

Service
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Service Manual

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PHILIPS

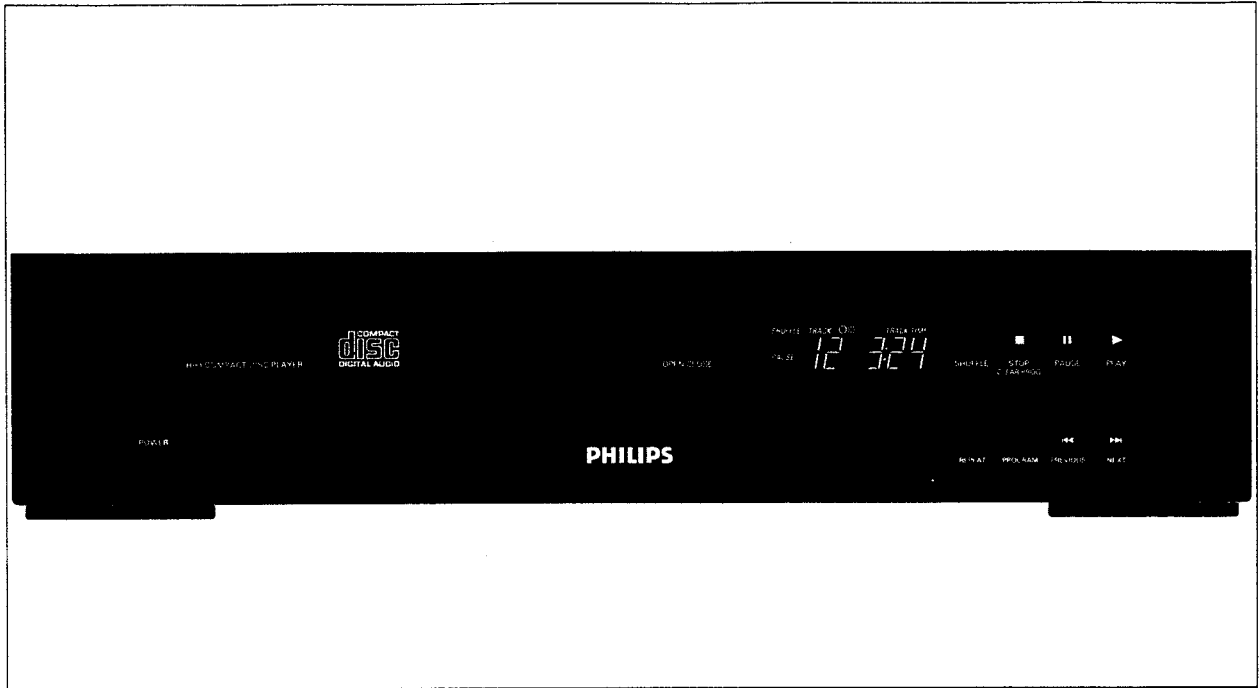
SPECIFICATION**GENERAL**

Mains voltage	: 230-240V for /05 120V for /17 Switchable: 110V-127V / 220-240V for /01
Mains frequency	: 50Hz - 60Hz
Power consumption	standby : 5W min. operated : 12W max.
Dimension (W x D x H)	: 460 x 399 x 187mm
Weight	: 2.5kg

Remote Control (CD165 only)**Internal : RC5 (CD163 only)****Line output**

Number of channels	: 2
Output voltage	: 2 Vrms \pm 3dB
Output resistance	: 1 k Ω
Dynamic range (-60dB)	: min. 85dB from 20Hz - 20kHz
Channel separation	: min. 82dB from 20Hz - 20kHz
Signal to noise ratio	: min. 90dB from 20Hz - 20kHz
Total harmonic distortion + noise	: min. 80dB from 20Hz - 20kHz
Frequency response	: \pm 0.55dB from 20Hz - 20kHz
Phase linearity	: \pm 7.0° from 20Hz - 16kHz
Automatic switched de-emphasis with time constants 15/50 μ s	
Outband attenuation	: min. 35dB above 40kHz

INSTALLATION



ACCESSORIES (for CD165 only)

- Remote control;
- Batteries (2x AAA size) for remote control.

Certain versions of this player are equipped with a voltage selector, which enables you to set the player to the correct mains voltage yourself.

POWER SUPPLY SETTING

- Check that the type plate on the bottom of your player indicates the correct power voltage.
- If your power supply voltage is different, consult your dealer or our Service Organisation.

CONNECTIONS

1 ANALOG OUT

For the connecting cable to the amplifier or HiFi system.

- Insert a red plug into the 'R' jack and the other plug into the 'L' jack of the CD or AUX input of your amplifier or HiFi system.
- You can also use the TUNER or TAPE IN connection, but *never* the PHONO input!

2 RC5-IN (Remote In) (for CD163 only)

For connecting up the equipment when you are incorporating the player in the amplifier or HiFi system with RC5.

3 Voltage selector (not all versions)

See 'Power supply setting'.

Important notes for users in the U.K.:

Mains Plug

This apparatus is fitted with an approved moulded 13 Amp plug.

To change a fuse in this type of plug proceed as follows:

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

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place. If the mains plug contains a fuse, this should have a value of 5 A. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 A.

Note:

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

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live. (L)

As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

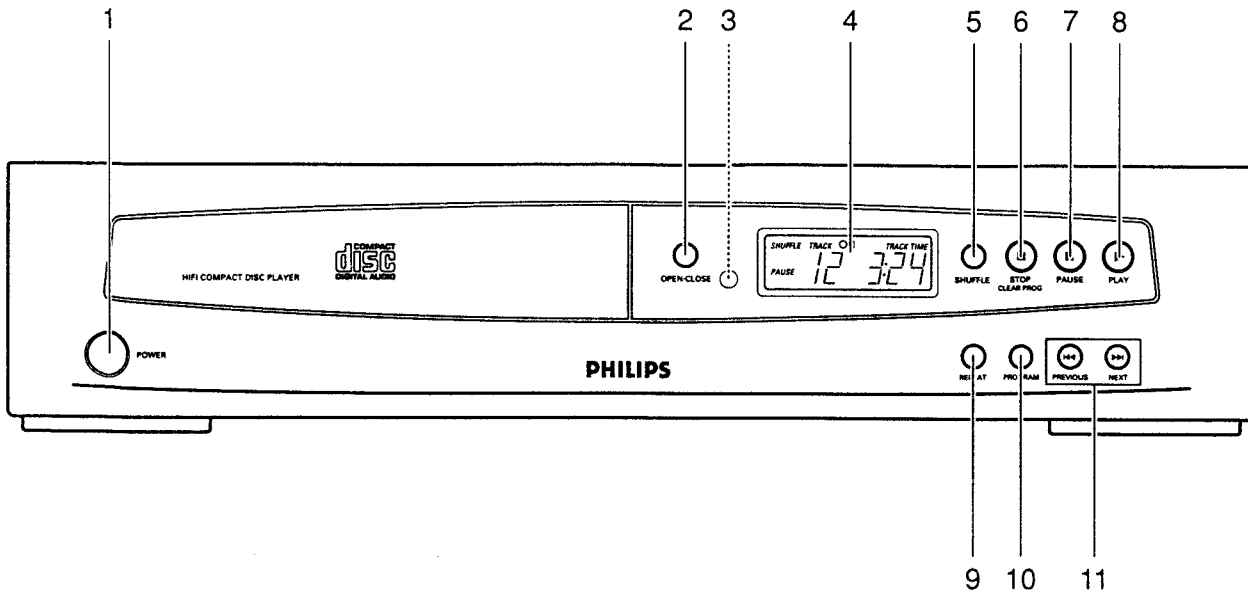
- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or ⚡) or coloured green (or green and yellow).

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

Copyright:

Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

FUNCTIONAL OVERVIEW

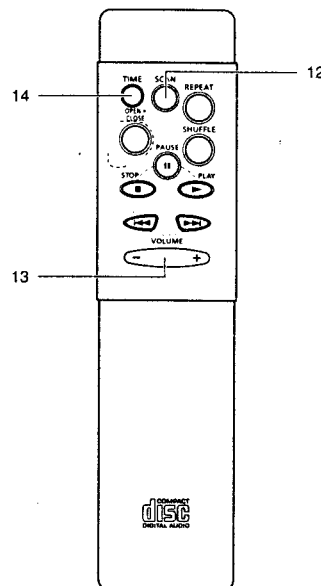


OPERATION

- 1 **POWER ON STANDBY** – Switching on and off.
- 2 **OPEN-CLOSE** – Opening and closing the CD compartment. The compartment also closes when the front is pressed briefly.
- 3 **Infra Red SENSOR. (for CD165 only)**
Receives the signals from the remote control.
- 4 **Display** – Informs you about the functioning of the player.
- 5 **SHUFFLE** – PLAY in random order.
- 6 **STOP/CP**
 - Stopping play
 - Erasing a programme (CP = Clear Programme).
- 7 **PAUSE** – Interrupting play.
- 8 **PLAY**
 - Starting play
- 9 **REPEAT** – Repeating play.
- 10 **PROGRAM** – Opening and closing the memory when compiling a programme.
- 11 **◀ and ▶**
 - Selecting another track during play.
 - Selecting a track to start play with.
 - Fast search to a particular passage during play.

REMOTE CONTROL (for CD165 only)

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



FUNCTIONAL OVERVIEW

DISPLAY



PAUSE – Lights up when play is interrupted.

TRACK – Indicates:

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

TRACK TIME – Indicates the elapsed playing time of the track being played.

TOTAL TIME – Indicates the total playing time of the CD.

REPEAT – Lights up when you repeat a CD or a programme.

REPEAT 1 – Lights up when you repeat a track.

SHUFFLE – Lights up when the tracks are played in random order.

PROGR – Flashes when a programme is being compiled.

- Lights up when a programme is being played.

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

DISPLAY MESSAGES

R E R D

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

N O D I S C

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

N O A U D I O D I S C

Lights up when insert a non audio CD (CD-ROM, CD-or CDV).

W R O N G T R A C K

Lights up if you select a non-existent track number.

G O T O P L A Y

Lights up if you try to activate a function for which you must first start play.

G O T O S T O P

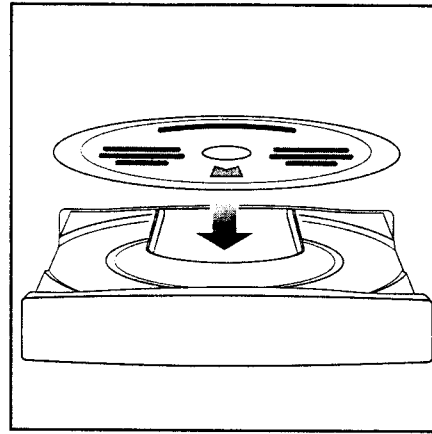
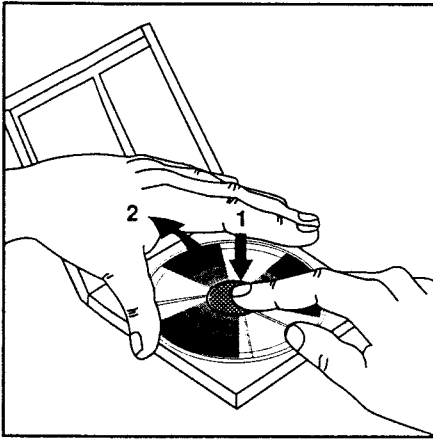
Lights up if you try to activate a function for which you must first stop play.

PLAY

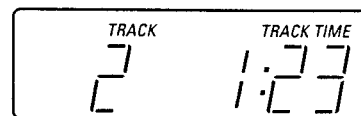
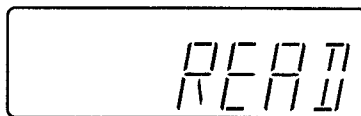
NORMAL PLAY

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

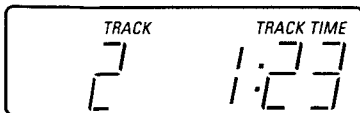
- Press POWER ON/STANDBY to switch the player on.
- Open the CD compartment by pressing OPEN•CLOSE.
 - OPEN lights up.
- Insert an audio CD, **printed side up**, and close the compartment.



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



- Press PLAY to start play.
 - You can also press PLAY immediately after inserting the CD, the compartment then closes automatically.
 - You can also close the CD compartment by pressing its front, PLAY will then start automatically.
 - The track being played is always shown under TRACK and its elapsed playing time is shown under TRACK TIME.



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

You can interrupt play by pressing PAUSE ; PAUSE then lights up.
 You can also restart play by pressing SCAN (on the remote control) or SHUFFLE.
 You can stop play by pressing STOP/CLEAR PROG or OPEN•CLOSE.

PLAY

SELECTING ANOTHER TRACK (◀▶)

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

SEARCHING FOR A PASSAGE (◀▶)

- Hold ◀ down to search backwards to the beginning.
- Hold ▶ down to search forwards to the end.

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

- the first 2 seconds fairly slowly, with sound;
- then at the maximum speed, with no sound.

If you reach the end of the last track and release ▶, play will resume a few seconds before the end of the CD.

STARTING WITH A PARTICULAR TRACK (◀▶)

- Press ▶ or ◀ (less than 0.5 seconds) until the desired track number appears under TRACK.
- Press PLAY.
- Play starts from the selected track.

PLAYING THE CD IN RANDOM ORDER (SHUFFLE)

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

If you press ◀, you will return to a track which has already been played.

If you press ▶, you will select any one of the following tracks.

If you press REPEAT *twice*, the tracks will be repeated in a different order each time, although the first track played will always be the same.

REPEATING PLAY (REPEAT)

Repeating a track:

- Press REPEAT before or during play.
- REPEAT 1 lights up, the track will now be repeated continuously.
- Press REPEAT *twice* to stop the track being repeated.

Repeating the CD:

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

NOTE

The following functions can only be operated using the remote control. In CD163 the RC5-IN must be connected to an amplifier or HiFi System with 'SCAN' or 'TIME' on its Remote Control.

SCANNING A CD (SCAN)

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

CALLING UP OTHER TIME INFORMATION

TIME

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

PLAY

PROGRAMMING / SYSTEM ASPECTS

ADJUSTING THE SOUND LEVEL (-VOLUME +)
(for CD165 only)**CAUTION:**

- Use the -VOLUME + keys (on the remote control) only if the player is connected to an amplifier or HiFi system without its own remote control.

Note:

- The setting chosen with -VOLUME+ will be cancelled when the player is switched off.
- Hold -VOLUME down.
 - VOL lights up; the output signal from the player will now decrease gradually.
 - The successive steps are shown on the display.
 - Release the key as soon as the required sound level is obtained.
- Hold VOLUME + down.
 - VOL lights up, the output signal will now increase again gradually to the maximum level.
 - The successive steps are shown on the display.
 - Release the key as soon as the required sound level is obtained.

PLAYING THE PROGRAMME (PLAY)

- Press PLAY.
Play starts with the first number of the programme.

All keys (except program) can be used during programmed play.

Search for a particular passage is only possible within the track being played.

ERASING A PROGRAM

(STOP/CP or OPEN•CLOSE)

- Press STOP/CP twice or, if the CD has already stopped, just once; you can also press OPEN•CLOSE straight away.
 - The programme has now been erased.

INTERFERENCE TO TUNER**NOTE!**

- To avoid unnecessary interference, always switch off the CD player when you are in Tuner mode.

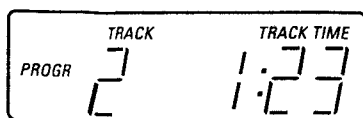
STORING A PROGRAMME (PROGRAM and ◀▶)

You can store 30 tracks from each CD in any required sequence in a program.

FULL lights up if you exceed the maximum of 30 tracks.



- In STOP mode, press PROGRAM to open the memory.
 - PROGR lights up and PROGR starts flashing.
 - Press ◀ or ▶ until the desired track number appears under TRACK.
 - Press PROGRAM again.
 - The track number has now been stored in the player's memory.
 - Select the other track numbers required and store each track by pressing PROGRAM.
 - The number of tracks and the playing time of your programme will be shown under TRACK and TOTAL TIME.



- Press STOP/CLEAR to stop programming.

TROUBLESHOOTING

If a fault occurs, run through the points listed below before taking your player for repair.

