

Service Manual

74CD62/01B/02B/05B

Compact disc player

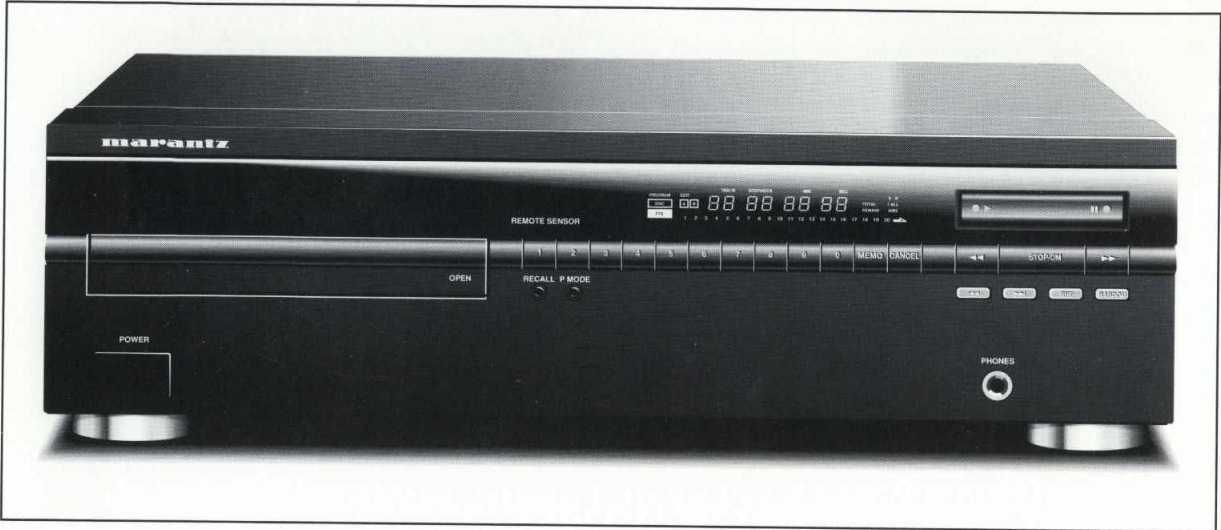


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marantz®

model CD62

Firs issue 1991

4822 725 50952

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.

Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

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

ORDERING PARTS:

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

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

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA

MARANTZ
Hietzinger Kai 137a
1130 Wien

BELGIUM

SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE

MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK

MARANTZ
Horsvinget 5
2630 Tastrup

NORWAY

MARANTZ
Postboks 7034
Assiden
3007 Drammen

FRANCE

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY

MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

THE NETHERLANDS

Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

SWEDEN

MARANTZ
Box 1324
171 25 Solna

FINLAND

MARANTZ
Kuortanegatan 1
00520 Helsingfors 52

GREAT BRITAIN

MARANTZ HiFi U.K. Ltd
Kingsbridge House
Padbury oaks
575-583 Bath Road
Long ford
Middlesex UB7 OEH
Faxnr.: 0753 680 428

GREECE

SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocrates Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN

MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT

AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY

MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA

AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SOUTH AFRICA

MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

SPAIN

Euroservice S.A.
Bernardo obrégón, 26
28012 Madrid
faxnr.: 3412 306 198

SWITZERLAND

MARANTZ
Technischer Service
Duenstrasse 3
3186 Düringen
Switzerland

TURKEY

DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA

CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

PORTUGAL

MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

MARANTZ INTERNATIONAL

Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

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

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

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**(NL) WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilier 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).

Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

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

La loro longevità potrebbe essere fortemente 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.

(I) Varo!

Avattaessa ja suojelukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

(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 ricambiaggio identici a quelli specificati.

(I) Varning!

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

(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.

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

TECHNICAL SPECIFICATIONS**General**

- | | | |
|----------------------------|------|--------------------------------------|
| 1. Mains voltage | /02B | : 220V ($\pm 10\%$) |
| | /05B | : 240V ($\pm 10\%$) |
| | /01B | : 110V-127V-220V-240V ($\pm 10\%$) |
| | | Selectable by voltage adapter |
| 2. Mains frequency | | : 50Hz |
| 3. Mains voltage selection | | : See Circuit Diagram Power Supply |
| 4. Power consumption | | |
| mains, operated | | : 20W |

Line output (Fixed and Variable)

- | | | |
|---|--|--|
| 1. Number of channels | | : 2 |
| 2. Output voltage | | : 0 - 2 Vrms $\pm 1,5$ dB |
| 3. Unbalance left right | | : max. $\pm 0,6$ dB |
| 4. Output resistance | | : 200 Ohm |
| 5. Amplitude linearity | | : max. $\pm 0,2$ db from 20 Hz to 20 kHz |
| 6. Phase non-linearity | | : max. from 20 Hz to 20 kHz |
| 7. Signal to noise ratio | | : min. 95dB from 20 Hz to 20 kHz |
| 8. Dynamic range (-60dB) | | : min. 92dB from 20 Hz to 20 kHz |
| 9. Total harmonic distortion + noise | | : min. 88dB from 20 Hz to 20 kHz |
| 10. Intermodulation distortion | | : min. 88db from 20 Hz to 20 kHz |
| 11. Out-band attenuation | | : min. 60dB |
| 12. Channel separation | | : min. 100dB from 20 Hz to 20 kHz |
| 13. Automatic switched de-emphasis with time constant | | : 15/50 μ s |

Fixed Headphone

- | | | |
|-------------------------|--|---|
| 1. Output voltage | | : 2 Vrms ± 3 dB |
| 2. Unbalance left-right | | : max. $\pm 0,6$ dB |
| 3. Output resistance | | : 150 Ohm |
| 4. Load impedance range | | : 32 Ohm to 600 Ohm load |
| 5. Output power | | : 0 to 50 mW into 32 Ohm load
0 to 90 mW into 150 Ohm load
0 to 50 mW into 600 Ohm load |

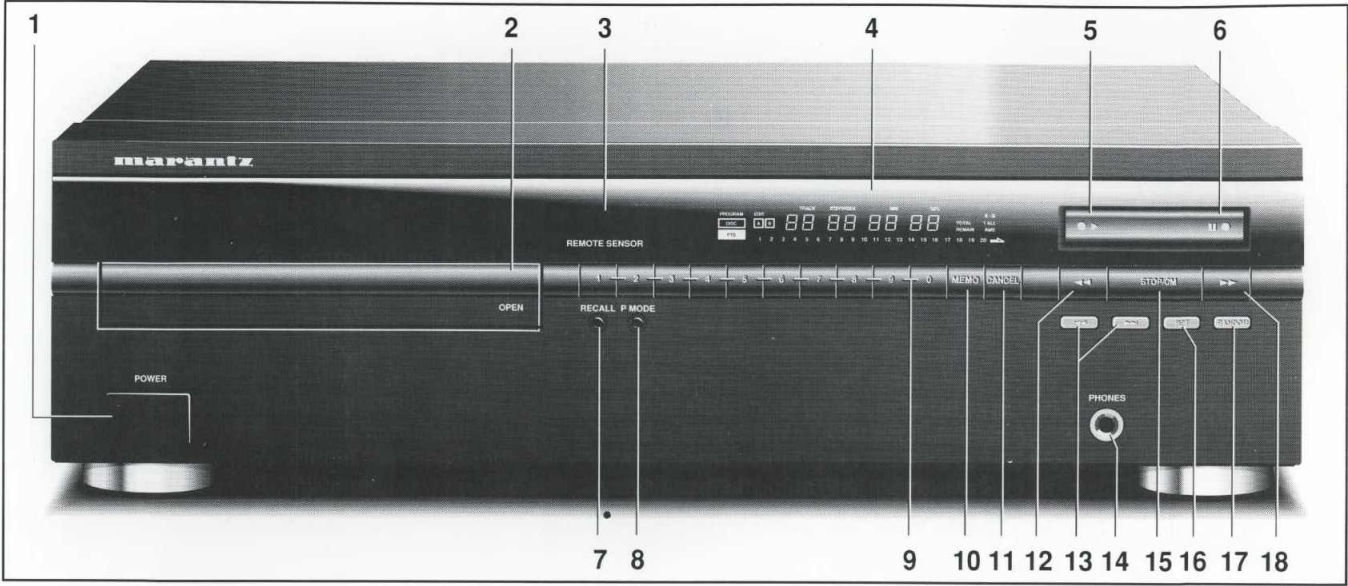
Dimensions and weight

- | | | |
|--------------------------|--|----------------------------|
| 1. Apparatus tray closed | | : WxDxH 420 x 117 x 288 mm |
| 2. Apparatus tray open | | : WxDxH 420 x 117 x 430 mm |
| 3. Weight | | : 4,6 kg |

Optical read-out system

- | | | |
|------------------------|--|------------------------|
| 1. Laser type | | : Semiconductor AlGaAs |
| 2. Wavelength | | : 780 nm ± 20 nm |
| 3. Light output (c.w.) | | : 0,4 mW $\pm 0,04$ mW |

CONTROLS AND CONNECTIONS



457 99 A.

CONTROLS

Indication
on App.

- 1. POWER
- 2. OPEN
- 3. REMOTES SENSOR
- 4. Display
- 5. PLAY-REPLAY
- 6. PAUSE
- 7. RECALL
- 8. P (rogram) MODE
- 9. 1-0 digit keys
- 10. MEMO
- 11. CANCEL
- 12. ◀
- 13. ▶ and ⏮
- 14. PHONES
- 15. STOP/CM
- 16. RPT (repeat)
- 17. RANDOM
- 18. ▶

Indication
in diagram

- SK1
- 0024
- 1002
- 1001
- 0037
- 0030
- 0020 1034
- 0012
- key0-9
- 0013
- 0015
- 0022
- 0040 0011
- BU-5
- 0014
- 0010
- 0019
- 0018

CONNECTIONS

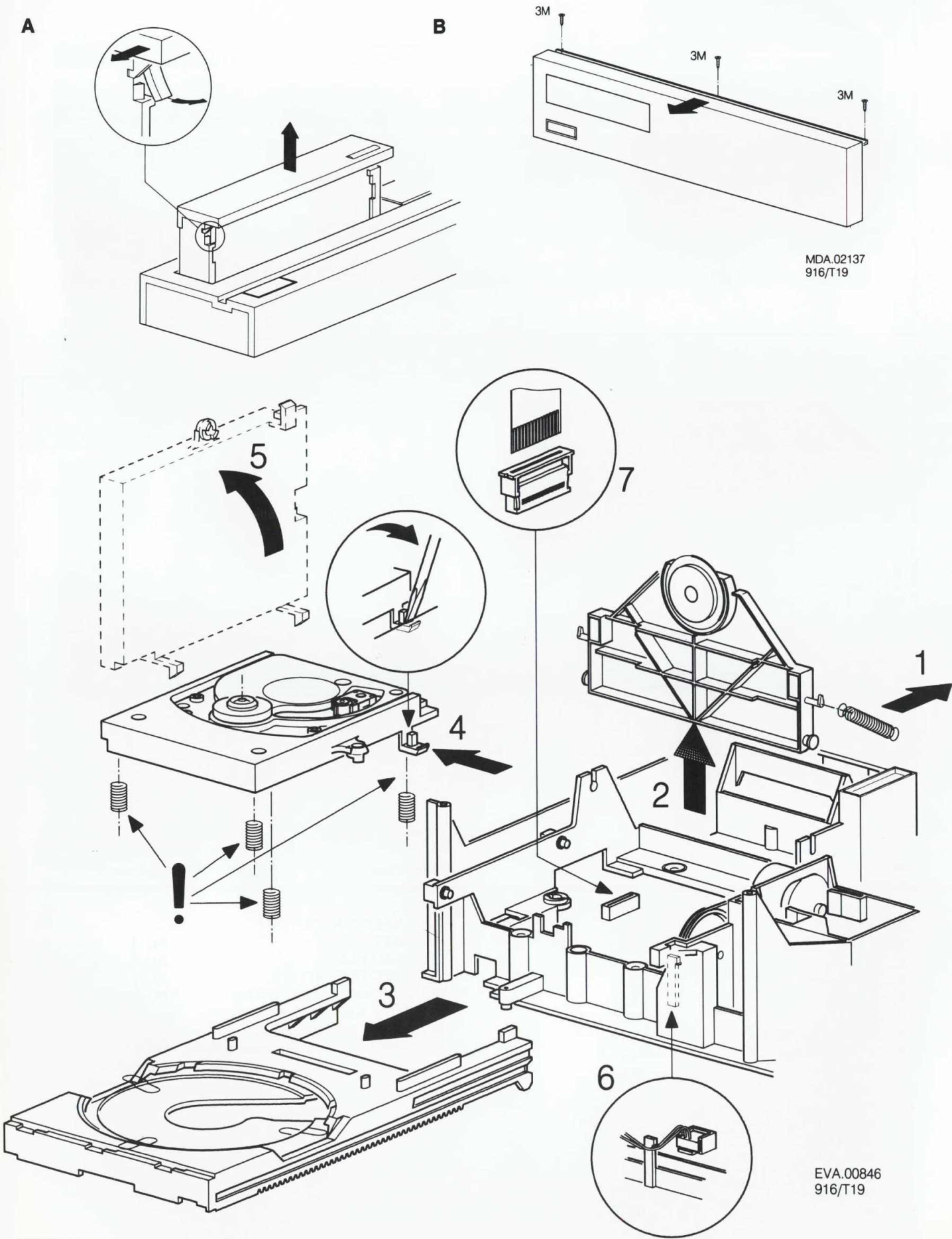
Indication
on App.

- 1. ANALOGUE OUTPUT
FIXED
VARIABLE
- 2. REMOTE CONTROL
- 3. DIGITAL OUTPUT COAX
- 4. Mains fuse holder(/01B)
- 5. Voltage selector(/01B)
- 6. Connection for the mains lead

