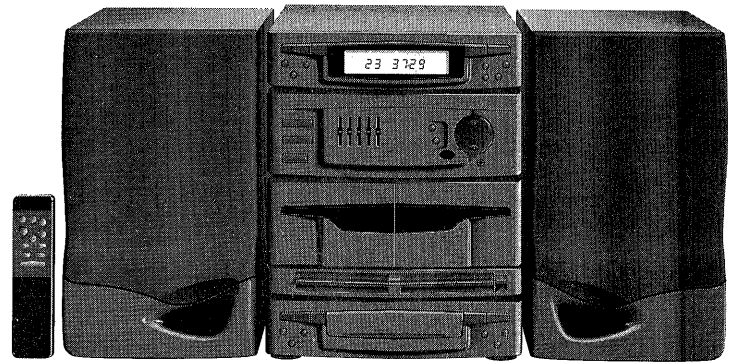


Service  
Service  
**Service**

←  
Volta ao Menu



# Service Manual



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**CLASS 1  
LASER PRODUCT**



## SPECIFICATIONS

### GENERAL

Mains voltage/setting

Switchable 120V - 230V (Set at 230V) for -/21

Mains frequency : 50Hz - 60Hz  
Mains breakdown protection : 10 minutes  
Clock Accuracy : < 4sec/day  
Power consumption : 96W max.  
Dimension centre unit : 240 x 309.5 x 273.5mm

### TUNER : FM SECTION

Tuning range : 87.5MHz - 108MHz

IF frequency : 10.7MHz  
Aerial input : 75Ω coaxial  
Dipole for -/26

Sensitivity at 26dB S/N : < 8μV {6.9μV}  
Selectivity at 600kHz bandwidth : > 20dB {30dB}  
IF rejection : > 50dB {60dB}  
Image rejection : > 20dB {25dB}

### TUNER : AM SECTION

Tuning range MW : 522kHz - 1611kHz

IF frequency : 450kHz  
Sensitivity at 26dB S/N MW : < 3.6mV/M {3.2mV/M}

Selectivity at 18kHz bandwidth MW : > 16dB {20dB}

IF rejection MW : > 24dB {24dB}

Image rejection MW : > 28dB {28dB}

### AMPLIFIER

Output power at 10% distortion : 2 x 12W -1dB  
Speaker impedance : 2 x 6Ω L/R  
Frequency response within -3dB : 63Hz - 15kHz  
DBB & Equalizer control : -6dB to +6dB  
Headphone output at 32Ω : 25mW  
Input sensitivity Aux/TV : 400mV at 47kΩ  
Mic : 1.5mV at 600Ω for -/21

### CASSETTE RECORDER

Number of track : 2 x 2 stereo  
Tape speed : 4.76 cm/sec ± 2%  
1.8 x 4.76 cm/sec  
Wow and flutter : < 0.4%  
Fast-wind time C60 : 130 sec  
Bias system : 65kHz ± 5kHz  
Recording playback frequency response within -8dB : 250Hz - 6300Hz  
Signal to noise ratio : > 41dB

### COMPACT DISC

Frequency response within +2dB/-4dB : 20Hz - 20kHz  
Signal/Hiss ratio : > 75dB  
Distortion at 1kHz : < 0.03%  
Channel difference at 1kHz : < 2dB  
Channel crosstalk at 1kHz : > 60dB  
De-emphasis : 0 or 15/50 μS (Switched by subcode on the disc)



**SERVICE TEST PROGRAM 1**

Operating sequence	Display shows	Remarks	In case of problems check
Hold "Program" and "Preset Up" button down while Power on to enter Service test program	<b>XX YY-S #</b>  This is the main menu	where XX - Type no numeric YY - Master μP version S - Service mode	
Press "Program"	<b>PASS or P</b>  Main menu reappears after 2 seconds	Eeprom test	Check IC if Display shows <b>ERR or N</b>
Press "Autoprogram"	<b>NEW or N</b>  Main menu reappears after 2 seconds	Eeprom is now reset to default data	
Press "Clock Set"	<b>32K or 32</b>	The Alarm buzzer is turned on An output signal of 4096Hz is available at pin 37 of μProcessor	Check X'tal
Press "Clock Set"	<b>8M or 8</b>	The output signal at pin 37 is now 3906 25Hz	Check 8MHz oscillator
Press "Clock Set"	Main menu reappear		
Press "Set Timer/News"	<b>FAST or F</b> <b>NOM or N</b>  Main menu reappears after 2 seconds	Pressing "Set Timer/News" key will alternate between Fast and Normal speed In the Fast mode the clock increases at 1 minute per second Leaving the test program now will allow quick customer checks on the clock/timer/alarm function	Ensure the clock is in normal speed before returning to customer
Press "Mono" and followed by any key on the set or Remote control  Press "Mono" to return to Main menu	See key test Table 1 and 2		
Press "News"	Figure 3 - 6 and Main menu	Pressing the "News" key will scroll through the 4 different displays and the Main menu	
Press "Timer"	<b>AUX</b> <b>TAPE</b> <b>CD</b> <b>TUNER</b>  Main menu reappears after 2 seconds	During source switching the set is not muted	
Disrupt the mains supply to exit the Service test program			Ending the Service test by pressing the "Power" key will render * CD error codes to be displayed * Tuner "Program" and "Autoprogram" keys non functioning

# Note XX - Model model (eg 26 for FW26, etc )  
YY - Software version, counting down from 99

**SERVICE TEST PROGRAM 2**

Operating sequence	Display shows	Remarks	In case of problems check
To perform CD test press "CD" at the Main menu screen	<b>CD AA</b>	The CD servo version is display AA = version number	Press "Power" key at the Main menu screen to exit Service test Enter CD mode and the set perform as normal except error codes will be displayed  A list of error codes are found in Table 4
Press "Stop" - Service pos 0	<b>SLED or S</b>	During this test the sledge will move outward	
Press "Next" - Service pos 1	<b>FOC or F</b>	Focus is switched on	
Press "Next" - Service pos 2	<b>DISC or D</b>	Disc motor is switched on	
Press "Next" - Service pos 3	<b>RDL or R</b>	Radial is switched on	
Pressing "Previous" will bring the set to the previous service pos			
To perform Tuner test press "Tuner" at the Main menu screen	<b>ZZZ</b>	Tuner version is display ZZZ = Tuner version	
Use the "Preset Up" and "Preset down" to display the loaded frequencies	See Table 3	Service frequencies are now loaded into the EEROM of the μProcessor	
To end the Service test program disrupt the mains supply			Ending the Service test by pressing the "Power" key will render * CD error codes to be displayed * Tuner "Program" and "Autoprogram" keys non functioning

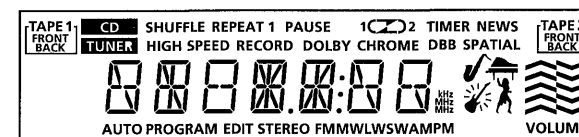


Figure 3

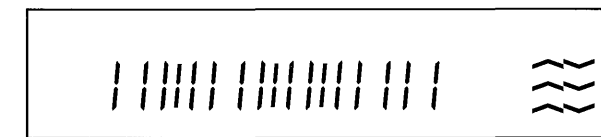


Figure 4

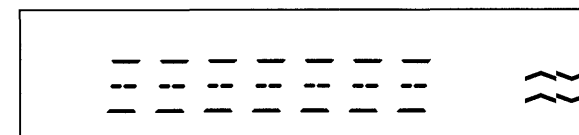


Figure 5

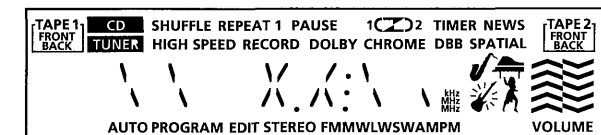


Figure 6

**TABLE 1. SERVICE KEY TEST TABLE**

Timer/News/Tuner keys	Display	Function keys	Display	CD Keys	Display
Timer	14	CD	09	Shuffle	29
News	15	Tuner	20	Scan	30
Set	16	Tape	10	Repeat	22
Band	13	Aux/DCC	04	Prog/Review	21
Clock Set	12	Power	08	Clear	26
Mono	11	High Speed Dubbing	07	Edit	25
Preset Down	17	Volume Up	03	Stop	27
Preset Up	18	Volume Down	19	Play/Pause	23
Prog	01			Open/close	31
Autoprogram	05			Next	24
Tuning Up	02			Previous	28
Tuning Down	06				

**TABLE 2. SERVICE REMOTE CONTROL KEY TEST TABLE**

Function/Tuner keys	Display	CD keys	Display
News	15 RC	CD	09 RC
Standby	32 RC	Pause	38 RC
Volume up (+)	03 RC	Stop	27 RC
Volume down (-)	19 RC	Play	37 RC
Tuner	20 RC	Previous	34 RC
Preset down	17 RC	Next	33 RC
Preset up	18 RC		

Note "RC" disappears when the key is released

**TABLE 3. TUNER SERVICE TEST FREQUENCIES**

PRESET	Europe "EUR"	East Eur. "EAS"	USA "USA"	Oversea "OSC"	Japan "JAP"
1	108 00 MHz	108 00 MHz	108 00 MHz	108 00 MHz	90 00 MHz
2	87 50 MHz	65 81 MHz	87 50 MHz	87 50 MHz	76 00 MHz
3	1611 kHz	1611 kHz	1710 kHz	1710 kHz	1629 kHz
4	522 kHz	522 kHz	530 kHz	530 kHz	522 kHz
5	279 kHz	279 kHz	-	-	-
6	153 kHz	153 kHz	-	-	-
7	98 00 MHz	98 00 MHz	98 00 MHz	98 00 MHz	80 00 MHz
8	558 kHz	558 kHz	560 kHz	560 kHz	558 kHz
9	1494kHz	1494kHz	1500kHz	1500kHz	1494kHz
10	549kHz	549kHz	550kHz	550kHz	549kHz

**TABLE 4. CD ERROR CODES TABLE**

Error codes	Check area	Remarks
E 1002	ICs 7000, 7060 and 7080	Focus error, no disc
E 1007	CDM 12 and Disc	Subcode error, no valid subcode
E 1008	Bad Disc and Lens	TOC error, out of lead-in area while reading TOC
E 1009	IC 7101 and 7102	CD4 + decoder error
E 1010	IC 7000 and 7080	Radial error
E 1012	ICs 7000 and 7660	Fatal sledge error
E 1013	ICs 7102, 7140, 7141 and 7660	Turntable motor error
E 1030	CDM 12 and IC 7000	Too many grooves to jump
E 1031	CDM 12 and IC 7000	Search error
E 1032	CDM 12 and IC 7000	Search binary error
E 1033	CDM 12 and IC 7000	Search index error
E 1034	CDM 12 and IC 7000	Search time error
E 1037	CDM 12 and IC 7000	Selection error
E 1050	Operating error	Edit calculation error
E 1051	Operating error	Edit track count error
E 1052	Operating error	Edit optimal error

**TAPE MECHANISM ADJUSTMENT**

ADJUSTMENT	CASSETTE	DECK 1	DECK 2	MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
Azimuth	10kHz	Play	-	1550	mV-meter	Left hand screw of Play or R/P head	Maximum L = R
	SBC420*	-	Play				
Motor speed	3150Hz	Play	-	1550	Wow and Futter meter	Preset in motor	** a
	SBC420*	-	Play			-	

\* SBC420 4822 397 30071

\*\* a The maximum permissible speed deviation is 2%  
Moreover, the wow and flutter value can be read  
This value should not exceed 0.4%

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Clock Set	12	Power	08	Clear	26
Mono	11	High Speed Dubbing	07	Edit	25
Preset Down	17	Volume Up	03	Stop	27
Preset Up	18	Volume Down	19	Play/Pause	23
Prog	01			Open/close	31
Autoprogram	05			Next	24
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Standby	32 RC	Pause	38 RC
Volume up (+)	03 RC	Stop	27 RC
Volume down (-)	19 RC	Play	37 RC
Tuner	20 RC	Previous	34 RC
Preset down	17 RC	Next	33 RC
Preset up	18 RC		

Note: "RC" disappears when the key is released.

**TABLE 3. TUNER SERVICE TEST FREQUENCIES**

PRESET	Europe "EUR"	East Eur. "EAS"	USA "USA"	Oversea "OSC"	Japan "JAP"
1	108.00 MHz	108.00 MHz	108.00 MHz	108.00 MHz	90.00 MHz
2	87.50 MHz	65.81 MHz	87.50 MHz	87.50 MHz	76.00 MHz
3	1611 kHz	1611 kHz	1710 kHz	1710 kHz	1629 kHz
4	522 kHz	522 kHz	530 kHz	530 kHz	522 kHz
5	279 kHz	279 kHz	-	-	-
6	153 kHz	153 kHz	-	-	-
7	98.00 MHz	98.00 MHz	98.00 MHz	98.00 MHz	80.00 MHz
8	558 kHz	558 kHz	560 kHz	560 kHz	558 kHz
9	1494kHz	1494kHz	1500kHz	1500kHz	1494kHz
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E 1013	ICs 7102, 7140, 7141 and 7660	Turntable motor error
E 1030	CDM 12 and IC 7000	Too many grooves to jump
E 1031	CDM 12 and IC 7000	Search error
E 1032	CDM 12 and IC 7000	Search binary error
E 1033	CDM 12 and IC 7000	Search index error
E 1034	CDM 12 and IC 7000	Search time error
E 1037	CDM 12 and IC 7000	Selection error
E 1050	Operating error	Edit calculation error
E 1051	Operating error	Edit track count error
E 1052	Operating error	Edit optimal error

**TAPE MECHANISM ADJUSTMENT**

ADJUSTMENT	CASSETTE	DECK 1	DECK 2	MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
Azimuth	10kHz	Play	-	1550	mV-meter	Left hand screw of Play or R/P head	Maximum L = R
	SBC420*	-	Play				
Motor speed	3150Hz	Play	-	1550	Wow and Flutter meter	Preset in motor	** a
	SBC420*	-	Play			-	

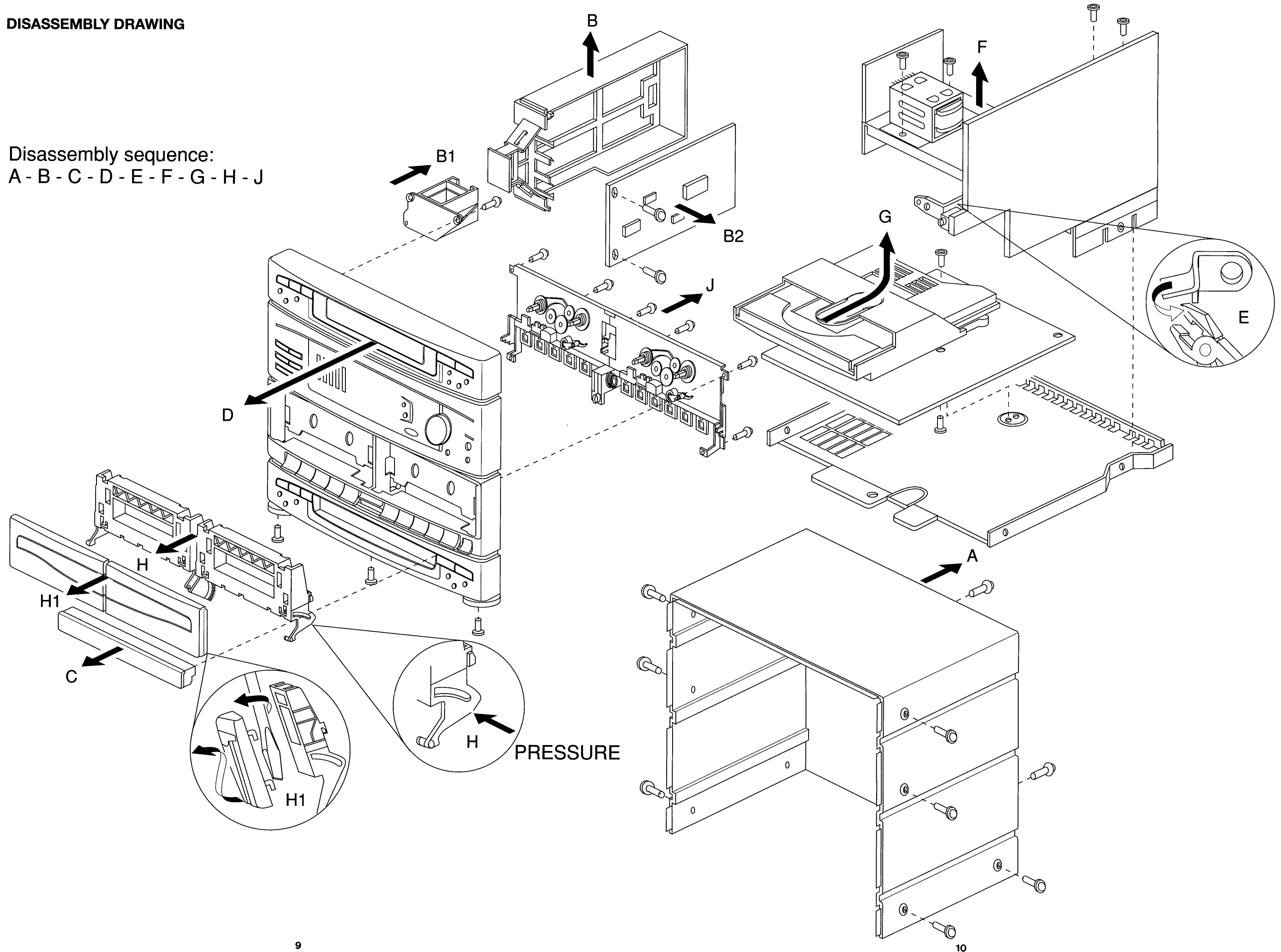
\* SBC420 4822 397 30071

\*\* a The maximum permissible speed deviation is 2%  
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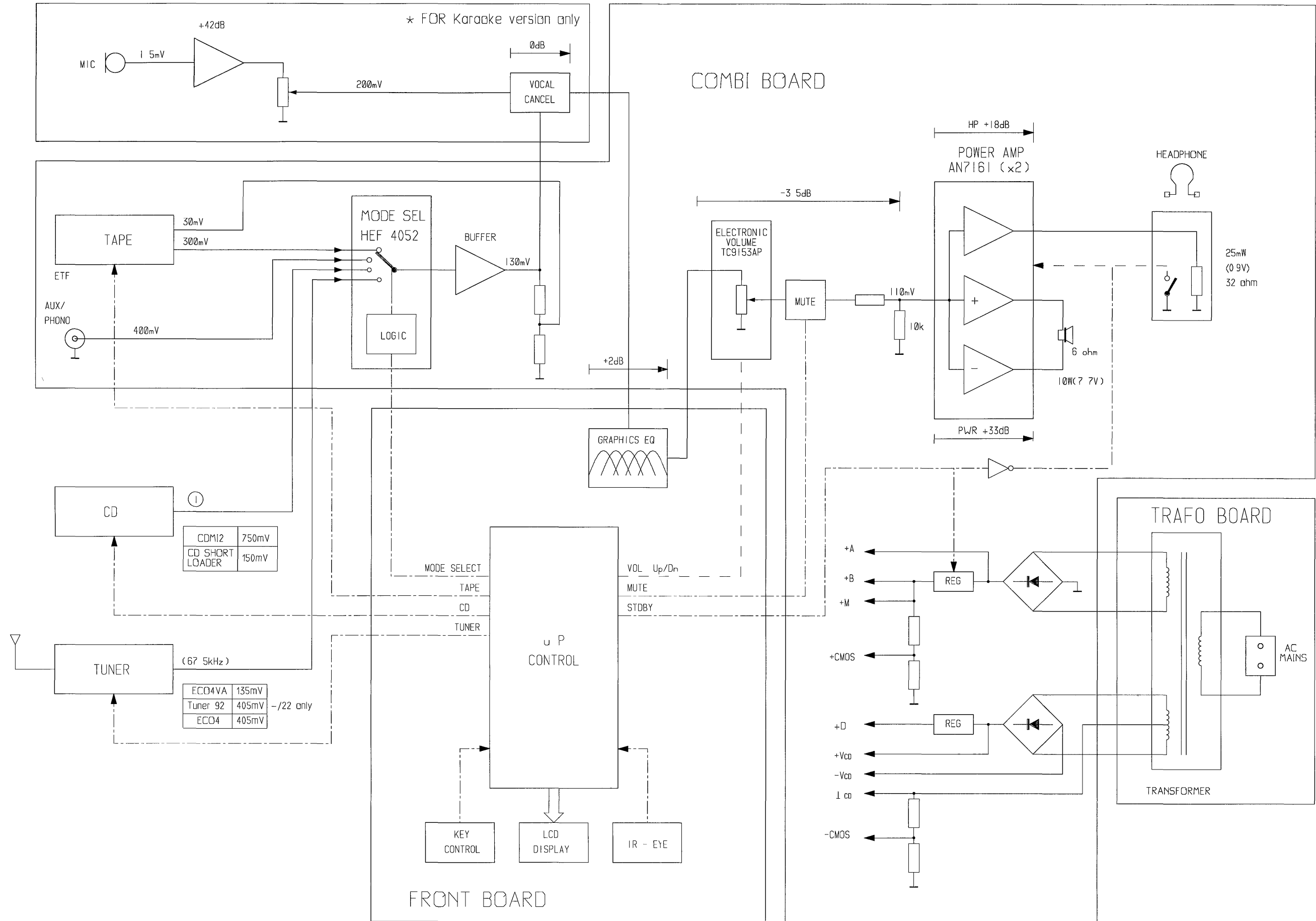


