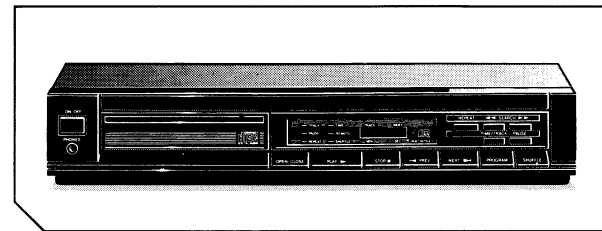


Service
Service
Service



43979A11

Service Manual



CONTENTS

- 1 Contents and Control Buttons
- 1 Technical specifications
- 2 Servicing hints, loading and cabinet parts
- 3 Electrical measurements and adjustments
- 4 Blockdiagram, panel data and partslist of the main panel
- 5 Control and display, wiring diagram and electrical partslist

(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.

(F)

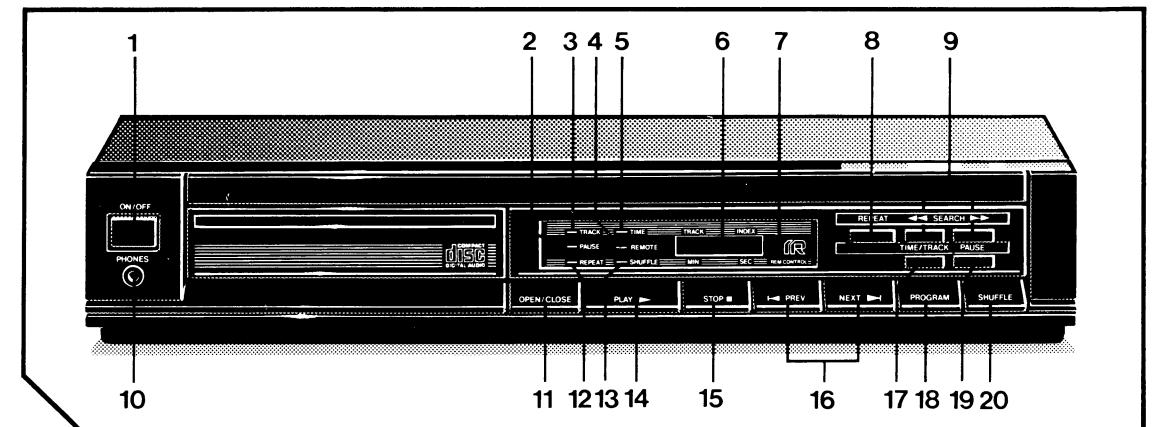
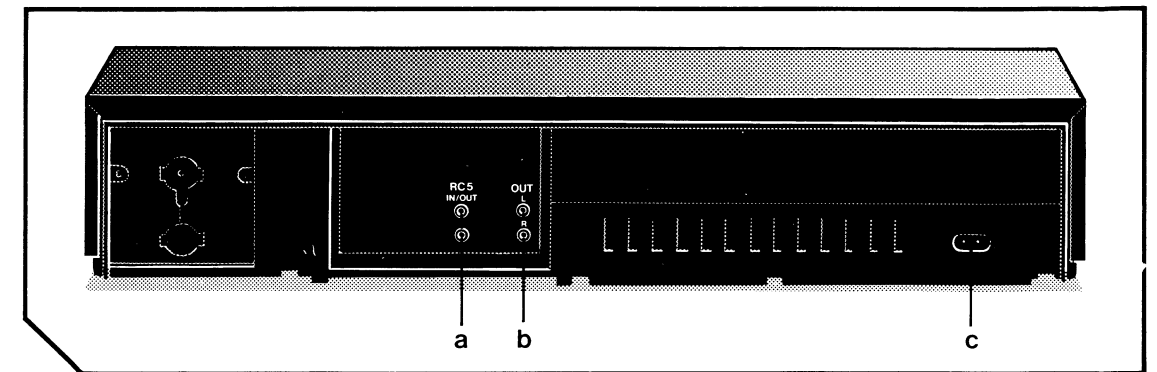
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(D)

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

(I)

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



43979A11

OPERATION

Explanation of keys etc

- 1 **ON/OFF** key
For switching on and off.
- 2 **PAUSE LED**
lights up when the player is in the pause mode.
- 3 **TRACK LED**
Lights up when you switch on the player. Indicates that the display is showing the track numbers and any index numbers of the disc.
- 4 **REMOTE LED** (CD 482 only)
lights up briefly when the REM CONTROL eye receives a command from the remote control.
- 5 **TIME LED**
Lights up during the display of the playing time of a track or the disc.
- 6 **MULTIMODE CD LED DISPLAY**
Informs you about the functioning of the player. Displays details from the disc contents list.
- 7 **REM CONTROL** eye (CD 482 only)
Receives the signals from the remote control.
- 8 **REPEAT** key
For repeating a disc or a programme
- 9 **<<SEARCH>>** keys
For fast search to a particular passage during play. ('<<' backwards, '>>' forwards.)
- 10 **PHONES** socket
For connection of headphones.
- 11 **OPEN/CLOSE** key
For opening and closing the disc tray.
- 12 **REPEAT LED**
Lights up when you repeat a disc or programme.
- 13 **SHUFFLE LED**
Lights up when you play a disc in random order.
- 14 **PLAY** key
For starting play
For returning to the beginning of a track
- 15 **STOP/CM** key
For stopping play (STOP)
For erasing a programme (CM = Clear Memory).
- 16 **PREV** and **NEXT** keys
For selecting a previous or a later track during play. For selecting the track number you want play to begin with.
For selecting track numbers when compiling a programme. ('PREV' from high to low, 'NEXT' from low to high.)
- 17 **TRACK/TIME** key
For selecting between track number and playing time indication.
- 18 **PROGRAM** key
For storing track numbers in a programme.
For erasing track numbers from a programme.
For checking the programme.
- 19 **PAUSE** key
For briefly interrupting play.
For holding play at the start of a disc, track or passage.
- 20 **SHUFFLE** key
For playing all tracks on a disc in random order.

CONNECTIONS

- a RC5 IN/OUT:** for a remote control system. Use this connection for:
- Connecting up the equipment when you are incorporating the player in a PHILIPS HiFi-system with remote control.
 - Connecting the remote control receiver EM 2200.
- b OUT L R:** For the connecting cable to the amplifier.
- Insert a red plug into the 'R' socket (right-hand channel) and the other plug into the 'L' socket (left-hand channel).
 - Insert the two other plugs into the corresponding sockets of the CD or AUX input of your amplifier. You can also use the TUNER or TAPE IN connection, but never the PHONO input. This is not suitable for Compact Disc reproduction.
- c** Connection for the mains lead.

TECHNICAL DATA

Typical Audio Performance

- Number of Channels: 2
- Frequency Range: 2-20 000 Hz
- Output resistance: 200 Ω
- Nominal load impedance: 100 kΩ//100 pF
- Amplitude Linearity: ± 0,1 dB (20-20 000 Hz)
- Phase Linearity: ± 1.0° (20-20 000 Hz)
- Dynamic Range: 90 dB (20-20 000 Hz)
- Signal-to-Noise Ratio: 96 dB (20-20 000 Hz)
- Channel Separation: 98 dB (20-20 000 Hz)
- Total Harmonic Distortion: 0,003% (20-20 000 Hz)
- Wow and Flutter: quartz crystal precision
- D/A Conversion: quadruple oversampling (176.4 kHz) with digital filter and two 16 bit D/A converters
- Error Correction System: Cross Interleaved Reed Solomon Code (CIRC)
- Audio Output Level: 2 V_{rms}
- Headphones load impedance: 32-600 Ω

Optical Readout System

- Laser: semi-conductor AlGaAs
- Wavelength: 780 nm

Signal Format

- Sampling Frequency: 44.1 kHz
- Quantization: 16 bit linear/channel

Power Supply

- Mains Voltage: see type plate at rear of player
- Mains Frequencies: 50 and 60 Hz
- Power Consumption: 15 W approx.
- Safety Requirements: IEC

Cabinet, general

- Dimensions (wxhxd) cabinet with tray closed: 420 x 75/81 x 280 mm approx.
- cabinet with tray opened: 420 x 75/81 x 410 mm approx.

Disc

- Diameter: 120 mm and 80 mm
- Thickness: 1.2 mm
- Direction of Rotation (seen from reading side): anti-clockwise
- Scanning Velocity: 1.2-1.4 m/s
- Rotation Speed: 500-200 rpm
- Playing Time (theoretical): 74 min (stereo)
- Track Pitch: 1.6 μm
- Material: plastic

The right is reserved to change data if necessary

This Compact Disc player complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.

(GB) WARNING

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



ESD

(NL) WAARSCHUWING

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

(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.

(D) WARNUNG

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

(F) ATTENTION

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

SERVICING HINTS

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

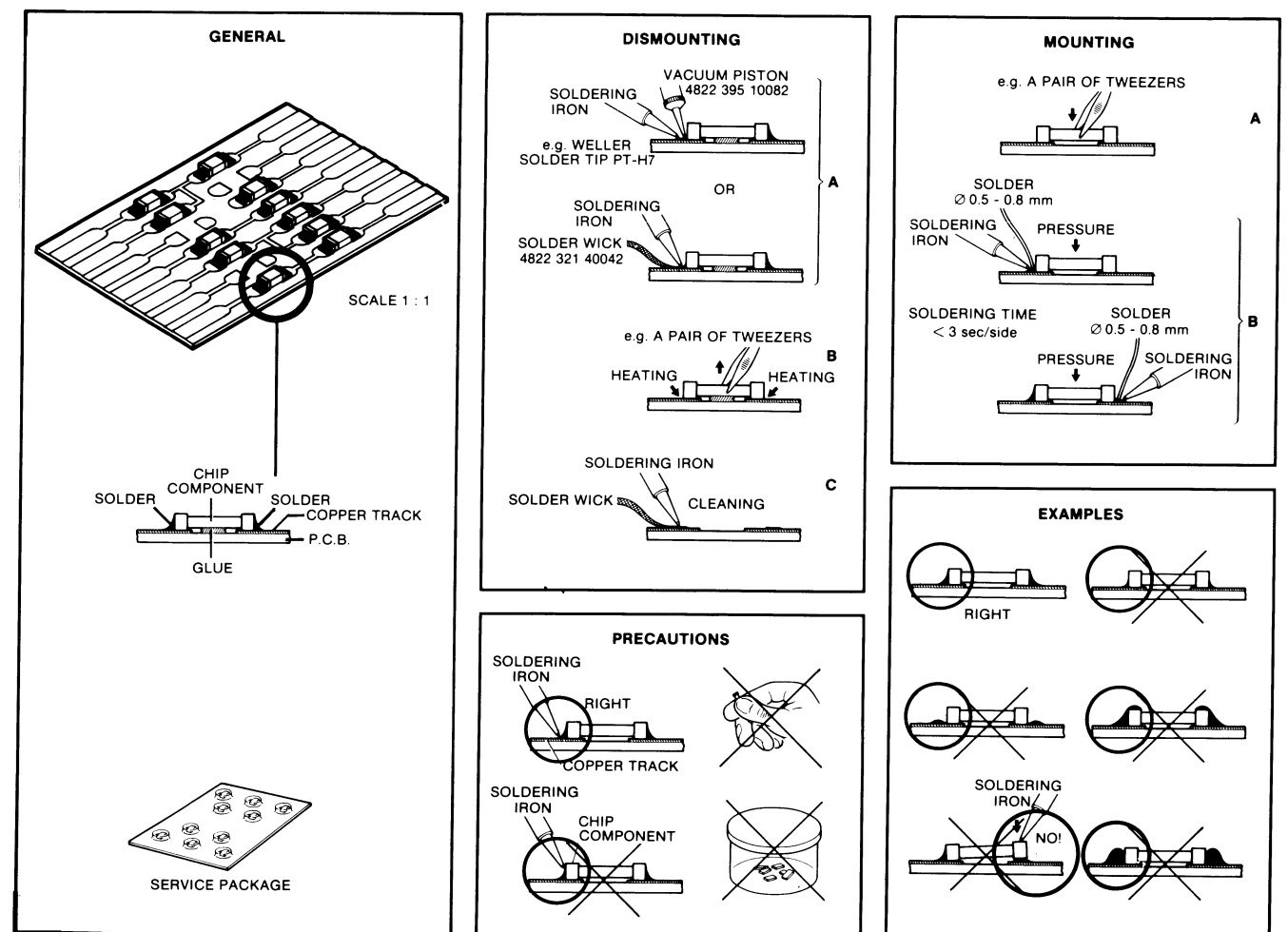
The disc should always rest properly on the turntable. To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism. If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold-down see drawing 42565 A12.

