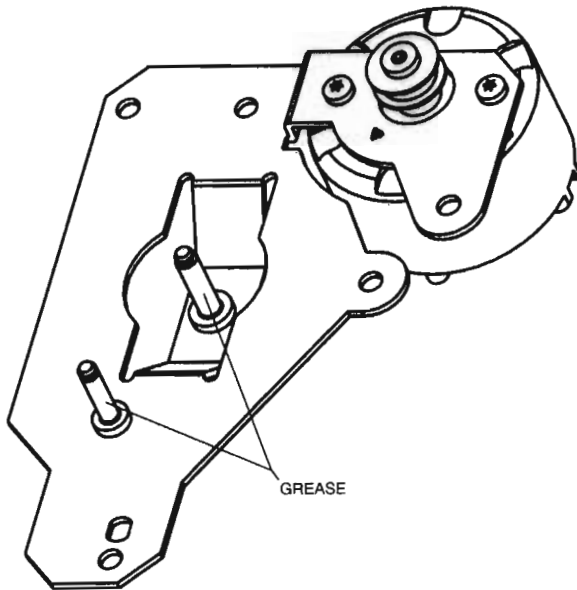


DRAWER

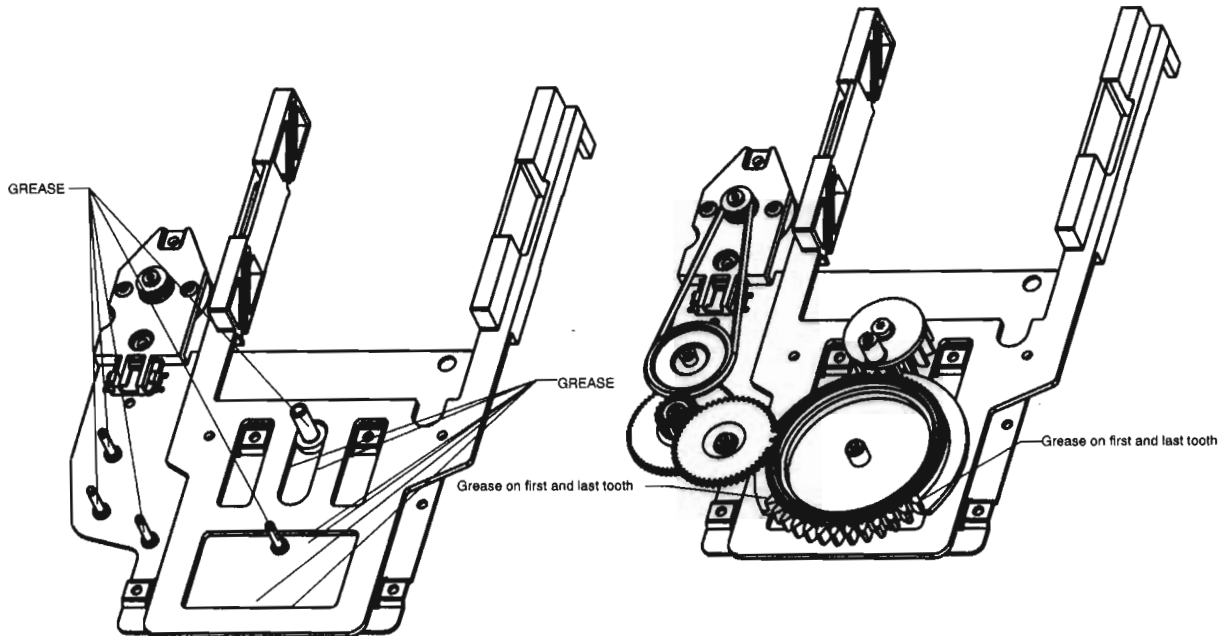


LUBRICATING INSTRUCTIONS (continued)

DRAWER MECHANISM

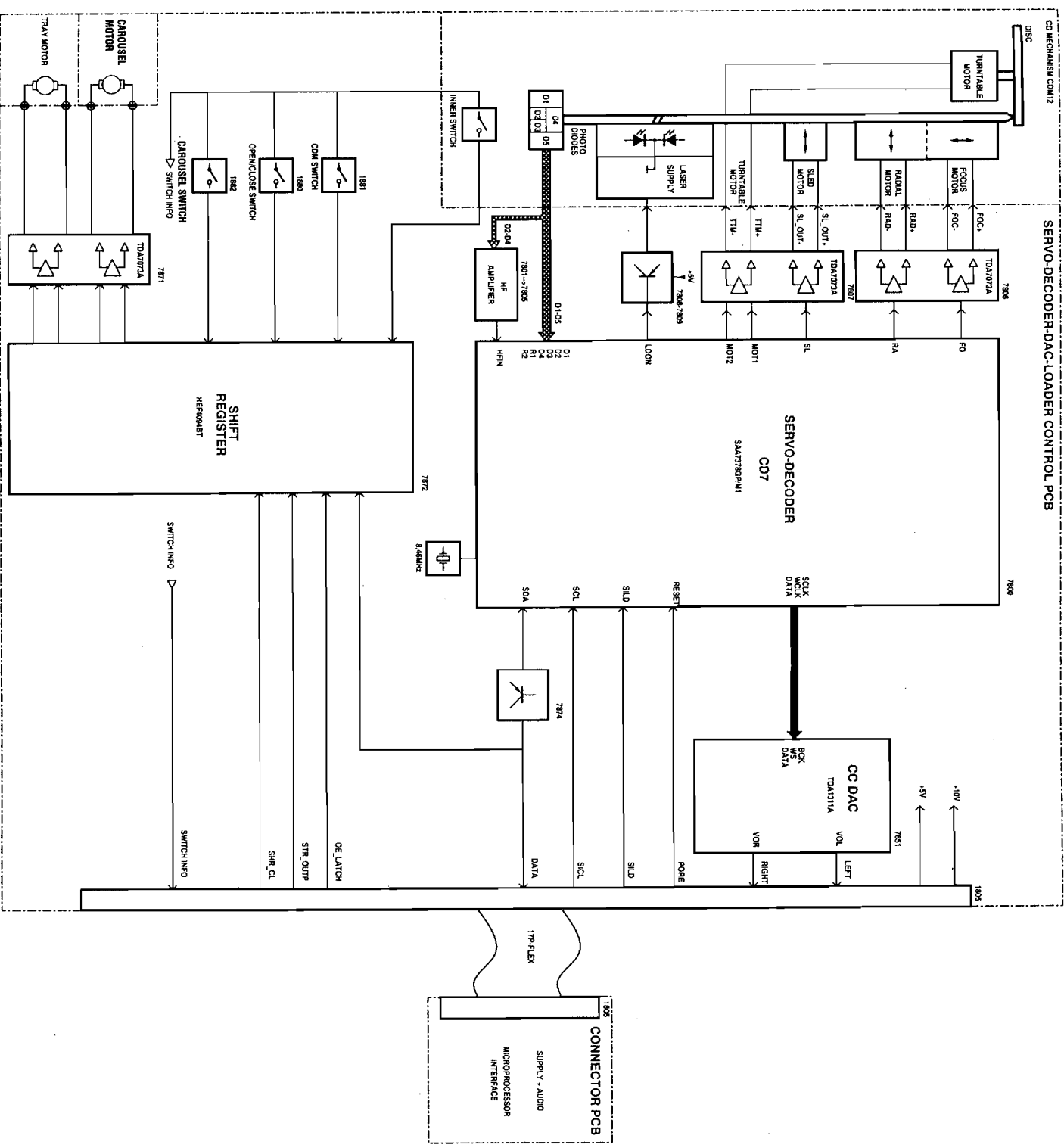


DISC-CHANGE MECHANISM

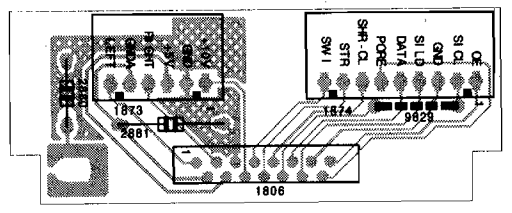
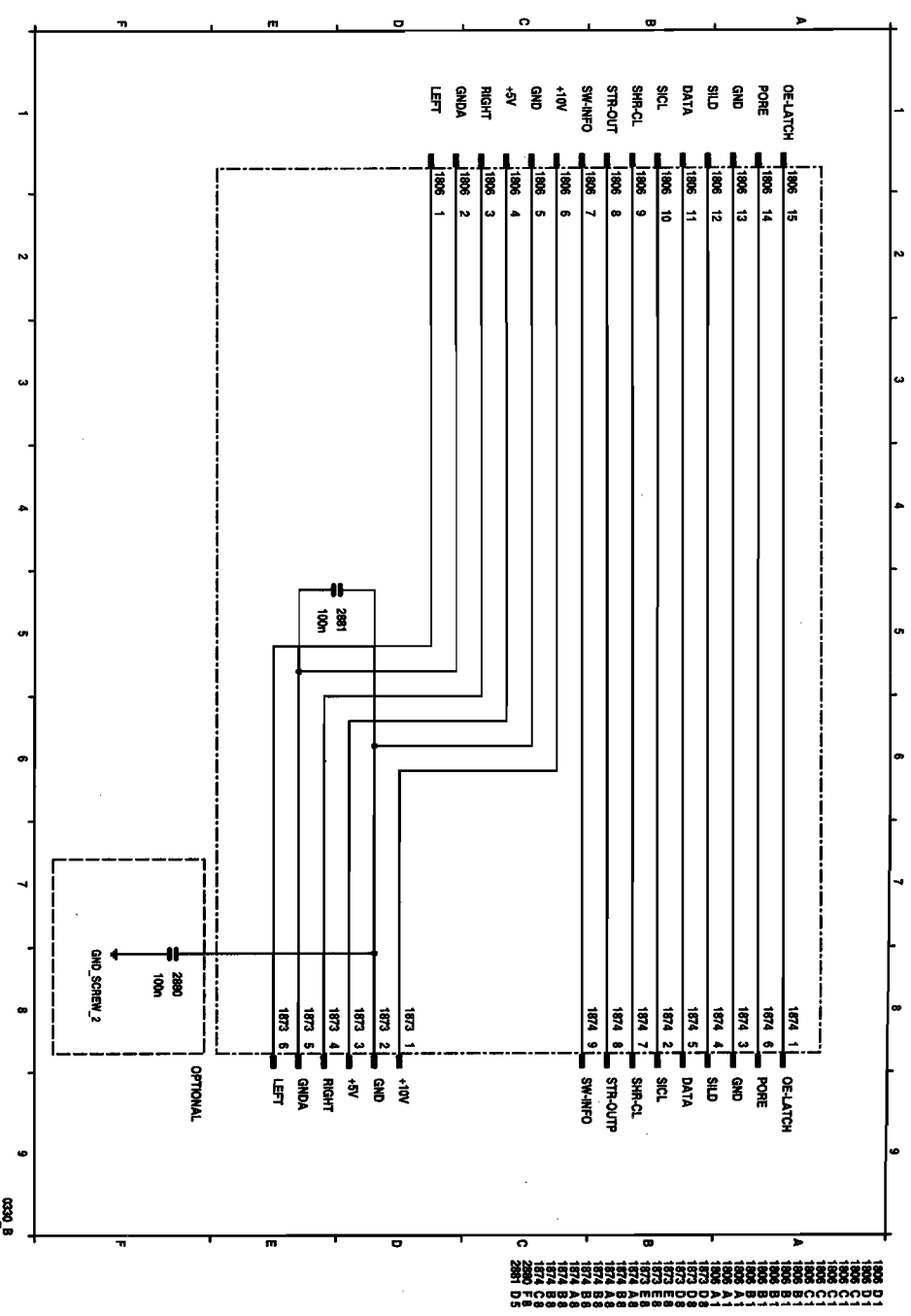


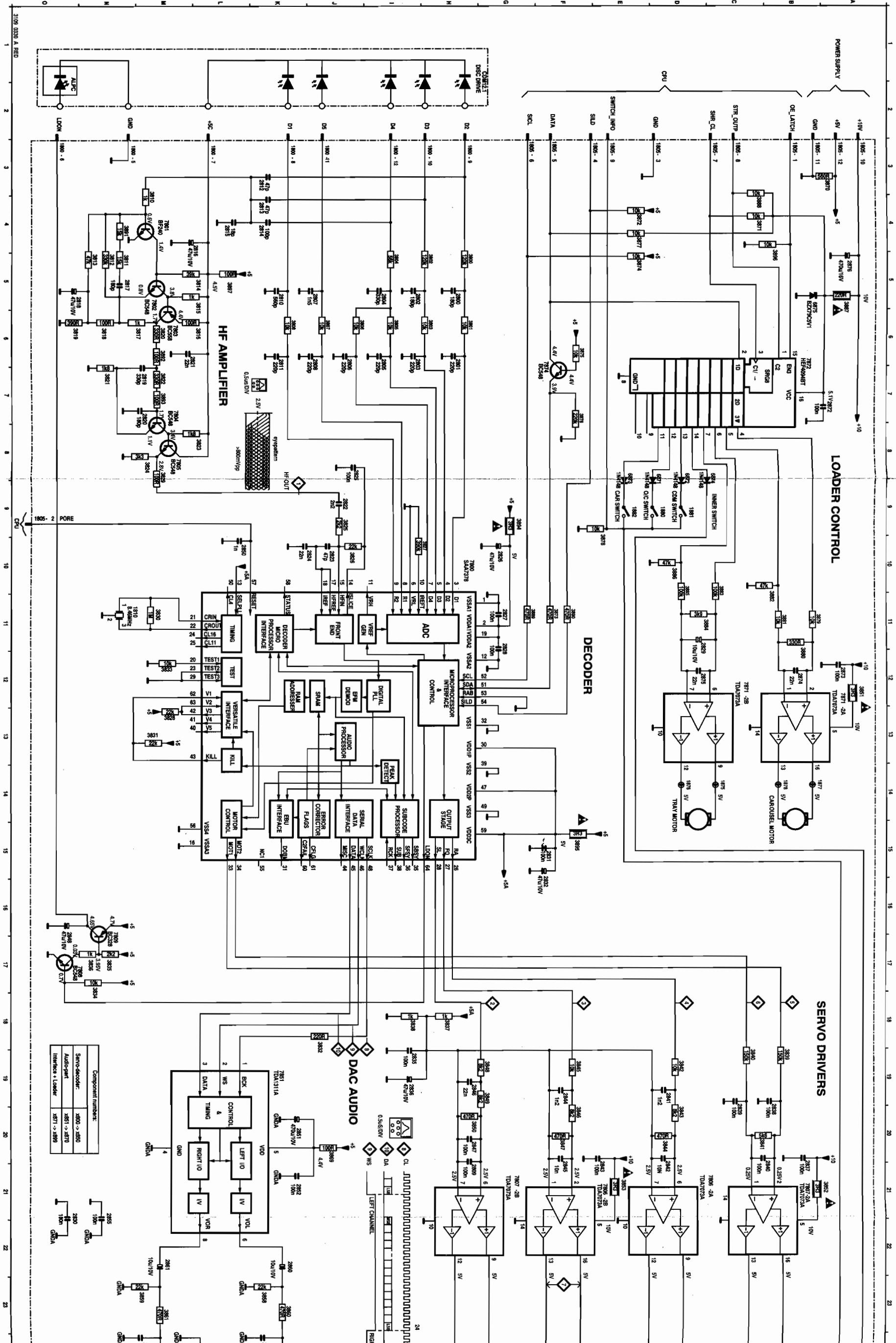
Use only grease **Polylub GLY 801** service code number 4822 390 10136

