

Service Service Service



Service Manual



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

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**CLASS 1
LASER PRODUCT**



PHILIPS

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/00/05/1014	230 V
	-/01/11	120 / 230 V
	-/17	120 V
Mains frequency	-/00/05/1014	50 Hz
	-/01/11	50 / 60 Hz
	-/17	60 Hz
Battery	mains	9 V (R20 x 6)
Power consumption		5 W
Dimension (W x H x D)		435 x 252 x 170 mm
Weight		3.4 Kg

AMPLIFIER

Output power	mains	2 x 1.4 W
	battery	2 x 1.6 W
Speaker impedance		2 x 4 ohm
Frequency response		100 Hz - 10 kHz (± 3 dB)

TUNER - FM SECTION

Tuning range	87.5 - 108 MHz
IF frequency	10.7 MHz \pm 0.2 MHz
Sensitivity	14 dBf at 26dB S/N
Selectivity	45 dB at 300kHz
IF rejection	65 dB
Image rejection	26 dB

TUNER - AM SECTION

Tuning range	MW	522 - 1607 kHz
	-/17	520 - 1730 kHz
IF frequency		468 kHz \pm 3 kHz
Sensitivity	MW	1500 μ V/m at 26dB S/N
Selectivity	MW	20 dB
IF rejection	MW	60 dB
Image rejection	MW	32 dB

AUDIO CASSETTE RECORDER

Number of tracks		2 stereo
Tape speed		4.76 cm/sec \pm 3%
Wow & flutter		< 0.48 JIS UWTD
Fast wind/rewind C60		< 120 sec.
Frequency response	P/B	125 - 8000 Hz
S/N ratio		\geq 40 dB

COMPACT DISC

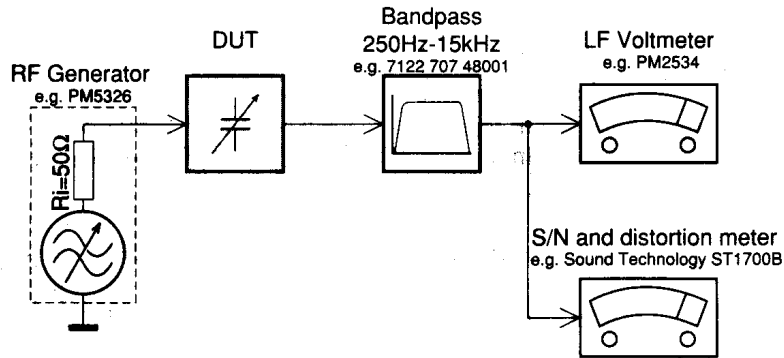
Frequency response	:	100 Hz - 10 kHz
S/N ratio	:	60 dB
Channel difference	1 kHz :	< 3 dB
Channel crosstalk	1 kHz :	40 dB
Laser wavelength	:	780 \pm 20 nm
Laser light power	:	< 0.5 mW

SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm.....	4822 395 50423
TORX screwdriver set SBC 163.....	4822 295 50145
Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....	4822 397 30155
Universal test cassette Fe SBC 420.	4822 397 30071

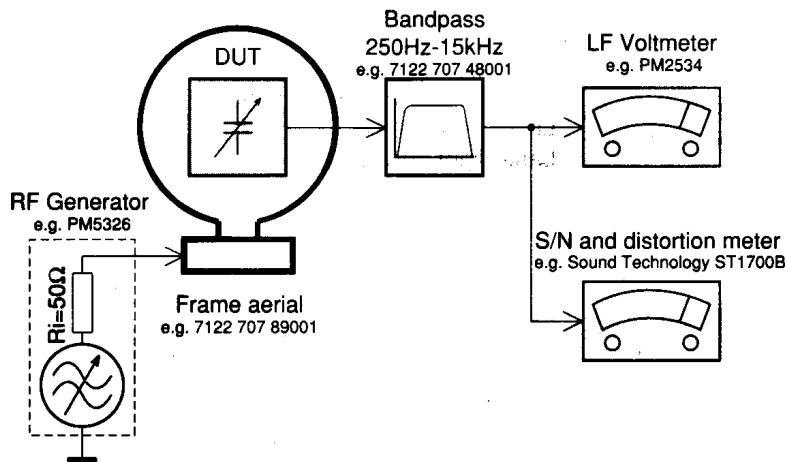
SERVICE MEASUREMENTS

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

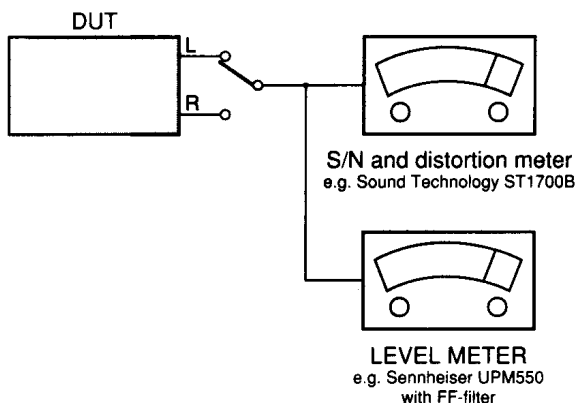
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

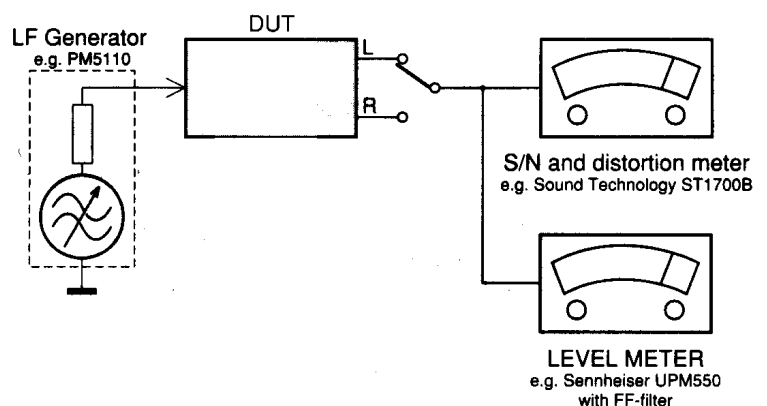
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



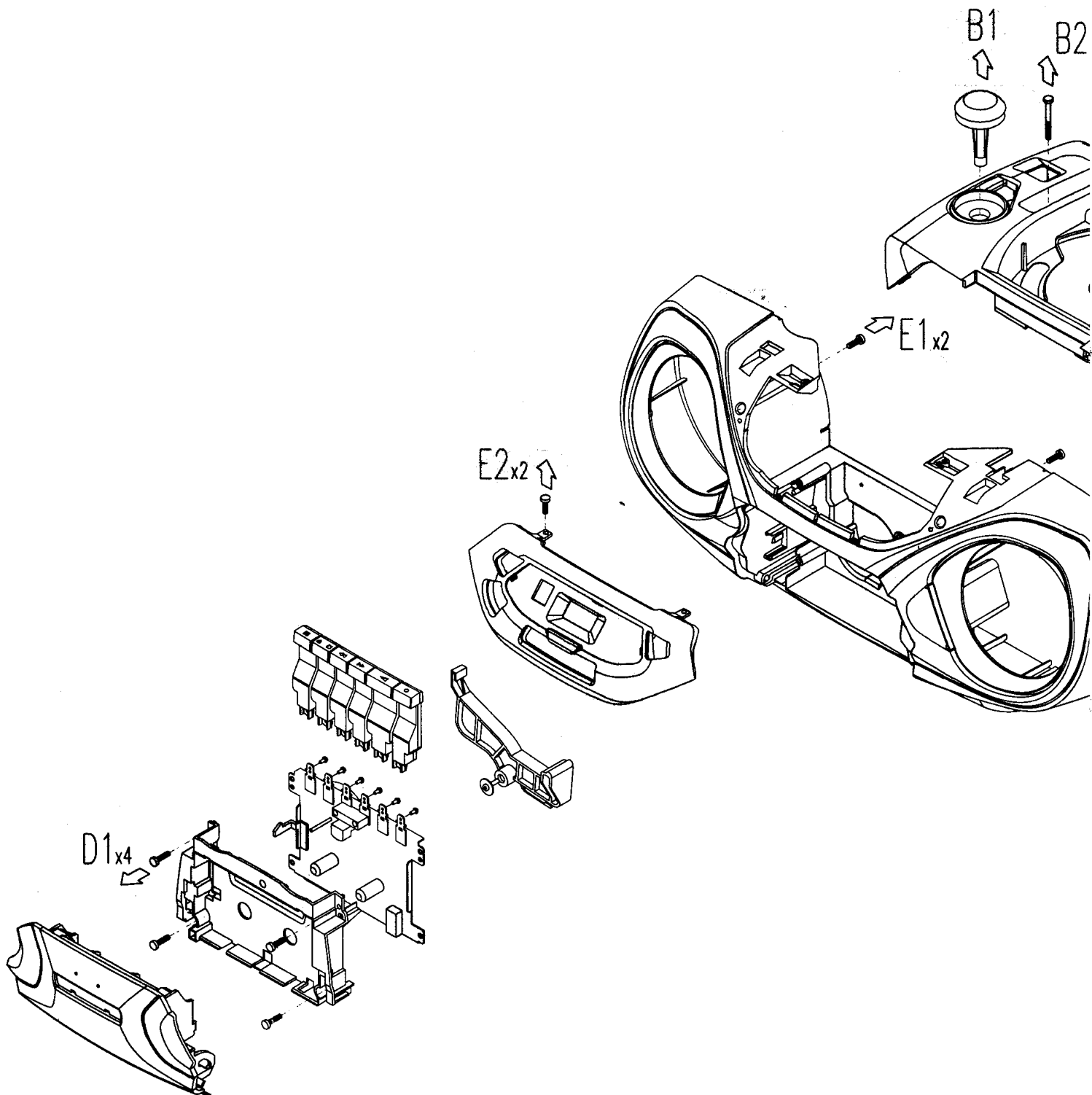
RECORDER

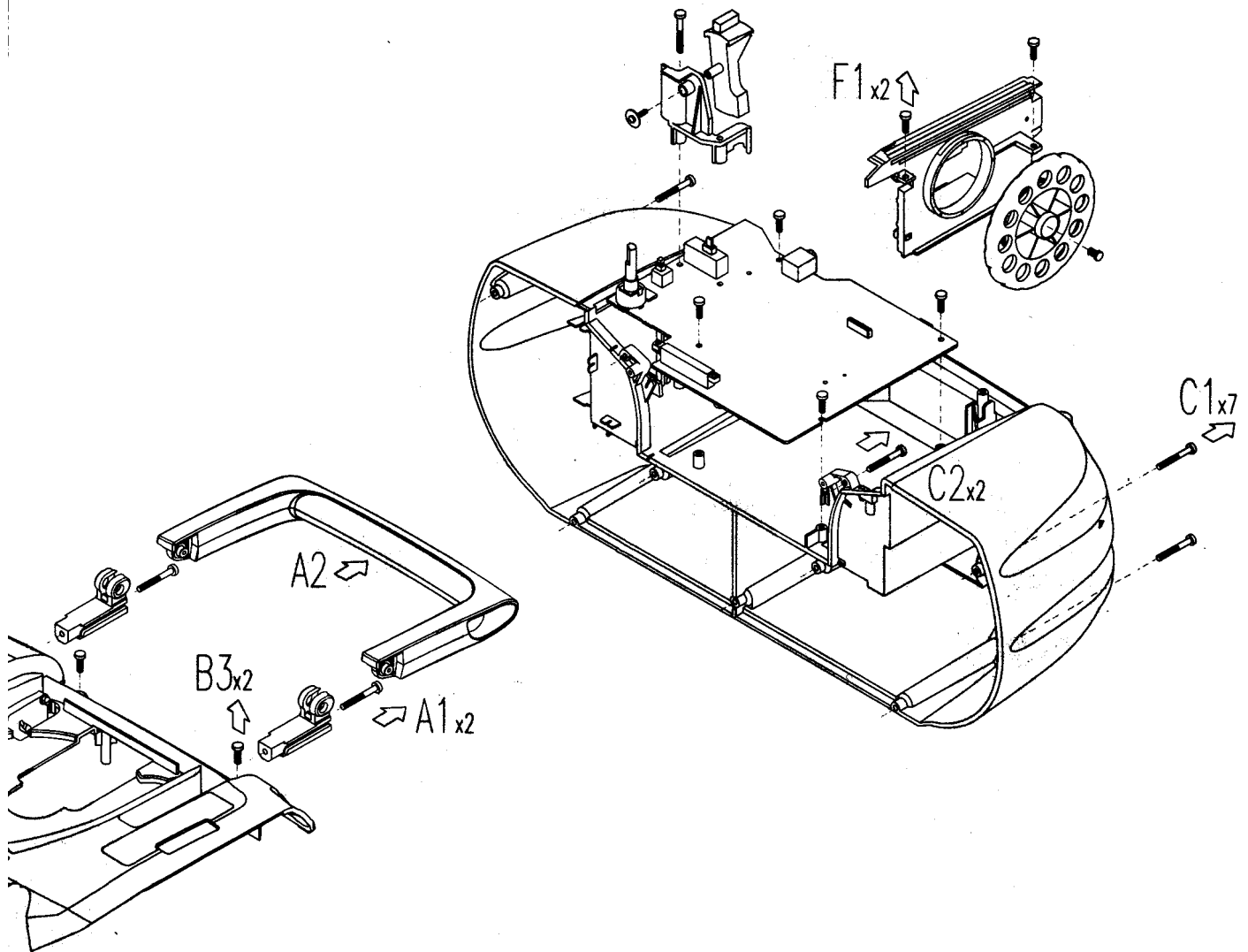
Use Universal Test Cassette Fe SBC420 4822 397 30071