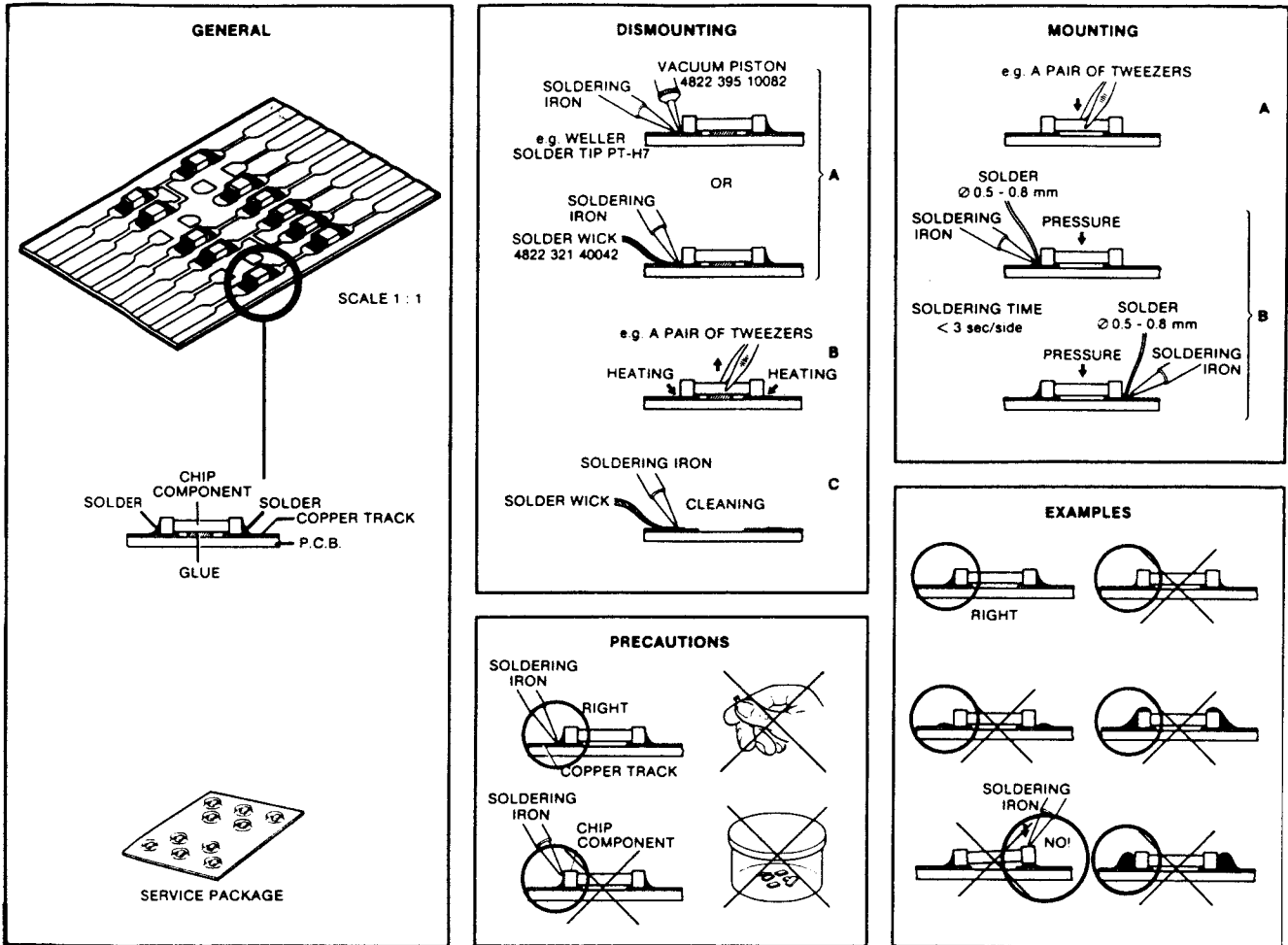
If the fault remains, try to clear it by switching the player off and on again. If this also fails to help, consult your dealer.

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

SYMPTOM	POSSIBLE CAUSE	REMEDY
<ul style="list-style-type: none"> – PLAY of the CD does not start or interruption of PLAY 	<ul style="list-style-type: none"> – The CD has been loaded upside down. – No CD inserted. – The CD is badly scratched or dirty. – Moisture condensation on the lens. 	<ul style="list-style-type: none"> • Reload the the CD, label side up. • Insert a CD, label side up. • Clean the CD player with a soft, lint-free cloth. • Leave the CD player in a warm environment until the moisture evaporates.
<ul style="list-style-type: none"> – Sound skips (at the same part) 	<ul style="list-style-type: none"> – The CD is dirty. 	<ul style="list-style-type: none"> • Clean the CD with a soft, lint-free cloth.
<ul style="list-style-type: none"> – The CD skips tracks. 	<ul style="list-style-type: none"> – The CD is damaged or dirty. 	<ul style="list-style-type: none"> • Replace or clean the CD.
<ul style="list-style-type: none"> – Play does not start from the first track 	<ul style="list-style-type: none"> – Program or SHUFFLE activated 	<ul style="list-style-type: none"> • Switch off REPEAT or clear programme.
<ul style="list-style-type: none"> – No sound or bad sound 	<ul style="list-style-type: none"> – Loose or wrong connections. – Strong magnetic fields near the CD player. 	<ul style="list-style-type: none"> • Check connections. • Find another place for the unit or change connections.
<ul style="list-style-type: none"> – Remote control does not function 	<ul style="list-style-type: none"> – Batteries are empty. – RC5-IN line not properly connected or missing <i>(for CD163 only)</i> 	<ul style="list-style-type: none"> • Replace the batteries. • Connect the RC5-IN line <i>(for CD163 only)</i>
<ul style="list-style-type: none"> – Remote control commands are not properly received 	<ul style="list-style-type: none"> – The distance between remote control and CD player or HiFi System is further than 10 metres. 	<ul style="list-style-type: none"> • Use remote control receiver EM 2200/2201. • Reduce the distance between remote control and CD player.
<ul style="list-style-type: none"> – Recorded level fluctuates or weak. 	<ul style="list-style-type: none"> – Volume +/- button has been pressed during recording <i>(for CD165 only).</i> 	<ul style="list-style-type: none"> • Switch off the set to reset the signal level of CD player or press volume+ button until maximum signal level of CD player is reached. <i>(for CD165 only).</i>

SERVICING HINTS

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

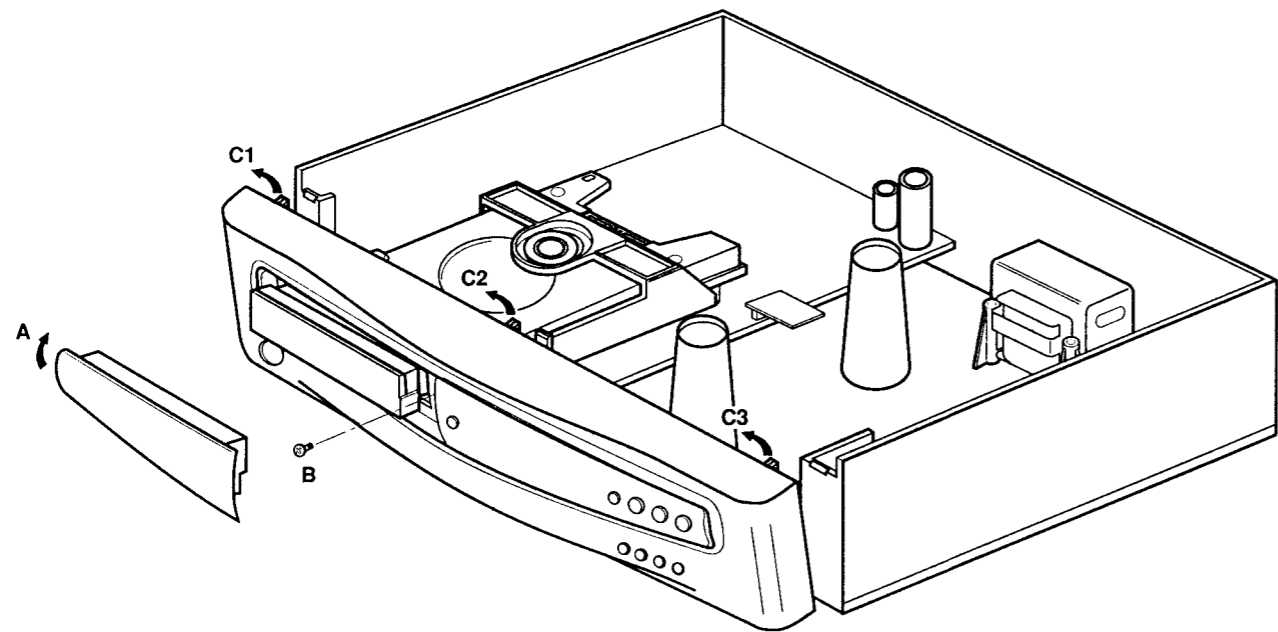


27 012CT

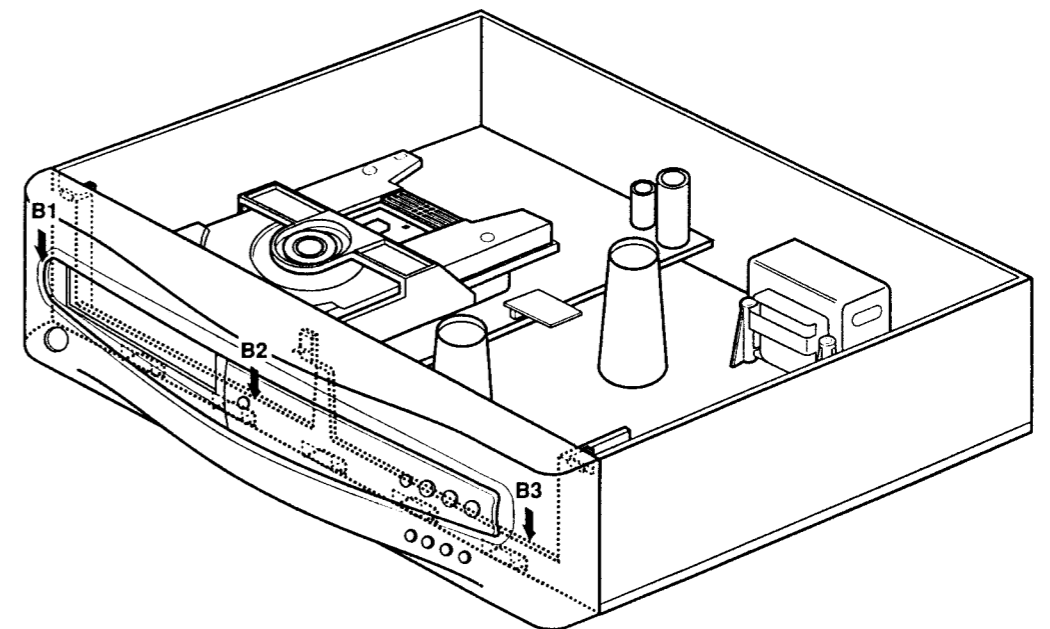
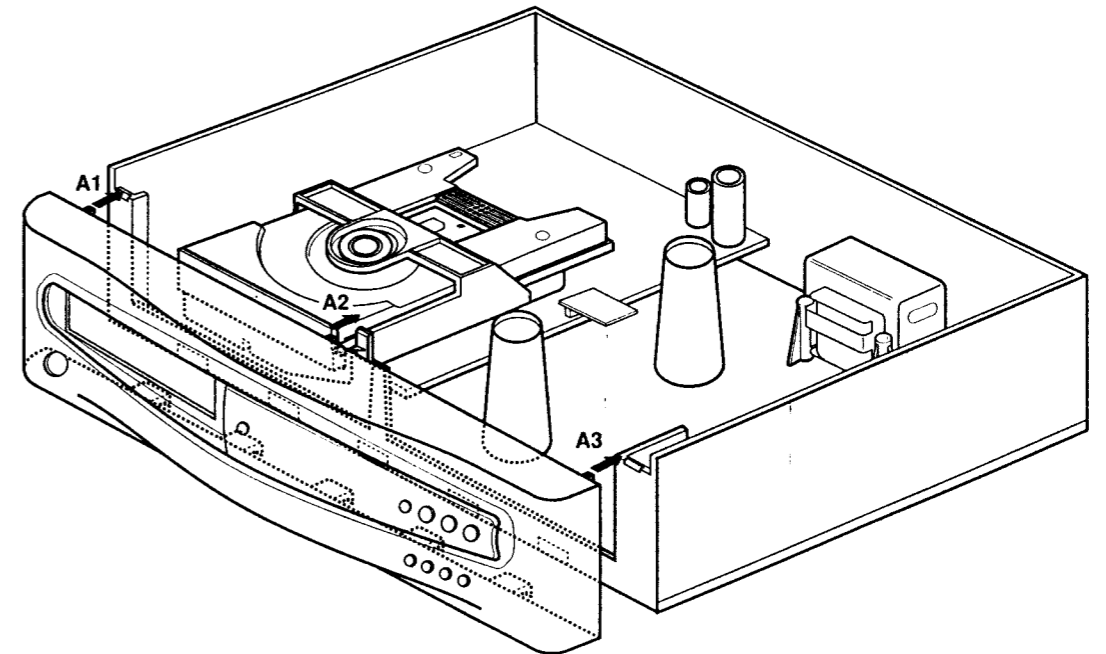
SERVICE TOOLS

- | | |
|--|----------------|
| Audio signal disc | 4822 397 30184 |
| Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A) | 4822 397 30096 |
| Disc (65 min 1kHz) without pause | 4822 397 30155 |
| Max. diameter disc (58.0 mm) | 4822 397 60141 |
| Torx screwdrivers | |
| Set (straight) | 4822 395 50145 |
| Set (square) | 4822 395 50132 |
| 13th order filter | 4822 395 30204 |

DISASSEMBLY HINT



ASSEMBLY HINT



GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



NL WAARSCHUWING

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

F ATTENTION

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

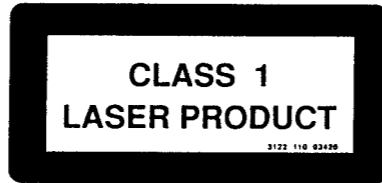
D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

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.

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



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 bij reparatie 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 i pezzi di ricambio identici a quelli specificati.

GB Warning !

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

S Varning !

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

SF Varoitus !

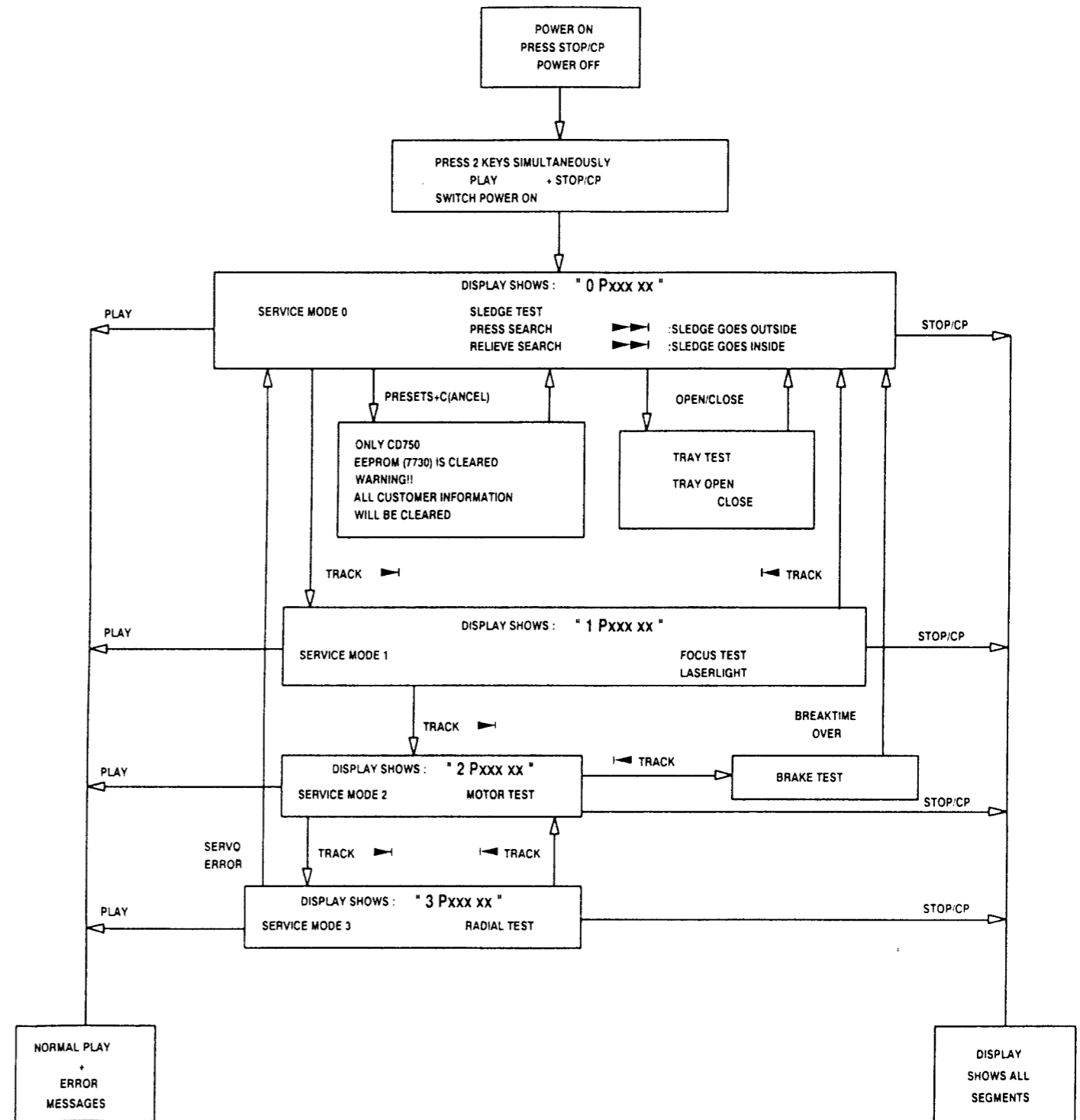
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

