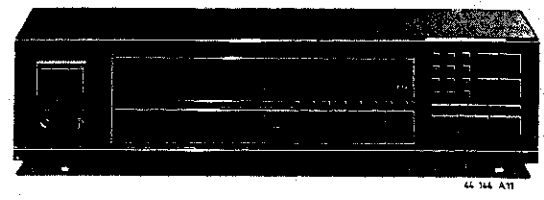
Compact disc player CDC875/00R/05R

Service
Service
Service



Service Manual

COMPACT disc DIGITAL AUDIO

CONTENTS

CLASS 1 LASER PRODUCT

3122 110 03420

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

(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.

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

(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.

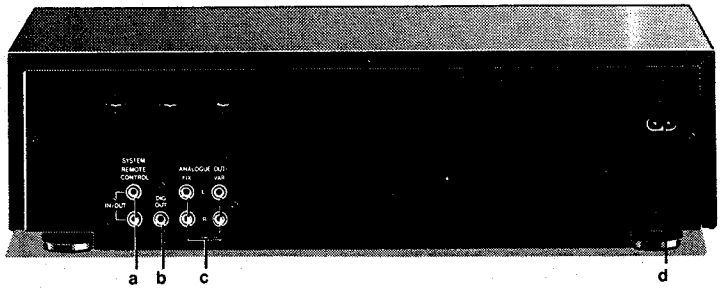
Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Servicic

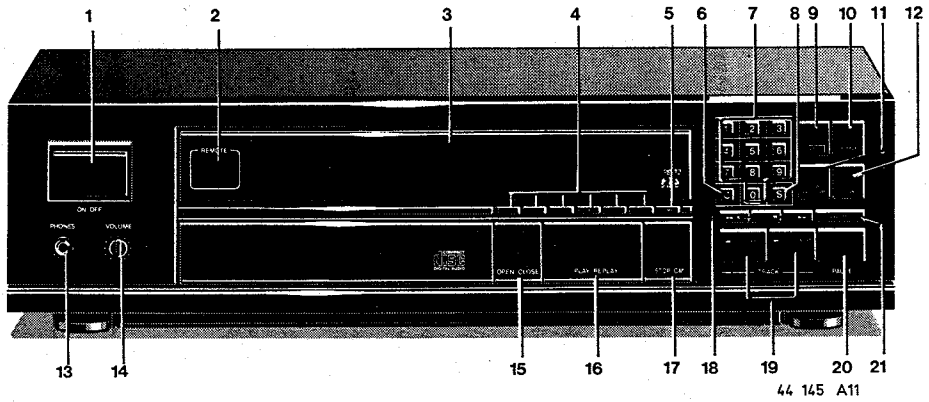
Subject to modification
4822 725 22171
Printed in The Netherlands

PHILIPS

Published by Service Consumer Electronics
CS 17 604

CONTROL BUTTONS





Front of player

1 Power ON/OFF
2 IR eye
3 Display
4 Disc select
5 A B
6 Clear
7 1 – 0 digit
8 Store
9 FTS
10 Shuffle
11 Play/program
12 Scan
13 Phones
14 Volume phones
15 Open/Close
16 Play/Replay
17 Stop/CM
18 ◀◀ SEARCH ▶▶ keys
19 ⏮ prev. TRACK next ⏭
20 Pause
21 Repeat

Rear of player

a RC 5
b Digital out
c Analogue out

TECHNICAL DATA

Typical Audio Performance

– Number of Channels	: 2
– Frequency Range	: 20-20 000 Hz
– Output resistance	: 200 Ω
– Amplitude Linearity	: ± 0,1 dB (20-20 000 Hz)
– Dynamic Range	: 90 dB (20-20 000 Hz)
– Signal-to-Noise Ratio	: 96 dB (20-20 000 Hz)
– Channel Separation	: 93 dB (20-20 000 Hz)
– Total Harmonic Distortion	: min – 90 dB (20-20 000 Hz)
– Wow and Flutter	: quartz crystal precision
– Error Correction System	: Cross Interleaved Reed Solomon Code (CIRC)
– Audio Output Level	: 2 $V_{rms.}$

Optical Readout System

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

Signal Format

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

Headphone

1. Output voltage	: Max. 5.6 Vrms
2. Unbalance Left-Right	: Max. +/- 0.5 dB
3. Output resistance	: 150 Ohm
4. Load impedance range	: 32 Ohm to 600 Ohm
5. Output power	: Max. 30 mW into 32 Ohm load Max. 50 mW into 150 Ohm load Max. 30 mW into 600 Ohm load
6. Amplitude linearity	: Max. +/- 0.1 dB from 20 Hz to 20 KHz into 600 Ohm
7. Phase non-linearity	: Max. +/- 1° from 20 Hz to 20 KHz into 600 Ohm
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. 0.003% (min-90 dB) from 20 Hz to 20 KHz into 600 Ohm
11. Intermodulation distortion	: Max. 0.003% (min-90 dB) from 20 Hz to 20 KHz
12. Channel separation	: min 65 dB from 20 Hz to 20 KHz into 600 Ohm

Digital output

Output level	: 0.5 V (peak to peak) +/- 20% into 75 Ohm load
DC-output	: +/- 0.05 V maximum

Power Supply

– Mains Voltage	: see type plate at rear of player
– Mains Frequencies	: 50 and 60 Hz
– Power Consumption	: 18 W approx.
– Safety Requirements	: IEC

Cabinet, general

– Dimensions (w x h x d)	: 420 x 113 x 340 mm
– Weight	: 6.5 kg 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

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.

SERVICING HINTS

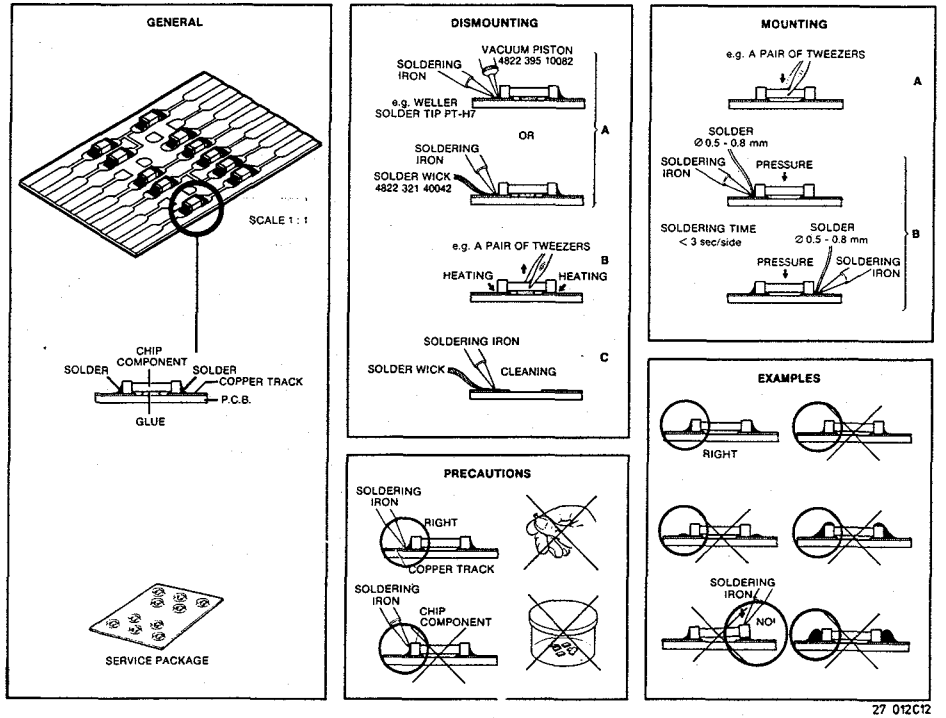
In the set chip components have been applied.
For disassembly and assembly of chip components see the figure below.

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

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

Disc without errors (5)+ disc with DO errors, black spots and fingerprints (5A)	4822 397 30096
Disc 65 min 1 kHz 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 connetor (14P)	4822 267 50676
Glass disc	4822 395 90204

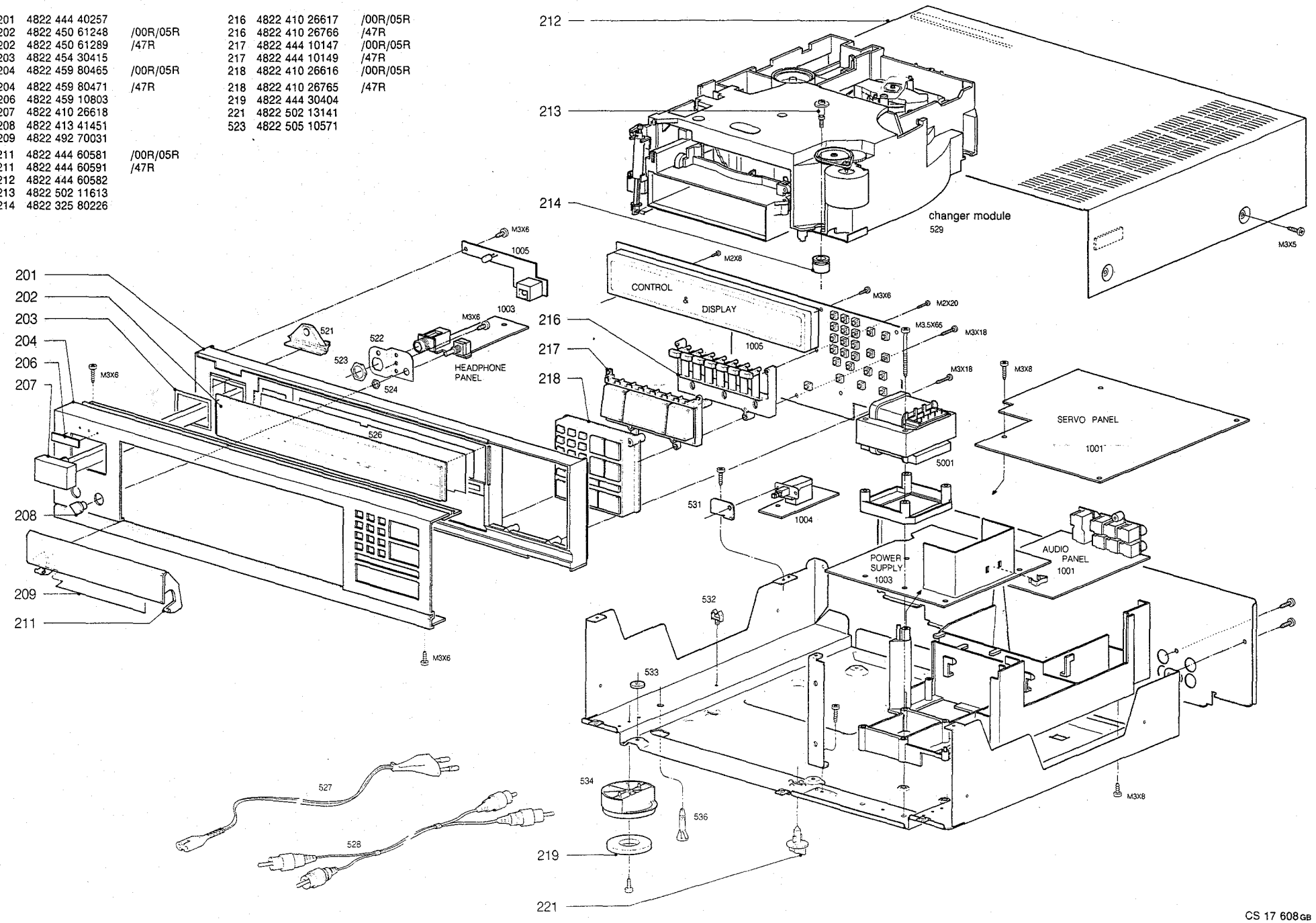


27 012C12

EXPLODED VIEW CABINET AND DISASSEMBLY

Partslist cabinet

201	4822 444 40257		216	4822 410 26617	/00R/05R
202	4822 450 61248	/00R/05R	216	4822 410 26766	/47R
202	4822 450 61289	/47R	217	4822 444 10147	/00R/05R
203	4822 454 30415		217	4822 444 10149	/47R
204	4822 459 80465	/00R/05R	218	4822 410 26616	/00R/05R
204	4822 459 80471	/47R	218	4822 410 26765	/47R
206	4822 459 10803		219	4822 444 30404	
207	4822 410 26618		221	4822 502 13141	
208	4822 413 41451		523	4822 505 10571	
209	4822 492 70031				
211	4822 444 60581	/00R/05R			
211	4822 444 60591	/47R			
212	4822 444 60582				
213	4822 502 11613				
214	4822 325 80226				

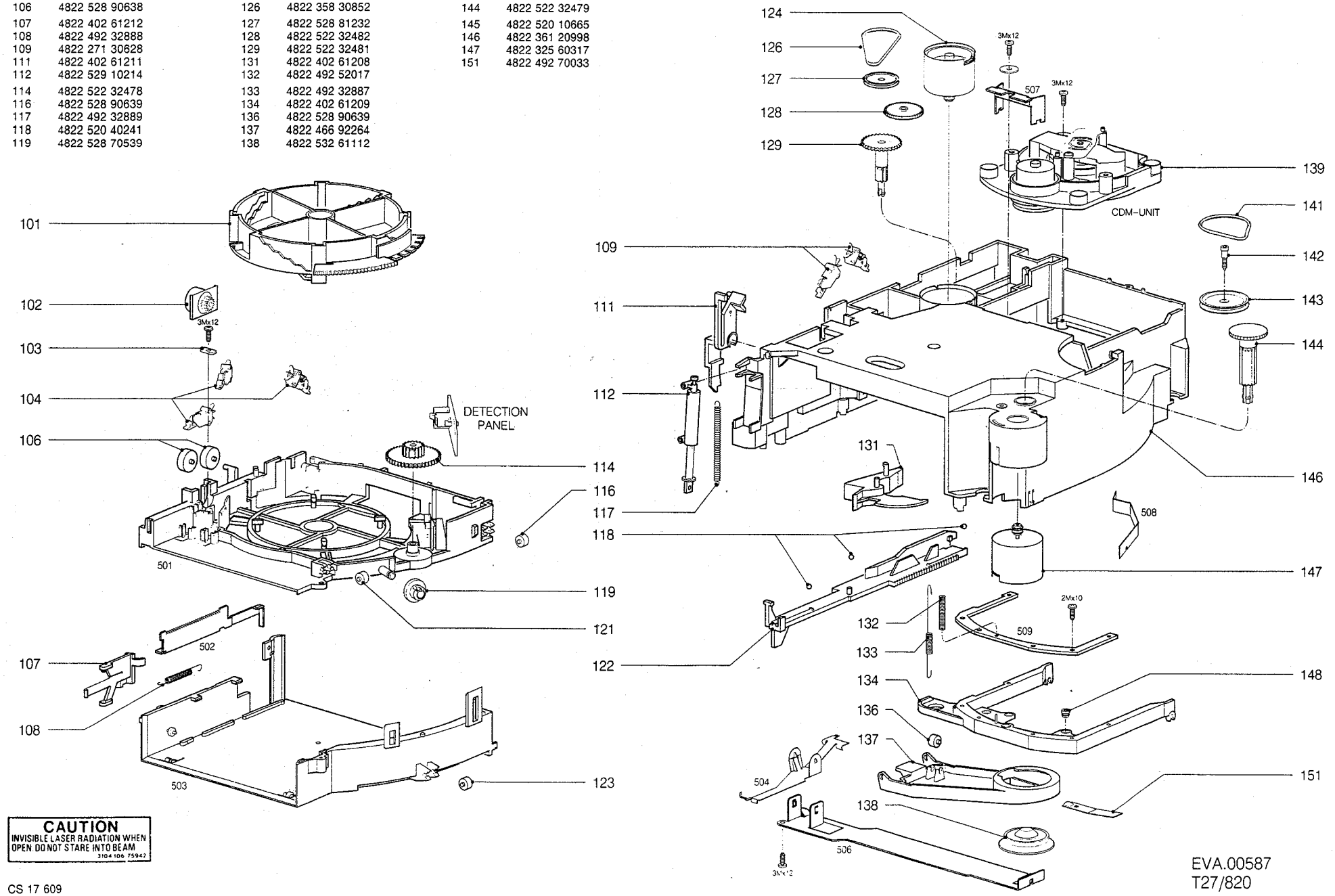


Partslist changermodule

101	4822 528 10741	121	4822 528 90639	139	4822 691 30215
102	4822 529 10213	122	4822 535 80787	141	4822 358 30853
103	4822 466 80671	123	4822 528 90639	142	4822 535 80788
104	4822 271 30628	124	4822 361 21141	143	4822 528 81231
106	4822 528 90638	126	4822 358 30852	144	4822 522 32479
107	4822 402 61212	127	4822 528 81232	145	4822 520 10665
108	4822 492 32888	128	4822 522 32482	146	4822 361 20998
109	4822 271 30628	129	4822 522 32481	147	4822 325 60317
111	4822 402 61211	131	4822 402 61208	151	4822 492 70033
112	4822 529 10214	132	4822 492 52017		
114	4822 522 32478	133	4822 492 32887		
116	4822 528 90639	134	4822 402 61209		
117	4822 492 32889	136	4822 528 90639		
118	4822 520 40241	137	4822 466 92264		
119	4822 528 70539	138	4822 532 61112		

