

# **Serviceanweisung**

## **Service manual**

**CD 1120 RC**

**CD 1130 RC**

**CD 1135 RC**

**CD 1150 RC**

**CD 1180 RC**

**Diese Service-Unterlage wurde ausschließlich für  
autorisiertes Fachpersonal erstellt.  
Für Eingriffe durch nicht autorisierte Personen  
übernimmt der Hersteller keine Haftung.**

**This service manual was only made for  
authorized specialists.  
For interventions by not authorized persons  
producer doesn't take possession of liability. ✓**

# WICHTIGER HINWEIS/IMPORTANT NOTE

Der integrierte CD-Spieler arbeitet mit unsichtbarem Laserlicht.

Nicht in den Strahl blicken und sich nicht dem Strahl aussetzen!

Vorsicht, Laserstrahlung im Inneren des Gerätes!

Zur Vermeidung von Strahlungsschäden darf das Gehäuse nur von qualifiziertem Fachpersonal geöffnet werden.

Informationsetikett auf der Geräterückseite (siehe Bild).

The integrated CD-Player works with invisible laser-light.

Do not look into this beam and don't abandon yourself to radiation.

Attention, laser-radiation also inside of the unit!

To avoid damages of radiation unit should be opened only by qualified service personnel.

Information label on the rear of unit (see picture).

## VAROITUS!

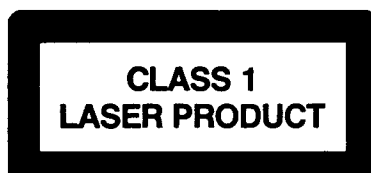
Suojakotelo ei saa avata. Laite sisältää laseriodin, joda lähettää näkymättömiä silmille vaarallista lasersäteilyä.

## VARO!

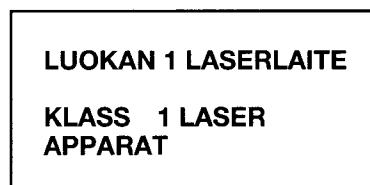
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.



Laser  $\lambda = 780 \text{ nm}$   
 $P_{\text{max}} = 0,5 \text{ mW}$

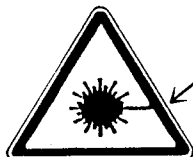
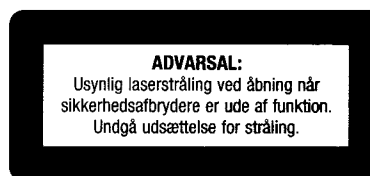
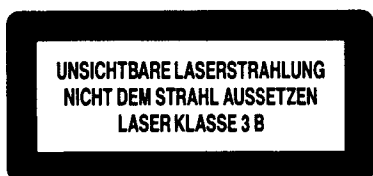


Laser  $\lambda = 780 \text{ nm}$   
 $P_{\text{max}} = 0,5 \text{ mW}$



Warnetikett in dem Plattenfach (siehe Bild).

Warning label in record-drawer (see picture).



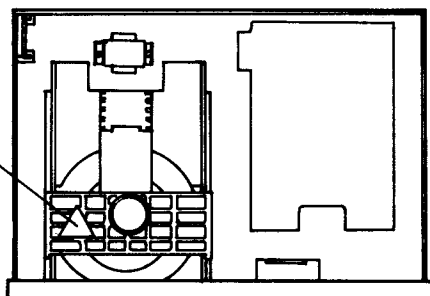
Austrittsöffnung für Laserstrahlung  
Discharge orifice for Laser radiation

## Hinweis für Original-Etikett:

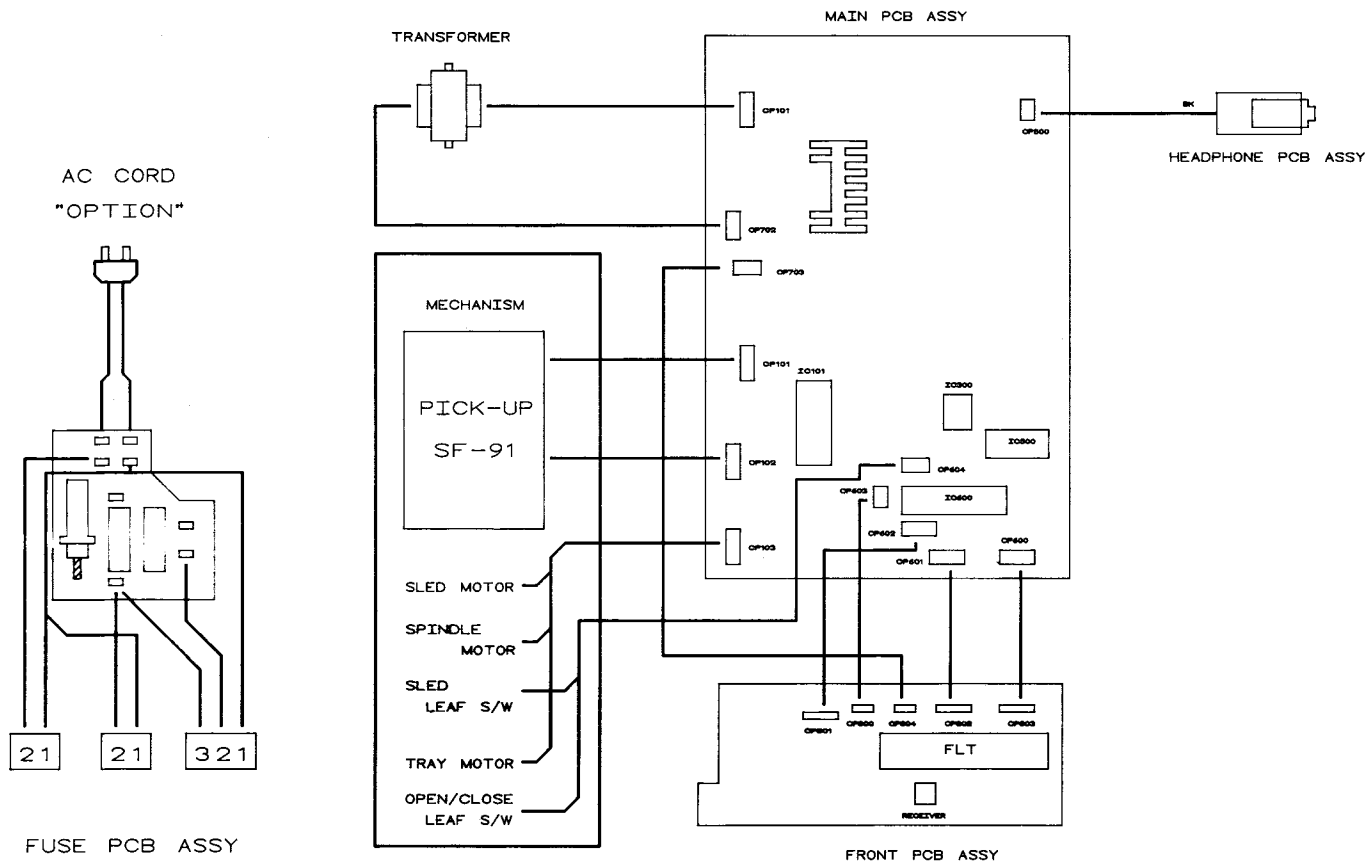
Schrift und Umrandung schwarz, Untergrund gelb.

## Indication for original label:

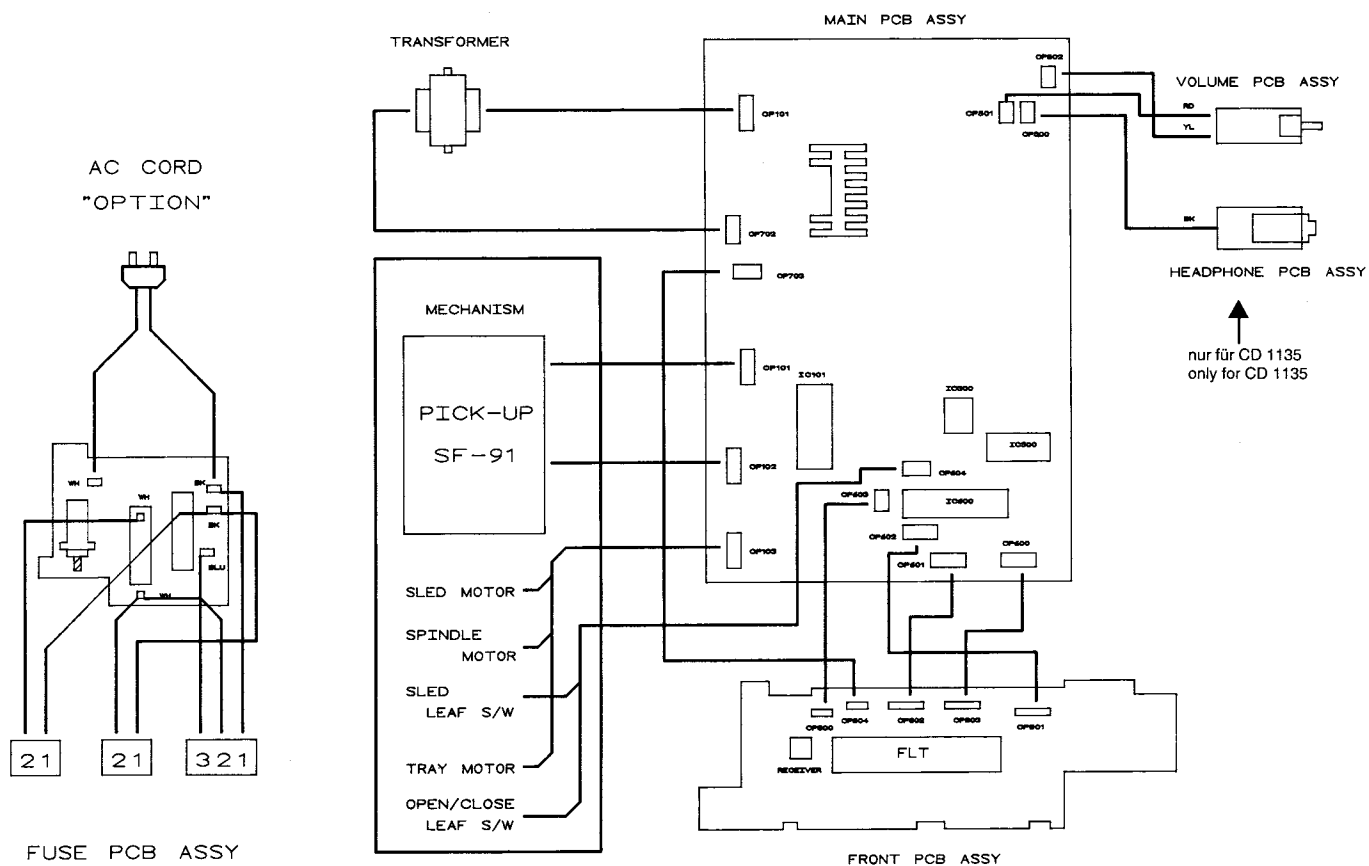
Letters and surrounding black, background yellow.