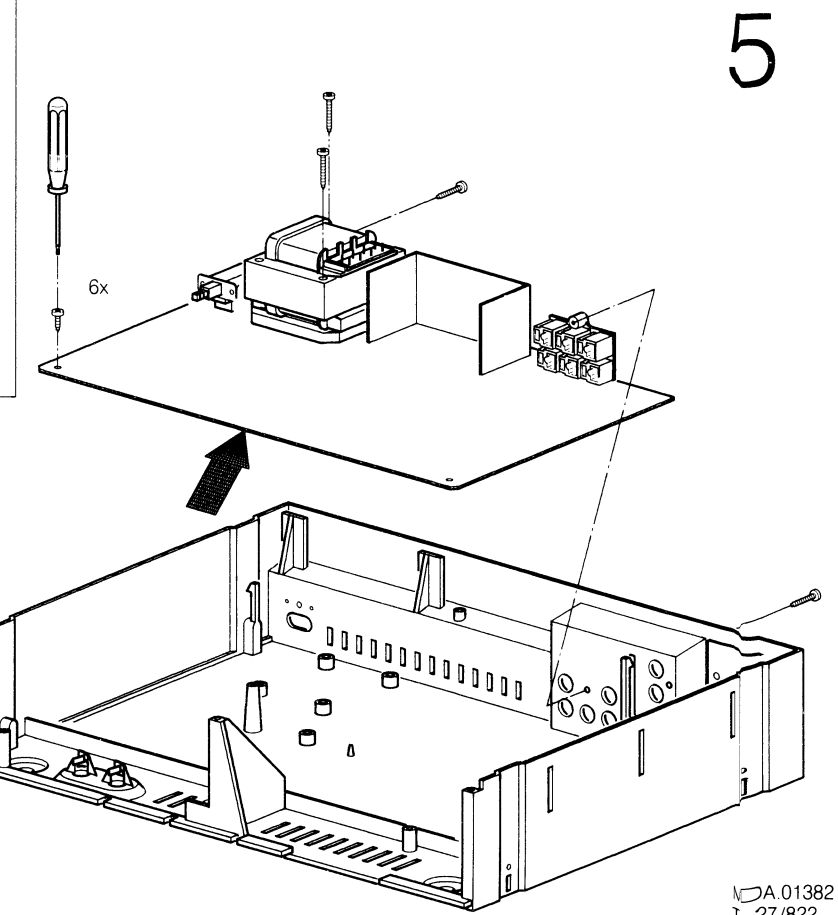
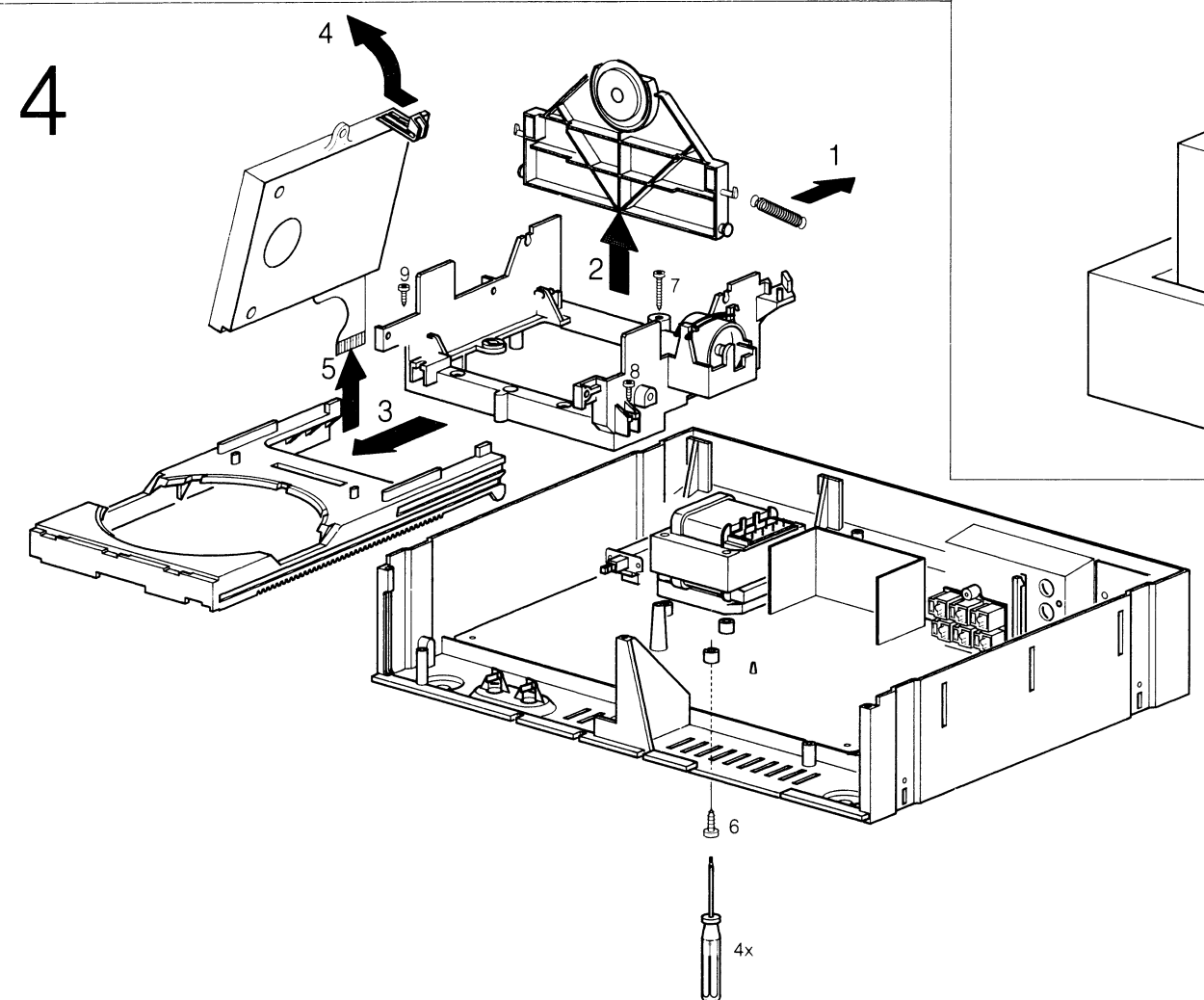
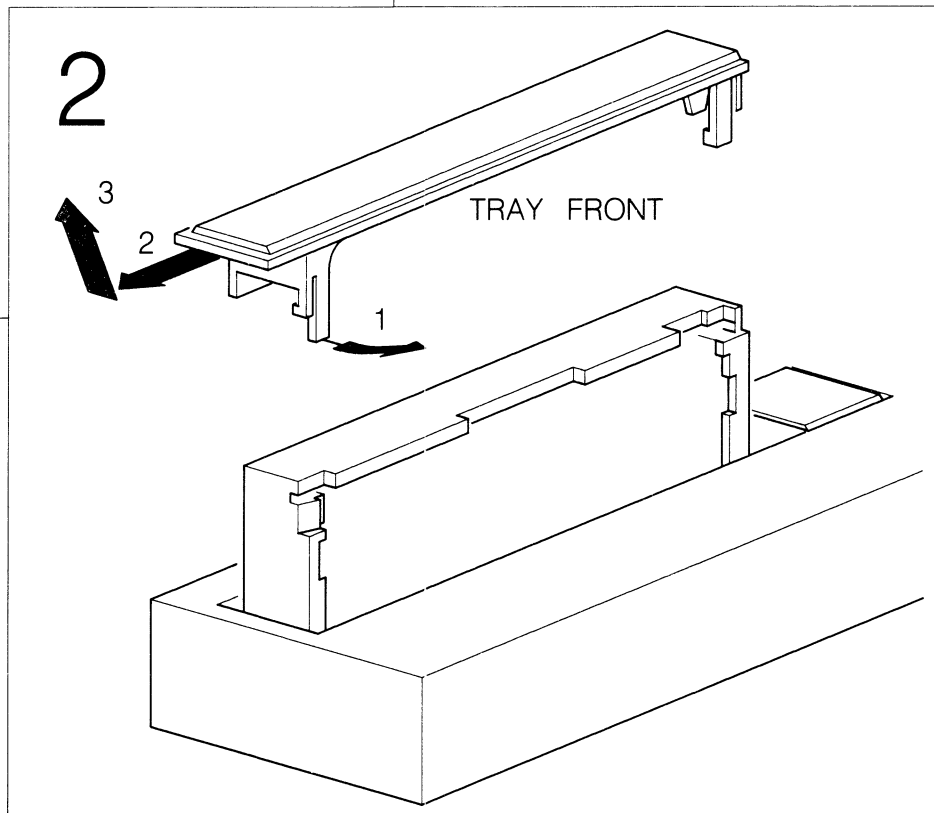
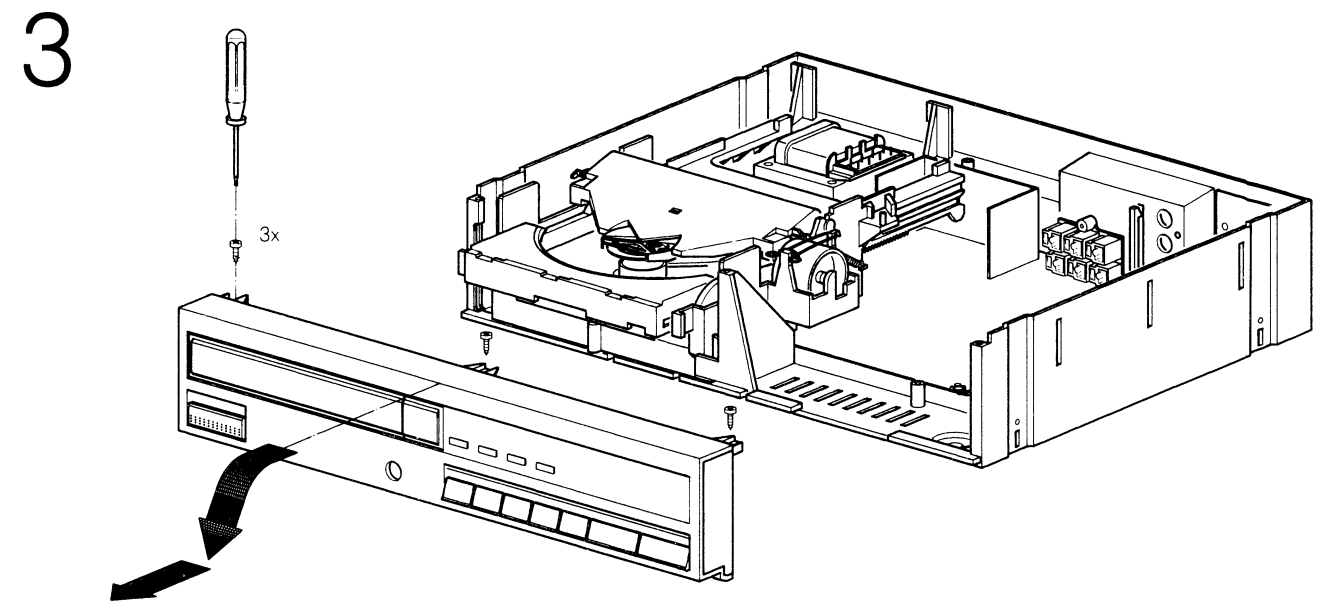
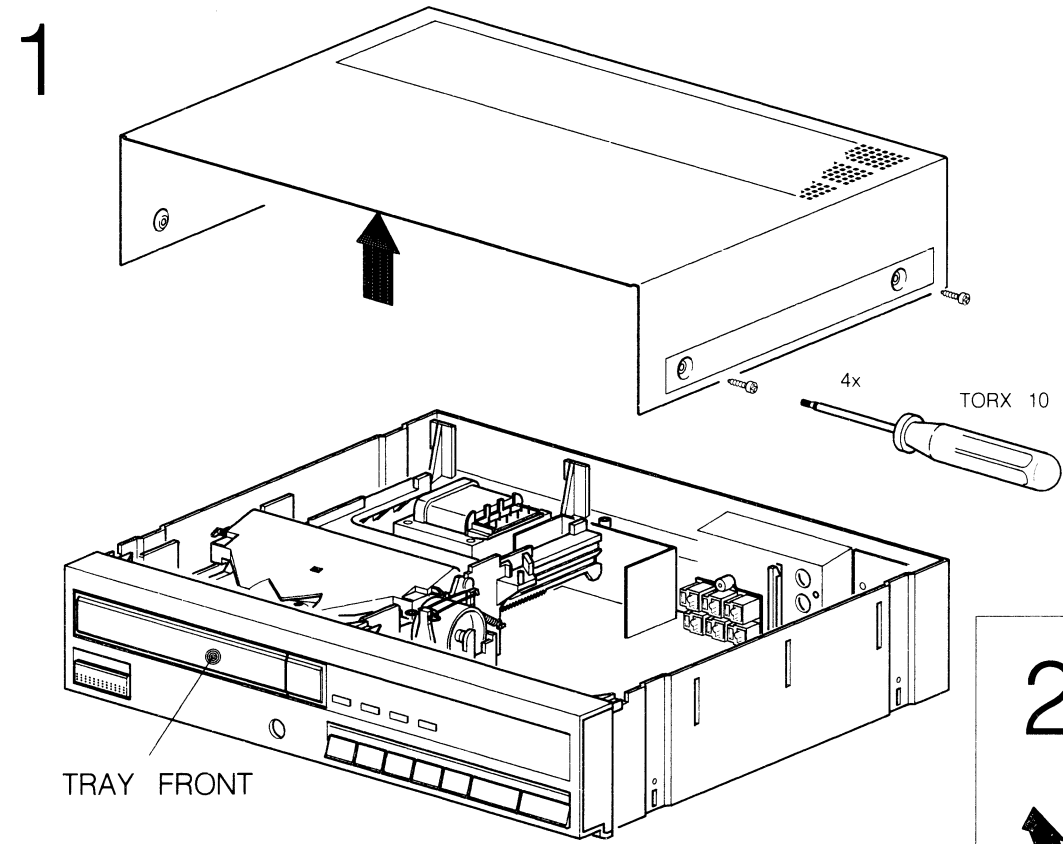
Test discs

It is important to treat the test discs with great care. The disorders on the discs (black spots, fingerprints, etc.) are exclusive and unambiguously positioned. Damage may cause additional drop-outs etc. rendering the intentional errors no longer exclusive. In that case it will no longer be possible to check e.g. the good working of the track detectors.