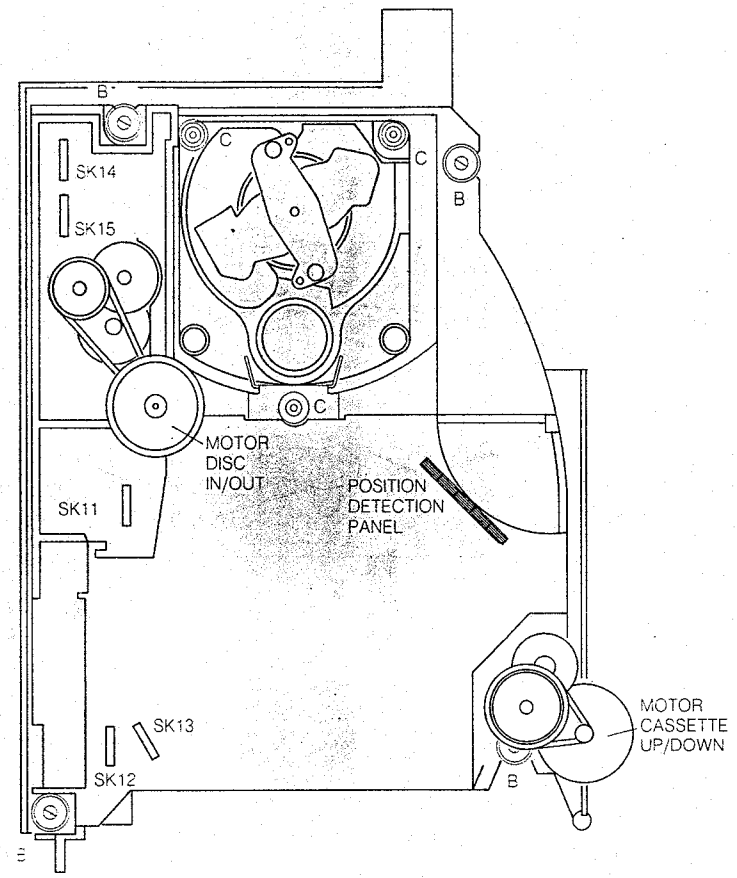
EXPLODED VIEW

CD-CHANGER MODULE



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

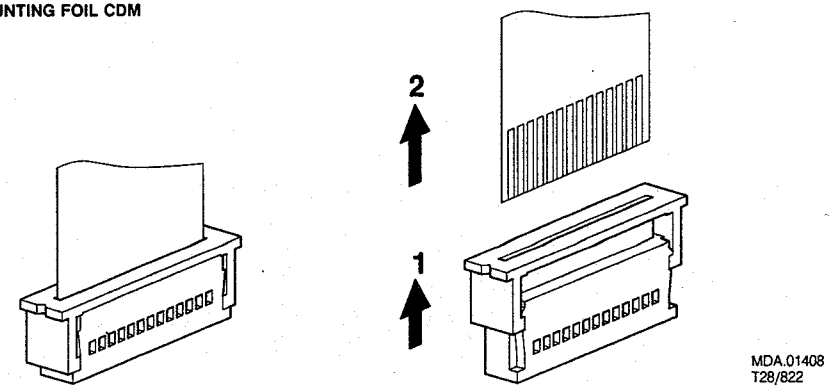
EVA.00587
T27/820



C-SCREWS FOR (DE)MOUNTING THE CDM
B-SCREWS FOR (DE)MOUNTING THE LOADING

MDA.01442
825/T27

DEMOUNTING FOIL CDM



MDA.01408
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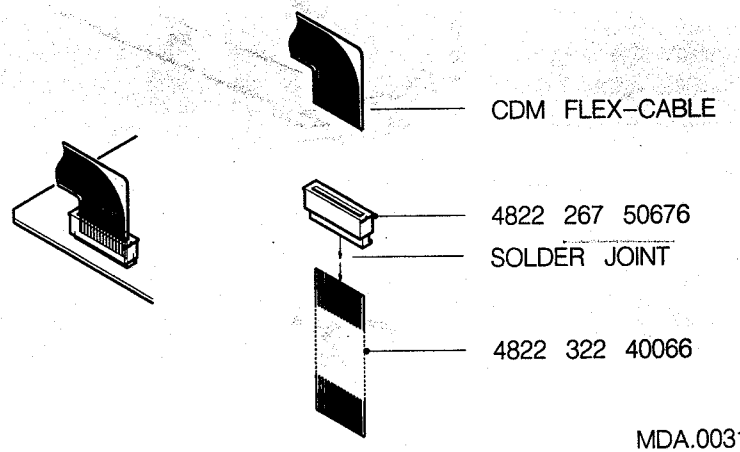
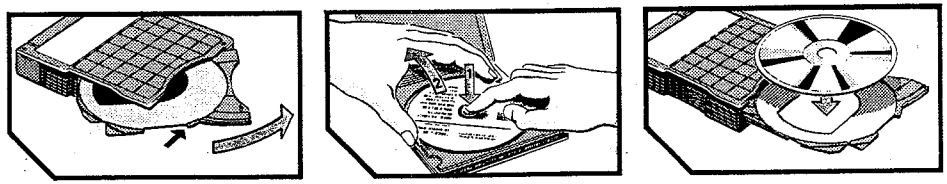
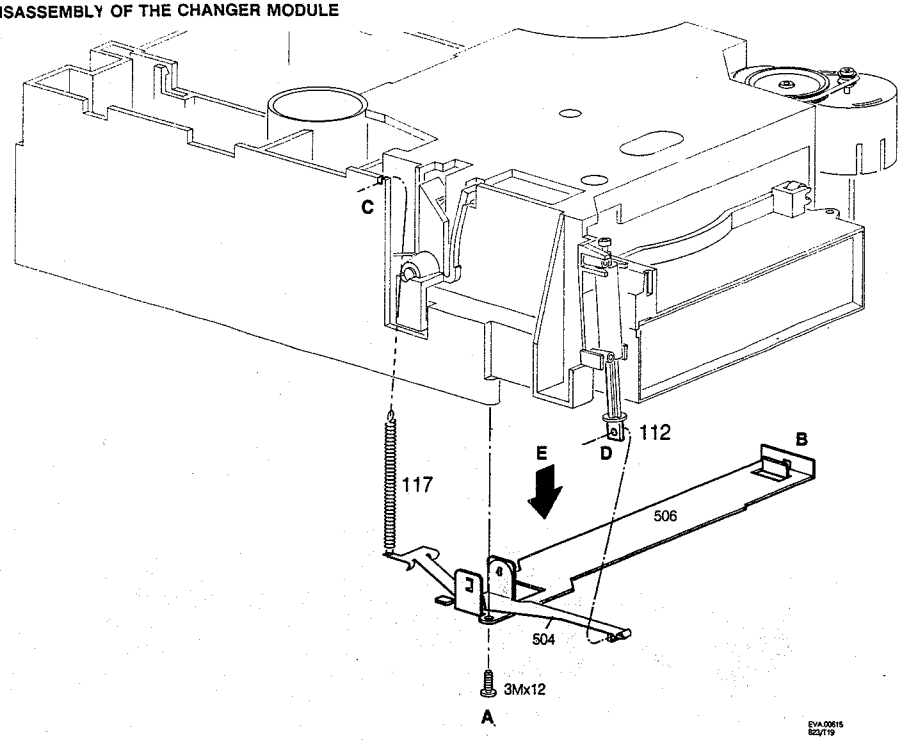


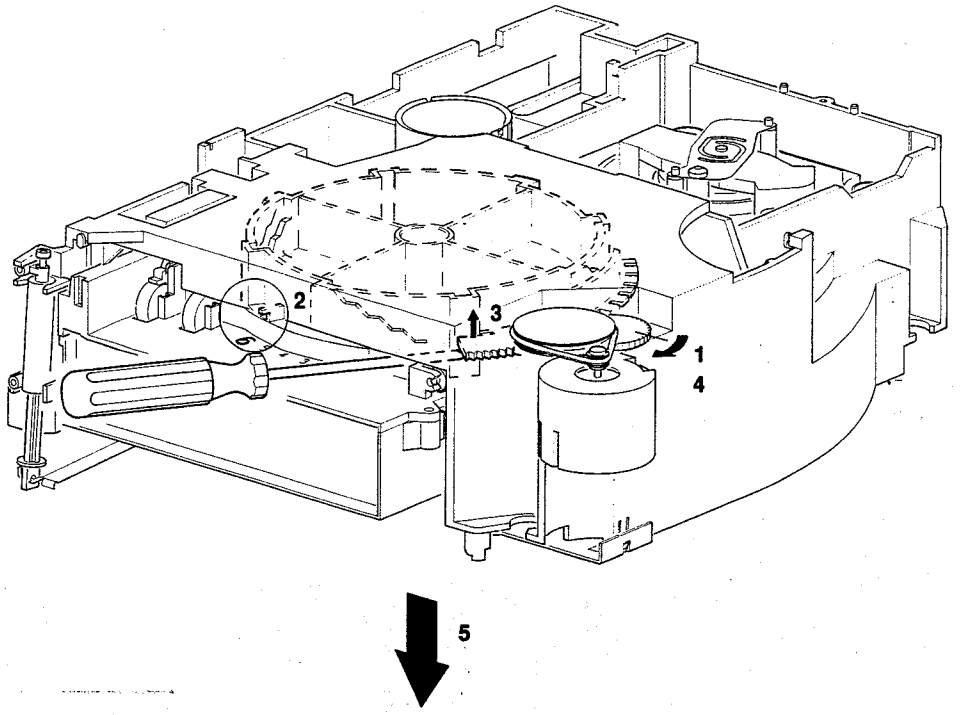
MDA.00311
T19-730



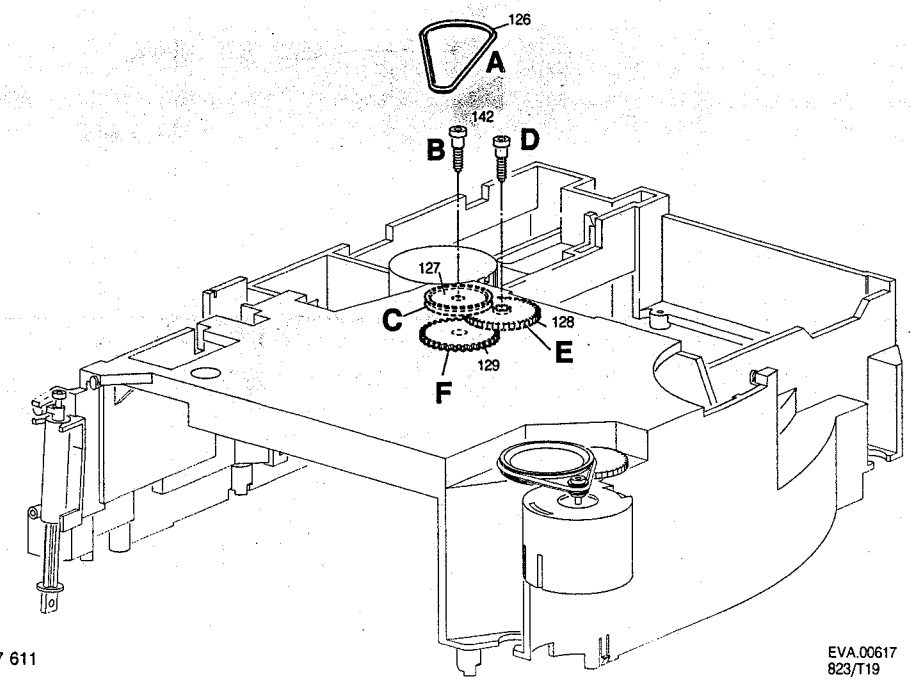
44 067 A11

DISASSEMBLY OF THE CHANGER MODULE





EVA.00614
822/T19



EVA.00617
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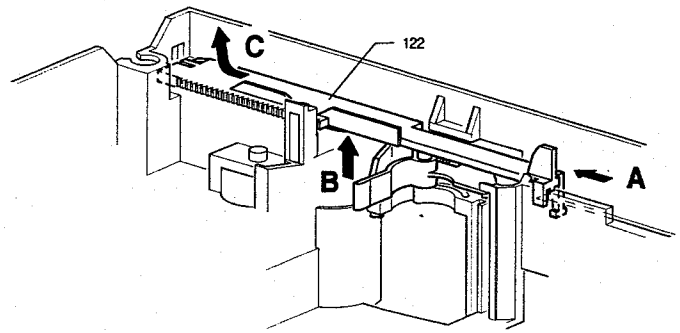
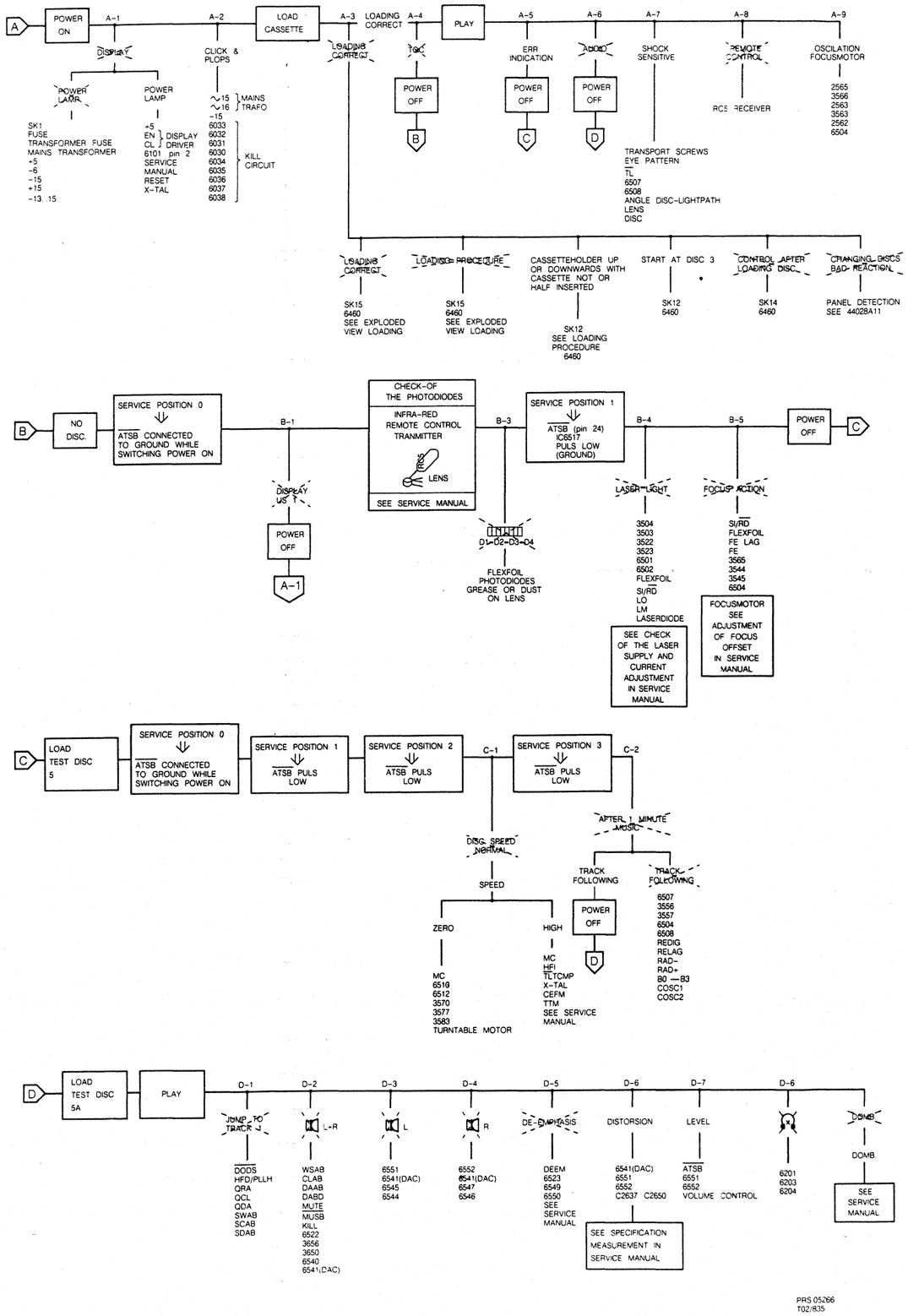


EVA.00618
823/T19

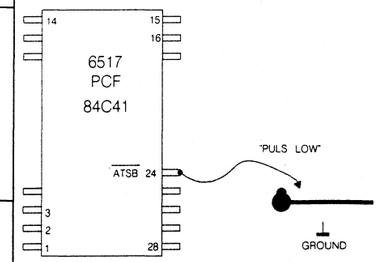
ELECTRICAL MEASUREMENTS AND ADJUSTMENTS



PRS 05266
T02/835

Initialization of the service program of the servo μP.

