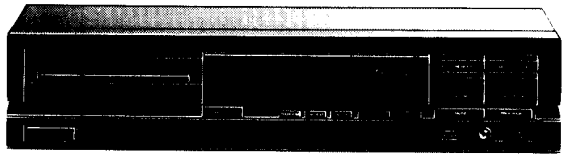
Compact disc player CD605/00B

CD615/00B

Service
Service
Service



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Service Manual

CONTENTS

COMPACT disc DIGITAL AUDIO

(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 ricambiago 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 03420

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

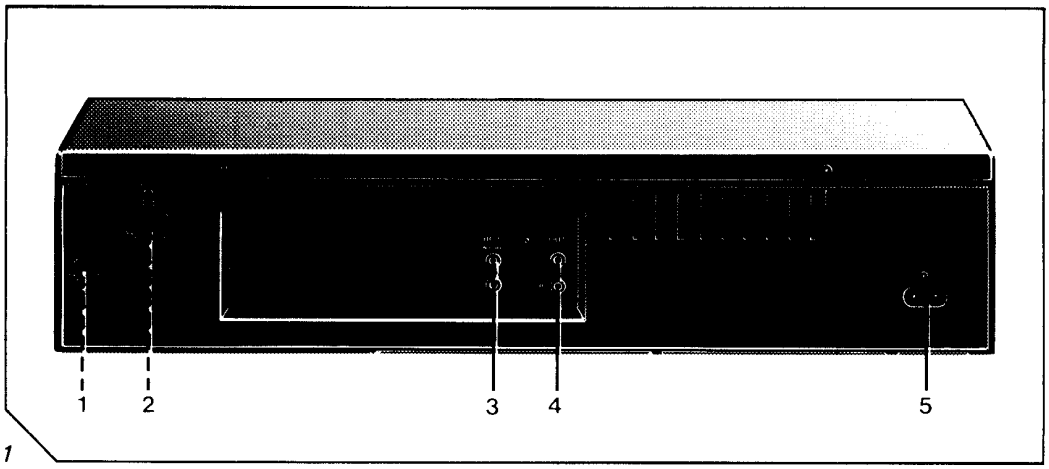
PHILIPS

"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 22952
Printed in The Netherlands

PHILIPS

Published by Consumer Electronics
CS 32 055



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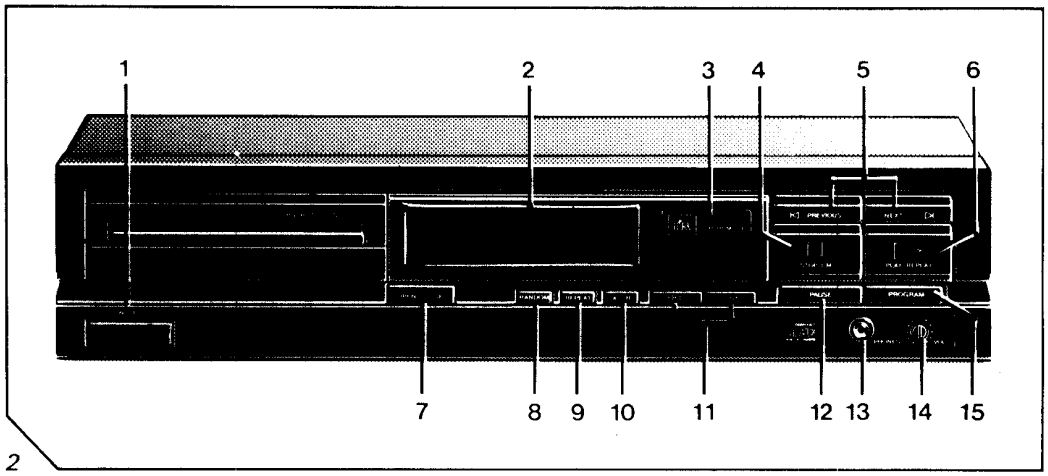

2

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CONTROLS AND CONNECTIONS

Front of player

1. **ON/OFF** : Switching on and off.
2. **Display**
3. **IR REMOTE (CD615 only)** : Receives signals from the remote control.
4. **STOP/CM** :
   - Stopping play.
   - Erasing a program (CM = Clear Memory).
5. **PREVIOUS** and **NEXT**
   - Selecting another track during play.
   - Selecting a track to start play with.
   - Selecting tracks while compiling a program.
6. **PLAY/REPLAY**
   - Starting play.
   - Returning to the beginning of a track.
7. **OPEN/CLOSE** : Opening and closing the drawer.
8. **RANDOM** : Playing in random order.
9. **REPEAT** : Repeating play.
10. **A-B** : Setting the starting and stopping point of a passage to be repeated.
11. << >> : Fast search for a passage.
12. **PAUSE** : Interrupting play.
13. **PHONES** : For connection of headphones.
14. **VOL**(ume) : For adjusting the volume of the headphones.
15. **PROGRAM**
    - Storing tracks in a program.
    - Erasing tracks from a program.
    - Checking the program.

Connections

1. Mains fuse holder. (not for all versions)
2. Voltage selector. (not for all versions)
3. **RC IN/OUT** :
   - For connecting up the equipment when you are incorporating the player in a PHILIPS HiFi system with its own remote control.
   - For connecting the remote control receiver EM 2200, available as an accessory. (not in the U.K.)
4. **OUT L/R** : For connecting the player to the amplifier.

TECHNICAL DATA :

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. 0,004 %) 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 whith time constant 15/50 µs		

Variable headphone

1.	Output voltage	:	max. 7 Vrms (at max. setting)
2.	Output resistance	:	150 Ω
3.	Load impedance range	:	30 to 600 Ω
4.	Output power	:	50 mW into 30 Ω 90 mW into 150 Ω 50 mW into 600 Ω
5.	Signal to noise ratio	:	min 85 dB from 20 Hz to 20 kHz
6.	Channel separation	:	min 70 dB from 20 Hz 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	:	3,8 kg

Optical read-out system

1.	Laser type	:	Semiconductor ALGaAs
2.	Ware Length	:	780 nm +/- 20nm
3.	Light output (c.w.)	:	0,4mW +/- 0,04nW

SERVICING HINTS

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

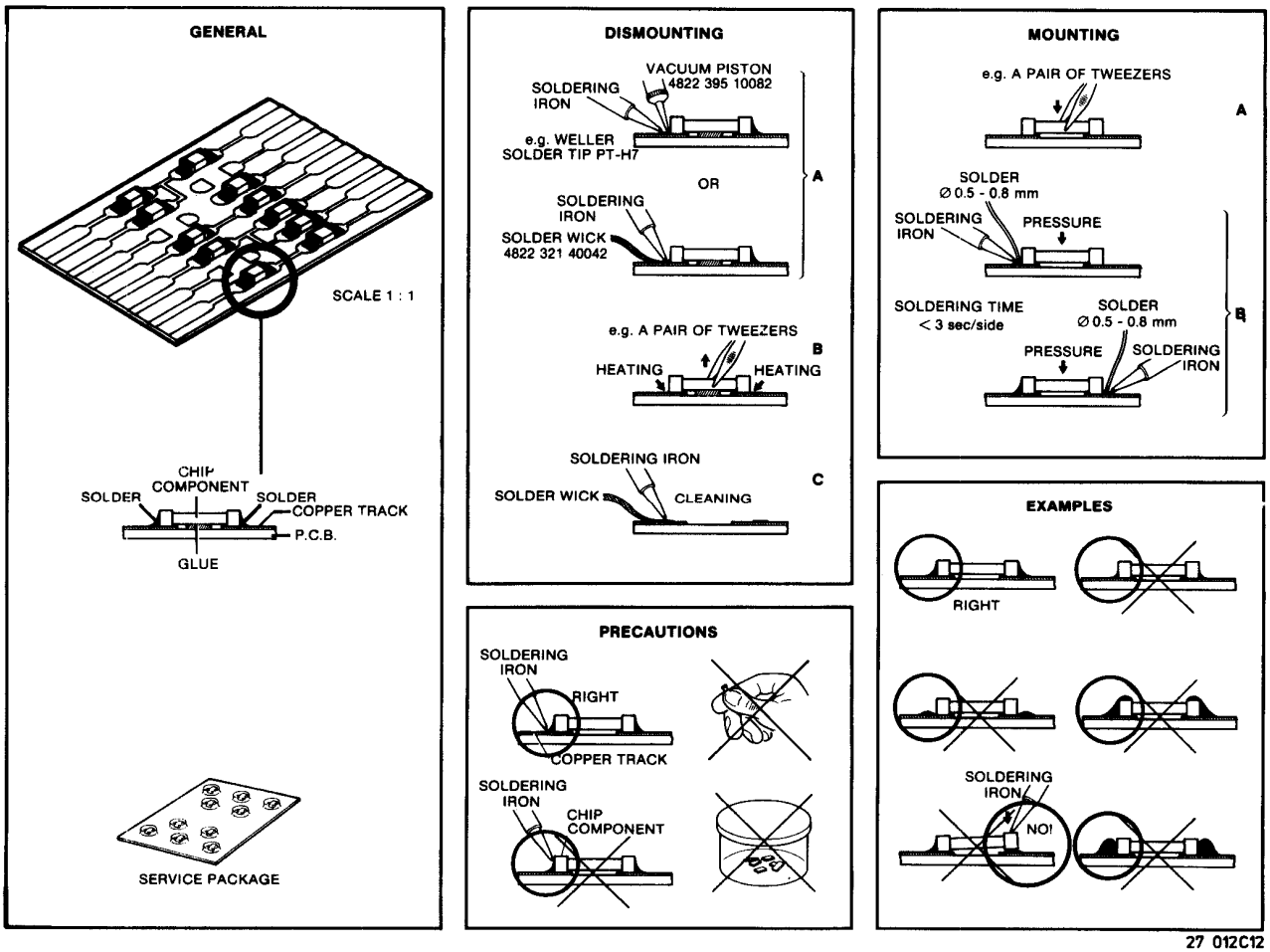
The disc should always rest properly on the turntable. To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a seperate disc hold-down should be used. (See drawing "Service disc hold-down")
The set can function 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 immediatly 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.

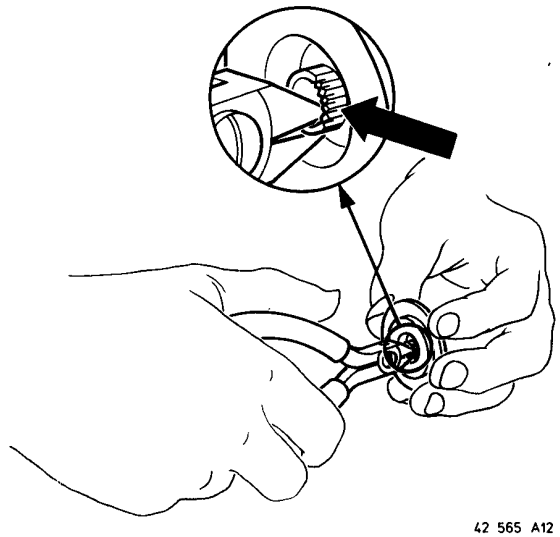
SERVICE TOOLS

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

SERVICE DISC HOLDDOWN



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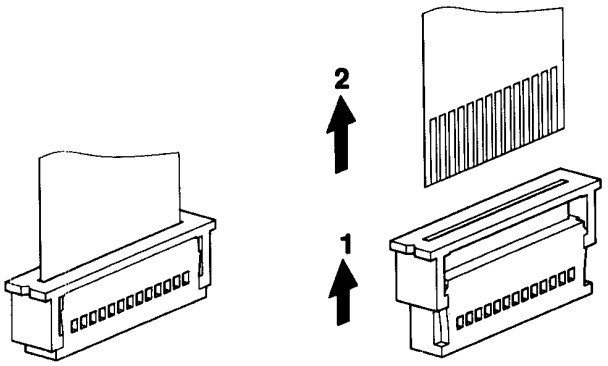
Compose a service Disc hold-down in the following way

- 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.



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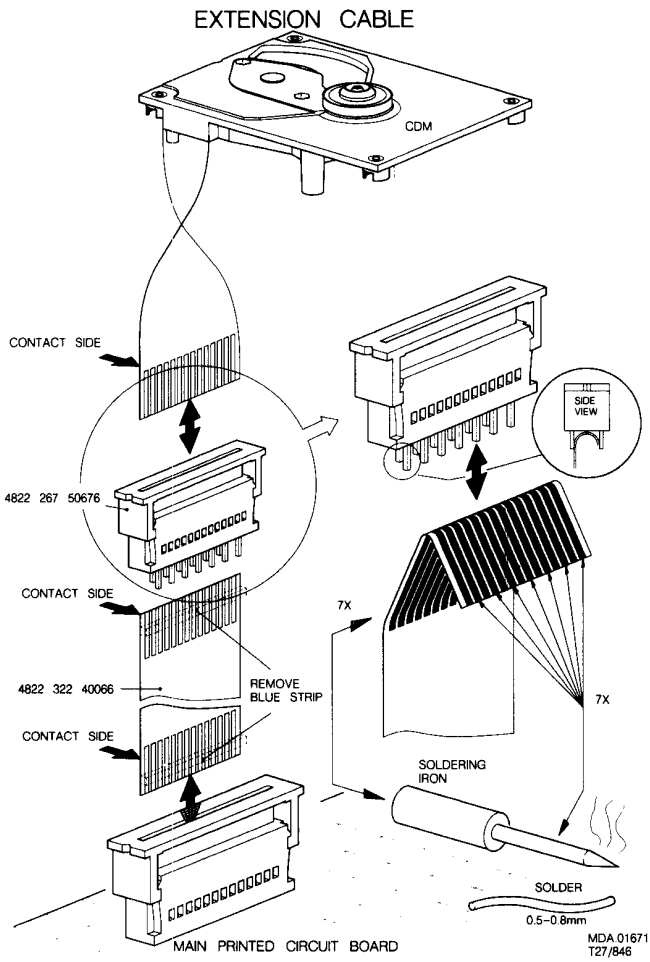
T28/822

SERVICE FOIL FOR CDM



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T27/846

(GB) WARNING

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

ESD

(NL) WAARSCHUWING

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

(F) ATTENTION

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

(D) WARNUNG

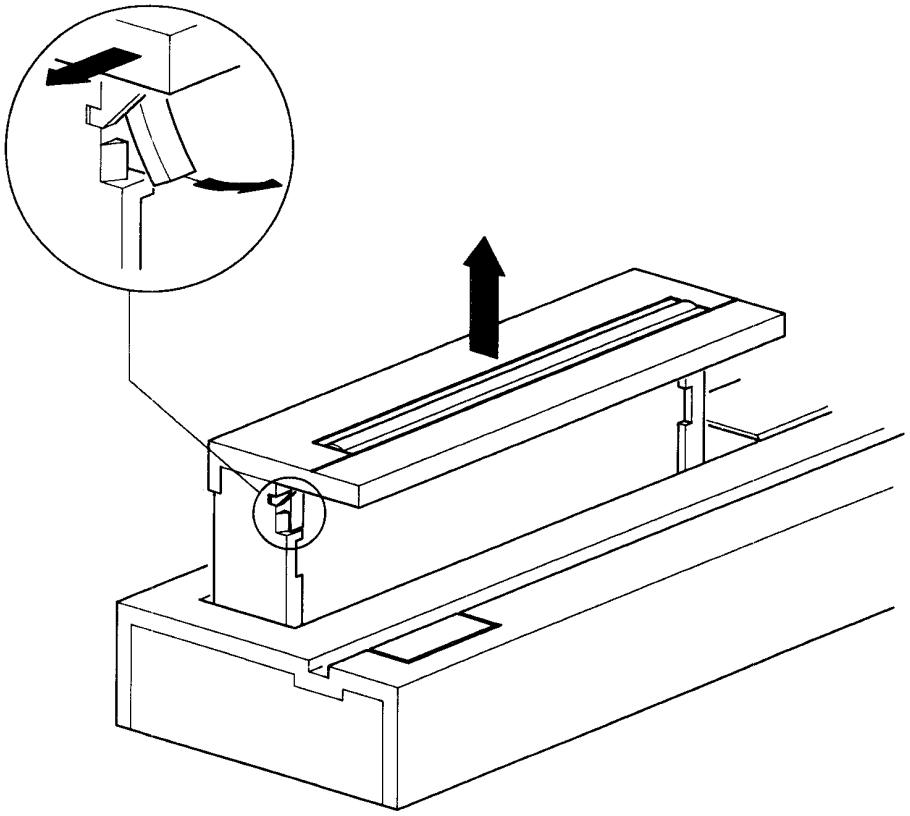
Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden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

(I) AVVERTIMENTO

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

CABINET DISASSEMBLY HINTS

A



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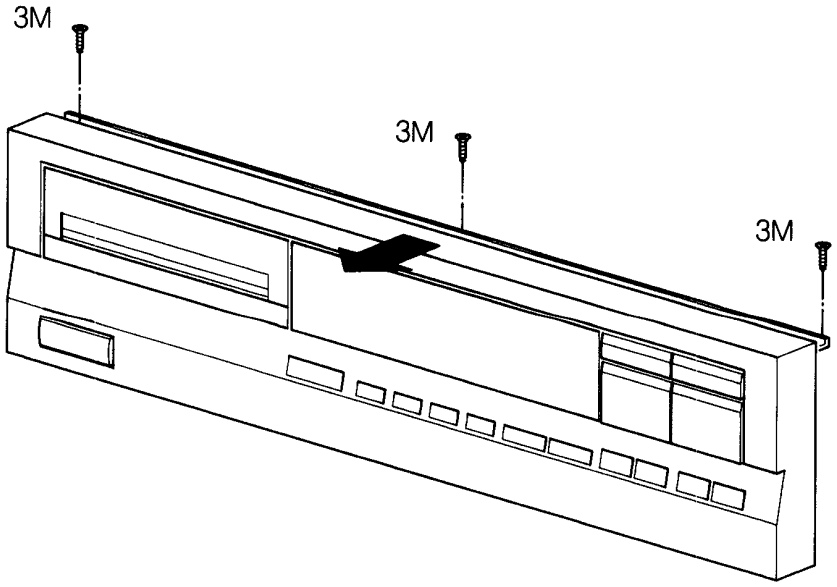
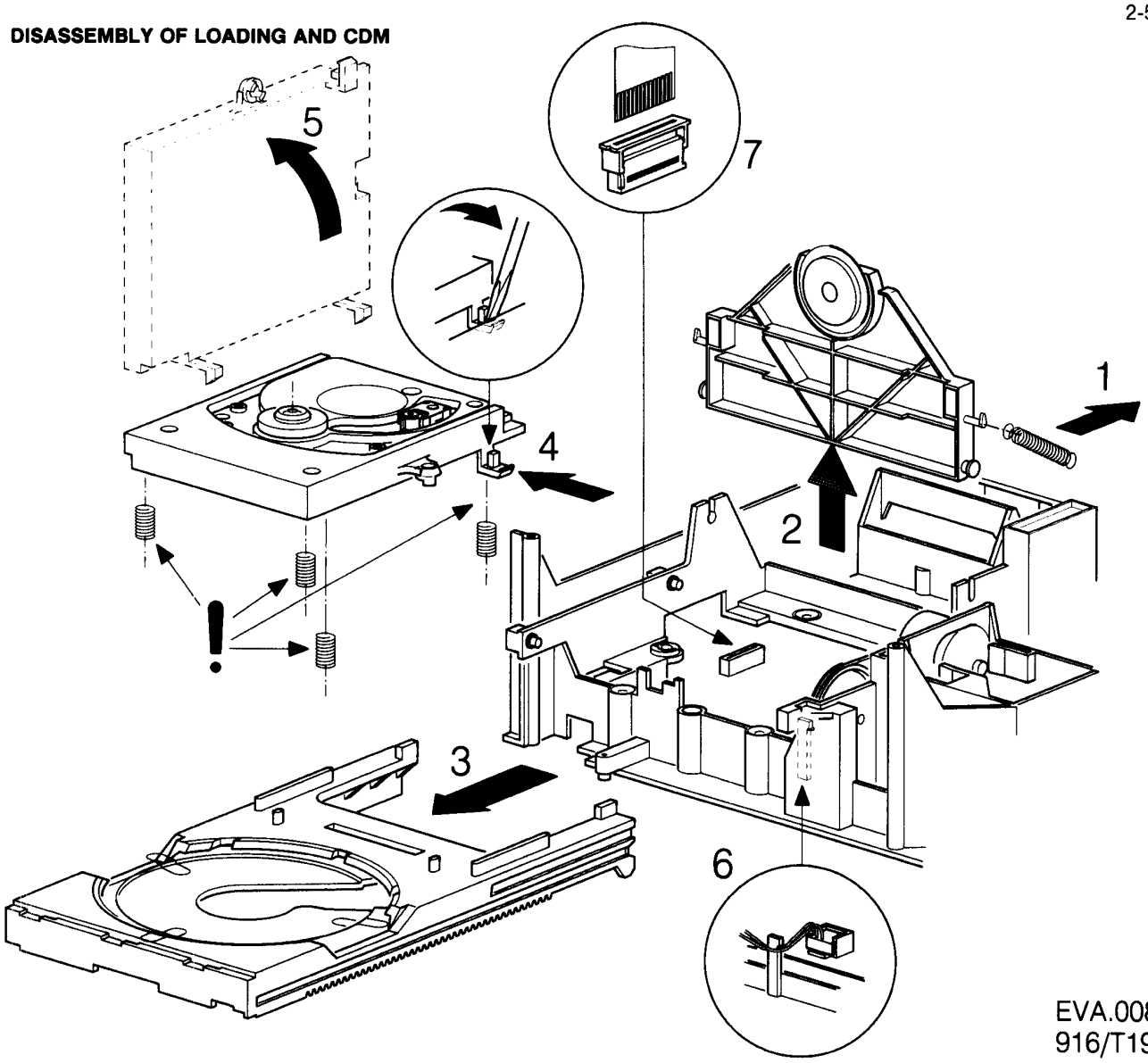