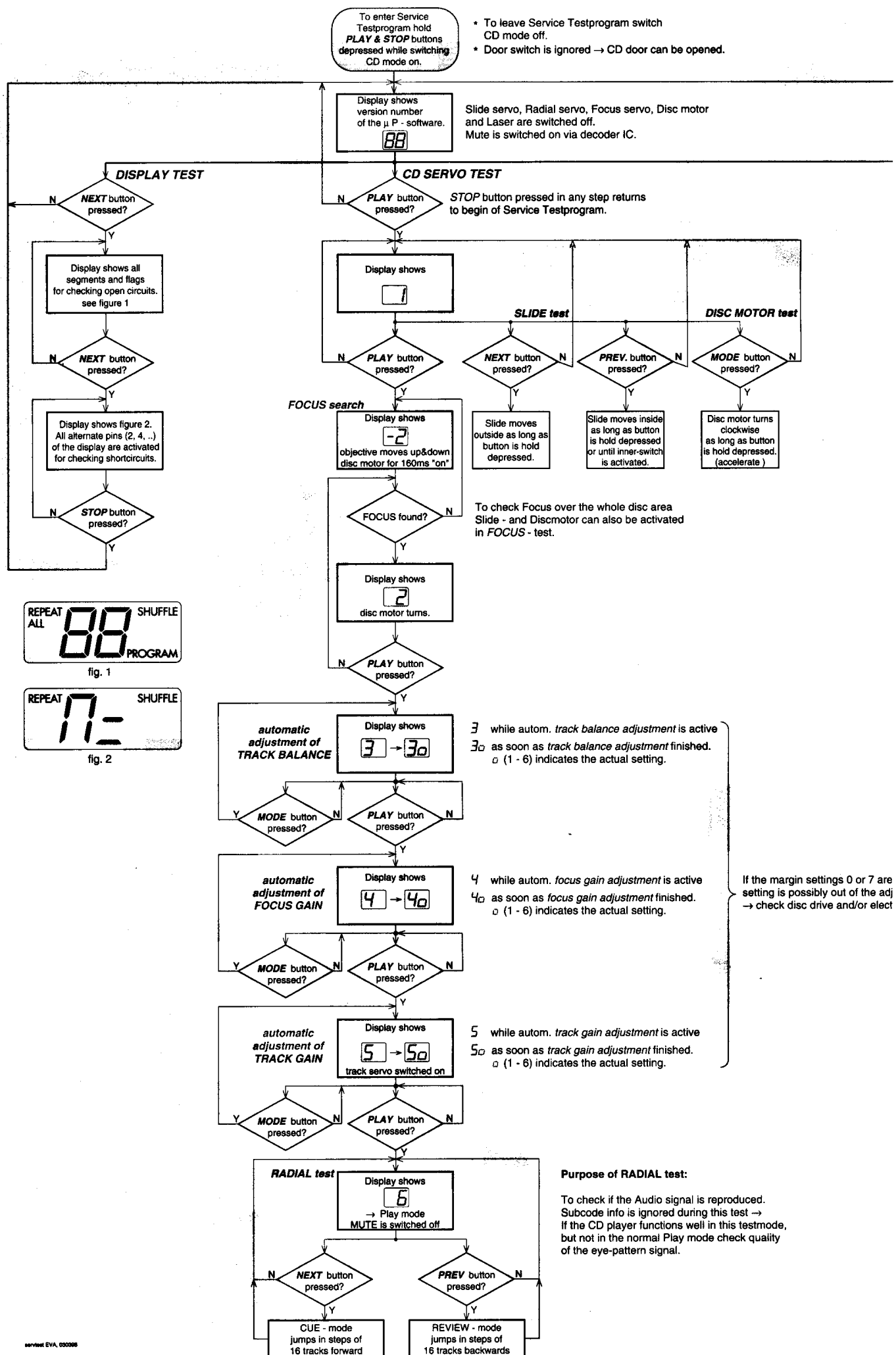


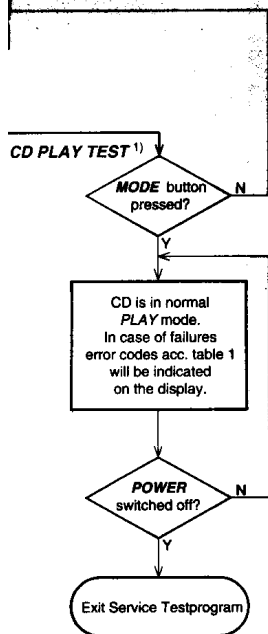
DISASSEMBLY DIAGRAM

- A. To remove Handle
- B. To remove Top Panel
- C. To remove Front Cabinet Assy
- D. To remove Tape Deck
- E. To remove Front Panel
- F. To remove Tuner Board









¹⁾ The CD PLAY TEST is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.

CD ERROR codes

Error number	Error description	Error type
E0	Focus Error Triggered when the focus is lost for more than 250ms during playing the CD.	W
E2	Slide-in error Generated when the inner-switch did not close within approx. 4s when the pick up is moved inside. Inner-switch or slide motor problems.	W
E3	Slide-out error Generated when the inner-switch did not open within approx. 250ms when the pick up is moved from the inner position outside. Inner-switch or slide motor problems.	W
E5	Jump error. 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), slide motor problems, track servo problems or scratched discs.	W
E6	Subcode Error No valid subcode for 300ms during PLAY.	W
E7	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
F0	Focus Search Error Triggered when the focus could not be found within 3s when starting up the CD.	F
F2	Fatal Subcode Error No valid subcode for more than 4s during PLAY.	F

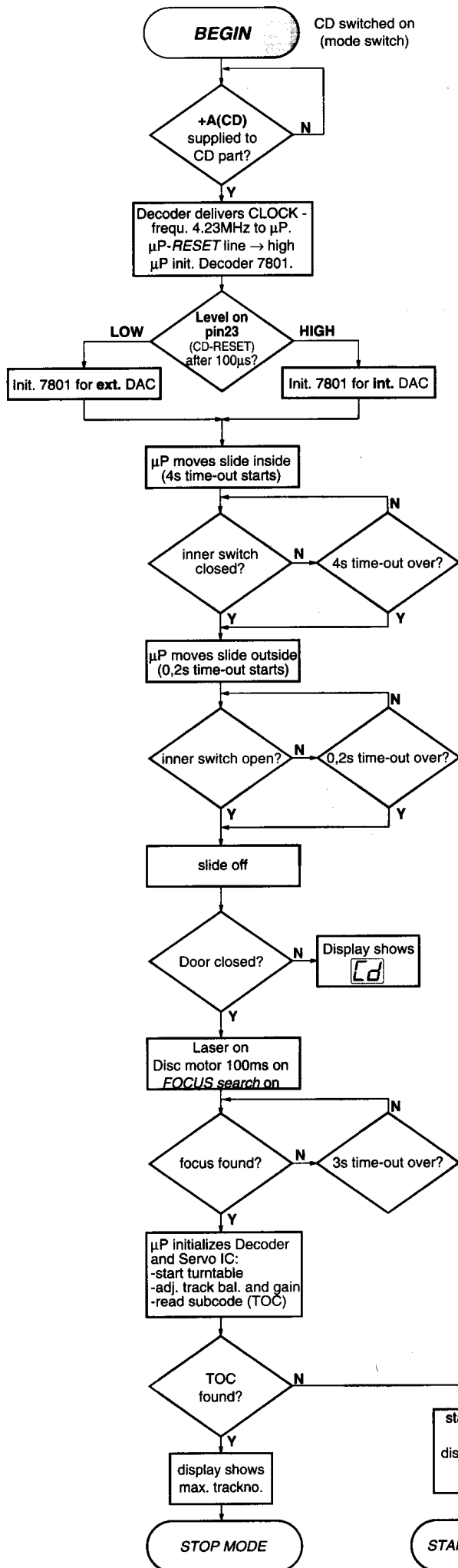
table 1

Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed.

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

displayed the required
adjustment range.
asonic circuitry

CD STARTUP PROCEDURE



Remark: To check focus servo, slide servo, track servo and turntable use service test program

- Battery empty?
- check +A,
- mode switch o.k.?

check: - +A(CD), +B(CD), +LASER, +M,
- time constant of reset circuit
- Pin 32 of μP 7800 HIGH ?
- Pin 30 of μP 7800, if 4.23 MHz o.k.

check: - door switch

check: - Laser light on ?
Check pin 38 of 7803 and **LASER CONTROL** circuit
- Focus Servo

check: - Motor control pin 27 of Decoder 7801 and Disc Motor driver 7805
- HF Signal by using service testprogram

