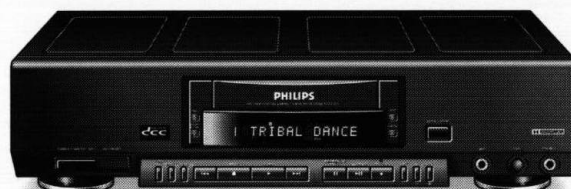


Service Service Service



Service Manual



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TECHNICAL SPECIFICATIONS

GENERAL

Power supply	
/00S	: 230 V ±15%
/01S	: 110, 127, 220-230, 240 V
	: Selectable by voltage selector
/17S	: 117 V ± 10%
Power consumption	
Standby mode	: < 5 W
Maximum	: < 25 W
Dimensions(WXDXH)	: 435 x 300 x 90(excl. feet)
Weight	: 4 Kg

DIGITAL I/O:

Format	: AES/EBU format according IEC958
	: (consumer format)
Sampling frequency	: 32 / 44.1 / 48 kHz (± 0.1%)
Unbalanced cinch	: 75 Ohm

ANALOG IN(digital recording from analog input)

Input sensitivity	: 150 mVrms
Max. input voltage	: 2.5 Vrms(= 2 V + 2 dB)
Input impedance	: 50 kOhm
Levelmeter resolution	: 2 dB
	: 3 dB
	: 5 dB
	: 10 dB
Sampling frequency	: 44.1 kHz
Record level settings	: 0 dB up to -28 dB, 14 steps of -2 dB
Overload	

DIGITAL OUT

Format	: AES/EBU format according IEC958
	: (consumer format)
Sampling frequency	: 32 / 44.1 / 48 kHz(± 100 ppm)
Unbalanced cinch	: 75 Ohm

ANALOG OUT DCC PLAYBACK

Sampling frequency = 44.1 kHz unless otherwise specified

Output voltage	: 2 Vrms ± 2 dB(0 dB dig.)
Frequency range	: 20 Hz..14.5 kHz, fs = 32 kHz
	: 20 Hz..20 kHz, fs = 44.1 kHz
	: 20 Hz..22 kHz, fs = 48 kHz
amplitude linearity	: ± 0.1 dB
channel unbalance	: < 0.85 dB(1 kHz)
output resistance	: 300 Ohm
phase non-linearity	: < 0.2 degrees(1 kHz)
outband attenuation	: 50 dB above 30 kHz
channel separation	: > 90 dB(1 kHz)
	: > 85 dB(20 Hz..20 kHz)
muting(search)	: > 98 dB
SNR A-weighted	: 102 dB
SNR unweighted	: 98 dB
DR	: > 97 dB(1 kHz)
	: > 95 dB(20 Hz..20 kHz)
THD + Noise	: > 81 dB(20 Hz..20 kHz)

ANALOG OUT ACC PLAYBACK

Noise reduction system according DOLBY B/C NR
(for playback only)

output voltage	: 500 mVrms ± 2 dB(200 nWb/m)
channel unbalance	: < 3 db(1 kHz)
output resistance	: 300 Ohm
amplitude linearity	: typ. 40 Hz...16 kHz within 3 dB
channel separation	: 20 dB(1 kHz, rel.tracks)
	: 59 dB(non rel.tracks)
muting(search)	: 90 dB
SNR	: Fe
	CR
(DIN reference level, 315 Hz/0 dB)	
unweighted	: - 48 dB
	- 50 dB
weighted	: - 53 dBA
	- 55 dBA
noise reduction	: Dolby B
	Dolby C
	+ 8.5 dB
	+ 17 dB
THD	: < 2%(1 kHz/-10 dB)

HEADPHONE OUTPUT DCC PLAYBACK

Sampling frequency = 44.1 kHz

output voltage	: > 5 Vrms
channel unbalance	: < 4 dB
output impedance	: 120 Ohm
load impedance	: 32 / 120 / 600 Ohm
output power	: 38 / 68 / 48 mW
frequency range	: 20 Hz..14.5 kHz, fs = 32 kHz
	: 20 Hz..20 kHz, fs = 44.1 kHz
	: 20 Hz..22 kHz, fs = 48 kHz
amplitude linearity	: +1/-2 dB

Audio specification at 4Vrms in case of 600 Ohm load

output sep.(typ.)	: 75 dB(1 kHz)
	: 65 dB(0-20 kHz)
muting	: 100 dB
SNR	: 86 dB
DR	: 86 dB(1 kHz)
THD+N	: 82 dB(1 kHz)

MICROPHONE IN

Input sensitivity	: 20 mV for max. level
	: 3 mV for ref. level
Input impedance	: 10 kOhm
Microphone impedances	: 200 - 600 - 2000 Ohm
Amplitude linearity	: ± 1 dB(200 Hz - 20 kHz)
S/N ratio	: typ. 75 dB(BW = 20 kHz)
THD + Noise	: typ. 65 dB(1 kHz)

INSTRUCTIONS FOR USE

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The type plate can be found on the back of the unit.

This product complies with the radio interference requirements of the European Community.

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



KEYS

- 1 POWER STANDBY/OFF** to switch the recorder on and off.
- 2 TIME** to select time and level information
- 3 DOLBY NR** to select Dolby Noise Reduction only on conventional musicassettes
- 4 TEXT**
- to select text information
 - to enter the title programming mode see page 14 .
- 5 SCROLL/DEMO**
- to scroll text information or to enter the demo mode.
 - to adjust the scroll speed when lyrics information is selected.
- 6 OPEN/CLOSE** to open and close the tray loader (also push tray to close).
- 7 PHONES** socket for headphone connection.
- 8 LEVEL** to adjust the volume when using headphones
- 9 MIC** socket for a microphone. (automatic source selection)

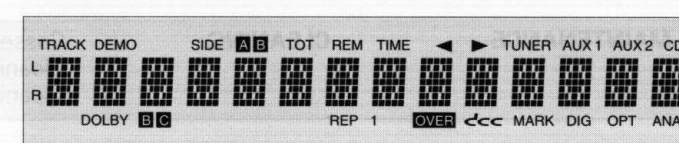
RECORDING CONTROLS

- 10 REC LEVEL +/-**
- to adjust the recording level (analog and microphone input).
 - to select characters during title programming
- 11 EDIT** to enter the edit mode. see page 13 'EDIT'
- 12 RECORD ●**
- to start the actual recording. (only in RECORD PAUSE mode)
 - to effectuate edit or title record
- 13 APPEND ►►** to search for the end of the latest recording after which the recorder switches to the RECORDING PAUSE mode.
- 14 REC. SELECT/ PAUSE II** to select the recording source and to enter the RECORDING PAUSE mode.

PLAYBACK CONTROLS

- 15 ►►**
- to search for the start of the next track (press < 0.5 sec.) (also for musicassettes)
 - to wind the tape forward (press >0.5 sec.)
- 16 PLAY ►** to start playback or recording.
- 17 STOP ■** to stop any action
- 18 ◀◀**
- to search for the start of the previous track (press <0.5 sec.) (also for music cassettes)
 - to wind the tape backward (press >0.5 sec.)
- 19 PRESETS** to enter the preset mode. see page 10 'PRESETS'
- 20 REPEAT** to repeat the current track, to repeat all tracks or to switch repeat off.
- 21 SIDE A/B** to reverse the tape travel direction
- 22 IR SENSOR** infra red remote control eye

DISPLAY INDICATIONS



- ▶ on during playback or recording
▶ blinking during forward search
◀ blinking during backward search
- TUNER, AUX1, AUX2, CD** indicates the selected recording source (user selection).
- REP (1)** lights up to indicate that the current track (REP 1) or all tracks (REP) will be repeated.
- OVER MARK** lights up if the recording level is too high
lights up each time a marker is read, written or erased on the tape.
- DIG, OPT, ANA** indicates the corresponding input with the selected recording source. see page 10 'PRESETS'

ENCLOSED CABLES:

- 1 x mains cable
- 2 x hifi connection cable (cinch)
- 1 x digital cable (cinch)

1 MAINS CONNECTION

- Before connecting the unit to the mains, proceed as follows:
 - If the unit is equipped with a VOLTAGE selector, first adjust the voltage selector to the local mains voltage.
 - If the unit does not have a voltage selector, first check if the mains voltage as shown on the type plate on the back of the unit corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.
- After all other connections have been made, connect the mains lead to the AC MAINS socket and insert the mains plug in the wall socket.

2 ANALOG CONNECTIONS

- a ANALOG PLAY** - Connect these sockets via the supplied hifi connection cables to the DCC **INPUT** sockets of your amplifier. You can also use the TAPE 1, TAPE 2 or AUX **INPUT** of your amplifier but never the PHONO **INPUT** socket.
- b ANALOG REC** - Connect these sockets via the supplied hifi connection cables to the DCC **OUTPUT** sockets of your amplifier. You can also use the TAPE 1/2 or AUX **OUTPUT** sockets of your amplifier.

3 DIGITAL CONNECTIONS

The DCC951 can be connected to your CD player via the digital or via the optical socket, depending on the available outputs on your CD player. Recordings through a digital connection guarantee optimum recording quality; record level setting is then not necessary.

DIGITAL IN - Connect this socket via the supplied digital cable to the corresponding digital output socket of e.g. CD and DAT or to the digital selector of some Philips amplifiers (e.g. FA930, 950, 951, DSC950).

OPTICAL IN - Pull out the protective plug from the socket. Connect this socket via an optical lead (SBC1150) to the corresponding optical output socket of e.g. CD and DAT.

NOTE: when you are not using the DIG IN connections, for the CD, the PRESETS of the DCC must be changed by using the preset key.

For this refer to the chapter PRESETS, page 10

OPTIONAL CONNECTION

DIGITAL OUT - Connect this socket via a cinch cable to the corresponding digital input socket of e.g. an amplifier with D/A convertor or another digital recorder.

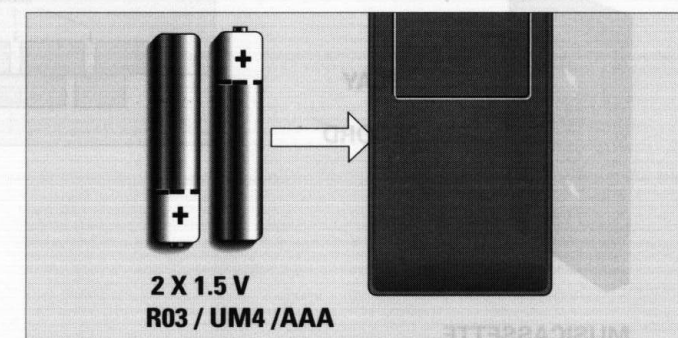
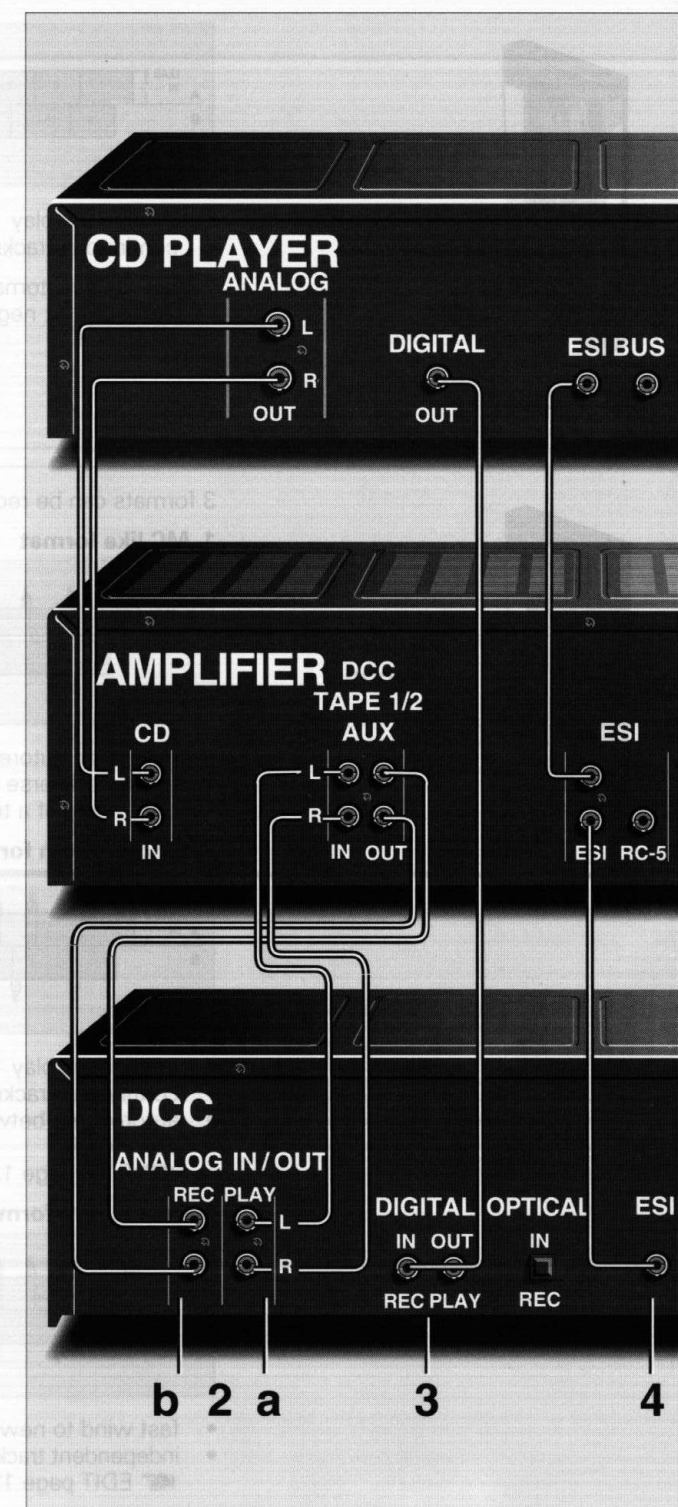
4 ESI BUS

In case your system consists of products of the Philips 900 series, the ESI BUS connections are recommended. Connect the ESI BUS socket as shown to the ESI BUS socket of e.g. your amplifier. In this way you can fully enjoy the ease of operation thanks to the intelligent communication between the sets in your Philips 900 system. (Automatic recording source selection)

5 REMOTE CONTROL

Open the battery compartment and insert two batteries, type R03, UM-4 or AAA-cells.

see also page.15

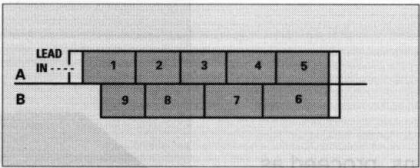




DCC ALBUM

PLAY

RECORD

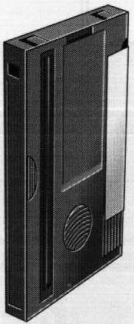


- continuous play
- continuous tracknumbering
- * LEAD IN: automatic search to start of first track; negative time will be displayed.

When using a DCC album the following information is available:

- album-info: title, artist
- tracktitle-list
- song lyrics (if present on cassette)
- tracknumbers
- track time, absolute time, total remaining time.
- direct track search
- title search

This information is continuously repeated in the music track and can be retrieved within a short time.



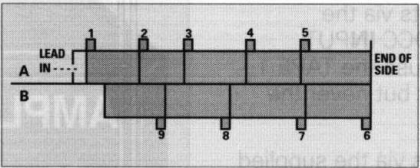
DCC

PLAY

RECORD

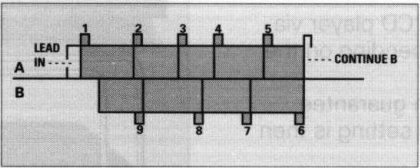
3 formats can be recorded:

1. MC like format



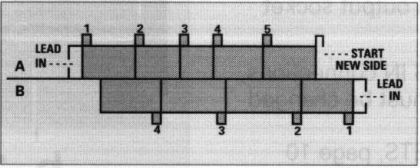
- automatic autoreverse at end of side
- this autoreverse action may occur in the middle of a track.

2. Single album format



- continuous play
- continuous tracknumbering
- autoreverse between tracks
- continue B
- EDIT page 13

3. Dual album format



- fast wind to new side
- independent tracknumbering per side
- EDIT page 13

When using a DCC the following information is available:

- absolute time
- track number at start of track
- track time
- remaining time on current side
- sequential track search

OPTIONAL

- title at start of track
- see TITLE PROGRAMMING page 16
- renumber
- see EDIT page 13

NOTE:

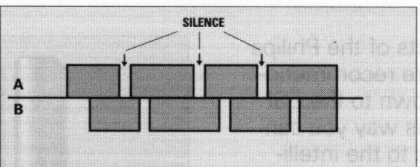
If a recording is started in a blank area, the player is not able to write tracknumbers and absolute time on the tape. The renumber action is then not possible.



MUSICCASSETTE

PLAY

RECORD

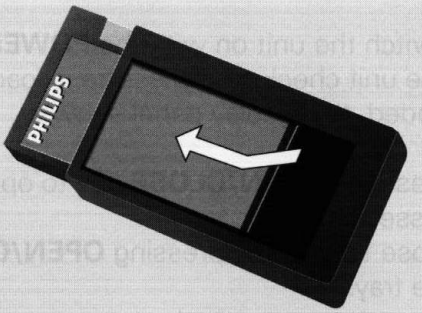


When using a conventional music cassette the following information is available:

- counter setting
- estimated absolute time
- AMS (search of start if tracks are separated with >3 sec. silence).

SLIDING OUT A DCC CASSETTE FROM ITS BOX

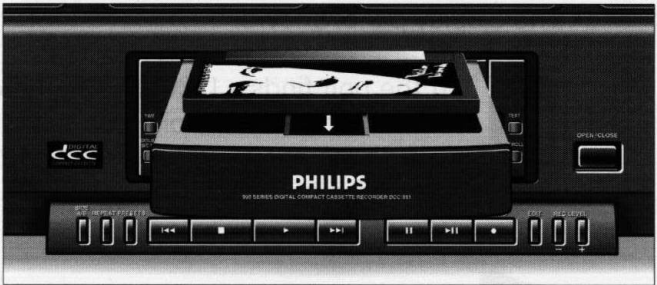
Press the cassette out with your thumb; push the cassette upwards.



POSITIONING A CASSETTE IN THE TRAY

Insert a DCC with the printed side up and protective slider pointed to the DCC-player.

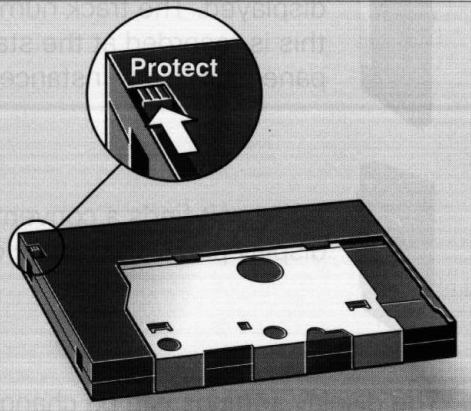
A conventional music cassette should be inserted with the tape pointed to the DCC-player.



PROTECTING A CASSETTE AGAINST RECORDING

Accidental overwriting of recordings made on your DCC cassettes can be prevented by sliding the red switch on the back of your cassette upward. No recording will then be possible on both sides of this tape.

Recording will be possible when the red switch is slid backward again.



KNOTES ON PLAYBACK (see page 6)

1. At the start of a tape (LEAD IN area) the display may show a negative time indication e.g. -0:11 and the player will wind to the start of the first track.
2. After closing the tray, the player always selects side A of a cassette. You can reverse the tape travel direction with the SIDE A/B key.
see also page 12
3. When you load a cassette and the tape is positioned near the start of a track, the DCC player will read the tape information and reposition the tape to the start of this track. Reading can take a little longer.
4. TROUBLESHOOTING:
What to do in case no sound is heard:
 - Check the connections that are made (see also page 3).
 - Check the source selection on your amplifier.
 - Check if the inserted cassette is not a blank DCC.
 - Check if a blank area on the tape is being played back.

Playback of a cassette is similar to operating a CD-player.

- 1
- Switch the unit on with the **POWER STANDBY/OFF** key.
The unit checks if a cassette is loaded. If no cassette is loaded, the display panel shows:
- 2
- Press the **OPEN/CLOSE** key to open the tray and insert a cassette.
Close the tray by pressing **OPEN/CLOSE** again or by pushing the tray.
The unit now reads the tape.
This procedure will take maximum 5 seconds.
The display panel shows:



If the unit finds a DCC album, the complete track title will once be scrolled on the display and afterwards the shortened title (max. 12 characters) will appear, e.g.:



If the unit finds a (user-recorded) DCC, the time is displayed. The track number may not be known as this is recorded at the start of a track. The display panel shows for instance:



If the unit finds a conventional music cassette, the display panel shows the counter mode:

The display settings can be changed with the **TIME/TEXT** key
see also page 7: **DISPLAY**

- 3
- Press the **PLAY** key to start playback.
Playback will start from the present position of the tape.
The play indication on the display lights up.
The display will show for instance:
- 4
- Press the **STOP** key to stop playback.
- 5
- Searching for next or previous tracks can be done by shortly pressing the **SKIP** keys.
The play indicator or on the display will start blinking.
The display shows e.g.:

When the **SKIP** keys are pressed > 0.5 sec., the deck starts (re)winding until you release the key.

see also page 12: **PLAYBACK FUNCTIONS**

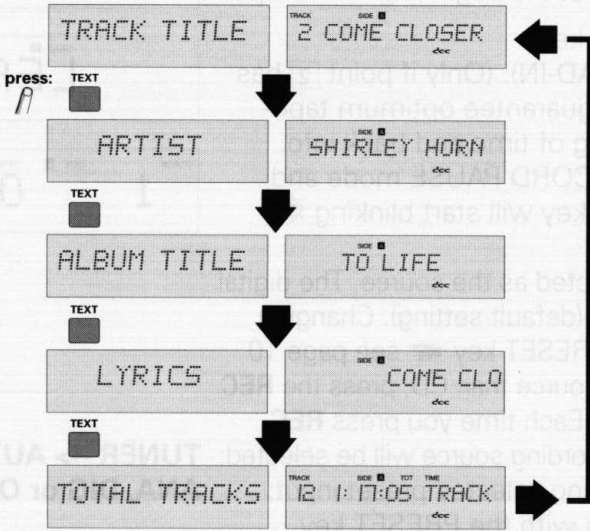
NOTES: see page 5.

TEXT, TIME

By pressing the **TEXT** or **TIME** key you can select different information to be shown on the display. Different information is available for the different cassette types (see CASSETTE TYPES page 4).

If the display is showing time information, pressing the **TEXT** key will result in:

When using prerecorded DCC cassettes:



Lyrics information is not available on all prerecorded DCC cassettes. In this case the topic indication **LYRICS** will stay on the display as long as no synchronized songtext has been detected.

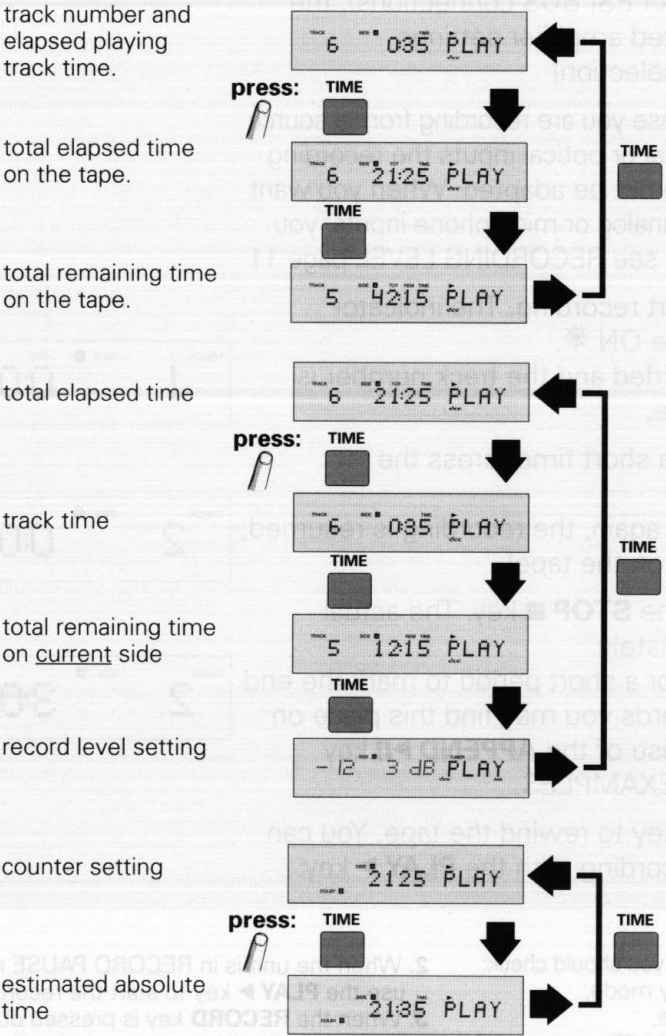
First, the display will show the topic name, then the topic line will be scrolled once and afterwards the shortened topic will be fixed on the display.

When you press the **SCROLL** key the selected text information will once be scrolled again on the display from right to left.

In case you have selected **LYRICS**, you can adapt the scrolling speed (in 9 steps) of the song lyrics to the music rythm by pressing the **SCROLL** key several times.

The text key is only functional when DCC cassettes are used. When you press this key when you are using conventional musicassettes the display will show

If the display is showing text information, pressing the **TIME** key will result in:



NO TEXT INFO

COUNTER RESET

By pressing the **TIME** key for 2 seconds the tape counter will be reset to 0000.

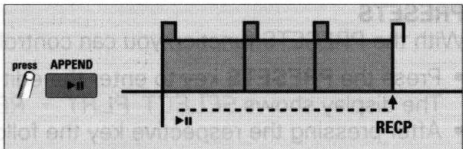
Basically, making recordings on your DCC recorder is similar to making tape recordings on a music cassette.

- 1 Press **OPEN/CLOSE**.
- 2 Insert a **blank** DCC.
Close the tray.
- 3 Press **BACKWARD** ◀ for more than 0.5 seconds. The deck will rewind and stop automatically at the beginning of the tape.
- 4 Press the **REC SELECT/PAUSE** ⏸ key.
 - a The deck writes a buffer area (LEAD-IN). (Only if point 2 has been used.) This buffer area is to guarantee optimum tape-recording conditions and recording of time and track info.
 - b The DCC player will enter the RECORD PAUSE mode and the indicator above the RECORD key will start blinking ✨.
 - c **SOURCE SELECTION:**
 - The CD player is automatically selected as the source. The digital input is also selected automatically (default setting). Changing this setting can be done with the PRESET key ⏸ see page 10
 - If you want to record from another source than CD, press the **REC SELECT/PAUSE** ⏸ key once more. Each time you press **REC SELECT/PAUSE** ⏸ the following recording source will be selected: **TUNER --> AUX1 --> AUX2 --> CD. ANA, DIG or OPT.** The display shows the corresponding selected preset input: Changing this preset can be done with the PRESET key ⏸ see page 10
 - **Note:** in case you have connected the DCC951 to a Philips 900 series system (with correct ESI BUS connections), the DCC player will use the selected amplifier settings. (Automatic recording source selection)
- 5 **RECORD LEVEL SETTING:** In case you are recording from a source which is connected via the digital or optical inputs the recording level does not need to and can not be adapted. When you want to record from a source via the analog or microphone inputs, you should check the peak level. ⏸ see RECORDING LEVEL page 11
- 6 Press the **RECORD** ● key to start recording. The indicator above the RECORD key will be ON ✨.
The time is continuously recorded and the track number is automatically increased by one.
- 7 To interrupt the recording for a short time, press the **REC. PAUSE** ⏸ key.
By pressing the **RECORD** ● key again, the recording is resumed; a new tracknumber is written on the tape.
- 8 To stop the recording, press the **STOP** ■ key. The actual music recording stops immediately.
The deck continues to write for a short period to mark the end of the last recording. Afterwards you may find this place on the tape very easily with the use of the **APPEND** ▶ key ⏸ see page 9: RECORDING EXAMPLES.
- 9 Press the **BACKWARD** ◀ key to rewind the tape. You can now start playback of your recording with the **PLAY** ▶ key.

- NOTES:**
1. In case the display shows **CHECK DIG IN** you should check:
 - if the CD player is switched on and in play mode,
 - if the correct digital connections are made,
 - if the PRESET on the DCC player is set to CD (⏸ see page 10)
 2. When the unit is in RECORD PAUSE mode, you may also use the **PLAY** ▶ key to start the recording.
 3. When the **RECORD** ● key is pressed during recording, a new tracknumber will be written on the tape.

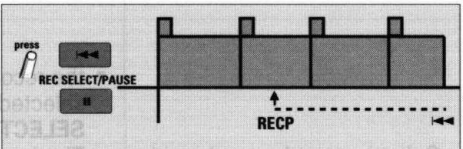
KRECORDING ON A PARTIALLY RECORDED DCC

- 1 Press **APPEND** ▶. The deck will search for the end of the last recording (which was marked when STOP was pressed during recording). **APP >** or **APP <** appears.
When this position has been found the last 10 seconds of this music track will be played back (**APPEND PLAY**), after which the RECORD PAUSE (RECP) mode is entered.
- 2 (Select the correct input source by pressing **REC SELECT/ PAUSE** ⏸.)
- 3 Press **RECORD** ● to start the actual recording.
- 4 Press **STOP** ■ when you want to stop recording.
The recording will be stopped and the deck marks the end of the last recording.



RECORDING ON A SPECIFIC LOCATION

- 1 Search for the location on the tape where you want to make a recording.
- 2
 - a Press **REC SELECT/ PAUSE** ⏸. The deck will enter the RECORD PAUSE (RECP) mode at the current position.
 - b (Select the correct input source by pressing again **REC SELECT/ PAUSE** ⏸.)
- 3 Press **RECORD** ● to start the actual recording.
- 4 Press **STOP** ■ when you want to stop recording.



Note: the tape must be positioned at a recorded area.

In case you start recording on an area of the tape on which no previous recording was made (an blank area), the DCC player will not record time information. The tracknumber will not be shown.

COMPLETELY OVERWRITING A RECORDED DCC

- 1 Select side A. ⏸ see SIDE A/B page 12
- 2 Press **BACKWARD** ◀. The deck will rewind and stop automatically at the beginning of the tape.
- 3 Press **REC SELECT/PAUSE** ⏸.
The deck will now write a LEAD IN area at the beginning of side A and will enter the RECORD PAUSE mode.
- 4 (Select the correct input source and adjust the recording level when needed).
- 5 Press **RECORD** ● to start the actual recording.
- 6 Press **STOP** ■ when you want to stop recording.
The recording will be stopped and the deck marks the end of the last recording.



1. Using the APPEND key has the following advantages:

- Easy finding of the latest recorded piece of music in order to continue recording at that point.
- Continuous tracknumbering
- Time recording.

2. Using the REC SELECT/PAUSE key has the following advantages:

- Possibility to start recording in the middle of a track.
- In case the RECP key is pressed while the position on the tape is within 2 seconds from the start of a tracknumber, the tape will be repositioned to the start of this track.

3. Press RECORD to actually start the recording:

example: press in following order: **APPEND** —> **RECORD** (to start recording at end of the latest recording)
or: **REC SELECT** —> **RECORD** (to start recording at the current position)

RECORDING IS NOT POSSIBLE:

- On a prerecorded DCC
- On a conventional music cassette
- On a DCC which is protected against recording.
⏸ see page 5 'PROTECTING A CASSETTE AGAINST RECORDING'.
- When the **COPY PROHIBIT** message lights up on the display.
The DCC deck operates with a **Serial Copy Management System**, which includes that a fully digital copy can be made from Prerecorded digital material but only directly from the original material.
It is not possible to make a digital copy of a digitally copied DCC to another DCC deck. When you want to copy this cassette from one DCC deck to another you can only do this via the analog input sockets.
- When no digital signal is available. The display shows **CHECK DIG IN**. ⏸ see page 16 'TROUBLESHOOTING'.

PLAYBACK FUNCTIONS

TRACK SEARCH

The **◀** and **▶** keys can be used to search for a particular track on the tape or to scroll through the tracklist (see title search).

In stop mode:

- Press **◀** (less than 0,5 seconds) to search for the start of the current track.
- Press **▶** (less than 0,5 seconds) to search for a track next to the current track.

Note: these keys are also functional when using conventional musicassettes (Automatic Music Search). This function reacts to silent passages of at least 3 seconds between the tracks.

WIND / REWIND

Searching for a passage during playback can also be done with the **◀** and **▶** keys.

In stop mode and during playback:

- Hold **▶** pressed down (for more than 0,5 seconds) to wind forward.
 - Hold **◀** pressed down (for more than 0,5 seconds) to wind backward.
- When the **◀** and **▶** keys were pressed during playback, playback will be continued as soon as you release the key. During searching time and track information will be displayed.

- When the text display is selected and the **◀** and **▶** keys are activated, the display changes to time indication as long as the search continues. Then the display will show the text information again.

TITLE SEARCH

The **◀** and **▶** keys can be used to browse through the track-list

When in stop mode and track title display :

- When you press **▶** or **◀** while the display is showing the track title, the title of the next or previous track appears on the display.
- Searching for the track does not yet start.
- You can actually search for the track by pressing the **PLAY ▶** key.

REVERSING THE PLAYING DIRECTION

- The **SIDE A/B** key is used to reverse the direction in which the tape is travelling.
- This selected side is indicated on the display with **SIDE [A]** or **SIDE [B]**.
- When you press this key during playback, the playing direction will be reversed and playback will be continued at the other side of the tape.

REPEAT

You can use the **REPEAT** key to replay a particular track or the total number of tracks on the tape.

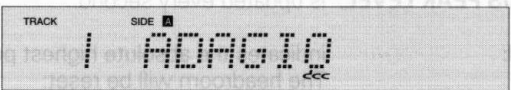
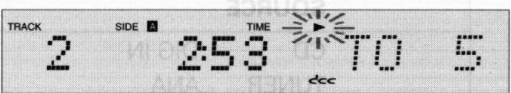
- Press this key once to repeat the current track.
- The indication **REP 1** will appear on the display.
- Repeating the current track is not possible when you are using conventional analogue cassettes.
- Press this key once again if you wish to repeat all tracks on the tape. The display will show **REP**.
- Press this key another time to switch repeat off again.

NOTE: When analogue cassettes are used, only the function **REP** can be activated. **REP 1** can not be selected.

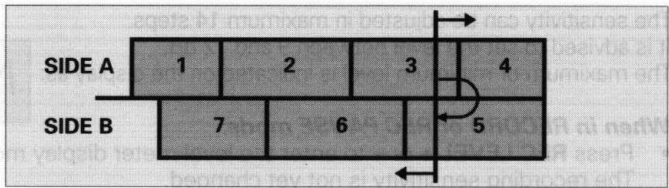
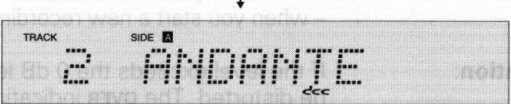
- During the track search the display shows e.g.:



or



↓



DOLBY NOISE REDUCTION

The Dolby Noise Reduction function can only be active when you are playing conventional music cassettes. With the Dolby key you can switch the Dolby NR system on or off and select Dolby B or Dolby C NR.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

RECORDING FUNCTIONS

EDIT

The EDIT function is only possible when you are using non protected user-recorded DCC cassettes. In this mode you can edit the tape formats, delete or create track transition and renumber the tracks.

When in REC PAUSE mode:

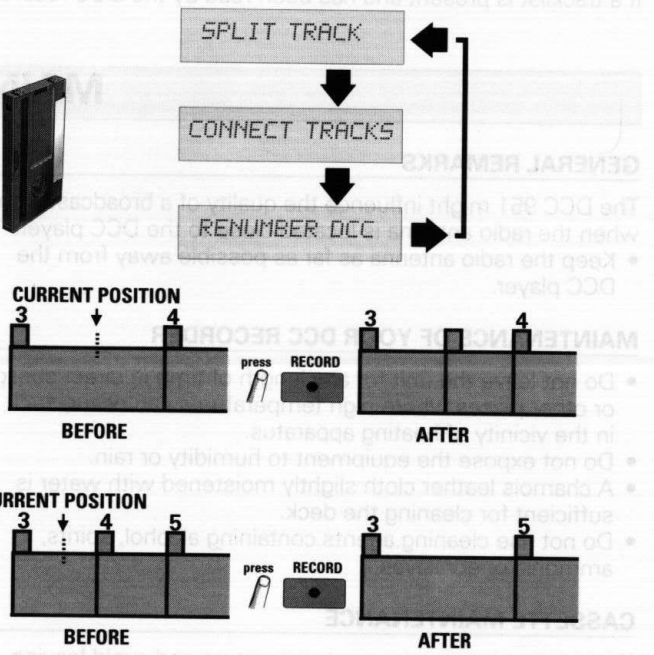
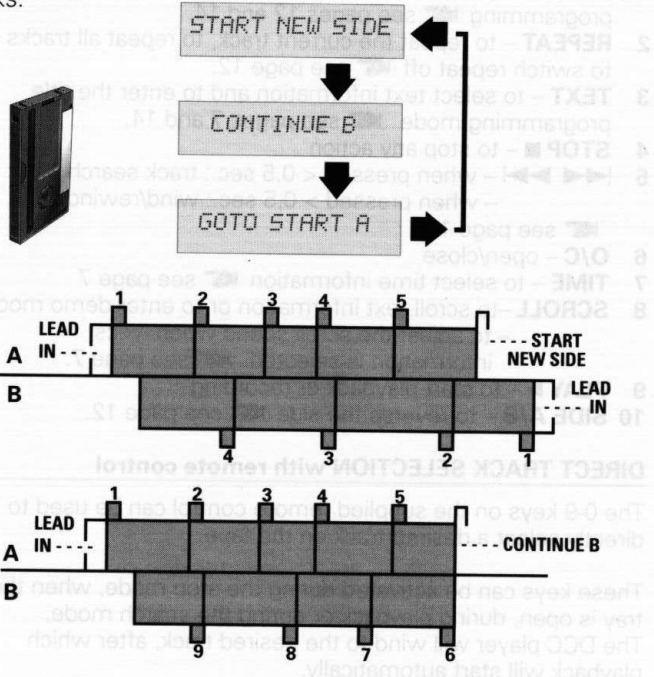
- 1 Press the **EDIT** key to enter the edit mode
- 2 You can select the various EDIT functions by pressing **EDIT** several times
- 3 Press the **RECORD** key to actually edit the tape.

- **START NEW SIDE:** When START NEW SIDE is detected during playback, the deck will automatically wind to the beginning of the next side after which playback will be continued with the first track on the next side. During winding the display will show **TO START B** or **TO START A**.
- **CONTINUE B:** mark the position where the tape must be reversed (only possible on side A of the tape). When CONTINUE B is detected during playback, the deck will immediately change to side B after which playback will be continued.
- **GO TO START A:** mark the position on the tape where the deck should start winding to the beginning of side A and stop. When GO TO START A is detected during playback, the deck will wind to the beginning of side A after which the deck stops.

When in STOP mode:

- 1 Press the **EDIT** key to enter the edit mode.
- 2 You can select the various EDIT functions by pressing **EDIT** several times
- 3 Press the **RECORD** key to actually edit the tape.

- **SPLIT TRACK:** the DCC starts a new track at the current position. When SPLIT TRACK has been performed a renumber action (see below) is necessary to ensure a correct tracknumber sequence.
- **CONNECT TRACKS:** the current and next track will be connected and recognized as one track. The deck will search for the start of the next track and erase the marker which indicates the start of this track. When tracks have been connected a renumber action (see below) is necessary to ensure a correct tracknumber sequence.
- **RENUMBER:** renumbering the tape. This action is only possible if tracknumbers have been recorded on the tape.
- The renumber action is needed:
 1. When a recording is started at a specific location (see page 9).
 2. When a track has been split.
 3. When tracks are connected
- As the complete tape will be checked for correct tracknumber sequence, it is best to finalize all edit-actions before renumbering.



During the renumber action the display shows the absolute time + 'RENUM'. When the action is finished the display shows

RENUM COMPLETE

NOTE: to exit edit press **STOP**

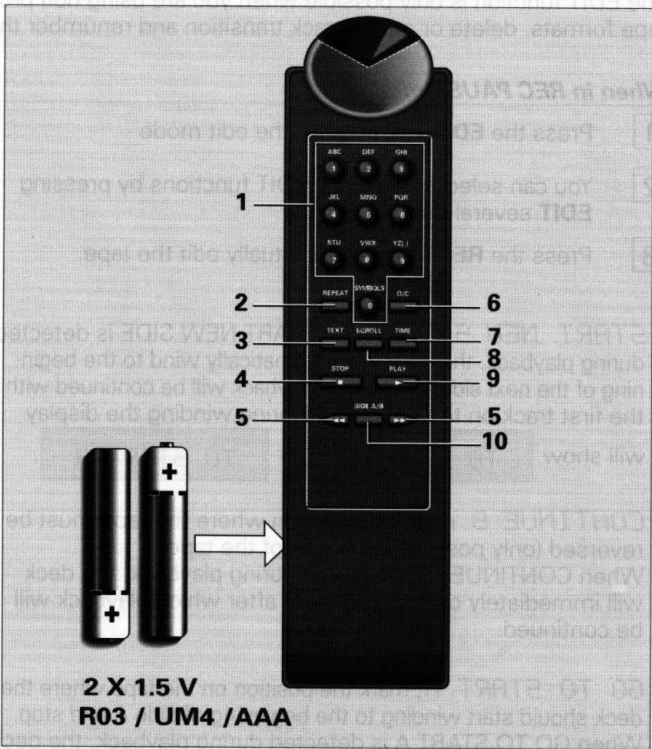
- 0-9** – these keys can be used for track selection and for title programming  see pages 12 and 14.
- 2 REPEAT** – to repeat the current track, to repeat all tracks or to switch repeat off  see page 12.
- 3 TEXT** – to select text information and to enter the title programming mode  see pages 7 and 14.
- 4 STOP** – to stop any action
- 5**   – when pressed < 0,5 sec.: track search
– when pressed > 0,5 sec.: wind/rewind  see page 12
- 6 O/C** – open/close
- 7 TIME** – to select time information  see page 7
- 8 SCROLL** – to scroll text information or to enter demo mode
– to adjust the scroll speed when lyrics information is selected  see page 7.
- 9 PLAY**  – to start playback or recording
- 10 SIDE A/B** – to reverse the side  see page 12.

DIRECT TRACK SELECTION with remote control

The 0-9 keys on the supplied remote control can be used to directly select a desired track on the tape.

These keys can be activated during the stop mode, when the tray is open, during playback or during the search mode. The DCC player will wind to the desired track, after which playback will start automatically.

When using DCC user-recorded tapes this function only works if a tracklist is present and has been read by the DCC-recorder.



MAINTENANCE

GENERAL REMARKS

The DCC 951 might influence the quality of a broadcast signal when the radio antenna is located close to the DCC player.

- Keep the radio antenna as far as possible away from the DCC player.

MAINTENANCE OF YOUR DCC RECORDER

- Do not leave the unit for any length of time in direct sunlight or other places where high temperatures can occur, such as in the vicinity of heating apparatus.
- Do not expose the equipment to humidity or rain.
- A chamois leather cloth slightly moistened with water is sufficient for cleaning the deck.
- Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.

CASSETTE MAINTENANCE

Keep the cassettes at room temperature and avoid leaving them in the sun or too close to magnets and transformers of e.g. recorders, radios, TV's and loudspeakers. Do not push the tape protection of DCC cassettes aside and avoid touching the tape.

CLEANING CASSETTES

- In principle there is no need to clean the head of your DCC player when you use only DCC cassettes. The use of conventional musicassettes of inferior quality may leave dirt on the DCC head. This can affect the sound quality of DCC cassettes (sound will be interrupted). Your DCC 951 automatically indicates when headcleaning is needed by showing the message **CLEAN HEAD**. This message can be shown when RECORD PAUSE is entered, during PLAYBACK or after playing many hours with conventional musicassettes. Special DCC cleaning-cassettes (Philips SBC3500) are available to clean the DCC head. It is strongly advised not to use conventional cleaning cassettes as they will not clean the DCC head good enough.

WARNING: Do not use DEMAGNITIZE cassettes.

This product complies with the radio interference requirements of the European Community.

Copyright:

Recording or copying is only authorised if there is no violation of copyright or other rights of third parties.

RECORDING FUNCTIONS

TITLE PROGRAMMING

TITLE recording is only possible when you are using non protected user-recorded DCC cassettes.

In STOP mode

When no text has been recorded on the tape yet:

- 1 Press TEXT.
When a new track is found and no text-info has been recorded yet the display shows **NO TEXT INFO**
- 2 Press TEXT again.
The display shows **TITLE PROGRAM**
- 3 A cursor will be blinking at the first character on the display (left).
The cursor can be moved on the display with the   keys. A maximum of 40 characters per title can be programmed.
- 4 Programming is either done with the **0-9** keys on the remote control (1=A,B,C, 2=D,E,F, 3=G,H,I, etc.) or with the **REC LEVEL +/-** keys.
 - Press **REC LEVEL +** to scroll through the alphabet characters in the following sequence: A, B, C, etc.
 - Press **REC LEVEL -** to scroll through the alphabet characters in the opposite sequence: Z, Y, X, etc.When these keys are pressed for more than 1 second the scrolling speed will be increased.
- 5 Press the RECORD key to store the title.
The deck will search for the start of the current track and record the track title at the start of this track. During this time the display will show **TITLE RECORD**

When text info has already been recorded on the tape:

- 1 Press TEXT.
When text info has already been recorded the display shows the current title.
- 2 An existing title can be edited by pressing the **TEXT** key again.
The display will first show **TITLE EDIT** and then the current title.
A cursor will be blinking at the first character on the display (left).
This cursor can be moved on the display with the   keys
- 3 Programming is done with the **0-9** keys on the remote control or with the **REC LEVEL +/-** keys as described above.
- 4 Press the RECORD key to store the new title.
The deck will search for the start of the current track and record the track title at the start of this track. During this time the display will show **TITLE RECORD**

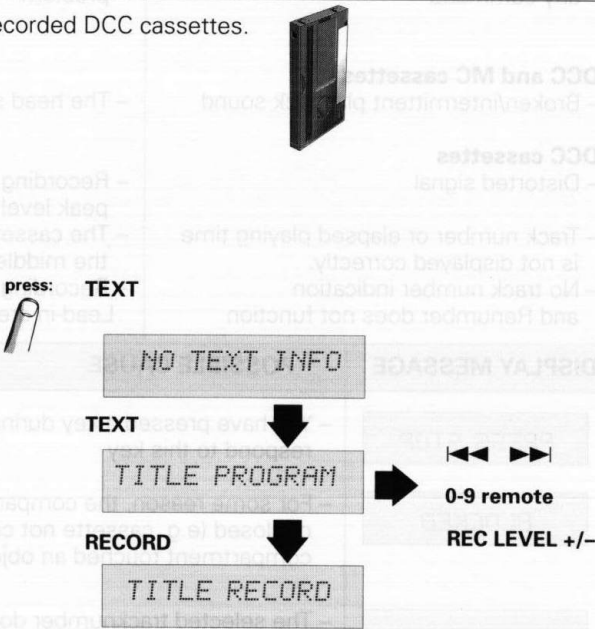
MICROPHONE RECORDING

If a microphone (e.g. Philips SBC3036) is connected, your DCC951 will automatically select microphone recording. If 'howling' occurs when using microphones:

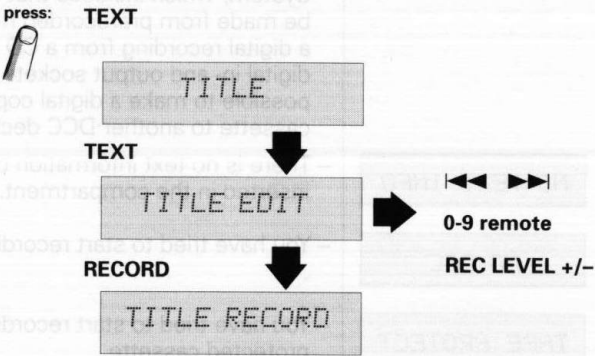
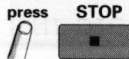
- keep the microphones away from the loudspeakers,
- or reduce the reproduction volume
- or use headphones for monitoring.

