

Service
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Service Manual

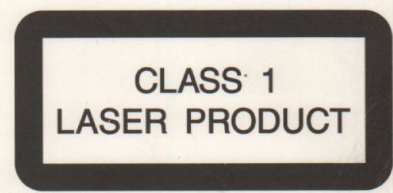


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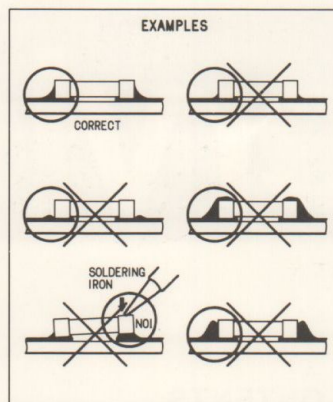
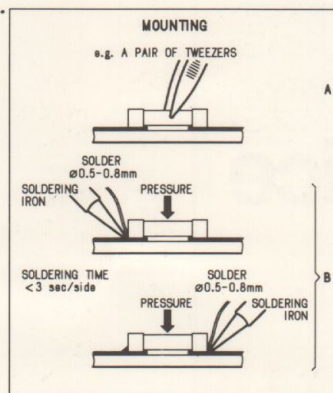
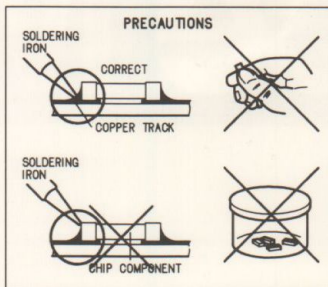
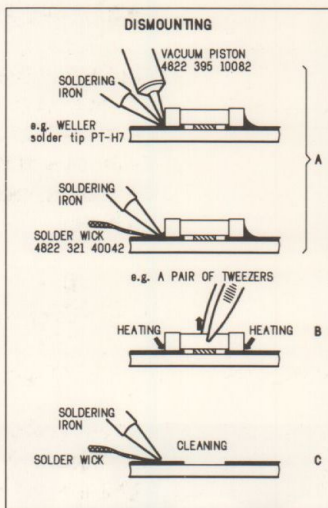
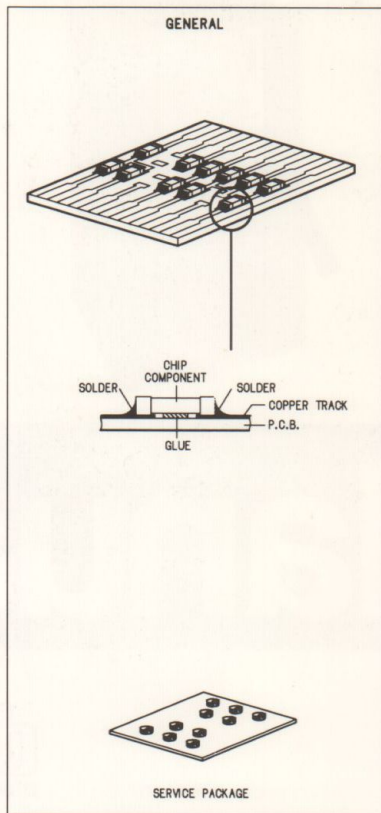
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Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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HANDLING CHIP COMPONENTS



(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 wrist wrap 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 longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le braceleterti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD



(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unvorsichtige 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 verminderen. 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 riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

Anti-static table mat large 1200x650x1.25mm
small 600x650x1.25mm

Anti-static wrist band
Connection box (1MΩ)
Extendible cable (to connect wrist band to conn. box)
Connecting cable (to connect table mat to conn. box)
Earth cable (to connect any product to mat or box)
Complete kit ESD3 (combining all above products)
Wristband tester

4822 466 10953
4822 466 10958
4822 395 10223
4822 320 11307
4822 320 11305
4822 320 11306
4822 320 11308
4822 310 10671
4822 344 13999

(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 those symbol. ⚠

(S) Varning!

Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

(DK) Advarsel!

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

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

(GB) WARNING

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

(F) ATTENTION

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.

(D) WARNUNG

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Original-ersatzteile zu verwenden.

(NL) WAARSCHUWING

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(I) AVVERTIMENTO

Le norme di sicurezza estigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/00 : 230 V
	-/01 : 120/230 V
	-/17 : 120 V
Ext. car battery	: 12 V
Mains frequency	-/00 : 50 Hz
	-/01 : 50 / 60 Hz
	-/17 : 60 Hz
Power consumption	standby : 10 W
	mains : 70 W
	Ext. DC : 35 W
Dimension (W x H x D)	: 328 x 557 x 296 mm
Weight	: 10 Kg

AMPLIFIER

Output power	long term : 2 x 30 W
	short term : 2 x 50 W
Speaker impedance	bass : 1 x 4 ohm
	treble : 1 x 4 ohm
Frequency response	: 80 Hz - 19 kHz (±3dB)

AUDIO CASSETTE RECORDER

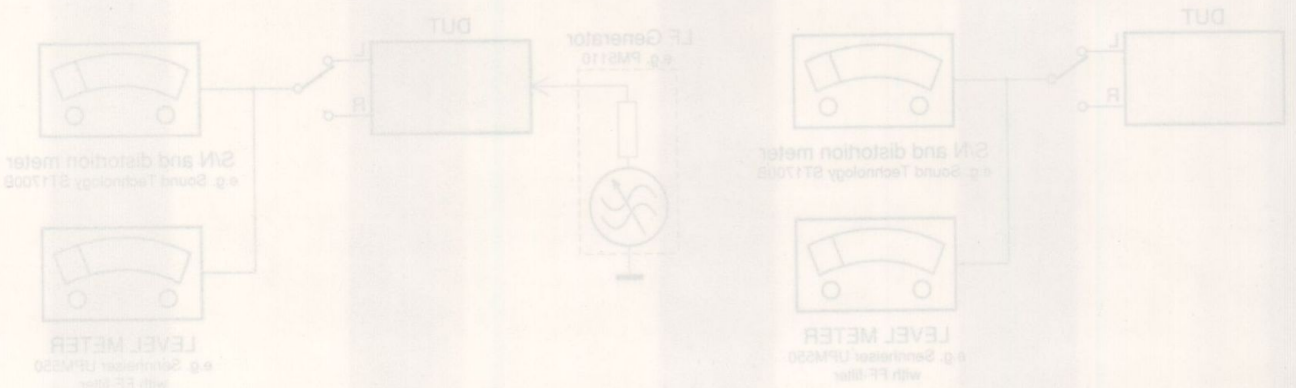
Number of tracks	: 2 stereo
Tape speed	: 4.76 cm/sec ± 3%
Wow & flutter	: < 0.48 % JIS UWTD
Fast wind/rewind C60	: < 110 sec.
Frequency response	P/B : 80 - 10 kHz
S/N ratio	: > 45 dB

COMPACT DISC

Frequency response	: 30 Hz - 18 kHz
S/N ratio	: > 60 dB
Channel difference	1 kHz : < 3 dB
Channel crosstalk	1 kHz : > 40 dB
Channel crosstalk	10 kHz : > 30 dB

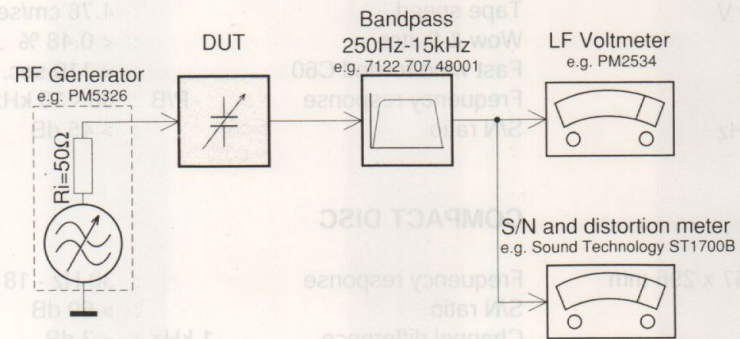
SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm4822 395 50423
TORX screwdriver set SBC 1634822 295 50145
Audio signal disc SBC 4294822 397 30184
Playability test disc SBC 4444822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause")4822 397 30155
Universal test cassette Fe SBC 4204822 397 30071



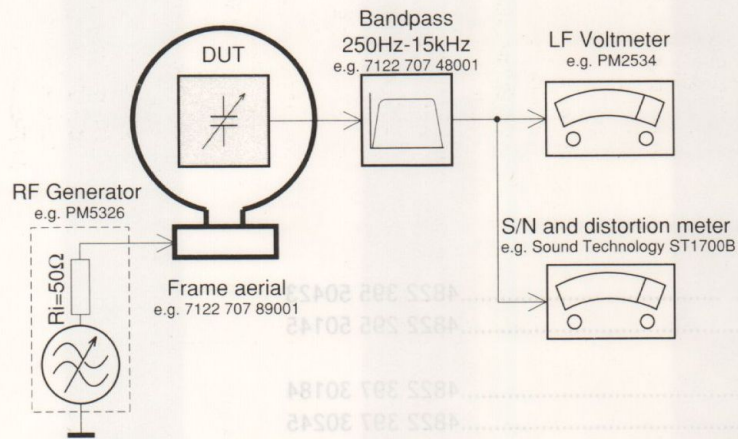
SERVICE MEASUREMENTS

Tuner FM



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

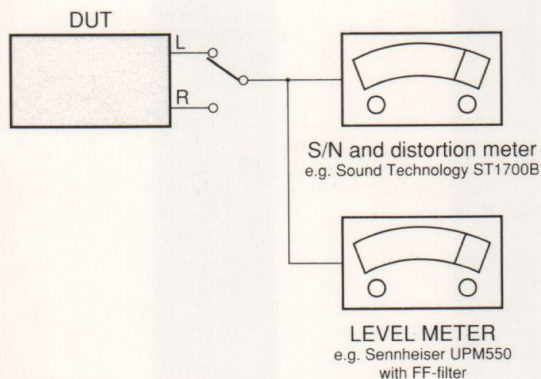
Tuner AM (MW, LW)



To avoid atmospheric interference all AM-measurements have to 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).

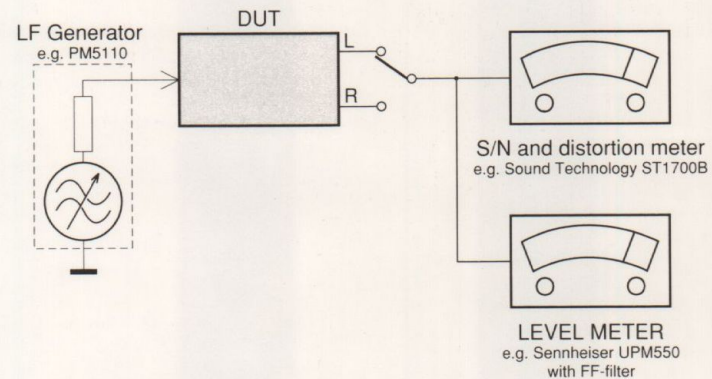
CD

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



RECORDER

Use Universal Test Cassette Fe SBC420 4822 397 30071

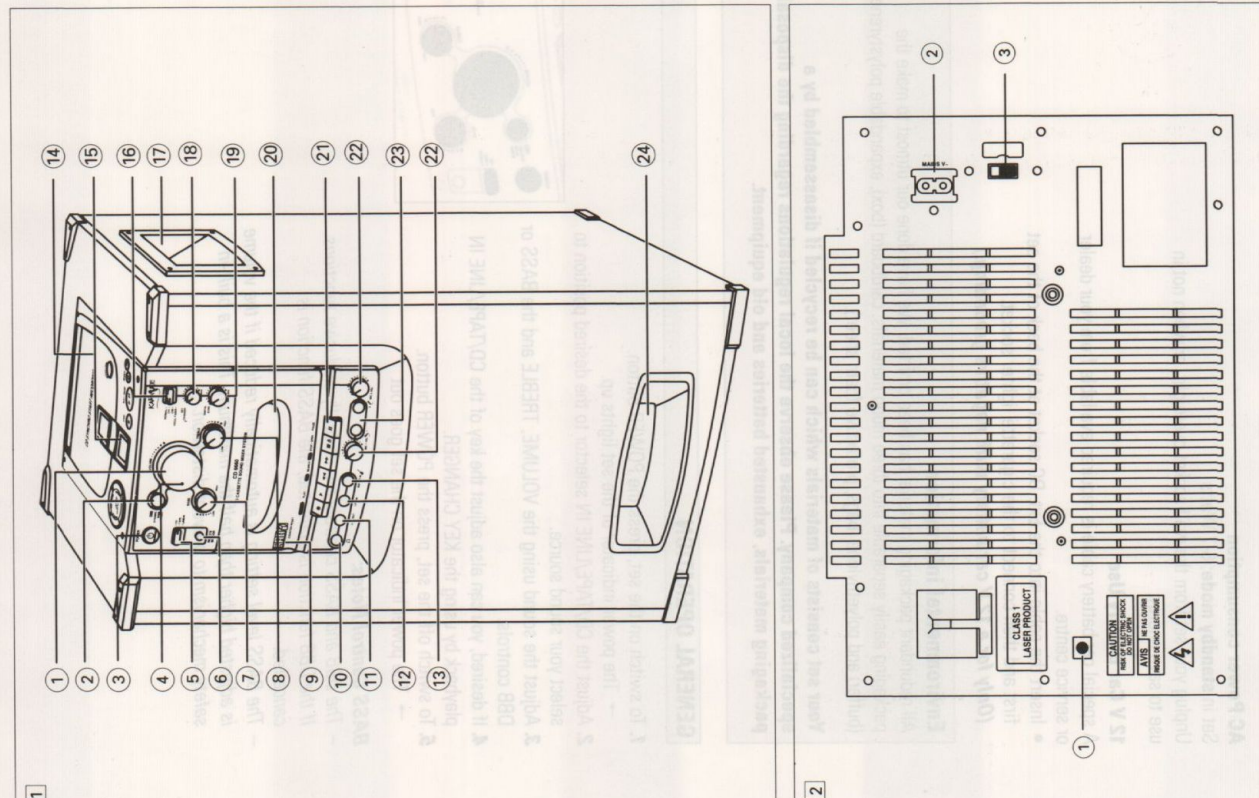
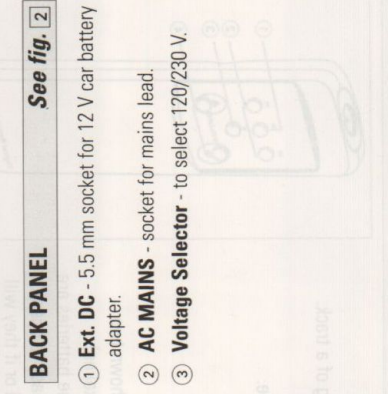


CONNECTIONS AND CONTROLS

TOP AND FRONT PANELS

- See fig. 1
- 1 VOLUME - to adjust the volume level.
 - 2 DBB - for an enhanced Dynamic Bass Boost.
 - 3 POWER - to switch the set on/off.
 - 4 Power indicator - lights up when the set is switched on.
 - 5 CD/TAPE/LINE IN - to select the sound source.
 - 6 REMOTE SENSOR - infrared sensor for remote control.
 - 7 BASS - for adjusting the bass (low) tones.
 - 8 TREBLE - to adjust the treble (high) tones.
 - 9 Counter to monitor and locate cassette tape passages.
 - 10 COUNTER RESET - to reset the tape counter.
 - 11 LINE OUT - stereo output to an external amplifier, tape deck, etc.
 - 12 LINE IN - stereo input for connection of an external source tape deck, CD player, etc.
 - 13 GUITAR IN - input socket for an electric guitar, piano, synthesizer, etc.
 - 14 CD PLAYER:
 - OPEN - to open/close the CD door.
 - STOP - to stop playback or erase a programme.
 - PLAY-PAUSE - to start or interrupt CD play.
 - SEARCH - to search backwards and forwards within a track; to skip to the beginning of a current/previous or subsequent track.
 - SHUFFLE - to play CD tracks in random order.
 - PROGRAM - to programme tracks and to review the programme.
 - REPEAT - to repeat a track/CD programme/entire CD.
 - Display - to show the status of the CD player and any active KEY CHANGER adjustments.

- 16 KARAOKE mode - to select one of the following modes:
 - NORMAL - for normal playback of CDs and tapes.
 - CH 1/CH 2 - (for special karaoke CDs and tapes only) to select right or left channel playback; the original vocals or music can be completely omitted during playback.
 - VOCAL FADER - for suppressing the original vocals during playback on CD/TAPE/LINE IN modes.
- 17 Handle
- 18 KEY CHANGER - for changing the key of the music during playback on CD/TAPE/LINE IN modes.
- 19 DIGITAL ECHO - to adjust the microphone's echo effect.
- 20 Cassette compartment
- 21 CASSETTE RECORDER keys:
 - RECORD - to start recording.
 - PLAY - to start playback.
- SEARCH:
 - REV/FF - to fast review/rewind the tape.
 - CUE/FF - to cue/fast wind the tape.
 - STOP-OPEN - to stop the tape and to open the cassette holder.
 - PAUSE II - to interrupt recording or playback.
 - MIC 1 or 2 VOL - to adjust the volume of the respective microphone.
 - MIC 1 or 2 - microphone input.
 - 24 Bass port



AC Power consumption

Set in **standby mode**: 6.7 Watts
 Unplug your set from the wall socket overnight, or when not in use to save energy.

12 V Car Battery Use

A special car battery cable is required available from your dealer or service centre.

- Insert the cable into the Ext. DC socket at the back of the set first and then connect to the cigarette lighter socket.
(Only for a 12 V car battery with negative grounding.)

Environmental information

All redundant packaging material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), expandable polystyrene (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 packaging materials, exhausted batteries and old equipment.

GENERAL OPERATION

1. To switch on the set, press the POWER button.
 → The power indicator of the set lights up.
2. Adjust the CD/TAPE/LINE IN selector to the desired position to select your sound source.
3. Adjust the sound using the VOLUME, TREBLE and the BASS or DBB controls.
4. If desired, you can also adjust the key of the CD/TAPE/LINE IN playback by using the KEY CHANGER.
5. To switch off the set, press the POWER button.
 → The power indicator on the set goes out

BASS Control Notes:

- The DBB and BASS controls are mutually exclusive functions. If the DBB function is activated, the BASS function is cancelled.
- The BASS level setting is automatically reduced if the volume is adjusted higher than half the maximum. This is a built-in safety mechanism to prevent distortion.

REMOTE CONTROL

- ① ► **II** - to start or interrupt CD playback.
- ② ◀ - To skip to a previous track/the beginning of a track.
- ③ ▶ - To skip to a next track.
- ④ ■ - to stop playback or erase a CD programme.
- ⑤ ▲ **VOLUME** ▲ - to increase the volume level.
- ⑥ ▼ **VOLUME** ▼ - to decrease the volume level.

Remote control batteries (included)

1. Open the battery compartment and insert as shown two batteries, type AA, R06 or UM3 (preferably alkaline).
 2. Replace the compartment door, making sure the batteries are firmly and correctly in place. The set is now ready to operate.
- **Important!** Remove the batteries if exhausted or if they will not be used for a long period.
 - The incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst. Therefore:
 - Do not mix battery types, e.g. alkaline with zinc carbonate.
 - When inserting new batteries, replace both the (old) batteries in use at the same time.

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

MAINS

1. Check if the mains voltage as shown on the type plate (on the back of the set) corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.
2. If your set is equipped with a voltage selector, adjust the selector to match with your local mains supply.
3. Connect the mains lead to the MAINS socket and the wall socket.
 → The set is now ready to use.
4. To switch off the mains supply completely, pull the mains plug out of the wall socket.

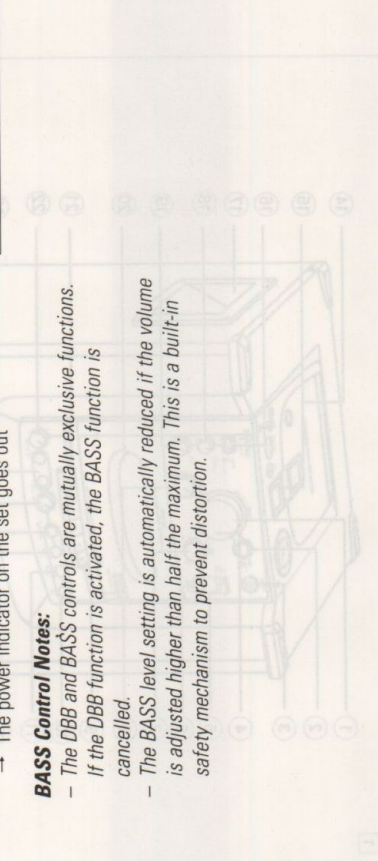
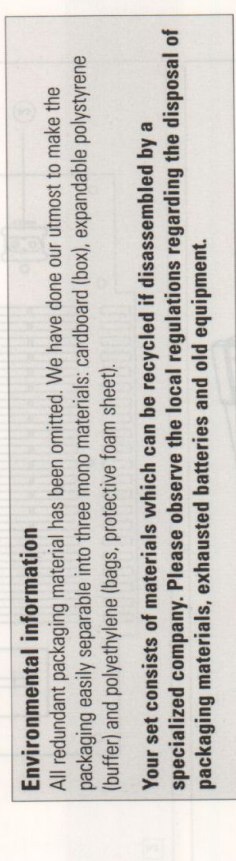
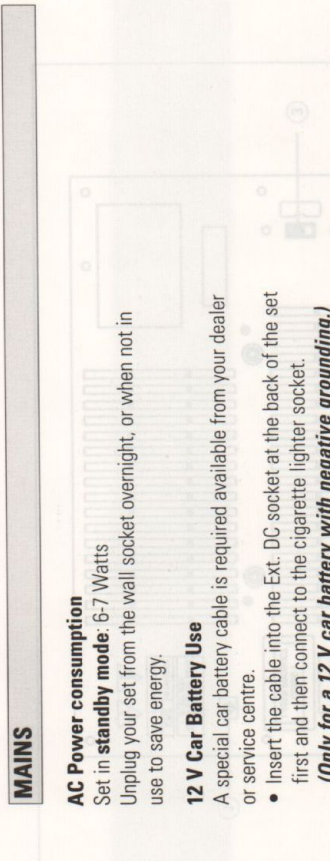
For users in the U.K.: please follow the instructions on page 2.

