

Service Service Service

RTV servis Horvat

Kešinci, 31402 Semeljci

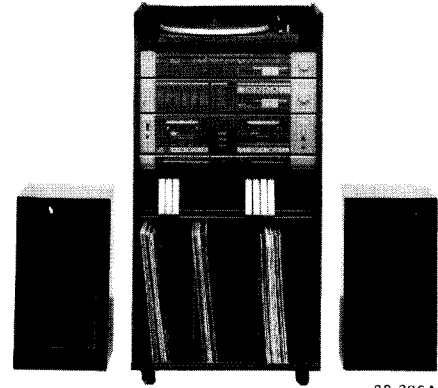
031-856-139

031-856-637

098-788-319

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Croatia



38 386A

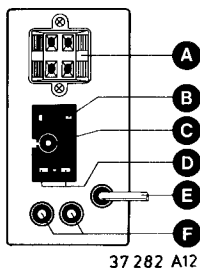
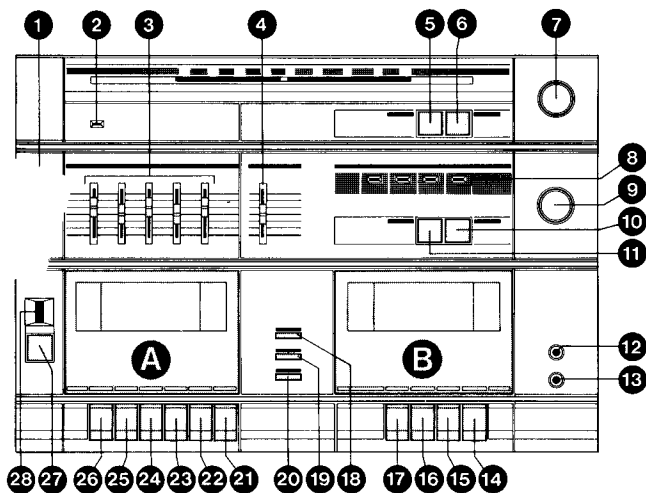
For Servicing Information concerning the cassette mechanism refer to Service Manuals: "Recorder Tape Decks RT75, RT77 and RT1".

For Servicing Information concerning the record player refer to Service Manual F7046/00A.

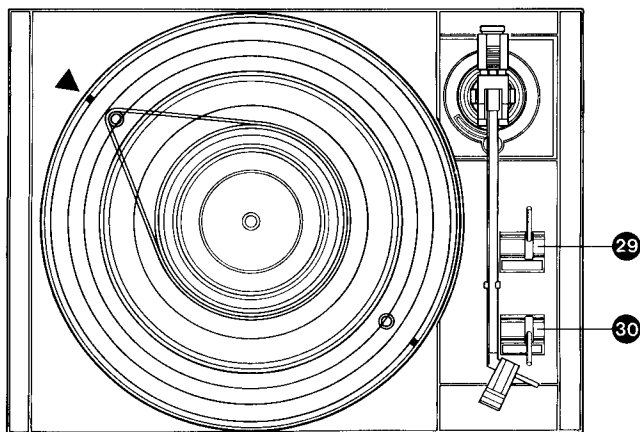
Service Manual

GB	NL	F	D	I	
TECHNICAL DATA	SPECIFICATIES	SPECIFICATIONS	TECHNISCHE DATEN	DATI TECNICI	
Power supply voltages	Voedingsspanningen	Alimentation	Versorgungsspannungen	Tensioni d'alimentazione	: 110,127,220,240 V 50/60 Hz~
Power consumption	Opgenomen vermogen	Puissance absorbée	Leistungsaufnahme	Potenza assorbita	: ≤ 110 W/max.
Dimensions	Afmetingen	Dimensions	Abmessungen	Dimensioni	: 450x880x360 mm approx.
Wave ranges:	Golfbereiken:	Gammes d'ondes:	Wellenbereiche:	Gamma d'onda:	
FM	FM	FM	UKW	FM	: 87.5-108 MHz
MW	MW	PO	MW	OM	: 520-1605 kHz (577- 187 m)
LW	LW	GO	LW	OL	: 150- 255 kHz (2000-1177 m)
Sensitivity:	Gevoeligheid:	Sensibilité:	Empfindlichkeit:	Sensibilità:	
Δf 75 kHz FM	Δf 75 kHz FM	Δf 75 kHz FM	Δf 75 kHz FM	Δf 75 kHz FM	: (1.6 μV mono, 26 dB S/N) (50 μV stereo, 46 dB S/N) (100 μV for 26 dB S/N)
600 kHz AM	600 kHz AM	600 kHz AM	600 kHz AM	600 kHz AM	
Aerial input	Antenne ingang	Impédance d'antenne	Antennen-Impedanz	Ingresso antenna	: 75 Ω and 300 Ω
Output power (at 4 Ω load)	Uitgangsvermogen (4 Ω)	Puissance de sortie (4 Ω)	Ausgangsleistung (4 Ω)	Potenza d'uscita (con carico 4 Ω)	: 2x 13 W (1 kHz) D≤10%
Output impedance	Uitgangsimpedantie	Impédance de sortie	Ausgangsimpedanz	Impedenza d'uscita	: 4 Ω
Output impedance of headphones	Uitgangsimpedantie hoofdtelefoon	Impédance de sortie écouteurs	Kopfhörer-Ausgangs-impedanz	Impedenza d'uscita per cuffia	: 4-1000 Ω
Cassette deck	Recorder	Magnétophone	Recorder	Piastra registratore	
Speed	Snelheid	Vitesse	Geschwindigkeit	Velocità	: 4.76 cm/sec ± 2%
Wow and flutter	Wow en flutter	Pleurage et scintillement	Gleichlaufschwankungen	Wow e flutter	: ≤ 0.2%
Record player	Platenspeler	Tourne-disque	Plattenspieler	Giradischi	
Speed	Snelheid	Vitesse	Geschwindigkeit	Velocità	: 33 ¹ /3-45 r.p.m
Wow and flutter	Wow en flutter	Pleurage et scintillement	Gleichlaufschwankungen	Wow e flutter	: ≤ 0.25%
Pick up cartridge	Element	Cartouche pick-up	Tonabnehmersystem	Testina	: GP215





37 282 A12



37 283 B12

GB

1	On/off switch		SK1
2	FM stereo indicator		6111
3	Equalizer controls	63 Hz	3315
		250 Hz	3325
		1 kHz	3335
		4 kHz	3345
		16 kHz	3355
4	Balance control		3370
5	MW/LW selection button		SK79
6	AM/FM selection button		SK78
7	Tuning knob		
8	Mode indicators	Phono	6333
		Tuner	6334
		CD/TV	6331
		Cass.	6332
9	Volume control		3369
10	Mono/Rif selection button		SK76
11	CD/TV function button		SK77
12	Terminal socket stereo headphone		BU2
		4-1000 Ω	
13	Terminal socket mono microphone		BU1
14	Play button		
15	Stop/Eject button		
16	Wind/Cue button		
17	Rewind/Review button		
18	Dubbing B → A button		SK74
19	Noise reduction button		SK73
20	Tape type button		SK72
21	Pause button		
22	Play button		
23	Stop/Eject button		
24	Wind/Cue button		
25	Rewind/Review button		
26	Recording button		
27	Zero reset button		
28	Counter		
29	Cue lever		
30	Speed selector switch		SK-H
A	Terminals for loudspeakers 4 Ω		BU5-6
B	Terminal sockets for AM aerial and earth		BU4
C	Terminal sockets for FM aerial, 75 Ω		BU4
D	Terminal sockets for FM aerial, 300 Ω		BU4
E	Mains lead		
F	Terminal sockets for CD/TV		BU3

NL

1	Aan/Uit schakelaar		SK1
2	FM stereo indicator		6111
3	Klankkleurregelaars	63 Hz	3315
		250 Hz	3325
		1 kHz	3335
		4 kHz	3345
		16 kHz	3355
4	Balanceregelaar		3370
5	Keuzetoets MW/LW		SK79
6	Keuzetoets AM/FM		SK78
7	Afstemknop		
8	Mode indicators	Phono	6333
		Tuner	6334
		CD/TV	6331
		Cass.	6332
9	Geluidssterkeregelbaar		3369
10	Mono/Rif keuzetoets		SK76
11	CD/TV functietoets		SK77
12	Aansluitbus stereo hoofdtelefoon		BU2
		4-1000 Ω	
13	Aansluitbus mono microfoon		BU1
14	Weergeeftoets		
15	Stop/Uitwerptoets		
16	Snelspoeltoets Wind/Cue		
17	Snelspoeltoets Rewind/Review		
18	Toets Dubbing B → A		SK74
19	Ruisonderdrukkingstoets		SK73
20	Keuzetoets voor bandsoort		SK72
21	Pauzetoets		
22	Weergeefknop		
23	Stop/Uitwerptoets		
24	Snelspoeltoets Wind/Cue		
25	Snelspoeltoets Rewind/Review		
26	Opneemtoets		
27	Nulstelhoets		
28	Bandteller		
29	Hefboom		
30	Toerentalkeuze		SK-H
A	Luidsprekeraansluitklemmen 4 Ω		BU5-6
B	Aansluitbussen voor AM-antenne en aarde		BU4
C	Aansluitbus voor FM-antenne, 75 Ω		BU4
D	Aansluitbus voor FM-antenne, 300 Ω		BU4
E	Netsnoer		
F	Aansluitbussen CD/TV		BU3

F

1	Commutateur Marche/Arrêt	SK1
2	Indicateur lumineux FM stéréo	6111
3	Egaliseur graphique 5 bandes	3315 63 Hz 250 Hz 1 kHz 4 kHz 16 kHz 3370
4	Balans stéréo	3370
5	Sélecteur de gamme d'ondes PO/GO	SK79
6	Sélecteur de modulation AM/FM	SK78
7	Bouton d'accord	
8	Voyants lumineux par Signalisation des saurces	Phono 6333 Tuner 6334 CD/TV 6331 Cass. 6332
9	Volume sonore	3369
10	Interrupteur Mono/Rif	SK76
11	Sélecteur CD/TV	SK77
12	Prise pour casque stéréo 4-1000 Ω	BU2
13	Prise pour microphone mono	BU1
14	Touche démarrage	
15	Touche d'arrêt/éjection	
16	Touche bobinage rapide avant	
17	Touche bobinage rapide arrière	
18	Bouton de duplication Dubbing B → A	SK74
19	Commutateur de réducteur du bruit	SK73
20	Commande sélection type de bande	SK72
21	Touche pause	
22	Touche démarrage	
23	Touche d'arrêt/éjection	
24	Touche bobinage rapide avant	
25	Touche bobinage rapide arrière	
26	Touche d'enregistrement	
27	Bouton de remise à zéro du compteur	
28	Compteur	
29	Lève bras	
30	Sélecteur de vitesse	SK-H
A	Prises pour haut-parleurs 4 Ω	BU5-6
B	Prise pour antenne extérieur AM et terre	BU4
C	Prise pour antenne extérieur FM, 75 Ω	BU4
D	Prise pour antenne FM, 300 Ω	BU4
E	Cordan secteur	
F	Prises d'entrées auxiliaires CD/TV	BU3

I

1	Interruttore acceso/spento	SK1
2	Indicatore FM stereo	6111
3	Controlli della tonalità	3315 63 Hz 250 Hz 1 kHz 4 kHz 16 kHz 3370
4	Controllo del bilanciamento	3370
5	Selettore MW/LW	SK79
6	Selettore AM/FM	SK78
7	Manopola di sintonia	
8	Indicatori del modo	Phono 6333 Tuner 6334 CD/TV 6331 Cass. 6332
9	Controllo del volume	3369
10	Selettore Mono/Rif	SK76
11	Selettore CD/TV	SK77
12	Presca per cuffia stereo phones 4-1000 Ω	BU2
13	Presca per microfono mono	BU1
14	Tasto di riproduzione	
15	Tasto di arresto/espulsione	

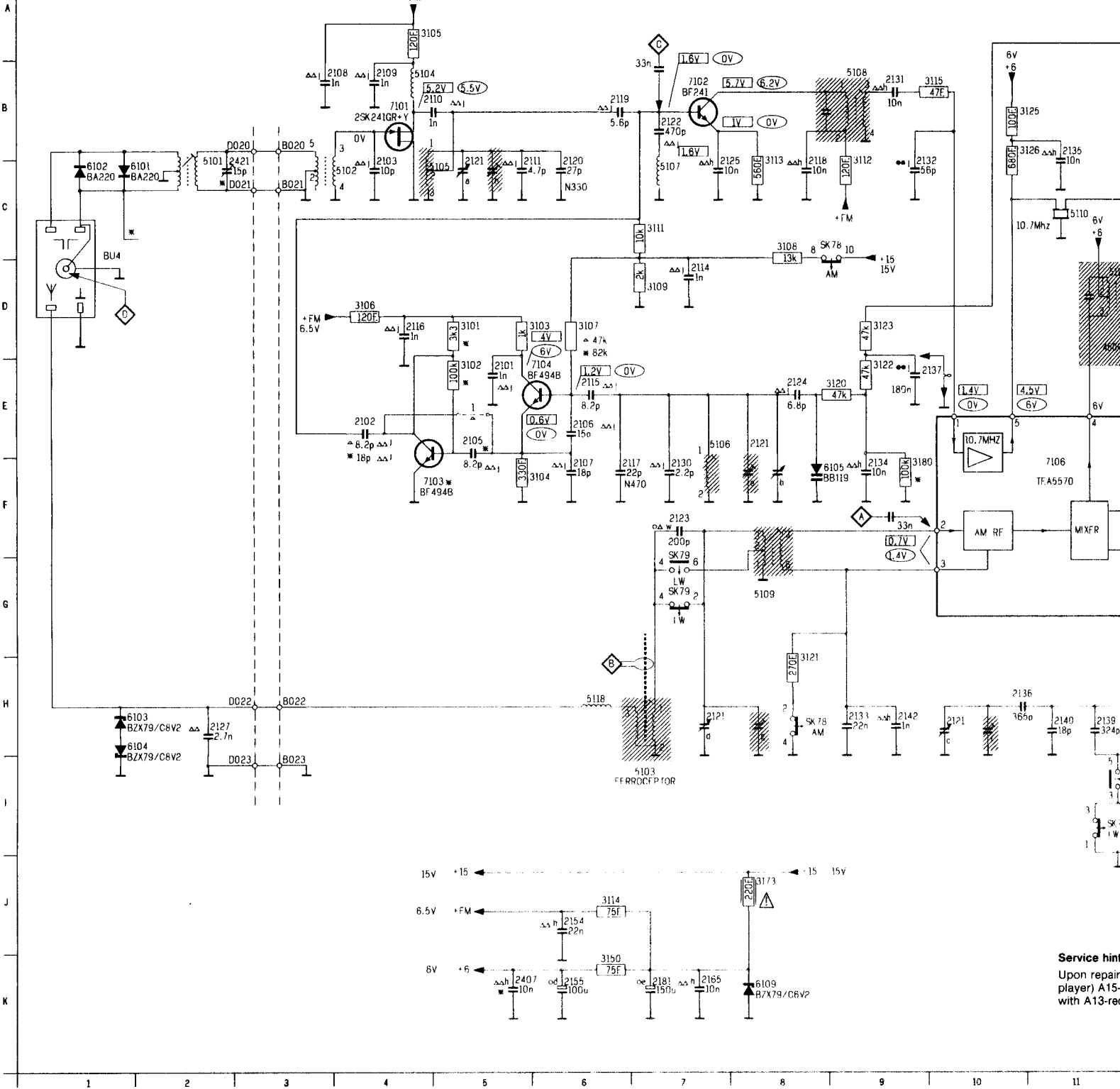
D

1	Netz-Ein/Aus-Schalter	SK1
2	FM stereo-Anzeige	6111
3	Klangfilter	3315 63 Hz 250 Hz 1 kHz 4 kHz 16 kHz 3370
4	Balance	3370
5	MW/LW Wellenbereichsschalter	SK79
6	AM/FM Wählschalter	SK78
7	Tuning-Knopf	
8	Programmquellen-Anzeiger	Phono 6333 Tuner 6334 CD/TV 6331 Cass. 6332
9	Lautstärke-Einsteller	3369
10	Mono/Rif Schalter	SK76
11	CD/TV Wiedergabe-Schalter	SK77
12	Anschluss für Stereokopfhörer 4-1000 Ω	BU2
13	Anschluss für ein Mono-Mikrofon	BU1
14	Wiedergabe-Schalter	
15	Stop/Eject Taste	
16	Wind/Cue schneller Bandvorlauf	
17	Rewind/Review schneller Bandrücklauf	
18	Dubbing B → A-Schalter	SK74
19	Noise Red-Schalter	SK73
20	Bandsorten-Einstellung	SK72
21	Pause-Schalter	
22	Wiedergabe/Start-Schalter	
23	Stop/Eject-Schalter	
24	Schneller Bandvorlauf	
25	Schneller Bandrücklauf	
26	Record-Schalter	
27	Rückstelltaste	
28	Zählwerk	
29	Tonarmlift	
30	U/min. Drehzahlwähler	SK-H
A	Lautsprecher-Ausgänge 4 Ω	BU5-6
B	Anschluss für eine AM-Antenne mit Erde	BU4
C	Anschluss für eine FM-Antenne, 75 Ω	BU4
D	Anschluss für eine FM-Antenne, 300 Ω	BU4
E	Netzanschlussleitung	
F	CD/TV-Anschlussbuchsen	BU3

