Service
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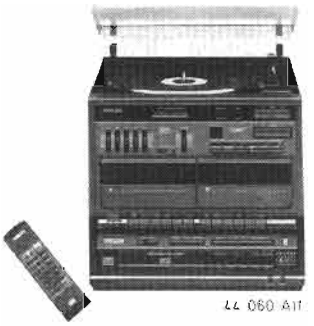
Pour ce qui concerne les instructions du méchanisme de cassette se référer à la documentation: Recorders tape deck RX18 + RX19

Les instructions réparation du tourne-disque dans la documentation: "Record player HP7D277"

La commande a distance, RC 2064, est livrable sons le code 4822 218 20722.



Service Manual

COMPACT disc DIGITAL AUDIO

SOMMAIRE

CLASS 1 LASER PRODUCT

Les normes de securité exigent que l'appareil soit remis a l'état d'origine et que soient utilisées les pieces de rechange identiques a celles specifiées

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

PHILIPS

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

Subject to modification

(F) 4822 725 22132

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PHILIPS

Published by Service Consumer Electronics

CONSEILS SERVICE

Démontage (voir fig.1)

Enlever la platine phono.
Dévisser les 4 vis A, soulever ensuite la platine phono à l'arrière en repoussant le crochet à ressort avec un tournevis.

Oter le fond et la paroi arrière.
Dévisser les 17 B.

Enlever les côtés.
Dévisser les 4 vis C.

Position Service: poser l'appareil sur le côté gauche.

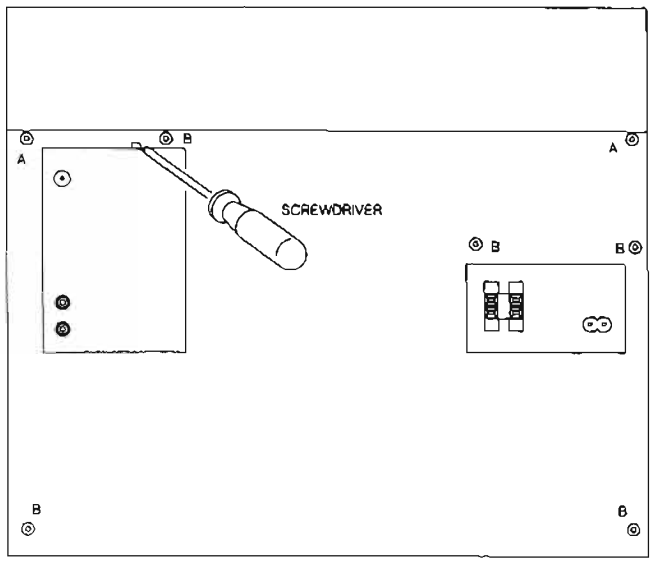


Fig. 2

MDA.00633
T27/729

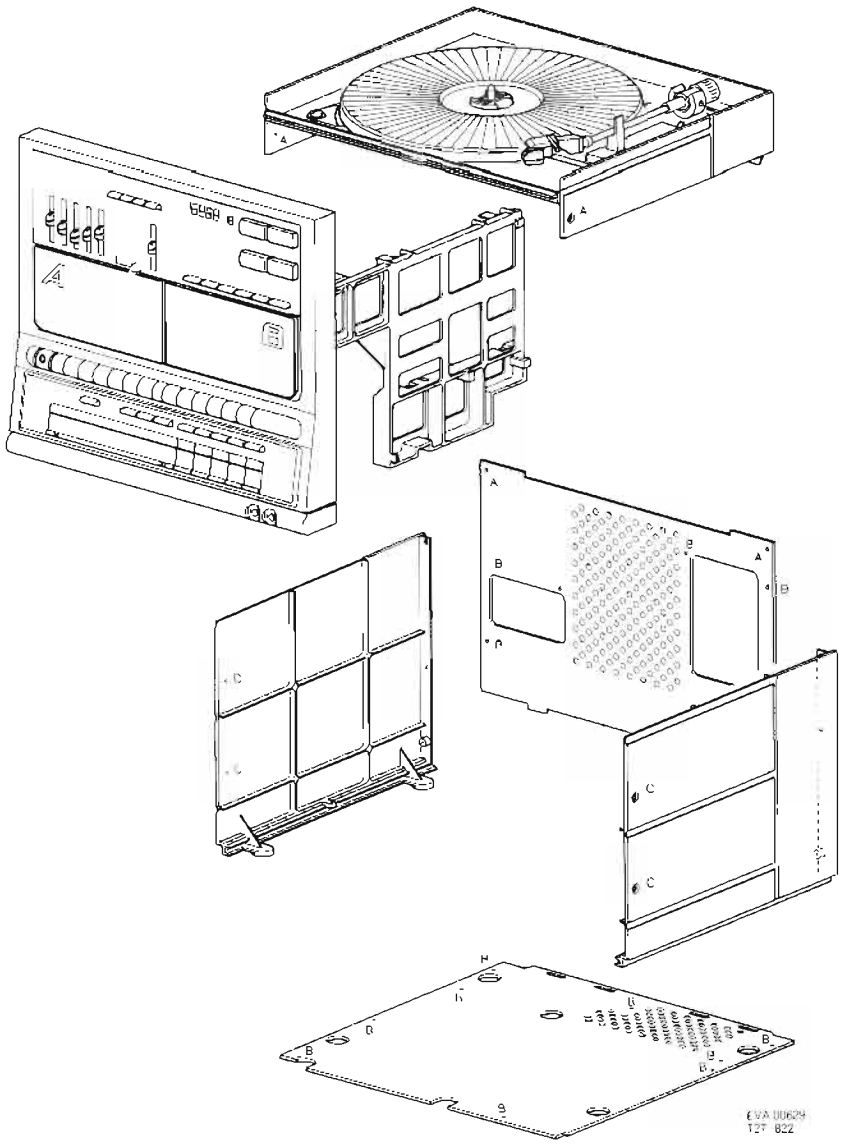
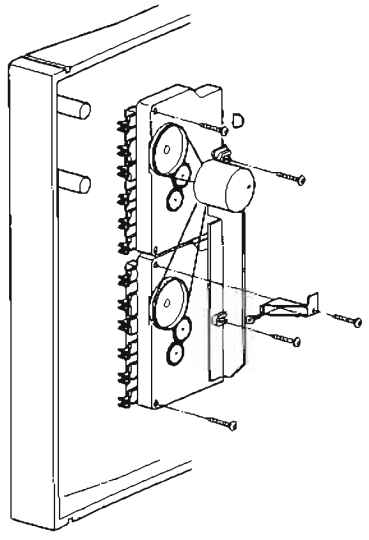


Fig. 1

Dépose de la mécanique de cassette (voir fig.3)

enlever les 6 vis D.



EVA.00524
T32-803

Fig. 3

Manutention de la platine RF (voir fig.5)

Enlever les 2 vis F de l'entrée d'antenne et sectionner le crochet: enlever la platine en écartant les 4 cliquets.

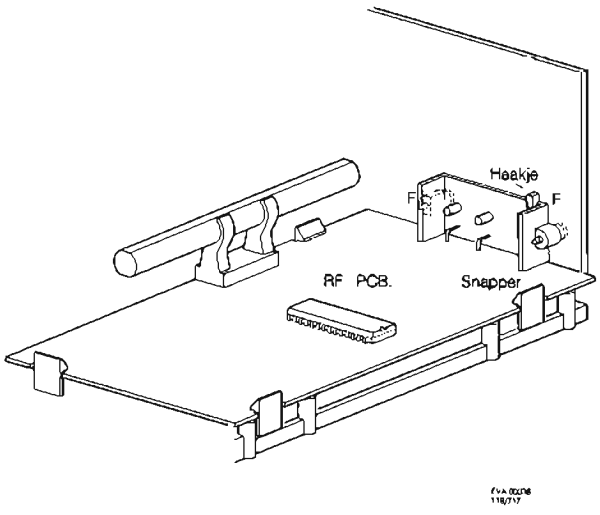


Fig. 5

Dépose du tourne-disque (voir fig.4)

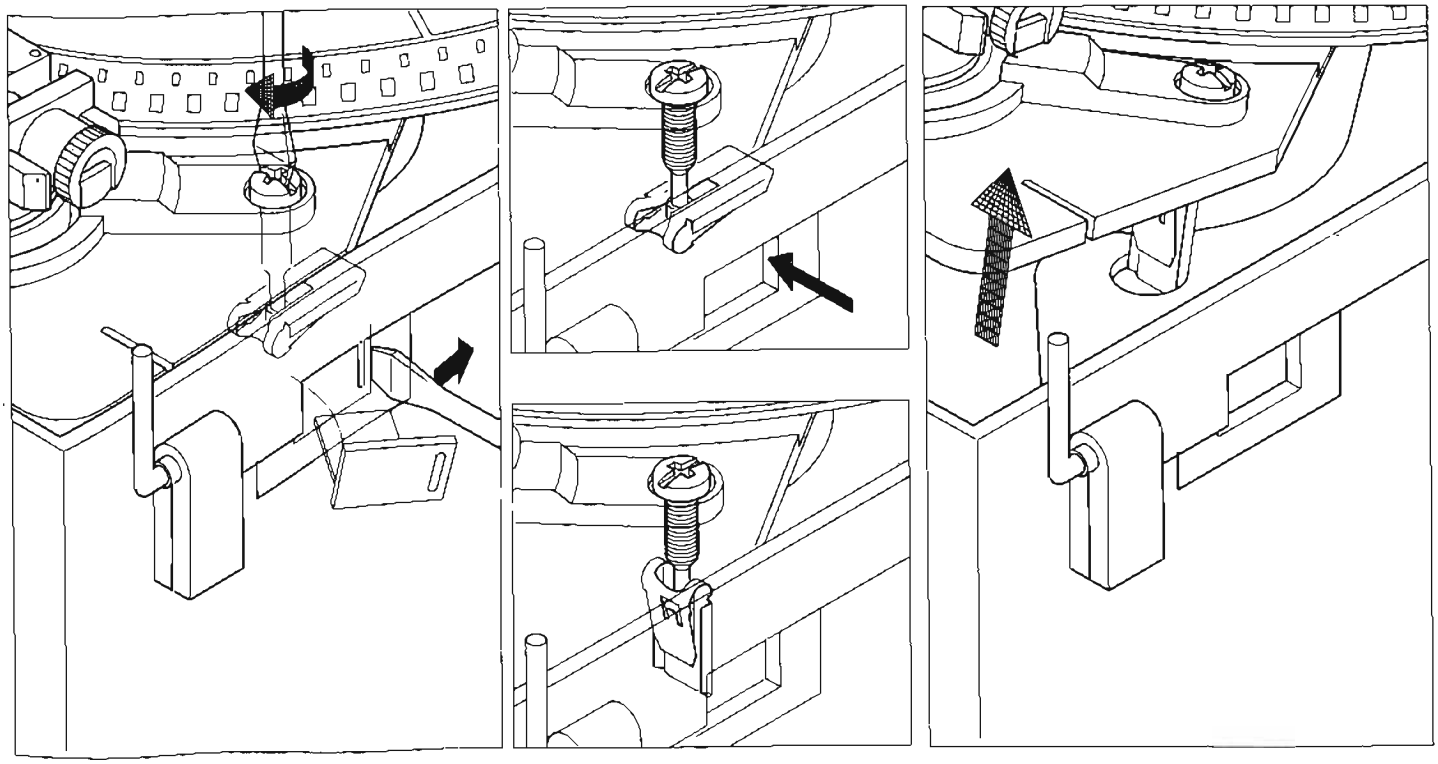
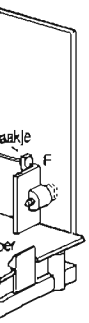


Fig. 4

MDA.00623
T28/714

ionner le
uets.



Dépose de la platine front panel (voir fig.6)

Dépose les boutons des potentiomètres.
Dépose 7 vis G et écarter les 3 cliquets.

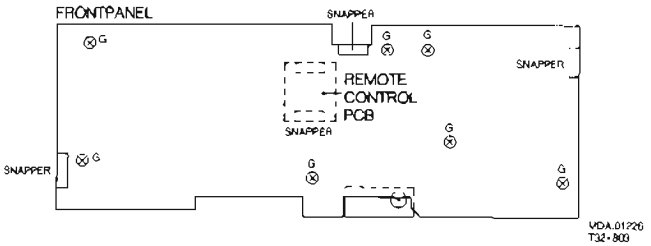
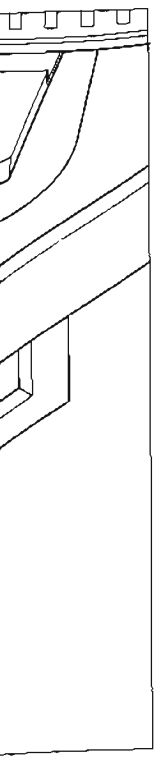


Fig. 6

Dépose de la mécanique CD

Enlever les 4 vis H.
Pour plus de détails au sujet de la dépose de la mécanique voir en fig.7.



MDA.00623
T28/714

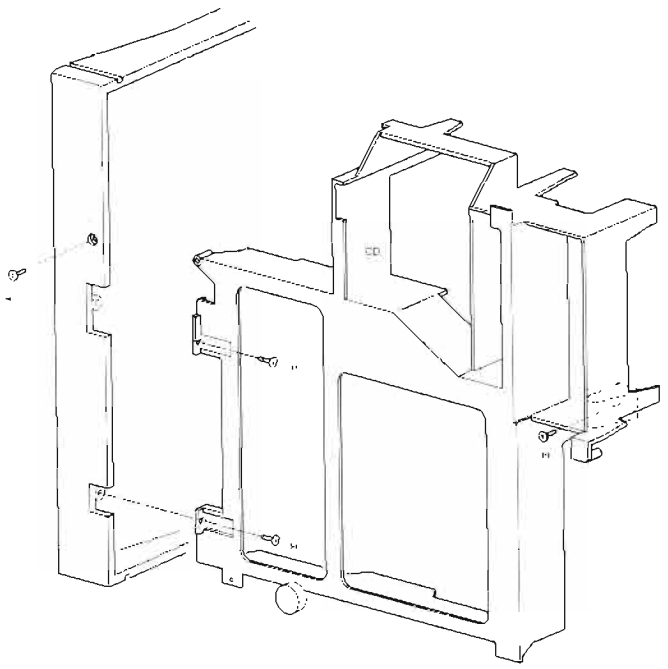


Fig. 7

Dépose du clavier CD (voir fig.8)

Enlever les 7 vis I.

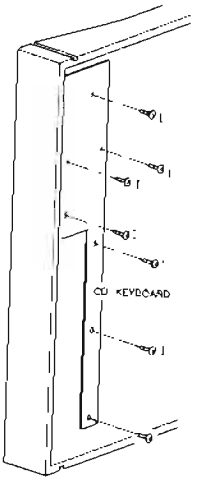


Fig. 8

PROGRAMME DE TEST SERVICE TMP47C421AF

Les parties suivantes peuvent être testées grâce au microprocesseur:
a. section microprocesseur
b. afficheur
c. RAM
d. E/S

Conditions générales:

- Une touche doit rester enfoncée pendant minimum 20 msec.
- L'intervale entre la pression de deux touches doit être d'au moins 50 msec.
- Tension d'aliment. 5 V (broches 26-18-58) l'appareil en marche.
- La tension sur le super conden. Maintenir la pression. 2383 doit se situer entre 2 et 5 V (à mesurer sur le condensateur)
- Fréquence d'horloge 4 MHz (broches 10-11).
- Appareil en position "tuner".

METTRE L'APPAREIL AU MODE DE TEST

Mettre l'appareil hors service.
Presser les touches "wave" et "preset up" et mettre en même temps la pression.
L'afficheur est il vierge?

non

Vérifier les portes E/S (basses)

R61=broche 36 R70=broche 39 R80=broche 19
R62=broche 37 R71=broche 40 R81=broche 20
R63=broche 38 R72=broche 41 R82=broche 22
R73=broche 42

Vérifier le fonctionnement des touches "wave" et "preset up".

oui

Le µP est au mode de test.

Relâcher les touches.
L'afficheur donne la 1ère mire (fig.a).

non

oui

Presser une touche quelconque de la section tuner.
L'afficheur donne la 2ème mire.

non

oui

Presser une touche quelconque de la section tuner.
L'afficheur donne la 1ère mire (fig.c).

non

CONTROLE AFFICHEUR

Vérifier "common 1-2" fig.d (broches 4 et 5 du µP, 1 et 3 de l'afficheur)
Vérifier la lumière de fond (6314).
Si l'afficheur est "plein" mesurer sur toutes les lignes de commande Fig.E et F (fig.b).

VERIFICATION DE LA SECTION TUNER DU µPROCESSEUR

Voir test du µP.
Tester les portes E/S (hautes)

R61=broche 36 R70=broche 39 R80=broche 19
R62=broche 37 R71=broche 40 R81=broche 20
R63=broche 38 R72=broche 41 R82=broche 22
R73=broche 42

non

Vérifier les lignes en dérachant le câble-ruban (E/S haute).

non

Remplacer le µP

oui

Section tuner defect.

oui

Presser une touche quelconque l'afficheur donne * * * * F * = chiffre sans importance.

non

oui

Contrôle des touches

CONTROL

Touche
Preset do
Preset up
Program
Wave
Tune dov
Tune up
Volume d
Volume u

TEST I.R D

Tou
Prog
Mu
Volume
Volum
1
2
3
4

PREREGL

Afficheu

Presser Afficheu * *

Mettre l' Mettre l'

RAM
Les fréq aux préré
Préré- glage
1 2 3 4

CONTROLE DES TOUCHES

Touche	Dernier chiffre
Preset down	b
Preset up	3
Program	6
Wave	2
Tune down	F
Tune up	7
Volume down	c
Volume up	8

non → Vérifier ou remplacer la touche

TEST I.R DE LA COMMANDE A DISTANCE

Touche	Dern. chiffre	Touche	Dern. chiffre	Touche	Dern. chiffre
Program	6	5	5	13	13
Mute	D	6	6	14	14
Volume down	C	7	7	15	15
Volume up	8	8	8	16	16
1	1	9	9	17	17
2	2	10	10	18	18
3	3	11	11	19	19
4	4	12	12		

non → Vérifier l'émetteur I.R
le récepteur
Remplacer le µP

partiellement → Remplacer l'émetteur I.R.

PREREGLAGE CHARGEMENT

Afficheur donne tous les segments, mire 3 (fig.c)

Presser une touche quelconque dans section tuner:
Afficheur montre
* * * * F
*=chiffre sans importance

non → Contrôle commutateurs

Mettre l'appareil hors service
Mettre l'appareil en service

RAM

Les fréquences suivantes sont alors mémorisées aux prérégalges:

Préré-glage	MW (kHz)	Préré-glage	MW (kHz)	Préré-glage	FM (kHz)
1	150	5	522	11	87.50
2	155	6	558	12	97.00
3	254	7	567	13	98.00
4	263	8	1278	14	99.00
		9	1494	15	104.00
		10	1611	16	108.00

