

World receiver AE3405/00/20

Service
Service
Service

Service Manual

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GB

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

NL

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

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.

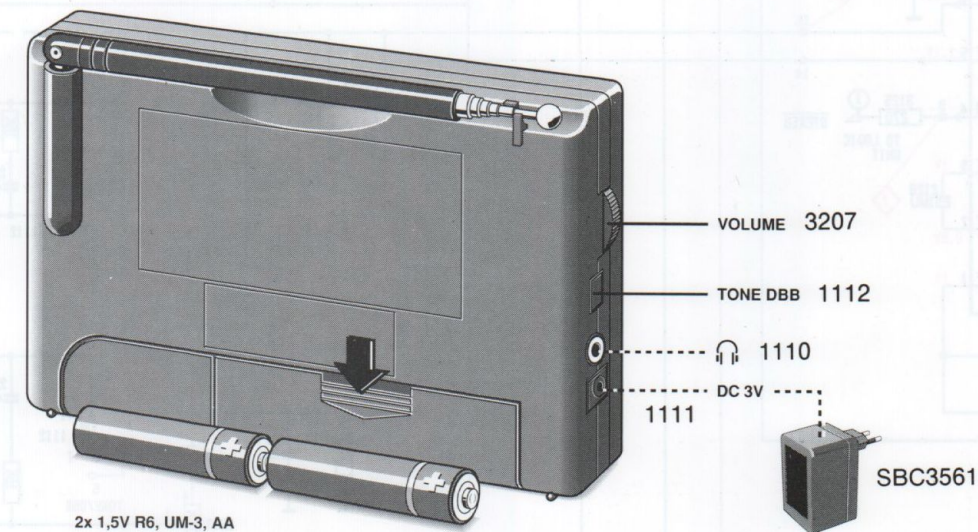
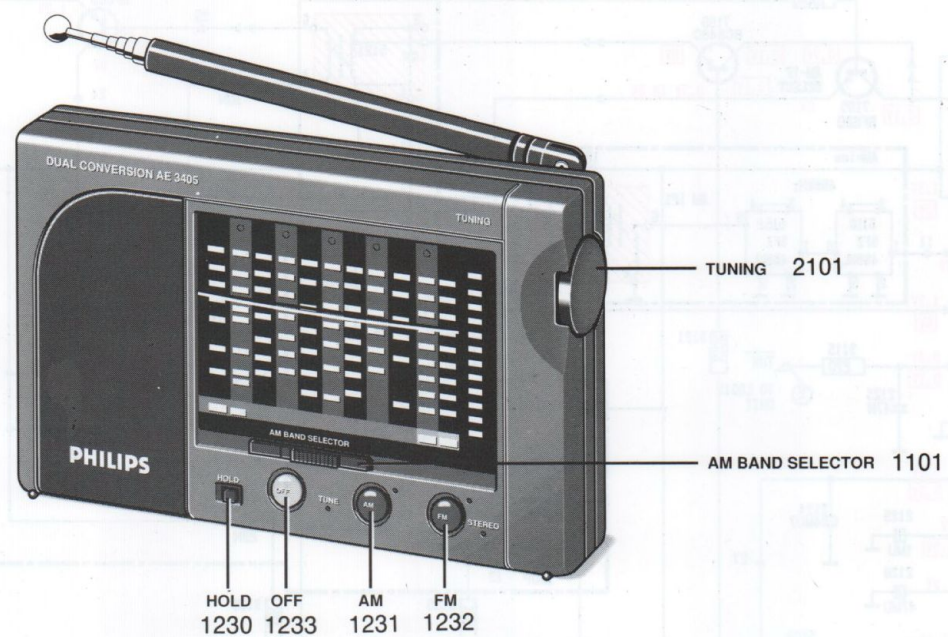
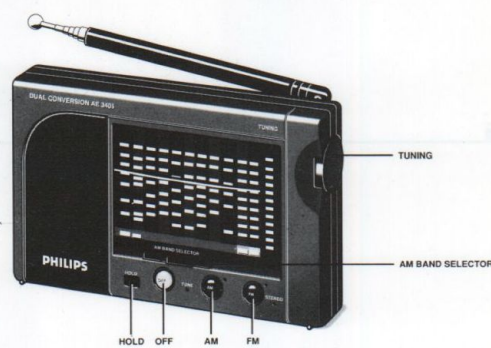
D

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

I

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

Connections & Controls



GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD



D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen Sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem 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 ditzelfde potentiaal.

I AVVERTIMENTO

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

Specification

Wave ranges :	LW	148,5 - 283,5 kHz	(-5 / +15 kHz)
	MW	526,5 - 1606,5 kHz	(-20 / +50 kHz)
	SW1 (49m)	5,950 - 6,200 MHz	(-250 / +150 kHz)
	SW2 (41m)	7,100 - 7,300 MHz	(-250 / +150 kHz)
	SW3 (31m)	9,500 - 9,900 MHz	(-250 / +150 kHz)
	SW4 (25m)	11,650 - 12,050 MHz	(-250 / +150 kHz)
	SW5 (22m)	13,600 - 13,800 MHz	(-250 / +150 kHz)
	SW6 (19m)	15,100 - 15,600 MHz	(-250 / +150 kHz)
	SW7 (16m)	16,550 - 17,900 MHz	(-250 / +150 kHz)
	SW8 (13m)	21,450 - 21,850 MHz	(-250 / +150 kHz)
	SW9 (11m)	25,600 - 26,100 MHz	(-250 / +150 kHz)
	FM	87,5 - 108,0 MHz	(-0,3 / +0,5 MHz)

Sensitivity
(for S/N = 26 dB)

LW :	4,0 mV/m
MW :	3,5 mV/m
SW :	65 uV
FM :	3 uV

IF

LW :	468 kHz
MW :	468 kHz
SW :	468 kHz + 4,52 MHz (Double conversion)
FM :	10,7 MHz

GENERAL

Battery :	2 x R6 (Battery lifetime > 15 hours)
Power Supply :	SBC 3561
Output power :	130 mW



