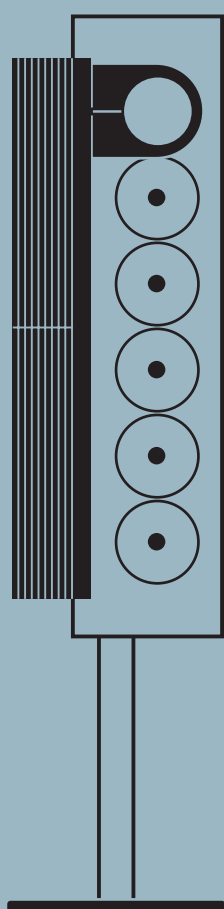


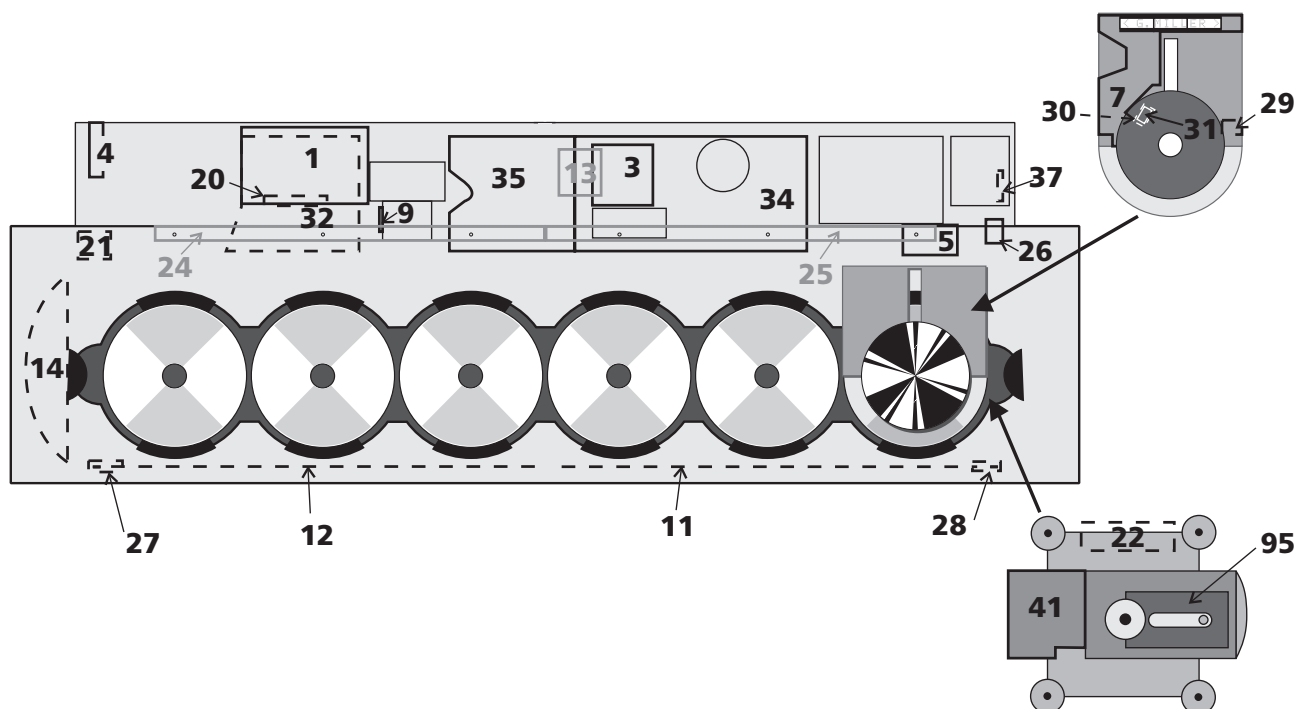
BeoSound 9000 MKIII

Type 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2580

Service Manual
English, German, French

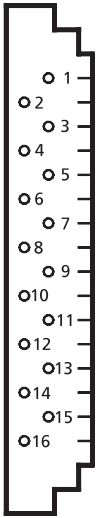
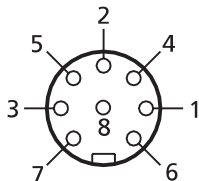
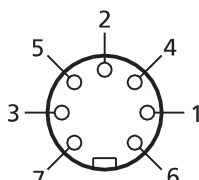
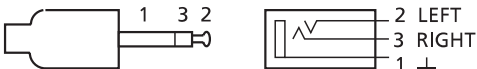

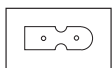


| | | | |
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= PCB13, PCB24 and PCB25 placed on the chassis topplate

| SPECIFICATION GUIDELINES FOR SERVICE USE | |
|---|---|
| With FM and AM range and RDS | BeoSound 9000 MKIII Type 2571 (EU), 2572 (GB), 2573 (USA-CDN), 2574 (J), 2575 (AUS), 2576 (TWN), 2577 (KOR), 2580 (LAT) |
| Operation | Direct keyboard Beo4, BeoLink 1000 |
| Mechanical functions | |
| Change from playing CD1 to playing CD6 (Lid closed and known CD's) | < 6.5 sec., typical 4 sec. |
| Position of CD | Typical $\pm 1^\circ$ |
| Tuner | |
| Number of Programmes | 60 |
| Stereo / Mono selection | Automatic / manual |
| Tuner, FM section | |
| Range | 87.5-108 MHz 76-90 MHz f. type 2564 |
| Aerial impedance | 75 ohm |
| Usable sensitivity mono (30 dB) | Typical 11dBf - 1 μ V |
| 50 dB quieting stereo | ≤ 41 dBf |
| Signal-to-noise at 65 dBf mono | ≥ 69 dB |
| Signal-to-noise at 65 dBf stereo | ≥ 64 dB |
| Frequency response | 20-15000Hz |
| Distortion + noise mono | $\leq 0.6\%$ |
| Distortion + noise stereo | $\leq 0.6\%$ |
| Intermodulation stereo | Typical 0.1% |
| Stereo channel separation | Typical 30dB |
| Subcarrier product rejection | ≥ 50 dB |
| Tuner, AM section | |
| Range | LW 153-279 kHz f. type 2571, 2572, 2575, 2576, 2577 MW 522-1611 kHz f. type 2571, 2572, 2575, 2576, 2577 MW 530-1710 kHz f. type 2573, 2580 MW 522-1629 kHz f. type 2574 |
| Antenna | Loop 18.1 μ H (Special) |
| LW sensitivity 20 dB S/N ratio | Typical 66dB μ V/m (2mV/m) |
| MW sensitivity 20 dB S/N ratio | Typical 60dB μ V/m (1mV/m) |
| Harmonic distortion | Typical 0.4 % |
| CD Player | |
| Number of CD's | 6 |
| Disc types | 12 cm (5"), 8 cm (3") with adaptor |
| Frequency range | 20-20.000 Hz ± 1 dB |
| Signal-to-noise ratio A-weighted | Typical 101dB |
| Dynamic range | ≥ 98 dB |
| Harmonic distortion | $\leq 0.1\%$ |
| Channel separation | ≥ 50 dB |
| Channel difference | $\leq \pm 1$ dB |
| Converter system | Bitstream |
| Preamplifier section | |
| Harmonic distortion | $\leq 0.1\%$ |
| Frequency range ± 1 dB | 10-20000Hz |
| Channel separation | ≥ 50 dB |
| Source separation | ≥ 80 dB |
| Signal-to-noise A-weight | ≥ 90 dB |
| Volume control | ≥ 90 dB |
| Bass control | 7.0dB ± 2 dB at 100Hz |
| Treble control | 7.0dB ± 2 dB at 10kHz |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|---|----------------|--|---------------------------------------|--|---------------------------|---|---------------------|---|---------------------|---|----------------|---|---------------|---|---------------|---|---------------|---|---------------|---|---------------|---|---------------|-----|
| Connections | | | | | | | | | | | | | | | | | | | | | | | | | |
| Master Link |  <table border="1"> <tr><td>Pin 1</td><td>Data-, -0.5 V \pm0.2 V in relation to Data+</td></tr> <tr><td>Pin 2</td><td>Data+, +0.5 V \pm0.2 V in relation to Data-</td></tr> <tr><td>Pin 3</td><td>ML connect > 3 V</td></tr> <tr><td>Pin 4-6</td><td>+supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V)</td></tr> <tr><td>Pin 7-10</td><td>Not used</td></tr> <tr><td>Pin 11</td><td>-supply voltage, -7 V to -15 V (in stand-by -2 V to -15 V)</td></tr> <tr><td>Pin 12</td><td>+supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V)</td></tr> <tr><td>Pin 13</td><td>Audio L- in/out, 2 V Bal, in relation to Audio L+, Rin 4.4 MW, Rout 150 Ω</td></tr> <tr><td>Pin 14</td><td>Audio L+ in/out, 2 V Bal, in relation to Audio L-, Rin 4.4 MW, Rout 150 Ω</td></tr> <tr><td>Pin 15</td><td>Audio R- in/out, 2 V Bal, in relation to Audio R+, Rin 4.4 MW, Rout 150 Ω</td></tr> <tr><td>Pin 16</td><td>Audio R+ in/out, 2 V Bal, in relation to Audio R-, Rin 4.4 MW, Rout 150 Ω</td></tr> <tr><td>Shield</td><td>GND</td></tr> </table> | Pin 1 | Data-, -0.5 V \pm 0.2 V in relation to Data+ | Pin 2 | Data+, +0.5 V \pm 0.2 V in relation to Data- | Pin 3 | ML connect > 3 V | Pin 4-6 | +supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V) | Pin 7-10 | Not used | Pin 11 | -supply voltage, -7 V to -15 V (in stand-by -2 V to -15 V) | Pin 12 | +supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V) | Pin 13 | Audio L- in/out, 2 V Bal, in relation to Audio L+, Rin 4.4 MW, Rout 150 Ω | Pin 14 | Audio L+ in/out, 2 V Bal, in relation to Audio L-, Rin 4.4 MW, Rout 150 Ω | Pin 15 | Audio R- in/out, 2 V Bal, in relation to Audio R+, Rin 4.4 MW, Rout 150 Ω | Pin 16 | Audio R+ in/out, 2 V Bal, in relation to Audio R-, Rin 4.4 MW, Rout 150 Ω | Shield | GND |
| Pin 1 | Data-, -0.5 V \pm 0.2 V in relation to Data+ | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 2 | Data+, +0.5 V \pm 0.2 V in relation to Data- | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 3 | ML connect > 3 V | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 4-6 | +supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 7-10 | Not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 11 | -supply voltage, -7 V to -15 V (in stand-by -2 V to -15 V) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 12 | +supply voltage, +7 V to +15 V (in stand-by +3 V to +15 V) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 13 | Audio L- in/out, 2 V Bal, in relation to Audio L+, Rin 4.4 MW, Rout 150 Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 14 | Audio L+ in/out, 2 V Bal, in relation to Audio L-, Rin 4.4 MW, Rout 150 Ω | | | | | | | | | | | | | | | | | | | | | | | | |
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| Pin 16 | Audio R+ in/out, 2 V Bal, in relation to Audio R-, Rin 4.4 MW, Rout 150 Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| Shield | GND | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Link |  <table border="1"> <tr><td>Pin 1</td><td>Power up (ON = >2.7 V -1mA)</td></tr> <tr><td>Pin 2</td><td>Signal GND</td></tr> <tr><td>Pin 3</td><td>Audio L out 0 V to 2 V RMS</td></tr> <tr><td>Pin 4</td><td>Speaker ON (ON = >2.7 V -1 mA)</td></tr> <tr><td>Pin 5</td><td>Audio R out 0 V to 2 V RMS</td></tr> <tr><td>Pin 6</td><td>Datalink out (High = >4 V, Low = <0.2 V)</td></tr> <tr><td>Pin 7</td><td>Data GND</td></tr> <tr><td>Pin 8</td><td>PL+ ON</td></tr> </table> | Pin 1 | Power up (ON = >2.7 V -1mA) | Pin 2 | Signal GND | Pin 3 | Audio L out 0 V to 2 V RMS | Pin 4 | Speaker ON (ON = >2.7 V -1 mA) | Pin 5 | Audio R out 0 V to 2 V RMS | Pin 6 | Datalink out (High = >4 V, Low = <0.2 V) | Pin 7 | Data GND | Pin 8 | PL+ ON | | | | | | | | |
| Pin 1 | Power up (ON = >2.7 V -1mA) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 2 | Signal GND | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 3 | Audio L out 0 V to 2 V RMS | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 4 | Speaker ON (ON = >2.7 V -1 mA) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 5 | Audio R out 0 V to 2 V RMS | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 6 | Datalink out (High = >4 V, Low = <0.2 V) | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 7 | Data GND | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 8 | PL+ ON | | | | | | | | | | | | | | | | | | | | | | | | |
| Audio Aux Link |  <table border="1"> <tr><td>Pin 1</td><td>Audio L out 1 V RMS, Rout 1 kΩ</td></tr> <tr><td>Pin 2</td><td>GND</td></tr> <tr><td>Pin 3</td><td>Audio L in 0.25 V RMS to 2 V RMS, Rin 47 kΩ</td></tr> <tr><td>Pin 4</td><td>Audio R out 1 V RMS, Rout 1 kΩ</td></tr> <tr><td>Pin 5</td><td>Audio R in 0.25 V RMS to 2 V RMS, Rin 47 kΩ</td></tr> <tr><td>Pin 6-7</td><td>Not used</td></tr> </table> | Pin 1 | Audio L out 1 V RMS, Rout 1 k Ω | Pin 2 | GND | Pin 3 | Audio L in 0.25 V RMS to 2 V RMS, Rin 47 k Ω | Pin 4 | Audio R out 1 V RMS, Rout 1 k Ω | Pin 5 | Audio R in 0.25 V RMS to 2 V RMS, Rin 47 k Ω | Pin 6-7 | Not used | | | | | | | | | | | | |
| Pin 1 | Audio L out 1 V RMS, Rout 1 k Ω | | | | | | | | | | | | | | | | | | | | | | | | |
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| Pin 3 | Audio L in 0.25 V RMS to 2 V RMS, Rin 47 k Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 4 | Audio R out 1 V RMS, Rout 1 k Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 5 | Audio R in 0.25 V RMS to 2 V RMS, Rin 47 k Ω | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin 6-7 | Not used | | | | | | | | | | | | | | | | | | | | | | | | |
| Headphones |  <p>\varnothing 3.5 mm, 220 W</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| Digital output CD |  <table border="1"> <tr><td colspan="2">AES / EBU</td></tr> <tr><td colspan="2">IEC 958</td></tr> <tr><td colspan="2">0.5Vpp, 75W, 1%</td></tr> </table> | AES / EBU | | IEC 958 | | 0.5Vpp, 75W, 1% | | | | | | | | | | | | | | | | | | | |
| AES / EBU | | | | | | | | | | | | | | | | | | | | | | | | | |
| IEC 958 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.5Vpp, 75W, 1% | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mains |  <table border="1"> <tr><td colspan="2">Cable included</td></tr> <tr><td colspan="2">Type 2571, 2572, 2577, 2580 – 230V AC</td></tr> <tr><td colspan="2">Type 2573, 2576 – 120V AC</td></tr> <tr><td colspan="2">Type 2574 – 100V AC</td></tr> <tr><td colspan="2">Type 2575 – 240V AC</td></tr> </table> | Cable included | | Type 2571, 2572, 2577, 2580 – 230V AC | | Type 2573, 2576 – 120V AC | | Type 2574 – 100V AC | | Type 2575 – 240V AC | | | | | | | | | | | | | | | |
| Cable included | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type 2571, 2572, 2577, 2580 – 230V AC | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type 2573, 2576 – 120V AC | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type 2574 – 100V AC | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type 2575 – 240V AC | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power frequency | 50-60 Hz | | | | | | | | | | | | | | | | | | | | | | | | |
| Power consumption Stand.by | Typical 1.0W | | | | | | | | | | | | | | | | | | | | | | | | |
| Power consumption | Typical 15W | | | | | | | | | | | | | | | | | | | | | | | | |

Dimensions

| | |
|-----------|--------------------|
| W x H x D | 86.9 x 7 x 30.1 cm |
| Weight | 11.5kg |
| Finish | Black, aluminium |

Optional accessories

| | |
|----------------------------------|---------------------|
| Beo4 | Type 1624, 1625 (I) |
| Wall bracket horizontal | Type 2054 |
| Wall bracket vertical | Type 2063 |
| Bracket | Type 2053 |
| Stand, adjustable in two heights | Type 2065 |
| Cable cover | Type 2062 |
| AM loop antenna | 8720047 |
| FM antenna | 8720048 |

| Type | Transformer | PCB5 Mains Relay | PCB34 Power Supply | PCB1 FM/AM | Mains cable |
|----------|---------------------|---------------------|-----------------------|---------------|-------------|
| 2571 EU | 8013551 EU-230V AC | 8005661 EU | 8000512 EU | 8000462 EU | 6100273 |
| 2572 GB | 8013551 EU-230V AC | 8005661 EU | 8000512 EU | 8000462 EU | 6100329 |
| 2573 US | 8013549 US-120V AC | 8005664 US | 8000536 US | 8000462 EU | 6100307 |
| 2574 JAP | 8013548 JAP-100V AC | 8005661 EU | 8000512 EU | 8000535 JAP | 6100331 |
| 2575 AUS | 8013550 AUS-240V AC | 8005661 EU | 8000512 EU | 8000462 EU | 6100332 |
| 2576 TWN | 8013549 US-120V AC | 8005664 US | 8000536 US | 8000462 EU | 6100307 |
| 2577 KOR | 8013551 EU-230V AC | 8005661 EU | 8000512 EU | 8000462 EU | 6100386 |
| 2580 LAT | 8013551 EU-230V AC | 8005661 EU | 8000512 EU | 8000462 EU | 6100273 |

Subject to change without notice

BRIEF OPERATION GUIDE

For more detailed operation see User's guide.

Closeup operation:

Loading CDs

- Press to raise the glass door
- Press to lower the glass door
- or
- Press to lower the door and start playing

CD playback

- Press to play a CD

- Press to play the next track on a CD
- or
- Press to play the same track again or press twice to play the previous track

- Press to pause playback
- Press to resume playing

Random

- Press to display [RANDOM ON] and cut in the random play function

- Press twice to display [RANDOM OFF] and cancel the random play function

- Press to switch to stand-by

Choosing a sequence of discs

- Press to start playback of a CD

- Press SELECT and [SELECT DISC] will appear on the display

- Press the direct CD selection buttons next to the CDs you want to include...

- Press SELECT to start clearing a sequence and play all six CDs

- then
- Press to clear the sequence

Programming a series of tracks for one CD

- Press to play CD

- Press to scan the CD [EDITING?] appears on the display
- then
- Press to start scanning the tracks

- Press to include a track number in the series
- or
- Press to exclude a track number from the series

- [EDITING OK] appears on the display when you have included or excluded the last track...
- then
- Press to accept the track series

- To clear a track series...

- Choose the CD whose track series you want to clear
- then
- Press to access the programming option
- then
- Press to clear the track series altogether

Playing edited CDs

- Press to start playback of a CD
- then
- Press to display [EDIT ON] and start edited playback

- Press twice to play a CD in full and cancel EDIT – [EDIT OFF] appears on the display

Positioning CDs

- Load and adjust a CD manually...

- Then press the direct CD selection button next to this CD to move the carriage to the CD ...

- then
- Press to access the positioning function for CDs
- then
- Press to store the position for this CD

Repeat this procedure for all the CDs you have loaded...

If you want to clear the positions for a CD, move the carriage to the CD in question...

- Press to access the positioning function to clear the position
- then
- Press to clear the position

Naming CDs

- Press to play CD
- then
- Press to access the naming function
- then
- Press to reveal the characters or numbers one by one
- or
- Press to move to next character position
- then
- Press to store the name

- Press while you are naming CDs or track series in order to automatically store the name and exit the naming function

To clear a name, follow this procedure...

- Press to access the naming function
- then
- Press to clear the name
- then
- Press to return to normal source operation

Listing CDs

- Press to play CD

- Press to access the naming list [CD LIST] appears briefly, then the name of the current CD appears

- Press to list the names one by one and return to names further up the list
- or
- Press to list the names one by one and return to names further down the list

- Press to clear a name while the appropriate name is displayed

- Press to return to normal source operation

Playing your radio programs

- RADIO** Press to turn on the radio

- ▲** Press to step through your radio programs
or
▼

- Press to switch to stand-by

Presetting radio stations

- RADIO** Press to turn on the radio
- TUNE** Press to start the tuning function
- AM/FM** Press to select [AM] or [FM], switches from one to the other, check display for an indication of which one you have chosen
- then
▲ Press to search for a radio station up or down the frequency band
or
▼
then
OK Press to accept the station you have found

- P. NO.** Press to change the displayed program number
- then
▲ Press to select for a program number – up or down
or
▼
then
OK Press to store your new radio program – [STORED] appears on the display

Fine tuning a radio station

- RADIO** Press to turn on the radio program you want to fine tune
- TUNE** Press to start the fine tuning function
then
TUNE
- ▲** Press to fine tune your program towards a higher or lower frequency
or
▼
then
OK Press to accept your fine tuned program
- then
OK Press again to store program and program number

Mono/stereo reception

- RADIO** Press to turn on the relevant radio program
- TUNE** Press to choose [MONO] or [STEREO]
then
TUNE
then
TUNE
then
▲ Press to switch from stereo to mono
or
▼
- OK** Press to store your new tuning on the program number

Clearing presets...

- RADIO** Press to turn on the radio
- ▲** Press to search for program number
or
▼
- CLEAR** Press to clear the program
then
OK Press to confirm the clearing of the radio program

Naming radio programs

- RADIO** Press to turn on the radio program you want to name
- NAMING** Press to start the naming function. The first of the twelve character positions blinks, indicating that you can start "writing" a name
- ▲** Press to reveal the characters one by one
or
▼ Press to reveal previously shown characters
- then
OK Press to move to the next character position
- then
OK Press to store the name of the radio station [NAMING OK] will appear on the display
- or
RADIO Press to store the name and exit the naming function. You can press RADIO at any time to store and exit the naming function

To clear a name...

- NAMING** Press to access the naming function
then
CLEAR Press to clear the name

Playing auxiliary sources

- A. AUX** Press to select extra equipment

Adjusting sound

- VOL ▲** Press to raise the volume
- VOL ▼** Press to lower the volume
- TREBLE** Press to access treble
- BASS** Press to access bass
- BALANCE** Press to access balance
- ▲** Press to raise or lower the treble and bass levels; or adjust the balance between the left and the right speaker
or
▼
- LOUDNESS** Press to see the status of the loudness adjustment function – [LOUDNESS ON] or [LOUDNESS OFF]. Press LOUDNESS again to change the setting
- OK** Press to accept all sound levels - [SOUND OK?] appears on the display
- then
OK Press to store all sound levels

If you have not stored your sound adjustments...

- RESET** Press to reset the sound levels to their previously stored settings

Switching displays, example

- RADIO** Press to turn on the radio
- OK** Press repeatedly to change the radio display indication

Programming Timers

- TIMER** Press to start programming timers
- then
▲ Press to choose a source for your Timer or choose a Timer stand-by
or
▼
then
OK Press to accept the Timer
- Then program when you want the Timer to start and stop...
- ▲** Press repeatedly until you have found the exact time for starting a Timer play
or
▼
then
OK Press to accept start

Repeat the procedure with the ▲ and ▼ buttons and OK to program the exact timer for stopping a Timer

To program a [SINGLE DATE] Timer...

- ▶ Press to display the date you want to program a Timer for
- or
- ▶ Press to display the date you want to program a Timer for
- then
- ▶ Press to accept the selection
- then
- ▶ Press to store your Timer programming and return to normal source operations

Checking or clearing Timers

- ▶ Press to check your timers
- then
- ▶ Press to see timer programming number, source and program number of individual timer entries
- or
- ▶ Press to see timer programming number, source and program number of individual timer entries
- then
- ▶ Press repeatedly to display the details of a particular programming

- When the display reads [OK ?]
- then
- ▶ Press to display [NEXT ?] to see your next timer programming entry
- or
- ▶ Press to display [NEXT ?] to see your next timer programming entry
- then
- ▶ Press to see your next entry – If there are no more entries, [NO MORE], will appear on the display

- ▶ Press clear while information regarding a timer programming is displayed on the display – [CLEARED] will appear on the display after pressing CLEAR

Setting and using the built-in clock

- ▶ Press to call up the built-in clock
- then
- ▶ Press to set time, date/month or year...
- or
- ▶ Press to set time, date/month or year...
- then
- ▶ Press to accept the changes and reveal the next display - Repeat this setting procedure for date/month and year...
- When you have set or changed the year, the display now reads [CLOCK OK?]
- then
- ▶ Press to store your new setting of the clock

- ▶ Press to show the clock
- ▶ Press to see the date and year
- To display the clock permanently...
- ▶ Press when Date and Year is displayed and change the display to time and ON e.g. [14:40 ON] – press again to cancel the permanent showing of the clock e.g. [14:41 OFF].

Option programming Beo4

- hold
- ▶ while pressing
- ▶ Until the Beo4 display reads OPTIONS?
- then
- ▶ Until the display reads A:OPT
- then
- ▶ Disable the remote control function
- or
- ▶ Enable the remote control function

Option programming BeoLink 1000

- ▶ Disable the remote control function
- or
- ▶ Enable the remote control function

Automatic demonstration

The product can be brought into automatic demonstration mode in which it plays back 90 randomly chosen tracks. Each track is played back for 20 seconds.

Load six CD's with at least ten tracks each.

Bring the product into stand-by.

Press: SHIFT 9 1 9 9 6.
The remote control terminal must be in audio mode.
(SHIFT is found under LIST on Beo4)

The automatic demonstration can be stopped by bringing BeoSound 9000 into stand-by, which is done by actuating stand-by on the product.

During the automatic demonstration the sound will be muted. Demute the product if you want sound.

Locking of glass lid

The glass lid can be locked so that it cannot be operated on the product.

Press: SHIFT 9 0 3 6 9.
The remote control terminal must be in audio mode.

The display reads: LOCK.

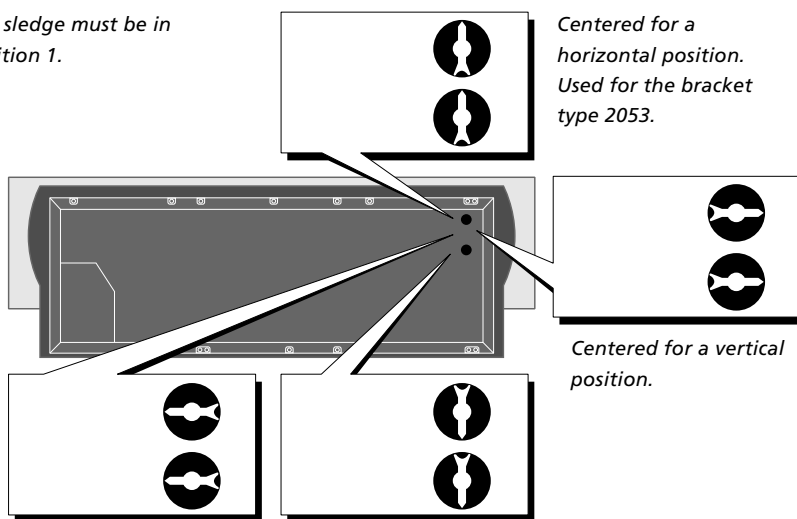
The function is stopped by pressing: SHIFT 9 0 3 6 9.
The remote control terminal must be in audio mode.

SHIFT is found under LIST on Beo4

The display reads: UNLOCK.

Centering the CD drive mechanism

The sledge must be in position 1.



Centered for a flat or near flat position. This is the factory setup.

Centered for a horizontal position. Used for the bracket type 2054.

The PIN-code system

Activate the PIN-code system

While the BeoSound 9000 is in stand-by mode you can set up the PIN-code.

| | |
|-----------------------------------|--|
| ▼ ▼ PAUSE NEW PIN | Press ▼ twice followed by PAUSE to activate the PIN-code function. The display shows NEW PIN for 1.5 sec.... |
| PIN _ _ _ _ | ...then you can enter a PIN-code |
| ▲ ▼ | Press to select a digit* |
| OK | Press to accept the digit |

The digit is replaced by a * and the next underscore blinks. Continue to enter the last three digits in the same manner.

If you wish to change the entered digits...

| | |
|--------------|--|
| RESET | Press to start entering from the beginning |
|--------------|--|

When the PIN-code has been entered...

| | |
|-----------|---|
| OK | Press to accept the PIN-code. The display shows CONFIRM for 1.5 sec.... |
| CONFIRM | |

| | |
|-------------|-------------------------------|
| PIN _ _ _ _ | ...then re-enter the PIN-code |
|-------------|-------------------------------|

| | |
|-----------|-------------------------------|
| OK | Press to confirm the PIN-code |
|-----------|-------------------------------|

| | |
|--------|---|
| STORED | The display shows that your setting is stored |
|--------|---|

If an incorrect code is entered the second time you must set up the PIN-code from the beginning.

Change or delete your PIN-code

While the PIN-code function is turned on you can always make changes to the PIN-code.

| | |
|---|---|
| ▼ ▼ PAUSE PIN _ _ _ _ NEW PIN? | Press ▼ twice followed by PAUSE to activate the PIN-code function. Enter the current PIN-code. The display shows NEW PIN? |
| ▲ ▼ NEW PIN? PIN OFF? | Press to choose from the two options NEW PIN? or PIN OFF? |

Select NEW PIN? to change your PIN-code

| | |
|----------------------|---|
| PIN _ _ _ _ | Enter the new PIN-code |
| OK CONFIRM | Press to accept the new PIN-code. The display shows CONFIRM for 1.5 sec.... |

| | |
|-------------|-----------------------------------|
| PIN _ _ _ _ | ...then re-enter the new PIN-code |
|-------------|-----------------------------------|

| | |
|-----------|-----------------------------------|
| OK | Press to confirm the new PIN-code |
|-----------|-----------------------------------|

| | |
|--------|--|
| STORED | The display shows that your new PIN-code is stored |
|--------|--|

Select PIN OFF? to delete your PIN-code

| | |
|---------|--|
| DELETED | The PIN-code function is disabled and the display shows DELETED for 3 sec. |
|---------|--|

For security reasons it is only possible to change or verify the PIN-code five times within a period of 3 hours. If an incorrect code is entered five times, BeoSound 9000 is turned off, and must be left in stand-by mode for 3 hours, before you may try again.

Using your PIN-code

When a PIN-code has been programmed, and the BeoSound 9000 has been disconnected from the mains for more than 30 minutes, you must enter the PIN-code when the BeoSound 9000 is turned back on.

| | |
|-------------|--|
| PIN _ _ _ _ | Enter the PIN-code |
| ▲ ▼ | Press to select a digit |
| OK | Press to accept the digit |
| RADIO 1 | When the PIN-code has been entered the display returns to the relevant source display e.g. RADIO 1 |

If an incorrect PIN-code is entered the display will show ERROR and you may try again. After the fifth try, the BeoSound 9000 is turned off, and must be left in stand-by mode for 3 hours, before you can try again.

Did you forget your PIN-code?

Should you forget your PIN-code you can require a five-digit Master Code from your Bang & Olufsen retailer.

When you have received a Master Code...

| | |
|-------------|--|
| PIN _ _ _ _ | When the display is open for PIN-code input... |
|-------------|--|

| | |
|--------------------|--|
| ▼ PIN _ _ _ _ _ | Press the ▼ button for more than 3 seconds to change the display to fit 5 digits |
|--------------------|--|

| | |
|---------------|-----------------------|
| PIN _ _ _ _ _ | Enter the Master Code |
|---------------|-----------------------|

| | |
|--------|-------------------------|
| ▲ ▼ | Press to select a digit |
|--------|-------------------------|

| | |
|-----------|---------------------------|
| OK | Press to accept the digit |
|-----------|---------------------------|

| | |
|---------|---|
| DELETED | The display shows that the PIN-code lock is off |
|---------|---|

When the Master Code is entered, the BeoSound 9000 can be used without entering the code again.

*NOTE!: It is also possible to enter the digits using the number keys 0 – 9 on your Beo4 remote control.

Explanation of diagram

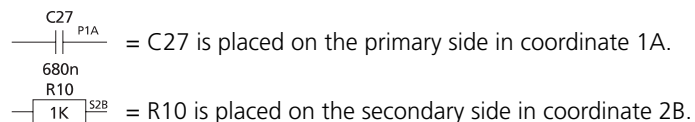
Type numbers of transistors and ICs are indicated on the diagrams. If the position is followed by an asterisk the spare part number must always be used because the component in question has been specially selected, e.g. IC4*.

Component print and coordinate system

The largest PCBs have component prints and a coordinate system on both the primary and the secondary side.

On the diagrams every component has a coordinate number.

This indicates in which coordinate on the PCB the component is situated. The coordinate numbers are written in smaller print types than the position numbers.



Control circuit

In certain control circuits the active mode is indicated by a function term or by an abbreviation. This may be e.g. $\overline{\text{ST.BY.}}$ = low in the stand-by mode or ST.BY. = high in the stand-by mode.

Wiring connections

The wiring connections on the diagrams are assembled in 'bundles'.

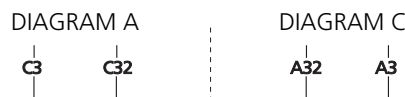
The individual wires are provided with one of the following codes:

INTERNAL CONNECTION ON ONE DIAGRAM PAGE



Internal connections on a diagram page are indicated by a number. The bend of the wire indicates in which direction the other end of the wire is found.

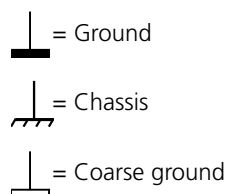
CONNECTION TO ANOTHER DIAGRAM PAGE



A connection to another diagram page is indicated by a number as well as by a letter of the diagram to which the connection leads.

Ground symbols

Three different ground symbols are used in the set.



Symbol of safety components



When replacing components with this symbol, components with identical part numbers must be used. The new component must be mounted in the same way as the one replaced.

Measuring conditions

All DC voltages have been measured in relation to ground with a voltmeter with an input impedance of 10 Mohms.

The DC voltages are stated in volts (V), e.g. 0.7V.

All oscillograms and AC voltages have been measured in relation to ground with an oscilloscope or a voltmeter with an input resistance of 1Mohm.

AC voltages are stated in millivolts (mV), e.g. 660mV.

Caution

The use of any controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.



The black and yellow label on the compact disc player serves as a warning that the apparatus contains a laser system and is classified as a class 1 laser product. The apparatus must be opened by qualified servicemen only.

CD laserdiode

Wavelength 780 nm \pm 20 nm, 30°C

Effect 2 mW \pm 0.1 mW, 30°C

Lithium battery**WARNING**

Short-circuit and overcharging of some types of lithium batteries may result in a violent explosion.

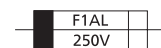
When replacing the lithium battery in this set, note the following:

Use only batteries of the same make and type as mentioned in this service manual (see page 3.9).

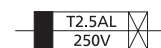
Place the battery exactly like the old one.

Explanation of the fuse symbols used in the set

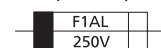
Replace with the same type 1 ampere 250 volts quick acting fuse.



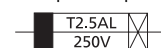
Replace with the same type 2.5 ampere 250 volts slow acting fuse.

**Explanation des symboles de fusible utilisés dans l'appareil**

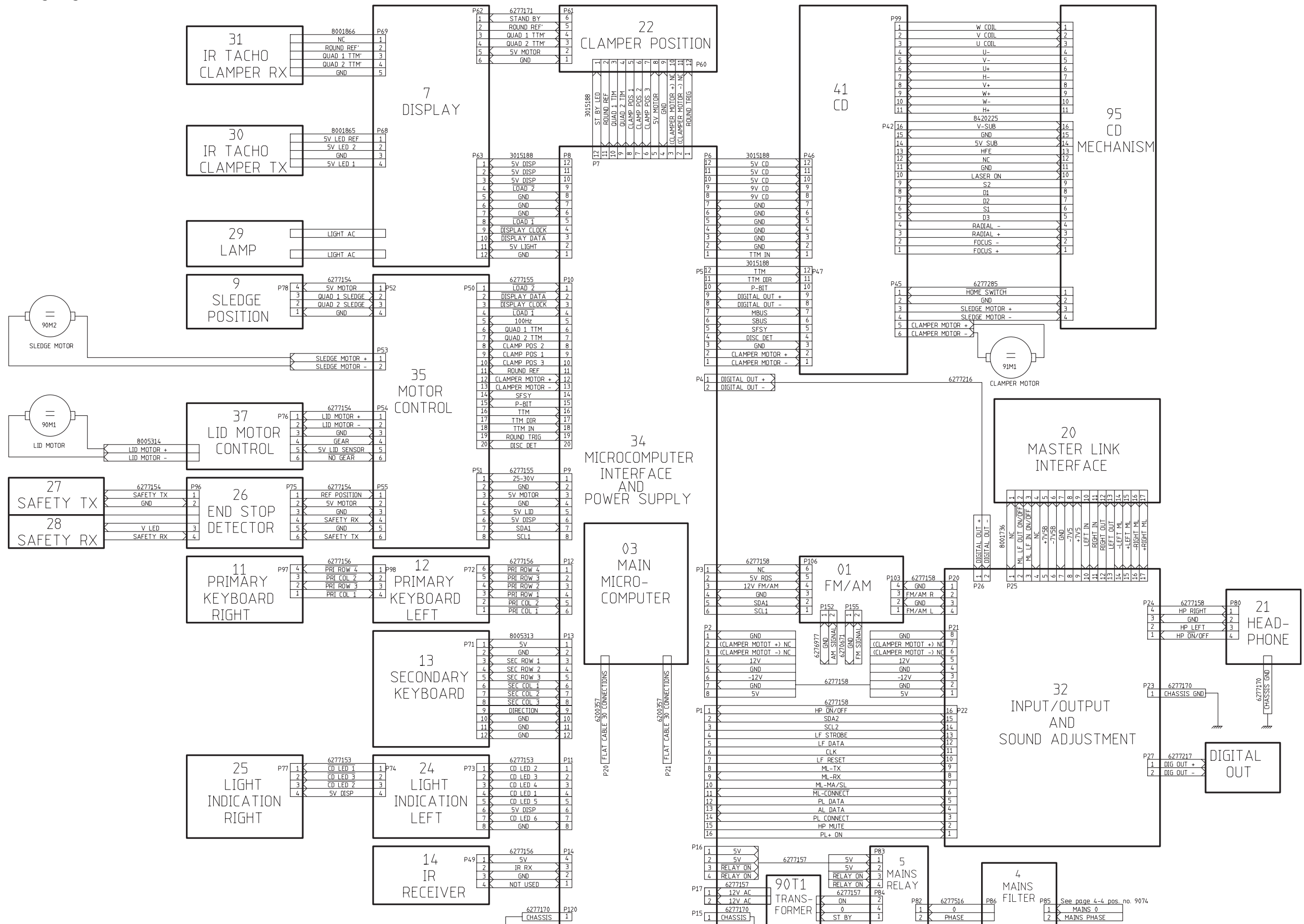
Remplacer par un fusible rapide de même type et de 1 ampères 250 volts.



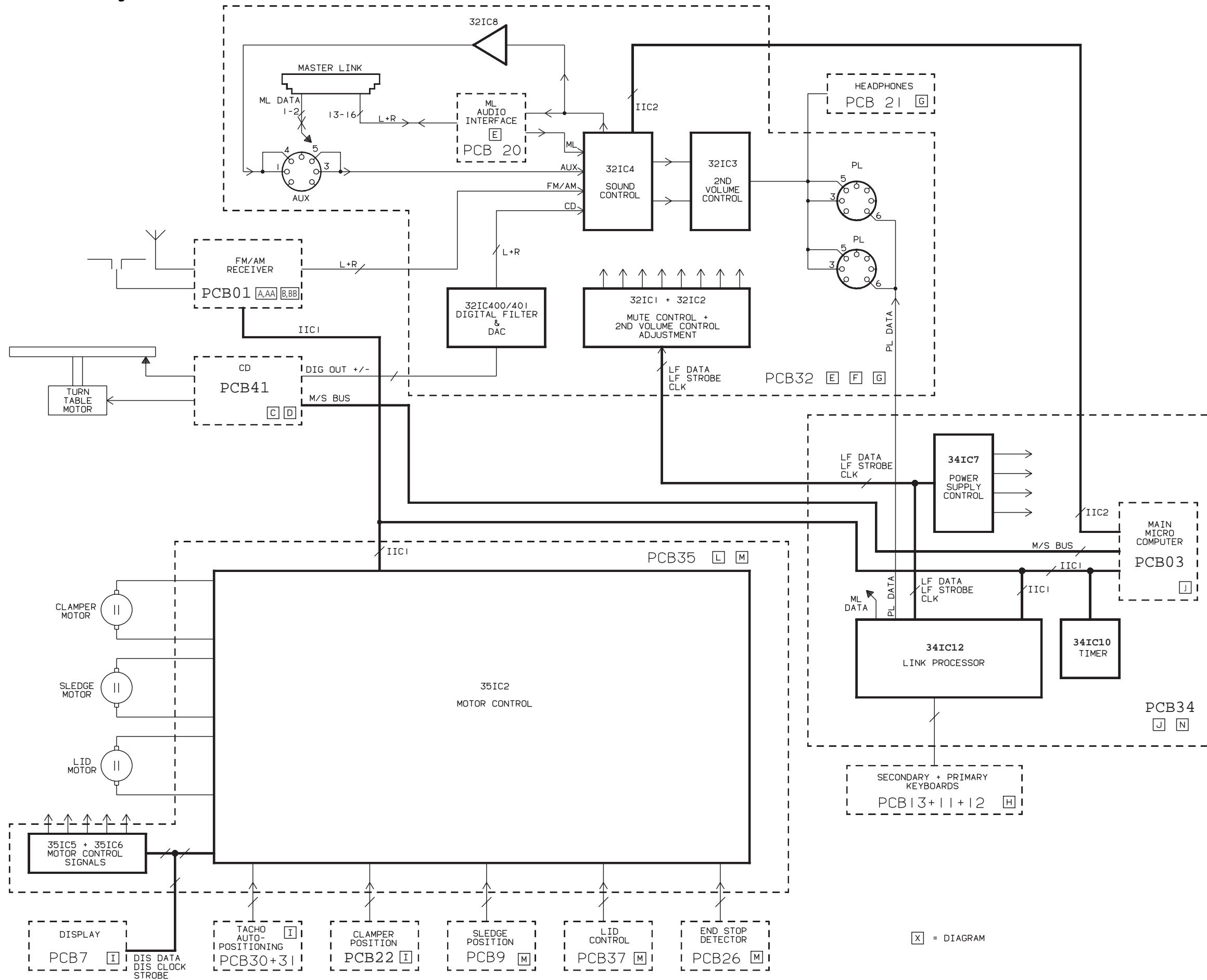
Remplacer par un fusible retardè de même type et de 2.5 ampères 250 volts.