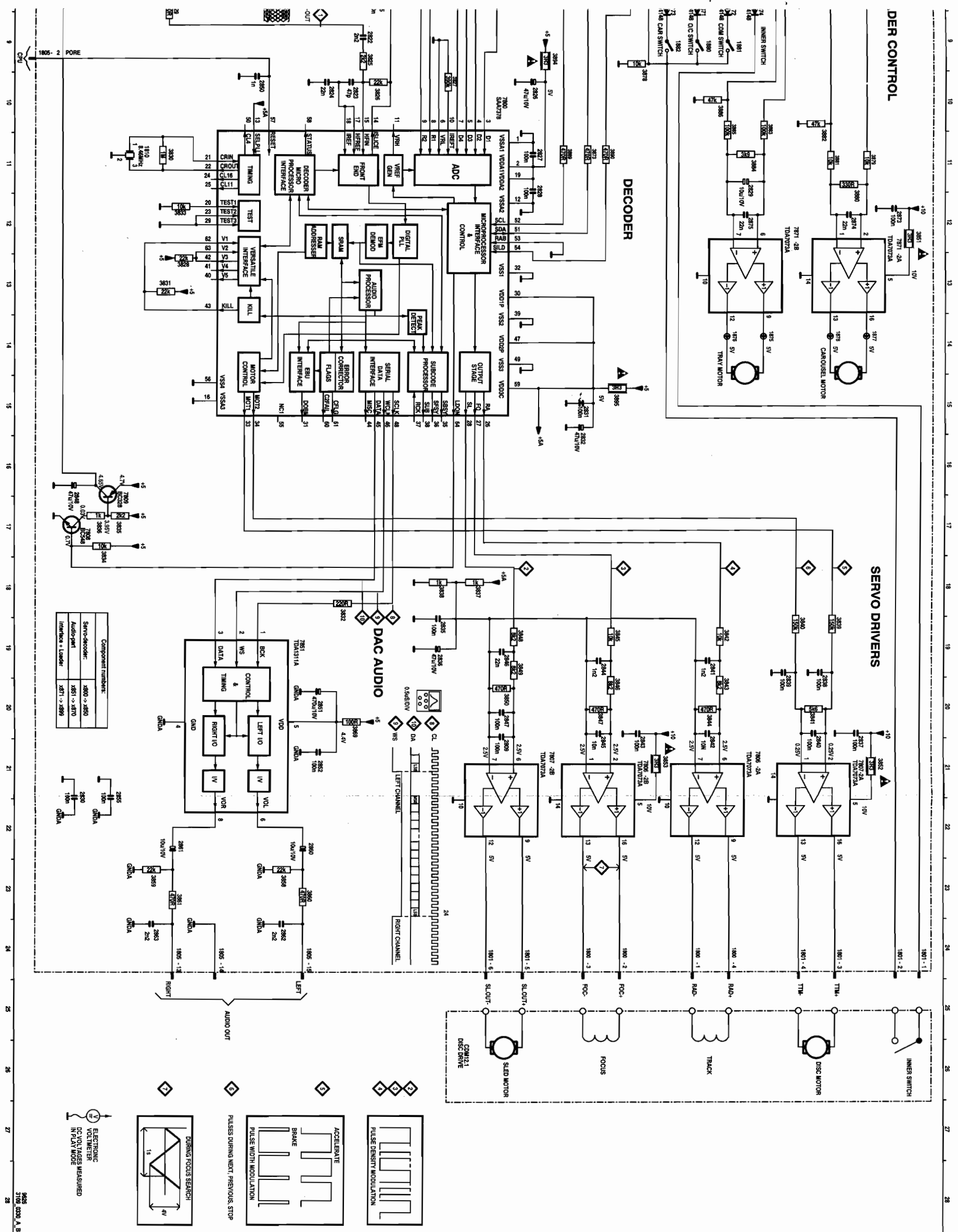
BLOCK DIAGRAM



CONNECTOR WIRING AND LAYOUT





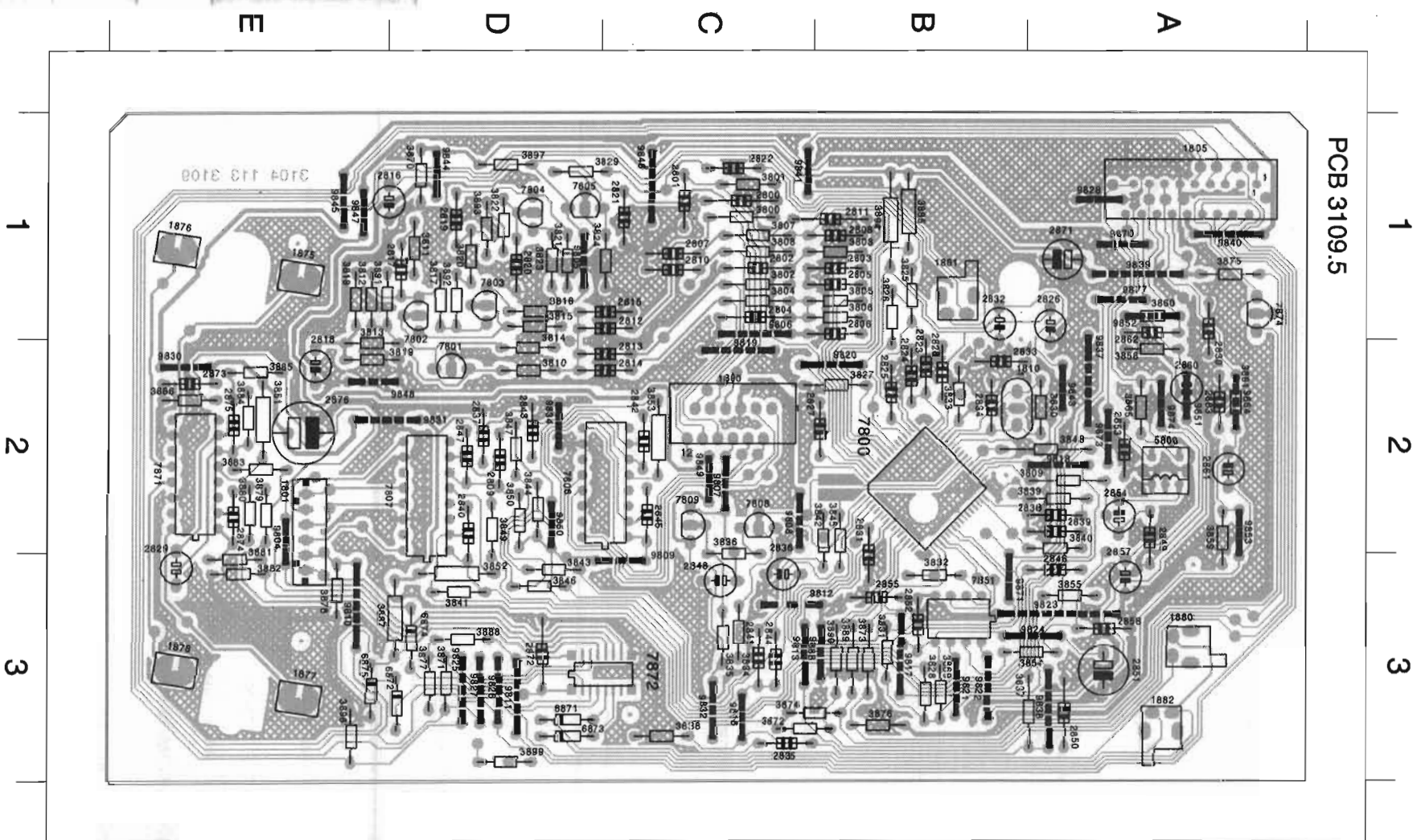


Component Number	Part Number
Servo-decoder	2800 - 2830
Audio-pamp	2851 - 2870
Interface + Leader	2871 - 2899

Component Number	Part Number
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1801	P25
1802	P26
1803	P27
1804	P28
1805	P29
1806	P30
1807	P31
1808	P32
1809	P33
1810	P34
1811	P35
1812	P36
1813	P37
1814	P38
1815	P39
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CDC P.C. BOARD
(viewed from the component side)

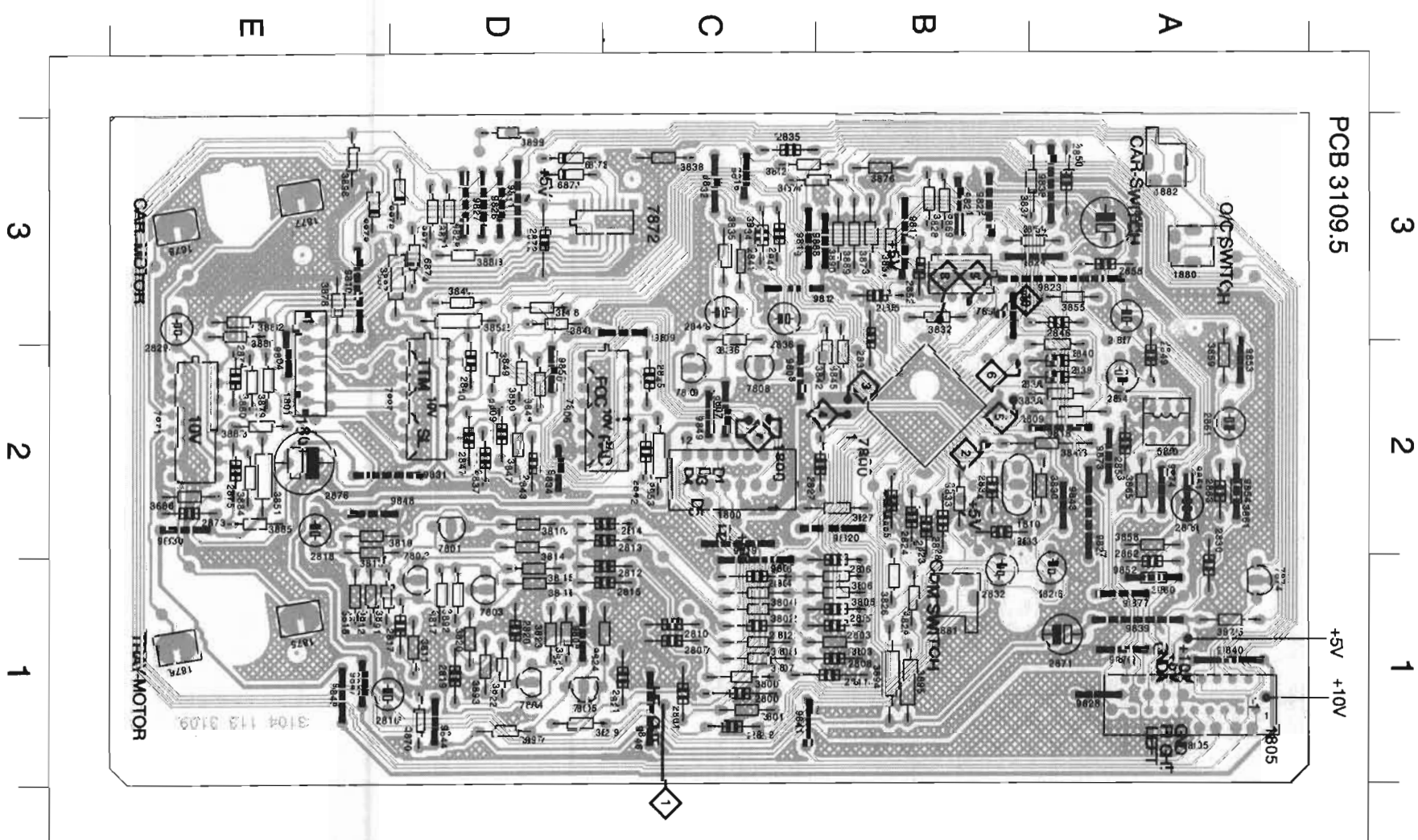
1828 -59



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1961 D 1	3901 A 1	7887 E 2
1962 D 1	3902 A 1	7888 E 2
1963 D 1	3903 A 1	7889 E 2
1964 D 1	3904 A 1	7890 E 2
1965 D 1	3905 A 1	7891 E 2
1966 D 1	3906 A 1	7892 E 2
1967 D 1	3907 A 1	7893 E 2
1968 D 1	3908 A 1	7894 E 2
1969 D 1	3909 A 1	7895 E 2
1970 D 1	3910 A 1	7896 E 2
1971 D 1	3911 A 1	7897 E 2
1972 D 1	3912 A 1	7898 E 2
1973 D 1	3913 A 1	7899 E 2
1974 D 1	3914 A 1	7900 E 2
1975 D 1	3915 A 1	7901 E 2
1976 D 1	3916 A 1	7902 E 2
1977 D 1	3917 A 1	7903 E 2
1978 D 1	3918 A 1	7904 E 2
1979 D 1	3919 A 1	7905 E 2
1980 D 1	3920 A 1	7906 E 2

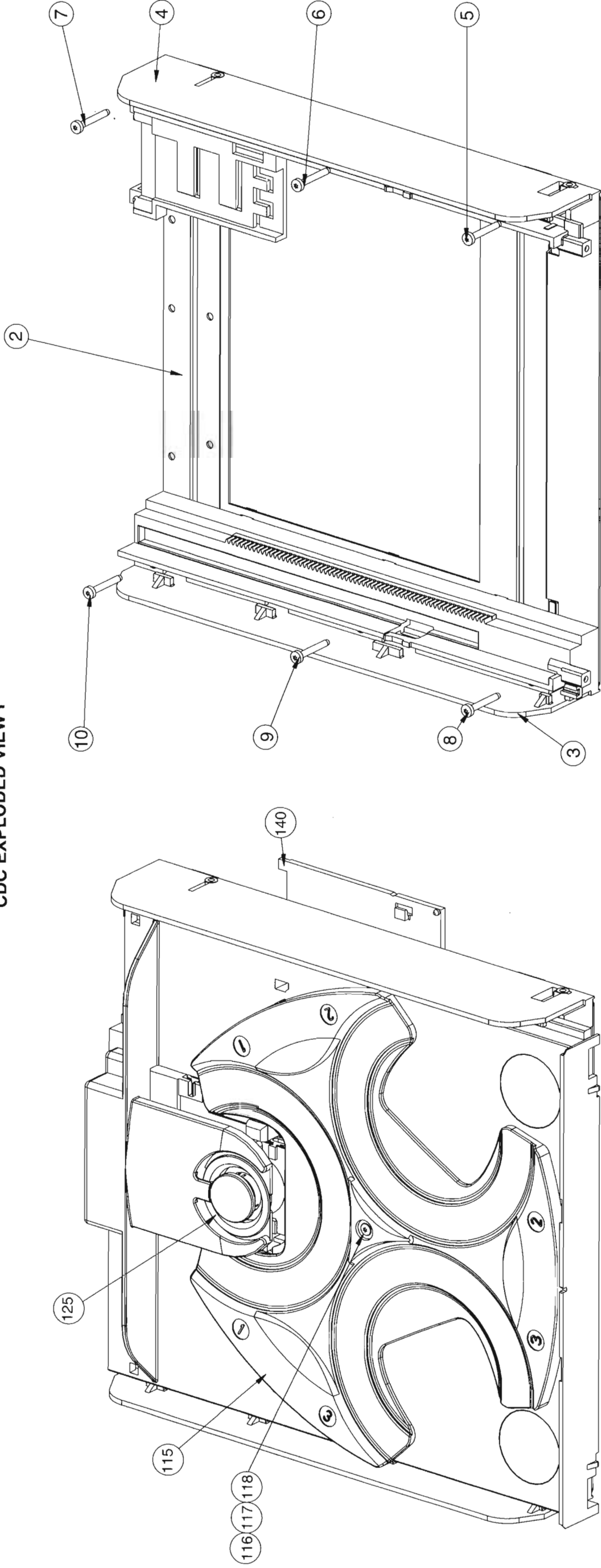
CDC P.C. BOARD
(viewed from the copper side)