AUTOMATIC CD DUBBING

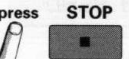
When the DCC player is incorporated in a Philips 900 series system (with correct ESI BUS connections) and when the preset setting is **CD SYNCHRO ON** (default). ( see PRESETS on page 10), CD synchro will always be started automatically when you are recording from a CD. When you start recording on your DCC player by pressing the RECORD key, the CD player will start playback automatically.



NOTE: to exit title programming



NOTE: to exit title programming



TROUBLE SHOOTING

2-16

SYMPTOM	POSSIBLE CAUSE	REMEDY
General problems – The unit does not respond to any command	– Electrostatic charge may cause this problem	– Switch off the power. – Switch on the power again after a few seconds.
DCC and MC cassettes – Broken/intermittent playback sound	– The head section is dirty	– Clean the head section
DCC cassettes – Distorted signal – Track number or elapsed playing time is not displayed correctly. – No track number indication and Renumber does not function	– Recording was made with too high peak level (OVERLOAD) – The cassette has been loaded in the middle of one of the tracks – Recording has not been started with a Lead-in area at the beginning of each side	– Make a new recording with lower peak level – Rewind the tape to the start of the track and start playback – You may consider to re-record the tape

DISPLAY MESSAGE	POSSIBLE CAUSE	REMEDY
PRESS STOP	– You have pressed a key during a function which cannot respond to this key	– Press the STOP key
BLOCKED	– For some reason, the compartment cannot be opened or closed (e.g. cassette not correctly inserted, compartment touched an object when it was opened).	– Do not force anything. Try to reset the player by switching ON and OFF again. If the trouble persists, consult your dealer or service station.
WRONG TRACK	– The selected tracknumber does not exist on the tape, playback is continued	– Enter an existing track number
CHECK DIG IN and CHECK OPT IN	– The CD player does not send any signal in 'STOP' mode. – The digital source has failed (i.e. loosened cable or DIG IN is not connected. The unit is switched to STOP. – 'Digital' or 'Optical' has been selected at the unit. If the digital source is missing, recording can not be started.	– Set the CD player into 'PAUSE' mode. – Check the connections and try again. If the problem persists, your digital/optical cable might be broken. Consult your dealer for a new cable
COPY PROHIBIT	– You can not make a digital copy of a source which is already a digital copy of an original music-program. The DCC951 operates with a Serial Copy Management System, which includes that a fully digital copy can be made from prerecorded material. E.g. you can make a digital recording from a CD to your DCC via the digital in- and output sockets. However, it is not possible to make a digital copy of this recorded DCC cassette to another DCC deck.	– When you want to copy this cassette from one DCC deck to another you can only do this via the analogue in- and output sockets. – Select the analog input and start recording again.
NO TEXT INFO	– There is no text information on the tape that has been inserted in the compartment.	– Program your own text information (see page 16 or select TIME information)
NO DCC	– You have tried to start recording with an 'ACC'.	– Insert a DCC into the tray.
TAPE PROTECT	– You have tried to start recording with a recording protected cassette.	– Push the red button on the DCC down (towards protective touch slider)
CLEAN HEAD	– There is dust or dirt on the head of your DCC player. This indication may appear during playback/recording or recording pause mode.	– Use a special DCC cleaning cassette to clean the head
RENUM FAILED	– Renumber is not possible when a recording was started on an empty area of the tape (no time info recorded)	– You may consider to re-record the tape
TAPE FULL	– indicates that the recording cannot be continued because the tape is full	– Use a new cassette for recording or rewind the tape to overwrite an existing recording
LOAD AGAIN	– The cassette has not been loaded correctly	– Load the cassette again.

If the trouble persists, even after the remedial action has been taken or if the symptoms are not included in the table, consult the dealer where you purchased the unit.

WARNINGS

3-1

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



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.

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.

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.

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.

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.

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

3-1

GB

HANDLING DCC-HEADS

CAUTION: The heads are suspectable to electrostatic voltage higher than 150Vdc! The heads are protected from external electrostatic charging by connecting the head flexible cable to the read/write board. When disconnecting the cable, always place the deck on a bench with required electrostatic discharging measures taken and wear electrostatic discharging band. Moreover, always mount the short-clip on the flexible cable removed.

The heads are also suspectable to strong external magnetic field and the analog output may be affected.

DO NOT USE HEAD DEMAGNETIZER, MAGNETIC SCREWDRIVER OR DEMAGNETIZER CASSETTE!

NL

VOORZORGSMAATREGELEN BIJ DE BEHANDELING VAN DE DCC-KOPPEN.

LET OP: De koppen zijn gevoelig voor een elektrostatische spanning groter dan 150Vdc. Als de kop normaal verbonden is met de Read/Write printplaat, is deze beveiligd tegen externe elektrostatische ontladingen. Zodra deze flex-foil verbinding wordt onderbroken, plaats dan het deck altijd op een werktafel, die voorzien is van elektrostatische ontladings-middelen en draag een elektrostatische ontladings-manchet. Schuif, bovendien, direct na het losnemen de kortsluit-clip over de flex-foil kabel.

De koppen zijn ook gevoelig voor sterke externe magnetische velden, deze kunnen het analoge uitgangsvermogen beïnvloeden.

GEBRUIK GEEN KOP DEMAGNETISEER SPOEL, MAGNETISCHE SCHROEVENDRAAIER OF DEMAGNETISEER CASSETTE!

D

BEHANDLUNG VON DCC-KÖPFEN.

VORSICHT! Die Köpfe sind empfindlich gegenüber elektrostatischen Spannungen ab ca. 150V!

Schutz vor Schäden durch statische Entladungen besteht für die Köpfe nur, solange sie über den Flexprint mit dem Lese-/Schreib-Verstärker verbunden sind.

Die Verbindung darf erst unterbrochen werden, wenn der DCC-Recorder auf einer ESD-sicheren Tischauflage steht und nachdem ein ESD-Schutz-Armband angelegt worden ist.

Der vom Verstärker-Print abgezogene Flexprint-Connector muß mit einem Kurzschlußstecker geschützt werden.

Die Köpfe sind ebenfalls empfindlich gegenüber starken äußeren Magnetfeldern; deren Einwirkung kann das analoge Ausgangssignal beeinträchtigen.

Verwendete Werkzeuge müssen antimagnetisch oder entmagnetisiert sein.

IM DCC-DECK DÜRFEN KEINE ENTMAGNETISIERUNGS-CASSETTEN ODER ENTMAGNETISIERUNGS-SPULEN BENUTZT WERDEN!

F

MANIPULATION DES TETES DCC

ATTENTION: Ces têtes sont sensibles aux tensions électrostatiques supérieures à 150Vdc. Les têtes sont protégées des charges életrostatiques extérieures par la connection du câble flexible de tête sur la carte Lecture/Ecriture. Lorsque l'on déconnecte ce câble, placer impérativement la platine sur un établi pour lequel on aura pris les mesures requises de décharge électrostatiques, l'opérateur devant porter l'équipement approprié (bracelet d'écoulement des charges électrostatiques)> De plus monter toujours le clip de court-circuit sur le câble flexible démonté.

Les têtes sont également sensibles à un champ magnétique extérieur puissant et la sortie analogique peut en être affectée.

NE PAS UTILISER DE DEMAGETISEUR DE TETES - DE TOURNEVIS MAGNETIQUE OU DE CASSETTE DE DEMAGNETISATION.

I

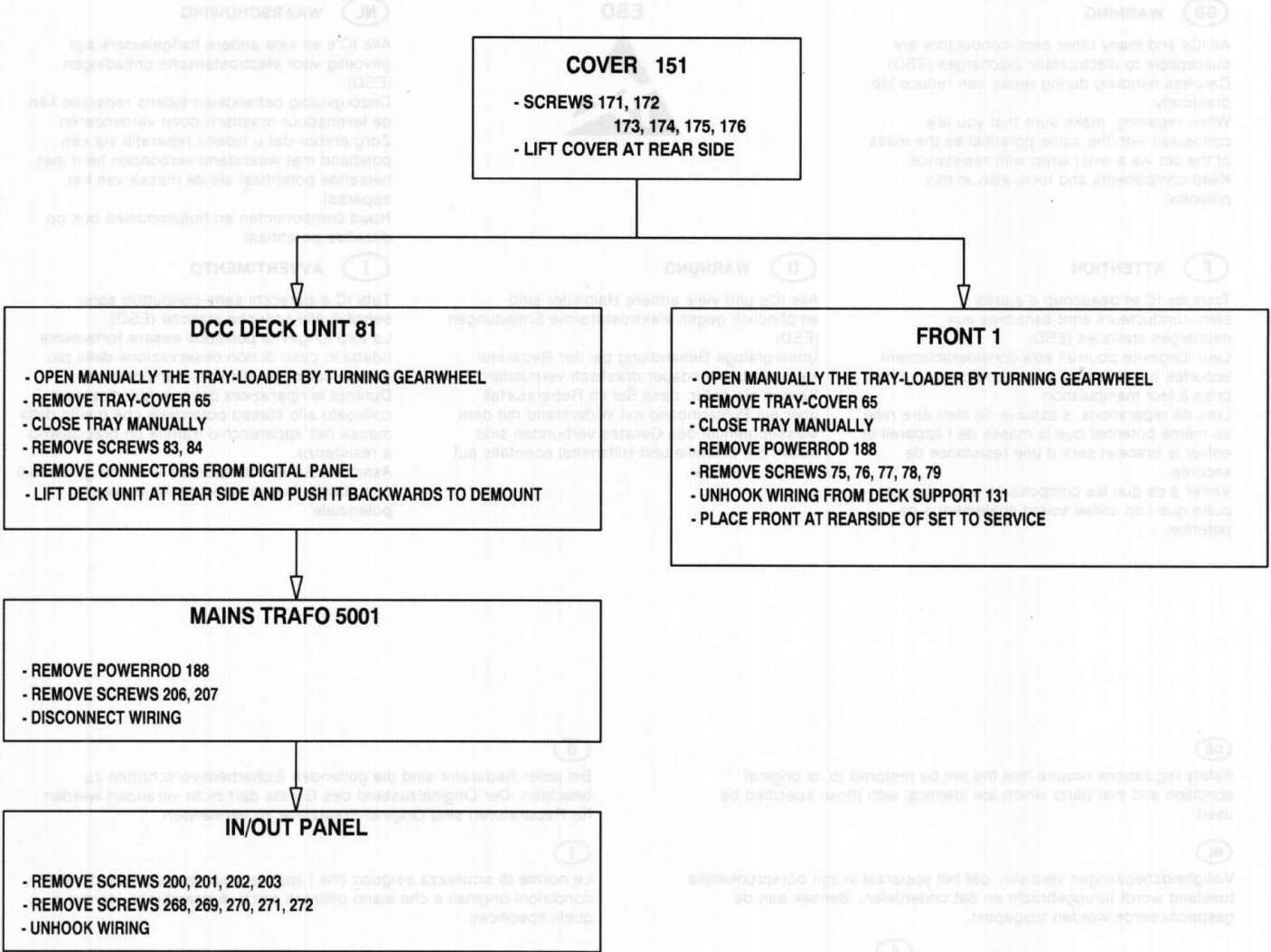
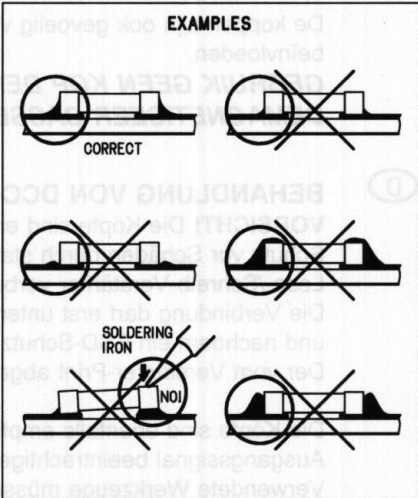
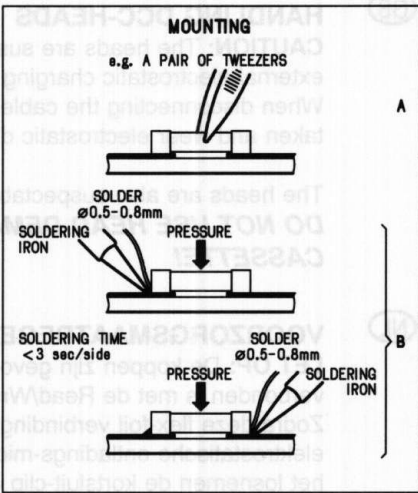
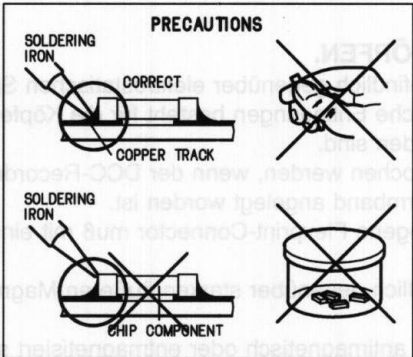
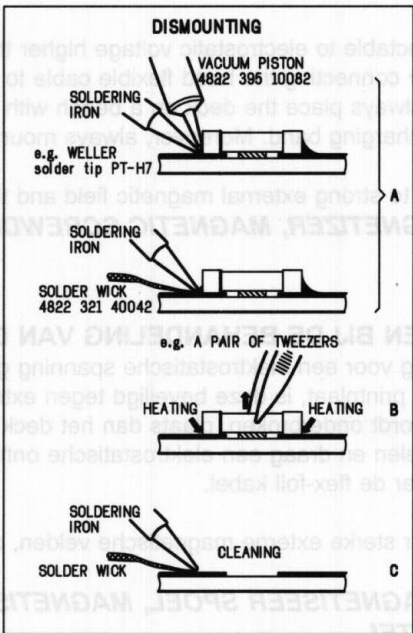
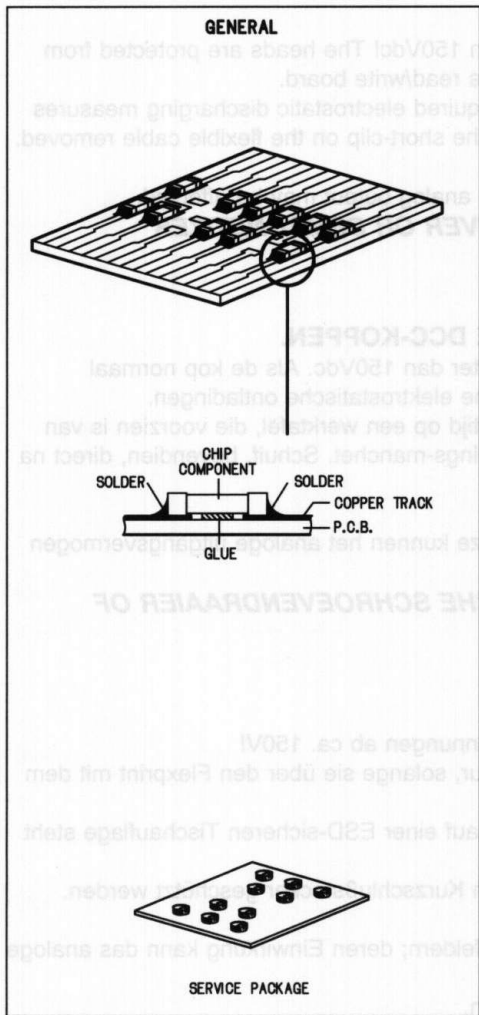
MANEGGIAMENTO DELL TESTINA DCC

ATTENZIONE: le testine sono suscettibili a cariche elettrostatiche con tensioni maggiori di 150V DC. Le testine sono protette dall'influenza di cariche elettrostatiche esterne dovute al collegamento del cavetto flessibile dalla testina alla basetta di lettura e scrittura (read/write board). Quando viene scollegato il cavetto, il deck deve sempre essere riposto sul banco di lavoro , che deve essere necessariamente provvisto delle necessarie protezioni antistatiche (ad esempio tappetino collegato a massa) e il tecnico addetto alla riparazione dovrà trovarsi necessariamente allo stesso potenziale.

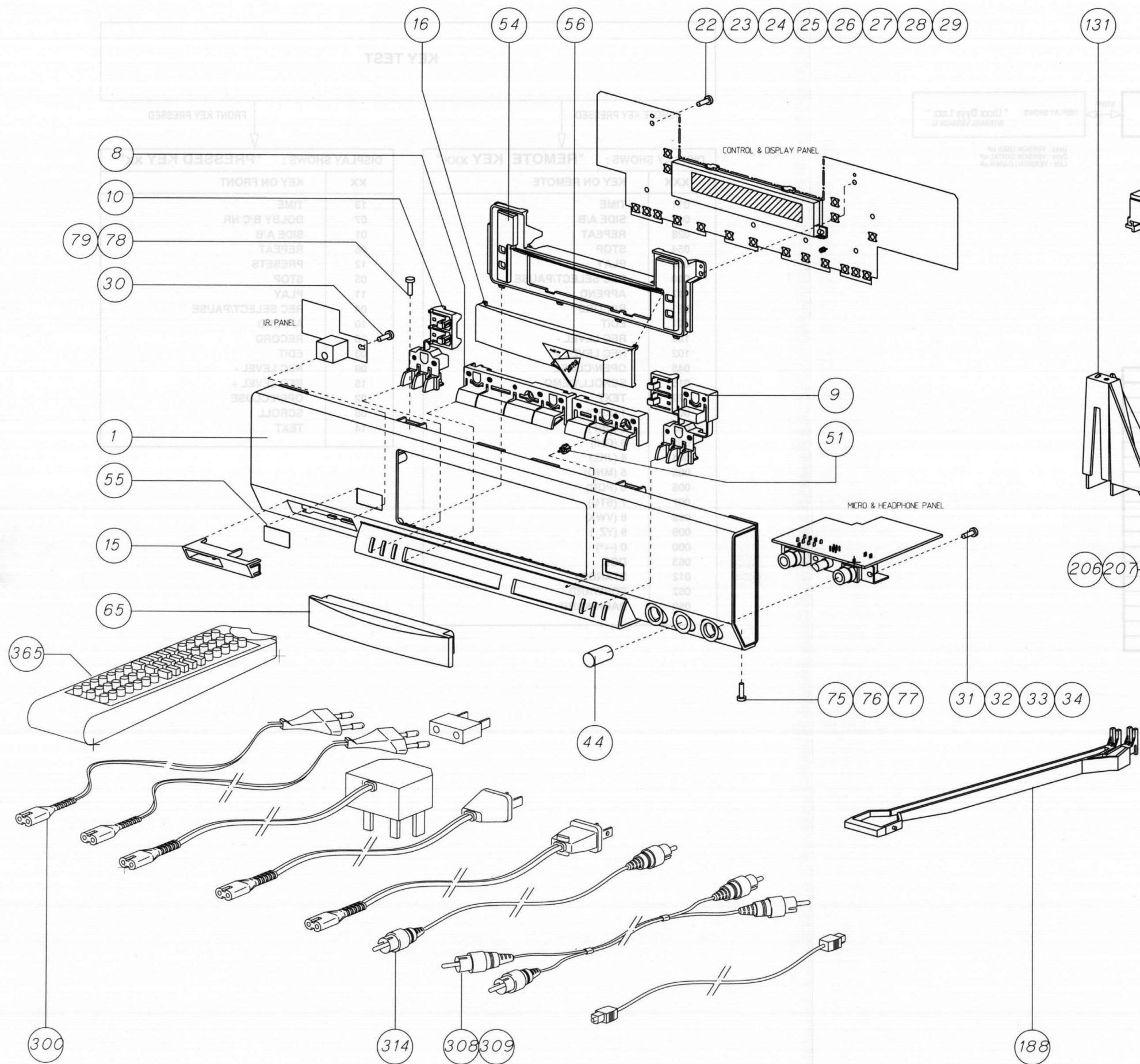
Dopodiché è necessario posizionare la clip (graffetta) in modo da cortocircuitare il cevetto rimosso.

Le testine sono suscettibili anche alla presenza di forti campi magnetici esterni e l'uscita analogica potrebbe risentirne particolarmente.

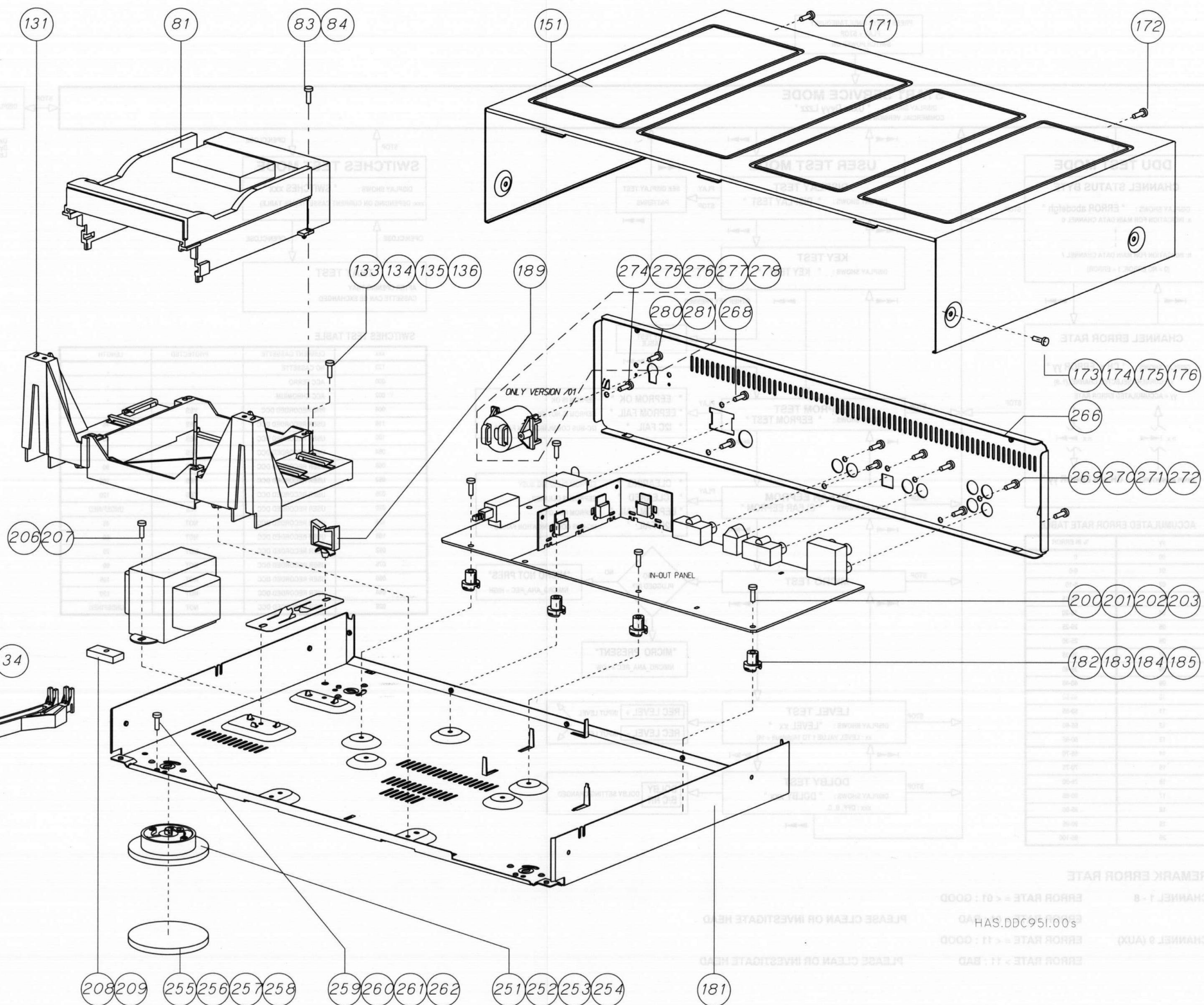
NON UTILIZZARE TESTINE SMAGNETTIZZATRICI , CACCIATIVI MAGNETIZZATI O CASSETTE SMAGNETIZZATRICI.



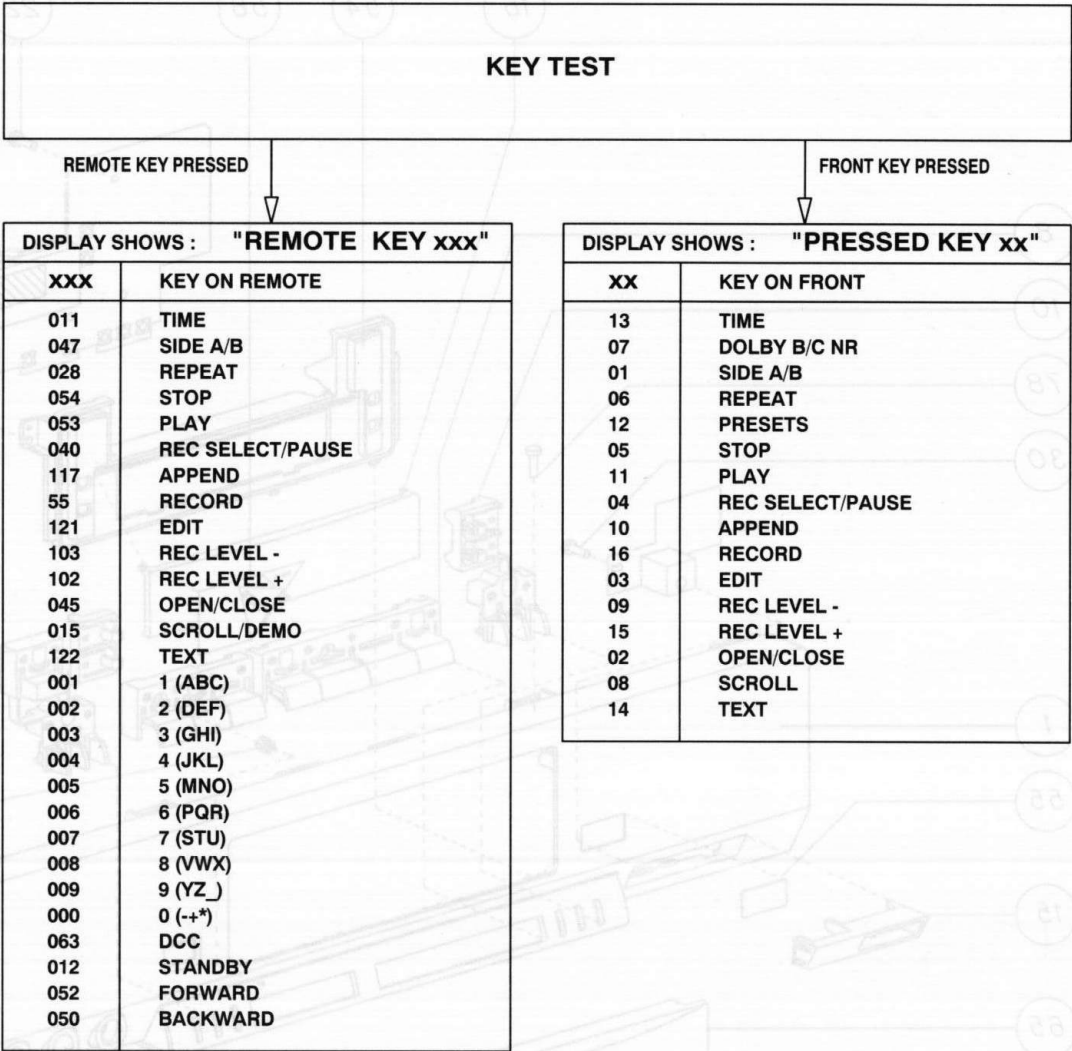
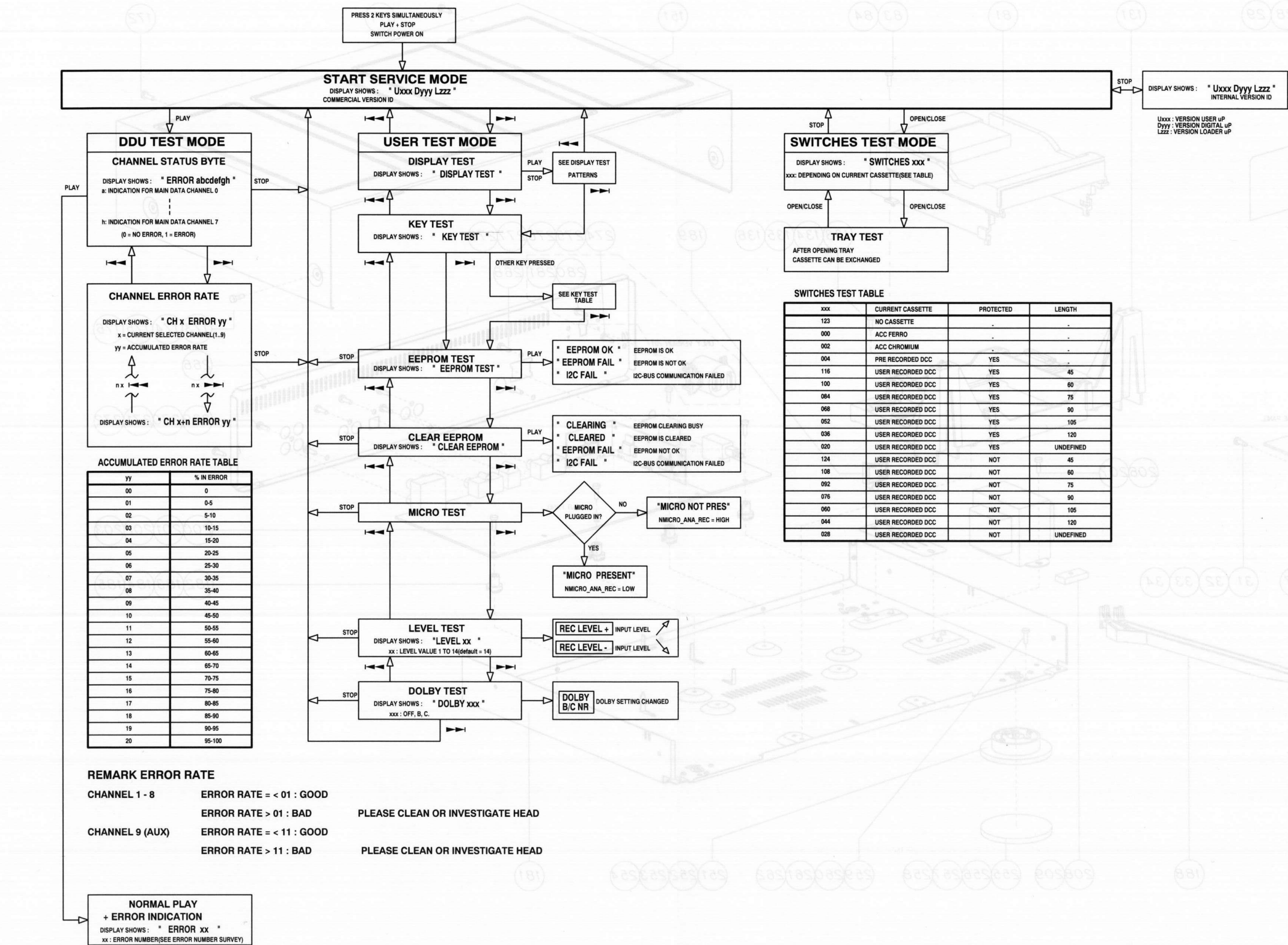
4-2



4-2

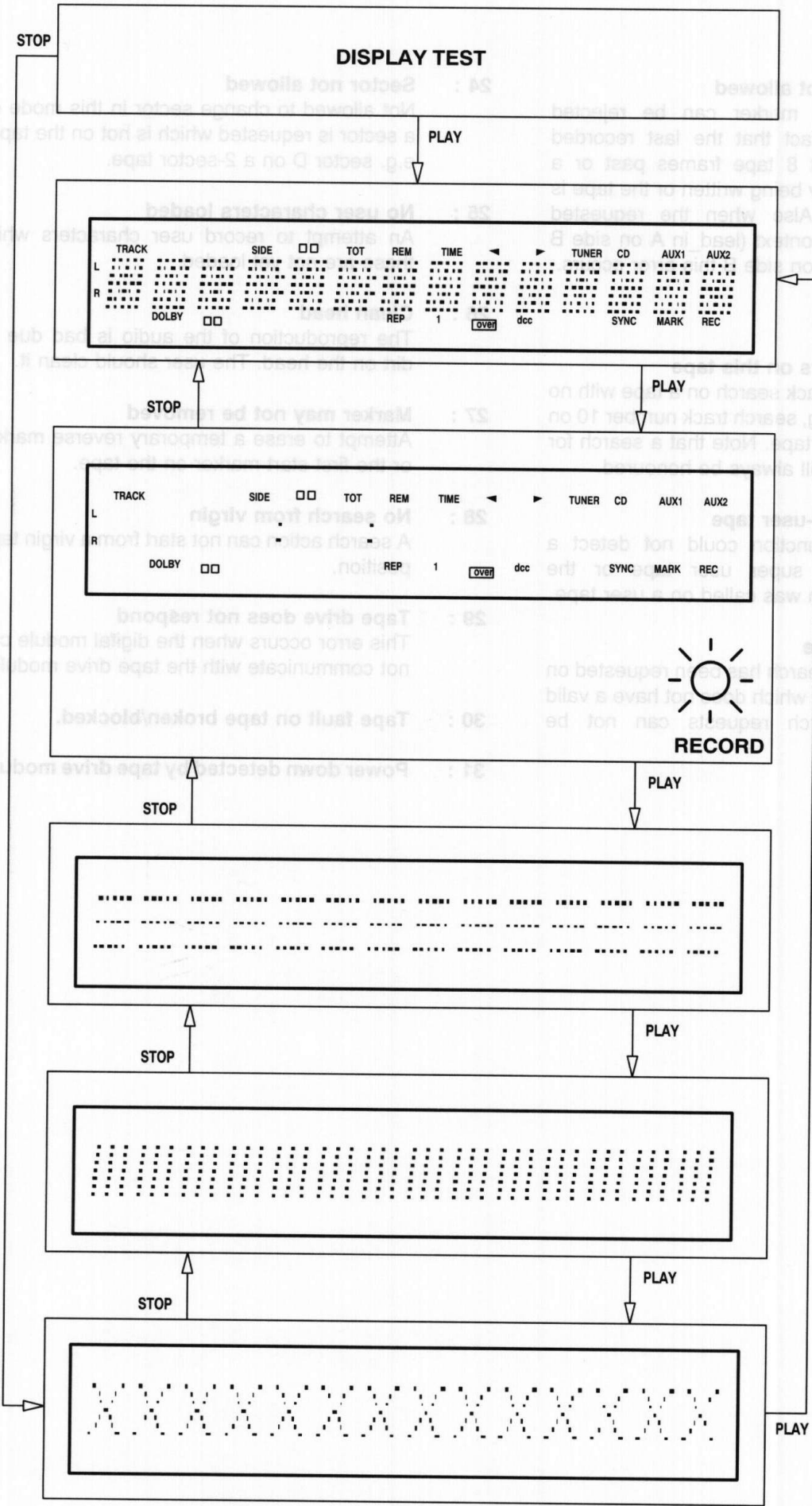


4-2



DISPLAY TEST PATTERNS

4-4



HAS1133
9424

4-4

- 10 : No error
- 11 : Record attempted on write protected tape
- 12 : Non-existent search target
- 13 : Invalid command received
- 14 : Setting not allowed
- 15 : Command overrun
- 16 : Signature not yet loaded
- 17 : Unreliable TOC
- 18 : Search target could not be found
- 19 : Internal DCC chip error
- 20 : There has an error occurred within the DCC chips on the DDU digital module. When this error persists over a longer period of time, please consult your nearest service officer.
- 21 : A record or auxiliary record or record-pause command is issued while the loaded cassette is write protected or is an ACC. The DDU module will refuse to record on such a tape.
- 22 : The target to search for does not exist on the currently loaded cassette. e.g. search for track number 20 while the tape only contains 12 tracks.
- 23 : The command which was received is not allowed in this context.
- 24 : This error message will be returned when the DDU module is performing a TOC search and a next_previous_count is downloaded.
- 25 : The DDU module has received too many state changing commands in a row to handle. This error occurs whenever a command is received while another command is still waiting for execution. The DDU module will not store a queue of received commands.
- 26 : The record command will only be accepted by the DDU module after the seekers signature has been loaded. This will make it possible to identify the recording set of each DCC cassette.
- 27 : During the process of TOC search the DDU module found out that the contents of the TOC does not match the contents of the tape. The search command should be repeated using relative search.
- 28 : The requested search target was valid but could not be found. e.g. a direct track search after track number 5 on a super-user tape while track number 5 was removed by after-recording, or an append search on a full tape.

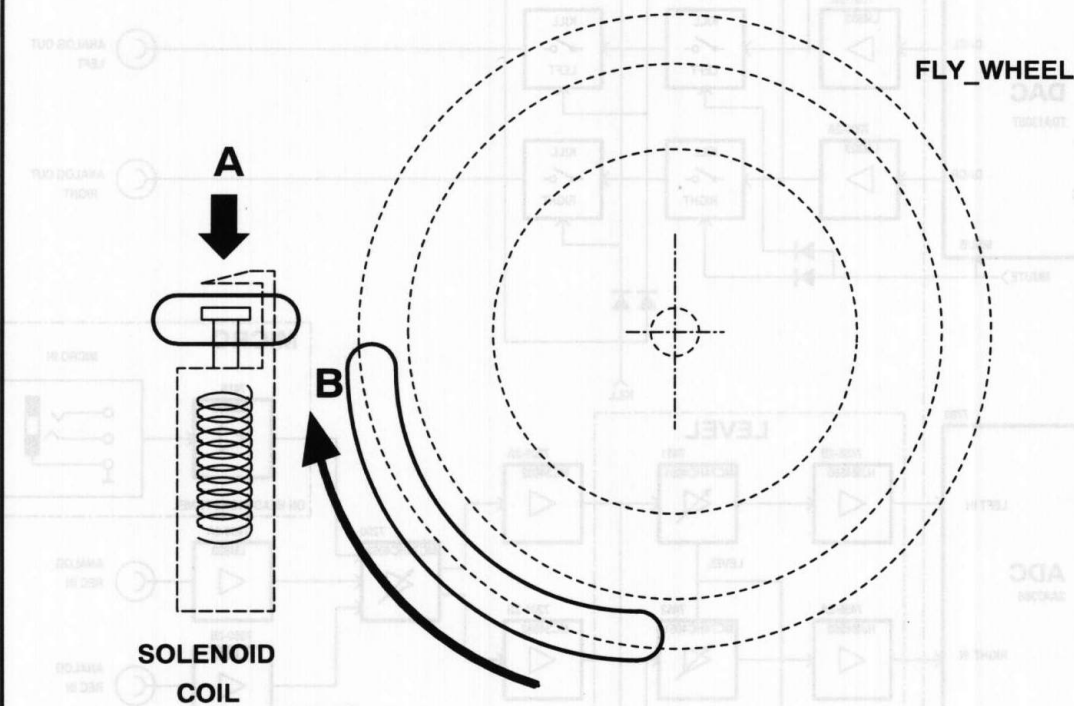
ERROR NUMBER SURVEY

- 00 : No error
- 01 : Deck failed
- 02 : The requested command could not be executed because of a malfunctioning of the mechanics.
- 03 : Tray blocked
- 04 : This error is issued when the tray has been blocked, although the tray might be moving out again due to this fact. The blocked indication will hence occur very short in the tray status message and could be missed.
- 05 : Tray pulled open
- 06 : During normal operation the tape drive module has sensed that the tray loader is forced to the open state by the user.
- 07 : Invalid parameter
- 08 : The parameter going with the last received command is unknown or out of range.
- 09 : No cassette
- 10 : The command can not be executed since there is no cassette loaded.
- 11 : Digital Audio Input out of lock or missing carrier
- 12 : During recording from a digital input, no input signal is detected. When continuing the recording, undefined data will be recorded which may lead to unpredictable audio during playback. The DDU module will refuse to continue the recording.
- 13 : Digital Audio Input has Professional class (unsupported)
- 14 : During recording from a digital input, a professional source may be detected which is not supported by the DDU module, hence the module will refuse to record from this source.
- 15 : Digital Audio Input has non-audio format
- 16 : During recording from a digital input, the input data may contain computer data instead of audio. The DDU module will refuse to continue the recording.
- 17 : Copy right protection violation (SCMS)
- 18 : During recording from a digital input, which contains user audio data but which is copyright protected, the DDU module will refuse to continue the recording.

ERROR NUMBER SURVEY

00 :	No error	10 :	Internal DCC chip error There has an error occurred within the DCC chips on the DDU digital module. When this error persists over a longer period of time, please consult your nearest service officer.	19 :	Marker writing not allowed A request for a marker can be rejected because of the fact that the last recorded marker is not yet 8 tape frames past or a marker is currently being written or the tape is write protected. Also when the requested marker is out of context (lead_in A on side B or reverse maker on side B this error occurs.	24 :	Sector not allowed Not allowed to change sector in this mode or a sector is requested which is not on the tape, e.g. sector D on a 2-sector tape.
01 :	Deck failed The requested command could not be executed because of a malfunctioning of the mechanics.	11 :	Record attempted on write protected tape A record or auxiliary record or record-pause command is issued while the loaded cassette is write protected or is an ACC. The DDU module will refuse to record on such a tape.	20 :	Not Used.	25 :	No user characters loaded An attempt to record user characters while these are not yet loaded.
02 :	Tray blocked This error is issued when the tray has been blocked, although the tray might be moving out again due to this fact. The blocked indication will hence occur very short in the tray status message and could be missed.	12 :	Non existent search target The target to search for does not exist on the currently loaded cassette. e.g. search for track number 20 while the tape only contains 12 tracks.	21 :	No track numbers on this tape Attempt to do a track search on a tape with no track numbers, e.g. search track number 10 on a non-super user tape. Note that a search for track number 1 will always be honoured.	26 :	Clean head The reproduction of the audio is bad due to dirt on the head. The user should clean it.
03 :	Tray pulled open During normal operation the tape drive module has sensed that the tray loader is forced to the open state by the user.	13 :	Invalid command received The command which was received is not allowed in this context.	22 :	No proper super-user tape The renumber function could not detect a marker on this super user tape or the renumber function was called on a user tape.	27 :	Marker may not be removed Attempt to erase a temporary reverse marker or the first start marker on the tape.
04 :	Invalid parameter The parameter going with the last received command is unknown or out of range.	14 :	Setting not allowed This error message will be returned when the DDU module is performing a TOC search and a next_previous_count is downloaded.	23 :	No TOC available A direct access search has been requested on a super-user tape which does not have a valid TOC. This search requests can not be honoured.	28 :	No search from virgin A search action can not start from a virgin tape position.
05 :	No cassette The command can not be executed since there is no cassette loaded.	15 :	Command overrun The DDU module has received to many state changing commands in a row to handle. This error occurs whenever a command is received while another command is still waiting for execution. The DDU module will not store a queue of received commands.			29 :	Tape drive does not respond This error occurs when the digital module can not communicate with the tape drive module.
06 :	Digital Audio input out of lock or missing carrier During recording from a digital input, no input signal is detected. When continuing the recording, undefined data will be recorded which may lead to unpredictable audio during playback. The DDU module will refuse to continue the recording.	16 :	Signature not yet loaded The record command will only be accepted by the DDU module after the setmakers signature has been loaded. This will make it possible to identify the recording set of each DCC cassette.			30 :	Tape fault on tape broken/blocked.
07 :	Digital Audio input has Professional class (unsupported) During recording from a digital input, a professional source may be detected which is not supported by the DDU module, hence the module will refuse to record from this source.	17 :	Unreliable TOC During the process of TOC search the DDU module found out that the contents of the TOC does not match the contents of the tape. The search command should be repeated using relative search.			31 :	Power down detected by tape drive module.
08 :	Digital Audio input has non-audio format During recording from a digital input, the input data may contain computer data instead of audio. The DDU module will refuse to continue the recording.	18 :	Search target could not be found The requested search target was valid but could not be found, e.g. a direct track search after track number 5 on a super-user tape while track number 5 was removed by after-recording, or an append search on a full tape.				
09 :	Copy right protection violation (SCMS) During recording from a digital input, which contains user audio data but which is copyright protected, the DDU module will refuse to continue the recording.						

BOTTOM PLATE

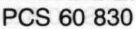


- IN CASE OF TAPE SALAD THE TAPE DECK RISKS TO BE BLOCKED IN THE PLAY POSITION.
TO UNBLOCK THE DECK OUT OFF THE PLAY POSITION, THE FOLLOWING INSTRUCTIONS HAVE TO BE CARRIED OUT:
1. DISCONNECT THE SET FROM THE MAINS.
 2. REMOVE COVER ITEM 151
 3. IN THE BOTTOM PLATE OF THE SET ARE 2 HOLES A AND B TO MANIPULATE THE DECK MECHANISM.
 4. VIA HOLE A, PUSH THE SHAFT OF THE SOLENOID INWARDS TO LOCK IN THE DECK MECHANISM.
 5. VIA HOLE B, TURN FLY-WHEEL IN CLOCKWISE DIRECTION UNTIL THE HEAD PLATE HAS BEEN RETURNED TO THE STOP POSITION.

