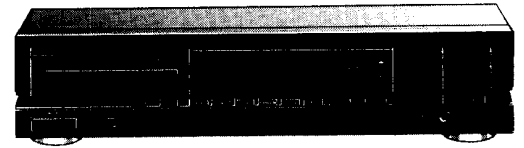


Service
Service
Service

CD824/00B



45 340 A11

Service Manual

COMPACT
disc
DIGITAL AUDIO

Contents

1. Technical specifications, Controls and connections, Service hints and tools.
2. Disassembly of player, Exploded view, Mechanical partslist, Faultfinding procedure.
3. Block diagram, Circuit diagram, Panel data, Wiring diagram.
4. Electrical partslists.

(GB)

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

(NL)

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

(D)

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

(I)

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

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(SF) Varo!

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

(S) Varning!

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

CLASS 1
LASER PRODUCT

3122 110 08-00

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio



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

Subject to modification

4822 725 22793

Printed in The Netherlands

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PHILIPS

Published by
Consumer Electronics

CS 29 314

TECHNICAL SPECIFICATIONS :**General**

1. Mains voltage : 220 , 240 Volt (+/- 10%)
2. Mains frequency : 50 Hz
3. Mains voltage selection : By soldering
4. Power consumption mains, operated : 15W

External RC-5 connection

- Specification : V-in Low : from -2,0V to +1,6V
 V-in High : from +3V to +7,5V
 R-in : from 47 kOhm to 68 kOhm

Line output

1. Number of channels : 2
2. Output voltage : 2 Vrms +/- 2dB
3. Unbalance left-right : max +/- 0,25dB
4. Output resistance : 200 Ohm
5. Amplitude linearity : max. +/- 0,15dB from 20 Hz to 20 kHz
 typ. +/- 0,035dB from 20 Hz to 20 kHz
6. Phase non-linearity : max. +/- 1,0° from 20 Hz to 20 kHz
 typ. +/- 0,5° from 20 Hz to 20 kHz
7. Signal to noise ratio : min. 90dB from 20 Hz to 20 kHz
 typ. 95dB
8. Dynamic range (-60dB) : min. 88dB from 20 Hz to 20 kHz (max. 0,0040 %)
 typ. 92dB (typ. 0,0025 %)
9. Total harmonic distortion + noise : min. 84dB from 20 Hz to 20 kHz (max. 0,0064 %)
 typ. 90dB (typ. 0,0032 %)
10. Intermodulation distortion : min. 84dB from 20 Hz to 20 kHz (max. 0,0064 %)
 typ. 90dB (typ. 0,0032 %)
11. Outband attenuation : min. 60dB above 24.8 kHz
12. Channel separation : min. 86dB from 20 Hz to 20 kHz
 typ. 90dB
13. Muting during random acces : min. 90dB from 20 Hz to 20 kHz
14. Automatic switched de-emphasis
 whitth time constant 15/50 µs

Variable headphone

1. Max. output voltage : 7,4 Vrms
2. Load impedance range : 30-600 Ω
3. Output impedance : 150 Ω
4. Max. output power : 50 mW into 30Ω
 90 mW into 150Ω
 50 mW into 600Ω
5. Signal to noise ratio : min 85dB
6. Dynamic range : min 85dB (20Hz to 20 kHz)
7. THD and noise : min 80dB (20Hz to 20 kHz)
8. Intermodulation distortion : min 80dB (20Hz to 20 kHz)
9. Channel separation : min 70dB (20Hz to 20 kHz)

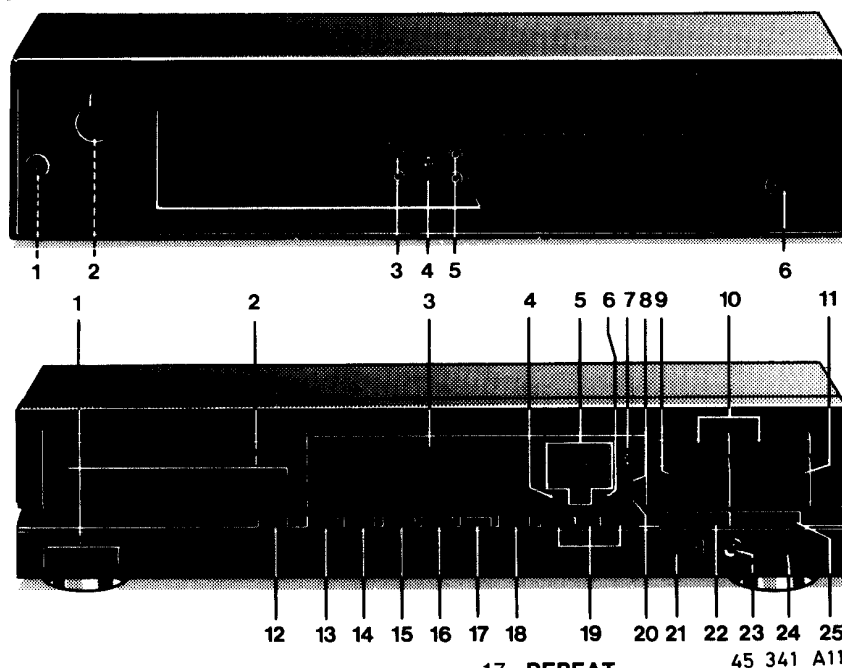
Dimensions and weight

1. Apparatus tray closed : WxDxH 420 x 280 x 104 mm
2. Apparatus tray open : WxDxH 420 x 423 x 104 mm
3. Weight : 4,0 kg

Laser diode

1. Wavelength : 780nm +/- 5nm
2. Output power on laserdiode : typ. 3 mW
3. Output power after objective lens : 100 µW

CONTROLS AND CONNECTIONS



Front of player

- 1 **ON/OFF**
Switching the set on and off.
- 2 **OPEN**
Opening the loading.
- 3 **Display**
- 4 **C(lear)**
– Erasing track numbers from a programme.
– Erasing favourite track selections.
- 5 **'1-0' digit keys**
– Selecting another track during play.
– Selecting a track to start play with.
– Selecting tracks when compiling a programme.
– Entering the recording time when making a tape recording.
- 6 **S(tore)**
– Storing tracks in a programme.
– Storing a programme in the FTS memory.
– Storing the recording time when making a tape recording.
- 7 **FTS 1 and 2**
– Activating the FTS memory. (FTS = Favourite Track Selection)
- 8 **REV(iew)**
Checking a programme.
- 9 **STOP/C(lear) M(emory)**
– Stopping play.
– Erasing a programme.
- 10 **PREVIOUS and NEXT**
– Selecting the recording time when making a tape recording.
– Selecting another track during play.
– Selecting a track to start play with.
- 11 **PLAY/REPLAY**
– Starting play.
– Returning to the beginning of the track.
- 12 **DIGITAL OUT**
For switching the DIG(ital) OUT output on and off. Only use this key if you connect the player to other digital equipment via this output.
- 13 **PRESETS**
Entering the desired play mode.
- 14 **TIME**
Selecting the time information you want to see.
- 15 **SCAN**
Automatically playing the beginning of each track.
- 16 **RANDOM**
Playing in random order.

17 **REPEAT**

Repeating play.

18 **A-B**

Setting the starting and stopping point of a passage to be repeated.

19 **<< and >>**

– Fast search to a particular passage during play. When used in conjunction with **FAST**, the search speed is increased.
– Selecting the required play mode.

20 **EDIT**

Entering the recording time when making a tape recording.

21 **Remote eye**

Receives the signals from the remote control.

22 **PAUSE**

Interrupting play.

23 **PHONES**

Connecting headphones.

24 **VOL(ume)**

For adjusting the volume when listening with headphones.

25 **PROG(ram)/PLAY**

Direct programming or immediate selection and playback of track numbers.

Back of player

- 1 Mains fuse holder. (Not for all versions)
- 2 Voltage selector. (Not for all versions)
- 3 **RC5 IN/OUT**
Use this connection for :
– Connecting up the equipment when you are incorporating the player in a HiFi system with its own remote control system.
– Connecting the remote control receiver EM 2200, available as an accessory. (Not available in the U.K.)
- 4 **DIG(ital) OUT**
For digital signal processing. This output supplies a digital signal and can therefore only be connected to an input which is suitable for this kind of signal. **never** connect this signal to a non-digital input of an amplifier, such as AUX, CD, TAPE, PHONO, etc!
- 5 **OUT L/R**
For the connection cable to the amplifier. Use the CD, AUX, TUNER or TAPE input of the amplifier. **Never** use the phono input.

SERVICING HINTS

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

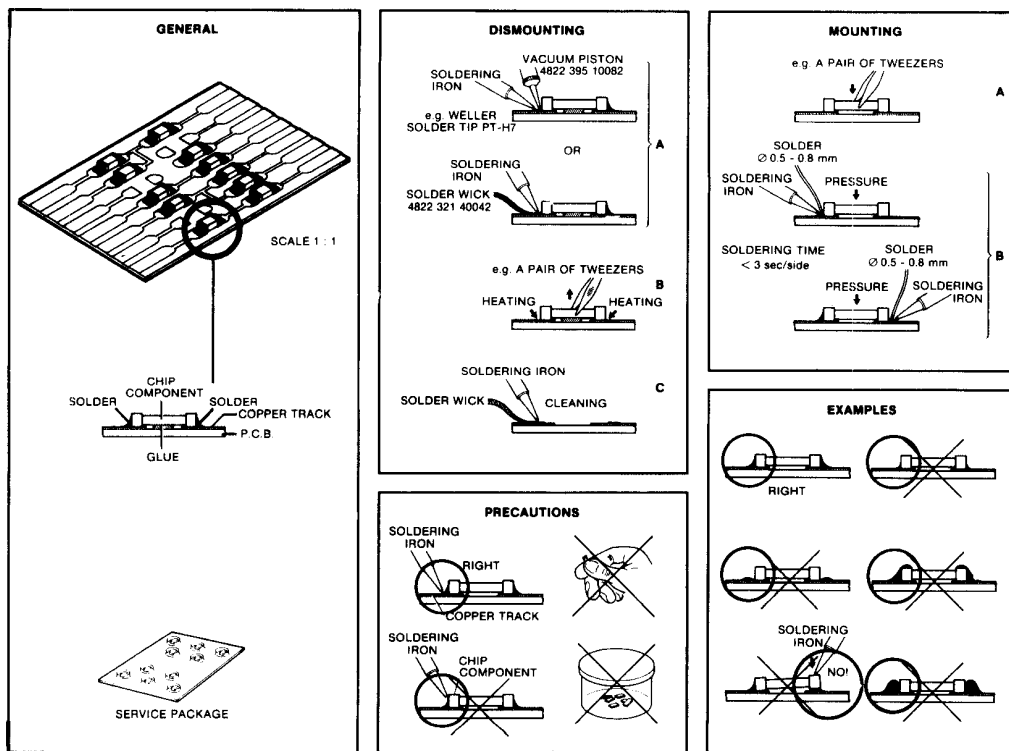
The disc should always rest properly on the turntable.
To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used.
(See drawing "Service disc hold-down")
The set can function normally then.
Code number of the disc hold-down is 4822 462 50383.

When the tray mechanism has been disassembled, the tray switch must be activated immediately after pressing the play button in order to ensure normal operation.

To avoid electric shock during servicing, it is recommended to mount an insulation cover over the mains leads on the servo & decoder panel. See drawing MDA 02548. The cover can be ordered under codenumber 4822 444 60655.

SERVICE TOOLS

Audio signals 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 1 kHz 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
Insulation cover	4822 444 60655



27 012C12

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 enfilez le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

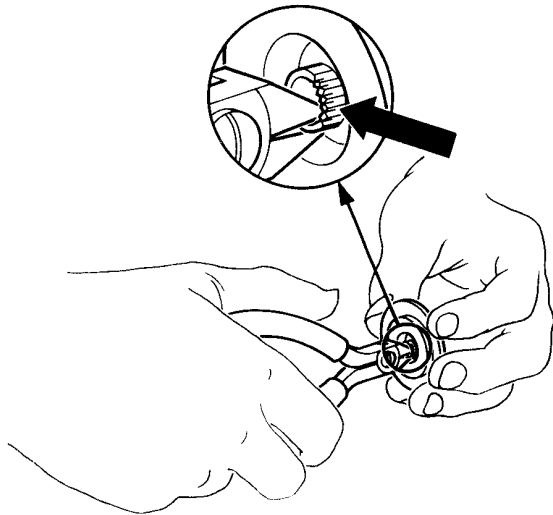
D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente 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.

SERVICE DISC-HOLDDOWN

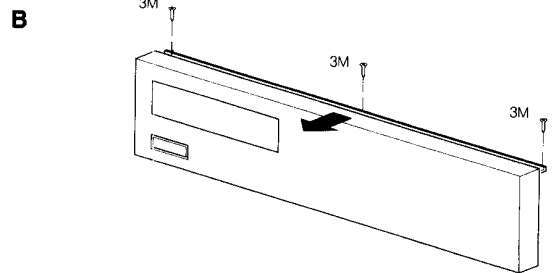
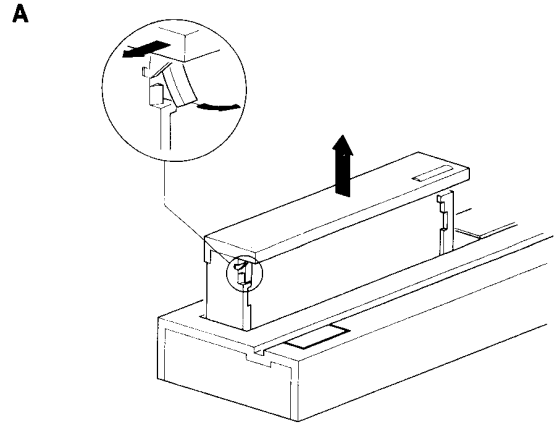


42 565 A12

Compose a service Disc hold-down in the following way

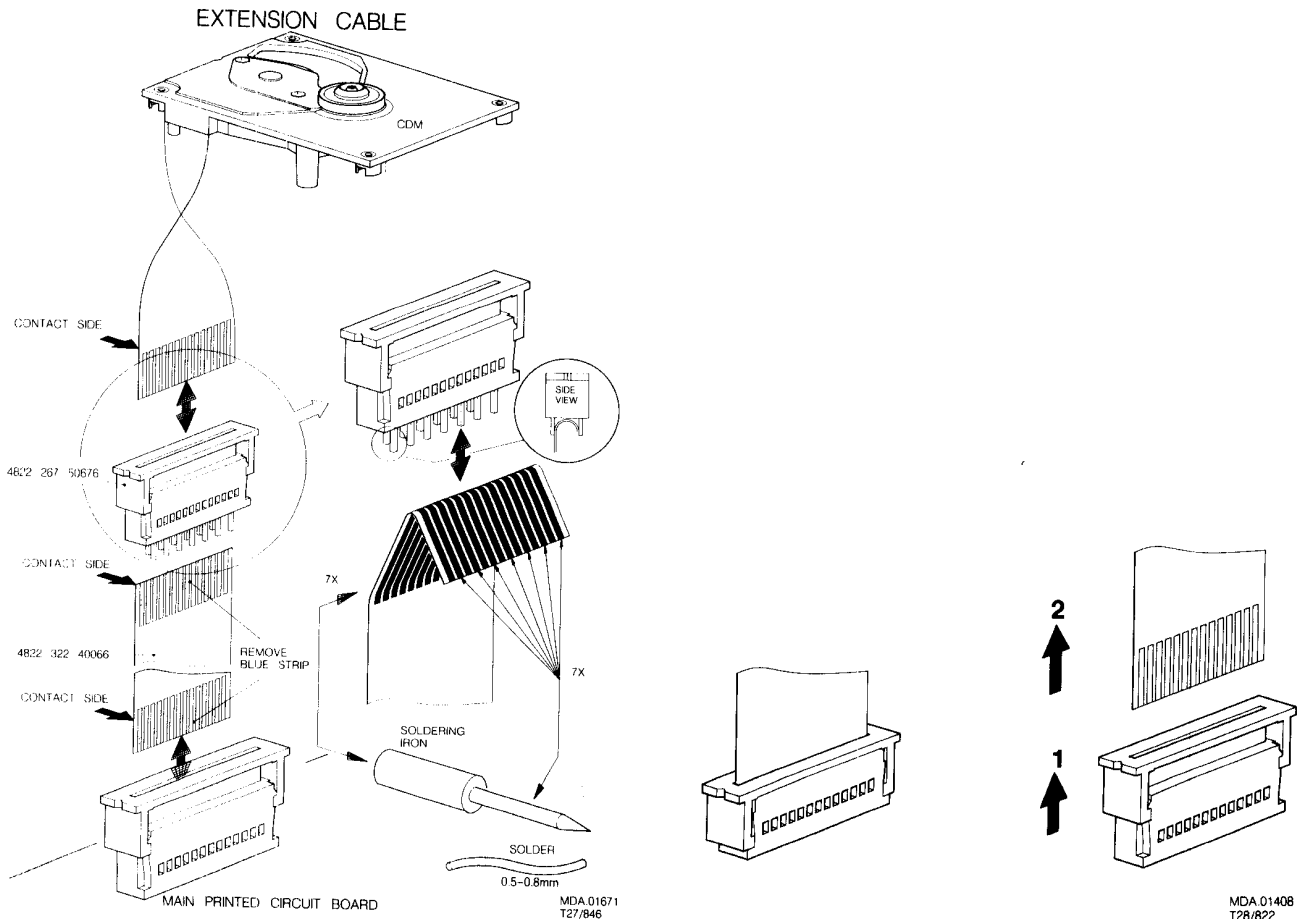
- Cut in the most inner ring of a disc hold-down (4822 462 50383) with small and sharp nippers, see fig. above.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases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

