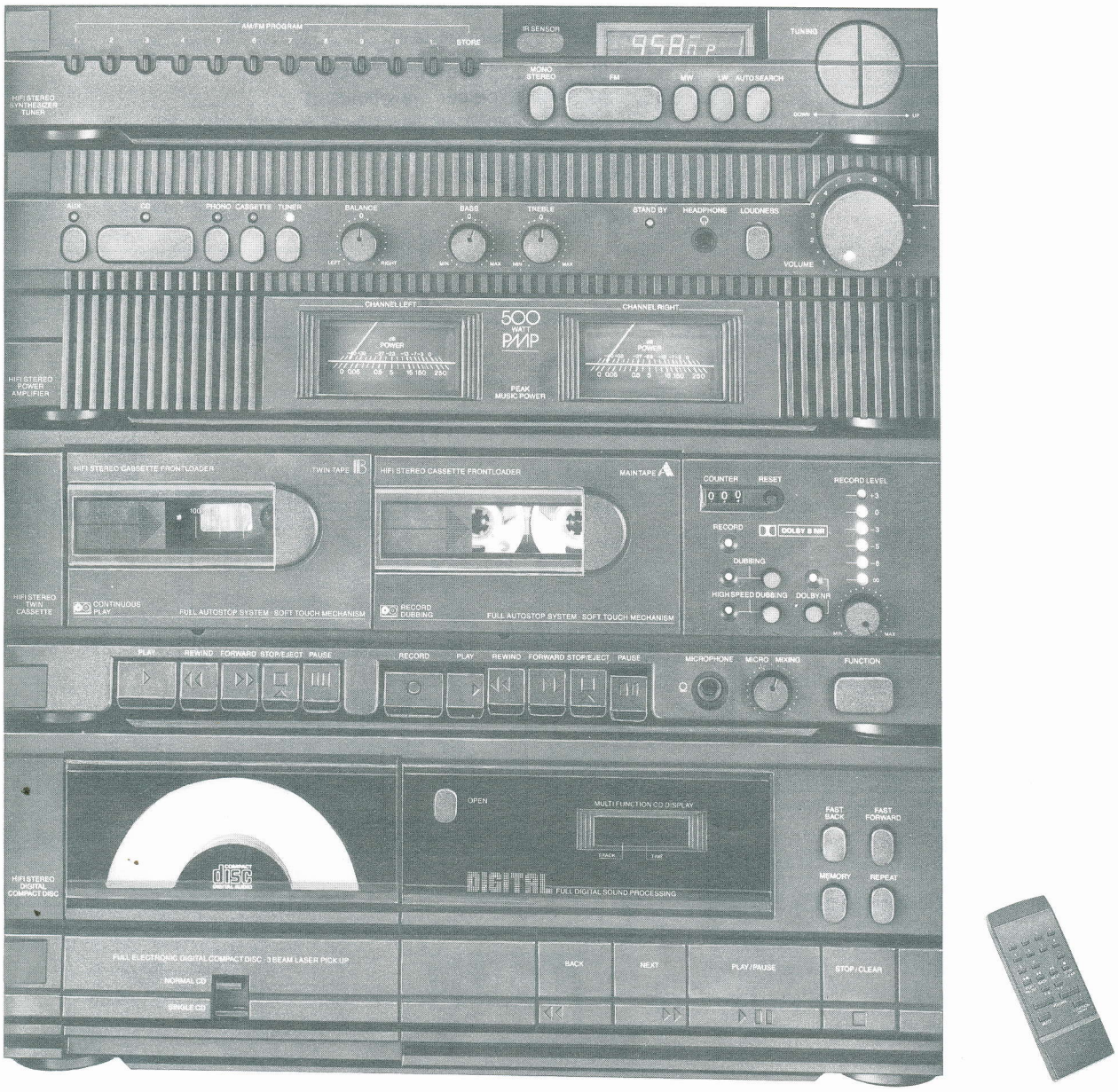
Dual

Service-Anleitung
Service Manual
Instructions de Service

CH 1000



Dual GmbH · Postfach 1144 · 7742 St. Georgen/Schwarzwald

921 613 0192

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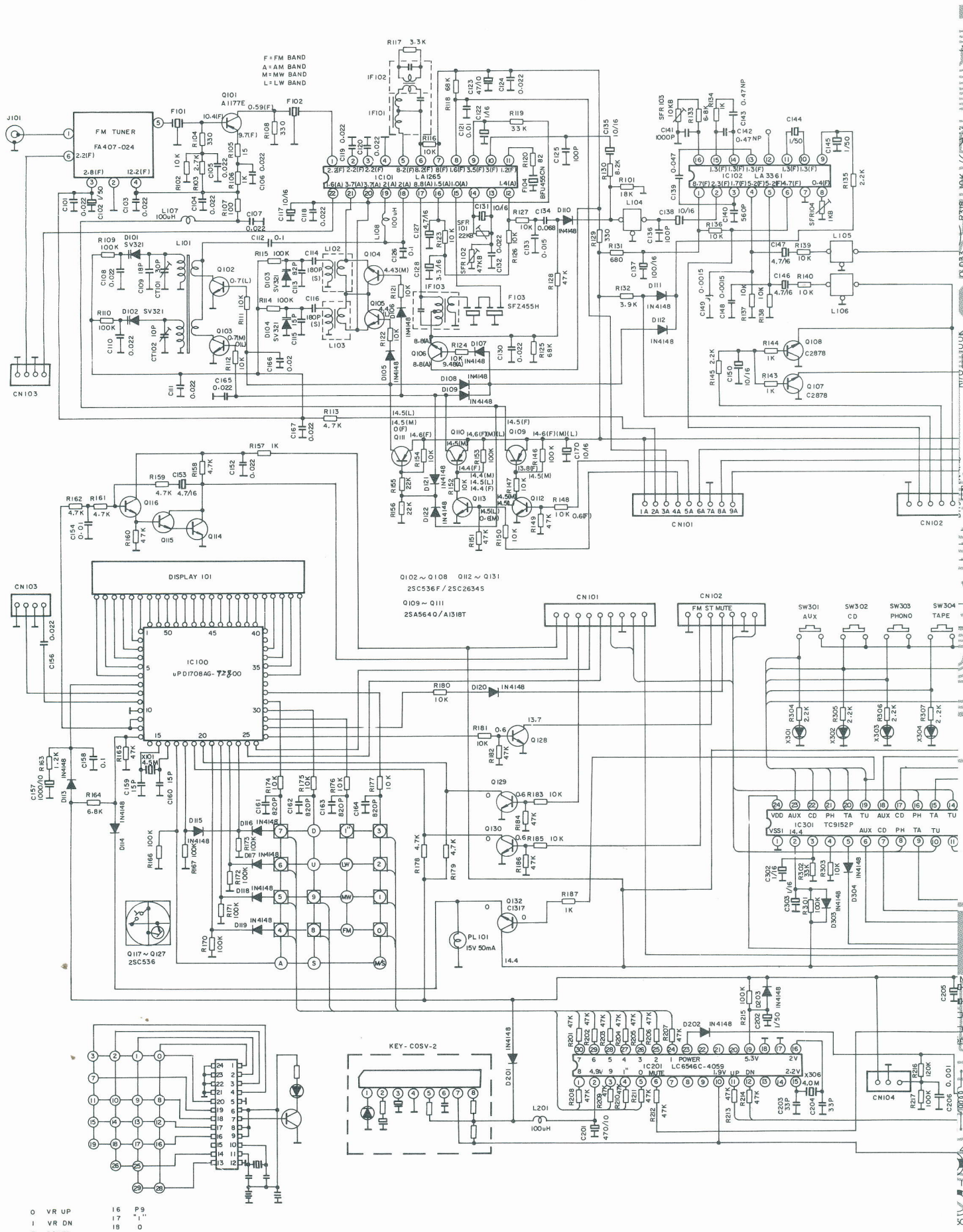

0	VR UP	16	P9
1	VR DN	17	"1"
7	POWER	18	0
8	P1	19	MUTE
9	P2	25	NEXT
10	P3	26	BACK
11	P4	28	PLAY/PAUSE
12	P5	29	STOP/CLEAR
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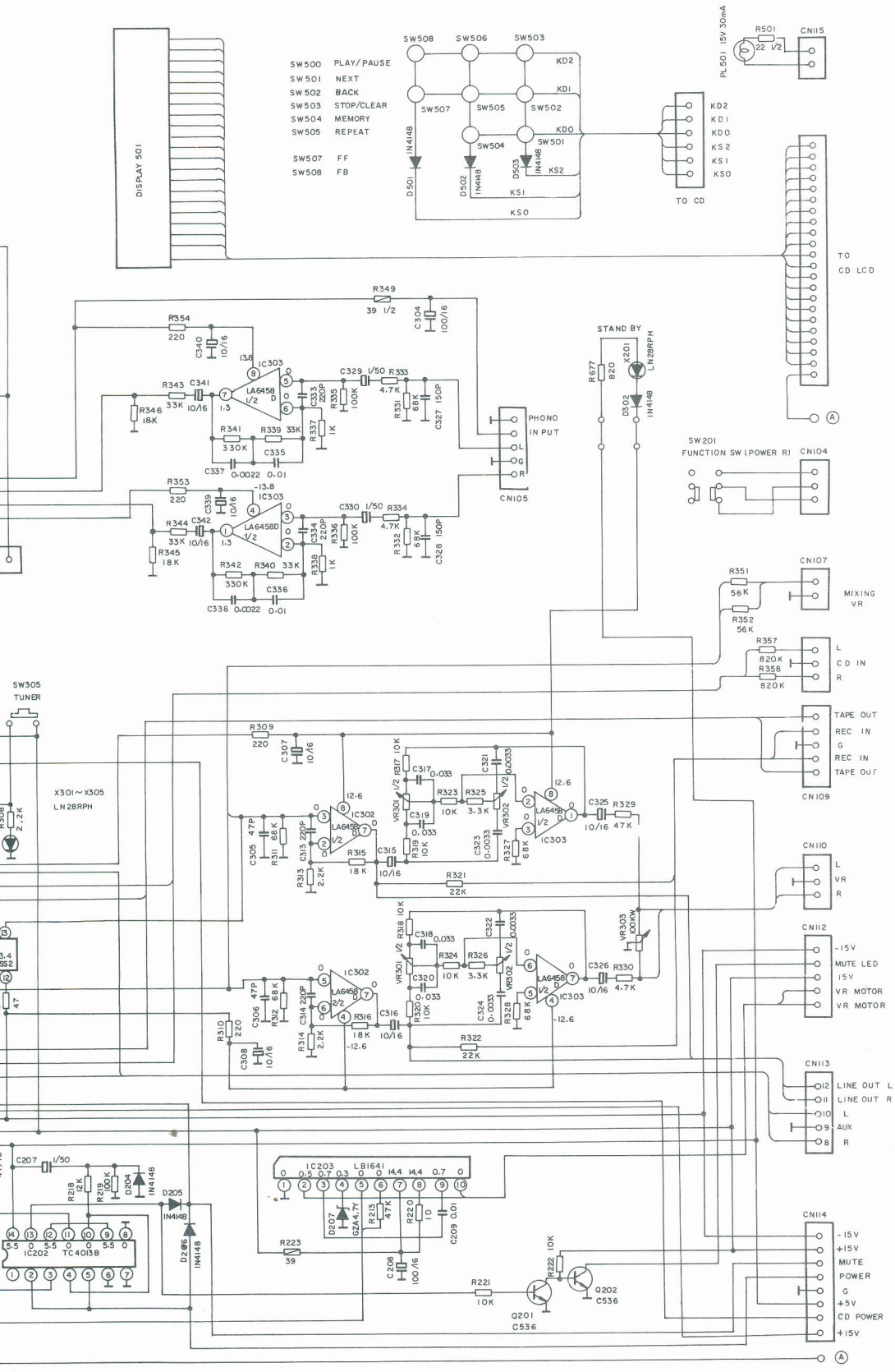
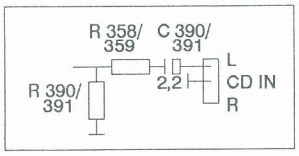
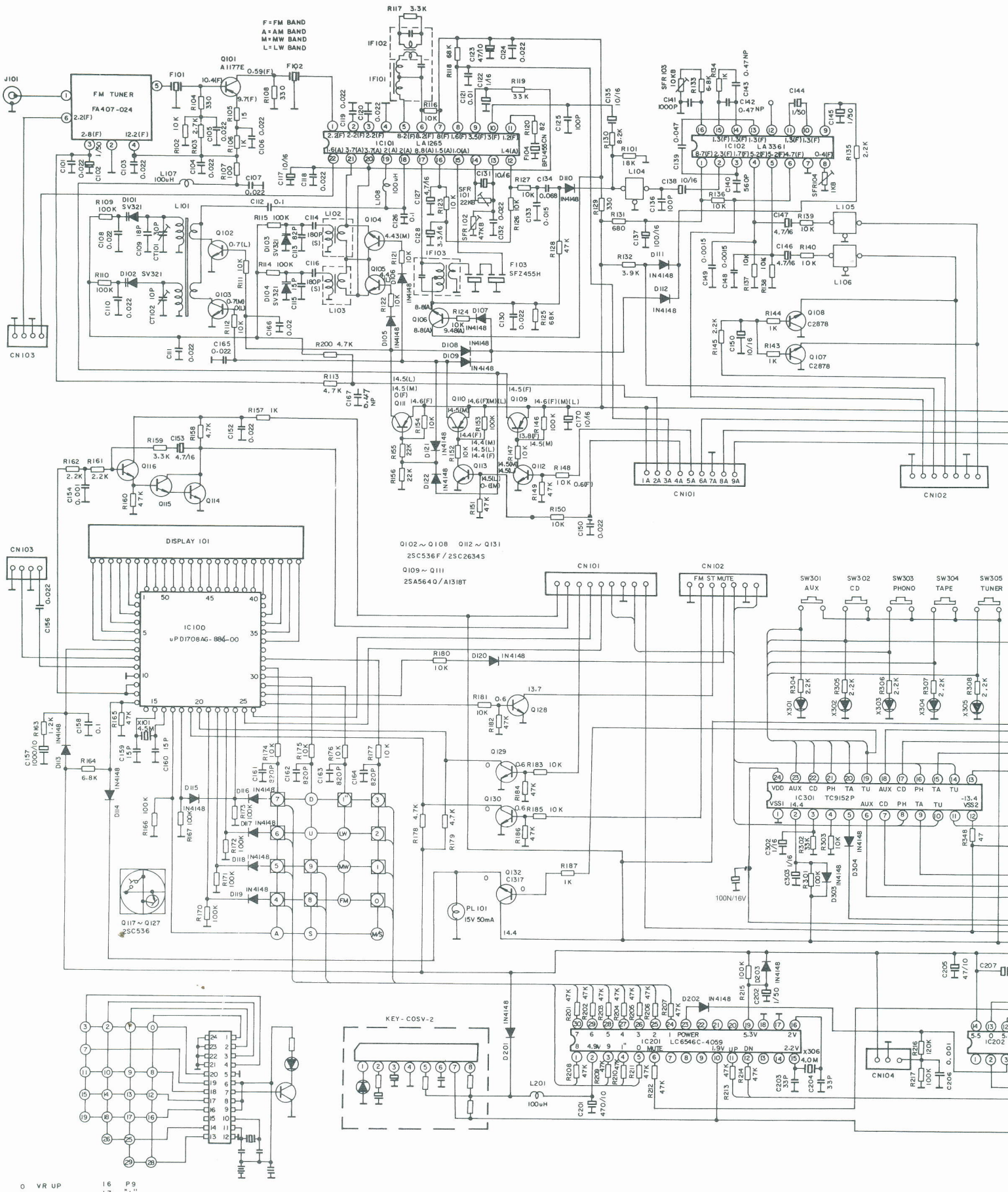


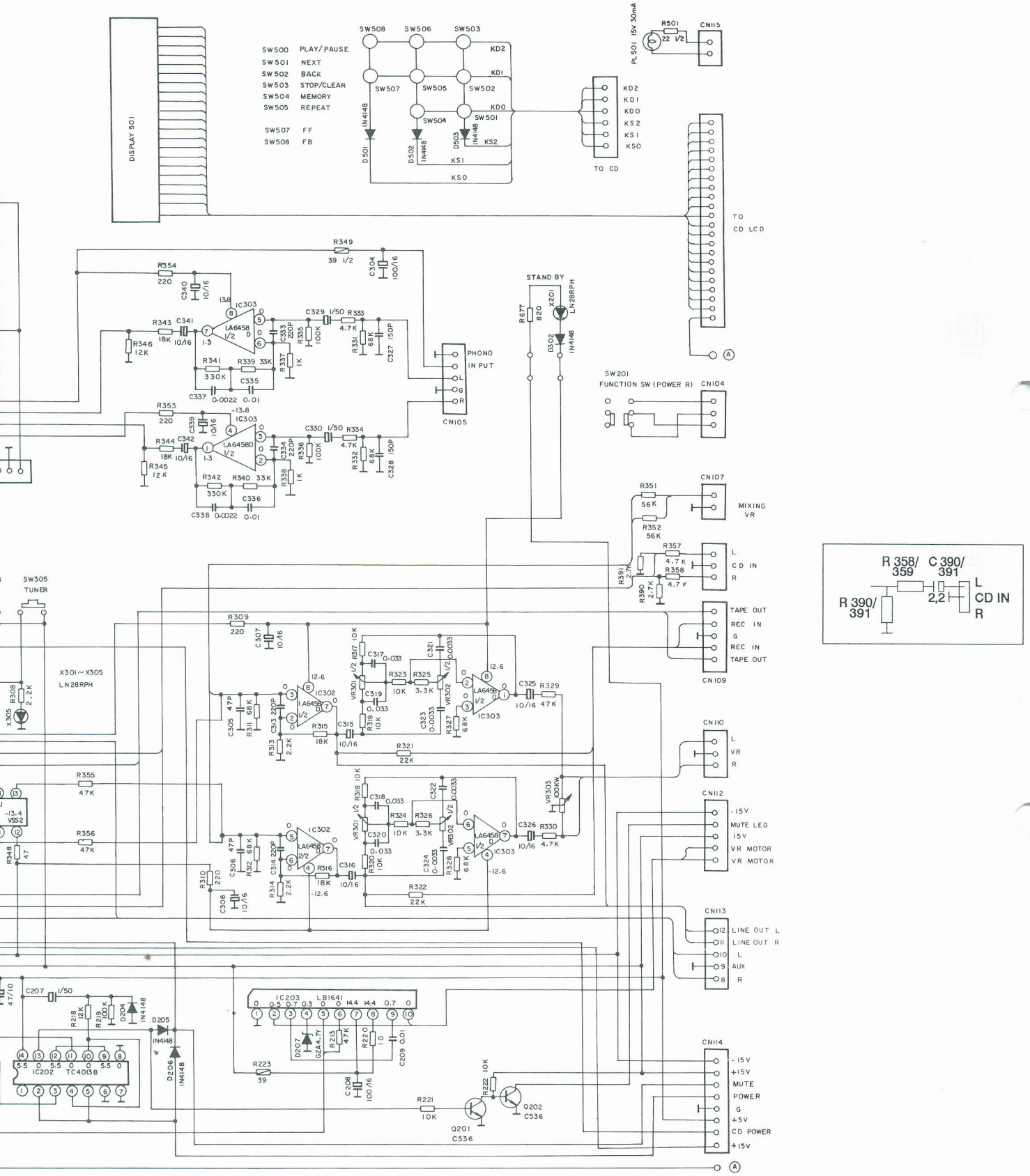
ab Serien-Nr.
from serial no.
90 CI 092001



Schaltbild HF (ab Serien Nr. 90 CI 165001)
Circuit diagram RF (from serial no. 90 CI 165001)

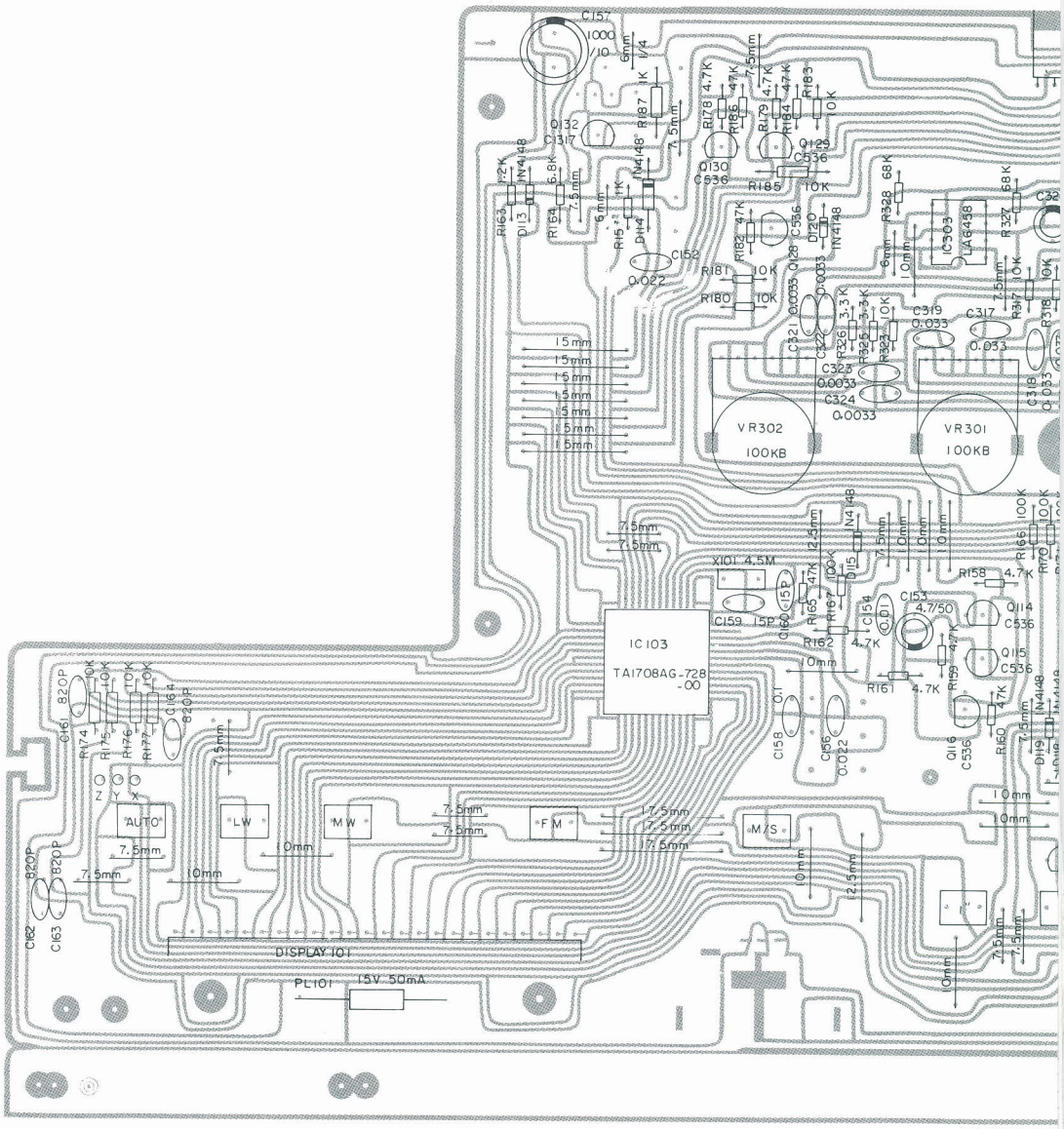


0 VR UP	16 P9
1 VR DN	17 "-"
7 POWER	18 0
8 P1	19 MUTE
9 P2	25 NEXT
10 P3	26 BACK
11 P4	28 PLAY/PAUSE
12 P5	29 STOP/CLEAR
13 P6	
14 P7	
15 P8	