TOOLS	REMARKS				
DOLBY LEVEL					
USE DOLBY REF. CASSETTE MTT-150 4822 397 30271 OR TCC-130 4822 397 30269	DOLBY REFERENCE LEVEL 200nWb/m DOLBY OFF	ANALOG OUT SOCKET 1005 PIN 2 (LEFT) PIN 3 (RIGHT)	ON DISPLAY PANEL R3199 (LEFT) R3198 (RIGHT)	ADJUST BOTH CHANNELS TO 500 mVrms +/- 2 dB	CONTROLE: +/- 1.5 Vpp 0.5 mS/DIV

SERVICE TOOLS

Dolby reference cassette MTT-150	4822 397 30271
Universal analog test cassette Fe "SBC420"	4822 397 30071
General purpose test cassette (prerecorded DCC)	4822 397 30256
9.6kHz calibration cassette (prerecorded DCC)	4822 397 30264
Mirror test cassette MC-112C	4822 395 30288
DCC head cleaner cassette (SBC 3500)	4822 015 20646
Ceramic screwdriver D281 1.7	4822 395 50451
TORX screwdriver set "SBC 163"	4822 395 50145
Wheel loosener	4822 395 60039
Trimming kit "SBC317"	4822 310 50095



ABBREVIATIONS

A0	Address SRAM; Address DRAM		(+10V = Open tray; 0V = Close tray)
A1	Address SRAM; Address DRAM	COA	Common analog
A1 0/RAS	Address SRAM; RAS DRAM	COAXIAL IN	IEC958 high sensitive input
A1 1	Address SRAM	COD	Common digital
A1 2/PinO5	Address SRAM; Address DRAM; Port expander output 5	COPY	copyright status bit
A1 3/PinO2	Address SRAM; Address DRAM; Port expander output 2	CRO2/TRAY_OPEN	CRO2/FE cassette detection switch input
A1 4/PinO1	Address SRAM; Address DRAM; Port expander output 1		if N_CASS_PRES = L
A1 5/PinO4	Address SRAM; Address DRAM; Port expander output 4		L = FE; H = CRO2
A1 6/PinO3	Address SRAM; Address DRAM; Port expander output 3		if N_CASS_PRES = H
A2	Address SRAM; Address DRAM		L = tray fully opened,
A3	Address SRAM; Address DRAM		H = tray is not fully opened
A4	Address SRAM; Address DRAM	CTRLMODE	select µP/stand-alone mode
A5	Address SRAM; Address DRAM	D0	Data SRAM; Data DRAM
A6	Address SRAM; Address DRAM	D1	Data SRAM; Data DRAM
A7	Address SRAM; Address DRAM	D2	Data SRAM; Data DRAM
A8	Address SRAM; Address DRAM	D3	Data SRAM; Data DRAM
A9/CAS	Address SRAM; CAS for DRAM	D4	Data SRAM;
A1+	Analog reader ACC Left channel	D5	Data SRAM;
ACC+	Analog reader ACC Right channel-	D6	Data SRAM;
ACC/NDCC	Analog or DCC playback	D7	Data SRAM;
ANAEYE	Analogue eye pattern output	DACL	Analog audio output left
ANAL	ACC output Left	DACR	Analog audio output right
ANAR	ACC output Right	DATA	data input
ATSB	12 dB attenuation(active LOW)	DCC_CASS_PRES	DCC cassette present switch input
ATTDAC	DAC attenuation control.	DEEM	pre-emphasis output bit
AZCHK	channel 0 and channel 7 azimuth monitor.	DEEM1	deeemphasis on/off
		DEEM2	deeemphasis on/off
BCK	bit clock input.	DEEMDAC	DAC control output.
BIAS	Bias current for ADC	DIGITAL OUT	IEC958 output
BIL	buffer op-amp inverting input for left channel.	DSMB	double speed mode(active LOW).
BIR	buffer op-amp inverting input for right channel.	ERCOSTAT	ERCO status, for test only
BOL	buffer op-amp inverting input for left channel.	FDAI	filtered serial data input(from ADAS)
BOR	buffer op-amp output for right channel.	FDAB	filtered serial data output(to ADAS)
CAP_A	Capstan motor control connection A	FDCL	filtered data bit clock
CAP_B	Capstan motor control connection B	FDIR	PASC mode encode/decode
CAPSTAN	Low output level switches the capstan motor on.	FDWS	filtered data word select
		FILTCL	capacitor for left channel 1st order filter function.
CAPSTAN+	Capstan motor + connection		capacitor for right channel 1st order filter function.
CAPSTAN-	Capstan motor - connection	FILTCL	capacitor for right channel 1st order filter function.
CEDC	system clock output.	FRESET	reset signal from codec.
CHMODE	use of channel status(0=professional use, 1=consumer use)	FS256	master audio clock at 256x sample frequency
CHROME	Indication if a chrome analog cassette is inserted.		indicates sample frequency=32kHz
CHTST1	Channel test pin 1	FS32	indicates sample frequency=32kHz
CHTST2	Channel test pin 2	FS44	indicates sample frequency=44kHz
CKIN	system clock input.	FS48	indicates sample frequency=48kHz
CKSL1	clock selection 1	FSYNC	subband synchronisation on F-I ² S bus.
CKSL2	clock selection 2	GNDA	Analog ground
CLAMP	Write current output	GNDD	Digital ground
CLK22	22.5792 MHz buffered clock output of SFC3.	GNDS	Analog motors ground
		HOLD	DDU is busy flag
CLK24	24.576 MHz XTAL buffered clock output of SFC3.	HPEN	high pass filter enable input.
CLKSEL	select system clock	I ² SOUTEN	serial audio output enable.
CLOCK	Serial data clock from controller	I ² SSEL	select auxiliary input or normal input in transmit mode.
CLOSE_TRAY	Tray motor connection		TTL level IEC input.
		IECIN0	high sensitivity IEC input.
		IECIN1	digital audio output for optical and transformer link.
		IECO	digital audio output enable
		IECOEN	IEC958 digital audio output.
		IECOP	select IEC input 0 or 1
		IECSEL	Head signals of main data channels
		IN0-7	Head signal of auxiliary data.
		INAUX	

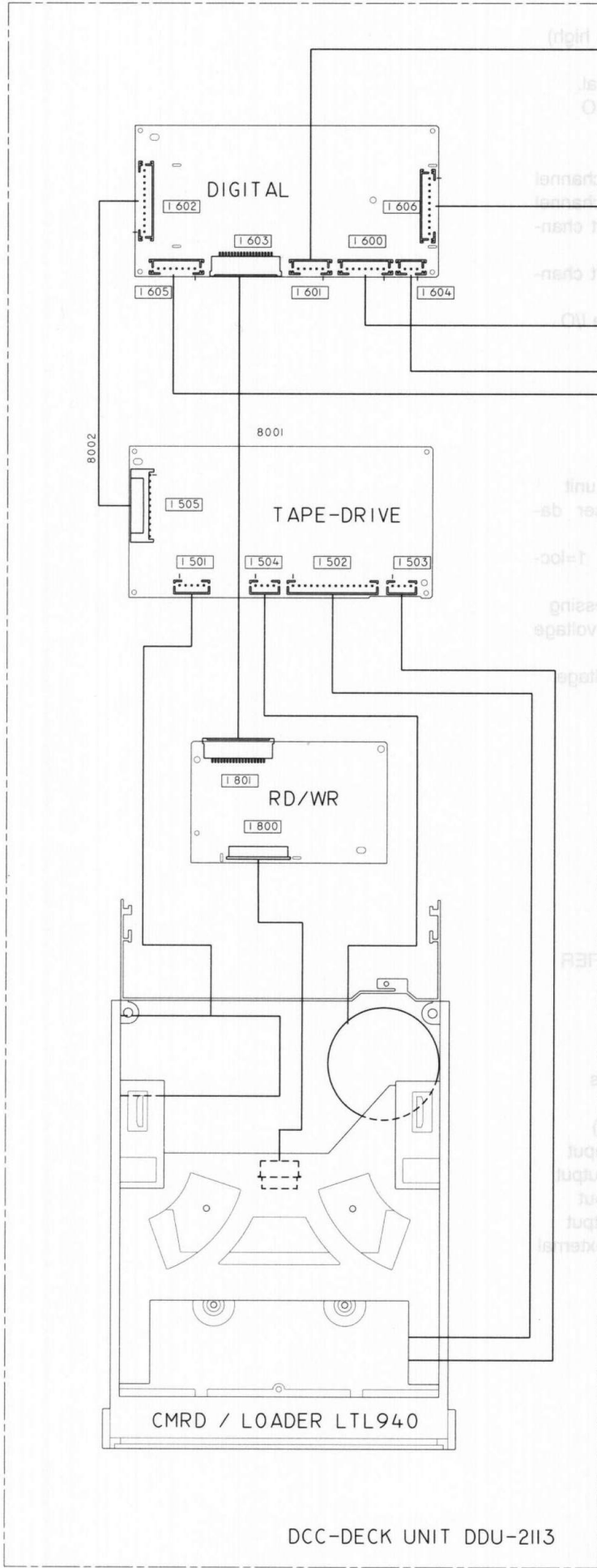
INL	Analog input signals from DCC head.
INMFL	Magnetic feedback amplifier input left.
INMFR	Magnetic feedback amplifier input right.
INR	Analog input signals from DCC head.
INVALID	validity of audio sample input/output
IREF	current reference node.
L3CLK	L3 bus clock line
L3CLKC	codec interface clock
L3CLKM	microcontroller interface clock
L3DATA	L3 bus serial data line
L3DATAC	codec interface data
L3DATAM	microcontroller interface data
L3INT	L3 interrupt output
L3MODE	Mode line for L3 interface
L3MODEC	codec interface mode
L3MODEM	microcontroller interface mode
L3REF	L3 bus timing reference
LADDR	microprocessor interface address switch input
LCLK	microprocessor interface clock line input
LDATA	microprocessor interface data line input/output
LEFT INPUT	Analog audio input left
LMODE	microprocessor interface mode line input
LOWPOWER	Low power playback reset
LTCNT0	LT compatible interface mode control
LTCNT0C	SAA2002 SFC interface mode control
LTCNT1	LT compatible interface mode control
LTCNT1C	SAA2002 SFC interface mode control
M0	(test mode input) connect to VDD
M1	(test mode input) connect to VDD
MCLK	6.144 MHz clock output
MESSYNC	Message synchronisation with controller
MLE	Latch enable signal for digital filter
MSYNC	Message synchronisation with Digital µP
MUSB	muting(active LOW)
MUTE	audio mute input
MUTEDAC	DAC control or general purpose output
N_CASS_PRES	Cassette present switch input
N_DCC_REC_PROT	DCC record protect switch input
N_FAILP	Power fail(L = power failure)
N_FLAP_PRESENT	Flap loader present indication
N_HOLE3	DCC tape length indication switch input
N_HOLE4	DCC tape length indication switch input
N_HOLE5	DCC tape length indication switch input
N_PLAY_POS	Indication if head is in play position
N_QREV_PRES	Quick reverse sensor present
N_TRAY_IN	Tray switch input
NC	not connected
N_DDC_REC_PROT	DCC record protection switch input
N_MUTE	Mute for audio channels(active low)
NODONE	No done state selection
N_RESET	Master reset Digital Unit
OEN	Output Enable for RAM
OPEN_TRAY	Tray motor connection(+10V = Close tray; 0V = Open tray)
OPTICAL IN	IEC958 input from optical receiver
OUTAUX	Parallel output of read IC.
OVL	overload indication output.

PINO1	Port expander output 1
PinO2/SPEEDB	Port expander output 2/ PWM capstan control output for deck B
PLAY MAG	Connection to the solenoid on the DDU deck.
POR	Power On Reset
PRGSTAT	TFE3 program status, for test only
PWRDWN	enable power-down input in the standby mode
QA-QJ	Put DRP into power down mode
QUICK_REVERSE	Signal for write heads.
R0+	Quick reverse input signal
R1+	Digital reader CH0(Hot)
R2+	Digital reader CH1(Hot)
R3+	Digital reader CH2(Hot)
R4+	Digital reader CH3(Hot)
R5+	Digital reader CH4(Hot)
R6+	Digital reader CH5(Hot)
R7+	Digital reader CH6(Hot)
RCfil	Digital reader CH7(Hot)
RCint	pin for PLL loop filter
RDMUX	pin for integrating capacitor
RDSYNC	Analogue multiplexed input from READ AMPLIFIER
RESET	Synchronisation output for READ AMPLIFIER
RESET_UP	Reset signal from Digital Unit controller
RESOL0	Reset tape drive module µP
RESOL1	resolution selection 0
RIGHT INPUT	resolution selection 1
RX+	Analog audio input right
RXD	Digital reader AUX channel(Hot)
SBCL	Serial data input from tape drive unit
SBCL	Bit clock for sub-band I2S interface.
SBDA	sub-band bit clock
SBDIR	Data line for sub-band I2S interface
SBEF	DRP
SBMCLK	Direction line for sub-band I2S interface
SBWS	Sub-band I2S error flag line
SCK	Master clock for sub-band I2S interface
SCL	Word selector for sub-band I2S interface
SD	Word selector for sub-band I2S interface
SDA1	Word selector for sub-band I2S interface
SDA2	I2S bus clock line
SDAD	baseband bit clock
SDAUX	serial audio data input/output; I ² S-bus
SDDAC	baseband serial data to/from DAIO and ADC
SDO	baseband serial data output to DAC
SFC3COMP	Serial data from AD-converter
SFOR	auxiliary serial data input; I ² S-bus
SHIELD	I2S bus data line for DAC
SLAVE	serial interface data output.
SLAVE_IN	SFC3(SAA2003) compatibility mode
SLAVE_OUT	input for selecting serial interface
SPEED	output format.
SREEL	Shield connection
STANDBY	input for selecting serial interface
STD	operating mode MASTER/SLAVE.

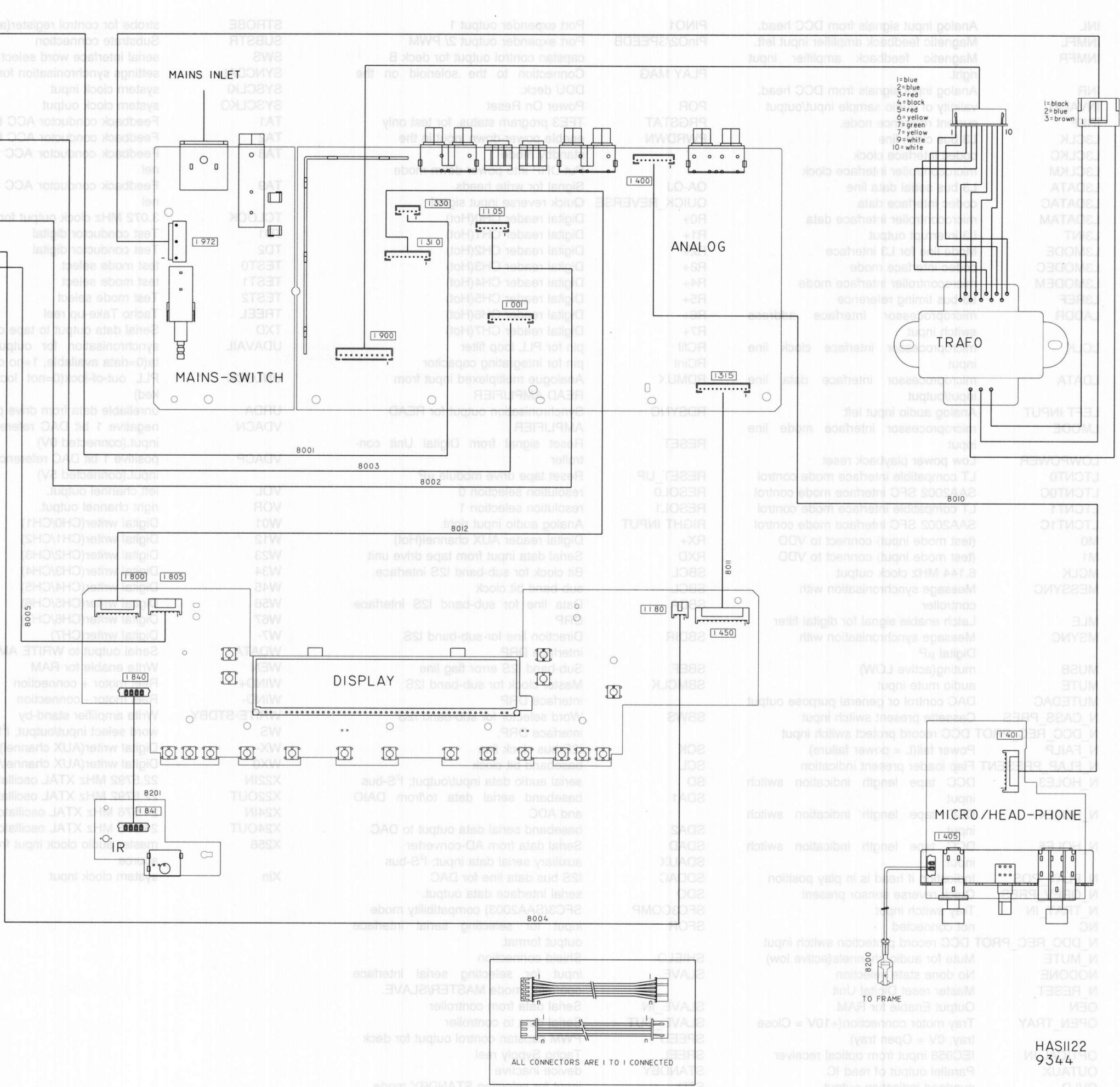
STROBE	strobe for control register(active high)
SUBSTR	Substrate connection
SWS	serial interface word select signal.
SYNCDAI	settings synchronisation for DAIO
SYSCLKI	system clock input
SYSCLKO	system clock output
TA1	Feedback conductor ACC Left channel
TA2	Feedback conductor ACC Left channel
TA8	Feedback conductor ACC Right channel
TA9	Feedback conductor ACC Right channel
TCLOCK	3.072 MHz clock output for tape I/O
TD1	Test conductor digital
TD2	Test conductor digital
TEST0	test mode select
TEST1	test mode select
TEST2	Test mode select
TREEL	Tacho Take-up reel
TXD	Serial data output to tape drive unit
UDAVAIL	synchronisation for output user data(0=data available, 1=no data)
UNLOCK	PLL out-of-lock(0=not locked, 1=locked)
URDA	unreliable data from drive processing
VDACN	negative 1 bit DAC reference voltage input.(connected 0V)
VDACP	positive 1 bit DAC reference voltage input.(connected 5V)
VOL	left channel output.
VOR	right channel output.
W01	Digital writer(CH0/CH1)
W12	Digital writer(CH1/CH2)
W23	Digital writer(CH2/CH3)
W34	Digital writer(CH3/CH4)
W45	Digital writer(CH4/CH5)
W56	Digital writer(CH5/CH6)
W67	Digital writer(CH6/CH7)
W7-	Digital writer(CH7)
WDATA	Serial output to WRITE AMPLIFIER
WEN	Write enable for RAM
WIND+	Reel motor + connection
WIND-	Reel motor - connection
WRITE-STDBY	Write amplifier stand-by
WS	word select input/output, I ² S-bus
WX-	Digital writer(AUX channel)
WX0	Digital writer(AUX channel/CH0)
X22IN	22.5792 MHz XTAL oscillator input
X22OUT	22.5792 MHz XTAL oscillator output
X24IN	24.576 MHz XTAL oscillator input
X24OUT	24.576 MHz XTAL oscillator output
X256	master audio clock input from external source
Xin	system clock input

WIRING DIAGRAM

6-1



6-1



PIN DESCRIPTION

6-1

1600-1105

- 1 = GNDD
- 2 = OPTICAL IN
- 3 = GNDD
- 4 = COAXIAL IN
- 5 = +5VD
- 6 = DIGITAL OUT
- 7 = GNDD

1601-1330

- 1 = N_FAILP
- 2 = GNDD
- 3 = +5VD
- 4 = GNDS
- 5 = +10VD

1602-1505

- 1 = MSYNC
- 2 = N_FAILP
- 3 = GNDS
- 4 = +10VD
- 5 = RESET_UP
- 6 = SPEED
- 7 = RXD
- 8 = +5VD
- 9 = TXD
- 10 = NDCC_REC_PROT
- 11 = GNDD

1603-1801

- 1 = GNDD
- 2 = WDATA
- 3 = GNDD
- 4 = CHROME
- 5 = GNDA
- 6 = ANAR
- 7 = GNDA
- 8 = ANAL
- 9 = WRITE_STNDBY
- 10 = ACC/NDCC
- 11 = RDMUX
- 12 = GNDD
- 13 = RDSYNC
- 14 = GNDD
- 15 = TCLOCK
- 16 = GNDD
- 17 = +5VD
- 18 = +10VD

1604-1180

- 1 = ANAL
- 2 = GNDA
- 3 = ANAR

1605-1805

- 1 = SLAVE_OUT
- 2 = GNDD
- 3 = MESSYNC
- 4 = SLAVE_IN
- 5 = NRESET
- 6 = CLOCK
- 7 = HOLD

1606-1001

- 1 = LEFT INPUT
- 2 = GNDA
- 3 = RIGHT INPUT
- 4 = GNDA
- 5 = NMUTE
- 6 = DACR
- 7 = GNDA
- 8 = +5VA
- 9 = GNDA
- 10 = DACL

1501

- 1 = CLOSE_TRAY
- 2 = OPEN_TRAY
- 3 = N_TRAY_IN
- 4 = GNDS
- 5 = N_FLAP_PRESENT

1502

- 1 = TREEL
- 2 = SREEL
- 3 = N_CASS_PRES
- 4 = CRO2/TRAY_OPEN
- 5 = DCC_CAS_PRES
- 6 = N_DCC_REC_PROT
- 7 = N_HOLE3
- 8 = N_HOLE4
- 9 = N_HOLE5
- 10 = N_QREV_PRES
- 11 = QUICK_REVERSE
- 12 = +5VD
- 13 = GNDD
- 14 = N_PLAY_POS

1503

- 1 = WIND-
- 2 = WIND+
- 3 = PLAY_MAG-
- 4 = +10VD

1504

- 1 = CAPSTAN-
- 2 = CAPSTAN+
- 3 = CAP_A
- 4 = CAP_B

1800

- 1 = TXD
- 2 = WX-
- 3 = RX+
- 4 = WX0
- 5 = R0+
- 6 = W01
- 7 = R1+
- 8 = W12
- 9 = R2+
- 10 = W23
- 11 = R3+
- 12 = W34
- 13 = COD
- 14 = W45
- 15 = R4+
- 16 = W56
- 17 = R5+
- 18 = W67
- 19 = R6+
- 20 = W7-
- 21 = R7+
- 22 = TD2
- 23 = TA8
- 24 = A2+
- 25 = TA9
- 26 = TA1
- 27 = A1+
- 28 = COA
- 29 = TA2
- 30 = SHIELD

1310-1800

- 1 = ESI_OUT
- 2 = ESI_IN
- 3 = NDIG_DET
- 4 = OPT_NDIG_SEL
- 5 = NON_OFF_SUPPLY
- 6 = +5VPER
- 7 = GND
- 8 = VFTD
- 9 = VAC2
- 10 = VAC1

1315-1450

- 1 = NHIGH_LOW_REC_LEVEL
- 2 = NMICRO_ANA_REC
- 3 = NMICRO_DET
- 4 = LEFT_OUT
- 5 = GND
- 6 = RIGHT_OUT
- 7 = -10VA
- 8 = GND
- 9 = +10VA
- 10 = LEFT_IN
- 11 = GND
- 12 = RIGHT_IN

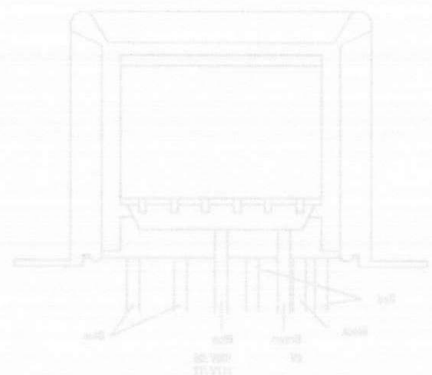
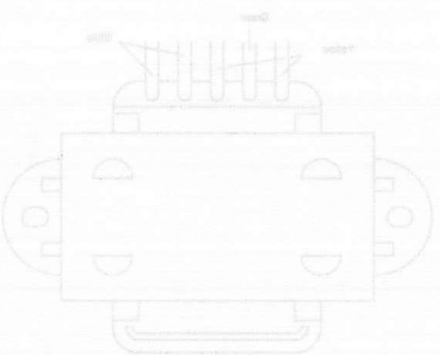
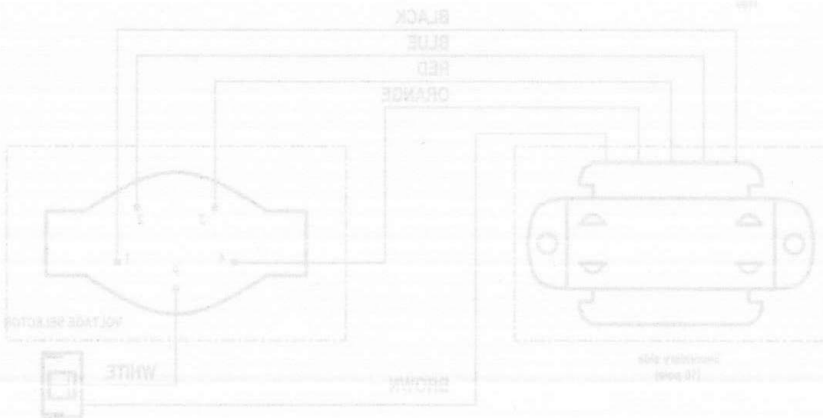
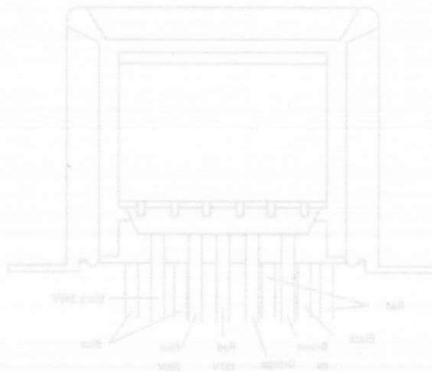
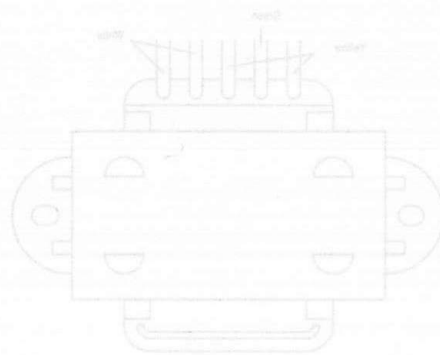
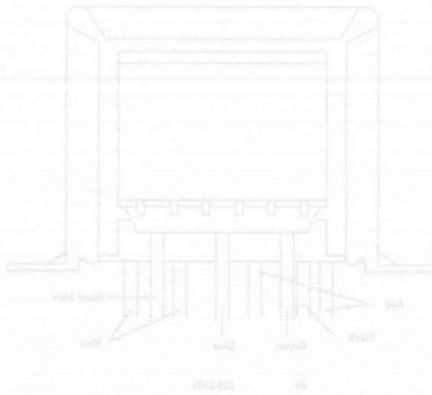
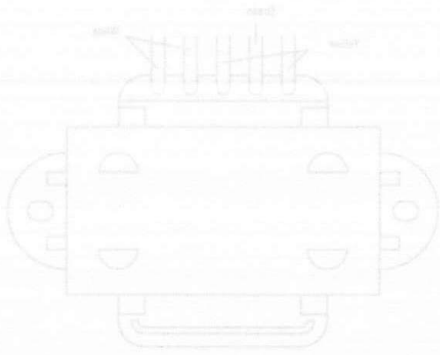
1840-1841

- 1 = +5V
- 2 = GND
- 3 = RC5
- 4 = LED

1400-1401

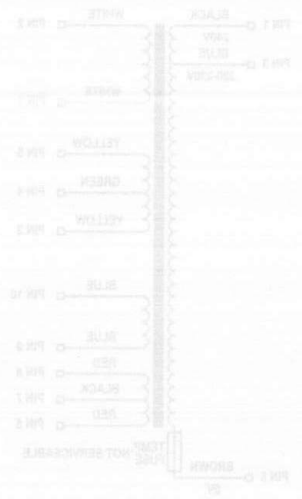
- 1 = MICRO_IN
- 2 = MICRO_DET
- 3 = KILL
- 4 = +10VA
- 5 = GND_PWR
- 6 = -10VA
- 7 = RHP
- 8 = GND_HP
- 9 = LHP

PERSONAL NOTES

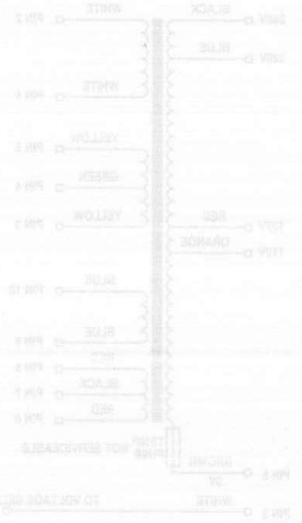


TRANSFORMER CONNECTIONS

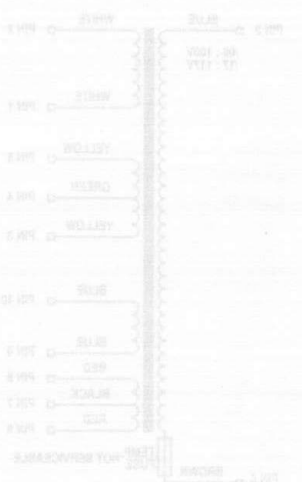
100 VERSION



101 VERSION

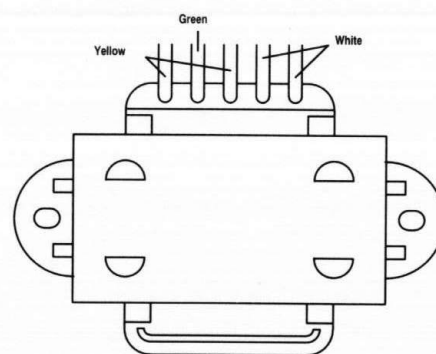
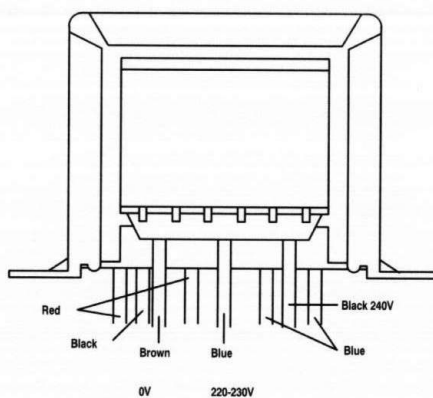
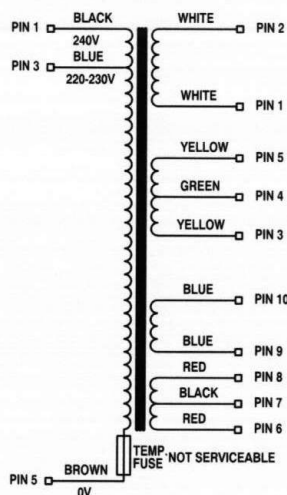


106/17 VERSIONS

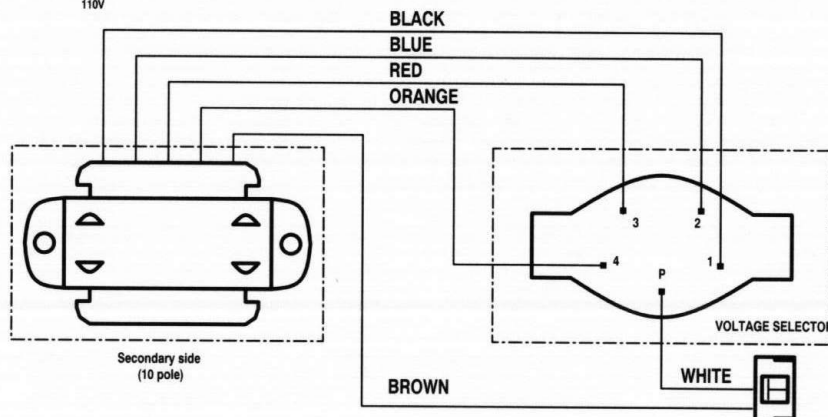
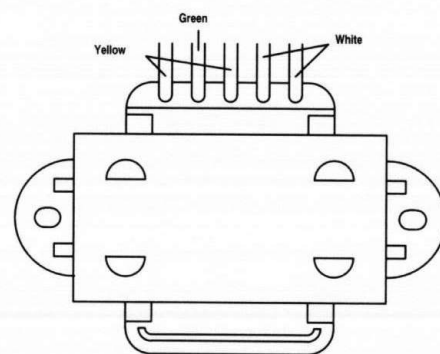
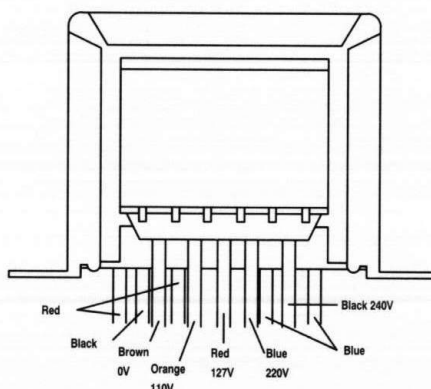
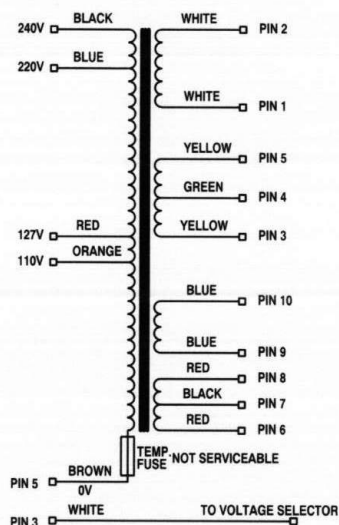


TRANSFORMER CONNECTIONS

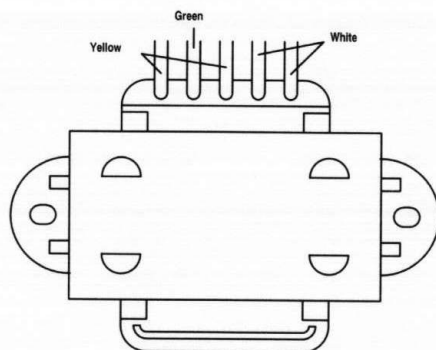
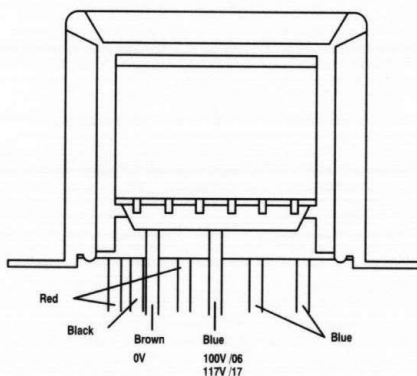
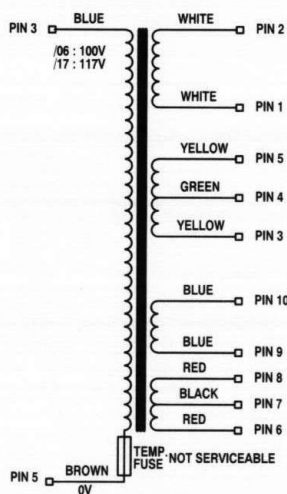
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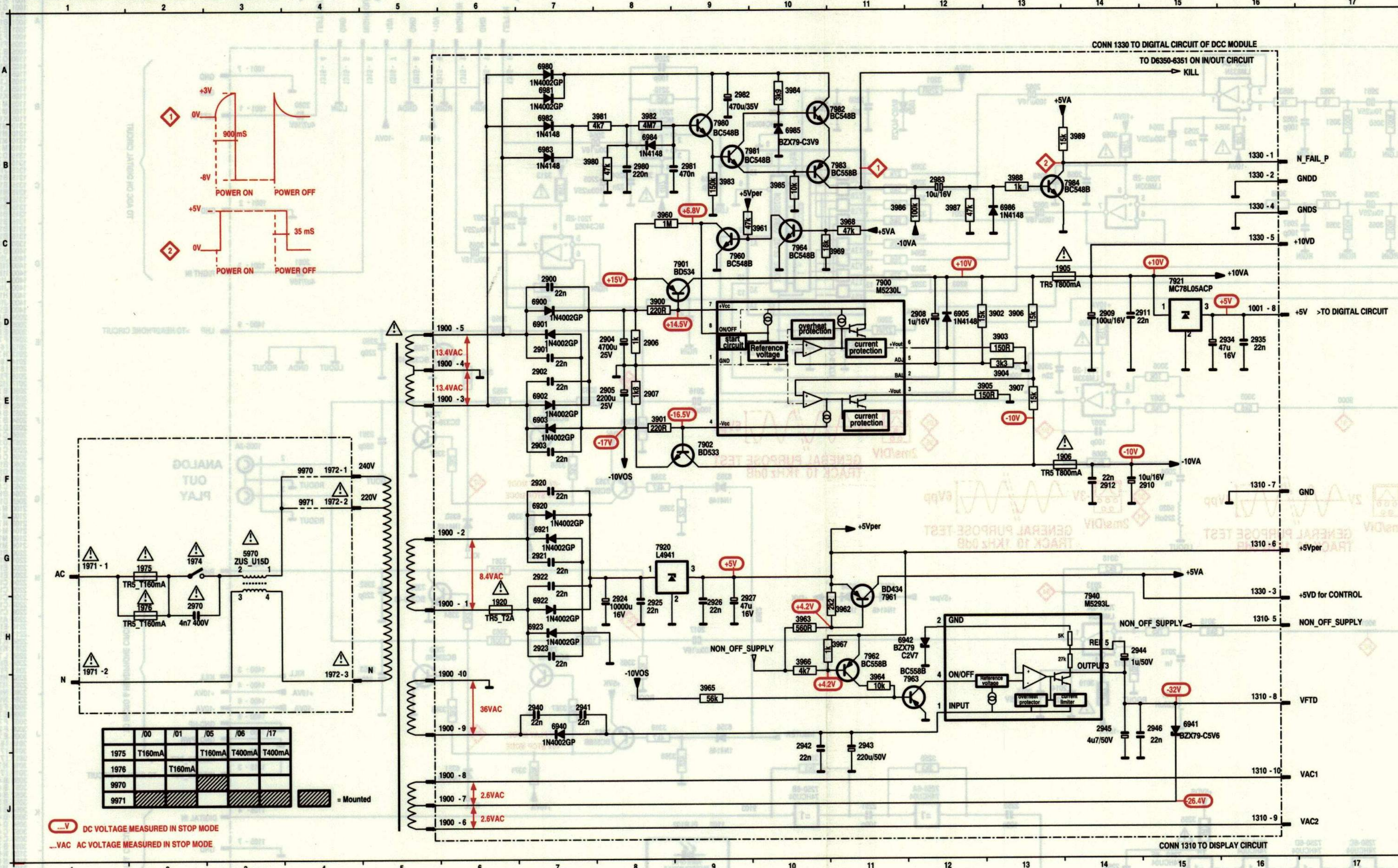
/01 VERSION



/06/17 VERSIONS



POWER SUPPLY CIRCUIT DIAGRAM



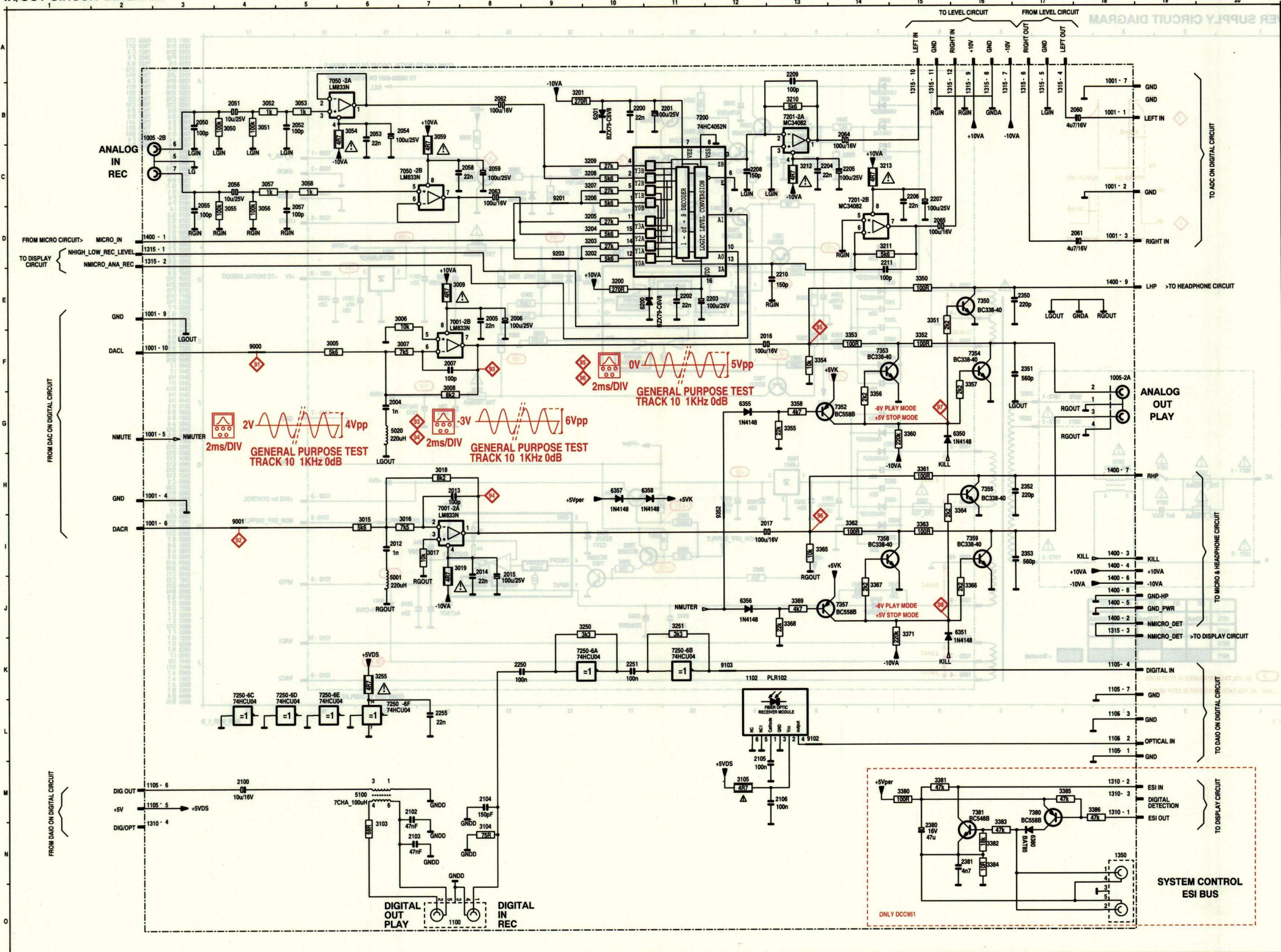
	/00	/01	/05	/06	/17
1975	T160mA		T160mA	T400mA	T400mA
1976		T160mA			
9970					
9971					

 = Mounted

 DC VOLTAGE MEASURED IN STOP MODE

...VAC AC VOLTAGE MEASURED IN STOP MODE

	1001	D16	6886	C13
	1310	H16	7900	D11
	1310	H16	7901	C9
	1310	F16	7902	F9
	1310	F16	7903	F9
	1310	J16	7921	D15
	1310	J16	7940	H14
A	1330	B16	7960	C9
	1330	B16	7961	H11
	1330	B16	7962	H11
	1330	C16	7963	C12
	1330	C16	7964	I10
	1900	H6	7980	B9
	1900	H6	7981	B9
	1900	E6	7982	A11
	1900	E6	7983	B11
	1900	D6	7984	B14
	1900	J6	9970	F4
	1900	J6	9971	F4
B	1900	I6		
	1905	F14		
	1906	F14		
	1920	H6		
	1971	G1		
	1971	H1		
	1972	F4		
	1972	F4		
	1972	I4		
	1974	G2		
C	1975	G2		
	1976	E2		
	2900	D7		
	2901	D7		
	2902	E7		
	2902	F7		
	2904	D8		
	2905	E8		
	2906	D8		
D	2907	E8		
	2908	D12		
	2909	D14		
	2910	F15		
	2911	D15		
	2912	F14		
	2920	F7		
	2921	G7		
	2922	G7		
	2923	H7		
	2924	H8		
E	2925	H8		
	2926	H9		
	2927	H9		
	2934	D16		
	2935	D16		
	2940	I7		
	2941	I7		
	2942	H10		
	2943	I11		
	2944	H14		
	2945	I14		
	2946	I15		
F	2947	H2		
	2980	B8		
	2981	B9		
	2982	A9		
	2983	B12		
	2984	B12		
	3901	E8		
	3902	D13		
	3903	D13		
	3904	E13		
G	3905	E13		
	3906	D13		
	3907	E13		
	3960	C6		
	3961	C6		
	3962	H10		
	3963	H10		
	3964	I11		
	3965	I9		
	3966	H10		
H	3967	H11		
	3968	C11		
	3969	C11		
	3980	B7		
	3981	A8		
	3982	A8		
	3983	B9		
	3984	B10		
	3985	B10		
	3986	C11		
	3987	C12		
I	3988	B13		
	3989	B14		
	5970	G3		
	6900	D7		
	6901	D7		
	6902	E7		
	6903	E7		
	6905	D12		
	6920	F7		
	6921	G7		
	6922	H7		
	6923	H7		
	6940	I7		
J	6941	I15		
	6942	H11		
	6980	A7		
	6981	A7		
	6982	A7		
	6983	B7		
	6984	B8		
	6985	B10		



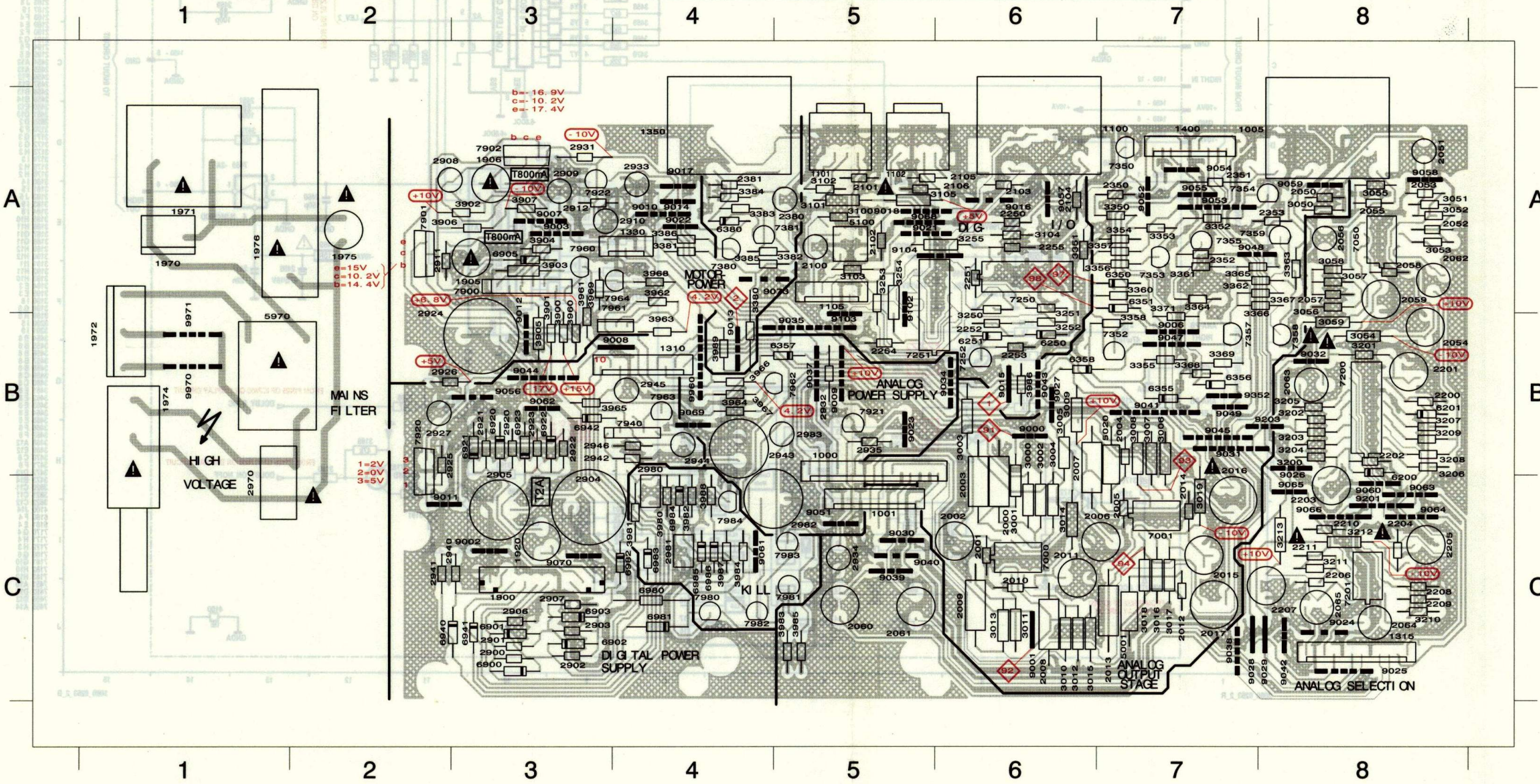
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	1001 B19	3388 M17
	1001 D18	3386 M18
	1001 H3	5001 J6
	1001 J10	5020 G5
	1001 L3	5100 M6
A	1001 M18	6200 E10
	1001 F3	6201 B10
	1001 F3	6305 G16
	1003 B3	6303 J16
	1005 B3	6305 G12
	1100 O7	6306 J12
	1102 K12	6307 M17
	1102 L18	6307 M17
	1105 L18	7001 F7
B	1105 L18	7001 F7
	1105 M3	7050 B9
	1105 K18	7200 B12
	1201 M18	7201 B13
	1201 C18	7352 C14
	1301 M18	7250 F9
	1310 M3	7250 K11
	1313 D3	7250 K4
	1313 D3	7250 K4
	1313 J18	7352 C14
	1315 J18	7358 J14
C	1315 B17	7250 L6
	1315 B17	7350 E16
	1315 B16	7353 F14
	1315 B16	7354 F16
	1315 B16	7355 F16
	1315 B16	7355 F16
	1315 B15	7358 J14
	1315 B16	7359 J16
D	1350 N18	7380 M17
	1400 J18	9000 F4
	1400 J18	9001 F4
	1400 J18	9102 K13
	1400 J18	9201 G9
	1400 J18	9203 D9
	2004 E8	9352 M12
	2005 E8	
	2006 E8	
E	2006 E8	
	2012 H7	
	2013 H7	
	2014 H8	
	2016 F12	
	2017 H2	
	2050 B3	
	2051 B4	
	2051 B4	
	2053 B6	
F	2055 D7	
	2055 D7	
	2055 D7	
	2057 D5	
	2058 C8	
	2059 C8	
	2059 C8	
	2061 D17	
	2062 B8	
	2063 C9	
G	2063 C9	
	2065 D15	
	2100 M4	
	2102 M7	
	2102 M7	
	2104 M8	
	2105 M12	
	2106 M13	
H	2108 H18	
	2201 B11	
	2202 B11	
	2203 E12	
	2203 E12	
	2205 C14	
	2206 C15	
	2207 C15	
	2208 B12	
	2209 A13	
	2210 E13	
	2211 D14	
	2250 D8	
I	2251 K10	
	2255 L7	
	2255 L7	
	2253 H17	
	2253 H17	
	2280 N15	
	2281 N16	
	2281 N16	
	3005 F5	
	3006 E7	
	3007 F7	
J	3008 E7	
	3008 E7	
	3015 E6	
	3016 H7	
	3018 H7	
	3019 H7	
	3050 B4	
	3051 B4	
	3051 B4	
K	3053 B5	
	3055 B6	
	3055 B6	
	3056 D4	
	3057 C4	
	3058 C5	
	3059 B7	
	3103 B9	
	3104 N8	
	3105 M12	
	3200 E10	
L	3201 H9	
	3202 D10	
	3203 D10	
	3204 D10	
	3205 D10	
	3206 C10	
	3207 C10	
	3208 C10	
	3209 C10	
	3210 B13	
M	3211 D14	
	3212 C13	
	3213 C13	
	3250 J10	
	3251 J11	
	3255 K6	
	3256 K6	
	3301 E15	
	3302 F15	
N	3303 F14	
	3304 F13	
	3305 G13	
	3306 G13	
	3357 F16	
	3358 F16	
	3360 F15	
	3361 H15	
	3362 H14	
	3363 H14	
	3364 H16	
	3365 H13	
	3368 J16	
	3368 J13	
O	3369 J13	
	3371 K15	
	3380 H15	
	3381 M15	
	3382 N16	
	3383 M16	

