

Service Manual

74CD36/01B/02B/05B/07B
74CD46/01B/02B/05B/07B
CD-46F B/U BL
Compact disc player

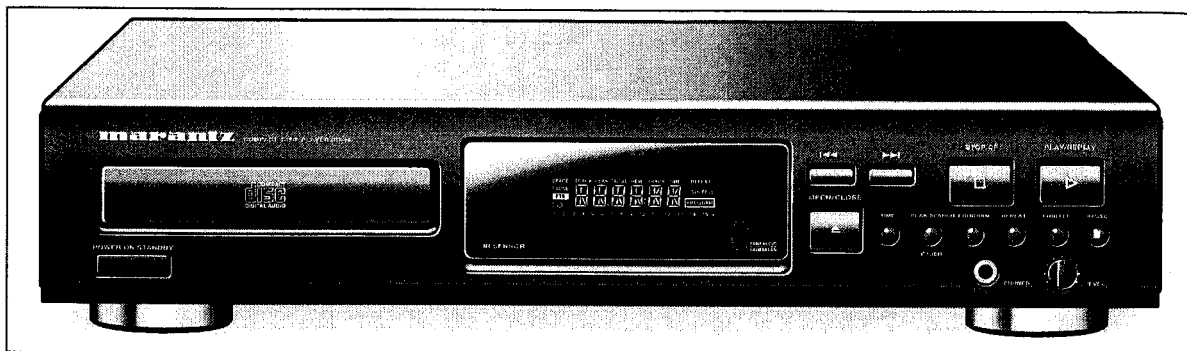


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marantz®

model CD36 - CD46

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA

MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, N.S.W., 2140
Australia

GREECE

ADAMCO ELECTR.SA
P.O.Box 21025
Hippocrates Str. 188
Athens 11471
Greece

NETHERLANDS

MARANTZ EUROPE B.V.
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

SWITZERLAND

MARANTZ SWITZERLAND
Postfach 8010
Zürich-Müllingen
Switzerland

BELGIUM

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

ITALY

Marantz Italy SPA
Piazza IV Novembre, 3
20124 Milano
Italy

PORTUGAL

COREL
Av. da Liberdade
211-2 Esq.
1250 Lisboa
Portugal

TRADING

MARANTZ TRADING
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

FRANCE

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France

JAPAN

Marantz Japan Inc.
35-1 SagamiOhno 7-Chome
Sagamihara City,
Kanagawa 228
Japan

SAUDI ARABIA

Al Alamiah Electronics
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia

U.K.

MARANTZ HiFi U.K. Ltd.
Kingsbridge House
Padbury Oaks
575-583 Bath Road
Middlesex UB7 0EH
U.K.

GERMANY

MARANTZ DEUTSCHLAND
Postfach 3129
49021 Osnabrück
Hakenbusch 3
49078 Osnabrück
Germany

KUWAIT

Al Alamiah Electronics
P.O.Box 8196
Salmiah
22052 Kuwait

SPAIN

PHILIPS IBERICA S.A.
Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

U.S.A.

MARANTZ AMERICA INC.
440, Medinah Road
Roselle, Illinois 60172
U.S.A.

All of the above locations are fully equipped to take care of your total service needs or can advise you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/01B	: 110-127V/220-240V
	/02B	: 220V-230V
	/04B(F B)	: 100V
	/05B	: 230-240V
	/06B(U BL)	: 120V
	/07B	: 230-240V
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection only	/01B	: Voltage selector 2 positions
4.Power consumption mains	standby	: < 3W
	operated	: < 10W

Remote Control

Internal: RC5

Line output

1.Number of channels		: 2
2.Output voltage		: 2 V _{rms} ± 3 dB
3.Unbalance left-right		: max. 1 dB
4.Output resistance		: 1 kΩ
5.Frequency response from 20 Hz to 20 kHz		: typ. ± 0.3 dB
		: max. ± 0.6 dB
		: with de-emphasis ± 2 dB
6.Phase non-linearity	from 20 Hz to 16 kHz	: max. 7.0°
	from 16 kHz to 20 kHz	: max. 32°
7.Out-band attenuation		: min. 35 dB above 40 kHz
8.Signal to noise ratio	from 20 Hz to 20 kHz	: typ. 95 dB(min. 90 dB)
	with digital silence	: typ. 110 dB (min. 100 dB)
	A-weighted	: typ. 98 dB
9.Dynamic range (-60 dB)	1 kHz	: typ. -94 dB(min. -90 dB)
	from 20 Hz to 20 kHz	: min. -85 dB
10.Total harmonic distortion + noise	1 kHz	: typ. -85 dB(min. -78 dB)
	from 20 Hz to 20 kHz	: min. -75 dB
11.Channel separation	1 kHz	: typ. 95 dB(min. 86 dB)
	from 20 Hz to 20 kHz	: min. 82 dB
	with digital silence detection	: typ. 110 dB(min. 100 dB)
12Automatic switched deemphasis with time constant 15/50 μs		

Variable headphone (CD46 only)

1.Output voltage		: max. 5 V _{rms} ± 3 dB
2.Unbalance left-right		: max. ± 1.2 dB
3.Output resistance		: 120 Ω
4.Load impedance range		: 32 Ω to 600 Ω load
5.Output power		: 0 to 30 mW into 30 Ω load
		: 0 to 50 mW into 150 Ω load
		: 0 to 30 mW into 600 Ω load
6.Signal to noise ratio		: typ. 80 dB (1 kHz)
7.Dynamic range		: min. 70 dB (20 Hz -20 kHz)
8.Total harmonic distortion		: min. 60 dB (20 Hz - 20 kHz)
9.Channel separation		: min. 70 dB (1 kHz)
		: min. 65 dB (31.5 Hz - 16 kHz)

Dimensions and weight

1.Apparatus tray closed		: WxDxH 435 x 260 x 90 mm
2.Apparatus tray open		: WxDxH 435 x 405 x 90 mm
3.Weight		: 3 kg

Optical read-out system

1.Laser type		: Semiconductor AlGaAs
2.Wavelength		: 780 nm ± 20 nm
3.Light output (c.w.)		: max. 0.5 mW

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WARNINGS

- Do not expose the equipment to rain or moisture.
- Do not remove the cover from the equipment.
- Do not insert anything into the equipment through the ventilation holes.
- Do not handle the mains lead with wet hands.

COPYRIGHT

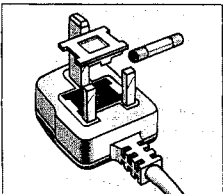
Recording and playback of some material may require permission. For further information refer to the following:

- Copyright Act 1956;
- Dramatic and Musical Performers Act 1958;
- Performers Protection Acts 1963 and 1972;
- Any subsequent statutory enactments and orders.

Recording is permissible insofar as copyright or other rights of third parties are not infringed.

FITTING A MAINS PLUG (*U.K. only*)

This apparatus is fitted with an approved moulded 13 Amp plug. To change a fuse in this type of plug proceed as follows:



- Remove fuse cover and fuse.
- Fix new fuse which should be a BS1362 5A, A.S.T.A. or BSI approved type.
- Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.

If the mains plug contains a fuse, this should have a value of **5A**. If a plug without a fuse is used, the fuse at the distribution board should not be greater than **5A**.

NOTE

The severed plug must be disposed to avoid a possible shock hazard should it be inserted into a 13A socket elsewhere.

HOW TO CONNECT A PLUG

The wires in the mains lead are coloured in accordance with the following code: BLUE - "NEUTRAL" ("N") and BROWN - "LIVE" ("L"). As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:


- The BLUE wire must be connected to the terminal which is marked with the letter "N" or coloured BLACK.
- The BROWN wire must be connected to the terminal which is marked with the letter "L" or coloured RED.
- Do *not* connect either wires to the earth terminal in the plug which is marked by the letter "E" or by the safety earth symbol or coloured green or green-and-yellow.

Before replacing the plug cover, make certain that the cordgrip is clamped over the sheath of the lead - not simply over the two wires.

INSTALLATION

POWER SUPPLY SETTING

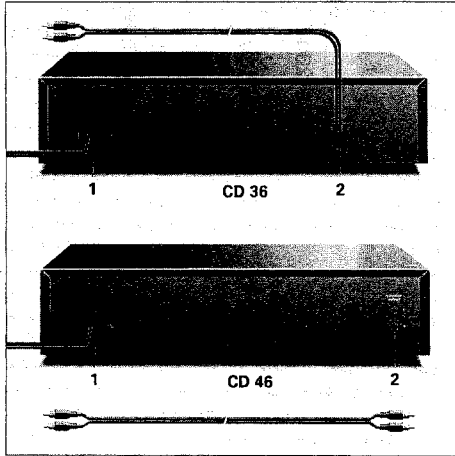
- Check that the type plate at the bottom of your player indicates the correct supply voltage.
- If your mains supply voltage is different, consult your dealer or our Service Organisation.
- *Certain versions of this player are equipped with a voltage selector at the bottom of the player which enables you to set the player to the correct mains voltage yourself.*



Position 120 V: for all mains voltages between 110V and 127 V.

Position 230 V: for all mains voltages between 220V and 240 V.

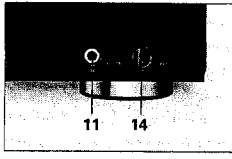
CONNECTIONS



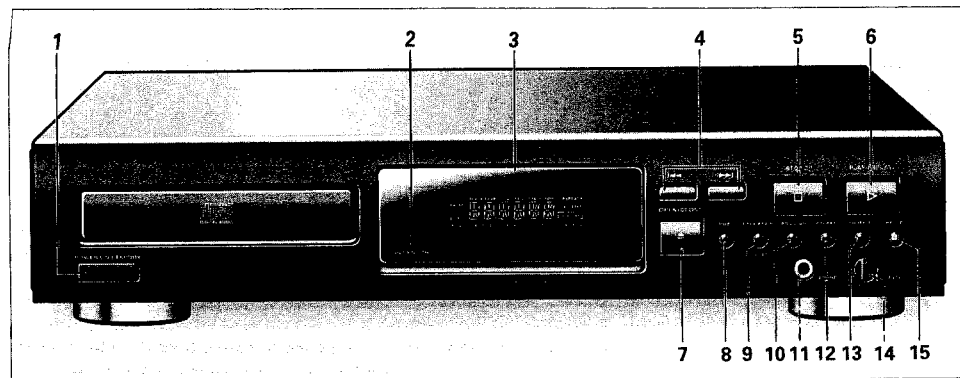
- 1 Mains connection**
 - Connect the mains lead to your mains supply.
- 2 ANALOGUE OUT**
 - Connecting cable to the amplifier
 - Insert a red plug into the 'R' socket and the other plug into the 'L' socket (*CD 46 only*).
 - Insert the two other plugs into the corresponding sockets of the CD or AUX input of your amplifier.
 - You can also use the TUNER or TAPE IN-connection, but *never* the PHONO input!

CONNECTING HEADPHONES (*CD 46 only*)

- Connect headphones with a 6.3 mm jack plug to the PHONES socket **11**.
- The sound level is adjusted with the LEVEL control **14**.



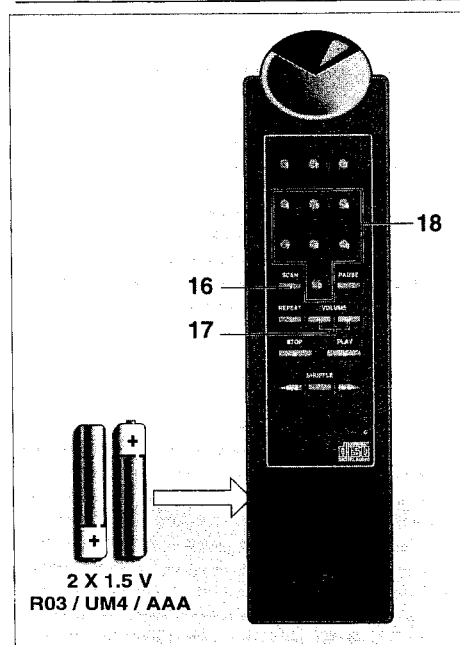
FUNCTIONAL OVERVIEW



FRONT OF PLAYER

- 1 POWER ON/STANDBY** – Switching on and off.
- 2 I(nfra) R(ed) SENSOR**
Receives the signals from the remote control.
- 3 Display** – Informs you about the functioning of the player.
- 4** ◀▶ and ▶▶
– Selecting another track.
– Selecting a track to start play with.
– Fast search to a particular passage during play.
- 5 STOP/CP**
– Stopping play.
– Erasing a programme (CP = Clear Programme).
- 6 PLAY/REPLAY**
– Starting play.
– Returning to the beginning of a track.
- 7 OPEN/CLOSE** – Opening and closing the CD compartment. The compartment also closes when the front is pressed briefly.
- 8 TIME** – Selecting the time information you want to see.
- 9 PEAK SEARCH** – Searching the loudest passage (peak) on a CD or in a programme when making a tape recording.
FADER – Fading in and out during play.
- 10 PROGRAM**
– Opening the memory when compiling a programme.
– Storing tracks in a programme.
- 11 PHONES (CD 46 only)**
Connecting headphones.
- 12 REPEAT** – Repeating play.
- 13 SHUFFLE** – Playback in random order.
- 14 LEVEL (CD 46 only)** – Adjusting the volume when listening with headphones.
- 15 PAUSE** – Interrupting play.

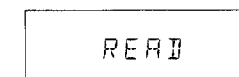
REMOTE CONTROL



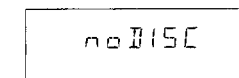
- The life of the batteries of the remote control is around one year. For replacement only use batteries of the type R03, UM4 or AAA.
- The buttons on the remote control have the same functions as the corresponding ones on the player.
- Extra buttons:
- 16 SCAN** – Automatically playing the beginning of each track.
- 17 – VOLUME +** – Adjusting the sound level when the player is connected to an amplifier or HiFi system without its own remote control.

FUNCTIONAL OVERVIEW

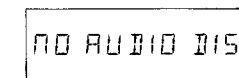
DISPLAY MESSAGES



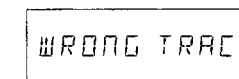
Lights up when the CD's contents list is being scanned.



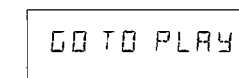
Lights up when there is no CD in the CD compartment.



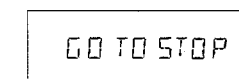
Scrolls on the display when insert a non audio CD (CD-ROM, CD-I or CDV).



Scrolls on the display if you select a non-existent track number.



Scrolls on the display if you try to activate a function for which you must first start play.



Scrolls on the display if you try to activate a function for which you must first stop play.

18 1-0 digit keys

- Selecting another track.
- Selecting a track to start play with.

DISPLAY



PAUSE

Lights up when play is interrupted.



Lights up when the player receives a command from the remote control.

TRACK

- Indicates:
 - what track is being played;
 - the number of tracks on the CD or in a programme.

PEAK

- Flashes when the loudest passage (peak) on a CD or in a programme is being searched.
- Lights up when the loudest passage (peak) has been found.

TRACK TIME

Indicates the elapsed playing time of the track being played.

REM(aining) TRACK TIME

Indicates the remaining playing time of the track being played.

TOTAL REM(aining) TIME

Indicates the remaining playing time of the CD or a programme.

TOTAL TIME

Indicates the total playing time of the CD or a programme.

REPEAT

Lights up when you repeat a CD or a programme.

REPEAT 1

Lights up when you repeat a track.

SHUFFLE

Lights up when the tracks are played in random order.

PROGRAM

- Flashes when a programme is being compiled.
- Lights up when a programme has been stored in the player memory.

1-15 track number indicator

Shows the number of tracks on the CD.



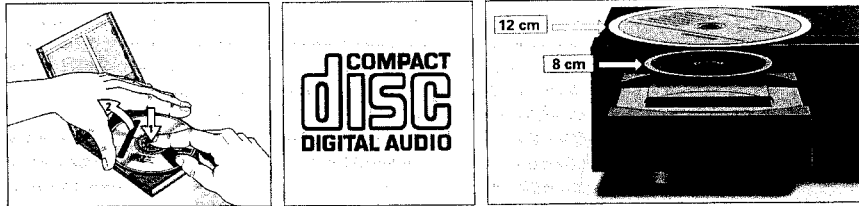
Lights up when there are more than 15 tracks on the CD.

PLAYBACK

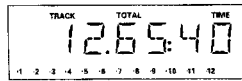
NORMAL PLAYBACK (PLAY/REPLAY)

NOTE! Use only audio CDs; no CD-ROM, CD-I or CDV.

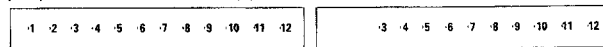
- Press **POWER ON/STANDBY 1** to switch the player on.
- Open the CD compartment by pressing **OPEN/CLOSE 7**.
– **OPEN** lights up.
- Insert an audio CD, **printed side up**, and close the compartment by pressing **OPEN/CLOSE 7**.



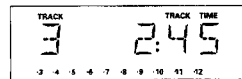
– **CLOSE** lights up, followed by **READ**. The number of tracks and the playing time of the CD are shown on the display.



- Press **PLAY/REPLAY 6** to start play. You can also press **PLAY/REPLAY** immediately after inserting the CD; the compartment then closes automatically. You can also close the CD compartment by pressing its front; playback will then start automatically.
- The number indicator shows how many tracks are on the CD; when a track has been played its number disappears.



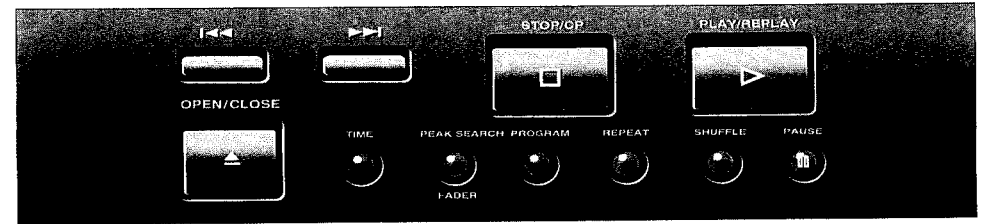
– The track being played is always shown under **TRACK** and its elapsed playing time is shown under **TRACK TIME**.



- Play will stop after the last track.
- Press **POWER ON/STANDBY 1** to switch the player off.

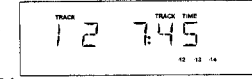
You can interrupt playback by pressing **PAUSE 15**; **PAUSE** then lights up. Press **PLAY/REPLAY 6** to restart; if you *first* press **PAUSE** again and *then* **PLAY/REPLAY**, the current track starts again from the beginning. You can also restart play by pressing **SCAN 16** (on the remote control) or **SHUFFLE 13**. If you press **PLAY/REPLAY** during play, the current track starts again from the beginning. You can stop playback by pressing **STOP/CP 5** or **OPEN/CLOSE 7**.

PLAYBACK



SELECTING ANOTHER TRACK (|<<< >>>|)

- Press **>>> 4** or **<<< 4** (less than 0.5 seconds) until the desired track number appears under **TRACK**.
- The music stops and a moment later the selected track begins to play.



You can also enter the number by using the 1-0 digit keys **18** (on the remote control). Numbers consisting of two figures must be keyed in **within 2 seconds**.

SEARCHING FOR A PASSAGE (|<<< >>>|)

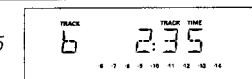
- Hold **<<< 4** down to search backwards to the beginning.
- Hold **>>> 4** down to search forwards to the end.

The searching speed is determined by how long a key is pressed:

- the first 2 seconds fairly slowly, with sound;
 - then at the maximum speed, with no sound.
- If you reach the end of the last track and release **>>>**, play will resume a few seconds before the end of the CD.

STARTING WITH A PARTICULAR TRACK (|<<< >>>|)

- Press **>>> 4** or **<<< 4** (less than 0.5 seconds) until the desired track number appears under **TRACK**.
- Press **PLAY/REPLAY 6**.
- Play starts from the selected track.

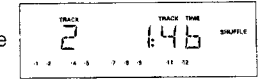


You can also enter the number by using the 1-0 digit keys **18** (on the remote control). Numbers consisting of two figures must be keyed in **within 2 seconds**.

In this case you don't have to press **PLAY/REPLAY**; play will automatically start from the selected track.

PLAYING THE CD IN RANDOM ORDER (SHUFFLE)

- Press **SHUFFLE 13** before or during play.
- If the CD compartment was open, it will now close.
- **SHUFFLE** lights up and all the tracks are now played in a random order.
- Press **SHUFFLE** again if you wish to return to normal play.



If you press **<<< 4**, you will return to a track which has already been played. If you press **>>> 4**, you will select any one of the following tracks. If you press **REPEAT 12**, twice the tracks will be repeated in a different order each time, although the first track played will always be the same.

REPEATING PLAY (REPEAT)

- **Repeating a track:**
- Press **REPEAT 12** before or during play.
- **REPEAT 1** lights up; the track will now be repeated continuously.
- Press **REPEAT** twice to stop the track being repeated.



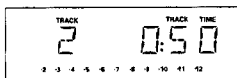
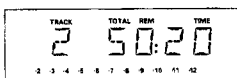
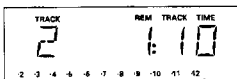
- **Repeating the CD:**
- Press **REPEAT 12** twice before or during play.
- **REPEAT** lights up; the CD will now be repeated continuously.
- Press **REPEAT** again to stop the CD being repeated.



PLAYBACK

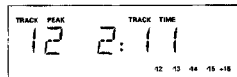
CALLING UP OTHER TIME INFORMATION (TIME)

- Press **TIME 8** whenever you want to know the remaining playing time of the track being played (REM TRACK TIME).
- Press **TIME** again if you wish to know the remaining playing time of the entire CD (TOTAL REM TIME).
- Press **TIME** again if you wish to return to the elapsed playing time indication of the current track (TRACK TIME).



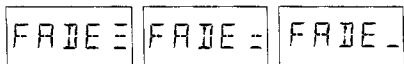
SEARCHING THE LOUDEST PASSAGE (PEAK SEARCH)

- In **STOP** mode, press **PEAK SEARCH 9**.
- PEAK starts flashing and the CD or the programme will now be scanned for the loudest passage (the peak).
- The display shows the track being scanned and its elapsed playing time.
- When the loudest passage has been found it will be repeated continuously (from 2 seconds before the peak until 2 seconds after the peak)
- You can now adjust your recording device.
- You can stop the search by pressing **STOP/CP 5** or **OPEN/CLOSE 7**; if you press **PLAY/REPLAY 6**, the CD or the programme will be played from the beginning.