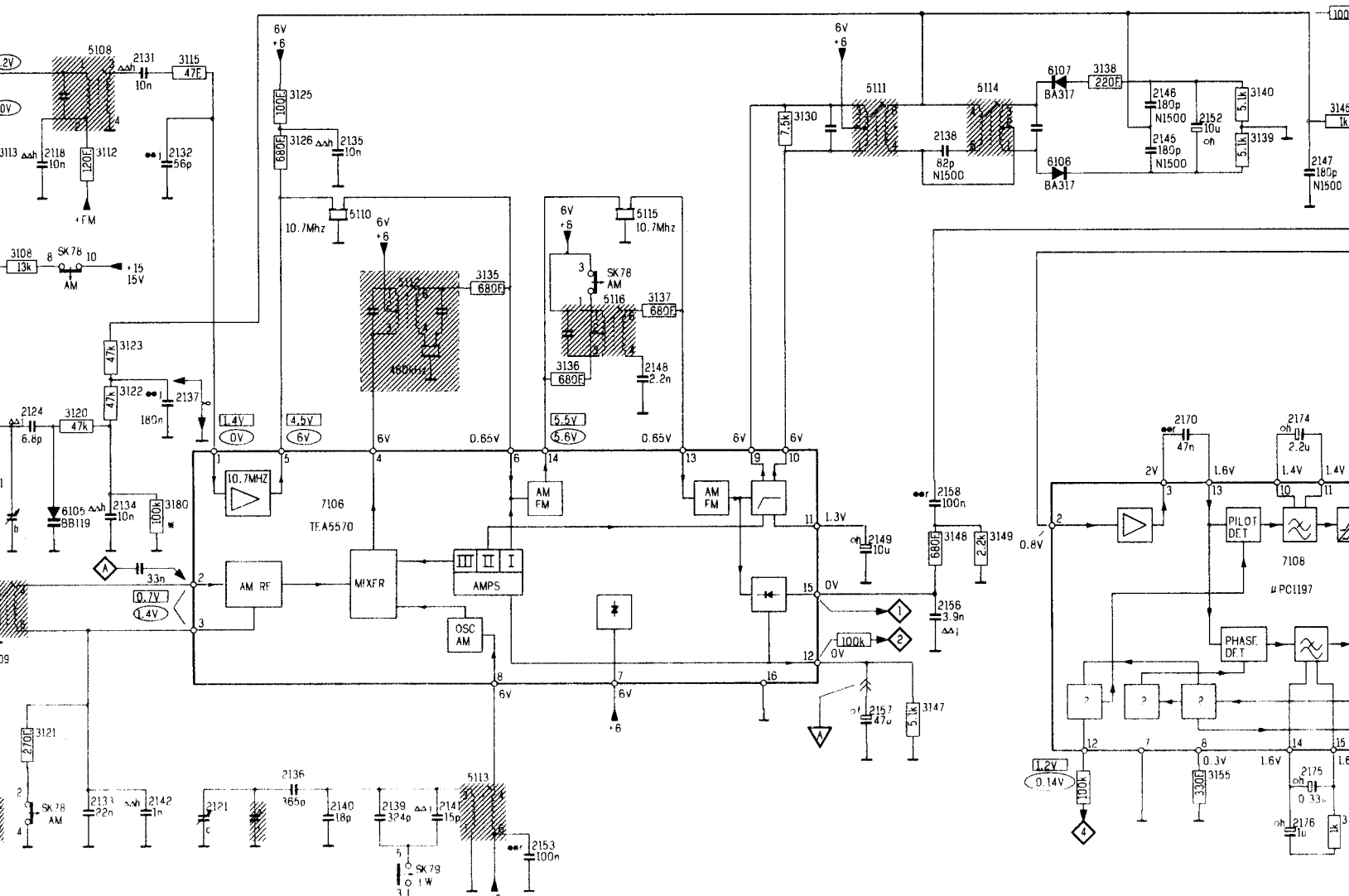
16	Tasto di avvolgimento rapido	
17	Tasto di riavvolgimento rapido	
18	Tasto di capiaturo Dubbing B → A	SK74
19	Tasto di soppressione del fruscio	SK73
20	Selettore del tipo di nastro	SK72
21	Tasto di pausa	
22	Tasto di riproduzione/avvolgimento	
23	Tasto di arresto/espulsione	
24	Tasto di avvolgimento rapido	
25	Tasto di avvolgimento rapido	
26	Tasto di registrazione	
27	Tasto di azzeramento	
28	Contanastro	
29	Leva	
30	Selettore dei giri	SK-H
A	Morsetti per casse acustiche 4 Ω	BU5-6
B	Prese per antenno AM e terro	BU4
C	Prese per antenna FM, 75 Ω	BU4
D	Prese per antenna FM, 300 Ω	BU4
E	Cordone di rete	
F	Prese CD/TV	BU3

2101	E 5	2107	F 6	2114	D 7	2119	B 6	2121	H10	2127	H 2	2134	F 9	2139	H11	2146	B18	2153	H13	2158	E16	2169	B22	2174	E19	2179	F23	2387	G25	3103	D 6
2102	E 4	2108	B 4	2115	D E 6	2120	C 6	2122	B 7	2130	F 7	2135	B11	2140	H11	2147	C19	2154	J 6	2165	K 7	2170	E18	2175	H19	2180	G23	2407	K 5	3104	F 6
2103	C 4	2109	B 4	2116	O 4	2121	C 5	2123	F 7	2131	B 9	2136	H10	2141	H12	2148	D14	2155	K 6	2166	B21	2171	E21	2176	H19	2181	K 7	2421	C 3	3105	R 5
2105	E 5	2110	B 5	2117	F 7	2121	E 8	2124	E 8	2132	C10	2137	E10	2142	H 9	2149	F16	2156	F16	2167	C21	2172	E23	2177	F22	2183	E21	3101	D 5	3106	D 4
2106	E 6	2111	C 6	2118	C 8	2121	H 7	2125	C 8	2133	H 9	2138	B16	2145	B18	2152	B18	2157	G16	2168	C22	2173	H20	2178	G22	2184	E22	3102	E 5	3107	D 6

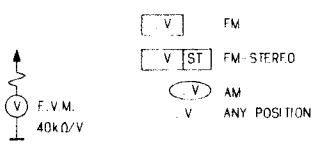
R.F. CIRCUIT DIAGRAM



6 2159 822 2174 E19 2179 F23 2387 G25 3103 D 6 3108 C 8 3114 J 6 3123 D 9 3136 D13 3145 820 3155 H18 3162 G23 3169 F23 3397 G25 5103 I 7 5108 8 9 51
 7 2170 E18 2175 H19 2180 G23 2407 K 5 3104 F 6 3109 D 7 3115 810 3125 B11 3137 D14 3147 G16 3156 E20 3163 F23 3172 I21 3398 G25 5104 8 4 5109 G 8 51
 11 2171 E21 2176 H19 2181 K 7 2421 C 3 3105 F 5 3111 C 7 3120 E 9 3126 B11 3138 B17 3148 F16 3157 H21 3165 G21 3173 J 8 3399 F23 5105 C 5 5110 C11 51
 12 2172 E23 2177 F22 2183 E21 3101 D 5 3106 D 4 3112 C 9 3121 H 8 3130 B15 3139 B19 3149 F17 3158 H21 3167 D23 3180 F 9 5101 C 2 5106 E 7 5111 B16 51
 2 2173 H20 2178 G22 2184 E22 3102 E 5 3107 D 6 3113 C 8 3122 E 9 3135 D12 3140 B19 3150 K 6 3159 H20 3168 G23 3356 E24 5102 C 4 5107 C 7 5112 D11 51



* ITEMS MARKED WITH * ONLY FOR F.I.Z.
 * NOT FOR F.I.Z.



VOLTAGE MEASURED WITHOUT SIGNAL
 UNLESS STATED OTHERWISE ALL FIXED RESISTORS
 ARF FILM RESISTORS SFR25 PMS
 ALL SWITCHES DRAWN IN REST POSITION

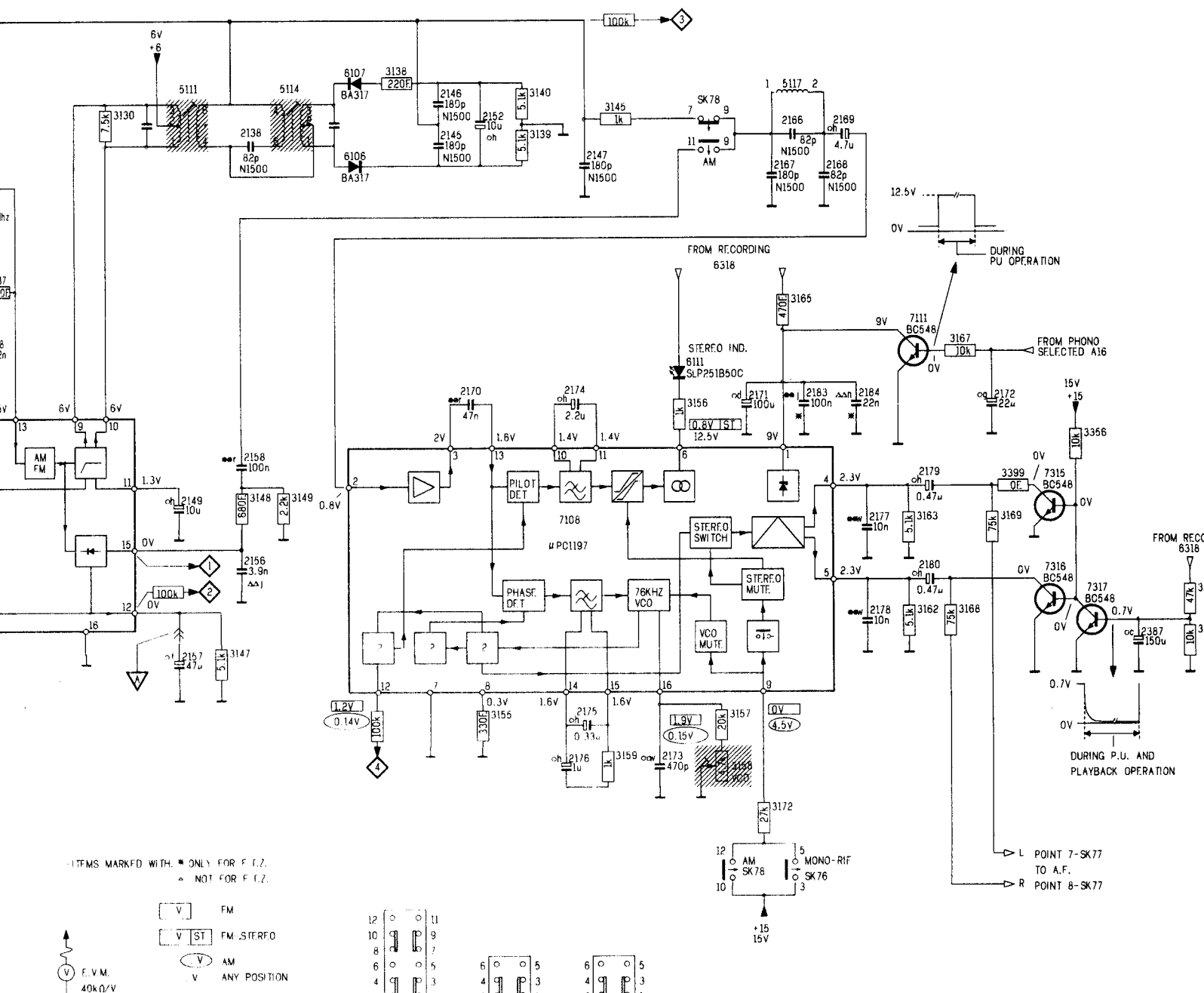
Service hint:
 Upon repairing the T.A.C. (detached from the record-player) A15-grey (not phono selected) must be connected with A13-red (+12).

RF part
 +15 = 15 V
 +FM = 6.5 V
 +6 = 6 V

7101
 9 0 V
 D 5.2 V 5.5
 S 1

3136 D13 3145 B20 3155 H18 3162 Q23 3169 F23 3397 Q25 5103 I 7 5108 B 9 5113 H12 5118 H 6 6105 F 9 7101 B 4 7111 D22 SK76 I21 SK78 I12
 3137 D14 3147 D16 3156 E20 3163 F23 3172 I21 3398 Q25 5104 B 4 5109 C 8 5114 B16 6101 C 2 6106 C17 7102 B 7 7315 F24 SK78 H 8 SK79 F 7
 3138 B17 3148 F16 3157 H21 3165 D21 3173 J 8 3399 F23 5105 C 5 5110 C11 5115 C14 6102 C 1 6107 B17 7103 F 5 7316 Q24 SK78 I21 SK79 G 7
 3139 B19 3149 F17 3158 H21 3167 D23 3180 F 9 5101 C 2 5106 E 7 5111 B16 5116 Q13 6103 H 2 6109 K 8 7104 E 6 7317 Q24 SK78 C 9 SK79 I12
 3140 B19 3150 K 6 3159 H20 3168 Q23 3356 E24 5102 C 4 5107 C 7 5112 D11 5117 B21 6104 H 2 6111 E20 7106 F11 BU4 C 1 SK78 D13 SK79 I11

14 15 16 17 18 19 20 21 22 23 24 25

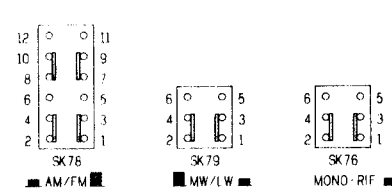


ITEMS MARKED WITH * ONLY FOR F I.Z.
 △ NOT FOR F I.Z.

V FM
 V ST FM STEREO
 V AM
 V ANY POSITION

F.V.M.
 40kΩ/V

VOLTAGE MEASURED WITHOUT SIGNAL
 UNLESS STATED OTHERWISE ALL FIXED RESISTORS
 ARE FILM RESISTORS SFR25 PMS
 ALL SWITCHES DRAWN IN REST POSITION



PRS.00296
 T10

14 15 16 17 18 19 20 21 22 23 24 25

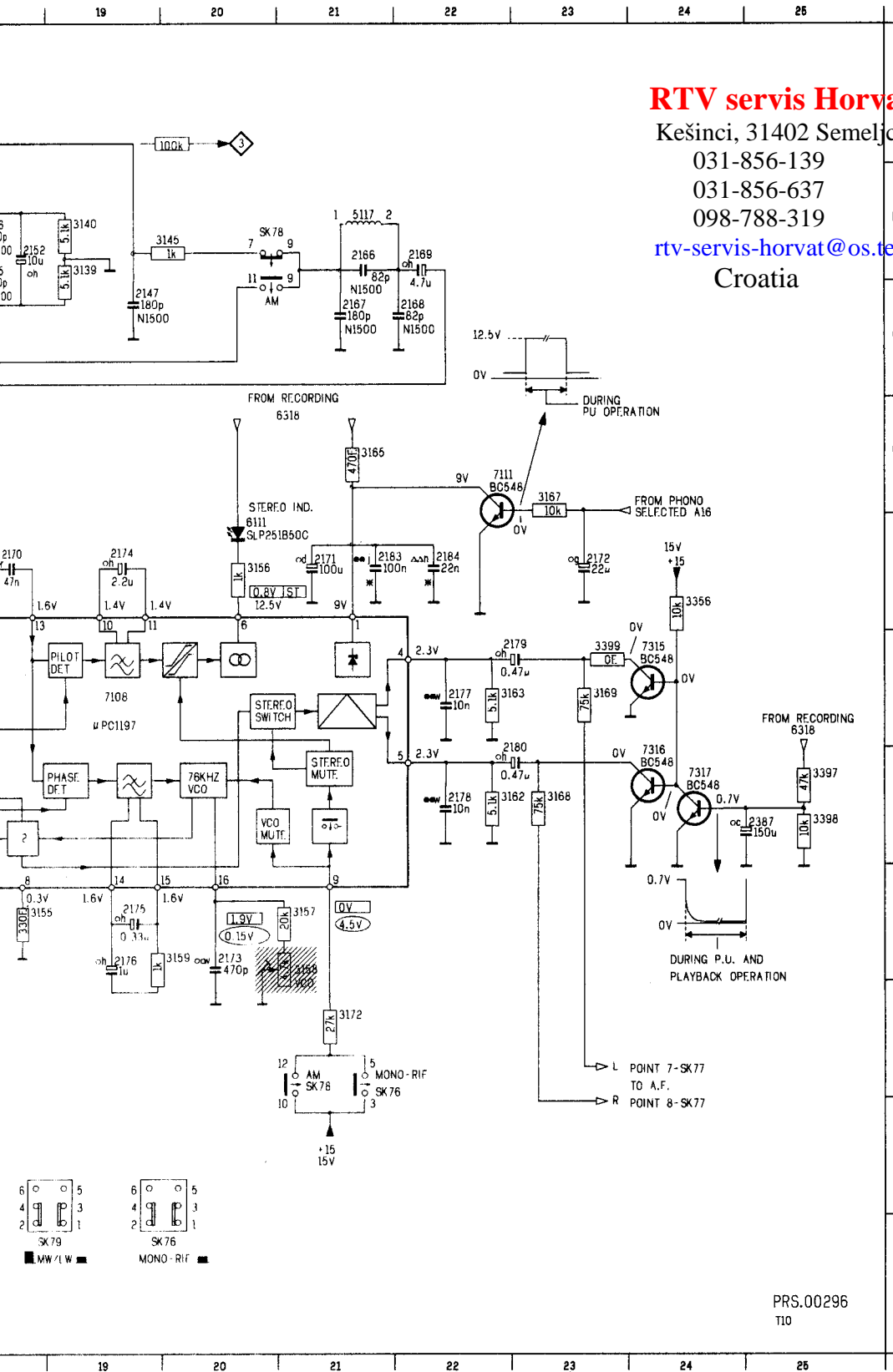
RF part
 +15 = 15 V
 +FM= 6.5 V
 +6 = 6 V

7101
 9 0 V
 D 5.2 V 5.5 V
 S 1

7102
 e 1 V 0 V
 b 1.6 V 0 V
 c 5.7 V 6.2 V

7104
 e 0.6 V
 b 1.2 V
 c 4 V

5103 I 7 5108 B 9 5113 H12 5118 H 6 6105 F 9 7101 B 4 7111 Q22 SK76 121 SK78 112
 5104 B 4 5109 G 8 5114 B16 6101 C 2 6106 C17 7102 B 7 7315 F24 SK78 H 8 SK79 G 7
 5105 C 5 5110 C11 5115 C14 6102 C 1 6107 B17 7103 F 5 7316 G24 SK78 121 SK79 G 7
 5106 E 7 5111 B16 5116 D13 6103 H 2 6109 K 8 7104 E 6 7317 G24 SK78 C 9 SK79 112
 5107 C 7 5112 D11 5117 B21 6104 H 2 6111 E20 7106 F11 BU4 C 1 SK78 D13 SK79 111



RTV servis Horvat

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Croatia

7106

1	1.4 V	0 V
2	0.7 V	1.4 V
3	0.7 V	1.4 V
4	6 V	
5	4.5 V	6 V
6	0.65 V	
7	6 V	
8	6 V	
9	6 V	
10	6 V	
11	1.3 V	
12	0 V	
13	0.65 V	
14	5.5 V	5.6 V
15	0 V	
16	⊥	

7108

1	9 V	
2	0.8 V	
3	2 V	
4	2.3 V	
5	2.3 V	
6	12.5 V	0.8 V ST
7	⊥	
8	0.3 V	
9	0 V	4.5 V
10	1.4 V	
11	1.4 V	
12	1.2 V	0.14 V
13	1.6 V	
14	1.6 V	
15	1.6 V	
16	1.9 V	0.15 V