## Wiring diagram

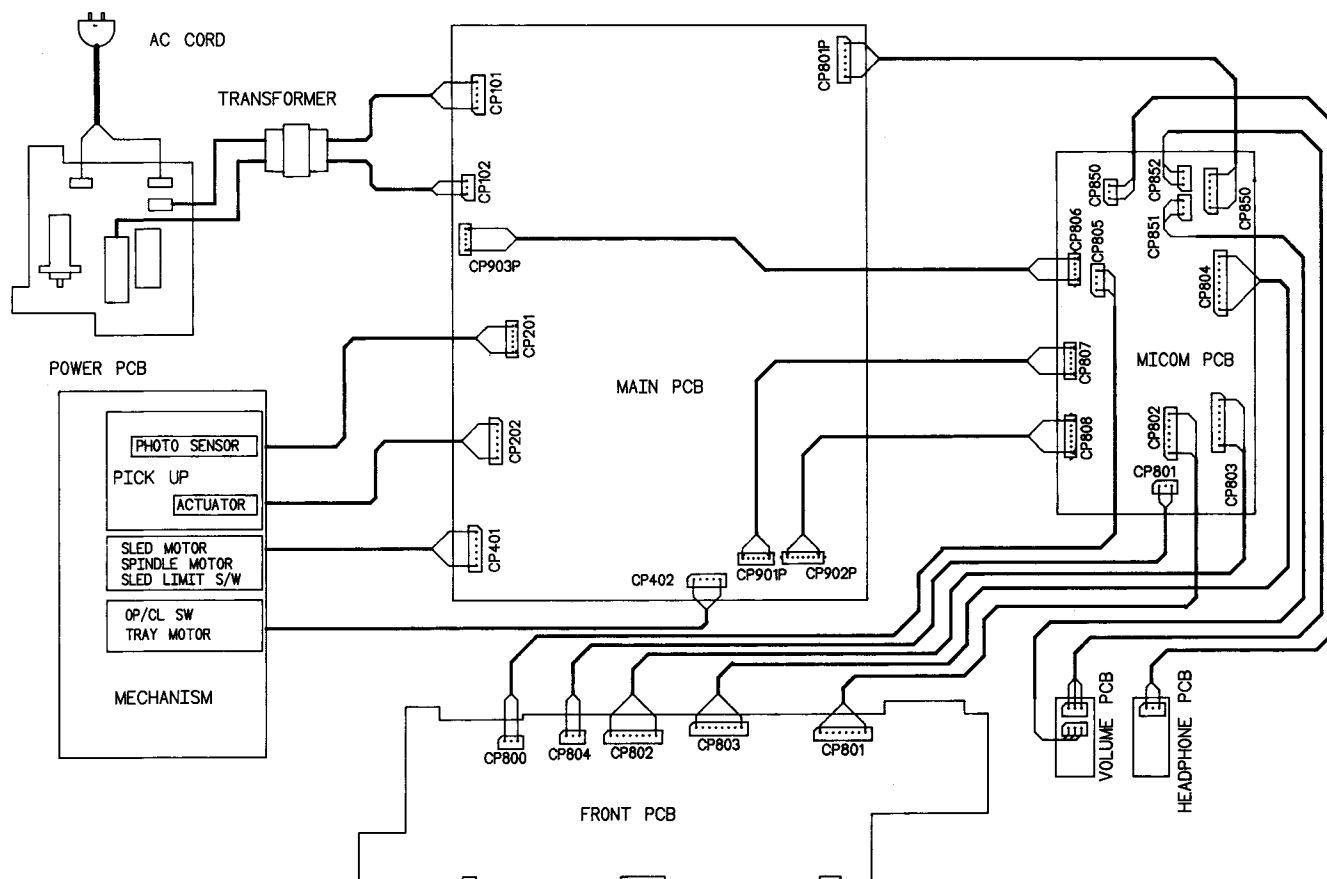


## Wiring diagram



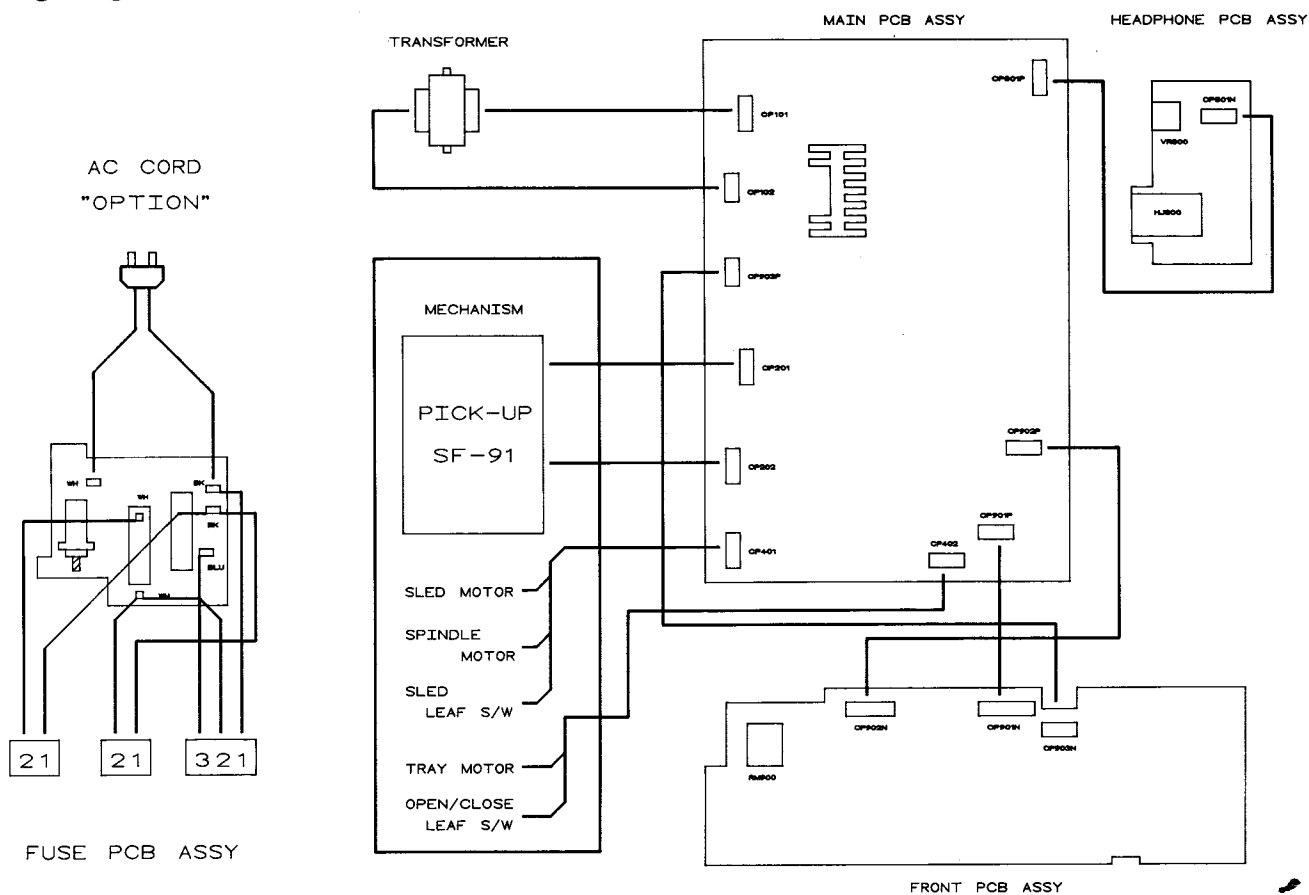
## Verdrahtungsplan CD 1150

### Wiring diagram



## Verdrahtungsplan CD 1180

### Wiring diagram



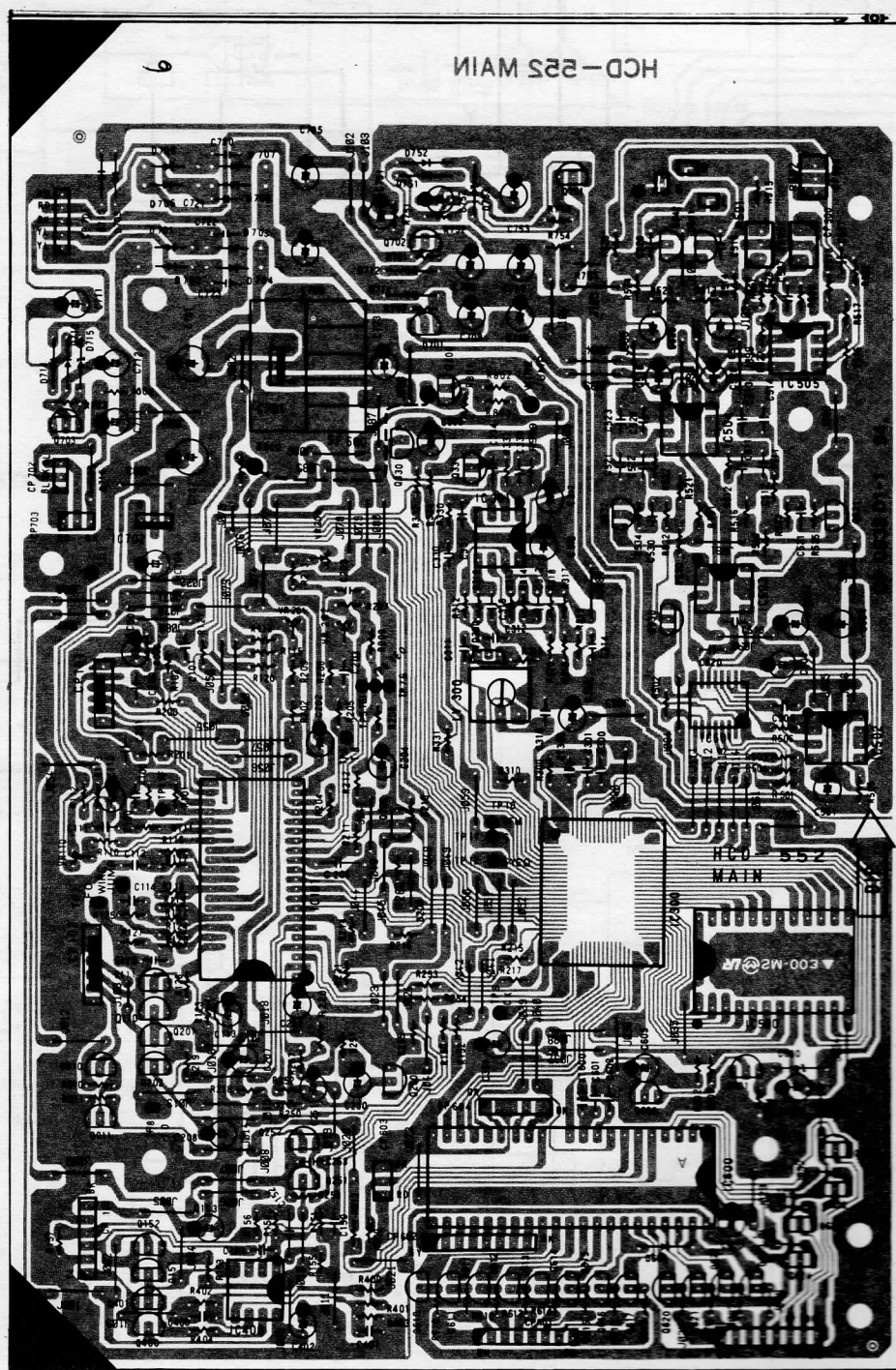
# Ersatzteilliste elektrisch CD 1020, CD 1130, CD 1135

## Spare parts list electrical

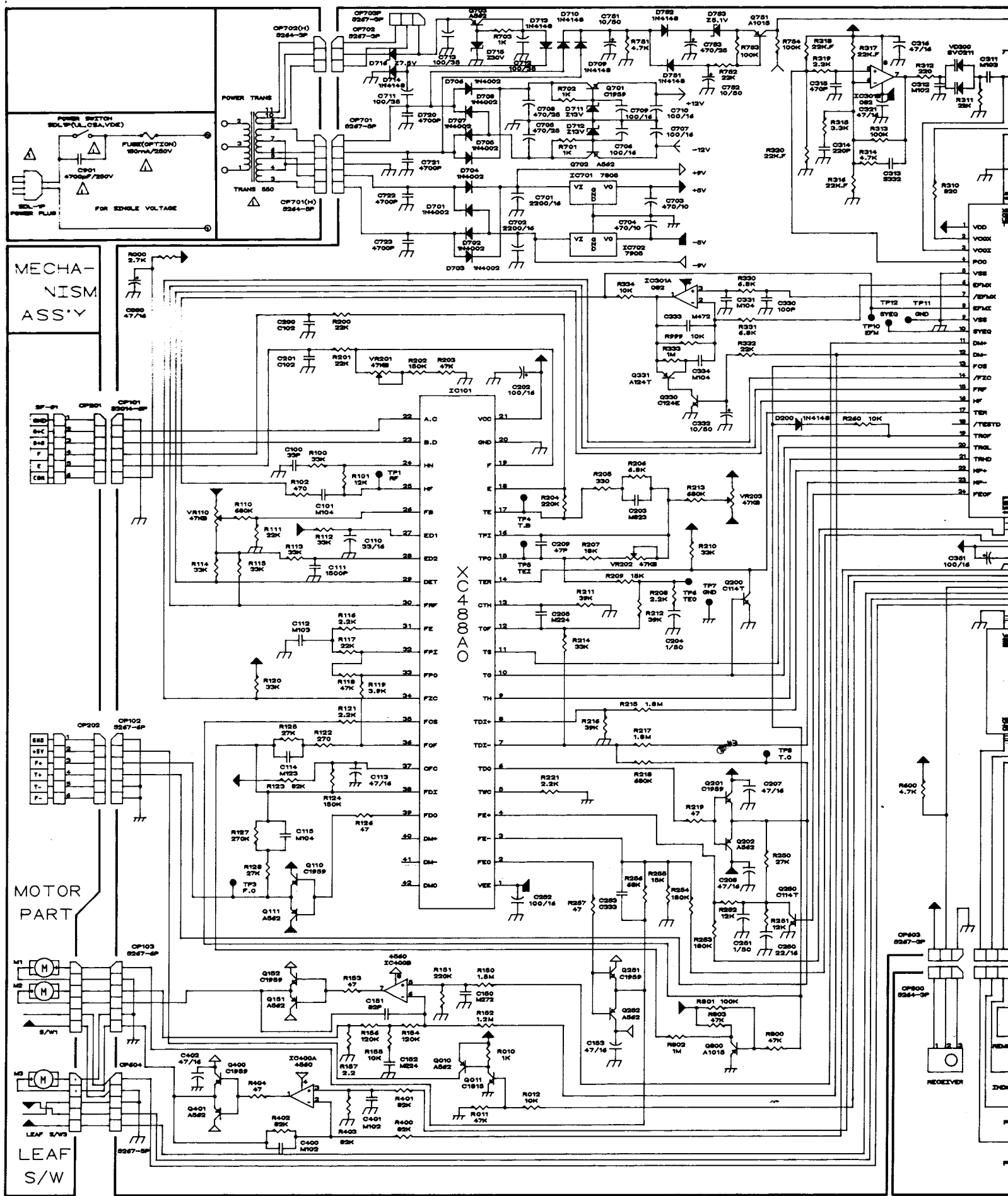
| Best.-Nr.<br>Part No. | Bezeichnung                    | Description             | Pos.      | Preisgruppe<br>Price-key |
|-----------------------|--------------------------------|-------------------------|-----------|--------------------------|
| 1 292 076             | Hauptplatine CD 1135           | Main PCB ass'y          | 11        | F 5                      |
| 1 292 077             | Hauptplatine CD 1120, CD 1130  | Main PCB ass'y          | 39,11     | F 2                      |
| 1 286 606             | IC XC 488 A0                   | IC XC 488 A0            | IC 101    | B 4                      |
| 1 283 561             | IC YM 3805                     | IC YM 3805              | IC 300    | D 2                      |
| 1 284 293             | IC NJM 082(B) D                | IC NJM 082(B) D         | IC 301    | A 1                      |
| 1 284 297             | IC NJM 4560 D                  | IC NJM 4560 D           | IC 400    | A 1                      |
| 1 284 295             | IC HY 6116P15                  | IC HY 6116P15           | IC 500    | B 5                      |
| 1 286 605             | IC YM 3015                     | IC YM 3015              | IC 501    | B 2                      |
| 1 284 297             | IC NJM 4560 D                  | IC NJM 4560 D           | IC 502    | A 1                      |
| 1 284 292             | IC KIA 7555                    | IC KIA 7555             | IC 503    | A 3                      |
| 1 284 292             | IC KIA 7555                    | IC KIA 7555             | IC 504    | A 3                      |
| 1 284 297             | IC NJM 4560 D                  | IC NJM 4560 D           | IC 505    | A 7                      |
| 1 292 084             | IC MSM 6408- 050RS             | IC MSM 6408-050RS       | IC 600    | C 9                      |
| 1 284 290             | IC GL 7805                     | IC GL 7805              | IC 701    | A 2                      |
| 1 292 078             | IC GL 7905                     | IC GL 7905              | IC 702    | A 4                      |
| 1 284 298             | Transistor KTA 1270            | Transistor KTA 1270     | Q 010     | A 0                      |
| 1 282 076             | Transistor KTC 3198            | Transistor KTC 3198     | Q 011     | A 0                      |
| 1 283 331             | Transistor KTC 3202            | Transistor KTC 3202     | Q 110     | A 0                      |
| 1 284 298             | Transistor KTA 1270            | Transistor KTA 1270     | Q 111     | A 0                      |
| 1 283 700             | Transistor DTC 114 TSTP        | Transistor DTC 114 TSTP | Q 200     | A 3                      |
| 1 283 331             | Transistor KTC 3202            | Transistor KTC 3202     | Q 201     | A 0                      |
| 1 284 298             | Transistor KTA 1270            | Transistor KTA 1270     | Q 202     | A 0                      |
| 1 283 331             | Transistor KTC 3202            | Transistor KTC 3202     | Q 251     | A 0                      |
| 0 037 408             | Transistor DTC 124 ESTP        | Transistor DTC 124 ESTP | Q 330     | A 0                      |
| 1 292 124             | Transistor DTA 124 TSTP        | Transistor DTA 124 TSTP | Q 331     | A 0                      |
| 1 283 331             | Transistor KTC 3202            | Transistor KTC 3202     | Q 400     | A 0                      |
| 1 284 298             | Transistor KTA 1270            | Transistor KTA 1270     | Q 401     | A 0                      |
| 1 287 666             | Transistor DTA 144 WSTP        | Transistor DTA 144 WSTP | Q 530     | A 0                      |
| 1 286 577             | Transistor DTC 143TSTP         | Transistor DTC 143TSTP  | Q 531/2   | A 0                      |
| 1 286 577             | Transistor DTC 143TSTP         | Transistor DTC 143TSTP  | Q 541/2   | A 0                      |
| 1 282 076             | Transistor KTC 3198            | Transistor KTC 3198     | Q 600     | A 0                      |
| 1 283 700             | Transistor DTC 114 TSTP        | Transistor DTC 114 TSTP | Q 601     | A 3                      |
| 1 292 088             | Transistor DTC 123 J           | Transistor DTC 123 J    | Q 610-/7  | A 0                      |
| 1 292 089             | Transistor DTA 123 J           | Transistor DTA 123 J    | Q 618-/27 | A 0                      |
| 1 283 331             | Transistor KTC 3202            | Transistor KTC 3202     | Q 701     | A 0                      |
| 1 284 298             | Transistor KTA 1270            | Transistor KTA 1270     | Q 702/3   | A 0                      |
| 1 282 077             | Transistor KTA 1266            | Transistor KTA 1266     | Q 751     | A 0                      |
| 1 292 108             | Zenerdiode 3,6V 1/2 W          | D-Zener 3,6V            | D 600     | A 0                      |
| 1 236 628             | Zenerdiode 30V 1/2 W           | D-Zener 30V             | D 715     | A 0                      |
| 1 227 360             | Zenerdiode 7,5V 1/2 W          | D-Zener 7,5V            | D 716     | A 0                      |
| 1 272 682             | Zenerdiode 13V 1/2 W           | D-Zener 13V             | D 711/2   | A 0                      |
| 1 238 242             | Zenerdiode 5,1V 1/2W           | D-Zener 5,1V            | D 753     | A 0                      |
| 1 223 906             | Diode 1N 4148                  | D-Switching 1N 4148     | Div.      | A 0                      |
| 1 226 501             | Gleichrichterdiode1N 4002      | D-Rectifier 1N 4002     | D701-/8   | A 0                      |
| 1 292 090             | Trimmpoti 47 kOhm              | VR,Semifixed            | VR 110    | A 5                      |
| 1 292 090             | Trimmpoti 47 kOhm              | VR,Semifixed            | VR 201-/3 | A 5                      |
| 1 281 500             | Quarz 8,6436 MHz               | X-Tal                   | XT 300    | C 2                      |
| 1 284 305             | Chinch-Buchse                  | Jack RCA                |           | A 0                      |
| 1 292 093             | Bedienteilplatine CD 1120      | Front PCB ass'y         | 20        | D 5                      |
| 1 292 094             | Bedienteilplatine CD 1130,1135 | Front PCB ass'y         | 4         | D 4                      |
| 1 292 089             | Transistor DTA 123 J           | Transistor DTA 123 J    | Q 801-/8  | A 0                      |
| 1 292 097             | Taster                         | S/W Tact                |           | A 0                      |
| 1 284 308             | IR-Empfänger                   | Remote receiver         |           | B 9                      |

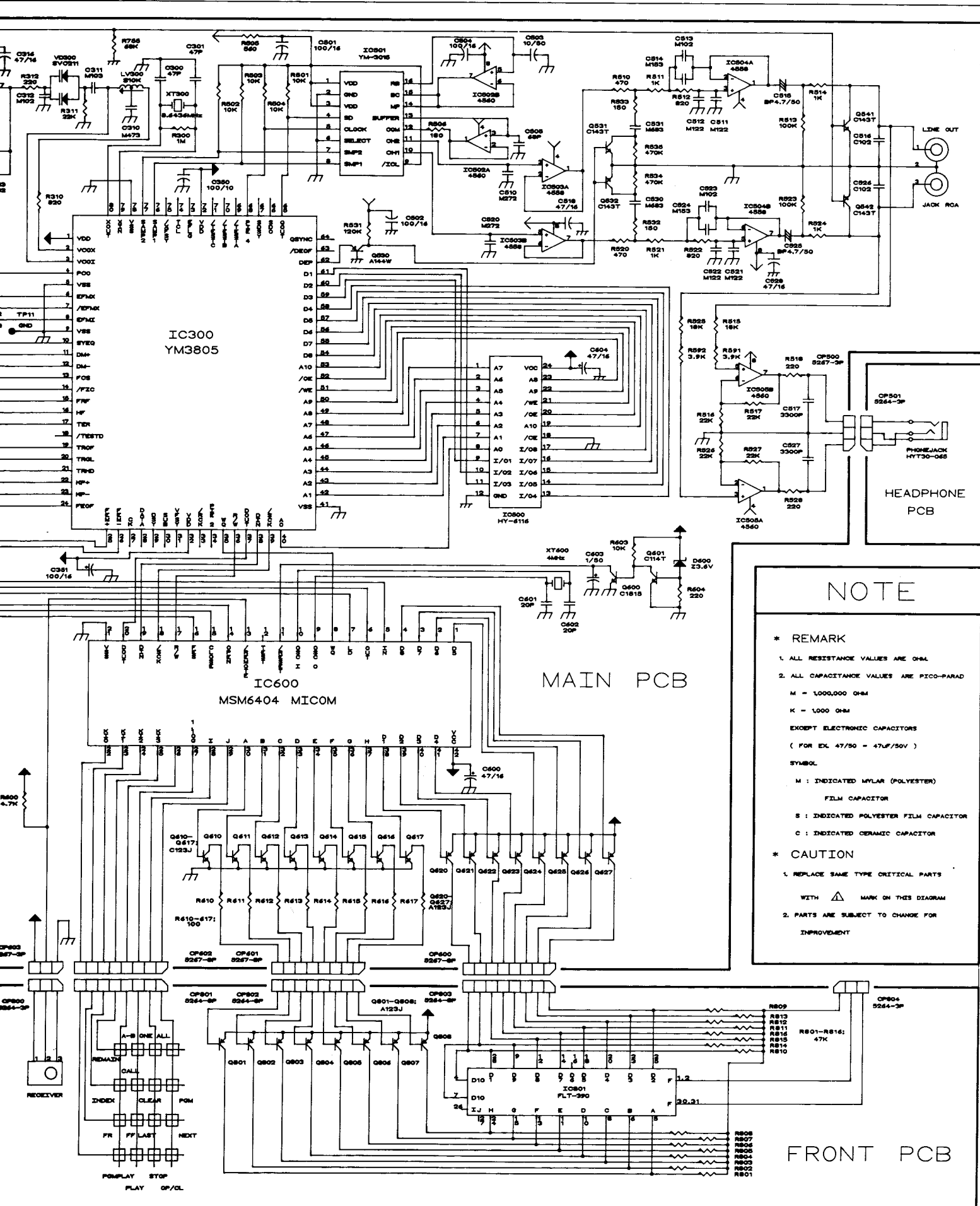
| Best.-Nr.<br>Part No. | Bezeichnung                              | Description          | Pos. | Preisgruppe<br>Price-key |
|-----------------------|--|----------------------|------|--------------------------|
| 1 284 306             | Display                                  | FLT                  |      | E 1                      |
| 1 292 095             | Kopfhörerplatine CD 1120                 | Headphone ass'y      | 30   | B 5                      |
| 1 292 096             | Kopfhörerplatine CD 1130                 | Headphone ass'y      | 19   | B 6                      |
| 1 292 100             | Kopfhörer- u. Lautstärkeplatine, CD 1135 | Phone + Volume ass'y | 19   | B 8                      |
| 1 292 107             | Netzschalterplatine CD 1120              | Fuse PCB ass'y       | 37   | C 5                      |
| 1 292 103             | Netzschalterplatine CD 1130, 1135        | Fuse PCB ass'y       | 9    | D 0                      |
| 1 292 104             | Netzschalter                             | S/W Push             |      | B 1                      |
| 1 292 105             | Netztrafo                                | Power, Trans         | 38   | C 6                      |

