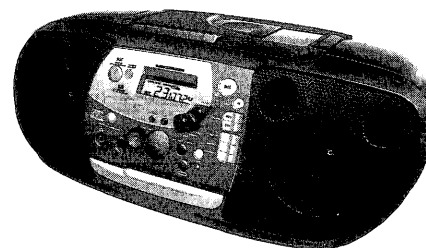


# Service Service Service

←  
Volta ao Menu



# Service Manual

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## LOCALIZAÇÃO DAS PLACAS DE CIRCUITOS IMPRESSOS

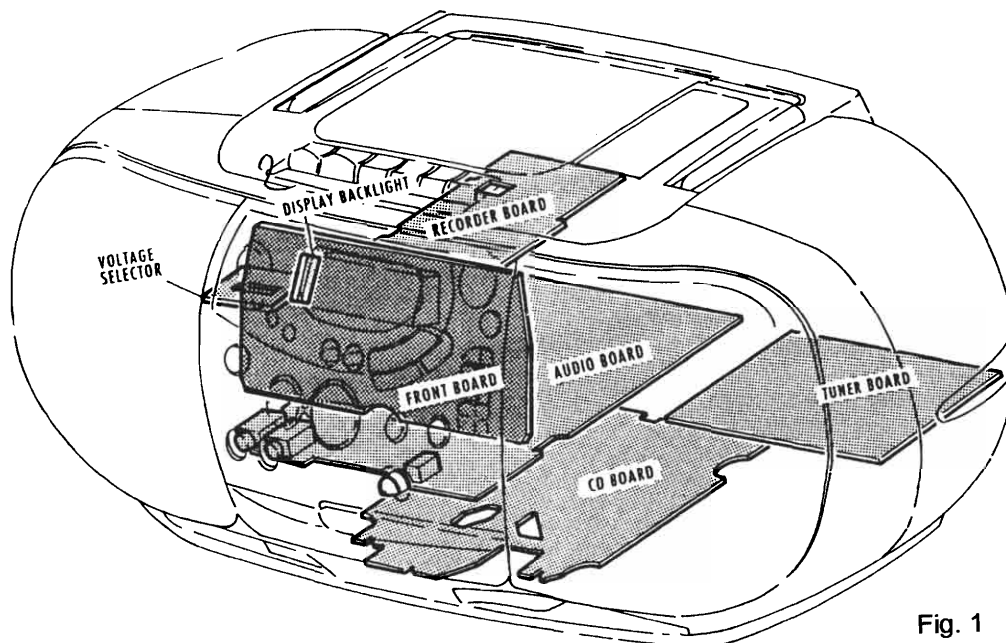


Fig. 1

### Geral:

Voltagem de entrada: 110V-220V / 60 Hz  
 Consumo de energia:  $\leq 35$  W à potência máxima de saída  
 $\leq 5$  W em "stand by"  
 Pilhas: 9 V (6 x R20)  
 Período de vida útil das pilhas: tipicamente 12 horas

### Amplificador:

Proteção do estágio de potência: temperatura e curto-circuito

#### 1. AZ1407

#### 2. AZ1508

Potência de saída, rede: 1. 2x1,6 Wrms-1dB a 4 Ohm D=10% 2. 2x3,2 Wrms-1dB a 8 Ohm D=10% bateria:  
 1. 2x1,6Wrms-1dB a 4 Ohm D=10% 2. 2x3,2 Wrms-1dB a 8 Ohm D=10%

Fones de ouvido: Plugue estéreo de 3,5 mm,  $\geq 20$ mW a 32Ohm (=0,8V a 32 Ohm) D=10%

Resposta de frequência: 30 Hz a 16 kHz (típica no volume ajustado em -20dB, nível de sinal do modo cd 0dB use SBC429)

### Controle Digital do Som DSC

	100 Hz	10 kHz
Normal (plano):	-2dB $\pm$ 3dB	0dB $\pm$ 3dB
Pop:	+7dB $\pm$ 3dB	8dB $\pm$ 3dB
Jazz:	+3dB $\pm$ 3dB	+5dB $\pm$ 3dB
DBB:	+7dB $\pm$ 3dB	+4dB $\pm$ 3dB

CD: A ser medido com a tomada do fone com carga de 100 k Ohm.

Resposta de frequência: 30 a 16.000 Hz -3dB  
 Relação sinal/ruído:  $\geq 80$ dB  
 Distorção:  $\leq 0,3\%$  a 1 kHz  
 Diferença de canais:  $\leq 3$ dB a 1kHz  
 Cruzamento de canais: 35dB no máximo  
 De-ênfase: 0 ou 15/50 $\mu$ s, comutada automaticamente  
 porsub-código no disco  
 Laser  
 Potência de saída: 500 $\mu$ W  
 Comprimento de ondas: 780  $\pm$  20 nm

**Sintonizador:**

	<b>FM</b>	<b>MW</b>	<b>LW<sup>1)</sup></b>
<b>Faixa de sintonia:</b>	87,5 a 108 MHz (65,81 a 74/87,5 a 108 MHz p/14) (76 a 90 MHz + Canal 1 95,75 MHz, Canal 2 95,75 MHz, Canal 3 107,75 MHz p/06)	531 a 1602 kHz (530 a 1700 kHz p/01/17)	153 a 279 kHz
<b>FI</b>	10,7 MHz $\pm$ 30 kHz	450 kHz $\pm$ 1 kHz	450 kHz $\pm$ kHz
<b>Sensibilidade em mono:</b> 26dB S/N, m=30% Ponto limitador de 3 dB	$\leq 5\mu\text{V}$ (2 $\mu\text{V}$ tipic.) $\leq 5\mu\text{V}$ (2 $\mu\text{V}$ tipicamente)	$\leq 4\text{mV/m}$ (3,5mV/m tipic.)	$\leq 6\text{mV/m}$ ,5mV/m tipic.)
<b>Grade de frequência</b>	50 kHz (30/50 kHz p/14) (100 kHz p/06/17) (50/100 kHz*p/01/11) * pode ser selecionado através de inicialização de software	9 kHz  (10 kHz p/17) (9/10 kHz* p/01/11)	3 kHz
<b>Distorção</b>	$\leq 3\%$ ( $\leq 1\%$ tipicamente) RF=1mV $\Delta f = 75$ kHz	$\leq 5\%$ (3% tipicamente) RF=50mV/m m=80%	$\leq 5\%$ (3% tipicamente) RF=50mV/m m=80%
<b>Taxa de rejeição de imagem</b>	$\geq 25\text{dB}$ (40dB tipicamente)	$\geq 28\text{dB}$	$\geq 30\text{dB}$
<b>Separação de canais a 1 kHz</b>	$\geq 22$ dB (27 dB tipicamente)		<sup>1)</sup> não em todas as versões

**Gravador:** A ser medido com a tomada do fone com carga de 100 kOhm.

<b>Velocidade da fita:</b>	4,76cm/seg $\pm$ 3%
<b>Wow e Flutter:</b>	$\leq 0,5\%$ ponderado
<b>Velocidade de enrolamento:</b>	110s para cassete C60
<b>Sistema de apagar/bias:</b>	cabeçote de apagar de ímã permanente/AC 73 $\pm$ 1,5 kHz
<b>Distorção a 250nWb/m:</b>	$\leq 7\%$
<b>Relação entre sinal/ruído (FF ponderado):</b>	$\geq 40$ dB
<b>(A ponderado):</b>	$\geq 43$ dB <b>Obs: o conjunto não está preparado para tocar ou gravar fitas de cromo IEC II !</b>
<b>Diferença de canais a PB:</b>	$\leq 3$ dB
<b>Diferença geral de canais:</b>	$\leq 5$ dB
<b>Separação de canais:</b>	$\geq 15$ dB a 1 kHz
<b>Separação de pistas:</b>	$\geq 55$ dB a 1 kHz
<b>Resposta de frequência IECI</b>	
PB:	125Hz a 8000 Hz (dentro de 8dB)
Total:	250Hz a 6300Hz (dentro de 8dB)



## INSTRUÇÕES DE DESMONTAGEM

### Desmontagem da tampa cassette

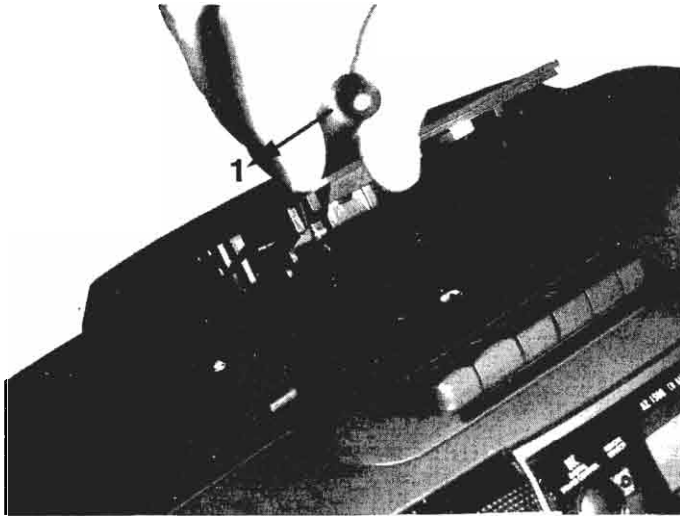


Figura 2

- Abra a tampa cassette
- Solte a trava do lado esquerdo pressionando-a para dentro com uma chave de fenda como mostrado na Fig. 1.
- Puxe a tampa para cima pelo lado esquerdo como mostrado na fig. 2
- A Trava do lado direito será agora solta automaticamente.

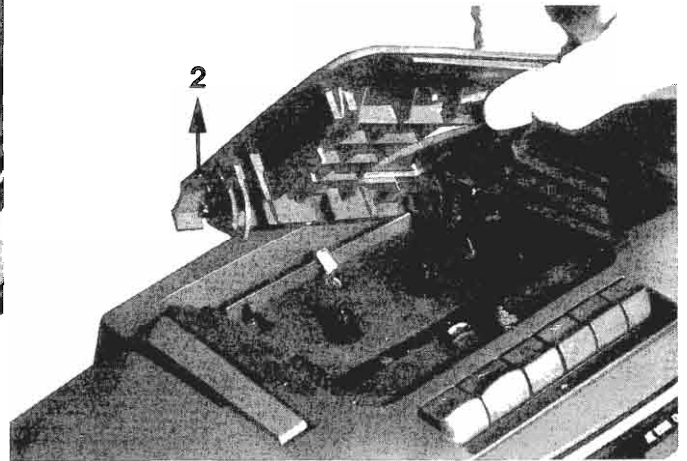


Figura 3

### Desmontando a alça de carregar

- Gire a alça primeiro para cima
- Pressione as nervuras de prender um pouco para baixo e puxe a alça para trás até que as nervuras de prender sejam mantidas a uma posição levemente inferior.
- Gire agora a alça totalmente para baixo, as nervuras de prender serão agora automaticamente viradas para baixo e soltarão a alça.
- Puxe a alça para trás até que esteja livre.

Para montar a alça, coloque-a simplesmente na posição horizontal no gabinete até encaixar.

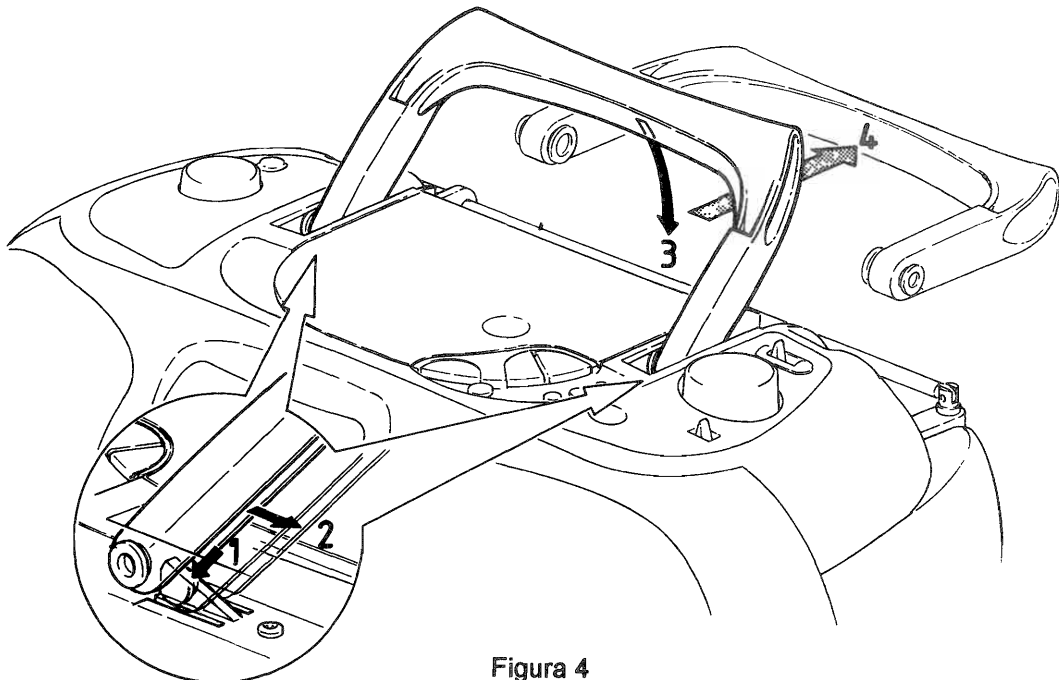


Figura 4

## Desmontagem do gabinete superior

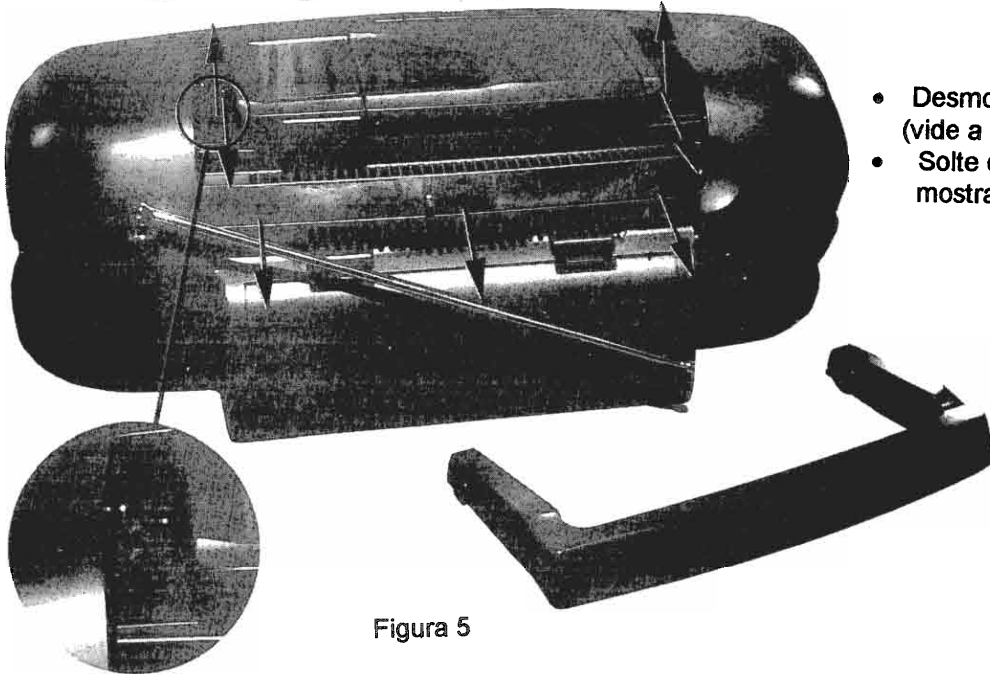


Figura 5

- Desmonte primeiro a alça (vide a página anterior)
- Solte os 7 parafusos como mostrado na Fig. 5

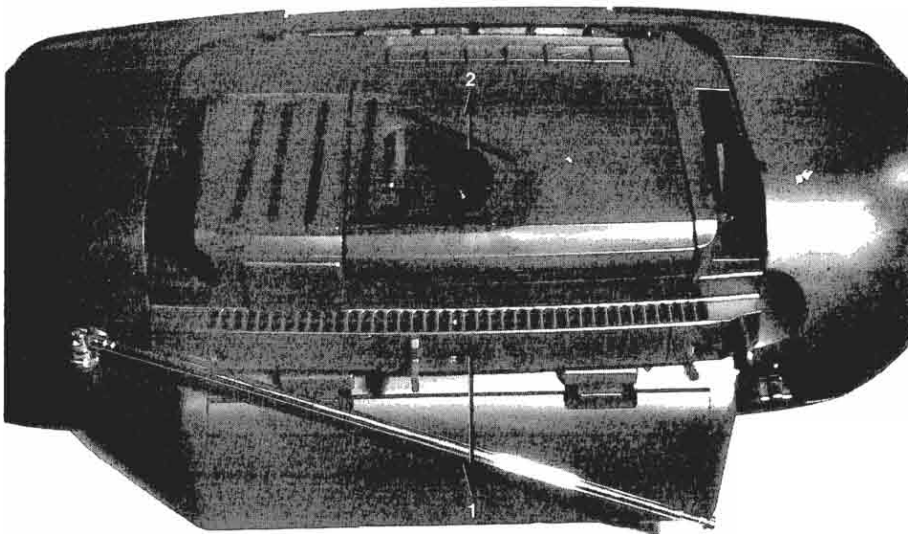


Figura 6

- Mova o gabinete superior para trás para liberar os encaixes do lado frontal
- Puxe o gabinete superior para cima

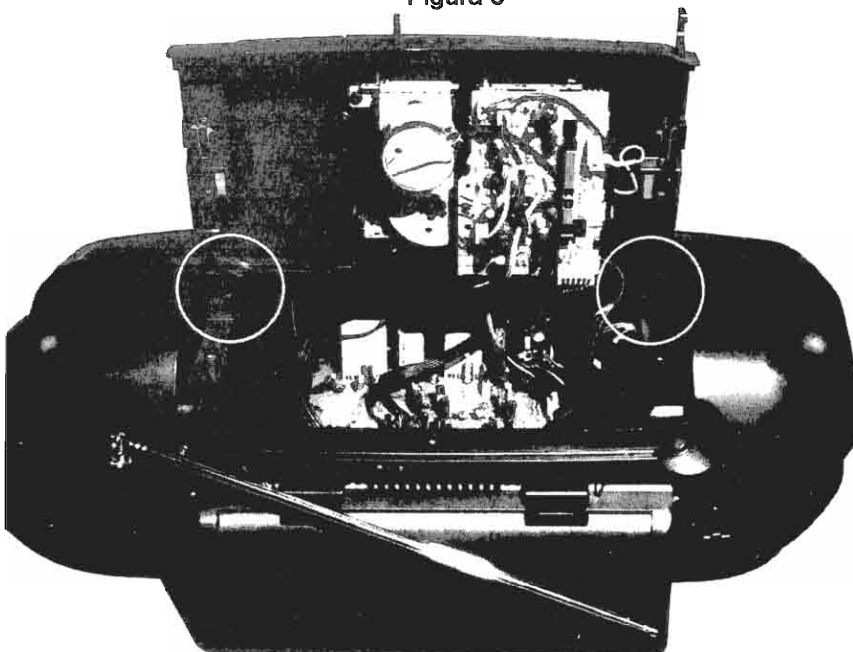


Figura 7

- Coloque o gabinete superior na posição de descanso como mostrado na Fig. 7.

### Separação dos gabinetes dianteiro e traseiro

- Desmonte primeiro a alça e o gabinete superior (vide as páginas anteriores)
- Remova a tampa das pilhas
- Solte os 6 parafusos como mostrado na Fig. 8

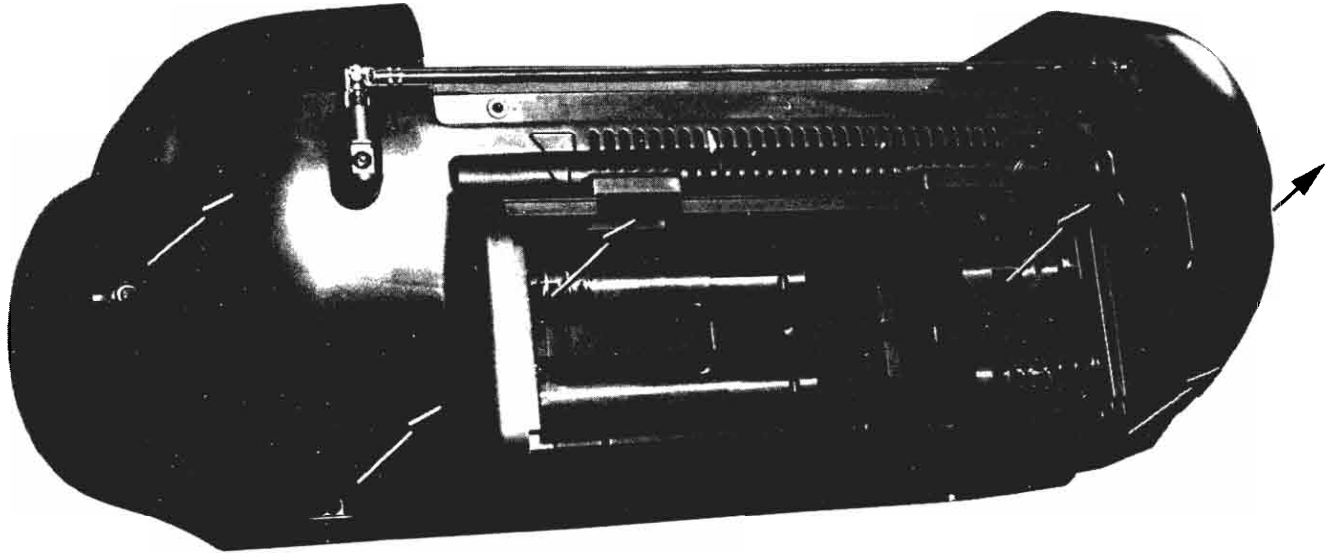


Figura 8

- Separe as partes do gabinete como mostrado na Fig. 9



Figura 9

ESD



SEGURANÇA



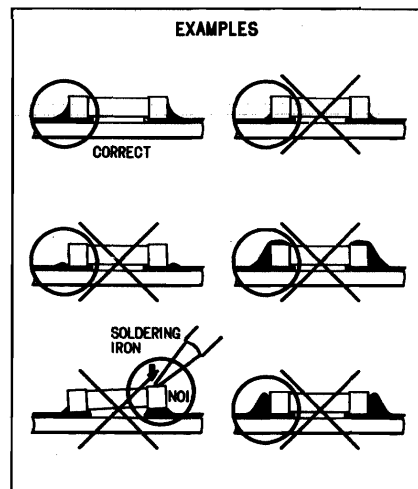
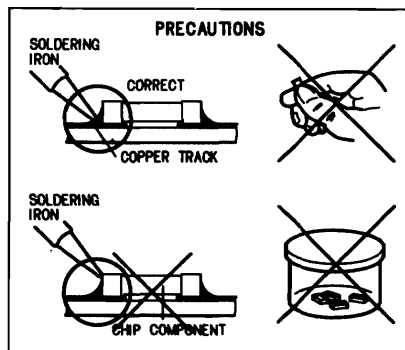
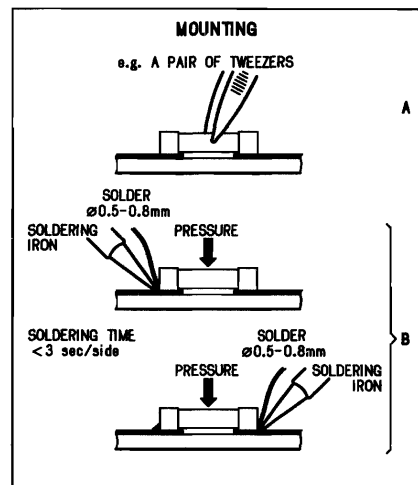
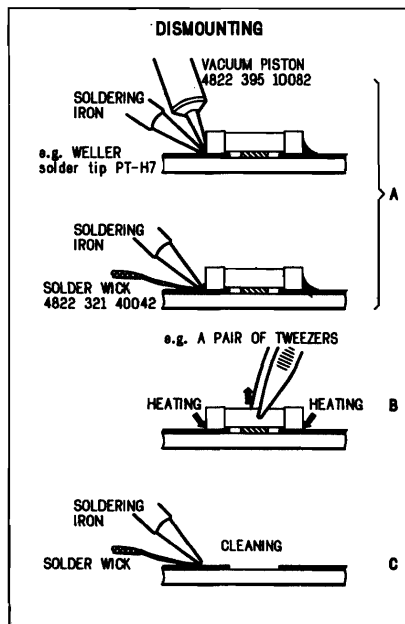
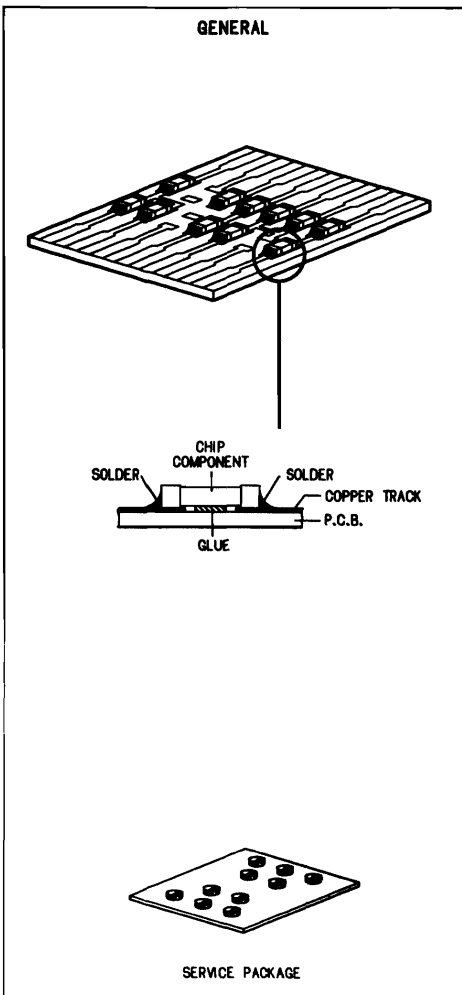
**(BR) ADVERTÊNCIA**

Todos os circuitos integrados e muitos outros semicondutores são susceptíveis a descargas eletrônicas (ESD). O manuseio descuidado durante reparos pode reduzir drasticamente o período de vida útil. Ao fazer reparos, certifique-se de que você esteja ligado ao mesmo potencial da massa do aparelho através de uma pulseira com resistência. Mantenha os componentes e ferramentas também neste potencial.

