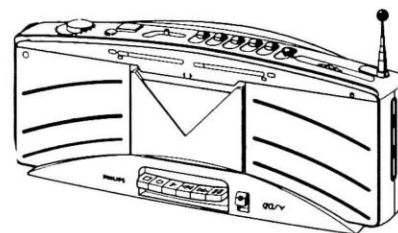


Service
Service
Service

For repair information of the cassette mechanism see
Service Manual of tape deck RR version RR-1-1.



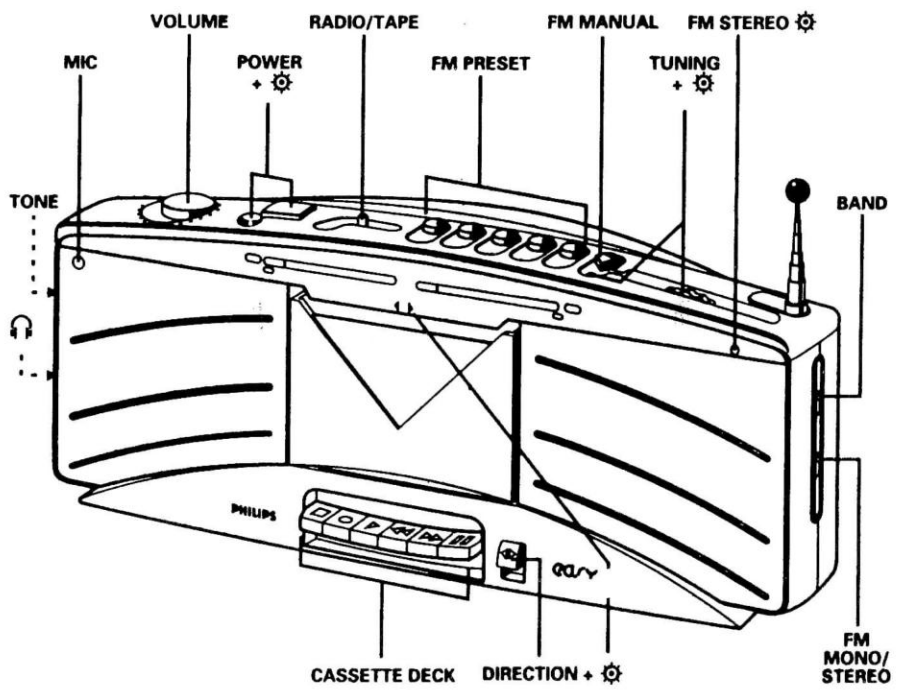
Service Manual

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RADIO- EN TELEVISIESERVICE
KEES van de MORTEL
BOESHEUVELSTRAAT 14
S-HERFORDANBOSCH
TELEFOON 070-249941



Connections and Controls



RADIO- EN TELEVISIE
 KEES van de
 BOKSHEUVEL
 N-HERTOEGE
 TELEFOON 07

11401

(GB) WARNING

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



(NL) WAARSCHUWING

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

(F) ATTENTION

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

(D) WARNUNG

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

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
 La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione.
 Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un bracciale a resistenza.
 Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SPECIFICATION

GENERAL

Mains voltage : 220V for -/00
 240V for -/05
 Mains frequency : 50Hz / 60Hz
 Battery : 9V (R20 x 6)
 Power consumption : 20W max.
 Dimensions (WxHxD) : 463 x 186 x 127 (mm)
 Weight : 2.4 Kgs

TUNER : FM section

Tuning range : 87.5MHz - 108MHz
 IF frequency : 10.7MHz
 Sensitivity : < 16µV 26dB S/N
 Selectivity : > 20dB at 600KHz Bandwidth
 IF rejection : > 50dB
 Image rejection : > 20dB

AUDIO/CASSETTE

Output power Mains : 2 x 2.0W -1dB
 (d=10%) Battery : 2 x 2.2W -1dB
 Speaker impedance : 2 x 3.2ohm
 Tape speed : 4.76cm/s ±2%
 Wow and flutter : < 0.35%
 Fast-wind time C60 : < 130 sec
 Bias frequency : 45KHz ± 7KHz
 Frequency response : 250 - 6300Hz
 S/N ratio : > 30dB

TUNER : AM section

Tuning range MW : 520KHz - 1606.5KHz
 LW : 148.5KHz - 283.5KHz
 SW : 5.95MHz - 15.6MHz
 IF frequency : 468KHz
 Sensitivity MW : < 3500µV/M 26dB S/N
 LW : < 6000µV/M 26dB S/N
 SW : < 310µV
 Selectivity MW : > 20dB
 LW : > 16dB
 SW : > 16dB
 IF rejection : > 40dB
 Image rejection MW : > 30dB
 SW : > 10dB

MORTEL
 TRAF 14
 INBOSCH

3 - CASSETTE ADJUSTMENT

Adjustment	Cassette	Recorder position		Measure on	Read on	Adjust with	Adjust to
		SK...	Deck				
R/P Head azimuth	8 KHz of SBC420 *	TAPE	PLAY FORWARD	1254	mV meter	Right hand screw R/P head	Maximum L = R
			PLAY REVERSE	1254	mV meter	Left hand screw R/P head	Maximum L = R
Motor speed	3150Hz of SBC420 *	TAPE	PLAY	1254	Wow and flutter meter	Preset in motor	3150 Hz +3/-2% **

* SBC420 : 4822 397 30071

** The Wow & Flutter value can be read. This value should not exceed 0.3%.

GB

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

D

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

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast

I

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

F

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

SK-								
AM-IF								
MW	468 KHz via 10nF		min.		5111 5110			max.
AM-RF								
MW	512 KHz		max.		5105			max.
	1635 KHz		min.		CT2			
	550 KHz				5102			
	1500 KHz				CT3			
LW	<147 KHz		max.					max.
	>283.5 KHz		min.					
	200 KHz				5103			
SW	5.9 MHz		max.		5104			max.
	15.5 MHz		min.		CT4			
	6.2 MHz				5101			
	15.1 MHz				CT1			
FM-IF								
FM	10.7 MHz via 10nF		min.					
					5109		symmetrical 	
FM-RF								
FM			max.		3126			$\approx 12V$
			min.					$V_L = 3 \pm 0.1$
					3127			$\approx 12V$
					3128			$= V_L$
FM	87.35 MHz		max.		5017			max.
	108.25 MHz		min.		2126			
	88 MHz				5016			
	106 MHz				2125			
Stereo decoder								
FM STEREO	98 MHz w/o pilot				3134			19 KHz ± 0.2 KHz