	ATSB	Remark
service position 0	pulse low	power on
service position 1	pulse low	The objective starts to focus - when no disc has been inserted the objective goes 16 × to and fro. Then the player reassumes service position 0.
service position 2	pulse low	The turntable motor starts to run.
service position 3	pulse low	The radial control is switched on.



MDA 1525
T27 833

A1
μP-SIGNALS

SIGNAL	MODE	◇			REMARKS
RESET	POWER ON	100		PULS "HIGH"	
X-TAL	STAND BY	101		10MHz	
MUTE	STAND BY	67		"LOW"	

MDA 01450
T33/825

μP-SIGNALS 6460

SIGNAL	MODE	◇			REMARKS
RESET	POWER ON	52		PULS "HIGH"	
T1	CASSETTE POSITION 1 TO 6	51		HIGH	WHEN CASSETTE ON CORRECT POSITION
X-TAL		50		HIGH	SEE FREQUENCY ON X-TAL
I^2D		53			ACTIVITY WHEN POWER ON EXCEPT: HIGH WHEN STARTING UP/ LOW WHEN STOPPING
I^2C		54			

MDA 01453
T-07 826

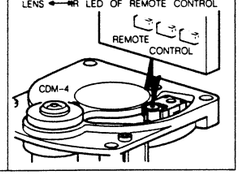
B2
B0,B1,B2,B3 SIGNALS

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	◇4 ◇6 ◇7 ◇8	–	–	SEE DRAWING 38314A12	SIGNAL DEPENDS ON DISTANCE LENS ← IR 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	◇9 V	–	1.8 < V < 2.3	–	Si=1 ◇21, 33Ω, GREEN LED, to LO, to LM, A, K, LITTLE LIGHT, SK, 18Ω, 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, 33Ω, GREEN LED, to LO, to LM, A, K, LITTLE LIGHT, SK, 18Ω, 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

MDA.01379
T-08 824

B4
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER OFF	◇11 R → GND	R3520	1k R	–	PRE-ADJUSTMENT OHMIC VALUE
2	EYE-PATTERN HF	TEST DISC 5 PLAY	PIN 25 DECODER A (SAA7210) → 10V 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	–	–

MDA.01380
T-08 823

ADJUSTMENT OF FOCUS-OFFSET

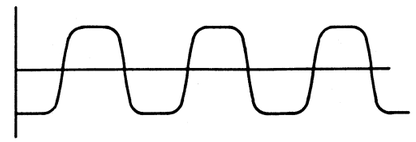
STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER ON	–	R3569	–	–	ADJUST FOR OPTICAL MID-POSITION
2	FE LAG	SERVICE POS "2" TEST DISC 5 PLAY	27	R3569	400mV ± 40mV DC	–	FINE ADJUSTMENT

MDA.01447
T33/825

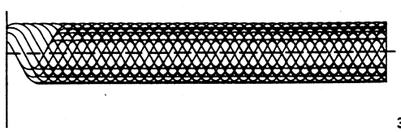
B5
FOCUS ACTION

SIGNAL	MODE	◇			REMARKS
Si/$\overline{Rd}$	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. NO DISC
FE-LAG	TEST DISC 5A.	27			SEE. ADJUSTMENT OF FOCUS-OFFSET

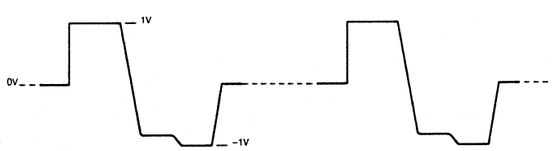
MDA.01384
T-08 825



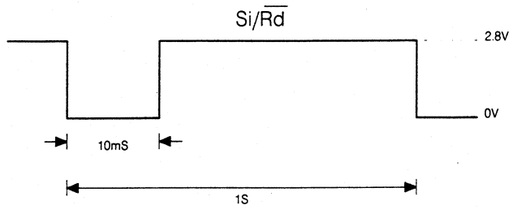
38 314 A12



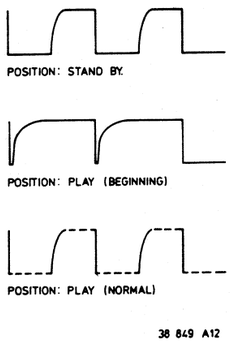
37 017 B8



MDA.01413
T33/823



MDA.01403
T33/821



38 849 A12

C1
HIGH SPEED DISC ROTATION

SIGNAL	MODE	◇			REMARKS
$\overline{TL}$	TEST DISC 5, PLAY OR SERVICE POSITION 2	13		PULSES "LOW"	WHEN THE DISC IS SLOWLY BRAKED BY HAND
TCMP	TEST DISC 5, PLAY OR SERVICE POSITION 2	14	-5V		AFTER 4 $\overline{TL}$ 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	16	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

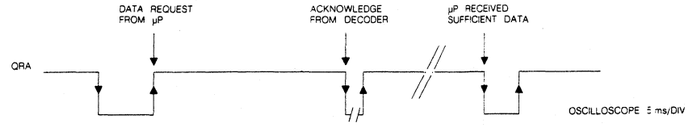
D1
JUMP TO TRACK 1

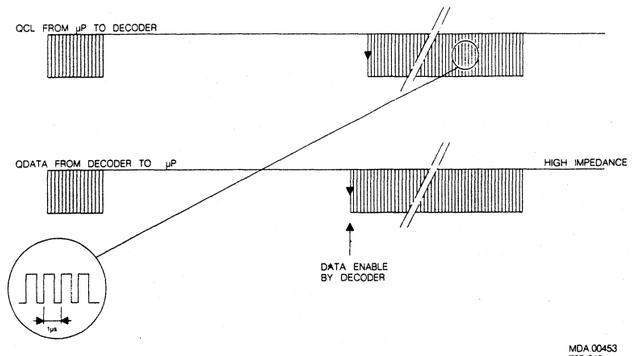
SIGNAL	MODE	◇			REMARKS
$\overline{DODS}$	TEST DISC 5A, SEARCH ≫OR SEARCH ≪	19			SEE DRAWING: MDA.01143
HFD/$\overline{PLLH}$	TEST DISC 5A: TRACK 15, PLAY	23		PULSES "LOW"	SEE DRAWING: MDA.00240 WHEN THE DISC IS SLOWLY BRAKED BY HAND
QRA	TEST DISC 5A, PLAY	75			SEE DRAWING: MDA.00453
QDA	TEST DISC 5A, 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-08 825

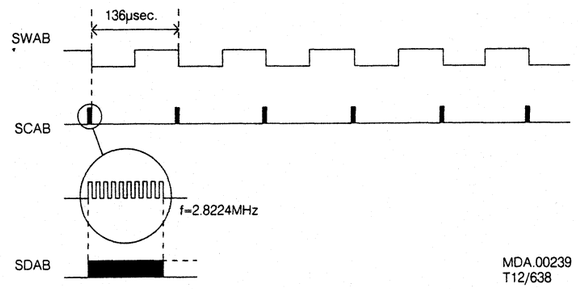
POSITION PLAYER	POWER ON	SERVICE POSITION 3 POSITION PLAY	PLAY	SEARCH. PAUSE
$\overline{DODS}$ SIGNAL	"LOW"	"HIGH"	"HIGH"	

MDA.01143
T12 -651





MDA.00453
T27/649



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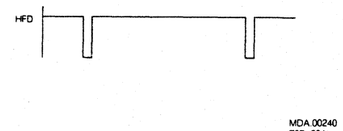
T12/638



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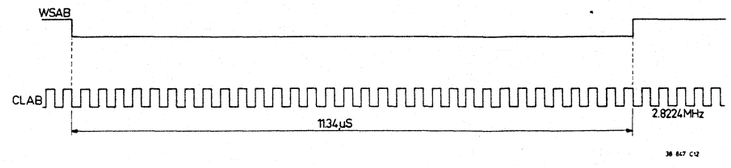
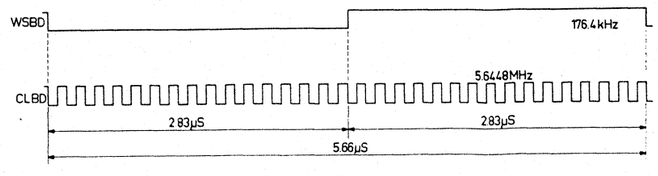
T07-804





CS 17 614

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	
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	
WSBD	DISC. PLAY	85			SEE DRAWING 38848C12
$\overline{MUSB}$	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

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

D9
DOBM DIGITAL OUTPUT

SIGNAL	MODE	◇			REMARKS
DOBM	TEST DISC 5A. PLAY	86			SEE DRAWING MDA.00238

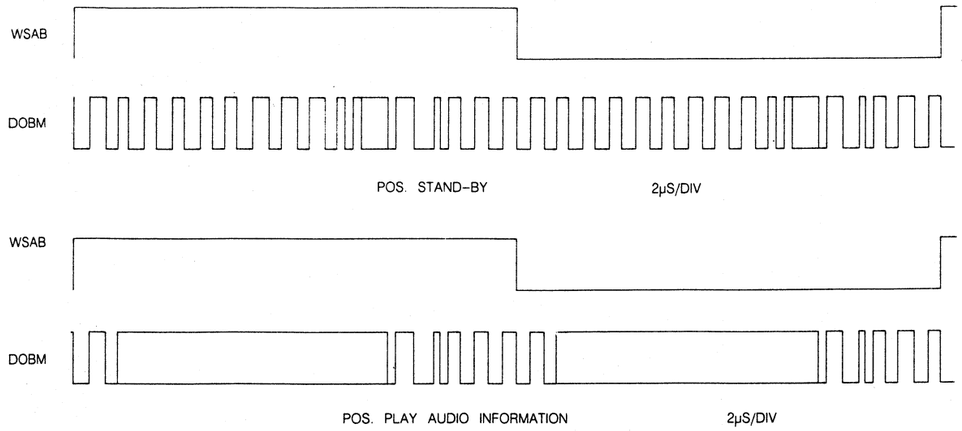
MDA.01391
T-08 823

D6
SPECIFICATIONS MEASUREMENT

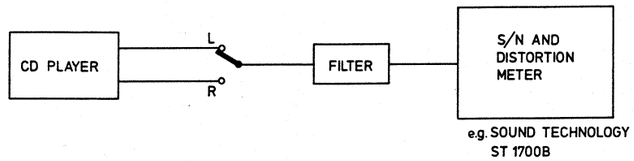
SIGNAL	MODE	◇			REMARKS
BU2-L	TEST DISC 3. PLAY TOTAL HARMONIC DISTORSION	FILTER OUTPUT	———		SEE DRAWING 30459A12
BU2-R	TEST DISC 3. PLAY TOTAL HARMONIC DISTORSION	FILTER OUTPUT	———		SEE DRAWING 30459A12
BU2-L	TEST DISC 3. PLAY SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	———		SEE DRAWING 30459A12
BU2-R	TEST DISC 3. PLAY SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	———		SEE DRAWING 30459A12

——— SEE TECHNICAL DATA

MDA.01395
T-08 832



MDA.00238
T07/733



30 459 A12

(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.

(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.

ESD

(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.

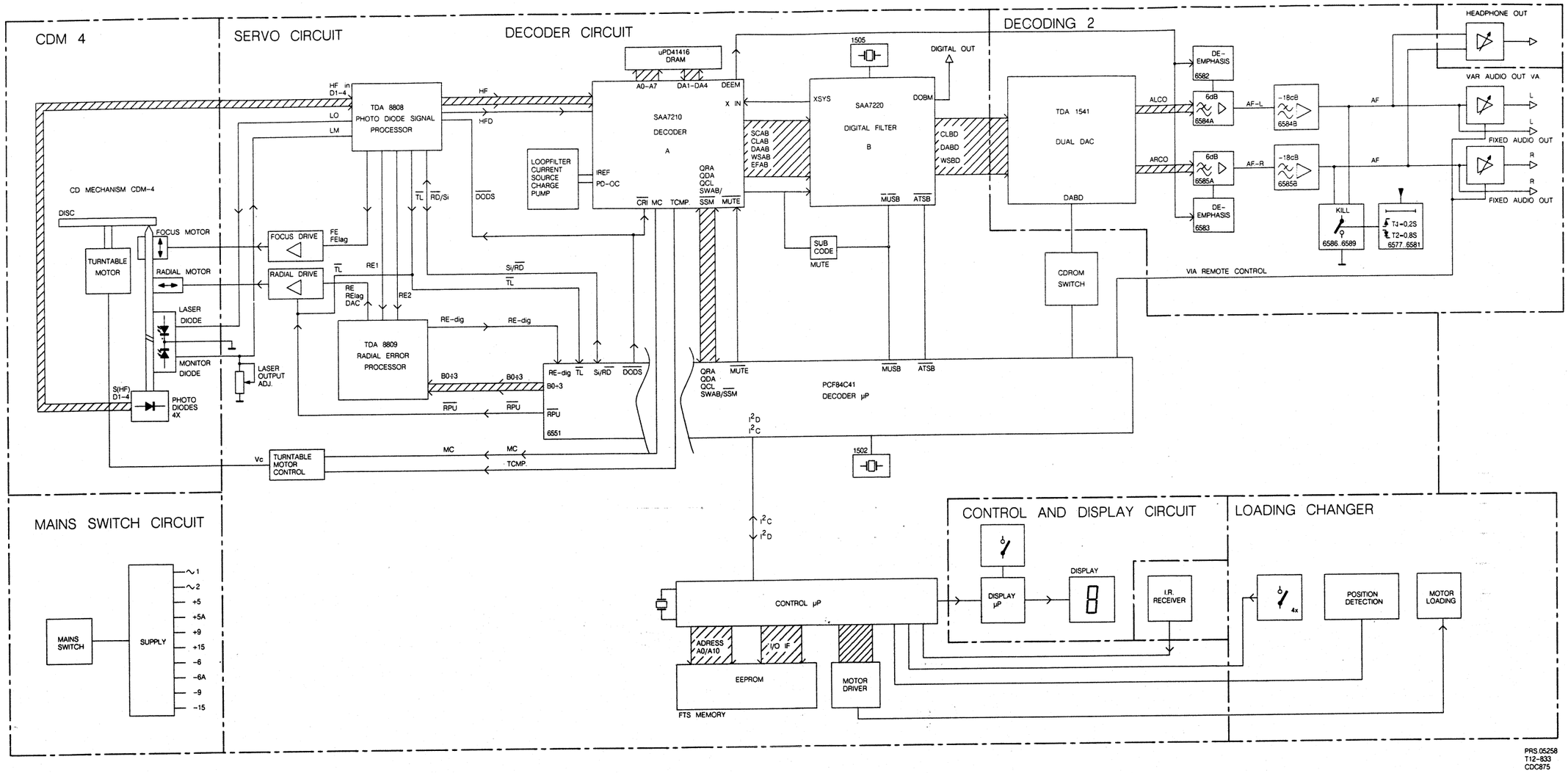
(NL) WAARSCHUWING

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.

(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.