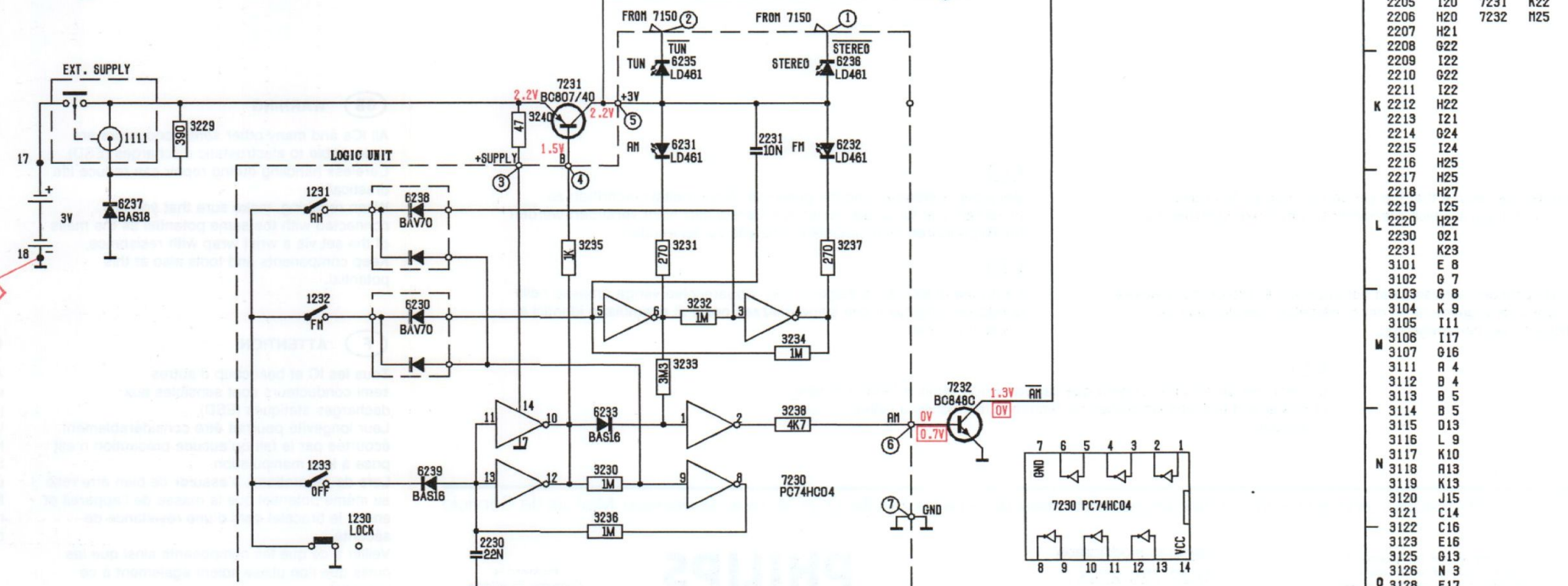
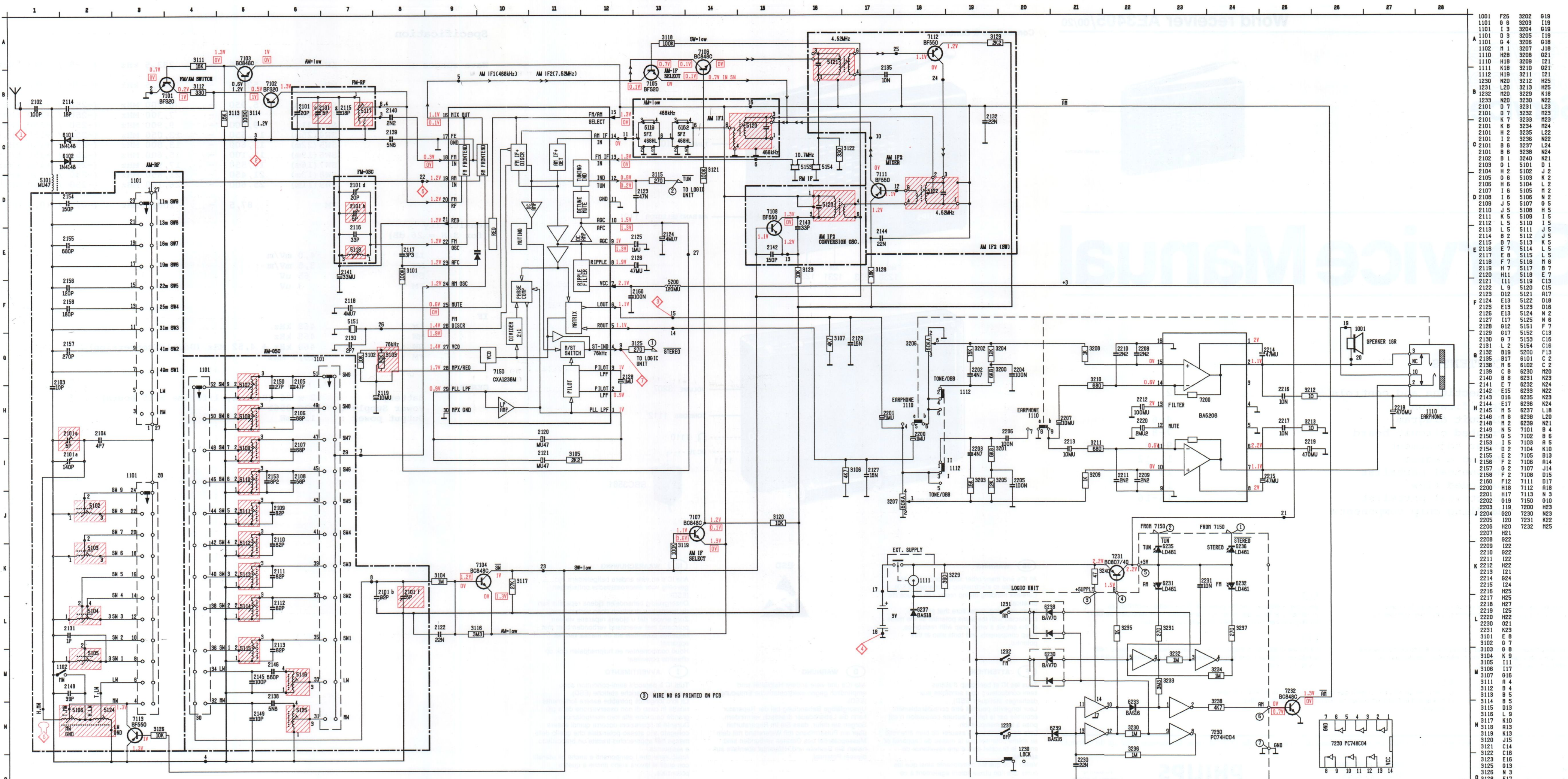
Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne.