Abbreviations and Pin-descriptions of CD ICs

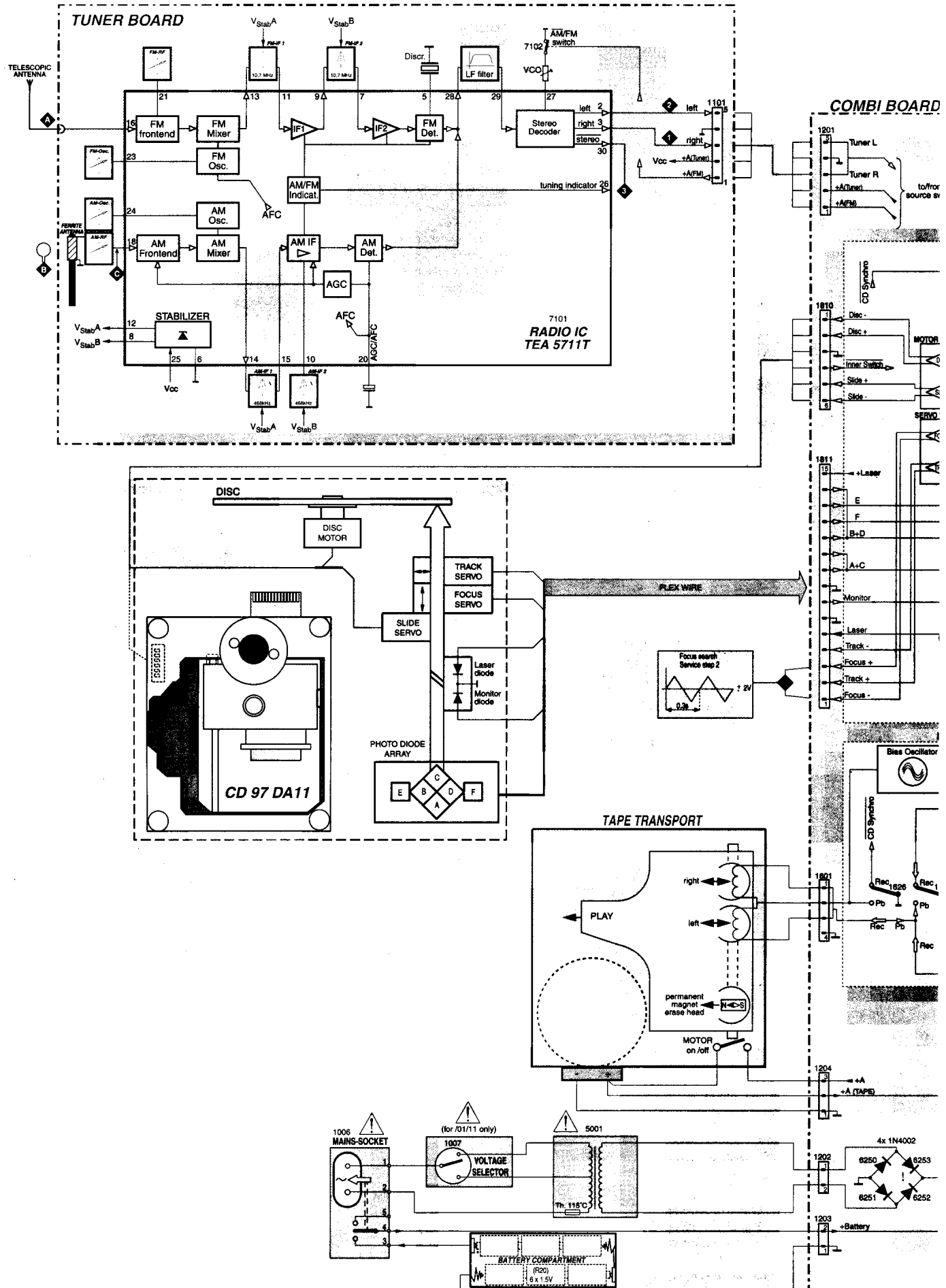
SERVO PROCESSOR M62475FP

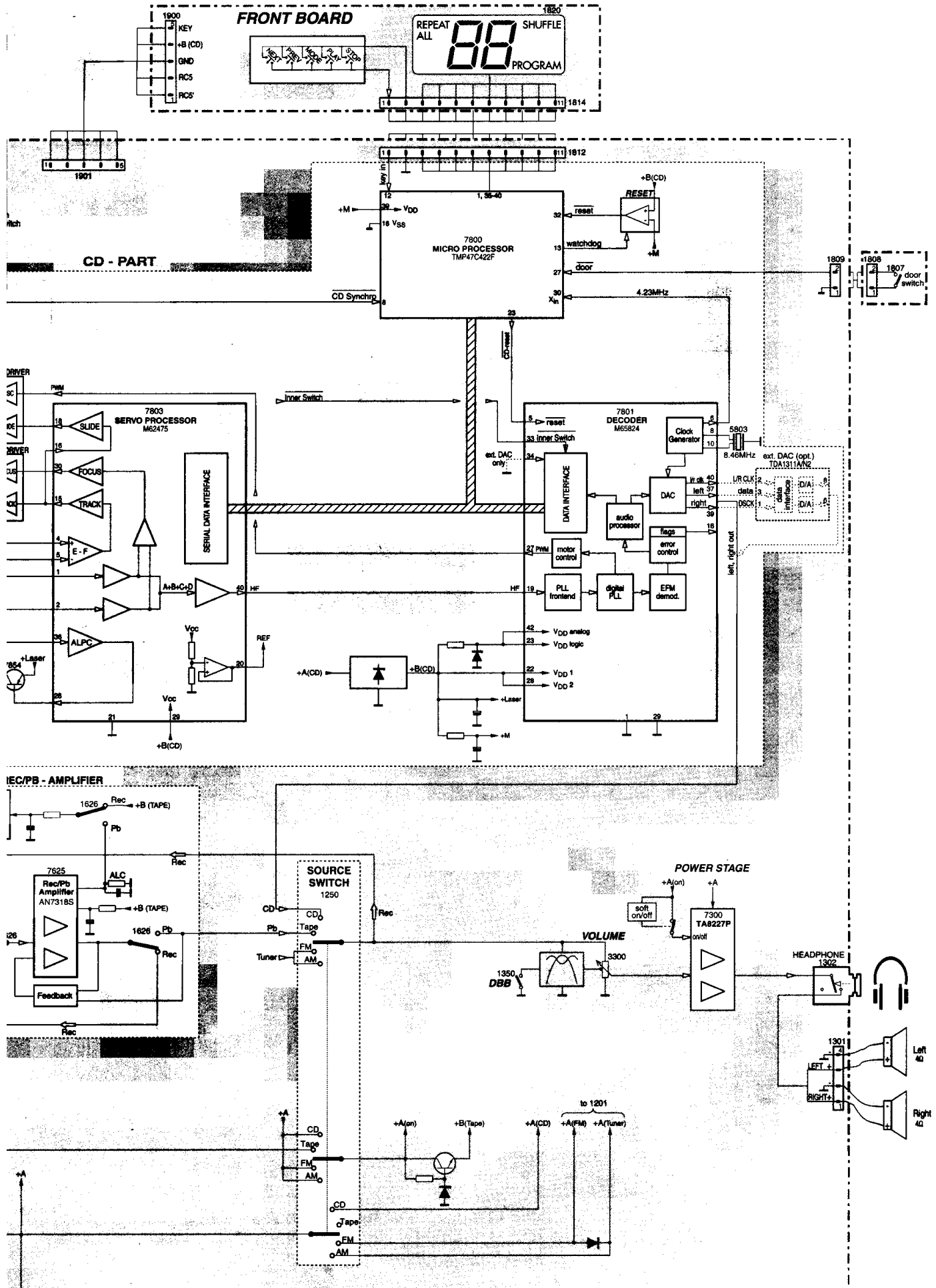
Pin	Name	Direction	Description
1-3	A, B, C	Diode array → Servo processor	Current input (central photo diode signal input)
4-5	E, F	Diode array → Servo processor	Current input (satellite photo diode signal input)
6	SGT	Servo processor → Track error ampl. Input	Signal generator output to track servo, sends 1700Hz for adjustment procedure
7	TE -	-	Inverting input of track error amplifier
8	TEGain	-	Gain control pin of track error amplifier
9	TG1	-	Track Gain 1 - switch: controls the gain of the track servo amplifier
10	TE out	-	Track Error amplifier output
11	TC/Shock	-	Track Cross/Shock detector input
12	TS +	-	Non inverting input of track servo amplifier
13	TG2	not connected	Track Gain 2 - switch: controls the gain of the track servo amplifier
14	TS -	-	Inverting input of side servo amplifier
15	TS out	Servo processor → Servo driver	Output of track servo amplifier
16	SS +	-	Non inverting input of slide servo amplifier
17	SS -	-	Inverting input of slide servo amplifier
18	Slide out	Servo processor → Motor driver	Output of slide servo amplifier
19	DET. FILTER	-	Pin for connection of DETection FILter capacitor of <i>ADJUST LOGIC</i>
20	BIAS	Servo processor → external electronic	Reference Voltage output Vcc/2 of internal BIAS-generator
21	GND	-	Ground connection pin (negative supply)
22	MLA/DIS	μp → Servo processor	Serial interface Microprocessor Latch control/DIScharge control for adjustment
23	JP1/SG	μp → Servo processor	Serial interface Jump control line/Signal Generator input line for adjustment
24	MCK	μp → Servo processor	Serial interface Clock input line
25	MSD	μp → Servo processor	Serial interface Data input line
26	D _{out}	Servo processor → μp	Serial interface Data output line
27	C _{LPF}	-	Pin for connection of Low Pass Filter capacitor of <i>ADJUST LOGIC</i>
28	I _{REF}	-	Reference current input
29	V _{CC}	-	Positive supply connection pin (4V - 5.5V)
30	FS _{OUT}	Servo processor → Servo driver	Output of focus servo amplifier
31	FS -	-	Inverting input of focus serco amplifier
32	FEGain	-	Gain control pin of focus error amplifier
33	FE -	-	Inverting input of focus error amplifier
34	SGF	Servo processor → Focus error ampl. Input	Signal generator output to focus servo, sends 1300Hz for adjustment procedure
35	C _{FSR}	-	Charge capacitor for Focus Search triangle-generator
36	ALPC +	-	Non inverting input of Automatic Laser Power amplifier
37	ALPC -	-	Inverting input of Automatic Laser Power Control amplifier
38	ALPC _{OUT}	Servo processor → Laser driver	Output of Automatic Laser Power Control amplifier
39	MRC	-	Connection pin for capacitor of Mirror detector
40	HF	Servo processor → Decoder	Output of HF amplifier
41	HFI	-	Inverting input of HF amplifier
42	ABC	-	Sum output of amplified A, B and C input (central photo diode signal input) to external ac-coupling capacitor

SERVO PROCESSOR M65824FP

Pin	Name	Direction	Description
1	Anal. V _{SS}	-	Analog system ground
2	ADJCLK	not connected	Clock output for servo adjustment; f=88.2kHz
3	LOCK	not connected	Lock monitor / low disc rotation output
4	CKSEL	-	System clock selection. Low=8.4672MHz, high=16.9344MHz
5	RESET	μp → Signal processor	System reset (low level = active)
6	C423	Signal processor → μp	4.2336MHz clock output
7	C846	not connected	8.4672MHz clock output
8	XI	X-Tal → Signal processor	Crystal oscillator input
9	DVSS	-	Digital system ground
10	XO	Signal processor → X-Tal	Crystal oscillator output
11	TEST	-	Normal / Test selection input. Testmode = high
12	SBCO	not connected	Subcode serial output
13	SCCK	-	Shift clock input for subcode data read
14	SYCLK	not connected	Frame lock status output. Lock = high
15	EFFK	not connected	EFM frame clock output. Duty = 50%
16	KILLB	not connected	Digital silence mute output. Digital zero = low
17	EST1	not connected	Error monitor output 1
18	EST2	not connected	Error monitor output 2
19	HF	Servo processor → Signal processor	HF signal input
20	TLC	-	Slice level control signal output
21	LPF	-	PLL loop filter
22	Dig. V _{DD}	-	Digital interface power supply
23	DSPS	-	Digital system power supply
24	SBQS	not connected	Interrupt signal to read out subcode Q data. Read = low
25	CRCF	not connected	Subcode Q-channel Cyclic Redundance Check Flag output. CRC o.k. = high level
26	SCAND	not connected	Subcode sync signal detection. Sync = high
27	PWM	Signal processor → Motor driver	Disc motor driving (Pluse Width Modulation) output
28	DVDD2	-	Digital interface power supply 2
29	DVSS2	-	Digital system ground 2
30	MCK	μp → Signal processor	μp interface shift Clock input
31	MSD	μp ↔ Signal processor	μp interface Serial Data I/O line
32	MLAB	μp → Signal processor	μp interface Latch clock input (internal 22k pull up resistor)
33	EXP1	→ Signal processor	Versatile input pin (internal 4.7k pull up resistor)
34	EXP2	→ Signal processor	Versatile input pin (internal 4.7k pull up resistor)
35	CGREF	→ Signal processor	Charge-pump for LPF reference current input
36	AMPREF	not connected	Op-amp for LPF reference voltage setting
37	LOUT/DO	Signal processor →	Audio signal output (left channel) / Ext. DAC mode: Audio serial data output
38	LNEG	not connected	Charge pump output (left channel) / Ext.DAC mode: Wordclock output
39	ROUT/DSCK	Signal processor →	Audio signal output (right channel) / Ext. DAC mode: Data shift clock output
40	RNEG/LRCK	Signal processor →	Charge pump output (right channel) / Ext.DAC mode: L/R clock output
41	IREF	-	Current reference
42	Anal. V _{DD}	-	Analog system power supply