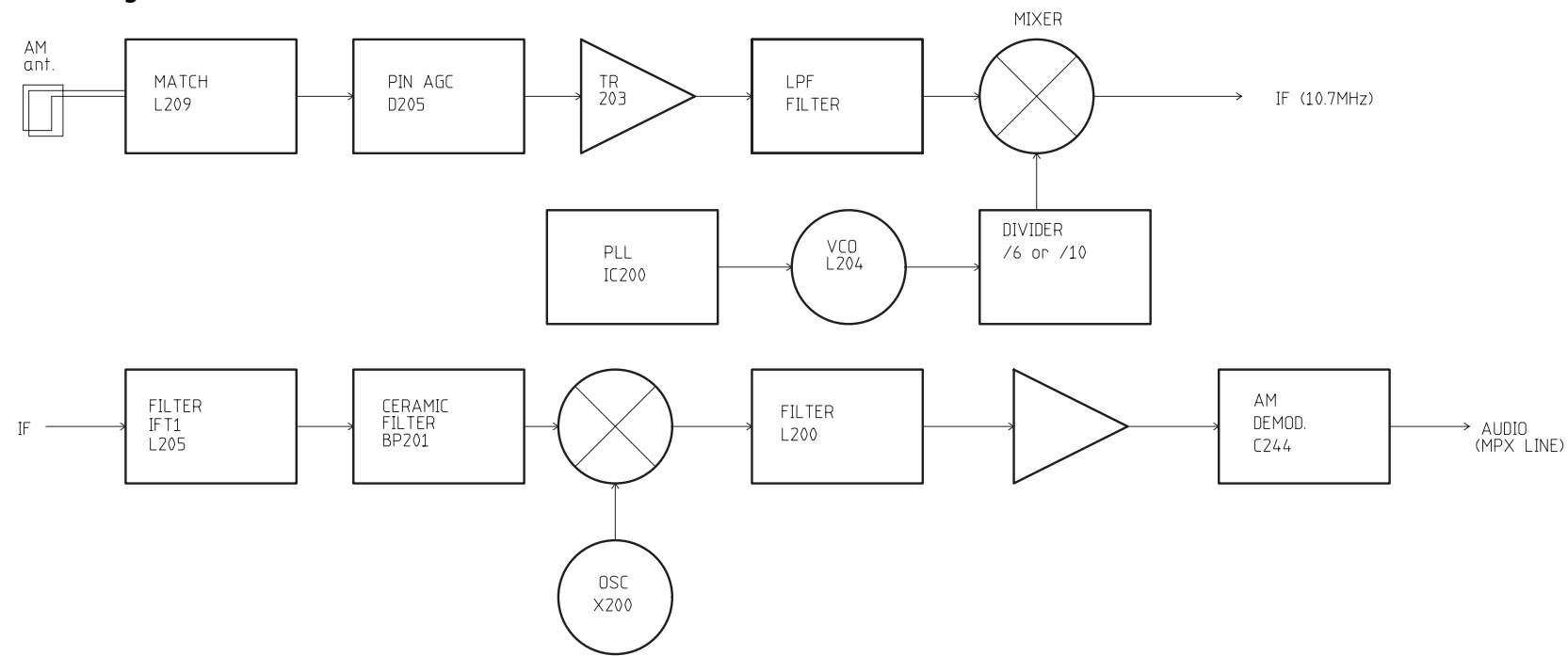
Wiring diagram



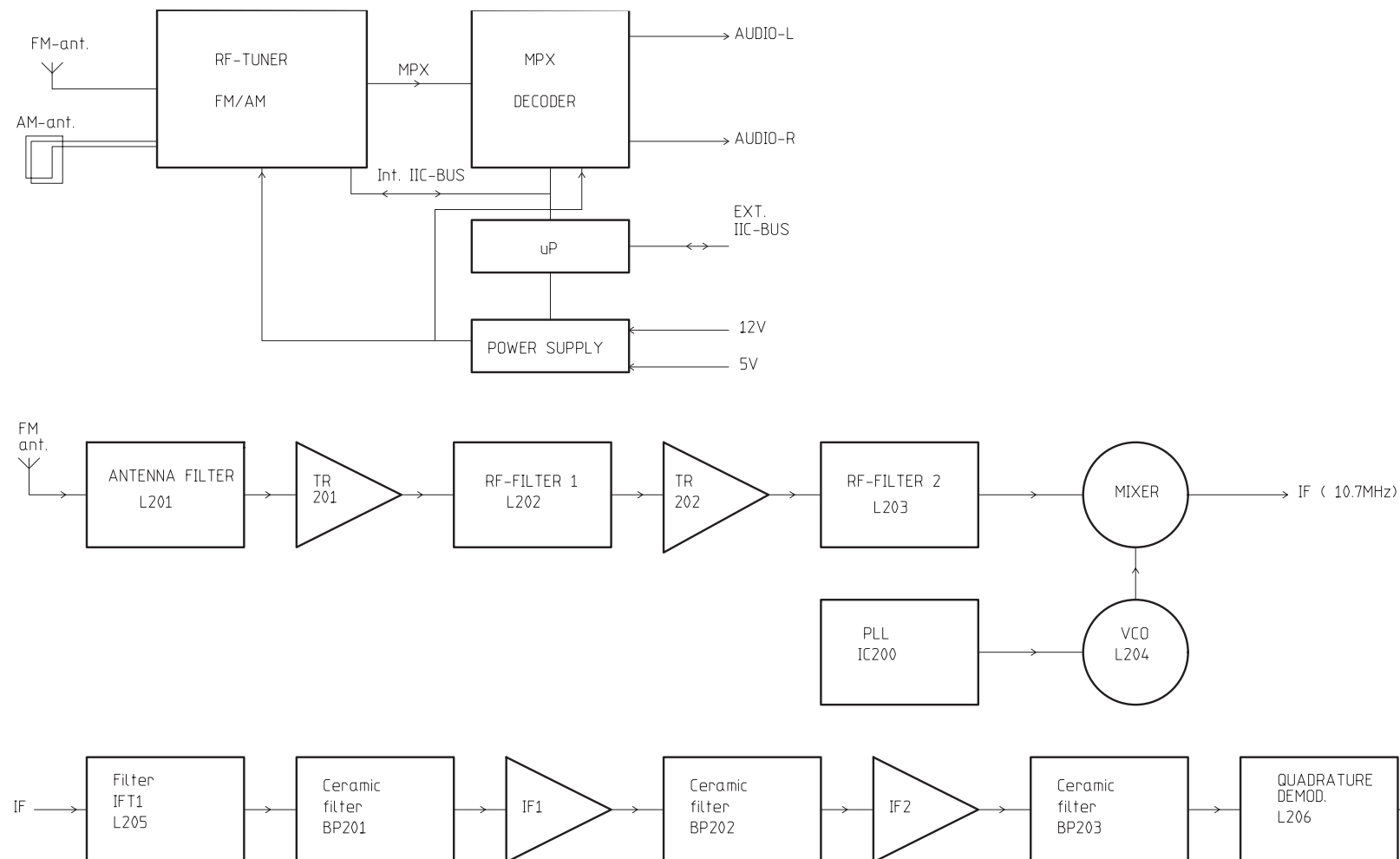
Overall block diagram



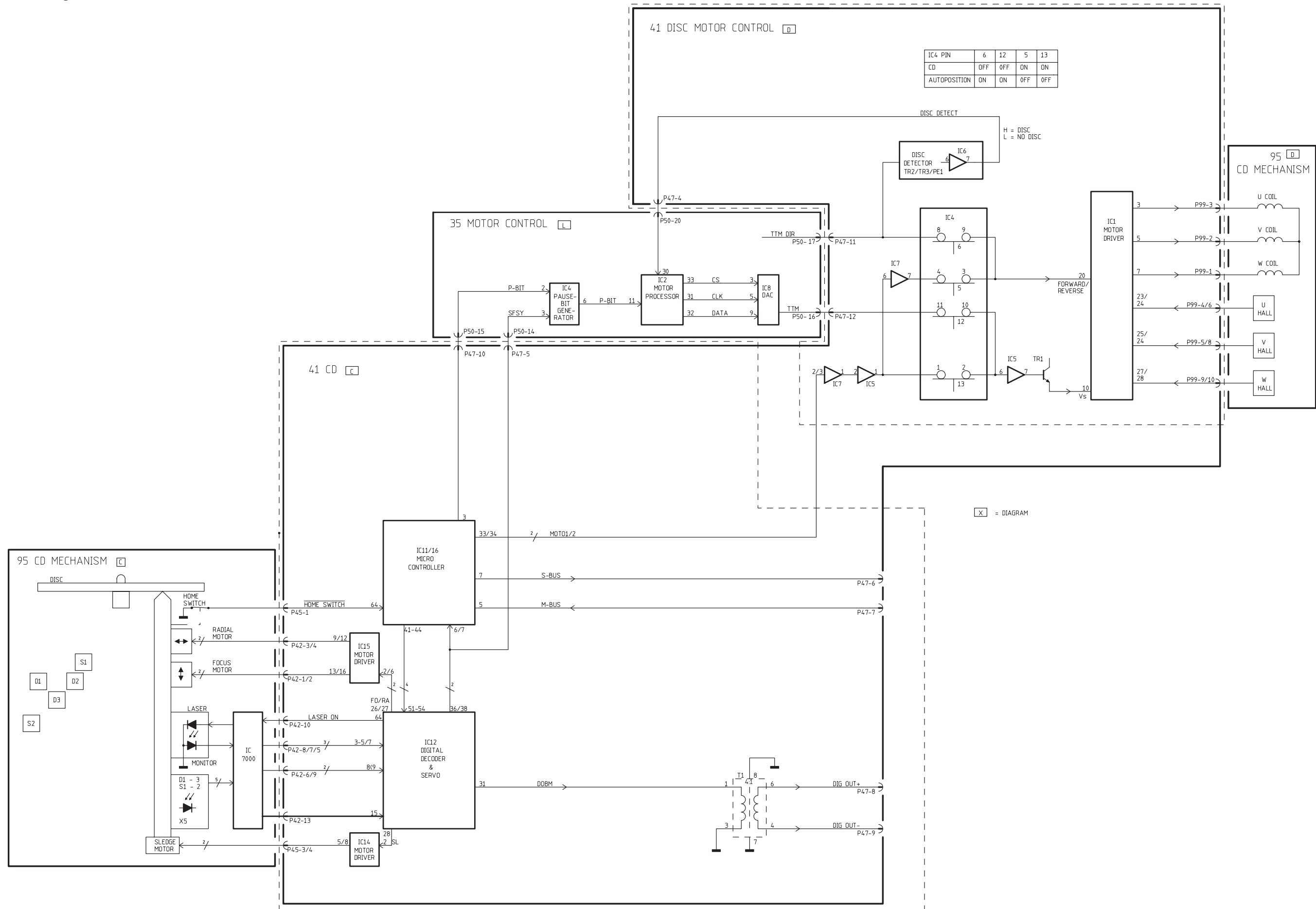
Block diagram for AM

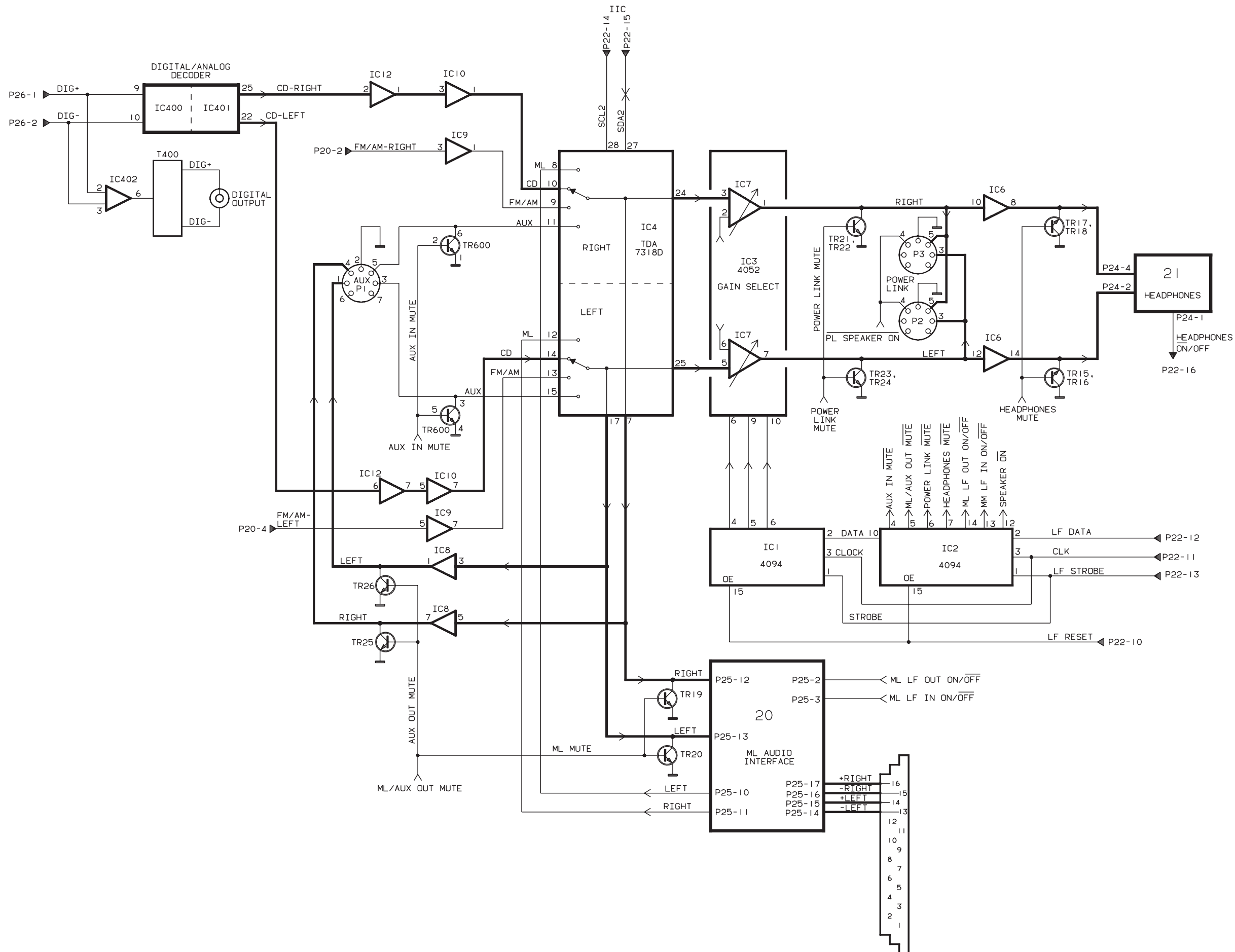


Block diagram for Frontend Tuner

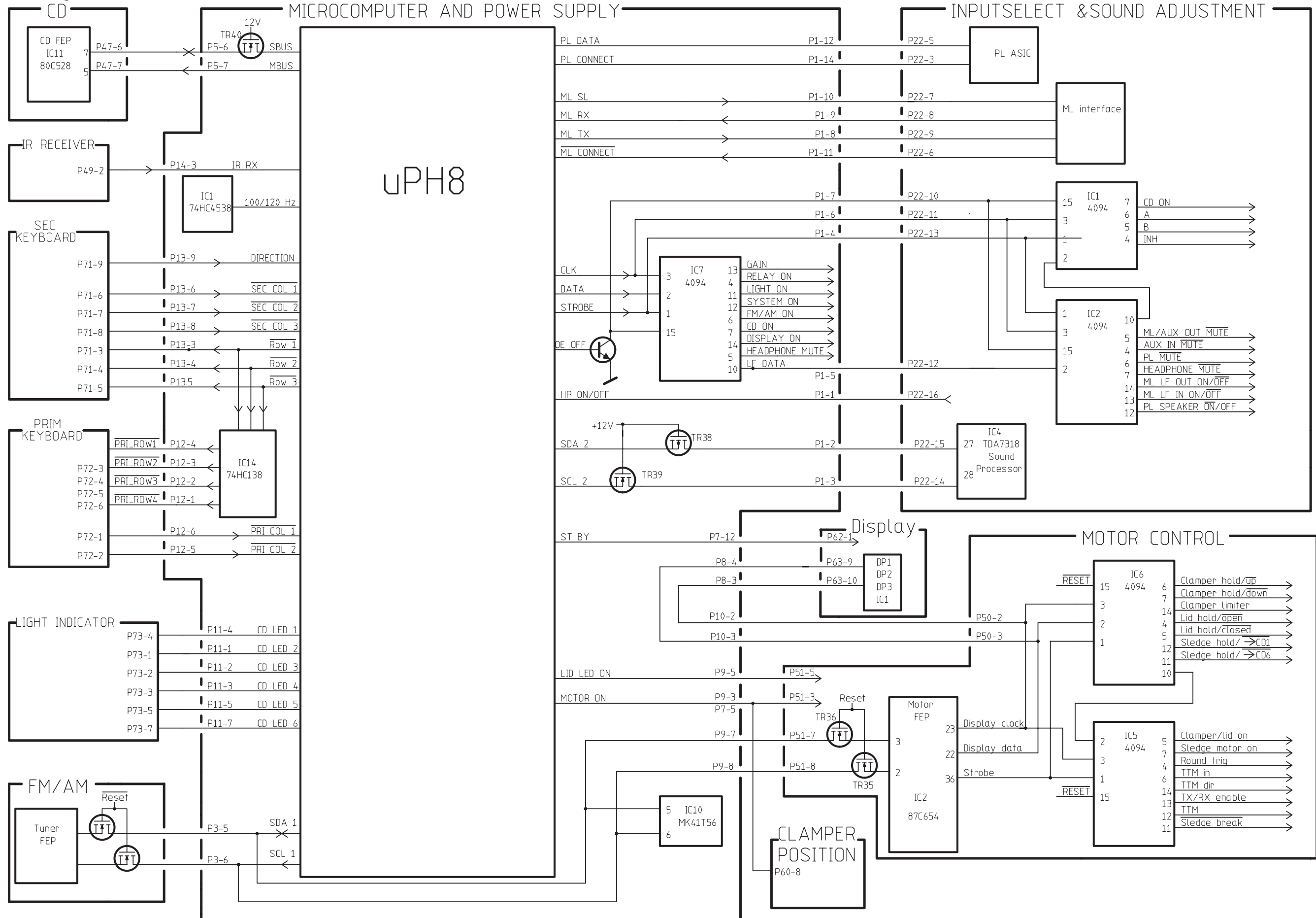


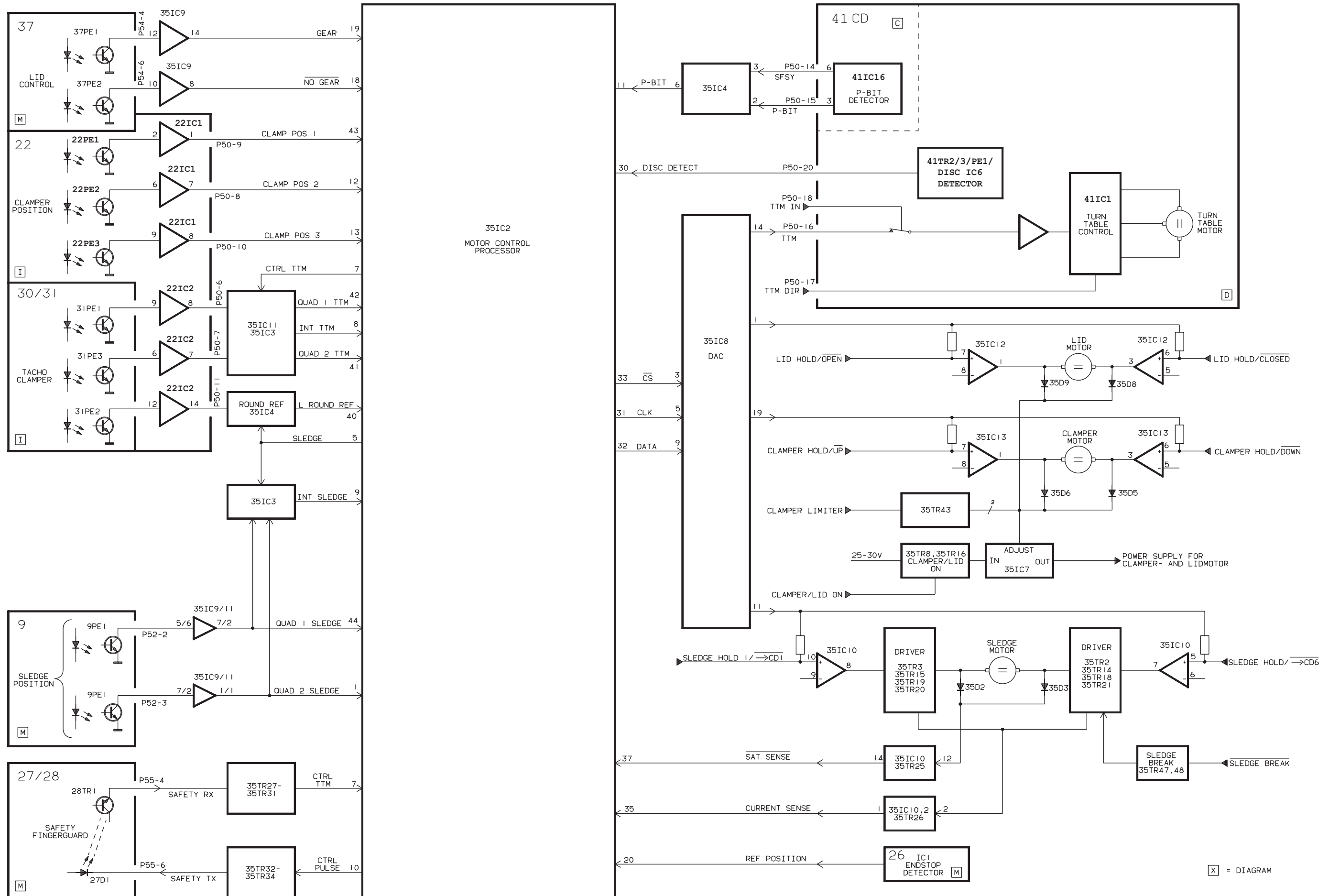
Block diagram for CD





Block diagram for Data





Block diagram for Power Supply

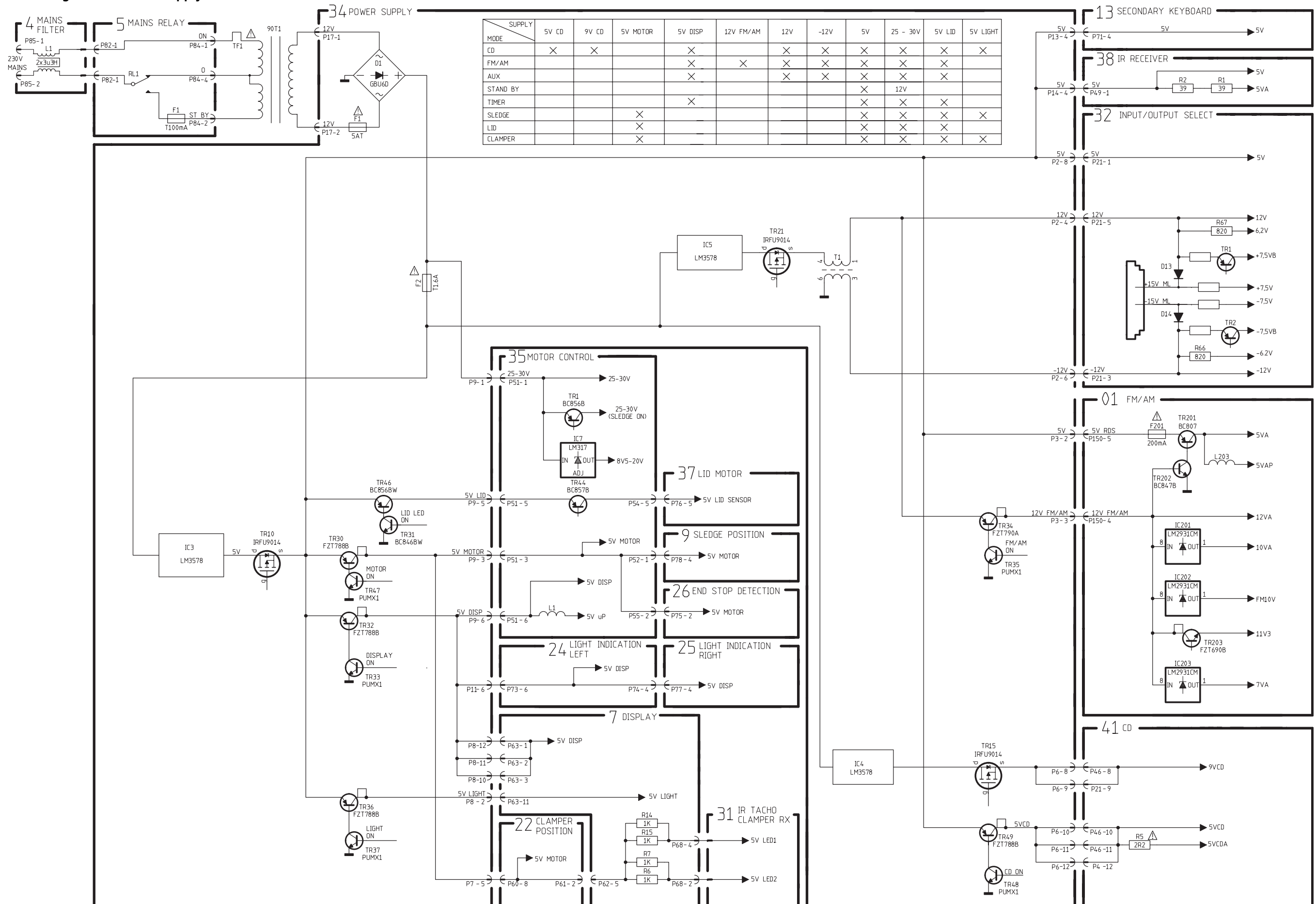


DIAGRAM A – Frontend tuner

PCB drawing for PCB1 see page 2.15

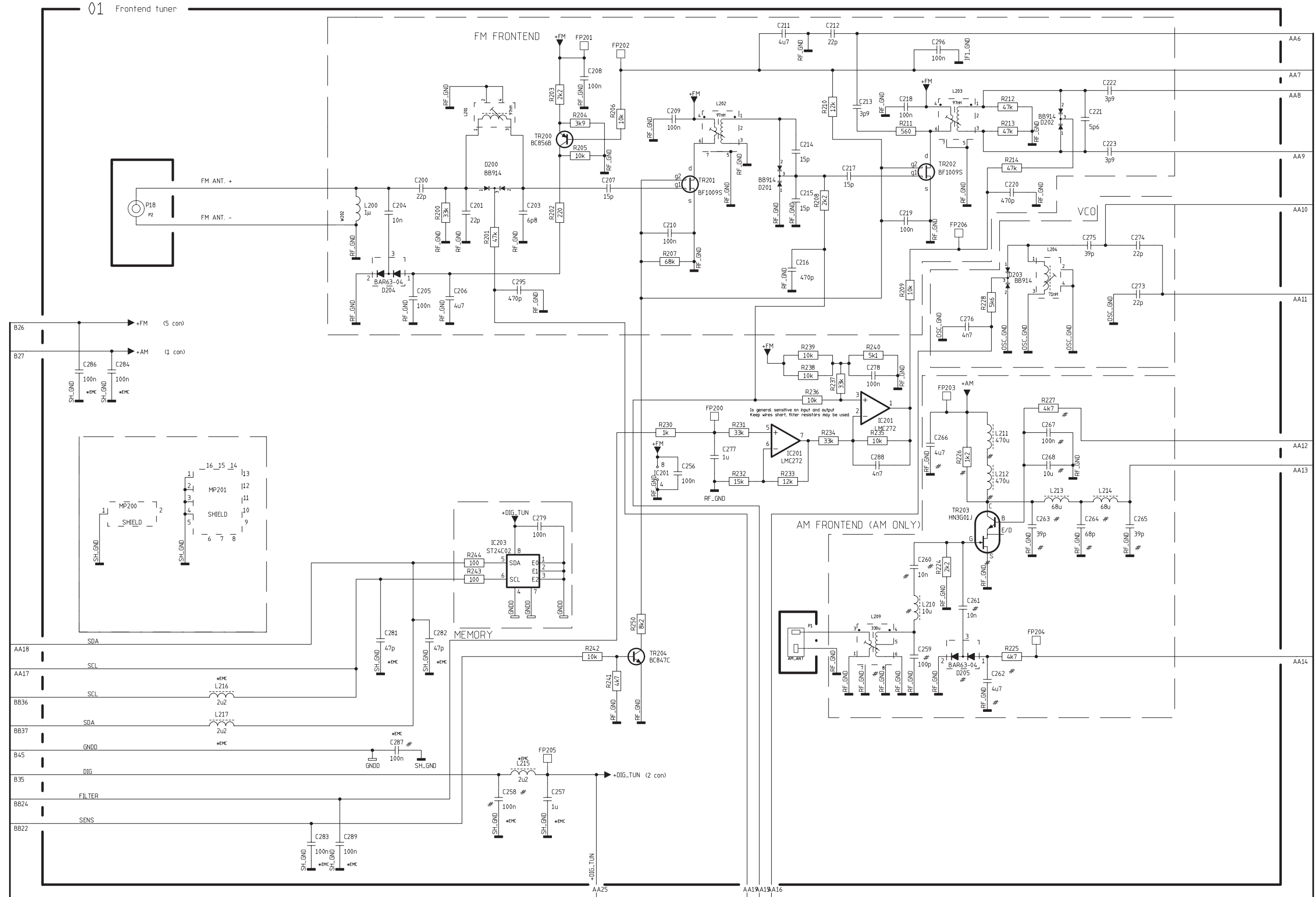
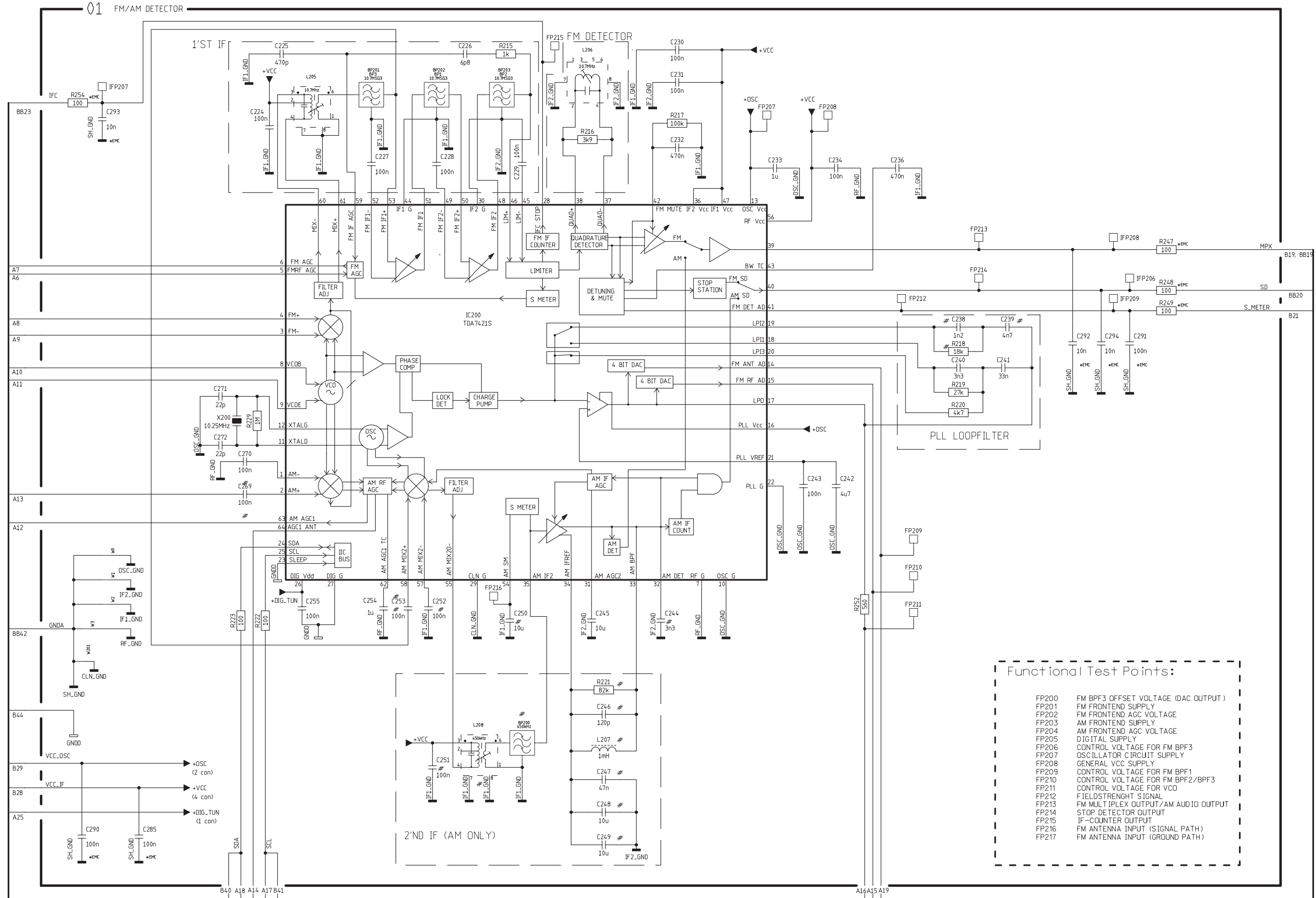


DIAGRAM AA – FM/AM detector PCB drawing for PCB1 see page 2.15



- Functional Test Points:
- FP200 FM BPF3 OFFSET VOLTAGE (DAC OUTPUT)
 - FP201 FM FRONTEND SUPPLY
 - FP202 FM FRONTEND AGC VOLTAGE
 - FP203 AM FRONTEND SUPPLY
 - FP204 AM FRONTEND AGC VOLTAGE
 - FP205 DIGITAL SUPPLY
 - FP206 CONTROL VOLTAGE FOR FM BPF3
 - FP207 OSCILLATOR CIRCUIT SUPPLY
 - FP208 GENERAL VCC SUPPLY
 - FP209 CONTROL VOLTAGE FOR FM BPF1
 - FP210 CONTROL VOLTAGE FOR FM BPF2/BPF3
 - FP211 CONTROL VOLTAGE FOR VCO
 - FP212 FIELDSTRENGTH SIGNAL
 - FP213 FM MULTIPLEX OUTPUT/AM AUDIO OUTPUT
 - FP214 STOP DETECTOR OUTPUT
 - FP215 IF-COUNTER OUTPUT
 - FP216 FM ANTENNA INPUT (SIGNAL PATH)
 - FP217 FM ANTENNA INPUT (GROUND PATH)

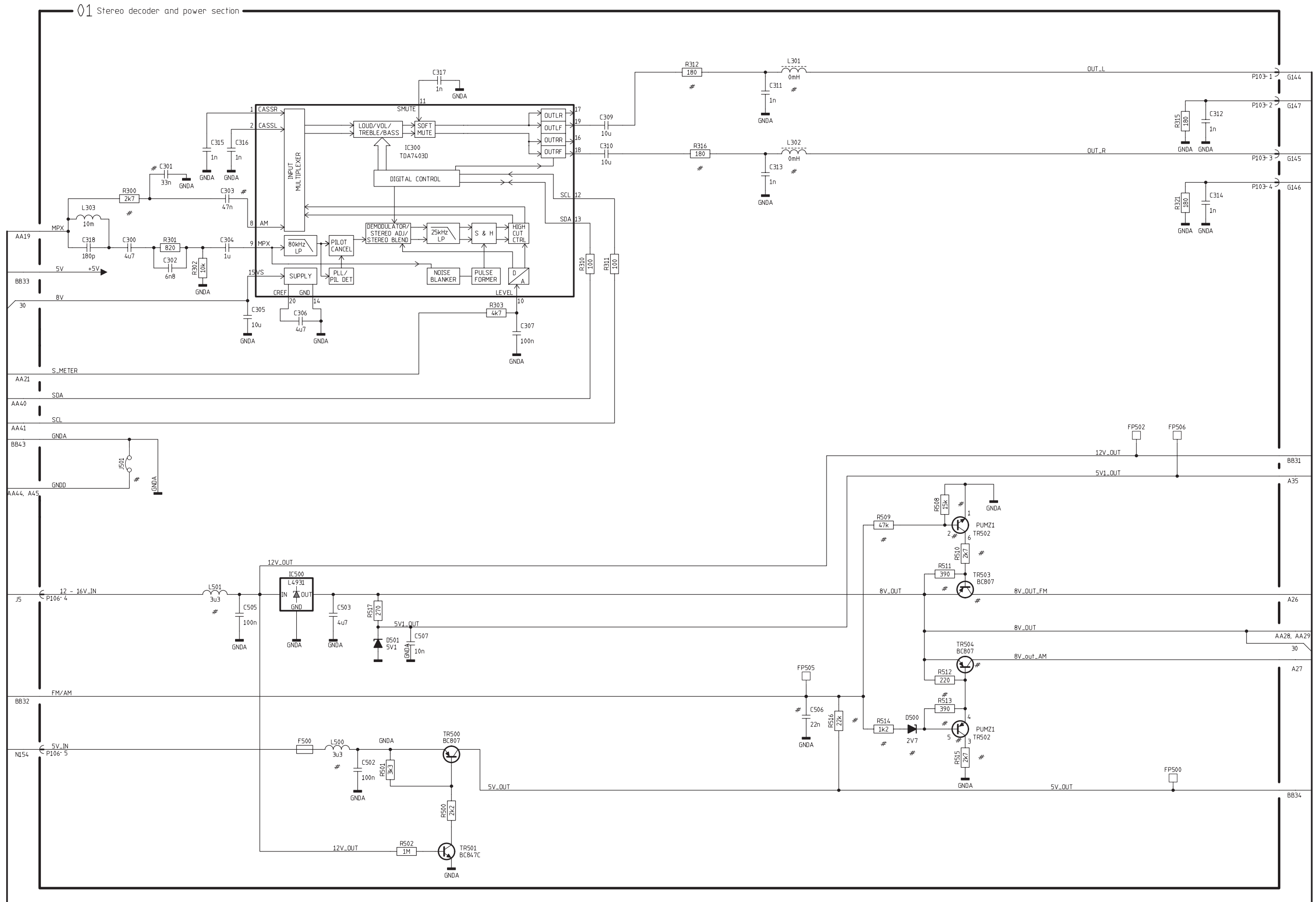
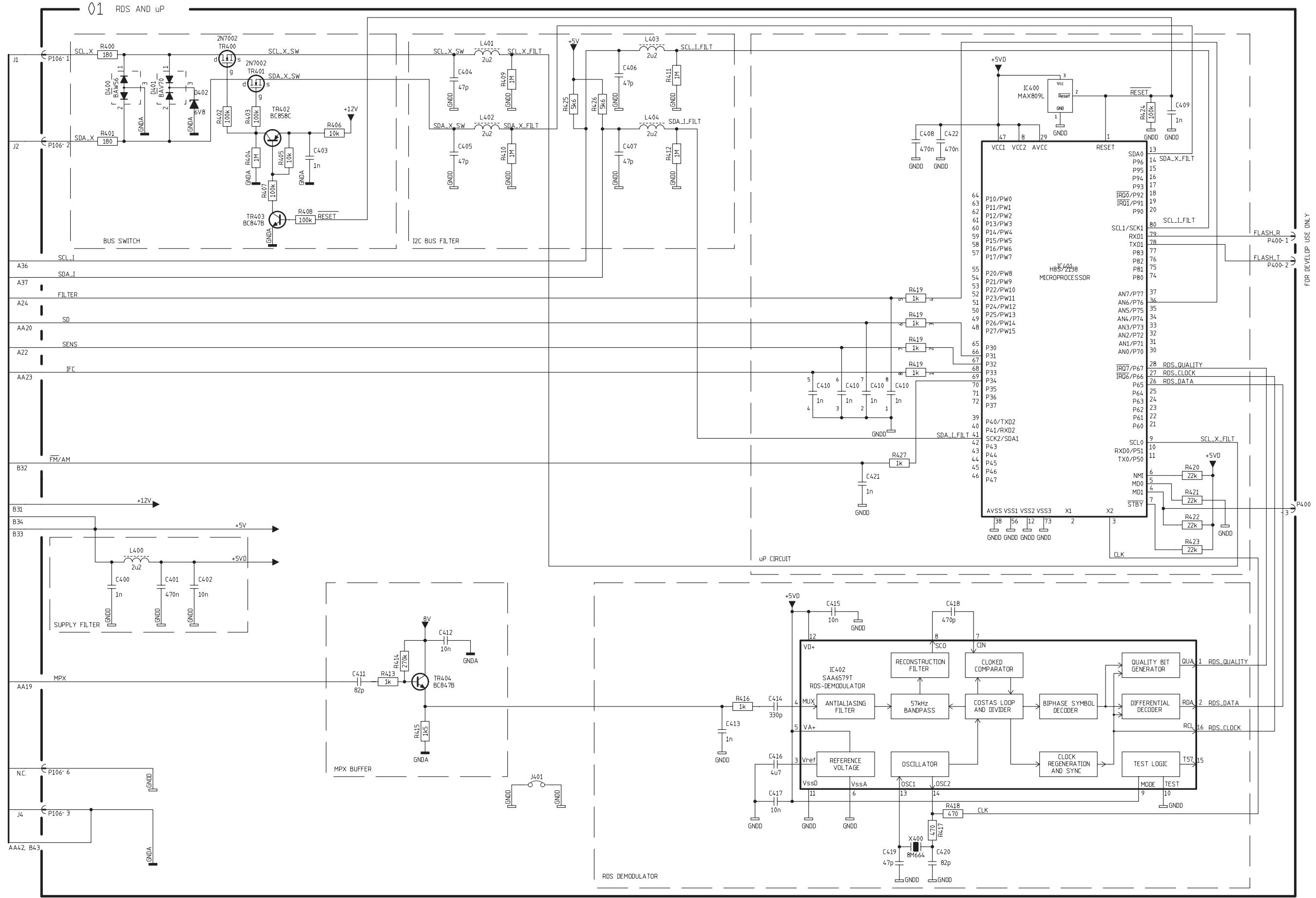