non → Remplacer le µP

oui → Le µP est en ordre

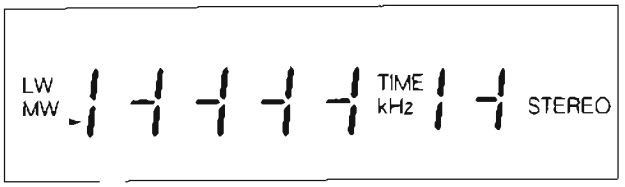


Fig. a

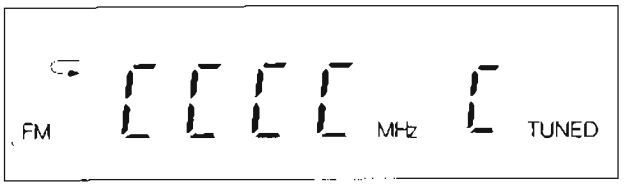


Fig. b

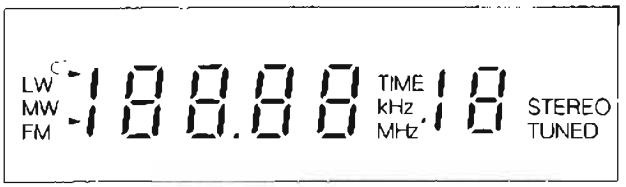


Fig. c

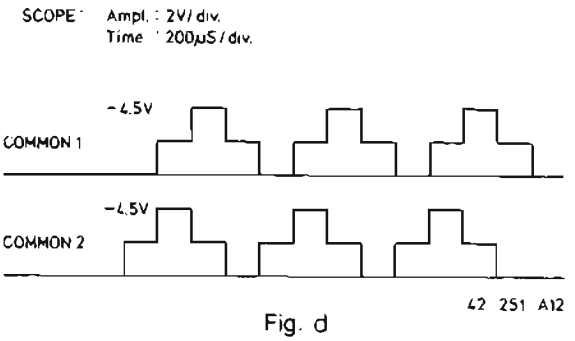


Fig. d

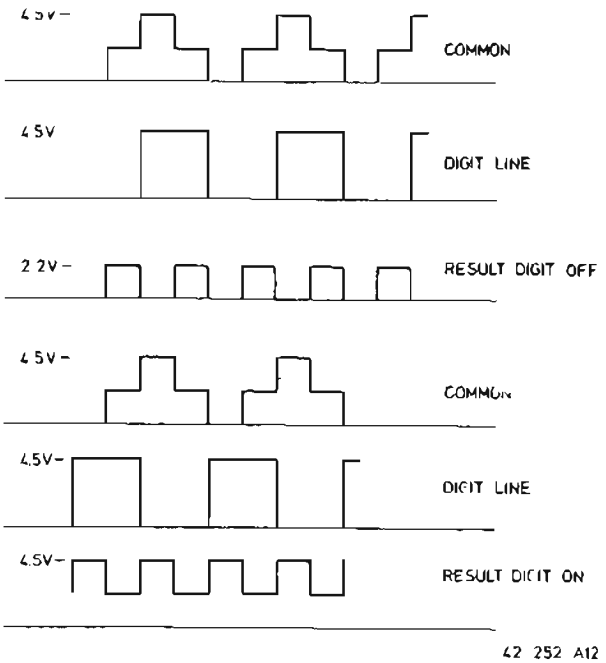


Fig. f

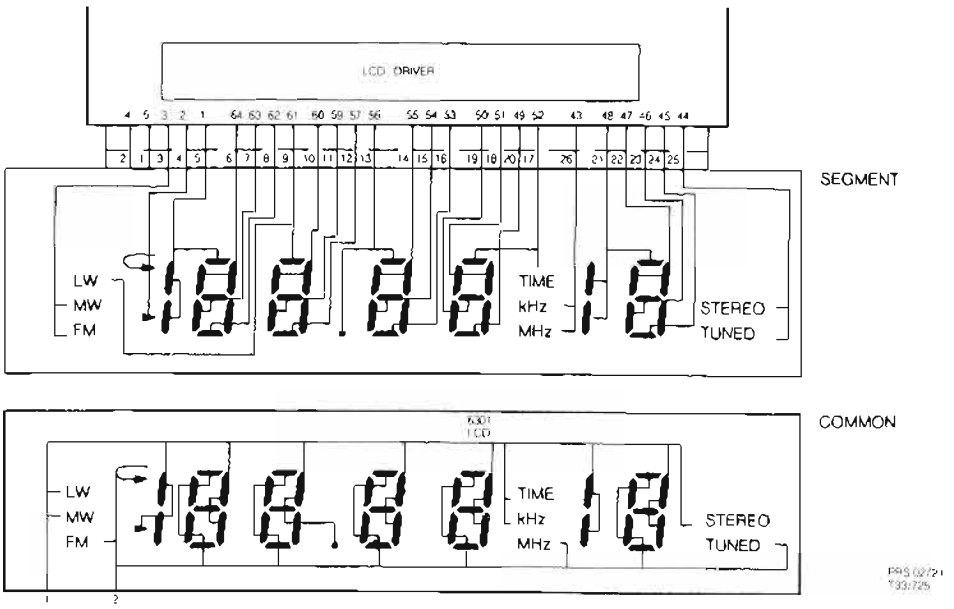
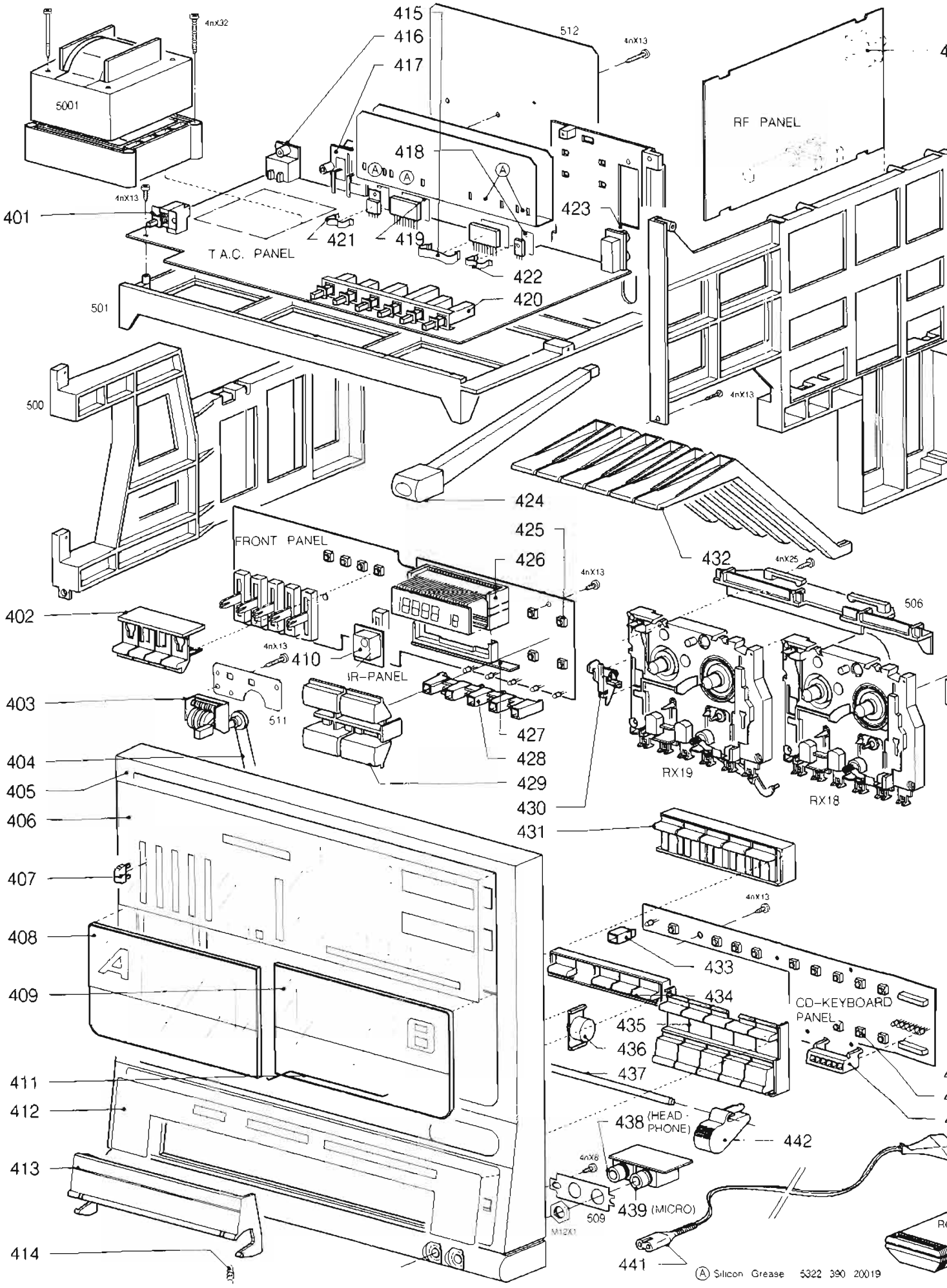
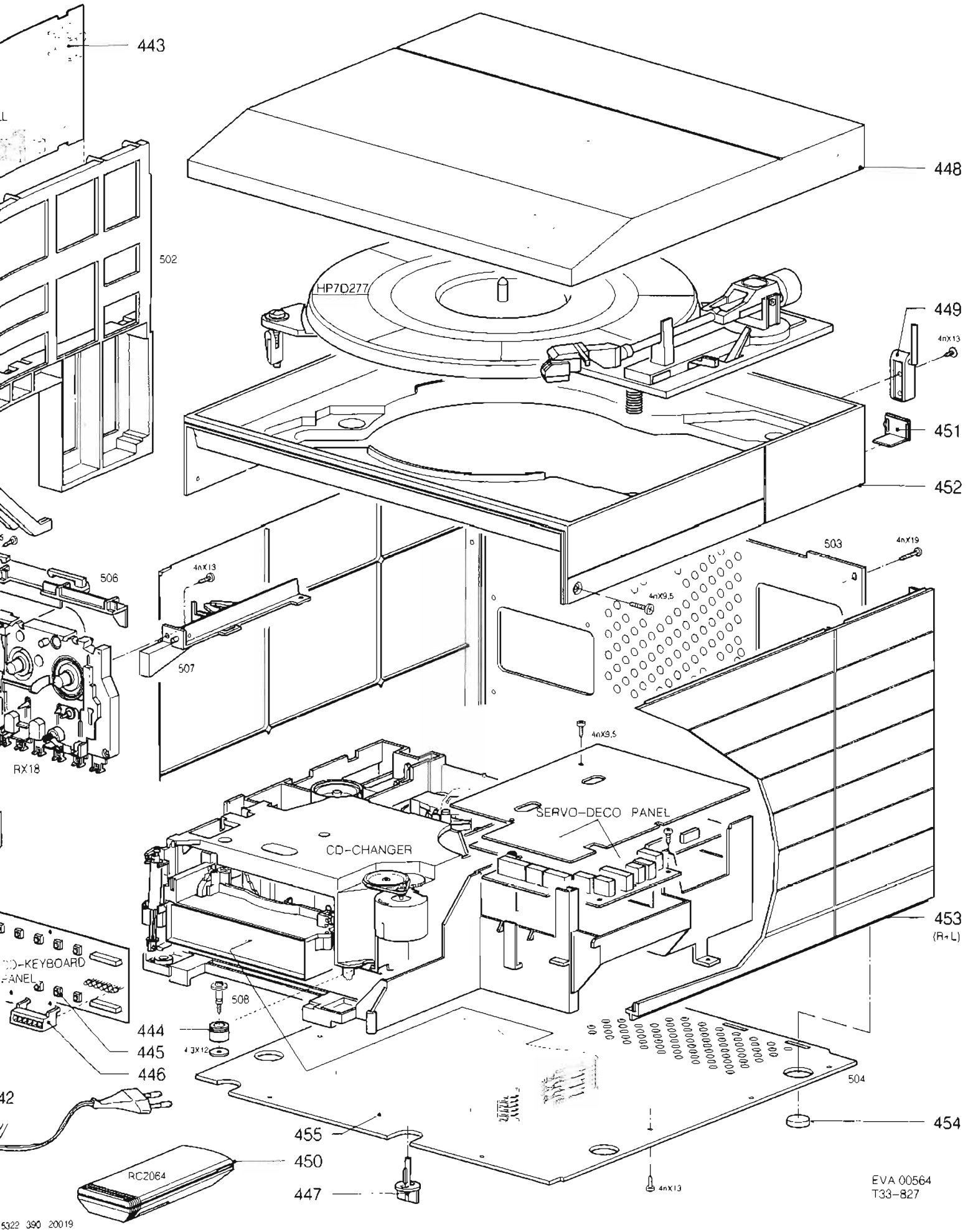
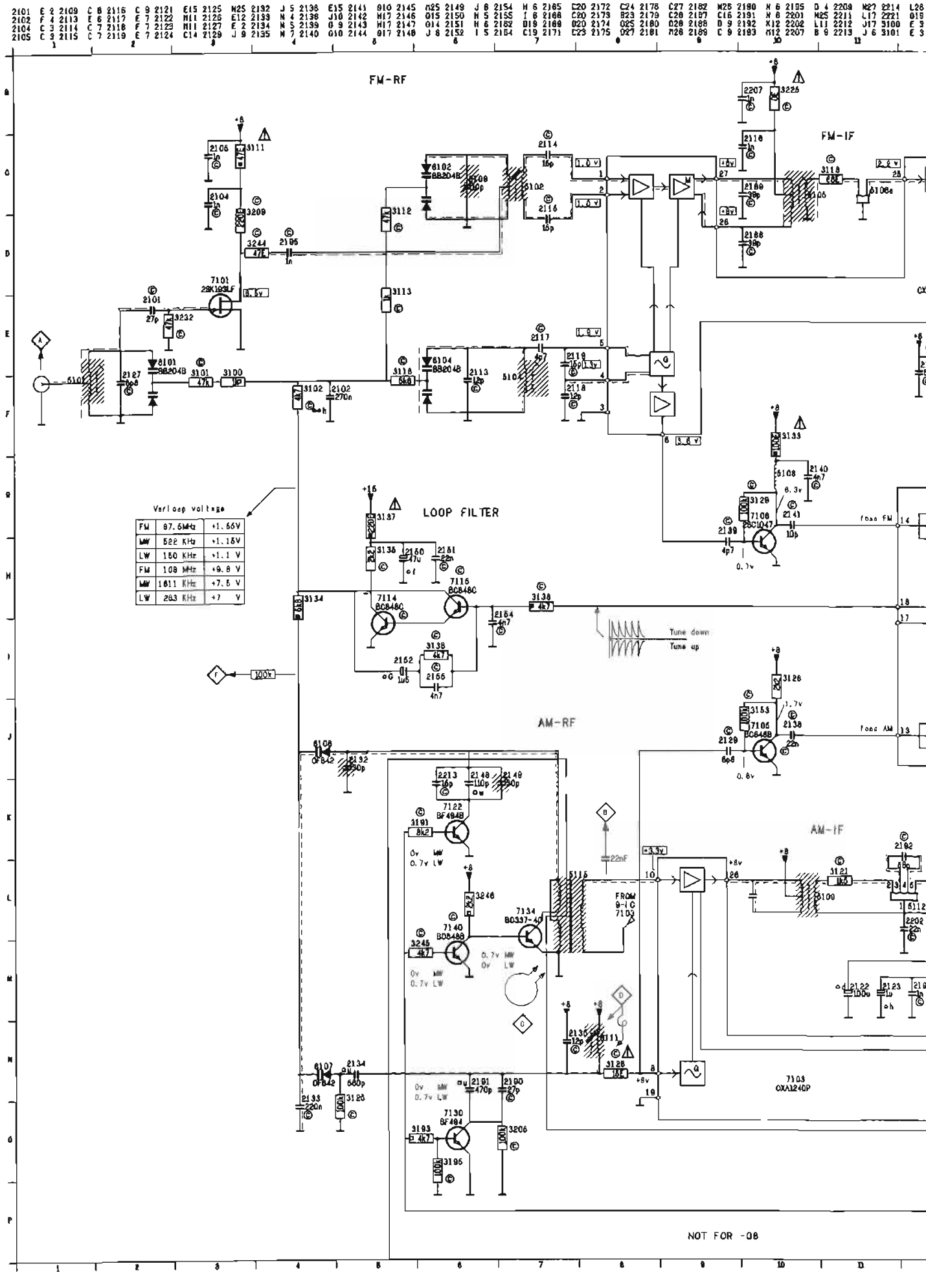
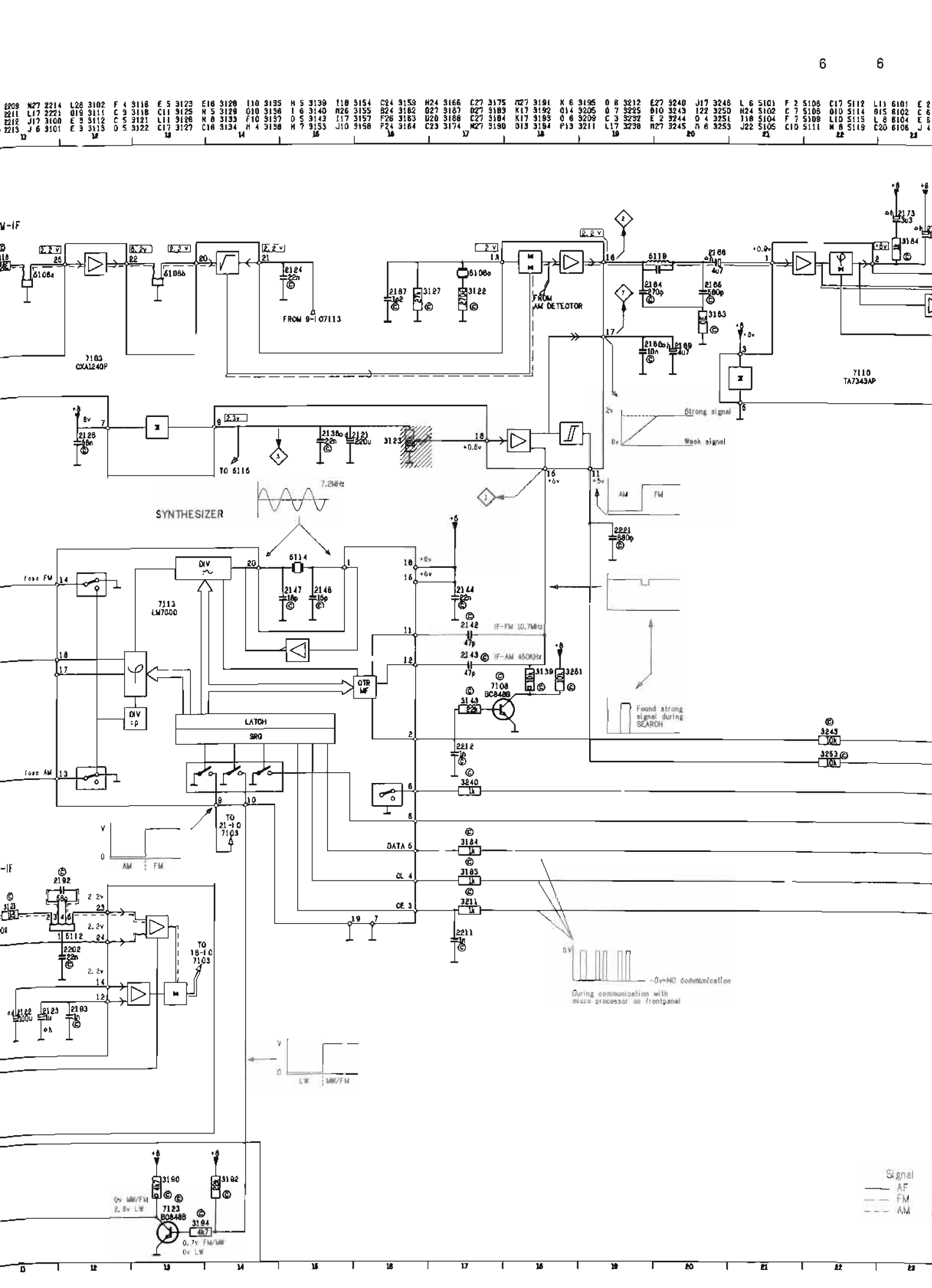


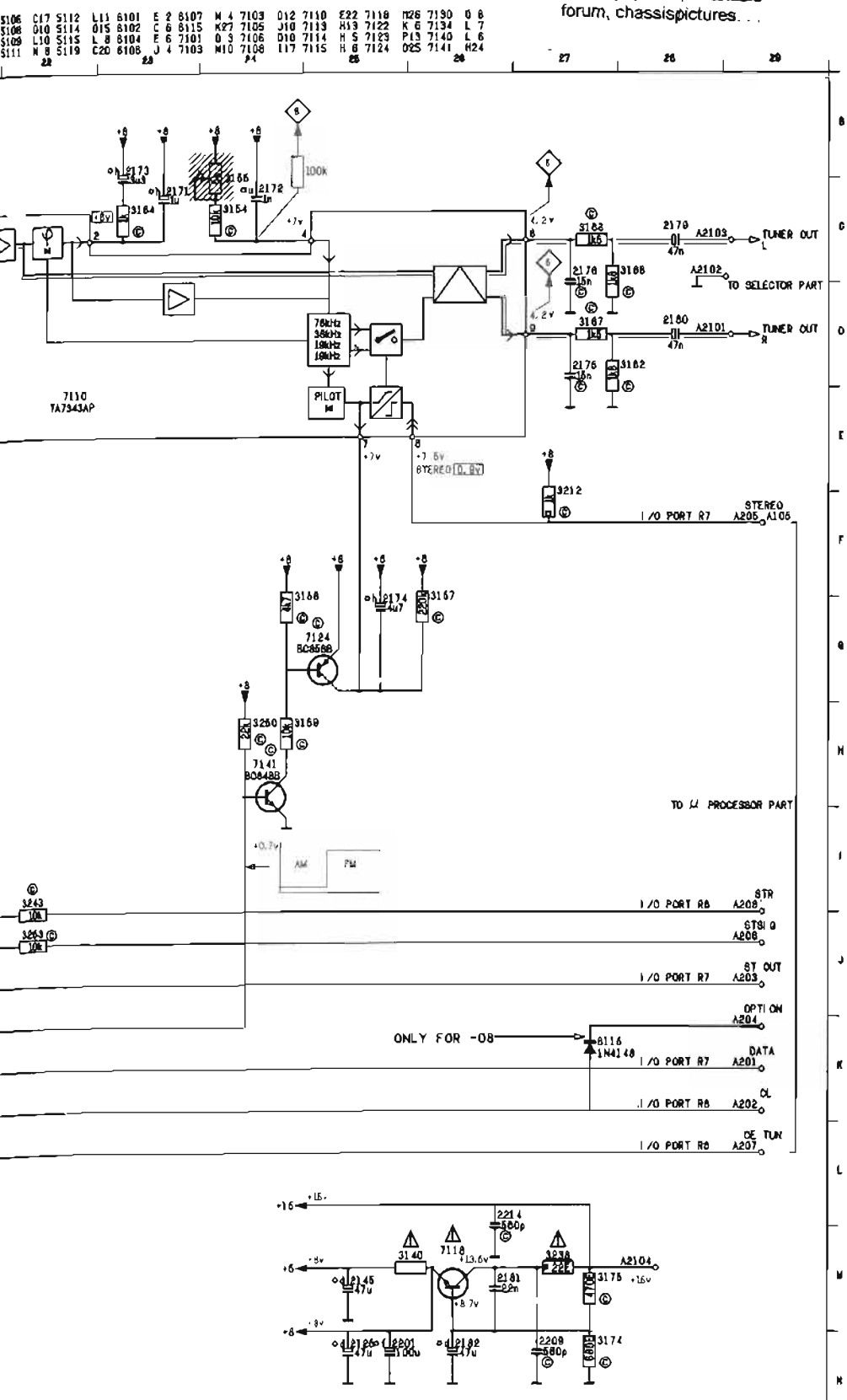
Fig. e


4nX32
5001
415
416
417
512
4nX13
RF PANEL
418
401
4nX13
T.A.C. PANEL
421
419
423
422
420
501
500
4nX13
424
FRONT PANEL
425
426
432
4nX25
506
402
4nX13
410
IR-PANEL
403
511
427
428
429
430
RX19
RX18
404
405
406
431
407
4nX13
408
433
409
434
CD-KEYBOARD
PANEL
435
436
437
411
412
438 (HEAD-
PHONE)
442
4nX6
413
439 (MICRO)
509
M12X1
414
441
Ⓐ Silicon Grease 5322 390 20019


443
448
502
HP7D277
449
4nX13
451
452
503
4nX19
506
4nX13
4nX9,5
507
RX18
4nX9,5
SERVO-DECO PANEL
CD-CHANGER
453
(R+L)
-KEYBOARD
ANEL
508
444
445
446
4 3X12
504
454
455
450
447
RC2064
4nX13
EVA 00564
T33-827


FM-RF
FM-IF
LOOP FILTER
AM-RF
AM-IF
Varicap voltage
FM 87.5MHz +1.65V
MW 522 KHz +1.18V
LW 150 KHz +1.1 V
FM 108 MHz +9.8 V
MW 1611 KHz +7.5 V
LW 263 KHz +7 V
Tune down
Tune up
FROM µ-IC 7103
7103 OXA1240P
NOT FOR -08

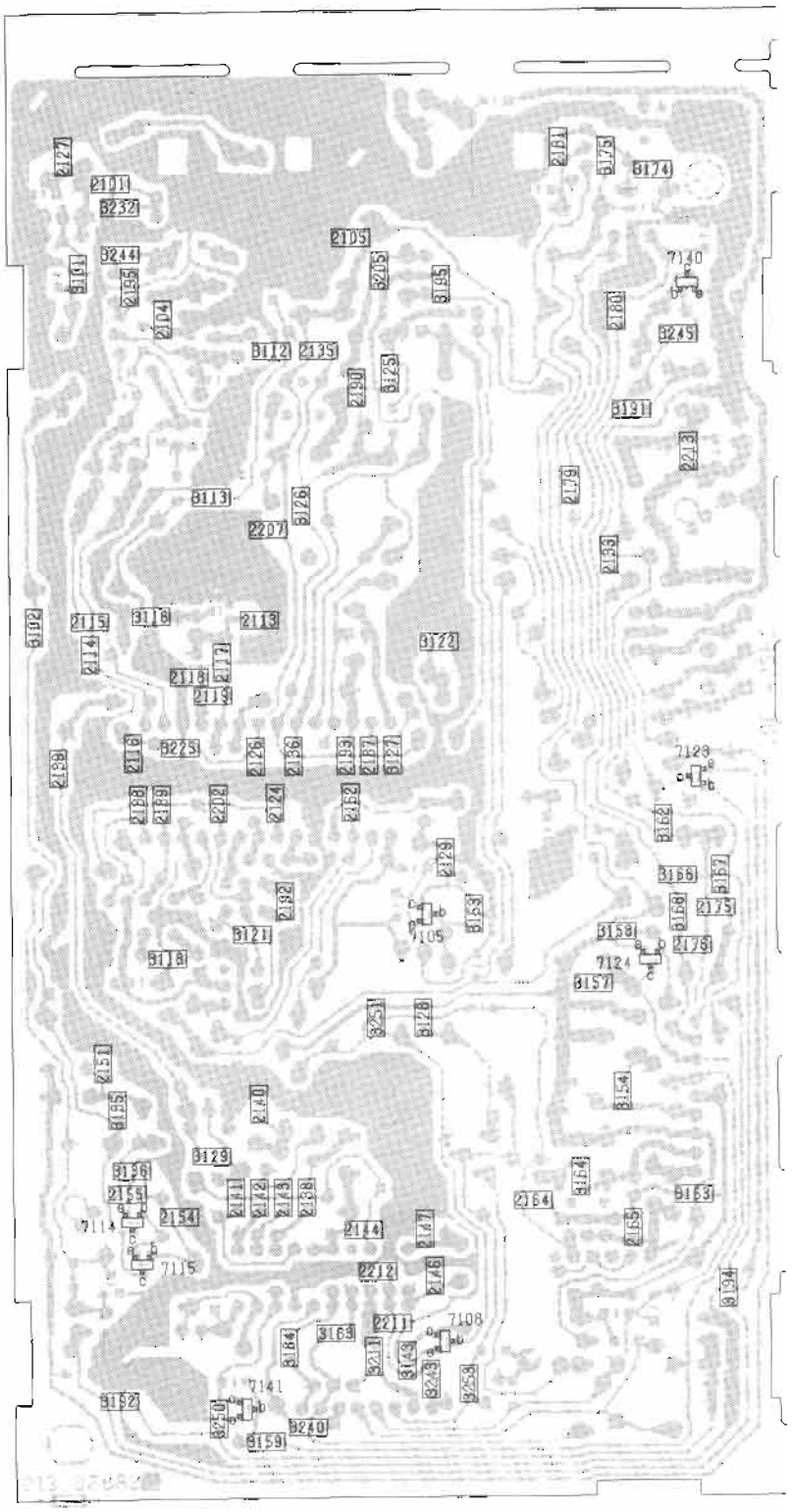

SYNTHESIZER
7103 CXA1240P
7110 TA7343AP
7113 LM7000
7108 BC848B
7123 BC848B
FROM 9-I 07113
FROM AM DETECTOR
TO 6116
TO 21-I 0 7103
TO 18-I 0 7103
7.2MHz
IF-FM 10.7MHz
IF-AM 450KHz
Strong signal
Weak signal
Found strong signal during SEARCH
During communication with micro processor on frontpanel
-0v=NO communication
LATCH
SRG
DIV
DATA 6
CL 4
CE 3
AM
FM
LW
MW/FM
Signal
AF
FM
AM



Signal
AF
FM
AM
Vdc
chip comp
FM

RF PART

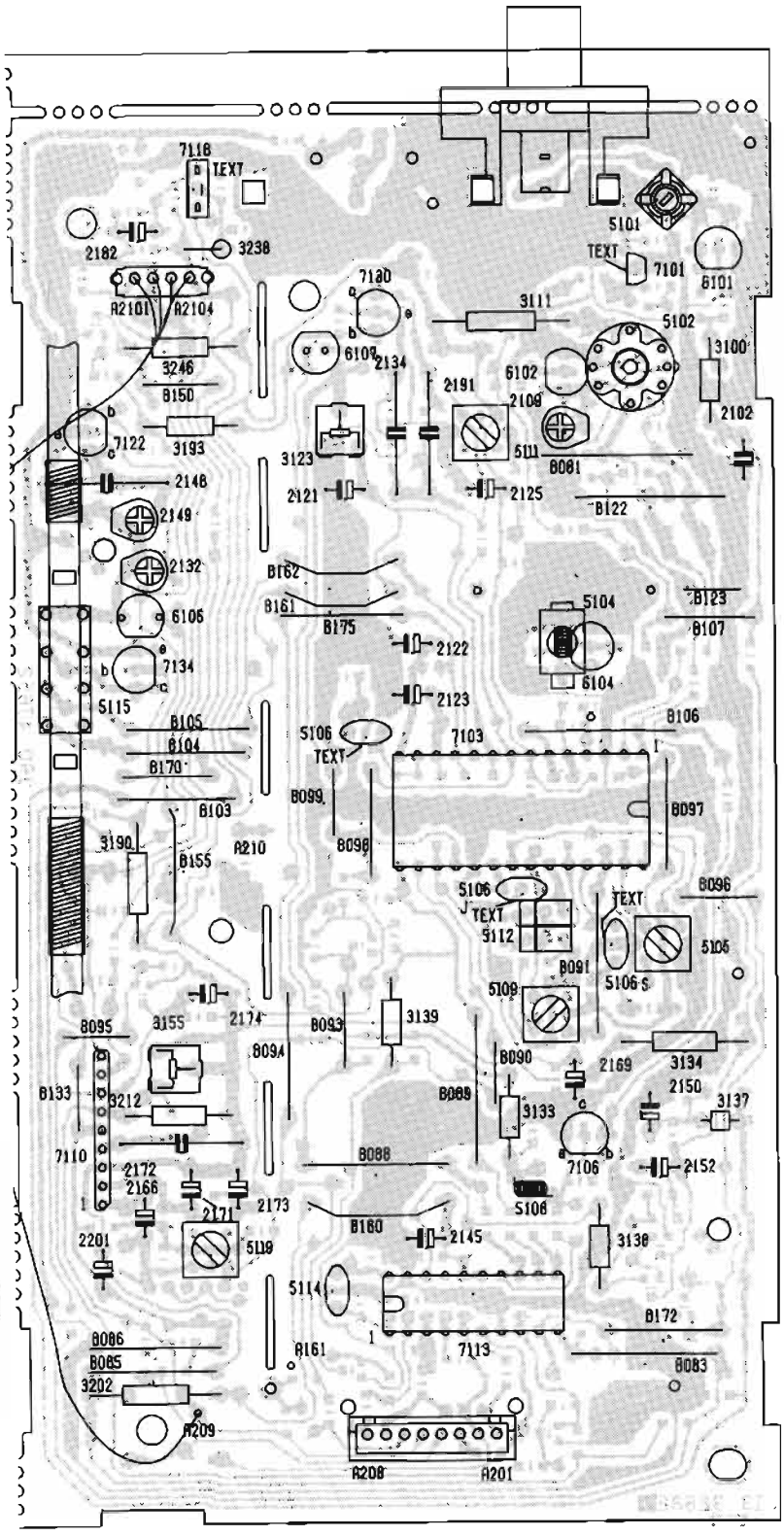
RF-IF panel



RF-IF panel

7118

BD135
e = + 8 V
b = + 8,7 V
c = + 12,5 V



7101

2SK193LF

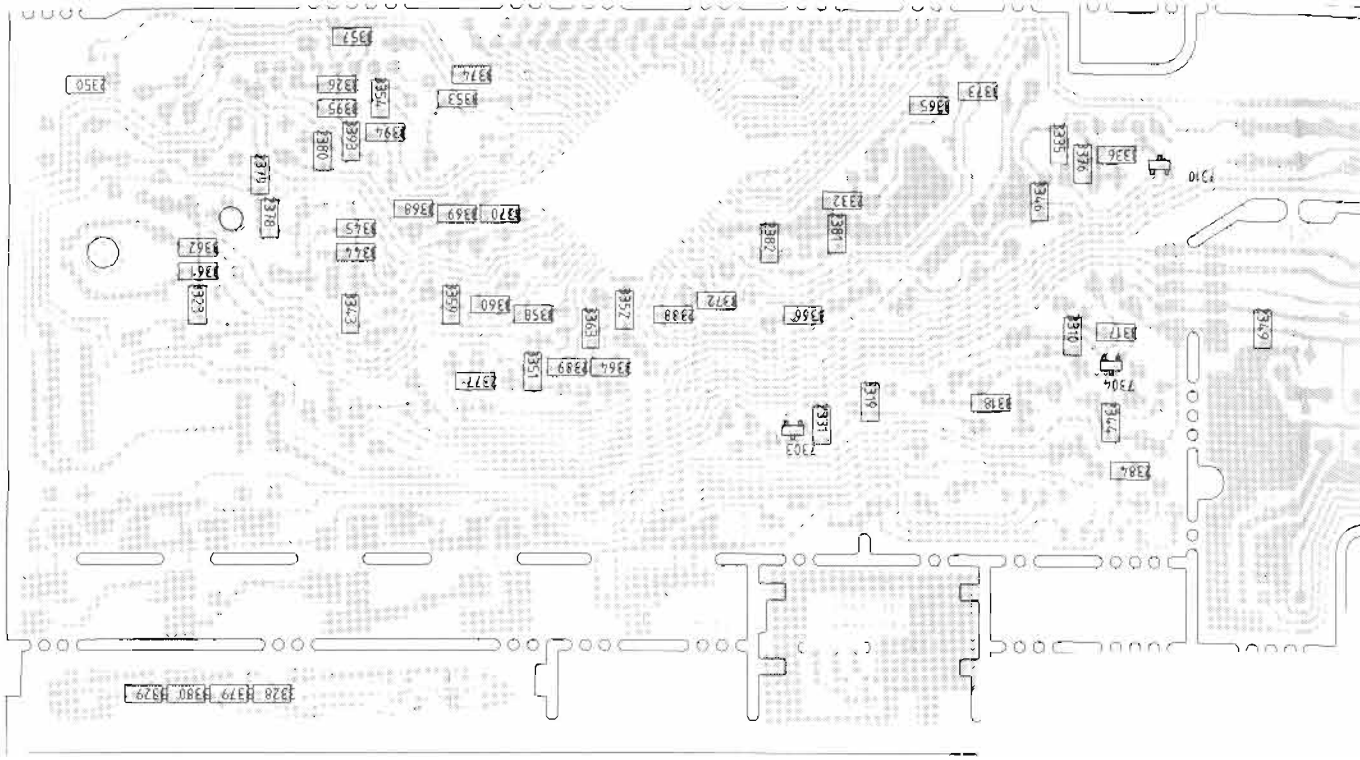
d = +6,5 V

7103
CXA1240P
1 = + 1 V
2 = + 1 V
4 = +1,3 V
5 = +1,5 V
6 = +1,3 V
7 = + 8 V
8 = + 8 V
9 = +2,3 V
10 = +2,3 V
13 = +2 V
14 = + 2,2 V
15 = + 5 V
16 = +2,2 V
18 = + 0,5 V
20 = +2,2 V
21 = +2,2 V
22 = +6,2 V
23 = + 2,2 V
24 = + 2,2 V
25 = +2,2 V
26 = + 8 V
27 = + 8 V
28 = +8 V

7110

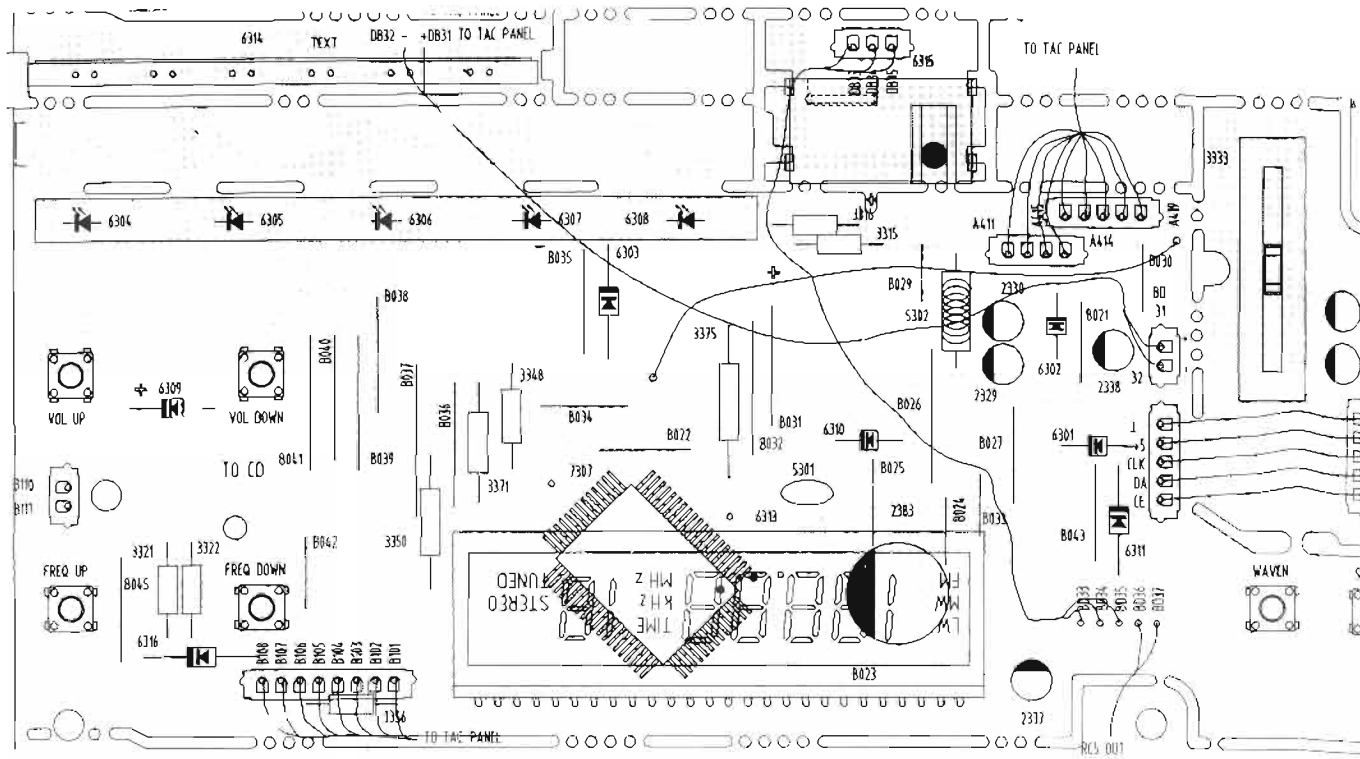
TA7343
2 = + 6 V
3 = + 8 V
4 = + 7
6 = + 7,5 V st 0,9 V
7 = + 7 V
8 = + 4,2 V
9 = + 4,2 V