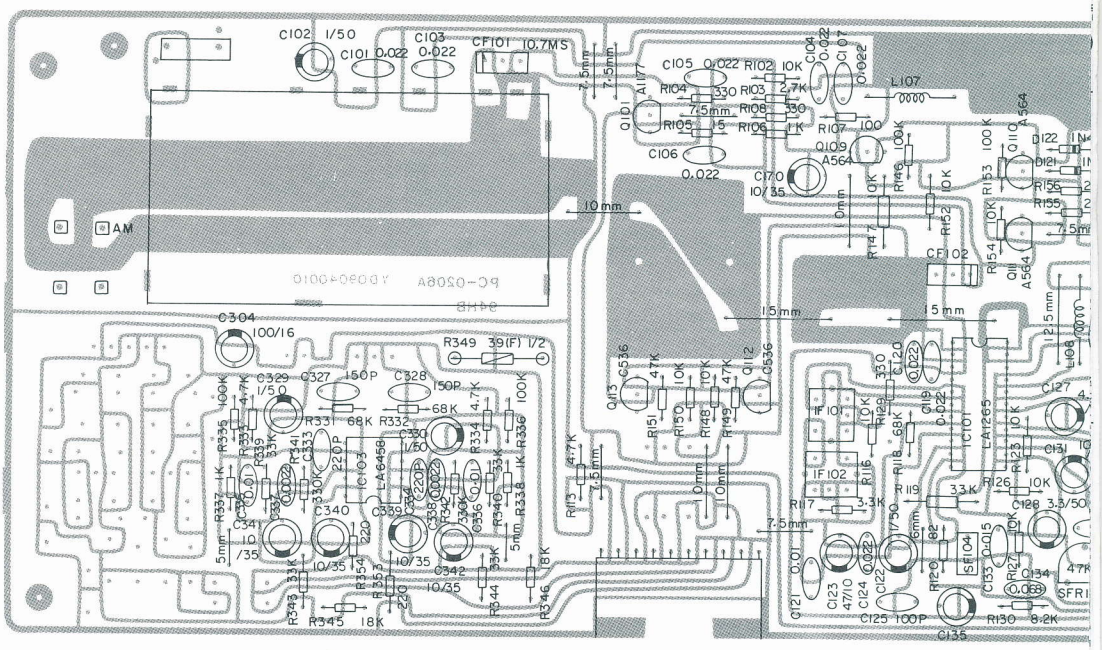

DISPLAY 501
SW500 PLAY/PAUSE
SW501 NEXT
SW502 BACK
SW503 STOP/CLEAR
SW504 MEMORY
SW505 REPEAT
SW507 FF
SW508 FB
SW508 SW506 SW503
SW507 SW505 SW502
SW504 SW501
KD2 KD1 KD0 KS2 KS1 KS0
D501 D502 D503 IN4148
TO CD
PL501 15V 30mA
R501 22 1/2
CN115
TO CD LCD
R349 39 1/2
C304 100/16
R354 220
C340 10/16
IC303 LA6458 1/2
R343 18K
C341 10/16
R346 12K
C329 1/50
R333 4.7K
C333 220P
R335 100K
R331 68K
C327 150P
R341 330K
R339 33K
R337 1K
C335
C337 0.0022
0.01
PHONO IN PUT
L G R
CN105
STAND BY
X201 LN28RPH
R677 820
D302 IN4148
SW201 FUNCTION SW (POWER R)
CN104
R353 220
C339 10/16
IC303 LA6458D 1/2
R344 18K
C342 10/16
R345 12K
C330 1/50
R334 4.7K
C334 220P
R336 100K
R332 68K
C328 150P
R342 330K
R340 33K
R338 1K
C336
C338 0.0022
0.01
CN107
R351 56K
R352 56K
MIXING VR
R357 4.7K
R358 4.7K
R391 2.7K
R390 2.7K
L CD IN R
TAPE OUT REC IN G REC IN TAPE OUT
CN109
SW305 TUNER
X301~X305 LN28RPH
R308 2.2K
R309 220
C307 10/16
IC302 LA6458 2/2
C305 47P
R311 68K
C313 220P
R313 2.2K
R315 18K
C315 10/16
R317 10K
C317 0.033
VR301
R323 10K
R325 3.3K
C321 0.0033
VR302
C319 0.033
R319 10K
C323 0.0033
R327 6.8K
IC303
C325 10/16
R329 47K
R321 22K
CN110
L VR R
R355 47K
R356 47K
R348 47
C306 47P
R312 68K
C314 220P
R314 2.2K
R316 18K
C316 10/16
R318 10K
C318 0.033
VR303 50K
R324 10K
R326 3.3K
C322 0.0033
C320 0.033
C324 0.0033
R328 6.8K
C326 10/16
R330 4.7K
R310 220
C308 10/16
R322 22K
CN112
-15V MUTE LED +5V VR MOTOR VR MOTOR
CN113
LINE OUT L LINE OUT R L AUX R
C207 1/50
R218 12K
R219 33K
D204 IN4148
D205 IN4148
D206 IN4148
IC202 TC4013B
IC203 LB1641
D207 GZA4.7V
R213 47K
R220 10
C209 0.01
C208 100/16
R223 39
R221 10K
R222 10K
Q201 C536
Q202 C536
CN114
-15V +15V MUTE POWER G +5V CD POWER +15V
R315.316 27K T90-5 ONLY
R 358/ 359
C 390/ 391
2,2
R 390/ 391
L CD IN R

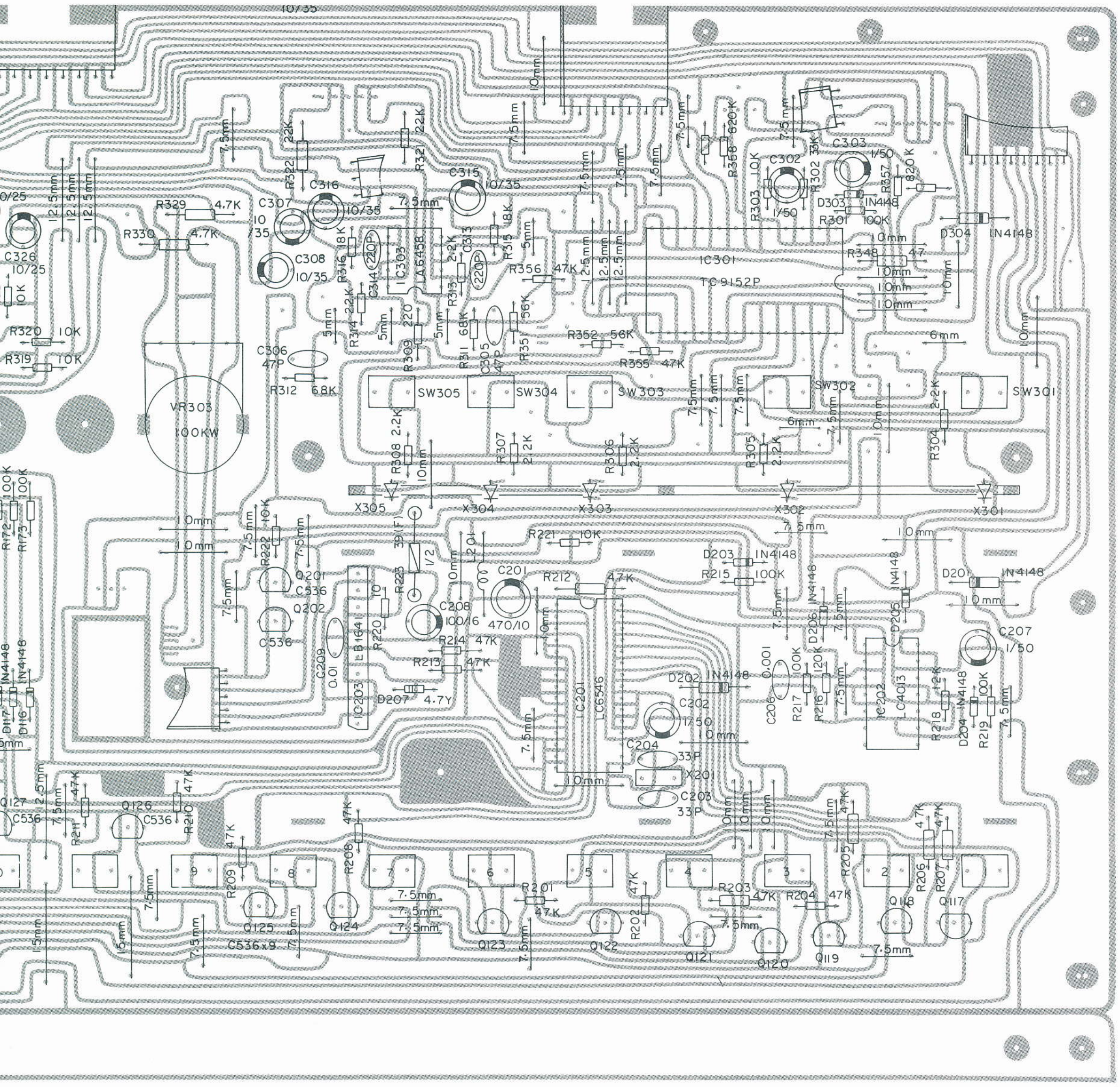
Bestückungsseite/Top view

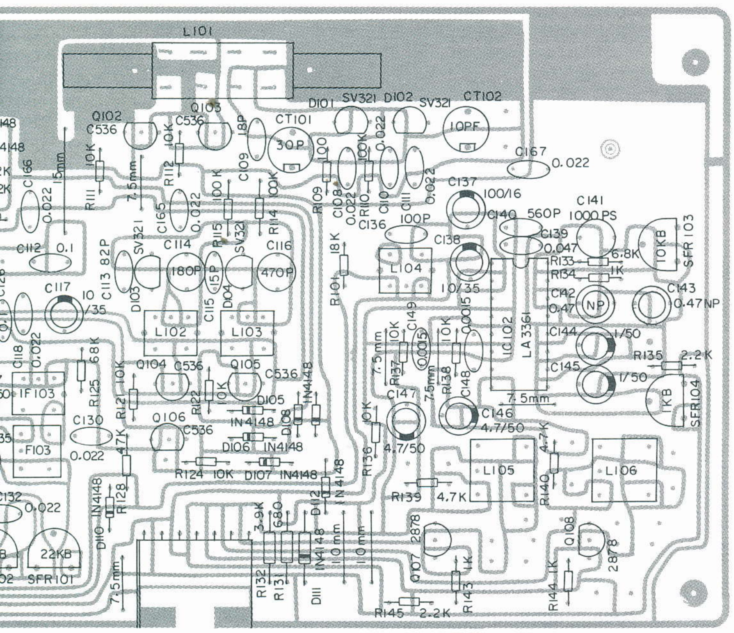
Grundplatine Audio
Main P.C.B. assembly



Tunerplatine
Tuner P.C.B. assembly

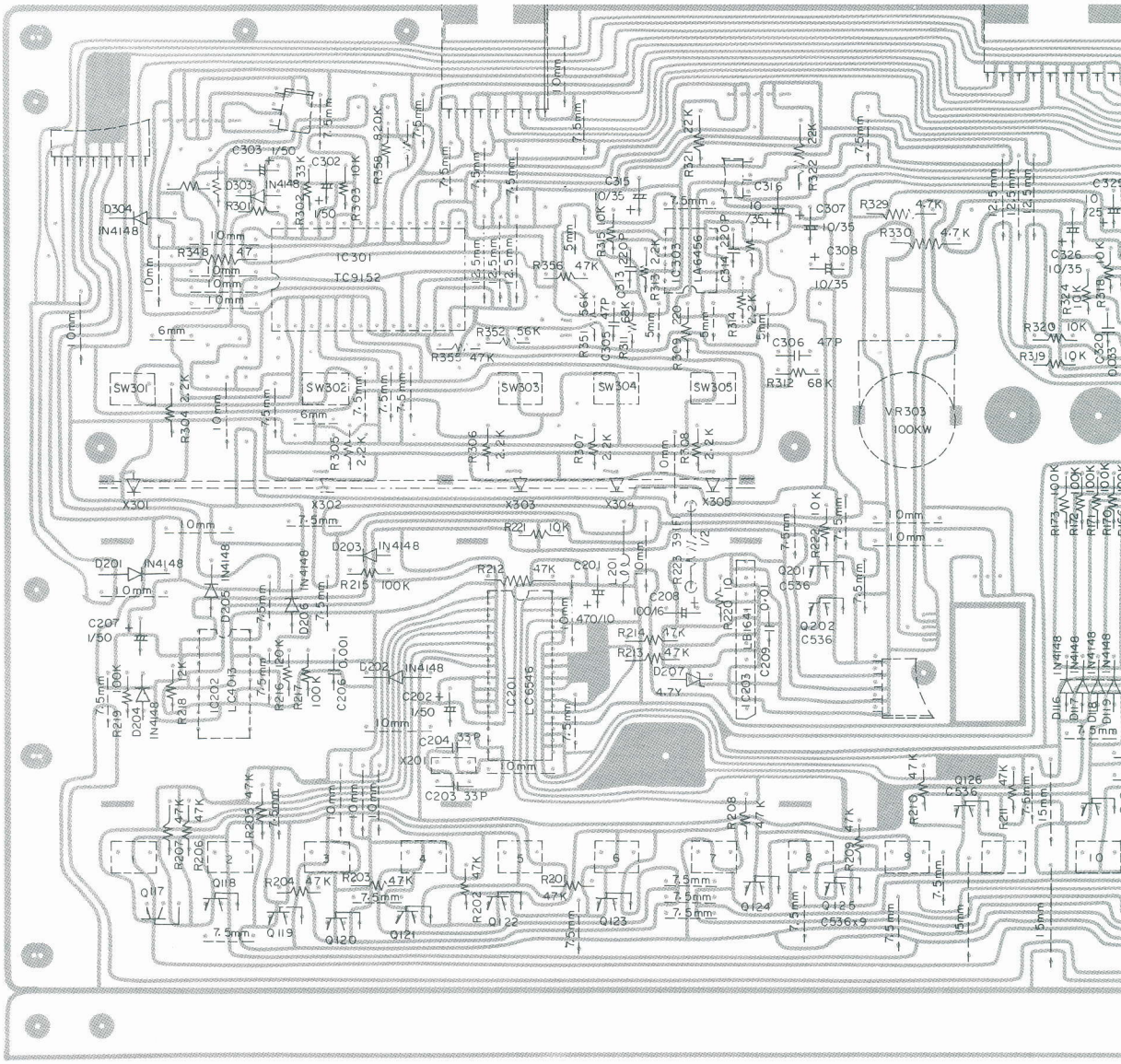



10/35
R322 22K
R321 22K
C316 10/35
C315 10/35
C307 10/35
C308 10/35
R329 4.7K
R330 4.7K
C326 10/25
R320 10K
R319 10K
R316 18K
C314 220P
IC303 LA6458
R313 2.2K
C313 220P
R315 18K
R356 47K
R314 2.2K
R309 220
R311 68K
C305 47P
R351 56K
R352 56K
R355 47K
IC301
TC9152P
R358 820K
R303 10K
C302 1/50
R302 33K
C303 1/50
R357 820K
D303 IN4148
R301 100K
D304 IN4148
R348 47
C306 47P
R312 68K
VR303 100KW
SW305
SW304
SW303
SW302
SW301
R308 2.2K
R307 2.2K
R306 2.2K
R305 2.2K
R304 2.2K
X305
X304
X303
X302
X301
R172 100K
R173 100K
R222 10K
Q201 C536
Q202 C536
39(F)
R223 1/2
L201
C201 470/10
R221 10K
R212 47K
D203 IN4148
R215 100K
D201 IN4148
C208 100/16
R220 10
C209 0.01
IC203 LB1641
R214 47K
R213 47K
D207 4.7Y
IC201 LC6546
D202 IN4148
C202 1/50
C204 33P
X201
C203 33P
C206 0.001
R217 100K
R216 120K
D206 IN4148
D205 IN4148
IC202 LC4013
R218 12K
D204 IN4148
R219 100K
C207 1/50
D117 IN4148
D116 IN4148
Q127 C536
R211 47K
Q126 C536
R210 47K
R209 47K
R208 47K
9
8
7
6
5
4
3
2
1
Q125
C536x9
Q124
Q123
R201 47K
Q122
R202 47K
Q121
R203 47K
Q120
R204 47K
Q119
R205 47K
R206 47K
R207 47K
Q118
Q117

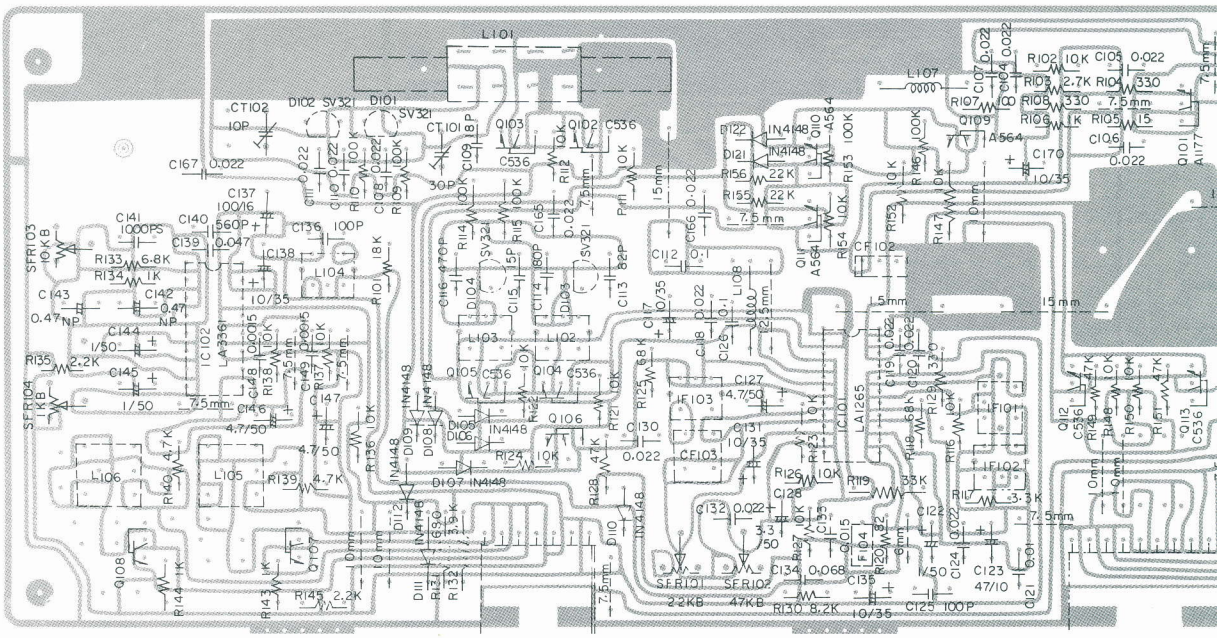

L101
Q102 C536
Q103 C536
D101 SV321
D102 SV321
CT102 10PF
CT101 30P
C109 18P
R111 10K
R112 10K
C165 0.022
C166 0.022
R115 100K
R114 100K
R109 100
C108 0.022
R110 100K
C110 0.022
C111 0.022
C167 0.022
C137 100/16
C136 100P
C140 560P
C141 1000PS
C139 0.047
C112 0.1
C113 82P
D103 SV321
C114 180P
C115 15P
D104 SV321
C116 470P
R101 18K
L104
C138 10/35
R133 6.8K
R134 1K
SFR103 10KB
C117 10/35
L102
L103
C149 0.0015
C142 0.47 NP
C143 0.47NP
IC102 LA3361
C144 1/50
R135 2.2K
C145 1/50
Q118 0.022
IF103
R125 68K
R121 10K
Q104 C536
Q105 C536
R122 10K
R137 10K
R138 10K
C148 0.0015
SFR104 1KB
D105 IN4148
D108 IN4148
C147 4.7/50
C146 4.7/50
C130 0.022
Q106 C536
D106 IN4148
F103
R136 10K
R140 4.7K
L105
L106
R124 10K
D107 IN4148
R128 47K
D110 IN4148
C132 0.022
R139 4.7K
D112 IN4148
R132 3.9K
R131 680
D111 IN4148
Q107 2878
Q108 2878
22KB
SFR101
R143 1K
R144 1K
R145 2.2K