MDA.02799
T27/9034

DISASSEMBLY OF LOADING AND CDM



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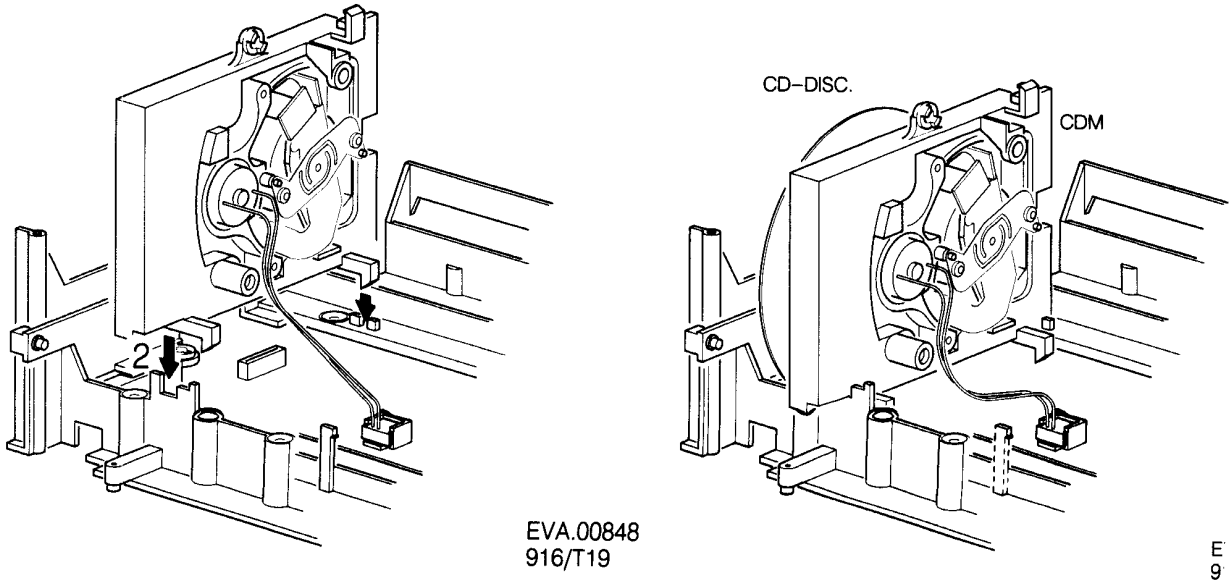
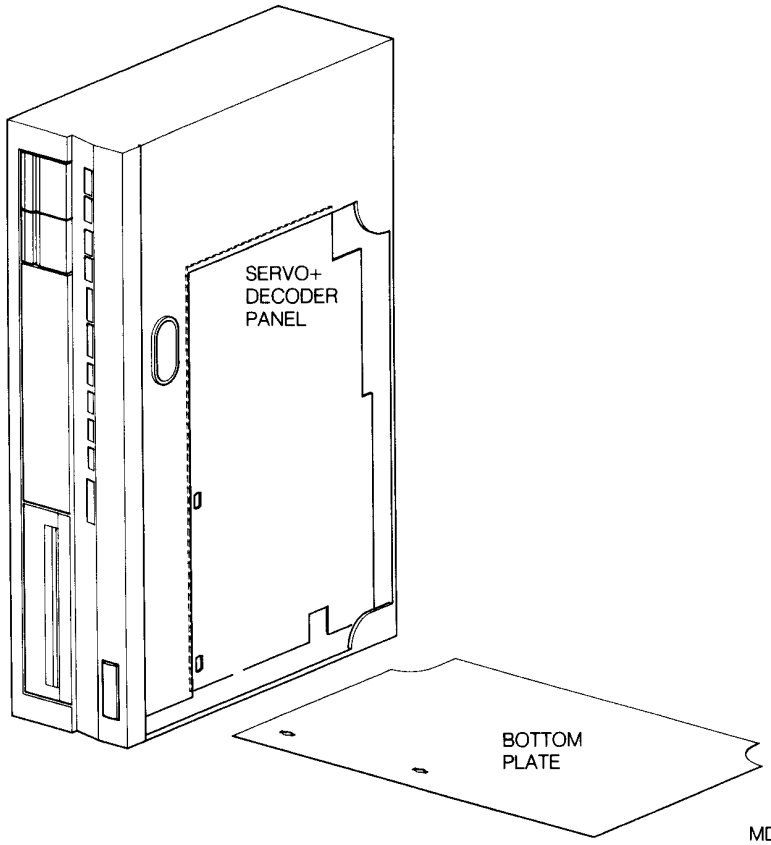
916/T19

PLAY SERVICE POSITION



EVA.00848
916/T19

FOR ACCESS OF THE MAIN PANEL REMOVE BOTTOM PLATE



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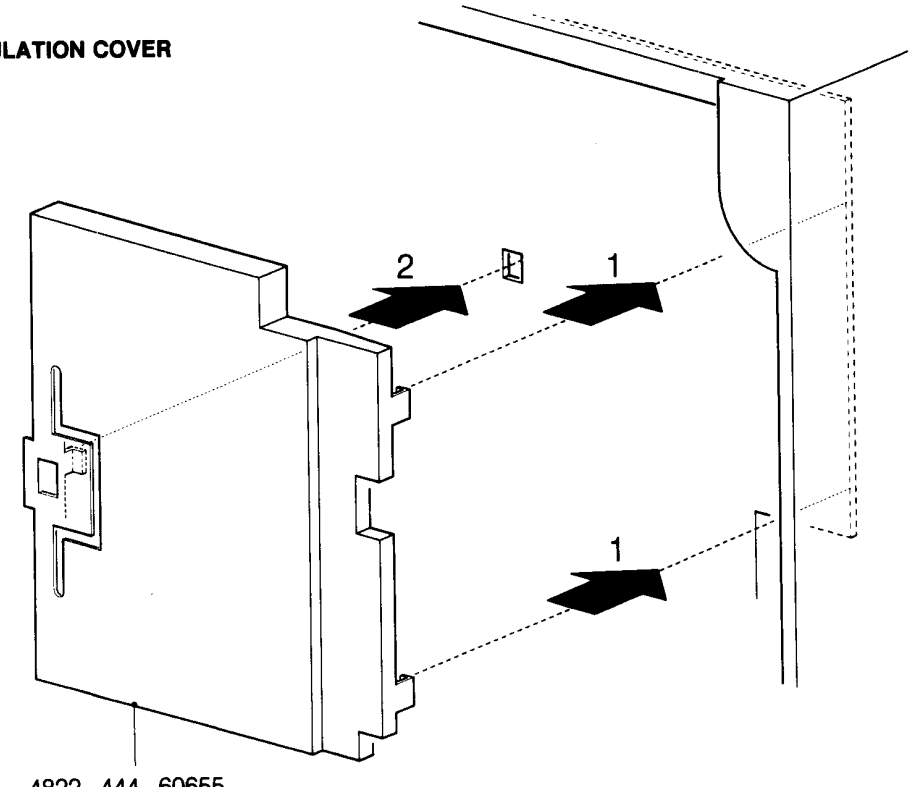
9034/T27

INSULATION COVER



4822 444 60655

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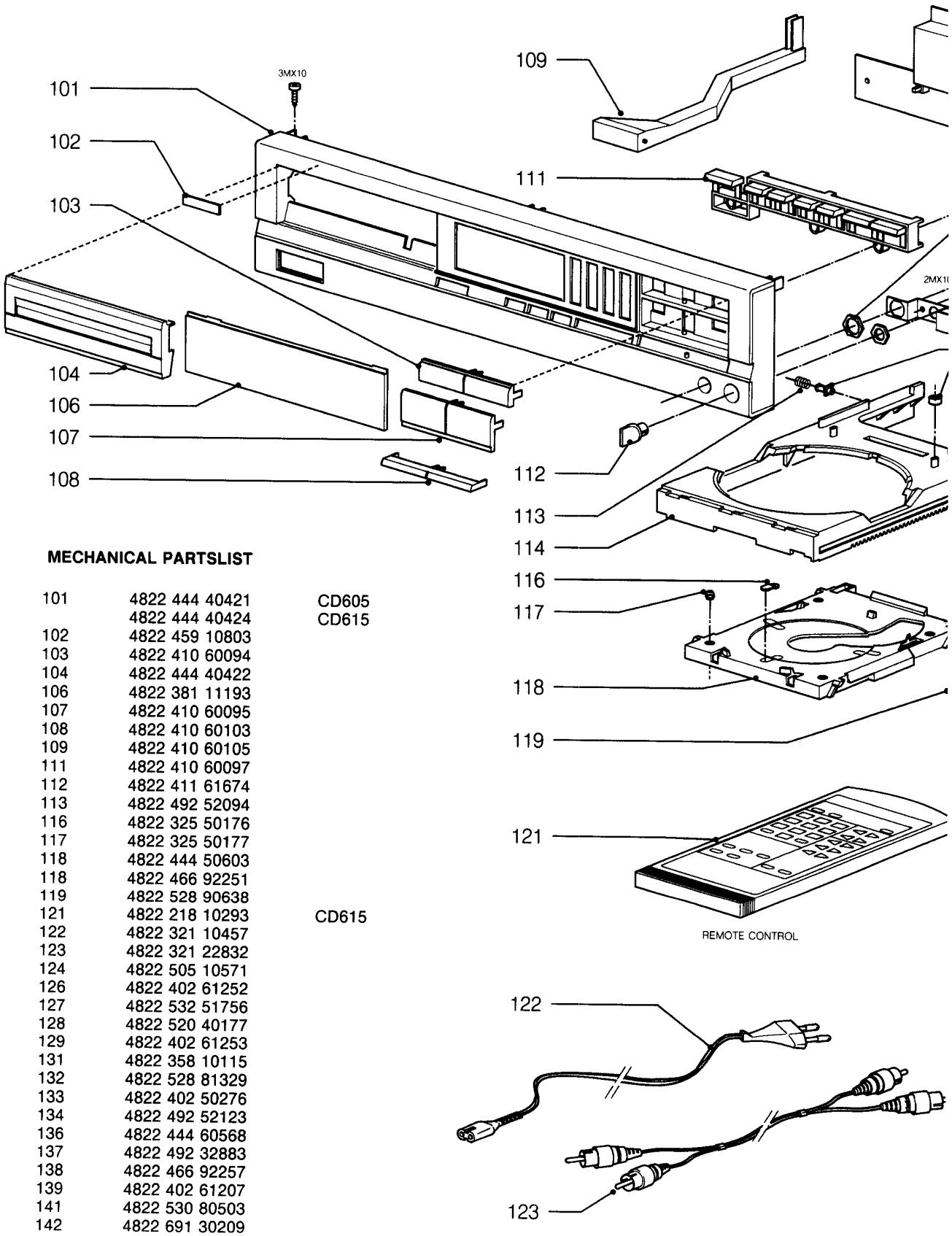
T02/007

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

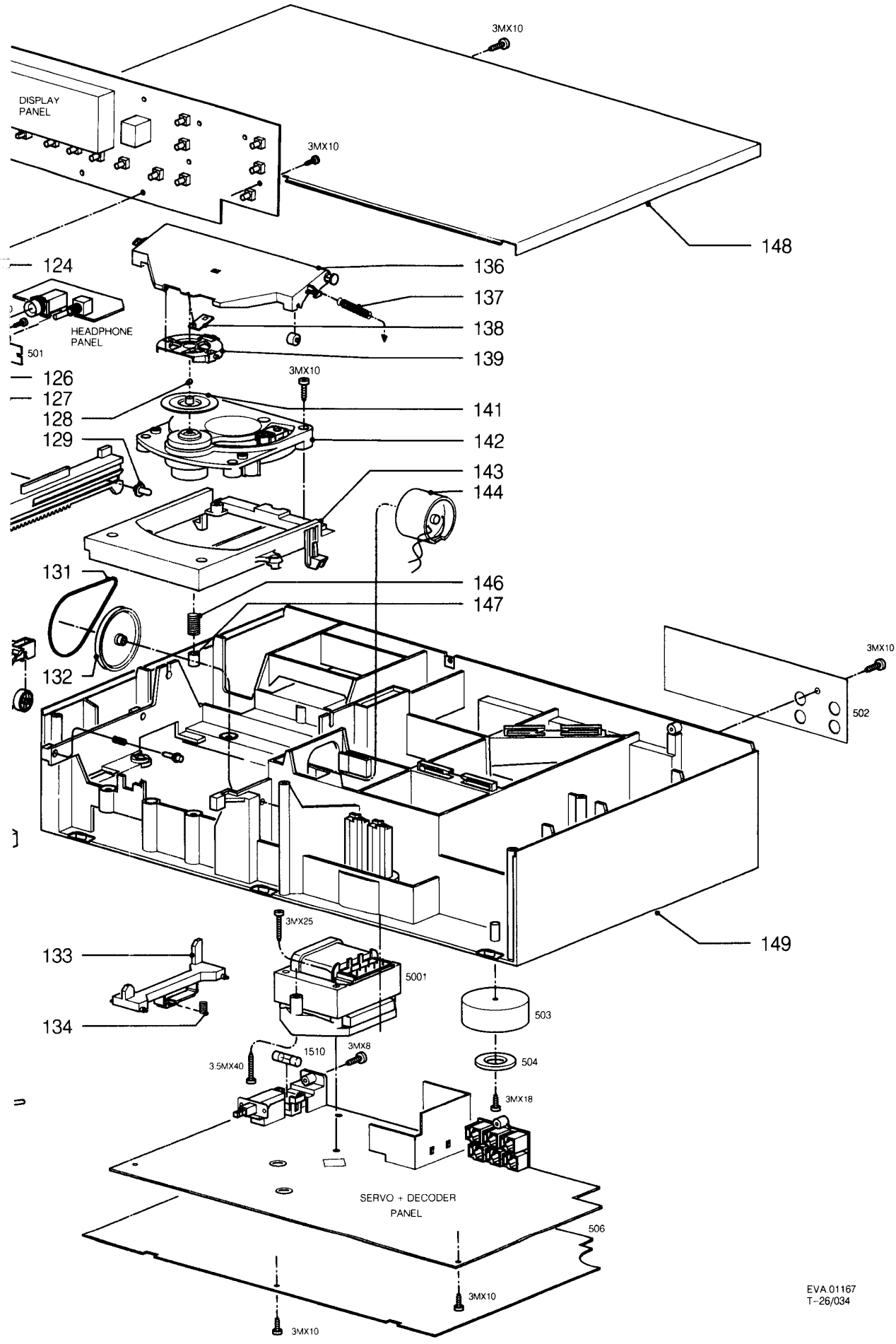
VA.00849
16/T19

EXPLODED VIEW



MECHANICAL PARTSLIST

101	4822 444 40421	CD605
	4822 444 40424	CD615
102	4822 459 10803	
103	4822 410 60094	
104	4822 444 40422	
106	4822 381 11193	
107	4822 410 60095	
108	4822 410 60103	
109	4822 410 60105	
111	4822 410 60097	
112	4822 411 61674	
113	4822 492 52094	
116	4822 325 50176	
117	4822 325 50177	
118	4822 444 50603	
118	4822 466 92251	
119	4822 528 90638	
121	4822 218 10293	CD615
122	4822 321 10457	
123	4822 321 22832	
124	4822 505 10571	
126	4822 402 61252	
127	4822 532 51756	
128	4822 520 40177	
129	4822 402 61253	
131	4822 358 10115	
132	4822 528 81329	
133	4822 402 50276	
134	4822 492 52123	
136	4822 444 60568	
137	4822 492 32883	
138	4822 466 92257	
139	4822 402 61207	
141	4822 530 80503	
142	4822 691 30209	
143	4822 402 61196	
144	4822 361 21258	
146	4822 492 51902	
147	4822 466 61587	
148	4822 444 30417	
149	4822 464 50805	