1828 -60



7800 B 2	7801 C 3
7802 C 3	7803 C 3

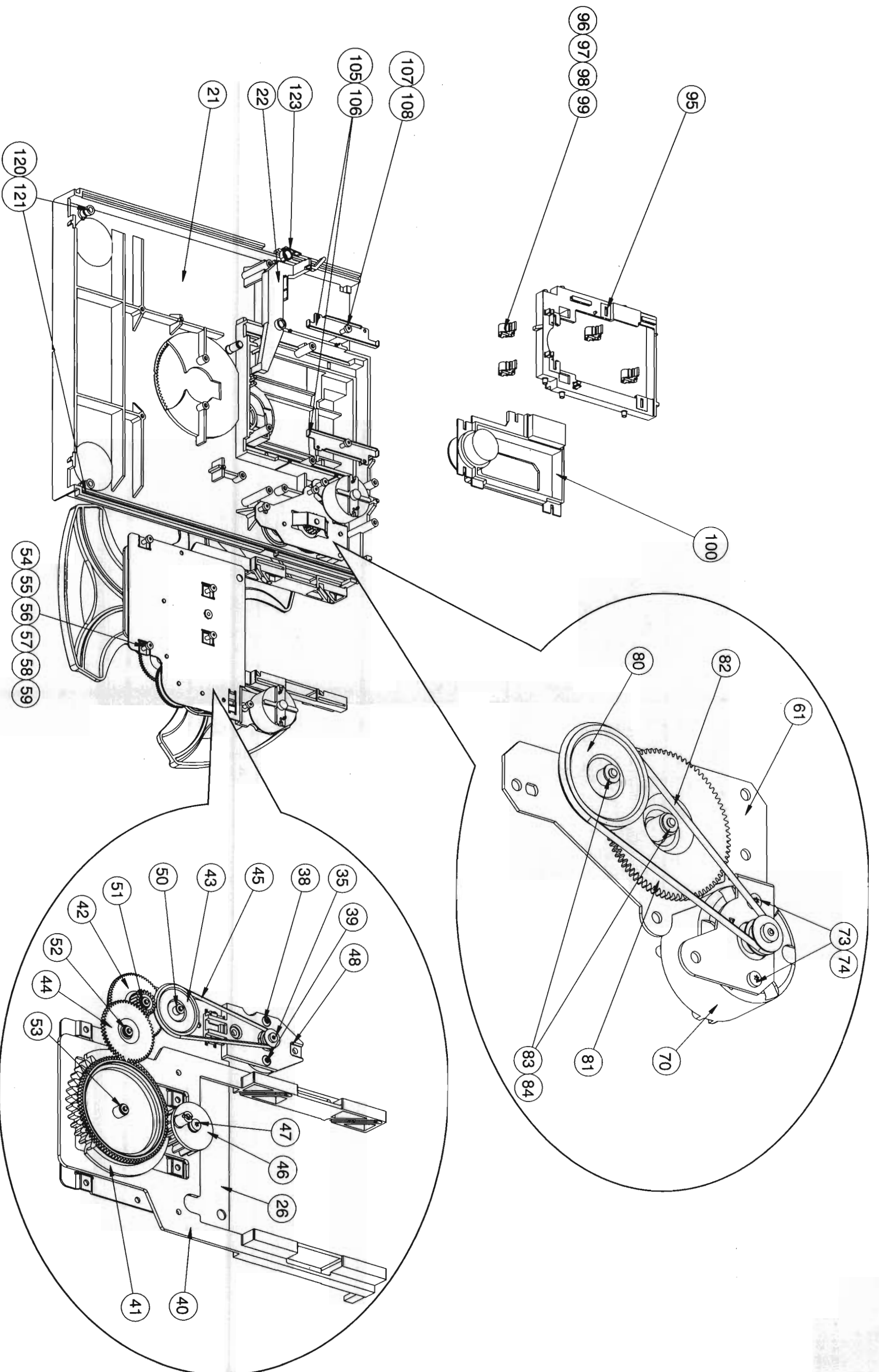
CDC EXPLODED VIEW I



CDC EXPLODED VIEW REPLACEMENT PARTS LIST

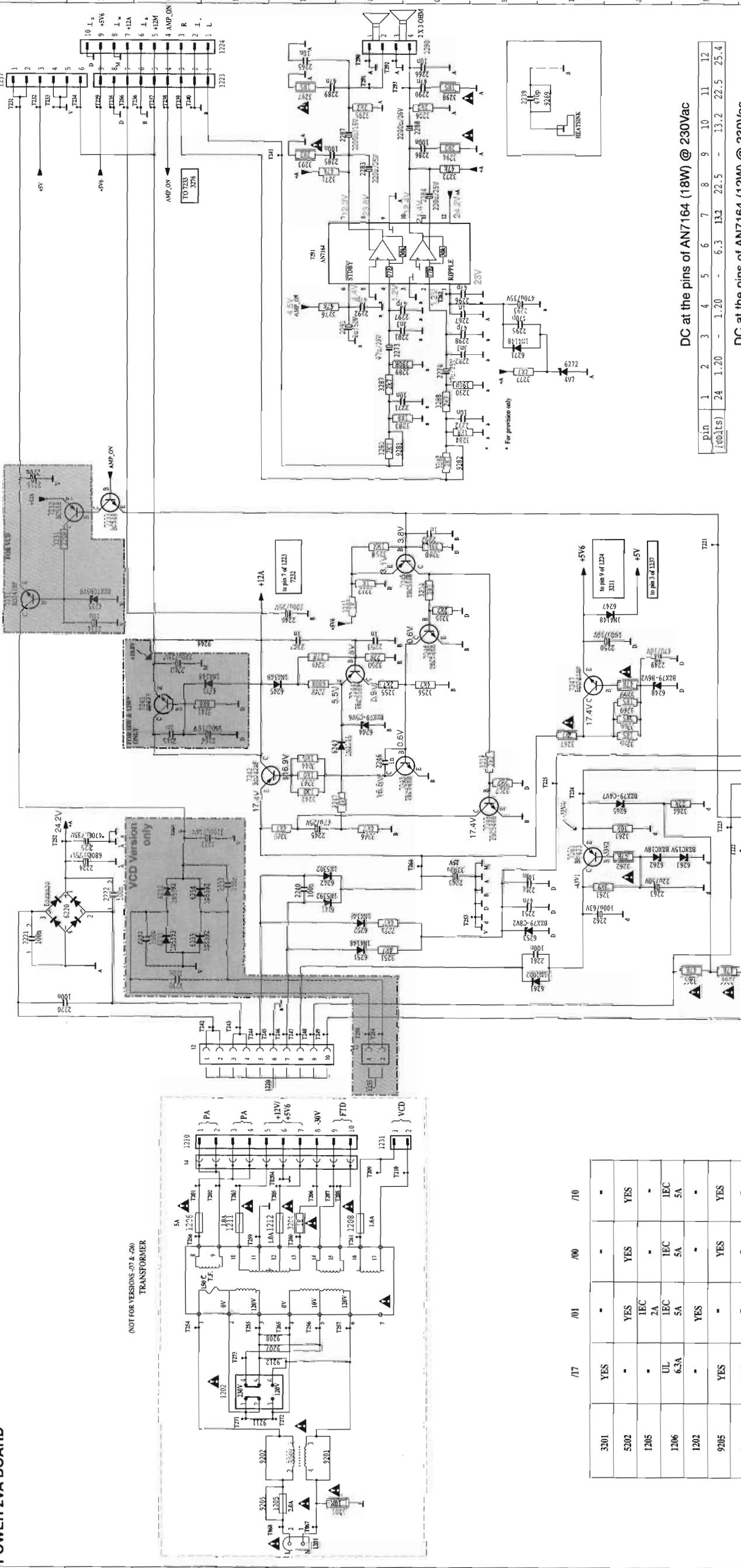
Ref.	Part No.	Description	Ref.	Part No.	Description
3	4822 463 11008	Guide Left	83	4822 532 12364	Washer
4	4822 463 11009	Guide Right	84	4822 532 12364	Washer
21	4822 441 11615	Drawer	95	4822 404 10894	CDM Support
22	4822 402 10088	Tumbler	96	4822 325 50215	Suspension
35	4822 361 10753	Carousel Motor	97	4822 325 50215	Suspension
38	4822 502 12548	Screw M2.6 x 3.5	98	4822 325 50215	Suspension
39	4822 502 12548	Screw M2.6 x 3.5	99	4822 325 50215	Suspension
40	4822 463 11011	Slide	100	4822 691 30278	CDM-12.1 Mechanism
41	4822 522 10509	Control Disc	115	4822 466 10736	Carousel
42	4822 522 10492	Gear Wheel	117	4822 532 12365	Bush
43	4822 528 10937	Pulley	120	4822 532 51756	Damping Grommet
44	4822 522 10493	Idler Wheel	121	4822 532 51756	Damping Grommet
			123	4822 402 10085	Switch Bracket
			125	4822 532 52386	Clamper
			140	4822 466 10734	Flex Cable Protection Plate
				4822 320 11183	Flexfoil 17P
				4822 390 10136	Lub. Grease Polylub GLY801

NOTE: Only the parts listed above are normal service spare parts.



2VA POWER BOARD SCHEMATIC DIAGRAM

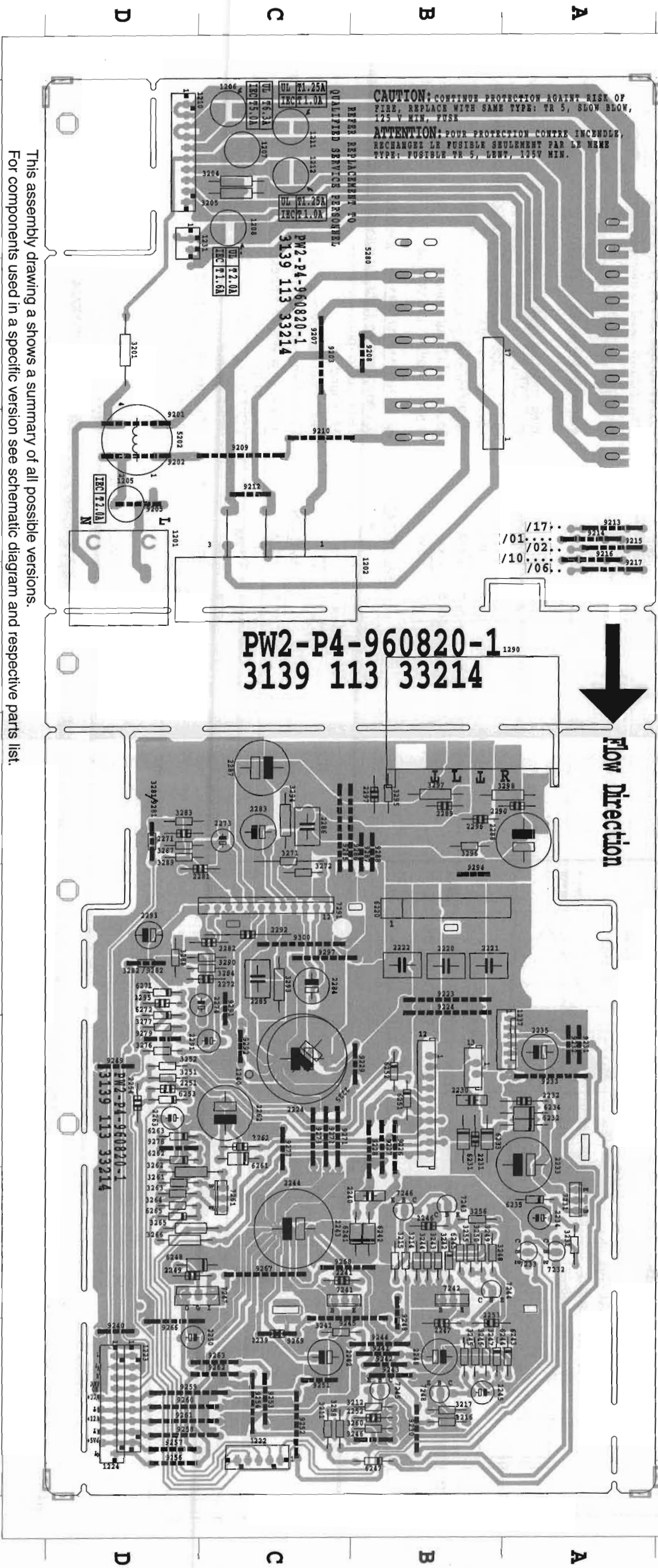
POWER 2VA BOARD



12 B 7	1211 C 1	2220 B 6	2234 A 8	2246 B 8	2261 C 7	2283 C 5	2292 C 6	3212 B 9	3244 B 8	3255 B 8	3266 D 8	3287 D 5	3298 A 5	6241 B 8	6253 D 7	7233 A 8	7261 C 8	9210 C 3	9226 B 7	9240 D 9	9251 C 9	9261 D 9	9273 C 7	9288 B 5
13 B 7	1212 C 1	2221 B 6	2235 A 7	2247 B 9	2262 C 7	2284 C 6	2293 D 6	3214 B 8	3245 B 9	3256 B 8	3271 C 5	3288 D 6	3299 D 3	6242 B 8	6251 C 7	7241 C 8	7291 C 6	9212 C 3	9227 B 7	9241 B 9	9252 C 9	9262 C 9	9277 C 7	9291 C 6
1201 D 4	1222 C 9	2222 B 6	2239 B 6	2248 B 9	2263 D 7	2285 C 6	2295 D 6	3215 B 8	3246 B 9	3257 C 9	3272 C 6	3289 D 7	3299 B 2	6243 A 9	6252 D 7	7242 B 8	7292 D 3	9213 A 3	9228 B 7	9242 B 7	9253 C 9	9263 C 9	9278 D 7	9292 C 7
1202 C 3	1223 D 9	2223 C 7	2240 B 8	2249 D 8	2271 D 5	2286 C 5	2296 B 5	3216 B 9	3247 B 9	3258 B 9	3273 D 7	3290 C 6	6220 B 6	6244 B 9	6253 D 7	7243 B 8	7293 D 3	9214 A 3	9229 B 7	9243 B 7	9254 C 9	9264 D 9	9279 D 7	9293 A 6
1205 D 3	1224 D 9	2224 C 7	2241 C 8	2250 D 9	2272 C 6	2287 C 5	2297 B 5	3217 B 9	3248 B 8	3259 D 8	3274 D 7	3291 C 6	6221 B 7	6245 B 9	6254 D 8	7244 B 8	7294 D 3	9215 A 3	9230 B 9	9244 B 9	9255 D 9	9265 D 9	9281 D 5	9297 C 6
1206 C 1	1231 D 1	2230 B 7	2242 C 9	2251 D 7	2273 C 5	2288 A 5	3201 D 2	3231 A 8	3249 B 8	3262 D 8	3281 D 5	3294 C 5	6233 A 7	6247 B 9	6271 D 6	7245 B 9	7295 C 2	9216 A 4	9231 A 7	9245 C 9	9257 D 9	9267 C 8	9282 D 6	9300 C 6
1207 C 1	1237 A 7	2231 B 7	2243 C 8	2252 B 9	2274 C 6	2289 A 5	3204 C 1	3241 C 9	3250 B 8	3263 D 8	3282 D 6	3295 B 5	6234 A 7	6248 D 8	6272 D 7	7246 B 8	7296 C 2	9217 A 4	9232 A 7	9246 B 9	9258 D 9	9268 C 8	9283 D 6	
1208 C 1	1240 C 7	2232 A 7	2244 C 8	2253 B 9	2275 C 6	2290 A 5	3205 C 1	3242 B 8	3251 D 7	3264 D 8	3283 D 5	3296 B 5	6235 A 7	6251 B 7	6273 A 8	7247 D 8	7297 A 4	9218 A 6	9233 A 7	9248 B 8	9259 D 9	9269 C 9	9284 C 5	
1210 D 1	1290 B 5	2233 A 8	2245 B 9	2254 D 7	2282 C 6	2291 C 7	3211 C 9	3243 B 8	3252 D 7	3265 D 8	3284 C 6	3297 B 5	6235 A 8	6252 B 7	6272 A 8	7248 B 9	7298 C 3	9224 B 6	9235 A 7	9249 D 7	9260 D 9	9272 C 7	9287 B 5	

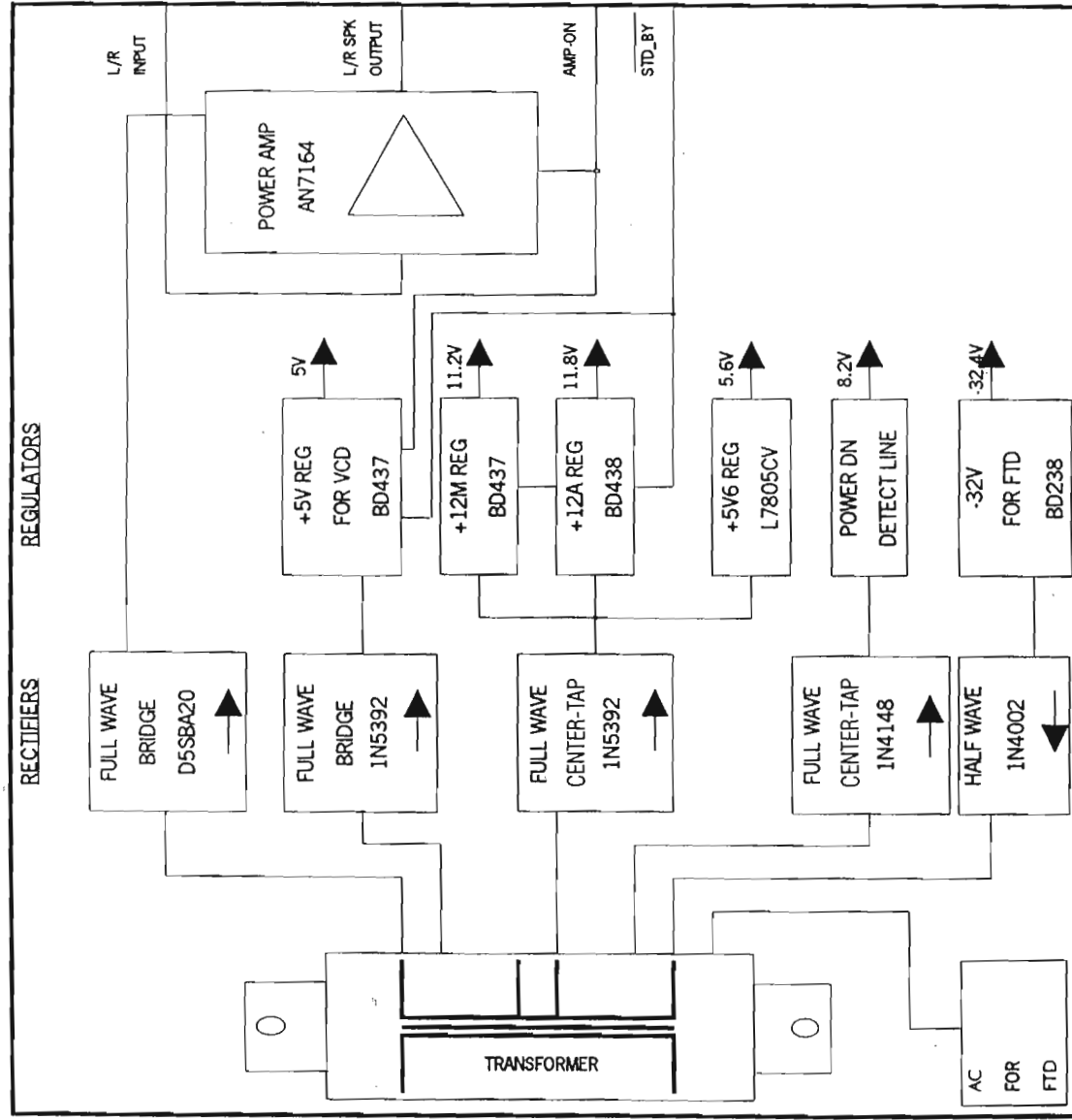
Front Component Layout Component Side View

p w 2 panel 1-p4-960820-1 s p c s
3139 113 33214



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

2VA POWER BOARD BLOCK DIAGRAM



WARNING : If the power amplifier heatsink is not attached to the power amplifier during testing, do not make the amplifier deliver more than 500mW per channel. It is advisable to inject signal one channel at a time whenever possible and to remove all input signal immediately after test.

2VA POWER BOARD CONNECTORS

0	1	PA
0	2	PA
0	3	PA
0	4	PA
0	5	+12V/+5V6
0	6	GND
0	7	+12V/+5V6
0	8	-35V
0	9	FTD
0	10	FTD

AC input to power amplifier rectifier
 AC input to power amplifier rectifier (Note: Pin 1 is shorted to Pin 2)
 AC input to power amplifier rectifier
 AC input to power amplifier rectifier (Note: Pin 3 is shorted to Pin 4)
 AC input to +12V & +5V6 rectifier
 Center-tap of secondary winding of Pin 5, 7 and 8
 AC input to +12V & +5V6 rectifier
 AC input to FTD rectifier
 FTD filament voltage
 FTD filament voltage

CONNECTOR 1222

0	1	STDBY
0	2	~F1
0	3	~F2
0	4	-32V
0	5	PWD DN

Standby signal from microprocessor
 AC voltage for FTD filament
 AC voltage for FTD filament
 -32.4V voltage for FTD grid
 Power down signal to microprocessor

CONNECTOR 1223

0	1	L
0	2	L ^a
0	3	R
0	4	AMP_ON
0	5	+12M
0	6	L ^B
0	7	+12A
0	8	D
0	9	+5V6

Left input for power amplifier
 AF ground
 Right input for power amplifier
 Control from up to switch power amplifier and VCD regulator to standby
 +12V for tape deck motors and CD mechanisms
 Ground for +12A
 +12V for analog circuitries
 Motor and Digital ground
 +5V6 for set up and VCD up

CONNECTOR 1224

0	1	L
0	2	L ^a
0	3	R
0	4	AMP_ON
0	5	+12A
0	6	L ^B
0	7	+12M
0	8	M
0	9	+5V6
0	10	D

AF SIGNAL AND SUPPLY (OPTION)
 (Connections as 1223 but with digital ground and motor ground separated)
 Left input for power amplifier
 AF ground
 Right input for power amplifier
 Control from up to switch power amplifier and VCD regulator to standby
 +12V for analog circuitries
 Ground for +12A
 +12V for tape deck motors and CD mechanisms
 Motor ground
 +5V6 for set up and VCD up
 Digital ground