**DISASSEMBLY DRAWING**

Disassembly sequence:  
A - B - C - D - E - F - G - H - J

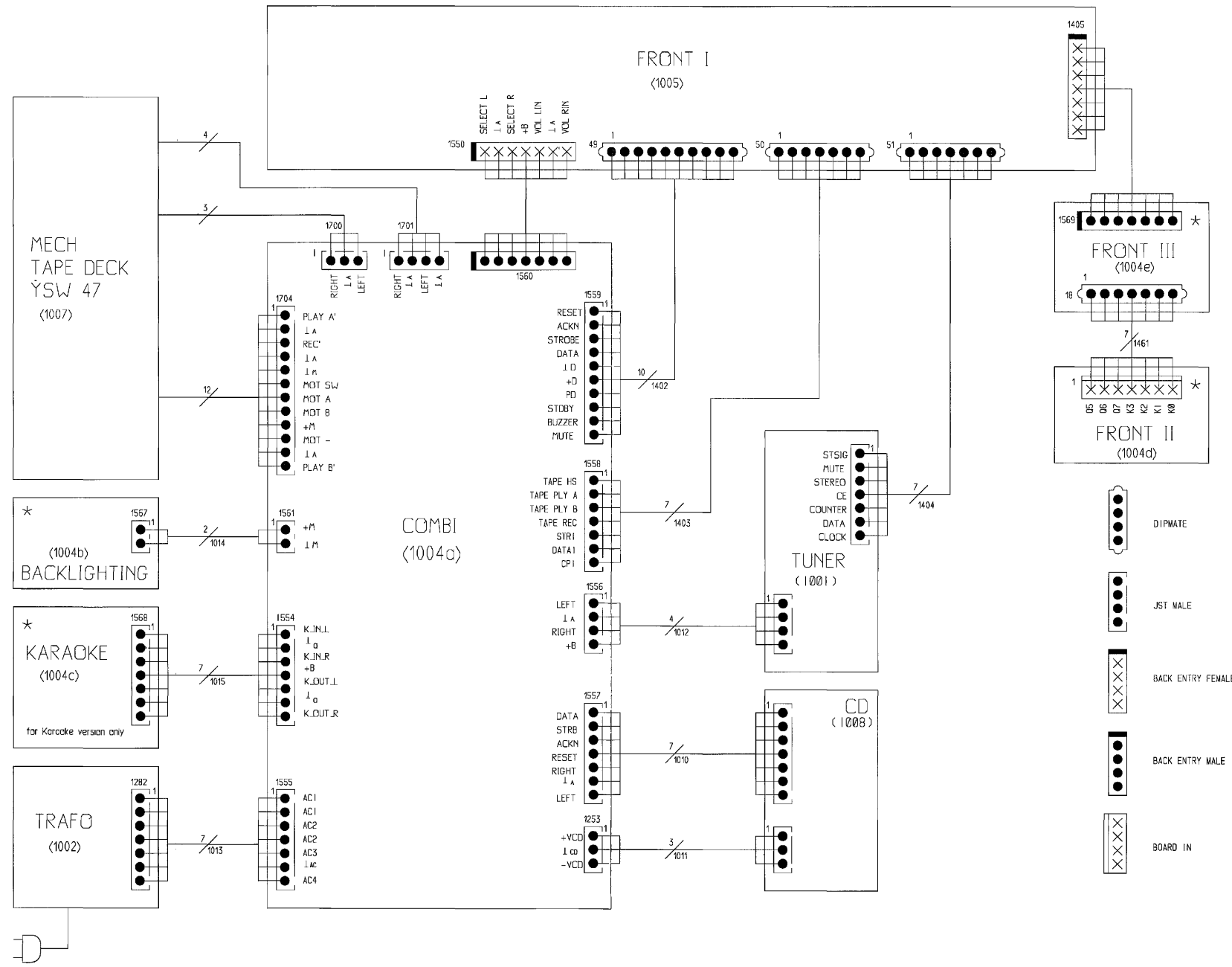


**BLOCK DIAGRAM**



① CD + 2.5dB WITH -6dB disc

WIRING DIAGRAM



\* BREAK AWAY FROM COMBI PCB

GB WARNING

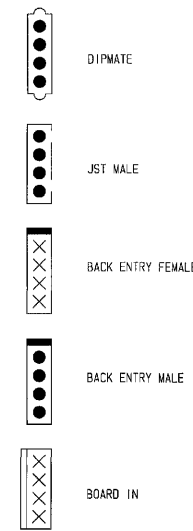
ESD



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.

GB

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



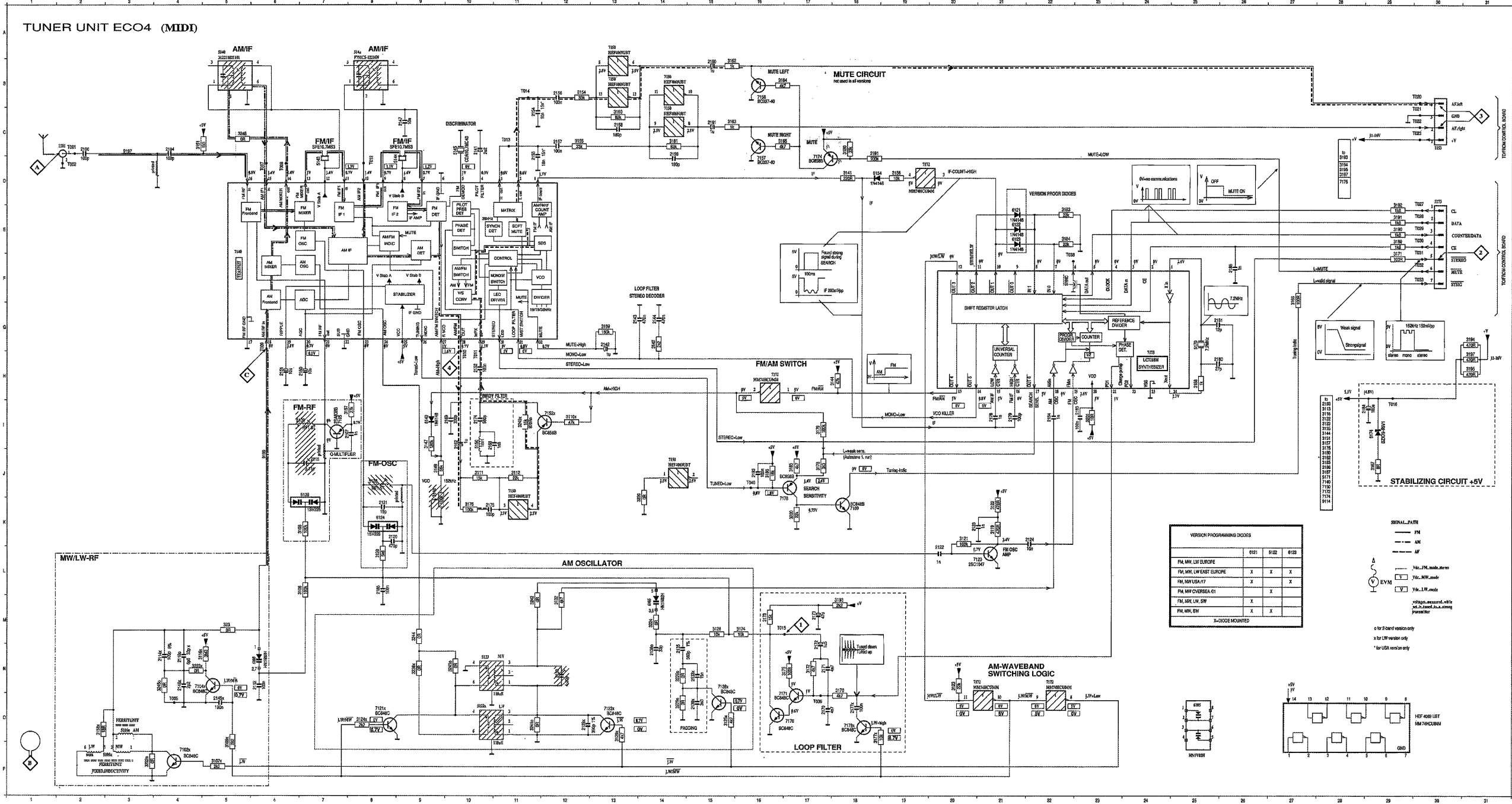
**CLASS 1 LASER PRODUCT**  
9123 110 00403

GB Warning !

Invisible laser radiation when open. Avoid direct exposure to beam.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

EC04 (MIDI) CIRCUIT



Component list for the Tuner Unit ECO4 (MIDI) circuit, organized by grid coordinates (A-P, 1-31).

A	1101 C2	2189 A13
A	1102 C2	2190 C14
A	1103 D20	2191 B14
A	2101 C4	2192 C14
A	2102 F5	2193 F16
A	2103 N4	2194 C16
A	2104 N4	2195 B18
A	2105 J7	2196 J7
A	2106 J7	2197 C17
A	2107 J7	2198 C18
A	2108 K3	2199 B18
A	2109 K3	2200 C18
A	2110 K3	2201 C18
A	2111 K3	2202 C18
A	2112 K3	2203 C18
A	2113 K3	2204 C18
A	2114 K3	2205 C18
A	2115 K3	2206 C18
A	2116 K3	2207 C18
A	2117 K3	2208 C18
A	2118 K3	2209 C18
A	2119 K3	2210 C18
A	2120 K3	2211 C18
A	2121 K3	2212 C18
A	2122 K3	2213 C18
A	2123 K3	2214 C18
A	2124 K3	2215 C18
A	2125 K3	2216 C18
A	2126 K3	2217 C18
A	2127 K3	2218 C18
A	2128 K3	2219 C18
A	2129 K3	2220 C18
A	2130 K3	2221 C18
A	2131 K3	2222 C18
A	2132 K3	2223 C18
A	2133 K3	2224 C18
A	2134 K3	2225 C18
A	2135 K3	2226 C18
A	2136 K3	2227 C18
A	2137 K3	2228 C18
A	2138 K3	2229 C18
A	2139 K3	2230 C18
A	2140 K3	2231 C18
A	2141 K3	2232 C18
A	2142 K3	2233 C18
A	2143 K3	2234 C18
A	2144 K3	2235 C18
A	2145 K3	2236 C18
A	2146 K3	2237 C18
A	2147 K3	2238 C18
A	2148 K3	2239 C18
A	2149 K3	2240 C18
A	2150 K3	2241 C18
A	2151 K3	2242 C18
A	2152 K3	2243 C18
A	2153 K3	2244 C18
A	2154 K3	2245 C18
A	2155 K3	2246 C18
A	2156 K3	2247 C18
A	2157 K3	2248 C18
A	2158 K3	2249 C18
A	2159 K3	2250 C18
A	2160 K3	2251 C18
A	2161 K3	2252 C18
A	2162 K3	2253 C18
A	2163 K3	2254 C18
A	2164 K3	2255 C18
A	2165 K3	2256 C18
A	2166 K3	2257 C18
A	2167 K3	2258 C18
A	2168 K3	2259 C18
A	2169 K3	2260 C18
A	2170 K3	2261 C18
A	2171 K3	2262 C18
A	2172 K3	2263 C18
A	2173 K3	2264 C18
A	2174 K3	2265 C18
A	2175 K3	2266 C18
A	2176 K3	2267 C18
A	2177 K3	2268 C18
A	2178 K3	2269 C18
A	2179 K3	2270 C18
A	2180 K3	2271 C18
A	2181 K3	2272 C18
A	2182 K3	2273 C18
A	2183 K3	2274 C18
A	2184 K3	2275 C18
A	2185 K3	2276 C18
A	2186 K3	2277 C18
A	2187 K3	2278 C18
A	2188 K3	2279 C18
A	2189 K3	2280 C18
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A	2192 K3	2283 C18
A	2193 K3	2284 C18
A	2194 K3	2285 C18
A	2195 K3	2286 C18
A	2196 K3	2287 C18
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A	2218 K3	2309 C18
A	2219 K3	2310 C18
A	2220 K3	2311 C18
A	2221 K3	2312 C18
A	2222 K3	2313 C18
A	2223 K3	2314 C18
A	2224 K3	2315 C18
A	2225 K3	2316 C18
A	2226 K3	2317 C18
A	2227 K3	2318 C18
A	2228 K3	2319 C18
A	2229 K3	2320 C18
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A	2236 K3	2327 C18
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A	2238 K3	2329 C18
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A	2249 K3	2340 C18
A	2250 K3	2341 C18
A	2251 K3	2342 C18
A	2252 K3	2343 C18
A	2253 K3	2344 C18
A	2254 K3	2345 C18
A	2255 K3	2346 C18
A	2256 K3	2347 C18
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A	2305 K3	2396 C18
A	2306 K3	2397 C18
A	2307 K3	2398 C18
A	2308 K3	2399 C18
A	2309 K3	2400 C18
A	2310 K3	2401 C18
A	2311 K3	2402 C18
A	2312 K3	2403 C18
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A	2316 K3	2407 C18
A	2317 K3	2408 C18
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A	2454 K3	2545 C18
A	2455 K3	2546 C18
A	2456 K3	2547 C18
A	2457 K3	2548 C18
A	2458 K3	

**TUNER Adjustment table ( ECO 4 FM/MW- and FM/MW/LW - versions with AM-ferrite antenna )**

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
<i>VARICAP ALIGNMENT <sup>1)</sup></i>						
<b>FM</b> 87.5 - 108MHz			108 MHz	5120	1	8V ± 0.2V
			87.5MHz	check		4.1V ± 0.5V
<b>FM /14 East Europe</b> 65.81 - 108MHz			108 MHz	5120	1	8V ± 0.2V
			65.81 MHz	check		0.8V ± 0.4V
<b>MW</b> 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5123	1	9V±0.1V (7.5±0.7V) <sup>1)</sup>
			530kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
<b>LW</b> 153 - 279kHz			279kHz	5122	1	8V±0.2V (7.5±1.5V) <sup>1)</sup>
			153kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
<b>MW</b> 3-band version 522 - 1611kHz			1611kHz	5123	1	8V±0.1V (7.5±0.5V) <sup>1)</sup>
			522kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
<b>FM - RF</b>						
<b>FM</b>	108MHz	A	108MHz	2115	3	MAX
	87.5MHz		87.5MHz	5109		
<b>FM /14 East Europe</b>	108MHz	mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX
	65.81MHz		65.81MHz	5109		
<b>VCO</b>						
<b>FM</b>	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152kHz ± 1kHz
<b>AM - IF</b>						
<b>MW</b>	540kHz Δf = 10kHz as low as possible	100nF 60E	540kHz	5142 5140	4	symmetrical and max height
<b>AM - RF</b>						
<b>LW</b>	198kHz	B	198kHz	5122	4	MAX
<b>MW</b> 3-band version	1494kHz		1494kHz	2130		
	549kHz		549kHz	5123		
<b>MW</b> 2-band version, 10kHz grid	1500kHz	mod=1kHz 30% AM	1500kHz	2130	4	MAX
	550kHz		550kHz	5123		

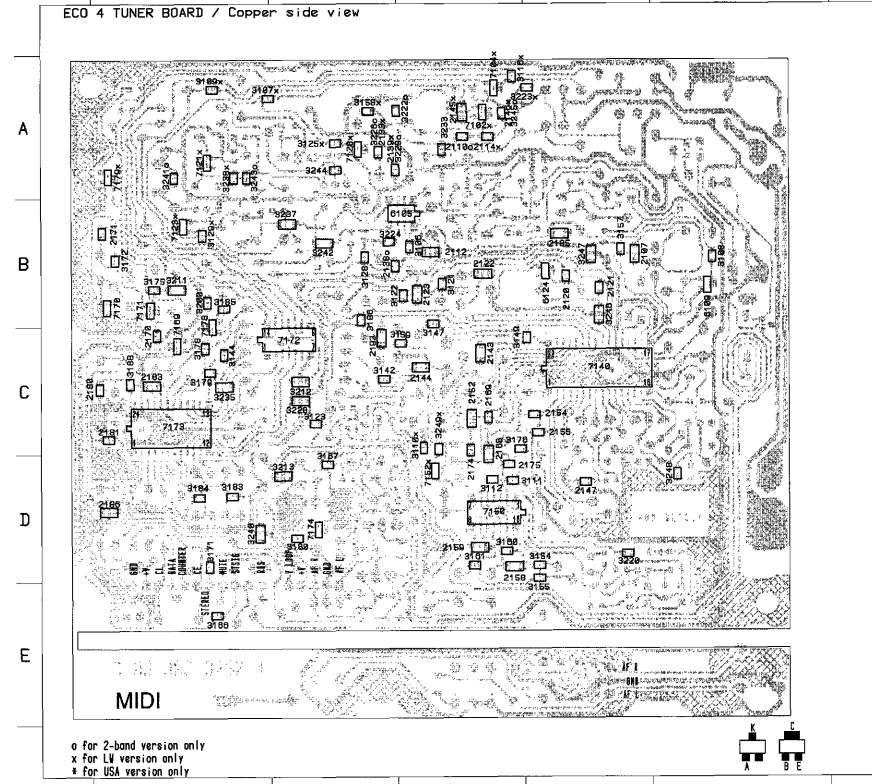
\* Use Service Test Program. By selecting the TUNER TEST, test frequencies will be stored as preset frequ. automatically.