Subject to modification
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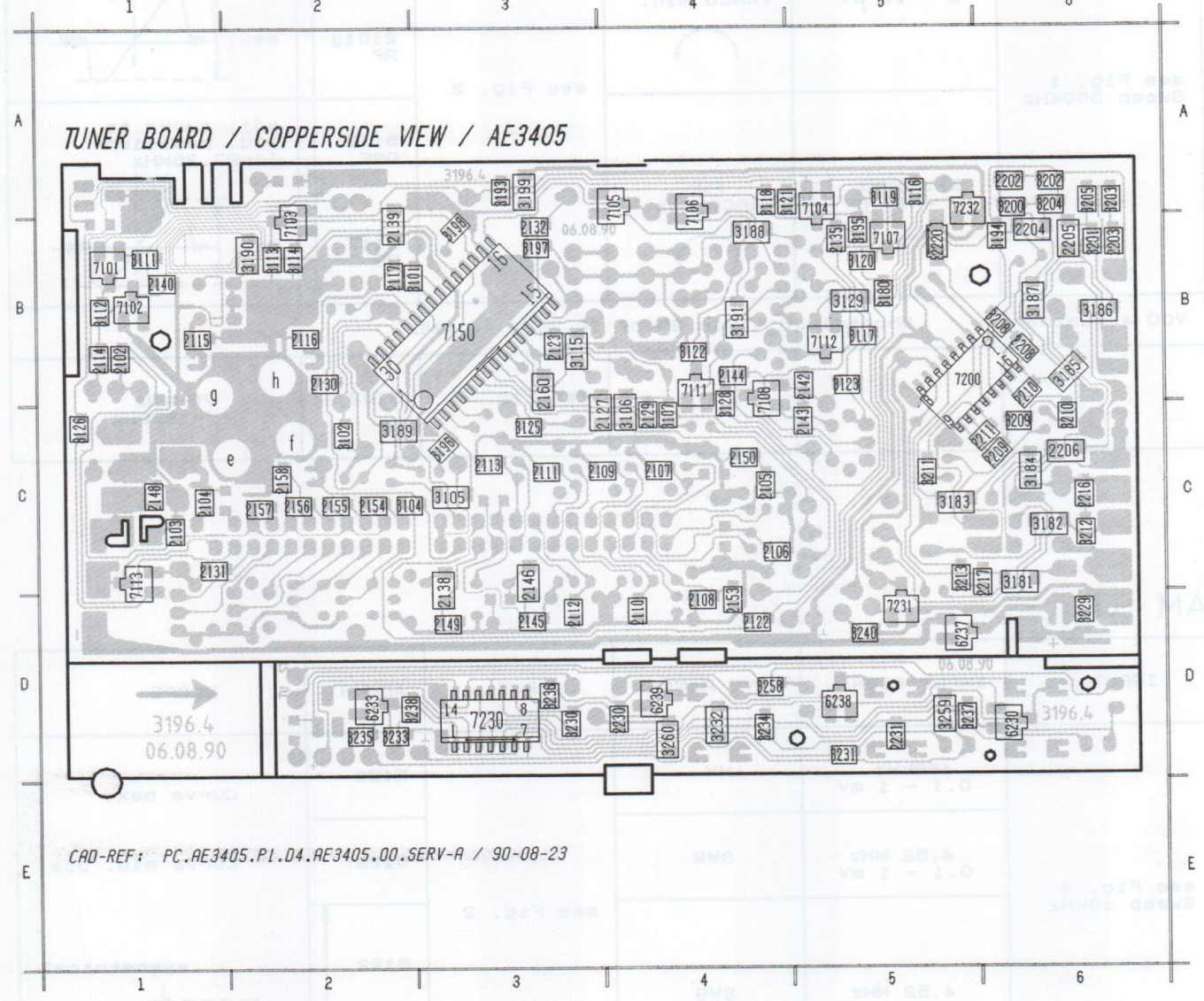
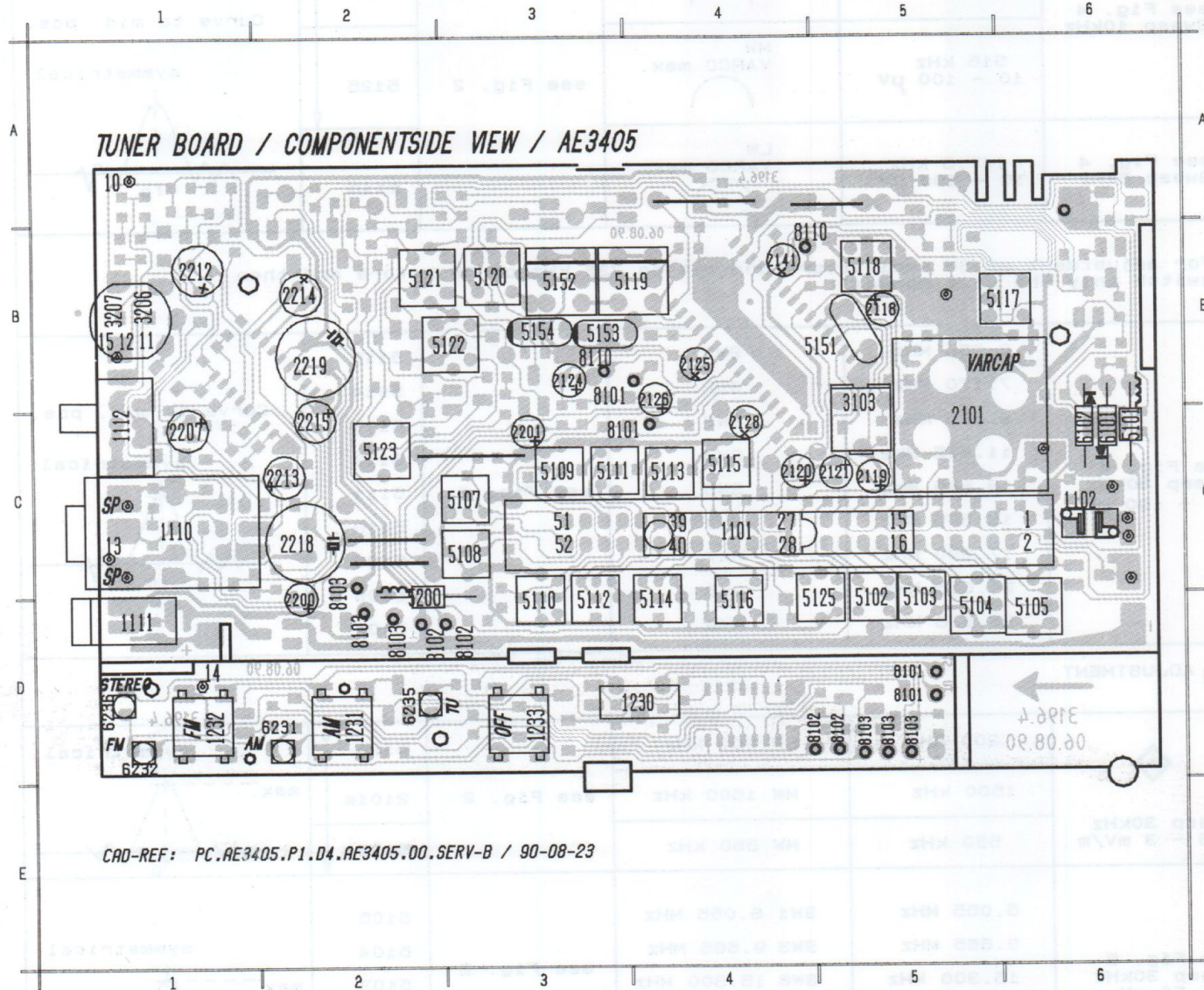
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1001	F26	3202	G19
1101	G 6	3203	I19
1101	I 3	3204	G19
1101	D 3	3205	I19
A 1101	G 4	3206	G18
1102	M 1	3207	J18
1110	H28	3208	G21
1110	H18	3209	I21
1111	K18	3210	G21
1112	H19	3211	I21
1230	N20	3212	H25
1231	L20	3213	H25
B 1232	M20	3229	K18
1233	N20	3230	N22
2101	D 7	3231	L23
2101	D 7	3232	H23
2101	K 7	3233	H23
2101	K 8	3234	H24
2101	H 2	3235	L22
2101	L 2	3236	N22
C 2101	B 6	3237	L2
2101	B 6	3238	N24
2102	B 1	3240	K21
2103	G 1	5101	D 1
2104	H 2	5102	J 2
2105	G 6	5103	K 2
2106	H 6	5104	L 2
2107	I 6	5105	M 2
D 2108	H 6	5106	N 2
2109	J 5	5107	G 5
2110	J 5	5108	H 5
2111	K 5	5109	I 5
2112	L 5	5110	I 5
2113	L 5	5111	J 5
2114	B 2	5112	J 5
2115	B 7	5113	K 5
E 2116	L 3	5114	L 5
2117	E 8	5115	L 5
2118	F 7	5116	M 6
2119	H 7	5117	B 7
2120	H11	5118	E 7
2121	I11	5119	C13
2122	L 9	5120	C15
2123	O12	5121	R17
F 2124	E13	5122	D18
2125	E13	5123	D16
2126	E13	5124	N 2
2127	I17	5125	N 6