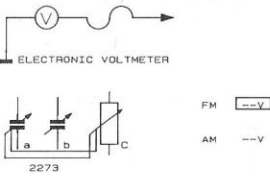
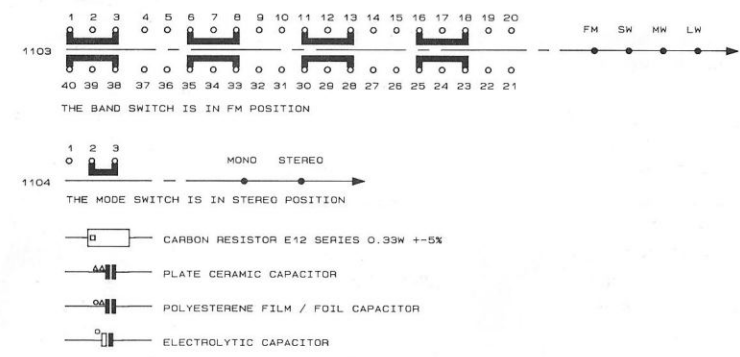
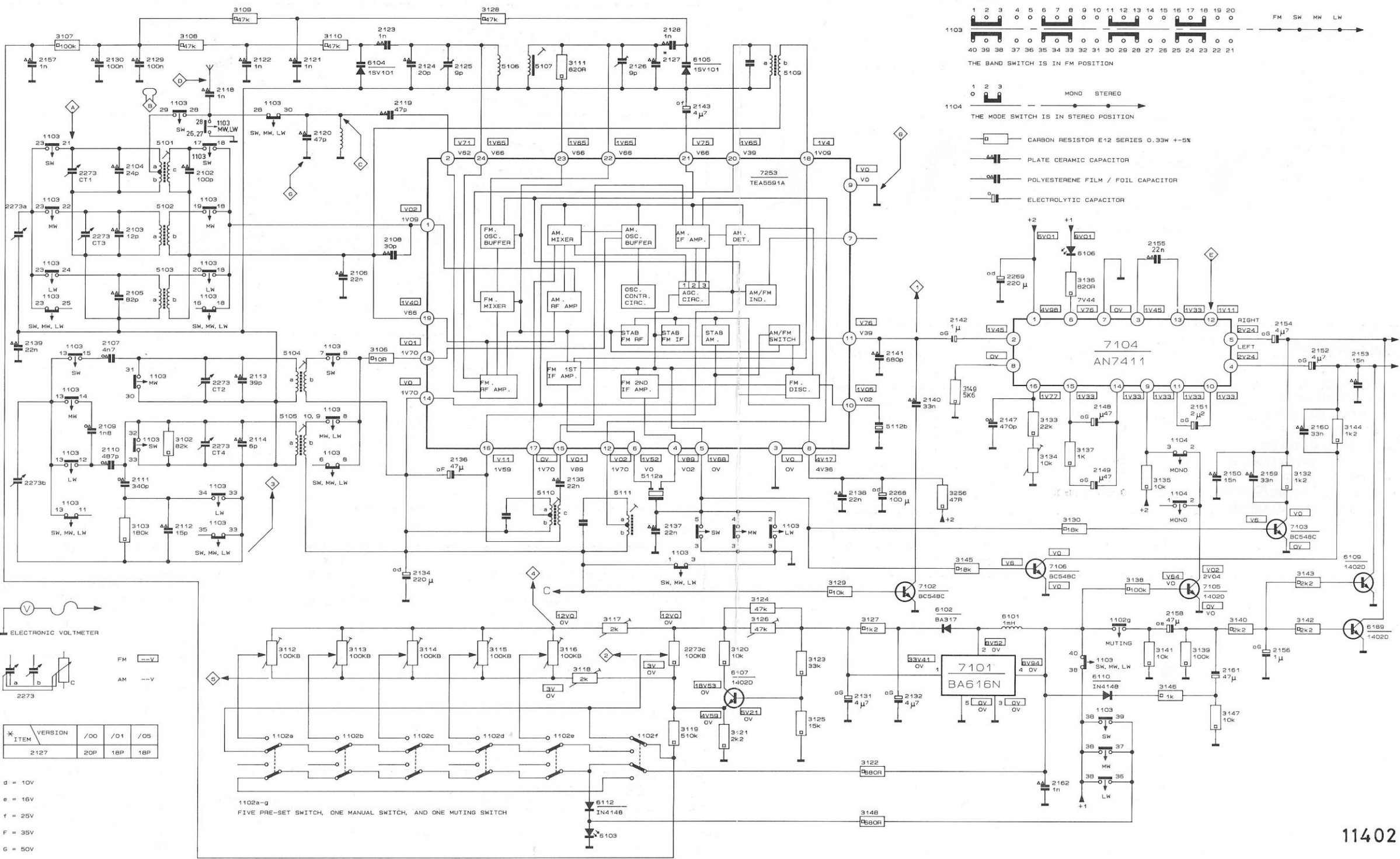
"Bei notwendigem Abgleich ist das Gerät auf die gesetzlich vorgeschriebenen Eckfrequenzen abzugleichen"

Repeat

REPAIR SERVICE
 A. MORTEL
 BOKSHEUWENSTRAAT 14
 S-HERTOGENBOSCH

RADIO- EN TELEVISIESERVICE
 KEES van de MORTEL
 BOKSHEUWENSTRAAT 14
 S-HERTOGENBOSCH

MISC.	1103	5103	5101	1102a	1104	5105	1102b	5104	1102c	5106	5107	8112	5111	5112a	5105	5107	5109	5112b	5102	7101	5101	5106	7104	1102g	1104	7105	7103	7106										
C.	2273a	2107	2109	2104	2111	2102	2113	2121	2120	2106	2123	2134	2136	2157	2103	2130	2112	2129	2118	2114	2119	2124	2125	2128	2273c	2138	2268	2140	2142	2269	2162	2148	2155	2151	2161	2154	2150	
R.	3107	3103	3102	3108	3109	3112	3110	3113	3106	3114	3115	3111	3118	3117	3119	3121	3124	3125	3122	3127	3129	3148	3256	3133	3136	3138	3141	3140	3139	3143	3145	3130	3146	3147	2159	2156	2153	3142