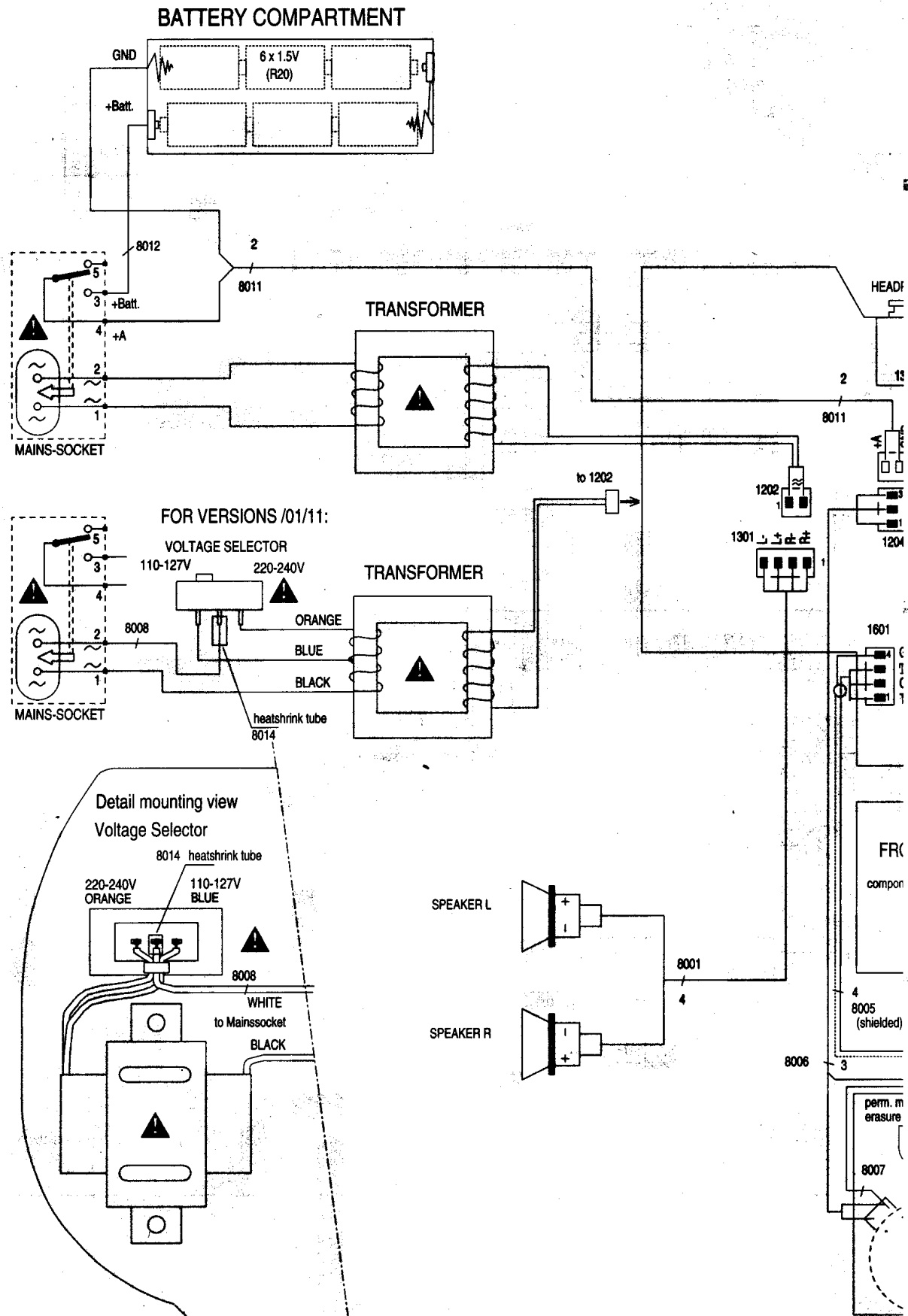
BLOCK DIAGRAM





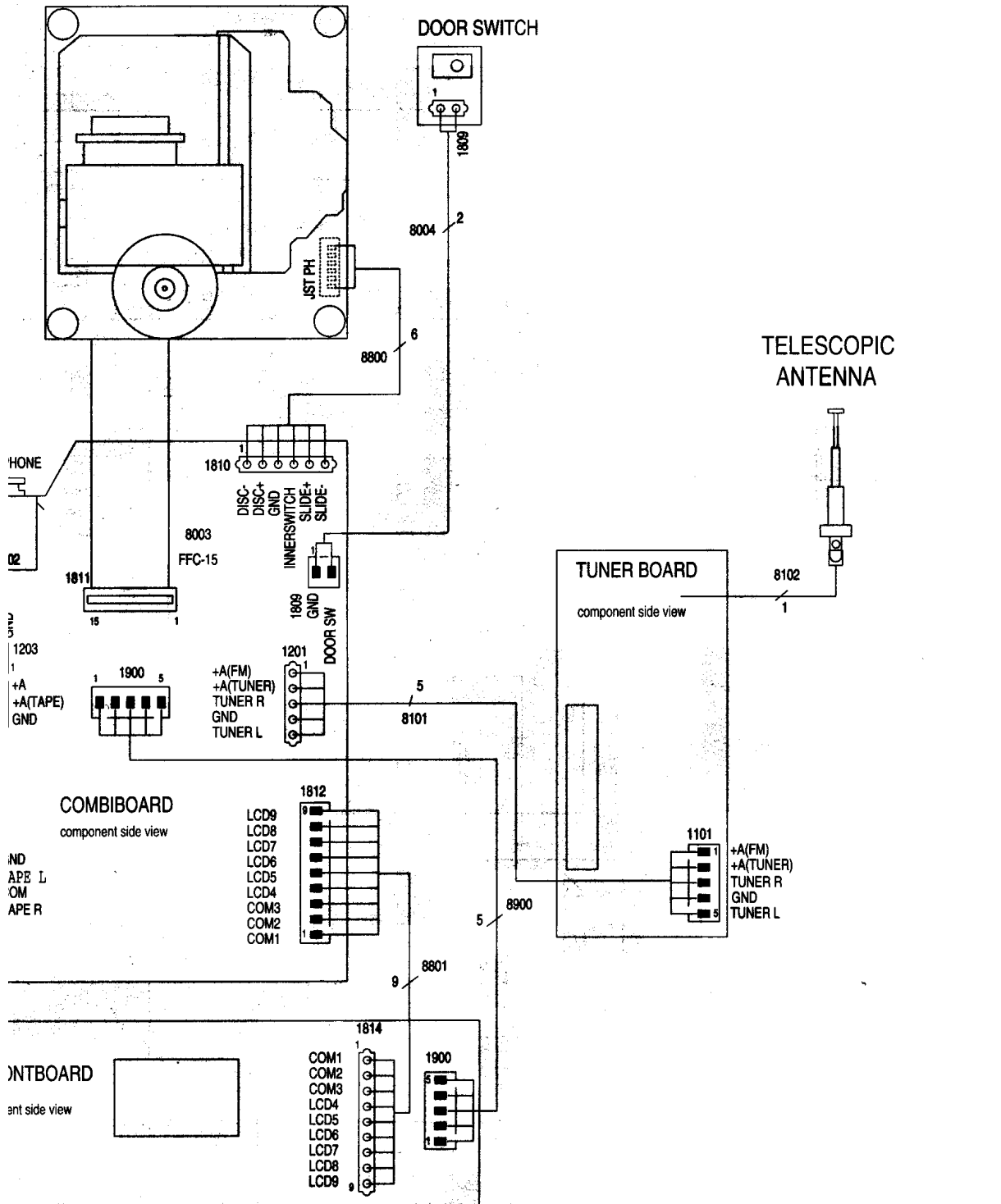
WIRING DIAGRAM

5-2



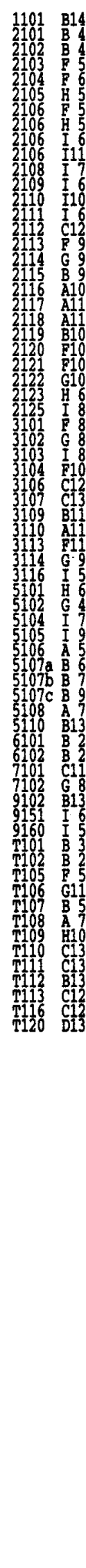
CD-DRIVE CD 97 DA11

top view



TUNER BOARD - CIRCUIT DIAGRAM





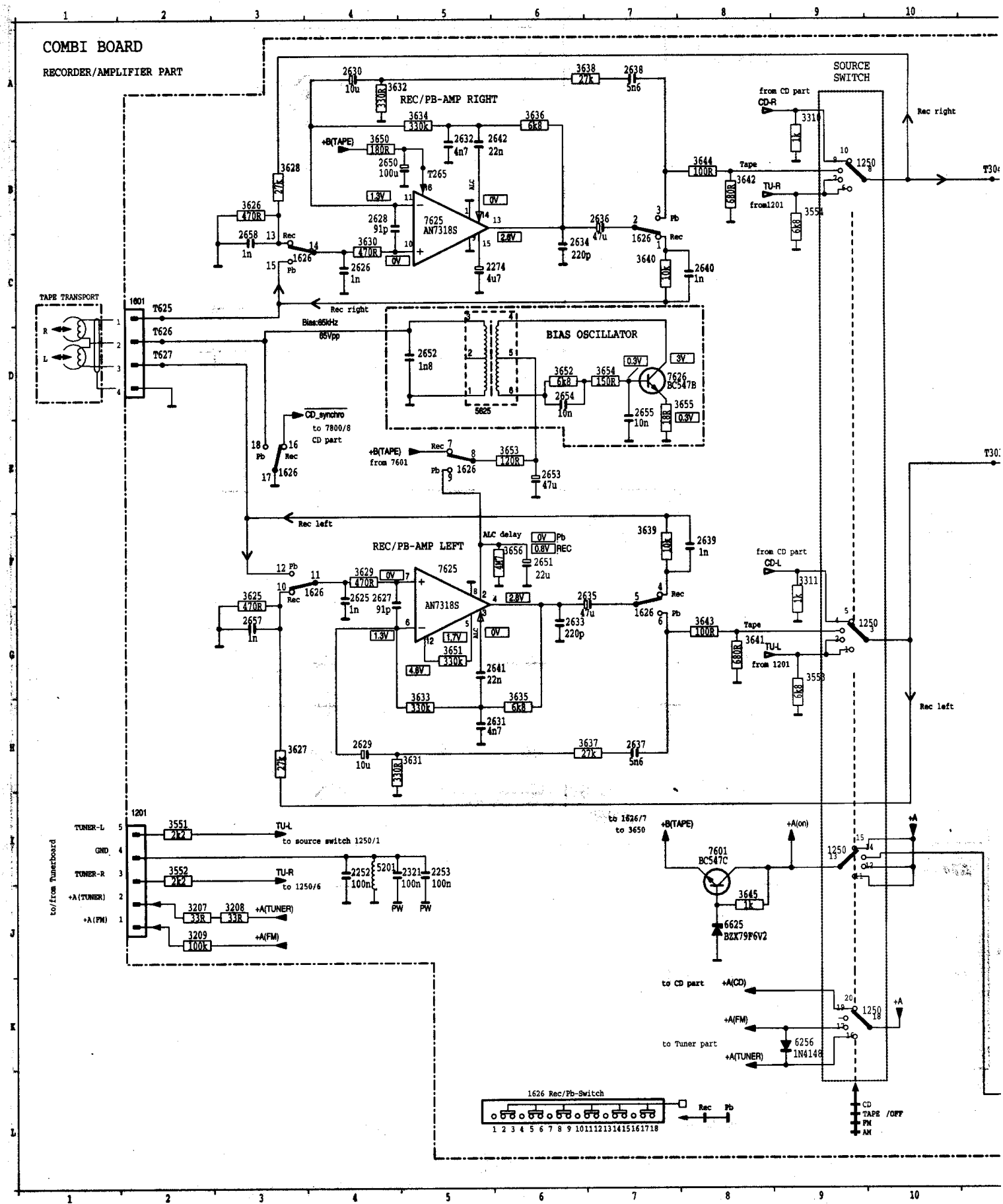
TUNER ADJUSTMENT TABLE

Waverange	Input Frequency	Input	Set tuned to	Adjust	Measure on	Scope / Counter
OSCILLATOR						
FM 87,5 - 108 MHz	87,35 MHz	<div>A</div> $\Delta f = \pm 500\text{kHz}$ $V_{RF} = 100\mu\text{V}$	lower band end <div></div>	5104	<div>1</div> or <div>2</div>	
	108,25 MHz		upper band end <div></div>	2106 C1		
MW 525 - 1607 kHz (530 - 1710 kHz) ¹⁾	512 kHz (520 kHz)	<div>C</div> $\Delta f = \pm 30\text{kHz}$ $V_{RF} = 100\mu\text{V}$	lower band end <div></div>	5105	<div>1</div> or <div>2</div>	
	1635 kHz (1730 kHz)		upper band end <div></div>	2106 C3		
FM - RF						
FM 87,5 - 108 MHz	87,5 MHz	<div>A</div> $\Delta f = \pm 500\text{kHz}$ $V_{RF} = 10\mu\text{V}$	87,5 MHz	5101	<div>1</div> or <div>2</div>	
	108 MHz		108 MHz	2106 C2		
VCO						
FM	98 MHz	<div>A</div> continuous wave $V_{RF} = 1\text{ mV}$	98 MHz	3101	<div>3</div> 	152 ± 1 kHz
AM - IF						
AM	468 kHz connect pin 24 of IC 7101 (AM Osc) with short wire to ground	<div>C</div> $\Delta f = \pm 15\text{kHz}$ $V_{RF} = 10\text{mV}$		5106	<div>1</div> or <div>2</div>	
			 see remark 2)	5108		
AM -RF						
MW	560 kHz	<div>B</div> $\Delta f = \pm 30\text{kHz}$ V_{RF} as low as possible	560 kHz	5102 (ferroceptor coil)	<div>1</div> or <div>2</div>	
	1500 kHz		1500 kHz	2106 C4		