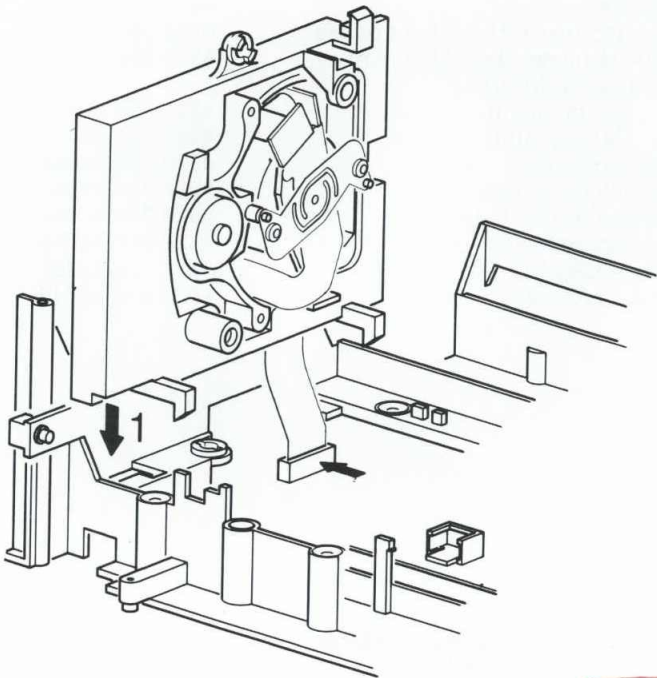
Indication
in diagram

- BU-3
- BU-2
- BU-2
- BU-2
- BU-1

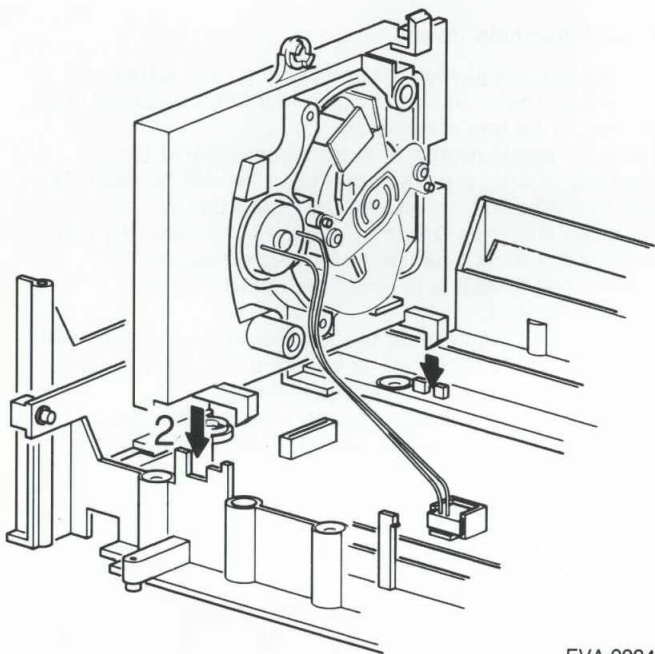
DISASSEMBLY OF THE CABINET AND LOADING
CABINET DISASSEMBLY HINTS



FOIL CONNECTION POSITION

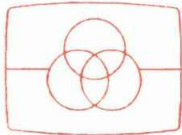


PLAY-SERVICE POSITION



CAUTION
INVISIBLE LASER RADIATION WHEN
OPEN. DO NOT STARE INTO BEAM
3104 106 75942

EVA.00848
916/T19

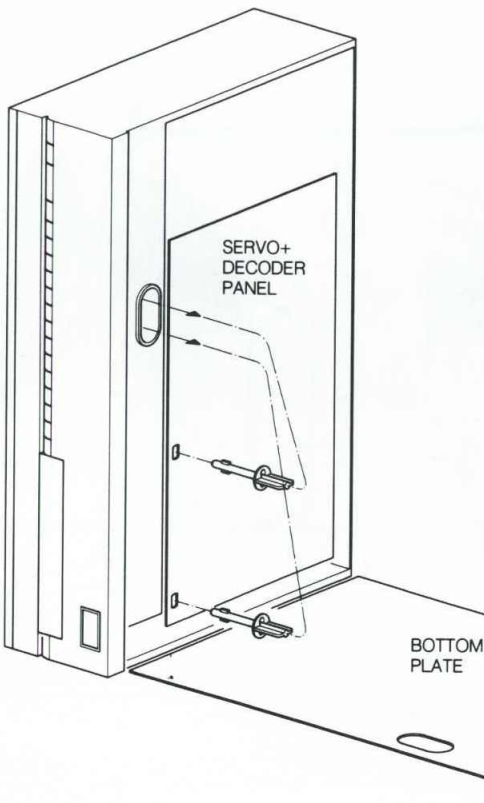


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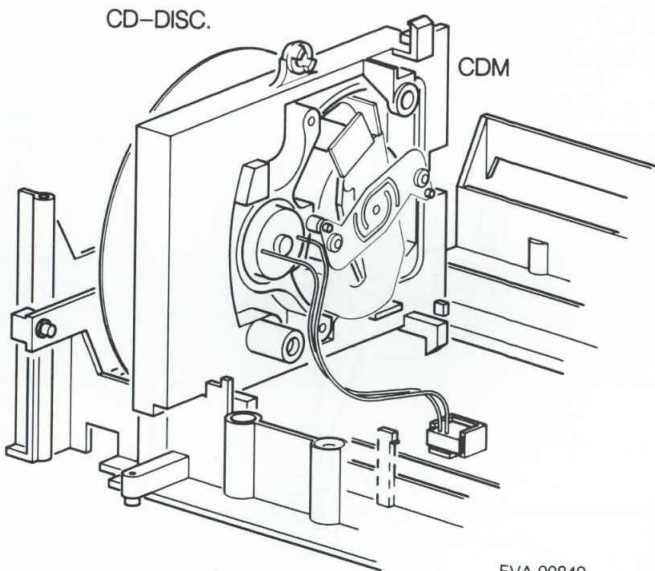
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MEASURING AND ADJUSTMENT POSITION



SERVICE POSITION PLAY



EVA.00849
916/T19

MDA.02138
916/T19

MZ 2903

SERVICING HINTS

When the tray mechanism and CDM-unit has been disassembled the player can be prepared for measurements by bridging The "tray detection" switch SK2 on the main panel.

Service disc hold-down

The disc should always rest properly on the turntable. To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.

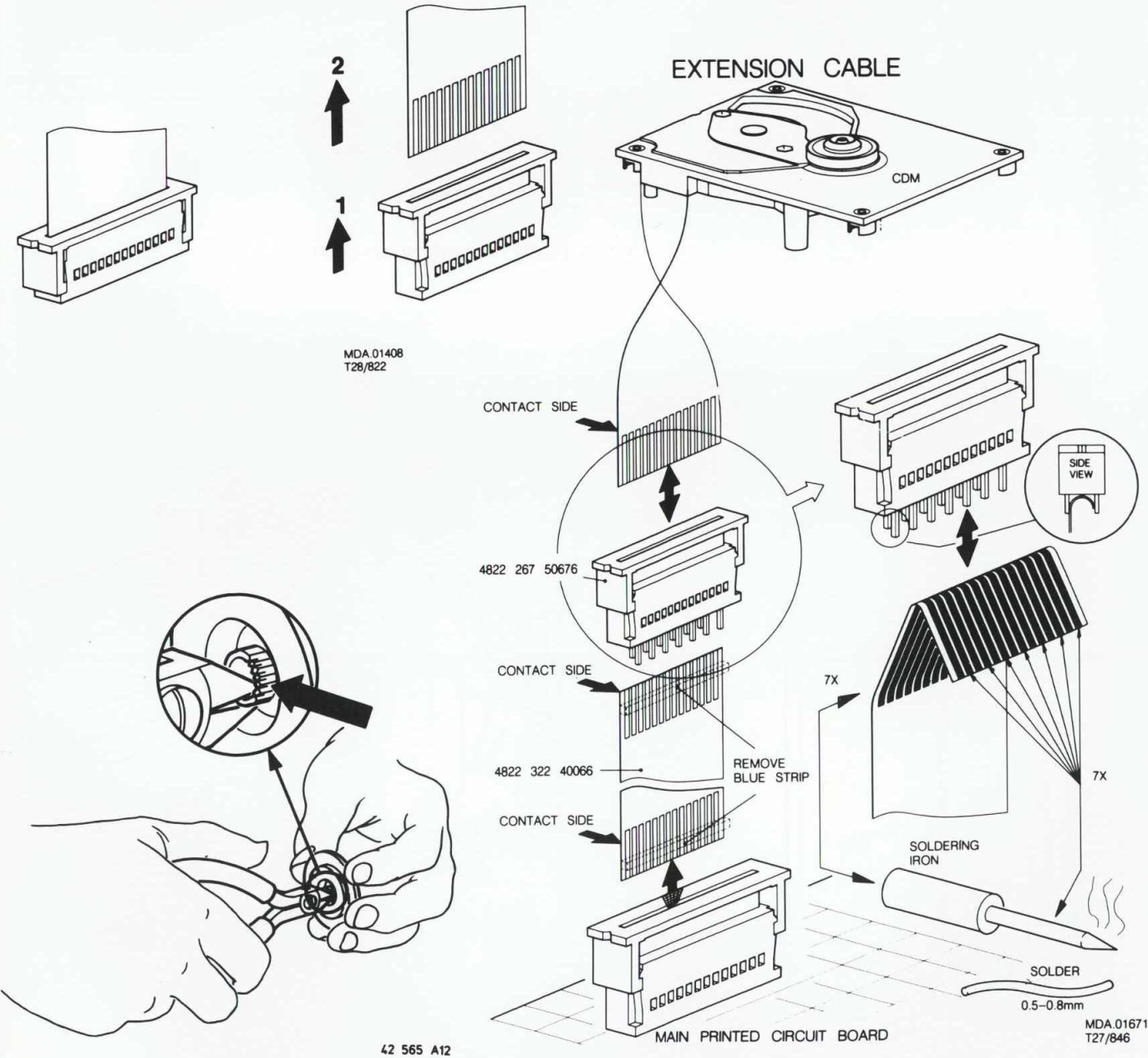
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold-down see the figure below.

Compose a service Disc hold-down in the following way.

- Cut in the most inner ring of a disc holddown (4822 462 50383) with small and sharp nippers See fig. below.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.

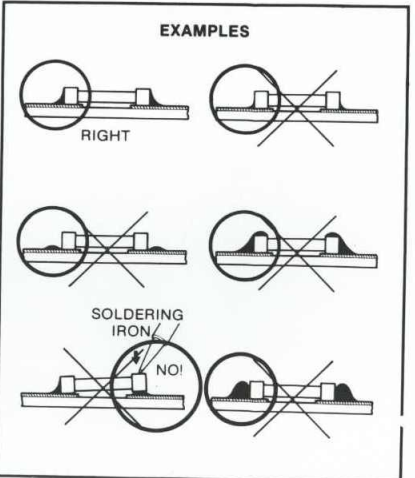
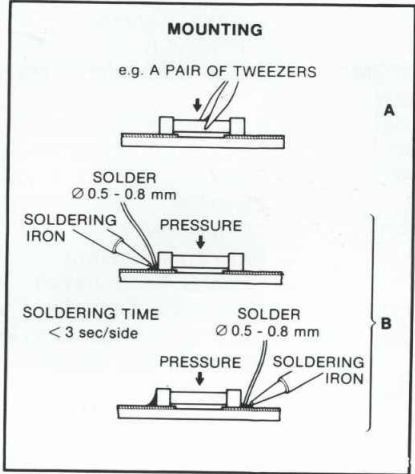
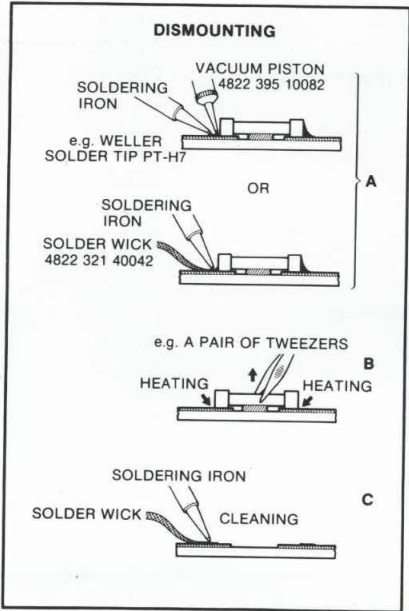
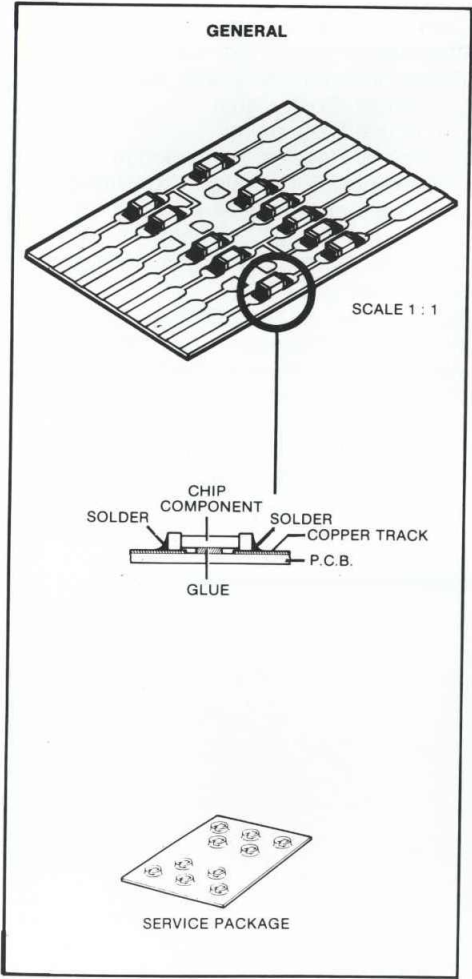
SERVICE TOOLS

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
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182
Infra red remote control e.g.	4822 218 10349