ITEM	VERSION	/00	/01	/05
2127	20P	18P	18P	

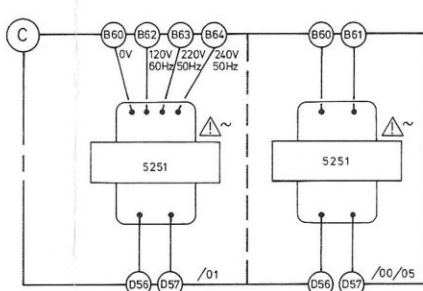
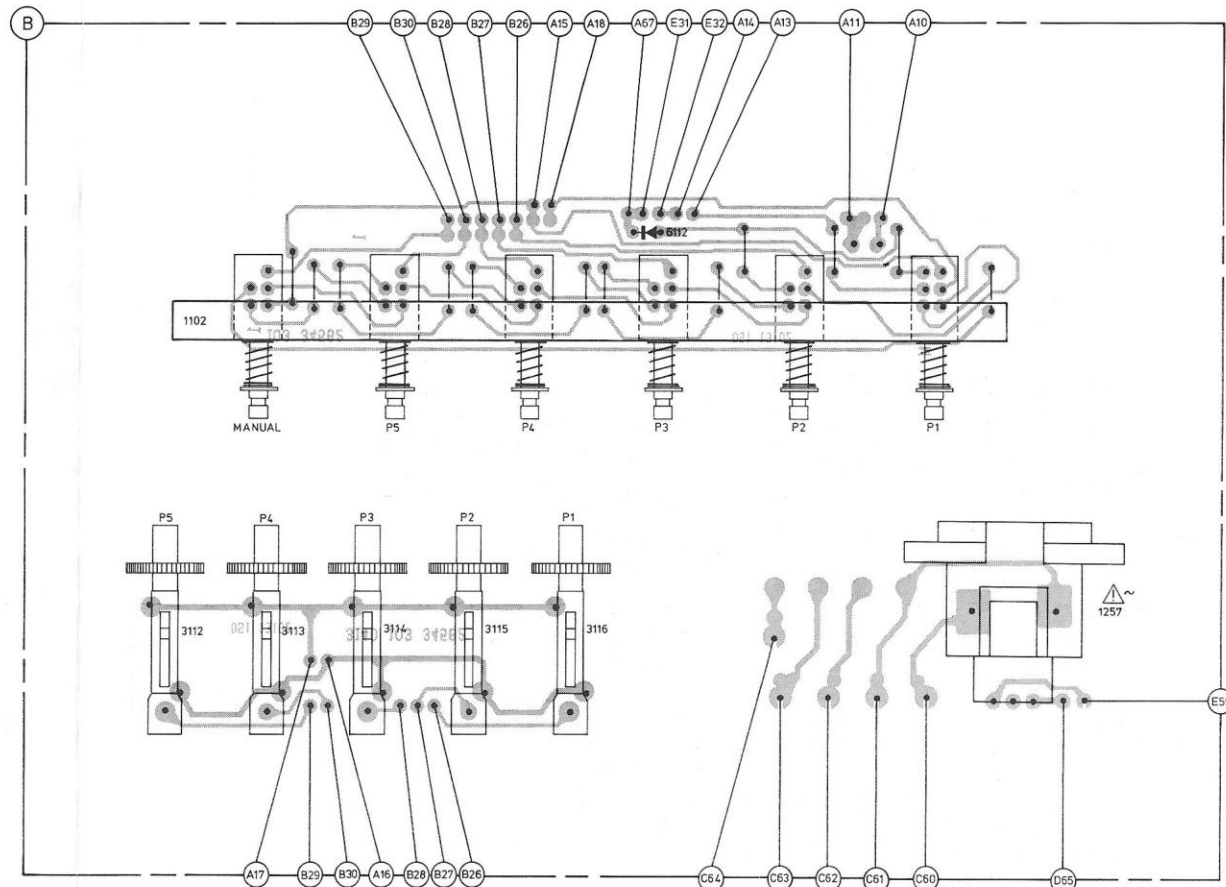
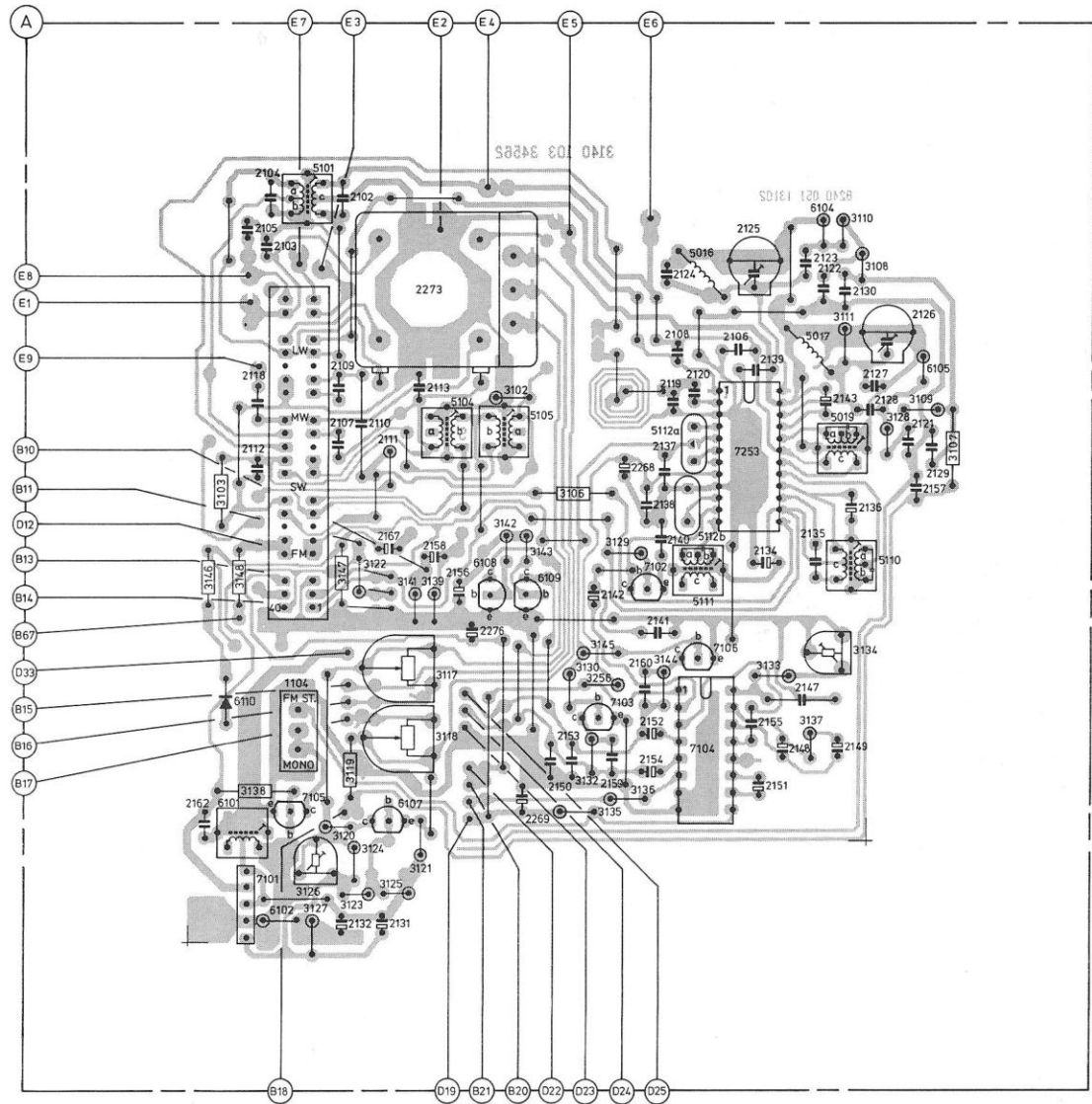
d = 10V
 e = 16V
 f = 25V
 F = 35V
 G = 50V