DIAGRAM BB – RDS and μP PCB drawing for PCB1 see page 2.15



PCB1, FM/AM - RDS - secondary side

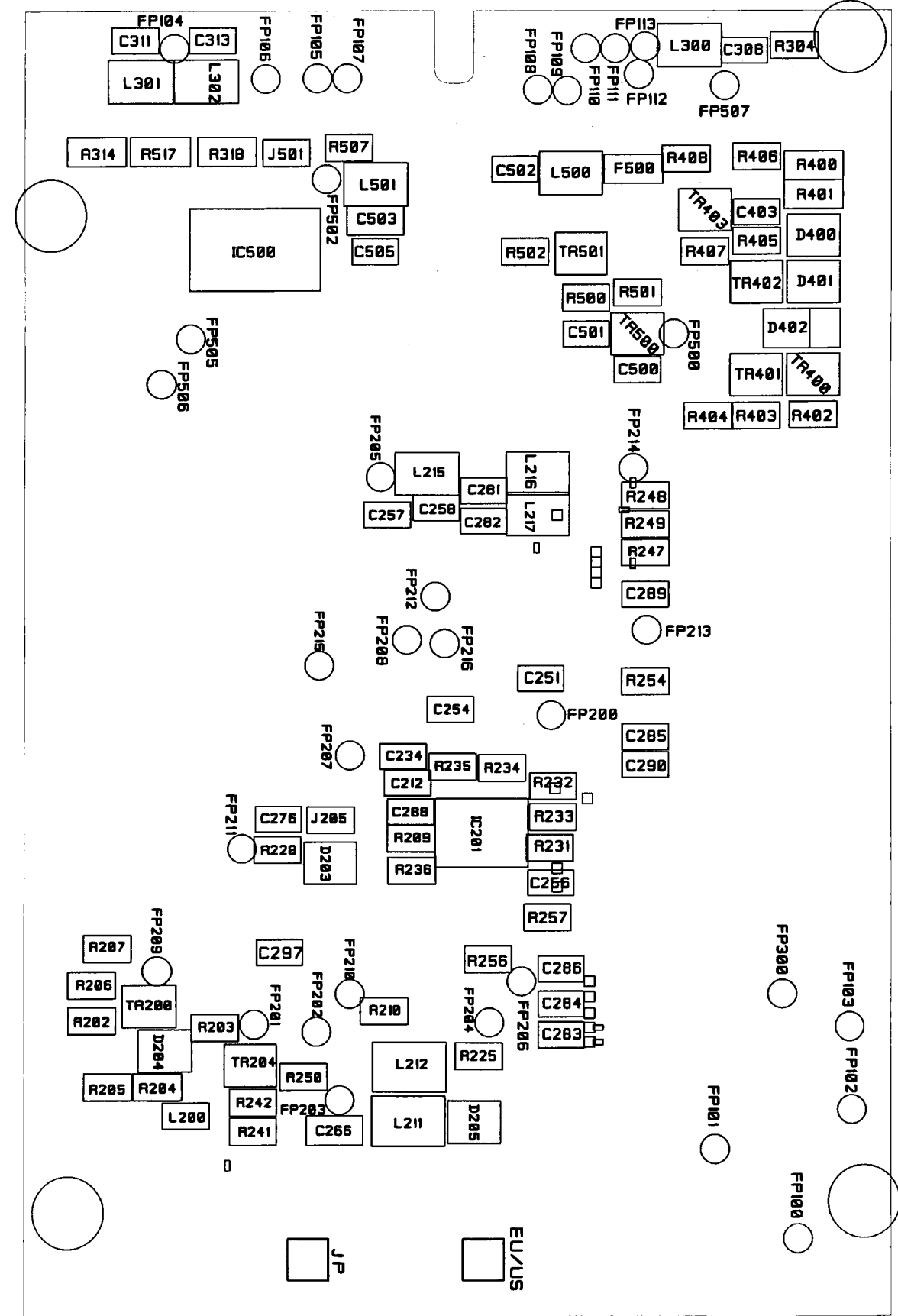
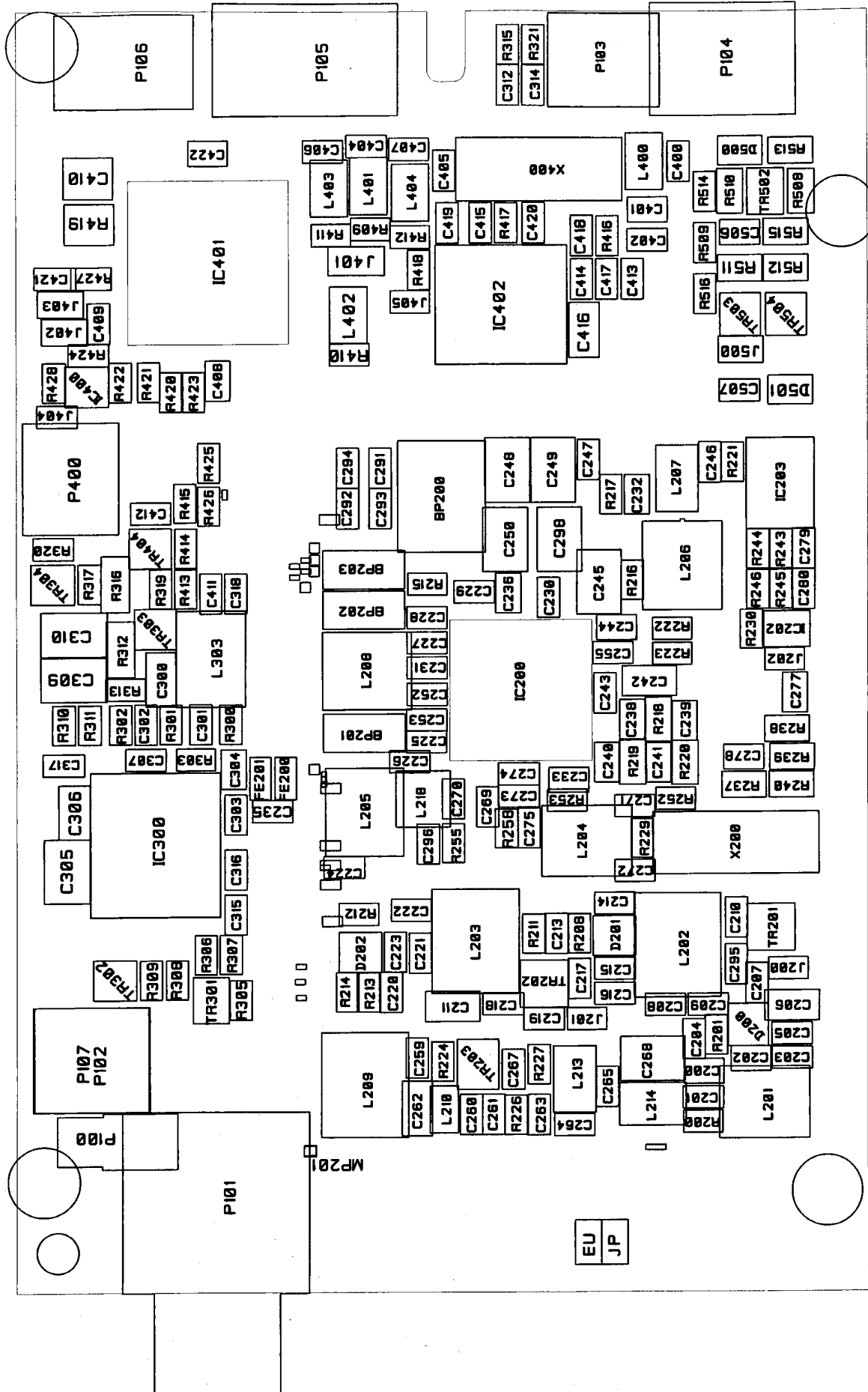
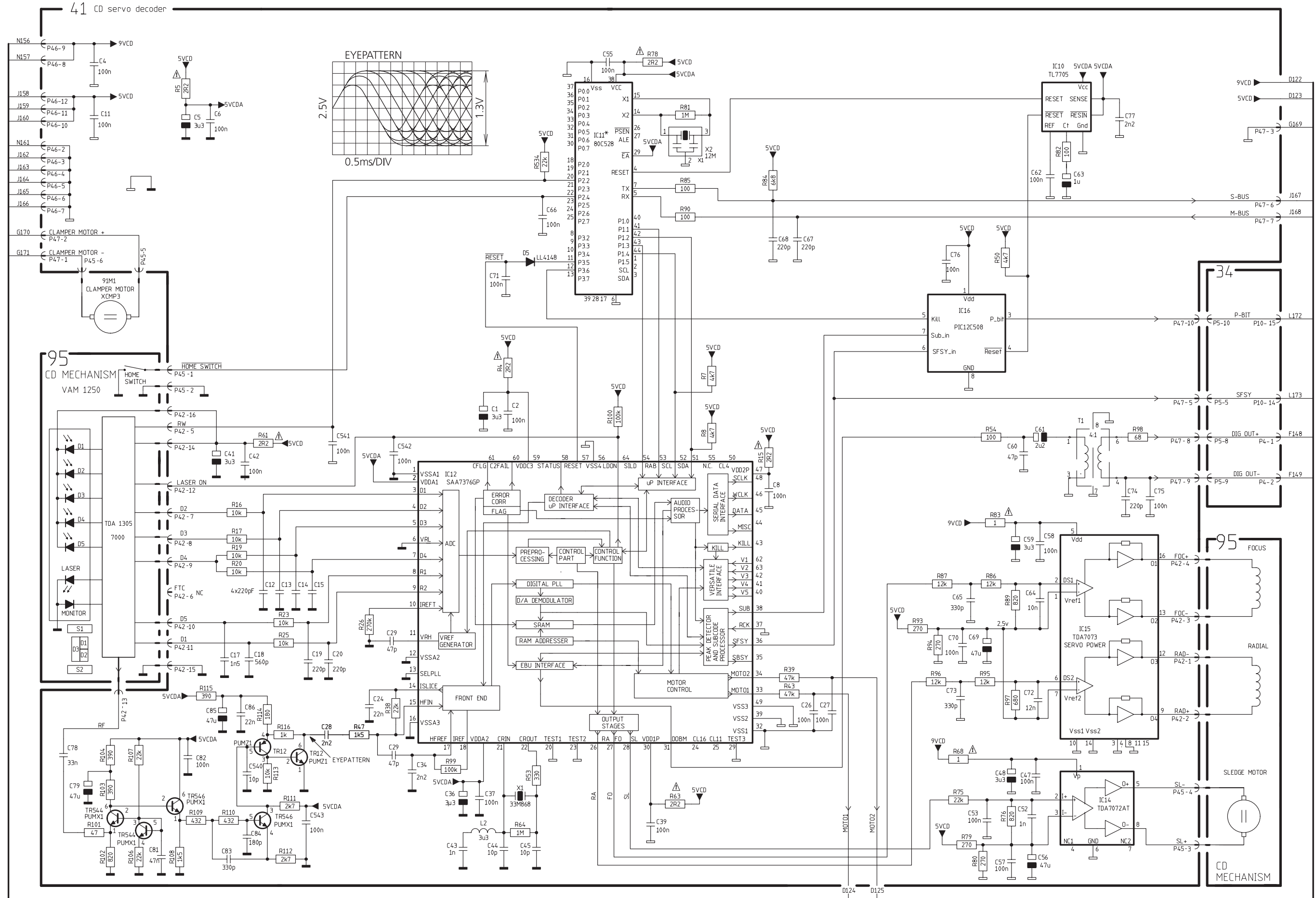
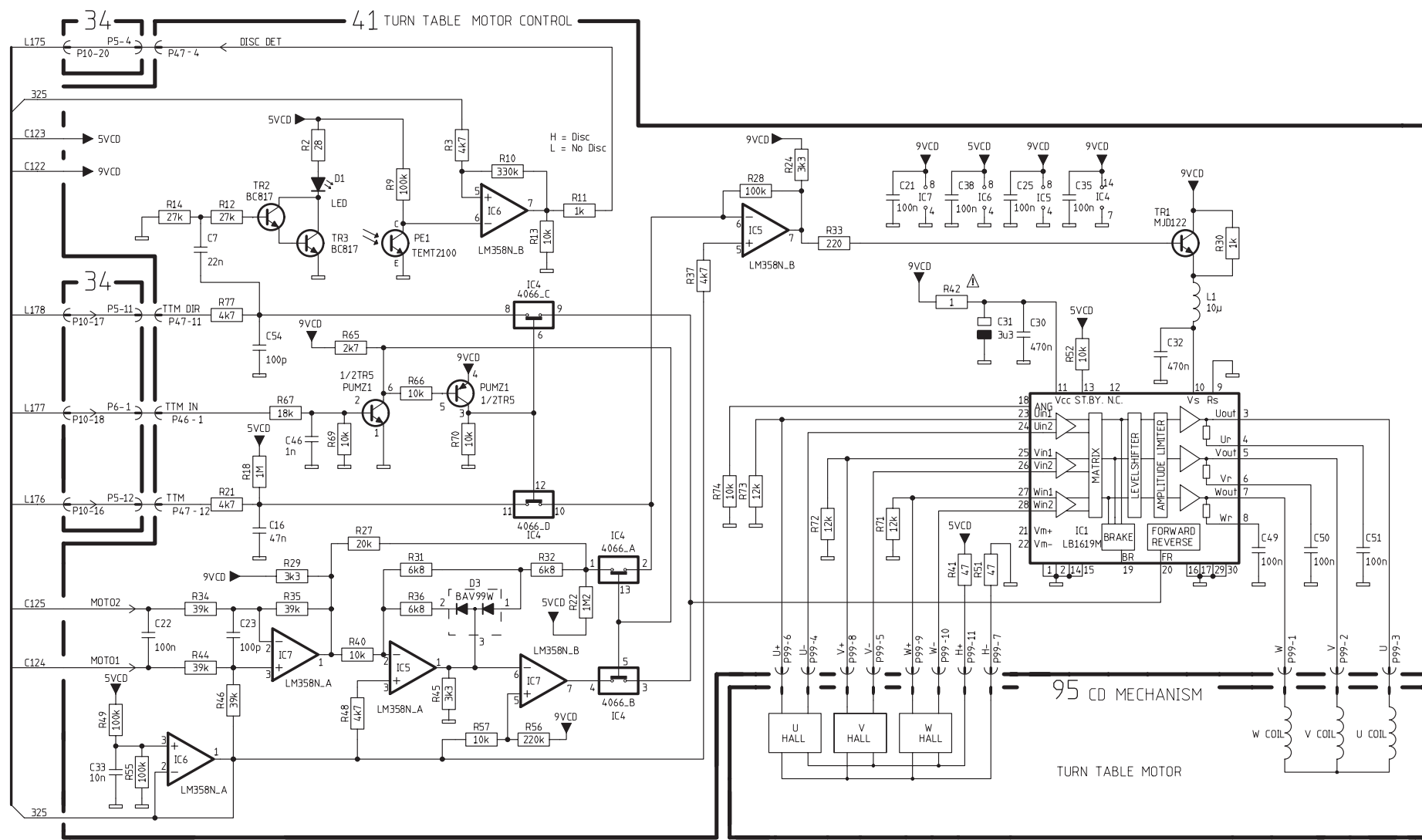
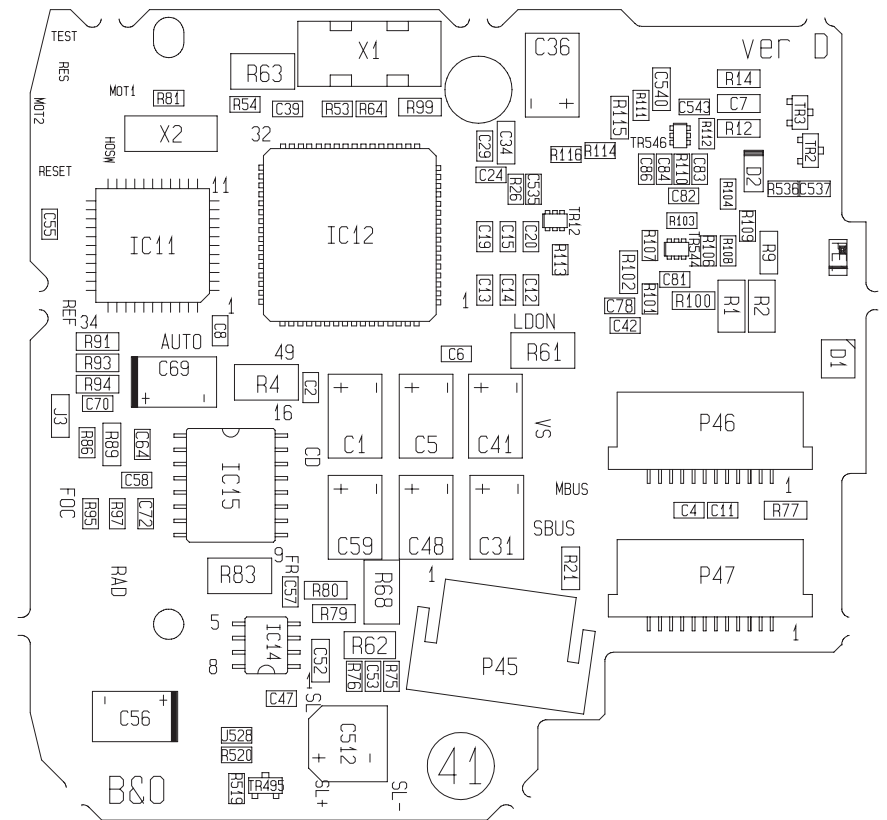


DIAGRAM C - CD servo decoder PCB drawing for PCB41 see page 2.17





PCB41, CD – primary side



PCB41, CD – secondary side

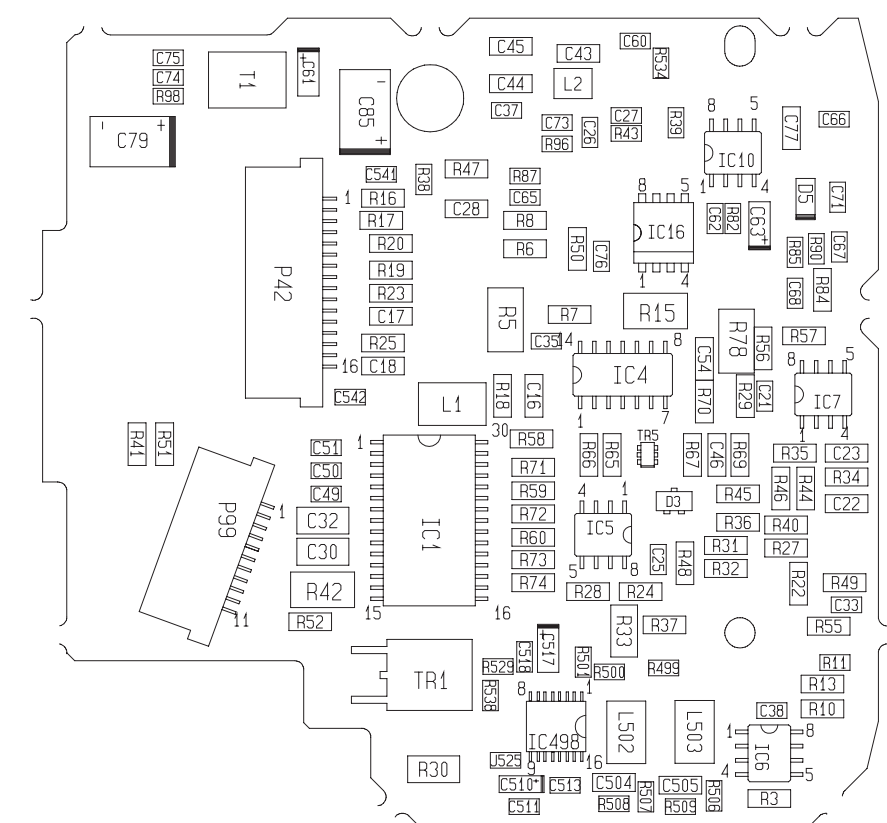
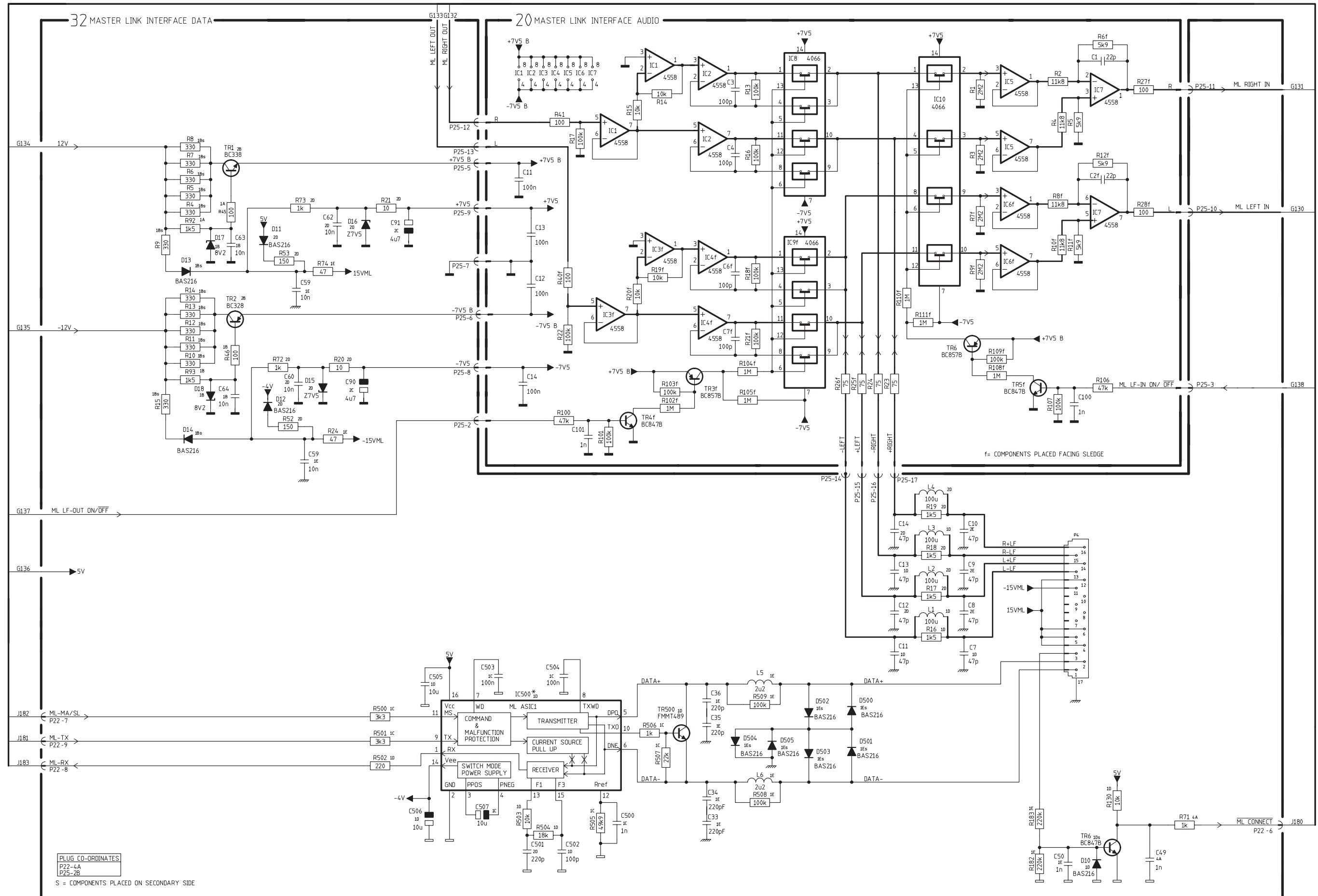
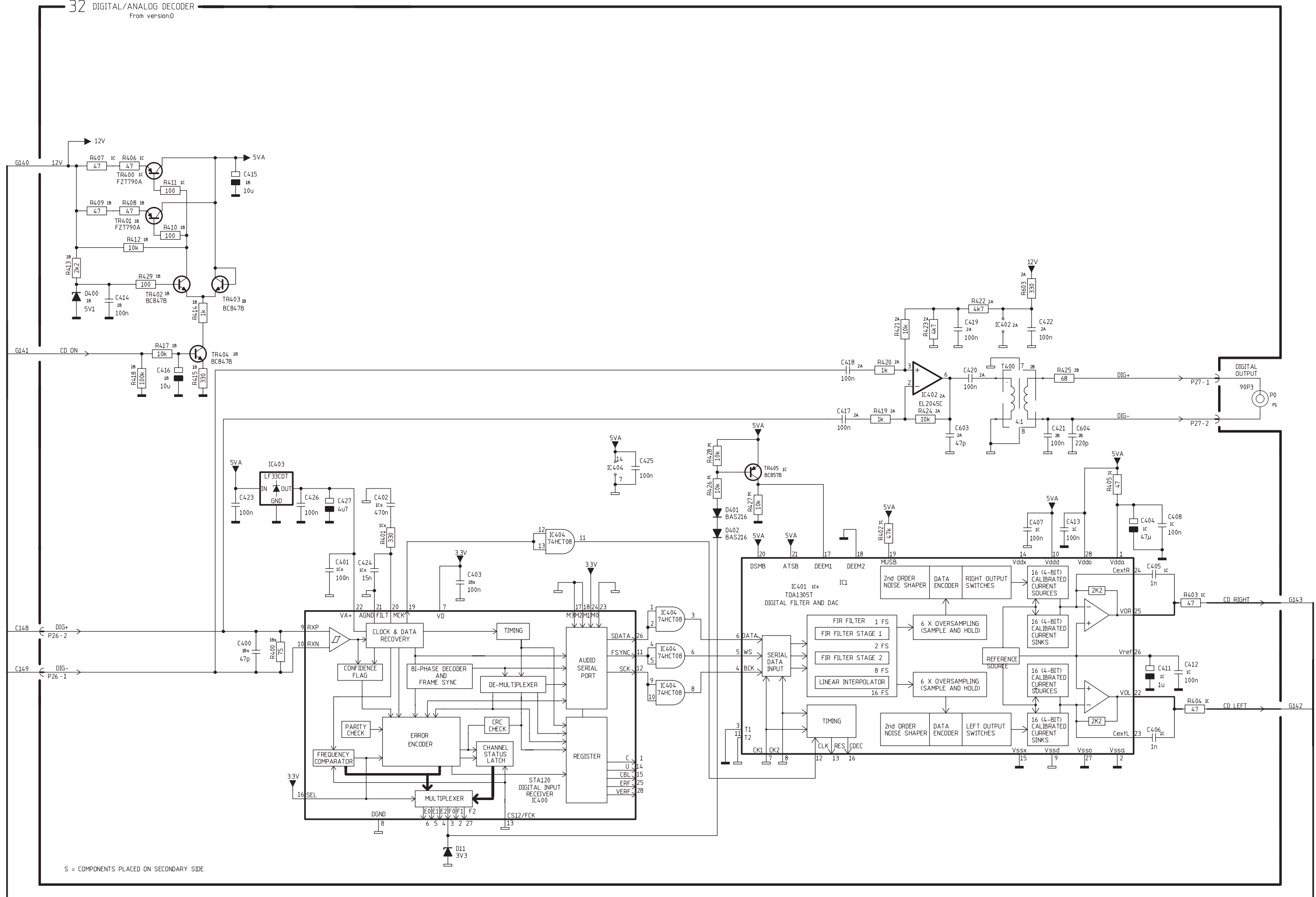


DIAGRAM E – Master Link interface data/audio PCB drawing for PCB32 see page 2.21

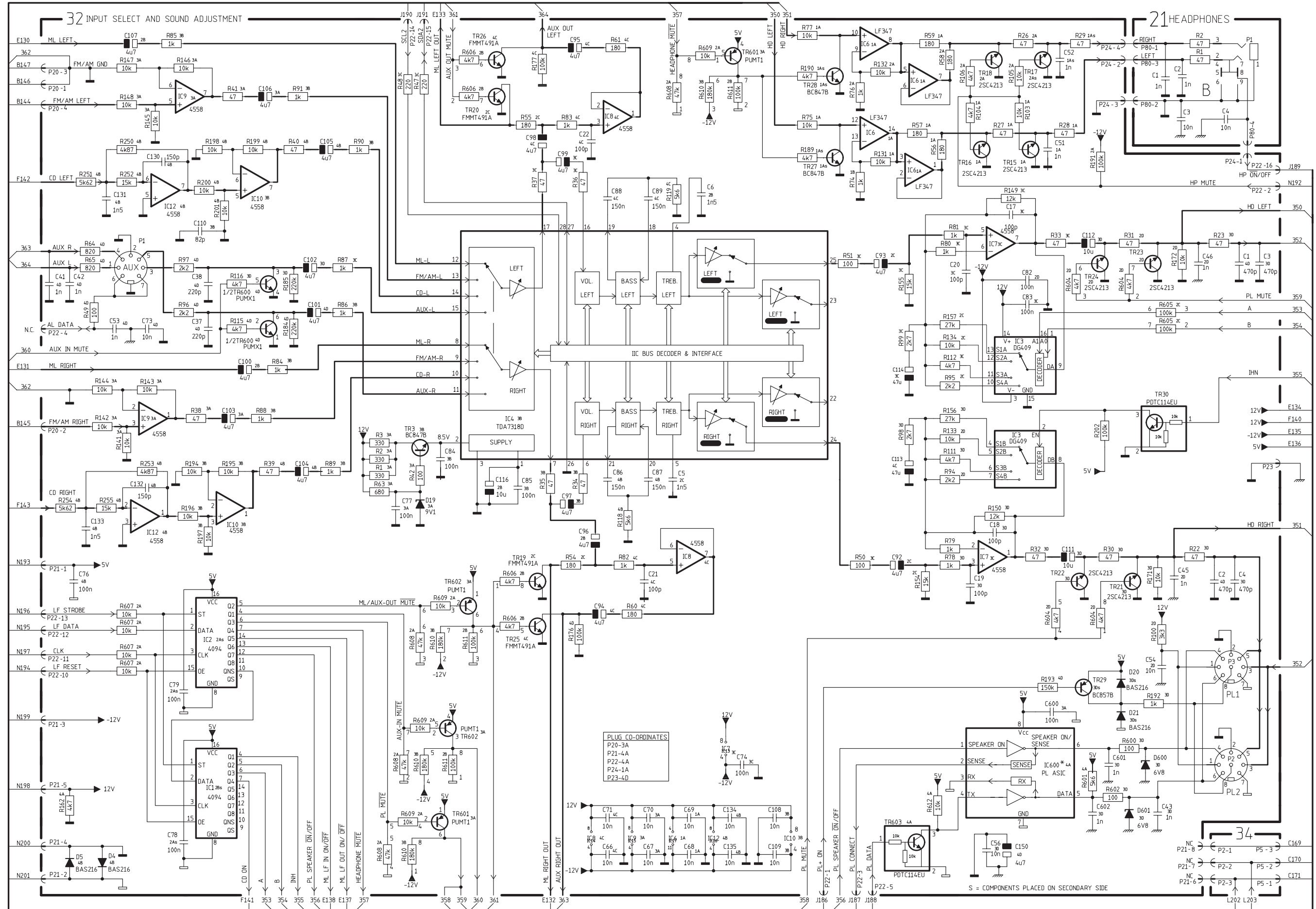


32 DIGITAL/ANALOG DECODER
From version 0

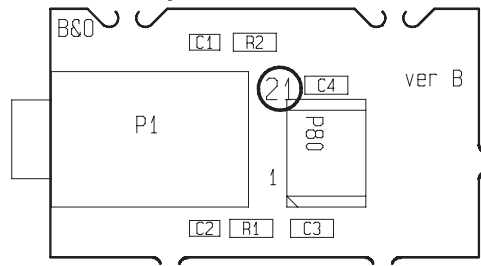


S = COMPONENTS PLACED ON SECONDARY SIDE

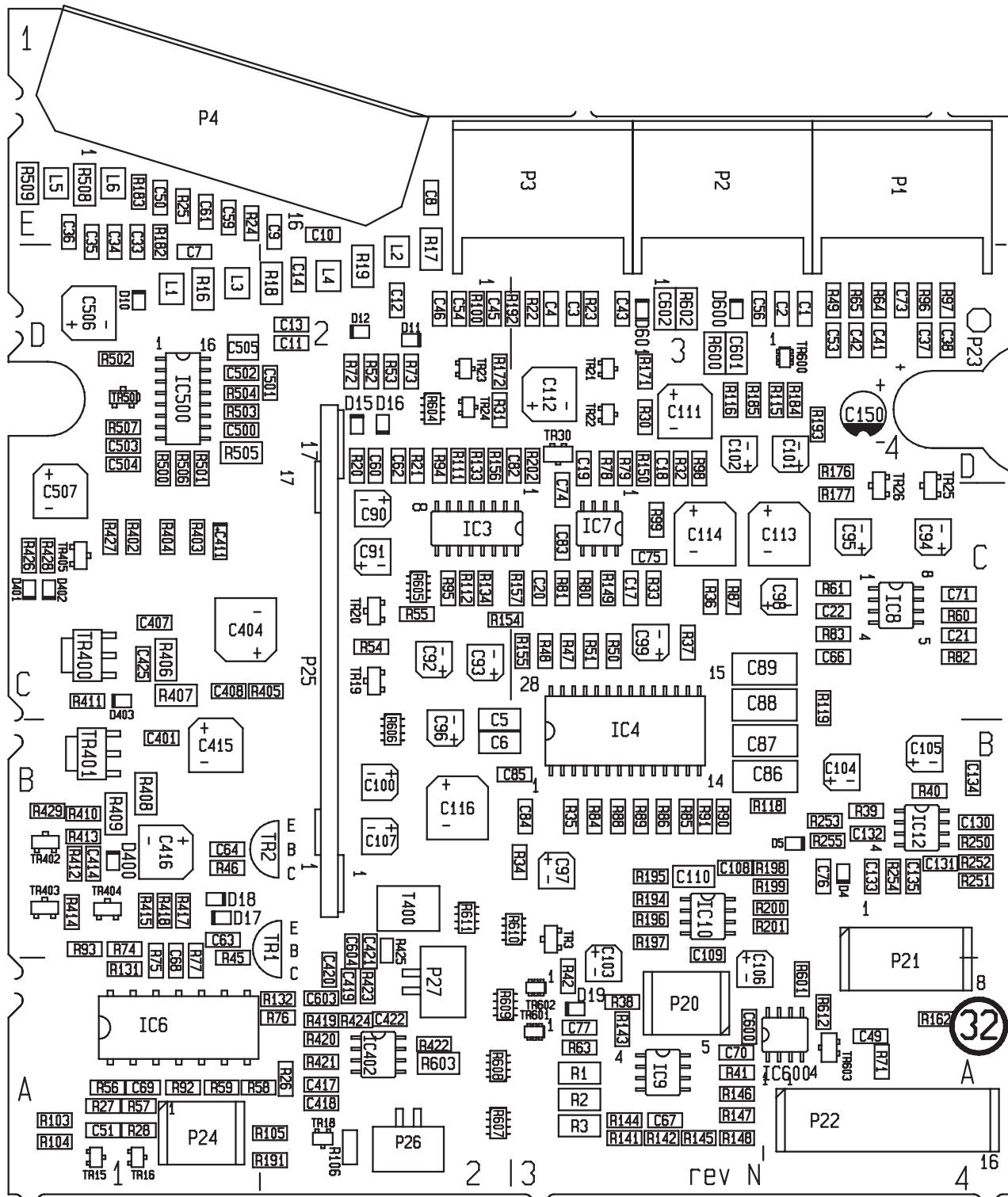
DIAGRAM G – Input select and Sound adjustment PCB drawing for PCB21 and PCB32 see page 2.21



PCB21, Headphone



PCB32, Input/output Select, Sound Adjustment – preliminary side



PCB32, Input/output Select, Sound Adjustment – secondary side

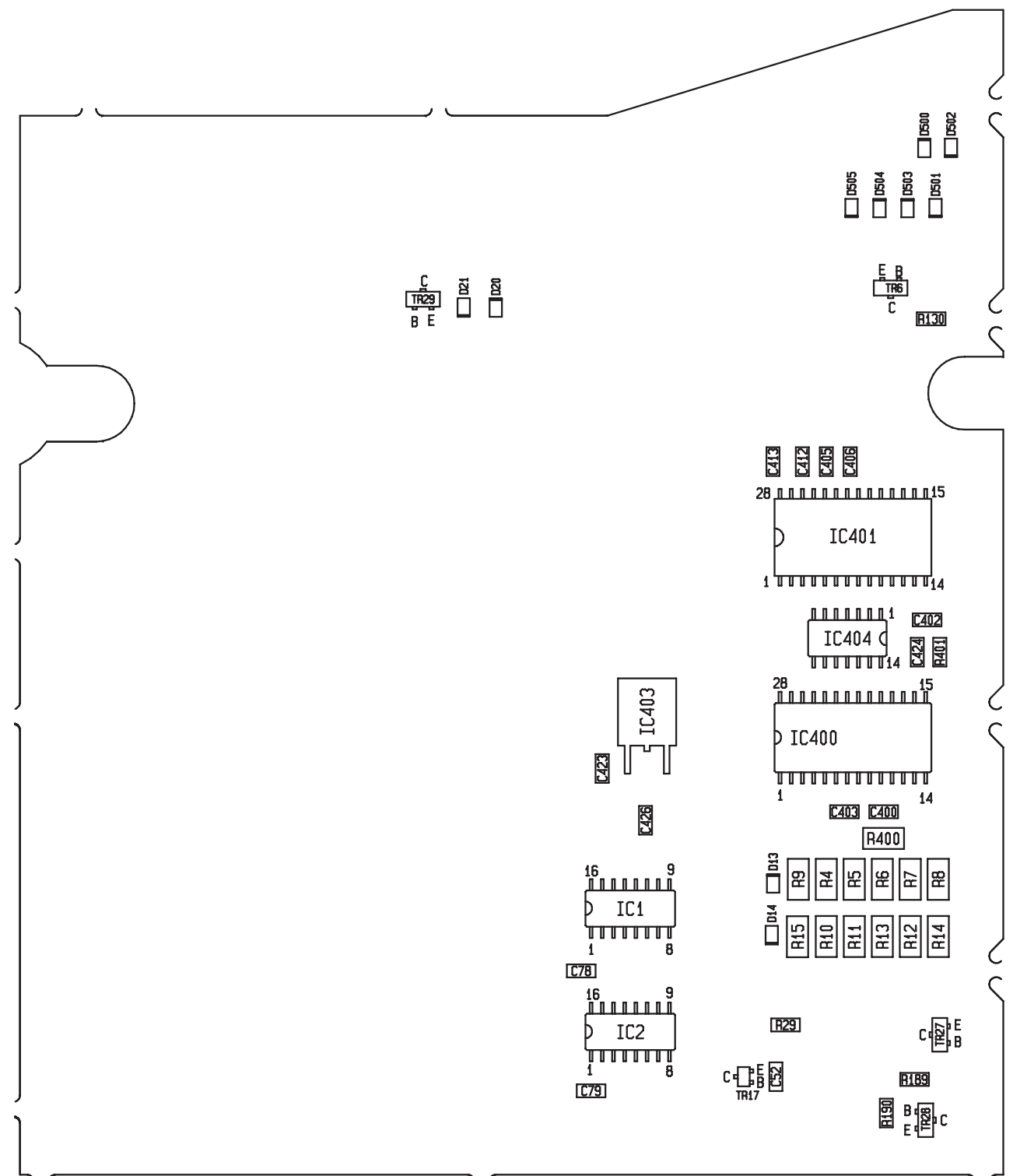
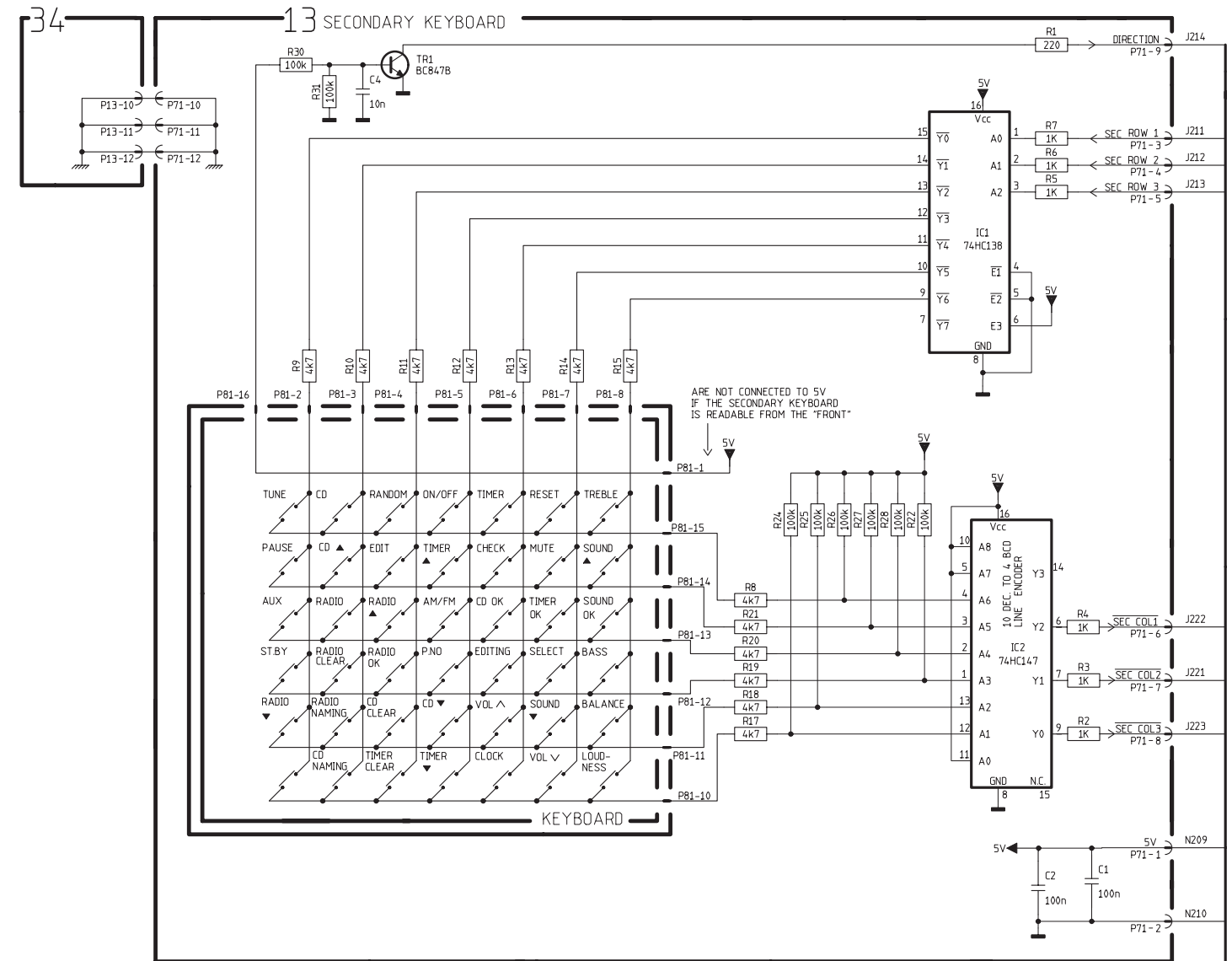
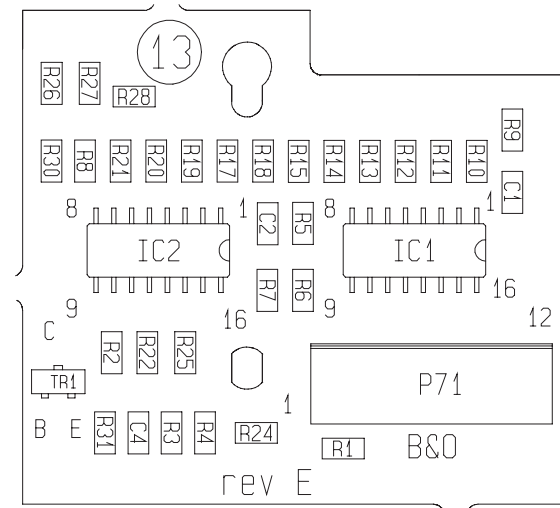


DIAGRAM H – Keyboard and IR Receiver

PCB13, Secondary Keyboard



PCB drawing for PCB14 see page 2.30

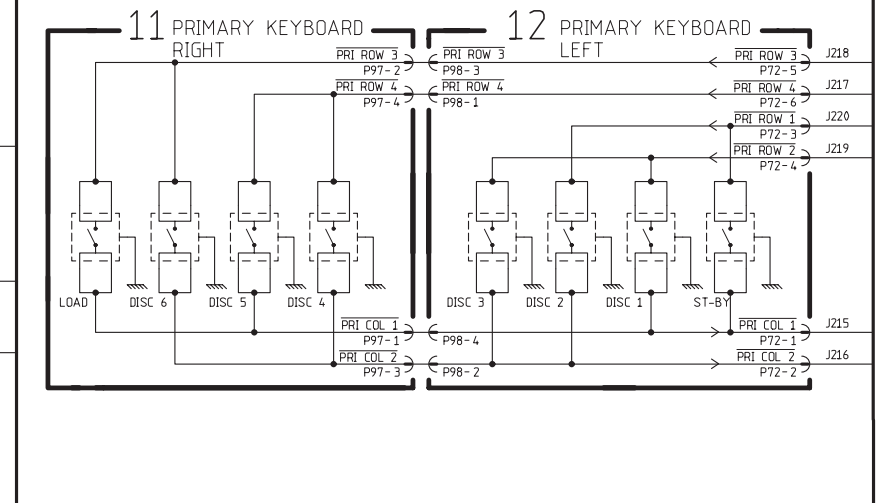
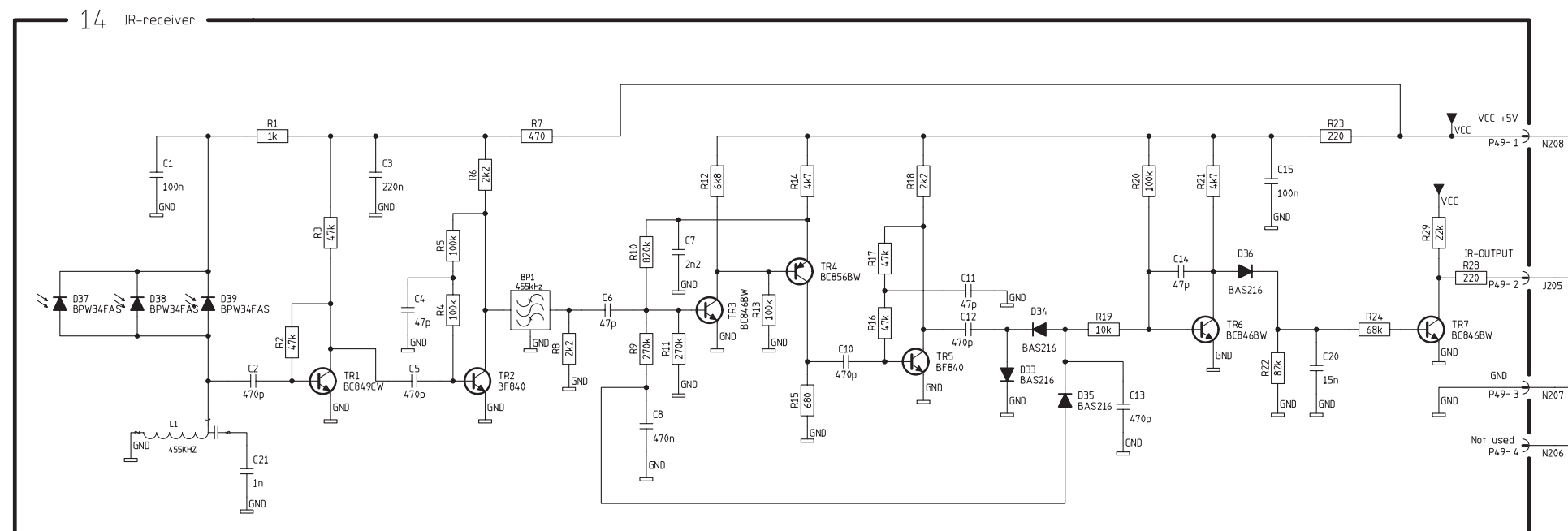
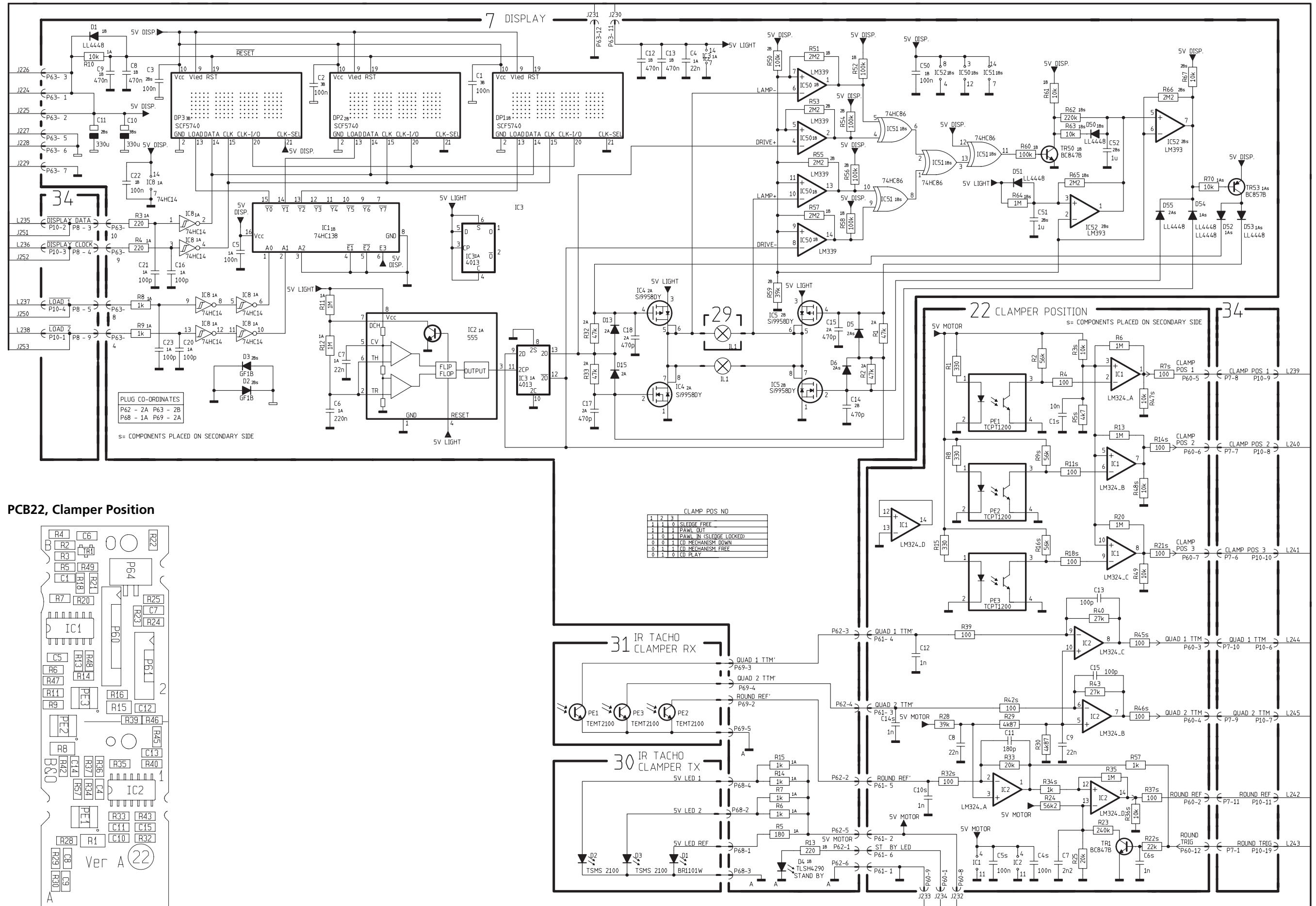