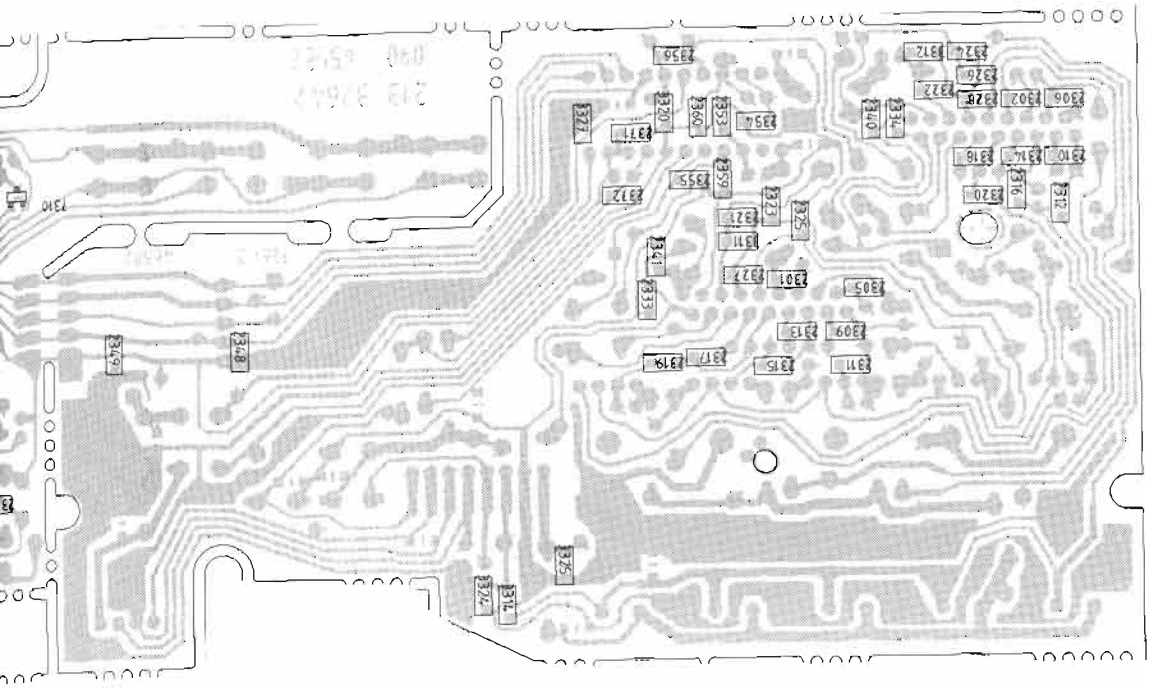
Front + EQ panel

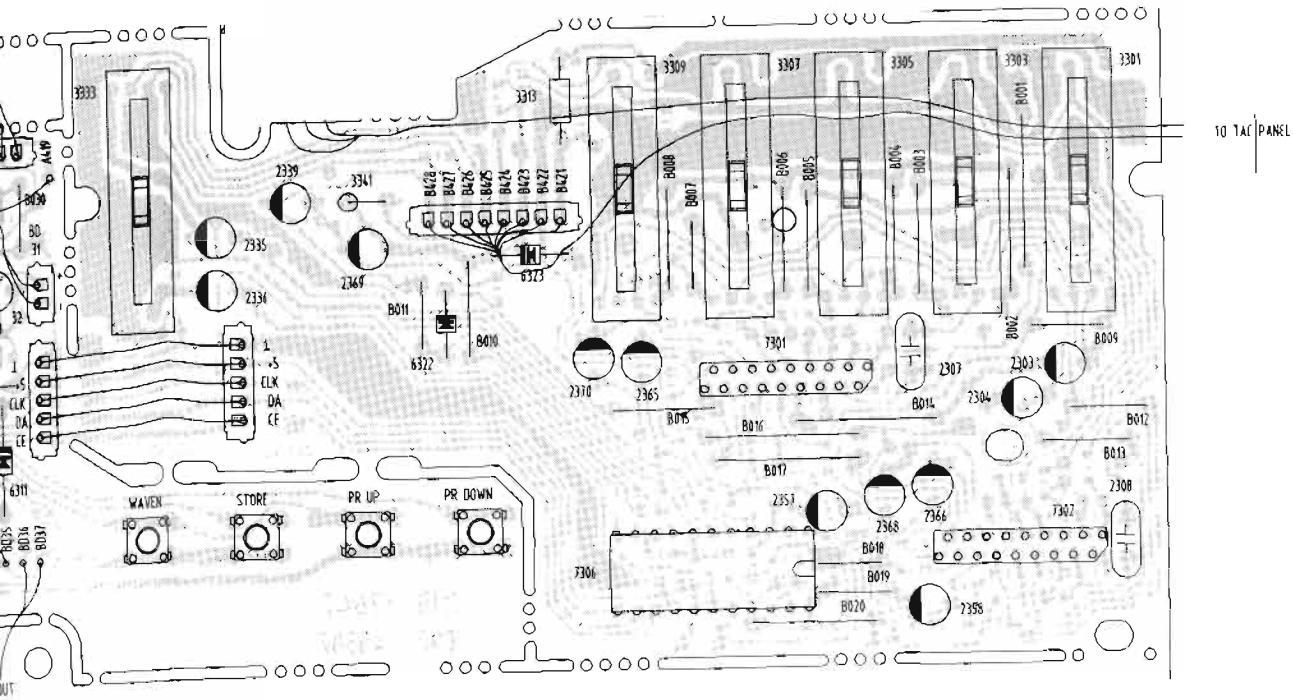


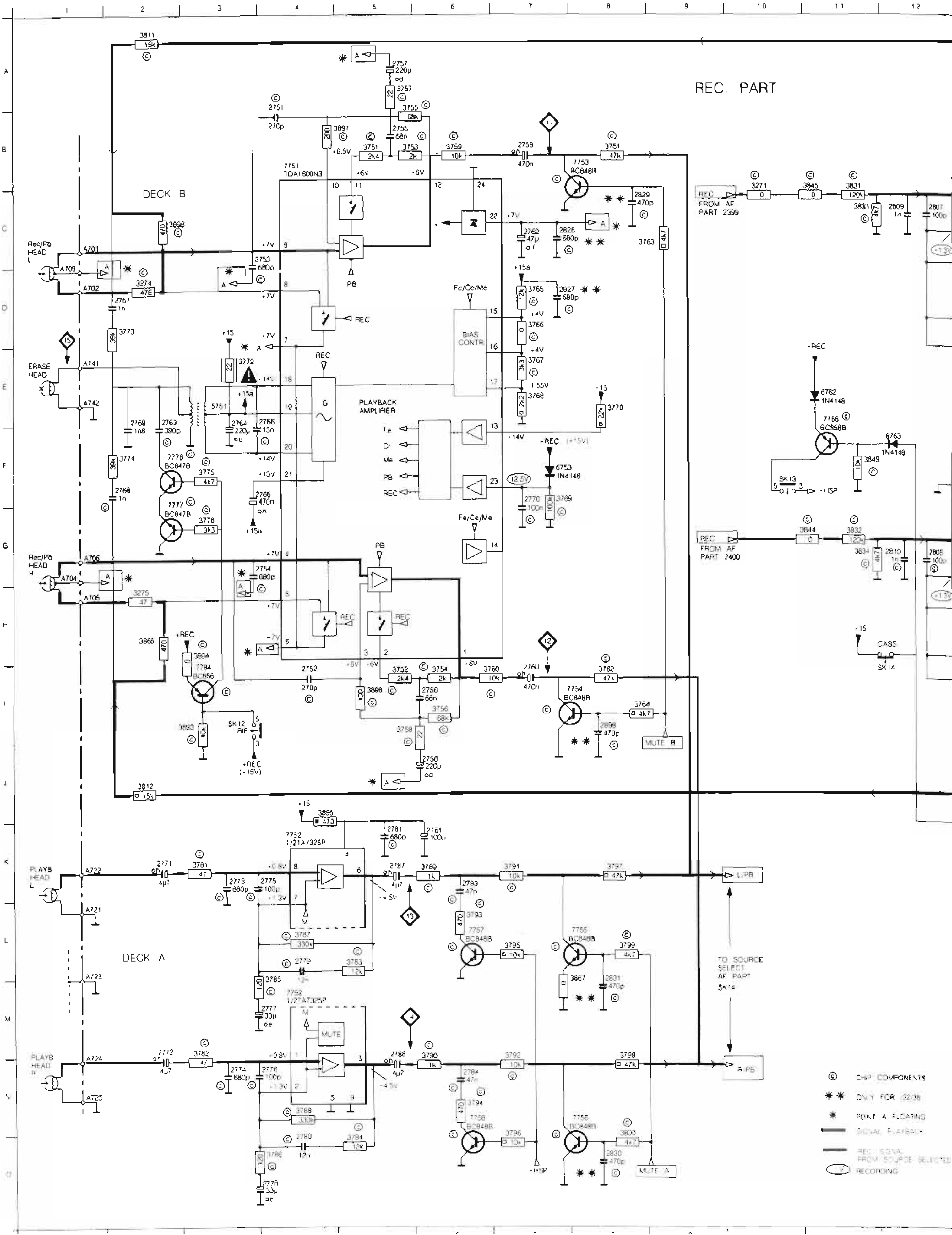
Backlight display

Remote control

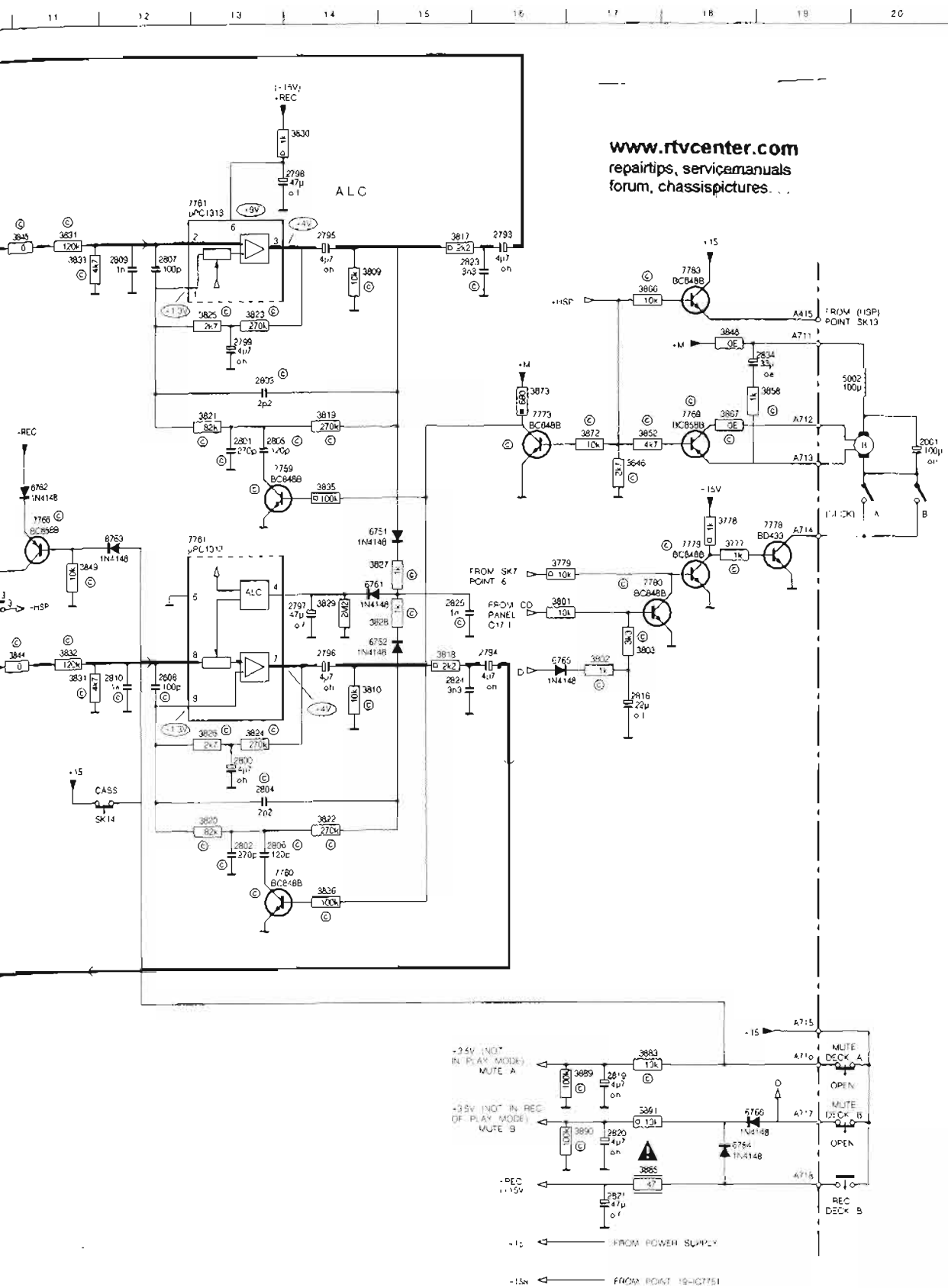





WAVEN
STORE
PR UP
PR DOWN
+5
CLK
DA
CE
TO TAC PANEL

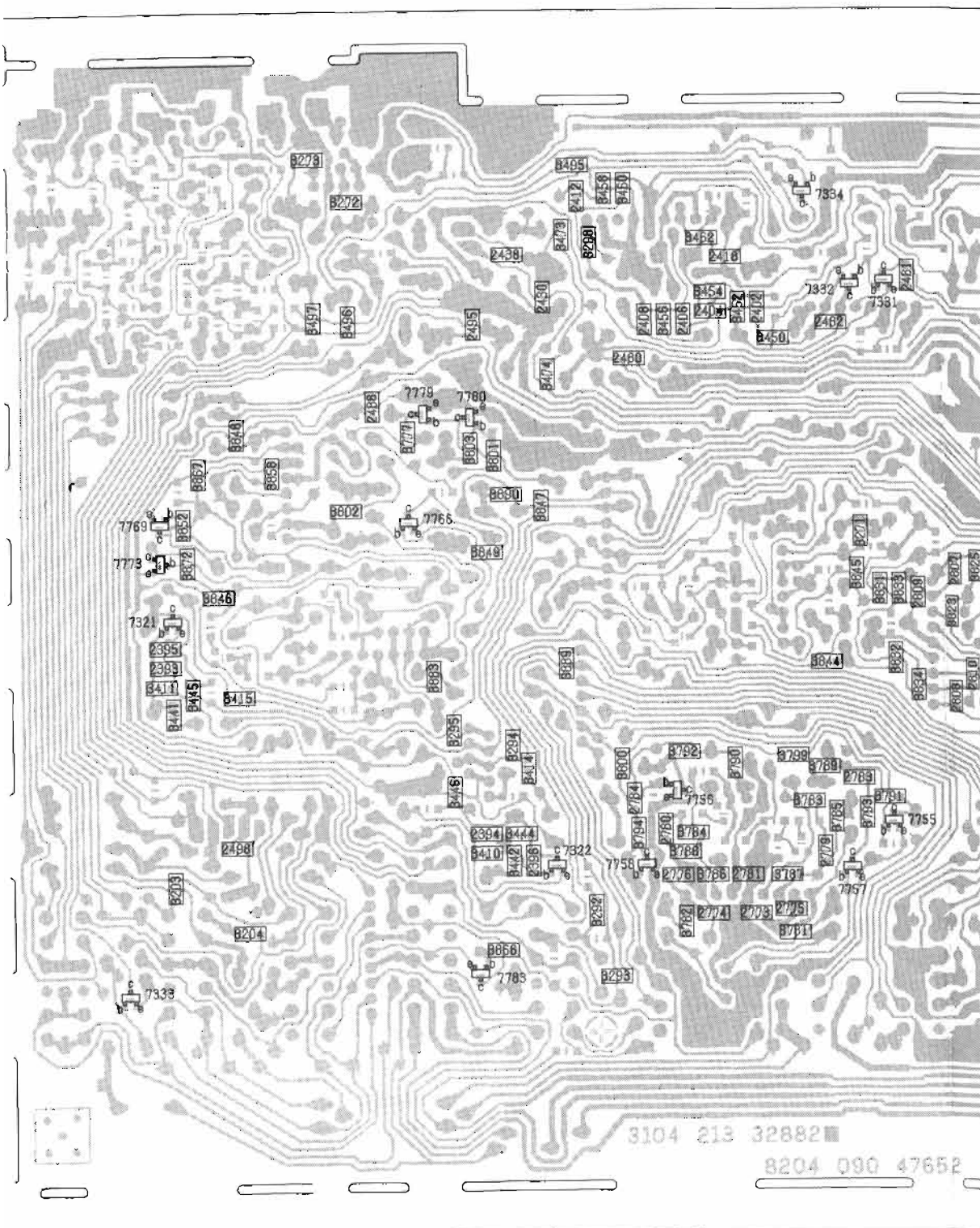


REC. PART
DECK B
DECK A
Rec/Pb HEAD L
Rec/Pb HEAD R
ERASE HEAD
PLAYB HEAD L
PLAYB HEAD R
7751 TDA1600N3
PLAYBACK AMPLIFIER
BIAS CONTR
Fe/Cr/Me
REC FROM AF PART 2399
REC FROM AF PART 2400
TO SOURCE SELECT AF PART SK14
MUTE B
MUTE A
7752 1/2TA7325P
MUTE
CHIP COMPONENTS
RECORDING



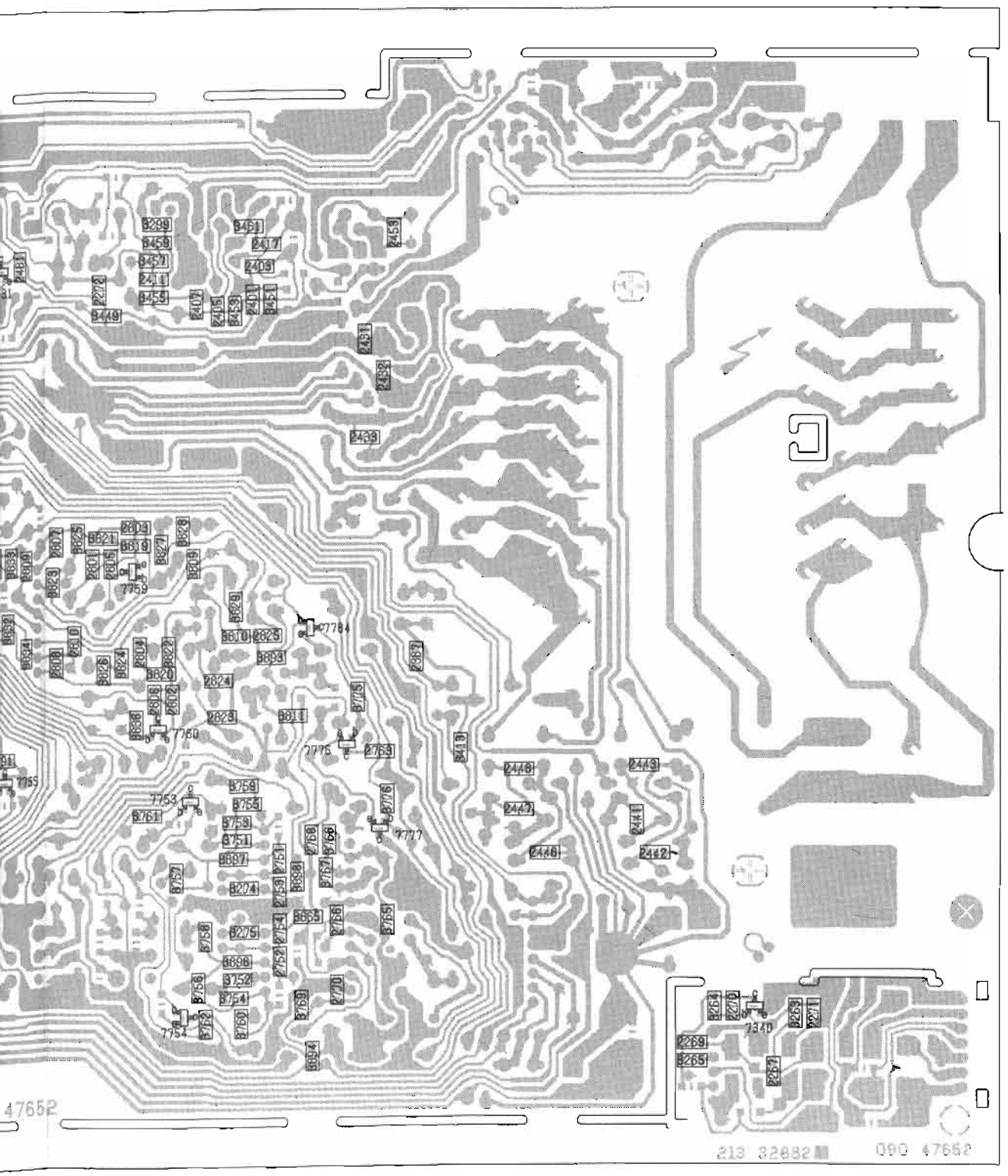
© CHIP COMPONENTS
** ONLY FOR 32/38
* POINT A FLOATING
SIGNAL PLAYBACK
REC SIGNAL FROM SOURCE SELECTED
RECORDING