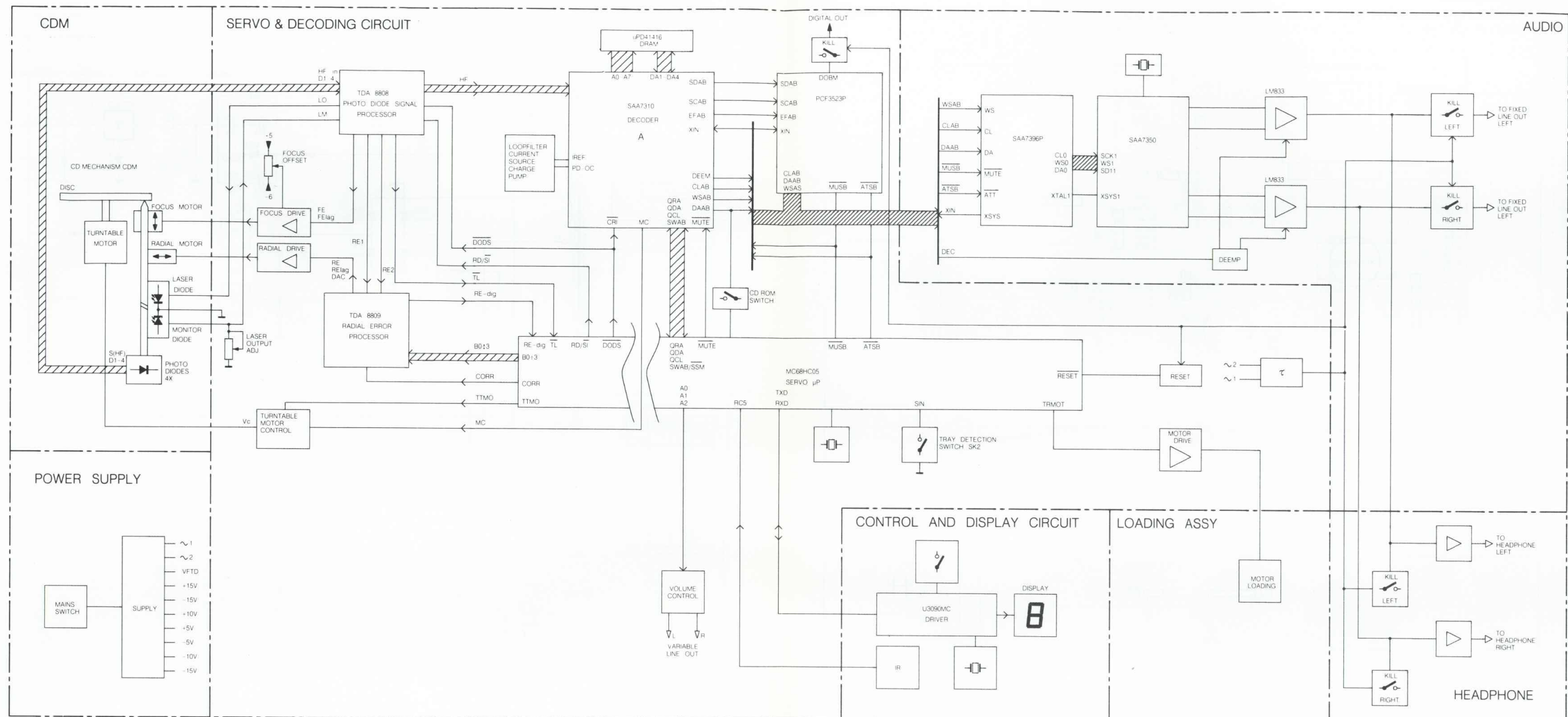
SERVICE HINTS

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

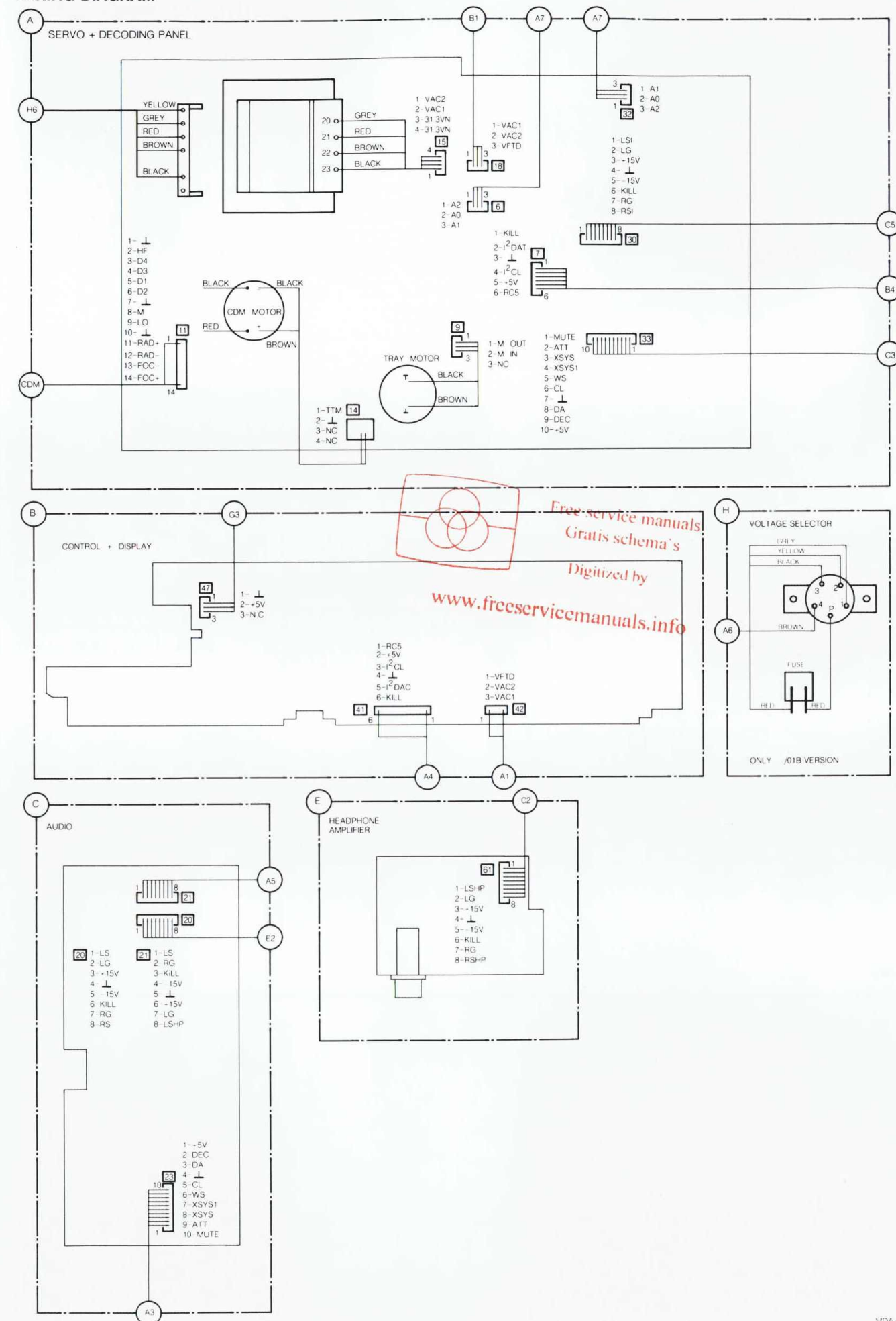


AGC	- Automatic Gain Control	Rosc	- Resistor wobble oscillator
B0-B3	- Control bits for radial circuit	Rwob	- Wobble generator input
BEQ	- Equalizer reference current input	RE1	- Radial error signal 1 (summation of amplified currents D_3 and D_4)
BGC	- DC and LF gain control reference input	RE2	- Radial error signal 2 (summation of amplified currents D_1 and D_2)
Cosc1	- Capacitor wobble oscillator	RE dig	- Radial error digital
Cosc2	- Capacitor wobble oscillator	RE lag	- Radial error signal for LAG network
DEC	- Decoupling input internal bypass	Sc	- Starting up capacitor input
DET	- HF detector voltage input	Si/RD	- On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
DIV4	- Divide by 4 input	TL	- Track loss output signal
DODS	- Drop out detector suppression	TTM-	- Control voltage for turntable motor
D1+4	- Photodiode currents	TTM+	- Control voltage for turntable motor
FE	- Focus error signal	Vext-	- Supply connection
FE lag	- Focus error signal for LAG network	Vext+	- Supply connection
HF	- HF output for DEMOD		
HFD	- HF detector output for DEMOD		
HF-in	- HF current input to HF amplifier		
HF-out	- HF amplifier and equalizer voltage output		
LM	- Laser monitor diode input		
LO	- Laser amplifier current output		
MC	- Motor control signal		
offset IN	- Offset control input		
offset OUT	- Offset control output		
PLLH	- PLL on hold output		
RADout	- output of RE2-RE1 input		
RE	- Radial error signal (Amplified RE_2 - RE_1 currents)		
ATSB	- Attenuation of Audio level in Search position (Cueing)	MUSB	- Soft Mute signal
ATT	- Attenuation	OALO	- Operational ampl. left output
CD ROM Switch	- Digital Data information on disc signal	OARO	- Operational ampl. right output
CEFM	- Clock Eight-to-Fourteen Modulator	PD/OC	- Phase detector - oscillator control
CLAB	- Clock signal Decoder-A to Filter-B	QCL	- Q-channel Clock signal
CLBD	- Clock signal Filter-B to DAC	QDA	- Q-channel Data signal
CLI	- I ² S serial bit clock input	QRA	- Q-channel Request Acknowledge
CORR	- 1/2 bit DAC	SCAB	- Subcode clock Decoder-A to Filter-B
CREF	- Reference Current	SDAB	- Subcode data Decoder-A to Filter-B
CRI	- Counter Reset Inhibit	SIN	- Tray switch
DAAB	- Data signal Decoder-A to Filter-B	SWAB/SSM	- Subcode Word/Start-stop motor signal
DABD	- Data signal Filter-B to DAC	TRMOT	- Tray motor drive
DAI	- I ² S serial data input	TTMO	- Motor offset and bandwidth switch
DEEM	- Deemphasis	WSAB	- Word select Decoder-A to Filter-B
DEC	- De-emphasis control	WSBD	- Word Select Filter-B to DAC
DMUTE	- Digital mute	WSI	- I ² S word select input
DOBM	- Digital out signal	XIN	- Oscillator signal in Decoder-A
EFAB	- Error flag Decoder-A to Filter-B	XSYS	- Oscillator signal out Filter-B
MCES	- Motor speed control	BSW	- Bandwidth switch turntable motor circuit
MUTE	- Mute signal		

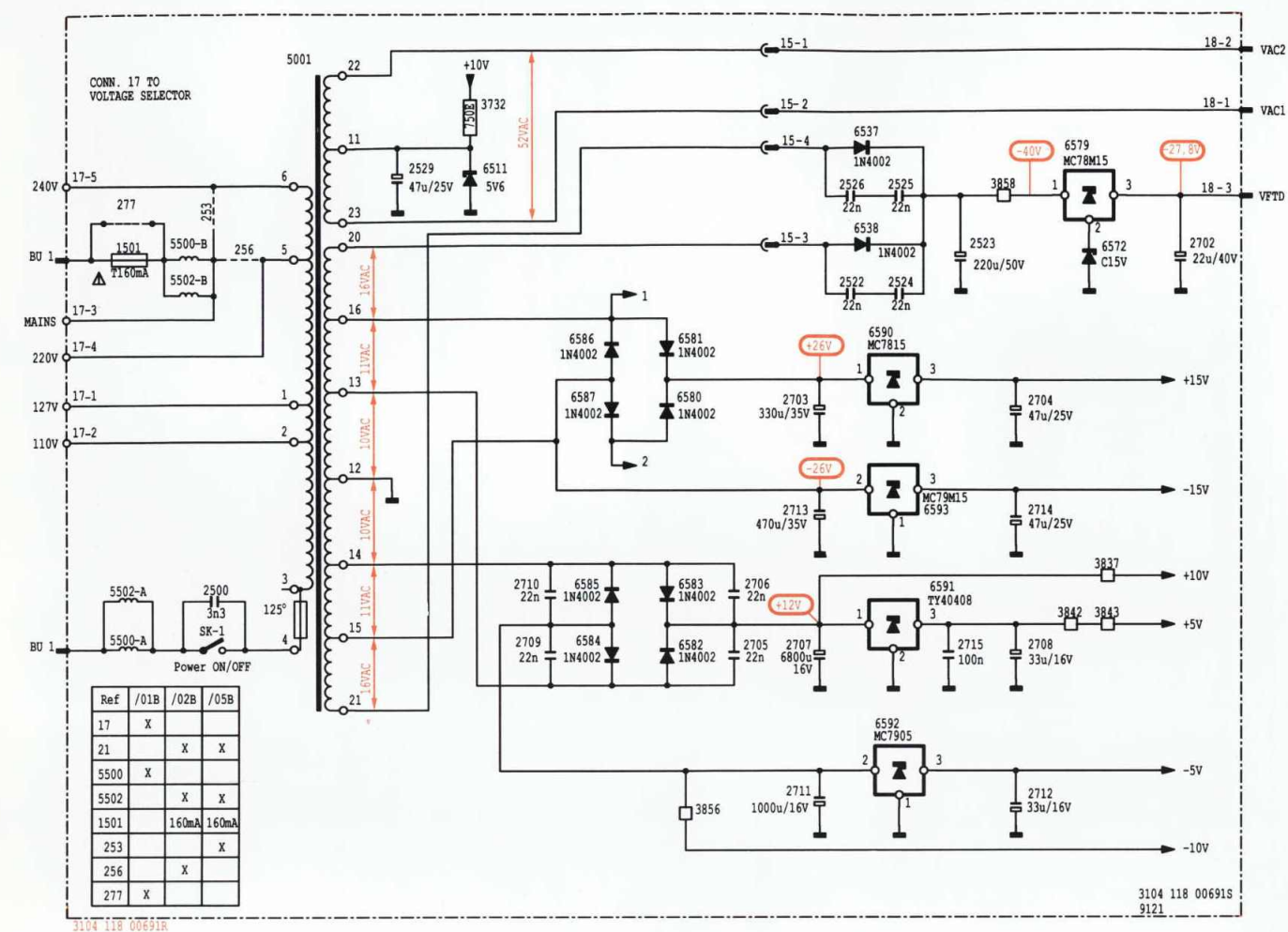
BLOCK DIAGRAM



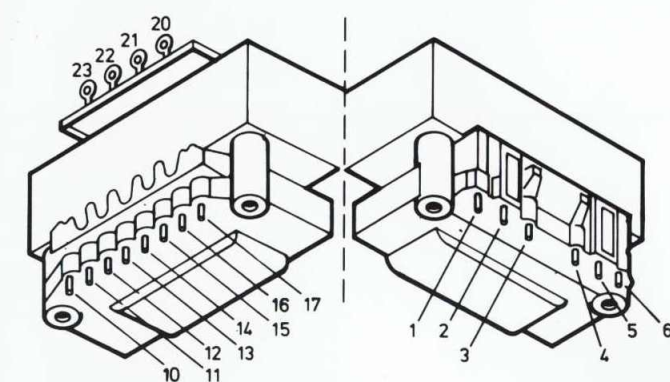
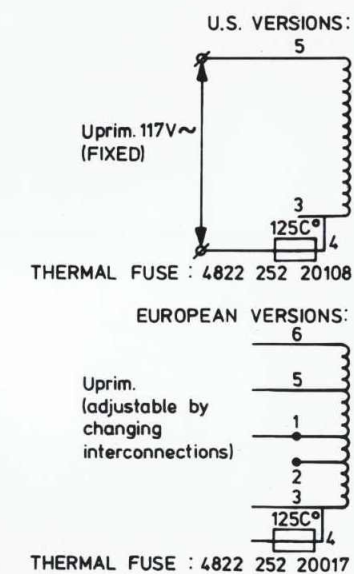
WIRING DIAGRAM



POWER SUPPLY

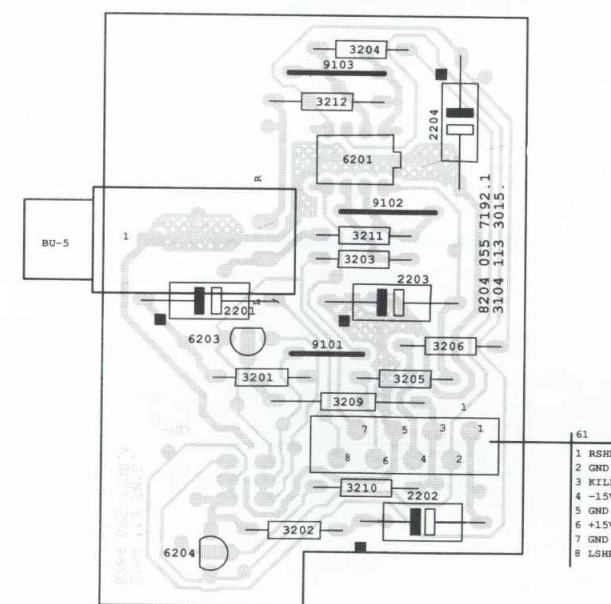
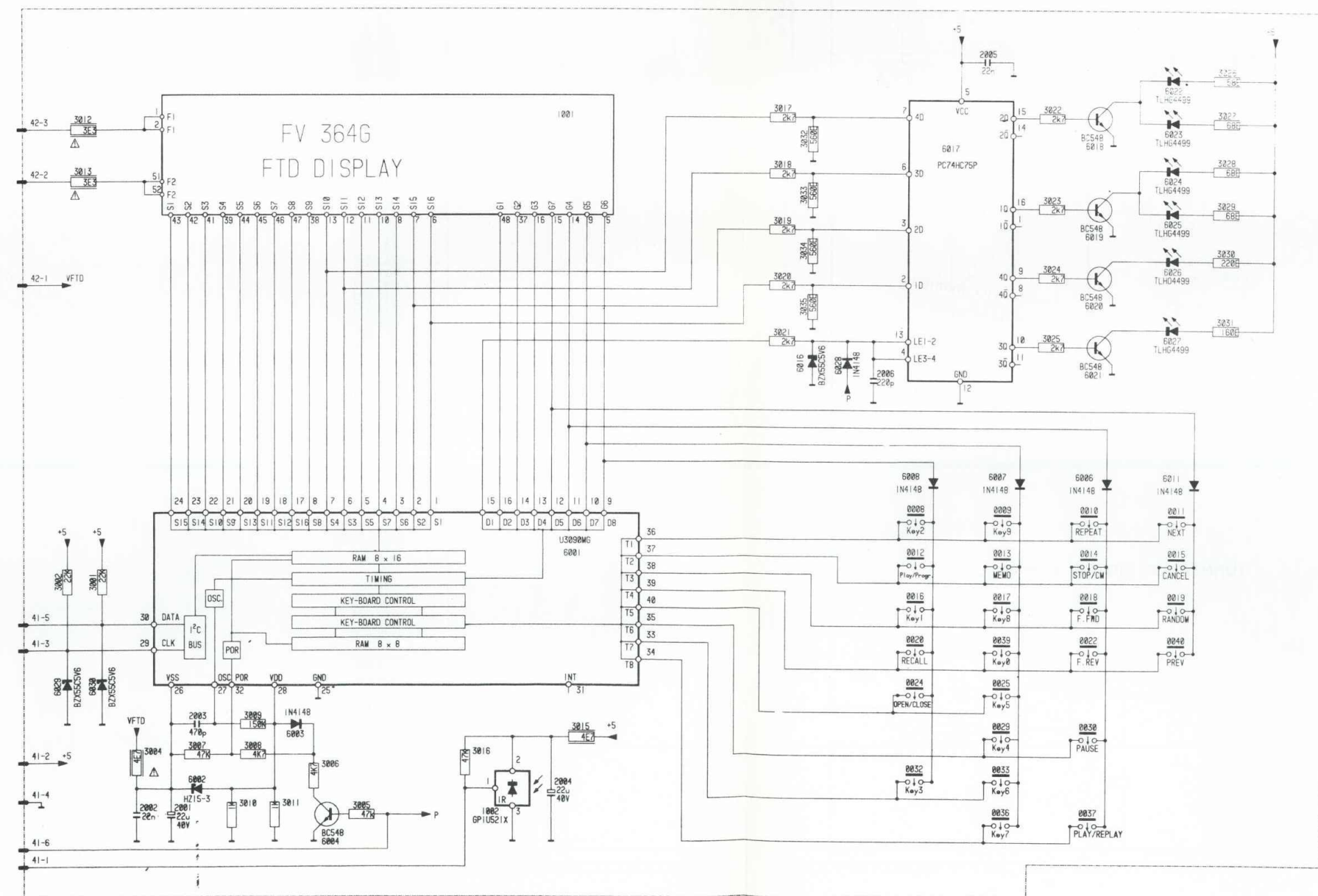
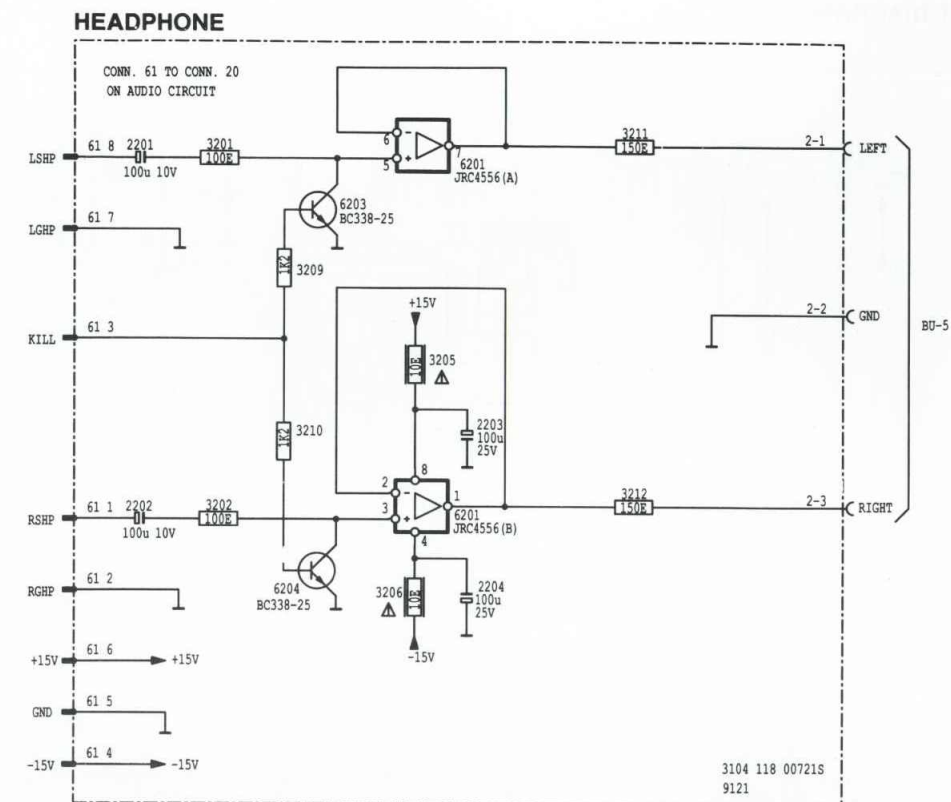