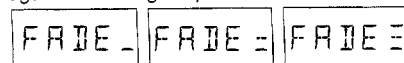


SETTING THE FADE-IN AND FADE-OUT TIME (FADER)

- During play press **FADER 9**.
- The sound level will now gradually decrease (FADE OUT), after which the player will go into the PAUSE mode.



- Press **FADER** again.
- Play continues and the sound level will increase again to the originally set level (FADE IN).

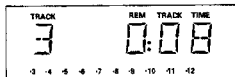


NOTE!

The following functions can only be operated using the remote control.

SCANNING A CD (SCAN)

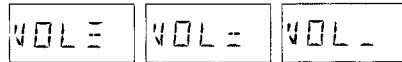
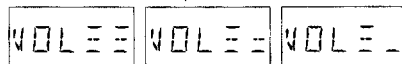
- Press **SCAN 16** before or during play.
- If the CD compartment was open, it will now close.
- **SCAN** lights up for 2 seconds and the first 10 seconds of each track are played in turn; 10 seconds are counted down each time under **REM TRACK TIME**.
- When the player reaches a track which you wish to hear in full, press **SCAN** again or **PLAY/REPLAY 6**.



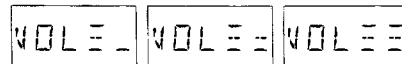
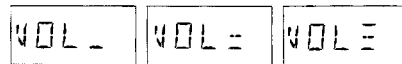
ADJUSTING THE SOUND LEVEL (- VOLUME +)

NOTE!

- Use the **- VOLUME +** keys only if the player is connected to an amplifier or HiFi system without its own remote control.
- The setting chosen with **- VOLUME +** will be cancelled when the player is switched off.
- Hold **- VOLUME 17** pressed down.
- **VOL** lights up; the output signal from the player will now decrease gradually.
- The successive steps are shown on the display.



- Release the key as soon as the required sound level is obtained.
- Hold **VOLUME + 17** pressed down.
- **VOL** lights up; the output signal will now increase again gradually to the maximum level.
- The successive steps are shown on the display.



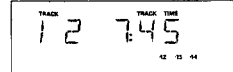
- Release the key as soon as the required sound level is obtained.

PROGRAMMING

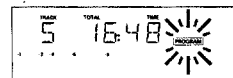
STORING A PROGRAMME (PROGRAM and <<< >>>)

You can store 30 tracks from each CD in any required sequence in a programme. **FULL** lights up if you exceed the maximum of 30 tracks. The 1-0 digit keys **18** on the remote control *cannot* be used to select tracks when compiling a programme.

- In **STOP** mode, press **PROGRAM 10** to open the memory.
- **PROGR** lights up and **PROGRAM** starts flashing.
- Press **>>>** or **<<<** **4** (less than 0.5 seconds) until the first desired track number appears under **TRACK**.



- Press **PROGRAM 10** again.
- The track number has now been stored in the player's memory.
- Select the other track numbers required and store each track by pressing **PROGRAM**.
- The number of tracks and the playing time of your programme will be shown under **TRACK** and **TOTAL TIME**.



- The track number indicator always shows which numbers have been stored.

PLAYING THE PROGRAMME (PLAY/REPLAY)

- Press **PLAY/REPLAY 6**.
- Playback starts with the first number of the programme.

All keys (except **PROGRAM 10** and **PEAK SEARCH 9**) can be used during programmed play. Search for a particular passage is only possible within the track being played.

ERASING A PROGRAMME (STOP/CP or OPEN/CLOSE)

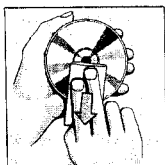
- **During play:**
- Press **OPEN/CLOSE 7** or **STOP/CP 5** (twice).
- **In STOP mode:**
- Press **OPEN/CLOSE 7** or **STOP/CP 5** (once).
- The programme has now been erased.

ADDITIONAL INFORMATION

MAINTENANCE

The CDs

- Never write on the printed side of a CD.
- **Do not attach any stickers to the CD.**
- Keep the shiny surface of the of the disc clean.
Use a soft lint-free cloth and always wipe the disc in a straight line from centre to edge.
- Never use cleaning agents for conventional records.
- Detergents or abrasive cleaning agents should not be used either.



The player

- A chamois leather slightly moistened with water is sufficient for cleaning the player.
- Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.

RECYCLING

Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

1. All redundant packaging material has been omitted. We have done our utmost to make the packaging easy separable into three mono-materials:
 - cardboard (box)
 - expandable polystyrene (buffer)
 - polyethylene (bags, protective foam sheet)
2. Your set consists of materials which can be recycled if disassembled by a specialized company.
3. Do not dispose of exhausted batteries with your household waste.

TECHNICAL DATA

Typical Audio Performance

Frequency range:20 Hz - 20 kHz
 Amplitude linearity:0.3 dB (20 Hz - 20 kHz)
 Phase linearity:4° (20 Hz - 20 kHz)
 Dynamic range:90 dB (1kHz)
 Signal-to-noise ratio:90 dB (1 kHz)
 Channel separation:90 dB (1kHz)
 Total harmonic distortion:0.003% (1kHz)
 Audio output level:2 Vrms
 Impedance PHONES socket **(CD 46 only)**:
30 - 600 ohms

Power supply

Mains voltage and frequency: see the type plate on the rear of the player
 Power consumption:< 10 W approx.
 Safety requirements:IEC 65

Cabinet

Material/finish:metal and polystyrene
 Dimensions (w x h x d):435 x 90 x 300 mm
 Weight:4 kg approx.

Subject to modification

This Compact Disc player complies with radio interference requirements as laid down in EC regulations.

TROUBLESHOOTING

If a fault occurs, run through the points listed below before taking your player for repair. If the fault remains, try to clear it by switching the player off and on again. If this also fails to help, consult your dealer.

Under no circumstances should you repair the player yourself as this will invalidate the guarantee!

SYMPTOM	POSSIBLE CAUSE	REMEDY
- Playback of the CD does not start or interruption of playback.	- The CD has been loaded upside down. - No CD inserted. - The CD is badly scratched or dirty. - Moisture condensation on the lens.	<ul style="list-style-type: none"> • Reload the CD, label side up. • Insert a CD, label side up. • Clean the CD with a soft, lint-free cloth. • Leave the CD player in a warm environment until the moisture evaporates.
- Sound skips (at the same part).	- The CD is dirty.	<ul style="list-style-type: none"> • Clean the CD with a soft, lint-free cloth.
- The CD skips tracks.	- The CD is damaged or dirty.	<ul style="list-style-type: none"> • Replace or clean the CD.
- Playback does not start from the first track.	- PROGRAM or SHUFFLE activated.	<ul style="list-style-type: none"> • Switch off SHUFFLE or clear programme.
- No sound or bad sound.	- Loose or wrong connections. - Strong magnetic fields near the CD player.	<ul style="list-style-type: none"> • Check connections. • Find another place for the unit or change connections.
- No sound or bad sound on headphones (CD 46 only) .	- Level control set to - position. - Headphones plug is dirty.	<ul style="list-style-type: none"> • Set level control • Clean plug.
- Remote control does not function.	- Batteries are empty.	<ul style="list-style-type: none"> • Replace the batteries.
- Remote control commands are not properly received.	- The distance between remote control and CD player is larger than 10 metres.	<ul style="list-style-type: none"> • Reduce the distance between remote control and CD player.

(GB) WARNING

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

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

ESD**(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.

(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 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 gegen elektrostatische Entladungen (ESD).

Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. 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.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridotta 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 braccialeto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

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

(NL)

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

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

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

(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.



**CAUTION
VARO!
VARNING
ADVERSEL
DANGER
DANGER
VORSICHT**

INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESEN.

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN.

USYNLIG LASERSTRÅLNING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING.

INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.



SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO.1492.

NOTE ON SAFETY:

Symbol  Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

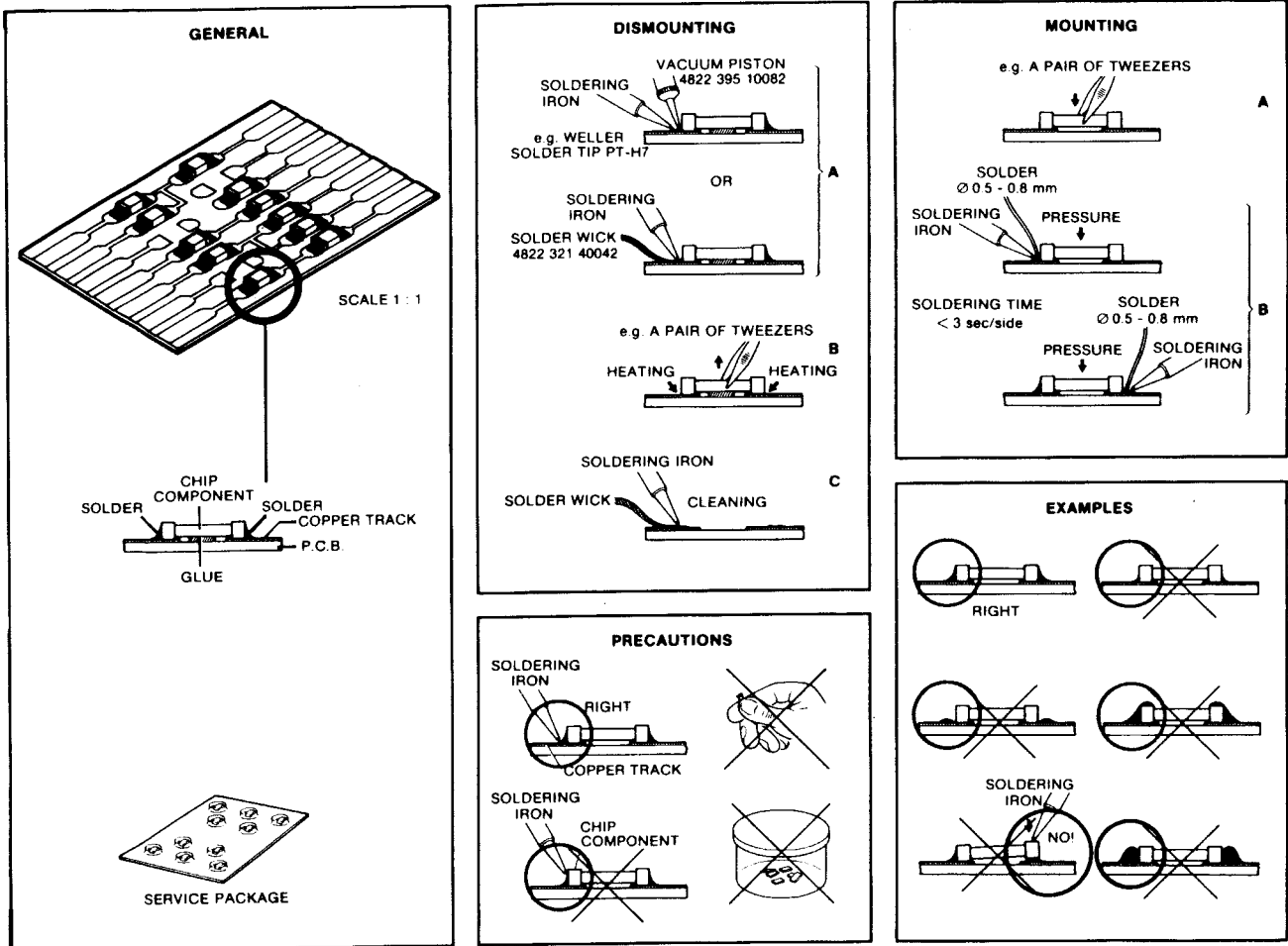
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne."

**CLASS 1
LASER PRODUCT**

3122 110 00420

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



27 012C12

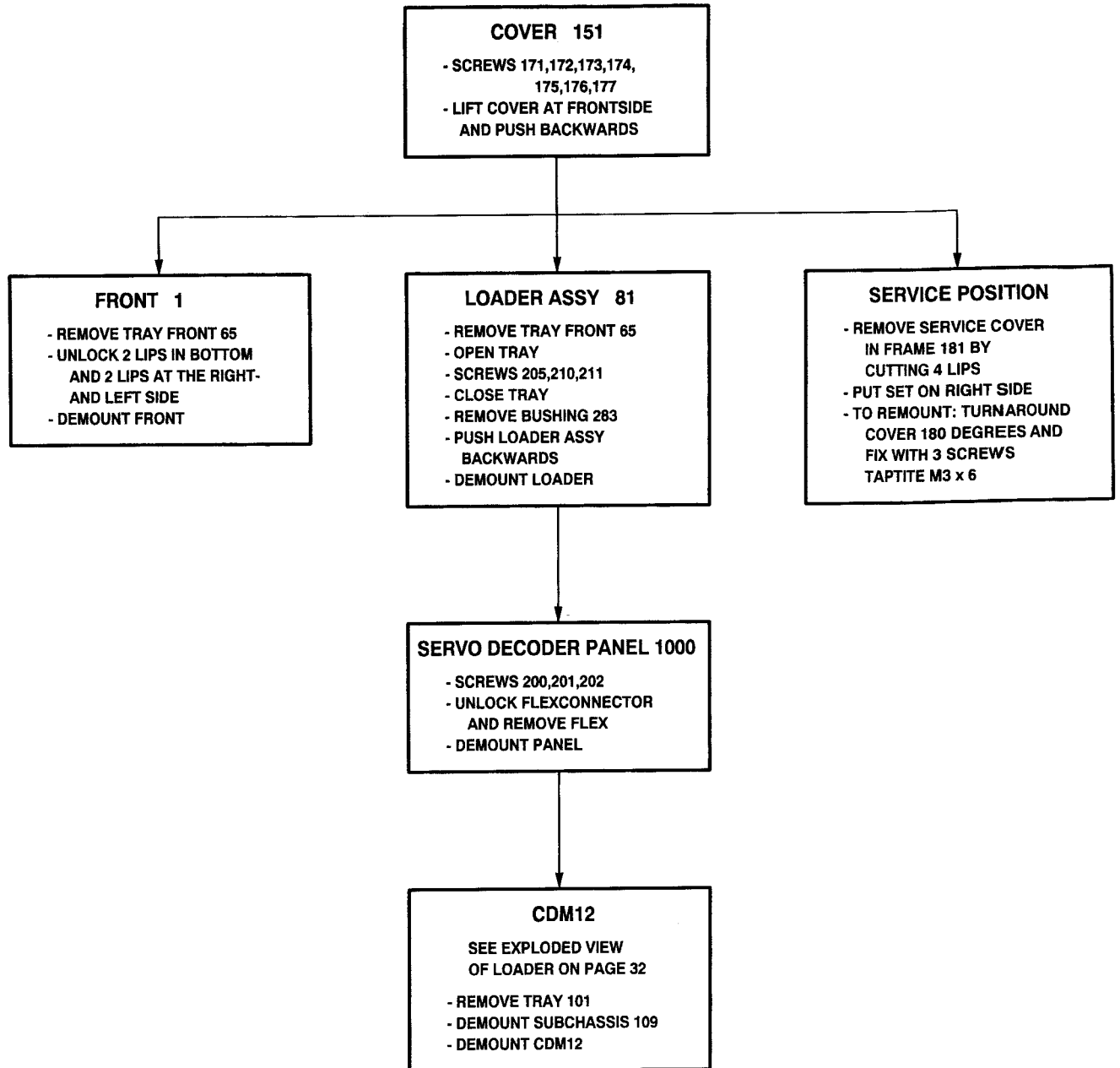
SERVICE TOOLS

- Audio signals disc
- Disc without errors(SBC444) +
- disc with DO errors,black spots and fingerprints(SBC444A)
- Disc(65 min 1 kHz) without no pause
- Max. diameter disc(58.0 mm)
- Torx screwdrivers
 - Set(straight)
 - Set(square)
- 13th order filter

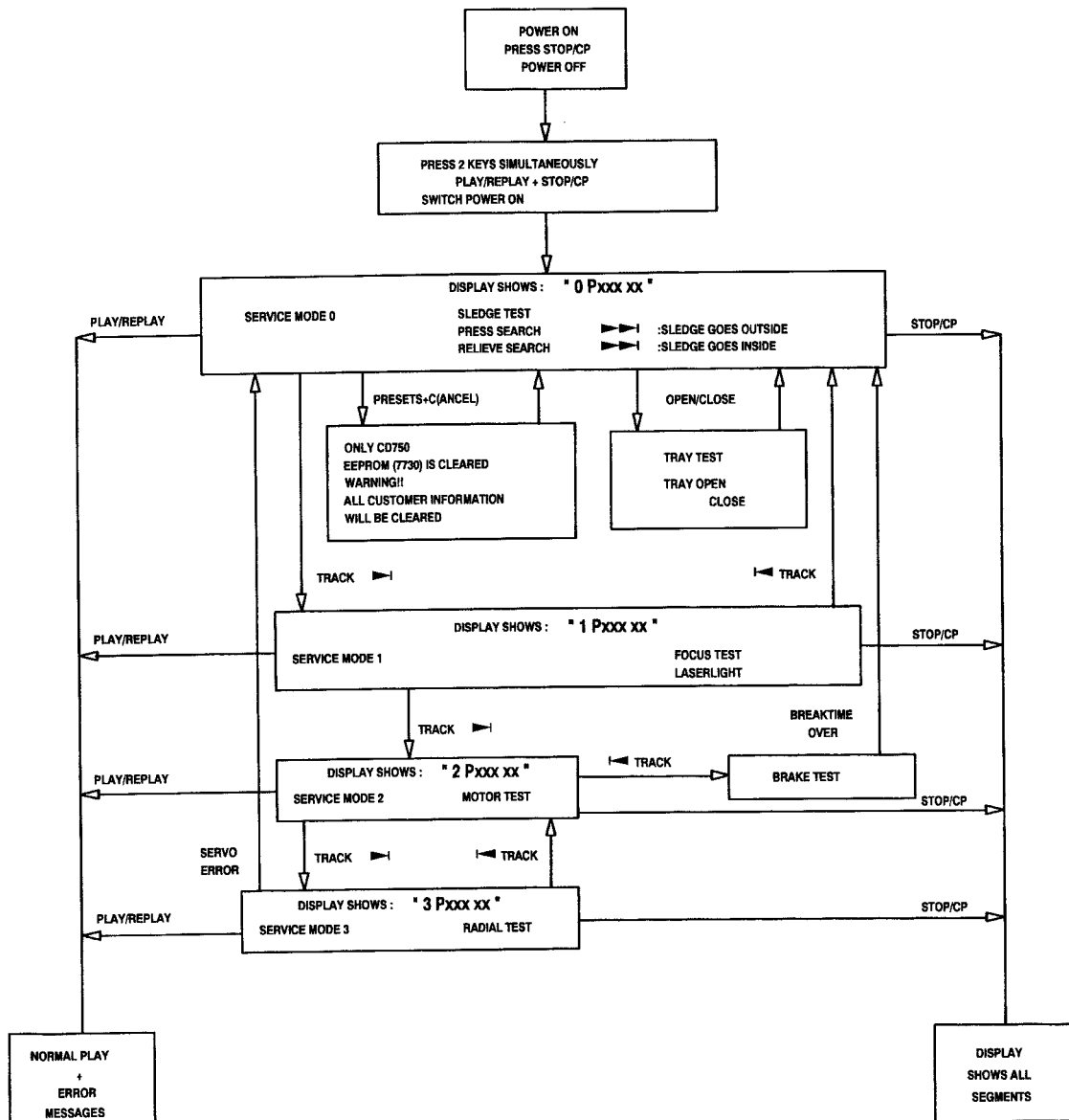
- 4822 397 30184
- 4822 397 30245
- 4822 397 30155
- 4822 397 60141
- 4822 395 50145
- 4822 395 50132
- 4822 395 30204

DISMANTLING INSTRUCTIONS

OPEN EXPLODED VIEW ON PAGE 33



SERVICE TEST PROGRAM



ERROR MESSAGES

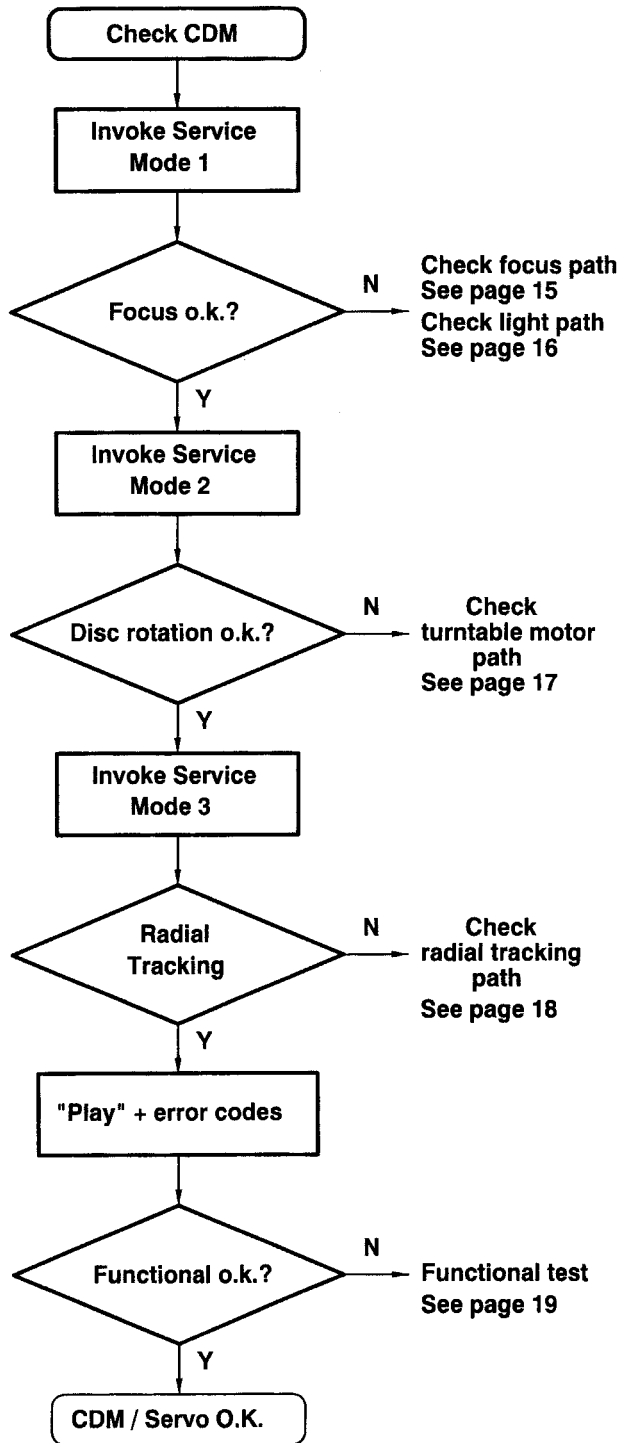
- "SLEDGE ERROR"
- "FOCUS ERROR"
- "RADIAL ERROR"
- "MOTOR ERROR"
- "EEP ER"
- "EEP OK"

Pxxx = PROGRAM OF MICROPROCESSOR
 xx = VERSION OF PROGRAM

HAS1120
 9342

FAULT FINDING GUIDE CDM 12.1

Main Fault Finding Guide CDM 12.1
System



Listen to kind of "scratching sound" while slowly turning the disc by hand.