DIAGRAM I – Display and clamber position PCB drawing for PCB7 see page 2.31



PCB22, Clamber Position

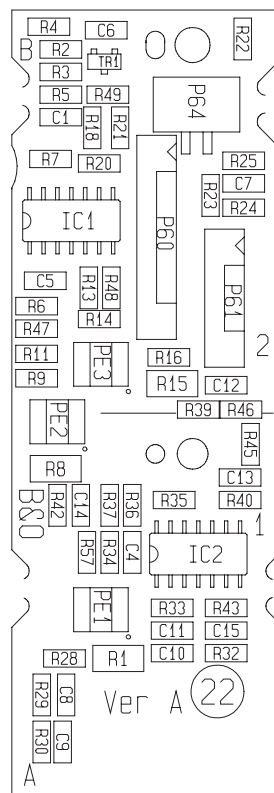
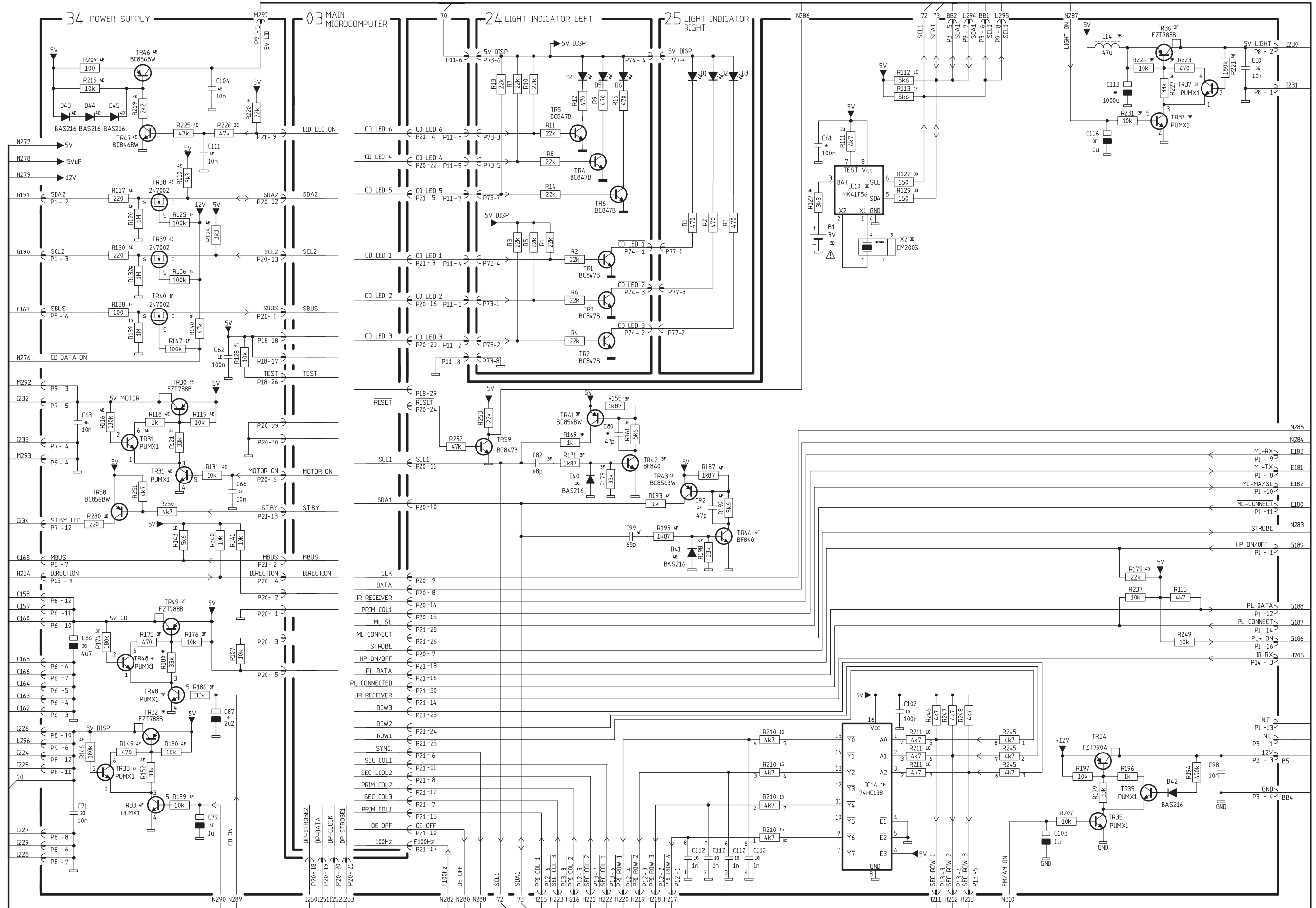


DIAGRAM J – Microcomputer, Power supply & Light Indicator

PCB drawing for PCB24 see page 2.30 – PCB34 see page 2.25



PCB34, Power Supply

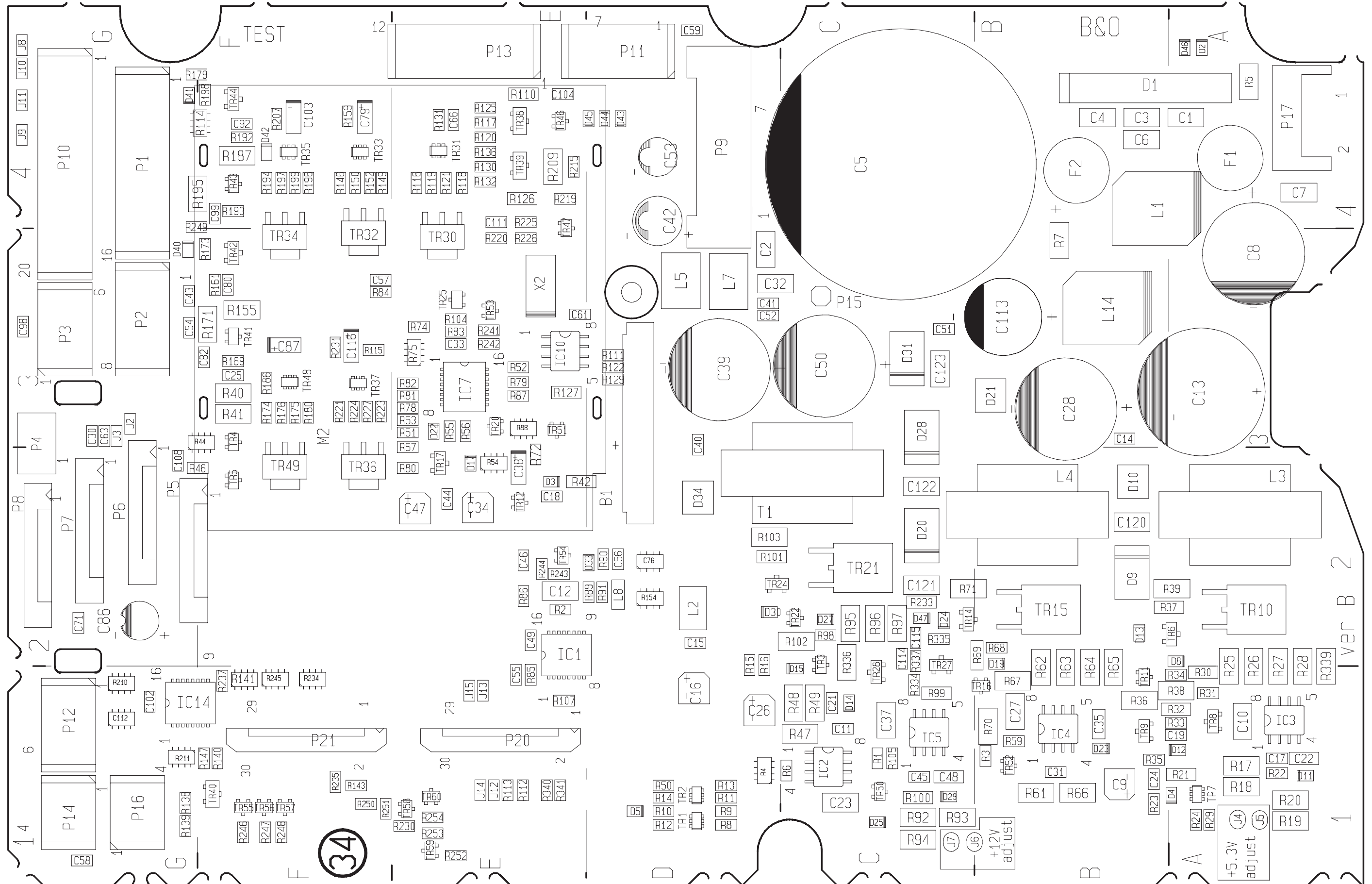
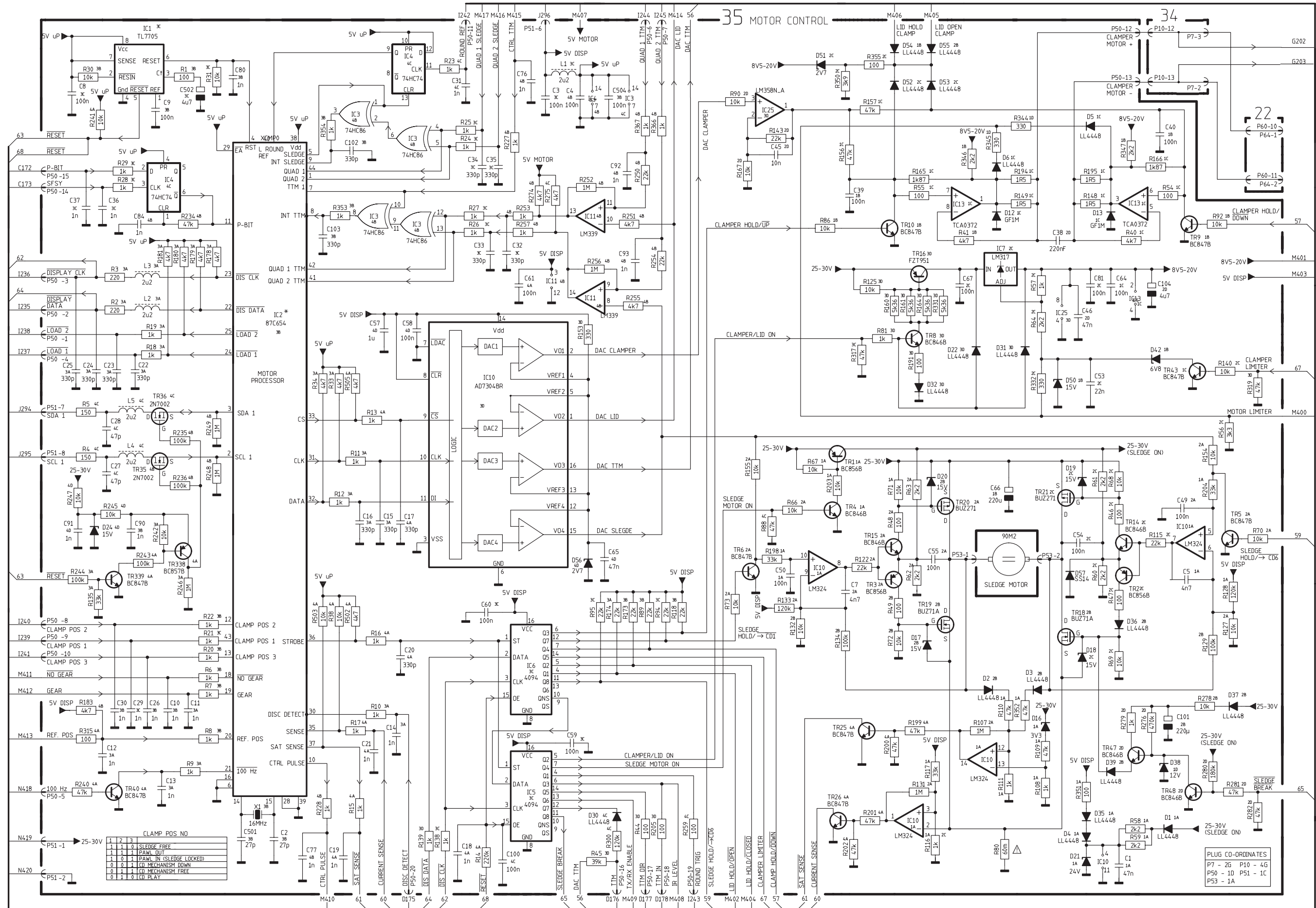
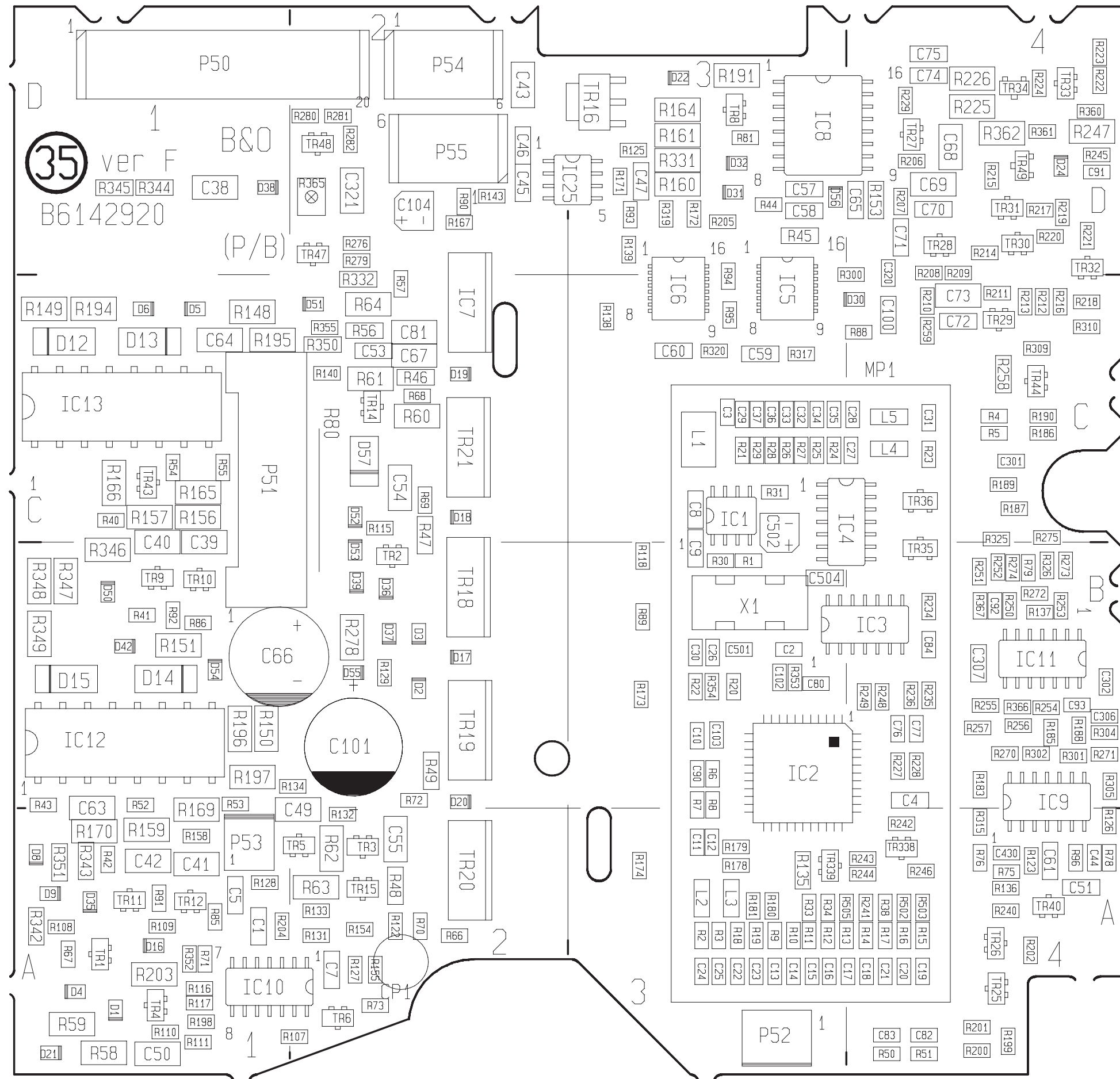


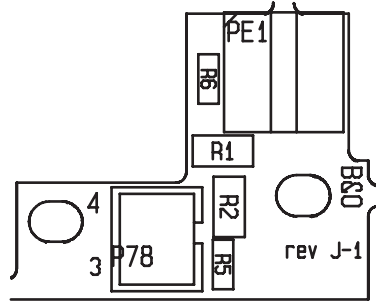
DIAGRAM L - Motor Control



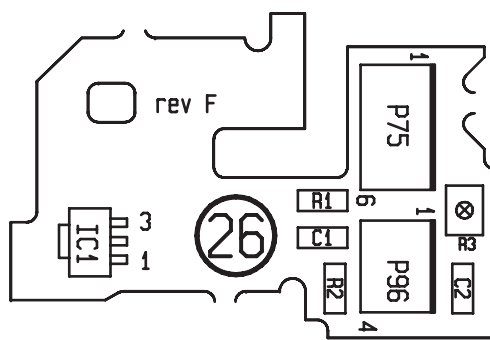
PCB35, Motor Control



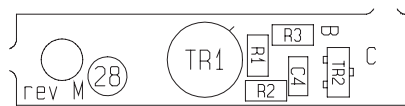
PCB9, Sledge Position



PCB26, End Stop Detector



PCB28, Safety RX



PCB37, Lid Motor

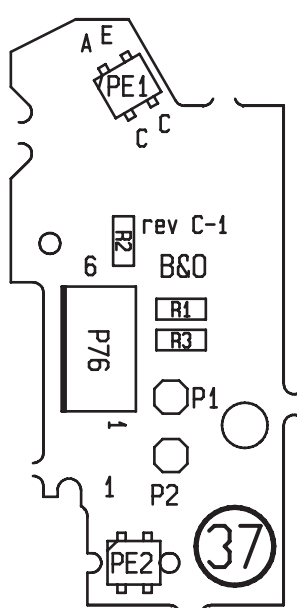


DIAGRAM M – Motor Control and Detection PCB drawing for PCB35 see page 2.27

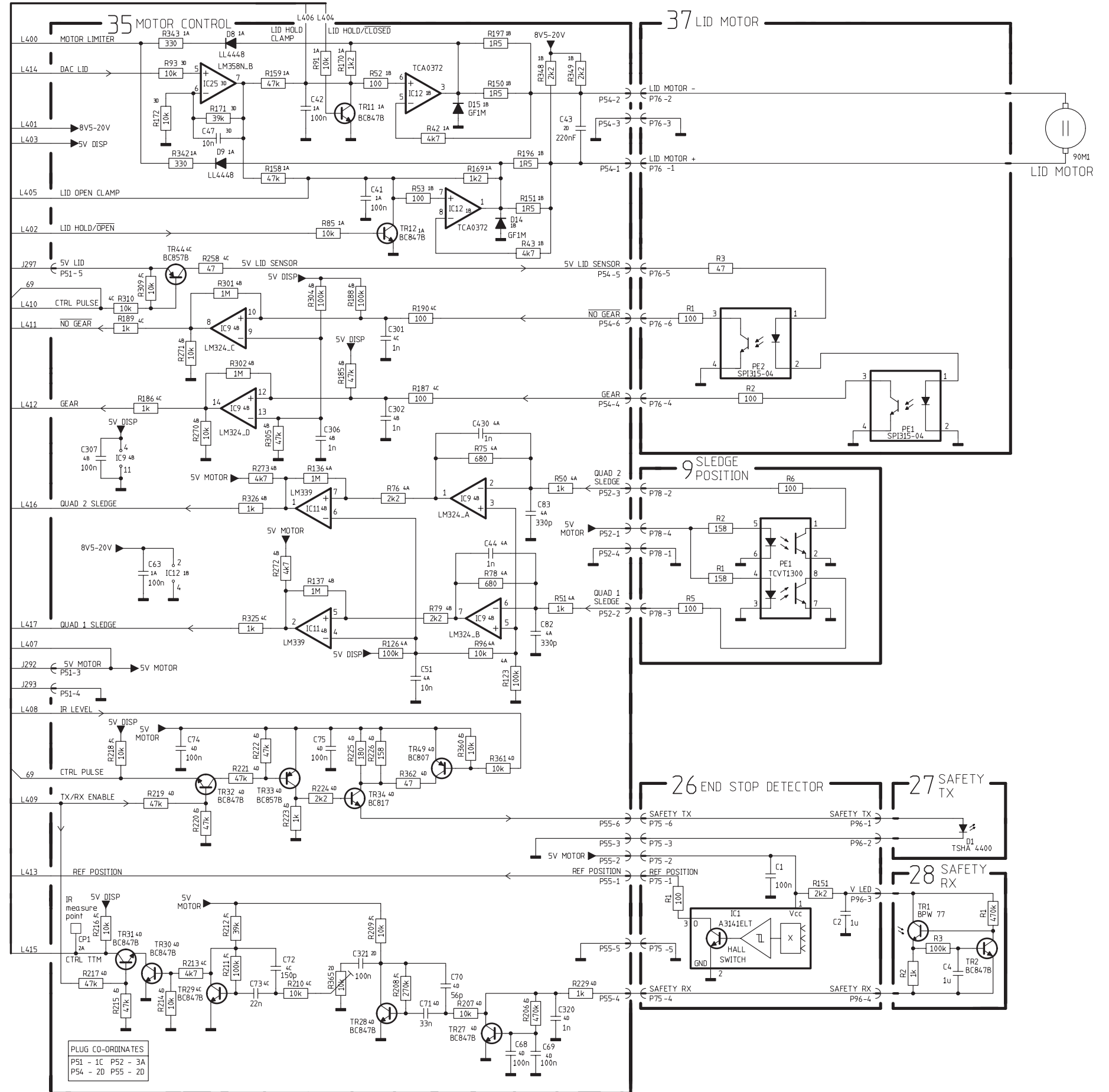


DIAGRAM N – Power Supply PCB drawing for PCB4 see page 2.31 – PCB5 see page 2.30 – PCB34 see page 2.25

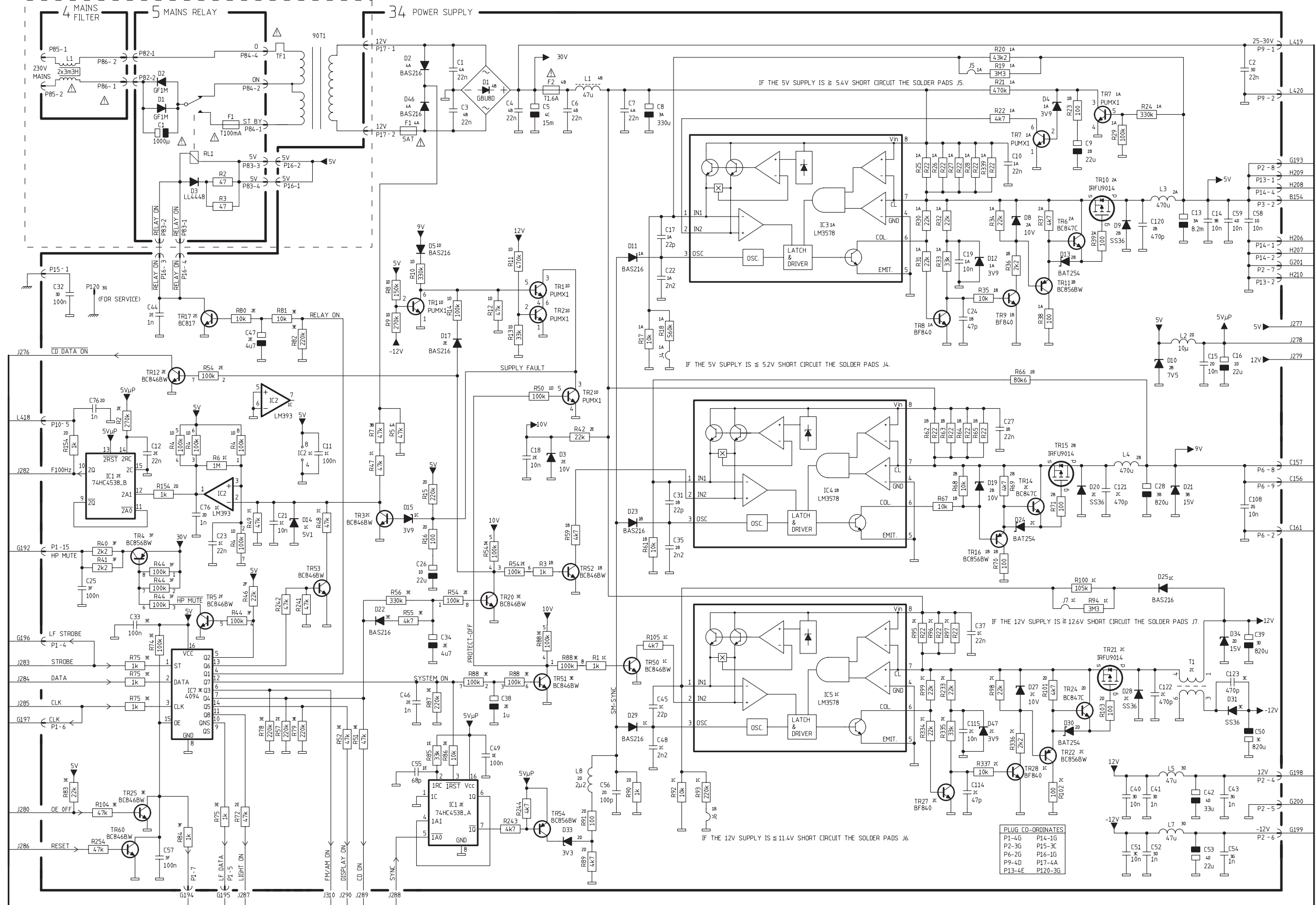
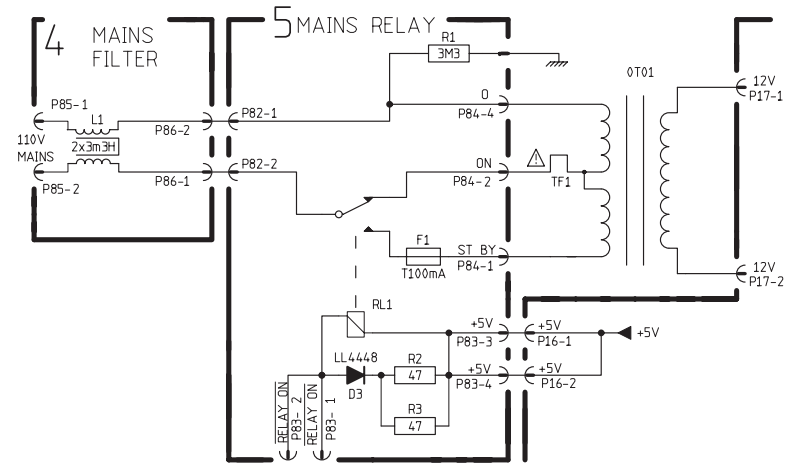
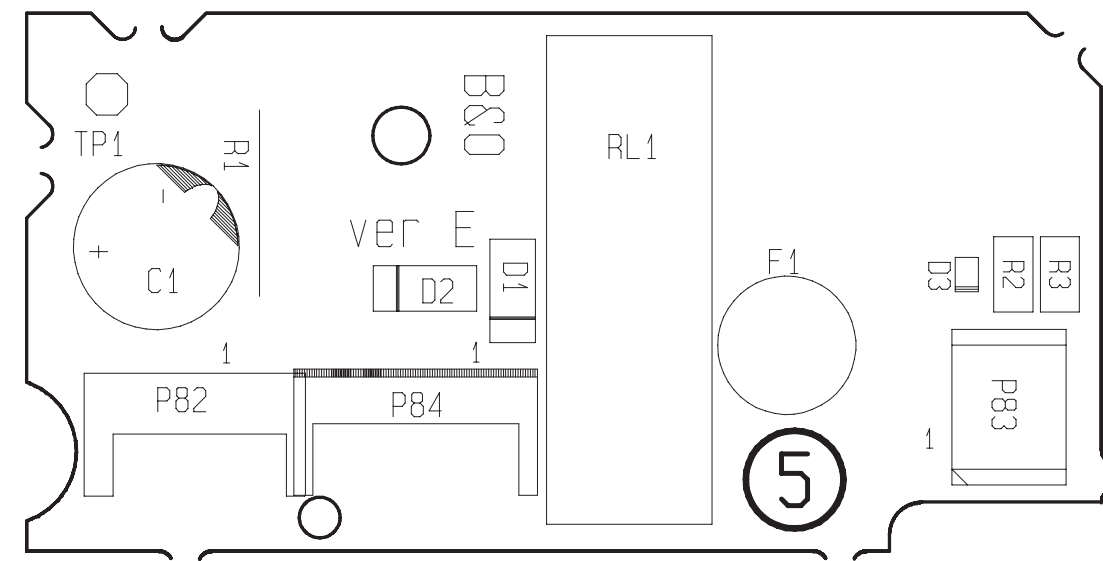


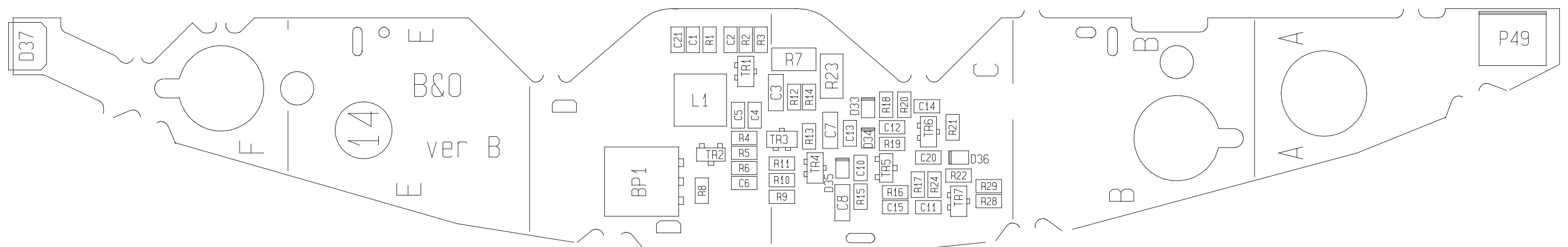
DIAGRAM O – Mains relay USA



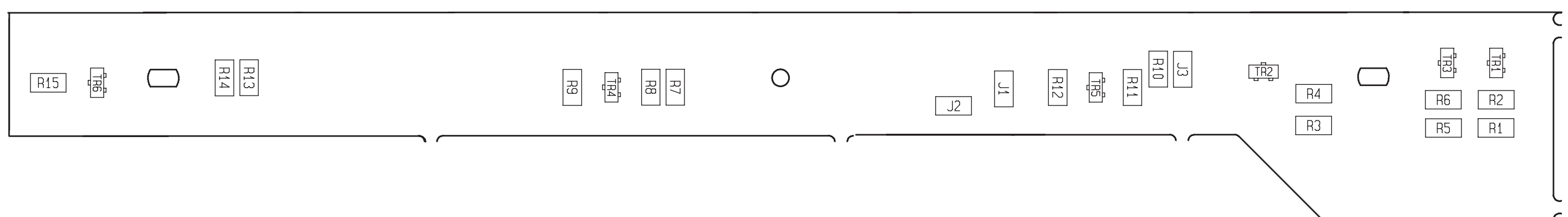
PCB5, Mains Relay



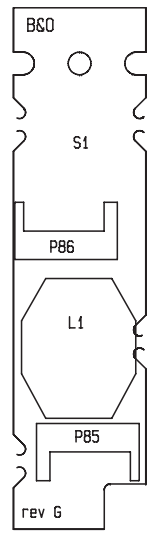
PCB14, IR Receiver



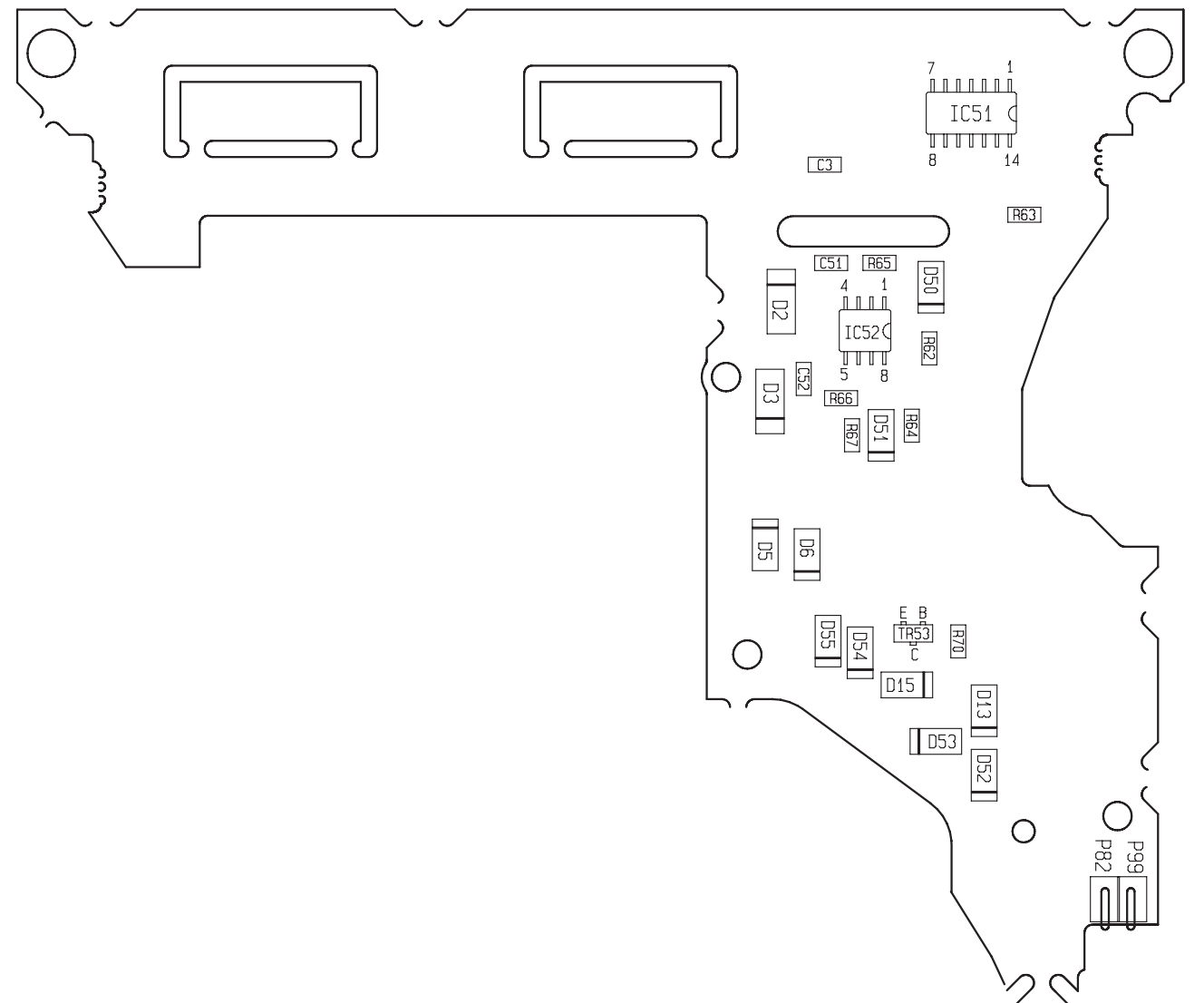
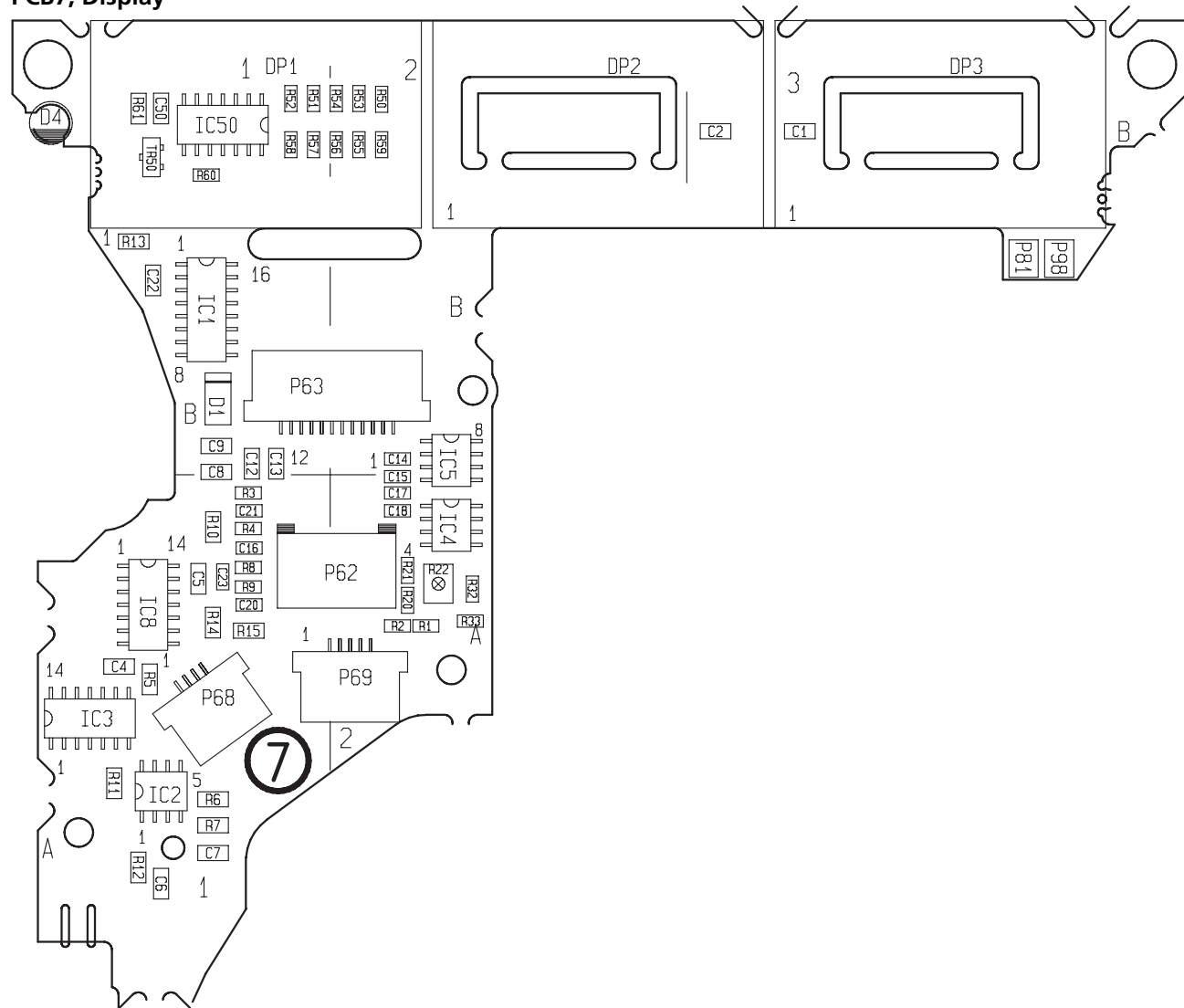
PCB24, Light indication, left



PCB4, Mains Filter



PCB7, Display



PCB1, 8000535 FM/AM - RDS
Type 2574

| | | | | | |
|---------------|---------|-----------|------|---------|----------|
| C202 | 4000401 | 12pF 50V | C274 | 4001127 | 22pF 50V |
| C203 | 4001125 | 15pF 50V | C275 | 4001131 | 47pF 50V |
| C213 | 4001120 | 5.6pF 50V | C297 | 4000401 | 12pF 50V |
| C221 | 4001126 | 18pF | | | |
| C222- C223 | 4001119 | 4.7pF 50V | | | |

| | | |
|---------------|---------|------------|
| L201 | 8021385 | Coil 108nH |
| L202- L203 | 8021384 | Coil 108nH |
| L204 | 8021350 | Coil164nH |

Other electrical parts like PCB1, type 2571, 2572, 2573, 2575, 2576, 2577, 2580

PCB3, 8000513 Main Microcomputer

| | | | |
|------|---------|-----|-------|
| IC3Δ | 8343945 | 147 | SW IC |
|------|---------|-----|-------|

PCB4, 8000463 Mains Filter

| | | |
|-----|---------|----------------|
| L1▲ | 8022318 | Coil 2 x 3.3mH |
|-----|---------|----------------|

| | | |
|-------------|---------|---------------|
| P85- P86 | 7221057 | Plug 2/3 pole |
|-------------|---------|---------------|

PCB5, 8005661 Mains relay
Type 2571, 2572, 2574, 2575,
2577, 2580

| | | | |
|-----------|---------|-----|--------|
| D1- D2 | 8300915 | 209 | GF 1M |
| D3 | 8301045 | 250 | BAS216 |

| | | |
|----|---------|---------------------|
| C1 | 4200821 | 1000μF -20+50% 6.3V |
|----|---------|---------------------|

| | | |
|------|---------|----------|
| RL1▲ | 7600120 | Relay 5V |
|------|---------|----------|

| | | |
|-----|---------|------------------|
| F1▲ | 6600084 | Fuse 100mAT 250V |
|-----|---------|------------------|

| | | |
|-----|---------|---------------|
| P82 | 7221057 | Plug 2/3 pole |
| P83 | 7211221 | Socket 4 pole |
| P84 | 7221163 | Plug 4/3 pole |

PCB5, 8005664 Mains relay

Type 2573, 2576

| | | |
|----|---------|----------------|
| R1 | 5000194 | 3.3MΩ 10% 1/2W |
|----|---------|----------------|

| | | |
|-----|---------|------------------|
| F1▲ | 6600164 | Fuse 100mAT 125V |
|-----|---------|------------------|

Other electrical parts like PCB5, type 2571, 2572, 2574, 2575, 2577, 2580

PCB7, 8005364 Display

| | | | | | | | |
|---------------|---------|-----|-----------|-------|---------|-----|--------|
| IC1Δ | 8342095 | 138 | 74HC138 | IC8Δ | 8341277 | 138 | 74HC14 |
| IC2Δ | 8342270 | 138 | TIMER 555 | IC50Δ | 8341857 | 138 | LM339 |
| IC3Δ | 8340740 | 138 | 4013 | IC51Δ | 8340433 | 138 | 74HC86 |
| IC4Δ- IC5Δ | 8342681 | 138 | SI9958DY | IC52Δ | 8341812 | 138 | LM393 |

| | | | | | | | |
|------|---------|----|--------|------|---------|----|--------|
| TR50 | 8320755 | 51 | BC847B | TR53 | 8320811 | 51 | BC857B |
|------|---------|----|--------|------|---------|----|--------|

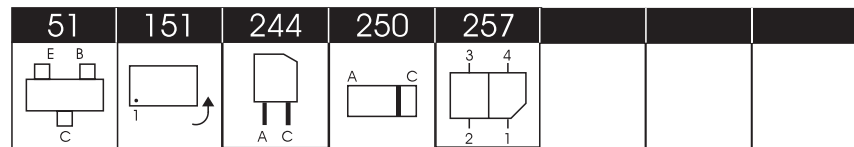
| | | | | | | | |
|-----------|---------|-----|---------|------|---------|-----|--------|
| D1 | 8300606 | 250 | LL4448 | D13 | 8300606 | 250 | LL4448 |
| D2- | 8300907 | 256 | GF1B | D15 | 8300606 | 250 | LL4448 |
| D3 | | | | D50- | 8300606 | 250 | LL4448 |
| D4 | 8330387 | 265 | Led red | D55 | | | |
| D5- D6 | 8300606 | 250 | LL4448 | | | | |

| | | |
|-----|---------|---------------|
| R59 | 5013256 | 39KΩ 1% 1/16W |
|-----|---------|---------------|

| | | | | | |
|-----------|----------|-------------------|------|---------|-------------------|
| C1- C3 | 4010274- | 100nF -20+80% 25V | C10- | 4201448 | 330μF 20% 6.3V |
| C4 | 4010272 | 22nF -20+80% 50V | C11 | | |
| C5 | 4010274 | 100nF -20+80% 25V | C12- | 4010321 | 470nF -20+80% 16V |
| C6 | 4010314 | 220nF -20+80% 25V | C13 | | |
| C7 | 4010315 | 22nF 10% 25V | C14- | 4001143 | 470pF 5% 50V |
| C8- C9 | 4010321 | 470nF -20+80% 16V | C15 | | |
| | | | C16 | 4001135 | 100pF 5% 50V |