Environmental Note: Save Energy.

Switching POWER on/off

Always release the POWER button to the off position when not using the set.

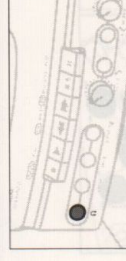
To avoid overheating of the set a safety circuit has been built in. Therefore your set may disconnect under extreme conditions. If this happens, switch off the set and let it cool down before further operation.



HEADPHONES

For headphones with a 6.35 mm socket.

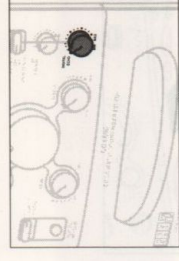
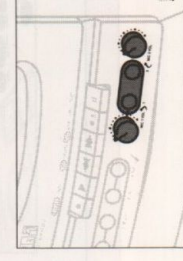
- When headphones are inserted into the ◊ socket, the speaker system is automatically disconnected.



MICROPHONE CONNECTION (1 x Philips microphone supplied)

For microphones with a 6.35 mm socket. You can reproduce and also mix your voice with CD's, cassettes, a line in source or a guitar! You can also use two microphones for a karaoke duet or microphone mixing function.

1. Before you plug in the microphone, turn the respective MIC 1 or 2 VOL control to minimum volume to prevent acoustic howling.
 2. Connect your microphone to the MIC 1 or 2 socket and switch on the microphone.
 3. Adjust the microphone volume to your desired level with the respective MIC 1 or 2 VOL control.
 4. If desired, adjust the ECHO control to create a resonance effect.
- Set ECHO to the minimum level if you do not wish to apply the ECHO effect.

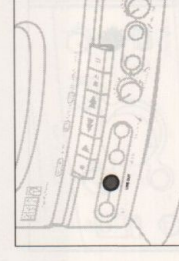


Note: When using the microphone, position it so that it is directed away from the speaker system to prevent acoustic howling.

LINE OUT

For amplifying or recording on an external source e.g. mini Hi-fi system, etc. A connection cord with a 6.35 mm jack may be required for the connection.

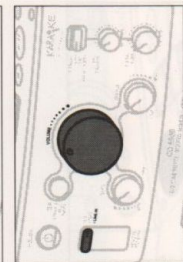
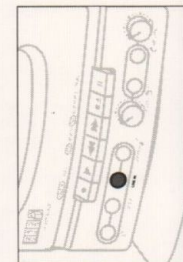
1. Connect the connection cord from the LINE OUT socket of the set to the LINE IN socket of the external source.
- The connection cords should be fully inserted into the LINE OUT and LINE IN sockets of the respective sets.
2. To adjust the volume of your connected external source, use the volume control located on the external source.



LINE IN

For amplifying or recording from an external CD player, amplifier, tuner, recorder, electric musical instruments, etc. A connection cord with a 6.35 mm jack may be required for the connection.

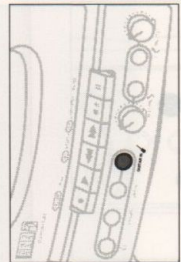
1. Connect the connection cord from the LINE IN socket of the set to the LINE OUT socket of the external source.
- The connection cords should be fully inserted into the LINE IN and LINE OUT sockets of the respective sets.
2. Set the source selector to LINE IN on the Sound Mixer.
3. To adjust the sound of your connected external source, use the VOLUME, TREBLE, BASS or DBB controls located on the Sound Mixer.



GUITAR IN

For amplifying or recording from an electric guitar or musical instrument. The GUITAR IN signal can also be mixed with the CD/TAPE/LINE IN sources. A 6.35 mm jack may be required for the GUITAR IN connection.

- Connect the connection cord from the musical instrument to the GUITAR IN socket of the set.
- Adjust the volume using the controls on the musical instrument.



KARAOKE MODE FEATURES

CH 1 and CH 2

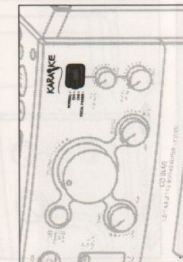
Special karaoke CDs and tapes are pre-recorded to enable two modes of playback: the vocal mode or the instrumental mode.

- Adjust the karaoke mode selector to either CH 1 or CH 2 to select the desired mode.

NORMAL

This allows you to listen to the original recording of Karaoke CDs/tapes without channel selection.

- Adjust the karaoke mode selector to NORMAL.



VOCAL FADER

This function suppresses the main vocals during playback and can be used in all three different source modes: CD, TAPE and LINE IN.

- Adjust the karaoke mode selector to VOCAL FADER.
 → The original vocals will now become faintly audible.

PLAYING A CD

Note: CD playback will also stop when:

- the CD door is opened;
- the CD has reached the end;
- you adjust the CD/TAPE/LINE IN selector to TAPE or LINE IN mode;
- you press the POWER button;
- an error has occurred.

SEARCH ◀◀ OR ▶▶

Selecting a different track

- On the set, press SEARCH ◀◀ or ▶▶ once or repeatedly until the required track number appears in the display. Alternatively, on the remote control press ◀◀ or ▶▶ once or more to select the required track.
- If you have selected a track number shortly after loading a CD or in the PAUSE position, you will need to press PLAY • PAUSE ▶▶ to start playback.

Searching for a passage within a track

1. On the set, press and hold down SEARCH ◀◀ or ▶▶.
 - The CD is played at high speed and low volume.
2. When you recognize the passage you want, release the SEARCH ◀◀ or ▶▶ controls.
 - Normal CD playback will resume at this point.

Different play modes: SHUFFLE/REPEAT

You can select and change the different play modes before or during playback.

→ The play modes can also be combined with PROGRAM

SHUFFLE - Tracks of the entire CD or the programme are played in random order.

SHUFFLE REPEAT ALL - To repeat the entire CD or programme continuously in random order.

REPEAT ALL - Repeats the entire CD.

REPEAT (SHUFFLE REPEAT) - Plays the current (random) track continuously.

1. Press SHUFFLE/REPEAT before or during playback until the desired function appears on the display.
2. To leave the REPEAT/SHUFFLE mode, press the respective SHUFFLE or REPEAT button repeatedly until the various REPEAT/SHUFFLE modes are no longer shown on the display.
 - You can also press STOP ■ to quit playback.

KARAOKE MODE FEATURES

KEY CHANGER

During playback of CDs, cassettes and LINE IN sources, you can use the KEY CHANGER to change the key of the music to suit your voice. The selected key information will be shown briefly in the display as a two digit number from 00-06.

- To adjust the key of the original singer and music to match your voice, turn the control clockwise from the centre position (00) for a range of six higher keys (01 - 06).
- Turn anti-clockwise if you want a lower key (01 - 06).
- If you do not wish to alter the original key, set the KEY CHANGER to the centre position.
 - In addition to the '00' display indication, a small click can be felt indicating the centre position when turning the control.

CD DISPLAY INDICATION

Cd: When you select the CD mode/open the CD compartment.

no: when no disc inserted/ CD programme is erased/ error in CD operation or with the CD (see Troubleshooting)

Total track number: in stop mode or at the end of a CD programme/ playback

▶ and the **current track number:** during playback.

▶▶ and the **current track number:** CD functions and the display freezes in pause position.

SHUFFLE/REPEAT (ALL) modes: when the respective mode is activated

PROGRAM: when programme mode active.

P: when you store a track.

F: memory full, no further tracks can be programmed.

CD PLAYBACK

1. Adjust the CD/TAPE/LINE IN selector to CD position.
2. Press OPEN to open the CD player compartment
3. Insert the CD, printed side facing up and push down on the CD door to close.
4. Start playback by pressing PLAY • PAUSE ▶▶.
5. Adjust the sound using the VOLUME, TREBLE and the BASS or DBB controls.
6. To interrupt playback, press PLAY • PAUSE ▶▶. Press PLAY • PAUSE ▶▶ again to continue playback.
7. Press STOP ■ to stop CD playback.
8. To switch off the set press the POWER button.

CASSETTE PLAYBACK

8. In the stop position, press SEARCH ◀◀ or ▶▶, to fast wind the tape in the respective direction.
- To review/cue, during playback press and hold down on the respective ◀◀ SEARCH ▶▶ key to hear tape playback at high speed. Release your finger from the key to return to normal playback.
9. To stop fast winding or to stop the tape, press STOP • OPEN ■ ▲.
 - The keys are automatically released at the end of the tape.
 - Always make sure that the PLAY ▶ key is released when you are not using the cassette deck.
10. To switch off the set, release the POWER button.

CASSETTE RECORDING

General information on cassette recording

- Recording is permissible insofar as copyright or other rights of third parties are not infringed.
 - This deck is **not** suited for recording on METAL (IEC IV) type cassettes. For recording you should use NORMAL type cassettes (IEC I) or CHROME (IEC II) type cassettes on which the tabs have not been broken.
 - The recording level is set automatically. Altering the VOLUME, BASS, TREBLE or DBB controls will not affect the recording in progress.
 - No recording will take place during the first 7 seconds, when the leader tape passes the recorder heads.
 - To prevent the accidental erasure of a recording, keep the cassette side to be safeguarded in front of you and break out the left tab. Recording on this side is no longer possible. To render this safeguard ineffective, cover the tabs with a piece of adhesive tape.
 - If you do not wish to use the microphone, GUITAR IN, or LINE IN in your recording, disconnect these sources to avoid accidental mixing with the recording source.
 - Do not press the SEARCH ◀◀ or ▶▶ keys during recording.
- Basic recording operation**
- The following six steps apply to all source recordings.
1. Select your source of sound for recording (CD, TAPE, LINE IN).
 2. Press STOP • OPEN ■ ▲ to open the cassette holder.
 3. Insert a blank cassette into the cassette deck and shut the cassette holder.
 4. Press RECORD ● to start recording.
 5. For brief interruptions, press PAUSE II. To resume recording, press PAUSE II again.
 6. To stop recording press STOP • OPEN ■ ▲.

INSTRUCTIONS FOR USE

If a fault occurs, first check the points listed below before taking the set for repair. If you are unable to remedy a problem by following these hints, consult your dealer or service centre.

WARNING: Under no circumstances should you try to repair the set yourself, as this would invalidate the guarantee.

PROBLEM**POSSIBLE CAUSE****REMEDY**

- Dust and dirt on the heads, capstan or pressure roller.
 - Clean the heads etc., see Maintenance.
 - Use of incompatible cassette type (METAL).
 - Only use NORMAL or CHROME for recording.
 - KEY CHANGER has been adjusted.
 - Return KEY CHANGER to centre (0) position.
 - VOCAL FADER active.
 - Adjust Karaoke Mode switch back to NORMAL.
- Recording does not work**
- Cassette tab(s) may be broken out.
 - Apply a piece of adhesive tape over the missing tab space.
- Remote control does not function properly**
- Batteries are exhausted.
 - Insert new batteries.
 - Batteries are incorrectly inserted.
 - Insert batteries correctly.
 - Distance or angle between the set is too large.
 - Reduce the distance or angle.

CD playback does not work

- CD is badly scratched or dirty.
- Replace or clean the CD, see Maintenance.
- Laser lens steamed up
- Wait until lens has acclimatized
- CD inserted upside down.
- Insert CD the right way.
- Wrong mode
- Set the source selector CD/TAPE/LINE IN to CD

The CD skips tracks

- CD is damaged or dirty.
- Replace or clean the CD.
- PROGRAM/SHUFFLE is active.
- Switch off the PROGRAM/SHUFFLE function.

No reaction to operation of any controls/display does not function properly

- Electrostatic discharge.
- Disconnect the set from power supply, reconnect after a few seconds.

Poor cassette sound quality

- Dust and dirt on the heads, capstan or pressure roller.
- Clean the heads etc., see Maintenance.
- Use of incompatible cassette type (METAL).
- Only use NORMAL or CHROME for recording.
- KEY CHANGER has been adjusted.
- Return KEY CHANGER to centre (0) position.
- VOCAL FADER active.
- Adjust Karaoke Mode switch back to NORMAL.

Recording does not work

- Cassette tab(s) may be broken out.
- Apply a piece of adhesive tape over the missing tab space.

Remote control does not function properly

- Batteries are exhausted.
- Insert new batteries.
- Batteries are incorrectly inserted.
- Insert batteries correctly.
- Distance or angle between the set is too large.
- Reduce the distance or angle.

Howling noise when using microphone

- Acoustic interference with speaker system.
- Reduce MIC 1 or 2 VOL or direct microphone away from speaker system.

Microphone does not work

- Microphone not switched on
- Switch on microphone.
- MIC VOL of corresponding MIC 1 or 2 not adjusted.
- Turn up MIC VOL of corresponding MIC.

This product complies with the radio interference requirements of the European Community. The type plate is located at the back of the set.

CASSETTE RECORDING**Sound Mixing, Microphone and Karaoke recording**

For the musically ambitious you can play an electric guitar, a LINE IN source, sing along to a karaoke CD and if desired, use the KEY CHANGER and ECHO functions and record all this on tape.

1. Connect a microphone to the MIC 1 or 2 socket, as described under Microphone Connection.
2. Select your sound source for mixing (CD, TAPE, LINE IN).
3. Insert a blank cassette into the cassette deck and shut the cassette holder.
4. Press RECORD ● to start recording.
5. To stop recording press STOP ● OPEN ■ ▲.

Synchro start CD recording

1. Adjust the CD/TAPE/LINE IN selector to CD position.
 2. Insert a CD and if desired, programme track numbers.
 3. Press STOP ● OPEN ■ ▲ to open the cassette holder.
 4. Insert a blank cassette into the cassette deck and shut the cassette holder.
 5. Press RECORD ● to start recording.
- Playing of the CD programme starts automatically from the beginning of the programme. It is not necessary to start the CD player separately.

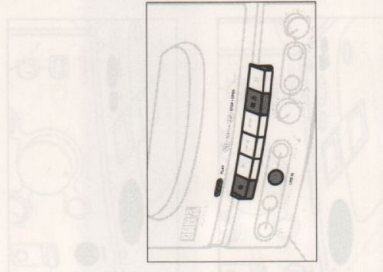
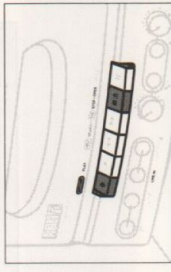
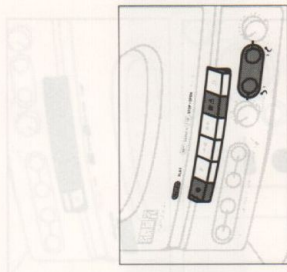
To select and record a particular passage within a track:

- a. press the SEARCH controls ◀◀ or ▶▶ on the CD player to find your passage
- b. put the CD player on pause at the selected passage.
- c. recording will begin from this exact point in the track when you press RECORD ●.

6. To stop recording press STOP ● OPEN ■ ▲.

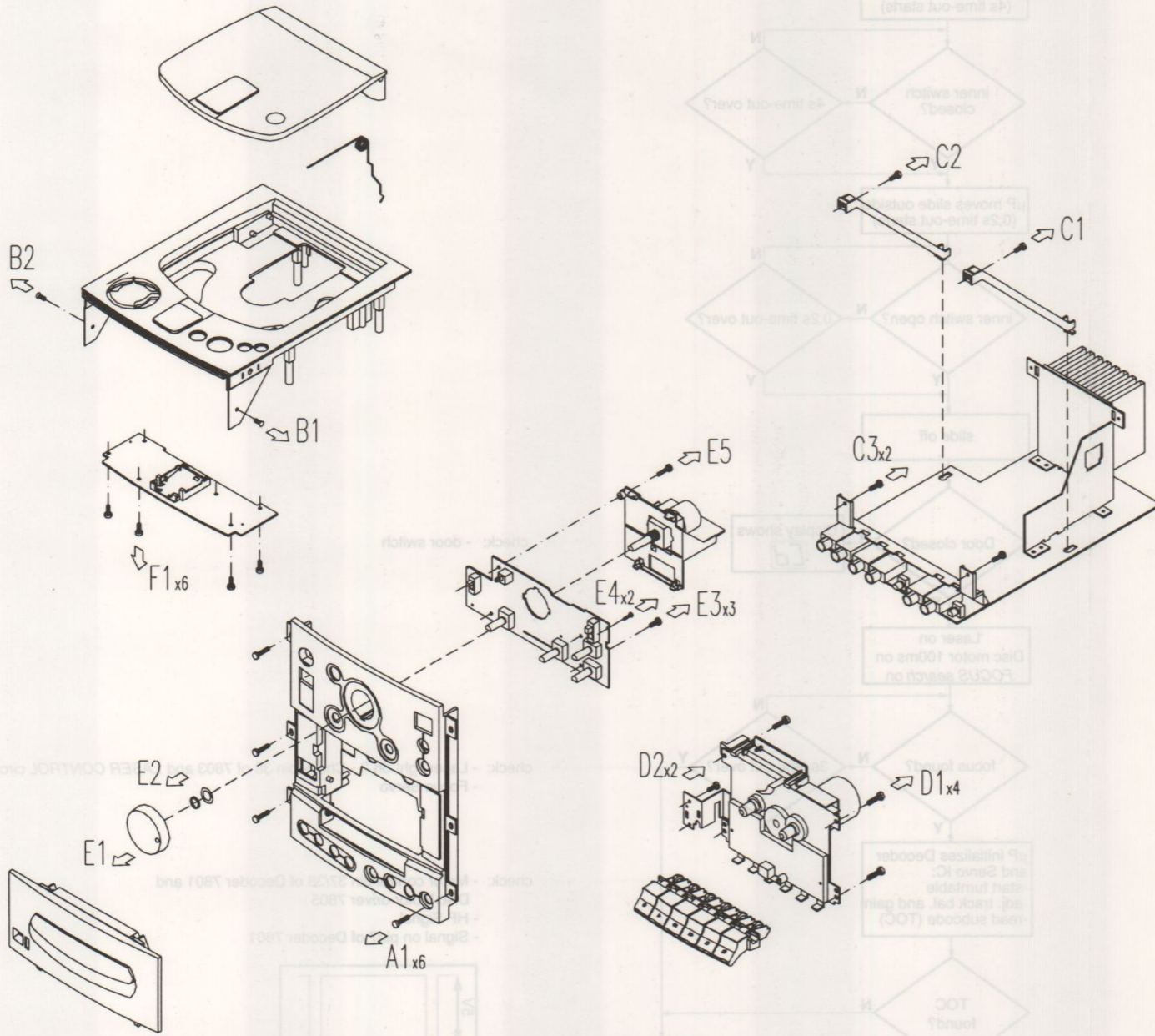
Recording from LINE IN sources

1. See the previous chapter on LINE IN to connect the LINE IN of the Sound Mixer with the LINE OUT of the external source.
2. Set the source selector to LINE IN.
3. Insert a blank cassette into the cassette deck and shut the cassette holder.
4. Press RECORD ● to start recording.
5. To stop recording press STOP ● OPEN ■ ▲.