## Platinendarstellung Grundplatine CD 1120, CD 1130, CD 1135 Main P.C.B.



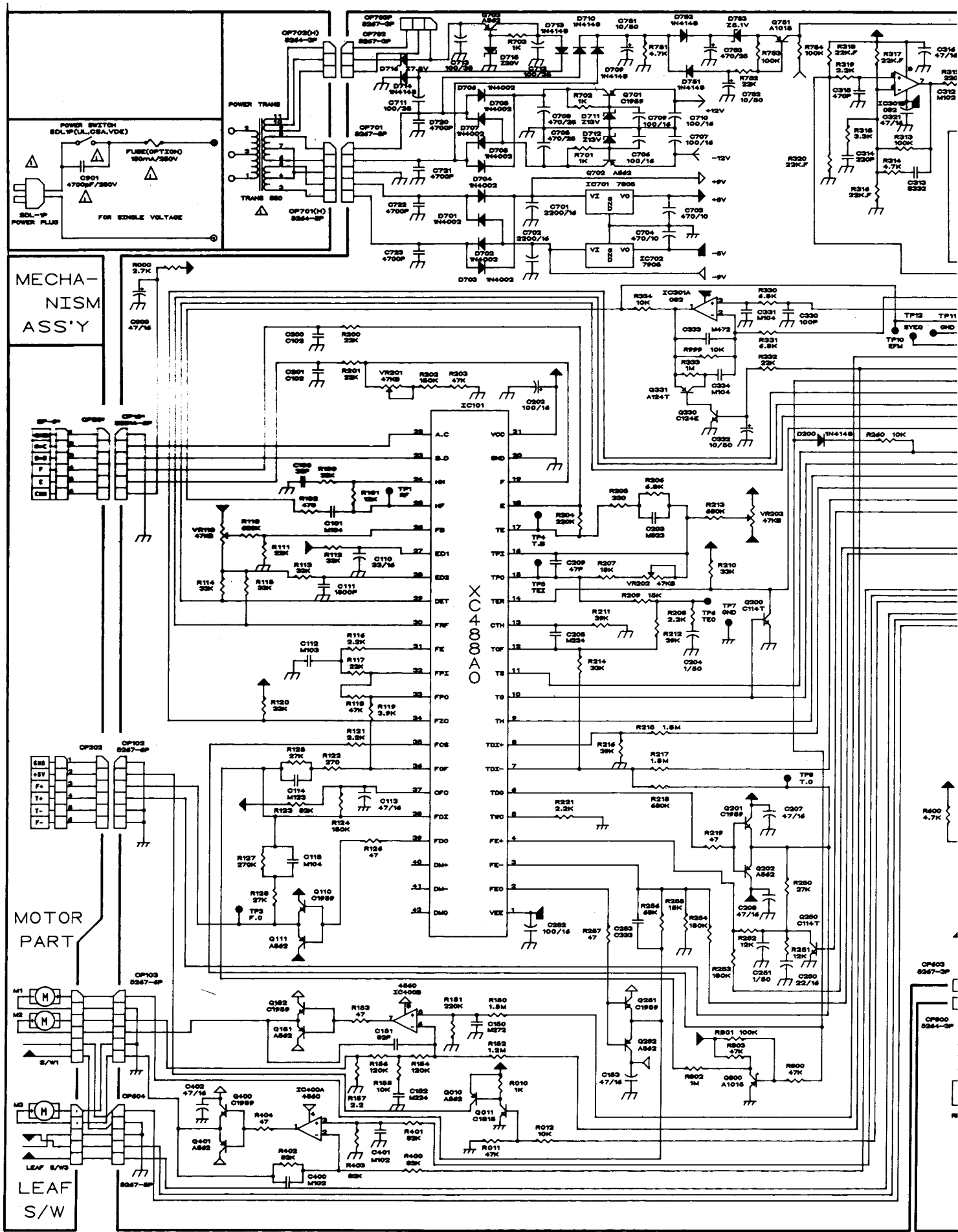
### Schematic diagram

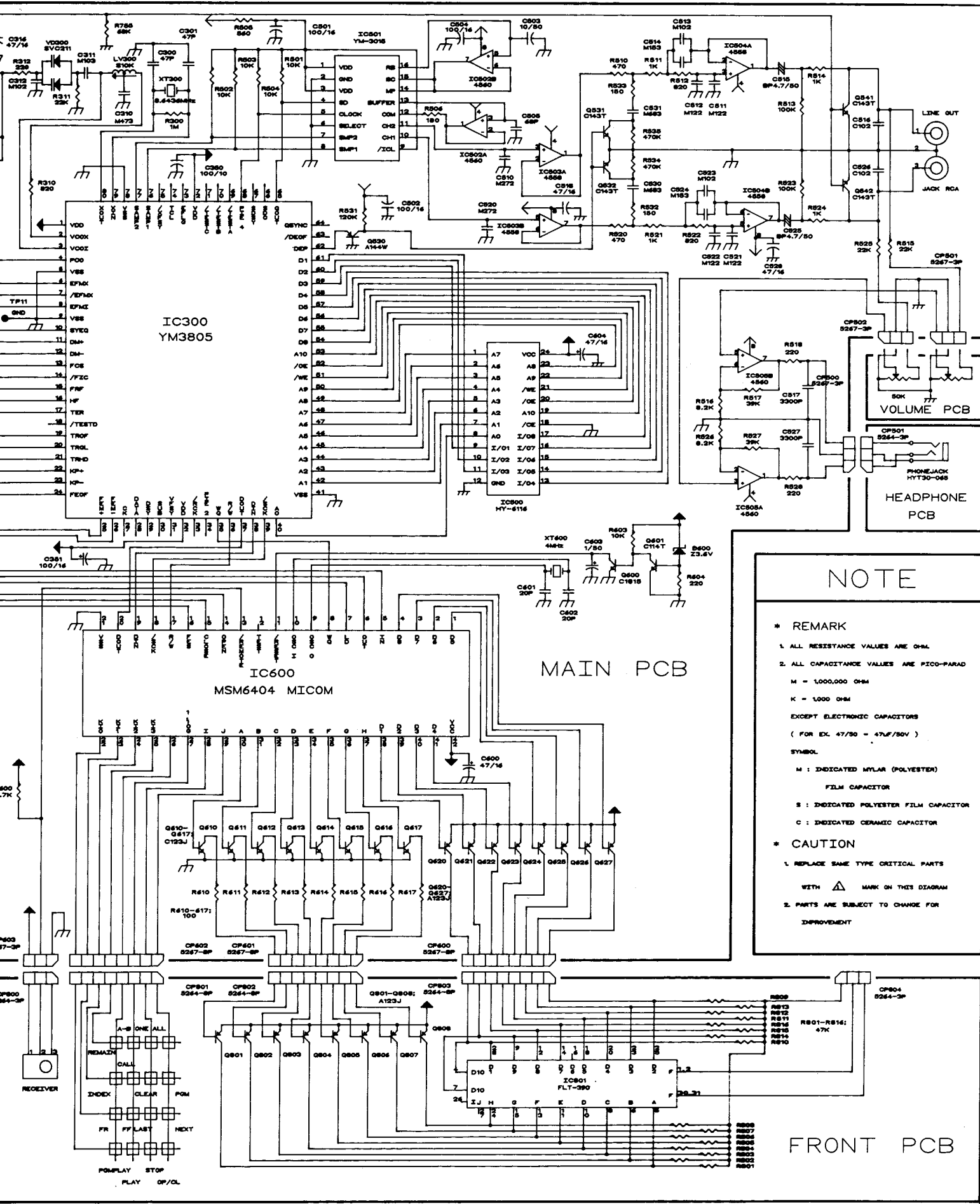




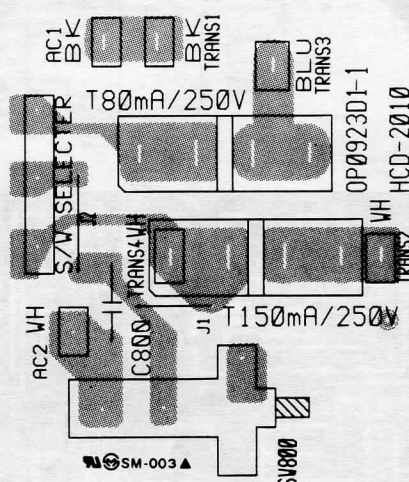
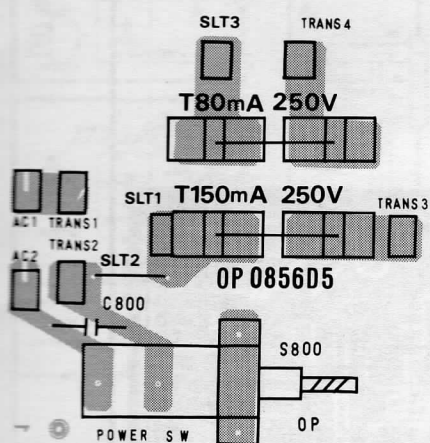


### Schematic diagram

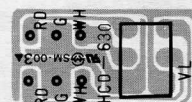




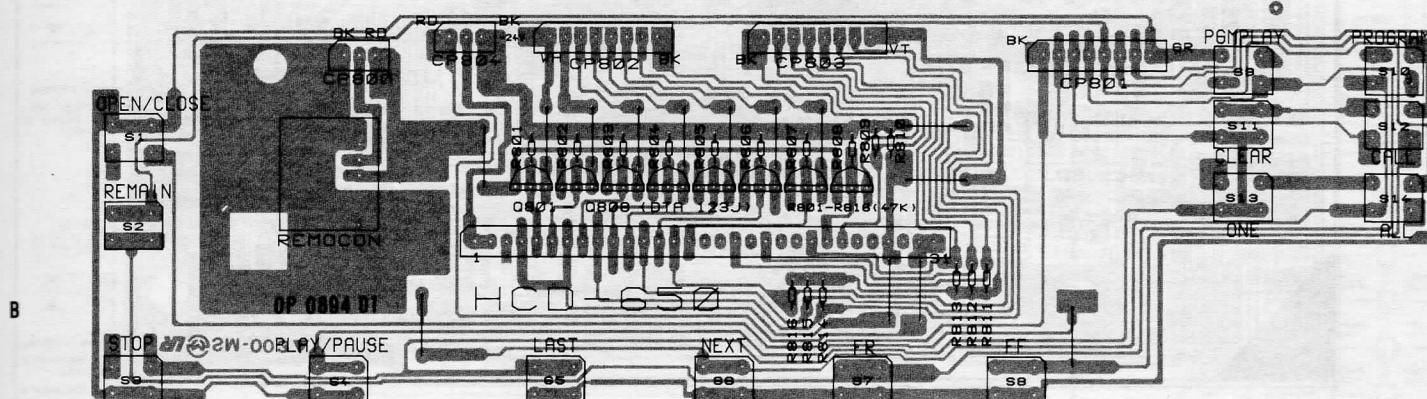
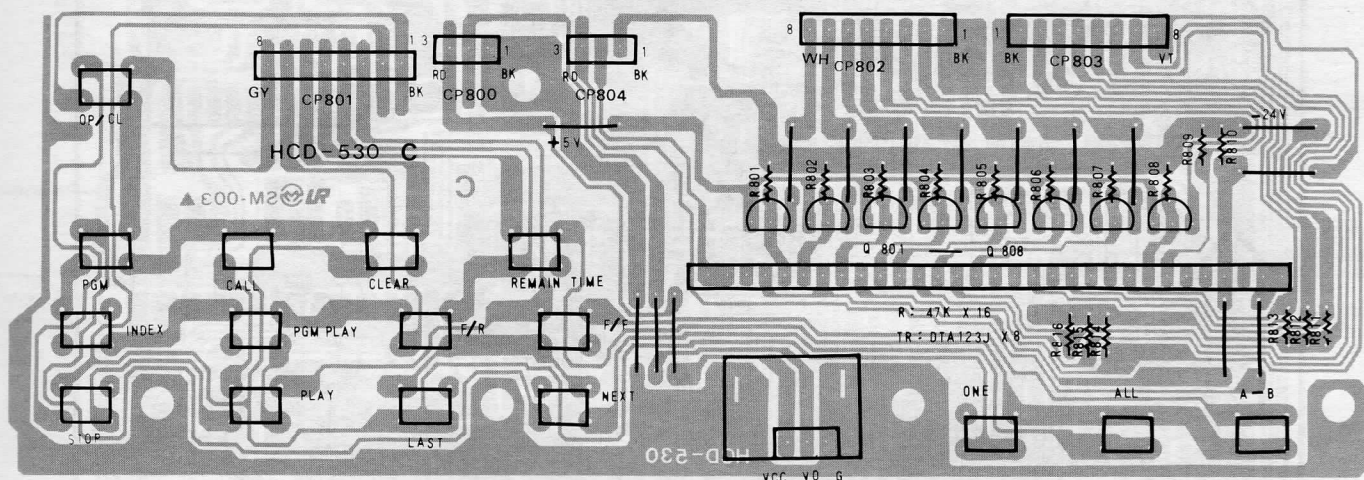
**Netzteilplatine CD 1130, CD 1135, CD 1150, CD 1180**  
**Fuse P.C.B.**



**Kopfhörerplatine CD 1130, CD 1135**  
**Headphone P.C.B.**



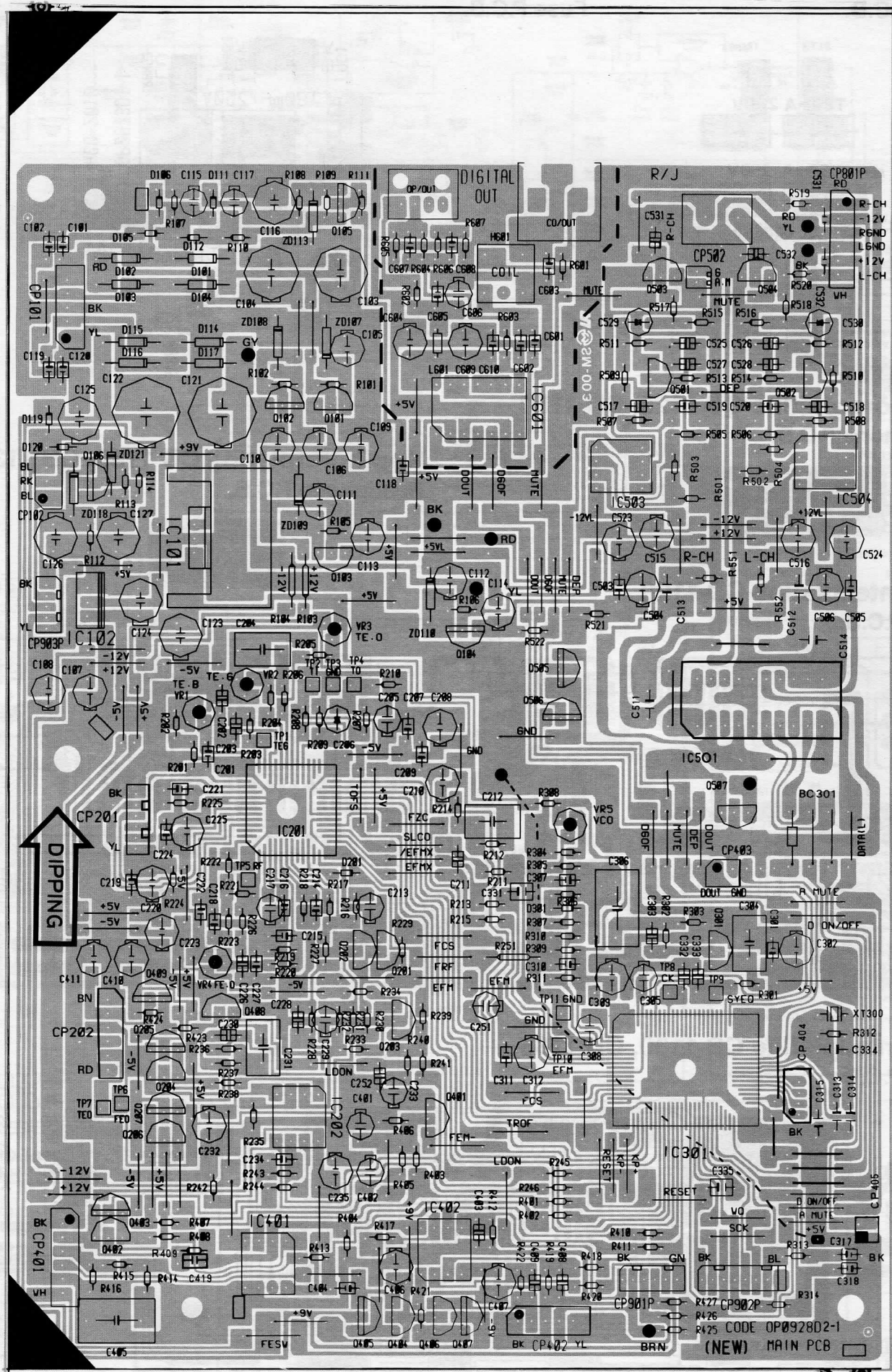
**Bedienteilplatine CD 1130, CD 1135**  
**Front P.C.B.**





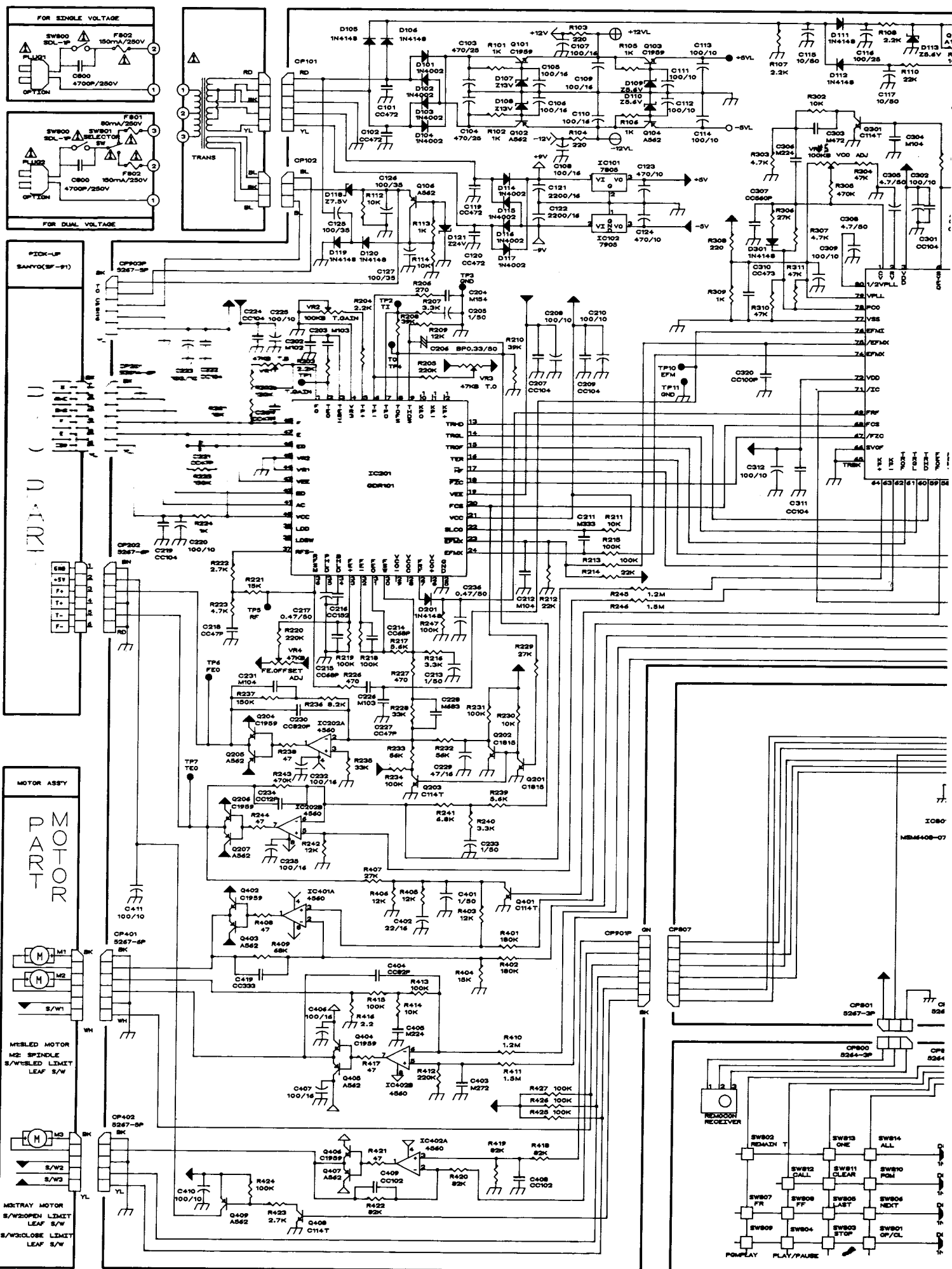
# Platinendarstellung Grundplatine CD 1150