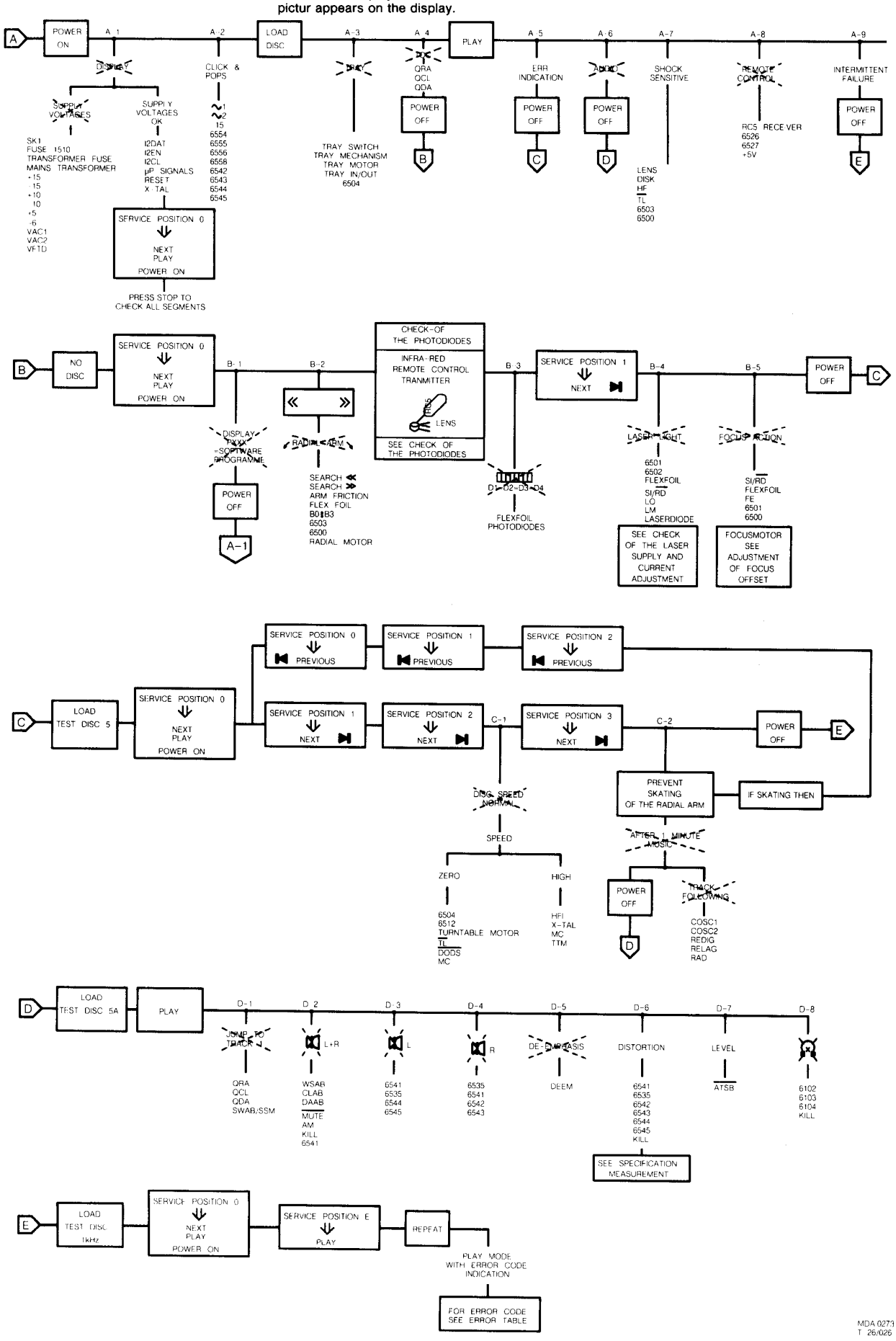

3MX10
DISPLAY PANEL
3MX10
148
124
136
137
138
139
HEADPHONE PANEL
501
126
127
128
129
3MX10
141
142
143
144
131
146
147
132
3MX10
502
149
3MX25
133
5001
503
134
1510
3MX8
3.5MX40
504
3MX18
SERVO + DECODER PANEL
506
3MX10
3MX10
EVA.01167
T-26/034

TROUBLE SHOOTING (FAULT FINDING TREE)

Start-up procedure

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 pictur 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 braches further reference is made to measurements you could carry out. These measurements are explained in several tables further on in this manual.



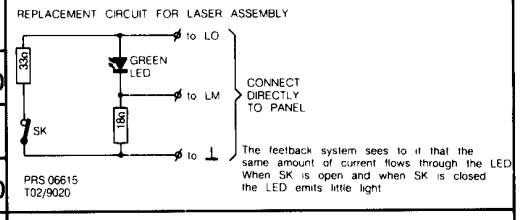
B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	⌀	▭	Λ	Remarks
1	D2 D1 D3 D4	power on	◇4 Λ ◇6 Λ ◇7 Λ ◇8 Λ	–	–	signal 4≡6≡7≡8	Signal depends on Distance lens ↔ IR LED of remote control

T-22811A

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 SK ⟋	◇9 V	1.8<V <2.3	
	LM		◇11 V	170<mV <220	
2	LO	serv. pos. 2 SK ⟍	◇9 V	1.8<V <2.3	
	LM		◇11 V	170<mV <220	
3	LO	Power on	◇9 V	0V ± 0.2V	No light

T-22811B

After opening SK, the led will emit 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	◇11 Ω	R3520	1kΩ +10% −0	--	PRE ADJUSTMENT OHMIC VALUE
3	--	POWER OFF	--	R3568	--	--	SET TO MID-POSITION
4	LASER CURRENT ⩢ VOLTAGE ACROSS R3500	TEST DISC 5A PLAY	◇1 V 2 mV DC	--	⩾15mV	--	IF < 15mV THEN GO TO STEP 3 AND SET R3515 TO 1/4 OR 3/4. TRY AGAIN
5	LASER CURRENT ⩢ VOLTAGE ACROSS R3500	TEST DISC 5A PLAY	◇1 V 2 mV DC	R3520	50mV	--	--
6	FE-LAG	TEST DISC 5A TRACK 1 PLAY	◇22 V mV DC	R3568	400mV	--	FINE ADJUSTMENT

MDA 02673
T28/020

B-5 ADJUSTMENT OF FOCUS-OFFSET

Step	Signal	Mode	◇	⌀	▭	Λ	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	22	R3568	400mV ± 40 mV DC	–	fine adjustment

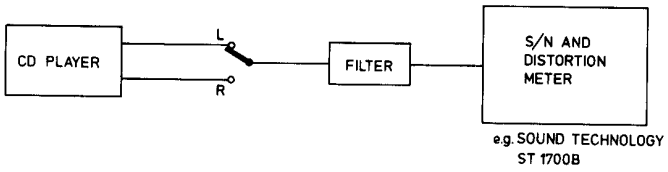
T-22811D

SPECIFICATIONS MEASUREMENT

Signal	Mode	◇			Remarks
BU2-L	Test disc 3, play total harmonic distorsion	filter output	See spec.		See drawing 30459A12
BU2-R	Test disc 3, play total harmonic distorsion	filter output	See spec.		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See spec.		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See spec.		See drawing 30459A12

T-22255O

SPECIFICATION MEASUREMENT



30 459 A12

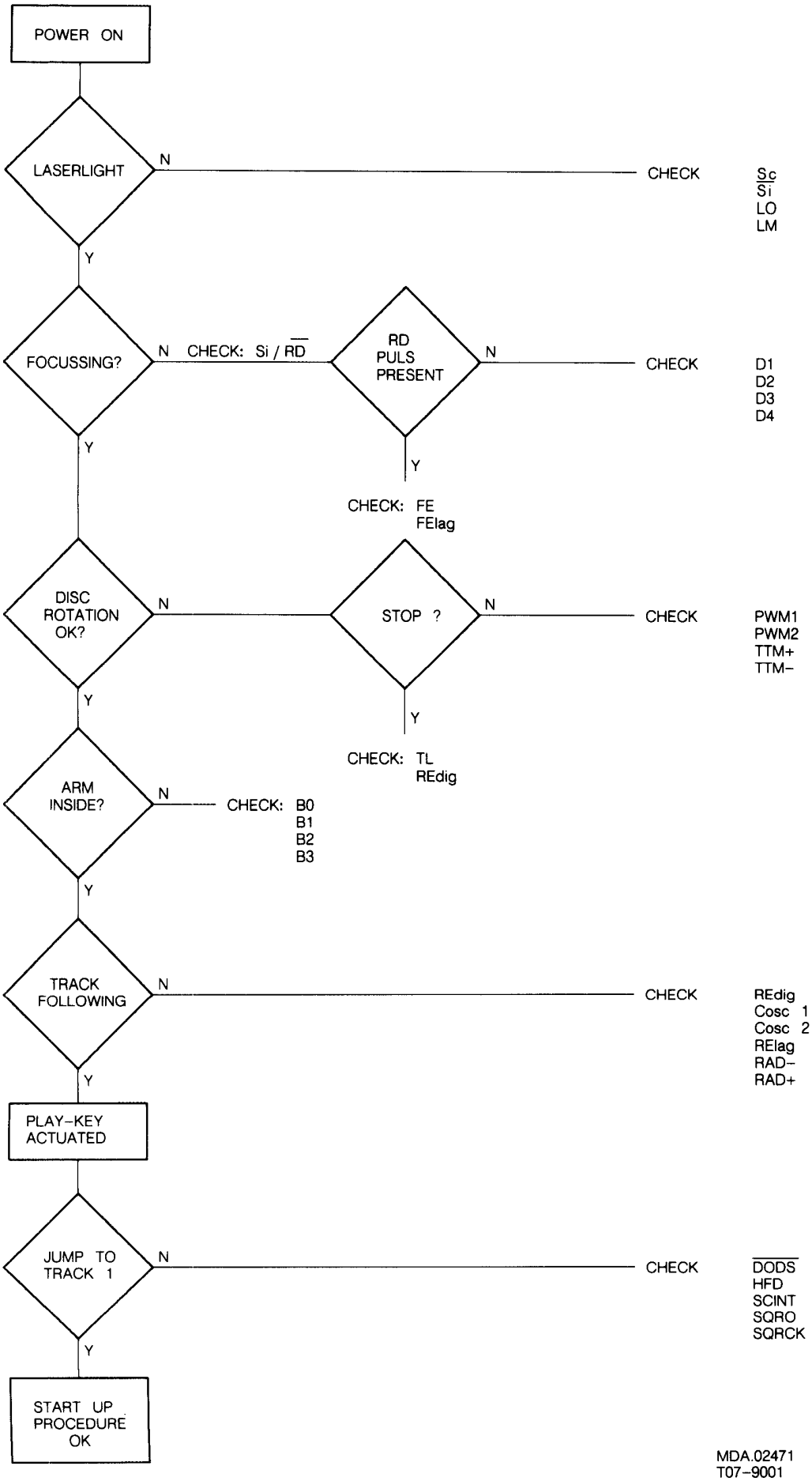
SYSTEM ERRORS

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 x 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

START UP PROCEDURE



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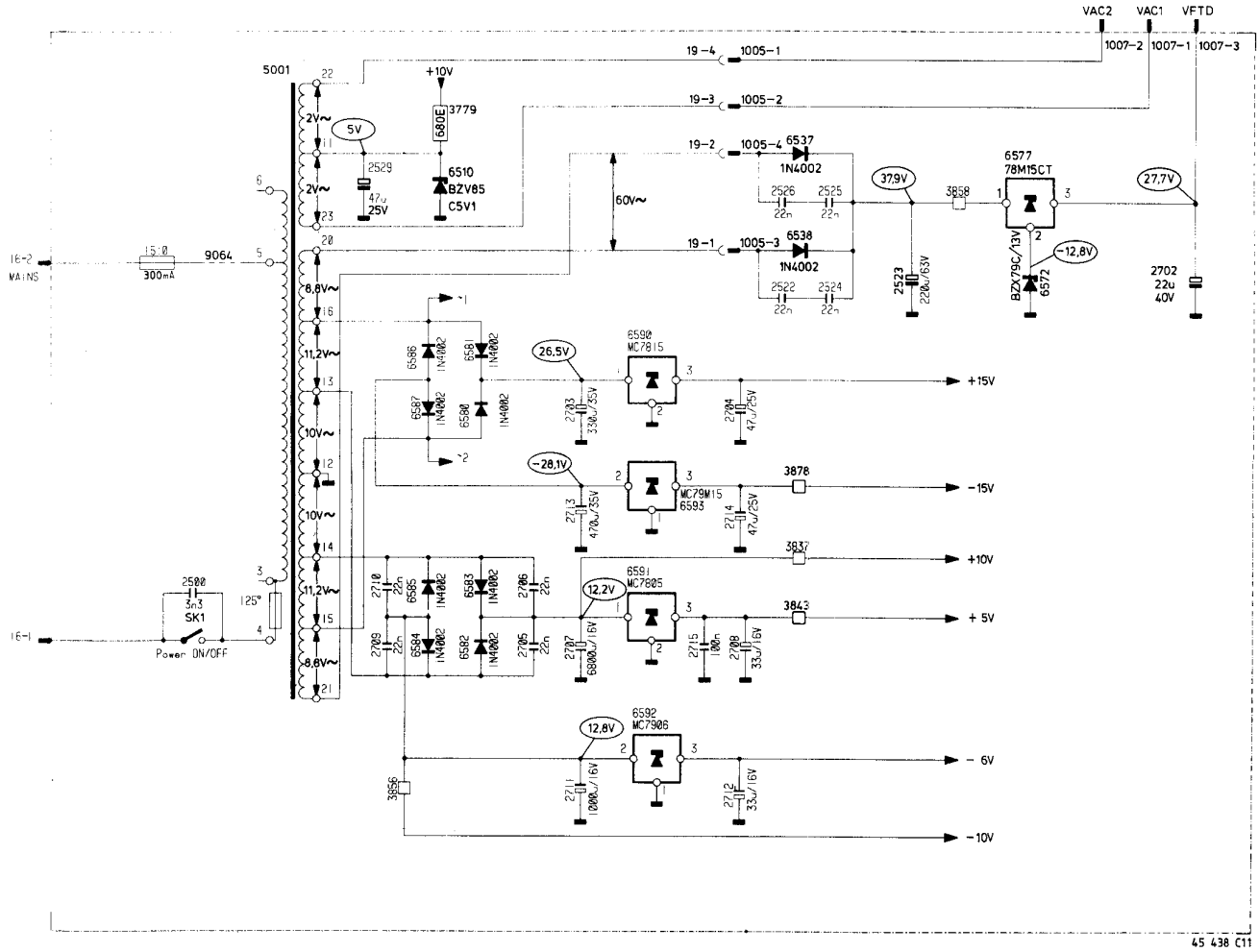
T07–9001

CIRCUIT DIAGRAM POWER SUPPLY



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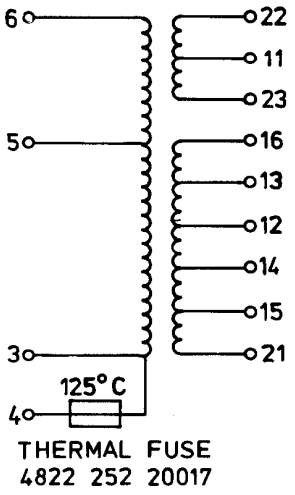
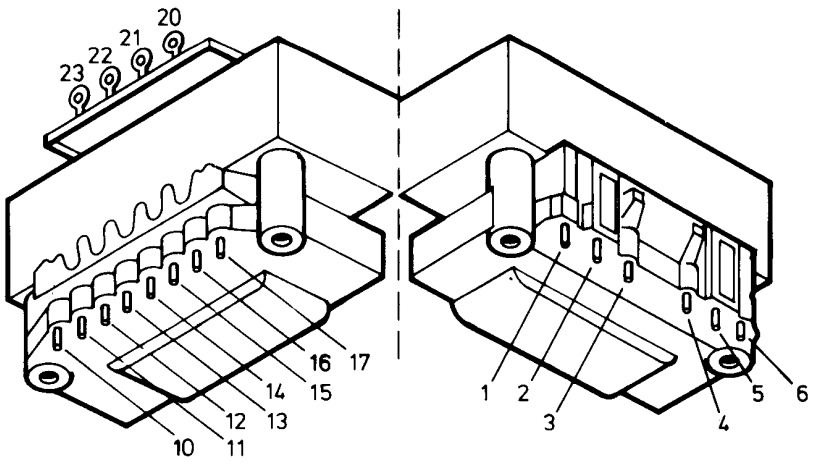
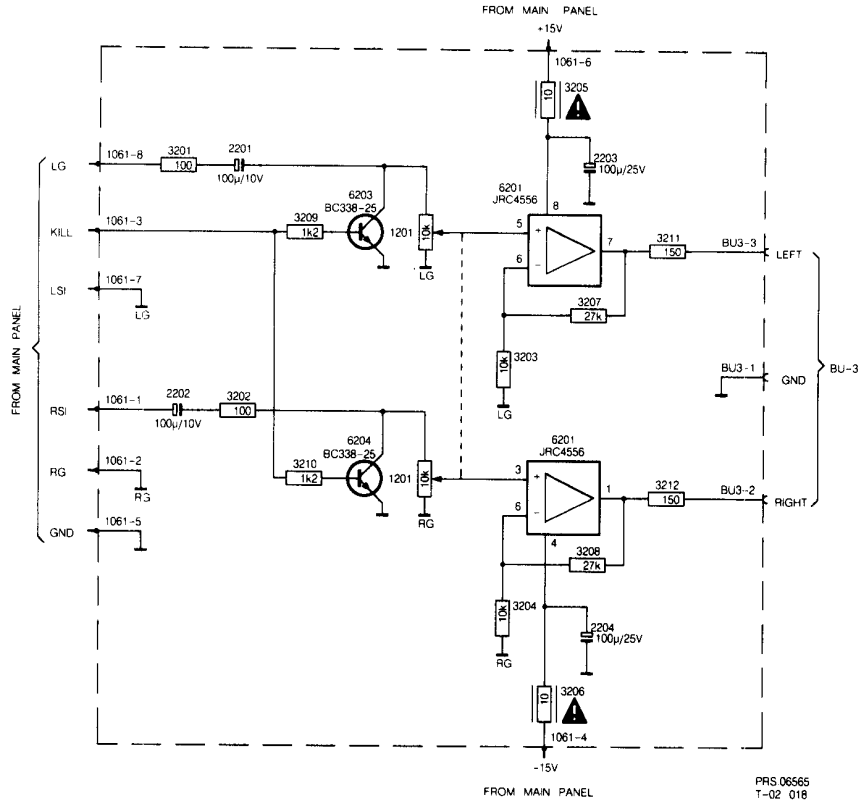
TRANSFORMER CONNECTIONS