7111

e	⊥
b	0 V
c	9 V

7315

e	⊥
b	0 V
c	0 V

7316

e	⊥
b	0 V
c	0 V

7317

e	⊥
b	0.7 V
c	0 V

7101

9	0 V	
D	5.2 V	5.5 V
S	⊥	

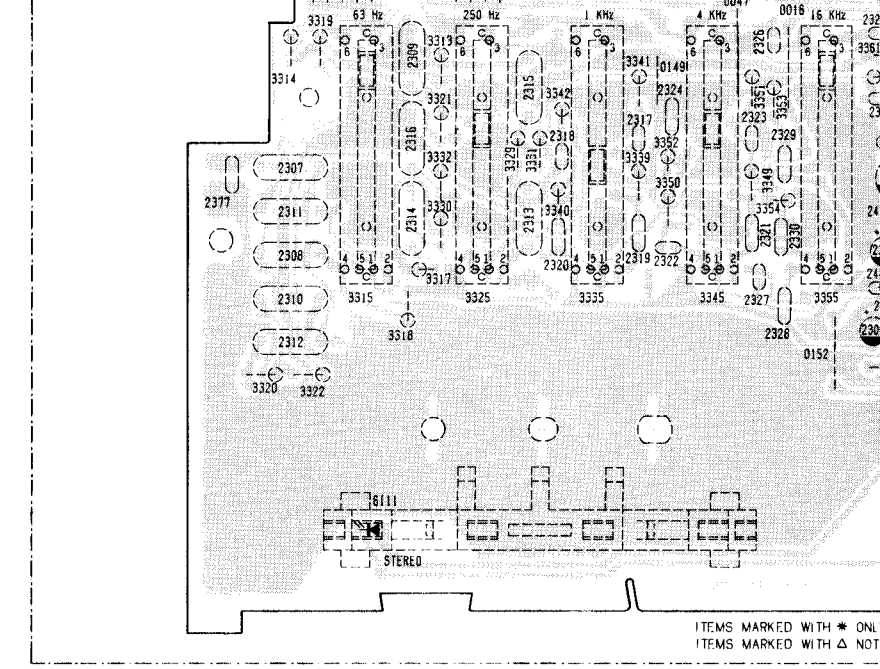
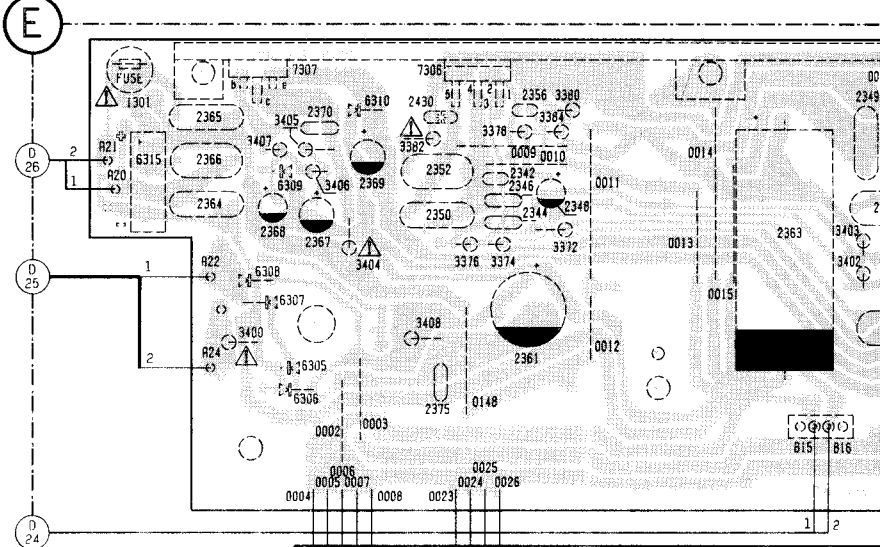
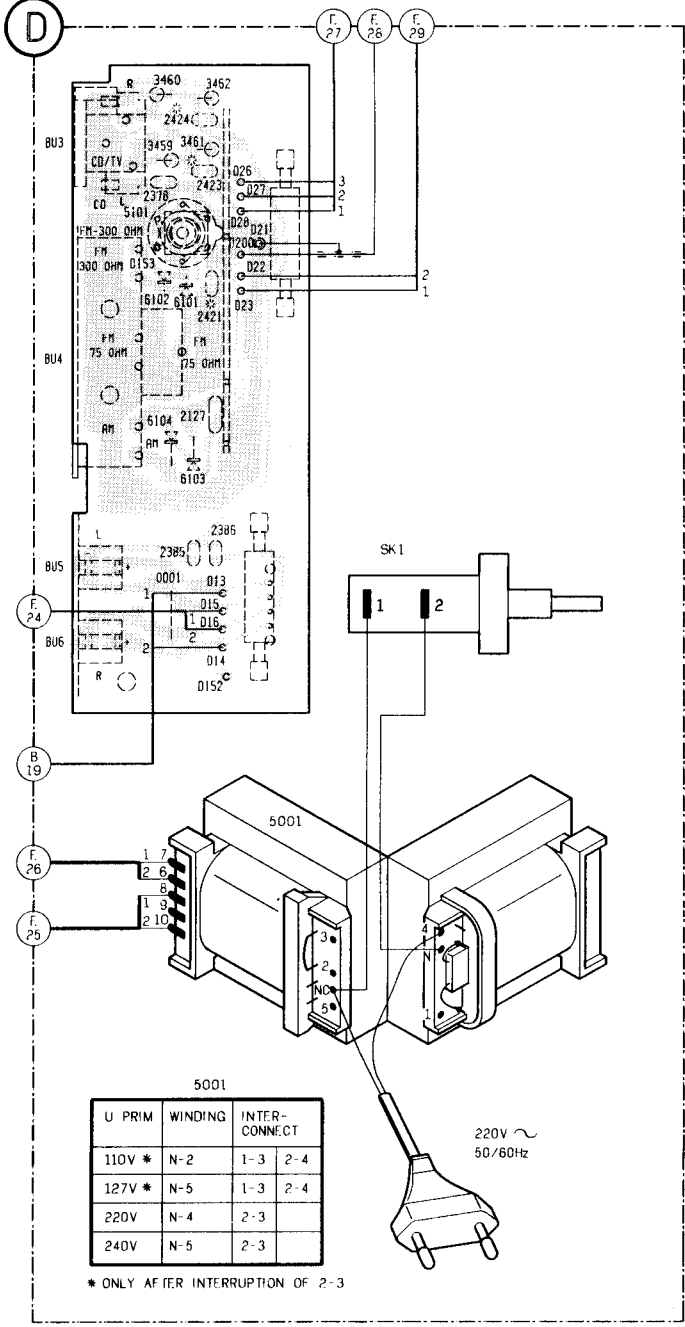
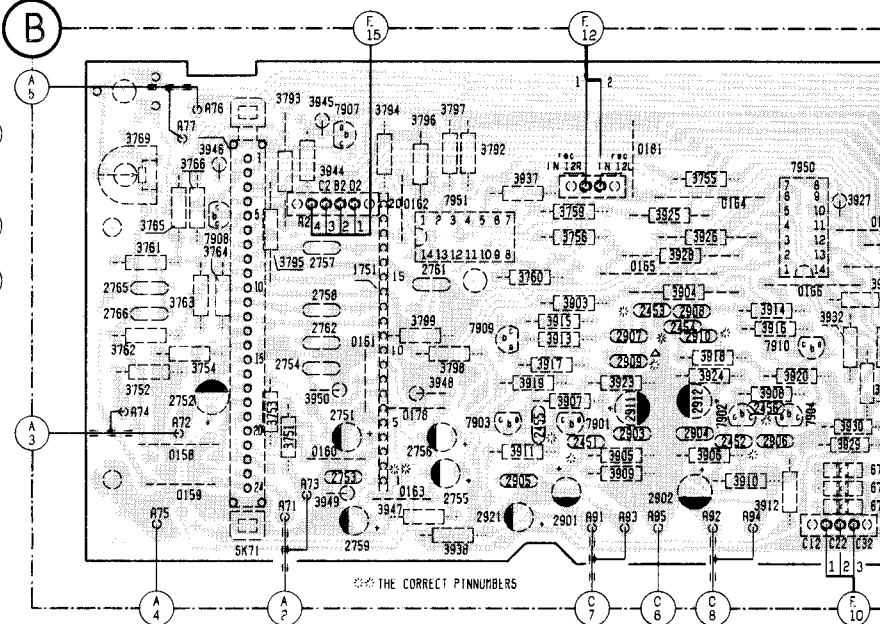
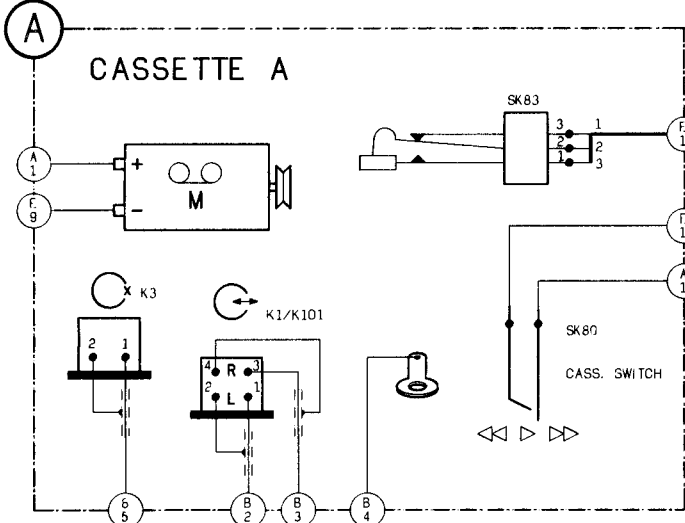
7102

e	1 V	0 V
b	1.6 V	0 V
c	5.7 V	6.2 V

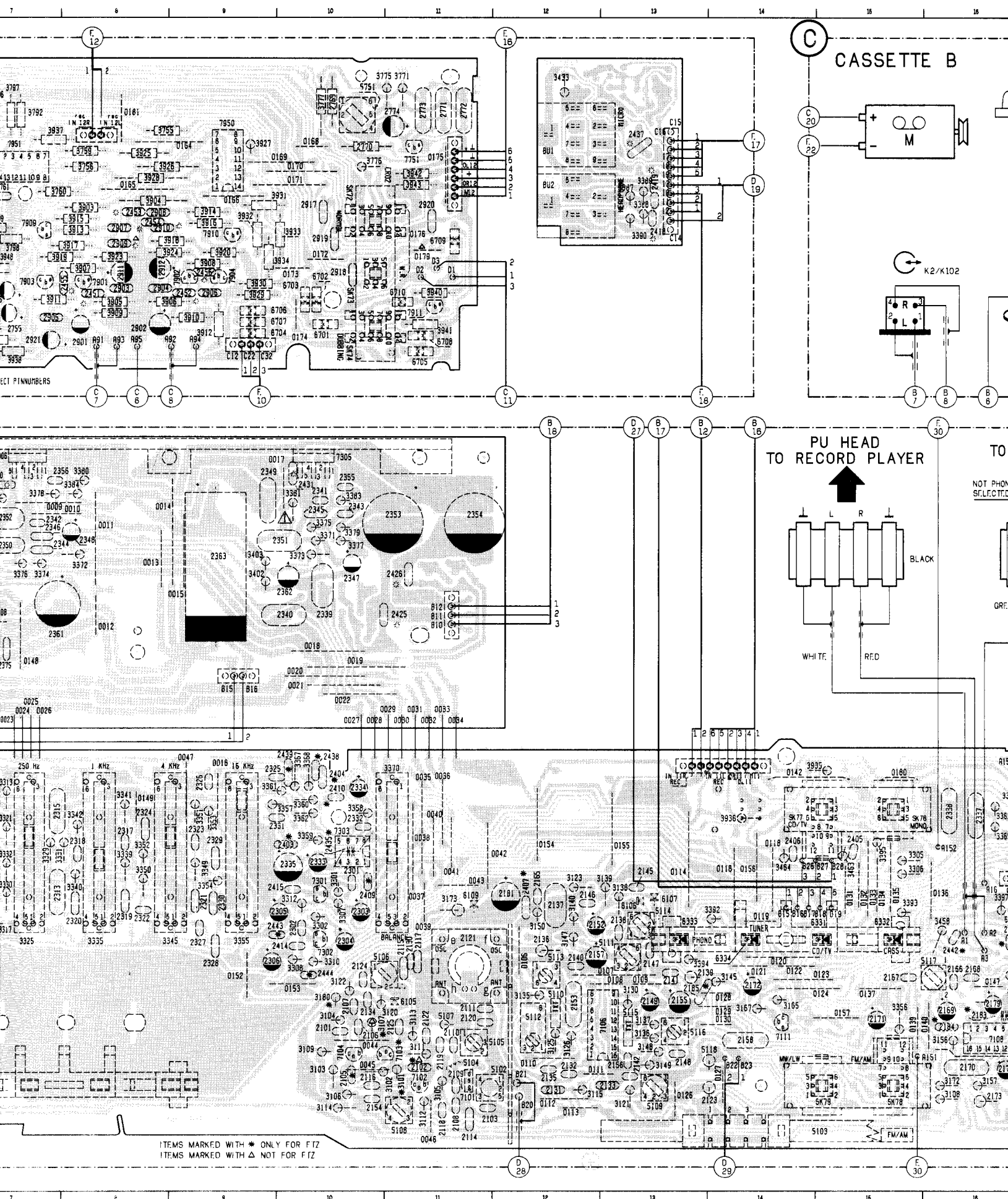
7104

e	0.6 V	0 V
b	1.2 V	0 V
c	4 V	6 V

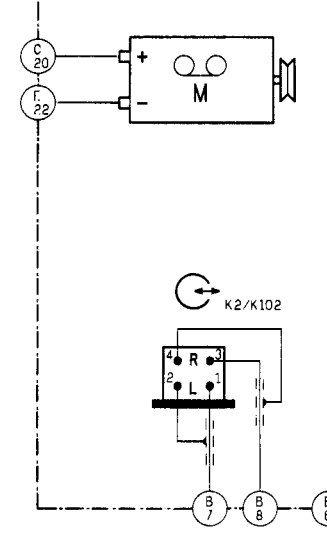
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110



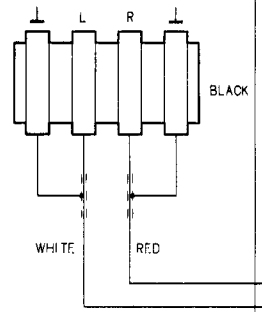
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ITEMS MARKED WITH Δ NOT



CASSSETTE B

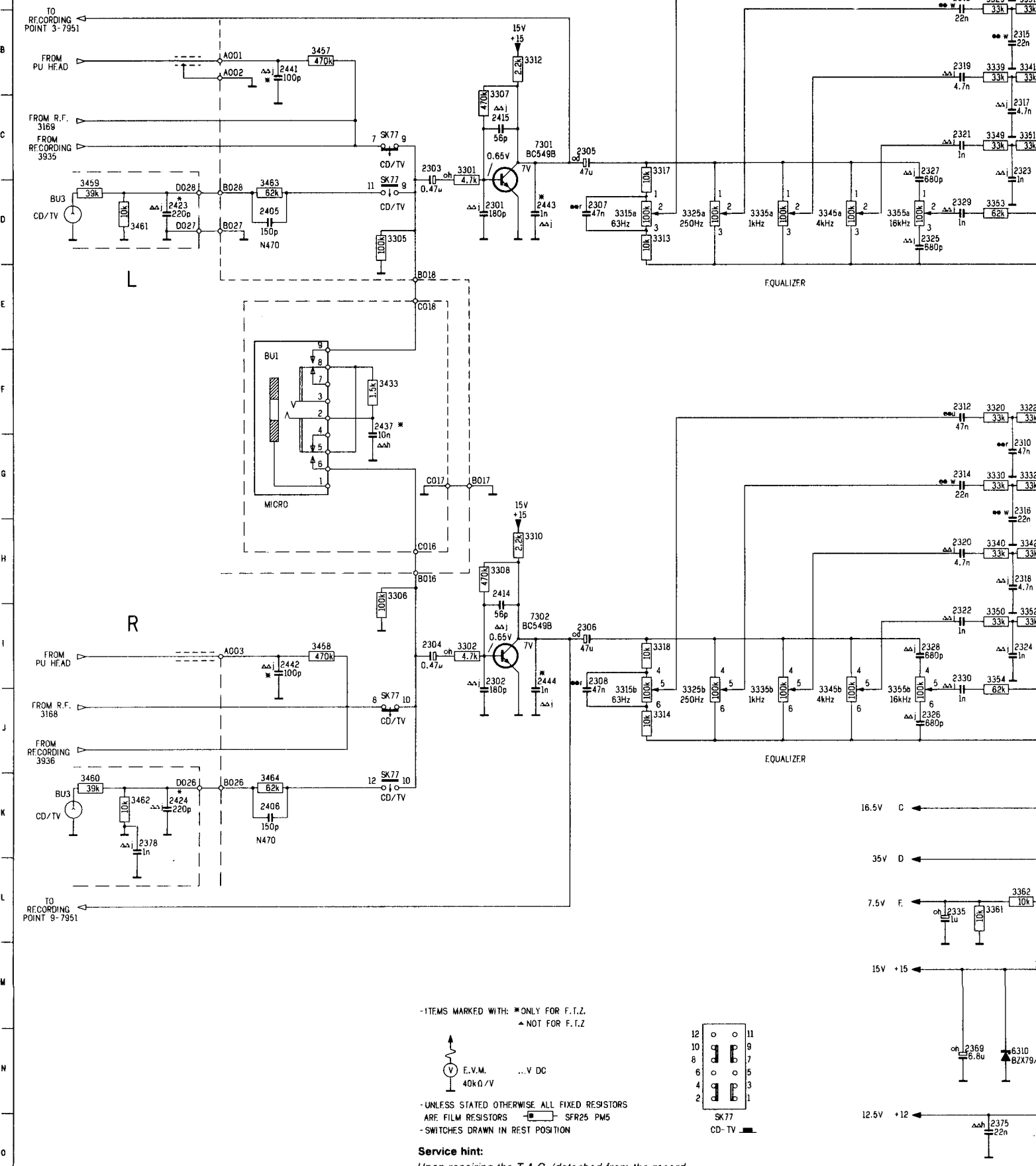


PU HEAD TO RECORD PLAYER

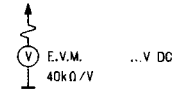


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ITEMS MARKED WITH Δ NOT FOR FIZ