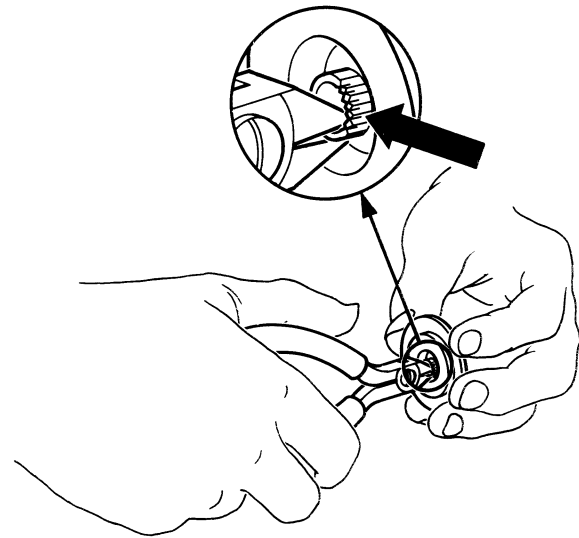
SERVICE TOOLS

Audio test disc (3)	4822 397 30085
Disc without errors (5)+ disc with DO errors, black spots and fingerprints (5A)	4822 397 30096
Disc 65 min 1kHz without pause	4822 397 30155
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (5p)	4822 321 21273
Service cable (14p)	4822 321 21598
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Glass disc	4822 395 90204



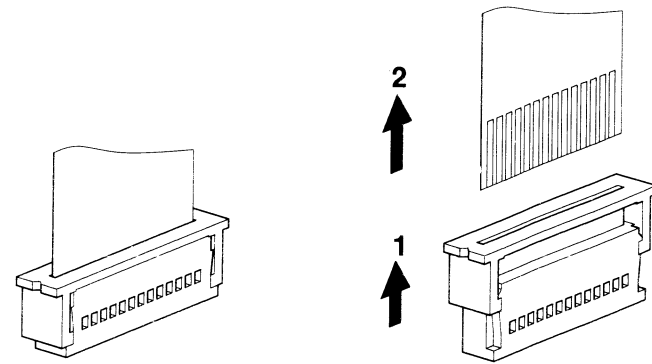


SERVICE DISC-HOLDDOWN



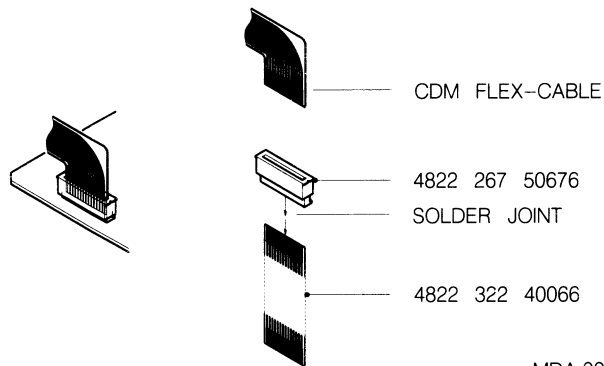
42 565 A12

DEMOUNTING FOIL CDM



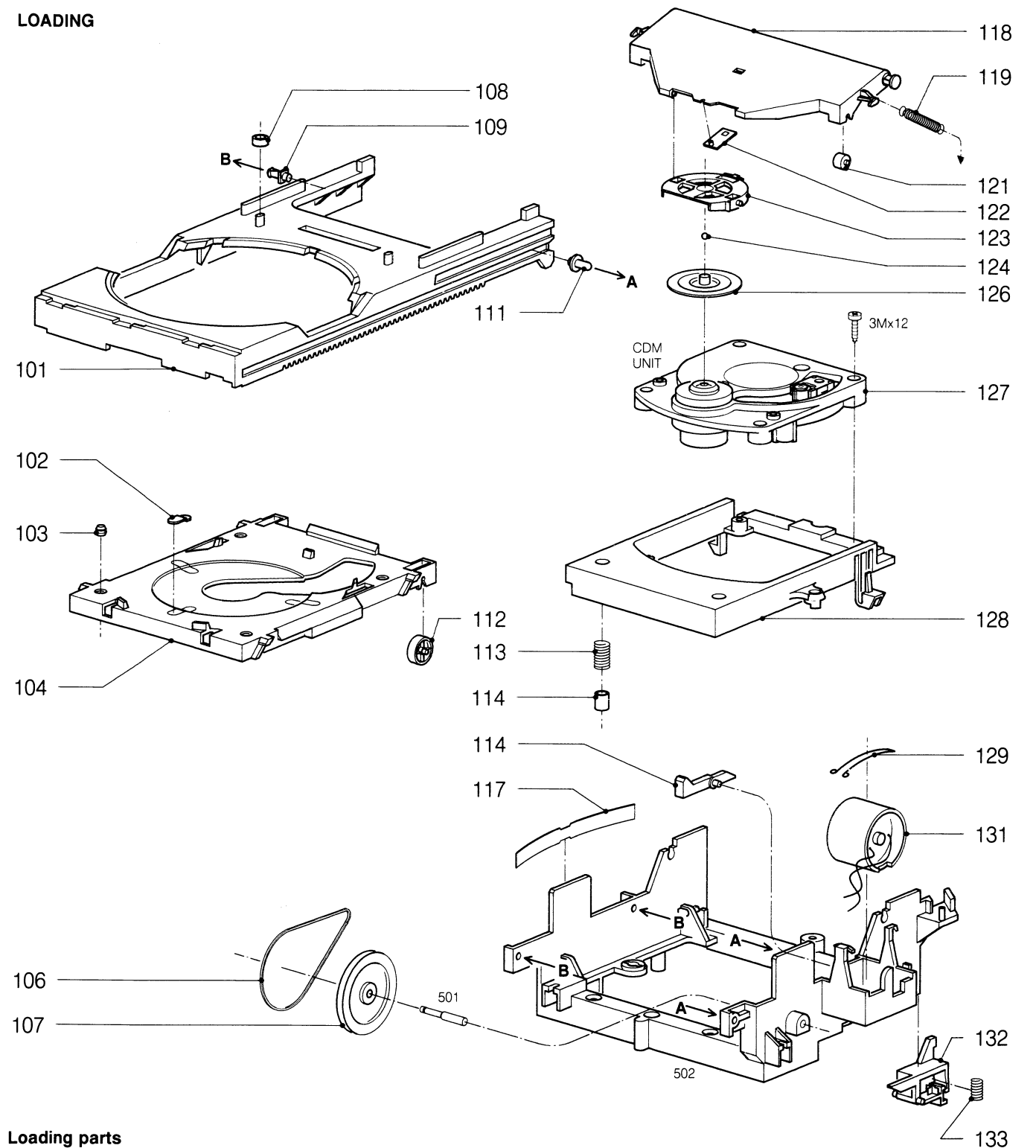
MDA.01408
T28/B22

SERVICE CDM FOIL



MDA.00311
T19-730

LOADING



Loading parts

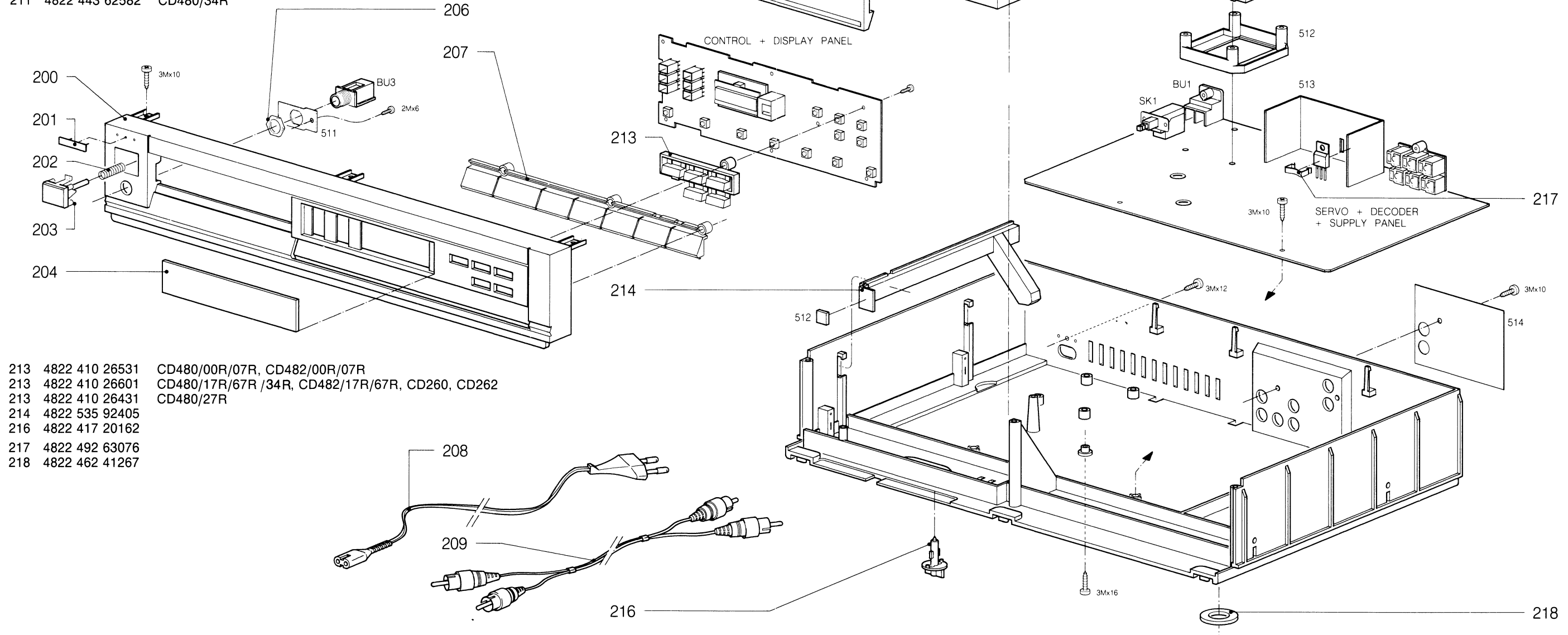
101	4822 444 50603	119	4822 492 32883
102	4822 325 50176	121	4822 528 90639
103	4822 325 50177	122	4822 466 92257
104	4822 466 92251	123	4822 402 61207
106	4822 358 10115	124	4822 520 40177
107	4822 522 32359	126	4822 530 80503
108	4822 532 51518	127	4822 691 30209
109	4822 402 61081	128	4822 402 61196
111	4822 402 61132	129	4822 492 63746
112	4822 528 90638	131	4822 361 20998
113	4822 492 51902	132	4822 402 50244
114	4822 466 61587	133	4822 492 51935
116	4822 402 61107		
117	4822 492 63659		
118	4822 444 60568		

EVA.00594
821/T19

EXPLODED VIEW CABINET

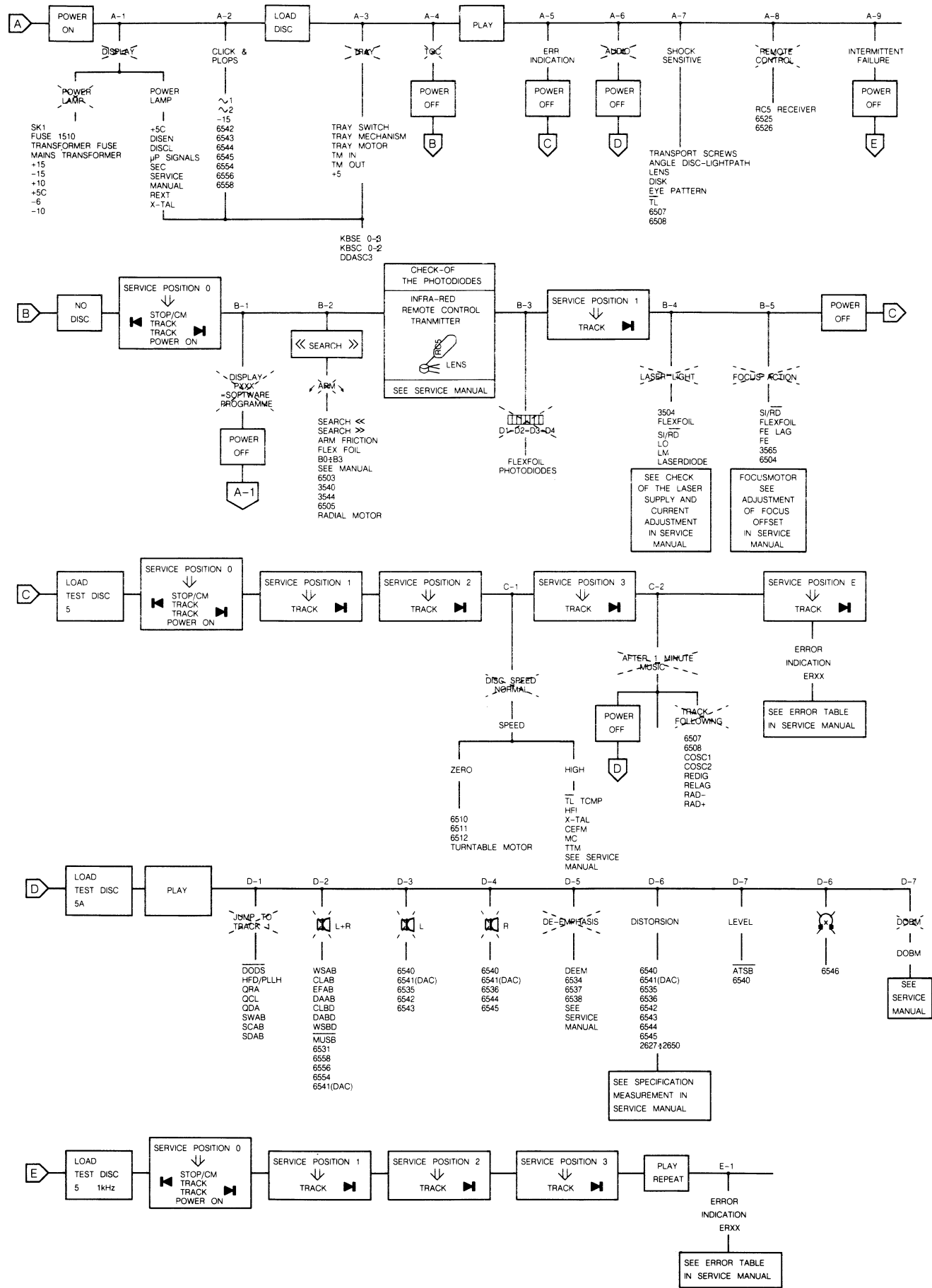
CABINET PARTS

- 200 4822 444 40253 CD480/00R/07R, CD482/00R/07R
- 200 4822 444 40256 CD480/17R/34R/67R, CD482/17R/67R
- 200 4822 444 40698 CD480/27R
- 200 4822 444 40265 CD260, CD262
- 201 4822 459 10806 CD480/00R/07R, CD482/00R/07R
- 201 4822 459 10827 CD480/17R/27R/67R, CD482/17R/67R, CD260, CD262
- 201 4822 459 10837 CD480/34
- 202 4822 492 51723
- 203 4822 410 26533
- 204 4822 381 11003 CD480/00R/07R/27R
- 204 4822 381 11008 CD480/17R/34R/67R
- 204 4822 381 11007 CD482/00R/07R
- 204 4822 381 11011 CD482/17R/67R
- 204 4822 381 11014 CD260
- 204 4822 381 11015 CD262
- 206 4822 505 10571
- 207 4822 410 26532 CD480/00R/07R, CD482/00R/07R
- 207 4822 410 26599 CD480/17R/34R/67R, CD482/17R/67R, CD260, CD262
- 207 4822 410 26532 CD480/27R
- 208 4822 321 10457 CD480/00R, CD482/00R
- 208 4822 321 10445 CD480/07R/17R/27R/34R/67R, CD482/07R/17R/67R, CD260, CD262
- 209 4822 321 22873
- 211 4822 444 50606
- 211 4822 443 62581 CD480/27R
- 211 4822 443 62582 CD480/34R