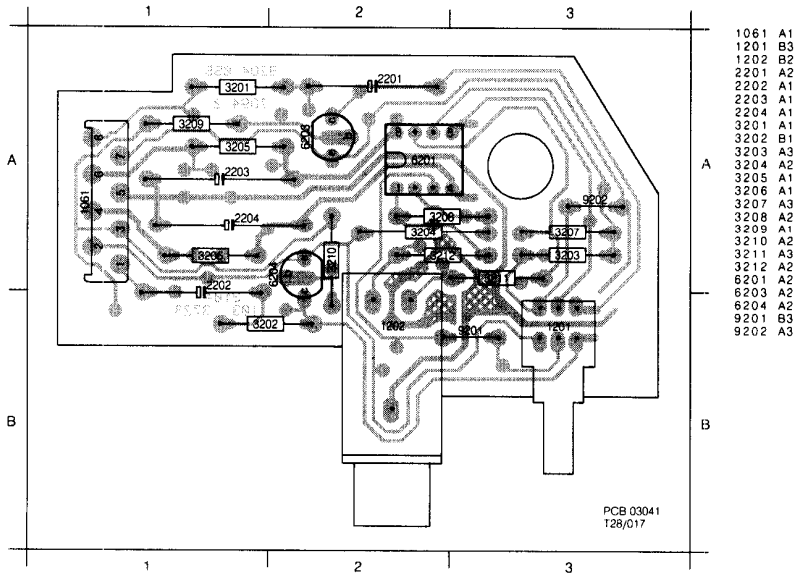


44 737 A11

VARIABLE HEADPHONE CIRCUIT DIAGRAM



VARIABLE HEADPHONE PANEL

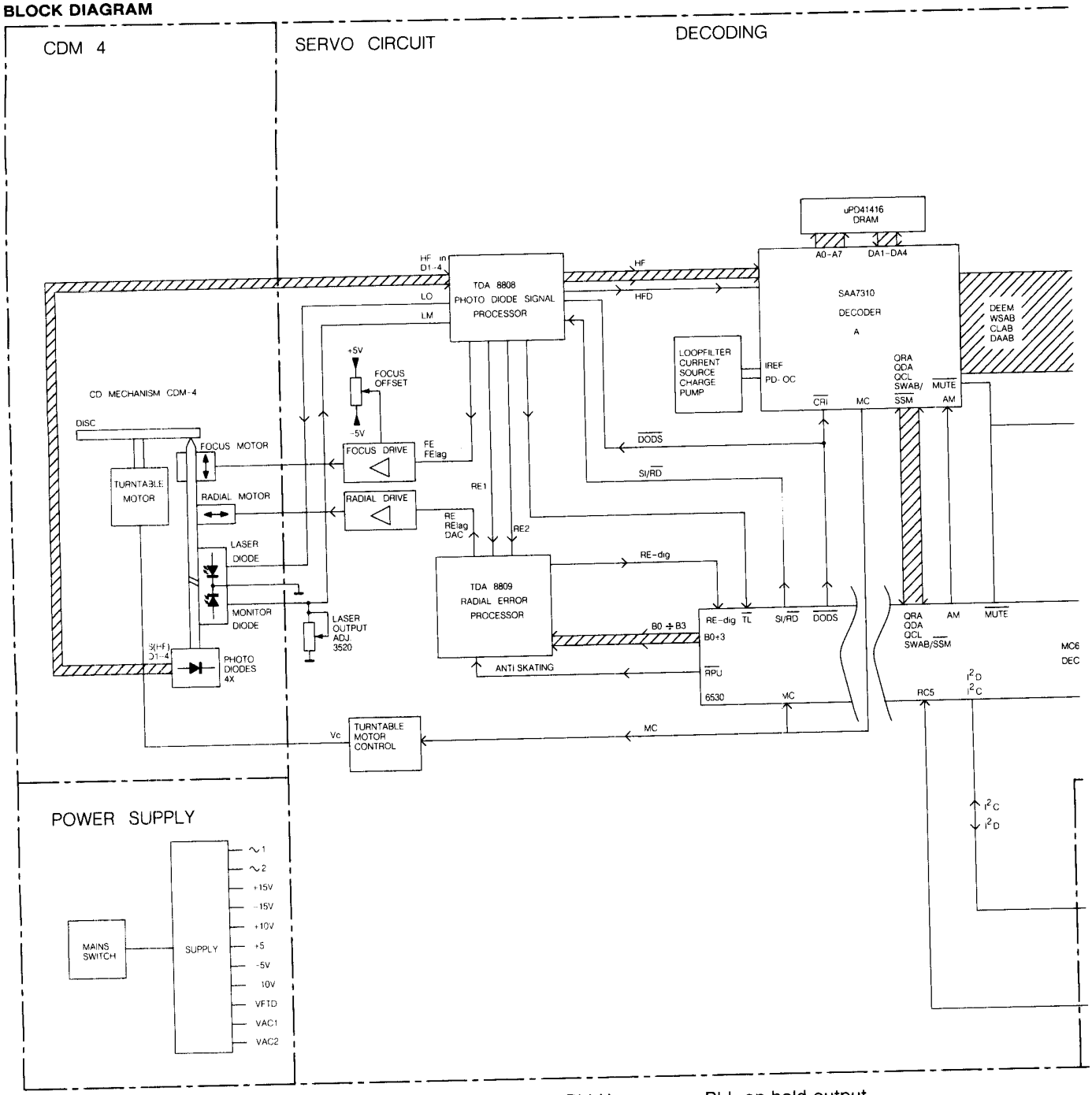


1061 A1
1201 B3
1202 B2
2201 A2
2202 A1
2203 A1
2204 A1
3201 A1
3202 B1
3203 A3
3204 A2
3205 A1
3206 A1
3207 A3
3208 A2
3209 A1
3210 A2
3211 A3
3212 A2
6201 A2
6203 A2
6204 A2
9201 B3
9202 A3

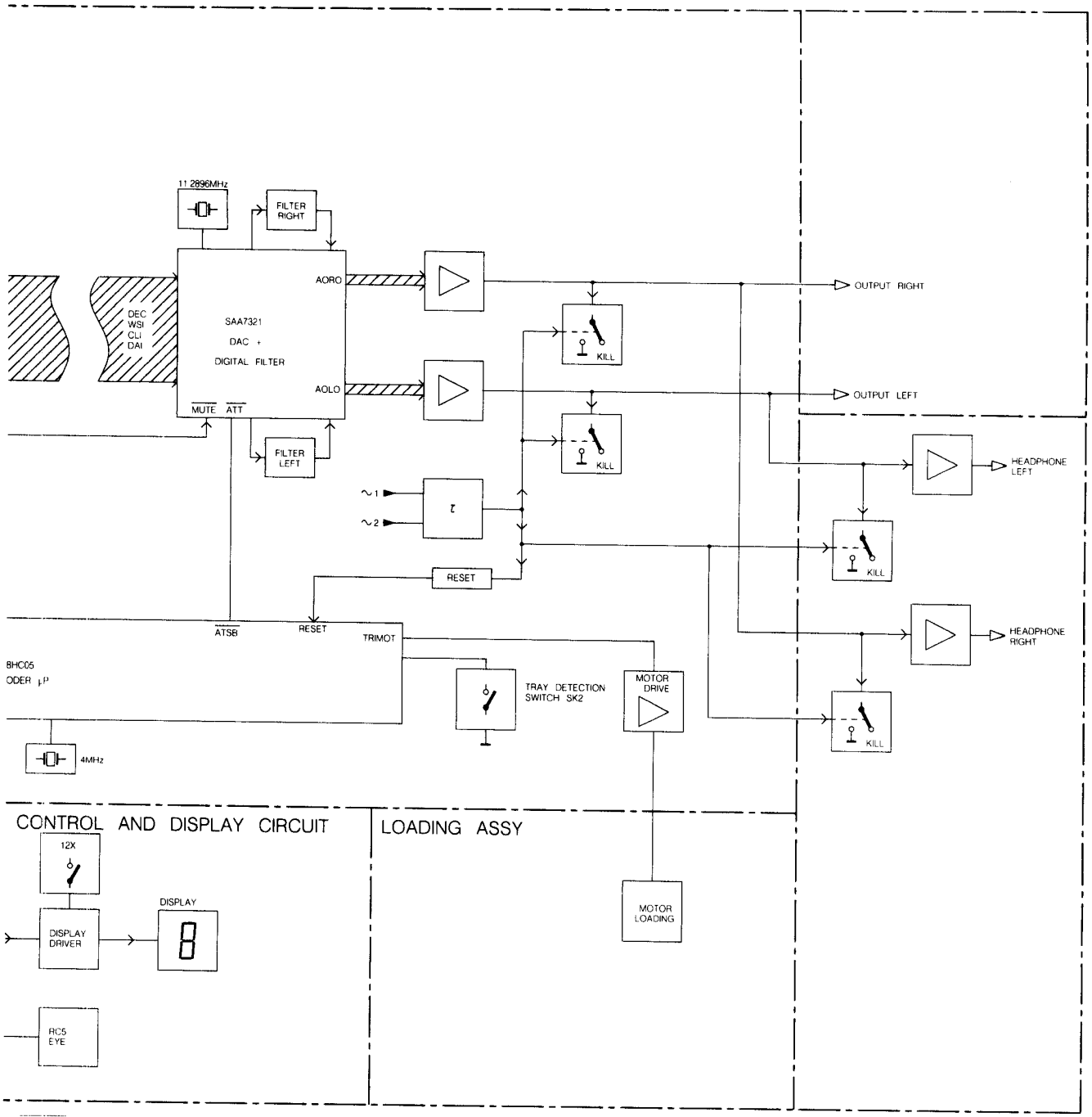
VARIABLE HEADPHONE PARTSLIST

Miscellanious		
	4822 505 10571	hex nut for headphone socket
1201	4822 102 10398	Potmeter 10kΩ LOG.
1202	4822 267 31065	Headphone 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
3203	4822 051 10103	10kΩ 2% 0,25W
3204	4822 051 10103	10kΩ 2% 0,25W
3205	4822 111 30508	10Ω 5% 0,33W
3206	4822 111 30508	10Ω 5% 0,33W
3207	4822 116 52264	27kΩ 5% 0,5W
3208	4822 116 52264	27kΩ 5% 0,5W
3209	4822 051 10122	1,2kΩ 2% 0,25W
3210	4822 051 10122	1,2kΩ 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 40958	BC338-25
6204	4822 130 40958	BC338-25

BLOCK DIAGRAM



AGC	– Automatic Gain Control	PLLH	– PLL on hold output
B0-B3	– Control bits for radial circuit	RADout	– output of RE2-RE1 input
BEQ	– Equalizer reference current input	RE	– Radial error signal (Amplified RE_2-RE_1 currents)
BGC	– DC and LF gain control reference input	Rosc	– Resistor wobble oscillator
Cosc1	– Capacitor wobble oscillator	Rwob	– Wobble generator input
Cosc2	– Capacitor wobble oscillator	RE1	– Radial error signal 1 (summation of amplified currents D_3 and D_4
DEC	– Decoupling input internal bypass	RE2	– Radial error signal 2 (summation of amplified currents D_1 and D_2
DET	– HF detector voltage input	RE dig	– Radial error digital
DIV4	– Divide by 4 input	RE lag	– Radial error signal for LAG network
DODS	– Drop out detector suppression	Sc	– Starting up capacitor input
D1÷4	– Photodiode currents	Si/RD	– On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
FE	– Focus error signal	TL	– Track loss output signal
FE lag	– Focus error signal for LAG network	TTM–	– Control voltage for turntable motor
HF	– HF output for DEMOD	TTM+	– Control voltage for turntable motor
HFD	– HF detector output for DEMOD	Vext–	– Supply connection
HF-in	– HF current input to HF amplifier	Vext+	– Supply connection
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		



PRS 06703
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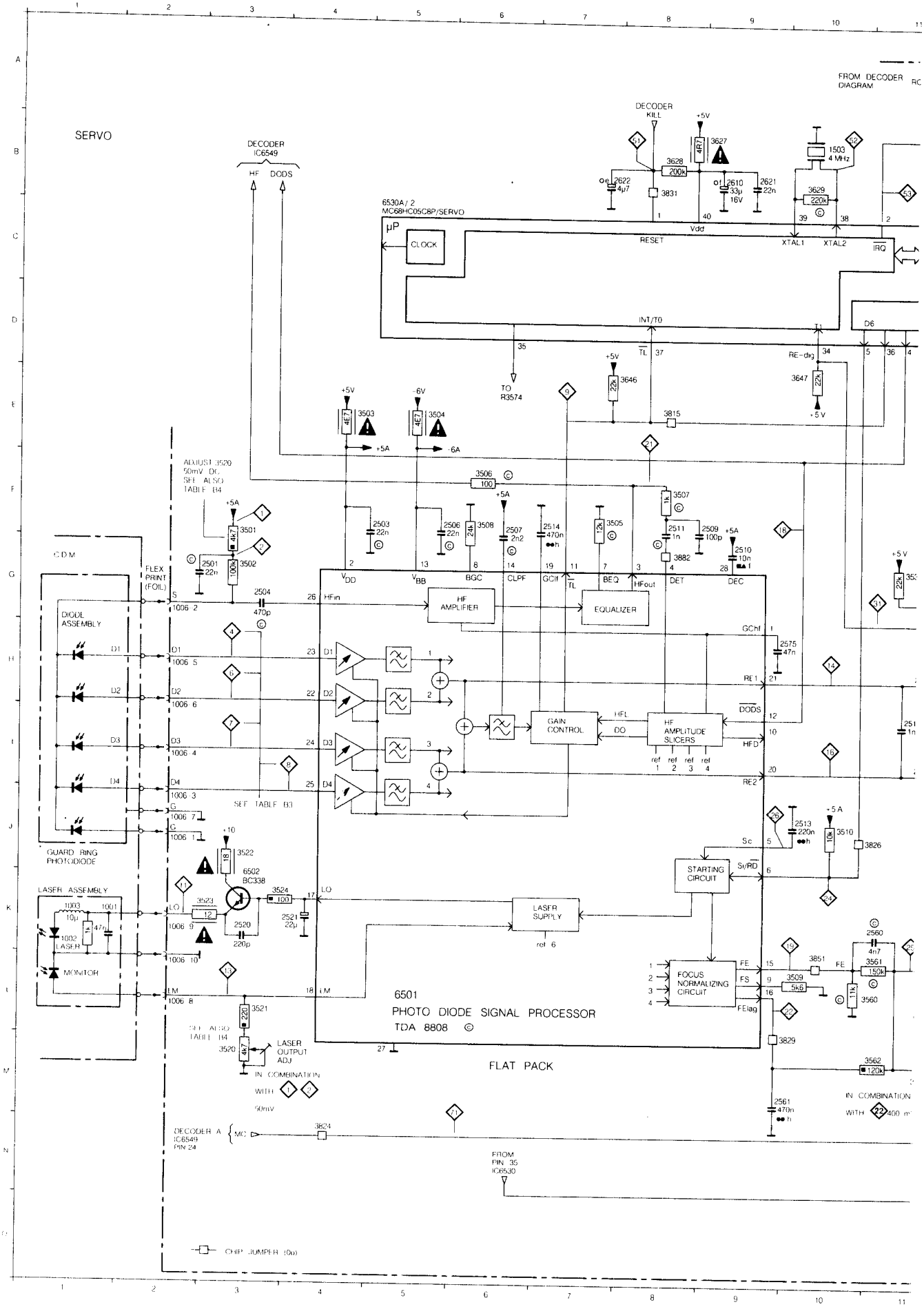
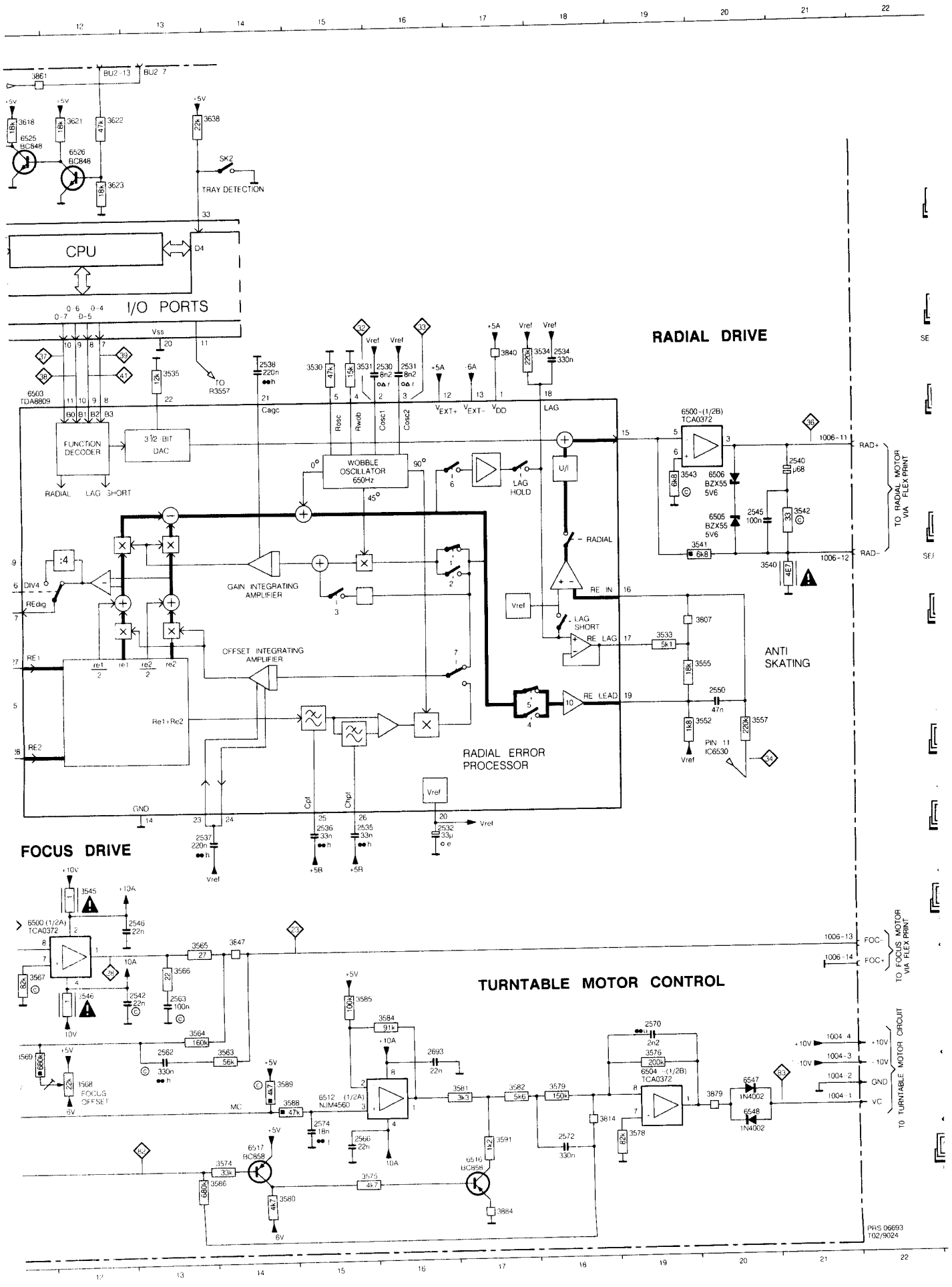
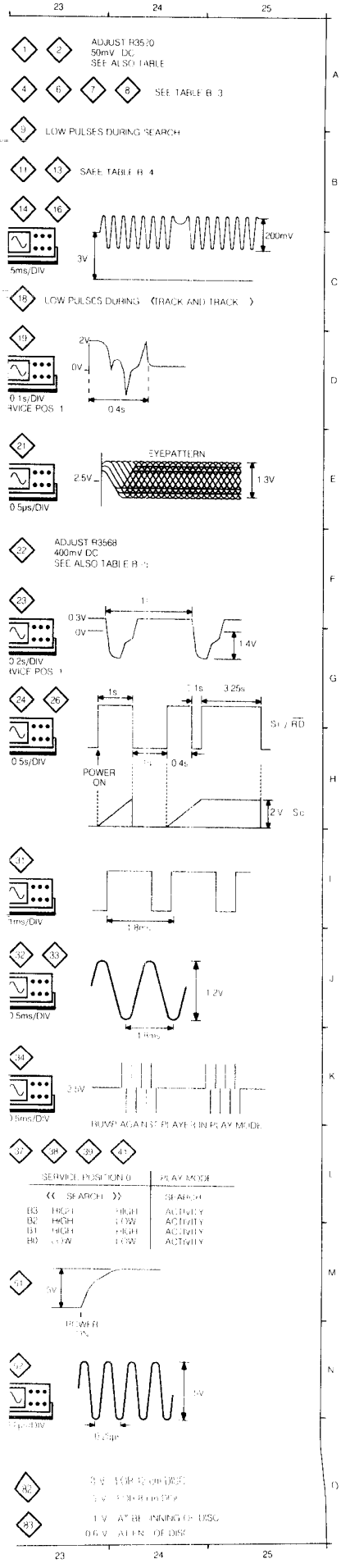
$\overline{\text{ATSB}}$	–	Attenuation of Audio level in Search position (Cueing)
ANI	–	Digital Data information on disc signal
CDL	–	Capacitor Damping Left
CDR	–	Capacitor Damping Right
CEFM	–	Clock Eight-to-Fourteen Modulator
CLAB	–	Clock signal Decoder-A to DAC
$\overline{\text{CLI}}$	–	I²S Serial Clock Input of DAC
CRI	–	Counter Reset Inhibit
DAAB	–	Data signal Decoder-A to DAC
DAI	–	I²S Serial Data Input of DAC
$\overline{\text{DEC}}$	–	Deemphasis Control of DAC
$\overline{\text{DEEM}}$	–	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
$\overline{\text{IREF}}$	–	Reference Current
$\overline{\text{MUTE}}$	–	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 Aknowledge
SCAB	–	Subcode clock Decoder-A to ADOC
SDAB	–	Subcode data Decoder-A to ADOC
SWAB/$\overline{\text{SSM}}$	–	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