1102a-g
 FIVE PRE-SET SWITCH, ONE MANUAL SWITCH, AND ONE MUTING SWITCH

11402

RADIO-REPARATIE SERVICE
 Kees van der Morteel
 Bokseweg 10
 'S-Hertogenbosch 5211
 TELEFON 2804

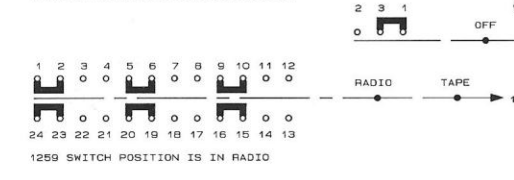
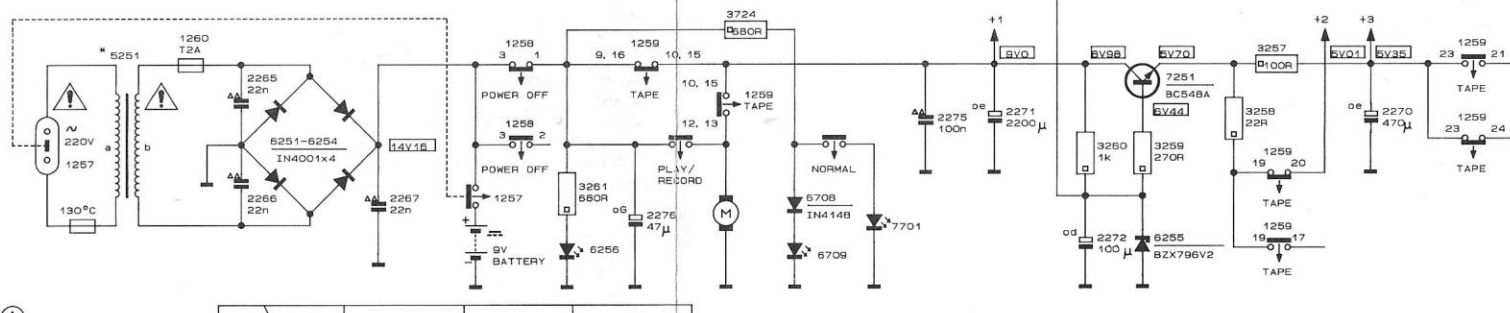
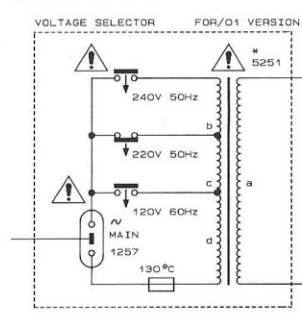
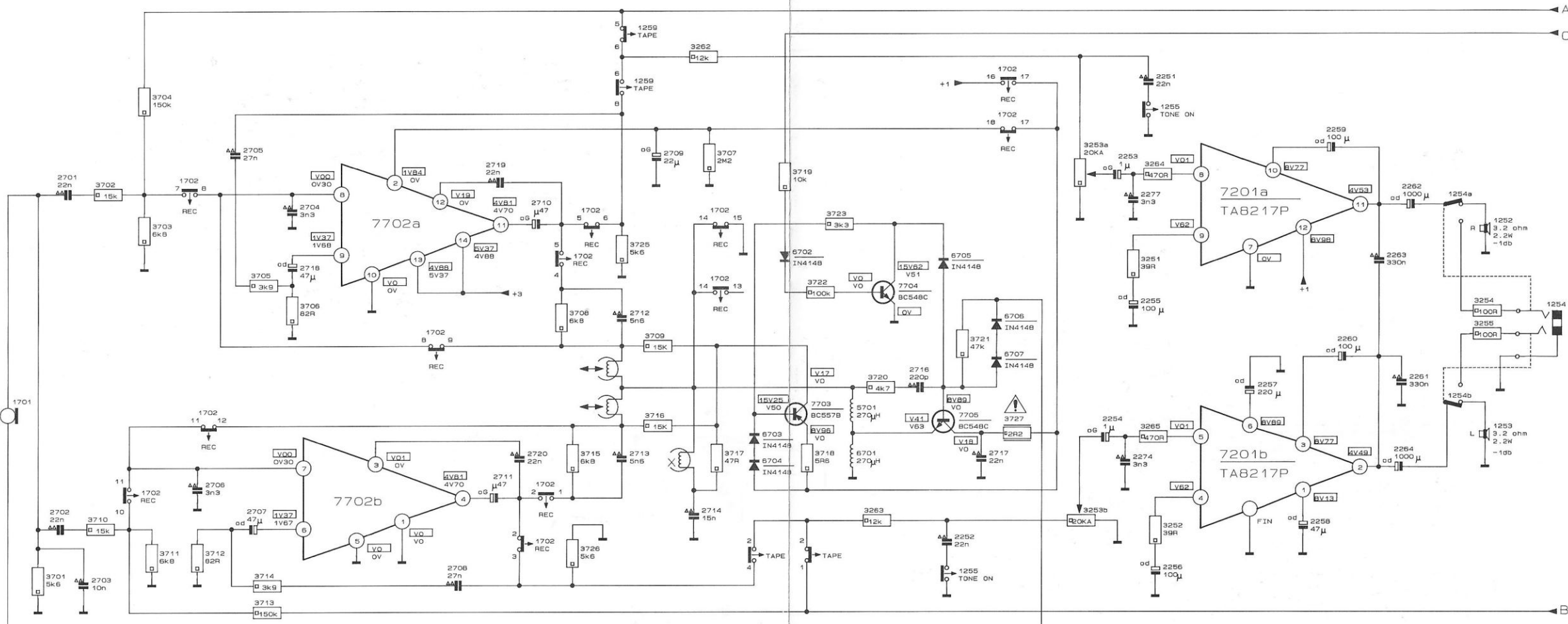
MISC.	6101	7101	6102	5101	6107	5104	6108	5105	7103	5112a	5016	7106	7253	6104	5019	5110	6105	5251	1102	6112	1257			
	6110	1104			6109					7102	5112b	7104	5017											
		7105								5111														
C.	2105	2104	2102	2110	2111	2273	2156	2276	2269	2150	2268	2138	2140	2124	2108	2125	2134	2123	2122	2130	2127	2126	2129	
	2118	2103	2109	2132	2131	2113		2153	2142	2160	2141	2119	2120	2106	2155	2147	2143	2136	2128	2121				
	2162	2112	2107	2167	2158			2159	2152	2154	2137	2139	2151	2148	2135	2149	2157							
R.	3103	3138	3120	3126	3122	3141	3139	3140	3142	3102	3143	3145	3129	3144	3133	3110	3108	3109	3112	3113	3114	3115	3116	
	3146	3148	3127	3119	3124	3117		3106	3256	3135	3136				3111	3128	3137	3107						
			3123	3147	3125	3123	3118	3121	3130	3132					3134									



