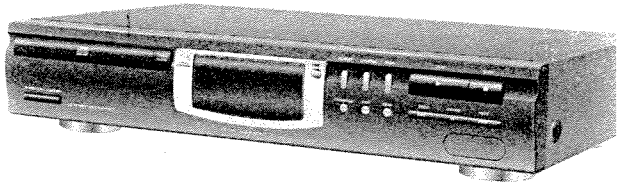
Compact Disc Player

CD71

CD72

all versio

Service
Service
Service



Service Manua

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ReWritable CD COMPATIBLE COMPAC disc DIGITAL AUDI

TECHNICAL SPECIFICATION

General

Dimensions (WxHxD)	: 435 x 86 x 265mm
Weight	: 2,9kg

Accessories

Instruction for use	: 4822 736 16252 for /00
	: 4822 736 16253 for /01
	: 4822 736 16254 for /14
Remote control	: 4822 219 10537

Remark : RC works with CD713 as well but is delivered with CD723 only!

Mains voltage

/00	: 220-230V(±10%) 50Hz
/01	: 120/230V(±15%) 50/60Hz
/14	: 220-230V(±10%) 50Hz

Power consumption

stand by	: ≤5W
operating	: approx. 8W

Audio performance

Number of channels	: 2
Output voltage (Line out)	: $2V_{RMS}$ ±3dB
Unbalance left-right	: ≤1dB
Frequency response	: 20Hz-20kHz ≤0,4dB
Signal to noise ratio	: 98 dB typ.
Dynamic range	: 95dB typ. at 1kHz
THD	: ≤0,0063% at 1kHz
Channel separation	: 85dB typ. at 1kHz

Headphone output

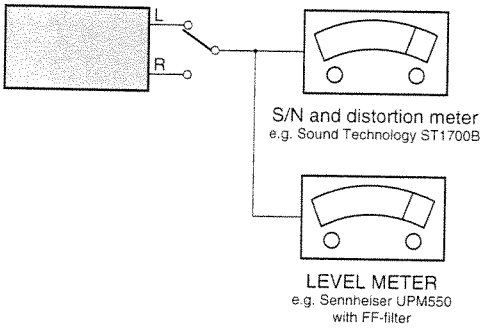
Output level (1kHz, 0dB)	: $\geq 5V_{RMS}$
Unbalance left-right	: ≤1,2dB
Output impedance	: 120Ω
Load impedance	: 32Ω - 600Ω
Output power	: 25mW at 32Ω
	: 52mW at 120Ω
	: 29mW at 600Ω

Laser

Output power	: <5mW (3mW typ.)
Wavelength	: 780nm

Measurement setup

Use Audio Signal disc SBC429 4822 397 30184

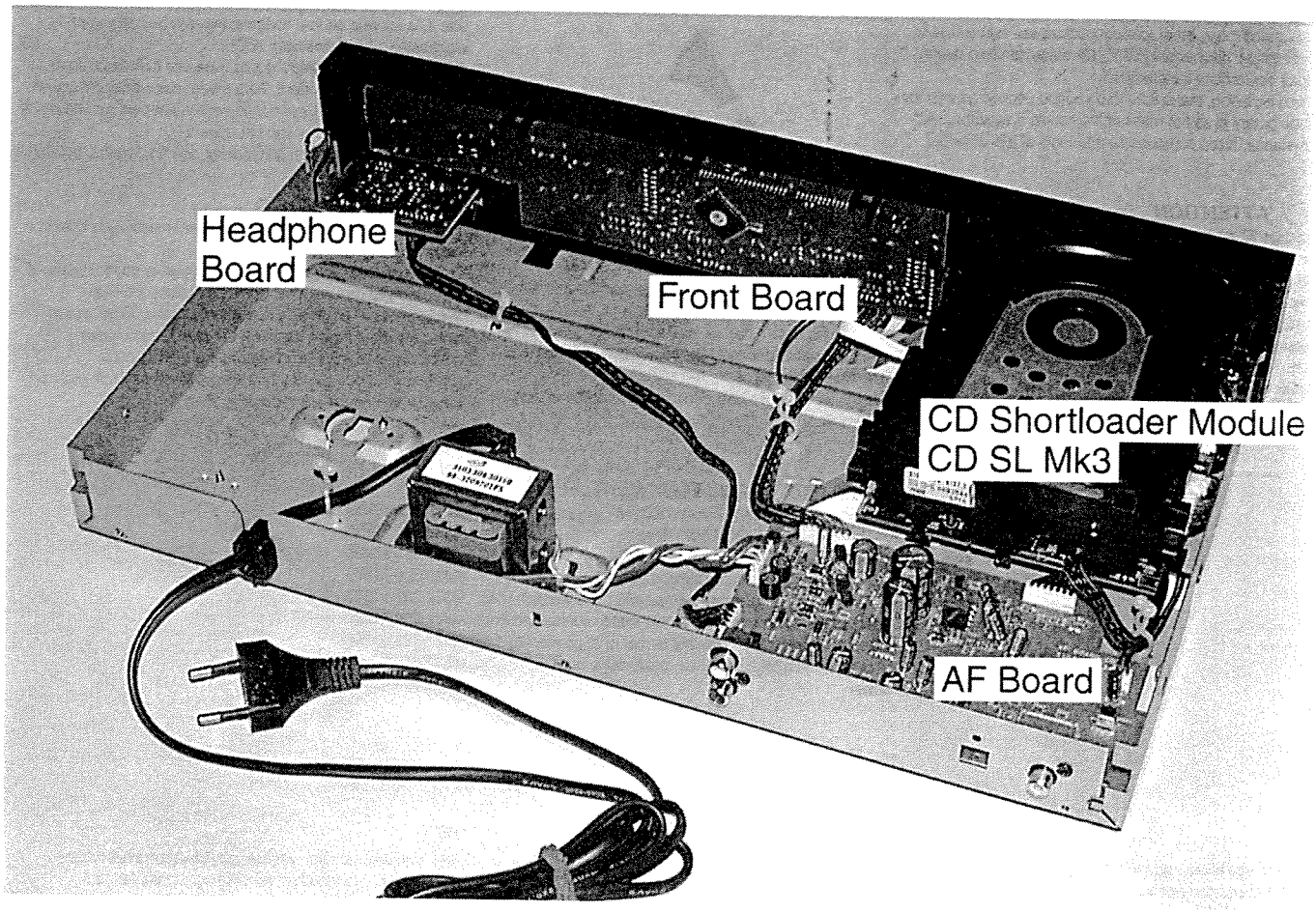


RC 5 Commands

System code = 20

Command	Code	Command	Code	Command	Code
KEY "0"	0	KEY "9"	9	SHUFFLE	28
KEY "1"	1	PLAY	53	SCAN	43
KEY "2"	2	STOP	54	REPEAT	29
KEY "3"	3	PAUSE	48	FADE	120
KEY "4"	4	TIME	11	VOLUME UP	16
KEY "5"	5	PREVIOUS	33	VOLUME DOWN	17
KEY "6"	6	REVIEW	50	STAND BY	12
KEY "7"	7	CUE	52	MUTE	13
KEY "8"	8	PROGRAM	36	NEXT	32

LOCATION OF PRINTED CIRCUIT BOARDS



ESD

(GB) WARNING
All ICs and many other semiconductors 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 wristband with resistance. Keep components and tools at this potential.

(F) ATTENTION
Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING
Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO
Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB) AVAILABLE ESD PROTECTION EQUIPMENT :

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1MΩ)		4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)		4822 320 11306
earth cable (1MΩ, to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

SAFETY

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ⚠

(F)
Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(GB) **DANGER**: Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

CLASS 1
LASER PRODUCT

(S) Varning !
Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(SF) Varoitus !
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

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COMPACT disc DIGITAL AUDIO

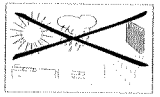
COMPACT disc DIGITAL AUDIO Recordable

COMPACT disc DIGITAL AUDIO ReWritable

Maintenance

Clean the CD player with a soft, slightly dampened lint-free cloth. Do not use any cleaning agents as they may have a corrosive effect.

Do not expose the CD player, batteries or CDs to humidity, rain, sand or excessive heat (caused by heating equipment or direct sunlight).

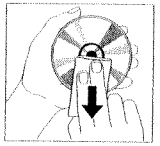


This CD player can play all kinds of Audio Discs such as CD-Recordables and CD-Rewriteables. Do not try to play a CD-ROM, CD-I, CDV or computer CD.

If the CD player cannot read CDs correctly use a commonly available cleaning CD to clean the lens before taking the CD player to repair. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.

The lens may cloud over when the CD player is suddenly moved from cold to warm surroundings. Playing a CD is not possible then. Leave the CD player in a warm environment until the moisture evaporates.

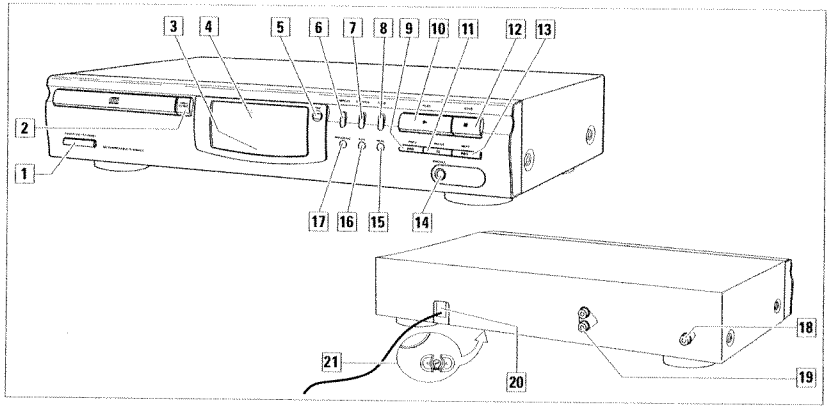
To clean a CD, wipe it in a straight line from the center toward the edge using a soft, lint-free cloth. A cleaning agent may damage the disc! Never write on a CD or attach a sticker to it.



Technical data

Subject to modification without notice.

Standby power consumption	< 5W
Frequency range	20–20,000Hz
Amplitude linearity	< 1dB (1kHz, -90dB)
Dynamic range	95dB (1kHz)
Signal-to-noise ratio	98dB (1kHz, A-weighted)
Channel separation	90dB (1kHz)
Total harmonic distortion	0.006%, -84dB (1kHz)
Audio output	2V RMS ±3dB, 1kΩ
Digital coaxial output	75Ω acc. IEC 958
Impedance headphones	30–600Ω (5V e. m. f. from 120Ω)
Dimensions	435 × 86 × 265mm
Weight	2.9kg



Controls on the front

- [1] **POWER ON / STANDBY** ... switches the CD player on and to standby
- [2] **OPEN·CLOSE** ... opens and closes the CD tray
- [3] Sensor for the infrared remote control
- [4] Display
- [5] **TIME** ... switches through the different time information
- [6] **REPEAT** ... repeats a track, a program or the entire CD
- [7] **SHUFFLE** ... plays a CD or a program in random order
- [8] **FADE** ... fades CD play out and in
- [9] **PREV.** ⏮ ... selects the beginning of the current or a previous track, and searches backward
- [10] **PLAY** ▶ ... starts CD play
- [11] **PAUSE** ⏸ ... interrupts CD play
- [12] **STOP** ■ ... stops CD play and clears a program
- [13] **NEXT** ⏭ ... selects the beginning of a subsequent track, and searches forward
- [14] **PHONES** ... (CD 723 only) 6.3mm headphone socket
- [15] **PEAK** ... searches the loudest passage of a CD
- [16] **EDIT** ... changes the settings for recording on tape or CD-Recordable
- [17] **PROGRAM** ... programs track numbers

Connections at the back

- [18] **DIGITAL OUT** ... (CD 723 only) to connect the digital input of a digital audio device
- [19] **LINE OUT L R** ... to connect the audio input of an amplifier
- [20] Mains lead ... After all other connections have been made, connect this mains lead to the wall socket.

At the bottom

- [21] **VOLTAGE SELECTOR** ... (Not on all versions.) Disconnect the mains lead first, if this selector must be reset.

Accessories

This CD player is supplied including:
– a remote control (CD 723 only)
– 2 batteries for the remote control (CD 723 only)
– a connection cable
– this instruction booklet

Connections

Usual connection, LINE OUT

1 Insert the red plug of the supplied connection cable into R and the other plug into L.

2 Insert the other side of the cable into the corresponding sockets of the CD or AUX input of your amplifier.

Important!

*You may also use the TUNER or TAPE, but **never** the PHONO input of your amplifier!*

Digital connection, DIGITAL OUT (CD 723 only)

Never connect this socket to a non-digital input – such as AUX, CD, PHONO, TAPE – of an amplifier. This output supplies a digital signal and can therefore only be connected to a digital input.

1 Insert an optional coaxial cable into DIGITAL OUT.

2 Insert the other side of the cable into the digital input of your digital device (e. g. CD Recorder).

Mains

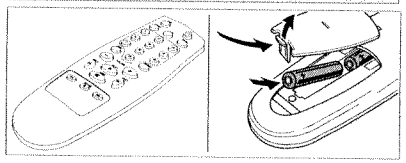
The type plate is located on the back of the CD player.

1 If your set is equipped with a VOLTAGE selector (at the bottom), set this selector to your local mains voltage if necessary. *Position 120V includes 110V–127V. Position 230V includes 220V–240V.*

2 Connect the mains cable to the wall socket. This switches on the mains supply.

Note: To disconnect the CD player from the mains completely, remove the mains plug from the wall socket.

Remote control (CD 723 only)



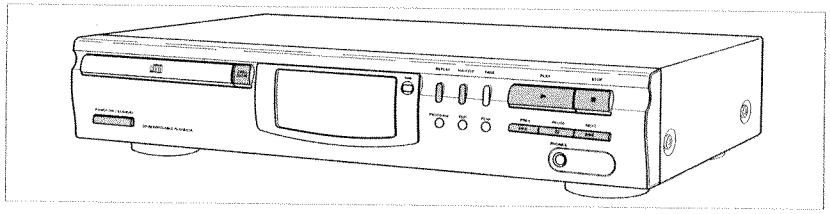
Batteries

- Open the battery compartment of the remote control and insert 2 alkaline batteries, type **AAA** (R03, UM-4).

Remove batteries if they are flat or the remote control is not going to be used for a long time.

Batteries contain chemical substances, so they should be disposed of properly.

TIME ..... switches through the different time informations
⏻ ..... switches the CD player to standby
PROGRAM ..... programs track numbers
FADE ..... fades CD play out and in
SHUFFLE ..... plays a CD or a program in random order
Digits **1**–**0** ..... selects a track by number
HIGHLIGHT ..... plays the beginning of each track
REPEAT ..... repeats a track, a program or the entire CD
VOLUME – ..... decreases the volume level
VOLUME + ... increases the volume level
PLAY ▶ ..... starts CD play
PREV. ⏮ ..... selects the beginning of the current or a previous track
NEXT ⏭ ..... selects the beginning of a subsequent track
STOP ■ ..... stops CD play and clears a program
◀◀ ..... searches backward
PAUSE ⏸ ..... interrupts CD play
▶▶ ..... searches forward



Playing a CD

1 Use POWER ON / STANDBY to switch on the CD player.

2 Press OPEN·CLOSE to open the CD tray.
OPEN appears on the display.

3 Insert an audio CD (printed side up) and press OPEN·CLOSE to close the CD compartment.
READING appears on the display. Then the number of tracks and the playing time is shown.

4 Press PLAY ▶ to start CD play.
The display shows ▷, **TRACK**, **TIME**, and the number and time of the actual track.

- You can interrupt CD play by pressing PAUSE ⏸
The display shows ⏸ and the track number and time where playback was stopped.
- Continue CD play by pressing PAUSE ⏸ again.

5 Press STOP ■ to stop CD play.

Note: Playback will also stop if the end of the CD is reached.

Selecting a track and searching

Selecting a track during CD play

- Briefly press PREV. ⏮ or NEXT ⏭ (PREV. ⏮ or NEXT ⏭ on the remote control) once or several times to skip to the beginning of the current, previous or subsequent track(s).

or

- Use the digits **1**–**0** on the remote control to key in the number of a track.
CD play continues with the selected track.

Selecting a track when CD play is stopped

1 Briefly press PREV. ⏮ or NEXT ⏭ (PREV. ⏮ or NEXT ⏭ on the remote control) once or several times.

or

- Use the digits **1**–**0** on the remote control to key in the number of a track.

2 Press PLAY ▶ to start CD play.
Playback starts with the selected track.

Searching for a passage during CD play

1 Hold down PREV. ⏮ or NEXT ⏭ (◀◀ or ▶▶ on the remote control) to find a particular passage in a backward or forward direction.
CD play continues at a low volume.

2 Release the button when you have reached the desired passage.

Note: In the shuffle and repeat mode and when playing a program, searching is only possible within the particular track.

Random order playing (SHUFFLE)

1 Press SHUFFLE before or during CD play to start shuffle play.
SHUFFLE is shown in the display. All the tracks of the CD (or program if available) will now be played in random order.

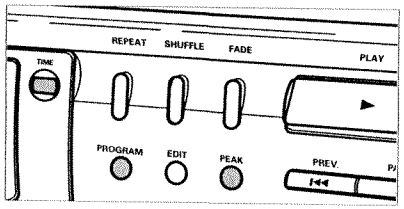
2 Press SHUFFLE again to return to normal CD play.

Repeating the CD, a track or a program

1 Press repeatedly REPEAT during CD play.
The display shows the different repeating modes.
REPEAT 1: the current track is played repeatedly.
REPEAT: the entire CD or program (if available) is played repeatedly.

2 Press REPEAT until the display indication disappears to return to normal CD play.

Note: It is possible to activate the different playing modes at the same time, e. g. you can repeatedly play the entire CD or program in random order (**PROGRAM REPEAT SHUFFLE**).



Programming track numbers

You can select a number of tracks and store these in the memory in the desired sequence. You can store any track more than once. At most, 30 tracks can be stored in the memory.

1 Press PROGRAM to start programming.
PROGRAM flashes.

Note: If you press PROGRAM while playing a CD, the actual track will be added to the program.

2 Press PREV. ⏮ or NEXT ⏭ (PREV. I◀ or NEXT ▶I on the remote control) to select the desired track.
or
• Key in the number of a track with the digits **1**–**0** on the remote control.

3 Press PROGRAM to store the track number.
TRACK, **TOTAL TIME**, and the number of the programmed track is displayed. The number of programmed tracks is increased and the time of the track is added to the total time of the program.

4 Repeat steps 2 and 3 for all tracks to be programmed.

5 Press STOP ■ to end programming.
PROGRAM lights permanently.

• It is possible to review the program using the PREV. ⏮ or NEXT ⏭ (PREV. I◀ or NEXT ▶I on the remote control). You can add more tracks by pressing PROGRAM like you have done before.

6 Press PLAY ▶ to start program play.

Note: If you try to store more than 30 tracks
PROGRAM FULL scrolls through the display.

Clearing the program

1 If necessary press STOP ■ to stop program playing.

2 Press STOP ■ to clear the program.
PROGRAM CLEARED scrolls through the display, **PROGRAM** disappears and your program is cleared.

Note: The program will also be cleared if you open the tray.

Loudest passage searching

You can search for the loudest passage of a CD or program. This will help you in adjusting your recording device if required.

1 If necessary press STOP ■ to stop CD play.

2 Press PEAK to start searching.
PEAK starts flashing. Searching may need a few minutes. Then 4 seconds of the loudest passage are played repeatedly.

• You can interrupt peak play by pressing PAUSE ❚❚. Continue peak play by pressing PAUSE ❚❚ again.

3 Press STOP ■ to stop playing.
or
• Press PLAY ▶ to start CD play.

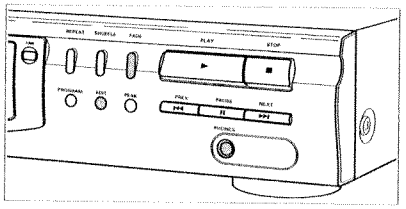
Time display

You can display time information which is stored on the CD.

While playing a CD or a program the number and elapsed time of the actual track, and **TIME** are displayed.

• Press TIME several times to display:
The number and remaining time of the actual track, and **REM TIME**.
The number of the actual track, the total elapsed time of the CD, and **TOTAL TIME**.
The number of the actual track, the total remaining time of the CD, and **TOTAL REM TIME**.

Note: If you press TIME when the CD is not playing you may only display the total time of the CD.



Fading out and in

You can fade out and in CD play, e. g. to stop and start a recording softly.

1 Press FADE during CD play to fade out.
The display shows ... in steps. The volume is lowered continuously until CD play is paused.

2 Press FADE again to fade in.
The display shows ... in steps. CD play starts and the volume is raised continuously to its previous level.

Note: You may use FADE anytime when CD play is paused to fade in.

Volume adjustment (CD 723 only)

The volume of the CD player can be adjusted. This affects the DIGITAL OUT output as well.

• Press VOLUME – or VOLUME + on the remote control.
The volume of the CD player is lowered or raised. The display shows the actual value between *VOL MIN* and *VOL MAX*.

Important!
VOLUME –/+ is altering the signal of the output. Before recording set the volume to VOL MAX and do not change during recording.

Locking the volume

It is possible to lock the output volume to its maximum. This affects the DIGITAL OUT output as well. Locking the volume can be usefull when recording from the CD-player.

• Keep EDIT pressed for more than 2 seconds.
If the voulme was unlocked:
The display shows *VOL FIX* and the volume is locked.
If the voulme was locked:
The display shows *VOL MAX* and the volume is unlocked.

Note: If you press VOLUME –/+ and the volume is locked the display shows VOL FIX.

Headphone listening (CD 723 only)

1 Connect your headphones to the 6.3mm PHONES socket.

2 Press VOLUME – or VOLUME + on the remote control to adjust the volume (see "Volume adjustment").

Important!
The volume of the headphones is in line with the volume of the output. Therefore do not use VOLUME –/+ during recording.

Scanning the CD (CD 723 only)

It is possible to listen to the beginning of each track of a CD or program. You can choose whether to play 10, 20 or 30 seconds of each track.

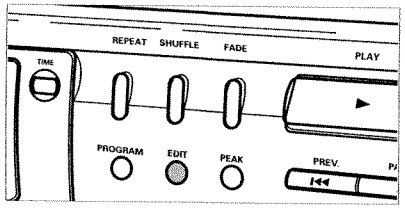
1 Press HIGHLIGHT on the remote control repeatedly to switch through the different scan modes.
SCAN 10, SCAN 20, SCAN 30, SCAN OFF ...
(*SCAN OFF* aborts the scan function).

2 As soon as the desired scan mode is displayed do not press the button again.
After 1 second scanning starts. The number and remaining time of the actual track, and **REM TIME** are displayed.

• You can interrupt scan by pressing PAUSE ❚❚. Continue scan by pressing PAUSE ❚❚ again.

3 Press STOP ■ to stop scanning.
or
• Press PLAY ▶ to start CD play with the actual track.

Note: If you press HIGHLIGHT while SHUFFLE is active, shuffle will be stopped before scanning.



Recording setup

It is possible to set up the CD player in a way that it will calculate which tracks will fit on your recording media. It is only possible to use the edit function if a disc has not more than 29 tracks.

If you use NORMAL the recording stops after the last track that fits on one side of your recording media. Notice that CD-Recordables are single-sided only! If you use OPTIMAL some tracks will be skipped to minimise the unused space on your recording media. The sequence of the tracks stays as the original.

1 Insert a CD and, if desired, program track numbers.

2 Press EDIT to start the setup.
The display shows **EDIT** and NORMAL.

3 Press PREV. ⏮ or NEXT ⏭ (PREV. ⏮ or NEXT ⏭ on the remote control) to switch through the different scan modes.
NORMAL, OPTIMAL, STOP... (STOP aborts the edit function).

4 As soon as the desired edit mode is displayed press EDIT.
The display shows C 90. ➢

5 Press PREV. ⏮ or NEXT ⏭ (PREV. ⏮ or NEXT ⏭ on the remote control) to switch through the different recording times and media.
C 100, C 120, CDR 21, CDR 60, CDR 74, C 30, C 45, C 60, C 90...