CABINET DISASSEMBLY HINTS

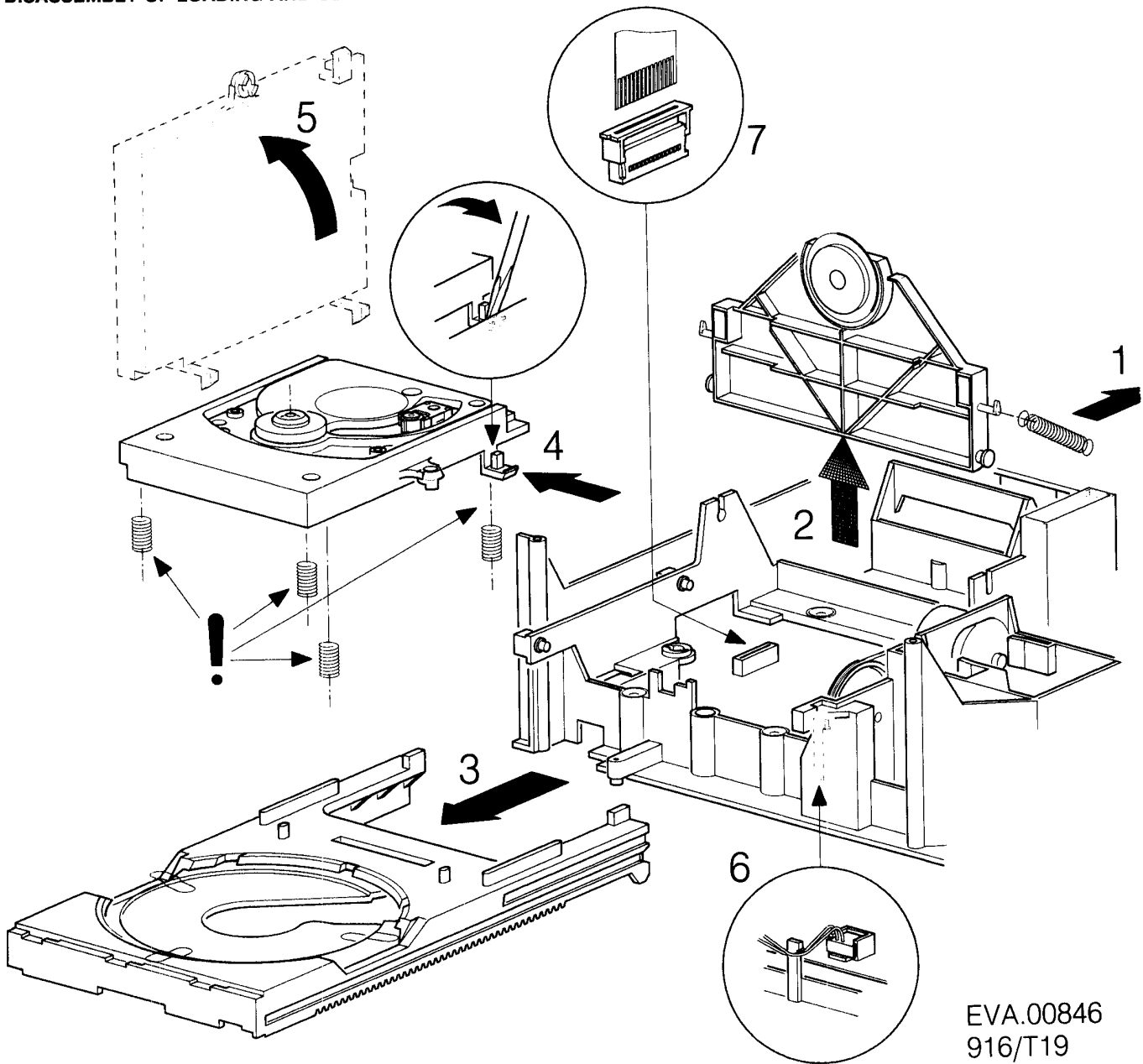


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916/T19

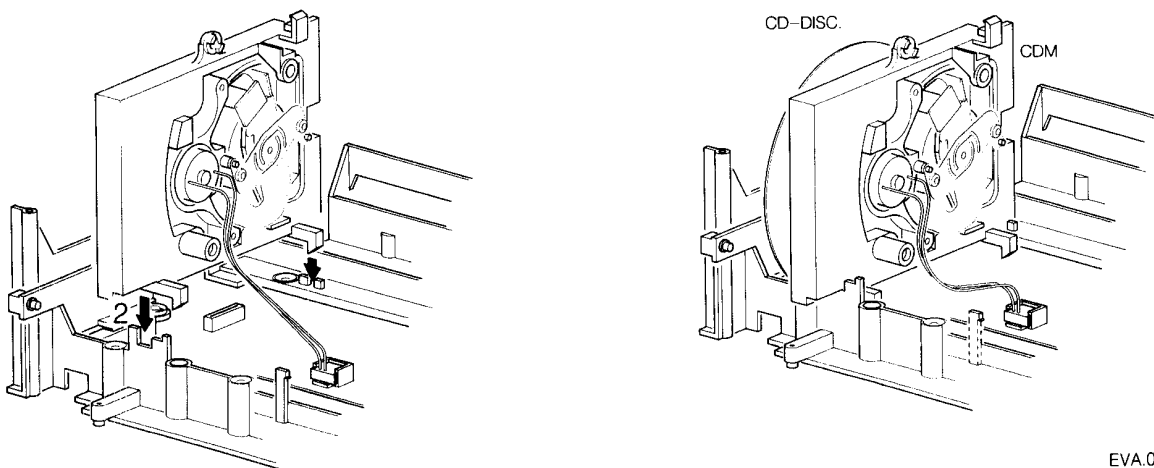
SERVICE FOIL FOR CDM



DISASSEMBLY OF LOADING AND CDM

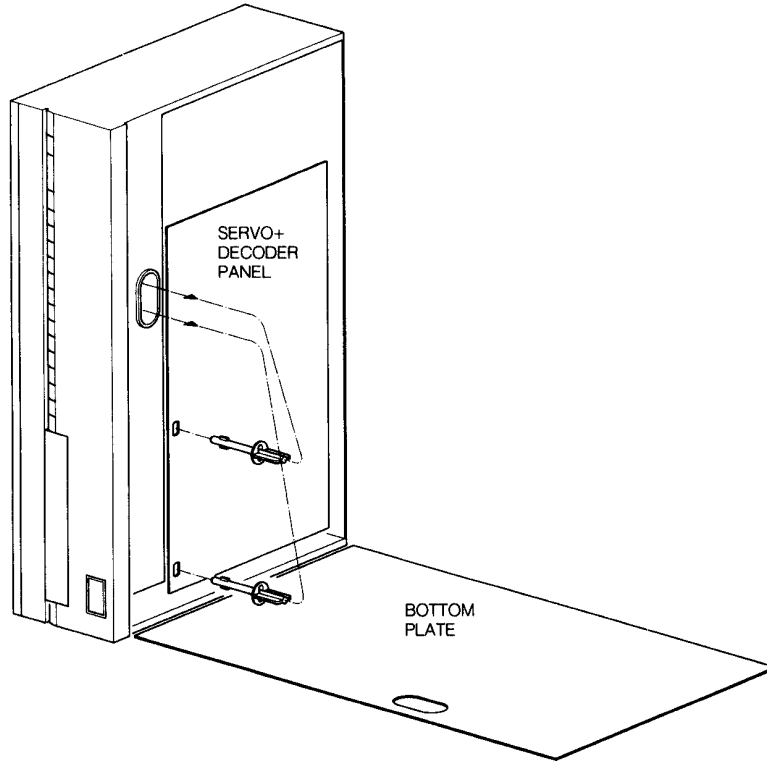


PLAY SERVICE POSITION



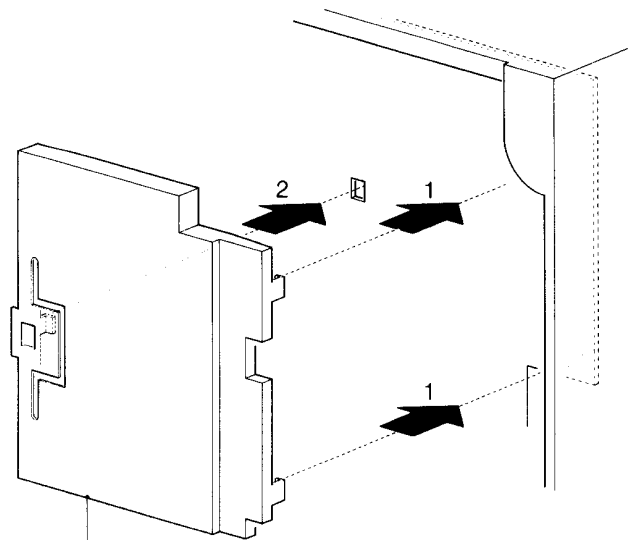
FOR ACCESS OF THE MAIN PCB REMOVE THE BOTTOM PLATE

MEASURING AND ADJUSTMENT POSITION
OF THE SET



MDA.02138
916/T19

INSULATION COVER



4822 444 60655

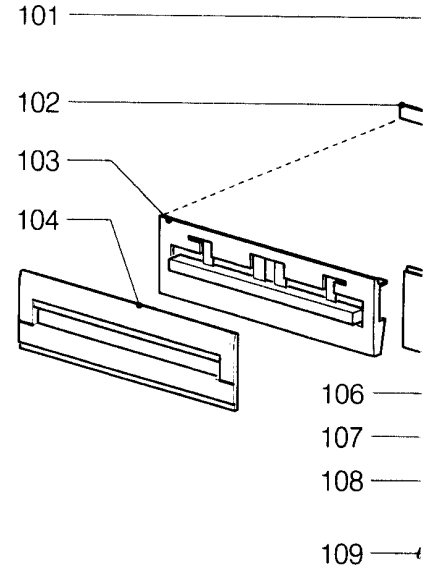
TO AVOID ELECTRIC SHOCK DURING SERVICING MOUNT
INSULATION COVER OVER MAINS LEADS ON MAIN PANEL

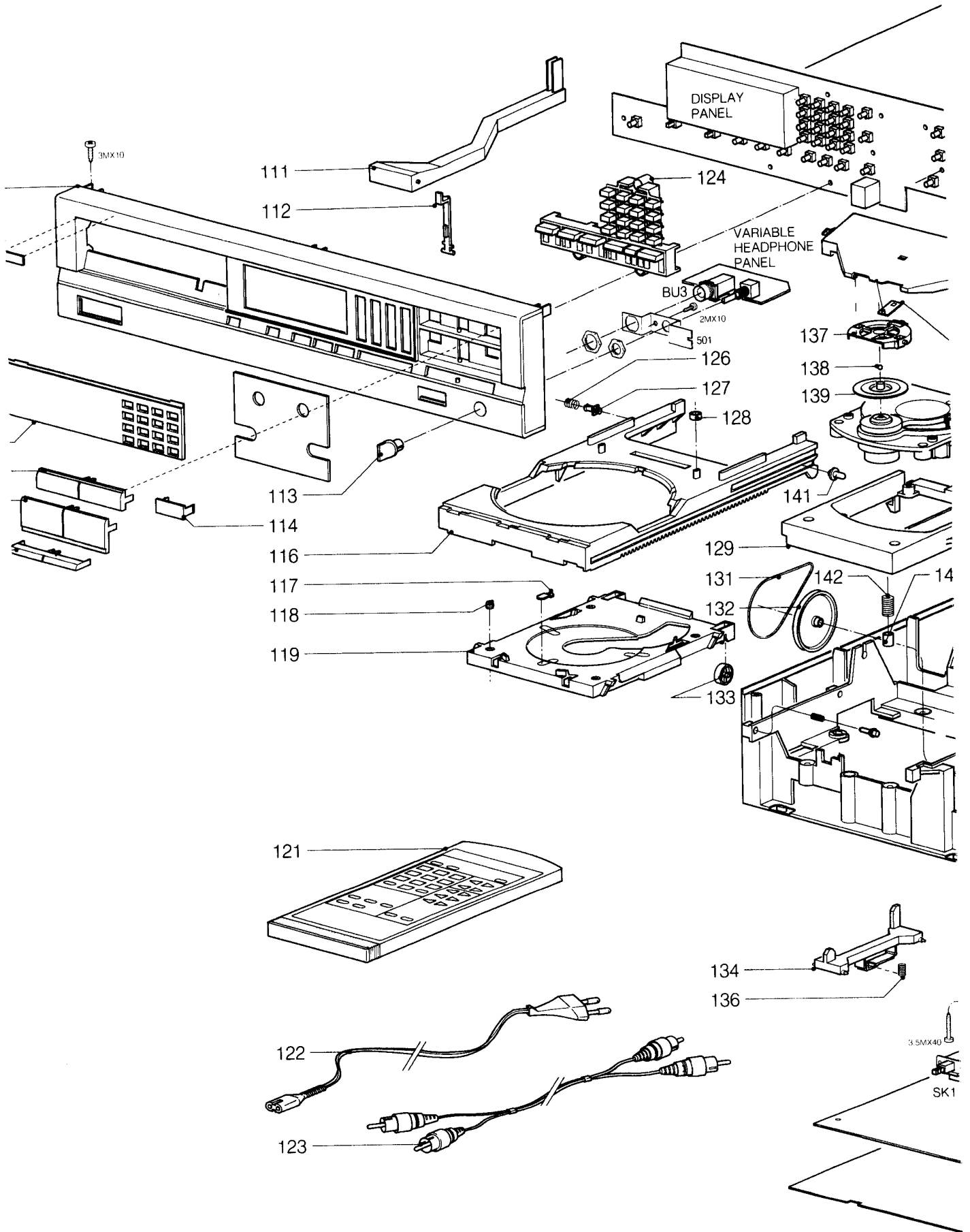
MDA.02548
T02/007

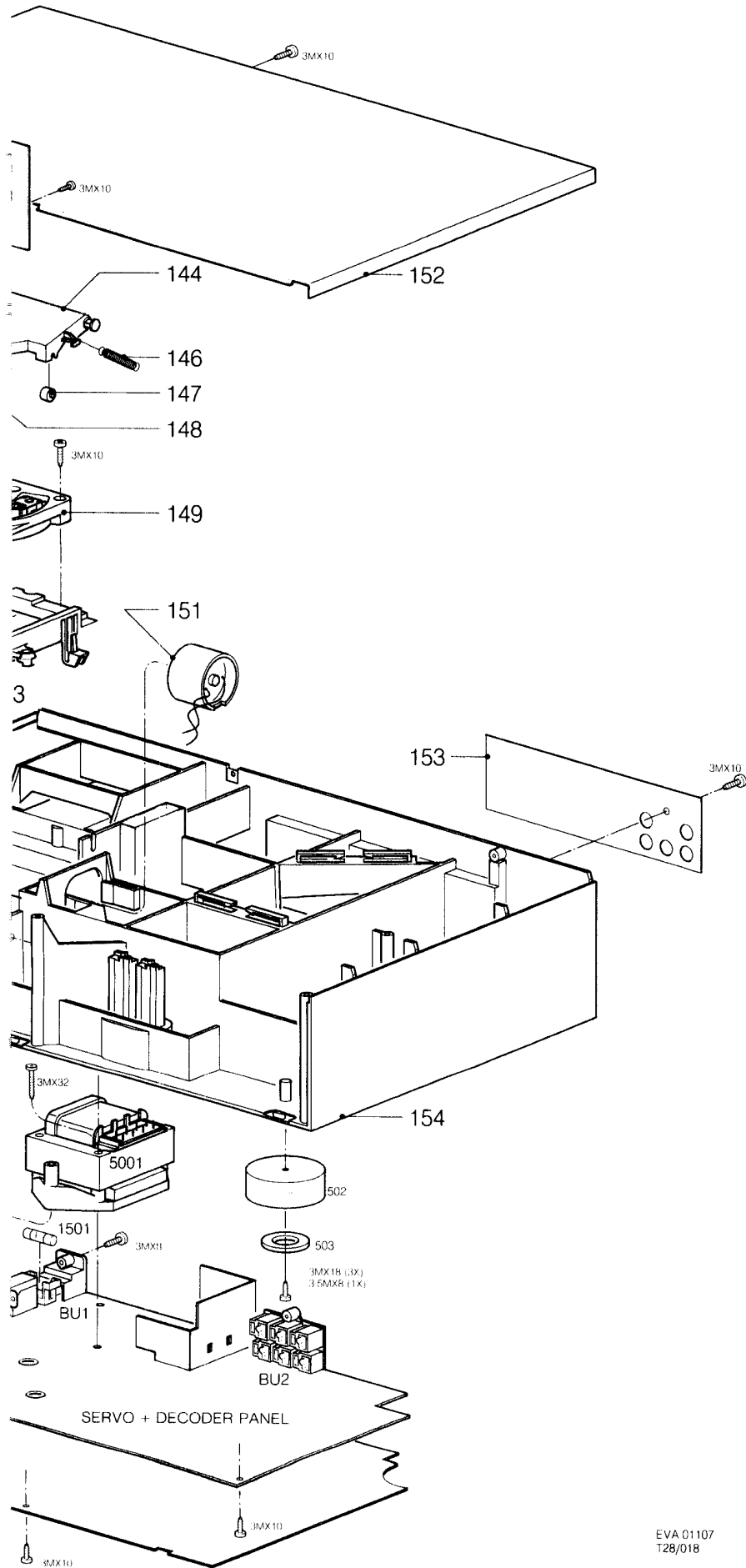
MECHANICAL PARTSLIST

101	4822 444 40394	for CD624
101	4822 444 40399	for CD824
102	4822 459 10803	
103	4822 444 60623	
104	4822 444 60696	
106	4822 381 11131	
107	4822 410 60094	
108	4822 410 60095	
109	4822 410 60096	
111	4822 410 60105	
112	4822 402 61249	
113	4822 411 61674	
114	4822 381 11051	
116	4822 444 50603	
117	4822 325 50176	
118	4822 325 50177	
119	4822 466 92251	
121	4822 218 10325	
122	4822 321 10457	for /00B
122	4822 321 10251	for /05B
122	4822 321 10523	for /10B
123	4822 321 22832	
124	4822 410 60729	
126	4822 492 52094	
127	4822 402 61252	
128	4822 532 51756	
129	4822 402 61196	
131	4822 358 10115	
132	4822 528 81329	
133	4822 528 90638	
134	4822 402 50276	
136	4822 492 52123	
137	4822 402 61207	
138	4822 520 40177	
139	4822 532 52234	
141	4822 402 61253	
142	4822 492 51902	
143	4822 466 61587	
144	4822 444 60568	
146	4822 492 32883	
147	4822 528 70651	
148	4822 466 92257	
149	4822 691 30209	
151	4822 361 21258	
152	4822 444 30417	
153	4822 444 30418	
154	4822 444 50621	

EXPLODED VIEW







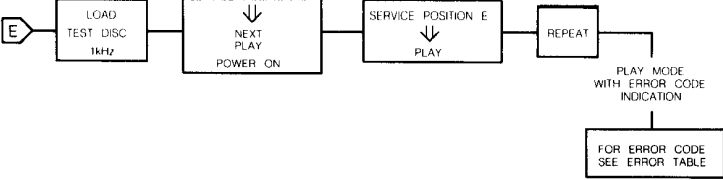
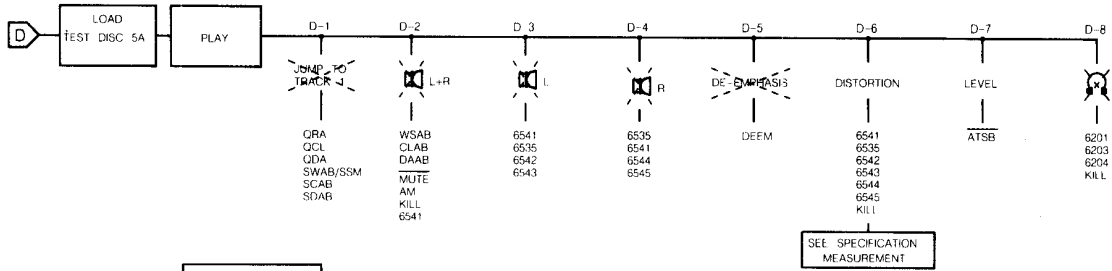
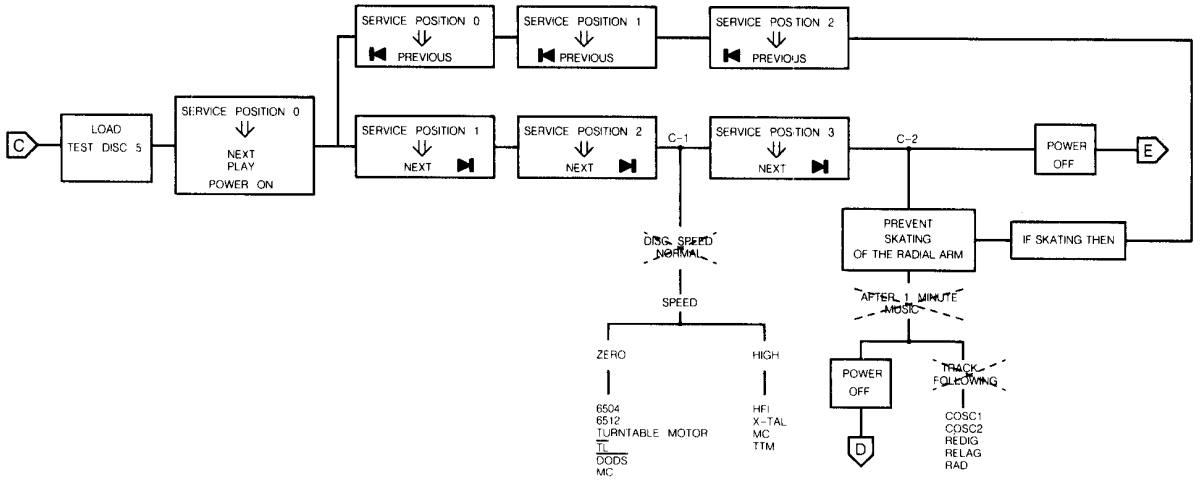
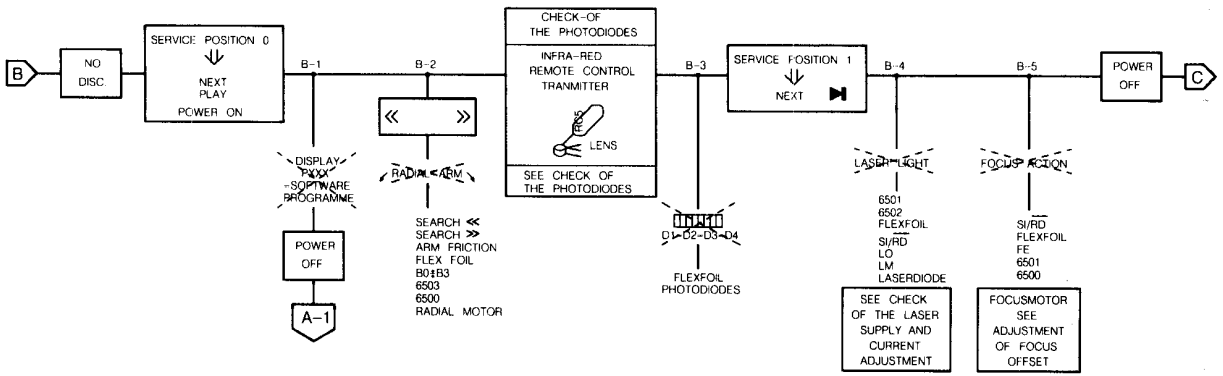
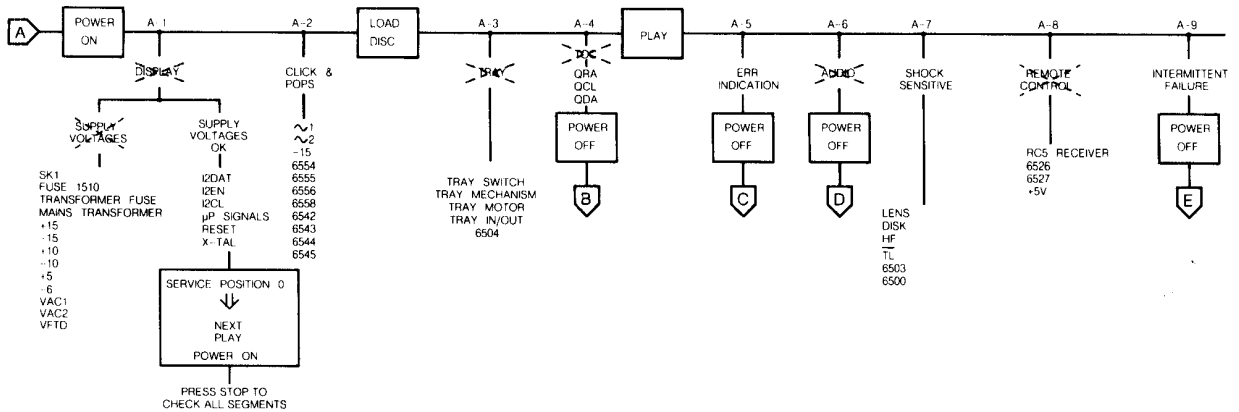
FAULTFINDING GUIDE