7253				7101				7104				6107			7103		
1	=V09	V02	13	=V17	V01	1	=0V	V3V4	1	=4V98	9	=V02	e	=0V	V4V9	e	=0V
2	=V62	V71	14	=V17	0V	2	=V62	V75	2	=V45	10	=V33	b	=0V	V5V2	b	=V6
3	=0V	0V	15	=V89	V01	3	=V45	11	=V31	c	=0V	V8V5	c	=0V	V8V5	c	=0V
4	=V02	V89	16	=V59	V11	4	=2V24	12	=V11	7106			7105				
5	=0V	V68	17	=V17	0V	5	=2V24	13	=V33	e	=0V	e	=0V	b	=V01	V64	
6	=0V	V53	18	=V09	V4	6	=V76	14	=V33	b	=V6	b	=V6	c	=2V04	V02	
7	=	—	19	=V66	V4	7	=0V	15	=V33	c	=V0	c	=V0				
8	=4V36	V17	20	=V39	V65	8	=0V	16	=V77								
9	=0V	0V	21	=V66	V75												
10	=V02	V03	22	=V66	V65												
11	=V39	V76	23	=	V65												
12	=V17	V02	24	=V66	V65												

11404

MISC.	1701	1702	7702a	5251	1260	1259	1258	6703	6702	5701	7704	6705	6707	1255	7251	7201a	1254a	1259		
		5251	7702b				1257a	6704	7703	6701	6709	6706	6708	6255	6253	7201b	1254b	1254		
C.	2701	2705	2704	2720	2719	2710	2712	2714	2716	2275	2251	2252	2253	2255	2257	2259	2262	2264		
	2702	2706	2718	2708	2711	2265	2713	2276	2271	2272	2277	2254	2274	2258	2260	2261	2264			
	2703		2707			2266	2709	2267												
R.	3701	3702	3704	3712	3705	3706	3708	3726	3725	3262	3717	3719	3722	3720	3721	3263	3253a	3251	3257	
	3710	3703		3714			3715	3709		3251	3718	3723					3235b	3254	3252	
		3711	3713				3707	3716			3724						3260	3259	3265	3256



ITEM	VERSION	/00	/05	/01
5251		AC220V 50Hz	AC240V 50Hz	AC120V 60Hz/ 220V 50Hz/ 240V 50Hz

- SAFETY RESISTOR E12 SERIES 0.33W +-5%
- CARBON RESISTOR E12 SERIES 0.33W +-5%
- PLATE CERAMIC CAPACITOR
- POLYESTERENE FILM / FOIL CAPACITOR
- ELECTROLYTIC CAPACITOR