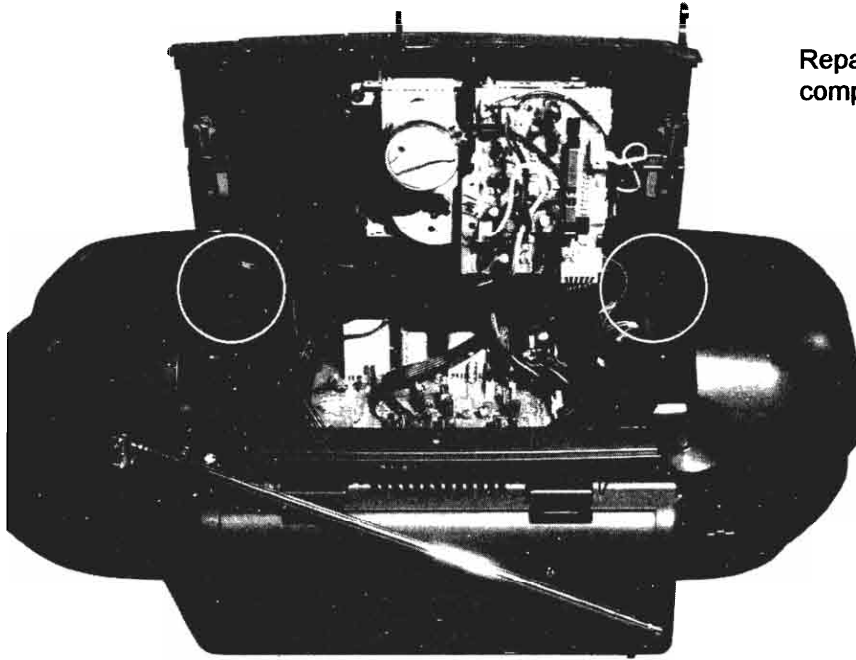
Os regulamentos de segurança exigem que o aparelho seja restaurado para a sua condição original e que sejam usadas peças idênticas às especificadas. Componentes de segurança são marcados com o símbolo \_

**PERIGO**

Radiação invisível de laser quando aberto. EVITE EXPOSIÇÃO AO RAIOS. Após o serviço e antes de sua devolução ao cliente, faça um teste de medição de vazamento de corrente de todas as peças metálicas expostas à terra, para assegurar que não exista risco de choque. A corrente de vazamento não poderá exceder 0,5 mA





**INFORMAÇÕES DE SERVIÇO**

Reparos na PLACA DO GRAVADOR e lado de componentes da PLACA DE ÁUDIO

Reparos no lado de cobre da PLACA DE ÁUDIO



Figura 10

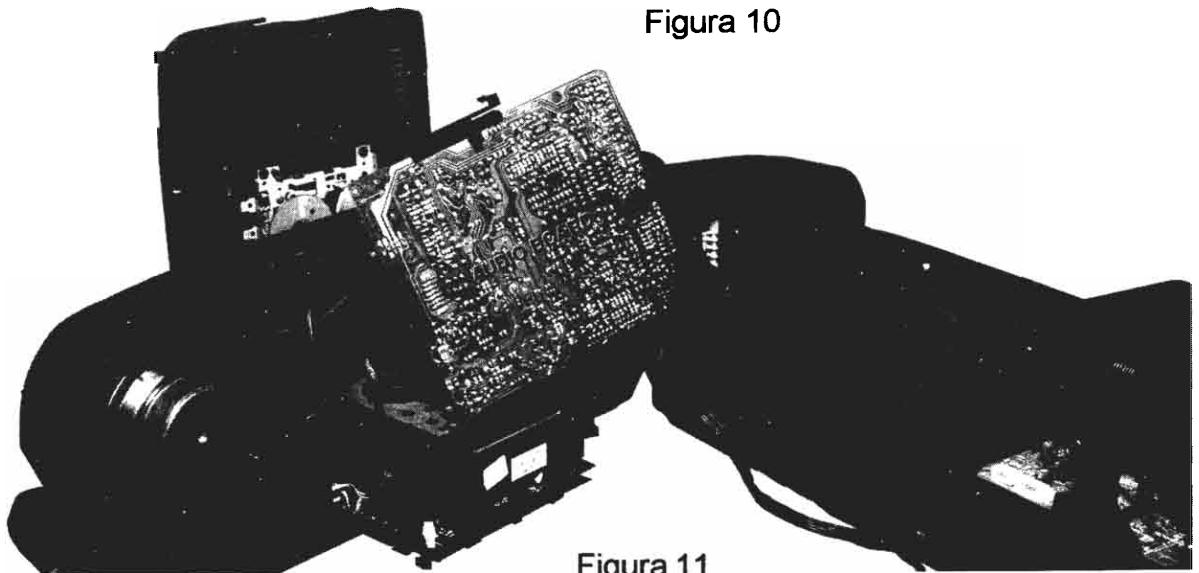
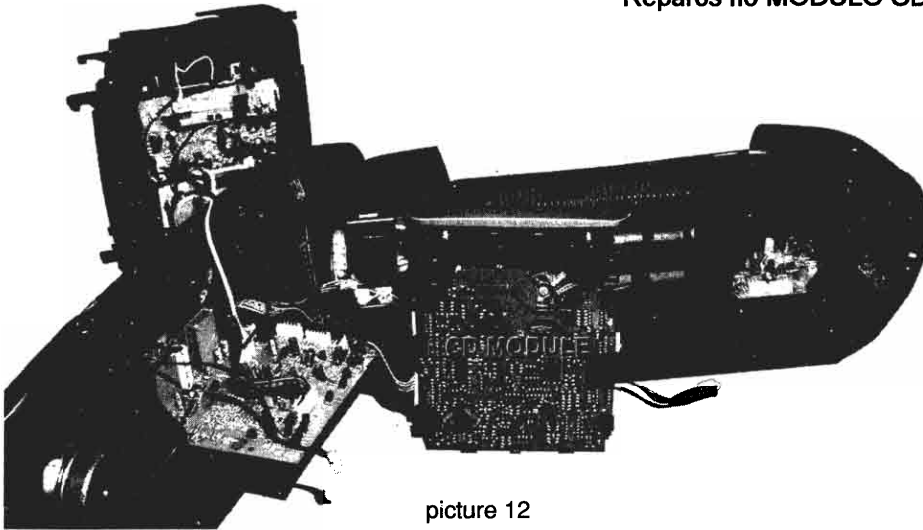


Figura 11

Reparos no MÓDULO CD



picture 12

Reparos no TUNER BOARD

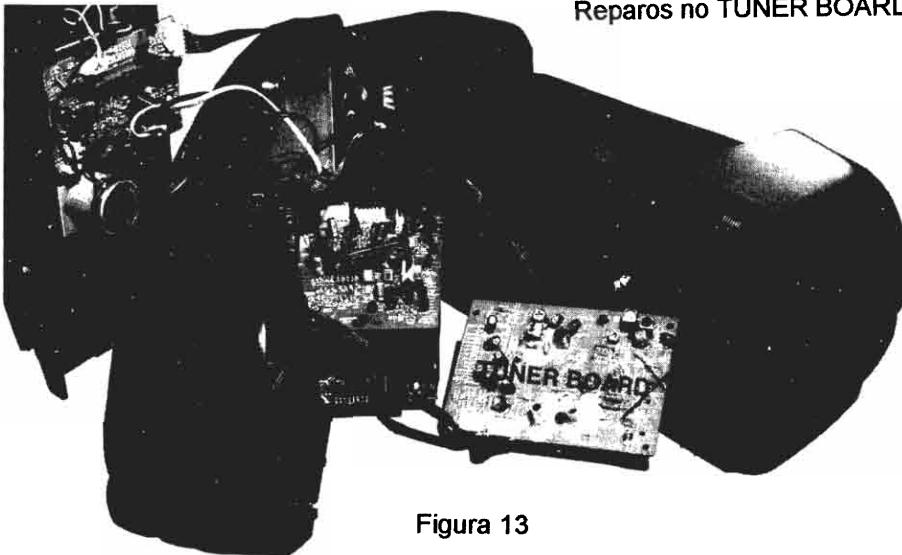


Figura 13

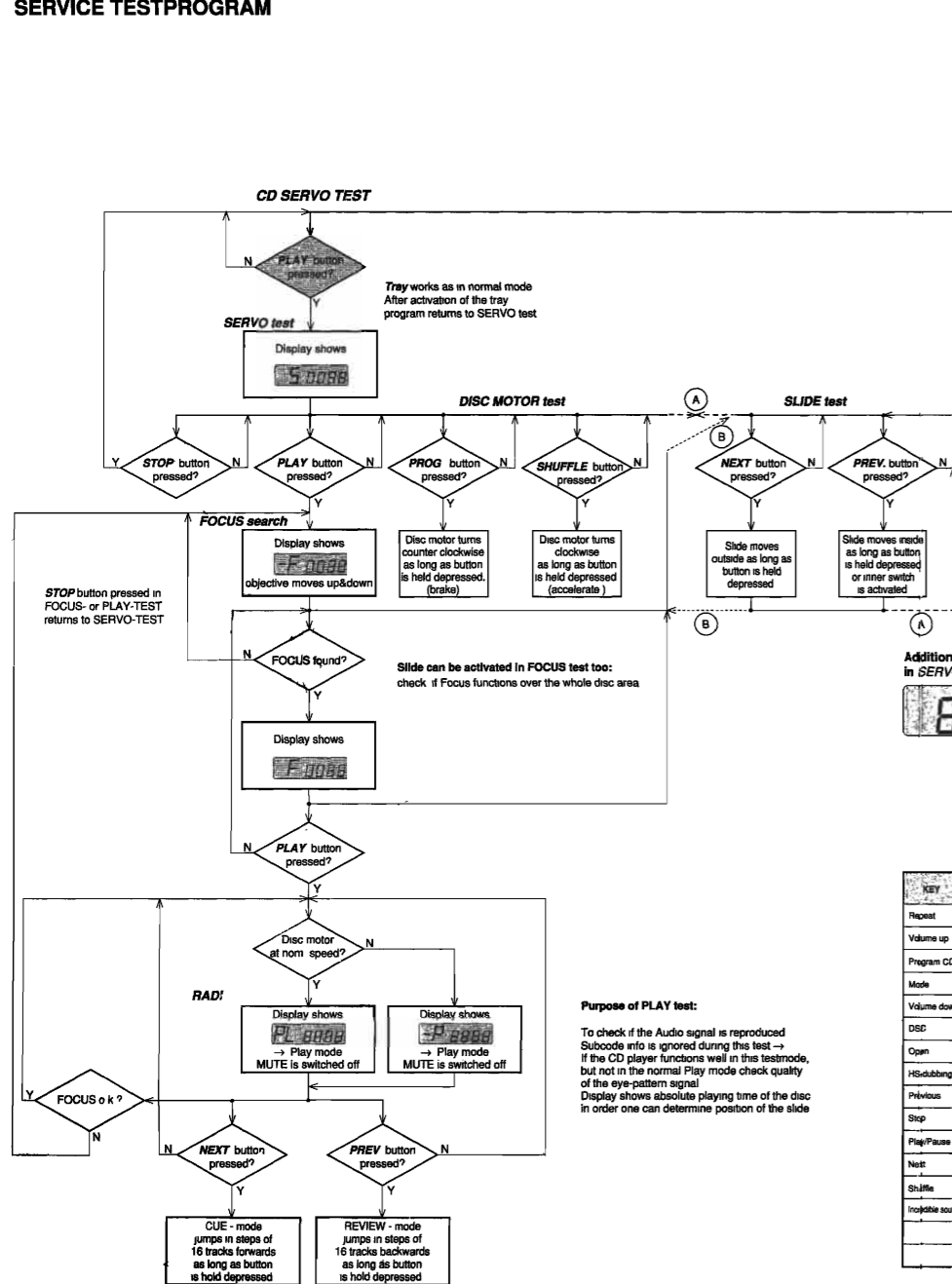
Reparos no FRONT BOARD



Figura 12



**SERVICE TESTPROGRAM**



Additional Information on the display in SERVO and FOCUS test

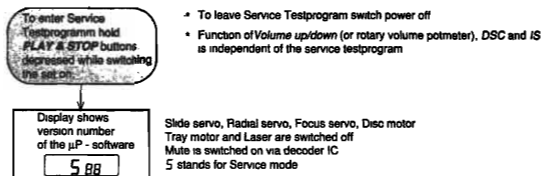


Indicate key numbers acc table 1  
 Indicates status of inner switch: □ switch closed (slide inside), / switch open  
 Indicates status of tray switch: □ switch closed (tray closed or open), / switch open (tray between and positions)

**KEY CODES**

KEY	KEY Remote Control	KEY CODE	KEY	KEY Remote Control	KEY CODE
Repeat		00			20
Volume up	Volume up	01			21
Program CD		03			22
Mode		04			23
Volume down	Volume down	05			24
DSE		06			25
Open	Open	09			26
HScrubbing		10			27
Previous	Previous	11			28
Stop	Stop	12			29
Play/Pause	Play/Pause	13	Band		30
Next	Next	14	Program Tuner		31
Shuffle	Shuffle	15	Tuning down		32
Repeatable sound		17	Tuning up		33
Tuner		18	Presel down		34
CD		19	Presel up		35

table 1



**DISPLAY TEST**

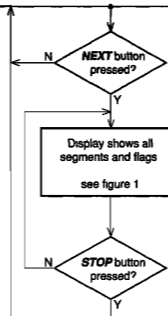
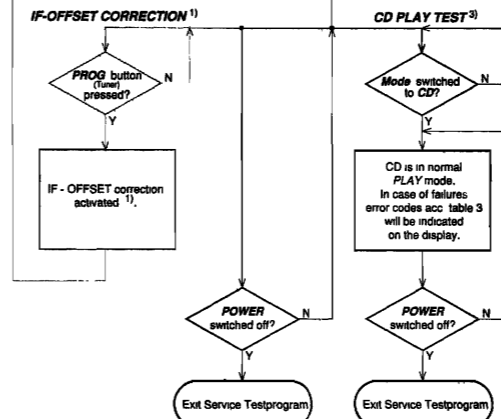
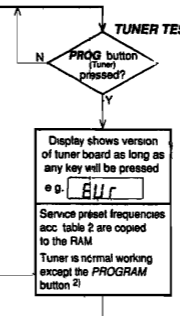


fig. 1

1) In sets with 30kHz grid on FM band it may occur that the tuned frequency is indicated wrong on the display because of tolerances of the discriminator filter. For that reason the testsoftware is prepared for an automatic IF-offset correction. Note: This test functions only with the East European tuner version /14/34. The test was executed on every set in the production line. In case the discriminator filter has to be exchanged the automatic IF-offset correction should also be executed after repair. To execute the automatic IF-offset correction: feed a strong 87.5MHz signal to the antenna; press the PROGRAM button. The µP starts now several times the search mode. If the transmitter was found at 87.5MHz the stop-frequency sent by the radio IC is compared with the nominal frequency. When the same difference is found twice the value will be stored as offset. The actual used offset is shown on the display (-3, -2, -1, 0, 1, 2, 3).

**SERVICE PLAY TESTS**



**SERVICE PRESET FREQUENCIES**

REGION	EUROPE FM/MW/LW	East EUROPE FM/MW/LW	USA FM/MW	OVERSEAS FM/MW	OVERSEAS FM/MW/SW	KOREA FM/MW-stereo	JAPAN FM/MW-stereo
PRESET	R00/05/20/25	/14/34	/17/37	4)Grid switchable 10 100kHz/9 50kHz /01/21	4)Grid switchable 10 100kHz/9 50kHz /11/31	/13/33	/06/26
1	87.5 MHz	65,81 MHz	87.5 MHz	87.5 MHz	87.5 MHz	87.5 MHz	76 MHz
2	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz	107.75 MHz (CH 3)
3	531 kHz	74 MHz	530 kHz	530/531 kHz	530/531 kHz	531 kHz	90 MHz
4	1602 kHz	87.5 MHz	1700 kHz	1700/1602 kHz	1700/1602 kHz	1602 kHz	95.75 MHz (CH 1)
5	558 kHz	531 kHz	560 kHz	560/558 kHz	560/558 kHz	558 kHz	101.75 MHz (CH 2)
6	1494 kHz	1602 kHz	1500 kHz	1500/1494 kHz	1500/1494 kHz	1494 kHz	531 kHz
7	153 kHz	558 kHz	98MHz	98/87,5MHz	98/3,9 MHz		1602 kHz
8	279 kHz	1494 kHz			87,5/12,1 MHz		558 kHz
9	198 kHz	153 kHz			87,5/4,2 MHz		1494 kHz
10	98MHz	279 kHz			87,5/11 MHz		80MHz
11	198 kHz			87,5/98MHz	87,5/98MHz	98MHz	

table 2

4) To toggle frequency grid press BAND button for more than 5s in normal tuner mode (not in service testmode).

Display will show either 9 Gr. id or 10 Gr. id for 2 s.

**CD ERROR codes**

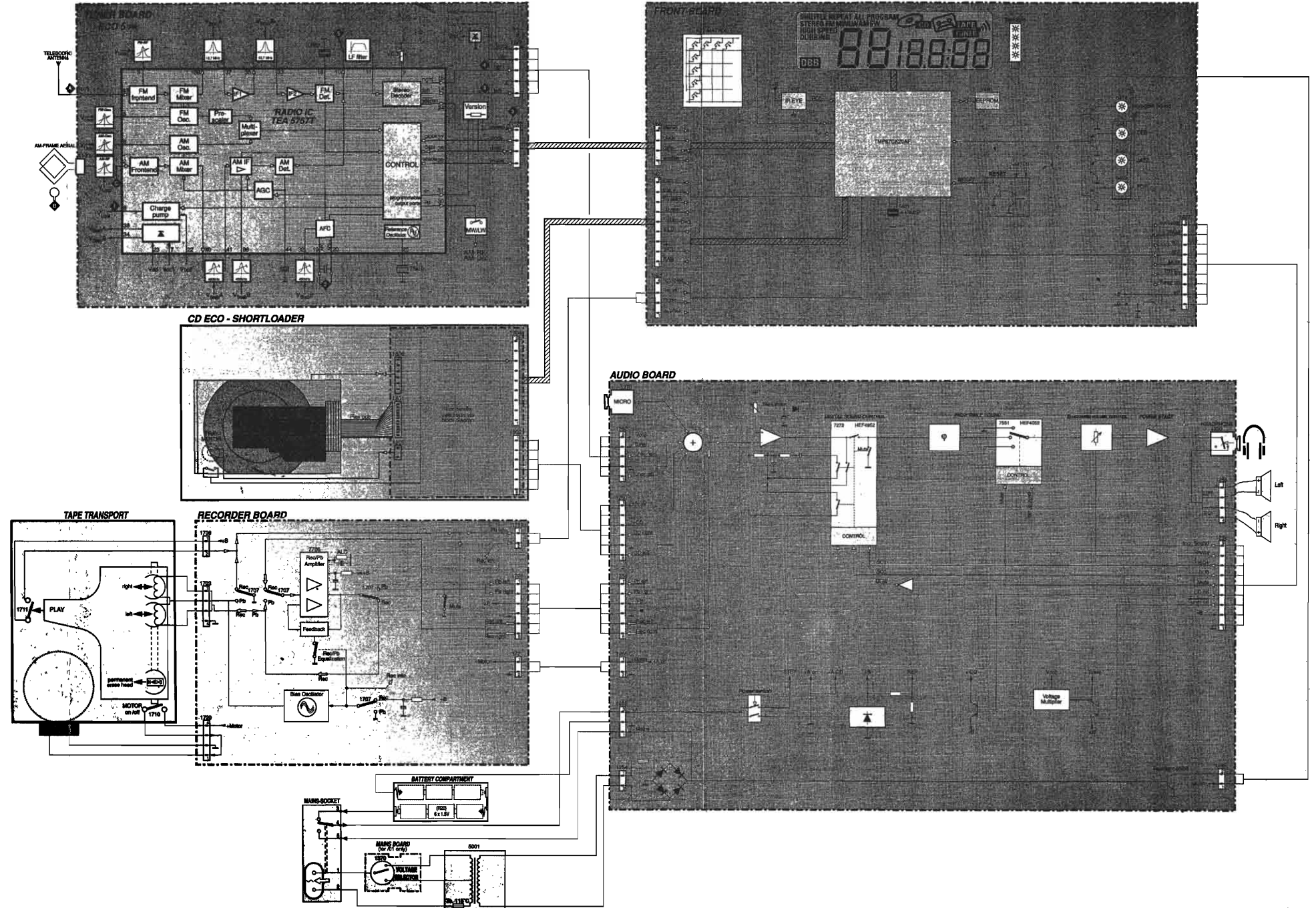
Error number	Error description	Error type
E 1002	Focus Error Triggered when the focus could not be found within a certain time when starting up the CD or when the focus is lost for a certain time during playing the CD.	W
E 1007	Subcode Error No subcode could have been read, even after retrying 10 times to restart the PLL and jumping 10 tracks. When this happens the servo is stopped and restarted (as if the user would have pressed STOP and then PLAY immediately) to recover.	W
E 1008	Out of lead-in during reading TOC Triggered when during reading the TOC the lead-in (track no. 0) is left. This can be caused by a misaligned inner-switch or by a disc with a mispositioned lead-in.	W
E 1010	Radial error Triggered when the radial servo is not on track for a certain time during playing the CD.	W
E 1011	Slide error Generated when the inner-switch did not open within a certain time when the pick up is moved from the inner position outside.	W
E 1012	Fatal slide error Generated when the inner-switch did not close within a certain time when the pick up is moved inside. Inner-switch or slide motor problems.	F
E 1013	Turntable motor error Generated when the CD did not reach 75% of speed during startup within a certain time. Disc motor problem.	F
E 1014	Too less offtracks. Triggered when the servo processor counts too less tracks in a defined time during JUMPS. This can be caused by a disturbed HF-signal (the tracks cannot be recognized exactly) or slide motor problems.	W
E 1020	PLL lock error When the PLL did not lock after 10 retries then this warning message is generated and the servo is stopped and restarted (as if the user would have pressed STOP and then PLAY immediately) to recover.	W

table 3

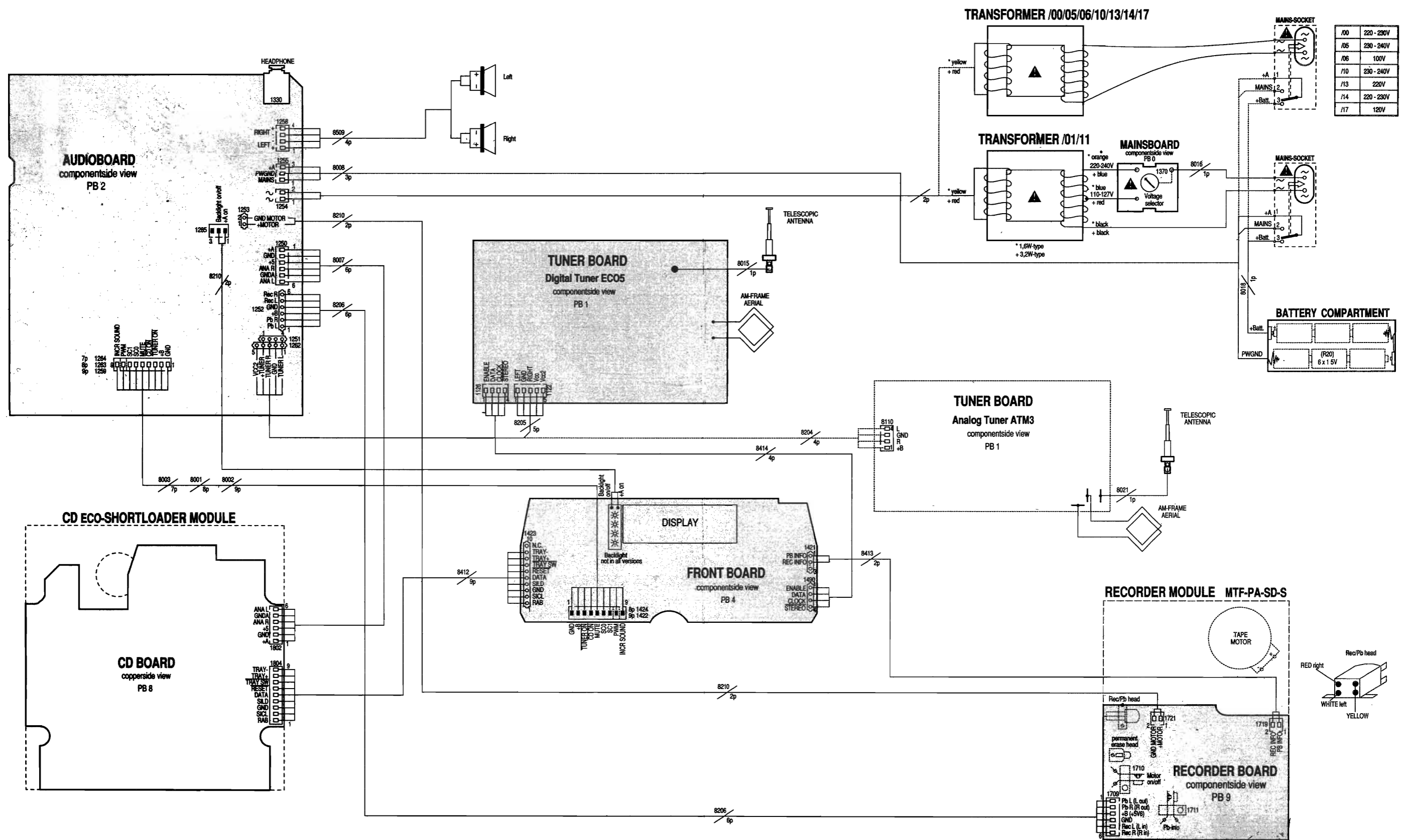
Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed. (If the set does not function after 10 retries Warning changes to Fatal Error)

F = Fatal Error → set stops operation, message remains on the display. (The set can only be operated again via a reset)

APPARATUS BLOCK DIAGRAM



WIRING DIAGRAM



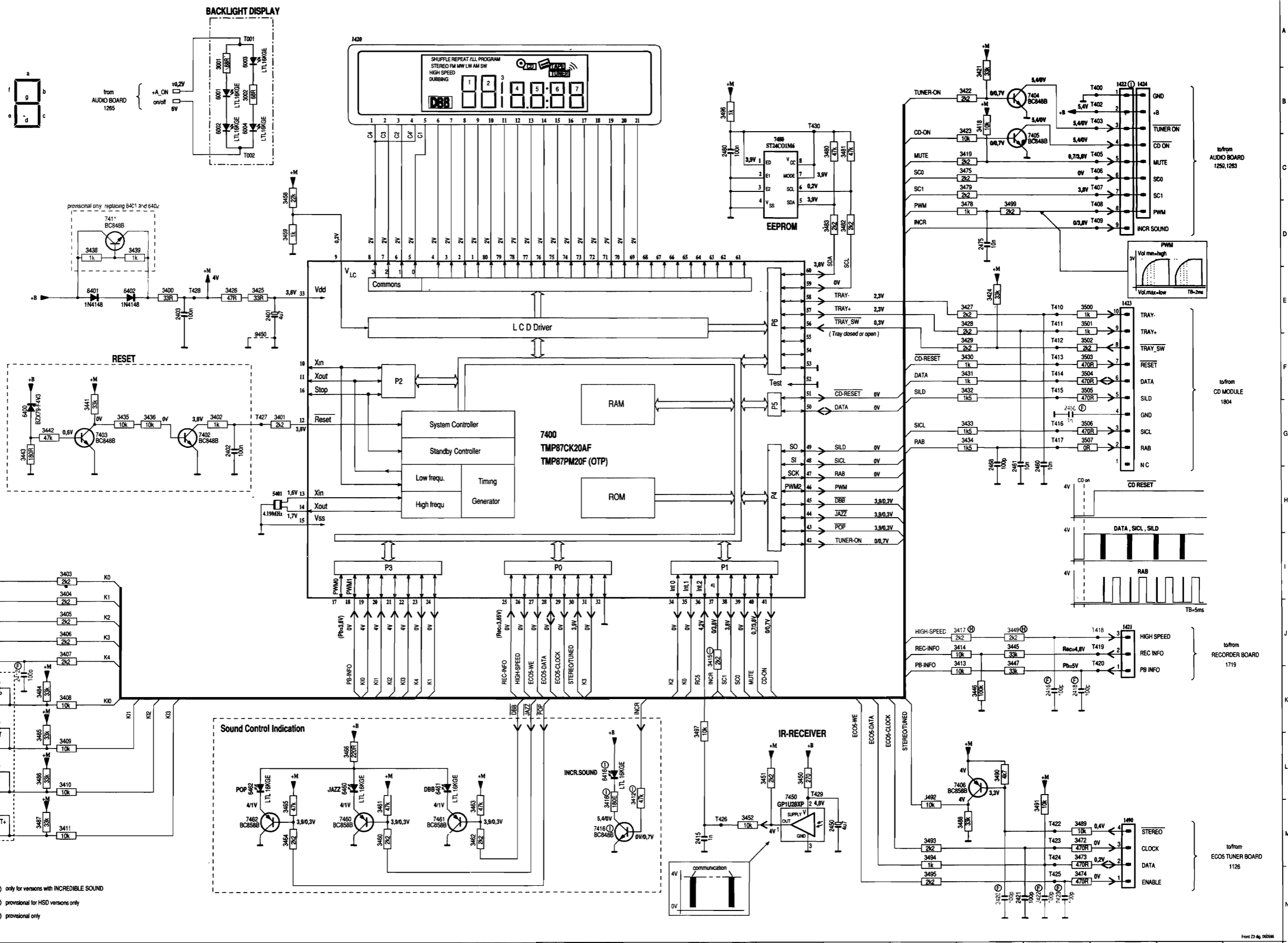
- JST connector 2.00mm pitch
- JST connector 2.50mm pitch
- DIPMATE (cable wave soldered)
- hand soldered