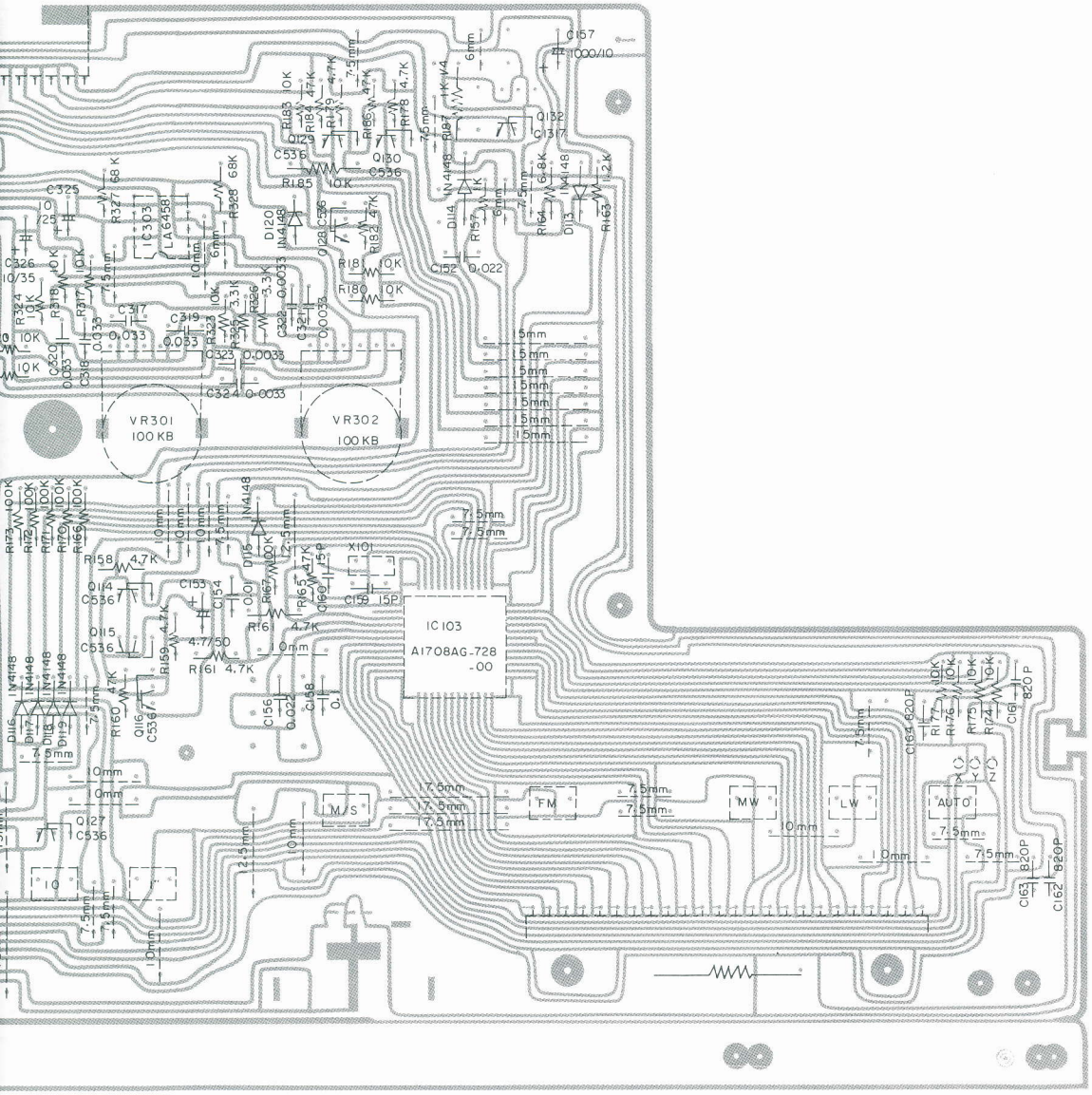
Leiterbahnseite/Bottom view

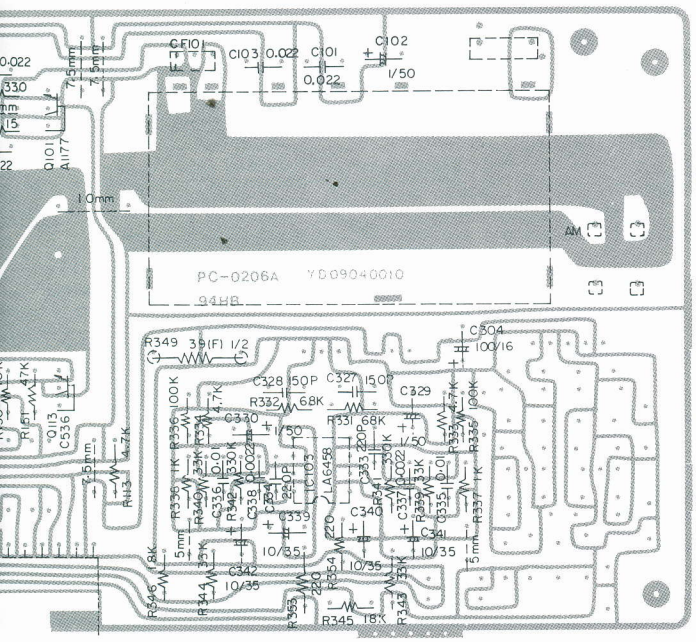
Grundplatine Audio
Main P.C.B.



Tunerplatine
Tuner P.C.B. assembly

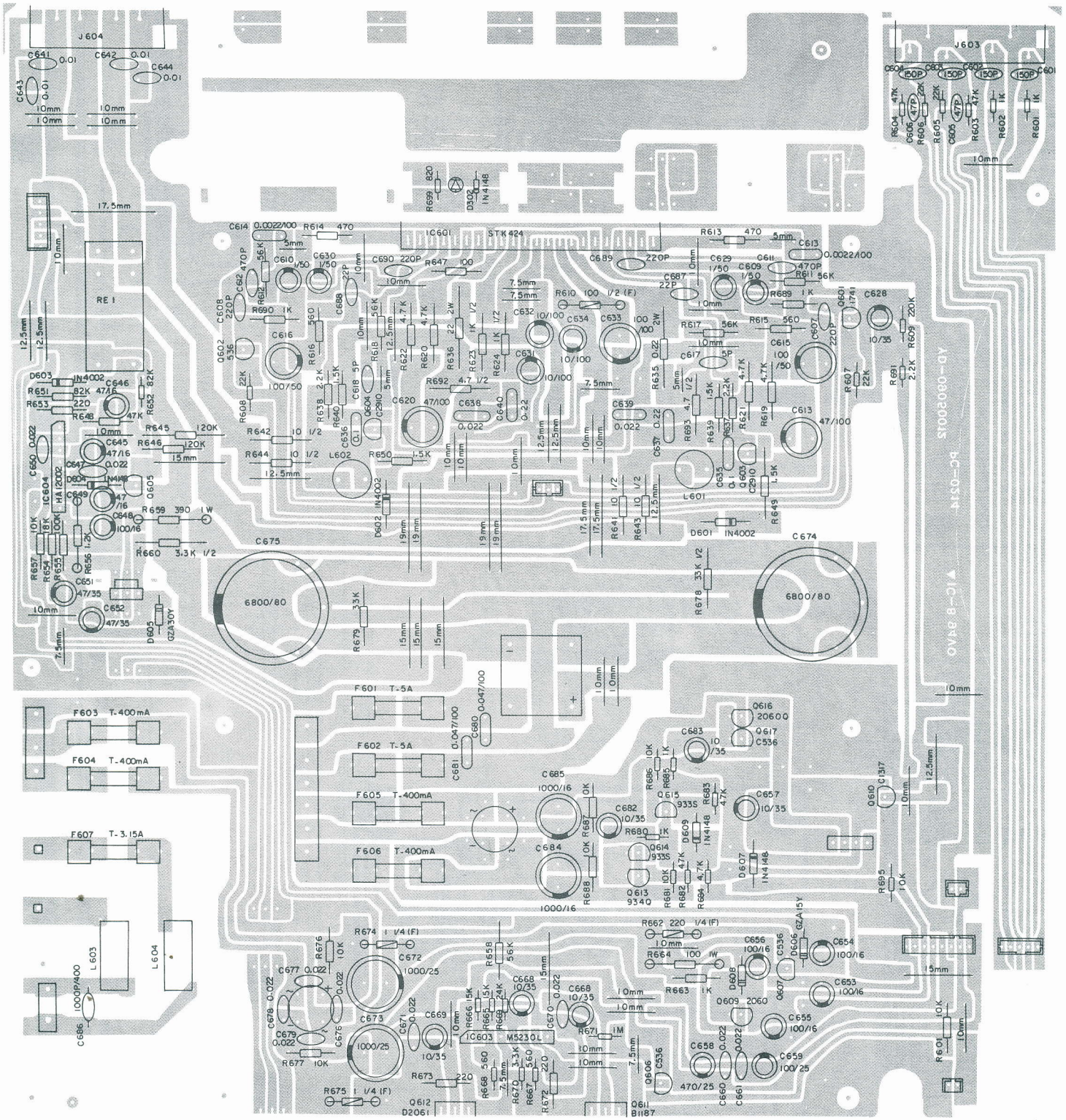



VR301
100 KB
VR302
100 KB
IC103
A1708AG-728
-00
FM
MW
LW
AUTO
M/S
AM

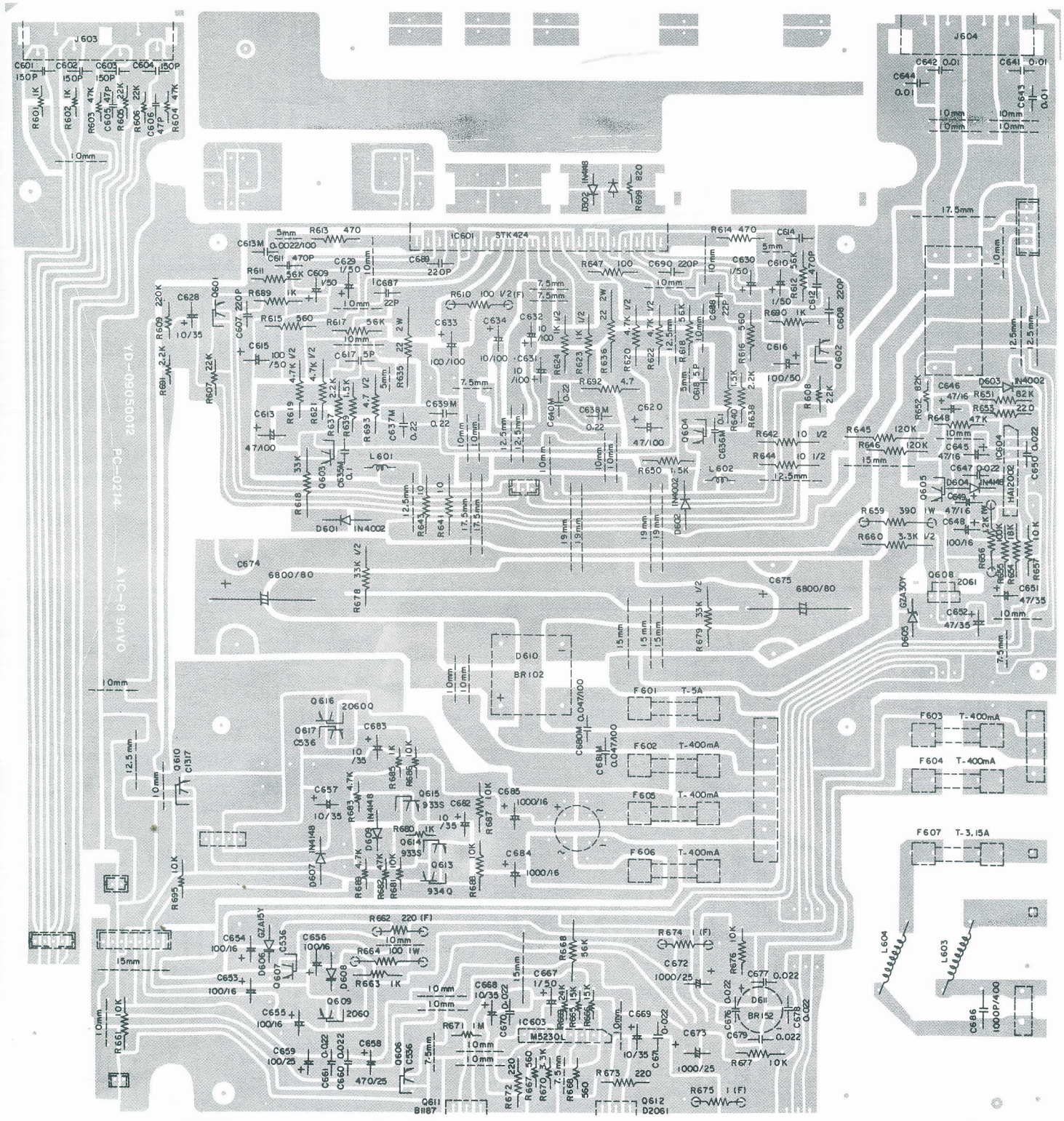

PC-0206A YD09040010
94HB
AM

Platinendarstellung Netzteil/Endstufe
Audio P.C.B.

Bestückungsseite/Top view

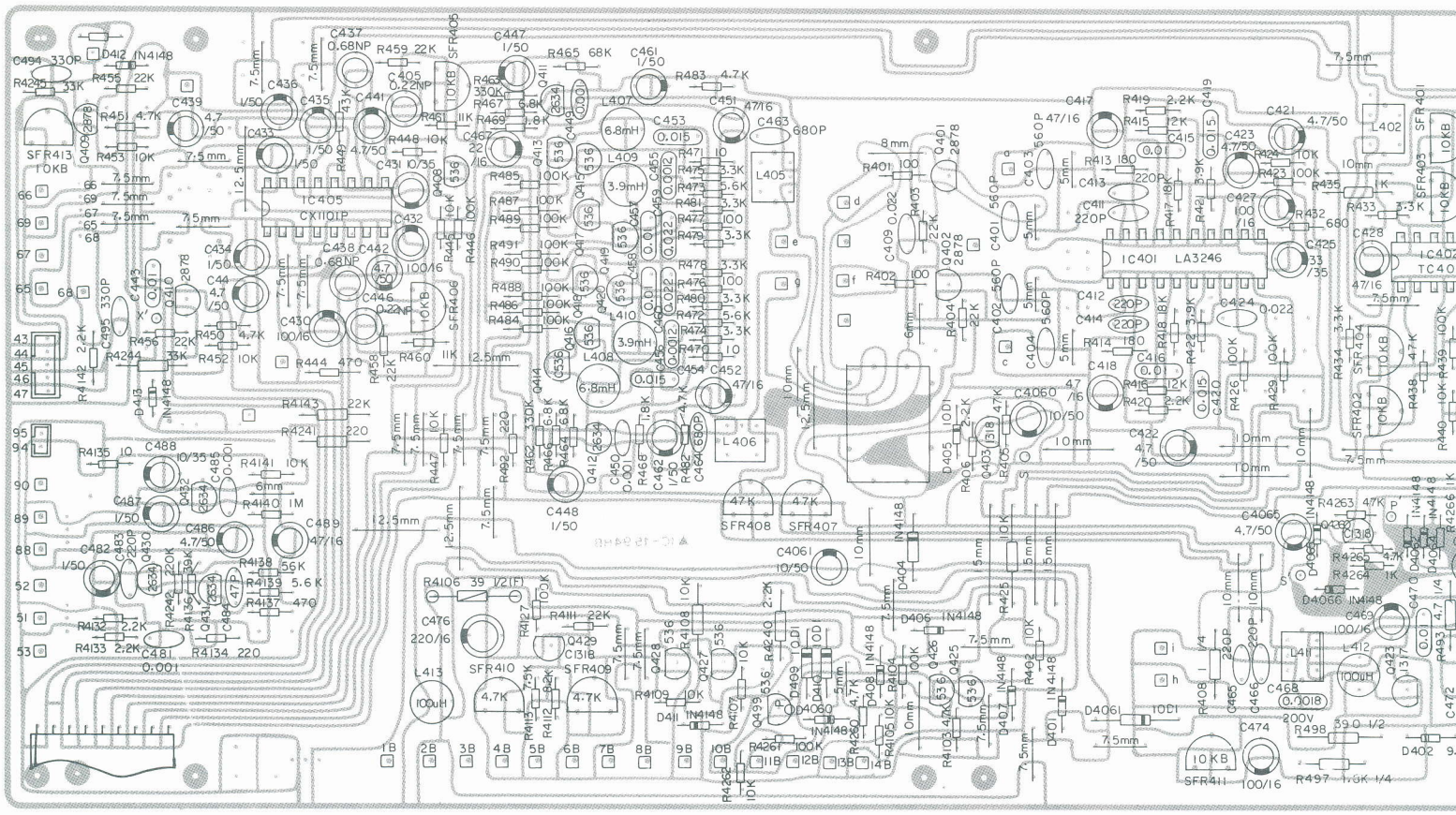


Leiterbahnseite/Bottom view

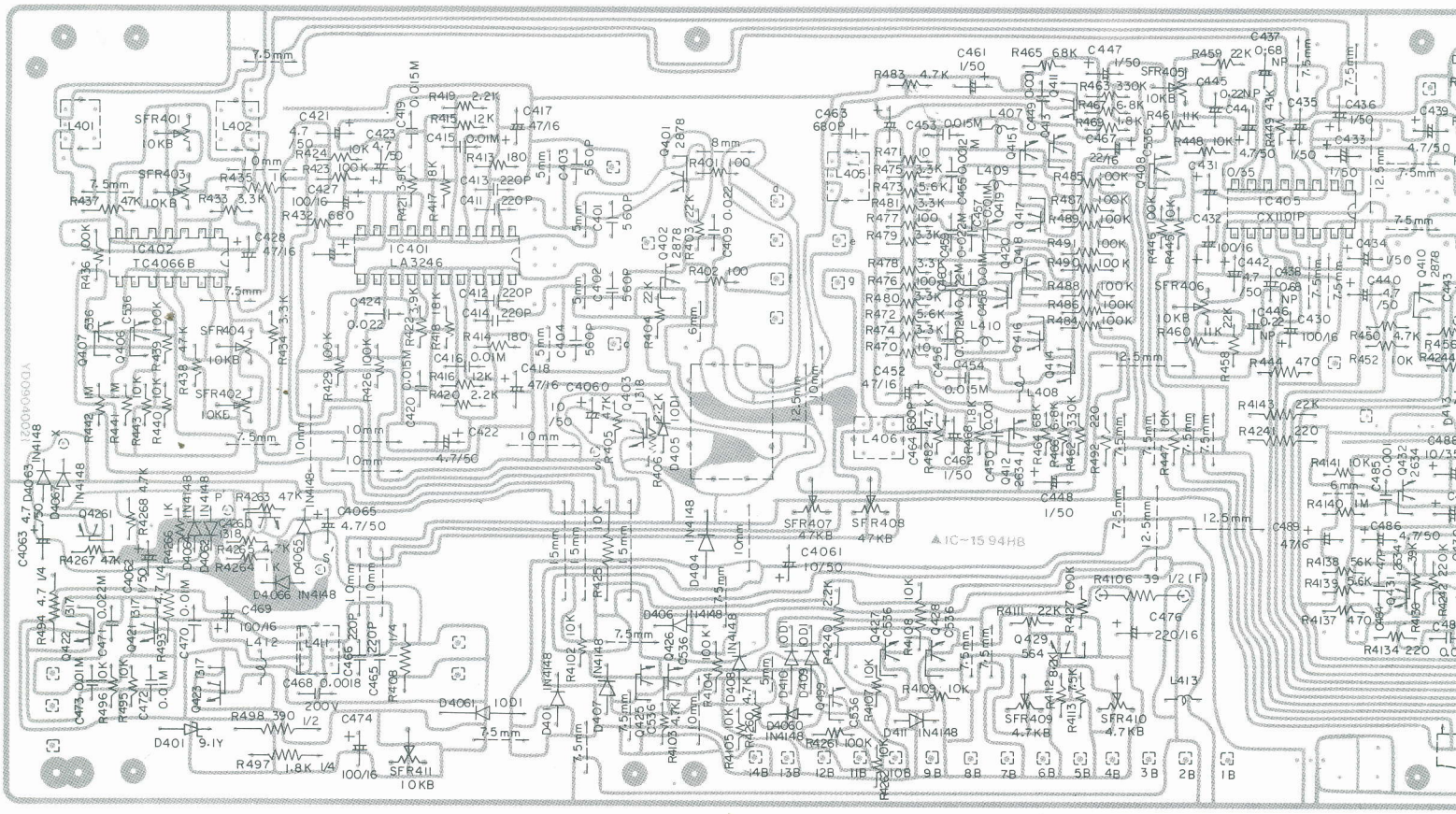


Platinendarstellung Cassette
Tape P.C.B.