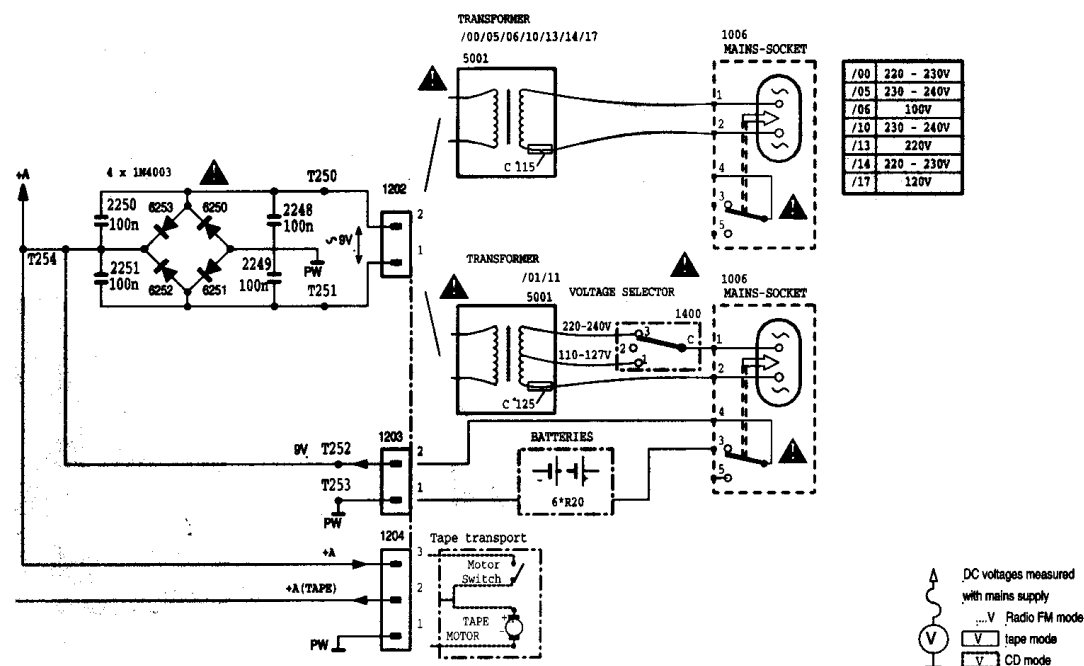
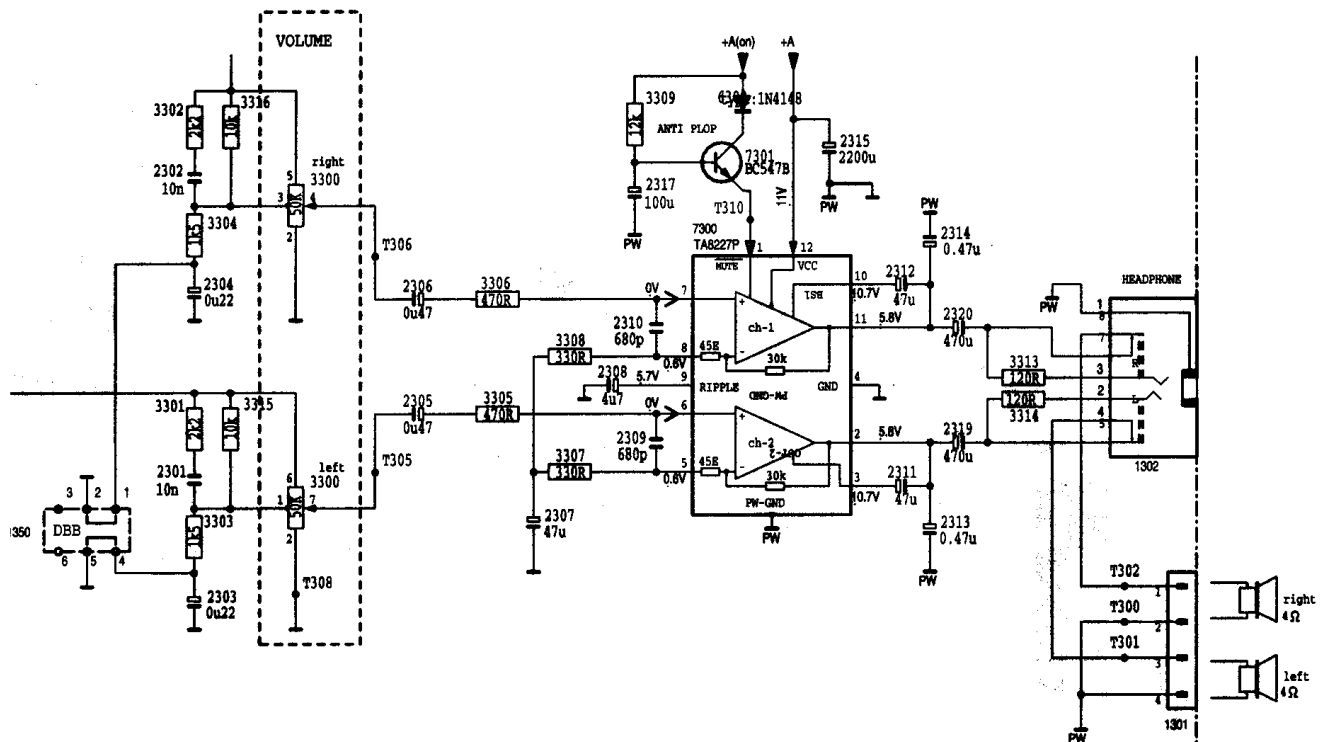
repeat

¹⁾ for USA /17²⁾ RC-network serves for damping the IF-filter while adjusting the other one.

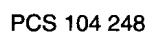
COMBI BOARD - CIRCUIT DIAGRAM RECORDER / AMPLIFIER PART

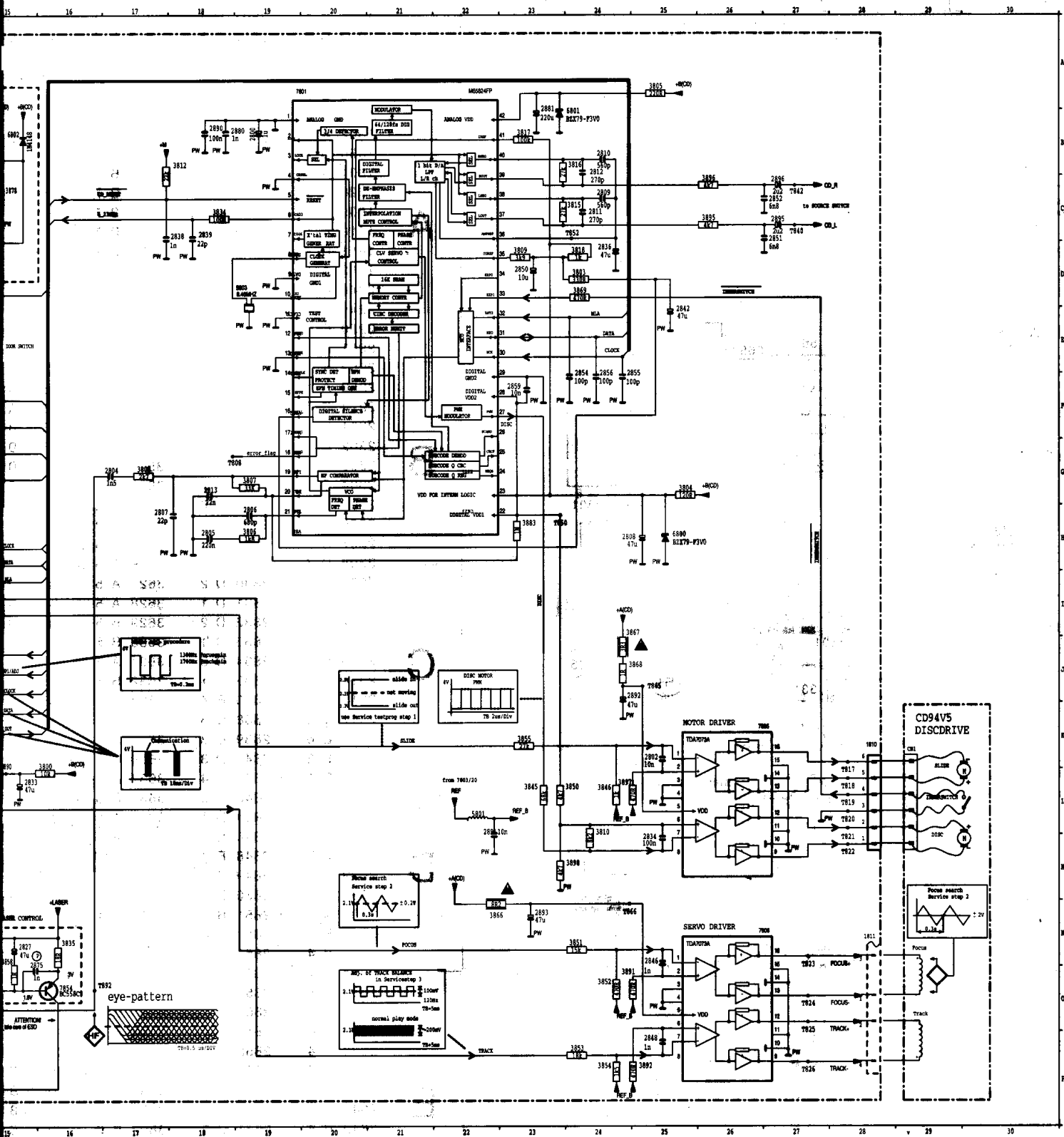


11 12 13 14 15 16 17 18 19



DC voltages measured
with mains supply
.....V Radio FM mode
V tape mode
V CD mode