A.F. CIRCUIT DIAGRAM

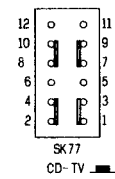


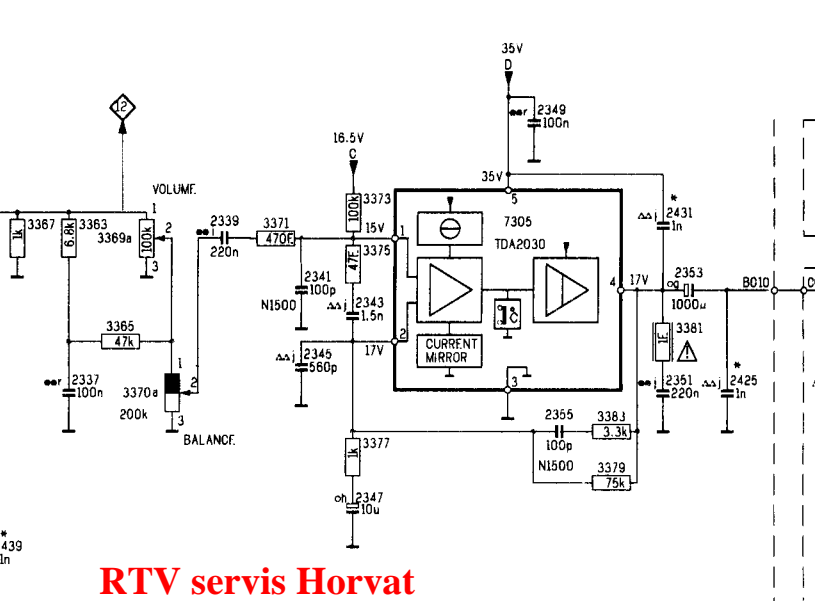
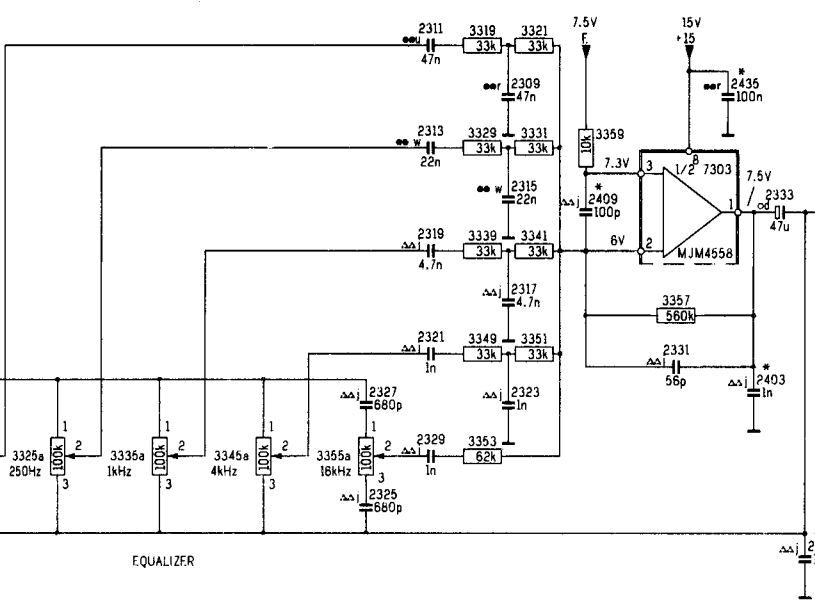
-ITEMS MARKED WITH: * ONLY FOR F.T.L.
 ▲ NOT FOR F.T.L.



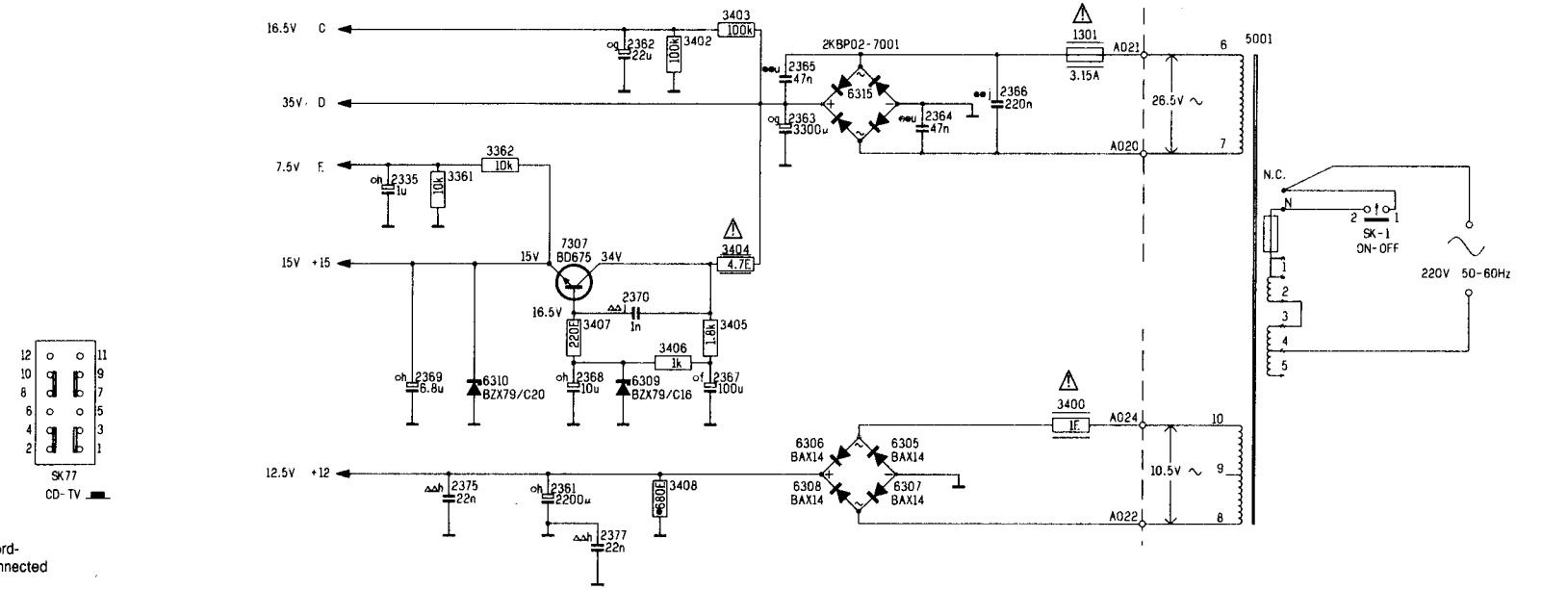
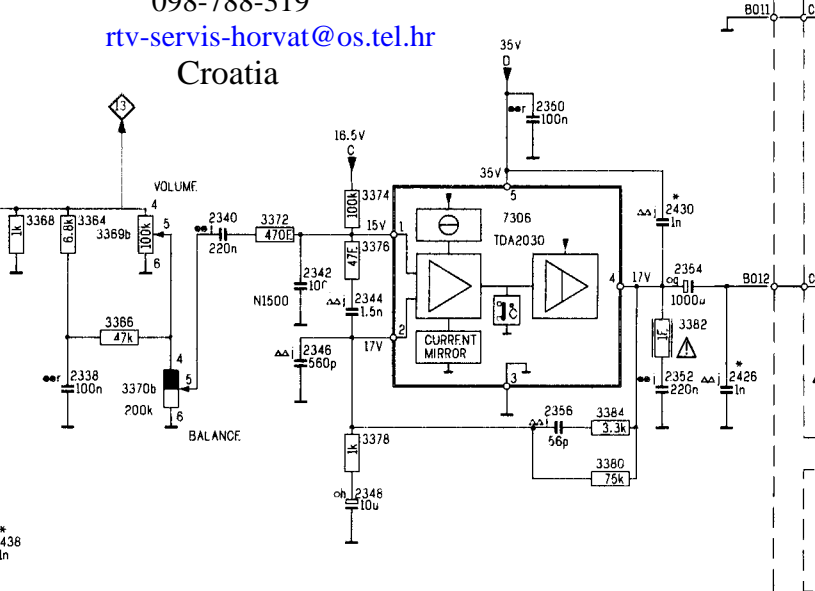
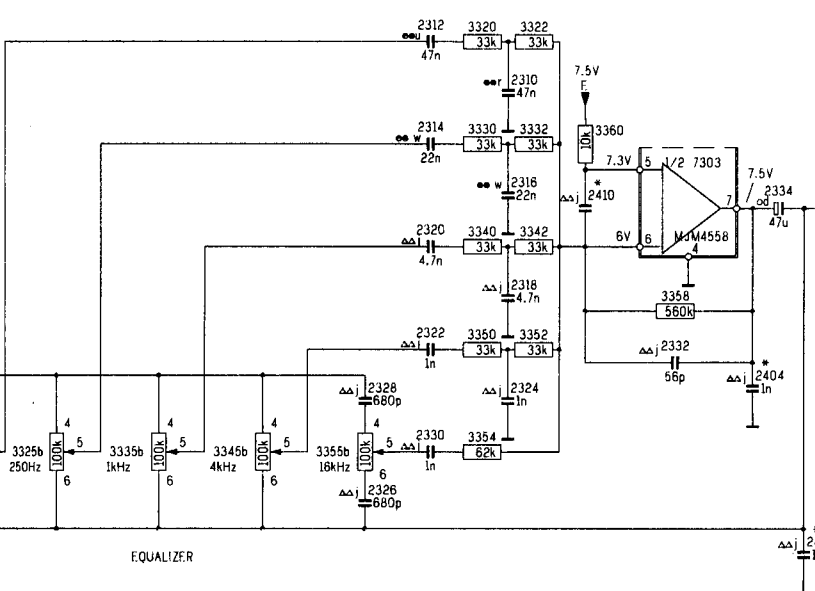
-UNLESS STATED OTHERWISE ALL FIXED RESISTORS ARE FILM RESISTORS - SFR25 PM5
 -SWITCHES DRAWN IN REST POSITION

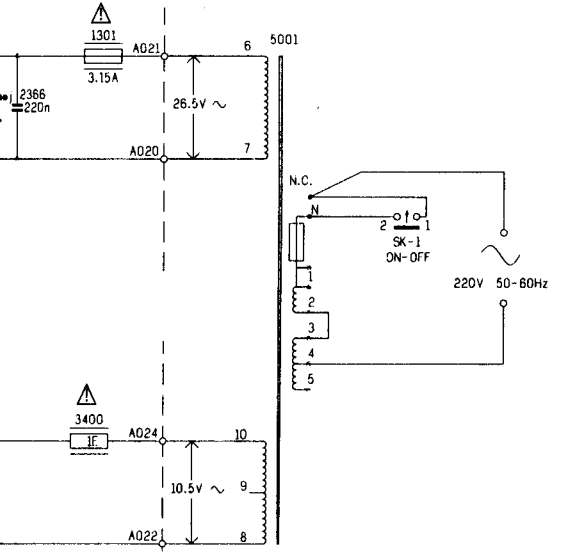
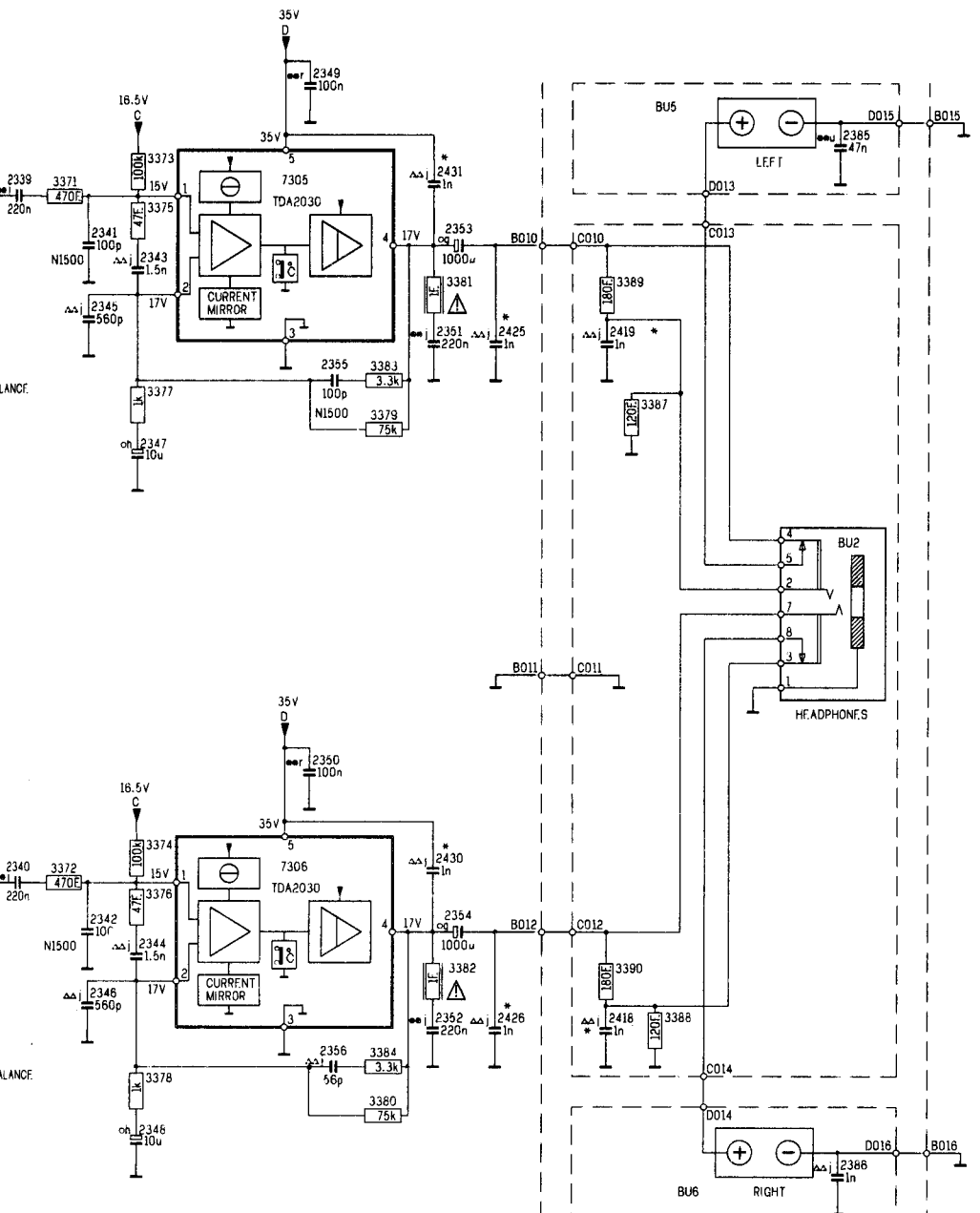
Service hint:
 Upon repairing the T.A.C. (detached from the record-player) A15-grey (not phono selected) must be connected with A13-red (+12).





RTV servis Horvat
 Kešinci, 31402 Semeljci
 031-856-139
 031-856-637
 098-788-319
rtv-servis-horvat@os.tel.hr
 Croatia