<sup>1)</sup> Adjustment of AM-RF stage influences the varicap voltage. Therefore check if varicap voltage fulfils value stated within brackets after AM-RF adjustment.

repeat

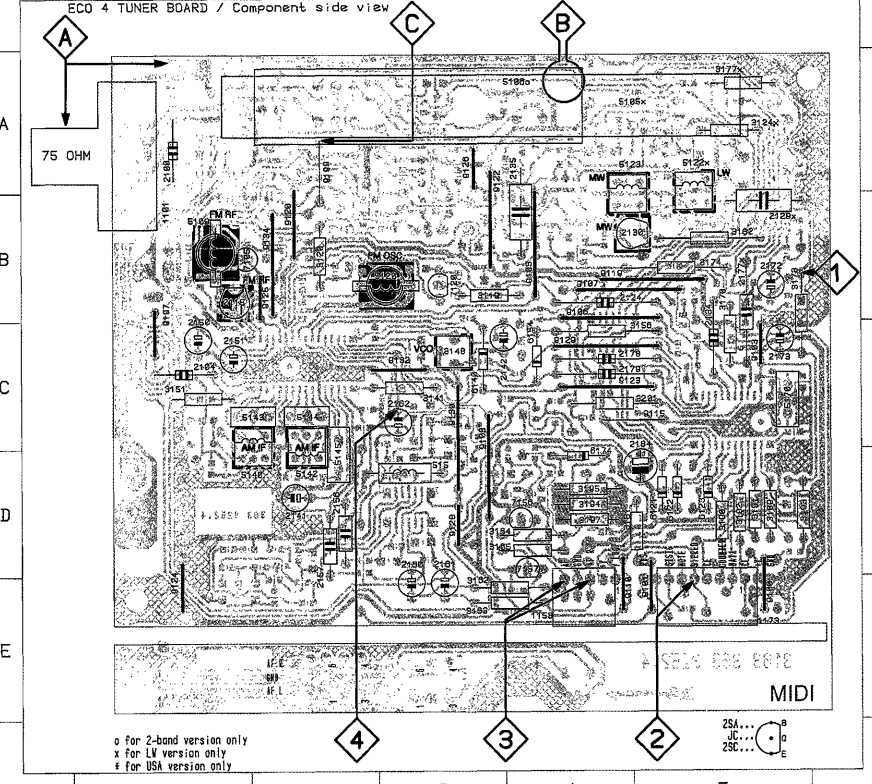
**EC04 (MIDI) LAYOUT**

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 2110x A 3 2145x A 3 2174 C 3 3111 B 9 3148 C 2 3176 C 3 3213 D 4 3240 D 5 3124 B 2 7172 C 4 7011 C 3 7020 D 5  
 2112 B 3 2146x A 3 2175 D 3 3112 D 9 3154 D 2 3178 C 5 3228 D 2 3241x A 5 7102x A 3 7173 C 5 7012 C 2 7020 E 5  
 2114x A 3 2147 D 2 2180 C 5 3110x A 3 3155 D 2 3179 C 5 3222x A 3 3242 B 4 7104x A 3 7174 D 4 7013 D 2 7021 E 5  
 2120 B 2 2152 C 3 2191 C 5 3121 B 3 3157 B 2 3180 D 4 3223x A 2 3243x A 5 7121x A 5 7178 C 5 7014 D 2 7022 E 5  
 2121 B 2 2154 C 2 2193 C 5 3122 B 3 3158x A 4 3180 D 5 3224 B 4 3244 A 4 7122x B 5 7178x A 5 7015 B 5 7023 B 3  
 2122 B 3 2155 C 2 2195 B 2 3123 C 4 3159 C 3 3184 D 5 3225x A 4 3245x A 3 7120x A 4 7081 A 1 7016 A 5 7020 B 5  
 2123 B 3 2159 D 3 2186 D 5 3125x A 4 3180 D 3 3185 B 5 3228 C 4 3240 B 2 7140 C 2 7082 A 1 7020 E 4 7028 D 5  
 2130x A 4 2159 D 3 2193 C 4 3128 B 4 3161 D 3 3180 B 4 3229x A 4 3247 B 2 7150 D 3 7085 D 1 7021 D 3  
 2130x A 4 2159 C 3 3197x A 5 3142 C 4 3187 D 4 3229 C 5 3233 A 3 3248 B 1 7152x B 3 7087 C 2 7022 D 4  
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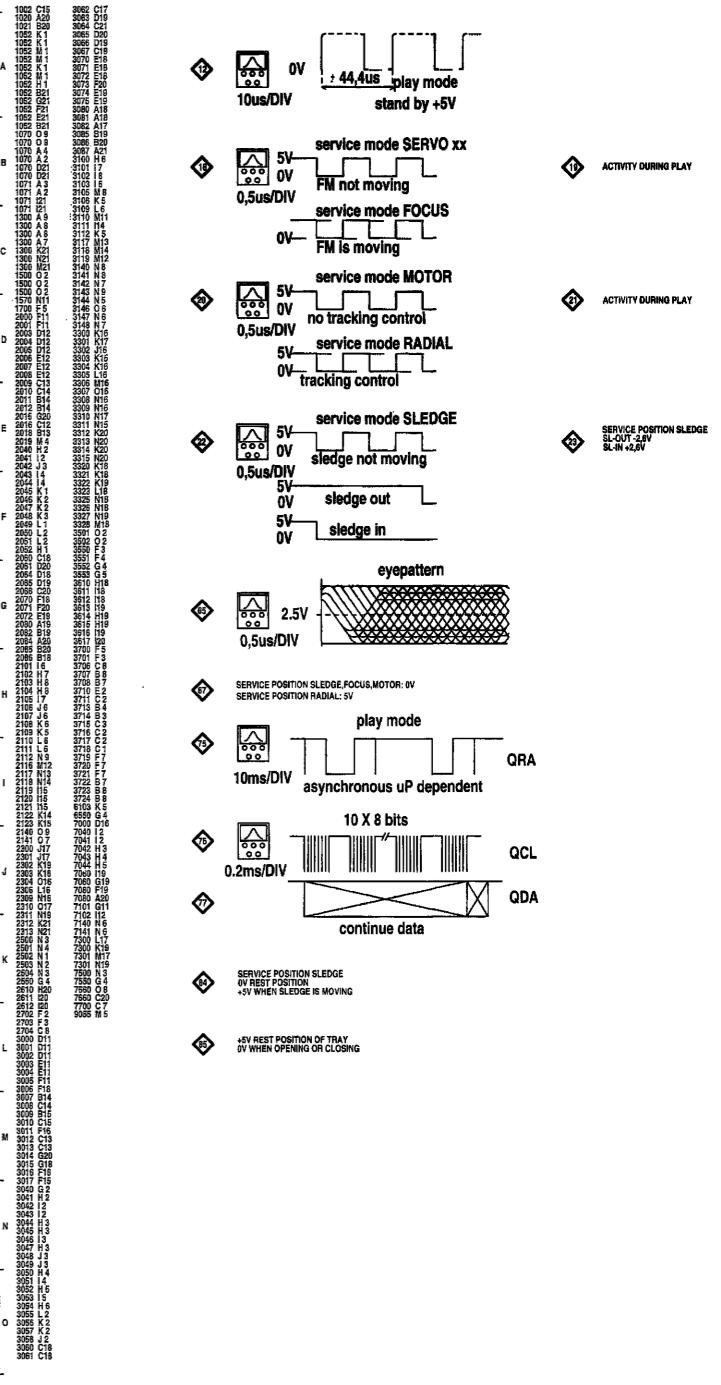
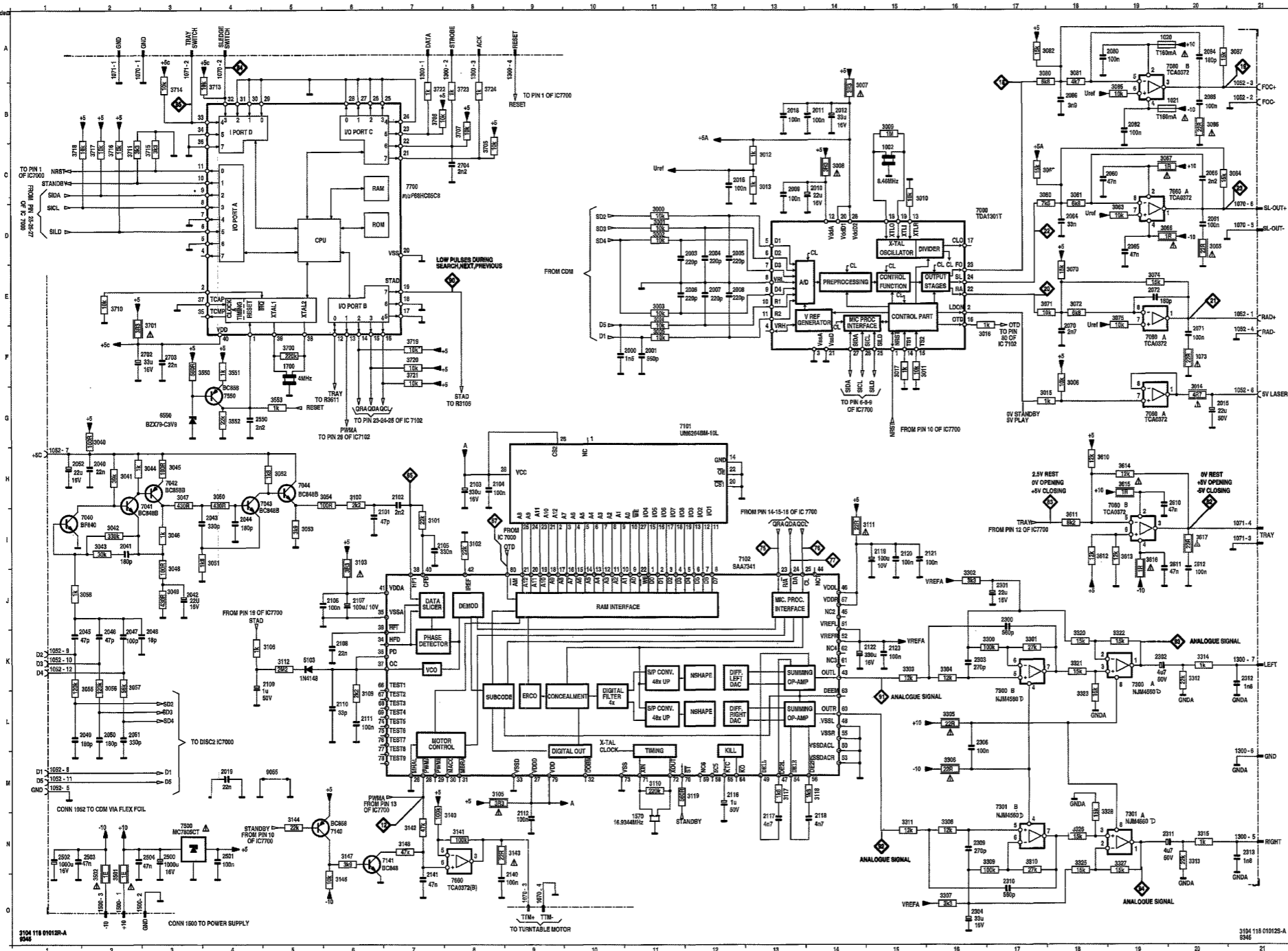


o for 2-band version only  
 x for LW version only  
 \* for USA version only

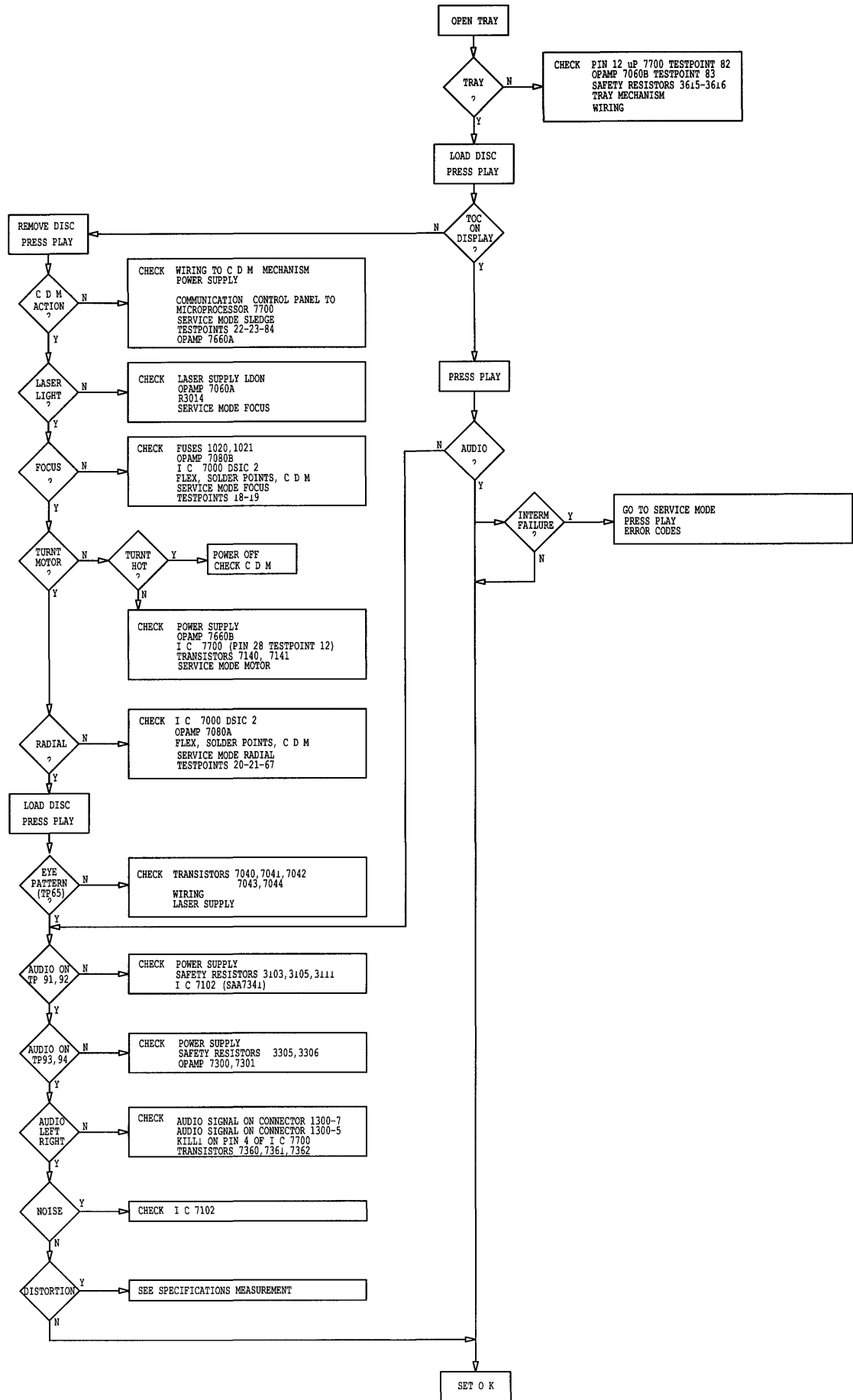
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 1153 E 4 2136 B 4 2162 C 3 3124x A 5 3195 D 4 3162 D 5 3122x A 5 3121 D 5 7150 D 4 3110 E 4 3120 B 3  
 1173 E 5 2141 D 2 2172 B 5 3132 B 5 3170 C 5 3103 D 5 3123 B 4 3122 D 5 7157 D 4 3115 C 5 3120 C 4  
 2108 A 1 2142 C 3 2173 C 5 3141 C 3 3173 B 5 3164 D 4 3148 C 2 3123 D 5 3106 E 5 3110 B 5 3130 C 3  
 2104 C 1 2160 D 1 2177x B 5 3148 C 3 3174 B 5 3165 D 4 3142 C 2 3148 C 3 3191 E 5 3120 B 2 3132 C 3  
 2115 B 1 2151 C 1 2178 C 4 3151 C 1 3177x A 5 3197 D 4 3143 C 2 3154 C 4 3133 C 5 3122 B 3 3134 B 2  
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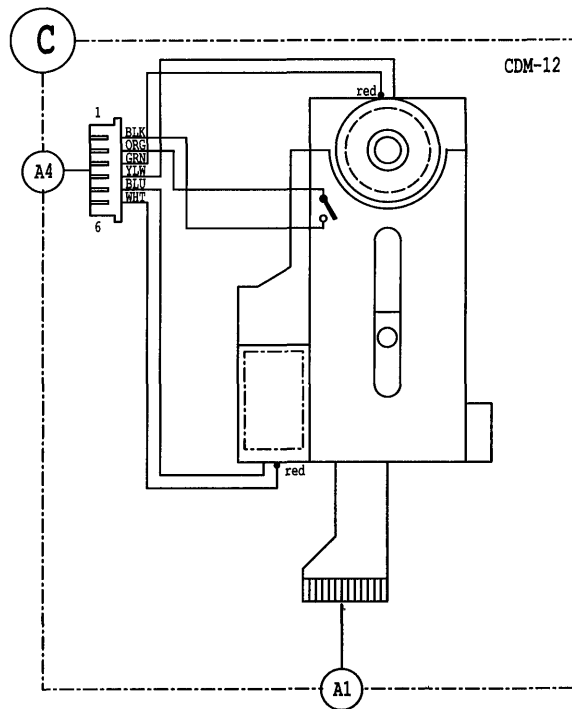
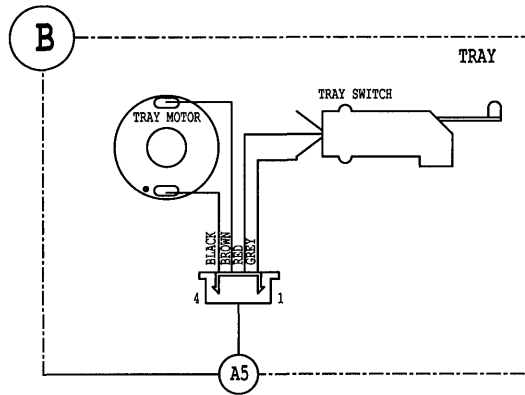
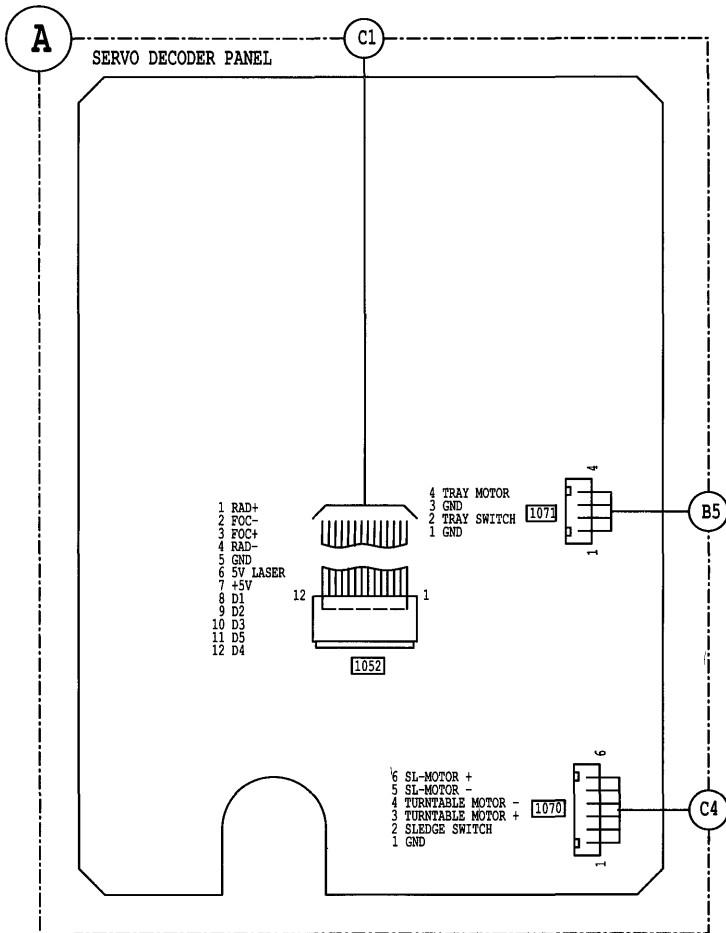
o for 2-band version only  
 x for LW version only  
 \* for USA version only