AF-REC panel

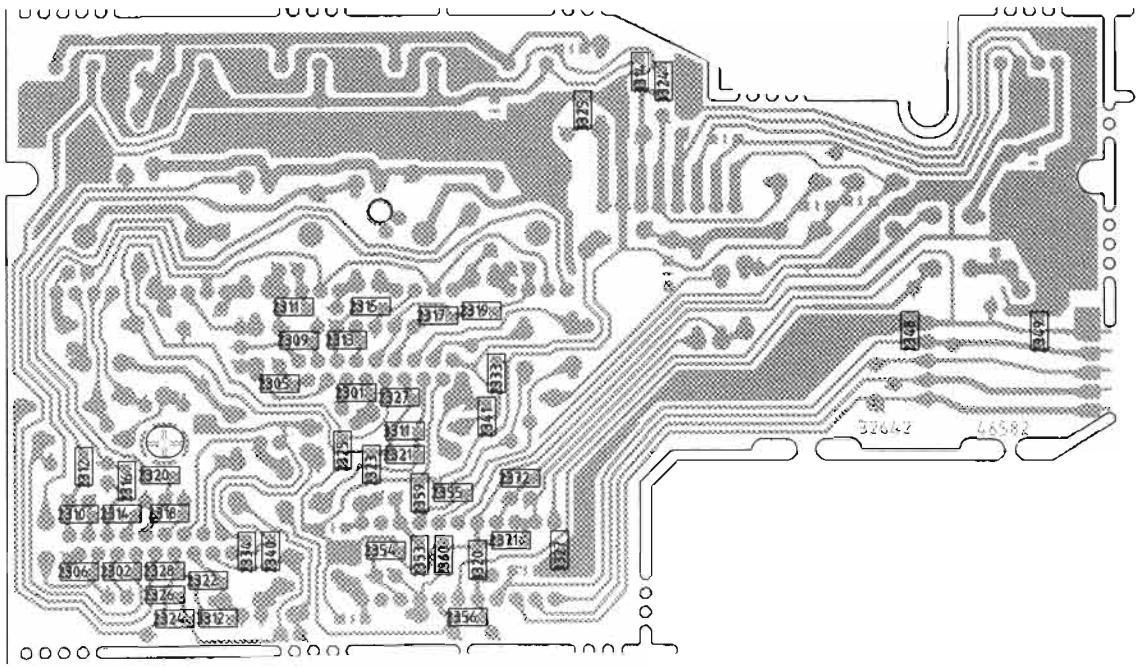


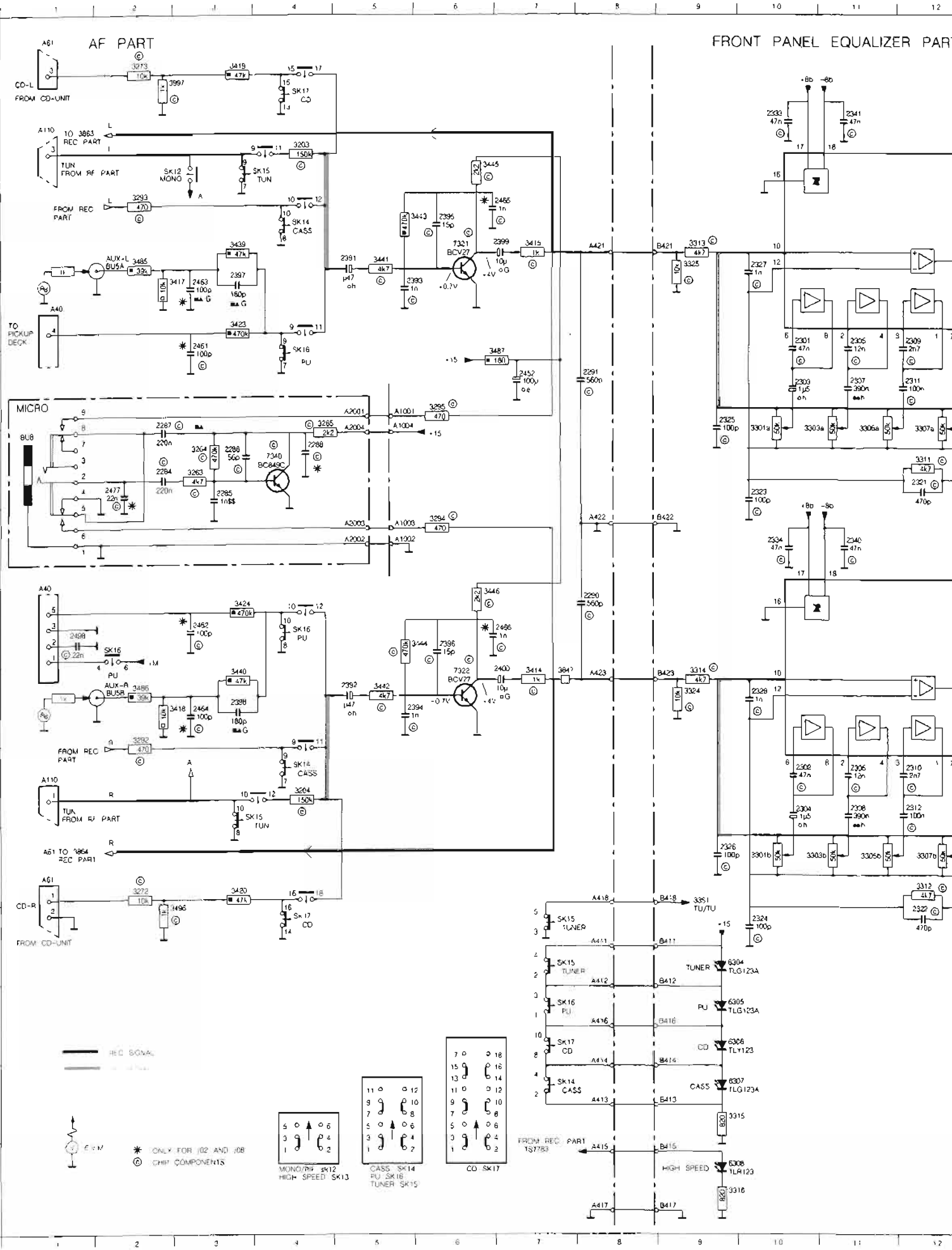
7321-7322

e = –
b = + 0,7 V
c = + 4 V


47652
213 32882
090 47652

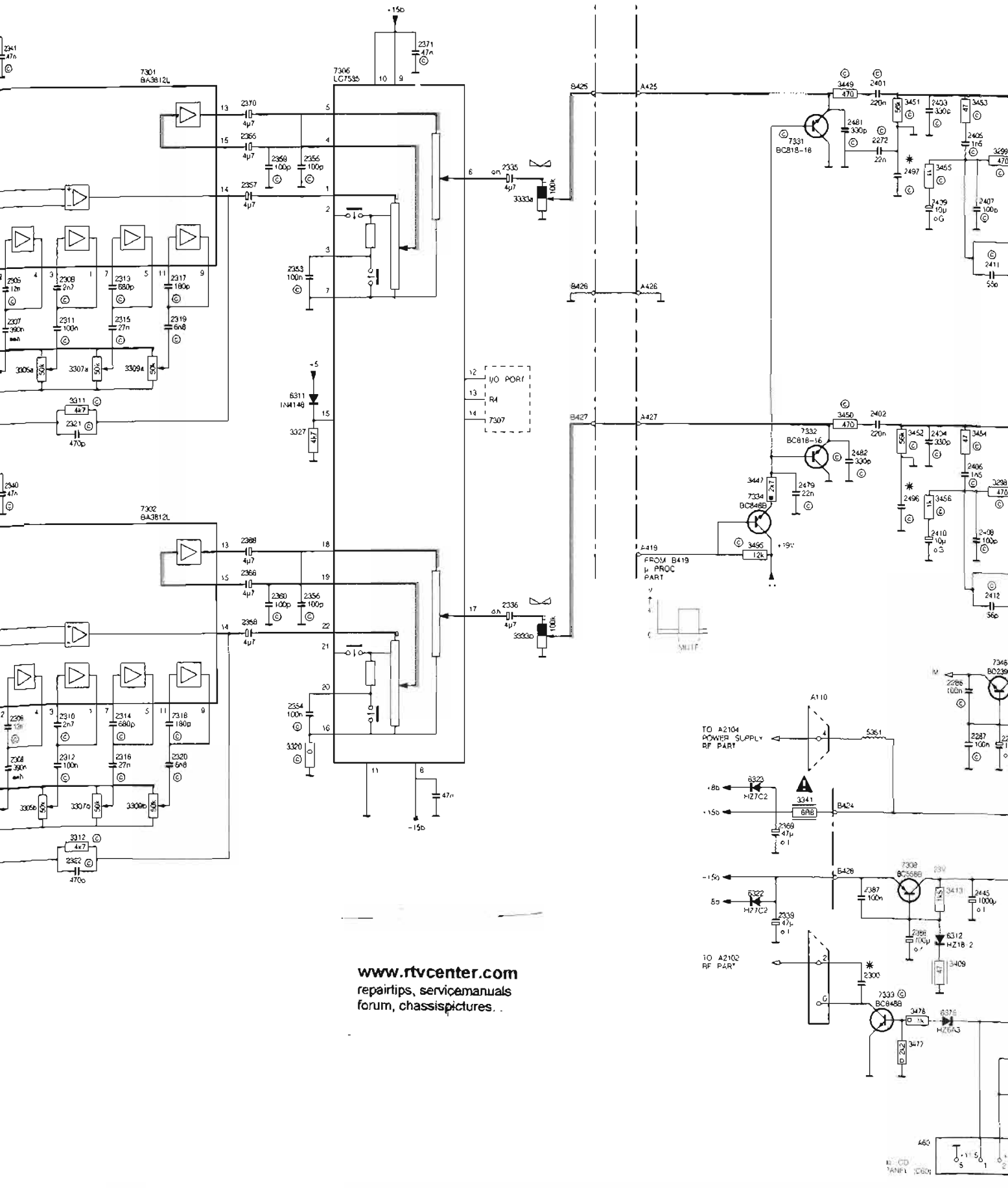
Front + EQ panel

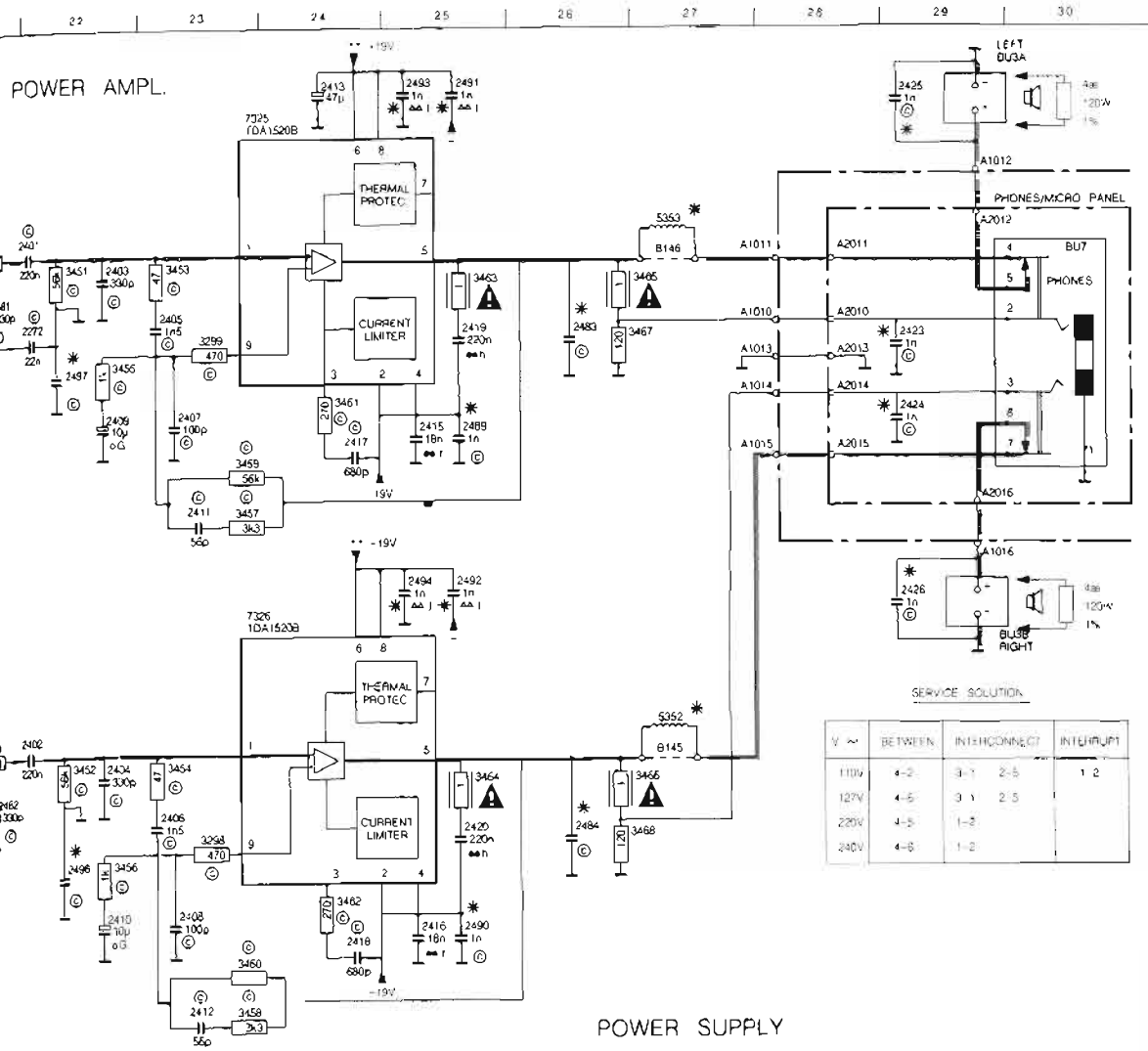


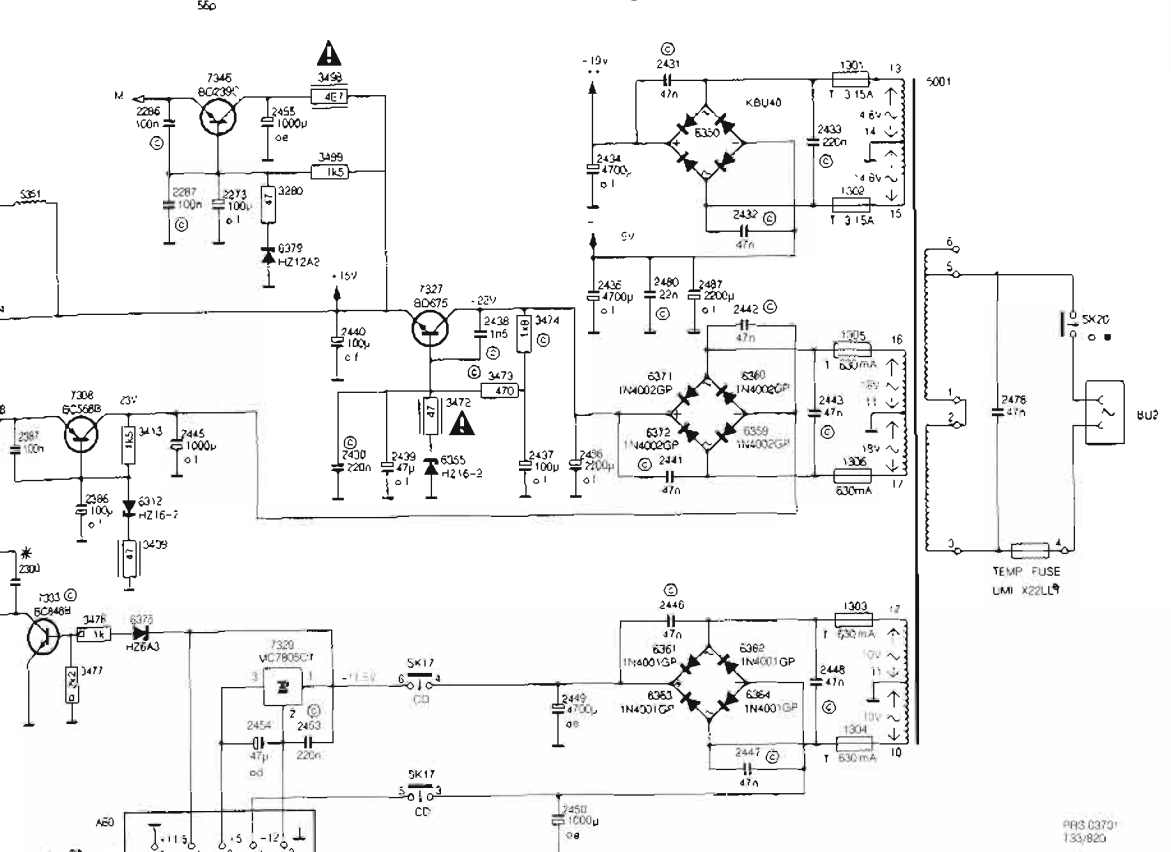

AF PART
FRONT PANEL EQUALIZER PART
CD-L
FROM CD-UNIT
TUN FROM RF PART
FROM REC PART
TO PICKUP DECK
MICRO
AUX-L BU5A
AUX-R BU5B
CD-R
TUNER
PU
CD
CASS
HIGH SPEED
REC SIGNAL
ONLY FOR 102 AND 108
CHIP COMPONENTS
MONO/RF SK12 HIGH SPEED SK13
CASS SK14 PU SK16 TUNER SK15
CD SK17

QUALIZER PART

POWER AMPL







1301	L28	2494	E25	SK14	N 7
1302	J28	2496	G22	SK14	C 4
1303	M28	2497	C22	SK15	J 4
1304	N28	2498	H 1	SK15	L 7
1305	K28	3203	B 4	SK15	L 7
1306	L28	3204	J 4	SK15	B 4
A 2272	C22	3263	F 3	SK16	E 4
2273	J23	3264	F 3	SK16	H 4
2284	F 2	3265	E 4	SK16	M 7
2285	F 3	3272	K 2	SK16	H 2
2286	F 3	3273	A 2	SK17	L 4
2286	L23	3280	J24	SK17	M 7
2287	E 2	3292	I 2	SK17	A 4
2287	J23	3293	C 2	SK17	N25
2288	F 4	3294	G 8	SK17	Q25
B 2290	H 8	3295	E 6	SK20	K30
2291	E 8	3298	Q23		
2300	M22	3299	Q23		
2301	D10	3301a	F10		
2302	J10	3301b	K10		
2303	E10	3303a	F10		
2304	J10	3303b	K10		
2305	D11	3305a	F11		
2306	J11	3305b	K11		
2307	E11	3307a	F12		
C 2308	J11	3307b	K12		
2309	D12	3309a	F13		
2310	J12	3309b	K13		
2311	E12	3311	F12		
2312	J12	3312	K12		
2313	D12	3313	C 9		
2314	J12	3314	I 9		
2315	E12	3315	N10		
2316	J12	3316	Q10		
D 2317	D13	3320	J15		
2318	J13	3324	I 5		
2319	E13	3325	C 9		
2320	J13	3327	F15		
2321	F12	3333a	C17		
2322	L12	3333b	I 7		
2323	F10	3341	K21		
2324	L10	3409	M23		
2325	E 9	3413	L23		
2326	K 9	3414	I 7		
E 2327	C10	3415	C 7		
2328	I10	3417	D 3		
2333	B10	3418	I 3		
2334	G10	3419	A 3		
2335	C17	3420	K 3		
2336	H17	3423	D 3		
2339	L20	3424	H 3		
2340	G11	3439	C 3		
2341	B11	3440	I 3		
F 2353	D15	3441	C 5		
2354	J15	3442	I 5		
2355	C15	3443	C 8		
2356	H15	3444	H 8		
2357	C14	3445	B 7		
2358	I14	3446	H 7		
2359	C14	3447	G20		
2360	H14	3449	B21		
2365	C14	3450	F21		
2366	H14	3451	B22		
G 2368	H14	3452	F22		
2369	K20	3453	B23		
2370	B14	3454	F23		
2371	B16	3455	C22		
2386	L22	3456	G22		
2387	L22	3457	D23		
2391	C 5	3458	H23		
2392	I 5	3459	Q23		
2393	D 6	3460	H23		
H 2394	I 6	3461	C24		
2395	C 6	3462	G24		
2396	H 6	3463	B25		
2397	D 8	3464	F26		
2398	I 3	3465	B27		
2399	C 7	3466	F27		
2400	I 7	3467	C27		
2401	B22	3468	G27		
2402	F22	3472	L25		
I 2403	B22	3473	L25		
2404	F22	3474	K26		
2405	C23	3477	N22		
2406	G23	3478	M22		
2407	C23	3485	C 2		
2408	H23	3486	I 2		
2409	C22	3487	E 7		
2410	H22	3495	H20		
2411	D23	3496	L 3		
2412	H23	3498	I 24		
J 2413	A24	3499	J24		
2415	D25	3847	I 7		
2416	H25	3997	A 3		
2417	O24	5001	I 29		
2418	H24	5351	J22		
2419	C25	5352	B27		
2420	G25	5353	B27		
2423	G25	6304	L10		
2424	D29	6305	M10		
K 2425	A29	6306	M10		
2426	E29	6307	N10		
2430	L24	6308	D10		
2431	I 27	6311	F15		
2432	J27	6312	L23		
2433	J28	6322	L20		
2434	J26	6323	K20		
2435	K26	6350	J27		
2436	L26	6355	L25		
2437	L26	6359	L27		
L 2438	K25	6360	L27		
2439	L25	6361	N27		
2440	K24	6362	N27		
2441	L27	6363	N27		
2442	K27	6364	N27		
2443	L28	6371	L27		
2445	L23	6372	L27		
2446	M27	6375	M22		
2447	Q27	6379	J24		
2448	N28	7301	B13		
M 2449	N26	7302	G13		
2450	Q26	7306	B15		
2452	E 7	7308	L22		
2453	N24	7321	D 6		
2454	N23	7322	I 6		
2455	I 24	7325	A24		
2461	D 3	7326	E24		
2462	H 3	7327	K25		
2463	D 3	7329	N24		
N 2464	I 3	7331	C21		
2465	C 7	7332	F21		
2466	M 7	7333	M22		
2477	F 2	7334	G20		
2478	L29	7340	F 4		
2479	G21	7346	I 23		
2480	K27	B145	K27		
2481	C21	B146	B27		
2482	G21	BU2	L20		
O 2483	C26	BU3A	A30		
2484	G26	BU3B	E30		
2487	K27	BU5A	C 2		
2488	D25	BU5B	I 2		
2490	H25	BU7	B30		
2491	A25	BU8	F 1		
2492	F25	SK12	B 2		
2493	A25	SK14	J 4		

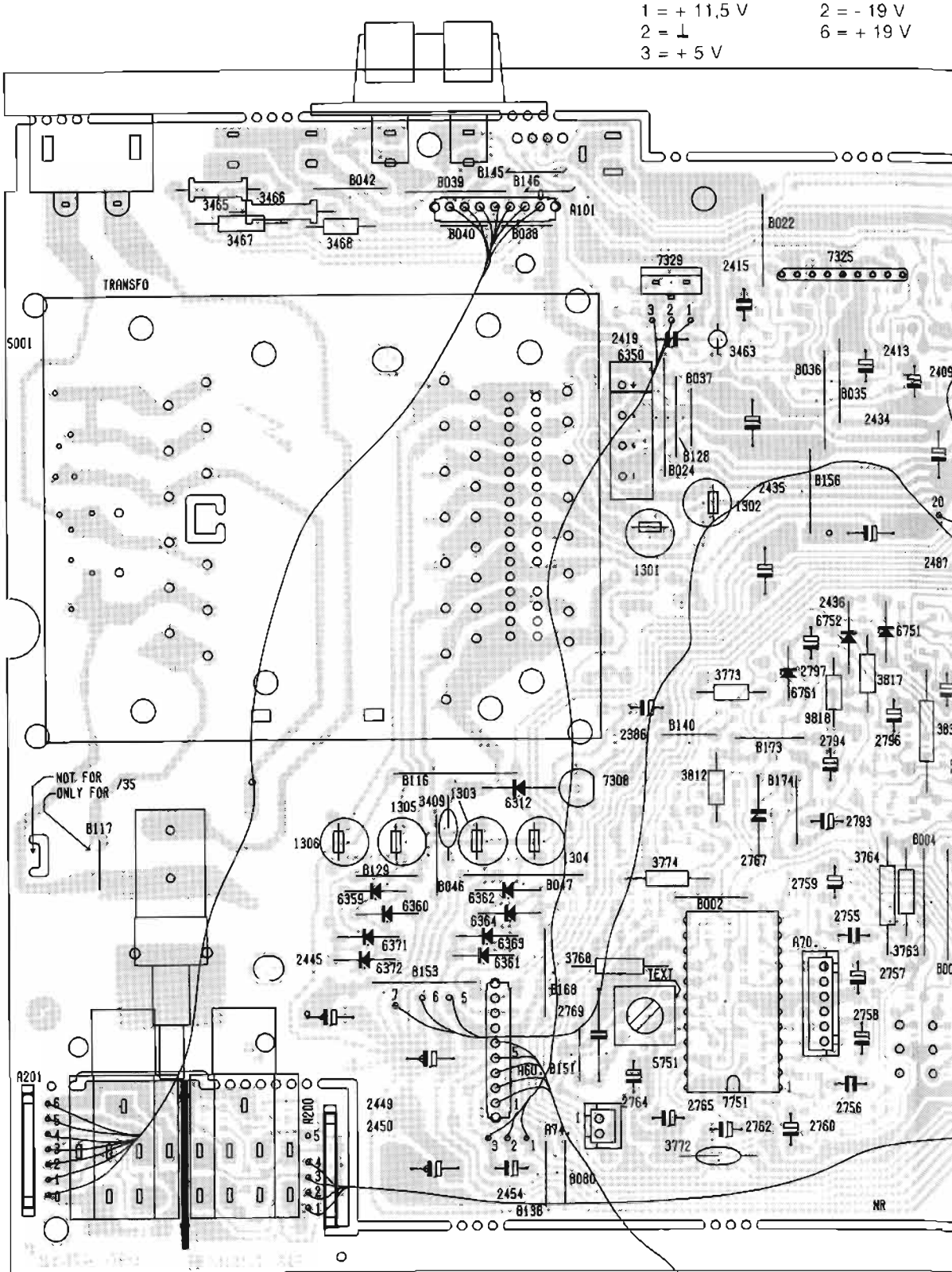
AF-REC panel

7329

MC7805CT
1 = + 11,5 V
2 = ⊥
3 = + 5 V

7325

TDA1520B
2 = - 19 V
6 = + 19 V



TO CD PANEL

7751

TDA1600

1 = + 6 V	6 = + 7 V	12 = + 6 V	17 = + 1,55 V
2 = + 6 V	8 = + 7 V	13 = + 14 V	18 = + 14 V
3 = + 6 V	9 = + 7 V	14 = + – V	19 = + 14 V
4 = + 7 V	10 = + 6,5 V	15 = + 4 V	20 = + 14 V
5 = + 7 V	11 = + 6 V	16 = + 4 V	21 = + 13 V
			23 = + 12,5 V

325

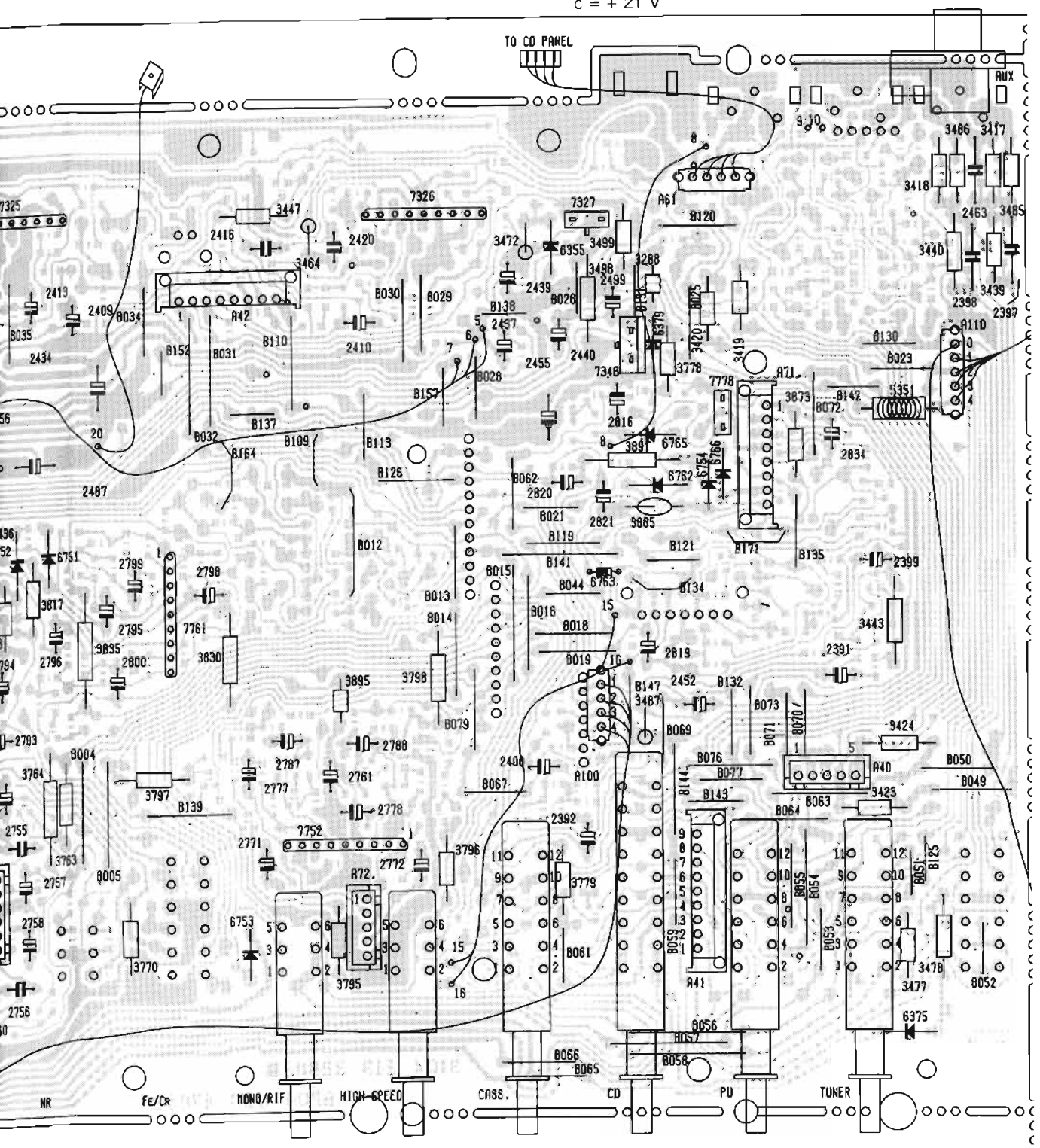
TDA1520B
= - 19 V
= + 19 V

7326

TDA1520B
2 = - 19 V
6 = + 19 V

7327

BD675
e = + 15 V
b = + 16 V
c = + 21 V



CD PANEL

7761

µPC1313

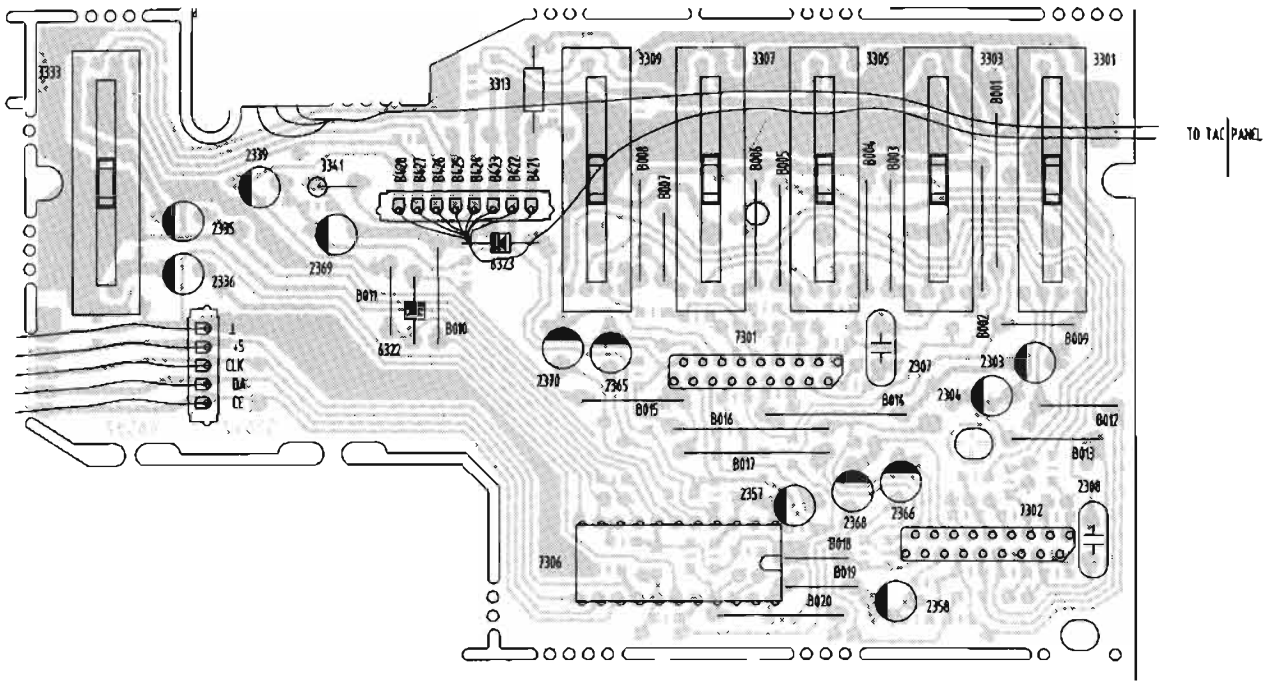
1 = + 1,3 V
3 = + 4 V
6 = + 9 V
7 = + 4 V
9 = + 1,3 V

7752

TA7325P

1 = + 0,8 V
2 = + 1,3 V
3 = + 4,5 V
4 = + 15 V
6 = + 4,5 V
7 = + 1,3 V
8 = + 0,8 V

EQ panel



7306	7301	7302
LC7535	BA3812L	BA3812L
8 = - 15 V	16 = - V	16 = - V
9 = + 15 V	17 = + 8 V	17 = + 8 V
10 = - 15 V	18 = - 8 V	18 = - 8 V
11 = –		
15 = + 4,4 V		

Mesures et réglages LF

Appareils de mesure requis
- Appareil de mesure universel
- Millivoltmètre en courant alternatif
- Générateur AF
- Oscilloscope
- Distorsiomètre

Généralités

Les mesures mentionnées ci-dessous s'appliquent pour le canal de gauche. Les points de mesure pour le canal de droite sont mentionnés entre paranthèses. A moins qu'indiqué différemment, les conditions générales suivantes s'appliquent pour les mesures et réglages électriques.
- Tension secteur 220 V, 2%, 50 Hz
- Résistances de charge de 4 Ω, 120 W, 1%
- Régulateur de volume: maxi
- Réglages de tonalité et de balance: position médiane
- Circuits imprimés en positions déterminées

POWER SUPPLY AND OUTPUT POWER

Sk position	Insert Signal	Volume	Power supply		Ripple	Output
AUX/TV	via 1 kΩ at Bu 5a (b)	min.	*			
			C2434	+19V	0,3V	
			C2435	−19V	0,3V	
			C2436	+22V	0,7V	
			C2445	−23V	0,4V	
			C2449	+19V	0,02V	
			C2450	−19V	0,02V	
		max.	*			BU3a (b)
			C2434	+15,5V	2V	(10V)
			C2435	−15,5V	2V	25 W
			C2436	+20,5V	0,8V	
			C2445	−23V	0,4V	
			C2449	+19V	0,2V	
			C2450	−19V	0,2V	

* C= condensor voltages ± 5%

TOTAL HARMONIC DISTORTION (T.H.D.)

Sk position	Insert Signal	Volume	Measure On ◇	T.H.D.	Output
AUX/TV	via 1 kΩ at Bu 5a (b)	max.	Bu 3a (b)	d < 10%	8,3V (±17,5W)

Mesures et réglages HF

Appareils de mesure requis
- Générateur RF
- Oscilloscope
- Millivoltmètre en courant coninu
- Millivoltmètre en courant alternatif
- Fréquencemètre

Généralités
- Lors de réglages RF les signaux injectés doivent être maintenus à un niveau aussi bas que possible.
- Le réglage IF s'obtient par un signal wobbulé. En FM, ce signal est de 10,7 MHz avec un balayage de 75 kHz à la fréquence de 50 Hz. En AM, ce signal est de 450 kHz avec un balayage de 10 kHz à la fréquence de 50 Hz.

FM-IF

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	REMARKS DETUNE	ADJUST	OSCILLOSCOPE	D.C. METER INDICATOR

FM-IF/T.H.D.

Tuner FM Wave range	98 MHz △f 250 kHz (50 Hz)	Ⓐ	Display 98.0 MHz	A		1 1 center fo	
	fo=f generator △f 250 kHz (50 Hz)				5105	symmetrical fo 1 2	
	98 MHz △f 75 kHz 10 µV				no adjustment provided	symmetrical 2	
	98 MHz △f 75 kHz 1 kHz mod. 1 mV						3 0V ± 30mV

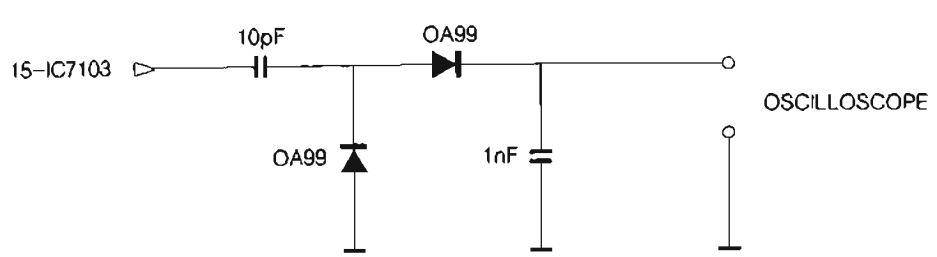
FM-RF

Tuner FM Wave range	108 MHz 1 kHz mod. △f 75 kHz	Ⓐ	Display 108 MHz		5104	max. ~ 1	

FM-RF

Tuner	87.5 MHz 1 kHz mod. △f 75 kHz	Ⓐ	Display 87.5 MHz		5101 5102 5103 [1]	max. ~ 1	
FM Wave range	108 MHz 1 kHz mod. △f 75 kHz		Display 87.5 MHz		2109 2110 [1]		

[1]) only for/02



PRS.02549
T33/718

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	REMARKS DETUNE	ADJUST	OSCILLOSCOPE	D.C. METER INDICATOR
Stereo decoder							
TUNER FM	98 MHz 1 mV unmodulated	A	Display 98.0 MHz	B	3155		6 Frequency counter 76 kHz ± 300 Hz
FM stereo-tuned indicator-tuning level - SEARCH STOP							
TUNER FM	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 12 µV	A	Display 98.0 MHz		3123		6313 stereo on tuned on
	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 3 µV				no adjustment provided		6313 stereo off tuned off
	98 MHz 1 kHz mod. 1 mV 98 MHz ±35 kHz						6313 tuned on
	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 30 µV		Display 99.0 MHz	C			

COMMENTAIRES

1 Placer le sommet de la courbe de réponse au milieu de l'écran, en modifiant la fréquence de wobbulation.

2 Régler au maximum la hauteur et la symmétrie.

A Pour rendre visible la courbe de réponse, il faut se servir du circuit détecteur. Voir figure PRS02549.

B Connecter le fréquencemètre par l'intermédiaire d'une résistance de 100KΩ.

C Accorder le tuner sur 99.0 MHz. Presser la touche tuning DOWN. A 98.0 MHz la recherche automatique doit s'arrêter.

D Mettre l'oscillateur hors circuit en court-circuitant les points 3 et 4 de 5111.

E Mettre la CAG hors circuit en court-circuitant le condensateur électrolytique 2122.

F Interrompre la boucle AM et soumettre une tension d'accord continue extérieure lisse de 9 V à la cathode de 6106 ou de 6107, via une résistance de 100 kΩ.
En outre, connecter en parallèle avec 6107 une capacité de 478 pF ± 1%.