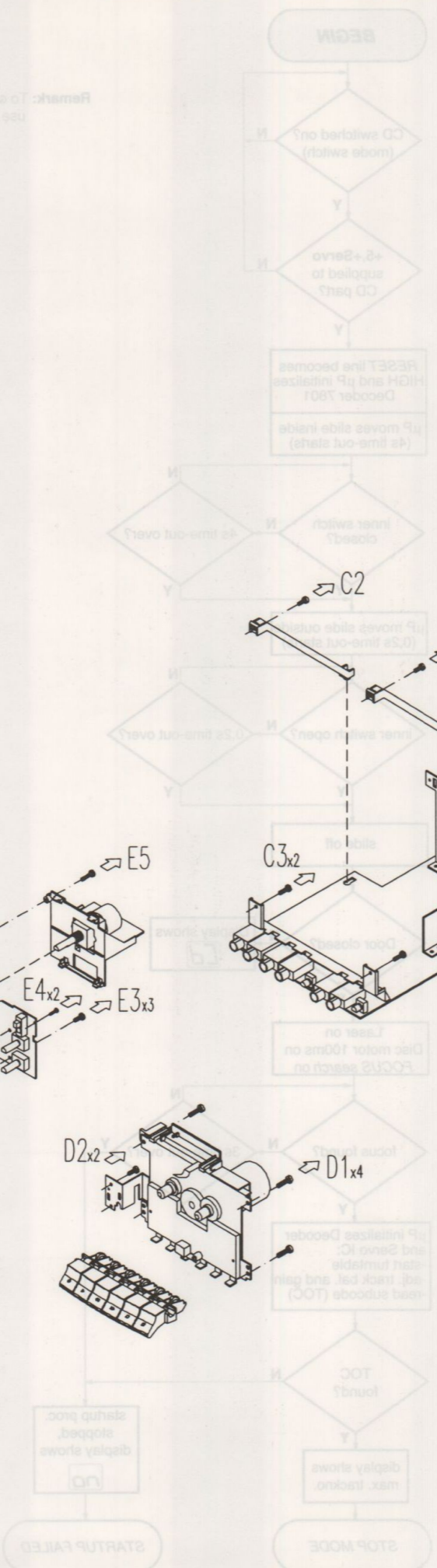


DISASSEMBLY DIAGRAM

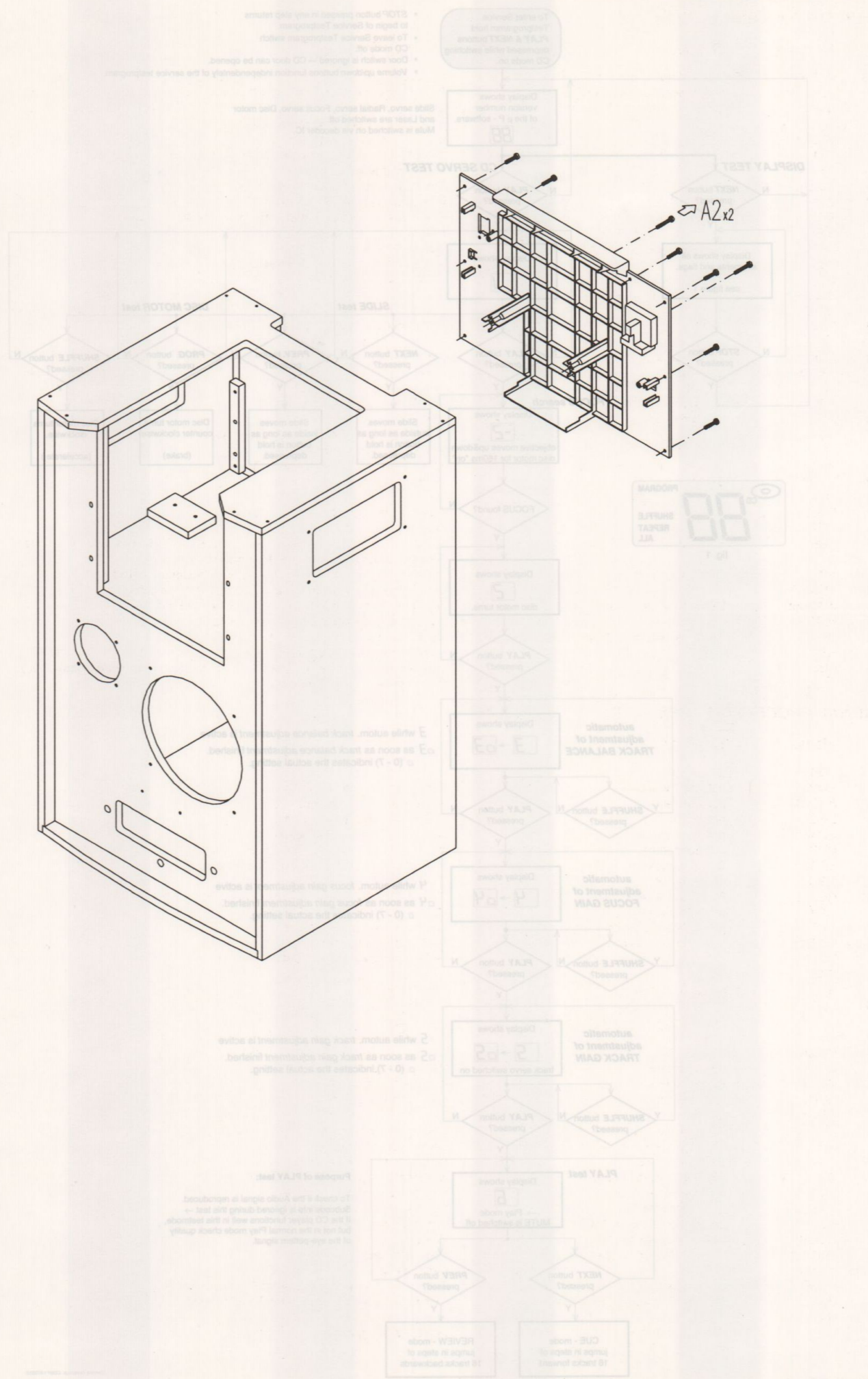
- A. To remove Front Panel Assembly
- B. To remove Top Cabinet
- C. To remove Power Board
- D. To remove Tape Deck
- E. To remove AF Board
- F. To remove Control Board



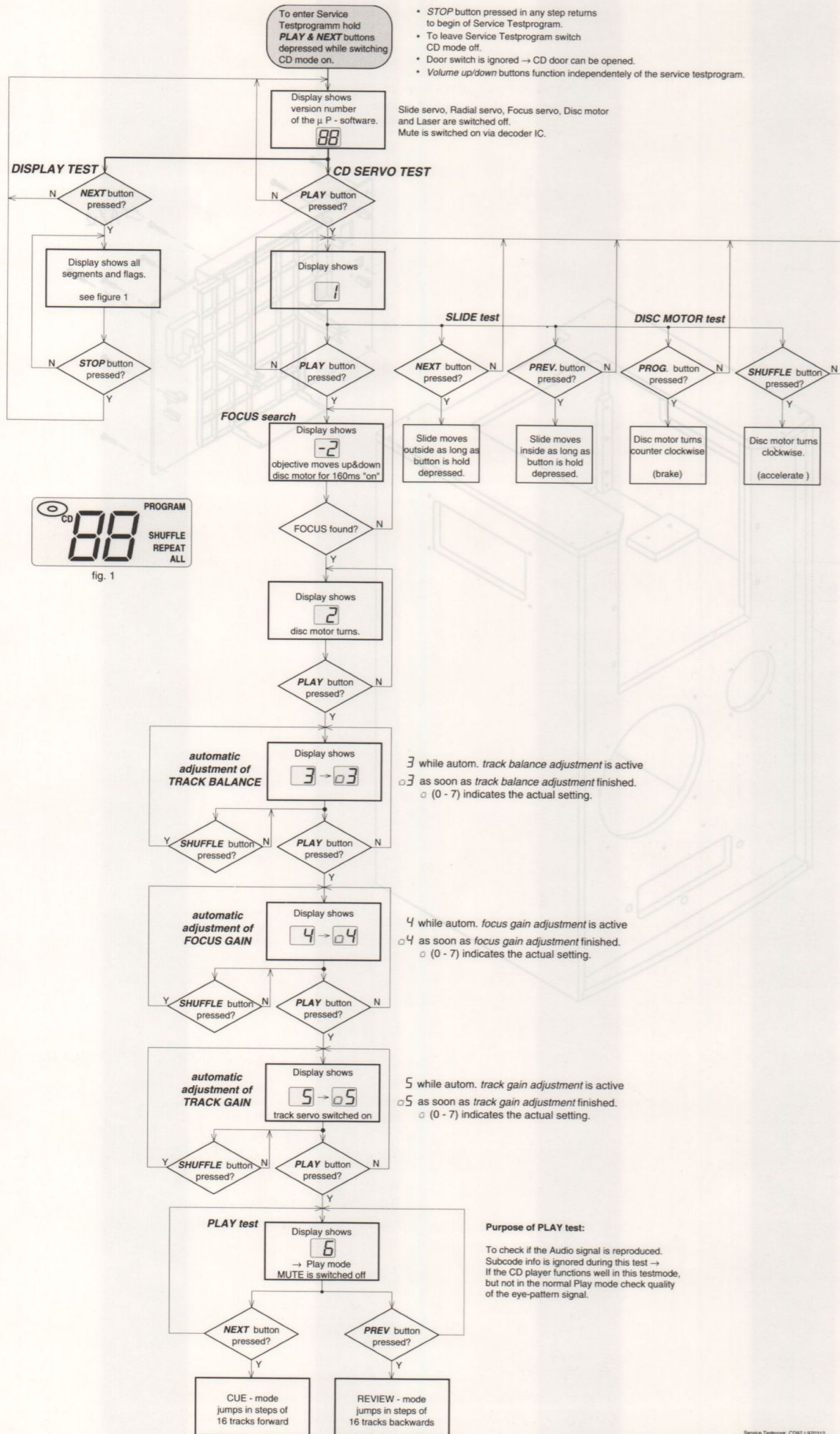
CD STARTUP - PROCEDURE



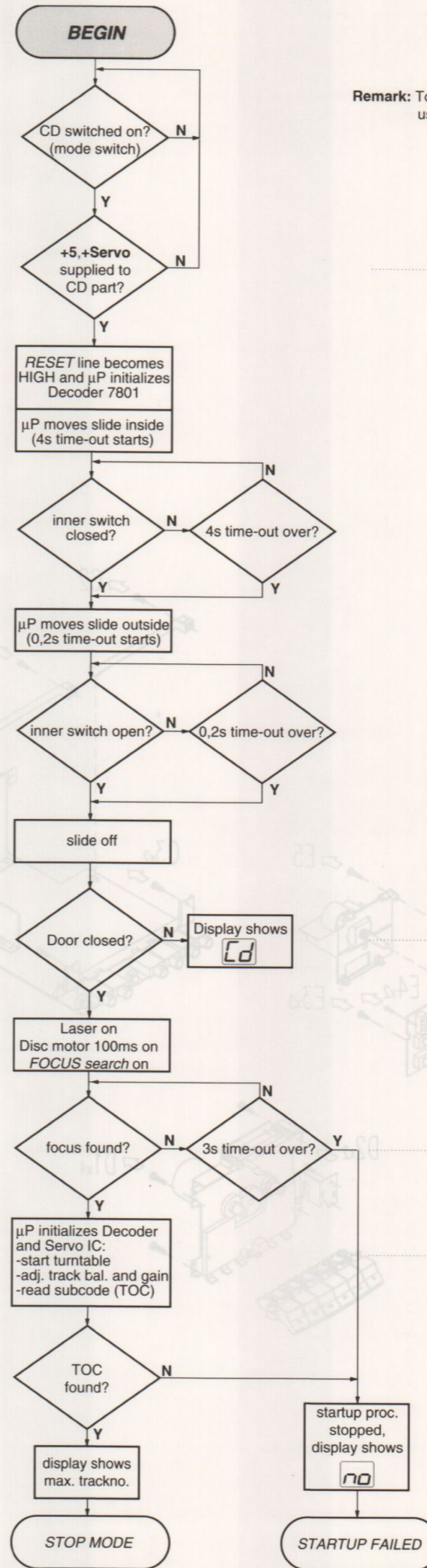
CD - SERVICE TEST PROGRAM



CD - SERVICE TESTPROGRAM

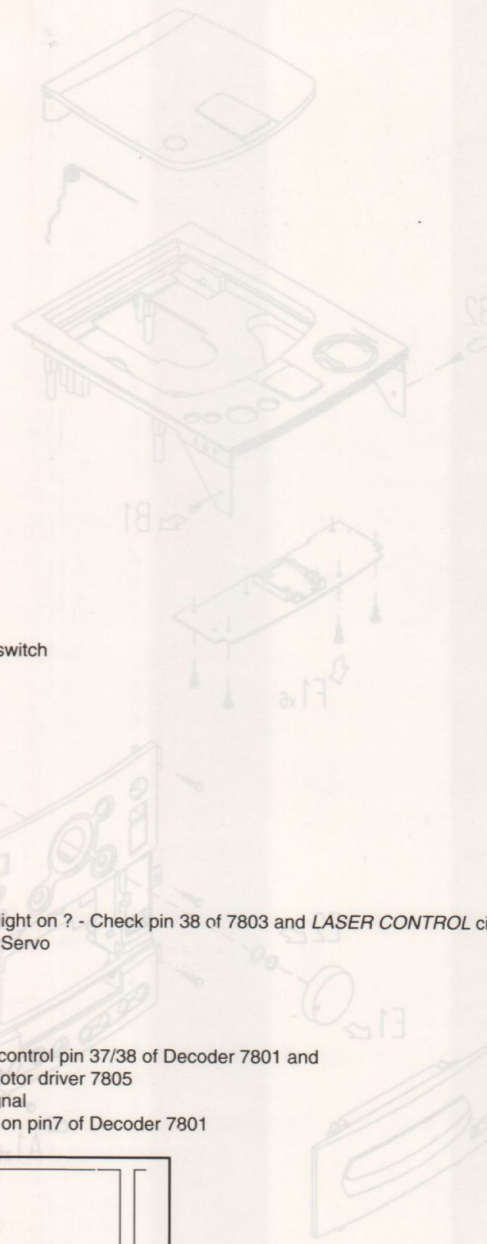


CD STARTUP - PROCEDURE



DISASSEMBLY DIAGRAM

A. To remove Front Panel
B. To remove Top Cabinet
C. To remove Power Board
D. To remove Tape Deck
E. To remove AF Board
F. To remove Control Board



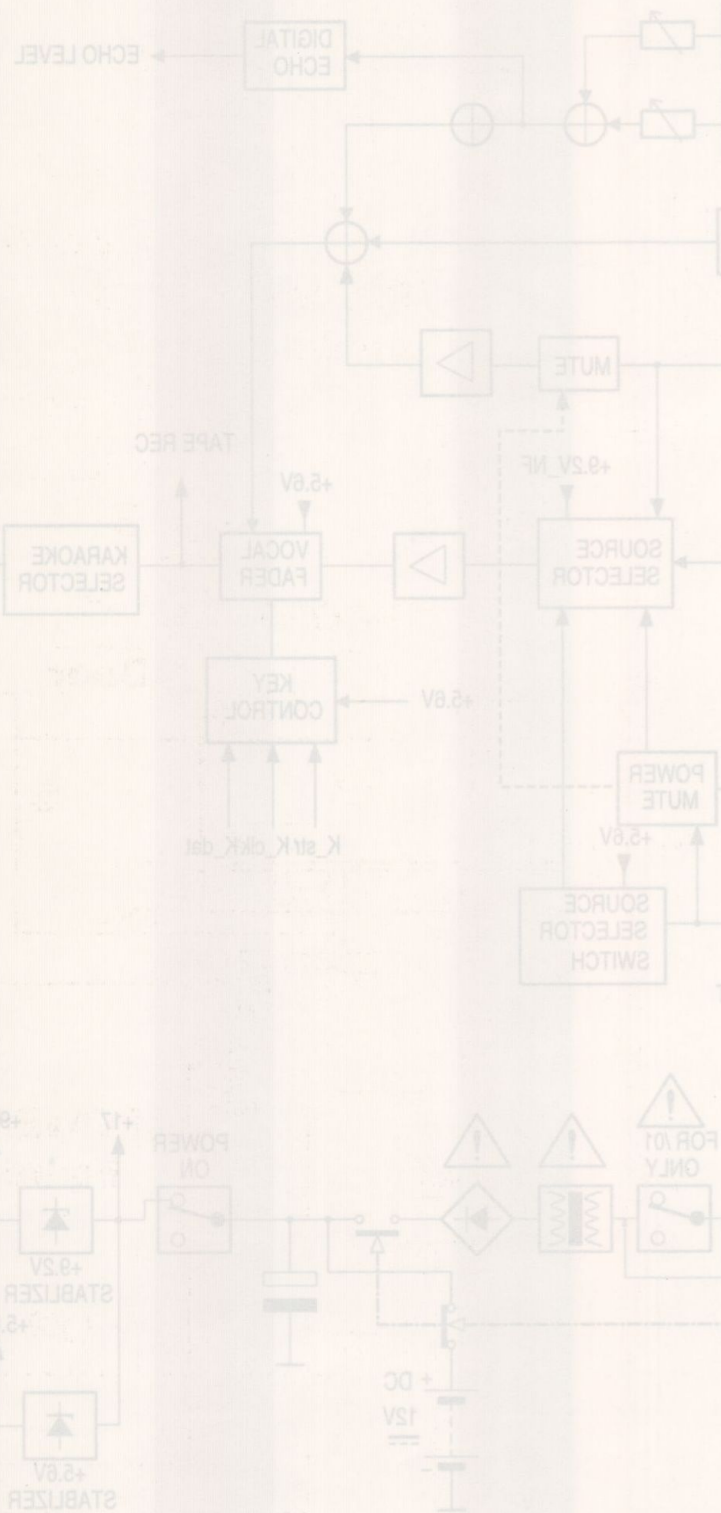
Abbreviations and Pin-descriptions of CD ICs

SERVO PROCESSOR M62475FP

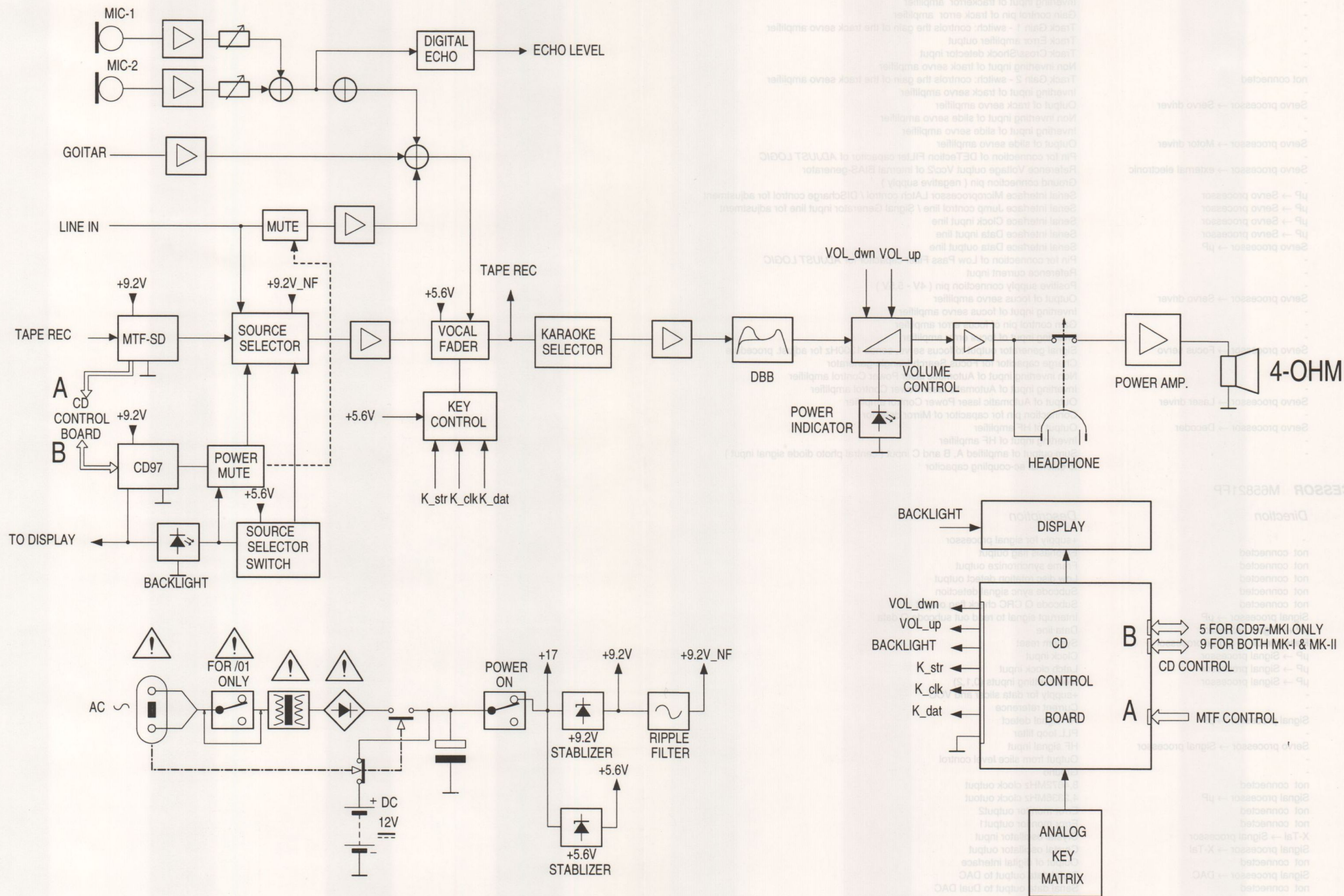
Pin	Name	Direction	Description
1-3	A, B, C	Diode array → Servo processor	Current input (central photo diode signal input)
4-5	E, F	Diode array → Servo processor	Current input (satellite photo diode signal input)
6	SGT	Servo processor → Track servo	Signal generator output to track servo, sends 1700Hz for adjustment procedure
7	TE -	-	Inverting input of trackerror amplifier
8	TEGain	-	Gain control pin of track error amplifier
9	TG1	-	Track Gain 1 - switch: controls the gain of the track servo amplifier
10	TE out	-	Track Error amplifier output
11	TC/Shock	-	Track Cross/Shock detector input
12	TS +	-	Non inverting input of track servo amplifier
13	TG2	not connected	Track Gain 2 - switch: controls the gain of the track servo amplifier
14	TS -	-	Inverting input of track servo amplifier
15	TS out	Servo processor → Servo driver	Output of track servo amplifier
16	SS +	-	Non inverting input of slide servo amplifier
17	SS -	-	Inverting input of slide servo amplifier
18	Slide out	Servo processor → Motor driver	Output of slide servo amplifier
19	DETFIL	-	Pin for connection of DETECTION FILTER capacitor of ADJUST LOGIC
20	BIAS	Servo processor → external electronic	Reference Voltage output Vcc/2 of internal BIAS-generator
21	GND	-	Ground connection pin (negative supply)
22	MLA/DIS	μP → Servo processor	Serial interface Microprocessor LATCH control / DIScharge control for adjustment
23	JP1/SG	μP → Servo processor	Serial interface Jump control line / Signal Generator input line for adjustment
24	MCK	μP → Servo processor	Serial interface Clock input line
25	MSD	μP → Servo processor	Serial interface Data input line
26	Dout	Servo processor → μP	Serial interface Data output line
27	CLPF	-	Pin for connection of Low Pass Filter capacitor for ADJUST LOGIC
28	IREF	-	Reference current input
29	VCC	-	Positive supply connection pin (4V - 5.5V)
30	FSout	Servo processor → Servo driver	Output of focus servo amplifier
31	FS -	-	Inverting input of focus servo amplifier
32	FEGain	-	Gain control pin of focus error amplifier
33	FE -	-	Inverting input of focus error amplifier
34	SGF	Servo processor → Focus servo	Signal generator output to focus servo, sends 1300Hz for adjust. procedure
35	CFSR	-	Charge capacitor for Focus Search triangle-generator
36	APC +	-	Non inverting input of Automatic laser Power Control amplifier
37	APC -	-	Inverting input of Automatic laser Power Control amplifier
38	APC out	Servo processor → Laser driver	Output of Automatic laser Power Control amplifier
39	MRC	-	Connection pin for capacitor of Mirror detector
40	HF	Servo processor → Decoder	Output of HF amplifier
41	HFI	-	Inverting input of HF amplifier
42	ABC	-	Sum output of amplified A, B and C input (central photo diode signal input) to external ac-coupling capacitor