# CD REPAIR CHART



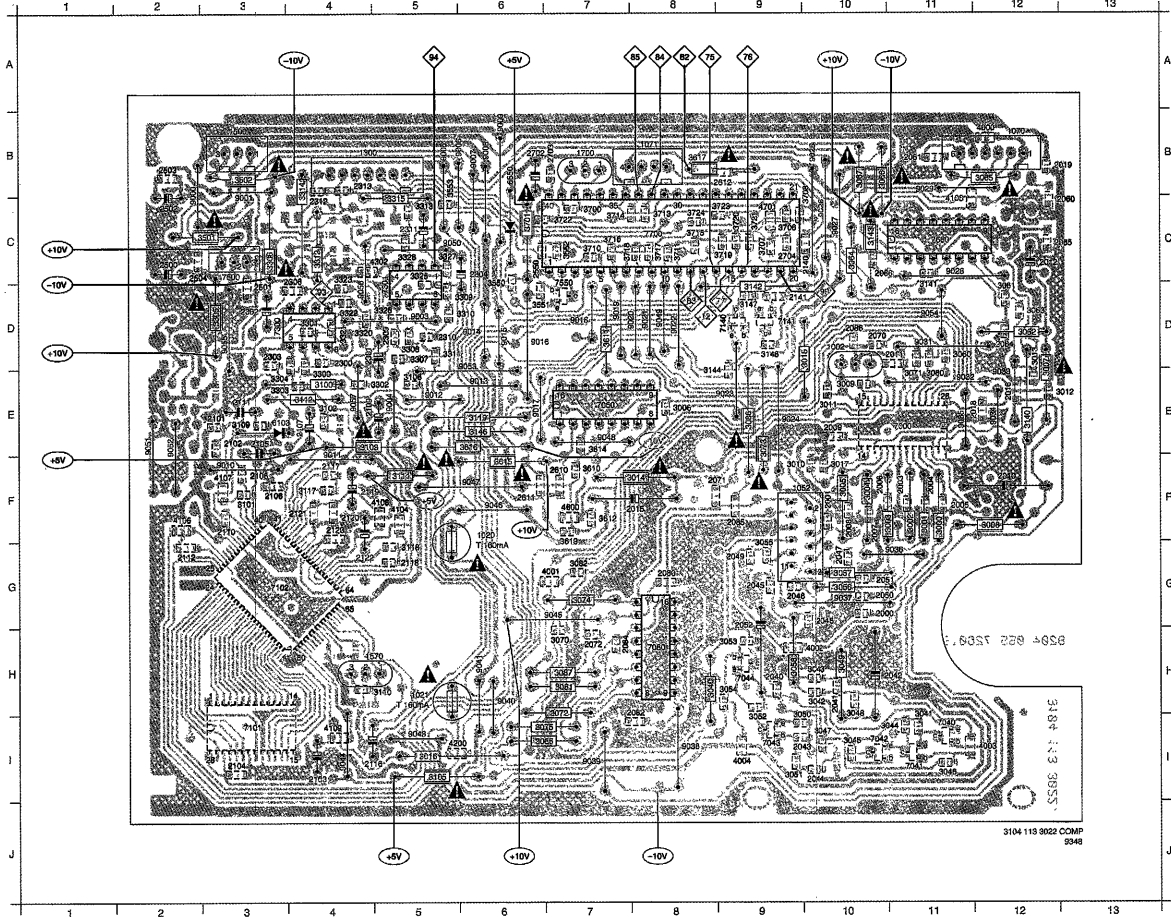
# CD WIRING



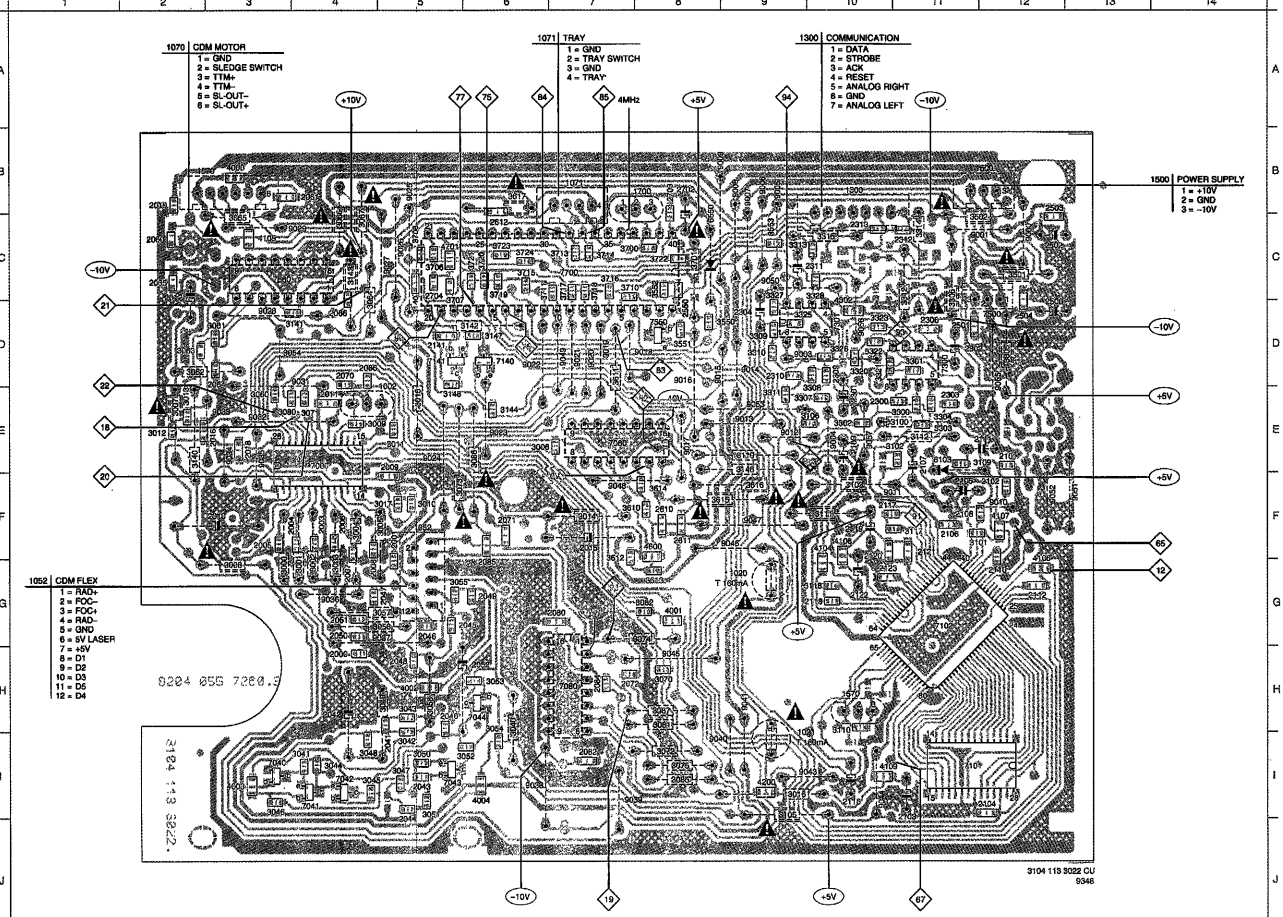


CD COMPONENT AND TRACK SIDE LAYOUT

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1020	F6	2010	F12	2051	G10	2104	B	2141	D9	2510	F7	3012	E12	3052	H8	3073	F9	3112	E4	3306	C3	3329	C2	3708	C10	4209	I12	7043	B	8005	B5	8023	B6	9042	H5
1021	H5	2011	D10	2052	H9	2105	F8	2142	D8	2511	F6	3013	D12	3053	H9	3074	C7	3113	F4	3307	C4	3330	C6	3709	C7	4210	H	7044	H9	8006	B6	8024	E9	9043	H4
1023	F9	2012	C12	2053	D10	2106	F3	2143	D7	2512	B6	3014	F7	3054	H6	3075	B	3114	G5	3308	D5	3331	D6	3710	C8	4104	F5	7045	E7	8007	B6	8025	E10	9044	G6
1070	B12	2015	F7	2051	B11	2107	E4	2522	D8	2702	B5	3015	D10	3055	G9	3080	E11	3119	B5	3309	D8	3351	D6	3713	C8	4105	C11	7080	H8	8008	B8	8026	D10	9046	F6
1071	B8	2016	E12	2054	D12	2108	F3	2523	D7	2703	D7	3016	B	3056	G10	3081	H7	3140	E12	3310	D5	3352	C7	3714	C7	4106	F2	7101	B	8009	B6	8027	C10	9047	F8
1000	B4	2018	E12	2055	C12	2109	E4	2524	C6	2704	C9	3017	F10	3057	G10	3082	G7	3141	D11	3311	D6	3353	C5	3715	C8	4107	F3	7102	G3	8010	F3	8028	C11	9048	E7
1500	B3	2019	B12	2056	C10	2110	F3	2525	D3	2705	F11	3040	H8	3058	H9	3085	B	3142	D9	3312	C4	3310	F7	3716	C7	4108	F4	7140	D9	8011	F4	8029	B11	9049	D8
1570	H4	2040	H8	2070	D10	2111	E5	2526	D5	2706	F11	3041	H11	3059	D11	3086	G9	3143	C10	3313	C5	3311	D7	3717	C8	4109	H	7141	D8	8012	E5	8030	B11	9050	C2
1700	E7	2041	H10	2071	F8	2112	G2	2510	D5	2707	F11	3042	H10	3060	D11	3087	H7	3144	E8	3314	C4	3312	F7	3718	C7	4202	I8	7300	D3	8013	E6	8032	E11	9051	E2
2000	G10	2042	H10	2072	H7	2113	H	2511	C5	2708	F11	3043	H10	3061	D12	3100	E4	3145	E6	3315	C5	3313	G7	3719	C8	4305	C4	7301	D9	8014	D6	8033	E12	9052	F2
2001	F10	2043	B	2080	G8	2114	F4	2512	C4	2709	F10	3044	H10	3062	D12	3101	F3	3147	F5	3316	C4	3314	E7	3720	C8	4306	F7	7302	C9	8015	D6	8034	E10	9053	D3
2003	F11	2044	H0	2082	I7	2115	G5	2513	B4	2710	F10	3045	H10	3063	C10	3102	E4	3148	D9	3317	D4	3315	F6	3721	C9	4701	C9	7350	D7	8016	D6	8035	E11	9054	D11
2004	F11	2045	G9	2084	H7	2116	F4	2510	C2	2711	F10	3046	H11	3064	H11	3103	E4	3149	E4	3318	C4	3316	E5	3722	C7	4103	E3	7400	C11	8017	E9	8036	G10	9055	D3
2005	F11	2046	G9	2085	F9	2117	F5	2511	D3	2712	E12	3047	H10	3065	H10	3104	E5	3150	E4	3319	C4	3317	B8	3723	C8	4307	B	7303	C1	8018	D7	8037	C10	9056	D4
2006	F10	2047	G10	2086	D10	2118	F4	2512	C2	2713	F10	3048	H10	3066	H10	3105	E5	3151	C5	3320	C5	3318	C7	3724	C8	7000	E11	7401	C2	8019	D7	8038	H	9057	E4
2007	G10	2048	G10	2101	E3	2122	G4	2523	C2	2714	F10	3049	H10	3067	H10	3106	E5	3152	C5	3321	C5	3319	C8	3725	C9	4000	B12	7402	H11	8020	D8	8039	D7	9058	F7
2008	F10	2049	G9	2102	E3	2123	F4	2524	C2	2715	F10	3050	H	3068	H	3107	E11	3110	H5	3322	C5	3320	C9	3726	C9	4201	G8	7403	H11	8021	D8	8040	H8	9059	E10



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1020	G8	2009	E5	2049	G6	2101	E12	2121	F11	2521	D11	3008	E8	3045	I4	3063	D2	3100	E10	3144	F9	3313	C9	3310	F7	3715	C6	4106	G12	7080	H7	8007	B9	8024	E8	9043	H9
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1082	F6	2011	E4	2051	G4	2103	J11	2123	G10	2523	D12	3008	G3	3047	I5	3065	D3	3102	E10	3146	F9	3315	C10	3312	G7	3717	D7	4108	F10	7102	G11	8009	B9	8026	C5	9045	H10
1070	B2	2012	C2	2052	H5	2104	H11	2140	D5	2524	D12	3009	E4	3048	I4	3066	C4	3103	F10	3146	E8	3320	D10	3313	G8	3718	D7	4109	I10	7140	D6	8010	F12	8027	C5	9046	F8
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1300	B4	2018	E12	2054	D12	2106	F3	2526	D8	2704	C9	3011	F5	3050	H5	3068	H	3106	E9	3321	D10	3315	F8	3720	D5	4201	B	7141	D5	8012	F10	8029	C3	9048	F7		
1500	B3	2019	B12	2055	C10	2110	F3	2526	D3	2705	F11	3040	H8	3059	H	3069	H	3107	H8	3322	D10	3316	F8	3721	C5	4400	F8	7301	D10	8013	E9	8031	D3	9049	D7		
1570	H4	2040	H8	2070	D10	2111	E5	2527	D5	2706	F11	3041	H11	3060	D11	3088	G9	3143	C10	3317	C5	3313	G7	3722	C8	4202	D10	7302	C11	8014	D9	8032	E3	9050	C9		
1700	E7	2041	H10	2071	F8	2112	G2	2510	D5	2707	F11	3042	H10	3061	D12	3100	E4	3144	E8	3318	C4	3314	E7	3723	C8	4305	C4	7302	C9	8015	D6	8033	E5	9051	F12		
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2001	F10	2043	B	2080	G8	2114	F4	2512	C4	2709	F10	3044	H10	3063	C10	3102	E4	3147	F5	3320	C4	3316	E7	3725	C9	4306	F7	7303	C1	8017	E9	8035	G10	9053	D3		
2003	F11	2044	H0	2082	I7	2115	G5	2513	B4	2710	F10	3045	H10	3064	H10	3103	E4	3148	D9	3321	D4	3317	B8	3726	C9	4307	B	7304	C1	8018	D7	8036	G4	9054	D3		
2004	F11	2045	G9	2084	H7	2116	F4	2510	C2	2711	F10	3046	H11	3065	H11	3104	E5	3149	E4	3322	D4	3318	E5	3727	C7	4103	E3	7400	C11	8019	E9	8037	G10	9055	D3		
2005	F11	2046	G9	2085	F9	2117	F5	2511	D3	2712	E12	3047	H10	3066	H10	3105	E5	3150	E4	3323	C4	3319	B8	3728	C8	4308	B	7304	C1	8020	D7	8038	H	9056	D10		
2006	F10	2047	G10	2086	D10	2118	F4	2512	C2	2713	F10	3048	H10	3067	H10	3106	E5	3151	C5	3324	C5	3320	C7	3729	C8	7000	E11	7401	C2	8021	D7	8039	H	9057	E4		
2007	G10	2048	G10	2101	E3	2122	G4	2523	C2	2714	F10	3049	H10	3068	H10	3107	E5	3152	C5	3325	C5	3321	C8	3730	C9	4000	B12	7402	H11	8022	D8	8040	H8	9058	F7		
2008	F10	2049	G9	2102	E3	2123	F4	2524	C2	2715	F10	3050	H	3069	H	3108	E11	3110	H5	3326	C5	3322	C9	3731	C9	4201	G8	7403	H11	8023	D8	8041	H8	9059	E10		