TRANSFORMER CONNECTIONS

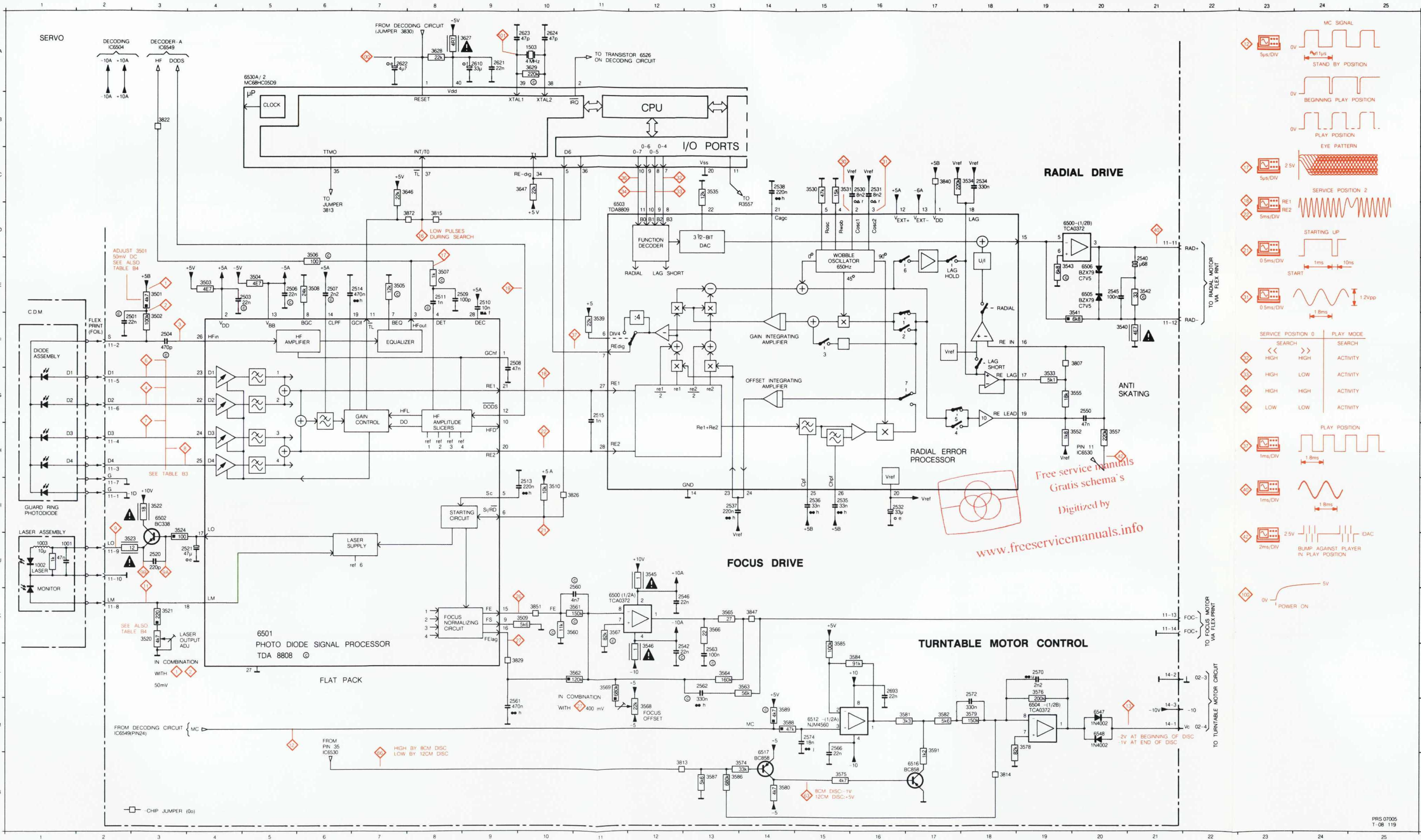


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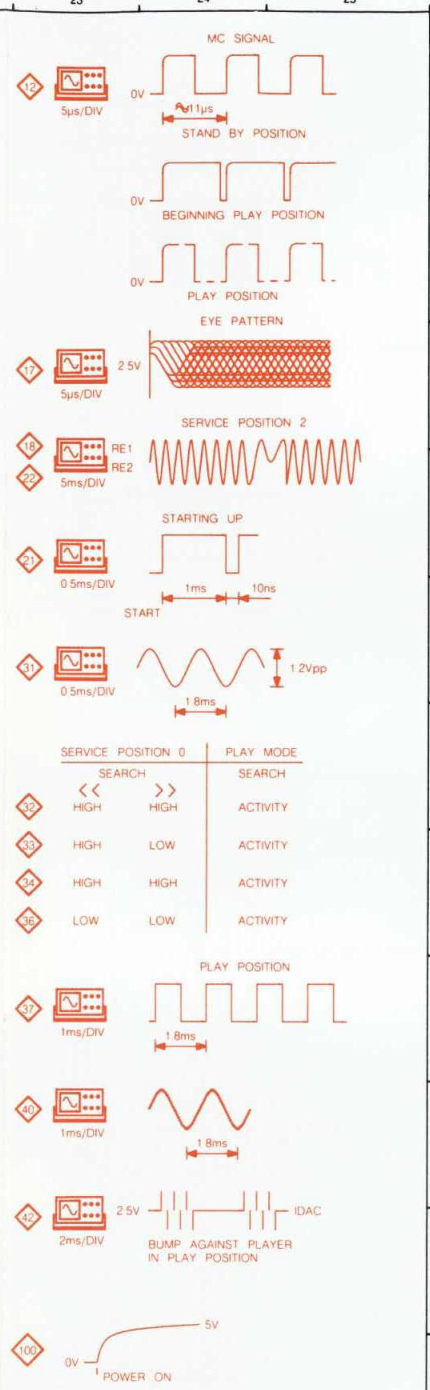
11



SERVO CIRCUIT DIAGRAM

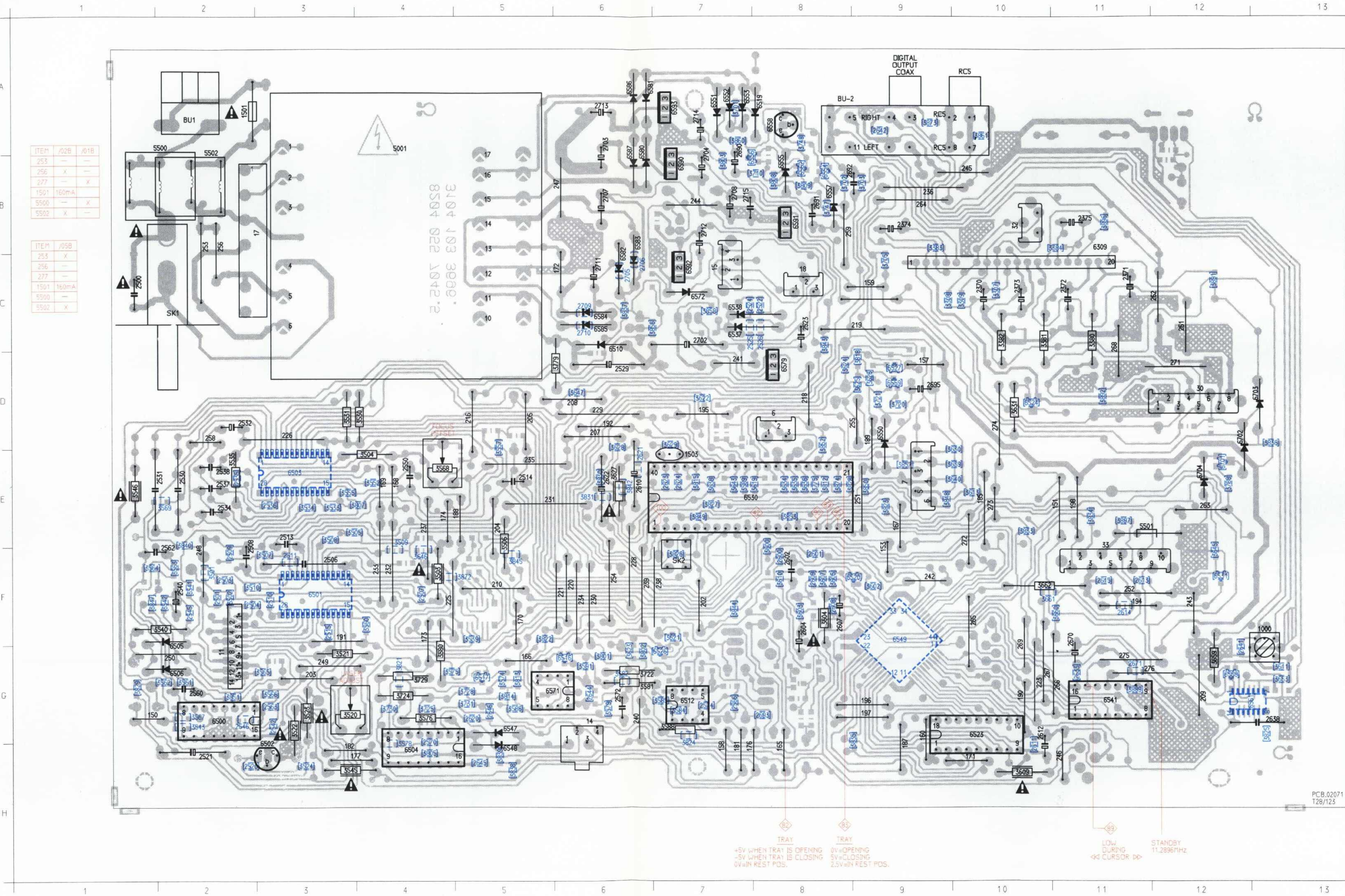


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- 1001 J1
- 1002 J1
- 1003 J1
- 1503 A10
- 2501 F2
- 2503 E4
- 2504 F3
- 2506 E5
- 2507 E6
- 2508 F9
- 2509 E8
- 2510 E9
- 2511 E8
- 2513 I10
- 2514 E7
- 2515 G11
- 2520 J3
- 2521 J3
- 2530 C16
- 2531 C16
- 2532 I16
- 2534 C18
- 2535 I15
- 2536 I15
- 2537 I13
- 2538 C14
- 2540 E21
- 2542 L12
- 2545 E20
- 2546 K12
- 2550 G20
- 2560 K11
- 2561 M9
- 2562 L13
- 2563 L13
- 2566 M15
- 2570 L19
- 2572 L18
- 2574 M15
- 2610 A9
- 2621 A9
- 2622 A7
- 2623 A10
- 2624 A10
- 2693 M16
- 3501 E3
- 3502 F3
- 3503 E4
- 3504 E5
- 3505 E7
- 3506 D6
- 3507 E8
- 3508 E6
- 3509 K10
- 3510 I10
- 3520 K3
- 3521 K3
- 3522 I3
- 3523 J2
- 3524 I3
- 3530 C15
- 3531 C15
- 3533 G19
- 3534 C18
- 3535 C13
- 3539 F11
- 3540 F20
- 3541 F20
- 3542 E21
- 3543 E19
- 3545 J12
- 3546 L12
- 3552 H19
- 3555 G19
- 3557 H20
- 3560 K10
- 3561 K11
- 3562 L11
- 3563 L14
- 3564 L13
- 3565 K13
- 3566 K13
- 3567 K11
- 3568 M12
- 3569 L11
- 3574 N14
- 3575 N15
- 3576 L19
- 3578 M19
- 3579 M18
- 3580 N14
- 3581 M16
- 3582 M17
- 3584 L16
- 3585 L15
- 3586 N13
- 3587 N13
- 3588 M14
- 3589 M14
- 3591 N17
- 3627 A8
- 3628 A8
- 3629 A10
- 3646 C7
- 3647 C9
- 3807 F20
- 3813 N13
- 3814 N18
- 3815 D8
- 3822 B3
- 3826 I11
- 3829 L10
- 3840 C17
- 3847 K14
- 3851 K10
- 3872 D8
- 6500 D19
- 6500 K11
- 6502 I3
- 6503 D11
- 6504 M19
- 6505 E20
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- 6512 M15
- 6516 N17
- 6517 N14
- 6530 A5
- 6547 M20
- 6548 M20