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	REMARKS DETUNE	ADJUST	OSCILLOSCOPE	D.C. METER INDICATOR
AM-IF							
Tuner MW Wave range	450 kHz △f 10 kHz (50 Hz)	B		A D E		① 1 center fo	
	fo=f generator △f 10 kHz (50 Hz)				5109	symmetrical MAX. fo ① 2	
				B			
AM-RF (Oscillator)							
TUNER MW	522 MHz Mod.: 1 kHz 80%	B	Display 522 kHz	F	5111	max. ~ ① middle	
				F			
AM-RF							
TUNER MW	567 kHz 1 kHz Mod. 80%	C	Display 567 kHz		5115 (MW)	max. ~ ①	
	1494 kHz 1 kHz Mod. 80%		Display 1494 kHz		2132		
TUNER [1] LW	155 kHz 1 kHz Mod. 80%		Display 155 kHz		5115 (LW)		
	254 kHz 1 kHz Mod. 80%		Display 254 kHz		2149		
				E			
AM tuned indicator/search stop							
Tuner MW	567 kHz 1 kHz Mod. 80% 2.2 mV	C	Display 567 kHz		no adjustment provided		6313 tuned on
	567 kHz 1 kHz mod. 80% 0,2 mV						6313 tuned off

↕Repeat - Herhalen - Répéter - Wiederholen - Ricomminciare - Repetera - Gentage - Gjentagelse - Toista

[1]) not for /38

TAPESPEE

S pos

Play

PLAYBACK

Play ded

ERASE OS

R

Mesures et réglages REC

Appareils de mesure requis

- Appareil de mesure universel
- Millivoltmètre en courant alternatif
- Générateur AF
- Indicateur de pleurage et de scintillement
- Fréquencemètre
- Cassette d'essai universelle SBC 419 (482 397 30069)

Généralités

A moins qu'indiqué différement les conditions générales suivantes s'appliquent pour les mesures et réglages électriques.

- Band: chrome
- Volume: min
- RIF hors service
- Pour tous les réglages et mesures, bande en marche, les têtes et guides doivent être démagnétisés et nettoyés.

stand	motor switch	mute A switch	mute B switch	Rec* switch
Playback	closed	open	open	open
rec.*	closed	open	open	closed
Playback ↓ pause	closed	closed	open	open
easy	open	open	closed	open

* only for deck B

TAPESPEED (Deck A and B)

SK position	Cassette	Measure on	adjust	Meter displays
Playback	3150Hz	11 12		Wow and flutter ≤0.3%

PLAYBACK (Sensitivity)

Playback deck B	315Hz	13 11 14 12		70mV

ERASE OSCILLATOR

Rec.	any	15		62kHz ± 5kHz

PLAYBACK CHARACTERISTIC (A or B)

SK position	Cassette	Measure on	adjust	
Play	63Hz	◇11 ◇12		+11.5dB
	80Hz			+10dB
	315Hz			0dB
	1kHz			−8.5dB
	4kHz			−14dB
	10kHz			−13dB

RECORDING CHARACTERISTIC

Rec. (deck B)	63Hz	2793 (2794)		−1dB
	80Hz			−0.5dB
	315Hz			0dB
	1kHz			0dB
	4kHz			+2.5dB
	10kHz			+10.5dB

Rewind after recording is made

Play (deck B)		◇11 ◇12		see fig. 1

DUBBING

Play (deck A) 315Hz (100mV=0dB) or dummy head on A722 (A724)	63Hz	2793 (2794)		−12.5dB
	80Hz			−10.5dB
	315Hz			0dB
	1kHz			−7.5dB
	4kHz			−7dB
	10kHz			−1.5dB

HIGH SPEED DUBBING

Play (deck A) 315Hz (100mV=0dB) or dummy head	63Hz	2793 (2794)		+11.5dB
	80Hz			+10dB
	315Hz			0dB
	1kHz			−1dB
	4kHz			−15dB
	10kHz			8.5dB

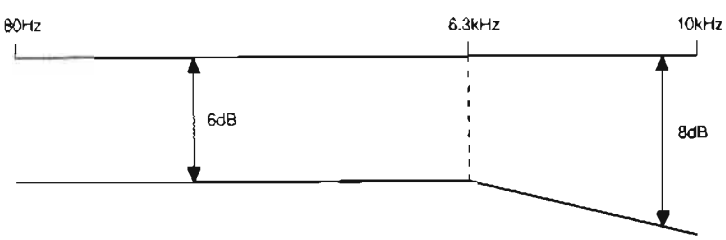


Fig. 1

MDA.00875

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Miscellaneous

1301	fuse 3.15 AT	4822 253 10048
1302	fuse 3.15 AT	4822 253 10048
1303	fuse 1 AT	4822 253 10052
1304	fuse 1 AT	4822 253 10052
1305	fuse 630 mAT	4822 253 20089
1306	fuse 630 mAT	4822 253 20089
6313	LCD display	4822 131 90122
5001	mainstransformer	4822 146 21306
	thermal fuse	4822 252 20206
	remote control transmitter	4822 218 20722

C

2109	mini trimmer 10pF	4822 125 60101
2110	mini trimmer 10pF	4822 125 60101 only/02
2132	mini trimmer 30pF	4822 125 60102
2149	mini trimmer 30pF	4822 125 60102 not for/08
2463	Tubular cap 100pF 50V	4822 122 10223
2383	super cap 100mF	4822 124 22448
2434	Elco 4700µF 25V	4822 124 22485
2435	Elco 4700µF 25V	4822 124 22485
2436	Elco 2200µF 25V	4822 124 21511
2478	47 nF 250V	5322 121 44223 not for /06
2478	47 nF 250V	4822 121 51183 only /06
2487	Elco 2200µF 25V	4822 124 21511

R

3100	metal film res. 1K 0,5W	4822 116 52391
3123	potm. trimmer 10K	4822 100 11255
3138	metal film res. 4K7 0,5W	4822 116 52426
3155	potm. trimmer 5K	4822 100 11256
3186	metal film res. 22K	4822 116 52463
3193	metal film res. 4K7 0,5W	4822 116 52426 not /08
3212	metal film res. 1K 0,5W	4822 116 52391
3238	safety res. 22E	4822 111 30517
3463	safety res. 1E	4822 111 30483
3464	safety res. 1E	4822 111 30483
3465	metal film res. 220E 1,6W	4822 116 51146
3466	metal film res. 220E 1,6W	4822 116 51146
3472	safety res. 47E	4822 111 30526
3478	metal film res. 1K 0,5 W	4822 116 52391
3492	safety res. 1E	4822 111 30483
3493	safety res. 1E	4822 111 30483
3763	metal film res. 4K7	4822 116 52426
3764	metal film res. 4K7	4822 116 52426
3770	metal film res. 22K	4822 116 52463
3830	metal film res. 1K 0,5W	4822 116 52391
3301	potm. slide 2x 50KB	4822 105 10844
3303	potm. slide 2x 50KB	4822 105 10844
3305	potm. slide 2x 50KB	4822 105 10844
3307	potm. slide 2x 50KB	4822 105 10844
3309	potm. slide 2x 50KB	4822 105 10844
3333	potm. slide 2x 100KB	4822 105 10968

-S-

5101	coil	4822 157 52733	
5102	coil	4822 157 53121	
5103	RF coil	4822 156 21339	only for/02
5104	RF Osc coil	4822 156 21339	not for/02
5104	RF Osc. coil	4822 157 53199	only for/02
5105	FM-IF	4822 157 52734	
5106	crystal res.	4822 242 71744	
5108	absorb. coil	4822 156 10641	
5109	AM-IF	4822 158 60511	
5111	AM-Osc.	4822 157 51844	
5112	Ceram filter	4822 242 70484	
5114	Crystal 7,2 MHz	4822 303 50034	
5115	Ferroceptor	4822 158 60578	not for/08
5115	Ferroceptor	4822 158 60585	only for/08
5117	coil	4822 157 53142	
5120	Ferrite lead	4822 157 53447	only for/02
5121	Ferrite lead ind.	4822 157 53447	only for/02
5122	Ferrite lead ind.	4822 157 53201	only for/02
5123	Ferrite lead ind.	4822 157 53447	only for/02
5351	coil	4822 157 53123	
5751	coil	4822 156 20946	
5301	ceram filter 4 MHz	4822 242 70831	
5302	coil	4822 157 53141	

C

7103	CAX1240P	4822 209 72744
7110	TA7343AP	4822 209 82492
7113	LM7000	4822 209 71331
7301	BA3812L	4822 209 83338
7302	BA3812L	4822 209 83338
7306	LC7535	4822 209 72635
7325	TDA1520B	4822 209 71743
7326	TDA1520B	4822 209 71743
7329	TY4040B/MC7805CT	4822 209 71579
7751	TDA1600N3	4822 209 72033
7752	TA7325P	4822 209 81038
7761	UPC1313HA	4822 209 70288
7307	TMP47C421AF	4822 209 73353
7306	NJM4558DD	4822 209 81054

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D

6101	BB204B	4822 130 34449	
6102	BB204B	4822 130 34449	
6103	BB204B	4822 130 34449	
6104	BB204B	4822 130 34449	
6106	OF642/BB112	4822 130 32159	
6107	OF642/BB112	4822 130 32159	
6110	BZX79/B5V1	4822 130 34233	
6301	BZX79-6V2	4822 130 34167	
6302	BZX79-13V	4822 130 34195	
6303	BZX79-10V	4822 130 34297	
6304	LED green	4822 130 81008	
6305	LED green	4822 130 81008	
6306	LED yellow	4822 130 81009	
6307	LED green	4822 130 81008	
6308	LED red	4822 130 81007	
6309	BZX79/B5V1	4822 130 34233	
6314	Backlight yellow	4822 130 81011	
6315	IR Receiver	4822 218 30393	
6322	HZ7C2	4822 130 32862	
6323	HZ7C2	4822 130 32862	
6350	K8U4D	4822 130 80305	
6355	HZ16-2	4822 130 31318	
6359	1N4002GP	4822 130 80291	
6360	1N4002GP	4822 130 80291	
6362	1N4001GP	5322 130 31973	
6363	1N4001GP	5322 130 31973	
6364	1N4001GP	5322 130 31973	
6370	1N4001GP	5322 130 31973	
6371	1N4002GP	4822 130 80291	
6372	1N4002GP	4822 130 80291	
6373	1N4001GP	5322 130 31973	
6375	HZ6A3	4822 130 32697	
6379	HZ12A2	4822 130 32987	
6751	1N4148	4822 130 30621	
6752	1N4148	4822 130 30621	
6753	1N4148	4822 130 30621	
6754	1N4148	4822 130 30621	
6761	1N4148	4822 130 30621	
6765	1N4148	4822 130 30621	
6766	1N4148	4822 130 30621	

TS

7101	2SK193LF	4822 130 41813	
7102	BC848B	5322 130 41982	only for/08
7105	BC848B	5322 130 41982	
7106	2SC1047C	4822 130 60163	
7108	BC848B	5322 130 41982	
7111	BC848B	5322 130 41982	
7112	BC848B	5322 130 41982	
7114	BC848C	5322 130 42136	
7115	BC848C	5322 130 42136	
7118	BD139	4822 130 40823	
7122	BF494B	4822 130 41376	not for/08
7123	BC848B	5322 130 41982	not for/08
7124	BC858B	5322 130 41983	
7130	BF494	4822 130 44195	
7134	BC337-40	4822 130 41344	not for/08
7135	BF245A	5322 130 44499	
7140	BC848B	5322 130 41982	
7304	BC848B	5322 130 41982	
7321	BC849C	4822 130 42614	
7322	BC849C	4822 130 42614	
7327	BD681	5322 130 44786	
7331	BC818-16	4822 130 60071	
7332	BC818-16	4822 130 60071	
7333	BC848B	5322 130 41982	
7334	BC848B	5322 130 41982	
7346	BD239C	5322 130 44903	
7753	BC848B	5322 130 41982	
7754	BC848B	5322 130 41982	
7755	BC848B	5322 130 41982	
7756	BC848B	5322 130 41982	
7757	BC848B	5322 130 41982	
7758	BC848B	5322 130 41982	
7759	BC848B	5322 130 41982	
7760	BC848B	5322 130 41982	
7766	BC848B	5322 130 41983	
7769	BC848B	5322 130 41982	
7773	BC848B	5322 130 41982	
7776	BC847D	4822 130 60511	
7777	BC847D	4822 130 60511	
7778	BD437	4822 130 40982	
7779	BC848B	5322 130 41982	
7780	BC848B	5322 130 41982	
7783	BC848B	5322 130 41982	
7784	BC856	4822 130 60136	

18

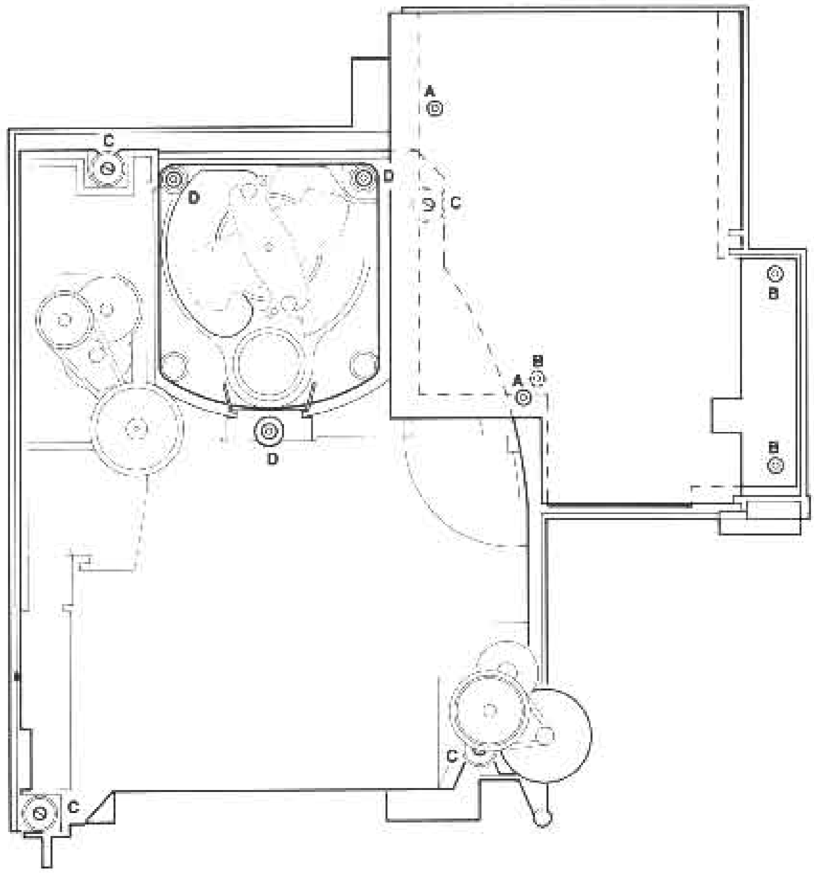
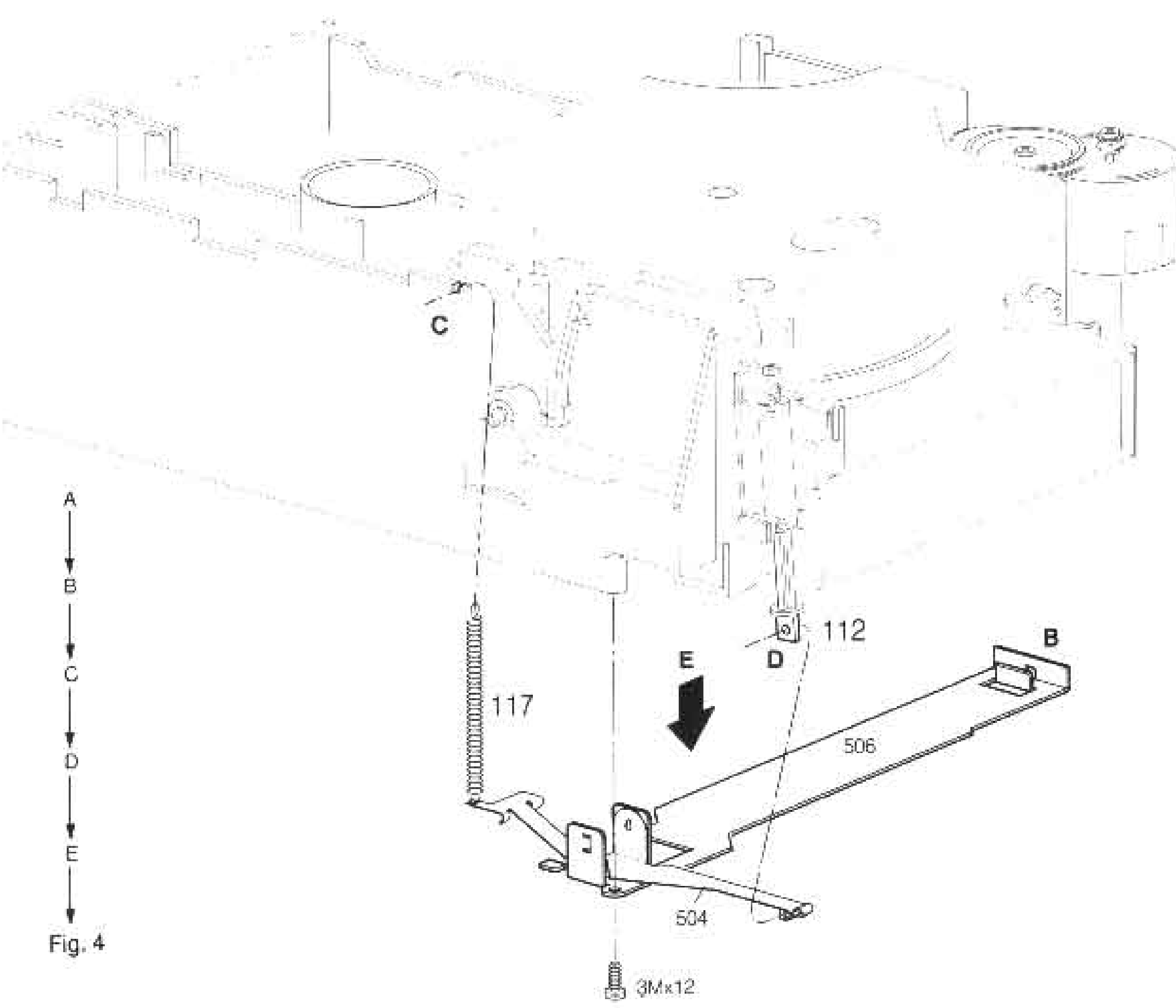


Fig. 1



A → B → C → D → E → Fig. 4

Fig. 3

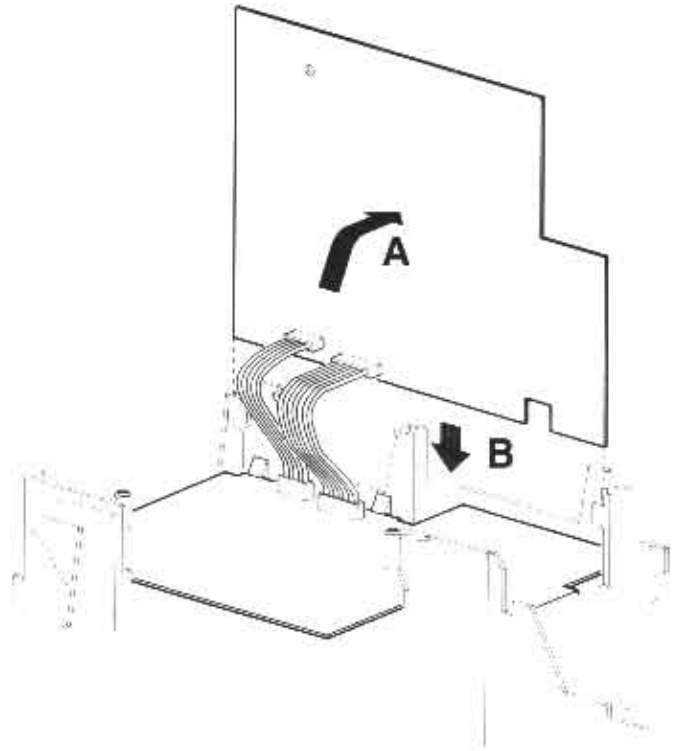
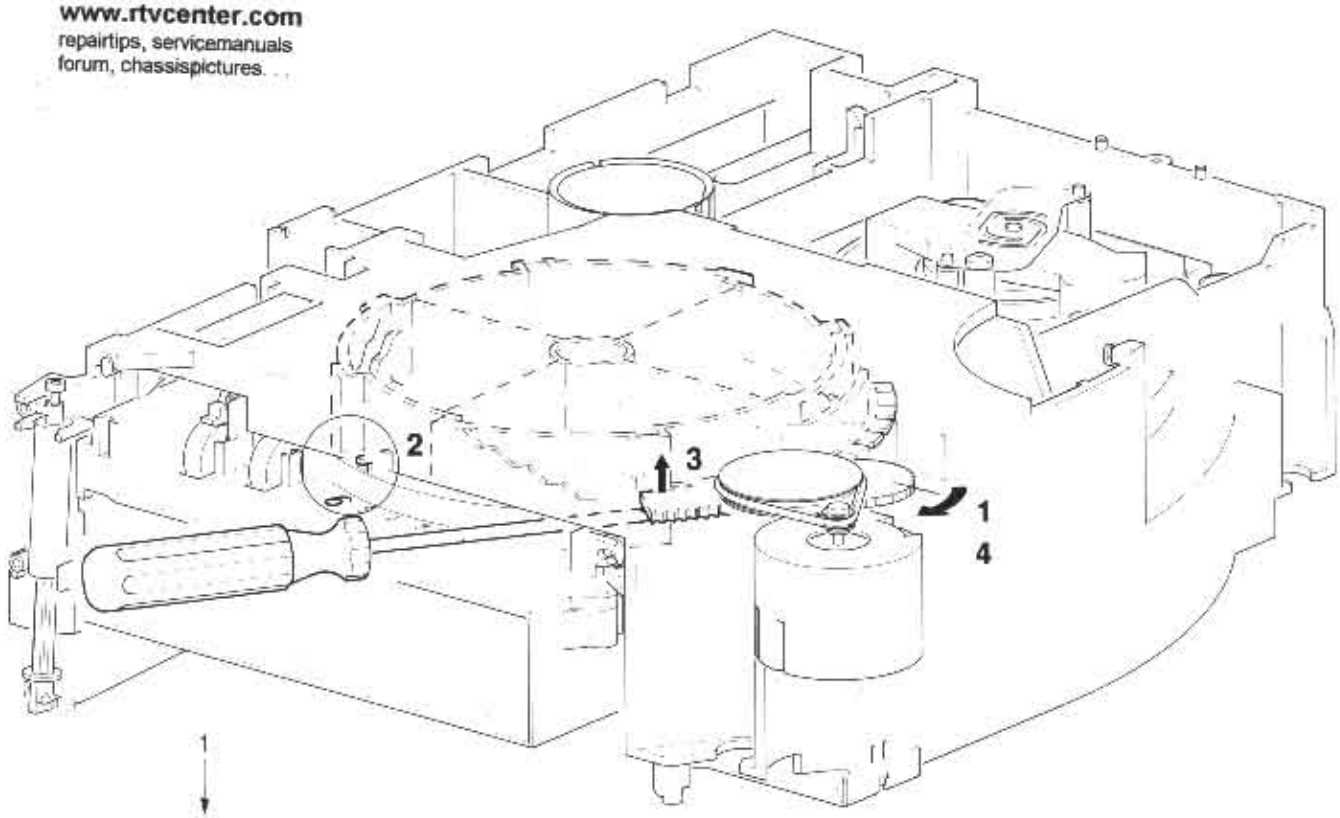


Fig. 2

EVA.00619
823/T19



EVA.00614
822/T19

Fig. 4

1
2
3
4
5

Fig. 5

Fig. 6

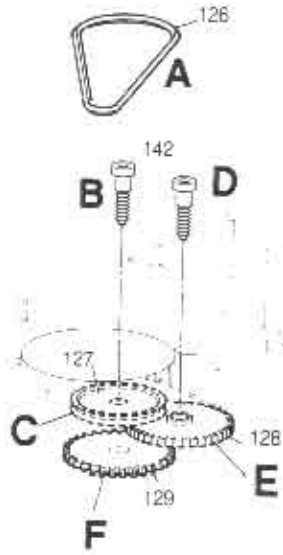


Fig. 5

EVA 00617
823/T19

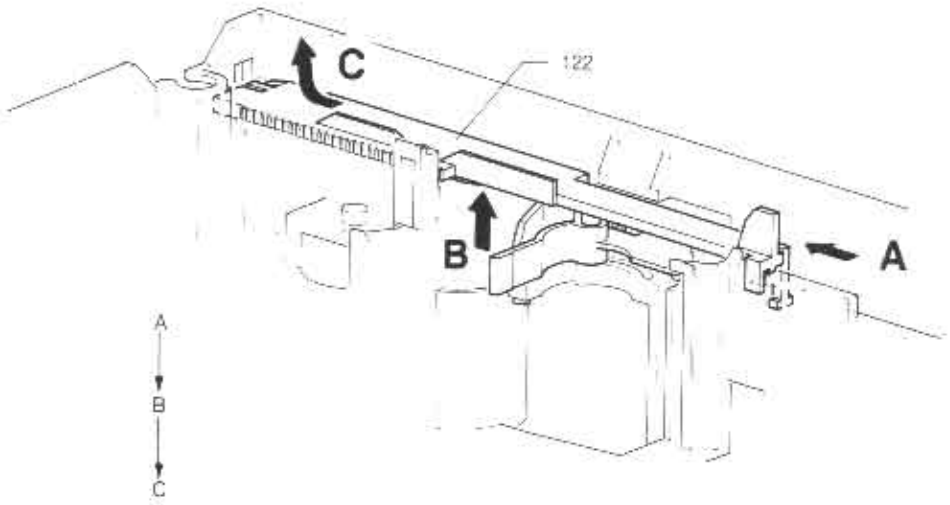


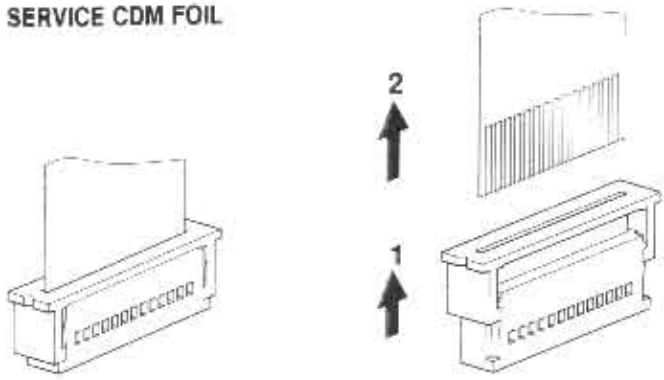
Fig. 6

EVA.00618
823/T19

SERVICE TOOLS

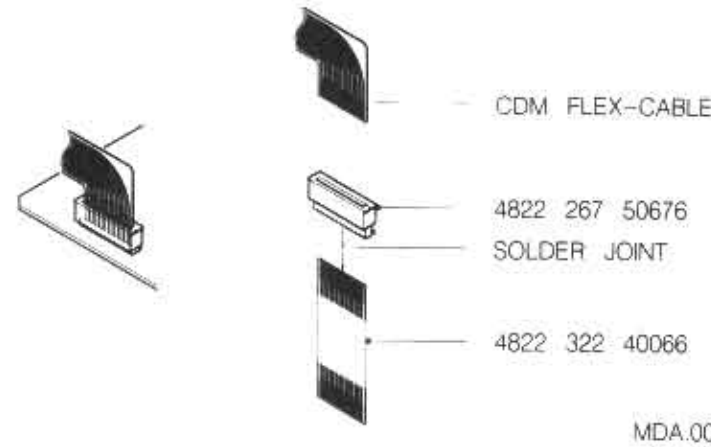
Audio test disc (3)	4822 397 30085
Disc without errors (5)+ disc with DO errors, black spots and fingerprints (5A)	4822 397 30096
Disc 65 min 1 kHz without pause	4822 397 30155
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable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