FRONT CIRCUIT I

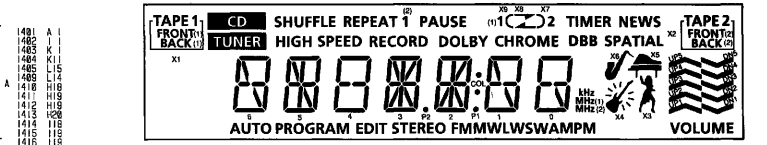
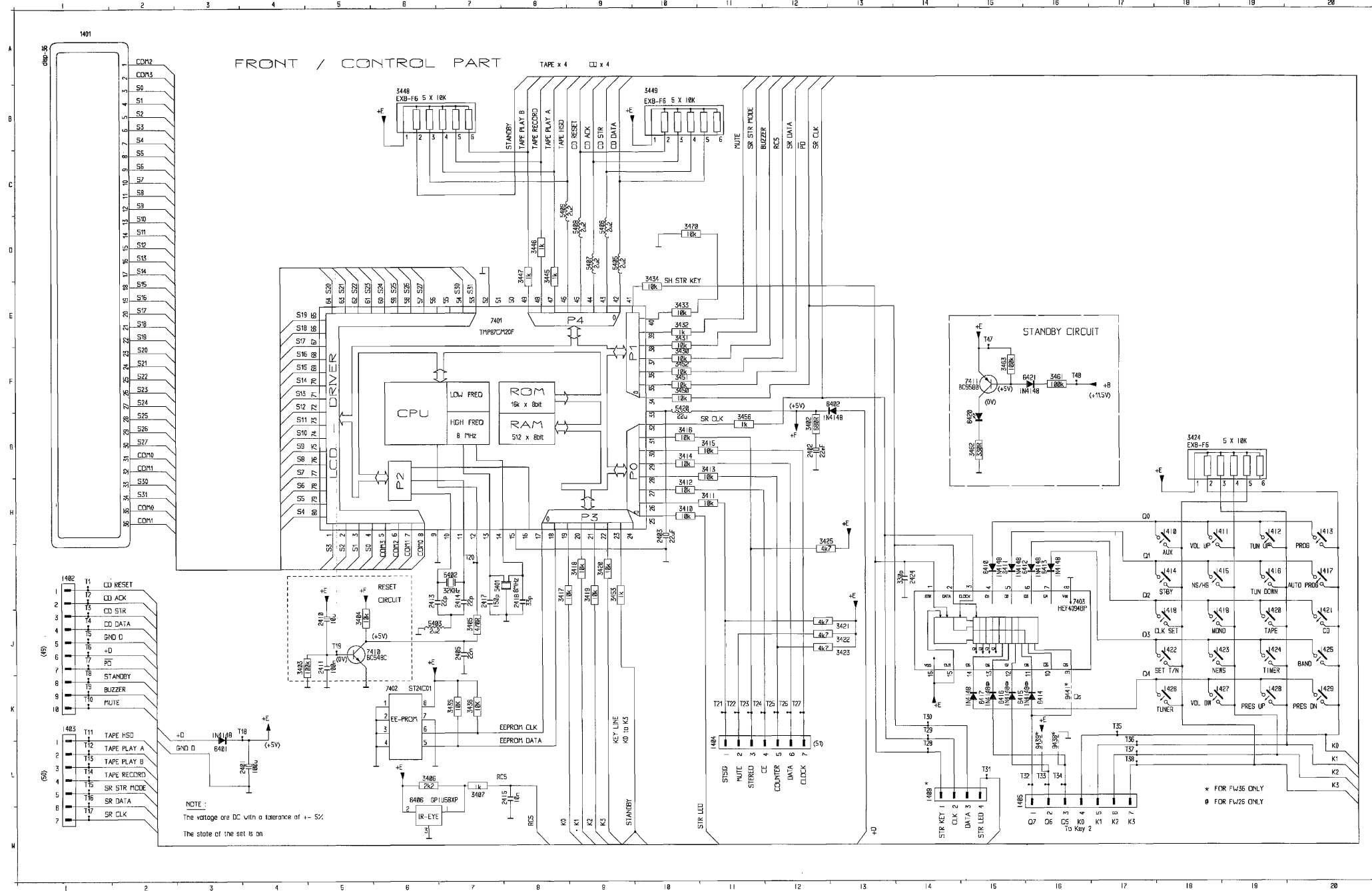
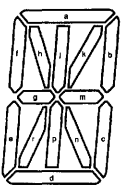


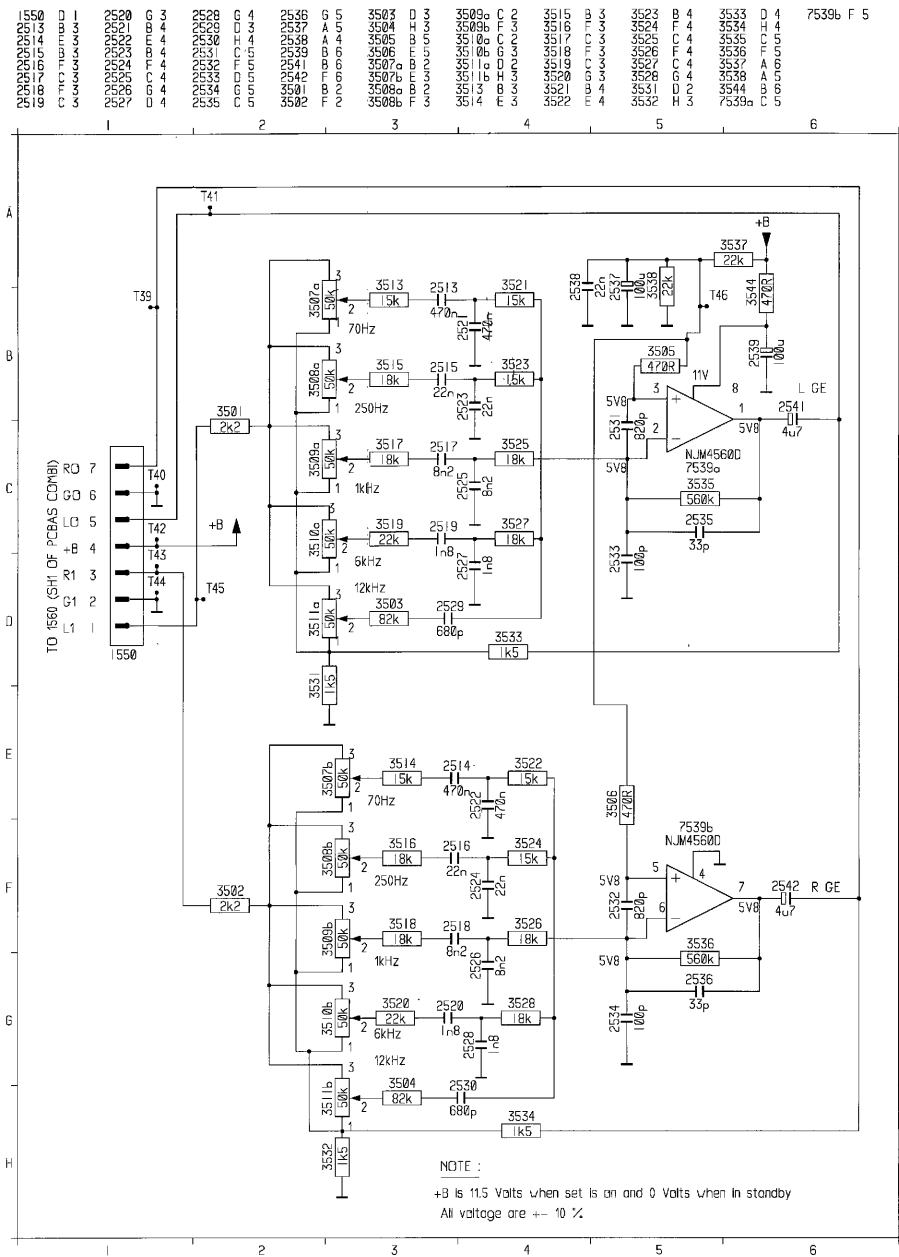
Figure 7. LCD pins connections



LCD DISPLAY PINS CONNECTIONS

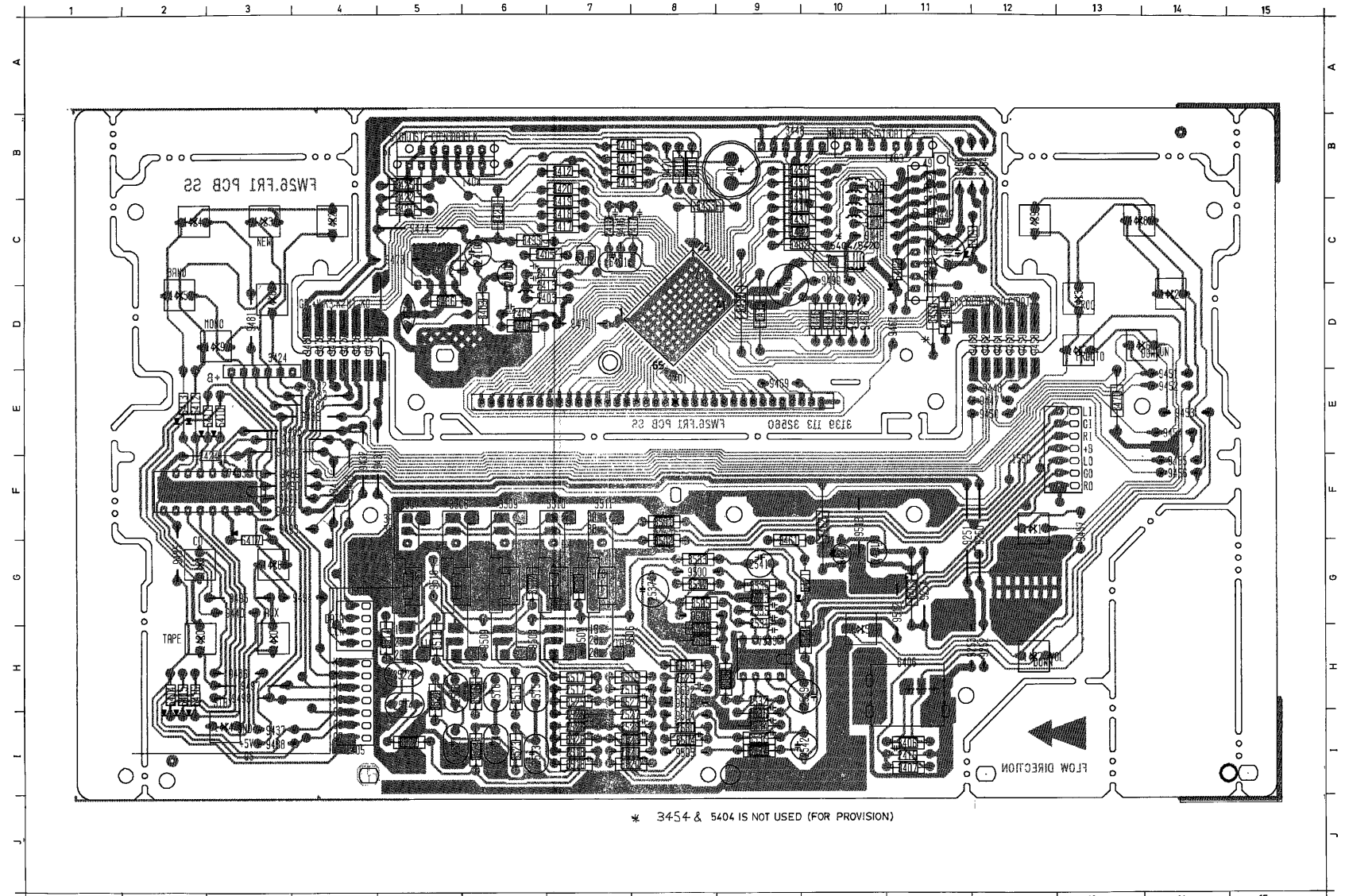
PIN NO.	COM 0	COM 1	COM 2	COM 3
1	-	-	COM 2	-
2	-	-	-	COM 3
3	6gm	6f	6e	6n
4	6b	6a	6c	6d
5	FRONT (1)	6h	BACK (1)	TAPE 1,X1
6	SHUFFLE	CD	HIGH SPEED	AUTO
7	5g	5f	5e	PROGRAM
8	5b	5a	5c	5d
9	TUNER	5hn	5m	5jp
10	1 (1), 2	TIMER	RECORD	REPEAT
11	4gm	4f	4e	EDIT
12	4b	4a	4c	4d
13	X7	X9	X8	1 (2)
14	FRONT (2)	X6	BACK (2)	TAPE 2,X2
15	3g	3f	3e	3n
16	3b	3a	3c	3d
17	3k	3h	3m	3jp
18	3r	DBB	PAUSE	STEREO
19	2gm	2f	2e	2n
20	2b	2a	2c	2d
21	2kr	CHROME	DOLBY	2jp
22	LW	-	MW	-
23	1gm	1f	1e	1n
24	1b	1a	1c	1d
25	COL	1h	FM,P1,MHz (1)	SW,P2,MHz (2)
26	X4	kHz	PM	AM
27	0gm	0f	0e	0n
28	0b	0a	0c	0d
29	X3	X5	SPATIAL	NEWS
30	UP1	DN1	-	VOLUME
31	-	-	-	-
32	-	-	-	-
33	DN2	DN3	DN4	DN5
34	UP2	UP3	UP4	UP5
35	COM 0	-	-	-
36	-	COM 1	-	-

**FRONT CIRCUIT II (GE PART)**



**FRONT COMPONENT LAYOUT**

1401	E8	1417	D13	1550	F12	2513	H5	2526	I7	2539	H10	3414	B7	3431	G9	3462	D9	3506	H9	3520	I7	3535	G9	5409	D10	6420	G10	9430	D5	9448	E12	9461	D12	9474	C5	9487	E3	9500	G8
1402	C11	1418	D8	2401	C11	2514	H5	2527	I7	2541	G9	3415	B7	3432	C9	3453	C8	3507	F5	3521	H5	3536	I9	5420	C10	6421	G10	9431	F4	9449	C10	9462	D12	9475	D4	9488	E3	9501	G8
1403	B10	1419	D3	2402	B9	2515	H6	2528	I7	2542	H10	3416	B7	3433	D9	3454	D11	3508	F5	3522	I5	3537	G8	6401	C12	7401	C3	9432	F4	9450	E12	9463	D12	9476	D4	9489	F3	9502	H8
1404	B5	1420	H2	2403	D9	2516	H6	2529	H8	3402	C9	3417	C7	3434	D11	3456	B9	3509	F6	3523	I6	3538	H8	6402	C11	7402	C5	9433	F4	9451	E14	9464	B12	9477	D4	9490	F3	9503	H8
1405	I4	1421	G2	2405	D6	2517	H7	2530	I8	3403	D6	3418	C7	3435	C6	3461	G9	3510	F7	3524	I6	3544	H10	6406	H11	7403	F3	9434	F4	9452	E14	9465	B11	9478	D4	9491	F3	9504	I8
1409	G4	1422	C4	2410	C6	2518	I7	2531	H9	3404	D6	3419	C7	3436	D5	3462	F10	3511	F7	3525	H7	5401	C7	6410	E3	7410	C6	9435	G2	9453	E14	9466	B11	9479	D4	9492	F3	9506	I8
1410	H3	1423	C3	2411	D5	2519	H7	2532	H9	3405	C6	3420	B7	3445	D10	3463	G11	3513	H5	3526	I7	5402	C7	6411	F5	7411	G10	9436	H3	9454	E14	9467	D11	9480	D4	9493	F3	9508	H7
1411	F12	1424	C2	2413	D6	2520	I7	2533	G9	3406	I11	3421	C5	3446	D10	3470	E13	3514	H5	3527	H7	5403	D6	6412	E2	7339	H9	9437	I3	9455	F14	9468	D10	9481	D3	9494	C4	9507	H7
1412	D14	1425	D2	2414	C6	2521	I5	2534	I9	3407	I11	3422	B5	3447	D10	3501	F8	3515	H6	3528	I7	5404	C10	6413	E2	9250	F12	9438	I3	9456	F14	9469	E9	9482	E4	9495	G3	9508	H6
1413	D13	1426	G3	2415	I1	2522	H5	2535	G9	3410	B8	3423	C6	3448	B9	3502	G8	3516	H6	3531	G7	5405	C10	6414	H2	9251	F11	9440	G3	9457	F13	9470	B8	9483	E4	9496	G3	9509	H6
1414	I3	1427	H12	2417	C8	2523	I6	2536	I9	3411	B8	3424	D3	3449	C11	3503	H8	3517	H7	3532	G6	5406	C10	6415	H2	9252	H12	9441	G2	9458	D12	9471	D7	9484	E4	9497	H3	9510	G5
1415	H10	1428	C13	2418	C7	2524	I6	2537	G8	3412	B7	3425	B5	3450	B9	3504	I8	3518	I7	3533	G6	5407	C10	6416	H2	9253	H11	9442	C7	9459	D12	9472	C5	9485	E4	9498	H3	9512	G11
1416	D13	1429	C12	2424	F2	2525	I7	2538	H8	3413	B7	3430	C9	3451	B9	3505	G8	3519	H7	3534	I9	5408	B10	6417	G3	9254	G11	9447	E12	9460	D12	9473	C5	9486	E3	9499	C10	9513	F10



**COMBI COMPONENT LAYOUT**

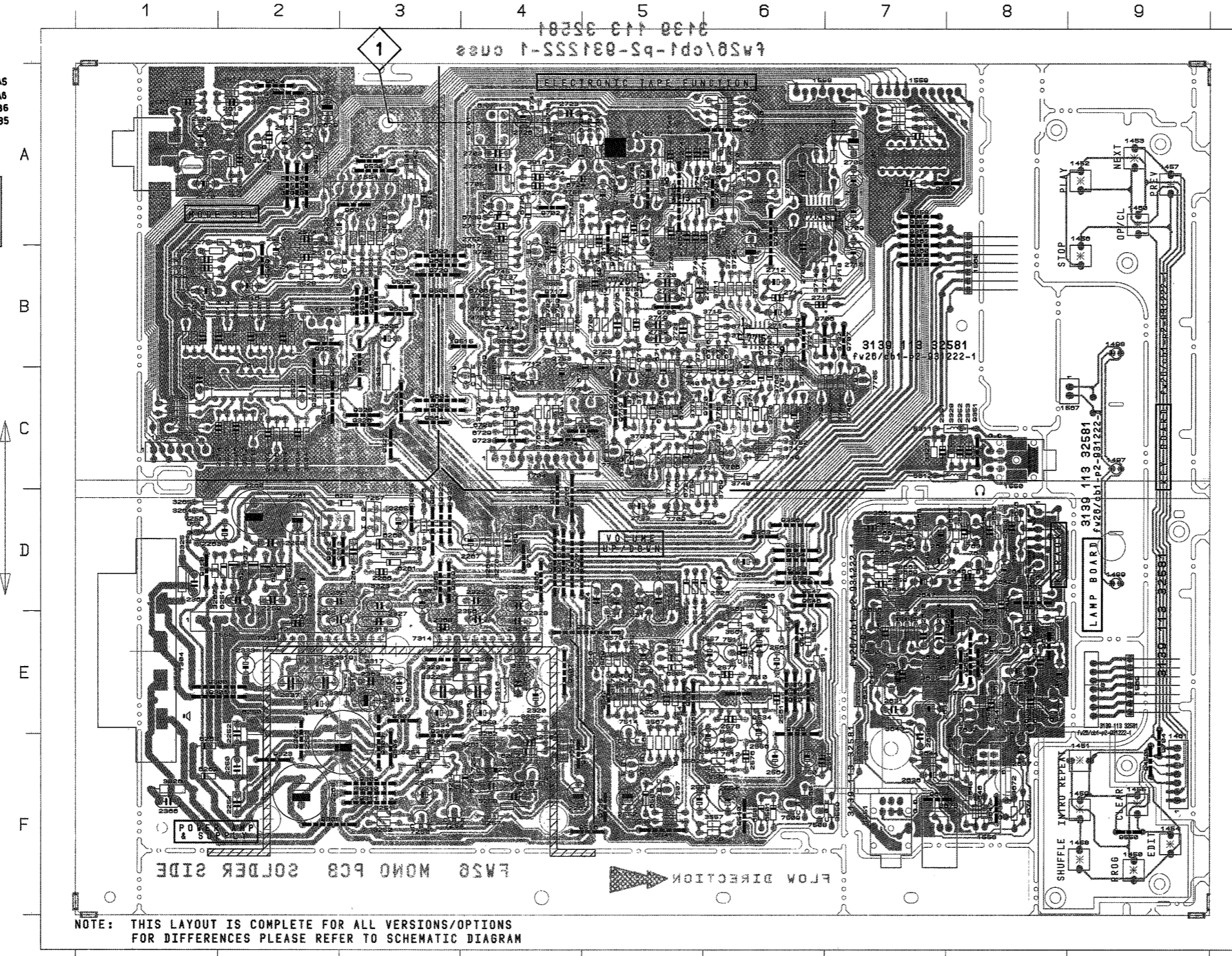
7713 A5  
7714 A6  
7715 B6  
7720 B5

**BIAS OSCILLATOR ADJUSTMENT**

TAPE POSITION	MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
Record	⬠ & Gnd	Frequency counter	5701	65kHz ± 5kHz

