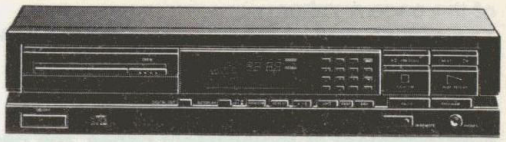
Compact disc player CD620/00R/05R

Service
Service
Service



44 873 A11

Service Manual

COMPACT disc DIGITAL AUDIO

CONTENTS

(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.

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 agrées, seuls habilités à réparer votre appareil en panne".

Subject to modification
4822 725 22468
Printed in The Netherlands

PHILIPS

Published by
Service Consumer Electronics

CS 23 648

1. EXPLANATION ON THE LAYOUT OF THE DOCUMENTATION

The documentation consists of chapters.
The number of the chapter is indicated by the first digit of the page number.
The second digit of the page number is the sequence numbering.

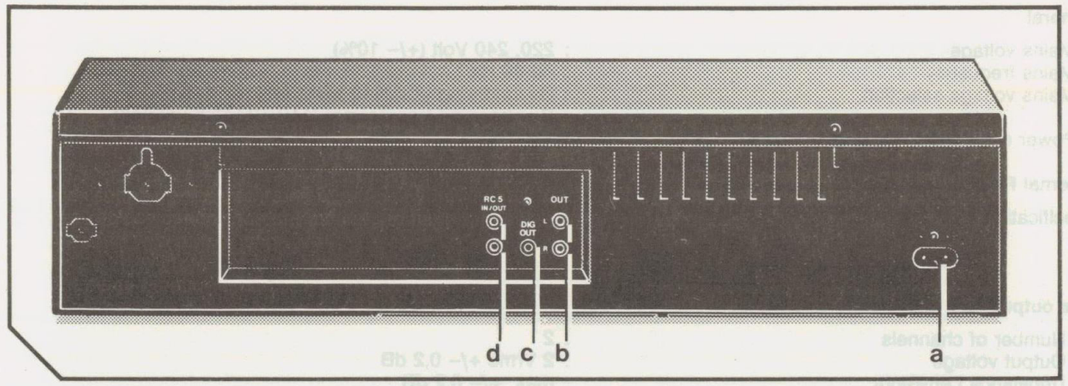
If modifications or supplements require new supplementary or replacement pages, the page number is extended with a third part:

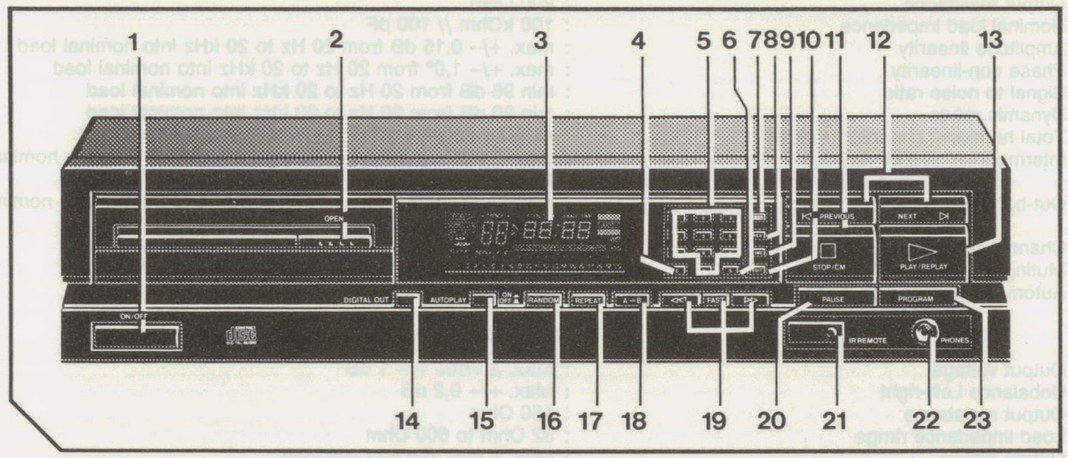
A digit behind the page number indicates that it concerns a supplementary page.
A replacement page is indicated by a letter behind the page number.

Example

3-6	is page 6 of chapter 3
3-6-1	is a supplementary page behind page 3-6
3-6-a	is the replacement page of page 3-6 (so page 3-6 can be removed from the documentation).

TABLE OF CONTENTS PER PAGE





44 874 A11

CONTROLS

1 On/Off
2 Open
3 Display
4 C(lear)
5 1–0 Digit keys
6 S(tore)
7 FTS
8 Rev(iew)
9 Time
10 Edit
11 Stop/CM
12 Previous and next
13 Play/Replay
14 Digital out
15 Autoplay
16 Random
17 Repeat
18 A–B
19 ≪ Search ≫
in combination with **Fast** for increased speed
20 Pause
21 IR remote
22 Phones
23 Prog(ram)/Play

a Mains
b Out L R
c Dig(ital) out
d RC5 In/Out

TECHNICAL DATA

General

1. Mains voltage	: 220, 240 Volt (+/– 10%)
2. Mains frequency	: 50-60 Hz
3. Mains voltage selection	: By soldering (220/240 Volt-version) By changing transformer (110/127 Volt-version)
4. Power consumption mains, operated	: 15 W

External RC-5 connection

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

Line output

1. Number of channels	: 2
2. Output voltage	: 2 Vrms +/– 0,2 dB
3. Unbalance Left-Right	: max. +/– 0,2 dB
4. Output resistance	: 200 Ohm
5. Nominal load impedance	: 100 kOhm // 100 pF
6. Amplitude linearity	: max. +/– 0,15 dB from 20 Hz to 20 kHz into nominal load
7. Phase non-linearity	: max. +/– 1,0° from 20 Hz to 20 kHz into nominal load
8. Signal to noise ratio	: min 96 dB from 20 Hz to 20 kHz into nominal load
9. Dynamic range	: min 90 dB from 20 Hz to 20 kHz into nominal load
10. Total harmonic distortion + noise	: min -88 dB from 20 Hz to 20 kHz into nominal load
11. Intermodulation distortion	: max. 0.004% (min -88 dB) from 20 Hz to 20 kHz into nominal load
12. Out-band attenuation	: min 60 dB above 24,1 kHz from 20 Hz to 20 kHz into nominal load
13. Channel separation	: min 93 dB from 20 Hz to 20 kHz into nominal load
14. Muting during random access	: min 90 dB from 20 Hz to 20 kHz into nominal load
15. Automatic switched de-emphasis with time constants	: 15/50 us

Headphone (fixed)

1. Output voltage	: Max. 2 Vrms +/– 1 dB
2. Unbalance Left-right	: Max. +/– 0,2 dB
3. Output resistance	: 150 Ohm
4. Load impedance range	: 32 Ohm to 600 Ohm
5. Output power	: Max. 6 mW into 32 Ohm load Max. 10 mW into 150 Ohm load Max. 6 mW into 600 Ohm load
8. Signal to noise ratio	: Min 93 dB from 20 Hz to 20 kHz into 600 Ohm
9. Dynamic range	: Min 90 dB from 20 Hz to 20 kHz into 600 Ohm
10. Total harmonic distortion + noise	: Max 0,004% (min-88 dB) from 20 Hz to 20 kHz
11. Intermodulation distortion	: max 0,004% (min-88 dB) from 20 Hz to 20 kHz
12. Channel separation	: min 80 dB from 20 Hz to 20 kHz into 600 Ohm

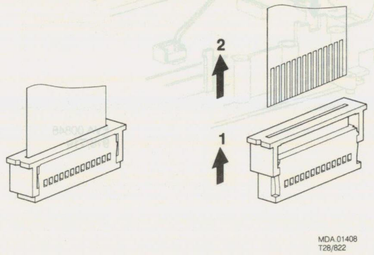
Dimensions and weight

1. Place and height of feet acc. to Philips specification		
2. Apparatus tray closed	W×D×M	: 420 x 280 × 90/104 mm
3. Apparatus tray open	W×D×M	: 420 × 423 × 90/104 mm
4. Weight	4,0 kg	

3. SERVICING HINTS

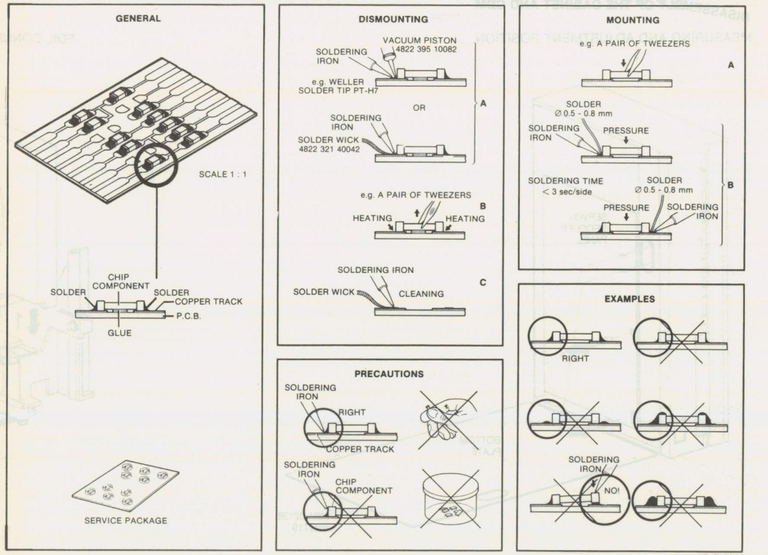
Service disc hold-down

The disc should always rest properly on the turntable.
To achieve this a disc hold–down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold–down see the figure below.
Compose a service Disc hold-down in the following way.
- Cut in the most inner ring of a disc holddown (4822 462 50383) with small and sharp nippers
  See fig. below.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.



SERVICE TOOLS

Audio test disc 1	4822 397 30185
Disc without errors + disc with DO errors, black spots and fingerprints	4822 397 30096
Disc (65 min, 1kHz) without pause	4822 397 30155
Maximum diameter disc	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204



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 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 potential.

D WARNUNG

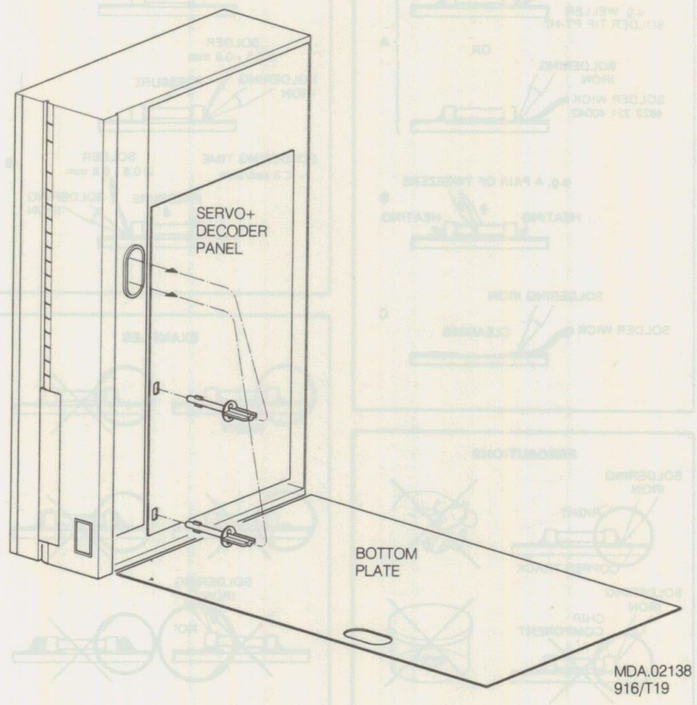
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential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