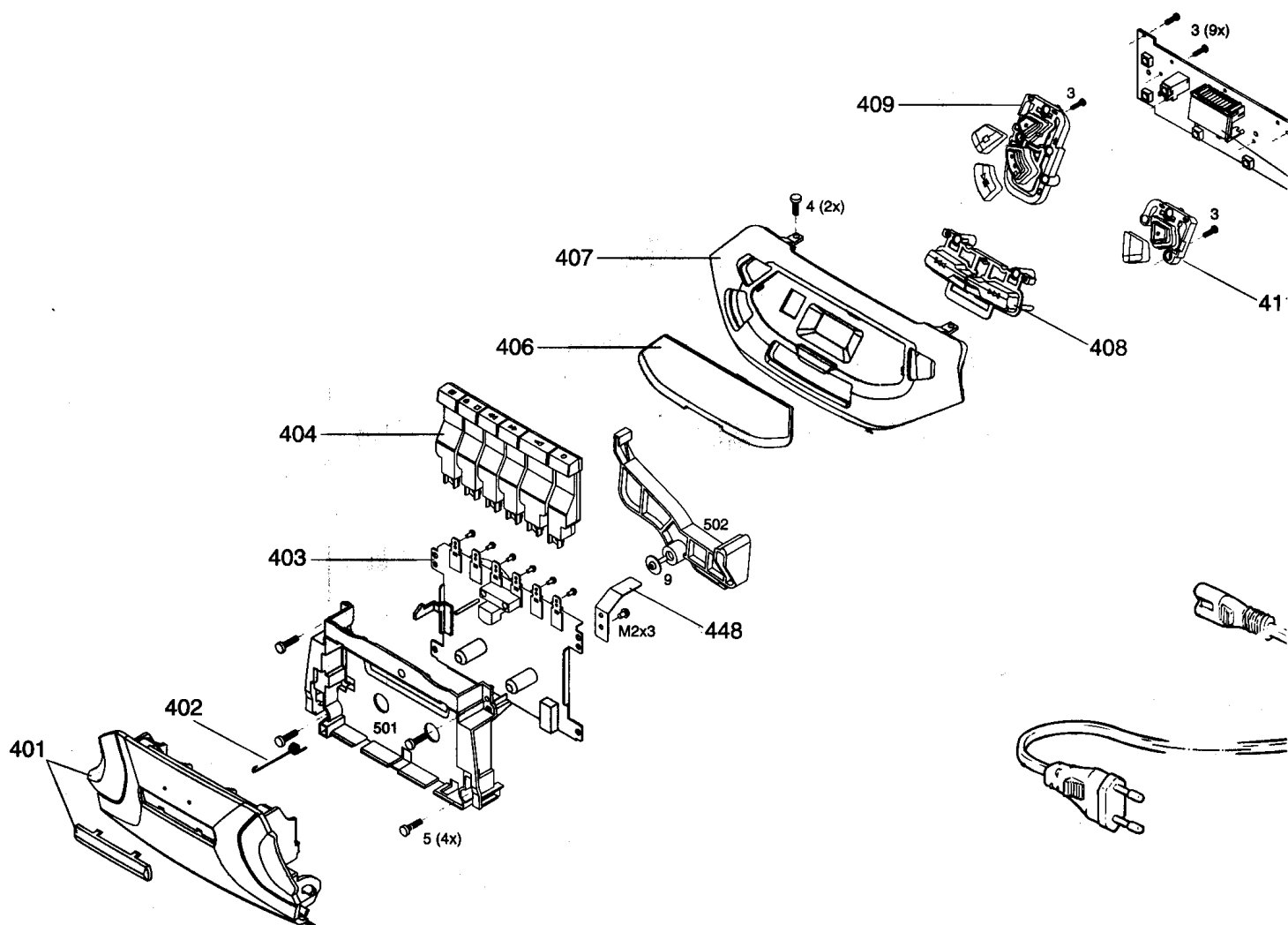


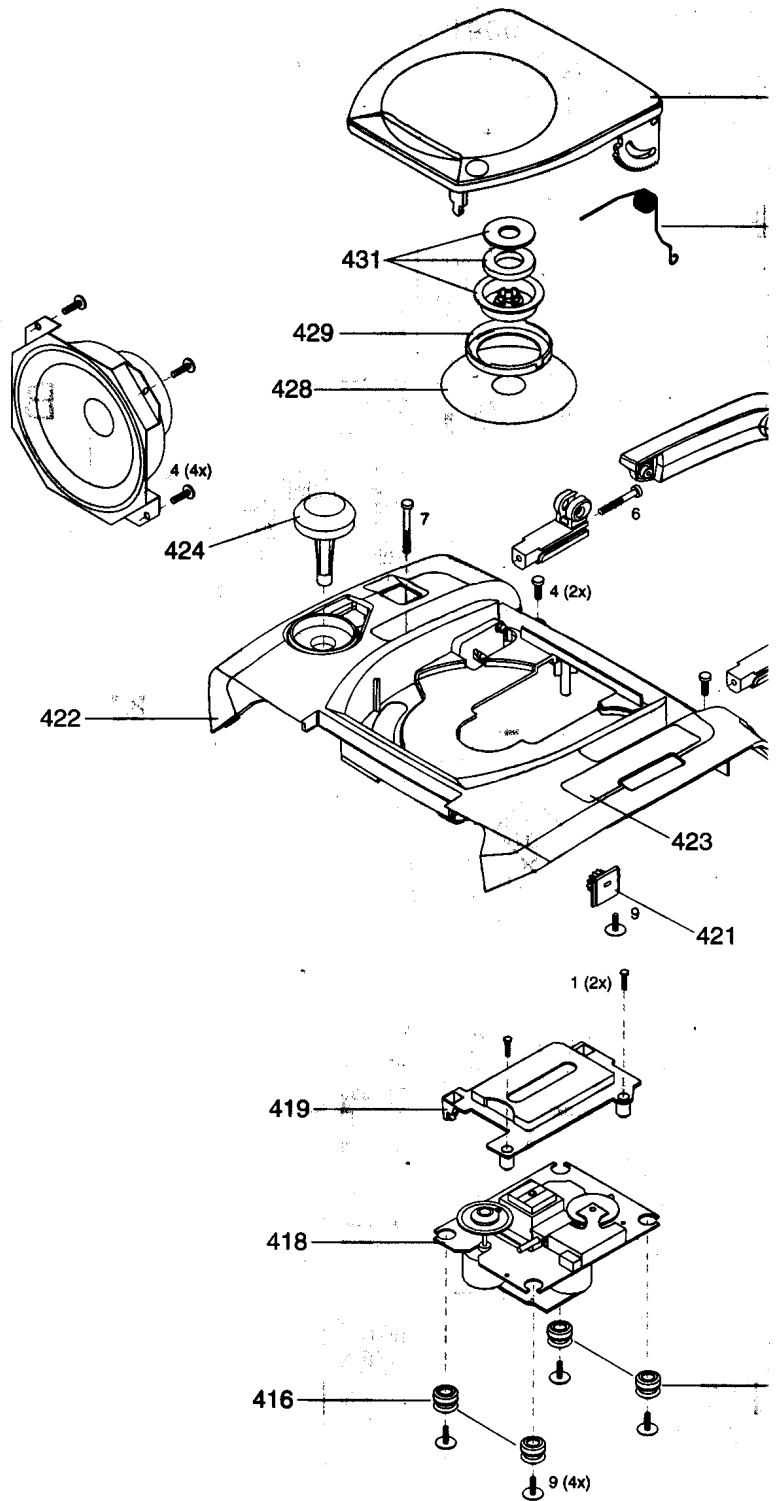
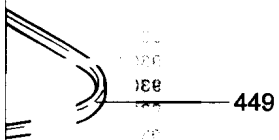
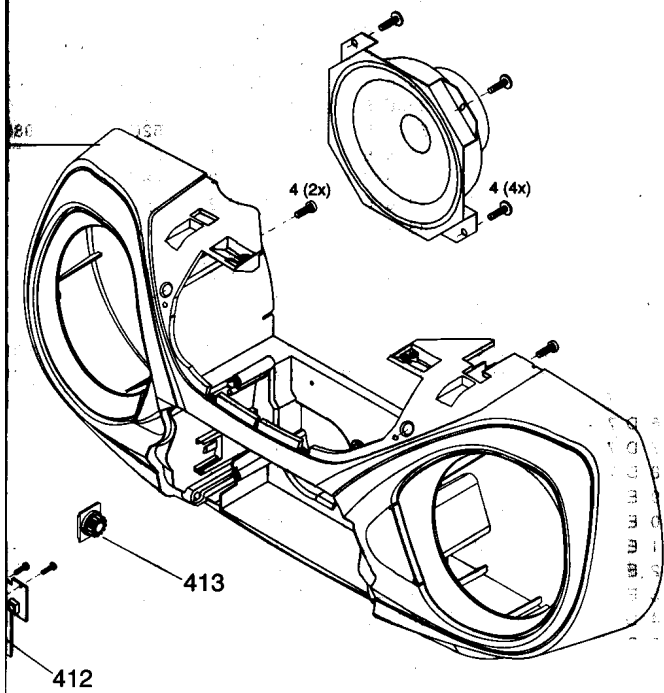


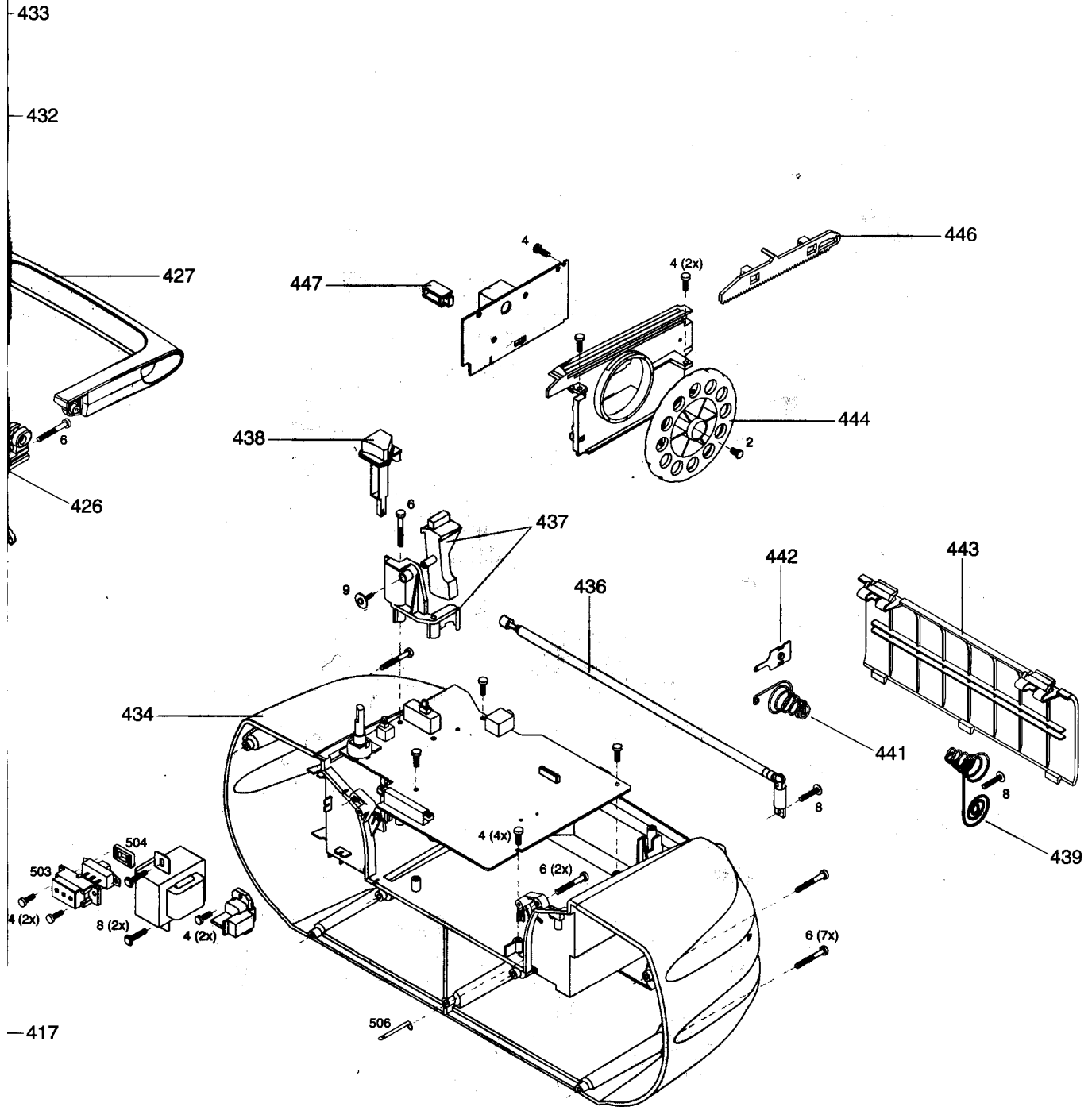
SCREW LIST

1. M2 x 5.5
2. M2.5 x 6
3. Torx 2 x 8
4. Torx 3 x 10
5. Torx 3 x 12
6. Torx 3 x 25
7. Torx 3 x 30
8. T P/W 3 x 16
9. Plas 2.6 x 10