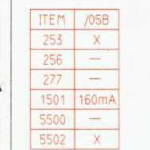
SERVO & DECODER PANEL component side



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11 G2	2509 F2	3564 F1	3851 E9
14 G6	2510 F3	3565 G2	3852 E8
15 C7	2511 F3	3566 G3	3853 E8
17 B5	2513 E3	3567 G2	3854 E8
18 C3	2514 E3	3568 G4	3855 E7
30 D12	2515 F3	3569 E1	3856 C7
32 B10	2520 H2	3574 G5	3857 E9
126 G11	2521 H2	3575 G4	3858 C7
151 E11	2522 C8	3576 G4	3860 A7
153 F9	2523 C8	3578 H4	3861 A10
157 D9	2524 C7	3579 G6	3872 F5
158 H7	2525 C7	3580 G4	3873 A9
159 C9	2526 C8	3581 G6	3874 E8
160 H8	2529 D6	3582 G6	3889 G11
165 H8	2530 E2	3584 G7	3891 C12
166 G5	2531 E2	3585 G5	3892 D11
167 E9	2532 D2	3586 G5	3895 B11
168 E4	2534 E2	3588 G7	3897 E11
169 E4	2535 E2	3589 C7	5001 A4
170 F5	2536 E3	3591 G6	5500 A1
171 H9	2537 E2	3600 F8	5501 E11
172 C5	2538 F2	3602 F9	5502 A2
173 G4	2540 F2	3603 F8	5503 B11
174 E4	2542 G3	3604 F8	5500 G2
176 F7	2543 F2	3605 F8	5501 F3
177 H3	2545 F2	3607 F8	5502 F8
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182 H3	2550 E4	3610 F8	5504 H4
185 E10	2551 G3	3611 F8	5505 G2
187 H9	2552 G3	3613 E10	5506 G2
188 E8	2553 G3	3619 E8	5510 D6
189 E8	2554 H4	3621 F7	5512 G7
190 G10	2557 G6	3622 D7	5516 G6
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198 E11	2563 F8	3629 G6	5527 D8
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204 E5	2566 G10	3634 E8	5538 C7
205 D5	2567 F11	3634 E8	5541 G11
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209 G12	2569 F11	3636 E8	5548 F9
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216 D5	2571 F5	3637 E8	5551 A7
218 D8	2572 F5	3638 E9	5552 A7
219 C8	2573 F5	3639 E9	5553 A7
221 F6	2574 G11	3640 E9	5554 B8
223 G10	2575 G12	3641 F2	5555 B8
224 D5	2576 G12	3642 F4	5556 B8
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226 D6	2578 G12	3644 G12	5558 D9
227 D6	2579 G12	3645 G12	5559 G13
228 F6	2580 G12	3646 G12	5560 G12
229 D6	2581 G12	3647 F10	5561 G5
230 G11	2582 G12	3648 A7	5562 C7
231 E5	2583 G12	3649 B8	5563 D8
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236 B9	2588 G12	3654 G9	5568 B6
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238 F7	2590 G12	3656 G9	5570 B6
239 F6	2591 G12	3657 G9	5571 G5
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241 D7	2593 G12	3659 G9	5573 D8
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254 C10	2606 G12	3672 G9	5586 G5
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SK2 F7	2631 G12	3697 G9	5611 G5
1501 A2	2632 G12	3698 G9	5612 G5
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2371 F11	2636 G12	3702 G9	5616 G5
2372 C11	2637 G12	3703 G9	5617 G5
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2502 F2	2643 G12	3709 G9	5623 G5
2503 F2	2644 G12	3710 G9	5624 G5
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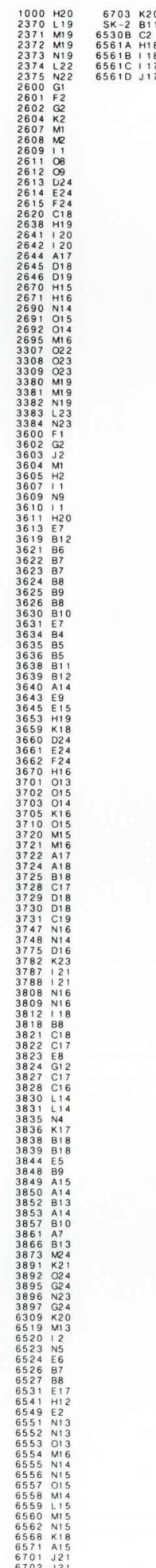
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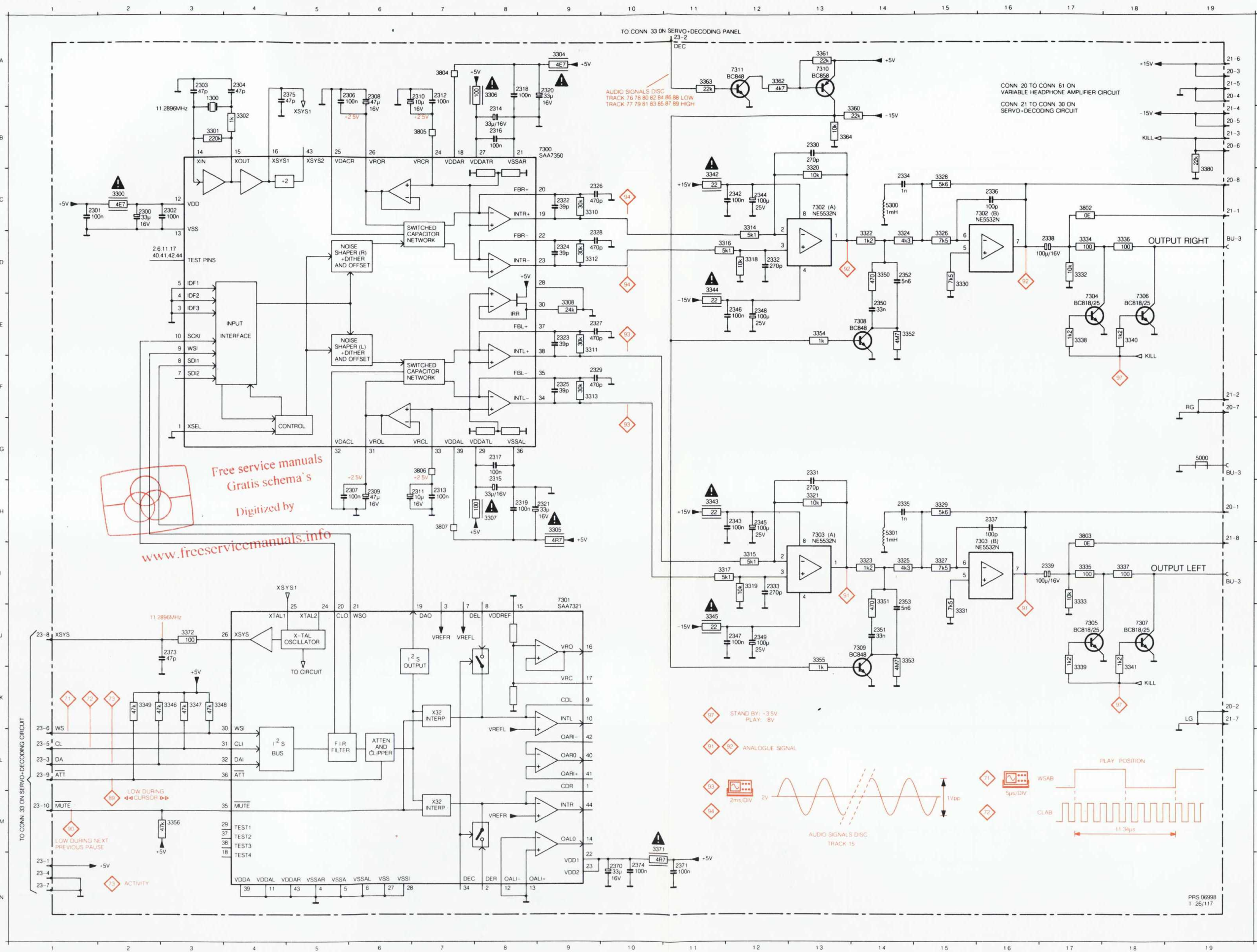


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	15	E8	2511	F12	3505	F11	3640	E5	3957	F6
	17	C12	2511	F12	3505	F11	3640	E5	3957	F6
	18	C7	2513	F12	3506	F10	3643	E7	3958	D8
	30	D5	2514	E9	3507	F12	3645	F3	3958	D8
	33	F4	2515	G12	3508	F11	3645	F3	3960	B4
	35	F4	2515	G12	3508	F11	3645	F3	3960	B4
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	151	F4	2520	H12	3509	F11	3647	D9	3961	B5
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	167	F6	2526	D7	3524	H12	3661	G4	3974	E6
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	189	E6	2545	G15	3542	G13	3721	E6	6309	C5
	190	H5	2545	G15	3543	H13	3722	G8	6500	H13
	191	G11	2546	H12	3543	H13	3724	H11	6501	F12
	192	H5	2547	H12	3544	H13	3725	H10	6502	H12
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AUDIO CIRCUIT DIAGRAM

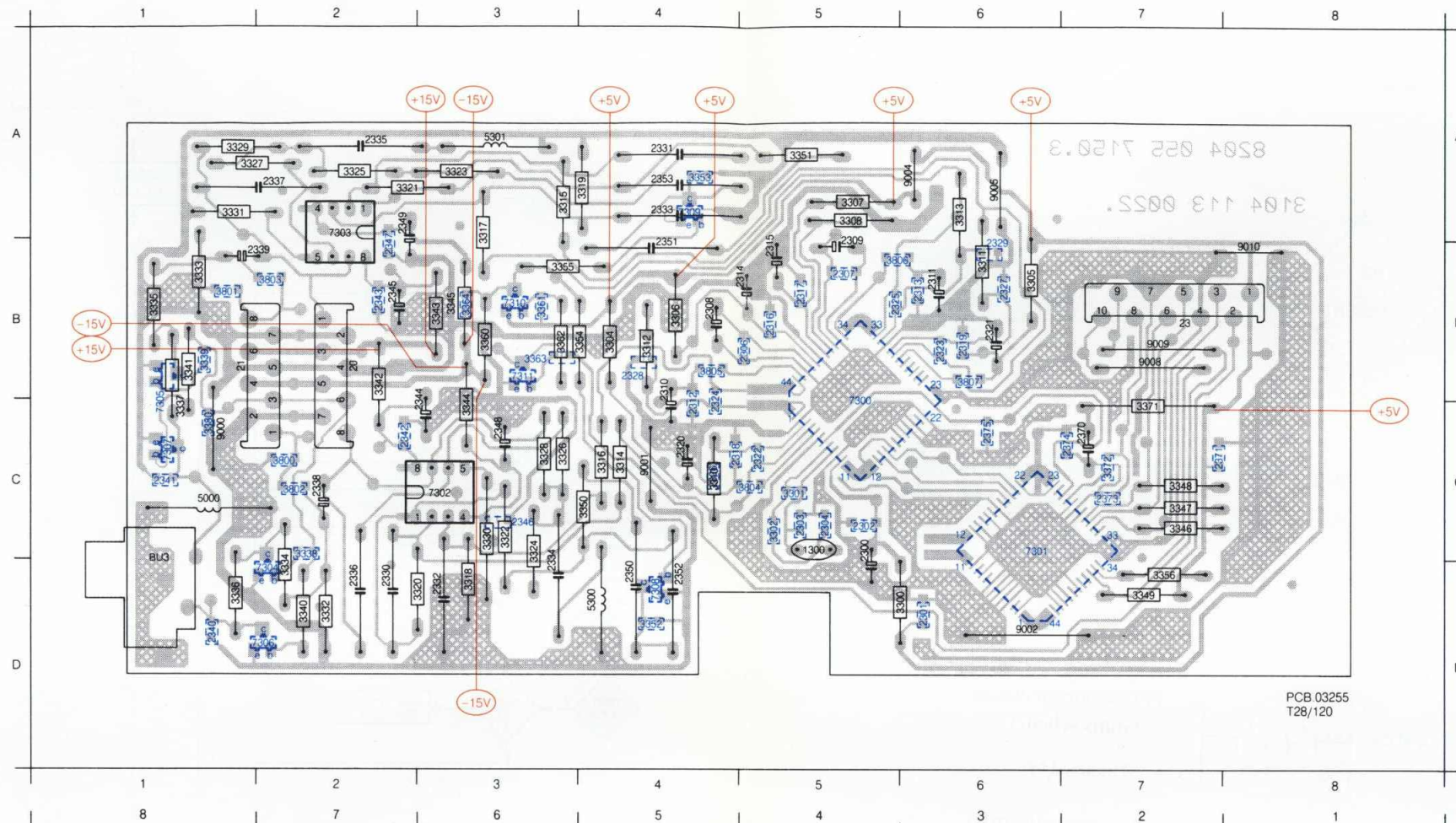


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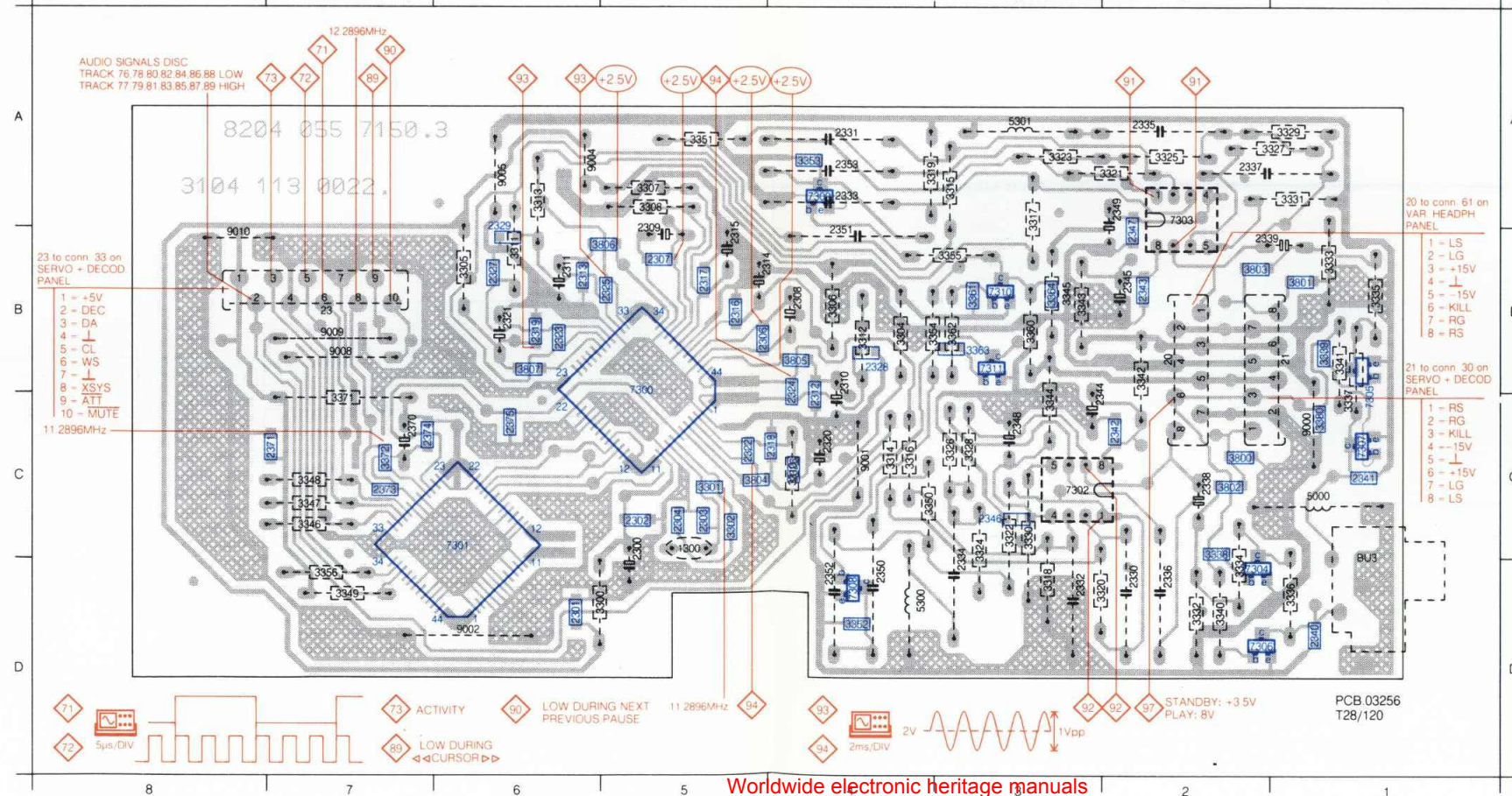
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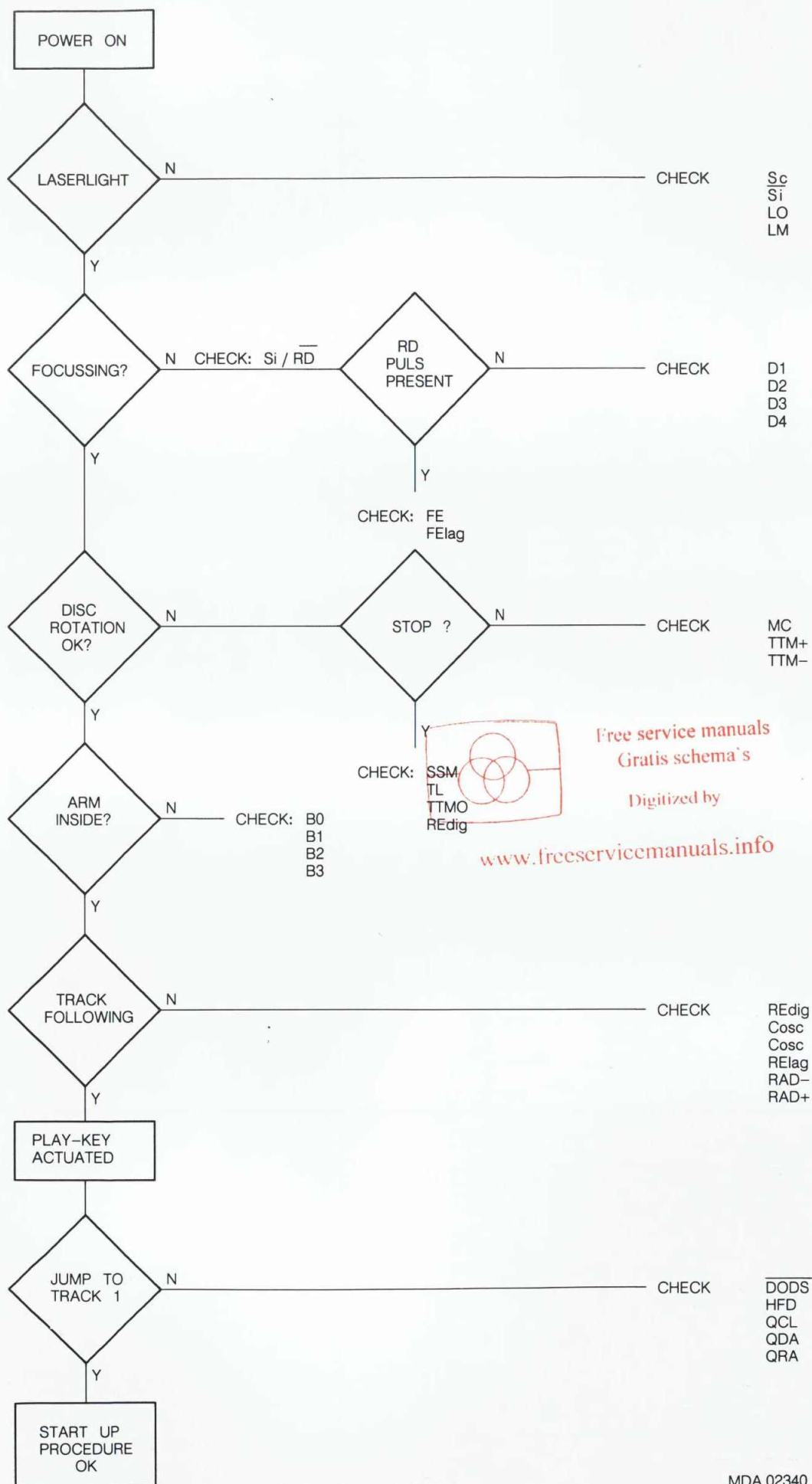
AUDIO PANEL
component side