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

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

SERVICE TEST PROGRAM

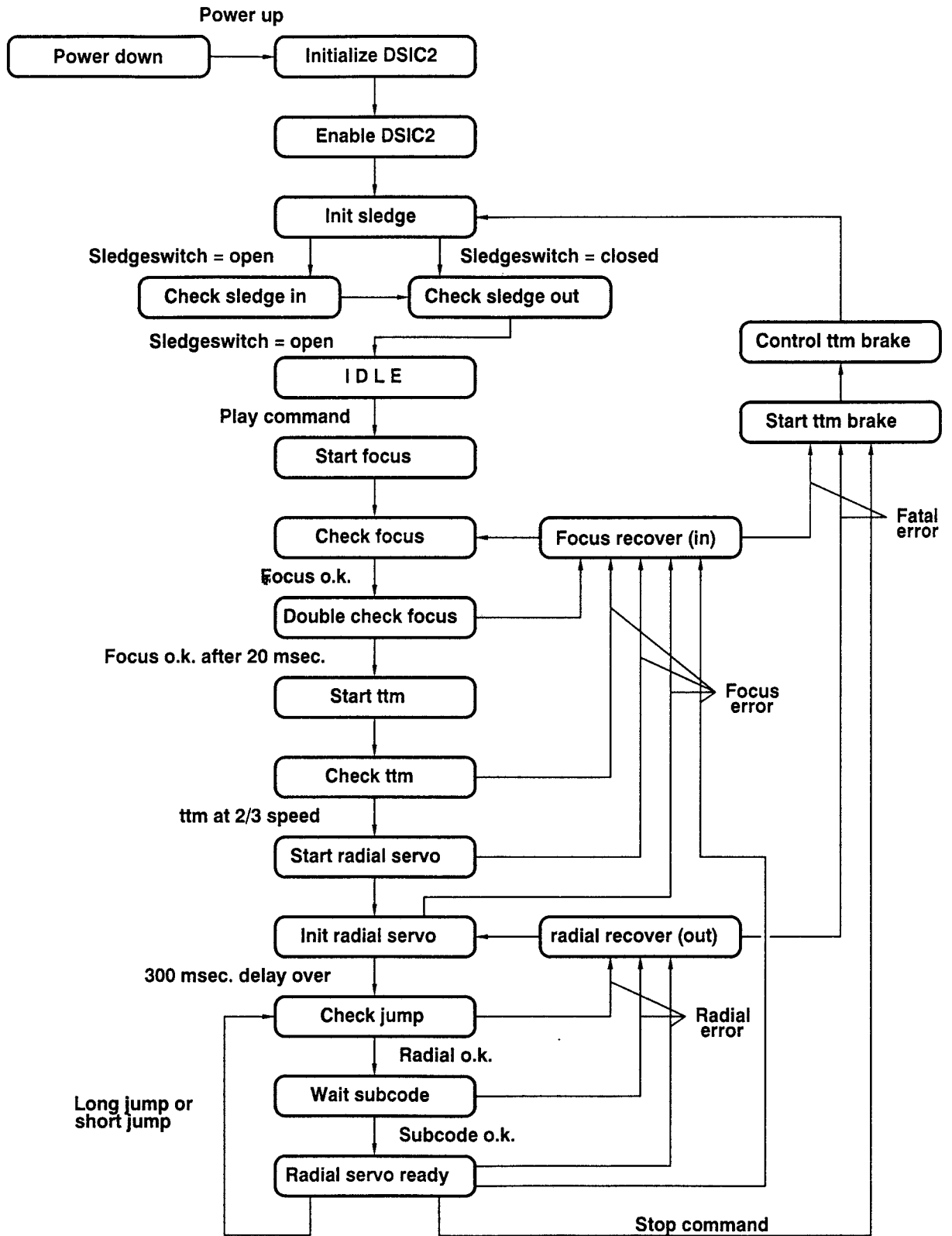


ERROR MESSAGES

- 'SLEDGE ERROR'
- 'FOCUS ERROR'
- 'RADIAL ERROR'
- 'MOTOR ERROR'

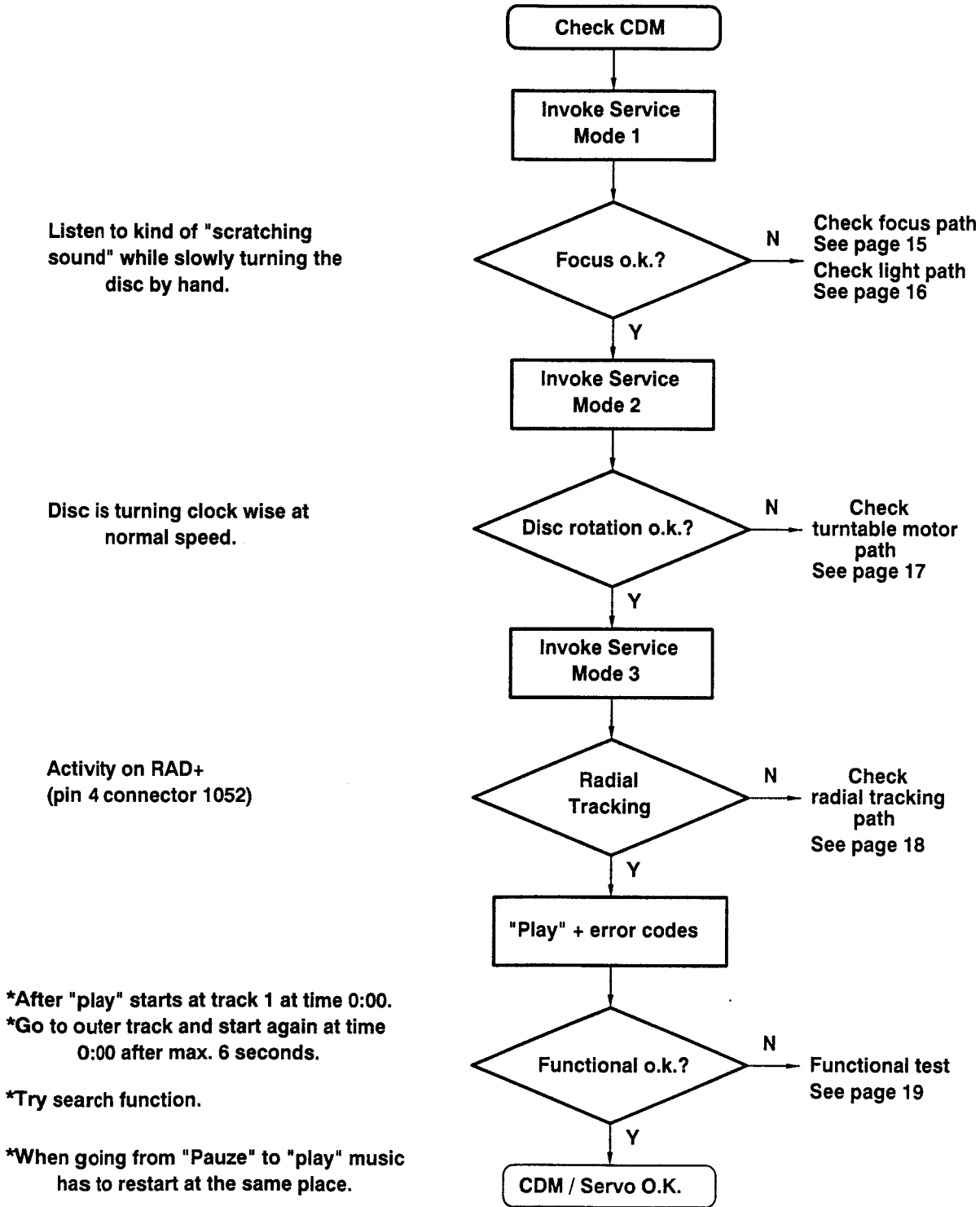
Pxxx = PROGRAM OF MICROPROCESSOR
xx = VERSION OF PROGRAM

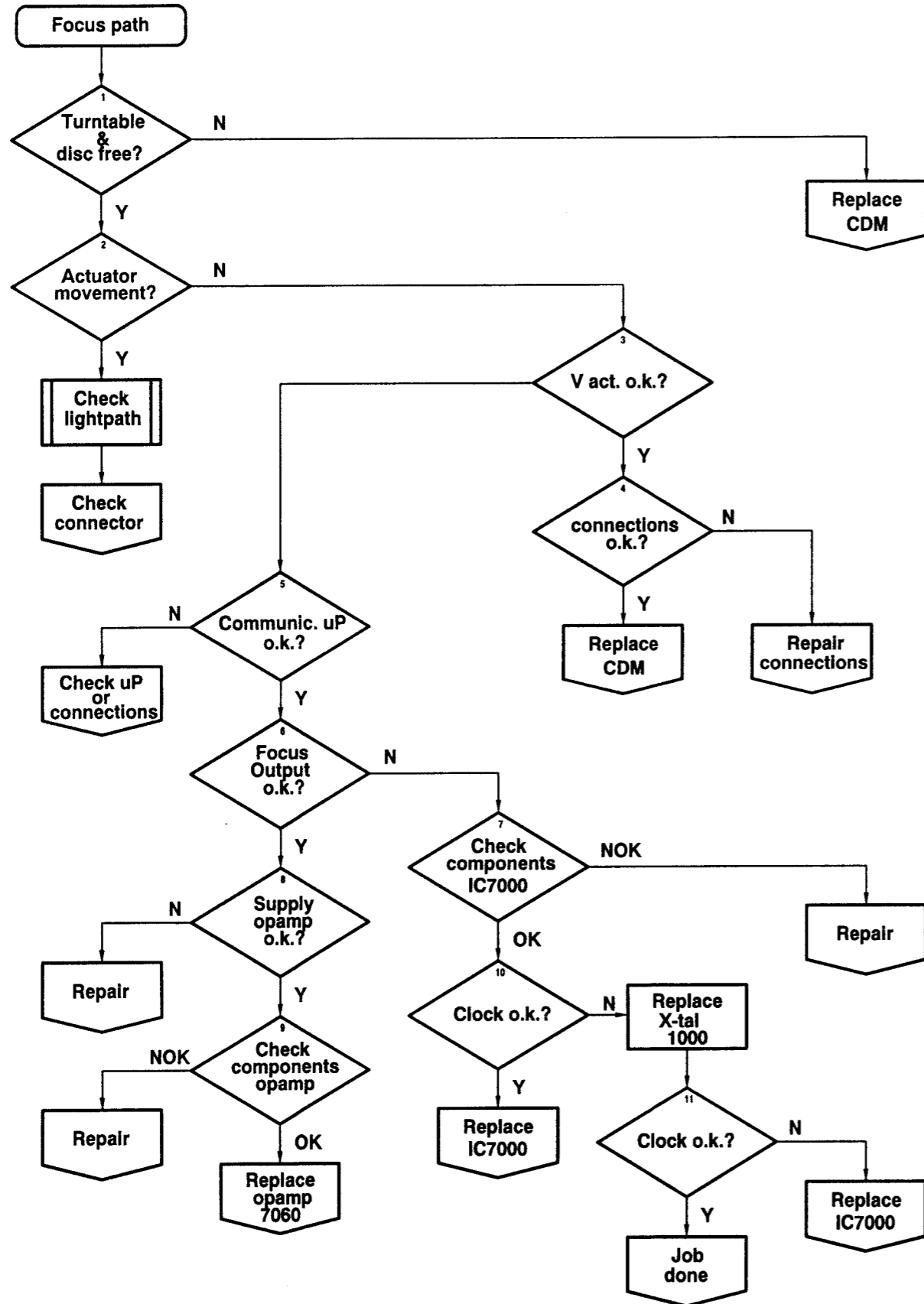
CDM 12.1 start up diagram.



FAULT FINDING GUIDE CDM 12.1

Main Fault Finding Guide CDM 12.1
System

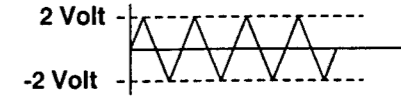




1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

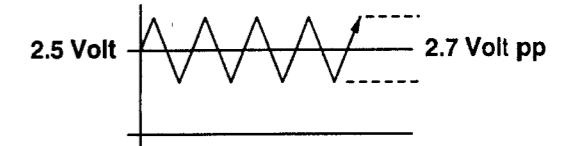
3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.



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

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

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



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

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

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

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

WARNING !!! LASER DAMAGE !!!

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

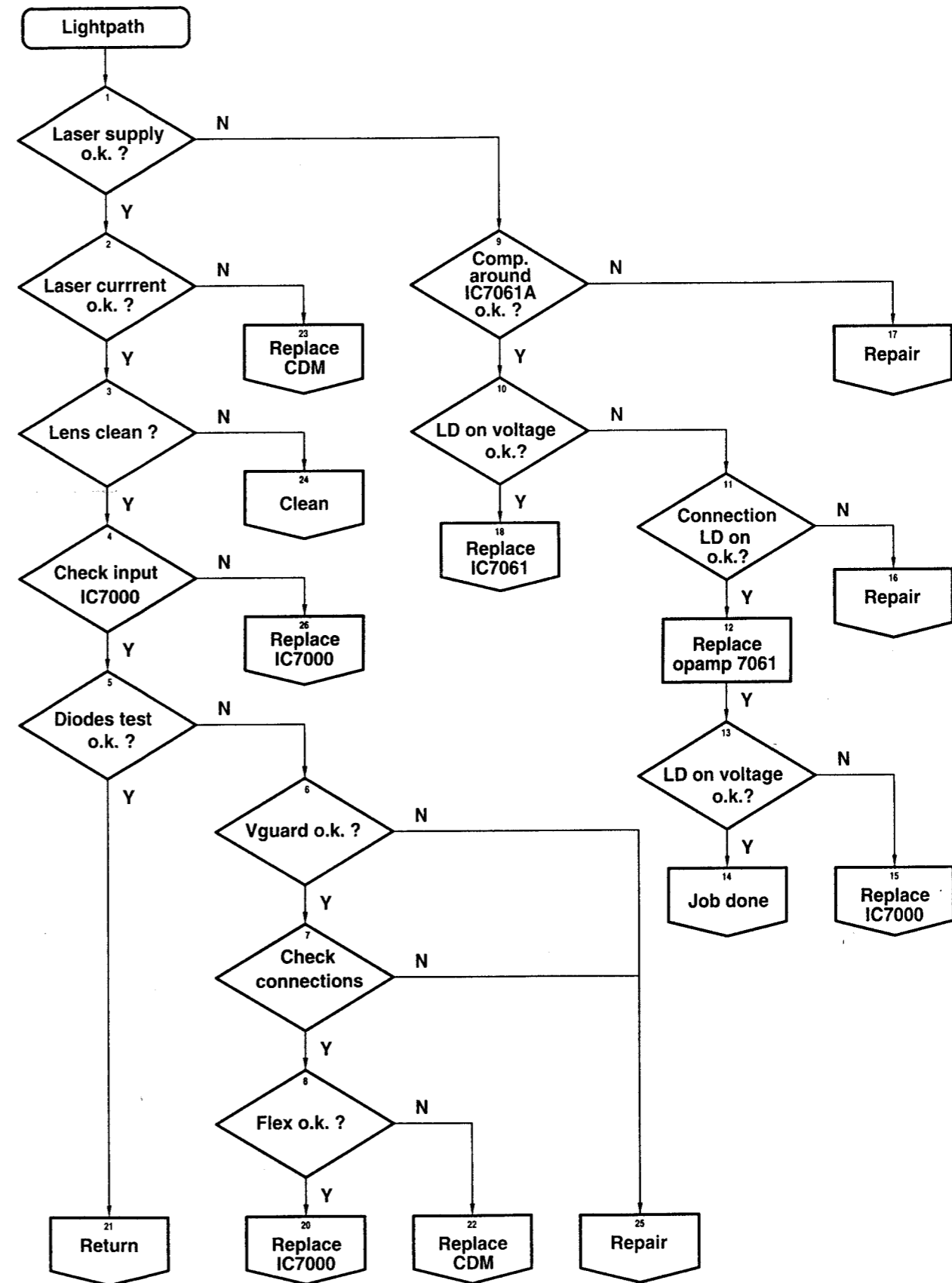
The instruction and sequence for measuring laser current is as follows:

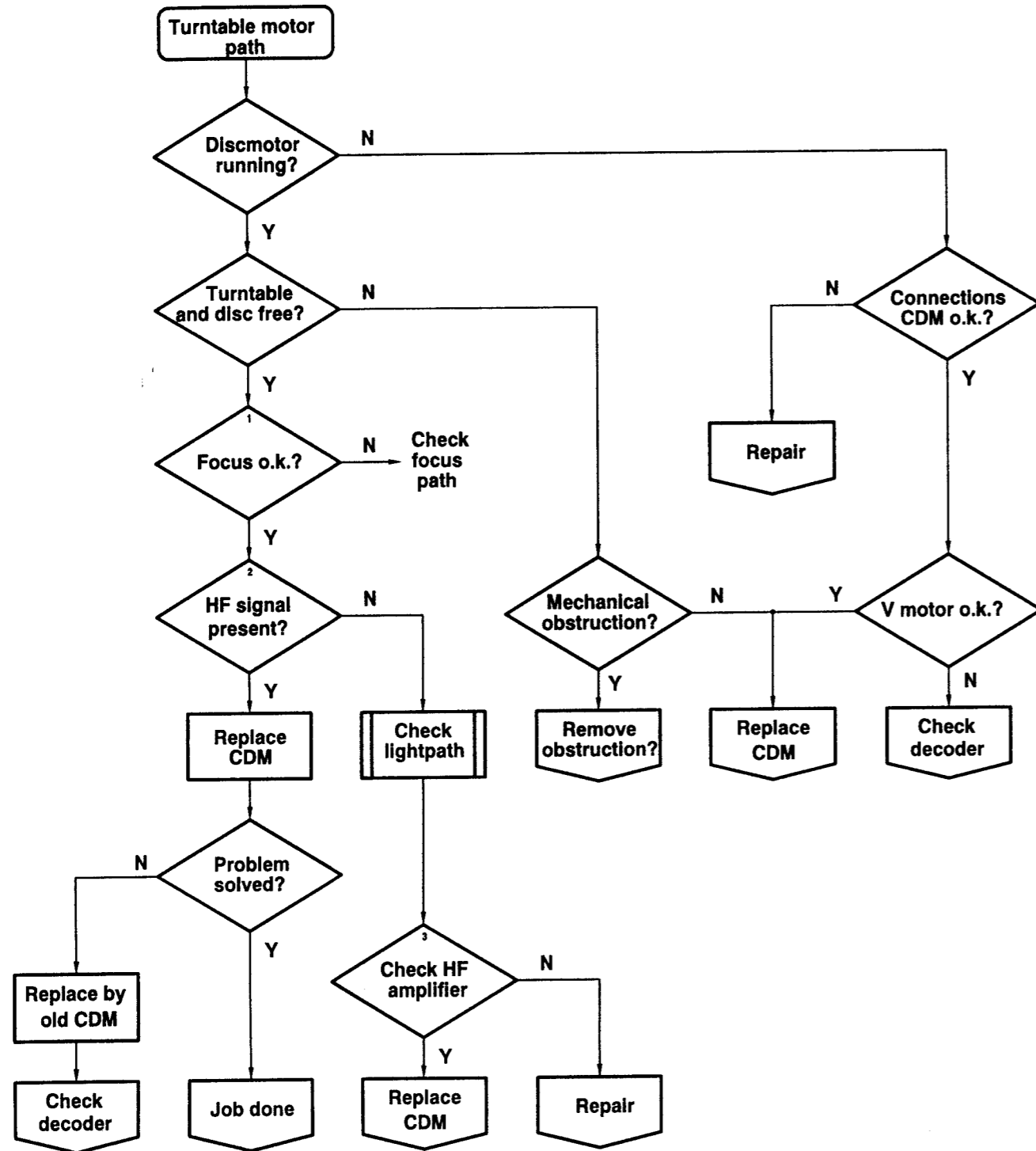
- turn off mains power.
- wait for > 1 second
- connect a multimeter (high input impedance, not grounded accross resistor 3022. (*))
- turn on mains power and go to play mode.
- reading of measurement value (current = reading/4R7) (**)
- go to stop and turn off mains power.
- disconnect the multimeter.

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

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

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





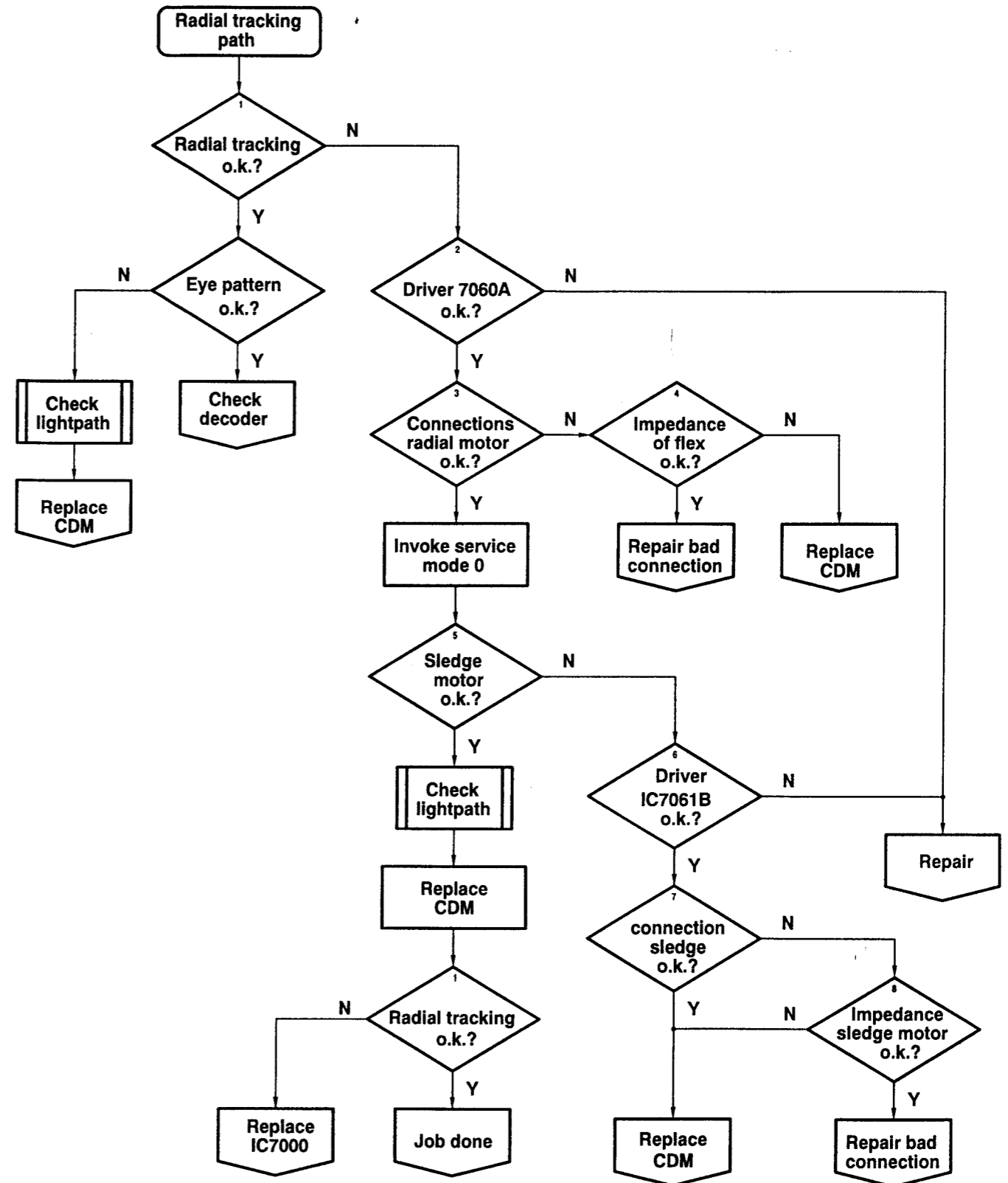
1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

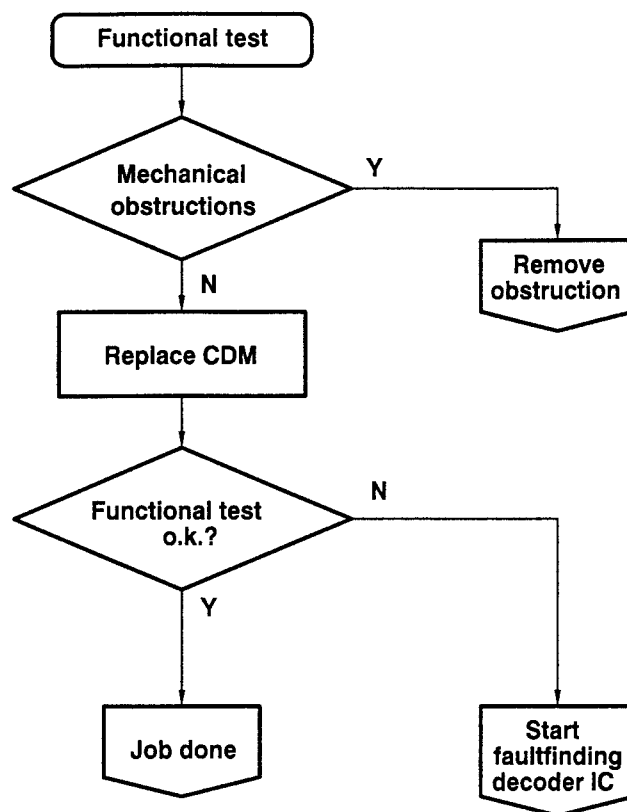
2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

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

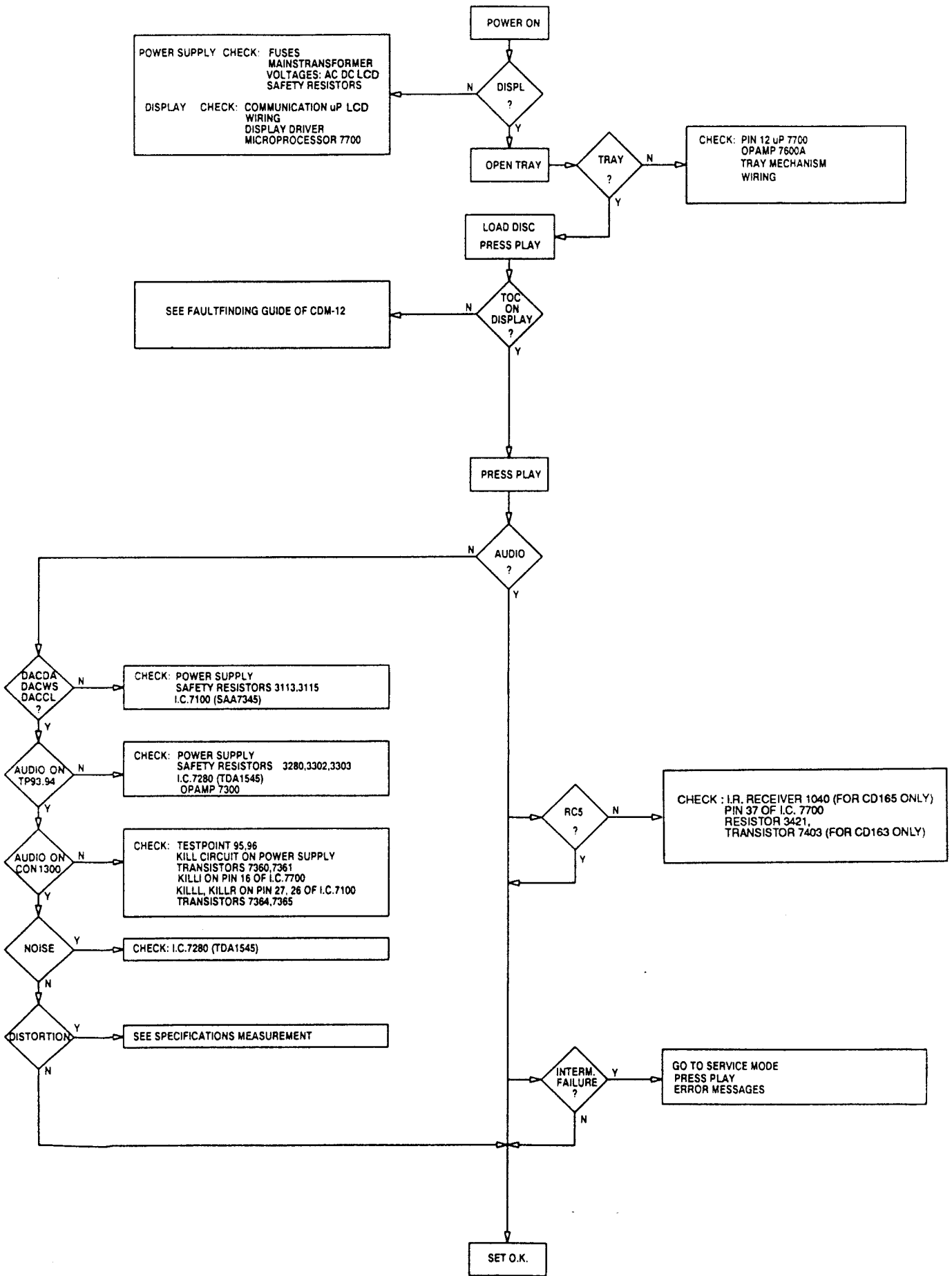
4)-V motor o.k.?
V motor < 2V: replace CDM.
V motor > 2V: check decoder part.

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





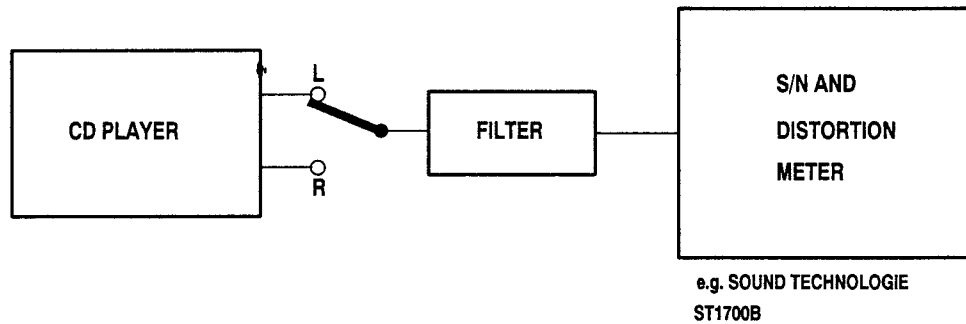
FAULTFINDING GUIDE



SPECIFICATIONS MEASUREMENT

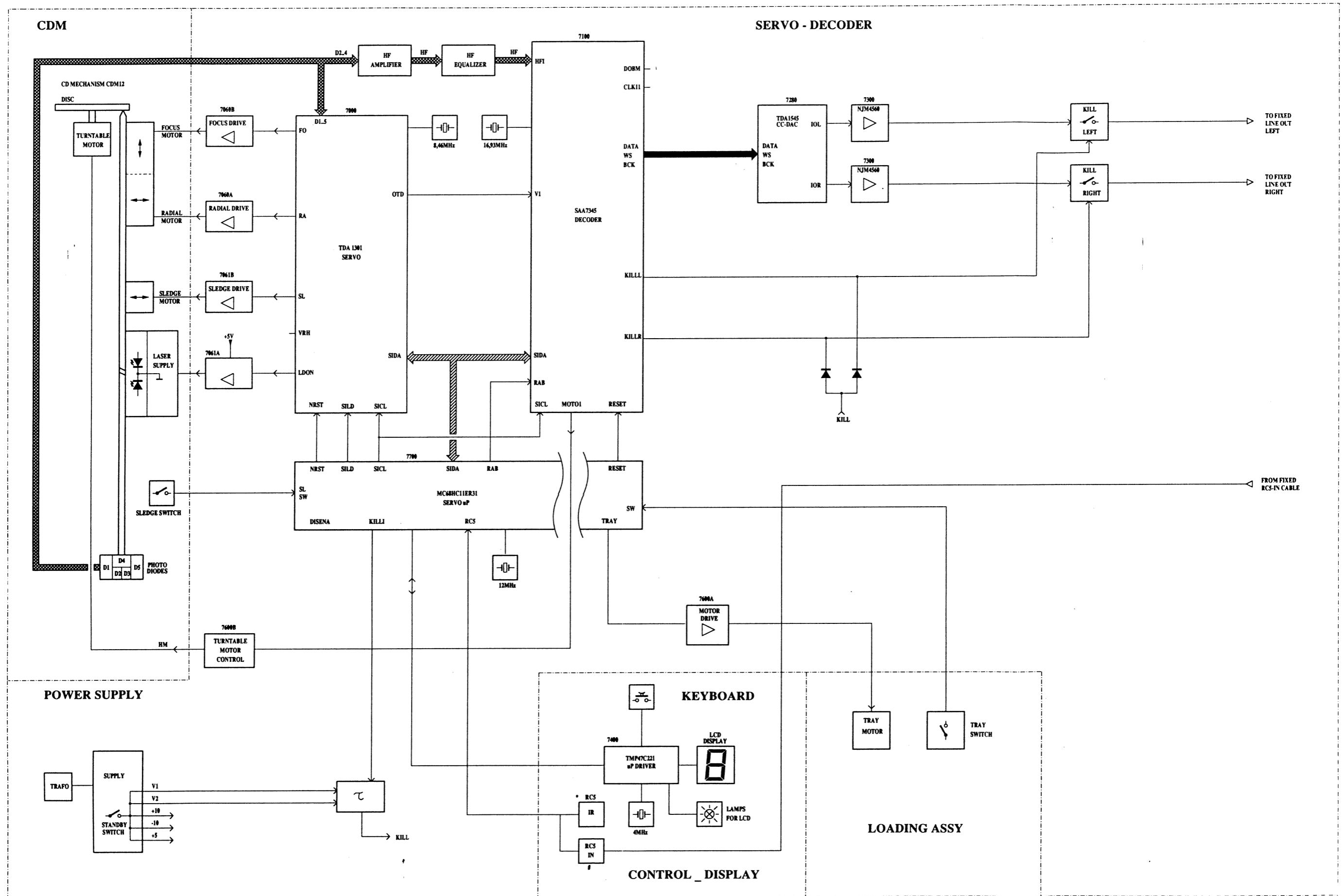
SIGNAL	AUDIO SIGNALS DISC 1	TESTPOINT	REMARKS
ANALOG OUT LEFT	TOTAL HARMONIC DISTORTION TRACKS 10 - 23	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			
ANALOG OUT LEFT	SIGNAL-TO-NOISE RATIO TRACK 1 REFERENCE LEVEL TRACK 49	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			