▲ symbol of safety component, see page 2.1

Δ indicates that static electricity may destroy the component



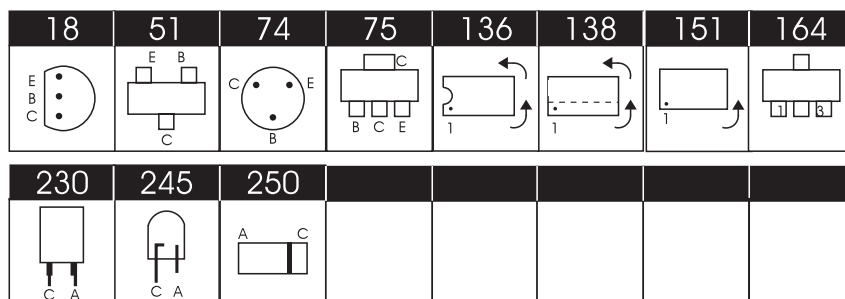
Resistors not referred to are standard, see page 3.13 and 3.14

| | | | | | | |
|--|---|---|---|---|---|------------------------|
| C17- C18 C20- C21 C22 | 4001143 4001135 4010274 | 470pF 5% 50V 100pF 5% 50V 100nF -20+80% 25V | C23 C50 C51- C52 | 4001135 4010274 4010323 | 100pF 5% 50V 100nF -20+80% 25V 1µF -20+80% 16V | |
| IL1 | 8230125 | Bulb, 190mA 6.3V | | | | |
| P62 P63 | 7211134 7210893 | Socket 6 pole Socket 12 pole | P68 P69 | 7210889 7211133 | Socket 4 pole Socket 5 pole | |
| PCB9, 8005312 Sledge position | PE1Δ | 8330388 | TCVT1300 | | | |
| R1- R2 | 5011853 | 158Ω 1% 1/4W | | | | |
| P78 | 7211221 | Socket 4 pole | | | | |
| PCB11, 8005295 Main keyboard, right | S1- S4 | 7400429 | Switch 1 pole | | | |
| P97 | 7211136 | Socket 4 pole | | | | |
| PCB12, 8005296 Main keyboard, left | S1- S4 | 7400429 | Switch 1 pole | | | |
| P72 P98 | 7211054 7211136 | Socket Socket 4 pole | | | | |
| PCB13, 8005313 Secondary keyboard | IC1Δ IC2Δ | 8342095 8342297 | 151 74HC138 151 74HC147 | | | |
| TR1 | 8320755 | 51 BC847B | | | | |
| C1- C2 C4 | 4010316 4010271 | 100nF 10% 25V 10nF 10% 50V | | | | |
| P71 | 7211057 | Socket 12 pole | | | | |
| PCB14, 8005299 IR Receiver | TR1 TR2 TR3 TR4 | 8321278 8320740 8321187 8321188 | BC849CW 51 BF840 51 BC846BW 51 BC856BW | TR5 TR6- TR7 | 8320740 8321187 | 51 BF840 51 BC846BW |
| D33- D36 D37 | 8301045 8330145 | 250 BAS216 244 IR detector 880nm 455KHz | D38- D39 | 8330393 | 244 IR detector 880nm BPW34FAS | |
| R7 | 5011303 | 470Ω 5% 1/4W | R23 | 5021512 | 220Ω 1% 1/4W | |
| C1 C2 C3 C4 C5 | 4011134 4001143 4010334 4001131 4001143 | 100nF 10% 16V 470pF 5% 50V 220nF 10% 16V 47pF 5% 50V 470pF 5% 50V | C6 C7 C8 C10 C11 | 4001131 4000442 4010387 4001143 4001131 | 47pF 5% 50V 2.2nF 5% 50V 470nF 10% 16V 470pF 5% 50V 47pF 5% 50V | |

Δ indicates that static electricity may destroy the component

| | | | | | | | |
|--|---------------|---------|--------------------|--|----------------|---------|-------------------|
| | C12- | 4001143 | 470pF 5% 50V | | C15 | 4011134 | 100nF 10% 16V |
| | C13 | | | | C20 | 4011124 | 15nF 10% 50V |
| | C14 | 4001131 | 47pF 5% 50V | | C21 | 4011110 | 1nF 10% 50V |
| | L1 | 8020744 | Coil 455KHz | | | | |
| | BP1 | 8030392 | Cer. filter 455KHz | | | | |
| | P49 | 7211053 | Socket 4 pole | | | | |
| PCB20, 8001824 ML interface | IC1Δ- IC7Δ | 8341022 | 151 4558 | | IC8Δ- IC10Δ | 8341024 | 151 4066 |
| | TR3 | 8320811 | 51 BC857B | | TR6 | 8320811 | 51 BC857B |
| | TR4- TR5 | 8320755 | 51 BC847B | | | | |
| | R2 | 5011841 | 11.8KΩ 1% 1/8W | | R14- | 5011557 | 10KΩ 1% 1/8W |
| | R4 | 5011841 | 11.8KΩ 1% 1/8W | | R15 | | |
| | R5- | 5011531 | 5.9KΩ 1% 1/8W | | R19- | 5011557 | 10KΩ 1% 1/8W |
| | R6 | | | | R20 | | |
| | R8 | 5011841 | 11.8KΩ 1% 1/8W | | R23- | 5011571 | 75Ω 1% 1/8W |
| | R10 | 5011841 | 11.8KΩ 1% 1/8W | | R26 | | |
| | R11- R12 | 5011531 | 5.9KΩ 1% 1/8W | | | | |
| | C1- C2 | 4000277 | 22pF 5% 50V | | C11- C14 | 4010166 | 100nF -20+80% 50V |
| | C3- C4 | 4000241 | 100pF 5% 50V | | C100- C101 | 4000345 | 1.0nF 5% 50V |
| | C6- C7 | 4000241 | 100pF 5% 50V | | | | |
| PCB21, 8005301 Headphone | C1- C2 | 4011110 | 1.0nF 10% 50V | | C3- C4 | 4010271 | 10nF 10% 50V |
| | P1 | 7210510 | Jack socket | | P80 | 7211221 | Socket 4 pole |
| PCB22, 8000514 Clamper position | IC1- IC2 | 8341041 | 151 LM324 | | | | |
| | TR1 | 8320755 | 51 BC847B | | | | |
| | PE1- PE3 | 8330478 | 257 Optocoupler | | | | |
| | R1 | 5011188 | 330Ω 5% 1/4W | | R25 | 5012366 | 20KΩ 1% 1/8W |
| | R8 | 5011188 | 330Ω 5% 1/4W | | R28 | 5012239 | 39KΩ 1% 1/8W |
| | R15 | 5011188 | 330Ω 5% 1/4W | | R29- | 5012290 | 4.87KΩ 1% 1/8W |
| | R23 | 5012278 | 240KΩ 1% 1/8W | | R30 | | |
| | R24 | 5012316 | 56.2KΩ 1% 1/8W | | R33 | 5012366 | 20KΩ 1% 1/8W |
| | C1 | 4010271 | 10nF 10% 50V | | C10 | 4010237 | 1nF 10% 50V |
| | C4- | 4010274 | 100nF -20+80% | | C11 | 4000415 | 180pF 5% 50V |
| | C5 | | | | C12 | 4010237 | 1nF 10% 50V |
| | C6 | 4010237 | 1nF 10% 50V | | C13 | 4000412 | 100pF 5% 50V |
| | C7 | 4010263 | 2.2nF 10% 50V | | C14 | 4010237 | 1nF 10% 50V |
| | C8- C9 | 4010272 | 22nF -20+80% 50V | | C15 | 4000412 | 100pF 5% 50V |
| | P60 | 7211234 | Socket 12 pole | | | | |
| | P61 | 7211340 | Socket 6 pole | | | | |
| | P64 | 7221272 | Plug 2 pole | | | | |

Δ indicates that static electricity may destroy the component



Resistors not referred to are standard, see page 3.13 and 3.14

PCB24, 8005304
Light indication, left

| | | | |
|-------------|---------|-------------|---------|
| TR1- TR6 | 8320755 | 51 | BC847B |
| D4- D6 | 8330387 | 230 | Led red |
| P73 | 6276998 | Plug 8 pole | |
| P74 | 6276913 | Plug 4 pole | |

PCB25, 8005305
Light indication, right

| | | | |
|-----------|---------|-----|---------|
| D1- D3 | 8330387 | 230 | Led red |
|-----------|---------|-----|---------|

PCB26, 8005315 End stop detector

| | | | |
|------|---------|-------------------|----------|
| IC1Δ | 8342715 | 164 | A3141ELT |
| C1 | 4010274 | 100nF -20+80% 25V | |
| C2 | 4010323 | 1μF -20+80% 16V | |
| P75 | 7211054 | Socket 6 pole | |
| P96 | 7211053 | Socket 4 pole | |

PCB27, 8005377 Safety TX

| | | | |
|----|---------|-----|----------|
| D1 | 8330266 | 245 | TSHA4480 |
|----|---------|-----|----------|

PCB28, 8005303 Safety RX

| | | | |
|-----|---------|-----------------|--------|
| TR1 | 8330363 | 74 | BPW77 |
| TR2 | 8320755 | 51 | BC847B |
| C4 | 4010323 | 1μF -20+80% 16V | |

PCB29, 8005309 Lamp

| | | | |
|-----|---------|------------------|--|
| IL1 | 8230125 | Bulb, 190mA 6.3V | |
|-----|---------|------------------|--|

PCB30, 8001865
IR transmitter, tacho clamper

PCB31, 8001866
IR receiver, tacho clamper

PCB32, 8005399
Input/Output select and sound adj.

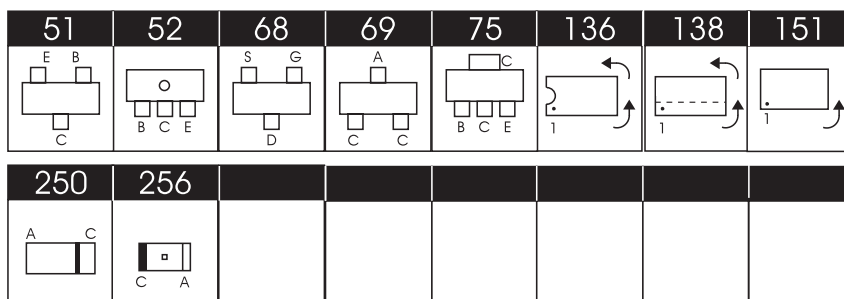
| | | | | | | | |
|-------|---------|-----|----------|---------|---------|-----|--------------|
| IC1Δ- | 8341025 | 138 | 4094 | IC12Δ | 8341022 | 138 | 4558 |
| IC2Δ | | | | IC400Δ | 8342869 | 151 | CS8412 |
| IC3Δ | 8341059 | 138 | 4052 | IC401Δ | 8342497 | 151 | TDA1305 |
| IC4Δ | 8342238 | 151 | TDA7318D | IC402Δ | 8342950 | 151 | EL2045CS |
| IC6Δ | 8340205 | 151 | LF347 | IC500Δ* | 8342500 | 151 | Asic-ML Data |
| IC7Δ- | 8341022 | 138 | 4558 | IC600Δ* | 8342900 | 151 | Asic-PL Data |
| IC10Δ | | | | | | | |

* specially selected or adapted sample

Δ indicates that static electricity may destroy the component

| | | | | | | | |
|-----|---------|----|----------|-------|---------|----|----------|
| TR1 | 8320512 | 18 | BC338-25 | TR15- | 8320941 | 51 | 2SC4213 |
| TR2 | 8320523 | 18 | BC328-25 | TR18 | 8320941 | 51 | 2SC4213 |
| TR3 | 8320755 | 51 | BC847B | TR19- | 8321080 | 51 | FMMT491A |
| TR6 | 8320755 | 51 | BC847B | TR26 | | | |

| | | | | | | | |
|-----------------|---------|----------------|---------------|-----------------|---------|-------------------|---------------|
| TR27- TR28 | 8320755 | 51 | BC847B | TR405 | 8320811 | 51 | BC857B |
| TR29 | 8320811 | 51 | BC857B | TR500 | 8321159 | 51 | FMMT489 |
| TR400- TR401 | 8321171 | 75 | FZT790A | TR600 | 8321198 | 136 | PUMX1 |
| TR402- TR404 | 8320755 | 51 | BC847B | TR601- TR602 | 8321197 | 136 | PUMT1 |
| | | | | TR603 | 8321202 | 51 | PDTC114EU |
| D2- D3 | 8300644 | 250 | Z6.2V 2% 0.5W | D19 | 8300762 | 250 | Z9.1V 2% 0.5W |
| D4- D5 | 8301045 | 250 | BAS216 | D20- D21 | 8301045 | 250 | BAS216 |
| D10- D14 | 8301045 | 250 | BAS216 | D400 | 8300563 | 250 | Z5.1V 2% 0.5W |
| D15- D16 | 8300636 | 250 | Z7.5V 5% 0.5W | D500- D505 | 8301045 | 250 | BAS216 |
| D17- D18 | 8300723 | 250 | Z8.2V 2% 0.5W | D600- D601 | 8300520 | 250 | Z6.8V 5% 0.5W |
| R141- R148 | 5012331 | 10K Ω | 1% 1/10W | R505 | 5011599 | 49.9K Ω | 1% 1/8W |
| R194- R201 | 5012331 | 10K Ω | 1% 1/10W | R600 | 5021484 | 100 Ω | 1% 1/4W |
| R250 | 5012290 | 4.87K Ω | 1% 1/10W | R602 | 5021484 | 100 Ω | 1% 1/4W |
| R251 | 5012297 | 5.62K Ω | 1% 1/10W | R604 | 5030052 | 4 x 4.7K Ω | 5% 1/16W |
| R253 | 5012290 | 4.87K Ω | 1% 1/10W | R605 | 5030054 | 4 x 100K Ω | 5% 1/16W |
| R254 | 5012297 | 5.62K Ω | 1% 1/10W | R606 | 5030052 | 4 x 4.7K Ω | 5% 1/16W |
| R400 | 5021391 | 75 Ω | 1% 1/4W | R607 | 5030050 | 4 x 10K Ω | 5% 1/16W |
| R406- R409 | 5021524 | 47 Ω | 1% 1/4W | R608 | 5030053 | 4 x 47K Ω | 5% 1/16W |
| R425 | 5013223 | 68 Ω | 1% 1/16W | R609 | 5030050 | 4 x 10K Ω | 5% 1/16W |
| | | | | R610 | 5030055 | 4 x 180K Ω | 5% 1/16W |
| | | | | R611 | 5030054 | 4 x 100K Ω | 5% 1/16W |
| C1- C4 | 4000420 | 470pF | 5% 50V | C113- C114 | 4201164 | 47 μ F | 20% 10V |
| C5- C6 | 4000351 | 1.5nF | 5% 50V | C116 | 4201391 | 10 μ F | 20% 50V |
| C7- C14 | 4000408 | 47pF | 5% 50V | C130 | 4000414 | 150pF | 5% 50V |
| C17- C22 | 4000412 | 100pF | 5% 50V | C131 | 4000457 | 1.5nF | 5% 50V |
| C33- C38 | 4000416 | 220pF | 5% 50V | C132 | 4000414 | 150pF | 5% 50V |
| C41- C42 | 4000424 | 1nF | 5% 50V | C133 | 4000457 | 1.5nF | 5% 50V |
| C43 | 4010237 | 1.0nF | 10% 50V | C134- C135 | 4010271 | 10nF | 10% 50V |
| C45- C46 | 4000424 | 1nF | 5% 50V | C150 | 4200972 | 4.7 μ F | 20% 10V |
| C49- C50 | 4010237 | 1.0nF | 10% 50V | C400 | 4000408 | 47pF | 5% 50V |
| C51- C52 | 4000424 | 1nF | 5% 50V | C401 | 4010274 | 100nF | -20+80% 25V |
| C53 | 4010237 | 1.0nF | 10% 50V | C402 | 4010273 | 47nF | -20+80% 50V |
| C54 | 4010271 | 10nF | 10% 50V | C403 | 4010274 | 100nF | -20+80% 25V |
| C56 | 4010271 | 10nF | 10% 50V | C404 | 4201164 | 47 μ F | 20% 10V |
| C59- C64 | 4010271 | 10nF | 10% 50V | C405- C406 | 4000424 | 1nF | 5% 50V |
| C66- C71 | 4010271 | 10nF | 10% 50V | C407- C408 | 4010274 | 100nF | -20+80% 25V |
| C73 | 4010271 | 10nF | 10% 50V | C411 | 4201348 | 1 μ F | 10% 16V |
| C74- C79 | 4010274 | 100nF | -20+80% 25V | C412- C414 | 4010274 | 100nF | -20+80% 25V |
| C82- C85 | 4010274 | 100nF | -20+80% 25V | C415- C416 | 4201163 | 10 μ F | 20% 35V |
| C86- C89 | 4130307 | 150nF | 10% 63V | C417- C422 | 4010274 | 100nF | -20+80% 25V |
| C90- C107 | 4200916 | 4.7 μ F | 20% 25V | C500 | 4010237 | 1.0nF | 10% 50V |
| C108- C109 | 4010271 | 10nF | 10% 50V | C501 | 4000416 | 220pF | 5% 50V |
| C110 | 4000281 | 82pF | 5% 50V | C502 | 4000412 | 100pF | 5% 50V |
| C111- C112 | 4201163 | 10 μ F | 20% 35V | C503 | 4010316 | 100nF | 10% 25V |
| | | | | C504 | 4010274 | 100nF | -20+80% 25V |
| | | | | C505- C507 | 4201163 | 10 μ F | 20% 35V |
| | | | | C600 | 4010274 | 100nF | -20+80% 25V |
| | | | | C601- C602 | 4010132 | 1.0nF | 10% 50V |
| | | | | C603 | 4000408 | 47pF | 5% 50V |
| | | | | C604 | 4000416 | 220pF | 5% 50V |



Resistors not referred to are standard, see page 3.13 and 3.14

| | | | | | |
|-----------|---------|--------------------|-----------|---------|----------------|
| L1- L4 | 8020705 | Coil 100µH 10% | L5- L6 | 8020821 | Coil 2.2µH 5% |
| T400 | 8021159 | Transformer 796KHz | | | |
| P1 | 7210418 | Socket 7 pole | P22 | 7211227 | Socket 16 pole |
| P2- | 7210689 | Socket 8 pole | P23 | 7500296 | Contact pin |
| P3 | | | P24 | 7211221 | Socket 4 pole |
| P4 | 7210904 | Socket 16 pole | P26 | 7221272 | Plug 2/2 pole |
| P20 | 7211221 | Socket 4 pole | P27 | 7221181 | Plug 2 pole |
| P21 | 7211223 | Socket 8 pole | | | |

PCB34, 8000512

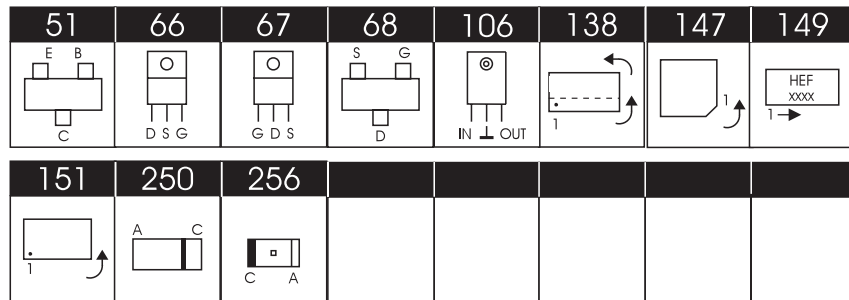
Power Supply

Type 2571, 2572, 2574, 2575, 2577, 2580

| | | | | | | | |
|---------------|---------|-----|---------------|-------|---------|-----|---------------|
| IC1Δ | 8343327 | 138 | 74HC4538 | IC7Δ | 8343333 | 138 | 4094B |
| IC2Δ | 8341812 | 138 | LM393 | IC10Δ | 8342397 | 138 | M41T56M6 |
| IC3Δ- IC5Δ | 8342673 | 151 | LM3578 | IC14Δ | 8343330 | 138 | 74HC138 |
| TR1- | 8321198 | 136 | PUMX1 | TR32 | 8321193 | 75 | FZT788B |
| TR2 | | | | TR33 | 8321198 | 136 | PUMX1 |
| TR3 | 8321187 | 51 | BC846BW | TR34 | 8321171 | 52 | FZT790A |
| TR4 | 8321188 | 51 | BC856BW | TR35 | 8321198 | 136 | PUMX1 |
| TR5 | 8321187 | 51 | BC846BW | TR36 | 8321193 | 75 | FZT788B |
| TR6 | 8320936 | 51 | BC847C | TR37 | 8321198 | 136 | PUMX1 |
| TR7 | 8321198 | 136 | PUMX1 | TR38- | 8320856 | 68 | 2N7002 |
| TR8- | 8320740 | 51 | BF840 | TR40 | | | |
| TR9 | | | | TR41 | 8321188 | 51 | BC856BW |
| TR10 | 8321363 | 69 | STD10PF06 | TR42 | 8320740 | 51 | BF840 |
| TR11 | 8321188 | 51 | BC856BW | TR43 | 8321188 | 51 | BC856BW |
| TR12 | 8321187 | 51 | BC846BW | TR44 | 8320740 | 51 | BF840 |
| TR14 | 8320936 | 51 | BC847C | TR46 | 8321188 | 51 | BC856BW |
| TR15 | 8321363 | 69 | STD10PF06 | TR47 | 8321187 | 51 | BC846BW |
| TR16 | 8321188 | 51 | BC856BW | TR48 | 8321198 | 136 | PUMX1 |
| TR17 | 8320752 | 51 | BC817-40 | TR49 | 8321193 | 75 | FZT788B |
| TR20 | 8321187 | 51 | BC846BW | TR50- | 8321187 | 51 | BC846BW |
| TR21 | 8321363 | 69 | STD10PF06 | TR53 | | | |
| TR22 | 8321188 | 51 | BC856BW | TR54 | 8321188 | 51 | BC856BW |
| TR24 | 8320936 | 51 | BC847C | TR55- | 8321187 | 51 | BC846BW |
| TR25 | 8321187 | 51 | BC846BW | TR57 | | | |
| TR27- | 8320740 | 51 | BF840 | TR58 | 8321188 | 51 | BC856BW |
| TR28 | | | | TR59- | 8321187 | 51 | BC846BW |
| TR30 | 8321193 | 75 | FZT788B | TR60 | | | |
| TR31 | 8321198 | 136 | PUMX1 | | | | |
| D1 | 8300949 | | Bridge | D15 | 8301061 | 256 | Z3.9V 2% 0.4W |
| D2 | 8301045 | 250 | BAS216 | D17 | 8301045 | 250 | BAS216 |
| D3 | 8301072 | 256 | Z10V 2% 0.4W | D19 | 8301072 | 256 | Z10V 2% 0.4W |
| D4 | 8301061 | 256 | Z3.9V 2% 0.4W | D20 | 8301217 | 250 | STPS3L60S |
| D5 | 8301045 | 250 | BAS216 | D21 | 8301104 | 250 | SM6T15C |
| D8 | 8301072 | 256 | Z10V 2% 0.4W | D22- | 8301045 | 250 | BAS216 |
| D9 | 8301217 | 250 | STPS3L60S | D23 | | | |
| D10 | 8301103 | 250 | SM6T7V5CA | D24 | 8301218 | 256 | BAT254 |
| D11 | 8301045 | 250 | BAS216 | D25 | 8301045 | 250 | BAS216 |
| D12 | 8301061 | 256 | Z3.9V 2% 0.4W | D27 | 8301072 | 256 | Z10V 2% 0.4W |
| D13 | 8301218 | 256 | BAT254 | D28 | 8301217 | 250 | STPS3L60S |
| D14 | 8301064 | 256 | Z5.1V 2% 0.4W | D29 | 8301045 | 250 | BAS216 |

Δ indicates that static electricity may destroy the component

| | | | | | | | |
|------|---------|----------------------------|---------------|-------|---------|----------------------------|---------------|
| D30 | 8301218 | 256 | BAT254 | D40- | 8301045 | 250 | BAS216 |
| D31 | 8301217 | 250 | STPS3L60S | D46 | | | |
| D33 | 8301059 | 256 | Z3.3V 2% 0.4W | D47 | 8301061 | 256 | Z3.9V 2% 0.4W |
| D34 | 8301104 | 250 | SM6T15C | | | | |
| R4 | 5030054 | 4 x 100K Ω 5% 1/16W | | R92 | 5012382 | 10K Ω 0.1% 1/4W | |
| R5 | 5021508 | 47K Ω 1% 1/4W | | R93 | 5012169 | 220K Ω 1% 1/4W | |
| R7 | 5021508 | 47K Ω 1% 1/4W | | R94 | 5023032 | 3.3M Ω 1% 1/4W | |
| R17 | 5012382 | 10K Ω 0.1% 1/4W | | R95- | 5021542 | 0.22 Ω 5% 1/4W | |
| R18 | 5023035 | 560K Ω 1% 1/4W | | R97 | | | |
| R19 | 5023052 | 470K Ω 1% 1/4W | | R100 | 5013172 | 105K Ω 1% 1/8W | |
| R20 | 5012175 | 43.2K Ω 1% 1/4W | | R102- | 5021484 | 100 Ω 1% 1/4W | |
| R25- | 5021542 | 0.22 Ω 5% 1/4W | | R103 | | | |
| R28 | | | | R114 | 5030052 | 4 x 4.7K Ω 5% 1/16W | |
| R36 | 5012200 | 2.2K Ω 1% 1/4W | | R141 | 5030052 | 4 x 4.7K Ω 5% 1/16W | |
| R38- | 5021484 | 100 Ω 1% 1/4W | | R143 | 5013247 | 6.8K Ω 1% 1/16W | |
| R39 | | | | R146 | 5013264 | 180K Ω 1% 1/16W | |
| R40- | 5012200 | 2.2K Ω 1% 1/4W | | R154 | 5030051 | 4 x 1K Ω 5% 1/16W | |
| R41 | | | | R155 | 5012209 | 1.87K Ω 1% 1/4W | |
| R44 | 5030054 | 4 x 100K Ω 5% 1/16W | | R161 | 5013246 | 5.6K Ω 1% 1/16W | |
| R47- | 5021508 | 47K Ω 1% 1/4W | | R171 | 5012209 | 1.87K Ω 1% 1/4W | |
| R49 | | | | R187 | 5012209 | 1.87K Ω 1% 1/4W | |
| R54 | 5030054 | 4 x 100K Ω 5% 1/16W | | R192 | 5013246 | 5.6K Ω 1% 1/16W | |
| R61 | 5012382 | 10K Ω 0.1% 1/4W | | R195 | 5012209 | 1.87K Ω 1% 1/4W | |
| R62- | 5021542 | 0.22 Ω 5% 1/4W | | R209 | 5021484 | 100 Ω 1% 1/4W | |
| R65 | | | | R210- | 5030052 | 4 x 4.7K Ω 5% 1/16W | |
| R66 | 5011843 | 80.6K Ω 1% 1/4W | | R211 | | | |
| R67 | 5021225 | 10K Ω 1% 1/4W | | R234 | 5030053 | 4 x 47K Ω 5% 1/16W | |
| R70- | 5021484 | 100 Ω 1% 1/4W | | R245 | 5030052 | 4 x 4.7K Ω 5% 1/16W | |
| R71 | | | | R336 | 5012200 | 2.2K Ω 1% 1/4W | |
| R75 | 5030051 | 4 x 1K Ω 5% 1/16W | | R339 | 5021542 | 0.22 Ω 5% 1/4W | |
| R88 | 5030054 | 4 x 100K Ω 5% 1/16W | | | | | |
| C1- | 4010216 | 22nF 10% 100V | | C43- | 4011110 | 1nF 10% 50V | |
| C4 | | | | C44 | | | |
| C5 | 4201179 | 15000 μ F 20% 50V | | C45 | 4001127 | 22pF 5% 50V | |
| C6- | 4010216 | 22nF 10% 100V | | C46 | 4011110 | 1nF 10% 50V | |
| C7 | | | | C47 | 4200916 | 4.7 μ F 20% 25V | |
| C8 | 4201406 | 330 μ F 20% 50V | | C48 | 4000442 | 2.2nF 5% 50V | |
| C9 | 4201163 | 22 μ F 20% 6.3V | | C49 | 4011135 | 100nF -20+80% 16V | |
| C10 | 4010216 | 22nF 10% 100V | | C50 | 4201407 | 820 μ F 20% 25V | |
| C11 | 4011135 | 100nF -20+80% 16V | | C51 | 4011122 | 10nF 10% 50V | |
| C12 | 4010216 | 22nF 10% 100V | | C52 | 4011110 | 1nF 10% 50V | |
| C13 | 4201178 | 8200 μ F 20% 10V | | C53 | 4201541 | 22 μ F 20% 50V | |
| C14- | 4011122 | 10nF 10% 50V | | C54 | 4011110 | 1nF 10% 50V | |
| C15 | | | | C55 | 4001133 | 68pF 5% 50V | |
| C16 | 4201163 | 22 μ F 20% 6.3V | | C56 | 4001135 | 100pF 5% 50V | |
| C17 | 4001127 | 22pF 5% 50V | | C57 | 4011135 | 100nF -20+80% 16V | |
| C18- | 4011122 | 10nF 10% 50V | | C58- | 4011122 | 10nF 10% 50V | |
| C19 | | | | C59 | | | |
| C21 | 4011122 | 10nF 10% 50V | | C61 | 4011135 | 100nF -20+80% 16V | |
| C22 | 4000442 | 2.2nF 5% 50V | | C63 | 4011122 | 10nF 10% 50V | |
| C23 | 4010216 | 22nF 10% 100V | | C66 | 4011122 | 10nF 10% 50V | |
| C24 | 4001131 | 47pF 5% 50V | | C71 | 4011122 | 10nF 10% 50V | |
| C25 | 4011135 | 100nF -20+80% 16V | | C76 | 4011056 | 4 x 1nF 10% | |
| C26 | 4201163 | 22 μ F 20% 6.3V | | C79 | 4201348 | 1 μ F 10% 16V | |
| C27 | 4010216 | 22nF 10% 100V | | C80 | 4001131 | 47pF 5% 50V | |
| C28 | 4201407 | 820 μ F 20% 25V | | C82 | 4001133 | 68pF 5% 50V | |
| C30 | 4011122 | 10nF 10% 50V | | C86 | 4200972 | 4.7 μ F 20% 10V | |
| C31 | 4001127 | 22pF 5% 50V | | C87 | 4201362 | 2.2 μ F 10% 10V | |
| C32 | 4010220 | 100nF 10% 50V | | C92 | 4001131 | 47pF 5% 50V | |
| C33 | 4011135 | 100nF -20+80% 16V | | C98 | 4011122 | 10nF 10% 50V | |
| C34 | 4200916 | 4.7 μ F 20% 25V | | C99 | 4001133 | 68pF 5% 50V | |
| C35 | 4000442 | 2.2nF 5% 50V | | C102 | 4011135 | 100nF -20+80% 16V | |
| C37 | 4010216 | 22nF 10% 100V | | C103 | 4201348 | 1 μ F 10% 16V | |
| C38 | 4201348 | 1 μ F 10% 16V | | C104 | 4011122 | 10nF 10% 50V | |
| C39 | 4201407 | 820 μ F 20% 25V | | C108 | 4011122 | 10nF 10% 50V | |
| C40 | 4011122 | 10nF 10% 50V | | C111 | 4011122 | 10nF 10% 50V | |
| C41 | 4011110 | 1nF 10% 50V | | C112 | 4011056 | 4 x 1nF 10% | |
| C42 | 4201254 | 33 μ F 20% 16V | | C113 | 4201337 | 1000 μ F 20% 10V | |



Resistors not referred to are standard, see page 3.13 and 3.14

| | | | | | |
|------|---------|--------------|-------|---------|---------------|
| C114 | 4001131 | 47pF 5% 50V | C120- | 4000466 | 470pF 5% 100V |
| C115 | 4011122 | 10nF 10% 50V | C123 | | |
| C116 | 4201348 | 1µF 10% 16V | | | |

| | | | | | |
|-----|---------|----------------|-----|---------|----------------|
| L1 | 8021113 | Coil 47µH 10% | L5 | 8020916 | Coil 47µH 5% |
| L2 | 8020772 | Coil 10µH 20% | L7 | 8020916 | Coil 47µH 5% |
| L3- | 8020914 | Coil 470µH 15% | L8 | 8021079 | Coil 2.2µH 10% |
| L4 | | | L14 | 8021113 | Coil 47µH 10% |

| | | | | | |
|-----|---------|---------------|-----|---------|-----------------|
| F1▲ | 6600145 | Fuse 5AT 250V | F2▲ | 6600155 | Fuse 1.6AT 250V |
|-----|---------|---------------|-----|---------|-----------------|

| | | |
|----|---------|-----------------------|
| T1 | 8021268 | Transformer 2 x 470µH |
|----|---------|-----------------------|

| | | |
|----|---------|-------------------|
| X2 | 8090230 | Crystal 32.768KHz |
|----|---------|-------------------|

| | | |
|------|---------|-----------------|
| B1▲* | 8700029 | Lithium battery |
|------|---------|-----------------|

| | | | | | |
|-----|---------|----------------|------|---------|----------------|
| P1 | 7211227 | Socket 16 pole | P12 | 7211222 | Socket 6 pole |
| P2 | 7211223 | Socket 8 pole | P13 | 7211225 | Socket 12 pole |
| P3 | 7211222 | Socket 6 pole | P14 | 7211221 | Socket 4 pole |
| P4 | 7221272 | Plug 2 pole | P15 | 6030359 | Ground wire |
| P5- | 7211234 | Socket 12 pole | P16 | 7211221 | Socket 4 pole |
| P8 | | | P17 | 7221057 | Plug 2/3 pole |
| P9 | 7221133 | Plug 8/8 pole | P20- | 7221357 | Socket 30 pole |
| P10 | 7211229 | Socket 20 pole | P21 | | |
| P11 | 7211223 | Socket 8 pole | | | |

PCB34, 8000536 Power Supply
Type 2573, 2576

| | | |
|-----|---------|-----------------|
| F1▲ | 6600163 | Fuse 5AT 125V |
| F2▲ | 6600162 | Fuse 1.6AT 125V |

Other electrical parts like PCB34, type 2571, 2572, 2574, 2575, 2577, 2580

PCB35, 8006777 Motor Control

| | | | | | | | |
|-------|---------|-----|-----------|--------|---------|-----|----------|
| IC1Δ | 8341747 | 138 | TL7705BCD | IC8Δ | 8342552 | 138 | DAC 0854 |
| IC2Δ* | 8343407 | 147 | 87C654 | IC9Δ- | 8341041 | 138 | LM324 |
| IC3Δ | 8340433 | 138 | 74HC86 | IC10Δ | | | |
| IC4Δ | 8340571 | 138 | 74HC74 | IC11Δ | 8341857 | 138 | LM339 |
| IC5Δ- | 8343333 | 149 | 4094B | IC12Δ- | 8341682 | 151 | TCA0372 |
| IC6Δ | | | | IC13Δ | | | |
| IC7Δ | 8340244 | 106 | LM317 | IC25Δ | 8341098 | 138 | LM358 |

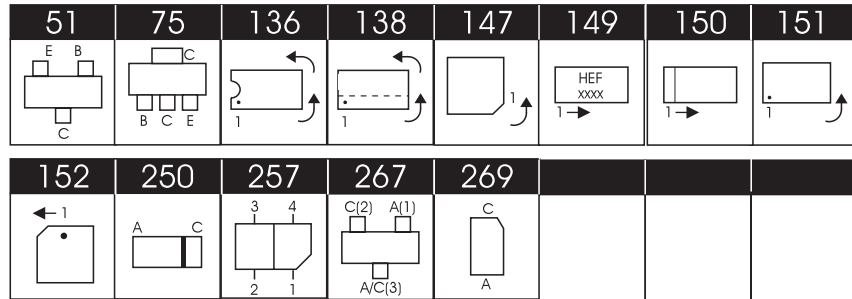
| | | | | | | | |
|-------|---------|----|---------|-------|---------|----|----------|
| TR1- | 8321188 | 51 | BC856BW | TR25- | 8321187 | 51 | BC846BW |
| TR3 | | | | TR32 | | | |
| TR4- | 8321187 | 51 | BC846BW | TR33 | 8321188 | 51 | BC856BW |
| TR6 | | | | TR34 | 8320752 | 51 | BC817-40 |
| TR8- | 8321187 | 51 | BC846BW | TR35- | 8320856 | 68 | 2N7002 |
| TR12 | | | | TR36 | | | |
| TR14- | 8321187 | 51 | BC846BW | TR40 | 8321187 | 51 | BC846BW |
| TR15 | | | | TR43 | 8321187 | 51 | BC846BW |
| TR16 | 8321176 | 51 | FZT951 | TR44 | 8321188 | 51 | BC856BW |
| TR18- | 8321016 | 67 | BUZ71A | TR47- | 8321187 | 51 | BC846BW |
| TR19 | | | | TR48 | | | |
| TR20- | 8321154 | 66 | BUZ271 | TR49 | 8320971 | 51 | BC807-40 |
| TR21 | | | | TR338 | 8321188 | 51 | BC856BW |
| | | | | TR339 | 8321187 | 51 | BC846BW |

▲ symbol of safety component, see page 2.1

* specially selected or adapted sample

Δ indicates that static electricity may destroy the component

| | | | | | | | |
|---------------|---------|----------------|---------------|---------------|---------|----------------|---------------|
| D1- D6 | 8301045 | 250 | BAS216 | D30- D32 | 8301045 | 250 | BAS216 |
| D8- D9 | 8301045 | 250 | BAS216 | D35- D37 | 8301045 | 250 | BAS216 |
| D12- D15 | 8300915 | 250 | GF1M | D38 | 8301074 | 256 | Z12V 2% 0.4W |
| D16 | 8301059 | 256 | Z3.3V 2% 0.4W | D39 | 8301045 | 250 | BAS216 |
| D17- D20 | 8301076 | 256 | Z15V 2% 0.4W | D42 | 8301067 | 250 | Z6.8V 2% 0.4W |
| D21 | 8301081 | 256 | Z24V 2% 0.4W | D50 | 8301077 | 256 | Z16V 2% 0.4W |
| D22 | 8301045 | 250 | BAS216 | D51 | 8301056 | 256 | Z2.7V 2% 0.4W |
| D24 | 8301076 | 256 | Z15V 2% 0.4W | D52- D55 | 8301045 | 250 | BAS216 |
| R45 | 5012239 | 39K Ω | 1% 1/10W | R169- R170 | 5023000 | 1.2K Ω | 1% 1/4W |
| R58- R64 | 5012200 | 2.2K Ω | 1% 1/4W | R171 | 5013256 | 39K Ω | 1% 1/16W |
| R75 | 5013235 | 680 Ω | 1% 1/16W | R191 | 5021484 | 100 Ω | 1% 1/4W |
| R78 | 5013235 | 680 Ω | 1% 1/16W | R194- R197 | 5021151 | 1.5 Ω | 1% 1/4W |
| R80 | 5012142 | 60m Ω | | R203 | 5021225 | 10K Ω | 1% 1/4W |
| R148- R151 | 5021151 | 1.5 Ω | 1% 1/4W | R212 | 5013256 | 39K Ω | 1% 1/16W |
| R152 | 5023002 | 11.3K Ω | 1% 1/4W | R225 | 5011903 | 180 Ω | 1% 1/4W |
| R153 | 5021225 | 10K Ω | 1% 1/4W | R226 | 5011853 | 158 Ω | 1% 1/4W |
| R156- R157 | 5021508 | 47K Ω | 1% 1/4W | R247 | 5021225 | 10K Ω | 1% 1/4W |
| R159 | 5021508 | 47K Ω | 1% 1/4W | R278 | 5021225 | 10K Ω | 1% 1/4W |
| R160- R161 | 5021372 | 5.36K Ω | 1% 1/4W | R280 | 5013264 | 180K Ω | 1% 1/16W |
| R164 | 5021372 | 5.36K Ω | 1% 1/4W | R331 | 5021372 | 5.36K Ω | 1% 1/4W |
| R165- R166 | 5012209 | 1.87K Ω | 1% 1/4W | R346- R349 | 5012200 | 2.2K Ω | 1% 1/4W |
| R362 | 5023026 | 39.2 Ω | 1% 1/4W | R365 | 5370470 | 10K Ω | |
| C1 | 4010274 | 100nF | -20+80% 25V | C57- C61 | 4010274 | 100nF | -20+80% 25V |
| C2 | 4001127 | 22pF | 5% 50V | C63- C64 | 4010220 | 100nF | 10% 50V |
| C3 | 4011110 | 1.0nF | 10% 50V | C65 | 4200898 | 22 μ F | 20% 6V3 |
| C4 | 4010274 | 100nF | -20+80% 25V | C66 | 4201330 | 220 μ F | 20% 50V |
| C5 | 4010267 | 4.7nF | 10% 50V | C67- C69 | 4010220 | 100nF | 10% 50V |
| C7 | 4010267 | 4.7nF | 10% 50V | C70 | 4000409 | 56pF | 5% 50V |
| C8- C9 | 4010274 | 100nF | -20+80% 25V | C71 | 4010307 | 33nF | 10% 25V |
| C10- C14 | 4011110 | 1.0nF | 10% 50V | C72 | 4000414 | 150pF | 5% 50V |
| C15- C17 | 4001141 | 330pF | 5% 50V | C73 | 4010216 | 22nF | 10% 100V |
| C18- C19 | 4011110 | 1.0nF | 10% 50V | C74- C75 | 4010274 | 100nF | -20+80% 25V |
| C20 | 4001141 | 330pF | 5% 50V | C76- C77 | 4011110 | 1.0nF | 10% 50V |
| C21 | 4011110 | 1.0nF | 10% 50V | C80 | 4011110 | 1.0nF | 10% 50V |
| C22- C25 | 4001141 | 330pF | 5% 50V | C81 | 4010220 | 100nF | 10% 50V |
| C26 | 4011110 | 1.0nF | 10% 50V | C82- C83 | 4001141 | 330pF | 5% 50V |
| C27- C28 | 4001131 | 47pF | 5% 50V | C84 | 4011110 | 1.0nF | 10% 50V |
| C29- C31 | 4011110 | 1.0nF | 10% 50V | C90- C93 | 4011110 | 1.0nF | 10% 50V |
| C32- C35 | 4001141 | 330pF | 5% 50V | C100 | 4010274 | 100nF | -20+80% 25V |
| C36- C37 | 4011110 | 1.0nF | 10% 50V | C101 | 4200858 | 220 μ F | 20% 50V |
| C38 | 4000287 | 220nF | -20+80% 25V | C102- C103 | 4001141 | 330pF | 5% 50V |
| C39- C42 | 4010220 | 100nF | 10% 50V | C104 | 4200916 | 4.7 μ F | 20% 25V |
| C43 | 4000287 | 220nF | -20+80% 25V | C186 | 4010274 | 100nF | -20+80% 25V |
| C44 | 4011110 | 1.0nF | 10% 50V | C301- C302 | 4011110 | 1.0nF | 10% 50V |
| C45 | 4010271 | 10nF | 10% 50V | C306 | 4011110 | 1.0nF | 10% 50V |
| C46 | 4010274 | 100nF | -20+80% 25V | C307 | 4010274 | 100nF | -20+80% 25V |
| C47 | 4010271 | 10nF | 10% 50V | C320 | 4011110 | 1.0nF | 10% 50V |
| C49- C50 | 4010220 | 100nF | 10% 50V | C321 | 4010220 | 100nF | 10% 50V |
| C51 | 4010271 | 10nF | 10% 50V | C430 | 4011110 | 1.0nF | 10% 50V |
| C53 | 4010272 | 22nF | -20+80% 50V | C501 | 4001127 | 22pF | 5% 50V |
| C54- C55 | 4010220 | 100nF | 10% 50V | C502 | 4200916 | 4.7 μ F | 20% 25V |
| | | | | C504 | 4010274 | 100nF | -20+80% 25V |



Resistors not referred to are standard, see page 3.13 and 3.14

| | | | | | | | |
|---------------|---------|----------------|------------------|---------|---------------|----------------|-----------|
| L1 | 8020772 | Coil 10μH 20% | | | | | |
| L2- L5 | 8021079 | Coil 2.2μH 10% | | | | | |
| X1 | 8090182 | Crystal 16MHz | | | | | |
| CP1 | 7530117 | Contact pin | | | | | |
| P50 | 7211229 | Socket 20 pole | P53 | 7221159 | Plug 2 pole | | |
| P51 | 7221133 | Plug 8/8 pole | P54- | 7211222 | Socket 6 pole | | |
| P52 | 7211053 | Socket 4 pole | P55 | | | | |
| MP1 | 3302352 | Screen | | | | | |
| PE1Δ- PE2Δ | 8330235 | 257 | Optocoupler | | | | |
| P76 | 7211075 | Socket 6 pole | | | | | |
| IC1Δ | 8342559 | 151 | LB1619M | IC11Δ | 8343709 | 87C528 OTP | |
| IC4Δ | 8341024 | 150 | 4066 | IC12Δ | 8342941 | 147 | SAA7376GP |
| IC5Δ- IC7Δ | 8341098 | 138 | LM358 | IC14Δ | 8343083 | 149 | TDA7072AT |
| IC10Δ | 8341612 | 138 | TL7705 | IC15Δ | 8342495 | 138 | TDA7073A |
| | | | | IC16Δ | 8343365 | 152 | PIC12C508 |
| TR1 | 8321184 | 75 | MJD122 | TR12 | 8321196 | 136 | PUMZ1 |
| TR2- TR3 | 8320752 | 51 | BC817-40 | TR544 | 8321198 | 136 | PUMX1 |
| TR5 | 8321196 | 136 | PUMZ1 | TR546 | 8321198 | 136 | PUMX1 |
| D1 | 8330422 | 269 | IR emitter | D5 | 8300482 | 250 | LL4148 |
| D3 | 8301035 | 267 | BAV99W | | | | |
| PE1 | 8330453 | | Photo transistor | | | | |
| R2 | 5021490 | 28Ω 1% 1/4W | | R46 | 5012239 | 39KΩ 1% 1/8W | |
| R4▲- | 5024001 | 2.2Ω | | R61▲ | 5024001 | 2.2Ω | |
| R5▲ | | | | R63▲ | 5024001 | 2.2Ω | |
| R15▲ | 5024001 | 2.2Ω | | R68▲ | 5024000 | 1Ω | |
| R21 | 5012332 | 4.7KΩ 1% 1/8W | | R78▲ | 5024001 | 2.2Ω | |
| R22 | 5012267 | 1.2MΩ 5% 1/8W | | R83▲ | 5024000 | 1Ω | |
| R27 | 5012366 | 20KΩ 1% 1/8W | | R86- | 5013250 | 12KΩ 1% 1/16W | |
| R28 | 5012240 | 100KΩ 1% 1/8W | | R87 | | | |
| R30 | 5012154 | 1KΩ 1% 1/4W | | R95- | 5013250 | 12KΩ 1% 1/16W | |
| R31- | 5012237 | 6.8KΩ 1% 1/8W | | R96 | | | |
| R32 | | | | R97 | 5013151 | 680Ω 5% 1/10W | |
| R33 | 5011194 | 220Ω 5% 1/4W | | R101 | 5013003 | 47Ω 1% 1/16W | |
| R34- | 5012239 | 39KΩ 1% 1/8W | | R103- | 5013232 | 390Ω 1% 1/16W | |
| R35 | | | | R104 | | | |
| R36 | 5012237 | 6.8KΩ 1% 1/8W | | R106- | 5013305 | 22KΩ 1% 1/10W | |
| R40 | 5012331 | 10KΩ 1% 1/8W | | R107 | | | |
| R41 | 5011928 | 47Ω 5% 1/8W | | R108 | 5013239 | 1.5KΩ 1% 1/16W | |
| R42 | 5024000 | 1Ω | | R109- | 5013041 | 432Ω 1% 1/16W | |
| R44 | 5012239 | 39KΩ 1% 1/8W | | R110 | | | |