CONNECTOR 1237

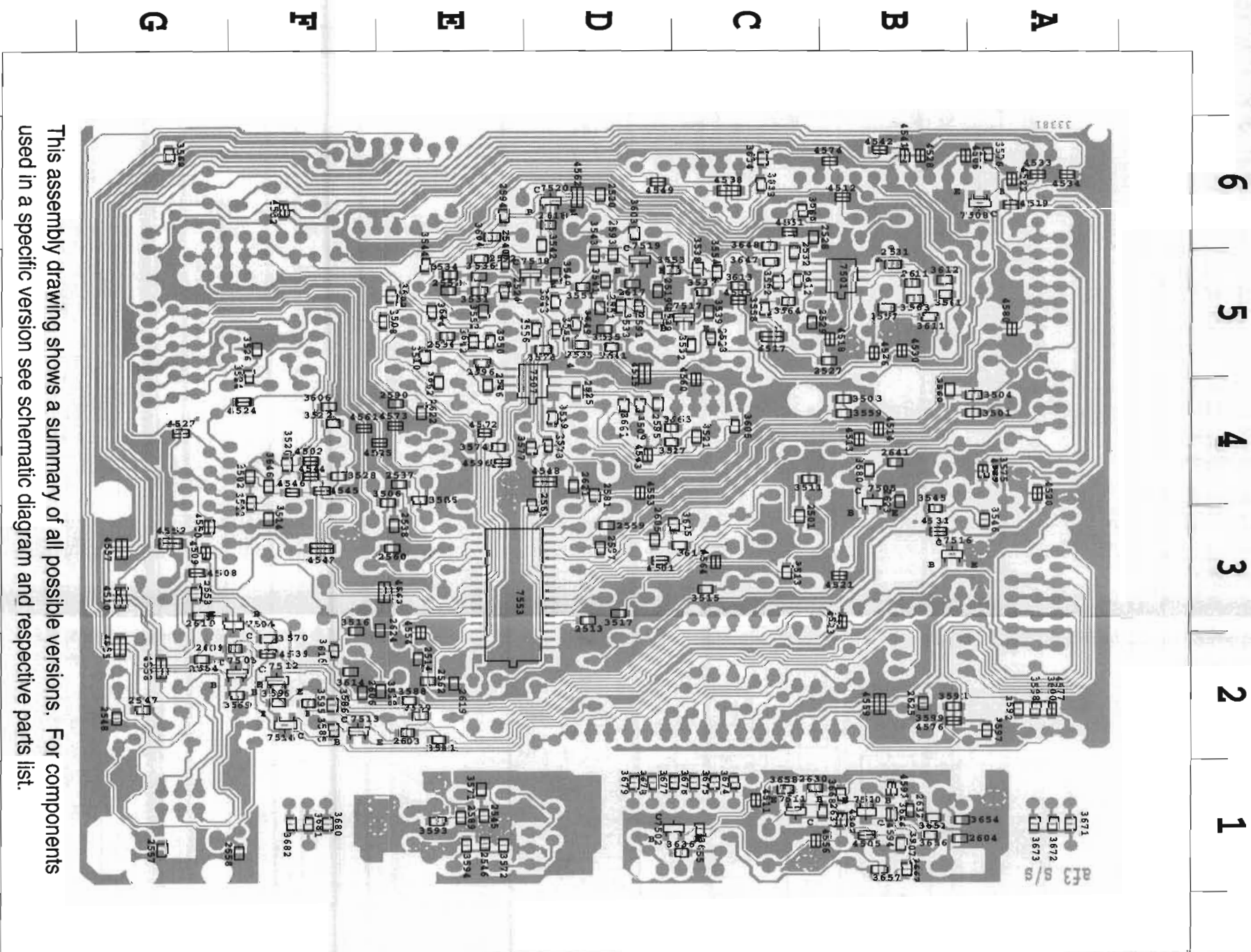
0	1	+VCD
0	2	+VCD
0	3	+Vsl
0	4	GND
0	5	GND
0	6	+VA

VCD SUPPLY (OPTION)
 +5V for VCD module
 +5V for VCD module
 +5V for VCD uP-SRAM
 Ground
 Ground
 +12V for VCD servo drivers

CONNECTOR 13 TO 1231

0	1	VCD
0	2	VCD

VCD SUPPLY (OPTION)
 AC input to VCD rectifier
 AC input to VCD rectifier

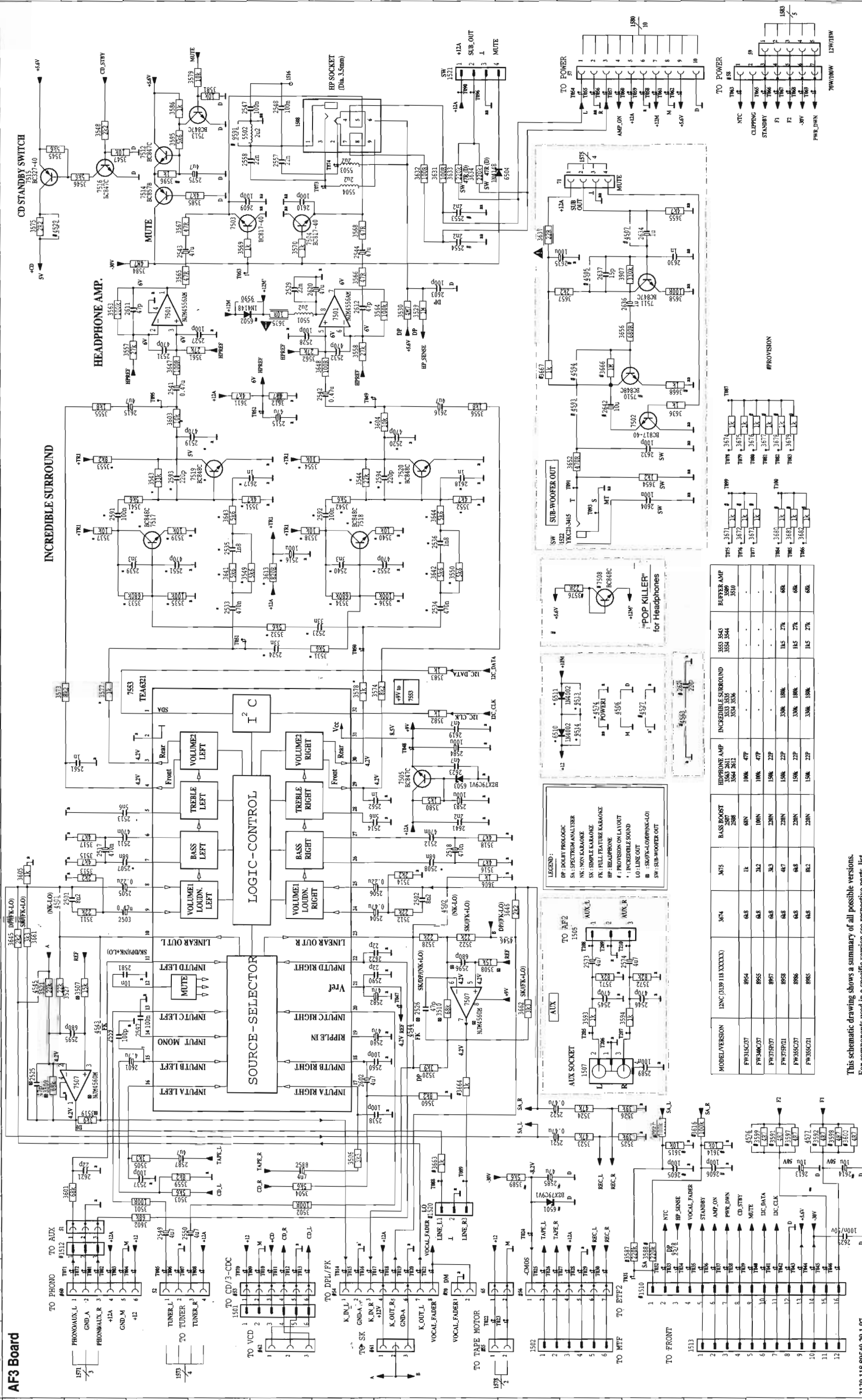


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

2501	C	3	2623	B	4	3559	B	4	3656	B	1
2502	F	4	2624	E	3	3560	B	4	3657	B	1
2513	D	3	2625	B	2	3561	B	5	3658	C	1
2514	E	2	2630	C	1	3562	C	5	3661	D	4
2519	D	5	2632	B	1	3563	B	5	3662	E	4
2520	D	6	2637	B	1	3564	C	5	3663	C	4
2523	C	5	2641	B	4	3566	C	6	3666	B	1
2524	E	5	3501	A	4	3568	G	6	3667	B	1
2525	D	4	3503	B	4	3569	F	2	3668	B	1
2526	E	4	3504	A	4	3570	F	2	3671	A	1
2527	B	5	3505	E	4	3571	E	1	3672	A	1
2528	C	6	3506	E	4	3572	E	1	3673	A	1
2529	C	5	3508	E	5	3573	D	4	3674	C	1
2531	B	5	3509	D	4	3574	E	4	3675	C	1
2532	C	5	3510	E	5	3575	A	4	3676	C	1
2535	D	5	3511	C	4	3576	A	6	3677	C	1
2536	E	5	3512	F	4	3577	D	4	3678	D	1
2537	E	4	3513	C	3	3578	D	5	3679	D	1
2538	E	3	3514	F	3	3580	B	4	3680	F	1
2539	D	5	3515	C	3	3581	E	2	3681	F	1
2540	E	5	3516	F	3	3585	F	2	3682	F	1
2545	E	1	3517	D	3	3586	F	2	3907	B	1
2546	E	1	3518	E	2	3588	E	2	4501	D	3
2547	G	2	3519	D	4	3591	B	2	4502	F	4
2548	G	2	3520	F	4	3592	A	2	4505	B	1
2551	D	5	3521	C	4	3593	E	1	4506	B	6
2552	E	5	3522	F	4	3594	E	1	4507	B	1
2553	G	3	3524	F	4	3595	F	2	4508	G	3
2554	G	2	3526	F	5	3596	F	2	4509	G	3
2557	G	1	3527	C	4	3597	A	2	4510	G	3
2558	F	1	3528	F	4	3598	A	2	4511	C	1
2559	D	3	3530	E	2	3599	B	2	4512	B	6
2560	E	3	3531	E	5	3600	A	2	4513	B	4
2561	D	3	3532	C	5	3602	E	5	4514	B	4
2562	E	2	3533	D	5	3603	D	6	4515	D	5
2581	D	4	3534	E	5	3604	E	6	4517	C	5
2589	E	1	3535	D	5	3605	C	4	4518	B	5
2590	E	4	3536	E	5	3606	F	4	4519	A	6
2591	D	5	3537	C	5	3611	B	5	4520	A	4
2592	E	5	3538	C	5	3612	B	5	4521	B	3
2593	D	5	3539	C	5	3613	C	5	4522	A	6
2594	E	6	3540	D	5	3614	F	2	4523	B	3
2595	D	4	3541	D	5	3615	C	3	4524	F	4
2596	E	5	3542	D	6	3616	F	2	4525	E	4
2597	D	3	3543	D	5	3617	C	3	4526	B	5
2603	E	2	3544	E	5	3633	C	6	4527	G	4
2604	B	1	3545	B	3	3634	C	6	4528	B	6
2605	D	3	3546	A	3	3636	C	1	4529	A	4
2606	F	2	3549	D	5	3641	D	5	4530	B	5
2609	F	2	3550	E	5	3642	E	5	4531	B	3
2610	G	3	3551	D	5	3643	D	5	4532	F	6
2611	B	5	3552	E	5	3644	E	5	4533	A	6
2612	C	5	3553	C	5	3646	F	4	4534	A	6
2617	D	5	3554	C	5	3647	C	5	4535	C	5
2618	D	6	3555	D	5	3648	C	6	4538	C	6
2619	E	2	3556	D	5	3652	B	1	4539	F	2
2621	D	4	3557	B	5	3654	B	1	4541	B	6
2622	E	4	3558	C	5	3655	C	1	4542	B	6

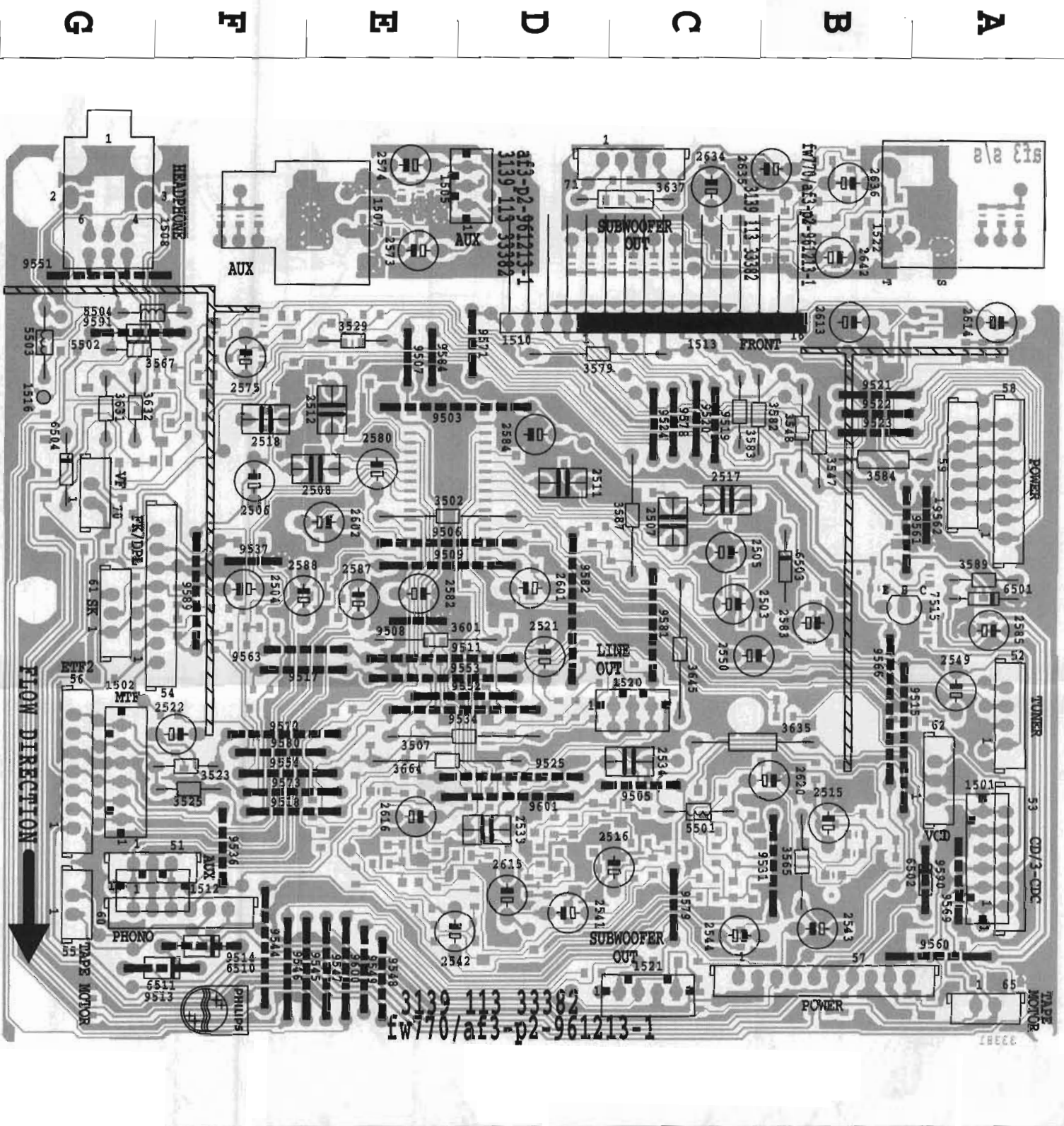
6 5 4 3 2 1

AF3 Board



This schematic drawing shows a summary of all possible versions. For components used in a specific version see respective parts list.

AF3 P.C. BOARD
(viewed from the component side)