SERVICE CDM FOIL

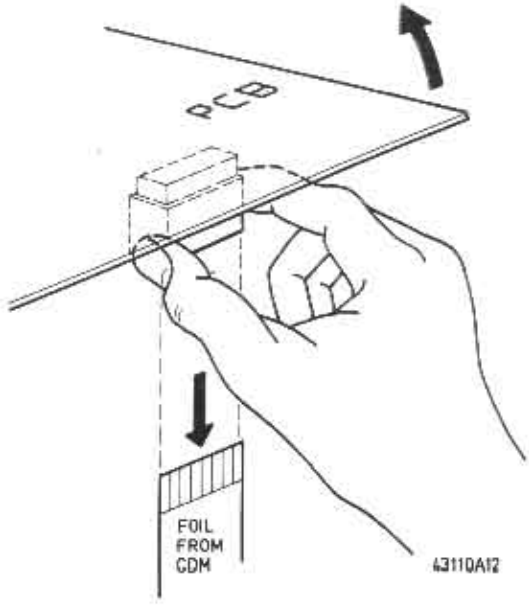


MDA.01408
T28/822

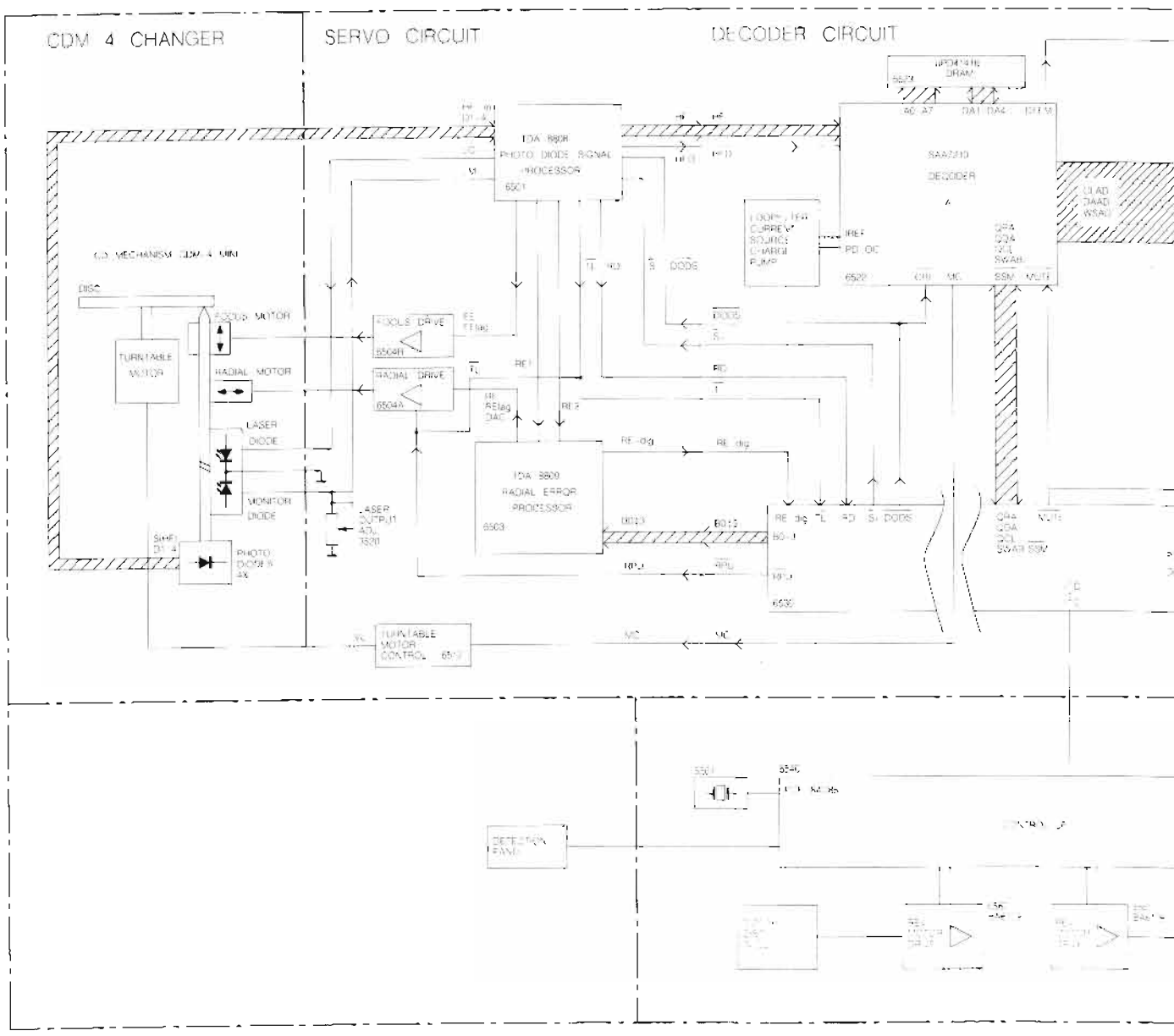
DEMOUNTING FOIL CDM



MDA.00311
T19-730

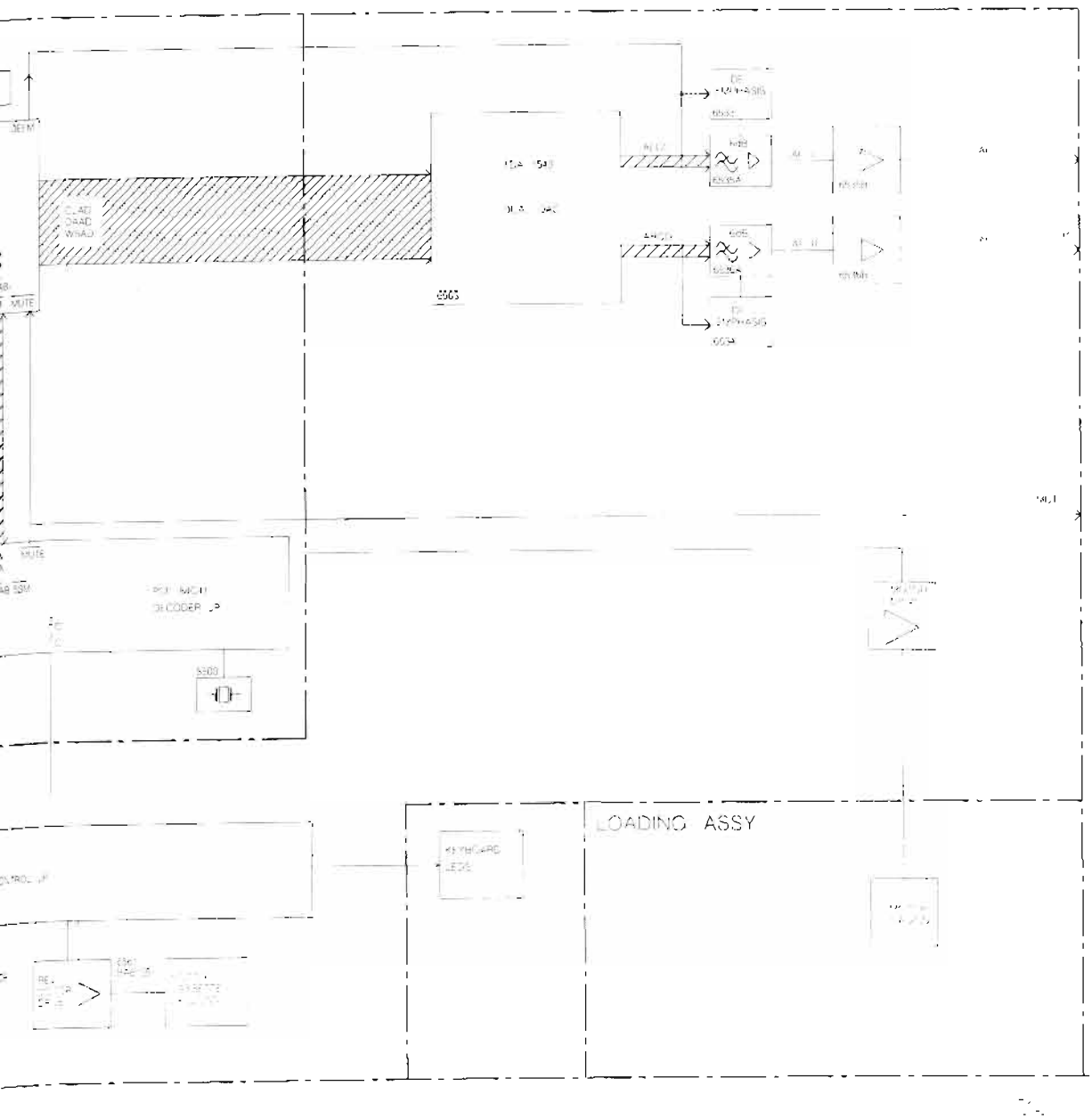


BLOCK DIAGRAM



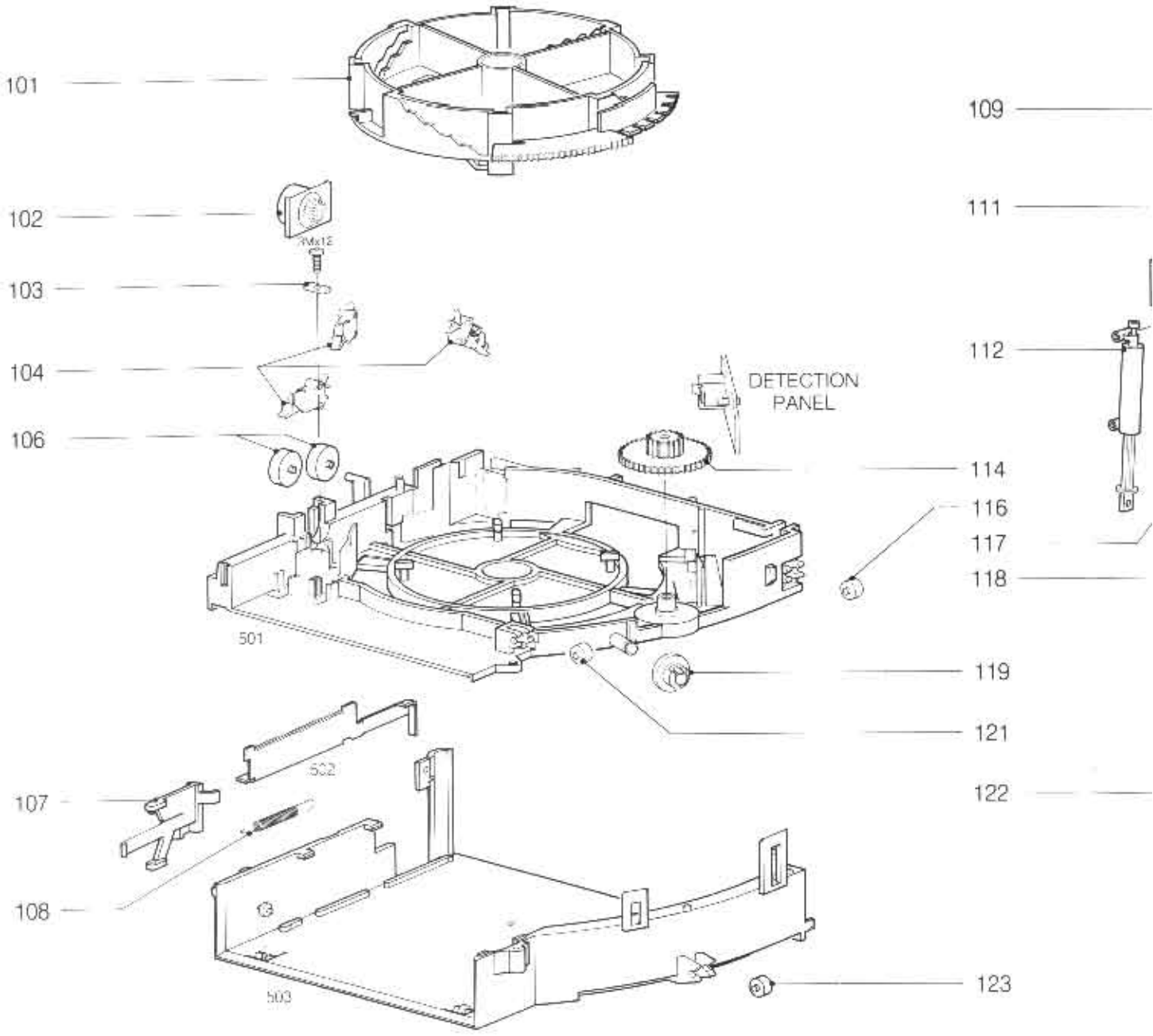
B0-B3 – Control bits for radial circuit
DAC – Current output for track jumping (Digital to Analogue Converted)
DODS – Drop out detector supression
D1÷4 – Photodiode currents
FE – Focus error signal
FE-lag – Focus error signal for LAG network
HF – HF output for DEMOD
HFD – HF detector output for DEMOD
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 curents D_3 and D_4
RE2 – Radial error signal 2 (summation of amplofied 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
RPU – Radial puls after track jumping
SI – On/off control for laser supply and focus circuit
TL – Track loss signal
Vc – Control voltage for turntable motor
ATSB – Attenuation of Audio level in Search position (Cueing)

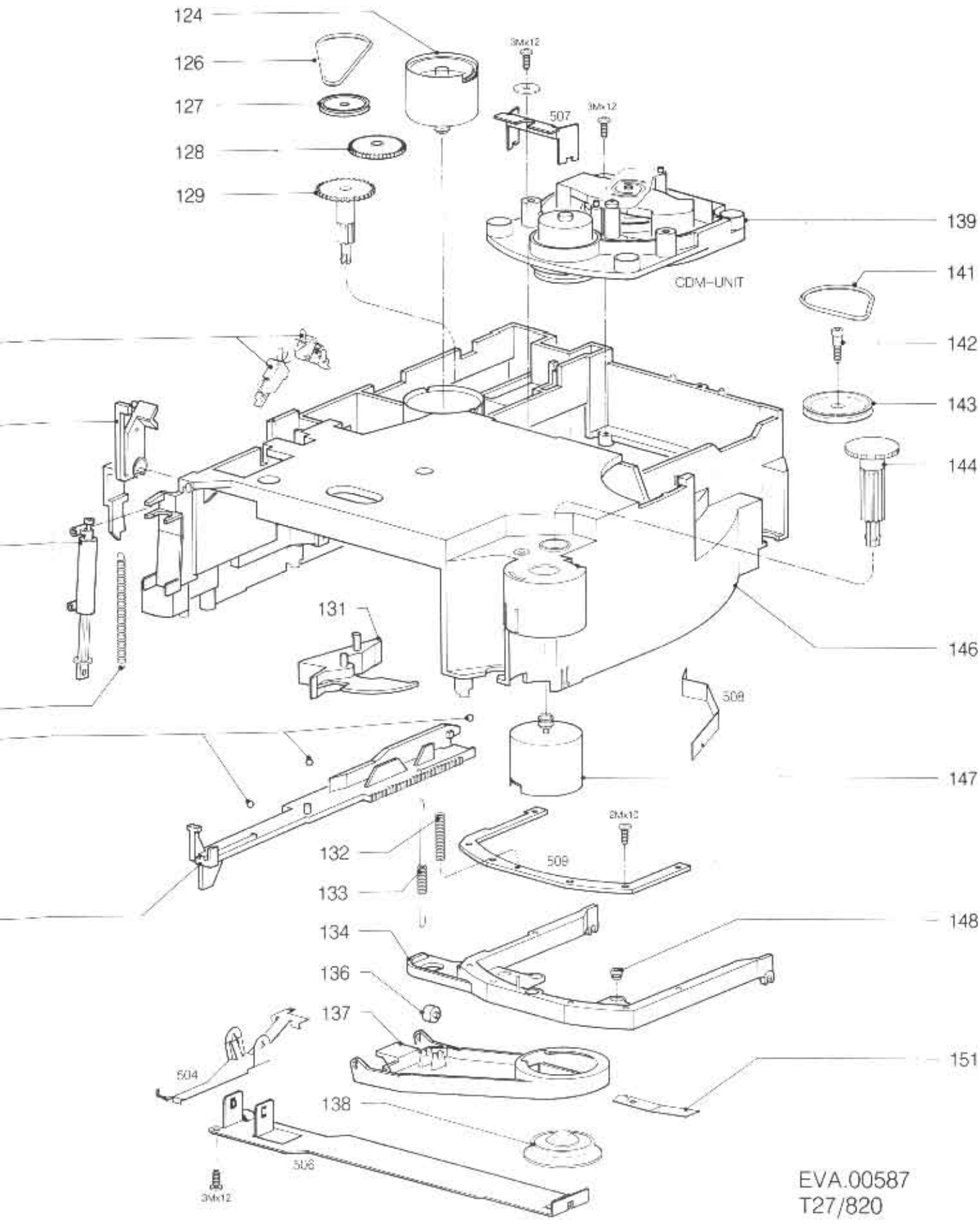
CEFM
CLAD
CRI
DAAD
DEEM
EFAB
IREF
MSTP
MUTE
MUSB
PD/OC



CEFM – Clock Eight-to-Fourteen Modulator
CLAD – Clock signal Decoder-A to DAC
CRI – Counter Reset Inhibit
DAAD – Data signal Decoder-A to DAC
DEEM – Deemphasis
EFAB – Error flag Decoder-A to Filter-B
IREF – Reference Current
MSTP – Motor start-stop signal
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
SCLK-I²C – Serial Clock signal Decoder-Control µP (Inter IC Connection)
SDAB – Subcode data Decoder-A to Filter-B
SDAT-I²D – Serial Data signal Decoder-Control µP (Inter IC Connection)
SWAB/SSM – Subcode Word/Start-stop motor signal
WSAD – Word Select Decoder-A to DAC
XIN – Oscillator signal in Decoder-A


101
102
M12
103
104
106
DETECTION
PANEL
109
111
112
114
116
117
118
119
121
122
123
501
502
503
107
108

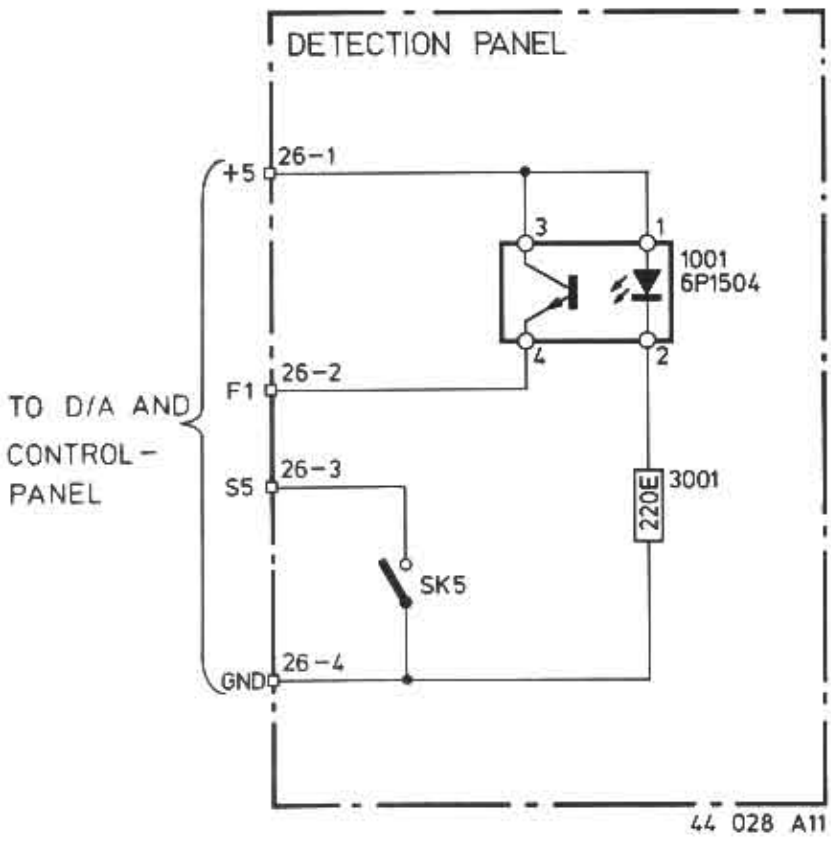

124
126
127
128
129
3Mx12
507
3Mx12
139
CDM-UNIT
141
142
143
144
146
131
509
147
3Mx12
132
509
133
148
134
136
137
151
504
138
D
E
506
3Mx12
EVA.00587
T27/820

MECHANICAL PARTSLIST

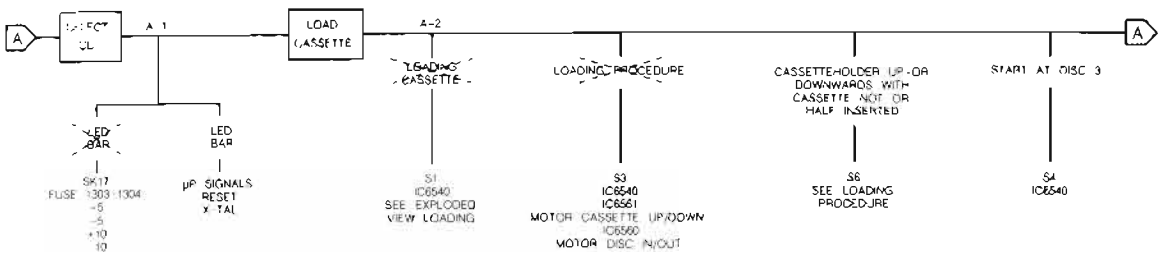
101	4822 528 10714	126	4822 358 30852
102	4822 529 10213	127	4822 528 81232
103	4822 466 80671	128	4822 522 32482
104	4822 271 30628	129	4822 522 32481
106	4822 528 90638	131	4822 402 61208
107	4822 402 61212	132	4822 492 52017
108	4822 492 32888	133	4822 492 32887
109	4822 271 30628	134	4822 402 61209
111	4822 402 61211	136	4822 528 90639
112	4822 529 10214	137	4822 466 92264
114	4822 522 32478	138	4822 532 61112
116	4822 528 90639	139	4822 691 30215
117	4822 492 32889	141	4822 358 30853
118	4822 520 40241	142	4822 535 80788
119	4822 528 70539	143	4822 528 81231
121	4822 528 90639	144	4822 522 32479
122	4822 535 80787	146	4822 520 10665
123	4822 528 90639	147	4822 361 20998
124	4822 361 21141	148	4822 325 60317
		151	4822 492 70033

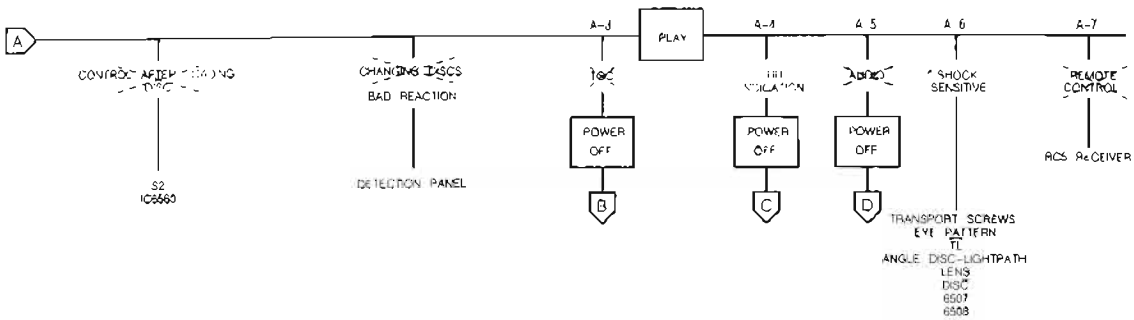
DETECTION PANEL

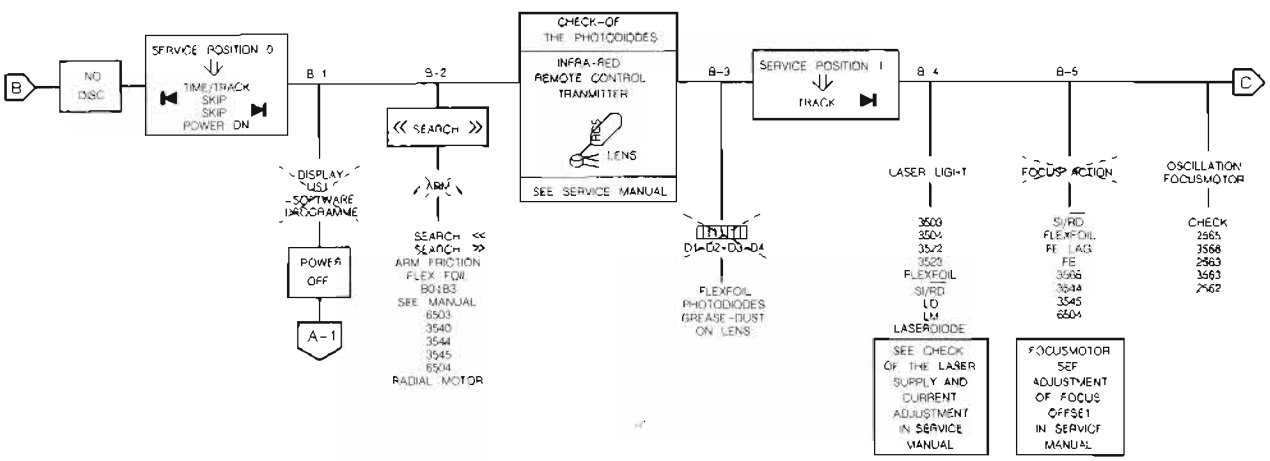
4822 276 12491	Switch assy SSCTL 1	SK5
4822 130 32114	Opto-coupler GP-1S04	1001
4822 116 52407	SFR25-220R	3001

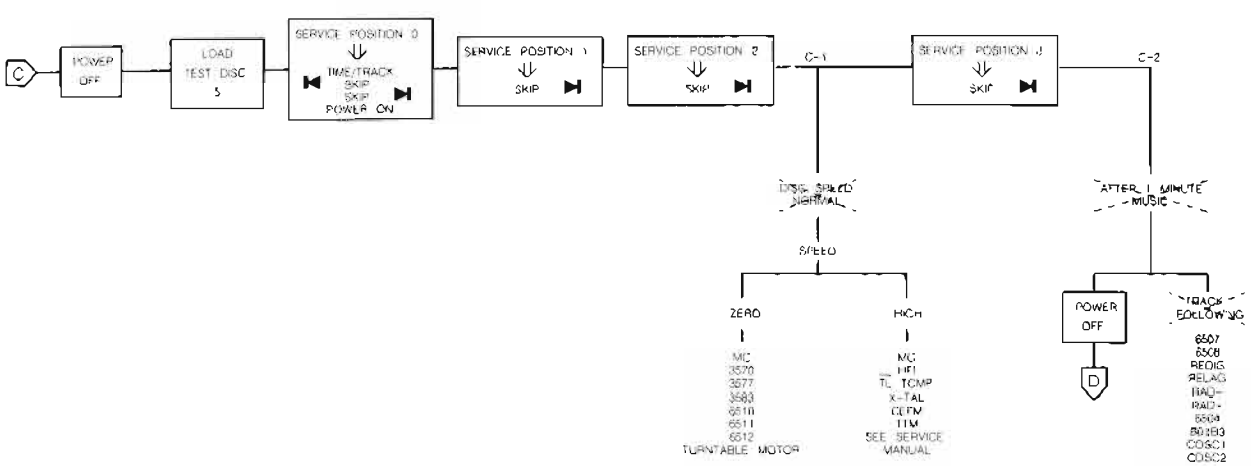


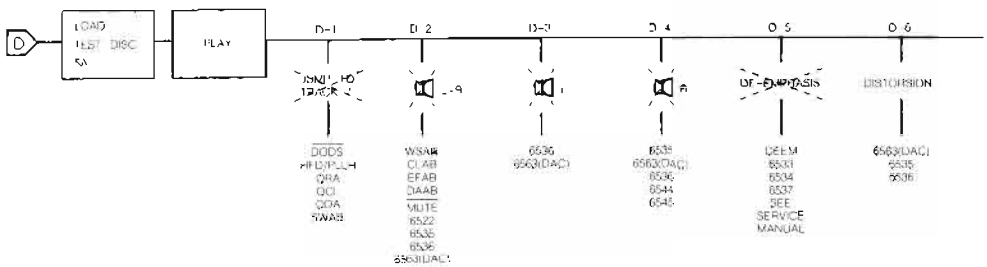
ELECTRICAL MEASUREMENTS AND ADJUSTMENTS











PRS.05187
T33/B26

A1
µP-SIGNALS

SIGNAL
RESET
X-TAL
MUTE

B2
B0,B1,B2,B3

SIGNAL	
B0	
B1	
B2	
B3	

B3
CHECK OF

STEP
1

B4
CHECK OF

STEP
1
2
3

B4
LASER CUR

STEP
1
2
3

A1
µP-SIGNALS

SIGNAL	MODE	◇			REMARKS
RESET	POWER ON	100		PULS 'HIGH'	
X-TAL	STAND BY	101		10MHz	
$\overline{\text{MUTE}}$	STAND BY	67		'LOW'	

MDA 01450
T33/825

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 01366
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 ← R LED OF REMOTE CONTROL; REMOTE CONTROL; CDM-4

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 < 3	–	SI=1 21; GREEN LED; 33Ω; to LO; to LM; LITTLE LIGHT; SK; 1kΩ; to; CONNECTED DIRECTLY TO PANEL
	LM	SK	11 (V)	–	170 < mV < 220	–	
2	LO	SERV POS 2	9 (V)	–	1.8 < V < 3	–	SI=1 21; GREEN LED; 33Ω; to LO; to LM; LITTLE LIGHT; SK; 1kΩ; to; CONNECTED DIRECTLY TO PANEL
	LM	SK	11 (V)	–	170 < mV < 220	–	
3	LO	POWER ON	9 (V)	–	0V ± 0.2V	–	NO LIGHT; SI=0 21

MDA 01379
T-08 824

B4
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER OFF	11, 38	R3520	1kΩ	–	PRE-ADJUSTMENT OHMIC VALUE
2	EYE-PATTERN HF	TEST DISC 5 PLAY	17, 0V GND	–	–	A	≠ 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 01446
133/825

BS
FOCUS ACTION

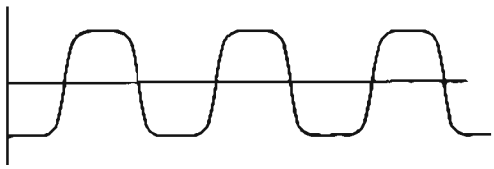
SIGNAL	MODE	◇			REMARKS
S/$\overline{RD}$	SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	21		PULS LOW	SEE DRAWING MDA.01403
FE	NO DISC SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	26			SEE DRAWING MDA.01413
RE-LAG	TEST DISC 5A	27			SEE ADJUSTMENT OF FOCUS-OFFSET

MDA.01448
T33825

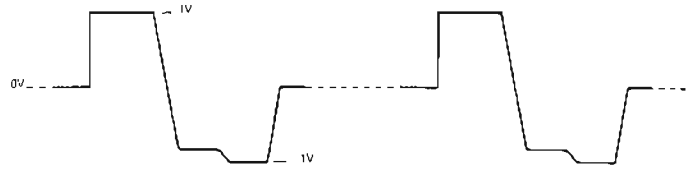
ADJUSTMENT OF FOCUS-OFFSET

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

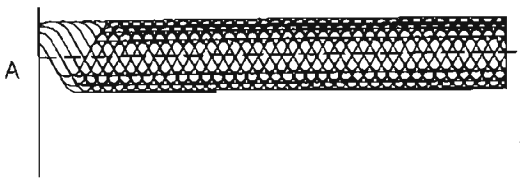
MDA.01447
T33/825



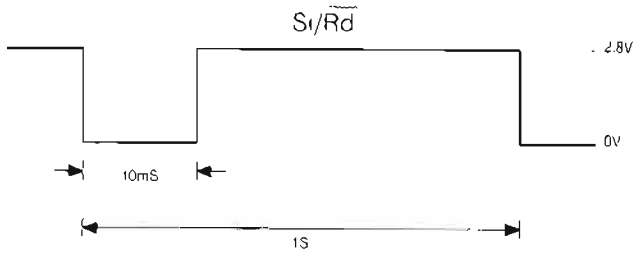
38 314 A12



MDA.01413
T33/821



37 017 B8



MDA.01403
T33/821

C1
HIGH SPEED DISC ROTATION

SIGNAL	MODE	◇			REMARKS
MC	TEST DISC 5, PLAY OR SERVICE POSITION 2	81			SEE DRAWING 38849A12
TCMP	TEST DISC 5, PLAY OR SERVICE POSITION 2	14	+5V		AFTER 4 $\overline{TL}$ PULSES
HFI	TEST DISC 5, PLAY OR SERVICE POSITION 3	66			SEE DRAWING 37017B8
X-tal	TEST DISC 5A, PLAY OR SERVICE POSITION 2	69		11.28MHz	
$\overline{TL}$	TEST DISC 5, PLAY OR SERVICE POSITION 2	13		PULSES LOW	
TTM-	TEST DISC 5A, PLAY OR SERVICE POSITION 2	16	APPROX -1V		

MDA 01445
T30/825

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

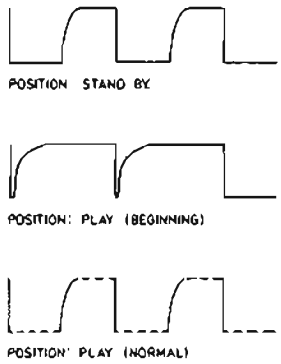
SIGNAL	MODE	◇			REMARKS
$\overline{DODS}$	TEST DISC 5A, SEARCH ≫ SEARCH ≪	19			SEE DRAWING MDA 01143
HFD/$\overline{PLLH}$	TEST DISC 5A, TRACK 15, PLAY	23		PULSES LOW	SEE DRAWING MDA 00240 WHEN THE DISC IS SLOWLY BRAKED BY HAND
ORA	TEST DISC 5A, PLAY	75			SEE DRAWING MDA 00450
OUA	TEST DISC 5A, PLAY	77			
OCL	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