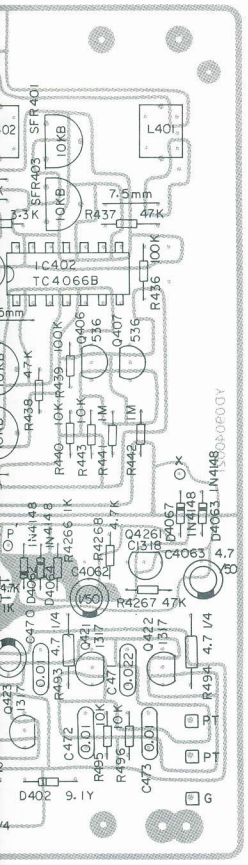
Bestückungsseite/Top view

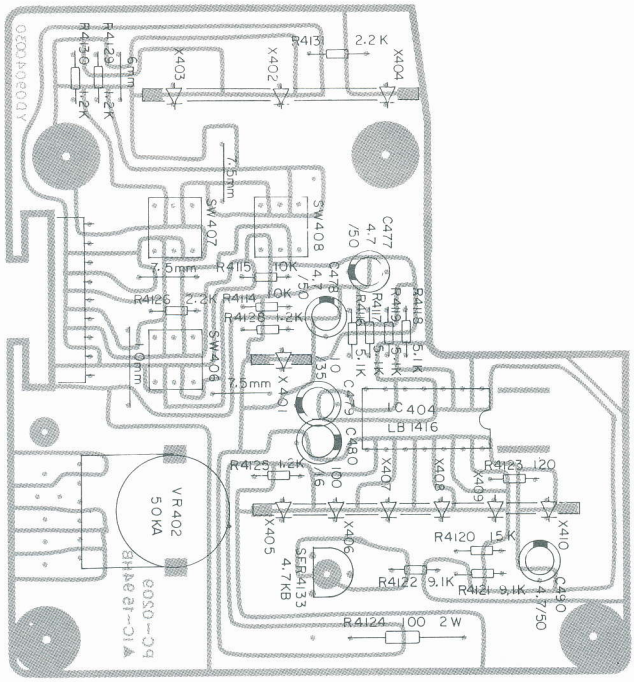


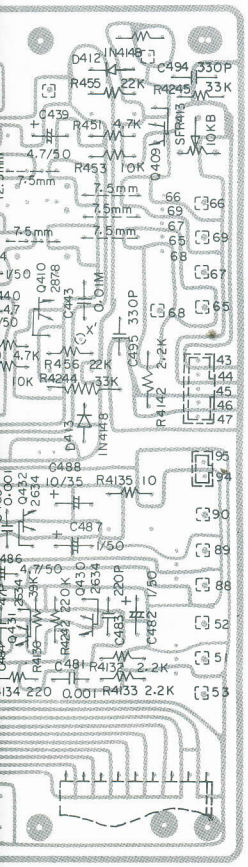
Leiterbahnseite/Bottom view

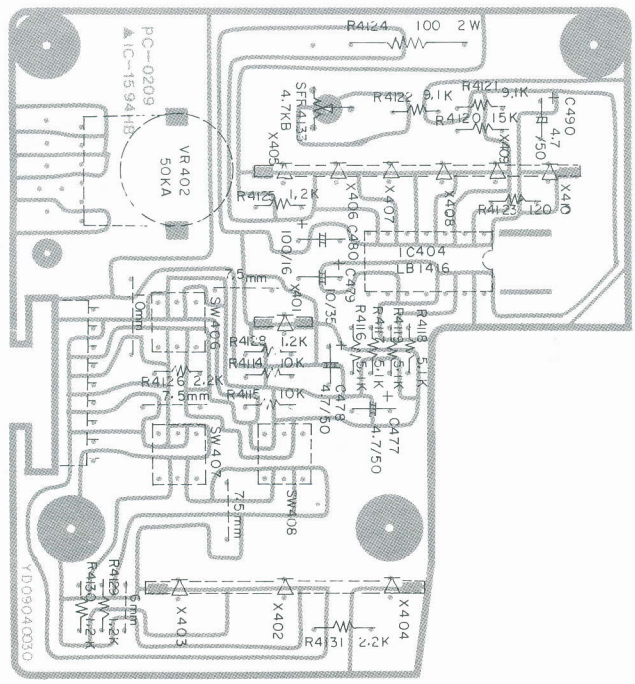


Funktionsplatine Cassette
Tape function P.C.B.

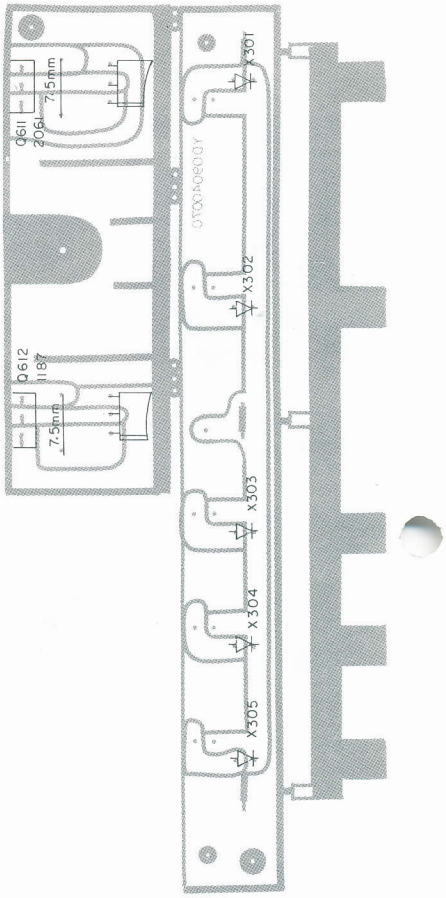


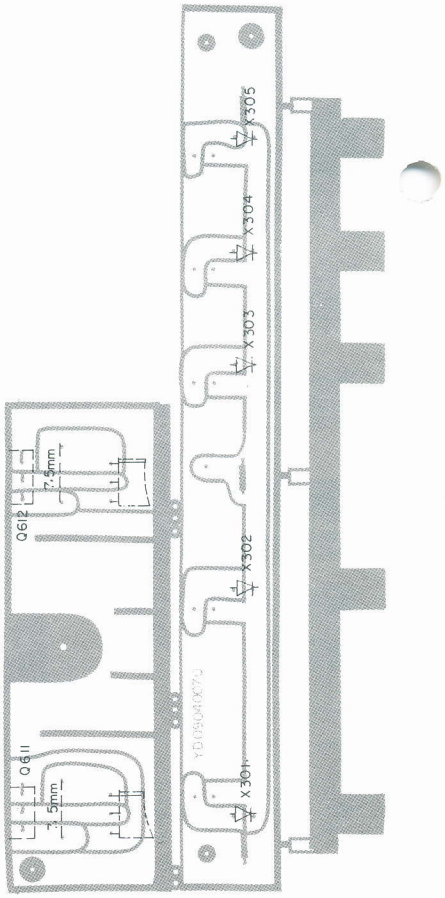






Platinendarstellung LED
LED P.C.B.

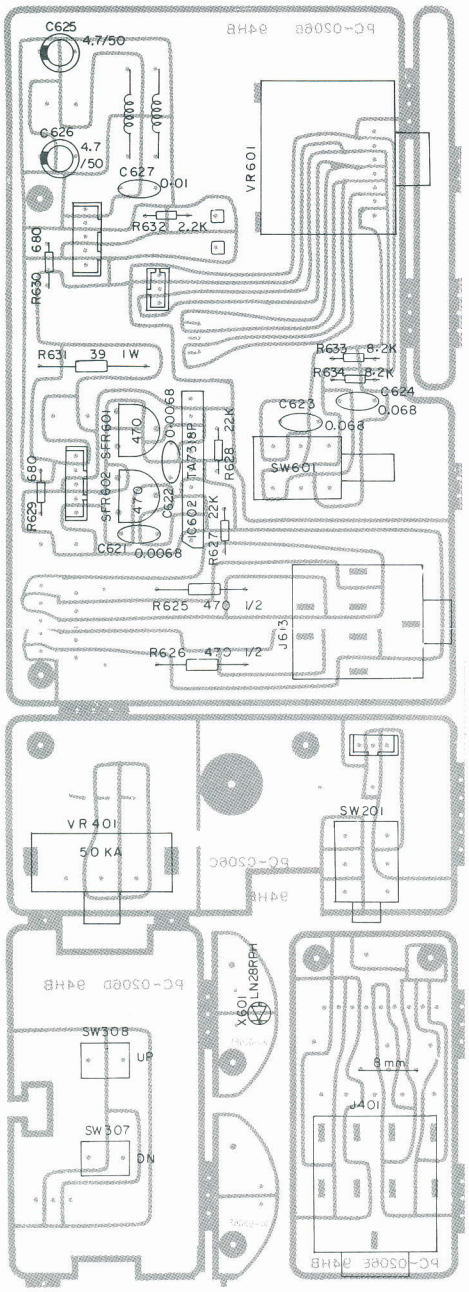


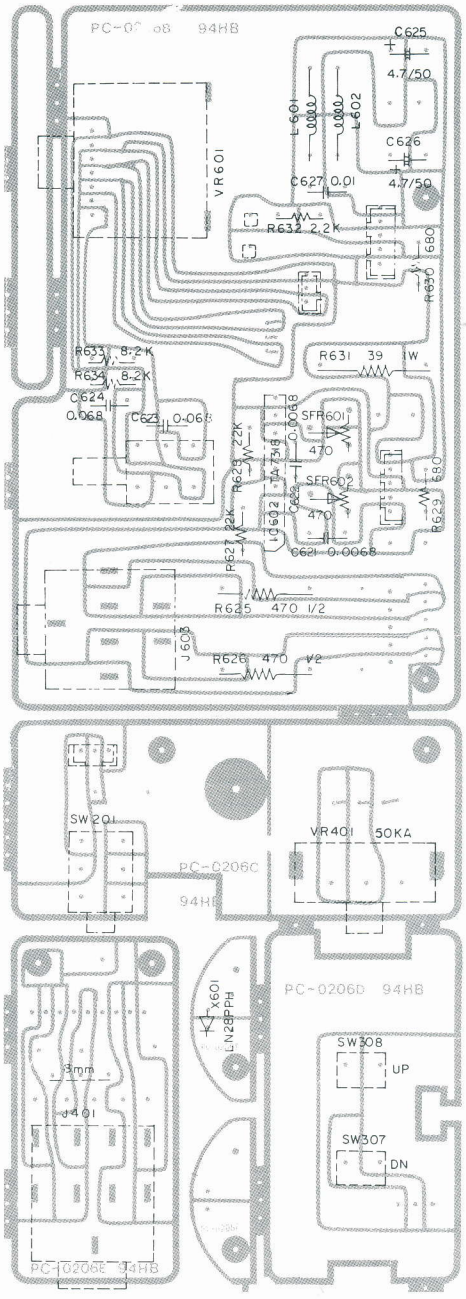


Bestückungsseite/Top view

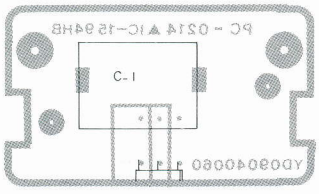
Leiterbahnseite/Bottom view

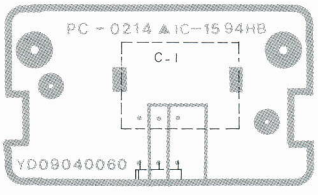
Platinendarstellung Volumenregler, Mixing und Netzschalter, Mikrofonbuchse, Tuning
VR P.C.B., Mixing VR/Function P.C.B., Mic. jack P.C.B., Tuning up/down P.C.B.





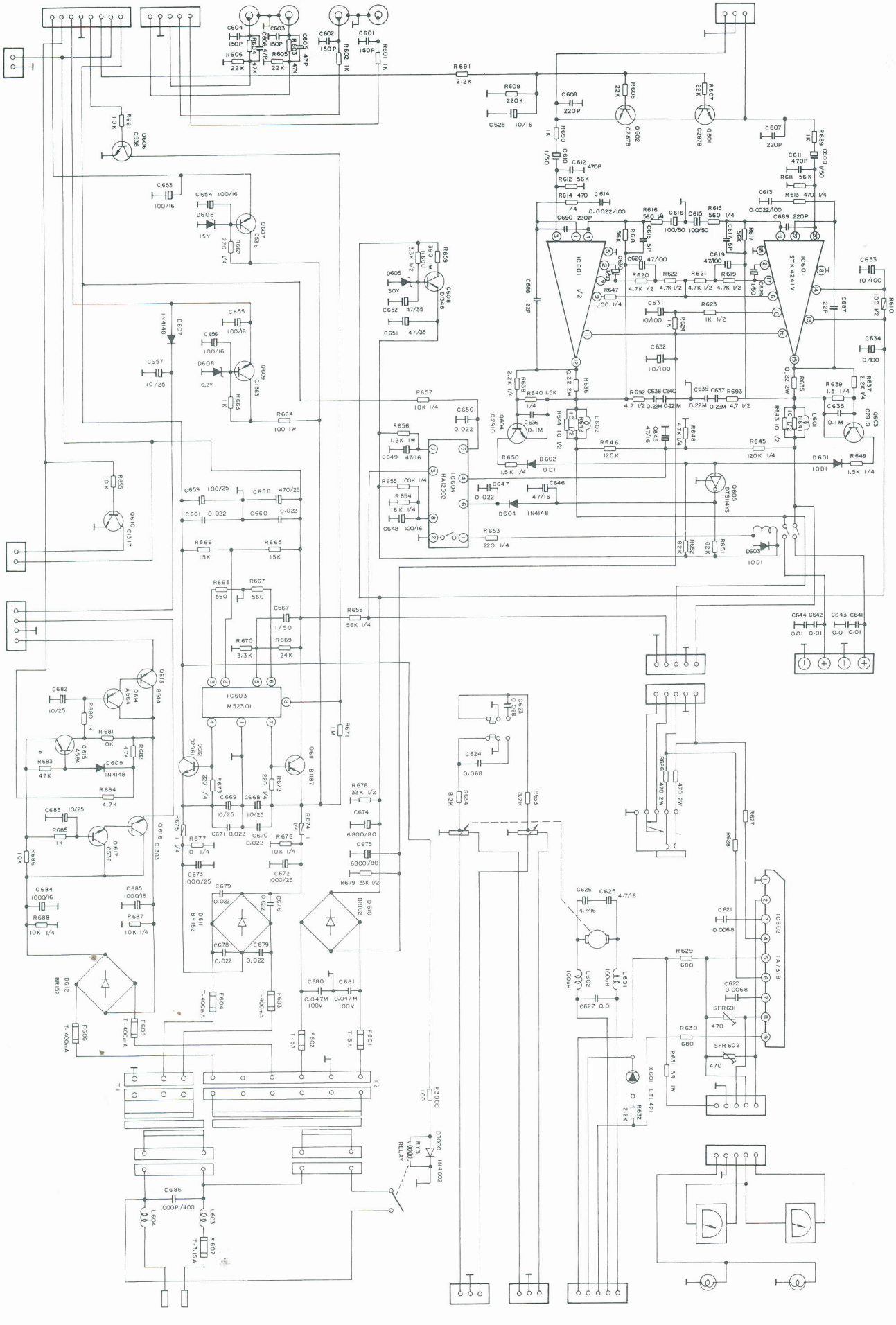
Platinendarstellung IR-Sensor
R/C Sensor P.C.B.



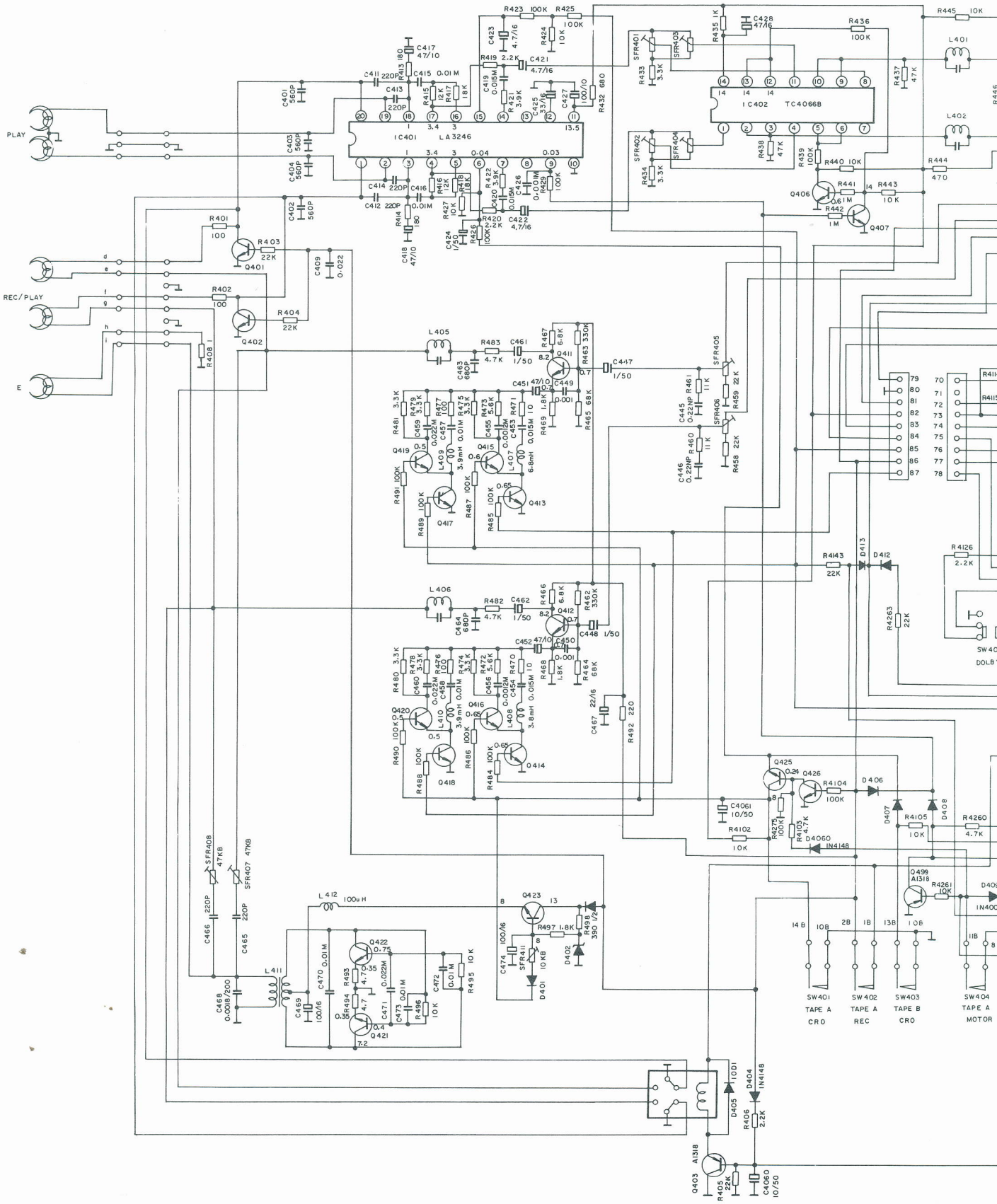


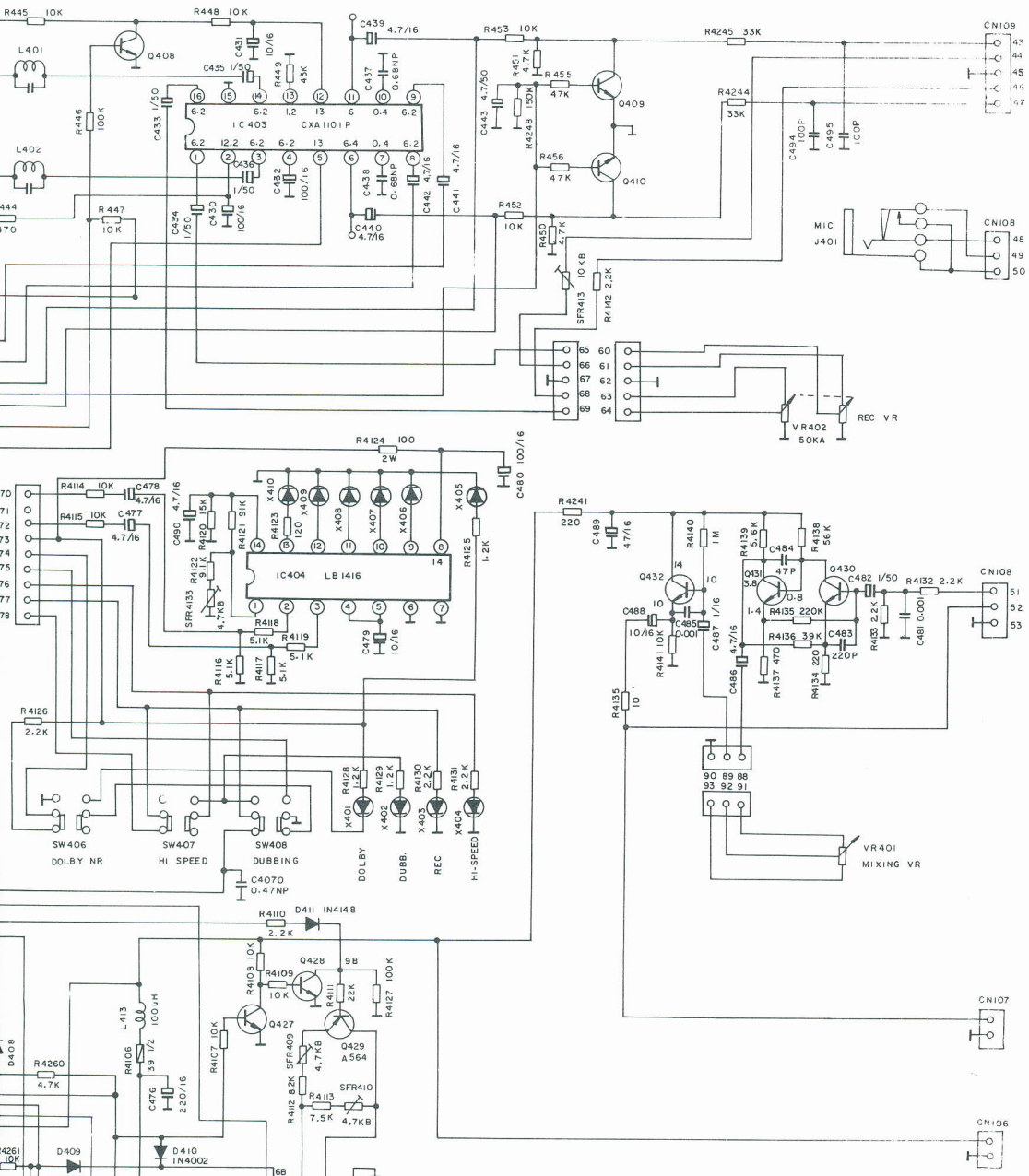
Schaltbild Netzteil/Endstufe

Circuit diagram power supply/output amplifier



Schaltbild Cassette
Circuit diagram tape





SFR401 402 403 404 411 413 405 406 10KB

SFR407 408 47KB

SFR409 410 4.7KB

Q406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 425 426 427 428 2SC536/C1740/C1815

Q430 431 432 2SC2634S

Q421 422 423 2SC1317R

Q424 430 2SA564/A933

Q401 402 404 2SC2878/C1741

Q403 405 2SC2362/C2389

D401 403 404 405 406 407 408 411 IN4148

D402 GZA9.1Y

X403 410 LN28RPH

X401 LN38GPH

X402 404 405 406 407 408 409 LN48YPH

Hinweis:
Ab Serien Nr. 90 CI 165001
R 4106 = 4,7 Ω ¼ W
R 4111 = 0 Ω
R 4107 + R 4108 Unterbrechung

Ab Serien Nr. 90 CI 139001
R 450/451 = 33 kΩ

Note:
From serial no. 90 CI 165001
R 4106 = 4,7 Ω ¼ W
R 4111 = 0 Ω
R 4107 + R 4108 disconnection

from serial no. 90 CI 139001
R 450/451 = 33 kΩ

ALIGNMENT PROCEDURE

1
LW

GENERAL ALIGNMENT CONDITIONS

1.Signal input must be kept as low as possible to avoid overload and clipping
(Use highest possible sensitivity of output indicator.)