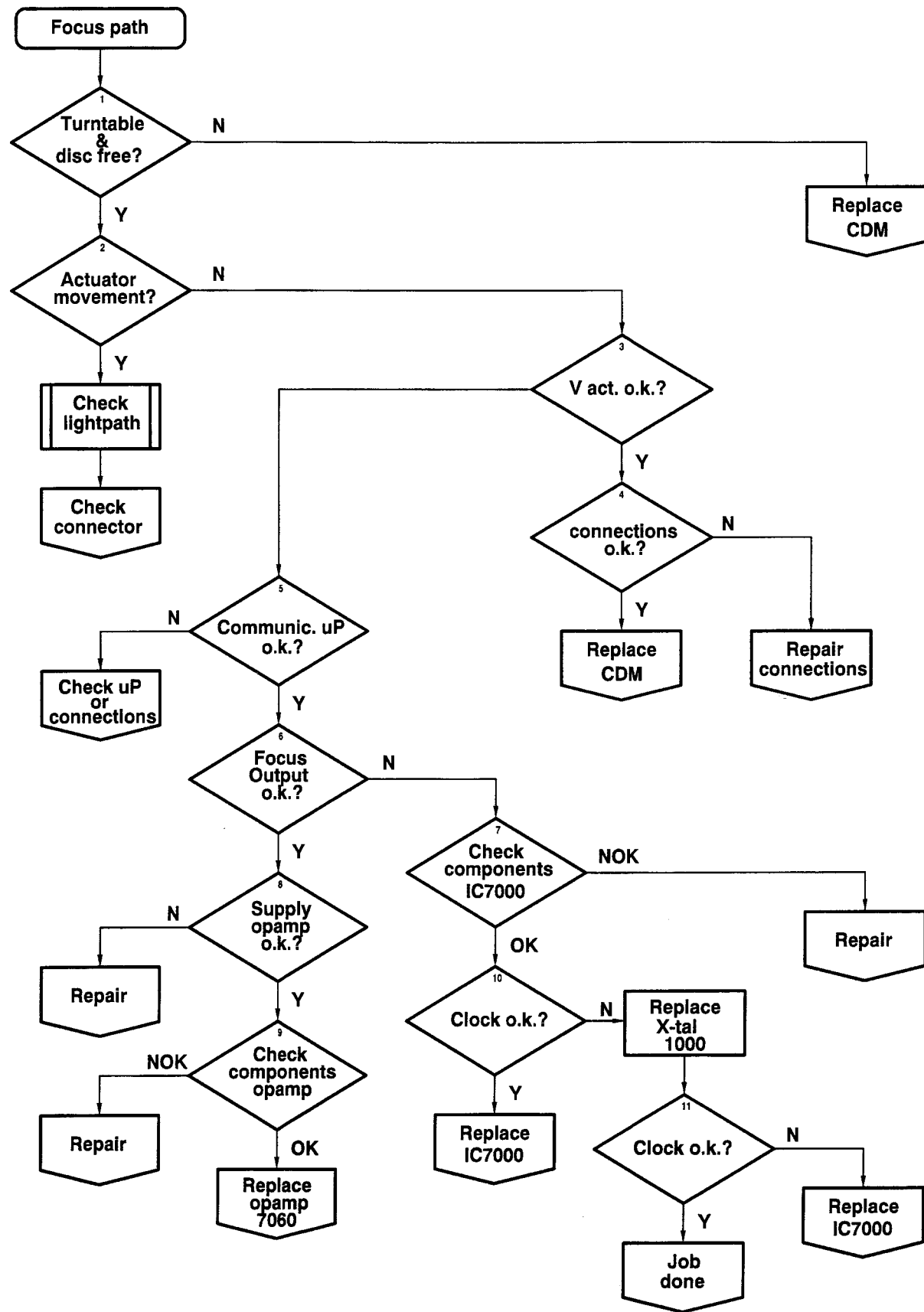
Disc is turning clock wise at normal speed.

Activity on RAD+ (pin 4 connector 1052)

*After "play" starts at track 1 at time 0:00.
*Go to outer track and start again at time 0:00 after max. 6 seconds.

*Try search function.

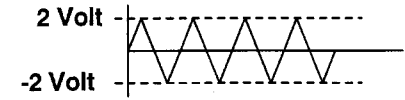
*When going from "Pauze" to "play" music has to restart at the same place.



1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

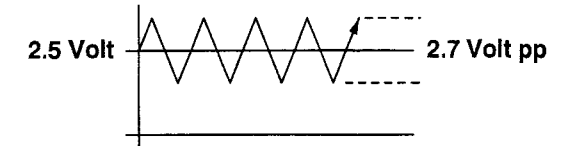
3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.



4)-Connections to actuator o.k.?
Check flex connector pin 2 and 3.

5)-Communication uP <-> IC7000.
SIDA activity (pin 27 of IC7000).

6)-Focus output o.k.?
See fig 2.
Measure with an 10k/3n3 low-pass filter.



7)-Components o.k.?
Check components R3010,R3011
C2012,C2013
X-tal 1000

8)-Power supply for opamp o.k.?
Check components R3006,R3007
C2008,C2009,C2071,C2074

9)-Check components o.k.?
Check components R3074,R3075,R3076,R3077
R3078,R3079
C2075,C2076

10) & 11)-Pin 17 of IC7000: a frequency of 8.46MHz?

WARNING !!! LASER DAMAGE !!!

For measurements on the laser (flexconnector pin 1052-6), certain conditions are absolutely necessary for precaution of laser damage.

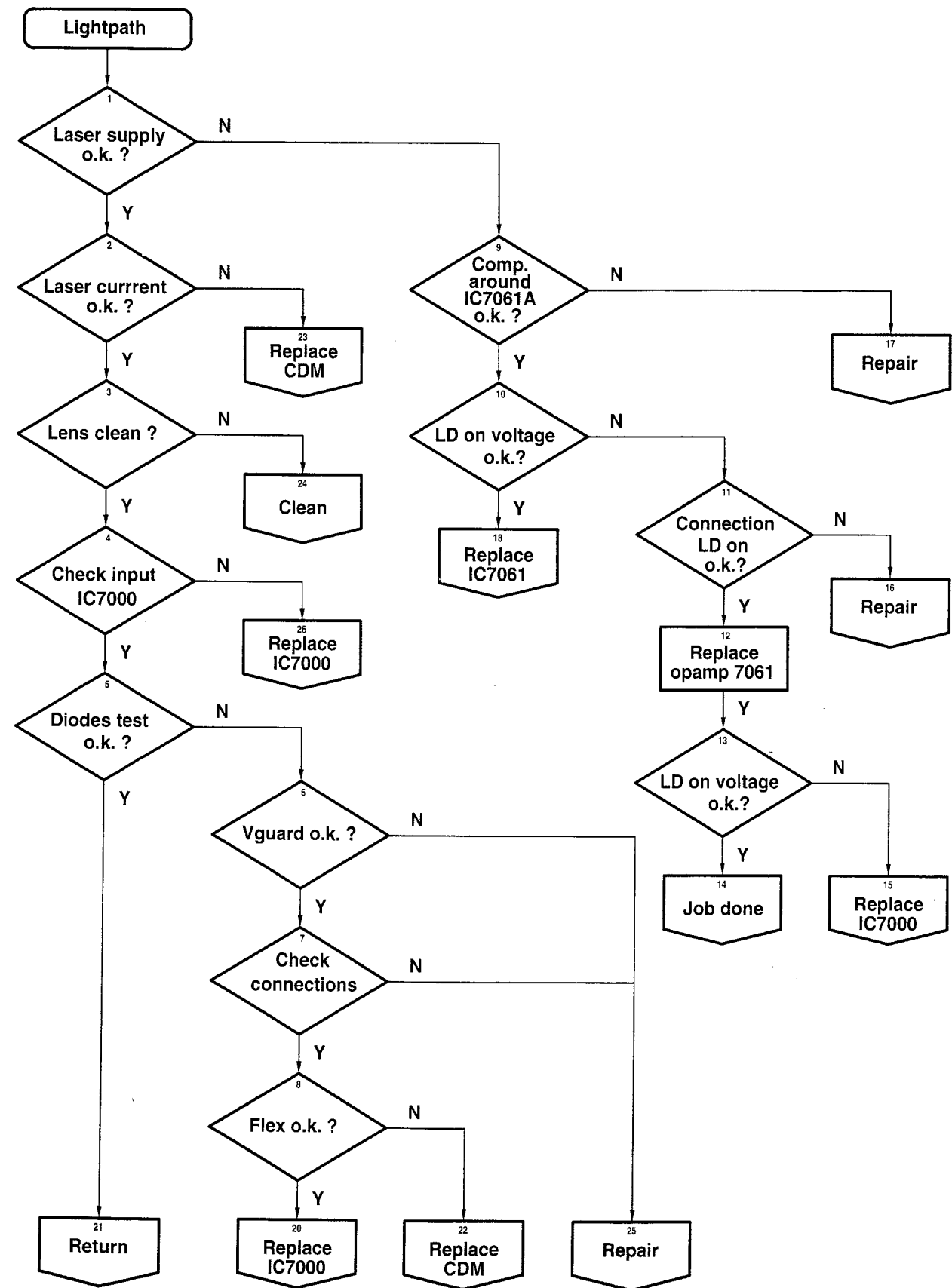
The instruction and sequence for measuring laser current is as follows:

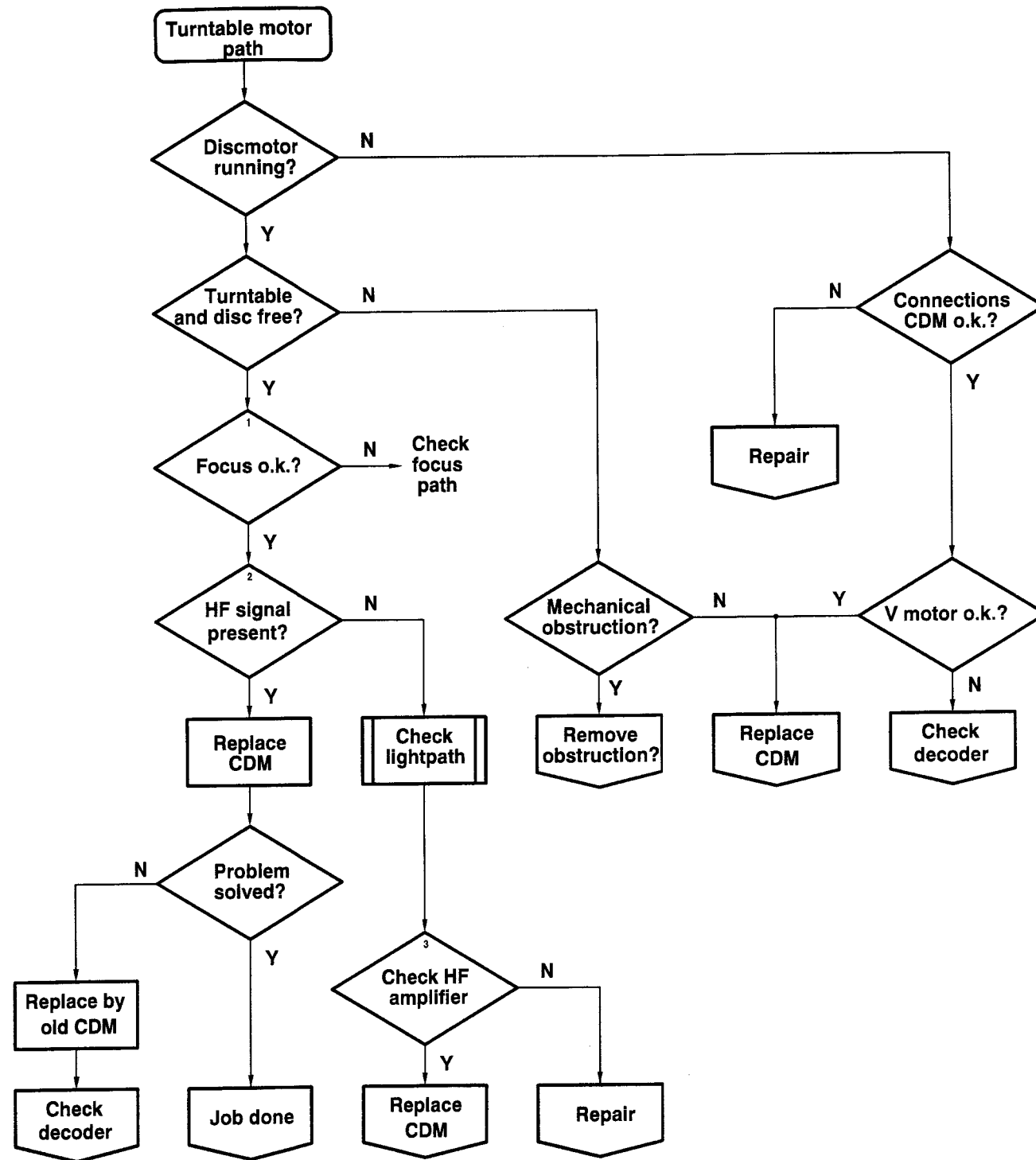
- turn off mains power.
- wait for > 1 second
- connect a multimeter (high input impedance, not grounded across resistor 3022. (*)
- turn on mains power and go to play mode.
- reading of measurement value (current = reading/4R7) (**)
- go to stop and turn off mains power.
- disconnect the multimeter.

* In case of a laser voltage measurement, connect the multimeter across elcap 2025, using the same procedure as mentioned above.

** If current is > 95 mA, you can be sure that the laser is defect; If the current is increasing during reading (within +/- 10 seconds), you can be sure that the laser is severely damaged.

- * 1)-Laser supply o.k.? Voltage across C2025: 4...5V
- ** 2)-Laser current o.k.? Voltage across R3022: 150...450mV
- 3)-Lens clean? Visual control. Check for dust,grease. Take attention for the blue coating.
- 4)-Check inputs. Switch back to service mode 0. Connect a 2.4 MOhm resistor from
 1052 - 9 to 5V: Voltage on pin 5 of IC7000 < 50mV.
 1052 - 10 to 5V: Voltage on pin 6 of IC7000 < 50mV.
 1052 - 12 to 5V: Voltage on pin 7 of IC7000 < 50mV.
 1052 - 11 to 5V: Voltage on pin 10 of IC7000 < 50mV.
 1052 - 8 to 5V: Voltage on pin 11 of IC7000 < 50mV.
- 5)-Diodes o.k.? Use IR LED of remote control. A half sine wave must be measured on the diodes (on pin 8,9,10,11,12 of conn. 1052) in the 10mV range.
- * 6)-V guard o.k.? Voltage across C2025: 4...5V
- 7)-Check connections between main PCB and CDM
- 8)-Flex o.k.? Measure diode functions on CDM-flex
- 9)-Check components around IC7061 R3022,R3021,R3020 C2025,C2060,C2064
- 10)-LD ON voltage o.k.? Measure on pin 2 of IC7000:4...5V.





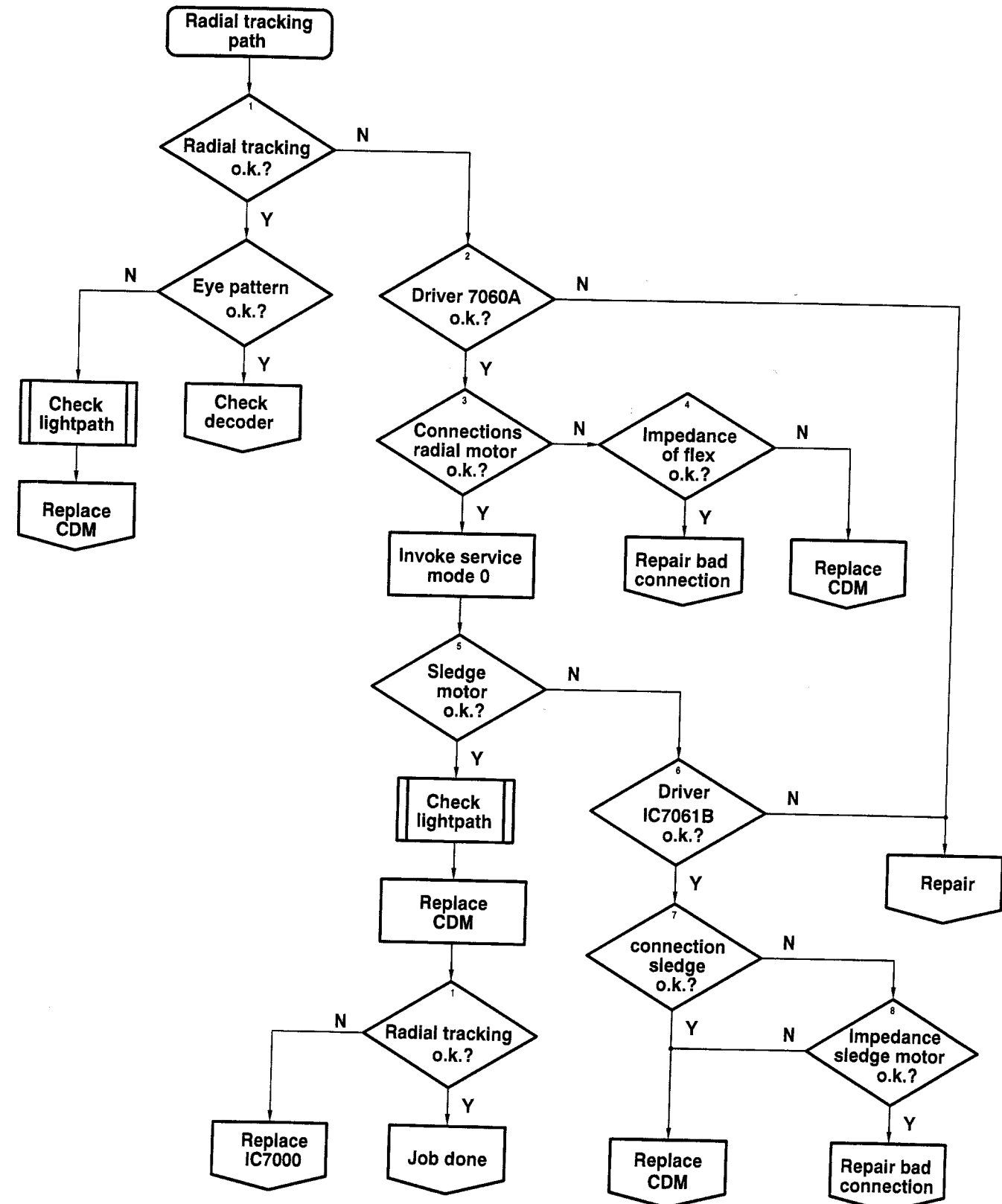
1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

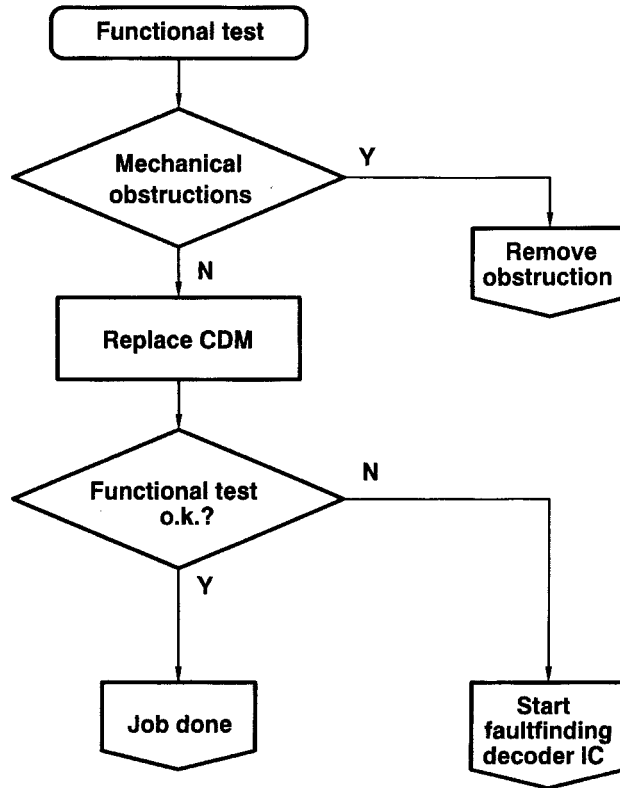
2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

3)-Check HF-amplifier.
* Supply 5V?
* Testpoint 17=1.4...1.9V DC?
* VHFI DC =2.9...3.6V?