SERVO CIRCUIT DIAGRAM



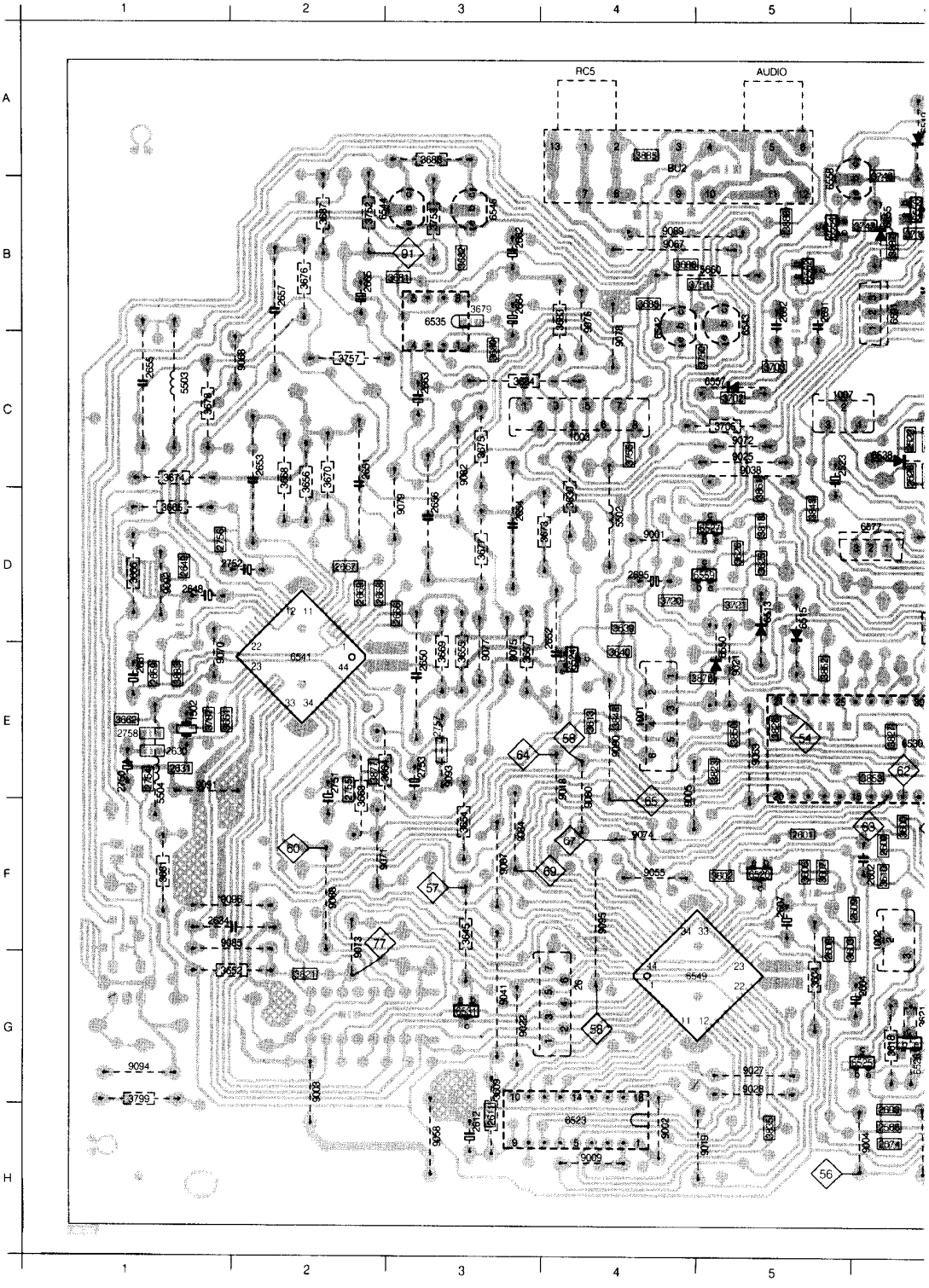

RADIAL DRIVE
FOCUS DRIVE
TURNTABLE MOTOR CONTROL
CPU
I/O PORTS
TRAY DETECTION
FUNCTION DECODER
3½ BIT DAC
WOBBLE OSCILLATOR 650Hz
GAIN INTEGRATING AMPLIFIER
OFFSET INTEGRATING AMPLIFIER
RADIAL ERROR PROCESSOR
ANTI SKATING
LAG HOLD
TO RADIAL MOTOR VIA FLEX PRINT
TO FOCUS MOTOR VIA FLEX PRINT
TO TURNTABLE MOTOR CIRCUIT
FOCUS OFFSET
PIN 11 IC6530
PRS 06693 T02/9024



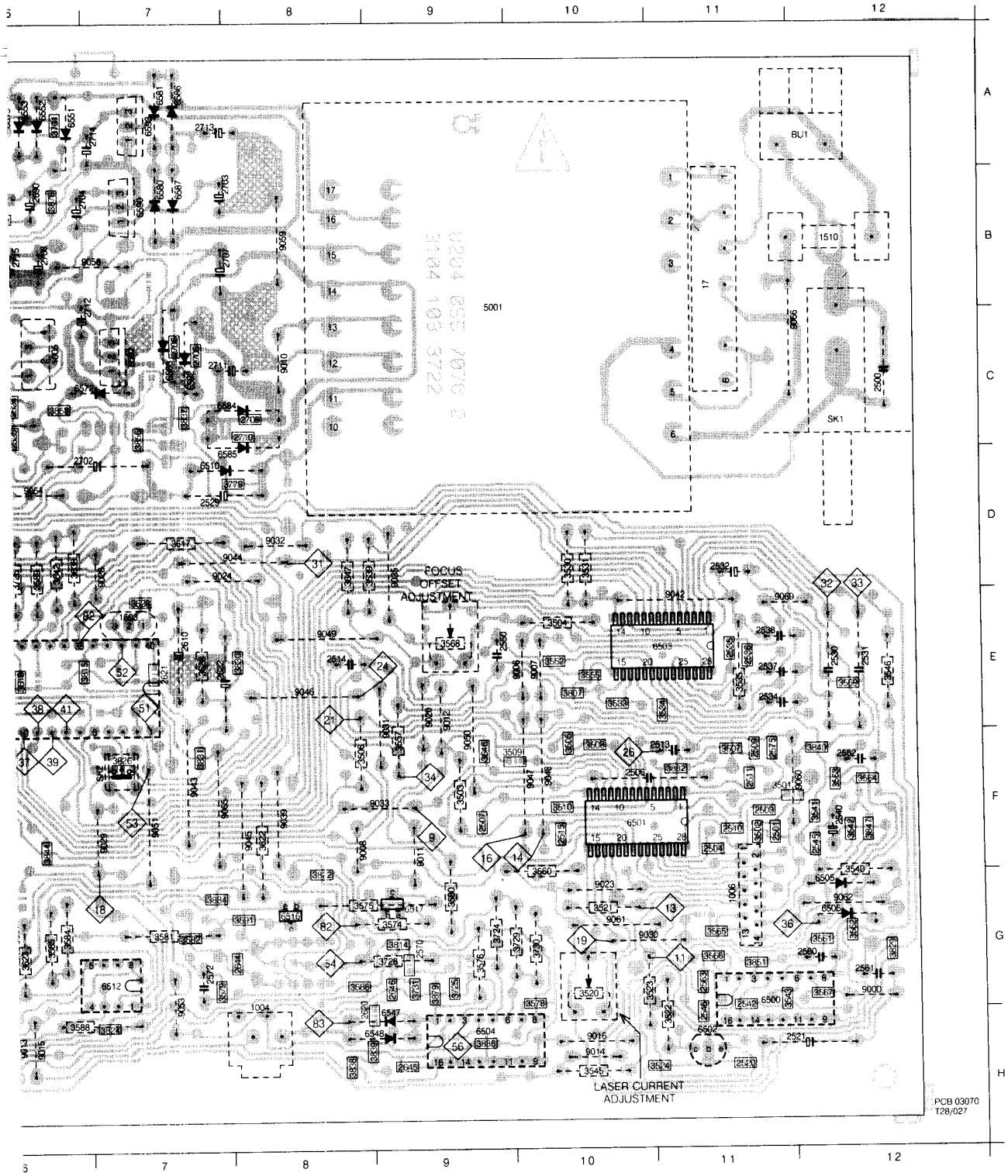
5K2	B14
1001	K1
1002	K1
1003	K1
1503	B10
2501	G2
2503	F5
2504	G3
2506	F5
2507	F6
2509	F8
2510	G8
2511	F8
2513	J10
2514	F7
2515	I 11
2520	K3
2521	K3
2530	E16
2531	E16
2532	J16
2534	D18
2535	J15
2536	J15
2537	J13
2538	E14
2540	F21
2542	L12
2545	F20
2546	K12
2550	I 20
2560	K11
2561	M9
2562	M13
2563	L13
2566	N15
2570	M19
2572	N18
2574	N15
2575	H9
2610	B9
2621	B9
2622	B7
2693	M16
3501	F3
3502	G3
3503	E4
3504	E5
3505	F7
3506	F6
3507	F8
3508	F6
3509	L10
3510	J10
3520	M3
3521	L3
3522	J3
3523	K3
3524	K3
3530	E15
3531	E15
3533	H19
3534	D18
3535	E13
3539	G11
3540	G20
3541	G20
3542	F21
3543	F19
3545	K12
3546	L12
3552	I 20
3555	H20
3557	I 20
3560	L10
3561	L11
3562	M11
3563	M14
3564	M13
3565	L13
3566	L13
3567	L11
3568	M12
3569	M11
3574	N14
3575	O15
3576	M19
3578	N19
3579	N18
3580	O14
3581	N17
3582	N17
3584	M16
3585	L15
3586	O13
3588	N14
3589	M14
3591	N17
3618	A11
3621	A12
3622	A12
3623	B12
3627	B9
3628	B8
3629	B10
3638	A14
3646	E7
3647	E10
3807	H20
3814	N18
3815	E8
3824	N4
3826	J11
3829	M10
3831	B8
3840	D17
3847	L14
3851	L10
3861	A12
3879	N20
3882	G8
3884	O17
6500	E19
6500	K11
6502	K3
6503	F11
6504	M19
6505	F20
6506	F20
6512	N15
6516	N17
6517	N14
6525	B11
6526	B12
6530	C5
6547	M20
6548	N20

MAIN PANEL SOLDER SIDE

17	B11	2507	F9	2537	E11	2608	G5	2655	C1	2705	C7	3502	F11	3541	F12	3578	G10	3618	G6	3
26	G4	2509	F11	2538	E11	2609	F6	2656	D3	2706	C7	3503	F9	3542	F12	3579	G7	3619	E6	3
BU1	A12	2510	F11	2540	F12	2610	E7	2657	B2	2707	B8	3504	E10	3543	H11	3580	G9	3621	G6	3
BU2	A4	2511	F11	2542	H11	2611	H3	2659	E1	2708	B6	3505	F10	3545	H10	3581	G7	3622	F8	3
SK1	C12	2513	F10	2545	F12	2612	H3	2661	E1	2709	C8	3506	F8	3546	E12	3582	G7	3623	G6	3
SK2	F7	2514	E8	2546	H11	2620	H8	2662	B3	2710	C8	3507	F11	3552	E10	3584	G6	3625	D5	3
1001	E4	2515	F10	2550	E9	2621	E7	2663	C3	2711	C7	3508	F10	3555	E10	3585	G6	3626	D5	3
1002	F6	2520	H11	2560	G12	2622	E7	2664	B3	2712	C7	3509	F9	3557	F9	3586	G8	3628	E7	3
1003	C4	2521	H11	2561	G12	2630	E1	2665	B2	2713	A7	3510	F10	3560	G10	3588	H6	3629	E7	3
1004	G8	2522	C6	2562	F12	2631	E1	2666	D3	2714	A7	3520	G10	3561	G12	3589	D6	3630	D4	3
1005	C6	2523	C5	2563	G11	2634	F1	2667	D2	2715	B6	3521	G10	3562	G12	3591	G8	3638	D6	3
1006	G11	2524	C6	2566	H6	2644	G8	2668	D2	2750	E1	3522	H11	3563	F12	3600	F6	3639	D4	3
1007	C5	2525	C6	2570	G9	2645	H9	2669	D2	2751	E2	3523	G10	3564	F12	3602	F5	3640	E4	3
1502	E1	2526	C6	2572	G7	2646	G9	2690	B6	2752	D1	3524	H10	3565	G11	3603	G6	3642	D6	3
1503	E7	2529	D7	2574	H6	2648	D1	2691	B5	2753	E3	3530	D10	3566	G11	3604	G5	3645	F3	3
1510	B12	2530	E12	2575	F11	2649	D1	2692	B5	2754	E1	3531	D10	3567	G12	3605	F5	3646	F9	3
2500	C12	2531	E12	2600	F6	2650	E3	2693	H6	2755	F2	3533	E10	3568	E9	3607	F5	3647	D8	3
2501	F11	2532	D11	2601	F5	2651	C2	2695	D4	2756	D1	3534	E11	3569	E12	3609	G3	3651	E1	3
2503	F11	2534	E11	2602	F6	2652	E4	2702	D6	2757	E3	3535	E11	3574	G9	3610	F6	3652	G1	3
2504	F11	2535	E11	2604	G6	2653	C2	2703	B8	2758	E1	3539	D9	3575	G8	3613	E4	3654	F3	3
2506	F10	2536	E11	2607	F5	2654	D3	2704	B7	3501	F11	3540	G12	3576	G9	3617	D7	3655	E3	3

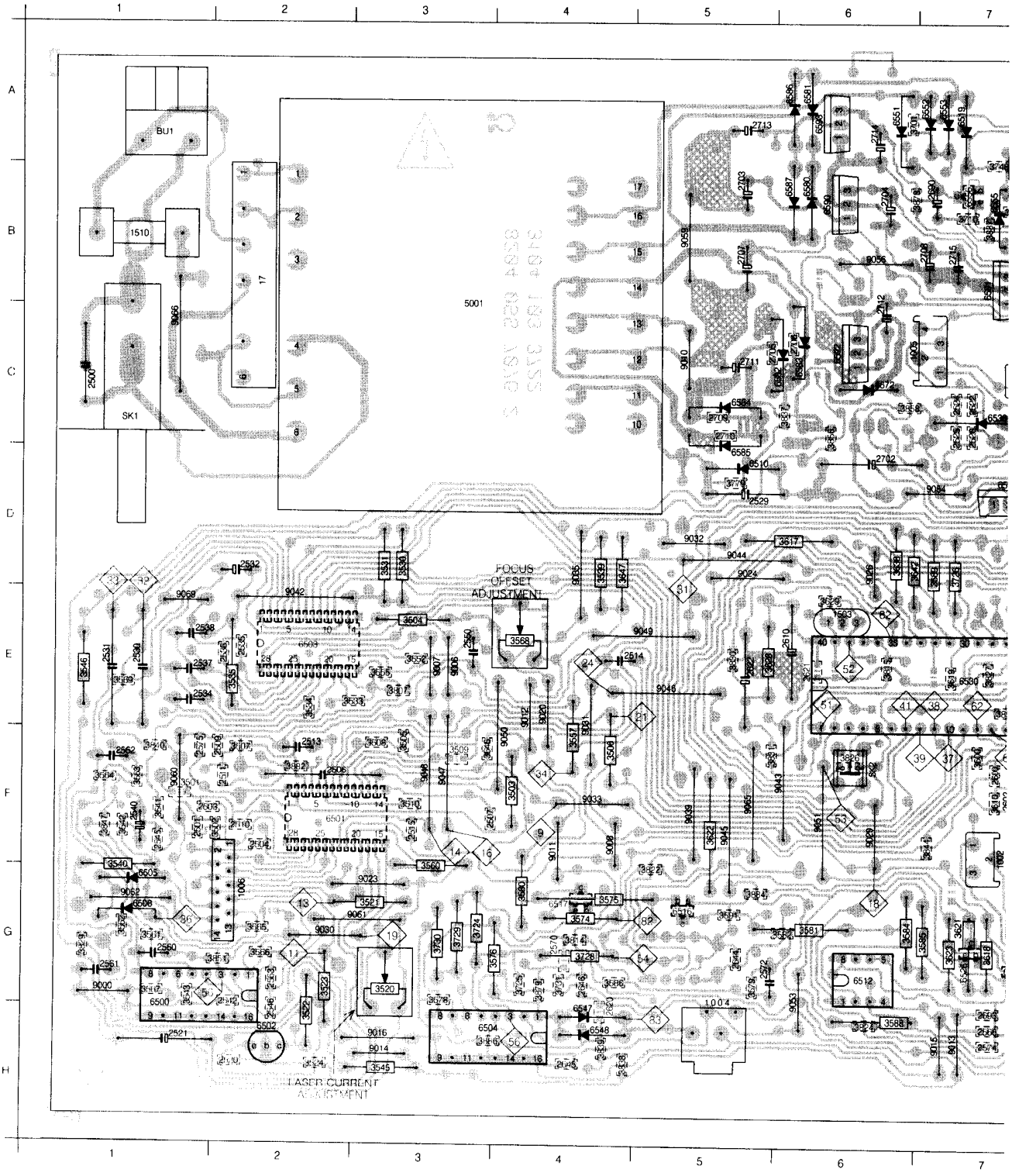


656 D2	3683 B4	3748 B6	3829 G12	3878 B6	6510 D7	6545 B3	6584 C7	9013 H6	9038 C5	9062 G12	9087 F3
661 F1	3684 C3	3750 C5	3830 E8	3879 G9	6512 G7	6547 H9	6585 D7	9014 H10	9039 F8	9063 E5	9088 F2
662 E1	3685 B4	3751 B4	3831 F7	3882 F11	6513 D5	6548 H8	6586 A7	9015 H6	9041 G3	9065 F7	9089 B4
663 F2	3686 B4	3752 B2	3835 H5	3883 E1	6515 D5	6549 G4	6587 B7	9016 H10	9042 E11	9066 C11	9090 E4
664 E3	3687 B2	3753 B3	3837 C7	3884 G7	6516 G8	6550 E5	6590 B7	9018 E4	9043 F7	9067 B4	9091 E1
665 D1	3688 A3	3755 C4	3838 H8	3885 A4	6517 G9	6551 A6	6591 B6	9019 H5	9044 D7	9068 C2	9092 D1
666 D1	3701 A6	3757 C2	3839 H9	3886 H9	6519 A6	6552 A6	6592 C7	9020 E9	9045 F8	9069 E11	9093 E3
667 E3	3702 C5	3779 D7	3840 F12	3887 B6	6520 F5	6553 A6	6593 A7	9021 E5	9046 E8	9070 E1	9094 G1
668 D2	3703 C5	3787 E1	3843 D5	3888 B5	6523 H4	6554 B5	9000 G12	9022 G3	9047 F10	9071 F3	9095 F4
669 E3	3705 C5	3799 G1	3844 F6	5001 C9	6524 E4	6555 B6	9001 D4	9023 G10	9048 F10	9072 C5	9096 F1
670 C2	3710 B6	3807 E10	3847 F12	5502 D4	6525 G5	6556 B6	9002 H4	9024 D7	9049 E8	9073 G2	
673 D4	3720 D4	3814 G9	3848 E4	5503 C1	6526 G6	6557 C5	9003 G2	9025 C5	9050 F9	9074 F4	
674 C1	3721 D5	3815 E7	3850 E5	5504 F1	6527 D5	6558 B5	9004 H6	9026 D7	9051 F7	9075 E3	
675 C3	3724 G9	3818 D5	3851 G11	5660 B5	6530 E6	6559 D4	9005 F4	9027 G5	9053 H7	9076 B4	
676 B2	3725 G9	3821 G2	3852 E5	6500 G11	6531 G3	6562 B5	9006 E10	9028 G5	9054 D6	9077 E3	
677 D3	3726 D6	3822 G8	3853 E6	6501 F10	6535 B3	6572 C6	9007 E10	9029 F7	9055 F4	9078 C4	
678 C1	3728 G9	3823 E5	3856 C7	6502 H11	6538 C6	6577 D6	9008 F8	9030 G10	9056 B7	9079 D3	
679 B3	3729 G10	3824 H7	3858 C6	6503 E11	6541 E2	6580 B7	9009 H4	9031 F9	9058 H3	9080 F4	
680 C3	3730 G10	3826 F7	3861 D5	6504 H9	6542 C4	6581 A7	9010 C8	9032 D8	9059 B8	9082 C3	
681 B3	3731 G9	3827 E6	3876 E4	6505 G12	6543 C5	6582 C7	9011 F9	9033 F8	9060 F12	9084 F3	
682 B3	3747 B6	3828 E5	3877 E2	6506 G12	6544 B3	6583 C7	9012 E9	9035 D9	9061 G10	9085 F1	