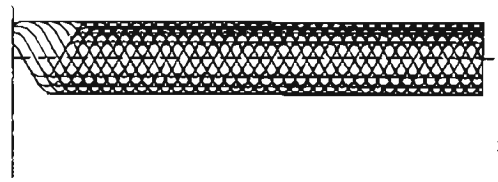
DECODER

SIGNAL	MODE	◇			REMARKS
CEFM	DISC PLAY	68		4.32MHz	
X-IN	DISC PLAY	69		11.28MHz	
WSAD	DISC PLAY	71			SEE DRAWING 38847C12
CLAD	DISC PLAY	72			SEE DRAWING 38847C12
DAAD	DISC PLAY	73		ACTIVITY	SEE DRAWING 38847C12
EFAB	TEST DISC 5A	74		PULSES	WHEN THE DISC IS SLOWLY BRAKED BY HAND
SWAB	DISC PLAY	78			SEE DRAWING MDA 00239
SCAB	DISC PLAY	79			SEE DRAWING MDA 00239
SDAB	DISC PLAY	80			SEE DRAWING MDA 00239
DFFM	TEST DISC 5 TRACK 14 PLAY TRACK 15 PLAY	84		LOW HIGH	

MDA 01449



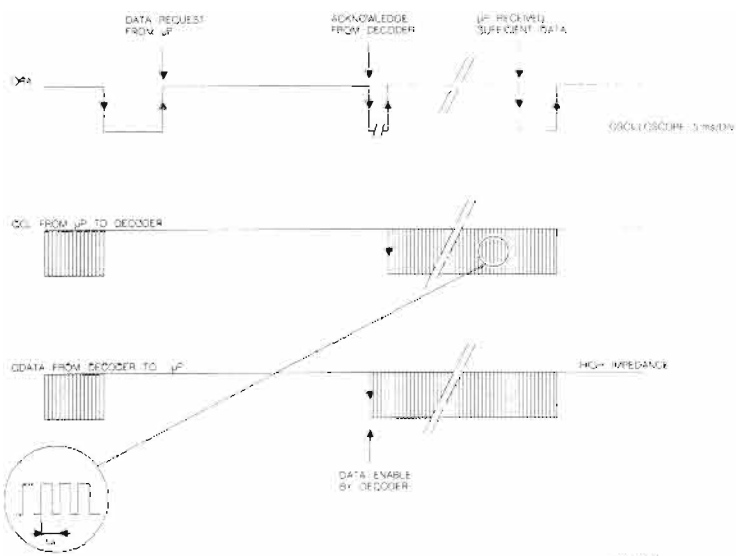
38 849 A12



37 017 B8

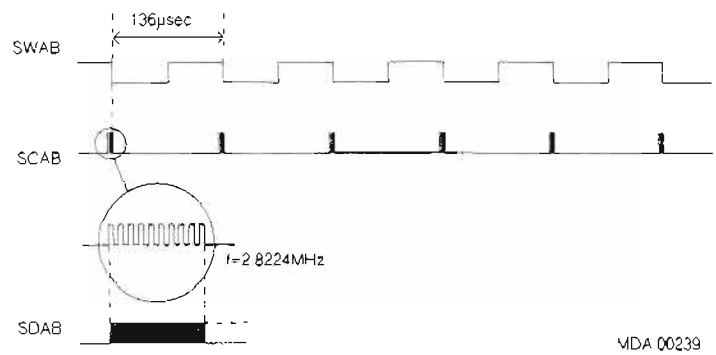
POSITION PLAYER	POWER ON	SERVICE POSITION 3 POSITION PLAY	PLAY	SEARCH PAUSE
$\overline{\text{DODS}}$ SIGNAL	"LOW"	"HIGH"	"HIGH"	

MDA 01143
T12 -651

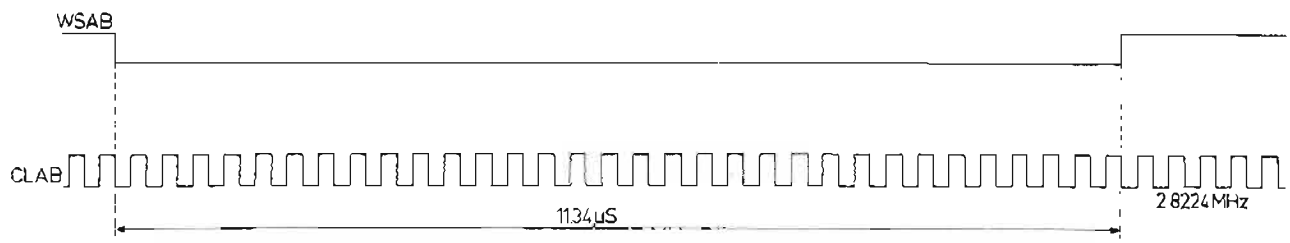


MDA 01388
T-08 825

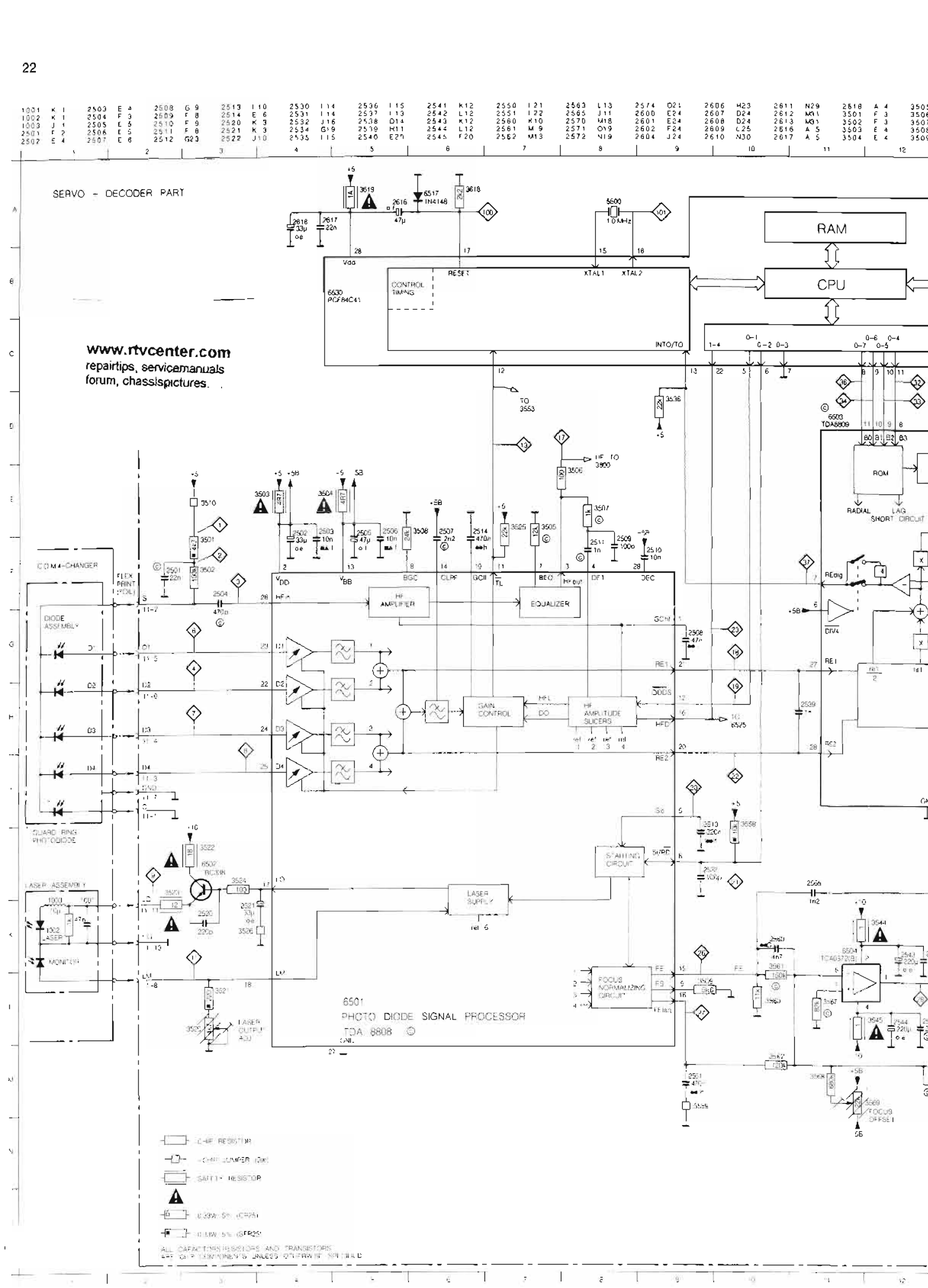
MDA 00240
T07-804



MDA 00239
T12/638

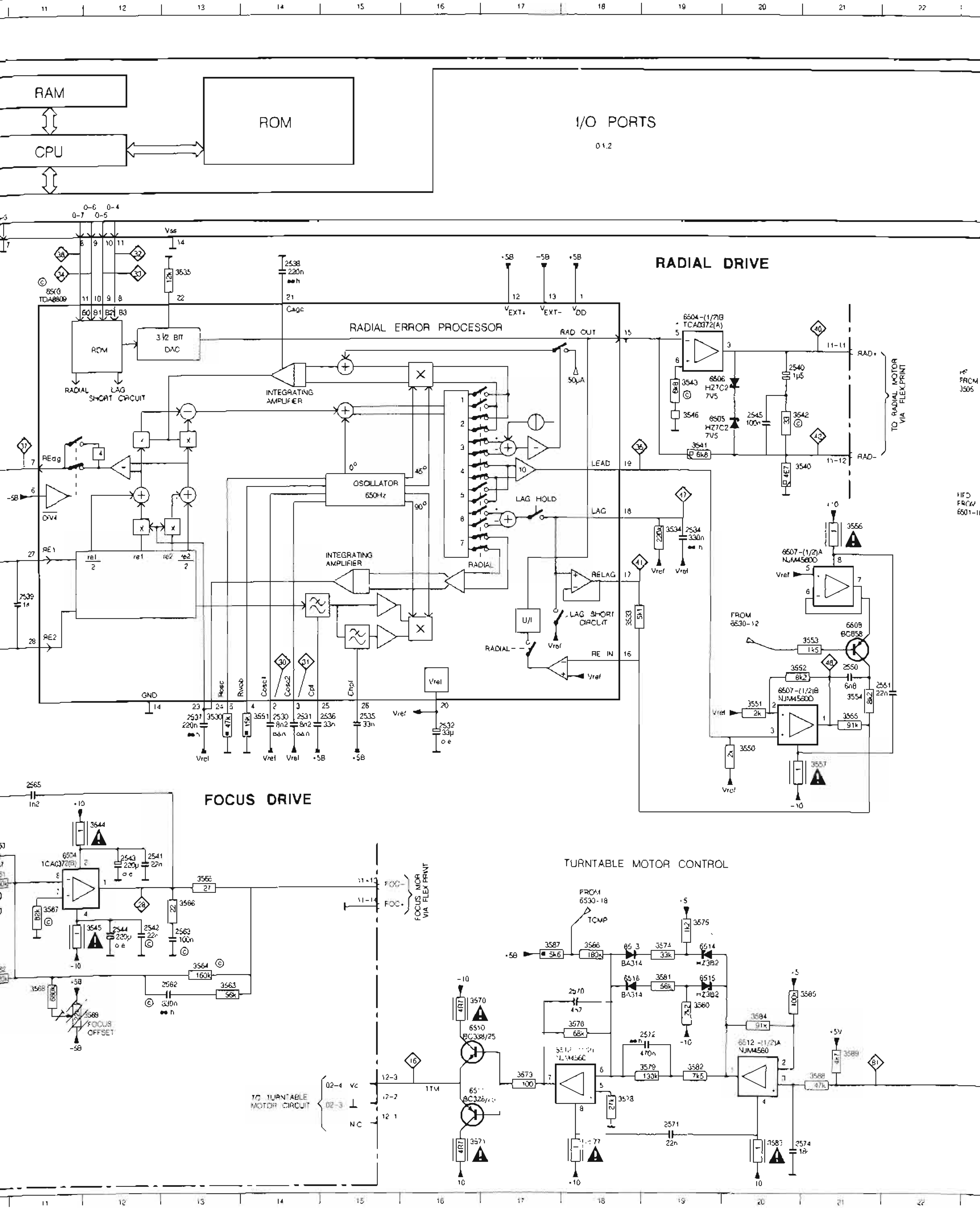


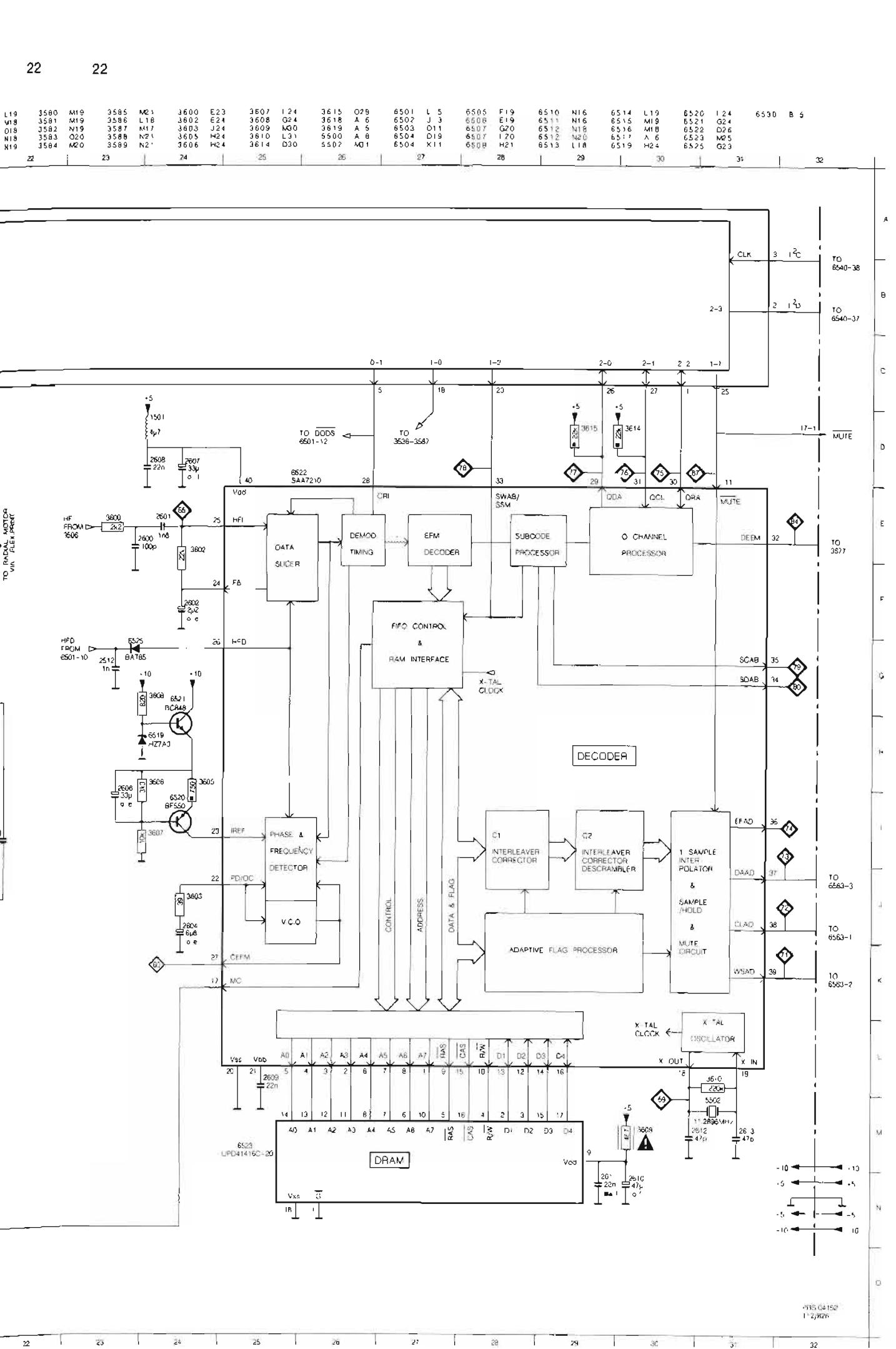
38 847 C12



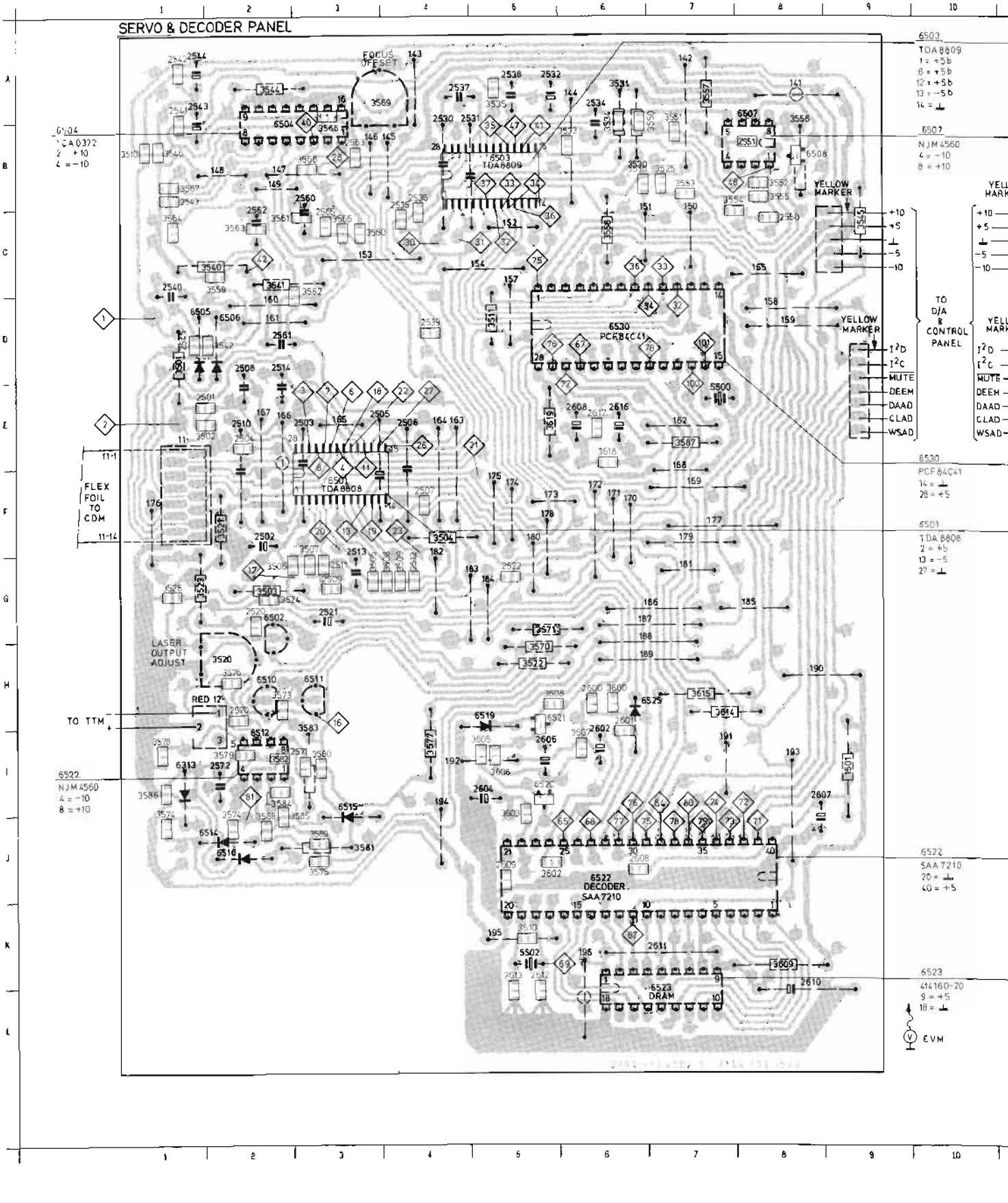
611	N29	2618	A 4	3505	E 7	3510	E 3	3524	J 3	3534	G19	3542	F21	3550	J20	3554	I21	3559	M 9	3564	M13	3569	M12	3575	L19
612	M31	3501	F 3	3506	E 8	3520	L 3	3525	E 7	3535	D13	3543	E19	3551	I14	3555	I21	3560	L10	3565	L13	3570	M17	3576	M18
613	M31	3502	F 3	3507	E 8	3521	L 3	3526	K 3	3538	O 9	3544	K12	3551	I20	3556	G21	3581	K10	3566	L13	3571	O17	3577	O18
616	A 5	3503	E 4	3508	E 6	3522	J 3	3530	I13	3540	F21	3545	L12	3552	I70	3557	J21	3562	M10	3567	L11	3573	N17	3578	N18
617	A 5	3504	E 4	3509	L 9	3523	J 2	3533	H18	3541	F19	3546	F19	3553	H21	3558	I10	3563	M13	3568	M11	3574	L19	3579	N19

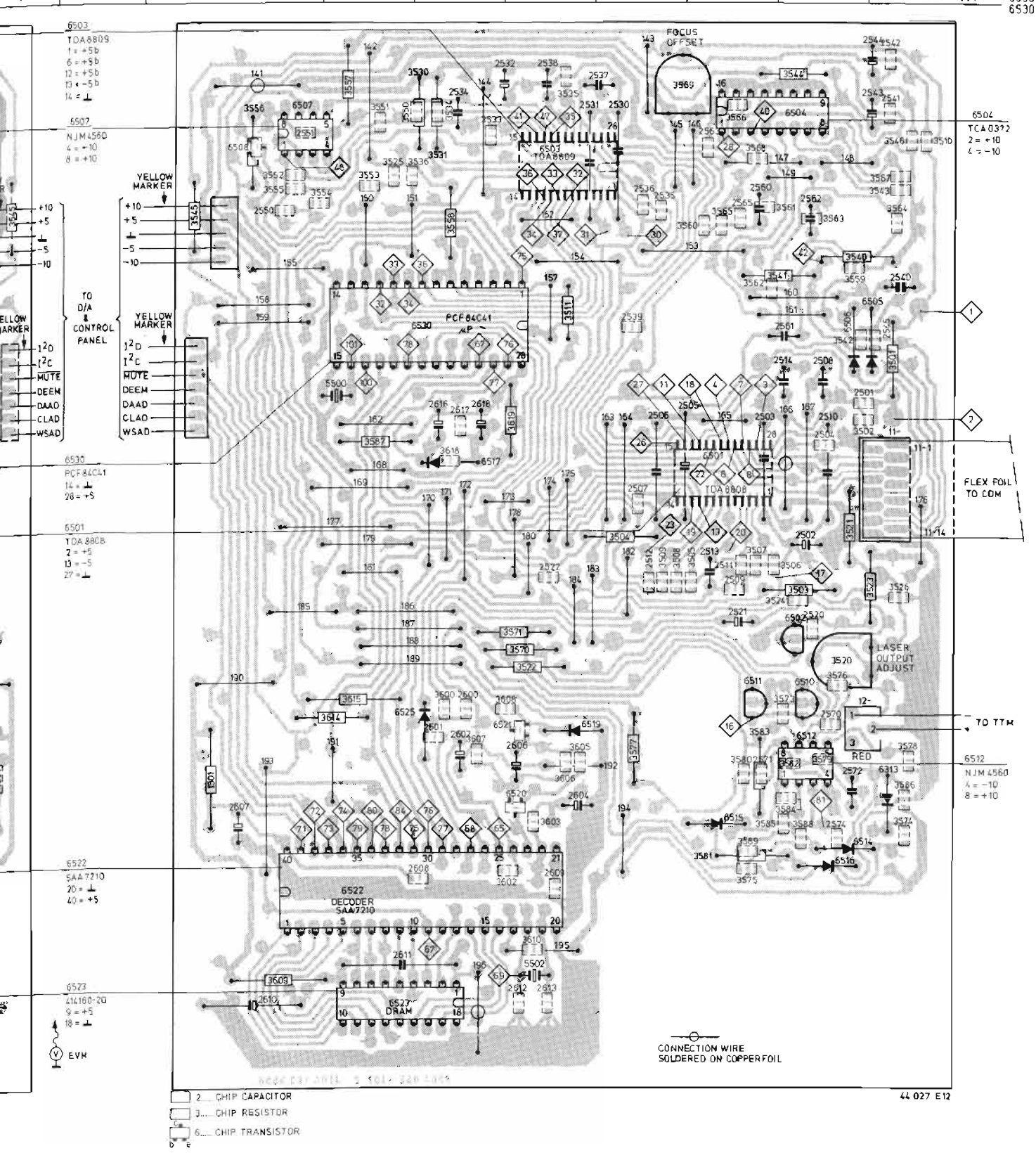
3580	M19
3581	M19
3582	N19
3583	O20
3584	M20

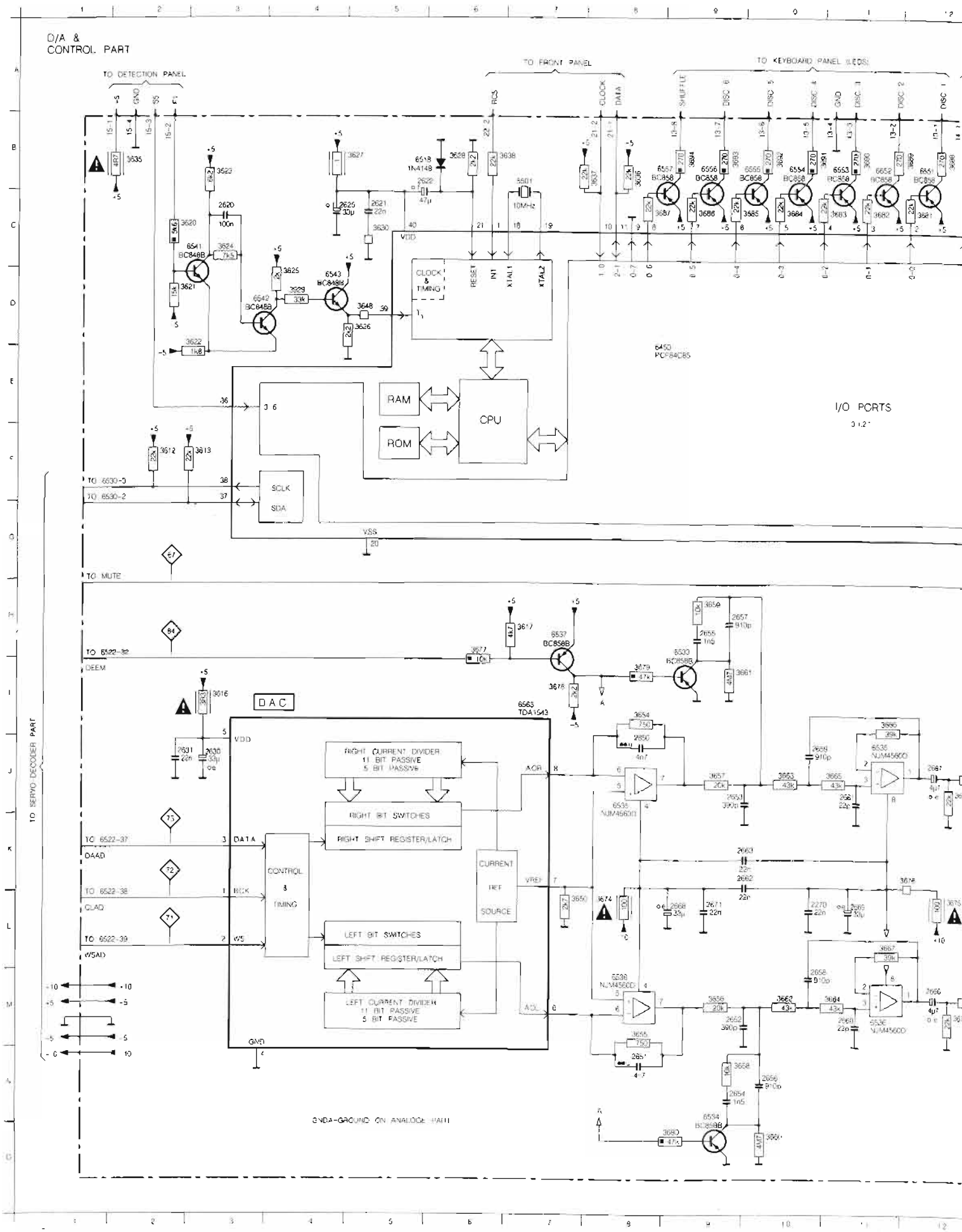


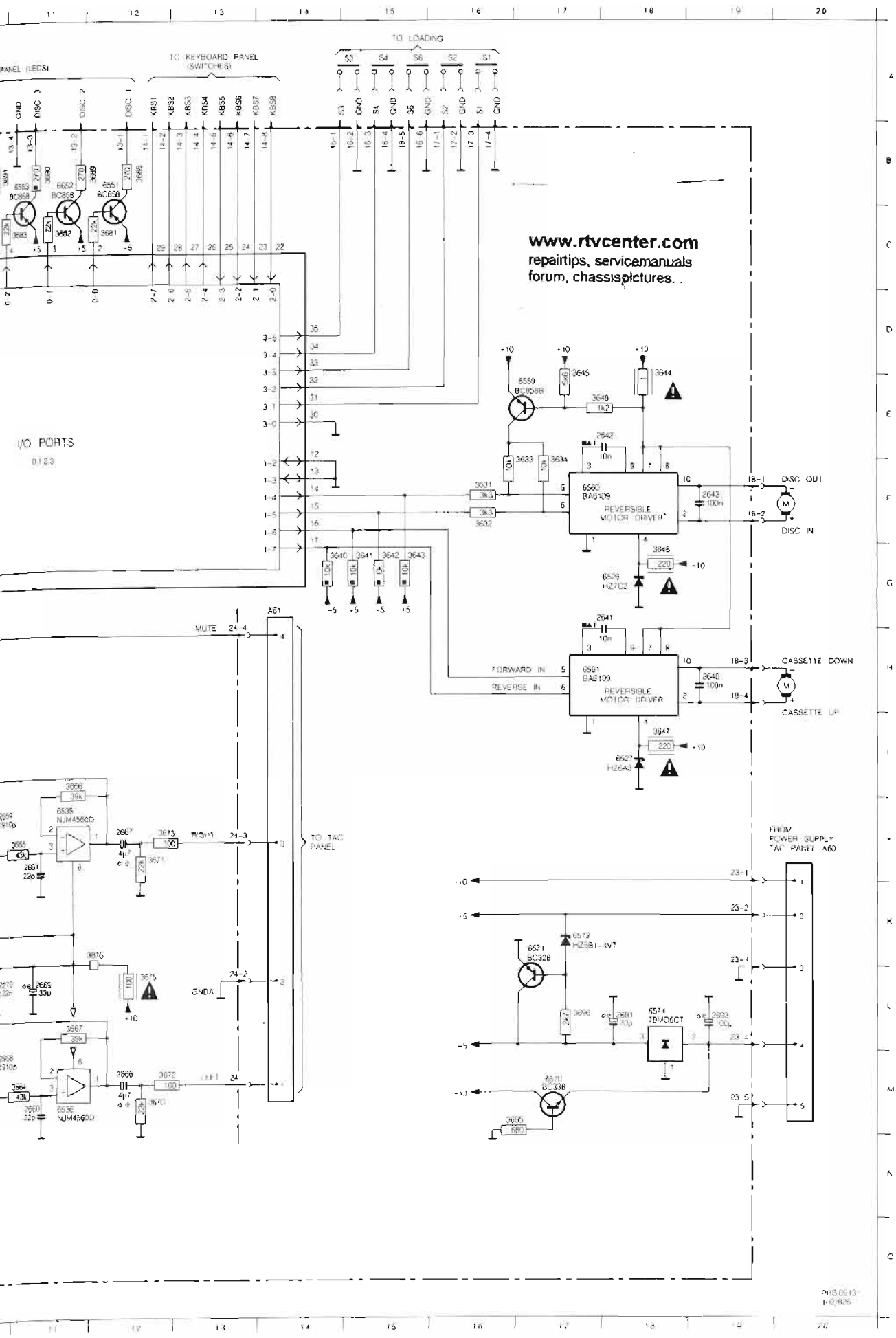

DECODER
DATA SLICER
DEMOD TIMING
EFM DECODER
SUBCODE PROCESSOR
Q CHANNEL PROCESSOR
FIFO CONTROL & RAM INTERFACE
PHASE & FREQUENCY DETECTOR
V.C.O
C1 INTERLEAVER CORRECTOR
C2 INTERLEAVER CORRECTOR DESCRAMBLER
1 SAMPLE INTERPOLATOR & SAMPLE /HOLD & MUTE CIRCUIT
ADAPTIVE FLAG PROCESSOR
CONTROL
ADDRESS
DATA & FLAG
X-TAL CLOCK
X TAL OSCILLATOR
DRAM
6522 SAA7210
6523 UPD41416C-20
TO 6540-38
TO 6540-37
TO 3577
TO 6563-3
TO 6563-1
TO 6563-2
TO DODS 6501-12
TO 3636-3687
MUTE
HF FROM 3606
HFD FROM 6501-10
TO RADIAL MOTOR VIA FLEX PRINT