▲ symbol of safety component, see page 2.1

Δ indicates that static electricity may destroy the component

| | | | | | |
|---------------|---------|------------------------|--------------|--------------------|---|
| R111- R112 | 5013242 | 2.7K Ω 1% 1/16W | R113 R116 | 5013063 5013124 | 10K Ω 1% 1/16W 1.0K Ω 1% 1/16W |
| C1 | 4201359 | 3.3 μ F 20% 16V | C49- | 4011135 | 100nF -20+80% 16V |
| C2 | 4011135 | 100nF -20+80% 16V | C50 | | |
| C4 | 4011135 | 100nF -20+80% 16V | C51 | 4011135 | 100nF -20+80% 16V |
| C5 | 4201359 | 3.3 μ F 20% 16V | C52 | 4000424 | 1nF 5% 50V |
| C6 | 4011135 | 100nF -20+80% 16V | C53 | 4011135 | 100nF -20+80% 16V |
| C7 | 4010315 | 22nF 10% 25V | C54 | 4000412 | 100pF 5% 50V |
| C8 | 4011135 | 100nF -20+80% 16V | C55 | 4011135 | 100nF -20+80% 16V |
| C11 | 4011135 | 100nF -20+80% 16V | C56 | 4201349 | tantal 47 μ F 20% 10V |
| C12- | 4001139 | 220pF 5% 50V | C57- | 4011135 | 100nF -20+80% 16V |
| C15 | | | C58 | | |
| C16 | 4010273 | 47nF -20+80% 50V | C59 | 4201359 | 3.3 μ F 20% 16V |
| C17 | 4010261 | 1.5nF 10% 50V | C60 | 4001131 | 47pF 5% 50V |
| C18 | 4000421 | 560pF 5% 50V | C61 | 4201362 | 2.2 μ F 10% 10 |
| C19- | 4001139 | 220pF 5% 50V | C62 | 4011135 | 100nF -20+80% 16V |
| C20 | | | C63 | 4201348 | 1 μ F 10% 16V |
| C21 | 4011135 | 100nF -20+80% 16V | C64 | 4011122 | 10nF 10% 50V |
| C22 | 4010274 | 100nF -20+80% 2V | C65 | 4001141 | 330pF 5% 50V |
| C23 | 4000412 | 100pF 5% 50V | C66 | 4011135 | 100nF -20+80% 16V |
| C24 | 4011126 | 22nF 10% 25V | C67- | 4001139 | 220pF 5% 50V |
| C25- | 4011135 | 100nF -20+80% 16V | C68 | | |
| C26 | | | C69 | 4201349 | 47 μ F 20% 10V |
| C27 | 4011135 | 100nF -20+80% 16V | C70- | 4011135 | 100nF -20+80% 16V |
| C28 | 4000442 | 2.2nF 5% 50V | C71 | | |
| C29 | 4001131 | 47pF 5% 50V | C72 | 4011123 | 12nF 10% 25V |
| C30 | 4010282 | 470nF -20+80% 25V | C73 | 4001141 | 330pF 5% 50V |
| C31 | 4201359 | 3.3 μ F 20% 16V | C74 | 4001139 | 220pF 5% 50V |
| C32 | 4010282 | 470nF -20+80% 25V | C75- | 4011135 | 100nF -20+80% 16V |
| C33 | 4011122 | 10nF 10% 50V | C76 | | |
| C34 | 4000442 | 2.2nF 5% 50V | C77 | 4000442 | 2.2nF 5% 50V |
| C35 | 4011135 | 100nF -20+80% 16V | C78 | 4011128 | 33nF 10% 25V |
| C36 | 4201359 | 3.3 μ F 20% 16V | C79 | 4201349 | 47 μ F 20% 10V |
| C37- | 4011135 | 100nF -20+80% 16V | C81 | 4011130 | 47nF 10% 16V |
| C39 | | | C82 | 4011135 | 100nF -20+80% 16V |
| C41 | 4201359 | 3.3 μ F 20% 16V | C83 | 4001141 | 330pF 5% 50V |
| C42 | 4011135 | 100nF -20+80% 16V | C84 | 4001138 | 180pF 5% 50V |
| C43 | 4000424 | 1nF 5% 50V | C85 | 4201349 | 47 μ F 20% 10V |
| C44- | 4000400 | 10pF 5% 50V | C86 | 4011126 | 22nF 10% 25V |
| C45 | | | C535 | 4011135 | 100nF -20+80% 16V |
| C46 | 4010237 | 1nF 10% 50V | C540 | 4000400 | 10pF 5% 50V |
| C47 | 4011135 | 100nF -20+80% 16V | C541- | 4011135 | 100nF -20+80% 16V |
| C48 | 4201359 | 3.3 μ F 20% 16V | C543 | | |
| L1 | 8021135 | Coil 10 μ H | L2 | 8020822 | Coil 3.3 μ H 5% |
| T1 | 8021159 | Transformer 796KHz | | | |
| X1 | 8090157 | Crystal 33.868MHz | X2 | 8030246 | Crystal 12MHz |
| P42 | 7210895 | Socket 16 pole | P99 | 7211146 | Socket 11 pole |
| P45 | 7221157 | Plug 6/6 pole | | | |
| P46- | 7211148 | Socket 12 pole | | | |
| P47 | | | | | |

PCB95, 8420254 CD mechanism
VAM 1250 (Turntable black)
From serial no. 15143261

WARNING! Static electricity may destroy the component

Mechanical part numbers

| | | |
|------|---------|--|
| 90M1 | 8400214 | Gear motor |
| 90M2 | 8400213 | Sledge motor, complete w/wire |
| 90T1 | 8013551 | Transformer 230V f/type 2571, 2572, 2577, 2580 |
| | 8013549 | Transformer 120V f/type 2573, 2576 |
| | 8013548 | Transformer 100V f/type 2574 |
| | 8013550 | Transformer 240V f/type 2575 |
| 90P1 | 6270671 | FM socket |
| 90P2 | 6276977 | AM socket |
| 90P3 | 7219095 | Socket f/digital output |
| 91M1 | 8400212 | Clamper motor |

Standard resistors

Resistors 5% 1/2 W

| | x1 | x10 | x100 | x1k | x10k | x100k | x1M | x10M |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| 1.0 | | 5011000 | 5011013 | 5011028 | 5011044 | 5010313 | 5011069 | 5011083 |
| 1.2 | 5011406 | 5011001 | 5011014 | 5011030 | 5011045 | 5011058 | 5010421 | |
| 1.5 | 5010727 | 5011002 | 5011015 | 5011031 | 5011046 | 5011059 | 5011071 | |
| 1.8 | 5010857 | 5010787 | 5011016 | 5011033 | | | 5011072 | |
| 2.2 | 5011335 | 5010708 | 5010815 | 5011034 | 5011048 | 5011061 | 5011074 | |
| 2.7 | 5011612 | 5010803 | 5011018 | 5010055 | 5011049 | 5011062 | 5011075 | |
| 3.3 | 5012147 | 5011007 | 5011019 | 5011037 | | 5011063 | 5010381 | |
| 3.9 | | 5010782 | 5011021 | 5010700 | 5011051 | | 5010392 | |
| 4.7 | 5010765 | 5011009 | 5011022 | 5010035 | | 5011065 | 5011078 | |
| 5.6 | | 5011010 | 5011023 | 5011041 | | 5011066 | | |
| 6.8 | 5010874 | 5011011 | 5011024 | 5011042 | 5010810 | 5011067 | 5011080 | |
| 8.2 | | 5011012 | 5011026 | 5011043 | 5010038 | 5011068 | 5011081 | |

Resistors 5% 1/4 W

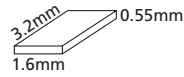
| | x1 | x10 | x100 | x1k | x10k | x100k | x1M | x10M |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| 1.0 | 5010592 | 5010506 | 5010065 | 5010040 | 5010059 | 5010049 | 5010054 | 5010638 |
| 1.2 | | 5010595 | 5010128 | 5010153 | 5010046 | 5010047 | 5010665 | |
| 1.5 | 5011348 | 5010468 | 5010057 | 5010247 | 5010053 | 5010063 | 5010093 | |
| 1.8 | | 5010822 | 5010362 | 5010066 | 5010135 | 5010072 | 5010791 | |
| 2.2 | 5010682 | 5010448 | 5010092 | 5010064 | 5010079 | 5010120 | 5010245 | |
| 2.7 | 5010925 | 5010403 | 5010000 | 5010298 | 5010141 | 5010083 | 5010431 | |
| 3.3 | 5011860 | 5010253 | 5010044 | 5010076 | 5010075 | 5010117 | 5010848 | |
| 3.9 | 5011377 | 5010622 | 5010070 | 5010069 | 5010060 | 5010073 | 5010714 | |
| 4.7 | 5010888 | 5010411 | 5010058 | 5010048 | 5010045 | 5010077 | 5011513 | |
| 5.6 | 5010706 | 5010151 | 5010067 | 5010041 | 5010061 | 5010071 | 5010658 | |
| 6.8 | 5010874 | 5010039 | 5010144 | 5010052 | 5010062 | 5010074 | | |
| 8.2 | 5010880 | 5010056 | 5010068 | 5010154 | 5010091 | 5010505 | | |

Resistors 5% 1/8 W

| | x1 | x10 | x100 | x1k | x10k | x100k | x1M | x10M |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| 1.0 | | 5011464 | 5011357 | 5010816 | 5010935 | 5011440 | 5011459 | 5020875 |
| 1.2 | | 5011351 | 5011084 | 5011442 | 5011338 | 5011341 | 5011175 | |
| 1.5 | | 5011463 | 5011443 | 5011178 | 5011364 | 5011398 | 5011460 | |
| 1.8 | | | 5011350 | 5011361 | 5011344 | 5011468 | | |
| 2.2 | 5011032 | 5011376 | 5010886 | 5011353 | 5010833 | 5011369 | 5011342 | |
| 2.7 | | 5011471 | 5011355 | 5011362 | 5011366 | 5011370 | 5011478 | |
| 3.3 | | 5011519 | 5011337 | 5010827 | 5011346 | 5011371 | 5011462 | |
| 3.9 | | 5011438 | 5011883 | 5011157 | 5011457 | 5011372 | 5020876 | |
| 4.7 | | 5011038 | 5011441 | 5011363 | 5010937 | 5011343 | 5011611 | |
| 5.6 | | 5011412 | 5011358 | 5010885 | 5011166 | 5011340 | | |
| 6.8 | | 5011356 | 5011336 | 5010839 | 5011367 | 5011458 | | |
| 8.2 | | 5011466 | 5011354 | 5011339 | 5011368 | 5011373 | | |

Resistors SMD 2% 1/8 W
SMD 5% 1/8 W

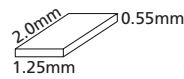
Glue dots, approx. 200, part no. 3181932



| | 5% | 2% | 2% | 2% | 2% | 2% | 5% | 2% |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| | x1 | x10 | x100 | x1k | x10k | x100k | x1M | x10M |
| 1.0 | 5011623 | 5011647 | 5011218 | 5011227 | 5011241 | 5011256 | 5011267 | 5011730 |
| 1.1 | 5011624 | 5011648 | 5011669 | 5011681 | 5011689 | 5011694 | 5011707 | |
| 1.2 | 5011625 | 5011649 | 5011219 | 5011682 | 5011490 | 5011257 | 5011708 | |
| 1.3 | 5011626 | 5011650 | 5011670 | 5011683 | 5011242 | 5011258 | 5011709 | |
| 1.5 | 5011627 | 5011651 | 5011220 | 5011228 | 5011243 | 5011259 | 5011710 | |
| 1.6 | 5011628 | 5011652 | 5011671 | 5011684 | 5011690 | 5011695 | 5011711 | |
| 1.8 | 5011629 | 5011653 | 5011672 | 5011229 | 5011244 | 5011260 | 5011712 | |
| 2.0 | 5011630 | 5011654 | 5011673 | 5011685 | 5011691 | 5011696 | 5011713 | |
| 2.2 | 5011216 | 5011655 | 5011674 | 5011230 | 5011245 | 5011261 | 5011714 | |
| 2.4 | 5011634 | 5011656 | 5011675 | 5011686 | 5011246 | 5011697 | 5011715 | |
| 2.7 | 5011635 | 5011657 | 5011497 | 5011231 | 5011247 | 5011262 | 5011716 | |
| 3.0 | 5011731 | 5011658 | 5011499 | 5011500 | 5011692 | 5011698 | 5011717 | |
| 3.3 | 5011217 | 5011659 | 5011676 | 5011232 | 5011248 | 5011263 | 5011718 | |
| 3.6 | 5011636 | 5011660 | 5011677 | 5011687 | 5011249 | 5011264 | 5011719 | |
| 3.9 | 5011637 | 5011661 | 5011221 | 5011233 | 5011491 | 5011699 | 5011720 | |
| 4.3 | 5011638 | 5011662 | 5011498 | 5011688 | 5011492 | 5011700 | 5011721 | |
| 4.7 | 5011639 | 5011269 | 5011222 | 5011234 | 5011250 | 5011265 | 5011722 | |
| 5.1 | 5011640 | 5011663 | 5011678 | 5011235 | 5011493 | 5011701 | 5011723 | |
| 5.6 | 5011641 | 5011664 | 5011223 | 5011236 | 5011251 | 5011702 | 5011724 | |
| 6.2 | 5011642 | 5011665 | 5011224 | 5011237 | 5011693 | 5011703 | 5011725 | |
| 6.8 | 5011643 | 5011666 | 5011225 | 5011238 | 5011252 | 5011704 | 5011726 | |
| 7.5 | 5011644 | 5011667 | 5011679 | 5011239 | 5011253 | 5011705 | 5011727 | |
| 8.2 | 5011645 | 5011270 | 5011226 | 5011240 | 5011254 | 5011266 | 5011728 | |
| 9.1 | 5011646 | 5011668 | 5011680 | 5011489 | 5011255 | 5011706 | 5011729 | |

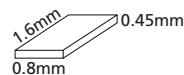
Resistors SMD 5% 1/10W

Glue dots, approx. 200, part no. 3181932



| | x1 | x10 | x100 | x1K | x10K | x100K | x1M | x10M |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.0 | 6000072 | | | | | | | |
| 1.0 | | 5011920 | 5011932 | 5011944 | 5011956 | 5011968 | 5011980 | 5012275 |
| 1.2 | 5012326 | 5011921 | 5011933 | 5011945 | 5011957 | 5011969 | 5012267 | |
| 1.5 | 5012379 | 5011922 | 5011934 | 5011946 | 5011958 | 5011970 | 5012268 | |
| 1.8 | 5012380 | 5011923 | 5011935 | 5011947 | 5011959 | 5011971 | 5011989 | |
| 2.2 | | 5011924 | 5011936 | 5011948 | 5011960 | 5011972 | 5012220 | |
| 2.7 | | 5011925 | 5011937 | 5011949 | 5011961 | 5011973 | 5012269 | |
| 3.3 | | 5011926 | 5011938 | 5011950 | 5011962 | 5011974 | 5012261 | |
| 3.9 | | 5011927 | 5011939 | 5011951 | 5011963 | 5011975 | 5012270 | |
| 4.7 | 5012472 | 5011928 | 5011940 | 5011952 | 5011964 | 5011976 | 5012271 | |
| 5.6 | | 5011929 | 5011941 | 5011953 | 5011965 | 5011977 | 5012272 | |
| 6.8 | | 5011930 | 5011942 | 5011954 | 5011966 | 5011978 | 5012273 | |
| 8.2 | | 5011931 | 5011943 | 5011955 | 5011967 | 5011979 | 5012274 | |

Resistors SMD 5% 1/16W



| | x1 | x10 | x100 | x1K | x10K | x100K | x1M | x10M |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|
| 1.0 | 5013201 | 5013213 | 5013225 | 5013237 | 5013249 | 5013261 | 5013273 | 5013285 |
| 1.2 | 5013202 | 5013214 | 5013226 | 5013238 | 5013250 | 5013262 | 5013274 | |
| 1.5 | 5013203 | 5013215 | 5013227 | 5013239 | | 5013263 | | |
| 1.8 | 5013204 | 5013216 | 5013228 | 5013240 | | 5013264 | 5013276 | |
| 2.2 | 5013205 | 5013217 | 5013229 | 5013241 | 5013253 | 5013265 | 5013277 | |
| 2.7 | 5013206 | 5013218 | | 5013242 | 5013254 | 5013266 | 5013278 | |
| 3.3 | 5013207 | | 5013231 | | 5013255 | 5013267 | 5013279 | |
| 3.9 | 5013208 | 5013220 | | 5013244 | | 5013268 | 5013280 | |
| 4.7 | 5013209 | 5013221 | 5013233 | 5013245 | 5013257 | 5013269 | 5013281 | |
| 5.6 | 5013210 | 5013222 | 5013234 | 5013246 | 5013258 | 5013270 | 5013282 | |
| 6.8 | 5013211 | 5013223 | 5013235 | 5013247 | 5013259 | 5013271 | 5013283 | |
| 8.2 | 5013212 | 5013224 | 5013236 | 5013135 | 5013260 | 5013272 | 5013284 | |

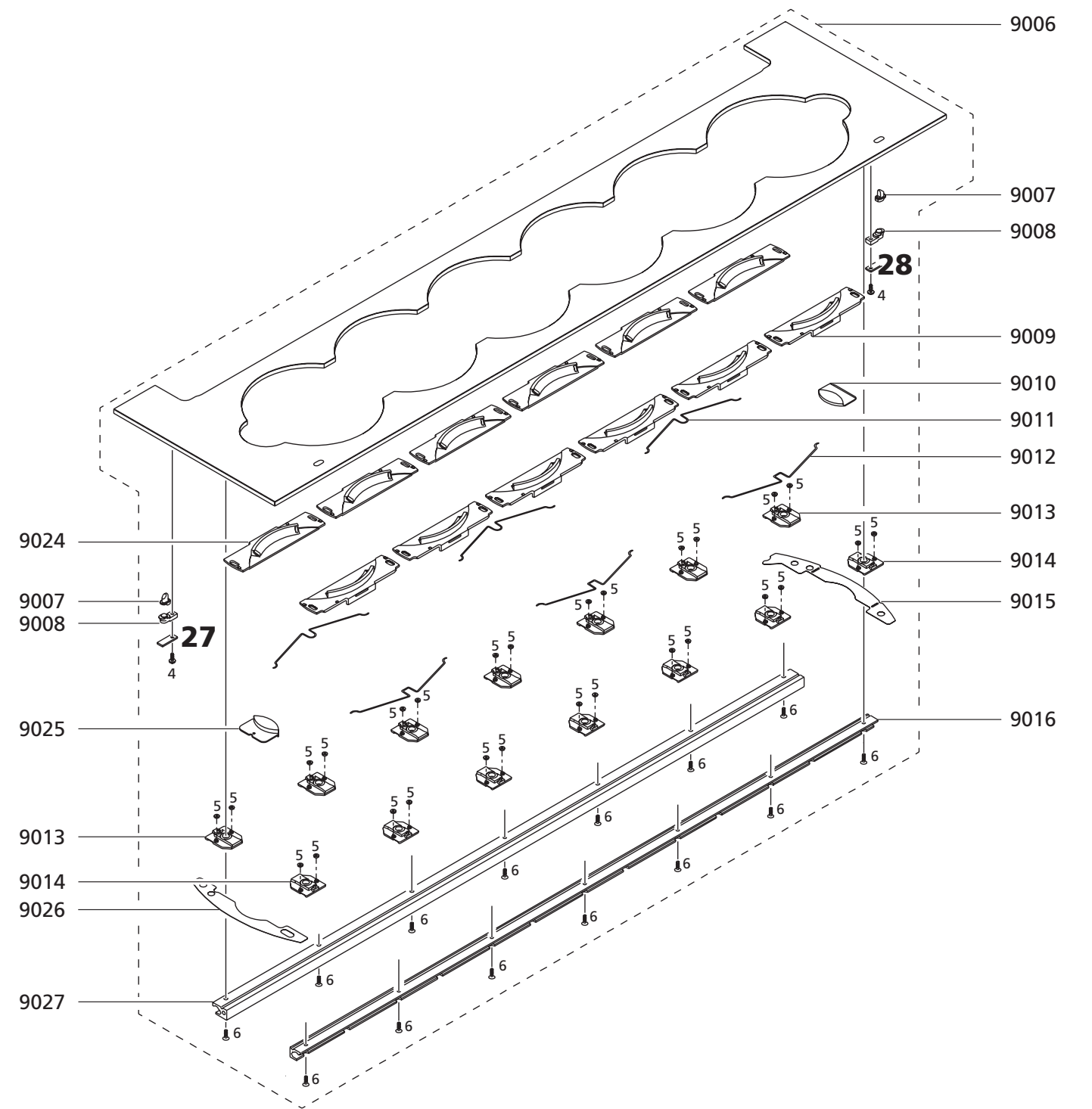
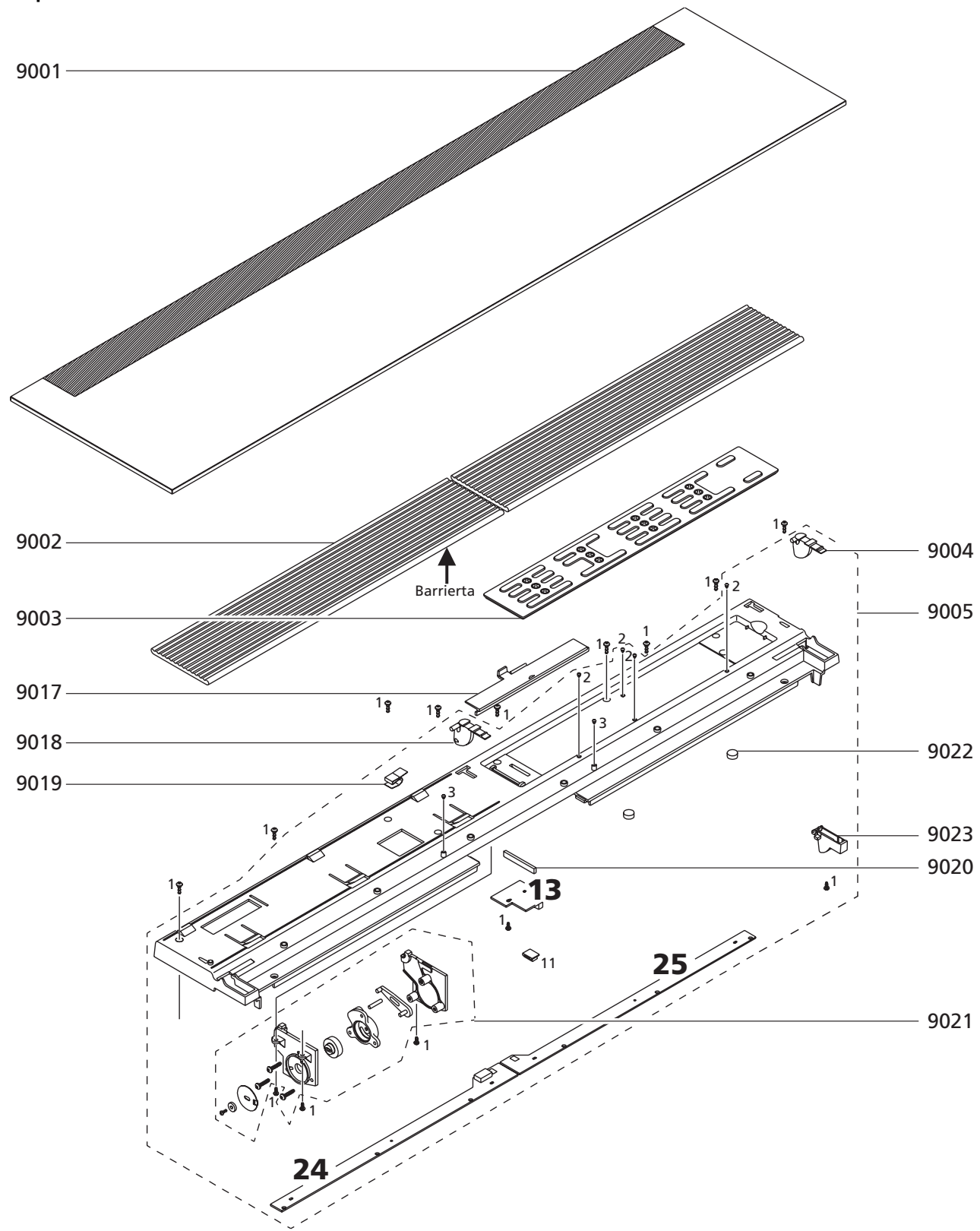
List of mechanical parts**Top**

| | | |
|----------|---------|--|
| 13Module | 8005313 | PCB13, Secondary Keyboard |
| 24Module | 8005304 | PCB24, Light indication, left |
| 25Module | 8005305 | PCB25, Light indication, right |
| 27Module | 8005377 | PCB27, Safety TX |
| 28Module | 8005303 | PCB28, Safety RX |
| 9001 | 3162785 | Glass lid |
| 9002 | 3160059 | Cover |
| 9003 | 3169064 | Secondary keyboard |
| | 3169297 | Secondary keyboard – new colour from serial no. _____ |
| 9004 | 3030123 | Hinge f/cover, right |
| 9005 | 3114481 | Chassis top plate, complete (without switch) |
| | 3114488 | Chassis top plate, complete (without switch) – new colour from serial no. _____ |
| 9006 | 3458925 | Top plate, complete |
| | 3459273 | Top plate, complete – new colour from serial no. _____ |
| 9007 | 3375163 | Lens |
| 9008 | 2622510 | Holder f/lens f/5 mm diode |
| 9009 | 3151325 | Disc holder, front |
| | 3151724 | Disc holder, front – new colour from serial no. _____ |
| 9010 | 3322176 | Window, right |
| 9011 | 2810283 | Spring f/disc holder, rear |
| 9012 | 2810282 | Spring f/disc holder, front |
| 9013 | 3031528 | Holder f/springs, rear |
| 9014 | 3031527 | Holder f/springs, front |
| 9015 | 3947582 | Tape |
| 9016 | 2569447 | Guide rail, front |
| 9017 | 3160063 | Cover for chassis top plate |
| | 3160266 | Cover for chassis top plate – new colour from serial no. _____ |
| 9018 | 3030124 | Hinge f/cover, left |
| 9019 | 2816288 | Spring, chassis connection |
| 9020 | 3333021 | Contact rubber |
| 9021 | 3114445 | Damper f/cover |
| 9022 | 3356064 | Magnet |
| 9023 | 3031533 | Holder f/hinge |
| 9024 | 3151324 | Disc holder rear |
| | 3151723 | Disc holder rear – new colour from serial no. _____ |
| 9025 | 3322175 | Window, left |
| 9026 | 3947581 | Tape |
| 9027 | 2569448 | Guide rail, rear |
| | 3984049 | Barrierta |

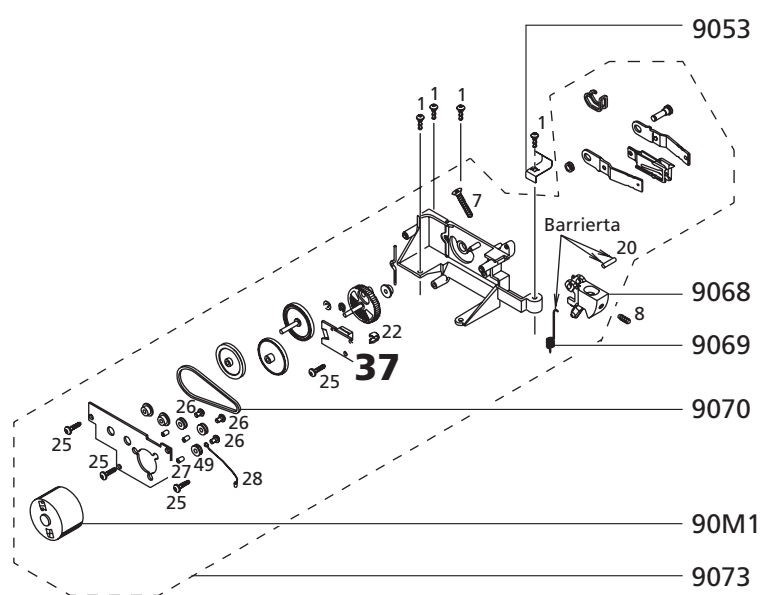
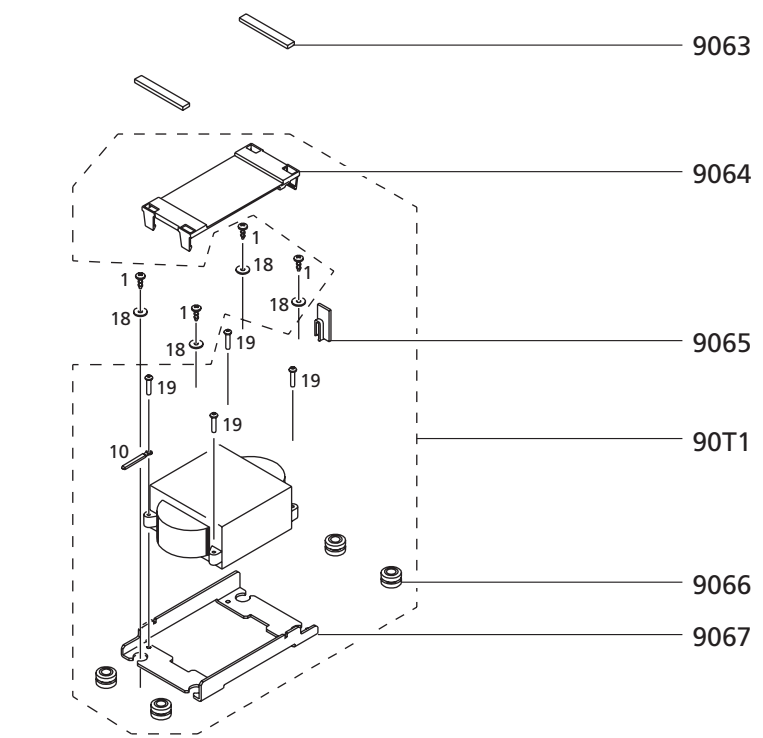
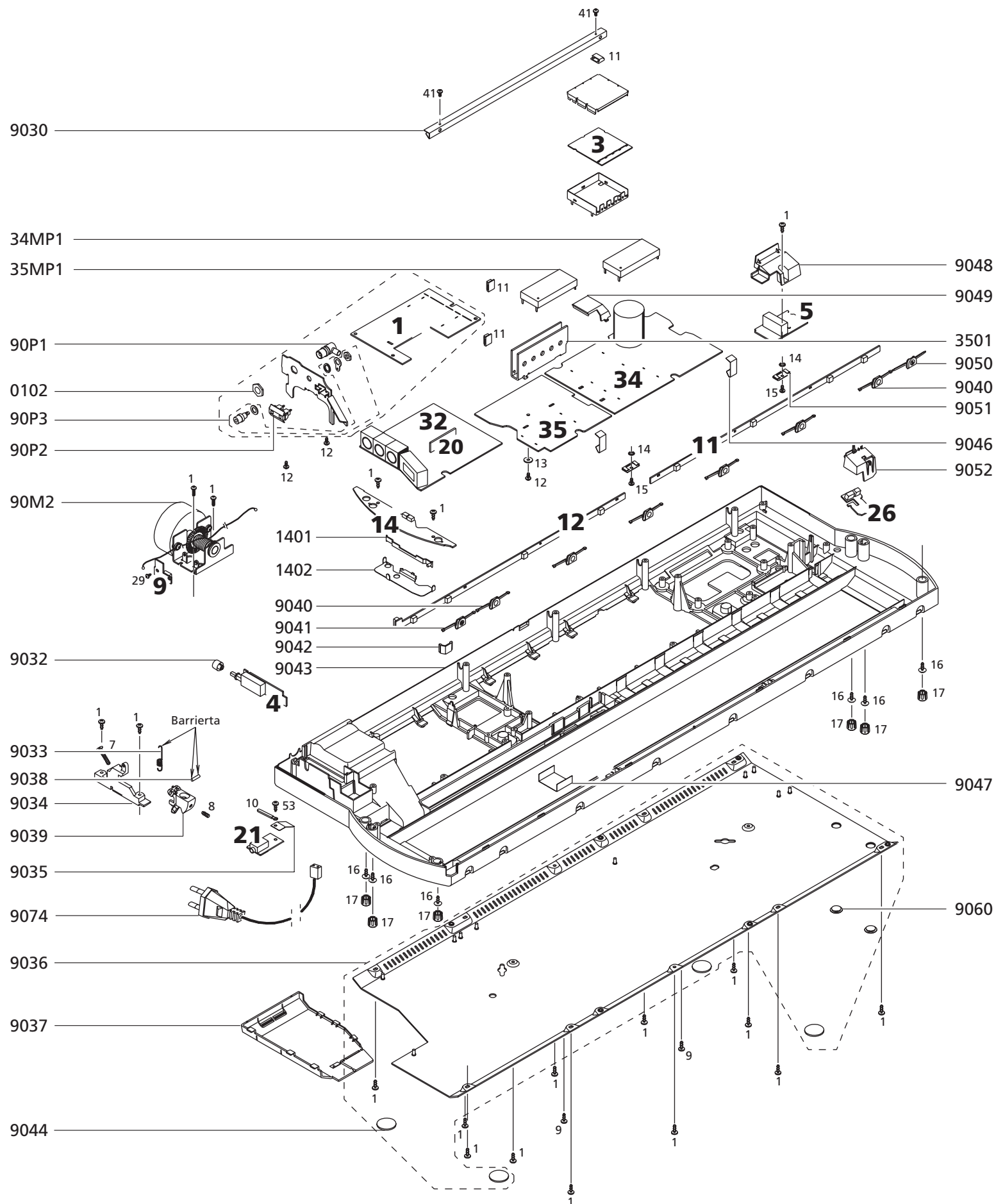
Survey of screws etc.

| | | |
|----|---------|----------------|
| 1 | 2013137 | Screw 3 x 10mm |
| 2 | 3103328 | Damper |
| 3 | 3341104 | Damper |
| 4 | 2038111 | Screw 3 x 8mm |
| 5 | 2732129 | O-ring |
| 6 | 2054005 | Screw 3 x 8mm |
| 11 | 2515059 | Holder f/wire |

Top



Chassis



Chassis

| | | |
|--|---------|---|
| 01Module | 8000462 | PCB1, FM/AM-RDS f/type 2571, 2572, 2573, 2575, 2576, 2577, 2580 |
| | 8000535 | PCB1, FM/AM-RDS f/type 2574 |
| 0102 | 2380170 | Nut f/FM socket |
| <i>If PCB88 are mounted instead of PCB01 see service manual BeoSound 9000 -3538887/3538888</i> | | |
| 03Module | 8000513 | PCB3, Main microcomputer |
| 04Module | 8000463 | PCB4, Mains filter without mains switch |
| 05Module | 8005661 | PCB5, Mains relay f/type 2571, 2572, 2574, 2575, 2577, 2580 |
| | 8005664 | PCB5, Mains relay f/type 2573, 2576 |
| 09Module | 8005312 | PCB9, Sledge Position |
| 11Module | 8005295 | PCB11, Main Keyboard, right |
| 12Module | 8005296 | PCB12, Main Keyboard, left |
| 14Module | 8005299 | PCB14, IR Reciever – Plasma from serial no. 14758303 |
| 1401 | 3302560 | Shield, plastic |
| 1402 | 3302555 | Shield |
| 20Module | 8001824 | PCB20, ML Interface |
| 21Module | 8005301 | PCB21, Headphone |
| 26Module | 8005315 | PCB26, End stop detector |
| 32Module | 8005399 | PCB32, Input/output Select and sound adjustment |
| 34Module | 8000512 | PCB34, Power supply f/type 2571, 2572, 2574, 2575, 2577, 2580 |
| | 8000536 | PCB34, Power supply f/type 2573, 2576 |
| 34MP1 | 3302352 | Shield |
| 35Module | 8006777 | PCB35, Motor control |
| 3501 | 3358312 | Heat sink |
| 35MP1 | 3302352 | Shield |
| 37Module | 8005314 | PCB37, Lid motor |
| 9030 | 3300149 | Shield |
| 9032 | 2776517 | Button, on/off |
| 9033 | 2810292 | Spring f/glass lid, left |
| 9034 | 3031338 | Fitting f/hinge, glass lid |
| 9035 | 2815045 | Spring, chassis connection |
| 9036 | 3454845 | Rear panel |
| | 3454983 | Rear panel – new colour from serial no. _____ |
| 9037 | 3162436 | Cover |
| | 3162822 | Cover – new colour from serial no. _____ |
| 9038 | 2830161 | Axle |
| 9039 | 3131407 | Hinge f/glass lid, left |
| 9040 | 2776487 | Button, select |
| | 2776724 | Button, select – new colour from serial no. _____ |
| 9041 | 2776493 | Button, stand by |
| | 2776725 | Button, stand by – new colour from serial no. _____ |
| 9042 | 3322158 | IR window |
| 9043 | 3114453 | Chassis |
| | 3114486 | Chassis – new colour from serial no. _____ |
| 9044 | 3103326 | Foot |
| 9046 | 2816290 | Spring, chassis connection |
| 9047 | 3302589 | Shield f/ribbon cables |
| 9048 | 3160058 | Cover f/PCB5 |
| 9049 | 3302561 | Cover f/ribbon cables |
| 9050 | 2776494 | Button, load |
| | 2776726 | Button, load – new colour from serial no. _____ |
| 9051 | 3151322 | Holder f/screw |
| 9052 | 3162505 | Cover f/PCB26 |
| 9053 | 2815049 | Spring, chassis connection |
| 9060 | 3341088 | Plastic plug |
| 9063 | 3947350 | Foam tape |
| 9064 | 3302568 | Cover f/transformer |

| | | |
|------|---------|--------------------------------|
| 9065 | 3302562 | Shield f/wire |
| 9066 | 2938277 | Bush |
| 9067 | 3124131 | Fittings |
| 9068 | 3131384 | Hinge f/glass lid, right |
| 9069 | 2810291 | Spring f/glass lid, right |
| 9070 | 2732120 | Rubber belt |
| 9073 | 2755051 | Gearbox, complete |
| 9074 | 6100273 | Mains cable f/ type 2571, 2580 |
| | 6100329 | Mains cable f/type 2572 |
| | 6100307 | Mains cable f/type 2573, 2576 |
| | 6100331 | Mains cable f/type 2574 |
| | 6100332 | Mains cable f/type 2575 |
| | 6100386 | Mains cable f/type 2577 |

| | | |
|------|---------|------------------------------|
| 90M1 | 8400214 | Gear motor |
| 90M2 | 8400213 | Sledge motor complete w/wire |

| | | |
|------|---------|-------------------------|
| 90P1 | 6270671 | FM socket |
| 90P2 | 6276977 | AM socket |
| 90P3 | 7219095 | Socket f/digital output |

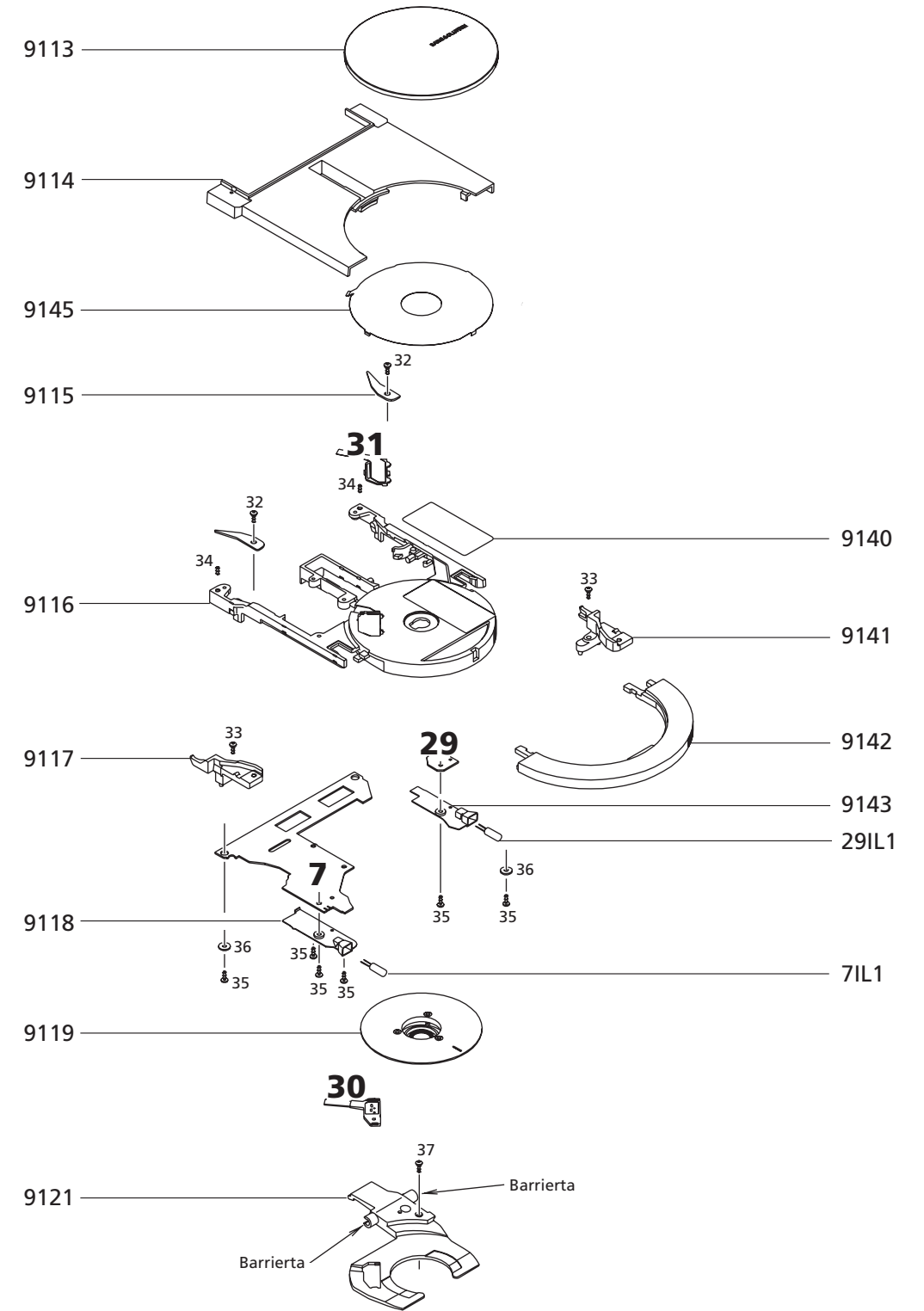
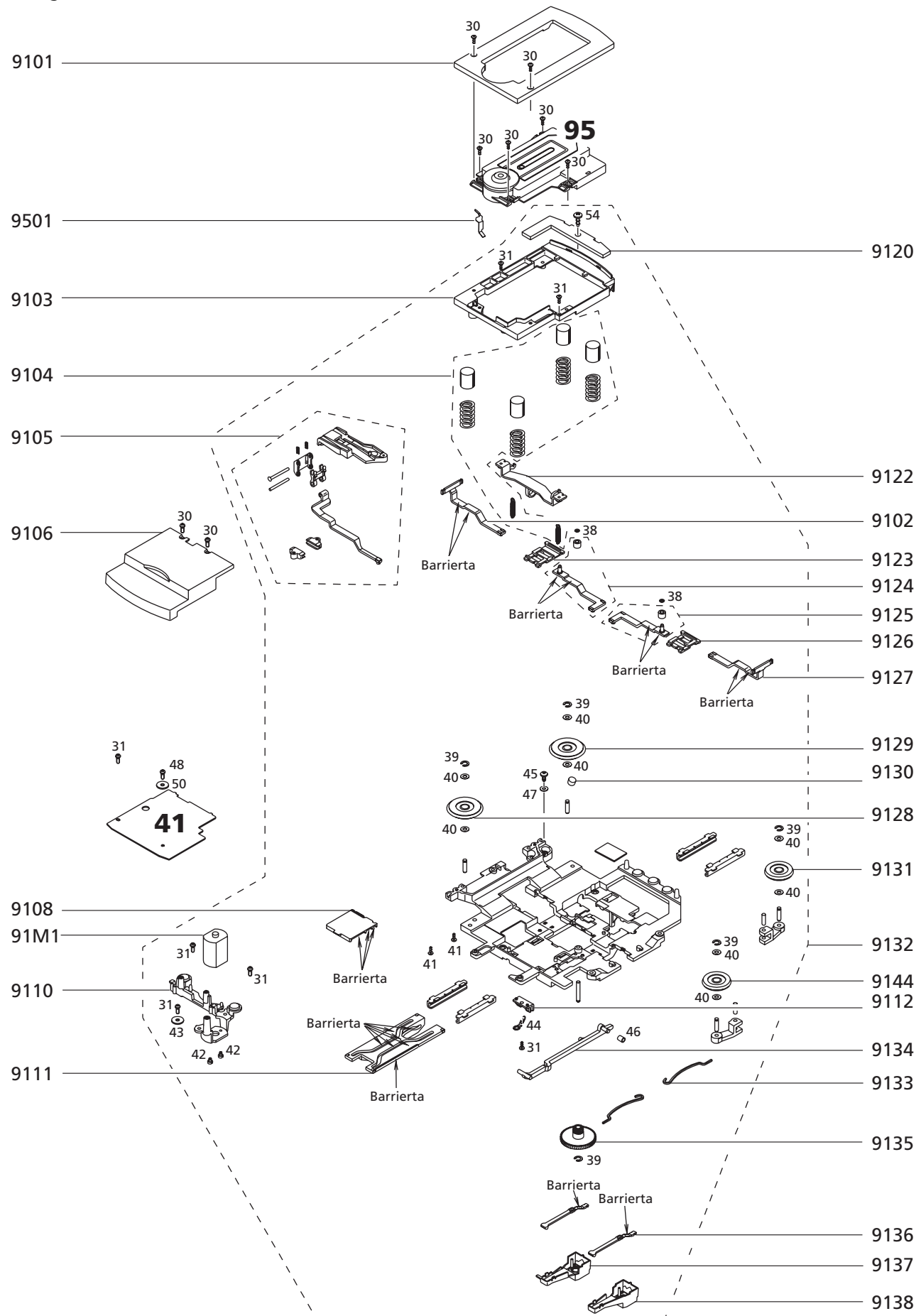
| | | |
|------|---------|---|
| 90T1 | 8013551 | Transformer 230V AC f/type 2571, 2572, 2577, 2580 |
| | 8013549 | Transformer 120V AC f/type 2573, 2576 |
| | 8013548 | Transformer 100V AC f/type 2574 |
| | 8013550 | Transformer 240V AC f/type 2575 |