2128	G12	5151	F 7
2129	G17	5152	C13
2130	G 7	5153	C16
2131	L 2	5154	C16
2132	B19	5200	F13
2133	I17	6101	C 2
2138	M 6	6102	C 2
2139	C 8	6230	M20
2140	B 8	6231	K23
2141	E 7	6232	K24
2142	E15	6233	N22
2143	O16	6235	K23
2144	K17	6236	K24
H 2145	N 5	6237	L18
2146	M 6	6238	L20
2148	M 2	6239	N21
2149	N 5	7101	B 4
2150	G 5	7102	B 6
2153	I 5	7103	R 5
2154	D 2	7104	K10
I 2155	E 2	7105	R13
2156	F 2	7106	B14
2157	O 2	7107	J14
2158	F 2	7108	D15
2160	F12	7111	D17
2200	H18	7112	R18
2201	H17	7113	N 3
2202	G19	7150	G10
2203	I19	7200	H23
J 2204	O20	7230	N23
2205	I20	7231	K22
2206	H20	7232	H25
2207	H21		
2210	G22		
2211	I22		
K 2212	H22		
2213	I21		
2214	G24		
2215	I24		
2216	H25		
2217	H25		
2218	H27		
2219	I25		
L 2220	H22		
2231	K23		
3101	E 8		
3102	G 7		
3103	G 8		
3104	K 9		
3105	I11		
3106	I17		
M 3107	G16		
3111	R 4		
3112	B 4		
3113	B 5		
3114	B 5		
3115	O19		
3116	L 9		
N 3117	K10		
3118	R15		
3119	K13		
3120	J15		
3121	C14		
3122	C16		
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O 3128	E17		
3129	R19		
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3201	I19		