BLOCK DIAGRAM

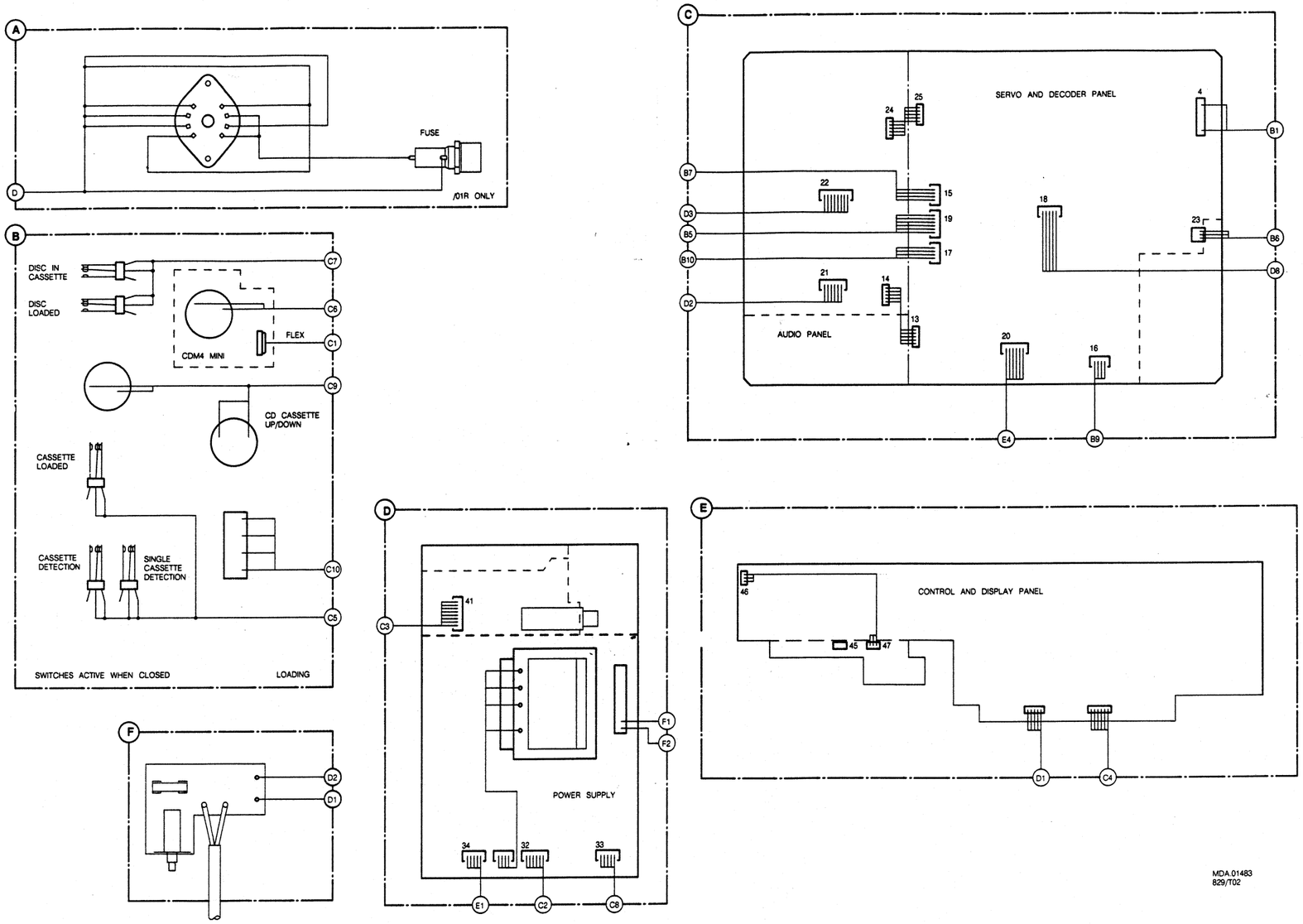


B0-B3	-	Control bits for radial circuit
DAC	-	Current output for track jumping (Digital to Analogue Converted)
$\overline{DODS}$	-	Drop out detector supression
D1÷4	-	Photodiode currents
FE	-	Focus error signal
FE-lag	-	Focus error signal for LAG network
HF	-	HF output for DEMOD
HFD	-	HF detector output for DEMOD
HF-in	-	HF current input
LM	-	Laser monitor diode input
LO	-	laser amplifier current output
MC	-	Motor control signal
RE	-	Radial error signal (amplified RE_2-RE_1 currents)
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
RD	-	Ready signal, starting up procedure finished
$\overline{RPU}$	-	Radial puls after track jumping
$\overline{Si}$	-	On/off control for laser supply and focus circuit
$\overline{TL}$	-	Track loss signal
Vc	-	Control voltage for turntable motor
$\overline{ATSB}$	-	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
$\overline{CLBD}$	-	Clock signal Filter-B to DAC
$\overline{CRI}$	-	Counter Reset Inhibit
DAAB	-	Data signal Decoder-A to Filter-B
$\overline{DABD}$	-	Clock signal Filter-B to DAC
$\overline{DEEM}$	-	Deemphasis
DOBM	-	Digital out signal
EFAB	-	Error flag Decoder-A to Filter-B
IREF	-	Reference Current
$\overline{MSTP}$	-	Motor start-stop signal
$\overline{MUTE}$	-	Mute signal
$\overline{MUSB}$	-	Soft Mute signal
PD/OC	-	Phase detector - oscillator control

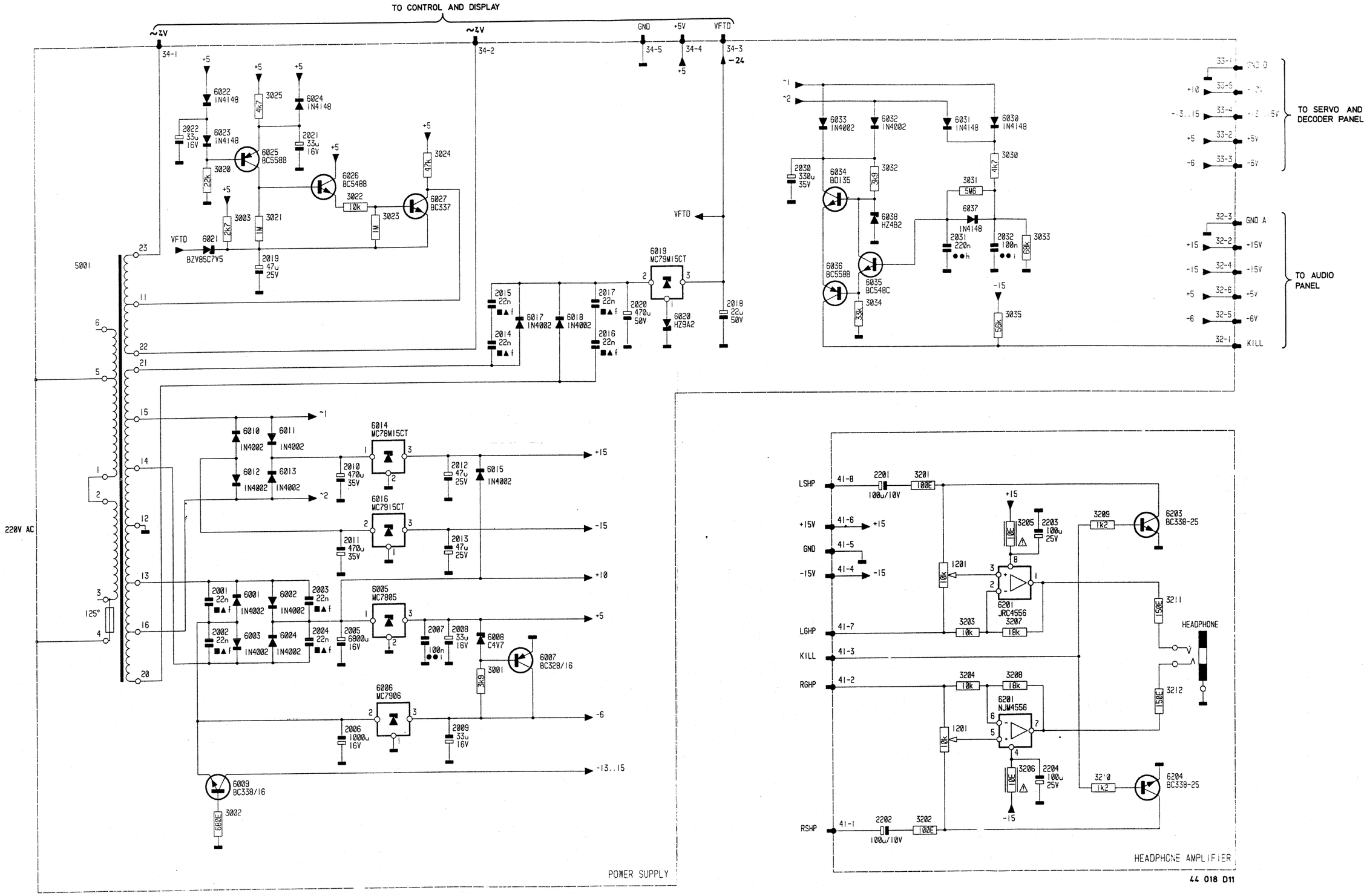
POR	-	power on reset
QCL	-	Q-channel Clock signal
QDA	-	Q-channel Data signal
QRA	-	Q-channel Request Acknowledge
SCAB	-	Subcode clock Decoder-A to Filter-B
SCLK-I^2C	-	Serial Clock signal Decoder-Control µP (Inter IC Connection)
SDAB	-	Subcode data Decoder-A to Filter-B
SDAT-I^2D	-	Serial Data signal Decoder-Control µP (Inter IC Connection)
SWAB/$\overline{SSM}$	-	Subcode Word/Start-stop motor signal
TCMP	-	Turntable control motor puls
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

WIRING DIAGRAM



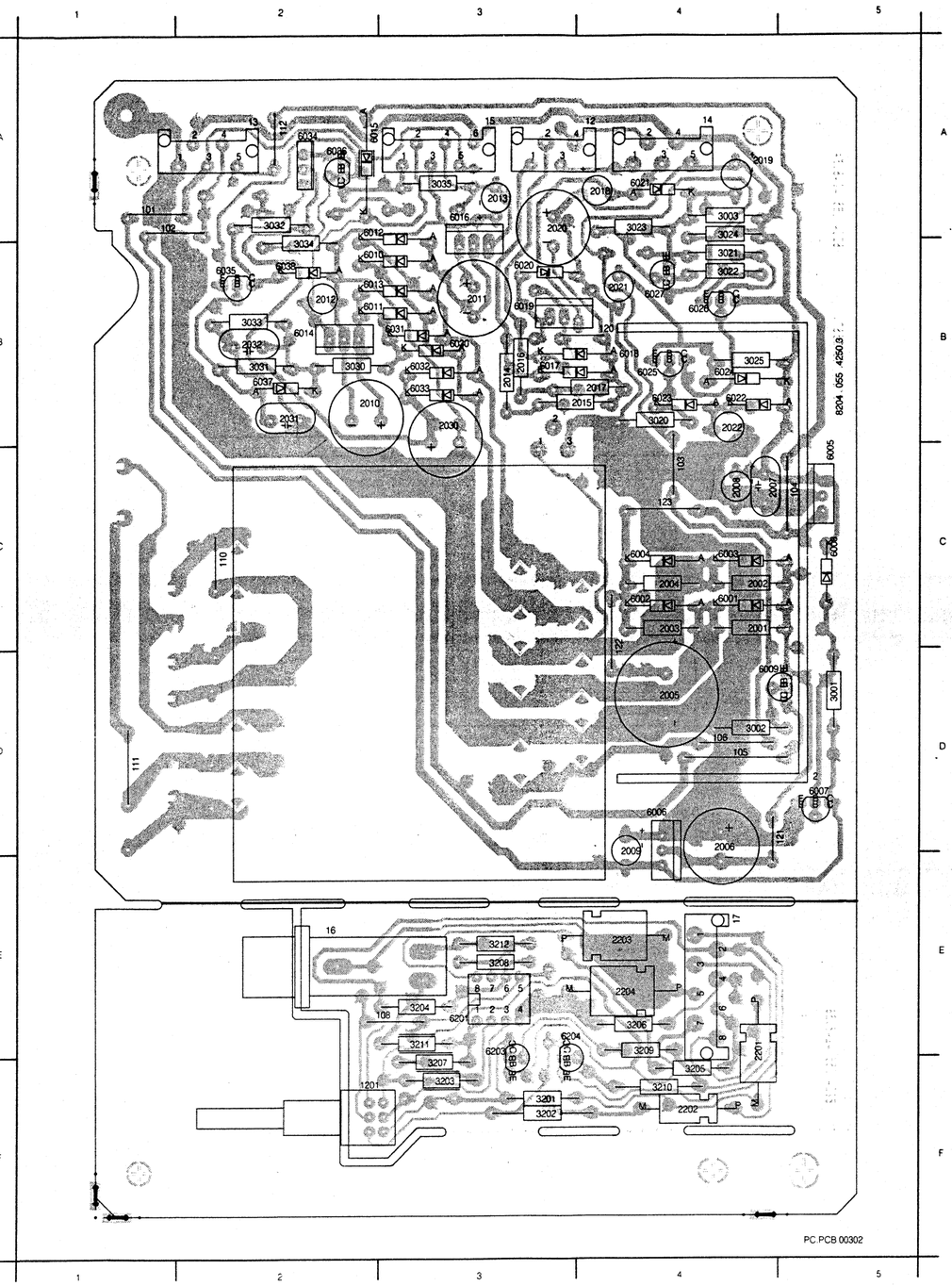
MDA.01483
829/T02

POWER AND HEADPHONE DIAGRAM



44 018 D11

POWER AND HEADPHONE PANEL



	101	A1	6010	B3
	101	E5	6011	B3
	102	A2	6012	A3
	103	C4	6013	B3
	104	C5	6014	B2
	105	D4	6015	A2
	106	D4	6016	A3
A	108	E3	6017	B3
	110	C2	6018	B4
	111	D1	6019	B3
	112	A2	6020	B3
	119	B3	6021	A4
	12	A4	6022	B4
	120	B4	6023	B4
	1201	F3	6024	B4
	122	D4	6025	B4
	123	C4	6026	B4
	13	A2	6027	B4
	14	A4	6028	B4
	15	A3	6030	B3
	16	E2	6031	B3
	17	E4	6032	B3
B	18	C4	6033	B3
	2	D5	6034	A2
	2001	C5	6035	B2
	2002	C5	6036	A2
	2003	C4	6037	B2
	2004	C4	6038	B2
	2005	D4	6201	E3
	2006	D4	6203	E3
	2007	C4	6204	E4
	2008	C4	8204	D3
	2009	D4		
	2010	B3		
	2011	B3		
	2012	B2		
C	2013	A3		
	2014	B3		
	2015	B4		
	2016	B3		
	2017	B4		
	2018	A4		
	2019	A5		
	2020	A4		
	2021	B4		
	2022	B4		
	2030	B3		
	2031	B2		
	2032	B2		
	2201	F4		
	2202	F4		
	2203	E4		
D	2204	E4		
	3001	D5		
	3002	D4		
	3003	A4		
	3020	B4		
	3021	B4		
	3022	B4		
	3023	A4		
	3024	A4		
	3025	B4		
	3030	B2		
	3031	B2		
	3032	A2		
	3033	B2		
E	3034	B2		
	3035	A3		
	3201	F3		
	3202	F3		
	3203	F3		
	3204	E3		
	3205	F4		
	3206	E4		
	3207	F3		
	3208	E3		
	3209	E4		
	3210	F4		
	3211	E3		
	3212	E3		
	6001	C4		
	6002	C4		
F	6003	C4		
	6004	C4		
	6005	C5		
	6006	D4		
	6007	D5		
	6008	C5		
	6009	D5		

SERVO DIAGRAM

DECODER-A IC6522 — HF DODS HFD

6517 A/ 2 PCF84C41 — µP — RESET Vdd XTAL1 XTAL2 IRQ — CPU — I/O PORTS — INT/T0 T1 D6 0-6 0-4 0-7 0-5 Vss

6518 1N1448 — 3592 22Ω — 2592 33µ — 3591 4R7 — 2690 33µ — 2691 22n — 1501 10 MHz

FROM POWER SUPPLY . 33.