Note: C is for cassette, CDR is for CD-Recordable and CD-Rewriteable and therefore for single-sided recording only.

6 As soon as the desired recording time and media is displayed press EDIT.
The number of tracks and the playing time are displayed.

7 Start your recording and press PLAY ▶ to start CD play.
If cassette (C) was selected the CD player pauses after playing the calculated tracks for side A. If CD-Recordable (CDR) was selected the CD player stops.

8 If required switch tape sides.

9 Press PLAY ▶ to start CD play again.
The number of tracks and the playing time are displayed. The remaining tracks for side B are played.

Note: It is possible to switch between A and B by using PREV. ⏮ or NEXT ⏭ (PREV. ⏮ or NEXT ⏭ on the remote control).

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

WARNING

Under no circumstances should you try to repair the CD player yourself as this will invalidate the guarantee.

If a fault occurs, first check the points listed below before taking the set for repair.

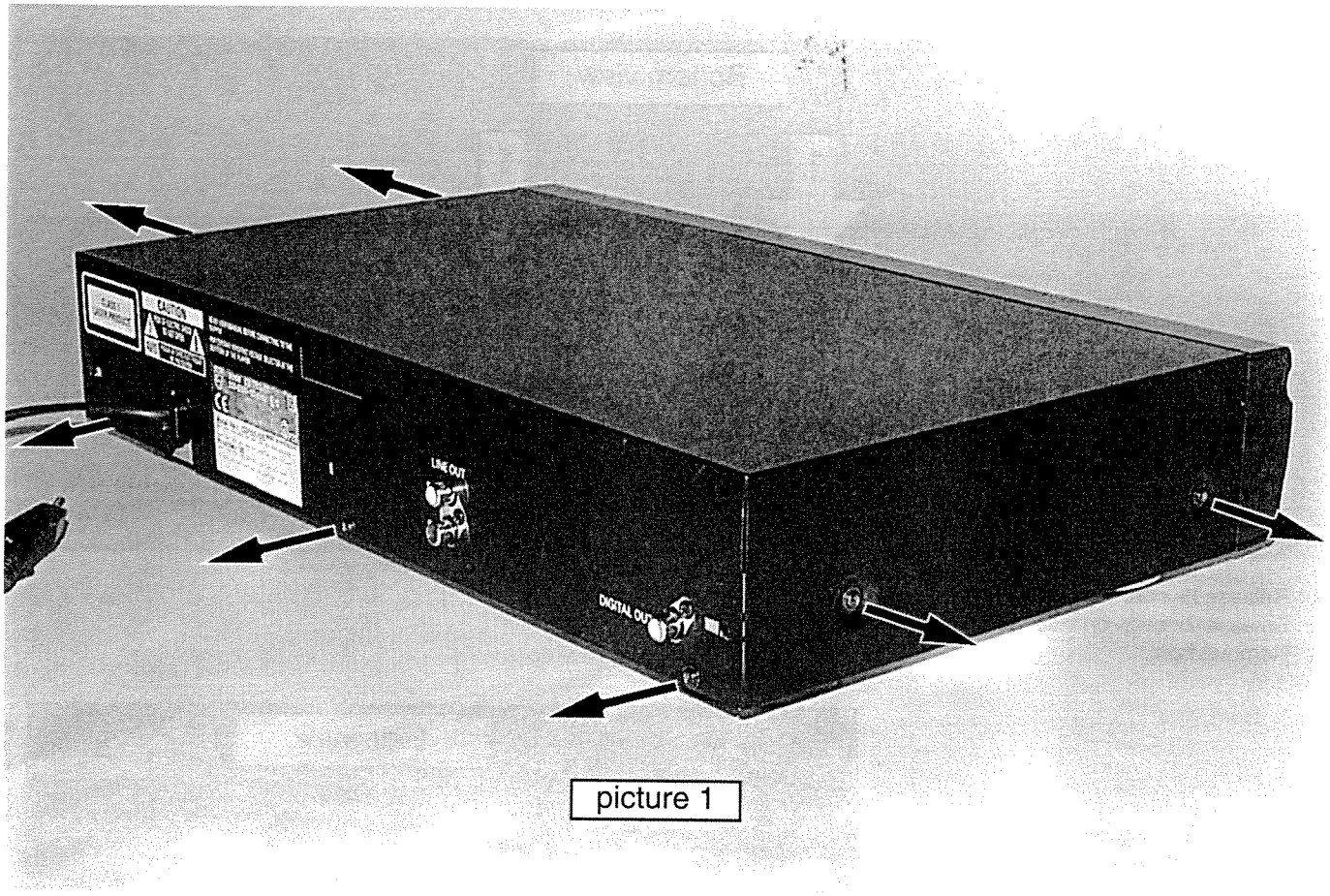
If you are unable to solve a problem by following this checklist, consult your dealer or service center.

Problem	Possible cause	Solution
No power	Mains cable is not securely connected.	Connect mains cable properly.
No or bad sound	CD 723 only: volume is too low.	Adjust volume.
	Interference caused by electric equipment like TVs, computers, engines, etc.	Keep the CD player away from electrical equipment.
	Loose or wrong connections.	Connect the CD player correctly.
No or bad headphone sound (CD 723 only)	Volume is too low.	Adjust VOLUME –/+.
	Headphone plug is dirty.	Clean headphone plug.
No or low quality recording	CD 723 only: volume is too low.	Adjust VOLUME –/+.
	Loose or wrong connections.	Connect the CD player correctly.
No reaction to operation of any keys	Electrostatic discharge.	Disconnect the CD player from mains, reconnect after a few seconds.
NO DISC **is displayed**	No CD is inserted.	Insert a CD.
	The CD is badly scratched or dirty.	Replace or clean the CD.
	The CD is inserted upside down.	Insert CD with label upwards.
DISC NOT FINALIZED **is displayed**	The CD-RW (or CD-R) is not properly recorded for the use on a standard CD player.	Read the instruction booklet of your CD-Rewriteable (or CD-Recordable) recorder on how to finalize a recording.
	The CD is badly scratched or dirty.	Replace or clean the CD.
WRONG TRACK **is displayed**	Chosen track number is higher than the highest track number on the CD.	Key in a track number within the range of the track numbers on the CD.
0 0.00 **is displayed**	First track of the CD is longer than the first side of the chosen recording media.	Choose a recording media with a recording time longer than the first track of the CD.
VOL FIX **is displayed (CD 723 only)**	Volume is locked.	Press EDIT for more than 2 seconds to unlock the volume.
CD skips tracks	**SHUFFLE** or **PROGRAM** is active.	Switch off **SHUFFLE** or **PROGRAM** play.
	The CD is badly scratched or dirty.	Replace or clean the CD.
	Laser lens is dirty.	Clean with a commonly available cleaning CD.
	The laser lens is steamed up.	Wait until the lens has cleared.
Remote control does not function properly (CD 723 only)	Batteries are inserted incorrectly.	Insert batteries correctly.
	Batteries are flat.	Insert fresh batteries.
	Distance to the CD player is too large.	Reduce distance.

MECHANICAL INSTRUCTIONS

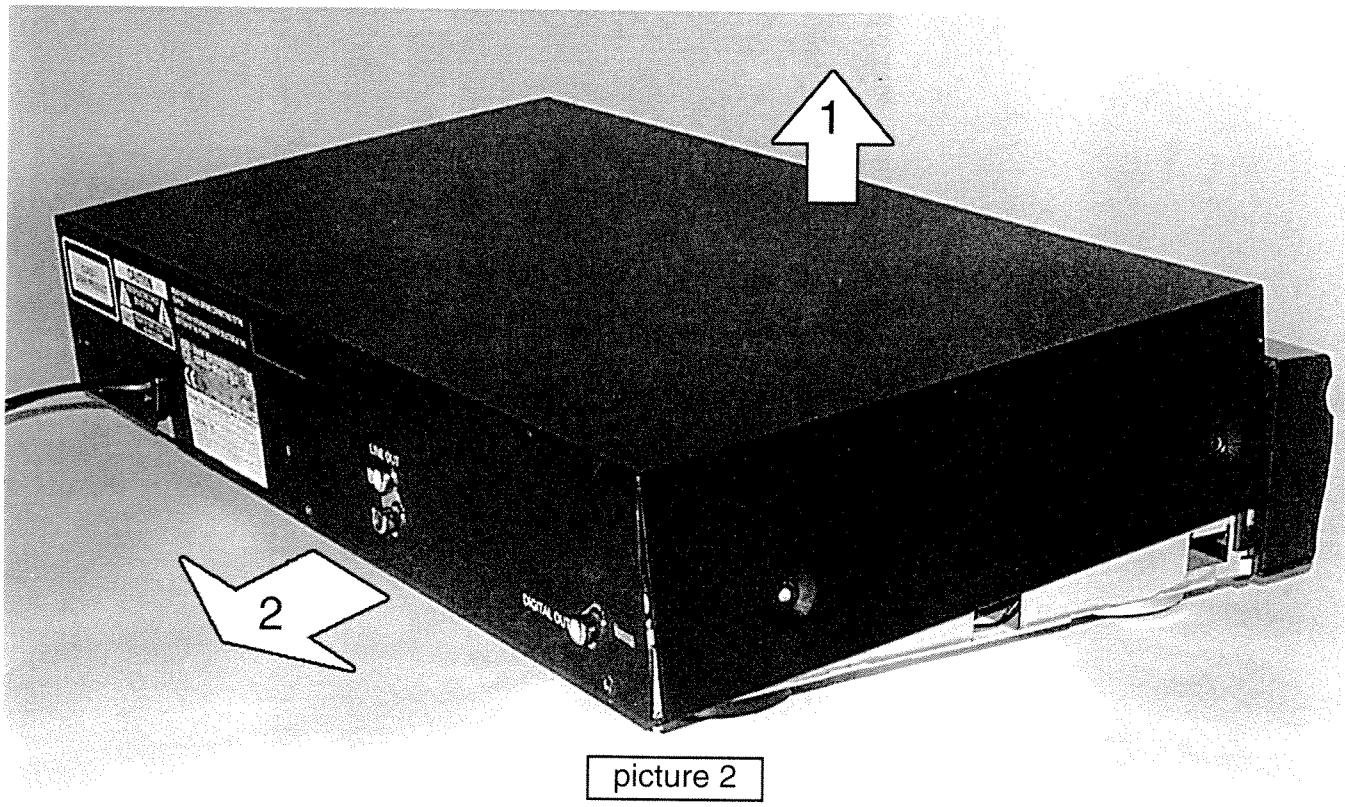
Dismantling Top Cover

1) Loosen 7x screw as shown in picture 1.



picture 1

2) Lift top cover as shown in picture 2.
3) Remove top cover.

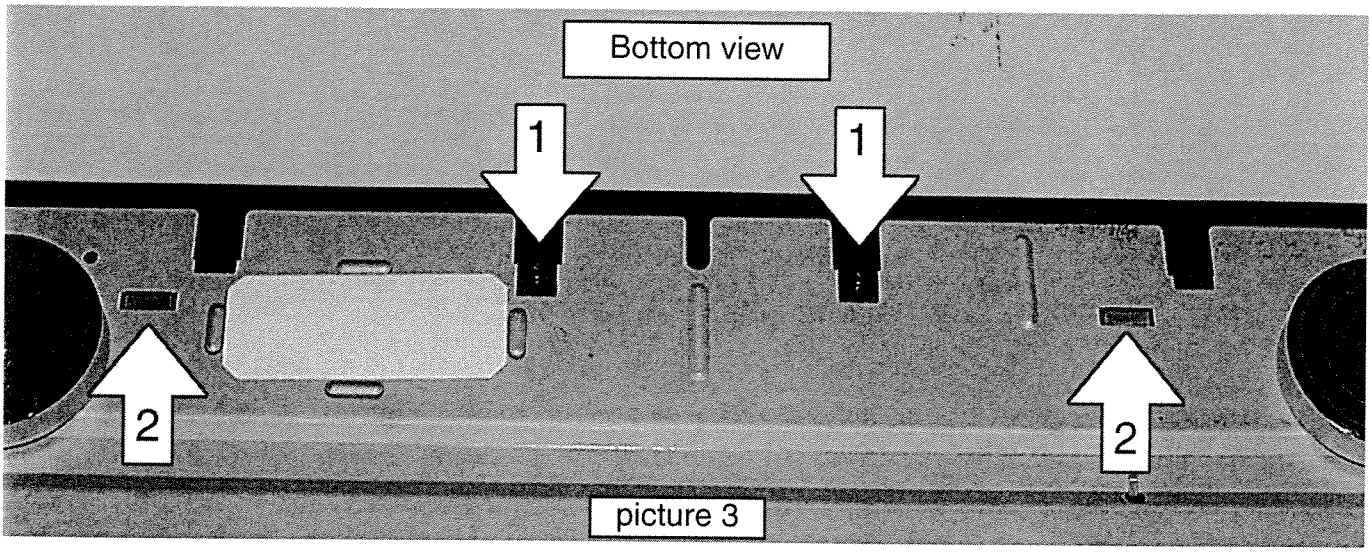


picture 2

MECHANICAL INSTRUCTIONS

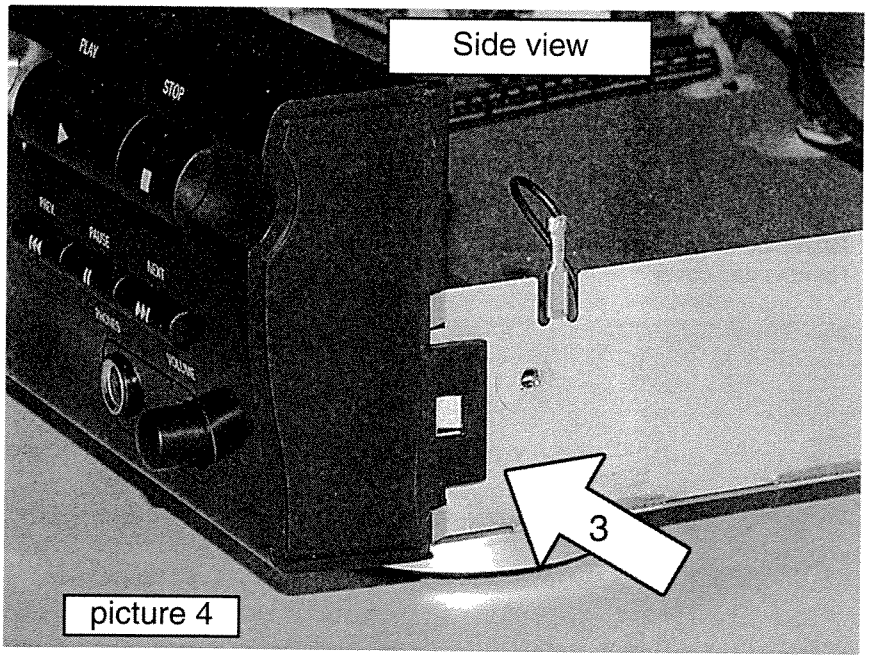
Dismantling Front

1) Loosen 2x screw as shown in picture 3.



picture 3

2) Release 2x snap on bottom (see picture 3).
3) Release 2x snap on side (see picture 4).
4) Remove front.



picture 4

Dismantling hints CD Short Loader

Dismantling the tray

a) Press open/close button to open the tray. If the tray doesn´t work, use a small screwdriver as shown in Fig.1 point 1 to move the tray outside. After the first centimetre it is possible to pull the tray out by hand.

b) Release two snaps and remove tray.

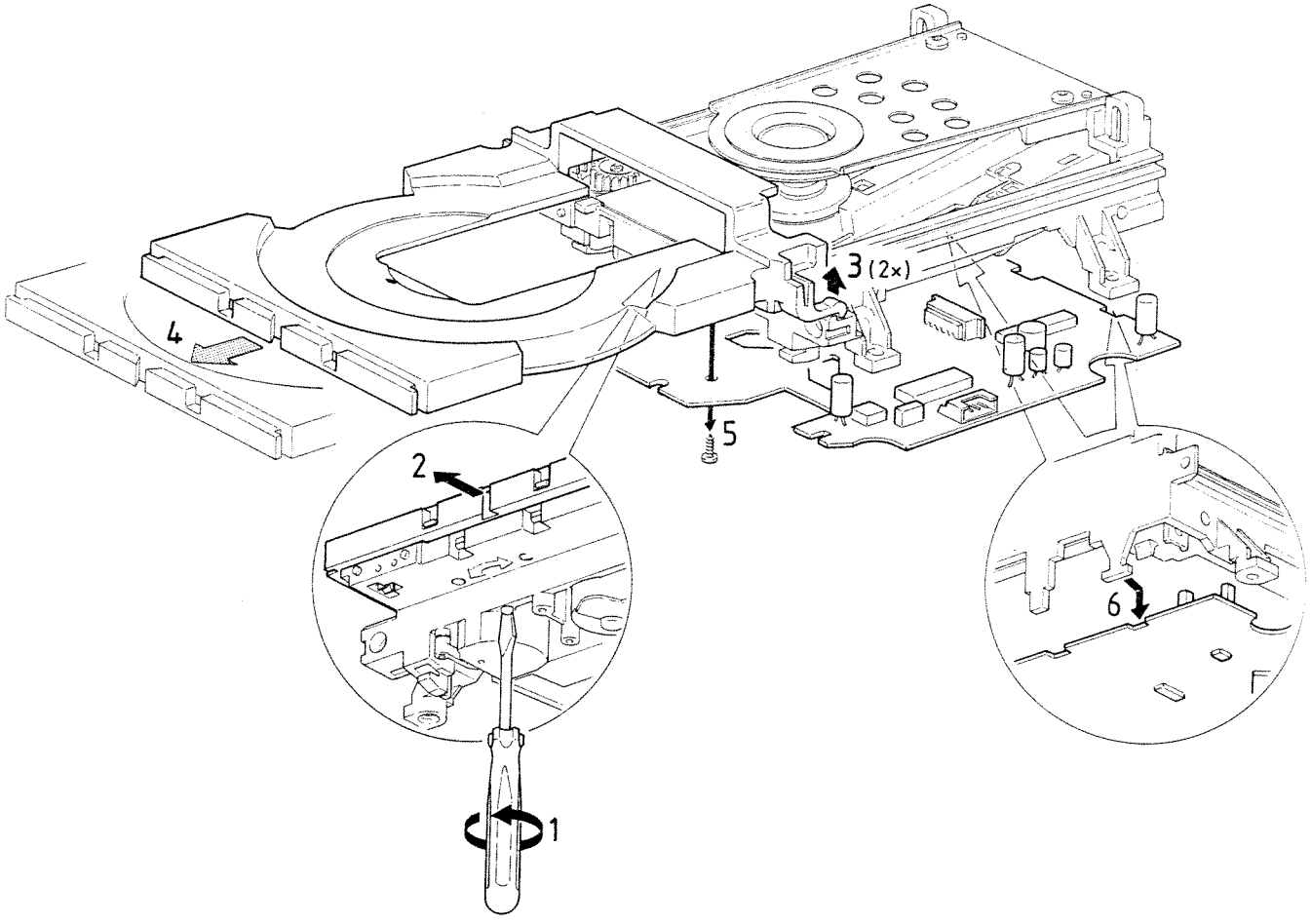


Fig. 1

Assembly of gear

a) Use a pin (e.g. a paperclip) to align the cam wheel (a) withthe gear wheel (b). See Fig. 2.

b) Fix the wheels with the small plastic whashers.

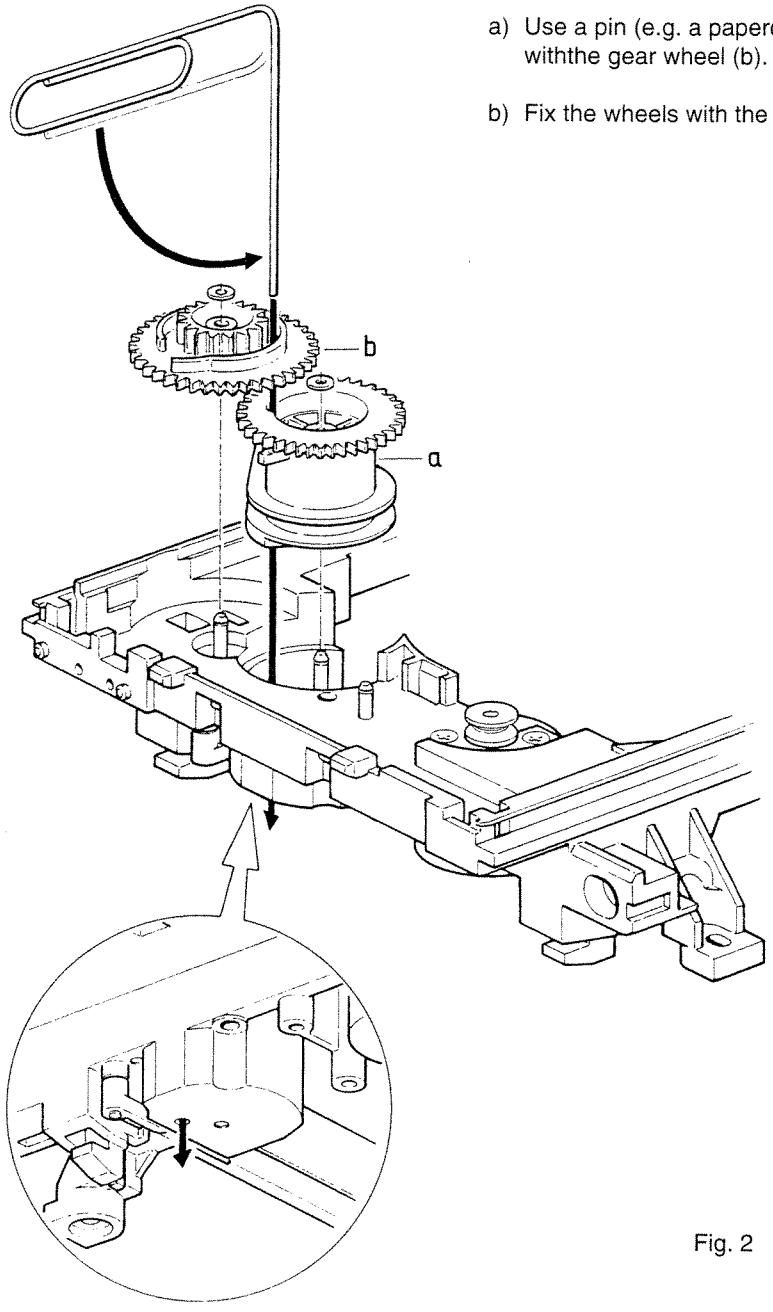


Fig. 2

c) Mount idle wheel 2 (c) and idle wheel 1 (d) in any position. See Fig. 3.

d) Fix the idle wheel 1 (d) with the small plastic whasher.

e) Mount the driving belt.

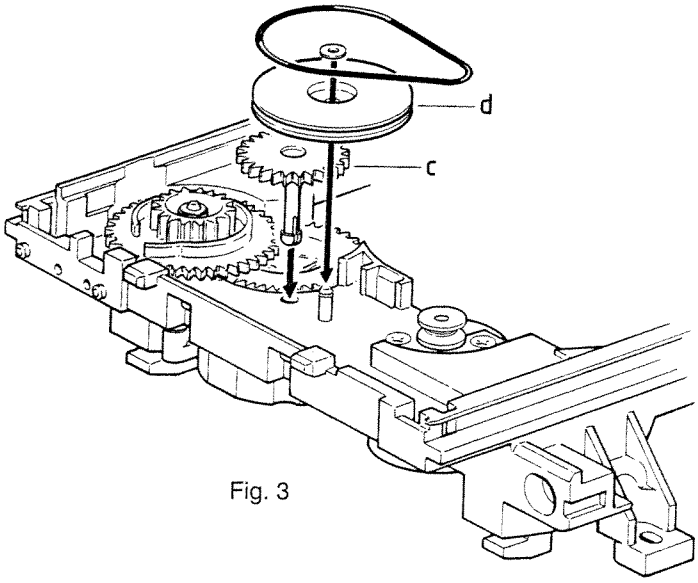


Fig. 3

f) Mount the pinion guiding assy and the cover as shown in Fig. 4.

g) Turn the gear wheel (b) counter clockwise to endposition.