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

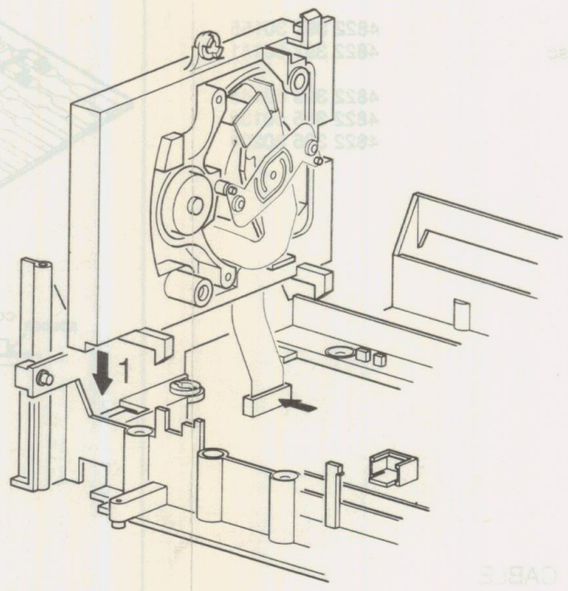
DISASSEMBLY OF THE CABINET AND CDM

MEASURING AND ADJUSTMENT POSITION

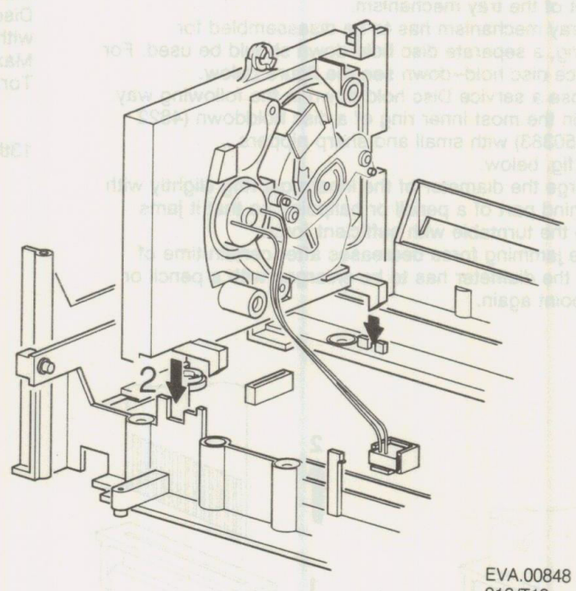


MDA.02138
916/T19

FOIL CONNECTION POSITION



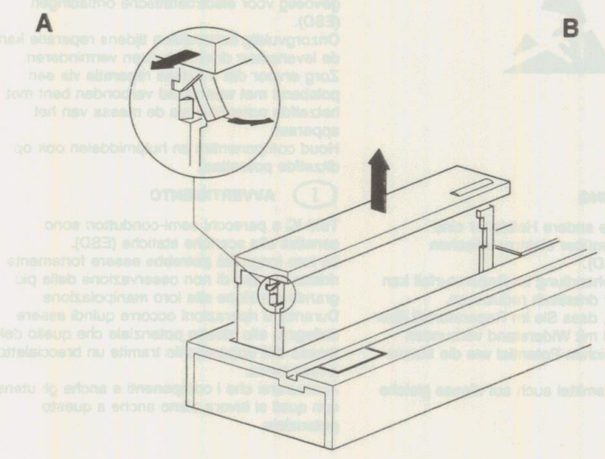
PLAY-SERVICE POSITION

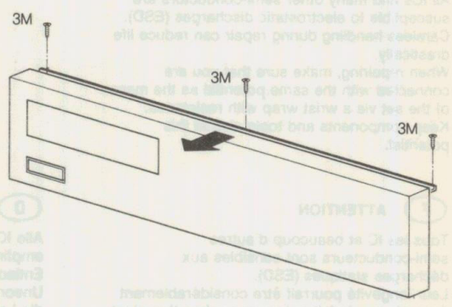


EVA.00848
916/T19

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

CABINET DISASSEMBLY HINTS





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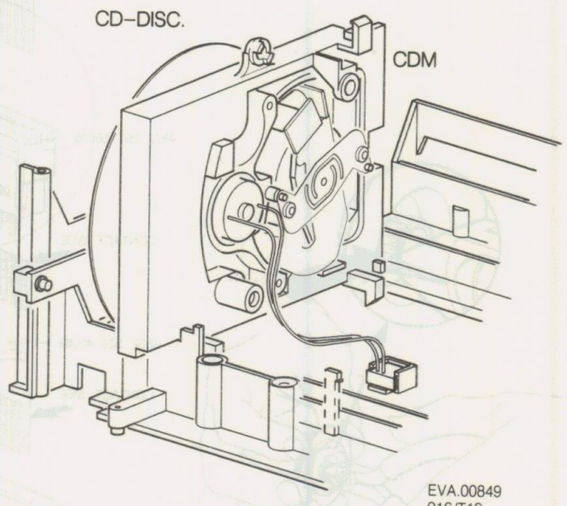
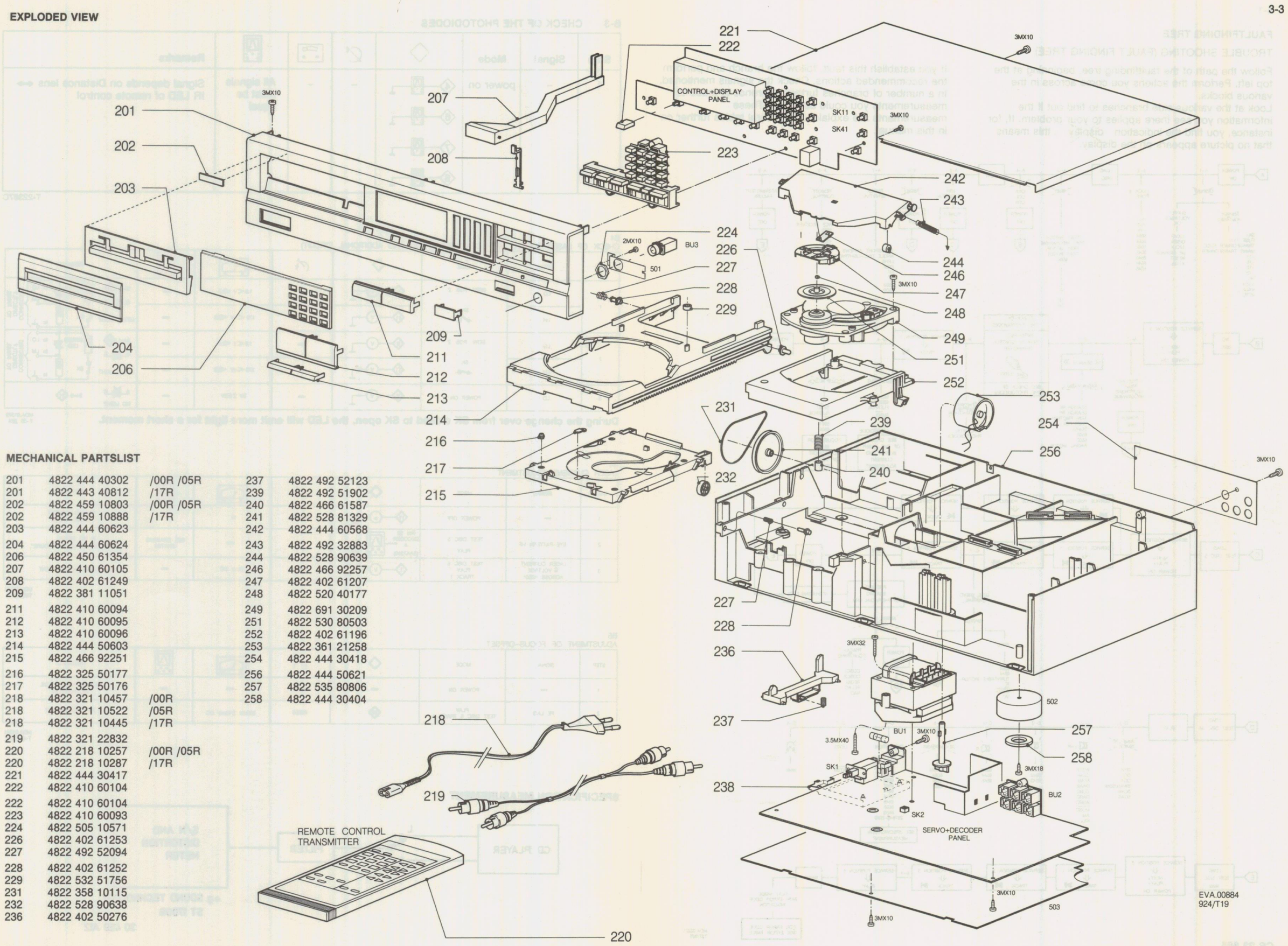
916/T19

SERVICE POSITION PLAY



EVA.00849
916/T19

EXPLODED VIEW



EVA.00884
924/T19

MECHANICAL PARTSLIST

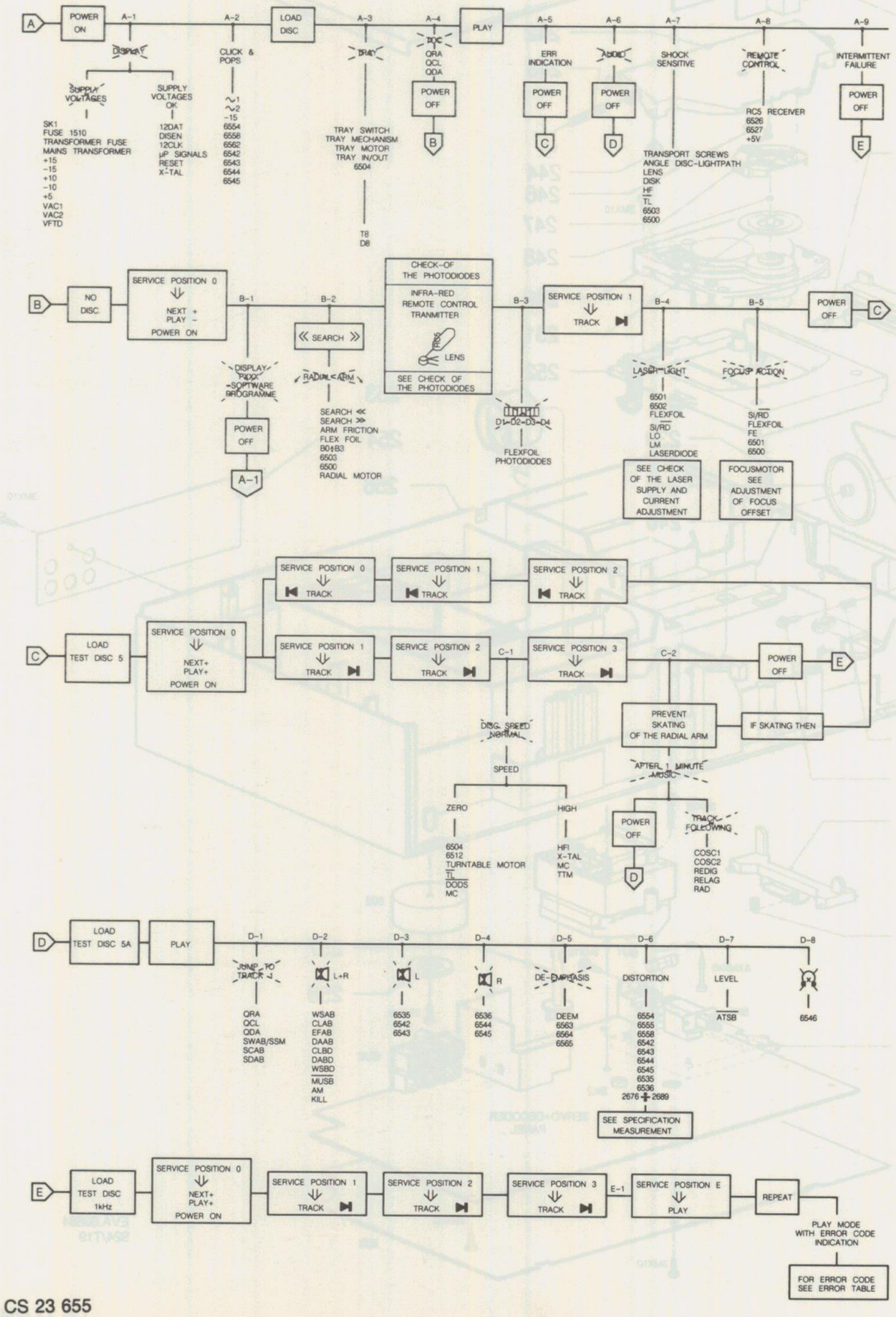
201	4822 444 40302	/00R /05R
201	4822 443 40812	/17R
202	4822 459 10803	/00R /05R
202	4822 459 10888	/17R
203	4822 444 60623	
204	4822 444 60624	
206	4822 450 61354	
207	4822 410 60105	
208	4822 402 61249	
209	4822 381 11051	
211	4822 410 60094	
212	4822 410 60095	
213	4822 410 60096	
214	4822 444 50603	
215	4822 466 92251	
216	4822 325 50177	
217	4822 325 50176	
218	4822 321 10457	/00R
218	4822 321 10522	/05R
218	4822 321 10445	/17R
219	4822 321 22832	
220	4822 218 10257	/00R /05R
220	4822 218 10287	/17R
221	4822 444 30417	
222	4822 410 60104	
222	4822 410 60104	
223	4822 410 60093	
224	4822 505 10571	
226	4822 402 61253	
227	4822 492 52094	
228	4822 402 61252	
229	4822 532 51756	
231	4822 358 10115	
232	4822 528 90638	
236	4822 402 50276	
237	4822 492 52123	
239	4822 492 51902	
240	4822 466 61587	
241	4822 528 81329	
242	4822 444 60568	
243	4822 492 32883	
244	4822 528 90639	
246	4822 466 92257	
247	4822 402 61207	
248	4822 520 40177	
249	4822 691 30209	
251	4822 530 80503	
252	4822 402 61196	
253	4822 361 21258	
254	4822 444 30418	
256	4822 444 50621	
257	4822 535 80806	
258	4822 444 30404	

FAULTFINDING TREE

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.



MDA.02201
T27/926

CS 23 655

B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	⌀	▭	⏛	Remarks
1	–	power on	4 6 7 8	–	–	All signals must be equal	Signal depends on Distance lens ↔ IR LED of remote control

T-22387C

B4
CHECK OF LASER SUPPLY (WITH DEMOUNTED CDM AND ADDITIONAL CIRCUIT)

STEP	SIGNAL	MODE	◇	⌀	⏛	⏛	REMARKS
1	LO	SERV. POS. 2	9 (V)	–	1.8 < V < 2.3	–	Si-1 21, 330, GREEN LED, to LO, to LM, A K, LITTLE LIGHT, SK, 180, to, CONNECTED DIRECTLY TO PANEL
	LM	SK	11 (V)	–	170 < mV < 220	–	
2	LO	SERV. POS. 2	9 (V)	–	1.8 < V < 2.3	–	Si-1 21, 330, GREEN LED, to LO, to LM, A K, LITTLE LIGHT, SK, 180, to, CONNECTED DIRECTLY TO PANEL
	LM	SK	11 (V)	–	170 < mV < 220	–	
3	LO	POWER ON	9 (V)	–	0V ± 0.2V	–	A K, NO LIGHT, Si-0 21

During the change over from SK closed to SK open, the LED will emit more light for a short moment.