IN/OUT PANEL

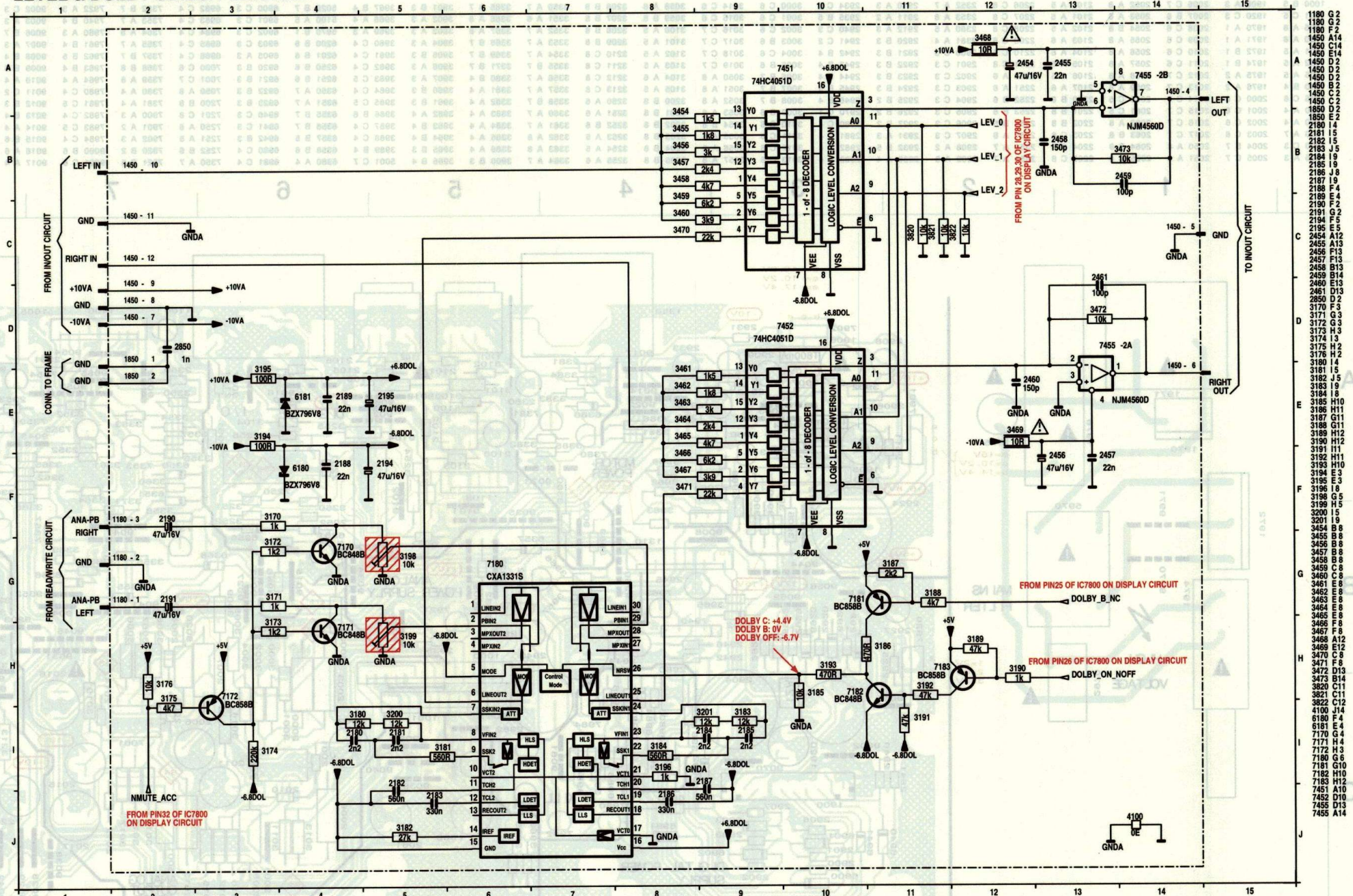
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7-4

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1001 C 5	1920 C 3	2007 B 6	2053 A 8	2101 A 5	2207 C 8	2353 A 8	2911 A 2	2935 B 5	3001 C 6	3015 C 6	3059 B 8	3207 B 8	3351 A 6	3366 A 8	3902 A 3	3968 A 4	5100 A 5	6901 C 3	6983 C 4	7353 A 7	7940 B 4	9003 A 3	9021 A 5	9037 B 5	9053 A 7	9068 A 5
1005 A 8	1970 A 1	2008 C 6	2054 B 8	2102 A 5	2208 C 8	2380 A 5	2912 A 3	2940 C 3	3002 C 6	3016 C 7	3100 A 5	3208 B 8	3352 A 7	3367 A 8	3903 A 3	3969 A 3	5970 B 1	6902 C 3	6984 C 4	7354 A 8	7960 A 3	9006 B 7	9022 A 4	9038 C 7	9054 A 7	9069 B 4
1100 A 6	1971 A 1	2009 C 6	2055 A 8	2103 A 6	2209 C 8	2381 A 4	2920 B 3	2941 C 2	3003 B 6	3017 C 7	3101 A 5	3209 B 8	3353 A 7	3368 B 7	3904 A 3	3980 C 4	6200 B 8	6903 C 3	6985 C 4	7355 A 7	7961 B 4	9007 A 3	9023 B 5	9039 C 5	9055 A 7	9070 C 3
1101 A 5	1972 B 1	2010 C 6	2056 A 8	2104 A 6	2210 C 8	2900 C 3	2921 B 3	2942 B 4	3004 C 6	3018 C 7	3102 A 5	3210 C 8	3354 A 7	3369 B 7	3905 B 3	3981 C 4	6201 B 8	6905 A 3	6986 C 4	7357 B 7	7962 B 5	9008 B 4	9024 C 8	9041 B 7	9057 A 6	9102 A 5
1102 A 5	1974 B 1	2011 C 6	2057 A 8	2105 A 5	2211 C 8	2901 C 3	2922 B 3	2943 B 4	3005 B 6	3019 C 7	3103 A 5	3211 C 8	3355 B 7	3371 B 7	3906 A 3	3982 C 4	6250 B 6	6920 B 3	7000 C 6	7358 B 8	7963 B 4	9009 B 5	9025 C 8	9041 B 7	9057 A 6	9102 A 5
1105 A 5	1975 A 2	2012 C 7	2058 A 8	2106 A 5	2250 A 6	2902 C 3	2923 B 3	2944 B 4	3006 B 7	3050 A 8	3104 A 6	3212 C 8	3356 A 7	3380 B 4	3907 A 3	3983 C 5	6251 B 6	6921 B 3	7001 C 7	7359 A 8	7964 A 4	9010 A 4	9026 B 8	9042 C 8	9058 A 8	9103 B 5
1310 B 4	1976 A 2	2013 C 7	2059 A 8	2107 A 6	2251 A 6	2903 C 3	2924 B 3	2945 B 4	3007 B 7	3051 A 8	3105 A 5	3213 C 8	3357 A 7	3381 A 4	3960 B 3	3984 C 4	6350 A 7	6922 B 3	7050 A 8	7380 A 4	7980 C 4	9011 C 2	9027 B 6	9043 B 6	9059 A 8	9104 A 6
1315 C 8	2000 C 6	2014 C 7	2060 C 5	2200 B 8	2252 B 6	2904 C 3	2925 B 2	2946 B 4	3008 B 7	3052 A 8	3200 B 8	3250 A 6	3358 B 4	3382 A 4	3961 B 3	3985 C 5	6351 A 7	6923 B 3	7200 B 8	7381 A 4	7981 C 5	9012 B 3	9028 C 7	9044 B 3	9060 C 8	9201 C 8
1330 A 4	2001 C 6	2015 C 7	2061 C 5	2201 B 8	2253 B 6	2905 C 3	2926 B 2	2970 C 1	3009 B 6	3053 A 8	3201 B 8	3251 A 6	3360 A 7	3383 A 4	3962 A 4	3986 B 6	6355 B 7	6940 C 3	7201 C 8	7900 A 3	7982 C 4	9013 B 4	9029 C 8	9045 B 7	9061 C 4	9203 B 8
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1400 A 7	2003 C 6	2017 C 7	2063 B 8	2203 C 8	2255 A 6	2907 C 3	2931 A 3	2981 C 4	3011 C 6	3055 A 8	3203 B 8	3253 A 5	3362 A 8	3385 A 4	3964 B 4	3988 C 4	6357 B 5	6942 B 3	7251 A 5	7902 A 3	7984 C 4	9015 B 6	9031 B 7	9048 A 7	9063 C 8	9960 B 4
1900 C 3	2004 B 7	2050 A 8	2064 C 8	2204 C 8	2350 A 7	2908 A 2	2932 B 5	2982 C 4	3012 C 6	3056 A 8	3204 B 8	3254 A 5	3363 A 8	3386 A 4	3965 B 3	3989 B 4	6358 B 6	6980 C 4	7252 B 6	7920 B 2	9000 B 8	9016 A 6	9032 B 8	9049 B 7	9064 C 8	9970 B 1
1905 A 3	2005 C 7	2051 A 8	2065 C 8	2205 C 8	2351 A 7	2909 A 3	2933 A 4	2983 B 5	3013 C 6	3057 A 8	3205 B 8	3255 A 6	3364 A 7	3900 B 3	3966 B 4	5001 C 7	6380 A 4	6981 C 4	7350 A 7	7921 B 5	9001 C 6	9017 A 4	9034 B 6	9051 C 5	9065 C 8	9971 B 1



LEVEL & DOLBY CIRCUIT DIAGRAM



FRONT PANEL

1180 B 1	1811 A 8	1819 A 3	1825 A 7	2180 B 2	2186 B 2	2194 B 3	2459 A 1	2803 A 8	3171 B 2	3180 B 2	3186 B 3	3192 B 3	3199 B 2	3457 A 1	3463 A 2	3469 B 1	3801 A 9	3807 A 3	3816 B 7	3822 A 3	3835 A 5	6180 B 1	7172 B 3	7452 A 2	7810 A 6
1450 B 1	1812 A 8	1820 A 4	1826 A 7	2181 B 2	2187 B 2	2195 B 3	2460 A 1	2804 A 7	3172 A 3	3181 B 2	3187 B 3	3193 B 3	3200 B 2	3458 B 1	3464 A 2	3470 B 1	3802 B 8	3810 A 8	3817 B 3	3830 A 5	4180 B 1	6181 B 1	7180 B 2	7455 A 1	7811 A 3
1800 B 9	1814 B 3	1821 A 4	1827 A 8	2182 B 2	2188 B 1	2454 B 1	2461 B 1	2805 A 4	3173 B 3	3182 B 2	3188 B 3	3194 B 1	3201 B 2	3459 B 1	3465 A 2	3471 B 2	3803 A 9	3811 B 9	3818 A 6	3831 A 5	5800 B 8	6801 A 6	7181 B 3	7800 B 8	7830 A 5
1805 B 8	1815 A 3	1822 A 5	1828 A 8	2183 B 2	2189 B 2	2455 B 1	2800 B 8	2810 B 8	3174 B 3	3183 B 2	3189 B 3	3195 B 1	3454 A 1	3460 B 1	3466 B 2	3472 A 2	3804 A 6	3812 B 9	3819 A 3	3832 A 5	5801 B 9	6802 A 4	7182 B 3	7801 B 9	7831 A 5
1808 B 9	1816 A 2	1823 A 5	1840 A 9	2184 B 2	2190 B 1	2457 A 1	2801 B 8	2850 B 1	3175 B 3	3184 B 2	3190 B 3	3196 B 2	3455 A 1	3461 A 2	3467 A 2	3473 B 1	3805 A 6	3813 B 9	3820 A 3	3833 A 4	5802 B 9	7170 A 3	7183 B 3	7805 A 5	
1810 B 8	1818 A 3	1824 A 6	1850 B 1	2185 B 2	2191 B 1	2458 A 1	2802 A 9	3170 B 1	3176 B 3	3185 B 3	3191 B 3	3198 B 1	3456 A 1	3462 A 2	3468 B 1	3800 B 7	3806 A 3	3815 B 8	3821 A 3	3834 A 5	5803 B 9	7171 B 3	7451 A 1	7806 B 9	

1

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A

B

A

B

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FRONT PANEL

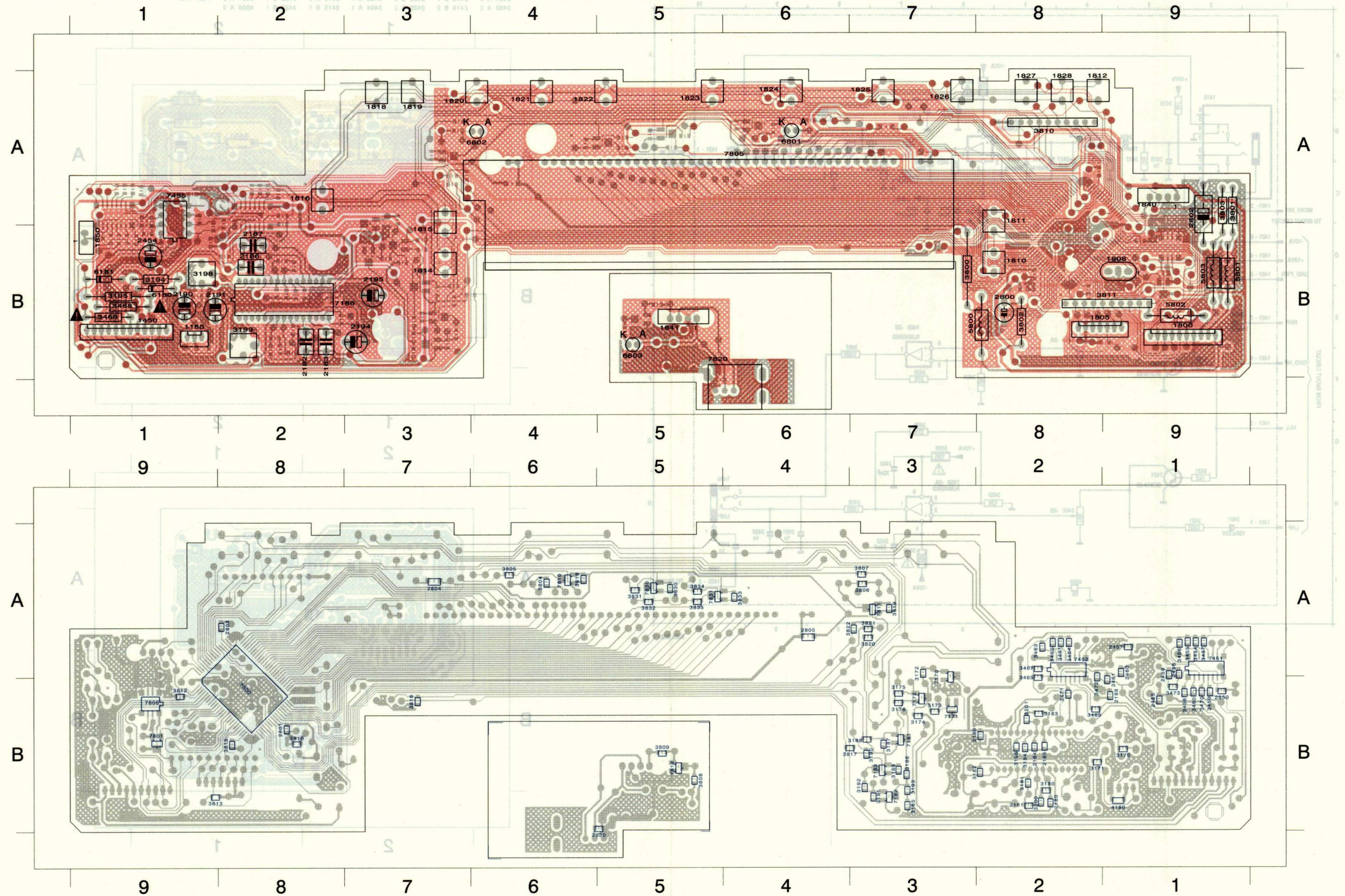


FRONT & I.R. PANEL

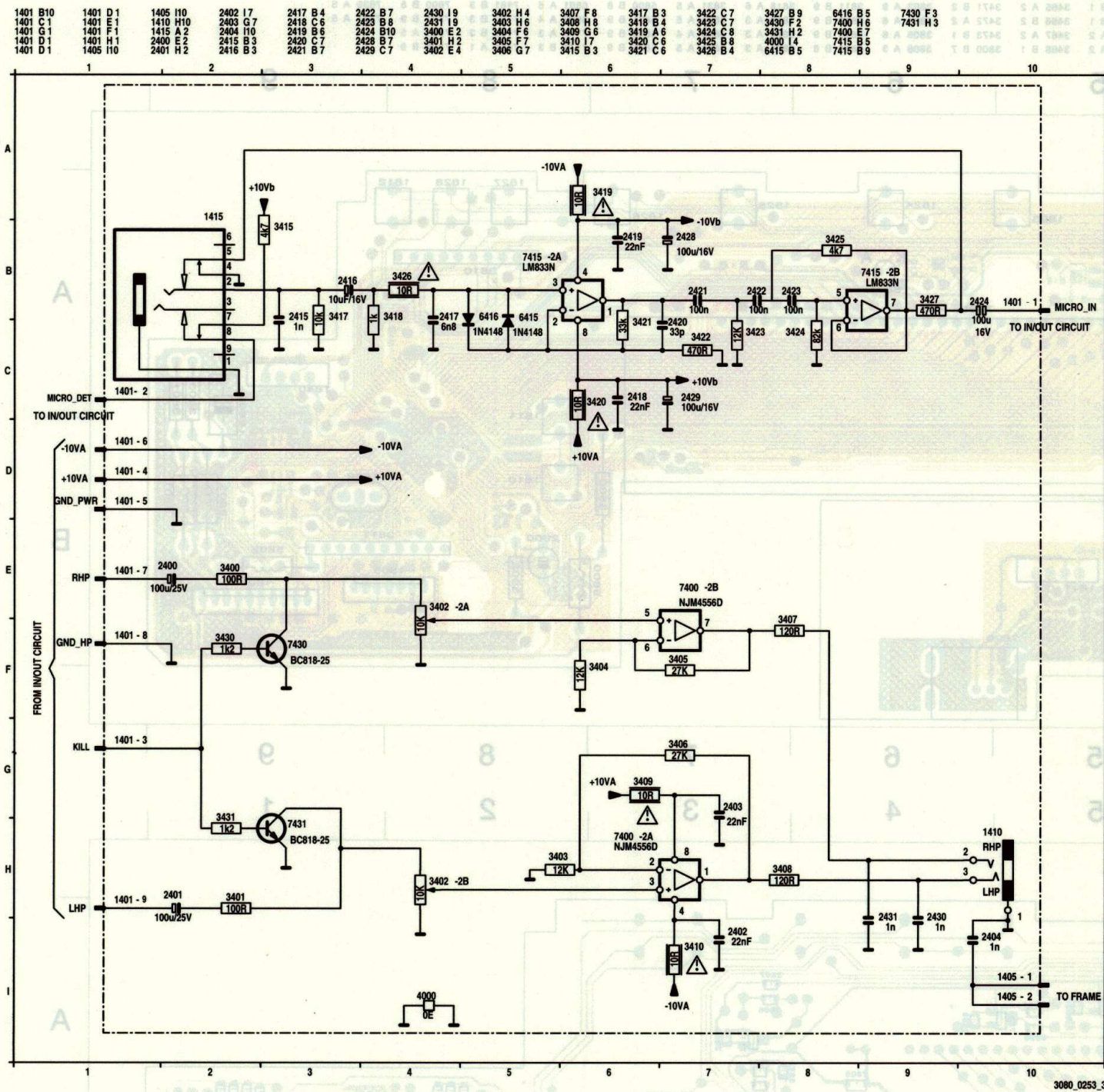
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7-8

1180 B 1	1811 A 8	1819 A 3	1825 A 7	2180 B 2	2186 B 2	2194 B 3	2459 A 1	2803 A 8	3171 B 2	3180 B 2	3186 B 3	3192 B 3	3199 B 2	3457 A 1	3463 A 2	3469 B 1	3801 A 9	3807 A 3	3816 B 7	3822 A 3	3835 A 5	6180 B 1	7172 B 3	7452 A 2	7810 A 6
1450 B 1	1812 A 8	1820 A 4	1826 A 7	2181 B 2	2187 B 2	2195 B 3	2460 A 1	2804 A 7	3172 A 3	3181 B 2	3187 B 3	3193 B 3	3200 B 2	3458 B 1	3464 A 2	3470 B 1	3802 B 8	3810 A 8	3817 B 3	3830 A 5	4180 B 1	6181 B 1	7180 B 2	7455 A 1	7811 A 3
1800 B 9	1814 B 3	1821 A 4	1827 A 8	2182 B 2	2188 B 1	2454 B 1	2461 B 1	2805 A 4	3173 B 3	3182 B 2	3188 B 3	3194 B 1	3201 B 2	3459 B 1	3465 A 2	3471 B 2	3803 A 9	3811 B 9	3818 A 6	3831 A 5	5800 B 8	6801 A 6	7181 B 3	7800 B 8	7830 A 5
1805 B 8	1815 A 3	1822 A 5	1828 A 8	2183 B 2	2189 B 2	2455 B 1	2800 B 8	2810 B 8	3174 B 3	3183 B 2	3189 B 3	3195 B 1	3454 A 1	3460 B 1	3466 B 2	3472 A 2	3804 A 6	3812 B 9	3819 A 3	3832 A 5	5801 B 9	6802 A 4	7182 B 3	7801 B 9	7831 A 5
1808 B 9	1816 A 2	1823 A 5	1840 A 9	2184 B 2	2190 B 1	2457 A 1	2801 B 8	2850 B 1	3175 B 3	3184 B 2	3190 B 3	3196 B 2	3455 A 1	3461 A 2	3467 A 2	3473 B 1	3805 A 6	3813 B 9	3820 A 3	3833 A 4	5802 B 9	7170 A 3	7183 B 3	7805 A 5	
1810 B 8	1818 A 3	1824 A 6	1850 B 1	2185 B 2	2191 B 1	2458 A 1	2802 A 9	3170 B 1	3176 B 3	3185 B 3	3191 B 3	3198 B 1	3456 A 1	3462 A 2	3468 B 1	3800 B 7	3806 A 3	3815 B 8	3821 A 3	3834 A 5	5803 B 9	7171 B 3	7451 A 1	7806 B 9	

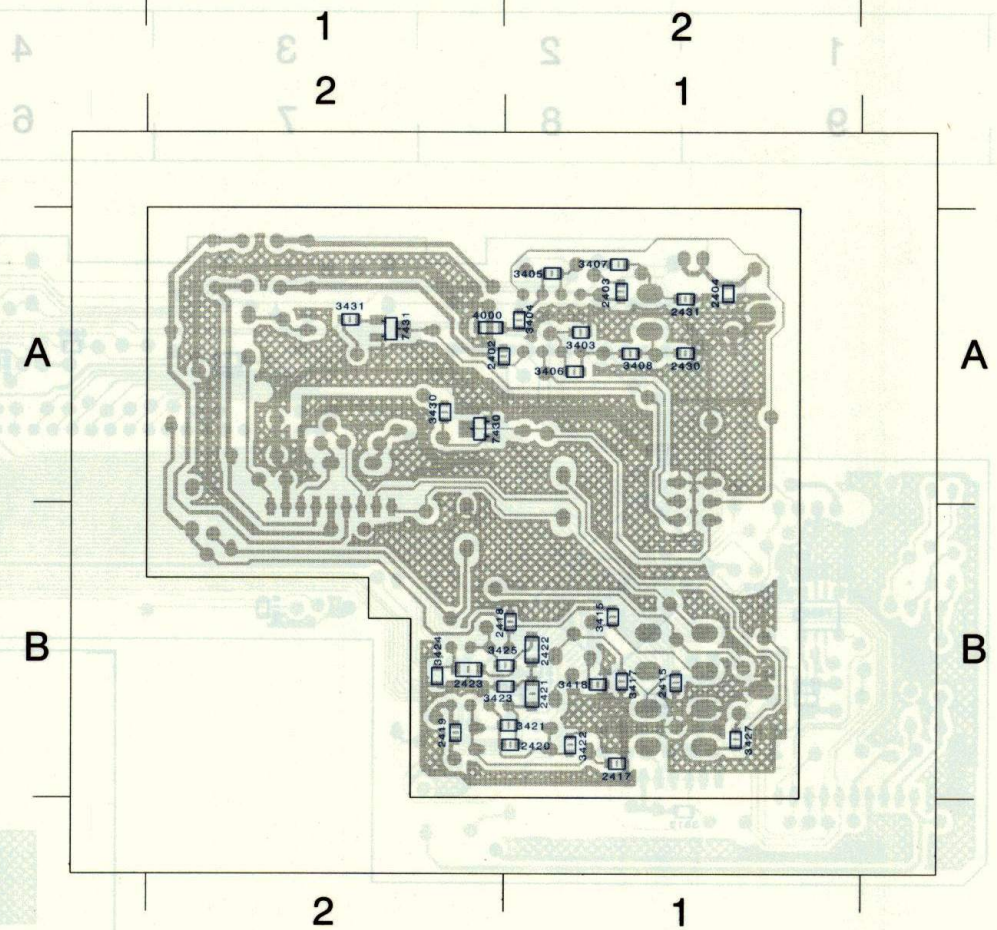
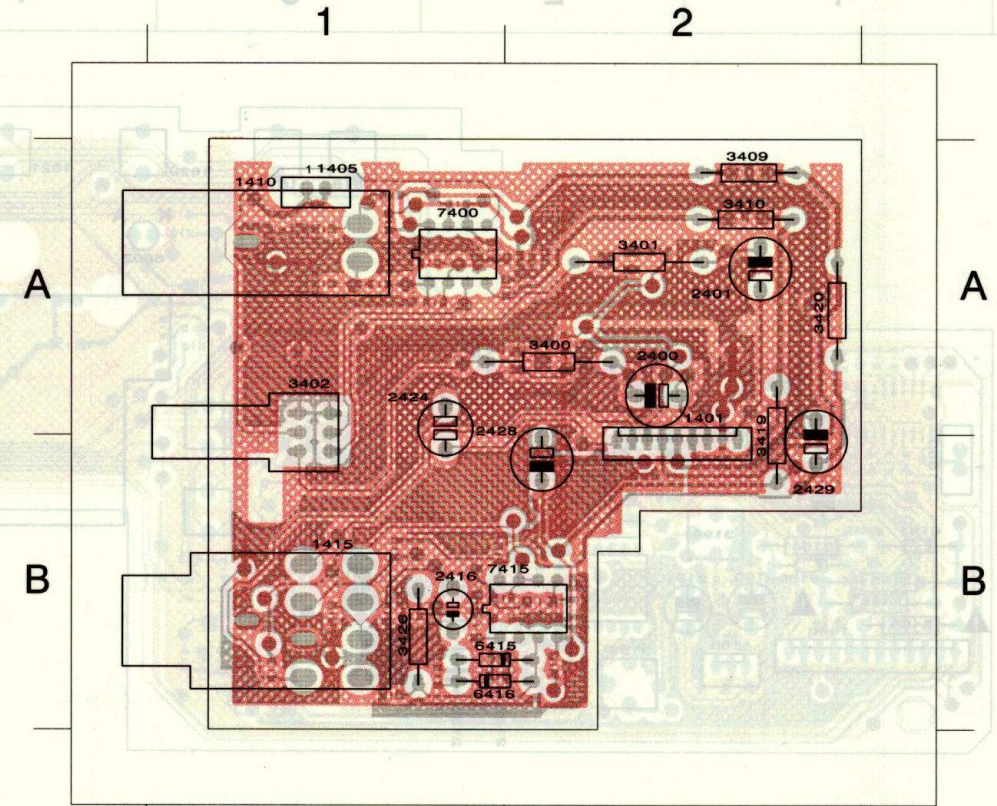


MICRO & HEADPHONE CIRCUIT DIAGRAM



MICRO & HEADPHONE PANEL

1401 B 2	2403 A 1	2420 B 1	2430 A 1	3405 A 1	3417 B 1	3424 B 2	6415 B 1
1405 A 1	2404 A 1	2421 B 1	2431 A 1	3406 A 1	3418 B 1	3425 B 1	6416 B 1
1410 A 1	2415 B 1	2422 B 1	3400 A 2	3407 A 1	3419 B 2	3426 B 1	7400 A 1
1415 B 1	2416 B 1	2423 B 2	3401 A 2	3408 A 1	3420 A 2	3427 B 1	7415 B 2
2400 A 2	2417 B 1	2424 A 1	3402 A 1	3409 A 2	3421 B 1	3430 A 2	7430 A 2
2401 A 2	2418 B 1	2428 B 2	3403 A 1	3410 A 2	3422 B 1	3431 A 2	7431 A 2
2402 A 2	2419 B 2	2429 B 2	3404 A 1	3415 B 1	3423 B 1	4000 A 2	



DDU DIGITAL DECK UNIT

In the chapter "Instructions for use" of this manual the cleaning of the DCC-head is explained. See Trouble shooting.

action: A1, A2, B

SERVICE HINTS
This unit is equipped with a Flexible Printed Circuit board (Flexfoil), so handle that foil with care during disassembly and re-assembly.

COME TO SERVICE POSITION OF THE DDU UNIT

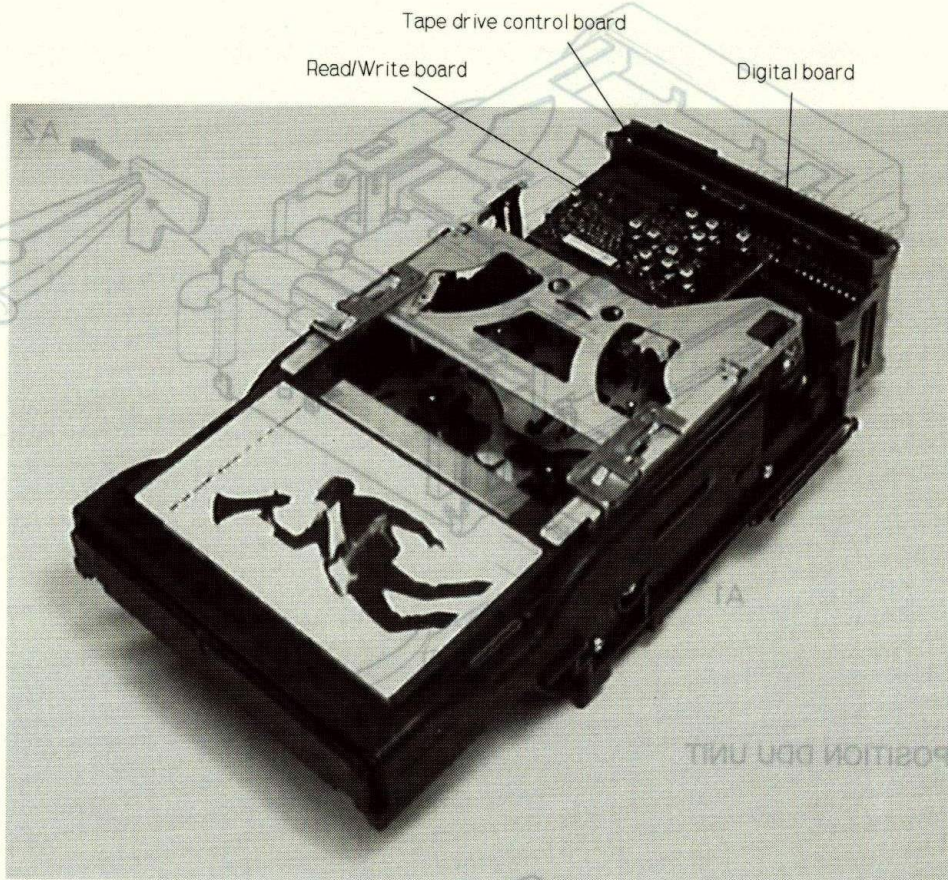


Figure 8.3

SERVICE POSITION DDU UNIT

DIGITAL DECK UNIT 2113

Figure 8.1

The Digital deck unit 2113 consists of:

Mechanical

Loader mechanism
Tape deck mechanism

Electrical

Read / Write board
Tape drive control board
Digital board

Figure 8.3

Now electrical measurement work
Read/Write - tape drive control
board can be carried out.

SERVICE HINTS

This unit is equipped with a Flexible Printed Circuit board (Flexfoil), so handle that foil with care during disassembly and re-assembly.

COME TO SERVICE POSITION OF THE DDU UNIT

In the chapter "Instructions for use" of this manual the cleaning of the DCC-head is explained. See Trouble shooting.

action: A1, A2, B

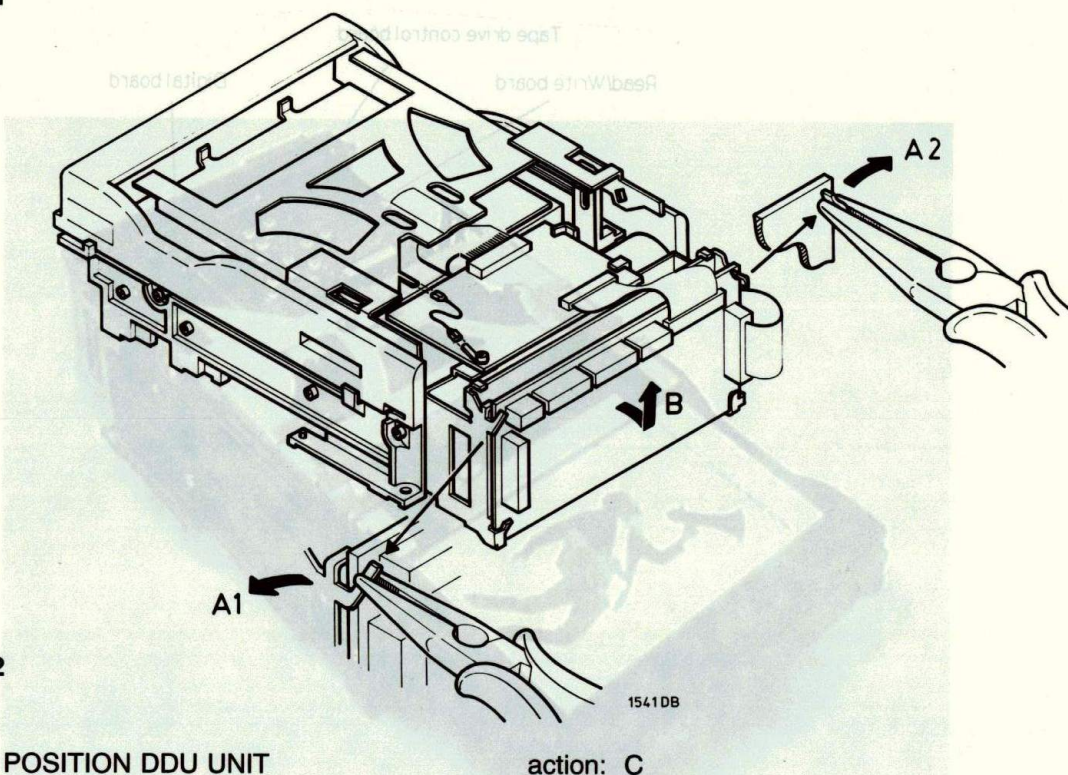


Figure 8.2

SERVICE POSITION DDU UNIT

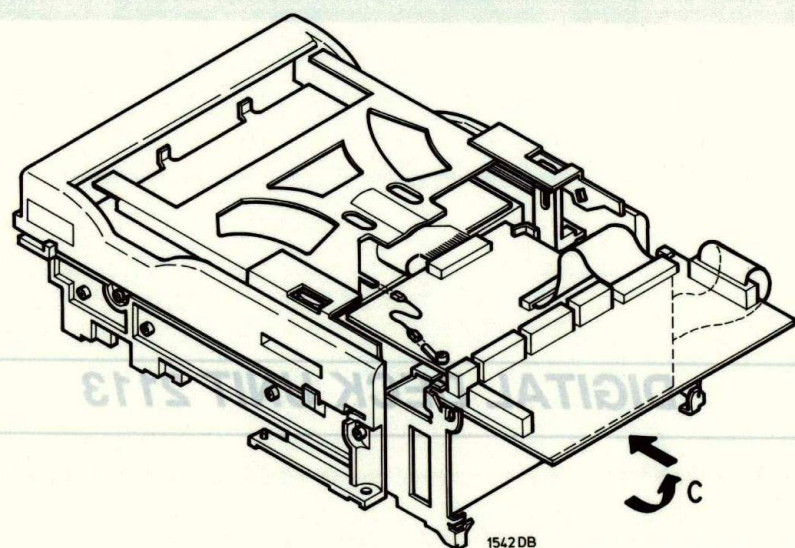


Figure 8.3

Now electrical measurements and checks on Read/Write-, tape drive control- and digital board can be carried out.

DISASSEMBLY INSTRUCTIONS**DISASSEMBLY OF THE LOADER**

Open tray manually, by moving - counter clockwise - drive gear wheel 86.

action: D, E

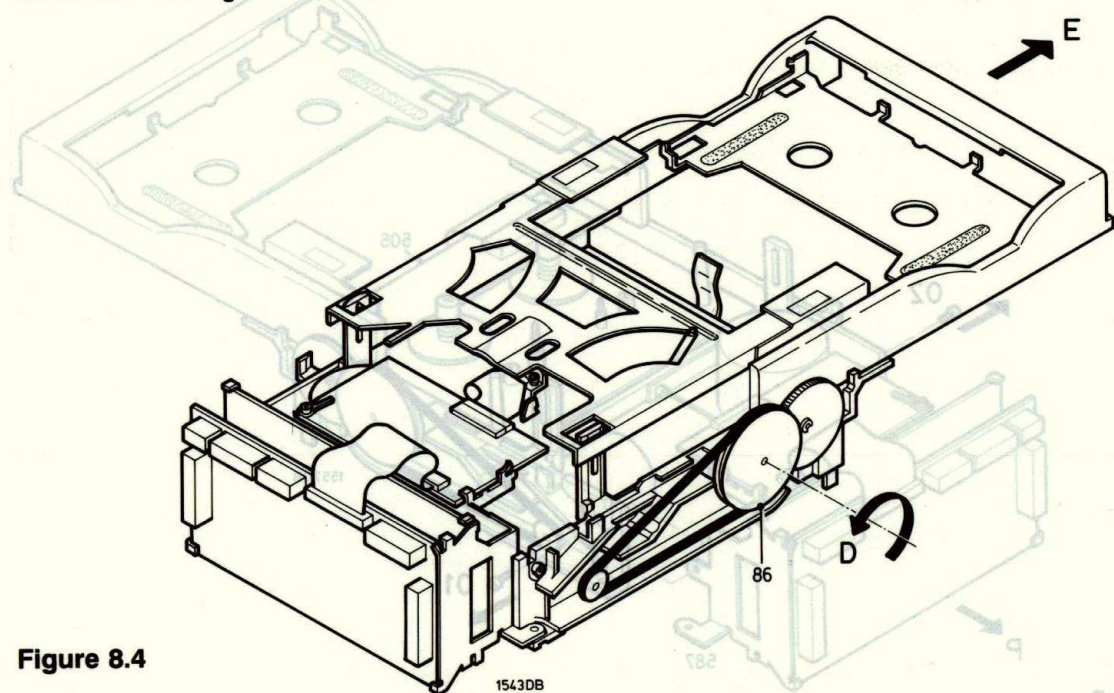


Figure 8.4

REMOVE CLAMPER ASSEMBLY ITEM 81

action: F1, F2

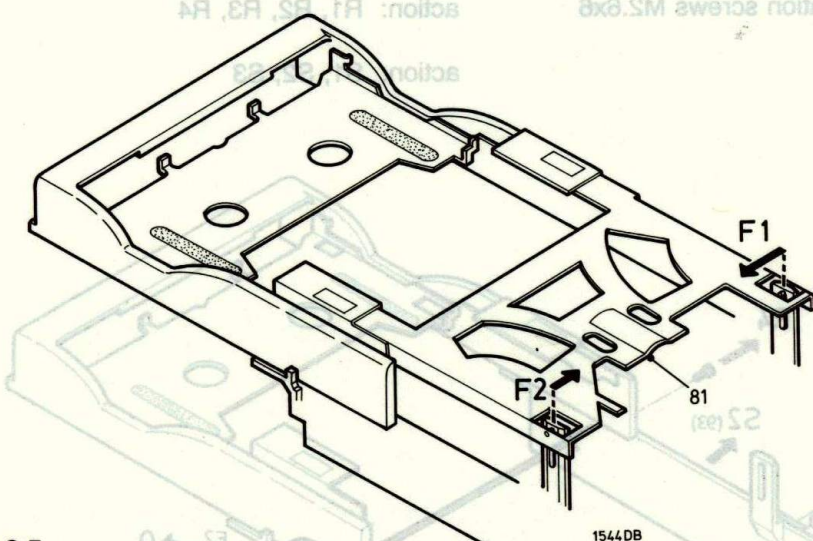


Figure 8.5

REPLACEMENT OF DCC-HEAD-SUPPORT-ASSEMBLY

After performing the actions D, E, F1 and F2, a.o., the DCC head support assembly item 117 can be reached.

REMOVAL HEAD SUPPORT ASSEMBLY ITEM 117

Open with action G1 connector 1800 and disconnect head's flexfoil. (action: G2) Warning! Do not open G1 too far, it will damage the connector. Do not forget to short-circuit the head's flexfoil, action G3.

action: G1, G2, G3

Remove pinch-rollers 102 and 118

action: H1, H2

Remove head support fixation screw 105

action: J

Remove head support assembly 117.

action: K

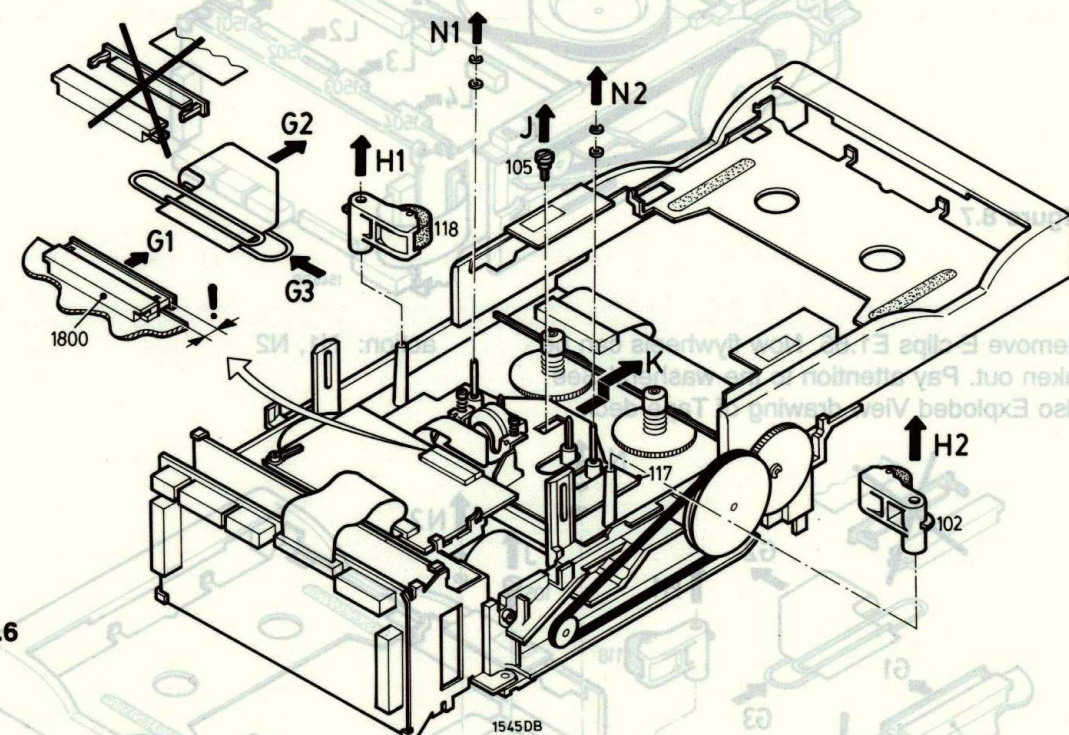


Figure 8.6

REMOVAL FLYWHEELS ITEMS 108 AND 126.

Remove connectors 1501, 1502, 1503 and 1504.