- 213 4822 410 26531 CD480/00R/07R, CD482/00R/07R
- 213 4822 410 26601 CD480/17R/67R /34R, CD482/17R/67R, CD260, CD262
- 213 4822 410 26431 CD480/27R
- 214 4822 535 92405
- 216 4822 417 20162
- 217 4822 492 63076
- 218 4822 462 41267

3-1
ELECTRICAL MEASUREMENTS AND ADJUSTMENTS



A1
µP-SIGNALS

SIGNAL	MODE	◇	⤴	⤵	REMARKS
RESET	POWER ON	100		PULS HIGH	
X-TAL	STAND BY	101		4MHz	
TRAY IN	OPEN/CLOSE	83			HIGH WHEN TRAY IS CLOSING
TRAY OUT	OPEN/CLOSE	83A			LOW WHEN TRAY IS OPENING
ATSB	DISC SEARCH	89		LOW	
MUTE	STAND BY PLAY	67		HIGH	

MDA 01389
T-08 823

B2
B0,B1,B2,B3 SIGNALS

SIGNAL	MODE	◇	⤴	⤵	REMARKS
B0	SERVICE POSITION 0 OR 1: SEARCH	36	⤵	LOW	
	SERVICE POSITION 0 OR 1: SEARCH	36	⤴	LOW	
B1	SERVICE POSITION 0 OR 1: SEARCH	34	⤵	HIGH	
	SERVICE POSITION 0 OR 1: SEARCH	34	⤴	HIGH	
B2	SERVICE POSITION 0 OR 1: SEARCH	33	⤵	LOW	
	SERVICE POSITION 0 OR 1: SEARCH	33	⤴	HIGH	
B3	SERVICE POSITION 0 OR 1: SEARCH	32	⤵	HIGH	
	SERVICE POSITION 0 OR 1: SEARCH	32	⤴	HIGH	

MDA 01386
T-08 823

B3
CHECK OF THE PHOTODIODES

STEP	SIGNAL	MODE	◇	⤴	⤵	REMARKS
1	-	POWER ON	◇	⤴	⤵	SEE DRAWING 3831AA12 SIGNAL DEPENDS ON DISTANCE LENS → LED OF REMOTE CONTROL

MDA 01378
T-08 824

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

STEP	SIGNAL	MODE	◇	⤴	⤵	REMARKS
1	LO	SERV. POS 2	◇	⤴	1.8 < V < 3	S1-1 GREEN LED CONNECTED SUPPLY TO PANEL
	LM	SK	◇	⤴	170 < mV < 20	
2	LO	SERV. POS 2	◇	⤴	1.8 < V < 3	S1-1 GREEN LED CONNECTED SUPPLY TO PANEL
	LM	SK	◇	⤴	170 < mV < 20	
3	LO	POWER ON	◇	⤴	0V ± 0.2V	S1-0 NO LIGHT

MDA 01379
T-08 824

B4
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE					REMARKS
1	-	POWER OFF		R3520	1k Ω	-	PRE-ADJUSTMENT OHMIC VALUE
2	EYE-PATTERN HF	TEST DISC 5 PLAY		-	-	SEE DRAWING 37017B8	IF NO SIGNAL SEE "START UP PROCEDURE"
3	LASER CURRENT \pm VOLTAGE ACROSS R3501	TEST DISC 5 PLAY TRACK 1		R3520	50mV DC	-	-

MDA 01380
T-08 823

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		R3569	400mV \pm 40mV DC	-	FINE ADJUSTMENT

MDA 01381
T-08 824

B5
FOCUS ACTION

SIGNAL	MODE				REMARKS
Si/Rd	SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	21	-	PULS "LOW"	SEE DRAWING MDA 01403
FE	TEST DISC 5A, SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	26	-	-	SEE DRAWING MDA 01413
FE-LAG	TEST DISC 5A	27	-	-	SEE ADJUSTMENT OF FOCUS-OFFSET

MDA 01384
T-08 823

C1
HIGH SPEED DISC ROTATION

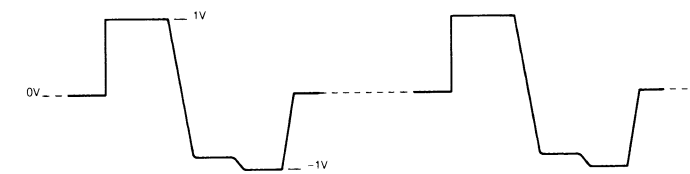
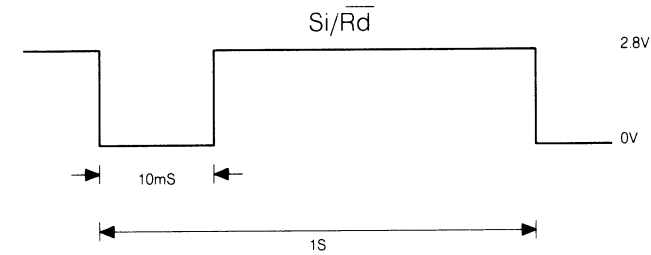
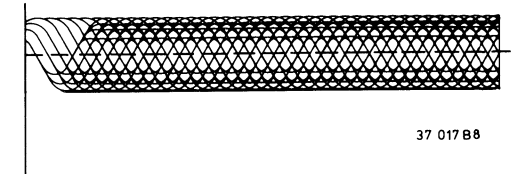
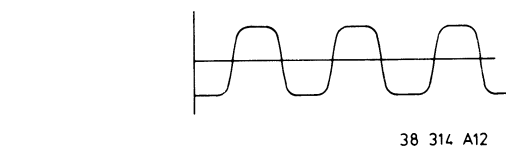
SIGNAL	MODE				REMARKS
Tl	TEST DISC 5, PLAY OR SERVICE POSITION 2	16	-	PULSES "LOW"	WHEN THE DISC IS SLOWLY BRAKED BY HAND
TCMP	TEST DISC 5, PLAY OR SERVICE POSITION 2	PIN 35 6530	+5V	-	AFTER 4 Tl PULSES
HFI	TEST DISC 5, PLAY OR SERVICE POSITION 2	65	-	-	SEE DRAWING 37017B8
X-tal	TEST DISC 5A, PLAY OR SERVICE POSITION 2	69	-	11.28MHz	IF THIS FREQUENCY DEVIATES CHECK X-OUT ON FILTER-B
CEFM	TEST DISC 5A, PLAY OR SERVICE POSITION 2	68	-	4.32MHz	-
MC	TEST DISC 5, PLAY OR SERVICE POSITION 2	81	-	-	SEE DRAWING 38849A12
TTM-	TEST DISC 5A, PLAY OR SERVICE POSITION 2	46	APPROX -1V	-	-

MDA 01385
T-08 823

C2
TRACK FOLLOWING

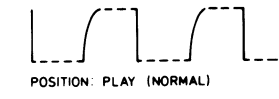
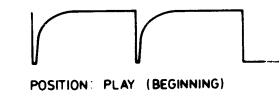
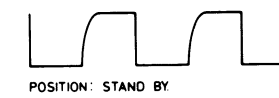
SIGNAL	MODE				REMARKS
RE dig	TEST DISC 5, PLAY OR SERVICE POSITION 3	37	-	PULSES "HIGH"	WHEN THE DISC IS SLOWLY BRAKED BY HAND
RE lag	TEST DISC 5, PLAY OR SERVICE POSITION 3	41	APPROX 2.5V DC	-	-
RAD-	TEST DISC 5A, PLAY OR SERVICE POSITION 3	42	-	-	-
RAD+	TEST DISC 5A, PLAY OR SERVICE POSITION 3	40	-	-	-
C osc1	TEST DISC 5, PLAY OR SERVICE POSITION 3	30	-	650Hz	-
C osc2	TEST DISC 5, PLAY OR SERVICE POSITION 3	31	-	650Hz	-

MDA 01387
T-08 825



MDA 01403
T33/821

MDA 01413
T33/823



38 849 A12

POSITION PLAYER	POWER ON	SERVICE POSITION 3	PLAY	SEARCH PAUSE
DOOS SIGNAL	"LOW"	"HIGH"	"HIGH"	

MDA 01143
T12 -651



MDA 0024
T07-804

D1
JUMP TO TRACK 1

SIGNAL	MODE	◆			REMARKS
DODS	TEST DISC 5A, SEARCH >>R SEARCH <<	19			SEE DRAWING MDA 01143
HFD/PLH	TEST DISC 5A, TRACK 15, PLAY	23		PULSES "LOW"	SEE DRAWING MDA 00240 WHEN THE DISC IS SLOWLY BRAKED BY HAND
QRA	TEST DISC 5A, PLAY	75			SEE DRAWING MDA 00453
QDA	TEST DISC 5A, PLAY	77			
QCL	TEST DISC 5A, PLAY	76			
SWAB	TEST DISC 5A, PLAY	78			SEE DRAWING MDA 00239
SCAB	TEST DISC 5A, PLAY	79			SEE DRAWING MDA 00239
SDAB	TEST DISC 5A, PLAY	80			SEE DRAWING MDA 00239

MDA 01388
T-08 823

D2
NO AUDIO OUTPUT LEFT + RIGHT

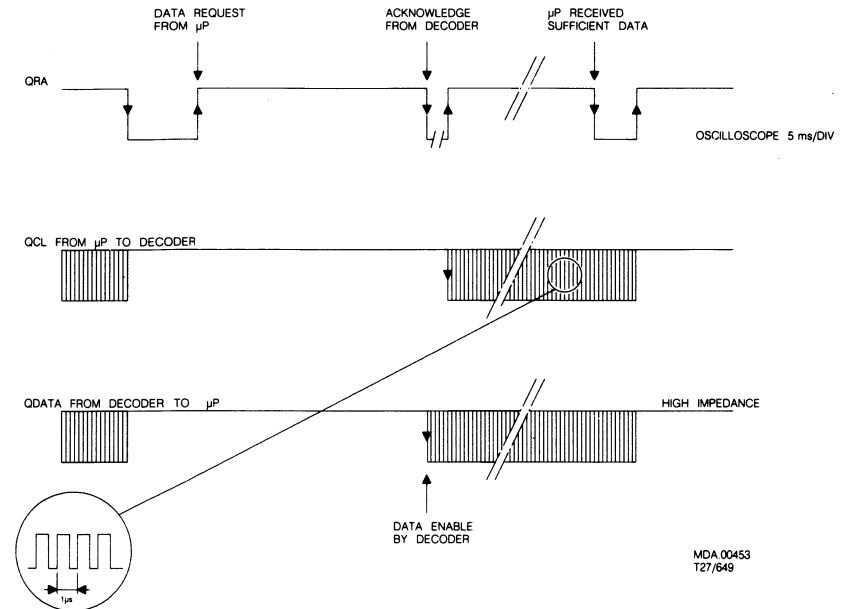
SIGNAL	MODE	◆			REMARKS
WSAB	DISC, PLAY	71			SEE DRAWING 38847C12
CLAB	DISC, PLAY	72			SEE DRAWING 38847C12
DAAB	DISC, PLAY	73		ACTIVITY	SEE DRAWING 38847C12
EFAB	TEST DISC 5A	74		PULSES	WHEN THE DISC IS SLOWLY BRAKED BY HAND
CLBD	DISC, PLAY	87			SEE DRAWING 38848C12
DABD	DISC, PLAY	86		ACTIVITY	SEE DRAWING 38848C12
WSBD	DISC, PLAY	85			SEE DRAWING 38848C12
MUSB	DISC, PAUSE, OR NEXT OR PREVIOUS	90		"LOW"	

MDA 01390
T-08 823

DAC IC

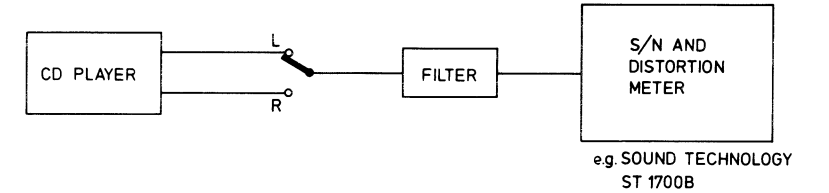
SIGNAL	MODE	◆			REMARKS
OUTPUT OF OP-AMP	DISC, PLAY	94		LF SIGNAL	LEFT CHANNEL
OUTPUT OF OP-AMP	DISC, PLAY	95		LF SIGNAL	RIGHT CHANNEL

MDA 01392
T-08 823

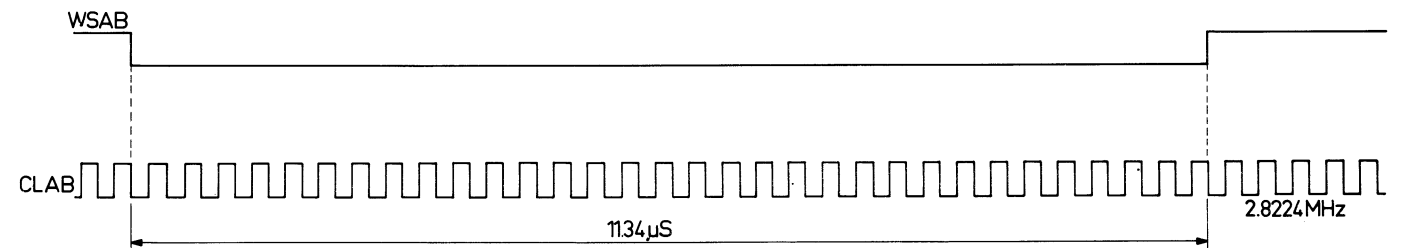


MDA 00239
T12/638

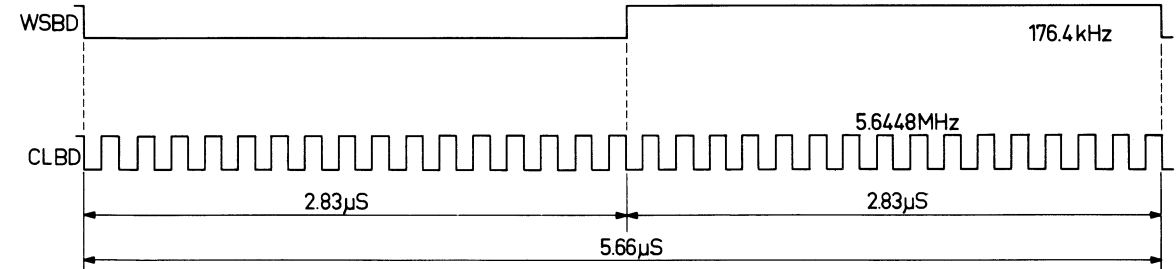
CD450



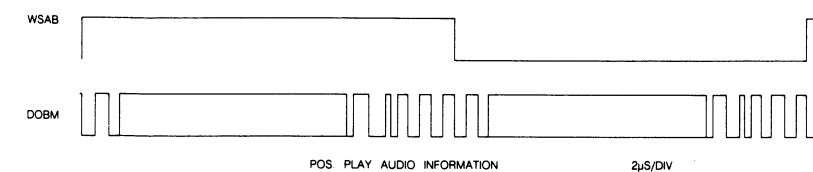
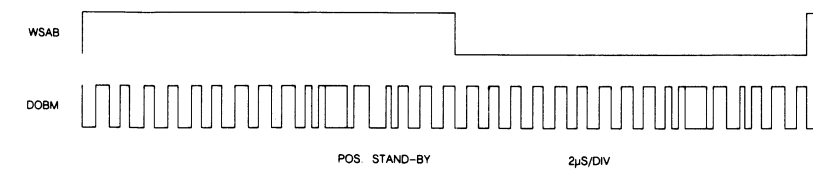
30 459 A12