MDA.01379
T-08 824

B4
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇	⌀	⏛	⏛	REMARKS
1	–	POWER OFF	11 (Ω) GND	R3520	1k	–	PRE-ADJUSTMENT OHMIC VALUE
2	EYE-PATTERN HF	TEST DISC 5 PLAY	PIN 32 DECODER A (SAA7310), 0V GND	–	–	SEE DRAWING 37017B8	IF NO SIGNAL SEE: "START UP PROCEDURE"
3	LASER CURRENT ≙ VOLTAGE ACROSS R3501	TEST DISC 5 PLAY TRACK 1	1 (V) 2	R3520	50mV DC	–	HIGH-OHMIC MEASUREMENT

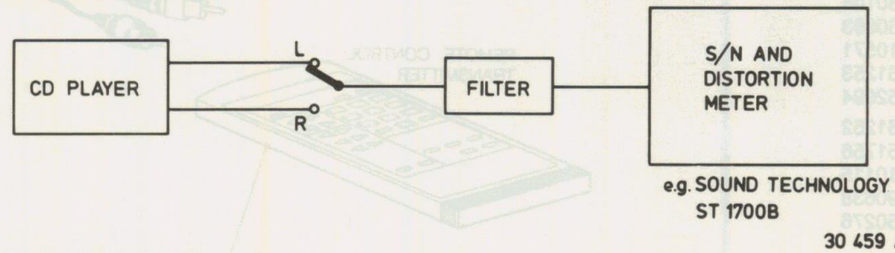
MDA.01778
T28/901

B5
ADJUSTMENT OF FOCUS-OFFSET

STEP	SIGNAL	MODE	◇	⌀	⏛	⏛	REMARKS
1	–	POWER ON	–	R3569	–	–	ADJUST FOR OPTICAL MID-POSITION
2	FE LAG	PLAY TEST DISC 5 TRACK 1	27	R3569	400mV ± 40mV DC	–	FINE ADJUSTMENT

MDA.01381
T-08 824

SPECIFICATION MEASUREMENT



30 459 A12

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

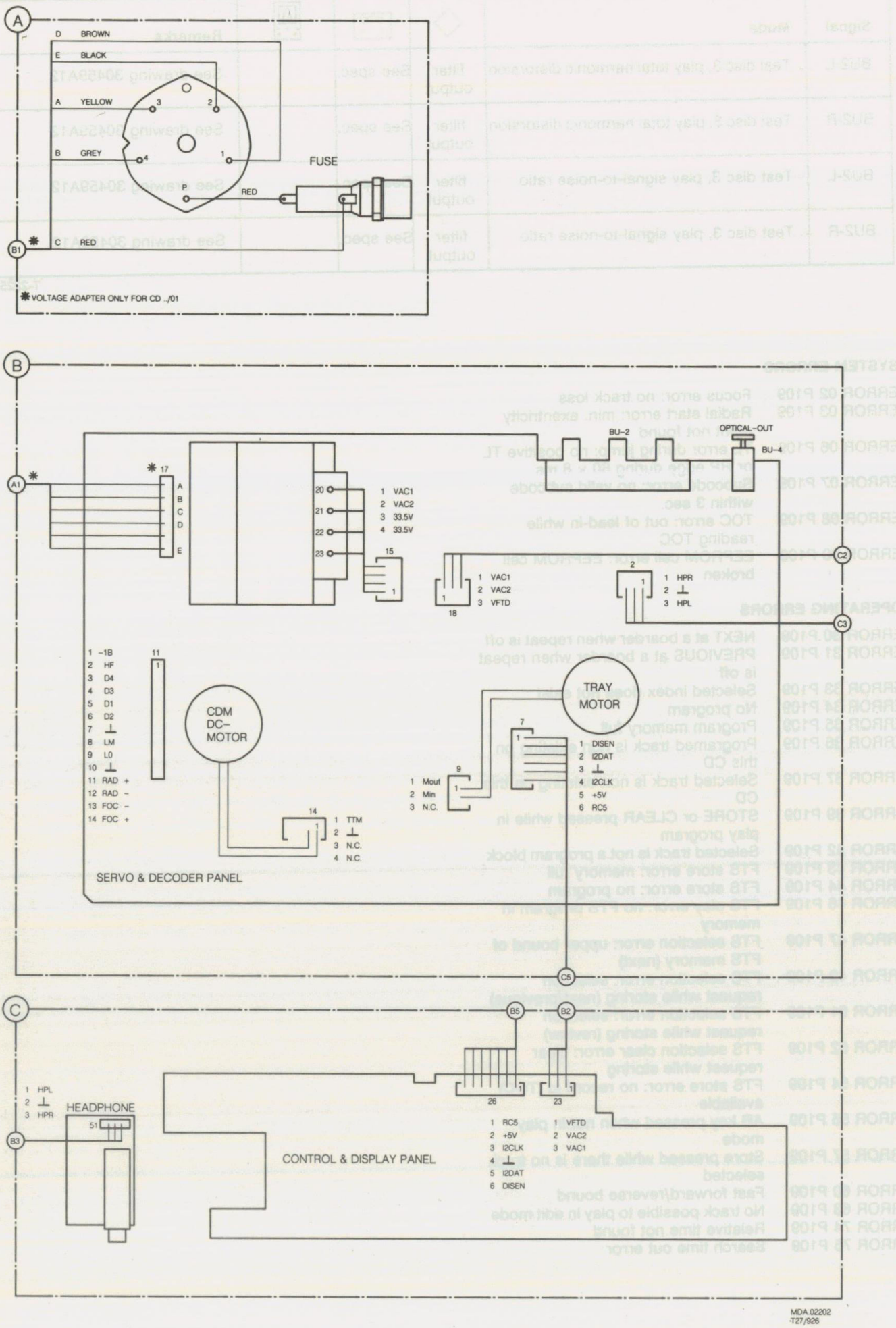
SYSTEM ERRORS

ERROR 02 P109 Focus error: no track loss
ERROR 03 P109 Radial start error: min. exentricity point not found
ERROR 06 P109 TL error during jump: no positive TL or RP edge during 60 × 8 ms
ERROR 07 P109 Subcode error: no valid subcode within 3 sec.
ERROR 08 P109 TOC error: out of lead-in while reading TOC
ERROR 09 P109 EEPROM cell error: EEPROM cell broken

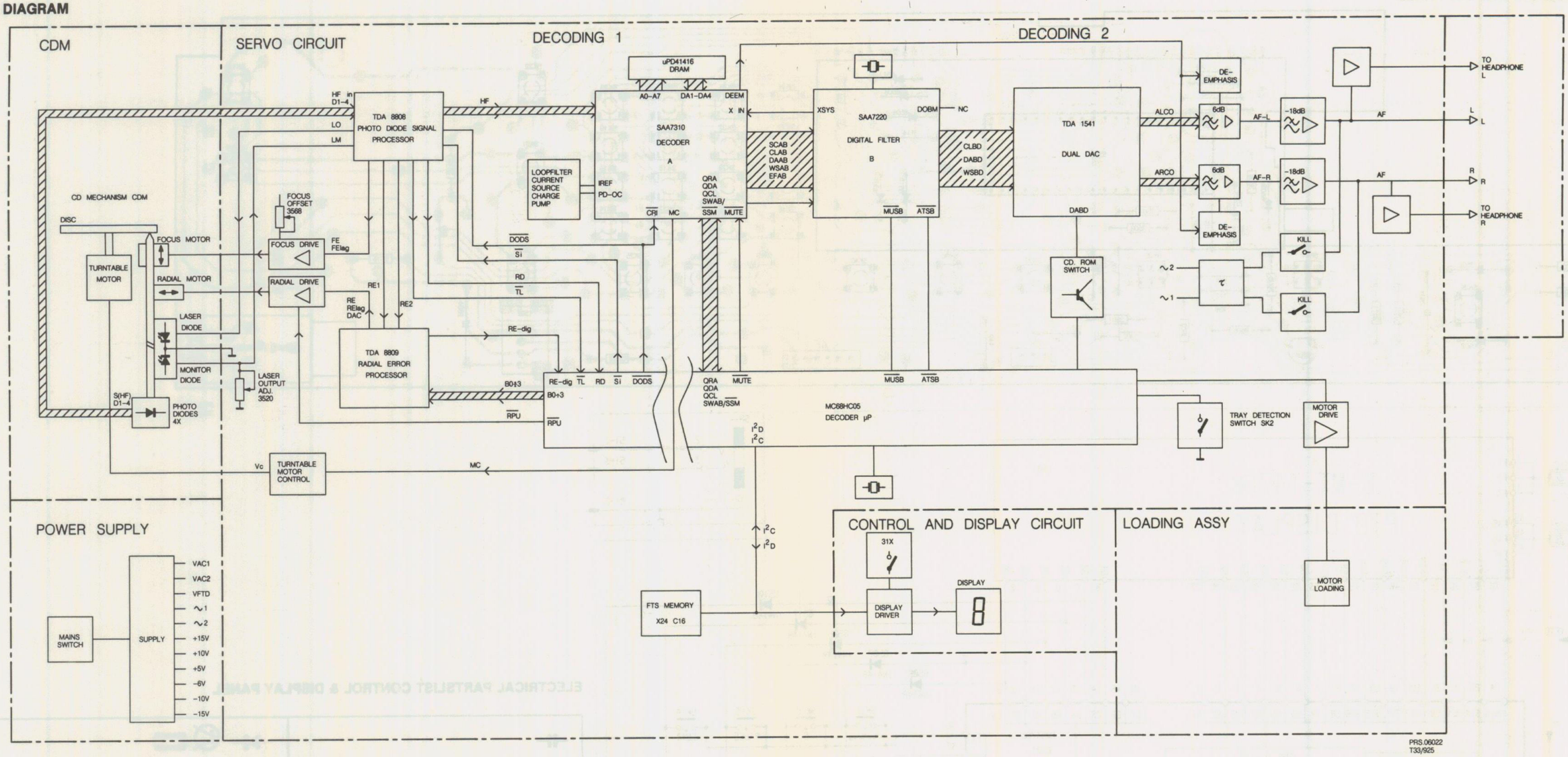
OPERATING ERRORS

ERROR 30 P109 NEXT at a boarder when repeat is off
ERROR 31 P109 PREVIOUS at a boarder when repeat is off
ERROR 33 P109 Selected index does not exist
ERROR 34 P109 No program
ERROR 35 P109 Program memory full
ERROR 36 P109 Programed track is non existing on this CD
ERROR 37 P109 Selected track is non existing on this CD
ERROR 39 P109 STORE or CLEAR pressed while in play program
ERROR 42 P109 Selected track is not a program block
ERROR 43 P109 FTS store error: memory full
ERROR 44 P109 FTS store error: no program
ERROR 46 P109 FTS play error: no FTS program in memory
ERROR 47 P109 FTS selection error: upper bound of FTS memory (next)
ERROR 49 P109 FTS selection error: selection request while storing (next/previous)
ERROR 51 P109 FTS selection error: selection request while storing (review)
ERROR 52 P109 FTS selection clear error: clear request while storing
ERROR 54 P109 FTS store error: no record id (TOC) available
ERROR 56 P109 AB key pressed when not in play mode
ERROR 57 P109 Store pressed while there is no track selected
ERROR 60 P109 Fast forward/reverse bound
ERROR 63 P109 No track possible to play in edit mode
ERROR 74 P109 Relative time not found
ERROR 75 P109 Search time out error

WIRING DIAGRAM



BLOCK DIAGRAM



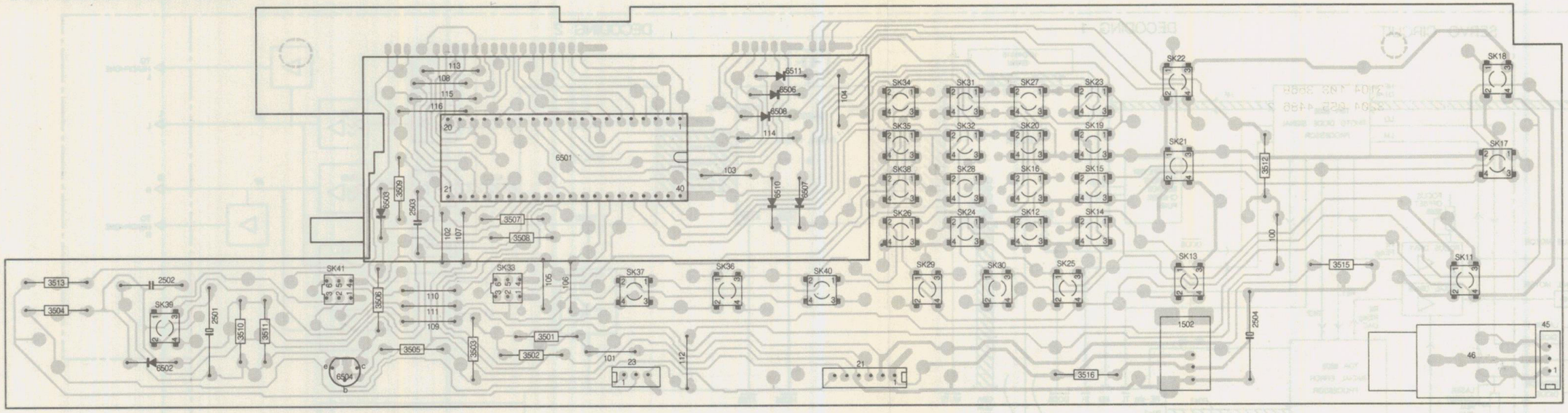
AGC – Automatic Gain Control
B0-B3 – Control bits for radial circuit
BEQ – Equalizer reference current input
BGC – DC and LF gain control reference input
Cosc1 – Capacitor wobble oscillator
Cosc2 – Capacitor wobble oscillator
DEC – Decoupling input internal bypass
DET – HF detector voltage input
DIV4 – 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 RE_2-RE_1 currents)