1400 K 1	1406 K 2	1412 L 3	1418 K 3	1424 B 20	2409 J 1	2416 K 19	2460 G 19	3400 E 6	3406 J 4	3412 L 13	3419 C 18	3426 E 7	3432 F 18	3439 D 5	3447 J 18	3459 D 7	3465 M 7	3478 D 18	3484 K 4	3490 L 18	3496 B 14	3503 F 19	6400 G 4	6462 L 7	7406 L 18	7412 M 7	7482 M 7
1401 K 1	1407 K 3	1413 M 1	1419 L 3	1426 B 20	2410 J 2	2417 N 8	2461 G 18	3401 G 7	3407 J 4	3413 J 18	3421 B 18	3427 E 18	3433 G 18	3441 G 4	3449 J 18	3459 D 9	3466 L 8	3479 C 18	3485 L 4	3491 M 19	3497 K 14	3504 F 19	6401 E 5	6463 L 7	7407 D 5	7413 D 5	7483 C 15
1402 K 2	1408 K 3	1414 L 1	1420 A 6	1427 B 20	2401 E 7	2411 J 3	2466 G 19	3402 G 6	3408 K 4	3415 J 14	3423 B 18	3429 E 18	3435 G 5	3443 G 4	3451 L 15	3461 M 9	3472 M 19	3480 C 18	3486 L 4	3492 L 17	3498 D 18	3505 F 19	6402 E 5	6464 L 7	7408 D 5	7414 D 5	7484 C 15
1403 K 3	1409 M 1	1415 M 2	1421 J 20	1428 B 20	2402 G 7	2412 K 3	2468 G 18	3403 G 6	3409 K 4	3416 J 12	3424 B 18	3430 F 18	3436 G 5	3444 J 18	3452 M 14	3462 M 10	3473 M 19	3481 C 18	3487 M 4	3493 M 17	3499 D 18	3506 F 19	6403 G 5	6465 L 7	7409 D 5	7415 D 5	7485 C 15
1404 K 1	1410 L 1	1416 M 3	1422 B 20	1429 B 20	2403 E 6	2413 M 14	2475 D 18	3404 J 4	3410 L 4	3417 J 18	3425 E 18	3430 F 18	3436 G 5	3444 J 18	3452 M 14	3463 M 10	3474 M 19	3482 D 18	3488 M 18	3494 M 17	3501 E 19	3507 G 19	6404 L 8	6466 L 7	7410 D 5	7416 M 12	7486 M 8
1405 K 1	1411 L 2	1417 M 3	1423 E 20	1430 B 11	2408 H 1	2416 K 19	2450 M 16	3405 J 4	3411 M 4	3418 B 18	3425 E 7	3431 F 18	3437 D 5	3445 K 18	3453 C 7	3464 M 7	3475 C 18	3483 D 18	3489 M 19	3495 M 17	3502 F 19	3501 H 7	6405 L 10	6467 L 7	7411 D 5	7417 M 12	7487 M 8

FRONT BOARD

DISPLAY CONNECTION TABLE

Pin	C1	C2	C3	C4	C4'
1	-	-	-	Com 4	-
2	-	-	Com 3	-	-
3	-	Com 2	-	-	-
4	-	-	-	Com 4'	-
5	Com 1	-	-	-	-
6	7a	7b	7c	7d	-
7	7i	7g	7e	-	-
8	6a	6b	6c	6d	-
9	6i	6g	6e	-	TUNER
10	5a	5b	5c	5d	-
11	5f	5g	5e	-	TAPE
12	4a	4b	4c	4d	-
13	4f	4g	4e	-	CD
14	2a	2b	2c	2d	-
15	2f	2g	2e	-	-
16	1a	1b	1c	1d	-
17	1f	1g	1e	-	PROGRAM
18	ALL	AM	SW	-	-
19	REPEAT	MW	LW	STEREO	-
20	SHUFFLE	FM	DUBBING	DBB	-
21	COLON	DOT2	3e,3f	DOT1	-



...V DC voltages measured with 9V battery supply in Tuner mode unless stated otherwise

Ⓢ only for versions with INCREDIBLE SOUND

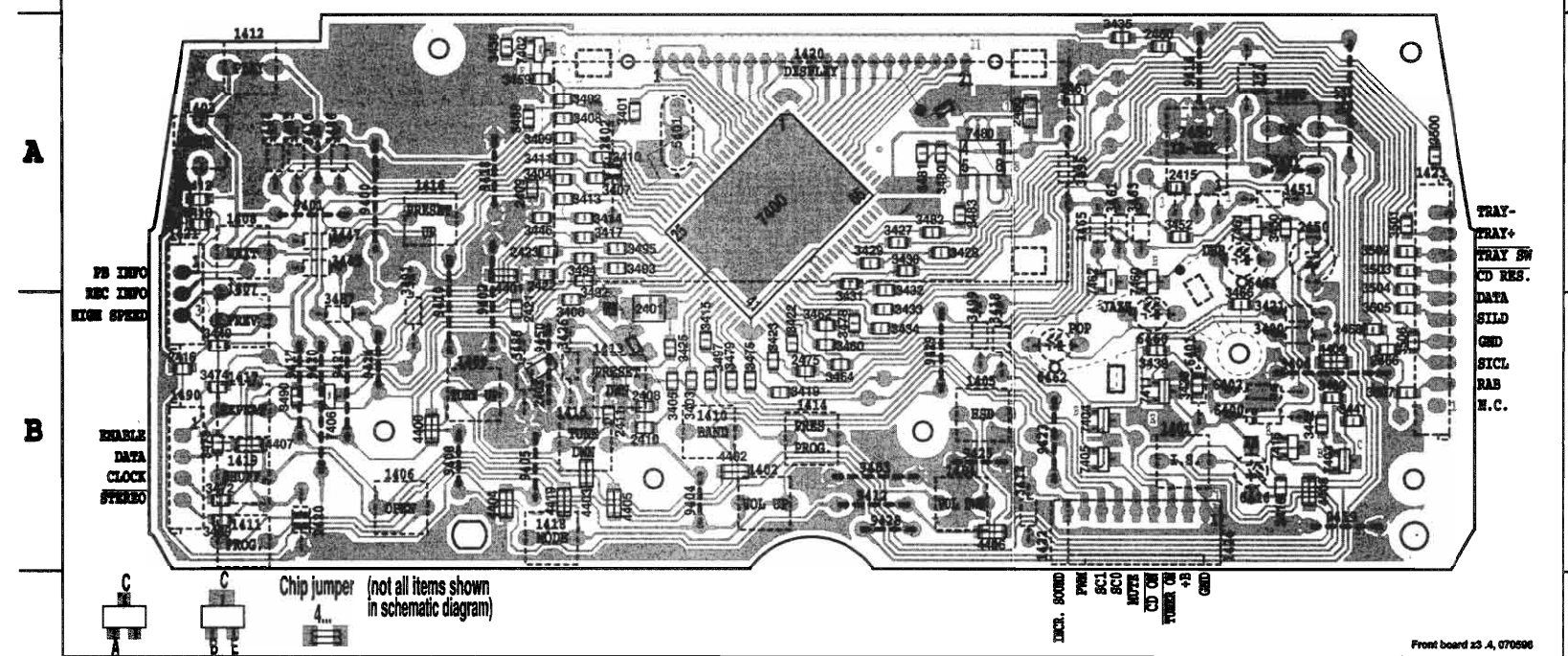
Ⓣ provisional for HSD versions only

Ⓡ provisional only



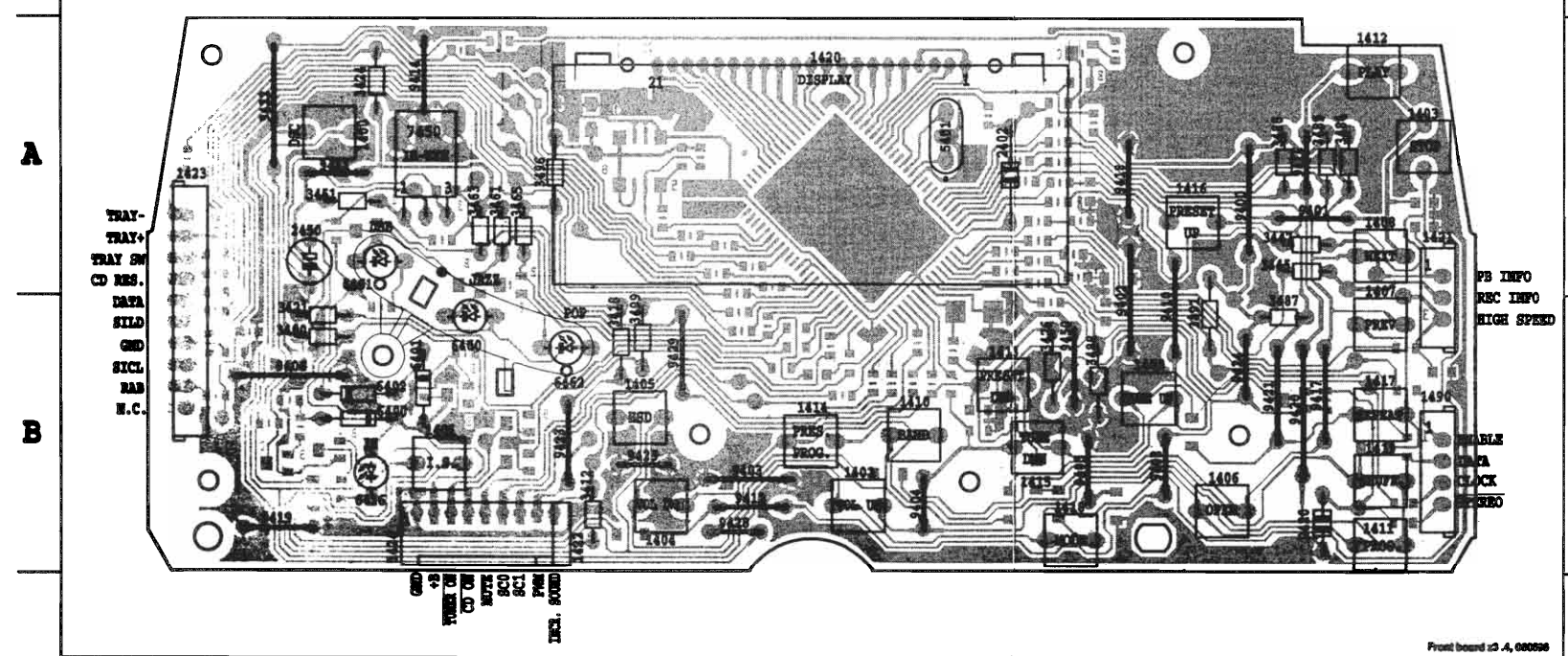
2401 B 4	2412 A 6	2423 A 5	2480 A 2	3406 B 5	3413 A 5	3422 B 4	3430 A 3	3436 A 5	3446 A 5	3460 B 3	3474 B 6	3482 A 3	3494 A 5	3503 A 1	4401 A 5	4407 B 6	7403 B 1	7460 A 2
2403 B 5	2415 A 2	2460 A 2	3401 A 4	3407 A 5	3414 A 5	3423 B 4	3431 A 3	3438 B 2	3449 B 6	3462 B 3	3475 B 4	3483 A 3	3495 A 4	3504 A 1	4402 B 4	4408 B 1	7404 B 2	7461 A 1
2408 B 4	2416 B 6	2461 A 2	3402 A 5	3408 A 5	3415 B 4	3425 B 4	3432 A 3	3439 B 2	3450 A 1	3464 B 3	3478 B 3	3489 B 6	3497 B 4	3505 B 1	4403 B 5	4409 B 1	7405 B 2	7462 A 2
2409 A 5	2418 A 6	2466 B 1	3403 B 4	3409 A 5	3416 B 1	3427 A 3	3433 B 3	3441 B 1	3452 A 2	3466 B 1	3479 B 4	3490 B 6	3500 A 1	3506 B 1	4404 B 5	4419 B 5	7406 B 6	7480 A 3
2410 B 4	2421 B 5	2468 B 1	3404 A 5	3410 A 4	3417 A 5	3428 A 3	3434 B 3	3442 B 1	3458 A 5	3472 B 6	3480 A 3	3492 A 6	3501 A 1	3507 B 1	4405 B 4	7400 A 4	7411 B 2	
2411 B 4	2422 A 5	2475 B 4	3405 B 4	3411 A 5	3419 B 4	3429 A 3	3435 A 2	3443 B 1	3459 A 5	3473 B 6	3481 A 3	3493 A 4	3502 A 1	4400 B 5	4406 B 3	7402 A 5	7416 B 1	

FRONT BOARD / copper side view

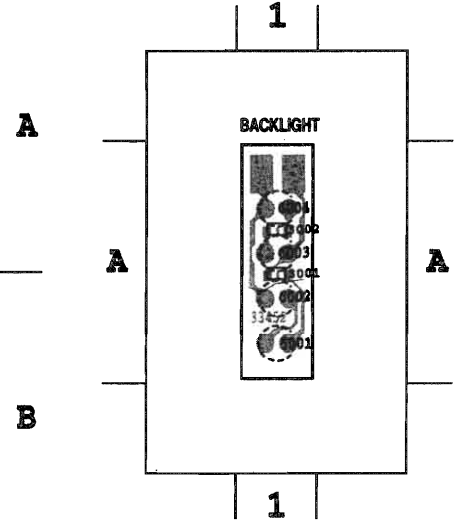


1400 A 1	1406 B 5	1412 A 6	1418 B 5	1424 B 2	3412 B 2	3447 A 6	3485 A 6	3499 B 3	6460 B 2	9402 B 5	9410 B 5	9418 A 5	9424 B 6
1401 B 2	1407 B 6	1413 B 4	1419 B 6	1490 B 6	3418 B 3	3451 A 1	3486 A 6	5401 A 4	6461 A 1	9403 B 3	9411 A 1	9419 B 1	9425 B 3
1402 B 4	1408 A 6	1414 B 3	1420 A 3	2402 A 4	3421 B 1	3461 A 2	3487 B 6	6400 B 1	6462 B 2	9404 B 4	9412 B 3	9420 B 6	9428 B 3
1403 A 6	1409 B 5	1415 B 5	1421 B 6	2420 B 6	3424 A 1	3463 A 2	3488 B 5	6401 B 2	7450 A 2	9405 B 5	9414 A 2	9421 B 6	9429 B 3
1404 B 3	1410 B 4	1416 A 5	1422 B 2	2450 A 1	3426 B 5	3465 A 2	3489 B 5	6402 B 1	9400 A 6	9406 B 1	9416 A 6	9422 A 1	9450 B 5
1405 B 3	1411 B 6	1417 B 6	1423 B 1	3400 B 1	3445 A 6	3484 A 6	3496 A 2	6416 B 1	9401 A 6	9408 B 5	9417 B 6	9423 B 2	

FRONT BOARD / component side view

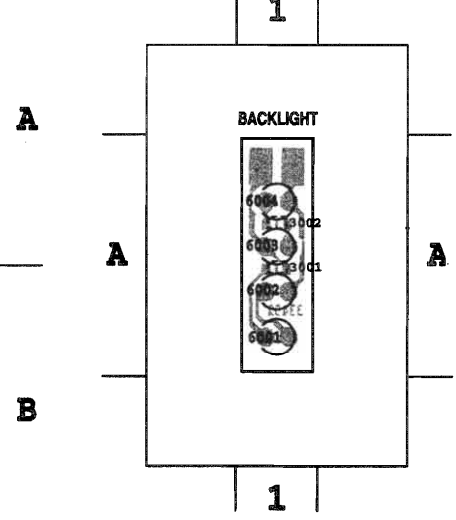


6001 A 1	6003 A 1	3001 A 1
6002 A 1	6004 A 1	3002 A 1

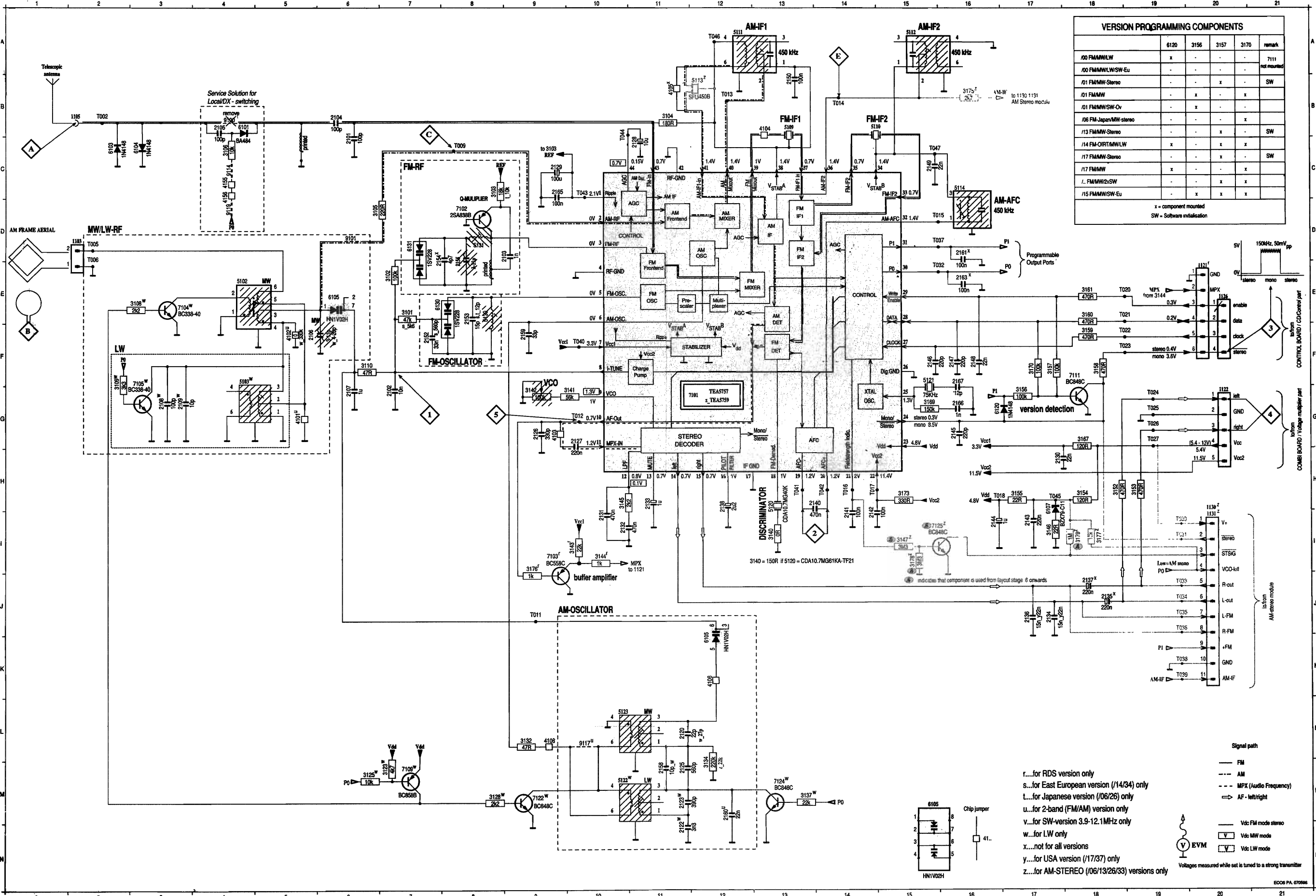


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

6001 A 1	6003 A 1	3001 A 1
6002 A 1	6004 A 1	3002 A 1



# TUNER BOARD ECO5 / PA



1103 D 2  
1105 B 2  
1121 E 20  
1122 G 20  
1126 E 20  
1130 B 20  
1131 B 20  
2101 C 8  
2102 G 7  
2103 D 9  
2104 B 6  
2105 F 5  
2107 G 8  
2108 G 3  
2109 G 3  
2121 H 1  
2122 M 11  
2123 M 11  
2125 M 11  
2126 G 9  
2127 G 10  
2128 C 11  
2129 C 9  
2130 H 7  
2131 H 0  
2132 H 0  
2133 H 11  
2134 J 17  
2135 J 18  
2136 J 17  
2137 H 8  
2138 H 12  
2140 H 4  
2141 H 4  
2142 H 4  
2143 H 7  
2144 H 7  
2145 G 16  
2146 F 15  
2147 F 16  
2148 F 16  
2149 C 15  
2150 B 13  
2152 F 7  
2153 G 8  
2154 E 7  
2155 D 8  
2156 M 11  
2157 F 9  
2158 F 9  
2160 M 12  
2161 D 16  
2162 M 13  
2165 C 9  
2166 G 16  
2167 F 16  
2168 G 13  
3102 E 7  
3103 G 8  
3104 B 11  
3105 B 3  
3108 E 3  
3109 F 2  
3110 F 10  
3122 M 7  
3125 M 6  
3128 M 8  
3129 F 14  
3134 M 12  
3137 M 13  
3140 G 10  
3141 G 10  
3142 G 9  
3143 H 0  
3144 H 10  
3145 H 10  
3146 H 7  
3147 H 8  
3148 G 8  
3153 H 9  
3154 H 8  
3155 H 7  
3156 G 17  
3157 F 17  
3158 F 18  
3159 F 18  
3180 E 18  
3181 E 18  
3187 G 18  
3188 G 15  
3189 G 15  
3170 F 17  
3173 H 15  
3175 B 16  
3176 J 9  
3177 H 8  
3178 H 5  
3178 H 8  
4101 G 5  
4102 F 5  
4103 G 9  
4104 B 13  
4105 B 11  
4106 K 12  
4108 L 9  
5102 E 4  
5103 F 4  
5108 B 13  
5110 B 14  
5111 A 13  
5112 A 15  
5113 B 12  
5114 C 16  
5120 H 13  
5121 F 15  
5122 M 11  
5123 L 11  
5130 E 6  
5131 D 8  
6103 C 2  
6104 C 3  
6105 K 12  
6105 E 6  
6107 H 17  
6120 G 16  
6130 E 7  
6131 D 7  
7101 G 11  
7102 D 8  
7103 L 9  
7104 E 3  
7105 F 2  
7109 M 9  
7111 F 19  
7122 M 9  
7124 M 13  
7125 H 5  
8100 B 4  
9101 D 6  
9117 L 10

CONTROL BOARD / Voltage multiplier part  
COMBI BOARD / Voltage multiplier part  
AM-stereo module

Signal path:  
 - FM  
 - AM  
 - MPX (Audio Frequency)  
 - AF - left/right

Vdc FM mode stereo  
 Vdc MW mode  
 Vdc LW mode

Voltages measured while set is tuned to a strong transmitter

Chip jumper  
 1 8  
 2 7  
 3 6  
 4 5

6105  
 H1102H

Indicates that component is used from layout stage 6 onwards

z...for AM-STEREO (06/13/26/33) versions only

y...for USA version (17/37) only

x...not for all versions

w...for LW only

v...for SW-version 3.9-12.1MHz only

u...for 2-band (FM/AM) version only

t...for Japanese version (06/26) only

s...for East European version (14/34) only

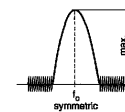
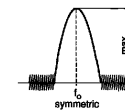
r...for RDS version only



1101 A1	2106 C2	2137 C5	3147 B5	3172 C5	5112 C4	5127 B4	7102 A3	9117 B2	9129 B3
1102 A1	2107 C2	2138 A5	3149 C5	3173 A5	5113 B3	5130 A3	7104 C2	9118 B4	9130 C3
1103 C1	2110 C2	2140 B5	3152 A5	5102 C2	5114 C4	5131 A3	7105 C3	9119 C4	9131 A5
1104 B1	2115 C1	2144 B5	3154 C5	5103 C2	5115 A4	6101 A2	7107 B3	9120 B4	9133 C3
1105 A1	2123 A2	2148 B4	3157 B5	5104 C2	5116 A4	6102 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2155 A3	3158 A5	5105 B2	5120 B4	6103 A1	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	2162 A2	3159 A5	5106 B2	5121 B4	6104 A2	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3105 B3	3160 A5	5108 C4	5122 B3	6106 B3	9111 C2	9124 C4	
1131 B5	2130 A4	3110 A2	3161 A5	5109 B4	5123 B2	6107 C5	9113 B2	9125 A3	
2104 A2	2133 A4	3132 B3	3170 C5	5110 B4	5124 B2	6109 C2	9114 B2	9126 B5	
2105 A1	2135 B5	3142 A4	3171 C5	5111 C3	5126 B3	6120 C4	9115 B3	9128 A2	

2101 C4	2119 B4	2141 B1	2154 C3	3101 C3	3116 A3	3133 B4	3153 C2	4101 A4	4120 C2	4160 A1	7106 A4
2102 C4	2120 B4	2142 B1	2156 C4	3102 C3	3117 B4	3134 B4	3155 A2	4102 A4	4150 B2	4161 A1	7108 A3
2103 C3	2122 B3	2143 A1	2157 B4	3103 C3	3118 B3	3136 B4	3156 A1	4103 C2	4151 B3	4162 C1	7109 A3
2108 A4	2124 A5	2145 C1	2158 B4	3104 B3	3120 B4	3137 B4	3167 C2	4104 A2	4152 B3	4163 C1	7111 A1
2109 A4	2126 C2	2146 C1	2159 C2	3106 C4	3121 A3	3140 B1	3168 B3	4105 B3	4153 B4	6105 A4	7120 B4
2112 B5	2127 C2	2147 C1	2160 C4	3108 A4	3122 B3	3141 C2	3169 B2	4106 B4	4154 C3	6110 A4	7121 B3
2113 A4	2131 C2	2149 B2	2161 A3	3109 A4	3123 A3	3143 C2	3175 A2	4107 C4	4155 A4	6111 B4	7122 B4
2114 A4	2132 C1	2150 B2	2163 A2	3111 A3	3125 A3	3144 C2	3176 C2	4108 B4	4156 A2	6130 C2	7123 B4
2116 B3	2134 C1	2151 C2	2165 B3	3112 A3	3126 B3	3145 C2	3177 A1	4109 A3	4157 B3	6131 C3	7124 C4
2117 A3	2136 B1	2152 C3	2166 B2	3114 A3	3127 B3	3146 A1	3178 A1	4110 A3	4158 C2	7101 B2	7125 A1
2118 B4	2139 B2	2153 C3	2167 B2	3115 A3	3128 B3	3148 A1	3179 A1	4111 C1	4159 A2	7103 C2	

TUNER ADJUSTMENT TABLE ( ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial )

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<b>VARICAP ALIGNMENT</b>						
<b>FM</b>	87.5 - 108MHz		108MHz	5130	1	8V ±0.2V
			87.5MHz	check		4.3V ±0.5V
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123	1	8V ±0.2V
			530kHz	check		1.1V ±0.4V
<b>LW</b>	153 - 279kHz		279kHz	5122	1	8V ±0.2V
			153kHz	check		1.1V ±0.4V
<b>MW</b> FM/MW/LW- and FM/MW-version* (9kHz grid) 531 - 1602kHz			1602kHz	5123	1	8V ±0.2V
			531kHz	check		1.1V ±0.4V
<b>FM RF</b>						
<b>FM</b>	87.5 - 108MHz	108MHz	A	108MHz	2155	4
		87.5MHz	mod=1kHz Δf=±22.5kHz	87.5MHz	5131	
<b>VCO</b>						
<b>FM</b>	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz <sup>1)</sup>
<b>AM IF</b>						
<b>MW</b>	450kHz connect pin 26 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C	IC 7101 <sub>36</sub> 100nF	5111	4	
		C	IC 7101 <sub>40</sub> 100nF see remark 2)	5112		
<b>AM AFC</b> <b>MW</b>		C	continuous wave V <sub>RF</sub> = 10mV	5114	2	0 ± 2 mV DC
<b>AM RF<sup>3)</sup></b>						
<b>MW</b> <sup>4)</sup> FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz 558kHz	B		1494kHz	2106	4
				558kHz	5102	
<b>LW</b>	198kHz 560kHz			198kHz	5103	4
				1500kHz 560kHz	2106 5102	
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz				Δf = ±30kHz V <sub>RF</sub> as low as possible		