38 847 C12






38 848 C12










MDA 00238
T07/733

D5
DEEM CIRCUIT

SIGNAL	MODE				REMARKS
DEEM	TEST DISC 5A TRACK 14 PLAY TRACK 15 PLAY	84		'LOW HIGH'	SEE TESTPOINT 92 AND 91 ON DEEM CIRCUIT
TESTPOINT 92	TEST DISC 5A TRACK 14	92		LF SIGNAL	
TESTPOINT 92	TEST DISC 5A TRACK 15	92		NO SIGNAL	
TESTPOINT 91	TEST DISC 5A TRACK 14	91		LF SIGNAL	
TESTPOINT 91	TEST DISC 5A TRACK 15	91		NO SIGNAL	

MDA 01393
T-08 825




D6
SPECIFICATIONS MEASUREMENT

SIGNAL	MODE				REMARKS
BU2-L	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT			SEE DRAWING: 3049A12
BU2-R	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT			SEE DRAWING: 3049A12
BU2-L	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT			SEE DRAWING: 3049A12
BU2-R	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT			SEE DRAWING: 3049A12

 SEE TECHNICAL DATA

MDA 01391
T-08 832

D9
DOBM DIGITAL OUTPUT

SIGNAL	MODE				REMARKS
DOBM	TEST DISC 5A, PLAY	88			SEE DRAWING: MDA 00238

MDA 01391
T-08 823

ERROR TABLE

System errors

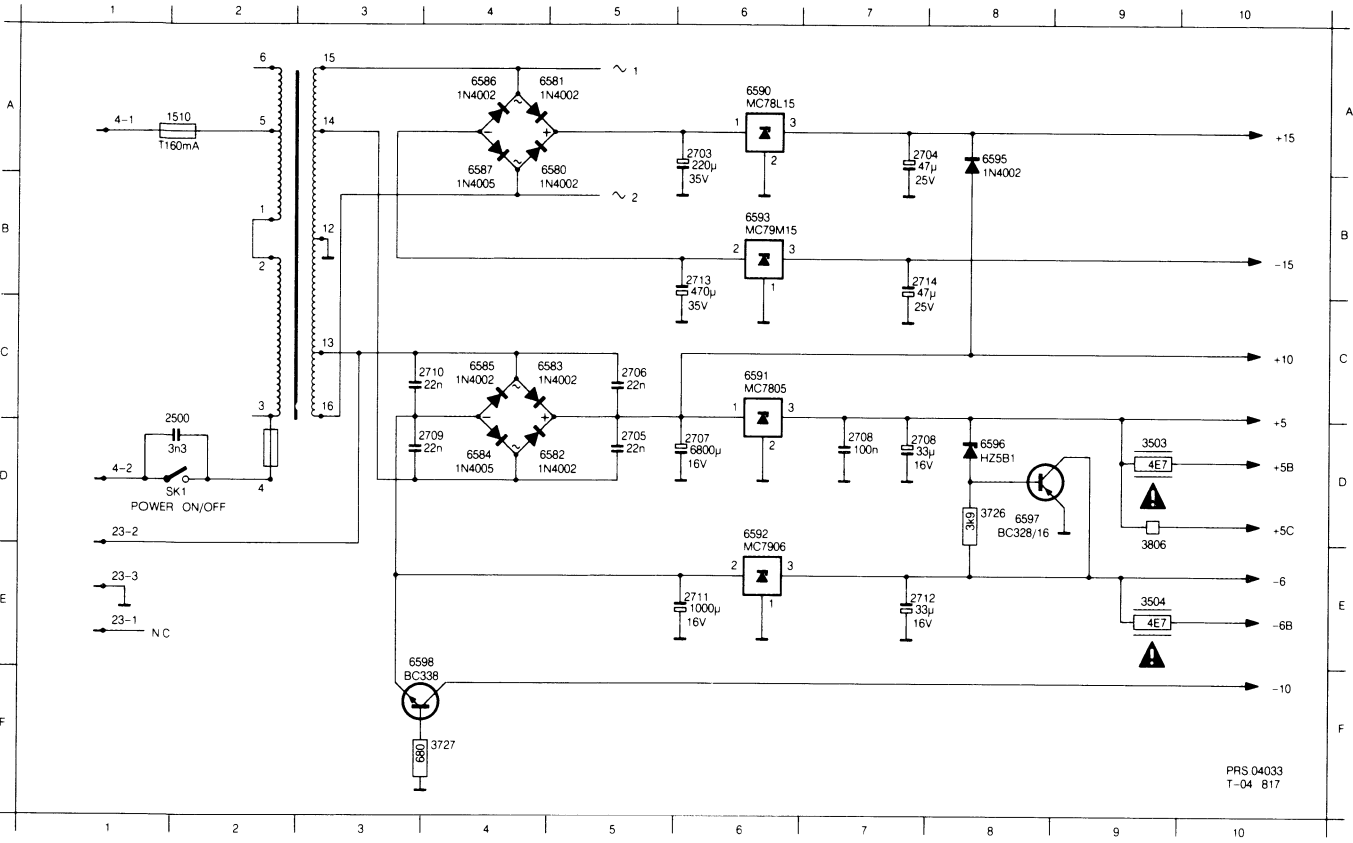
Indication	Cause	Check
Er 01	No RD	Si, Sc, RD, Photodiode signal processor
Er 02	No TL pulse at start-up	TL, HF, Photodiode signal processor, CD disc present
Er 03	No lead-in track found	CD disc, radial arm position, REdig, Radial error processor
Er 04	Too many TL pulses in PLAY	CD disc, HFD
Er 05	TL pulse > 50 msec. in PLAY	CD disc, HF in, photodiodes
Er 06	No TL pulse within 0.5 sec. during track jumping	RE-lag circuit
Er 07	Subcoding error during PLAY	HF
Er 08	TOC error	CD disc, turntable motor control, radial arm position

Operating errors

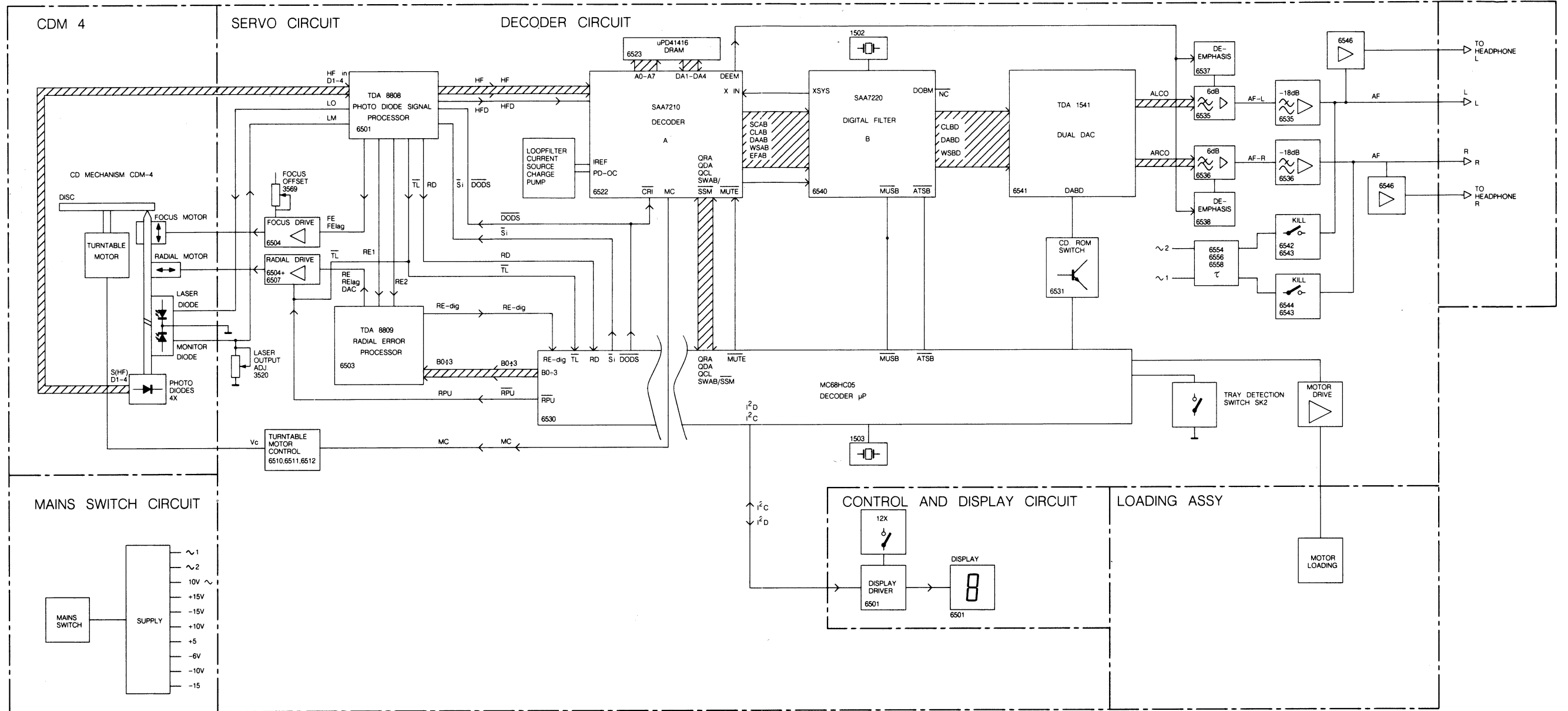
Er 30	"NEXT" key operated during the last track, with "REPEAT" turned off.
Er 31	"PREVIOUS" key operated during the first track, with "REPEAT" turned off.
Er 32	Index selected before a track has been selected.
Er 33	The selected index number does not exist on this disc.
Er 34	Programme survey requested; no programme present.
Er 35	The programme memory is full.
Er 36	The programmed track is not present on this CD disc.
Er 37	The selected track is not present on this CD disc.
Er 60	End of the "FAST FORWARD" search motion.
Er 61	End of the "FAST REVERSE" search motion.

4-1

1510	A 2	2705	D 5	2708	D 8	2712	E 8	3504	E 9	6580	A 5	6584	D 4	6590	A 6	6595	A 8	SK1	D 2
2500	C 2	2706	C 5	2709	D 4	2713	B 6	3726	D 8	6581	A 5	6585	C 4	6591	C 6	6596	D 8		
2703	A 6	2707	D 6	2710	C 4	2714	B 8	3727	F 4	6582	D 5	6586	A 4	6592	D 6	6597	D 8		
2704	A 8	2708	D 7	2711	E 6	3503	D 9	3806	D 9	6583	C 5	6587	A 4	6593	B 6	6598	E 4		



PRS 04033
T-04 817



PRS 05151
T02-823

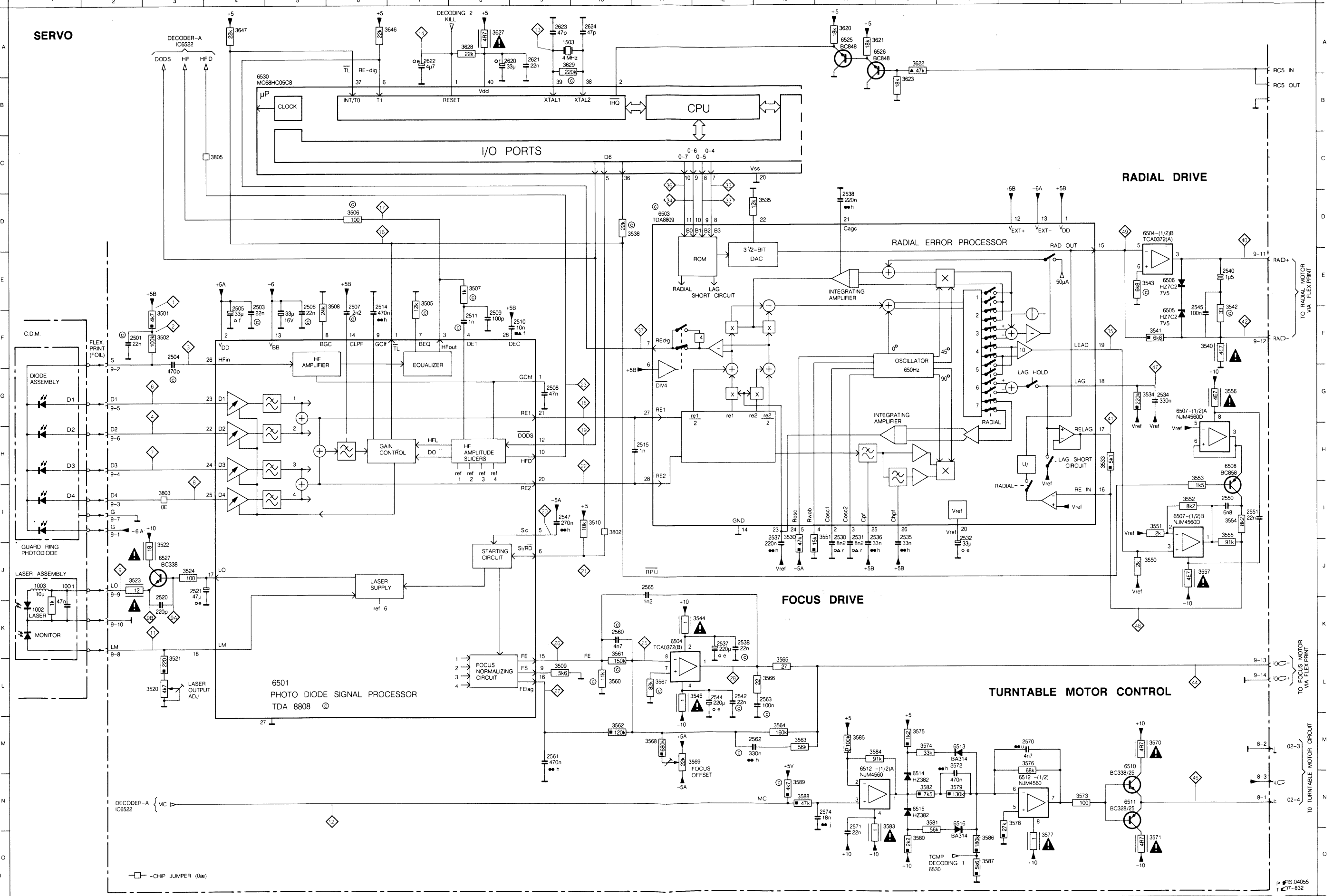
- AGC - Automatic Gain Control
- B0-B3 - Control bits for radial circuit
- BEQ - Equalizer reference current input
- BGC - DC and LF gain control reference input
- Cosc1 - Capacitor wobble oscillator
- Cosc2 - Capacitor wobble oscillator
- DEC - Decoupling input of inkruat bypass
- DET - HF detector voltage input
- DIV4 - Divide by 4 input
- DODS - Drop out detector suppression
- D1÷4 - Photodiode currents
- FE - Focus error signal
- FE lag - Focus error signal for LAG network
- HF - HF output for DEMOD
- HFD - HF detector output for DEMOD
- HF-in - HF current input to HF amplifier
- HF-out - HF amplifier and equalizer voltage output
- LM - Laser monitor diode input
- LO - Laser amplifier current output
- MC - Motor control signal
- offset IN - Offset control input
- offset OUT - Offset control output
- PLLH - PLL on hold output
- RADout - output of RE2-RE1 input
- RE - Radial error signal (Amplified RE₂-RE₁ currents)