3984049 Barrierta

Survey of screws etc.

| | | |
|----|---------|------------------------|
| 1 | 2013137 | Screw 3 x 10mm |
| 7 | 2058018 | Screw 4 x 25mm |
| 8 | 2072115 | Pointed screw 4 x 8mm |
| 9 | 2011050 | Screw 3 x 8mm |
| 10 | 7530119 | Solder tag |
| 11 | 2515059 | Holder f/wire |
| 12 | 2038137 | Screw 3 x 6mm |
| 13 | 2625002 | Washer |
| 14 | 2390106 | Lock washer |
| 15 | 2058006 | Screw 3 x 5mm |
| 16 | 2058007 | Screw 3 x 10mm |
| 17 | 3341110 | Plug |
| 18 | 2622490 | Washer |
| 19 | 2039064 | Screw 3 x 12mm |
| 20 | 2830161 | Axle 3 x 13.8mm |
| 22 | 3151388 | Holder f/optocoupler |
| 25 | 2054012 | Screw 3 x 10mm |
| 26 | 2036061 | Screw 2.6 x 6.5mm |
| 27 | 2930074 | Bush 2.6 x 3.2 x 4.8mm |
| 28 | 6032961 | GND wire |
| 29 | 2038117 | Screw 3 x 4mm |
| 41 | 2011043 | Screw 2.2 x 6mm |
| 49 | 2938306 | Bushing |
| 53 | 2052009 | Screw 3 x 8mm |

Sledge



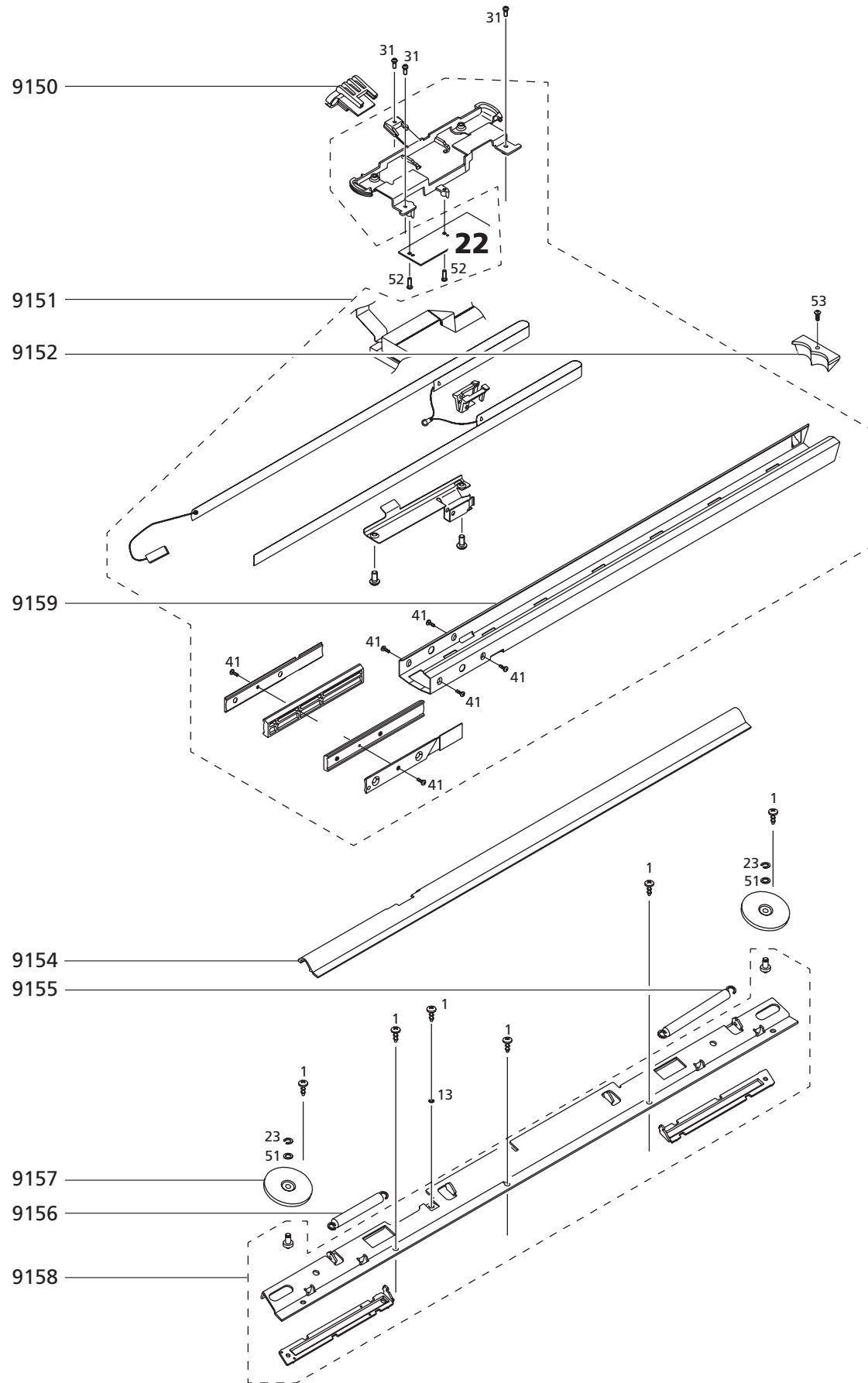
Sledge

| | | |
|----------|---------|---|
| 07Module | 8005364 | PCB7, Display |
| 7IL1 | 8230125 | Bulb, 190mA 6.3V |
| 29Module | 8005309 | PCB29, Lamp |
| 29IL1 | 8230125 | Bulb, 190mA 6.3V |
| 30Module | 8001865 | PCB30, IR transmitter, tacho clamper |
| 31Module | 8001866 | PCB31, IR Receiver, tacho clamper |
| 41Module | 8001872 | PCB41, CD VAM 1250 from serial no. 15143261 |
| 95Modul | 8420254 | CD mechanism VAM 1250 (Turntable black) from serial no. 15143261 WARNING! Static electricity may destroy the component |
| 9501 | 2815050 | Spring, chassis connection |
| 9101 | 3459272 | Cover f/CD mechanism – VAM 1250 from serial no. 15143261 |
| 9102 | 2854206 | Arm f/release of CD |
| 9103 | 3114427 | Chassis f/CD mechanism |
| 9104 | 2810293 | Springs f/CD mechanism complete |
| 9105 | 2854204 | Clamper arm |
| 9106 | 3459011 | Cover f/CD PCB |
| 9108 | 3014128 | Holder |
| 9110 | 3151333 | Holder f/springs |
| 9111 | 3014134 | Guide f/clamping |
| 9112 | 3031534 | Holder f/rocker arm |
| 9113 | 3162462 | Cover f/CD clamper |
| 9114 | 3162477 | Top plate for CD mechanism |
| 9115 | 2810281 | Flat spring |
| 9116 | 3114431 | Clamper |
| 9117 | 2570088 | Clamper holder, left |
| 9118 | 3358331 | Heat sink, left |
| 9119 | 3151684 | Holder, clamper |
| 9120 | 3342058 | Counterbalance |
| 9121 | 2854207 | Clamper arm |
| 9122 | 2854198 | Arm f/pull springs |
| 9123 | 3014112 | Holder f/arms, rear |
| 9124 | 2854203 | Arm f/pawl, rear |
| 9125 | 2854202 | Arm f/pawl, front |
| 9126 | 3014111 | Holder f/arms, front |
| 9127 | 2854206 | Arm f/release of CD |
| 9128 | 3032030 | Sledge wheel, rear |
| 9129 | 3032030 | Sledge wheel, rear |
| 9130 | 3356065 | Magnet f/endstop detector |
| 9131 | 3032031 | Sledge wheel, front |
| 9132 | 3114447 | Sledge complete |
| 9133 | 2810280 | Spring f/sledge wheel |
| 9134 | 2854196 | Rocker arm |
| 9135 | 2700105 | Gearwheel |
| 9136 | 2854205 | Adjustment arm f/pull spring |
| 9137 | 3131399 | House f/adjustment arm, rear |
| 9138 | 3131401 | House f/adjustment arm, front |
| 9140 | 3181048 | Lable, laser |
| 9141 | 2570084 | Clamper holder, right |
| 9142 | 3370164 | Lens f/light |
| 9143 | 3358332 | Heat sink, right |
| 9144 | 3032031 | Sledge wheel, front |
| 9145 | 3302594 | Cover |
| 91M1 | 8400212 | Clamper motor |
| | 3984049 | Barrierta |

Survey of screws etc.

| | | |
|----|---------|-----------------------|
| 30 | 2052007 | Screw 2.5 x 6mm |
| 31 | 2058013 | Screw 2.5 x 6mm |
| 32 | 2058011 | Screw 3 x 5mm |
| 33 | 2058015 | Screw 2.5 x 10mm |
| 34 | 2072116 | Pointed screw 3 x 4mm |
| 35 | 2054003 | Screw 2.2 x 4.5mm |
| 36 | 2625044 | Washer |
| 37 | 2052004 | Screw 2.2 x 5mm |
| 38 | 2622110 | Washer |
| 39 | 2390001 | Washer |
| 40 | 2620020 | Washer |
| 41 | 2011043 | Screw 2.2 x 6mm |
| 42 | 2058008 | Screw 2 x 2mm |
| 43 | 2622041 | Washer |
| 44 | 7530087 | Solder tag |
| 45 | 2036036 | Screw 2.5 x 4mm |
| 46 | 3333022 | Damper f/rocker arm |
| 47 | 2622379 | Washer |
| 48 | 2036082 | Screw 2.5 x 8mm |
| 50 | 2625044 | Washer |
| 54 | 2052009 | Screw 3 x 8mm |

Guide f/wire and ribbon cables



Guide f/wire and ribbon cables

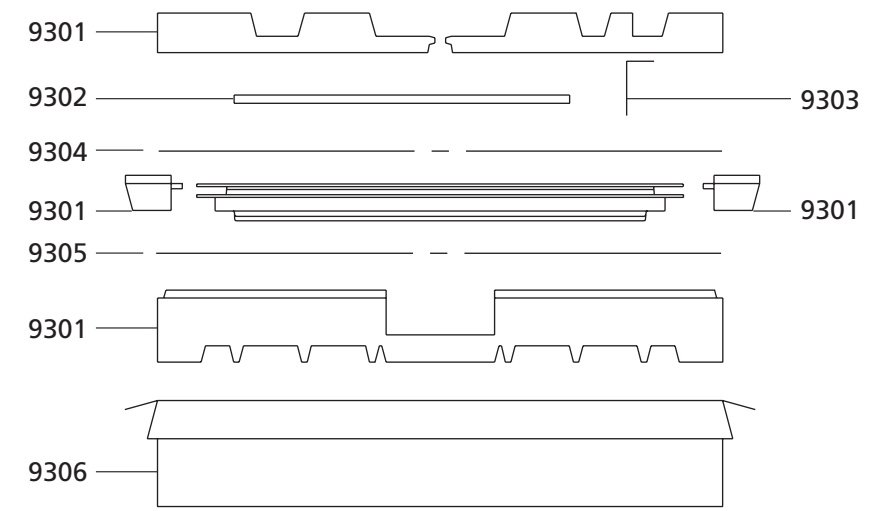
22Module 8000514 PCB22, Clamper position

| | | |
|------|---------|-----------------------------------|
| 9150 | 2510178 | Holder |
| 9151 | 3015197 | Ribbon cables complete with guide |
| 9152 | 3151463 | Holder |
| 9154 | 2560284 | Cover |
| 9155 | 2810277 | Spring f/wire, right |
| 9156 | 2810278 | Spring f/wire, left |
| 9157 | 3032029 | Wheel f/wire |
| 9158 | 3031535 | Fittings f/wire |
| 9159 | 3014098 | Guide f/ribbon cables |

Survey of screws etc.

| | | |
|----|---------|-----------------|
| 1 | 2013137 | Screw 3 x 10mm |
| 13 | 2625002 | Washer |
| 23 | 2390002 | Washer |
| 31 | 2058013 | Screw 2.5 x 6mm |
| 41 | 2011043 | Screw 2.2 x 6mm |
| 51 | 2622499 | Washer |
| 52 | 2036064 | Screw 2.5 x 5mm |
| 53 | 2013150 | Screw 2.5 x 8mm |

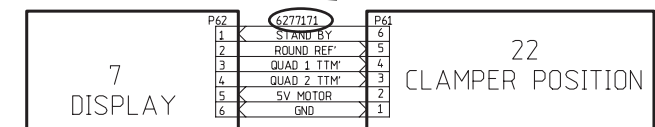
Packing



| | | |
|------|---------|-------------------|
| 9301 | 3397920 | Foam packing, set |
| 9302 | 3397983 | Insert f/cover |
| 9303 | 3392468 | Insert f/clamper |
| 9304 | 3946038 | Foil 1 x 1m |
| 9305 | 3946038 | Foil 1 x 1m |
| 9306 | 3392228 | Outer carton |
| | 2777037 | Holder f/handle |
| | 2777038 | Handle |

Wire bundles

See wiring diagram page 2.3.
The part no. is printed on the diagram above the wire bundle, as shown.



| | | |
|--------------------|---------|-----------------|
| Accessories | 8720047 | AM loop antenna |
| | 8720048 | FM antenna |

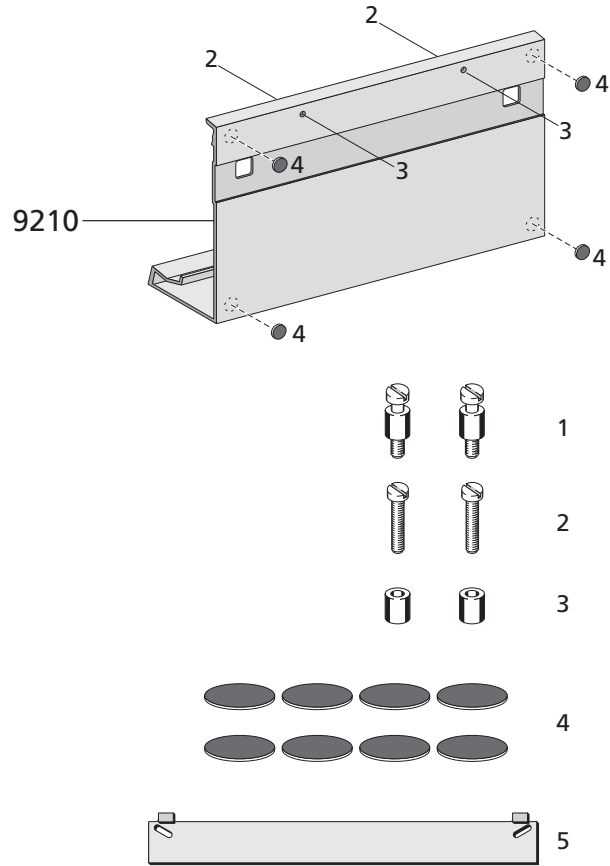
| | | |
|--------------|-----------|-------------|
| Guide | 3505745 | Danish |
| | 3505746 | Swedish |
| | 3505747 | Finnish |
| | 3505748 | English, EU |
| | 3505749 | German |
| | 3505750 | Dutch |
| | 3505751 | French |
| | 3505752 | Italian |
| | 3505753 | Spanish |
| | 3505754 | Portuguese |
| | 3505755 | Greek |
| | 3505756 | Brazil |
| | 3505757 | Polish |
| | 3505758 | Russian |
| | 3505759 | Hebrew |
| | 3505760 | Japanese |
| | 3505761 | Taiwanese |
| 3505762 | Korean | |
| 3505763 | Norwegian | |

| | | |
|-----------------------|-----------|-------------|
| Reference book | 3508389 | Danish |
| | 3508390 | Swedish |
| | 3508391 | Finnish |
| | 3508392 | English, EU |
| | 3508393 | German |
| | 3508394 | Dutch |
| | 3508395 | French |
| | 3508396 | Italian |
| | 3508397 | Spanish |
| | 3508398 | Portuguese |
| | 3508399 | Greek |
| | 3508400 | Brazil |
| | 3508401 | Polish |
| | 3508402 | Russian |
| | 3508403 | Hebrew |
| | 3508404 | Japanese |
| | 3508405 | Taiwanese |
| 3508406 | Korean | |
| 3508407 | Norwegian | |

| | | |
|-----------------------------|---------|---------|
| Product Informations | 3507000 | English |
| | 3507001 | Danish |
| | 3507002 | German |
| | 3507003 | French |

| | | |
|-----------------------------|---------|---------|
| Circuit descriptions | 3540273 | English |
| | 3540274 | Danish |
| | 3540275 | German |
| | 3540276 | French |
| | 3540277 | Dutch |

Bracket 2053



9210 2569423 Bracket

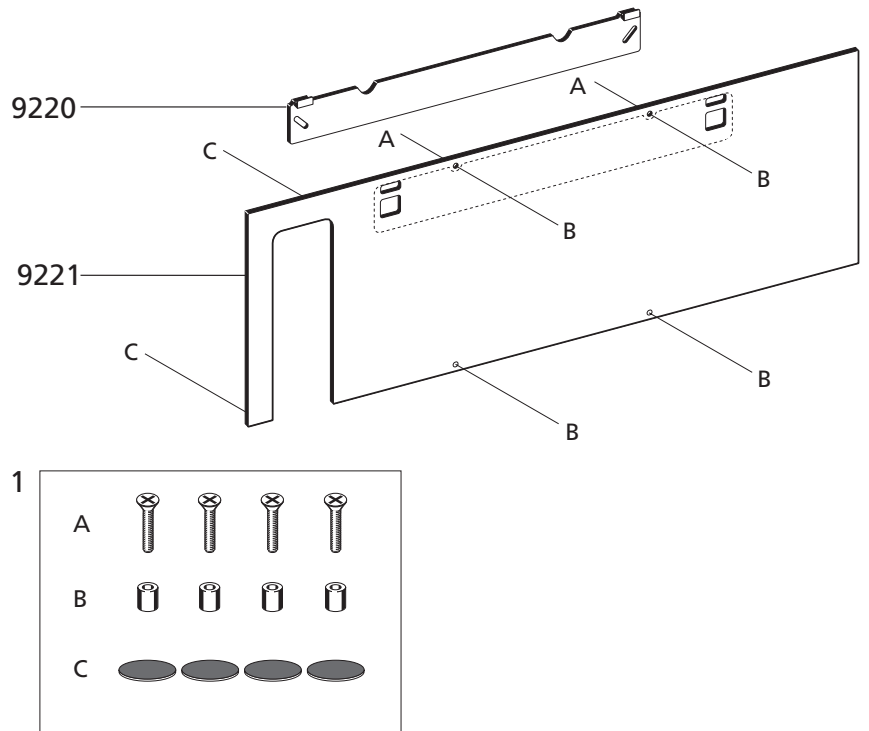
Survey of screws etc.

- | | | |
|---|---------|--------------------|
| 1 | 2930133 | Adjustment bushing |
| 2 | 2042211 | Screw 4 x 12mm |
| 3 | 2930132 | Bushing |
| 4 | 3103326 | Foot, 1 piece |
| 5 | 2569438 | Wall profile |
-

Parts not shown

- | | |
|---------|------------------------|
| 3103372 | Foot, set incl. screws |
| 3040037 | Red adjustment key |
| 3390455 | Bag w/parts |
| 3392440 | Outer carton |
| 3397970 | Foam packing |
| 3502941 | Setting-up guide |
| 3504533 | Setting-up guide |
-

Wall Bracket horizontal 2054



| | | |
|------|---------|--------------|
| 9220 | 2569470 | Wall profile |
| 9221 | 3452692 | Rear plate |

Survey of screws etc.

| | | |
|---|---------|-------------|
| 1 | 3390533 | Bag w/parts |
|---|---------|-------------|

Parts not shown

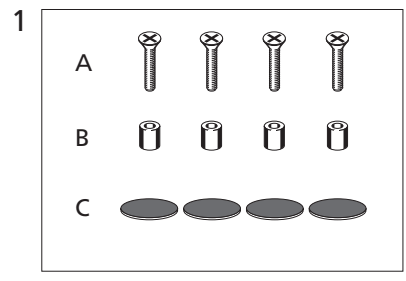
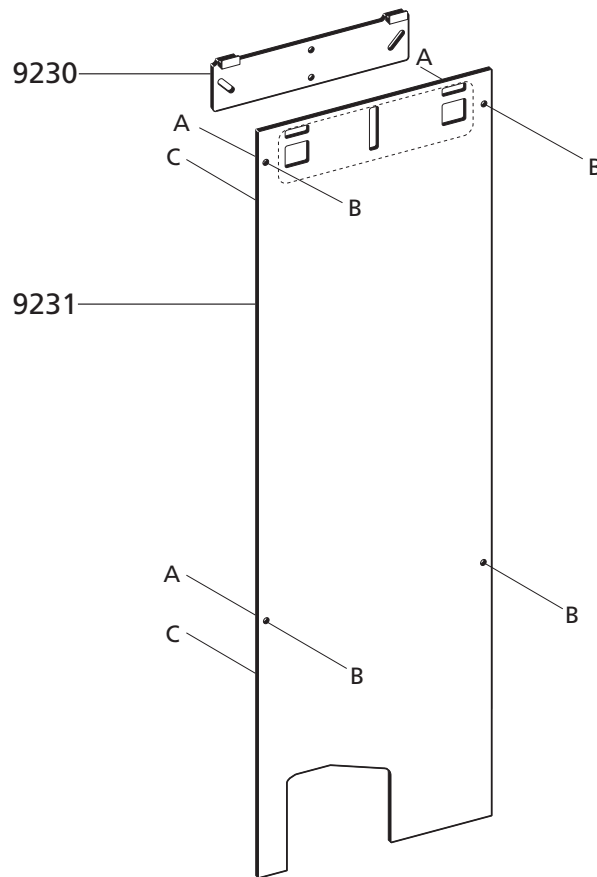
| | |
|---------|-------------------|
| 3392518 | Packing, complete |
| 3502942 | Setting-up guide |

Cable cover 2062



| | |
|---------|-------------------|
| 2569440 | Profile |
| 3031545 | Bracket |
| 3392517 | Packing, complete |

Wall Bracket Vertical 2063



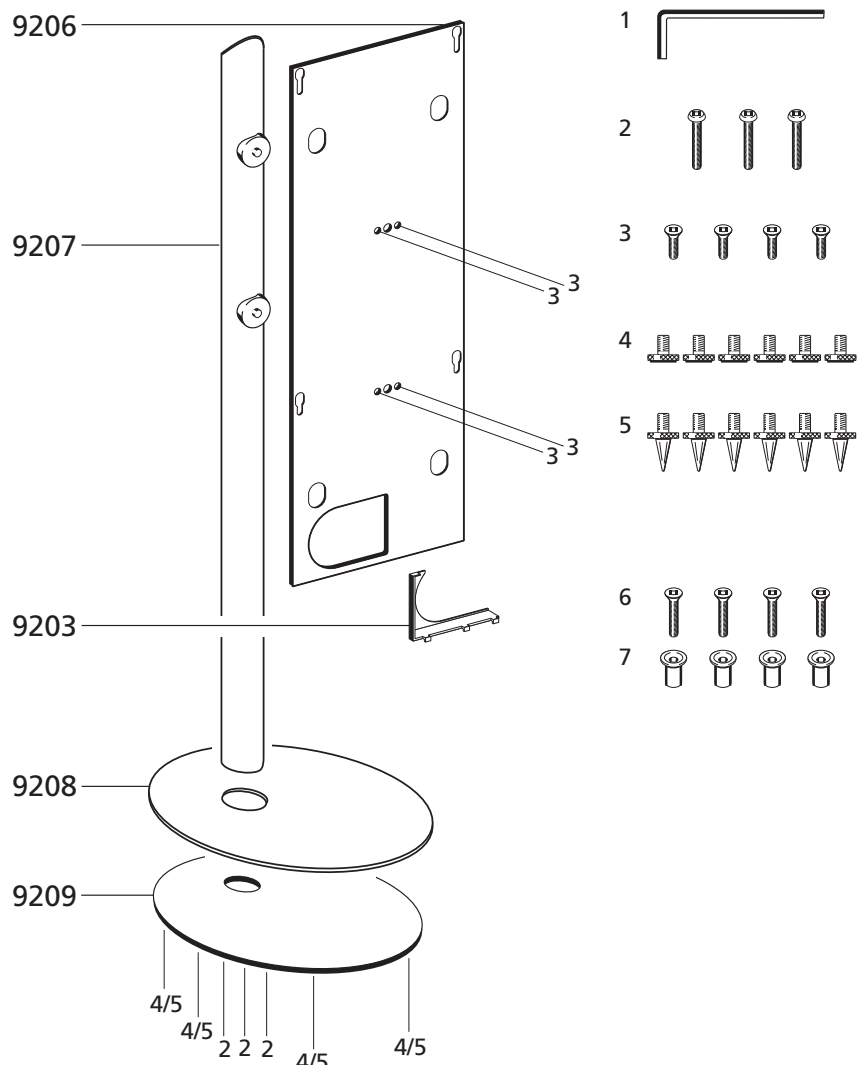
| | | |
|------|---------|--------------|
| 9230 | 2569471 | Wall profile |
| 9231 | 3452693 | Rear plate |

| | | | |
|-----------------------|---|---------|-------------|
| Survey of screws etc. | 1 | 3390533 | Bag w/parts |
|-----------------------|---|---------|-------------|

| | | | |
|-----------------|--|---------|-------------------|
| Parts not shown | | 3392518 | Packing, complete |
| | | 3502984 | Setting-up guide |

Stand 2065

Adjustable in two heights



| | | |
|------|---------|--|
| 9203 | 3162463 | Cover |
| | 3162823 | Cover – new colour from serial no. _____ |
| 9206 | 3452701 | Back plate |
| 9207 | 2569601 | Tube, high 118,6 cm |
| 9208 | 3162731 | Cover plate, aluminium |
| 9209 | 2752070 | Iron foot |

Survey of screws etc.

| | | |
|---|---------|--------------------------|
| 1 | 3040023 | Allen key |
| 2 | 2058009 | Allen screw 4 x 25mm |
| 3 | 2058010 | Screw 4 x 12mm |
| 4 | 3103392 | Foot, "Soft" |
| 5 | 3103390 | Foot, "Spike" adjustable |
| 6 | 2058012 | Screw 4 x 20mm |
| 7 | 2930135 | Bushing |

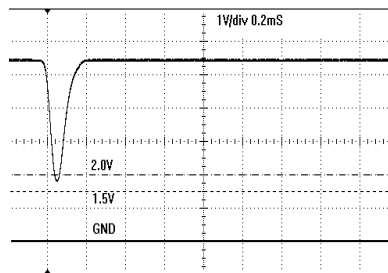
Parts not shown

| | |
|---------|--------------------|
| 3040037 | Red adjustment key |
| 3390550 | Bag w/parts |
| 3397944 | Foam, 1 piece |
| 3392621 | Wrapper |
| 3504553 | Setting-up guide |

Adjustments

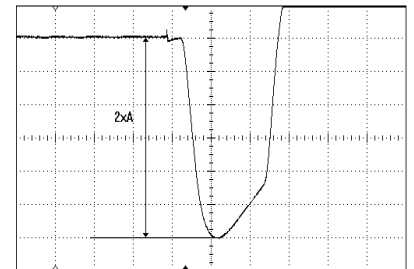
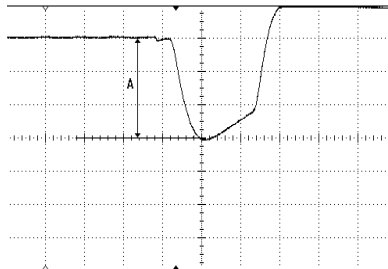
Adjustment of sensitivity of finger protection system

1. Install the glass lid, and close the lid. (Important!)
2. Switch off the product at the mains switch.
3. Connect an ohmmeter between ground and the middle pin on 35R365, and adjust to minimum value.
4. Connect an oscilloscope (DC) to 35CP1 (coordinate 2A).
5. Switch on the product.
6. Select CD6. The sledge will now try to move but it must stop.
7. Adjust by means of 35R365 until the bottom of the pulse is between 1.5 and 2V.



After approx. 30 seconds the pulses will disappear.

8. Switch off the mains, and then short-circuit 35CP1 to ground which is the chassis of the cooling plate.
9. Connect an oscilloscope (set to position AC) to the middle pin on 35R365.
10. Switch on the product.
11. Select CD6. The sledge will now try to move but it must stop.



12. Then measure the pulse height.
13. Now adjust by means of 35R365 until the pulse has twice the amplitude measured under point 12 above.
14. Switch off the mains. Remove the short-circuiting lead between 35CP1 and ground.
15. Switch the product back on, and select CD6. The sledge will now move quickly to the CD6 position.
16. Then select CD1 and check with a finger that the sledge is able to stop.
17. Open the glass lid.
18. Select CD6, and the sledge will now move slowly towards the CD6 position.
19. Then select CD1 and check with a finger that the sledge is able to stop.

Mechanical adjustments

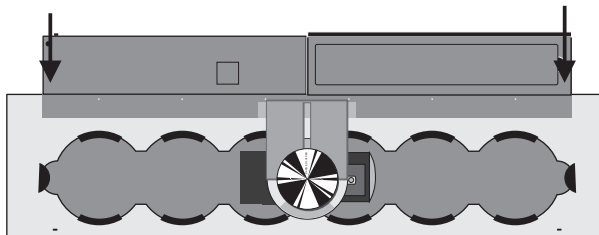
Adjustment of CD mechanism

See Brief Operation Guide, page 1.5.

Adjustment of lid

Remove the left aluminium plate (see point 2 under dismantling for further information, if necessary) and open the lid covering the secondary keyboard.

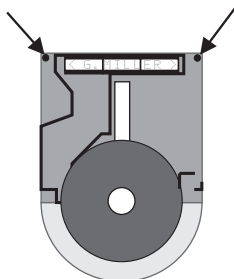
Adjust the lid until it is parallel with the top plate (15 mm).



Adjustment of clamber arm

Remove the top plate for the clamber arm (see dismantling for further information, if necessary).

Adjust the clamber until it is parallel with the top plate.



Test modes

Because of the high complexity of BeoSound 9000 MKIII it is important to use the built-in test and service functions during and after servicing the product. A good approach to finding an error is test mode 27 in which a report can be seen. Remember always to execute test modes 71 and 73 after a repair situation.

TM (test mode) names/function for adjustments and service

Tuner test modes

TM 01: Automatic offset-adjustment for FM
TM 02: Manual offset-adjustment for FM
TM 03: Status for offset-adjustment
TM 04: Variant status
TM 06: Check RDS name
TM 07: Setting up of tuner variant

Master test modes

TM 20: Test of display functions
TM 21: Open ML-out
TM 22: Test of keyboard functions
TM 23: Software version
TM 24: Service operation counter
TM 25: Open ML-in
TM 27: Service of error detection
TM 28: Validity test for ROM/RAM/EEPROM
TM 31: Set default settings
TM 32: Read-out of product ID
TM 34: Read-out of options
TM 35: Power down ON
TM 36: Power down OFF

CD test modes

TM 61: Focus on
TM 62: Focus off
TM 63: Starts turntable motor
TM 64: Stops turntable motor
TM 65: Light pen to outermost position
TM 66: Light pen to the innermost position
TM 67: Starts CD
TM 68: Stops CD
TM 71: Mechanical test of finger protection, sledge and led
TM 73: Adjustment of autopositioning
TM 74: Safeguard level set to max

WRONG SRC/TM

Having selected test mode, select CD before using test modes associated with CD and select radio before using test modes associated with radio.

If you select a test mode that is not valid, e.g. a CD test while CD has not been selected, the display will read:

WRONG SRC/TM

Test mode activating (by Beo4)

Wait 20 - 30 sec. after connecting to mains.

Since BeoSound 9000 is in option 0 if Power Link speakers are not connected, the option has to be changed to 1.

Option 1 can be obtained by short-circuiting pins 2 and 4 on the Power Link sockets. See Brief operation guide for further information, if necessary.

By means of remote control from St.by (can only be done if the product is not in option 0) :

Press **SHIFT 9 0 2 5 8** with no more than 2 sec. between the individual entering.

The remote control has to be in RADIO or CD option.

In test modes the tuner is fully functional and may overwrite the display but the TM will continue.

Select CD to view CD test modes.

Deactivating test mode (by Beo4)

Press ● and the display shows "TESTMODE OFF" or disconnect from mains.

TM01

Automatic offset-adjustment for FM.

This is done by letting the tuner search for the frequency 100 MHz (84 MHz for Japan) and when the signal is found the offset will be calculated and stored in NVRAM. The display shows "A OFFSET".

If failure the display shows "TM ERROR".

TM02

Manual offset-adjustment for FM.

This is done by keying in a frequency.

The tuner search for this frequency and the offset will be calculated and stored in NVRAM.

The display shows "M OFFSET".

If failure the display shows "TM ERROR".

TM03

Read-out offset status.

If the offset-adjustment is needed the display shows "TM ERROR".

If the result of the offset-adjustment is positive the display shows "OFFSET n".

If the result of the offset-adjustment is negative the display shows "OFFSET -n".

The figure n is in steps of 12.5 kHz.

TM04

Read-out variant status:

EUROPA (EU) FM, EUROPA (EU) FM/AM, USA (US) and JAPAN (JP). The display shows e.g. "EU FM/AM".

If failure the display shows "TM ERROR".

TM06

Checking that the RDS name of the radio programme in question is RDS-PS.

The display shows "TM OK".

If wrong RDS name or if name is missing the display shows "TM ERROR".

TM07

Tuner variant setup:

If from EU or AUS to US:

Key in the 3 digits indicating the choice.

No. 0: 003 = variant US

No. 1: 001 = RDS on, or 000 = RDS off

No. 2: 175 = FM starts in 500 kHz

No. 3: 216 = FM stops in 500 kHz

No. 4: 075 = Deemphas in μ s

No. 5: 000 = LW starts in kHz dividing with AM raster. 0 if no LW

No. 6: 000 = LW stops in kHz dividing with AM raster. 0 if no LW

No. 7: 053 = MW starts in kHz dividing with AM raster. 0 if no MW

No. 8: 171 = MW stops in kHz dividing with AM raster. 0 if no MW

No. 9: 010 = AM raster. Steps in kHz. 0 if no AM

If from US or AUS to EU.

No. 0: 001 = variant EU FM. (002 if EU FM/AM)

No. 1: 001 = RDS on, or 000 = RDS off

No. 2: 175 = FM starts in 500 kHz

No. 3: 216 = FM stops in 500 kHz

No. 4: 050 = Deemphas in μ s

No. 5: 017 = LW starts in kHz dividing with AM raster. 0 if no LW

No. 6: 031 = LW stops in kHz dividing with AM raster. 0 if no LW

No. 7: 058 = MW starts in kHz dividing with AM raster. 0 if no MW

No. 8: 179 = MW stops in kHz dividing with AM raster. 0 if no MW

No. 9: 009 = AM raster. Steps in kHz. 0 if no AM

If from EU or US to AUS

No. 0: 005 = variant AUS

No. 1: 001 = RDS on, or 000 = RDS off

No. 2: 175 = FM starts in 500 kHz

No. 3: 216 = FM stops in 500 kHz

No. 4: 050 = Deemphas in μ s

No. 5: 000 = LW starts in kHz dividing with AM raster. 0 if no LW

No. 6: 000 = LW stops in kHz dividing with AM raster. 0 if no LW

No. 7: 058 = MW starts in kHz dividing with AM raster. 0 if no MW

No. 8: 179 = MW stops in kHz dividing with AM raster. 0 if no MW

No. 9: 009 = AM raster. Steps in kHz. 0 if no AM

TM20

Checking the display by showing 2 types of icons in 2 rounds to test the pixels.
Press **GO** to shift between icons in the display.

TM21

Opens the signal from AUX-plug to the ML-output.

TM22

Test of key-board functions.

By pressing a key for instance **CD** the display will show "CD".

The testmode can only be ended by IR-remote control command "STOP".

This testmode can only be activated by IR-remote control command.

TM23

Read out of Software version.
Press **GO** to continue.
APP xx.xxx = Application processor. (Main CPU)
OS xx.xxx = APOS
IOP xx.xxx = I/O processor
MOT xx.xxx = Motor processor. (MOT-FEP)
TUN xx.xxx = Tuner processor. (Tuner-FEP)
CD xx.xxx = CD processor. (CD-FEP)

TM24

Service running counter.
First the Standby time will appear.
Press **GO** to toggle between the different counters.

- Standby time
- Radio-mode time
- CD-mode time
- AUX-mode time
- ML net radio time
- ML net music time
- Time with other ML source
- Theft protection active time

Number of times the theft protection has been unlocked.
Number of times the product has been powered up.
All numbers are stated at intervals of 10. (e.g. 3 = 30.)
When all counters have been shown the display will ask for a new test mode.

TM25

Opens ML-in.
A source must be selected to have a correct measurement.
Signal coming from the ML-in, exit on the PL and AUX as by normal selection.

TM27

Service Error detection.
The last registered errors regarding EEPROM, ML, IIC-bus, RS232 driver, CD, CD-sledge and lids can be readout. This test mode is also used for deleting all error-registrations.
To toggle between error indications press **GO**. When all errors are read press **GO** to reset all errors registered or press **STOP** to keep error register.
By pressing **▲** or **▼** the time of the errors will be shown.
YY.MM.DD - hh.mm.ss.
MEM: last EEPROM error.

- 02: EEPROM writes error
- 03: EEPROM reads error
- 04: EEPROM reads error only FF
- 11: EEPROM writes overflow
- 12: EEPROM controls init fail
- 13: EEPROM controls calloc fail
- 99: EEPROM content error

ML: Last error regarding to ML.

- 08: Link tied down

It is impossible to transmit on Master Link because it is pulled low. The error may occur if there is an error in the Master Link driver circuit, or because a short circuit has occurred on the Master Link.

- 16: Link tied up

It is impossible to transmit on Master Link because it is pulled low.

The error may occur either because the pull-up resistance in the system has become too low or as a result of an error in the data receiver circuit.

- 32: Configuration impossible

Disconnect all products from the Master Link system and reconnect them one by one until the error shows up.

IIC: Component which gave the last error regarding IIC-bus.

- 102: Tuner FEP
- 104: Motor FEP
- 136: Sound Processor
- 208: Clock

SER: The last error from the RS232 driver.

- 01: CDA queue not attached

SW communication error

- 02: CDA error timeout

SW communication error

- 03: CDA error unknown buf addr

Communication error. Check the bus and the components connected to it.

- 04: CDA error data expected

Communication error. Check the bus and the components connected to it.

- 05: CDA error unknown CMD

Communication error. Check the bus and the components connected to it.

- 06: CDA error checksum

Communication error. Check the bus and the components connected to it.

- 07: CDA error RX timeout

SW communication error

- 08: CDA error out of buffers

- 09: CDA error uart overrun

- 10: CDA error uart framing

- 11: CDA error uart parity

CD: CD error.

- 02: Focus error

The CD could not focus within the time limit.

- 03: Radial error

Set when the CD did not get on track after several retries.

- 04: Turntable motor error

Set when the disc did not spin up or down within the time limit.

- 05: PLL lock error

Set when PLL is out of lock during tracking mode.

- 06: Jump error

Set when a seek could not be performed or an error occurred during a binary search.

- 07: Subcode error

Set when a subcode could not be read within the time limit.

- 08: TOC read error

Set when the TOC could not be read, no access possible to lead-in.

- 20: Serial communication overrun error
Expected command byte, but received a data byte.
 - 22: Serial communication noise error
Check sum did not match.
 - 23: Serial communication software error
Queue full.
 - 37: Selection error
Unknown command
- OS: Error in the operation system.
- 08: IL TGL from APOS to FEP
 - 09: IL RX TX BUF limit
 - 13: FEP does not exist
- IO: Last error in the I/O driver.
- 01: IIC1 2 error
 - 05: Cannot configure FEP
 - 06: FEP communication error
 - 07: IL TGL from FEP to APOS
 - 08: IL TGL from APOS to FEP
 - 09: Interlink RX TX BUF limit
 - 14: FEP does not exist
 - 33: MLSL timeout error
 - 34: MLSL TX BUF full TGL does not send
 - 35: ML key lost key repaired
 - 36: External communication not allowed in preproject
 - 37: LSL format error
 - 38: LS IR format error
 - 39: LSL TX imposs
 - 40: LSL link tied up
 - 41: LSL link tied down
 - 42: Generic ICB error
 - 43: ICB L7 timeout
 - 44: ICB L7 illegal timeout
 - 45: ICB L7 out of repositories
 - 46: ICB L7 illegal L7 ack
 - 47: ICB L7 Acknowledge unexpected
 - 48: ICB L7 read response unexpected
 - 49: ICB L7 illegal resource type
 - 50: ICB L7 resource still running
 - 51: ICB L7 resource already free
 - 52: ICB L7 illegal IOP service
 - 53: ICB L7 illegal IOP object
 - 54: ICB L7 telegram flushed
 - 55: ICB L7 resource disabled
 - 56: ICB L7 HW clock illegal command
 - 57: ICB L7 HW clock illegal event
 - 58: ICB L2 retrans limit reached
 - 59: IIC component disabled
 - 60: CDS bus disabled
 - 61: Power down of IOP impossible

AP: Application processor errors.

- 16: Illegal timer ID
- 17: Timer not free
- 21: Illegal date value
- 22: Illegal time value
- 23: Illegal timer parameters
- 32: Illegal simple message ID
- 33: Out of message buffers
- 34: Message buffer virtual limit reached
- 64: Non ISR func. called from ISR
- 65: Physical stack limit reached
- 66: Stack virtual limit reached
- 67: Out of IAS objects
- 68: IAS signal lost
- 69: Overflow in IAS FIFO
- 70: IR queue not attached
- 71: LSL queue not attached
- 72: Scan queue not attached
- 73: Active keyscan queue not attached
- 74: Uart 0 queue not attached
- 75: TIIC queue not attached
- 76: RIIC queue not attached
- 77: Out of power down callback OBJ
- 78: Power down entered with timer running
- 79: Watchdog reset

IOP: Last error in the I/O microprocessor.

- 02: ICB layer 2 timeout
- 03: ICB layer 7 illegal service
- 04 ICB layer 7 illegal object
- 05: Reg mem data frame not valid
- 06: Data frame not valid
- 07: Illegal port ID
- 08: LSL TX impossible
- 09: LSL tied up
- 10: LSL tied down
- 11: IIC slave buffer full
- 12: IIC slave transmit timeout
- 13: IIC illegal switch port
- 14: IIC2 slave addressed
- 15: IIC conditional polling timeout
- 16: IOP IIC error
- 17: PD entered while service waitning
- 18: TP ICBL7 illegal command
- 19: TP module HW error APOS
- 21: TP clock error APOS

SLG: Sledge errors.

- 13: CC info finger detected.
The IR beam in the finger protection system has bin broken while the sledge was moving.
- 30: CC sledge pos count error.
A counter error has been registered on the signal from the sledge tacho. It is registered at 35IC2 pin 1, 44, 5 and 9.

- 31: CC sledge pos opto error.
Microprocessor 35IC2 cannot register pulses from 9PE1.
- 32: CC sledge calib switch error.
Microprocessor 35IC2 cannot register the signal REF. POS from the end stop detector at pin 20.
This error also occurs if the tacho system is not working.
- 33: CC clamp pos error.
The clamper cannot go to the desired position. The reason may be that it is locked or that there it is an error on PCB22, clamper position, or that the motor driver is defective.
- 38: CC current sense error.
35IC2 pin 35 registers that the sledge uses too much current. The reason may be that the sledge is blocked or that the sledge control is defective.
- 39: CC disc detect error.
The disk detector is not operating. Carry out test mode 71 to test the circuit.
- 40: CC sat sense error.
35IC2 pin 37 registers that the sledge uses too much current. The reason may be that the sledge is blocked or that the sledge control is defective.
- 41: CC sledge blocked error.
The sledge is blocked, or the power supply to the sledge control may be too low.
- 42: Finger protection is out of operation.
The finger protection circuit is out of operation. Use test mode 71 during troubleshooting.