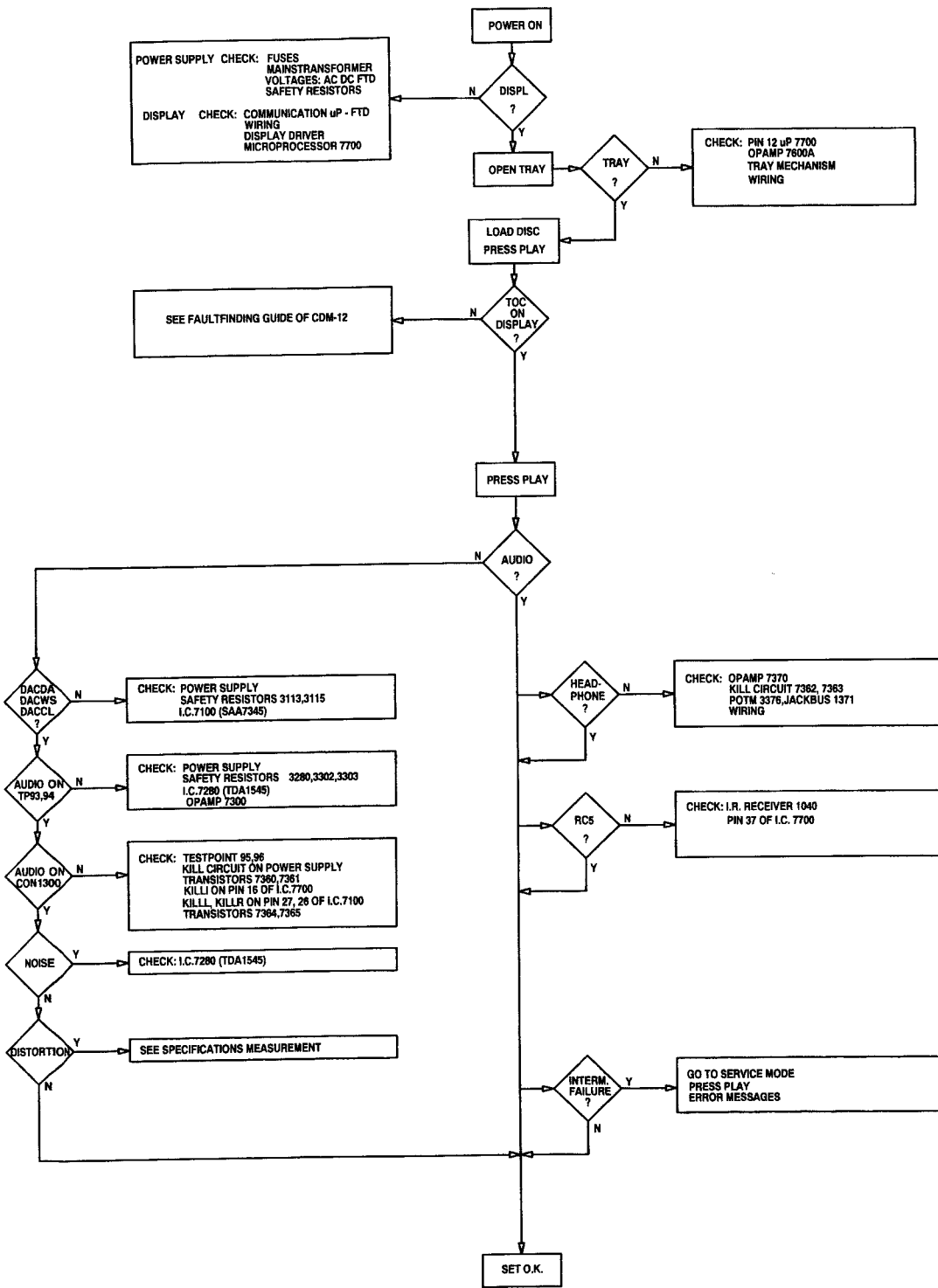
4)-V motor o.k.?
V motor < 2V: replace CDM.
V motor > 2V: check decoder part.

- 1)-Radial tracking o.k.? No OTD (testpoint 67) activity.
- 2)-Check driver 7060A.
Supply: C2071,C2074.
Components: C2067,C2068,C2069,R3068,R3069,R3070,R3071,R3072,R3073.
- 3)-Check connections radial actuator.
Switch power off.
Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.
- 4)-Check impedance on flex.
Power off.
Disconnect CDM-flex.
Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.
- 5)-Test sledge.
Power on.
Invoke service mode 0.
Move sledge out (with search forward key).
Sledge moves to init position after releasing key.
Not o.k. if sledge doesn't move,doesn't reach the outer position or makes a rattling noise at the inner side.
- 6)-Check driver 7061B.
Supply: C2060,C2064.
Components: C2062,C2063,C2066,R3060,R3062,R3064,R3065,R3066,R3067.
- 7)-Check connections of sledge drive.
Power off.
Measure impedance of 11 Ohm(+/-20%) between pin 5 and pin 6 of connector 1070.
- 8)-Check sledge motor.
Remove CDM.
Measure impedance of 11 Ohm(+/-20%) between motor terminals.





FAULTFINDING GUIDE

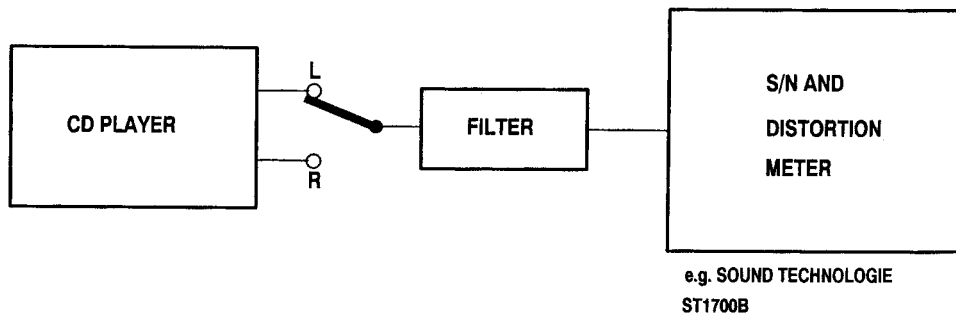


HAS1123
9345

SPECIFICATIONS MEASUREMENT

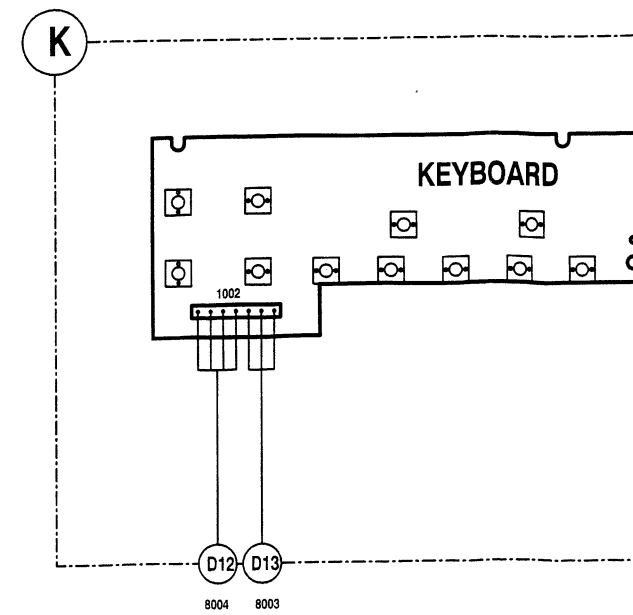
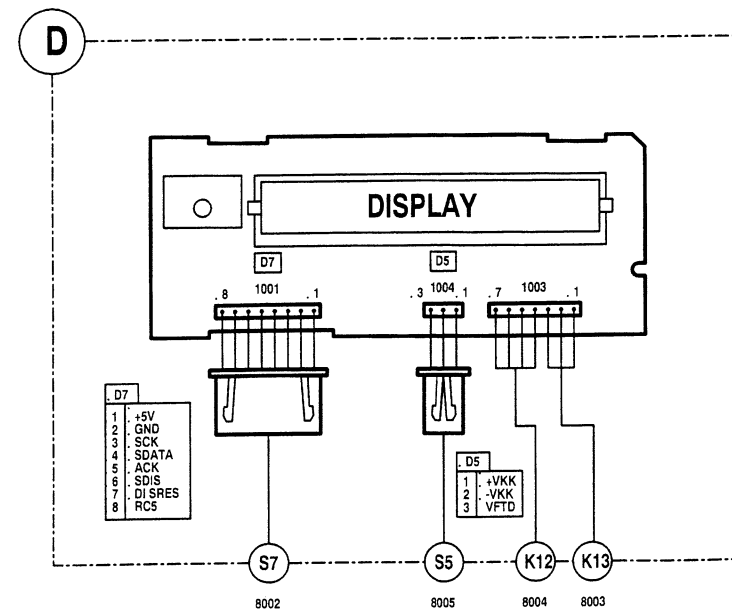
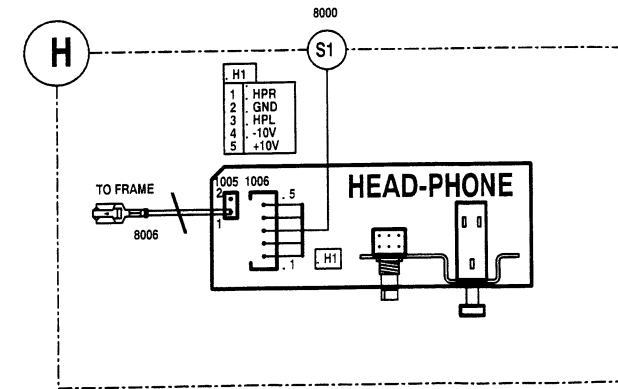
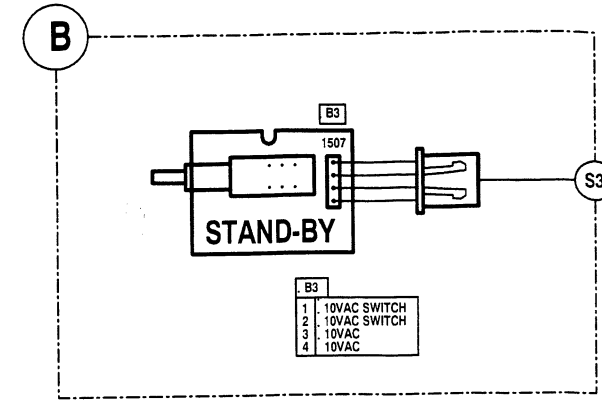
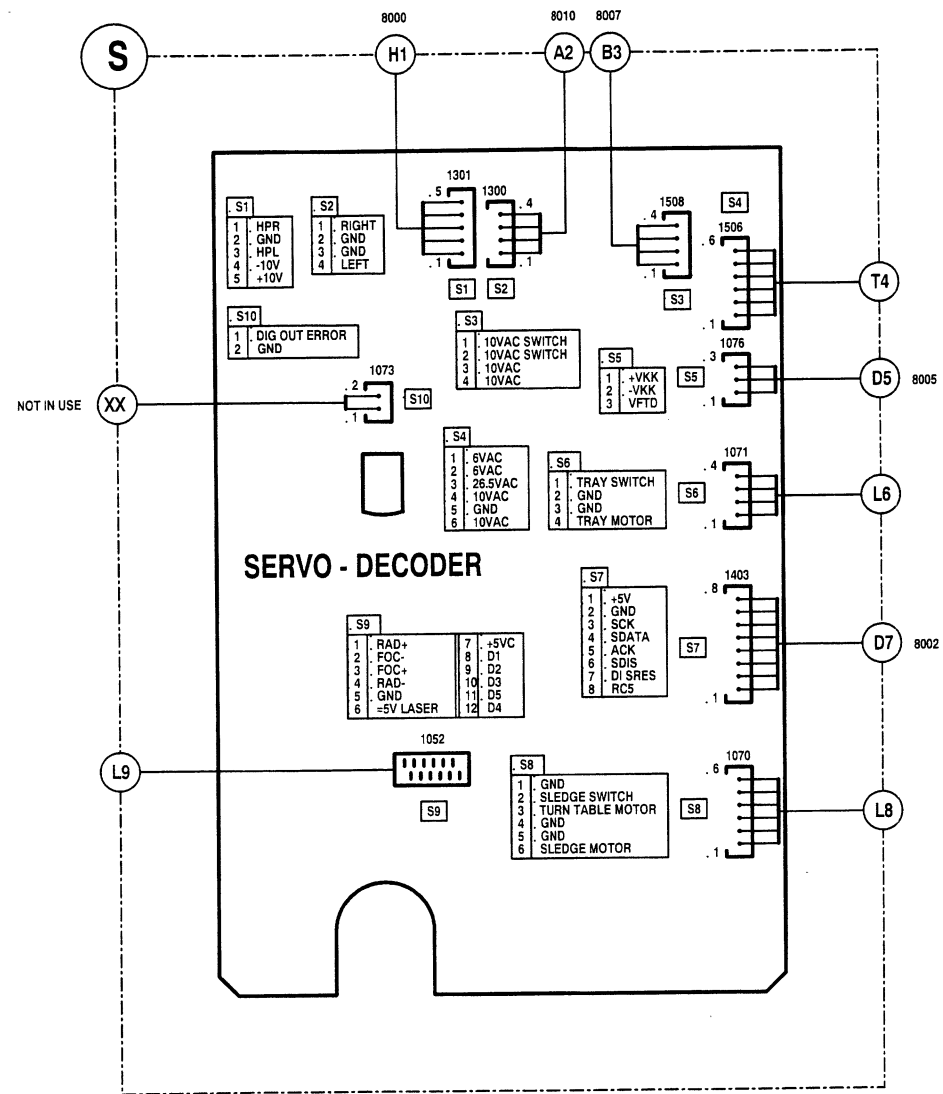
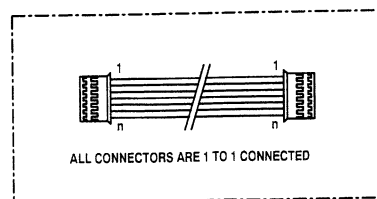
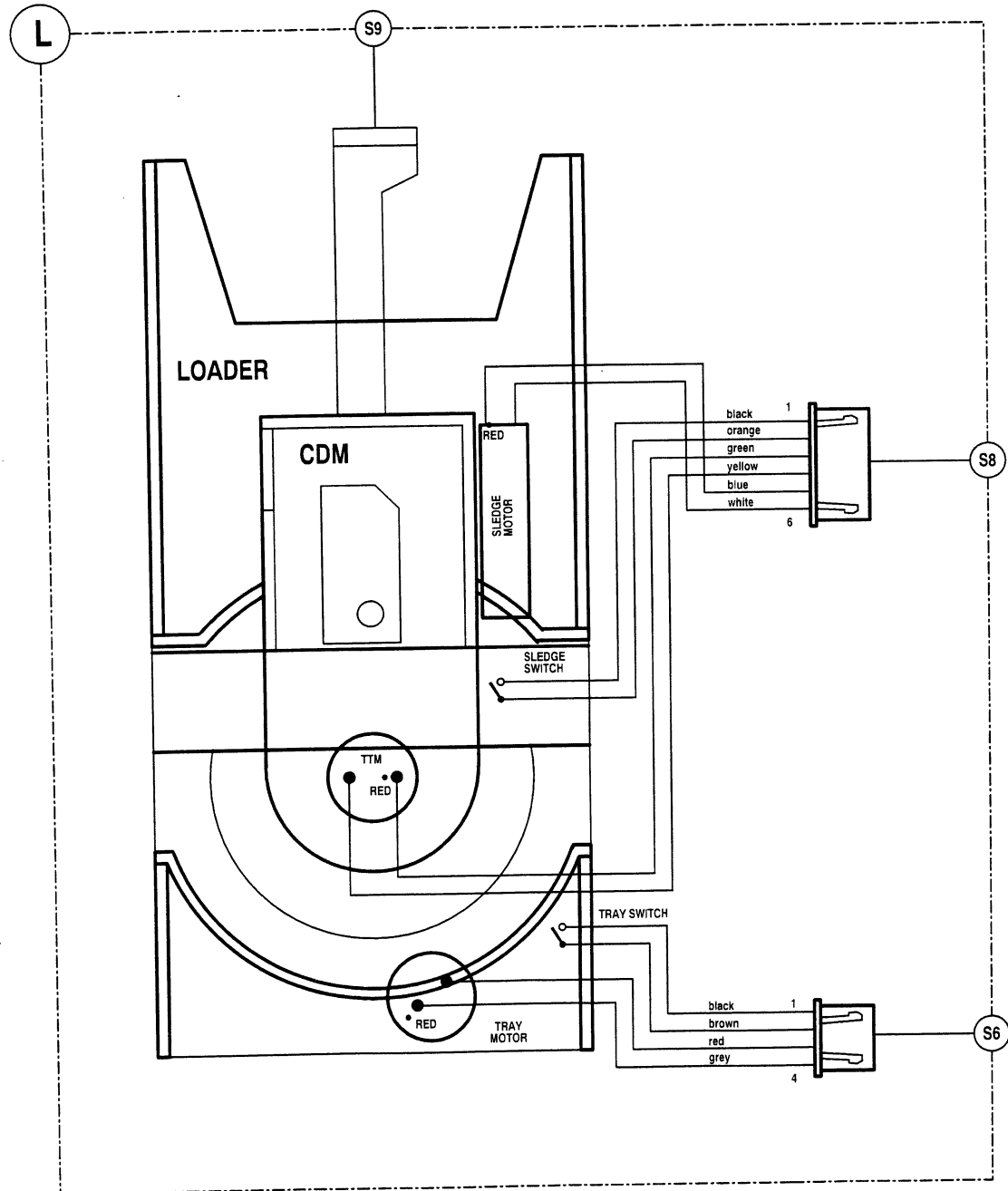
SIGNAL	AUDIO SIGNALS DISC 1	TESTPOINT	REMARKS
ANALOG OUT LEFT	TOTAL HARMONIC DISTORTION TRACKS 10 - 23	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			
ANALOG OUT LEFT	SIGNAL-TO-NOISE RATIO TRACK 1 REFERENCE LEVEL TRACK 49	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			

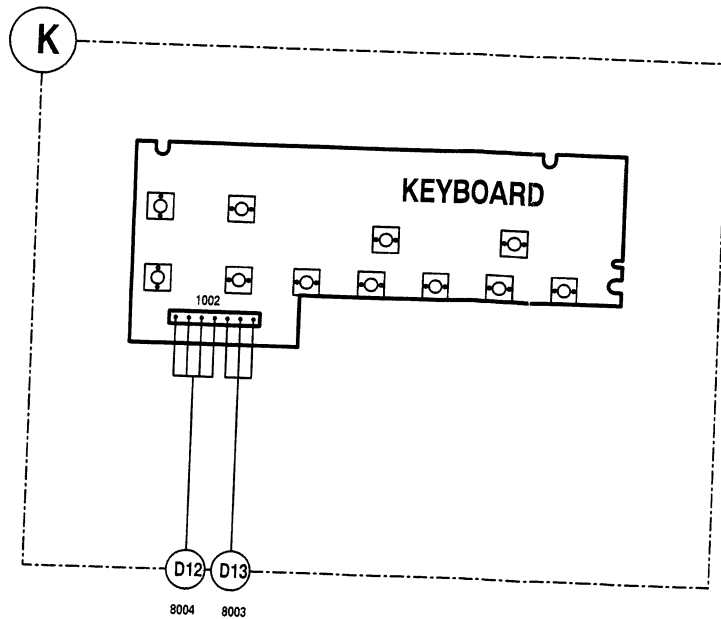
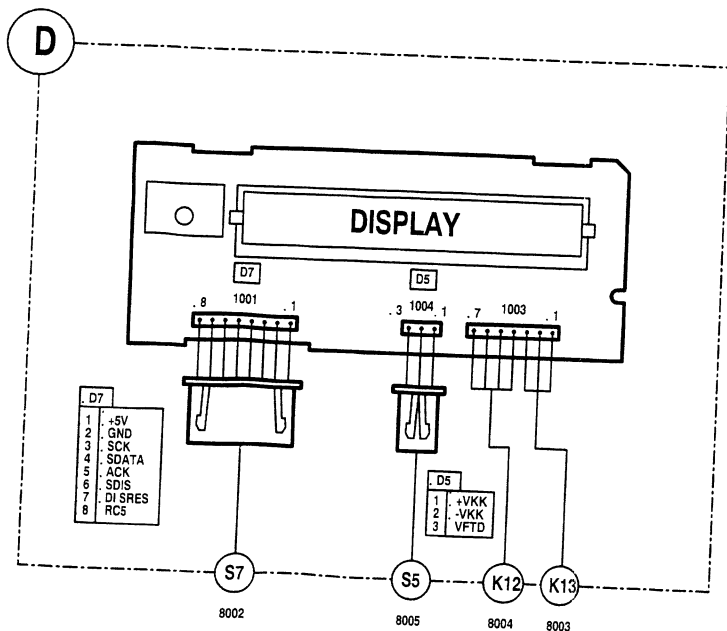
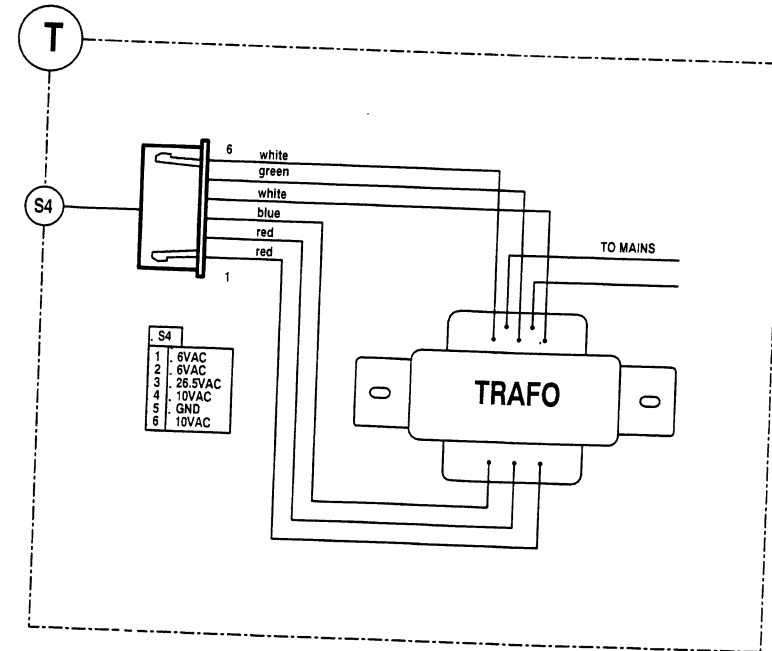
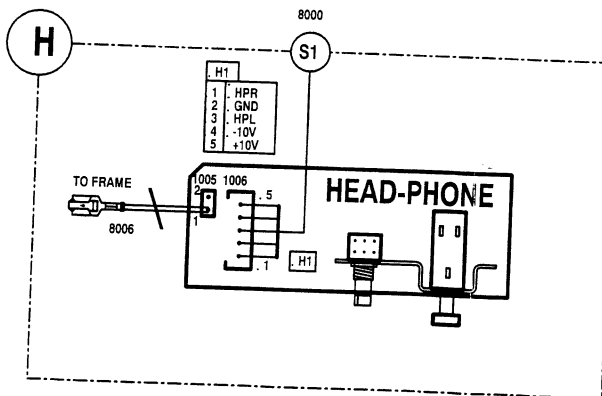
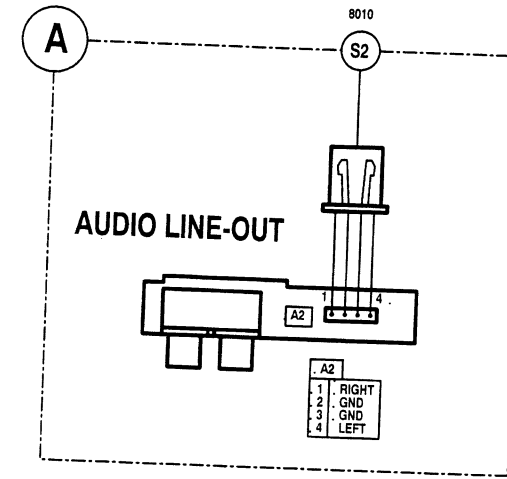
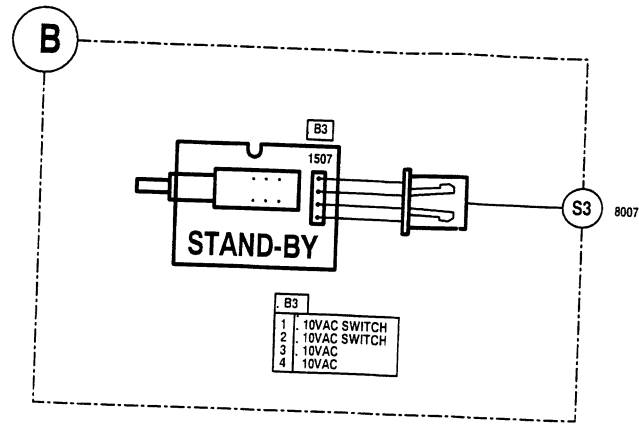
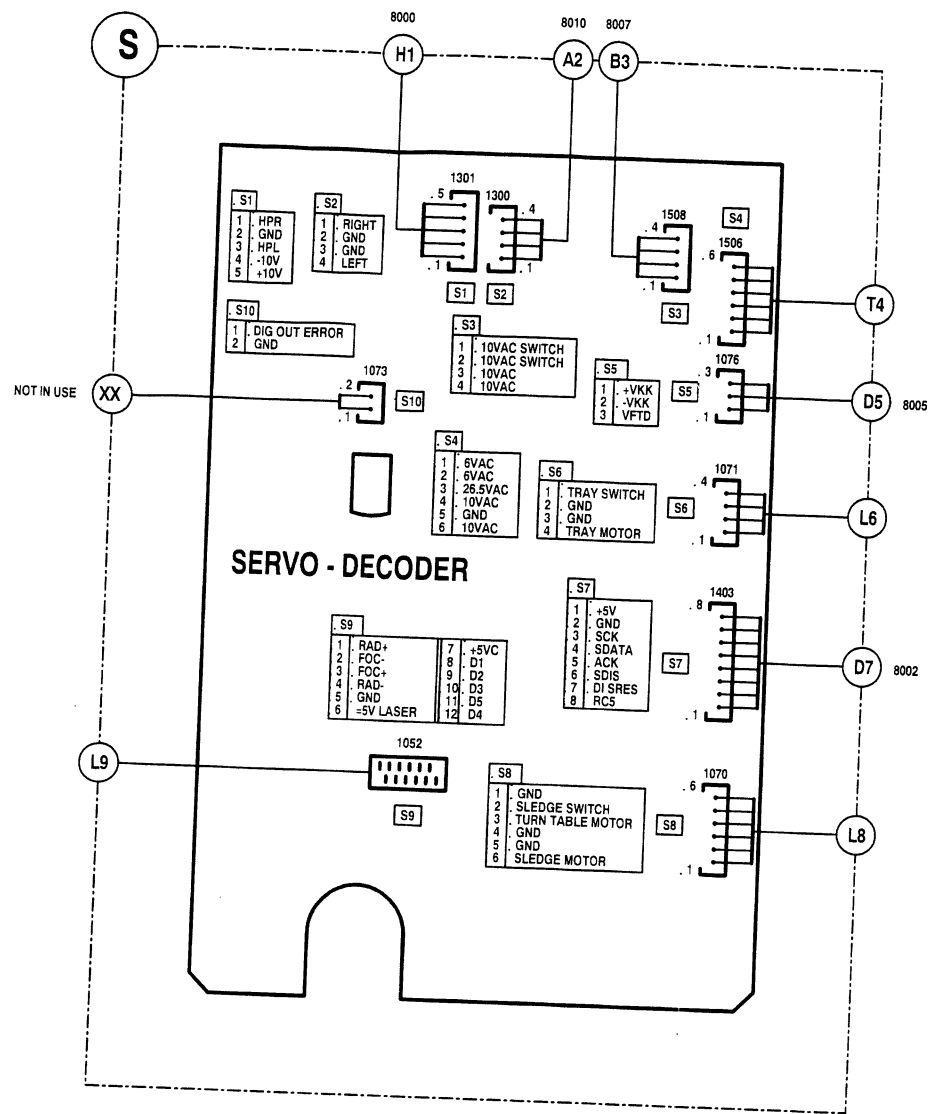
FILTER = 13TH ORDER FILTER 4822 395 30204