MAIN PANEL COMPONENT SIDE

17	B2	2507	F4	2537	E1	2608	G7	2655	C12	2705	C5	3502	F2	3541	F1	3578	G3	3618	G7
26	G9	2509	F2	2538	E1	2609	F7	2656	D10	2706	C6	3503	F4	3542	F1	3579	G5	3619	E7
BU1	A1	2510	F2	2540	F1	2610	E6	2657	B11	2707	B5	3504	E3	3543	H1	3580	G4	3621	G7
BU2	A8	2511	F2	2542	H2	2611	H10	2659	E12	2708	B7	3505	F3	3545	H3	3581	G6	3622	F5
SK1	C1	2513	F2	2545	F1	2612	H10	2661	E12	2709	C5	3506	F4	3546	E1	3582	G5	3623	G7
SK2	F6	2514	E4	2546	H2	2620	H4	2662	B9	2710	C5	3507	F2	3552	E3	3584	G6	3625	D8
1001	E9	2515	F3	2550	E3	2621	E6	2663	C10	2711	C5	3508	F3	3555	E3	3585	G7	3626	D8
1002	F7	2520	H2	2560	G1	2622	E5	2664	B9	2712	C6	3509	F3	3557	F4	3586	G4	3628	E5
1003	C9	2521	H1	2561	G1	2630	E12	2665	B10	2713	A5	3510	F3	3560	G3	3588	H6	3629	E6
1004	G5	2522	C7	2562	F1	2631	E12	2666	D10	2714	A6	3520	G3	3561	G1	3589	D7	3630	D9
1005	C6	2523	C7	2563	G2	2634	F11	2667	D10	2715	B7	3521	G3	3562	G1	3591	G5	3638	D6
1006	G2	2524	C7	2566	H7	2644	G5	2668	D10	2750	E12	3522	H2	3563	F1	3600	F7	3639	D9
1007	C7	2525	C7	2570	G4	2645	H4	2669	D10	2751	E11	3523	G2	3564	F1	3602	F8	3640	E9
1502	E12	2526	C7	2572	G5	2646	G4	2690	B7	2752	D11	3524	H2	3565	G2	3603	G7	3642	D7
1503	E6	2529	D5	2574	H7	2648	D11	2691	B7	2753	E10	3530	D3	3566	G2	3604	G8	3645	F10
1510	B1	2530	E1	2575	F1	2649	D12	2692	B8	2754	E12	3531	D3	3567	G1	3605	F8	3646	F3
2500	C1	2531	E1	2600	F7	2650	E10	2693	H7	2755	F11	3533	E2	3568	E4	3607	F7	3647	D4
2501	F1	2532	D2	2601	F8	2651	C10	2695	D9	2756	D11	3534	E2	3569	E1	3609	G10	3651	E11
2503	F1	2534	E1	2602	F7	2652	E9	2702	D6	2757	E10	3535	E2	3574	G4	3610	F7	3652	G11
2504	F2	2535	E2	2604	G7	2653	C11	2703	B5	2758	E12	3539	D4	3575	G4	3613	E9	3654	F10
2506	F2	2536	E2	2607	F8	2654	D9	2704	B6	3501	F1	3540	G1	3576	G4	3617	D6	3655	E10



748 B7
750 C8
751 B8
752 B10
753 B10
755 C9
757 C10
779 D5
787 E11
799 G12
807 E3
814 G4
815 E6
818 D8
821 G11
822 G5
823 E8
824 H6
826 F6
827 E7
828 E8

3829 G1
3830 E5
3831 F5
3835 H8
3837 C6
3838 H4
3839 H4
3840 F1
3843 D8
3844 F7
3847 F1
3848 E9
3850 E8
3851 G1
3852 E7
3853 E7
3856 C6
3858 C6
3861 D8
3876 E8
3877 E10

3878 B7
3879 G4
3882 F2
3883 E12
3884 G5
3885 A9
3886 H3
3887 B7
3888 B8
5001 C3
5502 D9
5503 C12
5504 F12
5660 B8
6500 H1
6501 F2
6502 H2
6503 E2
6504 H3
6505 G1
6506 G1

6510 D5
6512 G6
6513 D8
6515 D8
6516 G5
6517 G4
6519 A7
6520 F8
6523 H9
6524 E9
6525 G7
6526 G7
6527 D8
6530 E7
6531 G10
6535 B10
6538 C7
6541 E11
6542 C9
6543 C8
6544 B10

6545 B10
6547 H4
6548 H4
6549 G8
6550 E8
6551 A6
6552 A7
6553 A7
6554 B7
6555 B7
6556 B7
6557 C8
6558 B7
6559 D8
6562 B8
6572 C6
6577 D7
6580 B6
6581 A6
6582 C6
6583 C6

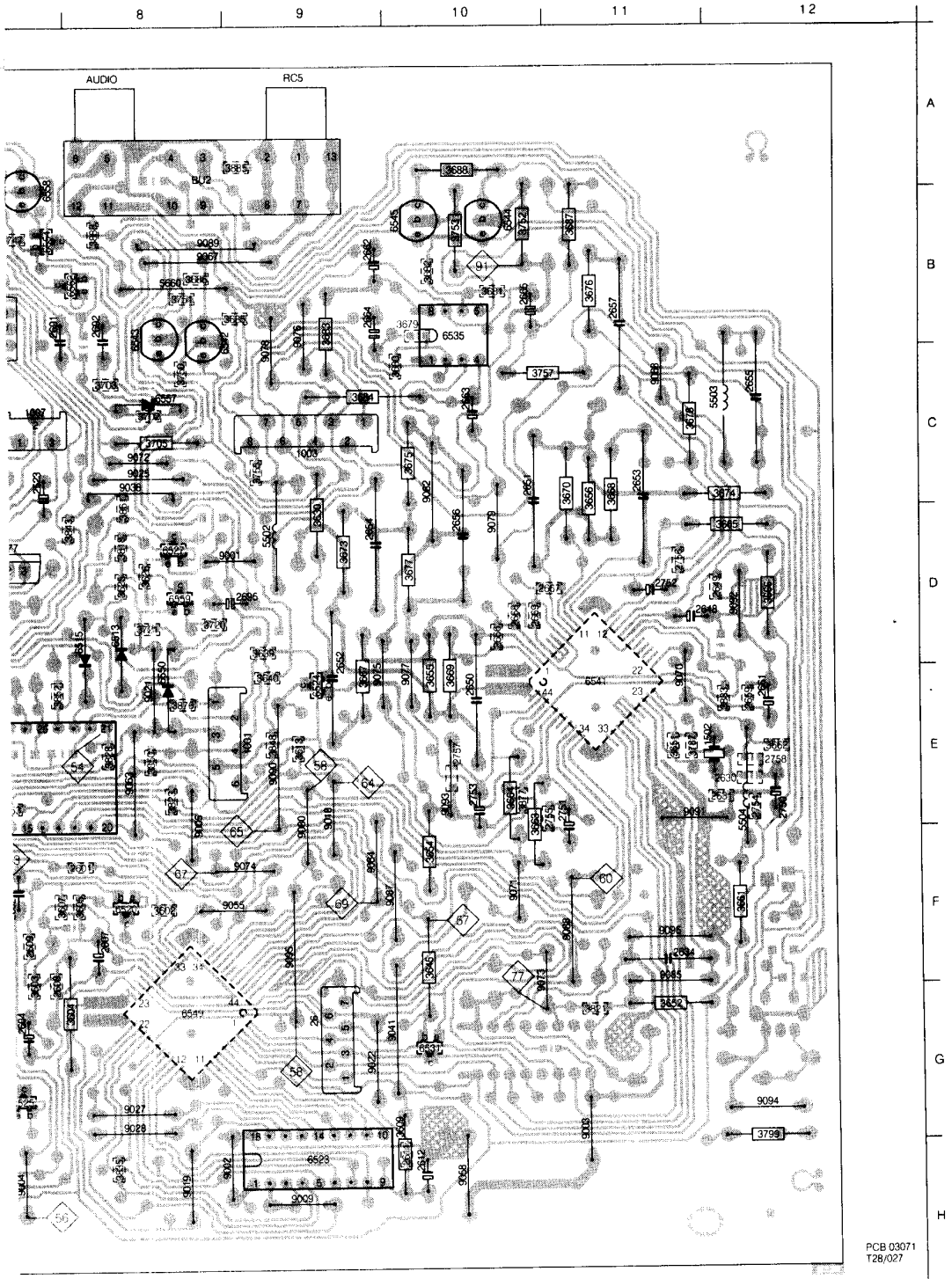
6584 C5
6585 D5
6586 A6
6587 B6
6590 B6
6591 B7
6592 C6
6593 A6
9000 G1
9001 D8
9002 H8
9003 G11
9004 H7
9005 F8
9006 E3
9007 E3
9008 F4
9009 H9
9010 C5
9011 F4
9012 E4

9013 H7
9014 H3
9015 H7
9016 H3
9018 E9
9019 H8
9020 E4
9021 E8
9022 G9
9023 G3
9024 D5
9025 C8
9026 D6
9027 G8
9028 G8
9029 F6
9030 G2
9031 F4
9032 D5
9033 F4
9035 D4

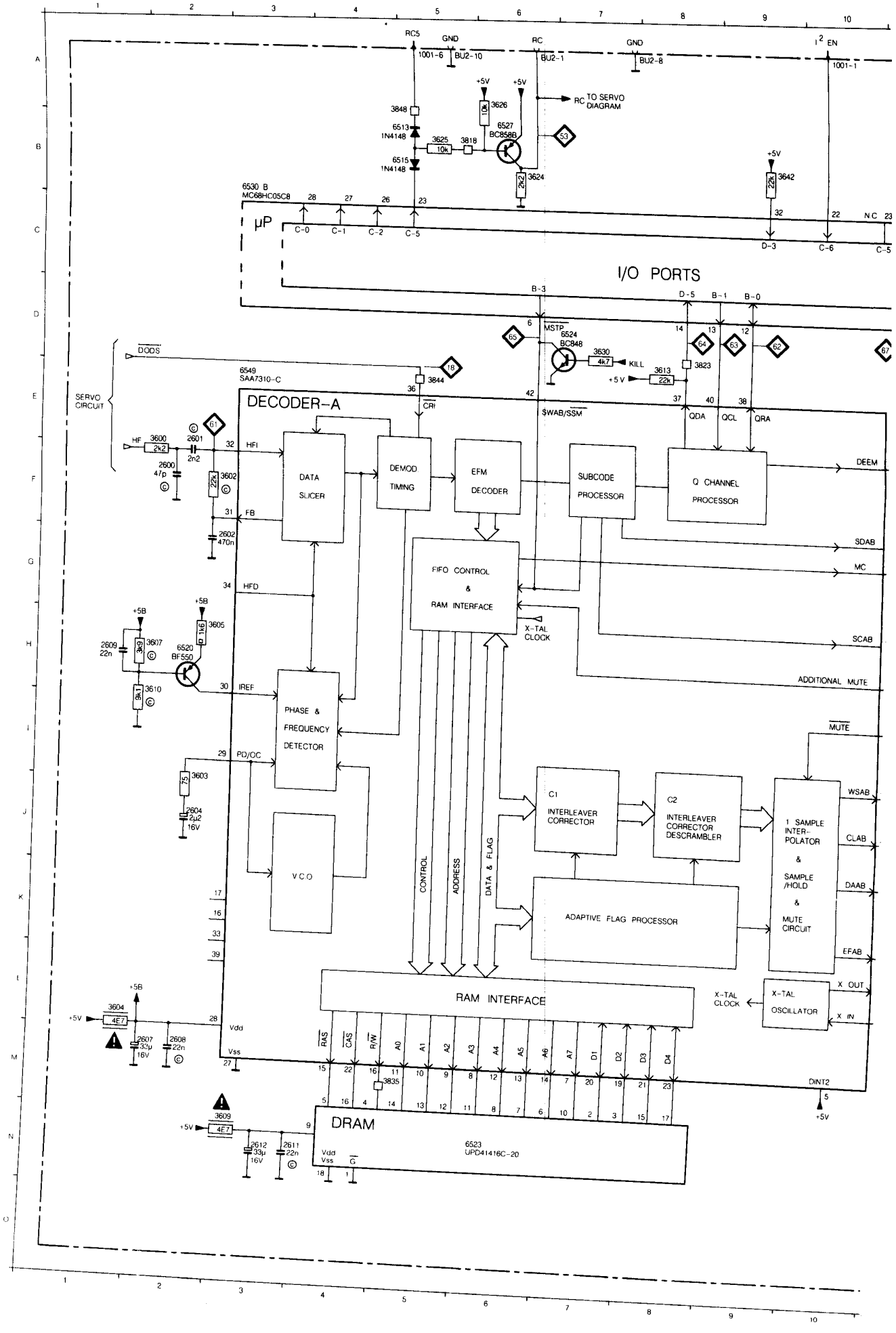
9038 C8
9039 F5
9041 G10
9042 E2
9043 F6
9044 D5
9045 F5
9046 E5
9047 F3
9048 F3
9049 E4
9050 F4
9051 F6
9053 H6
9054 D7
9055 F8
9056 B6
9058 H10
9059 B5
9060 F1
9061 G2

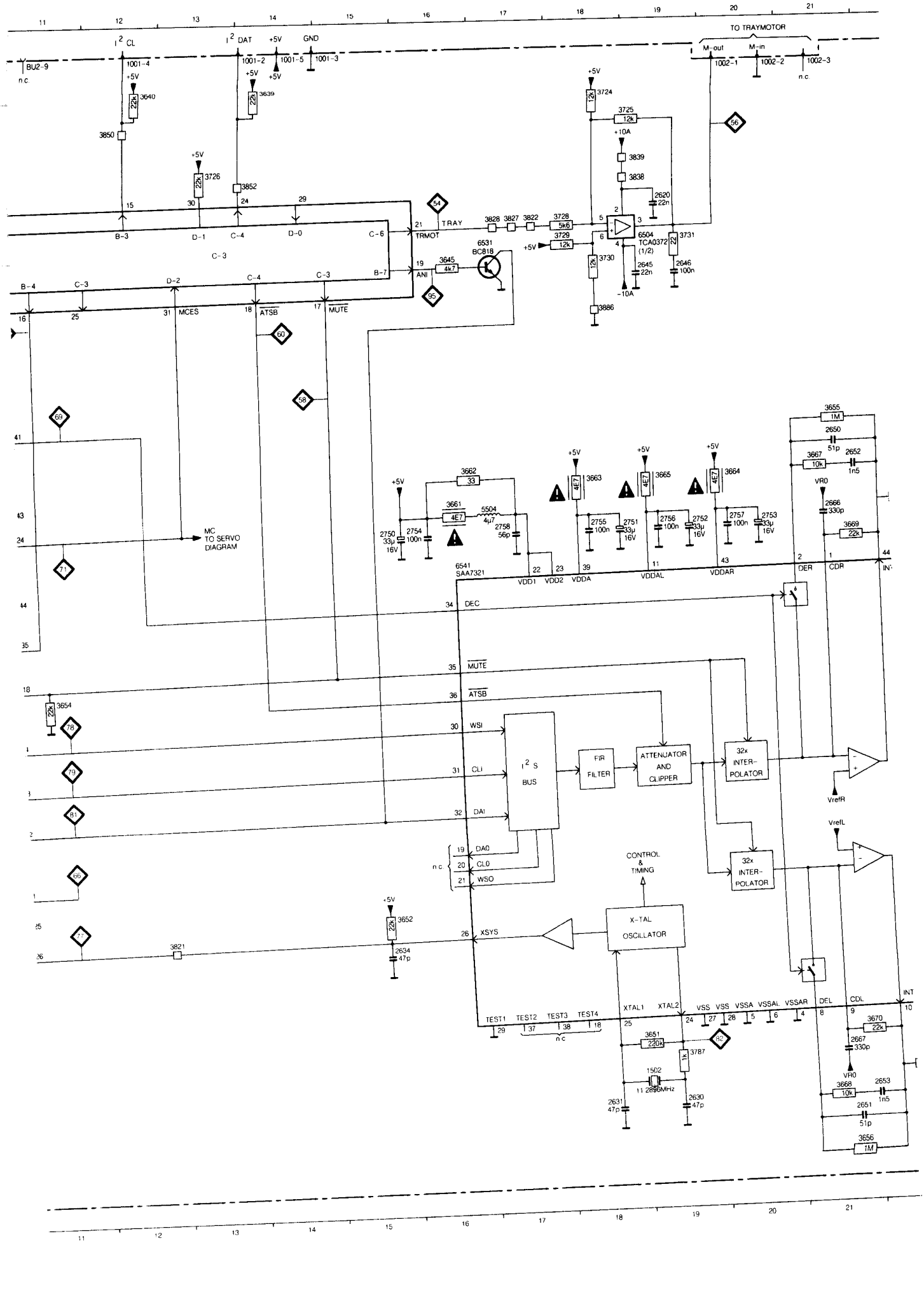
9062 G1
9063 E8
9065 F5
9066 C1
9067 B8
9068 C11
9069 E1
9070 E11
9071 F10
9072 C8
9073 G10
9074 F9
9075 E9
9076 B9
9077 E10
9078 C9
9079 D10
9080 F9
9082 C10
9084 F9
9085 F11