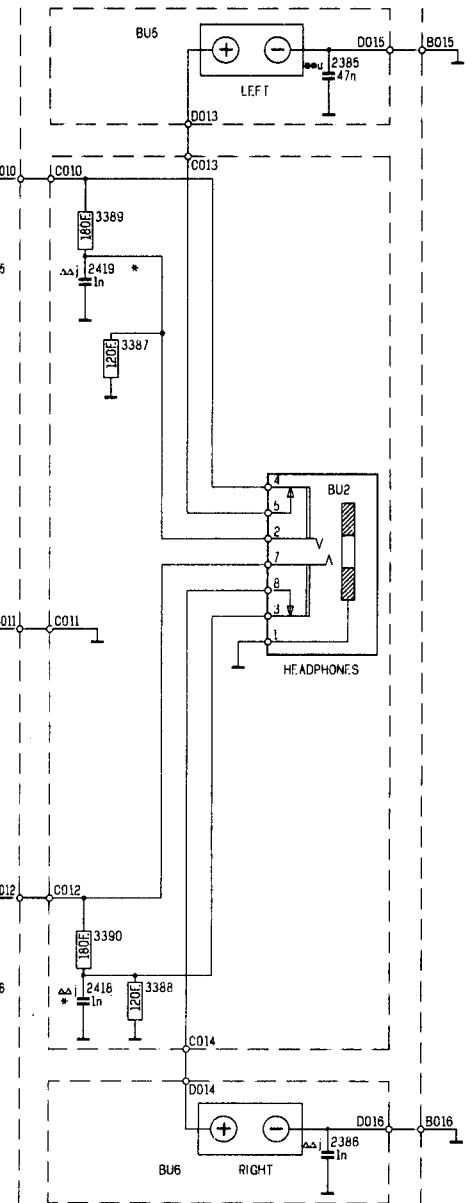




5001		
U PRIM.	WINDING	INTERCONN.
* 110V	N-2	1-3 and 2-4
* 127V	N-5	1-3 and 2-4
220V	N-4	2-3
240V	N-5	2-3

* ONLY AFTER INTERRUPTION OF 2-3

- AF part
- 7301**
- e
- b 0.6
- c 7
- 7302**
- e
- b 0.6
- c 7
- 7303**
- 1 7.5
- 2 6
- 3 7.3
- 4
- 5 7.3
- 6 6
- 7 7.5
- 8 15
- A 1301 K17 3368 H15
 - 2301 D 6 3369 H15
 - 2302 I 6 3369 B15
 - 2303 C 5 3370 I15
 - 2304 I 5 3370 C15
 - 2305 C 7 3371 B16
 - 2306 L 7 3372 H16
 - 2307 D 7 3373 B17
 - 2308 I 7 3374 H17
 - 2309 A12 3375 B17
 - 2310 G12 3376 H17
 - 2311 F11 3377 D17
 - 2312 F11 3378 H17
 - 2313 A11 3379 D19
 - 2314 G11 3380 J19
 - 2315 B12 3381 C19
 - 2316 G12 3382 I20
 - 2317 C12 3383 D19
 - 2318 H12 3384 I19
 - 2319 B11 3387 D21
 - 2320 H11 3388 I21
 - 2321 C11 3389 C21
 - 2322 I11 3390 I21
 - 2323 C12 3400 N17
 - 2324 I12 3402 K14
 - 2325 D11 3403 K14
 - 2326 J11 3404 M14
 - 2327 C11 3405 M14
 - 2328 I11 3406 N13
 - 2329 D11 3407 M13
 - 2330 I11 3408 O13
 - 2331 C13 3433 F 5
 - 2332 I13 3457 B 4
 - 2333 B14 3458 I 4
 - 2334 G14 3459 D 1
 - 2335 L11 3460 K 1
 - 2337 C15 3461 D 2
 - 2338 I15 3462 K 2
 - 2339 B16 3463 D 3
 - 2340 H16 3464 K 3
 - 2341 C17 5001 K18
 - 2342 H17 6305 N15
 - 2343 C17 6306 N14
 - 2344 H17 6307 O15
 - 2345 C17 6308 O14
 - 2346 I17 6309 N13
 - 2347 D17 6310 N12
 - 2348 J17 6315 K15
 - 2349 A18 7301 C 6
 - 2350 G18 7302 I 6
 - 2351 C19 7307 M13
 - 2352 I19 BU1 F 3
 - 2353 B19 BU2 E23
 - 2354 H19 BU3 K 1
 - 2355 D18 BU3 D 1
 - 2356 I18 BU5 A21
 - 2361 O12 BU6 J21
 - 2362 K13 SK-1 H19
 - 2363 L14 SK77 C 5
 - 2364 L15 SK77 J 5
 - 2365 K14 SK77 K 5
 - 2366 K16 SK77 D 5
 - 2367 N14
 - 2368 N13
 - 2369 N11
 - 2370 M13
 - 2375 O12
 - 2377 O13
 - 2378 K 2
 - 2385 B23
 - 2386 J23
 - 2403 C14
 - 2404 I14
 - 2405 D 3
 - 2406 K 3
 - 2409 B13
 - 2410 H13
 - 2414 H 6
 - 2415 C 6
 - 2418 I21
 - 2419 C21
 - 2423 D 2
 - 2424 K 2
 - 2425 C20
 - 2426 I20
 - 2430 H19
 - 2431 B19
 - 2435 A14
 - 2437 F 5
 - 2438 J14
 - 2439 L14
 - 2441 B14
 - 2442 I 4
 - 2443 D 6
 - 2444 I 6
 - 3301 C 6
 - 3302 I 6
 - 3305 D 5
 - 3306 H 5
 - 3307 B 6
 - 3308 H 6
 - 3310 H 6
 - 3312 B 6
 - 3313 D 8
 - 3314 J 8
 - 3315 J 7
 - 3315 D 7
 - 3317 C 8
 - 3318 I 8
 - 3319 A12
 - 3320 F12
 - 3321 A12
 - 3322 F12
 - 3325 J 8
 - 3325 D 8
 - 3329 A12
 - 3330 B12
 - 3331 A12
 - 3332 G12
 - 3335 J 9
 - 3335 D 9
 - 3339 B12
 - 3340 H12
 - 3341 B12
 - 3342 H12
 - 3345 D10
 - 3345 J10
 - 3349 C12
 - 3350 I12
 - 3351 C12
 - 3352 I12
 - 3353 D12
 - 3354 I12
 - 3355 J10
 - 3355 D10
 - 3357 C13
 - 3358 H13
 - 3359 A13
 - 3360 C13
 - 3361 L12
 - 3362 L12
 - 3363 B15
 - 3364 H15
 - 3365 C15
 - 3366 I15
 - 3367 B15
- BU5 LEFT
- BU6 RIGHT
- BU2 HEADPHONE
- BU1
- BU3
- BU4
- BU5
- BU6
- BU7
- BU8
- BU9
- BU10
- BU11
- BU12
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- BU14
- BU15
- BU16
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- DO97
- DO98
- DO99
- DO100



5001

U PRIM.	WINDING	INTERCONN.
* 110V	N-2	1-3 and 2-4
* 127V	N-5	1-3 and 2-4
220V	N-4	2-3
240V	N-5	2-3

* ONLY AFTER INTERRUPTION OF 2-3

PRS. 00295
T10

1301	K17	3368	H15
2301	D 6	3369	H15
2302	I 6	3369	B15
2303	C 5	3370	I15
2304	I 5	3370	C15
2305	C 7	3371	B16
2306	I 7	3372	H16
2307	D 7	3373	B17
2308	I 7	3374	H17
2309	A12	3375	B17
2310	G12	3376	H17
2311	A11	3377	D17
2312	A11	3378	I17
2313	A11	3379	O19
2314	G11	3380	J19
2315	B12	3381	C19
2316	G12	3382	I20
2317	C12	3383	O19
2318	H12	3384	I19
2319	B11	3387	D21
2320	H11	3388	I21
2321	C11	3389	C21
2322	I11	3390	I21
2323	C12	3400	N17
2324	I12	3402	K14
2325	D11	3403	K14
2326	J11	3404	M14
2327	C11	3405	M14
2328	I11	3406	N13
2329	D11	3407	M13
2330	I11	3408	O13
2331	C13	3433	F 5
2332	I13	3457	B 4
2333	B14	3458	I 4
2334	G14	3459	O 1
2335	L11	3460	K 1
2337	C15	3461	D 2
2338	H15	3462	K 2
2339	B16	3463	D 3
2340	H16	3464	K 3
2341	C17	5001	K18
2342	H17	6305	N15
2343	C17	6306	N14
2344	H17	6307	O15
2345	C17	6308	O14
2346	I17	6309	N13
2347	D17	6310	N12
2348	J17	6315	K15
2349	A18	7301	C 6
2350	G18	7302	I 6
2351	C19	7307	M13
2352	I19	BU1	F 3
2353	B19	BU2	E23
2354	H19	BU3	K 1
2355	D18	BU5	O 1
2356	I18	BU6	A21
2357	O12	BU6	J21
2358	K13	5K77	C 5
2359	L14	5K77	J 5
2364	L15	5K77	K 5
2365	K14	5K77	K 5
2366	K16	5K77	D 5
2367	N14		
2368	N13		
2369	N11		
2370	M13		
2375	O12		
2377	O13		
2378	K 2		
2385	B23		
2386	J23		
2403	C14		
2404	I14		
2405	D 3		
2406	K 3		
2409	B13		
2410	H13		
2414	H 6		
2415	C 6		
2418	I21		
2419	C21		
2423	D 2		
2424	K 2		
2425	C20		
2426	I20		
2430	H19		
2431	B19		
2435	A14		
2437	F 5		
2438	J14		
2439	E14		
2441	B 4		
2442	I 4		
2443	O 6		
2444	I 6		
3301	C 6		
3302	I 6		
3305	D 5		
3306	H 5		
3307	B 6		
3308	H 6		
3310	H 6		
3312	B 6		
3313	D 6		
3314	J 8		
3315	J 7		
3315	D 7		
3317	C 8		
3318	I 8		
3319	A12		
3320	F12		
3321	A12		
3322	F12		
3325	J 8		
3325	D 8		
3329	A12		
3330	C12		
3331	A12		
3332	G12		
3335	J 9		
3335	D 9		
3339	B12		
3340	H12		
3341	B12		
3342	H12		
3345	O10		
3345	J10		
3349	C12		
3350	I12		
3351	C12		
3352	I12		
3353	O12		
3354	I12		
3355	J10		
3355	O10		
3357	C13		
3358	H13		
3359	A13		
3360	G13		
3361	L12		
3362	L12		
3363	B15		
3364	H15		
3365	C15		
3366	I15		
3367	B15		

AF part

7301

e		15 V
b	0.65 V	17 V
c	7 V	

7302

e		15 V
b	0.65 V	17 V
c	7 V	

7303

1	7.5 V	
2	6 V	
3	7.3 V	
4		
5	7.3 V	
6	6 V	
7	7.5 V	
8	15 V	

7305

1	15 V
2	17 V
3	
4	17 V
5	35 V

7306

1	15 V
2	17 V
3	
4	17 V
5	35 V

7307

e	15 V
b	16.5 V
c	34 V

- Carbon film 0.2 W 70°C 5%
- Carbon film 0.33 W 70°C 5%
- Metal film 0.33 W 70°C 5%
- Carbon film 0.5 W 70°C 5%
- Carbon film 0.67 W 70°C 5%
- Carbon film 1.15 W 70°C 5%

- Ceramic plate Tuning ≤ 120 pF NP.0 2% Others -20/+80%
- Polyester flat foil 10%

- Metalized polyester flat film 10%

- Polyester flat foil small size (Mylar) 10%

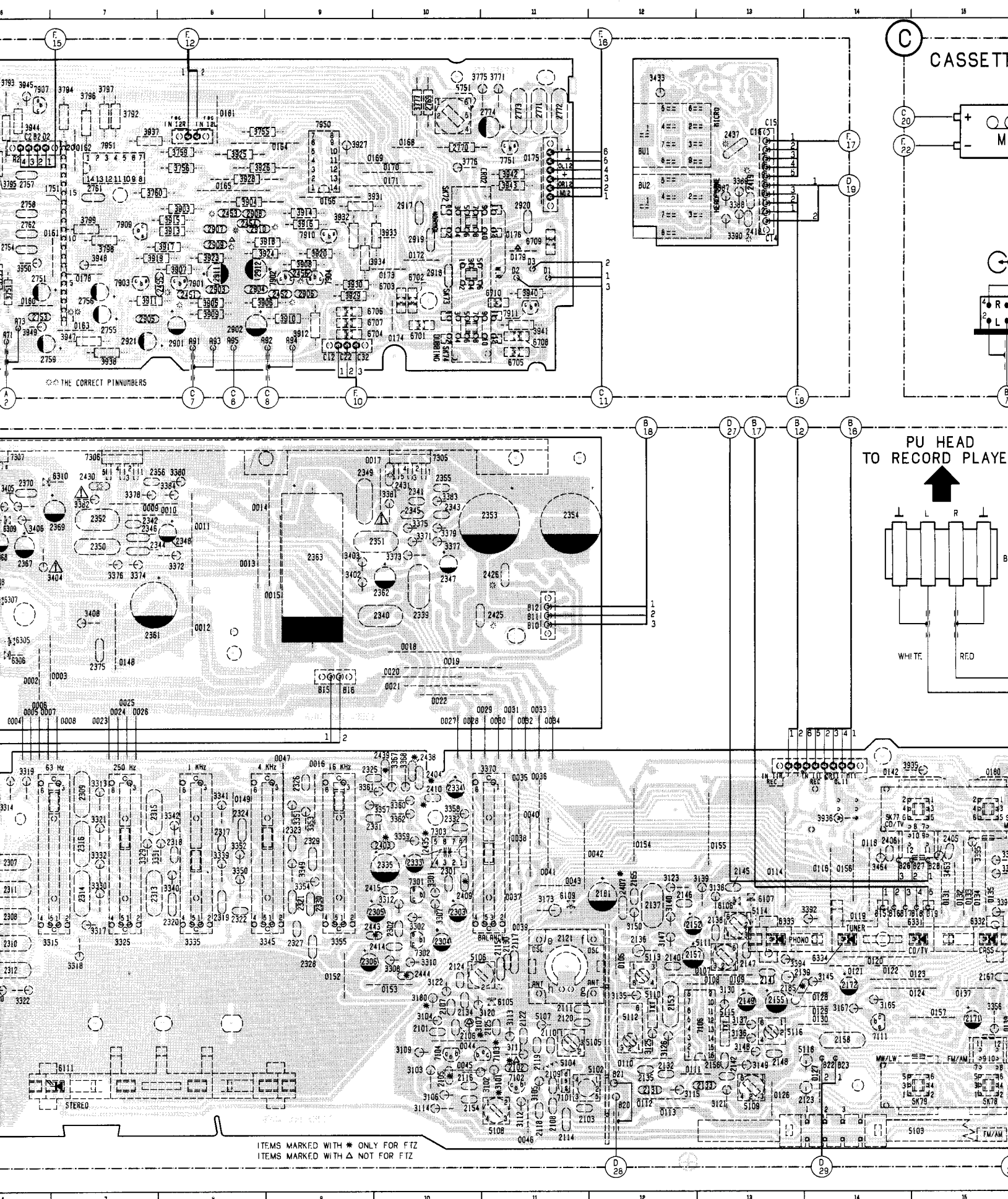
- Polysterene film/foil 1%

- Tubular ceramic

- Miniature single

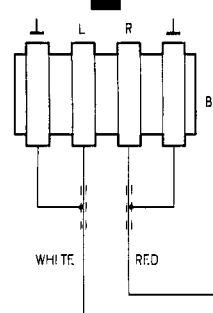
- Subminiature tantalum ± 20%

*a = 2,5 V
b = 4 V
c = 6,3 V
d = 10 V
e = 16 V
f = 25 V
g = 40 V
h = 63 V
j = 100 V
l = 125 V
m = 150 V
n = 160 V
q = 200 V
r = 250 V
s = 300 V
t = 350 V
u = 400 V
v = 500 V
w = 630 V
x = 1000 V
A = 1,6 V
B = 6 V
C = 12 V
D = 15 V
E = 20 V
F = 35 V
G = 50 V
H = 75 V
I = 80 V