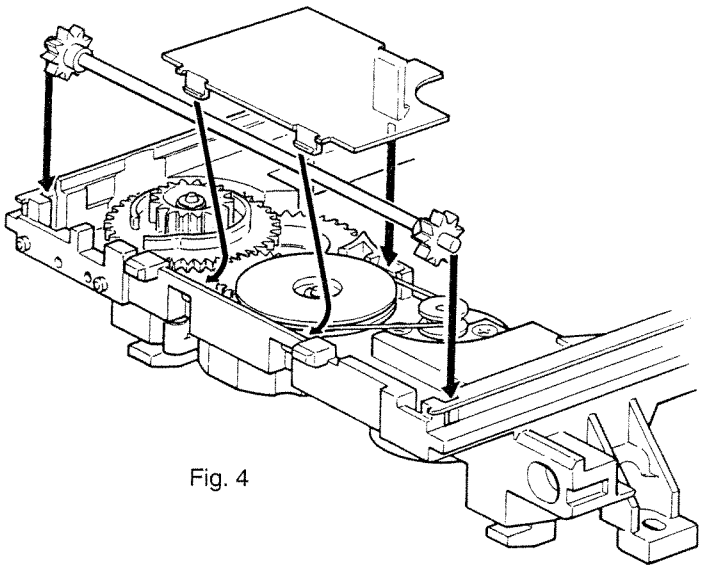


Fig. 4

h) Mount the CD Mechanism as shown in Fig. 5.

i) Mount the tray (Align the tray to the chassis and push it inside).

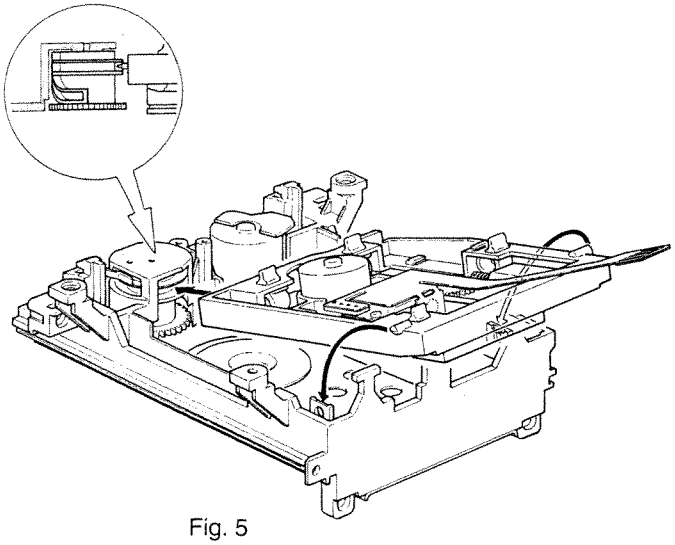


Fig. 5

Check if tray mechanism works correctly!

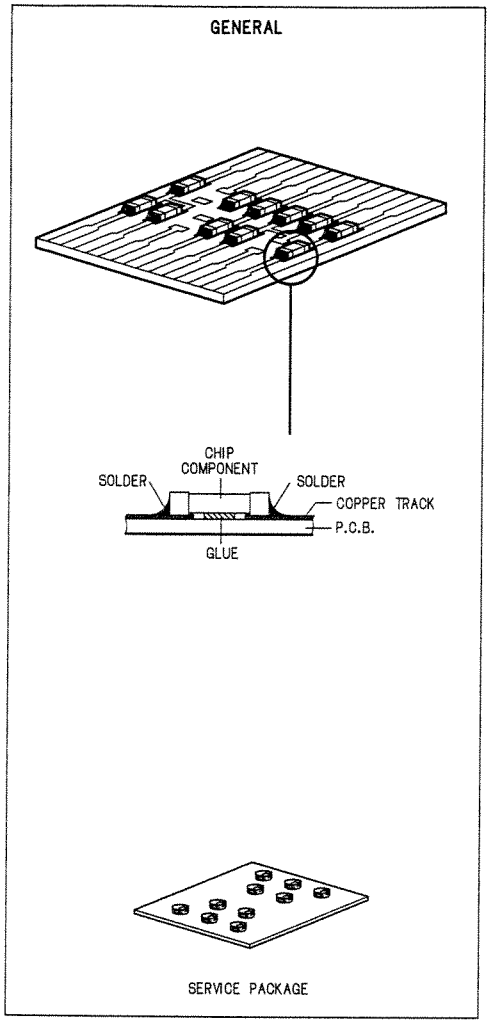
1) Turn the gear wheel (b) clockwise to its endposition (Use a small screwdriver as shown in Fig. 1 point 1).

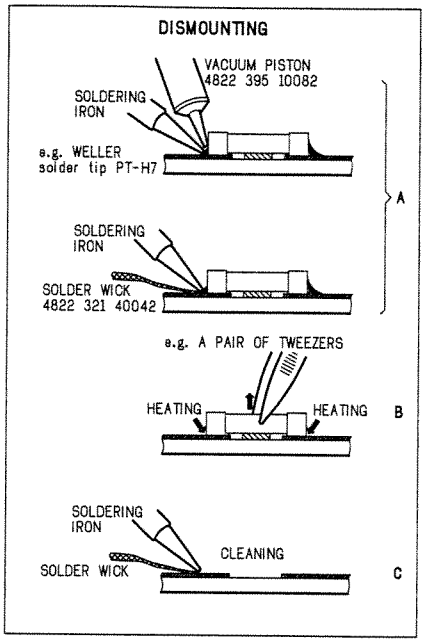
   The tray has to move to inner position first and then the CD mechanism has to move to its upper position.

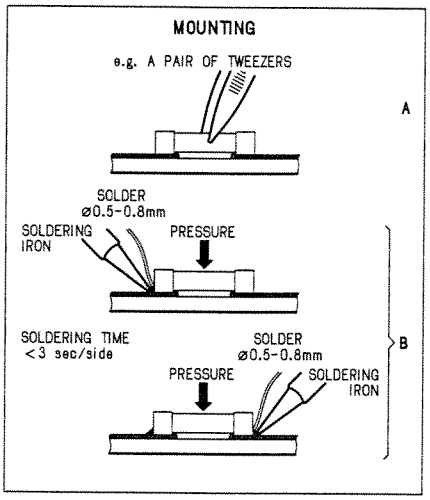
2) Turn the gear wheel (b) counter clockwise to its endposition.

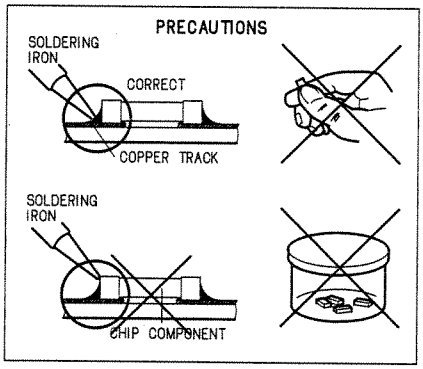
   The CD Mechanism has to move to its lower position first and then the tray has to move outside.

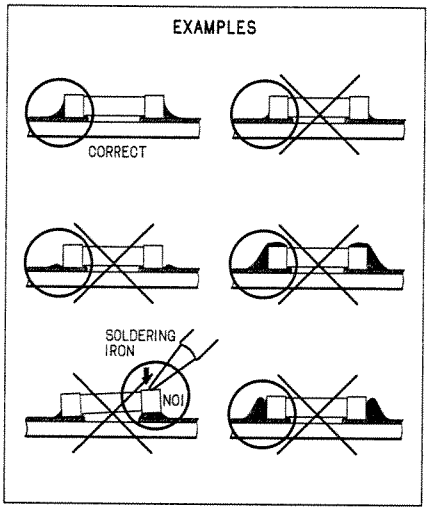
HANDLING CHIP COMPONENTS











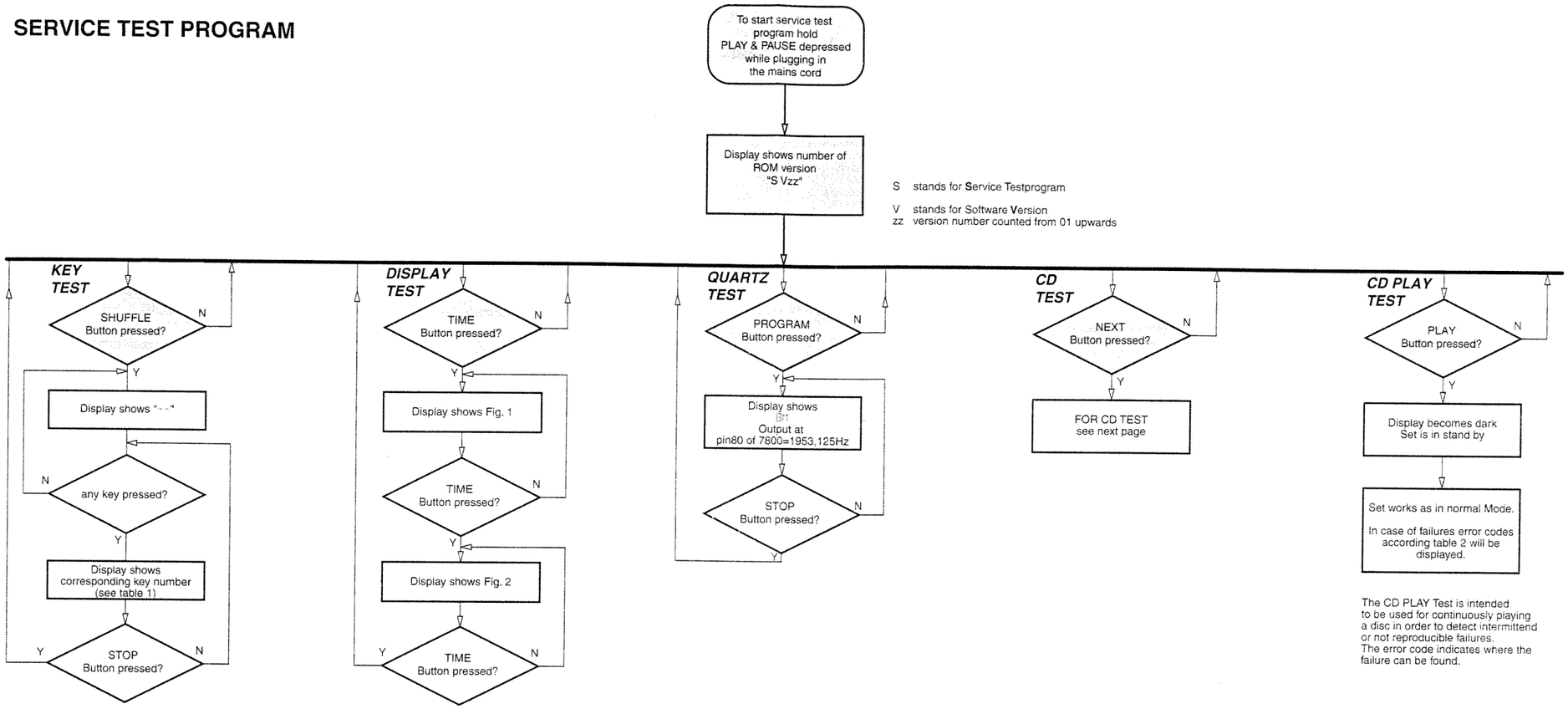
SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm 4822 395 50423
TORX screwdriver set SBC 163 .....4822 295 50145

Audio signal disc SBC 429.....4822 397 30184
Playability test disc SBC444 .....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A 4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30dB level without "pause") ...4822 397 30155

5-2

SERVICE TEST PROGRAM



KEY TEST

Key	Number	Key	Number	Key	Number
Next	1	Shuffle	7	Fade	13
Previous	2	Scan	8	Time	14
Play	3	Program	9	CD-Text	15
Stop	EXIT	Peak search	10	Scroll	16
Open/Close	5	Repeat	11	Stand by	17
Edit	6	Pause	12	any RC button	RC

Table 1

DISPLAY TEST

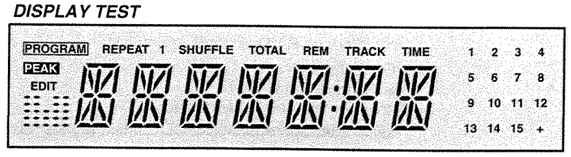


Fig. 1

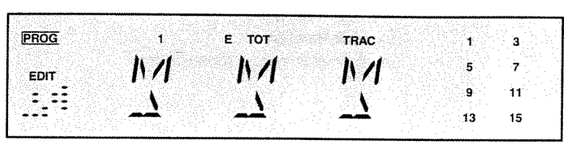


Fig. 2

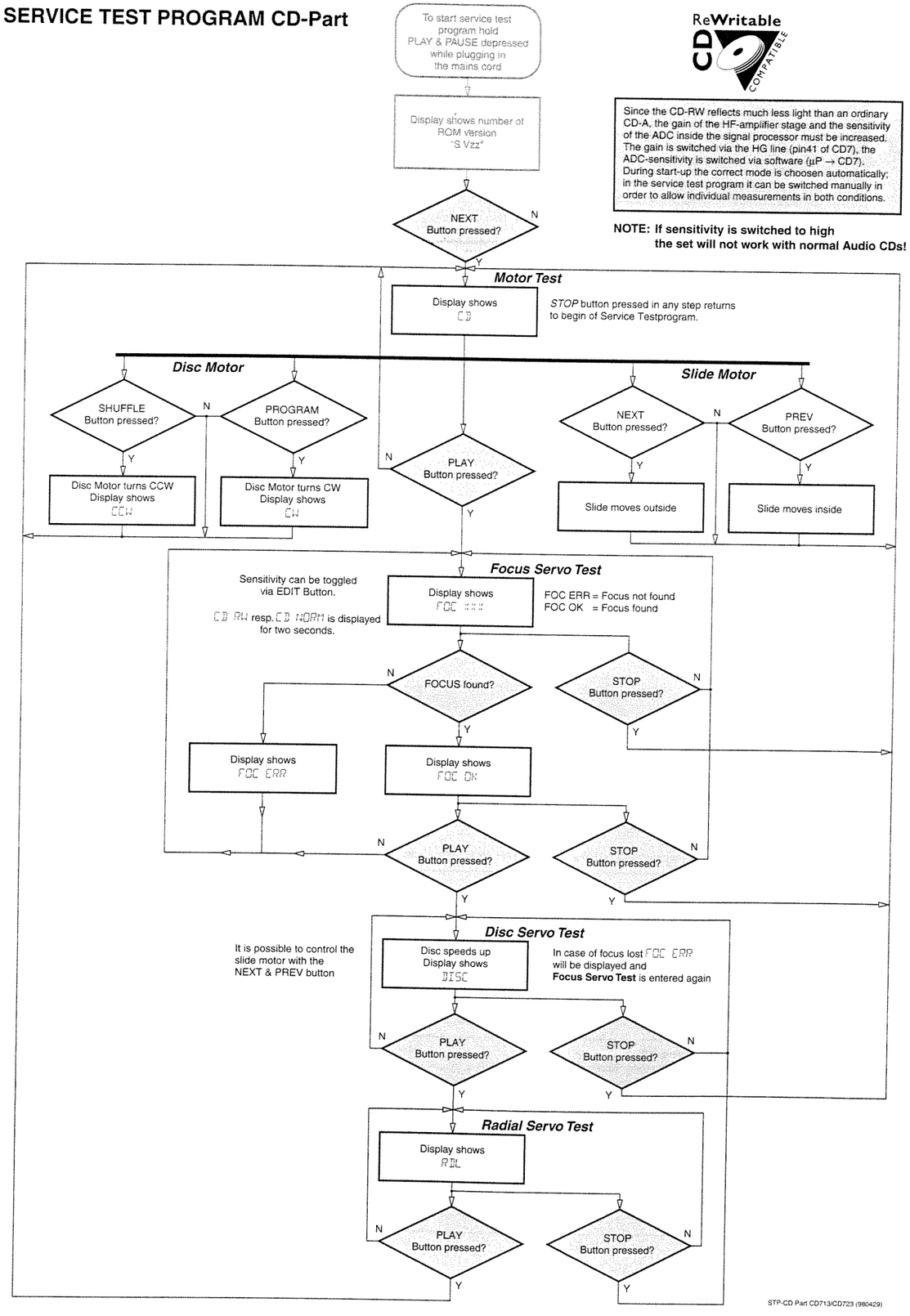
CD PLAY TEST

Error number	Type	Description
1000	W	**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 a certain time during playing the CD.
1001	W	**Radial error** Triggered when the radial servo is not on track for a certain time during.piaying the CD.
1002	W	**Slide in error** Generated when the slide did not reach its inner position (innerswitch is closed) before 6 seconds have passed by. Innerswitch or slide motor problem.
1003	W	**Slide out error** Generated when the slide did not come out of its inner position (innerswitch is open) before 250ms have passed by. Innerswitch or slide motor problem.
1005	W	**Jump error** Generated when the jump destination could not be found within a certain time.
1006	W	**Subcode error** No valid subcode for a certain time.
1007	W	**PLL error** The Phase -Lock-Loop could not lock within a certain time.
1008	W	**Turntable motor error** Generated when the CD could not reach 75% of speed during starting up within a certain time. Disc motor problem
1020	F	**Focus search error** Focus point has not been found within a certain time.

Table 2

W = Warning
Error number remains on display till next warning/error
F = Fatal error
Set stops playing → Error number remains on display

SERVICE TEST PROGRAM CD-Part



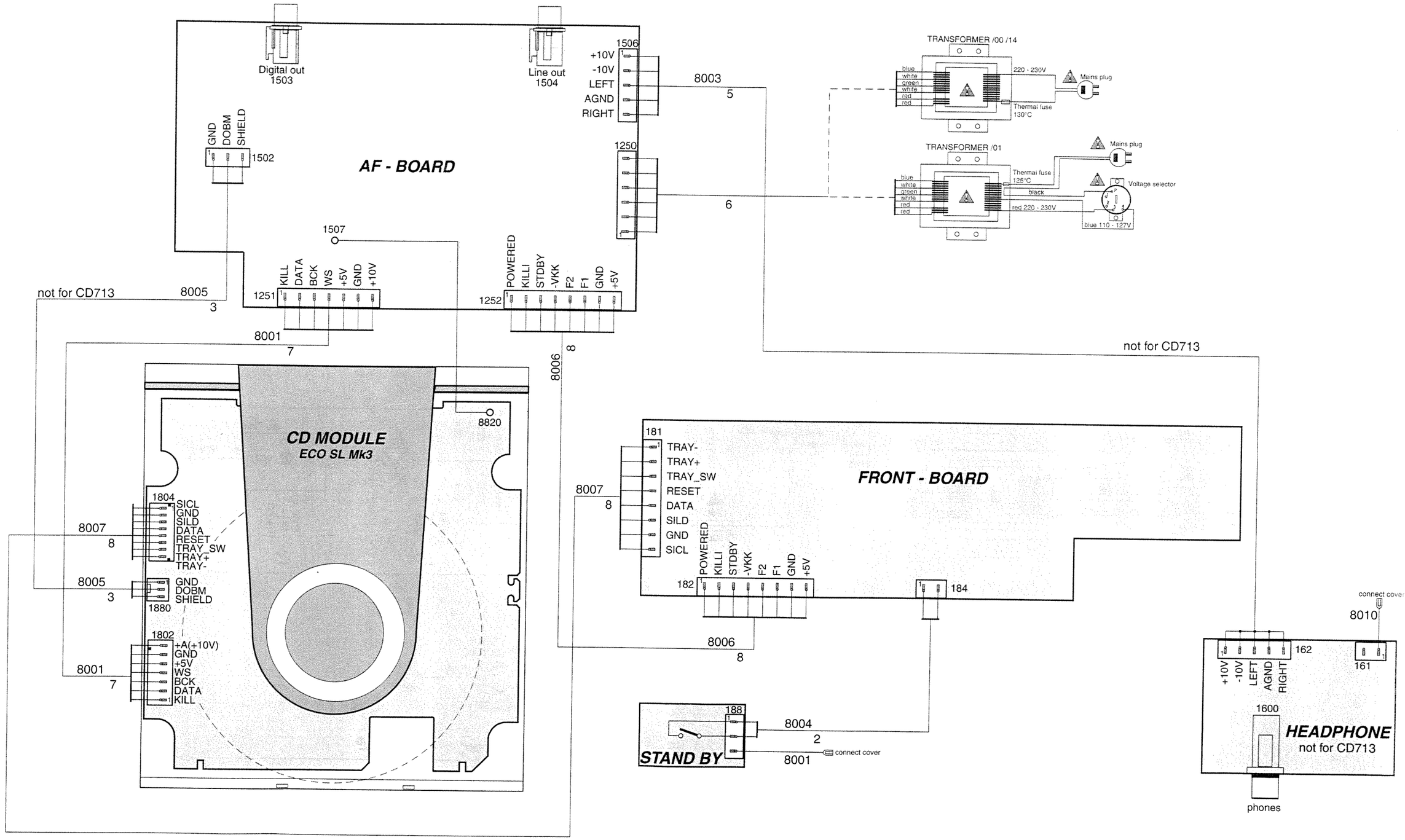
Abbreviations CD Part

SAA7372 – DECODER AND DIGITAL SERVO IC CD7

Pin	*Name*	*Direction*	*Description*
1	VSSA1	GND	supply (analog) of CD7
2	VDDA1	+4V	supply (analog) of CD7
3	D1	HF-preamp → CD7	unipolar current input (central diode signal input)
4	D2	HF-preamp → CD7	unipolar current input (central diode signal input)
5	D3	HF-preamp → CD7	unipolar current input (central diode signal input)
6	VRL	GND	reference input for ADC
7	D4	HF-preamp → CD7	unipolar current input (central diode signal input)
8	R1	HF-preamp → CD7	unipolar current input (satellite diode signal input)
9	R2	HF-preamp → CD7	unipolar current input (satellite diode signal input)
10	IREFT	→ CD7	current reference for calibration ADC
11	VRH	not connected	reference output from ADC
12	VSSA2	GND	supply (analog) of CD7
13	SELPLL	+4V	selects whether internal clock multiplier PLL is used
14	ISLICE	CD7 →	current feedback from data slicer
15	HFIN	→ CD7	comparator signal input
16	VSSA3	GND	supply (analog) of CD7
17	HFREF	→ CD7	comparator common mode input
18	IREF	→ CD7	reference current pin (nom. VDD/2)
19	VDDA2	+4V	supply (analog) of CD7
20	TEST1	GND	test control input
21	CRIN	X-Tal → CD7	crystal/resonator input
22	CDOUT	X-Tal → CD7	crystal/resonator output
23	TEST2	GND	test control input
24	CL16	not connected	16.9344MHz system clock output
25	CL11	not connected	11.2896MHz or 5.6448MHz clock output (3-state)
26	RA	CD7 → servo driver	radial actuator output
27	FO	CD7 → servo driver	focus actuator output
28	SL	CD7 → servo driver	slide actuator output
29	TEST3	GND	test control input
30	VDD1P	+4V	supply (digital) of CD7
31	DOBM	CD7 → digital output	bi-phase mark output (3-state)
32	VSS1	GND	supply (digital) of CD7
33	MOTO1	CD7 → servo driver	motor output1 of CD7; versatile (3-state)
34	MOTO2	CD7 → servo driver	motor output2 of CD7; versatile (3-state)
35	SBSY	not connected	subcode block sync (3-state)
36	SFSY	not connected	subcode frame sync (3-state)
37	RCK	GND	subcode clock input
38	SUB	not connected	P to W subcode bits (3-state)
39	VSS2	GND	supply (digital) of CD7
40	V5	not connected	versatile output pin of CD7
41	V4	not connected	versatile output pin of CD7
42	V3	not connected	versatile output pin of CD7 (open drain)
43	KILL	CD7 →	kill output; programmable (open drain)
44	MISC	not connected	C2 error flag; output only defined in CD-ROM modes (3-state)
45	DATA	CD7 → DAC	serial data output (3-state)
46	WCLK	CD7 → DAC	word clock output (3-state)
47	VDD2P	+4V	supply (digital) of CD7
48	BCLK	CD7 → DAC	serial bit clock output (3-state)
49	VSS3	GND	supply (digital) of CD7
50	CL4	not connected	4.2336MHz µP clock output
51	SDA	µP → CD7	µP interface data I/O line (open drain output)
52	SCL	µP → CD7	µP interface clock line
53	RAB	µP → CD7	µP interface R/W and load control line
54	SILD	µP → CD7	µP interface R/W and load control line
55	NC		no connection
56	VSS4	GND	supply (digital) of CD7
57	RESET	µP → CD7	power-on reset input (active low)
58	STATUS	not connected	servo interrupt request line/CD7 status register output (open drain)
59	VDD3C	+4V	supply core (digital)
60	C2FAIL	not connected	indication of correction failure (open drain)
61	CFLG	not connected	correction flag output (open drain)
62	V1	→ CD7	versatile input pin
63	V2	→ CD7	versatile input pin
64	LDON	CD7 → 7820	laser drive on output (open drain)