1501	I 9	2506	E16	2514	D 2	2534	A14	2541	A19	2561	D 2	2574	J 2	2608	E 6	2617	E 5	3506	G18	3521	F18	3531	B14
1501	I11	2507	F 4	2514	D18	2535	B 4	2542	A 1	2561	D18	2574	J18	2608	J14	2617	E14	3507	F 3	3522	H 5	3533	B 6
2445	D19	2507	F16	2520	G 2	2535	B16	2542	A19	2562	B 2	2600	H 6	2609	J 5	2618	E14	3507	F17	3522	H15	3534	B 6
2501	E 2	2508	D 2	2520	G18	2536	B 4	2543	A 1	2562	B18	2600	H14	2609	J15	3501	D 1	3508	G 4	3523	G 2	3534	B14
2501	E19	2508	D18	2521	G 3	2536	B16	2543	A19	2563	B 3	2601	H 6	2610	K 8	3501	D19	3508	G17	3523	G19	3535	A 5
2502	F 2	2509	G 3	2521	G17	2537	A 4	2544	A 1	2563	B17	2601	H14	2610	K12	3502	E 2	3509	G 4	3524	C 3	3535	A15
2502	F18	2510	E 2	2522	G 5	2537	A16	2544	A19	2565	C 3	2602	I 6	2611	K 7	3502	E19	3509	G16	3524	C18	3536	B 6
2503	E 3	2510	E18	2522	G15	2538	A 5	2545	D 1	2565	C17	2602	I14	2611	K13	3503	G 2	3510	B 1	3525	B 7	3536	B14
2503	E17	2511	G 3	2530	A 4	2538	A15	2550	C 8	2570	H 2	2604	I 5	2612	K 5	3503	G18	3510	B19	3525	B13	3540	C 2
2504	E 2	2511	G17	2530	A16	2539	D 4	2550	C12	2570	H18	2606	I 5	2612	K15	3504	F 4	3511	D 5	3526	G 1	3540	C18
2504	E18	2512	G 4	2531	A 5	2539	D16	2551	B 6	2571	I 3	2606	I16	2613	K 5	3504	F16	3511	D15	3526	G19	3541	C 2
2505	E 4	2512	G16	2532	A 5	2540	C 1	2551	B12	2571	I17	2607	I 8	2613	K15	3505	G 4	3520	H 2	3530	B 6	3541	C18
2505	E17	2513	F 3	2532	A15	2540	C19	2560	B 3	2572	I 2	2607	I12	2616	E 6	3505	G17	3520	H18	3530	B14	3542	D 2
2506	E 4	2513	F17	2534	A 6	2541	A 1	2560	B17	2572	I18	2608	J 6	2616	E14	3506	G 2	3521	F 2	3531	A 6	3542	D18






D/A &
CONTROL PART
TO DETECTION PANEL
TO FRONT PANEL
TO KEYBOARD PANEL (LEDS)
CLOCK & TIMING
RESET
INT
XTAL1
XTAL2
6450
PCF84C85
I/O PORTS
RAM
ROM
CPU
SCLK
SDA
TO 6530-3
TO 6530-2
VSS
TO MUTE
TO 6522-32
DEEM
DAC
6563
TDA1543
VDD
RIGHT CURRENT DIVIDER
11 BIT PASSIVE
5 BIT PASSIVE
RIGHT BIT SWITCHES
RIGHT SHIFT REGISTER/LATCH
TO 6522-37
DATA
DA4D
TO 6522-38
BCK
CLAD
TO 6522-39
WS
WSAD
CONTROL & TIMING
CURRENT REF SOURCE
VREF
AOR
AOL
LEFT BIT SWITCHES
LEFT SHIFT REGISTER/LATCH
LEFT CURRENT DIVIDER
11 BIT PASSIVE
5 BIT PASSIVE
GND
6535
NJM4560D
6536
NJM4560D
6537
BC858B
6538
BC858B
TO SERVO DECODER PART
DIGITAL-GROUND ON ANALOGUE PART


TO LOADING
S3 S4 S6 S2 S1
TO KEYBOARD PANEL (SWITCHES)
PANEL (LEDS)
DISC 3 DISC 2 DISC 1
KBS1 KBS2 KBS3 KBS4 KBS5 KBS6 KBS7 KBS8
I/O PORTS
0 1 2 3
www.rtvcenter.com
repairtips, servicemanuals
forum, chassispictures..
REVERSIBLE MOTOR DRIVER
DISC OUT
DISC IN
CASSETTE DOWN
CASSETTE UP
FORWARD IN
REVERSE IN
MUTE
TO TAC PANEL
FROM POWER SUPPLY TAC PANEL A60
GNDA

2562	A 5	2640	F 8	2654	B 6	2661	A12	2670	B14	3617	C13	3626	K18	3633	E12	3641	H 8	3648	K 4	3658	B 6	3665	A 9	3674	A1
2562	A15	2640	F12	2654	B15	2662	B 9	2671	A 7	3620	J 4	3627	J 1	3634	G 7	3641	H12	3648	K17	3658	B14	3665	A12	3675	B
2620	J 3	2641	E 6	2655	B 8	2662	B11	2671	A13	3620	J17	3627	J19	3634	D 8	3642	H 8	3649	D 8	3659	B 8	3666	A 8	3675	B1
2620	J17	2641	E14	2656	B 6	2663	B 6	2691	A 4	3621	J 3	3628	K 6	3634	D12	3642	H12	3649	D13	3659	B12	3666	A12	3676	B
2621	J 4	2642	E 8	2656	B14	2663	B14	2691	A16	3621	J17	3628	K14	3635	H 3	3643	H 8	3650	C 8	3660	B 5	3667	A 6	3676	B1
2621	J17	2642	E12	2657	B 8	2665	B12	2693	B 3	3622	J 3	3629	J 2	3635	H18	3643	H12	3650	C12	3660	B15	3667	A14	3677	C
2622	K 1	2643	E 8	2657	B12	2666	A 5	2693	B17	3622	J18	3629	J18	3636	H 1	3644	D 6	3654	B 9	3661	A 8	3670	A 5	3677	C1
2622	K19	2643	E12	2658	A 6	2666	A15	3612	I 3	3623	J 3	3630	J 4	3636	H19	3644	D14	3654	B11	3661	A12	3670	A15	3678	C
2625	K 2	2650	B 9	2658	A14	2667	A 7	3612	I17	3623	J17	3630	J16	3637	I 1	3645	D 8	3655	B 6	3662	A 6	3671	A 7	3678	C1
2625	K18	2650	B11	2659	A 8	2667	A13	3613	F 5	3624	J 3	3631	G 9	3637	H19	3645	D12	3655	B14	3662	A14	3671	A13	3679	B
2630	C 7	2651	B 6	2659	A12	2668	A 7	3613	F15	3624	J17	3631	G11	3638	J18	3646	D 8	3656	B 6	3663	A 8	3672	G 1	3679	B1
2630	C13	2651	B14	2660	A 6	2668	A13	3616	C 8	3625	J 2	3632	G 8	3639	F 5	3646	D12	3656	B14	3663	A12	3672	G19	3680	C
2631	C 7	2653	A 8	2660	A14	2669	B14	3616	C12	3625	J18	3632	G12	3640	H 8	3647	D 6	3657	B 8	3664	A 6	3673	H 2	3680	C1
2631	C13	2653	A12	2661	A 9	2670	B 6	3617	C 7	3626	K 2	3633	E 8	3640	H12	3647	D14	3657	B12	3664	A14	3674	A 5	3681	G

1 2 3 4 5 6 7 8 9 10 11

D/A & CONTROL PANEL

6574
79M05CT
1 = ⊥
2 = −10
3 = −5

TO SERVO DECODER PCB
- +10
- +5
- ⊥
- −5
- −10
- I²O
- I²C
- MUTE
- DEEM
- DAAD
- CLAD
- WSAD

YELLOW MARKER

FROM A60. POWER SUPPLY T.A.C. PANEL (23-)
1 = +10
2 = +5
3 = ⊥
4 = −10
5 = ⊥

TO A61. T.A.C. PANEL (24-)
1 = LEFT
2 = ⊥
3 = RIGHT
4 = MUTE

TO µP FRONT PANEL (21-)
1 = DATA
2 = CLOCK

TO KEYBOARD PANEL (LEDS)

TO FRONT PANEL RCS

6540 PCF84C85

NJM 4560D 6535 6536
4 = −10
8 = +10

TDA1543 6563
4 = ⊥
5 = +5

BA 6109 6560
1 = ⊥
4 = +5
7 = +10
8 = +10

BA 6109 6561
1 = ⊥
4 = +5
7 = +10
8 = +10

PCF 84C85 6540
20 = ⊥
40 = +5

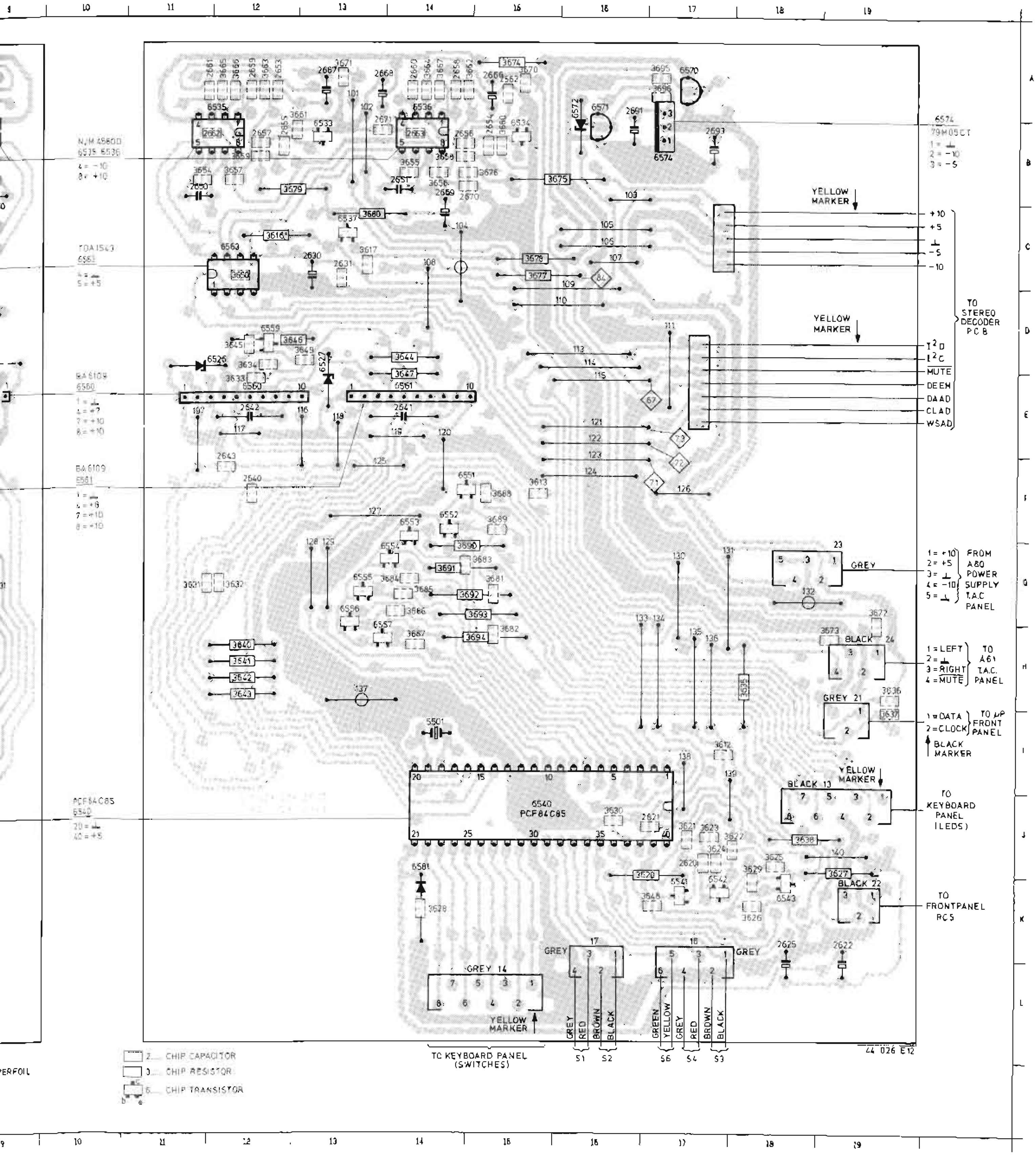
BLACK 53
BROWN 54
RED
GREY
YELLOW
GREEN 56
BLACK 52
BROWN
RED
GREY 51

TO KEYBOARD PANEL (SWITCHES)

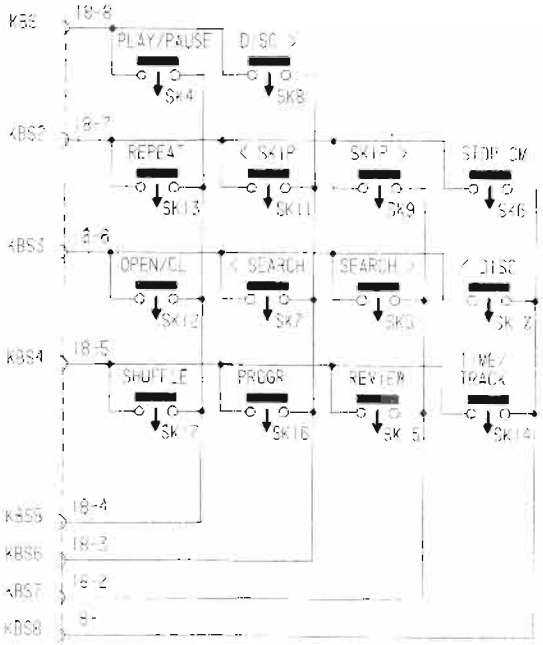
CONNECTION WIRE SOLDERED ON COPPERFOIL

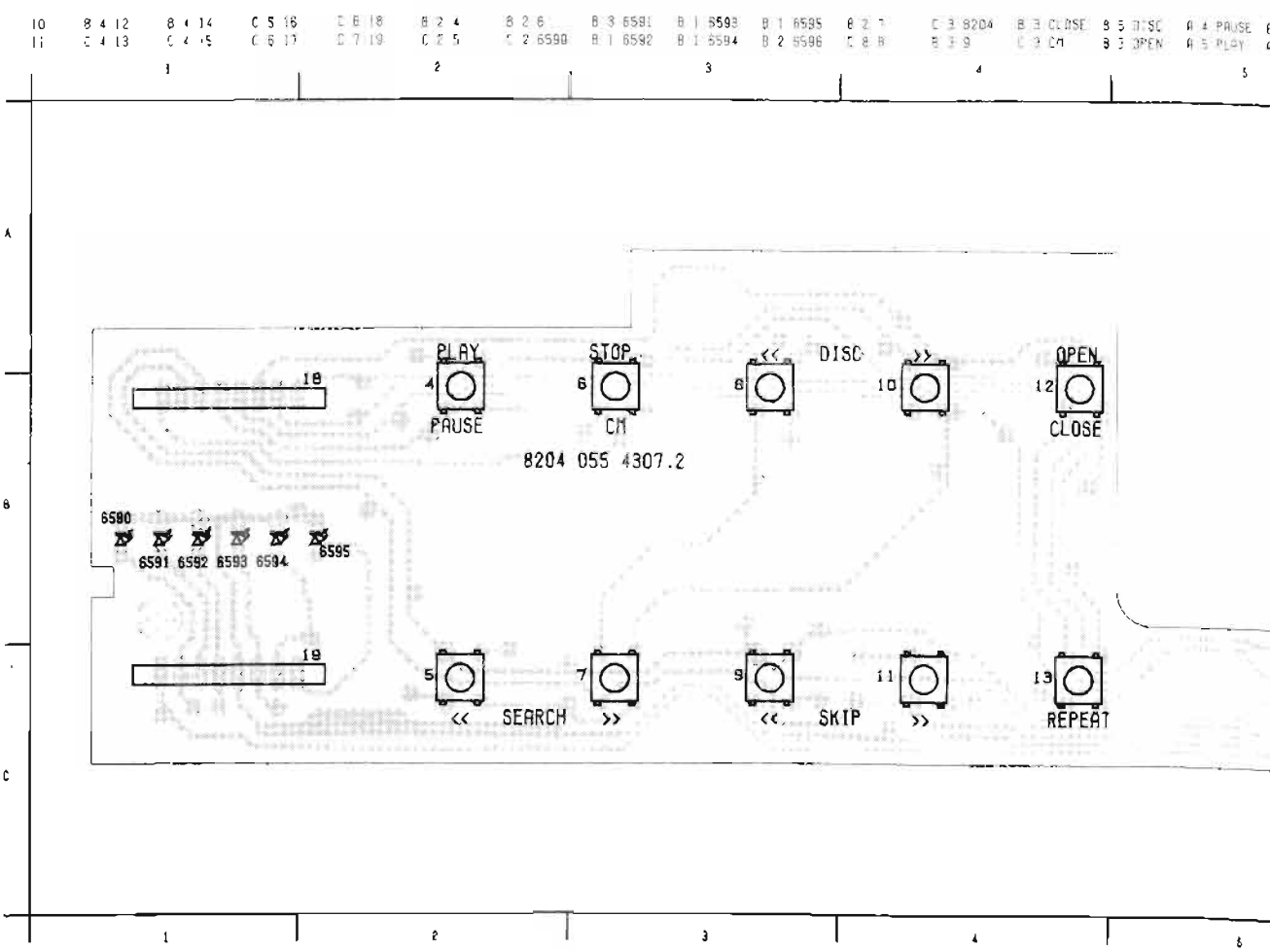
25 25

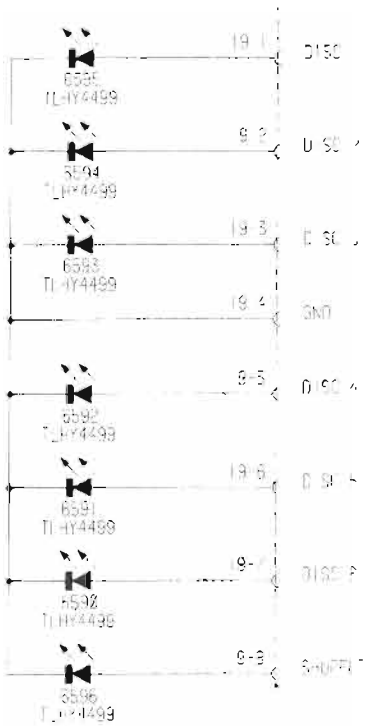
B 6	3665	A 9	3674	A15	3681	G15	3689	F15	3696	A17	6536	A 6	6552	F 6	6560	E 8	6581	J14
B14	3665	A12	3675	B 5	3682	H 5	3690	G 6	5501	I 6	6536	A14	6552	F14	6560	E12		
B 8	3666	A 8	3675	B15	3682	G15	3690	G14	5501	I14	6537	C 7	6553	F 6	6561	E 6		
B12	3666	A12	3676	B 5	3683	G 5	3691	G 6	6518	J 6	6537	C13	6553	F14	6561	E14		
B 5	3667	A 6	3676	B15	3683	G15	3691	G14	6526	D 9	6540	J 5	6554	G 7	6563	C 8		
B15	3667	A14	3677	C 5	3684	G14	3692	G 6	6526	D12	6540	J15	6554	F14	6563	C12		
A 8	3670	A 5	3677	C15	3685	G 6	3692	G14	6527	D 7	6541	K 3	6555	G 7	6570	A 3		
A12	3670	A15	3678	C 5	3685	G14	3693	G 6	6527	D13	6541	J17	6555	G13	6570	A17		
A 6	3671	A 7	3678	C15	3686	G 6	3693	G15	6533	A 7	6542	K 3	6556	G 7	6571	A 4		
A14	3671	A13	3679	B 8	3686	G14	3694	H 6	6533	A13	6542	J17	6556	G13	6571	A16		
A 8	3672	G 1	3679	B12	3687	H 6	3694	H15	6534	A 5	6543	K 2	6557	G 7	6572	A 4		
A12	3672	G19	3680	C 7	3687	H14	3695	A 3	6534	A15	6543	K18	6557	G13	6572	A16		
A 6	3673	H 2	3680	C13	3688	F 5	3695	A17	6535	A 9	6551	F 6	6559	D 8	6574	B 3		
A14	3674	A 5	3681	G 5	3688	F15	3696	A 3	6535	A11	6551	F14	6559	D12	6574	B17		



PRS 04164


KBS3
18-8
PLAY/PAUSE
DISC >
SK4
SK8
KBS2
REPEAT
< SKIP
SKIP >
STOP CM
SK13
SK11
SK9
SK6
KBS3
OPEN/CL
< SEARCH
SEARCH >
< DISC
SK12
SK7
SK5
SK 2
KBS4
18-5
SHUFFLE
PROGR
REVIEW
TIME/
TRACK
SK 1
SK16
SK 3
SK14
KBS5
18-4
KBS6
18-3
KBS7
18-2
KBS8


PLAY
PAUSE
STOP
CM
<<
DISC
>>
OPEN
CLOSE
8204 055 4307.2
6590
6591
6592
6593
6594
6595
<<
SEARCH
>>
<<
SKIP
>>


6595
TLHY4499
6594
TLHY4499
6593
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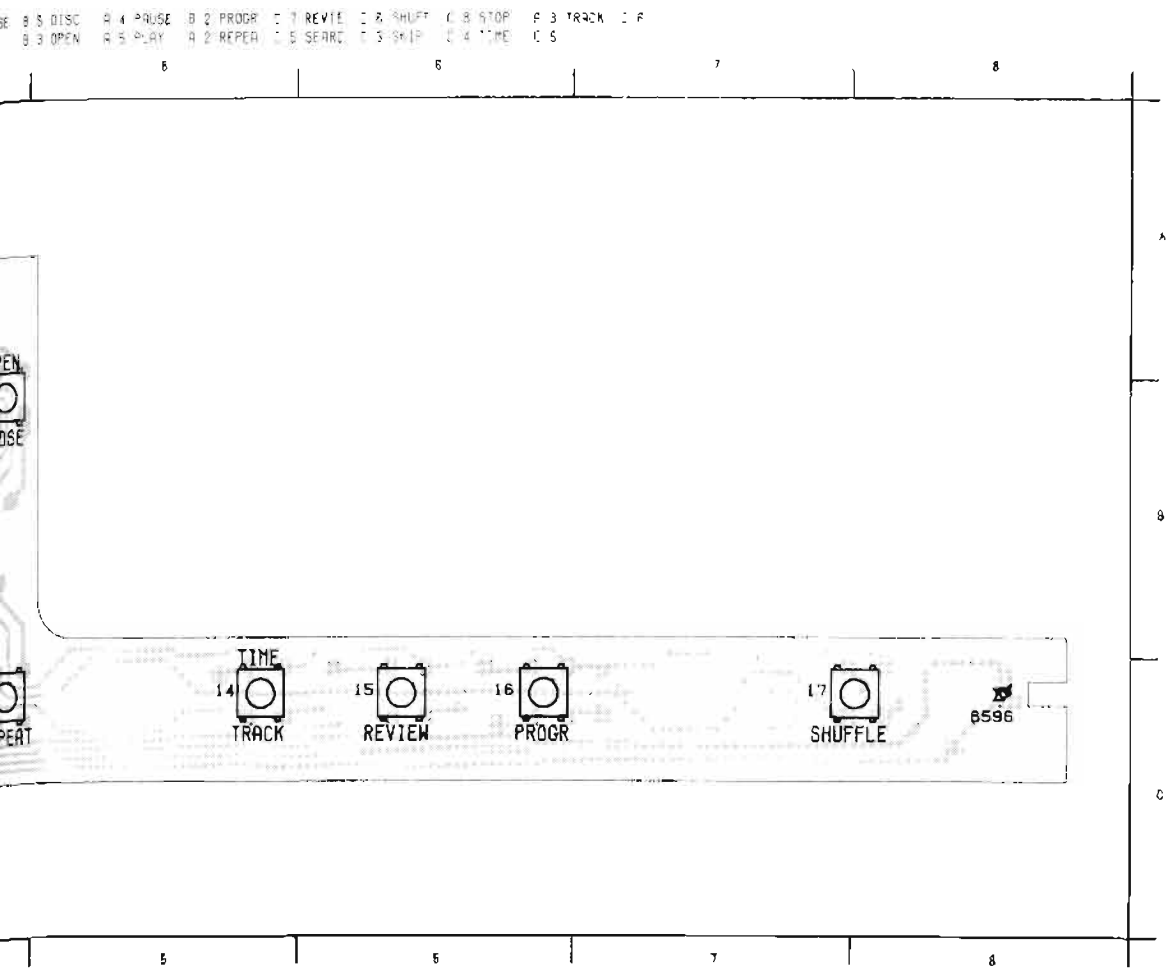
6596
TLHY4499
DISC
GND
44 071 A11


TIME
14
TRACK
15
REVIEW
16
PROGR
17
SHUFFLE
6596

C

2530	4822 121 51321	CAP. FOIL 8.2MF 1% 63V
2531	4822 121 51321	CAP. FOIL 8.2MF 1% 63V

R

3503	4822 111 30499	4E7
3504	4822 111 30499	4E7
3520	4822 101 10685	TRIMMER 4K7
3522	4822 111 30515	18E
3523	4822 111 30511	12E
3544	4822 111 30483	1R
3545	4822 111 30483	1R
3556	4822 111 30483	1R
3557	4822 111 30483	1R
3569	4822 100 20522	POTM. 22K
3570	4822 111 30499	4E7
3571	4822 111 30499	4E7
3577	4822 111 30483	1R
3583	4822 111 30483	1R
3609	4822 111 30499	4E7
3616	4822 111 30497	3E9
3619	4822 111 30483	1R
3627	4822 111 30483	1R
3635	4822 111 30499	4E7
3644	4822 111 30483	1R
3646	4822 111 30544	220E
3647	4822 111 30553	470E
3656	4822 116 80746	20K
3657	4822 116 80746	20K
3674	4822 111 30535	100E
3675	4822 111 30535	100E

S

1501	4822 157 51235	COIL
5500	4822 242 71378	CRYSTAL
5501	4822 242 71378	CRYSTAL
5502	4822 242 71644	CRYSTAL

D

4822 130 31983	BAT85
4822 130 30879	BA314
4822 130 32831	HZ3B2
4822 130 32986	HZ5B1
4822 130 32697	HZ6A3
4822 130 33523	HZ7A3
4822 130 32862	HZ7C2
4822 130 80851	LED YELLOW TLHY4499
4822 130 30621	1N4148

TS

4822 130 40988	BC328-25
4822 130 44121	BC338
4822 130 40958	BC338-25
5322 130 41982	BC848B
5322 130 41983	BC858B
4822 130 42131	BF550

IC

4822 209 82059	BA6109
4822 209 11079	MC79M05CT
4822 209 83274	NJM4560D
4822 209 73364	PCF84C41P/021
4822 209 73365	PCF84C85P/003
4822 209 71001	SAA7210P/04
4822 209 72587	TCA0372DP2
4822 209 73366	TDA1543
4822 209 73234	TDA8808T/C3
4822 209 73235	TDA8809T/C2
5322 209 82903	UPD41416C-20

© Chi

1 pF
1,2 pF
1,5 pF
1,8 pF
2,2 pF
3,3 pF
3,9 pF
4,7 pF
5,6 pF
6,8 pF
8,2 pF
10 pF
12 pF
15 pF
18 pF
22 pF
27 pF
33 pF
39 pF
47 pF
56 pF
68 pF
82 pF
100 pF
120 pF
150 pF
180 pF
220 pF
270 pF
330 pF
390 pF
470 pF
560 pF
680 pF
820 pF
1 nF
1,2 nF
1,5 nF
1,8 nF
2,2 nF
2,7 nF
3,3 nF
3,9 nF
4,7 nF
5,6 nF
6,8 nF
10 nF
12 nF
15 nF
18 nF
22 nF
27 nF
33 nF
47 nF
56 nF
100 nF
180 nF
220 nF

© Chip

0 E
1 E
1,1 E
1,2 E
1,3 E
1,5 E
1,6 E
1,8 E
2 E
2,2 E
2,4 E
2,7 E
3 E
3,3 E
3,6 E
3,9 E
4,3 E

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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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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