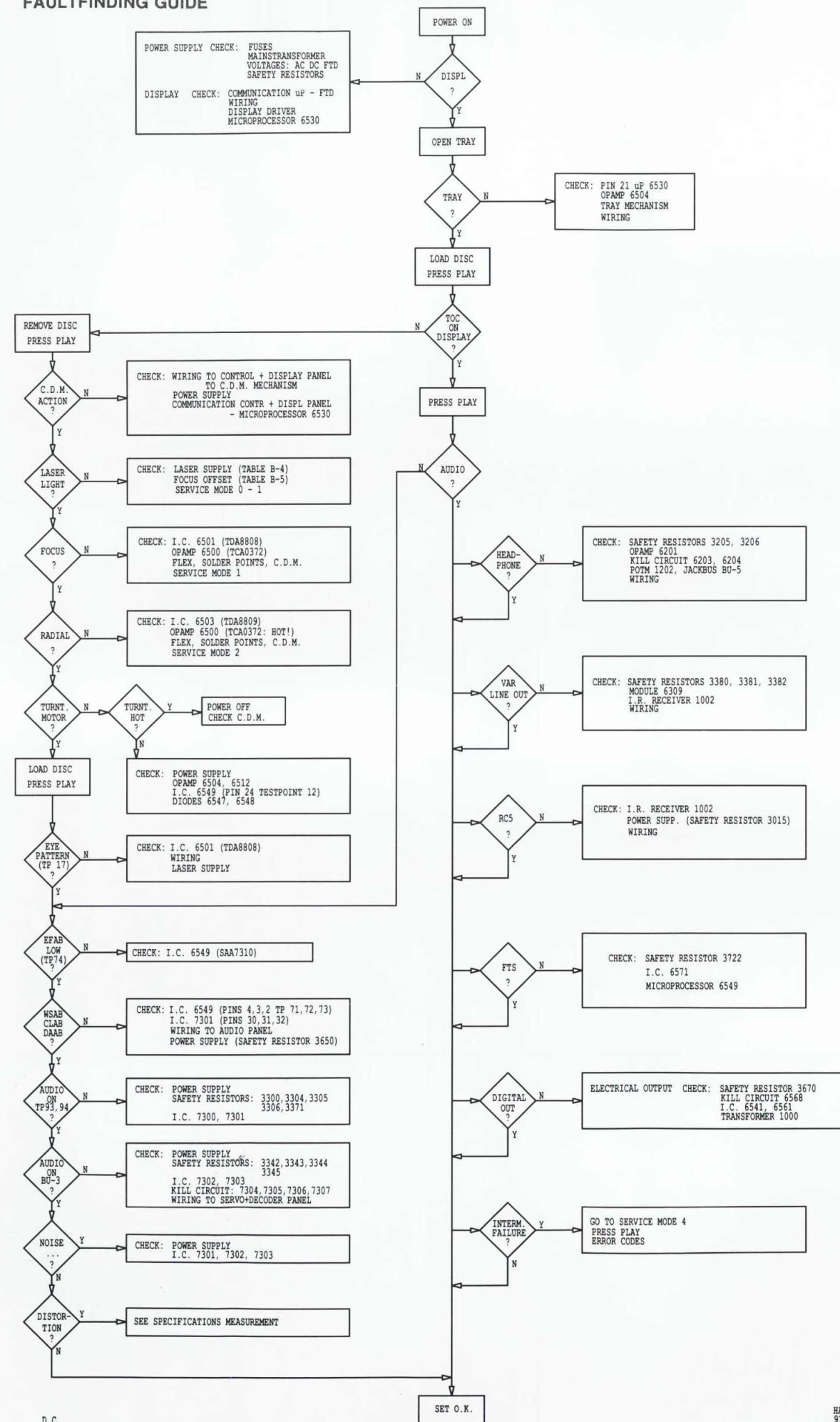
AUDIO PANEL
solder side



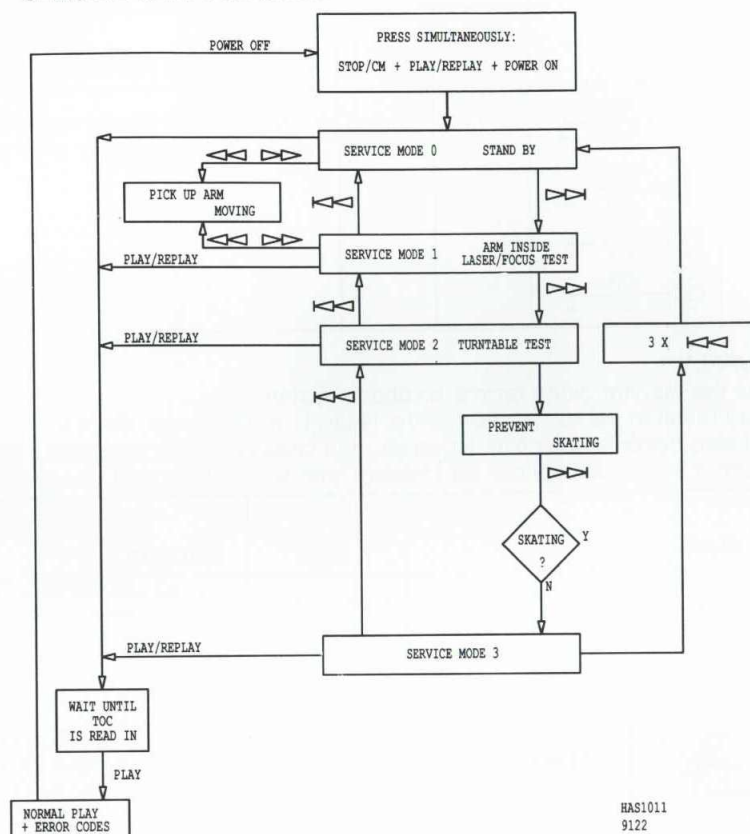
START UP PROCEDURE

MDA.02340
T07-941

FAULTFINDING GUIDE

HAS1010
9121

SERVICE TEST PROGRAM



ERROR CODE TABLE

SYSTEM ERRORS

- ER 02 No TL pulse at start-up
- ER 03 No lead-in track found
- ER 06 Jump error
- ER 07 Subcode error
- ER 08 TOC error

OPERATING ERRORS

- ER 30 "NEXT" key operated during the last track, with "REPEAT" turned off.
- ER 31 "PREVIOUS" operated during the first track, with "REPEAT" turned off.
- ER 32 AB operated in AMS mode.
- ER 33 The selected number does not exist on this disc.
- ER 34 Program survey requested; no program present.
- ER 35 The program memory is full.
- ER 36 The programmed track is not existing on this CD.
- ER 37 The selected track is not existing on this CD.
- ER 40 MEMO pressed when already a delete program has been made.
- ER 41 CANCEL pressed when already a not deleted program has been made.
- ER 42 Selected track is not a program block.
- ER 43 FTS store error: memory full.
- ER 44 FTS store error: no program.
- ER 46 FTS play error: no FTS program in memory.
- ER 47 FTS selection error: upper bound of FTS memory.(next)
- ER 49 FTS selection error: selection request while storing.(next/previous)
- ER 51 FTS selection error: selection request while storing. (review)
- ER 52 FTS selection clear error: clear request while storing.
- ER 54 FTS store error: no record id(toc) available.
- ER 55 MEMO pressed during AMS while track not known.
MEMO pressed during EDIT while cassette time = 0 sec.
- ER 56 AB pressed when not in PLAY mode
- ER 57 MEMO or CANCEL pressed while in PLAY program.
- ER 60 Fast forward/reverse bound.
- ER 63 No track possible to play in edit mode.
- ER 74 Relative time not found.
- ER 75 Binary search time out error.
- ER 76 Time search time out error.

B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode					Remarks
1	D2 D1 D3 D4	power on	 	-	-	signal $4 \pm 6 \pm 7 \pm 8$	Signal depends on Distance lens $\leftrightarrow$ IR LED of remote control

T-23267A

B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.

A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete C.D.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with the replacement circuit for laser assembly.

Step	Signal	Mode			Remarks
1	LO	serv. pos. 2		$1.8 < V < 2.3$	REPLACEMENT CIRCUIT FOR LASER ASSEMBLY CONNECT DIRECTLY TO PANEL The feedback system sees to it that the same amount of current flows through the LED. When SK is open and when SK is closed the LED emits little light. PRS 06615 T02/9020
	LM	SK		$170 < mV < 220$	
2	LO	serv. pos. 2		$1.8 < V < 2.3$	
	LM	SK		$170 < mV < 220$	
3	LO	Power on		$0V \pm 0.2V$	No light

After opening SK, the led will emit more light for a short moment.

T-23267B

B-4 LASER CURRENT ADJUSTMENT

Step	Signal	Mode					Remarks
1	-	Power off	-	-	-	-	Check if FLEX-FOIL is properly connected
2	-	Power off		R_{3520}	$1k\Omega \begin{smallmatrix} +10\% \\ -0 \end{smallmatrix}$	-	Pre-adjustment Ohmic value
3	-	Power off	-	R_{3568}	-	-	Set to mid-position
4	laser current = voltage across R3501	Test disc 5A play		$mV \text{ DC}$	$\geq 15mV$	-	If $< 15mV$ then go to step 3 and set R3568 to 1/4 or 3/4. Try again.
5	laser current = voltage across R3501	Test disc 5A play		$mV \text{ DC}$	R_{3520}	50mV	-
6	FE-LAG	Test disc 5A track 1 play		R_{3568}	400mV	-	Fine adjustment

T-50952C

B-5**ADJUSTMENT OF FOCUS-OFFSET**

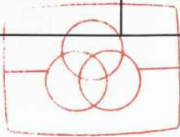
Step	Signal	Mode					Remarks
1	-	Power on no disc	-	R_{3568}	-	-	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27	R_{3568}	$400mV \pm 40 mV \text{ DC}$	-	fine adjustment

T-50952D

D-6 SPECIFICATIONS MEASUREMENT

Signal	Mode				Remarks
BU2-L	Test disc 3, play, total harmonic distortion	filter output	See technical data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distortion	filter output	See technical data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technical data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technical data		See drawing 30459A12

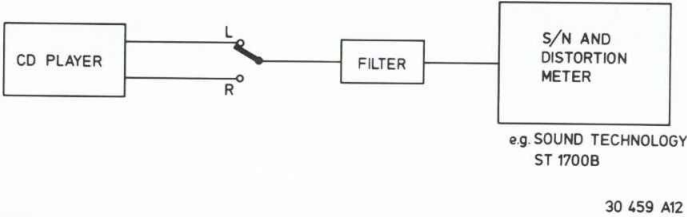
Filter = 13th order filter 4822 395 30204



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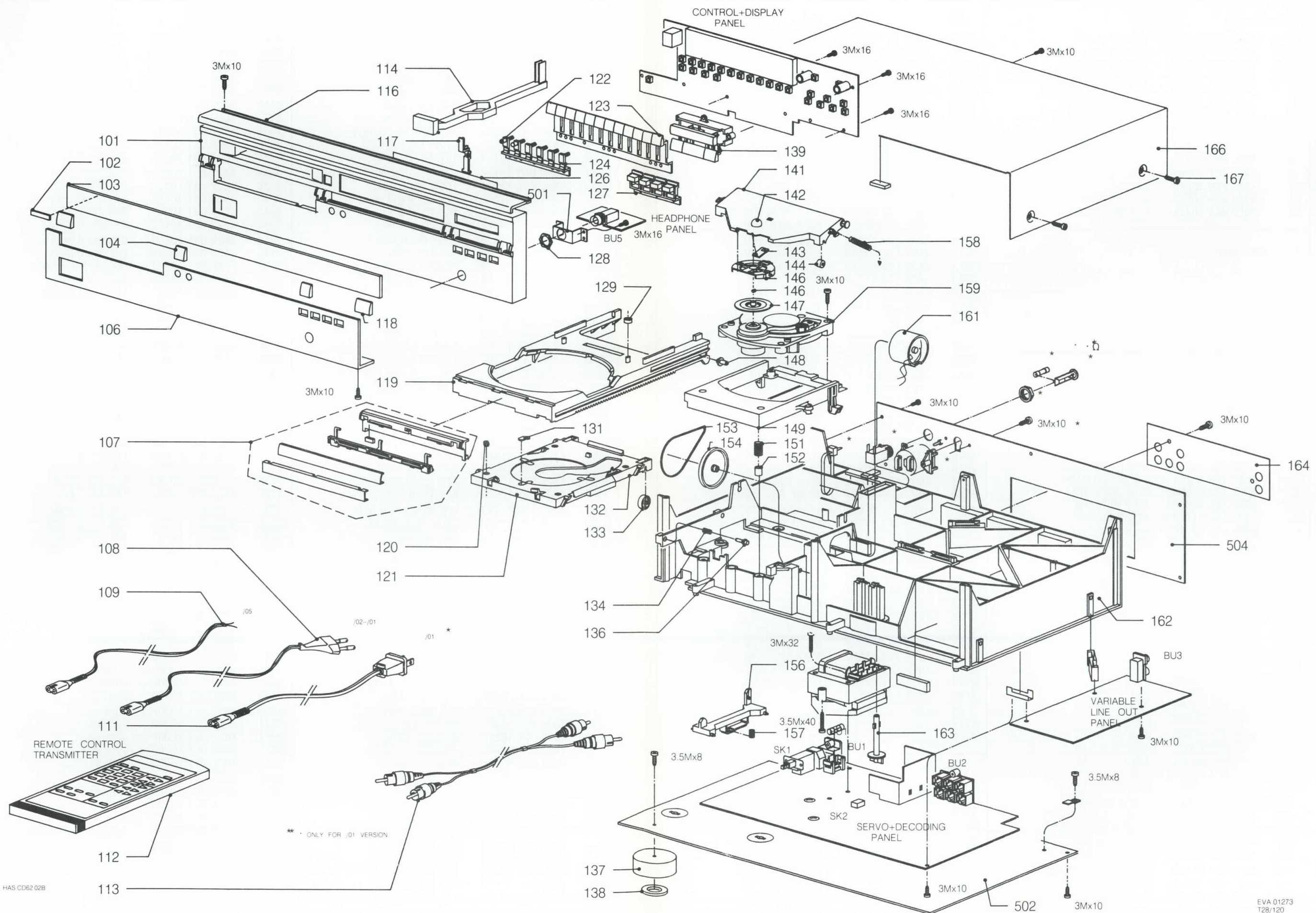
www.fre serv icem anu als .info