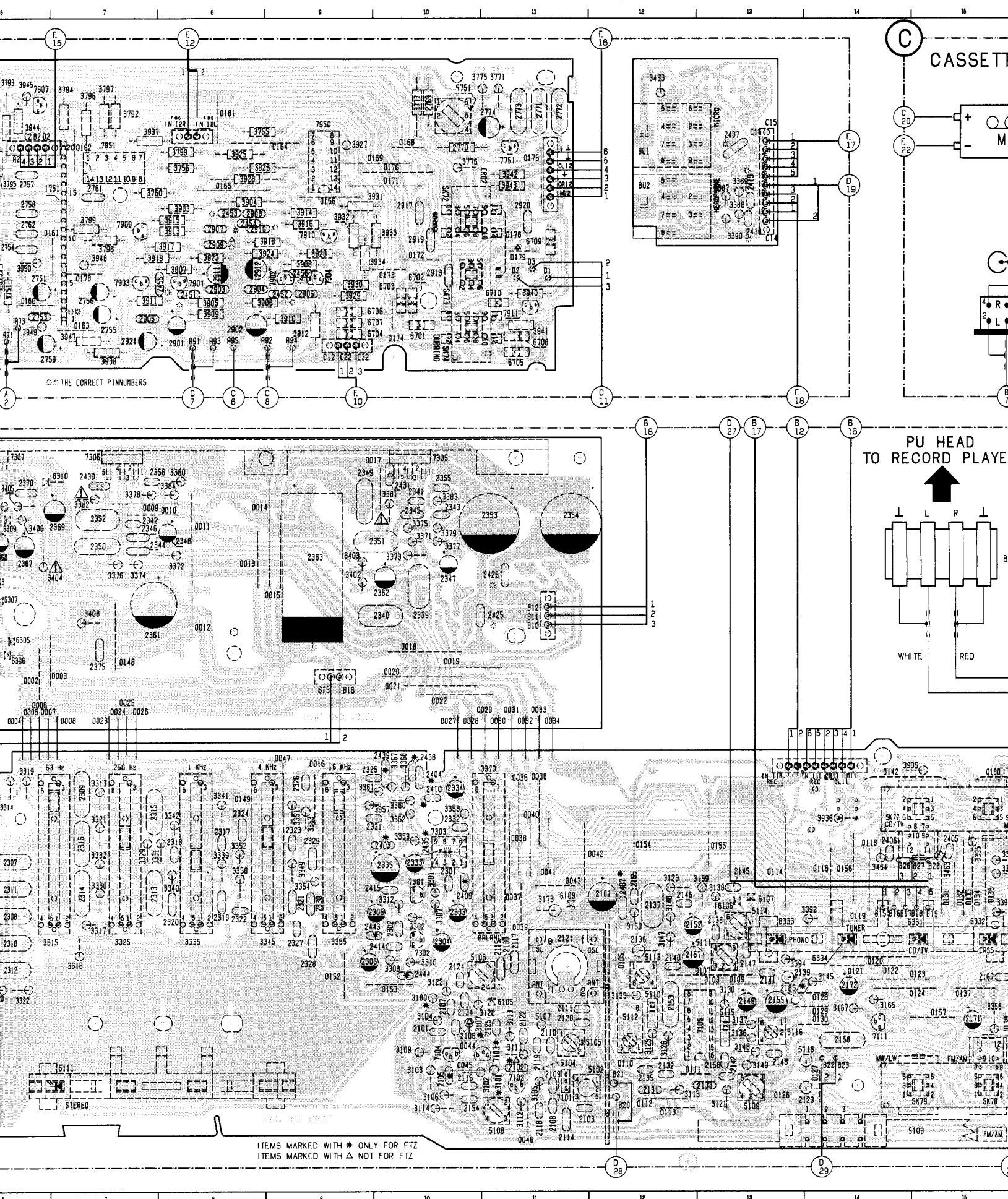
CASSETTE

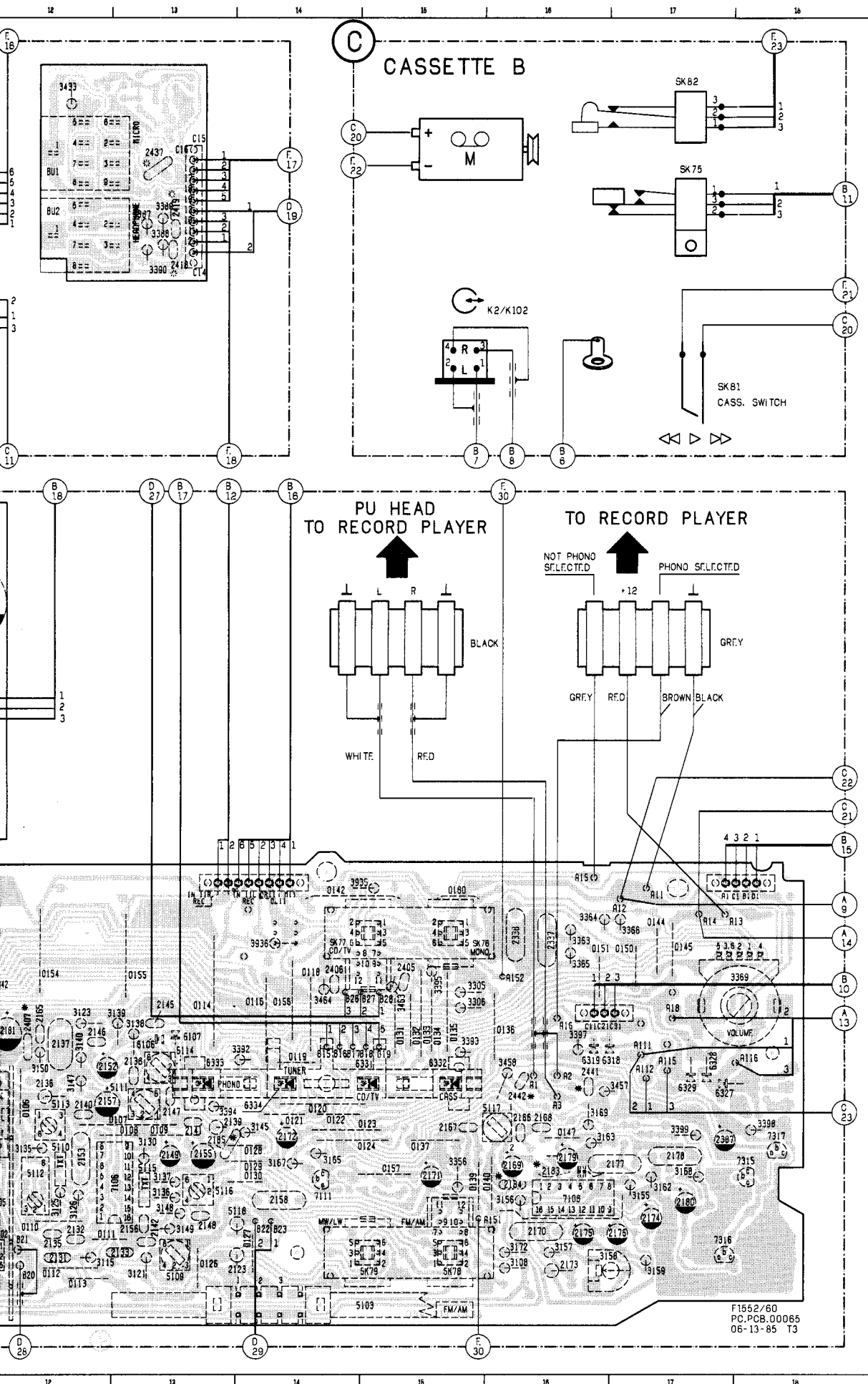
PU HEAD TO RECORD PLAYER



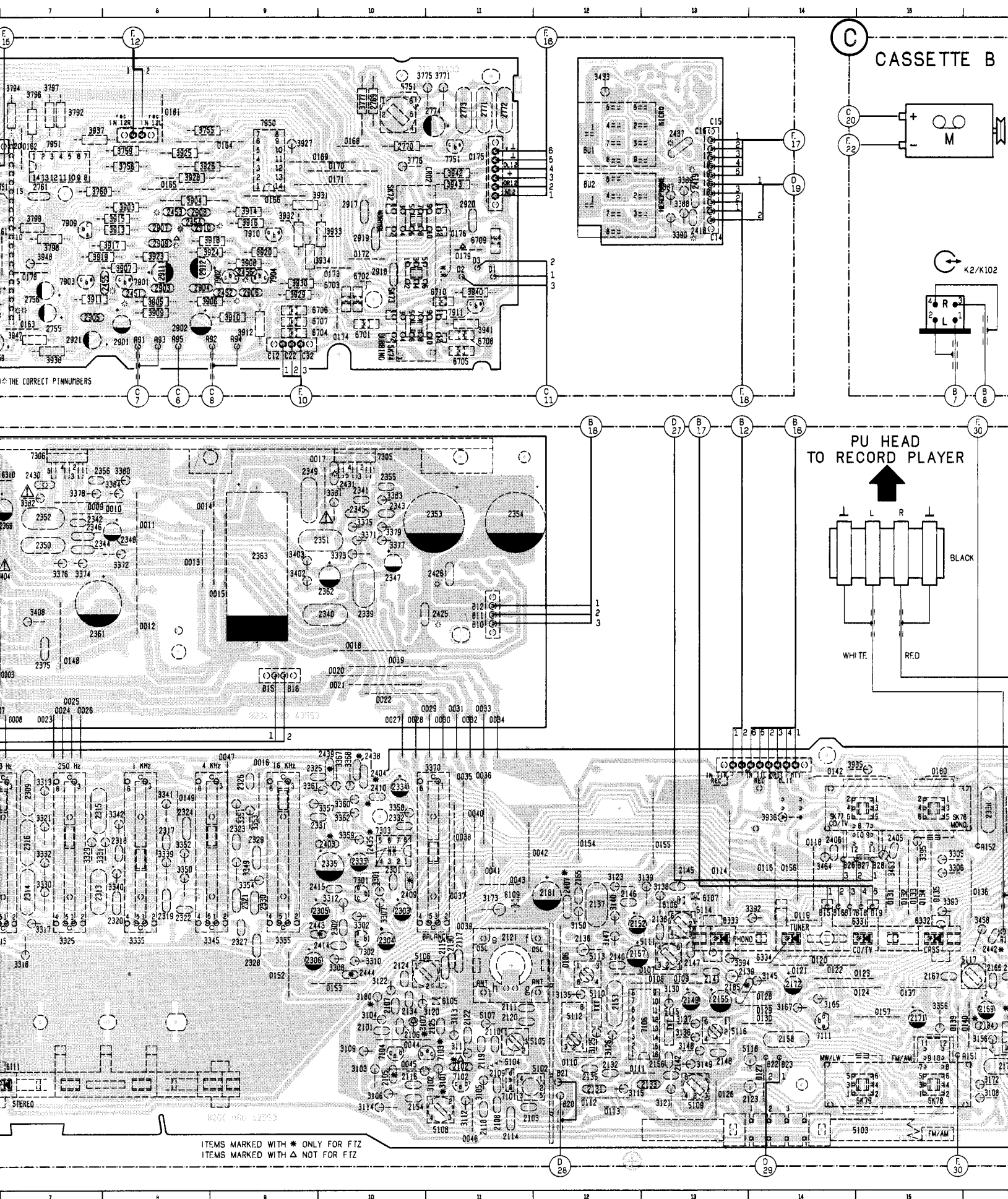
ITEMS MARKED WITH * ONLY FOR FIZ
 ITEMS MARKED WITH Δ NOT FOR FIZ

THE CORRECT PINNUMBERS

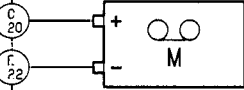




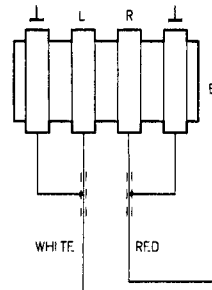
CS 101 854



CASSETTE B



PU HEAD TO RECORD PLAYER



ITEMS MARKED WITH * ONLY FOR FTZ
ITEMS MARKED WITH Δ NOT FOR FTZ

USE THE CORRECT PINNUMBERS

BLACK

WHITE

R.F.O.

FM/AM

FM/AM

FM/AM

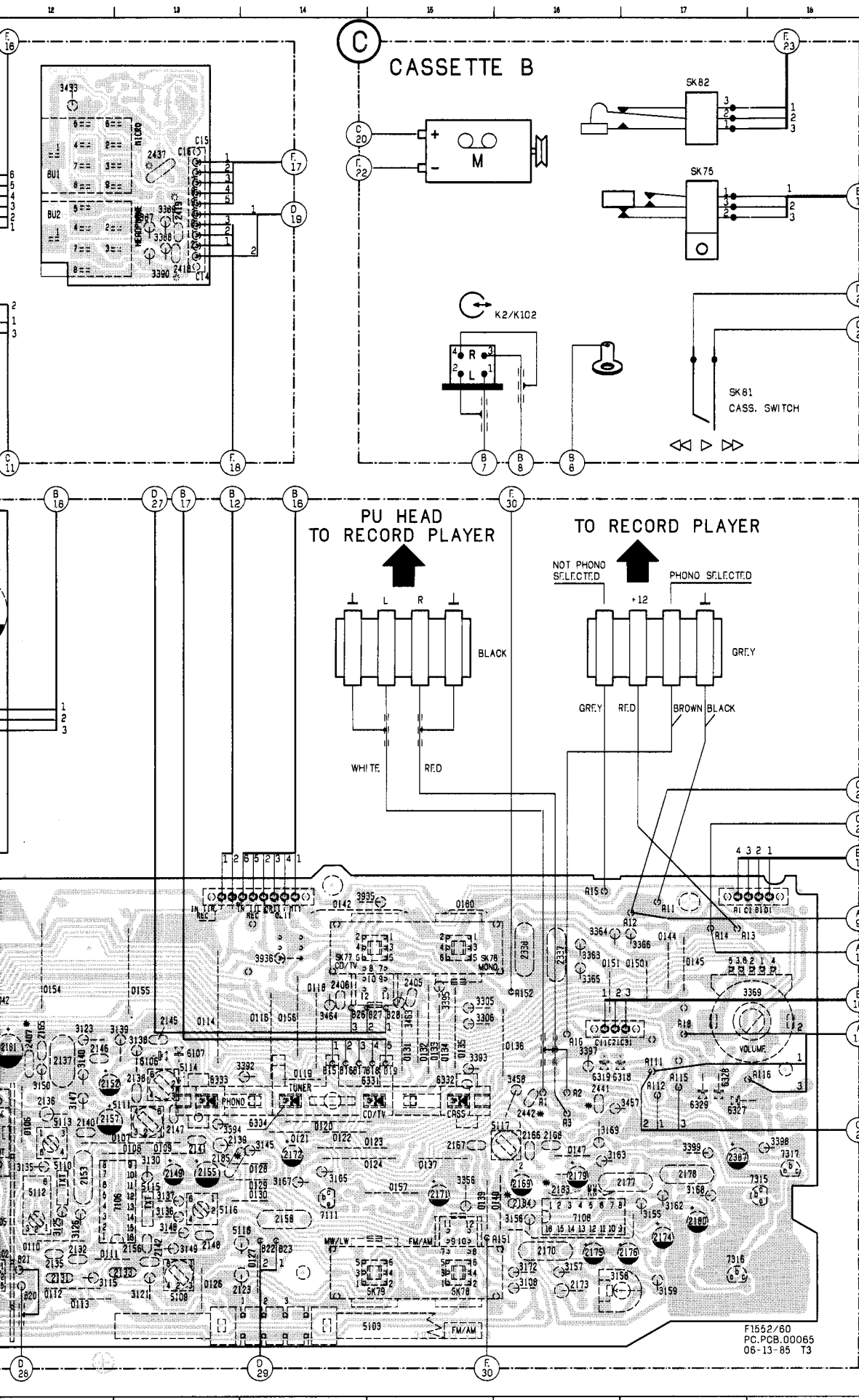
FM/AM

FM/AM

FM/AM

FM/AM

FM/AM



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ALIGNMENT












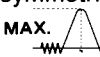




General

- During the alignment, keep the levels of the injected signals as low as possible.
- Alignment of IF stages requires a sweep signal.
For FM: Apply a 10.7 MHz signal with a sweep of 300 kHz at a frequency of 50 Hz.
For AM: Apply a 450 kHz (468 kHz) signal with a sweep of 10 kHz at a frequency of 50 Hz.
- Switch SK76 position: stereo.



Equipment required

- RF generator
- Oscilloscope
- DC-millivoltmeter
- AC-millivoltmeter
- Frequency counter





FM-IF

SK switch	 signal	 to	 tune in	DETUNE	 adjust	 oscilloscope	 DC mV meter	
FM SK-78	10.7 MHz Δf 300 kHz (50 Hz)			A B		 center  fo		
	fo=f generator Δf = 10 kHz (50 Hz)					5108		 symmetrical MAX. 
	10.7 MHz Δf 300 kHz (50 Hz) 1 mV					5114 5111		 symmetrical 
	10.7 MHz No sweep					5114		DC  0 V \pm 30 mV
								


FM-oscillator

FM SK-78	87.63 MHz mod. 1 kHz Δf 22.5 kHz		max. cap. 2121		5106	 max. ~	
	108.0 MHz mod. 1 kHz Δf 22.5 kHz		min. cap. 2121		2121e		


FM-RF antenna section

FM SK-78	87.63 MHz mod. 1 kHz Δf 22.5 kHz				5105	 max. ~	
	108.0 MHz mod. 1 kHz Δf 22.5 kHz				2121h		
							


Stereo-decoder

FM SK-78	No signal				3158	Counter  19 kHz \pm 100 Hz	
-------------	-----------	--	--	--	------	--	--


GB

- 1 Place the peak of the band-pass curve in the middle of the picture by shifting the sweep frequency.
- 2 Adjust for maximum height and symmetry.
- 3 Adjust for linearity and symmetry of the S-curve.
- A Switch off A.F.C. by short-circuiting 2137.
- B Open solder bridge 


NL

- 1 De top van de doorlaat curve, door verschuiven van wobbelfrequentie, in het midden van het scherm plaatsen.
- 2 Afregelen op maximum hoogte en symmetrie.
- 3 Afregelen op lineariteit en symmetrie van de S-kurve.
- A A.F.C. uitschakelen door 2137 kort te sluiten.
- B Open soldeerbrug 














F

- 1 En décalant la fréquence de wobulation, placer la crête de la courbe de réponse au centre de l'écran.
- 2 Ajuster pour avoir une courbe d'amplitude maximale et de bonne symétrie.
- 3 Ajuster pour avoir une courbe en S de bonne linéarité et de bonne symétrie.
- A Mettre la C.A.F. hors service en court-circuitant, le condensateur 2137.
- B Ouvrir le pontet 



I

- 1 Portare la cresta della curva di risposta al centro dello schermo per mezzo di scivolamento della frequenza di modulazione.
- 2 Regolare per altezza e simmetria massima.
- 3 Regolare per linearità e simmetria della curva ad S.
- A Mettere il C.A.F. fuori funzionamento cortocircuitando il condensatore 2137.
- B Aprire il ponticello 




AM-IF

SK						
switch	signal	to	tune in	adjust	oscilloscope	AC mV meter
AM SK-78 MW SK-79	450 kHz Δf 10 kHz (50 Hz)				 center  fo	
	fo=f generator $\Delta f = 10$ kHz (50 Hz)		2121 max. cap.	5112 5116	Symmetrical   MAX. 	

AM-RF-oscillator

AM SK-78 LW SK-79	147 kHz mod: 1 kHz 30%		2121 max. cap.	5113		 max. ~
AM SK-78 MW SK-79	1635 kHz mod: 1 kHz 30%		2121 min. cap.	2121f		

AM-RF-antenna section

AM SK-78 MW SK-79	560 kHz mod: 1 kHz 30%			5103	 max. ~
	1500 kHz mod: 1 kHz 30%			2121g	
AM SK-78 LW SK-79	155 kHz mod: 1 kHz 30%			5109	

Repeat - Herhalen - Répéter - Wiederholen - Ricominciare

D

- 1 Die Spitze der Durchlasskurve in der Mitte des Bildes legen dadurch, dass man die Wobelfrequenz verschiebt.
- 2 Abgleichen auf Maximalhöhe und Symmetrie.

Abgleichen auf Linearität und Symmetrie der S-Kurve.

GB Electrical measurements and adjustments "Recorder"

- A** – The maximum permissible speed deviation is $\pm 2\%$. Moreover, the wow and flutter value can be read.
 - This value should not exceed 0.35%.
- B** – Connect the Service cassette set to the apparatus via one of the loudspeaker connectors.
 - Set the apparatus to the play back position with the 50 Hz cassette from the cassette service set.
 - With R at the back of the motor, adjust for minimum variation of the indicator reading.
- C** – If the accuracy requirements are less stringent a high quality ferro (normal) cassette may be used as an alternative.
- D** – If the adjustment is correct the frequency response curve will be similar to curve b in Fig. 2 (distortion $\leq 5\%$).
- E** – Switch off A.L.C. by short-circuiting electrolytic capacitor 2759.
- F** – Mount a resistor of 20E between point 2(4) of K2 (K102) and A93 (A94).

F Mesurer electriques et reglages "Recorder"

- A** – L'écart de vitesse maximum admissible est de $\pm 2\%$. Le taux de pleurage pourra également être lu lors de cette mesure.
 - Cette valeur ne doit pas dépasser 0,35%.
- B** – Relier par l'intermédiaire d'un des connecteurs de haut-parleur la section cassette Service à l'appareil.
 - Positionner en reproduction et faire passer une cassette 50 Hz de la section cassette Service.
 - Régler grâce à R à l'arrière du moteur pour que la variation sur l'indicateur soit minimum.
- C** – Si les exigences du point de précision, ne sont pas tellement élevées, une cassette au ferro (normale) de bonne qualité, pourra également convenir.
- D** – Si le réglage est correctement effectué, la courbe de fréquence devra être égale à la courbe b de la Fig. 2 (distorsion $\leq 5\%$).
- E** – Mettre la A.L.C. hors service en court-circuitant le condensateur chimique 2759.
- F** – Monter une résistance de 20E entre le point 2(4) de K2 (K102) et A93 (A94).

A A.F.C.-Regelung ausschalten durch kurzschluss von 2137.

B Lötbrücke  öffnen.

"Bei notwendigem Abgleich ist das Gerät auf die gesetzlich vorgeschriebenen Eckfrequenzen abzugleichen".

>87.2 MHz <108.5 MHz.

NL Elektrische metingen en instellingen "Recorder"

- A** – De hoogst toelaatbare snelheidsafwijking bedraagt $\pm 2\%$. Tevens kan bij deze meting de jengelwaarde afgelezen worden.
 - Deze waarde mag niet hoger zijn dan 0.35%.
- B** – Via een van de luidsprekerconnectors het Service-cassettedeel met het apparaat verbinden.
 - Zet het apparaat in de weergeefstand met de 50 Hz cassette uit het Service-cassettedeel.
 - Met R aan de achterzijde van de motor op minimale variatie van de indicatoraflezing instellen.
- C** – Als de nauwkeurigheidseisen minder streng zijn, kan als alternatief een ferro-cassette (normal) van hoge kwaliteit gebruikt worden.
- D** – Als de instelling juist is, zal de frequentiekromme gelijk zijn aan kromme b in Fig. 2 (vervorming $\leq 5\%$).
- E** – A.L.C. regeling uitschakelen door elco 2759 kort te sluiten.
- F** – Plaats een weerstand van 20E tussen punt 2(4) van K2 (K102) en A93 (A94).

D Elektrische Messungen und Einstellungen "Recorder"

- A** – Die höchstzulässige Geschwindigkeitsabweichung beträgt $\pm 2\%$. Auch lässt sich bei dieser Messung der Jaulwert ablesen.
 - Dieser Wert darf 0,35% nicht überschreiten.
- B** – Über einen der Lautsprecherkonnektoren den Service-Cassetten teil mit dem Gerät verbinden.
 - Mit dem 50-Hz-Cassette aus dem Service-Cassetten teil das Gerät in die Wiedergabestellung bringen.
 - Mit R auf der Rückseite des Motors auf Mindest-Schwankung der Anzeigerablesung einstellen.
- C** – Wenn die Genauigkeitsanforderungen weniger streng sind, kann als Alternative eine Hochleistungs-Ferrocassette (Normal) benutzt werden.
- D** – Wenn die Einstellung richtig ist, wird der Frequenzgang gleich der kurve b in Bild 2 (Verzerrung $\leq 5\%$) sein.
- E** – A.L.C. ausschalten durch Kurzschluss von Elko 2759.
- F** – Einer Widerstand von 20E zwischen Punkt 2(4) von K2 (K102) und A93 (A94) montieren.