**RIF SERVICE SOLUTION:**  
Add capacitor 2755 10nF 5%  
2725 as indicated in the circuit.

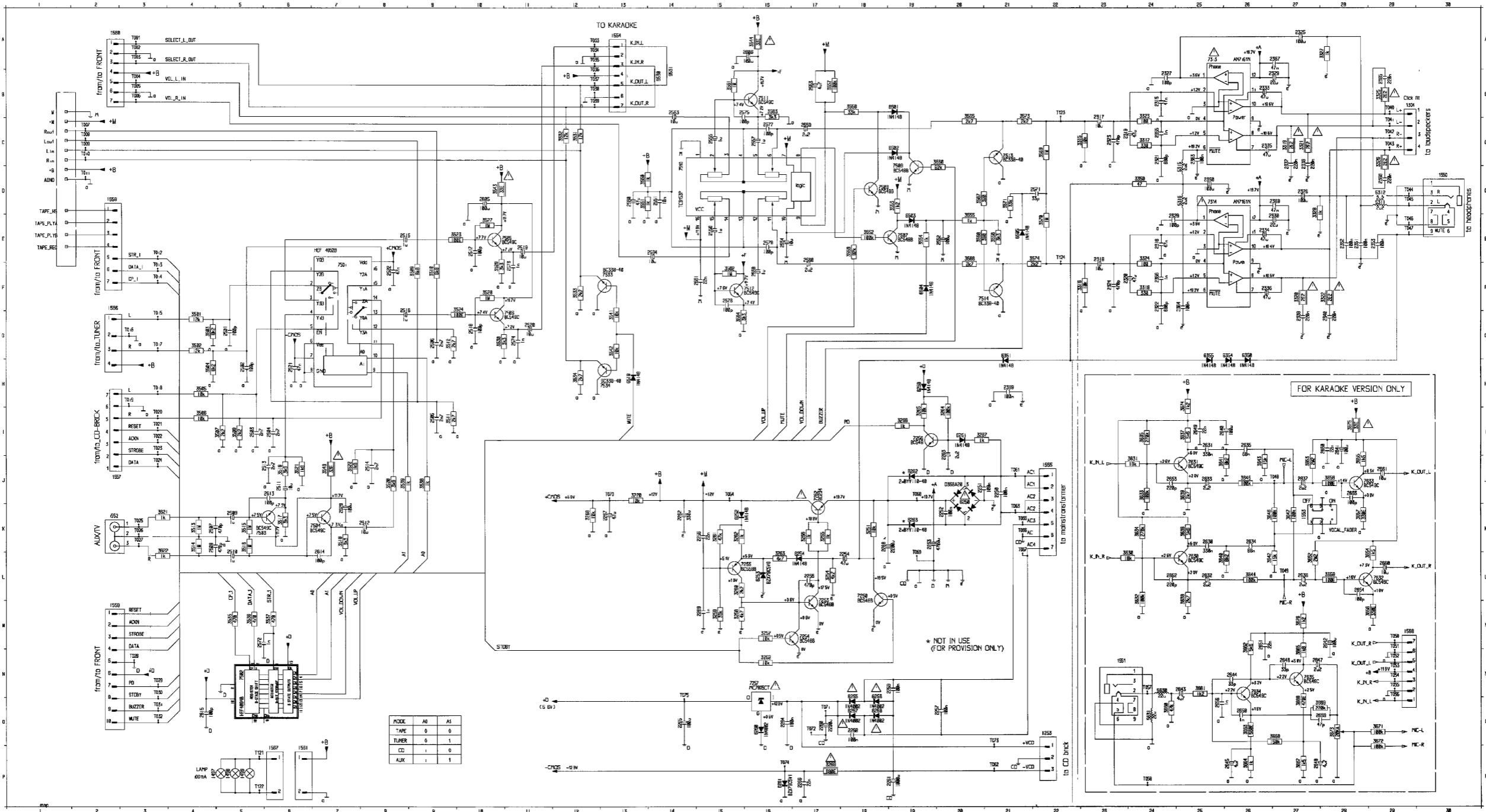
across capacitor



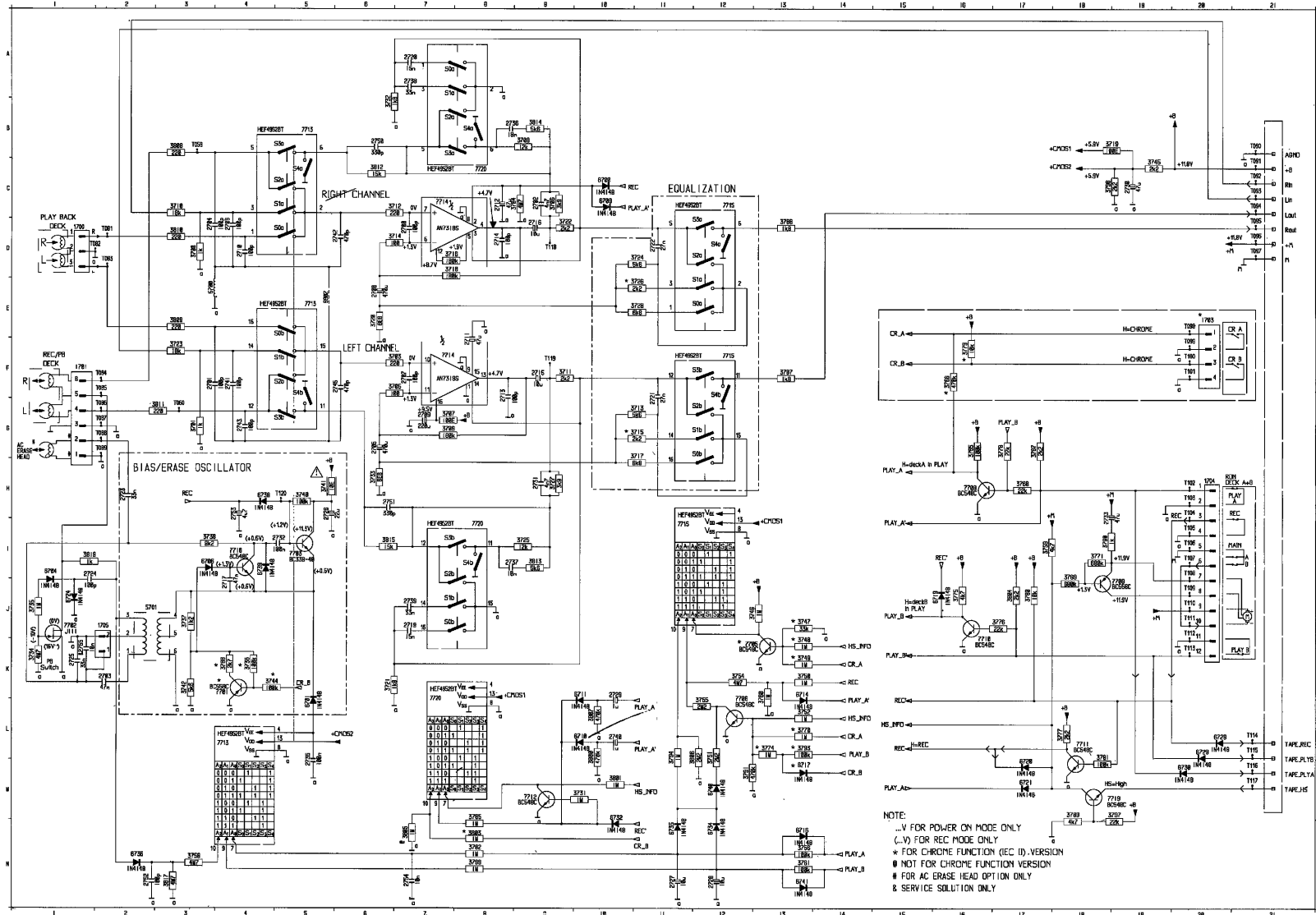
**NOTE:** THIS LAYOUT IS COMPLETE FOR ALL VERSIONS/OPTIONS  
FOR DIFFERENCES PLEASE REFER TO SCHEMATIC DIAGRAM

18 E 9	2501 B 2	2710 B 5	3532 A 3	3716 A 7	6251 D 2	9304 F 3	9708 B 6
1253 D 2	2502 C 2	2717 A 4	3533 A 3	3717 B 6	6252 F 4	9305 F 3	9707 B 7
1304 E 1	2503 B 1	2719 B 5	3534 A 3	3718 B 7	6253 F 4	9306 E 3	9708 A 6
1450 F 9	2504 C 2	2720 B 5	3535 A 7	3719 B 6	6254 F 3	9307 E 3	9709 B 6
1451 F 9	2505 B 2	2721 B 5	3536 A 7	3720 B 6	6255 D 2	9308 F 2	9710 A 8
1452 A 9	2506 C 2	2722 B 5	3537 A 7	3721 B 6	6256 D 2	9309 F 8	9711 A 8
1453 A 9	2507 A 1	2723 A 4	3538 C 1	3722 B 5	6257 D 2	9310 F 3	9712 D 4
1454 F 9	2508 A 2	2724 A 4	3539 C 1	3723 A 4	6258 B 2	9311 F 3	9715 D 4
1455 F 9	2509 A 1	2725 A 4	3541 A 3	3724 B 6	6259 D 3	9312 D 2	9715 D 4
1456 B 9	2510 A 1	2726 A 4	3542 A 3	3725 A 4	6260 D 3	9313 D 3	9717 B 4
1457 A 9	2511 A 2	2727 C 5	3543 C 3	3726 B 6	6261 D 3	9314 F 4	9718 C 5
1458 F 9	2512 A 2	2728 B 5	3544 C 3	3727 A 5	6262 F 1	9315 D 3	9719 C 5
1459 F 9	2513 B 2	2729 C 6	3549 A 2	3728 B 6	6263 F 1	9316 D 4	9720 C 6
1460 A 9	2514 C 2	2730 A 5	3550 E 8	3731 B 4	6264 D 9	9317 D 4	9723 C 4
1461 F 9	2515 B 2	2731 A 4	3551 E 8	3732 B 7	6265 F 3	9318 D 1	9724 C 4
1467 C 9	2516 B 2	2732 A 4	3552 F 5	3733 A 6	6266 B 2	9319 B 3	9725 C 5
1468 B 9	2517 B 1	2733 D 5	3553 F 5	3734 A 5	6267 E 6	9320 E 5	9726 F 6
1469 D 9	2518 B 2	2735 A 5	3554 E 5	3735 A 5	6268 F 1	9321 D 3	9727 D 4
1550 C 8	2519 B 2	2736 B 5	3555 F 5	3736 B 4	6269 F 8	9322 D 3	9728 F 5
1551 F 7	2520 A 2	2737 A 5	3556 F 5	3737 B 4	6270 F 5	9323 F 2	9729 B 3
1552 A 1	2521 C 1	2738 B 5	3557 F 6	3738 A 4	6271 E 5	9324 C 2	9735 F 6
1553 F 8	2522 C 2	2739 B 5	3558 F 6	3740 A 4	6272 E 5	9325 E 2	9735 E 6
1554 A 3	2526 F 6	2740 C 5	3559 F 7	3741 A 4	6273 A 3	9326 C 3	
1559 E 9	2527 F 6	2741 A 5	3560 E 5	3742 B 4	6274 C 3	9327 C 3	
1556 B 2	2528 F 5	2742 A 5	3561 E 6	3744 B 6	6275 C 6	9328 B 7	
1557 C 1	2553 F 6	2743 A 5	3562 F 6	3745 B 4	6276 A 4	9351 C 8	
1558 A 6	2554 F 6	2745 A 5	3563 E 6	3746 C 7	6277 B 4	9352 D 8	
1559 A 7	2555 E 6	2750 B 5	3564 F 6	3747 C 6	6278 C 5	9353 D 6	
1560 B 8	2556 E 6	2751 A 5	3565 E 5	3748 C 6	6279 B 5	9354 D 6	
1561 B 4	2557 E 6	2752 A 4	3566 E 5	3749 C 6	6280 E 5	9355 D 6	
1567 C 9	2558 F 6	2753 C 5	3567 F 5	3750 C 8	6281 C 6	9356 D 6	
1569 E 9	2559 E 5	2754 A 5	3568 F 5	3751 C 6	6282 B 6	9357 A 7	
1700 A 8	2581 E 6	2755 F 3	3570 E 5	3752 B 4	6283 C 5	9359 A 7	
1701 A 5	2589 E 6	2756 F 3	3571 E 5	3753 B 6	6284 C 5	9359 B 7	
1703 C 5	2564 F 6	2755 E 4	3573 E 5	3755 B 6	6285 C 5	9360 B 7	
1704 C 4	2571 E 5	2756 E 4	3574 E 5	3756 A 4	6286 A 4	9362 A 7	
1705 A 4	2572 A 7	2757 F 4	3575 A 1	3759 C 5	6287 C 4	9363 D 6	
2250 F 2	2573 B 1	2758 F 4	3576 A 1	3760 C 4	6288 C 4	9364 C 3	
2251 F 2	2574 A 2	2759 F 4	3578 D 8	3761 C 5	6289 C 4	9365 D 3	
2252 D 2	2575 C 5	2760 F 4	3579 C 5	3762 C 5	6290 C 5	9366 D 4	
2253 P 3	2576 F 6	2761 F 4	3582 F 7	3766 C 6	6291 B 6	9368 D 4	
2254 F 3	2577 E 6	2762 F 4	3583 E 7	3767 C 4	6292 E 5	9369 D 4	
2255 F 4	2578 E 6	2763 F 3	3584 D 7	3768 C 6	6293 A 4	9369 D 3	
2256 F 4	2605 B 3	2764 D 1	3585 E 7	3769 C 6	6294 B 4	9369 A 2	
2257 D 2	2606 D 6	2765 D 1	3586 D 7	3770 C 6	6295 A 4	9369 B 3	
2258 D 2	2613 A 2	2766 D 3	3587 E 7	3771 C 6	6296 C 6	9369 E 4	
2259 D 2	2614 A 2	2767 D 1	3588 E 7	3772 C 6	6297 C 5	9369 B 3	
2260 D 2	2615 A 2	2768 D 1	3589 E 7	3773 C 6	6298 F 3	9369 B 2	
2261 D 2	2620 D 2	2769 F 3	3590 F 7	3774 C 6	6299 F 3	9369 B 3	
2262 F 2	2630 F 7	2770 D 4	3591 F 7	3775 C 6	6300 F 3	9369 B 3	
2263 D 2	2631 E 7	2771 D 5	3592 E 6	3776 C 5	6301 F 3	9369 B 3	
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2272 E 3	2641 E 8	2780 E 2	3601 F 8	3785 C 5	6310 E 2	9369 B 3	
2273 E 3	2642 D 8	2781 D 3	3602 F 8	3786 C 5	6311 E 2	9369 B 3	
2274 E 3	2643 D 7	2782 D 3	3603 F 8	3787 A 6	6312 E 2	9369 B 3	
2275 E 3	2644 D 8	2783 D 3	3604 F 8	3788 B 4	6313 E 2	9369 B 3	
2276 E 3	2645 D 7	2784 D 3	3605 F 8	3789 C 4	6314 E 2	9369 B 3	
2277 E 3	2646 D 8	2785 D 3	3606 F 8	3790 D 6	6315 E 2	9369 B 3	
2278 E 3	2647 D 7	2786 D 3	3607 F 8	3791 C 6	6316 E 2	9369 B 3	
2279 E 3	2648 D 8	2787 D 3	3608 F 8	3792 C 6	6317 E 2	9369 B 3	
2280 E 3	2649 D 7	2788 D 3	3609 F 8	3793 C 6	6318 E 2	9369 B 3	
2281 E 3	2650 E 8	2789 D 3	3610 F 8	3794 C 6	6319 E 2	9369 B 3	
2282 D 4	2651 D 8	2790 D 3	3611 F 8	3795 C 6	6320 E 2	9369 B 3	
2283 D 4	2652 E 7	2791 C 1	3612 F 8	3796 C 6	6321 E 2	9369 B 3	
2284 D 4	2653 E 7	2792 C 1	3613 F 8	3797 C 6	6322 E 2	9369 B 3	
2285 D 4	2654 E 8	2793 C 1	3614 F 8	3798 C 6	6323 E 2	9369 B 3	
2286 D 4	2655 E 8	2794 C 1	3615 F 8	3799 C 6	6324 E 2	9369 B 3	
2287 D 4	2656 E 8	2795 C 1	3616 F 8	3800 C 6	6325 E 2	9369 B 3	
2288 D 4	2657 E 8	2796 C 1	3617 F 8	3801 C 6	6326 E 2	9369 B 3	
2289 D 4	2658 E 8	2797 C 1	3618 F 8	3802 C 6	6327 E 2	9369 B 3	
2290 D 4	2659 E 8	2798 C 1	3619 F 8	3803 C 6	6328 E 2	9369 B 3	
2291 D 4	2660 E 8	2799 C 1	3620 F 8	3804 C 6	6329 E 2	9369 B 3	
2292 D 4	2661 E 8	2800 C 1	3621 F 8	3805 C 6	6330 E 2	9369 B 3	
2293 D 4	2662 E 8	2801 C 1	3622 F 8	3806 C 6	6331 E 2	9369 B 3	
2294 D 4	2663 E 8	2802 C 1	3623 F 8	3807 C 6	6332 E 2	9369 B 3	
2295 D 4	2664 E 8	2803 C 1	3624 F 8	3808 C 6	6333 E 2	9369 B 3	
2296 D 4	2665 E 8	2804 C 1	3625 F 8	3809 C 6	6334 E 2	9369 B 3	
2297 D 4	2666 E 8	2805 C 1	3626 F 8	3810 C 6	6335 E 2	9369 B 3	
2298 D 4	2667 E 8	2806 C 1	3627 F 8	3811 C 6	6336 E 2	9369 B 3	
2299 D 4	2668 E 8	2807 C 1	3628 F 8	3812 C 6	6337 E 2	9369 B 3	
2300 D 4	2669 E 8	2808 C 1	3629 F 8	3813 C 6	6338 E 2	9369 B 3	
2301 D 4	2670 E 8	2809 C 1	3630 F 8	3814 C 6	6339 E 2	9369 B 3	
2302 D 4	2671 E 8	2810 C 1	3631 F 8	3815 C 6	6340 E 2	9369 B 3	
2303 D 4	2672 E 8	2811 C 1	3632 F 8	3816 C 6	6341 E 2	9369 B 3	
2304 D 4	2673 E 8	2812 C 1	3633 F 8	3817 C 6	6342 E 2	9369 B 3	
2305 D 4	2674 E 8	2813 C 1	3634 F 8	3818 C 6	6343 E 2	9369 B 3	
2306 D 4	2675 E 8	2814 C 1	3635 F 8	3819 C 6	6344 E 2	9369 B 3	
2307 D 4	2676 E 8	2815 C 1	3636 F 8	3820 C 6	6345 E 2	9369 B 3	
2308 D 4	2677 E 8	2816 C 1	3637 F 8	3821 C 6	6346 E 2	9369 B 3	
2309 D 4	2678 E 8	2817 C 1	3638 F 8	3822 C 6	6347 E 2	9369 B 3	
2310 D 4	2679 E 8	2818 C 1	3639 F 8	3823 C 6	6348 E 2	9369 B 3	
2311 D 4	2680 E 8	2819 C 1	3640 F 8	3824 C 6	6349 E 2	9369 B 3	
2312 D 4	2681 E 8	2820 C 1	3641 F 8	3825 C 6	6350 E 2	9369 B 3	
2313 D 4	2682 E 8	2821 C 1	3642 F 8	3826 C 6	6351 E 2	9369 B 3	
2314 D 4	2683 E 8	2822 C 1	3643 F 8	3827 C 6	6352 E 2	9369 B 3	
2315 D 4	2684 E 8	2823 C 1	3644 F 8	3828 C 6	6353 E 2	9369 B 3	
2316 D 4	2685 E 8	2824 C 1	3645 F 8	3829 C 6	6354 E 2	9369 B 3	
2317 D 4	2686 E 8	2825 C 1	3646 F 8	3830 C 6	6355 E 2	9369 B 3	
2318 D 4	2687 E 8	2826 C 1	3647 F 8	3831 C 6	6356 E 2	9369 B 3	
2319 D 4	2688 E 8	2827 C 1	3648 F 8	3832 C 6	6357 E 2	9369 B 3	
2320 D 4	2689 E 8	2828 C 1	3649 F 8	3833 C 6	6358 E 2	9369 B 3	
2321 D 4	2690 E 8	2829 C 1	3650 F 8	3834 C 6	6359 E 2	9369 B 3	
2322 D 4	2691 E 8	2830 C 1	3651 F 8	3835 C 6	6360 E 2	9369 B 3	
2323 D 4	2692 E 8	2831 C 1	3652 F 8	3836 C 6	6361 E 2	9369 B 3	
2324 D 4	2693 E 8	2832 C 1	3653 F 8	3837 C 6	6362 E 2	9369 B 3	
2325 D 4	2694 E 8	2833 C 1	3654 F 8	3838 C 6	6363 E 2	9369 B 3	
2326 D 4	2695 E 8	2834 C 1	3655 F 8	3839 C 6	6364 E 2	9369 B 3	
2327 D 4	2696 E 8	2835 C 1	3656 F 8	3840 C 6	6365 E 2	9369 B 3	
2328 D 4	2697 E 8	2836 C 1	3657 F 8	3841 C 6	6366 E 2	9369 B 3	
2329 D 4	2698 E 8	2837 C 1	3658 F 8	3842 C 6	6367 E 2	9369 B 3	
2330 D 4	2699 E 8	2838 C 1	3659 F 8	3843 C 6	6368 E 2	9369 B 3	
2331 D 4	2700 E 8	2839 C 1	3660 F 8	3844 C 6	6369 E 2	9369 B 3	
2332 D 4	2701 E 8	2840 C 1	3661 F 8	3845 C 6	6370 E 2	9369 B 3	
2333 D 4	2702 E 8	2841 C 1	3662 F 8	3846 C 6	6371 E 2	9369 B 3	
2334 D 4	2703 E 8	2842 C 1	3663 F 8	3847 C 6	6372 E 2	9369 B 3	
2335 D 4	2704 E 8	2843 C 1	3664 F 8	3848 C 6	6373 E 2	9369 B 3	
2336 D 4	2705 E 8	2844 C 1	3665 F 8	3849 C 6	6374 E 2	9369 B 3	