Remove cover 509

action: L1, L2, L3, L4

action: M1, M2

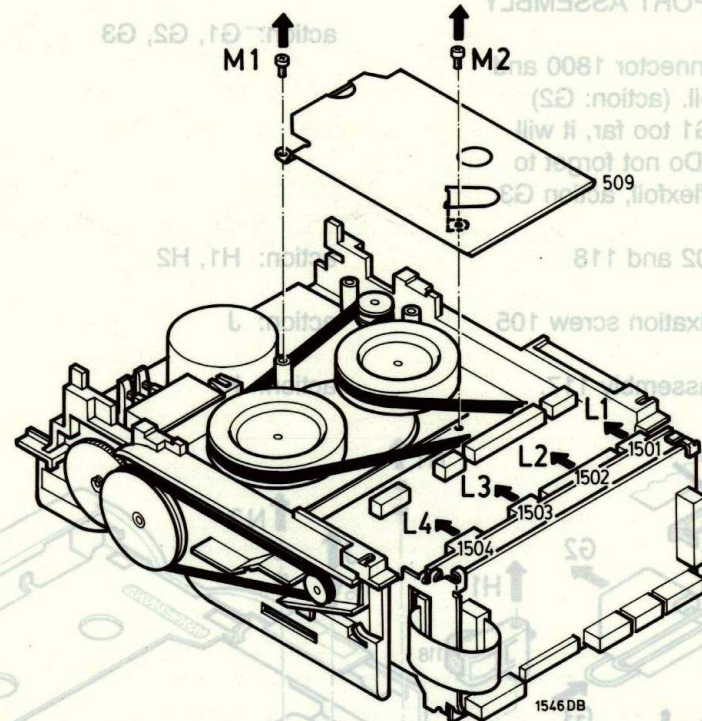


Figure 8.7

Remove E-clips E1.65. Now flywheels can be taken out. Pay attention to the washers! See also Exploded View drawing of Tape deck.

action: N1, N2

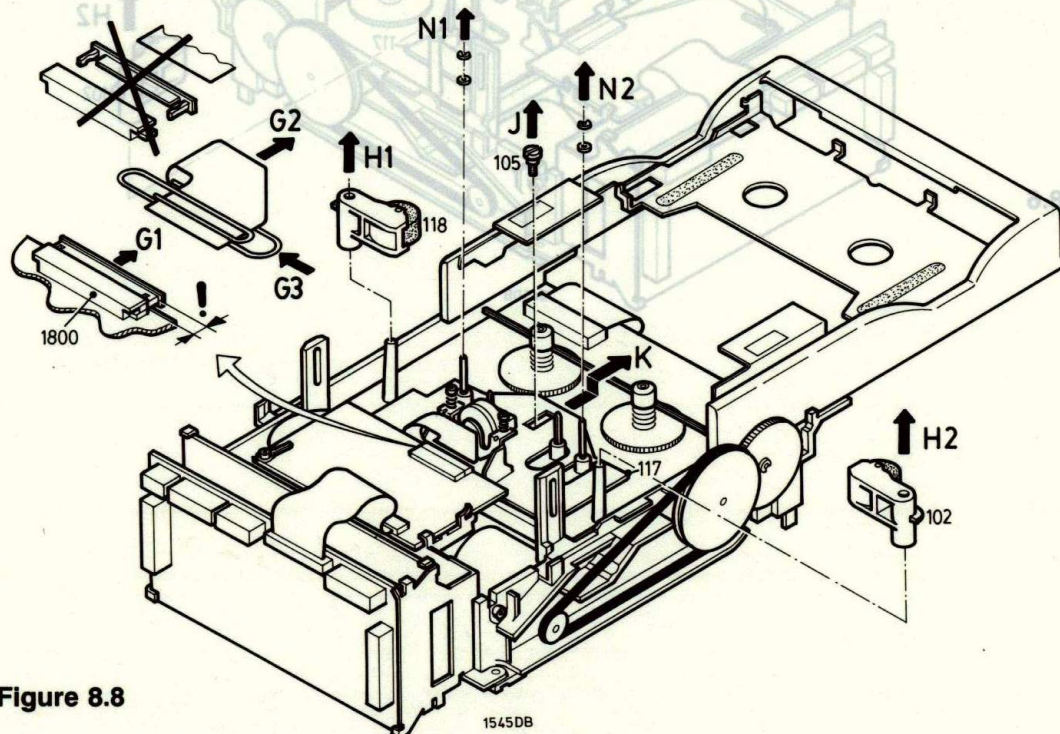


Figure 8.8

After removal of the flywheels, a.o. the printed board item 506 can be loosened, after desoldering Solenoid wires (L101), removing the solenoid fixing screw M2.6x6, item 114 (Solenoid coil), the command play arm 112 and Wind Motor M101 (item 123).

REMOVAL TAPE DECK CHASSIS 505. (Previous actions: G1, G2, G3)

Remove screws printed board block item 587

action: O1, O2

Remove block item 587

action: P

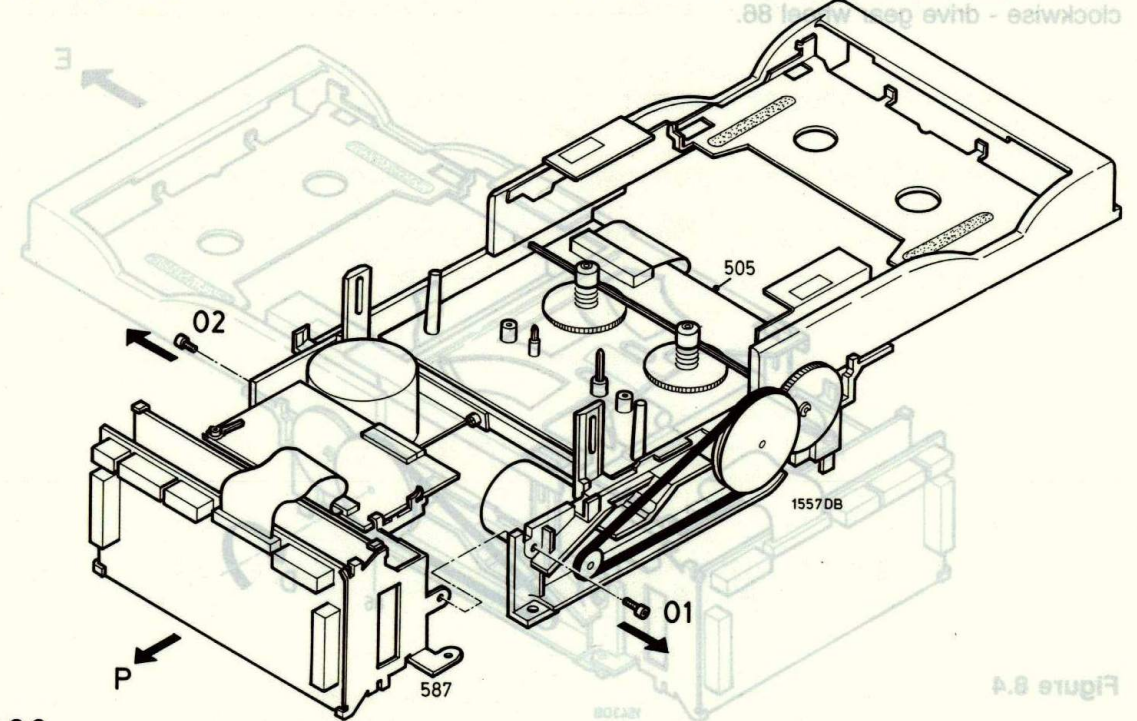


Figure 8.9

Remove E-ring E2 from axle 94

action: Q

Remove 4 tape deck fixation screws M2.6x6

action: R1, R2, R3, R4

Remove chassis 505

action: S1, S2, S3

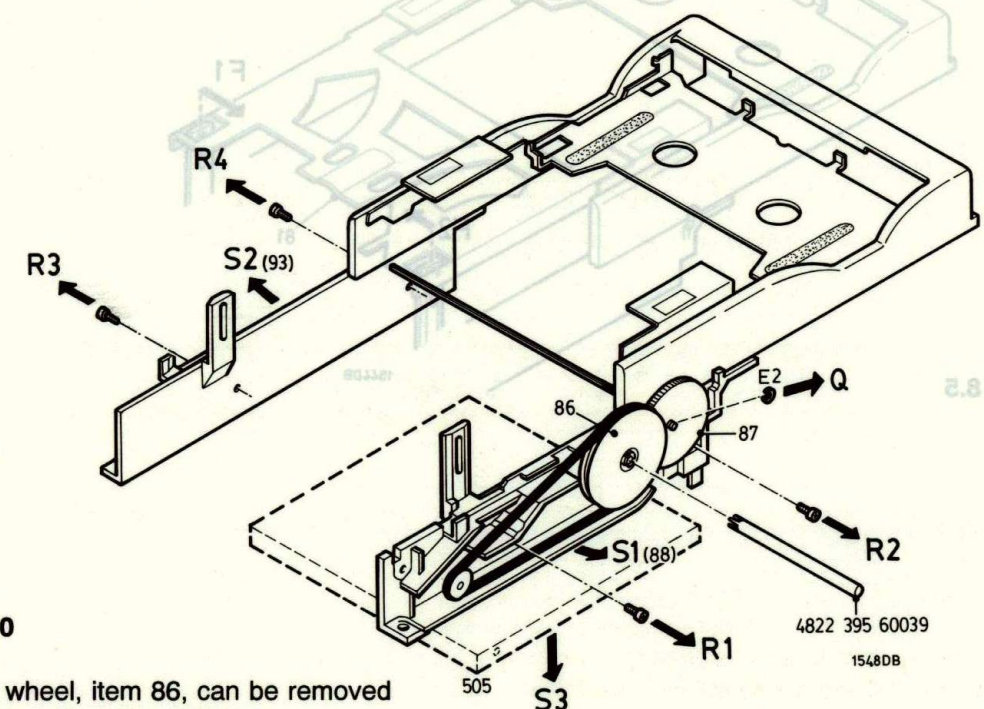


Figure 8.10

Drive gear wheel, item 86, can be removed with the aid of 4822 395 60039

DEMOUNTING AND MOUNTING TRAY ASSEMBLY ITEM 82

Keep with self-adhesive tape item 82 in mounted condition before loosening from the rest of the loader/tape deck.

action: T1, T2

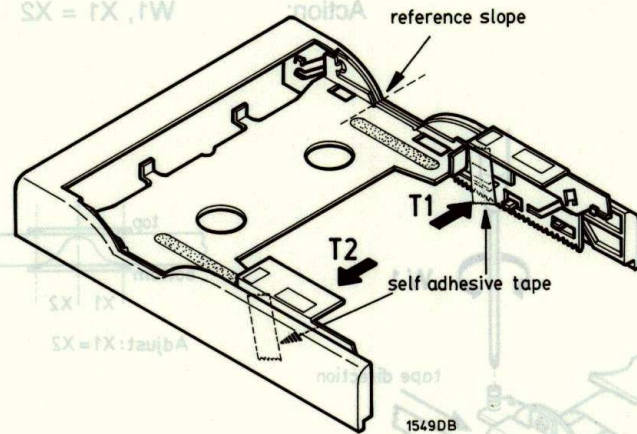


Figure 8.11

Exploded view of item 82

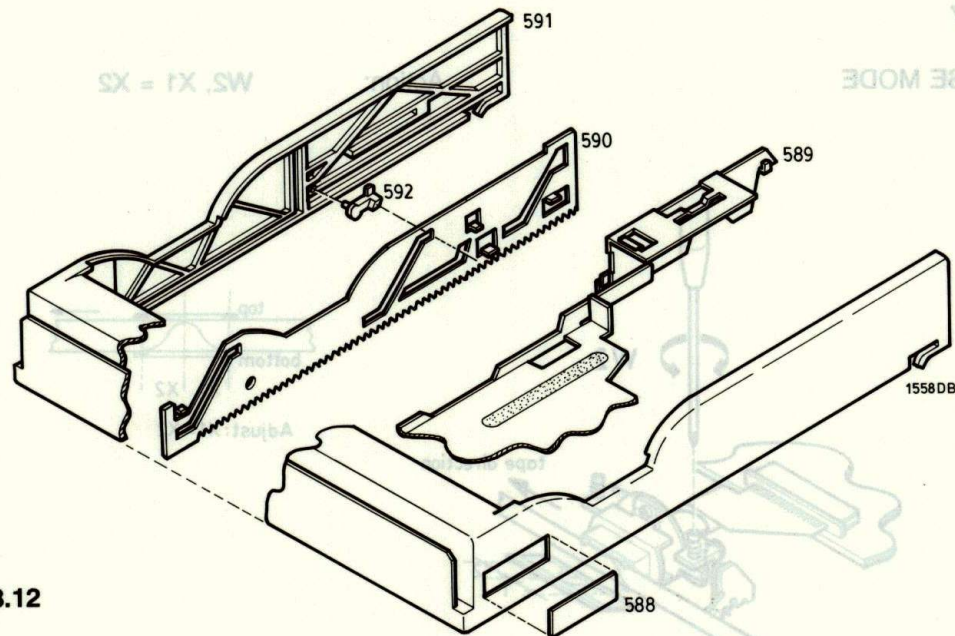


Figure 8.12

HINTS FOR MOUNTING

Mounting the loose components of tray assembly (item 82)

action: U1, U2, U3, U4

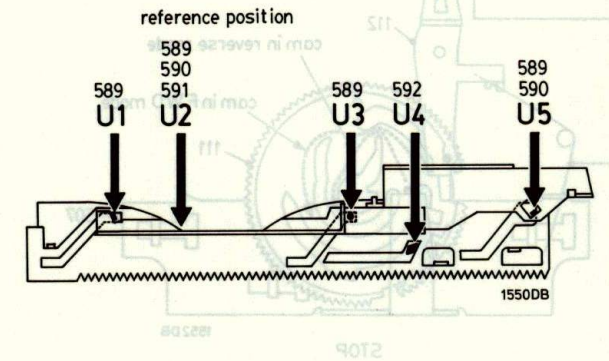


Figure 8.13

Mounting spring 89

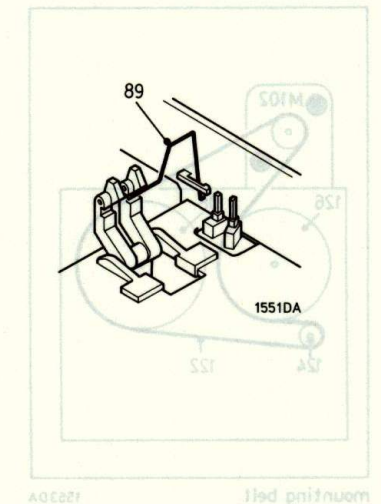


Figure 8.14

Mounting gearwheel item 111
Positioning gearwheel 111
STOP MODE

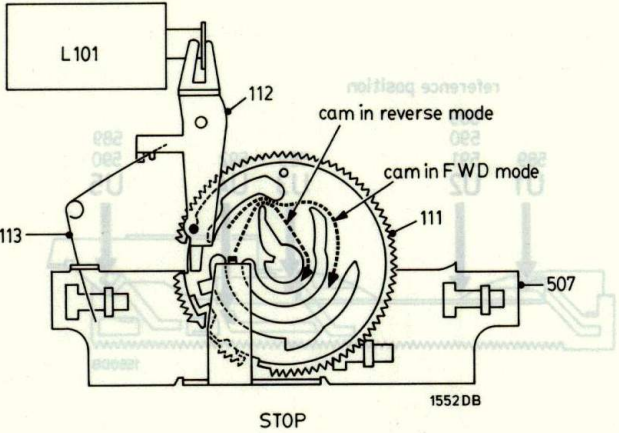


Figure 8.15

Mounting belt 122

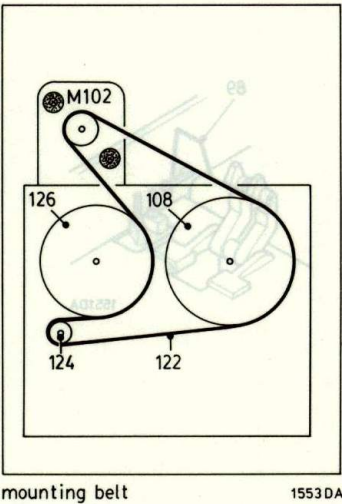


Figure 8.16

AZIMUTH ADJUSTMENT
Due to the Fixed Azimuth Tape Guides (FATG) and Azimuth Locking Pins (ALP), with a mirror cassette (4822 395 30288) the azimuth can be adjusted.

Adjust with the first azimuth screw, seen from tape direction, for synchronous left and right part of the mirror picture.

IN PLAY MODE

action: W

Action: W1, X1 = X2

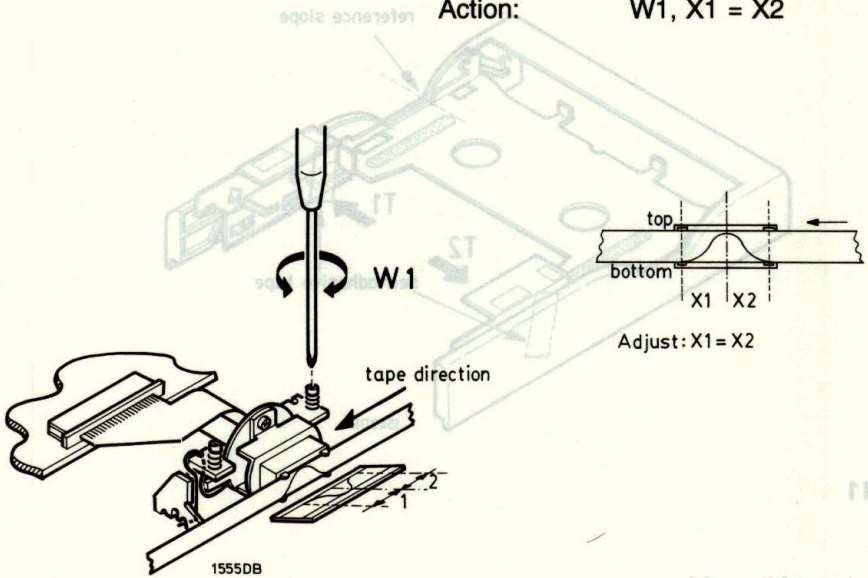


Figure 8.17

IN REVERSE MODE

Action: W2, X1 = X2

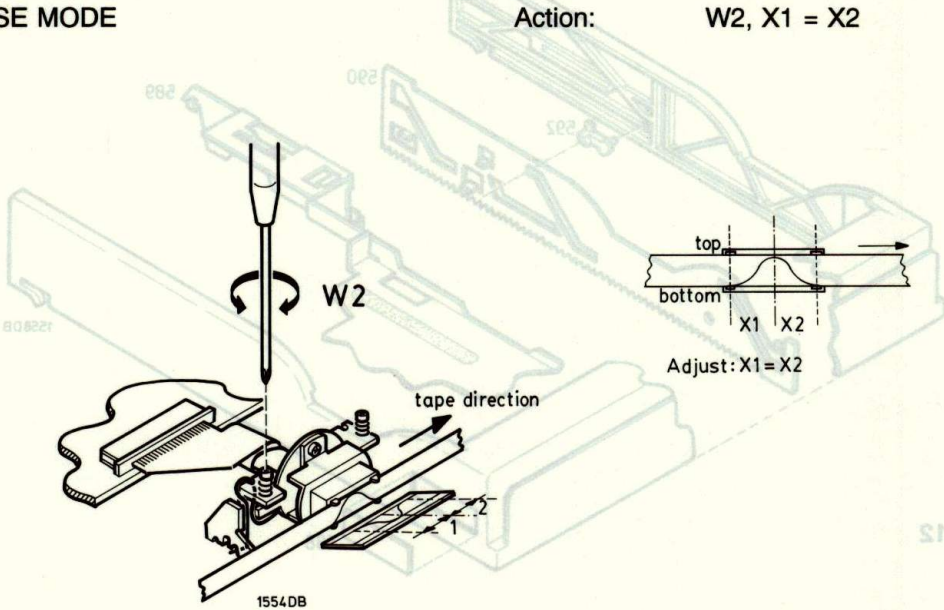


Figure 8.18

ABBREVIATIONS

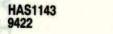
A0	Address SRAM; Address DRAM	COA	Common analog
A1	Address SRAM; Address DRAM	COAXIAL IN	IEC958 high sensitive input
A1 0/RAS	Address SRAM; RAS DRAM	COD	Common digital
A1 1	Address SRAM	COPY	copyright status bit
A1 2/PinO5	Address SRAM; Address DRAM; Port expander output 5	CRO2/TRAY_OPEN	CRO2/FE cassette detection switch input
A1 3/PinO2	Address SRAM; Address DRAM; Port expander output 2		if N_CASS_PRES = L
A1 4/PinO1	Address SRAM; Address DRAM; Port expander output 1		L = FE; H = CRO2
A1 5/PinO4	Address SRAM; Address DRAM; Port expander output 4		if N_CASS_PRES = H
A1 6/PinO3	Address SRAM; Address DRAM; Port expander output 3		L = tray fully opened,
A2	Address SRAM; Address DRAM		H = tray is not fully opened
A3	Address SRAM; Address DRAM	CTRLMODE	select μ P/stand-alone mode
A4	Address SRAM; Address DRAM	D0	Data SRAM; Data DRAM
A5	Address SRAM; Address DRAM	D1	Data SRAM; Data DRAM
A6	Address SRAM; Address DRAM	D2	Data SRAM; Data DRAM
A7	Address SRAM; Address DRAM	D3	Data SRAM; Data DRAM
A8	Address SRAM; Address DRAM	D4	Data SRAM; Data DRAM
A9/CAS	Address SRAM; CAS for DRAM	D5	Data SRAM; Data SRAM;
A1+	Analog reader ACC Left channel	D6	Data SRAM;
A2+	Analog reader ACC Right channel-	D7	Data SRAM;
ACC/NDCC	Analog or DCC playback	DACL	Analog audio output left
ANAEYE	Analog eye pattern output	DACR	Analog audio output right
ANAL	ACC output Left	DATA	data input
ANAR	ACC output Right	DCC_CASS_PRES	DCC cassette present switch input
ATSB	12 dB attenuation(active LOW)	DEEM	pre-emphasis output bit
ATTDAC	DAC attenuation control.	DEEM1	deemphasis on/off
AZCHK	channel 0 and channel 7 azimuth monitor.	DEEM2	deemphasis on/off
BCK	bit clock input.	DEEMDAC	DAC control output.
BIAS	Bias current for ADC	DIGITAL OUT	IEC958 output
BIL	buffer op-amp inverting input for left channel.	DSMB	double speed mode(active LOW).
BIR	buffer op-amp inverting input for right channel.	ERCOSTAT	ERCO status, for test only
BOL	buffer op-amp inverting input for left channel.	FDAI	filtered serial data input(from ADAS)
BOR	buffer op-amp output for right channel.	FDAO	filtered serial data output(to ADAS)
CAP_A	Capstan motor control connection A	FDCL	filtered data bit clock
CAP_B	Capstan motor control connection B	FDIR	PASC mode encode/decode
CAPSTAN	Low output level switches the capstan motor on.	FDWS	filtered data word select
CAPSTAN+	Capstan motor + connection	FILTCL	capacitor for left channel 1st order filter function.
CAPSTAN-	Capstan motor - connection	FILTCL	capacitor for right channel 1st order filter function.
CEDC	system clock output.	FRESET	reset signal from codec.
CHMODE	use of channel status(0=professional use, 1=consumer use)	FS256	master audio clock at 256x sample frequency
CHROME	Indication if a chrome analog cassette is inserted.	FS32	indicates sample frequency=32kHz
CHTST1	Channel test pin 1	FS44	indicates sample frequency=44kHz
CHTST2	Channel test pin 2	FS48	indicates sample frequency=48kHz
CKIN	system clock input.	FSYNC	subband synchronisation on F-I ² S bus.
CKSL1	clock selection 1	GNDA	Analog ground
CKSL2	clock selection 2	GNDD	Digital ground
CLK22	22.5792 MHz buffered clock output of SFC3.	GNDS	Analog motors ground
CLK24	24.576 MHz XTAL buffered clock output of SFC3.	HOLD	DDU is busy flag
CLKSEL	select system clock	HPEN	high pass filter enable input.
CLOCK	Serial data clock from controller	I ² SOUTEN	serial audio output enable.
CLOSE_TRAY	Tray motor connection (+10V = Open tray; 0V = Close tray)	I ² SSEL	select auxiliary input or normal input in transmit mode.
		ICLAMP	Write current output.
		IECIN0	TTL level IEC input.
		IECIN1	high sensitivity IEC input.
		IECO	digital audio output for optical and transformer link.
		IECOEN	digital audio output enable
		IECOP	IEC958 digital audio output.
		IECSEL	select IEC input 0 or 1
		INO-7	Head signals of main data channels
		INAUX	Head signal of auxiliary data.

INL	Analog input signals from DCC head.
INMFL	Magnetic feedback amplifier input left.
INMFR	Magnetic feedback amplifier input right.
INR	Analog input signals from DCC head.
INVALID	validity of audio sample input/output
IREF	current reference node.
L3CLK	L3 bus clock line
L3CLKC	codec interface clock
L3CLKM	microcontroller interface clock
L3DATA	L3 bus serial data line
L3DATAC	codec interface data
L3DATAM	microcontroller interface data
L3INT	L3 interrupt output
L3MODE	Mode line for L3 interface
L3MODEC	codec interface mode
L3MODEM	microcontroller interface mode
L3REF	L3 bus timing reference
LADDR	microprocessor interface address switch input
LCLK	microprocessor interface clock line input
LDATA	microprocessor interface data line input/output
LEFT INPUT	Analog audio input left
LMODE	microprocessor interface mode line input
LOWPOWER	Low power playback reset
LTCNT0	LT compatible interface mode control
LTCNT0C	SAA2002 SFC interface mode control
LTCNT1	LT compatible interface mode control
LTCNT1C	SAA2002 SFC interface mode control
M0	(test mode input) connect to VDD
M1	(test mode input) connect to VDD
MCLK	6.144 MHz clock output
MESSYNC	Message synchronisation with controller
MLE	Latch enable signal for digital filter
MSYNC	Message synchronisation with Digital μ P
MUSB	muting(active LOW)
MUTE	audio mute input
MUTEDAC	DAC control or general purpose output
N_CASS_PRES	Cassette present switch input
N_DCC_REC_PROT	DCC record protect switch input
N_FAILP	Power fail(L = power failure)
N_FLAP_PRESENT	Flap loader present indication
N_HOLE3	DCC tape length indication switch input
N_HOLE4	DCC tape length indication switch input
N_HOLE5	DCC tape length indication switch input
N_PLAY_POS	Indication if head is in play position
N_QREV_PRES	Quick reverse sensor present
N_TRAY_IN	Tray switch input
NC	not connected
N_DDC_REC_PROT	DCC record protection switch input
N_MUTE	Mute for audio channels(active low)
NODONE	No done state selection
N_RESET	Master reset Digital Unit
OEN	Output Enable for RAM
OPEN_TRAY	Tray motor connection(+10V = Close tray; 0V = Open tray)
OPTICAL IN	IEC958 input from optical receiver
OUTAUX	Parallel output of read IC.
OVL	overload indication output.

PINO1	Port expander output 1
PinO2/SPEEDB	Port expander output 2/ PWM capstan control output for deck B
PLAY MAG	Connection to the solenoid on the DDU deck.
POR	Power On Reset
PRGSTAT	TFE3 program status, for test only
PWRDWN	enable power-down input in the standby mode
QA-QJ	Put DRP into power down mode
QUICK_REVERSE	Signal for write heads.
R0+	Quick reverse input signal
R1+	Digital reader CH0(Hot)
R2+	Digital reader CH1(Hot)
R3+	Digital reader CH2(Hot)
R4+	Digital reader CH3(Hot)
R5+	Digital reader CH4(Hot)
R6+	Digital reader CH5(Hot)
R7+	Digital reader CH6(Hot)
RCfil	Digital reader CH7(Hot)
RCint	pin for PLL loop filter
RDMUX	pin for integrating capacitor
RDSYNC	Analogue multiplexed input from READ AMPLIFIER
RESET	Synchronisation output for READ AMPLIFIER
RESET_UP	Reset signal from Digital Unit controller
RESOL0	Reset tape drive module μ P
RESOL1	resolution selection 0
RIGHT INPUT	resolution selection 1
RX+	Analog audio input right
RXD	Digital reader AUX channel(Hot)
SBCL	Serial data input from tape drive unit
SBCL	Bit clock for sub-band I2S interface.
SBDA	sub-band bit clock
SBDIR	Data line for sub-band I2S interface
SBEF	DRP
SBMCLK	Direction line for sub-band I2S interface
SBWS	Sub-band I2S error flag line
SCK	Master clock for sub-band I2S interface
SCL	Word selector for sub-band I2S interface
SD	baseband bit clock
SDA1	serial audio data input/output; I ² S-bus
SDA2	baseband serial data to/from DAIO and ADC
SDAUX	baseband serial data output to DAC
SDDAC	Serial data from AD-converter
SDO	auxiliary serial data input; I ² S-bus
SFC3COMP	I2S bus data line for DAC
SFOR	serial interface data output.
SHIELD	SFC3(SAA2003) compatibility mode
SLAVE	input for selecting serial interface output format.
SLAVE_IN	Shield connection
SLAVE_OUT	input for selecting serial interface operating mode MASTER/SLAVE.
SPEED	Serial data from controller
SREEL	Serial data to controller
STANDBY	PWM capstan control output for deck
STD	Tacho Supply reel device inactive
	input for selecting STANDBY mode.

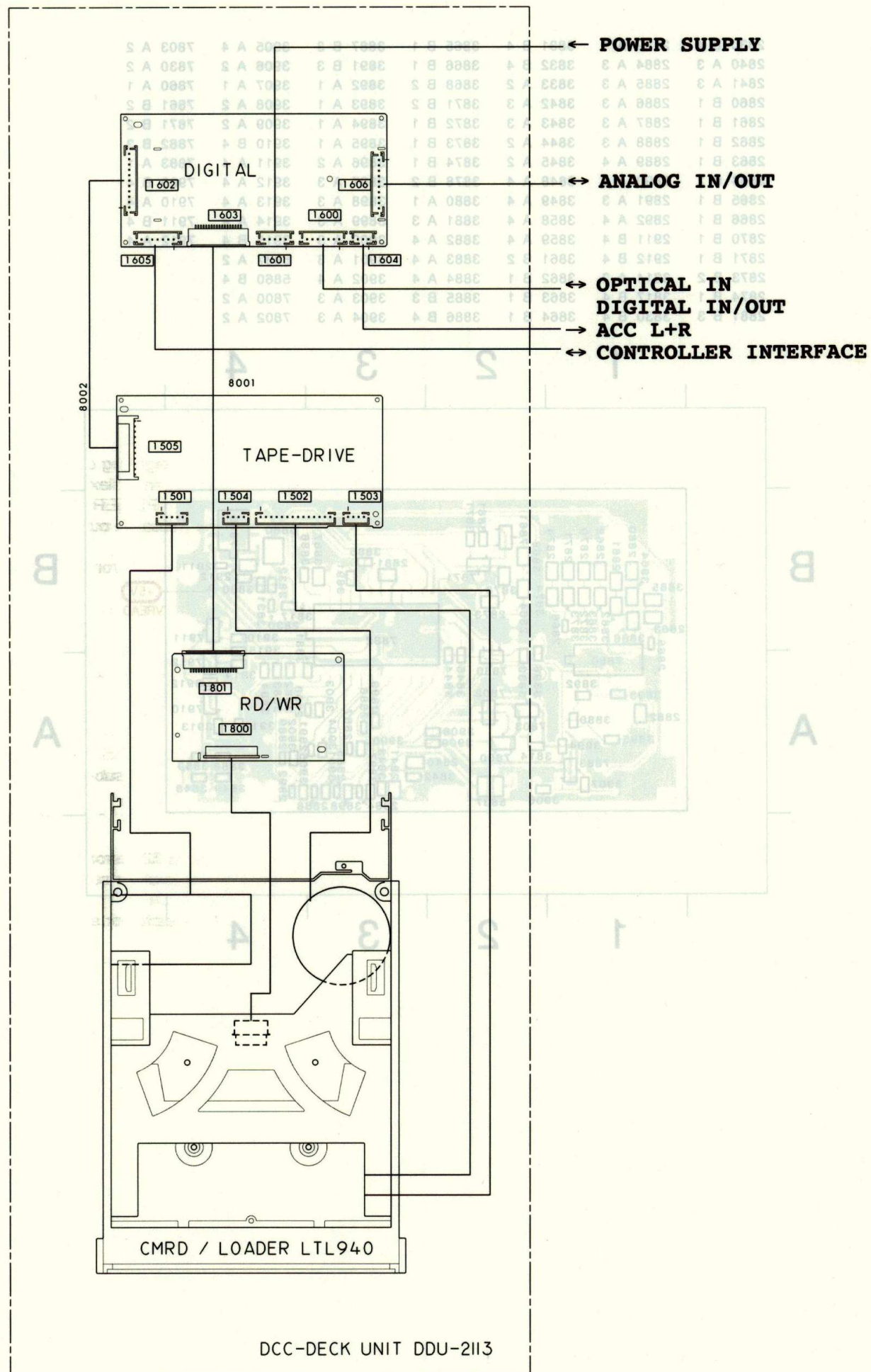
STROBE	strobe for control register(active high)
SUBSTR	Substrate connection
SWS	serial interface word select signal.
SYNCDAI	settings synchronisation for DAIO
SYSCCLKI	system clock input
SYSCCLKO	system clock output
TA1	Feedback conductor ACC Left channel
TA2	Feedback conductor ACC Left channel
TA8	Feedback conductor ACC Right channel
TA9	Feedback conductor ACC Right channel
TCLOCK	3.072 MHz clock output for tape I/O
TD1	Test conductor digital
TD2	Test conductor digital
TEST0	test mode select
TEST1	test mode select
TEST2	test mode select
TREEL	Tacho Take-up reel
TXD	Serial data output to tape drive unit
UDAVAIL	synchronisation for output user data(0=data available, 1=no data)
UNLOCK	PLL out-of-lock(0=not locked, 1=locked)
URDA	unreliable data from drive processing
VDACN	negative 1 bit DAC reference voltage input.(connected 0V)
VDACP	positive 1 bit DAC reference voltage input.(connected 5V)
VOL	left channel output.
VOR	right channel output.
W01	Digital writer(CH0/CH1)
W12	Digital writer(CH1/CH2)
W23	Digital writer(CH2/CH3)
W34	Digital writer(CH3/CH4)
W45	Digital writer(CH4/CH5)
W56	Digital writer(CH5/CH6)
W67	Digital writer(CH6/CH7)
W7-	Digital writer(CH7)
WDATA	Serial output to WRITE AMPLIFIER
WEN	Write enable for RAM
WIND+	Reel motor + connection
WIND-	Reel motor - connection
WRITE-STDBY	Write amplifier stand-by
WS	word select input/output, I ² S-bus
WX-	Digital writer(AUX channel)
WX0	Digital writer(AUX channel/CH0)
X22IN	22.5792 MHz XTAL oscillator input
X22OUT	22.5792 MHz XTAL oscillator output
X24IN	24.576 MHz XTAL oscillator input
X24OUT	24.576 MHz XTAL oscillator output
X256	master audio clock input from external source
Xin	system clock input

(*) ON FLEXIBLE CABLE OF DCC HEAD, THE ADVISED WRITE CURRENT HAS BEEN INDICATED. $V_{CLAMP} = \text{NOTED WRITE CURRENT} \times R_{tot}(10 \text{ Ohm})$

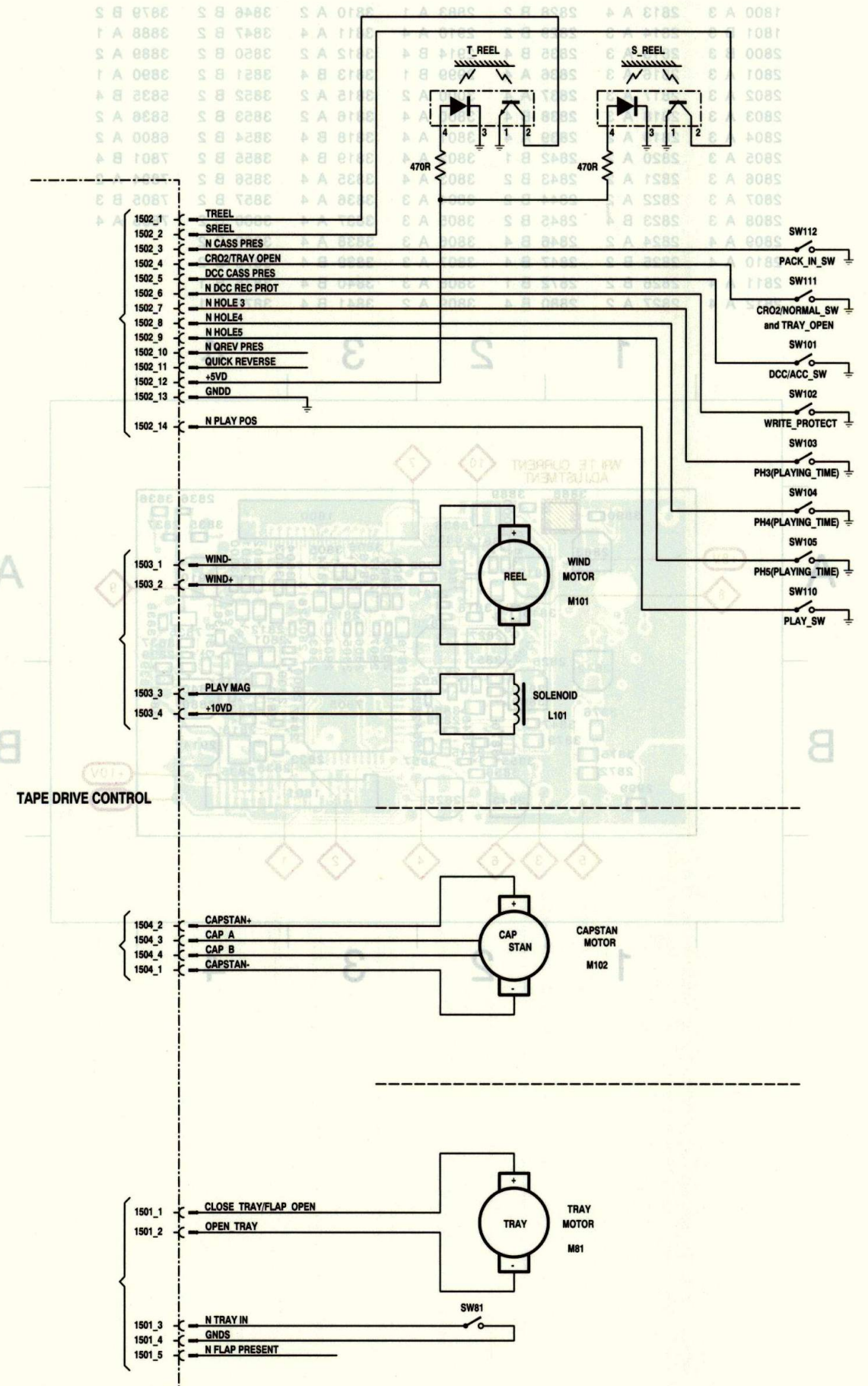


HAS1143
9422

WIRING DIAGRAM DDU



WIRING DIAGRAM DCC DECK

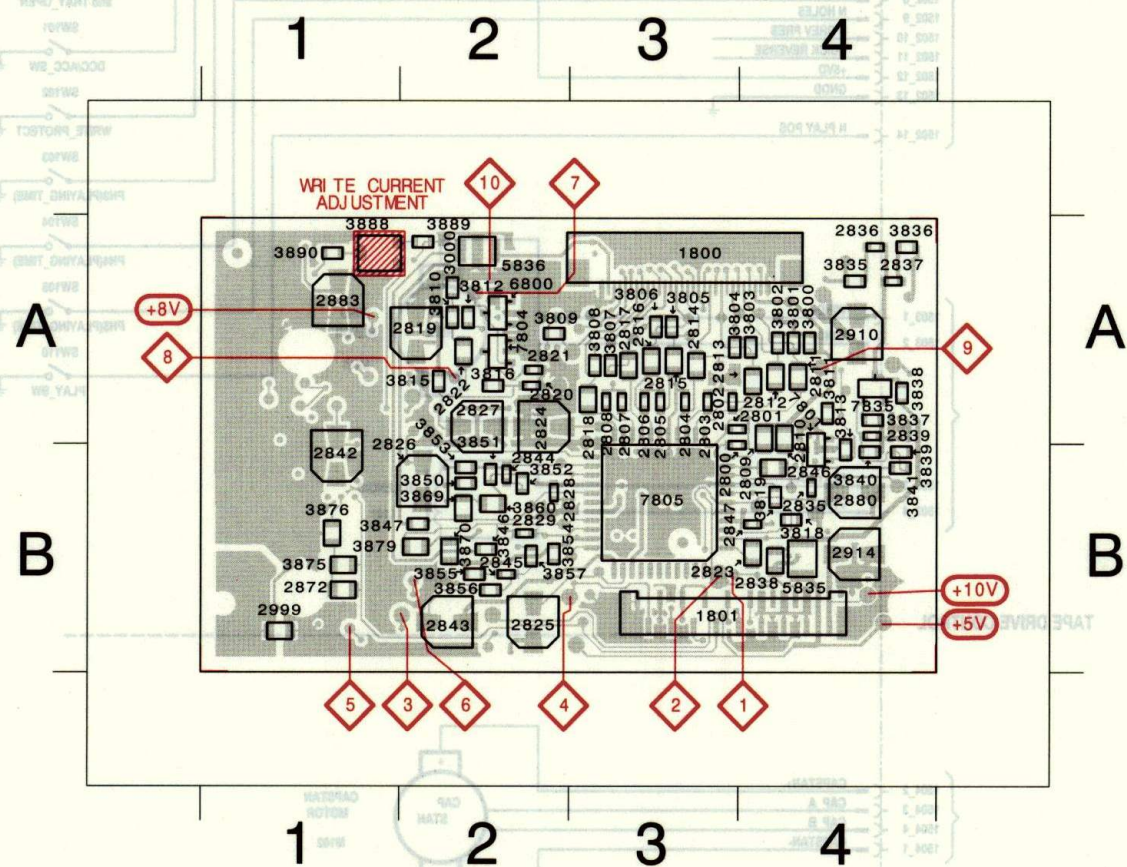


READ/WRITE PANEL

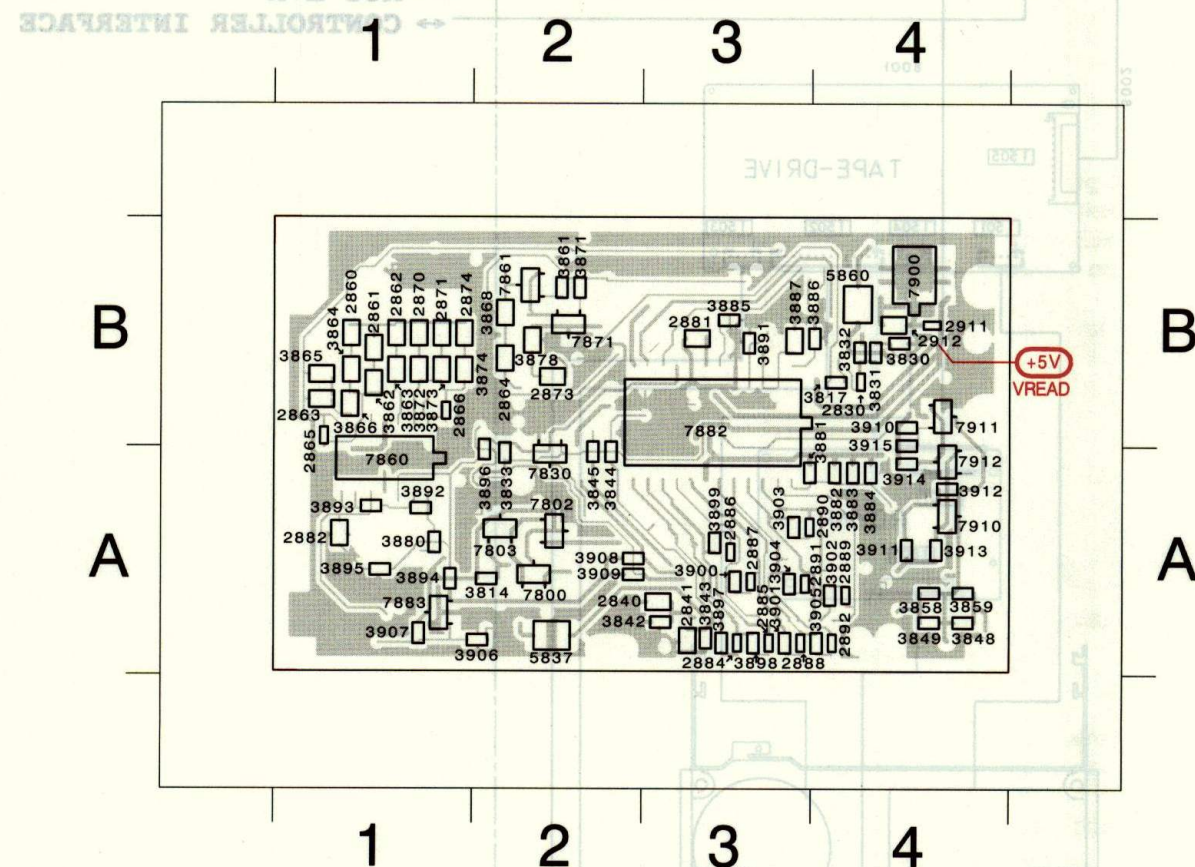
WIRING DIAGRAM DCC DECK

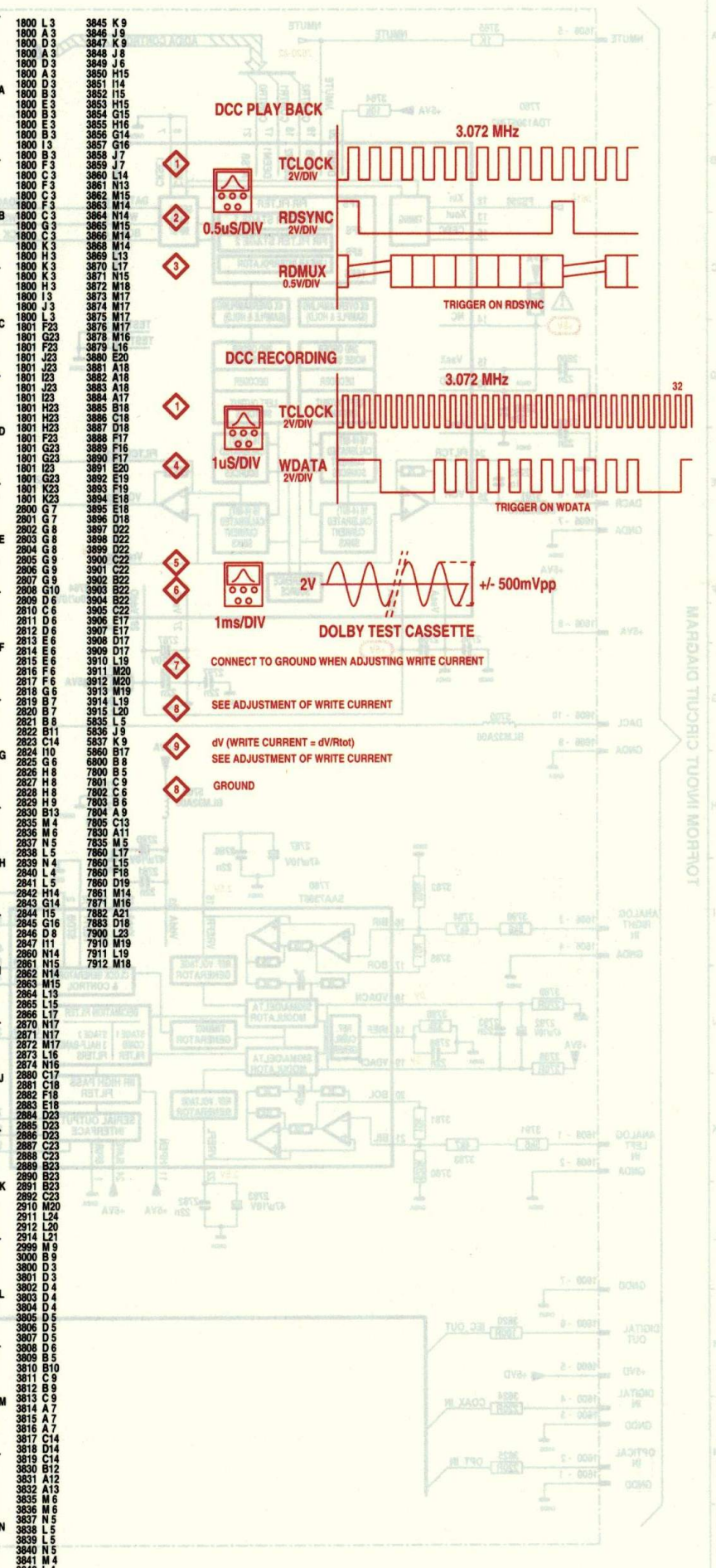
WIRING DIAGRAM DCC DECK

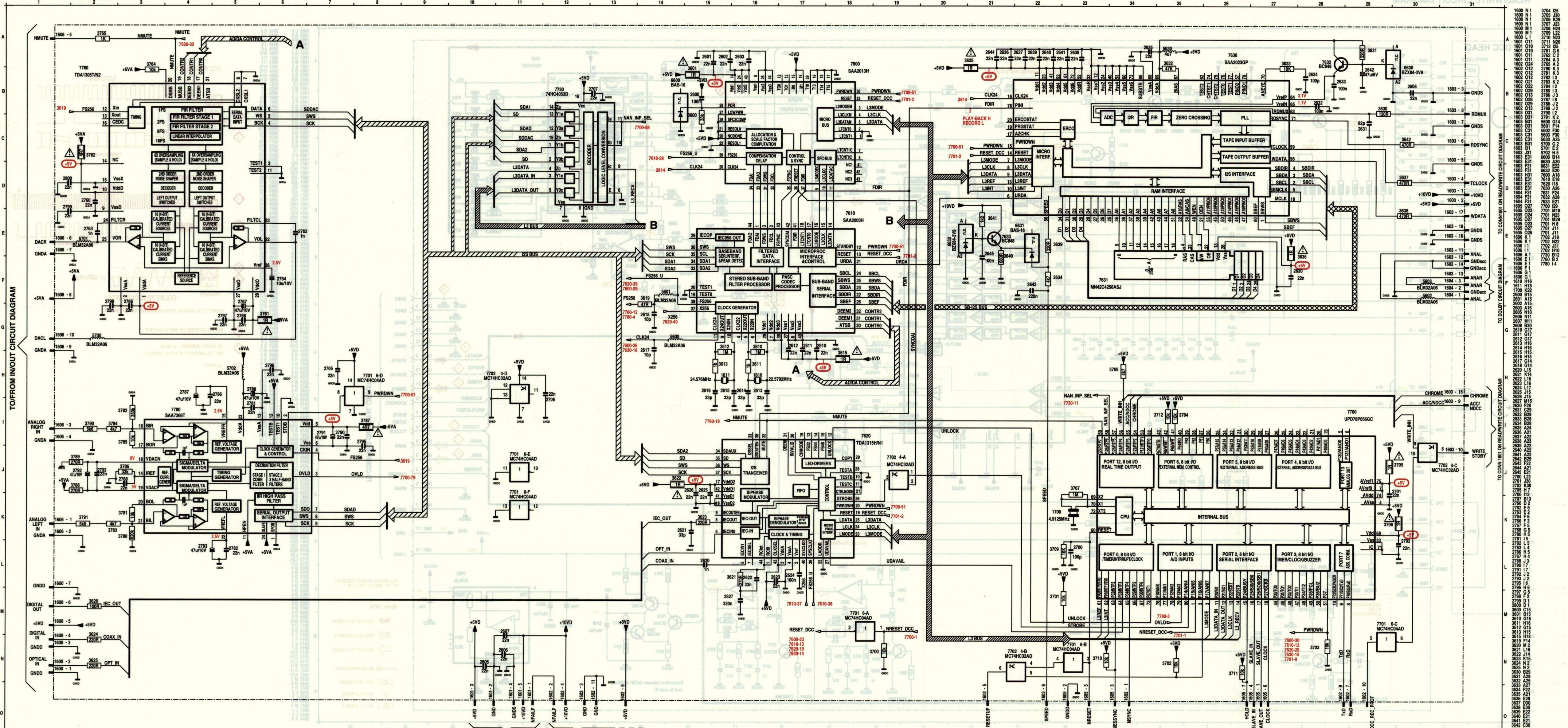
1800 A 3	2813 A 4	2828 B 2	2883 A 1	3810 A 2	3846 B 2	3879 B 2
1801 B 3	2814 A 3	2829 B 2	2910 A 4	3811 A 4	3847 B 2	3888 A 1
2800 B 3	2815 A 3	2835 B 4	2914 B 4	3812 A 2	3850 B 2	3889 A 2
2801 A 3	2816 A 3	2836 A 4	2999 B 1	3813 B 4	3851 B 2	3890 A 1
2802 A 3	2817 A 3	2837 A 4	3000 A 2	3815 A 2	3852 B 2	5835 B 4
2803 A 3	2818 A 3	2838 B 4	3800 A 4	3816 A 2	3853 B 2	5836 A 2
2804 A 3	2819 A 2	2839 A 4	3801 A 4	3818 B 4	3854 B 2	6800 A 2
2805 A 3	2820 A 2	2842 B 1	3802 A 4	3819 B 4	3855 B 2	7801 B 4
2806 A 3	2821 A 2	2843 B 2	3803 A 4	3835 A 4	3856 B 2	7804 A 2
2807 A 3	2822 A 2	2844 B 2	3804 A 3	3836 A 4	3857 B 2	7805 B 3
2808 A 3	2823 B 4	2845 B 2	3805 A 3	3837 A 4	3860 B 2	7835 A 4
2809 A 4	2824 A 2	2846 B 4	3806 A 3	3838 A 4	3869 B 2	
2810 A 4	2825 B 2	2847 B 4	3807 A 3	3839 B 4	3870 B 2	
2811 A 4	2826 B 2	2872 B 1	3808 A 3	3840 B 4	3875 B 1	
2812 A 4	2827 A 2	2880 B 4	3809 A 2	3841 B 4	3876 B 1	