I Misure e regolazioni elettriche "Recorder"

- (A)** - La deviazione massima di velocità è $\pm 2\%$. Inoltre, può essere rilevato il wow e flutter.
 - Questo valore non deve eccedere dello 0,35%.
- (B)** - Collegare lo strumento di servizio al connettore di uscita di una cassa acustica dell'apparecchio.
 - Posizionare l'apparecchio in riproduzione e usare la cassetta test a 50 Hz.
 - Regolare la velocità del motore (R), per la minima deviazione dello strumento.
- (C)** - Per necessità può essere usata una cassetta di alta qualità al ferro (normale).
- (D)** - Se la regolazione è corretta la curva di risposta in frequenza sarà simile alla curva b in Fig. 2 (distorsione $\leq 5\%$).
- (E)** - Mettere il C.A. fuori funzionamento cortocircuitando il condensatore 2759.
- (F)** - Montare una resistenza di 20E fra il punto 2(4) di K2 (K102) e A93 (A94).

Recorder A and B

Adjustment	Cassette	Recorder in position SK..	Apply signal to	Measure on	Read on	Adjust with	Adjust to
Playback speed Method 1 or Method 2	3150 Hz part of SBC420Fe	PLAY	-	Loudspeaker output or (12) ((13))	Wow and flutter meter	Trimpotmeter R at the back of the motor	(A)
	Test cassette set 801/CCS	PLAY	-	Loudspeaker output	indicator on test set	Trimpotmeter R at the back of the motor	(B)
Azimuth R/P head	8 kHz part of SBC420Fe	PLAY	-	(12) ((13))	AC mV meter or oscilloscope	Left screw on R/P head	Max. output
Static playback	-	PLAY (F) only rec B	(K) ((L)) A (M) ((N)) B 170 mV-315 Hz via 20 k Ω	(12) ((13))	AC mV meter > 100 mV	-	
Playback sensitivity	315 Hz-0 dB part of SBC420Fe	PLAY	-	(12) ((13))	AC mV meter > 300 mV	-	
BIAS oscillator frequency only rec. A	Any cassette	RIF SK-76 OFF REC+PLAY	-	(11)	Frequency counter	5751	55 kHz
Target value BIAS only rec. A	SBC420Fe side-2 (C)	PLAY	-	(9) ((10))	AC mV meter	3769	9 mV
BIAS only rec. A	SBC420Fe side-2 (C)	REC+PLAY	1 kHz (R) ((S)) (E)		AC mV meter	LF generator	12 mV
			63 Hz 250 Hz 6.3 Hz 10 kHz	Record a number of frequencies (same input voltage)			
	Rewind recording made	PLAY		(12) ((13))	AC mV meter		See graph Fig. 1 if necessary repeat adjustment (D)

Record player

Adjustment	Service Manual	Record player position SK			Read on	Adjust with	Adjust to
Speed	F7046	SK-H 33 $\frac{1}{3}$ rpm 45 rpm			Stroboscope	R3603 R3602	33 $\frac{1}{3}$ rpm 45 rpm

Electrical measurements and adjustments recorder and record player

General conditions recorder

- Prior to any measurement or adjustment with the tape running, heads and tape guides should be degaussed and cleaned.
- The measurements and adjustments are related to the left-hand channel.
The corresponding test points and adjusting elements for the right-hand channel are given in brackets.
- The voltages have been measured relative to earth.

Required test equipment and test cassettes

- AF generator
- AC mV meter
- Wow and flutter meter
- Multi meter
- Frequency counter
- Cassette service set 801CSS 4822 395 30078
- Universal test cassette SBC420Fe 4822 397 30071

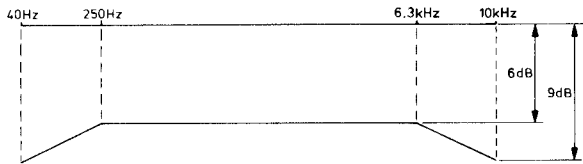


Fig. 1

23 742A12/A

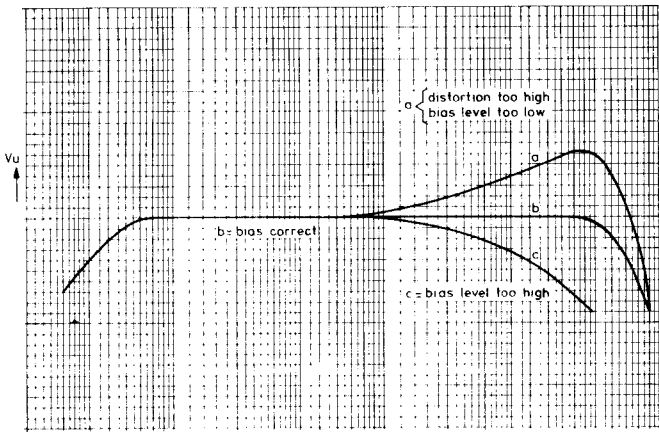
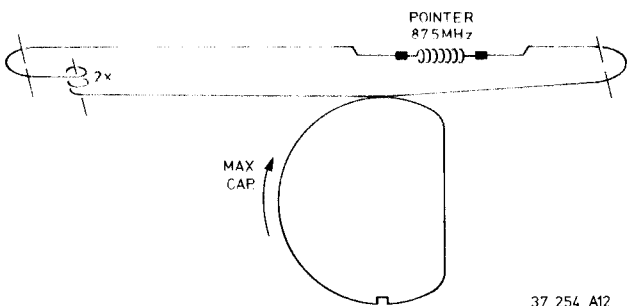
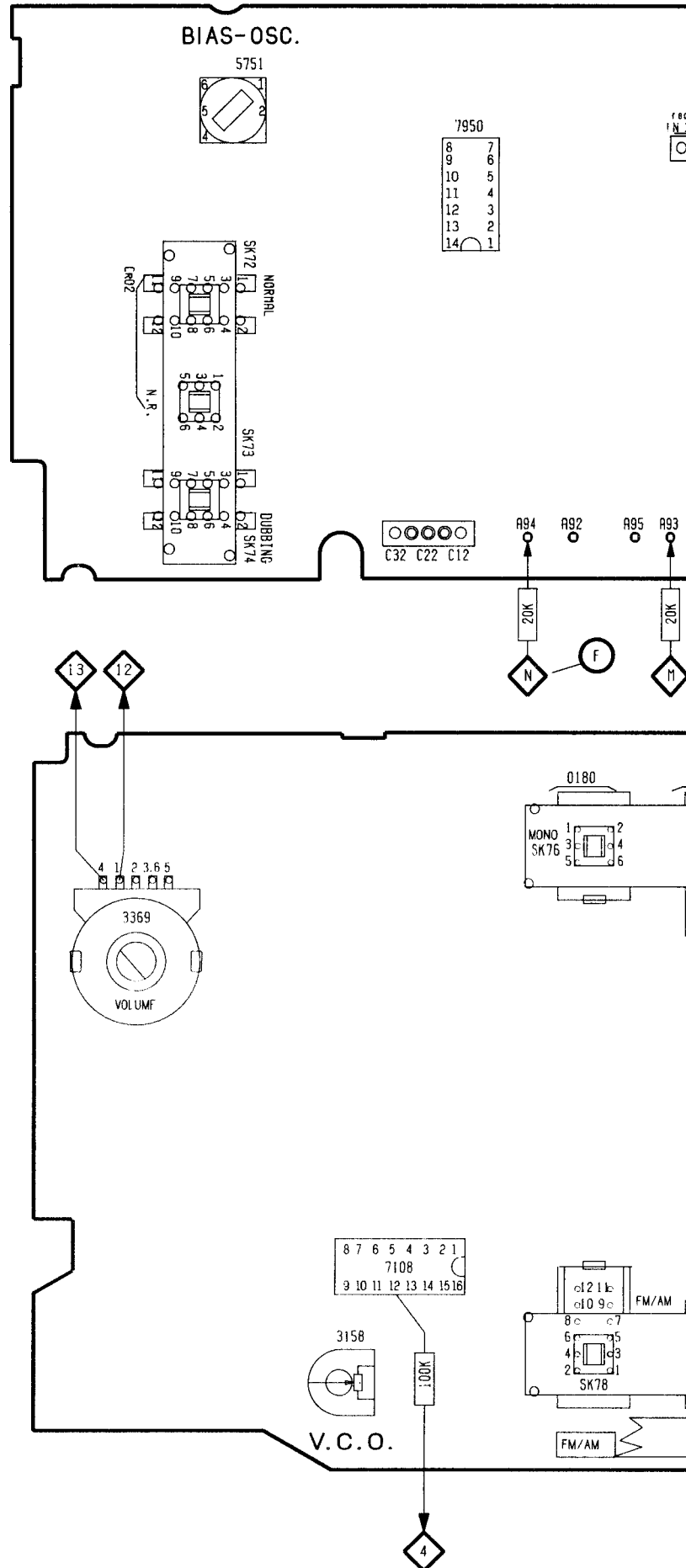


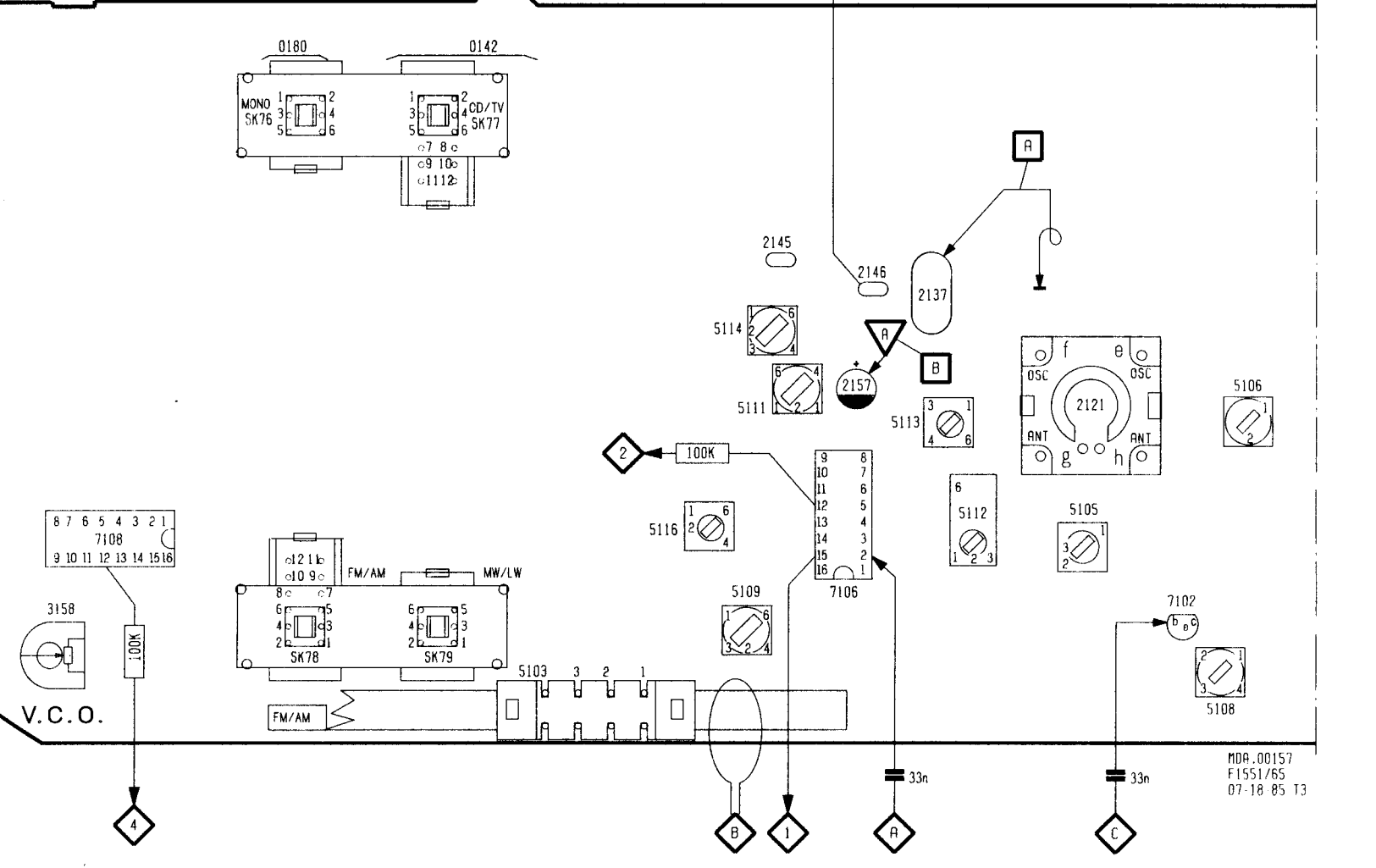
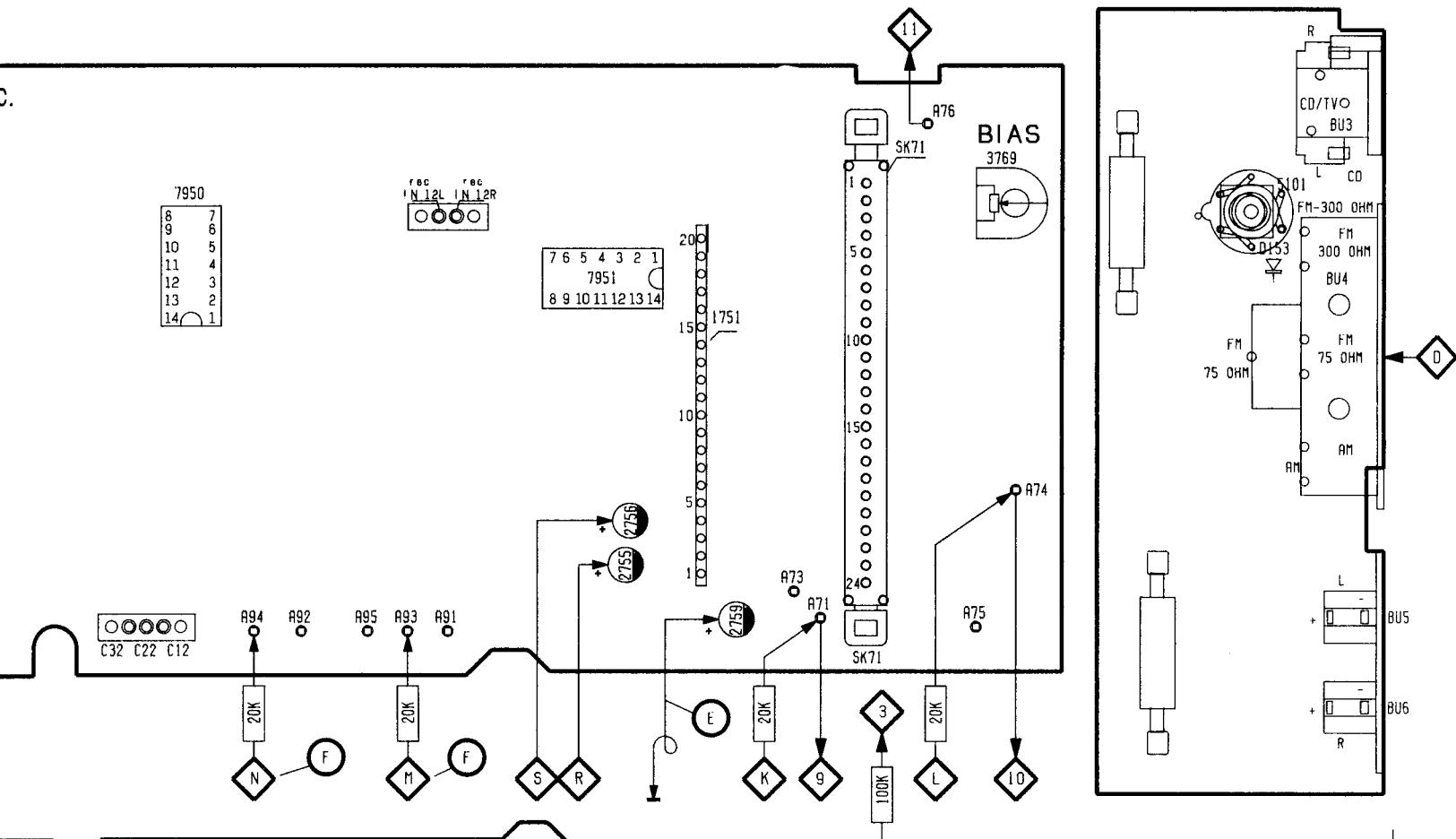
Fig. 2

29 476 A12

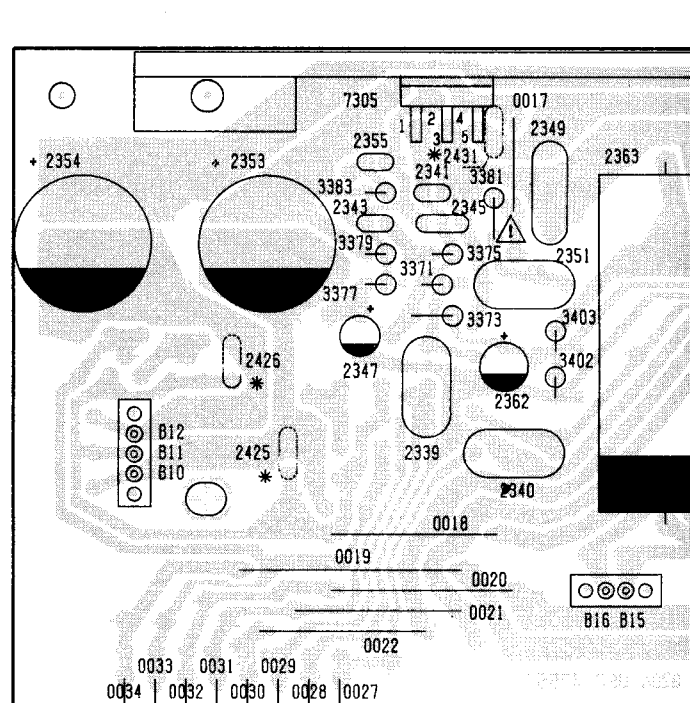
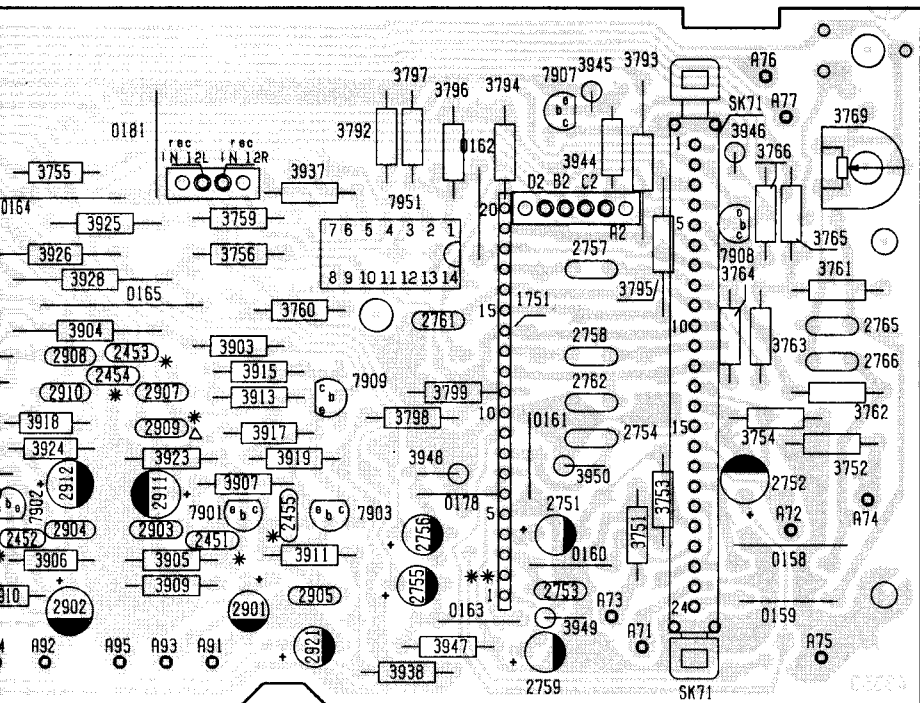