COMBI CIRCUIT I

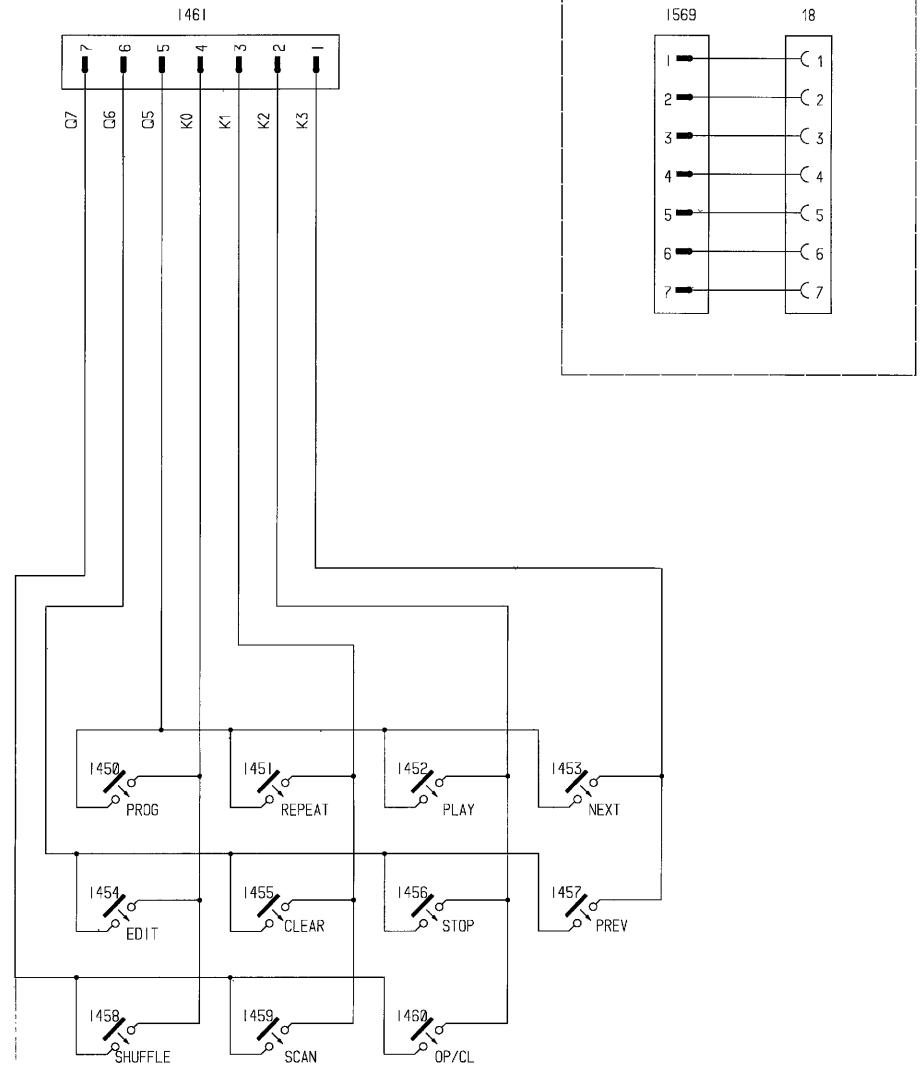


MODE	A0	A1
TAPE	0	0
TUNER	0	1
CD	1	0
AUX	1	1



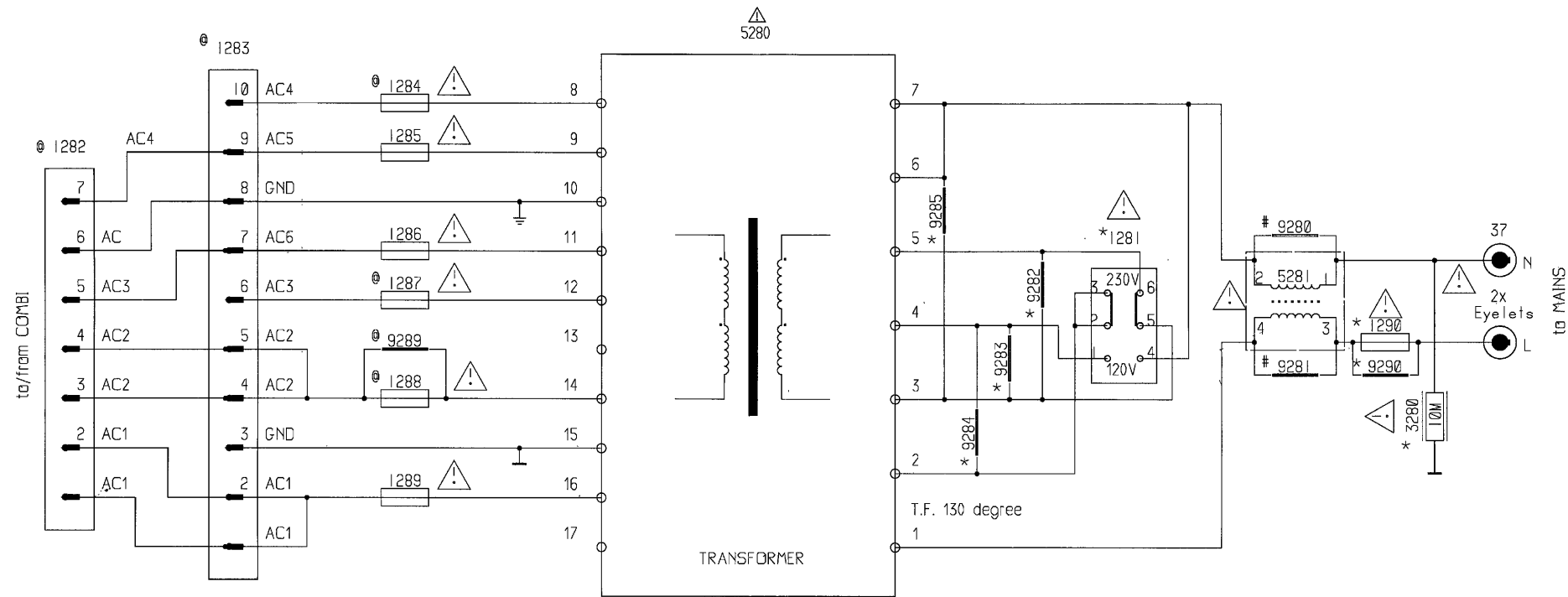
ELECTRONICS TAPE FUNCTION

FRONT III



CD CONTROLS

**TRAF0 CIRCUIT**



# NOT IN USE, (FOR PROVISION ONLY)

Note for items marked @

ITEM	MODEL	FW26	FW46
1282		Use	Not use
1283		Not use	Use
1284		Not use	Use
1287		Not use	Use
1288		Not use	Use
9289		Use	Not use
9282		Not use	UseX
9283		Not use	UseX

NOTE FOR ITEMS MARKED \*

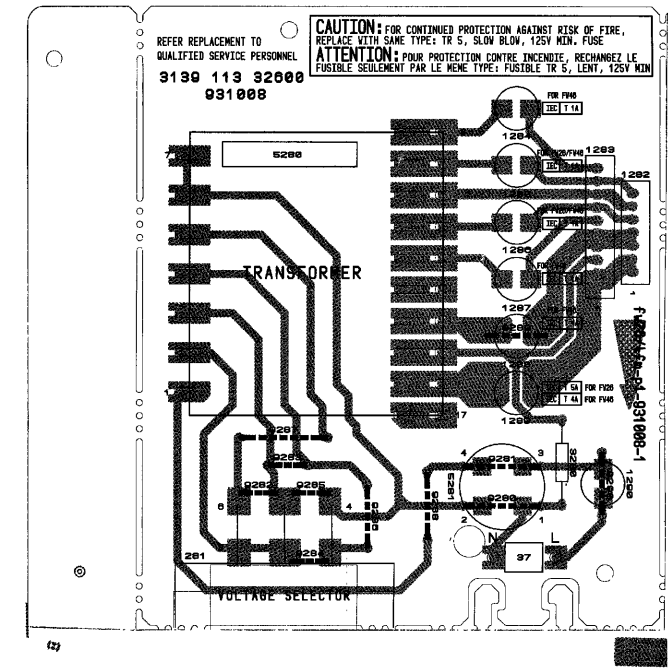
VOLTAGE	230V	120V/230V	240V	120V	100V
ITEM					
1281	Not use	Use	Not use	Not use	Not use
9282	Use@	Not use	Not use	Not use	Not use
9283	Not use	Not use	Use@	Not use	Not use
9284	Not use	Not use	Not use	Use	Not Use
9285	Not use	Not use	Not use	Use	Not Use
3280	Not use	Not use	Not use	Use	Not Use
1290	Not use	Not use	Not use	Use	Not Use
9290	Use	Use	Use	Not Use	Use

Remark

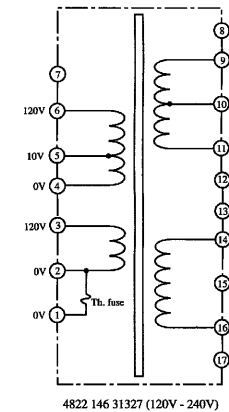
For the exact value of fuses, refer to partlist

	FW26	FW46
1284	Not use	Use
1285	Use	Use
1287	Not use	Use
1288	Not use	Use
1289	Use	Use

**TRAF0 COMPONENT LAYOUT**

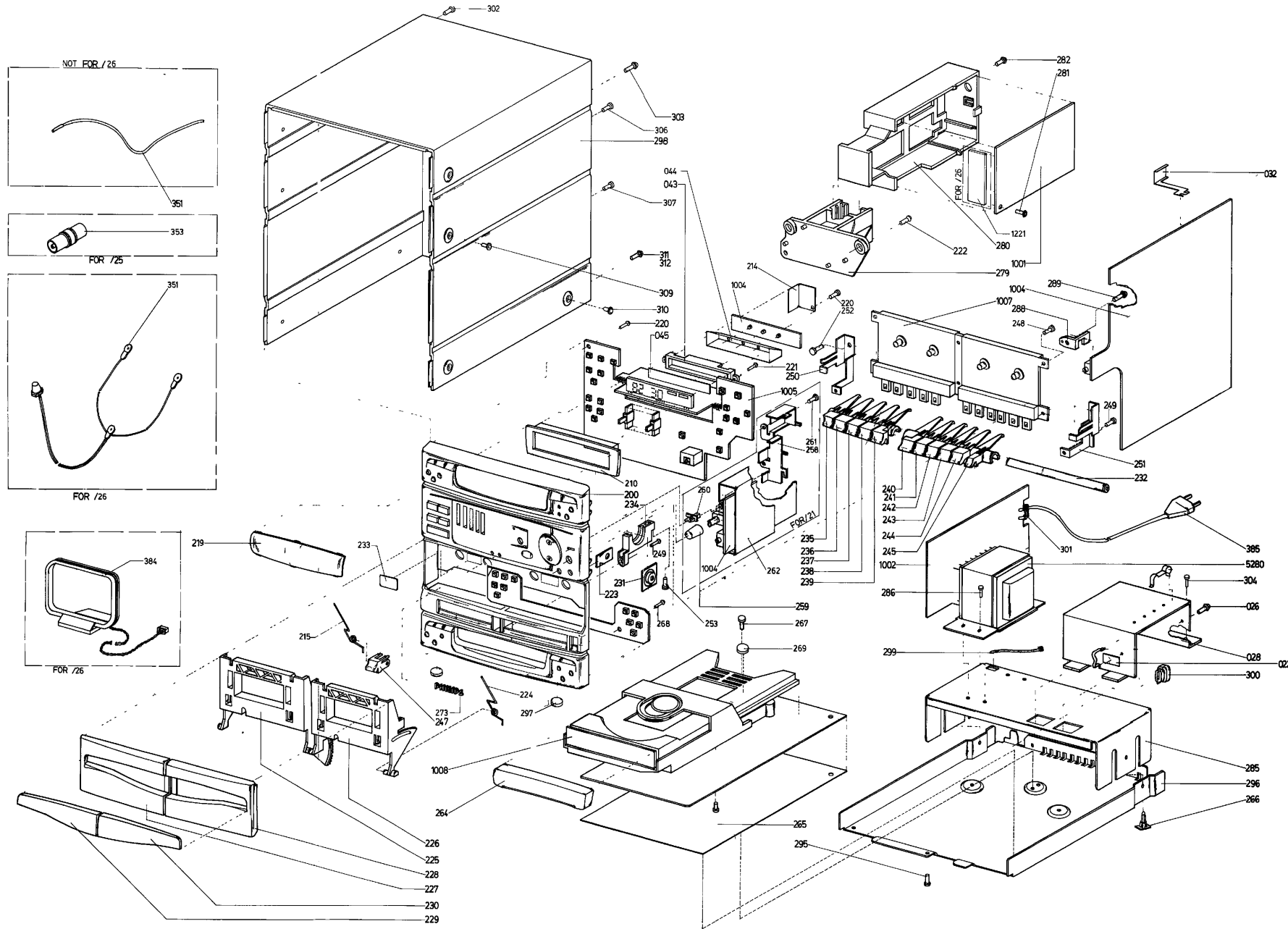


FW26 Double Primary type



4822 146 31327 (120V - 240V)

CENTRE UNIT



SCREWS LIST - MAIN UNIT

026	D2 9 x 13
220	D3 x 10
221	D3 x 10
222	D3 x 10
248	D3 x 10
249	D3 x 10
252	M3 x 6
253	M3 x 6
261	D3 x 10
267	M3 x 6
268	D3 x 8
281	D3 x 10
282	D3 x 10
286	M3 x 6
289	D3 x 8
295	M3 x 6
302	D3 x 10
303	D3 x 10
304	M3 x 6
306	D3 x 10
307	D3 x 10
309	M3 x 6
310	M3 x 6
311	M3 x 6
312	M3 x 6

MECHANICAL AND ACCESSORY PARTS - SET EXPLODED VIEW

200	4822 426 51715	Front Cabinet Assy /21
215	4822 492 42708	Spring Door Cassette (L)
219	4822 450 62187	Window Feature Assy
224	4822 492 42698	Spring Door Cassette (R)
225	4822 443 64084	Door Cassette (L)
226	4822 443 64085	Door cassette (r)
227	4822 443 64086	Cover Cassette Door (L)
228	4822 443 64087	Cover Cassette Door (R)
229	4822 450 62185	Window Cover (L)
230	4822 450 62186	Window-cover (r)
231	4822 529 10278	Damper Assembly
235	4822 410 63036	Button Deck 1 Play
236	4822 410 63037	Button Deck 1 Rewind
237	4822 410 63038	Button Deck 1 F Forward
238	4822 410 63039	Button Deck 1 Stop
239	4822 410 63041	Button Deck 1 Pause
240	4822 410 63042	Button Deck 2 Record
241	4822 410 63043	Button Deck 2 Play
242	4822 410 63044	Button Deck 2 Rewind
243	4822 410 63045	Button Deck 2 F Forward
244	4822 410 63046	Button Deck 2 Stop
245	4822 410 63047	Button Deck 2 Pause
247	4822 466 93335	Button Spacer
259	4822 413 41841	Knob - Karaoke /21
260	4822 413 41842	Knob - Vocal Cancel /21
264	4822 444 60968	Cover CD Door Assy
266	4822 466 93148	Spacer 5mm
269	4822 462 41933	Rubber
273	4822 459 11086	Badge (Philips) Assy
297	4822 462 40683	Plate (Foot)
298	4822 426 20248	Cabinet Rear /21
300	4822 532 60948	Bush, Mains Cord
350	4822 445 10393	Loudspeaker Box Assy (Philips)
351	4822 303 50063	FM Aerial
353	4822 263 21071	Adaptor Fem/Fem DIN
356	4822 218 10534	Remote Control RH6050/00
385	4806 321 17022	Mains Cord IEC