SIGNAL PROCESSOR M65821FP

Pin	Name	Direction	Description
1	VDD1	-	+supply for signal processor
2	EMP	not connected	Emphasis flag output
3	SYCLK	not connected	Frame synchronize output
4	LOCK	not connected	Low disc rotation detect output
5	SCAND	not connected	Subcode sync signal detection
6	CRCF	not connected	Subcode Q CRC check flag output
7	SBQS	Signal processor → μP	Interrupt signal to read out subcode Q data
8	MSD	μP ↔ Signal processor	Data line
9	RESET	Reset circuit → Signal processor	System reset
10	MCK	μP → Signal processor	Clock input
11	MLA	μP → Signal processor	Latch clock input
12-14	MODx	μP → Signal processor	Mode setting inputs (0,1,2)
15	VDD2	-	+supply for data slicer and VCO
16	IREF	-	Current reference
17	HFD	Signal processor → μP	HF signal detect
18	LPF	-	PLL loop filter
19	HF	Servo processor → Signal processor	HF signal input
20	TLC	-	Output from slice level control
21	VSS2	-	Ground
22	C846	not connected	8,4672MHz clock output
23	C423	Signal processor → μP	4,2336MHz clock output
24	EST2	not connected	Error monitor output2
25	EST1	not connected	Error monitor output1
26	XI	X-Tal → Signal processor	Crystal oscillator input
27	XO	Signal processor → X-Tal	Crystal oscillator output
28	DOTX	not connected	Output of digital interface
29	DO1	Signal processor → DAC	Serial data output to DAC
30	DO2	not connected	Serial data output to Dual DAC
31	CKSEL	not connected	Crystal selector input. H=8MHz, L=16MHz
32	DSCK	Signal processor → DAC	Data shift clock
33	WDCK	Signal processor → DAC	Word clock
34	LRCK1	Signal processor → DAC	Left/Right clock
35-36	not used	-	Left/Right clock
37	PWM1	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output1
38	PWM2	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output2
39-41	not used	-	-
42	VSS1	GND	Digital system ground

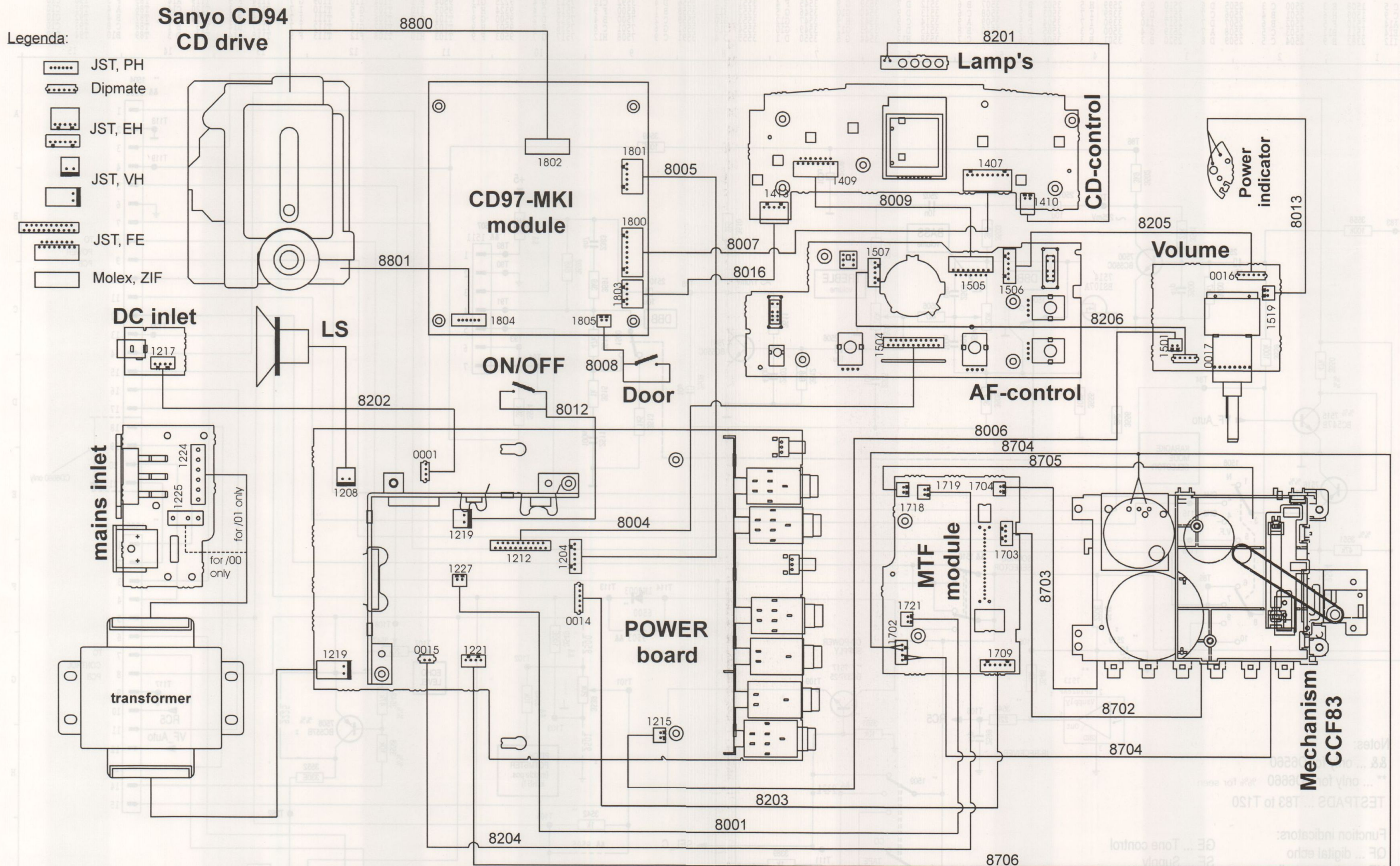


BLOCK DIAGRAM



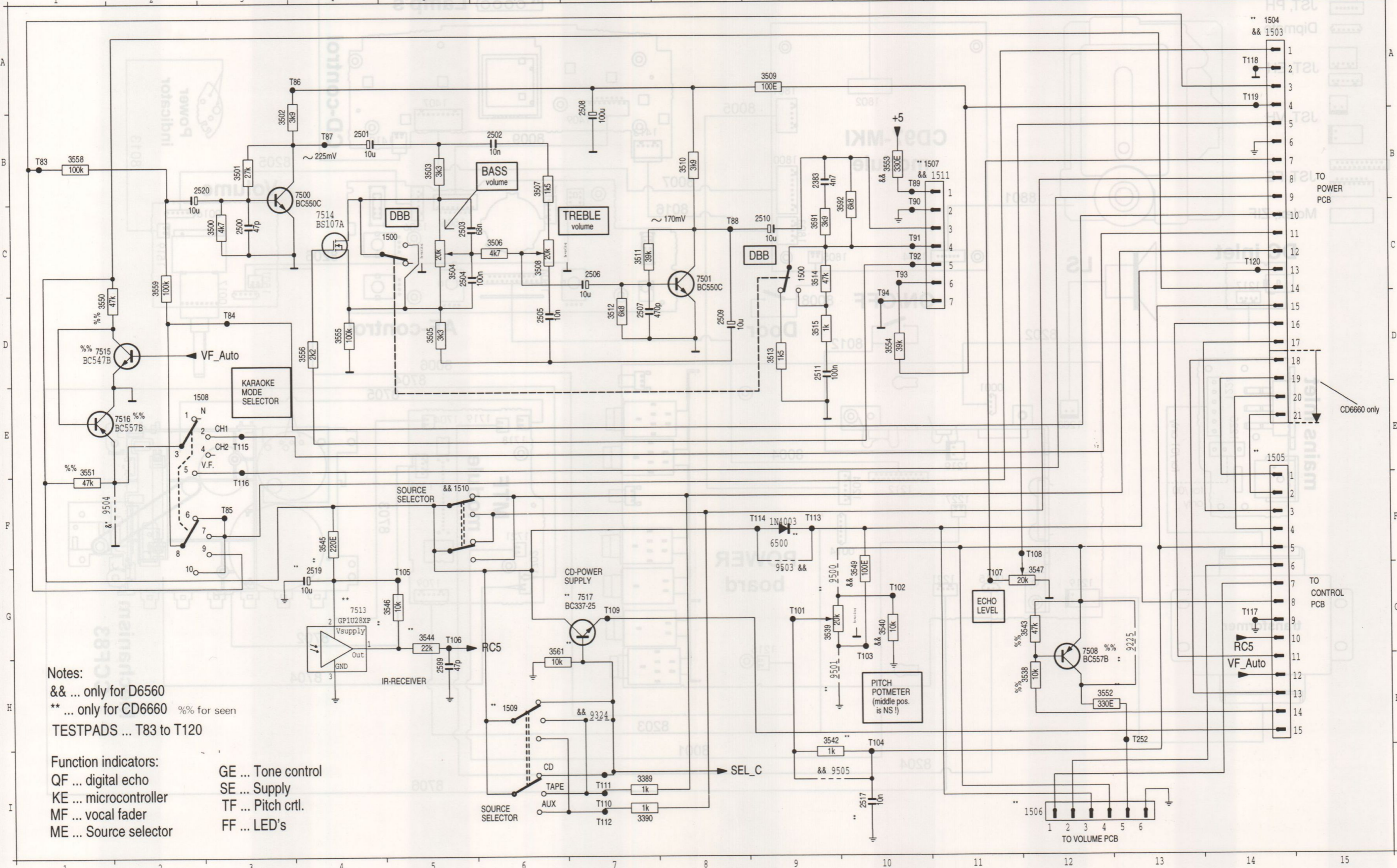
WIRING DIAGRAM

AF CONTROL BOARD - CIRCUIT DIAGRAM



AF CONTROL BOARD - CIRCUIT DIAGRAM

1500	C C 5	1508	D 6	2500	C C 3	2505	D 6	2510	D C 9	2599	H 5	3502	D B 3	3507	C B 7	3512	D D 7	3539	G G 9	3544	F F 4	3551	B B 1	3555	H H 1	3556	D D 4	3592	C C 10	7513	G G 4	9225	G G 3	9504	F 1	T104	G 7	T109	G 7	T114	F 9	T119	F 3	T90	C10
1501	C C 5	1509	D 6	2501	C C 3	2506	D 6	2511	D C 9	3500	H 5	3503	D B 3	3508	C B 7	3513	D D 7	3540	G G 9	3545	F F 4	3552	B B 1	3556	H H 1	3557	D D 4	3593	C C 10	7514	G G 4	9226	G G 3	9505	F 1	T105	G 7	T110	G 7	T115	F 9	T120	F 3	T91	C10
1502	C C 5	1510	D 6	2502	C C 3	2507	D 6	2512	D C 9	3501	H 5	3504	D B 3	3509	C B 7	3514	D D 7	3541	G G 9	3546	F F 4	3553	B B 1	3558	H H 1	3559	D D 4	3594	C C 10	7515	G G 4	9227	G G 3	9506	F 1	T106	G 7	T111	G 7	T116	F 9	T121	F 3	T92	C10
1503	C C 5	1511	D 6	2503	C C 3	2508	D 6	2513	D C 9	3502	H 5	3505	D B 3	3510	C B 7	3515	D D 7	3542	G G 9	3547	F F 4	3554	B B 1	3559	H H 1	3560	D D 4	3595	C C 10	7516	G G 4	9228	G G 3	9507	F 1	T107	G 7	T112	G 7	T117	F 9	T122	F 3	T93	C10
1504	C C 5	1512	D 6	2504	C C 3	2509	D 6	2514	D C 9	3503	H 5	3506	D B 3	3511	C B 7	3516	D D 7	3543	G G 9	3548	F F 4	3555	B B 1	3560	H H 1	3561	D D 4	3596	C C 10	7517	G G 4	9229	G G 3	9508	F 1	T108	G 7	T113	G 7	T118	F 9	T123	F 3	T94	C10



Notes:
 && ... only for D6560
 ** ... only for CD6660 % for seen
 TESTPADS ... T83 to T120

Function indicators:
 QF ... digital echo
 KE ... microcontroller
 MF ... vocal fader
 ME ... Source selector
 GE ... Tone control
 SE ... Supply
 TF ... Pitch ctrl.
 FF ... LED's

CD6660 only

TO CONTROL PCB

RC5

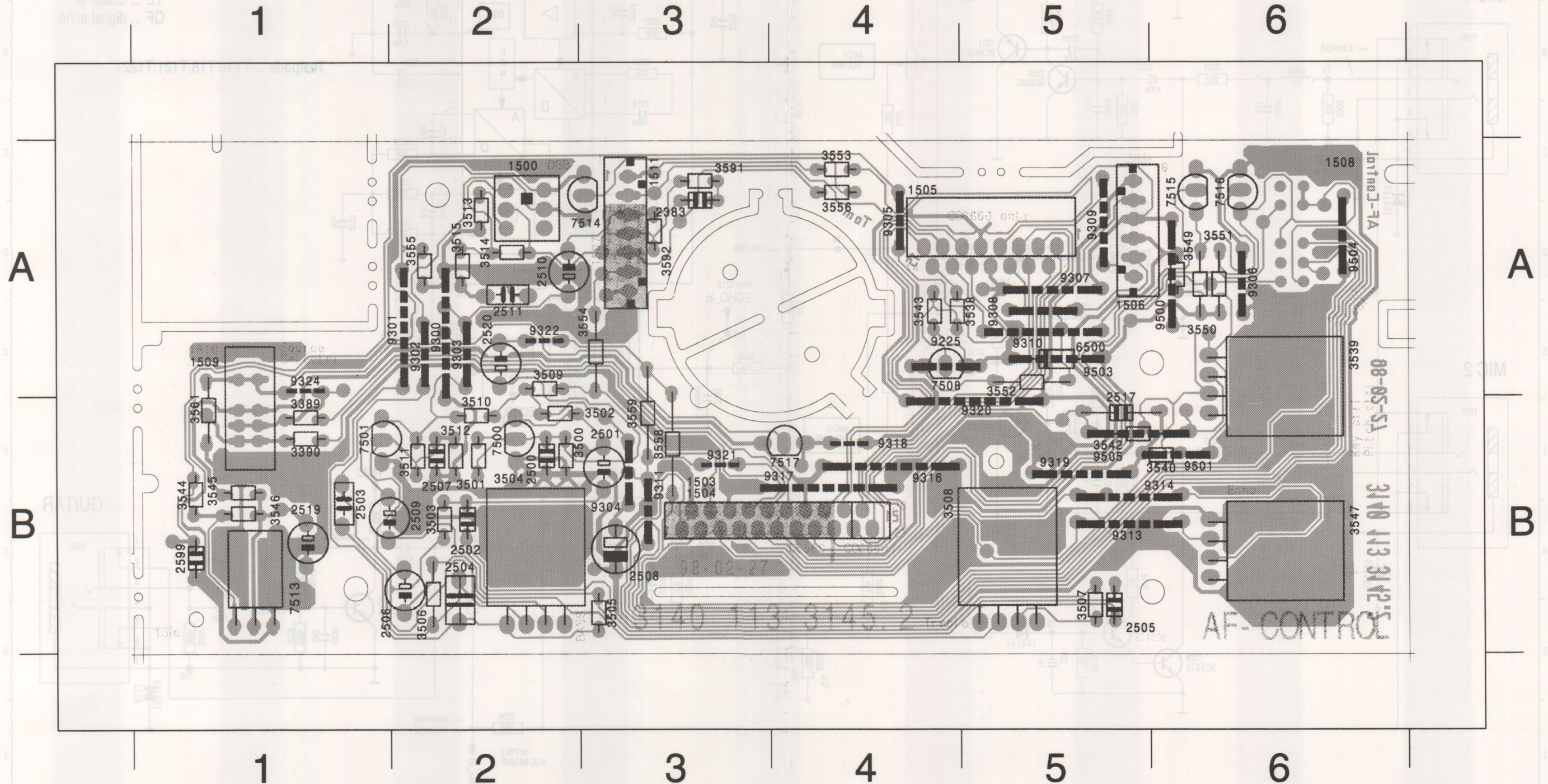
VF_Auto

TO VOLUME PCB

TO POWER PCB

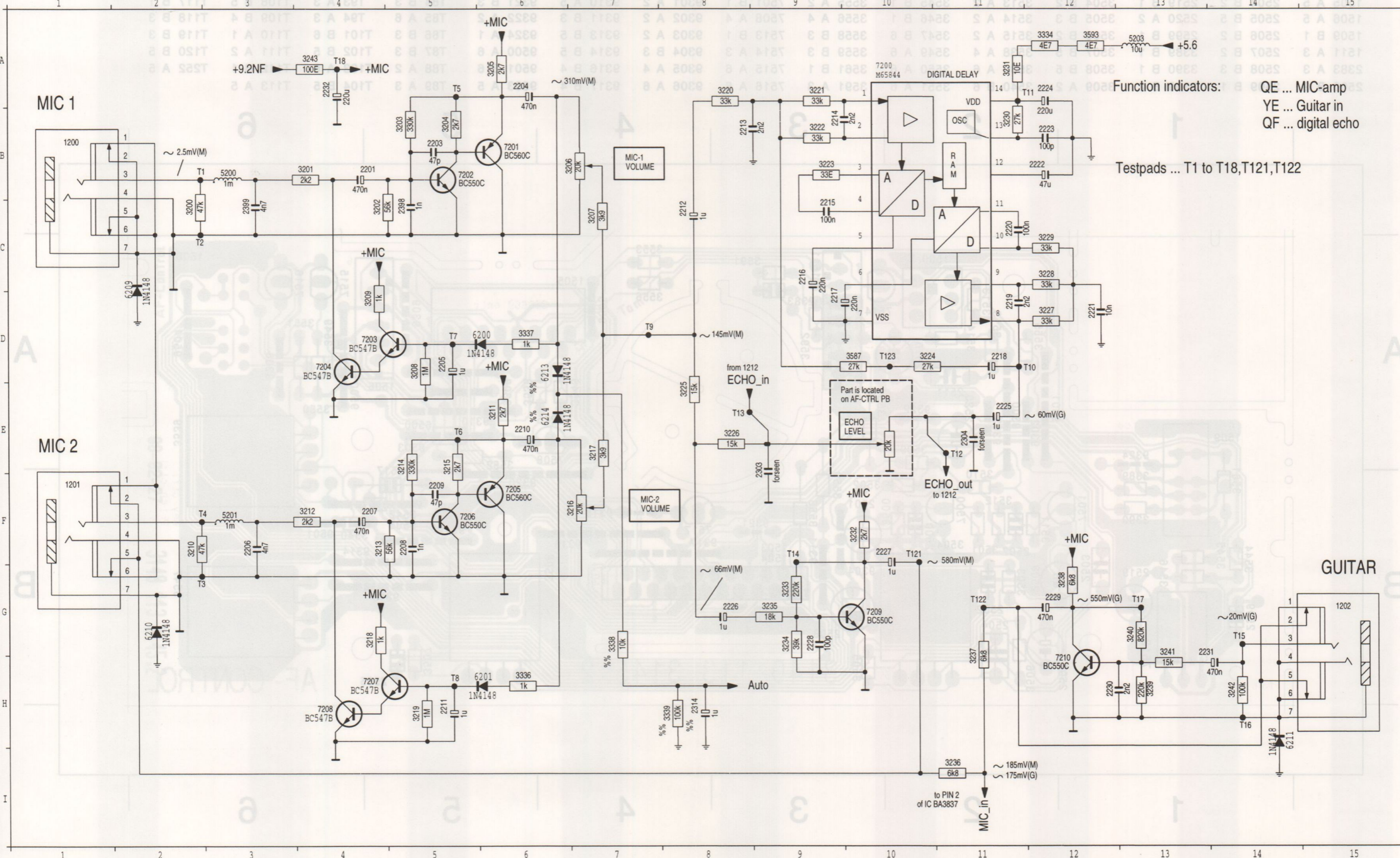
AF CONTROL BOARD - LAYOUT DIAGRAM

1500 A 2	2501 B 3	2510 A 2	3501 B 2	3510 B 2	3542 B 5	3552 A 5	3592 A 3	7517 B 4	9307 A 5	9318 B 4	9504 A 6	T90 A 3	T105 B 1	T114 A 5
1503 B 3	2502 B 2	2511 A 2	3502 B 2	3511 B 2	3543 A 4	3553 A 4	6500 A 5	9225 A 4	9308 A 5	9319 B 5	9505 B 5	T91 A 3	T106 B 1	T115 A 6
1504 B 4	2503 B 1	2517 B 5	3503 B 2	3512 B 2	3544 B 1	3554 A 3	7500 B 2	9300 A 2	9309 A 5	9320 B 5	T83 A 6	T92 A 3	T107 B 5	T116 A 6
1505 A 5	2504 B 2	2519 B 1	3504 B 2	3513 A 2	3545 B 1	3555 A 2	7501 B 1	9301 A 2	9310 A 5	9321 B 3	T84 B 3	T93 A 3	T108 B 5	T117 B 1
1506 A 5	2505 B 5	2520 A 2	3505 B 3	3514 A 2	3546 B 1	3556 A 4	7508 A 4	9302 A 2	9311 B 3	9322 A 2	T85 A 6	T94 A 3	T109 B 4	T118 B 3
1509 B 1	2506 B 2	2599 B 1	3506 B 2	3515 A 2	3547 B 6	3558 B 3	7513 B 1	9303 A 2	9313 B 5	9324 A 1	T86 B 3	T101 B 6	T110 A 1	T119 B 3
1511 A 3	2507 B 2	3389 B 1	3507 B 5	3538 A 4	3549 A 6	3559 B 3	7514 A 3	9304 B 3	9314 B 5	9500 A 6	T87 B 3	T102 B 5	T111 A 2	T120 B 5
2383 A 3	2508 B 3	3390 B 1	3508 B 5	3539 A 6	3550 A 6	3561 B 1	7515 A 6	9305 A 4	9316 B 4	9501 B 6	T88 A 2	T103 A 6	T112 B 1	T252 A 5
2500 B 2	2509 B 1	3500 B 2	3509 A 2	3540 B 6	3551 A 6	3591 A 3	7516 A 6	9306 A 6	9317 B 4	9503 A 5	T89 A 3	T104 B 5	T113 A 5	