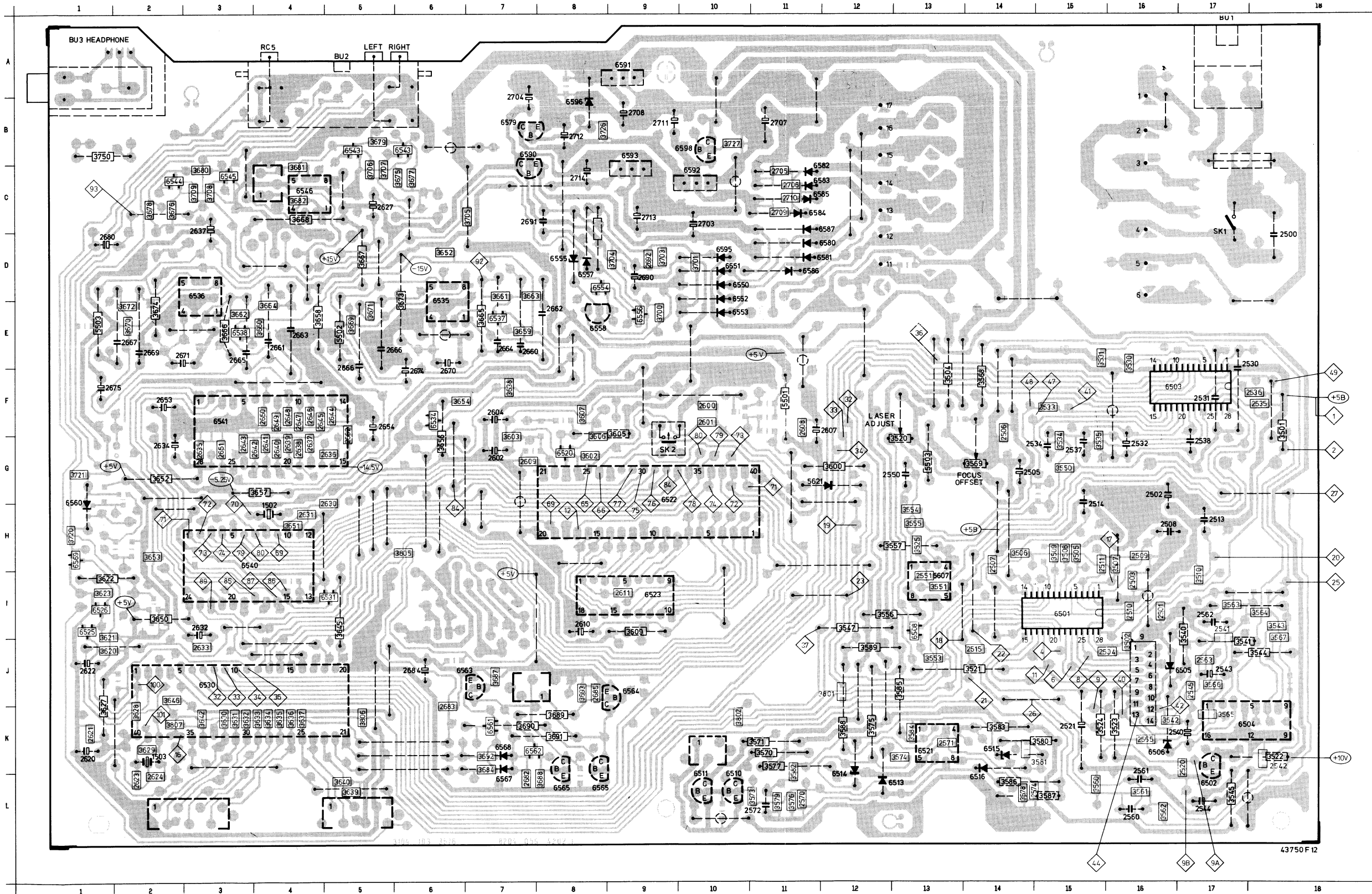
- Rosc - Resistor wobble oscillator
- Rwob - Wobble generator input
- RE1 - Radial error signal 1 (summation of amplified currents D₃ and D₄)
- RE2 - Radial error signal 2 (summation of amplified currents D₁ and D₂)
- RE dig - Radial error digital
- RE lag - Radial error signal for LAG network
- Sc - Starting up capacitor input
- Si/RD - On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
- TL - Track loss output signal
- TTM- - Control voltage for turntable motor
- TTM+ - Control voltage for turntable motor
- Vext- - Supply connection
- Vext+ - Supply connection

- ATSB - Attenuation of Audio level in Search position (Cueing)
- 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 Acknowledge
- 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

1001 J 1	2504 F 3	2510 F 9	2530 I 14	2537 K 12	2544 L 12	2561 M 9	2572 M 16	2624 A 10	3508 E 6	3523 J 2	3538 D 11	3545 L 12	3554 I 20	3562 M 10	3568 M 11	3575 M 15	3581 N 15	3587 O 16	3623 B 15	3802 I 10	6505 F 19	6511 N 19	6516 N 16
1002 K 1	2505 E 4	2511 F 8	2531 I 14	2537 I 13	2545 F 20	2562 M 13	2574 N 14	3501 F 3	3509 L 9	3524 J 3	3540 F 20	3550 J 19	3555 I 20	3563 M 13	3569 M 12	3576 M 17	3582 N 15	3588 N 13	3627 A 8	3803 I 3	6506 E 19	6512 N 17	6525 A 14
1003 J 1	2506 E 5	2514 F 6	2532 I 16	2538 K 12	2547 I 9	2563 L 13	2620 A 9	3502 F 3	3510 I 10	3530 I 13	3541 F 19	3551 I 14	3556 G 20	3564 M 13	3570 M 19	3577 O 17	3583 N 15	3589 N 13	3628 A 8	3805 C 4	6507 G 20	6512 M 14	6526 A 15
1503 A 9	2507 E 6	2515 H 11	2534 G 19	2538 D 14	2550 I 20	2565 J 11	2621 A 9	3505 E 7	3520 L 3	3533 H 18	3542 F 20	3551 I 19	3557 J 20	3565 L 13	3571 O 19	3578 N 17	3584 M 14	3620 A 14	3629 A 9	6503 D 11	6507 I 19	6513 M 16	6527 J 3
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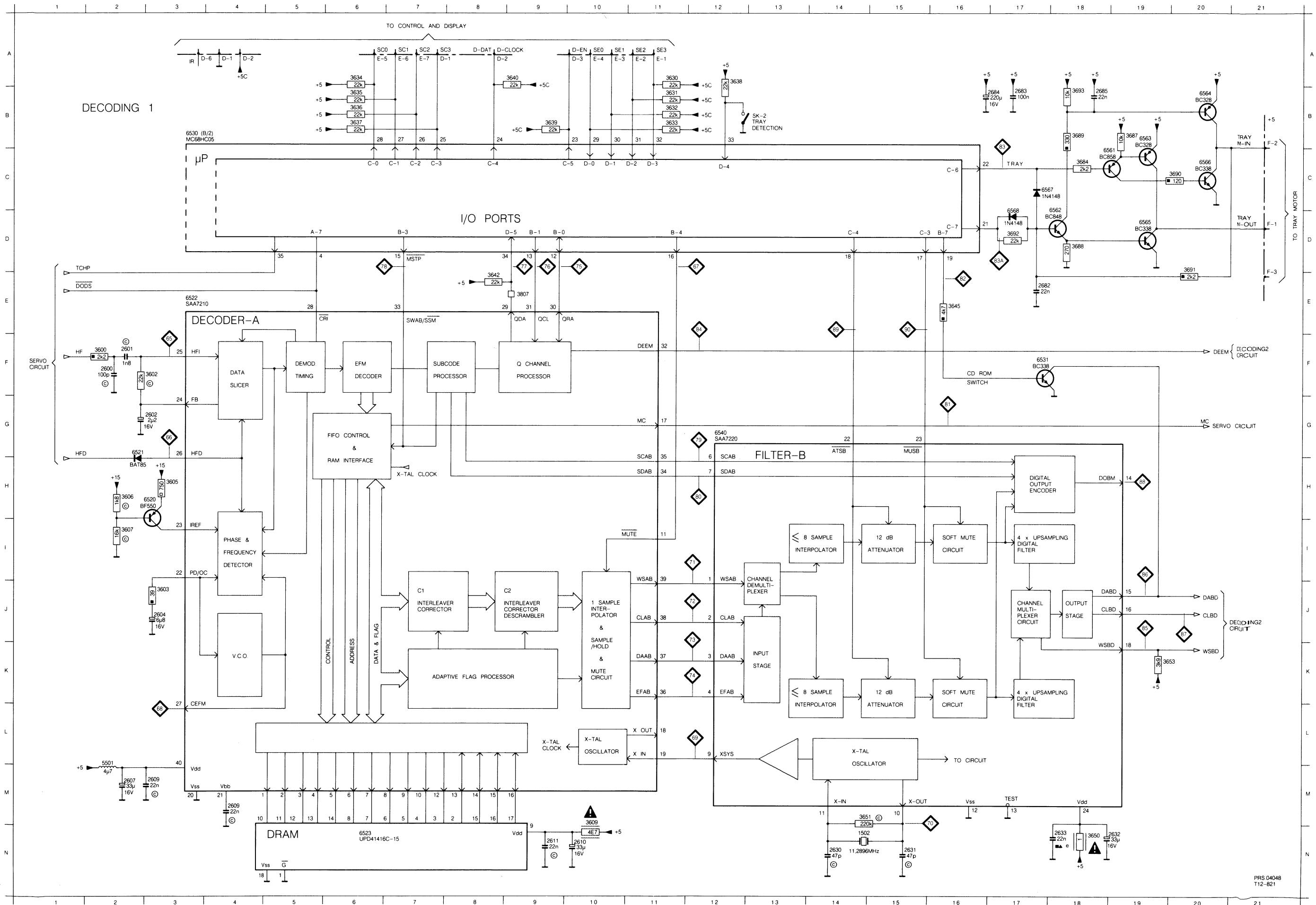
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2502	G16	2715	F13	3673	E 2	6602	O17
2503	I16	2716	F13	3674	E 2	6603	O 9
2504	J15	3504	F13	3675	C 6	6604	G 9
2505	G14	3505	H15	3676	C 3	6605	C 3
2506	G14	3506	H14	3677	C 6	6606	C 6
2507	H14	3507	H16	3678	C 6	6607	C 6
2508	H16	3508	H15	3679	B 5	6608	C 3
2509	H16	3509	H15	3680	C 3	6609	C 3
2510	I16	3510	I17	3681	C 4	6610	C 4
2511	H15	3520	G13	3682	C 4	6611	C 4
2512	H15	3521	G13	3683	C 4	6612	C 4
2513	H17	3521	J14	3684	K 7	6613	C 4
2514	H15	3522	K18	3687	J 7	6614	C 4
2515	J14	3523	K16	3688	L 8	6615	C 4
2520	K16	3524	K15	3689	K 8	6616	C 4
2521	K15	3525	K13	3690	K 8	6617	C 4
2530	F17	3530	F16	3691	K 8	6618	C 4
2531	F17	3531	F15	3692	K 7	6619	C 4
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2570	K16	3562	L16	3807	K 3	6639	C 4
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2639	H 5	3604	K 4	6536	E 10	6666	C 4
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2680	D 2	3652	D 6	6569	H 1	6694	C 4
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2705	C11	3663	E 8	6590	C 7	6704	C 4
2706	C11	3664	E 4	6591	A 9	6705	C 4
2707	B11	3665	E 7	6592	C10	6706	C 4
2708	C 9	3666	C 9	6593	C 9	6707	C 4
2709	C 9	3667	C 9	6595	D10	6708	C 4
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43750 F 12