414—







MECHANICAL PARTSLIST - CABINET

401	314011759300	Cassette Door Assy	434	314011429650	Cabinet Rear
402	482249242709	Cass Door Spring	436	482230314038	Telescopic Aerial
403	482269110612	Tape Deck Mechanism	437	314011759180	Knob Mode Assy
404	314011429720	Key Set Cass	438	314011758970	Knob DBB Assy
406	314011432250	Front Lens (Not for -/17)	439	482249251733	Spring Compression
406	314011432240	Front Lens (For -/17)	441	482249251961	Spring Compression
407	314011430200	Front Panel	442	314011121360	Contact Plate
408	314011429690	Keyset Search	443	314011433220	Door Battery
409	314011759020	Keyset Assy Stop/Play	444	314011429790	Wheel Tuning
411	314011759030	Knob Assy Mode	446	314011429800	Pointer
412	314011430280	Bracket LCD	447	482225690463	Holder Ferrite Bar
413	482252910322	Dampr Assy	448	482249211061	Spring Recording
414	314011759190	Front Cabinet Assy	449	482232110249	Mains Cord (For -/00/01/11/14)
416	482252910387	Damper Rubber (40 DEG)	449	482232110886	Mains Cord (For -/05)
417	482252910386	Damper Rubber (30 DEG)	449	482232110954	Mains Cord (For -/10)
418	482269110747	CD DA11 Drive Assy	449	482232111466	Mains Cord (For -/17)
419	482244201096	Cover CD		314011000130	Badge Philips
421	482252910322	Damper Assy		314011526900	Instruction Manual (For -/00/05)
422	314011432290	Top Cabinet (Not for -/17)		314011526910	Instruction Manual (For -/01/10/11)
422	314011432280	Top Cabinet (For -/17)		314011526980	Instruction Manual (For -/14)
423	314011321900	Lens Tuning (Not for -/17)		314011526720	Instruction Manual (For -/17)
423	314011322290	Lens Tuning (For -/17)			
424	314011429740	Knob Volume			
426	482240210856	Bracket Handle			
427	314011429770	Handle			
428	482253560096	Disc			
429	482253213153	Ring (CD LID)			
431	482253212798	Pressure Ring			
432	314011100750	Spring CD			
433	314011432320	Door CD			

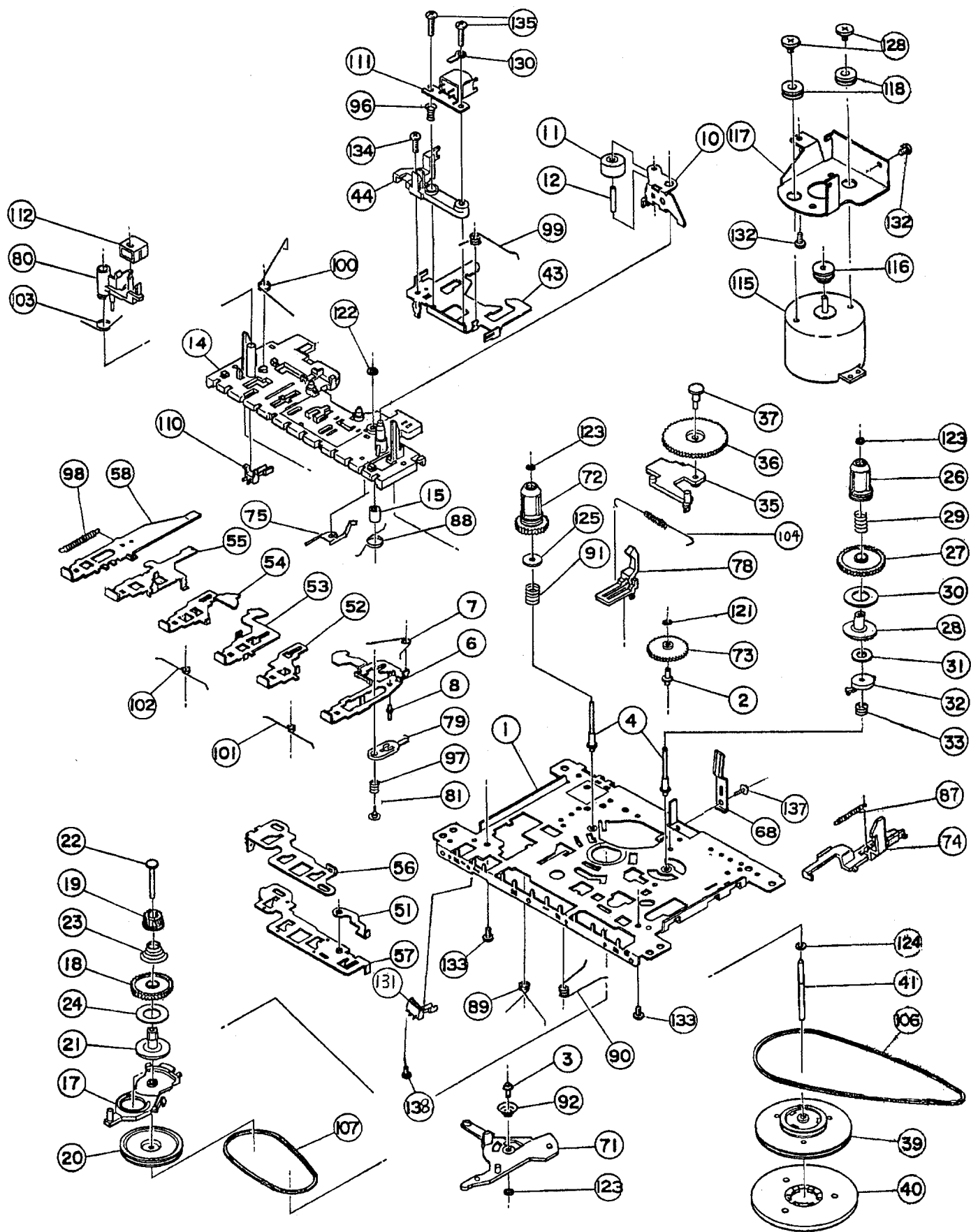
Note : Only these parts mentioned in the list are normal service parts.

MECHANICAL PARTSLIST - TAPE DECK

10	4822 528 70849	Pinch Roller Arm (B)
11	4822 528 70695	Pinch Roller Assy
74	4822 403 70968	Eject Hook (A)
106	4822 358 31325	Main Belt 45.2 x 1.2
107	4822 358 31124	Sub Belt 44.7 x 1.2
110	4822 278 90721	Leaf Switch
111	4822 249 30218	MS18R-AKONI
112	4822 249 40306	E. Head
115	4822 361 21565	Motor EG-530AD-9B
116	4822 528 81497	Motor Pulley

Note : Only these parts mentioned in the list are normal service parts.

EXPLODED VIEW DIAGRAM - TAPE DECK



ELECTRICAL PARTSLIST - COMBI BOARD**- CAPACITORS -**

2101	482212233195	100pF 10% 50V
2102	482212233848	47pF 5% SL 50V
2103	482212440248	10µF 20% 63V
2104	482212440248	10µF 20% 63V
2105	482212233191	22pF 5% 50V
2106	482212550681	Var Capacitor
2108	482212210465	4,7pF 10% 50V
2109	482212232147	22pF 2% N470 100V
2110	482212612229	8,2pF N750 50V
2112	482212440433	47µF 20% 25V
2113	482212440746	0,22µF 20% 63V
2114	482212612787	330pF 10% Y5V 50V
2115	482212440769	4,7µF 20% 100V
2116	482212141856	22nF 5% 250V
2116	532212142489	33NF 5% 250V
2117	482212421913	1µF 20% 63V
2118	482212421913	1µF 20% 63V
2119	482212141856	22nF 5% 250V
2119	532212142489	33NF 5% 250V
2120	482212421913	1µF 20% 63V
2121	482212441407	0,47µF 20% 63V
2122	482212441407	0,47µF 20% 63V
2248	532212142386	100nF 5% 63V
2249	532212142386	100nF 5% 63V
2250	532212142386	100nF 5% 63V
2251	532212142386	100nF 5% 63V
2252	482212612882	100nF +80-20% 50V
2253	482212612882	100nF +80-20% 50V
2274	482212440769	4,7µF 20% 100V
2301	482212151387	10nF 20% 16V
2302	482212151387	10nF 20% 16V
2303	482212440746	0,22µF 20% 63V
2304	482212440746	0,22µF 20% 63V
2305	482212441407	0,47µF 20% 63V
2306	482212441407	0,47µF 20% 63V
2307	482212440433	47µF 20% 25V
2308	482212440769	4,7µF 20% 100V
2309	482212210466	220pF 10% 50V
2310	482212210466	220pF 10% 50V
2311	482212440433	47µF 20% 25V
2312	482212440433	47µF 20% 25V
2313	482212441407	0,47µF 20% 63V
2314	482212441407	0,47µF 20% 63V
2315	482212314025	2200µF 20% 16V
2317	482212440207	100µF 20% 25V
2319	482212480195	470µF 20% 10V
2320	482212480195	470µF 20% 10V
2321	482212612882	100nF +80-20% 50V
2625	482212233197	1nF 10% 50V
2626	482212233197	1nF 10% 50V

- CAPACITORS -

2627	482212613507	91pF 5% 50V
2628	482212613507	91pF 5% 50V
2629	482212440248	10µF 20% 63V
2630	482212440248	10µF 20% 63V
2631	482212143856	4,7nF 5% 250V
2632	482212143856	4,7nF 5% 250V
2633	482212210466	220pF 10% 50V
2634	482212210466	220pF 10% 50V
2635	482212440433	47µF 20% 25V
2636	482212440433	47µF 20% 25V
2637	482212142469	5,6nF 5% 250V
2638	482212142469	5,6nF 5% 250V
2639	482212233197	1nF 10% 50V
2640	482212233197	1nF 10% 50V
2641	482212611585	22nF +80-20% Y5V 25V
2642	482212611585	22nF +80-20% Y5V 25V
2650	482212441584	100µF 20% 10V
2651	482212481151	22µF 50V
2652	482212110685	1,8nF 10% 50V
2653	482212440433	47µF 20% 25V
2654	482212151387	10nF 20% 16V
2655	482212151387	10nF 20% 16V
2657	482212233197	1nF 10% 50V
2658	482212233197	1nF 10% 50V
2800	482212421913	1µF 20% 63V
2801	482212421913	1µF 20% 63V
2802	482212151387	10nF 20% 16V
2803	482212481286	47µF 20% 16V
2804	482212612878	1,5nF 10% 16V
2805	482212142408	220nF 5% 63V
2806	482212614316	680pF 10% 50V Y5P
2807	482212233191	22pF 5% 50V
2808	482212440433	47µF 20% 25V
2809	482212210459	560pF 10% 50V
2810	482212210459	560pF 10% 50V
2811	482212612702	270pF 10% Y5P 50V
2812	482212612702	270pF 10% Y5P 50V
2813	482212612339	2,2nF 10% Y5R
2814	482212613677	39pF 5% 50V
2815	482212151387	10nF 20% 16V
2816	482212441407	0,47µF 20% 63V
2817	482212210577	3,3nF 10% 16V
2818	482212421913	1µF 20% 63V
2819	532212142386	100nF 5% 63V
2821	482212440248	10µF 20% 63V
2822	482212611585	22nF +80-20% Y5V 25V
2823	482212440769	4,7µF 20% 100V
2824	482212441407	0,47µF 20% 63V
2825	482212210462	15pF 5% NPO
2826	482212151252	470nF 5% 63V