Rosc – Resistor wobble oscillator
Rwob – Wobble generator input
RE1 – Radial error signal 1 (summation of amplified currents D_3 and D_4
RE2 – Radial error signal 2 (summation of amplified currents D_1 and D_2
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)
CD ROM Switch – Digital Data information on disc signal
CEFM – Clock Eight-to-Fourteen Modulator
CLAB – Clock signal Decoder-A to Filter-B
CLBD – Clock signal Filter-B to DAC
CREF – Reference Current
CRI – Counter Reset Inhibit
DAAB – Data signal Decoder-A to Filter-B
DABD – Data signal Filter-B to DAC
DEEM – Deemphasis
DOBM – Digital out signal
EFAB – Error flag Decoder-A to Filter-B
MUTE – Mute signal

MUSB – Soft Mute signal
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 Filter-B
SDAB – Subcode data Decoder-A to Filter-B
SWAB/SSM – Subcode Word/Start-stop motor signal
WSAB – Word select Decoder-A to Filter-B
WSBD – Word Select Filter-B to DAC
XIN – Oscillator signal in Decoder-A
XSYS – Oscillator signal out Filter-B
BSW – Bandwidth switch turntable motor circuit

CONTROL AND DISPLAY PANEL



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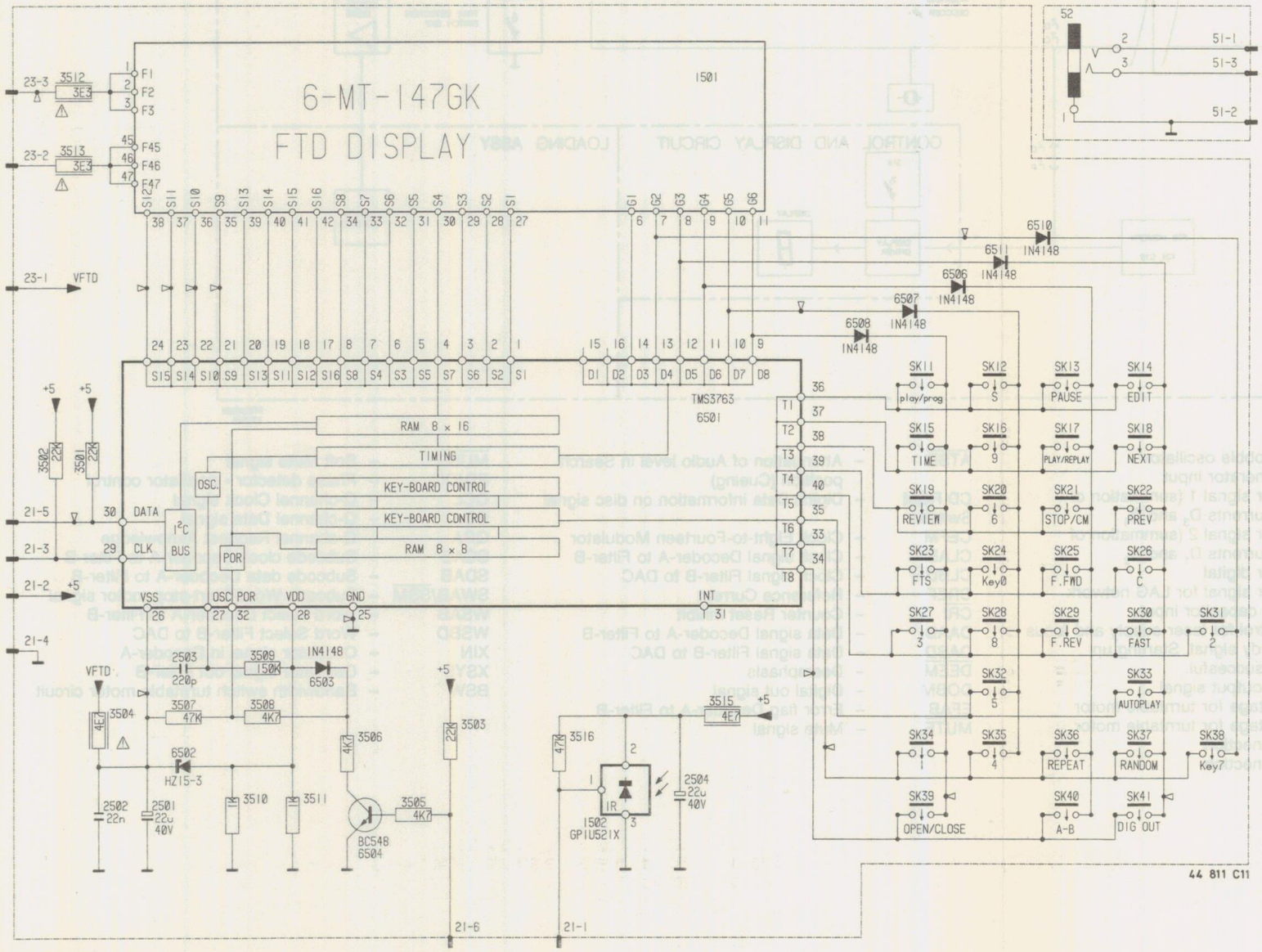
T28/931



CS 23 659

ELECTRICAL PARTSLIST CONTROL & DISPLAY PANEL

2501	5322 124 21643	22µF 20% 40V
2502	4822 122 10166	22µF 30% 16V
2503	4822 122 10172	220pF 10% 50V
2504	5322 124 21643	22µF 20% 40V

3501	4822 116 52463	22k 5% 0,5W
3502	4822 116 52463	22k 5% 0,5W
3503	4822 116 52463	22k 5% 0,5W
3504	4822 111 30499	4,7Ω 5% 0,33W
3505	4822 116 52426	4k7 5% 0,5W
3506	4822 116 52426	4k7 5% 0,5W
3507	4822 116 52472	47k 5% 0,5W
3508	4822 116 52426	4k7 5% 0,5W
3509	4822 116 52501	150k 5% 0,5W
3510	4822 116 52391	1k 5% 0,5W
3511	4822 116 52391	1k 5% 0,5W
3512	4822 111 30593	3,3Ω 5% 0,33W
3513	4822 111 30593	3,3Ω 5% 0,33W
3515	4822 111 30499	4,7Ω 5% 0,33W
3516	4822 116 52472	47k 5% 0,5W

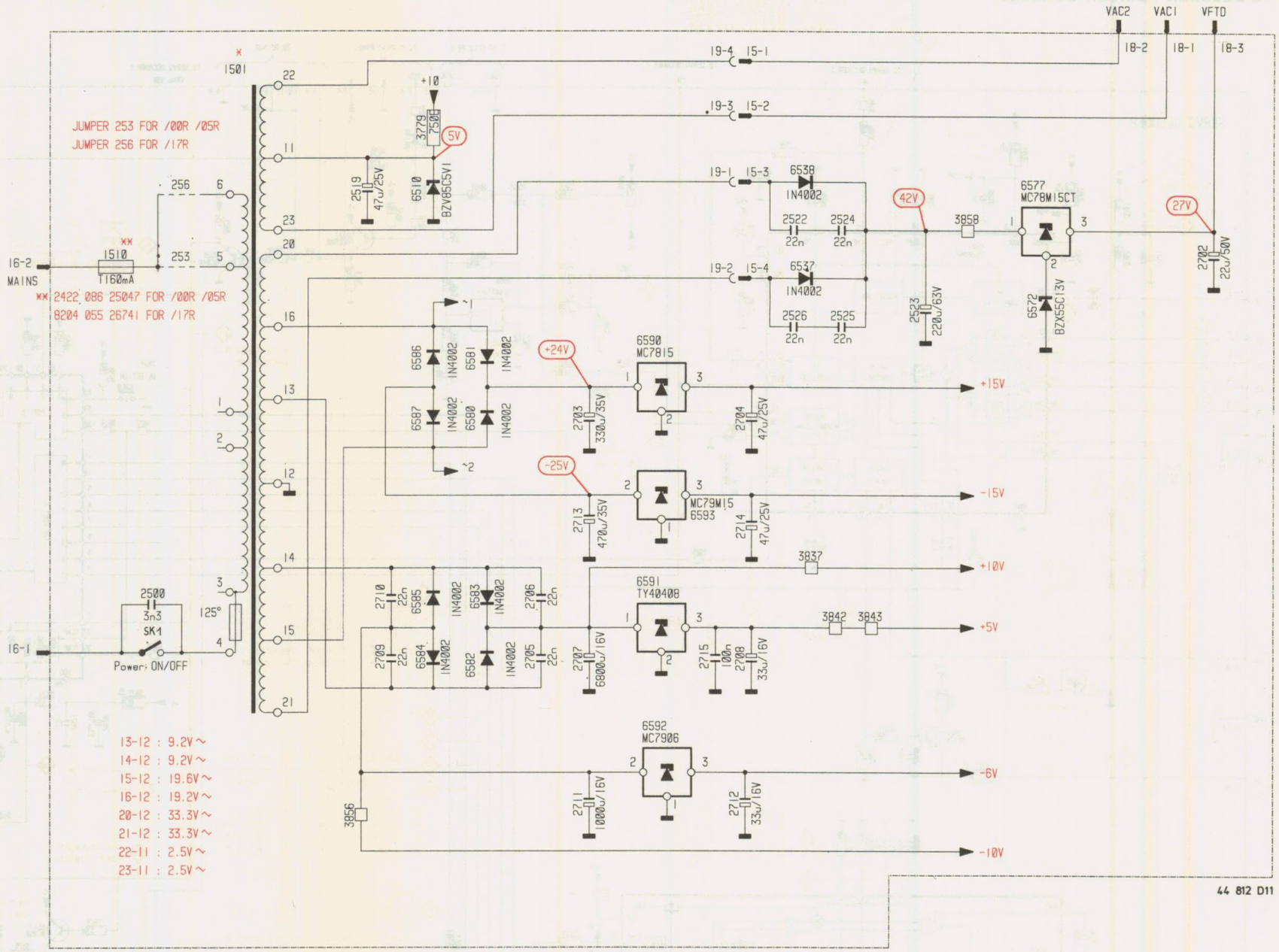
6501	4822 209 72226	U3090MG
6502	4822 130 81086	BZX55-C15
6503	4822 130 30621	1N4148
6504	4822 130 40938	BC548
6506	4822 130 30621	1N4148
6507	4822 130 30621	1N4148
6508	4822 130 30621	1N4148
6511	4822 130 30621	1N4148

SK . .	4822 276 12276	Tact switch (4.3 mm)
SK32	4822 267 20463	Switch assy
SK39	4822 267 20463	Switch assy

Miscellaneous

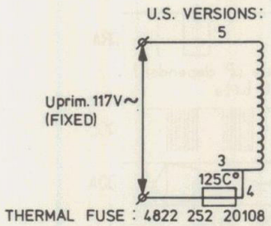
0052	4822 267 30743	Phone socket
1504	4822 130 90661	Display
1502	4822 214 51772	RC receiver

POWER SUPPLY CIRCUIT DIAGRAM



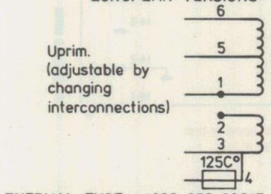
44 812 D11

U.S. VERSIONS:

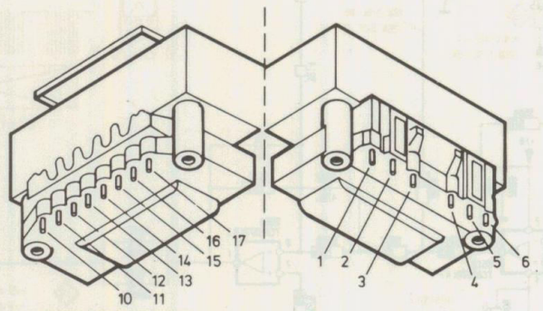


THERMAL FUSE : 4822 252 20108

EUROPEAN VERSIONS:



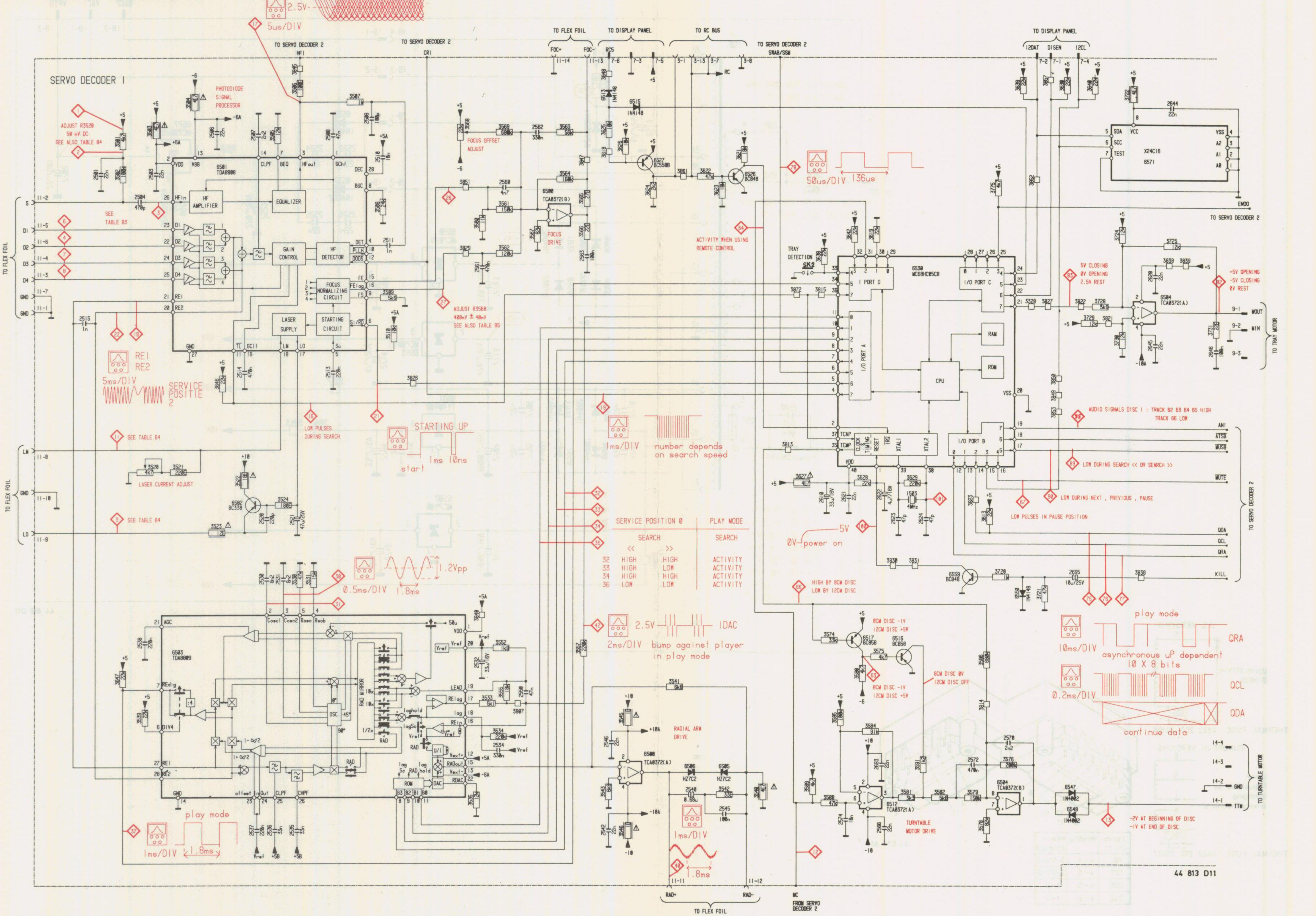
THERMAL FUSE : 4822 252 20017



44 577 A11

Uprim. (V) ~	Winding	Inter – connect
110	4 – 1	3–1/5–2
127	4 – 6	3–1/5–2
220	4 – 5	1 – 2
240	4 – 6	1 – 2

SERVO DECODER 1 CIRCUIT DIAGRAM

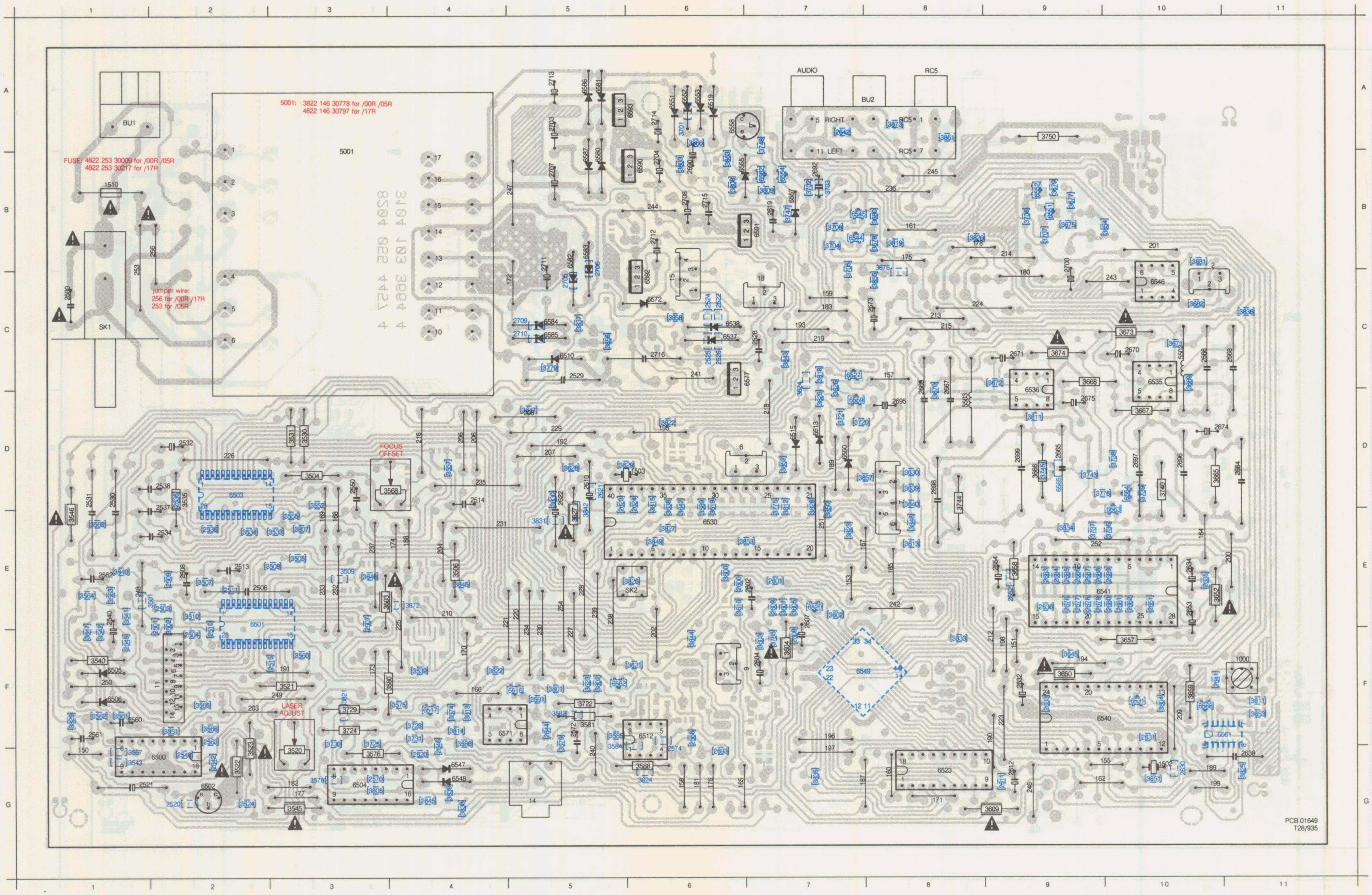


SERVO DECODER PANEL COMPONENT SIDE

65	C 6	181	G 6	206	D 4	229	D 5	250	F 1	2	B10	2528	C 7	2570	G 3
654	G 4	182	G 3	206	D 4	230	F 5	252	E 9	2500	C 1	2529	C 5	2572	F 5
151	F 9	183	C 7	207	D 5	231	E 4	254	E 5	2501	E 2	253	B 1	2574	G 6
153	E 7	185	E 8	208	D 5	232	E 3	256	B 2	2503	E 2	2530	D 1	2600	E 6
158	G 6	187	G 7	209	F10	233	E 3	1000	F11	2504	F 2	2531	D 1	2601	E 7
160	G 8	188	E 4	210	E 4	234	F 5	11	F 2	2506	E 2	2532	D 2	2602	E 7
164	E10	189	G10	212	F 9	235	D 4	14	G 5	2507	E 3	2534	E 2	2604	F 7
165	G 6	190	F 9	213	C 8	236	B 8	15	C 6	2508	E 2	2535	D 2	2607	E 7
167	E 7	191	F 3	214	B 9	237	E 3	150	G 1	2509	E 2	2536	E 2	2608	F 7
168	E 3	192	D 5	215	C 8	238	E 5	1502	G10	251	E 7	2537	D 2	2609	E 7
169	E 3	194	F 9	216	D 4	239	E 5	1503	D 6	2510	E 2	2538	D 2	2610	D 5
170	F 4	195	D 6	218	D 7	240	G 5	1510	B 1	2511	E 2	2540	E 1	2611	G 9
171	G 8	196	F 7	219	C 7	241	C 6	155	G10	2513	E 2	2542	G 2	2612	G 9
172	C 5	197	G 7	220	E 5	242	E 8	157	C 8	2514	D 4	2545	F 1	2619	B 7
173	F 3	198	F 9	221	E 4	243	C10	159	C 7	2515	F 3	2546	G 2	2620	G 4
174	E 4	199	G10	223	F 9	244	B 6	161	B 8	2520	G 2	2550	D 3	2621	D 5
175	B 8	200	E11	224	C 8	245	B 8	162	G 9	2521	G 1	2560	F 1	2622	D 5
176	G 6	201	B10	225	E 4	246	G 9	166	F 4	2522	C 6	2561	F 1	2623	D 5
177	G 3	202	F 6	226	D 2	247	B 5	18	C 7	2524	C 6	2562	E 1	2624	D 6
178	B 8	203	F 2	227	F 5	248	E 1	189	D 7	2525	C 6	2563	F 2	2630	G10
180	C 9	204	E 4	228	E 5	249	F 3	193	C 7	2526	C 6	2566	F 6	2631	F10

2632	F 9	2669	C 8	2692	B 7	2716	C 6	3539	F 4	3575	F 4	3611	F11	3651	G10
2633	F 9	2670	C10	2693	G 6	3501	E 2	3540	F 1	3576	G 3	3613	E 8	3652	E10
2634	E10	2671	C 9	2695	D 8	3502	E 2	3541	E 1	3578	G 3	3619	D 6	3653	F11
2635	E10	2673	C 8	2696	D10	3503	E 3	3542	E 1	3579	F 5	3621	F 6	3657	F10
2636	E 9	2674	D11	2697	D10	3504	D 3	3543	G 1	3580	F 4	3622	D 6	3658	E 9
2638	G11	2675	D 9	2698	D 8	3505	E 3	3545	G 3	3581	F 5	3623	F 5	3659	F10
2641	F10	2676	E 9	2699	D 9	3506	E 4	3546	E 1	3582	F 5	3624	C 7	3665	D10
2642	A 7	2677	E 9	2700	B 9	3507	E 2	3552	D 3	3584	F 5	3625	D 7	3666	D 9
2642	A 7	2678	E 9	2703	A 5	3508	E 3	3555	E 3	3585	F 5	3626	C 7	3667	D10
2644	F 5	2679	E 9	2704	B 6	3509	E 3	3557	D 4	3586	F 4	3627	E 5	3668	C 9
2645	G 4	2680	E10	2705	C 5	3510	E 2	3560	F 3	3588	G 6	3628	D 5	3669	C10
2646	F 4	2681	E10	2706	B 5	3520	G 3	3561	F 1	3589	D 6	3629	D 6	3670	C 8
2651	E10	2682	E10	2707	B 5	3521	F 3	3562	F 1	3591	F 5	3630	D 8	3671	C10
2652	E 9	2683	E 9	2708	B 6	3522	G 2	3563	E 1	3600	E 6	3638	D 6	3672	C 9
2653	E10	2684	E 9	2709	C 5	3523	F 2	3564	E 1	3602	E 7	3639	D 8	3673	C10
2654	E 9	2685	E 9	2710	C 5	3524	G 2	3565	F 2	3603	F 7	3640	D 8	3674	C 9
2664	D11	2686	E 9	2711	B 5	3530	D 3	3566	F 2	3604	F 7	3642	D 6	3675	B 9
2665	D 9	2687	E 9	2712	B 6	3531	D 3	3567	G 1	3605	E 7	3645	F 9	3676	B 8
2666	C10	2688	E 9	2713	A 5	3533	E 3	3568	D 4	3607	E 7	3646	E 3	3677	B 9
2667	C 8	2689	E10	2714	A 6	3534	E 2	3569	E 1	3609	G 9	3647	D 5	3678	B 8
2668	C11	2690	B 6	2715	B 6	3535	D 2	3574	F 4	3610	E 6	3650	F 9	3679	B 9

3680	B 8	3737	E 9	3809	B 7	3834	E 9	3857	D 8	6515	D 7	6550	D 7	6581	A 5
3681	B10	3738	D10	3811	D 9	3835	G 7	3858	C 6	6516	F 5	6551	B 9	6582	B 5
3682	C10	3739	D10	3812	D 7	3836	C11	3860	A 6	6517	F 4	6551	A 6	6583	B 5
3701	A 6	3740	D10	3813	F 4	3837	C 5	3861	A 8	6519	A 6	6552	B 9	6584	C 5
3702	B 7	3743	D 9	3814	F 4	3838	G 4	3863	B 6	6520	E 7	6552	A 6	6585	C 5
3703	B 7	3744	D 8	3815	D 6	3839	G 4	3872	E 4	6523	G 8	6553	A 6	6586	A 5
3704	B 7	3745	D 9	3818	C 7	3840	E 1	3873	A 8	6527	C 7	6554	B 7	6587	B 5
3705	B 7	3747	B 7	3819	B 8	3842	D 5	5001	B 3	6530	E 6	6555	B 6	6590	B 6
3706	B 9	3748	A 7	3820	B 8	3843	C 7	5502	C10	6531	F10	6557	B 7	6591	B 7
3707	B 9	3750	A 9	3821	F 3	3844	F 6	5503	D 8	6535	C10	6558	A 6	6592	C 6
3708	B 7	3775	D 7	3822	F 4	3845	E 4	6	D 7	6536	D 9	6559	D 7	6593	A 6
3720	D 7	3776	D10	3823	E 7	3847	E 1	6500	G 2	6537	C 6	6561	F10	6593	A 6
3721	D 7	3779	C 5	3824	G 6	3848	E 8	6501	E 2	6538	C 6	6562	F 5	7	D 8
3722	F 5	3785	F 7	3825	G11	3849	E 6	6502	G 2	6540	F10	6562	B 7	9	F 7
3724	F 3	3801	F 5	3826	E 6	3850	D 7	6503	D 2	6541	E10	6563	E10	BU1	A 1
3725	F 3	3802	F 5	3827	E 6	3851	F 2	6504	G 3	6544	B 7	6564	D10	BU2	A 8
3728	F 4	3803	B 6	3828	D 7	3852	D 7	6505	F 1	6545	B 7	6565	D 9	SK1	C 1
3729	F 3	3804	F10	3829	F 1	3853	E 7	6506	F 1	6546	C10	6568	F10	SK2	E 6
3730	F 3	3805	G 3	3830	D 5	3854	B10	6510	C 5	6548	G 4	6571	F 5		
3731	F 4	3807	E 3	3831	E 5	3855	C 8	6512	F 6	6549	F 8	6577	C 7		
3736	E10	3808	B 6	3833	F 8	3856	C 5	6513	D 7	6549	F 8	6580	B 5		