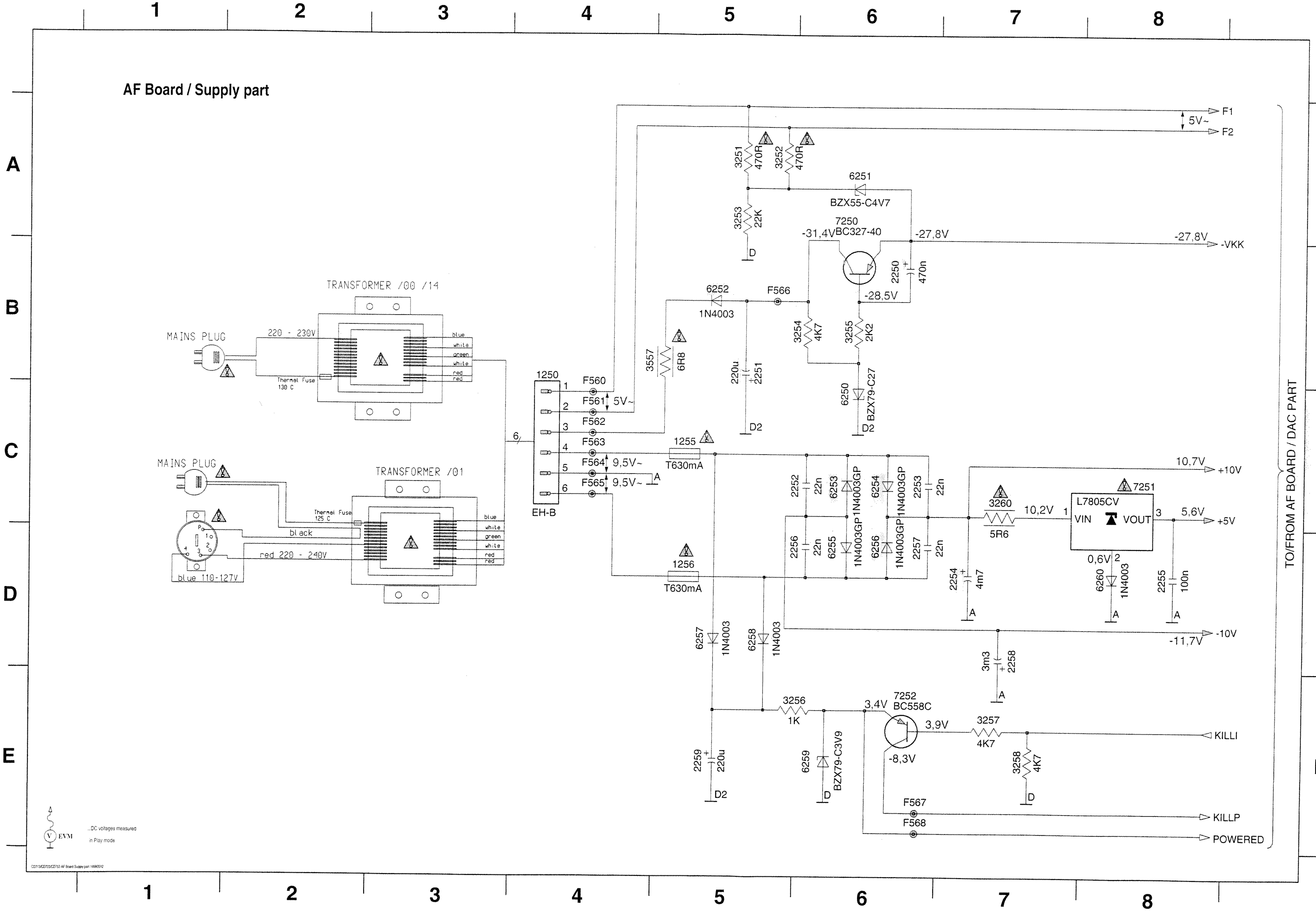
6-1

WIRING DIAGRAM



Wiring diagram CD713/CD723 (980430)

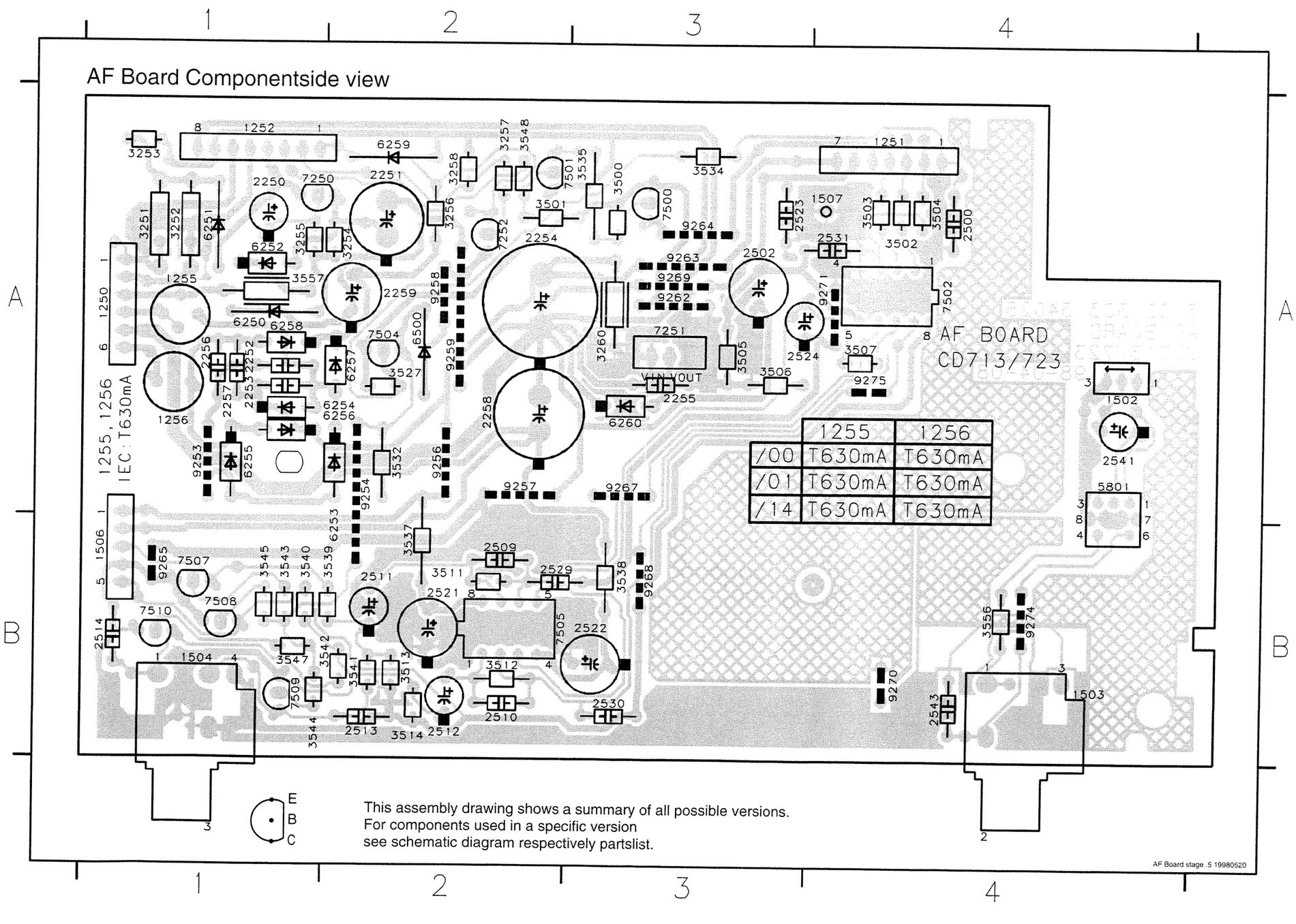
AF Board / Supply part


TRANSFORMER /00 /14
MAINS PLUG
220 - 230V
Thermal Fuse 130 C
MAINS PLUG
TRANSFORMER /01
Thermal Fuse 125 C
black
red 220 - 240V
blue 110-127V
1250
EH-B
F560
F561
F562
F563
F564
F565
5V~
9,5V~
1255
T630mA
1256
T630mA
3251 470R
3252 470R
6251 BZX55-C4V7
3253 22K
7250 BC327-40
-31,4V
-27,8V
-28,5V
2250 470n
6252 1N4003
F566
3557 6R8
2251 220u
3254 4K7
3255 2K2
6250 BZX79-C27
2252 22n
6253 1N4003GP
6254 1N4003GP
2253 22n
2256 22n
6255 1N4003GP
6256 1N4003GP
2257 22n
3260 5R6
10,2V
L7805CV
7251
VIN
VOUT
5,6V
0,6V
6260 1N4003
2254 4m7
2255 100n
10,7V
-11,7V
6257 1N4003
6258 1N4003
2258 3m3
3256 1K
7252 BC558C
3,4V
3,9V
-8,3V
3257 4K7
3258 4K7
2259 220u
6259 BZX79-C3V9
F567
F568
F1
F2
-VKK
+10V
+5V
-10V
KILLI
KILLP
POWERED
TO/FROM AF BOARD / DAC PART
...DC voltages measured in Play mode

1250 B4
1255 C5
1256 D5
2250 B6
2251 B5
2252 C6
2253 C6
2254 D7
2255 D8
2256 D6
2257 D6
2258 D7
2259 E5
3251 A5
3252 A5
3253 A5
3254 B6
3255 B6
3256 E6
3257 E7
3258 E7
3260 C7
3557 B4
6250 C6
6251 A6
6252 B5
6253 C6
6254 C6
6255 D6
6256 D6
6257 D5
6258 D5
6259 E6
6260 D8
7250 A6
7251 C8
7252 E6
F560 C4
F561 C4
F562 C4
F563 C4
F564 C4
F565 C4
F566 B5
F567 E6
F568 E6

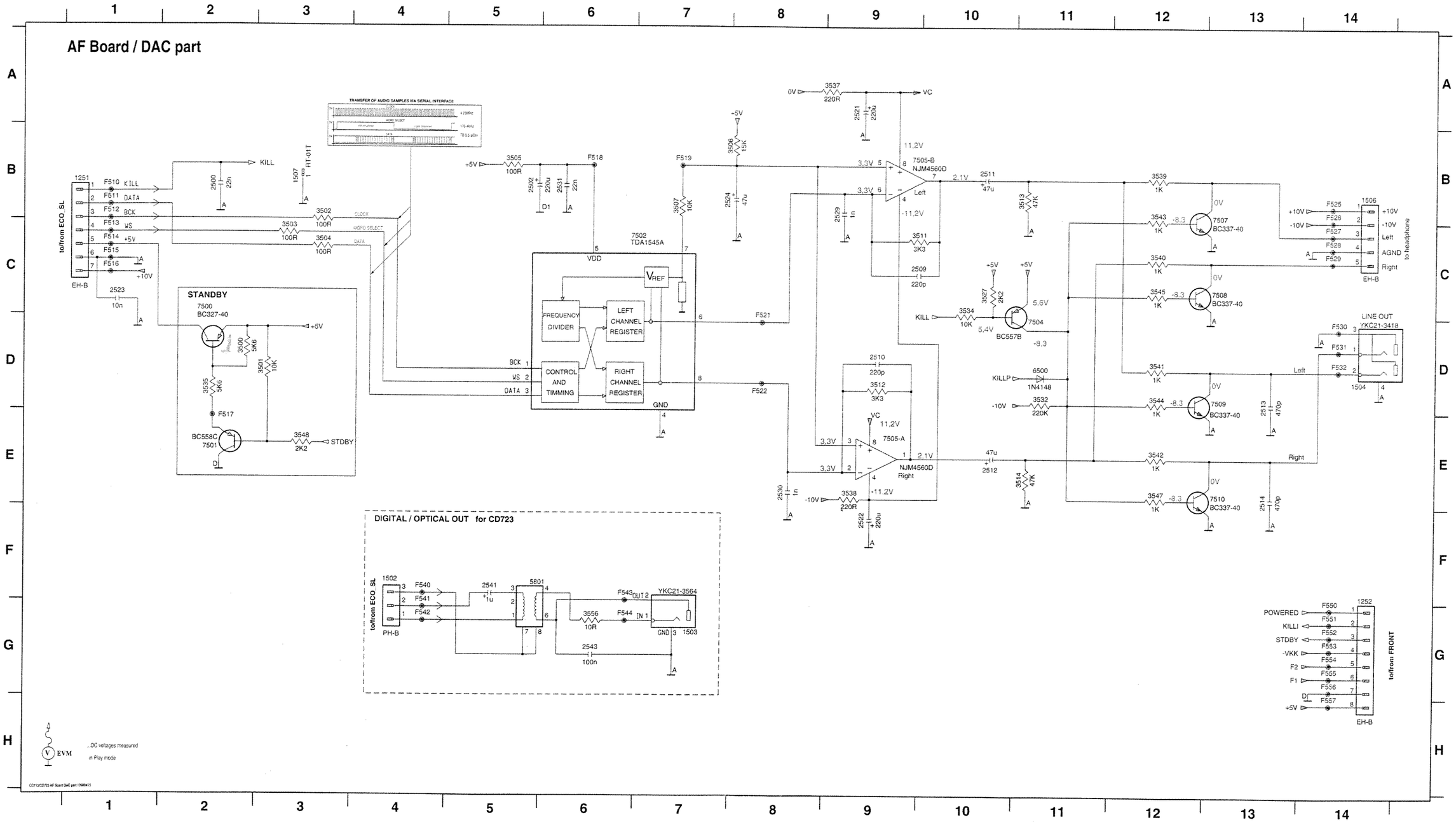
7-2

1250	A1	B	2254	A2	B	2511	B2	B	2544	A4	B	3503	A4	B	3532	A2	B	3548	A2	B	6256	A1	B	7508	B1	B	9267	B1	B
1251	A4	B	2255	A3	B	2512	B2	B	2545	B4	B	3504	A4	B	3533	B4	B	3550	A4	B	6257	A2	B	7509	B1	B	9269	A2	B
1252	A1	B	2256	A1	B	2513	B2	B	3251	A1	B	3505	A3	B	3534	A3	B	3552	A4	B	6258	A1	B	7510	B1	B	9270	A3	B
1255	A1	B	2257	A1	B	2514	B1	B	3252	A1	B	3506	A3	B	3535	A3	B	3553	A4	B	6259	A2	B	7511	B4	B	9272	A4	B
1256	A1	B	2258	A2	B	2515	A3	B	3253	A1	B	3507	B2	B	3537	B2	B	3556	B4	B	6260	A3	B	9253	A1	B	9274	B4	B
1502	A4	B	2259	A2	B	2516	A4	B	3254	A2	B	3508	B2	B	3538	B3	B	3557	A1	B	6500	A2	B	9254	A2	B			
1503	B4	B	2501	A3	B	2521	B2	B	3255	A1	B	3509	B3	B	3539	B2	B	5801	B4	B	7250	A1	B	9256	A2	B			
1504	B1	B	2502	A3	B	2522	B3	B	3256	A2	B	3510	B3	B	3540	B1	B	5803	B4	B	7251	A3	B	9257	A2	B			
1505	B4	B	2503	A4	B	2523	A3	B	3257	A2	B	3511	B2	B	3541	B2	B	6250	A1	B	7252	A2	B	9258	A2	B			
1506	B1	B	2504	A3	B	2524	A4	B	3258	A2	B	3512	B2	B	3542	B2	B	6251	A1	B	7500	A3	B	9262	A3	B			
2250	A1	B	2505	A4	B	2527	B4	B	3260	A3	B	3513	B2	B	3543	B1	B	6252	A1	B	7501	A2	B	9263	A3	B			
2251	A2	B	2506	A4	B	2540	B4	B	3500	A3	B	3514	B2	B	3544	B2	B	6253	A1	B	7504	A2	B	9264	A3	B			
2252	A1	B	2507	A3	B	2541	A4	B	3501	A2	B	3515	A3	B	3545	B1	B	6254	A2	B	7505	B2	B	9265	A3	B			
2253	A1	B	2508	B3	B	2543	B4	B	3502	A4	B	3527	A2	B	3547	B1	B	6255	A1	B	7507	B1	B	9266	B3	B			

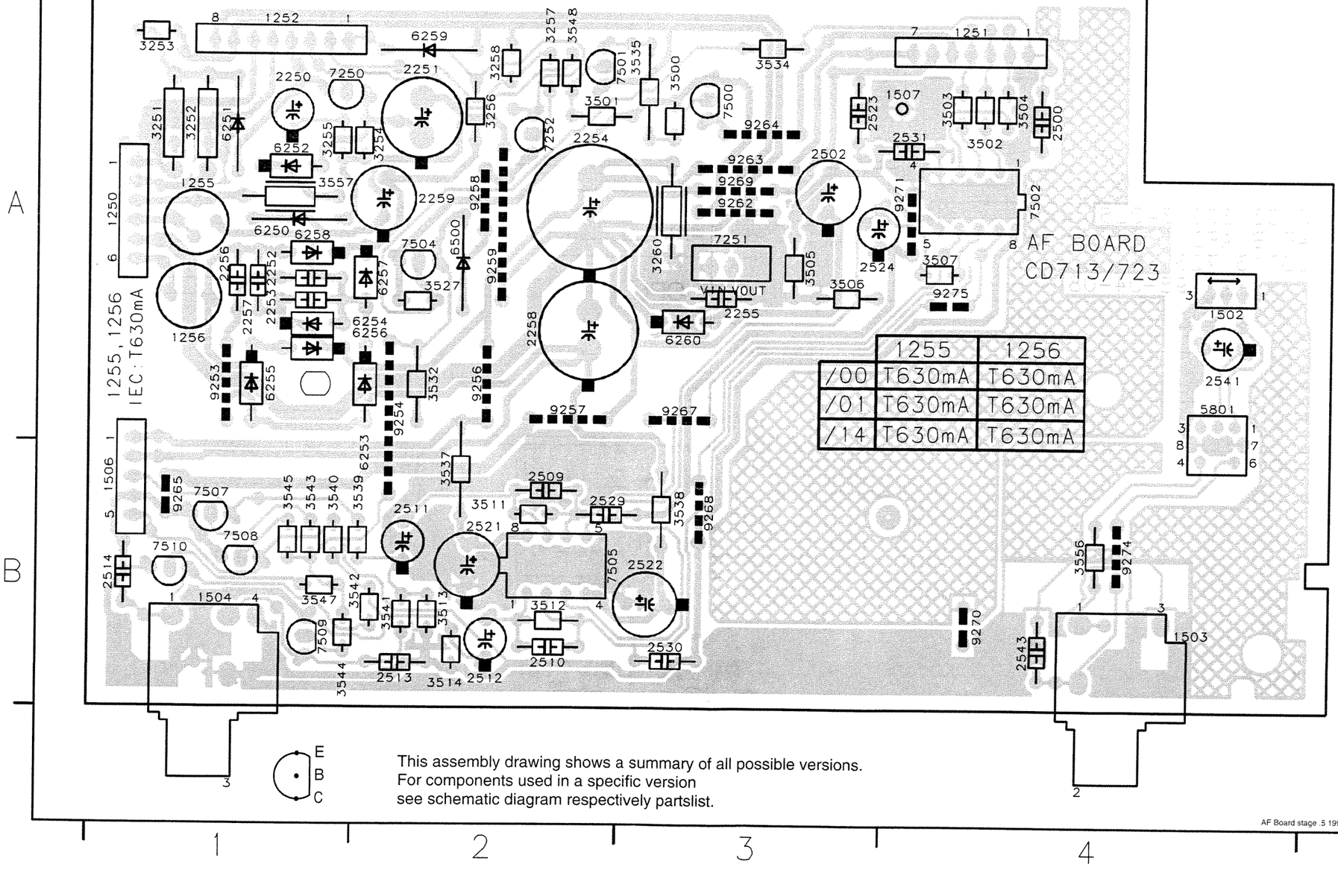


7-3

1251 B1	1504 D14	2502 B5	2512 E10	2522 F9	2530 E8	3500 D2	3504 C3	3511 C9	3527 C10	3537 A9	3541 D12	3545 C12	5801 F5	7502 C6	7507 B13	F510 B1	F514 C1	F518 B6	F525 B14	F529 C14	F540 F4	F544 G6	F553 G14	F557 H14
1252 F14	1506 B14	2509 C9	2513 D13	2523 C1	2531 B6	3501 D3	3505 B5	3512 D9	3532 D11	3538 E9	3542 E12	3547 E12	6500 D11	7504 D11	7508 C13	F511 B1	F515 C1	F519 B7	F526 B14	F530 D14	F541 G4	F550 G14	F554 G14	
1502 F4	1507 B3	2510 D9	2514 E13	2524 B7	2541 F5	3502 B3	3506 B7	3513 B11	3534 C10	3539 B12	3543 B12	3548 E3	7500 C2	7505-A E9	7509 D13	F512 B1	F516 C1	F521 D8	F527 C14	F531 D14	F542 G4	F551 G14	F555 G14	
1503 G7	2500 B2	2511 B10	2521 A9	2529 B9	2543 G6	3503 C3	3507 B7	3514 E11	3535 D2	3540 C12	3544 D12	3556 G6	7501 E2	7505-B B9	7510 E13	F513 C1	F517 E2	F522 D8	F528 C14	F532 D14	F543 F6	F552 G14	F556 G14	



1250	A1	B
1251	A4	B
1252	A1	B
1255	A1	B
1256	A1	B
1502	A4	B
1503	B4	B
1504	B1	B
1505	B4	B
1506	B1	B
2250	A1	B
2251	A2	B
2252	A1	B
2253	A1	B
2254	A2	B
2255	A3	B
2256	A1	B
2257	A1	B
2258	A2	B
2259	A2	B
2501	A3	B
2502	A3	B
2503	A4	B
2504	A3	B
2505	A4	B
2506	A4	B
2507	A3	B
2508	B3	B
2511	B2	B
2512	B2	B
2513	B2	B
2514	B1	B
2515	A3	B
2516	A4	B
2521	B2	B
2522	B3	B
2523	A3	B
2524	A4	B
2527	B4	B
2540	B4	B
2541	A4	B
2543	B4	B
2544	A4	B
2545	B4	B
3251	A1	B
3252	A1	B
3253	A1	B
3254	A2	B
3255	A1	B
3256	A2	B
3257	A2	B
3258	A2	B
3260	A3	B
3500	A3	B
3501	A2	B
3502	A4	B
3503	A4	B
3504	A4	B
3505	A3	B
3506	A3	B
3507	B2	B
3508	B2	B
3509	B3	B
3510	B3	B
3511	B2	B
3512	B2	B
3513	B2	B
3514	B2	B
3515	A3	B
3527	A2	B
3532	A2	B
3533	B4	B
3534	A3	B
3535	A3	B
3537	B2	B
3538	B3	B
3539	B2	B
3540	B1	B
3541	B2	B
3542	B2	B
3543	B1	B
3544	B2	B
3545	B1	B
3547	B1	B
3548	A2	B
3550	A4	B
3552	A4	B
3553	A4	B
3556	B4	B
3557	A1	B
5801	B4	B
5803	B4	B
6250	A1	B
6251	A1	B
6252	A1	B
6253	A1	B
6254	A2	B
6255	A1	B
6256	A1	B
6257	A2	B
6258	A1	B
6259	A2	B
6260	A3	B
6500	A2	B
7250	A1	B
7251	A3	B
7252	A2	B
7500	A3	B
7501	A2	B
7504	A2	B
7505	B2	B
7507	B1	B
7508	B1	B
7509	B1	B
7510	B1	B
7511	B4	B
9253	A1	B
9254	A2	B
9256	A2	B
9257	A2	B
9258	A2	B
9262	A3	B
9263	A3	B
9264	A3	B
9265	A3	B
9266	B3	B
9267	B1	B
9269	A2	B
9270	A3	B
9272	A4	B
9274	B4	B