2.Signal input should be kept as low as possible to avoid A.G.C action.
(Set output indicator to highest sensitvity.)

3.Marker insertion and amplitude should not distort the oscillator and amplitude should not distort the oscilloscope trace.

4. STANDARD MODULATION is 400 Hz 30%.

INSTRUMENT REQUIRED

Signal source
AM signal generator
Radio sweep generator
Sweep oscilloscope

Output indicators
AC millivolt meter
Oscilloscope

STEP	CONNECT SIGNAL SOURCE TO-	CONNECT OUTPUT INDICATOR	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO-	ADJUST	ADJUST FOR-
1.	Set function selector switch on the front panel to "LW" position.					
2	Sweep generator connected to a loop or short piece of wire Placed near AM antenna	Sweep oscilloscope connected to wire pin of the C 43 or C 44 and volume to maximum	See amplitude of 455 KHz	Quiet point on band near 515 KHz	IF103	Amplitude of filter
3	Signal generator connected to a loop	AC millivolt meter and oscilloscope connected across speaker	137 KHz	137KHz	LW OSC L102	maximum
4			290 KHz	290KHz		
5			170 KHz	170KHz	LW BAR ANT COIL	
6			270 KHz	270KHz	RF Trimmer CT101	
7	Repeat step 3 through 6 as necessary to obtain maximum sensitivity on station.					

ALIGNMENT PROCEDURE

GENERAL ALIGNMENT CONDITIONS:

1. Signal input must be kept as low as possible to avoid overload and clipping.
   (Use highest possible sensitivity of output indicator.)
2. Signal input should be kept as low as possible to avoid A.G.C. action.
   (Set output indicator to highest sensitivity.)
3. Maker insertion and amplitude should not distort the oscillator and amplitude should not distort the oscilloscope trace.
4. Standard modulation is 400 Hz.

INSTRUMENTS REQUIRED

Signal source

AM signal generator
Radio sweep generator
Sweep oscilloscope

Output indicators

AC millivolt meter
Oscilloscope

STEP	CONNECT SIGNAL SOURCE TO-	CONNECT OUTPUT INDICATOR-	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO-	ADJUST	ADJUST FOR-
1	Set function selector switch on the front panel to "MW" position.					
2.	Sweep generator connected to a loop or short Piece of wire Placed near AM antenna.	Sweep oscilloscope connected to wire pin of the C 43 of C 44 and volume to mzximum	See amplitude of 455 KHz	Quiet point on band near 513 KHz.	IF103	Amplitude of filter
3.	Signal generat- or connected to a loop.	AC millivolt meter and oscilloscope connected across speaker	513KHz	513KHz	AM OSC L103	maximum
4			1620KHz	1620KHz		
5			600KHz	600KHz	AM BAR ANT COIL	
6			1400 KHz	1400 KHz	RF Trimmer CT 102	
7	Repeat step 3 through 6 necessary to obtain maximum sensitivity on station.					

ALIGNMENT PROCEDURF

3

FM

GENERAL ALIGNMENT CONDITION

1.Signal input must be kept as low as possible to avoid ocerload clipping.
(Use highest possitivity of output indicator).
2.Makers must be accurate (crystal controlled or calibrated). The 10.7 MHz marker used in each section of the FM alignment must be the same.
3.Signal input should be kept as low as possible to avoid A.G.C. ACTION.
(Set output indicator to highest sensitivity).
4.FM signal generator RF output frequency must be monitoring.
5.Standard modulation is 1 KHz (40KHz).

INSTRUMENTS REQUIRED.

Signal sources
FM signal generator
*Radio sweep generator *
Sweep oscilloscope
Frequency counter

Output indicators
AC millivolt meter
Oscilloscope
114 KHz signal generator

STEP	CONNECT SIGNAL SOURCE TO-	CONNECT OUTPUT INDICATOR TO-	SET SIGNAL OR INSERT MARKER	SET RADIO DIAL TO	ADJUST	ADJUST FOR-
1.Set function selector switch on the front panel to "FM" Position.						
2	Radio sweep generator connect to FM front and tuner pin 3	Oscilloscope connected to wire pin of the C43 of C44 and volume VR to maximum	10.6 10.7 10.8MHz marker	Quiet Scale pointer on band	IF101 IF102	Straightness and symmetry of "S" curve with 10.7 MHz makerd at zero crossover

ALIGNMENT PROCEDURE

4
MPX

GENERAL ALIGNMENT CONDITION

1.Adjust FM signalgenerator output to 1mV (60dB) with MPX MODULATION 1 KHz
Deviation=33.75 KHz Pliot=6 KHz

INSTRUMENTS REQUIRED

Signal source

FM signal gererator
Stereo signal generator

Output indicator

Frequency counter
AC millivolt meter
Oscilloscope

STEP	CONNECT SIGNAL SOURCE TO-	CONNECT OUTPUT INDICATOR TO-	SET SIGNAL	SET RADIO DIAL	ADJUST	ADJUST FOR-
1	Set function selector switch on the front panel to "FM STEREO" Position.					
2	FM signal generator connected to FM aerial	Frequency counter connect to MPX test point	98 MHz and modulation signal off too	98 MHz	SFR103	19.00 KHz + / -50 Hz
3	FM signal generator connected to FM aerial	Connect to Scope of 2 CH	98MKz and Modulation 40KHz pilot 6KHz 1KHz Signal	98MKz	SFR104	The L and R More better Separating

Abgleichanweisung Cassette
Alignment procedure cassette

TAPE POSITION Recorderstellung	INPUT SIGNAL Eingangsspannung	TEST TAPE Testcassette	MEASURING INSTRUMENT Meßgerät	TEST POINT Meßpunkt	ADJUSTMENT LOCATION Abgleichpunkt	MEASURING SIGNAL Meßsignal

1. Head azimuth/A/W-Kopf-Einstellung

PLAYBACK		MTT-114 N 10 kHz	V.T.V.M AC-Millivoltmeter	OUT L CH OUT R CH	AZIMUTH SCREW	NF-max.

2. Tape speed/Geschwindigkeit

PLAYBACK LOW		MTT- 111 N 3000 Hz	FREQUENCY COUNTER Frequenz-zähler	OUT L CH OUT R CH	TAPE A TAPE B	SFR 409	3000 Hz
PLAYBACK HIGH		MTT-111 N 3000 Hz		OUT L CH OUT R CH	TAPE A TAPE B	SFR 410	4800 Hz

3. Dolby level/Dolby-Pegel

PLAYBACK		MTT-150 DOLBY TAPE 400 Hz	V. T. V. M AC-Millivoltmeter	IC 403 Pin 6 Pin 11	TAPE A TAPE B	SFR 404 SFR 403 SFR 402 SFR 401	548 mV

4. Oscillator coil frequency/Oszillatorfrequenz

RECORD		AC-513 IEC-II	FREQUENCY COUNTER Frequenzzähler	ERASE HEAD Löschkopf	L-411	125 kHz

5. Trap coil/HF-Sperre

RECORD		AC-513 IEC-II	V. T. V. M AC-Millivoltmeter	R 482 R 483	L-405 L-406	MINIMUM

6. Head bias level/Vormagnetisierung

RECORD		AC-513 IEC-II	V. T. V. M AC-Millivoltmeter	R/P HEAD	SFR 407/SFR 408	76 mV
		AC-212 IEC-I		R/P HEAD	SFR 411	55 mV

7. Level meter/Anzeige

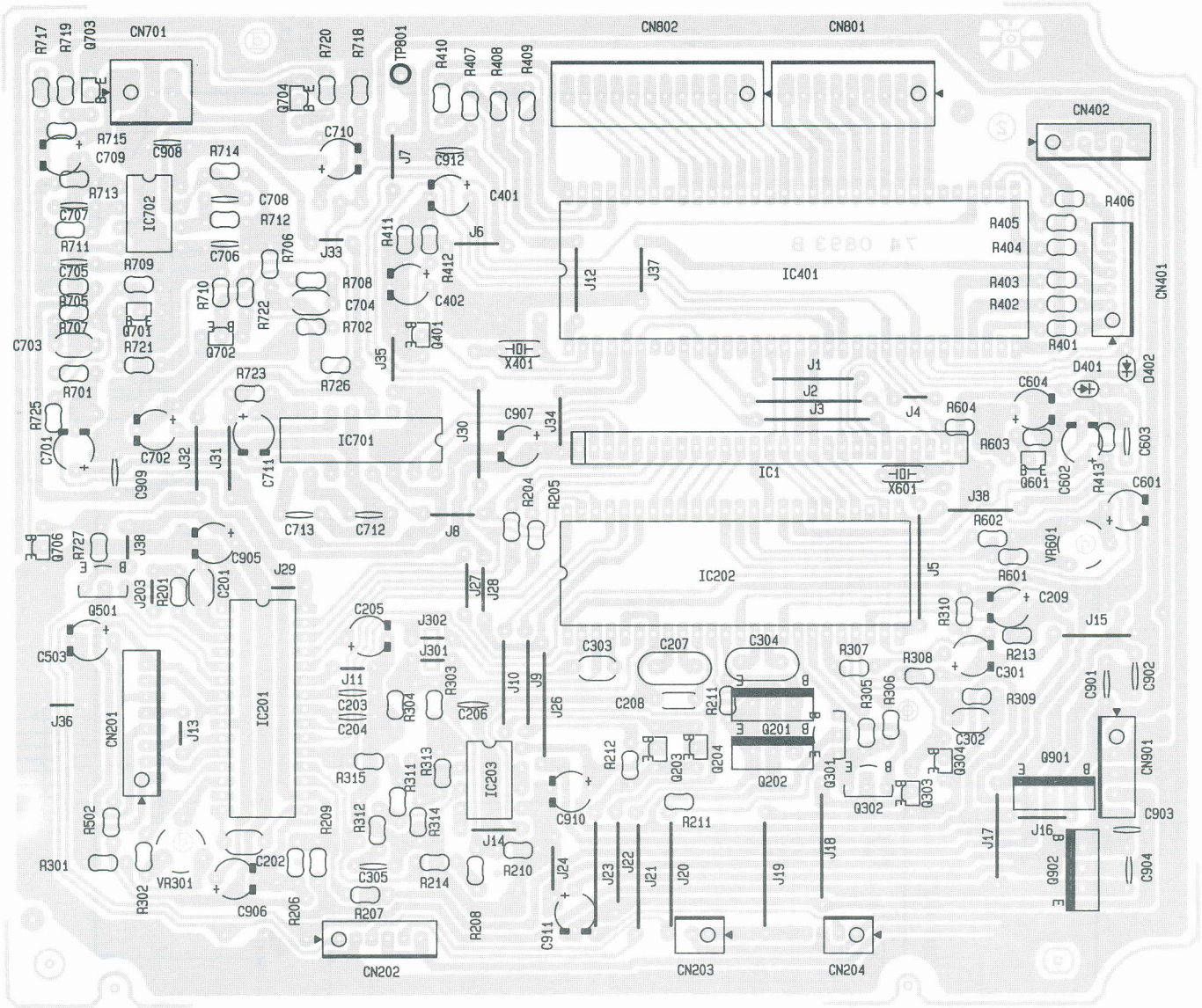
RECORD	AUX IN 1 kHz/500 mV	AC-513 IEC-II	VR 402 to 548 mV at IC 403 Pin 6/Pin 11 Mit VR 402 an IC 403 548 mV einstellen.	SFR-4133 5 YELLOW LED LIGHT SFR-4133 so abgleichen, daß alle 5 gelben LED's leuchten.

8. Record level/Aufnahmepegel

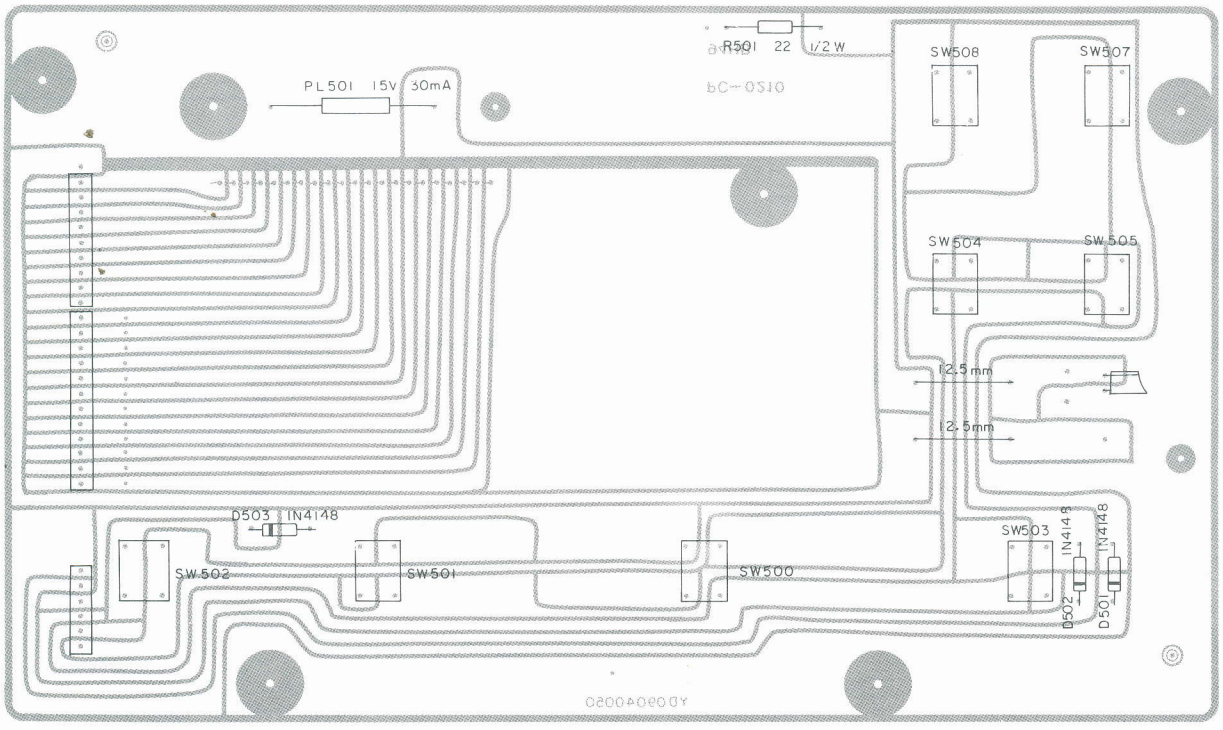
RECORD	AUX IN 1 kHz/500 mV	AC 513 IEC-II	V. T. V. M AC-Millivoltmeter	TP 1 TP 2	VR 402 to 548 mV at IC 403 Pin 4/Pin 20 SFR 405/SFR 406	200 mV

Löschspannung:	Fe:	ca. 140 Vss
	Cr:	ca. 190 Vss
Vormagnetisierung:	Fe:	ca. 70 Vss
	Cr:	ca. 90 Vss

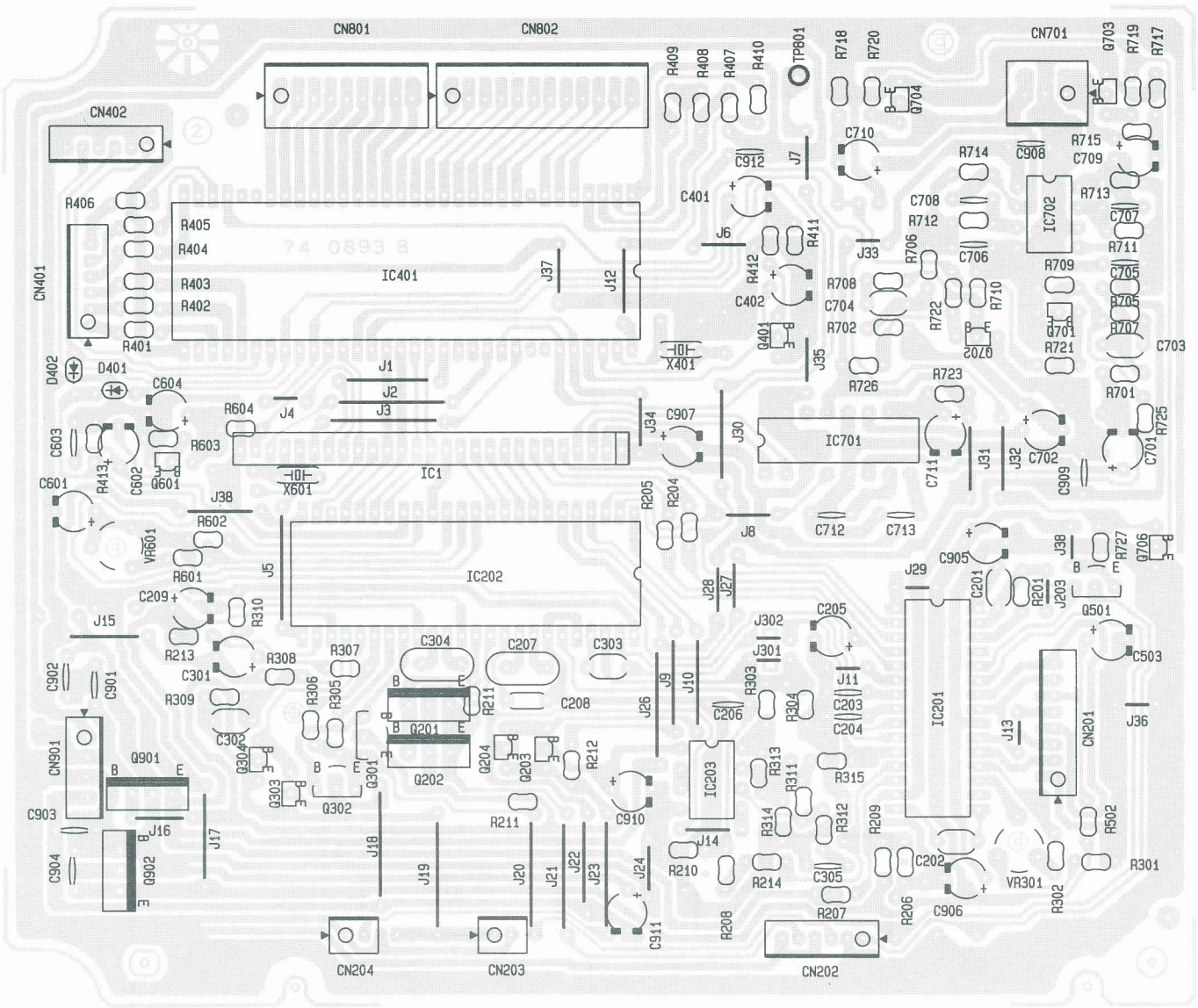
Bestückungsseite/Top view
CD-Platine
CD P.C.B.