13..15V — +10 — GND — +5 — −5 — 6050 MC7912 — 2050 330n — 2051 33µ — −12

RADIAL DRIVE

RADIAL ERROR PROCESSOR — ROM — 3 1/2-BIT DAC — RADIAL LAG SHORT CIRCUIT — INTEGRATING AMPLIFIER — OSCILLATOR 650Hz — RADIAL — LAG HOLD — LEAD — LAG — RAD OUT — 50µA — RELAG — U/I — LAG SHORT CIRCUIT — RADIAL− — RE IN

6503 TDA8809 — DIV4 — REdig — Cagc — V_{EXT+} V_{EXT-} V_{DD}

6504-(1/2)B TCA0372(A) — 6506 HZ7C2 7V5 — 6505 HZ7C2 7V5 — 3543 8k8 — 3541 8k8 — 3542 33 — 2540 1µ5 — 2545 100n — 3540 4R7 — RAD+ — RAD− — TO RADIAL MOTOR VIA FLEX.PRINT

6507-(1/2)A NJM4560D — 6507-(1/2)B NJM4560D — 6508 BC858 — 6509 BC848 — 3534 220Ω — 2534 330n — 3556 4R7 — 3553 1k5 — 3552 8k2 — 2550 6n8 — 3554 8k2 — 2551 22n — 3551 2k — 3555 91k — 3550 2k — 3557 4R7 — Vref

FOCUS DRIVE

6504-(1/2)A TCA0372(A) — 2560 4n7 — 3561 150k — 3560 11k — 3509 5k6 — FOCUS NORMALIZING CIRCUIT — FE FS FElag — 6504-(1/2)B TCA0372(B) — 2543 220µ — 2541 22n — 3567 82k — 3545 — 2544 220µ — 2542 22n — 3565 — 3566 22 — 2563 100n — 3562 120k — 3564 160k — 2562 330n — 3563 56k — 3802 6800Ω — 3568 — 3569 FOCUS OFFSET — 2565 1n2 — 3544

TO FOCUS MOTOR VIA FLEX.PRINT — FOC− FOC+

TURNTABLE MOTOR CONTROL

6512-(1/2)A NJM4560 — 6512-(1/2) NJM4560 — 3585 100Ω — 3584 91k — 3575 1k2 — 3574 33k — 6513 BA314 — 6514 HZ382 — 2572 470n — 3582 7k5 — 3579 130k — 6515 HZ382 — 3581 56k — 6516 BA314 — 3580 2k2 — 3586 180Ω — 3587 5k6 — 14 TCMP DECODING 1 6530 — 2570 4n7 — 3576 68k — 3578 22k — 3577 — 3573 100 — 6510 BC338/25 — 6511 BC328/25 — 3570 4R7 — 3571 4R7 — 3583 — 2571 22n — 3588 47k — 3589 4k7 — 2574 18n — MC — TO TURNTABLE MOTOR — 13-2 N.C 13-3 TTH− 13-1

C.D.M. — FLEX. PRINT (FOIL) — DIODE ASSEMBLY — D1 D2 D3 D4 — GUARD RING PHOTODIODE — LASER ASSEMBLY — 1003 10µ — 1002 LASER — 47n — MONITOR — LO LM — 6502 BC338 — 3523 12 — 3524 100 — 2520 220p — 2521 47µ — 3521 220 — 3520 4k7 — LASER OUTPUT ADJ — LASER SUPPLY — STARTING CIRCUIT — Si/RD — RPU — Sc — 25413 270n — 3510 10k — 3802

HF AMPLIFIER — EQUALIZER — GAIN CONTROL — HF AMPLITUDE SLICERS — HFL DO DODS HFD — GChf RE1 RE2 — 2508 47n — 2515 1n — 2514 470n — 2561 470n — 3506 100 — 3507 1k — 3505 12k — 2509 100p — 2510 10n — 2511 1n — 2501 22n — 2502 33µ — 2503 22n — 2505 33µ 16V — 2506 22n — 3508 24k — 2507 2n2 — 2504 470p — 3501 4k7 — 3502 100 — 3503 4k7 — 3535 12k — 2538 220n — 3530 47k — 3531 15k — 2530 8n2 — 2531 8n2 — 2536 33n — 2535 33n — 2537 220n — 2532 33µ — 3533 8k1 — 3541 8k8 — 3542 33 — 3543 8k8 — 3540 4R7 — 3534 220Ω — 2534 330n — 3553 1k5 — 3552 8k2 — 2550 6n8 — 3554 8k2 — 2551 22n — 3551 2k — 3555 91k — 3550 2k — 3557 4R7 — 3556 4R7 — 3570 4R7 — 3571 4R7 — 3577 — 3578 22k — 3573 100 — 3583 — 3580 2k2 — 3586 180Ω — 3587 5k6 — 3588 47k — 3589 4k7 — 2574 18n — 2571 22n — 3584 91k — 3585 100Ω — 3575 1k2 — 3574 33k — 3582 7k5 — 3579 130k — 3581 56k — 3576 68k — 2570 4n7 — 3569 22k — 3568 6800Ω — 3562 120k — 3564 160k — 3563 56k — 2562 330n — 2563 100n — 3566 22 — 3565 — 3567 82k — 3545 — 2544 220µ — 2542 22n — 2543 220µ — 2541 22n — 3560 11k — 3561 150k — 2560 4n7 — 3509 5k6 — 2565 1n2 — 3544 — 3543 8k8 — 3541 8k8 — 3542 33 — 2540 1µ5 — 2545 100n — 3540 4R7 — 3534 220Ω — 2534 330n — 3553 1k5 — 3552 8k2 — 2550 6n8 — 3554 8k2 — 2551 22n — 3551 2k — 3555 91k — 3550 2k — 3557 4R7 — 3556 4R7 — 3570 4R7 — 3571 4R7 — 3577 — 3578 22k — 3573 100 — 3583 — 3580 2k2 — 3586 180Ω — 3587 5k6 — 3588 47k — 3589 4k7 — 2574 18n — 2571 22n — 3584 91k — 3585 100Ω — 3575 1k2 — 3574 33k — 3582 7k5 — 3579 130k — 3581 56k — 3576 68k — 2570 4n7 — 3569 22k — 3568 6800Ω — 3562 120k — 3564 160k — 3563 56k — 2562 330n — 2563 100n — 3566 22 — 3565 — 3567 82k — 3545 — 2544 220µ — 2542 22n — 2543 220µ — 2541 22n — 3560 11k — 3561 150k — 2560 4n7 — 3509 5k6 — 2565 1n2 — 3544 — 3543 8k8 — 3541 8k8 — 3542 33 — 2540 1µ5 — 2545 100n — 3540 4R7 — 3534 220Ω — 2534 330n — 3553 1k5 — 3552 8k2 — 2550 6n8 — 3554 8k2 — 2551 22n — 3551 2k — 3555 91k — 3550 2k — 3557 4R7 — 3556 4R7 — 3570 4R7 — 3571 4R7 — 3577 — 3578 22k — 3573 100 — 3583 — 3580 2k2 — 3586 180Ω — 3587 5k6 — 3588 47k — 3589 4k7 — 2574 18n — 2571 22n — 3584 91k — 3585 100Ω — 3575 1k2 — 3574 33k — 3582 7k5 — 3579 130k — 3581 56k — 3576 68k — 2570 4n7 — 3569 22k — 3568 6800Ω — 3562 120k — 3564 160k — 3563 56k — 2562 330n — 2563 100n — 3566 22 — 3565 — 3567 82k — 3545 — 2544 220µ — 2542 22n — 2543 220µ — 2541 22n — 3560 11k — 3561 150k — 2560 4n7 — 3509 5k6 — 2565 1n2 — 3544

6501 PHOTO DIODE SIGNAL PROCESSOR TDA 8808 ©

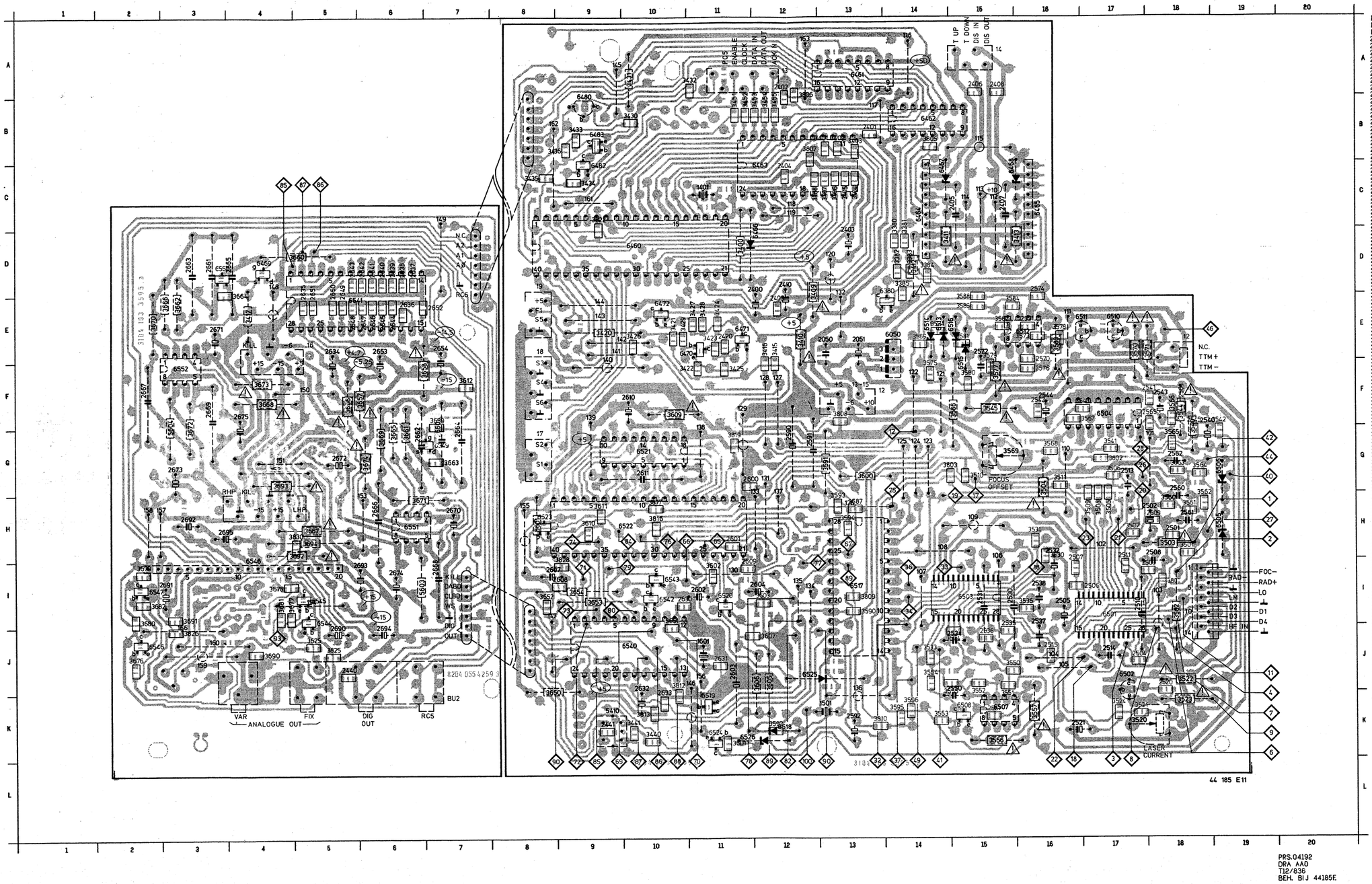
3814 3808 3809 ✱ ONLY CDC484 CDC486 — 3801 ✱ ONLY CDC875

DECODER-A IC6522 { MC

—CHIP JUMPER (0ae)

PRS.05154 T-08 826

SERVO AND DECODER PANEL



1401	C11	2691	I 3	3595	K14	6546	J 2
1501	K13	2692	H 3	3596	K14	6547	I 2
1601	J11	2693	H 6	3600	G13	6549	D 7
2050	E13	2694	I 6	3601	K11	6550	D 3
2050	E13	2695	H 3	3602	I11	6551	H 6
2051	E13	3380	C14	3603	I12	6552	E 3
2400	D12	3381	C14	3605	J12		
2401	B13	3382	D14	3606	J12		
2402	A12	3383	D14	3607	J12		
2403	C13	3384	D14	3609	F10		
2404	B12	3385	D14	3610	H 9		
2405	C15	3400	D11	3611	H 9		
2406	A15	3401	B13	3612	F 7		
2407	C15	3402	B13	3650	E 7		
2408	A15	3403	B13	3650	J 8		
2409	D12	3404	C13	3651	I10		
2410	D12	3405	C13	3652	I 8		
2420	E11	3406	C13	3653	I 9		
2426	E10	3407	C13	3654	I 9		
2440	J 5	3408	C12	3656	F 5		
2441	K 9	3409	D13	3657	F 6		
2501	H18	3410	E12	3658	E 7		
2502	H18	3411	D15	3660	D 5		
2503	I18	3412	D14	3661	F 6		
2504	J17	3413	D16	3662	D 3		
2505	I16	3415	E12	3663	G 7		
2506	I17	3416	E12	3665	F 6		
2507	H16	3417	E 4	3666	D 3		
2508	H18	3420	E 9	3667	H 5		
2509	H18	3421	E10	3668	F 4		
2509	H11	3422	F10	3669	G 6		
2510	I17	3423	E11	3670	E 2		
2511	H17	3424	E11	3671	G 6		
2513	G17	3425	F11	3672	F 3		
2514	J17	3427	E11	3673	F 4		
2515	J16	3428	E11	3674	G 6		
2520	E11	3429	E10	3675	J 5		
2521	K17	3430	B10	3676	J 2		
2530	I16	3431	A10	3677	I 5		
2531	I15	3432	A11	3678	I 4		
2532	H16	3433	B 9	3679	I 2		
2534	J15	3434	C 9	3680	I 2		
2535	I15	3435	C 8	3681	I 4		
2536	I15	3436	B 8	3682	I 2		
2537	I16	3440	K10	3690	J 4		
2538	I16	3441	K10	3691	I 3		
2540	F18	3451	A11	3692	H 5		
2541	F17	3452	A11	3693	G 4		
2542	F16	3453	A12	3694	H 5		
2542	F19	3454	A12	3801	I18		
2543	F18	3455	B12	3802	G17		
2544	F16	3468	B16	3803	G15		
2545	F18	3501	H18	3805	B14		
2550	J15	3502	I18	3806	A12		
2551	K15	3503	H18	3807	B12		
2560	I18	3504	H16	3808	F13		
2561	H18	3505	H17	3809	I13		
2562	F18	3506	G17	3810	K13		
2562	G18	3507	H17	3812	J10		
2565	E18	3508	H17	3813	K10		
2570	E16	3509	H17	3816	H10		
2571	E16	3510	G15	3817	H10		
2572	E15	3511	G15	3819	I11		
2574	F12	3520	K17	3822	C 9		
2590	F12	3521	K17	3825	J 5		
2591	G12	3522	J18	3826	J 3		
2600	I11	3523	K18	3828	I 9		
2600	G11	3524	K17	3830	H 5		
2601	H11	3530	H16	5410	K 9		
2602	I11	3533	J14	5545	I 5		
2603	J11	3534	J15	5601	H 8		
2604	I12	3535	I16	5603	I 7		
2607	I 8	3540	F18	5604	F 3		
2608	I 9	3541	G17	6050	E14		
2610	F10	3544	F18	6380	D14		
2611	G10	3545	F15	6460	D10		
2630	I10	3550	J15	6461	A13		
2631	J11	3551	J15	6462	B14		
2632	J10	3552	J15	6463	B12		
2633	J10	3553	K14	6464	C14		
2634	E 5	3554	J14	6465	C16		
2635	D 5	3555	G18	6466	C12		
2636	E 6	3555	J15	6467	B14		
2637	D 6	3556	K15	6469	D 4		
2638	D 6	3557	K16	6470	E10		
2639	D 6	3560	H18	6471	E11		
2640	D 6	3561	H18	6472	E10		
2641	D 6	3562	G18	6480	A 9		
2642	D 6	3563	G18	6482	B 9		
2643	D 5	3564	G18	6483	B 9		
2644	E 6	3566	F18	6501	I17		
2645	E 6	3567	F17	6502	J17		
2646	E 6	3568	G16	6503	I15		
2647	E 6	3569	G15	6504	F17		
2648	E 5	3570	E17	6506	G19		
2649	D 5	3571	E18	6507	K15		
2650	D 5	3573	E16	6508	K15		
2651	E 5	3574	E14	6510	E17		
2652	E 7	3575	E14	6511	E17		
2653	E 6	3576	F16	6512	E16		
2654	E 7	3577	F15	6513	E14		
2660	H 7	3578	E16	6514	E14		
2661	D 3	3579	E15	6516	E15		
2662	F 6	3580	F15	6517	I13		
2663	D 3	3581	E15	6518	K12		
2664	F 7	3582	E15	6519	J11		
2665	D 4	3583	E16	6520	I11		
2666	H 6	3584	D15	6521	G10		
2667	F 2	3585	E15	6522	H10		
2668	H 7	3586	F15	6523	H 8		
2669	F 3	3587	H13	6524	K11		
2670	H 7	3588	D15	6525	J12		
2671	E 3	3589	E14	6526	K11		
2672	G 5	3590	I13	6540	J10		
2673	G 3	3591	G13	6541	D 6		
2674	I 6	3592	K12	6542	I10		
2675	F 4	3593	G13	6543	I10		
2690	I 5	3594	H13	6544	I 5		