AF Board Componentside view

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

AF Board stage .5 19980520

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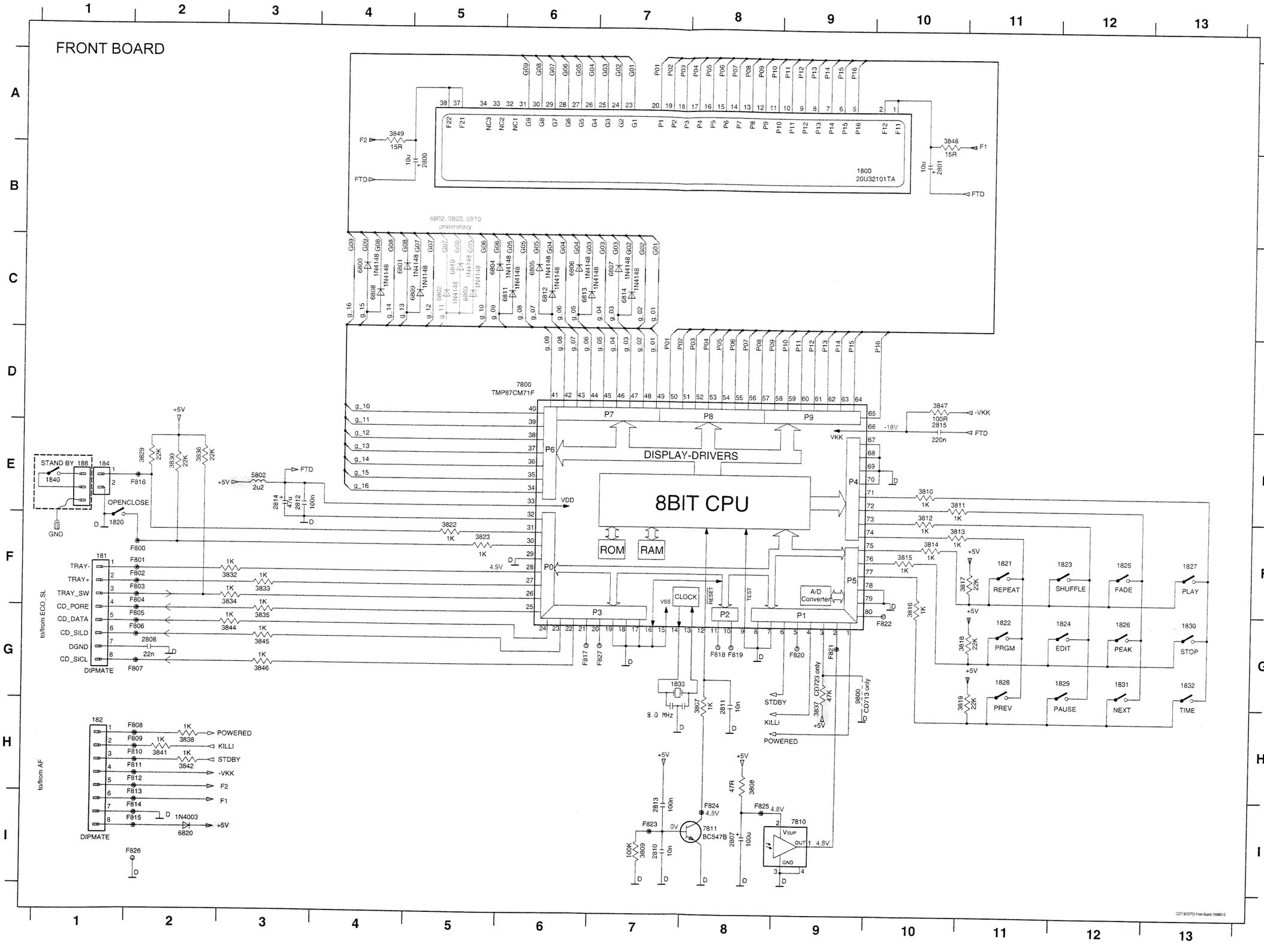
FRONT BOARD

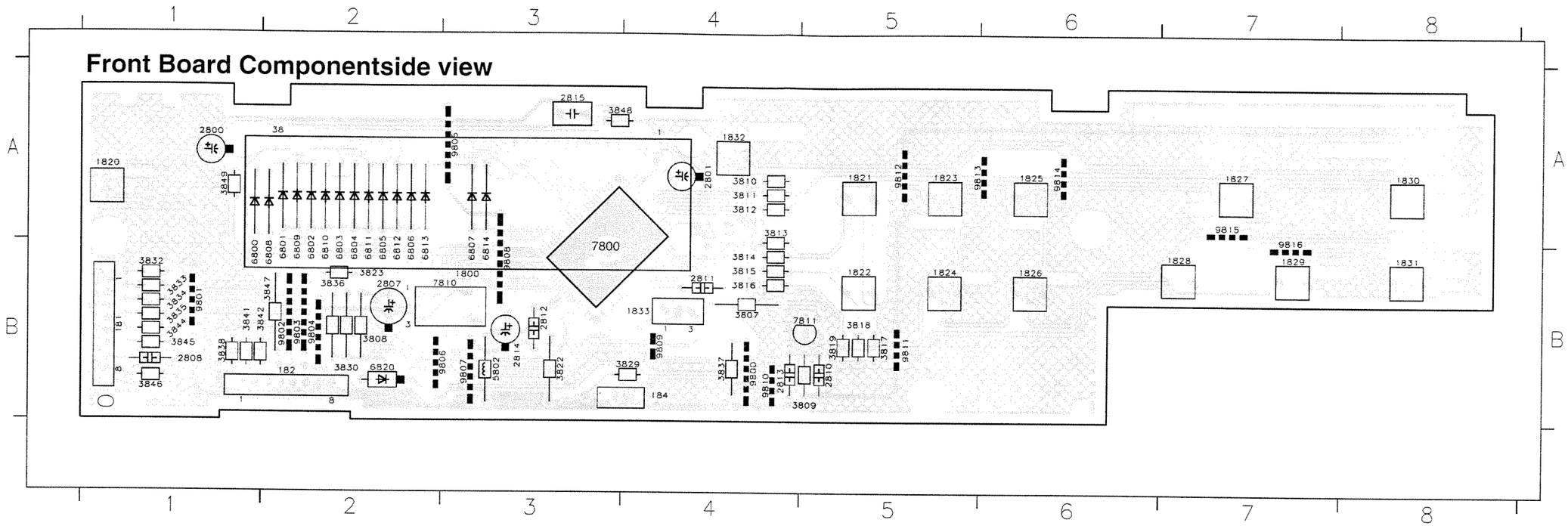


181 F1	F810 H2
182 H1	F811 H2
184 E1	F812 H2
1800 B9	F813 I2
1820 F1	F814 I2
1821 F11	F815 I2
1822 G11	F816 E2
1823 F12	F817 G6
1824 G12	F818 G8
1825 F12	F819 G8
1826 G12	F820 G9
1827 F13	F821 G9
1828 G11	F822 G10
1829 G12	F823 I7
1830 G13	F824 I8
1831 G12	F825 I8
1832 G13	F826 I2
1833 G7	F827 G7
2800 B5	
2801 B10	
2807 I8	
2808 G2	
2810 I7	
2811 H8	
2812 E3	
2813 I7	
2814 E3	
2815 D10	
3807 H8	
3808 H8	
3809 I7	
3810 E10	
3811 E10	
3812 E10	
3813 F10	
3814 F10	
3815 F10	
3816 F10	
3817 F11	
3818 G11	
3819 G11	
3822 F5	
3823 F5	
3829 E2	
3830 E2	
3832 F3	
3833 F3	
3834 F3	
3835 G3	
3836 E2	
3837 G9	
3838 H2	
3841 H2	
3842 H2	
3844 G3	
3845 G3	
3846 G3	
3847 D10	
3848 A10	
3849 A4	
5802 E3	
6800 C4	
6801 C4	
6802 C5	
6803 C5	
6804 C5	
6805 C6	
6806 C6	
6807 C7	
6808 C4	
6809 C5	
6810 C5	
6811 C6	
6812 C6	
6813 C6	
6814 C7	
6820 I2	
7800 D6	
7810 I9	
7811 I8	
9800 G9	
F800 F2	
F801 F2	
F802 F2	
F803 F2	
F804 F2	
F805 G2	
F806 G2	
F807 G2	
F808 H2	
F809 H2	

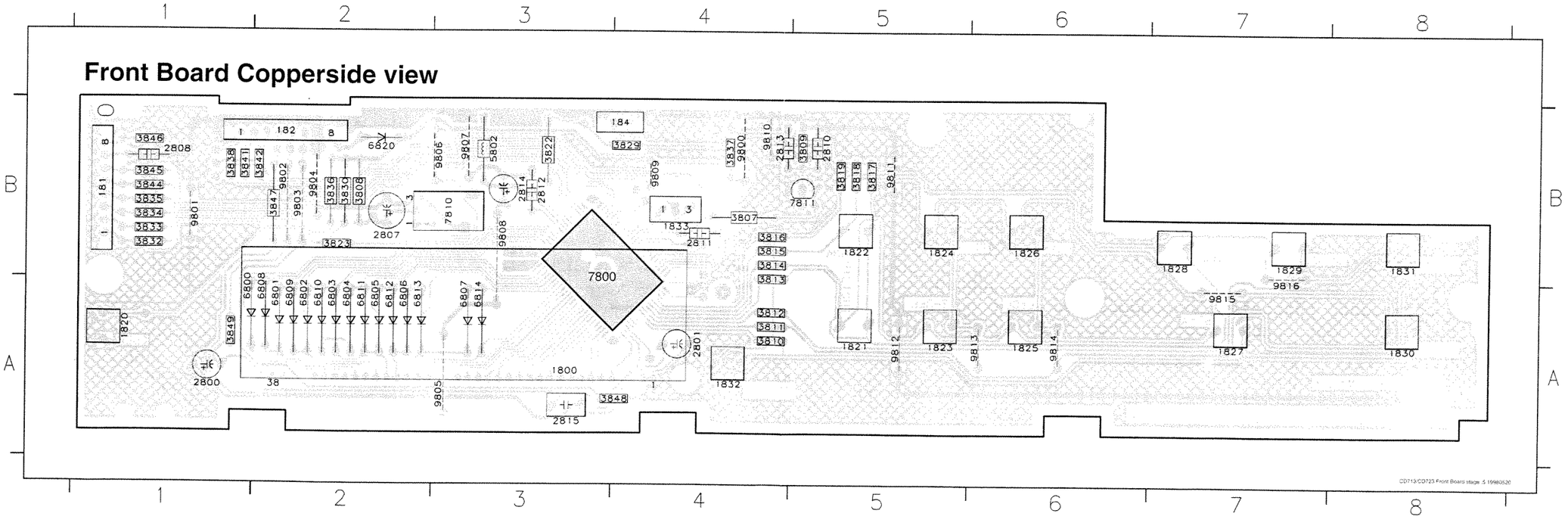
7-6

181 B1	1823 A5	1830 A8	2808 B1	3807 B4	3814 B4	3823 B2	3836 B2	3846 B1	6802 A2	6809 A2	7800 A3	9804 B2	9811 B5
182 B2	1824 B5	1831 B8	2810 B5	3808 B2	3815 B4	3829 B4	3837 B4	3847 B2	6803 A2	6810 A2	7810 B3	9805 A3	9812 A5
184 B3	1825 A6	1832 A4	2811 B4	3809 B5	3816 B4	3830 B2	3838 B1	3848 A3	6804 A2	6811 A2	7811 B5	9806 B2	9813 A6
1800 A3	1826 B6	1833 B4	2812 B3	3810 A4	3817 B5	3832 B1	3841 B1	3849 A1	6805 A2	6812 A2	9800 B4	9807 B3	9814 A6
1820 A1	1827 A7	2800 A1	2813 B4	3811 A4	3818 B5	3833 B1	3842 B1	5802 B3	6806 A2	6813 A2	9801 B1	9808 B3	9815 A7
1821 A5	1828 B7	2801 A4	2814 B3	3812 A4	3819 B5	3834 B1	3844 B1	6800 A1	6807 A3	6814 A3	9802 B2	9809 B4	9816 B7
1822 B5	1829 B7	2807 B2	2815 A3	3813 B4	3822 B3	3835 B1	3845 B1	6801 A2	6808 A2	6820 B2	9803 B2	9810 B4	

Front Board Componentside view

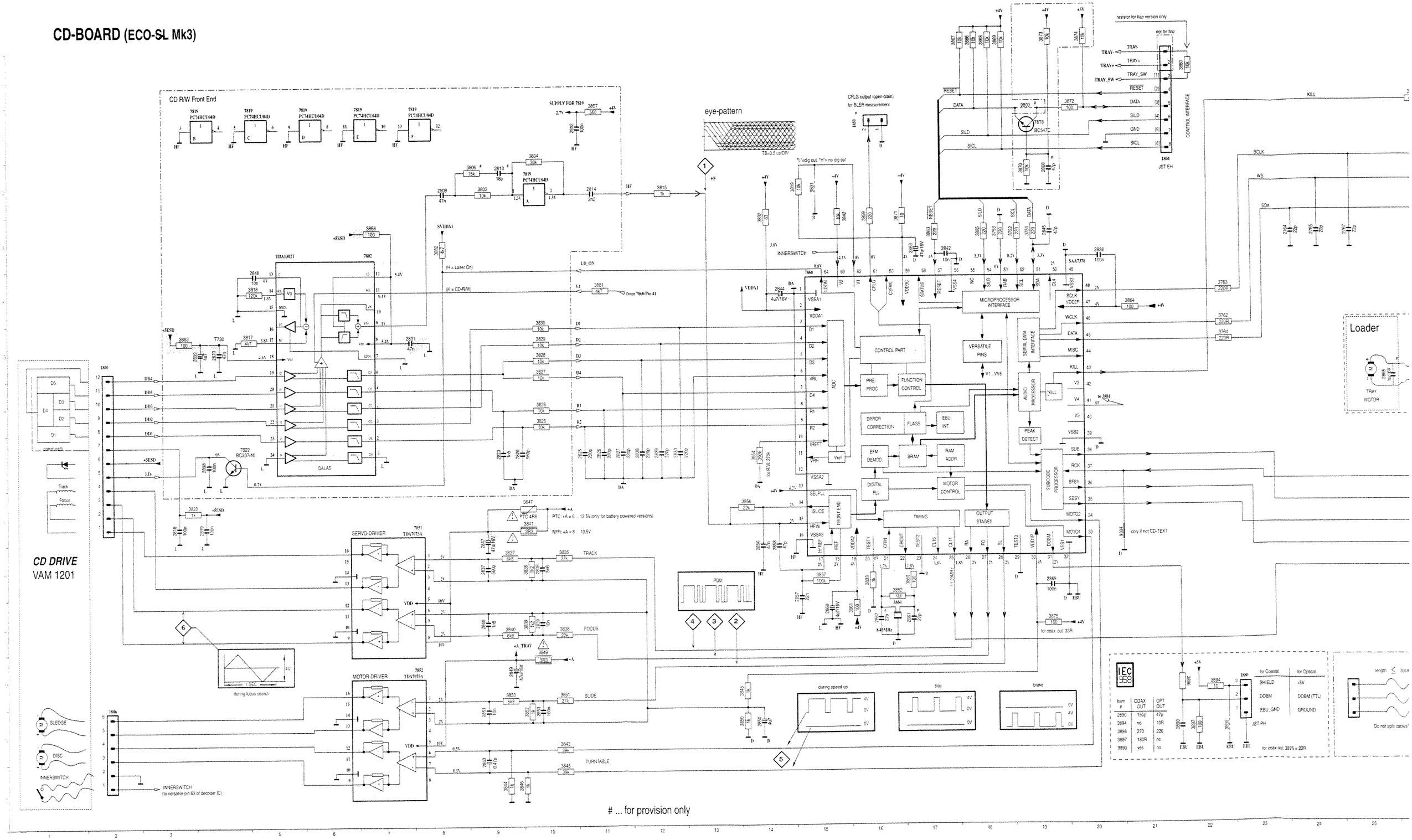


Front Board Copperside view

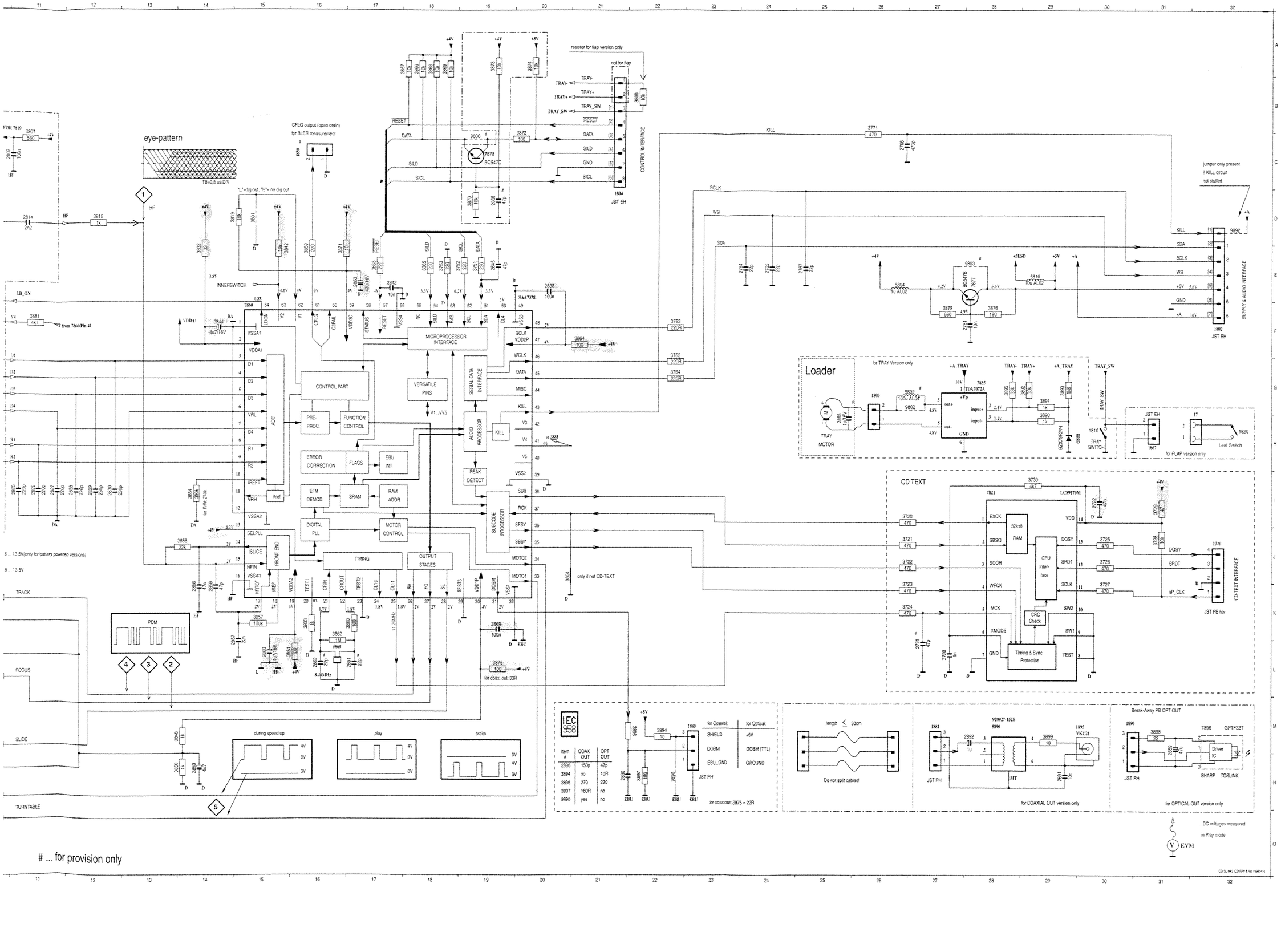


7-7

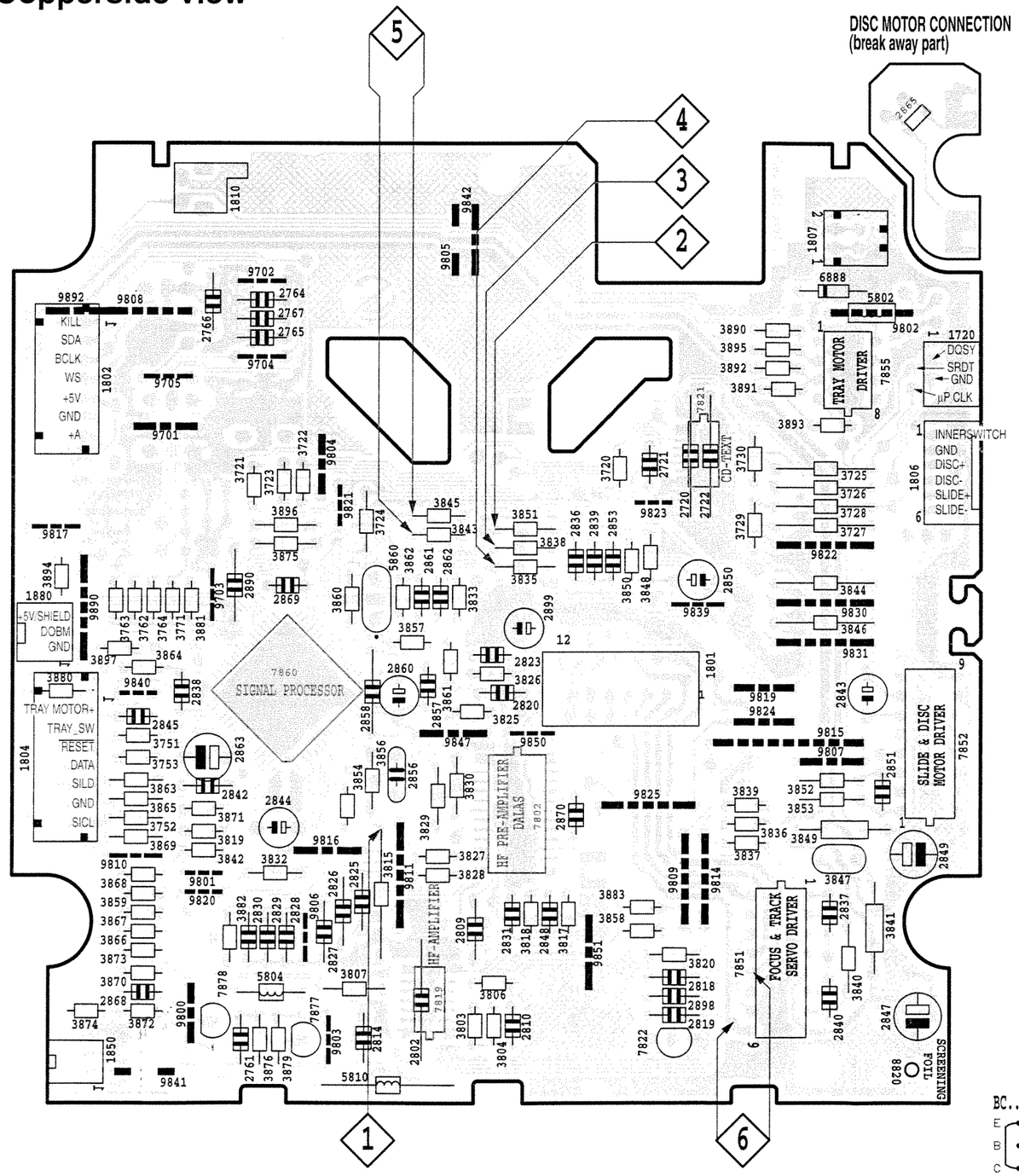
CD-BOARD (ECO-SL Mk3)