SERVO DECODER PANEL SOLDER SIDE

65	C 6	181	G 6	206	D 4	229	D 5	250	F 1	2	B10
654	G 4	182	G 3	206	D 4	230	F 5	252	E 9	2500	C 1
151	F 9	183	C 7	207	D 5	231	E 4	254	E 5	2501	E 2
153	E 7	185	E 8	208	D 5	232	E 3	256	B 2	2503	E 2
158	G 6	187	G 7	209	F10	233	E 3	1000	F11	2504	F 2
160	G 8	188	E 4	210	E 4	234	F 5	11	F 2	2506	E 2
164	E10	189	G10	212	F 9	235	D 4	14	G 5	2507	E 3
165	G 6	190	F 9	213	C 8	236	B 8	15	C 6	2508	E 2
167	E 7	191	F 3	214	B 9	237	E 3	150	G 1	2509	E 2
168	E 3	192	D 5	215	C 8	238	E 5	1502	G10	251	E 7
169	E 3	194	F 9	216	D 4	239	E 5	1503	D 6	2510	E 2
170	F 4	195	D 6	218	D 7	240	G 5	1510	B 1	2511	E 2
171	G 8	196	F 7	219	C 7	241	C 6	155	G10	2513	E 2
172	C 5	197	G 7	220	E 5	242	E 8	157	C 8	2514	D 4
173	F 3	198	F 9	221	E 4	243	C10	159	C 7	2515	F 3
174	E 4	199	G10	223	F 9	244	B 6	161	B 8	2520	G 2
175	B 8	200	E11	224	C 8	245	B 8	162	G 9	2521	G 1
176	G 6	201	B10	225	E 4	246	G 9	166	F 4	2522	C 6
177	G 3	202	F 6	226	D 2	247	B 5	18	C 7	2524	C 6
178	B 8	203	F 2	227	F 5	248	E 1	189	D 7	2525	C 6
180	C 9	204	E 4	228	E 5	249	F 3	193	C 7	2526	C 6

2528	C 7	2570	G 3	2632	F 9	2669	C 8	2692	B 7	2716	C 6
2529	C 5	2572	F 5	2633	F 9	2670	C10	2693	G 6	3501	E 2
253	B 1	2574	G 6	2634	E10	2671	C 9	2695	D 8	3502	E 2
2530	D 1	2600	E 6	2635	E10	2673	C 8	2696	D10	3503	E 3
2531	D 1	2601	E 7	2636	E 9	2674	D11	2697	D10	3504	D 3
2532	D 2	2602	E 7	2638	G11	2675	D 9	2698	D 8	3505	E 3
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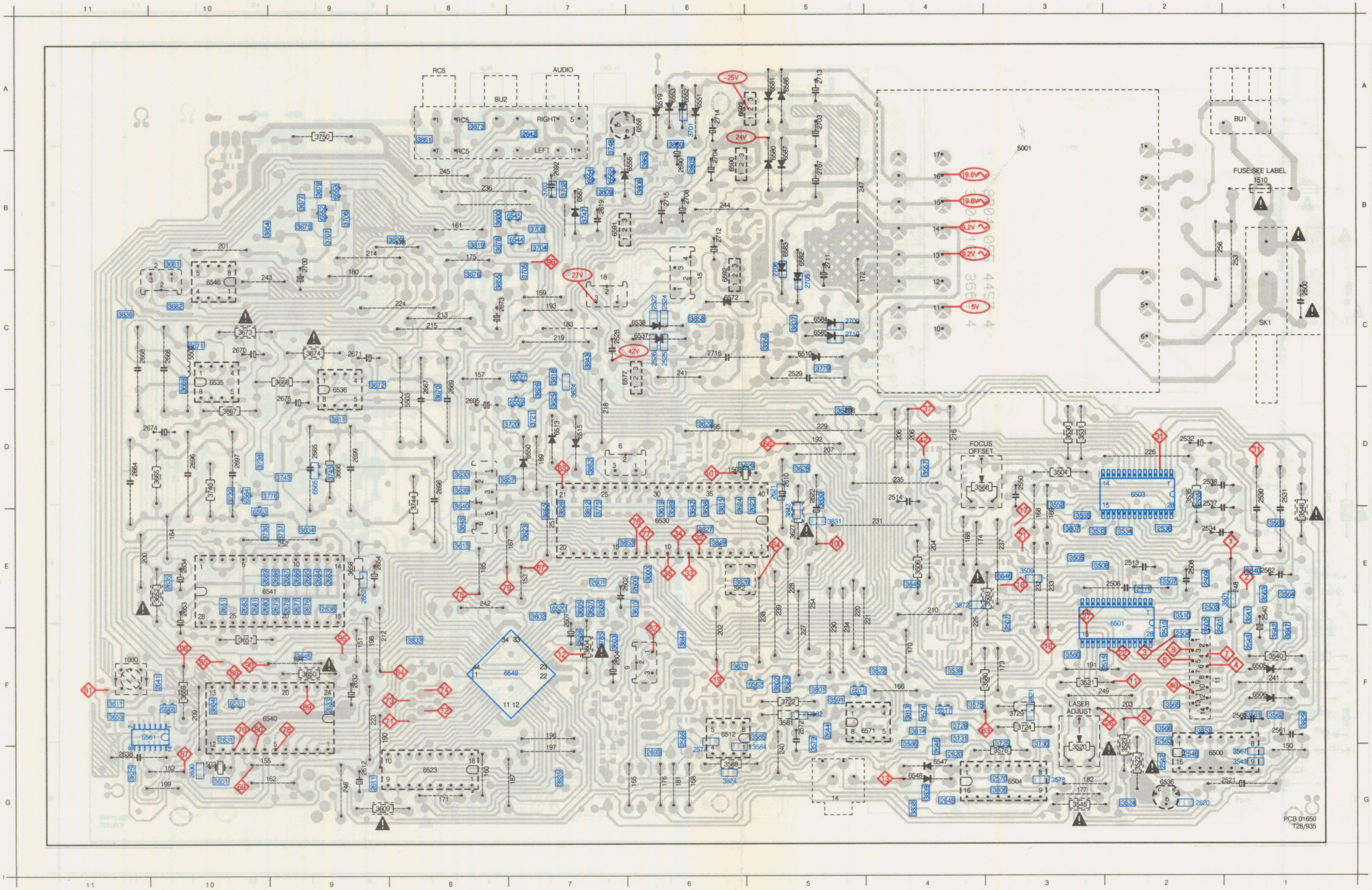
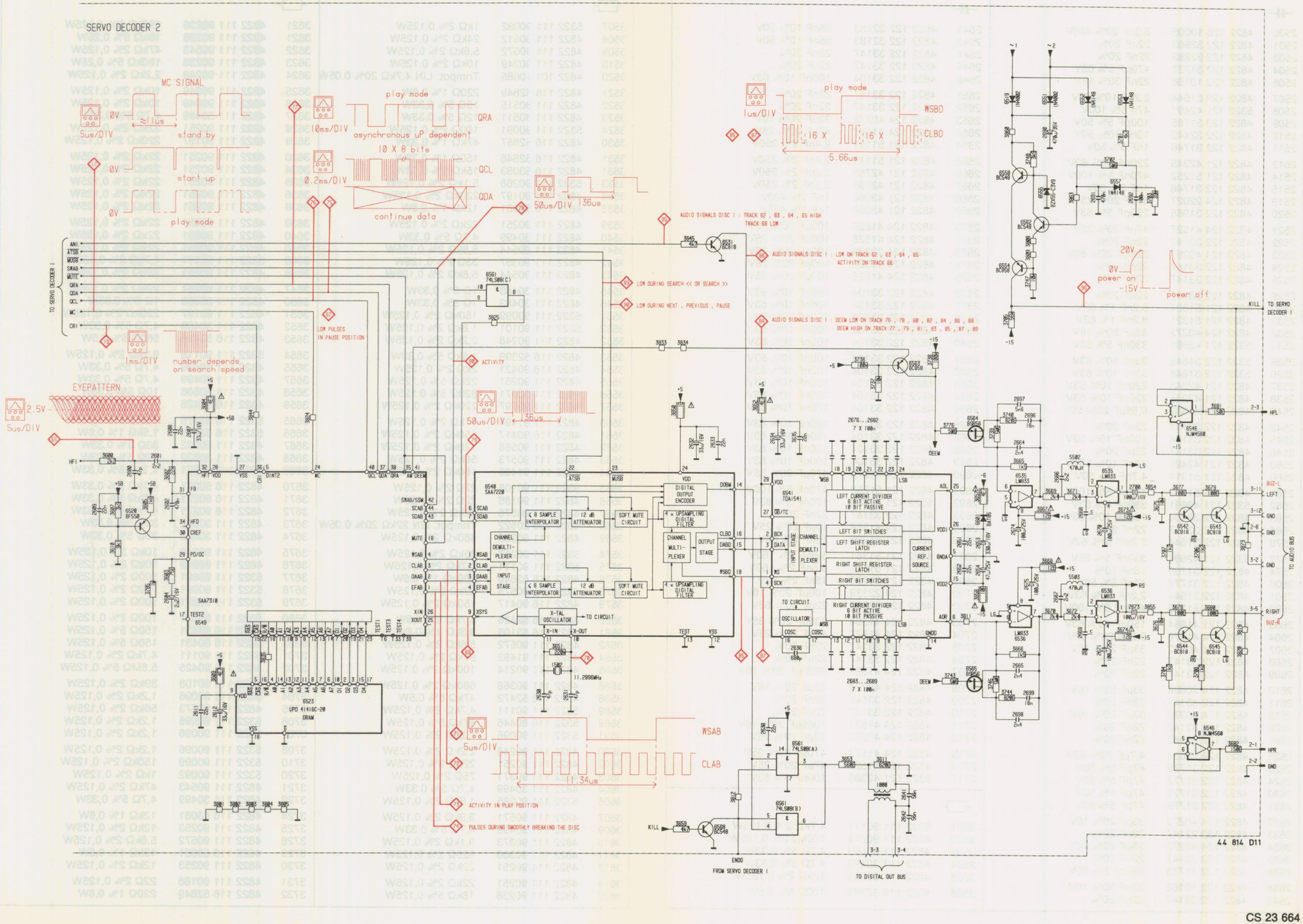
2536	E 2	2608	F 7	2642	A 7	2678	E 9	2703	A 5	3508	E 3
2537	D 2	2609	E 7	2644	F 5	2679	E 9	2704	B 6	3509	E 3
2538	D 2	2610	D 5	2645	G 4	2680	E10	2705	C 5	3510	E 2
2540	E 1	2611	G 9	2646	F 4	2681	E10	2706	B 5	3520	G 3
2542	G 2	2612	G 9	2651	E10	2682	E10	2707	B 5	3521	F 3
2545	F 1	2619	B 7	2652	E 9	2683	E 9	2708	B 6	3522	G 2
2546	G 2	2620	G 4	2653	E10	2684	E 9	2709	C 5	3523	F 2
2550	D 3	2621	D 5	2654	E 9	2685	E 9	2710	C 5	3524	G 2
2560	F 1	2622	D 5	2664	D11	2686	E 9	2711	B 5	3530	D 3
2561	F 1	2623	D 5	2665	D 9	2687	E 9	2712	B 6	3531	D 3
2562	E 1	2624	D 6	2666	C10	2688	E 9	2713	A 5	3533	E 3
2563	F 2	2630	G10	2667	C 8	2689	E10	2714	A 6	3534	E 2
2566	F 6	2631	F10	2668	C11	2690	B 6	2715	B 6	3535	D 2