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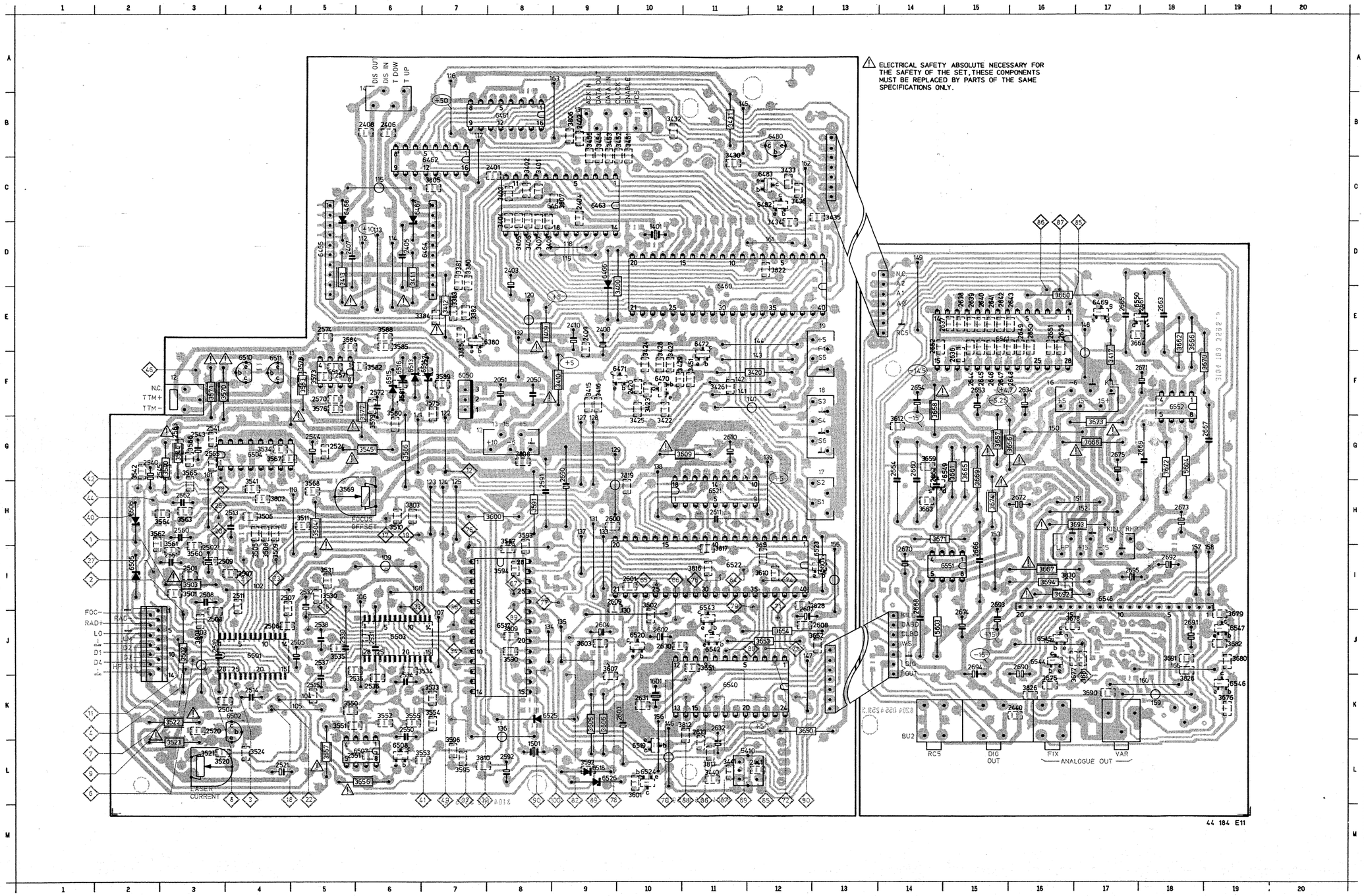
SERVO AND DECODER PANEL



3584	E 5	3400	D10	3651	J11		
1401	D10	3401	C 8	3652	J12		
1501	L 8	3402	C 8	3653	J12		
1601	K10	3403	C 8	3654	J12		
2050	F 8	3404	C 8	3656	G16		
2051	F 8	3405	D 8	3657	G15		
2400	E 9	3406	D 8	3658	F14		
2401	C 8	3407	D 8	3659	G14		
2402	B 9	3408	D 8	3660	E16		
2403	D 8	3409	E 8	3661	G15		
2404	C 9	3410	F 9	3662	E16		
2405	D 6	3411	D 6	3663	H14		
2406	B 6	3412	E 7	3664	E17		
2407	D 5	3413	D 5	3665	G15		
2408	B 6	3415	F 9	3666	E18		
2409	E 9	3416	F 9	3667	I16		
2410	E 9	3417	E17	3668	G17		
2420	F10	3420	F12	3669	G15		
2440	K16	3422	G10	3670	F18		
2441	L12	3423	F10	3671	H14		
2501	I 3	3424	E10	3672	G18		
2502	H 3	3425	G10	3673	G17		
2503	J 3	3426	F11	3674	H15		
2504	K 3	3427	E10	3675	J16		
2505	J 5	3428	E10	3676	K19		
2506	J 4	3429	F10	3677	J16		
2507	I 4	3430	B11	3678	J16		
2508	I 3	3431	B11	3679	J19		
2509	I 3	3432	B10	3680	J19		
2510	J 3	3433	C12	3681	J17		
2511	I 4	3434	C12	3682	J19		
2513	H 4	3435	C13	3690	K17		
2514	K 4	3436	C12	3691	J18		
2515	K 5	3440	L11	3692	I16		
2520	K 3	3441	D11	3693	H16		
2521	L 4	3451	B10	3694	I16		
2524	G 5	3452	F11	3801	J 3		
2530	J 5	3453	B 9	3802	H 4		
2531	J 4	3454	B 9	3803	H 6		
2532	I 5	3455	B 9	3805	C 7		
2534	J 6	3458	C 5	3806	B 9		
2535	K 5	3501	I 3	3807	C 9		
2536	K 6	3502	J 3	3808	G 8		
2537	J 5	3503	I 3	3809	J 8		
2538	J 5	3504	H 5	3810	L 7		
2540	G 2	3505	I 4	3812	K10		
2541	G 3	3506	H 4	3813	L11		
2543	G 3	3507	I 4	3816	I11		
2544	G 5	3508	I 4	3817	I11		
2545	G 2	3509	I 2	3819	G10		
2551	L 5	3510	H 6	3822	K16		
2560	H 3	3511	H 5	3826	J18		
2561	I 3	3520	L 3	3828	I13		
2562	H 3	3521	L 3	3410	L11		
2563	G 3	3522	K 3	5601	I13		
2565	G 3	3523	L 3	5603	J14		
2570	F 5	3524	L 4	5604	G18		
2571	F 5	3533	K 7	6050	F 7		
2572	F 6	3534	I 5	6380	E 8		
2574	E 5	3535	K 7	6450	D11		
2590	G 9	3536	G 4	6461	B 8		
2591	G 8	3537	J 4	6462	C 7		
2592	L 8	3595	J 5	6463	C 9		
2600	H 9	3540	G 3	6463	C 9		
2601	I10	3541	G 2	6464	D 7		
2602	J10	3542	G 2	6465	D 5		
2603	K10	3544	G 3	6466	D 9		
2604	J 9	3545	G 6	6467	C 6		
2607	I12	3550	K 5	6469	E17		
2608	J13	3551	K 5	6470	F10		
2609	I 9	3552	K 6	6471	F 9		
2610	G11	3553	K 6	6472	G11		
2611	H11	3554	K 7	6480	B12		
2630	J10	3555	K 6	6482	C12		
2631	K10	3556	L 6	6483	C12		
2632	K11	3557	J 4	6501	K 4		
2633	K11	3560	I 3	6502	K 4		
2634	F16	3561	H 3	6503	J 6		
2635	E16	3562	H 2	6504	G 4		
2636	E15	3563	H 3	6505	H 2		
2637	E15	3564	H 2	6506	H 2		
2638	E15	3565	G 3	6507	L 6		
2639	E15	3566	G 3	6508	L 6		
2640	E15	3567	G 4	6510	F 4		
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2646	F15	3574	F 7	6516	F 6		
2647	F15	3575	F 7	6517	J 8		
2648	F16	3576	F 5	6518	L 9		
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2651	E16	3579	G 6	6522	I11		
2652	E14	3580	F 6	6523	H13		
2653	F14	3581	F 6	6524	L10		
2654	F14	3582	F 6	6525	K 8		
2660	G14	3583	F 5	6526	L 9		
2661	E18	3585	E 6	6540	K11		
2662	G14	3586	G 6	6541	E15		
2663	E18	3587	H 8	6542	J11		
2664	G14	3588	E 6	6543	I11		
2665	E17	3589	F 7	6544	J16		
2666	H15	3590	J 8	6545	J16		
2667	G19	3591	H 8	6546	K19		
2668	I14	3592	L 9	6547	J19		
2670	I14	3593	H 8	6548	I17		
2671	F18	3594	I 8	6549	G15		
2672	H16	3595	L 7	6550	E17		
2673	H18	3596	K 7	6551	I15		
2675	G17	3600	H 8	6552	F18		
2690	J16	3601	L10				
2691	J18	3602	I10				
2692	I18	3603	J 9				
2694	J15	3605	K 9				
2695	I17	3606	K 9				
3380	D 7	3607	J 9				
3381	D 7	3609	G10				
3382	E 7	3610	I12				
3383	E 7	3611	H12				
3384	E 6	3612	F14				
3385	E 7	3650	K12				

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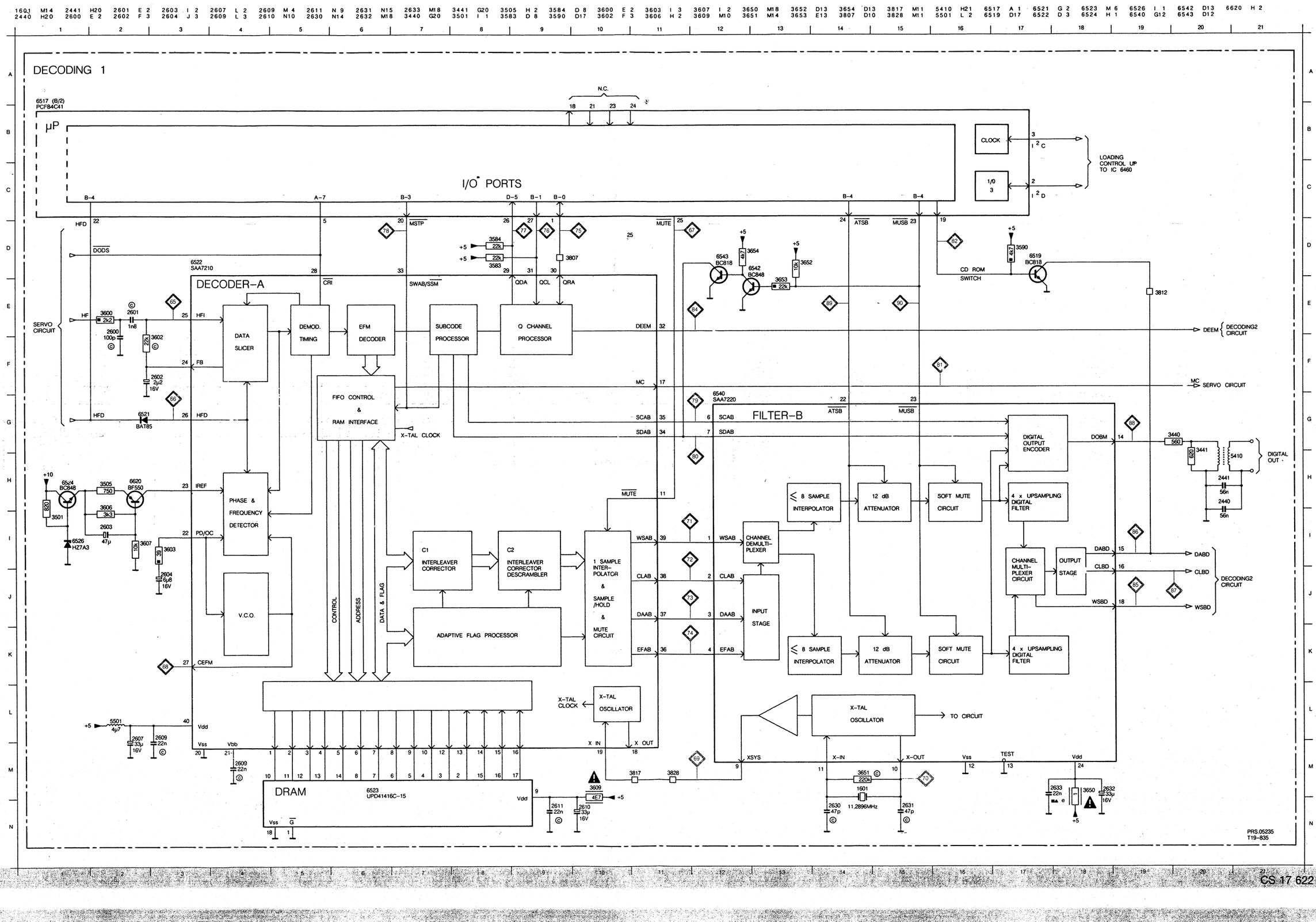
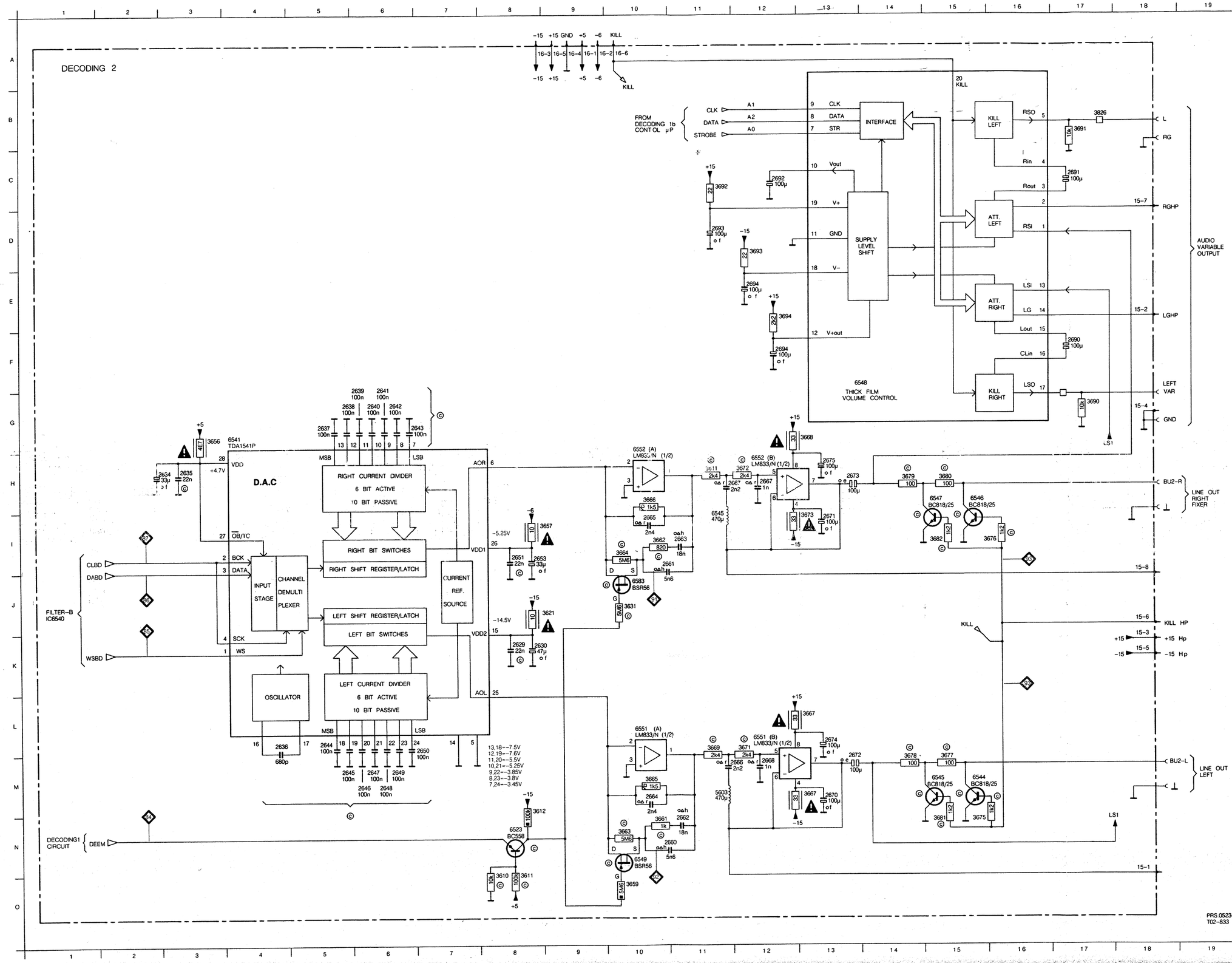
DECODING DIAGRAM