2830 B 4	2882 A 1	3831 B 4	3865 B 1	3887 B 3	3905 A 4	7803 A 2
2840 A 3	2884 A 3	3832 B 4	3866 B 1	3891 B 3	3906 A 2	7830 A 2
2841 A 3	2885 A 3	3833 A 2	3868 B 2	3892 A 1	3907 A 1	7860 A 1
2860 B 1	2886 A 3	3842 A 3	3871 B 2	3893 A 1	3908 A 2	7861 B 2
2861 B 1	2887 A 3	3843 A 3	3872 B 1	3894 A 1	3909 A 2	7871 B 2
2862 B 1	2888 A 3	3844 A 2	3873 B 1	3895 A 1	3910 B 4	7882 B 3
2863 B 1	2889 A 4	3845 A 2	3874 B 1	3896 A 2	3911 A 4	7883 A 1
2864 B 2	2890 A 3	3848 A 4	3878 B 2	3897 A 3	3912 A 4	7900 B 4
2865 B 1	2891 A 3	3849 A 4	3880 A 1	3898 A 3	3913 A 4	7910 A 4
2866 B 1	2892 A 4	3858 A 4	3881 A 3	3899 A 3	3914 A 4	7911 B 4
2870 B 1	2911 B 4	3859 A 4	3882 A 4	3900 A 3	3915 B 4	7912 A 4
2871 B 1	2912 B 4	3861 B 2	3883 A 4	3901 A 3	5837 A 2	
2873 B 2	3814 A 2	3862 B 1	3884 A 4	3902 A 4	5860 B 4	
2874 B 1	3817 B 4	3863 B 1	3885 B 3	3903 A 3	7800 A 2	
2881 B 3	3830 B 4	3864 B 1	3886 B 4	3904 A 3	7802 A 2	

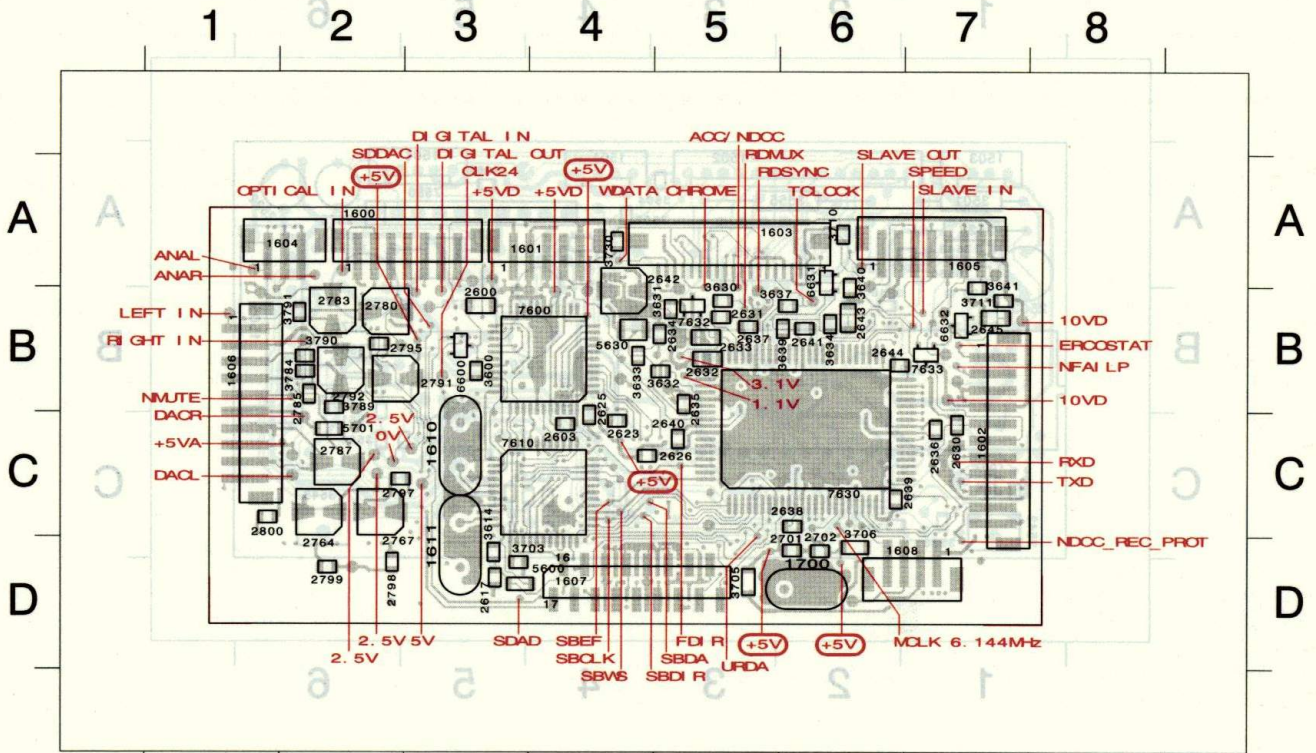




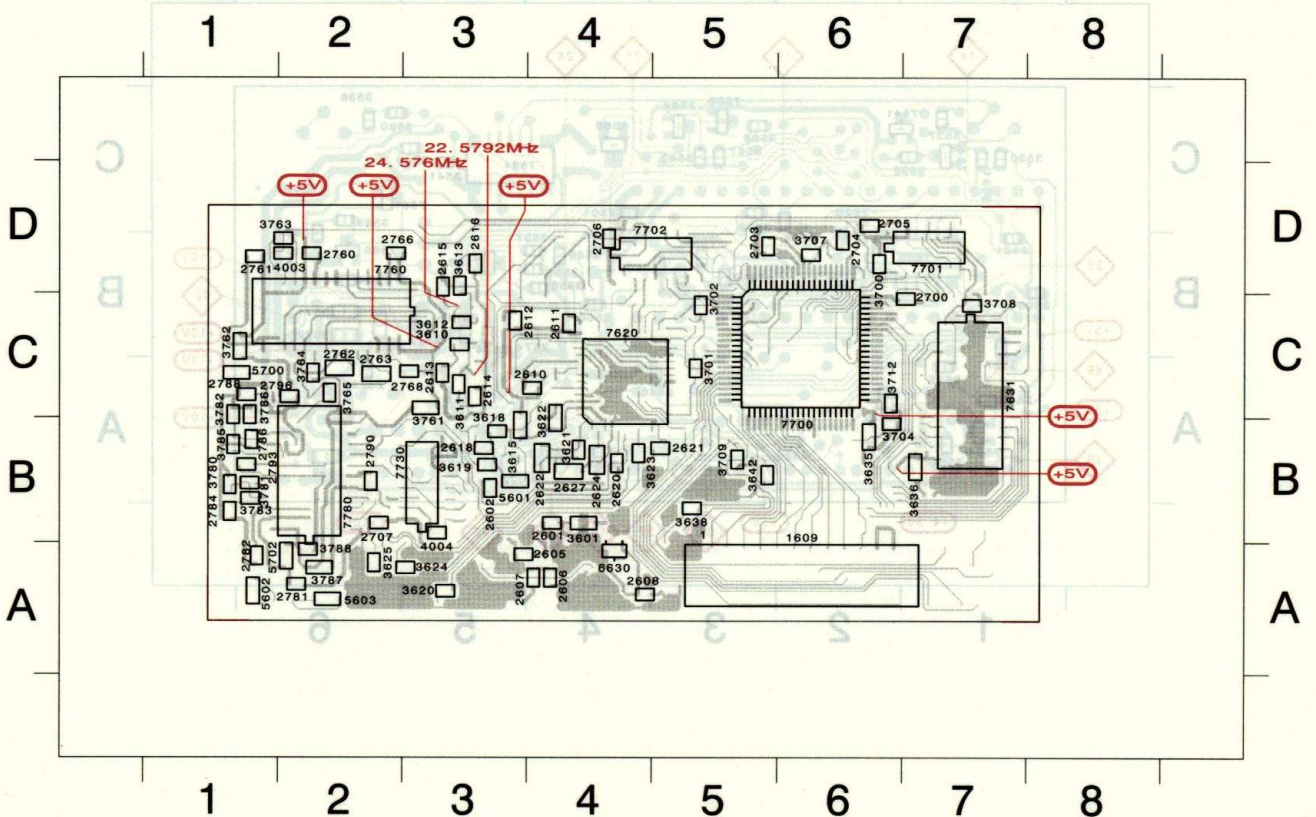


DIGITAL PANEL

1600	A	3	1607	D	4	2617	D	3	2633	B	5	2640	C	5	2702	D	6	2791	B	2	3600	B	3	3637	B	6	3710	A	6	5600	D	3	7610	C	4
1601	A	4	1608	D	7	2623	C	4	2634	B	5	2641	B	6	2764	C	2	2792	B	2	3614	D	3	3639	B	6	3711	B	7	5630	B	4	7630	C	6
1602	C	7	1610	C	3	2625	C	4	2635	B	5	2642	B	4	2767	C	2	2795	B	2	3630	B	5	3640	B	6	3730	A	4	5701	C	2	7632	B	5
1603	A	5	1611	D	3	2626	C	4	2636	C	7	2643	B	6	2780	B	2	2797	C	2	3631	B	5	3641	B	7	3784	B	2	6600	B	3	7633	B	7
1604	A	2	1700	D	6	2630	C	7	2637	B	5	2644	B	6	2783	B	2	2798	D	2	3632	B	5	3703	D	3	3789	B	6	6631	A	6			
1605	A	7	2600	B	3	2631	B	5	2638	C	6	2645	B	7	2785	B	2	2799	D	2	3633	A	4	3705	D	5	3790	B	2	6632	B	7			
1606	B	1	2603	C	4	2632	B	5	2639	C	6	2701	D	6	2787	C	2	2800	C	1	3634	B	6	3706	D	6	3791	B	2	7600	B	4			

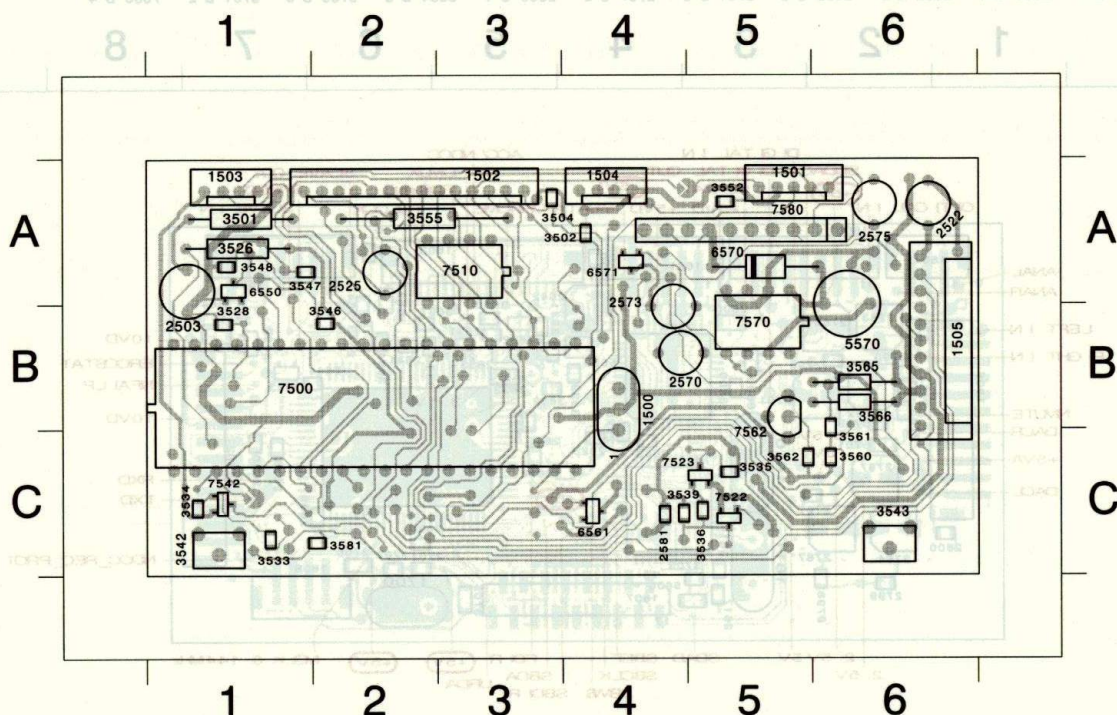


2609 B 6	2611 C 4	2621 B 5	2706 D 4	2781 A 2	3601 B 4	3620 A 3	3638 B 5	3709 B 5	3781 B 1	4004 B 3	7631 C 7
2601 B 4	2612 C 3	2622 B 4	2707 B 2	2782 A 1	3610 C 3	3621 B 4	3642 B 5	3712 C 6	3782 C 1	5601 B 3	7700 C 6
2602 B 3	2613 C 3	2624 B 4	2760 D 2	2784 B 1	3611 C 3	3622 B 4	3700 D 6	3761 C 3	3783 B 1	5602 A 1	7701 D 7
2605 A 3	2614 C 3	2627 B 4	2761 D 1	2786 B 1	3612 C 3	3623 B 4	3701 C 5	3762 C 1	3785 B 1	5603 A 2	7702 D 5
2606 A 4	2615 D 3	2700 C 7	2762 C 2	2788 C 1	3613 D 3	3624 A 3	3702 C 5	3763 D 2	3786 C 1	5700 C 1	7730 B 3
2607 A 4	2616 D 3	2703 D 5	2763 C 2	2790 B 2	3615 B 3	3625 A 2	3704 B 6	3764 C 2	3787 A 2	5702 A 2	7760 C 2
2608 A 4	2618 B 3	2704 D 6	2766 D 2	2793 B 1	3618 B 3	3635 B 6	3707 D 6	3765 C 2	3788 A 2	6630 A 4	7780 B 2
2610 C 4	2620 B 4	2705 D 6	2768 C 3	2796 C 2	3619 B 3	3636 B 7	3708 C 7	3780 B 1	4003 D 2	7620 C 4	

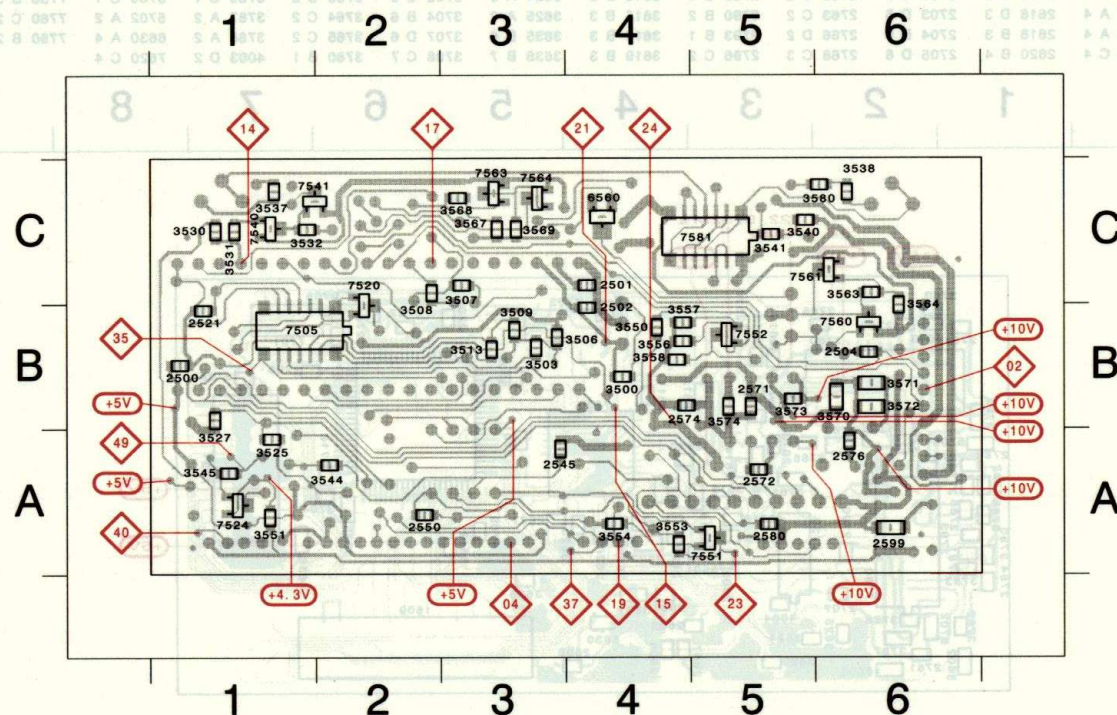


TAPE DRIVE CONTROL PANEL

1500 B 4	1505 B 6	2573 B 4	3504 A 3	3535 C 5	3546 B 2	3560 C 6	3581 C 2	6571 A 4	7542 C 1
1501 A 5	2503 A 1	2575 A 6	3526 A 1	3536 C 5	3547 A 1	3561 B 6	5570 B 6	7500 B 2	7562 B 5
1502 A 2	2522 A 6	2581 C 4	3528 B 1	3539 C 4	3548 A 1	3562 C 5	6550 A 1	7510 A 3	7570 B 5
1503 A 1	2525 A 2	3501 A 1	3533 C 1	3542 C 1	3552 A 5	3565 B 6	6561 C 4	7522 C 5	7580 A 5
1504 A 4	2570 B 4	3502 A 4	3534 C 1	3543 C 6	3555 A 2	3566 B 6	6570 A 5	7523 C 5	



2500	B 1	2571	B 5	3503	B 3	3527	B 1	3541	C 5	3556	B 4	3569	C 3	6560	C 4	7552	B 5
2501	C 4	2572	A 5	3506	B 3	3530	C 1	3544	A 2	3557	B 4	3570	B 6	7505	B 1	7560	B 6
2502	B 4	2574	B 4	3507	C 3	3531	C 1	3545	A 1	3558	B 4	3571	B 6	7520	B 2	7561	C 6
2504	B 6	2576	A 6	3508	C 2	3532	C 1	3550	B 4	3563	C 6	3572	B 6	7524	A 1	7563	C 3
2521	B 1	2580	A 5	3509	B 3	3537	C 1	3551	A 1	3564	B 6	3573	B 5	7540	C 1	7564	C 3
2545	A 3	2599	A 6	3513	B 3	3538	C 6	3553	A 4	3567	C 3	3574	B 5	7541	C 1	7581	C 5
2550	A 2	3500	B 4	3525	A 1	3540	C 5	3554	A 4	3568	C 3	3580	C 6	7551	A 5		

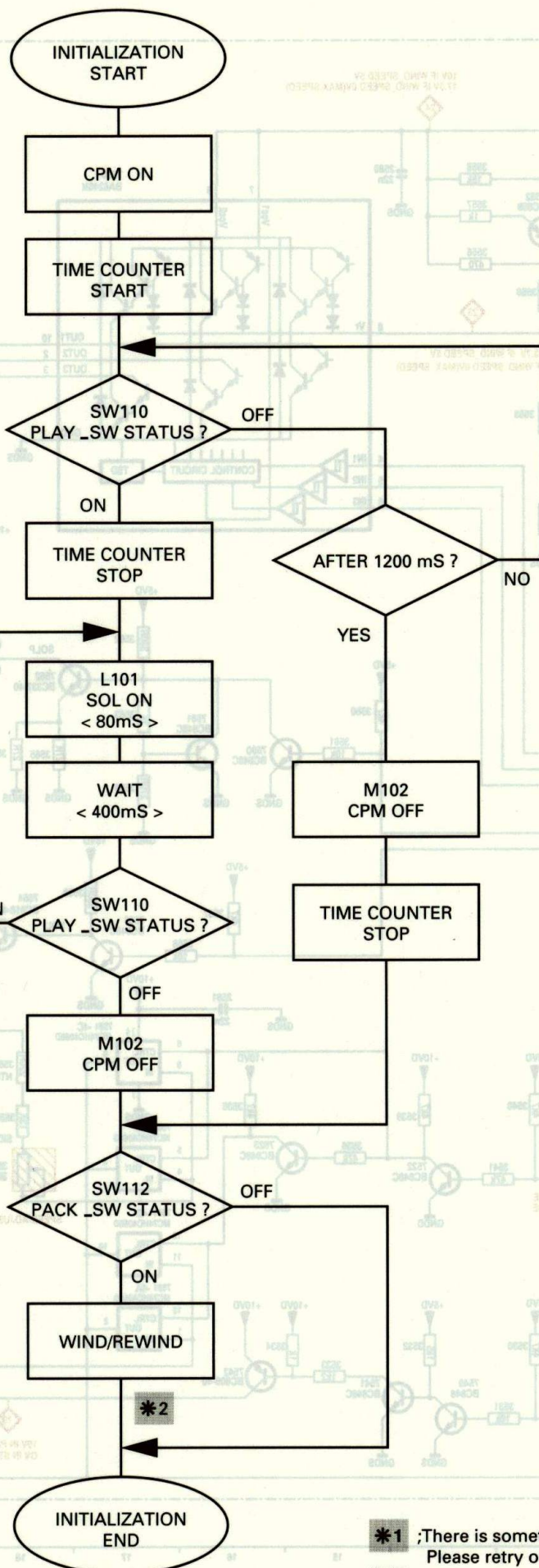


FLOW CHART TAPE DECK TIMING

LEGEND

< SYMBOLS >

CPM ; Capstan motor (M102)
 SOL ; Solenoid (L101)
 PLAY_SW ; Play Switch (SW110)
 PACK_SW ; Pack In Switch (SW112)

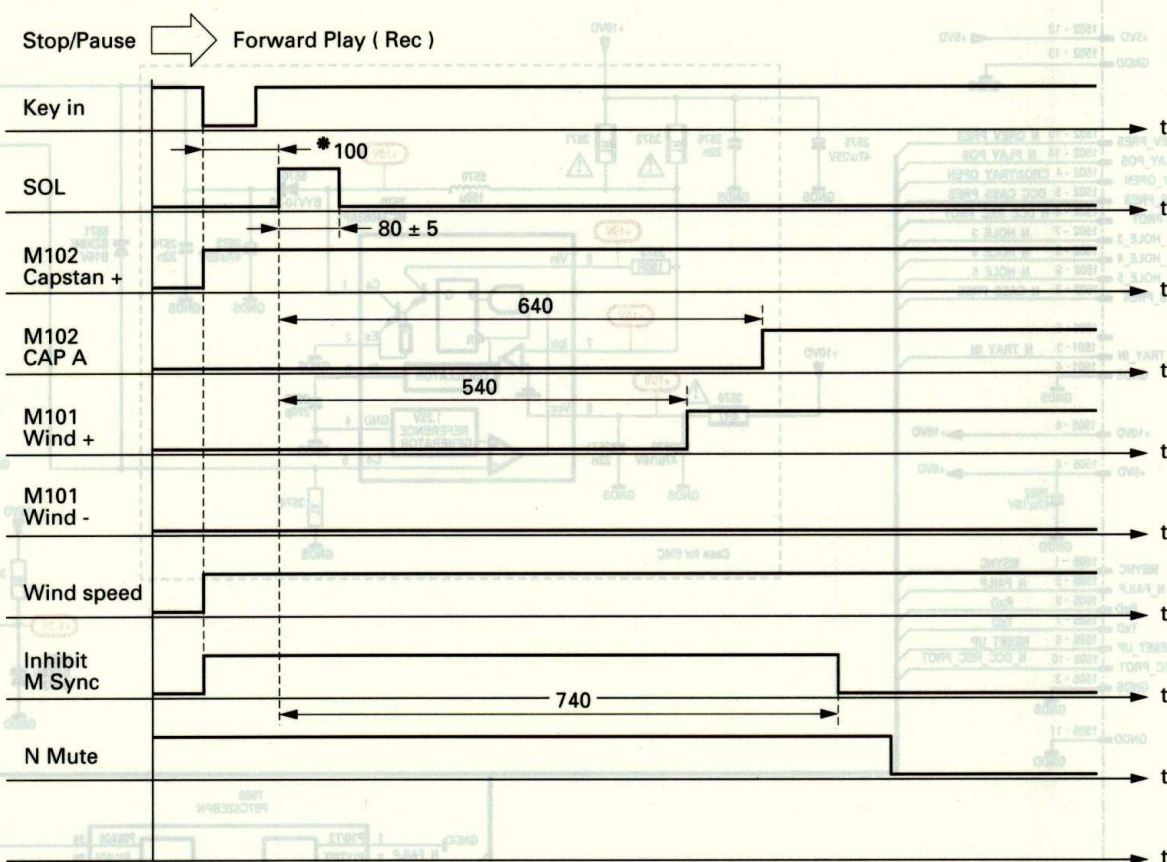


*1 ; There is something wrong.
Please retry only one time.

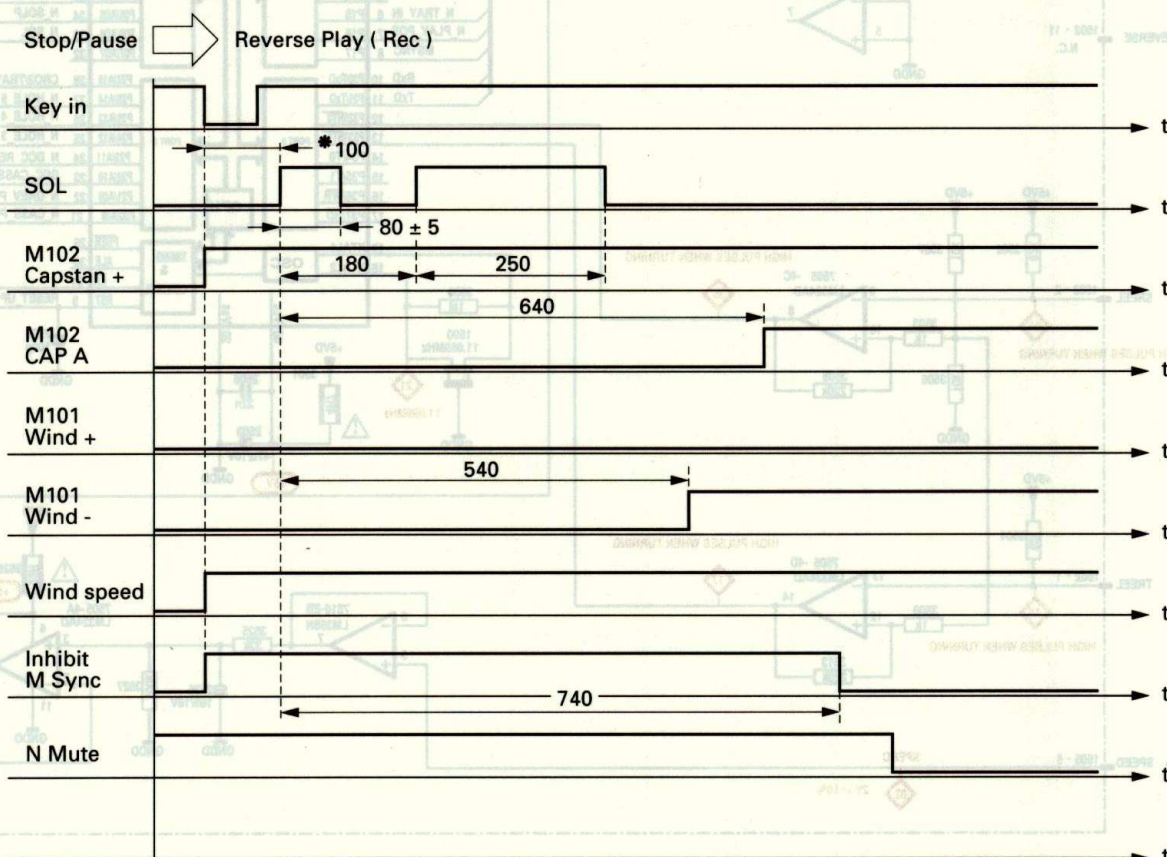
*2 ; Please remove the slack of tape.

TAPE DECK TIMING CHARTS

TAPE DECK TIMING CHART 1

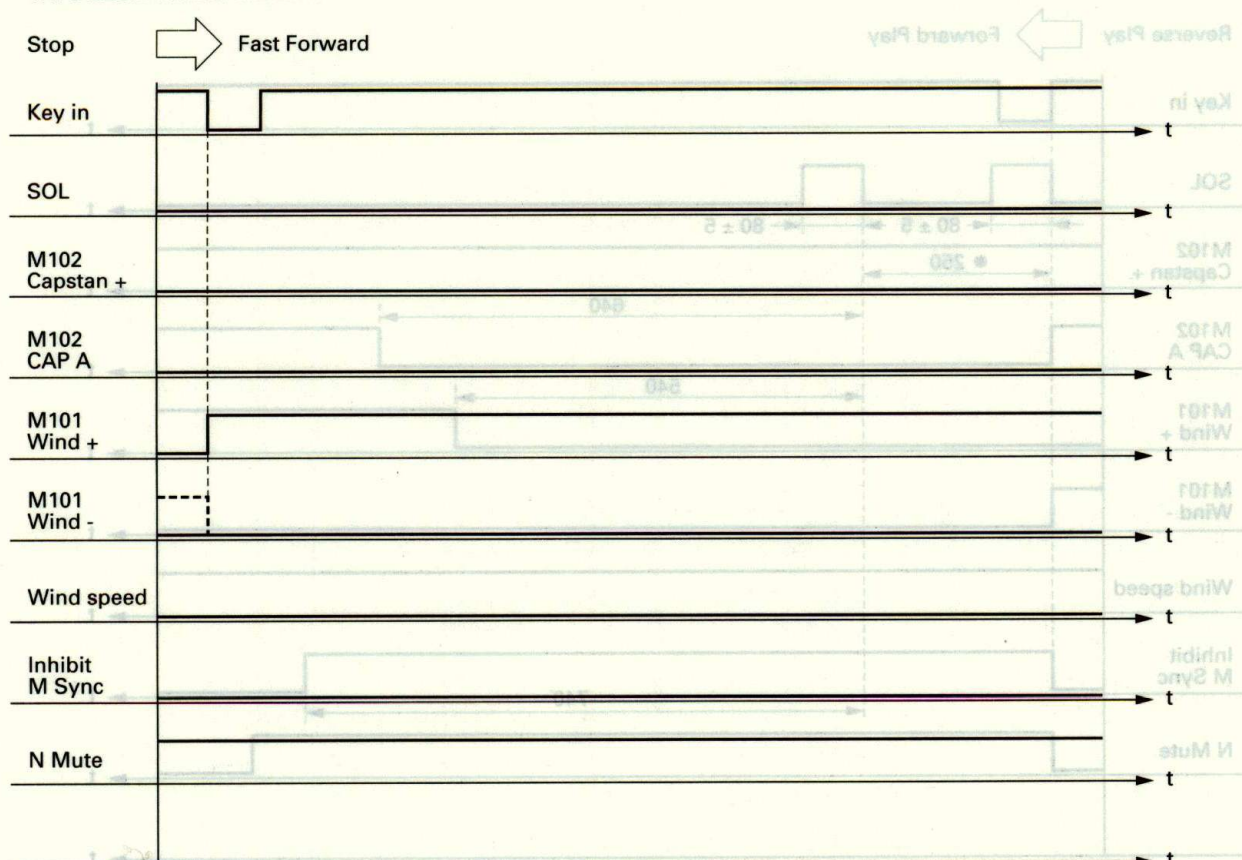


TAPE DECK TIMING CHART 2

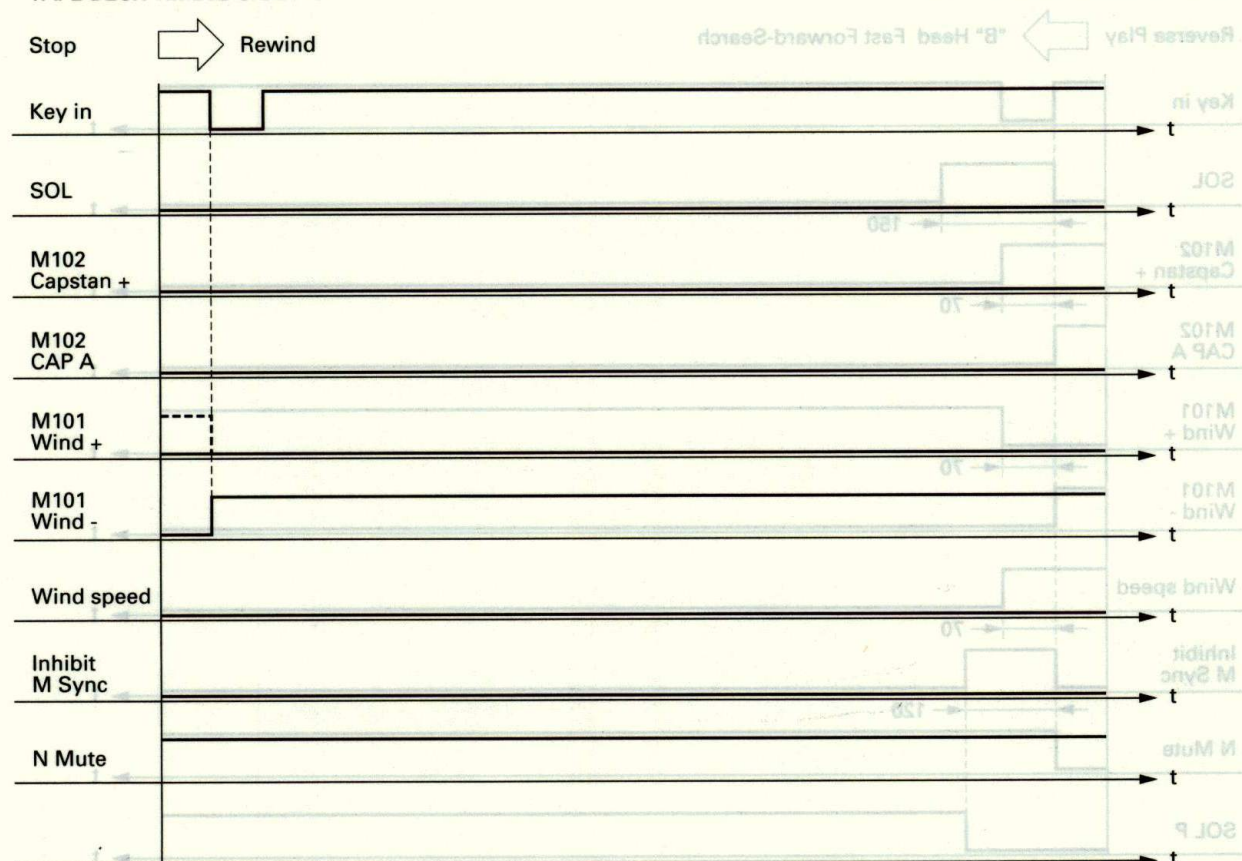


* This timing is the data when mold flywheels are used.
Please change to more than 150 mS at Zn-diecasting or sintered flywheels.

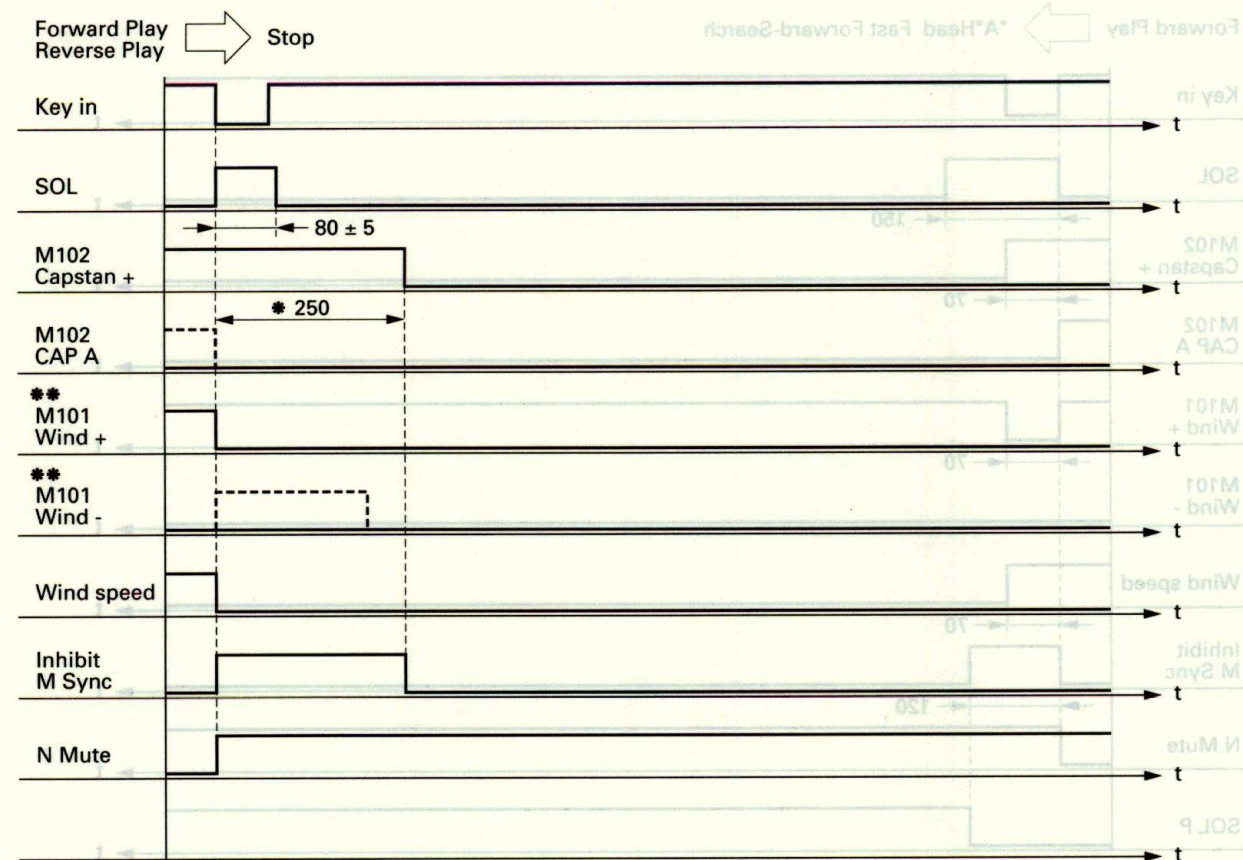
TAPE DECK TIMING CHART 3



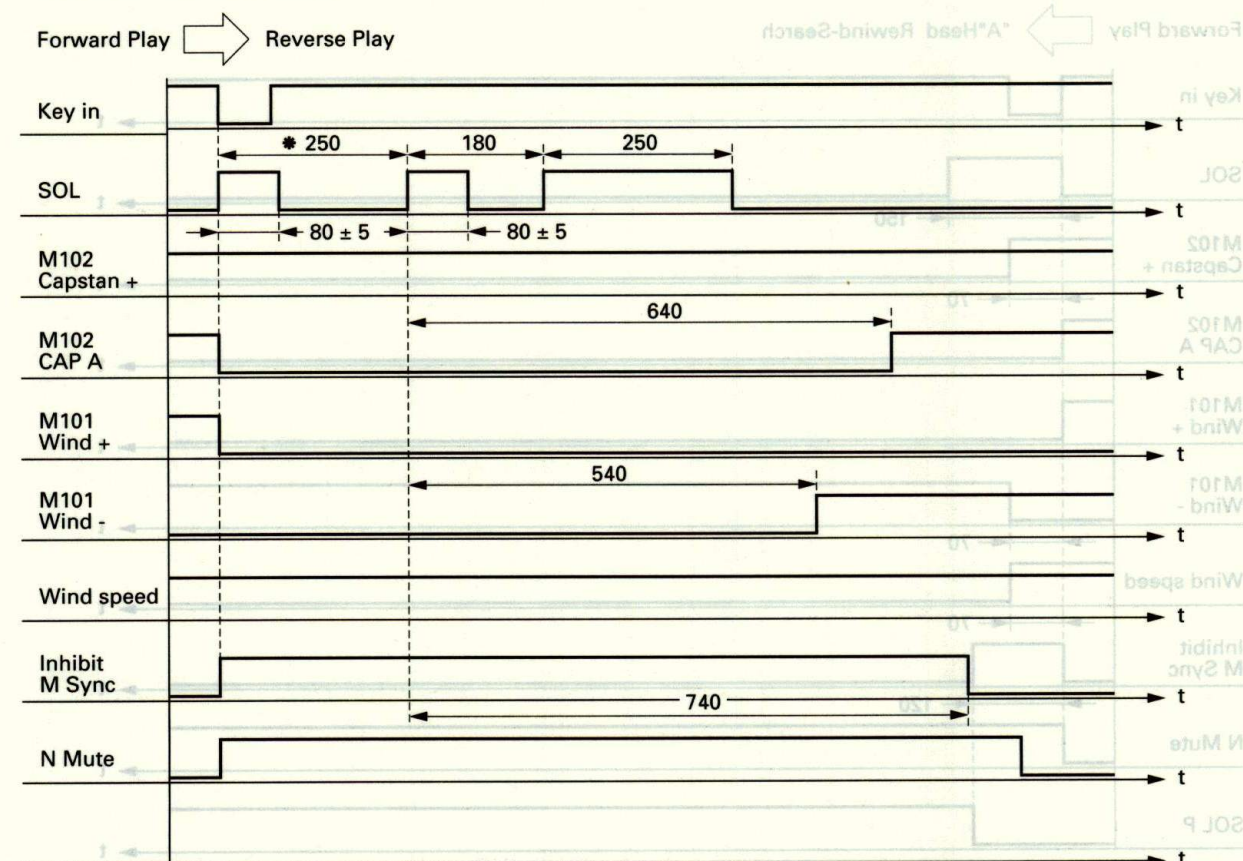
TAPE DECK TIMING CHART 4



TAPE DECK TIMING CHART 5



TAPE DECK TIMING CHART 6

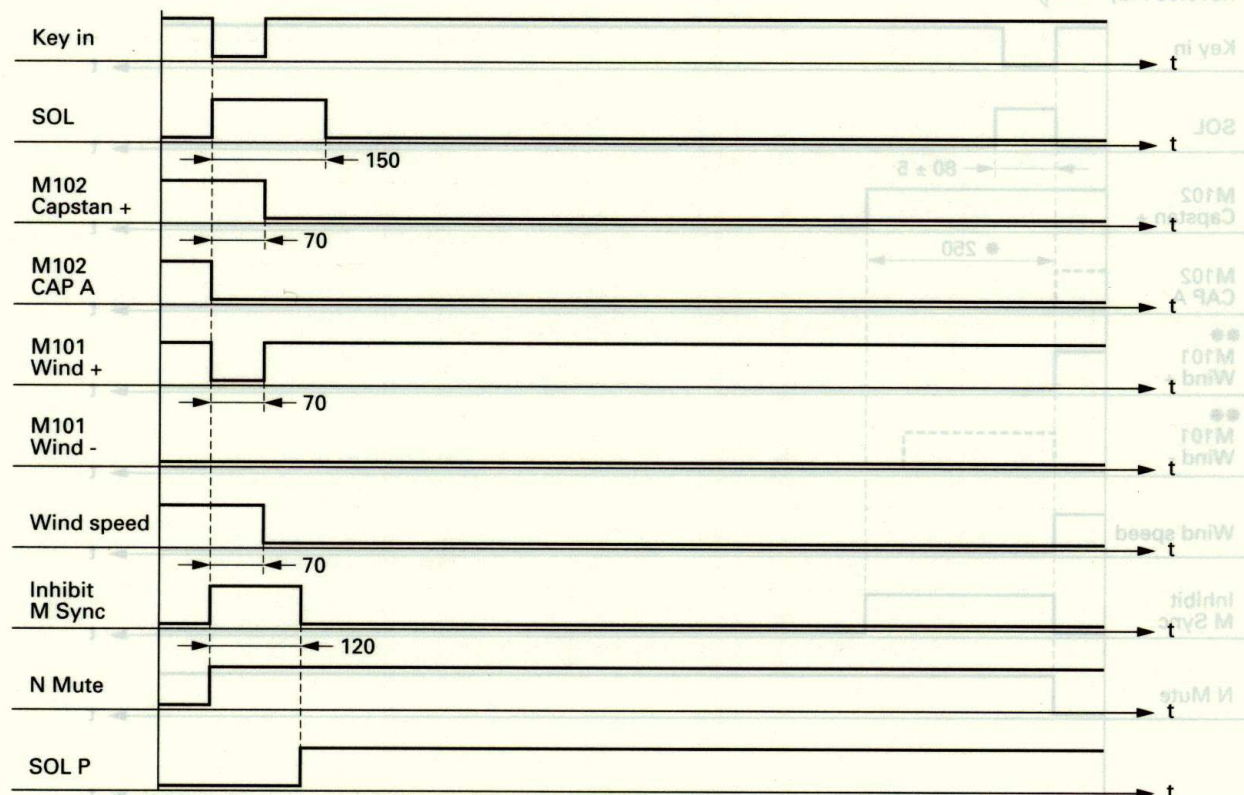


* Please change 250mS to 400mS at double speed PLAY mode.