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically

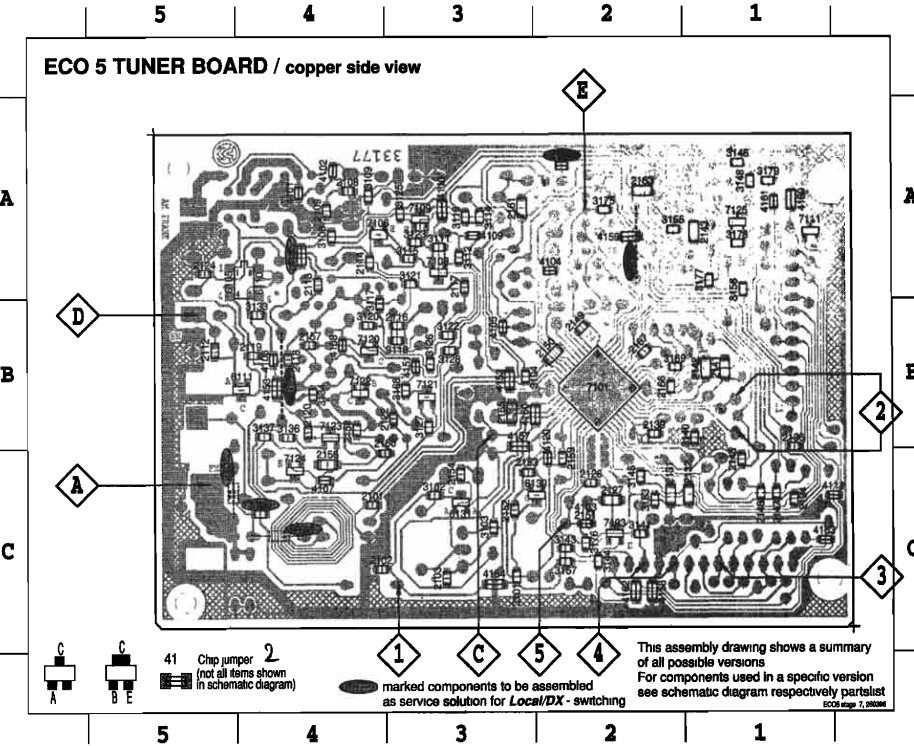
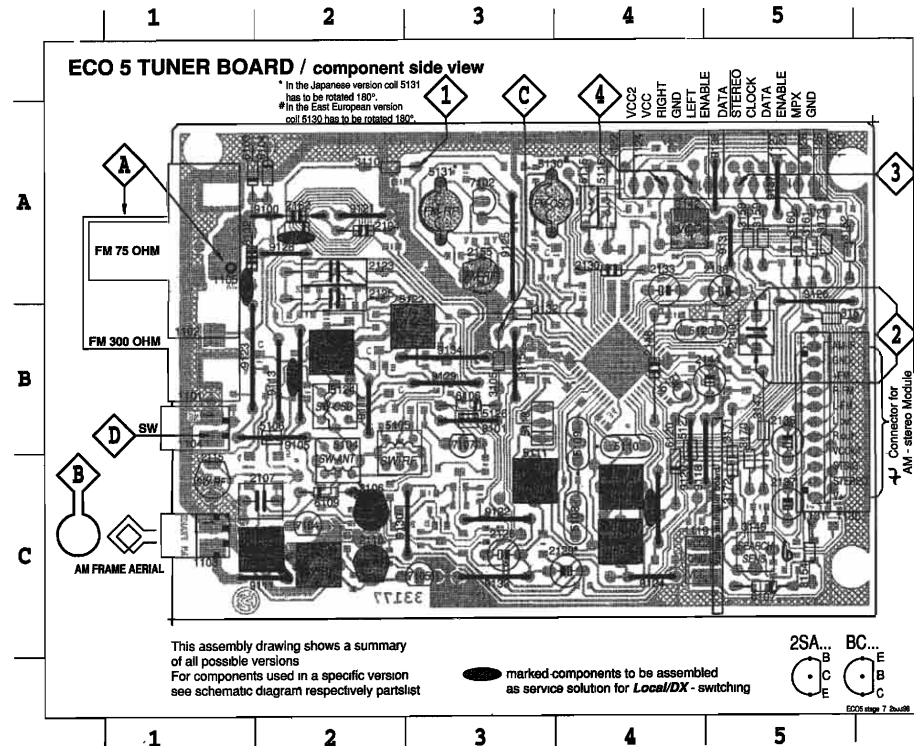
1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

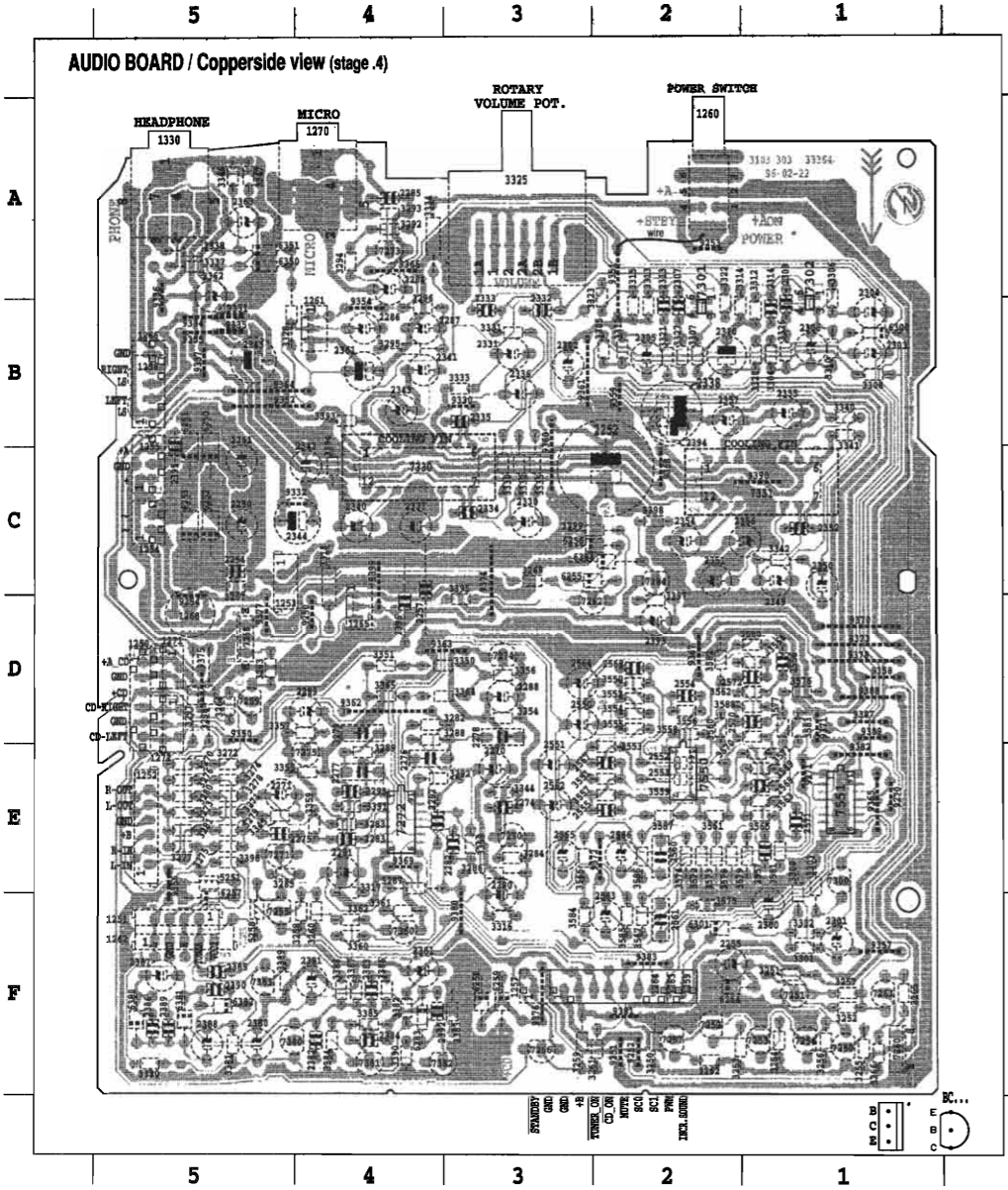
2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used!

4) MW has to be aligned before LW.

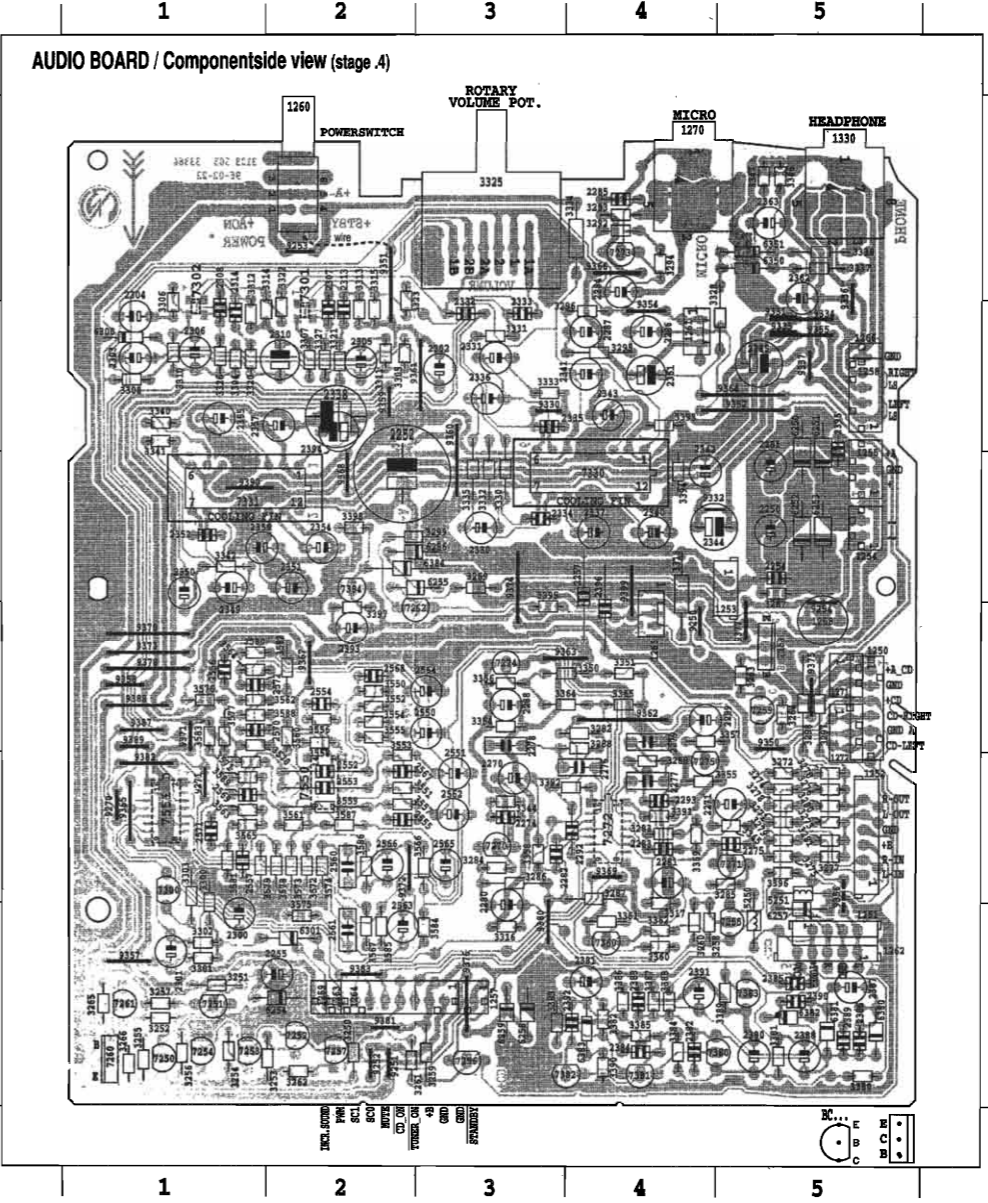
↑ Repeat





1256 D 5	2385 B 1	3286 B 3	3393 B 4	7271 R 5
1251 F 5	2356 C 1	3287 E 4	3394 C 4	7273 A 4
1252 E 5	2357 D 2	3288 D 4	3395 D 3	7274 D 3
1253 C 5	2361 B 4	3289 E 4	3396 E 5	7275 E 4
1254 C 5	2362 A 5	3292 A 4	3397 D 2	7300 K 1
1255 C 5	2363 A 5	3293 A 4	3398 C 2	7330 C 4
1257 F 2	2380 F 5	3294 A 4	3550 D 2	7331 C 1
1258 D 5	2381 F 4	3295 B 4	3551 E 2	7360 F 4
1259 F 2	2382 F 4	3296 B 4	3552 D 2	7380 F 5
1260 A 2	2383 F 4	3297 D 5	3553 E 2	7381 F 4
1261 B 4	2384 F 4	3298 D 5	3554 D 2	7382 F 4
1262 F 5	2385 F 5	3299 C 2	3555 D 2	7383 F 5
1263 F 2	2386 F 5	3300 F 1	3556 D 2	7384 C 2
1264 F 2	2387 F 5	3301 F 1	3557 E 2	7250 D 4
1265 D 4	2388 F 5	3302 F 1	3558 D 2	9251 F 2
1266 B 5	2389 F 5	3303 K 1	3559 E 2	9252 F 2
1266 D 5	2390 F 5	3304 B 1	3560 D 2	9253 A 2
1270 A 4	2391 F 4	3305 B 2	3561 E 2	9254 D 5
1271 D 5	2392 F 4	3306 B 1	3562 D 1	9270 K 1
1272 D 5	2393 D 2	3307 B 2	3563 E 1	9271 E 1
1330 A 5	2394 F 2	3308 B 1	3564 D 1	9320 B 3
2250 C 5	2395 B 5	3310 B 1	3565 E 1	9331 B 5
2251 C 5	2396 D 4	3311 B 2	3566 B 3	9332 C 4
2252 C 2	2550 D 3	3312 B 1	3567 F 2	9334 B 5
2254 C 5	2551 K 3	3313 B 2	3570 D 1	9335 B 5
2255 F 2	2552 E 2	3314 B 2	3571 E 1	9336 A 5
2257 C 4	2553 E 2	3315 B 2	3572 E 2	9337 B 5
2270 K 3	2554 D 2	3316 F 3	3573 E 2	9350 D 5
2271 E 5	2555 E 2	3317 F 4	3574 E 2	9351 A 2
2274 K 3	2556 D 1	3318 C 4	3575 F 2	9352 B 5
2275 E 5	2557 E 1	3320 B 1	3576 D 1	9354 B 4
2276 E 4	2560 E 2	3321 B 2	3577 D 1	9355 B 5
2277 E 4	2561 F 2	3322 B 2	3578 E 2	9356 E 5
2278 D 3	2562 B 3	3323 B 2	3579 E 1	9357 F 1
2279 D 4	2563 F 2	3325 A 3	3580 D 1	9358 D 1
2280 F 3	2564 D 3	3326 B 1	3581 E 1	9359 B 2
2281 E 4	2565 K 3	3327 B 2	3582 D 2	9360 C 3
2282 K 3	2566 E 2	3328 B 5	3583 D 1	9361 B 3
2283 K 4	2567 E 2	3330 C 3	3584 E 2	9362 D 4
2284 A 4	2568 D 2	3331 B 3	3585 F 2	9363 D 4
2285 A 4	2569 E 1	3332 C 3	3586 E 2	9364 B 5
2286 B 4	2570 D 1	3333 B 3	3587 E 2	9365 E 1
2287 B 4	2571 E 1	3334 A 4	3588 D 1	9366 A 4
2288 D 3	2572 D 1	3335 C 3	3589 E 1	9367 D 2
2289 D 4	3250 F 2	3337 A 5	5250 F 5	9368 C 2
2292 A 4	3251 F 1	3338 A 5	5251 E 5	9369 A 4
2293 E 4	3252 F 1	3340 B 1	6250 C 5	9370 D 1
2300 F 1	3253 F 2	3341 B 1	6251 C 5	9371 D 1
2301 F 1	3254 F 1	3342 C 1	6252 C 5	9372 E 2
2302 B 3	3255 F 1	3344 K 3	6253 C 5	9373 D 1
2303 B 1	3256 F 1	3345 E 5	6254 F 2	9374 C 3
2304 B 1	3257 F 1	3346 A 5	6255 C 3	9375 D 5
2305 E 2	3258 F 4	3347 A 5	6256 C 2	9376 F 3
2306 B 1	3259 F 3	3350 D 4	6257 F 5	9377 D 5
2307 E 2	3260 F 4	3351 D 4	6258 F 3	9378 D 1
2308 B 1	3261 F 2	3354 D 3	6259 F 3	9380 F 3
2310 B 2	3262 F 2	3355 E 4	6300 B 1	9381 F 2
2313 B 2	3263 D 5	3356 D 3	6301 F 2	9382 K 1
2314 B 1	3264 D 5	3357 D 4	6350 A 5	9383 F 2
2330 C 3	3265 F 1	3358 K 3	6351 A 5	9387 D 1
2331 B 3	3266 F 1	3359 E 4	6380 F 5	9388 D 1
2332 B 3	3267 C 5	3360 F 4	6381 F 5	9389 D 1
2333 B 3	3269 C 3	3361 F 4	6382 F 5	9390 C 1
2334 C 3	3270 E 5	3362 F 4	6383 F 4	9399 C 4
2335 B 3	3271 E 5	3364 D 4	6384 C 2	
2336 B 3	3272 E 5	3365 D 4	7250 F 1	
2337 C 4	3273 E 5	3380 F 5	7251 F 1	
2338 B 2	3274 E 5	3381 F 5	7252 F 2	
2340 C 4	3275 E 5	3382 F 4	7253 F 1	
2341 B 4	3276 E 5	3383 F 3	7254 F 1	
2342 C 4	3277 E 5	3384 F 4	7255 F 5	
2343 B 4	3278 E 5	3385 F 4	7256 F 3	
2344 C 4	3279 E 5	3386 F 4	7257 F 2	
2345 B 5	3280 E 5	3387 F 4	7258 D 5	
2349 C 1	3281 E 5	3388 F 4	7259 D 5	7272 E 4
2350 C 1	3282 D 4	3389 F 5	7260 F 1	7301 B 2
2351 C 2	3283 D 4	3390 F 4	7261 F 1	7550 E 2
2352 C 1	3284 K 3	3391 E 4	7262 D 3	7551 E 1
2354 C 2	3285 E 5	3392 E 4	7263 D 3	

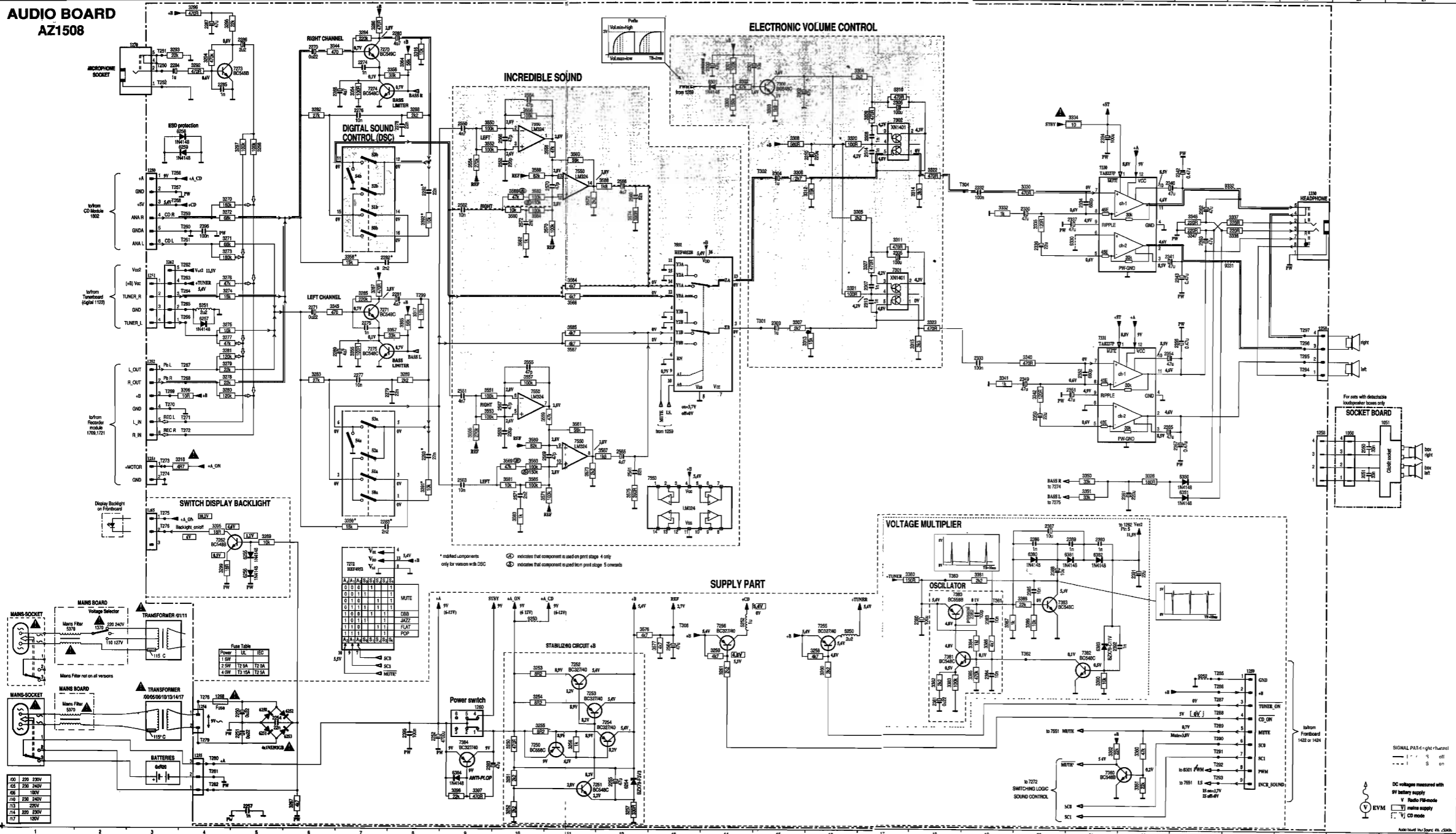
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist



1250 D 5	2355 B 1	3286 B 3	3393 B 4	7271 R 5
1251 F 5	2356 C 1	3287 E 4	3394 C 4	7273 A 4
1252 E 5	2357 D 2	3288 D 4	3395 D 3	7274 D 3
1253 C 5	2361 B 4	3289 E 4	3396 E 5	7275 E 4
1254 C 5	2362 A 5	3292 A 4	3397 D 2	7300 K 1
1255 C 5	2363 A 5	3293 A 4	3398 C 2	7330 C 4
1257 F 2	2380 F 5	3294 A 4	3550 D 2	7331 C 1
1258 D 5	2381 F 4	3295 B 4	3551 E 2	7360 F 4
1259 F 2	2382 F 4	3296 B 4	3552 D 2	7380 F 5
1260 A 2	2383 F 4	3297 D 5	3553 E 2	7381 F 4
1260 A 2	2383 F 4	3297 D 5	3553 E 2	7381 F 4
1261 B 4	2384 F 4	3298 D 5	3554 D 2	7382 F 4
1262 F 5	2385 F 5	3299 C 2	3555 D 2	7383 F 5
1263 F 2	2386 F 5	3300 F 1	3556 D 2	7384 C 2
1264 F 2	2387 F 5	3301 F 1	3557 E 2	7250 D 4
1265 D 4	2388 F 5	3302 F 1	3558 D 2	9251 F 2
1266 B 5	2389 F 5	3303 K 1	3559 E 2	9252 F 2
1266 D 5	2390 F 5	3304 B 1	3560 D 2	9253 A 2
1270 A 4	2391 F 4	3305 B 2	3561 E 2	9254 D 5
1271 D 5	2392 F 4	3306 B 1	3562 D 1	9270 K 1
1272 D 5	2393 D 2	3307 B 2	3563 E 1	9271 E 1
1330 A 5	2394 F 2	3308 B 1	3564 D 1	9320 B 3
2250 C 5	2395 B 5	3310 B 1	3565 E 1	9331 B 5
2251 C 5	2396 D 4	3311 B 2	3566 B 3	9332 C 4
2252 C 2	2550 D 3	3312 B 1	3567 F 2	9334 B 5
2254 C 5	2551 K 3	3313 B 2	3570 D 1	9335 B 5
2255 F 2	2552 E 2	3314 B 2	3571 E 1	9336 A 5
2257 C 4	2553 E 2	3315 B 2	3572 E 2	9337 B 5
2270 K 3	2554 D 2	3316 F 3	3573 E 2	9350 D 5
2271 E 5	2555 E 2	3317 F 4	3574 E 2	9351 A 2
2274 K 3	2556 D 1	3318 C 4	3575 F 2	9352 B 5
2275 E 5	2557 E 1	3320 B 1	3576 D 1	9354 B 4
2276 E 4	2560 E 2	3321 B 2	3577 D 1	9355 B 5
2277 E 4	2561 F 2	3322 B 2	3578 E 2	9356 E 5
2278 D 3	2562 B 3	3323 B 2	3579 E 1	9357 F 1
2279 D 4	2563 F 2	3325 A 3	3580 D 1	9358 D 1
2280 F 3	2564 D 3	3326 B 1	3581 E 1	9359 B 2
2281 E 4	2565 K 3	3327 B 2	3582 D 2	9360 C 3
2282 K 3	2566 E 2	3328 B 5	3583 D 1	9361 B 3
2283 K 4	2567 E 2	3330 C 3	3584 E 2	9362 D 4
2284 A 4	2568 D 2	3331 B 3	3585 F 2	9363 D 4
2285 A 4	2569 E 1	3332 C 3	3586 E 2	9364 B 5
2286 B 4	2570 D 1	3333 B 3	3587 E 2	9365 E 1
2287 B 4	2571 E 1	3334 A 4	3588 D 1	9366 A 4
2288 D 3	2572 D 1	3335 C 3	3589 E 1	9367 D 2
2289 D 4	3250 F 2	3337 A 5	5250 F 5	9368 C 2
2292 A 4	3251 F 1	3338 A 5	5251 E 5	9369 A 4
2293 E 4	3252 F 1	3340 B 1	6250 C 5	9370 D 1
2300 F 1	3253 F 2	3341 B 1	6251 C 5	9371 D 1
2301 F 1	3254 F 1	3342 C 1	6252 C 5	9372 E 2
2302 B 3	3255 F 1	3344 K 3	6253 C 5	9373 D 1
2303 B 1	3256 F 1	3345 E 5	6254 F 2	9374 C 3
2304 B 1	3257 F 1	3346 A 5	6255 C 3	9375 D 5
2305 E 2	3258 F 4	3347 A 5	6256 C 2	9376 F 3
2306 B 1	3259 F 3	3350 D 4	6257 F 5	9377 D 5
2307 E 2	3260 F 4	3351 D 4	6258 F 3	9378 D 1
2308 B 1	3261 F 2	3354 D 3	6259 F 3	9380 F 3
2310 B 2	3262 F 2	3355 E 4	6300 B 1	9381 F 2
2313 B 2	3263 D 5	3356 D 3	6301 F 2	9382 K 1
2314 B 1	3264 D 5	3357 D 4	6350 A 5	9383 F 2
2330 C 3	3265 F 1	3358 K 3	6351 A 5	9387 D 1
2331 B 3	3266 F 1	3359 E 4	6380 F 5	9388 D 1
2332 B 3	3267 C 5	3360 F 4	6381 F 5	9389 D 1
2333 B 3	3269 C 3	3361 F 4	6382 F 5	9390 C 1
2334 C 3	3270 E 5	3362 F 4	6383 F 4	9399 C 4
2335 B 3	3271 E 5	3364 D 4	6384 C 2	
2336 B 3	3272 E 5	3365 D 4	7250 F 1	
2337 C 4	3273 E 5	3380 F 5	7251 F 1	
2338 B 2	3274 E 5	3381 F 5	7252 F 2	
2340 C 4	3275 E 5	3382 F 4	7253 F 1	
2341 B 4	3276 E 5	3383 F 3	7254 F 1	
2342 C 4	3277 E 5	3384 F 4	7255 F 5	
2343 B 4	3278 E 5	3385 F 4	7256 F 3	
2344 C 4	3279 E 5	3386 F 4	7257 F 2	
2345 B 5	3280 E 5	3387 F 4	7258 D 5	
2349 C 1	3281 E 5	3388 F 4	7259 D 5	7272 E 4
2350 C 1	3282 D 4	3389 F 5	7260 F 1	7301 B 2
2351 C 2	3283 D 4	3390 F 4	7261 F 1	7550 E 2
2352 C 1	3284 K 3	3391 E 4	7262 D 3	7551 E 1
2354 C 2	3285 E 5	3392 E 4	7270 B 3	