PLT: Lid errors.

- 17: CC info plate pos error.
Position error. The lid may be blocked, the lid motor may be defective, or the optocouplers 37PE1 and 37PE2 may be defective.
- 37: CC door pos error / CC plate pos error.
(Occurs during test mode 71 only) Position error. The lid may be blocked, the lid motor may be defective, or the optocouplers 37PE1 and 37PE2 may be defective.

APS: Autoposition errors.

- 10: CC info P bit not found error
P bit has not been detected. If a CD-I Ready disc for example has been played back at some point or if there is an error in the detection circuit. The error has been detected at pin 11 of 35IC2.
- 11: CC info too many P bits.
Too many P bits have been detected. May be caused by scratches in the disk.
- 12: CC info TTM opto adjusted.
Information that the turntable tacho has been adjusted. Data in EEPROM has been lost.
- 14: CC info TTM pos count error.
An error has occurred in connection with scanning of the turntable motor position. The position is not stored in EEPROM. Optocoupler / tacho may be defective.
- 15: CC info TTM timeout error.
It has taken more than 5 seconds to carry out autopositioning. The turntable motor driver may be defective.
- 18: CC info TTM pos opto error.
It has not been possible to make a correct adjustment of the autopositioning circuit. The optocoupler circuit may be defective.
- 19: CC info TTM ref opto error.
The signal ROUND REF from PCB31 IR tacho clamper RX is missing.

- 34: CC TTM pos count error.
A counter error has occurred in connection with an adjustment (test mode 73).
Check the signals QUAD 1 TTM and QUAD 2 TTM from PCB31 IR tachometer RX.
- 35: CC TTM pos opto error.
(Occurs during test mode 73 only) It has not been possible to carry out a correct adjustment of the aut positioning circuit. The optocoupler / tachometer circuit may be defective.
- 36: CC TTM ref opto error.
(Occurs during test mode 73 only) The signal ROUND REF from PCB31 IR tachometer RX is missing.

PWR: Power errors.

- 20: CC power error.
Mains drop-out while the sledge was moving.
- 100: CC motor FEP power fail.

TM28

This TM checks the function of ROM, RAM, EEPROM. (O, A, P).
To readout TM, O and A have to be (+).
E.g. MEM +- indicates error in the EEPROM.

TM31

Default settings for sales purposes.

Option: 1
Volume: 32
Balance: 0
Bass: 0
Treble: 0

Loudness: OFF

Radio programmes erased.

CD settings erased.

Timer settings erased.

After default settings the display shows "DEFAULT TM ERROR".

If error occurs in TM the display will show "TM ERROR".

Item-number, serial-number, type-number, master pin-code, running counter and all offset adjustments will not be erased.

TM32

ID-readout of the product.

Press **GO** to toggle between the ID-numbers.

Item no = 7 figures.

Type no = 4 figures.

Serial no = 8 figures.

Master PIN = OK or ERROR.

If error in the readout all figures = 0.

TM34

Option readout.

TM35

Power down ON.

When power down mode is possible the display = "TM OK".

TM36

Power down OFF.
When power down mode is not possible the display = "TM OK".

To use CD test modes it is necessary to select CD, in the TM the HF-signal will not be used

TM61

Focus ON.
The CD-pen will try to focus.
This TM can only be turned off by using TM62.

TM62

Focus OFF.
The CD-pen will be turned OFF.

TM63

Starts turntable motor.
In order to ensure a controlled rotation, TM61 should be completed before you activate this Test Mode.
This TM can only be turned off by using TM64.

TM64

Turns off the turntable motor.

TM65

Light pen to outermost position.
The optical pickup unit goes to the outermost position and stays there.
This TM can only be turned off by TM66. Do not give other commands in the meantime.
Display = "LIGHTPEN OUT".

TM66

Light pen to the innermost position.
The optical pickup unit goes to the innermost position and stays there.
Display = "LIGHTPEN IN".

TM67

The CD starts playing.

TM68

The CD stops playing.

TM71

Mechanical test of finger protection, sledge and led.
CDs must be loaded in positions 6, 5, 4, 3, 2 but no CD in position 1, (the position nearest the LOAD button).
The CD must be stopped and the lid must be shut when the test is activated.
The following sequence is executed:

- End stop is found, the sledge runs slowly.
This tests sledge tacho, sledge motor, calibration of the end stop switch.
- Lid opens and closes.
This tests optocoupler for glass lid.
- Test of finger protection circuit.
- The sledge runs the longest possible distance slowly once, then quickly twice. This tests the sledge tacho for phase errors between quad 1 and quad 2 (the finger

protection circuit is cut out during the test). When the sledge is running it must run "properly".

- The lid opens.
- Autocalibration of CD positions.
This tests calibration, disc detector, sledge motor, sledge tacho, clamper motor, clamper optocoupler, and jaws.
The clamper is noise-optimized during the autocalibration.
- The sledge runs to the original position, i.e. the sledge position prior to activation of sledge test.

When error in CD test mode the Error-number refers to TM27 CD-errors.

TM72

Release of sledge.

Display = "RELEASE SLG"

When test mode 72 has been used the mains voltage to the product has to be disconnected to ensure correct calibration.

TM73

Adjustment of autopositioning.

Test mode 71 must have been executed.

- Press **SHIFT 9 0 2 5 8**
- Open the lid and load a CD.
- The sledge must be placed in the position where the CD is loaded.
- Press **7 3**
- If the test is OK the display will show: APS ADJUSTED.
- If an error has occurred during the test, the applicable error code can be seen during a test mode 27.

TM74

Changing transmitter power for the finger protection circuit.

Safeguard level is set to maximum and the display show: SAFEGUARD TM

This function can only be switched off by the main switch.

Glass doors lock

The glass doors can only be locked if the product is in Standby, the glass doors closed and only by remote control.

Press **SHIFT 9 0 3 6 9** with no more than 2 sec. between the individual entering.

The display shows "LOCKED".

To unlock the glass doors press **SHIFT 9 0 3 6 9** with no more than 2 sec. between the individual entering.

The display shows "UNLOCKED".

The function will be remembered in NVRAM after disconnecting from mains.

Theft protection

The theft protection is a 4 digit PIN-code of the user's own choice, which must be entered if the product has been disconnected from the mains for 15-30 min.

The theft protection is always deactivated from the factory, it is up to the user to activate it.

If the theft protection is activated, and the product has been without mains for 15-30 minutes, the user will be asked to enter the 4 digit PIN-code.

Before the product is handed in to service it is a good idea to ask the customer to deactivate the theft protection.

Service code

If the PIN-code is activated and the product is in a service situation, there is a possibility of 12 hours service by entering a 5 digit Service code which is 11111. This gives 12 hours of full functionality to service the product and make module changes without naming/registering the exchanged modules to the Customer's product. The 12 hours are only running when the product is connected to mains! If the customer's PIN-code or Master-code is entered the exchanged modules will be named/registered to the product. Registration of the modules cannot be changed. The service code must be entered when a source is selected and the product asks for the PIN-code "PIN _ _ _ _" press down the ▼ button (Keyboard) for three seconds and the display now writes "PIN _ _ _ _ _", press ▼▲ (Keyboard) to select digit, press OK (Keyboard) to accept digit.

Master code

If the PIN-code has been forgotten (5 tries every 3 hours with mains connected), the only way to unlock the product again is by entering the 5 digit Master code. The Master code can be ordered at Bang & Olufsen.

When a source is selected and the product asks for the PIN-code "PIN _ _ _ _" press down the ▼ button (Keyboard) for three seconds and the display asks for 5 digits instead of 4: "PIN _ _ _ _ _" ; enter the 5 digit Master code. Press ▼▲ (Keyboard) to select digit, press OK (Keyboard) to accept digit.

How to order Master code

The Master code is ordered by sending a request either via the Retail System or on the Master code formula, if non of these options are available please contact Bang & Olufsen.

Exchange of micro-processor module PCB3

When exchanging PCB3 remember to insert the EEPROM from the defective module, because it contains valuable data (serial no., type no., PIN-code etc.). The data is not transferred to the new module until you have been in contact with the theft protection or after 12 hours connected with mains. This means that you can try out a new PCB3 without transferring the products serial no. etc.

Note !

When the serial no. has been transferred to the micro-processor it can only be used for this specific product. Otherwise the module must go back to Bang & Olufsen's module repair department as an exchange module to be erased again. If the product functions are OK the theft protection is also OK; there is no need for testing the functionality of the theft protection.

When the product is connected to mains, wait 20-30 sec. before operating. All addresses in ML hav to be updated after disconnecting mains voltage.

Exchange of software EEPROM on PCB3

When exchanging the EEPROM on PCB3, the data from the micro-processor will be written into the EEPROM when selecting any source e.g. RADIO.

It is possible to borrow an EEPROM from another BeoSound 9000 to test if there is suspicion of a fault in the original EEPROM. The EEPROM will always adopt the data from the main micro-processor.

Exchange of both micro-processor module PCB3 and software EEPROM on PCB3

If both the micro-processor and the EEPROM need to be exchanged it is necessary to have them pre-programmed from Bang & Olufsen with the correct serial number, otherwise they will not work.

Please contact Bang & Olufsen.

Important

When the product is reconnected to mains, wait 20-30 sec. before operating. All addresses in ML hav to be updated after disconnecting mains voltage.

Set and enter PIN code

It is the customer's choice whether or not to activate the PIN code system.

However, if the customer has chosen to activate the system, BeoSound 9000 is protected against theft with a four-digit PIN code.

The use of a PIN code means that if BeoSound 9000 is disconnected from the mains for more than 15-30 minutes, the system can only be activated again by keying in a personal PIN code.

If the PIN code is not entered, BeoSound 9000 automatically switches to standby after 3 minutes.

If a wrong PIN code is entered, you get five attempts to key in the code, after which the system is switched off and cannot be switched on for 3 hours.

Should you forget the PIN code, please contact a retailer who can assist you in receiving a Master code from Bang & Olufsen. You need the Master code to reactivate BeoSound 9000.

Activate the PIN code system

The PIN code system is easily activated, and you choose the four-digit code yourself.

Press **MENU** **◀◀STOP** (Beo4) to key in a four-digit PIN code of your own choice.

NEW PIN appears briefly, and PIN _ _ _ _ appears.

Key in a four-digit PIN code of your own choice.

The PIN code is not displayed.

Press **GO** (Beo4) to store the PIN code.

CONFIRM appears briefly, and then PIN _ _ _ _ appears. Re-enter your code. The PIN code is not displayed. Press **GO** (Beo4) to store.

STORED appears, indicating that your PIN code is stored.

Enter the PIN code

If the PIN code system is activated and your BeoSound 9000 is disconnected from the mains for more than 15-30 minutes, you are requested to key in the four-digit PIN code when the system is first switched on. The cue PIN _ _ _ _ is displayed.

Key in your personal PIN code. The PIN code is not displayed. When the four-digit code has been entered, the display returns to the relevant source e.g. RADIO 1.

Deactivate the PIN code system

You can deactivate the PIN code system at any time. All you need is to enter your PIN code first and then deactivate the system.

Press **MENU** **◀◀** **STOP** (Beo4) or press **▼** **▼** **PAUSE** buttons (Keyboard) to key in the four-digit PIN code.

PIN _ _ _ _ appears. Key in your personal four-digit PIN code.

The PIN code is not displayed. NEW PIN ? appears.

Press **▲** or **▼** (Keyboard) to switch the display. PIN OFF appears.

Press **GO** (Beo4) or **OK** (Keyboard) to deactivate the PIN code system.

DELETED appears, indicating that the PIN code system is deactivated.

If you have forgotten your PIN code

If you have forgotten your PIN code, you must contact a retailer who then requests a five-digit Master code from Bang & Olufsen. Once you have keyed in this code, your BeoSound 9000 is operational again and the PIN code system is deactivated.

The cue PIN _ _ _ _ is displayed.

Press down the **▼** button (Keyboard) for three seconds and the display asks for 5 digits instead of 4: "PIN _ _ _ _ _" ; enter the 5 digit Master code. DELETED appears, indicating that the PIN code system is deactivated and the set is ready for use.

Change PIN code

The PIN code can be changed at any time. However, for security reasons it is only possible to change the PIN code five times within a period of 3 hours.

Press **MENU** **◀◀** **STOP** (Beo4) or press **▼** **▼** **PAUSE** buttons (Keyboard) to key in the four-digit PIN code.

PIN _ _ _ _ appears.

Key in your personal PIN code.

The PIN code is not displayed.

NEW PIN ? appears.

Press **GO** (Beo4) or **OK** (KeyBoard) to enter a new PIN code.

PIN _ _ _ _ appears.

Key in the new PIN code. The PIN code is not displayed.

Press **GO** (Beo4) or **OK** (KeyBoard) to store.

CONFIRM appears briefly, and then PIN _ _ _ _ appears.

Re-enter the new PIN code. The PIN code is not displayed.

Press **GO** (Beo4) or **OK** (KeyBoard) to store. STORED appears, indicating that your changed PIN code is stored.

Replacement of components

Exchange of microprocessor module PCB3

When exchanging PCB3 remember to insert the EEPROM from the defective module, because it contains valuable data (serial no., type no., PIN-code etc.). The data is not transferred to the new module until you have been in contact with the theft protection or after 12 hours connected with mains. This means that you can try out a new PCB3 without transferring the products serial no. Etc..

Note !

When the serial no. has been transferred to the micro-processor it can only be used for this specific product; it must go back to Bang & Olufsen's module repair department as an exchange module to be erased again.

If the product functions are OK the theft protection is also OK; there is no need for testing the functionality of the theft protection.

When the product is connected to mains, wait 20-30 sec. before operating.

All addresses in ML has to be updated after disconnecting mains voltage.

Exchange of software EEPROM on PCB3

When exchanging the EEPROM on PCB3, the data from the micro-processor will be written into the EEPROM when selecting any source e.g. RADIO.

It is possible to borrow an EEPROM from another BeoSound 9000 to test if there is suspicion of a fault in the original EEPROM. The EEPROM will always adopt the data from the main micro-processor.

Exchange of both micro-processor module PCB3 and software EEPROM on PCB3

If both the micro-processor and the EEPROM need to be exchanged it is necessary to have them pre-programmed from Bang & Olufsen with the correct serial number, otherwise they will not work.

Please contact Bang & Olufsen.

Replacement of 7DP1, 7DP2 or 7DP3

When display 7DP1, 7DP2 or 7DP3 is replaced, all three displays must be replaced to ensure an uniform light intensity.

Replacement of 29IL1 and 7IL1

When 29IL1 or 7IL1 is replaced, both light bulbs must be replaced.

Replacement of light indicator

When either Light indicator PCB's is replaced, it must be fixed again with double-sided adhesive tape.

Replacement of PCB35, PCB27, PCB28 and the mechanical parts of the finger protection system

Remember to carry out adjustment of the sensitivity of the finger protection system.

Repair tips

Voltage to sledge motor

Disconnect the voltage supply to the sledge motor while servicing (lift 35P53).

Repair of autopositioning

TM73 is used in connection with repair of autopositioning. The circuit can be measured each time the test is run. Use a storage oscilloscope, if necessary.

Only the signals SWAB and SDAB can be measured during lead-in, i.e. during ordinary play-back of a CD.

Autopositioning errors of less than 5 degrees may occur in rare cases.

Why does the product not work?

If the product does not work, the reason may be one of the following:

When the glass lid is not installed the sledge may stop during movement. That is because the IR beam in the finger protection system transmits at reduced power when the lid is closed. Run the lid hinges to the open position for maximum IR transmitter power (see test mode 74, if required).

A lid acknowledgment must be given for the product to operate. The lid may be subject to an adjustment error so that no acknowledgment is received.

If the finger protection beam is broken, the sledge cannot move.

If end stops have not been detected, the product will not operate.

If the optocouplers in the product are affected by external light the product will not operate.

CD

In connection with repair of the CD the following tips may be useful:

THE PHOTO DIODES AND THE LASER ARE MORE SENSITIVE TO STATIC ELECTRICITY THAN THE MOS IC'S. OMISSION TO TAKE THIS INTO CONSIDERATION DURING SERVICING MAY REDUCE THEIR LIVES DRAMATICALLY. SO BE SURE THAT THE WORK SITE IS PROTECTED AGAINST STATIC ELECTRICITY.

The product may not be connected to the mains while the CD mechanism or PCB41 are removed.

Focus can be checked by placing a CD over the light pen. The light pen will now "follow" the CD (up/down).

In normal operation the CD will first search for Focus, and when that has been found it will start the turntable motor, i.e. if the motor cannot start, the reason may be that focus has not been found.

The CD can run without clamper and disc detector. In test mode select CD as source. Move the sledge to position 1, disconnect the voltage supply to the sledge motor while servicing the CD (lift 35P53), load a CD, press CD, and the CD can now be played back.

By using one of the flat cables provided at the back of the service manual (type 252x - 3538847 or order no. 6277184) the display can be engaged by connecting 7P63 and 34P8.

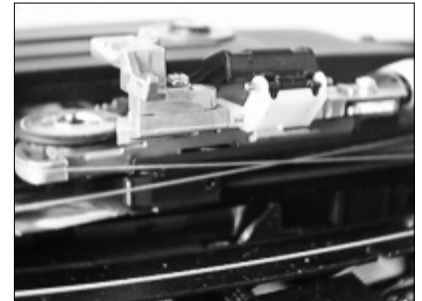
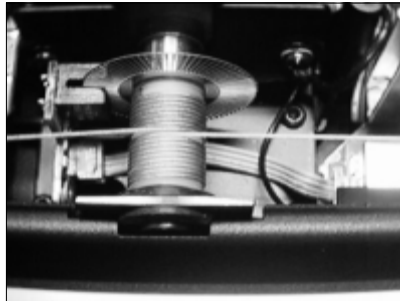
In connection with test modes the CD has reduced operation.

If the clamper arm is not installed, no tachometer pulses will come from the aut positioning system, and the turntable motor may therefore run in the reverse direction.

SLEDGE

In connection with repair of the sledge function the following tips may be useful:

The wire for the sledge must be placed correctly; otherwise periodic errors may occur.

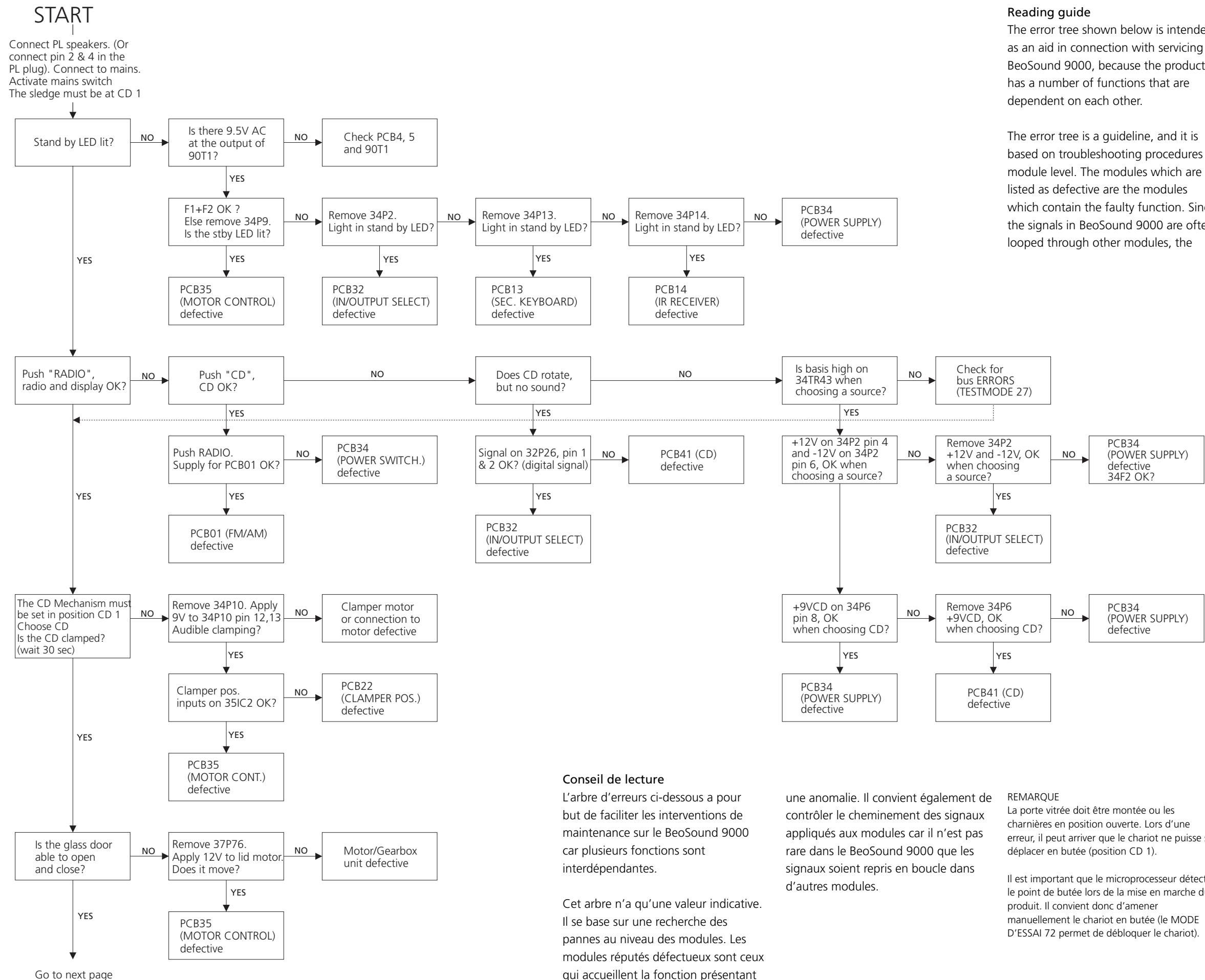


GLASS LID

The glass lid may be "pulled" out of mesh. The product has been designed in that way in order to allow the customer to remove his CD's without switching on the power supply to the product.

MISCELLANEOUS

When replacing the top, the number label must be transferred to the new top.



Reading guide

The error tree shown below is intended as an aid in connection with servicing BeoSound 9000, because the product has a number of functions that are dependent on each other.

The error tree is a guideline, and it is based on troubleshooting procedures at module level. The modules which are listed as defective are the modules which contain the faulty function. Since the signals in BeoSound 9000 are often looped through other modules, the

signal paths to the modules also have to be checked.

NOTE:
 The glass lid must either be on, or the hinge for the lid must be in the open position. In a fault situation the sledge may be unable to move to its end stop (CD 1 position).

End stop detection is important for the microprocessor when powering up the product. Therefore the sledge should manually be brought to the end stop position (the sledge is released in TEST MODE 72).

Anleitung

Der unten gezeigte Fehlerbaum ist als eine Hilfe im Zusammenhang mit der Wartung des BeoSound 9000 gedacht, indem nämlich eine Reihe von Funktionen voneinander abhängig ist.

Der Fehlerbaum dient als Anleitung und basiert auf Fehlersuche auf Modulebene. Die Module, die als fehlerhaft angegeben werden, sind die Module, auf denen sich die defekte Funktion untergebracht ist. Da die Signale im BeoSound 9000 oft durch andere Module hindurchgeschleift werden, sind die jeweiligen Signalwege zu den Modulen ebenfalls zu kontrollieren.

HINWEIS!
 Entweder muß die Glastür montiert sein oder die Türscharniere müssen in Position 'offen' stehen. Bei Fehlern kann es vorkommen, daß sich der Schlitten nicht ganz bis zum Endschalter (CD 1 Position) bewegen kann.

Die Erkennung der Endschalterposition ist für den Mikroprozessor bei jeder Inbetriebnahme des Produktes wichtig. Deshalb muß der Schlitten evtl. von Hand zur Endschalterposition bewegt werden (der Schlitten wird in TEST MODE 72 gelöst).

Conseil de lecture

L'arbre d'erreurs ci-dessous a pour but de faciliter les interventions de maintenance sur le BeoSound 9000 car plusieurs fonctions sont interdépendantes.

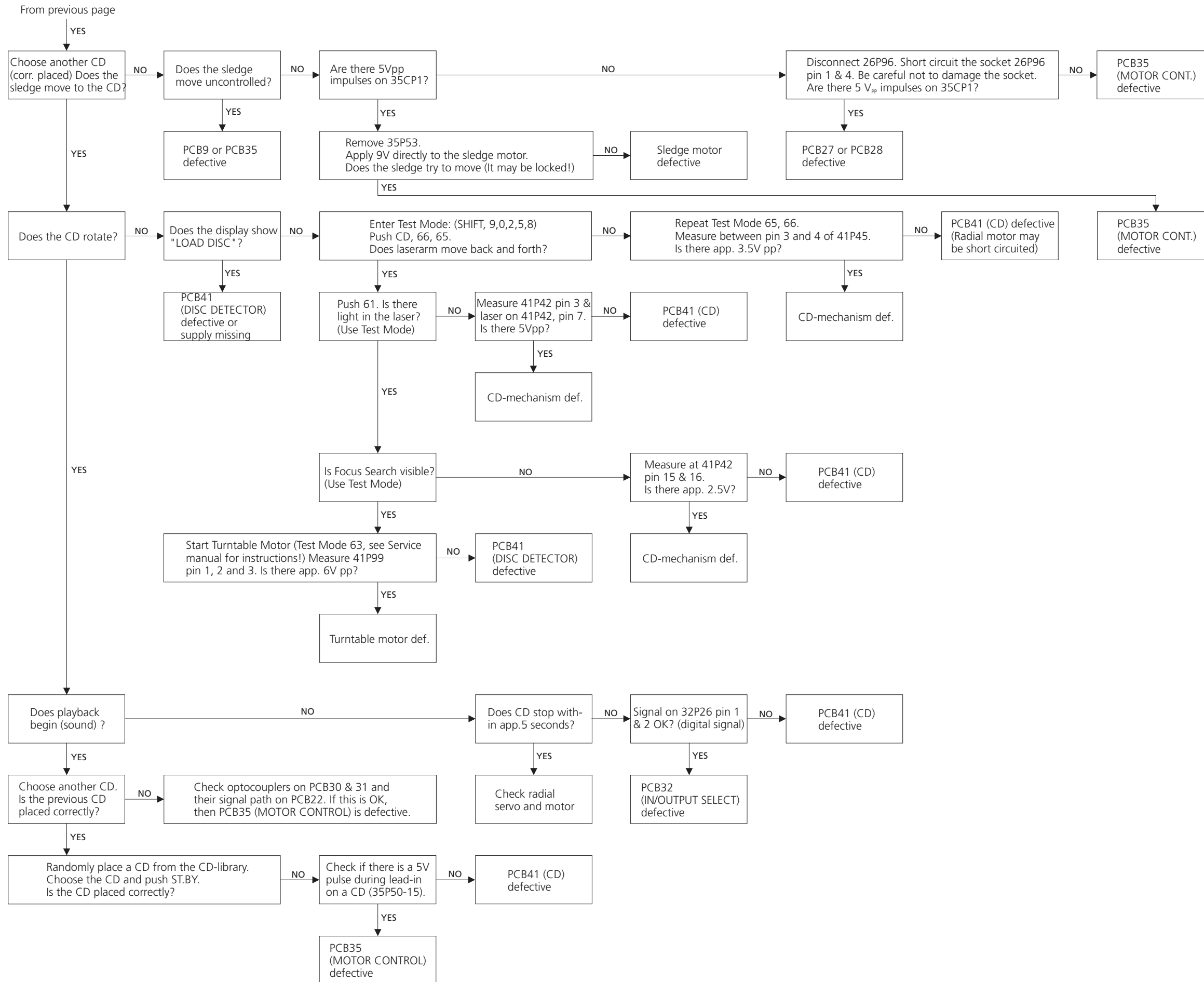
Cet arbre n'a qu'une valeur indicative. Il se base sur une recherche des pannes au niveau des modules. Les modules réputés défectueux sont ceux qui accueillent la fonction présentant

une anomalie. Il convient également de contrôler le cheminement des signaux appliqués aux modules car il n'est pas rare dans le BeoSound 9000 que les signaux soient repris en boucle dans d'autres modules.

REMARQUE

La porte vitrée doit être montée ou les charnières en position ouverte. Lors d'une erreur, il peut arriver que le chariot ne puisse se déplacer en butée (position CD 1).

Il est important que le microprocesseur détecte le point de butée lors de la mise en marche du produit. Il convient donc d'amener manuellement le chariot en butée (le MODE D'ESSAI 72 permet de débloquent le chariot).



Dismantling and assembly

READING GUIDE

BeoSound 9000 has a high level of integration of mechanics and electronics. To achieve optimum servicing it is therefore important to follow these dismantling instructions carefully when servicing the product.

The dismantling instructions are divided into two main sections:

- a) A section that describes how to gain access to the individual modules. This section includes a description of the mechanical parts that have to be dismantled.
- b) A section that describes how to remove/dismantle the individual mechanical/ electrical parts:
 1. Glass lid
 2. Left aluminium plate
 3. Release of sledge
 4. Cover for chassis top plate
 5. Chassis top plate
 6. Cover for CD clamper
 7. Top plate for CD mechanism
 8. Clamper arm
 9. CD mechanism
 10. Top plate
 11. Sledge and ribbon cables
 12. Sledge motor and wires
 13. Gearbox
 14. Rear panel

Remember always to execute TEST MODES 71 + 73, after a repair. When the product has been assembled, check the finger protection system by interrupting the IR beam between the two "towers".

If the optocouplers in the product are affected by external light the product will not operate. If the optocouplers in the product are affected by external light the product will not operate.

ACCESS TO THE INDIVIDUAL MODULES

PCB1 FM/AM, RF IF Decoder

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Lift up the PCB for service.

PCB3 Main microcomputer

- See PCB34.

PCB4 Mains Filter

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- The PCB is placed in service position.

PCB5 Mains Relay

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove the screw for the cover over PCB5. Take off the cover. Do not cut the Tyrap.
- Remove the leads in 5P82 and 5P84, and loosen the lead between 5P83 and 34P16. Make sure that the lead does not obstruct the wire.

PCB7 Display

- Carry out the points 1 and 6 to 8.
- If necessary, use one of the cables supplied at the back of the service manual during servicing. Connect it between 34P8 and 7P63.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB9 Sledge Position

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- The PCB is placed in service position.

PCB11 Main Keyboard, left

- Carry out point 10.
- The PCB can be lifted up.
- Remember the chassis spring when reassembling.

PCB12 Main Keyboard, right

- Carry out point 10.
- The PCB can be lifted up.
- Remember the chassis spring when reassembling.

PCB13 Secondary Keyboard

- Carry out points 1 to 5.
- Remove one screw on the PCB.

PCB14 IR Receiver

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (C, D, E) (see under point 10), lift the top plate carefully (approx. 2 cm), and carefully pull the top plate a little to the right.
- Remove two screws for PCB14 and lift off the PCB.

PCB20 Master Link Interface

- See PCB32.

PCB21 Headphones

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (C, D, E) (see under point 10), lift the top plate carefully (approx. 2 cm), and carefully pull the top plate a little to the right.
- Remove one screw. PCB21 can now be pulled up.
- When reassembling, make sure that the leads do not obstruct the sledge.

PCB22 Clamper Position

- Carry out point 14.

PCB24 Light indication right

- Carry out points 1 to 5.
- The diodes can be removed through the "front".
- The PCB is riveted to the chassis top plate and cannot be removed any further. If the PCB is removed, it MUST be fixed again with double-sided adhesive tape.

PCB25 Light indication left

- Carry out points 1 to 5.
- The diodes can be removed through the "front".
- The PCB is riveted to the chassis top plate and cannot be removed any further. If the PCB is removed, it MUST be fixed again with double-sided adhesive tape.

PCB26 End stop detector

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove 26P96 and 26P75. The PCB holder can now be lifted up.

PCB27 Safety TX

- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (see under point 10). Carefully pull the top plate towards the right. PCB27 is fixed under the top with a screw.

PCB28 Safety RX

- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (see under point 10). Carefully pull the top plate towards the right. PCB28 is fixed under the top with a screw.

PCB29 Lamp

- Carry out point 1 and the points 6 to 8.
- Remove one screw for the PCB.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB30 IR transmitter, tacho clamper

- Carry out points 1 and 6 and 7.
- Remove PCB29 and push up the Tacho holder. It is now possible to unclip PCB30.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB31 IR receiver, tacho clamper

- Carry out point 1 and points 6 to 8.
- Remove PCB29 and push up the Tacho holder. Push out the PCB via the two small holes from the opposite side of the Tacho holder.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB32 Input/output Select and Sound adjustment

- Carry out points 1 to 5.
 - Remove 35P53, power supply for sledge motor.
 - Remove PCB1. Push in the clip on the right-hand side and lift up (at a slant) the PCB for service.
- P24, Headphones, may be removed if necessary.

PCB34 Microcomputer and Power Supply

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove the plastic screen over the flex cables from the sledge.
- Lift up PCB34 and PCB35 simultaneously - watch out for the flex cables. Lift up PCB34 and PCB35 at the rear edge of the product.
- When carrying out service, lift up PCB34 and PCB35 and place them against the rear edge of the chassis. Make sure that the wire is able to run.
- The connection between 9P78 and 35P52 can be re-established by means of the cable supplied in the plastic pocket at the very back of the service guide.
- When returning PCB34 and PCB35 to their places, make sure that no leads get jammed.

PCB35 Motor control

- See PCB34.

PCB37 Lid Motor

- Carry out point 13.
- Unsolder the leads for the motor.
- Remove three screws on the flange with the motor.

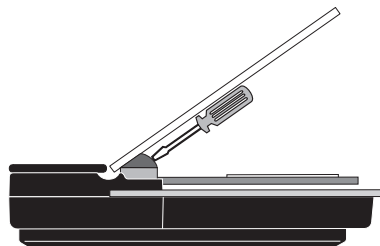
PCB41 CD

- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor.
- Remove the two screws for the cover for the CD PCB.
- Remove the two screws that hold PCB41, CD, and tilt PCB41 over to the side.
- Make sure that the ribbon cables do not get into contact with the CD.
- Push the sledge into position.

MECHANICAL/ELECTRICAL DISMANTLING**1. Glass lid**

- Open the glass lid. The lid can be forced up if necessary.
- Disconnect the mains voltage.
- First loosen the screw on the left-hand side (approx. 3 turns).
- Hold the left-hand side of the glass while loosening the screw on the right-hand side.
- Lift off the glass.
- Tighten the screws again, otherwise the screws will damage the top plate when the lid function is activated.
- WHEN THE GLASS LID HAS BEEN REMOVED THE SLEDGE IS ONLY ABLE TO RUN WHEN THE LID HINGES ARE IN THE OPEN POSITION. (SEE TEST MODE 74, IF REQUIRED).
- Check finger protection after assembly.

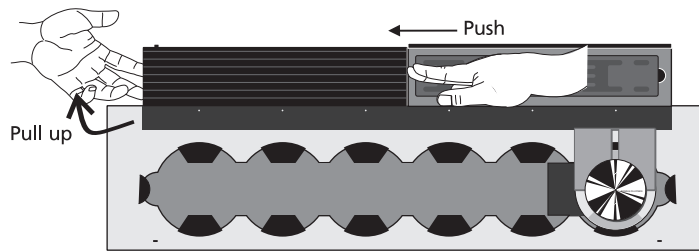
Fig. 1



2. Left aluminium plate (grooved profile)

- Lift the front edge on the left-hand side, push the plate to the left (it fits tightly), and lift it off.

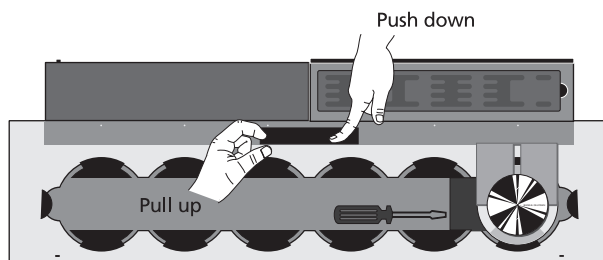
Fig. 2



3. Release of sledge

- The sledge can be released in four different ways:
 - a) With the product switched on.
 - Carry out point 1.
 - Carry out test mode 72 (CD72, see TESTMODES page 5.13).
 - b) If the product cannot be switched on.
 - Turn the big gearwheel under the sledge (in the middle on the left-hand side) clockwise. Use a screw driver, if necessary (be careful not to scratch the bottom), Fig. 3.
 - Or point c.
 - c) If the product cannot be switched on and the sledge is placed in positions 5 or 6.
 - Carry out points 6 to 8.
 - Remove the two screws for the cover for the CD PCB. Remove the cover by pulling it to the left.
 - Remove the plug for the clamper motor (41P45).
 - The clamper motor terminals are now accessible. Apply +9V DC. The sledge will now be released.
 - d) If the sledge is placed in position 6 and cannot be moved.
 - Remove the rear panel of the product, see point 14. The sledge is released by turning the big gearwheel.

Fig. 3



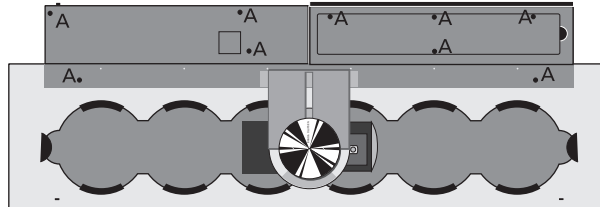
4. Cover for chassis top plate

- Carry out points 1 to 3.
- Push down the cover, tilt it out, and take it up, Fig. 3.
- Push the sledge into the notch that has been created.

5. Chassis top plate

- Carry out points 1 - 4.
- Switch off the product.
- Lift out the operating panel, and remove the nine screws marked A.
- Lift up and tilt backwards.

Fig. 4



6. Cover for CD clamper

- Turn the cover until BANG & OLUFSEN is aligned with the hole, and then lift it off, see Fig. 4.

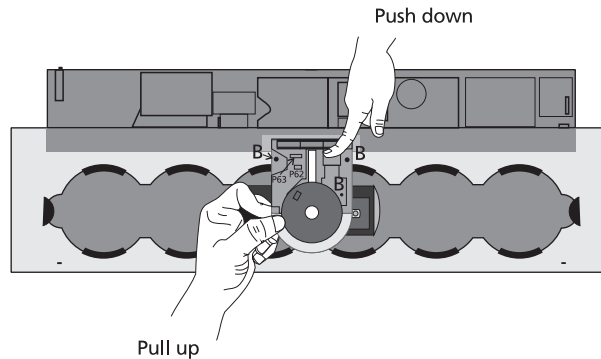
7. Top plate for CD mechanism

- Carry out point 1 and point 6.
- Lift off the plate (it has some small barbs that hold it back).

8. Clamper arm

- Carry out point 1 as well as points 6 and 7.
- Remove the three screws marked B and two flat springs.
- Loosen 7P62 and 7P63.
- Push down the clamper holder and then lift.

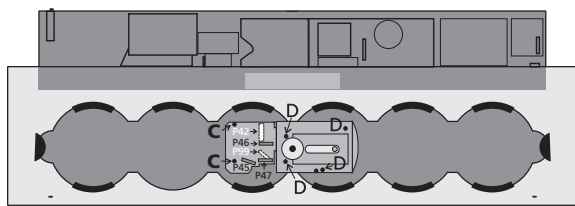
Fig. 5



9. CD mechanism

- Carry out points 1 and 3 as well as points 6 to 8.
- Remove two screws from the cover over the CD mechanism.
- Lift the cover on the left-hand side and push it towards the right.
- Remove the two screws (C) for the cover of the CD PCB. Remove the cover by pulling it towards the left.
- Remove two screws for PCB41, CD.
- Lift up PCB41 a little and remove P99.
- Remove one screw for the bracket on the CD mechanism.
- Remove the four screws (D) that hold the CD mechanism.
- Lift up the CD mechanism a little and loosen the flex cable. Watch out for the flex cable under the CD mechanism; the cable runs under the arm for the tension springs.

Fig. 6



10. Top plate

- Carry out the points 1 to 8.
- Remove 35P53, power supply for sledge motor.
- Remove two screws (E) for the clammer holder, and remove the holder, Fig. 8.
- Remove the six plugs with a thin hook or a similar object.
- Remove the six screws in the bottom (F), and loosen the two screws (G) (approx. six turns), Fig. 7.
- PLACE THE SLEDGE AT THE CENTRE.
- Loosen 26P96.
- The top can now be removed by pulling it towards the right while holding the sledge. It will be released from the sledge automatically when it reaches the end.
- LIFT THE TOP PLATE AS LITTLE AS POSSIBLE AND VERY CAREFULLY IN ORDER TO AVOID DAMAGING THE RIBBON CABLE AND STEEL BAND FOR THE SLEDGE.
- IT IS IMPORTANT TO HOLD ON TO THE SLEDGE. THE WIRE SYSTEM HAS BEEN "TIGHTENED" SO THAT IT IS VERY TIGHT.
- Remove the plastic strip over the well containing the ribbon cables and the wires by lifting up the strip.
- Place the sledge at the centre of the product.
- Instal the red holder on the bracket for wires/cable, Fig. 9.
- Loosen the spring on the right-hand side of the product, if necessary. The spring is very tight. Be careful not to let the sledge turn around.

Fig. 7

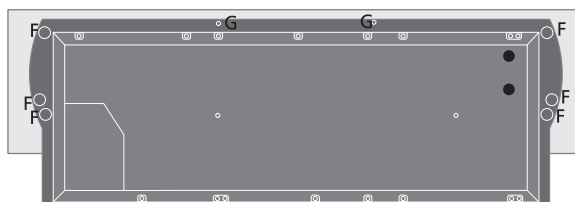
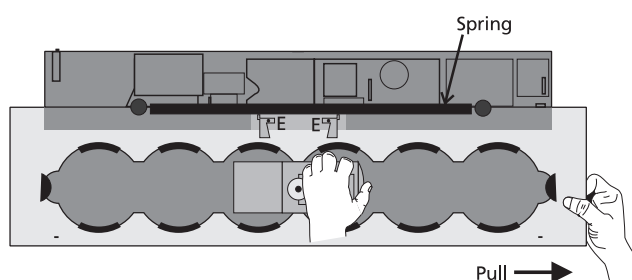


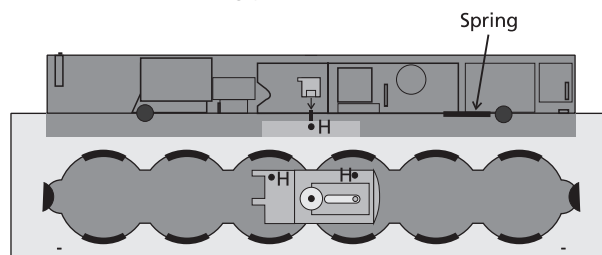
Fig. 8



11. Sledge and ribbon cables

- Carry out the points 1 to 8, and remove the screws for the top plate (C, D, E), see point 10.
- Remove the plastic strip over the well containing the ribbon cables and the wires by lifting up the strip.
- Instal the red holder on the bracket for wires/cable, Fig. 9.
- Remove two screws from the cover over the CD mechanism.
- Lift the cover on the left-hand side and push it towards the right.
- Remove the two screws for the cover for the CD PCB. Remove the cover.
- Loosen 41P46 and 41P47, Fig. 6.
- Remove 35P53, power supply for the sledge motor.
- Remove three screws (H) for the bracket for wires/cable, Fig. 9.
- Loosen 26P96.
- Lift up the top plate with the sledge carefully. Look out for the lead and ribbon cables.
- Place a holder, perhaps a Tyrapp, around the wire drive by the motor.
- Loosen the spring on the right-hand side of the product. The spring is very tight. Be careful not to let the sledge turn around.
- When the reassembly has been completed the sledge must not catch when it is moved while it is being pushed down at the same time.

Fig. 9



12. Sledge motor and wire drive

- Carry out point 11.
- Remove the wires from the sledge.
- Remove three screws and lift up the motor section.
- Watch out for the tachometer disc.
- Assembly, if necessary see pictures on page 5.19.

13. Gearbox

- Carry out the points 1 - 5.
- Remove four screws. The gearbox can now be lifted out.
- Remember to instal the chassis spring when the product is reassembled. The pointed end must be facing the top plate.

14. Rear panel

- Remove twelve screws (J) and lift it off. Watch out for the 8 ground connections .
- When the rear panel is installed the product must not be upside down. Place it in upright position, for example.

Fig. 10



Insulation test

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer.

Flashovers must not occur during the testing procedure!

Make the insulation test as follows:

Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester. Connect the other terminal of the insulation tester to ground on the FM-aerial socket.

NOTE!

To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 2.5kV is obtained. Maintain that voltage for one second, then slowly turn it down again.

During the testing the current must not exceed 10 mA.

Isolationsprüfung

Nach einer Zerlegung ist bei jedem Gerät eine Isolationsprüfung vorzunehmen. Die Prüfung wird dann ausgeführt, wenn das Gerät wieder vollständig zusammengebaut und zur Auslieferung an den Kunden bereit ist.

Überschläge dürfen während der Prüfung nicht vorkommen!

Die Isolationsprüfung in folgender Weise durchführen:

Die beiden Steckerstifte am Netzstecker kurzschließen und an eine der Anschlußklemmen des Isolationsprüfers anschließen. Die andere Anschlussklemme des Isolationsprüfers an die Masse des FM-Antennenanschlusses anschließen.

ACHTUNG!

Um Beschädigungen des Gerätes zu vermeiden, ist es wichtig, daß beide Anschlußklemmen des Isolationsprüfers einen sehr guten Kontakt haben.

Die Spannungsregelung des Isolationsprüfers langsam nach oben drehen, bis eine Spannung von 2,5kV erreicht wird. Diese Einstellung 1 Sekund aufrechter-halten, und anschließend die Spannung wieder langsam nach unten drehen.

Der Strom darf während der Prüfung nicht 10 mA übersteigen.