3539	F 4	3575	F 4	3611	F11	3651	G10	3680	B 8	3737	E 9
3540	F 1	3576	G 3	3613	E 8	3652	E10	3681	B10	3738	D10
3541	E 1	3578	G 3	3619	D 6	3653	F11	3682	C10	3739	D10
3542	E 1	3579	F 5	3621	F 6	3657	F10	3701	A 6	3740	D10
3543	G 1	3580	F 4	3622	D 6	3658	E 9	3702	B 7	3743	D 9
3545	G 3	3581	F 5	3623	F 5	3659	F10	3703	B 7	3744	D 8
3546	E 1	3582	F 5	3624	C 7	3665	D10	3704	B 7	3745	D 9
3552	D 3	3584	F 5	3625	D 7	3666	D 9	3705	B 7	3747	B 7
3555	E 3	3585	F 5	3626	C 7	3667	D10	3706	B 9	3748	A 7
3557	D 4	3586	F 4	3627	E 5	3668	C 9	3707	B 9	3750	A 9
3560	F 3	3588	G 6	3628	D 5	3669	C10	3708	B 7	3775	D 7
3561	F 1	3589	D 6	3629	D 6	3670	C 8	3720	D 7	3776	D10
3562	F 1	3591	F 5	3630	D 8	3671	C10	3721	D 7	3779	C 5
3563	E 1	3600	E 6	3638	D 6	3672	C 9	3722	F 5	3785	F 7
3564	E 1	3602	E 7	3639	D 8	3673	C10	3724	F 3	3801	F 5
3565	F 2	3603	F 7	3640	D 8	3674	C 9	3725	F 3	3802	F 5
3566	F 2	3604	F 7	3642	D 6	3675	B 9	3728	F 4	3803	B 6
3567	G 1	3605	E 7	3645	F 9	3676	B 8	3729	F 3	3804	F10
3568	D 4	3607	E 7	3646	E 3	3677	B 9	3730	F 3	3805	G 3
3569	E 1	3609	G 9	3647	D 5	3678	B 8	3731	F 4	3807	E 3
3574	F 4	3610	E 6	3650	F 9	3679	B 9	3736	E10	3808	B 6

3809	B 7	3834	E 9	3857	D 8	6515	D 7	6550	D 7	6581	A 5
3811	D 9	3835	G 7	3858	C 6	6516	F 5	6551	B 9	6582	B 5
3812	D 7	3836	C11	3860	A 6	6517	F 4	6551	A 6	6583	B 5
3813	F 4	3837	C 5	3861	A 8	6519	A 6	6552	B 9	6584	C 5
3814	F 4	3838	G 4	3863	B 6	6520	E 7	6552	A 6	6585	C 5
3815	D 6	3839	G 4	3872	E 4	6523	G 8	6553	A 6	6586	A 5
3818	C 7	3840	E 1	3873	A 8	6527	C 7	6554	B 7	6587	B 5
3819	B 8	3842	D 5	5001	B 3	6530	E 6	6555	B 6	6590	B 6
3820	B 8	3843	C 7	5502	C10	6531	F10	6557	B 7	6591	B 7
3821	F 3	3844	F 6	5503	D 8	6535	C10	6558	A 6	6592	C 6
3822	F 4	3845	E 4	6	D 7	6536	D 9	6559	D 7	6593	A 6
3823	E 7	3847	E 1	6500	G 2	6537	C 6	6561	F10	6593	A 6
3824	G 6	3848	E 8	6501	E 2	6538	C 6	6562	F 5	7	D 8
3825	G11	3849	E 6	6502	G 2	6540	F10	6562	B 7	9	F 7
3826	E 6	3850	D 7	6503	D 2	6541	E10	6563	E10	BU1	A 1
3827	E 6	3851	F 2	6504	G 3	6544	B 7	6564	D10	BU2	A 8
3828	D 7	3852	D 7	6505	F 1	6545	B 7	6565	D 9	SK1	C 1
3829	F 1	3853	E 7	6506	F 1	6546	C10	6568	F10	SK2	E 6
3830	D 5	3854	B10	6510	C 5	6548	G 4	6571	F 5		
3831	E 5	3855	C 8	6512	F 6	6549	F 8	6577	C 7		
3833	F 8	3856	C 5	6513	D 7	6549	F 8	6580	B 5		




SERVO DECODER 2
MC SIGNAL
5us/DIV
0V
≈1us
stand by
start up
play mode
10ms/DIV
0.2ms/DIV
play mode
asynchronous uP dependent
10 X 8 bits
QRA
QCL
QDA
continue data
50us/DIV
136us
lus/DIV
play mode
WSBD
CLBD
16 X
16 X
5.66us
AUDIO SIGNALS DISC I : TRACK 62 , 63 , 64 , 65 HIGH
TRACK 66 LOW
AUDIO SIGNALS DISC I : LOW ON TRACK 62 , 63 , 64 , 65
ACTIVITY ON TRACK 66
LOW DURING SEARCH << OR SEARCH >>
LOW DURING NEXT , PREVIOUS , PAUSE
AUDIO SIGNALS DISC I : DEEM LOW ON TRACK 76 , 78 , 80 , 82 , 84 , 86 , 88
DEEM HIGH ON TRACK 77 , 79 , 81 , 83 , 85 , 87 , 89
20V
0V
power on
-15V
power off
KILL
TO SERVO DECODER I
TO SERVO DECODER I
ANI
ATSB
WDSB
SMAB
MUTE
QRA
QDA
QCL
MC
CRI
LOW PULSES IN PAUSE POSITION
ACTIVITY
lms/DIV
number depends on search speed
EYEPATTERN
2.5V
5us/DIV
50us/DIV
136us
WSAB
CLAB
11.34us
ACTIVITY IN PLAY POSITION
PULSES DURING SMOOTHLY BREAKING THE DISC
6541 TDA1541
LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE
LEFT BIT SWITCHES
LEFT SHIFT REGISTER LATCH
RIGHT SHIFT REGISTER LATCH
RIGHT BIT SWITCHES
RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE
CURRENT REF. SOURCE
6540 SAA7220
SAA7310
8523 UPD 41416C-20 DRAM
6546 NJM4560
6535 LM833
6536 LM833
6542 BC818
6543 BC818
6544 BC818
6545 BC818
TO AUDIO BUS
LEFT
RIGHT
HPL
HPR
BUZ-L
BUZ-R
GND
ENDO
FROM SERVO DECODER I
TO DIGITAL OUT BUS
44 814 D11

CS 23 664

ELECTRICAL PARTS

2500	4822 126 10005	3,3nF 20% 400V
2501	4822 122 32863	22nF 20%
2503	4822 122 32863	22nF 20%
2504	4822 122 31727	470pF 5% 63V
2506	4822 122 10166	22nF 30% 16V
2507	4822 122 31644	2,2nF 10% 63V
2508	5322 121 42491	47n 5% 100V
2509	4822 122 31765	100pF 5% 50V
2510	4822 122 32442	10nF 10% 50V
2511	4822 122 31746	1nF 5% 50V
2513	4822 121 42245	220nF 10% 63V
2514	4822 121 51252	470nF 5% 100V
2515	4822 122 31746	1nF 5% 50V
2519	4822 124 22027	47µF 20% 25V
2520	4822 122 31965	220pF 5% 63V
2521	4822 124 41527	47µF 20% 25V
2522	4822 122 33147	22nF 20%
2523	4822 124 40257	220µF 20% 63V
2524	4822 122 33147	22nF 20%
2525	4822 122 33147	22nF 20%
2526	4822 122 33147	22nF 20%
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	5322 122 31848	33nF 10% 63V
2536	5322 122 31848	33nF 10% 63V
2537	4822 121 42245	220nF 10% 63V
2538	4822 121 42245	220nF 10% 63V
2540	4822 124 41583	0,68µF 20% 50V
2542	4822 122 33147	22nF 20%
2545	4822 122 33104	100nF 10% 63V
2546	4822 122 33147	22nF 20%
2550	4822 121 42491	47nF 10% 100V
2560	4822 121 51314	4,7nF 5% 50V
2561	4822 121 51252	470nF 5% 100V
2562	5322 121 42661	330nF 5% 63V
2563	4822 122 33104	100nF 10% 63V
2566	4822 122 33147	22nF 20%
2570	4822 122 31644	2,2nF 10% 63V
2572	5322 121 42661	330nF 5% 63V
2574	4822 122 31759	18nF 10%
2600	4822 122 31772	47pF 5% 50V
2601	4822 122 31644	2,2nF 10% 63V
2602	4822 121 51252	470nF 5% 100V
2603	4822 121 41854	150nF 10% 63V
2604	4822 124 41576	2,2µF 20% 50V
2607	4822 124 40272	33µF 20% 16V
2608	4822 122 33147	22nF 20%
2609	4822 122 33147	22nF 20%
2610	4822 124 20688	33µF 50% 16V
2611	4822 122 33147	22nF 20%
2612	4822 124 40272	33µF 20% 16V
2620	4822 122 33147	22nF 20%
2621	4822 122 33147	22nF 20%
2622	4822 124 22031	4,7µF 20% 63V
2623	4822 122 31772	47pF 5% 50V
2624	4822 122 31772	47pF 5% 50V
2630	4822 122 31772	47pF 5% 50V
2631	4822 122 31772	47pF 5% 50V
2632	4822 124 40272	33µF 20% 16V
2633	4822 122 33147	22nF 20%
2634	4822 124 40272	33µF 20% 16V
2635	4822 122 33147	22nF 20%
2636	4822 122 31775	680pF 5% 50V
2638	4822 122 10166	22nF 30% 16V
2640	4822 122 33147	22nF 20%

2641	4822 122 32183	56nF 10% 50V
2642	4822 122 32183	56nF 10% 50V
2644	4822 122 33147	22nF 20%
2645	4822 122 33147	22nF 20%
2646	4822 122 33104	100nF 10% 63V
2651	4822 122 33147	22nF 20%
2652	4822 122 33147	22nF 20%
2653	4822 124 40272	33µF 20% 16V
2654	4822 124 41527	47µF 20% 25V
2664	4822 121 51111	2,4nF 2% 250V
2665	4822 121 51111	2,4nF 2% 250V
2666	4822 121 42783	2,2nF 2% 250V
2667	4822 121 42783	2,2nF 2% 250V
2668	4822 121 43066	1nF 1% 400V
2669	4822 121 43066	1nF 1% 400V
2670	4822 124 41528	100µF 20% 25V
2671	4822 124 41528	100µF 20% 25V
2673	4822 124 22339	100µF 20% 16V
2674	4822 124 41528	100µF 20% 25V
2675	4822 124 41528	100µF 20% 25V
2676	4822 122 33104	100nF 10% 63V
2677	4822 122 33104	100nF 10% 63V
2678	4822 122 33104	100nF 10% 63V
2679	4822 122 33104	100nF 10% 63V
2680	4822 122 33104	100nF 10% 63V
2681	4822 122 33104	100nF 10% 63V
2682	4822 122 33104	100nF 10% 63V
2683	4822 122 33104	100nF 10% 63V
2684	4822 122 33104	100nF 10% 63V
2685	4822 122 33104	100nF 10% 63V
2686	4822 122 33104	100nF 10% 63V
2687	4822 122 33104	100nF 10% 63V
2688	4822 122 33104	100nF 10% 63V
2689	4822 122 33104	100nF 10% 63V
2690	4822 124 41573	470µF 20% 35V
2691	4822 121 51252	470nF 5% 100V
2692	5322 121 42386	100nF 5% 63V
2693	4822 122 33147	22nF 20%
2695	4822 124 41558	10µF 20% 25V
2696	4822 121 51225	18nF 2% 63V
2697	4822 121 51361	5,6nF 2% 160V
2698	4822 121 51361	5,6nF 2% 160V
2699	4822 121 51225	18nF 2% 63V
2700	4822 124 22339	100µF 20% 16V
2702	4822 124 22337	22µF 20% 63V
2703	4822 124 41594	330µF 20% 35V
2704	4822 124 41527	47µF 20% 25V
2705	4822 122 33147	22nF 20%
2706	4822 122 33147	22nF 20%
2707	4822 124 41591	6800µF 20% 16V
2708	4822 124 40272	33µF 20% 16V
2709	4822 122 33147	22nF 20%
2710	4822 122 33147	22nF 20%
2711	4822 124 41571	1000µF 20% 16V
2712	4822 124 40272	33µF 20% 16V
2713	4822 124 41573	470µF 20% 35V
2714	4822 124 41527	47µF 20% 25V
2715	5322 121 42386	100nF 5% 63V

3501	5322 111 90111	4,7kΩ 2% 0,125W
3502	4822 111 90214	100kΩ 2% 0,125W
3503	4822 111 30499	4,7Ω 5% 0,33W
3504	4822 111 30499	4,7Ω 5% 0,33W
3505	4822 111 90253	12kΩ 2% 0,125W
3506	4822 116 52389	100Ω 5% 0.5W