TROUBLE SHOOTING (FAULT FINDING TREE)

Follow the path of the faultfinding tree beginning at the top left. Perform the actions you come across in the various blocks. Look at the various side branches to find out if the information you see there applies to your problem. If, for instance, you find the indication **Display**, this means that no picture appears on the display.

If you establish this fault, follow the branch and perform the recommended actions. Check the signals mentioned. In a number of branches further reference is made to measurements you could carry out. These measurements are explained in several tables further on in this manual.

START-UP PROCEDURE



B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode					Remarks
1	D2 D1 D3 D4	power on	 	-	-	signal 4=6=7=8	Signal depends on Distance lens ←→ IR LED of remote control

T-22793A

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 teh replacement circuit for laser assembly.

Step	Signal	Mode			Remarks
1	LO	serv. pos. 2		$1.8 < V < 2.3$	
	LM	SK		$170 < mV < 220$	
2	LO	serv. pos. 2		$1.8 < V < 2.3$	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		$170 < mV < 220$	
3	LO	Power on		$0V \pm 0.2V$	No light

T-22793B

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

B-4 LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE					REMARKS
1	---	POWER OFF	---	---	---	---	CHECK IF FLEX-FOIL IS PROPERLY CONNECTED
2	---	POWER OFF			R3520	$1k\Omega$ +10% -0	PRE ADJUSTMENT OHMIC VALUE
3	---	POWER OFF	---		R3568	---	SET TO MID-POSITION
4	LASER CURRENT $\hat{=}$ VOLTAGE ACROSS R3500	TEST DISC 5A PLAY	 			$\geq 15mV$	IF $< 15mV$ THEN GO TO STEP 3 AND SET R3515 TO 1/4 OR 3/4. TRY AGAIN
5	LASER CURRENT $\hat{=}$ VOLTAGE ACROSS R3500	TEST DISC 5A PLAY	 		R3520	50mV	---
6	FE-LAG	TEST DISC 5A TRACK 1 PLAY			R3568	400mV	FINE ADJUSTMENT

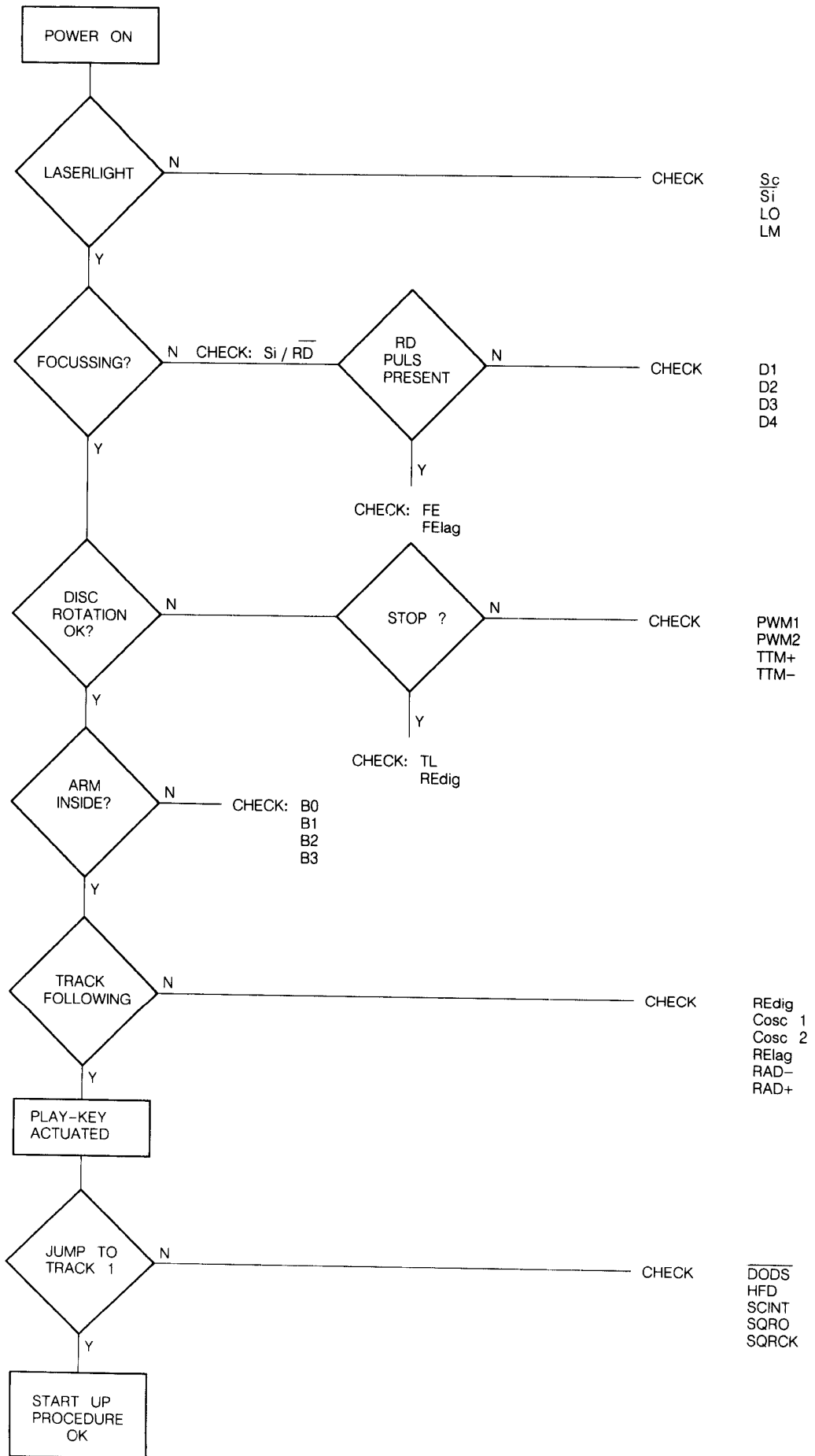
MDA 02673
T28/020

B-5 ADJUSTMENT OF FOCUS-OFFSET

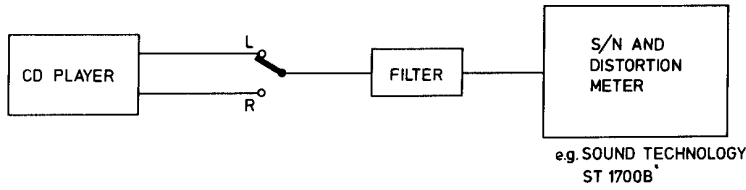
Step	Signal	Mode					Remarks
1	-	Power on no disc	-		R3568	-	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27		R3568	$400mV \pm 40 mV DC$	tine adjustment

T-22793D
CS 29 320

START UP PROCEDURE



SPECIFICATION MEASUREMENT



30 459 A12

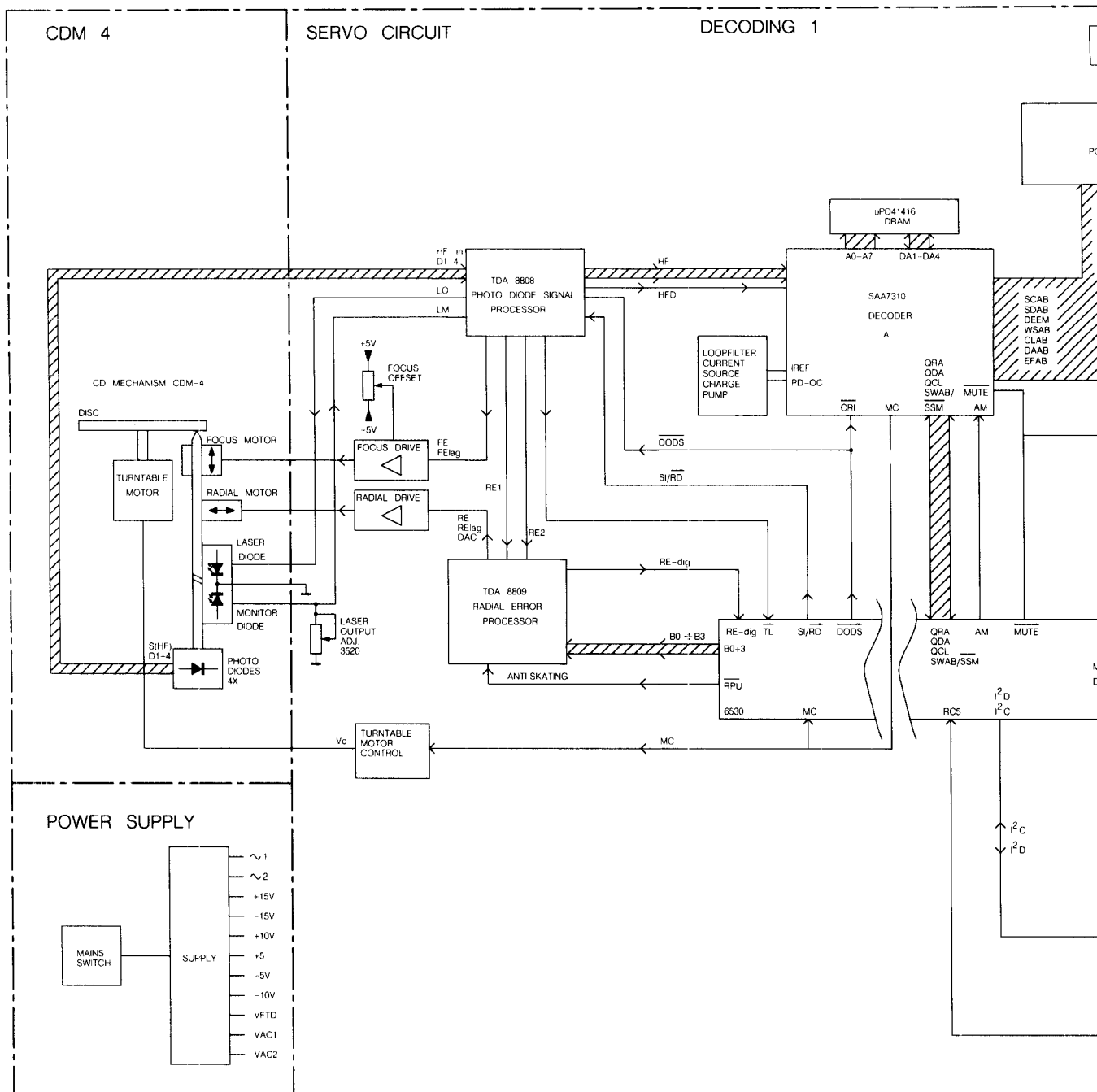
SYSTEM ERRORS

- ERROR 02 P122 Focus error: no track loss
 ERROR 03 P122 Radial start error: min. exentricity point not found
 ERROR 06 P122 TL error during jump: no positive TL or RP edge during 60×8 ms
 ERROR 07 P122 Subcode error: no valid subcode within 3 sec.
 ERROR 08 P122 TOC error: out of lead-in while reading TOC
 ERROR 09 P122 EEPROM cell error: EEPROM cell broken

OPERATING ERRORS

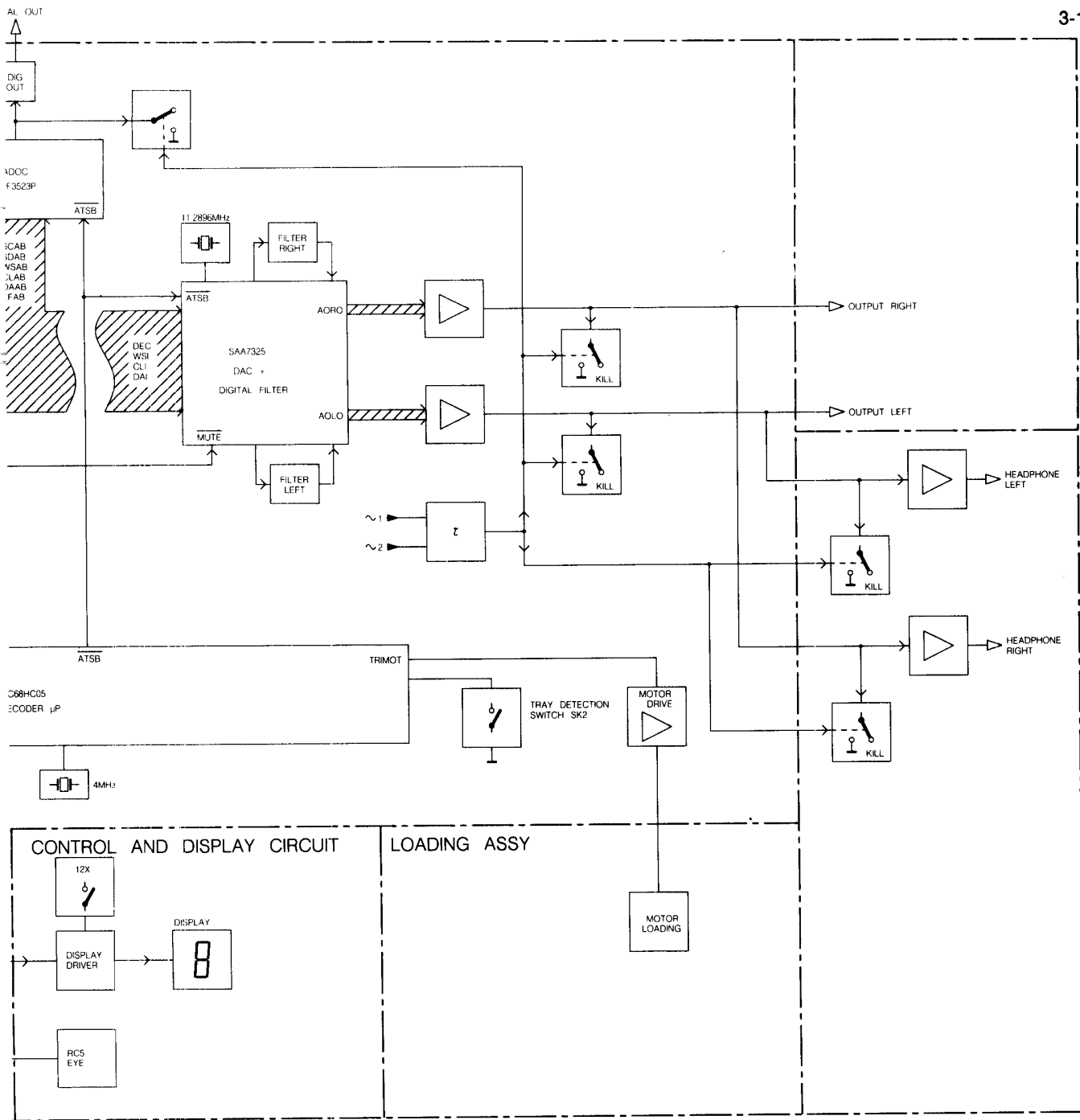
- ERROR 30 P122 NEXT at a boarder when repeat is off
 ERROR 31 P122 PREVIOUS at a boarder when repeat is off
 ERROR 33 P122 Selected index does not exist
 ERROR 34 P122 No program
 ERROR 35 P122 Program memory full
 ERROR 36 P122 Programed track is non existing on this CD
 ERROR 37 P122 Selected track is non existing on this CD
 ERROR 39 P122 STORE or CLEAR pressed while in play program
 ERROR 42 P122 Selected track is not a program block
 ERROR 43 P122 FTS store error: memory full
 ERROR 44 P122 FTS store error: no program
 ERROR 46 P122 FTS play error: no FTS program in memory
 ERROR 47 P122 FTS selection error: upper bound of FTS memory (next)
 ERROR 49 P122 FTS selection error: selection request while storing (next/previous)
 ERROR 51 P122 FTS selection error: selection request while storing (review)
 ERROR 52 P122 FTS selection clear error: clear request while storing
 ERROR 54 P122 FTS store error: no record id (TOC) available
 ERROR 56 P122 AB key pressed when not in play mode
 ERROR 57 P122 Store pressed while there is no track selected
 ERROR 60 P122 Fast forward/reverse bound
 ERROR 63 P122 No track possible to play in edit mode
 ERROR 74 P122 Relative time not found
 ERROR 75 P122 Search time out error

BLOCK DIAGRAM



AGC – Automatic Gain Control
 B0-B3 – Control bits for radial circuit
 BEQ – Equalizer reference current input
 BGC – DC and LF gain control reference input
 Cosc1 – Capacitor wobble oscillator
 Cosc2 – Capacitor wobble oscillator
 DEC – Decoupling input internal bypass
 DET – HF detector voltage input
 DIV4 – Divide by 4 input
 DODS – Drop out detector suppression
 D1÷4 – Photodiode currents
 FE – Focus error signal
 FE lag – Focus error signal for LAG network
 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 RE₂-RE₁ currents)
 Rosc – Resistor wobble oscillator
 Rwob – Wobble generator input
 RE1 – Radial error signal 1 (summation of amplified currents D₃ and D₄)
 RE2 – Radial error signal 2 (summation of amplified currents D₁ and D₂)
 RE dig – Radial error digital
 RE lag – Radial error signal for LAG network
 Sc – Starting up capacitor input
 Si/RD – On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
 TL – Track loss output signal
 TTM- – Control voltage for turntable motor
 TTM+ – Control voltage for turntable motor
 Vext- – Supply connection
 Vext+ – Supply connection