MECHANICAL PARTSLIST

101	4822 444 40308	
102	4822 459 10747	
103	4822 450 61771	
104	4822 460 20771	
106	4822 460 20762	
107	4822 444 40475	
108	4822 321 10249	for /01B/02B
	4822 321 10719	for /05B
112	4822 218 10421	
113	4822 321 22832	
114	4822 402 61255	
116	4822 460 20767	
117	4822 402 50277	
118	4822 460 20772	
119	4822 444 50603	
120	4822 325 50177	
121	4822 466 93011	
122	4822 410 50169	
123	4822 410 60202	
124	4822 410 60118	
127	4822 410 60116	
128	4822 505 10571	
129	4822 532 51756	
133	4822 528 90638	
134	4822 492 52094	
136	4822 402 61252	
137	4822 462 41859	
138	4822 466 40577	
139	4822 276 30404	
141	4822 444 60568	
142	4822 529 10267	
143	4822 466 92257	
144	4822 528 90639	
146	4822 520 40177	
146	4822 402 61207	
147	4822 530 80503	
148	4822 402 61253	
149	4822 402 61196	
151	4822 492 51902	
152	4822 466 61587	
153	4822 358 10115	
154	4822 528 81329	
156	4822 402 50276	
157	4822 492 52123	
158	4822 492 32883	
159	4822 691 30209	
161	4822 361 21258	
162	4822 444 50632	
163	4822 535 92907	
164	4822 444 60769	
166	4822 444 60628	
167	4822 502 30678	

EXPLODED VIEW



SERVO & DECODER PANEL

Miscellaneous					
BU-1	4822 265 20291	MAINS INLET	2560	4822 121 43901	4,7nF 5% 50V
BU-2	4822 267 20368	CINCH 5P	2561	4822 121 51252	470nF 5% 63V
SK-1	4822 276 11309	MAINS SWITCH	2562	5322 121 42661	330nF 5% 63V
SK-2	4822 276 12523	TRAY DETECTION SWITCH	2563	4822 122 33496	100nF 10% 63V
5	4822 492 63076	CLAMPING SPRING	2566	4822 122 32863	22nF 80% 50V
6	4822 264 40207	CONNECTOR 3P	2570	4822 122 31644	2,2nF 10% 63V
7	4822 265 40421	CONNECTOR 6P	2572	5322 121 42661	330nF 5% 63V
9	4822 264 40207	CONNECTOR 3P	2574	4822 122 31759	18nF 10%
11	4822 267 50676	CONNECTOR 14P	2600	4822 122 31772	47pF 5% 50V
14	4822 267 40576	CONNECTOR 4P	2601	4822 122 31644	2,2nF 10% 63V
18	4822 264 40207	CONNECTOR 3P	2602	4822 121 51252	470nF 5% 63V
30	4822 265 40818	CONNECTOR	2604	4822 124 41576	2,2μF 20% 50V
32	4822 264 40207	CONNECTOR 3P	2607	4822 124 40272	33μF 20% 16V
33	4822 265 40442	CONNECTOR 10P	2608	4822 122 32863	22nF 80% 50V
			2609	4822 122 32863	22nF 80% 50V
HF-Transformer			2610	4822 124 20688	33μF 50% 16V
1000	4822 148 80281	TRANSFORMER	2611	4822 122 32863	22nF 80% 50V
			2612	4822 124 40272	33μF 20% 16V
			2613	4822 122 31772	47pF 5% 50V
			2614	4822 122 31772	47pF 5% 50V
Crystal			2615	4822 122 31772	47pF 5% 50V
1503	4822 242 72579	RESONATOR 4,00 MHz	2620	4822 122 32863	22nF 80% 50V
			2621	4822 122 32863	22nF 80% 50V
			2622	4822 124 22031	4,7μF 20% 63V
			2623	4822 122 31772	47pF 5% 50V
			2624	4822 122 31772	47pF 5% 50V
2370	4822 124 41525	100μF 20% 25V	2638	4822 122 10166	22nF 30% 16V
2371	4822 124 41525	100μF 20% 25V	2641	4822 122 33105	56nF 10% 63V
2372	4822 124 41525	100μF 20% 25V	2642	4822 122 33105	56nF 10% 63V
2373	4822 124 41525	100μF 20% 25V	2644	4822 122 32863	22nF 80% 50V
2374	4822 124 22339	100μF 16V	2645	4822 122 32863	22nF 80% 50V
2375	4822 124 22339	100μF 16V	2646	4822 122 33496	100nF 10% 63V
2500	4822 126 10454	3,3nF 20% 400V	2670	4822 124 40272	33μF 20% 16V
2501	4822 122 32863	22nF 80% 50V	2671	4822 122 32863	22nF 80% 50V
2503	4822 122 32863	22nF 80% 50V	2690	4822 124 41334	470μF 20% 35V
2504	4822 122 31727	470pF 5% 63V	2691	4822 121 51252	470nF 5% 63V
2506	4822 122 10166	22nF 30% 16V	2692	5322 121 42386	100nF 5% 63V
2507	4822 122 31644	2,2nF 10% 63V	2693	4822 122 32863	22nF 80% 50V
2508	4822 121 43526	47nF 5% 100V	2695	4822 124 41558	10μF 25V
2509	4822 122 31765	100pF 5% 50V	2702	5322 124 21643	22μF 20% 40V
2510	4822 122 32442	10nF 50V	2703	4822 124 41859	330μF 20% 35V
2511	4822 122 31746	1000pF 5% 50V	2704	4822 124 40433	47μF 20% 25V
2513	4822 121 42408	220nF 5% 63V	2705	4822 122 32863	22nF 80% 50V
2514	4822 121 51252	470nF 5% 63V	2706	4822 122 32863	22nF 80% 50V
2515	4822 122 31746	1000pF 5% 50V	2707	4822 124 41591	6800μF 20% 16V
2519	4822 124 41799	220μF 63V	2708	4822 124 40272	33μF 20% 16V
2520	4822 122 31965	220pF 5% 63V	2709	4822 122 32863	22nF 80% 50V
2521	4822 124 22027	47μF 20% 25V	2710	4822 122 32863	22nF 80% 50V
2522	4822 122 32863	22nF 80% 50V	2711	4822 124 41853	1000μF 16V
2524	4822 122 32863	22nF 80% 50V	2712	4822 124 40272	33μF 20% 16V
2525	4822 122 32863	22nF 80% 50V	2713	4822 124 41334	470μF 20% 35V
2526	4822 122 32863	22nF 80% 50V	2714	4822 124 40433	47μF 20% 25V
2529	4822 124 22027	47μF 20% 25V	2715	5322 121 42386	100nF 5% 63V
2530	4822 121 51321	8,2μF 1% 63V			
2531	4822 121 51321	8,2μF 1% 63V			
2532	4822 124 40272	33μF 20% 16V			
2534	5322 121 42661	330nF 5% 63V			
2535	4822 122 31981	33nF ± 0,5pF 50V			
2536	4822 122 31981	33nF ± 0,5pF 50V			
2537	4822 121 42408	220nF 5% 63V			
2538	4822 121 42408	220nF 5% 63V			
2540	4822 124 41583	680nF 20% 50V Bipolar			
2542	4822 122 32863	22nF 80% 50V			
2545	4822 122 33496	100nF 10% 63V			
2546	4822 122 32863	22nF 80% 50V			
2550	4822 121 43526	47nF 5% 100V			

					
3504	4822 052 10478	4Ω 5% 0,33W	3625	4822 051 10103	10k 2% 0,25W
3505	4822 051 10123	12k 2% 0,25W	3626	4822 051 10103	10k 2% 0,25W
3506	4822 051 10101	100Ω 2% 0,25W	3627	4822 052 10478	4Ω 5% 0,33W
3507	4822 051 10102	1k 2% 0,25W	3628	4822 051 10223	22k 2% 0,25W
3508	4822 051 10243	24k 2% 0,25W	3629	4822 051 10224	220k 2% 0,25W
3509	4822 051 10562	5k6 2% 0,25W	3630	4822 051 10223	22k 2% 0,25W
3510	4822 051 10103	10k 2% 0,25W	3631	4822 050 24702	4k7 1% 0,6W
3520	4822 101 10685	4k7 20% LIN 0.05W	3634	4822 051 10223	22k 2% 0,25W
3521	4822 050 22201	220Ω 1% 0,6W	3635	4822 051 10223	22k 2% 0,25W
3522	4822 052 10189	18Ω 5% 0,33W	3636	4822 051 10223	22k 2% 0,25W
3523	4822 052 10129	12Ω 5% 0,33W	3638	4822 051 10223	22k 2% 0,25W
3524	4822 051 10101	100Ω 2% 0,25W	3639	4822 051 10223	22k 2% 0,25W
3530	4822 050 24703	47k 1% 0,6W	3640	4822 051 10223	22k 2% 0,25W
3531	4822 050 21503	15k 1% 0,6W	3643	4822 051 10223	22k 2% 0,25W
3533	4822 051 10512	5k1 2% 0,25W	3645	4822 051 10472	4k7 2% 0,25W
3534	4822 051 10224	220k 2% 0,25W	3646	4822 051 10223	22k 2% 0,25W
3535	4822 050 21203	12k 1% 0,6W	3647	4822 051 10223	22k 2% 0,25W
3539	4822 051 10223	22k 2% 0,25W	3653	4822 051 10561	560Ω 2% 0,25W
3540	4822 052 10478	4Ω 5% 0,33W	3659	4822 050 24702	4k7 1% 0,6W
3541	4822 051 10682	6k8 2% 0,25W	3660	4822 051 10101	100Ω 2% 0,25W
3542	4822 051 10339	33Ω 2% 0,25W	3661	4822 051 10101	100Ω 2% 0,25W
3543	4822 051 10682	6k8 2% 0,25W	3662	4822 051 10101	100Ω 2% 0,25W
3545	4822 052 10108	1Ω 5% 0,33W	3670	4822 052 10478	4Ω 5% 0,33W
3546	4822 052 10108	1Ω 5% 0,33W	3701	4822 051 10472	4k7 2% 0,25W
3552	4822 051 10182	1k8 2% 0,25W	3702	4822 051 10565	5M6 5% 0,25W
3555	4822 051 20183	18k 5% 0,1W	3703	4822 051 10433	43k 2% 0,25W
3557	4822 051 10224	220k 2% 0,25W	3705	4822 051 10563	56k 2% 0,25W
3560	4822 111 91494	11k 2%	3710	4822 051 10154	150k 2% 0,25W
3561	4822 051 10154	150k 2% 0,25W	3720	4822 051 10102	1k 2% 0,25W
3562	4822 051 10124	120k 2% 0,25W	3721	4822 051 10473	47k 2% 0,25W
3563	4822 051 10563	56k 2% 0,25W	3722	4822 052 10748	4Ω 5% 0,33W
3564	4822 111 91495	160k 2%	3724	4822 050 21203	12k 1% 0,6W
3565	4822 051 10279	27Ω 2% 0,25W	3725	4822 051 10123	12k 2% 0,25W
3566	4822 051 10229	22Ω 2% 0,25W	3728	4822 051 10562	5k6 2% 0,25W
3567	4822 051 10823	82k 2% 0,25W	3729	4822 050 21203	12k 1% 0,6W
3568	4822 100 11193	22k 20% LIN 0,05W	3730	4822 051 10123	12k 2% 0,25W
3569	4822 111 90368	680k 2% 0,125W	3731	4822 051 10229	22Ω 2% 0,25W
3574	4822 051 10333	33k 2% 0,25W	3747	4822 051 10103	10k 2% 0,25W
3575	4822 051 10472	4k7 2% 0,25W	3748	4822 051 10392	3k9 2% 0,25W
3576	4822 050 22004	200k 1% 0,6W	3775	4822 051 10472	4k7 2% 0,25W
3578	4822 051 10823	82k 2% 0,25W	3779	4822 051 10751	750Ω 2% 0,25W
3579	4822 051 10154	150k 2% 0,25W	3782	4822 051 10563	56k 2% 0,25W
3580	4822 050 24702	4k7 1% 0,6W	3787	4822 051 10101	100Ω 2% 0,25W
3581	4822 050 23302	3k3 1% 0,6W	3788	4822 051 10102	1k 2% 0,25W
3582	4822 051 10562	5k6 2% 0,25W	3801	4822 051 10008	Jumper
3584	4822 051 10913	91k 2% 0,25W	3802	4822 051 10008	Jumper
3585	4822 051 10104	100k 2% 0,25W	3803	4822 051 10008	Jumper
3586	4822 111 90368	680k 2% 0,125W	3805	4822 051 10008	Jumper
3588	4822 050 24703	47k 1% 0,6W	3807	4822 051 10008	Jumper
3589	4822 051 10472	4k7 2% 0,25W	3808	4822 051 10008	Jumper
3591	4822 051 10122	1k2 2% 0,25W	3809	4822 051 10008	Jumper
3600	4822 051 20222	2k2 5% 0,1W	3812	4822 051 10008	Jumper
3602	4822 051 10223	22k 2% 0,25W	3813	4822 051 10008	Jumper
3603	4822 051 10759	75Ω 2% 0,25W	3814	4822 051 10008	Jumper
3604	4822 052 10478	4Ω 5% 0,33W	3815	4822 051 10008	Jumper
3605	4822 051 10162	1k6 2% 0,25W	3818	4822 051 10008	Jumper
3607	4822 051 10392	3k9 2% 0,25W	3821	4822 051 10008	Jumper
3609	4822 052 10478	4Ω 5% 0,33W	3822	4822 051 10008	Jumper
3610	4822 051 10912	9k1 2% 0,25W	3823	4822 051 10008	Jumper
3611	4822 051 10621	620Ω 2% 0,25W	3824	4822 051 10008	Jumper
3613	4822 051 10223	22k 2% 0,25W	3826	4822 051 10008	Jumper
3619	4822 051 10223	22k 2% 0,25W	3827	4822 051 10008	Jumper
3621	4822 051 20183	18k 5% 0,1W	3828	4822 051 10008	Jumper
3622	4822 051 10473	47k 2% 0,25W	3829	4822 051 10008	Jumper
3623	4822 051 20183	18k 5% 0,1W	3830	4822 051 10008	Jumper
3624	4822 051 20222	2k2 5% 0,1W	3831	4822 051 10008	Jumper