3507	5322 111 90092	1kΩ 2% 0,125W
3508	4822 111 90512	24kΩ 2% 0,125W
3509	4822 111 90572	5,6kΩ 2% 0,125W
3510	4822 111 90249	10kΩ 2% 0,125W
3520	4822 101 10685	Trimpot. LIN 4,7kΩ 20% 0.05W
3521	4822 116 52849	220Ω 1% 0,6W
3522	4822 111 30515	18Ω 5% 0,33W
3523	4822 111 30511	12Ω 5% 0,33W
3524	5322 111 90091	100Ω 2% 0,125W
3530	4822 116 52857	47kΩ 1% 0,33W
3531	4822 116 52846	150Ω 1% 0,33W
3531	4822 116 53083	15kΩ 1% 0,33W
3533	5322 111 90268	5,1kΩ 2% 0,125W
3534	4822 111 90197	220kΩ 2% 0,125W
3535	4822 116 53081	12kΩ 1% 0,6W
3539	4822 111 90251	22kΩ 2% 0,125W
3540	4822 111 30499	4,7Ω 5% 0,33W
3541	4822 111 90544	6,8kΩ 2% 0,125W
3542	4822 111 90357	33Ω 2% 0,125W
3543	4822 111 90544	6,8kΩ 2% 0,125W
3545	4822 111 30483	1Ω 5% 0,33W
3546	4822 111 30483	1Ω 5% 0,33W
3551	5322 111 90099	150kΩ 2% 0,125W
3552	5322 111 90101	1,8kΩ 2% 0,125W
3552	4822 111 90248	2,2kΩ 2% 0,125W
3553	4822 116 52399	1,5kΩ 5% 0,33W
3554	4822 116 90421	2kΩ 2% 0,125W
3555	4822 111 90251	22kΩ 5% 0,125W
3556	4822 111 90171	820Ω 5% 0,125W
3557	4822 111 90197	220kΩ 2% 0,125W
3560	4822 111 91494	11kΩ 2% 0,125W
3561	4822 116 90417	150kΩ 2% 0,125W
3562	4822 111 90568	120kΩ 2% 0,125W
3563	4822 111 90573	56kΩ 2% 0,125W
3564	4822 111 91495	160kΩ 2% 0,125W
3565	5322 111 90105	27Ω 2% 0,125W
3566	4822 111 90186	22Ω 2% 0,125W
3567	4822 111 90575	82kΩ 2% 0,125W
3568	4822 100 20522	Trimpot. LIN 22kΩ 20% 0,05W
3569	4822 111 90368	680kΩ 2% 0,125W
3574	5322 111 90267	33kΩ 2% 0,125W
3575	5322 111 90111	4,7kΩ 2% 0,125W
3576	4822 116 52848	200kΩ 1% 0,6W
3578	4822 111 90575	82kΩ 2% 0,125W
3579	4822 116 90417	150kΩ 2% 0,125W
3580	4822 116 52426	4,7kΩ 5% 0,5W
3581	4822 116 53105	3,3kΩ 1% 0,6W
3582	4822 111 90572	5,6kΩ 2% 0,125W
3584	4822 111 91492	91kΩ 2% 0,125W
3585	4822 111 90214	100kΩ 2% 0,125W
3586	4822 111 90368	680kΩ 2% 0,125W
3588	4822 116 52472	47kΩ 5% 0.5W
3589	5322 111 90111	4,7kΩ 2% 0,125W
3589	5322 116 80446	47kΩ 5% 0,125W
3591	5322 111 90096	1,2kΩ 2% 0,125W
3600	4822 111 90248	2,2kΩ 2% 0,125W
3602	4822 111 90251	22kΩ 2% 0,125W
3603	4822 111 90371	75Ω 2% 0,125W
3604	4822 111 30499	4,7Ω 5% 0,33W
3605	5322 111 90265	1,6kΩ 2% 0,125W
3607	4822 111 90571	3,9kΩ 2% 0,125W
3609	4822 111 30499	4,7Ω 5% 0,33W
3610	4822 111 90373	9,1kΩ 2% 0,125W
3611	4822 111 90366	620Ω 2% 0,125W
3613	4822 111 90251	22kΩ 2% 0,125W
3619	4822 111 90251	22kΩ 2% 0,125W
3620	4822 111 90238	18kΩ 5% 0,125W

3621	4822 111 90238	180kΩ 5% 0,125W
3621	4822 111 90238	18kΩ 5% 0,25W
3622	4822 111 90543	47kΩ 2% 0,125W
3623	4822 111 90238	180kΩ 5% 0,25W
3624	4822 111 90248	2,2kΩ 2% 0,125W
3625	4822 111 90249	10kΩ 2% 0,125W
3626	4822 111 90249	10kΩ 2% 0,125W
3627	4822 111 30499	4,7Ω 5% 0,33W
3628	4822 111 90251	22kΩ 2% 0,125W
3629	4822 111 90197	220kΩ 2% 0,125W
3630	4822 111 90251	22kΩ 2% 0,125W
3634	4822 111 90251	22kΩ 2% 0,125W
3635	4822 111 90251	22kΩ 2% 0,125W
3636	4822 111 90251	22kΩ 2% 0,125W
3638	4822 111 90251	22kΩ 2% 0,125W
3639	4822 111 90251	22kΩ 2% 0,125W
3640	4822 111 90251	22kΩ 2% 0,125W
3643	4822 111 90251	22kΩ 2% 0,125W
3645	5322 111 90111	4,7kΩ 2% 0,125W
3646	4822 111 90251	22kΩ 2% 0,125W
3647	4822 111 90251	22kΩ 2% 0,125W
3650	4822 111 30483	1Ω 5% 0.33W
3651	4822 111 90197	220kΩ 2% 0,125W
3652	4822 111 30499	4,7Ω 5% 0,33W
3653	4822 116 52428	560Ω 5% 0,5W
3654	5322 111 90118	8,2kΩ 2% 0,125W
3655	4822 111 30499	4,7Ω 5% 0,33W
3657	4822 111 30499	4,7Ω 5% 0,33W
3658	4822 111 30508	10Ω 5% 0,33W
3659	4822 116 52426	4,7kΩ 5% 0.5W
3665	5322 116 53478	1,5kΩ 1% 0,6W
3666	5322 116 53478	1,5kΩ 1% 0,6W
3667	4822 111 30522	33Ω 5% 0,33W
3668	4822 111 30522	33Ω 5% 0,33W
3669	4822 116 90271	4,7kΩ 5% 0,33W
3670	4822 116 90271	4,7kΩ 5% 0,33W
3671	4822 116 90271	4,7kΩ 5% 0,33W
3672	4822 116 90271	4,7kΩ 5% 0,33W
3673	4822 111 30522	33Ω 5% 0,33W
3674	4822 111 30522	33Ω 5% 0,33W
3675	4822 111 90249	10kΩ 2% 0,125W
3676	4822 111 90249	10kΩ 2% 0,125W
3677	5322 111 90091	100Ω 2% 0,125W
3678	5322 111 90091	100Ω 2% 0,125W
3679	5322 111 90091	100Ω 2% 0,125W
3680	5322 111 90091	100Ω 2% 0,125W
3681	5322 116 80431	150Ω 5% 0,125W
3682	5322 116 80431	150Ω 5% 0,125W
3701	5322 111 90111	4,7kΩ 2% 0,125W
3702	4822 111 90425	5,6MΩ 5% 0,125W
3703	5322 111 90108	39kΩ 2% 0,125W
3704	5322 111 90096	1,2kΩ 2% 0,125W
3705	4822 111 90573	56kΩ 2% 0,125W
3706	5322 111 90096	1,2kΩ 2% 0,125W
3707	5322 111 90096	1,2kΩ 2% 0,125W
3708	5322 111 90096	1,2kΩ 2% 0,125W
3710	5322 111 90099	150kΩ 2% 0,125W
3720	5322 111 90092	1kΩ 2% 0,125W
3721	4822 111 90543	47kΩ 2% 0,125W
3722	4822 111 30499	4,7Ω 5% 0,33W
3724	4822 116 53081	12kΩ 1% 0,6W
3725	4822 111 90253	12kΩ 2% 0,125W
3728	4822 111 90572	5,6kΩ 2% 0,125W
3729	4822 116 53081	12kΩ 1% 0,6W
3730	4822 111 90253	12kΩ 2% 0,125W
3731	4822 111 90186	22Ω 2% 0,125W
3732	4822 116 52849	220Ω 1% 0,6W

3736	4822 111 90214	100kΩ 2% 0,125W
3737	4822 111 90249	10kΩ 2% 0,125W
3738	4822 111 90214	100kΩ 2% 0,125W
3739	4822 111 90425	5,6MΩ 5% 0,125W
3740	4822 116 52864	820Ω 1% 0,6W
3743	4822 111 90425	5,6MΩ 5% 0,125W
3744	4822 116 52864	820Ω 1% 0,6W
3745	4822 111 90425	5,6MΩ 5% 0,125W
3747	4822 111 90249	10kΩ 2% 0,125W
3747	4822 111 90216	30kΩ 5% 0,125W
3748	4822 111 90571	3,9kΩ 2% 0,125W
3775	5322 111 90111	4,7kΩ 2% 0,125W
3776	4822 111 90425	5,6MΩ 5% 0,125W
3779	5322 111 90306	750Ω 2% 0,125W
3785	4822 116 52493	1MΩ 5% 0,33W
3801	4822 111 90163	CHIP JUMPER
3802	4822 111 90163	CHIP JUMPER
3803	4822 111 90163	CHIP JUMPER
3804	4822 111 90163	CHIP JUMPER
3805	4822 111 90163	CHIP JUMPER
3808	4822 111 90163	CHIP JUMPER
3809	4822 111 90163	CHIP JUMPER
3810	4822 111 90163	CHIP JUMPER
3811	4822 111 90163	CHIP JUMPER
3812	4822 111 90163	CHIP JUMPER
3813	4822 111 90163	CHIP JUMPER
3814	4822 111 90163	CHIP JUMPER
3818	4822 111 90163	CHIP JUMPER
3821	4822 111 90163	CHIP JUMPER
3822	4822 111 90163	CHIP JUMPER
3823	4822 111 90163	CHIP JUMPER
3824	4822 111 90163	CHIP JUMPER
3825	4822 111 90163	CHIP JUMPER
3826	4822 111 90163	CHIP JUMPER
3827	4822 111 90163	CHIP JUMPER
3828	4822 111 90163	CHIP JUMPER
3829	4822 111 90163	CHIP JUMPER
3830	4822 111 90163	CHIP JUMPER
3831	4822 111 90163	CHIP JUMPER
3833	4822 111 90163	CHIP JUMPER
3834	4822 111 90163	CHIP JUMPER
3835	4822 111 90163	CHIP JUMPER
3836	4822 111 90163	CHIP JUMPER
3837	4822 111 90163	CHIP JUMPER
3838	4822 111 90163	CHIP JUMPER
3839	4822 111 90163	CHIP JUMPER
3840	4822 111 90163	CHIP JUMPER
3841	4822 111 90163	CHIP JUMPER
3842	4822 111 90163	CHIP JUMPER
3843	4822 111 90163	CHIP JUMPER
3844	4822 111 90163	CHIP JUMPER
3845	4822 111 90163	CHIP JUMPER
3847	4822 111 90163	CHIP JUMPER
3848	4822 111 90163	CHIP JUMPER
3849	4822 111 90163	CHIP JUMPER
3850	4822 111 90163	CHIP JUMPER
3852	4822 111 90163	CHIP JUMPER
3853	4822 111 90163	CHIP JUMPER
3854	4822 111 90163	CHIP JUMPER
3855	4822 111 90163	CHIP JUMPER
3856	4822 111 90163	CHIP JUMPER
3857	4822 111 90163	CHIP JUMPER
3858	4822 111 90163	CHIP JUMPER
3859	4822 111 90163	CHIP JUMPER
3860	4822 111 90163	CHIP JUMPER
3861	4822 111 90163	CHIP JUMPER
3862	4822 111 90163	CHIP JUMPER

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	CA0372DP2
6505	4822 130 34173	BZX79-B5V6
6506	4822 130 34173	BZX79-B5V6
6507	4822 130 61207	BC848
6508	4822 130 61207	BC848
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	BC858
6517	5322 130 42012	BC858
6519	5322 130 30684	1N4002
6520	4822 130 42131	BF550
6523	4822 209 70422	MN4264-15
6525	4822 130 61207	BC848
6526	4822 130 61207	BC848
6527	5322 130 42012	BC858
6528	4822 130 30861	BZX55-C7V5
6530	4822 209 60801	MC68HC05C9P/SC409009
6531	4822 130 42675	BC818
6535	5322 209 86234	NE5532N
6536	5322 209 86234	NE5532N
6537	5322 130 30684	1N4002
6538	5322 130 30684	1N4002
6540	4822 209 72545	SAA7220
6541	4822 209 72544	TDA1541
6542	4822 130 42675	BC818
6543	4822 130 42675	BC818
6544	4822 130 42675	BC818
6545	4822 130 42675	BC818
6546	4822 209 83274	NJM4560D
6547	5322 130 30684	1N4002
6548	5322 130 30684	1N4002
6549	4822 209 60775	SAA7310
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	BZX55-C3V9
6556	4822 130 61207	BC848
6557	4822 130 30621	1N4148
6558	4822 130 44121	BC338
6558	4822 130 40938	BC548
6559	4822 130 61207	BC848
6561	4822 209 60803	SN74LS08D
6561	5322 209 11596	PC74HCT08T
6562	4822 130 61207	BC848
6563	5322 130 42012	BC858
6564	4822 130 42633	BSR56
6565	4822 130 42633	BSR56
6568	4822 130 61207	BC848
6569	4822 218 20752	TOTX172
6571	4822 209 60772	X24C16
6572	4822 130 34195	BZX55-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	5322 209 11222	MC7905CT
6593	5322 130 41899	MC7915CT

MISCELLANEOUS

0003	4822 267 40789	Cinch socket 5p
0005	4822 492 63076	Spring clip
0016	4822 265 20291	Mains inlet
SK1	4822 276 11309	Mains switch
0021	4822 256 30274	Fuse holder
SK2	4822 276 12523	Tact switch
1000	4822 148 80281	Transformer
1501	4822 253 30009	FUSE 160mA T FOR /00R /05R
1501	4822 253 30217	FUSE 300mA T FOR /17R
1502	4822 242 71349	Cristal 11.2896 MHz
1503	4822 242 70831	Cer. osc. 4.0MHz
5001	4822 146 30778	MAINS TRANSFORMER /00R /05R
5001	4822 146 30797	MAINS TRANSFORMER /17R
5502	4822 157 53141	AL0410ST471K
5503	4822 157 53141	AL0410ST471K

TOOLS

4822 397 30184	CD AUDIO SIGNALS
4822 397 30096	AUDIO TEST DISC 5+5A
4822 397 30184	AUDIO TEST DISC 1kHz
4822 397 60141	AUDIO TEST MAX DIAM
4822 395 50145	TORX SCREWDRIVERSET
4822 395 50132	TORX SCREW SQUARE
4822 395 30204	13TH ORDER TER
4822 322 40066	SERVICE CABLE (14P)
4822 267 50676	SERVICE CONN (14P)
5322 130 32182	LED GREEN CQYG11
4822 321 21284	SERVICE CABLE (4P)