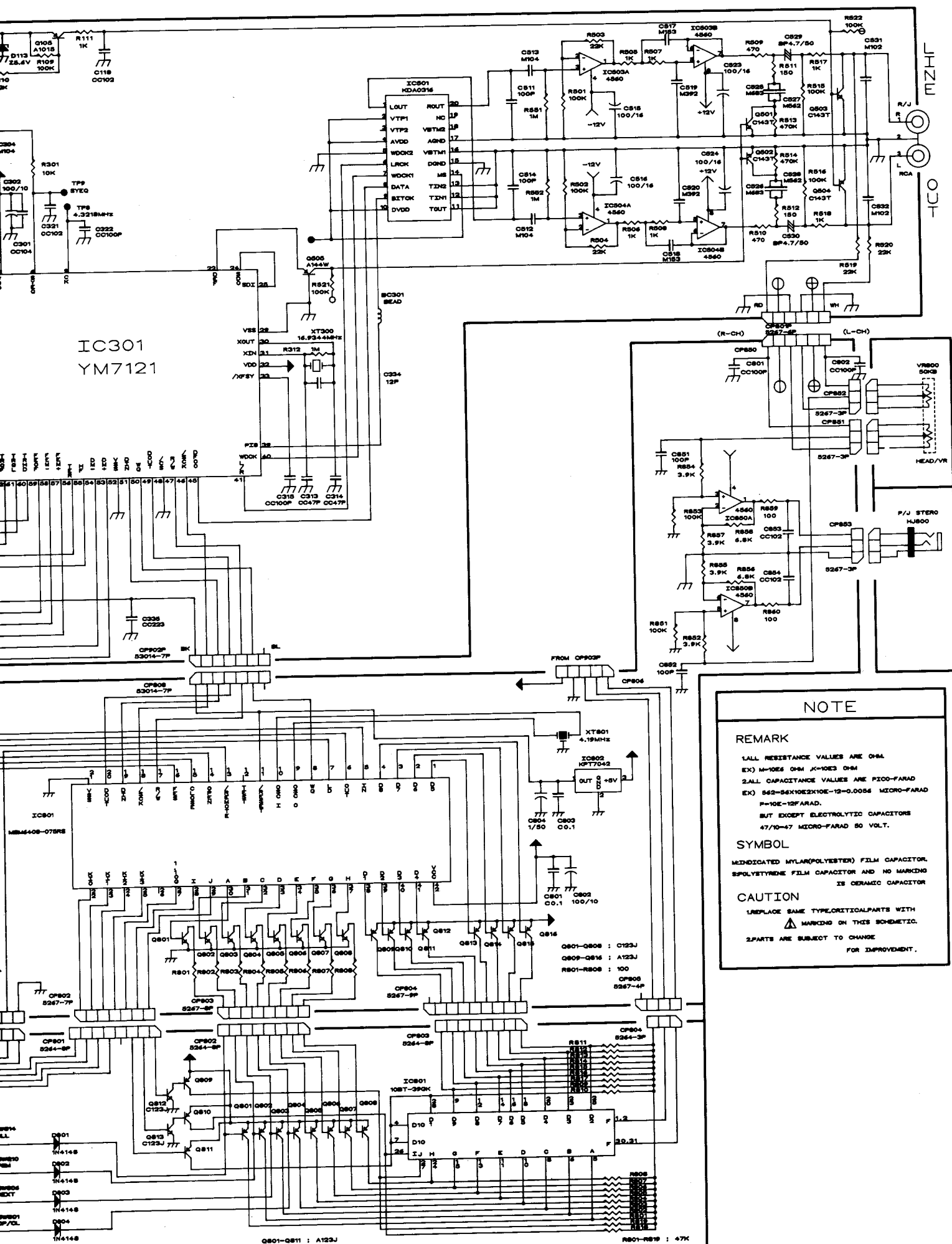
## Main P.C.B.



## Schaltbild CD 1150

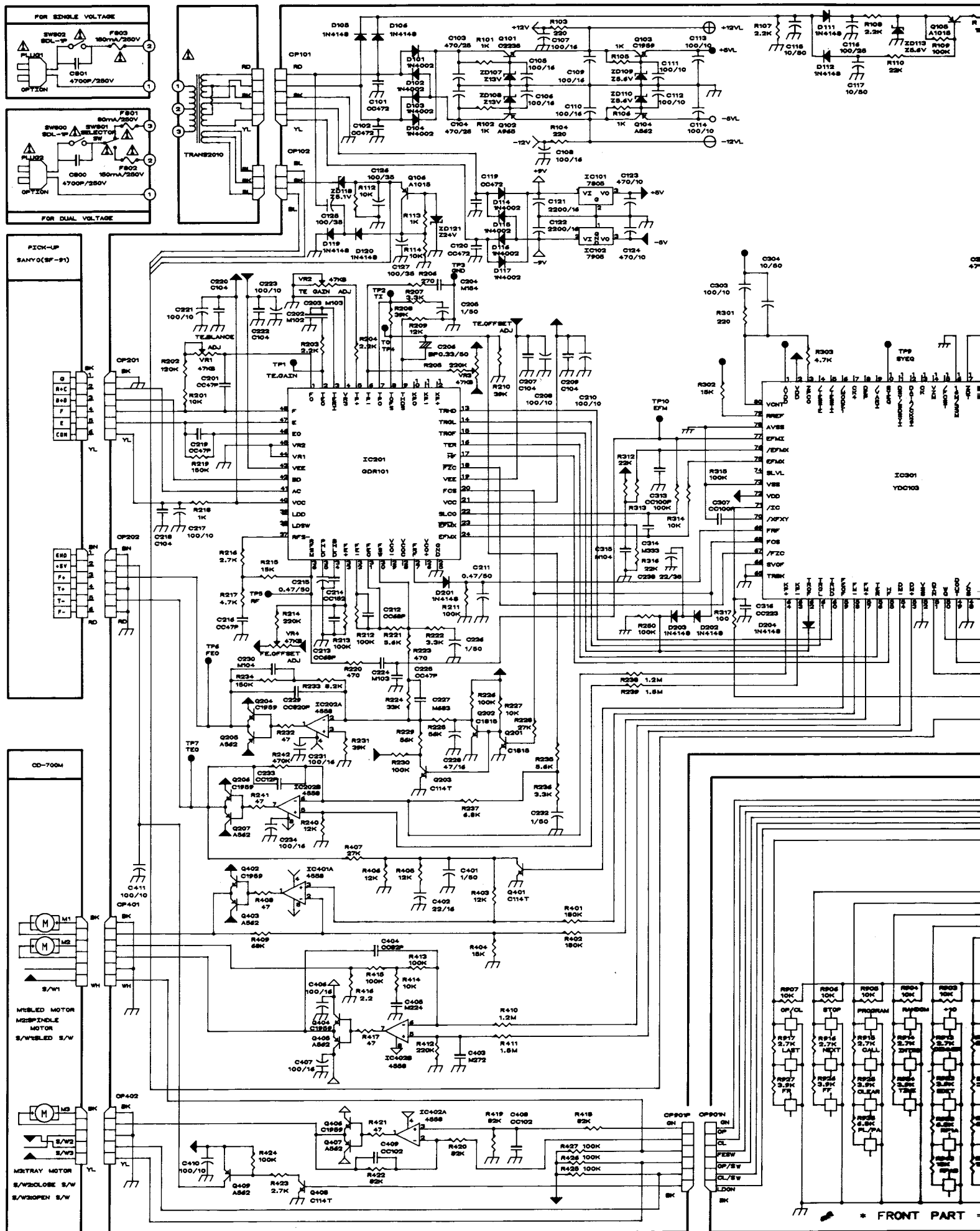
### Schematic diagram

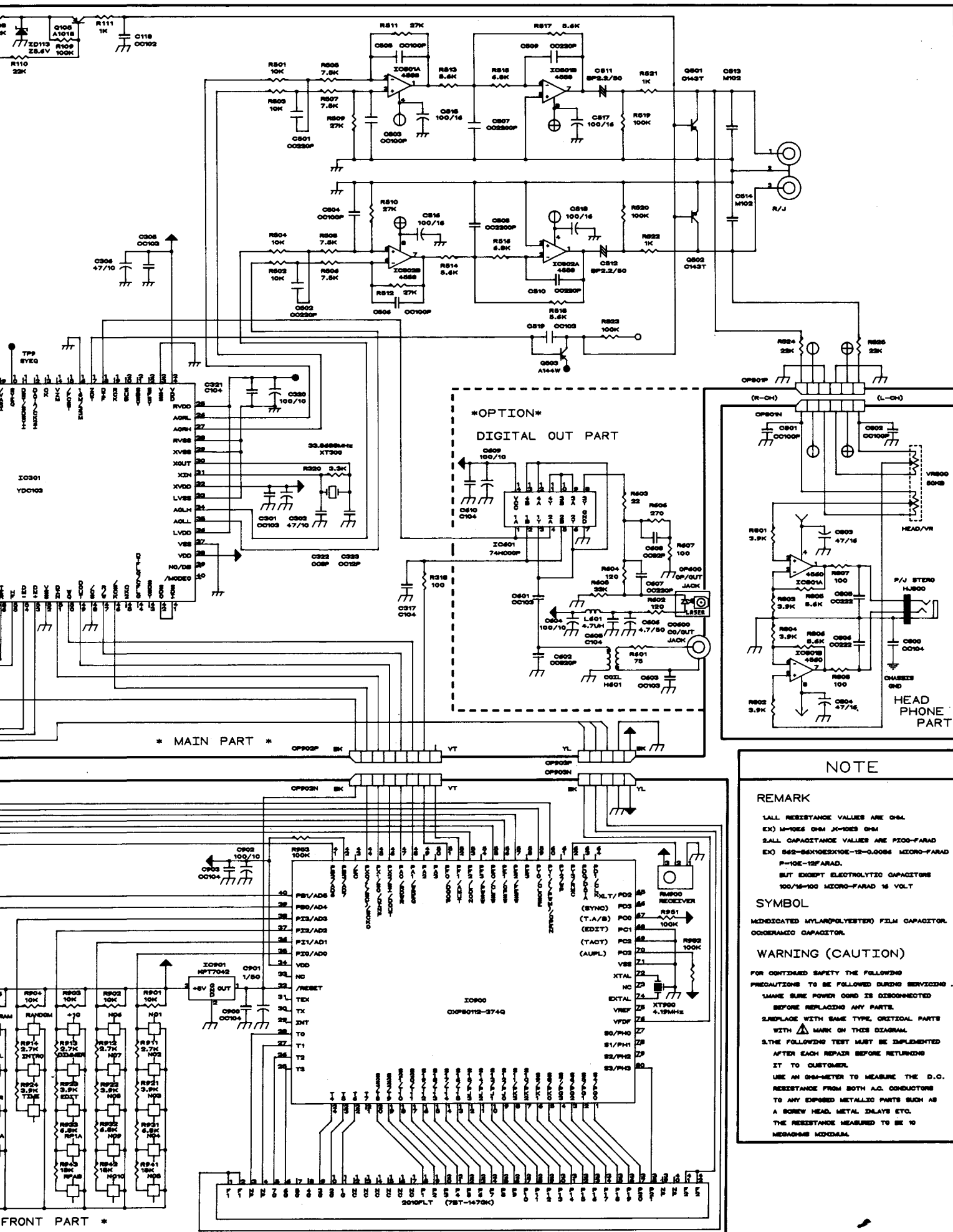




# Schaltbild CD 1180

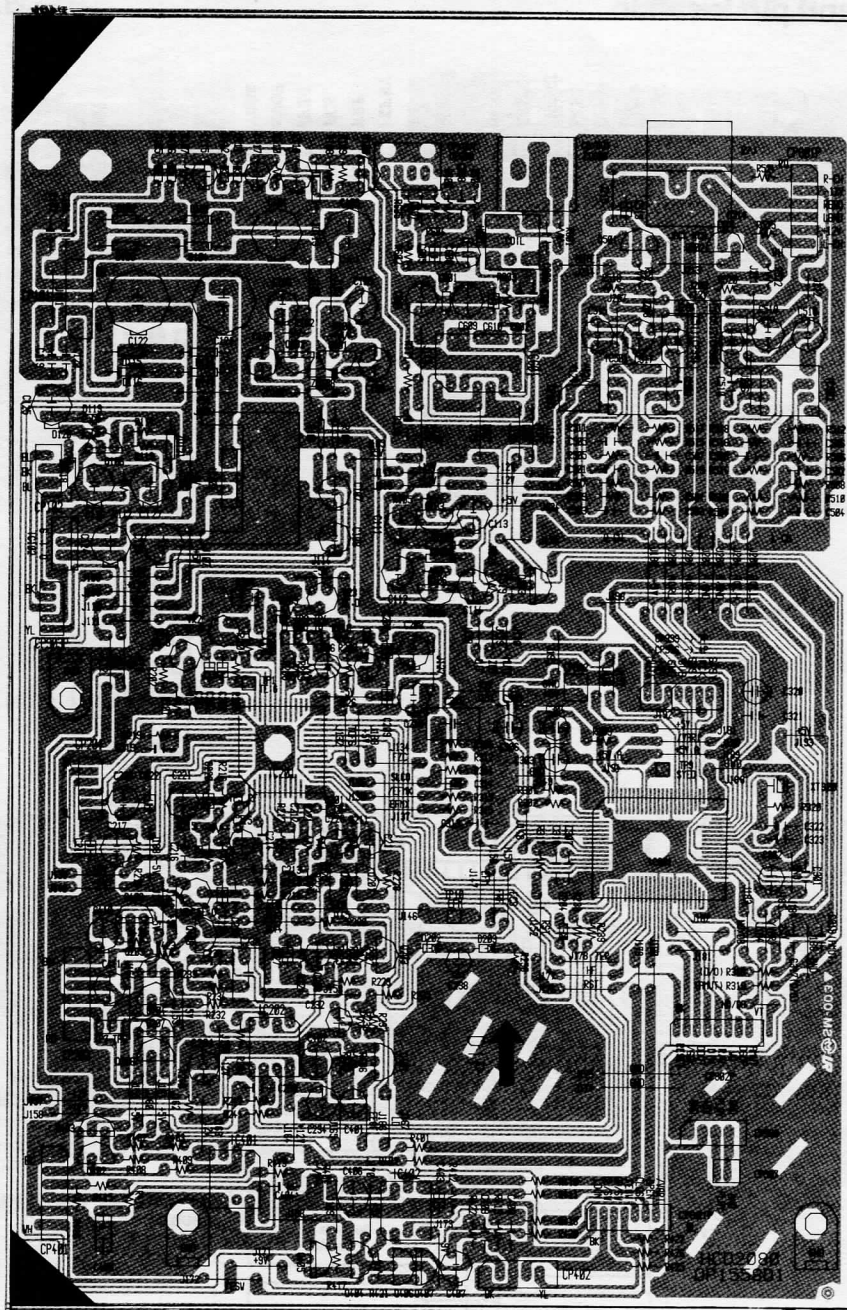
## Schematic diagram







# Platinendarstellung Grundplatine CD 1180 Main P.C.B.



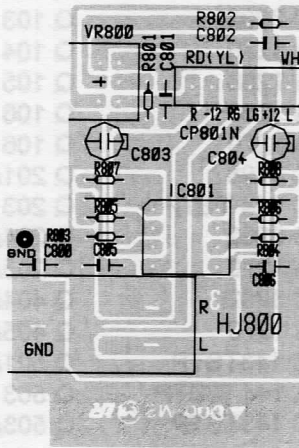
## Ersatzteilliste elektrisch CD 1150 und CD 1180 Spare parts list electrical

| Best.-Nr.<br>Part No. | Bezeichnung                 | Description        | Pos.     | Preisgruppe<br>Price-key |
|-----------------------|-----------------------------|--------------------|----------|--------------------------|
| 1 292 074             | Hauptplatine CD 1150        | Main PCB ass'y     | 11       | E 7                      |
| 1 292 075             | Hauptplatine CD 1180        | Main PCB ass'y     | 16       | E 8                      |
| 1 284 290             | IC GL 7805                  | IC GL 7805         | IC 101   | A 2                      |
| 1 292 078             | IC GL 7905                  | IC GL 7905         | IC 102   | A7                       |
| 1 292 079             | IC GDR 101                  | IC GDR 101         | IC 201   | B 9                      |
| 1 292 080             | IC BA 4558 D                | IC BA 4558 D       | IC 202   | A 3                      |
| 1 292 081             | IC YM 7121, CD 1150         | IC YM 7121         | IC 301   | D 8                      |
| 1 292 082             | IC YDC 103, CD 1180         | IC YDC 103         | IC 301   | D9                       |
| 1 291 277             | IC KDA 0316 LN, CD 1150     | IC KDA 0316 LN     | IC 501   | B 5                      |
| 1 292 080             | IC BA 4558 D, CD 1180       | IC BA 4558 D       | IC 501/2 | A 3                      |
| 1 292 080             | IC BA 4558 D, CD 1150       | IC BA 4558 D       | IC 503/4 | A 3                      |
| 1 292 083             | IC GD 74HC00P, CD 1180      | IC GD 74HC00P      | IC 601   | A4                       |
| 1 292 084             | IC MSM 6408-075 RS, CD 1150 | IC MSM 6408-075 RS | IC 801   | C 6                      |
| 1 292 085             | IC CXP 50112                | IC CXP 50112       | IC 900   | D 7                      |