			  		
3833	4822 051 10008	Jumper	6549	4822 209 61759	SAA7310GP/H5
3834	4822 051 10008	Jumper	6550	5322 130 30684	1N4002
3835	4822 051 10008	Jumper	6551	5322 130 30684	1N4002
3836	4822 051 10008	Jumper	6552	4822 130 30621	1N4148
3837	4822 051 10008	Jumper	6553	4822 130 30621	1N4148
3838	4822 051 10008	Jumper	6554	4822 130 42513	BC858C
3839	4822 051 10008	Jumper	6555	4822 130 31981	BZX79-C3V9
3840	4822 051 10008	Jumper	6556	4822 130 61207	BC848
3842	4822 051 10008	Jumper	6557	4822 130 30621	1N4148
3843	4822 051 10008	Jumper	6558	4822 130 44121	BC338
3844	4822 051 10008	Jumper	6559	4822 130 61207	BC848
3845	4822 051 10008	Jumper	6561	4822 209 60803	SN74LS08D
3847	4822 051 10008	Jumper	6562	4822 130 61207	BC848
3848	4822 051 10008	Jumper	6568	4822 130 61207	BC848
3849	4822 051 10008	Jumper	6571	4822 209 60772	X24C16
3850	4822 051 10008	Jumper	6572	4822 130 34195	BZX79-C13
3851	4822 051 10008	Jumper	6579	4822 209 80808	MC7815CT
3852	4822 051 10008	Jumper	6580	5322 130 30684	1N4002
3853	4822 051 10008	Jumper	6581	5322 130 30684	1N4002
3856	4822 051 10008	Jumper	6582	5322 130 30684	1N4002
3857	4822 051 10008	Jumper	6583	5322 130 30684	1N4002
3858	4822 051 10008	Jumper	6584	5322 130 30684	1N4002
3859	4822 051 10008	Jumper	6585	5322 130 30684	1N4002
3860	4822 051 10008	Jumper	6586	5322 130 30684	1N4002
3861	4822 051 10008	Jumper	6587	5322 130 30684	1N4002
3872	4822 051 10008	Jumper	6590	4822 209 80808	MC78M15CT
3873	4822 051 10008	Jumper	6591	4822 209 71579	TY40408
3891	4822 051 10008	Jumper	6592	5322 209 11222	MC7905CT
3892	4822 051 10008	Jumper	6593	5322 130 41899	MC7915CT
3896	4822 051 10008	Jumper	6701	5322 130 42012	BC858A
3897	4822 051 10008	Jumper	6702	4822 130 30621	1N4148
			6703	4822 130 30621	1N4148
					
5502	4822 214 51841	MAINS FILTER			
  					
6309	4822 214 51724	DVR-3			
6500	4822 209 72587	TCA0372DP2			
6501	4822 209 73234	TDA8808T/C3			
6502	4822 130 44121	BC338			
6503	4822 209 73235	TDA8809T/C2			
6504	4822 209 72587	TCA0372DP2			
6505	4822 130 30861	BZX79-C7V5			
6506	4822 130 30861	BZX79-C7V5			
6510	4822 130 31456	BZV85-C5V1			
6512	4822 209 83274	NJM4560D			
6516	5322 130 42012	BC858A			
6517	5322 130 42012	BC858A			
6519	5322 130 30684	1N4002			
6520	4822 130 42131	BF550			
6523	4822 209 70422	MN4264-15			
6524	4822 130 61207	BC848			
6526	4822 130 61207	BC848			
6527	5322 130 42012	BC858A			
6530	4822 209 63391	MC68HC05D9P/ZC400006			
6531	4822 130 42675	BC818			
6537	5322 130 30684	1N4002			
6538	5322 130 30684	1N4002			
6541	4822 209 62588	PCF3523P			
6547	5322 130 30684	1N4002			
6548	5322 130 30684	1N4002			

CONTROL & DISPLAY PANEL

Switch			  		
KEY..	4822 276 12465	CONTROL SWITCHES	6001	4822 209 72226	U3090
Miscellaneous			6002	4822 130 33732	BZV85-C15
			6003	4822 130 30621	1N4148
			6004	4822 130 40938	BC548
			6006	4822 130 30621	1N4148
	4822 267 30546	CONNECTOR 6P	6007	4822 130 30621	1N4148
	4822 265 30499	CONNECTOR	6008	4822 130 30621	1N4148
1001	4822 130 90663	FV364G DISPLAY	6011	4822 130 30621	1N4148
1002	4822 214 51772	GP1U521X RECEIVER	6016	4822 130 34173	BZX79-C5V6
			6017	4822 209 60774	PC74HC75P
			6018	4822 130 40938	BC548
			6019	4822 130 40938	BC548
			6020	4822 130 40938	BC548
			6021	4822 130 40938	BC548
			6022	4822 130 80848	TLHG4499
			6023	4822 130 80848	TLHG4499
2001	5322 124 21643	22µF 20% 40V	6024	4822 130 80848	TLHG4499
2002	4822 122 10166	22nF 30% 16V	6025	4822 130 80848	TLHG4499
2003	4822 122 31435	470pF 10% 50V	6026	4822 130 80898	TLHO4499
2004	5322 124 21643	22µF 20% 40V	6027	4822 130 80848	TLHG4499
2005	4822 122 10166	22nF 30% 16V	6028	4822 130 30621	1N4148
2006	4822 122 10172	220pF 10% 50V	6029	4822 130 34173	BZX79-C5V6
			6030	4822 130 34173	BZX79-C5V6
			3001	4822 050 22203	22k 1% 0,6W
			3002	4822 050 22203	22k 1% 0,6W
			3003	4822 050 22203	22k 1% 0,6W
			3004	4822 052 10478	4Ω7 5% 0,33W
			3005	4822 050 24703	47k 1% 0,6W
			3006	4822 050 24702	4k7 1% 0,6W
			3007	4822 050 24703	47k 1% 0,6W
			3008	4822 050 24702	4k7 1% 0,6W
			3009	4822 050 21504	150k 1% 0,6W
			3010	4822 050 21002	1k 1% 0,6W
			3011	4822 050 21002	1k 1% 0,6W
			3012	4822 052 10338	3Ω3 5% 0,33W
			3013	4822 052 10338	3Ω3 5% 0,33W
			3015	4822 052 10478	4Ω7 5% 0,33W
			3016	4822 050 24703	47k 1% 0,6W
			3017	4822 116 52263	2k7 5% 0,5W
			3018	4822 116 52263	2k7 5% 0,5W
			3019	4822 116 52263	2k7 5% 0,5W
			3020	4822 116 52263	2k7 5% 0,5W
			3021	4822 116 52263	2k7 5% 0,5W
			3022	4822 116 52263	2k7 5% 0,5W
			3023	4822 116 52263	2k7 5% 0,5W
			3024	4822 116 52263	2k7 5% 0,5W
			3025	4822 116 52263	2k7 5% 0,5W
			3026	4822 050 16809	68Ω 1% 0,4W
			3027	4822 050 16809	68Ω 1% 0,4W
			3028	4822 050 16809	68Ω 1% 0,4W
			3029	4822 050 16809	68Ω 1% 0,4W
			3030	4822 050 22201	220Ω 1% 0,6W
			3031	4822 050 21601	160Ω 1% 0,6W
			3032	4822 051 10561	560Ω 2% 0,25W
			3033	4822 051 10561	560Ω 2% 0,25W
			3034	4822 051 10561	560Ω 2% 0,25W
			3035	4822 051 10561	560Ω 2% 0,25W

AUDIO PANEL

Miscellaneous			
21	4822 265 40818	CONNECTOR	
23	4822 265 40442	CONNECTOR 10P	
BU-3	4822 267 30878	CINCH SOCKET 2P	
Crystal			
1300	4822 242 80346	CRYSTAL 11,2896MHz	
			
2300	4822 124 40272	33µF 20% 16V	
2301	4822 122 33496	100nF 10% 63V	
2302	4822 122 33496	100nF 10% 63V	
2303	5322 122 32452	47pF 5% 50V	
2304	5322 122 32452	47pF 5% 50V	
2306	4822 122 33496	100nF 10% 63V	
2307	4822 122 33496	100nF 10% 63V	
2308	4822 124 40433	47µF 20% 25V	
2309	4822 124 40433	47µF 20% 25V	
2310	4822 124 40435	10µF 20% 50V	
2311	4822 124 40435	10µF 20% 50V	
2312	4822 122 33496	100nF 10% 63V	
2313	4822 122 33496	100nF 10% 63V	
2314	4822 124 40272	33µF 20% 16V	
2315	4822 124 40272	33µF 20% 16V	
2316	4822 122 33496	100nF 10% 63V	
2317	4822 122 33496	100nF 10% 63V	
2318	4822 122 33496	100nF 10% 63V	
2319	4822 122 33496	100nF 10% 63V	
2320	4822 124 40272	33µF 20% 16V	
2321	4822 124 40272	33µF 20% 16V	
2322	5322 122 32966	39pF 5% 50V	
2323	5322 122 32966	39pF 5% 50V	
2324	5322 122 32966	39pF 5% 50V	
2325	5322 122 32966	39pF 5% 50V	
2326	5322 122 32268	470pF 10% 50V	
2327	5322 122 32268	470pF 10% 50V	
2328	5322 122 32268	470pF 10% 50V	
2329	5322 122 32268	470pF 10% 50V	
2330	4822 121 51569	270pF 1% 400V	
2331	4822 121 51569	270pF 1% 400V	
2332	4822 121 51569	270pF 1% 400V	
2333	4822 121 51569	270pF 1% 400V	
2334	4822 121 50591	1nF 1% 630V	
2335	4822 121 50591	1nF 1% 630V	
2336	4822 121 51288	100pF 630V	
2337	4822 121 51288	100pF 630V	
2338	4822 124 22339	100µF 20% 16V Bipolar	
2339	4822 124 22339	100µF 20% 16V Bipolar	
2342	4822 122 33496	100nF 10% 63V	
2343	4822 122 33496	100nF 10% 63V	
2344	4822 124 41525	100µF 20% 25V	
2345	4822 124 41525	100µF 20% 25V	
2346	4822 122 33496	100nF 10% 63V	
2347	4822 122 33496	100nF 10% 63V	
2348	4822 124 41525	100µF 20% 25V	
2349	4822 124 41525	100µF 20% 25V	
2350	4822 121 51147	33nF 2% 63V	
2351	4822 121 51147	33nF 2% 63V	
2352	4822 121 51079	5600pF 1% 160V	
2353	4822 121 51079	5600pF 1% 160V	
2370	4822 124 40272	33µF 20% 16V	
2371	4822 122 33496	100nF 10% 63V	
2373	5322 122 32452	47pF 5% 50V	
2374	4822 122 33496	100nF 10% 63V	
2375	5322 122 32452	47pF 5% 50V	
3300	4822 052 10478	4Ω 7 5% 0,33W	
3301	4822 051 20224	220k 5% 0,1W	
3302	4822 051 10102	1k 2% 0,25W	
3304	4822 052 10478	4Ω 7 5% 0,33W	
3305	4822 052 10478	4Ω 7 5% 0,33W	
3306	4822 052 10101	100Ω 5% 0,33W	
3307	4822 052 10101	100Ω 5% 0,33W	
3308	4822 050 22403	24k 1% 0,6W	
3310	4822 050 23300	30k 1% 0,6W	
3311	4822 050 23003	30k 1% 0,6W	
3312	4822 050 23003	30k 1% 0,6W	
3313	4822 050 23003	30k 1% 0,6W	
3314	4822 050 25102	5k1 1% 0,6W	
3315	4822 050 25102	5k1 1% 0,6W	
3316	4822 050 25102	5k1 1% 0,6W	
3317	4822 050 25102	5k1 1% 0,6W	
3318	4822 050 21003	10k 1% 0,6W	
3319	4822 050 21003	10k 1% 0,6W	
3320	4822 050 21003	10k 1% 0,6W	
3321	4822 050 21003	10k 1% 0,6W	
3322	4822 050 21202	1k2 1% 0,6W	
3323	4822 050 21202	1k2 1% 0,6W	
3324	4822 050 24302	4k3 1% 0,6W	
3325	4822 050 24302	4k3 1% 0,6W	
3326	4822 050 27502	7k5 1% 0,6W	
3327	4822 050 27502	7k5 1% 0,6W	
3328	4822 050 25602	5k6 1% 0,6W	
3329	4822 050 25602	5k6 1% 0,6W	
3330	4822 050 27502	7k5 1% 0,6W	
3331	4822 050 27502	7k5 1% 0,6W	
3332	4822 050 21003	10k 1% 0,6W	
3333	4822 050 21003	10k 1% 0,6W	
3334	4822 051 10101	100Ω 2% 0,25W	
3335	4822 051 10101	100Ω 2% 0,25W	
3336	4822 051 10101	100Ω 2% 0,25W	
3337	4822 051 10101	100Ω 2% 0,25W	
3338	4822 051 20122	1k2 5% 0,1W	
3339	4822 051 20122	1k2 5% 0,1W	
3340	4822 051 10122	1k2 2% 0,25W	
3341	4822 051 10122	1k2 2% 0,25W	
3342	4822 052 10229	22Ω 5% 0,33W	
3343	4822 052 10229	22Ω 5% 0,33W	
3344	4822 052 10229	22Ω 5% 0,33W	
3345	4822 052 10229	22Ω 5% 0,33W	
3346	4822 050 24703	47k 1% 0,6W	
3347	4822 050 24703	47k 1% 0,6W	
3348	4822 050 24703	47k 1% 0,6W	
3349	4822 050 24703	47k 1% 0,6W	
3350	4822 116 52224	470Ω 5% 0,5W	
3351	4822 116 52224	470Ω 5% 0,5W	
3352	4822 051 20135	1M3 5% 0,1W	
3353	4822 051 20135	1M3 5% 0,1W	
3354	4822 050 21002	1k 1% 0,6W	
3355	4822 050 21002	1k 1% 0,6W	
3356	4822 050 24703	47k 1% 0,6W	
3360	4822 050 22203	22k 1% 0,6W	
3361	4822 051 20223	22k 5% 0,1W	
3362	4822 050 24702	4k7 1% 0,6W	
3363	4822 051 20223	22k 5% 0,1W	
3364	4822 051 20103	10k 5% 0,1W	
3371	4822 052 10478	4Ω 7 5% 0,33W	
3372	4822 051 20101	100Ω 5% 0,1W	
3380	4822 051 20223	22k 5% 0,1W	
3802	4822 051 10008	jumper	
3803	4822 051 10008	jumper	

HEADPHONE PANEL

		
3804	4822 051 10008	jumper
3805	4822 051 10008	jumper
3806	4822 051 10008	jumper
3807	4822 051 10008	jumper
		
5000	4822 157 60363	ANTI INTERFERENCE COIL
5300	4822 157 50975	1 mH
5301	4822 157 50975	1 mH
		
7300	4822 701 11933	SAA7350
7301	4822 209 30008	SAA7322GP
7302	5322 209 86234	NE5532N
7303	5322 209 86234	NE5532N
7304	4822 130 42696	BC818-25
7305	4822 130 42696	BC818-25
7306	4822 130 42696	BC818-25
7307	4822 130 42696	BC818-25
7308	4822 130 61207	BC848
7309	4822 130 61207	BC848
7310	5322 130 42012	BC858
7311	4822 130 61207	BC848

Miscellaneous		
BU-5	4822 267 31065	SOCKET
		
2201	5322 124 21762	100µF 20% 10V
2202	5322 124 21762	100µF 20% 10V
2203	5322 124 21711	100µF 20% 25V
2204	5322 124 21711	100µF 20% 25V
		
3201	4822 051 10101	100Ω 2% 0,25W
3202	4822 051 10101	100Ω 2% 0,25W
3205	4822 052 10109	10Ω 5% 0,33W
3206	4822 052 10109	10Ω 5% 0,33W
3209	4822 051 10122	1k2 2% 0,25W
3210	4822 051 10122	1k2 2% 0,25W
3211	4822 050 21501	150Ω 1% 0,6W
3212	4822 050 21501	150Ω 1% 0,6W
		
6201	4822 209 82362	NJM4556D
6203	4822 130 44121	BC338
6204	4822 130 44121	BC338

MISCELLANEOUS		
21	4822 256 30274	FUSE HOLDER
1010	4822 263 40054	VOLTAGE ADAPTER
1501	4822 070 31601	FUSE T160mA
5001	4822 146 30778	MAINS TRANSFORMER