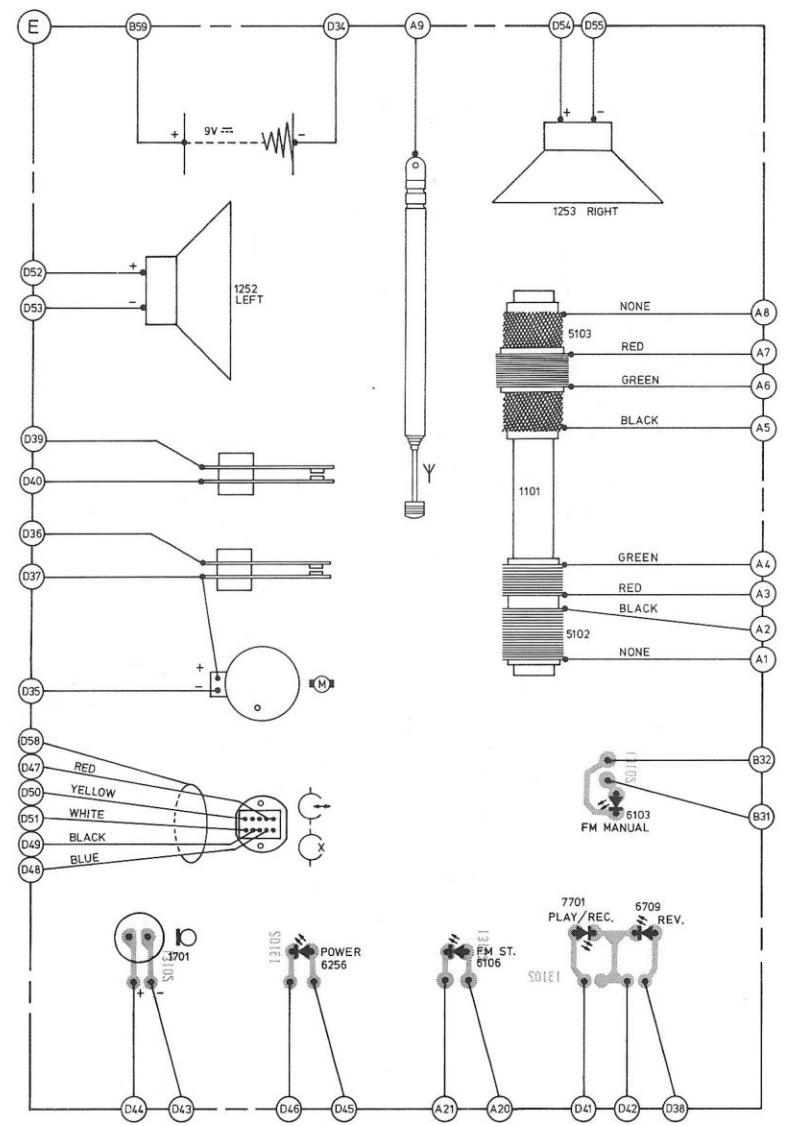
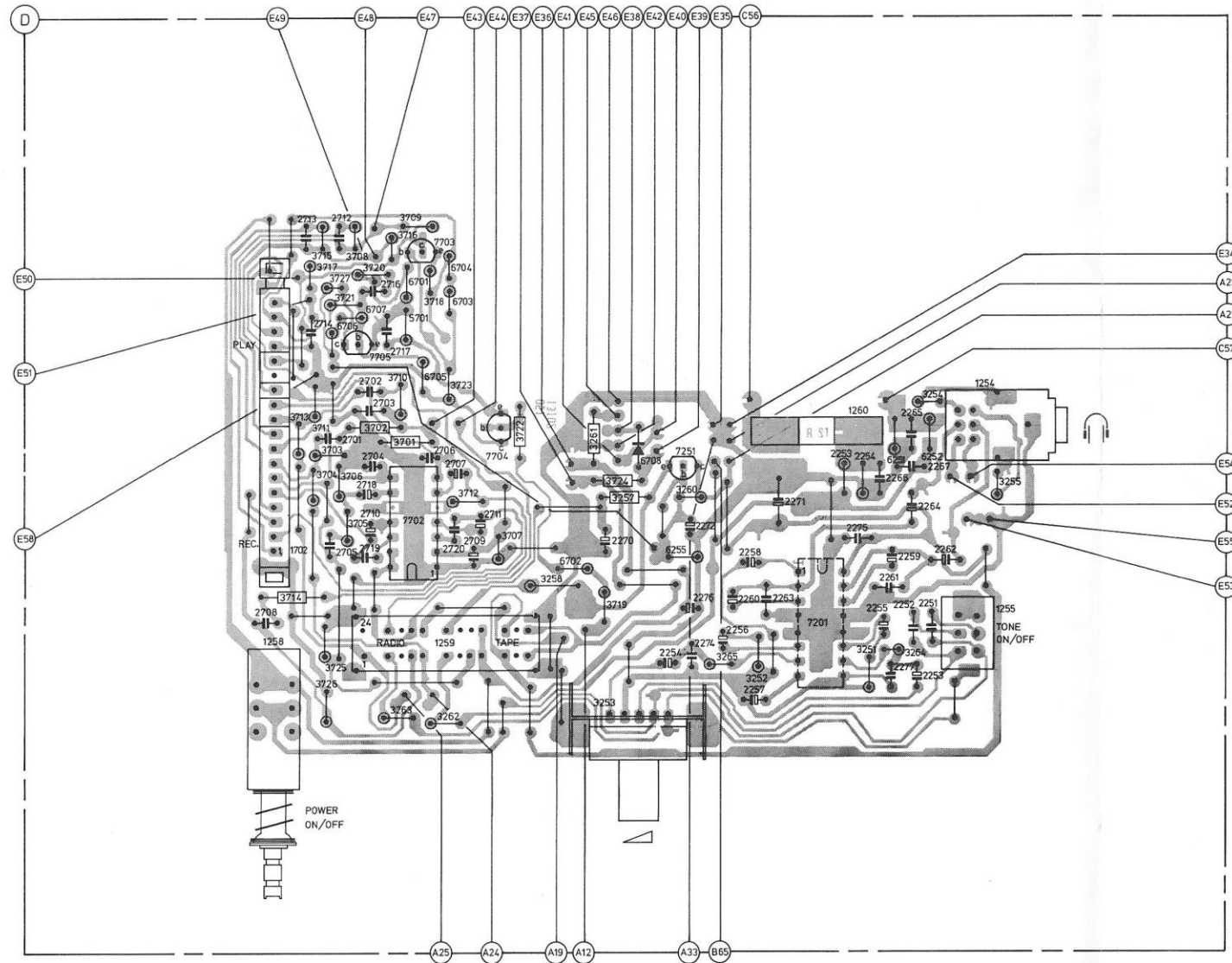
d = 10V
e = 16V
f = 25V
g = 50V