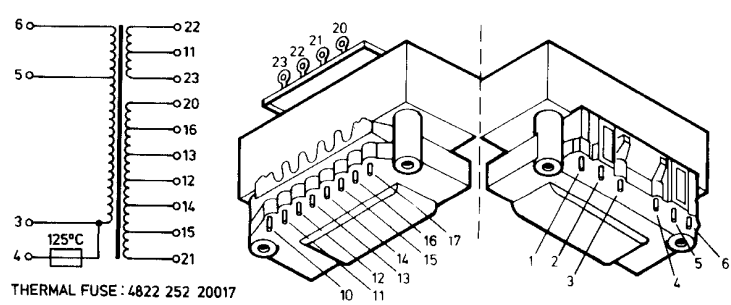
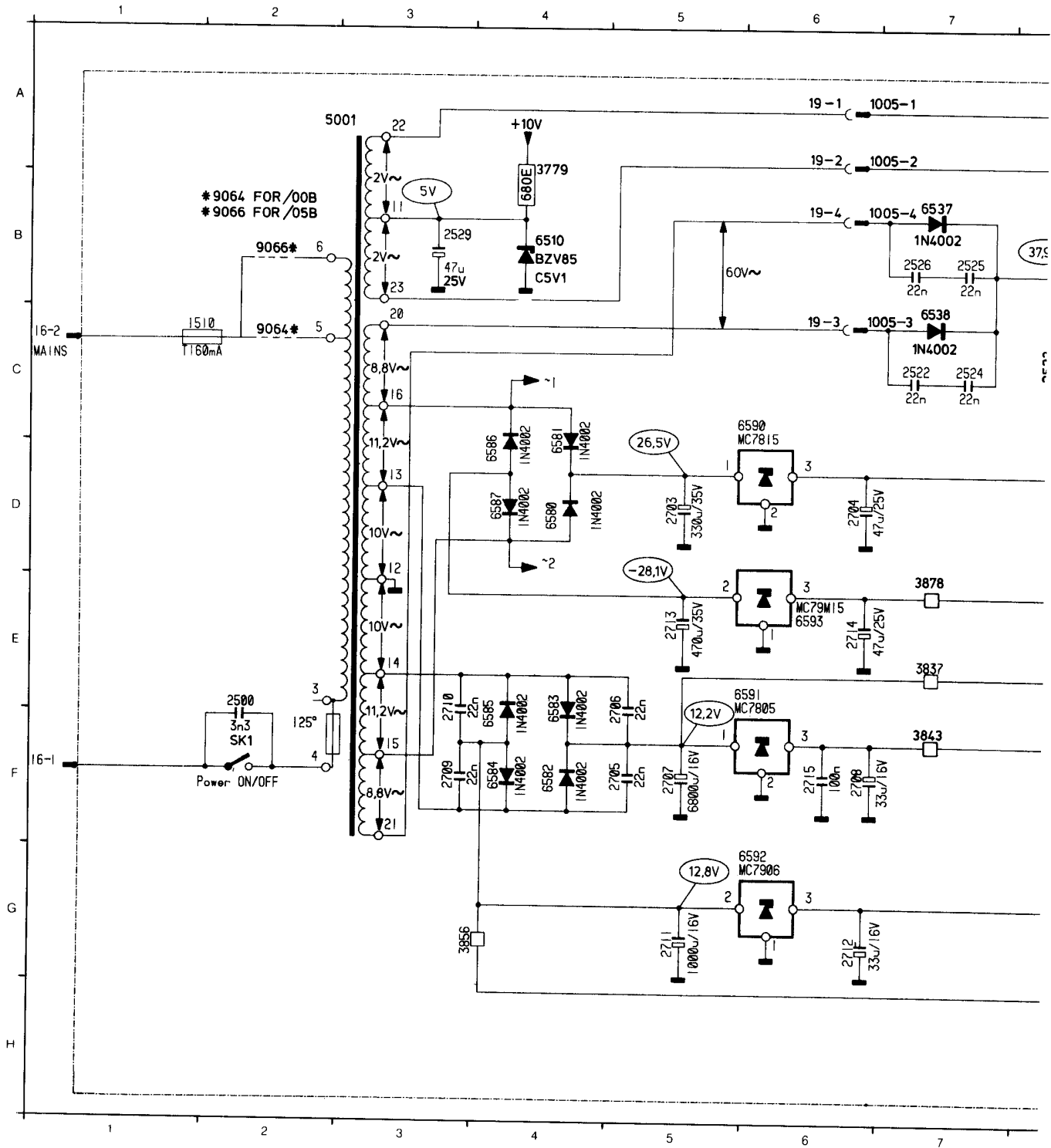


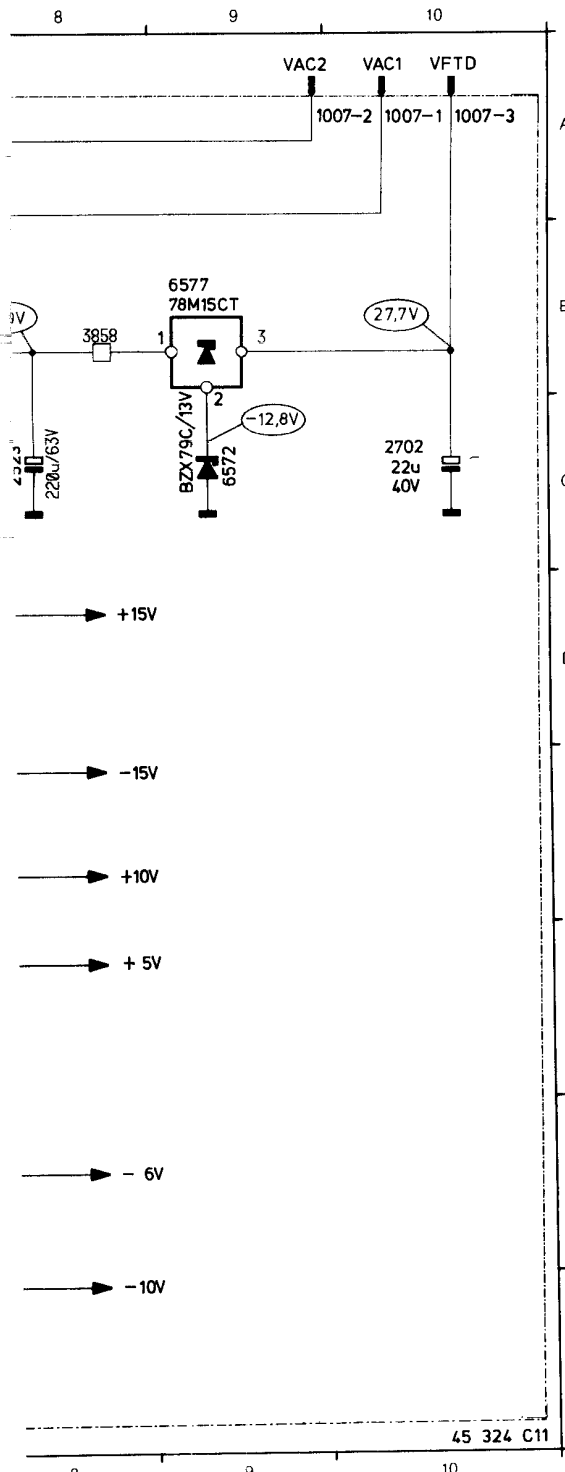
- ATSB** - Attenuation of Audio level in Search position (Cueing)
- ANI** - Digital Data information on disc signal
- CDL** - Capacitor Damping Left
- CDR** - Capacitor Damping Right
- CEFM** - Clock Eight-to-Fourteen Modulator
- CLAB** - Clock signal Decoder-A to DAC
- CLI** - I²S Serial Clock Input of DAC
- CRI** - Counter Reset Inhibit
- DAAB** - Data signal Decoder-A to DAC
- DAI** - I²S Serial Data Input of DAC
- DEC** - Deemphasis Control of DAC
- DEEM** - Deemphasis
- DEL** - De-emphasis Left
- DER** - De-emphasis Right
- DOBM** - Digital out signal
- EFAB** - Error flag Decoder-A to ADOC
- INTL** - Integrator Left
- INTR** - Integrator Right

- IREF** - Reference Current
- MUTE** - Mute signal
- OALO** - Operational Amplifier Left Output
- OARO** - Operational Amplifier Right Output
- OALI-** - Operational Amplifier Left Input -
- OALI+** - Operational Amplifier Left Input +
- OARI-** - Operational Amplifier Right Input -
- OARI+** - Operational Amplifier Right Input +
- PD/OC** - Phase detector - oscillator control
- QCL** - Q-channel Clock signal
- QDA** - Q-channel Data signal
- QRA** - Q-channel Request Acknowledge
- SCAB** - Subcode clock Decoder-A to ADOC
- SDAB** - Subcode data Decoder-A to ADOC
- SWAB/SSM** - Subcode Word/Start-stop motor signal
- WSAB** - Word select Decoder-A to ADOC
- WSI** - I²S Word Select Input of DAC
- XIN** - Oscillator signal in Decoder-A
- XSYS** - Oscillator signal out DAC

PRS 06567
T-02 018

POWER SUPPLY



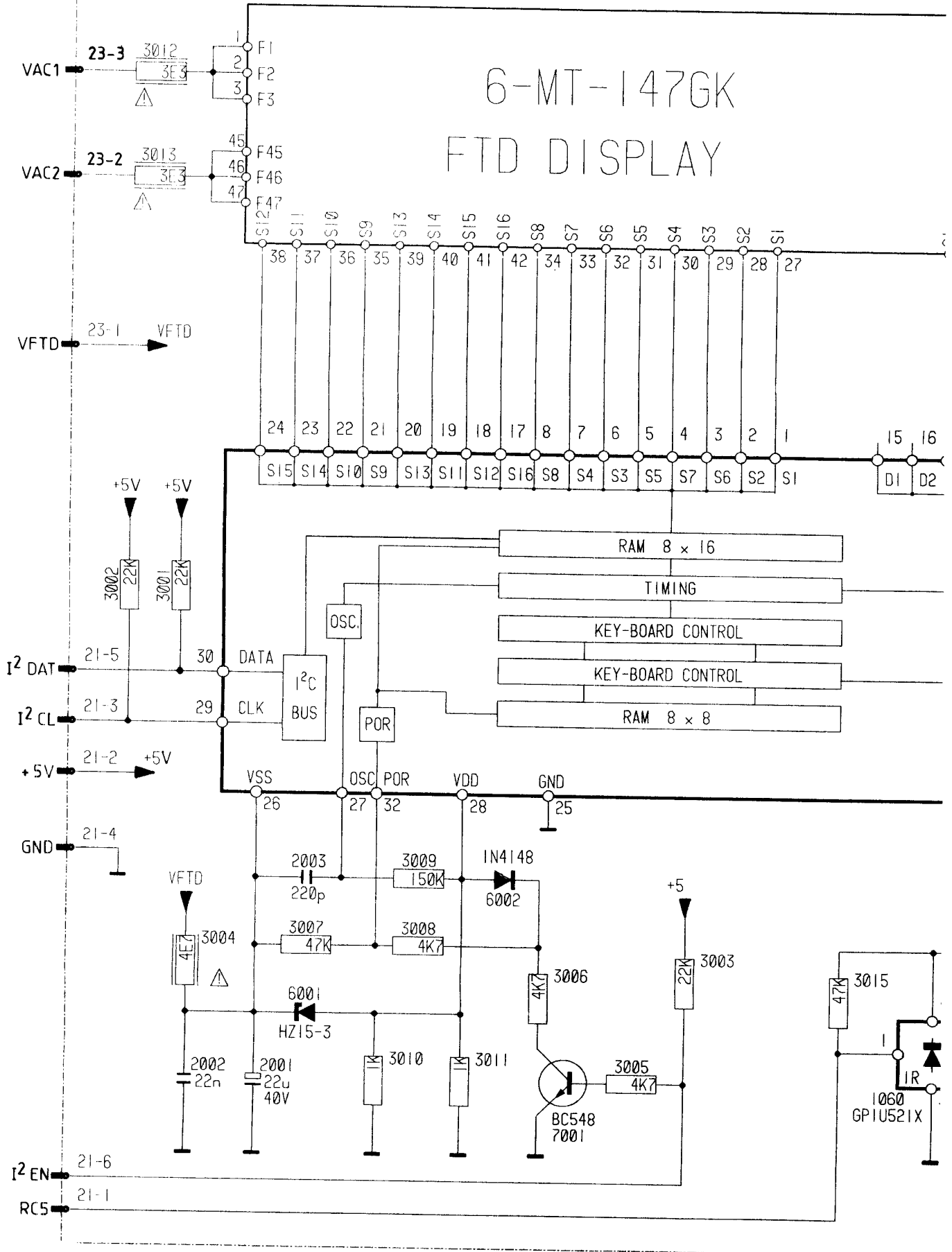


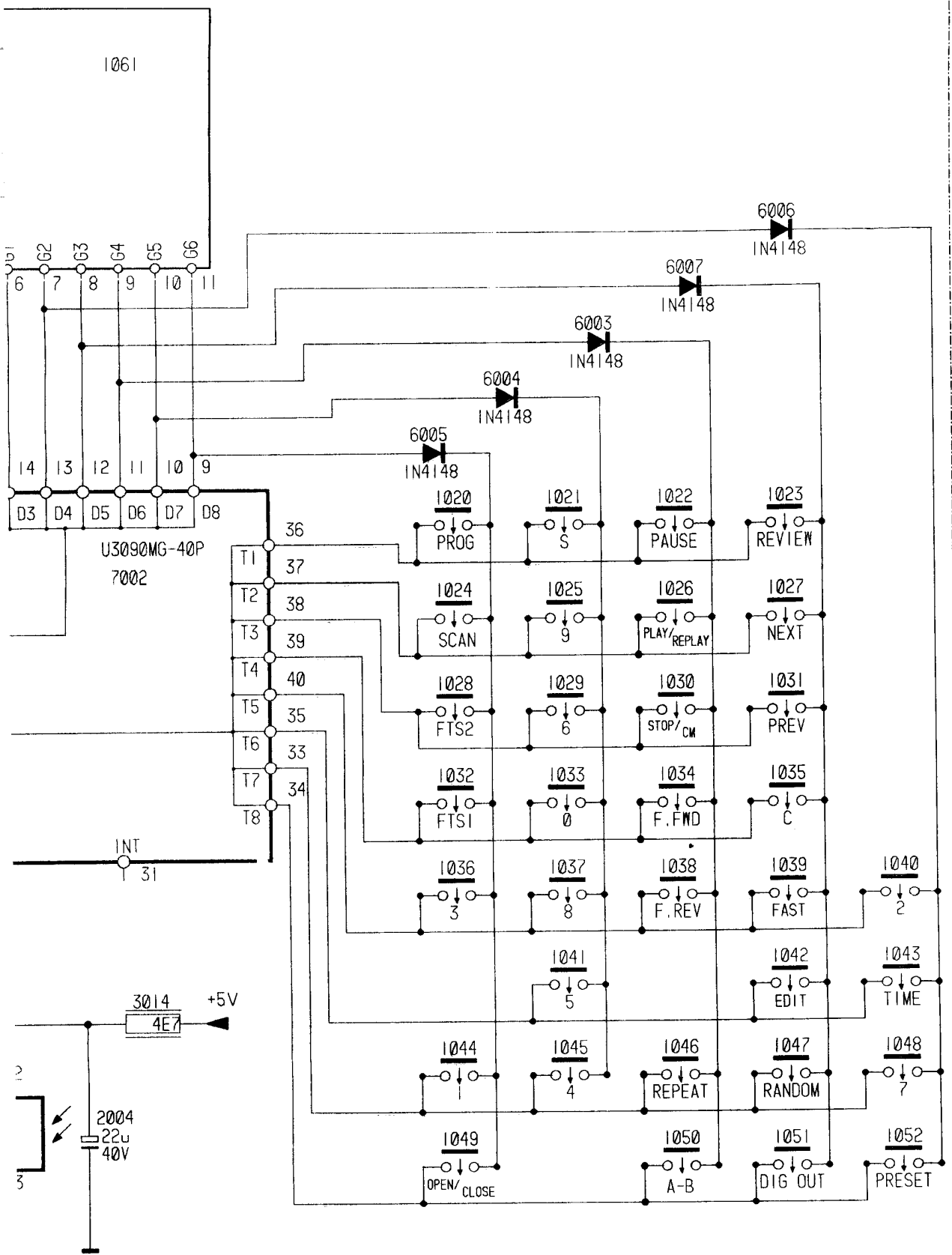
- 1510 C1
- 2500 E2
- 2522 C7
- 2523 C8
- 2524 C7
- 2525 B7
- 2526 B7
- 2529 B3
- 2702 C10
- 2703 D5
- 2704 D6
- 2705 F5
- 2706 E5
- 2707 F5
- 2708 F6
- 2709 F3
- 2710 E3
- 2711 G5
- 2712 G6
- 2713 E5
- 2714 E6
- 2715 F6
- 3779 A4
- 3837 E7
- 3842 F7
- 3843 F7
- 3856 G3
- 3858 B8
- 5001 A2
- 6510 B4
- 6537 B7
- 6538 C7
- 6573 C9
- 6577 B9
- 6580 D4
- 6581 C4
- 6582 F4
- 6583 E4
- 6584 F4
- 6585 F4
- 6586 D4
- 6587 D4
- 6590 C5
- 6591 E5
- 6592 G6
- 6593 E6
- 9064 C2
- 9066 B2