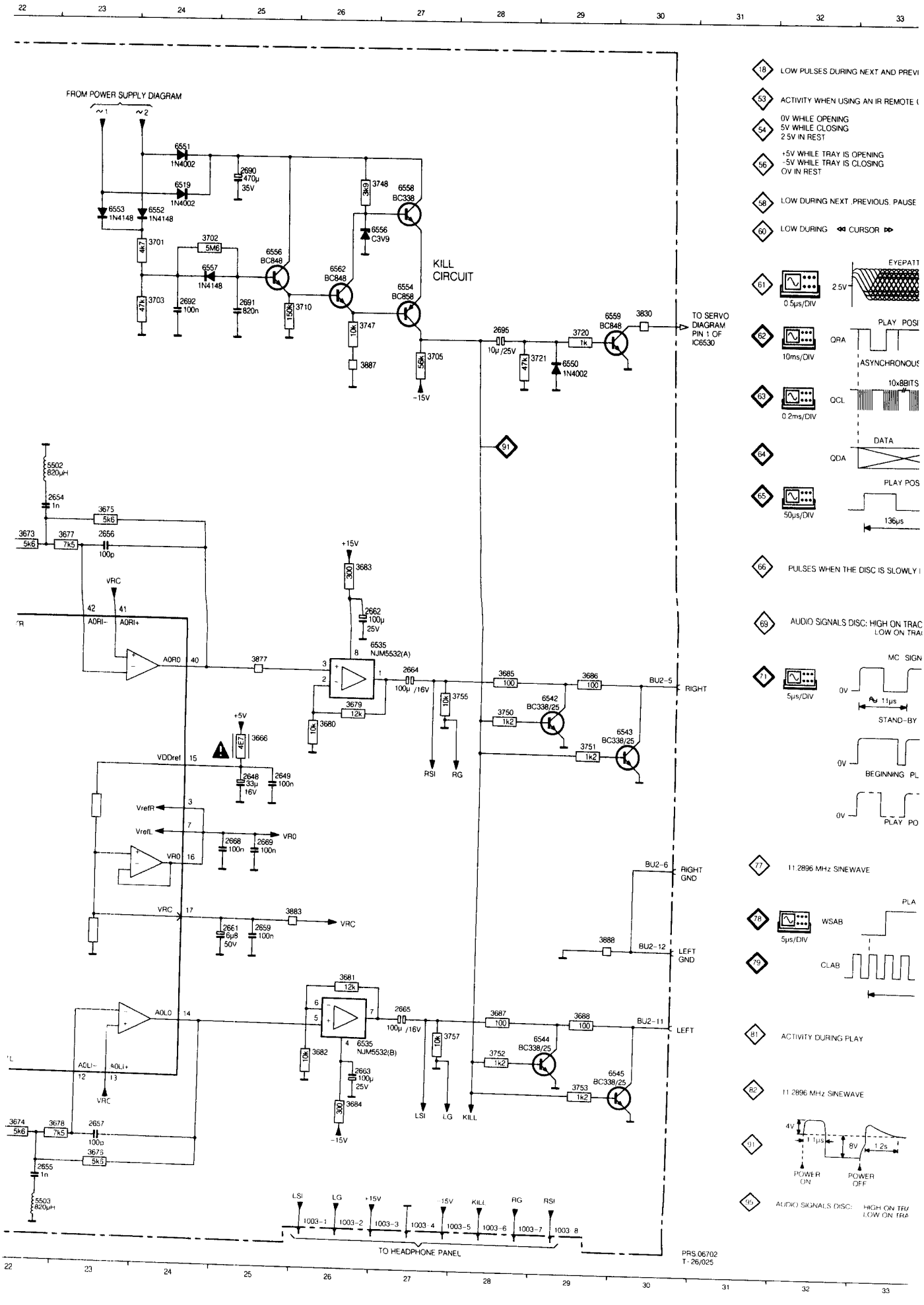
9087 F10
9088 F11
9089 B8
9090 E9
9091 E11
9092 D12
9093 E10
9094 G12
9095 F9
9096 F11

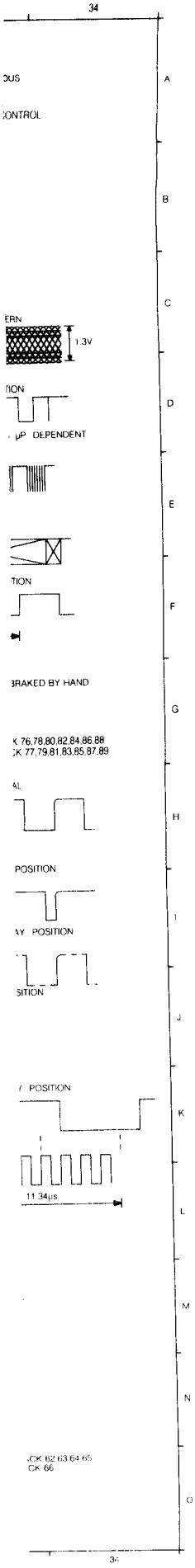


DECODER CIRCUIT DIAGRAM




TO TRAYMOTOR
M-out
M-in
I2 CL
I2 DAT
+5V
GND
TRAY
TRMOT
ANI
MCES
ATSB
MUTE
MC TO SERVO DIAGRAM
6541 SAA7321
VDD1
VDD2
VDDA
VDDAL
VDDAR
DER
CDR
DEC
WSI
CLI
DAI
I2S BUS
FIR FILTER
ATTENUATOR AND CLIPPER
32x INTER-POLATOR
VrefR
VrefL
DA0
CL0
WSO
CONTROL & TIMING
X-TAL OSCILLATOR
XSYS
XTAL1
XTAL2
VSS
VSSA
VSSAL
VSSAR
DEL
CDL
INT
TEST1
TEST2
TEST3
TEST4
6531 BC818
6504 TCA0372 (1/2)
+10A
-10A
VR0
11.2896MHz


FROM POWER SUPPLY DIAGRAM
KILL CIRCUIT
TO SERVO DIAGRAM PIN 1 OF IC6530
TO HEADPHONE PANEL
RIGHT
LEFT
RIGHT GND
LEFT GND
VRC
VR0
VrefR
VrefL
VDDref
LSI
LG
KILL
RG
RSI
+15V
-15V
NJM5532(A)
NJM5532(B)
BC338
BC848
BC858
BC338/25
1N4002
1N4148
C3V9
18 LOW PULSES DURING NEXT AND PREVI
53 ACTIVITY WHEN USING AN IR REMOTE (
54 0V WHILE OPENING 5V WHILE CLOSING 2.5V IN REST
56 +5V WHILE TRAY IS OPENING -5V WHILE TRAY IS CLOSING OV IN REST
58 LOW DURING NEXT ,PREVIOUS, PAUSE
60 LOW DURING ◀◀ CURSOR ▶▶
61 0.5µs/DIV 2.5V EYEPATT
62 10ms/DIV QRA PLAY POSI ASYNCHRONOUS
63 0.2ms/DIV QCL 10x8BITS
64 QDA DATA
65 50µs/DIV 136µs PLAY POS
66 PULSES WHEN THE DISC IS SLOWLY I
69 AUDIO SIGNALS DISC: HIGH ON TRAC LOW ON TRA
71 5µs/DIV 0V ≈ 11µs MC SIGN STAND-BY BEGINNING PL PLAY PO
77 11.2896 MHz SINEWAVE
78 5µs/DIV WSAB
79 CLAB PLA
81 ACTIVITY DURING PLAY
82 11.2896 MHz SINEWAVE
91 4V 11µs 8V 1.25 POWER ON POWER OFF
93 AUDIO SIGNALS DISC: HIGH ON TRA LOW ON TRA
PRS.06702 T-26/025



A
1502 N18
2600 F2
2601 E2
2602 G2
2604 J2
2607 M2
2608 M2
2609 H1
2611 N3
2612 N3
2620 C19
2630 N19
2631 N18
2634 L15

B
2645 D19
2646 D19
2648 I 25
2649 I 25
2650 F21
2651 O21
2652 F21
2653 N21
2654 F22
2655 O22

C
2656 G23
2657 N23
2659 K25
2661 K25
2662 G26
2663 M26
2664 H27
2665 L27
2666 G21
2667 N21

D
2668 J25
2669 J25
2690 B25
2691 D25
2692 D24
2695 D28
2750 G15
2754 G16
2755 G18

E
2756 G19
2757 G20
2758 G17
3600 E2
3602 F2
3603 J2
3604 L1
3605 H2
3607 H2
3609 N3

F
3610 I 2
3613 D8
3624 B6
3625 B5
3626 A6
3630 D7
3639 A14
3640 A12
3642 B9

G
3645 C16
3651 M19
3652 L15
3654 I 11
3655 E21
3656 O21
3661 F16
3662 F16
3663 F18

H
3664 F20
3665 F19
3666 I 25
3667 F21
3668 N21
3669 G21
3670 M21
3673 G22
3674 N22

I
3675 F23
3676 N23
3677 G23
3678 N23
3679 H26
3680 I 26
3681 L26
3682 M26
3683 G26
3684 N26

J
3685 H28
3686 H29
3687 L28
3688 L29
3701 C24
3702 C24
3703 D24
3705 D27
3710 D25

K
3720 D29
3721 D28
3724 A18
3725 B19
3726 B13
3728 C18
3729 C18
3730 C18
3731 C19

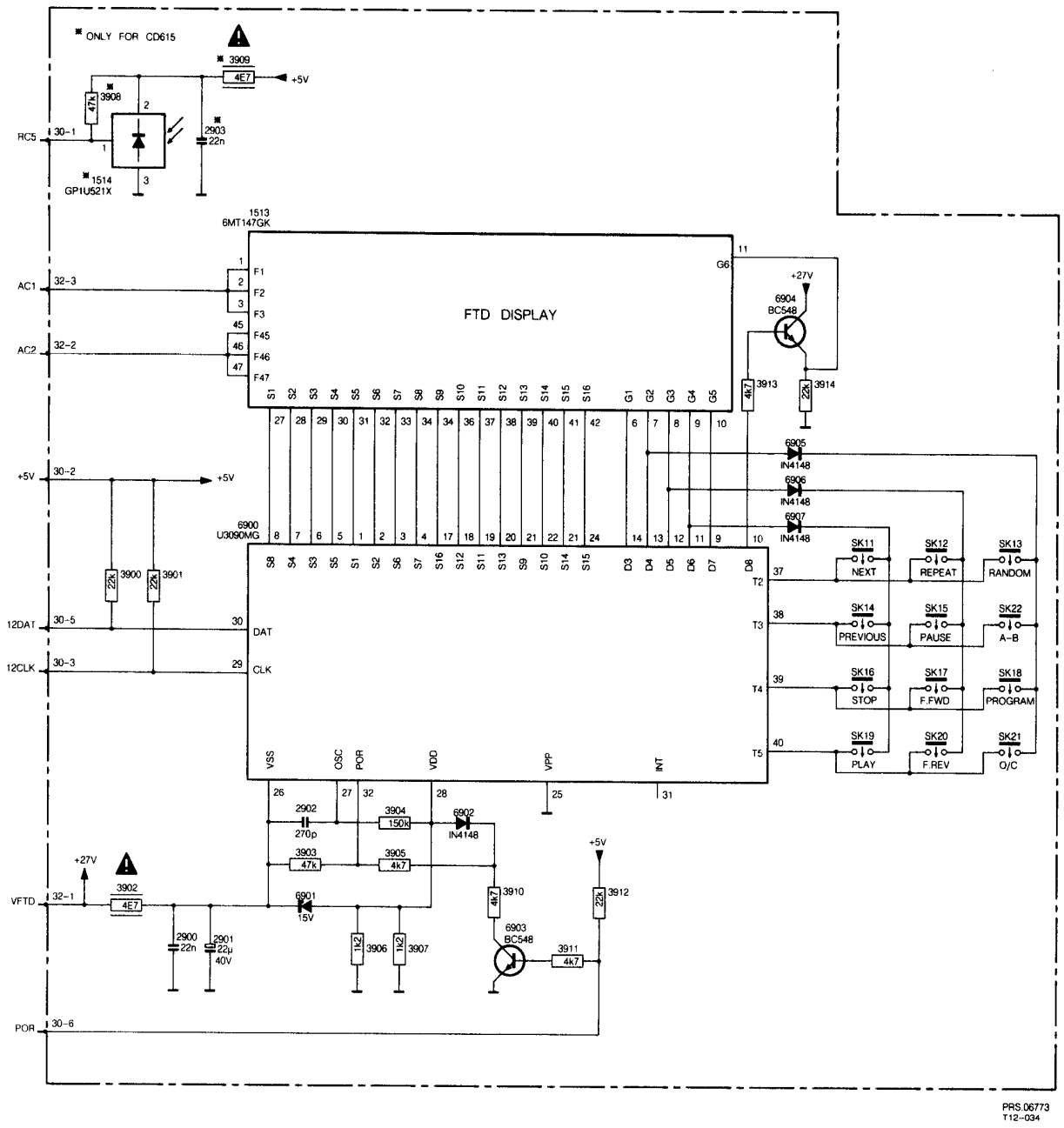
L
3747 D26
3748 B26
3750 I 28
3751 I 29
3752 M28
3753 M29
3755 H27
3757 M27
3787 N19

M
3818 B5
3821 L12
3822 C17
3823 D8
3827 C17
3828 C17
3830 D30
3835 M5
3838 B19
3839 B19

N
3844 E5
3848 A5
3850 B12
3852 B14
3877 M25
3883 K25
3886 D18
3887 D26
3888 K29
5502 F22
5503 O22
5504 G17

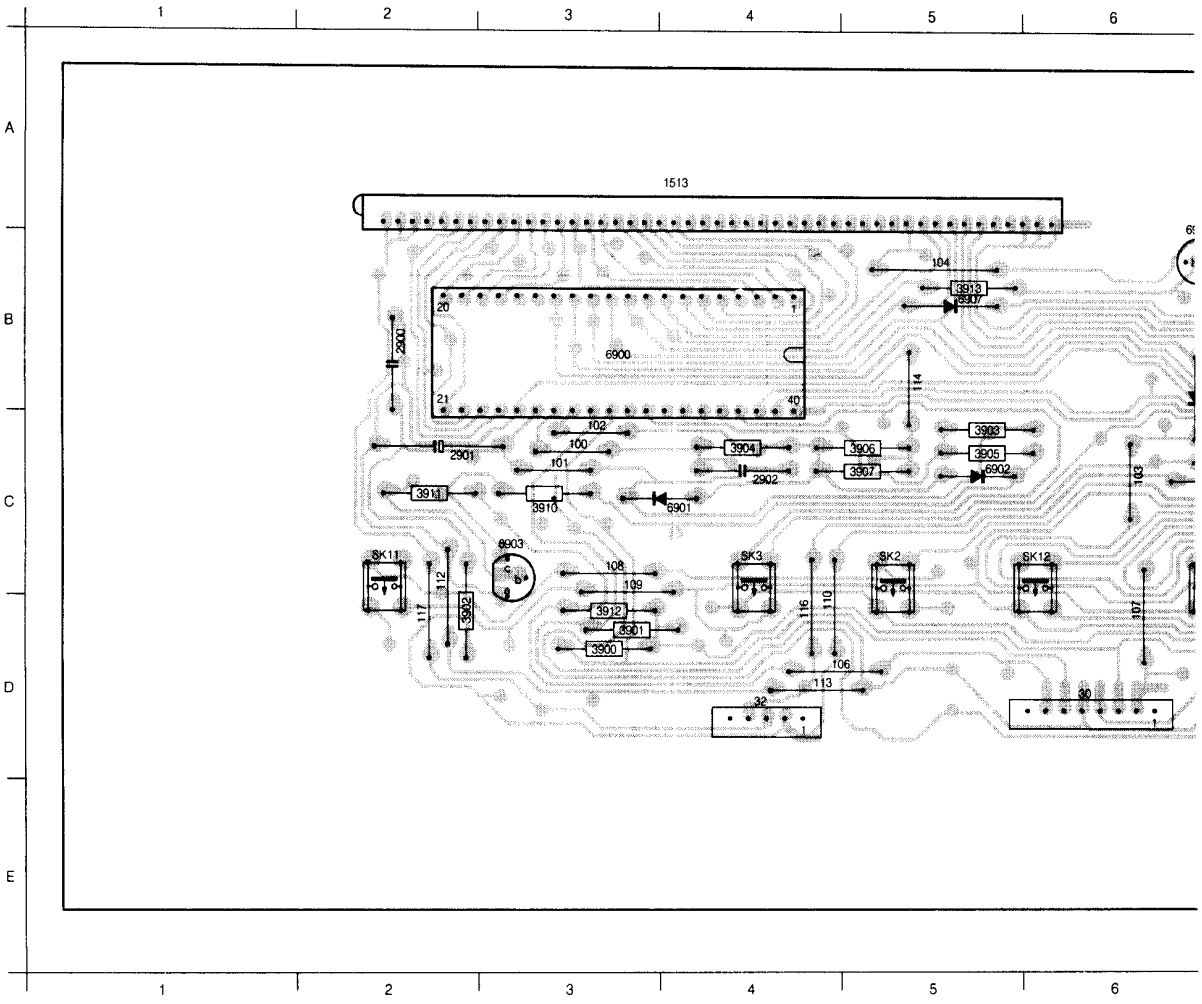
O
6513 B4
6515 B4
6519 B24
6520 H2
6523 N6
6524 D7
6527 B6
6530 B3
6531 C17
6535 H26
6535 M26
6541 G16
6542 H29
6543 I 30
6544 M29
6545 M30
6549 E3
6550 D29
6551 B24
6552 C24
6553 C23
6554 D27
6556 C25
6556 C26
6557 C24
6558 B27
6559 D29
6562 C26