37 254 A12

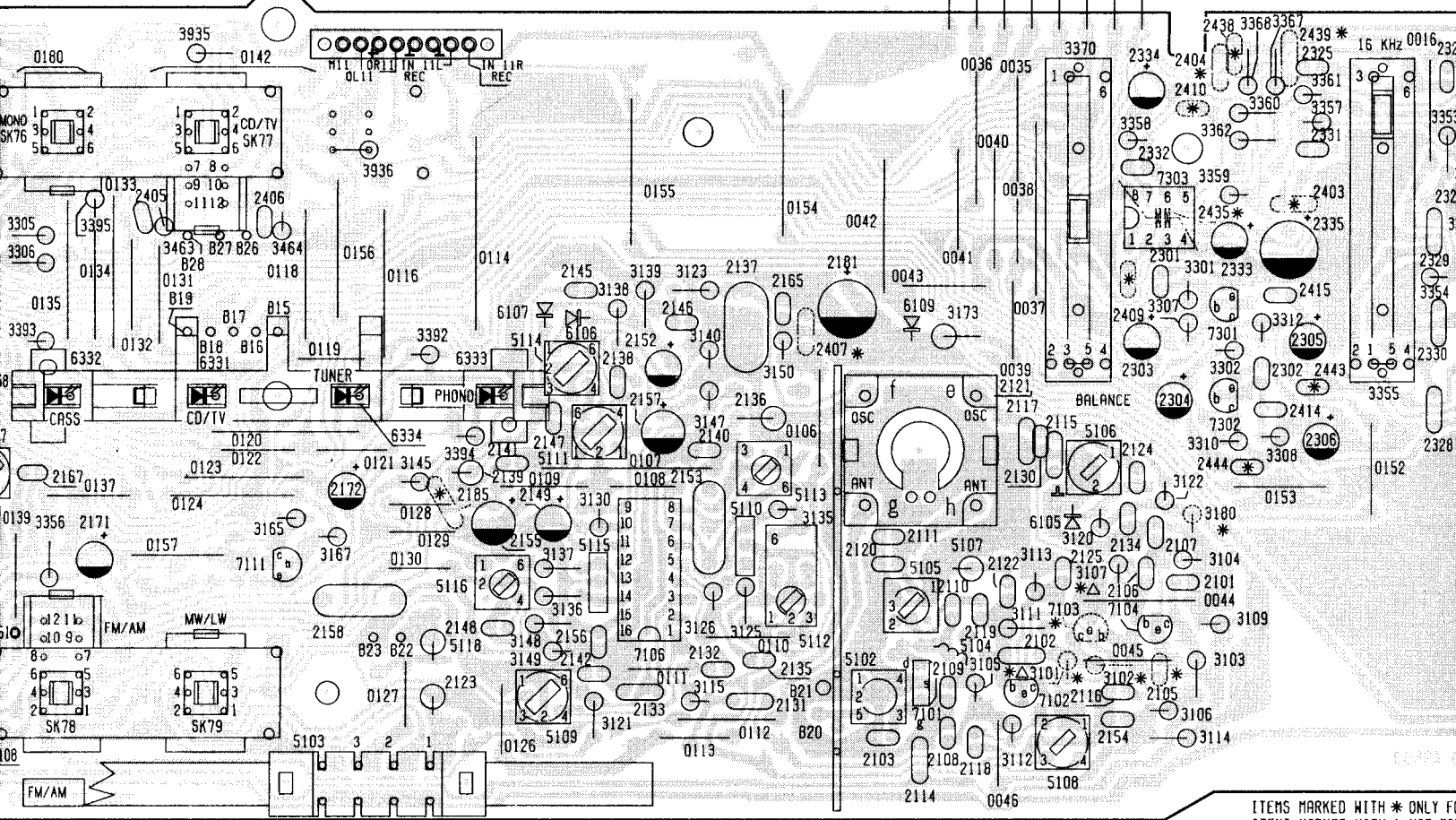




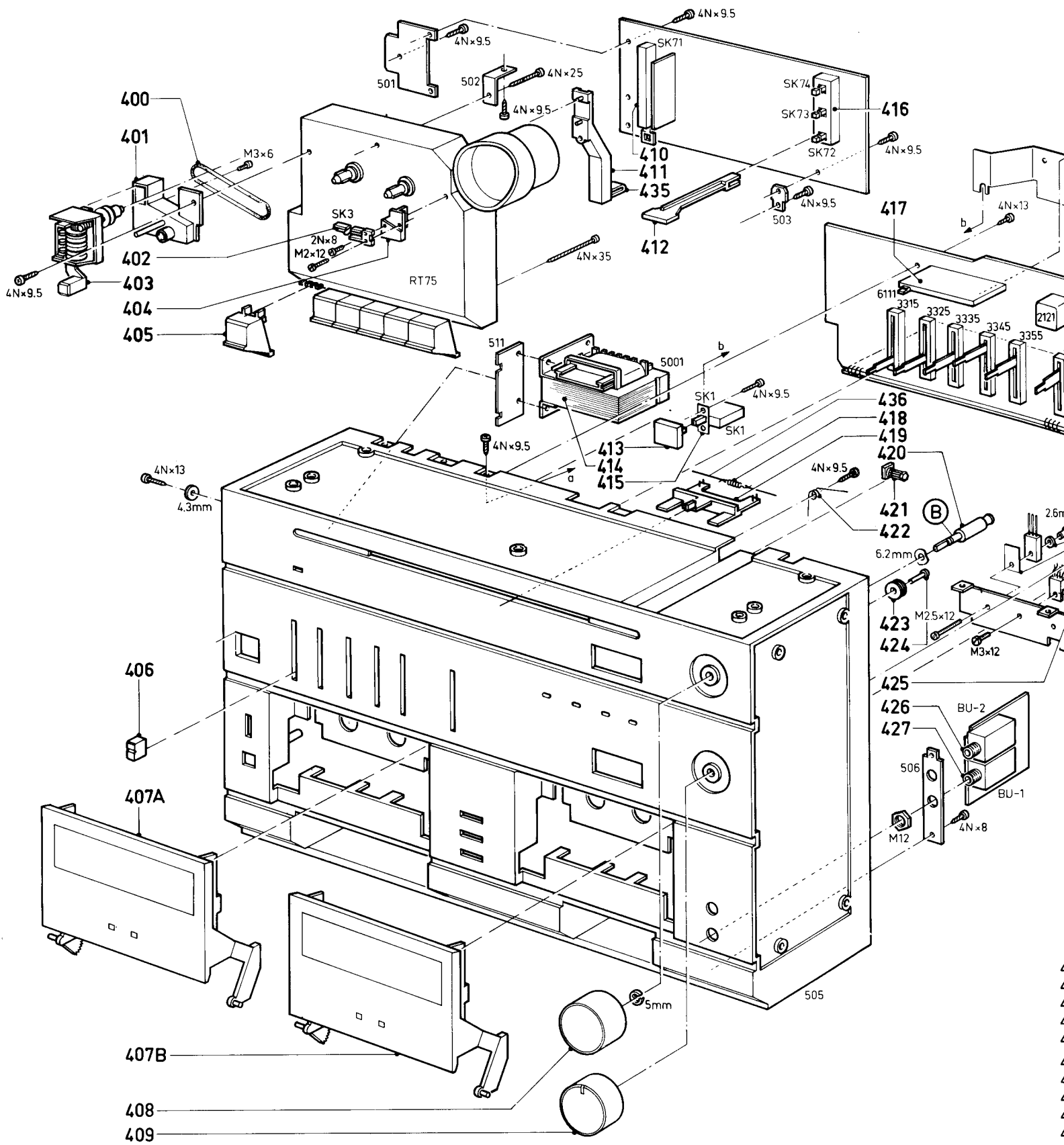
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** THE CORRECT PINNUMBERS



ITEMS MARKED WITH * ONLY FOR...
ITEMS MARKED WITH Δ NOT FOR...

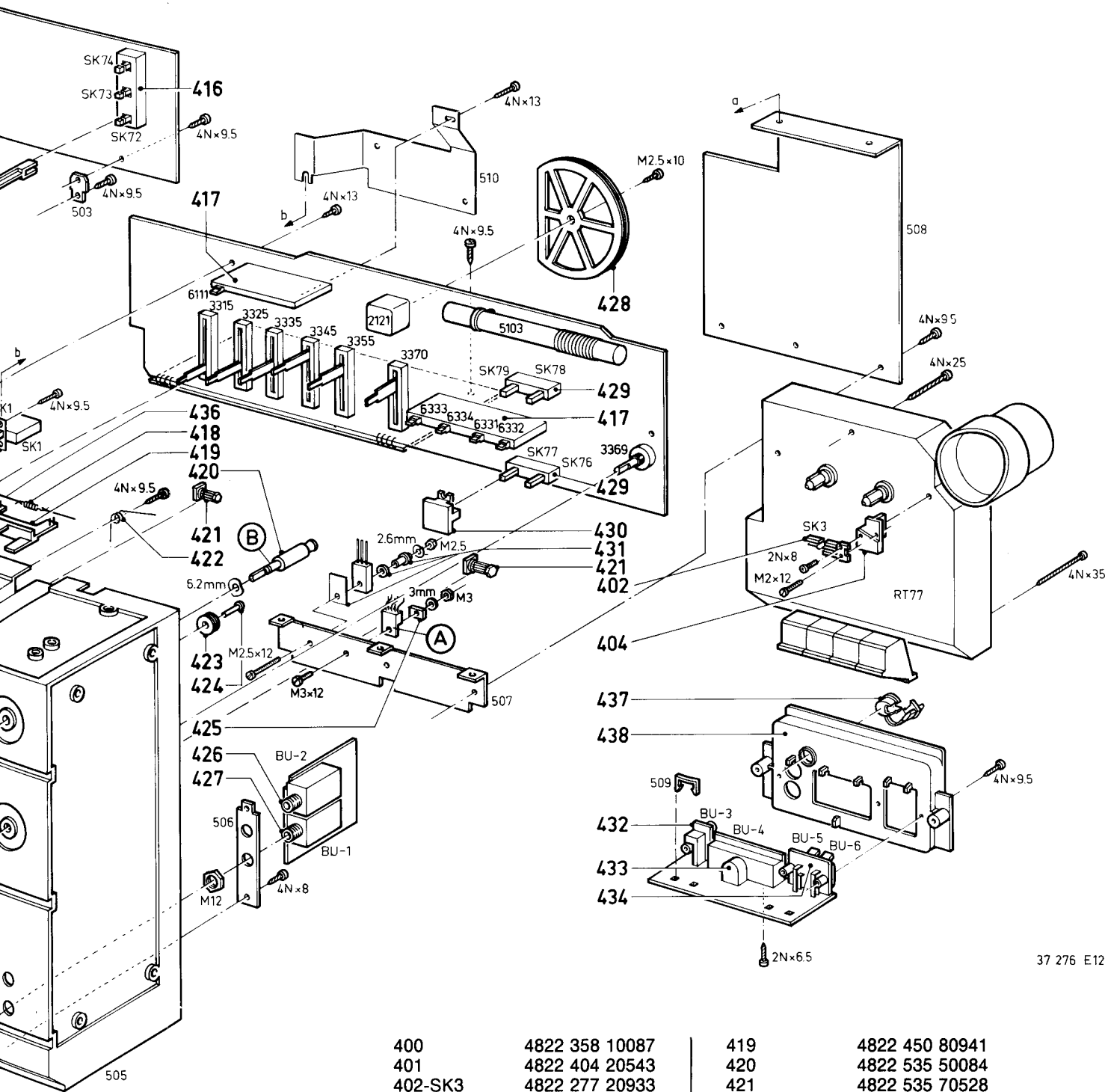


(A) Silicone grease

5322 390 20019

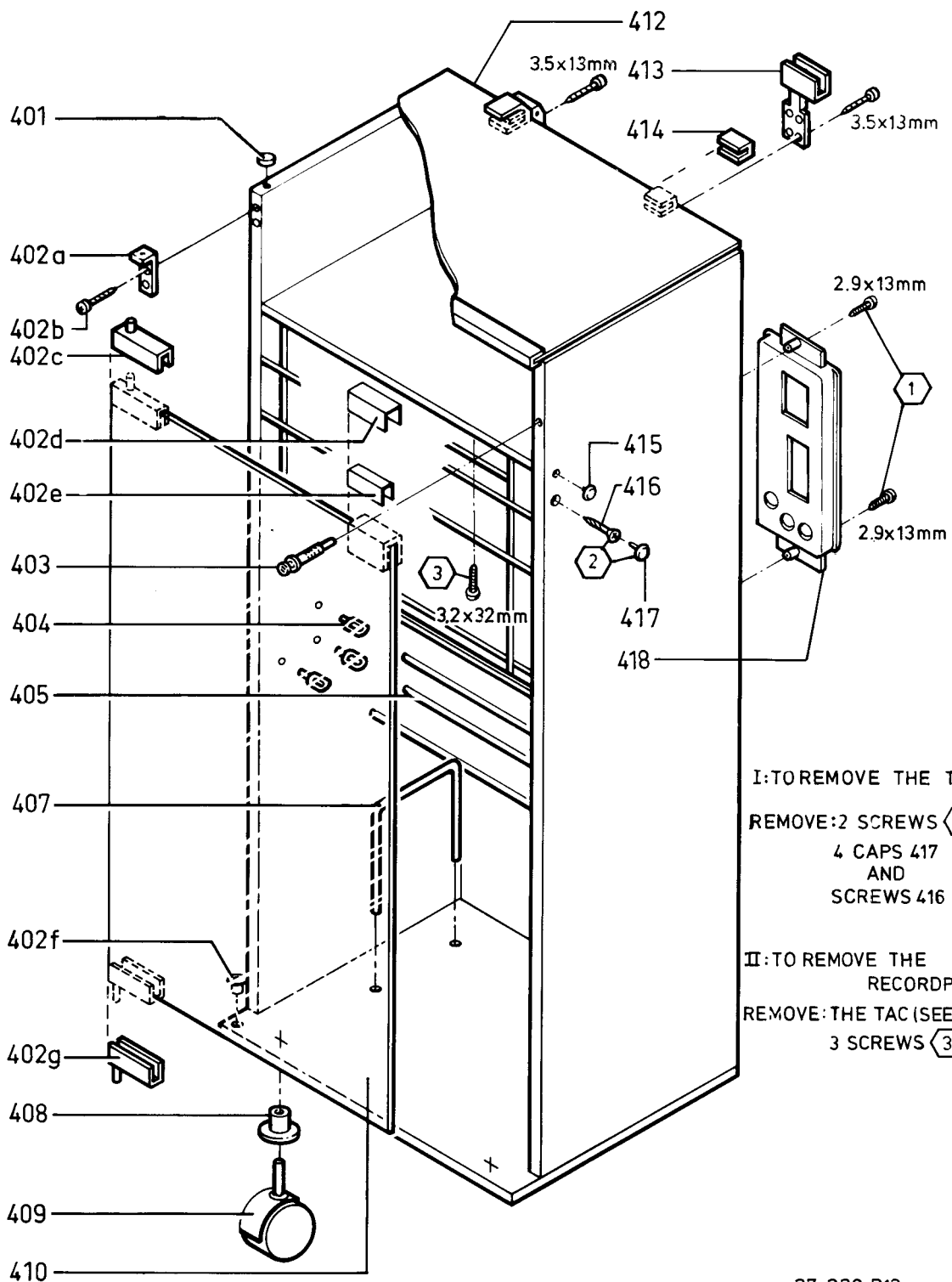
(B) Shell Alvania 2

4822 389 10001



37 276 E12

400	4822 358 10087	419	4822 450 80941
401	4822 404 20543	420	4822 535 50084
402-SK3	4822 277 20933	421	4822 535 70528
403	4822 349 50209	422	4822 492 41091
404	4822 404 20549	423	4822 528 80802
405	4822 410 30369	424	4822 535 70457
406	4822 411 61105	425	4822 466 80671
407A	4822 426 60305	426-BU2	4822 267 30558
407B	4822 426 60304	427-BU1	4822 267 30561
408	4822 413 41147	428	4822 528 80888
409	4822 413 41229	429-SK76 ÷ 79	4822 276 20325
410-SK71	4822 277 30709	430	4822 410 24034
411	4822 404 20576	431	4822 310 30559
412	4822 410 30384	432-BU3	4822 267 30552
413	4822 410 30372	433-BU4	4822 265 40145
414	4822 146 21028	434-BU5,6	4822 290 80609
415-SK1	4822 276 11263	435	4822 492 63178
416-SK72 ÷ 74	4822 276 30325	436	4822 321 30213
417	4822 255 40374	437	4822 325 50125
418	4822 492 31495	438	4822 464 70341



37 230 B12

401 4822 462 71344
 402 4822 310 20347
 403 4822 417 41004
 404 4822 462 71359
 405 4822 535 91832

407 4822 404 20581
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 409 4822 528 70428
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 412 4822 450 60513

413 4822 417 10833
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 415 4822 462 71346
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 417 4822 462 71346