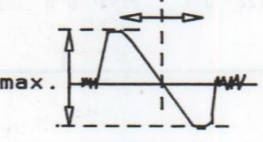
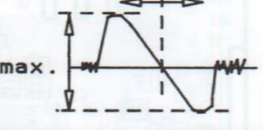
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1101	C 4	13	C 1	2126	B 4	2218	C 2	5107	C 3	5117	B 6	5153	B 3	8101	B 3	8103	D 2
1102	C 6	14	D 1	2128	C 4	2219	B 2	5108	C 3	5118	B 5	5154	B 3	8101	D 5	8103	D 5
1110	C 1	15	B 1	2141	B 4	3103	B 5	5109	C 3	5119	B 4	5200	D 2	8101	C 3	8103	D 5
1111	D 1	2101	C 5	2200	D 2	3206	B 1	5110	D 3	5120	B 3	6101	C 6	8102	D 2	8110	B 5
1112	C 1	2118	B 5	2201	C 3	3207	B 1	5111	C 3	5121	B 2	6102	C 6	8102	D 4	8110	B 3
12	B 1	2119	C 5	2207	C 1	5101	C 6	5112	D 3	5122	B 3	6231	D 2	8102	D 3		
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1231	D 2	2121	C 5	2213	C 2	5103	D 5	5114	D 4	5125	D 5	6235	D 2	8103	C 2		