7-7


eye-pattern
TB=0.5 us/DIV
"L"=dig out, "H"= no dig out
CFLG output (open drain)
for BLER measurement
RESET
DATA
SILD
SICL
CONTROL INTERFACE
JST EH
resistor for flap version only
not for flap
TRAY-
TRAY+
TRAY_SW
KILL
SCLK
WS
SDA
jumper only present if KILL circuit not stuffed
SUPPLY & AUDIO INTERFACE
INNERSWITCH
LD_ON
from 7860/Pin 41
MICROPROCESSOR INTERFACE
CONTROL PART
VERSATILE PINS
SERIAL DATA INTERFACE
AUDIO PROCESSOR
PEAK DETECT
PRE-PROC.
FUNCTION CONTROL
ERROR CORRECTION
FLAGS
EBU INT.
EFM DEMOD
SRAM
RAM ADDR
DIGITAL PLL
MOTOR CONTROL
SUBCODE PROCESSOR
FRONT END
TIMING
OUTPUT STAGES
ADC
Vref
SAA7378
Loader
for TRAY Version only
TRAY MOTOR
TRAY SWITCH
Leaf Switch
for FLAP version only
CD TEXT
LC89170M
32x8 RAM
CPU Inter-face
CRC Check
Timing & Sync Protection
CD-TEXT INTERFACE
JST FE hor
only if not CD-TEXT
TRACK
FOCUS
SLIDE
TURNTABLE
PDM
during speed up
play
brake
6 ... 13.5V(only for battery powered versions)
8 ... 13.5V
for coax. out: 33R
for coax out: 3875 = 22R
for Coaxial
for Optical
SHIELD
DOBM
EBU_GND
+5V
DOBM (TTL)
GROUND
JST PH
length ≤ 30cm
Do not split cables!
for COAXIAL OUT version only
Break-Away PB OPT OUT
SHARP TOSLINK
for OPTICAL OUT version only
...DC voltages measured in Play mode
EVM
... for provision only

ECO Short Loader Mk3
Copperside view



ECO SL Mk3 (R/W&IIs) Layout stage 2 (19980330)

17	opt.	3844 D2
1720	C1	3845 C4
1801	D3	3846 D2
1802	C6	3847 E2
1804	E6	3848 D3
1806	C1	3849 E2
1807	B2	3850 D3
1810	B5	3851 C3
1820	B3	3852 E2
1850	F6	3853 E2
1880	D6	3854 E4
1881	opt.	3856 E4
1890	opt.	3857 D4
1895	opt.	3858 E3
2720	C3	3859 E5
2721	C3	3860 D4
2722	C2	3861 D4
2761	F5	3862 D4
2764	B5	3863 E5
2765	B5	3864 D5
2766	B5	3865 E5
2767	B5	3866 E5
2802	F4	3867 E5
2809	E4	3868 E5
2810	F3	3869 E5
2814	F4	3870 F5
2818	F3	3871 E5
2819	F3	3872 F5
2820	D4	3873 F5
2823	D4	3874 F6
2825	E4	3875 C5
2826	E4	3876 F5
2827	E4	3879 F5
2828	F5	3880 D6
2829	F5	3881 D5
2830	F5	3882 F5
2831	E3	3883 E3
2836	D3	3890 B2
2837	E2	3891 C2
2838	D5	3892 C2
2839	D3	3893 C2
2840	F2	3894 D6
2842	E5	3895 B2
2843	D2	3896 C5
2844	E5	3897 D6
2845	D5	3898 opt.
2847	F1	3899 opt.
2848	E3	5802 B2
2849	E1	5804 F5
2850	D2	5810 F4
2851	E2	5860 D4
2853	D3	5890 opt.
2856	E4	6888 B2
2857	D4	7802 E4
2858	D4	7819 F4
2859	opt.	7822 F3
2860	D4	7851 F2
2861	D4	7852 D1
2862	D4	7855 C2
2863	E5	7860 D6
2865	A1	7877 F5
2868	F5	7878 F5
2869	D5	7896 opt.
2870	E3	9701 C5
2890	D5	9702 B5
2891	opt.	9703 D5
2892	opt.	9704 B5
2898	F3	9705 C5
2899	D3	9800 F5
3720	C3	9801 E5
3721	C5	9802 B2
3722	C5	9803 F4
3723	C5	9804 C4
3724	C4	9805 B4
3725	C2	9806 F5
3726	C2	9807 E2
3727	C2	9808 B5
3728	C2	9809 E3
3729	C2	9810 E5
3730	C2	9811 E4
3751	D5	9814 E2
3752	E5	9815 D2
3753	E5	9816 E4
3762	D5	9817 C6
3763	D6	9819 D2
3764	D5	9820 E5
3771	D5	9821 C4
3803	F4	9822 C2
3804	F4	9823 C3
3806	F4	9824 D2
3807	F4	9825 E3
3815	E4	9830 D2
3817	E3	9831 D2
3818	E3	9839 D2
3819	E5	9840 D5
3820	F3	9841 F5
3825	D4	9842 B4
3826	D4	9847 D4
3827	E4	9850 D3
3828	E4	9851 F3
3829	E4	9890 D6
3830	E4	9892 B6
3832	E5	
3833	D4	
3835	D3	
3836	E2	
3837	E2	
3838	C3	
3839	E2	
3840	F2	
3841	E2	
3842	E5	
3843	C4	

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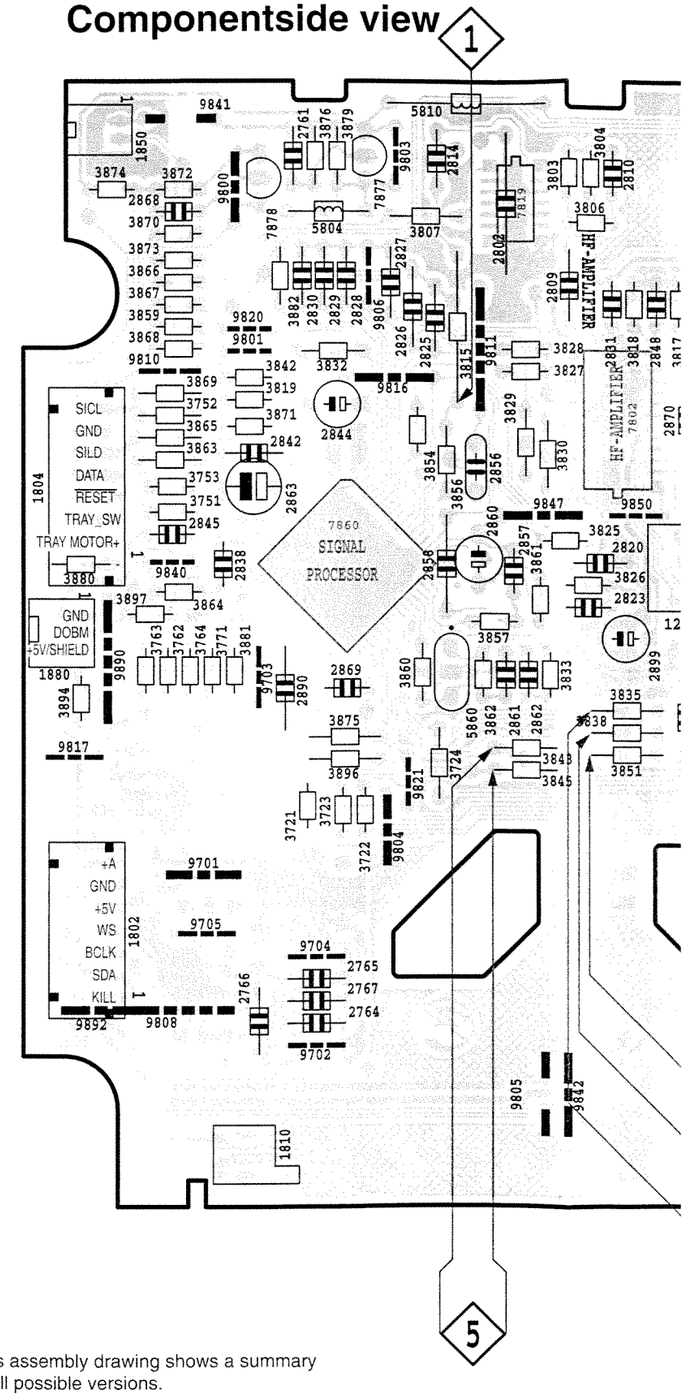
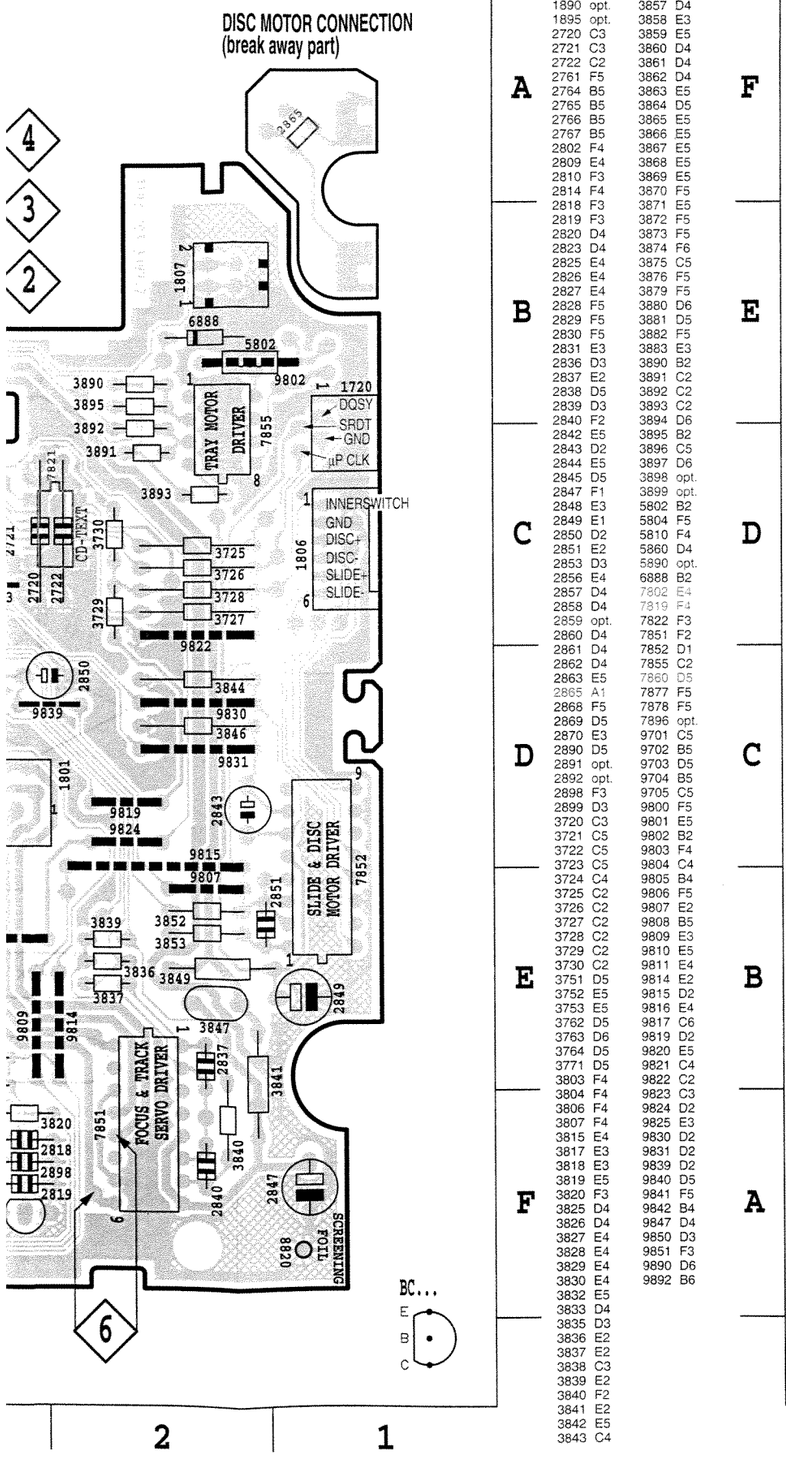
Componentside view



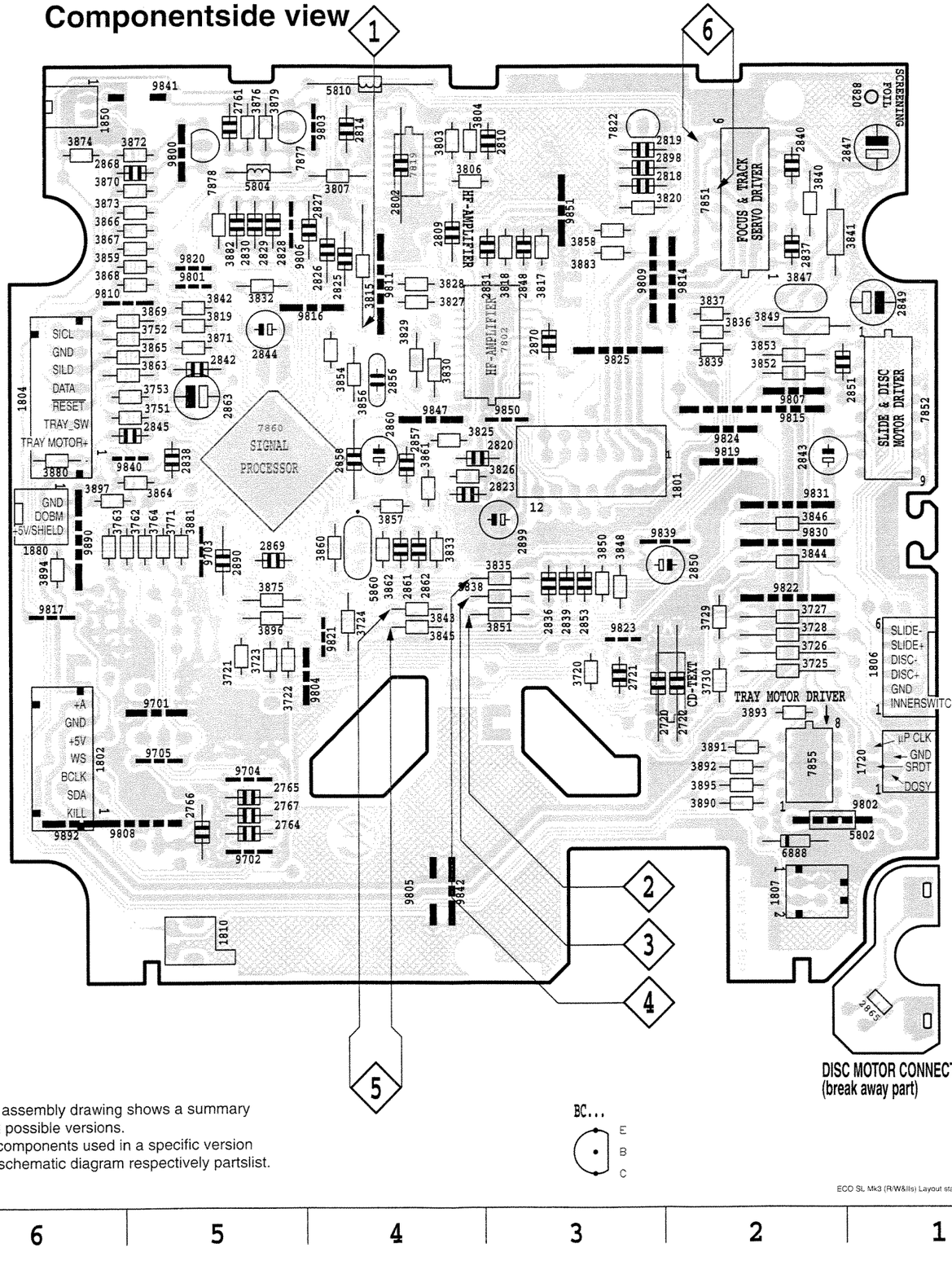
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

7-8

Componentside view



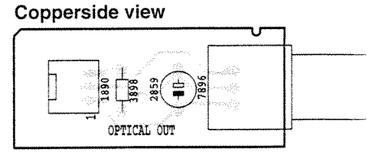
17	opt.	3844	D2
1720	C1	3845	C4
1801	D3	3846	D2
1802	C6	3847	E2
1804	E6	3848	D3
1806	C1	3849	E2
1807	B2	3850	D3
1810	B5	3851	C3
1820	B3	3852	E2
1850	F6	3853	E2
1880	D6	3854	E4
1881	opt.	3856	E4
1890	opt.	3857	D4
1895	opt.	3858	E3
2720	C3	3859	E5
2721	C3	3860	D4
2722	C2	3861	D4
2761	F5	3862	D4
2764	B5	3863	E5
2765	B5	3864	D5
2766	B5	3865	E5
2767	B5	3866	E5
2802	F4	3867	E5
2809	E4	3868	E5
2810	F3	3869	E5
2814	F4	3870	F5
2818	F3	3871	E5
2819	F3	3872	F5
2820	D4	3873	F5
2823	D4	3874	F6
2825	E4	3875	C5
2826	E4	3876	F5
2827	E4	3879	F5
2828	F5	3880	D6
2829	F5	3881	D5
2830	F5	3882	F5
2831	E3	3883	E3
2836	D3	3890	B2
2837	E2	3891	C2
2838	D5	3892	C2
2839	D3	3893	C2
2840	F2	3894	D6
2842	E5	3895	B2
2843	D2	3896	C5
2844	E5	3897	D6
2845	D5	3898	opt.
2847	F1	3899	opt.
2848	E3	5802	B2
2849	E1	5804	F5
2850	D2	5810	F4
2851	E2	5860	D4
2853	D3	5890	opt.
2856	E4	6888	B2
2857	D4	7802	E4
2858	D4	7819	F4
2859	opt.	7822	F3
2860	D4	7851	F2
2861	D4	7852	D1
2862	D4	7855	C2
2863	E5	7860	D5
2865	A1	7877	F5
2868	F5	7878	F5
2869	D5	7896	opt.
2870	E3	9701	C5
2890	D5	9702	B5
2891	opt.	9703	D5
2892	opt.	9704	B5
2898	F3	9705	C5
2899	D3	9800	F5
3720	C3	9801	E5
3721	C5	9802	B2
3722	C5	9803	F4
3723	C5	9804	C4
3724	C4	9805	B4
3725	C2	9806	F5
3726	C2	9807	E2
3727	C2	9808	B5
3728	C2	9809	E3
3729	C2	9810	E5
3730	C2	9811	E4
3751	D5	9814	E2
3752	E5	9815	D2
3753	E5	9816	E4
3762	D5	9817	C6
3763	D6	9819	D2
3764	D5	9820	E5
3771	D5	9821	C4
3803	F4	9822	C2
3804	F4	9823	C3
3806	F4	9824	D2
3807	F4	9825	E3
3815	E4	9830	D2
3817	E3	9831	D2
3818	E3	9839	D2
3819	E5	9840	D5
3820	F3	9841	F5
3825	D4	9842	B4
3826	D4	9847	D4
3827	E4	9850	D3
3828	E4	9851	F3
3829	E4	9890	D6
3830	E4	9892	B6
3832	E5		
3833	D4		
3835	D3		
3836	E2		
3837	E2		
3838	C3		
3839	E2		
3840	F2		
3841	E2		
3842	E5		
3843	C4		



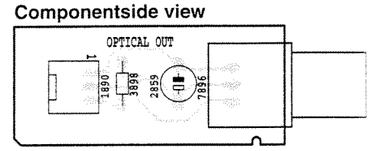
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

ECO SL Mk3 (R/W&Ills) Layout stage .2 (19980330)

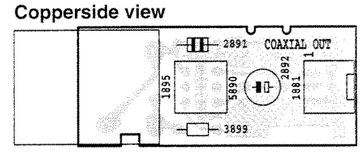
OPTIONAL
FOR SETS WITH OPTICAL OUT
Copperside view



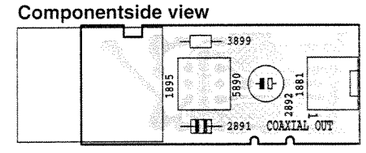
Componentside view



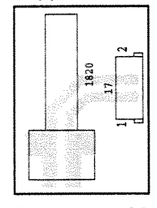
OPTIONAL
FOR SETS WITH COAXIAL OUT
Copperside view



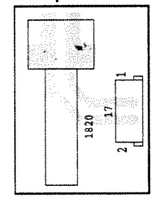
Componentside view



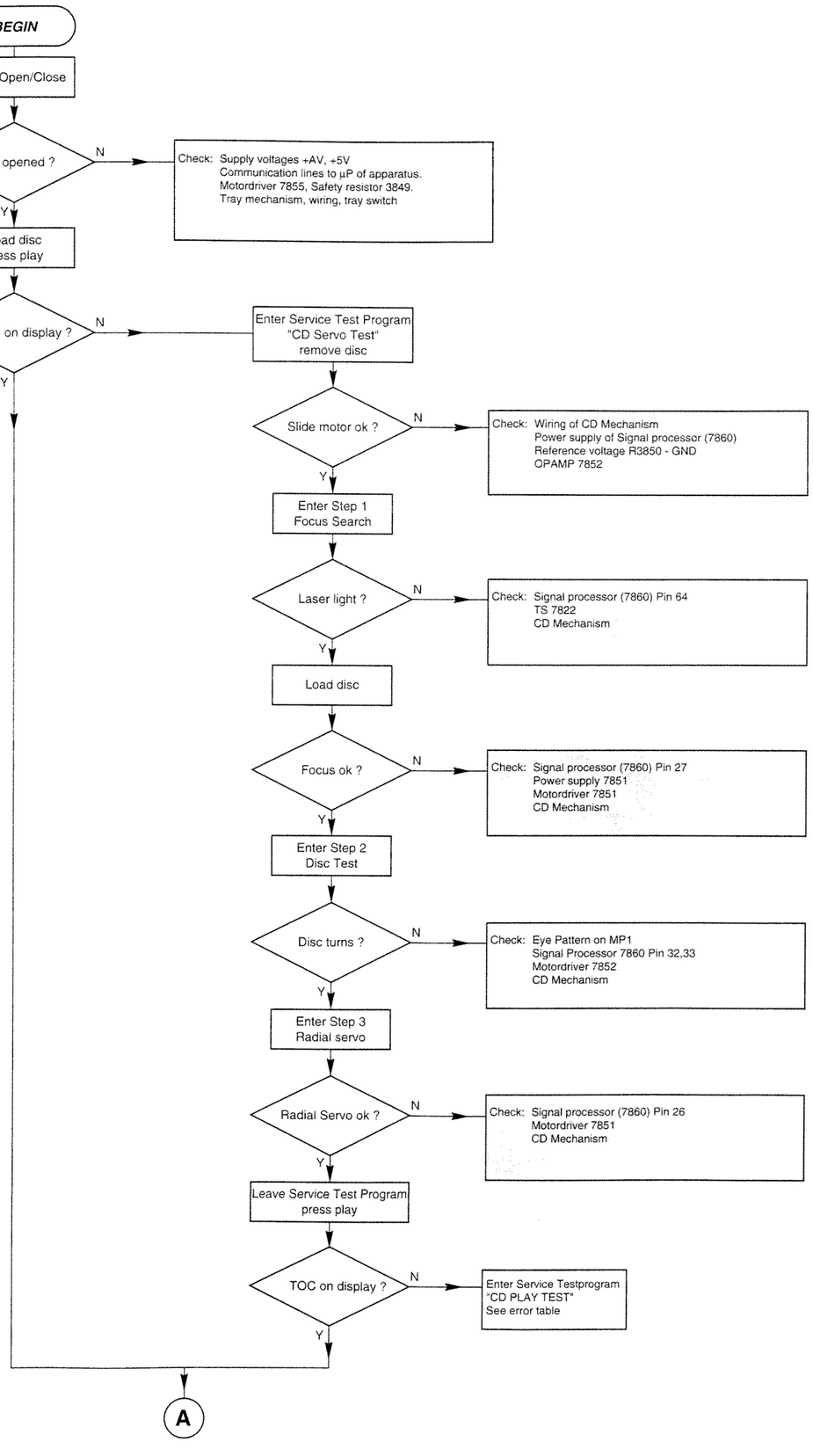
OPTIONAL
FOR FLAP LOADERS
Copperside view