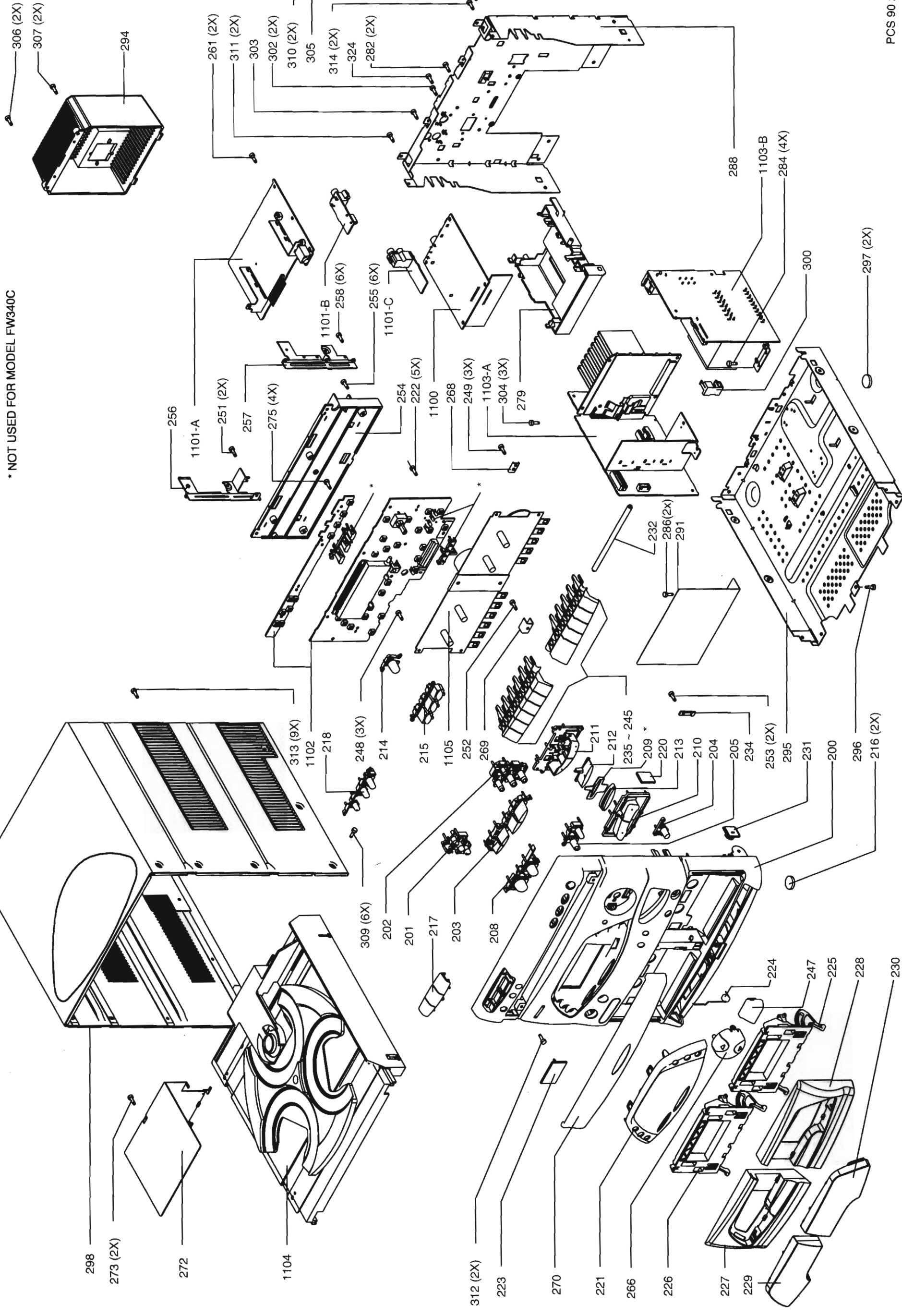


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

51	F 5	2588	F 4	9520	C 2
52	A 4	2601	D 3	9521	B 2
53	A 5	2602	E 3	9522	B 2
54	F 4	2613	B 2	9523	B 2
55	G 6	2614	A 2	9524	C 2
56	G 5	2615	D 6	9525	D 5
57	B 6	2616	E 5	9531	B 5
58	A 3	2620	B 5	9534	D 4
59	A 3	2634	C 1	9536	F 5
60	F 6	2635	B 1	9537	F 3
61	G 4	2636	B 1	9544	F 6
62	A 5	2642	B 1	9545	E 6
65	A 6	3502	E 3	9546	F 6
70	G 3	3507	D 4	9547	E 6
71	C 1	3523	F 5	9548	E 6
1501	A 5	3525	F 5	9549	E 6
1502	G 5	3529	E 2	9551	G 1
1505	D 1	3547	B 2	9552	D 4
1507	E 1	3548	B 2	9553	E 4
1508	G 1	3565	B 5	9554	F 5
1510	C 2	3567	G 2	9560	A 6
1512	F 5	3579	D 2	9561	B 3
1513	C 2	3582	C 2	9562	A 3
1516	G 2	3583	C 2	9563	E 4
1520	C 4	3584	B 3	9566	B 4
1521	C 6	3587	C 3	9569	A 5
1522	A 1	3589	A 3	9571	D 2
2503	C 4	3601	E 4	9572	F 4
2504	F 3	3631	G 2	9573	F 5
2505	C 3	3632	G 2	9578	C 2
2506	F 3	3635	C 4	9579	C 6
2507	C 3	3637	C 1	9580	F 5
2508	E 3	3645	C 4	9581	C 4
2511	D 3	3664	E 5	9582	D 4
2512	E 2	5501	C 5	9584	E 2
2515	B 5	5502	G 2	9589	F 3
2516	C 5	5503	G 2	9590	A 5
2517	C 3	5504	G 2	9591	G 2
2518	F 2	6501	A 4	9600	E 6
2521	D 4	6502	A 5	9601	D 5
2522	F 4	6503	B 3		
2533	D 5	6504	G 3		
2534	C 5	6510	F 6		
2541	D 6	6511	F 6		
2542	D 6	7515	B 4		
2543	B 6	9503	E 2		
2544	C 6	9505	C 5		
2549	A 4	9506	E 3		
2550	C 4	9507	E 2		
2573	E 1	9508	E 4		
2574	E 1	9509	E 3		
2575	F 2	9511	E 4		
2580	E 3	9513	F 6		
2582	E 3	9514	F 6		
2583	B 4	9515	B 4		
2584	D 2	9517	F 4		
2585	A 4	9518	F 5		
2587	E 4	9519	C 2		

1 2 3 4 5 6

CABINET EXPLODED VIEW



* NOT USED FOR MODEL FW340C

CABINET REPLACEMENT PARTS LIST

Ref.	Part No.	Description	Ref.	Part No.	Description
200	4822 459 04432	CABINET FRONT /37	237	4822 410 10211	BUTTON CASS 3 FRW
201	4822 410 10195	BUTTON LEFT(N/RDS)	238	4822 410 10212	BUTTON CASS 4 FRW
202	4822 410 10196	BUTTON DISP RIGHT	239	4822 410 10213	BUTTON CASS 5 STOP
203	4822 410 10918	BUTTON SET TUNER	240	4822 410 10214	BUTTON CASS 6 PAUSE
204	4822 410 10198	BUTTON HSD	241	4822 410 10215	BUTTON CASS 7 PLAY
205	4822 410 10199	BUTTON OPT/DBB			
			242	4822 410 10216	BUTTON CASS 8 FRW
208	4822 410 10201	BUTTON PWR/SOURCE	243	4822 410 10217	BUTTON CASS 9 FFW
210	4822 410 11006	BUTTON DSC1	244	4822 410 10218	BUTTON CASS 10 STOP
211	4822 410 11007	BUTTON DSC2	245	4822 410 10219	BUTTON CASS 11 PAUSE
212	4822 466 11124	LIGHT GUIDE DSC	247	4822 410 10221	BUTTON SPACER
213	4822 462 10758	CAP LIGHT GUIDE DSC			
			266	4822 410 10222	KNOB VOL UP/DOWN
214	4822 410 10204	BUTTON OPEN/CLOSE	270	4822 442 00709	COVER TRAY 3-CDC
215	4822 410 10205	BUTTON CDC SELECT	297	4822 462 40683	PLATE (FOOT)
217	4822 410 10922	BUTTON CDC1	298	4822 426 10362	CABINET REAR
218	4822 410 10207	BUTTON CDC2	300	4822 402 10288	BRACKET AC SOCKET
221	4822 450 10245	WINDOW DISP(N/RDS)			
				4822 445 10626	1X LOUDSPEAKER BOX
224	4822 492 11049	SPRING		4822 219 10134	REMOTE CONTROL
225	4822 443 10173	DOOR CASSETTE RIGHT		4822 320 11094	FM ANTENNA WIRE
226	4822 443 10173	DOOR CASSETTE LEFT		4822 303 50082	AM FRAME AERIAL
227	4822 442 00711	COVER DOOR CASS L		4822 736 14876	INSTRUCTIONS FOR USE
228	4822 442 00712	COVER DOOR CASS R			
			1110	4822 146 10454	TRANSFORMER
229	4822 450 10246	LENS CASSETTE LEFT		4822 321 10883	AC CORD
230	4822 450 10247	LENS CASSETTE RIGHT	1770	4822 691 10479	TAPE DECK YSW 27-500
231	4822 529 10322	DAMPER ASSY			
235	4822 410 10208	BUTTON CASS 1 REC	Note:	Only the parts listed above are normal service parts.	
236	4822 410 10209	BUTTON CASS 2 PLAY			

SCREW LIST - MAIN UNIT

222	D3 X 12	302	D3 X 12
248	D3 X 10	303	D3 X 12
249	D3 X 10	304	M3 X 6
251	D3 X 12	305	D3 X 12
252	D3 X 10	306	D3 X 6
253	D3 X 10	307	D3 X 12
255	D3 X 12	309	M3 X 10
258	D3 X 12	310	M3 X 10
261	D3 X 12	311	D3 X 10
273	M3 X 10	312	D3 X 10
275	D3 X 10	313	M3 X 10
282	D3 X 12	314	M3 X 6
284	M3 X 6	324	D3 X 12
286	M3 X 6		
296	D3 X 10		

FRONT BOARD ELECTRICAL REPLACEMENT PARTS LIST

Ref.	Part No.	Description	Ref.	Part No.	Description
MISCELLANEOUS					
1400	4822 135 00014	Fluorescent Display	2438	4822 126 13838	100nF Y5V 0805 50V P
1410	4822 276 13114	Tact Switch	2453	5322 122 32452	47pF 5% NP0 63V
1411	4822 276 13114	Tact Switch	2454	5322 122 32452	47pF 5% NP0 63V
1412	4822 276 13114	Tact Switch	2455	5322 122 32452	47pF 5% NP0 63V
1413	4822 276 13114	Tact Switch	2456	5322 122 32452	47pF 5% NP0 63V
1414	4822 276 13114	Tact Switch	2459	5322 122 32452	47pF 5% NP0 63V
1416	4822 276 13114	Tact Switch	2460	5322 122 32452	47pF 5% NP0 63V
1417	4822 276 13114	Tact Switch	2461	5322 122 32452	47pF 5% NP0 63V
1418	4822 276 13114	Tact Switch	2462	5322 122 32452	47pF 5% NP0 63V
1419	4822 276 13114	Tact Switch	2488	4822 122 33175	2.2nF 20% X7R 50V
1420	4822 276 13114	Tact Switch	2499	4822 126 13838	100nF Y5V 0805 50V P
1421	4822 276 13114	Tact Switch	2501	5322 122 32659	33pF 5% NP0 63V
1422	4822 276 13114	Tact Switch	2502	5322 122 32659	33pF 5% NP0 63V
1423	4822 276 13114	Tact Switch	2503	5322 122 32659	33pF 5% NP0 63V
1424	4822 276 13114	Tact Switch	2504	5322 122 32659	33pF 5% NP0 63V
1425	4822 276 13114	Tact Switch	2505	5322 122 32659	33pF 5% NP0 63V
1426	4822 276 13114	Tact Switch	2506	5322 122 32659	33pF 5% NP0 63V
1427	4822 276 13114	Tact Switch	2507	5322 122 32659	33pF 5% NP0 63V
1428	4822 276 13114	Tact Switch	2508	5322 122 32659	33pF 5% NP0 63V
1429	4822 276 13114	Tact Switch	2509	5322 122 32659	33pF 5% NP0 63V
1431	4822 276 13114	Tact Switch	2510	5322 122 32659	33pF 5% NP0 63V
1441	4822 276 13114	Tact Switch	2511	5322 122 32659	33pF 5% NP0 63V
1442	4822 276 13114	Tact Switch	2512	5322 122 32659	33pF 5% NP0 63V
1443	4822 276 13114	Tact Switch	RESISTORS		
1444	4822 276 13114	Tact Switch	3402	4822 051 20104	100K 5% 0.1W
1445	4822 276 13114	Tact Switch	3403	4822 051 20104	100K 5% 0.1W
1446	4822 276 13114	Tact Switch	3404	4822 051 20104	100K 5% 0.1W
1447	4822 276 13114	Tact Switch	3406	4822 051 10102	1K 2% 0.25W
1448	4822 276 13114	Tact Switch	3407	4822 051 10102	1K 2% 0.25W
1449	4822 276 13114	Tact Switch	3408	4822 051 10102	1K 2% 0.25W
1450	4822 276 13114	Tact Switch	3409	4822 051 10102	1K 2% 0.25W
1499	4822 276 13114	Tact Switch	3410	4822 051 10102	1K 2% 0.25W
CAPACITORS					
2401	4822 124 41584	100μF 20% 10V	3411	4822 051 10102	1K 2% 0.25W
2402	4822 124 42446	100μF 20% 10V	3412	4822 051 10102	1K 2% 0.25W
2403	4822 122 33496	100nF 10%X7R 63V	3413	4822 051 10102	1K 2% 0.25W
2404	4822 124 41596	22μF 20% 50V	3414	4822 051 10102	1K 2% 0.25W
2406	5322 122 32481	15pF 5% 50V	3415	4822 051 10102	1K 2% 0.25W
2407	5322 122 32481	15pF 5% 50V	3416	4822 051 10102	1K 2% 0.25W
2408	5322 122 32659	33pF 5% 50V	3417	4822 051 10102	1K 2% 0.25W
2409	5322 122 32659	33pF 5% 50V	3418	4822 051 10102	1K 2% 0.25W
2410	4822 124 40242	1μF 20% 63V	3419	4822 051 10102	1K 2% 0.25W
2411	5322 122 32531	100pF 5% NP0 50V	3420	4822 051 10102	1K 2% 0.25W
2412	5322 122 32531	100pF 5% NP0 50V	3421	4822 051 10102	1K 2% 0.25W
2413	4822 122 33177	10nF 20% X7R 50V	3422	4822 051 10102	1K 2% 0.25W
2414	5322 122 32531	100pF 5% NP0 50V	3423	4822 051 10102	1K 2% 0.25W
2415	4822 126 13838	100nF Y5V 0805 50V P	3424	4822 051 10102	1K 2% 0.25W
2422	4822 124 41584	100μF 20% 10V	3425	4822 051 10102	1K 2% 0.25W
2425	4822 121 51252	470nF 5% 63V	3426	4822 051 10102	1K 2% 0.25W
2426	4822 121 51252	470nF 5% 63V	3427	4822 051 10102	1K 2% 0.25W
2431	5322 122 34099	470pF 10% X7R 63V	3428	4822 051 10102	1K 2% 0.25W
2432	5322 122 34099	470pF 10% X7R 63V	3429	4822 051 10102	1K 2% 0.25W
2433	5322 122 34099	470pF 10% X7R 63V	3430	4822 051 10102	1K 2% 0.25W
2434	5322 122 34099	470pF 10% X7R 63V	3431	4822 051 10102	1K 2% 0.25W
2435	5322 122 34099	470pF 10% X7R 63V	3437	4822 117 10833	10K 10% 0.1W

FRONT BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description	Ref.	Part No.	Description
3438	4822 117 10833	10K 10% 0.1W	3505	4822 051 10102	1K 2% 0.25W
3439	4822 051 20474	470K 5% 0.1W	3506	4822 051 10102	1K 2% 0.25W
3440	4822 117 10833	10K 10% 0.1W	3507	4822 051 20272	2K7 5% 0.1W
3441	4822 051 20474	470K 5% 0.1W	3508	4822 051 20472	4K7 5% 0.1W
			3509	4822 117 10833	10K 10% 0.1W
3442	4822 117 10833	10K 10% 0.1W			
3443	4822 051 20474	470K 5% 0.1W	3510	4822 051 10102	1K 2% 0.25W
3446	4822 051 20331	330R 5% 0.1W	3511	4822 117 10833	10K 10% 0.1W
3447	4822 051 20331	330R 5% 0.1W	3512	4822 051 10102	1K 2% 0.25W
3448	4822 051 20331	330R 5% 0.1W	3513	4822 117 10833	10K 10% 0.1W
			3515	4822 117 10833	10K 10% 0.1W
3449	4822 051 20331	330R 5% 0.1W			
3450	4822 051 20331	330R 5% 0.1W	3516	4822 117 10833	10K 10% 0.1W
3451	4822 051 20331	330R 5% 0.1W	3517	4822 117 10833	10K 10% 0.1W
3452	4822 051 20331	330R 5% 0.1W	3521	4822 117 10833	10K 10% 0.1W
3453	4822 051 20331	330R 5% 0.1W	3525	4822 051 10102	1K 2% 0.25W
			3531	4822 117 10833	10K 10% 0.1W
3454	4822 051 20331	330R 5% 0.1W			
3455	4822 051 20331	330R 5% 0.1W	3532	4822 117 10833	10K 10% 0.1W
3456	4822 051 20331	330R 5% 0.1W	3533	4822 051 10102	1K 2% 0.25W
3457	4822 051 20331	330R 5% 0.1W	3534	4822 051 10102	1K 2% 0.25W
3459	4822 117 10833	10K 10% 0.1W	3536	4822 051 20479	47R 5% 0.1W
			3537	4822 051 10102	1K 2% 0.25W
3460	4822 117 10833	10K 10% 0.1W			
3461	4822 051 10102	1K 2% 0.25W	3538	4822 051 20472	4K7 5% 0.1W
3462	4822 051 20822	8K2 5% 0.1W	3540	4822 117 10833	10K 10% 0.1W
3463	4822 051 20682	6K8 5% 0.1W	3541	4822 117 10833	10K 10% 0.1W
3465	4822 117 10833	10K 10% 0.1W	3552	4822 051 10102	1K 2% 0.25W
			3553	4822 051 10102	1K 2% 0.25W
3466	4822 117 10833	10K 10% 0.1W			
3467	4822 117 10833	10K 10% 0.1W	3554	4822 051 10102	1K 2% 0.25W
3468	4822 117 10833	10K 10% 0.1W	3555	4822 051 10102	1K 2% 0.25W
3469	4822 051 10102	1K 2% 0.25W	3556	4822 117 10833	10K 10% 0.1W
3470	4822 051 20101	100R 5% 0.1W	3557	4822 117 10833	10K 10% 0.1W
			3558	4822 117 10833	10K 10% 0.1W
3472	4822 117 10833	10K 10% 0.1W			
3473	4822 117 10833	10K 10% 0.1W	3591	4822 052 10338	3R3 5% 0.33W
3475	4822 117 10833	10K 10% 0.1W	3592	4822 052 10338	3R3 5% 0.33W
3477	4822 051 10102	1K 2% 0.25W	3593	4822 117 10833	10K 10% 0.1W
3478	4822 051 20684	680K 5% 0.1W	3610	4822 116 83864	10K 5% 0.5W
3479	4822 051 20105	1M 5% 0.1W	3591 ▲	4822 052 10338	3R3 5% 0.33W
3480	4822 051 10102	1K 2% 0.25W	3592 ▲	4822 052 10338	3R3 5% 0.33W
3481	4822 051 10102	1K 2% 0.25W	3593	4822 117 10833	10K 10% 0.1W
3482	4822 051 10102	1K 2% 0.25W	3610	4822 116 83864	10K 10% 0.5W
3483	4822 051 10102	1K 2% 0.25W			
3484	4822 051 10102	1K 2% 0.25W			
3485	4822 051 10102	1K 2% 0.25W			
3486	4822 051 10102	1K 2% 0.25W			
3489	4822 117 10833	10K 10% 0.1W			
3490	4822 051 10102	1K 2% 0.25W			
3491	4822 051 20104	100K 5% 0.1W			
3493	4822 117 10833	10K 10% 0.1W			
3494	4822 117 11449	2K2 1% 0.1W			
3495	4822 117 11449	2K2 1% 0.1W			
3497	4822 051 10102	1K 2% 0.25W			
3498	4822 051 10102	1K 2% 0.25W			
3499	4822 051 10102	1K 2% 0.25W			
3500	4822 051 10102	1K 2% 0.25W			
3501	4822 051 10102	1K 2% 0.25W			
3503	4822 051 10102	1K 2% 0.25W			