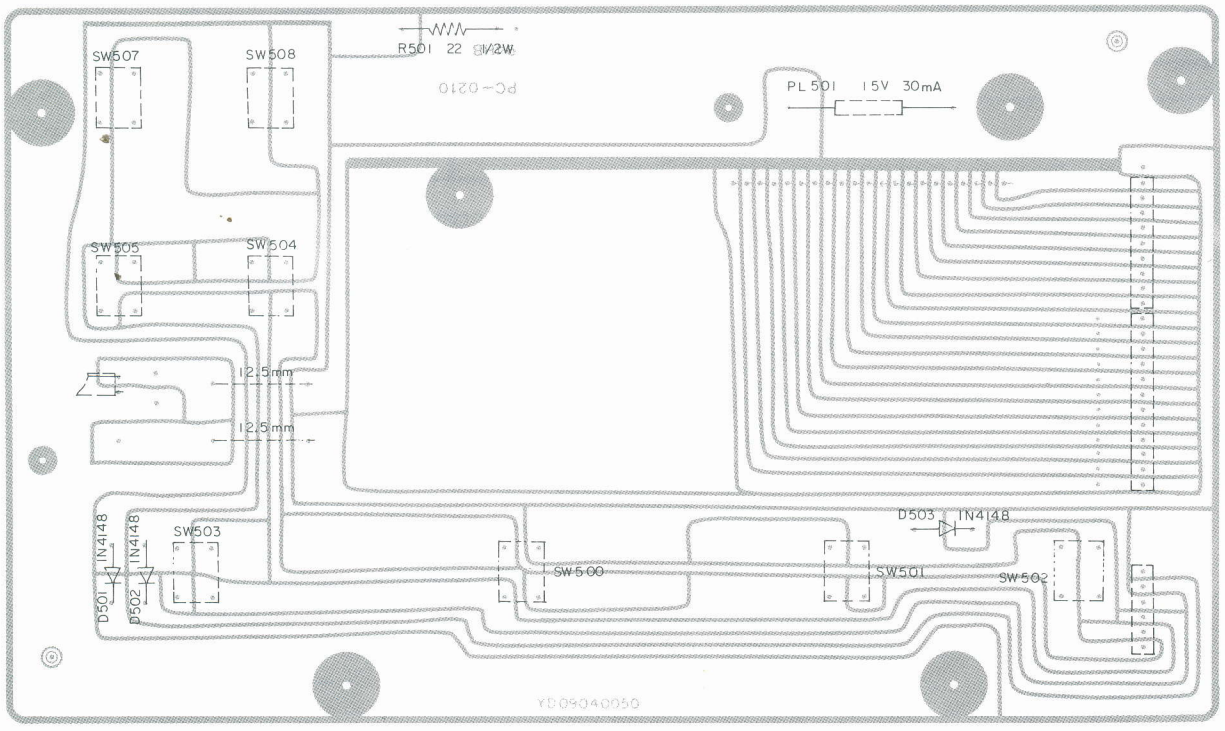


Funktionsplatine CD
CD function P.C.B.

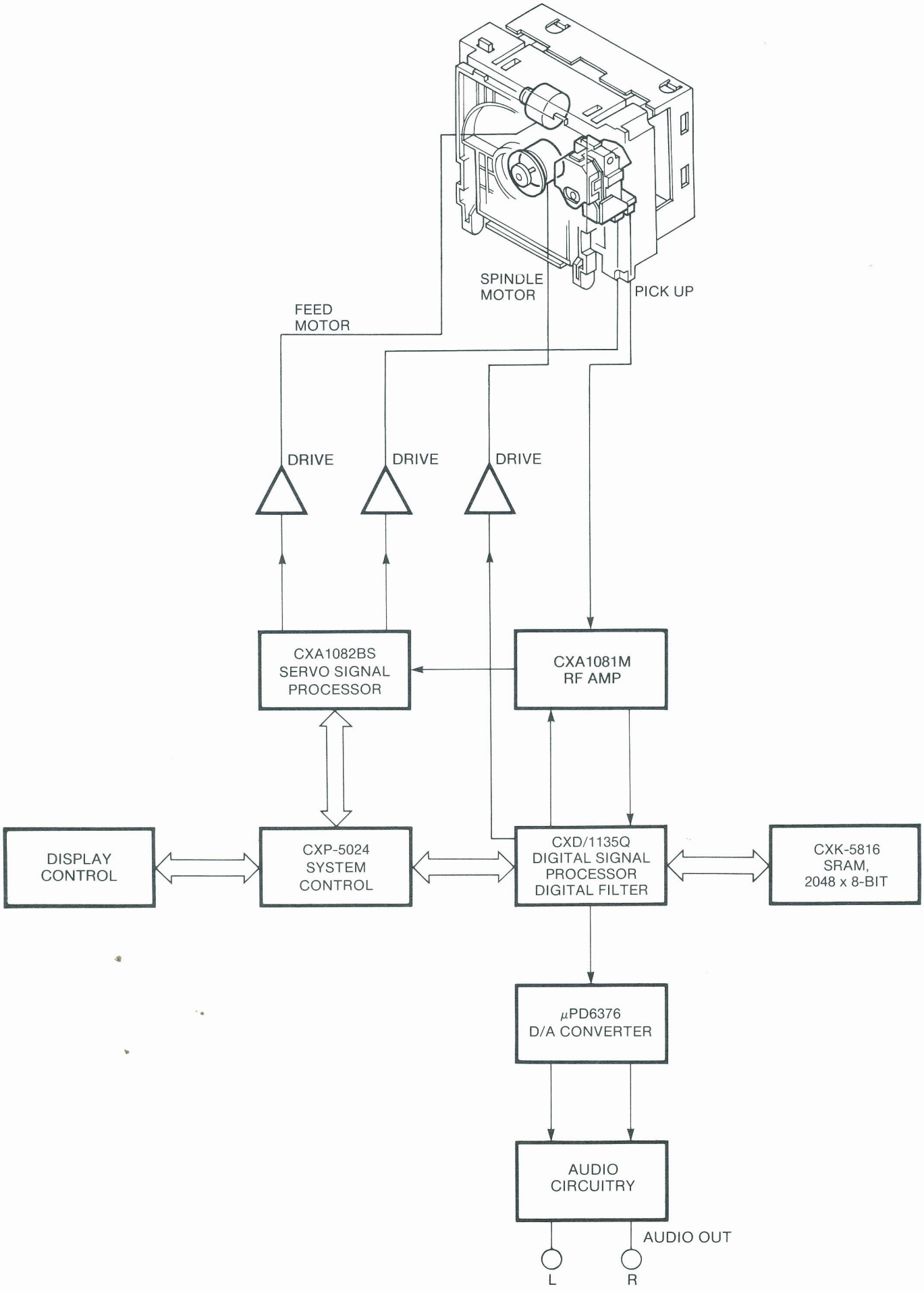


Leiterbahnseite/Bottom view

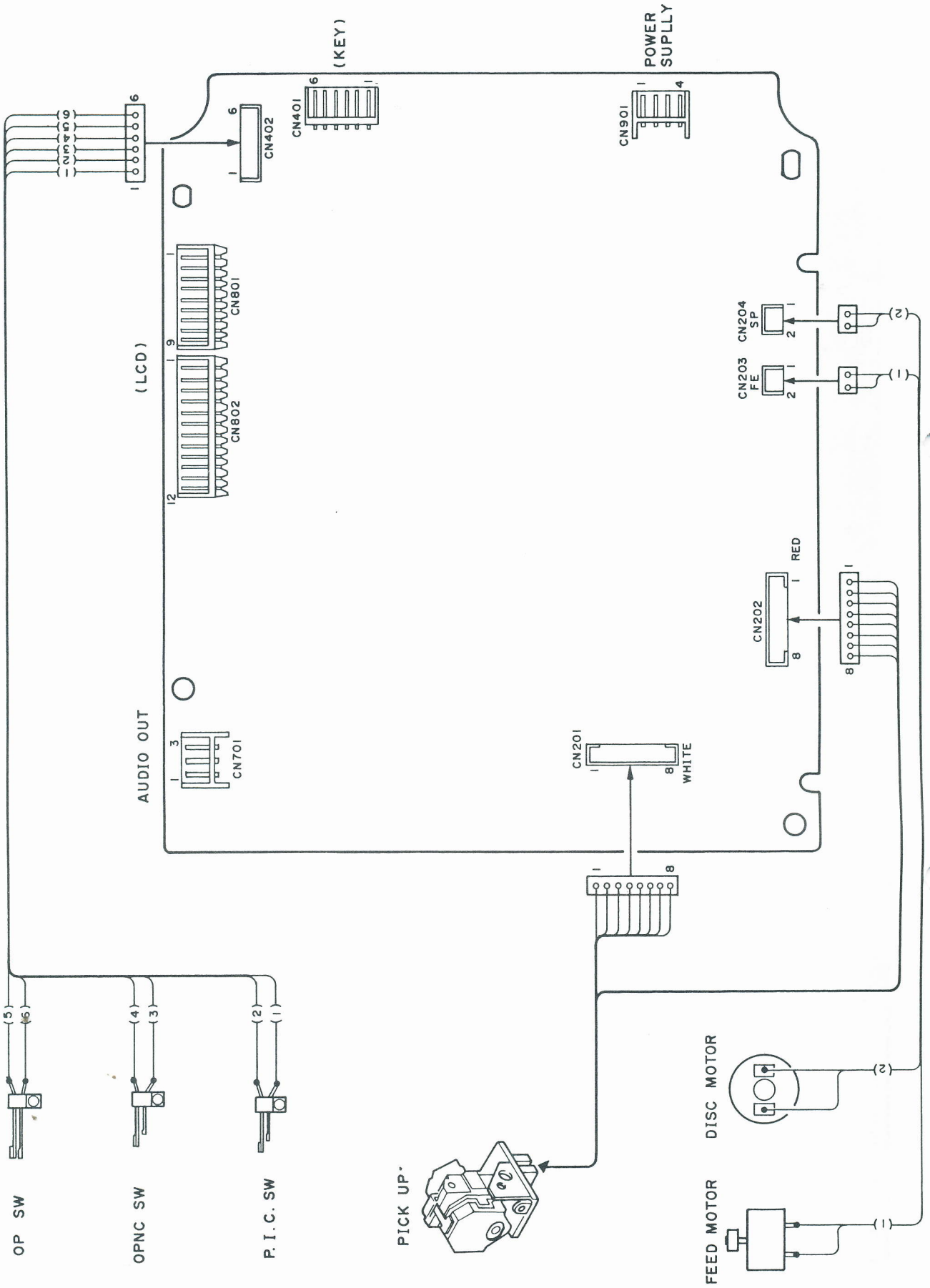




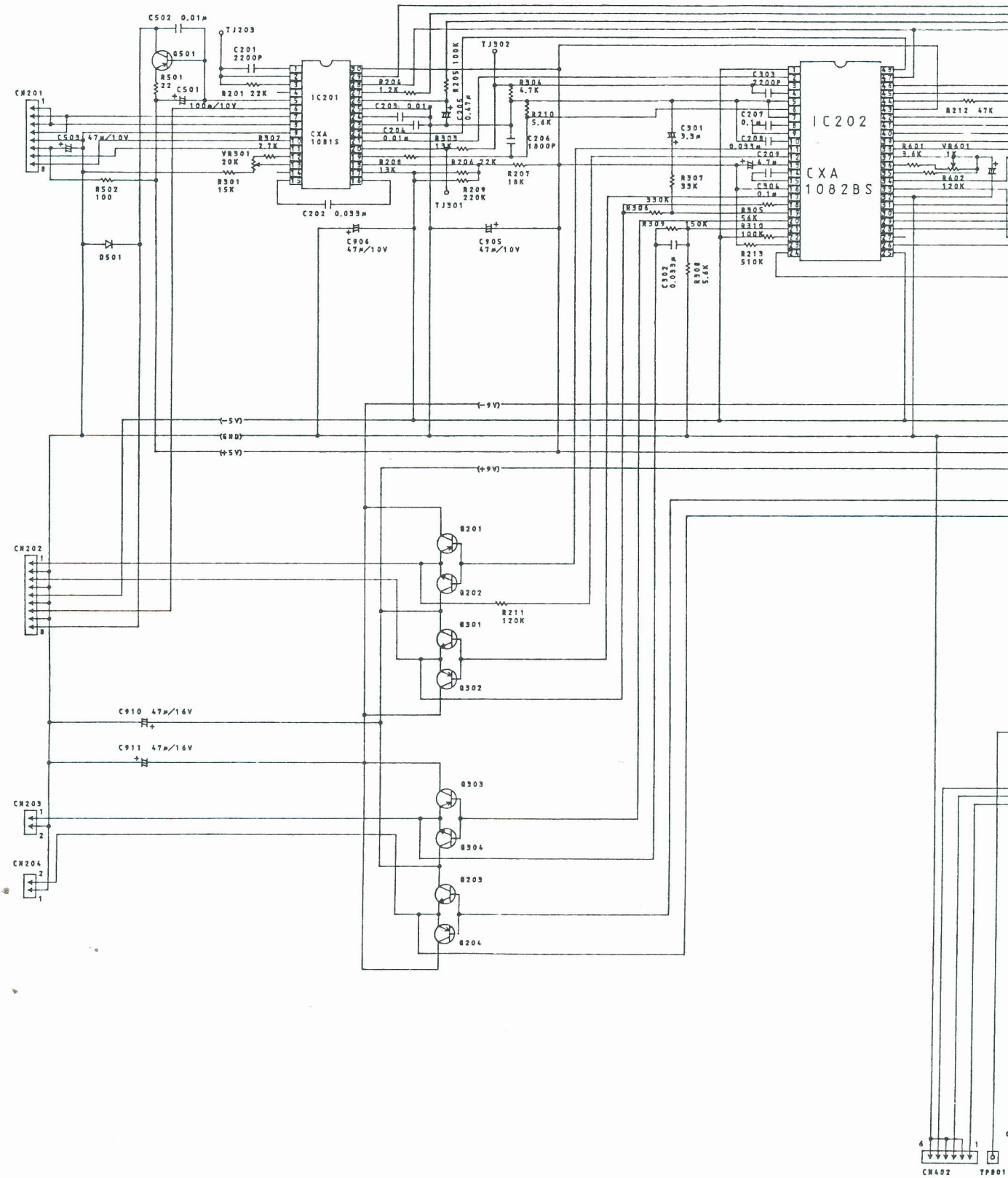
Blockschaltbild CD-Player
Block diagram CD player

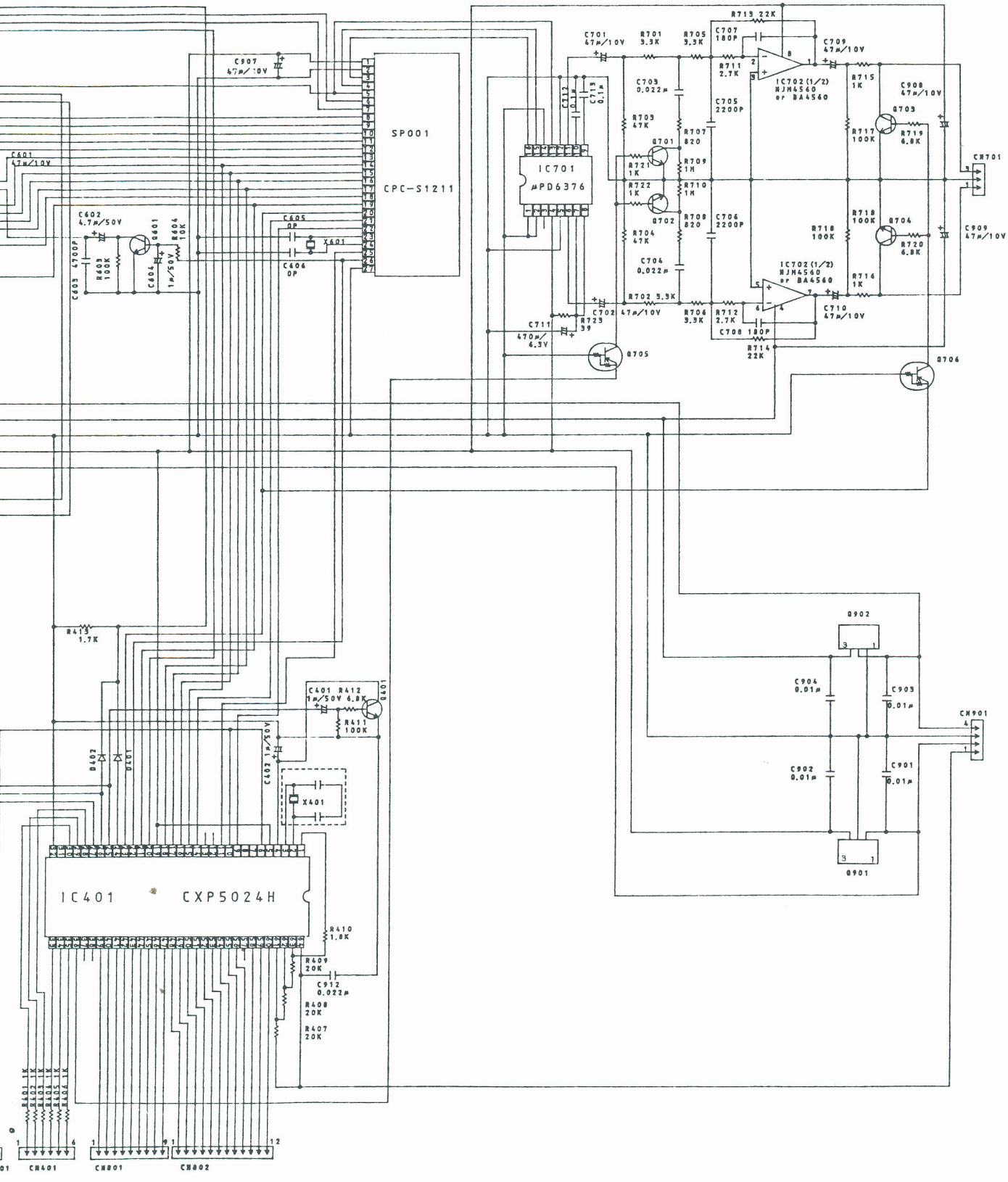


Verdrahtungsplan CD-Player
Wiring diagram CD player

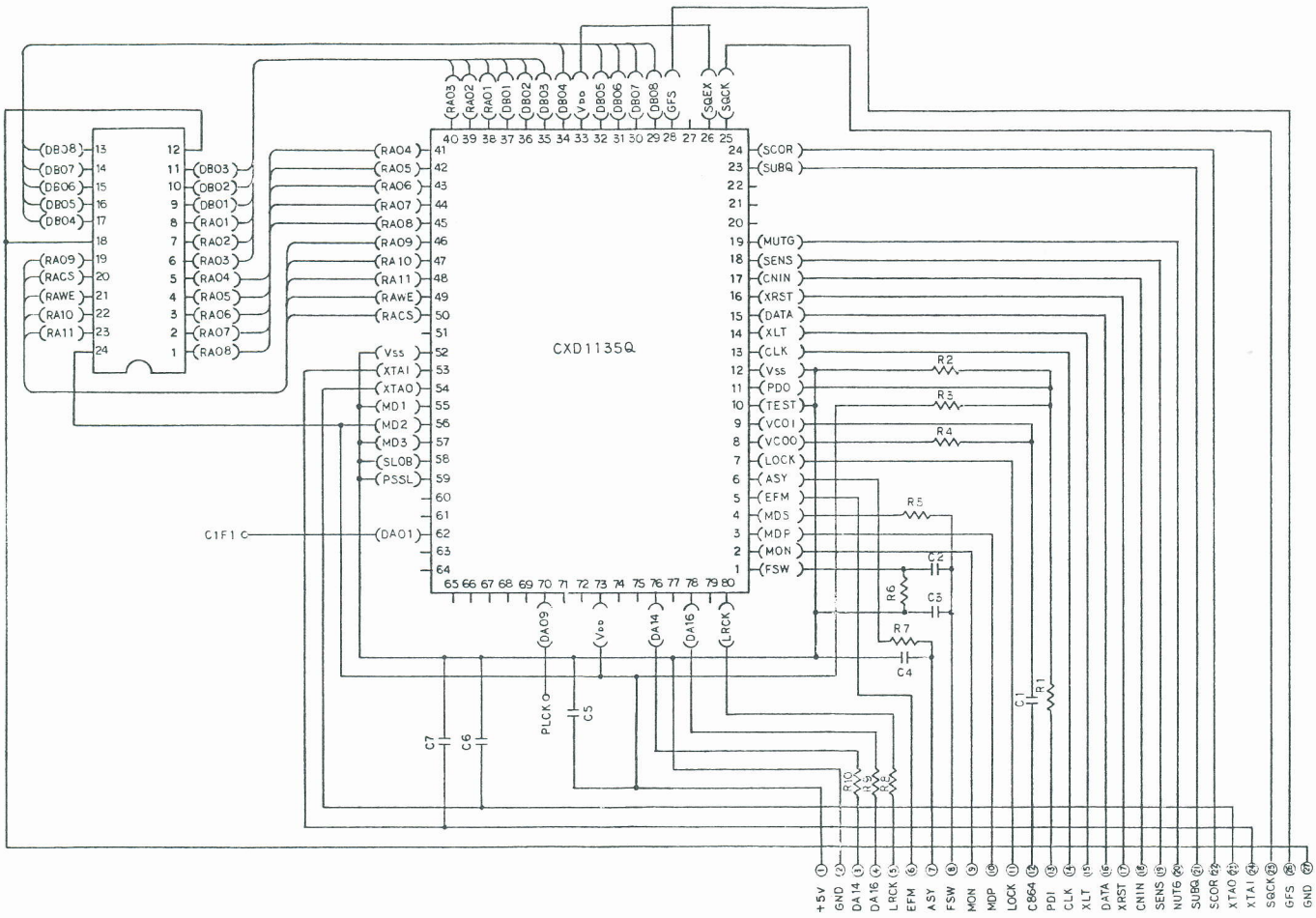


Schaltbild CD-Player
Circuit diagram CD player




SP001
CPC-S1211
IC701
μPD6376
IC702(1/2)
NJM4560
or BA4560
IC401
CXP5024H
X401
Q901
Q902
Q703
Q704
Q705
Q706
CN701
CN901
CN401
CN801
CN802

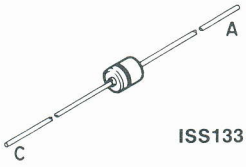
Schaltbild IC-Zusatzplatine SP 001 CPC-S 1211 zu CD-Player
Circuit diagram Sub P.C.B. SP 001 CPC-S 1211 for CD player



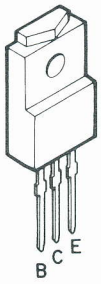
1	+5V
2	GND
3	D14
4	D16
5	LRCK
6	EFM
7	ASY
8	FSW
9	MON
10	MDP
11	LOCK
12	VCO
13	PDI
14	CLK
15	XLT
16	DATA
17	XRST
18	CNIN
19	SENS
20	MUTG
21	SUBQ
22	SCOR
23	XTAO
24	XTAI
25	SQCK
26	GFS
27	GND