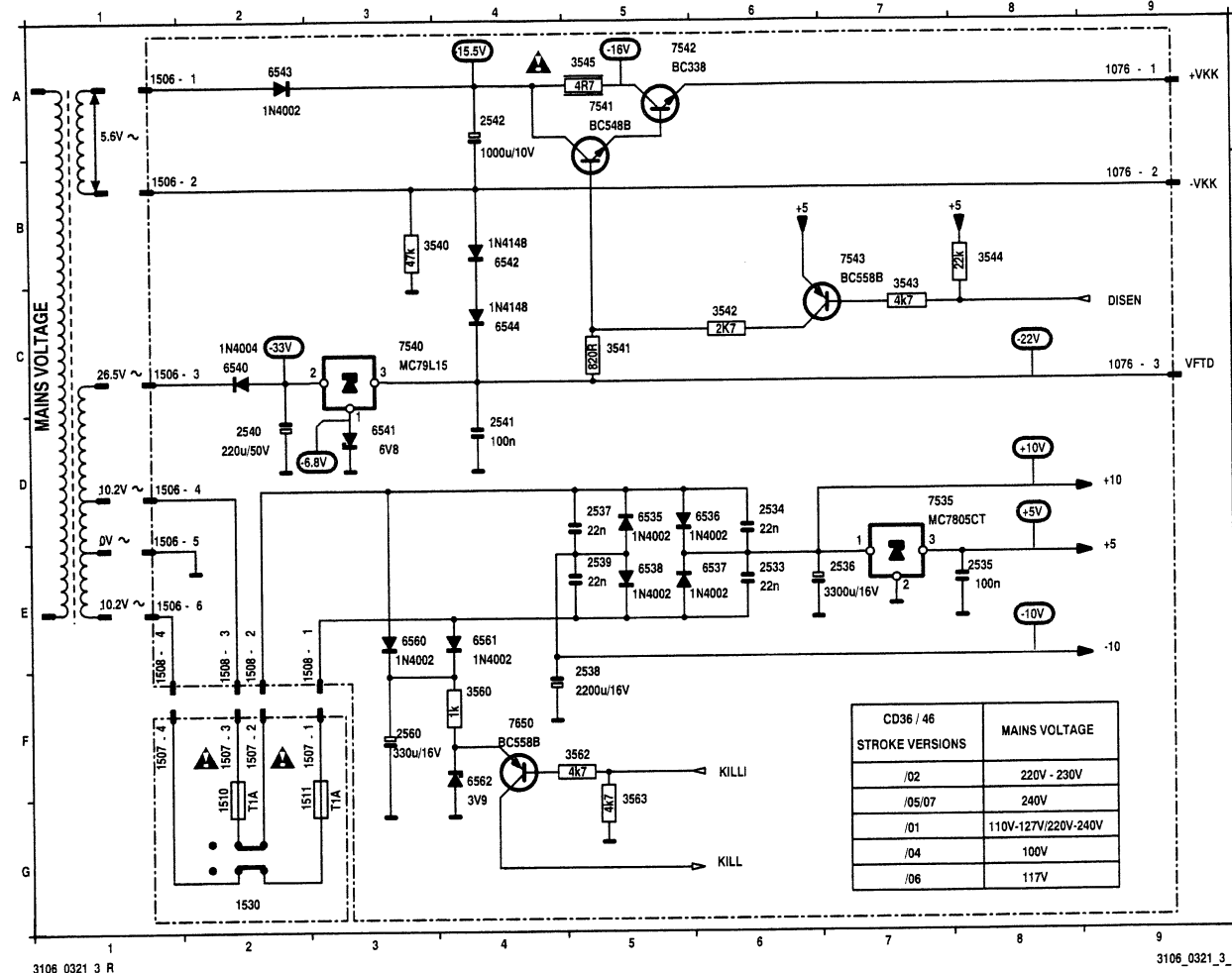
ABBREVIATIONS

BCK	Bit clock input of CC-DAC TDA1545
CFLG	correction flag output
CL	interface clock input line
CL11	11.2896 MHz clock output
CL16	16.9344 MHz system clock output
CLA	4.2336 MHz microprocessor clock output
CLO	Clock output
CRIN	crystal/resonator input
CROUT	crystal/resonator output
D1-D4	Central diode input of TDA1301
D1-D5	Photodiode signals from CDM12 mechanism
DA	interface data I/O line
DACCL	Bit clock output of CD6 decoder SAA7345
DACDA	Data output of CD6 decoder SAA7345
DACWS	Word select output of CD6 decoder SAA7345
DATA	serial data output/Data input of CC-DAC TDA1545
DOBM	biphase mark output
FO	Focus actuator output
FOC+	+Connection of focus actuator
FOC-	Ground connection of focus actuator
HF	High-Frequency signal to decoder input
HFIN	comparator signal input
HFREF	comparator common-mode input
IOL	Left channel current output
IOR	Right channel current output
IREF	Reference current output
ISLICE	current feedback from data slicer
LDON	Laser drive on
MISC	general purpose DAC output
MOTO1	motor output 1
MOTO2	motor output 2
NRST	Reset input
OTD	Off track detector
PORE	power-on reset enable input(active low)
R1-R2	Satellite diode signal input
RA	Radial actuator output
RAB	interface R/W and acknowledge input
RAD+	+Connection of radial actuator
RAD-	Ground connection of radial actuator
SCLK	serial bit clock output
SICL	Serial interface clock
SIDA	Serial interface data
SILD	Serial interface load
SL OUT	+Connection of sledge motor
SL	Sledge output
TEST1	test input
TEST2	test input
TS1-TS2	Test inputs
V1-5	Versatile input pins
WCLK	Word clock output
WS	Word select input of CC-DAC TDA1545
XTLI	Oscillator input
XTLO	Oscillator output
XTLR	Oscillator reference

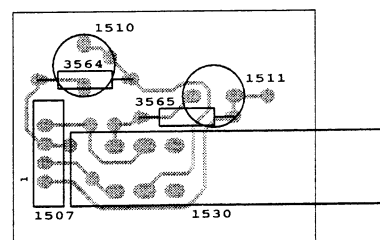




POWER SUPPLY CIRCUIT DIAGRAM

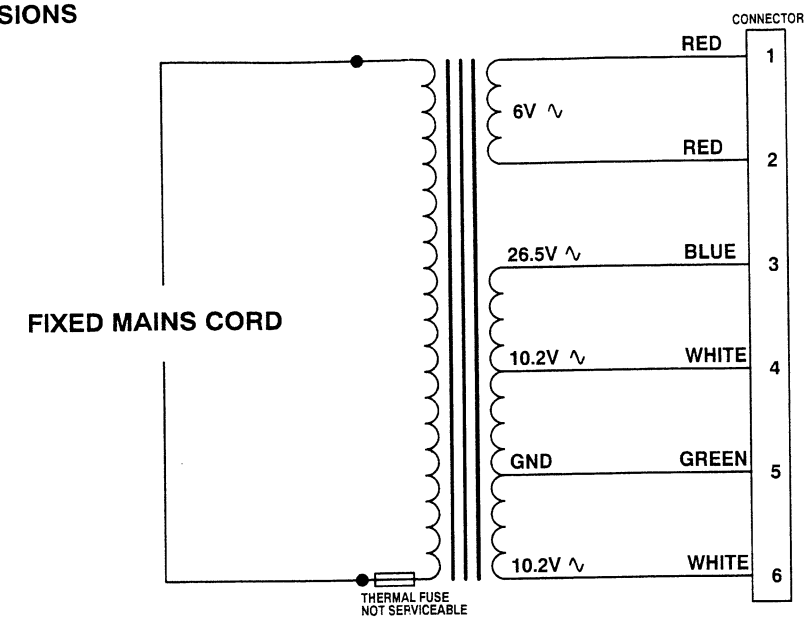


SWITCH PANEL



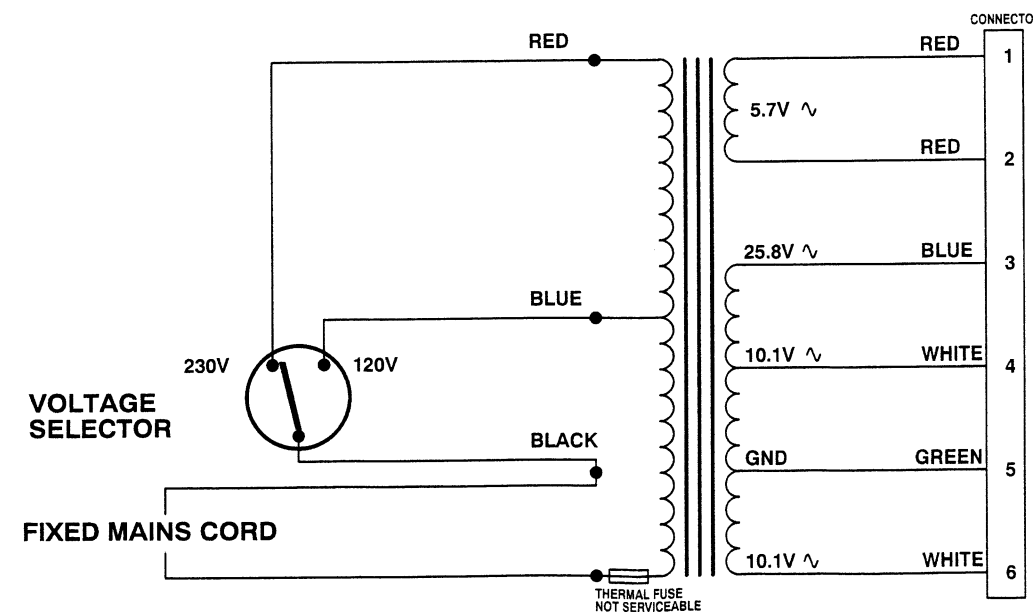
TRANSFORMER CONNECTIONS

/02/04/05/06/07 VERSIONS



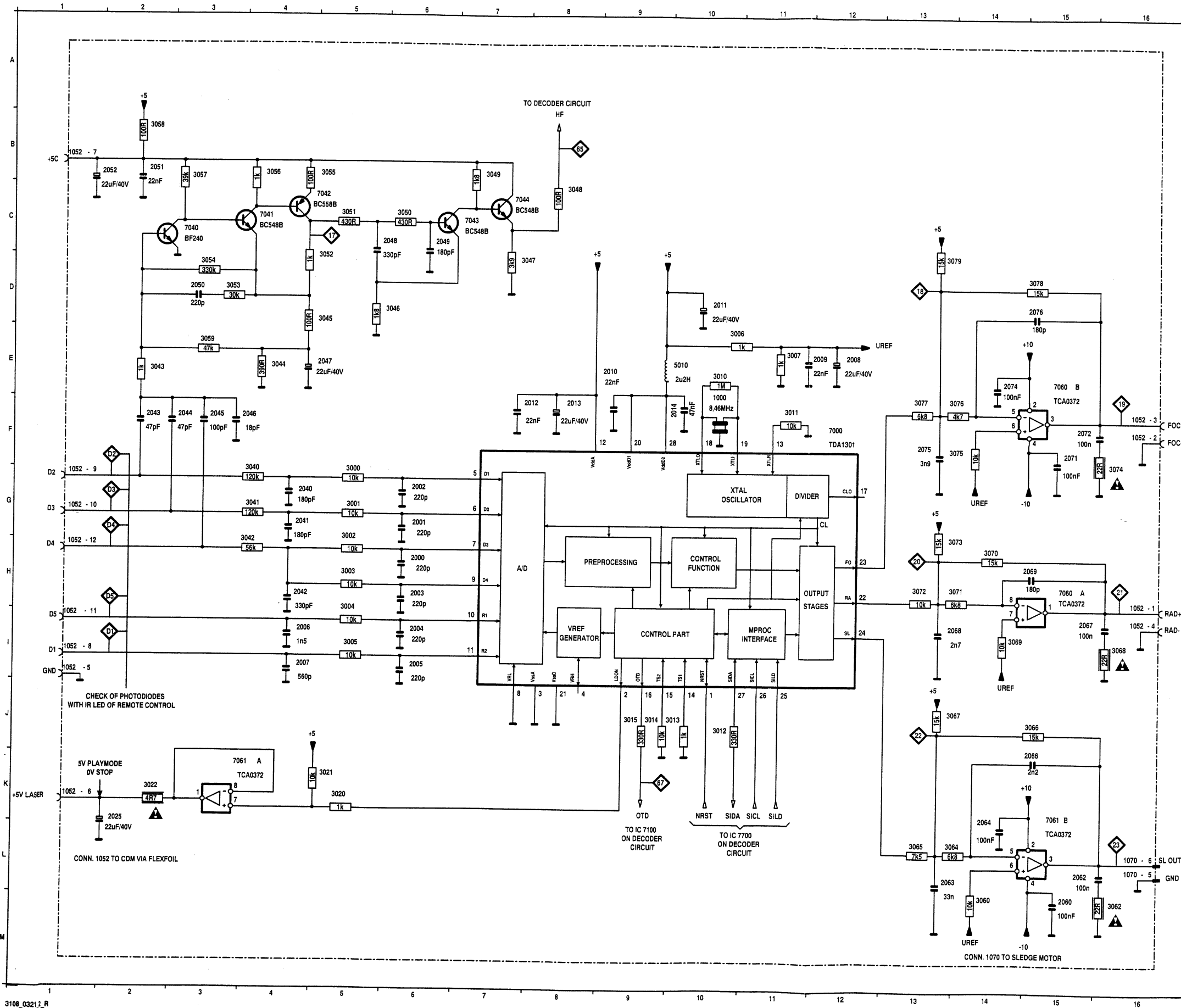
VERSION	MAINS VOLTAGE	SERVICE CODE
/02	220V-230V	4822 146 31337
/05	240V	4822 146 31339
/04 (F)	100V	4822 146 31345
/06 (U)	117V	4822 146 31341
/07	240V	4822 146 21797