REC -V
PLAY -V

11403

DIO- EN TELEVISIE SERVICE
 LES van de MORTEL
 BOKSHEUVELSTRAAT 14
 HERTOGENBOSCH
 TELEFON 043 - 22244

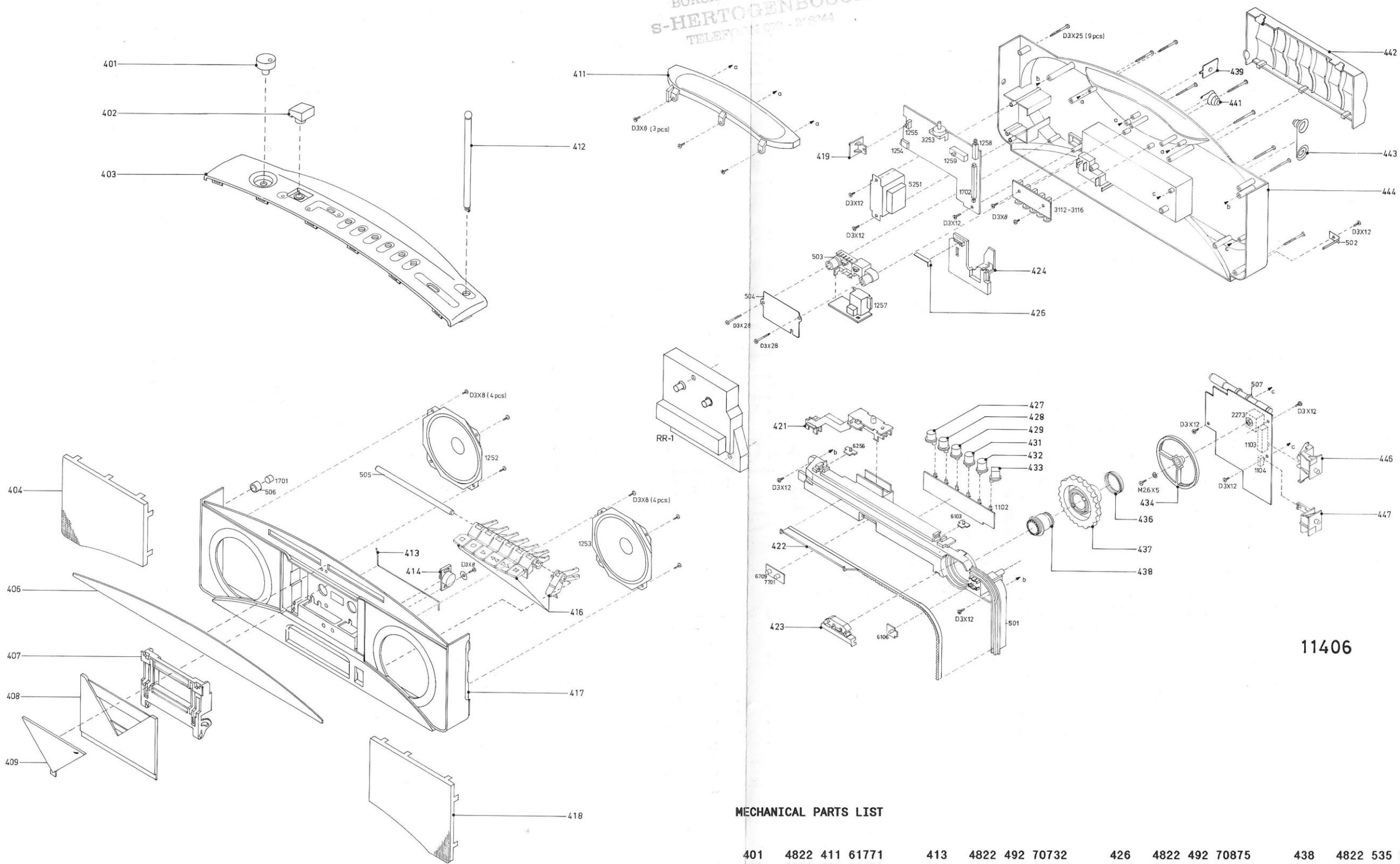
MISC.	1702	1258	6706	6707	6701	7703	6705	6704	7704	6702	6708	6255	7251	7201	6251	6252	1254	1255	1701	1252	6256	6106	1101	1253	5102	6103	
C.	2708	2713	2714	2712	2716	2705	2701	2702	1259	6703	2270	2254	2272	2274	2260	2258	2271	2253	2266	2259	2265	2267	2262				
R.	3713	3715	3711	3721	3708	3720	3716	3709	3723	3707	3722	3258	3261	3724	3260	3265	3251	3254	3255								
	3714	3717	3703	3725	3706	3702	3701	3263	3712			3719	3257														
	3727	3726	3704	3705	3263	3710	3718	3262	3253																		