POWER BOARD - CIRCUIT DIAGRAM (1) KARAOKE FEATURES (MIC, ECHO & GUITAR)

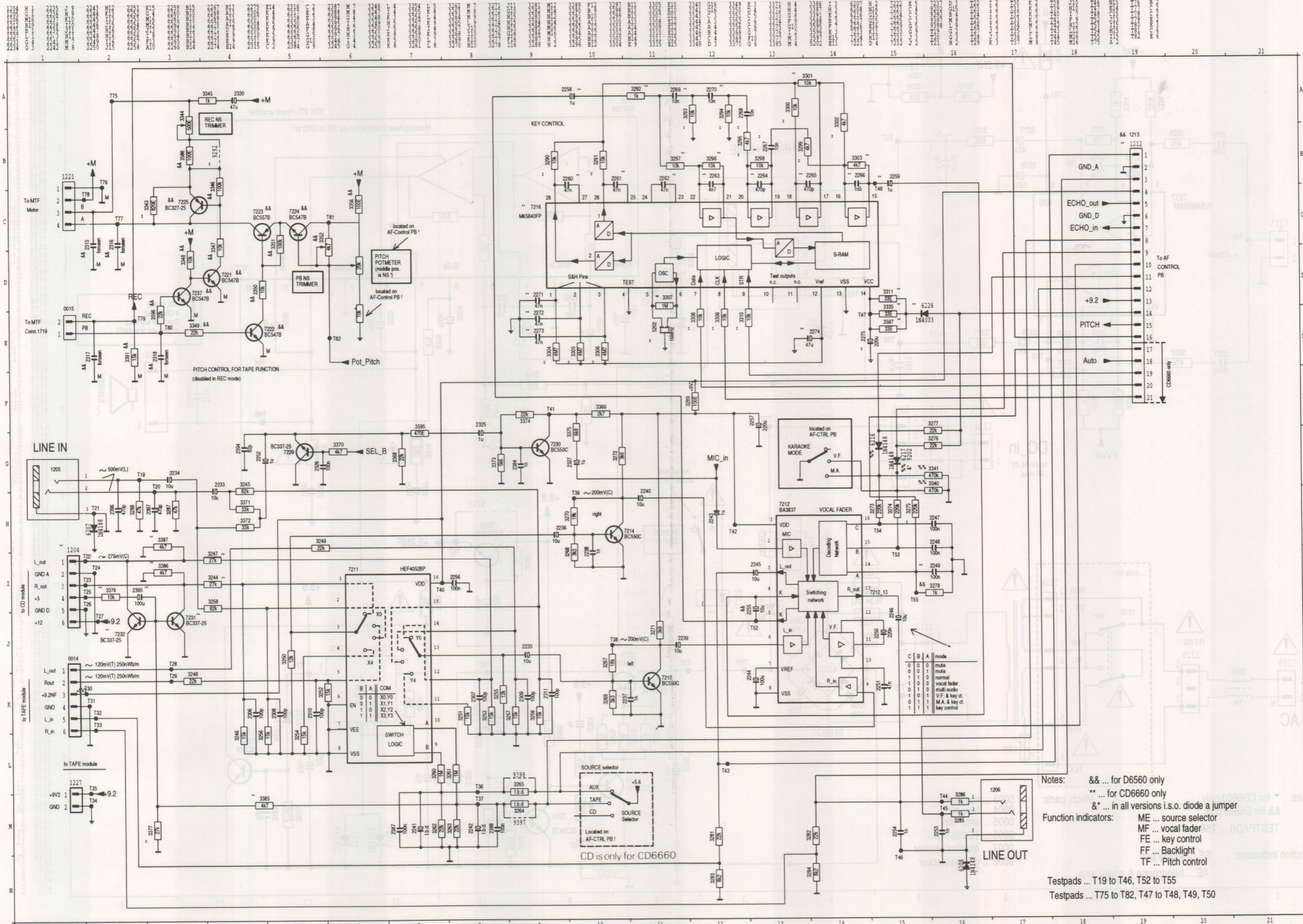
1200	B 1	2205	D 5	2211	C H 5	2217	D 9	2223	B12	2229	G12	2314	C H 8	3203	B 5	3209	D 4	3215	B 5	3221	D 9	3227	D12	3233	G 9	3239	H13	3333	G 9	3239	H13	3333	G 9	5200	B 3	6210	G 2	7202	B 5	7208	H 4	T12	E11	T15	G14	T4	F 2
1201	F 1	2206	D 5	2212	C H 5	2218	D11	2224	A12	2230	H12	2398	C H 8	3204	B 5	3210	D 4	3216	B 5	3222	D 9	3228	D12	3234	G 9	3240	G13	3334	G 9	5201	B 3	6211	H 2	7203	D 4	7209	G10	T121	F10	T15	G14	T4	F 2				
1202	G15	2207	D 5	2213	C H 5	2219	D11	2225	E11	2231	H13	2399	C H 8	3205	B 5	3211	D 4	3217	B 5	3223	D 9	3229	D12	3235	G 9	3241	H13	3335	G 9	5202	B 3	6212	H 2	7204	D 4	7210	H12	T122	G11	T17	G13	T5	F 3				
2201	B 4	2208	D 5	2214	C H 5	2220	C11	2226	A 4	2232	A 4	2300	C H 8	3206	B 5	3212	D 4	3218	B 5	3224	D 9	3230	B11	3236	G 9	3242	H13	3336	G 9	5203	B 3	6213	D 4	7205	F 5	T1	B 2	T123	D10	T18	G13	A 4	T6	F 4			
2203	B 5	2209	D 5	2215	C H 5	2221	D12	2227	F10	2233	E 9	2301	C H 8	3207	B 5	3213	D 4	3219	B 5	3225	D 9	3231	A11	3237	H11	3243	A 4	3337	G 9	5204	B 3	6214	D 4	7206	F 5	T11	B 2	T124	E10	T19	G13	A 4	T7	F 5			
2204	A 6	2210	D 5	2216	C H 5	2222	B12	2228	G 9	2234	E11	2302	C H 8	3208	B 5	3214	D 4	3220	B 5	3226	D 9	3232	F10	3238	G12	3244	A12	3338	G 9	5205	B 3	6215	H 2	7207	H 4	T11	B 2	T125	F 9	T3	G 3	T8	F 7				



Function indicators: QE ... MIC-amp
YE ... Guitar in
QF ... digital echo

Testpads ... T1 to T18, T121, T122

POWER BOARD - CIRCUIT DIAGRAM (2) KARAOKE FEATURES (KEY & PITCH CONTROL), SOURCE SELECTOR, LINE IN & OUT

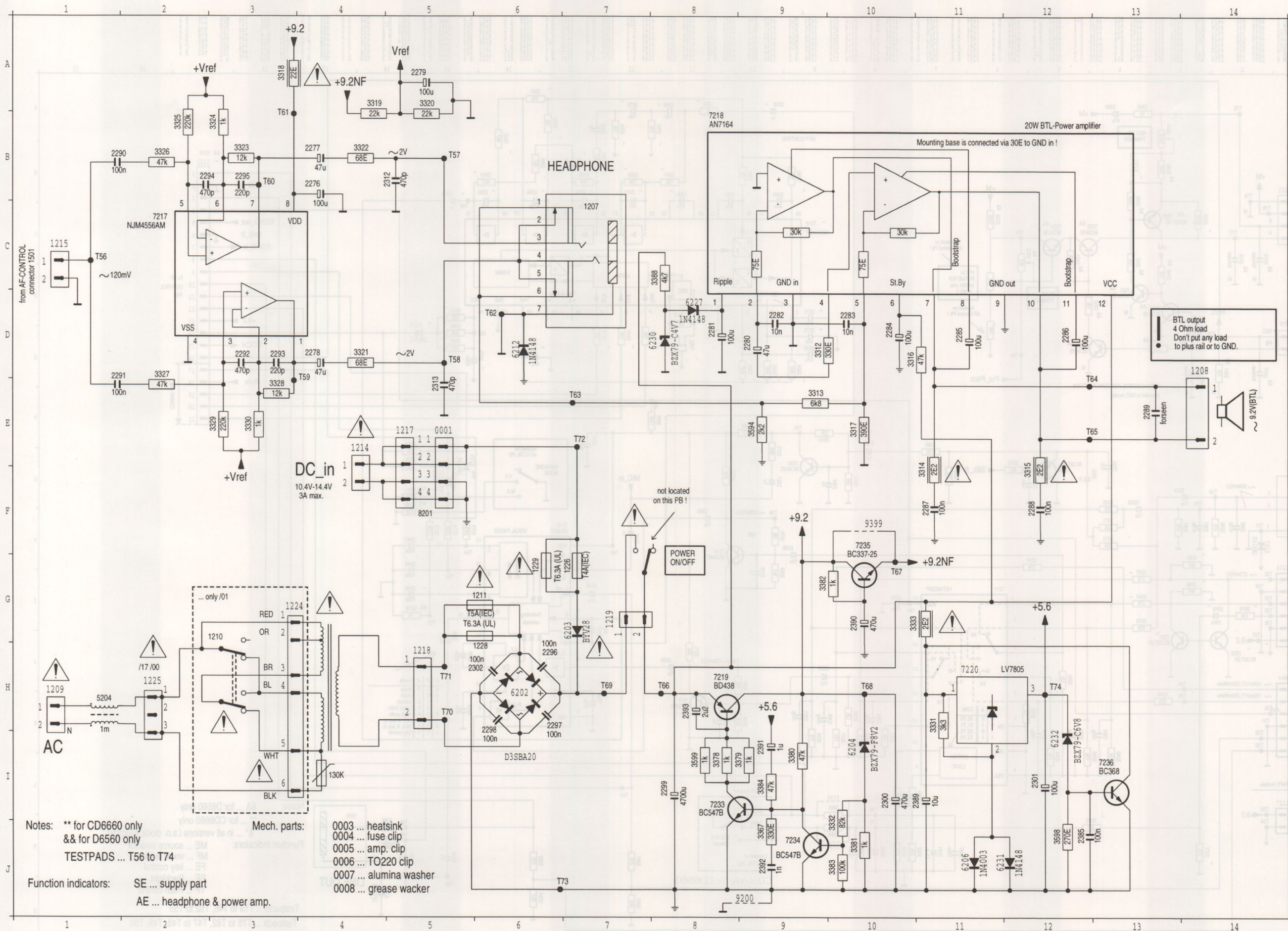


Notes: && ... for D6560 only
 ** ... for CD6660 only
 & ... in all versions i.s.o. diode a jumper

Function indicators:
 ME ... source selector
 MF ... vocal fader
 FE ... key control
 FF ... Backlight
 TF ... Pitch control

Testpads ... T19 to T46, T52 to T55
 Testpads ... T75 to T82, T47 to T48, T49, T50

POWER BOARD - CIRCUIT DIAGRAM (3) HEADPHONE, DC & AC SOCKET



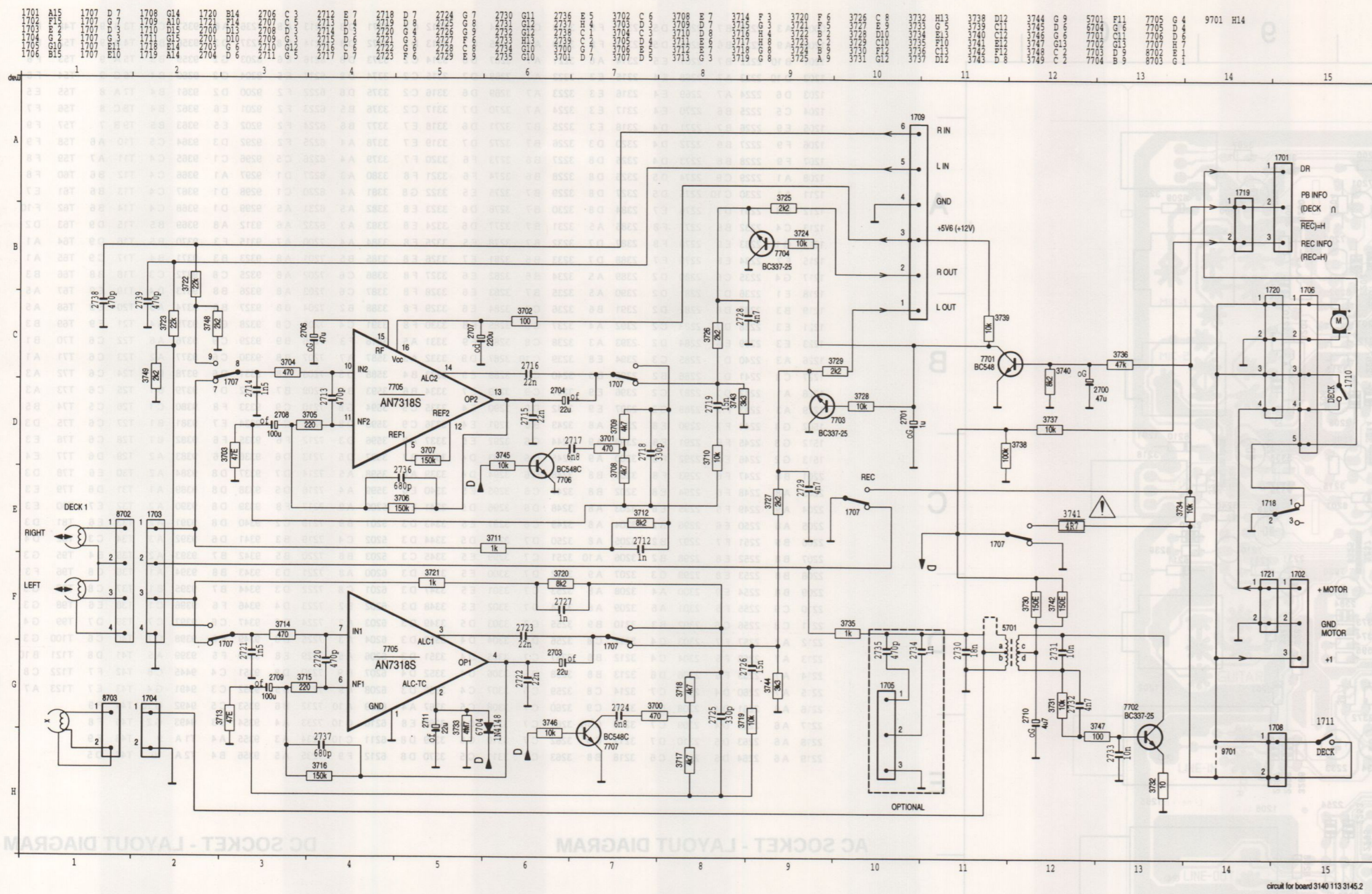
Notes: ** for CD6660 only
& for D6560 only
TESTPADS ... T56 to T74

Function indicators: SE ... supply part
AE ... headphone & power amp.

Mech. parts:
0003 ... heatsink
0004 ... fuse clip
0005 ... amp. clip
0006 ... TO220 clip
0007 ... alumina washer
0008 ... grease wacker

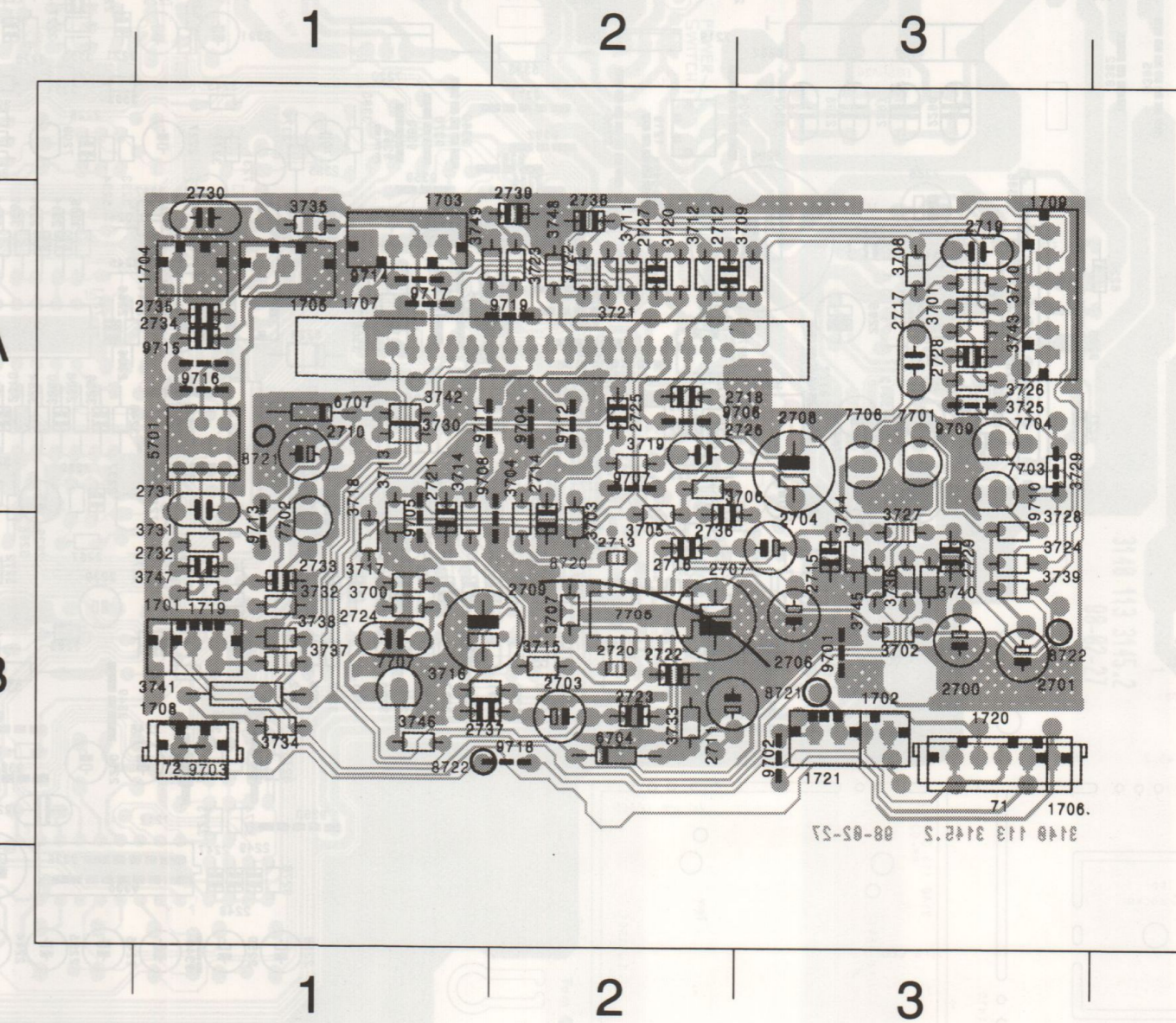
1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250					
T56	T57	T58	T59	T60	T61	T62	T63	T64	T65	T66	T67	T68	T69	T70	T71	T72	T73	T74	T75	T76	T77	T78	T79	T80	T81	T82	T83	T84	T85	T86	T87	T88	T89	T90	T91	T92	T93	T94	T95	T96	T97	T98	T99	T100	T101	T102	T103	T104	T105	T106	T107	T108	T109	T110