FILTER = 13TH ORDER FILTER 4822 395 30204



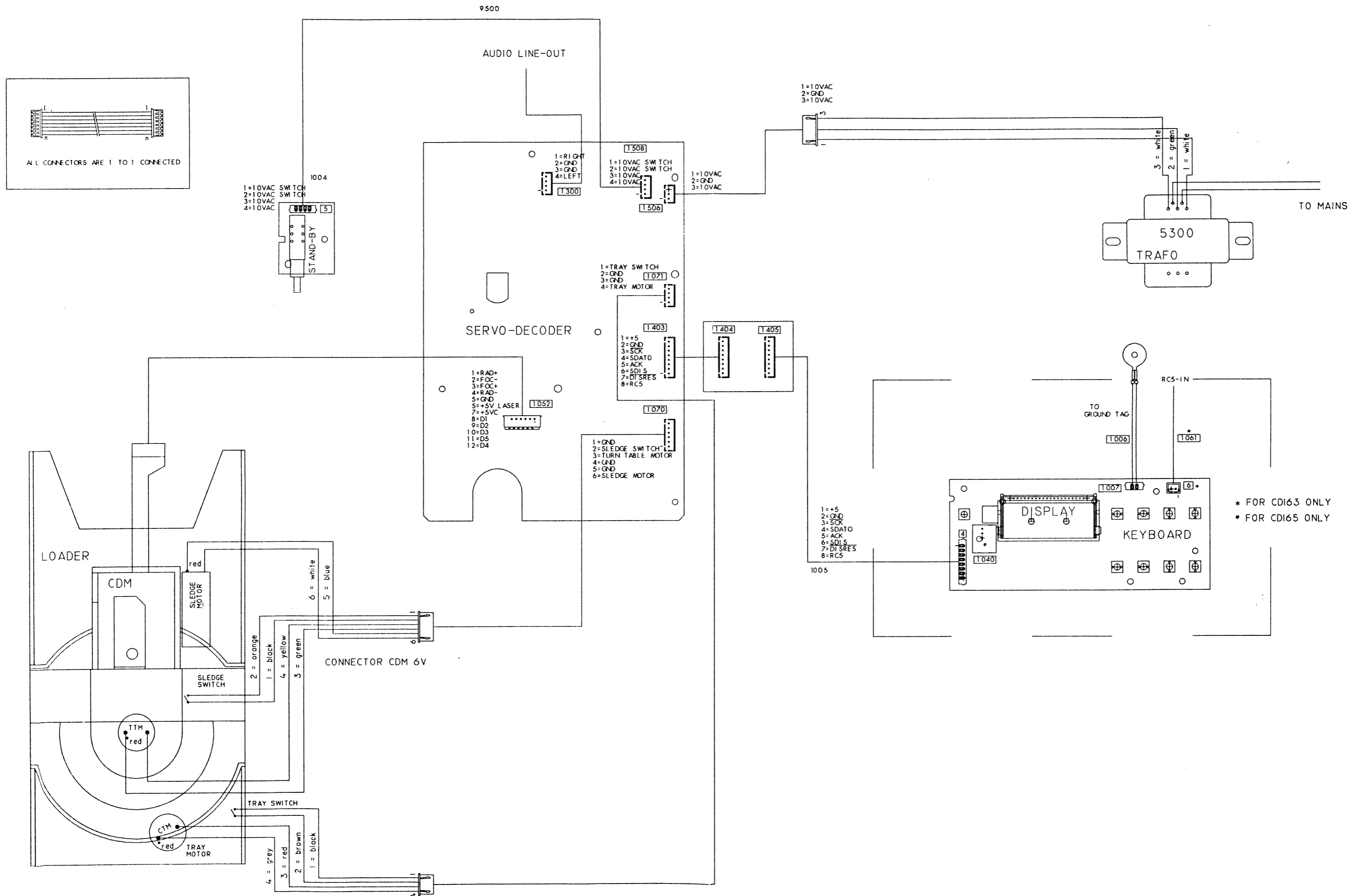
ABBREVIATIONS

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

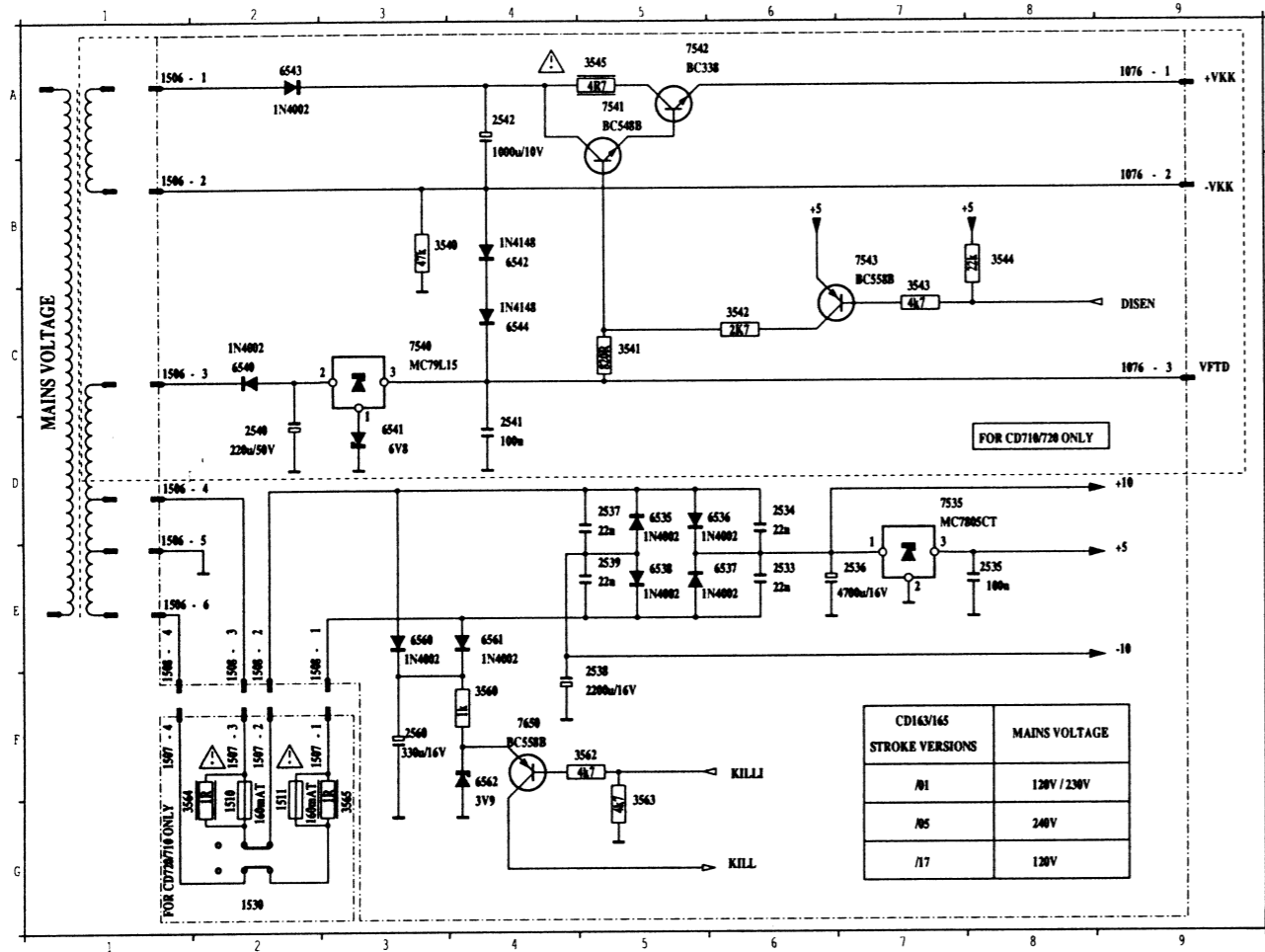


* FOR CD165 ONLY
 # FOR CD163 ONLY

WIRING DIAGRAM



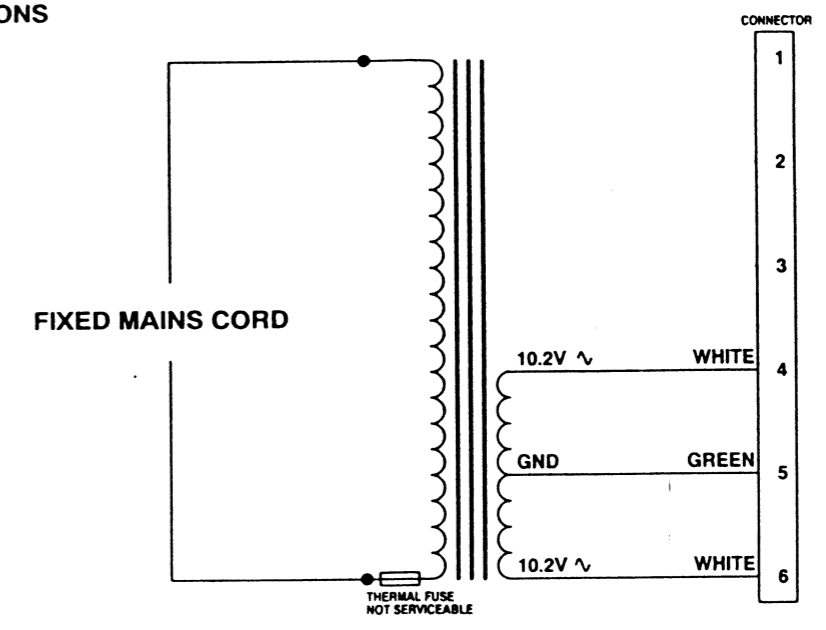
POWER SUPPLY CIRCUIT DIAGRAM



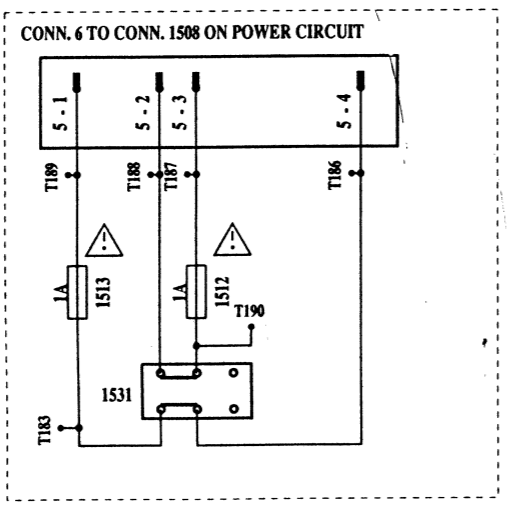
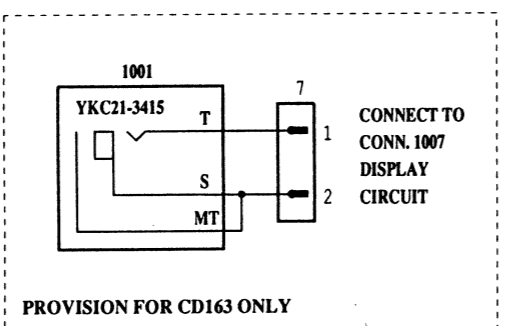
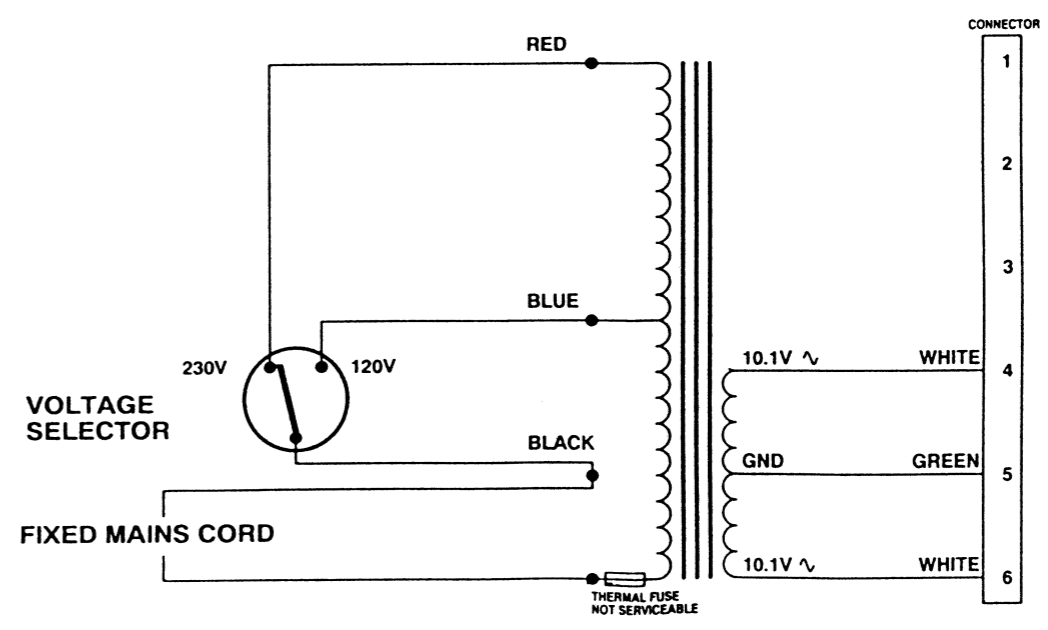
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506 Y 1
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TRANSFORMER CONNECTIONS