| Best.-Nr.<br>Part No. | Bezeichnung                              | Description             | Pos.       | Preisgruppe<br>Price-key |
|-----------------------|--|-------------------------|------------|--------------------------|
| 1 292 086             | Transistor KTC 1027                      | Transistor KTC 1027     | Q 101      | A 0                      |
| 1 292 087             | Transistor KTA 1023                      | Transistor KTA 1023     | Q 102      | A 0                      |
| 1 283 331             | Transistor KTC 3202                      | Transistor KTC 3202     | Q 103      | A 0                      |
| 1 284 298             | Transistor KTA 1270                      | Transistor KTA 1270     | Q 104      | A 0                      |
| 1 282 077             | Transistor KTA 1266                      | Transistor KTA 1266     | Q 105      | A 0                      |
| 1 282 077             | Transistor KTA 1266, CD 1180             | Transistor KTA 1266     | Q 106      | A 0                      |
| 1 284 298             | Transistor KTA 1270, CD 1150             | Transistor KTA 1270     | Q 106      | A 0                      |
| 1 282 076             | Transistor KTC 3198                      | Transistor KTC 3198     | Q 201/ 2   | A 0                      |
| 1 283 700             | Transistor DTC 114 TSTP                  | Transistor DTC 114 TSTP | Q 203      | A 3                      |
| 1 283 331             | Transistor KTC 3202                      | Transistor KTC 3202     | Q 204/6    | A 0                      |
| 1 284 298             | Transistor KTA 1270                      | Transistor KTA 1270     | Q 205/7    | A 0                      |
| 1 283 331             | Transistor KTC 3202                      | Transistor KTC 3202     | Q 404/6    | A 0                      |
| 1 284 298             | Transistor KTA 1270                      | Transistor KTA 1270     | Q 405/7/9A | 0                        |
| 1 286 577             | Transistor DTC 143 TSTP                  | Transistor DTC 143TSTP  | Q 501/2    | A 0                      |
| 1 287 666             | Transistor DTA 144 WSTP, CD 1180         | Transistor DTA 144 WSTP | Q 503      | A 0                      |
| 1 286 577             | Transistor DTC 143 TSTP, CD 1150         | Transistor DTC 143TSTP  | Q 503/4    | A 0                      |
| 1 227 360             | Zenerdiode 7,5V 1/2W, CD 1150            | Z-Diode 7,5V            | ZD 118     | A 0                      |
| 1 238 242             | Zenerdiode 5,1V 1/2W, CD 1180            | D-Zener 5,1V            | ZD 118     | A 0                      |
| 1 272 682             | Zenerdiode 13V 1/2W                      | D-Zener 13V             | ZD 107/8   | A 0                      |
| 1 282 827             | Zenerdiode 5,6V 1/2W                     | D-Zener 5,6V            | ZD 109     | A 0                      |
| 1 236 628             | Zenerdiode 30V 1/2W, CD 1150             | D-Zener 30V             | ZD 121     | A 0                      |
| 1 284 299             | Zenerdiode 24V 1/2W, CD 1180             | D-Zener 24V             | ZD 121     | A 0                      |
| 1 226 501             | Gleichrichterdiode 1N 4002               | D-Rectifier 1N 4002     | D 101-/4   | A 0                      |
| 1 226 501             | Gleichrichterdiode 1N 4002               | D-Rectifier 1N 4002     | D 114-/7   | A 0                      |
| 1 292 090             | Trimpoti 47 kOhm                         | VR,Semifixed            | VR 1-4     | A 1                      |
| 1 282 713             | Quarz 16,9344 MHz, CD 1150               | X-Tal                   | XT 300     | A 6                      |
| 1 289 502             | Quarz 33,8688 MHz, CD 1180               | X-Tal                   | XT 300     | A 8                      |
| 1 284 305             | Chinch-Buchse                            | Jack, RCA               |            | A 0                      |
| 1 292 121             | Digital-Buchse, CD 1180                  | Jack, Pin               |            | A 5                      |
| 1 292 091             | Bedienteilplatine CD 1150                | Front PCB ass'y         | 4          | D 8                      |
| 1 292 092             | Bedienteilplatine CD 1180                | Front PCB ass'y         | 12         | E 5                      |
| 1 292 097             | Taster                                   | S/W Tact                |            | A 3                      |
| 1 284 308             | IR-Empfänger                             | Remote receiver         |            | B 9                      |
| 1 284 306             | Display CD 1150                          | FLT                     |            | E 1                      |
| 1 292 098             | Display CD 1180                          | FLT                     |            | E 5                      |
| 1 292 099             | Micomplatine CD 1150                     | Micom PCB ass'y         | 22         | D 7                      |
| 1 292 100             | Kopfhörer- u. Lautstärkeplatine, CD 1135 | Phone + Volume ass'y    | 19         | B 8                      |
| 1 292 101             | Kopfhörer- u. Lautstärkeplatine, CD 1180 | Headphone ass'y         | 11         | C 2                      |
| 1 292 102             | Netzschalterplatine CD 1150              | Fuse PCB ass'y          | 9          | D 1                      |
| 1 292 103             | Netzschalterplatine CD 1180              | Fuse PCB ass'y          | 24         | C 6                      |
| 1 292 104             | Netzschalter                             | S/W Push                |            | B 1                      |
| 1 292 105             | Netztrafo CD 1150                        | Trans,former            | 17         | C 6                      |
| 1 292 106             | Netztrafo CD 1180                        | Trans,former            | 26         | C 7                      |

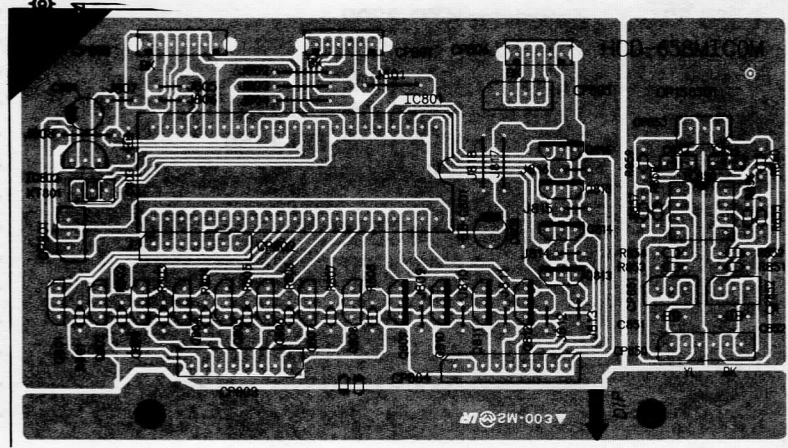
## Kopfhörer- u. Lautstärkeplatine CD 1180

### Headphone P.C.B.



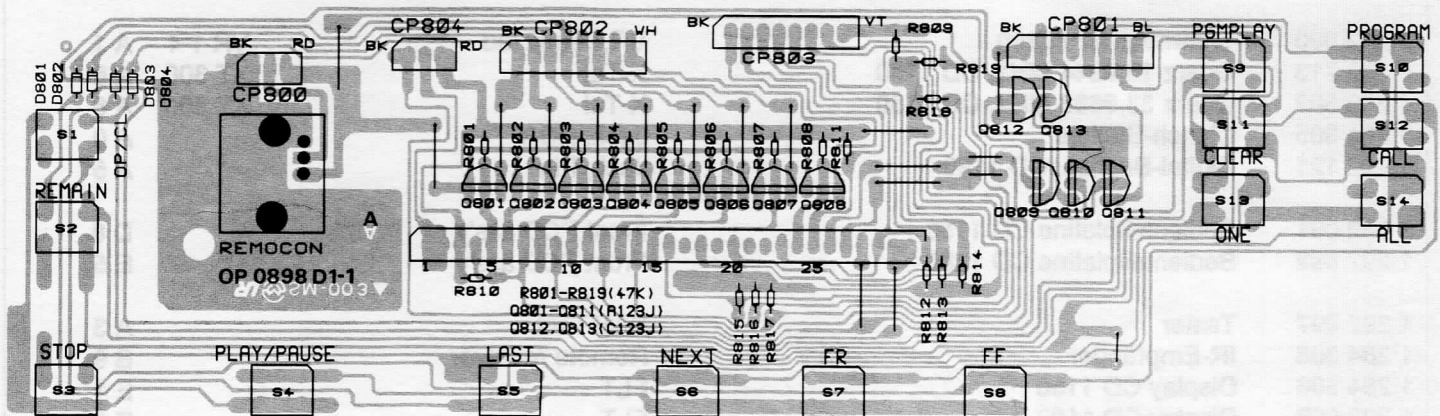
## Micamplatine CD 1150

### Micam P.C.B.



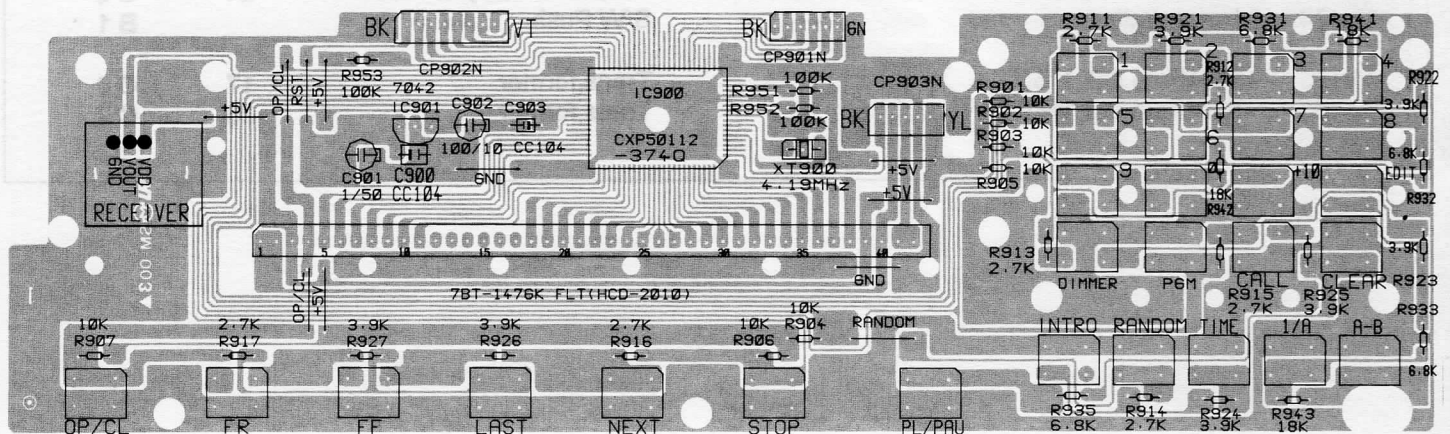
## Bedienteilplatine CD 1150

### Front P.C.B.



## Bedienteilplatine CD 1180

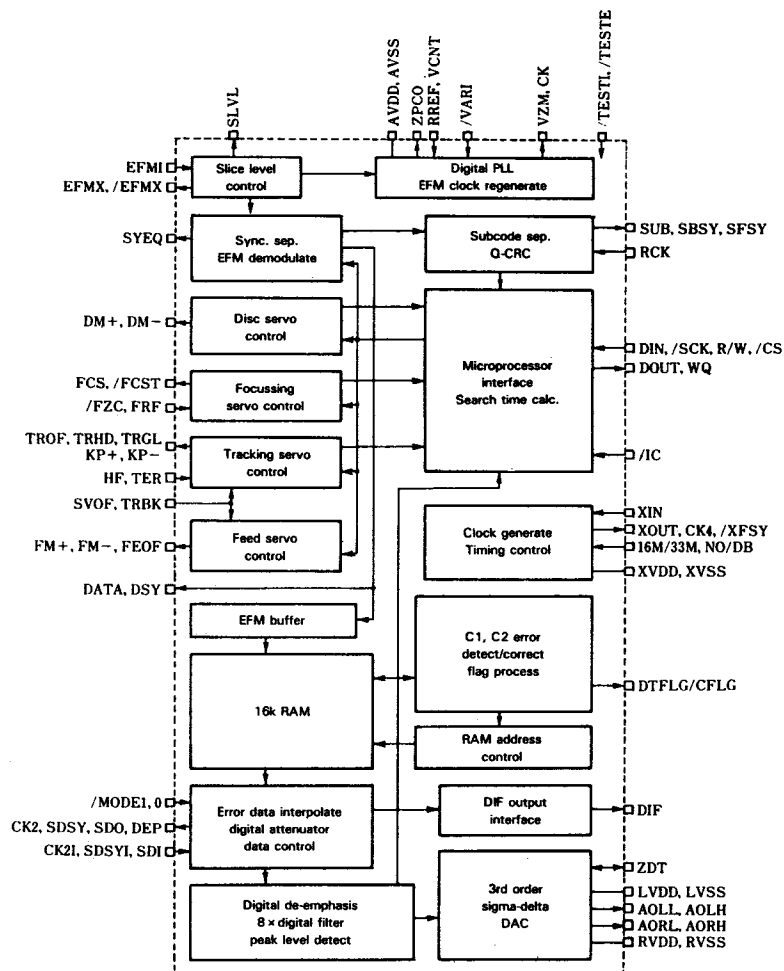
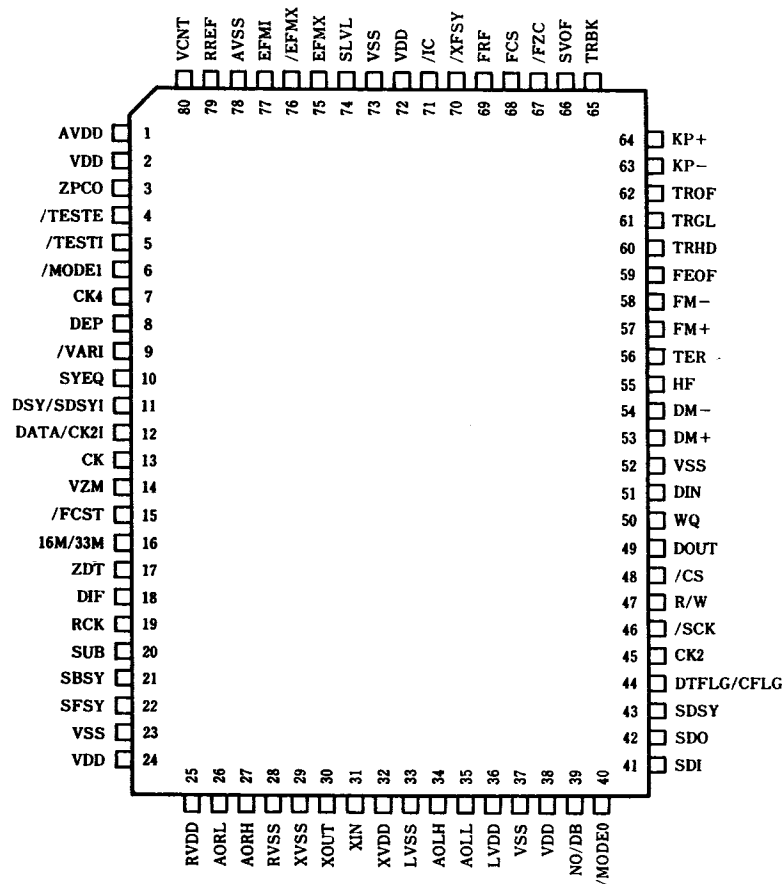
### Front P.C.B.



# IC-Blockschaltbilder und Anschlußbelegung

## IC Block diagrams and pin location

### IC YDC 103





# IC-Blockschaltbilder und Anschlußbelegung

## IC Block diagrams and pin location

### IC YDC 103

| No. | Name      | I/O  | Function  |
|-----|-----------|------|---|
| 1   | AVDD      | A    | 5V power supply (for PLL block)   |
| 2   | VDD       |      | 5V power supply (for logic block)   |
| 3   | ZPCO      | O    | Phase comparator output for digital PLL driving clock generator               |
| 4   | /TESTE    | I+   | LSI test terminal (should be left unconnected)                                |
| 5   | /TESTI    | I+   | LSI test terminal (should be left unconnected)                                |
| 6   | /MODE1    | I+   | Audio signal output mode select 1   |
| 7   | CK4       | O    | Clock output (4.2336MHz)  |
| 8   | DEP       | O    | De-emphasis control signal output   |
| 9   | /VARI     | I+   | Variable speed select ('L': variable speed)                                   |
| 10  | SYEQ      | O    | Sync. equal signal output   |
| 11  | DSY/SDSYI | I/O  | EFM demodulation signal, synchronous signal / L/R clock input during DSP mode |
| 12  | DATA/CK2I | I/O  | EFM demodulation signal, data signal / bit clock input during DSP mode        |
| 13  | CK        | OD   | EFM regeneration clock output   |
| 14  | VZM       | OD   | Digital PLL driving clock output, dividing into 3 or 6 signal output          |
| 15  | /FCST     | OD   | Focus search start signal output  |
| 16  | 16M/33M   | I+   | Master clock select ('H': 16.9344MHz, 'L': 33.8688MHz)                        |
| 17  | ZDT       | I+/O | DAC zero detect muting enable/sound signal zero detect output                 |
| 18  | DIF       | O    | Digital audio interface signal output   |
| 19  | RCK       | I-   | Sub-code interface read clock   |
| 20  | SUB       | OD   | Sub-code interface sub-code data  |
| 21  | SBSY      | OD   | Sub-code interface block synchronous signal                                   |
| 22  | SFSY      | OD   | Sub-code interface frame synchronous signal                                   |
| 23  | VSS       |      | Ground (for logic block)  |
| 24  | VDD       |      | 5V power supply (for noise shaper block)                                      |
| 25  | RVDD      | A    | 5V power supply (for DAC Rch block)   |
| 26  | AORL      | OA   | DAC stream output (L for Rch)   |
| 27  | AORH      | OA   | DAC stream output (H for Rch)   |
| 28  | RVSS      | A    | Ground (for DAC Rch)  |
| 29  | XVSS      |      | Ground (for crystal oscillation block)  |
| 30  | XOUT      | O    | Crystal oscillator connecting terminal  |
| 31  | XIN       | I    | Crystal oscillator connecting terminal (16.9344MHz or 33.8688MHz)             |
| 32  | XVDD      |      | 5V power supply (for crystal oscillation block)                               |
| 33  | LVSS      | A    | Ground (for DAC Lch)  |
| 34  | AOLH      | OA   | DAC stream output (H for Lch)   |
| 35  | AOLL      | OA   | DAC stream output (L for Lch)   |
| 36  | LVDD      | A    | 5V power supply (for DAC Lch)   |
| 37  | VSS       |      | Ground (for noise shaper block)   |
| 38  | VDD       |      | 5V power supply (for logic block)   |
| 39  | NO/DB     | I+   | Normal/double speed select  |
| 40  | /MODE0    | I+   | Audio signal output mode select 0   |

| No. | Name       | I/O | Function  |
|-----|------------|-----|---|
| 41  | SDI        | I   | DAC digital data input  |
| 42  | SDO        | O   | Audio data output serial data   |
| 43  | SDSY       | O   | Audio data output L/R clock   |
| 44  | DTFLG/CFLG | O   | Audio data output error flag  |
| 45  | CK2        | O   | Audio data output bit clock   |
| 46  | /SCK       | I   | Microprocessor interface serial clock   |
| 47  | R/W        | I   | Microprocessor interface R/W identification signal                                |
| 48  | /CS        | IO  | Microprocessor interface chip select  |
| 49  | DOUT       | OT  | Microprocessor interface data output  |
| 50  | WQ         | O   | Microprocessor interface data read request signal                                 |
| 51  | DIN        | I   | Microprocessor interface data input   |
| 52  | VSS        |     | Ground (for logic block)  |
| 53  | DM+        | O   | Disc motor control signal (acceleration)  |
| 54  | DM-        | O   | Disc motor control signal (deceleration)  |
| 55  | HF         | IS  | On-track signal input   |
| 56  | TER        | IS  | Tracking error signal input   |
| 57  | FM+        | O   | Feed control signal (outward direction)   |
| 58  | FM-        | O   | Feed control signal (inward direction)  |
| 59  | FEOF       | O   | Feed servo OFF signal   |
| 60  | TRHD       | O   | Tracking hold signal  |
| 61  | TRGL       | O   | Tracking gain lowering signal   |
| 62  | TROF       | O   | Tracking servo OFF signal   |
| 63  | KP-        | O   | Kick pulse signal (inward direction)  |
| 64  | KP+        | O   | Kick pulse signal (outward direction)   |
| 65  | TRBK       | I   | Forced tracking brake signal  |
| 66  | SVOF       | I   | Forced servo OFF signal   |
| 67  | /FZC       | I+  | Focus error zero cross signal input   |
| 68  | FCS        | O   | Focus start signal  |
| 69  | FRF        | I   | Focus reflection signal   |
| 70  | /XFSY      | OD+ | Crystal frame synchronous signal (7.35kHz)  |
| 71  | /IC        | IS+ | Initial clear input   |
| 72  | VDD        |     | 5V power supply (for logic block)   |
| 73  | VSS        |     | Ground (for logic block)  |
| 74  | SLVL       | OA  | EFM slice level voltage output  |
| 75  | EFMX       | OA  | Output for EFM duty detection (positive phase)                                    |
| 76  | /EFMX      | OA  | Output for EFM duty detection (reversed phase)                                    |
| 77  | EFMI       | IA  | EFM signal input  |
| 78  | AVSS       | A   | Ground (for PLL block)  |
| 79  | RREF       | IA  | Digital PLL driving clock generator constant current resistor connecting terminal |
| 80  | VCNT       | IA  | Digital PLL driving clock generator control terminal                              |

Note 1) Symbols in the I/O column indicate as follows.