RECORDER BOARD - CIRCUIT DIAGRAM



RECORDER BOARD - LAYOUT DIAGRAM

71 B 3	1721 B 3	2714 B 2	2727 A 2	3700 B 1	3713 B 1	3726 A 3	3739 B 3	6707 A 1	9707 A 2
72 B 1	2700 B 3	2715 B 3	2728 A 3	3701 A 3	3714 B 1	3727 B 3	3740 B 3	7701 A 3	9708 B 2
1701 B 1	2701 B 3	2716 B 2	2729 B 3	3702 B 3	3715 B 2	3728 B 3	3741 B 1	7702 B 1	9709 A 3
1702 B 3	2703 B 2	2717 A 3	2730 A 1	3703 B 2	3716 B 1	3729 A 3	3742 A 1	7703 A 3	9710 A 3
1703 A 1	2704 B 3	2718 A 2	2731 A 1	3704 B 2	3717 B 1	3730 A 1	3743 A 3	7704 A 3	9711 A 1
1704 A 1	2706 B 3	2719 A 3	2732 B 1	3705 A 2	3718 B 1	3731 B 1	3744 B 3	7705 B 2	9712 A 2
1705 A 1	2707 B 2	2720 B 2	2733 B 1	3706 A 2	3719 A 2	3732 B 1	3745 B 3	7706 A 3	9713 B 1
1706 B 3	2708 A 3	2721 B 1	2734 A 1	3707 B 2	3720 A 2	3733 B 2	3746 B 1	7707 B 1	9714 A 1
1707 A 2	2709 B 1	2722 B 2	2735 A 1	3708 A 3	3721 A 2	3734 B 1	3747 B 1	9707 B 3	9715 A 1
1708 B 1	2710 A 1	2723 B 2	2736 A 2	3709 A 3	3722 A 2	3735 A 1	3748 A 2	9702 B 3	9716 A 1
1709 A 3	2711 B 2	2724 B 1	2737 B 1	3710 A 3	3723 A 2	3736 B 3	3749 A 2	9704 A 2	9717 A 1
1719 B 1	2712 A 2	2725 A 2	2738 A 2	3711 A 2	3724 B 3	3737 B 1	5701 A 1	9705 B 1	9718 B 2
1720 B 3	2713 B 2	2726 A 2	2739 A 2	3712 A 2	3725 A 3	3738 B 1	6704 B 2	9706 A 2	9719 A 2



CASSETTE ADJUSTMENT

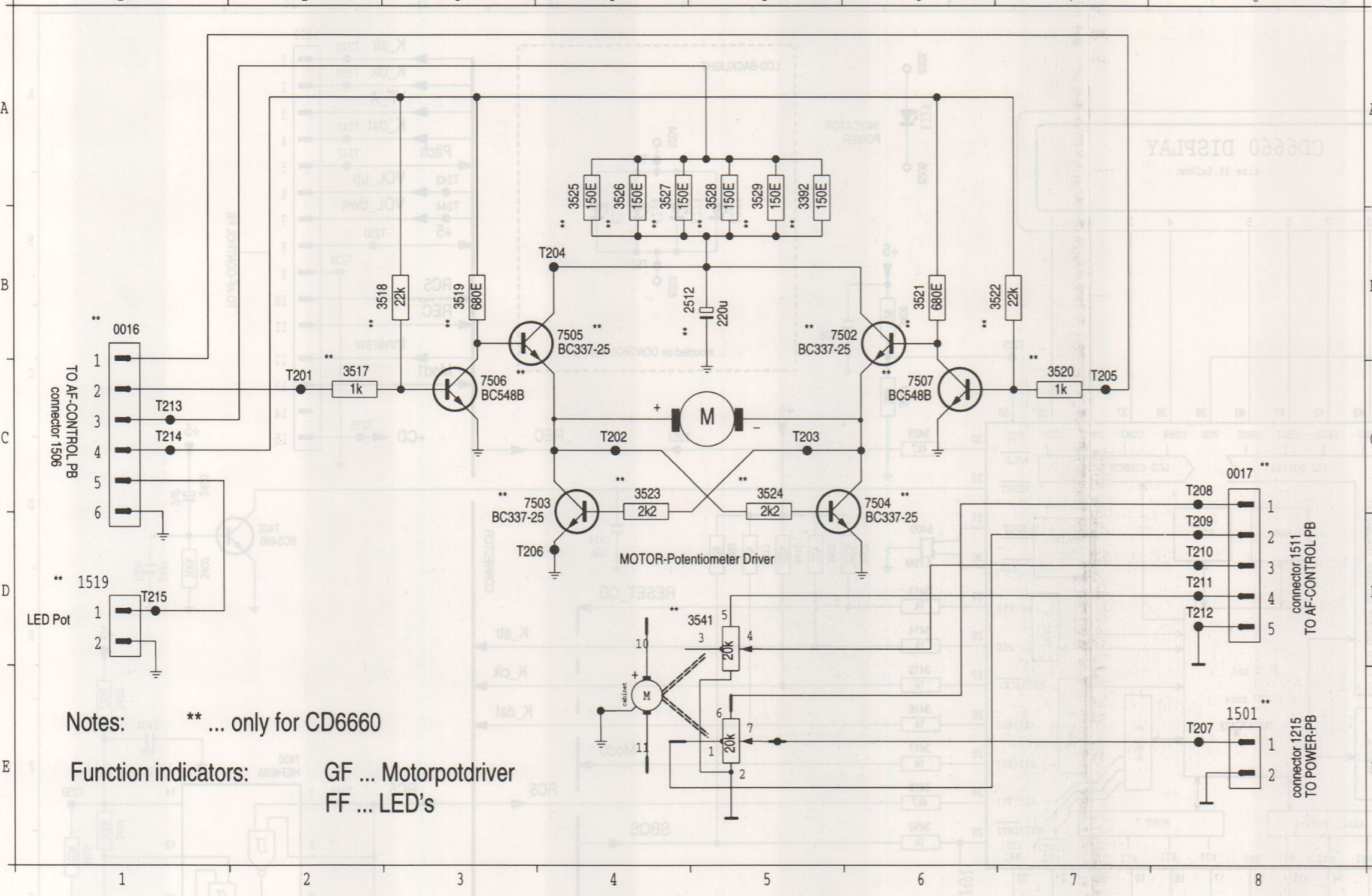
Adjustment	Cassette	SK	Deck 1	Measure on	Read on	Adjust with	Adjust to
Azimuth	10kHz SBC420*	Tape	Play	H/P Jack	mV meter	Left hand Screw R/P Head	max.
Motor Speed	3150kHz SBC420*	Tape	Play	H/P Jack	Wow and flutter meter	Preset in motor	**a

* SBC420 : 4822 397 30071

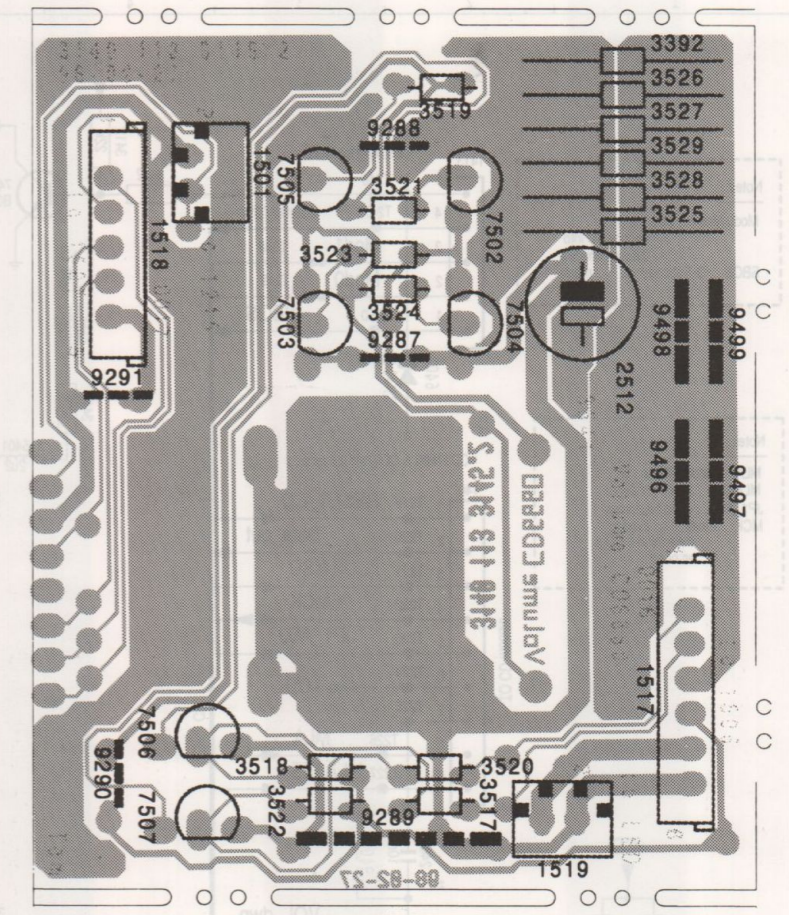
**a The maximum permissible speed deviation is ± 3%.
Moreover, the wow and flutter value can be read.

VOLUME BOARD - CIRCUIT DIAGRAM

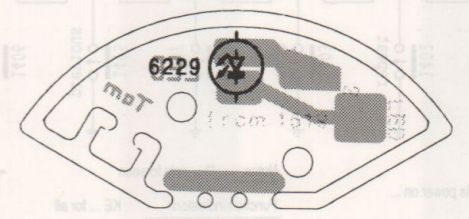
1501	E 8	3392	A 5	3519	B 3	3522	B 7	3525	A 4	3528	A 5	7502	B 6	7505	B 4	T201	C 2	T204	B 4	T207	E 8	T210	D 8	T213	C 1
1519	D 1	3517	C 2	3520	C 7	3523	C 4	3526	A 4	3529	A 5	7503	C 4	7506	C 3	T202	C 4	T205	C 7	T208	C 8	T211	D 8	T214	C 1
2512	B 5	3518	B 3	3521	B 6	3524	C 5	3527	A 4	3541	D 5	7504	C 6	7507	C 6	T203	C 5	T206	D 3	T209	D 8	T212	D 8	T215	D 1



VOLUME BOARD - LAYOUT DIAGRAM



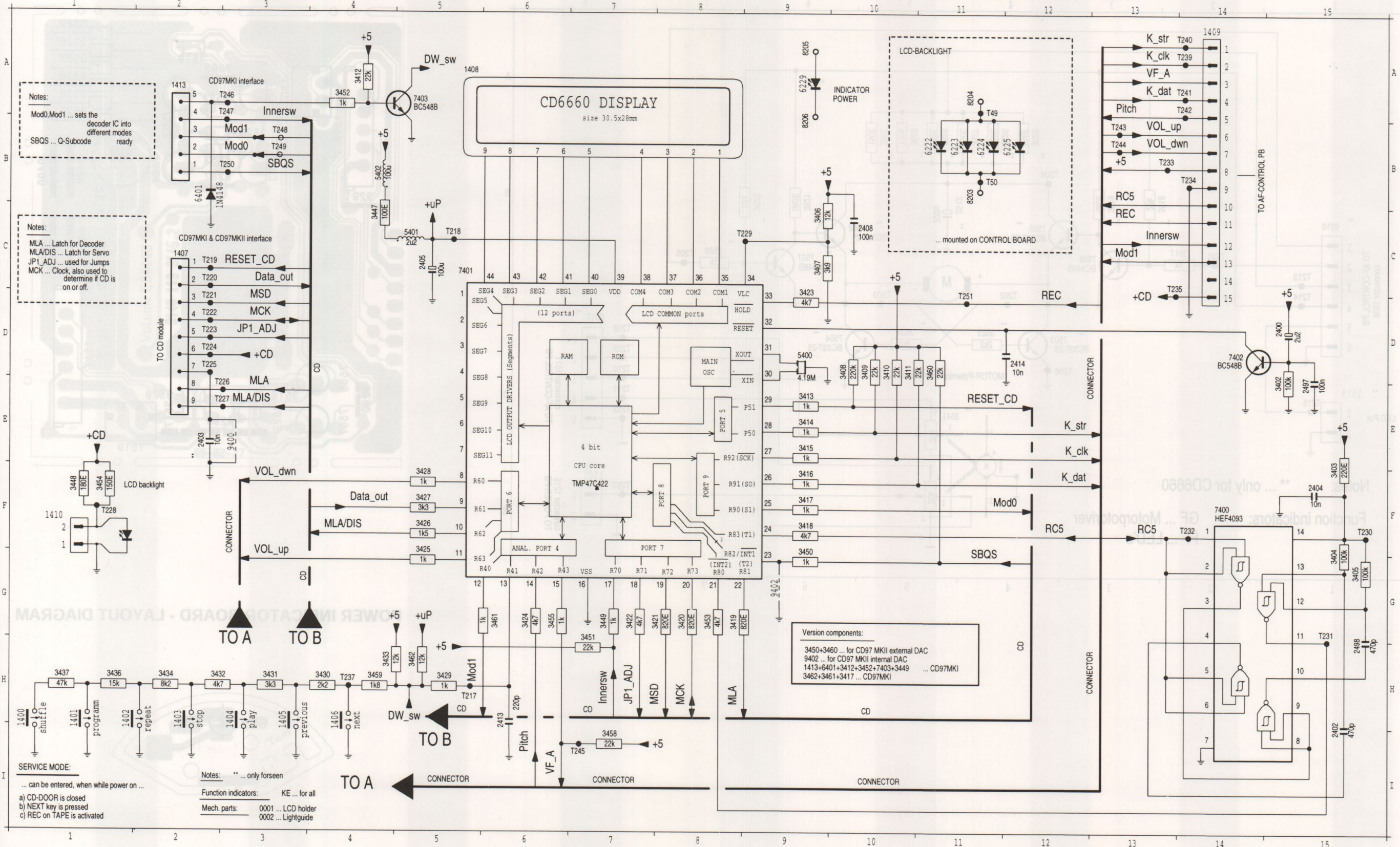
POWER INDICATOR BOARD - LAYOUT DIAGRAM



CD CONTROL BOARD - CIRCUIT DIAGRAM

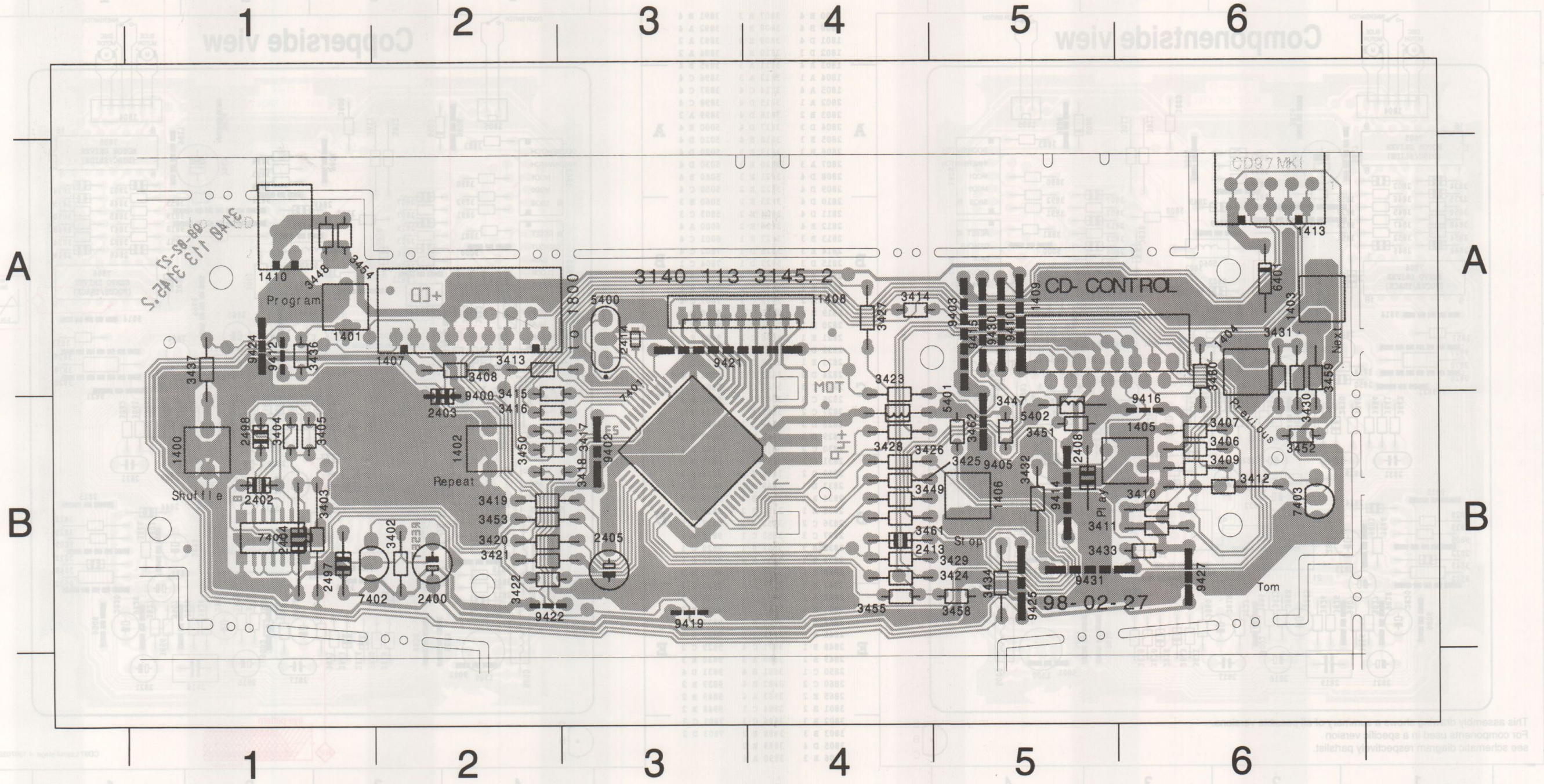
VOLUME BOARD - CIRCUIT DIAGRAM

1400	H	1	1406	H	4	2400	D15	2413	H	6	3404	F15	3410	D10	3416	U16	3422	U7	3423	U8	3424	U9	3434	U10	3444	U11	3450	U12	6220	U13	6221	U14	6222	U15	6223	U16	6224	U17	6225	U18	7401	U19	7402	U20	7403	U21	7404	U22	7405	U23	7406	U24	7407	U25	7408	U26	7409	U27	7410	U28	7411	U29	7412	U30	7413	U31	7414	U32	7415	U33	7416	U34	7417	U35	7418	U36	7419	U37	7420	U38	7421	U39	7422	U40	7423	U41	7424	U42	7425	U43	7426	U44	7427	U45	7428	U46	7429	U47	7430	U48	7431	U49	7432	U50	7433	U51	7434	U52	7435	U53	7436	U54	7437	U55	7438	U56	7439	U57	7440	U58	7441	U59	7442	U60	7443	U61	7444	U62	7445	U63	7446	U64	7447	U65	7448	U66	7449	U67	7450	U68	7451	U69	7452	U70	7453	U71	7454	U72	7455	U73	7456	U74	7457	U75	7458	U76	7459	U77	7460	U78	7461	U79	7462	U80	7463	U81	7464	U82	7465	U83	7466	U84	7467	U85	7468	U86	7469	U87	7470	U88	7471	U89	7472	U90	7473	U91	7474	U92	7475	U93	7476	U94	7477	U95	7478	U96	7479	U97	7480	U98	7481	U99	7482	U100
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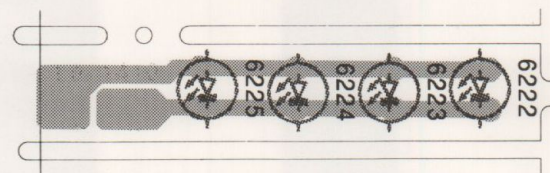