PRS.04182
T33/834
BEHBU 43750F

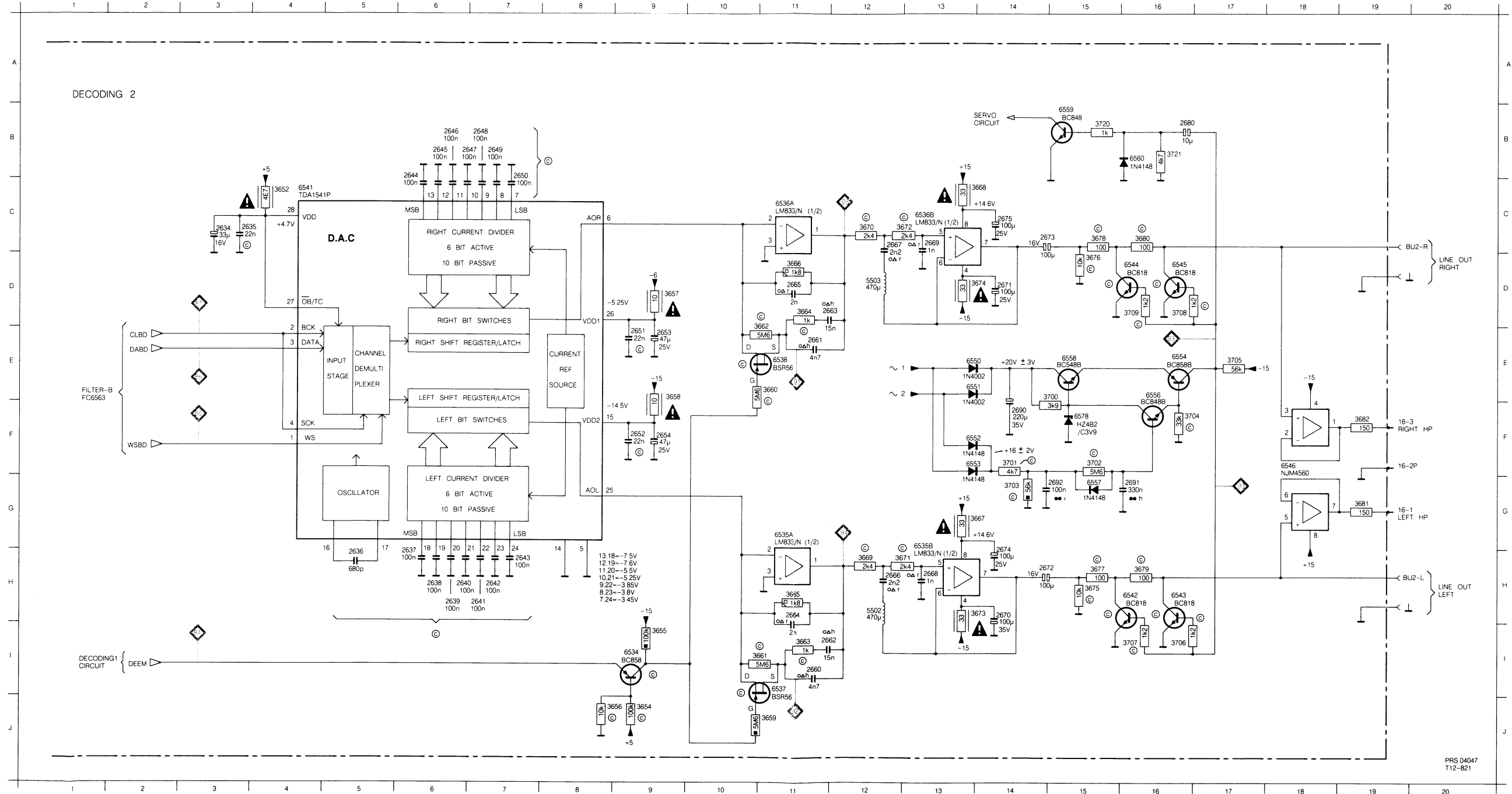
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2600 F 2	2604 J 3	2609 M 4	2630 N14	2633 N18	2684 B17	3602 F 3	3606 H 2	3630 M11	3633 B11	3636 B 6	3639 B 9	3645 E16	3653 K20	3688 D18	3691 D20	3807 E 9	6521 G 2	6530 B 3	6561 C18	6564 B20	6567 C17	
2601 F 2	2607 M 2	2610 N10	2631 N15	2682 E17	2685 B18	3603 J 3	3607 I 2	3631 B11	3634 A 6	3637 B 6	3640 A 9	3650 N18	3684 C18	3689 B18	3692 D17	5501 L 2	6522 E 3	6531 F17	6562 C18	6565 D19	6568 C17	



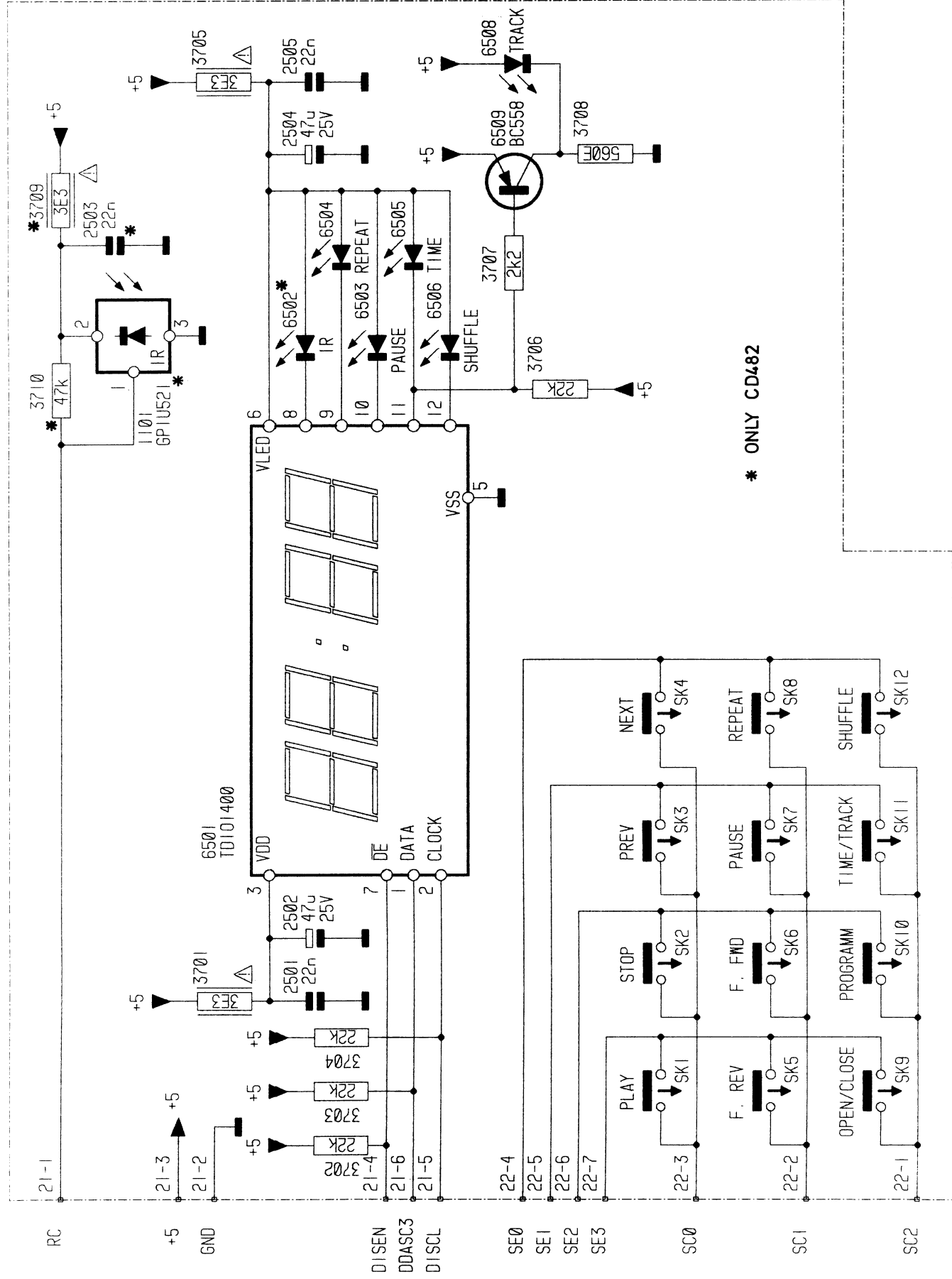
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2636	H 5	2641	H 7	2646	B 6	2650	B 7	2660	I 11	2665	D11	2671	D14	2680	B16	3652	C 4	3658	E 9	3663	I 11	3668	C14	3673	H14	3678	C15	3700	E15	3705	E17	3720	B15	6535A	G11	6538	E11	6551	E13	6557	G15	6586	H16
2637	H 6	2642	H 7	2647	B 7	2651	E 9	2661	E11	2666	H12	2672	H14	2690	F14	3654	J 9	3659	J11	3664	D11	3669	H12	3674	D14	3679	H16	3701	F14	3706	D16	3721	B16	6535B	G13	6541	C 4	6552	F13	6558	E15	6588	H16
2638	H 6	2643	H 7	2648	B 7	2652	F 9	2662	I 11	2667	C12	2673	C14	2691	G16	3655	I 9	3660	E11	3665	H11	3670	C12	3675	H15	3680	C16	3702	F15	3706	I16	5502	H12	6536A	C11	6544	D16	6553	F13	6559	B15	6589	D16
2639	H 6	2644	B 6	2649	C13	2653	E 9	2663	D11	2668	H13	2674	G14	2692	G15	3656	J 9	3661	I 11	3666	D11	3671	H13	3676	D15	3681	G19	3703	G14	3707	D16	5503	D12	6536B	C13	6546	F18	6554	E16	6560	B16		