PRS 04348
 T12/016
 BEH.BY 45324C

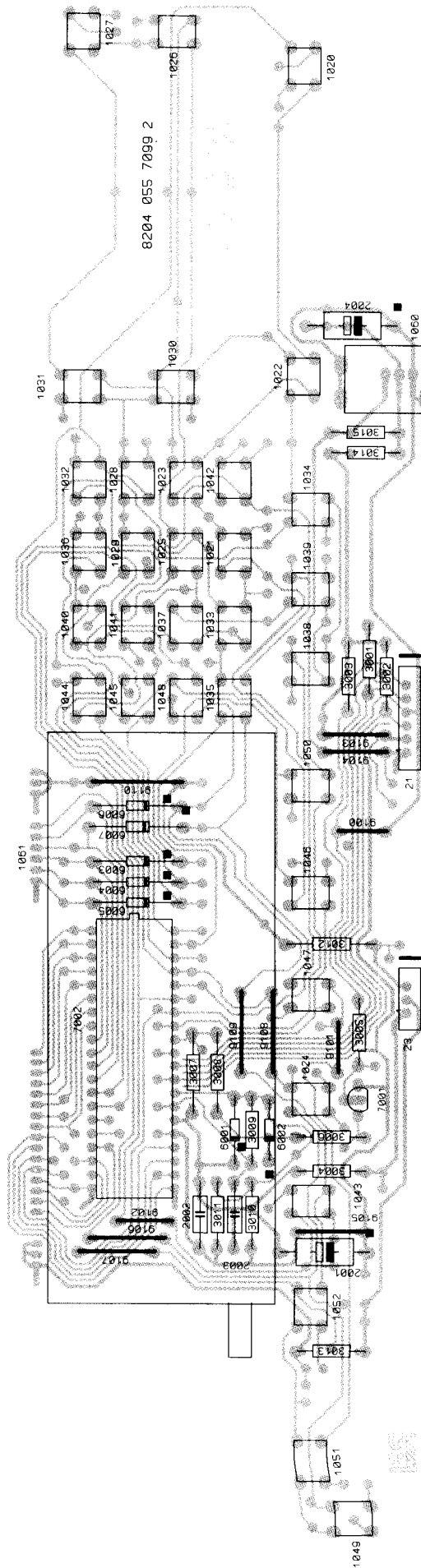
45 324 C11

DISPLAY CIRCUIT DIAGRAM



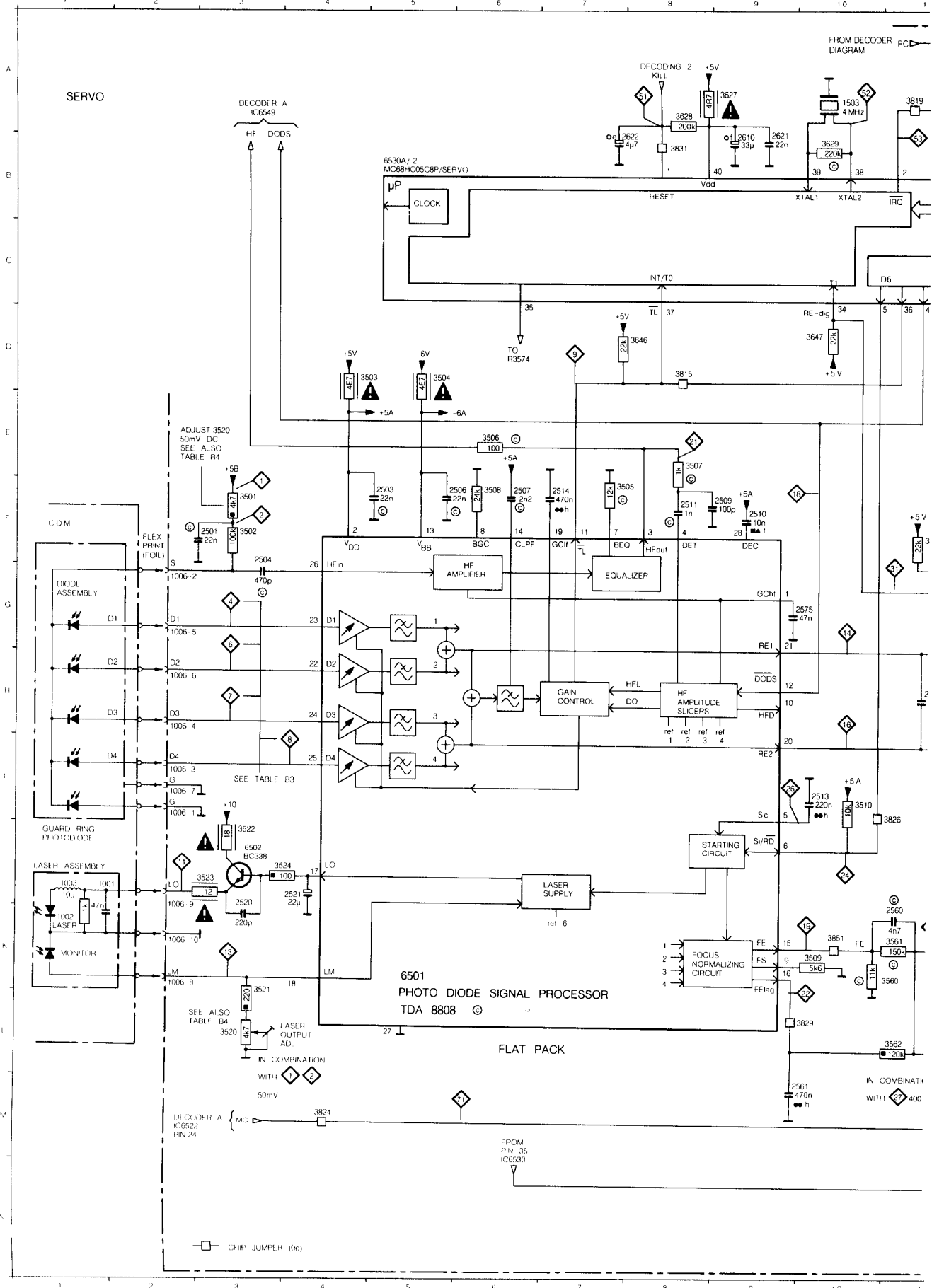


DISPLAY PANEL

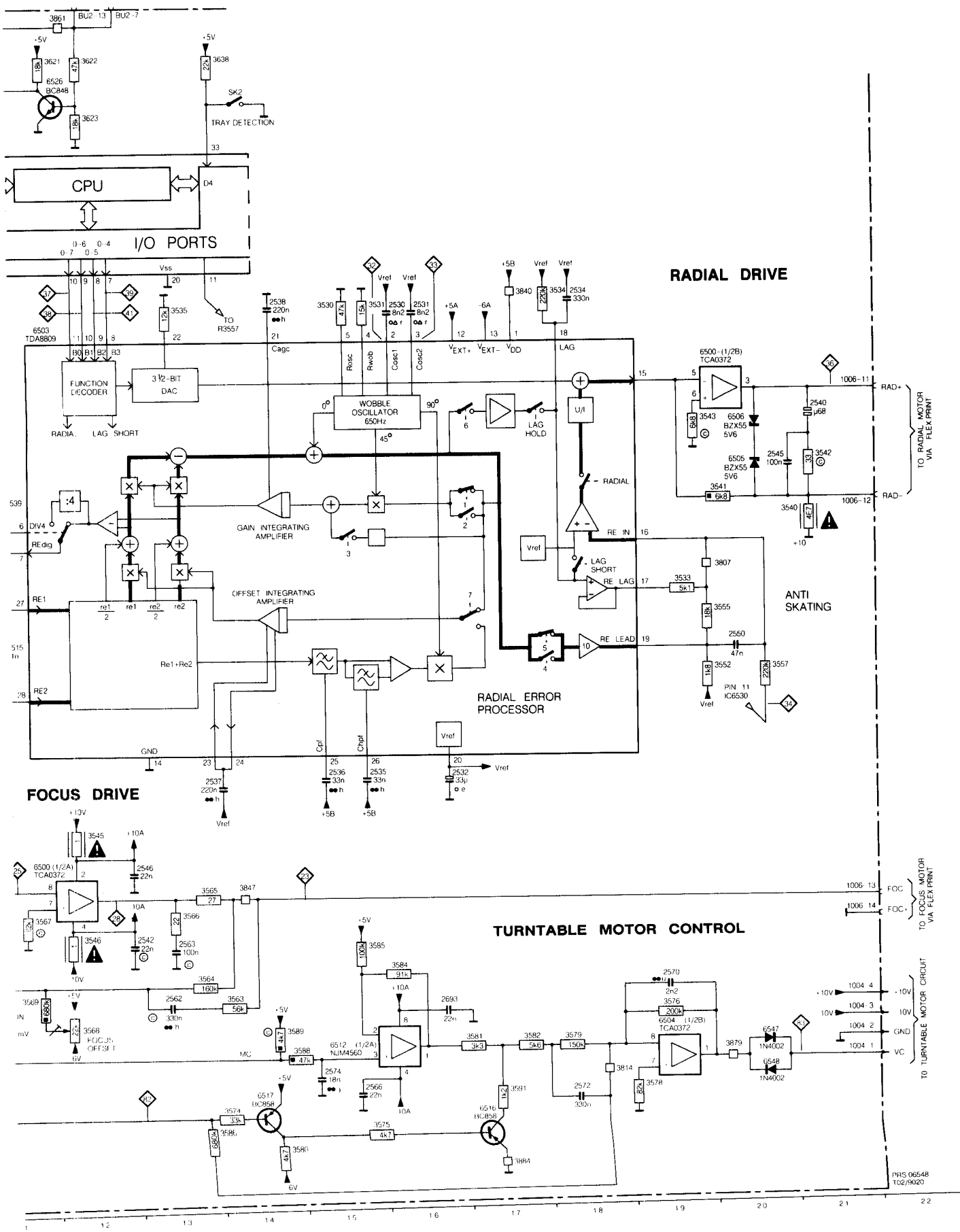


3-4 SERVO CIRCUIT DIAGRAM

SK2 A14	2503 F5	2511 F8	2530 D16	2537 J13	2550 H20	2570 L19	2622 B7	3505 F7	3520 L3	3531 D15	3541 F20	3555 H20
1001 J1	2504 F3	2513 I10	2531 D16	2538 D14	2560 J11	2572 M18	2693 L16	3506 E6	3522 L3	3533 G19	3542 F21	3557 H2C
1002 K1	2506 F5	2514 F7	2532 J16	2540 E21	2561 M9	2574 M15	3501 F3	3507 E8	3523 J3	3534 D18	3543 E19	3560 K11
1003 J1	2507 F6	2515 H11	2534 D18	2542 L13	2562 L13	2575 G8	3502 F3	3508 F6	3523 J3	3535 D13	3545 J12	3561 K11
1503 A10	2509 F9	2520 J3	2535 J15	2545 F20	2563 L13	2610 B9	3503 D4	3509 K10	3524 J4	3539 F11	3546 L12	3562 L14
1501 F3	2510 F9	2521 J4	2536 J15	2546 K13	2566 M15	2621 B8	3504 D5	3510 I10	3530 D15	3540 F20	3552 H20	3563 L14



3564 L13	3574 N14	3581 M17	3589 M14	3626 A8	3814 M18	3831 B8	3884 N17	6505 F20	6530 B5
3565 K13	3575 N15	3582 M17	3591 M17	3629 B10	3815 D8	3840 D17	6500 D19	6506 E20	6547 M20
3566 K13	3576 L19	3584 L16	3621 A12	3638 A14	3819 A11	3847 K14	6500 K11	6512 M15	6548 M20
3567 K11	3578 M19	3585 L15	3622 A12	3646 D8	3824 M4	3851 K10	6502 J3	6516 N17	
3568 M12	3579 M18	3586 N13	3623 B12	3647 D10	3826 L11	3861 A12	6503 D11	6517 N14	
3569 L11	3580 N14	3588 M15	3627 A9	3807 G20	3829 L10	3879 M20	6504 M19	6526 A12	

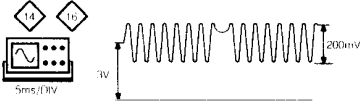


1 2 ADJUST R352P
50mV DC
SEE ALSO TABLE

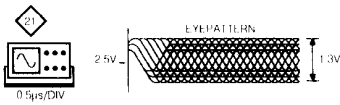
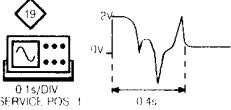
3 4 7 8 SEE TABLE B-3

9 LOW PULSES DURING SEARCH

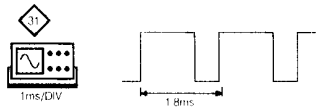
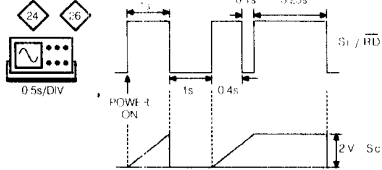
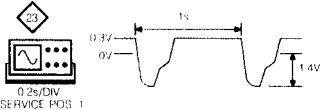
11 12 SEE TABLE B-4



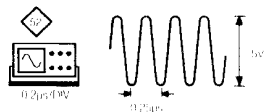
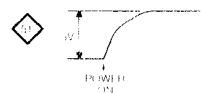
18 LOW PULSES DURING (TRACK AND) TRACK



22 ADJUST R356R
400mV DC
SEE ALSO TABLE B-5



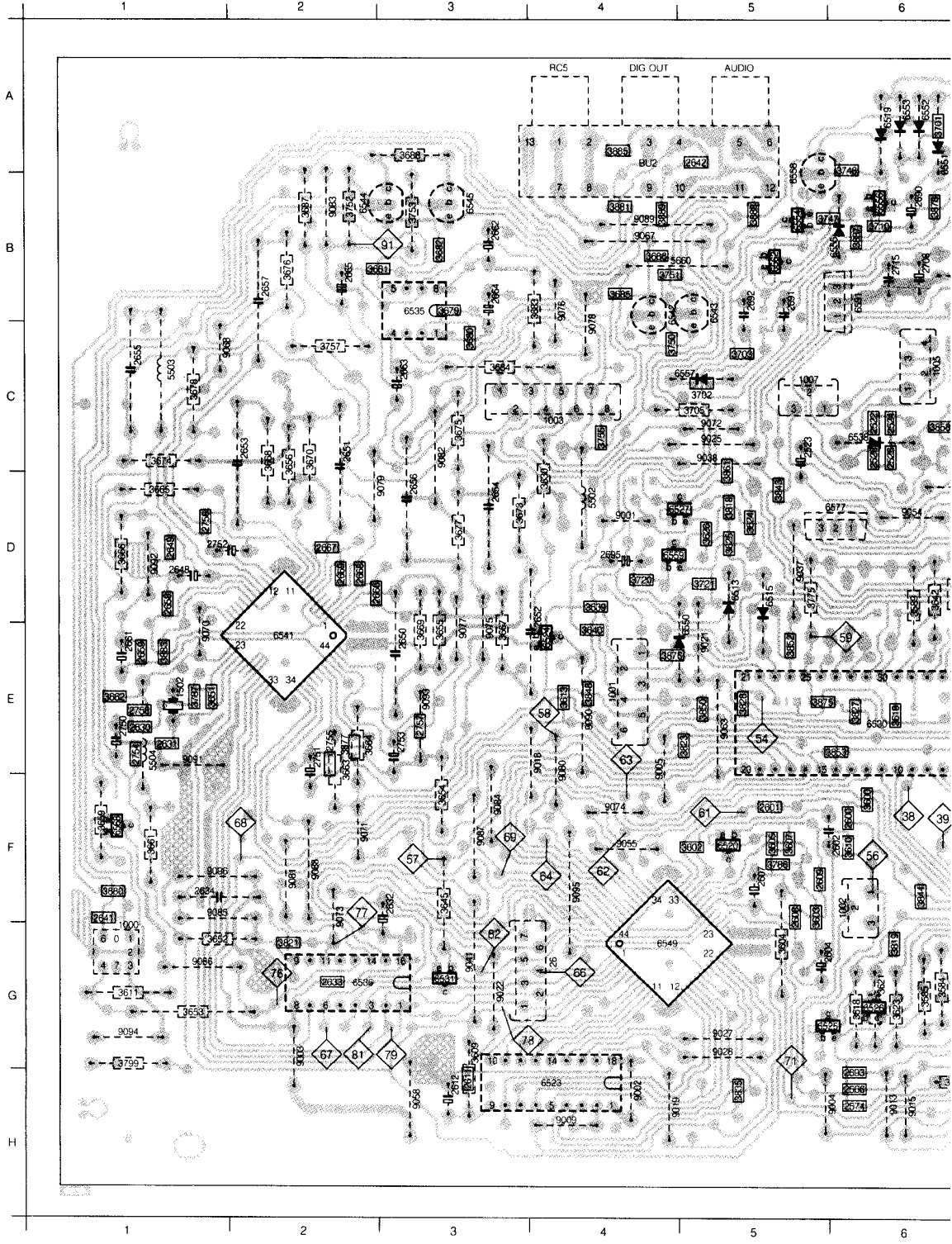
SEARCH POSITION 0	SEARCH	PLAY MODE
PG HIGH	HIGH	ACTIVITY
RF HIGH	LOW	ACTIVITY
B3 HIGH	HIGH	ACTIVITY
BS LOW	LOW	ACTIVITY



32 0V FOR 1.2cm DISC
33 5V FOR 1.2cm DISC
34 1V AT BEGINNING OF DISC
35 0.6V AT END OF DISC

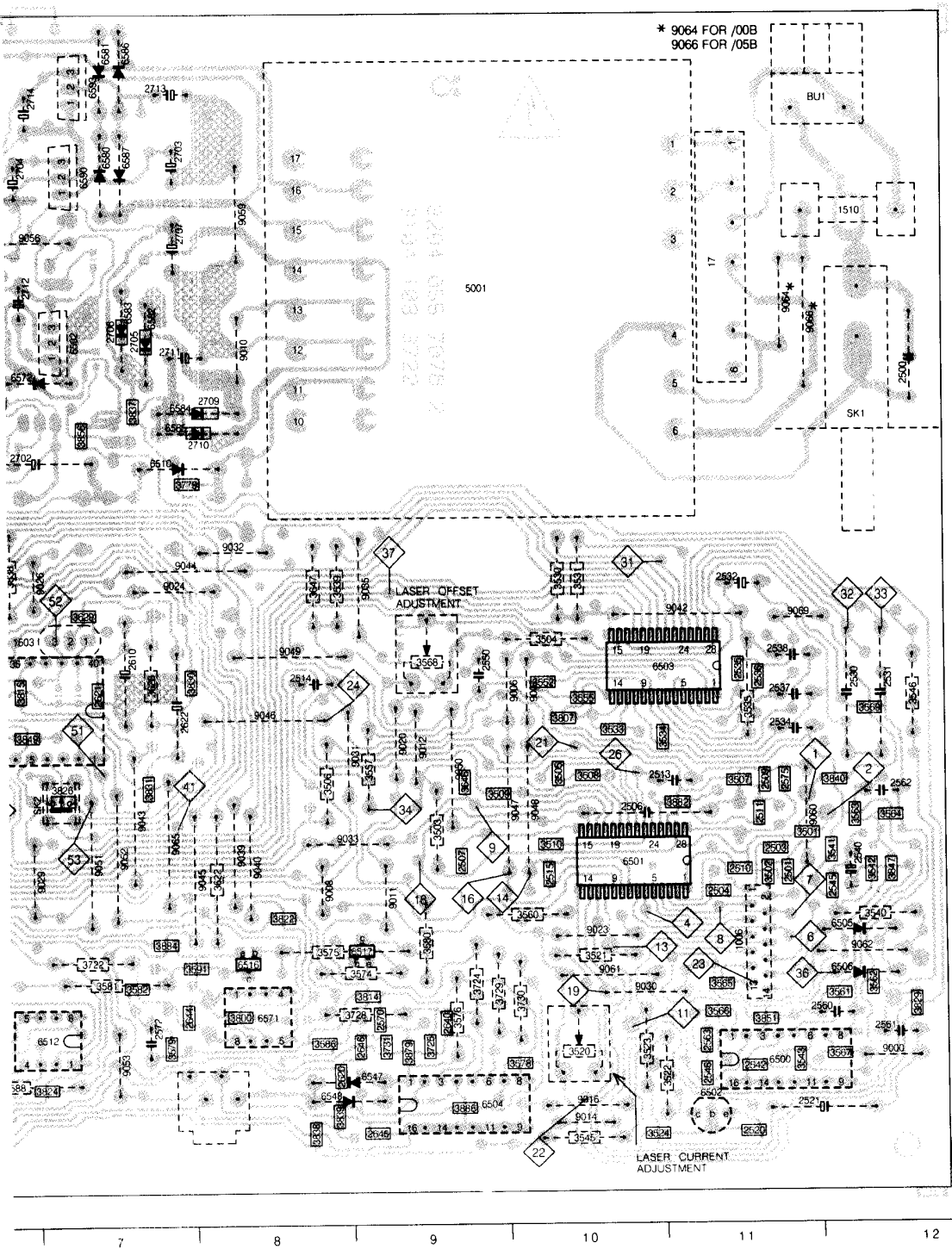
SERVO & DECODER PANEL SOLDER SIDE

2501 F11	2524 C6	2570 G9	2630 E1	2658 D1	2710 C7	3508 F10	3555 E10	3579 G7	3613 E4	3662 E1
2503 F11	2525 C6	2574 H6	2631 E1	2659 E1	2754 E1	3509 F9	3561 G12	3582 G7	3619 E6	3679 B3
2504 F11	2526 C6	2575 F11	2633 C2	2666 D3	2755 F2	3510 F10	3562 G12	3586 G8	3624 D5	3680 C3
2507 F9	2535 E11	2600 F6	2640 C8	2667 D2	2756 D1	3524 H10	3563 F12	3591 G7	3625 D5	3681 B2
2509 F11	2536 E11	2601 F5	2641 F1	2668 D2	2757 E3	3533 E10	3564 F12	3600 F6	3626 D5	3682 B3
2510 F11	2542 H11	2608 G5	2642 A5	2669 D2	2758 E1	3534 E11	3565 G11	3602 F5	3629 E7	3685 B4
2511 F11	2545 F12	2609 F5	2644 G7	2693 H6	3501 F11	3541 F12	3566 G11	3603 C5	3639 D4	3686 B4
2515 F10	2546 H11	2611 H3	2645 H9	2705 C7	3502 F11	3542 F12	3567 G12	3605 F5	3640 E4	3701 A6
2520 H11	2563 G11	2620 H8	2646 G9	2706 C7	3505 F10	3543 H11	3569 F12	3607 F5	3646 F9	3702 C5
2522 C6	2566 H6	2621 E7	2649 D1	2709 C8	3507 F11	3552 E10	3578 G9	3610 F6	3651 E1	3703 C5