CD CONTROL BOARD - LAYOUT DIAGRAM

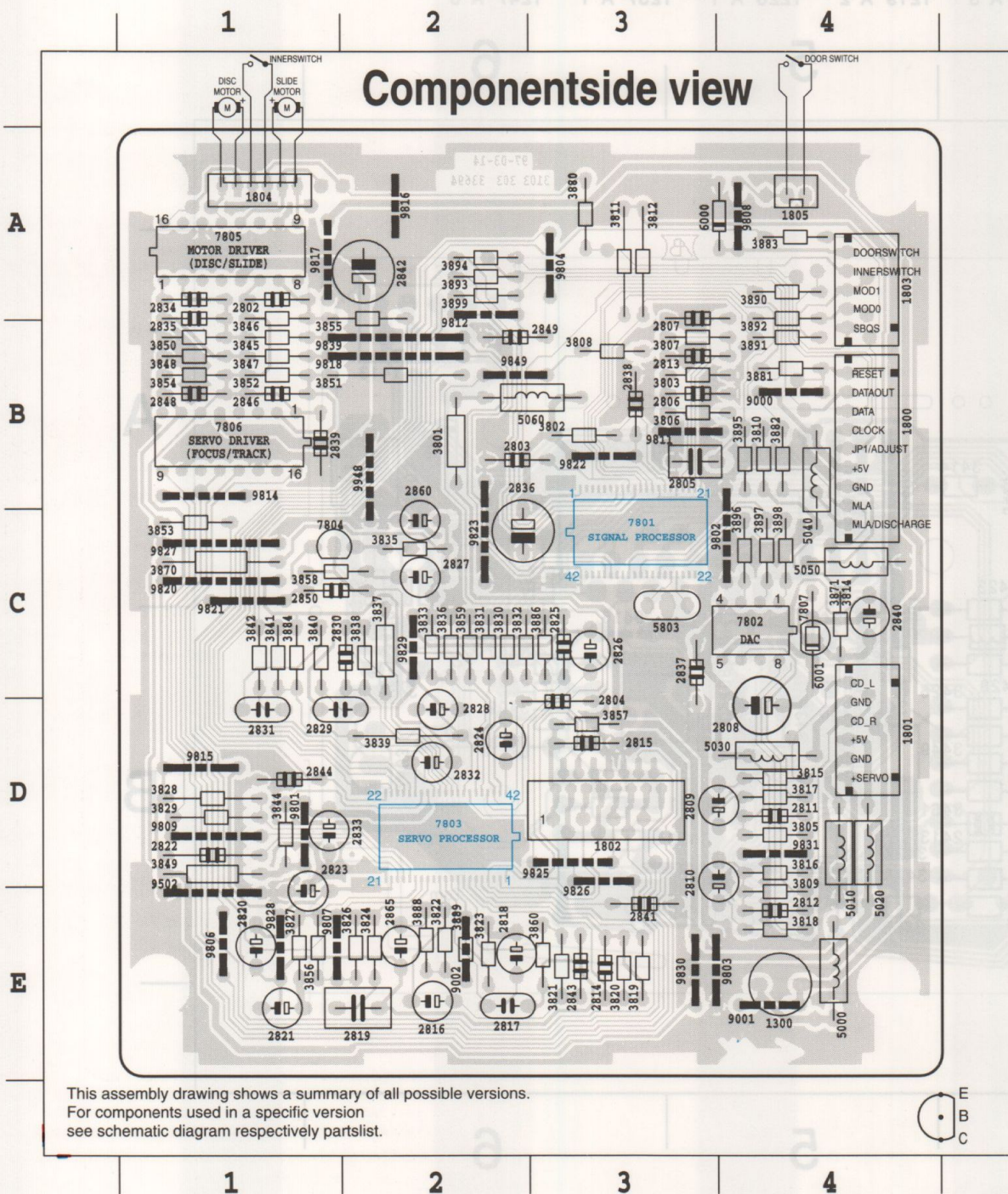
1400 B 1	1409 A 5	2413 B 4	3407 B 6	3416 B 2	3425 B 4	3434 B 5	3453 B 2	5401 B 4	9403 A 5	9422 B 2	T220 A 2	T229 B 6	T239 B 6	T248 A 6
1401 A 1	1410 A 1	2414 A 3	3408 A 2	3417 B 2	3426 B 4	3436 A 1	3454 A 1	5402 B 5	9405 B 5	9424 A 1	T221 A 2	T230 B 1	T240 B 6	T249 A 6
1402 B 2	1413 A 6	2497 B 1	3409 B 6	3418 B 2	3427 A 4	3437 A 1	3455 B 4	6401 A 6	9410 A 5	9425 B 5	T222 A 2	T231 B 1	T241 B 6	T250 A 6
1403 A 6	2400 B 2	2498 B 1	3410 B 6	3419 B 2	3428 B 4	3447 B 5	3458 B 5	7400 B 1	9412 A 1	9427 B 6	T223 A 2	T232 B 3	T242 A 6	T251 A 4
1404 A 6	2402 B 1	3402 B 2	3411 B 6	3420 B 2	3429 B 4	3448 A 1	3459 A 6	7401 B 3	9414 B 5	9430 A 5	T224 A 2	T233 B 6	T243 B 5	
1405 B 6	2403 B 2	3403 B 1	3412 B 6	3421 B 2	3430 A 6	3449 B 4	3460 A 6	7402 B 1	9415 A 5	9431 B 5	T225 A 2	T234 A 5	T244 A 5	
1406 B 5	2404 B 1	3404 B 1	3413 A 2	3422 B 2	3431 A 6	3450 B 2	3461 B 4	7403 B 6	9416 B 6	T217 B 4	T226 A 1	T235 A 4	T245 B 4	
1407 A 2	2405 B 3	3405 B 1	3414 A 4	3423 B 4	3432 B 5	3451 B 5	3462 B 5	9400 B 2	9419 B 3	T218 B 4	T227 A 1	T236 A 6	T246 A 6	
1408 A 3	2408 B 5	3406 B 6	3415 B 2	3424 B 4	3433 B 6	3452 B 6	5400 A 3	9402 B 3	9421 A 3	T219 A 2	T228 A 1	T237 A 1	T247 A 6	



LAMP'S BOARD - LAYOUT DIAGRAM

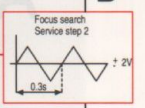
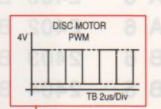
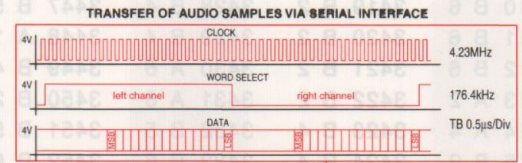
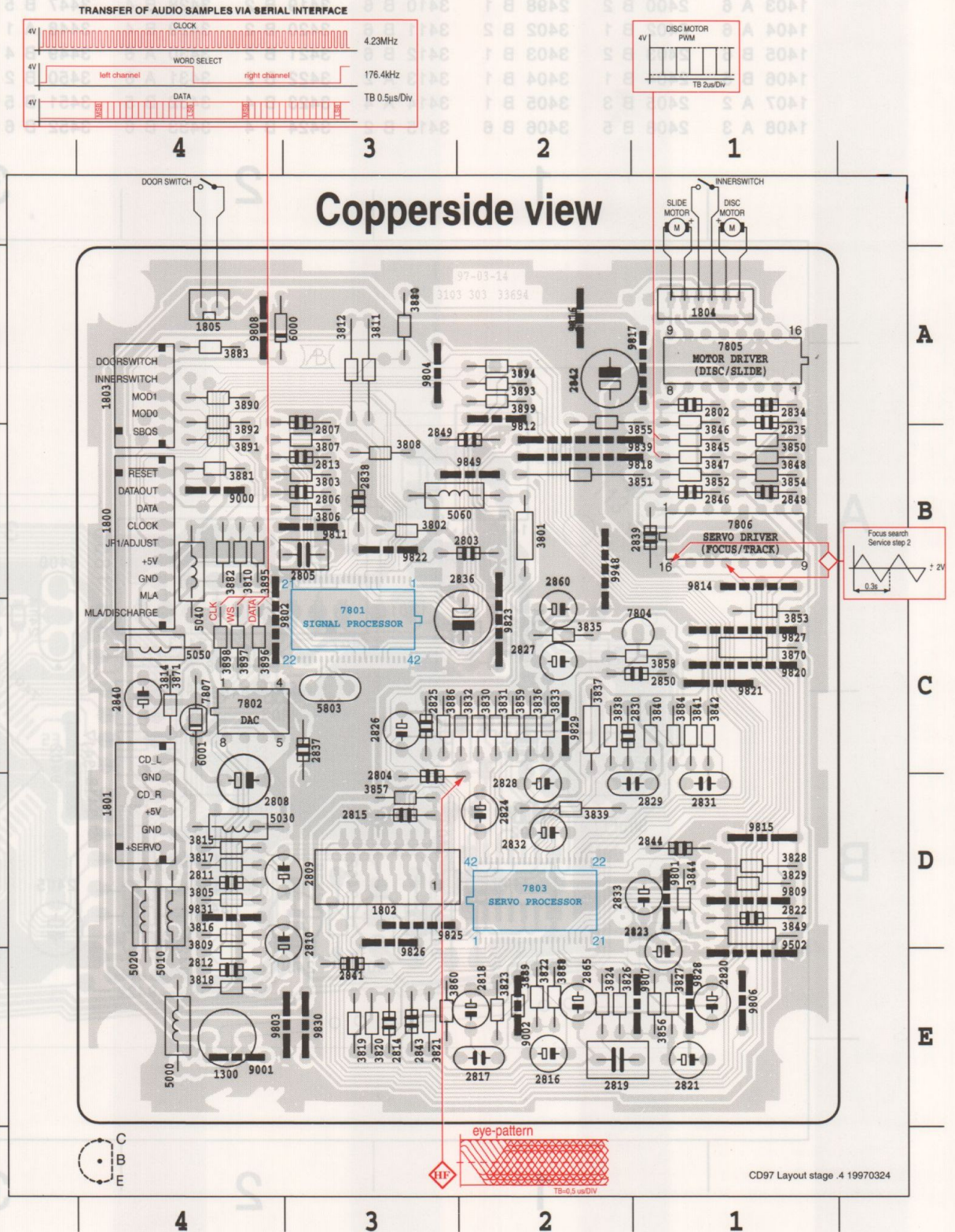


CD 97 (MK I) - LAYOUT DIAGRAM



1300 E 4	3807 B 3	3891 B 4
1800 B 4	3808 B 3	3892 A 4
1801 D 4	3809 E 4	3893 A 2
1802 D 3	3810 B 4	3894 A 2
1803 A 4	3811 A 3	3895 B 4
1804 A 1	3812 A 3	3896 C 4
1805 A 4	3814 C 4	3897 C 4
2802 A 1	3815 D 4	3898 C 4
2803 B 2	3816 D 4	3899 A 2
2804 D 3	3817 D 4	5000 E 4
2805 B 3	3818 E 4	5010 D 4
2806 B 3	3819 E 3	5020 D 4
2807 A 3	3820 E 3	5030 D 4
2808 D 4	3821 E 3	5040 B 4
2809 D 4	3822 E 2	5050 C 4
2810 D 4	3823 E 2	5060 B 3
2811 D 4	3824 E 2	5803 C 3
2812 E 4	3826 E 2	6000 A 4
2813 B 3	3827 E 1	6001 C 4
2814 E 3	3828 D 1	7802 C 4
2815 D 3	3829 D 1	7804 C 1
2816 E 2	3830 C 2	7805 A 1
2817 E 2	3831 C 2	7806 B 1
2818 E 2	3832 C 2	7807 C 4
2819 E 2	3833 C 2	9000 B 4
2820 E 1	3835 C 2	9001 E 4
2821 E 1	3836 C 2	9002 E 2
2822 D 1	3837 C 2	9502 E 1
2823 E 1	3838 C 2	9801 D 1
2824 D 2	3839 D 2	9802 C 4
2825 C 3	3840 C 1	9803 E 3
2826 C 3	3841 C 1	9804 A 3
2827 C 2	3842 C 1	9806 E 1
2828 D 2	3844 D 1	9807 E 1
2829 D 1	3845 B 1	9808 A 4
2830 C 2	3846 A 1	9809 D 1
2831 D 1	3847 B 1	9811 B 3
2832 D 2	3848 B 1	9812 A 2
2833 D 1	3849 D 1	9814 B 1
2834 A 1	3850 B 1	9815 D 1
2835 A 1	3851 B 2	9816 A 2
2836 C 2	3852 B 1	9817 A 1
2837 C 3	3853 C 1	9818 B 2
2838 B 3	3854 B 1	9820 C 1
2839 B 1	3855 A 2	9821 C 1
2840 C 4	3856 E 1	9822 B 3
2841 E 3	3857 D 3	9823 C 2
2842 A 2	3858 C 1	9825 D 3
2843 E 3	3859 C 2	9826 D 3
2844 D 1	3860 E 3	9827 C 1
2846 B 1	3870 C 1	9828 E 1
2848 B 1	3871 C 4	9829 C 2
2849 B 2	3880 A 3	9830 E 3
2850 C 1	3881 B 4	9831 D 4
2860 C 2	3882 B 4	9839 B 2
2865 E 2	3883 A 4	9849 B 2
3801 B 2	3884 C 1	9948 B 2
3802 B 3	3886 C 3	7801 C 3
3803 B 3	3888 E 2	7803 D 2
3805 D 4	3889 E 2	
3806 B 3	3890 A 4	

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

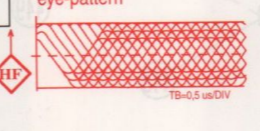
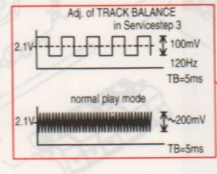
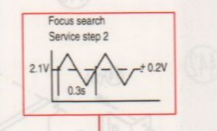
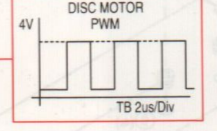
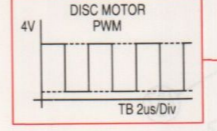
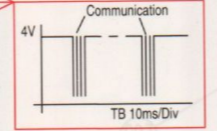
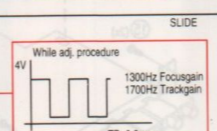
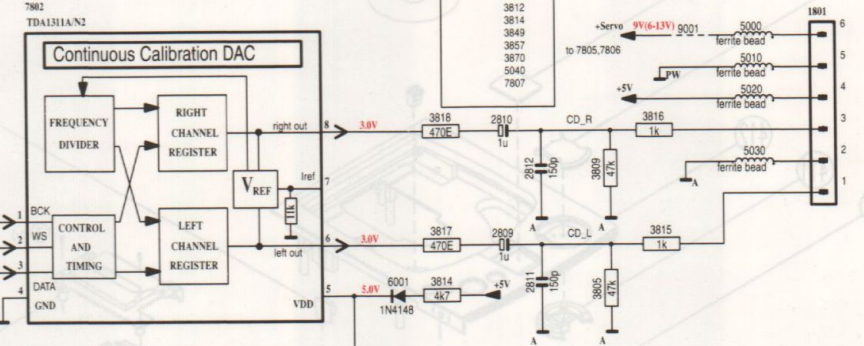
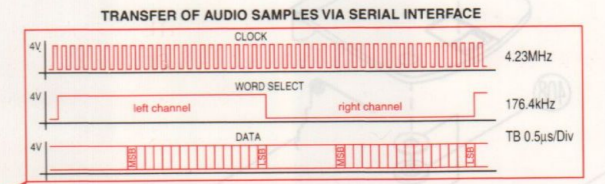
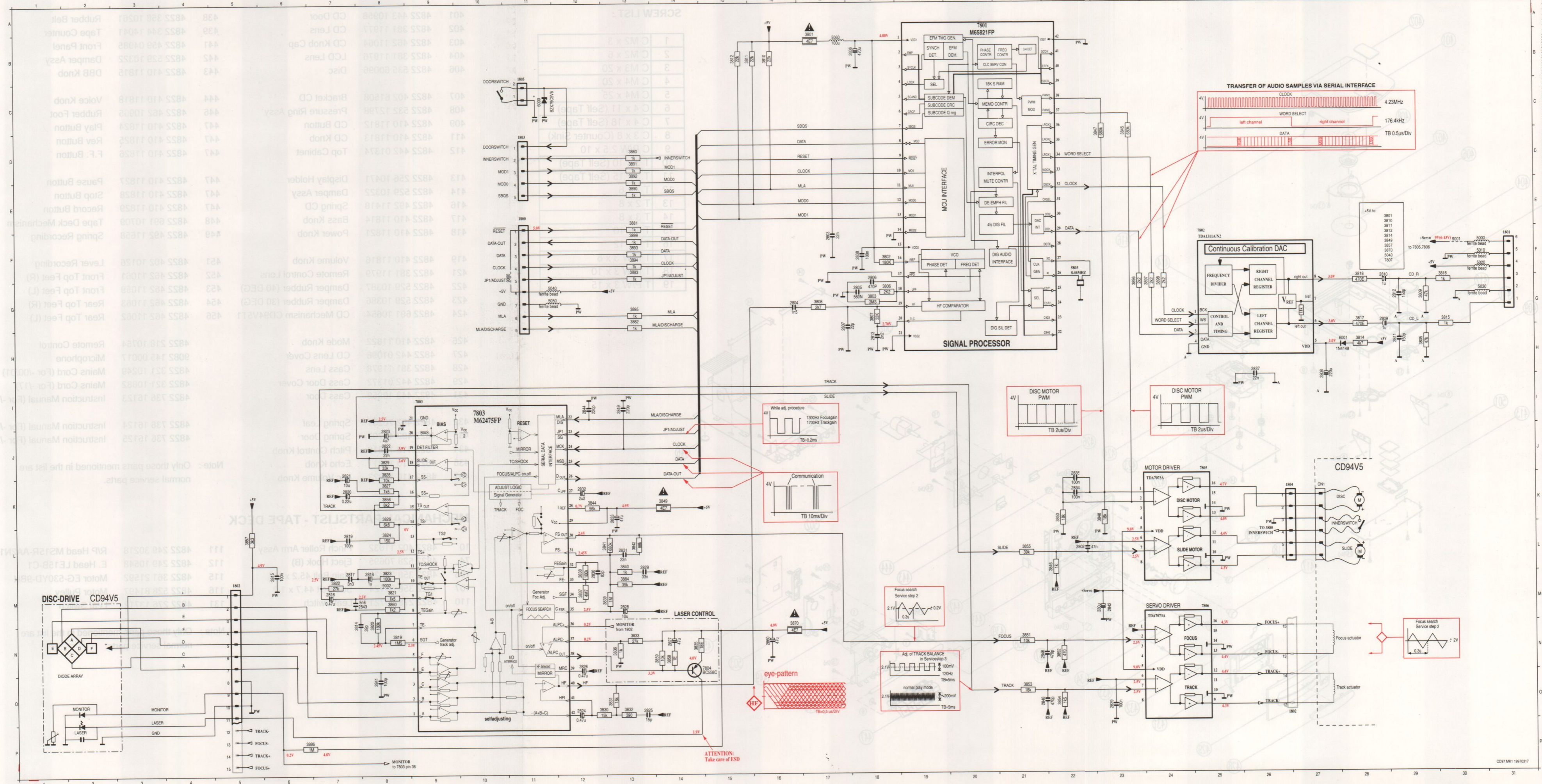


CD97 Layout stage -4 19970324

CD97(MK I) - CIRCUIT DIAGRAM

MECHANICAL PARTS LIST - CABINET

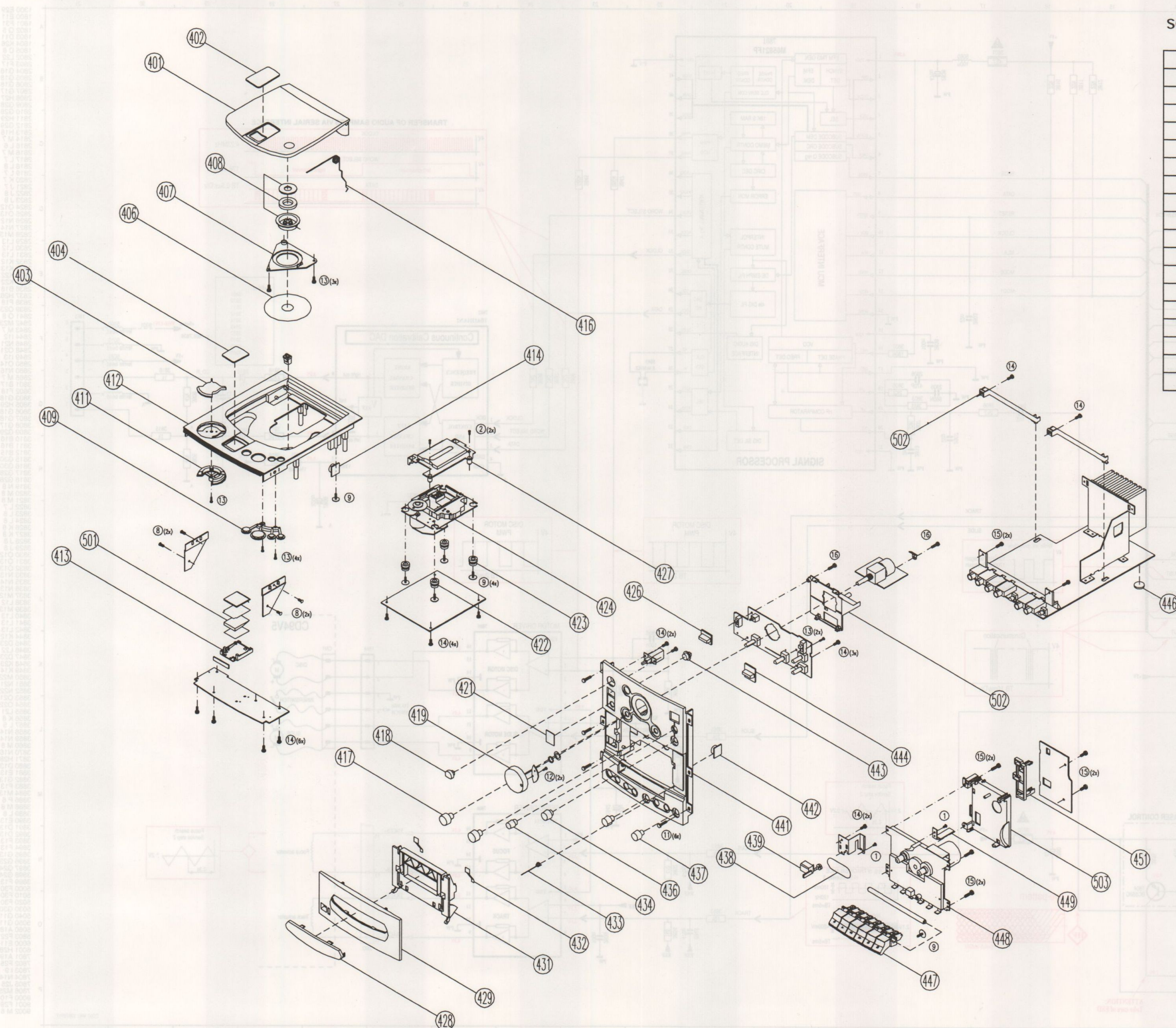
EXPLODED VIEW DIAGRAM - CABINET



ATTENTION: Take care of ESD

1300 E29
 1800 E11
 1801 F31
 1802 Q 5
 1803 D 11
 1804 K26
 1805 D 8
 2802 L22
 2803 F17
 2804 G16
 2805 G18
 2806 G18
 2807 G17
 2808 H27
 2809 G28
 2810 G28
 2811 H29
 2812 G29
 2813 H18
 2814 M 7
 2815 L 6
 2816 L 7
 2817 L 7
 2818 L 8
 2819 L 7
 2820 K 7
 2821 J 7
 2822 J 8
 2823 L 8
 2824 O12
 2825 O13
 2826 N12
 2827 N14
 2828 M13
 2829 L18
 2830 L12
 2831 L13
 2832 M12
 2833 K13
 2834 K22
 2835 K22
 2836 B18
 2837 H28
 2838 F18
 2839 Q23
 2841 O 8
 2842 M23
 2843 M 7
 2844 H12
 2845 N21
 2846 O21
 2849 H13
 2850 O14
 2860 N16
 2865 M 7
 2867 G18
 2868 G18
 2869 G29
 2870 G18
 2871 B16
 2872 B15
 2873 G30
 2874 G30
 2875 G28
 2876 M 8
 2877 L 8
 2878 L 8
 2879 J 8
 2880 O12
 2881 O13
 2882 O13
 2883 N13
 2884 N14
 2885 M12
 2886 L12
 2887 M13
 2888 L13
 2889 L13
 2890 K12
 2891 D23
 2892 K23
 2893 K14
 2894 M22
 2895 N21
 2896 N22
 2897 O21
 2898 O22
 2899 L21
 2900 K 8
 2901 L 5
 2902 N14
 2903 N14
 2904 M 8
 2905 N16
 2906 H28
 2907 D13
 2908 E13
 2909 G13
 2910 F13
 2911 F13
 2912 G24
 2913 G24
 2914 F13
 2915 F30
 2916 F30
 2917 G30
 2918 G30
 2919 G11
 2920 E11
 2921 H28
 2922 A19
 2923 F25
 2924 I 9
 2925 N14
 2926 J25
 2927 M25
 2928 F10
 2929 F29
 2930 M 8