/01 VERSION

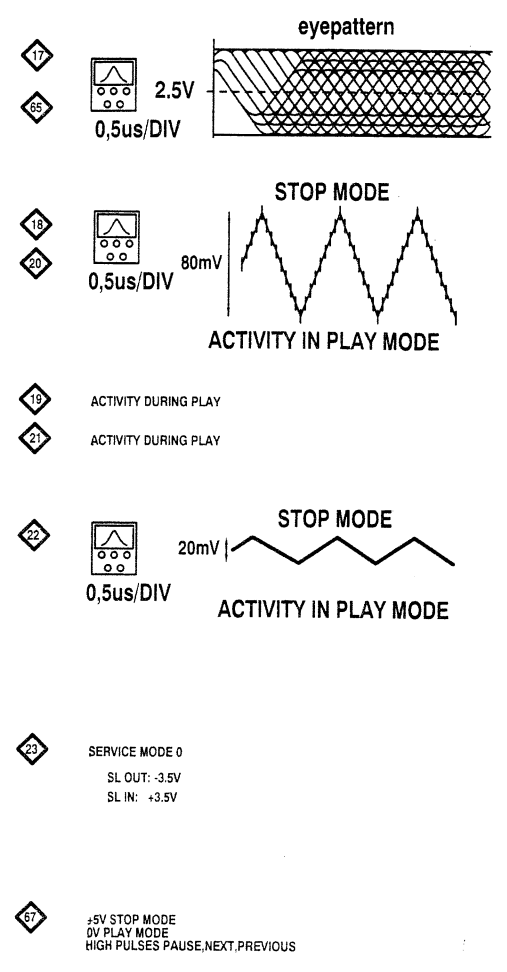


POSITION	MAINS VOLTAGE	SERVICE CODE
120V	110V-127V	4822 146 21796
230V	220V-240V	

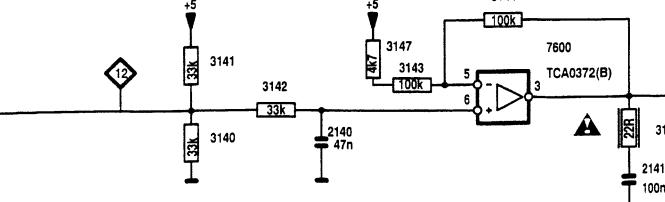
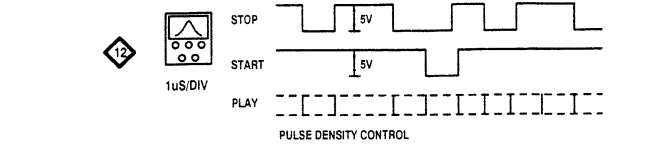
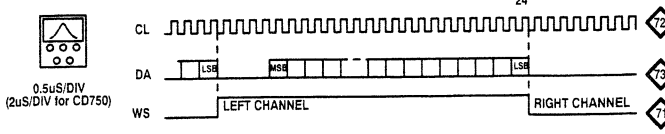
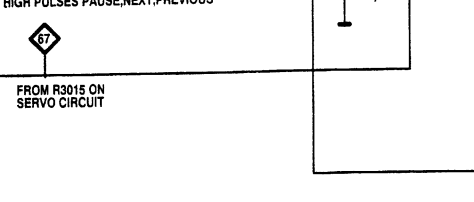
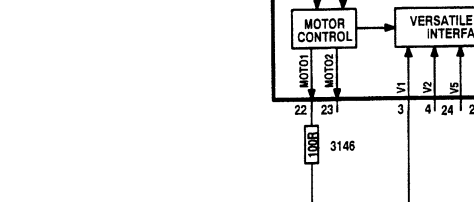
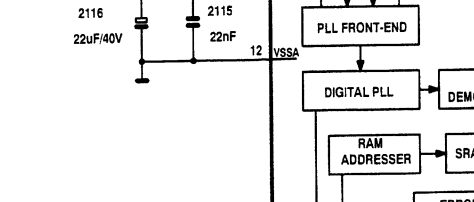
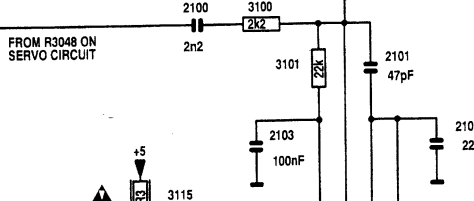
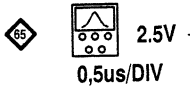
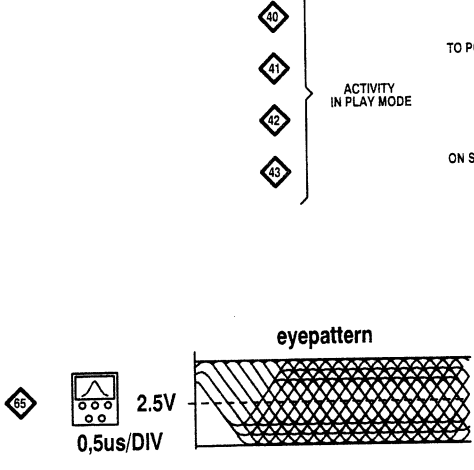
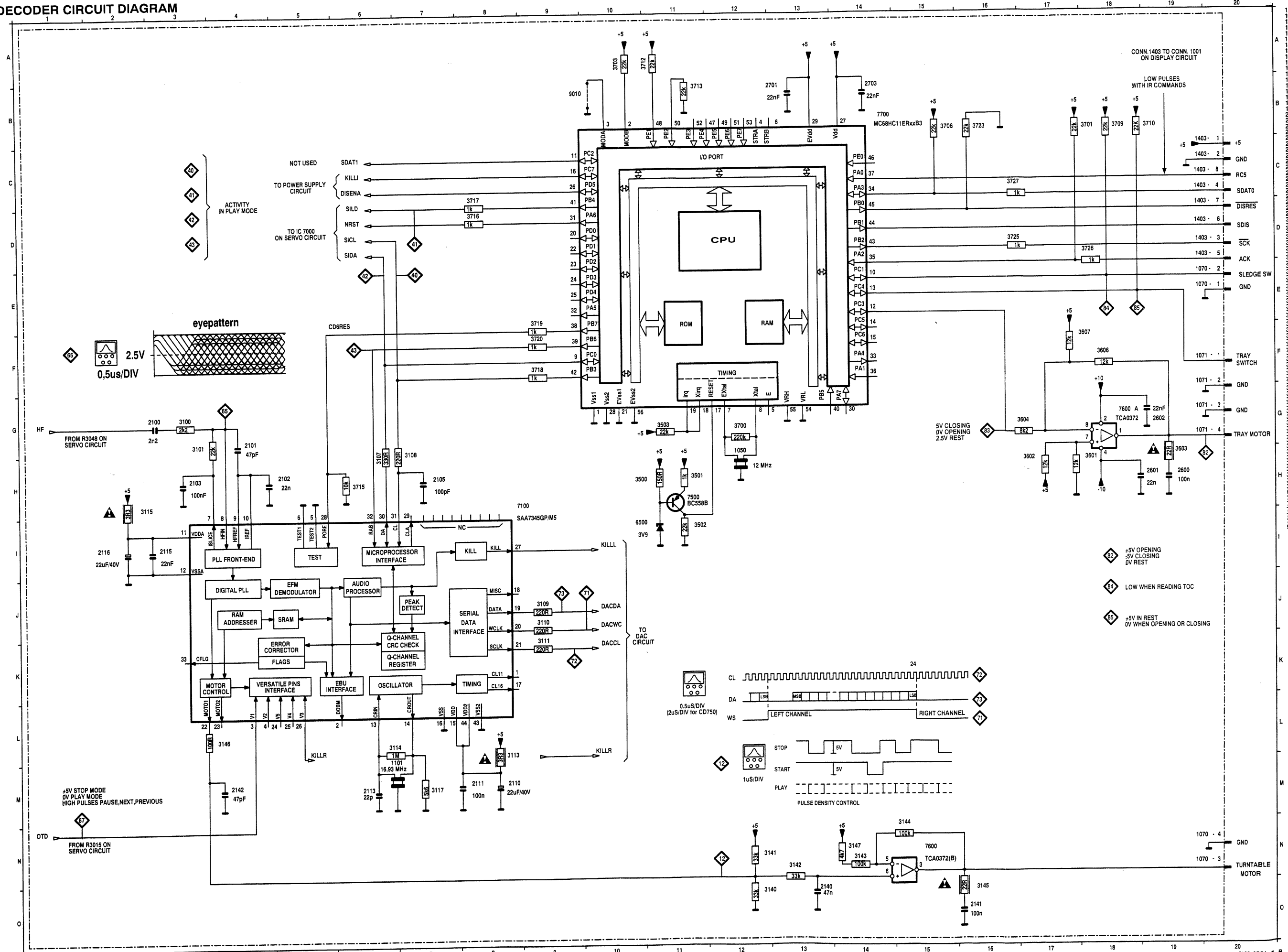
TRANSFORMER AND VOLTAGE SELECTOR ARE ONE ASSEMBLY



- 1000 E10
- 1052 H16
- 1052 F16
- 1052 I16
- 1052 J1
- 1052 K1
- 1052 B1
- 1052 I1
- 1052 F1
- 1052 G1
- 1052 I1
- 1052 H1
- 1070 L16
- 2000 H6
- 2001 G6
- 2002 G6
- 2003 H6
- 2004 I6
- 2005 I6
- 2006 I4
- 2007 I4
- 2008 E12
- 2009 E12
- 2010 E9
- 2011 D10
- 2012 F8
- 2013 F8
- 2014 F10
- 2025 K2
- 2040 G4
- 2041 G4
- 2042 H4
- 2043 F4
- 2044 F3
- 2045 F3
- 2046 F4
- 2047 E4
- 2048 C6
- 2049 C6
- 2050 B2
- 2052 B2
- 2060 M15
- 2062 L15
- 2063 L13
- 2064 K14
- 2066 J15
- 2067 I15
- 2068 I14
- 2069 H15
- 2071 F11
- 2072 F15
- 2074 E14
- 2075 F13
- 2076 D15
- 3000 G5
- 3001 G5
- 3002 G5
- 3003 H5
- 3004 H5
- 3005 I5
- 3006 E10
- 3007 E11
- 3010 E10
- 3011 F11
- 3012 I10
- 3013 J10
- 3014 J9
- 3015 J9
- 3020 K5
- 3021 K5
- 3022 K2
- 3040 G4
- 3041 G4
- 3042 H4
- 3043 E2
- 3044 E4
- 3045 D5
- 3046 D5
- 3047 D5
- 3048 C8
- 3049 B7
- 3050 C6
- 3051 C5
- 3052 D5
- 3053 D3
- 3054 D3
- 3055 B5
- 3056 B4
- 3057 B4
- 3058 B2
- 3059 E3
- 3060 M14
- 3062 M16
- 3064 L14
- 3065 L13
- 3066 J15
- 3067 J14
- 3068 I16
- 3069 I14
- 3070 H14
- 3071 H14
- 3072 H13
- 3073 E14
- 3074 F16
- 3075 F14
- 3076 F14
- 3077 F13
- 3078 D15
- 3079 D13
- 5010 E10
- 7000 F12
- 7040 C3
- 7041 C4
- 7042 C4
- 7043 C7
- 7044 C7
- 7060 H15
- 7060 E15
- 7061 K4
- 7061 K15



DECODER CIRCUIT DIAGRAM



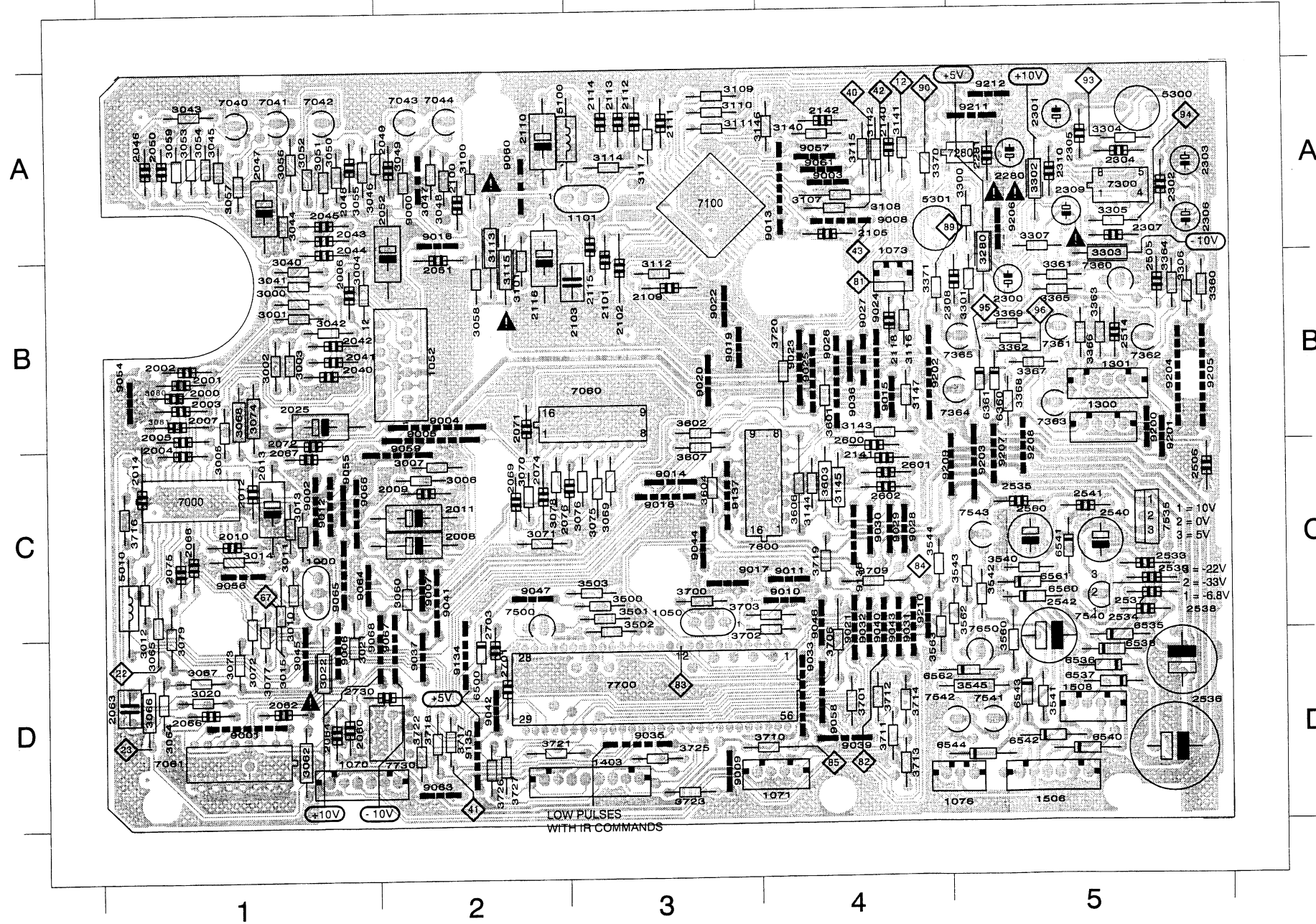
- 65 5V STOP MODE
DV PLAY MODE
HIGH PULSES PAUSE, NEXT, PREVIOUS
- 67 FROM R3015 ON
SERVO CIRCUIT
- 72 5V OPENING
5V CLOSING
DV REST
- 73 LOW WHEN READING TOC
- 74 5V IN REST
DV WHEN OPENING OR CLOSING

1050 H12
1070 E19
1070 N19
1070 F19
1071 F19
1071 G19
1071 G19
1101 M 6
1403 C19
1403 D19
1403 D19
1403 D19
1403 C19
2100 G 2
2101 G 3
2102 H 5
2103 H 3
2105 H 7
2110 M 8
2111 M 8
2113 M 6
2116 F 3
2140 O13
2141 O16
2142 M 4
2600 H19
2601 H19
2602 G19
2703 B14
3100 G 3
3101 G 3
3107 H 6
3108 H 7
3109 J 9
3110 J 9
3111 K 9
3113 L 8
3115 H 2
3115 H 2
3117 M 7
3140 O12
3141 H12
3142 N13
3143 N14
3144 N15
3145 O16
3146 L 4
3147 N14
3500 H10
3501 H11
3502 H11
3503 G11
3601 H18
3602 H17
3603 H19
3604 G16
3606 F18
3607 F17
3700 G12
3701 B18
3703 A10
3706 B15
3709 B16
3710 B19
3712 A11
3713 B11
3716 C 8
3717 C 8
3719 E 9
3720 F 9
3723 B16
3725 D18
3726 D18
3727 C16
6500 I10
7100 H 8
7500 H11
7600 G18
7600 N15
7700 B14
9010 B 9

MAIN PANEL COMPONENT SIDE

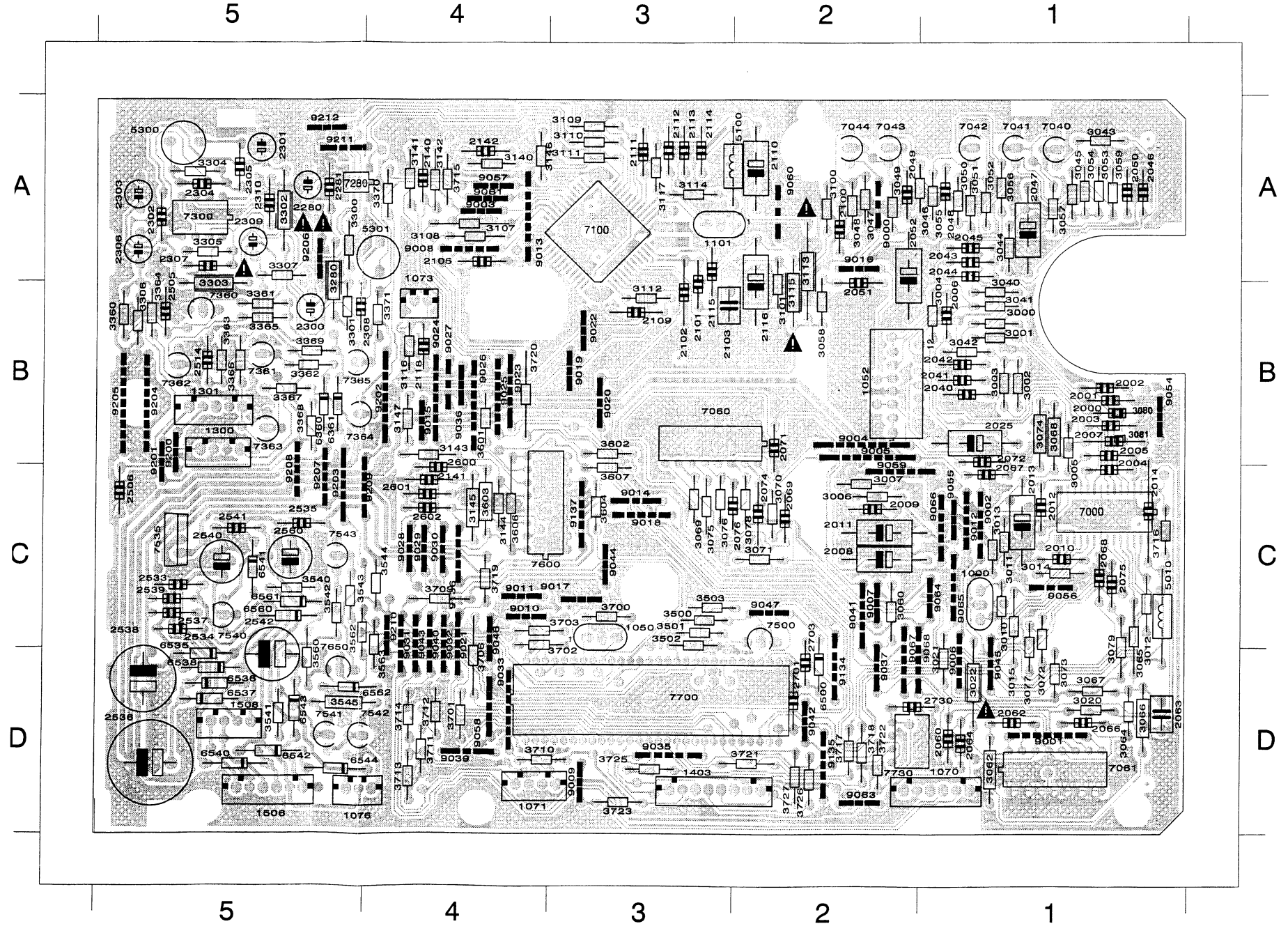
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1050 C 3	2013 C 1	2066 D 1	2115 A 3	3010 C 1	3051 A 1	3073 D 1	3116 B 4	3700 C 3	3725 D 3	9001 D 1	9021 C 4	9043 C 4	9135 D 2	2309 A 5	3303 B 5	3543 C 5	6561 C 5	9204 B 5
1062 B 2	2014 C 1	2067 C 1	2116 B 2	3011 C 1	3052 A 1	3074 B 1	3117 A 3	3701 D 4	3726 D 2	9002 C 1	9022 B 3	9044 C 3	9136 C 4	2310 A 5	3304 A 5	3544 C 4	6562 D 5	9205 B 5
1070 D 1	2025 B 1	2068 C 1	2118 B 4	3012 C 1	3053 A 1	3075 C 3	3140 A 4	3702 C 4	3727 D 2	9003 A 4	9023 B 4	9045 D 1	9137 C 3	2505 B 5	3305 A 5	3545 D 5	7280 A 5	9206 A 5
1071 D 4	2040 B 1	2069 C 2	2140 A 4	3013 C 1	3054 A 1	3076 C 3	3141 A 4	3703 C 4	5100 C 1	9004 B 2	9024 B 4	9046 C 4	...	2506 C 5	3306 B 5	3546 D 5	7300 A 5	9207 C 5
1101 A 3	2041 B 1	2071 B 2	2141 C 4	3014 C 1	3055 A 1	3077 C 1	3142 A 4	3706 D 4	5100 A 3	9005 B 2	9025 B 4	9047 C 2	1076 D 5	2514 B 5	3307 A 5	3547 C 5	7360 B 5	9208 C 5
1073 B 4	2042 B 1	2072 B 1	2142 A 4	3015 C 1	3056 A 1	3078 C 2	3143 B 4	3709 C 4	6500 D 2	9006 D 1	9026 B 4	9054 B 1	1300 B 5	2533 C 5	3360 B 5	3548 C 5	7361 B 5	9209 C 4
1101 A 3	2042 B 1	2072 B 1	2142 A 4	3015 C 1	3056 A 1	3078 C 2	3143 B 4	3709 C 4	6500 D 2	9006 D 1	9026 B 4	9054 B 1	1300 B 5	2533 C 5	3360 B 5	3548 C 5	7361 B 5	9209 C 4
1403 D 3	2043 A 1	2074 C 2	2600 C 4	3020 D 1	3057 A 1	3079 C 1	3144 C 4	3710 D 4	7000 C 1	9007 C 2	9027 B 4	9055 C 1	1301 B 5	2534 C 5	3361 B 5	3500 A 5	7362 B 5	9210 C 4
2000 B 1	2044 A 1	2075 C 1	2601 C 4	3021 D 1	3058 B 2	3080 B 1	3145 C 4	3711 D 4	7040 A 1	9008 A 4	9028 C 4	9056 C 1	1506 D 5	2535 C 5	3362 B 5	5301 A 4	7363 B 5	9211 A 5
2001 B 1	2045 A 1	2076 C 3	2602 C 4	3022 D 1	3059 A 1	3081 B 1	3146 A 4	3712 D 4	7041 A 1	9009 D 3	9029 C 4	9057 A 4	1508 D 5	2536 D 5	3363 B 5	6360 B 5	7364 B 5	9212 A 5
2002 B 1	2046 A 1	2100 A 2	2701 D 2	3040 B 1	3060 C 2	3100 A 2	3147 B 4	3713 D 4	7042 A 1	9010 C 4	9030 C 4	9058 D 4	2280 A 5	2537 C 5	3364 B 5	6361 B 5	7365 B 5	
2003 B 1	2047 A 1	2101 B 3	2703 D 2	3041 B 1	3062 D 1	3101 B 2	3148 A 4	3714 D 4	7043 A 2	9011 C 4	9031 C 4	9059 C 2	2281 A 5	2538 D 5	3365 B 5	6362 B 5	7366 C 5	
2004 C 1	2048 A 1	2102 B 3	2730 D 2	3042 B 1	3064 D 1	3107 A 4	3501 C 3	3715 A 4	7044 A 2	9012 C 1	9032 C 4	9060 A 2	2300 B 5	2539 C 5	3366 B 5	6363 B 5	7367 D 5	
2005 B 1	2049 A 2	2103 B 3	3000 B 1	3043 A 1	3065 C 1	3108 A 4	3502 C 3	3716 C 2	7045 A 2	9013 A 4	9033 D 4	9061 A 4	2301 A 5	2540 C 5	3367 B 5	6364 B 5	7368 D 5	
2006 B 1	2050 A 1	2105 A 4	3001 B 1	3044 A 1	3066 D 1	3109 A 3	3503 C 3	3717 D 2	7081 D 1	9014 C 3	9035 D 3	9063 D 2	2302 A 5	2541 C 5	3368 B 5	6365 B 5	7369 D 5	
2007 B 1	2051 B 2	2109 B 3	3002 B 1	3045 A 1	3067 D 1	3110 A 3	3601 B 4	3718 C 2	7100 A 3	9015 B 4	9036 B 4	9064 C 1	2303 A 5	2542 D 5	3369 B 5	6366 B 5	7370 D 5	
2008 C 2	2052 A 2	2110 A 2	3003 B 1	3046 A 1	3068 B 1	3111 A 3	3602 B 3	3719 C 4	7500 C 2	9016 A 2	9037 D 2	9065 C 1	2304 A 5	2543 C 5	3370 A 4	6367 B 5	7371 D 5	
2009 C 2	2060 D 1	2111 A 3	3004 B 1	3047 A 2	3069 C 3	3112 B 3	3603 C 4	3720 B 4	7600 C 4	9017 C 3	9039 D 4	9066 C 1	2305 A 5	2544 C 5	3371 B 4	6368 B 5	7372 D 5	
2010 C 1	2062 D 1	2112 A 3	3005 B 1	3048 A 2	3070 C 2	3113 A 2	3604 C 3	3721 D 2	7700 D 3	9018 C 3	9040 C 4	9067 D 2	2306 A 5	3300 A 5	3540 C 5	6543 D 5	9201 B 5	
2011 C 2	2063 D 1	2113 A 3	3006 C 2	3049 A 2	3071 C 2	3114 A 3	3606 C 4	3722 D 2	7730 D 2	9019 B 3	9041 C 2	9068 D 1	2307 A 5	3301 B 5	3541 D 5	6544 D 5	9202 B 4	