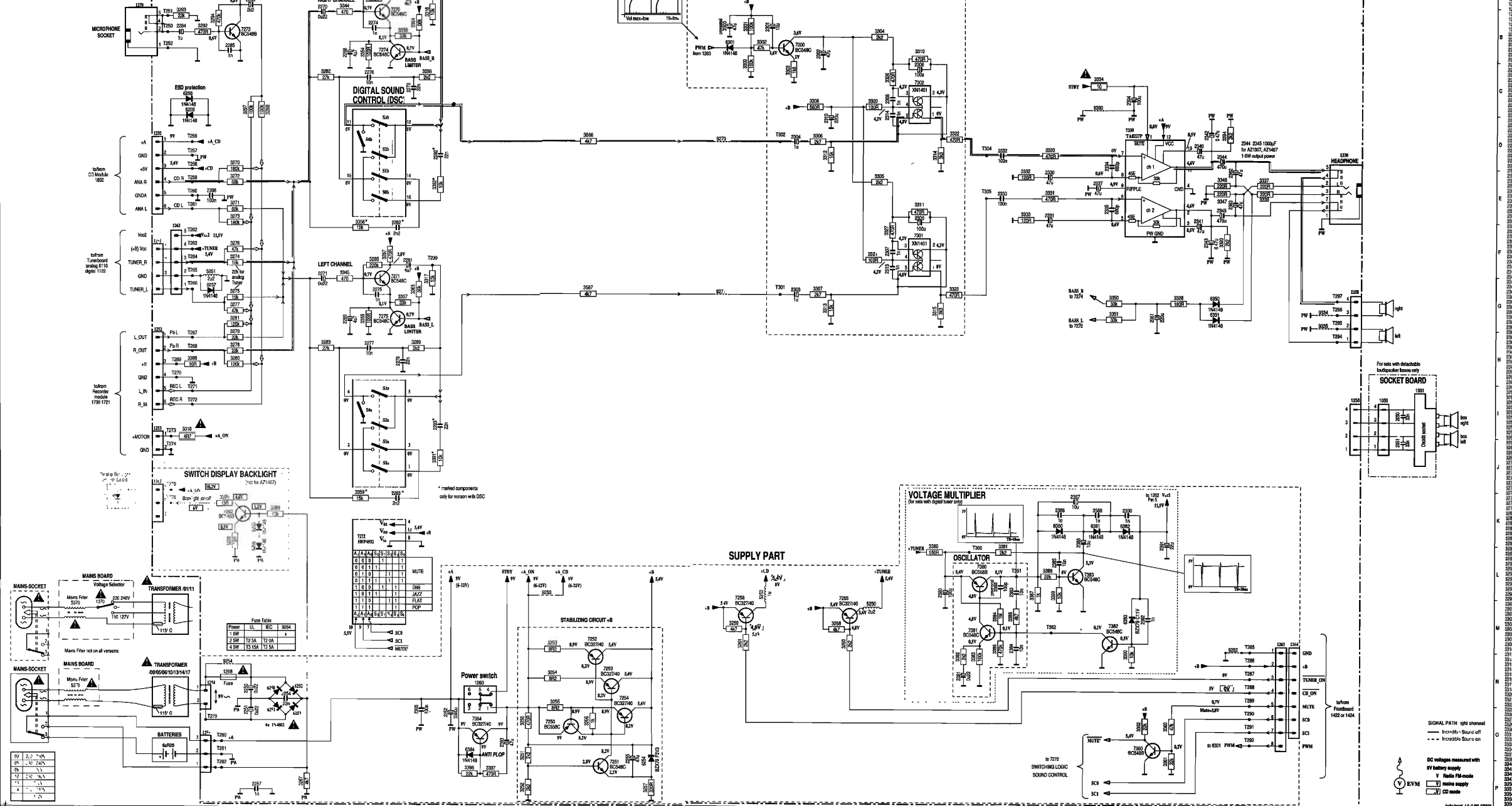
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist

# AUDIO BOARD AZ1508



1292 D	3318 I 4
1292 F	3300 C18
1292 H	3317 F 8
1292 J	3302 D18
1292 K	3305 D18
1292 L	3306 D18
1292 M	3307 D18
1292 N	3308 D18
1292 O	3309 D18
1292 P	3310 D18
1292 Q	3311 D18
1292 R	3312 D18
1292 S	3313 D18
1292 T	3314 D18
1292 U	3315 D18
1292 V	3316 D18
1292 W	3317 D18
1292 X	3318 D18
1292 Y	3319 D18
1292 Z	3320 D18
1293 A	3321 D18
1293 B	3322 D18
1293 C	3323 D18
1293 D	3324 D18
1293 E	3325 D18
1293 F	3326 D18
1293 G	3327 D18
1293 H	3328 D18
1293 I	3329 D18
1293 J	3330 D18
1293 K	3331 D18
1293 L	3332 D18
1293 M	3333 D18
1293 N	3334 D18
1293 O	3335 D18
1293 P	3336 D18
1293 Q	3337 D18
1293 R	3338 D18
1293 S	3339 D18
1293 T	3340 D18
1293 U	3341 D18
1293 V	3342 D18
1293 W	3343 D18
1293 X	3344 D18
1293 Y	3345 D18
1293 Z	3346 D18
1294 A	3347 D18
1294 B	3348 D18
1294 C	3349 D18
1294 D	3350 D18
1294 E	3351 D18
1294 F	3352 D18
1294 G	3353 D18
1294 H	3354 D18
1294 I	3355 D18
1294 J	3356 D18
1294 K	3357 D18
1294 L	3358 D18
1294 M	3359 D18
1294 N	3360 D18
1294 O	3361 D18
1294 P	3362 D18
1294 Q	3363 D18
1294 R	3364 D18
1294 S	3365 D18
1294 T	3366 D18
1294 U	3367 D18
1294 V	3368 D18
1294 W	3369 D18
1294 X	3370 D18
1294 Y	3371 D18
1294 Z	3372 D18
1295 A	3373 D18
1295 B	3374 D18
1295 C	3375 D18
1295 D	3376 D18
1295 E	3377 D18
1295 F	3378 D18
1295 G	3379 D18
1295 H	3380 D18
1295 I	3381 D18
1295 J	3382 D18
1295 K	3383 D18
1295 L	3384 D18
1295 M	3385 D18
1295 N	3386 D18
1295 O	3387 D18
1295 P	3388 D18
1295 Q	3389 D18
1295 R	3390 D18
1295 S	3391 D18
1295 T	3392 D18
1295 U	3393 D18
1295 V	3394 D18
1295 W	3395 D18
1295 X	3396 D18
1295 Y	3397 D18
1295 Z	3398 D18
1296 A	3399 D18
1296 B	3400 D18
1296 C	3401 D18
1296 D	3402 D18
1296 E	3403 D18
1296 F	3404 D18
1296 G	3405 D18
1296 H	3406 D18
1296 I	3407 D18
1296 J	3408 D18
1296 K	3409 D18
1296 L	3410 D18
1296 M	3411 D18
1296 N	3412 D18
1296 O	3413 D18
1296 P	3414 D18
1296 Q	3415 D18
1296 R	3416 D18
1296 S	3417 D18
1296 T	3418 D18
1296 U	3419 D18
1296 V	3420 D18
1296 W	3421 D18
1296 X	3422 D18
1296 Y	3423 D18
1296 Z	3424 D18

# AUDIO BOARD AZ1407



Power Table

Power	1.5W	1.5W	1.5W
2.2W	7.5A	7.5A	7.5A
4.0W	13.1A	13.1A	13.1A

Fuse Table

1	1.5W	1.5W	1.5W
2	1.5W	1.5W	1.5W
3	1.5W	1.5W	1.5W
4	1.5W	1.5W	1.5W

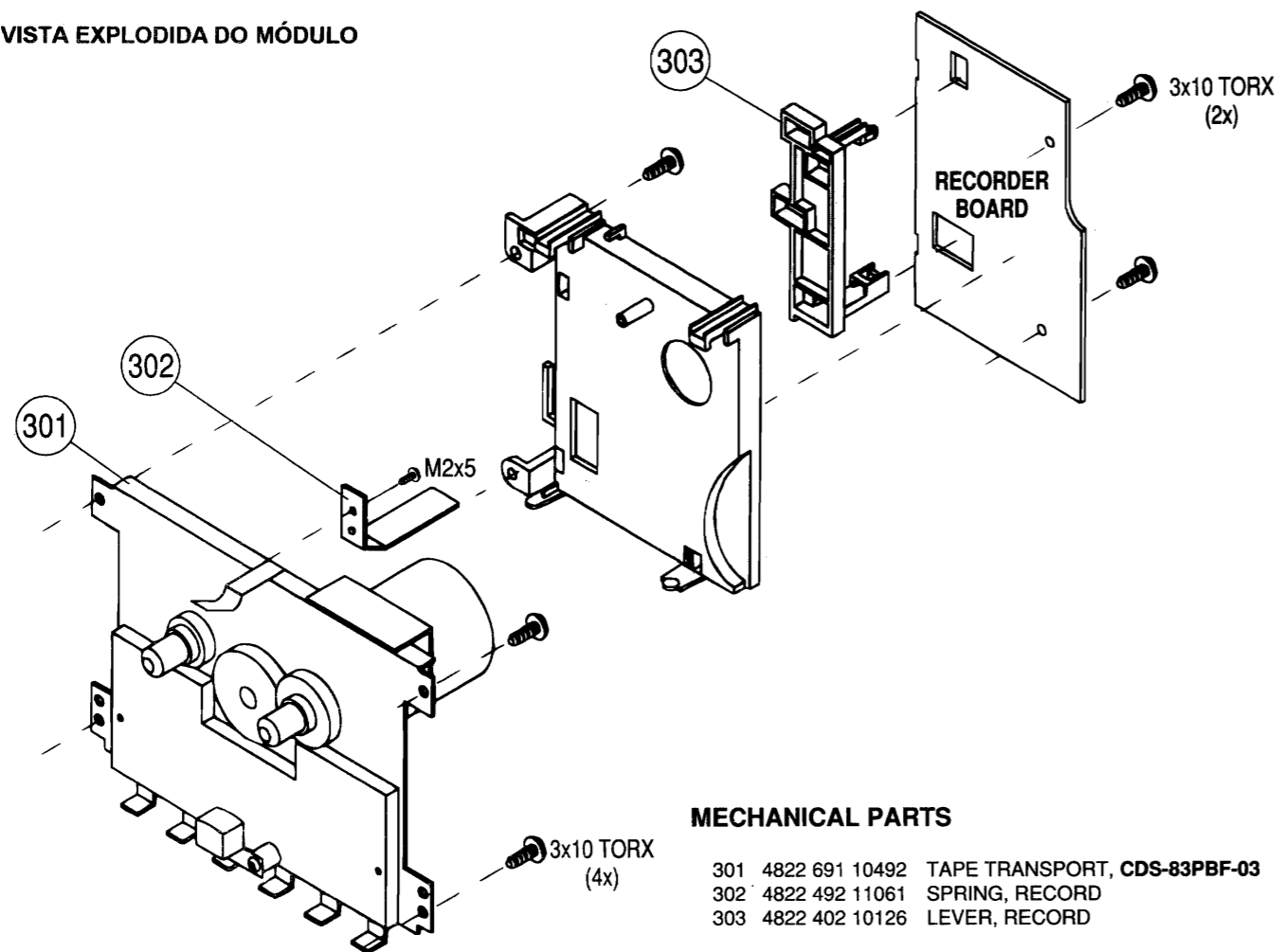
DC voltage measured with 10 7772

+	5V	5V	5V
-	5V	5V	5V
+	5V	5V	5V
-	5V	5V	5V

Audio board 16-42 9V 97606

### MÓDULO DO GRAVADOR MTF-PA-SD-S

VISTA EXPLODIDA DO MÓDULO



#### MECHANICAL PARTS

- 301 4822 691 10492 TAPE TRANSPORT, CDS-83PBF-03
- 302 4822 492 11061 SPRING, RECORD
- 303 4822 402 10126 LEVER, RECORD

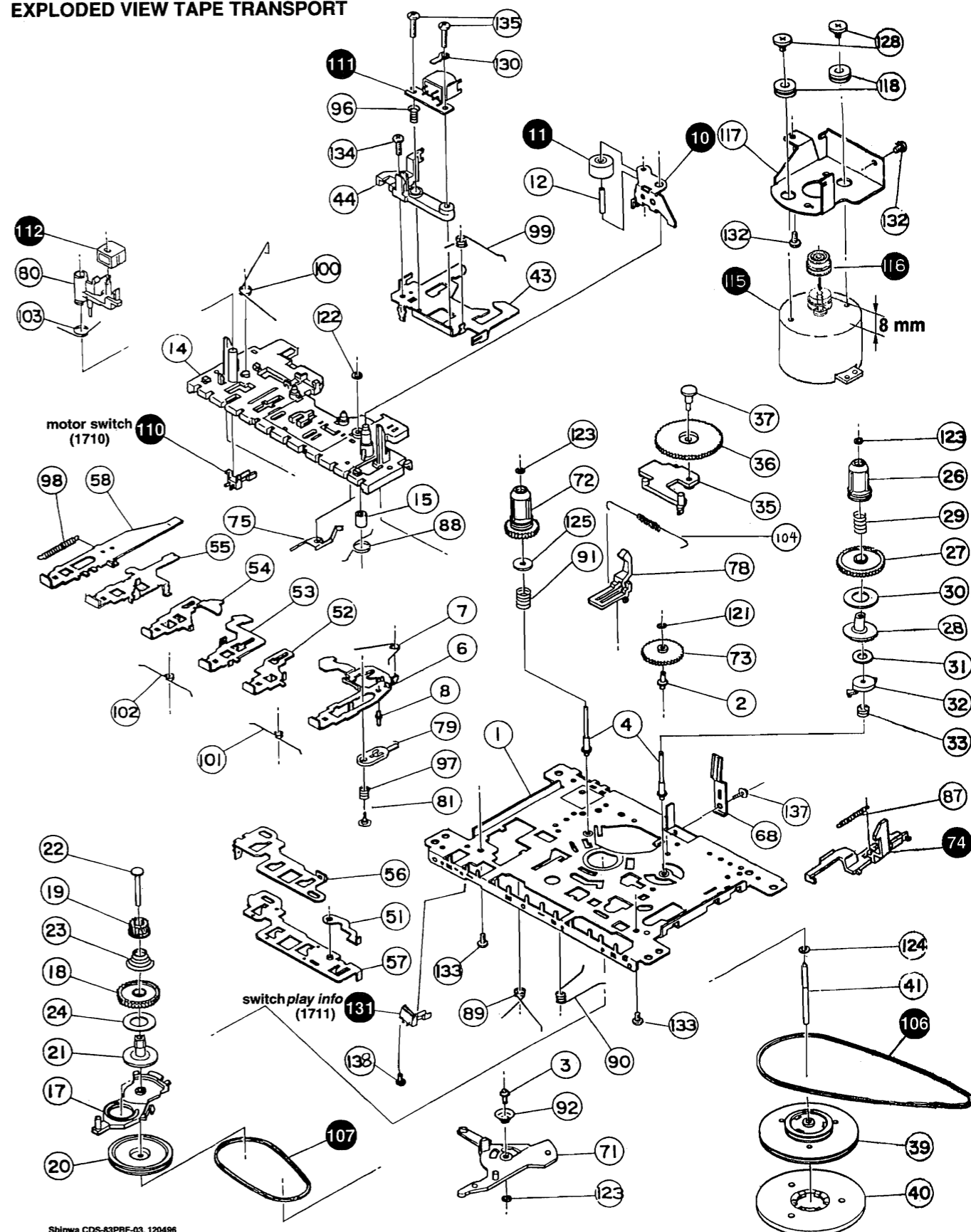
Somente as peças para as quais é mencionado um número de código de serviço são peças normais de serviço.

#### AJUSTE do AZIMUTE



Insira a fita diretamente no compartimento da fita tampa permanecerá aberta.  
 Use a fita de teste SBC420 (4822 397 30071) na parte de 10kHz.  
 Ajuste o parafuso do lado esquerdo para a saída máxima e o canal esquerdo = canal direito.9-1 (2ª parte)

### EXPLODED VIEW TAPE TRANSPORT



Shinwa CDS-83PBF-03, 120496

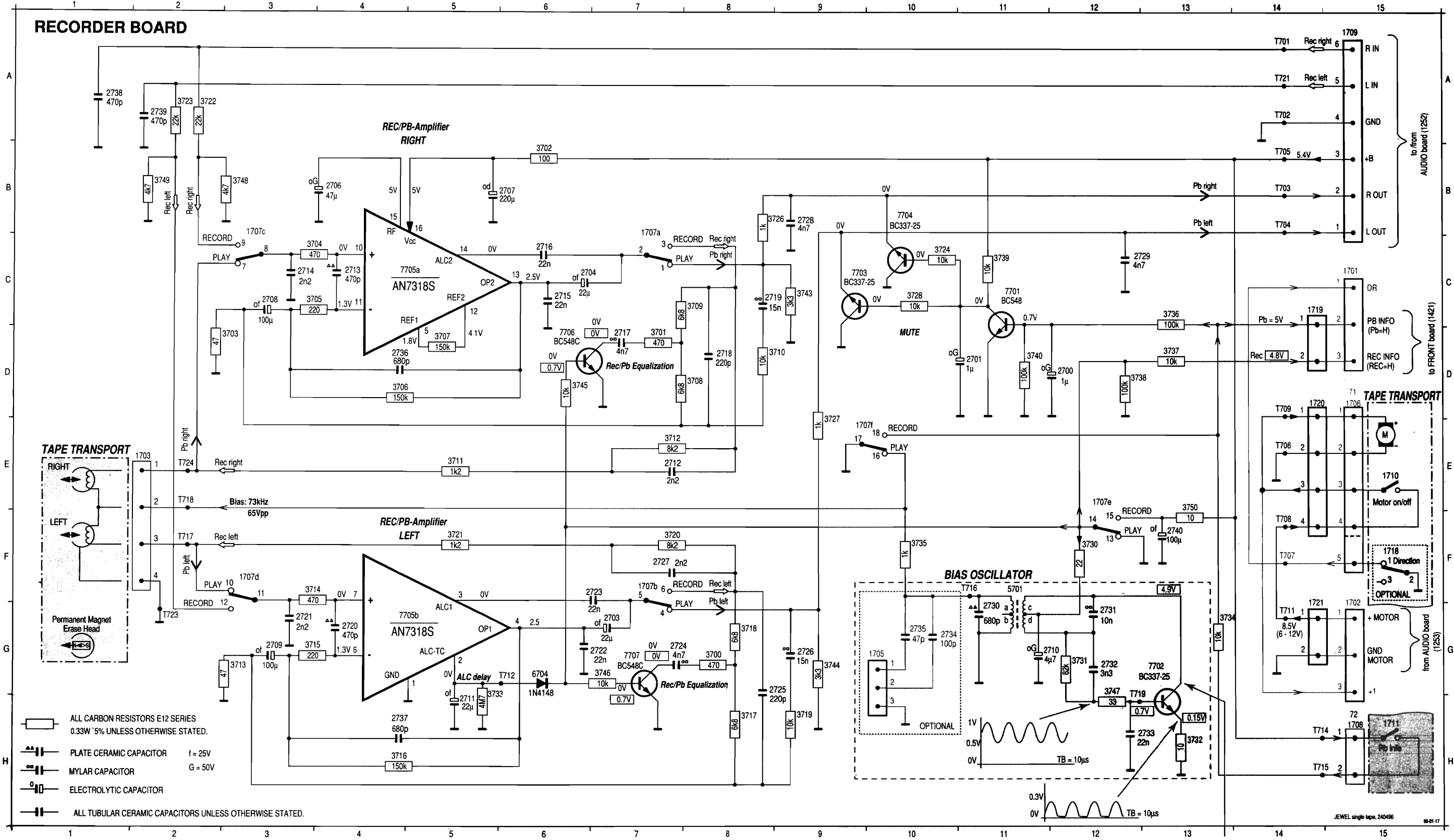
Somente as peças para as quais é mencionado um número de código de serviço são peças normais de serviço.

- |                    |                           |                    |                              |
|--------------------|---------------------------|--------------------|------------------------------|
| 10 4822 528 70849  | PINCH ROLLER ARM          | 111 4822 249 10397 | REC/PB-HEAD, MS15R-AA2N1     |
| 11 4822 528 70695  | PINCH ROLLER ASSY         | 112 4822 249 40306 | ERASE HEAD, TDK6PA           |
| 74 4822 403 30792  | EJECT HOOK                | 115 4822 361 21656 | MOTOR, EG-530AD-9B           |
| 106 4822 358 31325 | MAIN BELT                 | 116 4822 528 81497 | MOTOR PULLEY                 |
| 107 4822 358 31124 | SUB BELT                  | 131 4822 276 13712 | LEAF SWITCH, INDICATION PLAY |
| 110 4822 278 90663 | LEAF SWITCH, MOTOR ON/OFF |                    |                              |

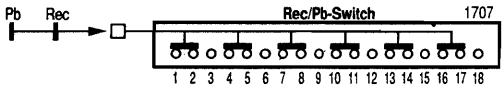


1701 C15	1707c B3	1711 H15	2703 G7	2711 H5	2718 D8	2725 G9	2732 G12	2739 A2	3705 C3	3712 E7	3719 H9	3727 E9	3735 F10	3744 G9	5701 F11	7705b G4
1702 G15	1707d F3	1718 F15	2704 C6	2712 E7	2719 C8	2726 G9	2733 H13	2740 F13	3706 D4	3713 G9	3720 F7	3728 C10	3736 C13	3745 D6	6704 G6	7706 D6
1703 E2	1707e E12	1719 C14	2706 B4	2713 C4	2720 G4	2727 F7	2734 G10	3700 G8	3707 D5	3714 F3	3721 F5	3730 F12	3737 D13	3746 G7	7701 C11	7707 G7
1705 G10	1707f E10	1720 D14	2707 B6	2714 C3	2721 G3	2728 B9	2735 G10	3701 D7	3708 D8	3715 G3	3722 A2	3731 G12	3738 D12	3747 G12	7702 G13	
1706 D15	1708 H14	1721 G14	2708 C3	2715 C6	2722 G7	2729 C13	2736 D4	3702 B6	3709 C8	3716 H4	3723 A2	3732 H13	3739 C11	3748 B3	7703 C9	
1707a B7	1709 A15	2700 D12	2709 G3	2716 C6	2723 F7	2730 G11	2737 H4	3703 D3	3710 D9	3717 H8	3724 C10	3733 H5	3740 D11	3749 B2	7704 B10	
1707b F7	1710 E15	2701 D11	2710 G12	2717 D7	2724 G7	2731 G12	2738 A1	3704 C3	3711 E5	3718 G8	3726 B9	3734 G13	3743 C9	3750 E13	7705a C4	

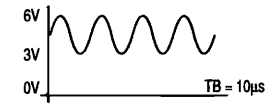
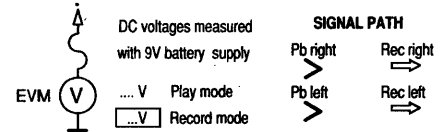
### RECORDER BOARD

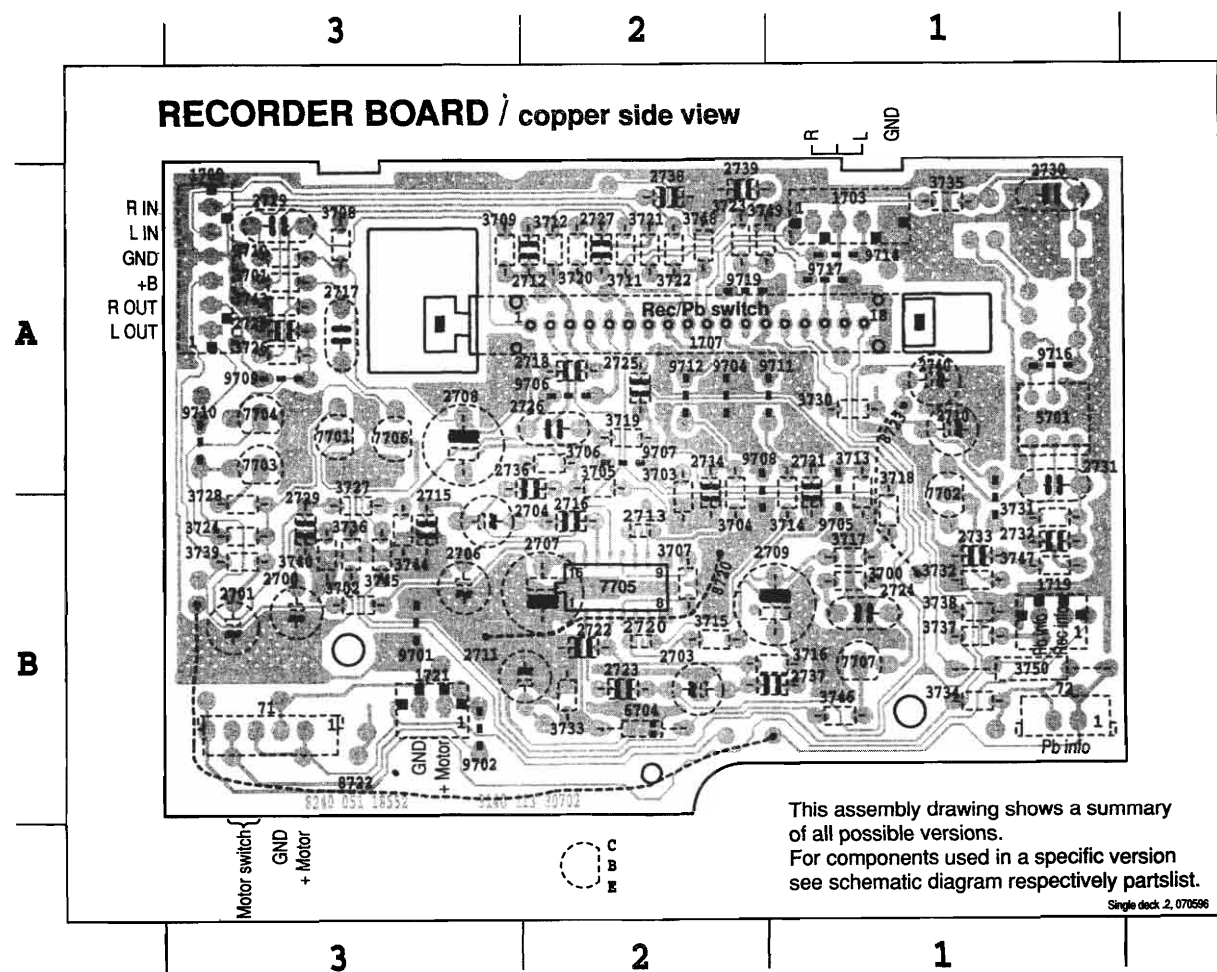


- ALL CARBON RESISTORS E12 SERIES 0.33W 5% UNLESS OTHERWISE STATED.
- PLATE CERAMIC CAPACITOR f = 25V
- MYLAR CAPACITOR G = 50V
- ELECTROLYTIC CAPACITOR
- ALL TUBULAR CERAMIC CAPACITORS UNLESS OTHERWISE STATED.

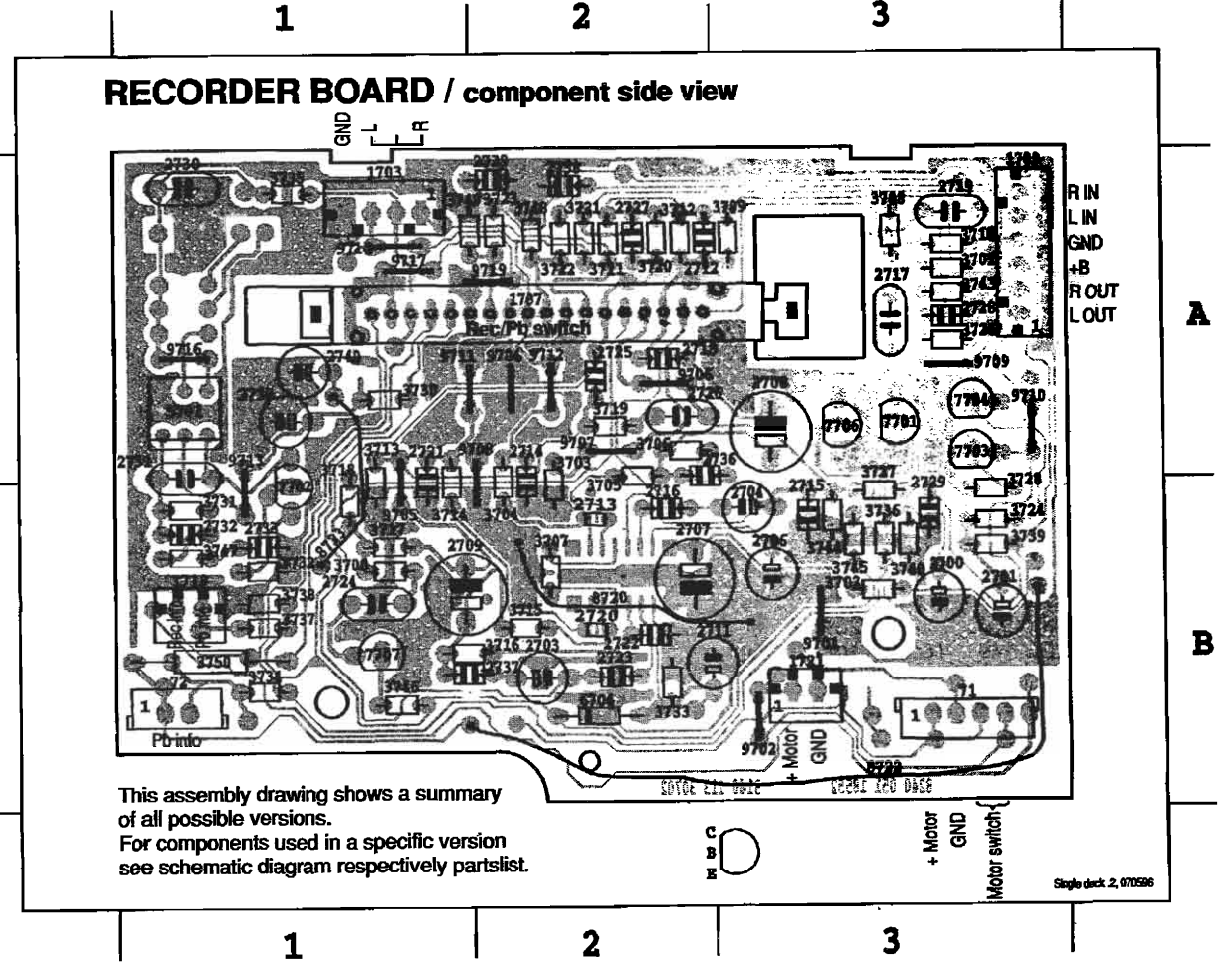


**Adjustment of tape speed: (use Universal Test Cassette SBC420)**  
Measure on headphone socket and adjust trimpot. on motor to 3150Hz ±1%.