/00/05/06/17 VERSIONS



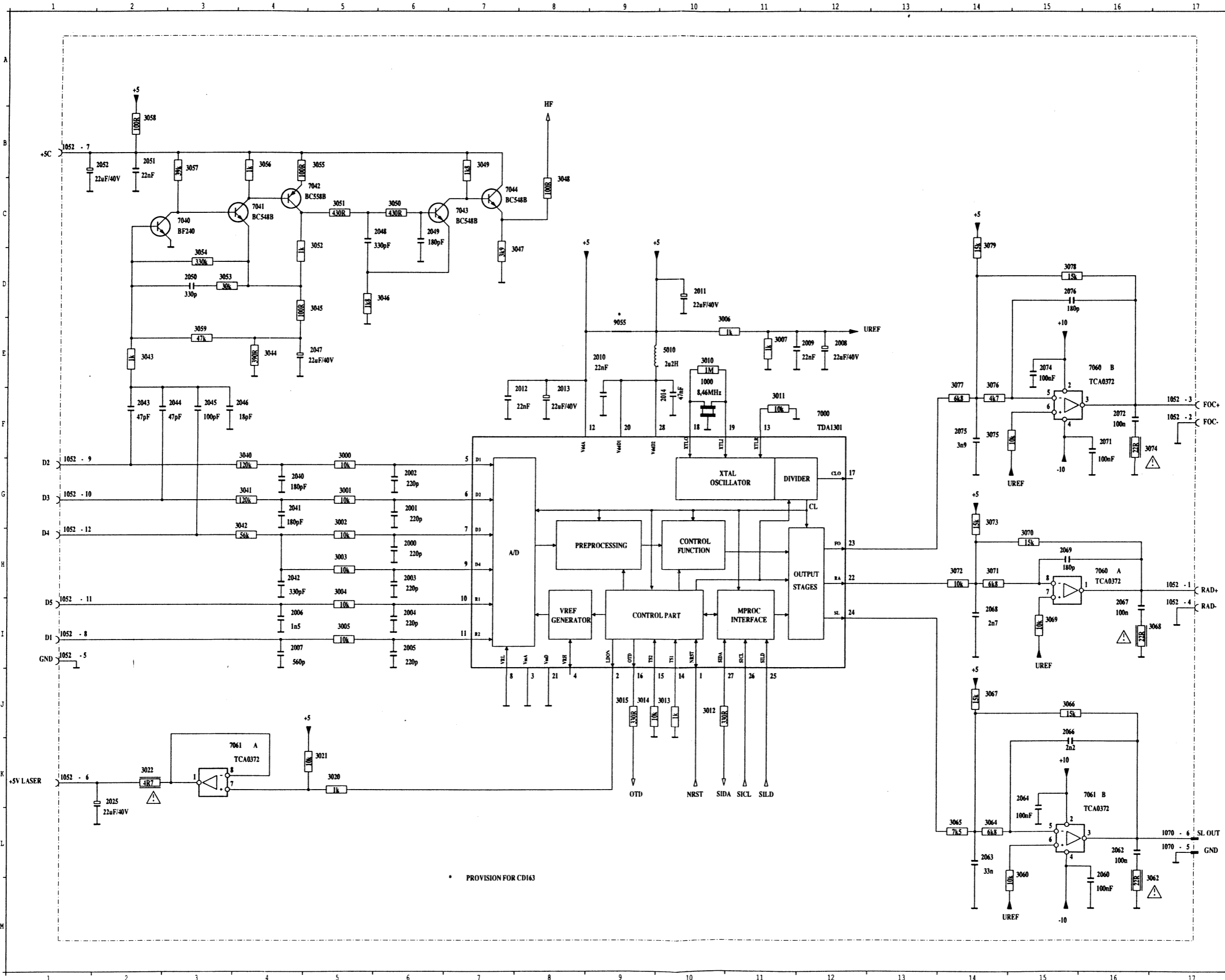
/01 VERSION



SERVO CIRCUIT DIAGRAM

26

26

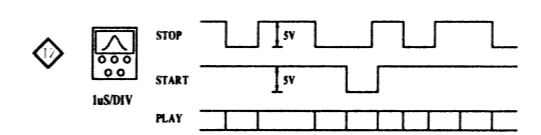
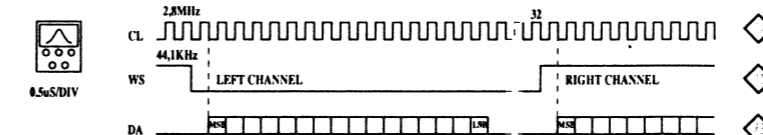
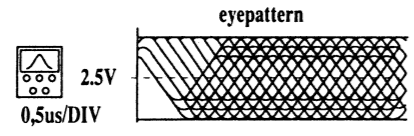
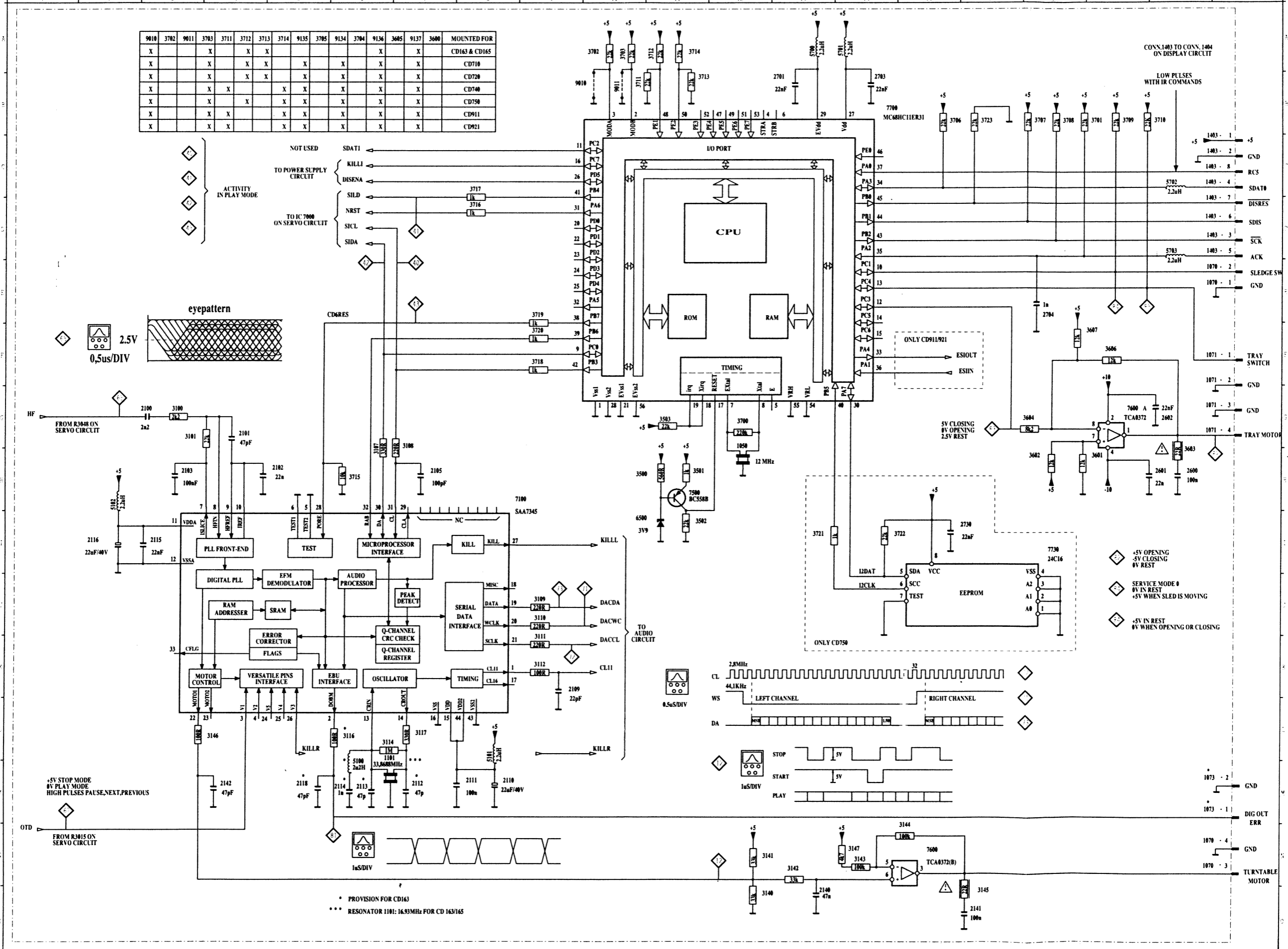


PROVISION FOR CD163

1000	E10
1052	E17
1053	F17
1054	F17
1055	F17
1056	F17
1057	F17
1058	F17
1059	F17
1060	F17
1070	L17
1071	L17
1072	L17
1073	L17
1074	L17
1075	L17
1076	L17
1077	L17
1078	L17
1079	L17
1080	L17
1081	L17
1082	L17
1083	L17
1084	L17
1085	L17
1086	L17
1087	L17
1088	L17
1089	L17
1090	L17
1091	L17
1092	L17
1093	L17
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1095	L17
1096	L17
1097	L17
1098	L17
1099	L17

DECODER CIRCUIT DIAGRAM

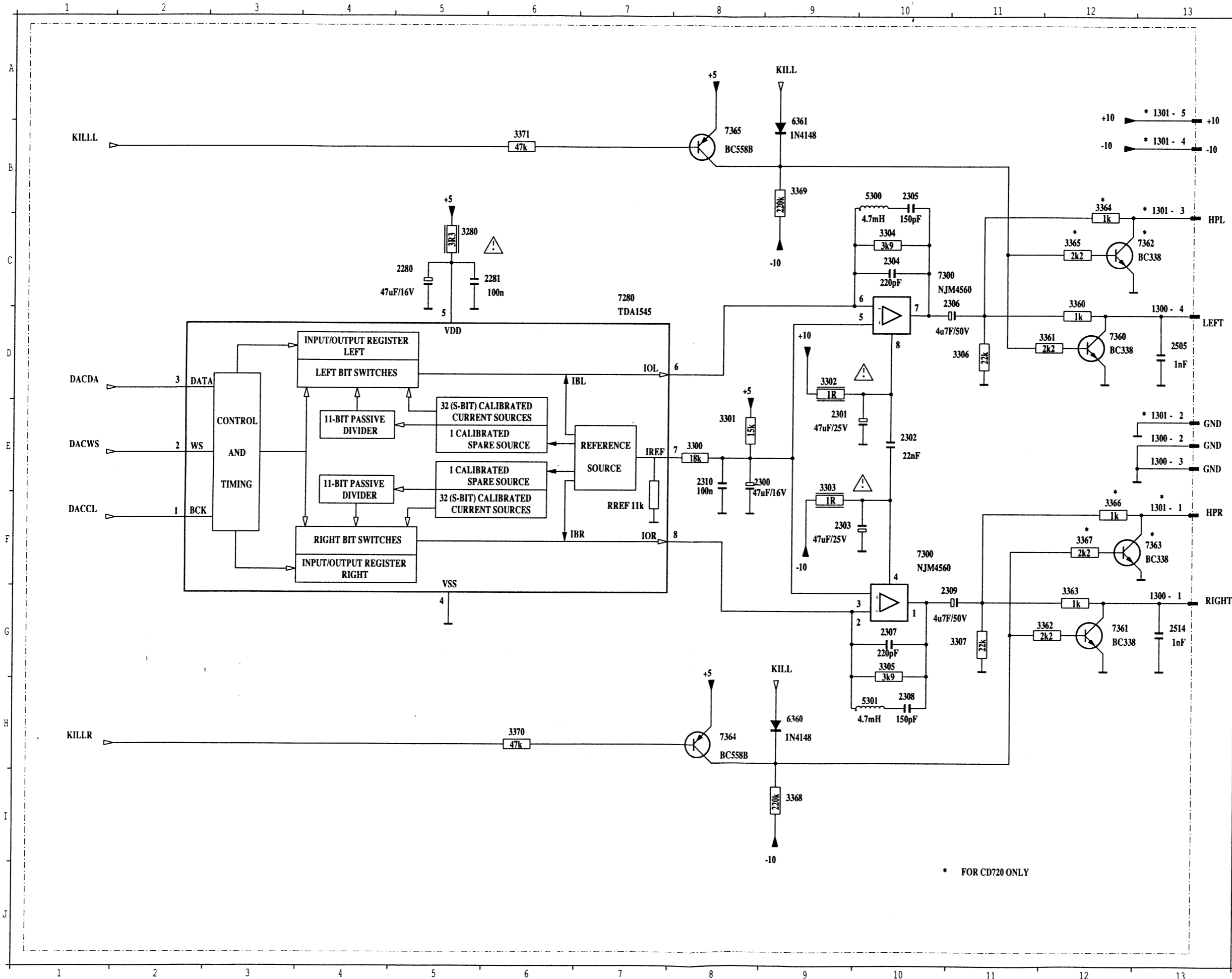
9010	3702	9011	3703	3711	3712	3713	3714	9135	3705	9134	3704	9136	3605	9137	3600	MOUNTED FOR
X			X		X	X				X		X	X	X		CD163 & CD165
X			X		X	X				X		X	X	X		CD710
X			X		X	X				X		X	X	X		CD720
X			X	X	X	X				X		X	X	X		CD740
X			X	X	X	X				X		X	X	X		CD750
X			X	X	X	X				X		X	X	X		CD911
X			X	X	X	X				X		X	X	X		CD921



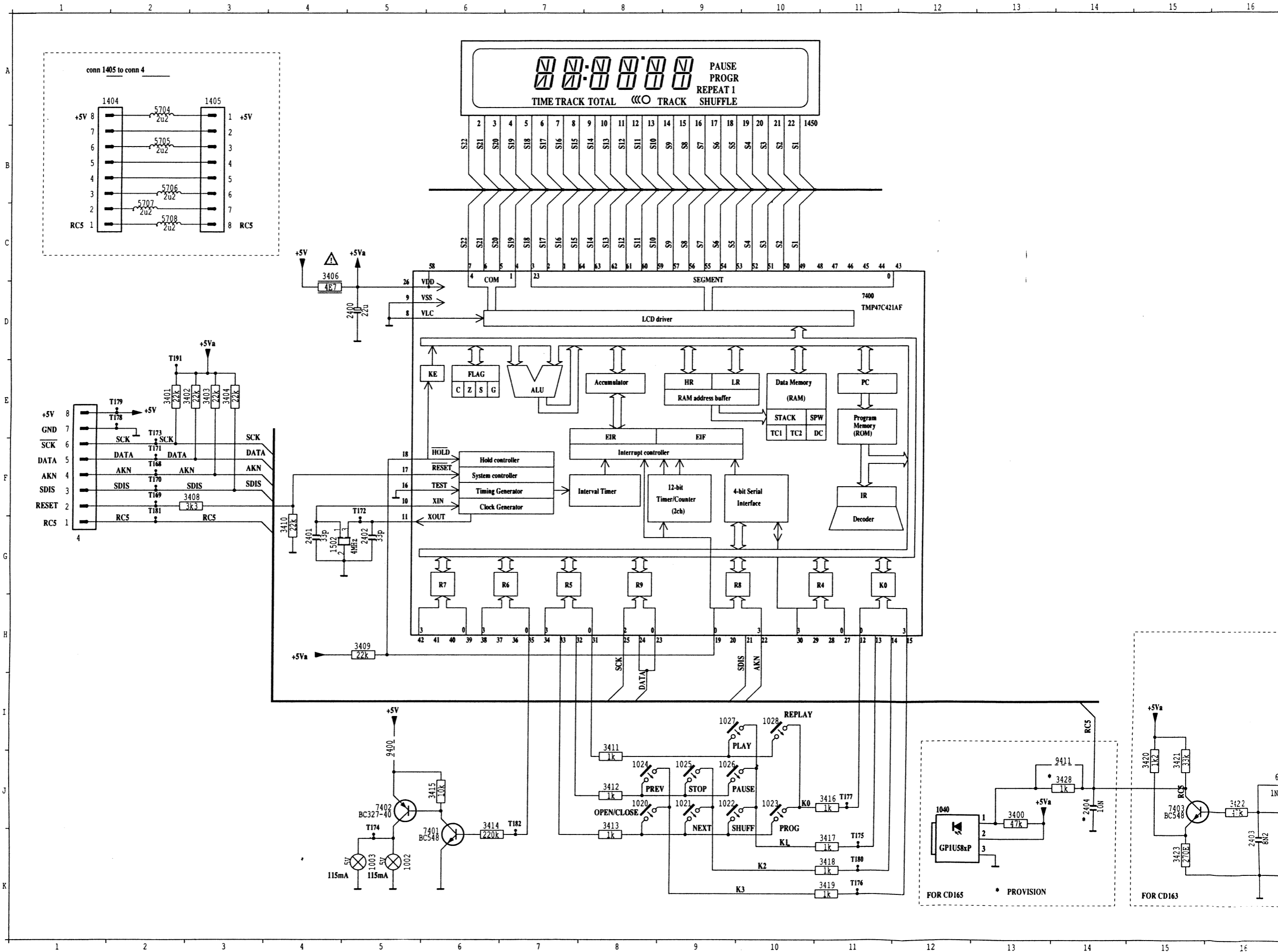
* PROVISION FOR CD163
*** RESONATOR 1101: 16.93MHz FOR CD 163/165