1 2 3 4 5

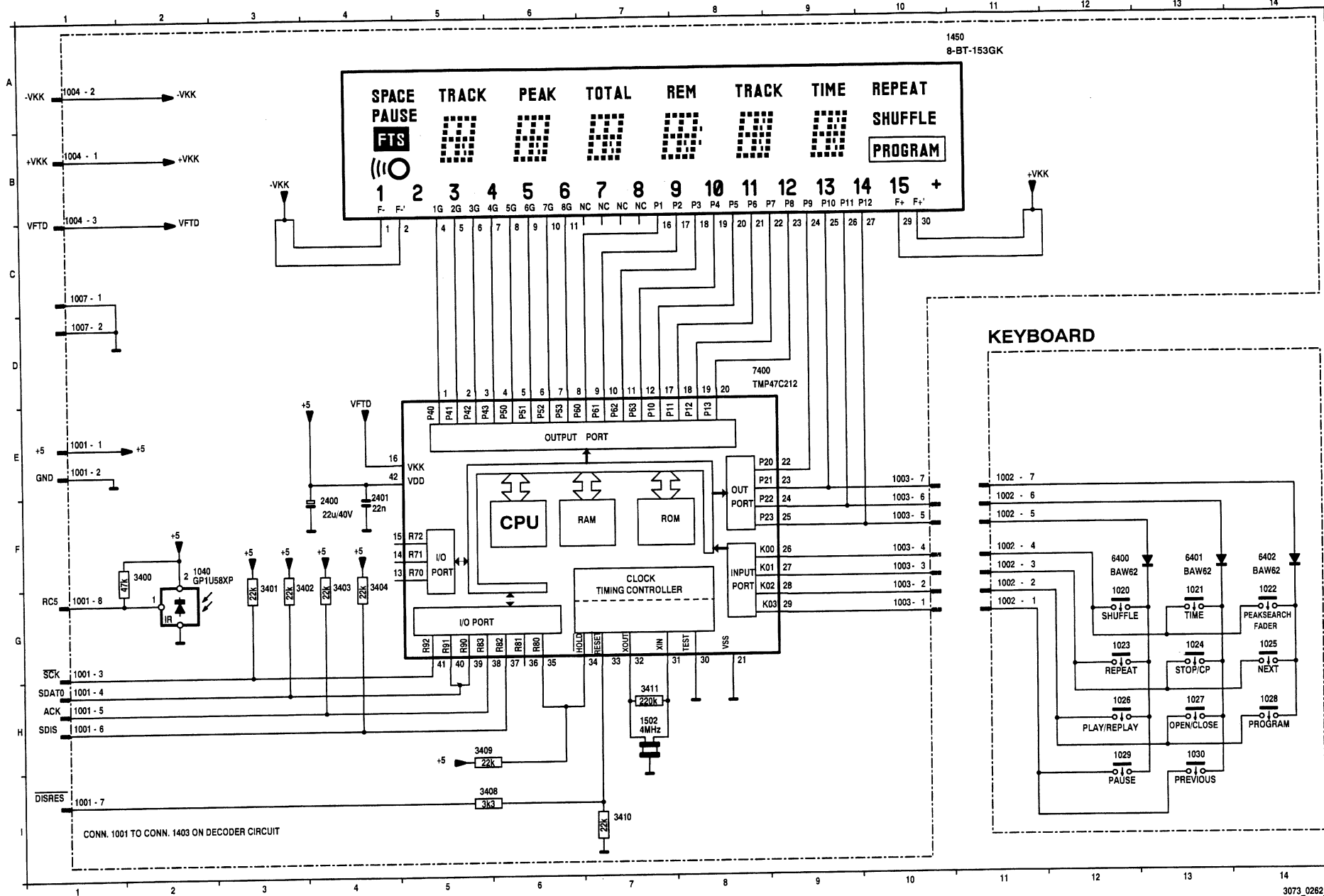


MAIN PANEL SOLDER SIDE

9203 C 5	6560 C 5	3542 C 5	3302 A 5	2308 B 5	9134 D 2	9042 D 2	9020 B 3	9000 A 2	3723 D 3	3607 C 3	3115 B 2	3072 C 1	3050 A 1	3007 C 2	2114 A 3	2084 D 1	2012 C 1	1000 C 1	
9204 B 5	6561 C 5	3543 C 5	3303 B 5	2309 A 5	9135 D 2	9043 C 4	9021 C 4	9001 D 1	3725 D 3	3700 C 3	3116 B 4	3073 D 1	3051 A 1	3010 C 1	2115 A 3	2066 D 1	2013 C 1	1050 C 3	
9205 B 5	6562 D 5	3544 C 4	3304 A 5	2310 A 5	9136 C 4	9044 C 3	9022 B 3	9002 C 1	3726 D 2	3701 D 4	3117 A 3	3074 B 1	3052 A 1	3011 C 1	2116 B 2	2067 C 1	2014 C 1	1052 B 2	
9206 A 5	7280 A 5	3545 D 5	3305 A 5	2505 B 5	9137 C 3	9045 D 1	9023 B 4	9003 A 4	3727 D 2	3702 C 4	3140 A 4	3075 C 3	3053 A 1	3012 C 1	2118 B 4	2068 C 1	2025 B 1	1070 D 1	
9207 C 5	7300 A 5	3560 D 5	3306 B 5	2506 C 5	...	9046 C 4	9024 B 4	9004 B 2	5010 C 1	3703 C 4	3141 A 4	3076 C 3	3054 A 1	3013 C 1	2140 A 4	2069 C 2	2040 B 1	1071 D 4	
9208 C 5	7360 B 5	3562 C 5	3307 A 5	2514 B 5	1076 D 5	9047 C 2	9025 B 4	9005 B 2	5100 A 3	3706 D 4	3142 A 4	3077 C 1	3055 A 1	3014 C 1	2141 C 4	2071 B 2	2041 B 1	1073 B 4	
9209 C 4	7361 B 5	3563 C 4	3360 B 5	2533 C 5	1300 B 5	9054 B 1	9026 B 4	9006 D 1	6500 D 2	3709 C 4	3143 B 4	3078 C 2	3056 A 1	3015 C 1	2142 A 4	2072 B 1	2042 B 1	1101 A 3	
9210 C 4	7362 B 5	5300 A 5	3361 B 5	2534 C 5	1301 B 5	9055 C 1	9027 B 4	9007 C 2	7000 C 1	3710 D 4	3144 C 4	3079 C 1	3057 A 1	3020 D 1	2600 C 4	2074 C 2	2043 A 1	1403 D 3	
9211 A 5	7363 B 5	5301 A 4	3362 B 5	2535 C 5	1506 D 5	9056 C 1	9028 C 4	9008 A 4	7040 A 1	3711 D 4	3145 C 4	3080 B 1	3058 B 2	3021 D 1	2601 C 4	2075 C 1	2044 A 1	2000 B 1	
9212 A 5	7364 B 5	6360 B 5	3363 B 5	2536 D 5	1508 D 5	9057 A 4	9029 C 4	9009 D 3	7041 A 1	3712 D 4	3146 A 4	3081 B 1	3059 A 1	3022 D 1	2602 C 4	2076 C 3	2045 A 1	2001 B 1	
		6381 B 5	3364 B 5	2537 C 5	2280 A 5	9058 D 4	9030 C 4	9010 C 4	7042 A 1	3713 D 4	3147 B 4	3100 A 2	3060 C 2	3060 C 2	3040 B 1	2701 D 2	2100 A 2	2046 A 1	2002 B 1
		6535 C 5	3365 B 5	2538 D 5	2281 A 5	9059 C 2	9031 C 4	9011 C 4	7043 A 2	3714 D 4	3500 C 3	3101 B 2	3062 D 1	3041 B 1	2703 D 2	2101 B 3	2047 A 1	2003 B 1	2004 C 1
		7540 C 5	6536 D 5	3366 B 5	2539 C 5	2300 B 5	9060 A 2	9032 C 4	7044 A 2	3715 A 4	3501 C 3	3107 A 4	3064 D 1	3042 B 1	2730 D 2	2102 B 3	2048 A 1	2005 B 1	2006 B 1
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		7542 D 5	6538 D 5	3368 B 5	2541 C 5	2302 A 5	9062 D 2	9035 D 3	7081 D 1	3717 D 2	3503 C 3	3109 A 3	3066 D 1	3044 A 1	3001 B 1	2105 A 4	2050 A 1	2006 B 1	2007 B 1
		7543 C 5	6540 D 5	3369 B 5	2542 D 5	2303 A 5	9064 C 1	9036 B 4	7100 A 3	3718 D 2	3601 B 4	3110 A 3	3067 D 1	3045 A 1	3002 B 1	2109 B 3	2051 B 2	2007 B 1	2008 C 2
		7650 D 5	6541 C 5	3370 A 4	2560 C 5	2304 A 5	9065 C 1	9037 D 2	7500 C 2	3719 C 4	3602 B 3	3111 A 3	3068 B 1	3046 A 1	3003 B 1	2110 A 2	2052 A 2	2008 C 2	2009 C 2
		9200 B 5	6542 D 5	3371 B 4	3280 B 5	2305 A 5	9066 C 1	9039 D 4	7600 C 4	3720 B 4	3603 C 4	3112 B 3	3069 C 3	3047 A 2	3004 B 1	2111 A 3	2060 D 1	2009 C 2	2010 C 1
		9201 B 5	6543 D 5	3540 C 5	3300 A 5	2306 A 5	9067 D 2	9040 C 4	7700 D 3	3721 D 2	3604 C 3	3113 A 2	3070 C 2	3048 A 2	3005 B 1	2112 A 3	2062 D 1	2010 C 1	2011 C 2
		9202 B 4	6544 D 5	3541 D 5	3301 B 5	2307 A 5	9068 D 1	9041 C 2	7730 D 2	3722 D 2	3606 C 4	3114 A 3	3071 C 2	3049 A 2	3006 C 2	2113 A 3	2063 D 1	2011 C 2	

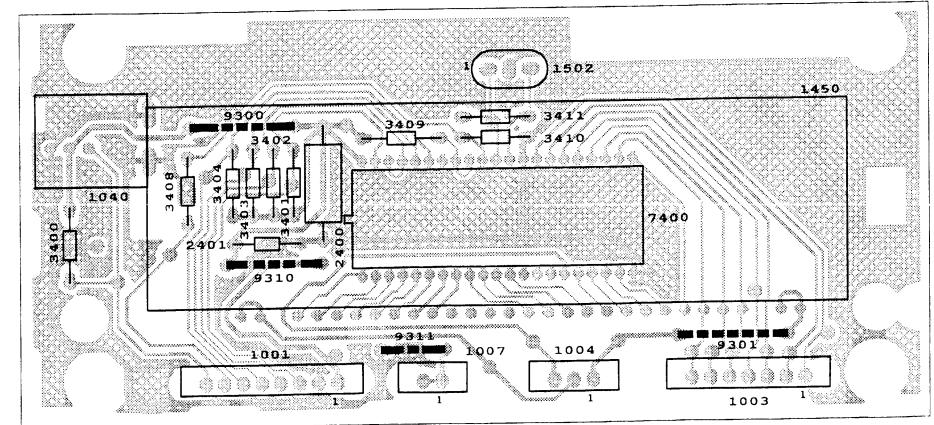


CONTROL AND DISPLAY CIRCUIT DIAGRAM

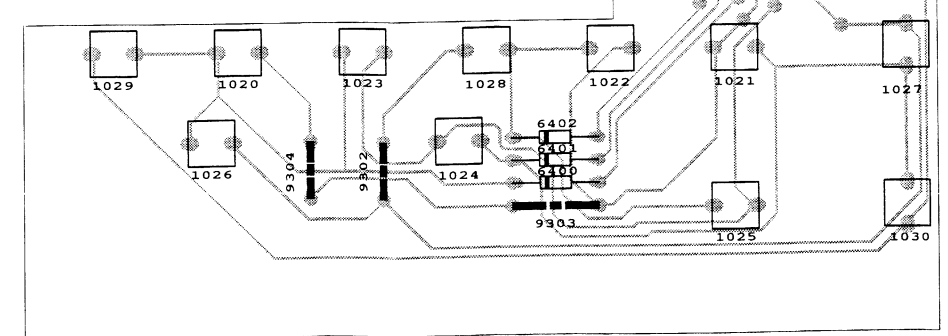


- 1001 E 1
- 1001 G 1
- 1001 H 1
- 1001 H 1
- 1001 H 1
- 1001 I 1
- 1001 G 1
- 1002 G 11
- 1002 F 11
- 1002 F 11
- 1002 E 11
- 1003 G 10
- 1003 G 10
- 1003 F 10
- 1003 F 10
- 1003 E 10
- 1004 B 1
- 1004 A 1
- 1007 C 1
- 1007 D 1
- 1020 G 12
- 1021 G 13
- 1022 G 14
- 1023 G 12
- 1024 G 13
- 1025 G 14
- 1026 H 12
- 1027 H 13
- 1028 H 14
- 1029 H 12
- 1030 H 13
- 1040 F 2
- 1450 A 10
- 1502 H 7
- 2400 F 4
- 2401 F 4
- 3400 G 3
- 3401 G 3
- 3402 G 3
- 3403 G 4
- 3404 G 4
- 3405 G 5
- 3409 H 5
- 3410 I 7
- 3411 H 7
- 6400 F 12
- 6401 F 13
- 6402 F 14
- 7400 D 8

DISPLAY PANEL

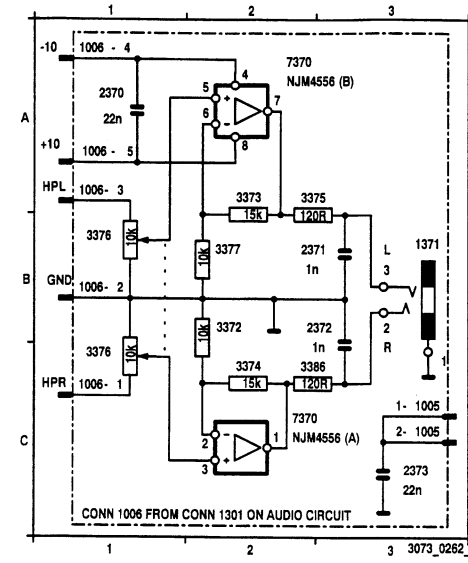


KEYBOARD PANEL

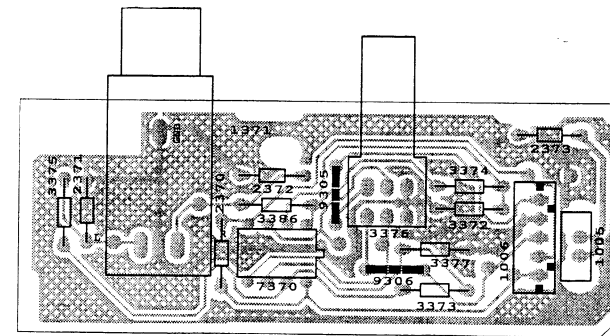


HEADPHONE CIRCUIT DIAGRAM(CD46 only)

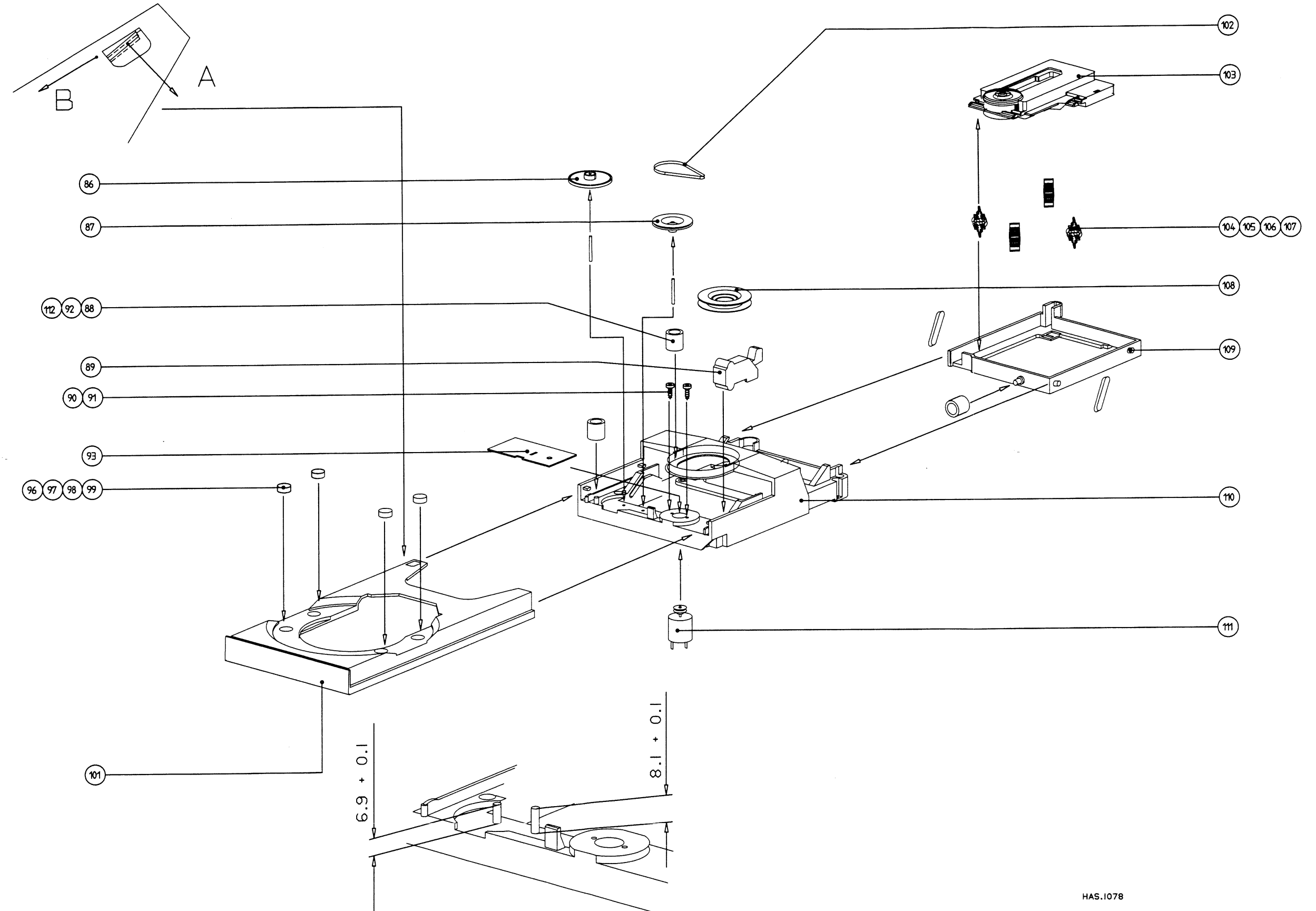
1005 C 3	1006 A 1	2372 B 3	3375 A 3	7370 C 2
1006 C 3	1006 A 1	2373 C 3	3376 C 1	7370 A 2
1006 C 1	1371 B 3	3372 B 2	3376 B 1	
1006 B 1	2370 A 1	3373 A 2	3377 B 2	
1006 A 1	2371 B 2	3374 C 2	3386 C 3	



HEADPHONE PANEL(CD46 only)



DETAIL I



HAS.1078

PARTSLIST LOADER

86	4822 528 81464	DRIVE PINION
87	4822 528 81465	PULLEY
88,92,112	4822 325 60379	DAMPING GROMMET
89	4822 276 13222	SWITCH
93	4822 444 60816	COVER PLATE
96,97,98,99	4822 325 80511	ORNAMENTAL TULE
101	4822 444 50679	SLIDE
102	4822 358 31168	BELT
103	4822 691 30278	CDM12.1 MECHANISM
104,105,106,107	4822 325 50215	SUSPENSION
108	4822 402 61412	CLAMPER ASSY
109	4822 464 50895	SUBCHASSIS
110	4822 464 50678	CHASSIS
111	4822 361 21492	MOTOR

Screws

90,91	selftapping screw 2,2 x 4
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MECHANICAL PARTS LIST

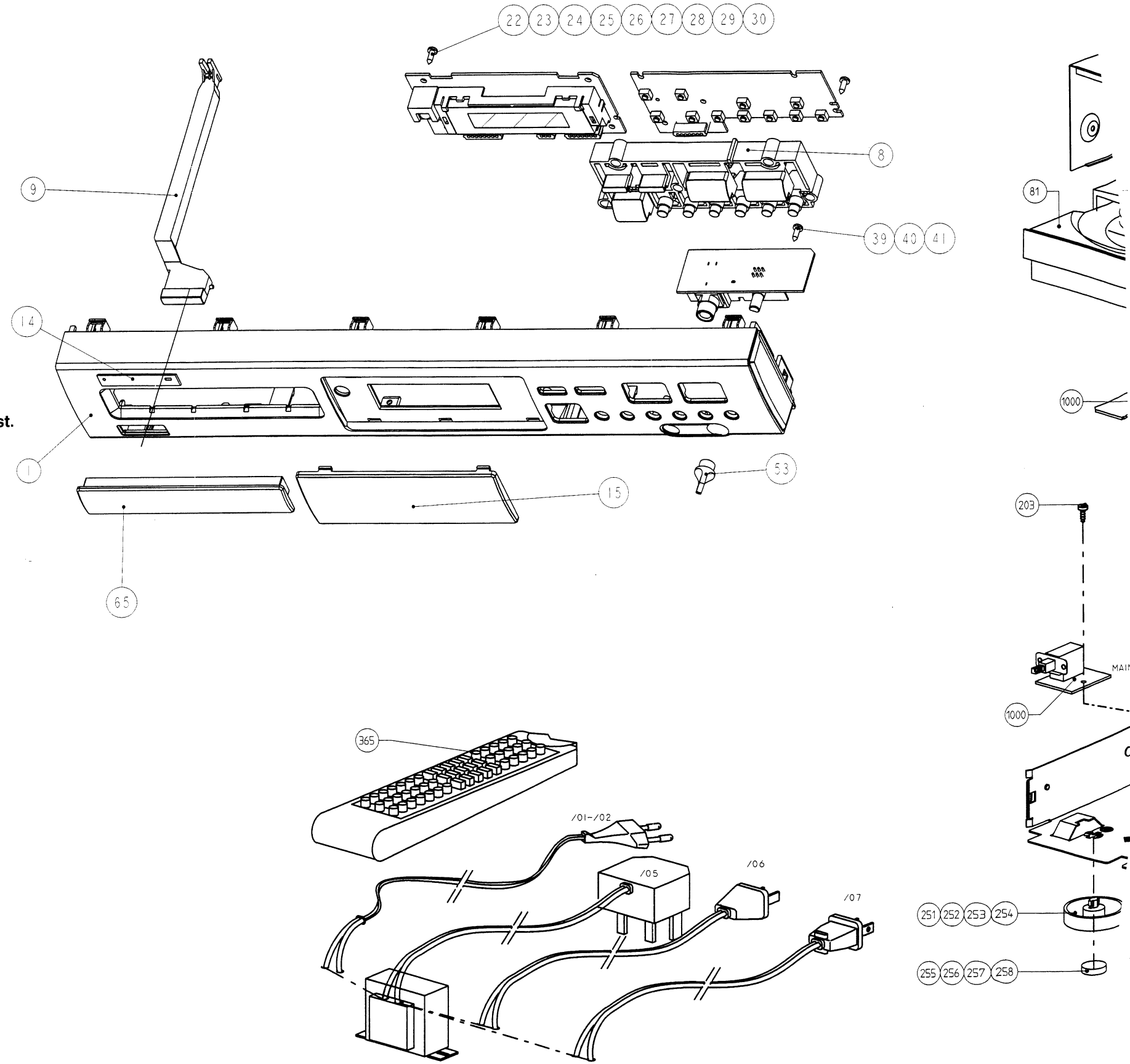
1	4822 444 40817	FRONT CD36
1	4822 444 40816	FRONT CD46
8	4822 410 63683	KNOBUNIT
9	4822 402 61557	POWER ROD
14	4822 454 12948	WORDMARK
15	4822 450 62406	WINDOW
53	4822 410 61467	VOLUME KNOB
65	4822 444 50738	TRAY FRONT
151	4822 444 60976	COVER CD36
151	4822 444 61045	COVER CD46
251,252,253,254	4822 462 42081	FOOT CD36
251,252,253,254	4822 462 42163	FOOT GOLD CD46
255,256,257,258	4822 462 40683	TABLE PROTECTOR
283,284	▲ 4822 532 60948	BUSHING
306	▲ 4822 265 10092	ADAPTER (/01B)
308	4822 321 62381	CINCH CABLE CD36
308	4822 321 22832	CINCH CABLE CD46
365	4822 218 10538	REM.CONTROL RD6843

Not mentioned parts are only available during production period on special request.