R 1	6.8K ~ 22K	10 K	Ω
R 2	82K ~ 120K	100 K	Ω
R 3	82K ~ 120K	100 K	Ω
R 4	82K ~ 120K	100 K	Ω
R 5	8.2K ~ 47 K	20 K	Ω
R 6	820K ~ 3.9M	1 M	Ω
R 7	6.8K ~ 22 K	11 K	Ω
R 8	0 ~ 3.9 K	1 K	Ω
R 9	0 ~ 3.9K	1 K	Ω
R 10	0 ~ 3.9K	1 K	Ω
C 1	680P ~ 2200P	1000P	F
C 2	0.1μ ~ 0.82μ	0.47μ	F
C 3	2700P ~ 0.033μ	6800P	F
C 4	1000P ~ 0.1 μ	0.01μ	F
C 5	0.01μ ~ 0.47 μ	0 1 μ	F
C 6	10 P ~ 100 P	15 P	F
C 7	10 P ~ 100 P	15 P	F

IC- und Transistorblockschaltbilder für CD-Player
IC and transistor block diagrams for CD player

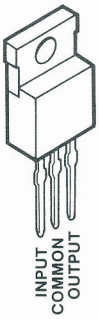


ISS133 D401, 402, 501

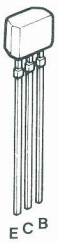


2SB1185 Q201
2SD1762 Q202

DTA143ES Q705, 706

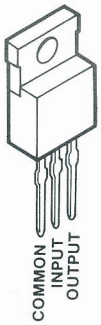


BA17805 Q901



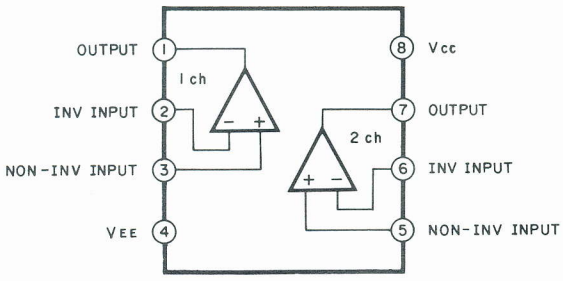
2SA854 Q204, Q303
2SC1740 Q401, 601, 701, 702
Q703, 704
2SC1741 Q203, Q304

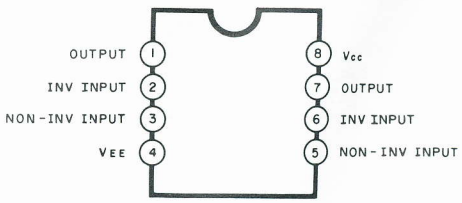
2SA1015Y Q501
2SA934 Q302
2SC2060 Q301



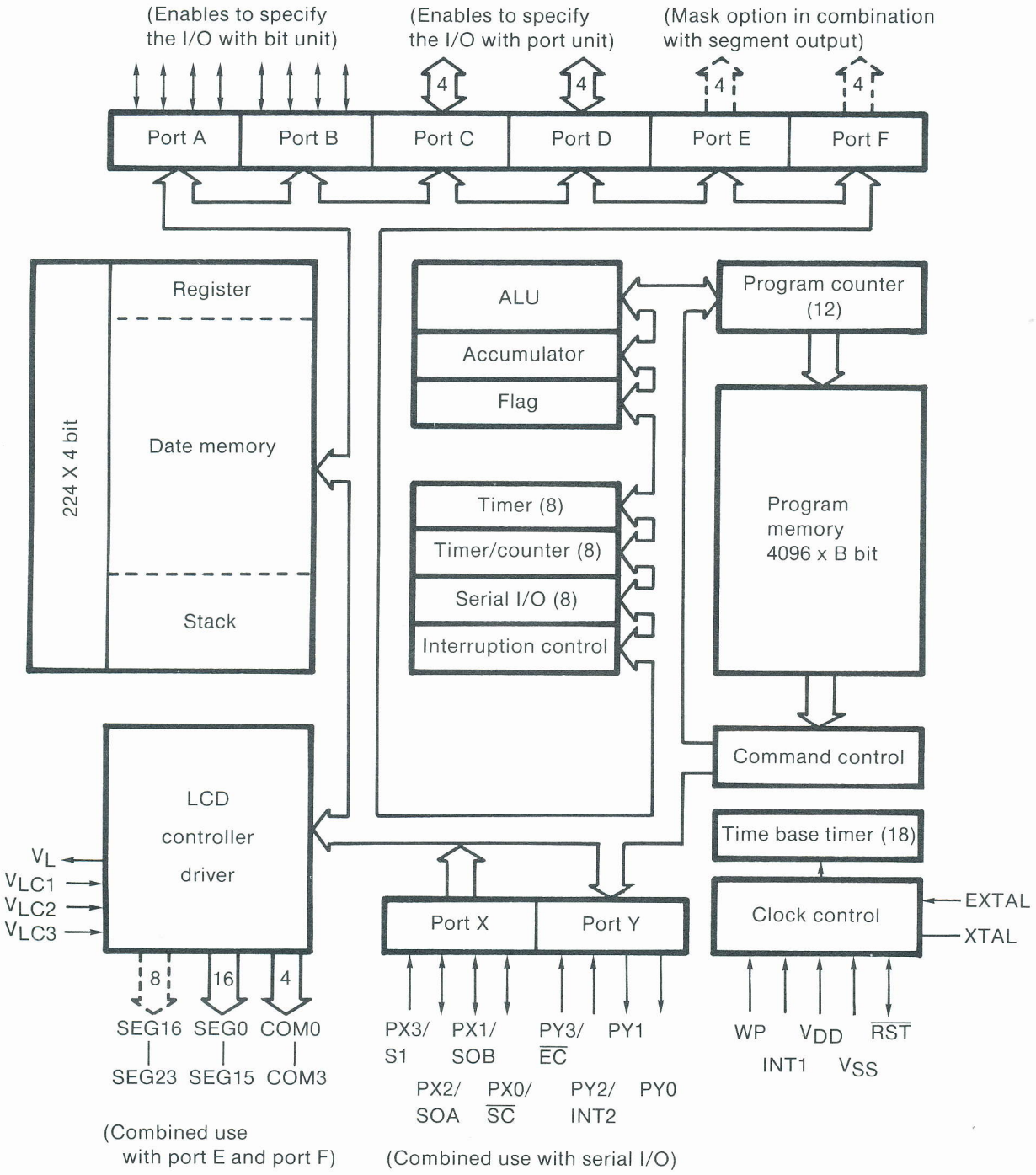
MC7905CT Q902

IC 702 BA 4560

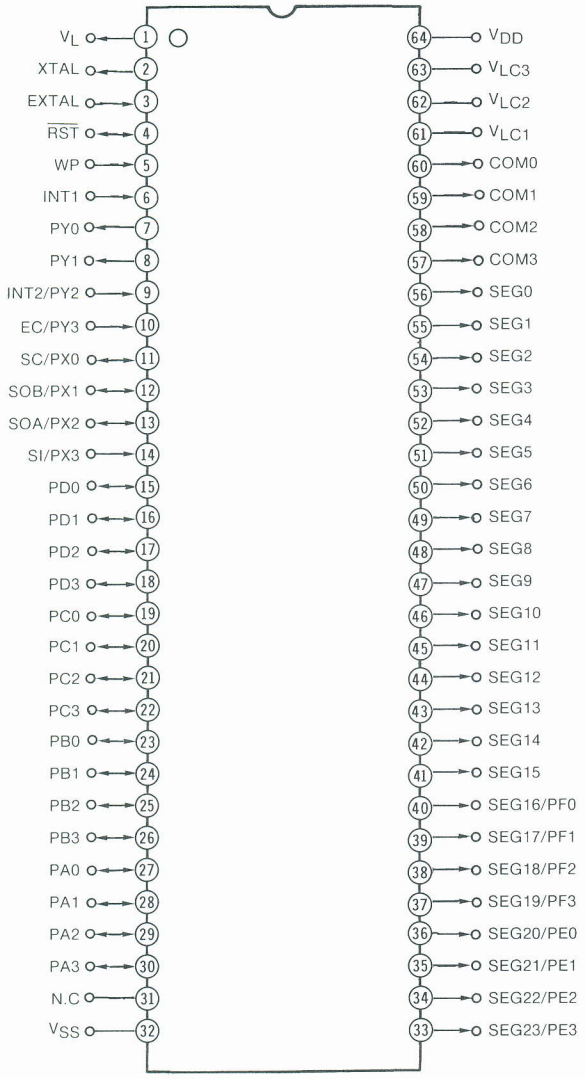


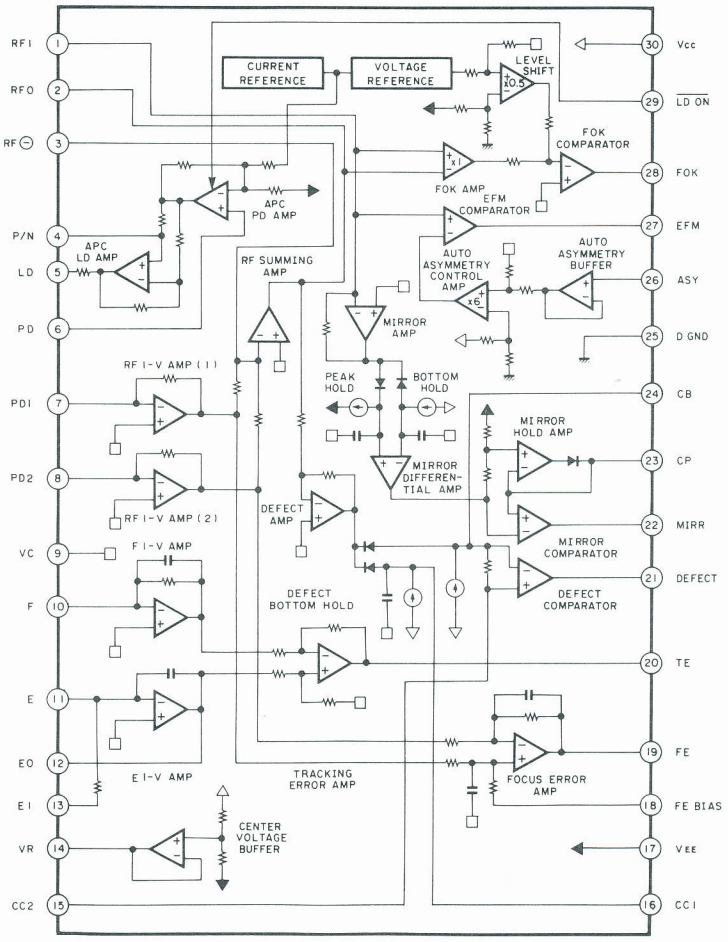


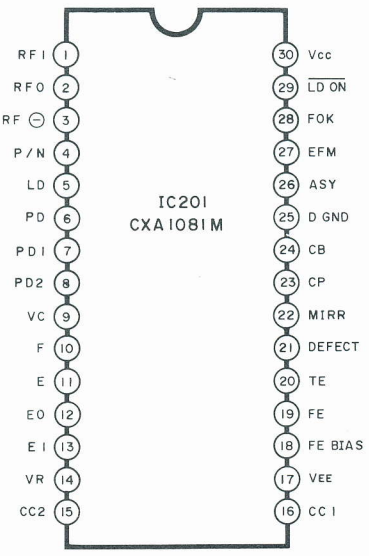
IC 401 CXP 5024 H



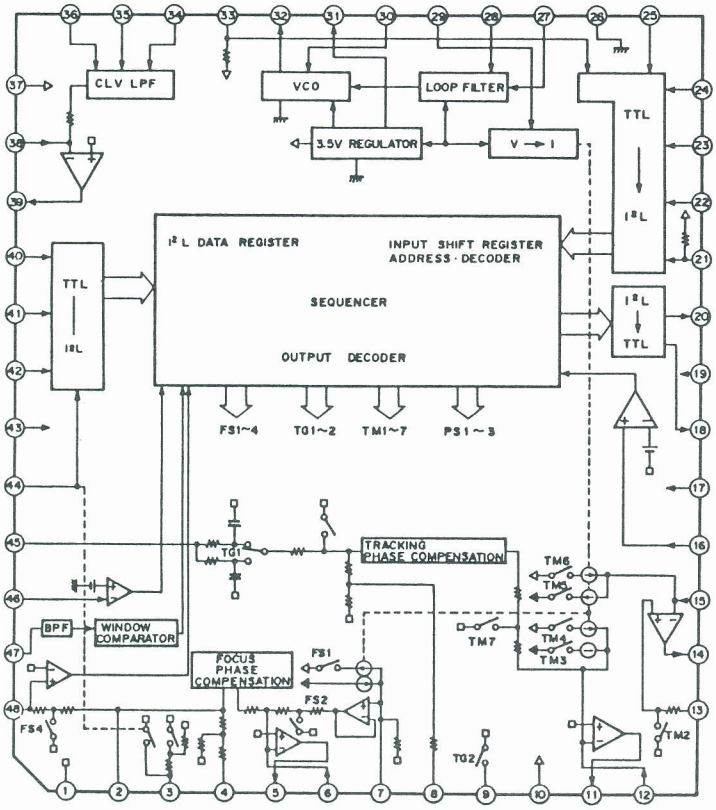
IC 201 CXA 1081 M

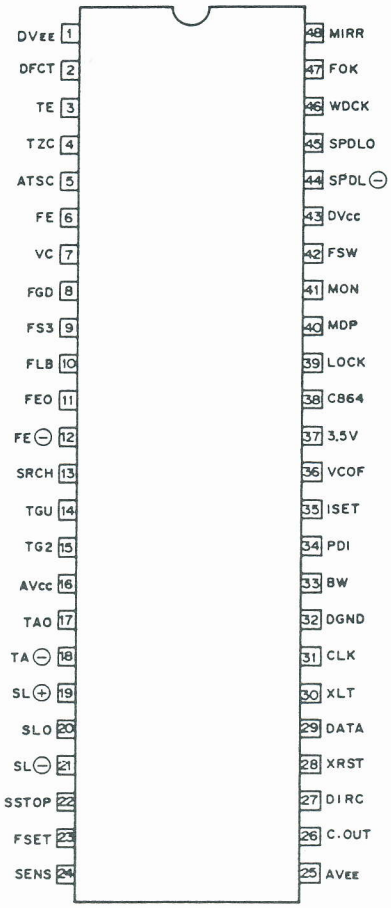




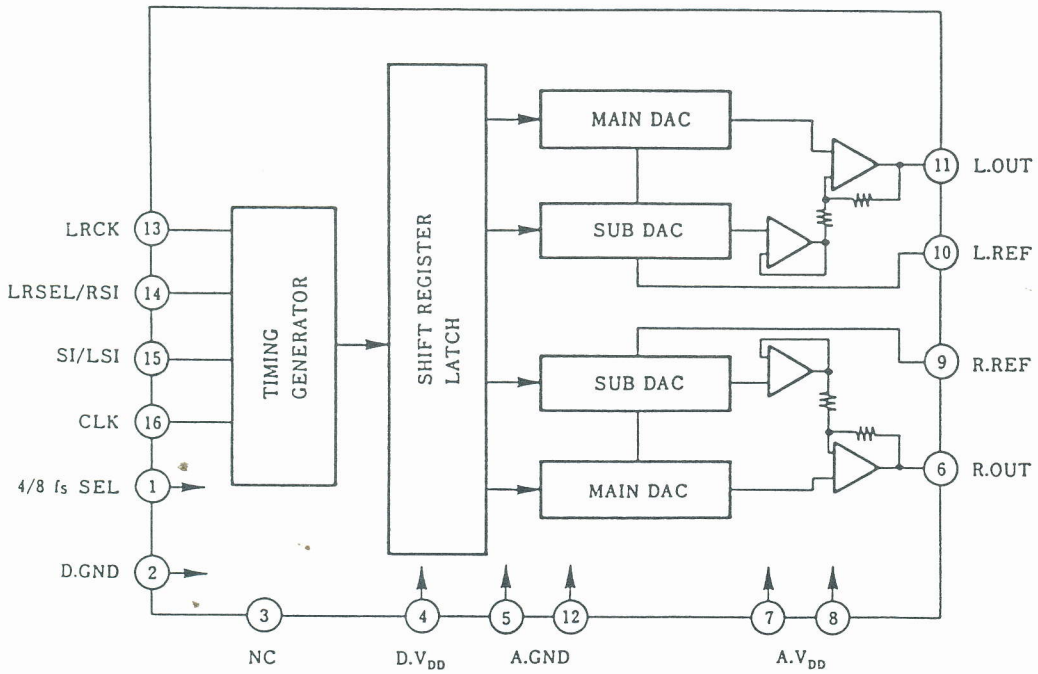


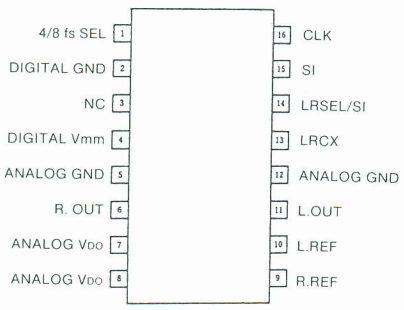
IC 202 CXA 1082





IC 701 μPD 6376





TR VOLTAGE

Pin No. DC	E	C	B
Q201	0.0	-9.0	-0.6
Q202	0.0	9.0	0.6
Q203	0.0	9.0	-0.6
Q204	0.0	-9.0	-0.6
Q301	0.0	9.0	0.5
Q302	0.0	-9.0	0.5
Q303	0.0	-9.0	0.6
Q304	0.0	9.0	0.6
Q401	0.0	5.2	0.0
Q601	0.0	0.0	0.0
Q701	0.0	0.0	-0.2
Q702	0.0	0.0	-0.2
Q703	0.0	0.0	0.0
Q704	0.0	0.0	0.0

Pin No. DC	IN	GND	OUT
Q705	0.0	-0.3	0.0
Q706	3.3	0.0	0.0
Q901	9.0	0.0	5.0

IC201

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DC	0.0	0.3	0.0	2.8	3.0	-5.0	0.0	0.0	0.0	0.0	0.0	-1.0	-0.7	0.0	-1.1
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
DC	0.8	-5.0	-0.1	-0.1	-0.1	-4.2	0.0	-3.4	0.0	0.0	2.5	2.4	0.3	2.3	5.0

IC202

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DC	-5.0	-4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.6	0.0	0.5	0.0	0.0
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
DC	5.0	0.6	0.0	0.0	0.6	0.0	-5.0	-4.0	5.0	-5.0	0.1	5.0	5.0	5.0	5.0
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
DC	5.0	0.0	2.9	2.9	2.3	2.3	3.5	2.2	0.0	0.0	0.0	0.0	5.0	0.0	-0.5
Pin No.	46	47	48												
DC	2.5	0.0	0.0												

IC401

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DC	0.0	2.2	2.2	5.3	5.0	0.2	5.0	5.0	0.0	0.2	5.0	0.0	0.0	0.0	5.0
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
DC	5.0	5.0	5.0	5.0	0.0	5.0	0.0	3.3	2.8	5.0	0.0	5.0	5.0	5.0	5.0
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
DC	0.0	0.0	5.0	5.0	5.0	2.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Pin No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
DC	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Pin No.	61	62	63	64											
DC	3.4	1.8	0.2	5.0											

IC701

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DC	0.0	0.0	0.0	5.0	0.0	1.5	4.8	4.8	2.1	2.1	1.5	0.0	2.5	0.0	0.0
Pin No.	16														
DC	2.4														

IC702

Pin No.	1	2	3	4	5	6	7	8
DC	0.0	0.0	0.0	-5.0	0.0	0.0	0.0	5.0

SP001

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DC	5.0	0.0	2.4	0.0	2.5	2.5	2.5	0.0	0.0	0.0	0.0	2.2	2.9	5.0	0.0
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27			
DC	5.0	5.0	0.1	0.1	3.3	0.0	0.0	2.4	2.4	5.0	0.0	0.0			

Abgleichanweisung CD-Spieler

Benötigte Meßgeräte: Frequenzzähler
Test-CD
Oszilloskop

VCO-Frequenzabgleich

Dieser Abgleich kann ohne CD-Platte durchgeführt werden.

1. Frequenzzähler an Testpunkt VCO und Masse anschließen.
2. Pin 7 der IC-Zusatzplatine mit Masse verbinden.
3. Gerät einschalten.
4. Mit Poti VR 601 Frequenz auf 4,3218 ±0,01 MHz abgleichen.
5. Kurzschlußbrücke an Pin 7 der IC-Zusatzplatine wieder entfernen.

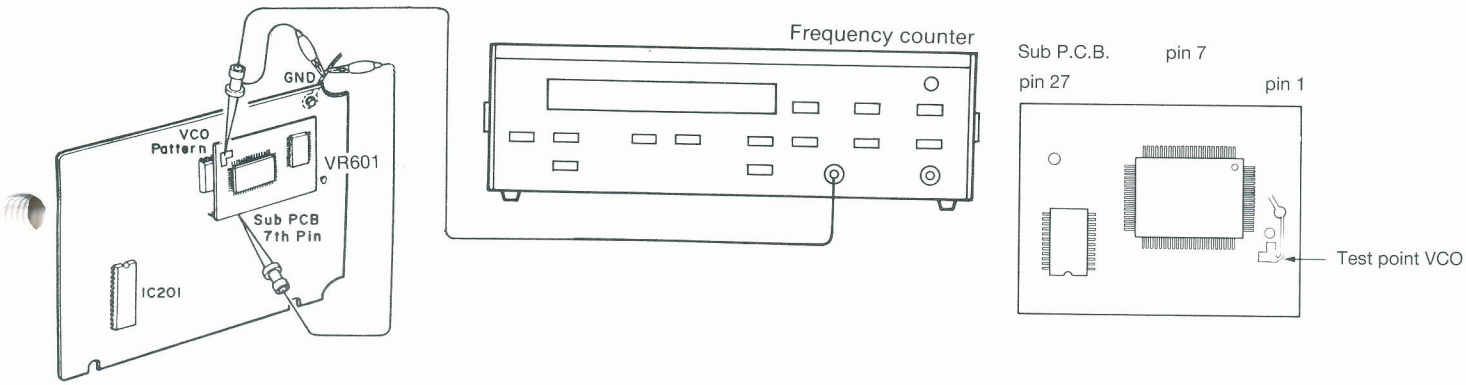
Alignment procedure CD player

Instruments required: Frequency counter
Test disc
Oscilloscope

VCO frequency adjustment

This VCO frequency adjustment does not need a CD disc.