DISPLAY CIRCUIT DIAGRAM

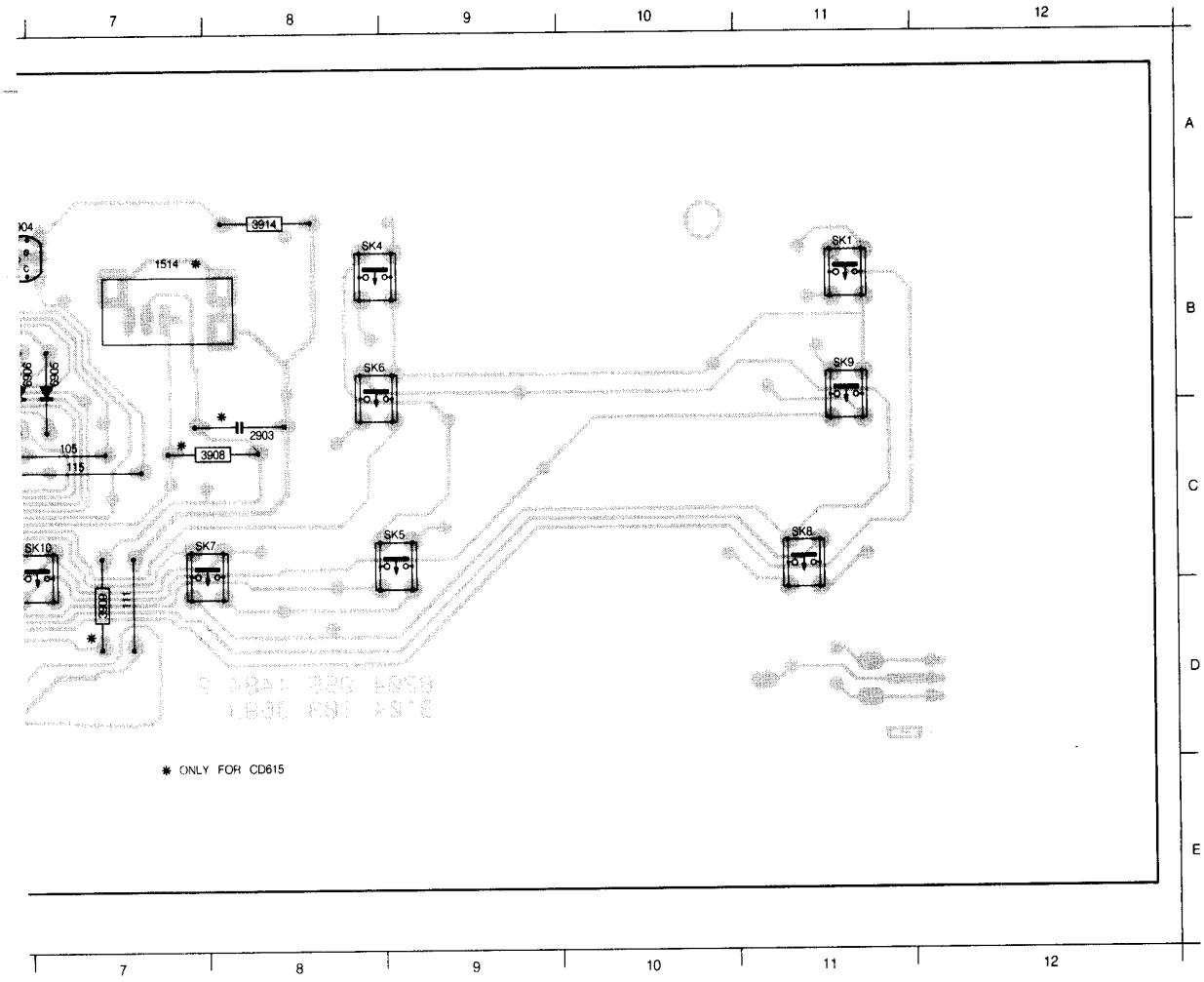


DISPLAY PANEL

30 D6	101 C3	104 B5	107 D6	110 D4	113 D4	116 D4	SK2 C5	SK5 C9	SK8 C11	1514 B7	2
32 D4	102 C3	105 C7	108 C3	111 D7	114 B5	117 D2	SK3 C4	SK6 B8	SK9 B11	2900 B2	2
100 C3	103 C6	106 D4	109 C3	112 D2	115 C7	SK1 B11	SK4 B8	SK7 C7	1513 A4	2901 C2	3



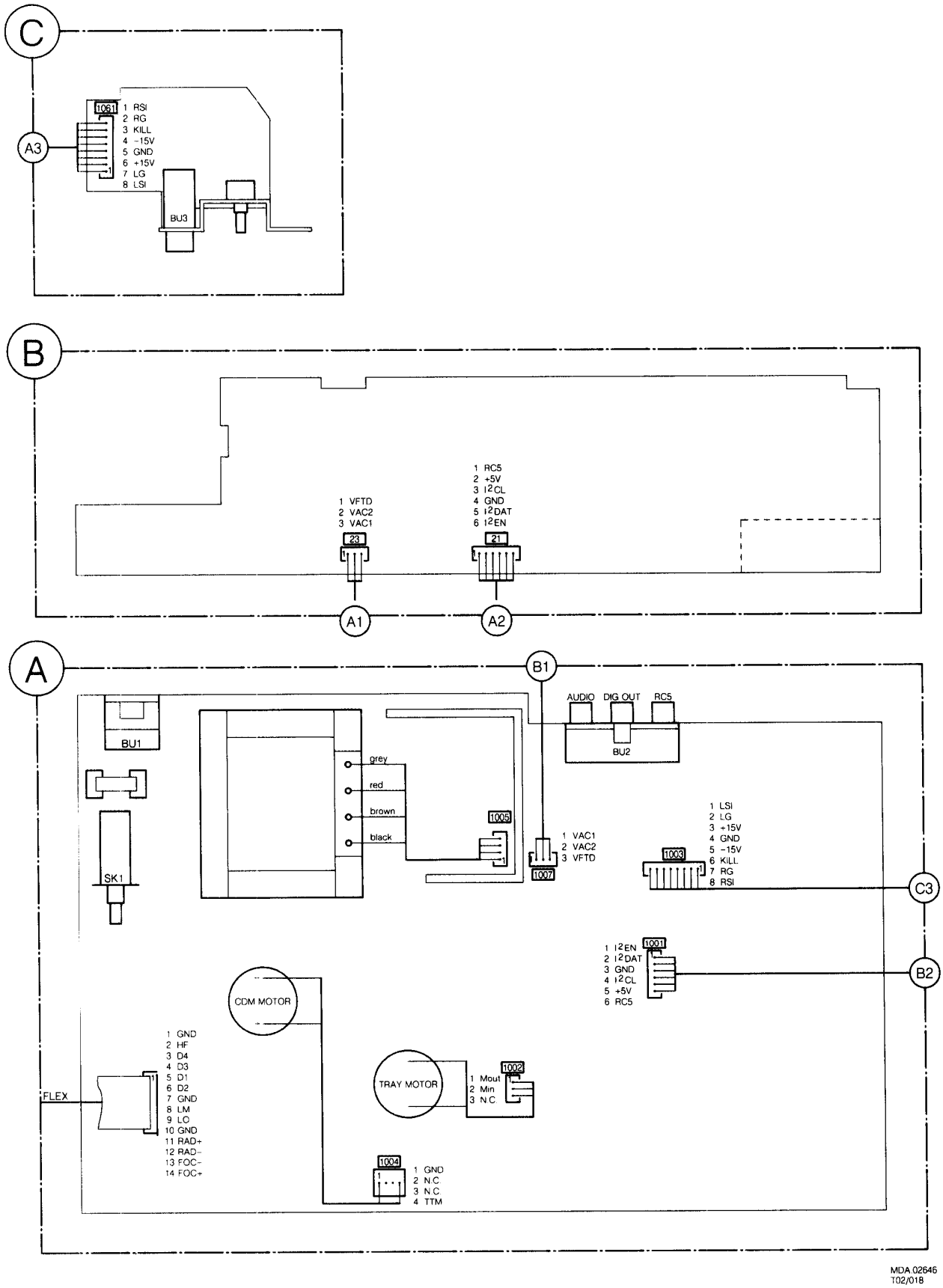
02 C4	3901 D3	3904 C4	3907 C5	3910 C3	3913 B5	6901 C4	6904 A6	6907 B5	SK11 C2
03 C8	3902 D2	3905 C5	3908 C7	3911 C2	3914 B8	6902 C5	6905 B7	ONLY E7	SK12 C6
00 D3	3903 C5	3906 C5	3909 D7	3912 D3	6900 B3	6903 C3	6906 B7	SK10 C6	



DISPLAY PARTSLIST

SK..	4822 276 12276	TACT SWITCH
1513	4822 130 90661	ISPLAY 6-MT-147GK
1514	4822 214 51772	RECEIVER GP1U521X
2900	4822 122 10166	22nF 30% 16V
2901	5322 124 21643	22µF 20% 40V
2902	4822 122 31465	270pF 10%
2903	4822 122 10166	22nF 30% 16V
3900	4822 051 10223	22k 2% 0,25W
3901	4822 051 10223	22k 2% 0,25W
3902	4822 052 10478	4,7Ω 5% 0,33W
3903	4822 050 24703	47k 1% 0,6W
3904	4822 050 21504	150k 1% 0,6W
3905	4822 116 52921	4,7k 1% 0,6W
3906	4822 051 10122	1,2k 2% 0,25W
3907	4822 051 10122	1,2k 2% 0,25W
3908	4822 050 24703	47k 1% 0,6W
3909	4822 052 10478	4,7Ω 5% 0,33W
3910	4822 116 52921	4,7k 1% 0,6W
3911	4822 116 52921	4,7k 1% 0,6W
3912	4822 051 10223	22k 2% 0,25W
3913	4822 116 52921	4,7k 1% 0,6W
3914	4822 051 10223	22k 2% 0,25W
6900	4822 209 72226	U3090
6901	4822 130 81086	BZX55-C15
6902	4822 130 30621	1N4148
6903	4822 130 40938	BC548
6904	4822 130 40938	BC548
6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148
6907	4822 130 30621	1N4148

WIRING DIAGRAM



MDA.02646
T02/018

PARTSLIST SERVO & DECODER PANEL

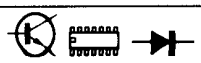
2500	4822 126 10454	3.3nF 20% 400V
2501	4822 122 33809	22nF 20% 50V
2503	4822 122 33809	22nF 20% 50V
2504	5322 122 34099	470pF 10% 63V
2506	4822 122 10166	22nF 30% 16V
2507	4822 122 33175	2.2nF 20% 50V
2509	5322 122 32531	100pF 5% 50V
2510	4822 122 33177	10nF 20% 50V
2511	4822 122 31746	1nF 5% 50V
2513	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% SMD
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	8.2µF 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 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 20% 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	4.7µF 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
2634	4822 122 10179	33pF 5% 50V
2645	4822 122 33809	22nF 20% 50V
2646	4822 122 33496	100nF 10% 63V
2648	4822 124 40272	33µF 20% 16V
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 20% 16V Bipolar
2665	4822 124 22339	100µF 20% 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 20% 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

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 Trimpot. 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
3533	4822 051 20512	5.1kΩ 5% 0.1W
3534	4822 051 20224	220kΩ 5% 0.1W
3535	4822 050 21203	12kΩ 1% 0.6W

3539	4822 051 10223	22kΩ 2% 0.25W
3540	4822 052 10478	4.7Ω 5% 0.33W
3541	4822 051 20682	6.8kΩ 5% 0.1W
3542	4822 051 20339	33Ω 5% 0.1W
3543	4822 051 20682	6.8kΩ 5% 0.1W
3545	4822 052 10108	1Ω 5% 0.33W
3546	4822 052 10108	1Ω 5% 0.33W
3552	4822 051 20182	1.8kΩ 5% 0.1W
3555	4822 051 20183	18kΩ 5% 0.1W
3557	4822 050 22004	200kΩ 1% 0.6W
3560	4822 050 21103	11kΩ 1% 0.6W
3561	4822 051 20154	150kΩ 5% 0.1W
3562	4822 051 20124	120kΩ 5% 0.1W
3563	4822 051 20563	56kΩ 5% 0.1W
3564	4822 051 20164	160kΩ 5% 0.1W
3565	4822 051 20279	27Ω 5% 0.1W
3566	4822 051 20229	22Ω 5% 0.1W
3567	4822 051 20829	82Ω 5% 0.1W
3568	4822 100 11193	22kΩ Trimpot. Lin.
3569	4822 051 20684	680kΩ 5% 0.1W
3574	4822 050 13303	33kΩ 1% 0.4W
3575	4822 116 52921	4.7kΩ 1% 0.6W
3576	4822 050 22004	200kΩ 1% 0.6W
3578	4822 051 20823	82kΩ 5% 0.1W
3579	4822 051 20154	150kΩ 5% 0.1W
3580	4822 116 52921	4.7kΩ 1% 0.6W
3581	4822 050 23302	3.3kΩ 1% 0.6W
3582	4822 051 20562	5.6kΩ 5% 0.1W
3584	5322 116 53658	91kΩ 1% 0.6W
3585	4822 050 21004	100kΩ 1% 0.6W
3586	4822 051 20684	680kΩ 5% 0.1W
3588	4822 050 24703	47kΩ 1% 0.6W
3589	4822 116 52921	4.7kΩ 1% 0.6W
3591	4822 051 20122	1.2kΩ 5% 0.1W
3600	4822 051 20222	2.2kΩ 5% 0.1W
3602	4822 051 20223	22kΩ 5% 0.1W
3603	4822 051 20759	75Ω 5% 0.1W
3604	4822 052 10478	4.7Ω 5% 0.33W
3605	4822 051 20162	1.6kΩ 5% 0.1W
3607	4822 051 20392	3.9kΩ 5% 0.1W
3609	4822 052 10478	4.7Ω 5% 0.33W
3610	4822 051 20912	9.1kΩ 5% 0.1W
3613	4822 051 20223	22kΩ 5% 0.1W
3617	4822 051 10223	22kΩ 5% 0.125W
3618	4822 050 21803	18kΩ 5% 0.125W
3621	4822 050 21803	18kΩ 1% 0.6W
3622	4822 050 24703	47kΩ 1% 0.6W
3623	4822 050 21803	18kΩ 1% 0.6W
3624	4822 051 20222	2.2kΩ 5% 0.1W
3625	4822 051 20103	10kΩ 5% 0.1W
3626	4822 051 20103	10kΩ 5% 0.1W
3627	4822 052 10478	4.7Ω 5% 0.33W
3628	4822 050 22004	200kΩ 1% 0.6W
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
3640	4822 051 20223	22kΩ 5% 0.1W
3642	4822 051 10223	22kΩ 2% 0.25W
3645	4822 116 52921	4.7kΩ 1% 0.6W
3646	4822 051 20223	22kΩ 5% 0.1W
3647	4822 051 10223	22kΩ 2% 0.25W
3651	4822 051 20224	220kΩ 5% 0.1W
3652	4822 051 10223	22kΩ 2% 0.25W
3654	4822 116 52921	4.7kΩ 5% 0.125W
3655	4822 116 52235	1MΩ 5% 0.5W
3656	4822 116 52235	1MΩ 5% 0.5W
3663	4822 052 10478	4.7Ω 5% 0.33W
3664	4822 052 10478	4.7Ω 5% 0.33W
3665	4822 052 10478	4.7Ω 5% 0.33W
3666	4822 052 10478	4.7Ω 5% 0.33W
3667	4822 050 21003	10kΩ 1% 0.6W
3668	4822 050 21003	10kΩ 1% 0.6W
3669	4822 050 22203	22kΩ 1% 0.6W
3670	4822 050 22203	22kΩ 1% 0.6W
3673	4822 050 25602	5.6kΩ 1% 0.6W
3674	4822 050 25602	5.6kΩ 1% 0.6W
3675	4822 050 25602	5.6kΩ 1% 0.6W
3676	4822 050 25602	5.6kΩ 1% 0.6W
3677	4822 050 27502	7.5kΩ 1% 0.6W
3678	4822 050 27502	7.5kΩ 1% 0.6W
3679	4822 051 20163	16kΩ 5% 0.1W
3680	4822 051 20103	10kΩ 5% 0.1W
3681	4822 051 20163	16kΩ 5% 0.1W
3682	4822 051 20103	10kΩ 5% 0.1W
3683	4822 052 10339	33Ω 5% 0.33W
3684	4822 052 10339	33Ω 5% 0.33W
3685	4822 051 20101	100Ω 5% 0.1W
3686	4822 051 20101	100Ω 5% 0.1W
3687	4822 051 10101	100Ω 2% 0.25W
3688	4822 051 10101	100Ω 2% 0.25W
3701	4822 051 20472	4.7kΩ 5% 0.1W
3702	4822 116 82595	5.6MΩ 10% 0.1W
3703	4822 051 20473	47kΩ 5% 0.1W
3705	4822 050 25603	56kΩ 1% 0.6W
3710	4822 051 20154	150kΩ 5% 0.1W
3720	4822 051 10102	1kΩ 2% 0.25W
3721	4822 051 20473	47kΩ 5% 0.1W
3724	4822 050 21203	12kΩ 1% 0.6W
3725	4822 051 20163	16kΩ 5% 0.1W
3726	4822 051 10223	22kΩ 5% 0.125W
3728	4822 050 15602	5.6kΩ 1% 0.4W
3729	4822 050 21203	12kΩ 1% 0.6W
3730	4822 050 21203	12kΩ 1% 0.6W
3731	4822 051 20229	22Ω 5% 0.1W
3747	4822 051 20103	10kΩ 5% 0.1W
3748	4822 051 20392	3.9kΩ 5% 0.1W
3750	4822 051 20122	1.2kΩ 5% 0.1W
3751	4822 051 20122	1.2kΩ 5% 0.1W
3752	4822 051 10122	1.2kΩ 2% 0.25W
3753	4822 051 10122	1.2kΩ 2% 0.25W
3755	4822 051 20103	10kΩ 5% 0.1W
3757	4822 051 10103	10kΩ 2% 0.25W
3779	4822 051 20681	680Ω 5% 0.1W
3787	4822 051 10102	1kΩ 2% 0.25W
38..	4822 051 10008	Chip jumper

5502	4822 157 51238	0.82µH
5503	4822 157 51238	0.82µH
5504	4822 157 51235	4.7µH 10%
5505	4822 157 51193	470µH

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 34173	BZX79-C5V6
6506	4822 130 34173	BZX79-C5V6
6510	4822 130 31456	BZV85-C5V1
6512	4822 209 83274	NJM4560D
6513	4822 130 30621	1N4148
6515	4822 130 30621	1N4148
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
6525	4822 130 61207	BC848
6526	4822 130 61207	BC848
6527	5322 130 41983	BC858B
6530	4822 209 61894	MC68HC05C8P/ZC99698
6531	4822 130 42675	BC818
6535	4822 209 83662	NJM5532DD
6537	5322 130 30684	1N4002
6538	5322 130 30684	1N4002
6541	4822 209 61708	SAA7321GP
6542	4822 130 40958	BC338-25
6543	4822 130 40958	BC338-25
6544	4822 130 40958	BC338-25
6545	4822 130 40958	BC338-25
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
6556	5322 130 41981	BC848A
6557	4822 130 30621	1N4148
6558	4822 130 44121	BC338
6559	4822 130 61207	BC848
6562	4822 130 61207	BC848
6572	4822 130 34195	BZX79-C13
6577	4822 209 80808	MC78M15CT
6580	5322 130 30684	1N4002
6581	5322 130 30684	1N4002
6582	5322 130 30684	1N4002
6583	5322 130 30684	1N4002
6584	5322 130 30684	1N4002
6585	5322 130 30684	1N4002
6586	5322 130 30684	1N4002
6587	5322 130 30684	1N4002
6590	4822 209 80808	MC78M15CT
6591	4822 209 71579	TY40408
6592	4822 209 82056	MC7906CT
6593	5322 130 41899	MC7915CT

MISCELLANEOUS

21	4822 256 30274	Fuse holder
BU2	4822 267 40766	Cinch socket
SK1	4822 276 11309	Mains switch
SK2	4822 276 12523	Tray swich
1502	4822 242 71349	X-tal 11.2896 MHz
1503	4822 242 72527	Ceramic resonator 4 MHz

MISCELLANEOUS

1510	4822 070 31251	2422 086 01006 FUSE T125MA
5001	4822 146 30938	8212 839 27880

TOOLS

4822 397 30184	CD audio signals
4822 397 30096	Audio test disc 5+5A
4822 397 30155	Audio test disc 1kHz
4822 397 60141	Audio disc max. diam.
4822 395 50145	TORX screwdriver set
4822 395 50132	TORX screwd square
4822 395 30204	13th order filter
4822 322 40066	Service flex (14p)
4822 267 50676	Service con. (14p)
5322 130 32182	LED green CQYG11
4822 321 21284	Service cable (4p)
4822 444 60655	Insulation cover