3710 B6	3779 D7	3822 G8	3837 C7	3851 G11	3879 G9	3889 B4	6531 G3
3720 D4	3786 F5	3823 E5	3838 H8	3852 E5	3880 F1	6501 F10	6541 E2
3721 D5	3787 E1	3824 H6	3839 H8	3853 E5	3881 B4	6503 E10	6549 G4
3725 G9	3800 G8	3826 F7	3840 F12	3856 C7	3882 F11	6516 G8	6554 B5
3731 G9	3807 E10	3827 E6	3843 D5	3858 C6	3883 E1	6517 G8	6558 B6
3747 B5	3814 G8	3828 E5	3844 F6	3861 D5	3884 G7	6520 F5	6559 D4
3748 B8	3815 E6	3829 G12	3847 F12	3875 E5	3885 A4	6524 E4	6562 B5
3750 C4	3818 D5	3830 F8	3848 E4	3876 E4	3886 H9	6525 G5	6568 F1
3751 B4	3819 G6	3831 F7	3849 E6	3877 E2	3887 B6	6526 G6	
3755 C4	3821 G2	3835 H5	3850 E5	3878 B6	3888 B5	6527 D4	

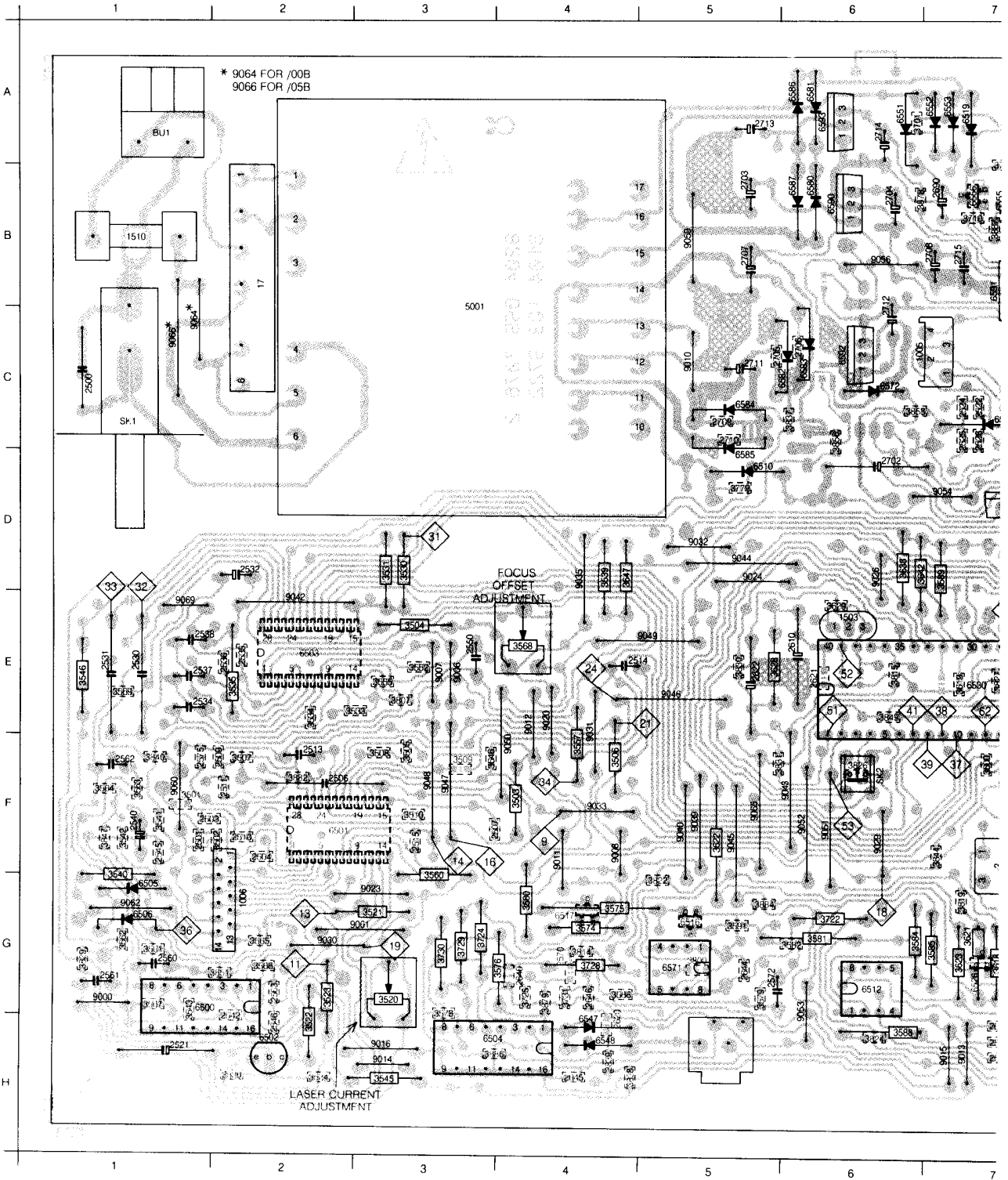
7 8 9 10 11 12



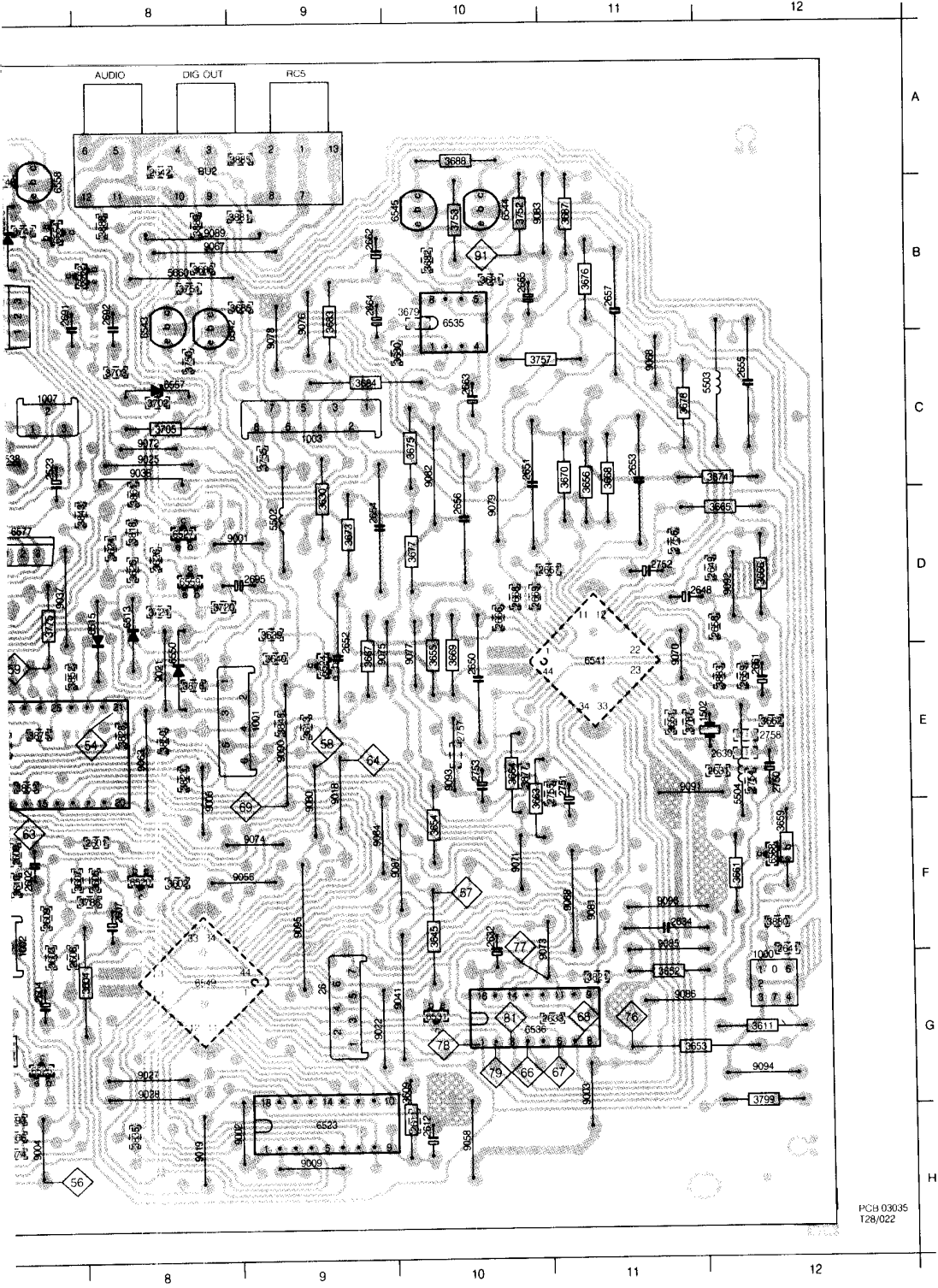
A
B
C
D
E
F
G
H

SERVO & DECODER PANEL COMPONENT SIDE

17 B2	2513 F2	2607 F8	2664 B9	2752 D11	3568 E4	3630 D9	3669 E10	3752 B10	6515 D8	6557 C8	9001 D8
26 C9	2514 E4	2610 E6	2665 B10	2753 E10	3574 G4	3638 D6	3670 C11	3753 B10	6519 A7	6558 B7	9002 H8
BU1 A1	2521 H1	2612 H10	2690 B7	3503 F4	3575 G4	3642 D7	3673 D9	3757 C10	6523 H9	6571 G5	9003 G1
BU2 A8	2523 C7	2622 E5	2691 B7	3504 E3	3576 G4	3645 F10	3674 C12	3775 D7	6530 E7	6572 C8	9004 H7
SK1 C1	2530 E1	2632 F10	2692 B8	3506 F4	3580 G4	3647 D4	3675 C10	3799 G12	6535 B10	6577 D7	9005 F8
SK2 F6	2531 E1	2634 F11	2695 D9	3520 G3	3581 G6	3652 G11	3676 B11	5001 C3	6536 G10	6580 B6	9006 E3
1000 G12	2532 D2	2648 D11	2702 D6	3521 G3	3584 G6	3653 G11	3677 D10	5502 D9	6538 C7	6581 A6	9007 E3
1001 F9	2534 E1	2650 E10	2703 B5	3522 H2	3585 G7	3654 F10	3678 C11	5503 C12	6542 C8	6582 C5	9008 F4
1002 F7	2537 E1	2651 C10	2704 D6	3523 G2	3588 H6	3655 F10	3683 B9	5504 E12	6543 C8	6583 C6	9009 H9
1003 C9	2538 E1	2652 E9	2707 R5	3530 D3	3589 D7	3656 D11	3684 C9	5660 B8	6544 B10	6584 C5	9010 C5
1005 C6	2540 F1	2653 C11	2708 B7	3531 D3	3604 G8	3659 F12	3687 B11	6500 G1	6545 B10	6585 C5	9011 F4
1006 G2	2550 G3	2654 D9	2711 C5	3535 E2	3609 H10	3661 F12	3688 A10	6502 H2	6547 H4	6586 A6	9012 E4
1007 C7	2560 G1	2655 C12	2712 C6	3539 D4	3611 G12	3663 F11	3705 C8	6504 H3	6548 H4	6587 B6	9013 H7
1502 E12	2561 G1	2656 D10	2713 A5	3540 G1	3618 G7	3664 E10	3722 G6	6505 G1	6550 E8	6590 B6	9014 H3
1503 E6	2567 F1	2657 B11	2714 A6	3545 H3	3621 G7	3665 D12	3724 G3	6506 G1	6551 A6	6591 B7	9015 H7
1510 B1	2572 G5	2661 E12	2715 B7	3546 E1	3622 F5	3666 D12	3728 G4	6510 D5	6552 A7	6592 C6	9016 H3
2500 C1	2602 F7	2662 B9	2750 E12	3557 F4	3623 G7	3667 E9	3729 G3	6512 G6	6553 A7	6593 A6	9018 E9
2506 F2	2604 G7	2663 C10	2751 E11	3560 G3	3628 E5	3668 D11	3730 G3	6513 D8	6555 B7	9000 G1	9019 H8

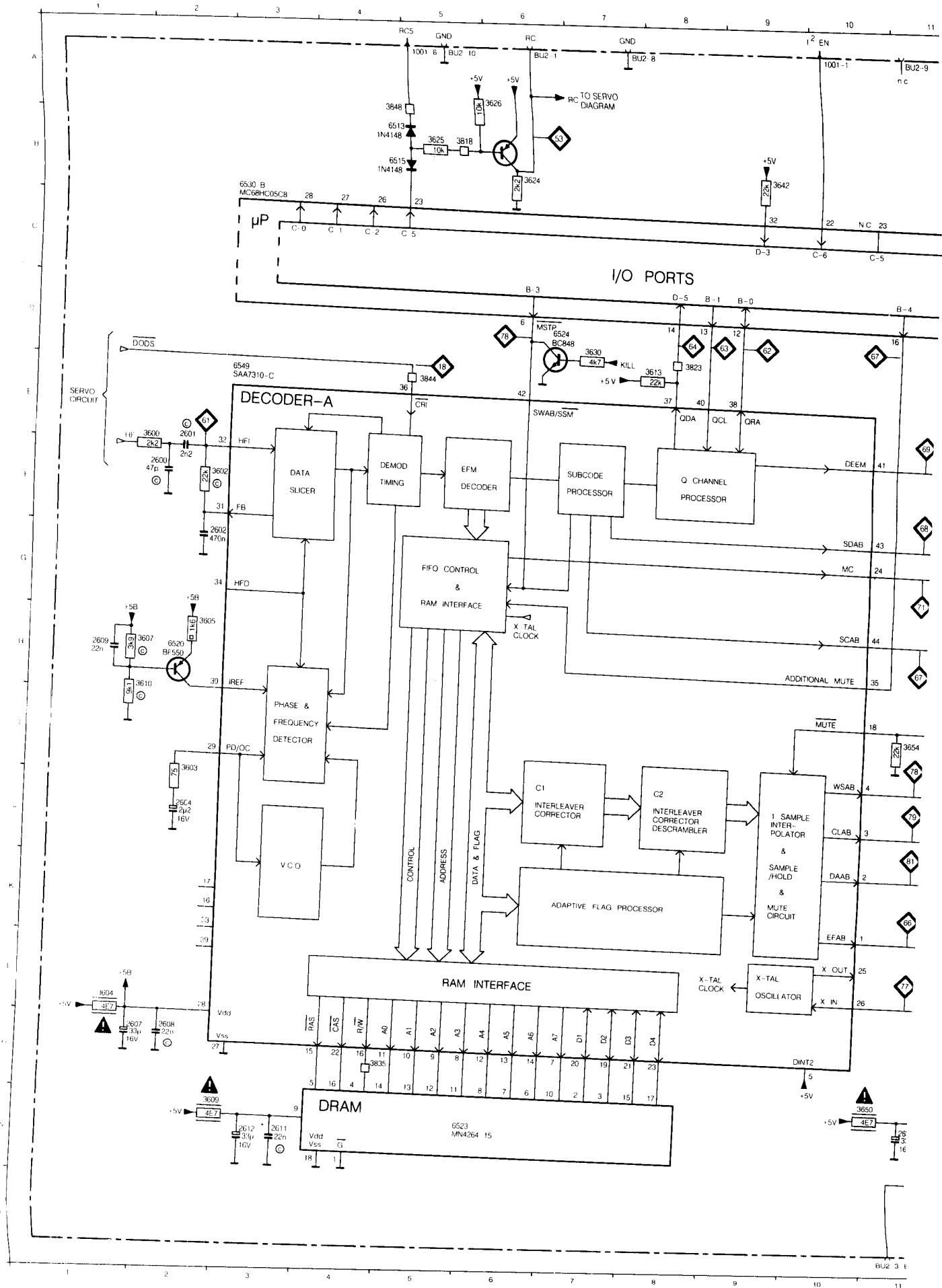


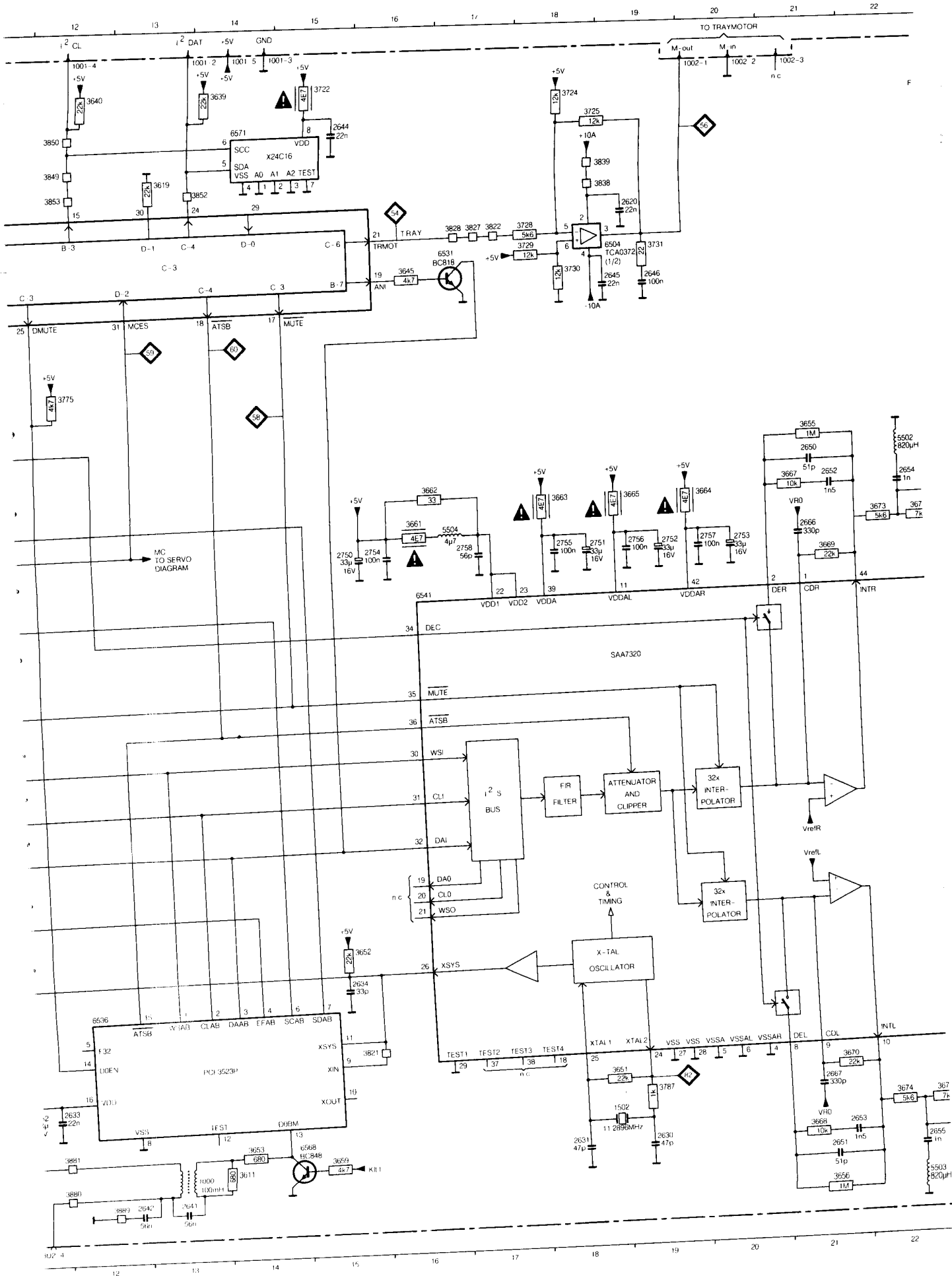
9020 E4	9040 F5	9059 B5	9077 E10	9095 F9
9021 E6	9041 G10	9060 F11	9078 C9	9096 F11
9022 G9	9042 F2	9061 G2	9079 D10	
9023 G3	9043 F6	9062 G1	9080 F9	
9024 D5	9044 D5	9063 E8	9081 F11	
9025 C8	9045 F5	9064 C1	9082 C10	
9026 D6	9046 E5	9065 F5	9083 B11	
9027 G8	9047 F3	9066 C1	9084 F9	
9028 G8	9048 F3	9067 B8	9085 F11	
9029 F6	9049 E4	9068 C11	9086 G11	
9030 G2	9050 F4	9069 E11	9087 F10	
9031 F4	9051 F6	9070 E11	9088 F11	
9032 D5	9052 F6	9071 F10	9089 B8	
9033 F4	9053 H6	9072 C8	9090 E9	
9035 D4	9054 D7	9073 G10	9091 E11	
9037 D7	9055 F8	9074 F9	9092 D12	
9038 C8	9056 B6	9075 E9	9093 E10	
9039 F5	9058 H10	9076 B9	9094 G12	