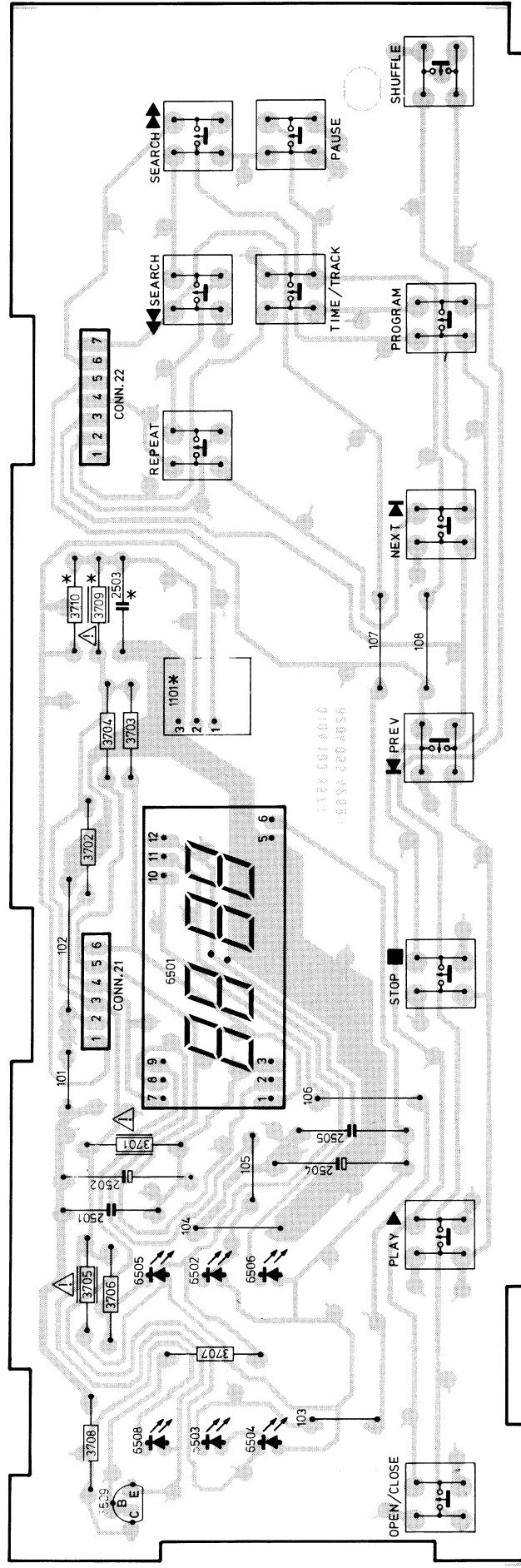
PRS 04047
T12-B21

CONTROL & DISPLAY CIRCUIT



43 722 B12

CONTROL & DISPLAY PANEL



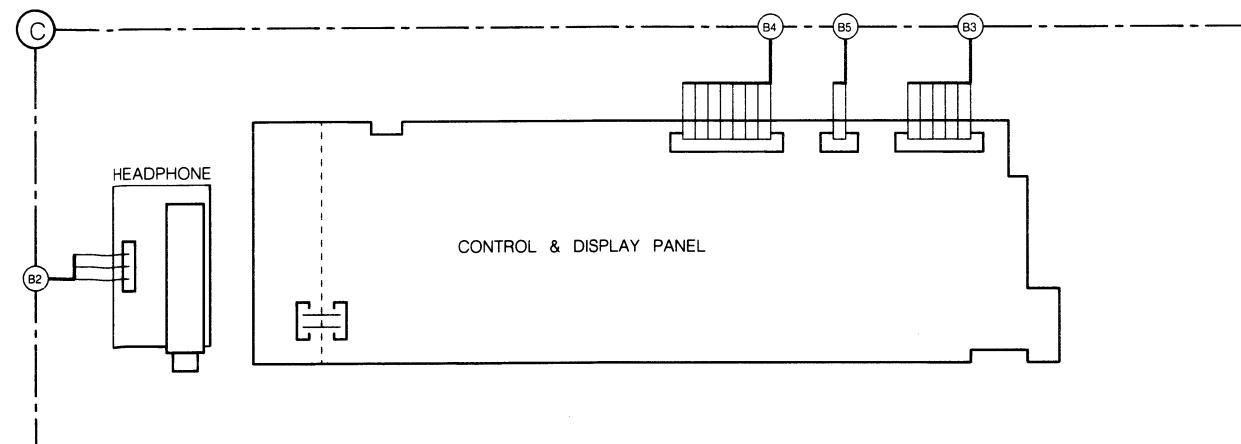
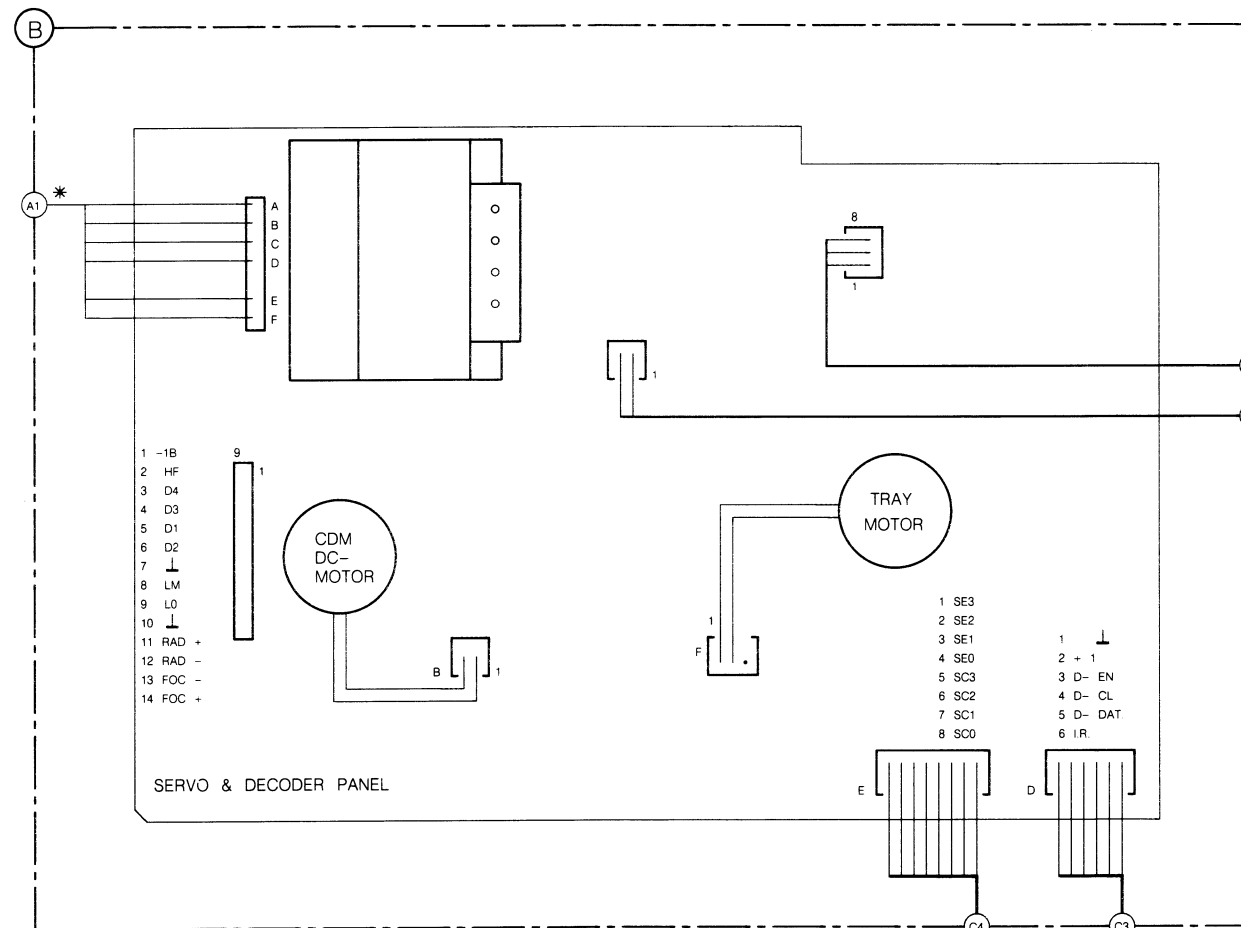
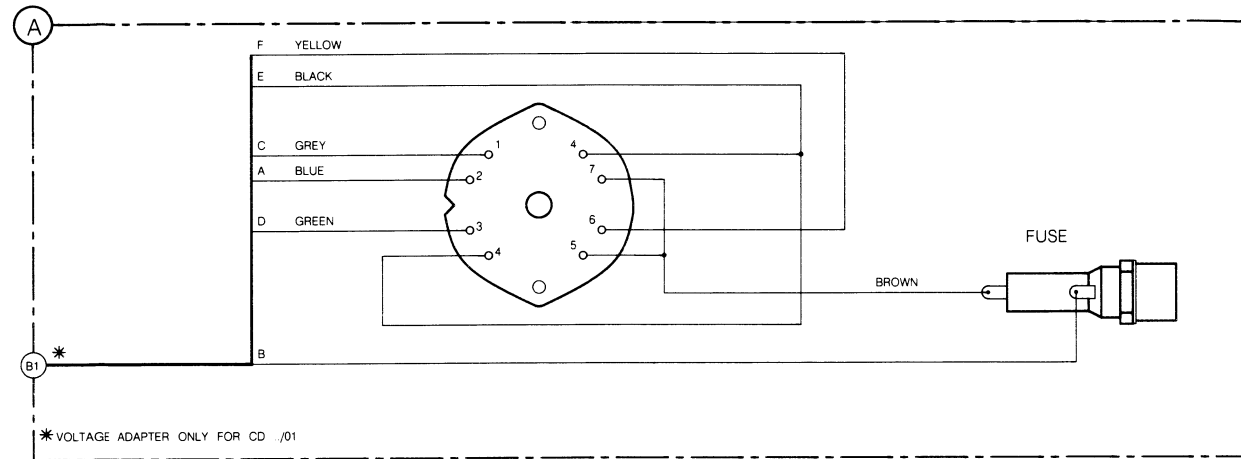
* CD 482 ONLY

43 723 D12

CONTROL & DISPLAY PARTS

- RES. Safety 3E3 4822 111 30593
- LED Display 6501 4822 130 90552
- LED orange 4822 130 80898
- LED Holder 4822 255 40817
- Transistor BC558 8422 130 40941
- TACT Switch 4822 276 11896
- 1.W. RECEIVER 4822 214 51723

WIRING DIAGRAM







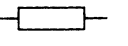

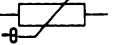




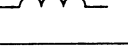







ELECTRICAL PARTSLIST SERVO + DECODER PANEL


















For non active chip components see separate list.

<p>MC79L09AC 4822 209 73233</p> <p>MC79M15CT 5322 209 86361</p> <p>MC7906CT 4822 209 82056</p> <p>TY40408 (+5V) 4822 209 71579</p> <p>MC78M15 4822 209 80808</p> <p>TDA8808T 4822 209 73234</p> <p>TDA8809T/C2 4822 209 73235</p> <p>SAA7210P/04 4822 209 71001</p> <p>μPD41416C-20 4822 209 50582</p> <p>SAA7220 4822 209 11157</p> <p>TDA1541A/N2 4822 209 72544</p> <p>TDA1543 4822 209 73236</p> <p>LM833N 4822 209 83163</p> <p>NJM4560D 4822 209 83274</p> <p>TCA0372DP2 4822 209 72587</p> <p>MC68HC05C8 4822 209 73232</p>	<p>1N4002 4822 130 30684</p> <p>1N4148 4822 130 30621</p> <p>HZ7C2/7V2 4822 130 32862</p> <p>BA314 4822 130 30879</p> <p>HZ3B2 4822 130 32831</p> <p>HZ7A3 4822 130 33523</p> <p>BAT85 4822 130 31983</p>
<p>CSA4.000 4822 242 70831</p> <p>11289.6 kHz 4822 242 71644</p>	<p>Coil 4.7 mH 4822 157 71644</p>
<p>BC328-16 4822 130 41023</p> <p>BC328 4822 130 44104</p> <p>BC338 4822 130 44121</p> <p>BC558B 4822 130 44197</p> <p>BC858 5322 130 42012</p> <p>BC848 5322 130 41981</p> <p>BC818 4822 130 42675</p> <p>BF550 4822 130 42131</p>	<p>Safety resistors 1/3 Watt</p> <p>4E7 4822 116 52858</p> <p>12E 4822 111 30511</p> <p>18E 4822 111 31515</p> <p>100E 4822 116 52389</p> <p>120E 4822 116 52394</p> <p>220R 4822 116 43221</p> <p>330E 4822 116 52416</p> <p>750R 4822 116 52432</p> <p>1K 4822 116 52391</p> <p>1K2 4822 116 52395</p> <p>1K8 4822 116 53109</p> <p>2K2 4822 116 52408</p> <p>4K7 4822 116 52426</p> <p>5K6 4822 116 52438</p> <p>6K8 4822 116 52925</p> <p>10K 4822 116 52452</p> <p>22K 4822 116 52463</p> <p>47K 4822 116 52472</p> <p>100K 4822 116 52973</p> <p>180K 4822 116 52505</p> <p>5M6 4822 116 52533</p>
<p>Miscellaneous</p> <p>Display 4822 130 90543</p> <p>Cinch socket 4822 267 40766</p> <p>Tack switch (tray) 4822 276 11896</p> <p>Mains switch 4822 276 11309</p> <p>Mains inlet 4822 265 20291</p> <p>Phone socket 4822 267 30743</p> <p>Fuse holder 4822 256 30274</p> <p>Mains transformer 4822 146 30701</p>	<p>Non flameable Resistors</p> <p>1R 4822 111 30483</p> <p>4R7 4822 111 30499</p> <p>10R 4822 111 30508</p> <p>33R 4822 111 30522</p> <p>1K8 4822 116 53109</p>
<p>330N 5322 121 42661</p> <p>4.7M 50V 4822 124 41577</p> <p>6M8 50V 4822 124 41578</p> <p>33M 16V 4822 124 40272</p> <p>47M 25V 4822 124 41527</p> <p>100M 25V 4822 124 41528</p> <p>220M 16V 4822 124 40196</p> <p>220M 35V 4822 124 41572</p> <p>470M 35V 4822 124 41573</p> <p>1000M 16V 4822 124 41571</p> <p>6800M 16V 4822 124 41571</p>	<p>Bipolar</p> <p>0.68M 16V 4822 124 41583</p> <p>10M 25V 4822 124 41558</p> <p>100M 16V 4822 124 22339</p>

**ELECTRICAL PARTSLIST SERVO + DECODER PANEL
(CONTINUED)**
For non active chip components see separate stocklist

				
3302	4 E 7	5%	0,33 W	4822 111 30499
3305	4 E 7	5%	0,33 W	4822 111 30499
3306	4 E 7	5%	0,33 W	4822 111 30499
3336	4 E 7	5%	0,33 W	4822 111 30499
3360	4 E 7	5%	0,33 W	4822 111 30499
3369	1 R	5%	0,33 W	4822 111 30483
3372	4 E 7	5%	0,33 W	4822 111 30499
3374	4 E 7	5%	0,33 W	4822 111 30499
3381	4 E 7	5%	0,33 W	4822 111 30499
3383	4 E 7	5%	0,33 W	4822 111 30499
3384	4 E 7	5%	0,33 W	4822 111 30499
3385	4 E 7	5%	0,33 W	4822 111 30499
3388	4 E 7	5%	0,33 W	4822 111 30499
3389	4 E 7	5%	0,33 W	4822 111 30499
3390	4 E 7	5%	0,33 W	4822 111 30499
3396	1 R	5%	0,33 W	4822 111 30483
3404	10 M	5%	0,5 W	4822 116 52494
3418	22 E	5%	0,33 W	4822 111 30517
3419	22 E	5%	0,33 W	4822 111 30517
3421	47 E	5%	0,33 W	4822 111 30526
3422	11 K	1%	0,6 W	4822 116 52907
3424	150 E	1%	0,6 W	4822 116 52846
3425	47 E	5%	0,33 W	4822 111 30526
3426	11 K	1%	0,6 W	4822 116 52907
3428	150 E	1%	0,6 W	4822 116 52846
3429	47 E	5%	0,33 W	4822 111 30526
3430	11 K	1%	0,6 W	4822 116 52907
3432	150 E	1%	0,6 W	4822 116 52846
3433	47 E	5%	0,33 W	4822 111 30526
3434	11 K	1%	0,6 W	4822 116 52907
3436	150 E	1%	0,6 W	4822 116 52846
3446	4 E 7	5%	0,33 W	4822 111 30499
3447	10 E	5%	0,33 W	4822 111 30508
3448	4 E 7	5%	0,33 W	4822 111 30499
3454	820 E	1%	0,6 W	4822 116 52864
3455	820 E	1%	0,6 W	4822 116 52864
3458	33 E	5%	0,33 W	4822 111 30522
3459	33 E	5%	0,33 W	4822 111 30522
3460	2 K 4	1%	0,6 W	4822 116 52851
3461	2 K 4	1%	0,6 W	4822 116 52851
3462	2 K 4	1%	0,6 W	4822 116 52851
3463	2 K 4	1%	0,6 W	4822 116 52851
3464	33 E	5%	0,33 W	4822 111 30522
3465	33 E	5%	0,33 W	4822 111 30522
3466	620 E	5%	0,5 W	4822 116 52429
3467	4 E 7	5%	0,33 W	4822 111 30499
3476	620 E	5%	0,5 W	4822 116 52429
3477	4 E 7	5%	0,33 W	4822 111 30499
3482	330 R	1%	0,6 W	5322 116 53736
3483	270 E	1%	0,6 W	5322 116 53288
Miscellaneous				
	Spring clip			4822 255 40179
5001	Mains transformer			4822 146 30701
BU 3	Phone socket			4822 267 30743
BU 2	Cinch socket 4p			4822 267 40766
BU 1	Mains inlet			4822 265 20291
SK1	Mains switch			4822 276 11309
SK2	Switch			4822 276 11896
	Holder fuse			4822 256 30274
1510	Fuse T160 mA			4822 253 30009
	Thermal fuse trafo 220/240 V			4822 252 20017
	Thermal fuse trafo 110/127 V			4822 252 20108

SYMBOL	DESCRIPTION
	Capacitor, general
	Electrolytic capacitor (+ and - may be omitted)
	Bipolar electrolytic capacitor (+ may be omitted)
	Resistor, general
	N.T.C. resistor
	P.T.C. resistor
	Voltage divider with preset adjustment
	Chip jumper
	Pin contact
	Bus contact
	Coil, self-induction
	Transformer with electrically poor conducting core and adjustable pre-magnetization
	Diode
	Zener diode
	Stabistor
	Double variable capacity diode (in one envelope)
	Photo conductive diode
	L.E.D.

SYMBOL	DESCRIPTION
	Transistor (N.P.N.)
	Transistor (P.N.P.)
	Direct current (DC)
	Alternating current (AC)
	Earth (functional)
	Frame or chassis connection
	Direction in which AC voltages are passed on (optional present)
	Interrupted line
	Not-connected crossing lines
	Connected lines
	Cable tree with lead-outs
	Changer, general (arrow is optional)
	Voltage Controlled Oscillator
	Band-pass filter
	Phase changing network
	Delay element
	Amplifier, general