+ : pull up, - : pull down, D : open drain, T : 3-state, S : schmitt trigger, A : analog terminal

Note 2) For the structural reason, the same power should be supplied to each power supply terminal.

IC-Blockschaltbilder und Anschlußbelegung
IC Block diagrams and pin location

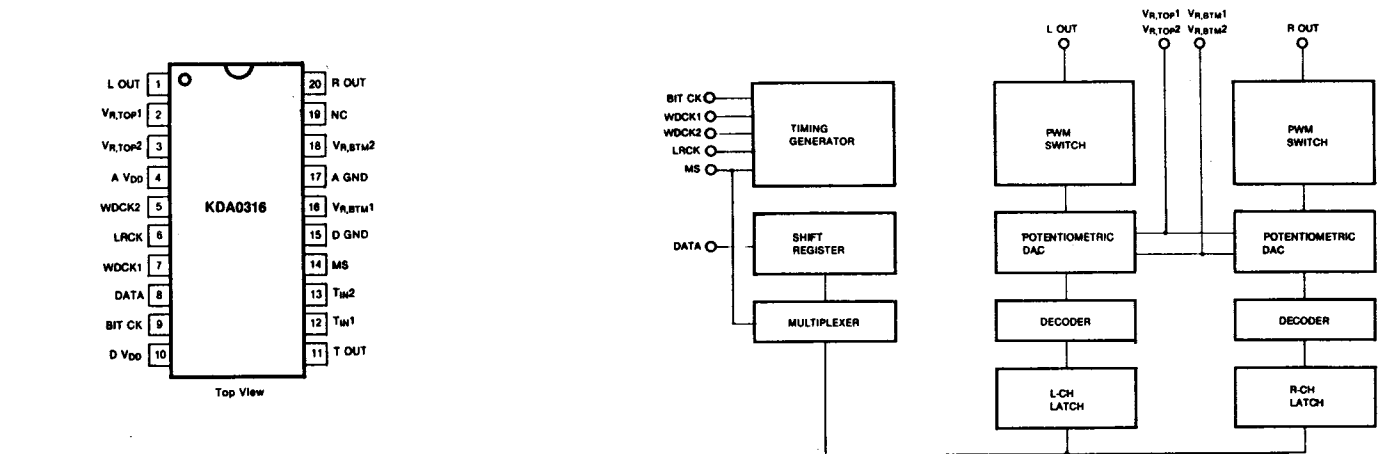
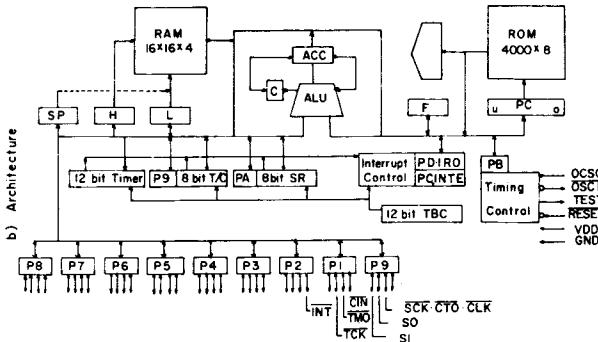
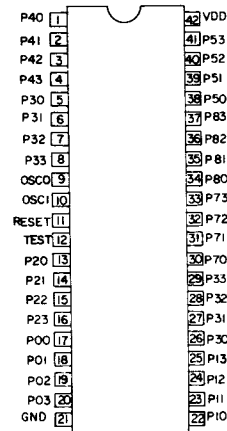


Table with 3 columns: Pin No, Symbol, Function. It lists 20 pins and their corresponding functions, such as L OUT (Left channel output pin), VRTOP1 (Top reference voltage 1 pin), A VDD (Analog supply voltage pin), etc.

MICOM
MSM 6408 (IC600)

a) Pin configuration



OUTPUT PORT

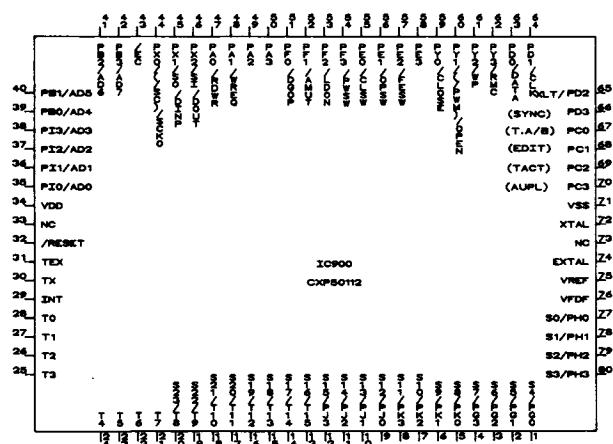
Table with 3 columns: PIN NO., PORT NAME, COMMAND NAME. It lists output ports from P40 to P53 and their corresponding command names like DIGIT, TRAY IN, TRAY OUT, LASER ON, SCK, DIN, KEY, SEGMENT, etc.

INPUT PORT

Table with 3 columns: PIN NO., PORT NAME, COMMAND NAME. It lists input ports from P33 to P13 and their corresponding command names like WO, OSC 0, OSC 1, RES, P20 (INT), P21, P22, P23, P00, P03, P10, P11, P12, P13, etc.

### IC Block diagrams and pin location

## MICOM PIN FUNCTIONS

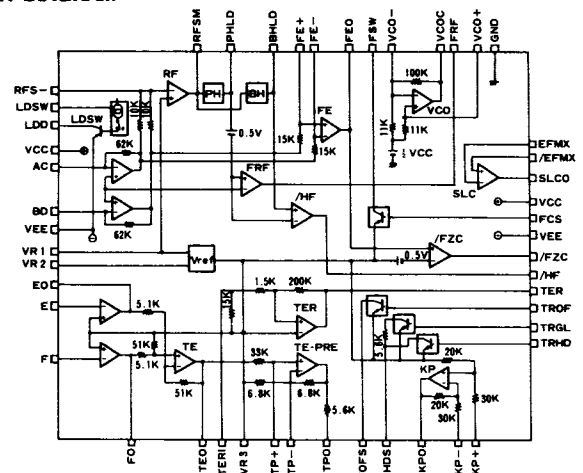
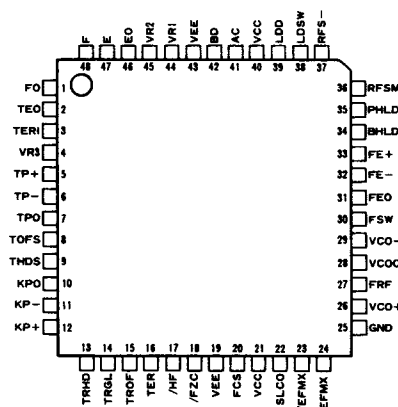


### INPUT PORT

| PIN NO | PORT NAME | COMMAND NAME |
|--------|-----------|--------------|
| 1      | S4        | SEGMENT      |
| 20     | S23       | SEGMENT      |
| 22     | T8        | DIGIT        |
| 28     | T0        | DIGITT       |
| 44     | PX0       | SCK          |
| 45     | PX1       | DIN          |
| 47     | PA0       | RDWR         |
| 51     | PF0       | DGOP         |
| 52     | PF1       | AUMT         |
| 53     | PF2       | LDON         |
| 58     | FE0       | CLOSE        |
| 60     | PE1       | OPEN         |
| 80     | S3        | SEGMENT      |

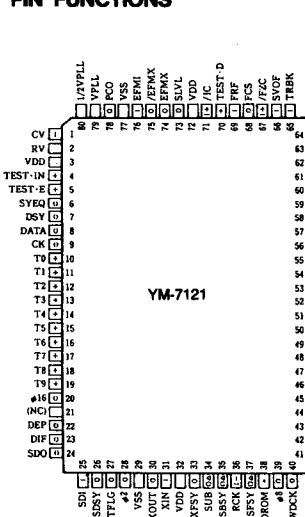
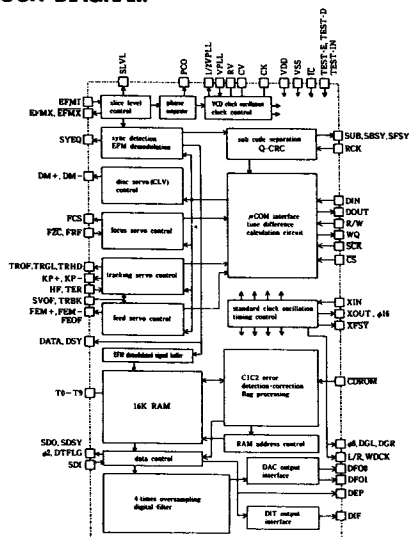
| PIN NO | PORT MAME | COMMAND NAME |
|--------|-----------|--------------|
| 32     | RESET     | RESET        |
| 35     | PJ0       | KINO         |
| 42     | PB3       | KIN7         |
| 46     | PX2       | DOUT         |
| 48     | PA1       | WREQ         |
| 55     | PE0       | CLSW         |
| 56     | PE1       | OPSW         |
| 57     | PE2       | FESW         |
| 62     | PY3       | RMC          |
| 67     | PC0       | T. A/B       |
| 68     | PC1       | EDIT         |
| 69     | PC2       | TACT         |
| 70     | PC3       | AUPL         |
| 72     | XT0       | 4.19MHz      |
| 74     | XT1       | 4.19MHz      |

### BLOCK DIAGRAM



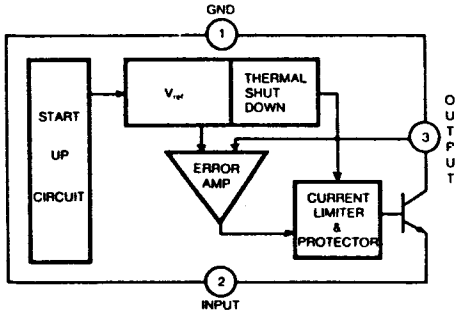
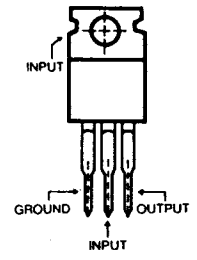
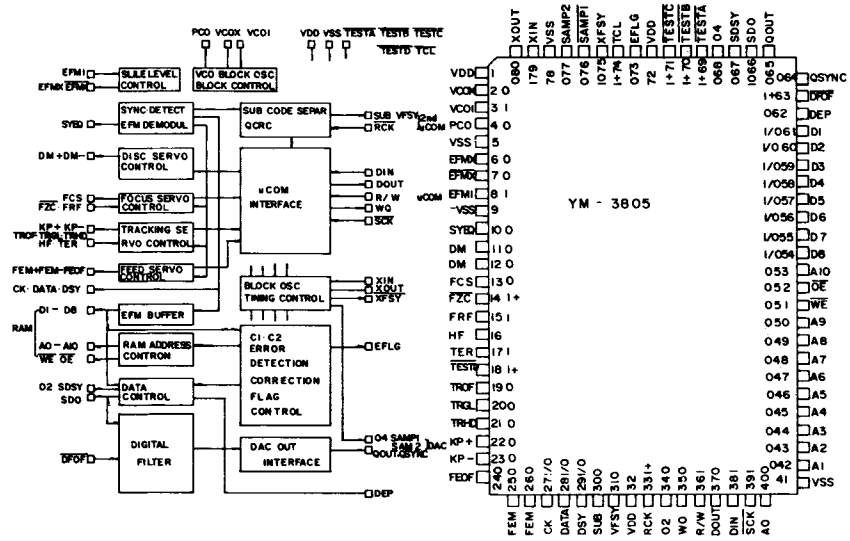
### BLOCK DIAGRAM

## PIN FUNCTIONS

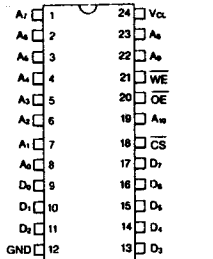
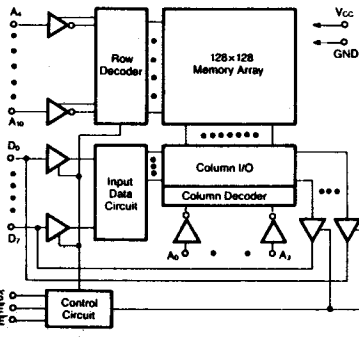
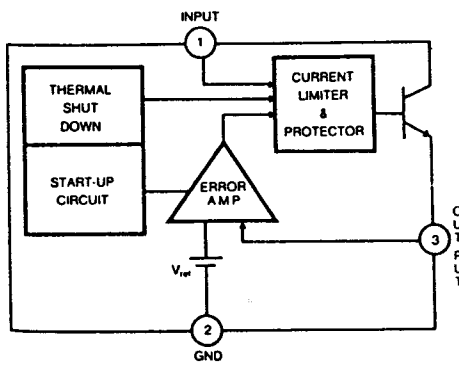
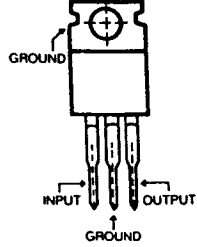
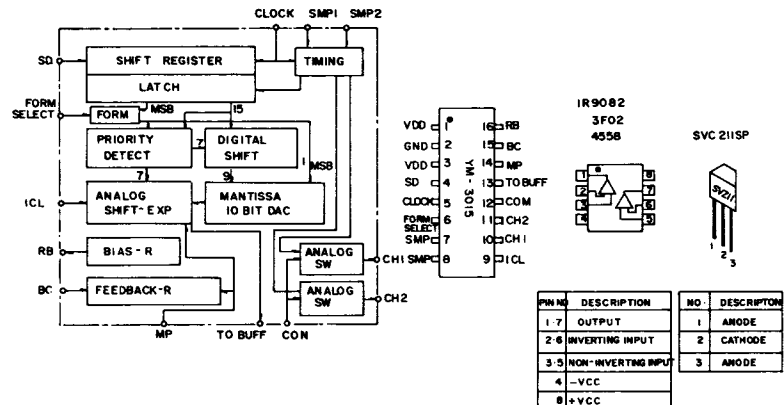


IC-Blockschaltbilder und Anschlußbelegung  
IC Block diagrams and pin location

DIGITAL SIGNAL PROCESSOR  
YM-3805 (IC300)



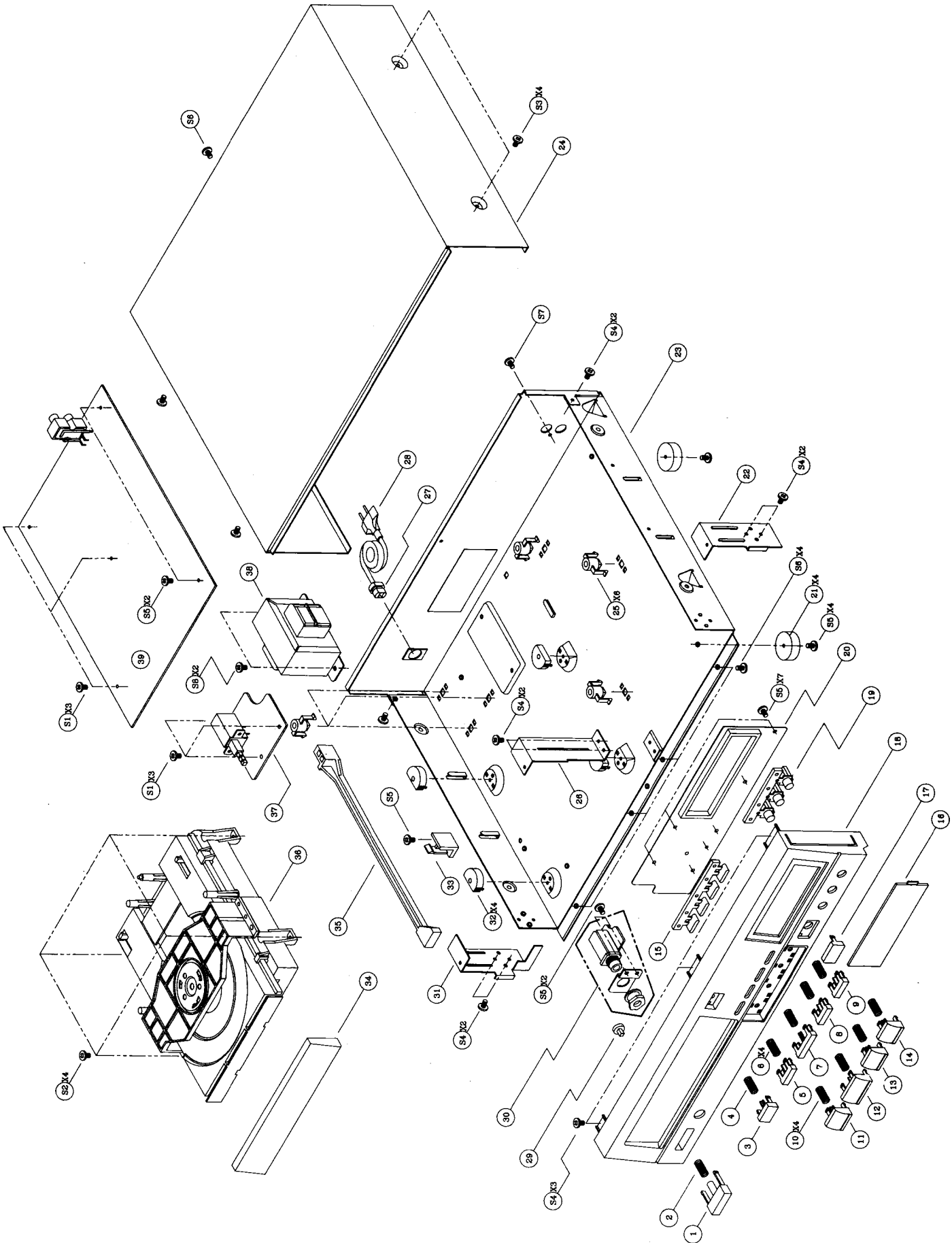
D/A CONVERTER  
YM-3015



|                                 |                     |
|---------------------------------|---------------------|
| A <sub>0</sub> —A <sub>10</sub> | ADDRESS INPUT       |
| D <sub>0</sub> —D <sub>7</sub>  | DATA INPUT/OUTPUT   |
| CS                              | CHIP SELECT INPUT   |
| WE                              | WRITE ENABLE INPUT  |
| OE                              | OUTPUT ENABLE INPUT |
| V <sub>cc</sub>                 | POWER               |
| GND                             | GROUND              |