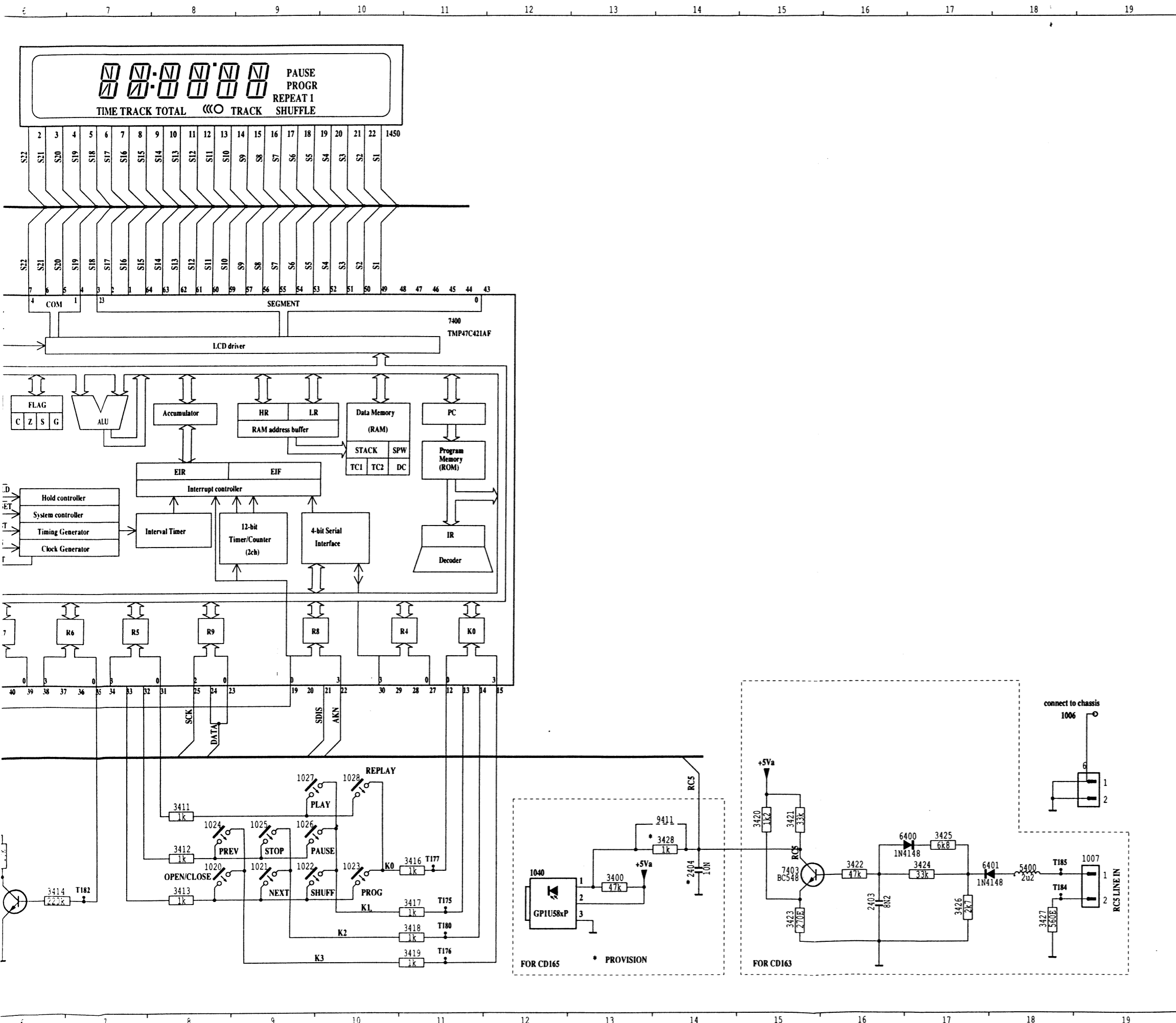
- ◇ +5V OPENING
-5V CLOSING
0V REST
- ◇ SERVICE MODE 0
0V IN REST
+5V WHEN SLED IS MOVING
- ◇ +5V IN REST
0V WHEN OPENING OR CLOSING

DAC CIRCUIT DIAGRAM



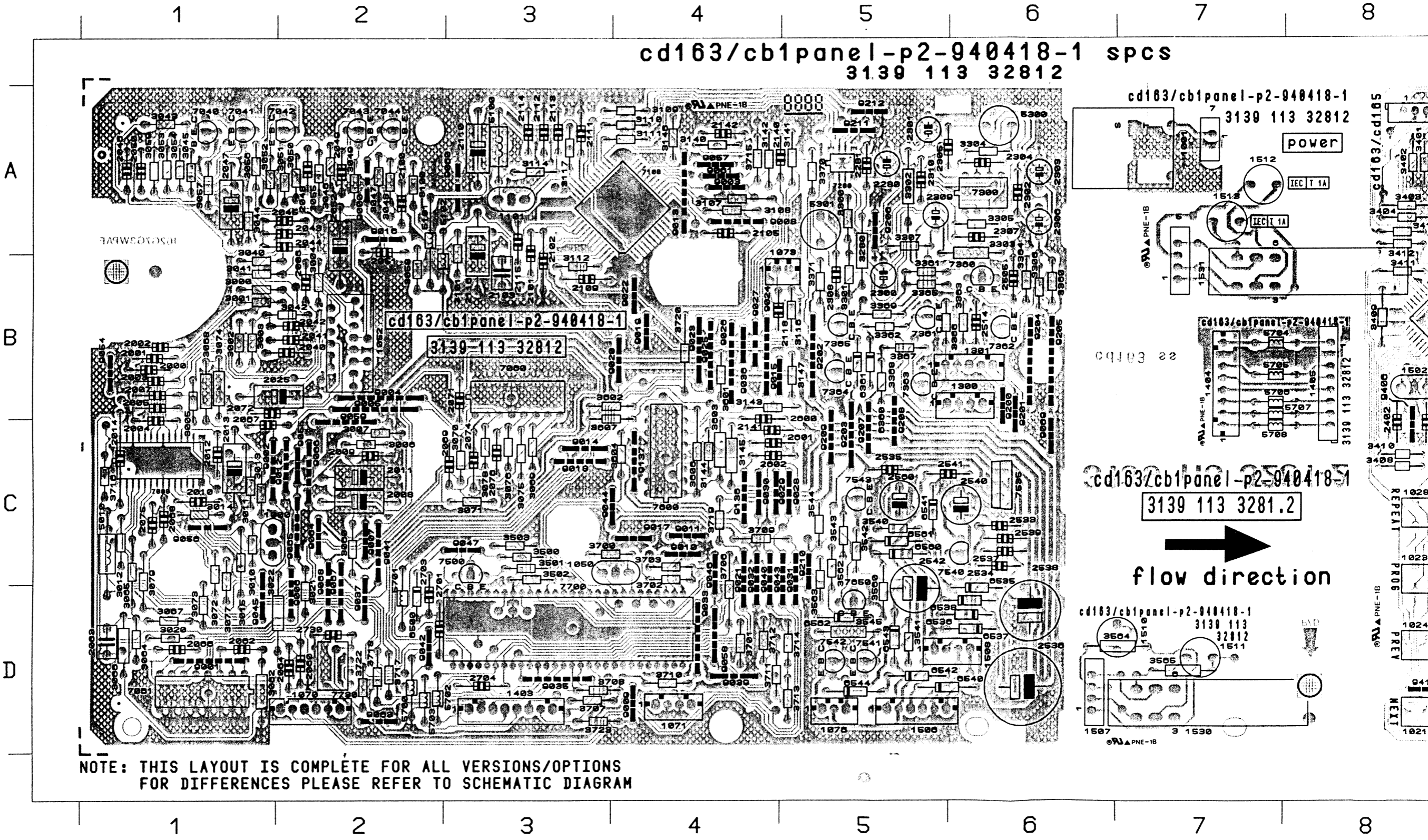
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1300 F13
1300 D13
1301 F13
1301 E13
1301 B13
1301 B13
1301 B13
1301 A13
1301 A13
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2281 E E E E E E E E E E E E E E E E
2300 F F F F F F F F F F F F F F F F
2301 F F F F F F F F F F F F F F F F
2302 E10
2303 F F F F F F F F F F F F F F F F
2304 C10
2305 B10
2306 C11
2307 G10
2308 H10
2309 G11
2310 E E E E E E E E E E E E E E E E
2505 D13
2514 G13
3280 C C C C C C C C C C C C C C C C
3300 E E E E E E E E E E E E E E E E
3301 E E E E E E E E E E E E E E E E
3302 E E E E E E E E E E E E E E E E
3303 F F F F F F F F F F F F F F F F
3304 C10
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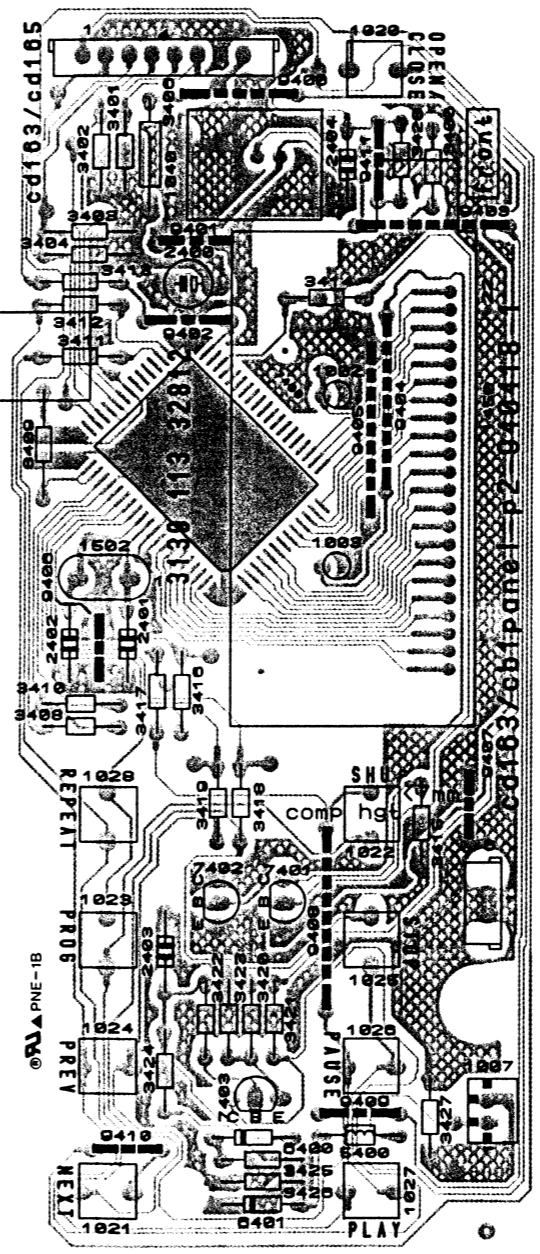
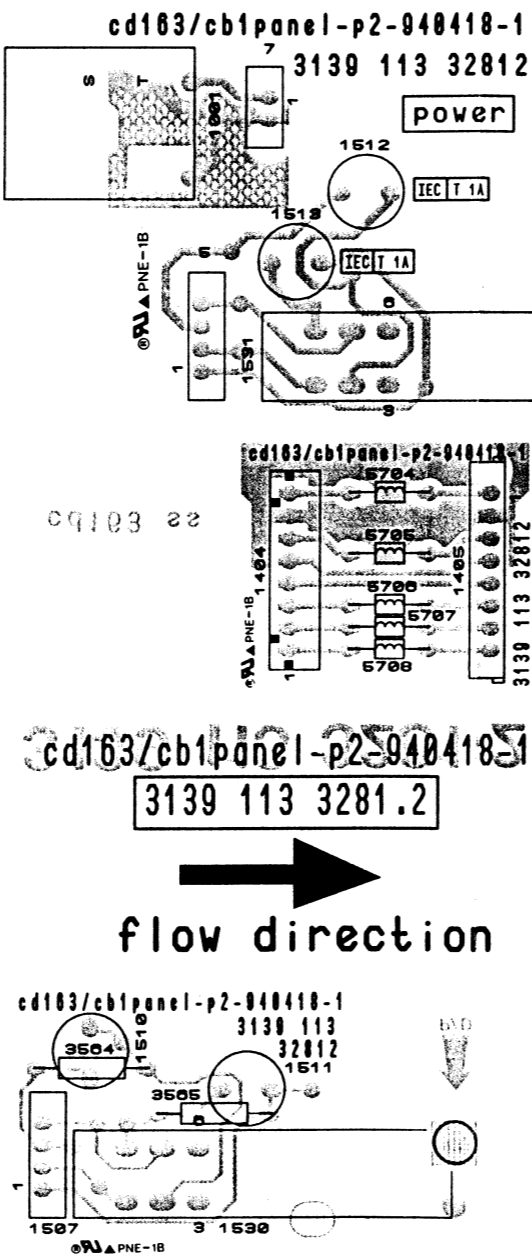
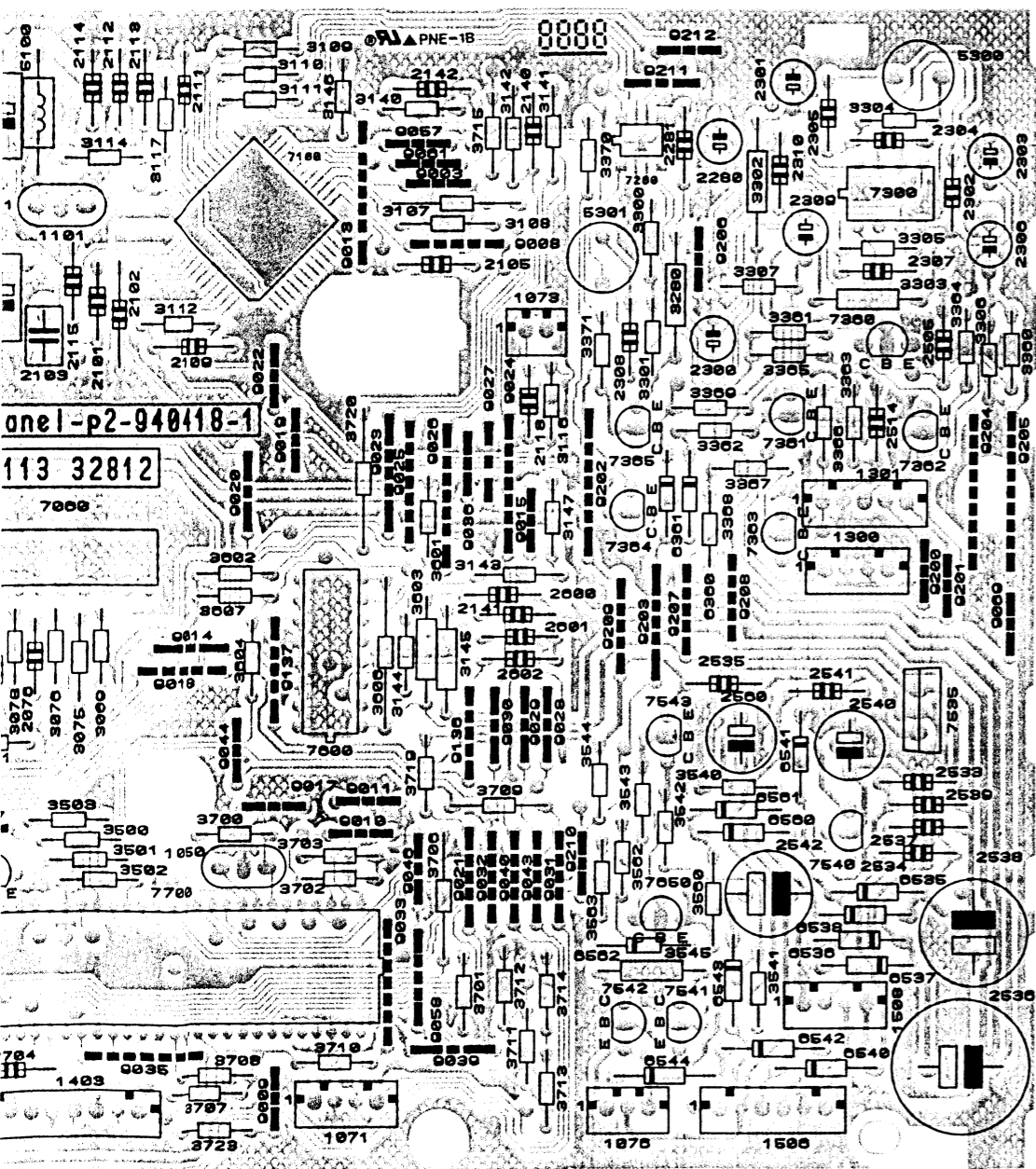
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A 2	2074 C 3	2141 C 4	3011 C 1	3050 A 2	3070 C 3	3114 A 3	3604 C 4	3717 D 2	7043 A 2	9010 C 4	9030 C 4	9059 C 2	1511 D 7	2534 C 6	3307 A 5	3545 D 5	5364 D 5	9200 B 6	1513 A 7	
A 1	2075 C 1	2142 A 4	3012 C 1	3051 A 2	3071 C 3	3116 B 5	3606 C 4	3718 D 2	7044 A 2	9011 C 4	9031 C 5	9061 A 4	1530 D 7	2535 C 5	3360 B 6	3560 D 5	5366 C 5	9201 B 6	1531 B 7	
A 1	2076 C 3	2600 C 4	3013 C 1	3052 A 1	3072 C 1	3117 A 3	3607 C 3	3719 C 4	7060 B 3	9012 C 2	9032 C 4	9063 D 2	2200 A 5	2536 D 6	3361 B 5	3562 C 5	5361 C 5	9202 B 5	----	
A 2	2100 A 2	2601 C 4	3014 C 1	3053 A 1	3073 D 1	3140 A 4	3700 C 3	3720 B 4	7061 D 1	9014 C 3	9033 D 4	9064 C 2	2201 A 5	2537 C 6	3362 B 5	3563 C 5	5362 D 5	9203 C 5	----	
A 2	2101 B 3	2602 C 4	3015 C 1	3054 A 1	3074 B 1	3141 A 5	3701 D 4	3722 D 2	7500 C 3	9015 B 4	9065 C 3	2300 B 5	2538 D 6	3363 B 6	3564 D 7	7300 A 6	9204 B 6	----	----	
A 1	2102 B 3	2701 D 2	3020 D 1	3055 A 2	3075 C 3	3142 A 4	3702 C 4	3723 D 3	7600 C 4	9016 A 2	9036 B 4	9066 C 2	2301 A 5	2539 C 6	3364 B 6	3565 D 7	7360 B 6	9205 B 6	----	----