DECODING DIAGRAM

DECODING 2



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2630	K	9
2634	H	3
2635	H	3
2636	L	4
2637	G	5
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2639	F	6
2640	G	6
2641	F	6
2642	G	6
2643	G	7
2644	L	5
2645	M	5
2646	M	6
2647	M	6
2648	M	6
2649	M	6
2650	L	7
2651	I	8
2653	I	9
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2663	I	11
2664	M	10
2665	I	10
2666	M	12
2667	H	12
2667	H	12
2668	M	12
2670	M	13
2671	I	13
2672	M	13
2673	M	13
2674	L	13
2675	H	13
2690	F	17
2691	C	17
2692	C	12
2693	D	11
2694	E	12
2694	F	12
3610	O	8
3611	H	11
3611	O	8
3612	M	8
3621	J	9
3631	J	10
3656	G	3
3657	I	9
3659	O	10
3661	N	10
3662	I	10
3663	N	10
3664	I	10
3665	M	10
3666	H	10
3667	L	13
3667	M	13
3668	G	13
3669	L	11
3671	L	12
3672	H	12
3673	I	13
3675	N	15
3676	I	16
3677	M	15
3678	M	14
3679	M	14
3680	H	15
3680	H	15
3681	N	15
3682	I	15
3690	G	17
3691	B	17
3692	C	11
3693	D	12
3694	E	12
3826	B	17
5603	M	11
6523	N	8
6541	G	4
6544	M	15
6545	M	15
6545	I	11
6546	H	15
6547	H	15
6548	F	14
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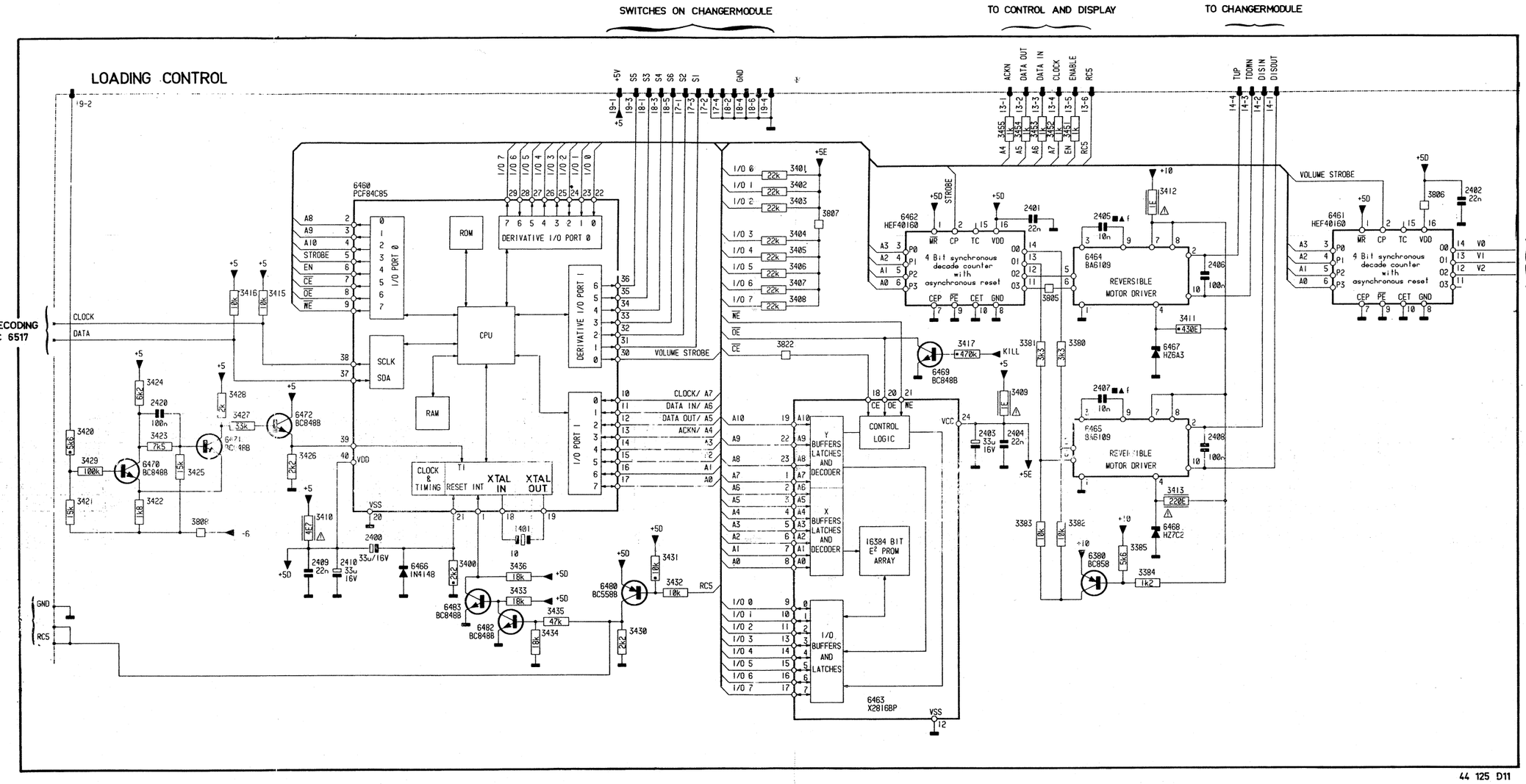
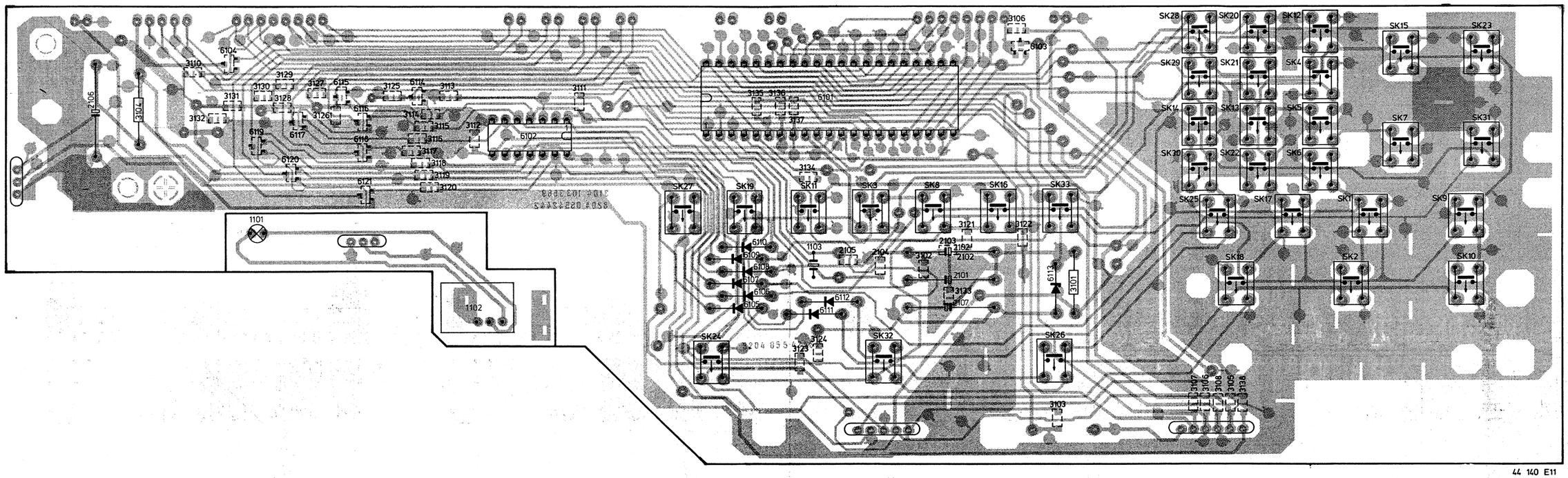
6551	L	12
6551	L	10
6552	H	12
6552	G	10
6583	J	10

LOADING CONTROL DIAGRAM



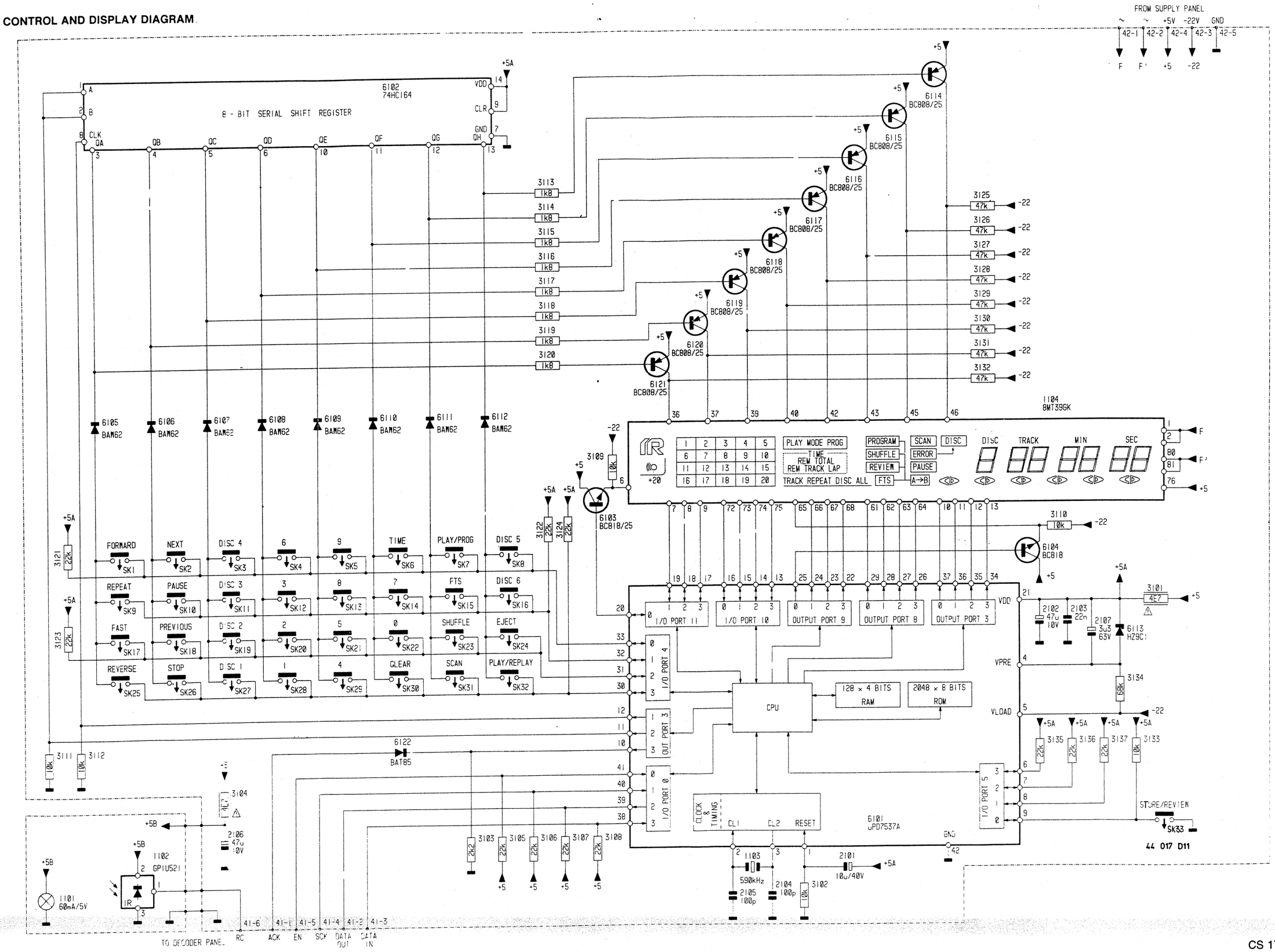
44 125 D11

CONTROL AND DISPLAY PANEL



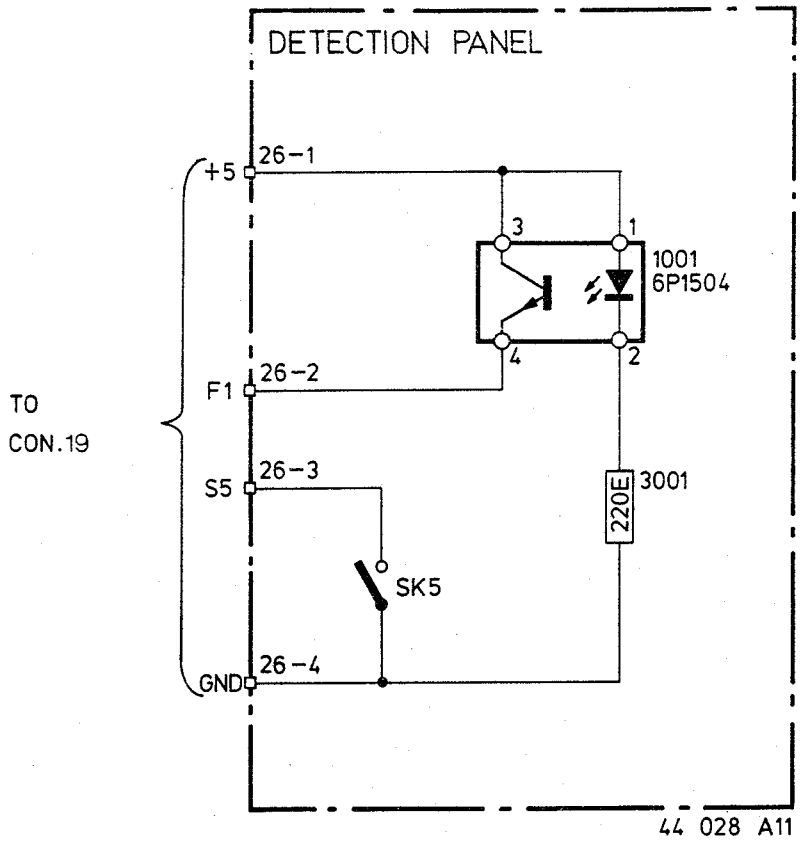
44 140 E11

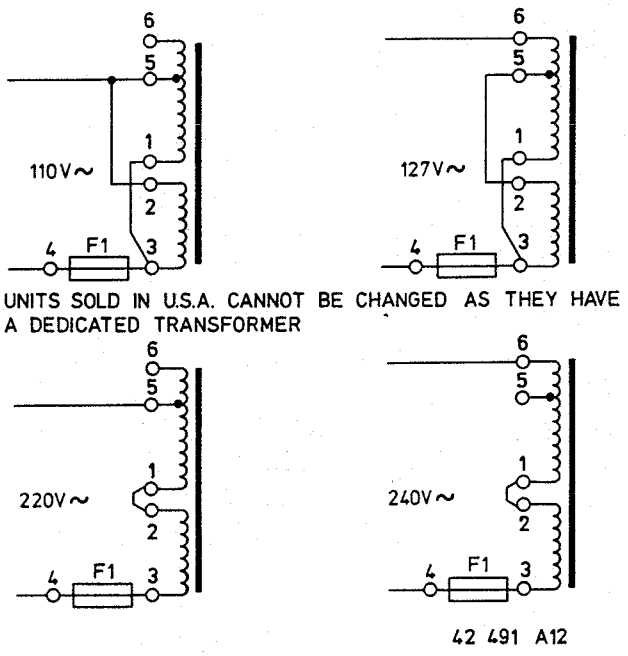
CONTROL AND DISPLAY DIAGRAM

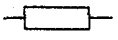
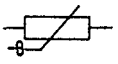
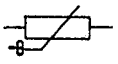
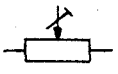
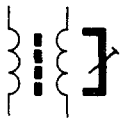


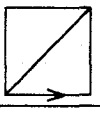
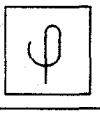
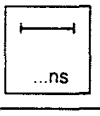
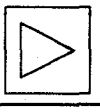
CS 17 626