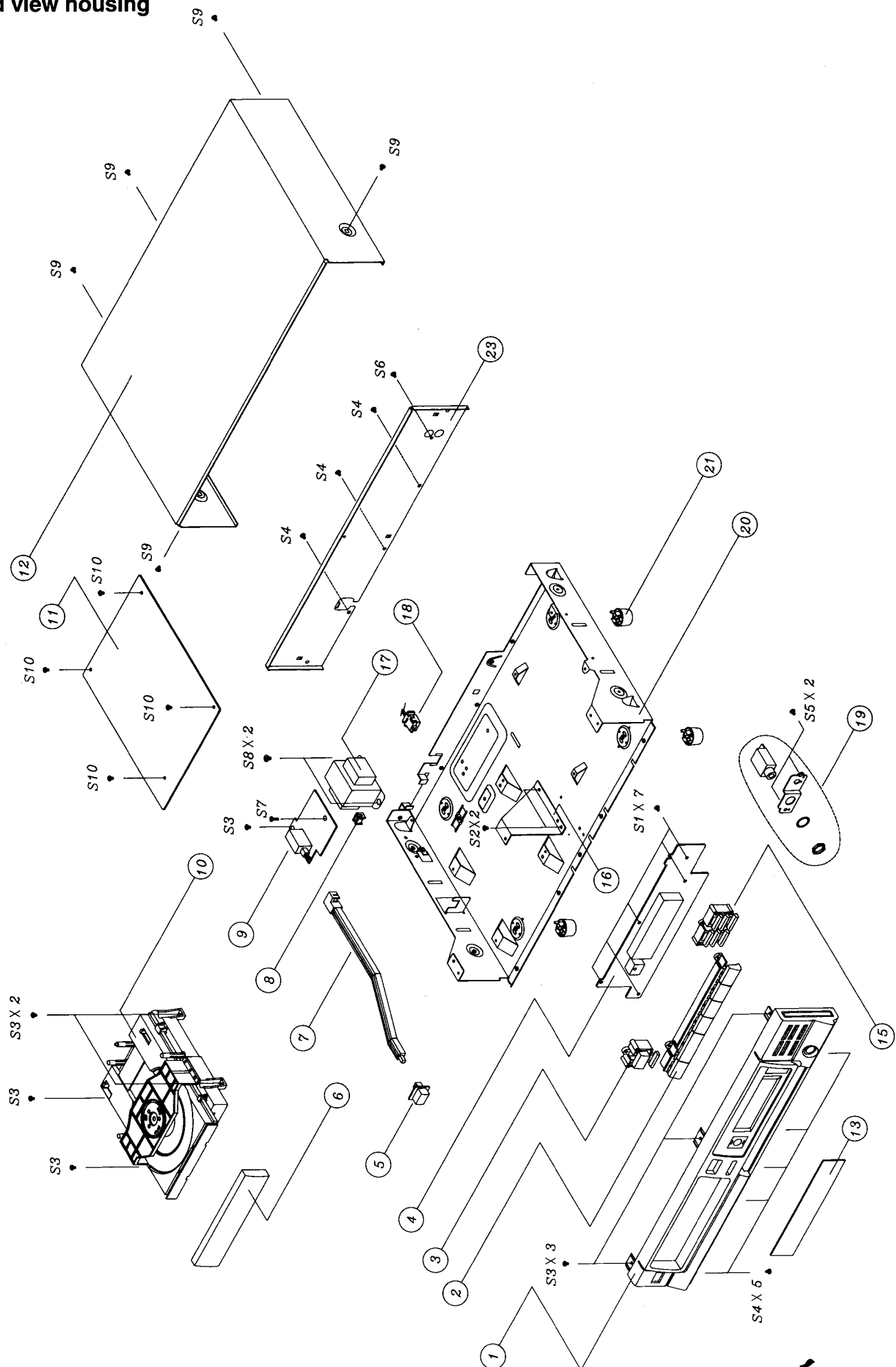


**Explosionsdarstellung Gehäuse CD 1120**  
**Exploded view housing**



# Explosionsdarstellung Gehäuse CD 1130

## Exploded view housing



## Ersatzteilliste Gehäuse CD 1120

### Spare parts list housing

| Best.-Nr.<br>Part No. | Bezeichnung                          | Description        | Pos. | Preisgruppe<br>Price-key |
|-----------------------|--------------------------------------|--------------------|------|--------------------------|
| 1 292 114             | Fernbedienungsgeber CD 1130          | Remcon ass'y       |      | D 2                      |
| 1 292 117             | Knopf Netzschalter                   | Button POWER       | 1    | A 3                      |
| 1 292 001             | Feder Netztaste                      | Spring POWER       | 2    | A 0                      |
| 1 292 002             | Taste Open/Close                     | Button OPEN/CLOSE  | 3    | A 4                      |
| 1 292 003             | Feder Taste Open/Close               | Spring button OPEN | 4    | A 0                      |
| 1 292 004             | Taste Index                          | Button INDEX       | 5    | A 4                      |
| 1 292 005             | Feder A (4), Index, Programm, Search | Spring button "A"  | 6    | A 0                      |
| 1 292 006             | Taste Programm                       | Button PGMPLAY     | 7    | A 4                      |
| 1 292 007             | Taste search rewind                  | Button SEARCH "R"  | 8    | A 4                      |
| 1 292 008             | Taste search forward                 | Button SEARCH "F"  | 9    | A 4                      |
| 1 292 009             | Feder B (4), Stop, Play, Skip        | Spring button "B"  | 10   | A 0                      |
| 1 292 010             | Taste Stop                           | Button STOP        | 11   | A 4                      |
| 1 292 011             | Taste Play                           | Button PLAY        | 12   | A 4                      |
| 1 292 012             | Taste Skip rewind                    | Button SKIP "R"    | 13   | A 4                      |
| 1 292 013             | Taste Skip forward                   | Button SKIP "F"    | 14   | A 4                      |
| 1 292 014             | Taste Control                        | Button CONTROL     | 15   | A 2                      |
| 1 292 015             | Fenster Display CD 1120              | Window display     | 16   | B 0                      |
| 1 292 016             | Fenster IR-Sensor CD 1120            | Remcon Window      | 17   | A 5                      |
| 1 292 118             | Frontblende CD 1120                  | Panel front        | 18   | B 9                      |
| 1 292 017             | Tastensatz (3)                       | Button REPEAT      | 19   | A 2                      |
| 1 292 018             | Gehäusefuß                           | Foot               | 21   | A 5                      |
| 1 292 019             | Gehäusedeckel                        | Cover upper        | 24   | D 1                      |
| 1 292 020             | Platinenhalterung                    | Support PCB        | 25   | A 2                      |
| 1 292 021             | Zugentlastung                        | Stopper cord AC    | 27   | A 8                      |
| 1 292 022             | Stoepsel CD 1120                     | Link function      | 29   | A 1                      |
| 1 292 023             | Fuß CD-Mechanik                      | Mecha foot         | 32   | A 2                      |
| 1 292 024             | Führung Schaltstange                 | Holder link power  | 33   | A 1                      |
| 1 292 025             | Blende Schlitten                     | Cover tray         | 34   | B 0                      |
| 1 292 026             | Schaltstange Netzschalter            | Link power         | 35   | A 5                      |

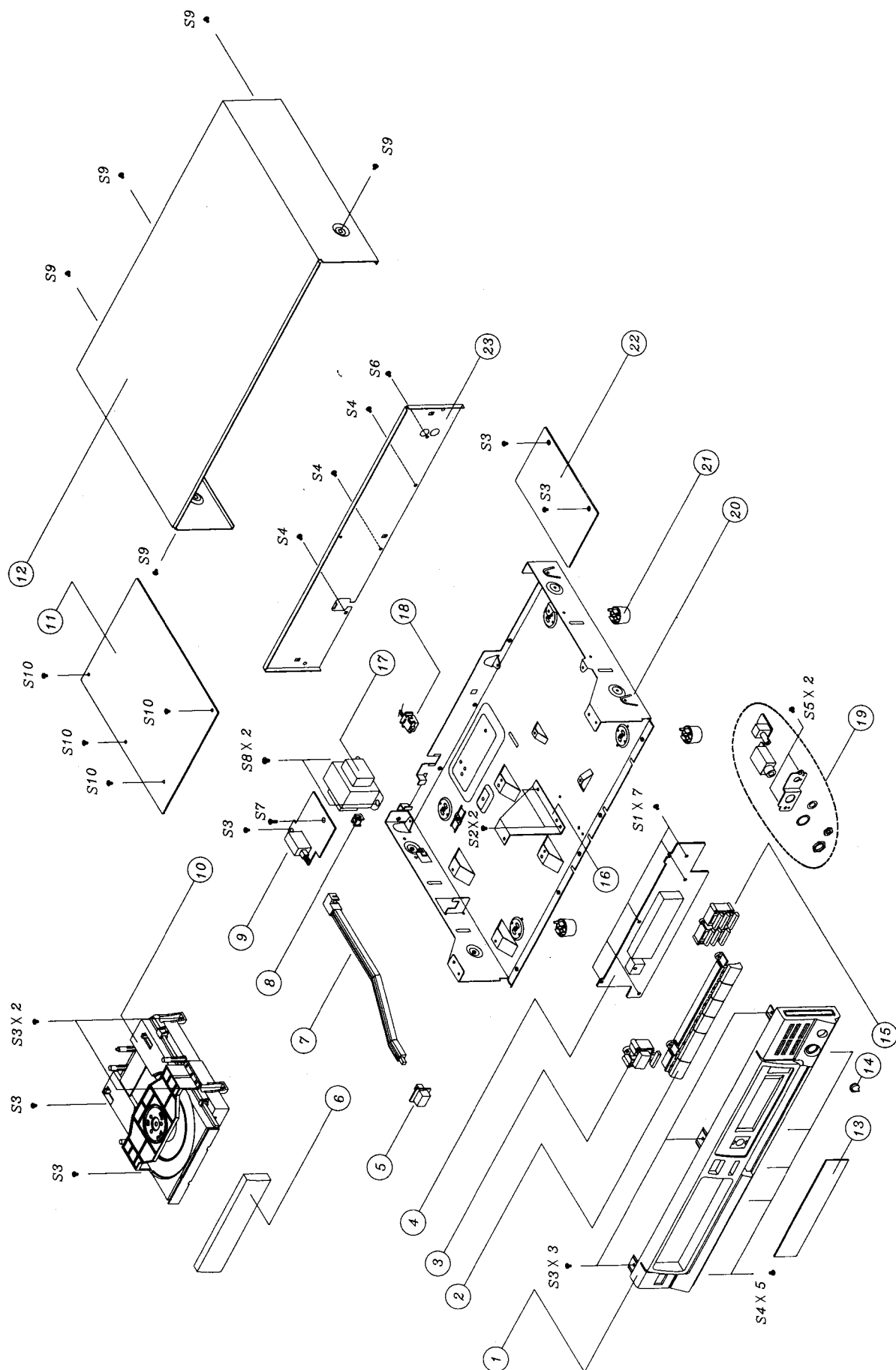
## Ersatzteilliste Gehäuse CD 1130

### Spare parts list housing

| Best.-Nr.<br>Part No. | Bezeichnung                            | Description     | Pos. | Preisgruppe<br>Price-key |
|-----------------------|--|-----------------|------|--------------------------|
| 1 291 991             | Fernbedienungsgeber CD 1130            | Remcon ass'y    |      | D 2                      |
| 1 291 995             | Frontblende CD 1130                    | Panel, front    | 1    | B 9                      |
| 1 292 027             | Tastensatz (6) PLAY, STOP, ...         | Button B        | 2    | A 6                      |
| 1 292 028             | Tastensatz (2) OPEN/CLOSE, REMAIN TIME | Button A        | 3    | A 3                      |
| 1 292 000             | Knopf Netzschalter                     | Button, Power   | 5    | A 1                      |
| 1 292 045             | Blende Schlitten                       | Cover, tray     | 6    | B 1                      |
| 1 292 046             | Schaltstange Netzschalter              | Link, Power     | 7    | A 5                      |
| 1 292 047             | Platinenhalterung Netzplatine          | Support, PCB    | 8    | A 0                      |
| 1 292 048             | Gehäusedeckel                          | Cover, upper    | 12   | C 7                      |
| 1 292 049             | Fenster Display                        | Window, display | 13   | B 2                      |
| 1 292 051             | Tastensatz (6) PROGRAMM                | Button C        | 15   | A 3                      |
| 1 292 052             | Zugentlastung                          | Stopper AC Cord | 18   | A 8                      |
| 1 292 053             | Gehäusefuß                             | Foot            | 21   | A 3                      |

# Explosionsdarstellung CD 1135, CD 1150

## Exploded view housing



## Ersatzteilliste Gehäuse CD 1135

### Spare parts list housing

| Best.-Nr.<br>Part No. | Bezeichnung                            | Description     | Pos. | Preisgruppe<br>Price-key |
|-----------------------|--|-----------------|------|--------------------------|
| 1 291 991             | Fernbedienungsgeber CD 1130            | Remcon ass'y    |      | D 2                      |
| 1 291 996             | Frontblende CD 1135                    | Panel, front    | 1    | B 9                      |
| 1 292 027             | Tastensatz (6) PLAY, STOP, ...         | Button B        | 2    | A 6                      |
| 1 292 028             | Tastensatz (2) OPEN/CLOSE, REMAIN TIME | Button A        | 3    | A 3                      |
| 1 292 000             | Knopf Netzschalter                     | Button, Power   | 5    | A 1                      |
| 1 292 045             | Blende Schlitten                       | Cover, tray     | 6    | B 1                      |
| 1 292 046             | Schaltstange Netzschalter              | Link, Power     | 7    | A 5                      |
| 1 292 047             | Platinenhalterung Netzplatine          | Support, PCB    | 8    | A 0                      |
| 1 292 048             | Gehäusedeckel                          | Cover, upper    | 12   | C 7                      |
| 1 292 049             | Fenster Display                        | Window, display | 13   | B 2                      |
| 1 292 050             | Knopf Lautstärke(Kopfh.)               | Knob, Volume    | 14   | A 1                      |
| 1 292 051             | Tastensatz (6) PROGRAMM                | Button C        | 15   | A 3                      |
| 1 292 052             | Zugentlastung                          | Stopper AC Cord | 18   | A 8                      |
| 1 292 053             | Gehäusefuß                             | Foot            | 21   | A 3                      |

## Ersatzteilliste Gehäuse CD 1150

### Spare parts list housing

| Best.-Nr.<br>Part No. | Bezeichnung                            | Description     | Pos. | Preisgruppe<br>Price-key |
|-----------------------|--|-----------------|------|--------------------------|
| 1 291 992             | Fernbedienungsgeber CD 1150            | Remcon ass'y    |      | D 2                      |
| 1 291 997             | Frontblende CD 1150                    | Panel, front    | 1    | B 9                      |
| 1 292 027             | Tastensatz (6) PLAY, STOP, ...         | Button B        | 2    | A 6                      |
| 1 292 028             | Tastensatz (2) OPEN/CLOSE, REMAIN TIME | Button A        | 3    | A 3                      |
| 1 292 000             | Knopf Netzschalter                     | Button, Power   | 5    | A 1                      |
| 1 292 044             | Blende Schlitten                       | Cover, tray     | 6    | B 1                      |
| 1 292 046             | Schaltstange Netzschalter              | Link, Power     | 7    | A 5                      |
| 1 292 047             | Platinenhalterung Netzplatine          | Support, PCB    | 8    | A 0                      |
| 1 292 048             | Gehäusedeckel                          | Cover, upper    | 12   | C 7                      |
| 1 292 049             | Fenster Display                        | Window, display | 13   | B 2                      |
| 1 292 050             | Knopf Lautstärke(Kopfh.)               | Knob, Volume    | 14   | A 0                      |
| 1 292 051             | Tastensatz (6) PROGRAMM                | Button C        | 15   | A 3                      |
| 1 292 052             | Zugentlastung                          | Stopper AC Cord | 18   | A 8                      |
| 1 292 053             | Gehäusefuß                             | Foot            | 21   | A 0                      |

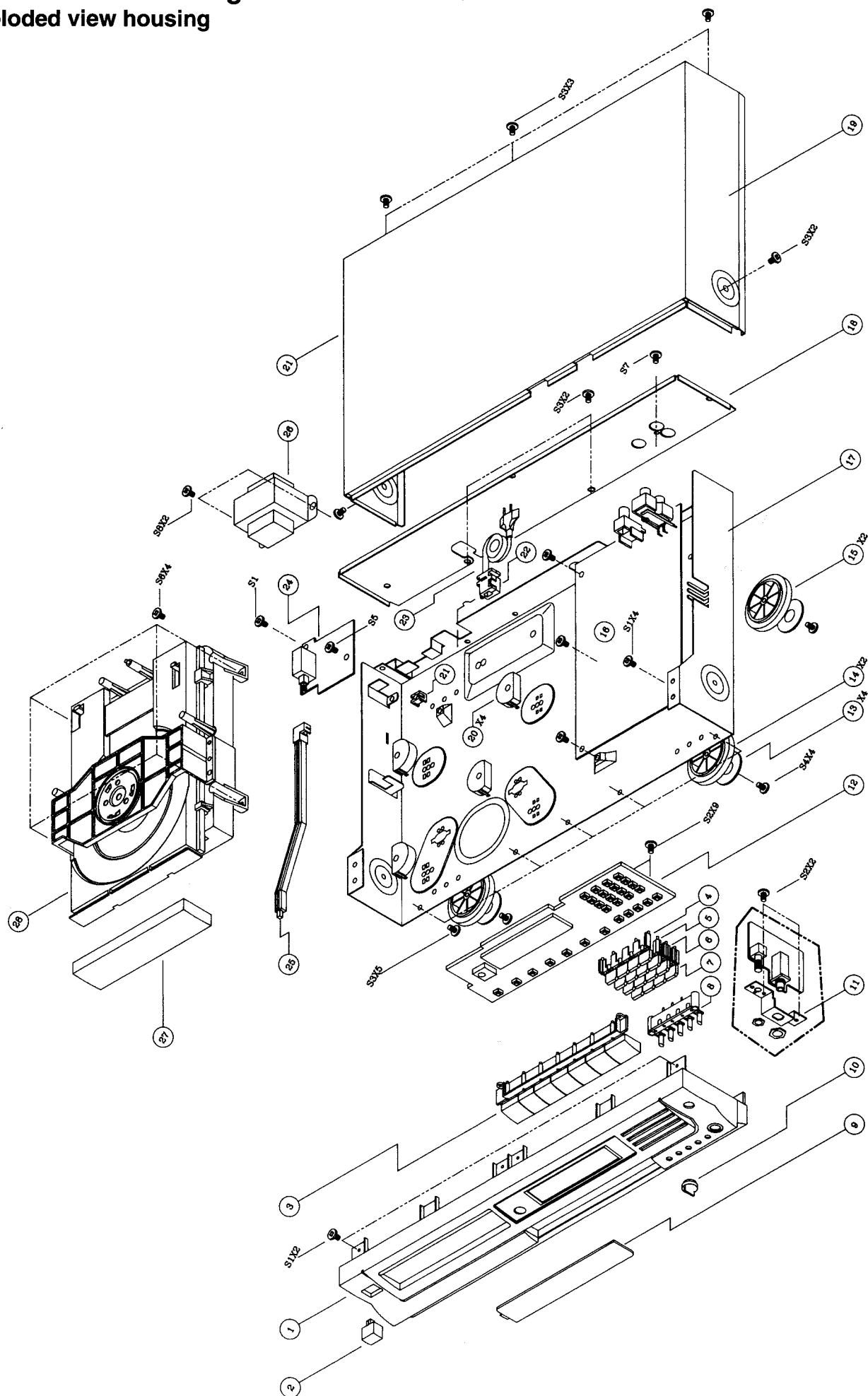
## Ersatzteilliste Gehäuse CD 1180

### Spare parts list housing

| Best.-Nr.<br>Part No. | Bezeichnung                             | Description     | Pos. | Preisgruppe<br>Price-key |
|-----------------------|---|-----------------|------|--------------------------|
| 1 292 109             | Fernbedienungsgeber CD 1180             | Remcon ass'y    |      | C 6                      |
| 1 292 110             | Frontblende CD 1180                     | Panel, front    | 1    | B 9                      |
| 1 292 000             | Knopf Netzschalter                      | Button power    | 2    | A 0                      |
| 1 292 029             | Tastensatz (7) OPEN/CLOSE, PLAY, STOP   | Button Control  | 3    | A 4                      |
| 1 292 030             | Tastensatz (4) 1, 2, 3, 4               | Button A        | 4    | A 1                      |
| 1 292 031             | Tastensatz (4) 5, 6, 7, 8               | Button B        | 5    | A 1                      |
| 1 292 033             | Tastensatz (4) 9, 0, +10, edit          | Button C        | 6    | A 1                      |
| 1 292 033             | Tastensatz (4) DIMMER, PROGRAMM, ...    | Button D        | 7    | A 1                      |
| 1 292 034             | Tastensatz (5) INTRO, RANDOM, TIME, ... | Button repeat   | 8    | A 3                      |
| 1 292 035             | Fenster Display                         | Window display  | 9    | B 2                      |
| 1 292 036             | Knopf Lautstärke(Kopfh.)                | Knob, Volume    | 10   | A 0                      |
| 1 292 037             | Filz Gehäusefuß                         | Leg cushion     | 13   | A 3                      |
| 1 292 038             | Gehäusefuß (gold) vorne                 | Foot            | 14   | A 4                      |
| 1 292 039             | Gehäusefuß (schwarz) hinten             | Foot            | 15   | A 3                      |
| 1 292 040             | Gehäusedeckel                           | Cover upper     | 19   | D 1                      |
| 1 92 041              | Fuß CD-Mechanik                         | Mecha foot      | 20   | A 0                      |
| 1 292 042             | Zugentlastung                           | Stopper AC Cord | 22   | A 8                      |
| 1 292 043             | Schaltstange Netzschalter               | Link, Power     | 25   | A 5                      |