71 B 3	2737 B 1	3738 B 1
72 B 1	2738 A 2	3739 B 3
1703 A 1	2739 A 2	3740 B 3
1707 A 2	2740 A 1	3743 A 3
1709 A 3	3700 B 1	3744 B 3
1719 B 1	3701 A 3	3745 B 3
1721 B 3	3702 B 3	3746 B 1
2700 B 3	3703 B 2	3747 B 1
2701 B 3	3704 B 2	3748 A 2
2703 B 2	3705 A 2	3749 A 2
2704 B 3	3706 A 2	3750 B 1
2706 B 3	3707 B 2	5701 A 1
2707 B 2	3708 A 3	6704 B 2
2708 A 3	3709 A 3	7701 A 3
2709 B 1	3710 A 3	7702 B 1
2710 A 1	3711 A 2	7703 A 3
2711 B 2	3712 A 2	7704 A 3
2712 A 2	3713 B 1	7705 B 2
2713 B 2	3714 B 1	7706 A 3
2714 B 2	3715 B 2	7707 B 1
2715 B 3	3716 B 1	9701 B 3
2716 B 2	3717 B 1	9702 B 3
2717 A 3	3718 B 1	9704 A 2
2718 A 2	3719 A 2	9705 B 1
2719 A 3	3720 A 2	9706 A 2
2720 B 2	3721 A 2	9707 A 2
2721 B 1	3722 A 2	9708 B 2
2722 B 2	3723 A 2	9709 A 3
2723 B 2	3724 B 3	9710 A 3
2724 B 1	3726 A 3	9711 A 1
2725 A 2	3727 B 3	9712 A 2
2726 A 2	3728 B 3	9713 B 1
2727 A 2	3730 A 1	9714 A 1
2728 A 3	3731 B 1	9716 A 1
2729 B 3	3732 B 1	9717 A 1
2730 A 1	3733 B 2	9719 A 2
2731 A 1	3734 B 1	8720 B 2
2732 B 1	3735 A 1	8722 B 3
2733 B 1	3736 B 3	8723 A 1
2736 A 2	3737 B 1	



**ELECTRICAL PARTSLIST RECORDER BOARD**

## MISCELLANEOUS

1707 4822 277 11504 SWITCH SLIDE, REC/PB

## CAPACITORS

2700	4822 124 40242	1µF	20%	63V
2701	4822 124 40242	1µF	20%	63V
2703	4822 124 41596	22µF	20%	50V
2704	4822 124 41596	22µF	20%	50V
2706	4822 124 41397	47µF	20%	25V
2707	4822 124 80144	220µF	20%	25V
2708	4822 124 41584	100µF	20%	10V
2709	4822 124 41584	100µF	20%	10V
2710	4822 124 40246	4,7µF	20%	63V
2711	4822 124 41596	22µF	20%	50V

## COILS

5701 4822 157 10371 OSC. COIL VAR. 100kHz

## DIODES

6704 ~~4806 130 37078~~ 1N4148

## TRANSISTORS

7701	<del>4806 130 47039</del>	BC548
7702	<del>4806 130 47234</del>	BC337-25
7703		BC337-25
7704		BC337-25
7706	<del>4806 130 47042</del>	BC548C

7707 BC548C

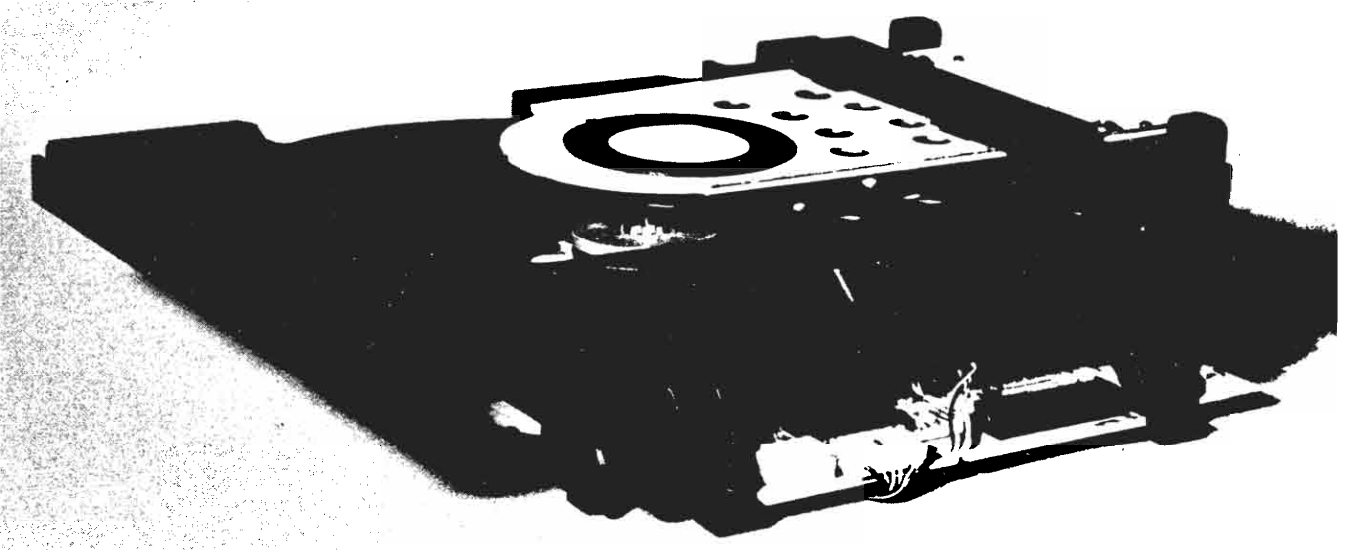
## INTEGRATED CIRCUITS

7705 © ~~4806 209 87683~~ AN7318S, Rec/Pb-AMPLIFIER IC

2740 4822 124 41584 100µF 20% 10V

**Obs:** Materias Standard como capacitores, resistores e etc,  
devem ser os de uso normal em nossa linha de aparelhos.





# ***ECO SHORT LOADER UNIT***

for Portables

## Instruções para desmontagem do Short Loader CD

### Desmontagem da bandeja

- a) Pressione o botão de abrir/fechar para abrir a bandeja.

Se a bandeja não funcionar, use uma pequena chave de fenda, como mostrado na Fig. 1, item 1 para mover a bandeja para fora. Após o primeiro centímetro será possível puxar a bandeja para fora com a mão.

- b) Solte as duas travas e remova a bandeja.

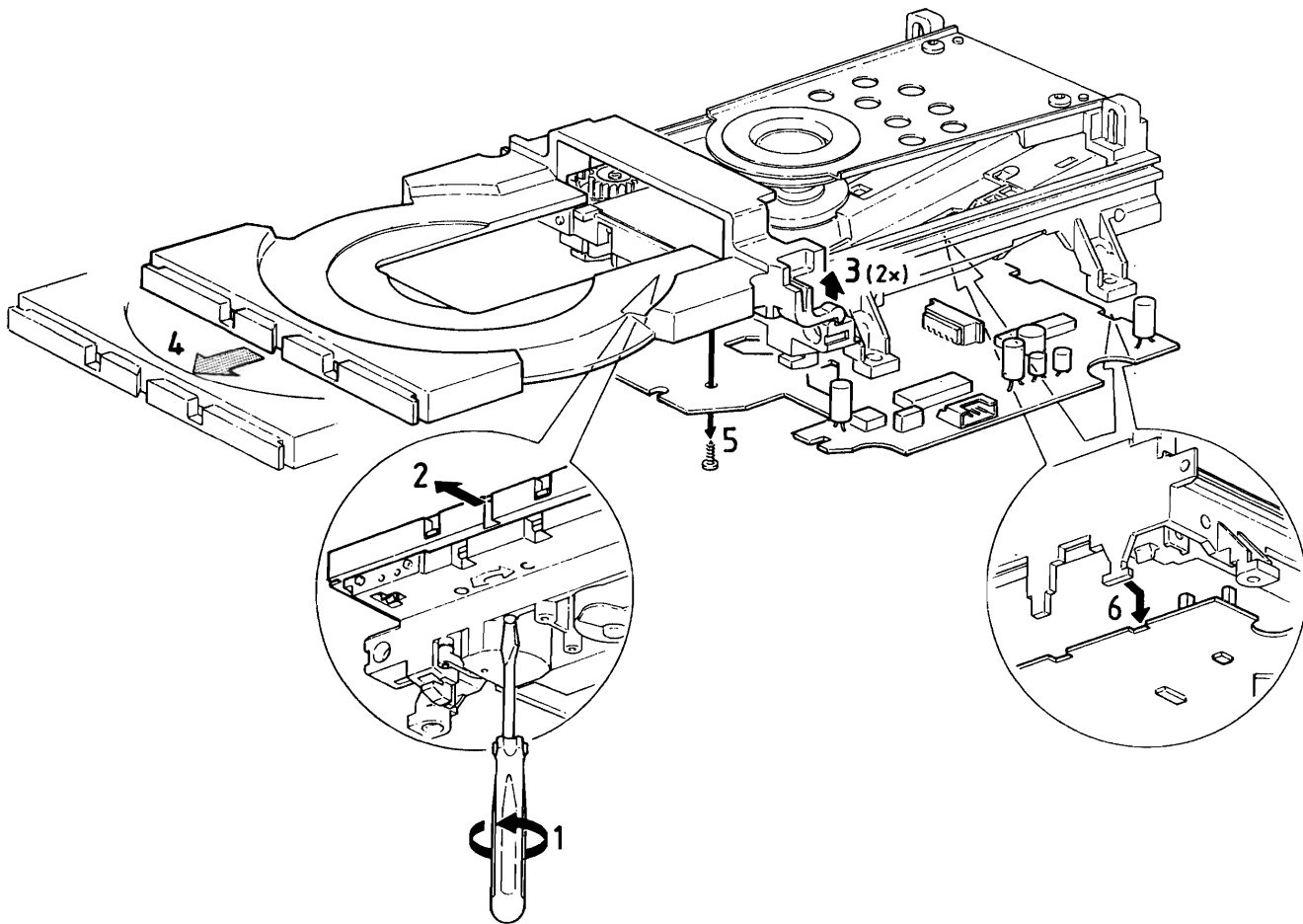


Fig. 1

**Montagem das engrenagens**

- a) Use um pino (p.ex. um clip de papel) para alinhar a engrenagem do excêntrico (a) com a engrenagem motriz (b). Vide Fig. 2.
- b) Fixe as engrenagens com as pequenas arruelas plásticas

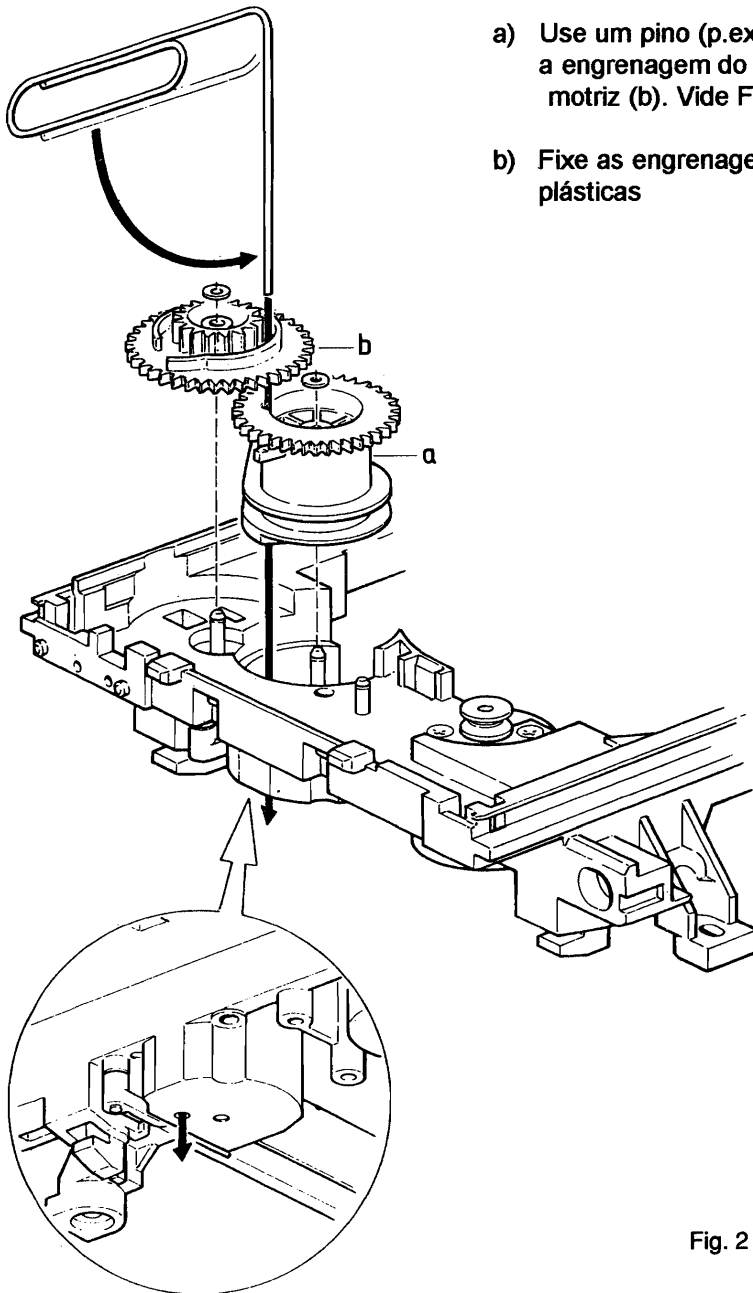


Fig. 2

- c) Monte a engrenagem 2 (c) e a polia 1 (d) em qualquer posição. Vide Fig. 3
- d) Fixe a polia 1 (d) com a pequena arruela plástica.
- e) Monte a correia de acionamento

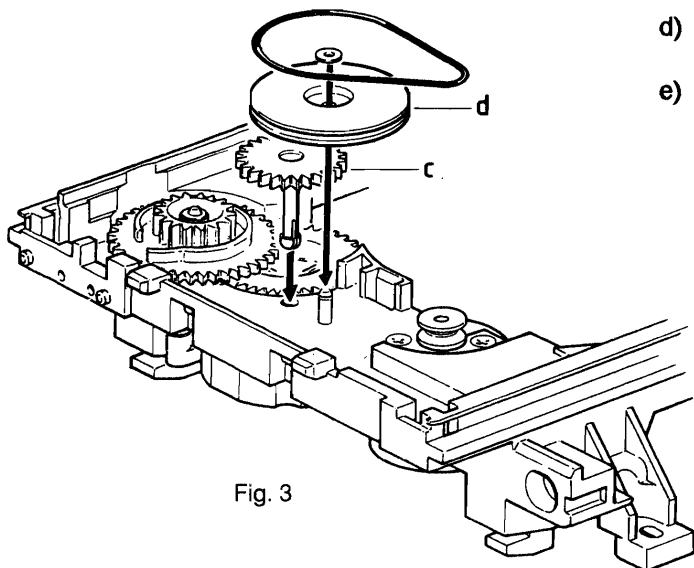


Fig. 3

- f) Monte o conjunto de guia de pinhões e a tampa como mostrado na Fig. 4
- g) Gire a engrenagem (b) no sentido anti-horário para a posição de fim de curso

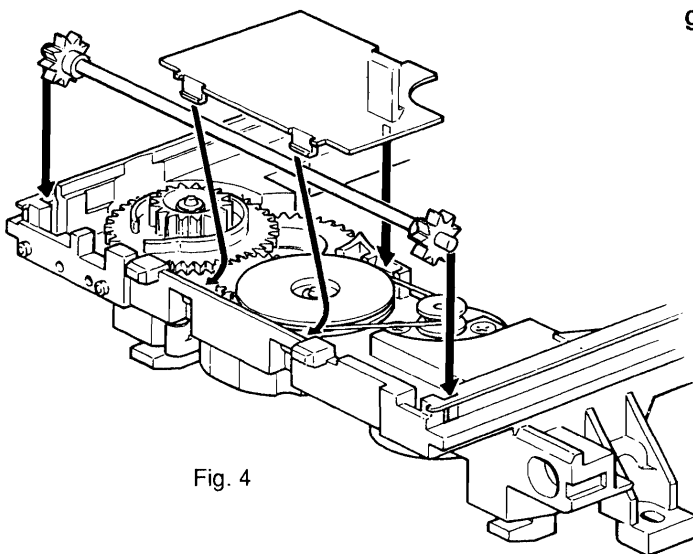


Fig. 4

- h) Monte o Mecanismo CD como mostrado na Fig. 5
- i) Monte a bandeja (alinhe a bandeja com o chassi e empurre-a para dentro)

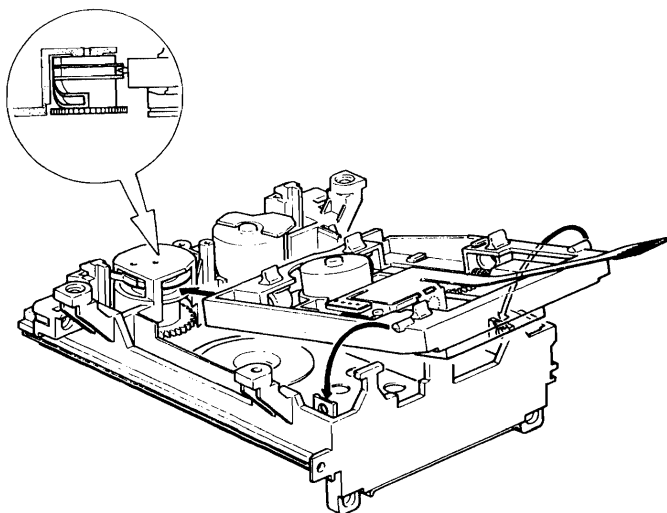
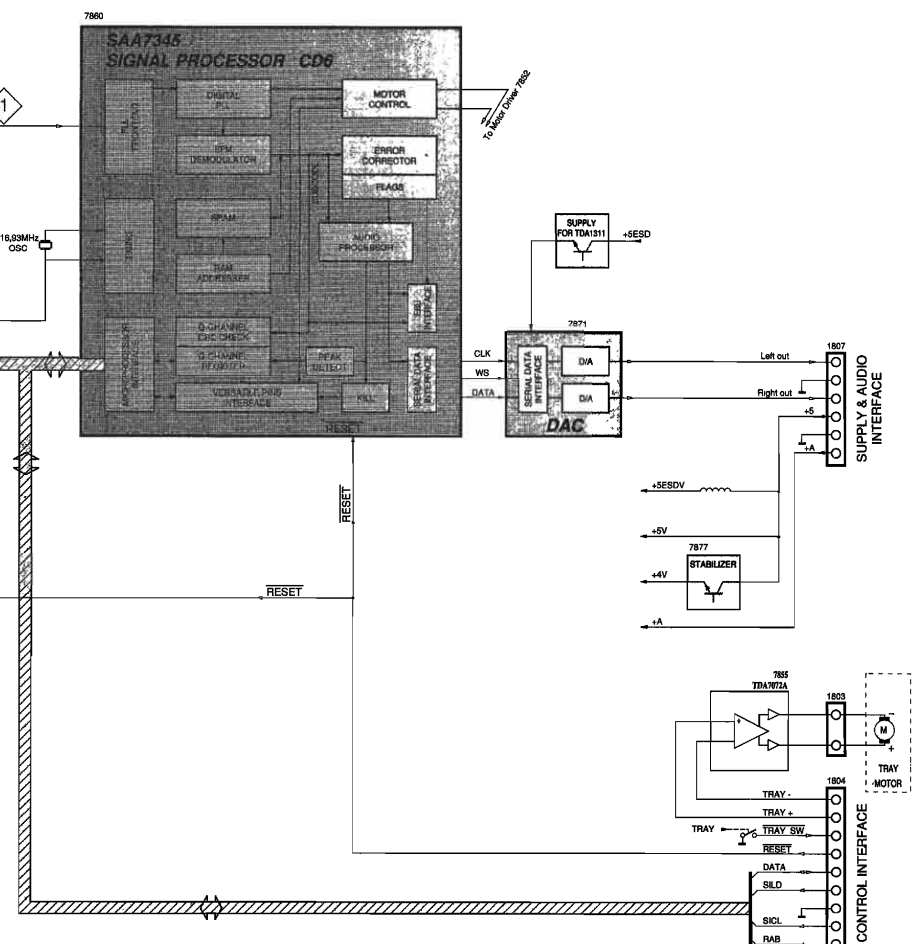
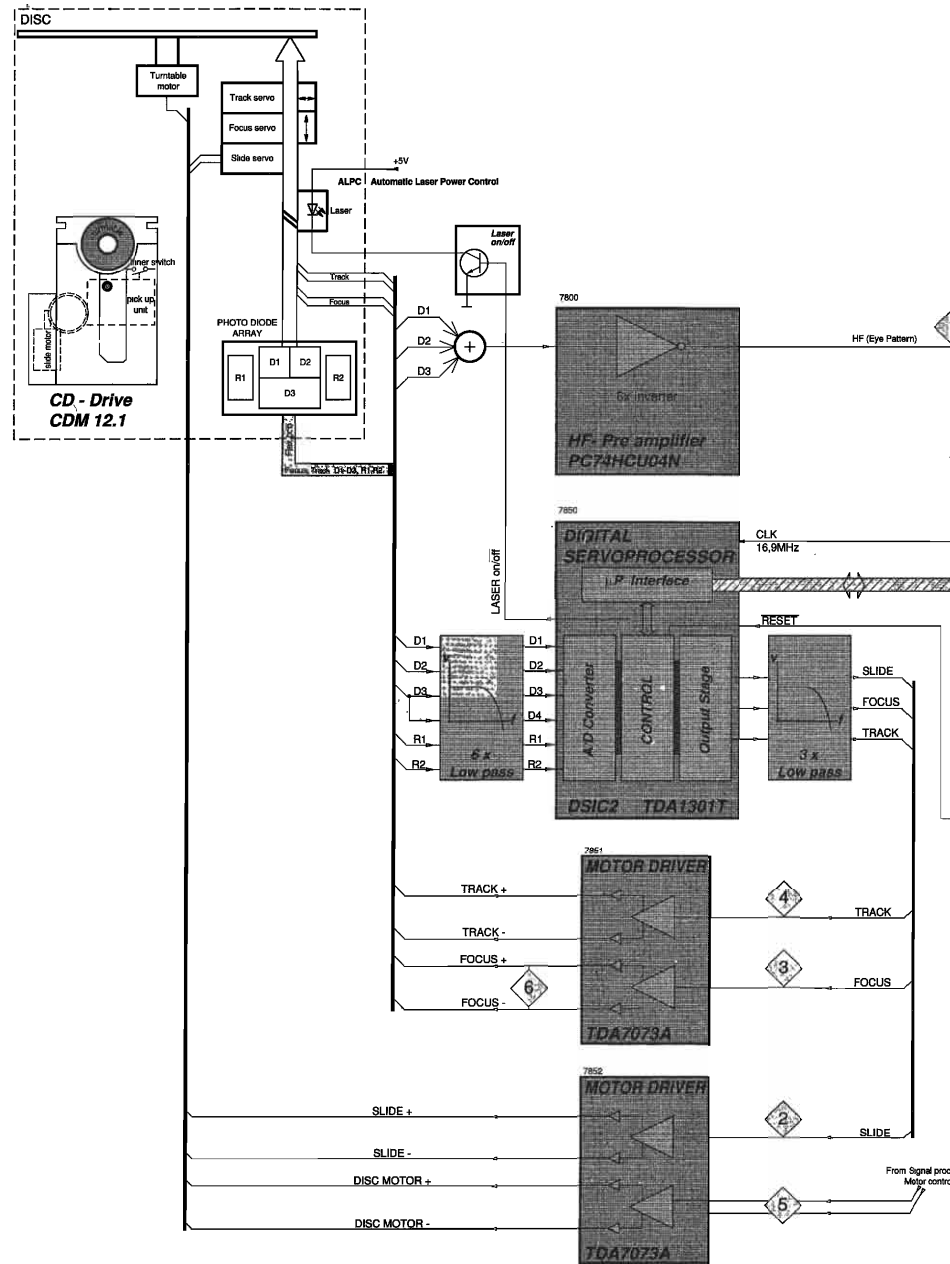


Fig. 5

**Verifique se o mecanismo da bandeja funciona corretamente !**

- 1) Gire a engrenagem (g) no sentido horário até a sua posição de fim de curso (use uma pequena chave de fenda, como mostrado na Fig. 1, item 1). A bandeja deverá se movimentar primeiro para a sua posição interna e então o mecanismo do CD deverá mover-se para a sua posição superior.
- 2) Gire a engrenagem (b) no sentido anti-horário até a sua posição de fim de curso. O mecanismo do CD deverá primeiro mover-se para a sua posição inferior e então a bandeja deverá mover-se para fora.