** Interchange M101 Wind + and M101 Wind - timing at REVERSE PLAY mode.

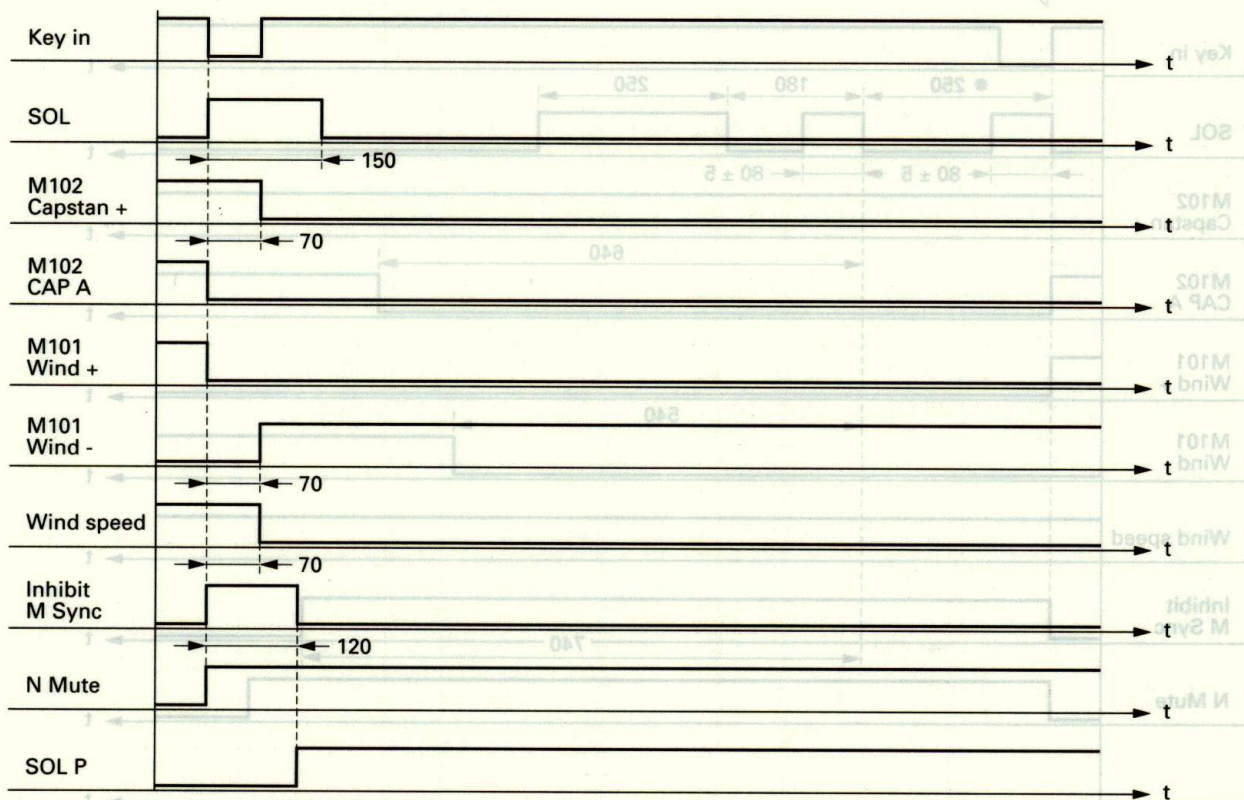
TAPE DECK TIMING CHART 7

Forward Play → "A" Head Fast Forward-Search



TAPE DECK TIMING CHART 8

Forward Play → "A" Head Rewind-Search

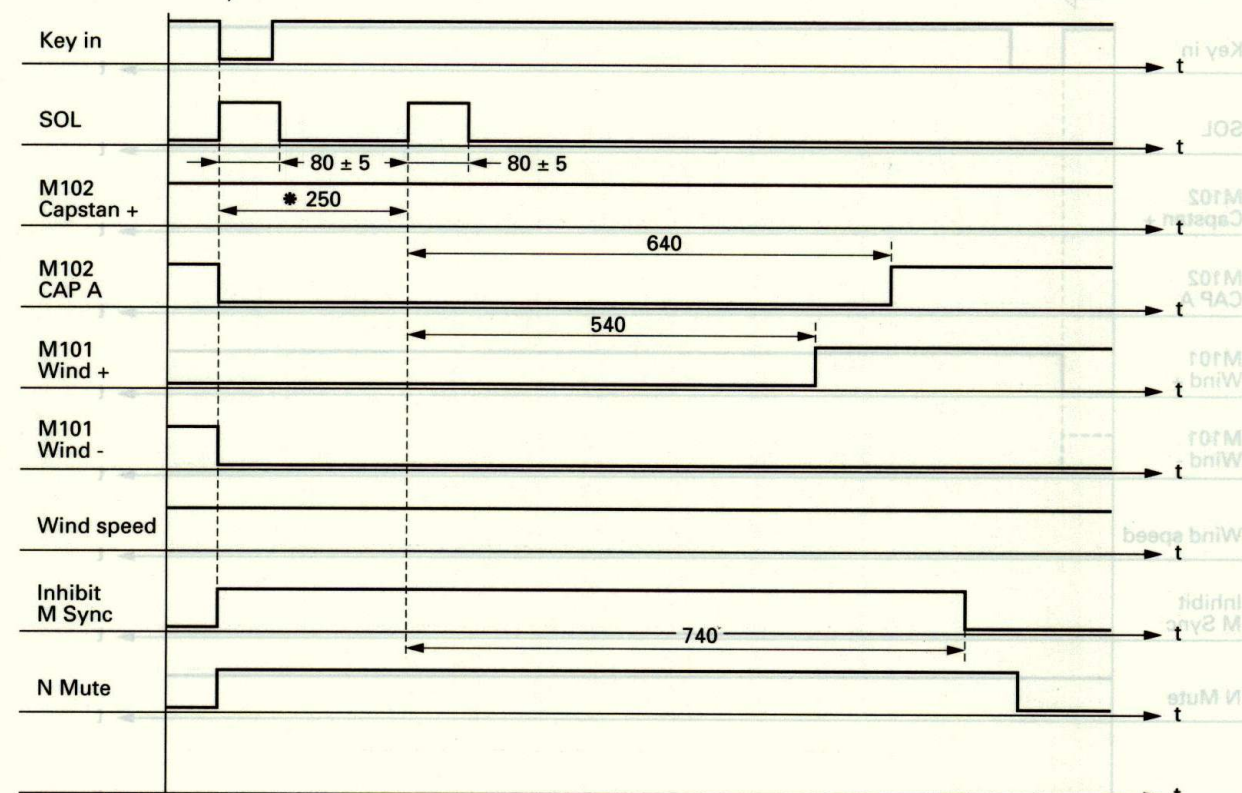


* Please change 250ms to 400ms at double speed PLAY mode.
 Intermingle M101 Wind + and M101 Wind - timing at REVERSE PLAY mode.

SBP0183

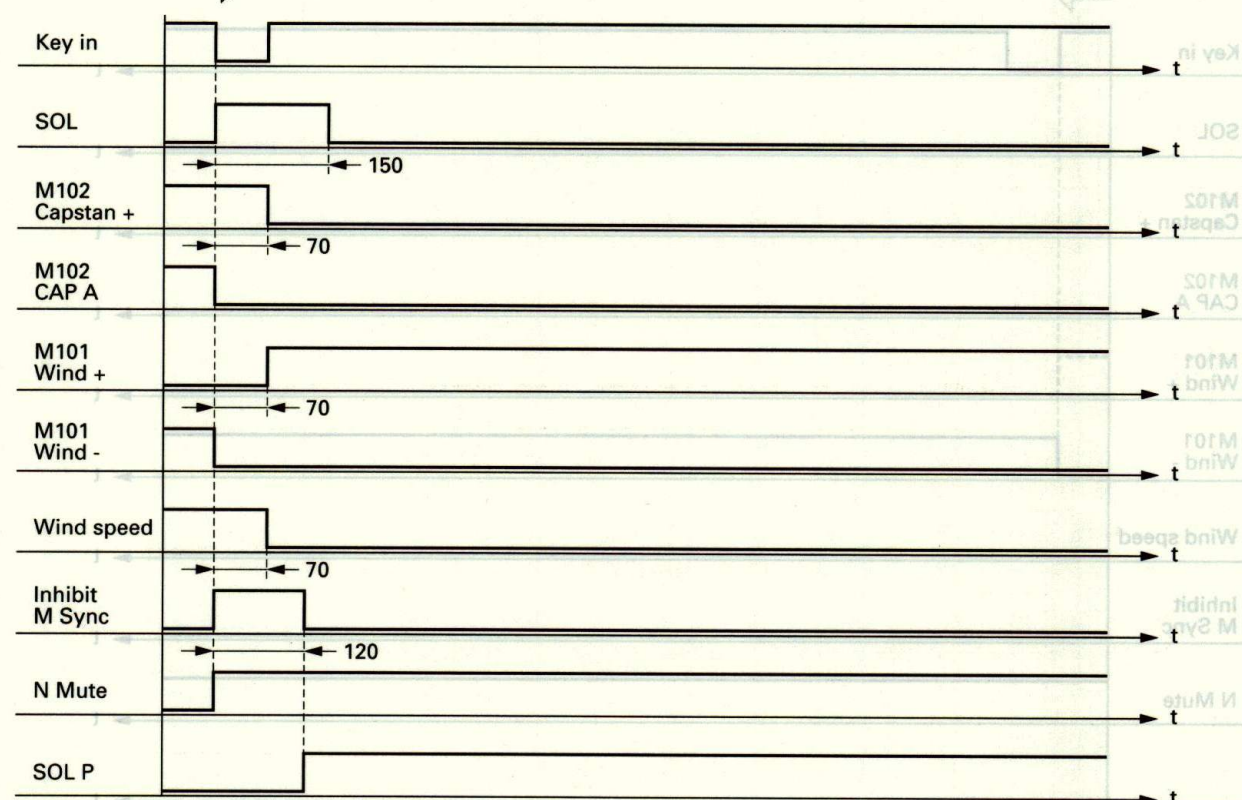
TAPE DECK TIMING CHART 9

Reverse Play → Forward Play



TAPE DECK TIMING CHART 10

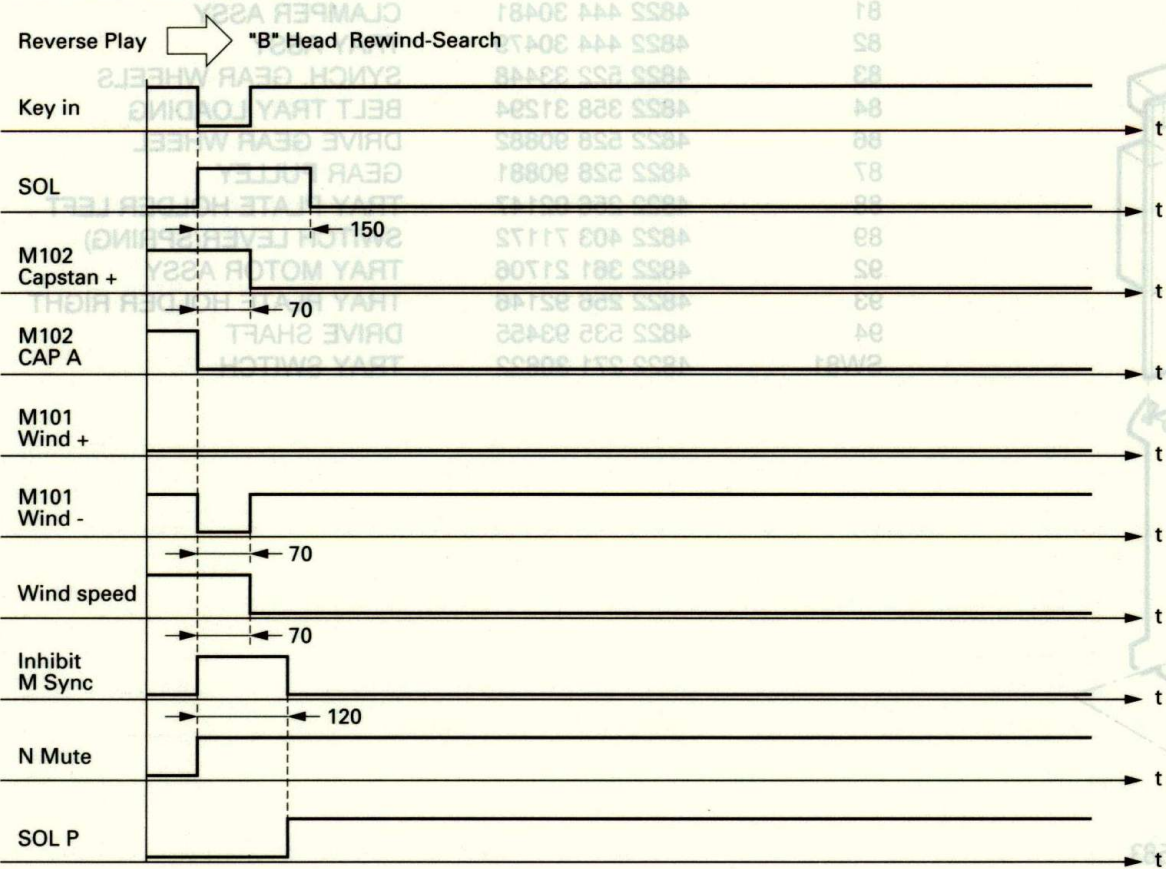
Reverse Play → "B" Head Fast Forward-Search



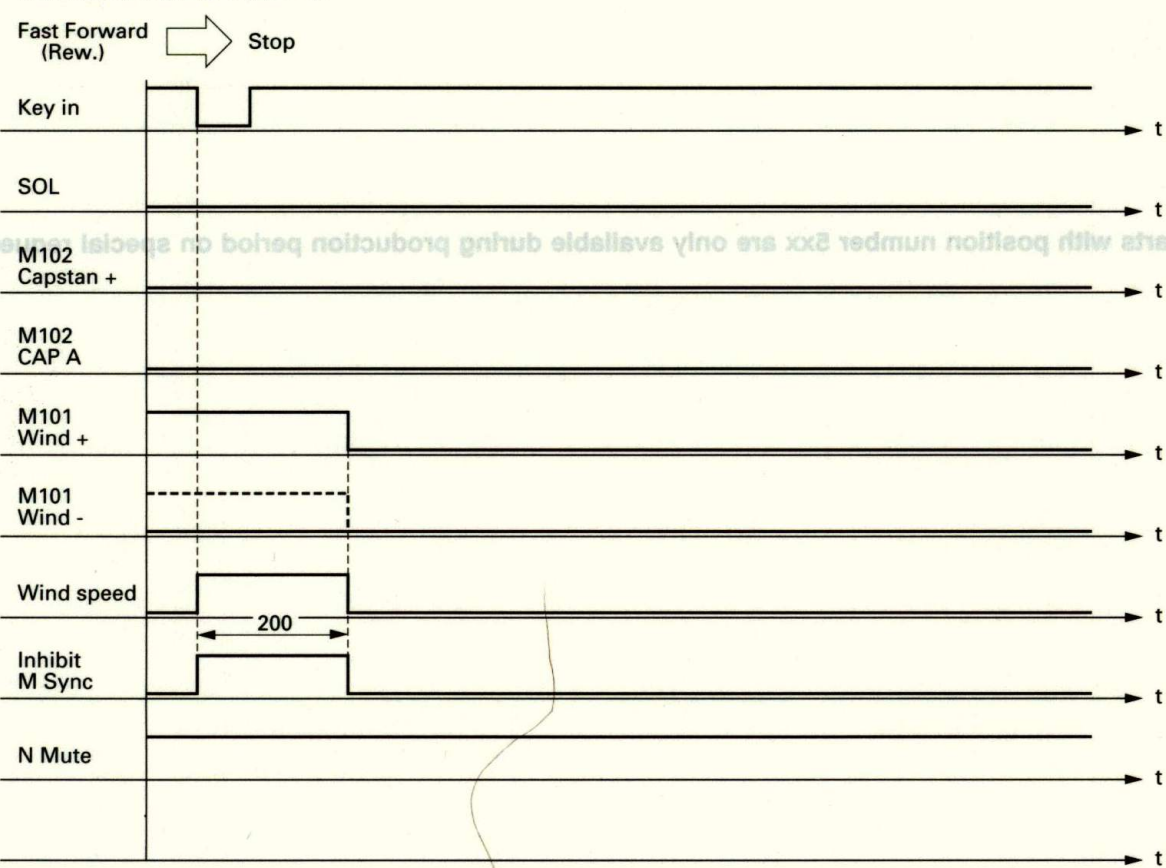
* Please change 250ms to 400ms at double speed PLAY mode.

SBP0184

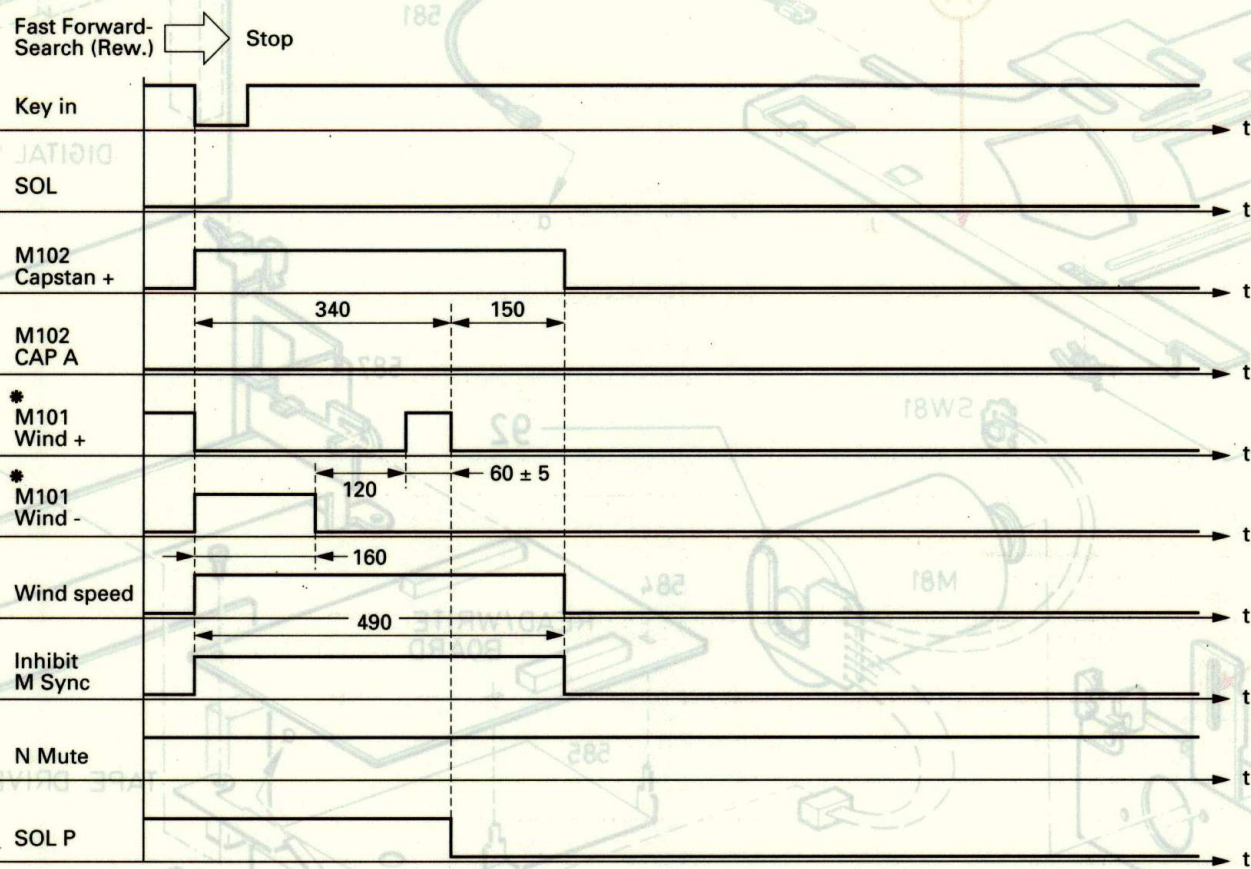
TAPE DECK TIMING CHART 11



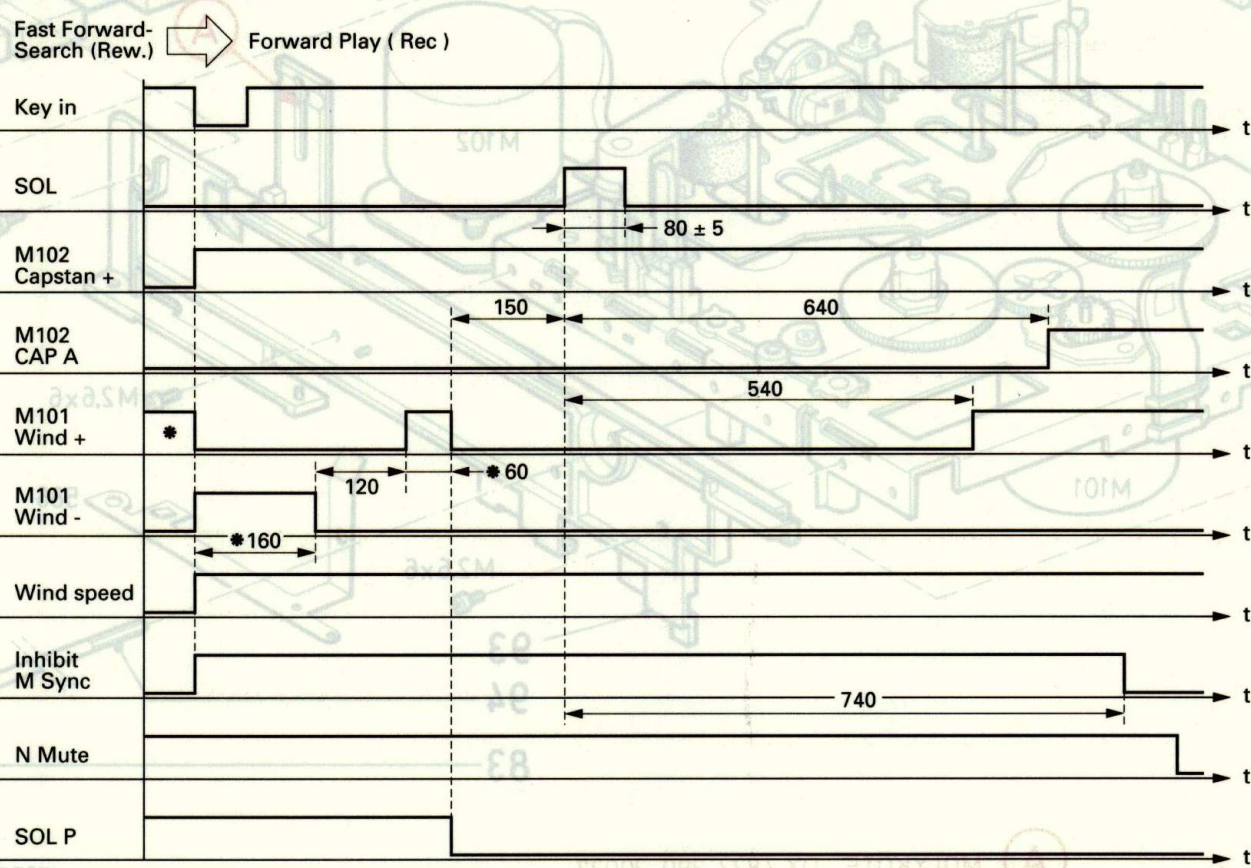
TAPE DECK TIMING CHART 12



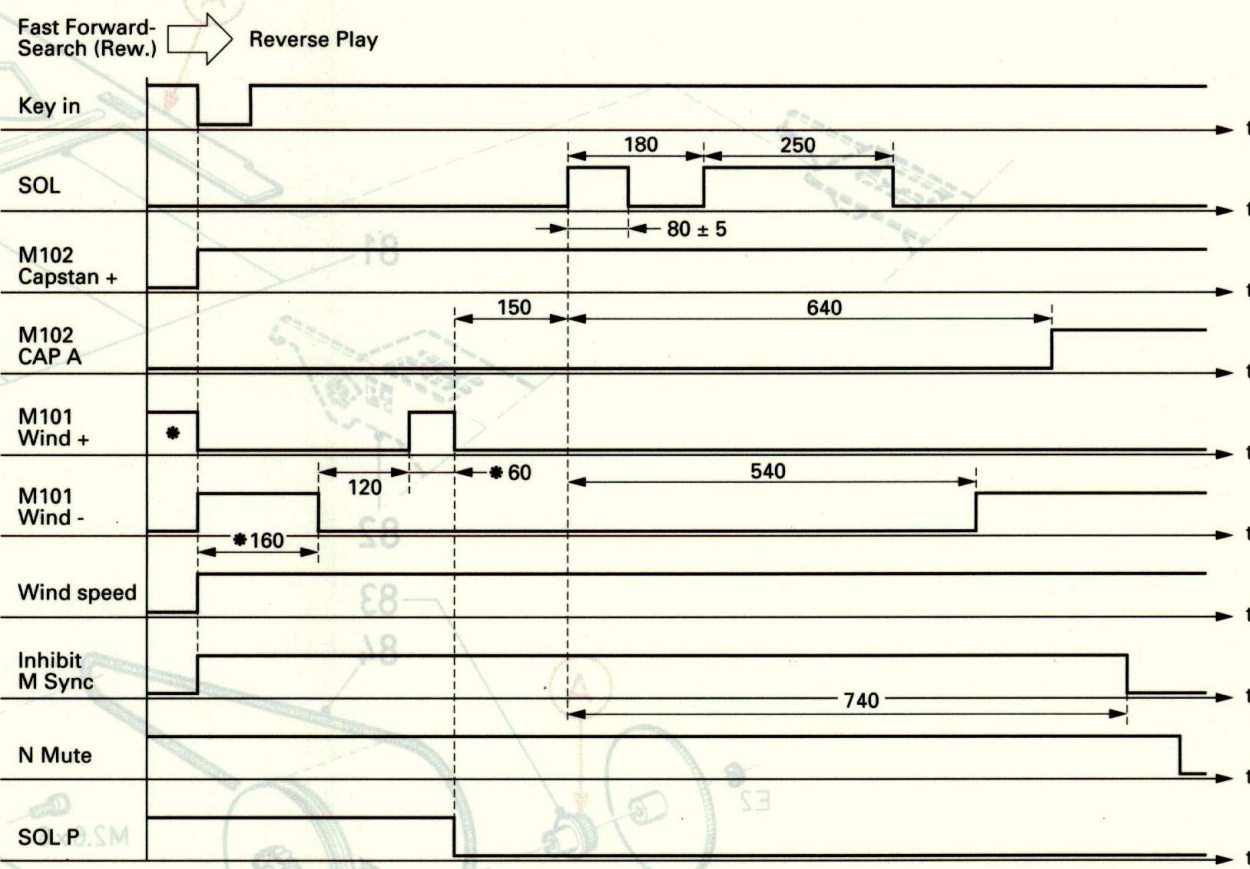
TAPE DECK TIMING CHART 13



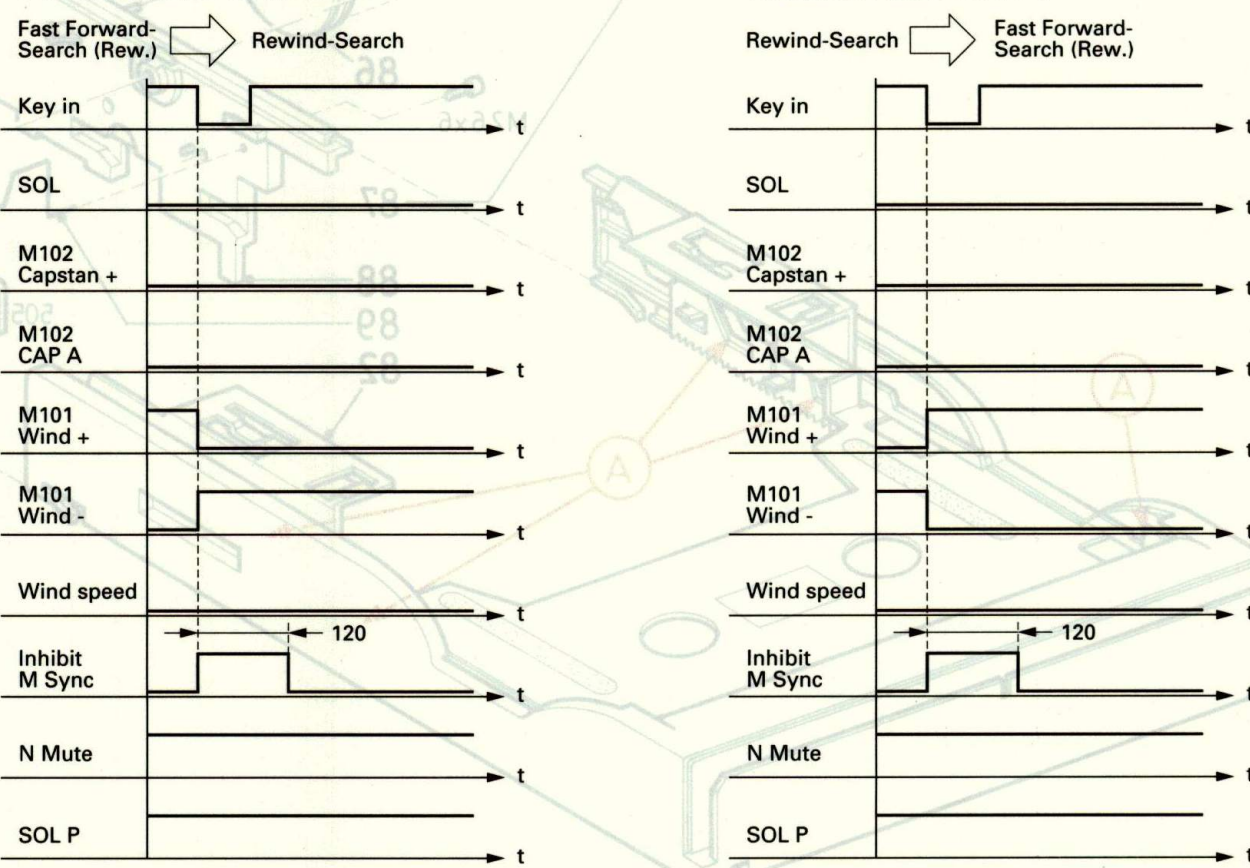
TAPE DECK TIMING CHART 14



TAPE DECK TIMING CHART 15



TAPE DECK TIMING CHART 16

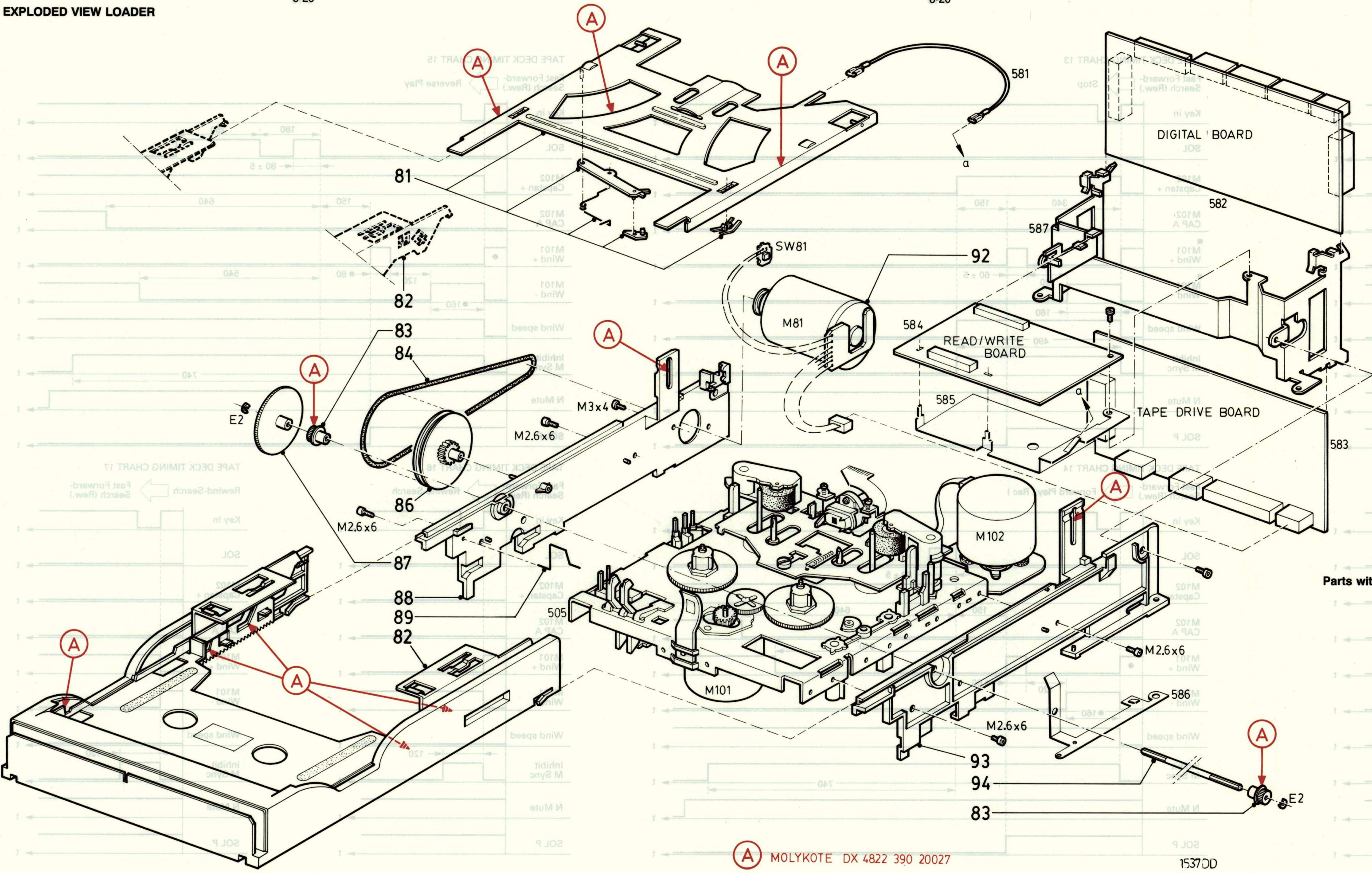


EXPLODED VIEW LOADER

8-20

8-20

8-20



MECHANICAL PARTS LIST LOADER

81	4822 444 30481	CLAMPER ASSY
82	4822 444 30479	TRAY ASSY
83	4822 522 33448	SYNCH. GEAR WHEELS
84	4822 358 31294	BELT TRAY LOADING
86	4822 528 90882	DRIVE GEAR WHEEL
87	4822 528 90881	GEAR PULLEY
88	4822 256 92147	TRAY PLATE HOLDER LEFT
89	4822 403 71172	SWITCH LEVER(SPRING)
92	4822 361 21706	TRAY MOTOR ASSY
93	4822 256 92146	TRAY PLATE HOLDER RIGHT
94	4822 535 93455	DRIVE SHAFT
SW81	4822 271 30822	TRAY SWITCH

Parts with position number 5xx are only available during production period on special request.

A MOLYKOTE DX 4822 390 20027

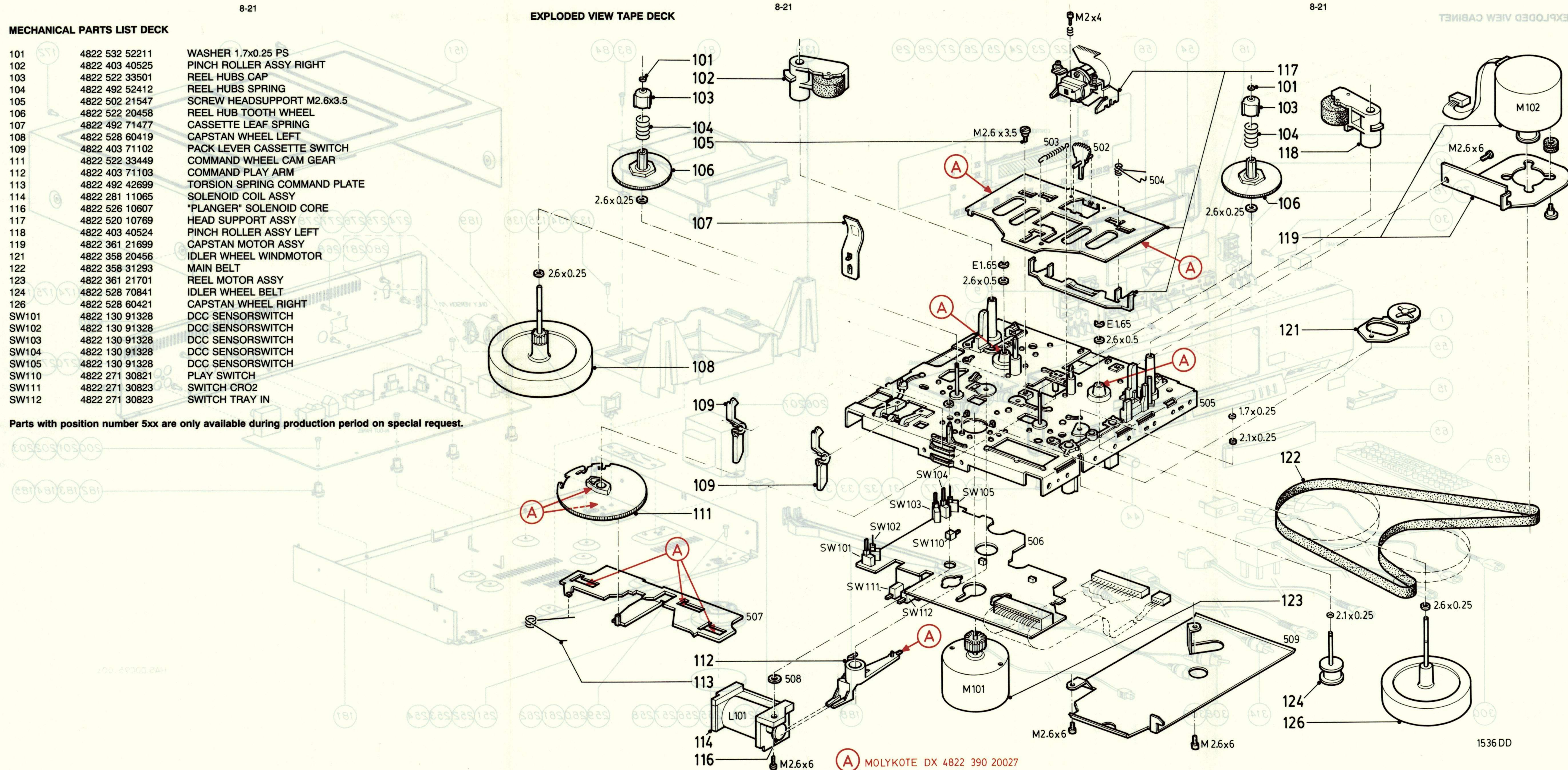
153700

MECHANICAL PARTS LIST DECK

101	4822 532 52211	WASHER 1.7x0.25 PS
102	4822 403 40525	PINCH ROLLER ASSY RIGHT
103	4822 522 33501	REEL HUBS CAP
104	4822 492 52412	REEL HUBS SPRING
105	4822 502 21547	SCREW HEADSUPPORT M2.6x3.5
106	4822 522 20458	REEL HUB TOOTH WHEEL
107	4822 492 71477	CASSETTE LEAF SPRING
108	4822 528 60419	CAPSTAN WHEEL LEFT
109	4822 403 71102	PACK LEVER CASSETTE SWITCH
111	4822 522 33449	COMMAND WHEEL CAM GEAR
112	4822 403 71103	COMMAND PLAY ARM
113	4822 492 42699	TORSION SPRING COMMAND PLATE
114	4822 281 11065	SOLENOID COIL ASSY
116	4822 526 10607	"PLANGER" SOLENOID CORE
117	4822 520 10769	HEAD SUPPORT ASSY
118	4822 403 40524	PINCH ROLLER ASSY LEFT
119	4822 361 21699	CAPSTAN MOTOR ASSY
121	4822 358 20456	IDLER WHEEL WINDMOTOR
122	4822 358 31293	MAIN BELT
123	4822 361 21701	REEL MOTOR ASSY
124	4822 528 70841	IDLER WHEEL BELT
126	4822 528 60421	CAPSTAN WHEEL RIGHT
SW101	4822 130 91328	DCC SENSORSWITCH
SW102	4822 130 91328	DCC SENSORSWITCH
SW103	4822 130 91328	DCC SENSORSWITCH
SW104	4822 130 91328	DCC SENSORSWITCH
SW105	4822 130 91328	DCC SENSORSWITCH
SW110	4822 271 30821	PLAY SWITCH
SW111	4822 271 30823	SWITCH CRO2
SW112	4822 271 30823	SWITCH TRAY IN

Parts with position number 5xx are only available during production period on special request.