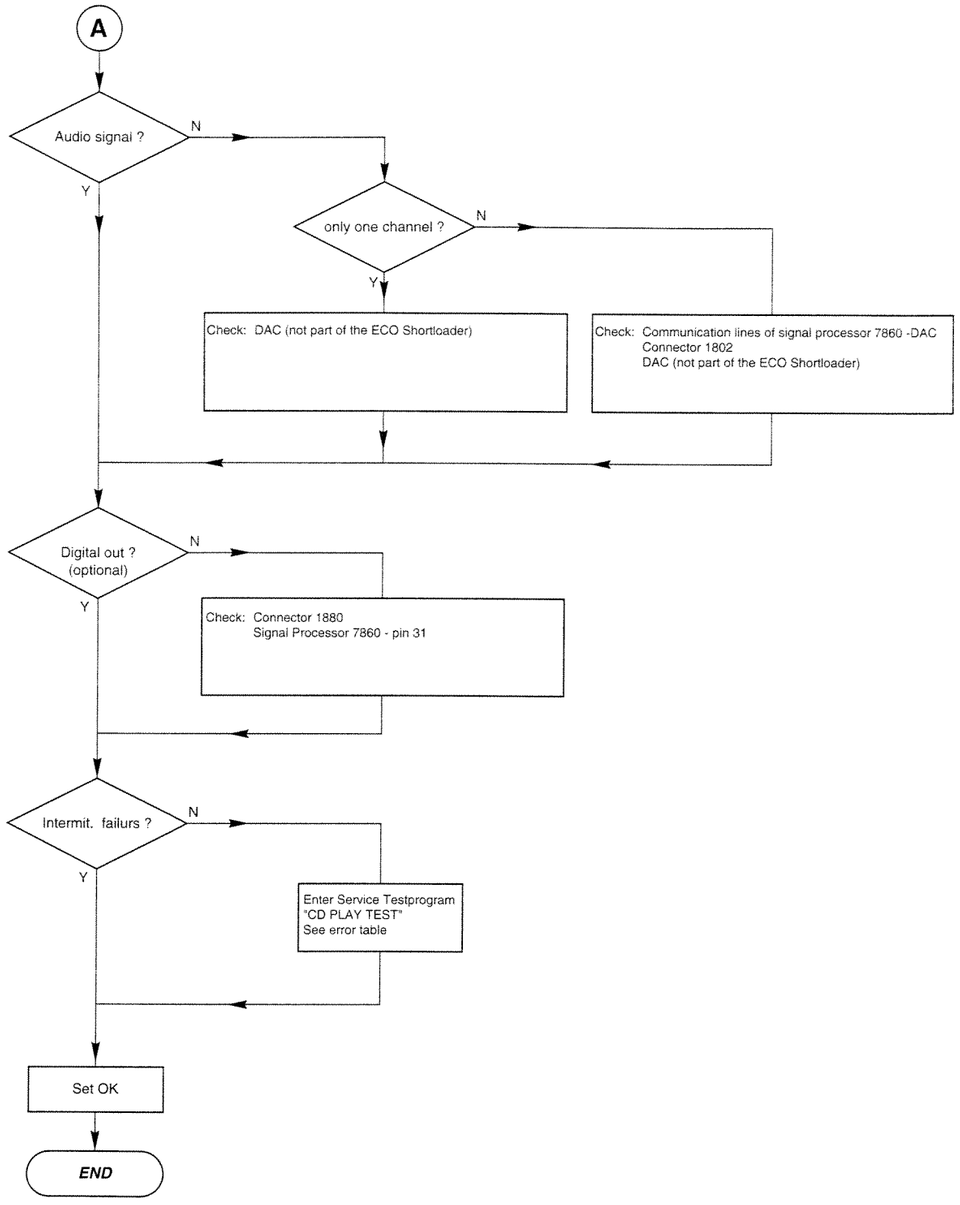


Componentside view



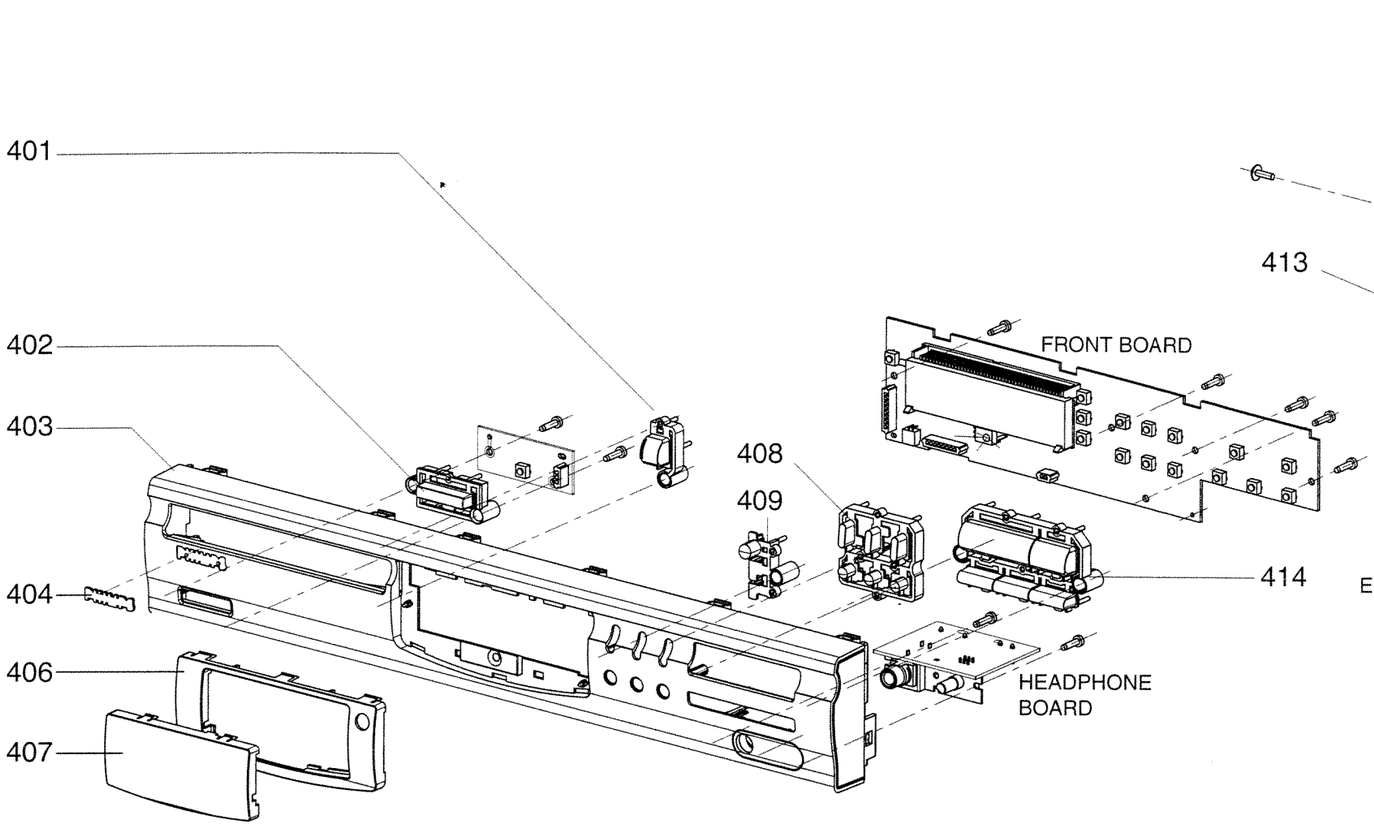
7-9

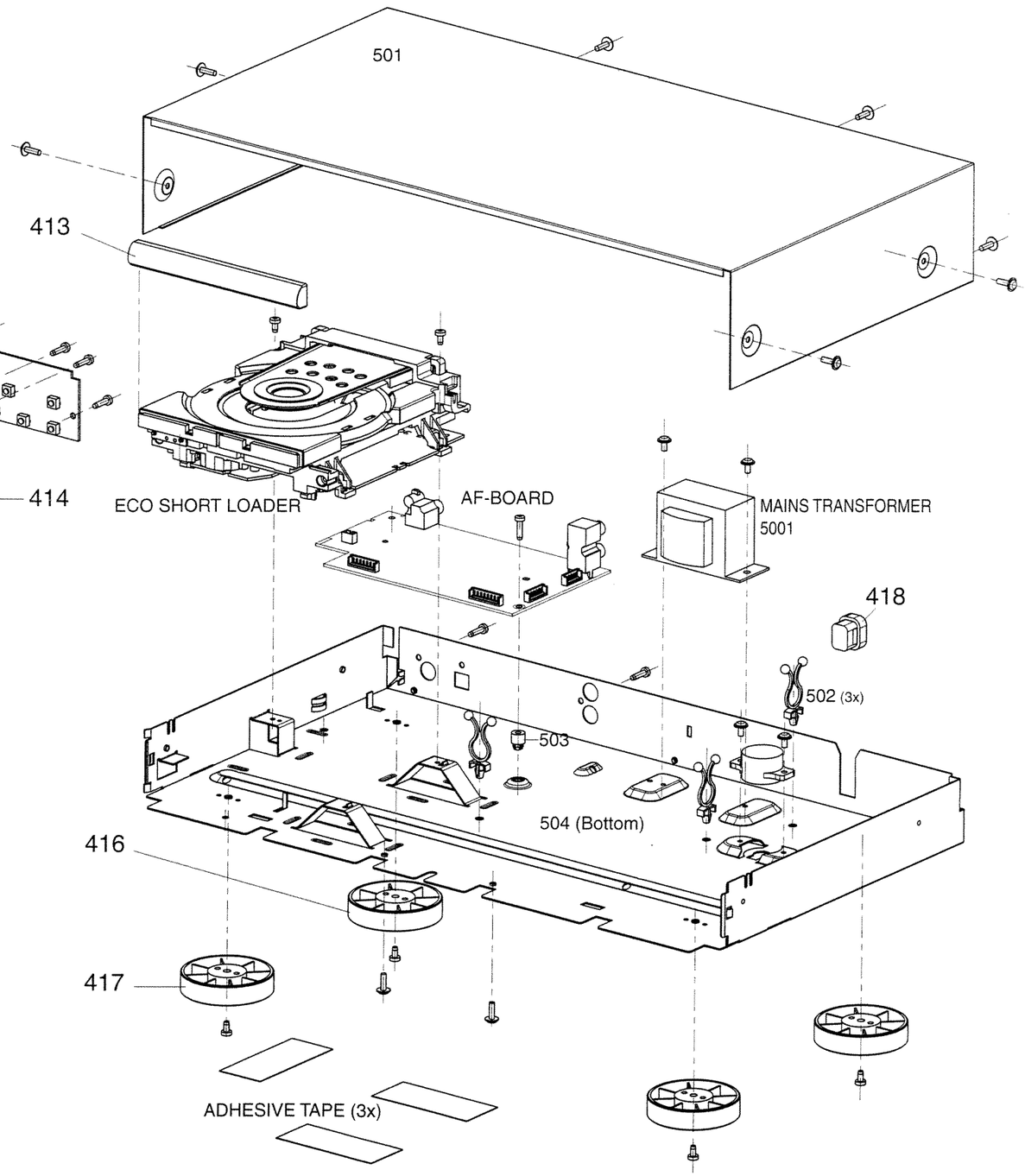

BEGIN
Press Open/Close
Tray opened ?
N
Check: Supply voltages +AV, +5V
Communication lines to µP of apparatus.
Motordriver 7855, Safety resistor 3849.
Tray mechanism, wiring, tray switch
Y
Load disc
press play
TOC on display ?
N
Enter Service Test Program
"CD Servo Test"
remove disc
Y
Slide motor ok ?
N
Check: Wiring of CD Mechanism
Power supply of Signal processor (7860)
Reference voltage R3850 - GND
OPAMP 7852
Y
Enter Step 1
Focus Search
Laser light ?
N
Check: Signal processor (7860) Pin 64
TS 7822
CD Mechanism
Y
Load disc
Focus ok ?
N
Check: Signal processor (7860) Pin 27
Power supply 7851
Motordriver 7851
CD Mechanism
Y
Enter Step 2
Disc Test
Disc turns ?
N
Check: Eye Pattern on MP1
Signal Processor 7860 Pin 32,33
Motordriver 7852
CD Mechanism
Y
Enter Step 3
Radial servo
Radial Servo ok ?
N
Check: Signal processor (7860) Pin 26
Motordriver 7851
CD Mechanism
Y
Leave Service Test Program
press play
TOC on display ?
N
Enter Service Testprogram
"CD PLAY TEST"
See error table
Y
A


A
Audio signal ?
N
Y
only one channel ?
N
Y
Check: DAC (not part of the ECO Shortloader)
Check: Communication lines of signal processor 7860 -DAC
Connector 1802
DAC (not part of the ECO Shortloader)
Digital out ?
(optional)
N
Y
Check: Connector 1880
Signal Processor 7860 - pin 31
Intermit. failurs ?
N
Y
Enter Service Testprogram
"CD PLAY TEST"
See error table
Set OK
END

10-1

EXPLODED VIEW of SET





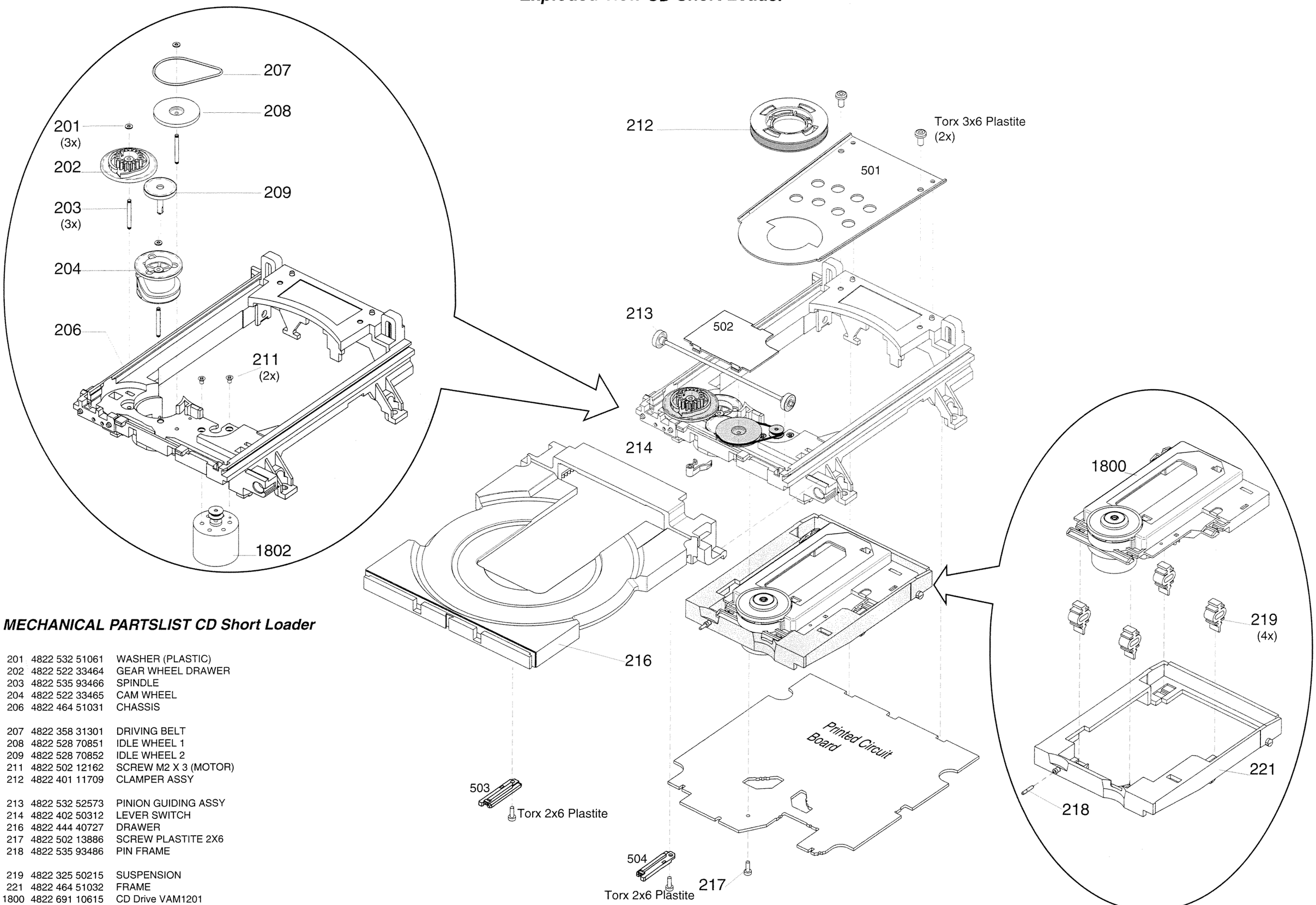
MECHANICAL PARTSLIST SET

401	4822 410 11906	BUTTON OPEN-CLOSE
402	4822 410 11905	KNOB POWER
403	4822 459 05029	CABINET FRONT CD713
403	4822 459 05031	CABINET FRONT CD723
404	4822 459 10887	WORDMARK "PHILIPS"
406	4822 464 10452	FRAME DISPLAY
407	4822 450 10553	WINDOW DISPLAY
408	4822 410 11907	BUTTON SET PROGRAM
409	4822 410 11908	BUTTON TIME
413	4822 442 01467	COVER DOOR CD
414	4822 410 11904	BUTTON SET PLAY-PAUSE
416	4822 462 72095	FOOT BLACK
417	4822 462 42159	FOOT SILVER
418	4822 532 60948	CABLE BUSH
5001	4822 146 11031	TRANSFORMER MAINS not for /01
5001	4822 146 11032	TRANSFORMER MAINS for /01 only
	4822 219 10537	RC07104/01 (Remote Control)
	4822 321 22832	CINCH-CABLE

CD7x3 Exploded view (980430)

10-2

Exploded view CD Short Loader



MECHANICAL PARTSLIST CD Short Loader

201	4822 532 51061	WASHER (PLASTIC)
202	4822 522 33464	GEAR WHEEL DRAWER
203	4822 535 93466	SPINDLE
204	4822 522 33465	CAM WHEEL
206	4822 464 51031	CHASSIS
207	4822 358 31301	DRIVING BELT
208	4822 528 70851	IDLE WHEEL 1
209	4822 528 70852	IDLE WHEEL 2
211	4822 502 12162	SCREW M2 X 3 (MOTOR)
212	4822 401 11709	CLAMPER ASSY
213	4822 532 52573	PINION GUIDING ASSY
214	4822 402 50312	LEVER SWITCH
216	4822 444 40727	DRAWER
217	4822 502 13886	SCREW PLASTITE 2X6
218	4822 535 93486	PIN FRAME
219	4822 325 50215	SUSPENSION
221	4822 464 51032	FRAME
1800	4822 691 10615	CD Drive VAM1201
1802	4822 361 21708	MOTOR ASSY
	4822 502 30735	SCREW 3 X 6 PLASTITE

WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CDM-ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done 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)