# BLOCKDIAGRAM CD Module



## Abbreviations CD Part

### DSIC2

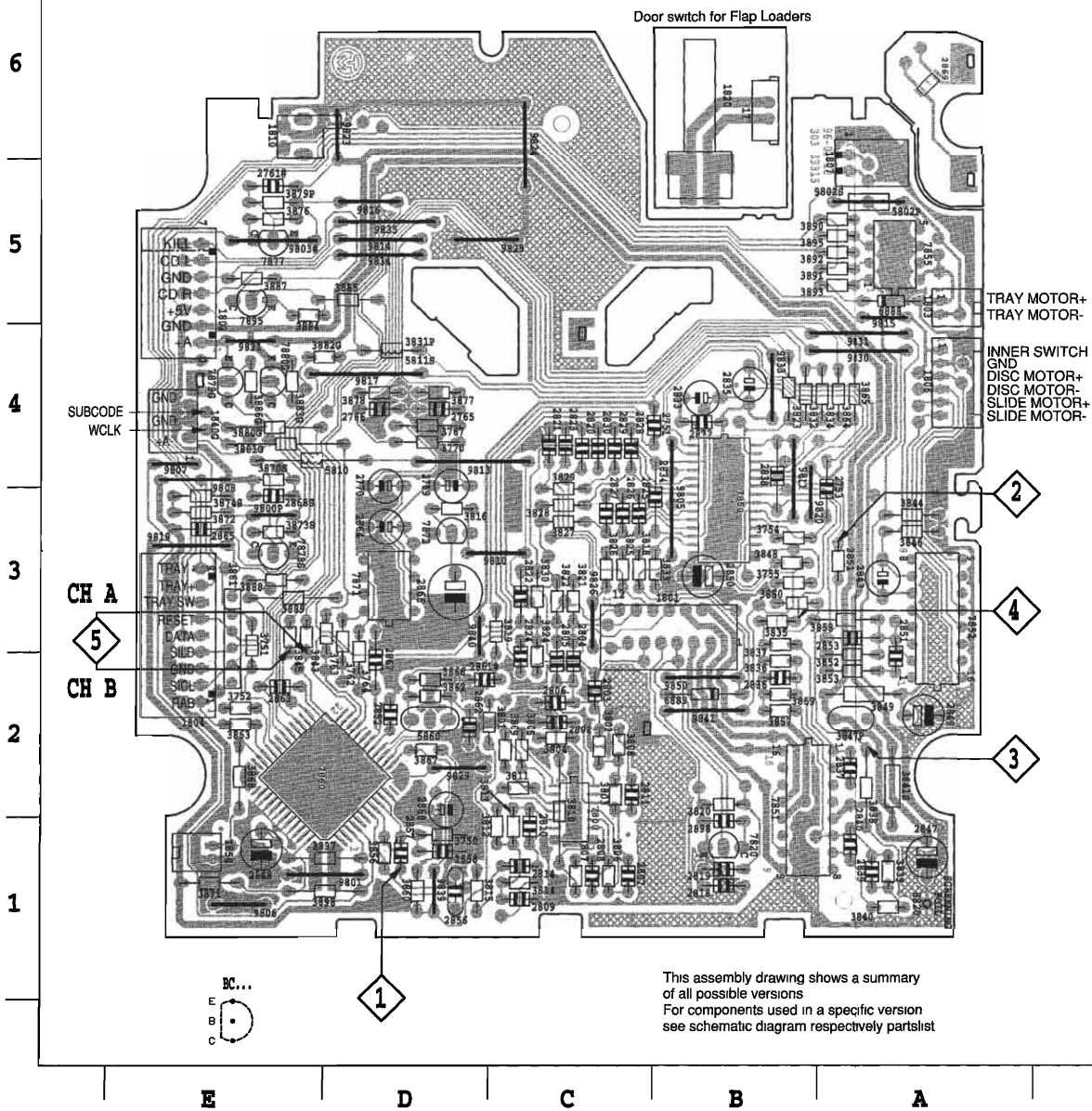
Pin	Name	Direction	Description
1	RESET	μP → DSIC2	Reset input (Low level is active)
2	Laser on/off	DSIC2 → Laser switch	Switches Laser on/off (High level is active)
3	Gnd		Ground (Analogue part)
4	VRH	not connected	Reference input for A/D Converter
5	D1	Diode array → DSIC2	Unipolar current input (Central diode signal input)
6	D2	Diode array → DSIC2	Unipolar current input (Central diode signal input)
7	D3	Diode array → DSIC2	Unipolar current input (Central diode signal input)
8	Vref	Gnd	Reference input for A/D Converter
9	D4	Diode array → DSIC2	Unipolar current input (Central diode signal input)
10	R1	Diode array → DSIC2	Unipolar current input (Satellite diode signal input)
11	R2	Diode array → DSIC2	Unipolar current input (Satellite diode signal input)
12	VDD		Supply for DSIC2 (Analogue part)
13			
14	TS1	Gnd	Test input 1
15	TS2	Gnd	Test input 2
16	OTD	not connected	Off Track Detection (Low level is active)
17	CLO	not connected	Clock output
18	XTLO		Oscillator output pin
19	XTLI		Oscillator input pin
20	VDD		+Supply for DSIC2 (Digital part)
21	Gnd		Ground (Digital part)
22	Track	DSIC2 → Servo Driver	Radial actuator output
23	Focus	DSIC2 → Servo Driver	Focus actuator output
24	Slide	DSIC2 → Servo Driver	Slide motor output
25	SILD	μP → DSIC2	Serial Interface Load
26	SICL	μP → DSIC2	Serial Interface Clock
27	SIDA	μP ← DSIC2	Serial Interface Data
28	VDD		+Supply for DSIC2 (Digital part)

### SIGNAL PROCESSOR CD6

Pin	Name	Direction	Description
1	CL11	not connected	11,2896MHz clock output (3-state)
2	DOBIM	not connected	digital bi-phase mark output (3-state)
3	V1	→ Signal processor	Versatile input (used for Version detection)
4	V2	→ Signal processor	Versatile input (used for inner switch detection)
5	Test2	Gnd	Test input of signal processor
6	Test1	Gnd	Test input of signal processor
7	ISLICE	Signal processor → Signal processor	Current feedback from internal data slicer
8	HF IN	HF Pre-amp → Signal processor	Comparator signal input
9	HFREF	HF Pre-amp → Signal processor	Comparator signal input
10	IREF	→ Signal processor	reference current pin (nom VDD/2)
11	VDDA		+Supply (analogue) of signal processor
12	VSSA		- Supply (analogue) of signal processor
13	CRIN	X-Tal → Signal processor	Crystal/resonator input of signal processor
14	CROUT	Signal processor → X-Tal	Crystal/resonator output of signal processor
15	VDD1		+Supply for I/O buffers of signal processor
16	VSS1		- Supply for I/O buffers of signal processor
17	CL16	not connected	16,9344MHz clock output
18	MISC	not connected	General purpose DAC output (3-state)
19	DATA	Signal processor → DAC	Serial data output of signal processor (3-state)
20	WCLK	Signal processor → DAC	Word clock output of signal processor (3-state)
21	SCLK	Signal processor → DAC	Serial bit clock output of signal processor (3-state)
22	MOTOR1	Signal processor → Disc motor driver	Motor output1 of signal processor, versatile (3-state)
23	MOTOR2	Signal processor → Disc motor driver	Motor output2 of signal processor, versatile (3-state)
24	V5	not connected	Versatile output pin of signal processor
25	V4	not connected	Versatile output pin of signal processor
26	V3	not connected	Versatile output pin of signal processor
27	KILL	not connected	Kill output, programmable (open drain)
28	PORE	μP → Signal processor	Power On Reset enable input (active low)
29	CLA	not connected	4,2336MHz microprocessor clock output
30	DA	μP ↔ Signal processor	Interface data I/O line
31	CL	μP → Signal processor	Interface clock input line
32	RAB	μP → Signal processor	Interface R/W and acknowledge input
33	CFLG	Signal processor →	Correction flag output (open drain)
34-42	not used		
43	VSS2		Digital supply for internal logic of signal processor
44	VDD2		Digital supply for internal logic of signal processor

E D C B A

### COMPACT DISC BOARD Copperside view



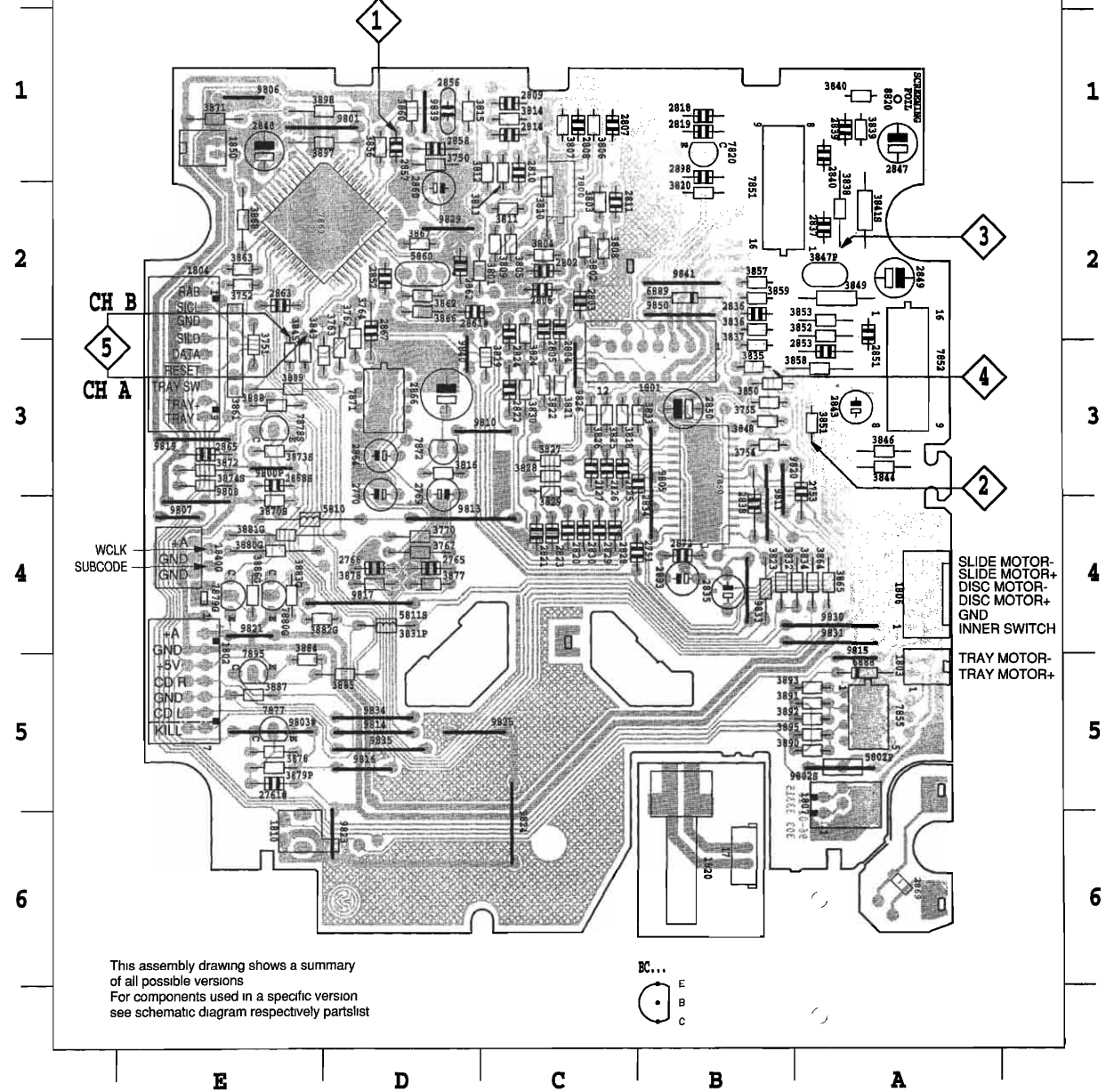
1801 B 3	3754 B 3	38748 E 3
1802 E 5	3755 B 3	3876 E 5
1803 A 5	3762 D 3	3877 D 4
1804 E 3	3763 D 3	3878 D 4
1806 A 4	3764 D 3	3879 E 5
1807 A 5	3767 D 4	3880 E 4
1810 W 6	3770 D 4	38810 A 4
1820 B 5	3801 D 2	38820 E 4
1840G E 4	3802 C 2	38832 E 4
1850 E 1	3803 C 2	3884 E 5
2751 C 4	3804 C 2	3885 D 5
2753 A 3	3805 C 2	3886G E 4
2761F E 5	3806 C 1	3887 E 5
2765 D 4	3807 C 1	3888 E 3
2766 D 4	3808 C 2	3889 E 3
2769 D 3	3809 C 2	3890 A 5
2770 D 3	3810 C 2	3891 A 5
2802 C 2	3811 C 2	3892 A 5
2803 C 2	3812 C 1	3893 A 5
2804 C 2	3813 C 1	3895 A 5
2805 C 2	3814 C 1	3897 D 1
2806 C 2	3815 D 1	3898 D 1
2807 C 1	3816 D 3	5802P A 5
2808 C 1	3818 C 3	5810 E 4
2809 C 1	3819 C 3	58118 D 4
2810 C 1	3820 B 2	5860 D 2
2811 C 2	3821 C 3	6888 A 5
2814 C 1	3822 C 3	6889 B 2
2818 B 1	3823 B 4	7800 C 2
2819 B 1	3824 C 2	7820 B 1
2820 C 4	3825 C 3	7850 B 3
2821 C 4	3826 C 3	7851 B 2
2822 C 3	3827 C 3	7852 A 3
2823 C 4	3828 C 3	7853 A 5
2824 C 2	3829 C 3	7860 D 2
2825 C 3	3830 C 3	7871 D 3
2826 C 3	3831P D 4	7872 D 3
2827 C 3	3832 B 4	7877 E 5
2828 C 4	3833 B 3	7878E E 3
2829 C 4	3834 A 4	7879G E 4
2830 C 4	3835 B 3	7880G E 4
2833 B 4	3836 B 2	7895 E 5
2834 B 3	3837 B 3	9800P E 3
2835 B 4	3838 A 2	9801 D 1
2836 B 2	3839 A 1	9802S A 5
2837 A 2	3840 A 1	9803# E 5
2838 B 4	3841E A 2	9805 B 3
2839 A 1	3843 B 3	9806 E 1
2840 A 1	3844 A 3	9807 E 4
2843 A 3	3845 E 3	9808 E 4
2847 A 1	3846 A 3	9810 C 3
2848 E 1	3847A E 2	9811 B 4
2849 A 2	3848 B 3	9813 D 3
2850 B 3	3849 A 2	9814 D 5
2851 A 2	3850 B 3	9815 A 5
2852 D 2	3851 A 3	9816 D 5
2853 A 3	3852 A 2	9817 D 4
2856 D 1	3853 A 2	9819 B 3
2857 D 1	3856 D 1	9820 B 3
2858 D 1	3857 B 2	9821 E 4
2860 D 2	3858 A 3	9823 D 6
2861F D 2	3859 B 2	9824 C 6
2862 D 2	3860 D 1	9825 D 5
2863 E 2	3861 E 3	9826 C 3
2864 D 3	3862 D 2	9829 D 2
2865 E 3	3863 E 2	9830 A 4
2866 D 3	3864 A 4	9831 A 4
2867 D 2	3865 A 4	9833 B 4
2868E E 3	3866 D 2	9834 D 5
2869 A 6	3867 D 2	9835 D 5
2872 B 4	3868 E 2	9839 D 1
2898 B 1	3870E E 4	9840 D 3
3750 D 1	3871 E 1	9841 B 2
3751 E 3	3872 E 3	9850 B 2
3752 E 2	3873E E 3	

#### Version related parts

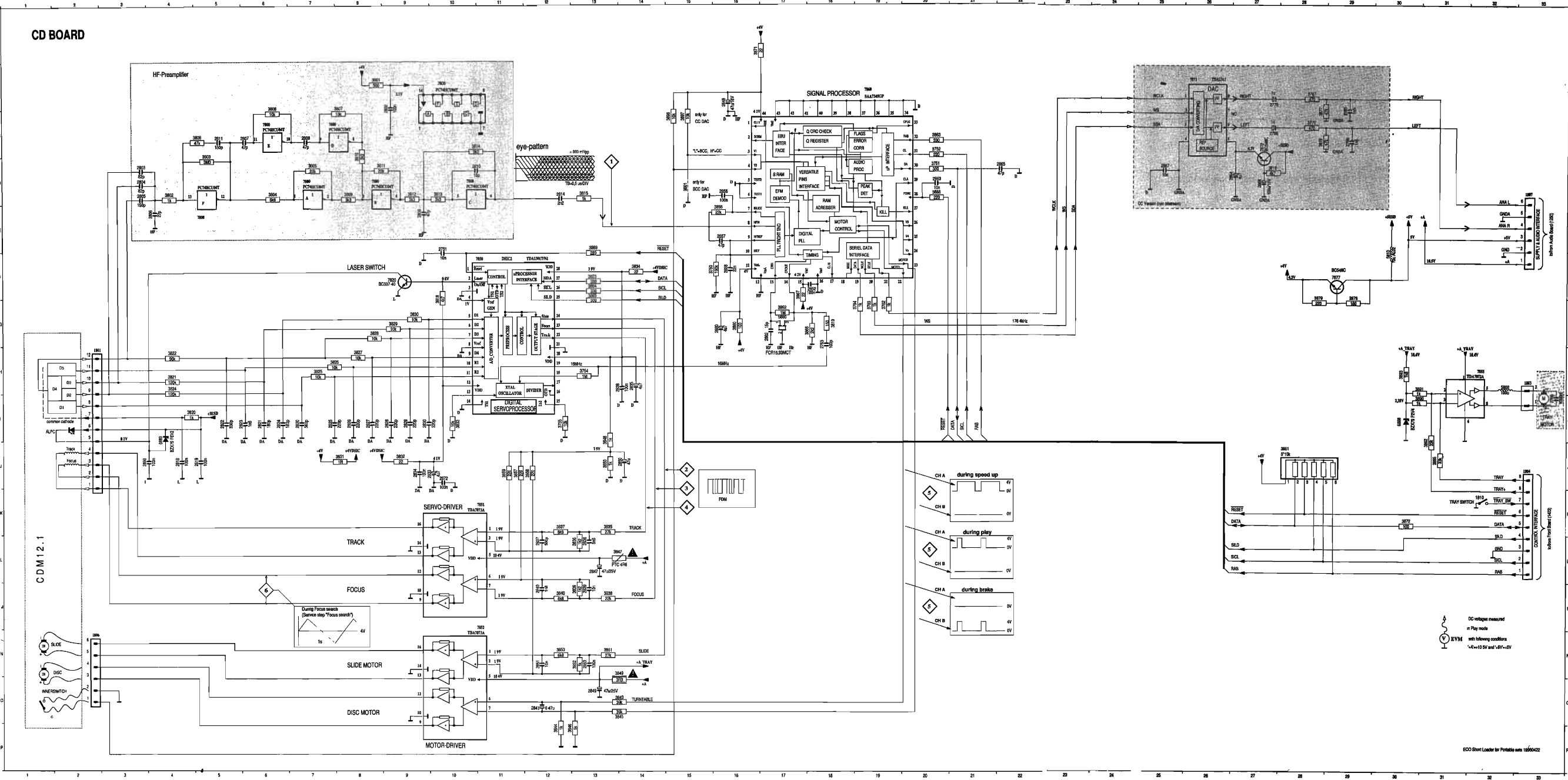
xxxxS for System applications only  
 xxxXP for Portable applications only  
 xxxxG for CD Graphics versions only  
 xxxx# provisional only Not used yet

E D C B A

### COMPACT DISC BOARD Component side view



CD BOARD



- 1801 G 2
- 1803 H30
- 1804 J33
- 1805 N 2
- 1807 D33
- 1810 K32
- 2761 E10
- 2763 G18
- 2761 G29
- 2765 C29
- 2765 C29
- 2765 C27
- 2770 B27
- 2802 B 9
- 2803 D 3
- 2804 D 3
- 2805 D 3
- 2808 E 4
- 2807 C 6
- 2808 C 7
- 2809 E 9
- 2810 D10
- 2811 C 5
- 2814 D12
- 2818 J 4
- 2818 J 5
- 2821 I 6
- 2822 I 6
- 2823 I 6
- 2824 I 6
- 2825 I 7
- 2826 I 8
- 2827 I 8
- 2828 I 9
- 2829 I 9
- 2830 I 9
- 2833 J10
- 2834 J 9
- 2835 H14
- 2836 L13
- 2837 L12
- 2838 H14
- 2839 M13
- 2840 M12
- 2843 O12
- 2847 L12
- 2846 B16
- 2849 N12
- 2850 J14
- 2851 N12
- 2852 G18
- 2853 N13
- 2856 D16
- 2857 E16
- 2858 F16
- 2860 G16
- 2862 G17
- 2863 D20
- 2864 D27
- 2866 D27
- 2867 D25
- 2868 M29
- 2872 J10
- 2886 J 3
- 3750 F16
- 3751 D20
- 3752 C20
- 3754 H13
- 3755 H12
- 3762 G19
- 3763 G19
- 3764 G19
- 3767 B28
- 3770 C28
- 3801 B 8
- 3802 D 4
- 3803 C 5
- 3804 D 6
- 3805 D 7
- 3806 B 6
- 3807 B 5
- 3808 C 5
- 3809 D 8
- 3810 E 8
- 3811 D 8
- 3812 D 9
- 3813 D10
- 3814 C10
- 3815 D13
- 3816 D27
- 3818 F10
- 3819 G18
- 3820 I 4
- 3821 H 4
- 3822 H 4
- 3823 F13
- 3824 H 4
- 3825 H 7
- 3826 H 7
- 3827 H 8
- 3828 G 8
- 3829 G 9
- 3830 G 9
- 3831 J 7
- 3832 J 9
- 3833 I10
- 3834 F14
- 3835 K13
- 3836 L13
- 3837 K12
- 3838 M13
- 3839 M13
- 3840 M12
- 3841 L13
- 3843 O13
- 3844 P12
- 3845 O13
- 3846 P12
- 3847 L13
- 3848 H13
- 3849 N13
- 3850 J13
- 3851 N13
- 3852 N13
- 3853 N12
- 3856 E16
- 3857 J11
- 3857 J12
- 3859 J11
- 3860 G16
- 3861 I25
- 3862 G17
- 3863 C20
- 3864 F13
- 3865 F13
- 3866 G18
- 3867 G17
- 3868 C20
- 3869 F13
- 3870 F13
- 3871 A16
- 3872 K30
- 3873 J30
- 3874 J30
- 3876 F29
- 3877 C28
- 3878 C28
- 3885 D20
- 3889 E13
- 3890 I30
- 3891 H30
- 3892 J31
- 3893 H30
- 3895 J31
- 3897 B15
- 3898 B15
- 3899 H15
- 5811 J 7
- 5860 G17
- 6889 I 4
- 7800 D 7
- 7800 D 8
- 7800 D10
- 7800 C 7
- 7800 C 6
- 7800 E 5
- 7820 F 9
- 7850 F10
- 7851 K11
- 7852 M11
- 7855 H31
- 7860 B20
- 7871 B26
- 7872 C27
- 7877 F29
- 7878 K29

DC voltages measured  
 in Play mode  
 with following conditions  
 \*V=+10.5V and \*I=0V-0.5V

ECO Short Loader for Portability with 18604022

**Instruções de Manutenção do Servo do CD**

Capacitores carregados na placa servo podem danificar os circuitos eletrônicos do CDM quando por ocasião da conexão de um novo mecanismo CDM. Portanto além dos cuidados normais o técnico de reparação deve:  
 - Desligar a fonte de alimentação  
 - Adotar as medidas de proteção contra descarga eletrostáticas (ESD).

Os seguintes passos devem ser seguidos para a substituição do mecanismo CDM:

1. Desconecte o cabo "flexfoil" do CDM antigo da placa de circuito impresso.
2. Conecte um "clip" de papel no cabo "flexfoil" do novo CDM para curto-circuito os vários terminais (fig. 1)
3. Curto-circuito a placa de circuito impresso com uma folha metálica (código 4822 321 11197) ligado no conector do flexfoil (fig.2).
4. Remova o mecanismo do CDM antigo
5. Posicione o novo mecanismo CDM em seus suportes.
6. Remova o curto-circuito de placa de circuito impresso.
7. Remova o curto-circuito fo cabo "flexfoil" do novo CDM
8. Conecte o novo cabo "flexfoil" no conector da placa do circuito impresso (fig. 3)

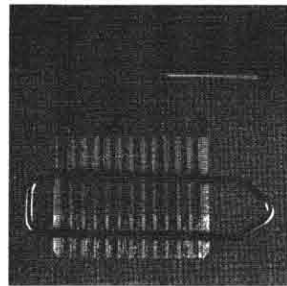


fig.1

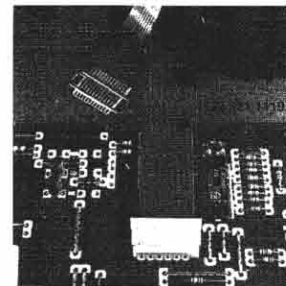


fig.2

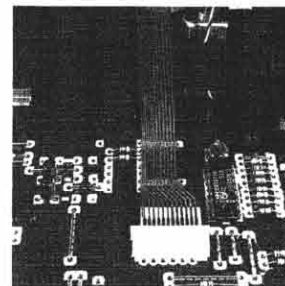
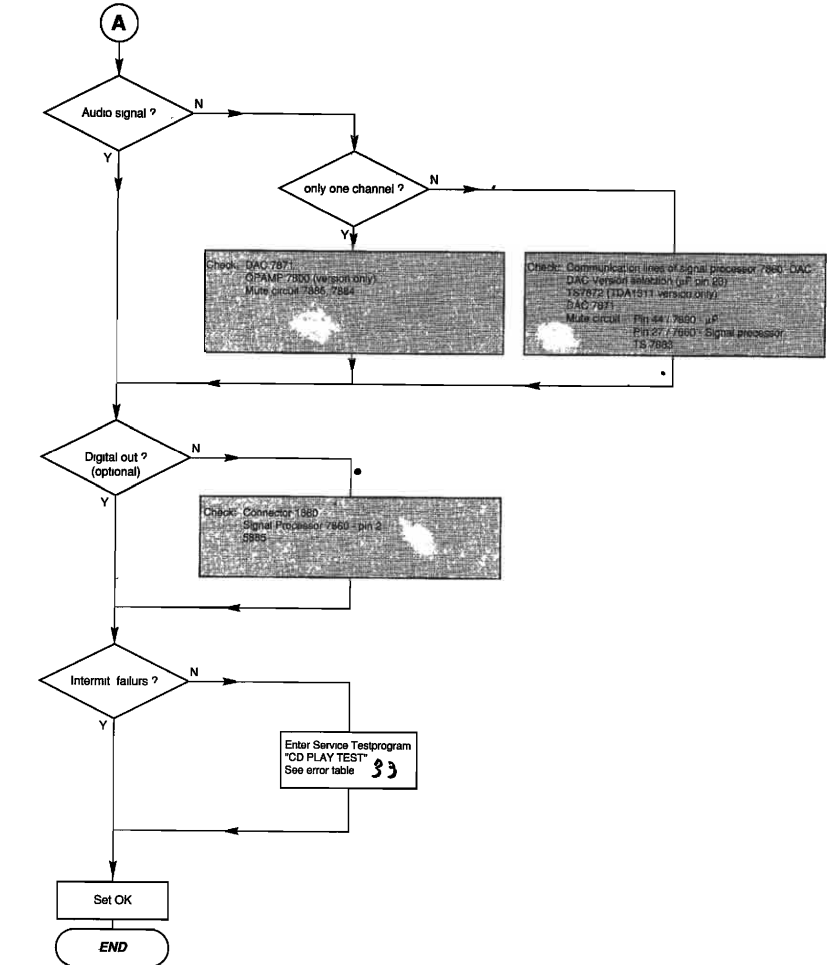
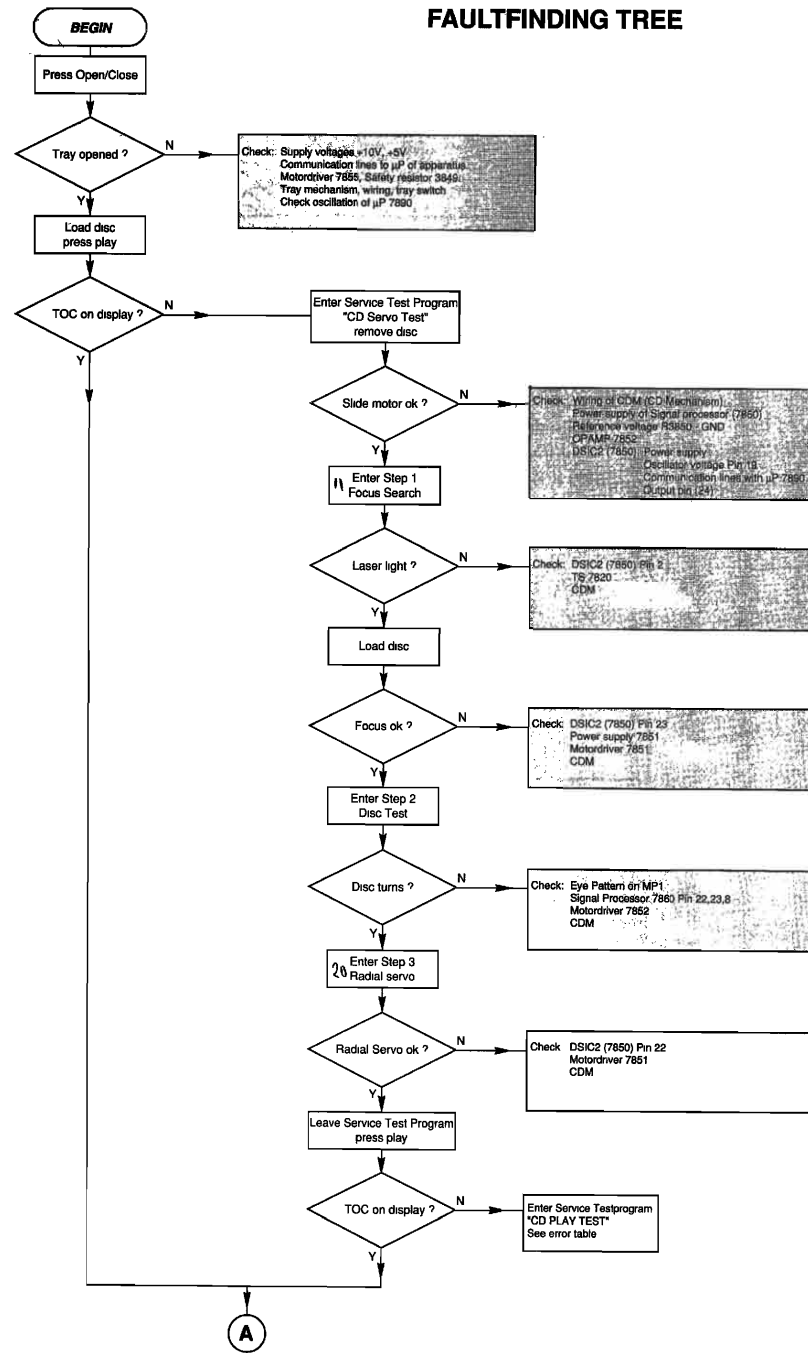