1007 Tape Mechanism YSW47

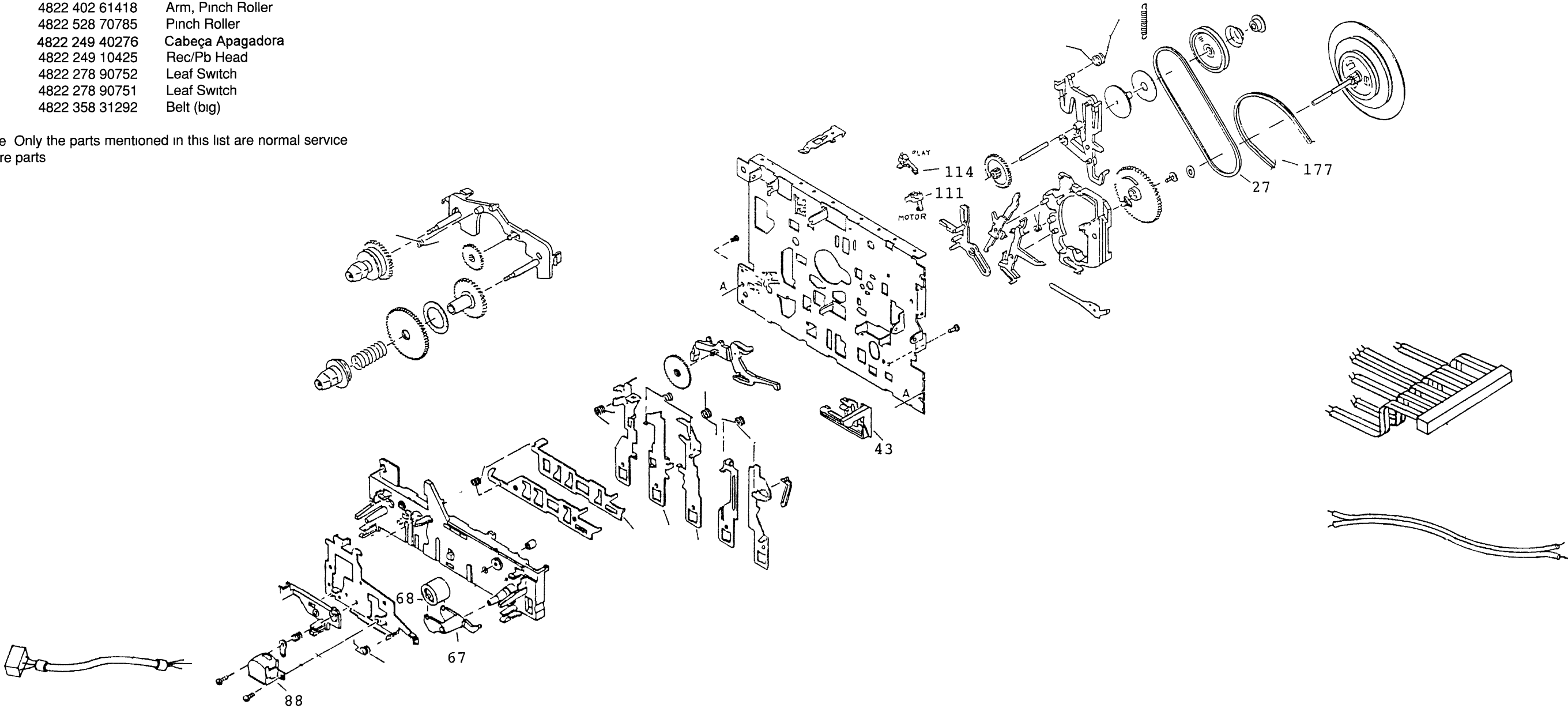
Note Only the parts mentioned in this list are normal service spare parts



**PLAYBACK MECHANISM**

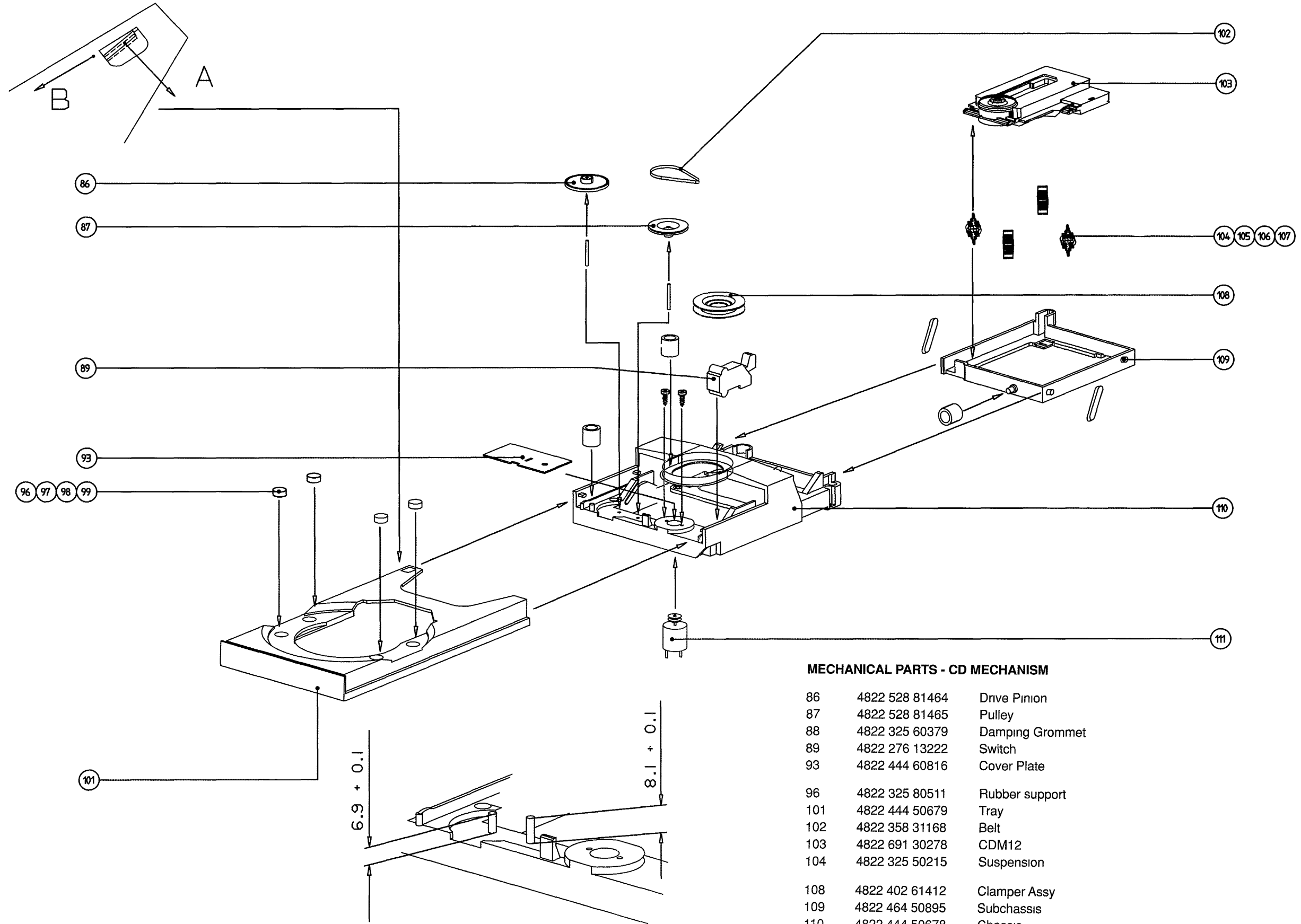
	4822 361 21585	Motor
	4822 528 81482	Polia do Motor
27	4822 358 31231	Belt (small)
43	4822 403 30811	Lever Eject
67	4822 402 61418	Arm, Pinch Roller
68	4822 528 70785	Pinch Roller
85	4822 249 40276	Cabeça Apagadora
88	4822 249 10425	Rec/Pb Head
111	4822 278 90752	Leaf Switch
114	4822 278 90751	Leaf Switch
177	4822 358 31292	Belt (big)

Note Only the parts mentioned in this list are normal service spare parts



CD EXPLODED VIEW

DETAIL I



MECHANICAL PARTS - CD MECHANISM

86	4822 528 81464	Drive Pinion
87	4822 528 81465	Pulley
88	4822 325 60379	Damping Grommet
89	4822 276 13222	Switch
93	4822 444 60816	Cover Plate
96	4822 325 80511	Rubber support
101	4822 444 50679	Tray
102	4822 358 31168	Belt
103	4822 691 30278	CDM12
104	4822 325 50215	Suspension
108	4822 402 61412	Clamper Assy
109	4822 464 50895	Subchassis
110	4822 444 50678	Chassis
111	4822 361 21492	Motor

Note Only the parts mentioned in this list are normal service spare parts

**ELECTRICAL PARTS - ECO4 MIDI BOARD**

**MISCELLANEOUS**

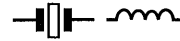
1101 4822 267 10283 Coaxial Socket 75Ω  
 1101 4822 265 20598 F-connector Coaxial 75Ω



2100 100pF 10% 50V  
 2104 100pF 10% 50V  
 2107 1nF 2% 63V  
 2110 33pF 5% 50V  
 for LW version  
 2110 6 8pF 5% 50V  
 2112 100nF 10% 63V  
 2114 100pF 5% 50V  
 for LW version  
 2115 4822 125 60101 Trimmer 3-11pF 100V  
 2120 470pF 10% 50V  
 2121 15pF 5% 50V  
 2122 1nF 2% 63V  
 2123 1nF 2% 63V  
 2124 10nF 20% 16V  
 2129 390pF 1% 160V  
 for LW version  
 2130 4822 125 50355 Trimmer 4-20pF 100V



3148 4822 100 11163 Trimmer 100k 30% 0 2W



5106 4822 158 60642 Ferrite antenna MW  
 for 2-band version  
 5109 4822 156 30947 RF Coil 1 5T  
 5120 4822 156 30947 RF Coil 1 5T  
 5122 4822 157 60517 Coil 110μH 8%  
 for LW version  
 5123 4822 157 60517 Coil 110μH 8%  
 5140 4822 158 60511 AM IF Coil 450kHz  
 5142 4822 157 70302 AM IF Coil 450kHz  
 5143 4822 242 70665 Ceramic Filter 10 7MHz  
 5144 4822 242 70665 Ceramic Filter 10 7MHz  
 5145 4822 242 81362 Ceramic Discriminator  
 5150 Coil 1mH 10%  
 5170 4822 242 72976 Ceramic Resonator  
 7 2MHz





6105 4822 130 83075 HN1V02H  
 6109 4822 130 82833 1SV228  
 6121 4806 130 37078 1N4148 (refer to circuit)  
 6122 1N4148 (refer to circuit)  
 6123 1N4148 (refer to circuit)  
 6124 4822 130 82833 1SV228  
 6140 1N4148  
 6154 1N4148  
 6174 4822 130 34233 BZX79-B5V1



7105 4806 130 47337 2SA838B  
 7120 4806 130 47316 2SC1047  
  
 7140 4822 209 32011 TEA5712T/N2 (RF IC)  
 7150 5322 209 14482 HEF4096UBT  
 (6 x Inverter)  
  
 7156 4806 130 47234 BC337-40  
 7157 BC337-40  
 7169 4806 130 47321 BC848C  
 7170 BC848C  
 7171 BC848C  
 7172 5322 209 11517 MM74HCU04M  
 (6 x Inverter)  
  
 7173 4822 209 31998 LC7218M (Synthesizer)  
 7174 4806 130 47269 BC858B  
 7178 BC858B


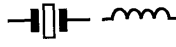


Note Only the parts mentioned in this list are normal service spare parts

**ELECTRICAL PARTS - CD BOARD**

MISCELLANEOUS		
1002	4822 242 73557	Ceramic Resonator 8 46MHz
1020	4822 071 51601 $\Delta$	Fuse T160mA 250V
1021	4822 071 51601 $\Delta$	Fuse T160mA 250V
1570	4822 242 80997	Resonator 16 93MHz
1700	4822 242 72527	Ceramic Resonator 4MHz
		
6103	4806 130 37078	1N4148
6550	4806 130 37190	BZX79-C3V9
		
7000	4822 209 31064	TDA1301T/N1
7040	4822 130 60887	BF840
7041	4806 130 47321	BC848B
7042	4806 130 47269	BC858B
7043		BC848B
7044		BC848B
7060	4822 209 72587	TCA0372DP2
7080	4822 209 72587	TCA0372DP2
7101	4822 209 32036	UM6264BM-10L
7102	4806 209 87619	SAA7341GP
7140	4806 130 47322	BC858
7141		BC848
7300	4806 209 87373	NJM4560D
7301		NJM4560D
7500	4822 209 80891 $\Delta$	MC78M05CT
7550		BC858
7660	4822 209 72587	TCA0372DP2
7700	4806 209 87374	MC68HC05C8/ SERVO-S22

Note Only the parts mentioned in this list are normal service spare parts

**ELECTRICAL PARTS - FRONT BOARD**

MISCELLANEOUS		
1401	4822 130 91315	LCD Display FW26
1410	4822 276 13114	Tact Switch
1411	4822 276 13114	Tact Switch
1412	4822 276 13114	Tact Switch
1413	4822 276 13114	Tact Switch
1414	4822 276 13114	Tact Switch
1415	4822 276 13114	Tact Switch
1416	4822 276 13114	Tact Switch
1417	4822 276 13114	Tact Switch
1418	4822 276 13114	Tact Switch
1419	4822 276 13114	Tact Switch
1420	4822 276 13114	Tact Switch
1421	4822 276 13114	Tact Switch
1422	4822 276 13114	Tact Switch
1423	4822 276 13114	Tact Switch
1424	4822 276 13114	Tact Switch
1425	4822 276 13114	Tact Switch
1426	4822 276 13114	Tact Switch
1427	4822 276 13114	Tact Switch
1428	4822 276 13114	Tact Switch
1429	4822 276 13114	Tact Switch
		
3424	4822 116 90836	Resistor network 5 x 10k
3448	4822 116 90836	Resistor network 5 x 10k
3449	4822 116 90836	Resistor network 5 x 10k
3507	4822 105 11107	Potm Slide 50k x 2
3508	4822 105 11107	Potm Slide 50k x 2
3509	4822 105 11107	Potm Slide 50k x 2
3510	4822 105 11107	Potm Slide 50k x 2
3511	4822 105 11107	Potm Slide 50k x 2
		
5401	5322 242 73697	Ceram Resonator 8MHz
5402	4822 242 70938	Crystal 32 768kHz
	4822 157 62552	Coil 2 2 $\mu$ H 20%
	4822 157 50961	Coil 22 $\mu$ H 10%
		
	4806 130 37078	1N4148
6420	4822 130 82978	LTL-16KPE
6406	4822 214 52009	GP1U58XP
		
7401	4822 209 32392	TMP87C 20F UPC FW26
7402	4822 209 31508	ST24C01
7403	4806 209 87164	HEF4094BP
7539	4806 209 87373	NJM4560D

**ELECTRICAL PARTS - COMBI BOARD**

**MISCELLANEOUS**

1304	4822 267 31176	Loudspeaker Socket
1450	4822 276 13114	Tact Switch
1451	4822 276 13114	Tact Switch
1452	4822 276 13114	Tact Switch
1453	4822 276 13114	Tact Switch
1454	4822 276 13114	Tact Switch
1455	4822 276 13114	Tact Switch
1456	4822 276 13114	Tact Switch
1457	4822 276 13114	Tact Switch
1458	4822 276 13114	Tact Switch
1459	4822 276 13114	Tact Switch
1460	4822 276 13114	Tact Switch
1497	4822 134 41171	Lamp Assy blue
1498	4822 134 41171	Lamp Assy blue
1499	4822 134 41171	Lamp Assy blue
1550	4822 267 40898	Headphone Socket
1551 *	4822 267 40898	Mic Socket
1552	4806 267 37060	AUX/TV Socket
1553 *	4822 276 12571	Vocal Fade Switch



5311	4822 157 62552	Coil 2.2μH
5312	4822 157 62552	Coil 2.2μH
5315	4822 157 62552	Coil 2.2μH
5316	4822 157 62552	Coil 2.2μH
5630 *		Coil 22μH 10%
5631 *	4822 157 50961	Coil 22μH 10%
5700	4822 157 60147	HF Bead
5701	4822 156 20946	Osc coil 100kHz



6250	4822 130 82079	△ D3SBA20
6251		1N4148
6252	4806 130 37078	1N4148
6253	4822 130 34173	BZX79-C5V6
6254		1N4148
6255	4806 130 37501	△ 1N4002
6256		△ 1N4002
6257		△ 1N4002
6258		△ 1N4002



6259	4806 130 37078	1N4148
6260	4806 130 37501	1N4002
6261	4822 130 34233	BZX79-C5V1
6350		1N4148
6351		1N4148
6354		1N4148
6355		1N4148
6501		1N4148
6502		1N4148
6503		1N4148
6504		1N4148
6505		1N4148
6510		1N4148
6700		1N4148
6701		1N4148
6704		1N4148
6706		1N4148
6709		1N4148
6710		1N4148
6711		1N4148
6714		1N4148
6716		1N4148
6719		1N4148
6720		1N4148
6721		1N4148
6724		1N4148
6728		1N4148
6729		1N4148
6730		1N4148
6732		1N4148
6734		1N4148
6735		1N4148
6736		1N4148
6738		1N4148
6739		1N4148
6740		1N4148
6741		1N4148



7250	4806 130 47078	BC548B
7252	4806 130 47066	△ BD234
7253		BC548B
7254		BC548B
7255	4806 130 47050	BC558B
7256		BC548B
7257	4822 209 80891	△ MC7805CT
7313	4822 209 73356	△ AN7161N(FP)
7314	4822 209 73356	△ AN7161N(FP)
7501	4822 209 10263	HEF4052B
7502	4806 209 87164	HEF4094BP

\* For Karaoke version only

**ELECTRICAL PARTS - COMBI BOARD**



7503	4806 130 47045	BC549C
7504		BC549C
7505		BC549C
7506		BC549C
7507	4806 130 47041	BC548B
7508		BC548B
7509		BC548B
7510	4822 209 30537	TC9153P
7511		BC549C
7512		BC549C
7513	4806 130 47332	BC338-40
7514		BC338-40
7533		BC338-40
7534		BC338-40
7630 *		BC549C
7631 *		BC549C
7632 *		BC549C
7633 *		BC549C
7634 *		BC549C
7635 *		BC549C
7702	4822 130 63494	J111
7703		BC338-40
7706		BC548C
7708		BC548C
7709	4806 130 47050	BC558C
7710		BC548C
7711		BC548C
7712		BC548C
7713	4822 209 32919	HEF4952BT
7714	4822 209 32918	AN7318S
7715	4822 209 32919	HEF4952BT
7716		BC548C
7719		BC548C
7720	4822 209 32919	HEF4952BT

\* For Karaoke version only

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

**ELECTRICAL PARTS - TRAF0 BOARD**

**MISCELLANEOUS**

1281	4822 272 10269	△	Voltage Selector /21
1285	4822 071 51002	△	Fuse T1A 250V IEC
1286	4822 071 51002	△	Fuse T1A 250V IEC
1289	4806 253 10065	△	Fuse T5A 250V IEC
5280	4822 146 31327	△	Mains Transformer /21
5281	4822 157 70003	△	Choke Coil, Mains

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