2102	B 1	2123	B 3	2150	C 4	2216	C 6	3117	B 5	3186	B 6	3204	A 6	3238	D 2	7108	B 4
2103	C 1	2127	C 4	2153	D 4	2217	C 6	3118	A 4	3187	B 6	3205	A 6	3240	D 5	7111	B 4
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2105	C 4	2130	B 2	2155	C 2	2230	D 4	3120	B 5	3189	C 2	3209	C 6	3259	D 5	7113	C 1
2106	C 4	2131	C 1	2156	C 2	2231	D 5	3121	A 5	3190	B 2	3210	C 6	3260	D 4	7150	B 3
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2109	C 4	2138	C 3	2160	B 3	3104	C 2	3125	C 3	3194	B 6	3213	C 5	6237	D 5	7231	D 5
2110	D 4	2139	B 2	2202	A 6	3105	C 3	3126	C 1	3195	B 5	3229	D 6	6238	D 5	7232	A 5
2111	C 3	2140	B 1	2203	B 6	3106	C 4	3128	C 4	3196	C 3	3230	D 3	6239	D 4		
2112	D 3	2142	B 5	2204	B 6	3107	C 4	3129	B 5	3197	B 3	3231	D 5	7101	B 1		
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2117	B 2	2148	C 1	2210	B 6	3115	B 3	3184	C 6	3202	A 6	3236	D 3	7106	A 4		
2122	D 4	2149	D 3	2211	C 6	3116	A 5	3185	B 6	3203	A 6	3237	D 5	7107	B 5		

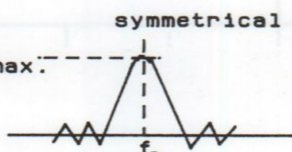


Tuner adjustment

FM

INPUT	INPUT SIGNAL	SET TUNED TO	OUTPUT	ADJUST	SCOPE/COUNTER
OSC. and RF Adjustment					
see Fig. 1 Sweep 500kHz	108.25MHz 2 - 10 μ V	FM VARCO min.	see Fig. 2	2101h OSC	adj. curve to mid. position fo=108.25MHz 
				2101g RF	
	87.35MHz 2 - 10 μ V	FM VARCO max.		5118 OSC	adj. curve to mid. position fo=87.35MHz 
				5117 RF	
VCO Adjustment Shortcircuit Pin 26 of IC 7150 to GND					
			see Fig. 3	3103	76 kHz +/- 800Hz

AM IF

INPUT	INPUT SIGNAL	WAVE RANGE	OUTPUT	ADJUST	SCOPE
see Fig. 4 Sweep 10kHz	468kHz 0.1 - 1 mV	MW	see Fig. 2	5120	Curve max.
	4.52 MHz 0.1 - 1 mV	SW9		5123	Curve mid. pos.
	4.52 MHz 0.1 - 1 mV	SW9		5122	symmetrical max. 
		5121			

Repeat

AM

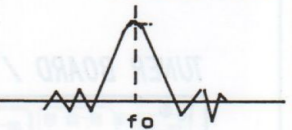
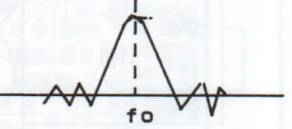
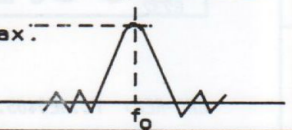
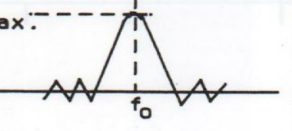
INPUT	INPUT SIGNAL	WAVE RANGE	OUTPUT	ADJUST	SCOPE
OSCILLATOR ADJUSTMENT					
see Fig. 4 Sweep 10kHz	1635 kHz 10 - 100 μ V	MW VARCO min.	see Fig. 2	2101f	Curve to mid. pos. symmetrical 
		515 kHz 10 - 100 μ V		MW VARCO max.	
see Fig. 4 Sweep 5kHz	147.5 kHz 10 - 100 μ V	LW VARCO max.		5116	
For adjustment of SW oscillator tune set to 735 kHz on MW before and then switch only the wave ranges					
see Fig. 4 Sweep 30kHz 10 - 100 μ V	6.055 MHz	SW1	see Fig. 2	5115	Curve to mid. pos. symmetrical 
	7.170 MHz	SW2		5114	
	9.665 MHz	SW3		5113	
	11.815 MHz	SW4		5112	
	13.685 MHz	SW5		5111	
	15.300 MHz	SW6		5110	
	17.690 MHz	SW7		5109	
	21.625 MHz	SW8		5108	
	25.825 MHz	SW9		5107	
RF ADJUSTMENT					
6 Sweep 30kHz 0.3 - 3 mV/m	200 kHz	LW 200 kHz	see Fig. 2	5124	symmetrical max. 
	1500 kHz	MW 1500 kHz		2101e	
	550 kHz	MW 550 kHz		5106	
see Fig. 5 Sweep 30kHz 5 - 50 μ V	6.055 MHz	SW1 6.055 MHz	see Fig. 2	5105	symmetrical max. 
	9.665 MHz	SW3 9.665 MHz		5104	
	15.300 MHz	SW6 15.300 MHz		5103	
	21.625 MHz	SW8 21.625 MHz		5102	