POSITION DETECTION PANEL





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

MDA.00083
T32-735

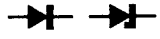
ELECTRICAL PARTSLIST

TY40408=MC7805CT selected	4822 209 71579
MC79L05	4822 209 73233
MC7912CT	5322 209 73277
TDA8808T/C3	4822 209 73234
TDA8809T/C2	4822 209 73235
TCA0372DP2	4822 209 72587
SAA7210	4822 209 71001
µPD41416	4822 209 70422
TDA1541	4822 209 72544
NJM4560D	4822 209 83274
PCF84C85P	4822 209 73445
PCF84C41P/021	4822 209 73364
BA6109	4822 209 82059
LM833N	4822 209 83163
PCF2111P	5322 209 70185
MC78M15CT	4822 209 80808
MC79M15CT	5322 209 86361
MC7906CT	4822 209 82056
NJM4556D	4822 209 82362
PC74HC164P	4822 209 11605
µPC7537C	4822 209 73338
HEF40160BP	4822 209 11233
SAA7220	4822 209 72545
X2816BP	4822 209 72102

BC328	4822 130 44104
BC338	4822 130 44121
BC328-16	4822 130 41023
BC548C	4822 130 44196
BC558	4822 130 44197
BC818	4822 130 42675
BC848 Chip	5322 130 41981
BC858 Chip	5322 130 42012
BD135	4822 130 40823
BF550	4822 130 42131
BC337	4822 130 40855
BC338-25	4822 130 40958
BC548B	4822 130 40937
BC808-25	5322 130 42048
BC818-25	4822 130 42696
BC848B	5322 130 41982
BSR56	4822 130 42633

680pF	50V	4822 122 31381
1nF	50V	4822 122 31746
1n2	50V	4822 121 51309
1n8	50V	4822 121 51311
2n2	50V	4822 121 51325
3n3	400V	4822 122 40327
3n9	50V	4822 121 51313
6n8	50V	4822 121 51093
10nF	25V	4822 122 10177
15nF	50V	4822 121 51315
22nF	16V	4822 122 10166
33nF	63V	4822 122 31848
47nF	100V	4822 121 42491
220nF	63V	4822 121 42245
330nF	63V	4822 121 42661
470nF	100V	4822 121 51252

1nF	50V	4822 121 51324
2n7	50V	4822 121 51312
4n7	50V	4822 121 51314
27nF	50V	4822 121 42888
1µ5 bip	50V	4822 124 41601
2µ2	16V	4822 124 41593
4µ7	50V	4822 124 41576
6µ8	50V	4822 124 41578
8µ2	63V	4822 121 51321
33µF	16V	4822 124 40272
47µF	25V	4822 124 41527
100µF	25V	4822 124 41528
220µF	16V	4822 124 40196
330µF	35V	4822 124 41594
6800µF	16V	4822 124 41591
1000µF	16V	4822 124 41571
470µF	35V	4822 124 41573
22µF	50V	4822 124 41596
470µF	50V	4822 124 41614
10µF	40V	4822 124 20708
47µF	10V	4822 124 20678
3µ3	63V	4822 124 20725
100µF	10V	5322 124 21762



1N4002	5322 130 60684
1N4148	4822 130 30621
BAT85	4822 130 31983
BA314	4822 130 30879
HZ3B2	4822 130 32831
HZ4B2	4822 130 32843
HZ5B1	4822 130 32986
HZ6A3	4822 130 32697
HZ7C2	4822 130 32862
HZ7A3	4822 130 33523
HZ9C1	4822 209 70289
BAW62	4822 130 30613
BZV85-C7V5	5322 130 32586
HZ9A2	4822 130 33294

10.000 MHz	4822 242 71378
11289.6 kHz	4822 242 71644

Coil 4.7 µ	4822 157 53139
470 µ	4822 157 53141

1R	0.33 W	4822 111 30483
4R7	0.33 W	4822 111 30499
4R7	0.6 W	4822 116 52858
10R	0.33 W	4822 111 30508
12R	0.33 W	4822 111 30511
18R	0.33 W	4822 111 30515
220R	0.33 W	4822 111 30544
430R	0.5 W	4822 116 52423

ELECTRICAL PARTSLIST

680R	0.5 W	4822 116 52431
750R	0.5 W	4822 116 52432
2K2	0.5 W	4822 116 52408
2K7	0.5 W	4822 116 52413
3K3	0.5 W	4822 116 51417
3K9	0.5 W	4822 116 52422
4K7	0.5 W	4822 116 52426
5K6	0.5 W	4822 116 52438
6K8	0.5 W	4822 116 52441
10K	0.5 W	4822 116 52452
22K	0.5 W	4822 116 52463
33K	0.5 W	4822 116 52467
47K	0.5 W	4822 116 52472
180K	0.5 W	4822 116 52505
1M	0.5 W	4822 116 52493
5M6	0.5 W	4822 116 52533
100R	0.5 W	4822 116 52389
18K	0.5 W	4822 116 52461
1K2	0.5 W	4822 116 52395
150R	0.5 W	4822 116 52398

10K	log dual	4822 100 30061
4K7	0.05 W	4822 101 10685
22K	0.05 W	4822 100 20522

MISCELLANEOUS

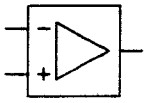
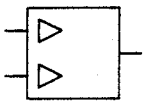
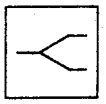
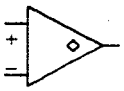
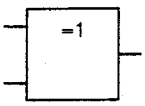
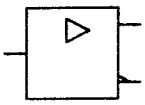
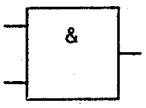
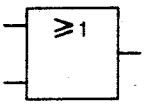
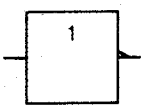
Display	4822 130 90575
Trafo/00R mains	4822 146 30716
Trafo/47R mains	4822 146 21373
Trafo digout	4822 148 80281
Switches keyboard	4822 276 12465
Phone socket	4822 267 30743
Cinch socket 5p	4822 267 40789
Cinch socket 2p	4822 267 30631
Fuse 315 mA	4822 253 30014
Fuse 800 mA	4822 253 30019
Thickfilm unit	4822 214 51724
LAMP	4822 134 40909
Power on switch	4822 276 11309

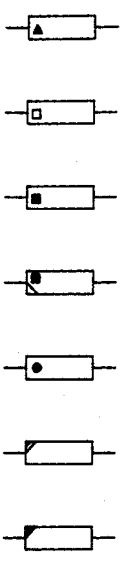
Changermodule

Transformer fuse

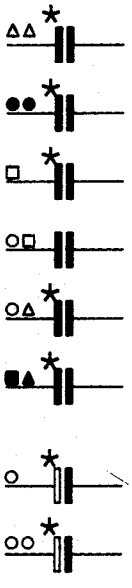
EU 4822 252 20017

USA 4822 252 20108

SYMBOL	DESCRIPTION
	Operational amplifier
	Differential amplifier
	Splitter
	Operational amplifier with open output
	Exclusive OR gate
	True/complement amplifier with high input
	Flip Flop
	AND gate
	OR gate
	Inverter with high input



0.2W (CR 16)	≤ 220k	5%
	> 270k	10%
0.33W (CR 25)	≤ 1M	5%
	> 1M	10%
0.33W (SFR25)		5%
0.25W (VR 25)	≤ 10M	5%
	> 10M	10%
0.5W (CR 37)	≤ 1M	5%
	> 1M	10%
0.67W (CR 52)		5%
1.15W (CR 68)		5%



Ceramic plate

Polyester flat foil

Polyester mepolesco

Mylar
(Polyester flat foil small sized)

Micropoco

Tubular ceramic
(body colour pink or yellow/green)

Miniature single elco

Subminiature tantalum

* a=2,5V
b=4V
c=6,3V
d=10V
e=16V
f=25V
g=40V
h=63V
i=100V
j=125V
l=125V
m=150V
n=160V
q=200V
r=250V
s=300V
t=350V
u=400V
v=500V
w=630V
x=1000V
A=1.6V
B=6V
C=12V
D=15V
E=20V
F=35V
G=50V
H=75V
I=80V

MDA.00084
T32-735

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1 pF	5%	4822 122 32479
1,2 pF	5%	4822 122 33013
1,5 pF	5%	4822 122 31792
1,8 pF	5%	4822 122 32087
2,2 pF	5%	4822 122 32425
3,3 pF	5%	4822 122 32079
3,9 pF	5%	4822 122 32081
4,7 pF	5%	4822 122 32082
5,6 pF	5%	4822 122 32506
6,8 pF	5%	4822 122 32507
8,2 pF	5%	4822 122 32083
10 pF	5%	4822 122 31971
12 pF	5%	4822 122 32139
15 pF	5%	4822 122 32504
18 pF	5%	4822 122 31769
22 pF	10%	4822 122 31837
27 pF	5%	4822 122 31966
33 pF	5%	4822 122 31756
39 pF	5%	4822 122 31972
47 pF	5%	4822 122 31772
56 pF	5%	4822 122 31774
68 pF	5%	4822 122 31961
82 pF	10%	4822 122 31839
100 pF	5%	4822 122 31765
120 pF	5%	4822 122 31766
150 pF	5%	4822 122 31767
180 pF	2%	4822 122 31794
220 pF	5%	4822 122 31965
270 pF	5%	4822 122 32142
330 pF	10%	4822 122 31642
390 pF	5%	4822 122 31771
470 pF	5%	4822 122 31727
560 pF	5%	4822 122 31773
680 pF	5%	4822 122 31775
820 pF	5%	4822 122 31974
1 nF	10%	5322 122 31647
1,2 nF	5%	4822 122 31807
1,5 nF	10%	4822 122 31781
1,8 nF	10%	4822 122 32153
2,2 nF	10%	4822 122 31644
2,7 nF	10%	4822 122 31783
3,3 nF	10%	4822 122 31969
3,9 nF	10%	4822 122 32566
4,7 nF	10%	4822 122 31784
5,6 nF	10%	4822 122 31916
6,8 nF	10%	4822 122 31976
10 nF	10%	4822 122 31728
12 nF	10%	5322 122 31648
15 nF	10%	4822 122 31782
18 nF	10%	4822 122 31759
22 nF	10%	4822 122 31797
27 nF	10%	4822 122 32541
33 nF	10%	4822 122 31981
47 nF	10%	4822 122 32542
56 nF	10%	4822 122 32183
100 nF	10%	4822 122 31947
180 nF	10%	4822 122 32915
220 nF	20%	4822 122 32715

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0 E	jumper	4822 111 90163
1 E	5%	4822 111 90184
1,1 E	5%	4822 111 90377
1,2 E	5%	4822 111 90378
1,3 E	5%	4822 111 90379
1,5 E	5%	4822 111 90381
1,6 E	5%	4822 111 90382
1,8 E	5%	4822 111 90383
2 E	5%	4822 111 90384
2,2 E	5%	5322 111 90104
2,4 E	5%	4822 111 90385
2,7 E	5%	4822 111 90386
3 E	5%	4822 111 90387
3,3 E	5%	4822 111 90388
3,6 E	5%	4822 111 90389
3,9 E	5%	4822 111 90391
4,3 E	5%	4822 111 90392

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4,7 E	5%	5322 111 90376
5,1 E	5%	4822 111 90393
5,6 E	5%	4822 111 90394
6,2 E	5%	4822 111 90395
6,8 E	5%	4822 111 90254
7,5 E	5%	4822 111 90396
8,2 E	5%	4822 111 90397
9,1 E	5%	4822 111 90398
10 E	2%	5322 111 90095
11 E	2%	4822 111 90338
12 E	2%	4822 111 90341
13 E	2%	4822 111 90343
15 E	2%	4822 111 90344
16 E	2%	4822 111 90347
18 E	2%	5322 111 90139
20 E	2%	4822 111 90352
22 E	2%	4822 111 90186
24 E	2%	4822 111 90355
27 E	2%	5322 111 90105
30 E	2%	4822 111 90356
33 E	2%	4822 111 90357
36 E	2%	4822 111 90359
39 E	2%	4822 111 90361
43 E	2%	5322 116 90125
47 E	2%	4822 111 90217
51 E	2%	4822 111 90365
56 E	2%	4822 111 90239
62 E	2%	4822 111 90367
68 E	2%	4822 111 90203
75 E	2%	4822 111 90371
82 E	2%	4822 111 90124
91 E	2%	4822 111 90375
100 E	2%	5322 111 90091
110 E	2%	4822 111 90335
120 E	2%	4822 111 90339
130 E	2%	4822 111 90164
150 E	2%	5322 111 90098
160 E	2%	4822 111 90345
180 E	2%	5322 111 90242
200 E	2%	4822 111 90348
220 E	2%	4822 111 90178
240 E	2%	4822 111 90353
270 E	2%	4822 111 90154
300 E	2%	4822 111 90156
330 E	2%	5322 111 90106
360 E	1%	4822 111 90288
360 E	2%	4822 111 90358
390 E	2%	5322 111 90138
430 E	2%	4822 111 90362
470 E	2%	5322 111 90109
510 E	2%	4822 111 90245
560 E	2%	5322 111 90113
620 E	2%	4822 111 90366
680 E	2%	4822 111 90162
750 E	2%	5322 111 90306
820 E	2%	4822 111 90171
910 E	2%	4822 111 90372
1 k	2%	5322 111 90092
1,1 k	2%	4822 111 90336
1,2 k	2%	5322 111 90096
1,3 k	2%	4822 111 90244
1,5 k	2%	4822 111 90151
1,6 k	2%	5322 111 90265
1,8 k	2%	5322 111 90101
2 k	2%	4822 111 90165
2,2 k	2%	4822 111 90248
2,4 k	2%	4822 111 90289
2,7 k	2%	4822 111 90569
3 k	2%	4822 111 90198
3,3 k	2%	4822 111 90157
3,6 k	2%	5322 111 90107
3,9 k	2%	4822 111 90571
4,3 k	2%	4822 111 90167
4,7 k	2%	5322 111 90111
5,1 k	2%	5322 111 90268
5,6 k	2%	4822 111 90572
6,2 k	2%	4822 111 90545

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1U

6,8 k	2%	4822 111 90544
7,5 k	2%	4822 111 90276
8,2 k	2%	5322 111 90118
9,1 k	2%	4822 111 90373
10 k	2%	4822 111 90249
11 k	2%	4822 111 90337
12 k	2%	4822 111 90253
13 k	2%	4822 111 90509
15 k	2%	4822 111 90196
16 k	2%	4822 111 90346
18 k	2%	4822 111 90238
20 k	2%	4822 111 90349
22 k	2%	4822 111 90251
24 k	2%	4822 111 90512
27 k	2%	4822 111 90542
30 k	2%	4822 111 90216
33 k	2%	5322 111 90267
36 k	2%	4822 111 90514
39 k	2%	5322 111 90108
43 k	2%	4822 111 90363
47 k	2%	4822 111 90543
51 k	2%	5322 111 90274
56 k	2%	4822 111 90573
62 k	2%	5322 111 90275
68 k	2%	4822 111 90202
75 k	2%	4822 111 90574
82 k	2%	4822 111 90575
91 k	2%	5322 111 90277
100 k	2%	4822 111 90214
110 k	2%	5322 111 90269
120 k	2%	4822 111 90568
130 k	2%	4822 111 90511
150 k	2%	5322 111 90099
160 k	2%	5322 111 90264
180 k	2%	4822 111 90565
200 k	2%	4822 111 90351
220 k	2%	4822 111 90197
240 k	2%	4822 111 90215
270 k	2%	4822 111 90302
300 k	2%	5322 111 90266
330 k	2%	4822 111 90513
360 k	2%	4822 111 90515
390 k	2%	4822 111 90182
430 k	2%	4822 111 90168
470 k	2%	4822 111 90161
510 k	2%	4822 111 90364
560 k	2%	4822 111 90169
620 k	2%	4822 111 90213
680 k	2%	4822 111 90368
750 k	2%	4822 111 90369
820 k	2%	4822 111 90205
910 k	2%	4822 111 90374
1 M	2%	4822 111 90252
1,1 M	5%	4822 111 90408
1,2 M	5%	4822 111 90409
1,3 M	5%	4822 111 90411
1,5 M	5%	4822 111 90412
1,6 M	5%	4822 111 90413
1,8 M	5%	4822 111 90414
2 M	5%	4822 111 90415
2,2 M	5%	4822 111 90185
2,4 M	5%	4822 111 90416
2,7 M	5%	4822 111 90417
3 M	5%	4822 111 90418
3,3 M	5%	4822 111 90191
3,6 M	5%	4822 111 90419
3,9 M	5%	4822 111 90421
4,3 M	5%	4822 111 90422
4,7 M	5%	4822 111 90423
5,1 M	5%	4822 111 90424
5,6 M	5%	4822 111 90425
6,2 M	5%	4822 111 90426
6,8 M	5%	4822 111 90235
7,5 M	5%	4822 111 90427
8,2 M	5%	4822 111 90237
9,1 M	5%	4822 111 90428
10M	5%	5322 111 91141