ELECTRICAL PARTSLIST - COMBI BOARD**- CAPACITORS -**

2827	482212440433	47µF	20%	25V
2828	482212440248	10µF	20%	63V
2829	532212142489	33nF	5%	250V
2830	482212210319	82pF	5%	50V
2831	482212141856	22nF	5%	250V
2832	482212422652	2,2µF	20%	50V
2833	482212440433	47µF	20%	25V
2834	482212612882	100nF	+80-20%	50V
2835	482212233195	100pF	10%	50V
2836	482212440433	47µF	20%	25V
2838	482212233197	1nF	10%	50V
2839	482212233191	22pF	5%	50V
2841	482212613677	39pF	5%	50V
2842	482212440433	47µF	20%	25V
2843	482212613098	5,6nF	20%	16V
2844	482212233195	100pF	10%	50V
2846	482212233197	1nF	10%	50V
2848	482212233197	1nF	10%	50V
2849	482212233195	100pF	10%	50V
2850	482212440248	10µF	20%	63V
2851	482212613312	6,8nF	20% Y5R	16V
2852	482212613312	6,8nF	20% Y5R	16V
2854	482212233195	100pF	10%	50V
2855	482212233195	100pF	10%	50V
2856	482212233195	100pF	10%	50V
2857	482212233195	100pF	10%	50V
2858	482212233195	100pF	10%	50V
2859	482212151387	10nF	20%	16V
2860	482212440433	47µF	20%	25V
2871	482212611714	4,7nF	20%	
2873	482212612882	100nF	+80-20%	50V
2874	482212612882	100nF	+80-20%	50V
2876	482212612882	100nF	+80-20%	50V
2880	482212233197	1nF	10%	50V
2881	482212411912	220µF	20%	6,3V
2890	482212612882	100nF	+80-20%	50V
2891	482212151387	10nF	20%	16V
2892	482212440433	47µF	20%	25V
2893	482212440433	47µF	20%	25V
2895	482212422652	2,2µF	20%	50V
2896	482212422652	2,2µF	20%	50V

- RESISTORS -

3101	482210020167	50K	30% LIN	0,1W
3102	482211652297	68K	5%	0,5W
3103	482205011002	1K00	1%	0,4W
3104	482211652256	2K2	5%	0,5W
3106	482211652231	820R	5%	0,5W

- RESISTORS -

3107	482211652191	33R	5%	0,5W
3113	482211652234	100K	5%	0,5W
3114	482211652234	100K	5%	0,5W
3116	482211652191	33E	5%	0,5W
3207	482211652191	33R	5%	0,5W
3208	482211652191	33R	5%	0,5W
3209	482211652234	100K	5%	0,5W
3300	482210111826	50K	20% LIN	0.025W
3301	482211652256	2K2	5%	0,5W
3302	482211652256	2K2	5%	0,5W
3303	482211652243	1K5	5%	0,5W
3304	482211652243	1K5	5%	0,5W
3305	482211683883	470R	5%	0,5W
3306	482211683883	470R	5%	0,5W
3307	482211652219	330R	5%	0,5W
3308	482211652219	330R	5%	0,5W
3309	482211652238	12K	5%	0,5W
3310	482205011002	1K	1%	0,4W
3311	482205011002	1K	1%	0,4W
3313	482211652206	120R	5%	0,5W
3314	482211652206	120R	5%	0,5W
3315	482205021003	10K	1%	0,6W
3316	482205021003	10K	1%	0,6W
3551	482211652256	2K2	5%	0,5W
3552	482211652256	2K2	5%	0,5W
3553	482211683961	6K8	5%	
3554	482211683961	6K8	5%	
3625	482211683883	470R	5%	0,5W
3626	482211683883	470R	5%	0,5W
3627	482211652264	27K	5%	0,5W
3628	482211652264	27K	5%	0,5W
3629	482211683883	470R	5%	0,5W
3630	482211683883	470R	5%	0,5W
3631	482211652219	330R	5%	0,5W
3632	482211652219	330R	5%	0,5W
3633	482211652272	330K	5%	0,5W
3634	482211652272	330K	5%	0,5W
3635	482211683961	6K8	5%	
3636	482211683961	6K8	5%	
3637	482211652264	27K	5%	0,5W
3638	482211652264	27K	5%	0,5W
3639	482205021003	10K	1%	0,6W
3640	482205021003	10K	1%	0,6W
3641	482211652228	680R	5%	0,5W
3642	482211652228	680R	5%	0,5W
3643	482211652175	100R	5%	0,5W
3644	482211652175	100R	5%	0,5W
3645	482205011002	1K	1%	0,4W
3650	482211652213	180R	5%	0,5W
3651	482211652272	330K	5%	0,5W

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3652	482211683961	6K8	5%	
3653	482211652206	120R	5%	0,5W
3654	482211683868	150R	5%	0,5W
3655	482211652184	18R	5%	0,5W
3656	482211130893	4M7	5%	0,2W
3800	482211652176	10R	5%	0,5W
3801	482205024708	4R7	1%	0,6W
3802	482211683868	150R	5%	0,5W
3803	482211652219	330R	5%	0,5W
3804	482211652206	120R	5%	0,5W
3805	482211683872	220R	5%	0,5W
3806	482211652249	1K8	5%	0,5W
3807	482205023303	33K	1%	0,6W
3808	482211652263	2K7	5%	0,5W
3809	482211652276	3K9	5%	0,5W
3810	482211652303	8K2	5%	0,5W
3812	482211652257	22K	5%	0,5W
3814	482211652257	22K	5%	0,5W
3815	482211652264	27K	5%	0,5W
3816	482211652264	27K	5%	0,5W
3817	482211652234	100K	5%	0,5W
3818	482205011002	1K	1%	0,4W
3819	482211711825	1M5	5%	
3820	482211652252	180K	5%	0,5W
3821	482211652243	1K5	5%	0,5W
3822	482211652264	27K	5%	0,5W
3823	482211652234	100K	5%	0,5W
3824	482211683868	150R	5%	0,5W
3825	482211683883	470R	5%	0,5W
3826	482211683961	6K8	5%	
3827	482211652269	3K3	5%	0,5W
3828	482211652297	68K	5%	0,5W
3829	482211683884	47K	5%	0,5W
3830	482211652244	15K	5%	0,5W
3831	482211652251	18K	5%	0,5W
3833	482211652264	27K	5%	0,5W
3834	482211652175	100R	5%	0,5W
3835	482211652184	18R	5%	0,5W
3836	482205011002	1K	1%	0,4W
3837	482211130893	4M7	5%	0,2W
3838	482211652234	100K	5%	0,5W
3839	482211652298	680K	5%	0,5W
3840	482205011002	1K	1%	0,4W
3841	482211652285	470K	5%	0,5W
3842	482211652297	68K	5%	0,5W
3843	482211683881	390R	5%	0,5W
3844	482211652291	56K	5%	0,5W
3845	482211652297	68K	5%	0,5W
3846	482205011002	1K	1%	0,4W
3847	482211652257	22K	5%	0,5W

- RESISTORS -

3848	482211652257	22K	5%	0,5W
3849	482211652175	100R	5%	0,5W
3850	482211652283	4K7	5%	0,5W
3851	482211652244	15K	5%	0,5W
3852	482211683883	470R	5%	0,5W
3853	482211652251	18K	5%	0,5W
3854	482211652243	1K5	5%	0,5W
3855	482211652264	27K	5%	0,5W
3856	482211652303	8K2	5%	0,5W
3857	482211652269	3K3	5%	0,5W
3858	482211680176	1R	5%	0,5W
3859	482205021003	10K	1%	0,6W
3860	482211712798	8,2R	5%	0,25W
3861	482211712798	8,2R	5%	0,25W
3862	482211652269	3K3	5%	0,5W
3863	482211652219	330R	5%	0,5W
3864	482211652256	2K2	5%	0,5W
3865	482211652256	2K2	5%	0,5W
3866	482205210828	8R2	5%	0,33W
3867	482205210338	3R3	5%	0,33W
3868	482211680176	1R	5%	0,5W
3869	482211683883	470R	5%	0,5W
3870	482211652257	22K	5%	0,5W
3871	482205011002	1K	1%	0,4W
3874	482211683872	220R	5%	0,5W
3877	482211652244	15K	5%	0,5W
3878	482211652228	680R	5%	0,5W
3880	482211652207	1K2	5%	0,5W
3881	482211652257	22K	5%	0,5W
3882	482205021003	10K	1%	0,6W
3883	482211683866	1M	5%	0,5W
3884	482211652264	27K	5%	0,5W
3885	482211130893	4M7	5%	0,2W
3886	482211683866	1M	5%	0,5W
3887	482211683872	220R	5%	0,5W
3888	482211683883	470R	5%	0,5W
3889	482211683883	470R	5%	0,5W
3890	482205021003	10K	1%	0,6W
3891	482211683883	470R	5%	0,5W
3892	482211683883	470R	5%	0,5W
3893	482205023303	33K	1%	0,6W
3894	482211683883	470R	5%	0,5W
3895	482211652283	4K7	5%	0,5W
3896	482211652283	4K7	5%	0,5W
3897	482211683883	470R	5%	0,5W
3898	482211652283	4K7	5%	0,5W
3899	482205011002	1K	1%	0,4W

ELECTRICAL PARTSLIST - COMBI BOARD**- COILS & FILTERS -**

5101	482215770513	Coil FM
5102	242253594985	Coil 64μH 5%
5104	482215711843	Coil MD7B-01F
5105	482215771145	Coil 270μH
5106	482215770499	Coil IFT AM
5107	482224281154	Filter KMFC5058-Z
5108	482215611146	Coil IFT AM
5110	482215711838	Coil 0,22μH 10%
5201	482215770826	Coil 2,4μH
5625	482215710371	Coil Var 100kHz
5801	482215770826	Coil 2,4μH
5803	482224273557	Filter CST8,46MTW-TF01

- DIODES -

6101	482213030621	Diode 1N4148
6102	482213030621	Diode 1N4148
6250	482213031878	Diode 1N4003G
6251	482213031878	Diode 1N4003G
6252	482213031878	Diode 1N4003G
6253	482213031878	Diode 1N4003G
6256	482213030621	Diode 1N4148
6300	482213030621	Diode 1N4148
6625	482213034167	Diode BZX79-B6V2
6800	482213031881	Diode BZX79-B3V0
6801	482213031881	Diode BZX79-B3V0
6802	482213030621	Diode 1N4148
6803	482213030621	Diode 1N4148
6804	482213030621	Diode 1N4148
6805	319801053980	Diode BZX79-B3V9
6850	482213031881	Diode BZX79-B3V0
6851	532213034834	Diode BZX79-C3V6

- IC & TRANSISTORS -

7101	482220932746	IC TEA5711T/N2
7102	482213044503	Trans BC547C
7300	482220931544	IC TA8227P
7301	482213040959	Trans BC547B
7601	482213044503	Trans BC547C
7625	482220932918	IC AN7318S
7626	482213040959	Trans BC547B
7800	482220915932	IC TMP47C422F
7801	482220916076	IC M65824FP/ES5.0
7803	482220990496	IC M62475FP
7805	482220932852	IC TDA7073A/N2
7806	482220932852	IC TDA7073A/N2
7850	932200363676	Trans TBC327-40
7851	482213044568	Trans BC557B
7852	932200363676	Trans TBC327-40

- IC & TRANSISTORS -

7853	482213044503	Trans BC547C
7854	933650090126	Trans BC557C
7855	482213044503	Trans BC547C

- MISCELLANEOUS -

1002	482224010254	Loudspeaker
1003	482224010254	Loudspeaker
1006	482226520318	Mains Socket (Not for -/17)
1006	482226520706	Mains Socket (For -/17)
1102	242254944211	Ferrite Bar 5x13x55
1250	482227711739	Slide Switch
1302	242202605076	Headphone Socket
1350	482227612648	Push Switch
1400	482227721794	Voltage Selector (For -/01/11)
1626	482227711504	Push Switch
1807	482227613963	CD Door Switch
5001	⚠ 482214610877	Transformer (For -/00/05/14)
5001	⚠ 482214610875	Transformer (For -/01/11)
5001	⚠ 482214610874	Transformer (For -/10)
5001	482214610876	Transformer (For -/17)
8003	482232012637	Flexible Foil 15p 70mm

Note: Only these parts mentioned in the list are normal service parts.

ELECTRICAL PARTSLIST - FRONT BOARD**- RESISTORS -**

3872	48221	683882	39K	5%	0,5W
3873	48221	652257	22K	5%	0,5W
3875	48221	652256	2K2	5%	0,5W
3876	48221	652283	4K7	5%	0,5W

- MISCELLANEOUS -

1800	482227613114	Push Switch
1801	482227613114	Push Switch
1802	482227613114	Push Switch
1803	482227613114	Push Switch
1804	482227613114	Push Switch
1820	932214649682	LCD Display THD3497DPRDPN

Note: Only these parts mentioned in the list are normal service parts.