Fig. 1

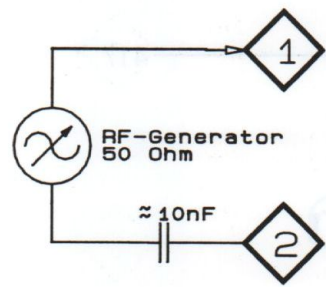


Fig. 2

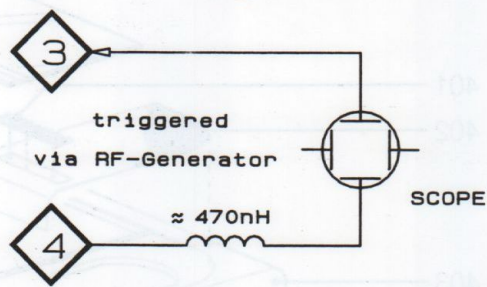


Fig. 3

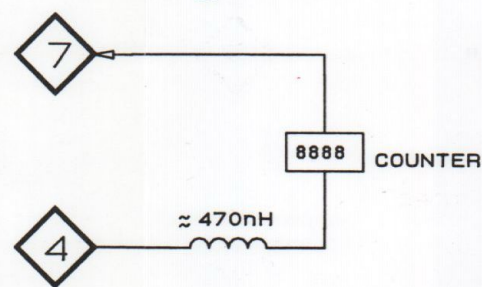


Fig. 4

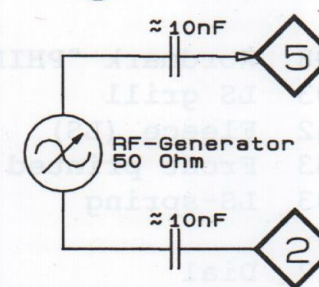
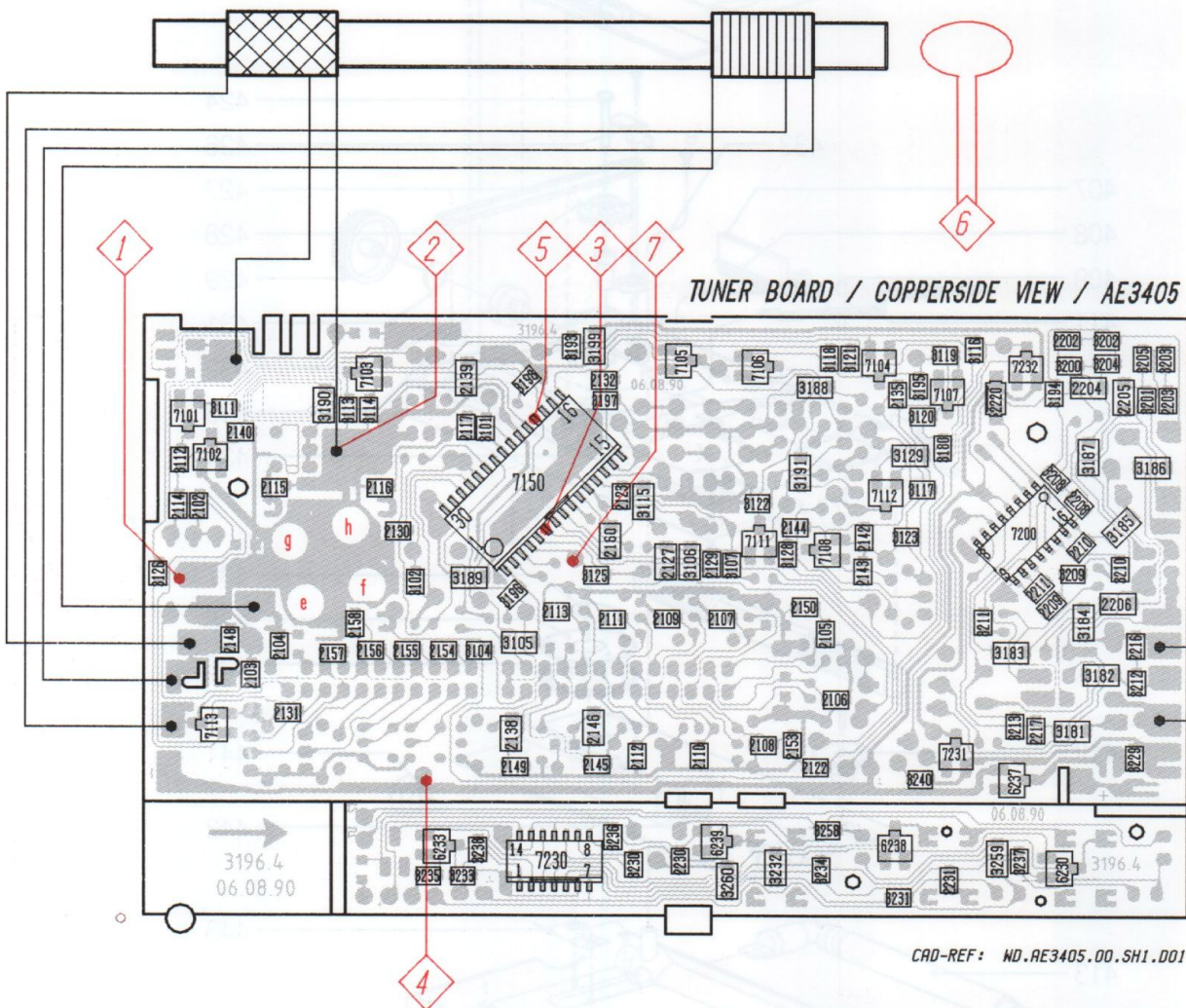
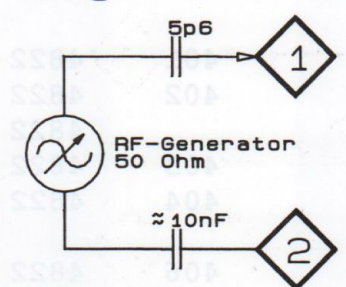
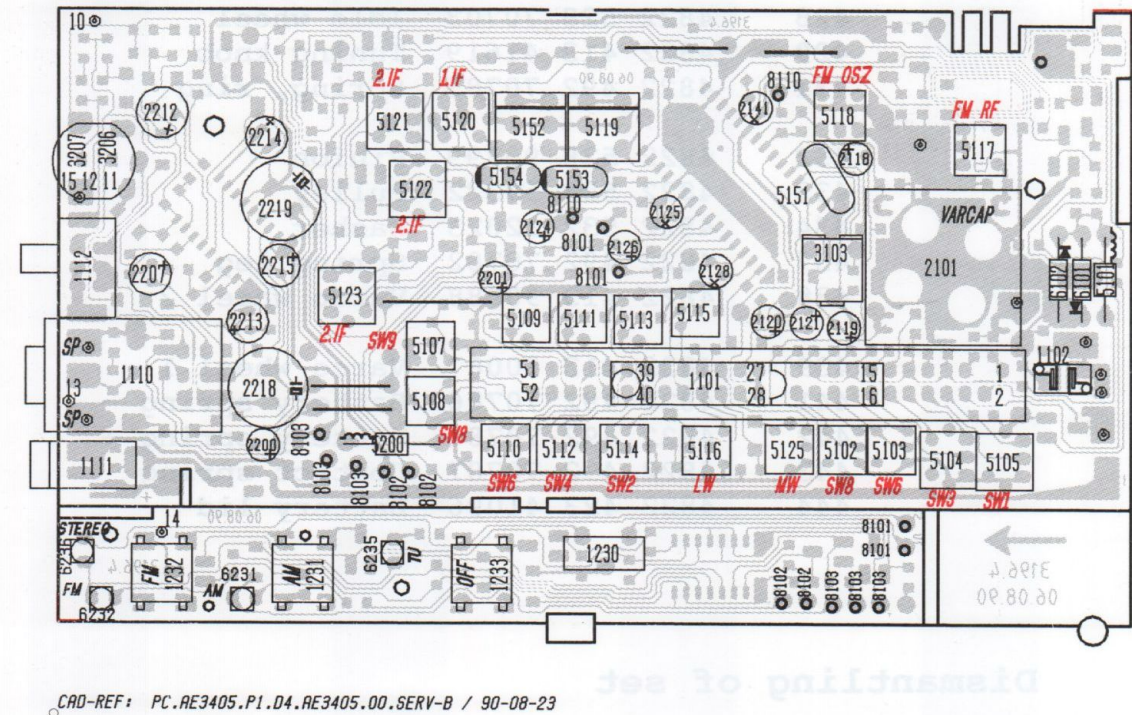