EXPLODED VIEW TAPE DECK



A MOLYKOTE DX 4822 390 20027



MECHANICAL PARTS LIST CABINET

1	4822 443 41373	FRONT ASSY
8	4822 410 63215	BUTTON UNIT NOSE
9	4822 410 63213	BUTTON UNIT DISPLAY
10	4822 410 63214	BUTTON UNIT
15	4822 450 61831	IR WINDOW
16	4822 450 62235	WINDOW
44	4822 410 61705	VOLUME KNOB
51	4822 380 20425	REFLECTOR
54	4822 460 20809	SET IN PART ASSY
65	4822 443 41374	TRAY FRONT ASSY
151	4822 444 60975	COVER
188	4822 535 93475	POWER ROD
251	4822 462 41888	FOOT
252	4822 462 41888	FOOT
253	4822 462 41888	FOOT
254	4822 462 41888	FOOT
255	4822 462 41887	FELT
256	4822 462 41887	FELT
257	4822 462 41887	FELT
258	4822 462 41887	FELT
282▲	4822 256 30402	FUSE CARRIER(01S)
300▲	4822 321 10831	MAINS CORD /00S/01S
302▲	4822 321 10883	MAINS CORD /17S
308	4822 321 22832	SBC1072 CINCH CABLE
309	4822 321 22832	SBC1072 CINCH CABLE
314	4822 321 61452	CINCH CABLE DIGITAL IN
365	4822 218 10543	REMOTE CONTROLE RD6842/00

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

Screws

Self-tapping screw for metal M3x6:	75,76,77
Self-tapping screw for metal with washer 3x6:	171,172,173,174,175,176 274,275,276,277,278
Self-tapping screw for metal M3x10:	206,207
Self-tapping screw for metal M3x15:	133,134,135,136 200,201,202,203
Self-tapping screw for plastic 3x10:	22,23,24,25,26,27,28,29 30 31,32,33,34 78,79 259,260,261,262 268 269,270,271,272

ELECTRICAL PARTS LIST

10-1

IN/OUT PANEL					
MISCELLANEOUS					
▲	4822 492 63076	CLAMPING SPRING	2203	4822 124 41525	100µF 20% 25V
1005	4822 267 31823	ANALOG IN/OUT SOCKET	2204	4822 126 11585	22nF +80-20% 25V
1100	4822 267 31448	DIGITAL IN/OUT SOCKET	2205	4822 124 41525	100µF 20% 25V
1102	4822 212 23837	OPTICAL INPUT	2206	4822 126 11585	22nF +80-20% 25V
1350	4822 267 31759	ESI BUS SOCKET	2207	4822 124 41525	100µF 20% 25V
1905	▲ 4822 071 58001	RADIAL FUSE T 800mA	2208	4822 122 33849	150pF 10%Y5P 50V
1906	▲ 4822 071 58001	RADIAL FUSE T 800mA	2209	4822 122 33195	100pF 10% 50V
1920	▲ 4822 071 52002	RADIAL FUSE T 2A	2210	4822 122 33849	150pF 10%Y5P 50V
1971	▲ 4822 265 31015	MAINS INLET	2211	4822 122 33195	100pF 10% 50V
1974	▲ 4822 276 13277	MAINS SWITCH	2250	4822 126 12882	100nF +80-20% 50V
1975	▲ 4822 071 51601	FUSE T 160mA (/00S)	2251	4822 126 12882	100nF +80-20% 50V
1975	▲ 4822 252 51171	FUSE T 400mA (/17S)	2255	4822 126 11585	22nF +80-20% 25V
CAPACITORS			2350	4822 122 10466	220pF 10% 50V
2004	4822 122 33197	1nF 10% 50V	2351	4822 122 10459	560pF 10% 50V
2005	4822 126 11585	22nF +80-20% 25V	2352	4822 122 10466	220pF 10% 50V
2006	4822 124 41525	100µF 20% 25V	2353	4822 122 10459	560pF 10% 50V
2007	4822 121 51288	100pF 630V	2380	4822 124 40433	47µF 20% 25V
2012	4822 122 33197	1nF 10% 50V	2381	4822 126 11714	4,7nF 20%
2013	4822 121 51288	100pF 630V	2900	4822 126 11585	22nF +80-20% 25V
2014	4822 126 11585	22nF +80-20% 25V	2901	4822 126 11585	22nF +80-20% 25V
2015	4822 124 41525	100µF 20% 25V	2902	4822 126 11585	22nF +80-20% 25V
2016	4822 124 22339	100µF 16V	2903	4822 126 11585	22nF +80-20% 25V
2017	4822 124 22339	100µF 16V	2904	4822 124 42119	4700µF 20% 25V
2050	4822 122 33195	100pF 10% 50V	2908	4822 124 40242	1µF 20% 63V
2051	4822 124 80865	10µF 20% 25V	2909	4822 124 41525	100µF 20% 25V
2052	4822 122 33195	100pF 10% 50V	2910	4822 124 40248	10µF 20% 63V
2053	4822 126 11585	22nF +80-20% 25V	2911	4822 126 11585	22nF +80-20% 25V
2054	4822 124 41525	100µF 20% 25V	2912	4822 126 11585	22nF +80-20% 25V
2055	4822 122 33195	100pF 10% 50V	2920	4822 126 11585	22nF +80-20% 25V
2056	4822 124 80865	10µF 20% 25V	2921	4822 126 11585	22nF +80-20% 25V
2057	4822 122 33195	100pF 10% 50V	2922	4822 126 11585	22nF +80-20% 25V
2058	4822 126 11585	22nF +80-20% 25V	2923	4822 126 11585	22nF +80-20% 25V
2059	4822 124 41525	100µF 20% 25V	2924	4822 124 80153	1000µF 20% 16V
2060	4822 124 40246	4,7µF 20% 63V	2925	4822 126 11585	22nF +80-20% 25V
2061	4822 124 40246	4,7µF 20% 63V	2926	4822 126 11585	22nF +80-20% 25V
2062	4822 124 22339	100µF 16V	2927	4822 124 40433	47µF 20% 25V
2063	4822 124 22339	100µF 16V	2934	4822 124 40433	47µF 20% 25V
2064	4822 124 22339	100µF 16V	2935	4822 126 11585	22nF +80-20% 25V
2065	4822 124 22339	100µF 16V	2940	4822 126 11585	22nF +80-20% 25V
2100	4822 124 40248	10µF 20% 63V	2941	4822 126 11585	22nF +80-20% 25V
2102	4822 126 12785	47nF TUB 50V	2942	4822 126 11585	22nF +80-20% 25V
2103	4822 126 12785	47nF TUB 50V	2943	5322 124 22094	220µF 20% 50V
2104	4822 122 33849	150pF 10%Y5P 50V	2944	4822 124 40242	1µF 20% 63V
2105	4822 126 12882	100nF +80-20% 50V	2945	4822 124 40246	4,7µF 20% 63V
2106	4822 126 12882	100nF +80-20% 50V	2946	4822 126 11585	22nF +80-20% 25V
2200	4822 126 11585	22nF +80-20% 25V	2970	4822 126 12224	4,7nF 20% 125V
2201	4822 124 41525	100µF 20% 25V	2980	4822 121 42408	220nF 5% 63V
2202	4822 126 11585	22nF +80-20% 25V	2981	4822 121 51252	470nF 5% 63V
			2982	4822 124 41334	470µF 20% 35V
			2983	4822 124 80865	10µF 20% 25V

10-2

RESISTORS			3361	4822 116 52175	100Ω 5% 0,5W
2906	4822 050 11002	1k 1% 0,4W	3362	4822 116 52175	100Ω 5% 0,5W
2907	4822 116 52249	1k8 5% 0,5W	3363	4822 116 52175	100Ω 5% 0,5W
3005	4822 050 25602	5k6 1% 0,6W	3364	4822 116 52256	2k2 5% 0,5W
3006	4822 050 21003	10k 1% 0,6W	3365	4822 116 52233	10k 5% 0,5W
3007	4822 050 27502	7k5 1% 0,6W	3366	4822 116 52256	2k2 5% 0,5W
3008	4822 050 28202	8k2 1% 0,6W	3367	4822 116 52256	2k2 5% 0,5W
3009	▲ 4822 052 10478	4Ω7 5% 0,33W	3368	4822 116 52257	22k 5% 0,5W
3015	4822 050 25602	5k6 1% 0,6W	3369	4822 116 52283	4k7 5% 0,5W
3016	4822 050 27502	7k5 1% 0,6W	3371	4822 116 52258	220k 5% 0,5W
3017	4822 050 21003	10k 1% 0,6W	3380	4822 116 52175	100Ω 5% 0,5W
3018	4822 050 28202	8k2 1% 0,6W	3381	4822 116 52284	47k 5% 0,5W
3019	▲ 4822 052 10478	4Ω7 5% 0,33W	3382	4822 116 52251	18k 5% 0,5W
3050	4822 116 52234	100Ω 5% 0,5W	3383	4822 116 52284	47k 5% 0,5W
3051	4822 116 52234	100Ω 5% 0,5W	3384	4822 116 52176	10Ω 5% 0,5W
3052	4822 050 11002	1k 1% 0,4W	3385	4822 116 52284	47k 5% 0,5W
3053	4822 050 11002	1k 1% 0,4W	3386	4822 116 52284	47k 5% 0,5W
3054	▲ 4822 052 10478	4Ω7 5% 0,33W	3900	4822 116 52215	220Ω 5% 0,5W
3055	4822 116 52234	100Ω 5% 0,5W	3901	4822 116 52215	220Ω 5% 0,5W
3056	4822 116 52234	100Ω 5% 0,5W	3902	4822 116 52244	15k 5% 0,5W
3057	4822 050 11002	1k 1% 0,4W	3903	4822 050 21501	150Ω 1% 0,6W
3058	4822 050 11002	1k 1% 0,4W	3904	4822 116 52269	3k3 5% 0,5W
3059	▲ 4822 052 10478	4Ω7 5% 0,33W	3905	4822 050 21501	150Ω 1% 0,6W
3103	4822 116 52199	68Ω 5% 0,5W	3906	4822 116 52244	15k 5% 0,5W
3104	4822 116 52201	75Ω 5% 0,5W	3907	4822 116 52244	15k 5% 0,5W
3105	▲ 4822 052 10478	4Ω7 5% 0,33W	3960	4822 116 52235	1M 5% 0,5W
3200	4822 116 52217	270Ω 5% 0,5W	3961	4822 116 52284	47k 5% 0,5W
3201	4822 116 52217	270Ω 5% 0,5W	3962	4822 116 52256	2k2 5% 0,5W
3202	4822 116 52289	5k6 5% 0,5W	3963	4822 116 52226	560Ω 5% 0,5W
3203	4822 116 52264	27k 5% 0,5W	3964	4822 116 52233	10k 5% 0,5W
3204	4822 116 52289	5k6 5% 0,5W	3965	4822 116 52291	56k 5% 0,5W
3205	4822 116 52264	27k 5% 0,5W	3966	4822 116 52283	4k7 5% 0,5W
3206	4822 116 52289	5k6 5% 0,5W	3967	4822 050 11002	1k 1% 0,4W
3207	4822 116 52264	27k 5% 0,5W	3968	4822 116 52284	47k 5% 0,5W
3208	4822 116 52289	5k6 5% 0,5W	3969	4822 116 52251	18k 5% 0,5W
3209	4822 116 52264	27k 5% 0,5W	3980	4822 116 52284	47k 5% 0,5W
3210	4822 116 52289	5k6 5% 0,5W	3981	4822 116 52283	4k7 5% 0,5W
3211	4822 116 52289	5k6 5% 0,5W	3982	4822 050 24705	4M7 1% 0,6W
3212	▲ 4822 052 10478	4Ω7 5% 0,33W	3983	4822 116 52245	150k 5% 0,5W
3213	▲ 4822 052 10478	4Ω7 5% 0,33W	3984	4822 116 52276	3k9 5% 0,5W
3250	4822 116 52269	3k3 5% 0,5W	3985	4822 116 52233	10k 5% 0,5W
3251	4822 116 52269	3k3 5% 0,5W	3986	4822 116 52234	100Ω 5% 0,5W
3255	▲ 4822 052 10478	4Ω7 5% 0,33W	3987	4822 116 52284	47k 5% 0,5W
3350	4822 116 52175	100Ω 5% 0,5W	3988	4822 050 11002	1k 1% 0,4W
3351	4822 116 52256	2k2 5% 0,5W	3989	4822 116 52244	15k 5% 0,5W
3352	4822 116 52175	100Ω 5% 0,5W			
3353	4822 116 52175	100Ω 5% 0,5W			
3354	4822 116 52233	10k 5% 0,5W			
3355	4822 116 52257	22k 5% 0,5W			
3356	4822 116 52256	2k2 5% 0,5W			
3357	4822 116 52256	2k2 5% 0,5W			
3358	4822 116 52283	4k7 5% 0,5W			
3360	4822 116 52258	220k 5% 0,5W			

COILS			7901	4822 130 63427	BD534
5001	4822 157 51192	220mH	7902	4822 130 63558	BD533
5020	4822 157 51192	220mH	7920	4822 209 12335	L4941
5100	4822 157 70601	DIGITAL TRAFO	7921	4822 209 72042	MC78L05ACP
5970 ▲	4822 214 51841	MAINS FILTER			
DIODES			7940	4822 209 33379	M5293L
6200	4822 130 34278	BZX79-C6V8	7960	4822 130 40937	BC548B
6201	4822 130 34278	BZX79-C6V8	7961	4822 130 40995	BD434
6350	4822 130 30621	1N4148	7962	4822 130 44197	BC558B
6351	4822 130 30621	1N4148	7963	4822 130 44197	BC558B
6355	4822 130 30621	1N4148			
6356	4822 130 30621	1N4148	7964	4822 130 40937	BC548B
6357	4822 130 30621	1N4148	7980	4822 130 40937	BC548B
6358	4822 130 30621	1N4148	7981	4822 130 40937	BC548B
6380	4822 130 31983	BAT85	7982	4822 130 40937	BC548B
6900	4822 130 80291	1N4002GP	7983	4822 130 44197	BC558B
			7984	4822 130 40937	BC548B
FRONT PANEL					
6901	4822 130 80291	1N4002GP	MISCELLANEOUS		
6902	4822 130 80291	1N4002GP		4822 256 92194	FTD HOLDER
6903	4822 130 80291	1N4002GP	1808	5322 242 73697	RESONATOR 8MHz
6905	4822 130 30621	1N4148	1810	4822 276 13213	TACT SWITCH
6920	4822 130 80291	1N4002GP	1811	4822 276 13213	TACT SWITCH
			1812	4822 276 13213	TACT SWITCH
6921	4822 130 80291	1N4002GP	1814	4822 276 13213	TACT SWITCH
6922	4822 130 80291	1N4002GP	1815	4822 276 13213	TACT SWITCH
6923	4822 130 80291	1N4002GP	1816	4822 276 13213	TACT SWITCH
6940	4822 130 80291	1N4002GP	1817	4822 276 13213	TACT SWITCH
6941	4822 130 34173	BZX79-C5V6	1818	4822 276 13213	TACT SWITCH
			1819	4822 276 13213	TACT SWITCH
6942	5322 130 34563	BZX79-C2V7	1820	4822 276 13213	TACT SWITCH
6980	4822 130 80291	1N4002GP	1821	4822 276 13213	TACT SWITCH
6981	4822 130 80291	1N4002GP	1822	4822 276 13213	TACT SWITCH
6982	4822 130 30621	1N4148	1823	4822 276 13213	TACT SWITCH
6983	4822 130 30621	1N4148			
6984	4822 130 30621	1N4148	1824	4822 276 13213	TACT SWITCH
6985	4822 130 31981	BZX79-C3V9	1825	4822 276 13213	TACT SWITCH
6986	4822 130 30621	1N4148	1826	4822 276 13213	TACT SWITCH
			1827	4822 276 13213	TACT SWITCH
			1828	4822 276 13213	TACT SWITCH
TRANSISTORS & I.C.'s					
7001	4822 209 83163	LM833N	CAPACITORS		
7050	4822 209 83163	LM833N	2180	4822 122 33175	2,2nF 20% 50V
7200	4822 209 60002	74HC4052N	2181	4822 122 33175	2,2nF 20% 50V
7201	5322 209 12377	MC34082P	2182	4822 121 51412	560nF 5% 63V
7250	5322 209 11323	74HCU04P	2183	5322 121 42661	330nF 5% 63V
			2184	4822 122 33175	2,2nF 20% 50V
7350	5322 130 44779	BC338-40			
7352	4822 130 44197	BC558B	2185	4822 122 33175	2,2nF 20% 50V
7353	5322 130 44779	BC338-40	2186	5322 121 42661	330nF 5% 63V
7354	5322 130 44779	BC338-40	2187	4822 121 51412	560nF 5% 63V
7355	5322 130 44779	BC338-40	2188	4822 122 33809	22nF 20% 50V
			2189	4822 122 33809	22nF 20% 50V
7357	4822 130 44197	BC558B			
7358	5322 130 44779	BC338-40			
7359	5322 130 44779	BC338-40			
7380	4822 130 44197	BC558B			
7381	4822 130 40937	BC548B			
7900	4822 209 72868	M5230L			

2190	4822 124 23624	47µF 20% 16V	3458	4822 117 11145	4k7 1% 0,1W
2191	4822 124 23624	47µF 20% 16V	3459	4822 117 11146	6k2 1% 0,1W
2194	4822 124 23624	47µF 20% 16V	3460	4822 117 11144	3k9 1% 0,1W
2195	4822 124 23624	47µF 20% 16V			
2454	4822 124 23624	47µF 20% 16V	3461	4822 117 11139	1k5 1% 0,1W
			3462	4822 117 11141	1k8 1% 0,1W
2455	4822 122 33809	22nF 20% 50V	3463	4822 117 11143	3k 1% 0,1W
2456	4822 124 23624	47µF 20% 16V	3464	4822 117 11142	2k4 1% 0,1W
2457	4822 122 33809	22nF 20% 50V	3465	4822 117 11145	4k7 1% 0,1W
2458	5322 122 33538	150pF 2% 63V			
2459	5322 122 32531	100pF 5% 50V	3466	4822 117 11146	6k2 1% 0,1W
			3467	4822 117 11144	3k9 1% 0,1W
2460	5322 122 33538	150pF 2% 63V	3468 ▲	4822 052 10109	10Ω 5% 0,33W
2461	5322 122 32531	100pF 5% 50V	3469 ▲	4822 052 10109	10Ω 5% 0,33W
2800	4822 124 23624	47µF 20% 16V	3470	4822 117 10354	22k 1% 0,1W
2801	4822 122 33809	22nF 20% 50V			
2802	5322 124 21643	22µF 20% 40V	3471	4822 117 10354	22k 1% 0,1W
			3472	4822 117 10833	10k 1% 0,1W
2803	4822 122 33809	22nF 20% 50V	3473	4822 117 10833	10k 1% 0,1W
2804	4822 122 33496	100nF 10% 63V	3800 ▲	4822 052 10108	1Ω 5% 0,33W
2805	4822 122 33496	100nF 10% 63V	3801 ▲	4822 052 10108	1Ω 5% 0,33W
2810	4822 122 33809	22nF 20% 50V			
2850	5322 122 34123	1nF 10% 50V	3802 ▲	4822 052 10108	1Ω 5% 0,33W
			3803 ▲	4822 052 10478	4Ω7 5% 0,33W
RESISTORS			3806	4822 051 20331	330Ω 5% 0,1W
3170	4822 051 10102	1k 2% 0,25W	3807	4822 051 20472	4k7 5% 0,1W
3171	4822 051 10102	1k 2% 0,25W	3810	4822 116 90877	4k7X8 5%
3172	4822 051 20122	1k2 5% 0,1W			
3173	4822 051 20122	1k2 5% 0,1W	3811	4822 116 90877	4k7X8 5%
3174	4822 051 20224	220k 5% 0,1W	3812	4822 051 20223	22k 5% 0,1W
			3813	4822 117 10833	10k 1% 0,1W
3175	4822 051 20472	4k7 5% 0,1W	3815	4822 117 10833	10k 1% 0,1W
3176	4822 117 10833	10k 1% 0,1W	3816	4822 051 20472	4k7 5% 0,1W
3180	4822 051 20123	12k 5% 0,1W			
3181	4822 051 20561	560Ω 5% 0,1W	3817	4822 117 10833	10k 1% 0,1W
3182	4822 051 20273	27k 5% 0,1W	3819	4822 117 10834	47k 1% 0,1W
			3820	4822 117 10833	10k 1% 0,1W
3183	4822 051 20123	12k 5% 0,1W	3821	4822 117 10833	10k 1% 0,1W
3184	4822 051 20561	560Ω 5% 0,1W	3822	4822 117 10833	10k 1% 0,1W
3185	4822 117 10833	10k 1% 0,1W			
3186	4822 051 20471	470Ω 5% 0,1W	3830	4822 051 20472	4k7 5% 0,1W
3187	4822 051 20222	2k2 5% 0,1W	3831	4822 051 20472	4k7 5% 0,1W
			3832	4822 051 20823	82k 5% 0,1W
3188	4822 051 20472	4k7 5% 0,1W	3833	4822 051 20472	4k7 5% 0,1W
3189	4822 117 10834	47k 1% 0,1W	3834	4822 051 20472	4k7 5% 0,1W
3190	4822 051 10102	1k 2% 0,25W			
3191	4822 117 10834	47k 1% 0,1W	3835	4822 051 20823	82k 5% 0,1W
3192	4822 117 10834	47k 1% 0,1W			
			COILS		
3193	4822 051 20471	470Ω 5% 0,1W	5800	4822 157 51462	10µH
3194	4822 050 21001	100Ω 1% 0,6W	5801	4822 157 51462	10µH
3195	4822 050 21001	100Ω 1% 0,6W	5802	4822 157 51462	10µH
3196	4822 051 10102	1k 2% 0,25W	5803	4822 157 51462	10µH
3198	4822 100 11676	10k 30%LIN 0.2W			
			DIODES, TRANSISTORS & IC'S		
3199	4822 100 11676	10k 30%LIN 0.2W	6180	4822 130 34278	BZX79-C6V8
3200	4822 051 20123	12k 5% 0,1W	6181	4822 130 34278	BZX79-C6V8
3201	4822 051 20123	12k 5% 0,1W	6802	4822 130 82978	LTL-16kPE
3454	4822 117 11139	1k5 1% 0,1W	7170	5322 130 41982	BC848B
3455	4822 117 11141	1k8 1% 0,1W	7171	5322 130 41982	BC848B
3456	4822 117 11143	3k 1% 0,1W			
3457	4822 117 11142	2k4 1% 0,1W	7172	5322 130 41983	BC858B

7180 4822 209 31134 CXA1331S			RESISTORS		
7181 5322 130 41983 BC858B			3400	4822 116 52175	100Ω 5% 0,5W
7182 5322 130 41982 BC848B			3401	4822 116 52175	100Ω 5% 0,5W
7183 5322 130 41983 BC858B			3402	4822 101 21199	10kX2 20% 0,025W
7451 5322 209 61483 74HC4051D			3403	4822 051 20123	12k 5% 0,1W
7452 5322 209 61483 74HC4051D			3404	4822 051 20123	12k 5% 0,1W
7455 4822 209 83274 NJM4560D			3405 4822 051 20273 27k 5% 0,1W		
7800 4822 209 33369 TMP87CP70F			3406 4822 051 20273 27k 5% 0,1W		
7998 4822 209 33381 TMP87PP71F			3407 4822 051 20121 120Ω 5% 0,1W		
7801 4822 209 33378 MN1382-S			3408 4822 051 20121 120Ω 5% 0,1W		
7805 4822 130 91349 DCC951			3409 ▲ 4822 052 10109 10Ω 5% 0,33W		
7806 5322 209 63719 ST24C02A			3410 ▲ 4822 052 10109 10Ω 5% 0,33W		
7811 5322 130 41983 BC858B			3415 4822 051 20472 4k7 5% 0,1W		
7830 5322 130 41983 BC858B			3417 4822 117 10833 10k 1% 0,1W		
7831 5322 130 41983 BC858B			3418 4822 051 10102 1k 2% 0,25W		
I.R. PANEL			3419 ▲ 4822 052 10109 10Ω 5% 0,33W		
2820 4822 122 33809 22nF 20% 50V			3420 ▲ 4822 052 10109 10Ω 5% 0,33W		
7820 4822 214 52009 GP1U58XP			3421 4822 051 20333 33k 5% 0,1W		
MICRO & HEADPHONE PANEL			3422 4822 051 20471 470Ω 5% 0,1W		
MISCELLANEOUS			3423 4822 051 20123 12k 5% 0,1W		
1410 4822 267 31453 MICROPHONE SOCKET			3424 4822 051 20823 82k 5% 0,1W		
1415 4822 267 31479 HEADPHONE SOCKET			3425 4822 051 20472 4k7 5% 0,1W		
CAPACITORS			3426 ▲ 4822 052 10109 10Ω 5% 0,33W		
2400 4822 124 41525 100μF 20% 25V			3430 4822 051 20122 1k2 5% 0,1W		
2401 4822 124 41525 100μF 20% 25V			3431 4822 051 20122 1k2 5% 0,1W		
2402 4822 122 33809 22nF 20% 50V			4000 4822 051 10008 0Ω 5% 0,25W		
2403 4822 122 33809 22nF 20% 50V			DIODES, TRANSISTORS & I.C.'s		
2404 5322 122 34123 1nF 10% 50V			6415 4822 130 30621 1N4148		
2415 5322 122 34123 1nF 10% 50V			6416 4822 130 30621 1N4148		
2416 4822 124 40248 10μF 20% 63V			7400 4822 209 82362 NJM4556D		
2417 5322 122 31866 6,8nF 10% 63V			7415 4822 209 83163 LM833N		
2418 5322 122 32654 22nF 10% 63V			7430 4822 130 42696 BC818-25		
2419 5322 122 32654 22nF 10% 63V			7431 4822 130 42696 BC818-25		
2420 5322 122 32659 33pF 5% 50V			MAINS VOLTAGE		
2421 4822 122 33496 100nF 10% 63V			1976 4822 070 31601 FUSE T 160mA/(01)		
2422 4822 122 33496 100nF 10% 63V			5001 ▲ 4822 146 31355 MAINS TRAFO/(00)		
2423 4822 122 33496 100nF 10% 63V			5001 ▲ 4822 146 31396 MAINS TRAFO/(01)		
2424 4822 124 22339 100μF 16V			5001 ▲ 4822 277 21366 VOLTAGE SELECTOR/(01)		
2428 4822 124 41525 100μF 20% 25V			5001 ▲ 4822 444 60655 COVER/(01)		
2429 4822 124 41525 100μF 20% 25V			5001 ▲ 4822 146 31397 MAINS TRAFO/(17)		
2430 5322 122 34123 1nF 10% 50V					
2431 5322 122 34123 1nF 10% 50V					

READ/WRITE PANEL			2865 4822 122 33761 22pF 5% 50V		
CAPACITORS			2866 4822 122 33761 22pF 5% 50V		
2800	4822 126 13193	4,7nF 10% 63V	2870 4822 122 32627 2,7nF 10% 50V		
2801	5322 126 11583	10nF 10% 63V	2871 4822 122 32627 2,7nF 10% 50V		
2802	5322 126 11583	10nF 10% 63V	2872 4822 126 10525 8,2nF 10% 63V		
2803	5322 126 11583	10nF 10% 63V	2873 4822 126 10525 8,2nF 10% 63V		
2804	5322 126 11583	10nF 10% 63V	2874 4822 126 13189 1μF 80-20%16V		
2805	5322 126 11583	10nF 10% 63V	2880 4822 124 80867 10μF 20% 16V		
2806	5322 126 11583	10nF 10% 63V	2881 4822 126 13196 100nF 10% 25V		
2807	5322 126 11583	10nF 10% 63V	2882 4822 126 13196 100nF 10% 25V		
2808	5322 126 11583	10nF 10% 63V	2883 4822 124 80867 10μF 20% 16V		
2809	4822 126 13189	1μF 80-20%16V	2884 5322 126 11579 3,3nF 10% 63V		
2810	4822 126 13189	1μF 80-20%16V	2885 5322 126 11579 3,3nF 10% 63V		
2811	4822 126 13189	1μF 80-20%16V	2886 5322 126 11579 3,3nF 10% 63V		
2812	4822 126 13189	1μF 80-20%16V	2887 5322 126 11579 3,3nF 10% 63V		
2813	4822 126 13189	1μF 80-20%16V	2888 5322 126 11579 3,3nF 10% 63V		
2814	4822 126 13189	1μF 80-20%16V	2889 5322 126 11579 3,3nF 10% 63V		
2815	4822 126 13189	1μF 80-20%16V	2890 5322 126 11579 3,3nF 10% 63V		
2816	4822 126 13189	1μF 80-20%16V	2891 5322 126 11579 3,3nF 10% 63V		
2817	4822 126 13189	1μF 80-20%16V	2892 5322 126 11579 3,3nF 10% 63V		
2818	4822 126 13189	1μF 80-20%16V	2910 4822 124 80867 10μF 20% 16V		
2819	4822 124 80867	10μF 20% 16V	2911 5322 126 11583 10nF 10% 63V		
2820	5322 126 11583	10nF 10% 63V	2912 4822 126 13196 100nF 10% 25V		
2821	5322 126 11583	10nF 10% 63V	2914 4822 124 80867 10μF 20% 16V		
2822	4822 126 13196	100nF 10% 25V	2999 4822 126 13196 100nF 10% 25V		
2823	4822 126 13196	100nF 10% 25V	RESISTORS		
2824	4822 124 80867	10μF 20% 16V	3000 4822 051 30223 22k 5% 0,062W		
2825	4822 124 80867	10μF 20% 16V	3800 4822 051 30561 560Ω 5% 0,062W		
2826	4822 124 80867	10μF 20% 16V	3801 4822 051 30561 560Ω 5% 0,062W		
2827	4822 124 80867	10μF 20% 16V	3802 4822 051 30561 560Ω 5% 0,062W		
2828	5322 126 11583	10nF 10% 63V	3803 4822 051 30561 560Ω 5% 0,062W		
2829	5322 126 11583	10nF 10% 63V	3804 4822 051 30561 560Ω 5% 0,062W		
2830	5322 126 11583	10nF 10% 63V	3805 4822 051 30561 560Ω 5% 0,062W		
2835	5322 126 11578	1nF 10% 63V	3806 4822 051 30561 560Ω 5% 0,062W		
2836	4822 126 13192	2,2nF 10% 63V	3807 4822 051 30561 560Ω 5% 0,062W		
2837	4822 126 13192	2,2nF 10% 63V	3808 4822 051 30561 560Ω 5% 0,062W		
2838	4822 126 13196	100nF 10% 25V	3809 4822 051 30681 680Ω 5% 0,062W		
2839	4822 122 33775	39pF 5% 50V	3810 4822 051 30222 2k2 5% 0,062W		
2840	4822 126 13196	100nF 10% 25V	3811 4822 051 30473 47k 5% 0,062W		
2841	4822 126 13196	100nF 10% 25V	3812 4822 051 30104 100k 5% 0,062W		
2842	4822 124 80867	10μF 20% 16V	3813 4822 051 30103 10k 5% 0,062W		
2843	4822 124 80867	10μF 20% 16V	3814 4822 051 30104 100k 5% 0,062W		
2844	4822 126 13191	470pF 10% 63V	3815 4822 051 30472 4k7 5% 0,062W		
2845	4822 126 13191	470pF 10% 63V	3816 4822 051 30562 5k6 5% 0,062W		
2846	4822 126 13189	1μF 80-20%16V	3817 4822 051 30393 39k 5% 0,062W		
2847	5322 126 11583	10nF 10% 63V	3818 4822 051 30479 47Ω 5% 0,062W		
2860	4822 126 13189	1μF 80-20%16V	3819 4822 051 30104 100k 5% 0,062W		
2861	4822 122 32627	2,7nF 10% 50V	3830 4822 051 30103 10k 5% 0,062W		
2862	4822 122 32627	2,7nF 10% 50V	3831 4822 051 30103 10k 5% 0,062W		
2863	4822 126 10525	8,2nF 10% 63V	3832 4822 051 30103 10k 5% 0,062W		
2864	4822 126 10525	8,2nF 10% 63V	3835 4822 051 30229 22Ω 5% 0,062W		
			3836 4822 051 30229 22Ω 5% 0,062W		

3837	4822 051 30279	27Ω	5% 0,062W	3893	4822 051 30822	8k2	5% 0,062W
3838	4822 051 30101	100Ω	5% 0,062W	3894	4822 051 30333	33k	5% 0,062W
3839	4822 051 30152	1k5	5% 0,062W	3895	4822 051 30562	5k6	5% 0,062W
3840	4822 051 30561	560Ω	5% 0,062W	3896	4822 051 30104	100k	5% 0,062W
				3897	4822 051 30229	22Ω	5% 0,062W
3841	4822 051 30182	1k8	5% 0,062W				
3842	4822 051 30331	330Ω	5% 0,062W	3898	4822 051 30229	22Ω	5% 0,062W
3843	4822 051 30331	330Ω	5% 0,062W	3899	4822 051 30229	22Ω	5% 0,062W
3844	4822 051 30109	10Ω	5% 0,062W	3900	4822 051 30229	22Ω	5% 0,062W
3845	4822 051 30109	10Ω	5% 0,062W	3901	4822 051 30229	22Ω	5% 0,062W
				3902	4822 051 30229	22Ω	5% 0,062W
3846	4822 051 30109	10Ω	5% 0,062W				
3847	4822 051 30109	10Ω	5% 0,062W	3903	4822 051 30229	22Ω	5% 0,062W
3848	4822 051 30152	1k5	5% 0,062W	3904	4822 051 30229	22Ω	5% 0,062W
3849	4822 051 30152	1k5	5% 0,062W	3905	4822 051 30229	22Ω	5% 0,062W
3850	4822 051 30274	270k	5% 0,062W	3906	4822 051 30472	4k7	5% 0,062W
				3907	4822 051 30271	270Ω	5% 0,062W
3851	4822 051 30333	33k	5% 0,062W				
3852	4822 051 30102	1k	5% 0,062W	3908	4822 051 30561	560Ω	5% 0,062W
3853	4822 051 30183	18k	5% 0,062W	3909	4822 051 30561	560Ω	5% 0,062W
3854	4822 051 30333	33k	5% 0,062W	3910	4822 051 30688	6Ω8	5% 0,062W
3855	4822 051 30102	1k	5% 0,062W	3911	4822 051 30222	2k2	5% 0,062W
				3912	4822 051 30392	3k9	5% 0,062W
3856	4822 051 30183	18k	5% 0,062W				
3857	4822 051 30274	270k	5% 0,062W	3913	4822 051 30102	1k	5% 0,062W
3858	4822 051 30152	1k5	5% 0,062W	3914	4822 051 30821	820Ω	5% 0,062W
3859	4822 051 30152	1k5	5% 0,062W	3915	4822 051 30688	6Ω8	5% 0,062W
3860	4822 116 83933	15k	1% 0,1W				
				COILS			
3861	4822 051 30473	47k	5% 0,062W	5835	4822 157 70298	15μH	
3862	4822 117 11154	1k	1% 0,1W	5836	4822 157 70298	15μH	
3863	4822 117 10356	39k	1% 0,2W	5837	4822 157 70298	15μH	
3864	4822 117 11137	68k	1% 0,1W	5860	4822 157 63622	0.47μH	
3865	4822 117 11147	270k	1% 0,1W				
				DIODES, TRANSISTORS & I.C.'s			
3866	4822 117 11148	56k	1% 0,1W	6800	5322 130 31928	BAS16	
3868	4822 117 10965	18k	1% 0,1W	7800	4822 130 42675	BC818	
3869	4822 117 11149	82k	1% 0,1W	7801	5322 130 41982	BC848B	
3870	4822 116 83933	15k	1% 0,1W	7802	4822 130 42675	BC818	
3871	4822 051 30473	47k	5% 0,062W	7803	5322 130 41982	BC848B	
3872	4822 117 11154	1k	1% 0,1W	7804	5322 130 41982	BC848B	
3873	4822 117 10356	39k	1% 0,2W	7805	4822 209 31995	TDA1317	
3874	4822 117 11137	68k	1% 0,1W	7830	5322 130 41982	BC848B	
3875	4822 117 11147	270k	1% 0,1W	7835	5322 130 41982	BC848B	
3876	4822 117 11148	56k	1% 0,1W	7860	4822 209 33392	MC34074AD	
3878	4822 117 10965	18k	1% 0,1W	7861	5322 130 41982	BC848B	
3879	4822 117 11149	82k	1% 0,1W	7871	5322 130 41982	BC848B	
3880	4822 051 30222	2k2	5% 0,062W	7882	4822 209 33396	TDA1319T/N1	
3881	4822 051 30399	39Ω	5% 0,062W	7883	4822 130 42615	BC817-40	
3882	4822 051 30399	39Ω	5% 0,062W	7900	4822 209 33411	MC78L05ACD	
3883	4822 051 30399	39Ω	5% 0,062W				
3884	4822 051 30399	39Ω	5% 0,062W	7910	5322 130 41982	BC848B	
3885	4822 051 30122	1k2	5% 0,062W	7911	5322 130 41979	BC808	
3886	4822 051 30159	15Ω	5% 0,062W	7912	5322 130 41982	BC848B	
3887	4822 051 20228	2Ω2	5% 0,1W				
3888	4822 101 11318	POTMETER 22k	LIN				
3889	4822 051 30103	10k	5% 0,062W				
3890	4822 051 30473	47k	5% 0,062W				
3891	4822 051 30221	220Ω	5% 0,062W				
3892	4822 051 30683	68k	5% 0,062W				

DIGITAL PANEL				2706	4822 122 33809	22nF 20% 50V
RESONATORS				2707	4822 122 33809	22nF 20% 50V
1610	4822 242 81359	CRYSTAL 22.579 MHz		2760	4822 122 33809	22nF 20% 50V
1611	4822 242 81358	CRYSTAL 24.576 MHz		2762	4822 122 31746	1000pF 2% 63V
1700	4822 242 81739	RESONATOR 4.91 MHz		2763	4822 122 31746	1000pF 2% 63V
				2764	4822 124 80867	10μF 20% 16V
CAPACITORS						
2600	4822 122 33496	100nF 10% 63V		2766	4822 122 33809	22nF 20% 50V
2601	4822 122 33809	22nF 20% 50V		2767	4822 124 80866	47μF 20% 6,3V
2602	4822 122 33809	22nF 20% 50V		2768	4822 122 33809	22nF 20% 50V
2603	4822 122 33809	22nF 20% 50V		2780	4822 124 80866	47μF 20% 6,3V
2605	4822 122 33809	22nF 20% 50V		2781	4822 122 33809	22nF 20% 50V
2606	4822 122 33809	22nF 20% 50V		2782	4822 122 33809	22nF 20% 50V
2607	4822 122 33809	22nF 20% 50V		2783	4822 124 80866	47μF 20% 6,3V
2610	4822 122 33809	22nF 20% 50V		2786	4822 122 33809	22nF 20% 50V
2611	4822 122 33809	22nF 20% 50V		2787	4822 124 80866	47μF 20% 6,3V
2612	4822 122 33809	22nF 20% 50V		2788	4822 122 33809	22nF 20% 50V
2613	5322 122 32659	33pF 5% 50V		2790	4822 122 33809	22nF 20% 50V
2614	5322 122 32659	33pF 5% 50V		2791	4822 124 80866	47μF 20% 6,3V
2615	5322 122 32659	33pF 5% 50V		2792	4822 124 80866	47μF 20% 6,3V
2616	5322 122 32659	33pF 5% 50V		2793	4822 122 33809	22nF 20% 50V
2617	5322 122 32448	10pF 5% 50V		2795	4822 122 33809	22nF 20% 50V
2618	5322 122 32448	10pF 5% 50V		2796	4822 122 33809	22nF 20% 50V
2620	5322 122 34123	1nF 10% 50V		2797	4822 122 33809	22nF 20% 50V
2621	5322 122 32659	33pF 5% 50V		2798	4822 122 33809	22nF 20% 50V
2622	4822 122 31981	33nF +0,5pF 50V		2799	4822 122 33809	22nF 20% 50V
2623	4822 122 33809	22nF 20% 50V		2800	4822 122 33809	22nF 20% 50V
				RESISTORS		
2624	4822 122 33496	100nF 10% 63V		3600	4822 051 20333	33k 5% 0,1W
2625	4822 122 33809	22nF 20% 50V		3601 ▲	4822 117 11151	1Ω 5%
2626	4822 122 33809	22nF 20% 50V		3610	4822 051 20105	1M 5% 0,1W
2627	4822 122 33064	330nF 80% 25V		3611	4822 051 10102	1k 2% 0,25W
2630	4822 122 33809	22nF 20% 50V		3612	4822 051 20105	1M 5% 0,1W
2631	4822 122 33515	82pF 5% 63V		3613	4822 051 10102	1k 2% 0,25W
2632	4822 122 33496	100nF 10% 63V		3615 ▲	4822 117 11151	1Ω 5%
2633	4822 122 33496	100nF 10% 63V		3619	4822 051 20479	47Ω 5% 0,1W
2634	5322 122 32531	100pF 5% 50V		3620	4822 051 20101	100Ω 5% 0,1W
2635	4822 122 33809	22nF 20% 50V		3621	4822 051 20271	270Ω 5% 0,1W
2636	4822 122 33809	22nF 20% 50V		3622 ▲	4822 117 11151	1Ω 5%
2637	4822 122 33809	22nF 20% 50V		3623	4822 051 20221	220Ω 5% 0,1W
2638	4822 122 33809	22nF 20% 50V		3624	4822 051 20221	220Ω 5% 0,1W
2639	4822 122 33809	22nF 20% 50V		3625	4822 051 20221	220Ω 5% 0,1W
2640	4822 122 33809	22nF 20% 50V		3630	4822 051 20121	120Ω 5% 0,1W
2641	4822 122 33809	22nF 20% 50V		3631	4822 051 20221	220Ω 5% 0,1W
2642	4822 124 80866	47μF 20% 6,3V		3632	4822 117 10834	47k 1% 0,1W
2643	4822 122 32927	220nF +80-20% 50V		3633	4822 117 10833	10k 1% 0,1W
2644	4822 122 33809	22nF 20% 50V		3634	4822 051 20472	4k7 5% 0,1W
2645	4822 122 33496	100nF 10% 63V		3635 ▲	4822 117 11151	1Ω 5%
2700	5322 122 32531	100pF 5% 50V		3636 ▲	4822 117 11151	1Ω 5%
2701	4822 122 33809	22nF 20% 50V		3637	4822 051 20471	470Ω 5% 0,1W
2702	4822 122 33809	22nF 20% 50V		3638	4822 051 20471	470Ω 5% 0,1W
2705	4822 122 33809	22nF 20% 50V		3639	4822 051 20331	330Ω 5% 0,1W
				3640	4822 051 20331	330Ω 5% 0,1W

3641	4822 051 20122	1k2 5% 0,1W	7633	4822 130 61207	BC848
3642	4822 051 20471	470Ω 5% 0,1W	7700	4822 209 33388	UPD78P056GC
3700	4822 117 10833	10k 1% 0,1W	7701	4822 209 30739	MC74HC04AD
3701	4822 117 10833	10k 1% 0,1W	7702	4822 209 33389	MC74HC32AD
3702	4822 117 10833	10k 1% 0,1W	7730	4822 209 60792	74HC4053D
3703	4822 117 10833	10k 1% 0,1W	7760	4822 209 33403	TDA1305T/N2
3704	4822 117 10833	10k 1% 0,1W	7780	4822 209 33397	SAA7366T
3705 ▲	4822 117 11151	1Ω 5%	TAPE/DRIVE PANEL		
3706 ▲	4822 117 11151	1Ω 5%	RESONATORS		
3707	4822 051 20105	1M 5% 0,1W	1500	4822 242 81738	RESONATOR 11.059 MHz
3708	4822 051 20472	4k7 5% 0,1W	CAPACITORS		
3709	4822 117 10833	10k 1% 0,1W	2500	4822 122 33809	22nF 20% 50V
3710	4822 117 10833	10k 1% 0,1W	2503	4822 124 40433	47μF 20% 25V
3711	4822 117 10833	10k 1% 0,1W	2504	5322 122 32531	100pF 5% 50V
3712	4822 117 10833	10k 1% 0,1W	2521	4822 122 33809	22nF 20% 50V
3761 ▲	4822 117 11151	1Ω 5%	2522	4822 124 40433	47μF 20% 25V
3762 ▲	4822 117 11152	4Ω7 5%	2525	4822 124 40243	1,5μF 20% 63V
3764	4822 117 10833	10k 1% 0,1W	2545	4822 126 13189	1μF 80-20%16V
3765	4822 051 10102	1k 2% 0,25W	2550	4822 122 33809	22nF 20% 50V
3780	4822 051 20624	620k 5% 0,1W	2570	4822 124 40433	47μF 20% 25V
3781	4822 117 10833	10k 1% 0,1W	2571	4822 122 33809	22nF 20% 50V
3782	4822 051 20334	330k 5% 0,1W	2572	4822 122 33216	270pF 5% 50V
3783	4822 051 20472	4k7 5% 0,1W	2573	4822 124 40433	47μF 20% 25V
3784	4822 051 20472	4k7 5% 0,1W	2574	4822 122 33809	22nF 20% 50V
3785	4822 117 10833	10k 1% 0,1W	2575	4822 124 40433	47μF 20% 25V
3786	4822 051 20333	33k 5% 0,1W	2576	4822 122 33809	22nF 20% 50V
3787 ▲	4822 117 11152	4Ω7 5%	2580	4822 122 33809	22nF 20% 50V
3788	4822 051 20271	270Ω 5% 0,1W	2581	4822 122 33809	22nF 20% 50V
3789	4822 051 20271	270Ω 5% 0,1W	2599	4822 122 33496	100nF 10% 63V
3790	4822 051 20562	5k6 5% 0,1W	RESISTORS		
3791	4822 051 20562	5k6 5% 0,1W	3500	4822 051 20105	1M 5% 0,1W
COILS			3501 ▲	4822 052 10478	4Ω7 5% 0,33W
5600	4822 157 71267	COIL	3502	4822 117 11158	62k 5% 0,1W
5601	4822 157 71267	COIL	3503	4822 051 10102	1k 2% 0,25W
5602	4822 157 71267	COIL	3504	4822 117 11158	62k 5% 0,1W
5603	4822 157 71267	COIL	3506	4822 117 10833	10k 1% 0,1W
5630	4822 157 70298	15μH	3507	4822 117 10833	10k 1% 0,1W
5700	4822 157 71267	COIL	3508	4822 051 20224	220k 5% 0,1W
5701	4822 157 71267	COIL	3509	4822 051 10102	1k 2% 0,25W
5702	4822 157 71267	COIL	3513	4822 051 20224	220k 5% 0,1W
DIODES, TRANSISTORS & I.C.'s			3525	4822 051 20333	33k 5% 0,1W
6600	5322 130 31928	BAS16	3526 ▲	4822 052 10229	22Ω 5% 0,33W
6630	4822 130 80654	BZX84-B3V9	3527	4822 051 20104	100k 5% 0,1W
6631	5322 130 31928	BAS16	3528	4822 051 20823	82k 5% 0,1W
6632	4822 130 80654	BZX84-B3V9	3530	4822 051 20472	4k7 5% 0,1W
7600	4822 209 33401	SAA2013H	3531	4822 117 10833	10k 1% 0,1W
7610	4822 209 33399	SAA2003H	3532	4822 117 11139	1k5 1% 0,1W
7620	4822 209 33395	TDA1315H/N1			
7630	4822 209 33402	SAA2023GP			
7631	4822 209 33387	MN41C4256ASJ			
7632	4822 130 61207	BC848			

3533	4822 051 20122	1k2 5% 0,1W	7505	4822 209 31615	LM324A
3534	4822 051 10102	1k 2% 0,25W	7510	4822 209 70672	LM358N
3535	4822 051 20472	4k7 5% 0,1W	7520	5322 130 42136	BC848C
3536	4822 117 10834	47k 1% 0,1W	7522	5322 130 42136	BC848C
3537	4822 051 20133	13k 5% 0,1W	7523	5322 130 42136	BC848C
3538	4822 051 20133	13k 5% 0,1W	7524	5322 130 42012	BC858
3539	4822 051 20472	4k7 5% 0,1W	7540	5322 130 42136	BC848C
3540	4822 051 20472	4k7 5% 0,1W	7541	5322 130 42136	BC848C
3541	4822 117 10834	47k 1% 0,1W	7542	4822 130 42655	BC808-40
3542	4822 100 12137	3k3 30% 0,1W	7551	5322 130 42136	BC848C
3543	4822 100 12137	3k3 30% 0,1W	7552	5322 130 42012	BC858
3544	4822 051 20822	8k2 5% 0,1W	7560	5322 130 42136	BC848C
3545	4822 051 20472	4k7 5% 0,1W	7561	5322 130 42136	BC848C
3546	4822 117 10833	10k 1% 0,1W	7562	4822 130 41344	BC337-40
3547	4822 116 83933	15k 1% 0,1W	7563	5322 130 42136	BC848C
3548	4822 117 11384	2k7 1% 0,1W	7564	4822 130 42616	BC818-40
3550	4822 051 20331	330Ω 5% 0,1W	7570	4822 209 60059	MC34063A
3551	4822 051 10102	1k 2% 0,25W	7580	4822 209 33391	BA6246N
3552	4822 117 11383	12k 1% 0,1W	7581	4822 209 33393	MC74HC4066D
3553	4822 117 11148	56k 1% 0,1W			
3554	4822 051 20221	220Ω 5% 0,1W			
3555 ▲	4822 052 10229	22Ω 5% 0,33W			
3556	4822 051 20471	470Ω 5% 0,1W			
3557	4822 051 10102	1k 2% 0,25W			
3558	4822 051 20153	15k 5% 0,1W			
3560	4822 051 20472	4k7 5% 0,1W			
3561	4822 117 10833	10k 1% 0,1W			
3562	4822 051 20331	330Ω 5% 0,1W			
3563	4822 051 10102	1k 2% 0,25W			
3564	4822 051 20271	270Ω 5% 0,1W			
3565	4822 050 22709	27Ω 1% 0,6W			
3566	4822 050 22709	27Ω 1% 0,6W			
3567	4822 051 20472	4k7 5% 0,1W			
3568	4822 117 10833	10k 1% 0,1W			
3569	4822 051 20331	330Ω 5% 0,1W			
3570 ▲	4822 117 11152	4Ω7 5%			
3571 ▲	4822 117 11151	1Ω 5%			
3572 ▲	4822 117 11151	1Ω 5%			
3573	4822 051 20181	180Ω 5% 0,1W			
3574	4822 051 10102	1k 2% 0,25W			
3580	4822 116 30468	220Ω 5% 0,21W			
3581	4822 116 30468	220Ω 5% 0,21W			
COILS					
5570	4822 157 71152	150μH			
DIODES, TRANSISTORS & I.C.'s					
6550	4822 130 81755	BZX84-B4V3			
6560	5322 130 31928	BAS16			
6561	5322 130 31928	BAS16			
6570	4822 130 32911	BYV10-30			
6571	4822 130 83665	BZX84-B16			
7500	4822 209 33394	P87C52EBPN			