FRONT BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description
JUMPER		
4401	4822 051 20008	JUMPER OR
4403	4822 051 20008	JUMPER OR
4407	4822 051 20008	JUMPER OR
4408	4822 051 20008	JUMPER OR
4410	4822 051 20008	JUMPER OR
4411	4822 051 20008	JUMPER OR
4412	4822 051 20008	JUMPER OR
4413	4822 051 20008	JUMPER OR
4414	4822 051 20008	JUMPER OR
4415	4822 051 20008	JUMPER OR
4416	4822 051 20008	JUMPER OR
4417	4822 051 20008	JUMPER OR
4418	4822 051 20008	JUMPER OR
4419	4822 051 20008	JUMPER OR
4420	4822 051 20008	JUMPER OR
4421	4822 051 20008	JUMPER OR
4422	4822 051 20008	JUMPER OR
4425	4822 051 20008	JUMPER OR
4426	4822 051 20008	JUMPER OR
4427	4822 051 20008	JUMPER OR
4428	4822 051 20008	JUMPER OR
4429	4822 051 20008	JUMPER OR
4430	4822 051 20008	JUMPER OR
4431	4822 051 20008	JUMPER OR
4432	4822 051 20008	JUMPER OR
4433	4822 051 20008	JUMPER OR
4434	4822 051 10008	JUMPER OR
4435	4822 051 20008	JUMPER OR
4436	4822 051 20008	JUMPER OR
4437	4822 051 20008	JUMPER OR
4439	4822 051 20008	JUMPER OR
4440	4822 051 20008	JUMPER OR
4441	4822 051 20008	JUMPER OR
4442	4822 051 20008	JUMPER OR
4443	4822 051 20008	JUMPER OR
4445	4822 051 20008	JUMPER OR
4446	4822 051 20008	JUMPER OR
4447	4822 051 20008	JUMPER OR
4449	4822 051 20008	JUMPER OR
4451	4822 051 20008	JUMPER OR
4452	4822 051 20008	JUMPER OR
4453	4822 051 20008	JUMPER OR
4491	4822 051 10008	JUMPER OR

Ref.	Part No.	Description
COILS & INDUCTORS		
5402	4822 242 70938	TA252E00 (32,768KHz)
5405	4822 156 21721	INDUCTOR 2.2μH 10%
5406	4822 156 21721	INDUCTOR 2.2μH 10%
5410	4822 242 72066	CERAMIC FILTER 8MHz
5411	4822 156 21721	INDUCTOR 2.2μH 10%

Ref.	Part No.	Description
DIODES		
6401	5322 130 30684	1N4002
6403	5322 130 30684	1N4002
6404	5322 130 30684	1N4002
6412	4822 130 30621	1N4148
6414	4822 130 30621	1N4148
6415	4822 130 30621	1N4148
6441	4822 130 30621	1N4148
6446	4822 130 30621	1N4148
6447	4822 130 30621	1N4148
6448	4822 130 30621	1N4148
6449	4822 130 30621	1N4148
6450	4822 130 30621	1N4148
6451	4822 130 30621	1N4148
6452	4822 130 30621	1N4148
6453	4822 130 30621	1N4148
6454	4822 130 30621	1N4148
6455	4822 130 30621	1N4148
6456	4822 130 30621	1N4148
6457	4822 130 30621	1N4148
6467	4822 130 10165	GP1U28XP

Ref.	Part No.	Description
INTERGRATED CIRCUITS		
7401	4822 209 15436	TMP87CP71F-322S51471
7403	4822 209 31508	ST24C01B6

Ref.	Part No.	Description
TRANSISTORS		
7405	5322 130 42755	BC847C
7406	5322 130 42755	BC847C
7407	5322 130 42755	BC847C
7420	5322 130 42755	BC847C

Note: Only the parts listed above are normal service spare parts.

EC05 TUNER ELECTRICAL REPLACEMENT PARTS LIST

Ref.	Part No.	Description	Ref.	Part No.	Description
MISCELLANEOUS					
1101	4822 267 31505	Antenna connector 300E	2152	4822 122 33342	33nF 10% 63V
1102	4822 267 10283	Socket Coaxial IEC 75E	2153	4822 122 32139	12pF 2% 63V
CAPACITORS					
2101	5322 122 32531	100pF 5% 50V	2153	5322 122 32481	15pF 5% 50V
2101	5322 122 32452	47pF 5% 63V	2155	4822 125 60101	Trimmer 3-11pF 100V
2102	4822 122 33177	10nF 20% 50V	2158	5322 122 32448	10pF 5% 50V
2103	5322 122 34123	1nF 10% 50V	2159	5322 122 32659	33pF 5% 50V
2104	4822 122 33195	100pF 10% 50V	2160	5322 122 32654	22nF 10% 63V
2106	4822 125 50355	Trimmer 4-20pF	2161	4822 122 31947	100nF 20% 63V
2106	4822 125 60101	Trimmer 3-11pF 100V	2161	4822 126 10002	100nF 20% 25V
2107	4822 121 51319	1μF 10% 63V	2163	4822 122 31947	100nF 20% 63V
2108	5322 122 32531	100pF 5% 50V	2163	4822 126 10002	100nF 20% 25V
2109	5322 122 32448	10pF 5% 50V	2164	4822 126 13482	470nF 80/ 20% 16V
2120	5322 122 31946	27pF 5% 63V	2165	4822 122 31947	100nF 20% 63V
2120	5322 122 32658	22pF 5% 50V	2165	4822 126 10002	100nF 20% 25V
2122	4822 122 33891	3.3nF 10% 63V	2166	5322 122 34123	1nF 10% 50V
2123	4822 121 51254	390pF 1% 400V	2167	4822 122 32139	12pF 2% 63V
2125	4822 121 51381	560pF 5% 400V	RESISTORS		
2126	5322 122 31863	330pF 5% 50V	3101	4822 051 20562	5k6 5% 0.1W
2127	4822 122 32927	220nF +80/-20% 50V	3101	4822 051 20333	33k 5% 0.1W
2127	4822 126 13473	220nF +80/-20% 50V	3102	4822 051 20104	100k 5% 0.1W
2128	4822 124 41579	10μF 20% 50V	3103	4822 051 20183	18k 5% 0.1W
2129	4822 124 41584	100μF 20% 10V	3104	4822 117 11448	180E 1% 0.1W
2130	4822 126 11585	22nF+80/-20% 25V	3105	4822 116 83872	220E 5% 0.5W
2131	4822 122 33325	470nF 16V	3108	4822 117 11449	2k2 1% 0.1W
2131	4822 126 13482	470nF +80/-20% 16V	3109	4822 051 20472	4k7 5% 0.1W
2132	4822 122 33325	470nF 16V	3110	4822 116 52195	47E 5% 0.5W
2132	4822 126 13482	470nF80/ 20% 16V	3120	4822 051 20008	Chip Jumper 0805
2133	4822 124 40242	1μF 20% 63V	3123	4822 051 20472	4k7 5% 0.1W
2134	4822 122 33128	15nF 10% 63V	3125	4822 117 10833	10k 1% 0.1W
2134	5322 122 32654	22nF 10% 63V	3128	4822 117 11449	2k2 1% 0.1W
2135	4822 124 40746	0.22μF 20% 63V	3132	4822 116 52195	47E 5% 0.5W
2136	4822 122 33128	15nF 10% 63V	3134	4822 051 20224	220k 5% 0.1W
2136	5322 122 32654	22nF 10% 63V	3137	4822 051 20223	22k 5% 0.1W
2137	4822 124 40746	0.22μF 20% 63V	3140	4822 051 20008	Chip Jumper 0805
2138	4822 124 41576	2.2μF 20% 50V	3140	4822 117 10353	150E 1% 0.1W
2139	5322 122 32447	1pF 5% 50V	3141	4822 051 20563	56k 5% 0.1W
2140	4822 121 51252	470nF 5% 63V	3142	4822 100 11163	100k 30%LIN 0.1W
2141	4822 122 31947	100nF 20% 63V	3145	4822 117 11449	2k2 1% 0.1W
2141	4822 126 10002	100nF 20% 25V	3146	4822 051 20229	22E 5% 0.1W
2142	4822 122 31947	100nF 20% 63V	3152	4822 116 52224	470E 5% 0.5W
2142	4822 126 10002	100nF 20% 25V	3153	4822 051 20471	470E 5% 0.1W
2143	4822 122 32927	220nF +80/-20% 50V	3154	4822 116 83868	150E 5% 0.5W
2143	4822 126 13473	220nF +80/-20% 50V	3155	4822 051 20471	470E 5% 0.1W
2144	4822 124 40242	1μF 20% 63V	3156	4822 051 20104	100k 5% 0.1W
2145	4822 122 33575	220pF 5% 50V	3157	4822 116 52234	100k 5% 0.5W
2146	4822 122 33575	220pF 5% 50V	3158	4822 116 52224	470E 5% 0.5W
2147	4822 122 33575	220pF 5% 50V	3159	4822 116 52224	470E 5% 0.5W
2148	4822 126 11585	22nF+80/-20% 25V	3160	4822 116 52224	470E 5% 0.5W
2149	5322 122 32654	22nF 10% 63V	3161	4822 116 52224	470E 5% 0.5W
2150	4822 122 31947	100nF 20% 63V	3167	4822 051 20221	220E 5% 0.1W
2152	5322 116 80853	560pF 5% 63V	3169	4822 051 20154	150k 5% 0.1W

ECO5 TUNER BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description	Ref.	Part No.	Description
3170	4822 116 52234	100k 5% 0.5W	7105	5322 130 44779	BC338-40
3171	4822 116 52219	330E 5% 0.5W	7109	5322 130 41983	BC858B
4101	4822 051 20008	Chip Jumper 0805	7111	5322 130 42136	BC848C
4102	4822 051 20008	Chip Jumper 0805	7122	5322 130 42136	BC848C
4103	4822 051 20008	Chip Jumper 0805	7124	5322 130 42136	BC848C
4104	4822 051 20008	Chip Jumper 0805			
4105	4822 051 20008	Chip Jumper 0805			
4106	4822 051 20008	Chip Jumper 0805			
4108	4822 051 20008	Chip Jumper 0805			
4111	4822 051 20008	Chip Jumper 0805			
4120	4822 051 20008	Chip Jumper 0805			
4150	4822 051 10008	Chip Jumper 1206			
4151	4822 051 20008	Chip Jumper 0805			
4152	4822 051 10008	Chip Jumper 1206			
4153	4822 051 10008	Chip Jumper 1206			
4154	4822 051 10008	Chip Jumper 1206			
4155	4822 051 10008	Chip Jumper 1206			
4156	4822 051 20008	Chip Jumper 0805			
4157	4822 051 10008	Chip Jumper 1206			
4158	4822 051 10008	Chip Jumper 1206			
4159	4822 051 10008	Chip Jumper 1206			

NOTE: Only the parts listed above are normal service spare parts.

COILS & FILTERS

5102	4822 157 71634	RF Coil AM
5103	4822 157 71635	RF Coil LW
5109	4822 242 70665	Ceram Filter 10.7MHz
5110	4822 242 70665	Ceram Filter 10.7MHz
5111	4822 158 60511	AM-IF Filter 450kHz
5112	4822 157 70302	AM-IF Filter 450kHz
5114	4822 157 70302	AM-AFC Filter 450kHz
5120	4822 242 82065	Ceram Filter 10.7MHz
5120	4822 242 10251	Ceram Filter 10.7MHz
5121	4822 242 10261	QUARTZ 75kHz
5122	4822 157 60517	OSC. COIL LW
5123	4822 157 60517	OSC. COIL AM
5130	4822 156 30947	RF-COIL 1.5 TURNS
5131	4822 156 30947	RF-COIL 1.5 TURNS

DIODES

6103	4822 130 30621	1N4148
6104	4822 130 30621	1N4148
6105	4822 130 83075	HN1V02H, VARICAP.
6106	4822 130 30621	1N4148
6107	4822 130 34488	BZX79-C11 (COL)
6120	4822 130 30621	1N4148
6130	4822 130 82833	1SV228
6131	4822 130 82833	1SV228

TRANSISTORS & INTEGRATED CIRCUITS

7101	4822 209 90924	TEA5757H/V1,RADIO IC
7102	4822 130 60093	2SA838B
7104	5322 130 44779	BC338-40

CASSETTE BOARD ELECTRICAL REPLACEMENT PARTS LIST

Ref.	Part No.	Description	Ref.	Part No.	Description
CAPACITORS					
2703	4822 124 41397	47μF 20% 25V	2760	4822 122 33519	470pF 10% 50V
2704	4822 124 41596	22μF 20% 50V	2761	4822 122 33169	680pF 10% 50V
2705	4822 124 40246	4.7μF 20% 63V	2762	4822 122 33169	680pF 10% 50V
2706	4822 124 40181	220μF 20% 10V			
2707	4822 124 41576	2.2μF 20% 50V	RESISTORS		
			3701	4822 116 83863	1k 5% 0.5W
2708	4822 124 40181	220μF 20% 10V	3702	4822 116 52284	47k 5% 0.5W
2709	4822 124 80144	220μF 20% 25V	3705	4822 116 83863	1k 5% 0.5W
2710	4822 124 41397	47μF 20% 25V	3706	4822 111 30893	4M7 5% 0.2W
2711	4822 124 40181	220μF 20% 10V	3707	4822 116 52176	10Ω 5% 0.5W
2712	4822 124 40181	220μF 20% 10V			
			3708	4822 116 83864	10k 5% 0.5W
2713	4822 124 80144	220μF 20% 25V	3709	4822 116 52217	270Ω 5% 0.5W
2714	4822 124 41397	47μF 20% 25V	3710	4822 116 52269	3k3 5% 0.5W
2715	4822 124 41596	22μF 20% 50V	3711	4822 116 52256	2k2 5% 0.5W
2716	4822 124 41596	22μF 20% 50V	3712	4822 116 52256	2k2 5% 0.5W
2718	4822 124 41397	47μF 20% 25V			
			3713	4822 116 52257	22k 5% 0.5W
2719	4822 124 41397	47μF 20% 25V	3714	4822 116 52257	22k 5% 0.5W
2721	4822 121 51387	10nF 20% 16V	3715	4822 116 52256	2k2 5% 0.5W
2722	4822 126 11714	4.7nF 20% 50V	3716	4822 116 52303	8k2 5% 0.5W
2723	4822 121 51304	10nF 10% 50V	3718	4822 116 83864	10k 5% 0.5W
2724	4822 121 51306	18nF 10% 50V			
			3719	4822 116 52256	2k2 5% 0.5W
2725	4822 126 11714	4.7nF 20% 16V	3720	4822 116 52256	2k2 5% 0.5W
2726	4822 126 11714	4.7nF 20% 16V	3721	4822 116 52245	150k 5% 0.5W
2727	4822 126 12878	1.5nF 10% 50V	3722	4822 116 52215	220Ω 5% 0.5W
2728	4822 121 51305	15nF 10% 50V	3723	4822 116 52224	470Ω 5% 0.5W
2729	4822 126 12787	330pF 10% 50V			
			3724	4822 116 52184	18Ω 5% 0.5W
2730	4822 121 51304	10nF 10% 50V	3725	4822 116 52303	8k2 5% 0.5W
2731	4822 126 11585	22nF +80-20% 25V	3726	4822 116 83863	1k 5% 0.5W
2732	4822 126 11585	22nF +80-20% 25V	3727	4822 116 52219	330Ω 5% 0.5W
2733	4822 126 12878	1.5nF 10% 16V	3728	4822 116 83864	10k 5% 0.5W
2734	5322 122 32311	470pF 10% 100V			
			3729	4822 116 52256	2k2 5% 0.5W
2735	4822 121 51305	15nF 10% 50V	3730	4822 116 52256	2k2 5% 0.5W
2736	4822 126 12787	330pF 10% 50V	3734	4822 116 52289	5k6 5% 0.5W
2737	4822 121 51304	10nF 10% 50V	3731	4822 116 52245	150k 5% 0.5W
2738	4822 126 11585	22nF +80-20% 25V	3732	4822 116 83864	10k 5% 0.5W
2739	4822 122 33195	100pF 10% 50V			
			3733	4822 116 52256	2k2 5% 0.5W
2740	4822 126 12339	2.2nF 20%	3735	4822 116 83864	10k 5% 0.5W
2741	4822 126 12339	2.2nF 20%	3736	4822 116 52256	2k2 5% 0.5W
2742	4822 122 33195	100pF 10% 50V	3737	4822 116 52245	150k 5% 0.5W
2743	4822 126 12878	1.5nF 10% 16V	3738	4822 116 52215	220Ω 5% 0.5W
2744	5322 122 32311	470pF 10% 100V			
			3739	4822 116 52224	470Ω 5% 0.5W
2745	4822 126 12878	1.5nF 10% 16V	3740	4822 116 52283	4k7 5% 0.5W
2746	5322 122 32311	470pF 10% 100V	3741	4822 116 52184	18Ω 5% 0.5W
2747	4822 121 51305	15nF 10% 50V	3742	4822 116 52245	150k 5% 0.5W
2748	4822 126 11585	22nF +80-20% 25V	3743	4822 116 52215	220Ω 5% 0.5W
2749	4822 126 12878	1.5nF 10% 16V			
			3744	4822 116 52224	470Ω 5% 0.5W
2750	5322 122 32311	470pF 10% 100V	3745	4822 116 52283	4k7 5% 0.5W
2751	4822 121 51305	15nF 10% 50V	3746	4822 116 52184	18Ω 5% 0.5W
2752	4822 126 12878	1.5nF 10% 50V	3747	4822 116 52289	5k6 5% 0.5W
2753	4822 124 40242	1μF 20% 63V	3748	4822 116 52224	470Ω 5% 0.5W
2754	4822 124 41397	47μF 20% 25V			
			3749	4822 116 52245	150k 5% 0.5W
2755	4822 124 40242	1μF 20% 63V	3750	4822 116 52215	220Ω 5% 0.5W
2756	4822 124 41397	47μF 20% 25V	3751	4822 116 52224	470Ω 5% 0.5W
2757	4822 121 51252	470nF 5% 63V	3752	4822 116 52184	18Ω 5% 0.5W
2758	4822 121 51252	470nF 5% 63V	3753	4822 116 52224	470Ω 5% 0.5W
2759	4822 122 33519	470pF 10% 50V			

CASSETTE BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description
3754	4822 116 52256	2k2 5% 0.5W
3755	4822 116 52256	2k2 5% 0.5W
3756	4822 116 52256	2k2 5% 0.5W
3757	4822 116 52256	2k2 5% 0.5W
3759 ▲	4822 052 10478	4Ω7 5% 0.33W
3760	4822 116 52263	2k7 5% 0.5W
3761	4822 116 52284	47k 5% 0.5W
3762	4822 116 83874	220k 5% 0.5W
3764	4822 116 83864	10k 5% 0.5W
3765	4822 116 83864	10k 5% 0.5W
3766	4822 116 83864	10k 5% 0.5W
3767	4822 116 83864	10k 5% 0.5W
3768	4822 116 83864	10k 5% 0.5W
3769	4822 116 52303	8k2 5% 0.5W
3770	4822 116 52284	47k 5% 0.5W
3771	4822 116 83864	10k 5% 0.5W
3772	4822 116 52234	100k 5% 0.5W
3773	4822 116 83864	10k 5% 0.5W
3774	4822 116 52303	8k2 5% 0.5W
3775	4822 116 52284	47k 5% 0.5W
3776	4822 116 52234	100k 5% 0.5W
3777	4822 116 52284	47k 5% 0.5W
3778	4822 116 52234	100k 5% 0.5W
3779	4822 116 83864	10k 5% 0.5W
3780	4822 116 52245	150k 5% 0.5W
3781	4822 116 52175	100Ω 5% 0.5W
3782	4822 116 52175	100Ω 5% 0.5W
3783	4822 116 83864	10k 5% 0.5W
3784	4822 116 83864	10k 5% 0.5W
3785	4822 116 52217	270Ω 5% 0.5W
3786	4822 116 52234	100k 5% 0.5W
3787	4822 116 52175	100Ω 5% 0.5W
3788	4822 116 52256	2k2 5% 0.5W
3789	4822 116 52256	2k2 5% 0.5W

COIL

5701	4822 157 10371	100KHZ OSC COIL
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DIODES

6703	4822 130 30621	1N4148
6705	5322 130 34563	BZX79-C2V7
6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148
6710	4822 130 34173	BZX79-C5V6
6711	4822 130 34173	BZX79-C5V6

TRANSISTORS & INTEGRATED CIRCUITS

Ref.	Part No.	Description
7701	4822 130 42231	BC557C
7702	4822 130 40938	BC548
7704	4822 130 40981	BC337-25
7709	4822 130 44503	BC547C
7710	4822 130 44503	BC547C
7711	4822 209 32918	AN7318S
7712	4822 209 32918	AN7318S
7713	4822 130 40981	BC337-25
7714	4822 130 40981	BC337-25
7715	4822 130 40981	BC337-25
7716	4822 130 40981	BC337-25
7717	4822 130 40938	BC548
7718	4822 130 40959	BC547B
7719	4822 130 40959	BC547B
7720	4822 130 44503	BC547C
7721	4822 130 44503	BC547C

Note: Only the parts listed above are normal service spare parts.