3 4 5 6 7 8 9

cd163/cb1panel-p2-940418-1 spcs
3139 113 32812

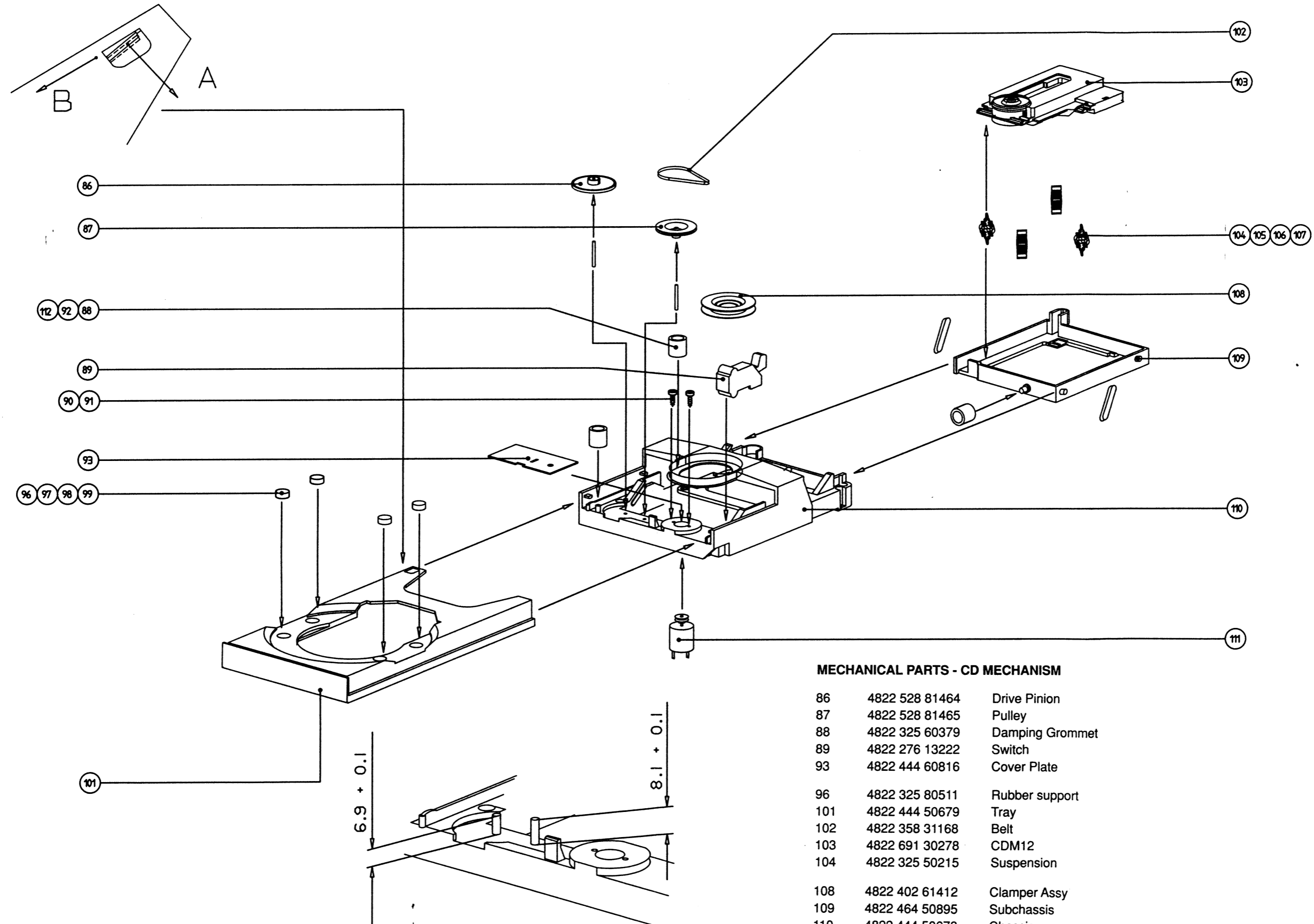


A
B
C
D

VERSIONS/OPTIONS
SCHEMATIC DIAGRAM

3 4 5 6 7 8 9

DETAIL I



MECHANICAL PARTS - CD MECHANISM

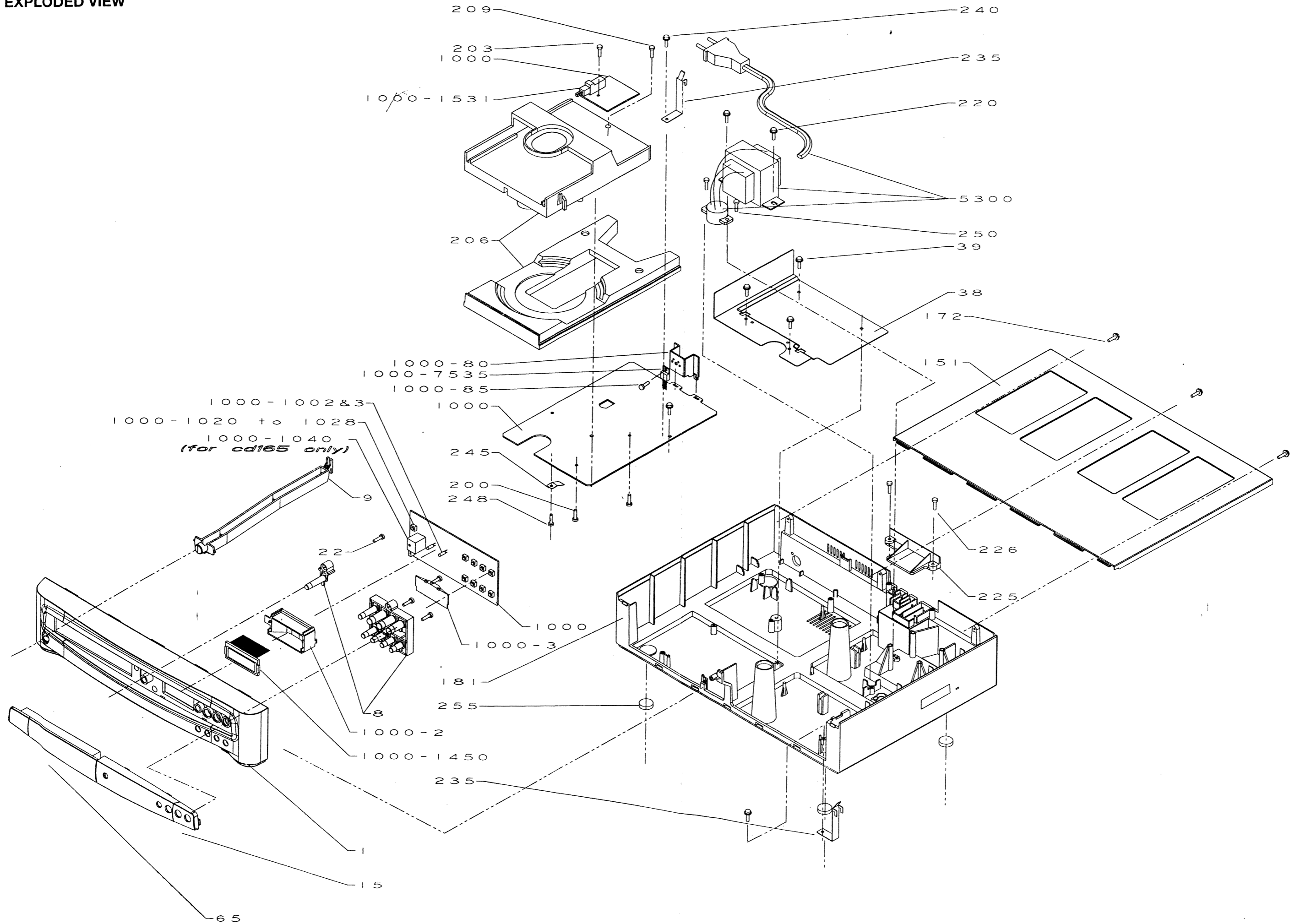
86	4822 528 81464	Drive Pinion
87	4822 528 81465	Pulley
88	4822 325 60379	Damping Grommet
89	4822 276 13222	Switch
93	4822 444 60816	Cover Plate
96	4822 325 80511	Rubber support
101	4822 444 50679	Tray
102	4822 358 31168	Belt
103	4822 691 30278	CDM12
104	4822 325 50215	Suspension
108	4822 402 61412	Clamper Assy
109	4822 464 50895	Subchassis
110	4822 444 50678	Chassis
111	4822 361 21492	Motor

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

EXPLODED VIEW

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LIST OF SCREWS

22	PLASTITE TORX SCR 3 X 12
39	PLAST TORX SCR WASH 3 X 12
172	PLAST TORX SCR WASH 3 X 12
200	PLASTITE TORX SCR 3 X 8
203	PLASTITE TORX SCR 3 X 12
209	PLASTITE TORX SCR 3 X 12
220	PLAST TORX SCR WASH 3 X 12
226	PLASTITE TORX SCR 3 X 12
240	PLAST TORX SCR WASH 3 X 12
248	PLASTITE TORX SCR 3 X 12
250	PLASTITE TORX SCR 3 X 12
1000-85	PAN TAP SCR 2.9 X 8

SET MECHANICAL PARTSLIST (CD163)

1	4822 444 30488	Cabinet front assy
1	4822 444 40745	Cabinet front /17
8	4822 410 63272	Button set cd assy
9	4822 410 63271	Knob-power
15	4822 450 62251	Window cd assy
65	4822 444 60987	Cover door cd assy
181	4822 444 50727	Cabinet-bottom
225	4822 402 50313	Bracket-power
255	4822 462 40683	Plate (foot)
1000-2	4822 255 41091	Display holder
1000-3	4822 466 70673	Display diffusor
5300	4822 146 31367 Δ	Transformer /01
5300	4822 146 31369 Δ	Transformer /05
5300	4822 146 31371 Δ	Transformer /17
	4822 321 62488	Cinch cable mono
	4822 321 62381	Audio cord
	4822 736 22061	IFU /01
	4822 736 22067	IFU /17

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

SET MECHANICAL PARTSLIST (CD165)

1	4822 444 30488	Cabinet front assy
1	4822 444 40745	Cabinet front /17
8	4822 410 63272	Button
9	4822 410 63271	Knob-power
15	4822 450 62251	Window cd assy
65	4822 444 60988	Cover door
181	4822 444 50727	Cabinet-bottom
225	4822 402 50313	Bracket-power
255	4822 462 40683	Plate (foot)
1000-2	4822 255 41091	Display holder
1000-3	4822 466 70673	Display diffusor
5300	4822 146 31367 Δ	Transformer /01
5300	4822 146 31369 Δ	Transformer /05
5300	4822 146 31371 Δ	Transformer /17
	4822 218 10537	Remote control
	4822 321 62381	Audio cord
	4822 736 22061	IFU /01
	4822 736 22067	IFU /17

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

MISCELLANEOUS

1000	4822 242 73557	Res cer 8.467Mhz
1002	4822 134 41101	Lamp 5V 115mA
1003	4822 134 41101	Lamp 5V 115mA
1020	4822 276 13114	Tact switch 20mA 15V
1021	4822 276 13114	Tact switch 20mA 15V
1022	4822 276 13114	Tact switch 20mA 15V
1023	4822 276 13114	Tact switch 20mA 15V
1024	4822 276 13114	Tact switch 20mA 15V
1025	4822 276 13114	Tact switch 20mA 15V
1026	4822 276 13114	Tact switch 20mA 15V -
1027	4822 276 13114	Tact switch 20mA 15V
1028	4822 276 13114	Tact switch 20mA 15V
1040	4822 214 52009	GP1U58XP - CD165
1050	5322 242 73686	CST12.00MTW-TF01
1101	4822 242 80997	CST16.93MXW040-TF01
1450	4822 130 91366	Liquid Crystal Display
1502	4822 242 72527	Res Cer 4MHz
1512	4822 071 51002 Δ	Fuse 1A 250V
1513	4822 071 51002 Δ	Fuse 1A 250V
1531	4822 276 13489	Push switch

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2000	4822 122 10466	220pF 10% 50V
2001	4822 122 10466	220pF 10% 50V
2002	4822 122 10466	220pF 10% 50V
2003	4822 122 10466	220pF 10% 50V
2004	4822 122 10466	220pF 10% 50V
2005	4822 122 10466	220pF 10% 50V
2006	4822 126 12878	1.5nF 10% 16V
2007	4822 122 10459	560pF 10% 50V
2008	5322 124 21643	22μF 20% 40V
2009	4822 126 11585	22nF +80-20% 25V
2010	4822 126 11585	22nF +80-20% 25V
2011	5322 124 21643	22μF 20% 40V
2012	4822 126 11585	22nF +80-20% 25V
2013	5322 124 21643	22μF 20% 40V
2014	4822 126 12785	47nF TUB 50V
2025	5322 124 21643	22μF 20% 40V
2040	4822 126 10053	180pF 10%Y5P
2041	4822 126 10053	180pF 10%Y5P
2042	4822 126 12787	330pF 10% 50V
2043	4822 122 33848	47pF 5%SL 50V
2044	4822 122 33848	47pF 5%SL 50V
2045	4822 122 33195	100pF 10% 50V
2046	4822 126 12573	18pF 5% 50V
2047	5322 124 21643	22μF 20% 40V
2048	4822 126 12787	330pF 10% 50V
2049	4822 126 10053	180pF 10%Y5P
2050	4822 126 12787	330pF 10% 50V
2051	4822 126 11585	22nF +80-20% 25V
2052	5322 124 21643	22μF 20% 40V
2060	4822 126 12882	100nF +80-20% 50V
2062	4822 126 12882	100nF +80-20% 50V

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2063	5322 121 42489	33nF 5% 250V
2064	4822 126 12882	100nF +80-20% 50V
2066	4822 126 12339	2.2nF 10% Y5E
2067	4822 126 12882	100nF +80-20% 50V
2068	4822 126 12148	2.7nF 10%
2069	4822 126 10053	180pF 10%Y5P
2071	4822 126 12882	100nF +80-20% 50V
2072	4822 126 12882	100nF +80-20% 50V
2074	4822 126 12882	100nF +80-20% 50V
2075	4822 126 13151	3.9nF 10% Y5E 16V
2076	4822 126 10053	180pF 10%Y5P
2100	4822 126 12339	2.2nF 10% Y5E
2101	4822 122 33848	47pF 5%SL 50V
2102	4822 126 11585	22nF +80-20% 25V
2103	5322 121 42386	100nF 5% 63V
2105	4822 122 33195	100pF 10% 50V
2109	4822 122 33191	22pF 5% 50V
2110	5322 124 21643	22μF 20% 40V
2111	4822 126 12882	100nF +80-20% 50V
2115	4822 126 11585	22nF +80-20% 25V
2116	5322 124 21643	22μF 20% 40V
2140	4822 126 12785	47nF TUB 50V
2141	4822 126 12882	100nF +80-20% 50V
2142	4822 122 33848	47pF 5%SL 50V
2280	4822 124 40433	47μF 20% 25V
2281	4822 126 12882	100nF +80-20% 50V
2300	4822 124 40433	47μF 20% 25V
2301	4822 124 40433	47μF 20% 25V
2302	4822 126 11585	22nF +80-20% 25V
2303	4822 124 40433	47μF 20% 25V
2304	4822 122 10466	220pF 10% 50V
2305	4822 122 33849	150pF 10%Y5P 50V
2306	4822 124 40246	4.7μF 20% 63V
2307	4822 122 10466	220pF 10% 50V
2308	4822 122 33849	150pF 10%Y5P 50V
2309	4822 124 40246	4.7μF 20% 63V
2310	4822 126 12882	100nF +80-20% 50V
2400	5322 124 41431	22μF 20% 35V
2401	4822 122 33069	33pF 5%5L 50V
2402	4822 122 33069	33pF 5%5L 50V
2403	4822 122 10575	8.2nF 20% 16V
2505	4822 122 33197	1nF 10% 50V
2514	4822 122 33197	1nF 10% 50V
2533	4822 126 11585	22nF +80-20% 25V
2534	4822 126 11585	22nF +80-20% 25V
2535	4822 126 12882	100nF +80-20% 50V
2536	4822 124 41458	4700μF 20% 16V
2537	4822 126 11585	22nF +80-20% 25V
2538	4822 124 80148	2200μF 20% 16V
2539	4822 126 11585	22nF +80-20% 25V
2560	4822 124 40849	330μF 20% 16V
2600	4822 126 12882	100nF +80-20% 50V
2601	4822 126 11585	22nF +80-20% 25V
2602	4822 126 11585	22nF +80-20% 25V
2701	4822 126 11585	22nF +80-20% 25V