fig.3

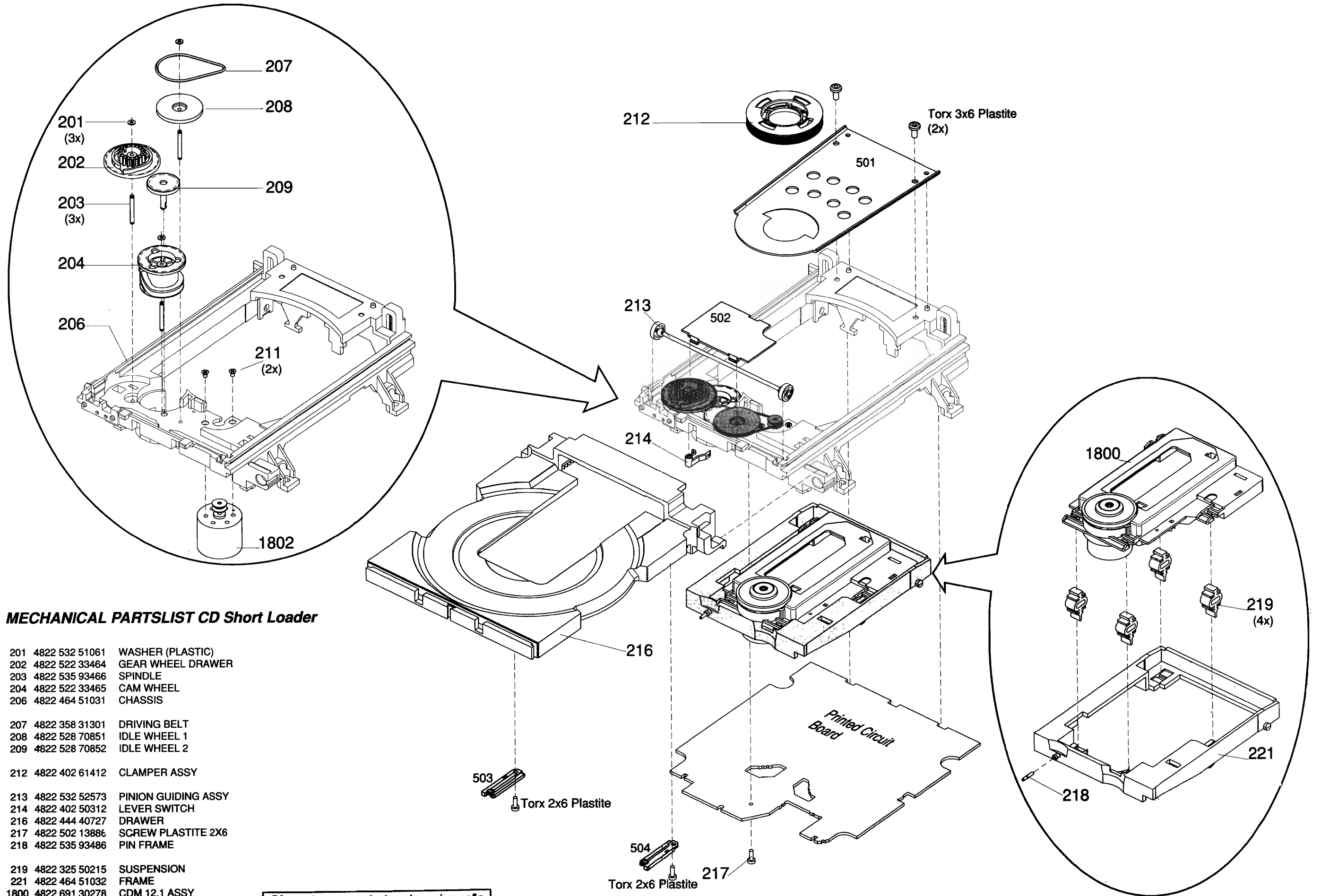
Remarks \_\_\_\_\_

**FAULTFINDING TREE**





**Exploded view CD Short Loader**



**MECHANICAL PARTSLIST CD Short Loader**

201	4822 532 51061	WASHER (PLASTIC)
202	4822 522 33464	GEAR WHEEL DRAWER
203	4822 535 93466	SPINDLE
204	4822 522 33465	CAM WHEEL
206	4822 464 51031	CHASSIS
207	4822 358 31301	DRIVING BELT
208	4822 528 70851	IDLE WHEEL 1
209	4822 528 70852	IDLE WHEEL 2
212	4822 402 61412	CLAMPER ASSY
213	4822 532 52573	PINION GUIDING ASSY
214	4822 402 50312	LEVER SWITCH
216	4822 444 40727	DRAWER
217	4822 502 13886	SCREW PLASTITE 2X6
218	4822 535 93486	PIN FRAME
219	4822 325 50215	SUSPENSION
221	4822 464 51032	FRAME
1800	4822 691 30278	CDM 12.1 ASSY
1802	4822 361 21708	MOYOR ASSY
	4822 502 30735	SCREW 3 X 6 PLASTITE

**Obs. : As peças relacionadas acima, são únicas disponíveis para reposição.**

## ELECTRICAL PARTSLIST CD BOARD

## MISCELLANEOUS

1810 4822 276 13503 SWITCH, TRAY

## CAPACITORS

2769 4822 124 41969 1µF 20% 50V

2770 4822 124 41969 1µF 20% 50V

2833 4822 124 23401 4,7µF 20% 25V

2835 4822 124 23401 4,7µF 20% 25V

2843 5322 124 41948 0,47µF 20% 50V

2847 4822 124 40433 47µF 20% 25V

2848 4822 124 23178 47µF 20% 16V

2849 4822 124 40433 47µF 20% 25V

2850 4822 124 23178 47µF 20% 16V

2860 4822 124 23401 4,7µF 20% 25V

2864 4822 124 23401 4,7µF 20% 25V

2866 4822 124 42446 100µF 20% 10V

**Obs. : As peças relacionadas acima, são  
únicas disponíveis para reposição.**

## ELECTRICAL PARTSLIST CD BOARD

## RESISTORS

3861 4822 116 90836 RES.NETWORK 5x10kΩ

## COILS

5802 4822 157 50964 100µH  
5810 4822 152 20677 10µH  
5860 4822 242 81865 CER.RES. 16,93MHz

## DIODES

6888 4822 130 80655 BZX79-F2V4  
6889 4822 130 34167 BZX79-F6V2

## TRANSISTORS

7820 4806 130 47234 BC337-40  
7872 4806 130 47042 BC548C  
7877 BC548C  
7878 BC548C

## INTEGRATED CIRCUITS

7800 5322 209 11517 PC74HCU04D  
7850 4806 209 87677 TDA1301T/N2  
7851 4806 209 87707 TDA7073A/N2  
7852 4806 209 87707 TDA7073A/N2  
7855 4822 209 31519 TDA7072A  
7860 4806 209 87701 SAA7345GP/S5  
7871 4822 209 32421 TDA1311A/N2

**Obs. : As peças relacionadas acima, são  
únicas disponíveis para reposição.**

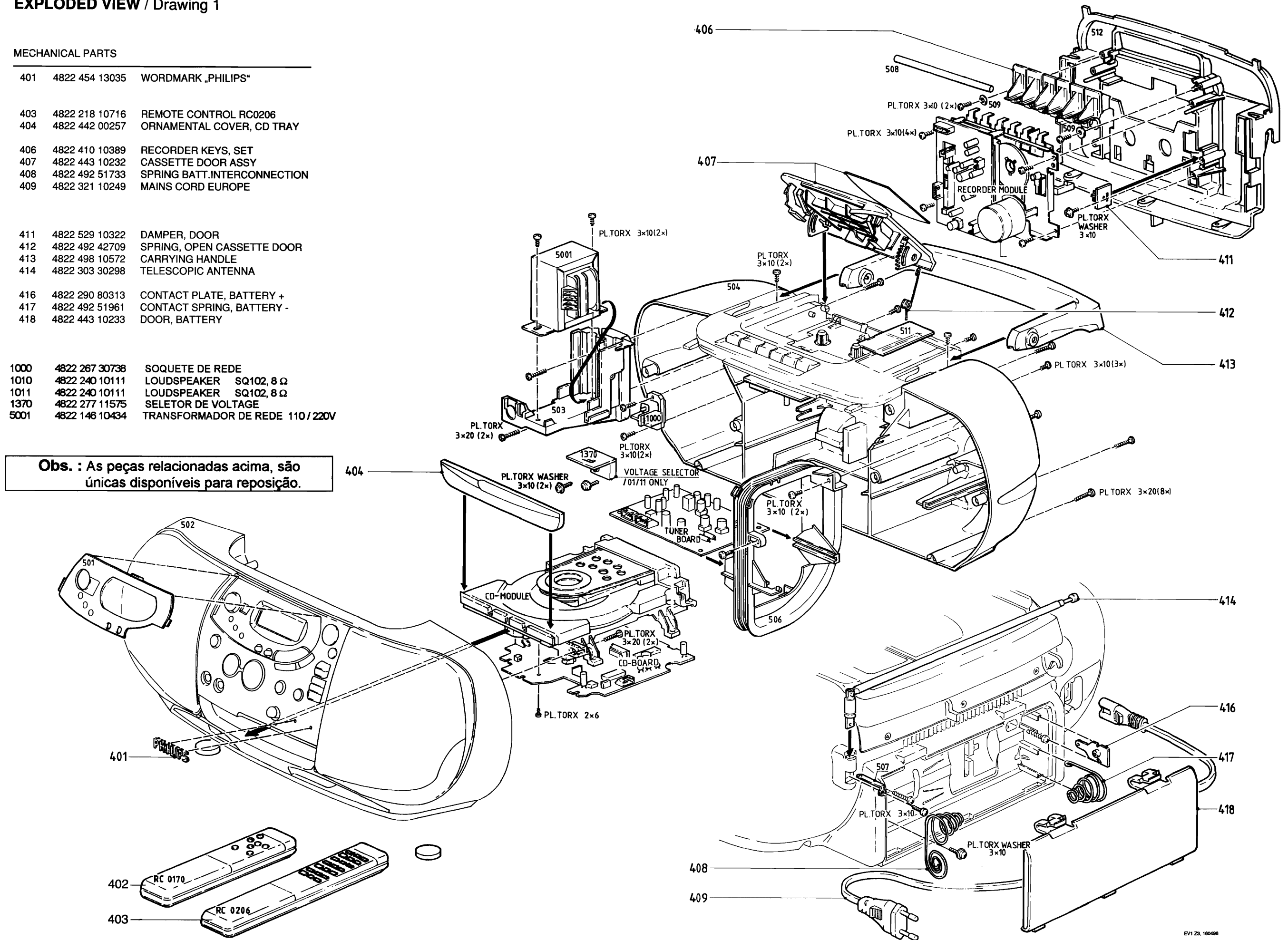
**Obs: Materias Standard como capacitores, resistores e etc,  
devem ser os de uso normal em nossa linha de aparelhos.**

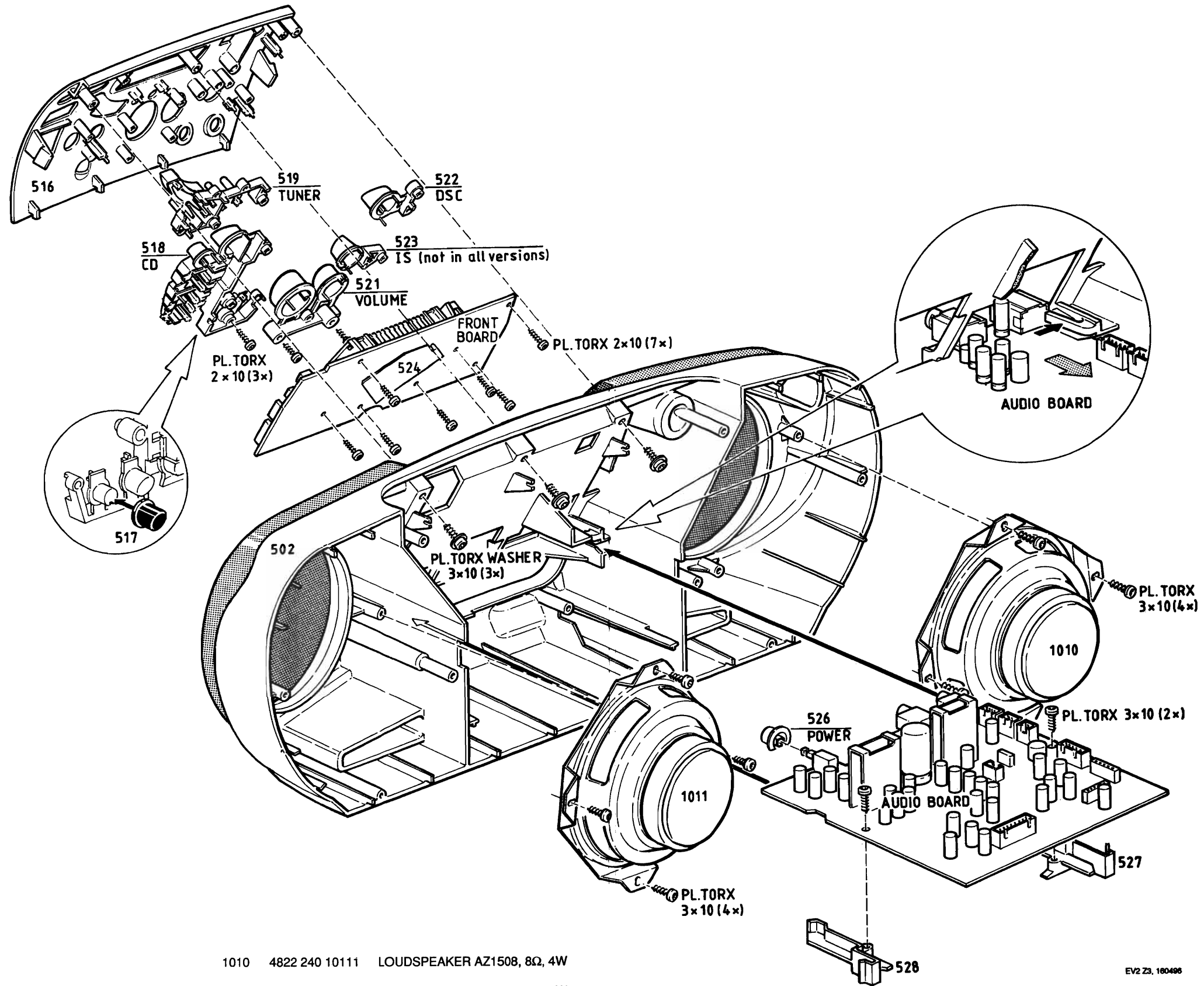
EXPLODED VIEW / Drawing 1

MECHANICAL PARTS

401	4822 454 13035	WORDMARK „PHILIPS“
403	4822 218 10716	REMOTE CONTROL RC0206
404	4822 442 00257	ORNAMENTAL COVER, CD TRAY
406	4822 410 10389	RECORDER KEYS, SET
407	4822 443 10232	CASSETTE DOOR ASSY
408	4822 492 51733	SPRING BATT.INTERCONNECTION
409	4822 321 10249	MAINS CORD EUROPE
411	4822 529 10322	DAMPER, DOOR
412	4822 492 42709	SPRING, OPEN CASSETTE DOOR
413	4822 498 10572	CARRYING HANDLE
414	4822 303 30298	TELESCOPIC ANTENNA
416	4822 290 80313	CONTACT PLATE, BATTERY +
417	4822 492 51961	CONTACT SPRING, BATTERY -
418	4822 443 10233	DOOR, BATTERY
1000	4822 267 30738	SOQUETE DE REDE
1010	4822 240 10111	LOUDSPEAKER SQ102, 8 Ω
1011	4822 240 10111	LOUDSPEAKER SQ102, 8 Ω
1370	4822 277 11575	SELETOR DE VOLTAGE
5001	4822 146 10434	TRANSFORMADOR DE REDE 110 / 220V

Obs. : As peças relacionadas acima, são únicas disponíveis para reposição.





- 1010 4822 240 10111 LOUDSPEAKER AZ1508, 8Ω, 4W
- 1011 4822 240 10111 LOUDSPEAKER AZ1508, 8Ω, 4W

**Obs. :** As peças relacionadas acima, são únicas disponíveis para reposição.

**FRONT BOARD**

## MISCELLANEOUS

1400	4822 276 13114	TACT SWITCH	
1401	4822 276 13114	TACT SWITCH	AZ1508 only
1402	4822 276 13114	TACT SWITCH	
1403	4822 276 13114	TACT SWITCH	
1404	4822 276 13114	TACT SWITCH	
1406	4822 276 13114	TACT SWITCH	
1407	4822 276 13114	TACT SWITCH	
1408	4822 276 13114	TACT SWITCH	
1409	4822 276 13114	TACT SWITCH	
1410	4822 276 13114	TACT SWITCH	
1411	4822 276 13114	TACT SWITCH	
1412	4822 276 13114	TACT SWITCH	
1413	4822 276 13114	TACT SWITCH	
1414	4822 276 13114	TACT SWITCH	
1415	4822 276 13114	TACT SWITCH	
1416	4822 276 13114	TACT SWITCH	
1417	4822 276 13114	TACT SWITCH	
1418	4822 276 13114	TACT SWITCH	
1419	4822 276 13114	TACT SWITCH	
1420	4822 135 00034	LCD, LPH6364-1	
7450	4822 130 10165	GP1U28XP, INFRARED EYE	

## CAPACITORS

2403©	4822 122 33496	100nF	10%	63V
2410©	5322 122 32531	100pF	5%	50V
2415©	5322 122 34123	1nF	10%	50V
2421©	5322 122 32531	100pF	5%	50V
2450	4822 124 40246	4,7µF	20%	63V
2468©	5322 122 32531	100pF	5%	50V
2480©	4822 122 33496	100nF	10%	63V

**Obs:** Materias Standard como capacitores, resistores e etc, devem ser os de uso normal em nossa linha de aparelhos.

## ELECTRICAL PARTSLIST

## FRONT BOARD

## TUNER BOARD (ECO 5 PA)

## CAPACITORS

2106	4822 125 60101	3-11pF TRIMCAP.	FM-AM version
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## COILS

5401	4822 242 73769	CER. RES. 4,19MHz
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## DIODES

6001	<del>4822 130 83363</del>	LED, LTL-16KGE	AZ1508 only					
6002		LED, LTL-16KGE	AZ1508 only					
6003		LED, LTL-16KGE	AZ1508 only	2128	4822 124 41579	10µF	20%	50V
6004		LED, LTL-16KGE.	AZ1508 only	2129	4822 124 41584	100µF	20%	10V
6400	4822 130 31554	BZX79-F4V3						
6401	<del>4806 130 37078</del>	1N4148						
6402		1N4148						
6416		LED, LTL-16KGE	AZ1508 only	2133	4822 124 40242	1µF	20%	63V
6460		LED, LTL-16KGE						
6461		LED, LTL-16KGE		2135	4822 124 40746	0,22µF	20%	63V
6462		LED, LTL-16KGE						

## TRANSISTORS

7402 ©	<del>4806 130 47226</del>	BC848B		2137	4822 124 40746	0,22µF	20%	63V
7403 ©		BC848B		2138	4822 124 41576	2,2µF	20%	50V
7404 ©		BC848B						
7405 ©		BC848B						
7406 ©	<del>4806 130 47269</del>	BC858B						
7416 ©		BC848B	AZ1508 only	2144	4822 124 40242	1µF	20%	63V
7460 ©		BC858B						
7461 ©		BC858B						
7462 ©		BC858B						

## INTEGRATED CIRCUITS

7400 ©	4822 209 13155	TMP87CK20AF-JWLDV83251
7480 ©	4822 209 13156	ST24C01M6, EEPROM

2155	4822 125 60101	3-11pF TRIMCAP.
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**Obs: Materias Standard como capacitores, resistores e etc, devem ser os de uso normal em nossa linha de aparelhos.**

**ELECTRICAL PARTSLIST****TUNER BOARD (ECO 5 PA)****RESISTORS**

3142	4822 100 11163	100kΩ TRIMPOT LIN.
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**DIODES**

6103	4806 130 37078	1N4148
6104		1N4148
6105 ©	4822 130 83075	HN1V02H (TUNING DIODE)
6107	4822 130 34488	BZX79-C11
6120		1N4148
6130 ©	4822 130 82833	1SV228 (TUNING DIODE)
6131 ©	4822 130 82833	1SV228 (TUNING DIODE)

**TRANSISTORS**

7102	4806 130 47337	2SA838B
7104	4806 130 47332	BC338-40
7105		BC338-40
7109 ©	4806 130 47269	BC858B
7111 ©	4806 130 47321	BC848C
7122 ©		BC848C
7124 ©		BC848C

**INTEGRATED CIRCUITS**

7101 ©	4822 209 90924	TEA5757H/V1, RADIO IC
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**COILS**

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	CER. FILTER 10,7MHz
5110	4822 242 70665	CER. FILTER 10,7MHz
5111	4822 158 60511	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz (AM AFC)
5120	4822 242 10251	CER. DISCRIMINATOR 10.7MG61KA-TF21
5120	4822 242 82065	CER. DISCRIMINATOR 10.7MG40K
5121	4822 242 10261	QUARTZ 75KHZ
5123	4822 157 60517	OSCILLATOR COIL MW
5130	4822 156 30947	RF COIL 1,5 TURNS
5131	4822 156 30947	RF COIL 1,5 TURNS

**Obs: Materias Standard como capacitores, resistores e etc, devem ser os de uso normal em nossa linha de aparelhos.**

**ELECTRICAL PARTSLIST**

**AUDIO BOARD**

MISCELLANEOUS

1260	4822 276 13483	SWITCH PUSH, POWER
1268	4822 071 52502	▲ FUSE T 2,5A <span style="float:right">not for AZ1508/17</span>
1270	4822 265 10489	SOCKET MICRO 3,5MM JACK
1330	4822 267 31468	SOCKET HEADPH. 3,5MM JACK

CAPACITORS

2250	4822 124 40746	0,22µF	20%	63V
2251	4822 124 40746	0,22µF	20%	63V
2252	4822 124 41458	4700µF	20%	16V <span style="float:right">for AZ1508 only</span>
2255	4822 124 40433	47µF	20%	25V
2270	4822 124 40746	0,22µF	20%	63V
2271	4822 124 40746	0,22µF	20%	63V

2280	4822 124 40246	4,7µF	20%	63V
2281	4822 124 40246	4,7µF	20%	63V

2284	4822 124 40242	1µF	20%	63V
------	----------------	-----	-----	-----

2286	4822 124 41576	2,2µF	20%	50V
2287	4822 124 40433	47µF	20%	25V
2288	4822 124 40246	4,7µF	20%	63V
2289	4822 124 40246	4,7µF	20%	63V

2301	4822 124 41579	10µF	20%	50V
2302	4822 124 40433	47µF	20%	25V
2303	4822 124 40242	1µF	20%	63V
2304	4822 124 40242	1µF	20%	63V
2305	4822 124 41584	100µF	20%	10V
2306	4822 124 41584	100µF	20%	10V

2310	4822 124 40196	220µF	20%	16V
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2330	4822 124 40433	47µF	20%	25V
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2336	4822 124 41596	22µF	20%	50V <span style="float:right">for AZ1508 only</span>
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2337	4822 124 40433	47µF	20%	25V
2340	4822 124 40433	47µF	20%	25V
2341	4822 124 40433	47µF	20%	25V
2342	4822 124 41407	0,47µF	20%	63V
2343	4822 124 41407	0,47µF	20%	63V

	4822 124 40184	1000µF	20%	10V <span style="float:right">for AZ1407 only</span>
	4822 124 40184	1000µF	20%	10V <span style="float:right">for AZ1407 only</span>
2349	4822 124 40433	47µF	20%	25V <span style="float:right">for AZ1508 only</span>
2350	4822 124 41596	22µF	20%	50V <span style="float:right">for AZ1508 only</span>
2351	4822 124 40433	47µF	20%	25V <span style="float:right">for AZ1508 only</span>

2354	4822 124 40433	47µF	20%	25V <span style="float:right">for AZ1508 only</span>
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CAPACITORS

2355	4822 124 40433	47µF	20%	25V <span style="float:right">for AZ1508 only</span>
2356	4822 124 41407	0,47µF	20%	63V <span style="float:right">for AZ1508 only</span>
2357	4822 124 41407	0,47µF	20%	63V <span style="float:right">for AZ1508 only</span>
2361	4822 124 40196	220µF	20%	16V
2362	4822 124 40433	47µF	20%	25V
2363	4822 124 40433	47µF	20%	25V
2380	4822 124 41525	100µF	20%	25V
2381	4822 124 40746	0,22µF	20%	63V

2387	4822 124 41579	10µF	20%	50V
2388	4822 124 41579	10µF	20%	50V

2391	4822 124 41596	22µF	20%	50V
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2393	4822 124 40433	47µF	20%	25V
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2394	4822 124 41525	100µF	20%	25V
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2564	4822 124 40433	47µF	20%	25V <span style="float:right">for AZ1508 only</span>
2565	4822 124 40246	4,7µF	20%	63V <span style="float:right">for AZ1508 only</span>

2566	4822 124 40246	4,7µF	20%	63V <span style="float:right">for AZ1508 only</span>
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**Obs: Materias Standard como capacitores, resistores e etc, devem ser os de uso normal em nossa linha de aparelhos.**



## AUDIO BOARD

## COILS

5250	4822 157 62552	2,2µH
5251	4822 157 62552	2,2µH
5252	4822 157 53302	1µH

## DIODES

6250	5322 130 80686 ▲	1N5392	for AZ1508 only
6251	5322 130 80686 ▲	1N5392	for AZ1508 only
6252	5322 130 80686 ▲	1N5392	for AZ1508 only
6253	5322 130 80686 ▲	1N5392	for AZ1508 only
6254	5322 130 31504	BZX79-F3V3	
6255	4806 130 37078	1N4148	for AZ1508 only
6256		1N4148	for AZ1508 only
6257		1N4148	
6258		1N4148	
6259		1N4148	
6301		1N4148	
6350		1N4148	
6351		1N4148	
6380		1N4148	
6381		1N4148	
6382		1N4148	
6383	4822 130 34488	BZX79-C11V	
6384		1N4148	

## TRANSISTORS

7250	4806 130 47050	BC558C	
7251	4806 130 47042	BC548C	
7252	4806 130 47313	BC327-40	
7253		BC327-40	
7254		BC327-40	
7255		BC327-40	
7256		BC327-40	
7262	4806 130 47041	BC548B	for AZ1508 only
7270	4806 130 47045	BC549C	
7271		BC549C	
7273		BC548B	
7274		BC548C	
7275		BC548C	
7300		BC548C	
7301	4822 130 61067	XN1401 (DOUBLE PNP)	
7302	4822 130 61067	XN1401 (DOUBLE PNP)	
7360	4822 130 40937	BC548B	
7380	4806 130 47050	BC558B	
7381		BC548C	
7382		BC548C	
7383		BC548C	
7384		BC327-40	

## INTEGRATED CIRCUITS

7272	4822 209 32919	HEF4952BT	
7330	4822 209 31544	TA8227P, POWER STAGE	
7331	4822 209 31544	TA8227P, POWER STAGE	for AZ1508 only
7550	4822 209 63709	LM324D, 4-FOLD OPAMP.	for AZ1508 only
7551	5322 209 11102	HEF4052BT	for AZ1508 only

## I.C. 's

7272	4822 209 32919	HEF4952BT, DSC SWITC
7330	4822 209 31544	TA8227P, POWER STAGE
7331	4822 209 31544	TA8227P, POWER STAGE
7400	4822 209 13155	TMP87CK20AF-JW/LDV832
7400	4822 209 14822	TMP87CK20AF-JW/LDV833
7480	4822 209 13156	EEPROM ST24C01M6
7550	4822 209 63709	LM324D, 4-FOLD OPAMP
7551	5322 209 11102	HEF4052BT, IS SWITCH
7705	4806 130 87683	AN7318S
7800	5322 209 11517	PC74HCU04D
7850	4806 209 87677	TDA1301T/N2
7851	4806 209 87707	TDA7073A/N2
7852	4806 209 87707	TDA7073A/N2
7855	4822 209 31519	TDA7072A
7860	4806 209 87701	SAA7345GP/S5
7871	4822 209 32421	TDA1311A/N2

**Obs: Materias Standard como capacitores, resistores e etc,  
devem ser os de uso normal em nossa linha de aparelhos**