**To order parts call the TOLL FREE Philips Sales Center number:
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(In Canada) 1-800-363-PART • 1-800-663-7178 (Fax)**

WARNING

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Use of substitute replacement parts which do not have the same spec-ified safety characteristics may create shock, fire, or other hazards.

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CDC BOARD ELECTRICAL REPLACEMENT PARTS LIST

Ref.	Part No.	Description	Ref.	Part No.	Description
MISCELLANEOUS					
1810	4822 242 73557	Ceram Resonator 8.46MHz	2848	4822 124 23624	47µF 20% 16V
1880	4822 276 13503	Open/Close Switch	2850	4822 122 33197	1nF 10% 50V
1881	4822 276 13503	CDM Position Switch	2851	4822 124 41997	470µF 10V
1882	4822 276 13503	Carousel Switch	2852	4822 126 12882	100nF+80/-20% 50V
8002	4822 320 11313	Flexfoil 15P	2855	4822 126 12882	100nF+80/-20% 50V
CAPACITORS					
2800	4822 126 10053	180pF 10% 50V	2860	4822 124 41579	10µF 20% 50V
2801	4822 122 10466	220pF 10% 50V	2861	4822 124 41579	10µF 20% 50V
2802	4822 126 10053	180pF 10% 50V	2862	4822 126 12339	2.2nF 10% 16V
2803	4822 122 10466	220pF 10% 50V	2863	4822 126 12339	2.2nF 10% 16V
2804	4822 126 12787	330pF 10% 50V	2872	4822 126 12882	100nF+80/-20% 50V
2805	4822 122 10466	220pF 10% 50V	2873	4822 126 12882	100nF+80/-20% 50V
2806	4822 122 10466	220pF 10% 50V	2874	4822 126 11585	22nF+80/-20% 25V
2807	4822 126 12878	1,5nF 10% 16V	2875	4822 126 11585	22nF+80/-20% 25V
2808	4822 122 10466	220pF 10% 50V	2876	4822 124 23794	470µF 20% 16V
2809	4822 126 12882	100nF+80/-20% 50V	RESISTORS		
2810	4822 122 10459	560pF 10% 50V	3800	4822 116 52239	120k 5% 0.5W
2811	4822 122 10466	220pF 10% 50V	3801	4822 116 83864	10k 5% 0.5W
2812	4822 122 33848	47pF 5% 50V	3802	4822 116 52239	120k 5% 0.5W
2813	4822 122 33848	47pF 5% 50V	3803	4822 116 83864	10k 5% 0.5W
2814	4822 122 33195	100pF 10% 50V	3804	4822 116 52291	56k 5% 0.5W
2815	4822 126 12573	18pF 5% 50V	3805	4822 116 83864	10k 5% 0.5W
2816	4822 124 23624	47µF 20% 16V	3806	4822 116 83864	10k 5% 0.5W
2817	4822 126 10053	180pF 10% 50V	3807	4822 116 83864	10k 5% 0.5W
2818	4822 124 23624	47µF 20% 16V	3808	4822 116 83864	10k 5% 0.5W
2819	4822 126 12787	330pF 10% 50V	3810	4822 050 11002	1k 1% 0.4W
2820	4822 126 10053	180pF 10% 50V	3811	4822 116 52244	15k 5% 0.5W
2821	4822 126 11585	22nF+80/-20% 25V	3812	4822 116 52272	330k 5% 0.5W
2822	4822 126 12339	2.2nF 10% 16V	3813	4822 116 52284	47k 5% 0.5W
2823	4822 122 33848	47pF 5% 50V	3814	4822 116 83882	39k 5% 0.5W
2824	4822 126 11585	22nF+80/-20% 25V	3815	4822 050 11002	1k 1% 0.4W
2825	4822 126 12882	100nF+80/-20% 50V	3816	4822 116 52175	100E 5% 0.5W
2826	4822 124 23624	47µF 20% 16V	3817	4822 050 11002	1k 1% 0.4W
2827	4822 126 12882	100nF+80/-20% 50V	3818	4822 116 52175	100E 5% 0.5W
2828	4822 126 12882	100nF+80/-20% 50V	3819	4822 116 52222	390E 5% 0.5W
2829	4822 124 80865	10µF 20% 25V	3820	4822 116 52219	330E 5% 0.5W
2830	4822 126 12882	100nF+80/-20% 50V	3821	4822 116 52249	1k8 5% 0.5W
2831	4822 126 12882	100nF+80/-20% 50V	3822	4822 116 52219	330E 5% 0.5W
2832	4822 124 23624	47µF 20% 16V	3823	4822 116 52249	1k8 5% 0.5W
2835	4822 126 12882	100nF+80/-20% 50V	3824	4822 116 52269	3k3 5% 0.5W
2836	4822 124 23624	47µF 20% 16V	3825	4822 116 52256	2k2 5% 0.5W
2837	4822 126 12882	100nF+80/-20% 50V	3826	4822 116 52257	22k 5% 0.5W
2838	4822 126 12882	100nF+80/-20% 50V	3827	4822 116 52278	390k 5% 0.5W
2839	4822 126 12882	100nF+80/-20% 50V	3828	4822 116 52257	22k 5% 0.5W
2840	4822 126 12882	100nF+80/-20% 50V	3829	4822 116 52175	100E 5% 0.5W
2841	4822 122 10574	1.2nF 10% 16V	3830	4822 116 52235	1M 5% 0.5W
2842	4822 121 51387	10nF 20% 16V	3831	4822 116 52257	22k 5% 0.5W
2843	4822 126 12882	100nF+80/-20% 50V	3832	4822 116 83872	220E 5% 0.5W
2844	4822 122 10574	1.2nF 10% 16V	3833	4822 116 83864	10k 5% 0.5W
2845	4822 121 51387	10nF 20% 16V	3834	4822 116 83864	10k 5% 0.5W
2846	4822 126 11585	22nF+80/-20% 25V	3835	4822 116 52256	2k2 5% 0.5W
2847	4822 126 12882	100nF+80/-20% 50V	3836	4822 050 11002	1k 1% 0.4W
			3837	4822 050 11002	1k 1% 0.4W

CDC BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description
3838	4822 050 11002	1k 1% 0.4W
3839	4822 116 52245	150k 5% 0.5W
3840	4822 116 52245	150k 5% 0.5W
3841	4822 116 52289	5k6 5% 0.5W
3842	4822 116 83864	10k 5% 0.5W
3843	4822 116 52303	8k2 5% 0.5W
3844	4822 116 52224	470E 5% 0.5W
3845	4822 116 83864	10k 5% 0.5W
3846	4822 116 52303	8k2 5% 0.5W
3847	4822 116 52224	470E 5% 0.5W
3848	4822 116 52303	8k2 5% 0.5W
3849	4822 116 52303	8k2 5% 0.5W
3850	4822 116 52224	470E 5% 0.5W
3851	4822 052 10338 ▲	3E3 5% 0.33W
3852	4822 052 10338 ▲	3E3 5% 0.33W
3853	4822 052 10338 ▲	3E3 5% 0.33W
3858	4822 116 52257	22k 5% 0.5W
3859	4822 116 52257	22k 5% 0.5W
3860	4822 116 52224	470E 5% 0.5W
3861	4822 116 52224	470E 5% 0.5W
3869	4822 116 52175	100E 5% 0.5W
3870	4822 116 52226	560E 5% 0.5W
3871	4822 116 83864	10k 5% 0.5W
3872	4822 116 83864	10k 5% 0.5W
3873	4822 116 52224	470E 5% 0.5W
3874	4822 116 83864	10k 5% 0.5W
3875	4822 116 83864	10k 5% 0.5W
3876	4822 116 83874	220k 5% 0.5W
3877	4822 116 83864	10k 5% 0.5W
3878	4822 116 83864	10k 5% 0.5W
3879	4822 116 83864	10k 5% 0.5W
3880	4822 116 52219	330E 5% 0.5W
3881	4822 116 83864	10k 5% 0.5W
3882	4822 116 52284	47k 5% 0.5W
3883	4822 116 52234	100k 5% 0.5W
3884	4822 116 52276	3k9 5% 0.5W
3885	4822 116 52234	100k 5% 0.5W
3886	4822 116 52284	47k 5% 0.5W
3887	4822 052 10221 ▲	220E 5% 0.33W
3888	4822 116 83864	10k 5% 0.5W
3889	4822 116 52224	470E 5% 0.5W
3890	4822 116 52224	470E 5% 0.5W
3891	4822 116 52244	15k 5% 0.5W
3892	4822 116 52175	100E 5% 0.5W
3893	4822 116 52175	100E 5% 0.5W
3894	4822 052 10338 ▲	3E3 5% 0.33W
3895	4822 052 10338 ▲	3E3 5% 0.33W
3896	4822 116 83864	10k 5% 0.5W
3897	4822 116 52175	100E 5% 0.5W

DIODES

6871	4822 130 30621	1N4148
6872	4822 130 30621	1N4148

Ref.	Part No.	Description
6873	4822 130 30621	1N4148
6874	4822 130 30621	1N4148
6875	4822 130 34233	BZX79-C5V1

TRANSISTORS & INTEGRATED CIRCUITS

7800	4822 209 12752	SAA7378GP/M1
7801	4822 130 40902	BF240
7802	4822 130 40937	BC548B
7803	4822 130 44197	BC558B
7804	4822 130 40937	BC548B
7805	4822 130 40937	BC548B
7806	4822 209 32852	TDA7073A/N2
7807	4822 209 32852	TDA7073A/N2
7808	4822 130 40937	BC548B
7809	4822 130 41715	BC328-40
7851	4822 209 32421	TDA1311A/N2
7871	4822 209 32852	TDA7073A/N2
7872	5322 209 11306	HEF4094BT
7874	4822 130 40937	BC548B

Note: Only the parts listed above are normal service spare parts.

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2VA POWER BOARD ELECTRICAL REPLACEMENT PARTS LIST

1828 -89

Ref.	Part No.	Description
MISCELLANEOUS		
1201 ▲	4822 265 31016	AC Socket /37
1206 ▲	4822 252 51123	Fuse 6.3A
1211 ▲	4822 071 51002	Fuse 1A
1212 ▲	4822 071 51002	Fuse 1A

CAPACITORS

2220	5322 121 42386	100nF 5% 63V
2221	5322 121 42386	100nF 5% 63V
2222	5322 121 42386	100nF 5% 63V
2224	4822 124 11516	6800µF 20% 35V
2239	4822 122 33519	470pF10% 50V
2240	5322 121 42386	100nF 5% 63V
2243	4822 124 42057	3300µF 20% 25V
2245	4822 124 40433	47µF 20% 25V
2246	4822 122 33197	1nF 10% 50V
2247	4822 122 33197	1nF 10% 50V
2248	4822 124 81029	100µF 20% 25V
2249	4822 124 40433	47µF 20% 25V
2250	4822 124 41584	100µF 20% 10V
2251	4822 126 12785	47nF Y5VTUB 50V
2252	4822 122 33197	1nF 10% 50V
2253	4822 122 33197	1nF 10% 50V
2254	4822 126 12882	100nF +80-20% 50V
2261	4822 126 12882	100nF +80-20% 50V
2262	4822 124 40255	100µF 20% 63V
2263	4822 124 41596	22µF 20% 50V
2265	4822 121 51387	10nF 20% 16V
2266	4822 121 51387	10nF 20% 16V
2267	4822 122 33197	1nF 10% 50V
2271	4822 121 51387	10nF 20% 16V
2272	4822 121 51387	10nF 20% 16V
2273	4822 124 40433	47µF 20% 25V
2274	4822 124 40433	47µF 20% 25V
2281	4822 122 10577	3.3nF 10% 16V
2282	4822 122 10577	3.3nF 10% 16V
2283	4822 124 22263	220µF 20% 25V
2284	4822 124 22263	220µF 20% 25V
2285	5322 121 42386	100nF 5% 63V
2286	5322 121 42386	100nF 5% 63V
2287	4822 123 14025	2200µF 20% 16V
2288	4822 123 14025	2200µF 20% 16V
2289	4822 126 12785	47nF Y5VTUB 50V
2290	4822 126 12785	47nF Y5VTUB 50V
2291	4822 124 40242	1µF 20% 63V
2293	4822 123 14026	470µF 20% 35V
2295	4822 122 33519	470pF10% 50V

Ref.	Part No.	Description
RESISTORS		
3201 ▲	4822 053 21106	10M 5% 0.5W
3204 ▲	4822 052 10108	1R 5% 0.33W
3211	4822 050 11002	1k 1% 0.4W
3212	4822 050 11002	1k 1% 0.4W
3214	4822 116 52256	2K2 5% 0.5W

3215	4822 116 52256	2K2 5% 0.5W
3216	4822 116 52256	2K2 5% 0.5W
3217	4822 116 52256	2K2 5% 0.5W
3242	4822 050 11002	1k 1% 0.4W
3243	4822 050 11002	1k 1% 0.4W
3244	4822 050 11002	1k 1% 0.4W
3245	4822 116 52283	4K7 5% 0.5W
3246	4822 116 52283	4K7 5% 0.5W
3247	4822 116 52283	4K7 5% 0.5W
3248	4822 116 52228	680R 5% 0.5W
3249	4822 116 52264	27K 5% 0.5W
3250	4822 116 52257	22K 5% 0.5W
3251	4822 116 52283	4K7 5% 0.5W
3252	4822 116 52283	4K7 5% 0.5W
3255	4822 116 52263	2K7 5% 0.5W
3256	4822 116 52283	4K7 5% 0.5W
3258	4822 116 52207	1K2 5% 0.5W
3260	4822 116 83882	39K 5% 0.5W
3261	4822 116 52276	3K9 5% 0.5W
3262 ▲	4822 052 10479	47R 5% 0.33W
3263	4822 116 83864	10K 5% 0.5W
3264	4822 116 52257	22K 5% 0.5W
3265 ▲	4822 052 10479	47R 5% 0.33W
3266 ▲	4822 052 10479	47R 5% 0.33W
3267 ▲	4822 052 10278	2R7 5% 0.33W
3268	4822 116 52243	1K5 5% 0.5W
3269	4822 116 52243	1K5 5% 0.5W
3270	4822 116 52243	1K5 5% 0.5W
3271	4822 116 83884	47K 5% 0.5W
3272	4822 116 83884	47K 5% 0.5W
3276	4822 116 83884	47K 5% 0.5W
3277	4822 116 52283	4K7 5% 0.5W
3281	4822 116 52263	2K7 5% 0.5W
3282	4822 116 52263	2K7 5% 0.5W
3283	4822 116 52249	1K8 5% 0.5W
3284	4822 116 52249	1K8 5% 0.5W
3287	4822 116 52263	2K7 5% 0.5W
3288	4822 116 52263	2K7 5% 0.5W
3289	4822 116 52222	390R 5% 0.5W
3290	4822 116 52222	390R 5% 0.5W

2VA POWER BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description
RESISTORS		
3293▲	4822 052 10228	2R2 5% 0.33W
3294▲	4822 052 10228	2R2 5% 0.33W
3295	4822 116 52256	2K2 5% 0.5W
3296	4822 116 52256	2K2 5% 0.5W
3297▲	4822 117 12148	1R5 5% 330MWATT
3298▲	4822 117 12148	1R5 5% 330MWATT
3299▲	4822 052 10479	47R 5% 0.33W

DIODE

6220	4822 130 82079	D3SBA20
6241	5322 130 80686	1N5392
6242	5322 130 80686	1N5392
6243	4822 130 30621	1N4148
6244	4822 130 34173	BZX79-C5V6
6245	4822 130 30621	1N4148
6247	4822 130 30621	1N4148
6248	4822 130 34167	BZX79-B
6251	4822 130 30621	1N4148
6252	4822 130 30621	1N4148
6253	4822 130 34382	BZX79-C8V2
6261	5322 130 30684	1N4002GP
6262	4822 130 31024	BZX79-C18
6263	4822 130 34281	BZX79-C15
6265	4822 130 34174	BZX79-C4V7
6271	4822 130 30621	1N4148
6272	4822 130 34174	BZX79-C4V7

TRANSISTORS

7242	4822 130 63575	BD242BFI
7243	4822 130 40937	BC548B
7244	4822 130 44197	BC558B
7245	4822 130 44197	BC558B
7246	4822 130 40937	BC548B
7247	4822 130 63615	BD241BFI
7248	4822 130 40937	BC548B
7261	4822 130 41646	BF423

INTERGRATED CIRCUIT

7291	4822 209 90411	AN7164
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Note: Only the parts listed above are normal service spare parts.