EXPLODED VIEW DIAGRAM - CABINET



SCREW LIST :

1	C M2 x 3
2	C M2 x 6
3	C M3 x 20
4	C M4 x 20
5	C M4 x 25
6	C 4 x 11 (Self Tape)
7	C 4 x 18 (Self Tape)
8	C 3 x 8 (Counter Sink)
9	C P/W 2.5 x 10
10	T 3 x 10 (Self Tape)
11	T 3 x 15 (Self Tape)
12	T 2 x 6
13	T 2 x 8
14	T 3 x 8
15	T 3 x 10
16	T 3 x 12
17	T P/W 3 x 6
18	T P/W 3 x 10
19	T P/W 3 x 15

MECHANICAL PARTSLIST - CABINET

401	4822 443 10958	CD Door	438	4822 358 10261	Rubber Belt
402	4822 381 11977	CD Lens	439	4822 344 14041	Tape Counter
403	4822 462 11064	CD Knob Cap	441	4822 459 04985	Front Panel
404	4822 381 11976	LCD Lens	442	4822 529 10322	Damper Assy
406	4822 535 60096	Disc	443	4822 410 11815	DBB Knob
407	4822 402 61508	Bracket CD	444	4822 410 11818	Voice Knob
408	4822 532 12798	Pressure Ring Assy	446	4822 462 10965	Rubber Foot
409	4822 410 11812	CD Button	447	4822 410 11824	Play Button
411	4822 410 11813	CD Knob	447	4822 410 11825	Rev Button
412	4822 442 01374	Top Cabinet	447	4822 410 11826	F.F. Button
413	4822 256 10471	Display Holder	447	4822 410 11827	Pause Button
414	4822 529 10322	Damper Assy	447	4822 410 11828	Stop Button
416	4822 492 11418	Spring CD	447	4822 410 11829	Record Button
417	4822 410 11814	Bass Knob	448	4822 691 10709	Tape Deck Mechanism
418	4822 410 11821	Power Knob	449	4822 492 11658	Spring Recording
419	4822 410 11816	Volume Knob	451	4822 402 10126	Lever Recording
421	4822 381 11979	Remote Control Lens	452	4822 462 11061	Front Top Feet (R)
422	4822 529 10387	Damper Rubber (40 DEG)	453	4822 462 11059	Front Top Feet (L)
423	4822 529 10386	Damper Rubber (30 DEG)	454	4822 462 11063	Rear Top Feet (R)
424	4822 691 10654	CD Mechanism CD94V5T1	456	4822 462 11062	Rear Top Feet (L)
426	4822 410 11822	Mode Knob	4822 218 10754	Remote Control	
427	4822 442 01096	CD Lens Cover	9082 145 00017	Microphone	
428	4822 381 11978	Cass Lens	4822 321 10249	Mains Cord (For -/00/01)	
429	4822 442 01372	Cass Door Cover	4822 321 10882	Mains Cord (For -/17)	
431	4822 443 10959	Cass Door	4822 736 16123	Instruction Manual (For -/00)	
432	4822 492 70231	Spring Leaf	4822 736 16124	Instruction Manual (For -/01)	
433	4822 492 42709	Spring Door	4822 736 16125	Instruction Manual (For -/17)	
434	4822 410 11819	Pitch Control Knob			
436	4822 410 11817	Echo Knob			
437	4822 410 11823	Mic Volume Knob			

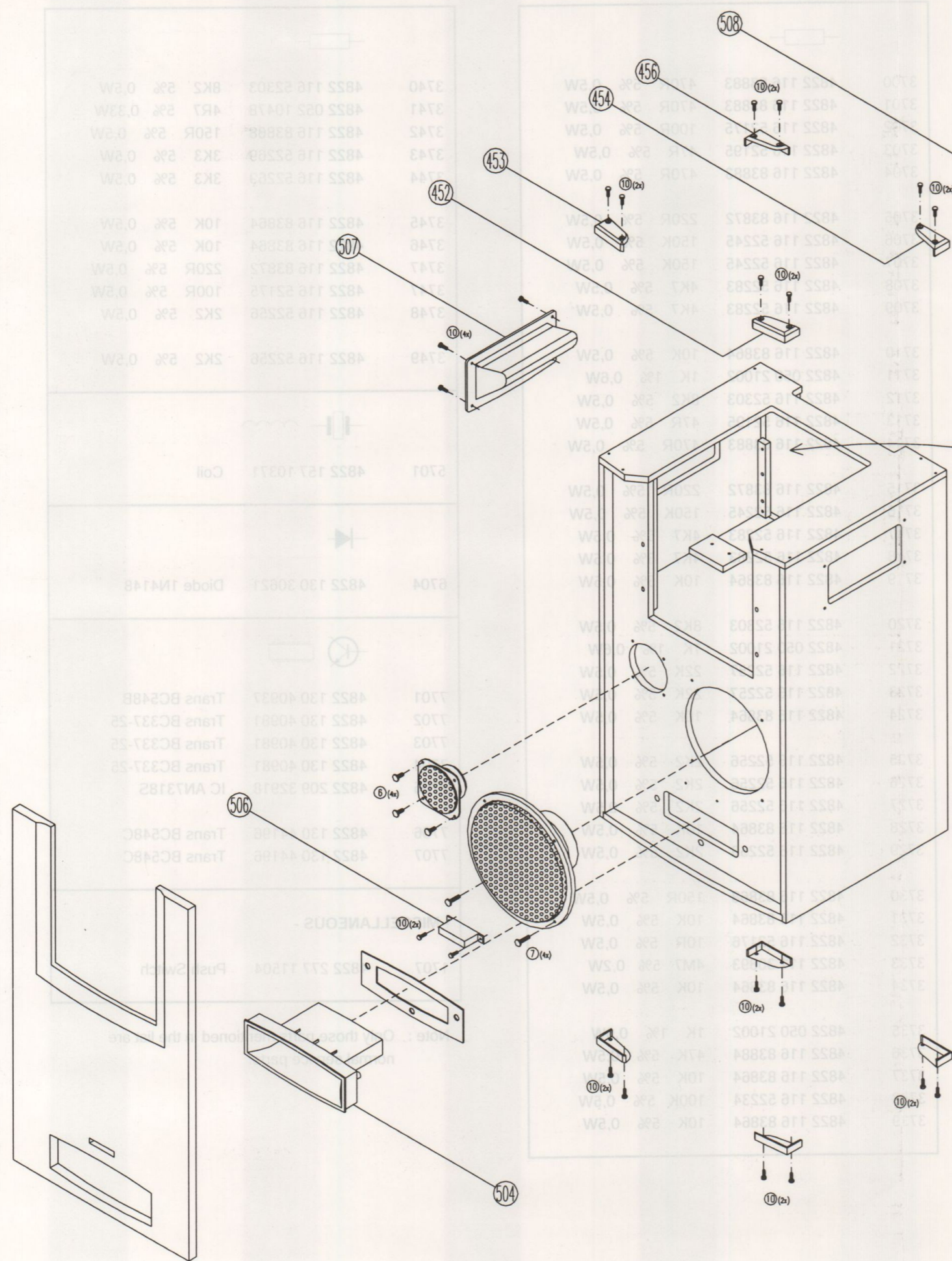
Note : Only those parts mentioned in the list are normal service parts.

MECHANICAL PARTSLIST - TAPE DECK

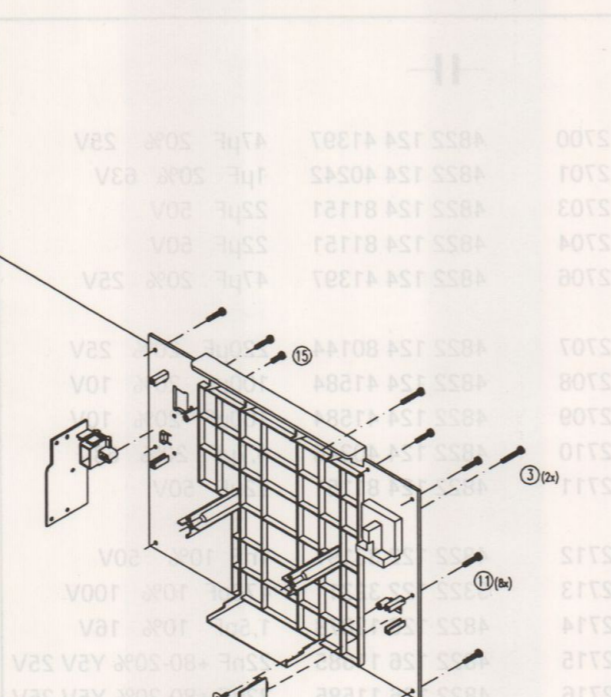
10	4822 402 11032	Pinch Roller Arm Assy	111	4822 249 30218	R/P Head MS15R-AA2N1
74	4822 528 70695	Eject Hook (B)	112	4822 249 10548	E. Head LE15B-C1
106	4822 358 31325	Main Belt 45.2 x 1.2	115	4822 361 21592	Motor EG-530YD-9BH
107	4822 358 31124	Sub Belt 44.7 x 1.2	116	4822 528 81497	Motor Pulley
110	4822 278 90721	Leaf Switch	131	4822 276 13712	Leaf Switch

Note : Only those parts mentioned in the list are normal service parts.

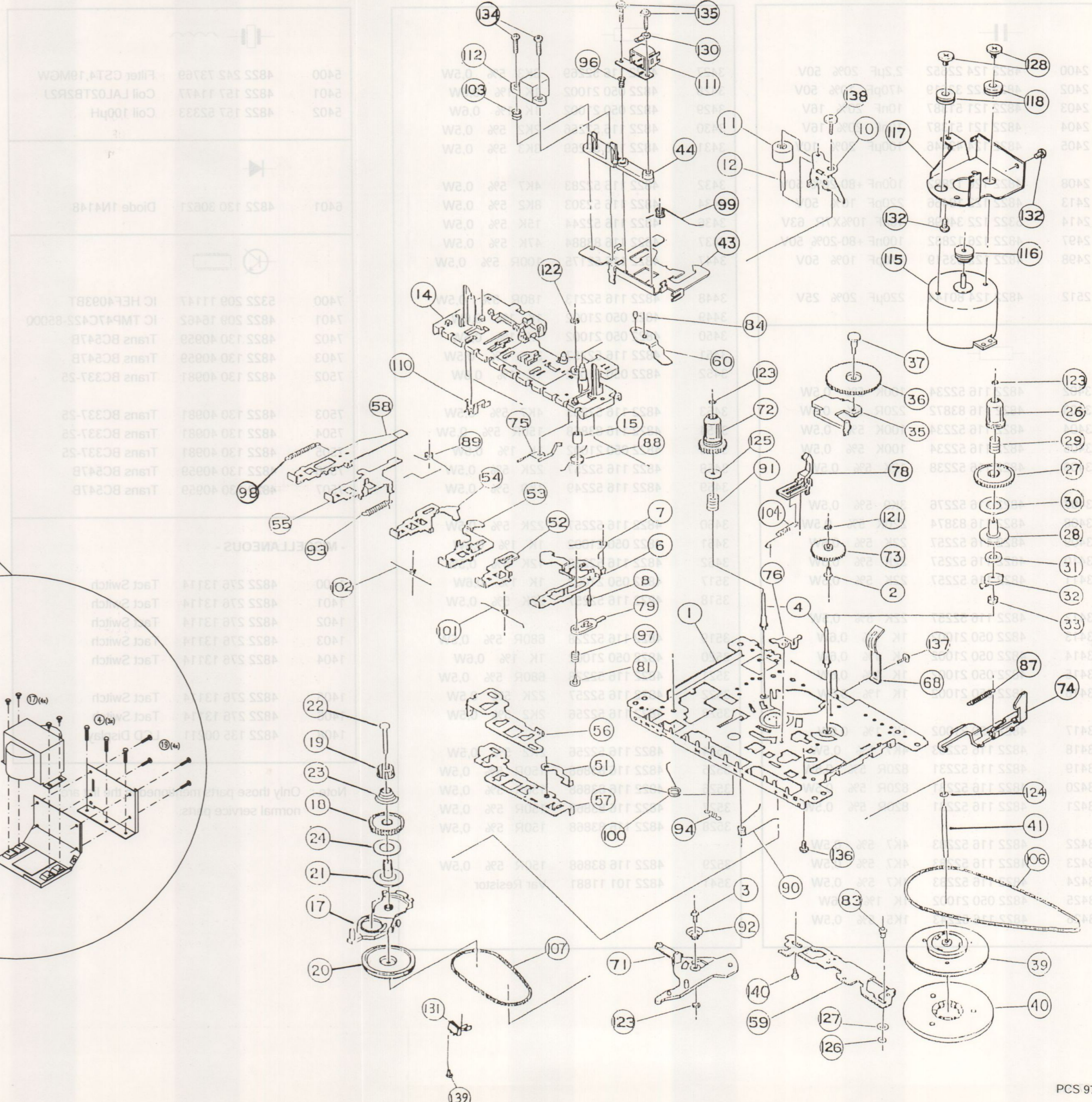
EXPLODED VIEW DIAGRAM - SPEAKER BOX



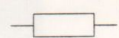
RECORDER BOARD



EXPLODED VIEW DIAGRAM - TAPE DECK



AF CONTROL & POWER BOARD



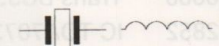
3539	4822 101 11882	VR 20K
3542	4822 050 21002	1K 1% 0,6W
3544	4822 116 52257	22K 5% 0,5W
3545	4822 116 83872	220R 5% 0,5W
3546	4822 116 83864	10K 5% 0,5W

3547	4822 101 11883	VR 20K
3552	4822 116 52219	330R 5% 0,5W
3554	4822 116 83882	39K 5% 0,5W
3555	4822 116 52234	100K 5% 0,5W
3556	4822 116 52256	2K2 5% 0,5W

3558	4822 116 52234	100K 5% 0,5W
3559	4822 116 52234	100K 5% 0,5W
3561	4822 116 83864	10K 5% 0,5W
3587	4822 116 52264	27K 5% 0,5W
3591	4822 116 52276	3K9 5% 0,5W

3592	4822 116 83961	6K8 5%
3593	4822 116 81753	4R7 5% 0,5W
3594	4822 116 52256	2K2 5% 0,5W
3595	4822 116 83883	470R 5% 0,5W
3597	4822 116 52191	33R 5% 0,5W

3598	4822 116 83876	270R 5% 0,5W
3599	4822 050 21002	1K 1% 0,6W



5200	4822 157 53473	Coil 1000 μ H 10%
5201	4822 157 53473	Coil 1000 μ H 10%
5202	4822 242 81357	Filter
5203	4822 157 11517	Coil 10 μ H 5%
5204	4822 157 71285	Coil 400 μ H 30%



6200	4822 130 30621	Diode 1N4148
6201	4822 130 30621	Diode 1N4148
6202	4822 130 82079	Diode D3SBA20
6203	4822 130 80791	Diode BYV28-200/20
6204	4822 130 34382	Diode BZX79-B8V2

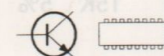
6206	4822 130 31878	Diode 1N4003G
6207	4822 130 30621	Diode 1N4148
6208	4822 130 30621	Diode 1N4148
6209	4822 130 30621	Diode 1N4148
6210	4822 130 30621	Diode 1N4148



6211	4822 130 30621	Diode 1N4148
6212	4822 130 30621	Diode 1N4148
6222	4822 130 10418	LED LTL16KGE
6223	4822 130 10418	LED LTL16KGE
6224	4822 130 10418	LED LTL16KGE

6225	4822 130 10418	LED LTL16KGE
6226	4822 130 31878	Diode 1N4003G
6227	4822 130 30621	Diode 1N4148
6229	4822 130 11239	LED LTL-2211AT
6230	4822 130 34174	Diode BZX79-B4V7

6231	4822 130 30621	Diode 1N4148
6232	4822 130 34278	Diode BZX79-B6V8
6500	4822 130 31878	Diode 1N4003G



7200	4822 209 90407	IC M65844P
7201	4822 130 61755	Trans BC560C
7202	4822 130 41096	Trans BC550C
7203	4822 130 40959	Trans BC547B
7204	4822 130 40959	Trans BC547B

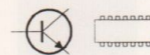
7205	4822 130 61755	Trans BC560C
7206	4822 130 41096	Trans BC550C
7207	4822 130 40959	Trans BC547B
7208	4822 130 40959	Trans BC547B
7209	4822 130 41096	Trans BC550C

7210	4822 130 41096	Trans BC550C
7211	4822 209 10263	IC HEF4052BP
7212	4822 209 90408	IC BA3837
7213	4822 130 41096	Trans BC550C
7214	4822 130 41096	Trans BC550C

7216	4822 209 90409	IC M65840FP
7217	4822 209 31378	IC NJM4556MB
7218	4822 209 90411	IC AN7164
7219	4822 130 40995	Trans BD438
7220	4822 209 80817	IC L7805CV

7229	4822 130 40981	Trans BC337-25
7230	4822 130 41096	Trans BC550C
7231	4822 130 40981	Trans BC337-25
7232	4822 130 40981	Trans BC337-25
7233	4822 130 40959	Trans BC547B

AF CONTROL & POWER BOARD



7234	4822 130 40959	Trans BC547B
7235	4822 130 40981	Trans BC337-25
7236	5322 130 44647	Trans BC368
7500	4822 130 41096	Trans BC550C
7501	4822 130 41096	Trans BC550C

7513	4822 130 10165	Sensor GP1U28XP
7514	4822 130 11241	Trans BS107
7517	4822 130 40981	Trans BC337-25

- MISCELLANEOUS -

1000	4822 240 10288	Loudspeaker 6.5" 30W
1001	4822 240 10289	Loudspeaker 2.5" 30W
1003	⚠ 4822 146 10983	Transformer (For -/00)
1003	⚠ 4822 146 10984	Transformer (For -/01)
1003	⚠ 4822 146 10985	Transformer (For -/17)

1006	4822 276 13963	CD Door Switch
1008	4822 276 13963	CD Door Switch
1200	4822 265 11288	Mic Socket
1201	4822 265 11288	Mic Socket
1202	4822 265 11288	Line Socket

1205	4822 265 11289	Line Socket
1206	4822 265 11289	Line Socket
1207	4822 265 11291	Headphone Socket
1209	4822 265 31015	Mains Socket (For -/00/01)
1209	4822 265 31016	Mains Socket (For -/17)

1210	⚠ 4822 272 10315	Voltage Selector (For -/01)
1211	⚠ 4822 253 30474	Fuse 5A
1214	4822 265 11292	DC Socket
1226	⚠ 4822 070 34002	Fuse 4A (For -/00/01)
1226	⚠ 4822 252 51123	Fuse 6.3A (For -/17)

1500	4822 276 12648	Push Switch
1508	4822 277 11774	Slide Switch
1509	4822 277 11775	Slide Switch
8004	4822 320 12336	Flexible Foil 240mm
8009	4822 320 12335	Flexible Foil 120mm

Note : Only those parts mentioned in the list are normal service parts.