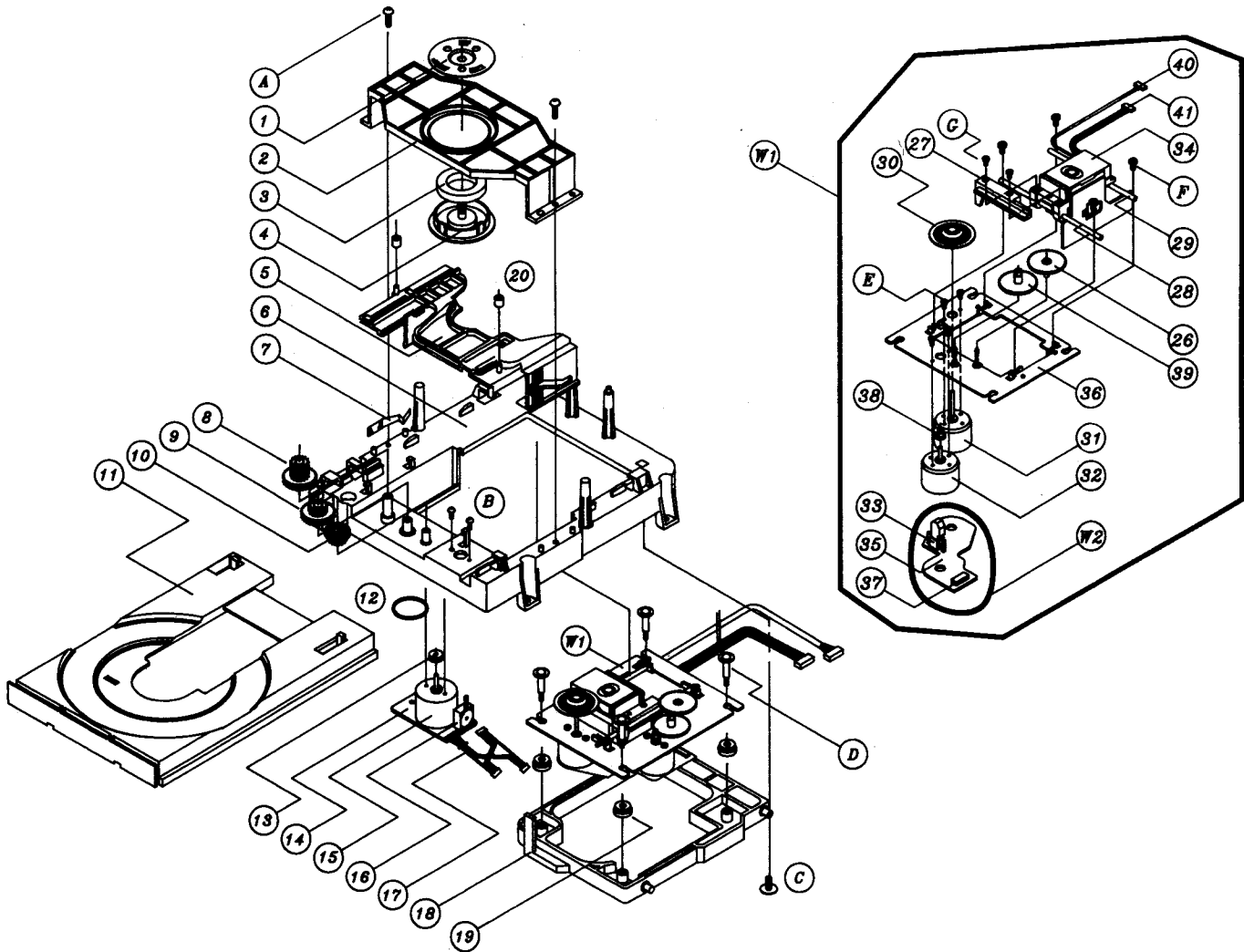
# Explosionsdarstellung Gehäuse CD 1180

## Exploded view housing



## Explosionsdarstellung CD-Mechanik

### Exploded view CD Mechanism



## Ersatzteilliste CD-Mechanik

### Spare parts list CD mechanism

| Best.-Nr.<br>Part No. | Bezeichnung                   | Description      | Pos. | Preisgruppe<br>Price-key |
|-----------------------|-------------------------------|------------------|------|--------------------------|
| 1 292 054             | CD-Mechanik kpl. CD 1120-1135 | Base Mecha ass'y | 36   | F 4                      |
| 1 292 055             | CD-Mechanik kpl. CD 1150,1180 | Base Mecha ass'y | 10   | F 1                      |
| 1 292 056             | Magnetplatte                  | Plate Clamper    | A1   | A 2                      |
| 1 292 057             | Halter Niederhalter           | Flapper          | A2   | A 6                      |
| 1 292 058             | Magnet                        | Magnet core      | A3   | B 0                      |
| 1 292 059             | Niederhalter                  | Clamper          | A4   | A 2                      |
| 1 292 060             | Führungsrahmen                | Guide frame      | A5   | A 9                      |
| 1 292 061             | Mechanikplatte                | Mecha base       | A6   | B 8                      |
| 1 292 062             | Feder                         | Spring rack      | A7   | A 0                      |
| 1 292 063             | Zahnrad laden                 | Gear load        | A8   | A 0                      |
| 1 292 064             | Zahnrad mitte                 | Gear center      | A9   | A 1                      |
| 1 292 065             | Zahnrad pulley                | Gear pulley      | A10  | A 1                      |
| 1 292 066             | Schlitten                     | Tray             | A11  | A 7                      |
| 1 292 067             | Antriebsriemen Schlitten      | Belt             | A12  | A 0                      |
| 1 292 068             | Motor pulley                  | Pulley motor     | A13  | B 6                      |
| 1 292 069             | Motor Schlitten               | Motor L/C        | A15  | B 7                      |
| 1 292 070             | Federblattschalter            | Switch leaf      | A16  | A 7                      |
| 1 292 071             | Rahmen                        | Frame feed       | A18  | B 0                      |
| 1 292 072             | Gummi CD-Aufhängung           | Insulator        | A19  | B 0                      |
| 1 292 159             | Motor Spindel                 | Motor spindle    | A32  | B 3                      |
| 1 292 160             | Laserabtaster                 | Pick up          | A34  | E 6                      |
| 1 292 073             | Mechanikplatte kpl.           | Assy feed mecha  | W1   | B 6                      |

## Abgleich CD 1120 - CD 1135

Benötigte Meßgeräte:

- Frequenzzähler
- Oscilloscope
- Test CD Phillips 5A

HF-Signal = ca 1,5V<sub>ss</sub>

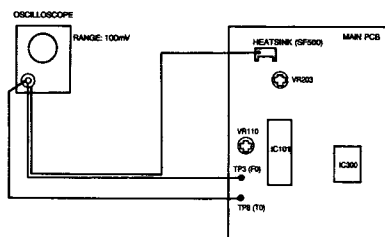
### 1. Spur-Servo-Abgleich

- CD einlegen und Stop drücken.
- Oscilloscope auf DC-Betrieb an TP6(TO) und Kühlblech SF500 anschließen (siehe Bild 1).
- Mit VR203 die Gleichspannung auf -200mV abgleichen.

### 2. Fokus-Servo-Abgleich

- CD einlegen und auf Stop drücken.
- Oscilloscope auf DC-Betrieb an TP3(FO) und Kühlblech SF500 anschließen (siehe Bild 1)
- Mit VR110 die Gleichspannung auf 0V abgleichen.

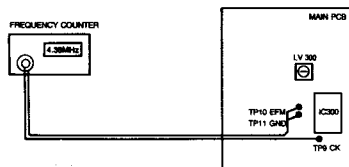
Bild 1



### 3. Frequenzabgleich

- Den Frequenzzähler an TP9(CK) und TP11(GND) anschließen (siehe Bild 2).
- TP10(EFM) und TP11(GND) kurzschließen.
- Mit LV300 die Frequenz auf 4,38MHz abgleichen.
- Kurzschlußbrücke entfernen.

Bild 2



### 4. TE-Balance-Abgleich

- CD einlegen und Play drücken.
- Oscilloscope an TP4(TB) und Kühlblech SF500 anschließen (siehe Bild 4).
- TP6(TEO) und TP7(G) kurzschließen.
- Mit VR201 abgleichen. (A=B)(siehe Bild 3)

Bild 4

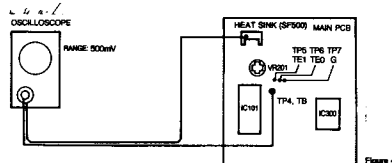


Figure 4

## Adjustment CD 1120 - CD 1135

Instruments required:

- Frequency counter
- Oscilloscope
- Test CD Phillips 5A

HF-Signal = ca 1,5V<sub>pp</sub>

### 1. Tracking-offset-Adjustment

- Load a disk in a player and set the player in stop mode.
- Connect the oscilloscope to TP8(TO) and Headsink (SF500)(Figure 1).
- Adjust VR203 so that the DC value of oscilloscope becomes -200mV

### 2. Focus-offset-Adjustment

- Load a disk in the player and set the player in stop mode
- Connect the oscilloscope to TP(FO) and Headsink (SF500)(Figure 1).
- Adjust VR110 so that the DC value of oscilloscope becomes ZERO.

### 3. VCO-Adjustment

- Connect the frequency counter to TP9(CK) and TP11(GND)(Figure 2)
- Connect the short to TP10(EFM) and TP11(GND).
- Adjust LV300 so that frequency counter becomes 4,38MHz.

### 4. TE-Balance-Adjustment

- Load a disk in the player and set the player to play mode
- Connect the oscilloscope to TP4(TB) and Headsink(SF500)(Figure 4).
- Connect the short to TP6(TEO) and TP7(G).
- Adjust VR201.(A0B)(Figure3).

Bild 3

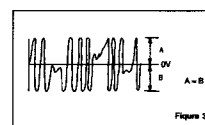


Figure 3

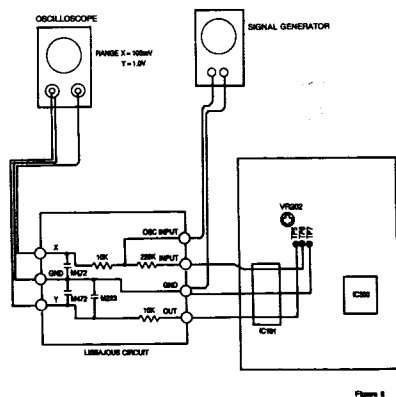


**Dieser Abgleich muß normalerweise nicht durchgeführt werden, da er bereits vom Werk aus eingestellt ist**

## 5. Spur-Servo-Verstärkung

- Signalgenerator und Oscilloscope wie in Bild 6 angezeigt anschließen (Bild 6).
- Signalgenerator auf 900 Hz und 4,0V<sub>ss</sub> einstellen.
- Mit VR202 das Oscillogramm wie in Bild 5 einstellen.

### Bild 6



### Abgleich CD 1150 und CD 1180

**Benötigte Meßgeräte:**

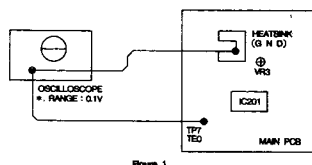
- Frequenzzähler
- Oscilloscope
- Test CD Phillips 5A

**HF-Signal = ca 1,5Vss**

## 1. Spur-Servo-Abgleich

- CD einlegen und Stop drücken.
- Oszilloscope im DC-Betrieb an TP7(TEO) und Kühlblech anschließen (siehe Bild 1).
- Mit VR3 die Gleichspannung auf +200mV einstellen.

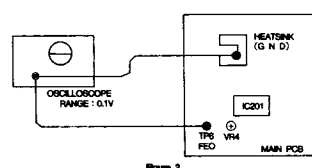
### Bild 1



## 2.Focus-Servo-Abgleich

- **CD einlegen und auf Stop drücken.**
- **Oscilloscope im DC-Betrieb an TP6(EFO) und Kühlblech anschließen (siehe Bild 2).**
- **Mit VR4 die Gleichspannung auf 0V abgleichen.**

### Bild 2

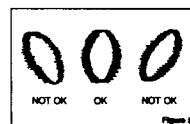


**This adjustment is not necessary, it is done by the manufacturer.**

## 5. Tracking-Gain-Error

- Connect the sine waveform signal generator and the connector as shown in Figure 6.
- Adjust the signal generator so that its frequency becomes 900Hz and its output 4,0Vpp.
- Adjust VR202 so that Lissajous figure on the Oscilloscope indicates the figure shown in Figure 5.

### Bild 5



### Adjustment CD 1150 and CD 1180

**Instruments required:**

- Frequency counter
- Oscilloscope
- Test CD Phillips 5A

HF-Signal = ca 1,5Vpp

## 1.Tracking-Offset-Adjustment

- Load a disk in the player and set the player to stop mode.
- Connect the oscilloscope to TP7(TEO) and Headsink (Figure 1).
- Adjust VR3 so that the DC value of oscilloscope becomes +200mV.

## 2.Fokus-Offset-Adjustment

- Load a disk in the player and set the player to stop mode
- Connect the oscilloscope to TP6(FEO) and Headsink (Figure 2).
- Adjust VR4 so that the DC value of oscilloscope becomes ZERO.

### 3.VCO-Abgleich

- Frequenzzähler an TP8(CK) und TP11(GND) anschließen (siehe Bild 3)
- TP10(EFM) mit TP11(GND) kurzschließen.
- Mit VR5 die Frequenz auf 4,3218MHz abgleichen.
- Kurzschlußbrücke entfernen.

Bild 3

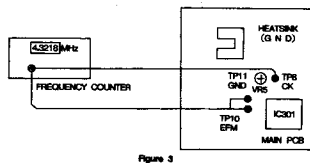


Figure 3

### 4.TE-Balance-Abgleich

- CD einlegen und Play drücken.
- Oscilloscope an TP1(TEG) und Kühlblech anschließen (siehe Bild 5).
- TP4(TO) mit TP3(GND) kurzschließen.
- Mit VR1 abgleichen. (A=B) (siehe Bild 4)

Bild 5

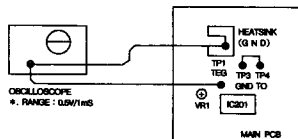


Figure 5

Dieser Abgleich muß normalerweise nicht durchgeführt werden, da er bereits vom Werk aus eingestellt ist.

### 5.Spur-Servo-Verstärkung

- Signalgenerator und Oscilloscope wie in Bild 6 anschließen.
- Signalgenerator auf 900Hz und 4,0Vss einstellen.
- Mit VR2 das Oscillogramm wie in Bild 7 einstellen.

Bild 6

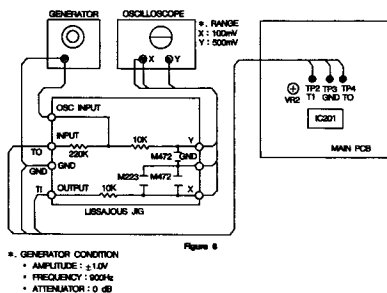


Figure 6

• GENERATOR CONDITION  
• AMPLITUDE : 4.0V  
• FREQUENCY : 900Hz  
• ATTENUATOR : 0 dB

### 3.VCO-Adjustment

- Connect the frequency counter to TP8(CK) and TP11(GND)(Figure 3).
- Connect the short to TP10(EFM) and TP11(GND).
- Adjust VR5 so that the frequency counter becomes 4.3218MHz.
- Remove the short from TP10(EFM) and TP11(GND).

### 4.Tracking-Balance-adjustment

- Load a disk in the player and set the player in play mode.
- Connect the Oscilloscope to TP1(TEG) and Headsink (Figure 5).
- Connect the short to TP4(TO) and TP3(GND).
- Adjust VR1 so that oscilloscope indicates as shown in Figure 4.

Bild 4

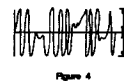


Figure 4

This adjustment is not necessary, it is done by the manufacturer.

### 5.Tracking-Gain-Adjustment

- Connect the sine waveform signal generator and the oscilloscope as shown in Figure 6.
- Adjust the signal generator so that its frequency becomes 900Hz and its output 4,0Vpp.
- Adjust Vr2 so that Lissajous figure on the oscilloscope indicates as shown in Figure 7.

Bild 7

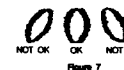


Figure 7

Bitte bei Ersatzteilbestellung die genaue Bezeichnung und Ident-Nr. (siehe Typenschild) des Gerätes sowie Bestell-Nummer und Positions-Nummer des Ersatzteils angeben.

For ordering of spare parts please state exact description and ident.-no. of unit (see silver rating label on the backside of unit) as well as part no. and position no. of required spare parts.

Benutzen Sie:



\*317298 #

oder

Telefax: 08245/511 05

Technische Änderungen vorbehalten.

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