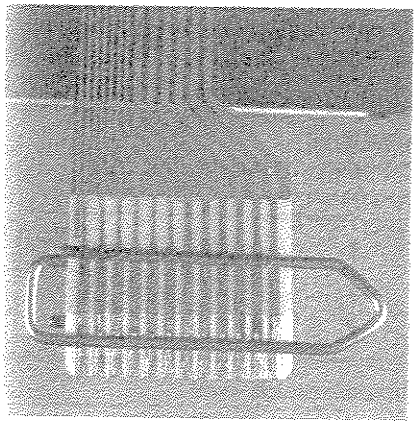


fig.1

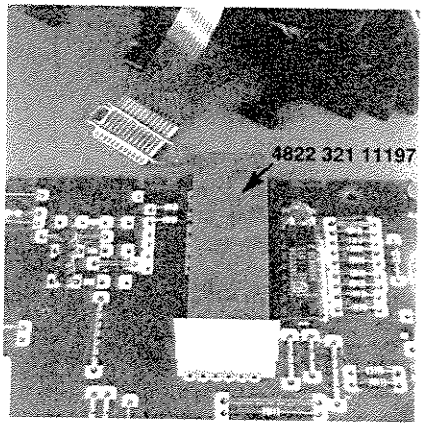


fig.2

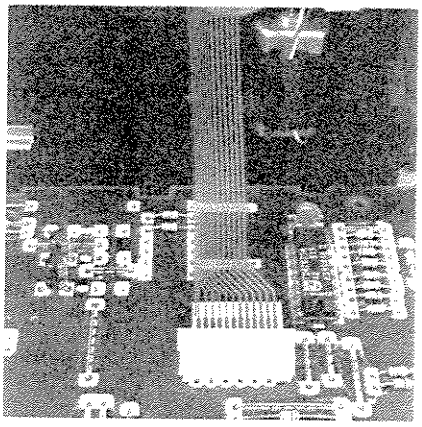
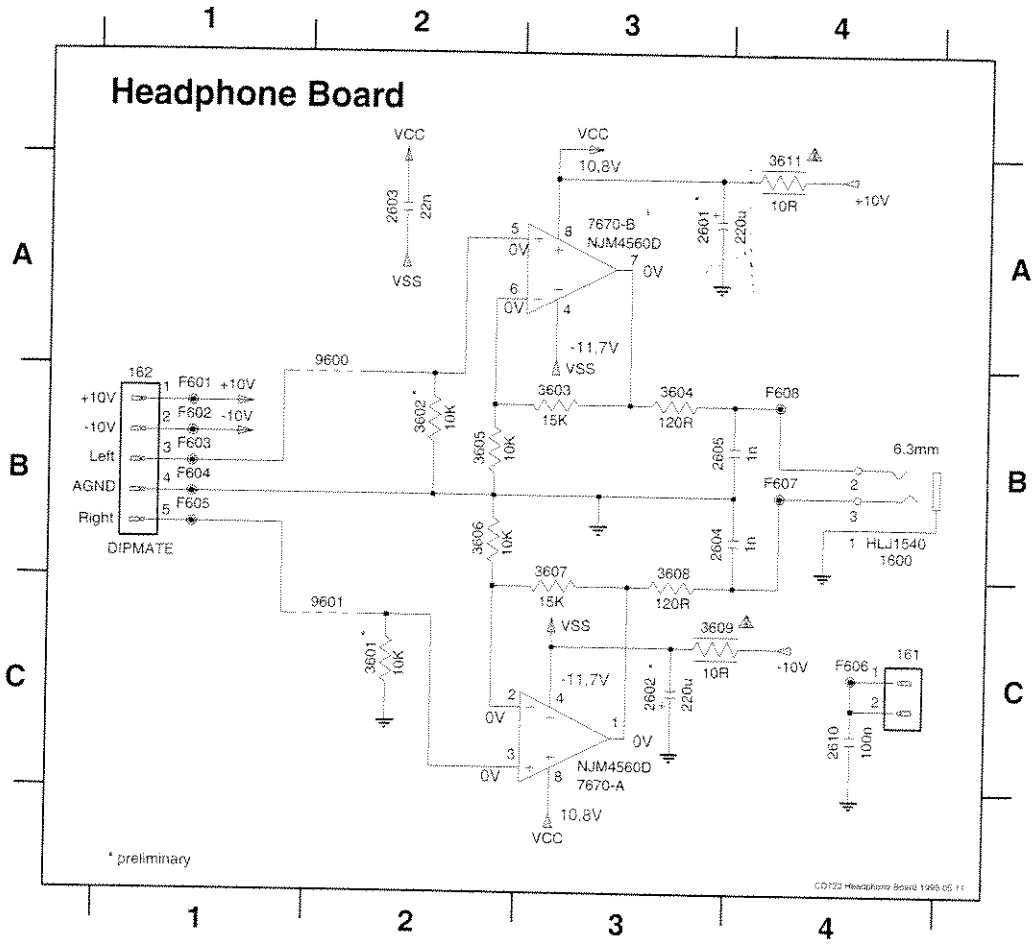
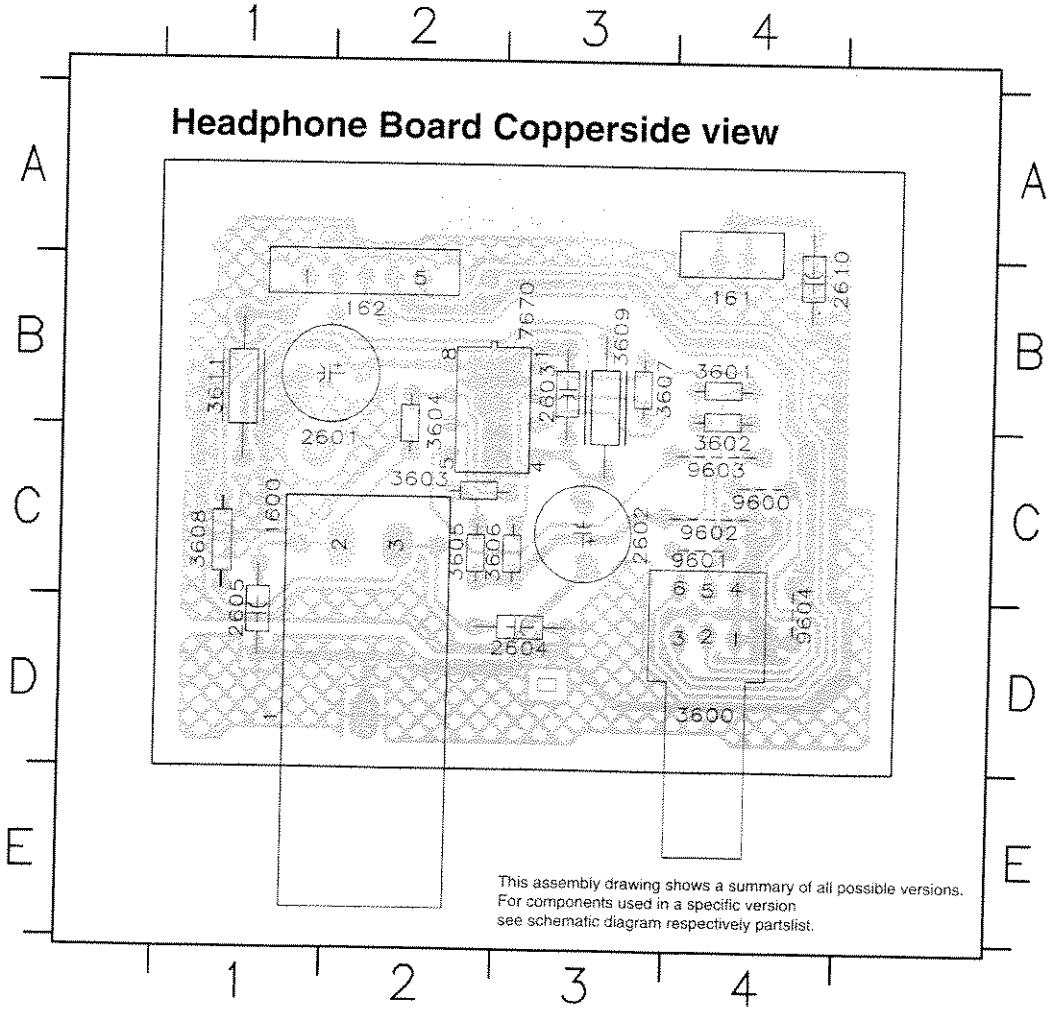


fig.3

Remarks



161 C4
162 B1
1600 B4
2601 A3
2602 C3
2603 A2
2604 B3
2605 B3
2610 C4
3601 C2
3602 B2
3603 B3
3604 B3
3605 B2
3606 B2
3607 B3
3608 B3
3609 C3
3611 A4
7670-A C3
7670-B A3
9600 B2
9601 C2



161 B4
162 B2
1600 D2
2601 B2
2602 C3
2603 B3
2604 D3
2605 D1
2610 B4
3600 D4
3601 B4
3602 B4
3603 C2
3604 B2
3605 D2
3606 D3
3607 B3
3608 C1
3609 B3
3611 B1
7670 B3
9600 C4
9601 C4
9602 C4
9603 C4
9604 D4

MISCELLANEOUS

1720	4822 265 11183	CON. FLEX FOIL 4 PIN SIDE ENTRY
1800	4822 691 10645	CD DRIVE VAM1201
1801	4822 267 51453	CON. FLEX FOIL 12 PIN SIDE ENTRY
1810	4822 276 13503	SWITCH

CAPACITORS

2720	4822 122 33197	1nF	10%	50V
2722	4822 126 12785	47nF	10%	50V
2761	4822 121 51387	10nF	20%	16V
2764	4822 122 33191	22pF	5%	50V
2765	4822 122 33191	22pF	5%	50V
2766	4822 126 12878	1,5nF	10%	16V
2767	4822 122 33191	22pF	5%	50V
2802	4822 126 12882	100nF	20%	50V
2809	4822 126 12785	47nF	10%	50V
2814	4822 126 12339	2,2nF	10%	16V
2818	4822 126 12882	100nF	20%	50V
2819	4822 126 12882	100nF	20%	50V
2820	4822 122 10459	560pF	10%	50V
2823	4822 126 12878	1,5nF	10%	16V
2825	4822 122 10466	220pF	10%	50V
2826	4822 122 10466	220pF	10%	50V
2827	4822 122 10466	220pF	10%	50V
2828	4822 122 10466	220pF	10%	50V
2829	4822 122 10466	220pF	10%	50V
2830	4822 122 10466	220pF	10%	50V
2831	4822 126 12785	47nF	10%	50V
2836	4822 126 13098	5,6nF	20%	16V
2837	4822 122 10459	560pF	10%	50V
2838	4822 126 12882	100nF	20%	50V
2839	4822 121 51387	10nF	20%	16V
2840	4822 122 10576	1,8nF	10%	16V
2842	4822 121 51387	10nF	20%	16V
2843	5322 124 41948	0,47µF	20%	50V
2844	4822 124 22726	4,7µF	20%	35V
2845	4822 122 33848	47pF	5%	50V
2847	4822 124 40433	47µF	20%	25V
2848	4822 121 51387	10nF	20%	16V
2849	4822 124 40433	47µF	20%	25V
2850	4822 124 22726	4,7µF	20%	35V
2851	4822 121 51387	10nF	20%	16V
2853	4822 126 12882	100nF	20%	50V
2856	4822 121 70619	22nF	10%	50V
2857	4822 126 11585	22nF	20%	50V
2858	4822 122 33848	47pF	5%	50V
2860	4822 124 22726	4,7µF	20%	35V
2861	4822 122 33191	22pF	5%	50V
2862	4822 122 33191	22pF	5%	50V
2863	4822 124 81286	47µF	20%	16V
2869	4822 126 12882	100nF	20%	50V
2870	4822 126 12785	47nF	10%	50V
2890	4822 122 33849	150pF	10%	50V
2898	4822 126 12882	100nF	20%	50V
2899	4822 124 22726	4,7µF	20%	35V

RESISTORS

3720	4822 116 83883	470Ω	5%	0,16W
3721	4822 116 83883	470Ω	5%	0,16W
3722	4822 116 83883	470Ω	5%	0,16W
3723	4822 116 83883	470Ω	5%	0,16W
3724	4822 116 83883	470Ω	5%	0,16W
3725	4822 116 83883	470Ω	5%	0,16W
3726	4822 116 83883	470Ω	5%	0,16W
3727	4822 116 83883	470Ω	5%	0,16W
3728	4822 116 83864	10kΩ	5%	0,5W
3729	4822 116 52195	47Ω	5%	0,5W
3730	4822 116 52283	4,7kΩ	5%	0,5W
3751	4822 116 83872	220Ω	5%	0,5W
3752	4822 116 83872	220Ω	5%	0,5W
3753	4822 116 83872	220Ω	5%	0,5W
3762	4822 116 83872	220Ω	5%	0,5W
3763	4822 116 83872	220Ω	5%	0,5W
3764	4822 116 83872	220Ω	5%	0,5W
3771	4822 116 83883	470Ω	5%	0,16W
3803	4822 116 83864	10kΩ	5%	0,5W
3804	4822 116 52257	22kΩ	5%	0,5W
3807	4822 116 52226	560Ω	5%	0,5W
3815	4822 050 11002	1kΩ	5%	0,2W
3817	4822 116 52283	4,7kΩ	5%	0,5W
3818	4822 116 52239	120kΩ	5%	0,5W
3820	4822 050 11002	1kΩ	5%	0,2W
3825	4822 116 83864	10kΩ	5%	0,5W
3826	4822 116 83864	10kΩ	5%	0,5W
3827	4822 116 83864	10kΩ	5%	0,5W
3828	4822 116 83864	10kΩ	5%	0,5W
3829	4822 116 83864	10kΩ	5%	0,5W
3830	4822 116 83864	10kΩ	5%	0,5W
3832	4822 116 52191	33Ω	5%	0,5W
3833	4822 050 11002	1kΩ	5%	0,2W
3835	4822 116 52264	27kΩ	5%	0,5W
3836	4822 116 52207	1,2kΩ	5%	0,5W
3837	4822 116 83961	6,8kΩ	5%	0,16W
3838	4822 116 52257	22kΩ	5%	0,5W
3839	4822 116 52207	1,2kΩ	5%	0,5W
3840	4822 116 83961	6,8kΩ	5%	0,16W
3841 ⚠	4822 052 10338	3,3Ω		NFR25
3842	4822 116 83864	10kΩ	5%	0,5W
3843	4822 116 83882	39kΩ	5%	0,5W
3844	4822 050 11002	1kΩ	5%	0,2W
3845	4822 116 83882	39kΩ	5%	0,5W
3846	4822 050 11002	1kΩ	5%	0,2W
3848	4822 050 11002	1kΩ	5%	0,2W
3849 ⚠	4822 052 10338	3,3Ω		NFR25
3850	4822 050 11002	1kΩ	5%	0,2W
3851	4822 116 52264	27kΩ	5%	0,5W
3852	4822 050 11002	1kΩ	5%	0,2W
3853	4822 116 83961	6,8kΩ	5%	0,16W
3854	4822 116 83878	270kΩ	5%	0,5W
3856	4822 116 52257	22kΩ	5%	0,5W
3857	4822 116 52234	100kΩ	5%	0,5W
3858	4822 116 52175	100Ω	5%	0,5W
3859	4822 116 83872	220Ω	5%	0,5W
3860	4822 116 52175	100Ω	5%	0,5W
3861	4822 116 52175	100Ω	5%	0,5W
3862	4822 116 52235	1MΩ	5%	0,5W

ELECTRICAL PARTSLIST CD BOARD

RESISTORS

3863	4822 116 83872	220Ω	5%	0,5W
3864	4822 116 52175	100Ω	5%	0,5W
3865	4822 116 83872	220Ω	5%	0,5W
3866	4822 116 83864	10kΩ	5%	0,5W
3867	4822 116 83864	10kΩ	5%	0,5W
3868	4822 116 83864	10kΩ	5%	0,5W
3869	4822 116 83864	10kΩ	5%	0,5W
3870	4822 116 83864	10kΩ	5%	0,5W
3871	4822 116 52176	10Ω	5%	0,5W
3872	4822 116 52175	100Ω	5%	0,5W
3873	4822 116 83864	10kΩ	5%	0,5W
3874	4822 116 83864	10kΩ	5%	0,5W
3875	4822 116 52191	33Ω	5%	0,5W
3876	4822 116 52213	180Ω	5%	0,5W
3879	4822 116 52226	560Ω	5%	0,5W
3881	4822 116 52283	4,7kΩ	5%	0,5W
3882	4822 116 52283	4,7kΩ	5%	0,5W
3883	4822 116 52175	100Ω	5%	0,5W
3890	4822 050 11002	1kΩ	5%	0,2W
3891	4822 050 11002	1kΩ	5%	0,2W
3892	4822 116 52271	33kΩ	5%	0,16W
3893	4822 116 52249	1,8kΩ	5%	0,16W
3895	4822 116 52271	33kΩ	5%	0,16W
3896	4822 116 83876	270Ω	5%	0.16W
3897	4822 116 52213	180Ω	5%	0,5W

COILS

5804	4822 157 53302	1µH
5810	4822 157 11517	10µH
5860	4822 242 10566	CRYSTAL 8.4672MHz

DIODES

6888	4822 130 80655	BZX79-F2V4

TRANSISTORS

7822	4822 130 41344	BC337-40
7877	4822 130 40959	BC547B
7878	4822 130 44503	BC547C

INTEGRATED CIRCUITS

7802©	4822 209 12636	TDA1302T/N1
7819©	5322 209 11517	PC74HCU04T
7821	4822 209 16143	LC89170M
7851	4822 209 32852	TDA7073A/N2
7852	4822 209 32852	TDA7073A/N2
7855©	4822 209 31519	TDA7072A
7860©	4822 209 12752	SAA7378GP

ELECTRICAL PARTSLIST HEADPHONE BOARD

MISCELLANEOUS

1600	4822 267 31453	HEADPHONE SOCKET 6,3mm

CAPACITORS

2603	4822 126 11585	22nF	20%	50V
2604	4822 122 33197	1nF	10%	50V
2605	4822 122 33197	1nF	10%	50V
2610	4822 126 12882	100nF	20%	50V

RESISTORS

3603	4822 116 52244	15kΩ	5%	0,5W
3604	4822 116 52206	120Ω	5%	0,5W
3605	4822 116 83864	10kΩ	5%	0,5W
3606	4822 116 83864	10kΩ	5%	0,5W
3607	4822 116 52244	15kΩ	5%	0,5W
3608	4822 116 52206	120Ω	5%	0,5W
3609	4822 052 10109	10Ω	5%	NFR
3611 ⚠	4822 052 10109	10Ω	5%	NFR
3612	4822 116 83864	10kΩ	5%	0,5W

INTEGRATED CIRCUITS

7670	4822 209 83274	NJM4560D

ELECTRICAL PARTSLIST SET

MISCELLANEOUS

5001 ⚠	4822 146 11031	TRANSFORMER MAINS not for /01
5001 ⚠	4822 146 11032	TRANSFORMER MAINS for /01 only
	4822 219 10537	RC07104/01 (Remote Control)
	4822 321 22832	CINCH-CABLE (THIN)

ELECTRICAL PARTSLIST AF BOARD

MISCELLANEOUS

1255 ⚠	4822 071 56301	FUSE T 630mA/250V	
1256 ⚠	4822 071 56301	FUSE T 630mA/250V	
1503	4822 267 31996	CINCH SOCKET	
1504	4822 265 20553	CINCH SOCKET	

CAPACITORS

2250	4822 124 41407	0,47µF	20%	63V
2251	4822 124 11769	220µF	20%	50V
2252	4822 126 11585	22nF	20%	50V
2253	4822 126 11585	22nF	20%	50V
2254	4822 124 11878	4700µF	20%	16V
2255	4822 126 12882	100nF	20%	50V
2256	4822 126 11585	22nF	20%	50V
2257	4822 126 11585	22nF	20%	50V
2258	4822 124 40784	3300µF	20%	16V
2259	4822 124 40849	330µF	20%	16V
2500	4822 126 11585	22nF	20%	50V
2502	4822 124 22263	220µF	20%	25V
2509	4822 122 10466	220pF	10%	50V
2510	4822 122 10466	220pF	10%	50V
2511	4822 124 40433	47µF	20%	25V
2512	4822 124 40433	47µF	20%	25V
2513	4822 122 33519	470pF	10%	50V
2514	4822 122 33519	470pF	10%	50V
2521	4822 124 22263	220µF	20%	25V
2522	4822 124 22263	220µF	20%	25V
2523	4822 121 51387	10nF	20%	16V
2524	4822 124 40433	47µF	20%	25V
2529	4822 122 33197	1nF	10%	50V
2530	4822 122 33197	1nF	10%	50V
2531	4822 126 11585	22nF	20%	50V
2541	4822 124 40242	1µF	20%	63V
2543	4822 126 12882	100nF	20%	50V

RESISTORS

3251 ⚠	4822 053 10471	470Ω	5%	1W
3252 ⚠	4822 053 10471	470Ω	5%	1W
3253	4822 116 52257	22kΩ	5%	0,5W
3254	4822 116 52283	4,7kΩ	5%	0,5W
3255	4822 116 52256	2,2kΩ	5%	0,16W
3256	4822 050 11002	1kΩ	5%	0,2W
3257 ⚠	4822 116 52283	4,7kΩ	5%	0,5W
3258	4822 116 52283	4,7kΩ	5%	0,5W
3259	4822 052 10478	4,7Ω	5%	NFR
3260 ⚠	4822 052 10568	5,6Ω	5%	0,33W
3500	4822 116 52289	5,6kΩ	5%	0,16W
3501	4822 116 83864	10kΩ	5%	0,5W
3502	4822 116 52175	100Ω	5%	0,5W
3503	4822 116 52175	100Ω	5%	0,5W
3504	4822 116 52175	100Ω	5%	0,5W
3505	4822 116 52175	100Ω	5%	0,5W
3506	4822 116 52244	15kΩ	5%	0,5W
3507	4822 116 83864	10kΩ	5%	0,5W
3511	4822 116 52269	3,3kΩ	5%	0,5W
3512	4822 116 52269	3,3kΩ	5%	0,5W

RESISTORS

3513	4822 116 83884	47kΩ	5%	0,16W
3514	4822 116 83884	47kΩ	5%	0,16W
3527	4822 116 52256	2,2kΩ	5%	0,16W
3532	4822 116 83874	220kΩ	5%	0,5W
3534	4822 116 83864	10kΩ	5%	0,5W
3535	4822 116 52289	5,6kΩ	5%	0,16W
3537	4822 116 83872	220Ω	5%	0,5W
3538	4822 116 52207	1,2kΩ	5%	0,5W
3539	4822 050 11002	1kΩ	5%	0,2W
3540	4822 050 11002	1kΩ	5%	0,2W
3541	4822 050 11002	1kΩ	5%	0,2W
3542	4822 050 11002	1kΩ	5%	0,2W
3543	4822 050 11002	1kΩ	5%	0,2W
3544	4822 050 11002	1kΩ	5%	0,2W
3545	4822 050 11002	1kΩ	5%	0,2W
3547	4822 050 11002	1kΩ	5%	0,2W
3548	4822 116 52256	2,2kΩ	5%	0,16W
3556	4822 116 52176	10Ω	5%	0,5W
3557	4822 052 10688	6,8Ω	5%	0,33W

DIODES

6250	4822 130 34379	BZX79-C27
6251	4822 130 34174	BZX79-B4V7
6252	4822 130 31878	1N4003G
6253	4822 130 31878	1N4003G
6254	4822 130 31878	1N4003G
6255	4822 130 31878	1N4003G
6256	4822 130 31878	1N4003G
6257	4822 130 31878	1N4003G
6258	4822 130 31878	1N4003G
6259	4822 130 31981	BZX79-C3V9
6260	4822 130 31878	1N4003G
6500	4822 130 30621	1N4148

TRANSISTORS

7250	4822 130 41327	BC327-40
7252	5322 130 60068	BC558C
7500	4822 130 41327	BC327-40
7501	5322 130 60068	BC558C
7504	4822 130 44568	BC557B
7507	4822 130 41344	BC337-40
7508	4822 130 41344	BC337-40
7509	4822 130 41344	BC337-40
7510	4822 130 41344	BC337-40

INTEGRATED CIRCUITS

7251 ⚠	4822 209 80817	L7805CV
7502	4822 209 31147	TDA1545A/N2 DAC
7505	4822 209 83274	NJM4560D

ELECTRICAL PARTSLIST FRONT BOARD

MISCELLANEOUS

1800	4822 135 00233	DISPLAY
1820	4822 276 13114	TACT SWITCH
1821	4822 276 13114	TACT SWITCH
1822	4822 276 13114	TACT SWITCH
1823	4822 276 13114	TACT SWITCH
1824	4822 276 13114	TACT SWITCH
1825	4822 276 13114	TACT SWITCH
1826	4822 276 13114	TACT SWITCH
1827	4822 276 13114	TACT SWITCH
1828	4822 276 13114	TACT SWITCH
1829	4822 276 13114	TACT SWITCH
1830	4822 276 13114	TACT SWITCH
1831	4822 276 13114	TACT SWITCH
1832	4822 276 13114	TACT SWITCH
1840	4822 276 13114	TACT SWITCH
7810	4822 130 10165	GP1U28XP, IR EYE

CAPACITORS

2800	4822 124 22726	4,7µF	20%	35V
2801	4822 124 22726	4,7µF	20%	35V
2807	4822 124 81029	100µF	20%	25V
2808	4822 126 11585	22nF	20%	50V
2810	4822 121 51387	10nF	20%	16V
2811	4822 121 51387	10nF	20%	16V
2812	4822 126 12882	100nF	20%	50V
2813	4822 126 12882	100nF	20%	50V
2814	4822 124 40433	47µF	20%	25V
2815	4822 121 42408	220nF	5%	63V

RESISTORS

3807	4822 050 11002	1kΩ	5%	0,2W
3808	4822 116 52195	47Ω	5%	0,5W
3809	4822 116 52234	100kΩ	5%	0,5W
3810	4822 050 11002	1kΩ	5%	0,2W
3811	4822 050 11002	1kΩ	5%	0,2W
3812	4822 050 11002	1kΩ	5%	0,2W
3813	4822 050 11002	1kΩ	5%	0,2W
3814	4822 050 11002	1kΩ	5%	0,2W
3815	4822 050 11002	1kΩ	5%	0,2W
3816	4822 050 11002	1kΩ	5%	0,2W
3817	4822 116 52257	22kΩ	5%	0,5W
3818	4822 116 52257	22kΩ	5%	0,5W
3819	4822 116 52257	22kΩ	5%	0,5W
3820	4822 116 52182	15Ω	5%	0,5W
3821	4822 116 52182	15Ω	5%	0,5W
3822	4822 050 11002	1kΩ	5%	0,2W
3823	4822 050 11002	1kΩ	5%	0,2W
3829	4822 116 52257	22kΩ	5%	0,5W
3830	4822 116 52257	22kΩ	5%	0,5W
3832	4822 050 11002	1kΩ	5%	0,2W
3833	4822 050 11002	1kΩ	5%	0,2W
3834	4822 050 11002	1kΩ	5%	0,2W
3835	4822 050 11002	1kΩ	5%	0,2W
3836	4822 116 52257	22kΩ	5%	0,5W
3837	4822 116 83884	47kΩ	5%	0,16W
3838	4822 050 11002	1kΩ	5%	0,2W
3841	4822 050 11002	1kΩ	5%	0,2W
3842	4822 050 11002	1kΩ	5%	0,2W
3844	4822 050 11002	1kΩ	5%	0,2W
3845	4822 050 11002	1kΩ	5%	0,2W

RESISTORS

3846	4822 050 11002	1kΩ	5%	0,2W
3847	4822 116 52175	100Ω	5%	0,5W
3848	4822 116 52182	15Ω	5%	0,5W
3849	4822 116 52182	15Ω	5%	0,5W

COILS

1833	4822 242 72066	CERAMIC FILTER 8,0MHz
5801	4822 156 31058	FILTER DIGITAL OUT
5802	4822 156 21721	2,2µH

DIODES

6800	4822 130 30621	1N4148
6801	4822 130 30621	1N4148
6804	4822 130 30621	1N4148
6805	4822 130 30621	1N4148
6806	4822 130 30621	1N4148
6807	4822 130 30621	1N4148
6808	4822 130 30621	1N4148
6809	4822 130 30621	1N4148
6811	4822 130 30621	1N4148
6812	4822 130 30621	1N4148
6813	4822 130 30621	1N4148
6814	4822 130 30621	1N4148
6820	4822 130 31878	1N4003G

TRANSISTORS

7811	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7800 ©	4822 209 16738	TMP87CM71-83770 MICROPROCESSOR