<table border="1"> <tr><td>7703</td></tr> <tr><td>-e = 0V [8V9]</td></tr> <tr><td>-b = 0V [5V2]</td></tr> <tr><td>-c = 0V [V17]</td></tr> </table>	7703	-e = 0V [8V9]	-b = 0V [5V2]	-c = 0V [V17]	<table border="1"> <tr><td>7702</td></tr> <tr><td>-1 = 0V [0V]</td></tr> <tr><td>-2 = 0V [V84]</td></tr> <tr><td>-3 = 0V [V01]</td></tr> <tr><td>-4 = 4V7 [V81]</td></tr> <tr><td>-5 = 0V [0V]</td></tr> <tr><td>-6 = 1V67 [V37]</td></tr> <tr><td>-7 = V3 [0V]</td></tr> <tr><td>-8 = 0V [V3]</td></tr> <tr><td>-9 = 1V68 [V37]</td></tr> <tr><td>-10 = 0V [0V]</td></tr> <tr><td>-11 = 4V7 [V81]</td></tr> <tr><td>-12 = 0V [V19]</td></tr> <tr><td>-13 = 5V37 [V88]</td></tr> <tr><td>-14 = 5V37 [V88]</td></tr> </table>	7702	-1 = 0V [0V]	-2 = 0V [V84]	-3 = 0V [V01]	-4 = 4V7 [V81]	-5 = 0V [0V]	-6 = 1V67 [V37]	-7 = V3 [0V]	-8 = 0V [V3]	-9 = 1V68 [V37]	-10 = 0V [0V]	-11 = 4V7 [V81]	-12 = 0V [V19]	-13 = 5V37 [V88]	-14 = 5V37 [V88]	<table border="1"> <tr><td>7201</td></tr> <tr><td>-1 = 8V13</td></tr> <tr><td>-2 = 4V9</td></tr> <tr><td>-3 = 8V77</td></tr> <tr><td>-4 = V62</td></tr> <tr><td>-5 = V01</td></tr> <tr><td>-6 = 8V9</td></tr> <tr><td>-7 = 0V</td></tr> <tr><td>-8 = V01</td></tr> <tr><td>-9 = V62</td></tr> <tr><td>-10 = 8V77</td></tr> <tr><td>-11 = 4V53</td></tr> <tr><td>-12 = 8V9</td></tr> </table>	7201	-1 = 8V13	-2 = 4V9	-3 = 8V77	-4 = V62	-5 = V01	-6 = 8V9	-7 = 0V	-8 = V01	-9 = V62	-10 = 8V77	-11 = 4V53	-12 = 8V9	<table border="1"> <tr><td>7705</td></tr> <tr><td>-e = 0V [V18]</td></tr> <tr><td>-b = V1 [V63]</td></tr> <tr><td>-c = 0V [8V9]</td></tr> </table> <table border="1"> <tr><td>7251</td></tr> <tr><td>-e = 5V70</td></tr> <tr><td>-b = 6V44</td></tr> <tr><td>-c = 8V9</td></tr> </table>	7705	-e = 0V [V18]	-b = V1 [V63]	-c = 0V [8V9]	7251	-e = 5V70	-b = 6V44	-c = 8V9
7703																																											
-e = 0V [8V9]																																											
-b = 0V [5V2]																																											
-c = 0V [V17]																																											
7702																																											
-1 = 0V [0V]																																											
-2 = 0V [V84]																																											
-3 = 0V [V01]																																											
-4 = 4V7 [V81]																																											
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-14 = 5V37 [V88]																																											
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-3 = 8V77																																											
-4 = V62																																											
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-6 = 8V9																																											
-7 = 0V																																											
-8 = V01																																											
-9 = V62																																											
-10 = 8V77																																											
-11 = 4V53																																											
-12 = 8V9																																											
7705																																											
-e = 0V [V18]																																											
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-c = 0V [8V9]																																											
7251																																											
-e = 5V70																																											
-b = 6V44																																											
-c = 8V9																																											

11405

RADIO- EN TELEVISIESERVICE
 KEES van de MORTEL
 BOKSHEUVELSTRAAT 14
 S-HERTOGENBOSCH
 TELEFOON 073 - 218244



11406

MECHANICAL PARTS LIST

401	4822 411 61771	413	4822 492 70732	426	4822 492 70875	438	4822 535 93219
402	4822 411 61772	414	4822 529 10257	427	4822 410 61161	439	4822 492 70874
403	4822 423 90163	416	4822 410 61168	428	4822 410 61162	441	4822 492 51961
404	4822 458 30606	417	4822 423 51076	429	4822 410 61163	442	4822 423 41124
406	4822 333 40444	418	4822 458 30605	431	4822 410 61164	443	4822 492 51733
407	4822 443 63024	419	4822 450 61693	432	4822 410 61165	444	4822 421 50088 /00
408	4822 443 63273	421	4822 411 61773	433	4822 410 61166	444	4822 421 50089 /05
409	4822 333 40443	422	4822 450 81185	434	4822 522 33068	446	4822 411 61774
411	4822 498 10408	423	4822 423 41125	436	4822 492 70878	447	4822 410 61167
412	4822 303 30397	424	4822 403 70378	437	4822 413 51368		

ELECTRICAL PARTS LIST

- IC -				- Capacitors -						
7101	4822	209	63823	BA6161N	2125	2126	4822 125 50062	Cap-Trim. 9p		
7104	4822	209	71321	AN7411	2273		4822 125 50578	PVC		
7201	4822	209	63783	TA8217						
7253	4822	209	60565	TEA5591A						
7702	4822	209	70997	AN7312						
- Transistors -				- Coils -						
6107-6109	4822	130	40937	1402D	5701	4822	157	63134	Choke 560µH	
7105					6701	4822	157	53518	Choke 270µH	
7102 7103	4822	130	44196	TBC548C	6101	4822	157	63136	Inductor 1mH	
7106 7704					5101	4822	157	63139	Ant - SW	
7705					5102	4822	157	63137	Ant - MW	
					5103	4822	157	63138	Ant - LW	
7251	4822	130	40948	TBC548A	5104	4822	157	63139	Osc - SW	
7703	4822	130	44197	TBC558B	5105	4822	156	10687	Osc - MW	
					5107	4822	156	30947	Osc - FM	
					5109	4822	153	50206	IFT - FM	
- Diodes -				5110	4822	156	11023	IFT - AM		
6102	4822	130	30847	BA317	5111	4822	157	63135	IFT - AM	
6104 6105	4822	130	40937	1SV101						
6702-6708	4822	130	30621	1N4148						
6251-6254	5322	130	30684	1N4002						
6255	4822	130	34167	BZX79 6V2						
6103 6106	4822	130	31274	LED D3 Red						
6709 7701	4822	130	82549	LED Green						
- Potm. -				- Miscellaneous -						
3112-3116	4822	100	11705	Preset 100K	5112	4822	242	71869	Cer. Filter	
3117 3118	4822	105	11079	Trim 2K	1102	4822	276	20511	Sw, push 2P2Tx6	
3124	4822	105	11081	Trim 100K	1103	4822	277	21489	Sw, slide 8P4T	
3126	4822	100	11715	Trim 50K	1104	4822	277	20837	Sw, slide 1P2T	
3134	4822	105	11078	Trim 10K	1255	4822	277	20959	Sw, slide 2P2T	
3253	4822	102	20109	Rotary 20KAx2	1258	4822	276	13074	Sw, push 2P2T	
					1259	4822	277	21491	Sw, slide 6P2T	
					1702	4822	277	20594	Sw, push 6P2T	
					1101	4822	526	10123	Ferrite bar	
					1252 1253	4822	240	40189	Loudspeaker 3.2Ω	
					1701	4822	242	30176	Microphone	
					1254	4822	267	30827	Socket-headphone	
					1257	⚠	4822	265	20287	Socket-mains
					5251	⚠	4822	146	30966	Transf.mains /00
					5251	⚠	4822	146	30967	Transf.mains /05

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