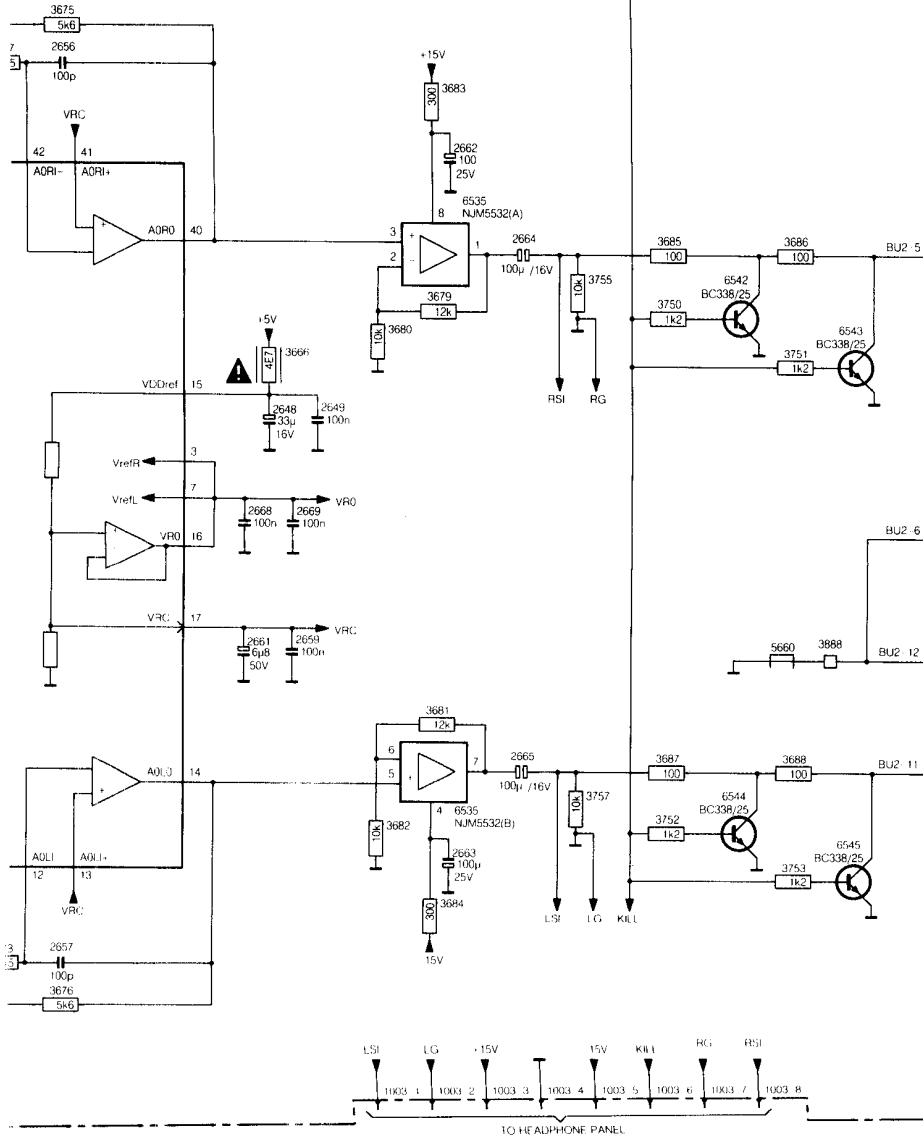
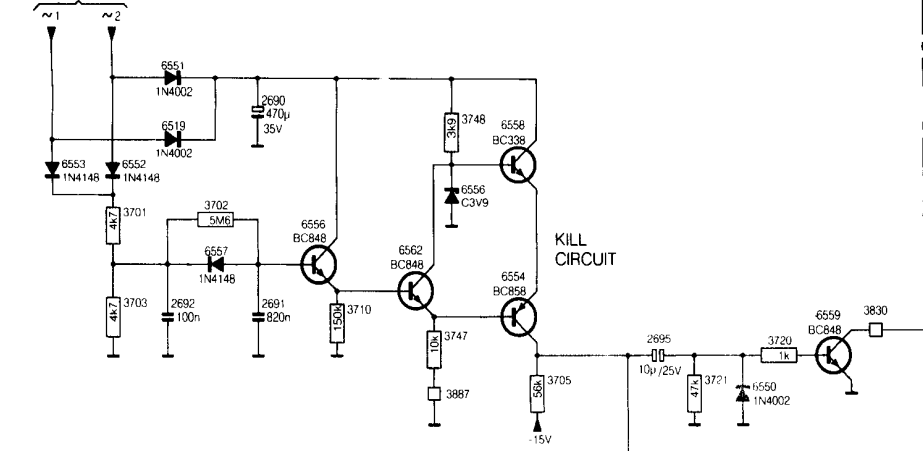
PCB 03035
128/022

DECODER CIRCUIT DIAGRAM





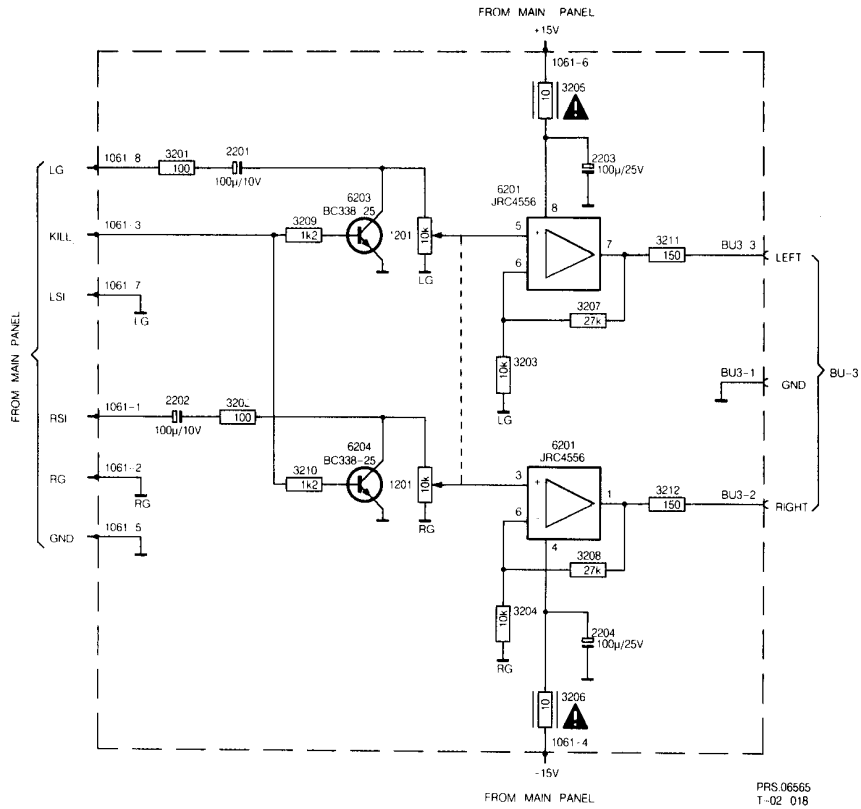
ROM POWER SUPPLY DIAGRAM



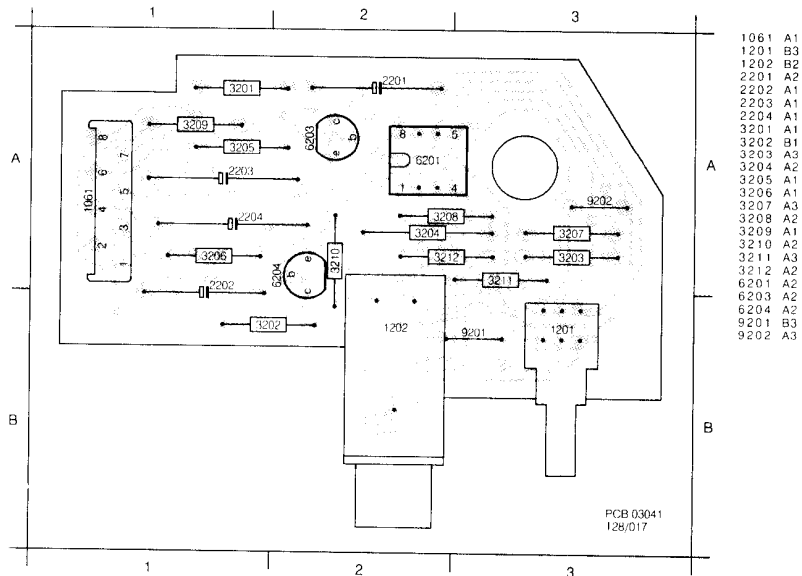
- 60 LOW PULSES DURING NEXT AND PREVIOUS
- 61 ACTIVITY WHEN USING AN IR REMOTE CONTROL
- 62 0V WHILE OPENING
5V WHILE CLOSING
2.5V IN REST
- 63 -5V WHILE TRAY IS OPENING
5V WHILE TRAY IS CLOSING
0V IN REST
- 64 0.5µs/DIV
- 65 10ns/DIV
- 66 0.2ms/DIV
- 67 5µs/DIV
- 68 ACTIVITY DURING PLAY
- 69 AUDIO SIGNALS: HIGH ON TRACK 76,78,80,82,84;
LOW ON TRACK 77,79,81,83,85
- 70 5µs/Div
- 71 11.2896 MHz SINE WAVE
- 72 1µs/DIV
- 73 1µs/DIV
- 74 ACTIVITY DURING PLAY
- 75 11.2896 MHz SINE WAVE
- 76 4µs/Div

34	1000 O13	3889 O12
	1502 N18	5502 F22
	2600 F2	5503 Q22
	2601 F2	5504 G17
	2602 G2	5660 K29
	2604 J2	6513 B4
	2607 M1	6515 B4
	2608 M2	6519 B24
	2609 H1	6520 H2
	2611 N3	6523 N6
	2612 N3	6524 D6
	2620 C19	6530 B2
	2630 N19	6531 C17
	2631 N18	6535 H26
	2632 N11	6535 M26
	2633 N11	6536 I12
	2644 I15	6541 G16
	2641 O13	6542 H28
	2642 O12	6543 I29
	2644 B15	6544 M28
	2645 D19	6545 M29
	2646 D19	6549 E2
	2648 I25	6550 D29
	2649 I25	6551 B24
	2650 F21	6552 C23
	2651 Q21	6553 Q23
	2652 F21	6554 Q27
	2653 N21	6556 C25
	2654 F22	6556 C26
	2655 N22	6557 C24
	2656 Q23	6558 B27
	2657 N23	6559 D29
	2659 K25	6562 C26
	2661 K24	6568 N14
	2662 G26	6571 B14
	2663 M26	
	2664 H27	
	2665 I27	
	2666 G21	
	2667 N21	
	2668 J24	
	2669 J25	
	2690 B25	
	2691 D25	
	2692 D24	
	2695 D28	
	2750 G15	
	2754 G16	
	2755 G18	
	2756 G19	
	2757 G20	
	2758 G17	
	3600 F1	
	3602 F2	
	3603 F2	
	3604 I1	
	3605 H2	
	3607 H1	
	3609 N3	
	3610 H1	
	3611 O14	
	3613 D8	
	3619 B13	
	3624 B6	
	3625 B5	
	3626 A6	
	3630 D7	
	3639 A14	
	3640 A12	
	3642 B9	
	3645 C16	
	3650 M11	
	3651 M18	
	3652 I15	
	3653 N14	
	3654 I11	
	3655 E21	
	3656 Q21	
	3659 N15	
	3661 F16	
	3662 F16	
	3663 F18	
	3664 I20	
	3665 F19	
	3666 I25	
	3667 F21	
	3668 N21	
	3669 Q21	
	3670 M21	
	3673 Q22	
	3674 N22	
	3675 F23	
	3676 N23	
	3677 Q22	
	3678 N22	
	3679 H26	
	3680 I26	
	3681 I26	
	3682 M26	
	3683 G26	
	3684 N26	
	3685 H28	
	3686 H29	
	3687 L28	
	3688 L29	
	3701 Q23	
	3702 Q24	
	3703 D23	
	3705 D27	
	3710 D25	
	3720 D29	
	3721 D28	
	3722 A15	
	3724 A18	
	3725 B18	
	3728 C18	
	3729 C18	
	3730 C18	
	3731 C19	
	3747 D26	
	3748 B26	
	3750 I28	
	3751 I29	
	3752 M28	
	3754 M29	
	3755 I27	
	3757 M27	
	3775 F13	
	3782 N16	
	3814 B5	
	3821 M15	
	3822 Q17	
	3823 I18	
	3827 C17	
	3828 C17	
	3830 Q30	
	3835 Q5	
	3838 B10	
	3840 C10	
	3843 F5	
	3846 A3	
	3848 B17	
	3850 H17	
	3852 B14	
	3853 H17	
	3860 C11	
	3863 N11	
	3864 D26	
	3868 F21	
34		

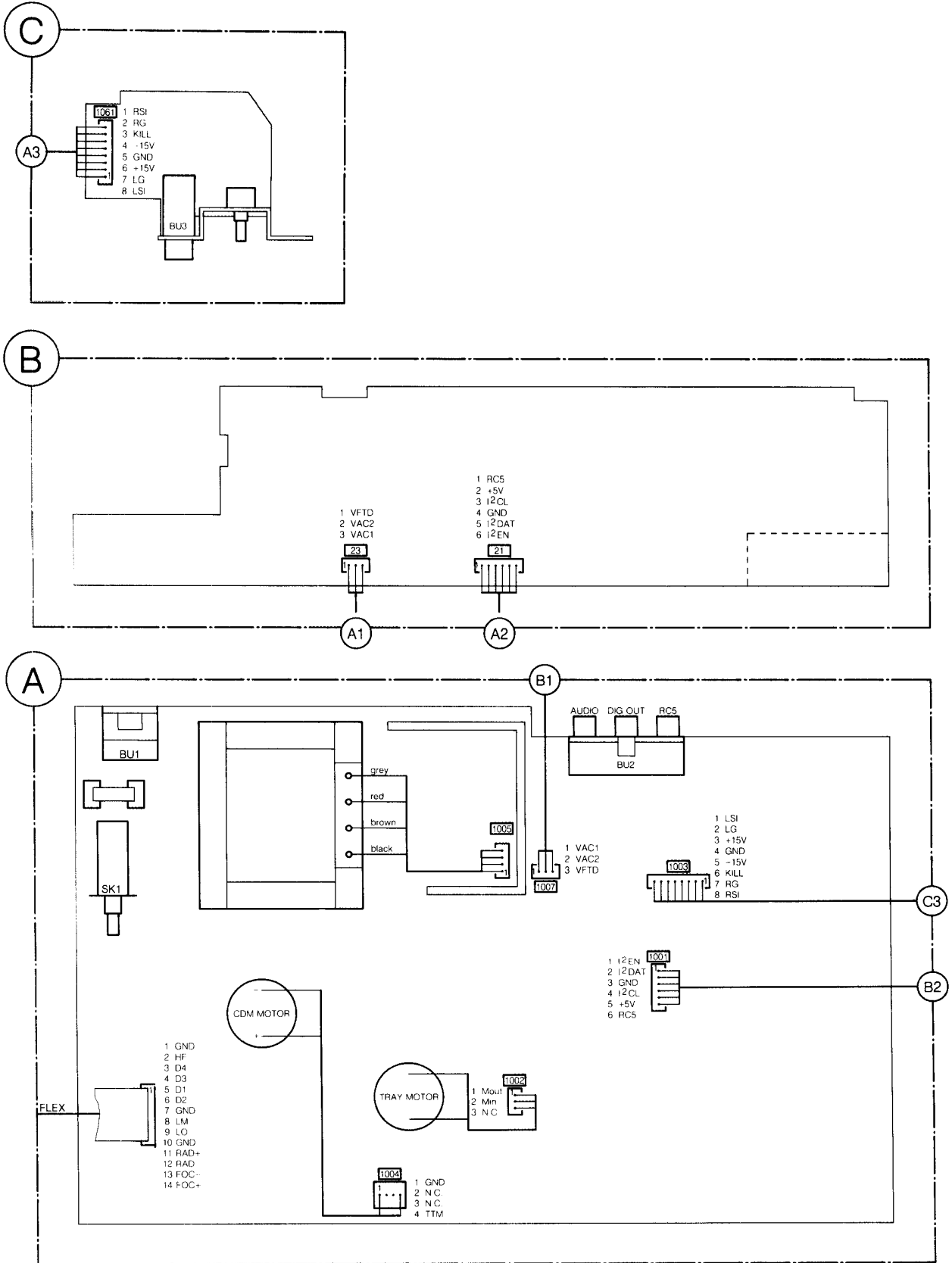
HEADPHONE CIRCUIT DIAGRAM



HEADPHONE PANEL



WIRING DIAGRAM



SERVO & DECODER PANEL PARTSLIST

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


2500	4822 126 10454	3,3nF 20% 400V
2501	4822 122 33809	22nF 20% 50V
2503	4822 122 33809	22nF 20% 50V
2504	5322 122 34099	470pF 10% 63V
2506	4822 122 10166	22nF 30% 16V
2507	4822 122 33175	2,2nF 20% 50V
2509	5322 122 32531	100pF 5% 50V
2510	4822 122 33177	10nF 20% 50V
2511	4822 122 31746	1nF 5% 50V
2513	4822 121 43375	220nF 63V
2514	4822 121 51252	470nF 5% 63V
2515	4822 122 31746	1nF 5% 50V
2520	5322 126 10794	220pF 10%
2521	5322 124 21643	22μF 20% 40V
2522	4822 122 33809	22nF 20% 50V
2523	4822 124 41799	220μF 63V
2524	4822 122 33809	22nF 20% 50V
2525	4822 122 33809	22nF 20% 50V
2526	4822 122 33809	22nF 20% 50V
2529	4822 124 22027	47μF 20% 25V
2530	4822 121 51321	8,2nF 1% 63V
2531	4822 121 51321	8,2nF 1% 63V
2532	4822 124 40272	33μF 20% 16V
2534	5322 121 42661	330nF 5% 63V
2535	4822 122 33342	33nF 10% 63V
2536	4822 122 33342	33nF 10% 63V
2537	4822 121 43375	220nF 63V
2538	4822 121 43375	220nF 63V
2540	4822 124 41583	0,68μF 50V Bipolar
2542	4822 122 33809	22nF 20% 50V
2545	4822 122 33496	100nF 10% 63V
2546	4822 122 33809	22nF 20% 50V
2550	5322 121 42604	47nF 5% 63V
2560	4822 121 51314	4,7nF 5% 50V
2561	4822 121 51252	470nF 5% 63V
2562	5322 121 42661	330nF 5% 63V
2563	4822 122 33496	100nF 10% 63V
2566	4822 122 33809	22nF 20% 50V
2570	4822 122 33175	2,2nF 20% 50V
2572	5322 121 42661	330nF 5% 63V
2574	4822 122 33893	18nF 10% 63V
2575	4822 122 32542	47nF 10% 63V
2600	5322 122 32452	47pF 5% 50V
2601	4822 122 31644	2,2nF 10% 63V
2602	4822 121 51252	470nF 5% 63V
2604	4822 124 41576	2,2μF 20% 50V
2607	4822 124 40272	33μF 20% 16V
2608	4822 122 33809	22nF 20% 50V
2609	4822 122 33809	22nF 20% 50V
2610	4822 124 20688	33μF 50% 16V
2611	4822 122 33809	22nF 20% 50V
2612	4822 124 40272	33μF 20% 16V
2620	4822 122 33809	22nF 20% 50V
2621	4822 122 33809	22nF 20% 50V
2622	4822 124 22031	4,7μF 20% 63V
2630	5322 122 32452	47pF 5% 50V
2631	5322 122 32452	47pF 5% 50V
2632	4822 124 40272	33μF 20% 16V
2633	4822 122 33809	22nF 20% 50V
2634	4822 122 10179	33pF 5% 50V
2641	4822 122 33485	56nF 10% 63V
2642	4822 122 33485	56nF 10% 63V
2644	4822 122 33809	22nF 20% 50V
2645	4822 122 33809	22nF 20% 50V
2646	4822 122 33496	100nF 10% 63V
2648	4822 124 40272	33μF 20% 16V