Fig. 5



TUNER BOARD / COMPONENTSIDE VIEW / AE3405

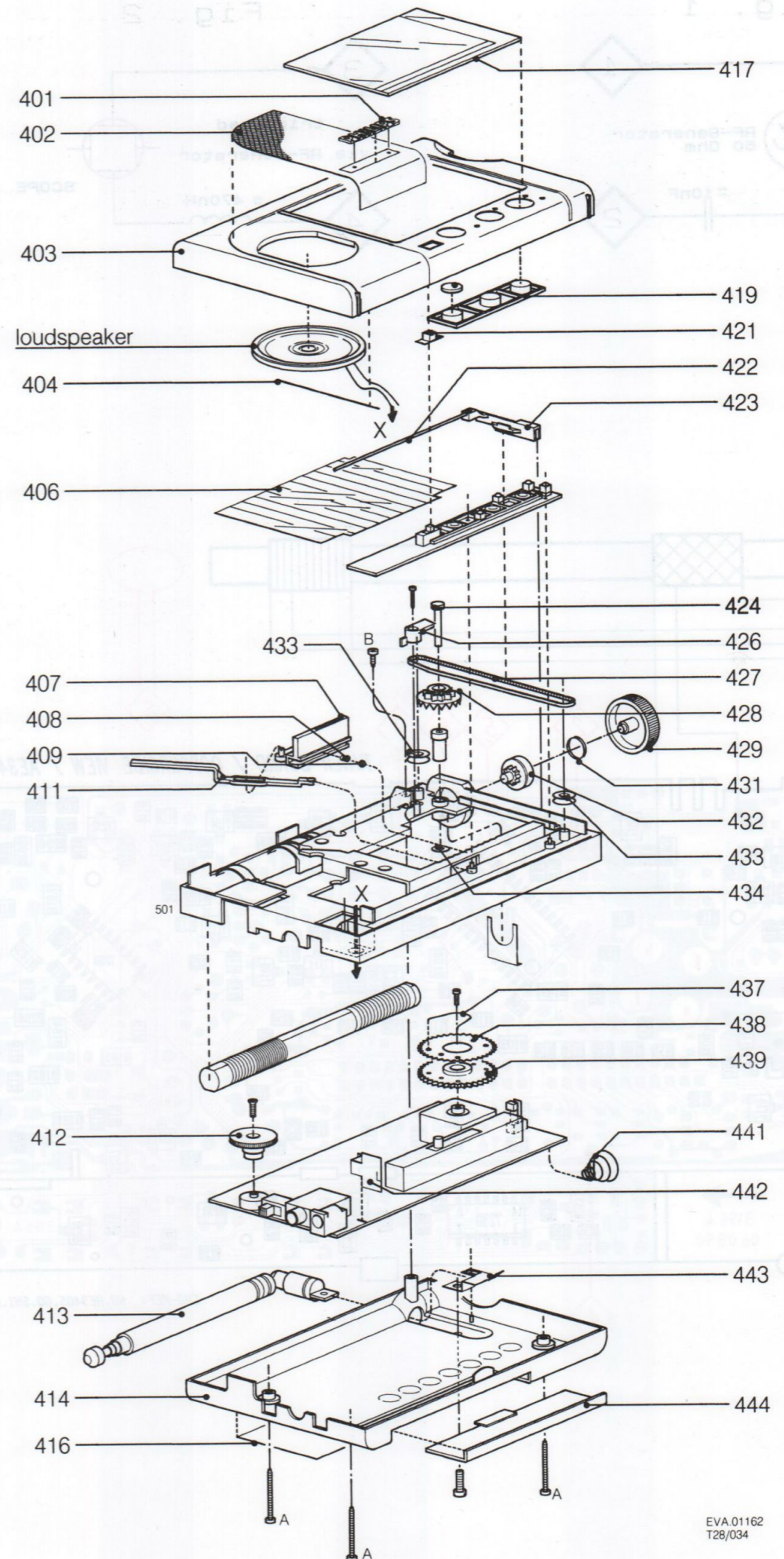


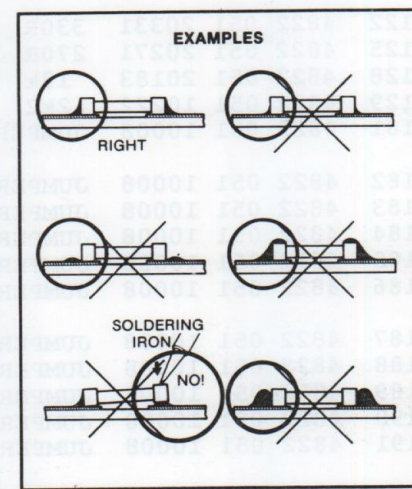
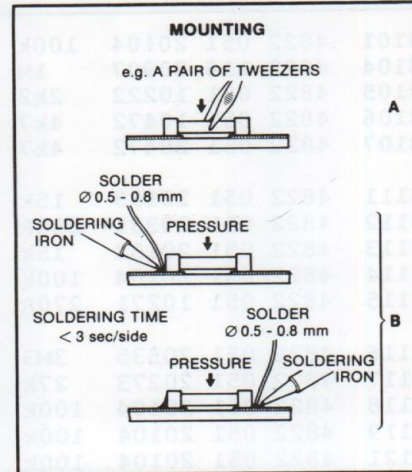
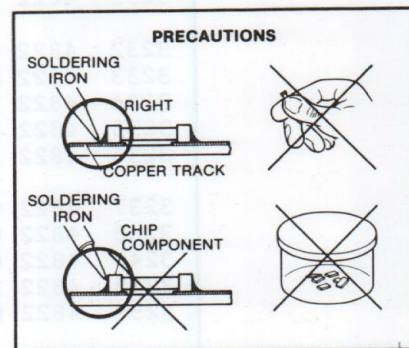
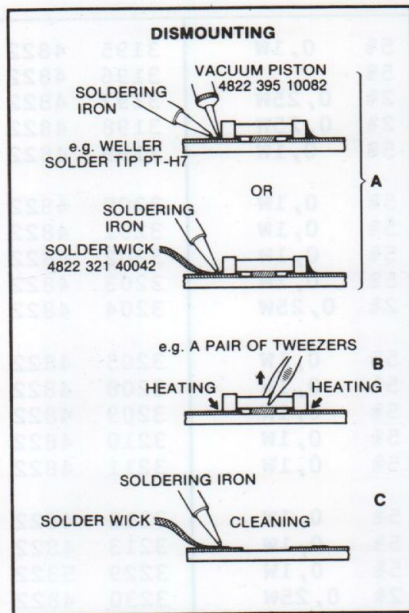
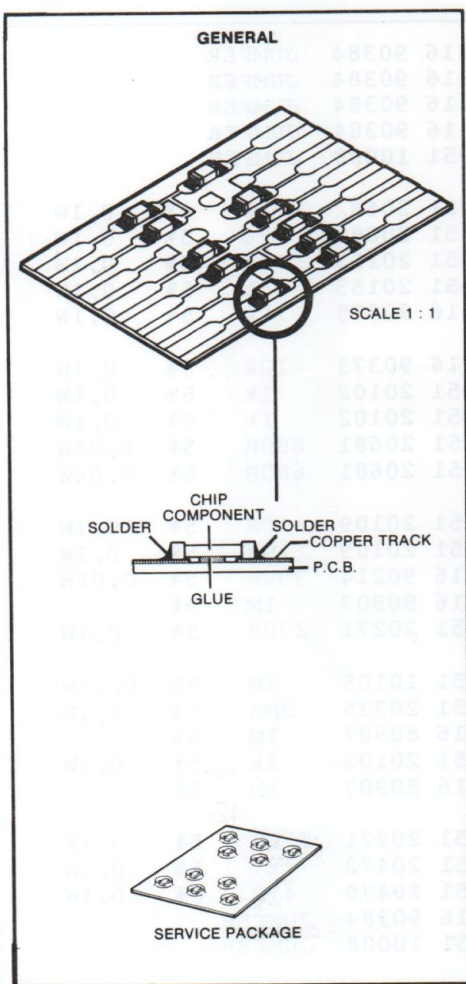
Mechanical Partslist

401	4822 459 11008	Wordmark "PHILIPS"
402	4822 458 20193	LS grill
	4822 445 51042	Fleece (LS)
403	4822 423 51053	Front printed
404	4822 492 70783	LS-spring
406	4822 333 30217	Dial
407	4822 411 61732	Knob, SW
408	4822 492 52217	Compression spring
409	4822 520 40134	Steel ball
411	4822 347 10307	Indicator
412	4822 413 51358	Volume wheel
413	4822 303 30395	Telescopic aerial
414	4822 421 30076	Rear cabinet
416	4822 454 12673	World map (PC foil)
417	4822 450 61636	Window printed
419	4822 404 10832	Key support printed
421	4822 413 41621	Knob printed (HOLD)
422	4822 450 81177	Pointer
423	4822 256 91732	Pointer support
424	4822 535 93161	Spindle
426	4822 404 10833	Guide
427	4822 358 31095	Gear belt
428	4822 528 70703	Idle wheel
429	4822 413 41619	Tuning knob
431	4822 492 70785	Spring, ring
432	4822 528 90799	Pinion
433	4822 528 50322	Pulley
434	4822 532 12023	Washer
437	4822 492 70782	Spring leg
438	4822 413 90088	Varco wheel 2
439	4822 413 90087	Varco wheel 1
441	4822 492 70786	Battery spring -
442	4822 492 70784	Battery spring +
443	4822 492 70787	Contact spring
444	4822 423 41096	Battery lid

Dismantling of set

- 1) Loosen three screws (A) on the bottom.
Remove the front part (403). Attention - speaker wires!
- 2) Loosen one screw (B) in the top right hand corner of the set.
Remove the bottom (414).





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