**To order parts call the TOLL FREE Philips
Sales Center number:
(In U.S.A.) 1-800-851-8885
(In Canada) 1-800-363-PART • 1-800-663-
7178 (Fax)**

WARNING

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list and enclosed within a broken line * (where several critical components are grouped in one area) along with the safety symbol ▲ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips Consumer Electronics Company. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

* Broken Line: _____

**TO ENSURE THE CONTINUED RELIABILITY OF
THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S
REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR
PART NUMBERS IN THE PARTS LIST SECTION OF THIS
SERVICE MANUAL.**

AF3 BOARD ELECTRICAL REPLACEMENT PARTS LIST

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Ref.	Part No.	Description	Ref.	Part No.	Description
MISCELLANEOUS					
1507	4822 265 20553	AUX connector	2582	4822 124 41751	4.7 μ F 50V
1508	4822 267 40898	Headphone	2583	4822 124 81029	100 μ F 25V
1510	4822 265 41325	16 pin connector	2584	4822 124 81029	100 μ F 25V
1522	4822 267 31729	Cinch socket (subwoofer)	2587	4822 124 40246	4.7 μ F 50V
			2588	4822 124 40246	4.7 μ F 50V
CAPACITORS					
2501	4822 122 33336	8.2nF 10% 50V	2589	4822 126 13838	100nF +80/-20% 50V
2502	4822 122 33336	8.2nF 10% 50V	2590	5322 122 32658	22pF 5% 50V
2503	4822 124 41407	0.47 μ F 50V	2597	4822 126 13838	100nF +80/-20% 50V
2504	4822 124 41407	0.47 μ F 50V	2601	4822 124 40246	4.7 μ F 50V
2505	4822 124 40746	0.22 μ F 50V	2602	4822 124 40246	4.7 μ F 50V
2506	4822 124 40746	0.22 μ F 50V	2604	4822 126 13838	100nF +80/-20% 50V
2507	4822 121 41853	100nF 10% 100V	2609	5322 122 32531	100pF 5% 50V
2508	4822 121 41853	100nF 10% 100V	2610	5322 122 32531	100pF 5% 50V
2511	4822 121 51252	470nF 50V	2611	5322 122 32452	47pF 5% NPO 63V
2512	4822 121 51252	470nF 50V	2612	5322 122 32452	47pF 5% NPO 63V
2513	4822 122 32646	5.6nF 10% 50V	2615	4822 124 40246	4.7 μ F 50V
2514	4822 122 32646	5.6nF 10% 50V	2616	4822 124 40246	4.7 μ F 50V
2515	4822 124 40433	47 μ F 25V	2619	5322 126 10223	4.7nF 10% 63V
2517	4822 121 51252	470nF 50V	2620	4822 124 40433	47 μ F 25V
2518	4822 121 51252	470nF 50V	2621	5322 122 32658	22pF 5% 50V
2521	4822 124 41407	0.47 μ F 50V	2622	5322 122 32658	22pF 5% 50V
2522	4822 124 41407	0.47 μ F 50V	2630	5322 122 34123	1nF 10% 50V
2527	5322 122 32531	100pF 5% 50V	2632	5322 122 32531	100pF 5% 50V
2528	5322 122 32531	100pF 5% 50V	2634	4822 124 40242	1 μ F 50V
2529	5322 122 32654	22nF 10% 63V	2636	4822 124 40242	1 μ F 50V
2531	5322 122 32268	470pF 10% 50V	2637	5322 122 32481	15pF NPO 50V
2532	5322 122 32268	470pF 10% 50V	2641	4822 122 33175	2.2nF 20% 50V
2537	5322 122 32531	100pF 5% 50V			
2538	5322 122 32531	100pF 5% 50V			
2541	4822 124 41407	0.47 μ F 50V			
2542	4822 124 41407	0.47 μ F 50V			
2543	4822 124 41751	47 μ F 50V			
2544	4822 124 41751	47 μ F 50V			
2545	5322 122 34099	470pF 10% 50V			
2546	5322 122 34099	470pF 10% 50V			
2547	4822 126 13838	100nF Y5V 50V			
2548	4822 126 13838	100nF Y5V 50V			
2549	4822 124 40246	4.7 μ F 50V			
2550	4822 124 40246	4.7 μ F 50V			
2557	5322 122 32654	22nF 10% 63V			
2558	5322 122 32654	22nF 10% 63V			
2559	5322 122 32531	100pF NPO 50V			
2560	5322 122 32531	100pF NPO 50V			
2561	5322 122 34123	1nF 10% 50V			
2562	5322 122 34123	1nF 10% 50V			
2573	4822 124 40246	4.7 μ F 50V			
2574	4822 124 40246	4.7 μ F 50V			
2575	4822 124 40246	4.7 μ F 50V			
2580	4822 124 41751	4.7 μ F 50V			
2581	4822 122 33177	10nF 10% 50V			

AF3 BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

Ref.	Part No.	Description	Ref.	Part No.	Description
RESISTORS					
3501	4822 051 20109	10R 5% 0.1W	3586	4822 051 10102	1K 5% 0.1W
3502	4822 116 52176	10R 5% 0.5W	3593	4822 051 10102	1K 5% 0.1W
3503	4822 051 20562	5K6 5% 0.1W	3594	4822 051 10102	1K 5% 0.1W
3504	4822 051 20562	5K6 5% 0.1W	3595	4822 051 20562	5K6 5% 0.1W
3505	4822 051 20332	3K3 5% 0.1W	3601	4822 116 52297	68K 5% 0.5W
3506	4822 051 20332	3K3 5% 0.1W	3602	4822 051 20683	68K 5% 0.1W
3511	4822 051 20223	22K 5% 0.1W	3611	4822 051 20472	4K7 5% 0.1W
3512	4822 051 20223	22K 5% 0.1W	3612	4822 051 20472	4K7 5% 0.1W
3513	4822 117 11449	2K2 5% 0.1W	3631	4822 116 52175	100R 5% 0.5W
3514	4822 117 11449	2K2 5% 0.1W	3632	4822 116 52175	100R 5% 0.5W
3515	4822 051 20472	4K7 5% 0.1W	3633	4822 051 20224	220K 5% 0.1W
3516	4822 051 20472	4K7 5% 0.1W	3634	4822 051 20224	220K 5% 0.1W
3517	4822 051 20472	4K7 5% 0.1W	3635	▲ 4822 052 10109	25R 5% 0.33W
3518	4822 051 20472	4K7 5% 0.1W	3636	4822 051 10102	1K 5% 0.1W
3523	4822 116 83884	47K 5% 0.5W	3637	▲ 4822 052 10229	25R 5% 0.33W
3524	4822 051 20473	47K 5% 0.1W	3647	4822 051 20101	100R 5% 0.1W
3525	4822 116 83882	39K 5% 0.5W	3648	4822 051 20101	100R 5% 0.1W
3526	4822 051 20393	39K 5% 0.1W	3652	4822 051 20471	470R 5% 0.1W
3545	4822 051 20562	5K6 5% 0.1W	3654	4822 051 20122	1K2 5% 0.1W
3546	4822 051 20562	5K6 5% 0.1W	3655	4822 051 20472	4K7 5% 0.1W
3547	4822 116 83864	10K 5% 0.5W	3656	4822 051 20681	680R 5% 0.1W
3548	4822 116 52256	2K2 5% 0.5W	3657	4822 117 11449	2K2 5% 0.1W
3555	4822 051 20182	1K8 5% 0.1W	3658	4822 051 20101	100R 5% 0.1W
3556	4822 051 20182	1K8 5% 0.1W	3907	4822 051 20334	330K 5% 0.1W
3557	4822 051 20273	27K 5% 0.1W			
3558	4822 051 20273	27K 5% 0.1W			
3559	4822 051 20822	8K2 5% 0.1W			
3560	4822 051 20822	8K2 5% 0.1W			
3561	4822 051 20273	27K 5% 0.1W			
3562	4822 051 20273	27K 5% 0.1W			
3563	4822 051 20104	100K 5% 0.1W			
3564	4822 051 20104	100K 5% 0.1W			
3565	4822 116 52195	47R 5% 0.5W			
3566	4822 051 20479	47R 5% 0.1W			
3567	4822 116 52195	47R 5% 0.5W			
3568	4822 051 20479	47R 5% 0.1W			
3569	4822 051 10102	1K 5% 0.1W			
3570	4822 051 10102	1K 5% 0.1W			
3571	4822 117 11149	82K 5% 0.1W			
3572	4822 117 11149	82K 5% 0.1W			
3573	4822 051 20822	8K2 5% 0.1W			
3574	4822 051 20822	8K2 5% 0.1W			
3575	4822 051 20228	2R2 5% 0.1W			
3579	4822 116 83864	10K 5% 0.5W			
3580	4822 117 11139	1K5 5% 0.1W			
3581	4822 117 10833	10K 5% 0.1W			
3582	4822 050 11002	1K 5% 0.5W			
3583	4822 050 11002	1K 5% 0.5W			
3584	4822 050 24705	4M7 1% 0.6W			
3585	4822 051 20472	4K7 5% 0.1W			

AF3 BOARD ELECTRICAL REPLACEMENT PARTS LIST (continued)

1828 -93

Ref.	Part No.	Description	Ref.	Part No.	Description
JUMPER			INDUCTORS		
4501	4822 051 20008	JUMPER	5501	4822 156 21721	INDUCTOR 2.2μH 10%
4502	4822 051 20008	JUMPER	5502	4822 156 21721	INDUCTOR 2.2μH 10%
4506	4822 051 20008	CHIP JUMPER	5503	4822 156 21721	INDUCTOR 2.2μH 10%
4508	4822 051 20008	CHIP JUMPER	5504	4822 156 21721	INDUCTOR 2.2μH 10%
4509	4822 051 20008	CHIP JUMPER	DIODES		
4510	4822 051 10008	CHIP JUMPER	6503	4822 130 30862	BZX79-C9V1
4511	4822 051 20008	CHIP JUMPER	6504	4822 130 30621	1N4148
4512	4822 051 20008	CHIP JUMPER	TRANSISTORS		
4513	4822 051 20008	CHIP JUMPER	7502	4822 130 42615	BC817-40
4514	4822 051 20008	CHIP JUMPER	7503	4822 130 42615	BC817-40
4515	4822 051 10008	CHIP JUMPER	7504	4822 130 42615	BC817-40
4517	4822 051 10008	CHIP JUMPER	7505	5322 130 42755	BC847C
4518	4822 051 20008	CHIP JUMPER	7511	5322 130 42755	BC847C
4519	4822 051 20008	CHIP JUMPER	7512	5322 130 42755	BC847C
4520	4822 051 20008	CHIP JUMPER	7513	5322 130 42755	BC847C
4521	4822 051 20008	CHIP JUMPER	7514	5322 130 60508	BC857B
4522	4822 051 20008	CHIP JUMPER	7515	4822 130 41327	BC327-40
4523	4822 051 20008	CHIP JUMPER	7516	5322 130 42755	BC847C
4524	4822 051 20008	CHIP JUMPER	INTEGRATED CIRCUITS		
4525	4822 051 20008	CHIP JUMPER	7501	4822 209 31378	NJM4556AM
4526	4822 051 20008	CHIP JUMPER	7553	4822 209 33652	TEA6321T
4528	4822 051 20008	CHIP JUMPER	Note: Only the parts listed above are normal service spare parts.		
4530	4822 051 20008	CHIP JUMPER			
4531	4822 051 20008	CHIP JUMPER			
4532	4822 051 20008	CHIP JUMPER			
4533	4822 051 20008	CHIP JUMPER			
4534	4822 051 20008	CHIP JUMPER			
4535	4822 051 20008	CHIP JUMPER			
4538	4822 051 10008	CHIP JUMPER			
4539	4822 051 20008	CHIP JUMPER			
4541	4822 051 20008	CHIP JUMPER			
4542	4822 051 20008	CHIP JUMPER			
4547	4822 051 10008	CHIP JUMPER			
4548	4822 051 10008	CHIP JUMPER			
4549	4822 051 20008	CHIP JUMPER			
4550	4822 051 20008	CHIP JUMPER			
4551	4822 051 20008	CHIP JUMPER			
4552	4822 051 10008	CHIP JUMPER			
4553	4822 051 20008	CHIP JUMPER			
4554	4822 051 20008	CHIP JUMPER			
4555	4822 051 10008	CHIP JUMPER			
4556	4822 051 20008	CHIP JUMPER			
4557	4822 051 10008	CHIP JUMPER			
4558	4822 051 10008	CHIP JUMPER			
4559	4822 051 10008	CHIP JUMPER			
4561	4822 051 20008	JUMPER			
4572	4822 051 20008	CHIP JUMPER			
4573	4822 051 20008	CHIP JUMPER			
4576	4822 051 20008	CHIP JUMPER			
4577	4822 051 20008	CHIP JUMPER			
4580	4822 051 20008	CHIP JUMPER			
4586	4822 051 20008	JUMPER			
4593	4822 051 20008	CHIP JUMPER			
4594	4822 051 20008	CHIP JUMPER			
4596	4822 051 20008	CHIP JUMPER			

AUDIO SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Important

Proper service and repair is important to the safe, reliable operation of all Philips equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

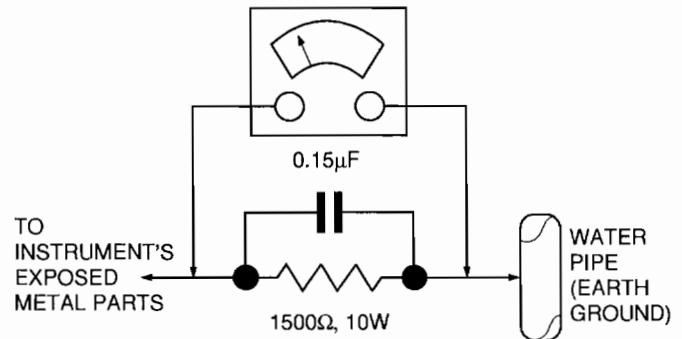
1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those units which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed according to the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with a \blacktriangle by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol \blacktriangle on the schematic diagrams and/or exploded views. Replacement parts without the same safety characteristics may create shock, fire, or other hazards.
7. When servicing any unit, always use a separate Isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit is safe to operate without danger of electrical shock.

*Broken line



Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled unit directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.1 5uF. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 milliamperes. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Parts Replacement

1. Many electrical and mechanical parts in Philips equipment have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.
2. All ICs and many other semiconductor parts are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce the life of the part drastically.

FOR PRODUCTS CONTAINING LASER:

DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION - The use of optical instruments with this product will increase eye hazard.

Philips Consumer Electronics Company

A Division of Philips Electronics North America Corp.

Technical Service Data

Service Solutions Group
Technical Publications Department
P.O. Box 555
401 East Old Andrew Johnson Highway
Jefferson City, TN 37760

MANUAL 1828

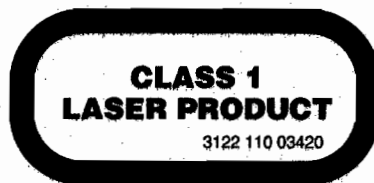
Supplement 1

Philips Magnavox Model: FW340C3701

Chassis: FW340/37

File: 1997: 1828

FW340C3701 AUDIO SYSTEM



THE CDC ASSEMBLY USED IN THIS MODEL WAS CHANGED DURING PRODUCTION. THE SERVICE INFORMATION COVERING THE UNIQUE CDC ASSEMBLY CAN BE FOUND AS FOLLOWS:

REFER TO MANUAL 1850:

SPECIFICATIONS	4
DISASSEMBLY	19, 67
SERVICING HINTS	51, 52
WIRING DIAGRAM	53
BLOCK DIAGRAM	54, 55
SCHEMATIC DIAGRAMS	56-61, 65, 66
C.B.A.'S	62-66
LUBRICATION INSTRUCTIONS	72, 73
EXPLODED VIEWS/MECHANICAL	
REPLACEMENT PARTS LISTS	68-71, 115
ELECTRICAL REPLACEMENT PARTS LIST	124, 125

FOR ANY INFORMATION ON THESE MODELS NOT INCLUDED IN THIS SUPPLEMENT, REFER TO ORIGINAL MANUAL 1828.

To order parts, call the TOLL FREE Philips Sales Center number:
(In USA) 1-800-851-8885 • (Facsimile) 1-800-535-3715 • (In Canada) 1-800-363-PART

REFER TO ORIGINAL MANUAL 1828 FOR IMPORTANT SAFETY NOTICE/GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST BECOME FAMILIAR WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

Visit our World Wide Web site at <http://www.magnavox.com>

MANUAL 1828 Supplement 1
(MODEL: FW340C3701)

MANUAL 1828 Supplement 1 (MODEL: FW340C3701)

Philips Consumer Electronics Company

A Division of Philips Electronics North America Corp.

Technical Service Data

Service Solutions Group
Technical Publications Department
P.O. Box 555
401 East Old Andrew Johnson Highway
Jefferson City, TN 37760

MANUAL 1828

Supplement 2

Philips Magnavox Model: FW340C3701
Chassis: FW340/37

File: 1997: 1828

FW340C3701 AUDIO SYSTEM

This supplement includes updated replacement parts list and servicing information for the model listed above.

Servicing Notes

The part number listed for "Flexfoil 17p" in the CDC mechanism exploded view parts list on page 62 should be deleted because the part is not used with these models. The correct reference (8002), description (Flexfoil 15p), and part number (4822 320 11313) are shown in the parts list on page 87 of manual 1828.

A part number for the cabinet foot has been assigned. The part number shown below should be added to the mechanical parts list on page 79 of manual 1828.

A higher-rated audio output IC (IC7291) is available for the model listed above. The part number shown below should be added to page 90 of manual 1828.

Updated Replacement Parts List

The item shown below should be added to the Replacement Parts List of manual 1828. For all other information, refer to manual 1828 and supplement one.

Ref.	Description	Part No.
216	Cabinet Foot	4822 462 40683
7291	Audio Output IC	4822 209 16327

To order parts, call the TOLL FREE Philips Sales Center number:
(In USA) 1-800-851-8885 • (Facsimile) 1-800-535-3715 • (In Canada) 1-800-363-PART

REFER TO MANUAL 1828 FOR IMPORTANT SAFETY NOTICE/GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST BECOME FAMILIAR WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

Visit our World Wide Web site at <http://www.magnavox.com>