Screws

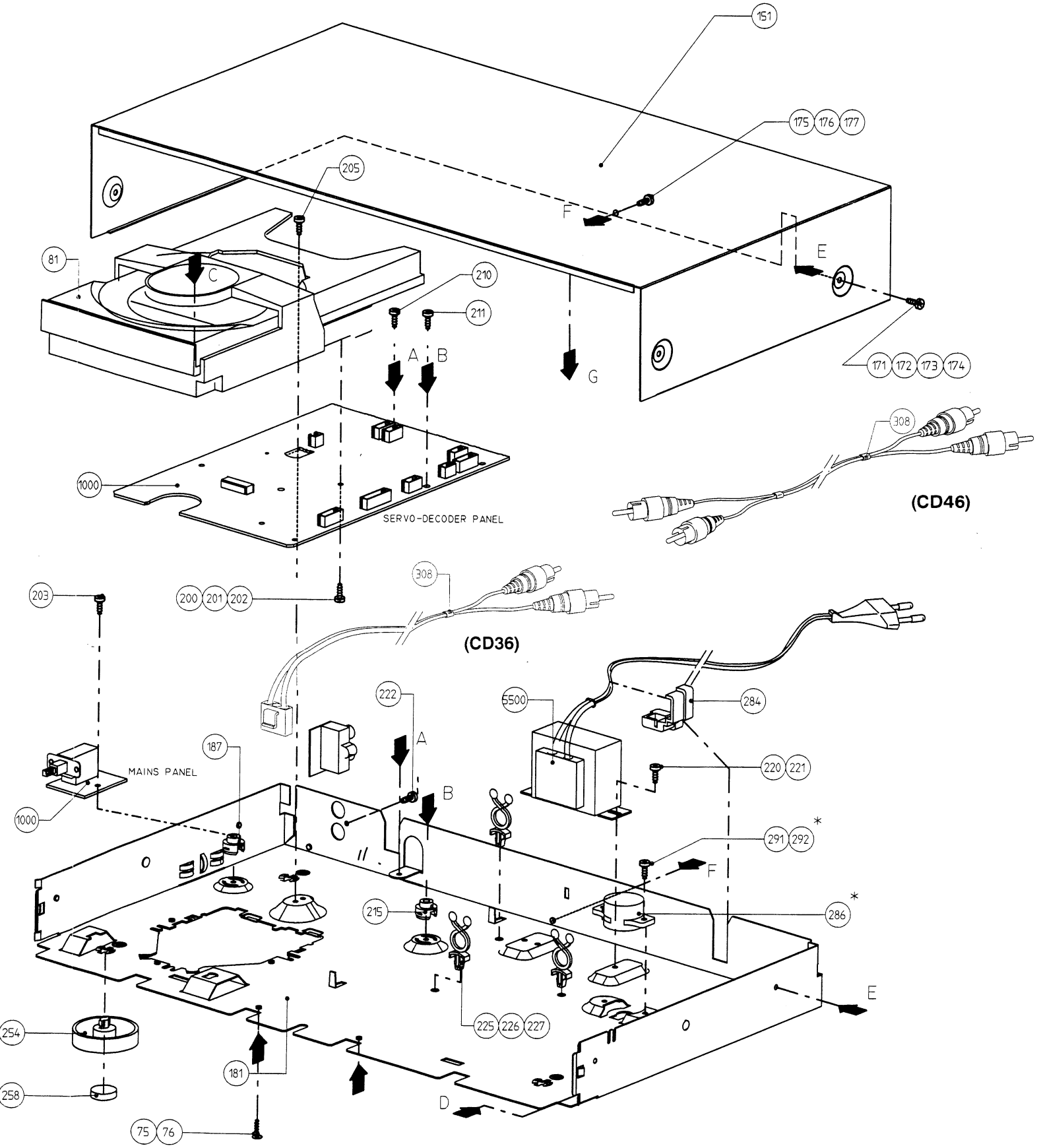
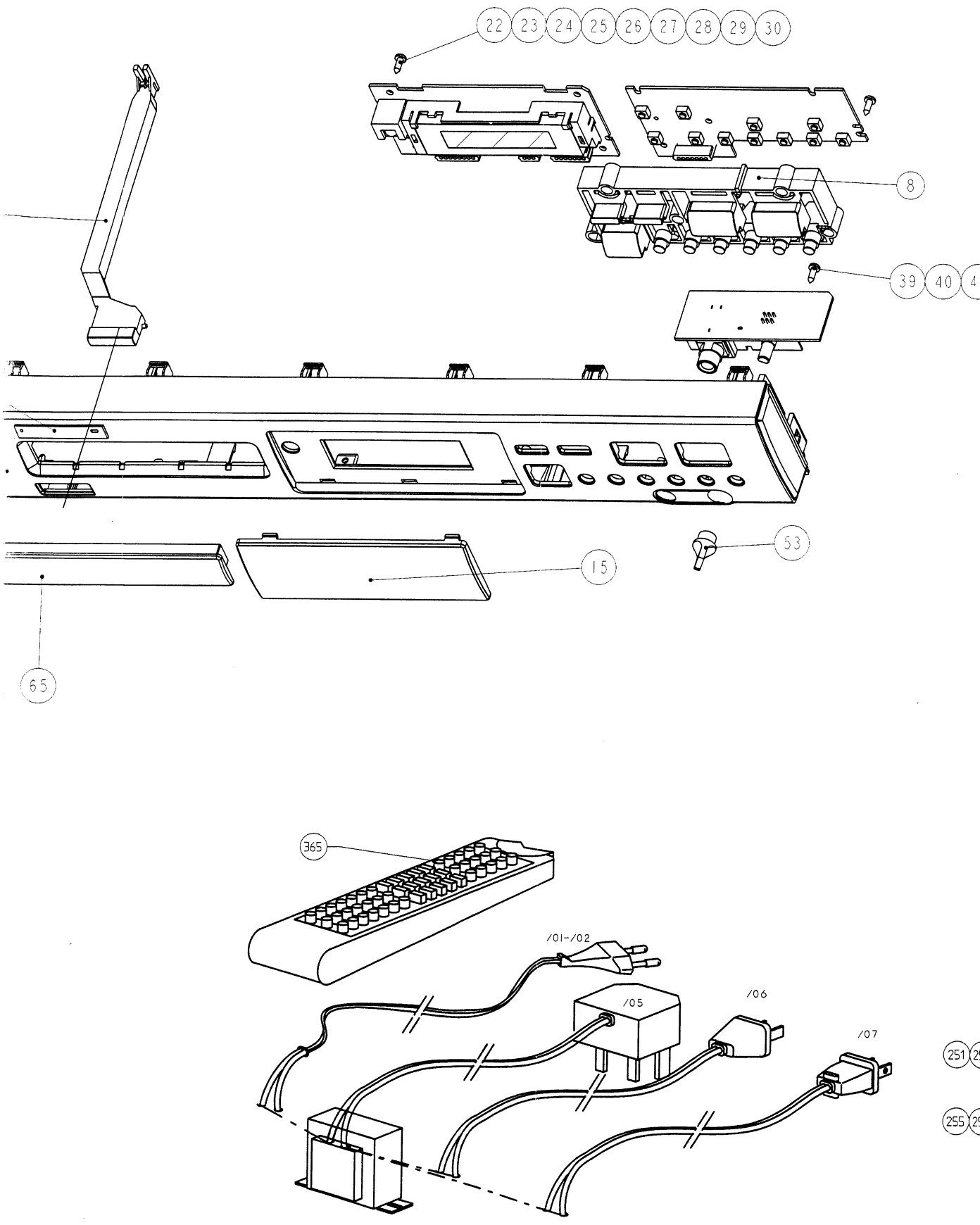
Selftapping screw for plastic 3x8:	200, 201, 202, 222
Selftapping screw for plastic 3x10:	39, 40, 41
Selftapping screw for plastic 3x12:	22, 23, 24, 25, 26, 27, 28, 29, 30
Selftapping screw for metal M3x6:	75, 76 171, 172, 173, 174 175, 176, 177 205, 210, 220, 221 291, 292
Selftapping screw for metal M3x10:	203, 211

EXPLODED VIEW



* ONLY /01-VERSION

EXPLODED VIEW



* ONLY /01-VERSION

MISCELLANEOUS					
			2048	4822 126 12787	330pF 10% 50V
1000	4822 256 92151	DISPLAY HOLDER	2049	4822 126 10053	180pF 10%Y5P
1020	4822 242 73557	RESONATOR 8.46MHz	2050	4822 122 10466	220pF 10% 50V
1021	4822 276 13114	TACT SWITCH	2051	4822 126 11585	22nF +80-20% 25V
1022	4822 276 13114	TACT SWITCH	2052	5322 124 21643	22μF 20% 40V
			2060	4822 126 12882	100nF +80-20% 50V
1023	4822 276 13114	TACT SWITCH	2062	4822 126 12882	100nF +80-20% 50V
1024	4822 276 13114	TACT SWITCH	2063	5322 121 42489	33nF 5% 250V
1025	4822 276 13114	TACT SWITCH	2064	4822 126 12882	100nF +80-20% 50V
1026	4822 276 13114	TACT SWITCH	2066	4822 126 12339	2.2nF 10% Y5Ω
1027	4822 276 13114	TACT SWITCH	2067	4822 126 12882	100nF +80-20% 50V
1028	4822 276 13114	TACT SWITCH	2068	4822 126 12148	2.7nF 10%
1029	4822 276 13114	TACT SWITCH	2069	4822 126 10053	180pF 10%Y5P
1030	4822 276 13114	TACT SWITCH	2071	4822 126 12882	100nF +80-20% 50V
1040	4822 214 52009	IR RECEIVER GP1U58XP	2072	4822 126 12882	100nF +80-20% 50V
1050	5322 242 73686	RESONATOR 12MHz	2074	4822 126 12882	100nF +80-20% 50V
1101	4822 242 81865	RESONATOR 16.93MHz	2075	4822 126 13151	3.9nF 10% Y5Ω 16V
1303	4822 267 31731	ANALOG OUT SOCKET	2076	4822 126 10053	180pF 10%Y5P
1371	4822 267 31453	HEADPHONE SOCKET	2100	4822 126 12339	2.2nF 10% Y5Ω
1450	4822 130 91329	DISPLAY 8-BT-153GK	2101	4822 122 33848	47pF 5%SL 50V
1502	4822 242 72527	RESONATOR 4MHz	2102	4822 126 11585	22nF +80-20% 25V
1510 ▲	4822 071 51002	FUSE RADIAL T 1A	2103	5322 121 42386	100nF 5% 63V
1511 ▲	4822 071 51002	FUSE RADIAL T 1A	2105	4822 122 33195	100pF 10% 50V
1530 ▲	4822 276 13489	MAINS SWITCH	2110	5322 124 21643	22μF 20% 40V
			2111	4822 126 12882	100nF +80-20% 50V
			2113	4822 122 33191	22pF 5% 50V
CAPACITORS			2115	4822 126 11585	22nF +80-20% 25V
2000	4822 122 10466	220pF 10% 50V	2116	5322 124 21643	22μF 20% 40V
2001	4822 122 10466	220pF 10% 50V	2140	4822 126 12785	47nF TUB 50V
2002	4822 122 10466	220pF 10% 50V	2141	4822 126 12882	100nF +80-20% 50V
2003	4822 122 10466	220pF 10% 50V	2142	4822 122 33848	47pF 5%SL 50V
2004	4822 122 10466	220pF 10% 50V			
2005	4822 122 10466	220pF 10% 50V	2280	4822 124 40433	47μF 20% 25V
2006	4822 126 12878	1.5nF 10% 16V	2281	4822 126 12882	100nF +80-20% 50V
2007	4822 122 10459	560pF 10% 50V	2300	4822 124 40433	47μF 20% 25V
2008	5322 124 21643	22μF 20% 40V	2301	4822 124 40433	47μF 20% 25V
2009	4822 126 11585	22nF +80-20% 25V	2302	4822 126 11585	22nF +80-20% 25V
2010	4822 126 11585	22nF +80-20% 25V	2303	4822 124 40433	47μF 20% 25V
2011	5322 124 21643	22μF 20% 40V	2304	4822 122 10466	220pF 10% 50V
2012	4822 126 11585	22nF +80-20% 25V	2305	4822 122 33849	150pF 10%Y5P 50V
2013	5322 124 21643	22μF 20% 40V	2306	4822 124 40246	4.7μF 20% 63V
2014	4822 126 12785	47nF TUB 50V	2307	4822 122 10466	220pF 10% 50V
2025	5322 124 21643	22μF 20% 40V	2308	4822 122 33849	150pF 10%Y5P 50V
2040	4822 126 10053	180pF 10%Y5P	2309	4822 124 40246	4.7μF 20% 63V
2041	4822 126 10053	180pF 10%Y5P	2310	4822 126 12882	100nF +80-20% 50V
2042	4822 126 12787	330pF 10% 50V	2370	4822 126 11585	22nF +80-20% 25V
2043	4822 122 33848	47pF 5%SL 50V	2371	4822 122 33197	1nF 10% 50V
2044	4822 122 33848	47pF 5%SL 50V	2372	4822 122 33197	1nF 10% 50V
2045	4822 122 33195	100pF 10% 50V	2373	4822 126 11585	22nF +80-20% 25V
2046	4822 126 12573	18pF 5% 50V	2374	4822 126 12882	100nF +80-20% 50V
2047	5322 124 21643	22μF 20% 40V	2400	5322 124 21643	22μF 20% 40V
			2401	4822 126 11585	22nF +80-20% 25V
			2505	4822 122 33197	1nF 10% 50V
			2506	4822 126 12882	100nF +80-20% 50V

2514	4822 122 33197	1nF 10% 50V	3055	4822 116 52175	100Ω 5% 0,5W
2533	4822 126 11585	22nF +80-20% 25V	3056	4822 050 11002	1k 1% 0,4W
2534	4822 126 11585	22nF +80-20% 25V	3057	4822 116 52277	39k 5% 0,5W
2535	4822 126 12882	100nF +80-20% 50V	3058	4822 116 52175	100Ω 5% 0,5W
2536	4822 124 80294	3300μF 20% 16V	3059	4822 116 52284	47k 5% 0,5W
2537	4822 126 11585	22nF +80-20% 25V	3060	4822 116 83864	10k 5% 0,5W
2538	4822 124 80148	2200μF 20% 16V	3062 ▲	4822 052 10229	22Ω 5% 0,33W
2539	4822 126 11585	22nF +80-20% 25V	3064	4822 116 52296	6k8 5% 0,5W
2540	5322 124 22094	220μF 20% 50V	3065	4822 050 27502	7k5 1% 0,6W
2541	4822 126 12882	100nF +80-20% 50V	3066	4822 050 21503	15k 1% 0,6W
2542	4822 124 40184	1000μF 20% 10V	3067	4822 116 52244	15k 5% 0,5W
2560	4822 124 40849	330μF 20% 16V	3068 ▲	4822 052 10229	22Ω 5% 0,33W
2600	4822 126 12882	100nF +80-20% 50V	3069	4822 116 83864	10k 5% 0,5W
2601	4822 126 11585	22nF +80-20% 25V	3070	4822 116 52244	15k 5% 0,5W
2602	4822 126 11585	22nF +80-20% 25V	3071	4822 116 52296	6k8 5% 0,5W
2701	4822 126 11585	22nF +80-20% 25V	3072	4822 116 83864	10k 5% 0,5W
2703	4822 126 11585	22nF +80-20% 25V	3073	4822 116 52244	15k 5% 0,5W
			3074 ▲	4822 052 10229	22Ω 5% 0,33W
RESISTORS			3075	4822 116 83864	10k 5% 0,5W
3000	4822 116 83864	10k 5% 0,5W	3076	4822 116 52283	4k7 5% 0,5W
3001	4822 116 83864	10k 5% 0,5W	3077	4822 116 52296	6k8 5% 0,5W
3002	4822 116 83864	10k 5% 0,5W	3078	4822 116 52244	15k 5% 0,5W
3003	4822 116 83864	10k 5% 0,5W	3079	4822 116 52244	15k 5% 0,5W
3004	4822 116 83864	10k 5% 0,5W	3100	4822 116 52256	2k2 5% 0,5W
3005	4822 116 83864	10k 5% 0,5W	3101	4822 116 52257	22k 5% 0,5W
3006	4822 050 11002	1k 1% 0,4W	3107	4822 116 52219	330Ω 5% 0,5W
3007	4822 050 11002	1k 1% 0,4W	3108	4822 116 52215	220Ω 5% 0,5W
3010	4822 116 52235	1M 5% 0,5W	3109	4822 116 52215	220Ω 5% 0,5W
3011	4822 116 83864	10k 5% 0,5W	3110	4822 116 52215	220Ω 5% 0,5W
3012	4822 116 52219	330Ω 5% 0,5W	3111	4822 116 52215	220Ω 5% 0,5W
3013	4822 050 11002	1k 1% 0,4W	3113 ▲	4822 052 10338	3Ω3 5% 0,33W
3014	4822 116 83864	10k 5% 0,5W	3114	4822 116 52235	1M 5% 0,5W
3015	4822 116 52219	330Ω 5% 0,5W	3115 ▲	4822 052 10338	3Ω3 5% 0,33W
3020	4822 050 11002	1k 1% 0,4W	3117	4822 116 52289	5k6 5% 0,5W
3021	4822 116 83864	10k 5% 0,5W	3140	4822 116 52271	33k 5% 0,5W
3022 ▲	4822 052 10478	4Ω7 5% 0,33W	3141	4822 116 52271	33k 5% 0,5W
3040	4822 116 52239	120k 5% 0,5W	3142	4822 116 52271	33k 5% 0,5W
3041	4822 116 52239	120k 5% 0,5W	3143	4822 116 52234	100k 5% 0,5W
3042	4822 116 52291	56k 5% 0,5W	3144	4822 116 52234	100k 5% 0,5W
3043	4822 050 11002	1k 1% 0,4W	3145 ▲	4822 052 10229	22Ω 5% 0,33W
3044	4822 116 52222	390Ω 5% 0,5W	3146	4822 116 52175	100Ω 5% 0,5W
3045	4822 116 52175	100Ω 5% 0,5W	3147	4822 116 52283	4k7 5% 0,5W
3046	4822 116 52249	1k8 5% 0,5W	3280 ▲	4822 052 10338	3Ω3 5% 0,33W
3047	4822 116 52276	3k9 5% 0,5W	3300	4822 116 52251	18k 5% 0,5W
3048	4822 116 52175	100Ω 5% 0,5W	3301	4822 116 52244	15k 5% 0,5W
3049	4822 116 52249	1k8 5% 0,5W	3302 ▲	4822 052 10108	1Ω 5% 0,33W
3050	4822 116 52223	430Ω 5% 0,5W	3303 ▲	4822 052 10108	1Ω 5% 0,33W
3051	4822 116 52223	430Ω 5% 0,5W	3304	4822 116 52276	3k9 5% 0,5W
3052	4822 050 11002	1k 1% 0,4W	3305	4822 116 52276	3k9 5% 0,5W
3053	4822 116 52267	30k 5% 0,5W	3306	4822 116 52257	22k 5% 0,5W
3054	4822 116 52272	330k 5% 0,5W	3307	4822 116 52257	22k 5% 0,5W
			3360	4822 050 11002	1k 1% 0,4W
			3361	4822 116 52256	2k2 5% 0,5W