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2649	4822 122 33496	100nF 10% 63V
2650	4822 121 51556	51pF 1% 630V
2651	4822 121 51556	51pF 1% 630V
2652	4822 121 42729	1,5nF 1% 250V
2653	4822 121 42729	1,5nF 1% 250V
2654	4822 121 50591	1nF 1% 630V
2655	4822 121 50591	1nF 1% 630V
2656	4822 121 51288	100pF 630V
2657	4822 121 51288	100pF 630V
2658	4822 122 33496	100nF 10% 63V
2659	4822 122 33496	100nF 10% 63V
2661	4822 124 41578	6,8μF 20% 50V
2662	4822 124 41525	100μF 20% 25V
2663	4822 124 41525	100μF 20% 25V
2664	4822 124 22339	100μF 16V Bipolar
2665	4822 124 22339	100μF 16V Bipolar
2666	5322 122 31842	330pF 5% 63V
2667	5322 122 31842	330pF 5% 63V
2668	4822 122 33496	100nF 10% 63V
2669	4822 122 33496	100nF 10% 63V
2690	4822 124 41334	470μF 20% 35V
2691	4822 121 51436	820nF 10% 63V
2692	5322 121 42386	100nF 5% 63V
2693	4822 122 33809	22nF 20% 50V
2695	4822 124 41558	10μF 25V Bipolar
2702	5322 124 21643	22μF 20% 40V
2703	4822 124 41859	330μF 20% 35V
2704	4822 124 40433	47μF 20% 25V
2705	4822 122 33809	22nF 20% 50V
2706	4822 122 33809	22nF 20% 50V
2707	4822 124 41591	6800μF 20% 16V
2708	4822 124 40272	33μF 20% 16V
2709	4822 122 33809	22nF 20% 50V
2710	4822 122 33809	22nF 20% 50V
2711	4822 124 41853	1000μF 16V
2712	4822 124 40272	33μF 20% 16V
2713	4822 124 41334	470μF 20% 35V
2714	4822 124 40433	47μF 20% 25V
2715	5322 121 42386	100nF 5% 63V
2750	4822 124 40272	33μF 20% 16V
2751	4822 124 40272	33μF 20% 16V
2752	4822 124 40272	33μF 20% 16V
2753	4822 124 40272	33μF 20% 16V
2754	4822 122 33496	100nF 10% 63V
2755	4822 122 33496	100nF 10% 63V
2756	4822 122 33496	100nF 10% 63V
2757	4822 122 33496	100nF 10% 63V




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3501	4822 051 20472	4,7kΩ 5% 0,1W
3502	4822 051 20104	100kΩ 5% 0,1W
3503	4822 052 10478	4,7Ω 5% 0,33W
3504	4822 052 10478	4,7Ω 5% 0,33W
3505	4822 051 20163	16kΩ 5% 0,1W
3506	4822 051 10101	100Ω 2% 0,25W
3507	4822 050 21002	1kΩ 1% 0,6W
3508	4822 051 20243	24kΩ 5% 0,1W
3509	4822 051 20562	5,6kΩ 5% 0,1W
3510	4822 051 20103	10kΩ 5% 0,1W
3520	4822 101 10685	4,7kΩ 20% 0,05W Potmtr. Lin.
3521	4822 051 10221	220Ω 2% 0,25W
3522	4822 052 10189	18Ω 5% 0,33W
3523	4822 052 10129	12Ω 5% 0,33W
3524	4822 051 20101	100Ω 5% 0,1W
3530	4822 050 24703	47kΩ 1% 0,6W




					
3531	4822 050 21503	15kΩ 1% 0,6W	3651	4822 051 20224	220kΩ 5% 0,1W
3533	4822 051 20512	5,1kΩ 5% 0,1W	3652	4822 051 10223	22kΩ 2% 0,25W
3534	4822 051 20224	220kΩ 5% 0,1W	3653	4822 050 26801	680Ω 1% 0,6W
3535	4822 050 21203	12kΩ 1% 0,6W	3654	4822 051 10223	22kΩ 2% 0,25W
3539	4822 051 10223	22kΩ 2% 0,25W	3655	4822 116 52235	1MΩ 5% 0,5W
3540	4822 052 10478	4,7Ω 5% 0,33W	3656	4822 116 52235	1MΩ 5% 0,5W
3541	4822 051 20682	6,8kΩ 5% 0,1W	3659	4822 116 52921	4,7kΩ 1% 0,6W
3542	4822 051 20339	33Ω 5% 0,1W	3663	4822 052 10478	4,7Ω 5% 0,33W
3543	4822 051 20682	6,8kΩ 5% 0,1W	3664	4822 052 10478	4,7Ω 5% 0,33W
3545	4822 111 30483	1Ω 5% 0,33W	3665	4822 052 10478	4,7Ω 5% 0,33W
3546	4822 111 30483	1Ω 5% 0,33W	3666	4822 052 10478	4,7Ω 5% 0,33W
3552	4822 051 20182	1,8kΩ 5% 0,1W	3667	4822 050 21003	10kΩ 1% 0,6W
3555	4822 051 20183	18kΩ 5% 0,1W	3668	4822 050 21003	10kΩ 1% 0,6W
3557	4822 050 22004	200kΩ 1% 0,6W	3669	4822 050 22203	22kΩ 1% 0,6W
3560	4822 050 21103	11kΩ 1% 0,6W	3670	4822 050 22203	22kΩ 1% 0,6W
3561	4822 051 20154	150kΩ 5% 0,1W	3673	4822 050 25602	5,6kΩ 1% 0,6W
3562	4822 051 20124	120kΩ 5% 0,1W	3674	4822 050 25602	5,6kΩ 1% 0,6W
3563	4822 051 20563	56kΩ 5% 0,1W	3675	4822 050 25602	5,6kΩ 1% 0,6W
3564	4822 051 20164	160kΩ 5% 0,1W	3676	4822 050 25602	5,6kΩ 1% 0,6W
3565	4822 051 20279	27Ω 5% 0,1W	3677	4822 050 27502	7,5kΩ 1% 0,6W
3566	4822 051 20229	22Ω 5% 0,1W	3678	4822 050 27502	7,5kΩ 1% 0,6W
3567	4822 051 20829	82Ω 5% 0,1W	3679	4822 051 20163	16kΩ 5% 0,1W
3568	4822 100 11193	22kΩ 20% 0,05W Potmtr Lin.	3680	4822 051 20103	10kΩ 5% 0,1W
3569	4822 051 20684	680kΩ 5% 0,1W	3681	4822 051 20163	16kΩ 5% 0,1W
3574	4822 050 13303	33kΩ 1% 0,4W	3682	4822 051 20103	10kΩ 5% 0,1W
3575	4822 116 52921	4,7kΩ 1% 0,6W	3683	4822 052 10339	33Ω 5% 0,33W
3576	4822 050 22004	200kΩ 1% 0,6W	3684	4822 052 10339	33Ω 5% 0,33W
3578	4822 051 20823	82kΩ 5% 0,1W	3685	4822 051 20101	100Ω 5% 0,1W
3579	4822 051 20154	150kΩ 5% 0,1W	3686	4822 051 20101	100Ω 5% 0,1W
3580	4822 116 52921	4,7kΩ 1% 0,6W	3687	4822 051 10101	100Ω 2% 0,25W
3581	4822 050 23302	3,3kΩ 1% 0,6W	3688	4822 051 10101	100Ω 2% 0,25W
3582	4822 051 20562	5,6kΩ 5% 0,1W	3701	4822 051 20472	4,7kΩ 5% 0,1W
3584	5322 116 53658	91kΩ 1% 0,6W	3702	4822 116 82595	5,6MΩ 10% 0,1W
3585	4822 050 21004	100kΩ 1% 0,6W	3703	4822 051 20473	47kΩ 5% 0,1W
3586	4822 051 20684	680kΩ 5% 0,1W	3705	4822 050 25603	56kΩ 1% 0,6W
3588	4822 050 24703	47kΩ 1% 0,6W	3710	4822 051 20154	150kΩ 5% 0,1W
3589	4822 116 52921	4,7kΩ 1% 0,6W	3720	4822 051 10102	1kΩ 2% 0,25W
3591	4822 051 20122	1,2kΩ 5% 0,1W	3721	4822 051 20473	47kΩ 5% 0,1W
3600	4822 051 20222	2,2kΩ 5% 0,1W	3722	4822 052 10478	47,Ω 5% 0,33W
3602	4822 051 20223	22kΩ 5% 0,1W	3724	4822 050 21203	12kΩ 1% 0,6W
3603	4822 051 20759	75Ω 5% 0,1W	3725	4822 051 20163	16kΩ 5% 0,1W
3604	4822 052 10478	4,7Ω 5% 0,33W	3728	4822 050 15602	5,6kΩ 1% 0,4W
3605	4822 051 20162	1,6kΩ 5% 0,1W	3729	4822 050 21203	12kΩ 1% 0,6W
3607	4822 051 20392	3,9kΩ 5% 0,1W	3730	4822 050 21203	12kΩ 1% 0,6W
3609	4822 052 10478	4,7Ω 5% 0,33W	3731	4822 051 20229	22Ω 5% 0,1W
3610	4822 051 20912	9,1kΩ 5% 0,1W	3747	4822 051 20103	10kΩ 5% 0,1W
3611	4822 050 26801	680Ω 1% 0,6W	3748	4822 051 20392	3,9kΩ 5% 0,1W
3613	4822 051 20223	22kΩ 5% 0,1W	3750	4822 051 20122	1,2kΩ 5% 0,1W
3619	4822 051 20223	22kΩ 5% 0,1W	3751	4822 051 20122	1,2kΩ 5% 0,1W
3621	4822 116 53084	18kΩ 1% 0,6W	3752	4822 051 10122	1,2kΩ 2% 0,25W
3622	4822 050 24703	47kΩ 1% 0,6W	3753	4822 051 10122	1,2kΩ 2% 0,25W
3623	4822 116 53084	18kΩ 1% 0,6W	3755	4822 051 20103	10kΩ 5% 0,1W
3624	4822 051 20222	2,2kΩ 5% 0,1W	3757	4822 051 10103	10kΩ 2% 0,25W
3625	4822 051 20103	10kΩ 5% 0,1W	3775	4822 116 52921	4,7kΩ 1% 0,6W
3626	4822 051 20103	10kΩ 5% 0,1W	3779	4822 051 20681	680Ω 5% 0,1W
3627	4822 052 10478	4,7Ω 5% 0,33W	3787	4822 051 10102	1kΩ 2% 0,25W
3628	4822 050 22004	200kΩ 1% 0,6W	38..	4822 051 10008	Chip jumper
3629	4822 051 20224	220kΩ 5% 0,1W			
3630	4822 116 52921	4,7kΩ 1% 0,6W			
3638	4822 051 10223	22kΩ 2% 0,25W			
3639	4822 051 20223	22kΩ 5% 0,1W	5502	4822 157 51238	0,820μH
3640	4822 051 20223	22kΩ 5% 0,1W	5503	4822 157 51238	0,820μH
3642	4822 051 10223	22kΩ 2% 0,25W	5504	4822 157 51235	4,7μH 10%
3645	4822 116 52921	4,7kΩ 1% 0,6W	5505	4822 157 51193	470μH
3646	4822 051 20223	22kΩ 5% 0,1W			
3647	4822 051 10223	22kΩ 2% 0,25W			

➔			➔		
6500	4822 209 72587	TCA0372DP2	6556	5322 130 41981	BC848A
6501	4822 209 73234	TDA8808T/C3	6557	4822 130 30621	1N4148
6502	4822 130 44121	BC338	6558	4822 130 44121	BC338
6503	4822 209 73235	TDA8809T/C2	6559	4822 130 61207	BC848
6504	4822 209 72587	TCA0372DP2	6562	4822 130 61207	BC848
6505	4822 130 34173	BZX79-C5V6	6568	4822 130 61207	BC848
6506	4822 130 34173	BZX79-C5V6	6571	4822 209 60772	X24C16
6510	4822 130 31456	BZV85-C5V1	6572	4822 130 34195	BZX79-C13
6512	4822 209 83274	NJM4560D	6577	4822 209 80808	MC78M15CT
6513	4822 130 30621	1N4148	6580	5322 130 30684	1N4002
6515	4822 130 30621	1N4148	6581	5322 130 30684	1N4002
6516	5322 130 42012	BC858A	6582	5322 130 30684	1N4002
6517	5322 130 42012	BC858A	6583	5322 130 30684	1N4002
6519	5322 130 30684	1N4002	6584	5322 130 30684	1N4002
6520	4822 130 42131	BF550	6585	5322 130 30684	1N4002
6523	4822 209 70422	MN4264-15	6586	5322 130 30684	1N4002
6524	4822 130 61207	BC848	6587	5322 130 30684	1N4002
6526	4822 130 61207	BC848	6590	4822 209 80808	MC78M15CT
6527	5322 130 41983	BC858B	6591	4822 209 71579	TY40408
6530	4822 209 62667	MC68HC05C9P/ZC409027	6592	4822 209 82056	MC7906CT
6531	4822 130 42675	BC818	6593	5322 130 41899	MC7915CT
6535	4822 209 83662	NJM5532DD	Miscellaneous		
6536	4822 209 62588	PCF3523P	0005	4822 492 63076	Spring clip
6537	5322 130 30684	1N4002	0021	4822 256 30274	Fuse holder
6538	5322 130 30684	1N4002	1000	4822 148 80281	Transformer for Dig. Out
6541	4822 209 61708	SAA7321GP	1008	4822 267 40863	Cinch socket
6542	4822 130 40958	BC338-25	1010	4822 276 11309	Mains switch
6543	4822 130 40958	BC338-25	1011	4822 276 12523	Tray tact switch
6544	4822 130 40958	BC338-25	1502	4822 242 71349	11,2896MHz Crystal
6545	4822 130 40958	BC338-25	1503	4822 242 72527	4MHz Resonator
6547	5322 130 30684	1N4002			
6548	5322 130 30684	1N4002			
6549	4822 209 61759	SAA7310GP/S5			
6550	5322 130 30684	1N4002			
6551	5322 130 30684	1N4002			
6552	4822 130 30621	1N4148			
6553	4822 130 30621	1N4148			
6554	4822 130 42513	BC858C			
6555	4822 130 31981	BZX79-C3V9			

CONTROL & DISPLAY PARTSLIST

Miscellaneous					
1020	4822 276 12276	Tact switch	2001	5322 124 21643	22µF 20% 40V
1021	4822 276 12276	Tact switch	2002	4822 122 10166	22nF 30% 16V
1022	4822 276 12276	Tact switch	2003	4822 122 10172	220pF 10% 50V
1023	4822 276 12276	Tact switch	2004	5322 124 21643	22µF 20% 40V
1024	4822 276 12276	Tact switch			
1025	4822 276 12276	Tact switch	3001	4822 051 10223	22kΩ 2% 0,25W
1026	4822 276 12276	Tact switch	3002	4822 051 10223	22kΩ 2% 0,25W
1027	4822 276 12276	Tact switch	3003	4822 051 10223	22kΩ 2% 0,25W
1028	4822 276 12276	Tact switch	3004	4822 052 10478	4,7Ω 5% 0,33W
1029	4822 276 12276	Tact switch	3005	4822 116 52921	4,7kΩ 1% 0,6W
1030	4822 276 12276	Tact switch	3006	4822 116 52921	4,7kΩ 1% 0,6W
1031	4822 276 12276	Tact switch	3007	4822 050 24703	47kΩ 1% 0,6W
1032	4822 276 12276	Tact switch	3008	4822 116 52921	4,7kΩ 1% 0,6W
1033	4822 276 12276	Tact switch	3009	4822 050 21504	150kΩ 1% 0,6W
1034	4822 276 12276	Tact switch	3010	4822 050 21002	1kΩ 1% 0,6W
1035	4822 276 12276	Tact switch	3011	4822 050 21002	1kΩ 1% 0,6W
1036	4822 276 12276	Tact switch	3012	4822 052 10338	3,3Ω 5% 0,33W
1037	4822 276 12276	Tact switch	3013	4822 052 10338	3,3Ω 5% 0,33W
1038	4822 276 12276	Tact switch	3014	4822 052 10478	4,7Ω 5% 0,33W
1039	4822 276 12276	Tact switch	3015	4822 050 24703	47kΩ 1% 0,6W
1040	4822 276 12276	Tact switch			
1041	4822 276 12276	Tact switch	6001	4822 130 34281	BZX79-C15
1042	4822 276 12276	Tact switch	6002	4822 130 30621	1N4148
1043	4822 276 12276	Tact switch	6003	4822 130 30621	1N4148
1044	4822 276 12276	Tact switch	6004	4822 130 30621	1N4148
1045	4822 276 12276	Tact switch	6005	4822 130 30621	1N4148
1046	4822 276 12276	Tact switch	6006	4822 130 30621	1N4148
1047	4822 276 12276	Tact switch	6007	4822 130 30621	1N4148
1048	4822 276 12276	Tact switch	7001	4822 130 40938	BC548
1049	4822 276 12276	Tact switch	7002	4822 209 72226	U3090
1050	4822 276 12276	Tact switch			
1051	4822 276 12276	Tact switch			
1052	4822 276 12276	Tact switch			
1060	4822 214 51772	GP1U521X			
1061	4822 130 90661	6-MT-147GK			

VARIABLE HEADPHONE PARTSLIST

Miscellaneous			
	4822 505 10571	hex nut for headphone socket	
1201	4822 102 10398	Potmeter 10k Ω LOG.	
1202	4822 267 31065	Headphone socket	
			
2201	5322 124 21762	100 μ F 20% 10V	
2202	5322 124 21762	100 μ F 20% 10V	
2203	5322 124 21711	100 μ F 20% 25V	
2204	5322 124 21711	100 μ F 20% 25V	
			
3201	4822 051 10101	100 Ω 2% 0,25W	
3202	4822 051 10101	100 Ω 2% 0,25W	
3203	4822 051 10103	10k Ω 2% 0,25W	
3204	4822 051 10103	10k Ω 2% 0,25W	
3205	4822 111 30508	10 Ω 5% 0,33W	
3206	4822 111 30508	10 Ω 5% 0,33W	
3207	4822 116 52264	27k Ω 5% 0,5W	
3208	4822 116 52264	27k Ω 5% 0,5W	
3209	4822 051 10122	1,2k Ω 2% 0,25W	
3210	4822 051 10122	1,2k Ω 2% 0,25W	
3211	4822 050 21501	150 Ω 1% 0,6W	
3212	4822 050 21501	150 Ω 1% 0,6W	
			
6201	4822 209 82362	NJM4556D	
6203	4822 130 40958	BC338-25	
6204	4822 130 40958	BC338-25	