1. Connect the frequency counter to test point (VCO) and to ground.
2. Connect the Sub P.C.B. 7th pin to GND wire.
3. Set the unit power on.
4. Adjust VR 601 to 4.3218 ±0.01 MHz.
5. Resolder (Pin 7 in Sub P.C.B. and GND).



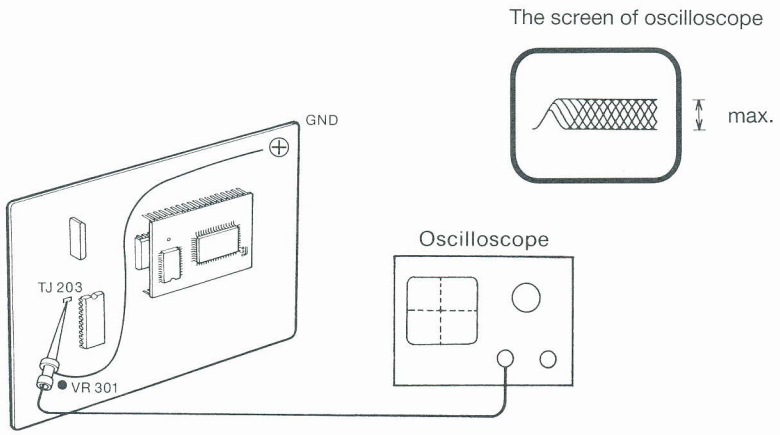
VCO ADJUSTMENT

EF-Balance-Abgleich

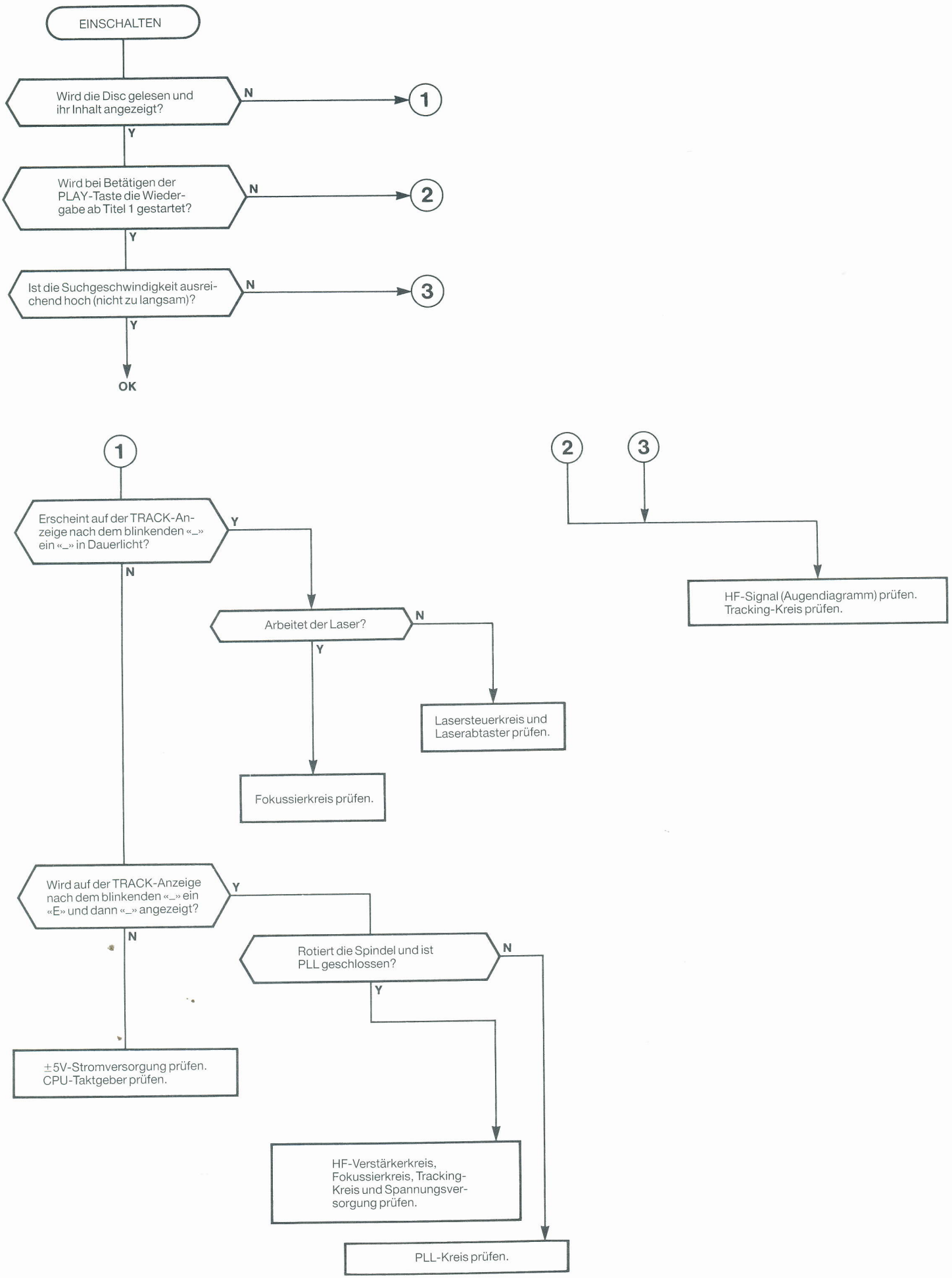
1. CD-Platte einlegen und »PLAY«-Taste drücken.
2. Oszilloskop an Testpunkt TJ 203 und Masse anschließen.
3. HF-Signal mit VR 301 auf Maximum abgleichen.

EF-Balance adjustment

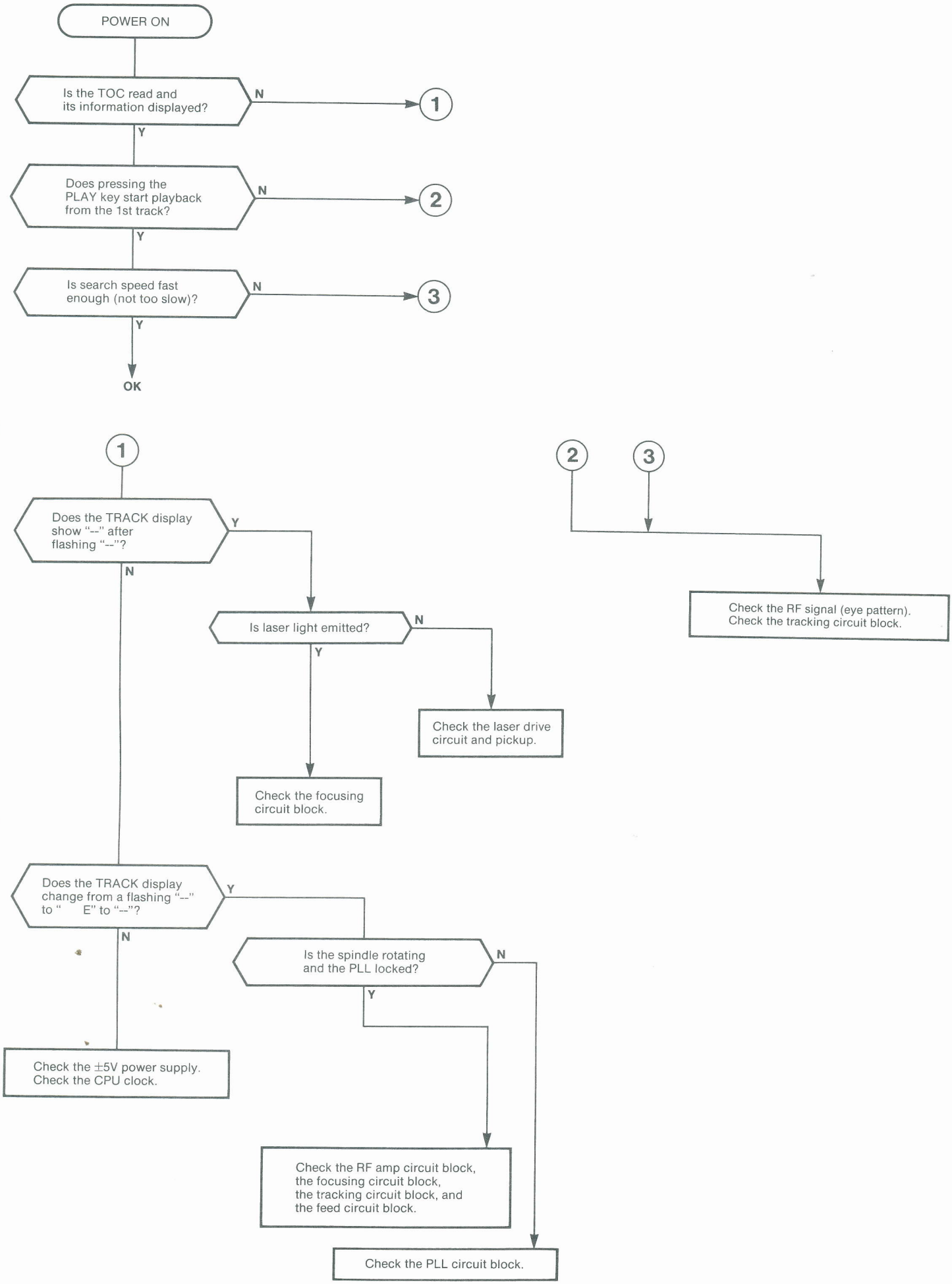
1. Load a disc and play back.
2. Connect an oscilloscope to the test points TJ 203 and ground.
3. Adjust VR 301 so that the HF-Signal becomes maximum.



Fehlersuchdiagramm CD-Player



Troubleshooting Flowchart CD player



Ersatzteile · Replacement parts · Pièces détachées · CH 1000

Pos.	Art.-Nr.	Bezeichnung
B 30	287 033	Fernbedienung
	286 656	Gehäuse
	286 657	Gehäuseoberteil
	286 658	Glastüre
	286 659	Scharniersatz (T)
	286 660	Griff
	286 661	Glasdeckel
	280 955	Scharniersatz (D)
	286 662	Zierleiste
	286 663	Schublade
		Lautsprecher CL 1000
	286 666	CL 1000 einzeln
	286 119	Dual-Logo
	286 664	Schallwandabdeckung
	286 665	Buchse
	286 667	Dorn
	286 668	TT-Lautsprecher
	286 669	MT-Lautsprecher
	286 670	HT-Lautsprecher
	286 671	Weiche
	286 672	Anschlußklemmen
		Front
A 1	287 034	Frontteil
A 2	287 001	Blende
A 3	287 002	CD-Fach-Fenster
A 4	287 003	Blende CD
A 5	287 004	Blende Tuner
A 6	287 005	Drehknopf
A 7	287 006	Drehknopf
A 8	287 007	Knopf
A 9	287 008	Tastensatz 6-fach
A 10	287 009	Tastensatz 5-fach
A 11	287 010	Knopf
A 12	287 011	Knopf
A 13	287 012	Knopf
A 14	287 013	Tastenfach 2-fach
A 15	287 014	Funktionstasten CD
A 16	287 015	Knopf Eject
A 17	287 016	Knopf
B 19	287 017	Druckfeder
		Casettendeck
C 3	287 018	Cassettenfach (A)
C 4	287 019	Cassettenfach (B)
C 5	287 020	Cassettenfachfenster
C 6	287 021	Taste PLAY A
C 7	287 022	Taste PAUSE
C 8	287 023	Taste STOP/EJECT
C 9	287 024	Taste FAST FORWARD
C 10	287 025	Taste REC.
C 11	287 026	Taste REWIND
C 12	287 027	Taste PLAY B
C 13	287 028	Feder
C 14	287 029	Dämpfrad kpl.
C 15	287 030	Dämpfradhalter
C 16	287 031	Zählwerk
C 17	287 032	Riemen
		Elektronik (ohne CD)
IC 100	287 045	IC UPD 1708 AG-728 00
IC 100	287 046	IC UPD 1708 AG-88400
IC 301	287 047	IC TC 9152 P
IC 201	287 048	IC LC 6546 C-4059
IC 202	287 049	IC BU 4013 B
IC 202	287 050	IC LC 4013 B
IC 203	284 489	IC LB 1641
302-3	287 051	IC BU 4558
IC 101	287 052	IC LA 1265
IC 102	287 053	IC LA 3361
IC 103	287 054	IC LA 6458 D
IC 602	287 055	IC TA 7318 P
IC 401	287 056	IC LA 3246
IC 402	287 057	IC BU 4066 B
IC 403	287 058	IC CX 1101 P
IC 404	268 714	IC LB 1416
IC 601	287 059	IC STK 4241
IC 603	287 060	IC M 5230 L
IC 604	263 158	IC HA 12002
Div.	283 729	Transistor DTC 144 E
Div.	269 092	Transistor 2 SC 536 F, G
Div.	268 339	Transistor 2 SC 1317 S
Div.	281 505	Transistor 2 SA 933 S
Q 101	287 061	Transistor 2 SA 1177 E
Q 107	247 649	Transistor 2 SC 1741 R

Pos.	Art.-Nr.	Bezeichnung
Q 40.	274 431	Transistor 2 SC 2878 A
Q 4..	287 062	Transistor 2 SC 2634 S
	287 063	Transistor 2 SA 1318
Q 611	287 064	Transistor 2 SD 2061 F
Q 612	287 065	Transistor 2 SB 1187 F
604-9	269 095	Transistor 2 SC 2060 Q
Q 606	281 504	Transistor 2 SA 934 R
603-4	287 066	Transistor 2 SC 2910 S
Div.	247 648	Transistor 2 SC 1740
Div.	223 906	Diode 1 N 4148
Div.	226 501	Diode 1 N 4002
D 207	284 932	Diode HZ 5 B 1
101-4	275 855	Diode SVC 321
D4...	287 067	Diode 10 D 1 SIL
D 402	279 932	Diode ZPD 9,1 2%
D 602	287 068	Diode GZA 6,2 XOD Y
D 604	287 069	Gleichrichter BR 152
D 605	236 628	Diode ZPD 30
D 609	287 070	Diode GZA 15 Z FLS 137
D 608	287 071	Diode BR 61/DBA 40 B
D 610	287 072	Gleichrichter BR 102
Div.	287 073	LED SLR 34 VR 5
X 401	287 074	LED SEL 2310 S GN
X 4...	287 075	LED SLR 34
X 101	287 076	Quarz 4,5 MHz
X 306	281 411	Quarz 4 MHz
Div.	287 078	Drossel 100 UH
101-2	287 079	Keramik-Filter 10.7-8
CF 104	287 080	Keramik-Filter
105-6	287 081	Filter MPX
CF 103	287 082	Keramik-Filter SFZ 455
L 102	287 083	Spule LW-Oszi.
L 103	287 084	Spule MW-Oszi.
L 104	287 085	Spule AM
IF 103	287 086	Spule AM ZF
IF 101	287 087	Spule (A)
IF 102	287 088	Spule (B)
L 101	287 089	Ferritantenne kpl.
L 412-3	287 090	Spule 100 UH
09-10	287 091	Spule 3,9 MH
L 407-8	287 092	Spule 6,8 MH
L 401-4	287 093	Filter
L 411	287 094	Spule
L 603-4	287 095	Spule
CT 101	287 096	Trimmer 30 PF
CT 102	287 097	Trimmer 10 PF
TN 101	287 098	Tuner
R 223	287 099	Sich.-Widerstand 39 Ohm ½ Watt
R 654-5	287 100	Sich.-Widerstand 1 kOhm ¼ Watt
R 610	287 101	Sich.-Widerstand 100 ½ W
R 620	287 102	Sich.-Widerstand 100 R
R 662	287 103	Sich.-Widerstand 220 R
R 623-4	287 104	Sich.-Widerstand 4 R 7
R 658-9	287 105	Sich.-Widerstand 2,2 Ohm 1 Watt
R 674-5	287 106	Sich.-Widerstand 1 Ohm ¼ Watt
SF 104	287 107	Poti 1 K
Div.	287 108	Poti
SF 101	287 109	Poti 22 K
Div.	287 110	Poti 47 kOhm
601-2	287 111	Poti 470 Ohm
Div.	287 112	Poti 4,7 K
301-2	287 113	Steller 2 × 100 K
VR 303	287 114	Steller 100 K
VR 601	287 115	Steller 2 × 100 K mit Motor
VR 401	287 116	Steller 50 K
VR 402	287 117	Steller 100 K × 2
Div.	287 118	Schalter
SW 201	287 119	Schalter
SW 601	287 120	Schalter
SW 406-8	287 121	Schalter
Div.	287 122	Tipptaste
RE 1	287 123	Relais
RE 2	287 559	Relais (Stand by)
RE 3	287 560	Relais
DS 101	287 124	Display (Tuner)
PL 101	287 125	Lampe 15 V 50 MA
J 603	287 126	Kopfhörerbuchse
J 401	287 127	Mikrophonbuchse
DS 501	287 128	Display (CD)
PL 501	287 129	Lampe 15 V 30 MA
601-2	287 130	Cinch Buchse
J 604	287 131	Lautsprecherbuchse
	287 132	Anzeigeinstrument
	287 198	Netztrafo
	287 199	Stand by trafo

Änderungen vorbehalten! Subject to change! Sous réserve de modification!

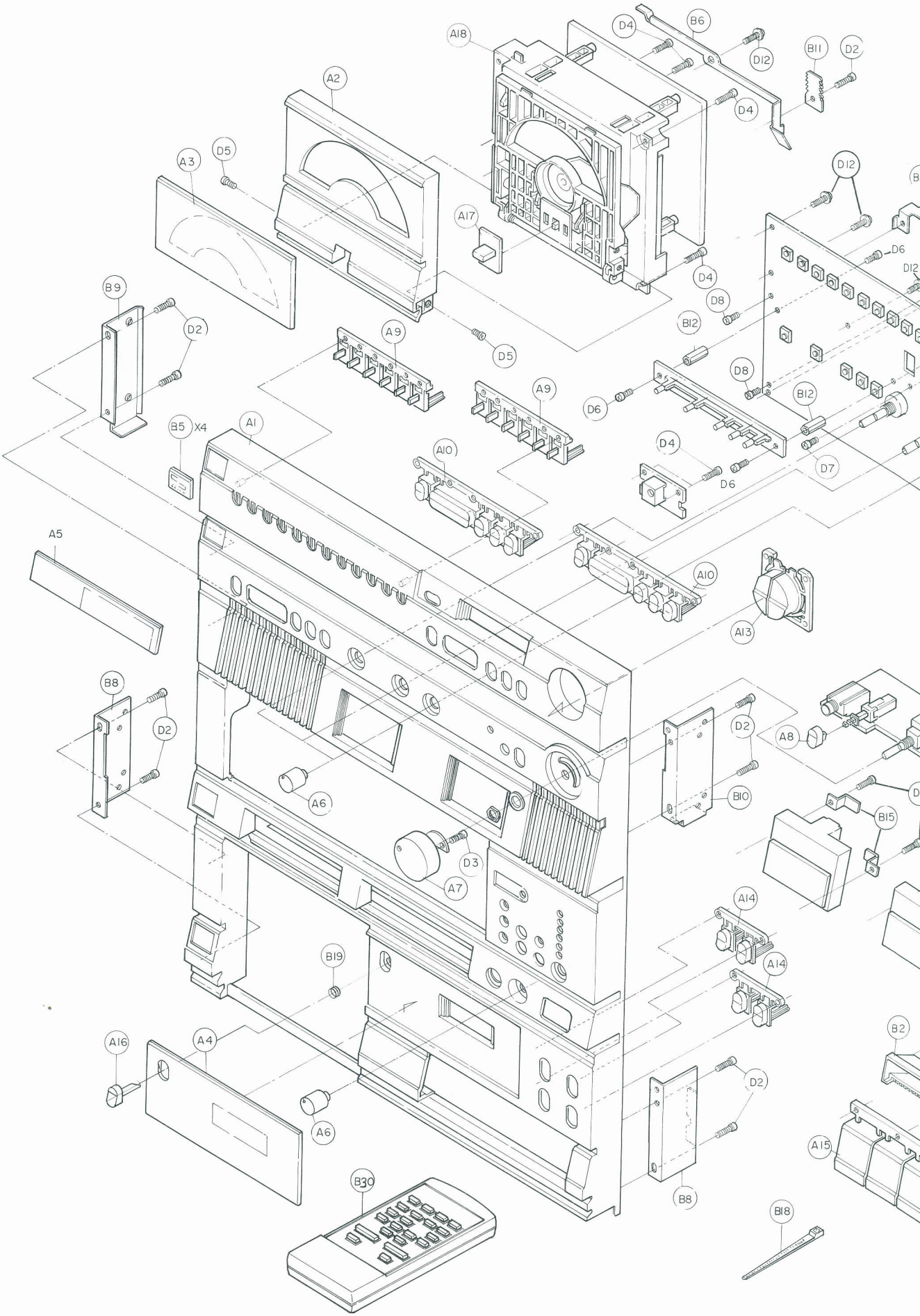
Ersatzteile · Replacement parts · Pièces détachées · CH 1000

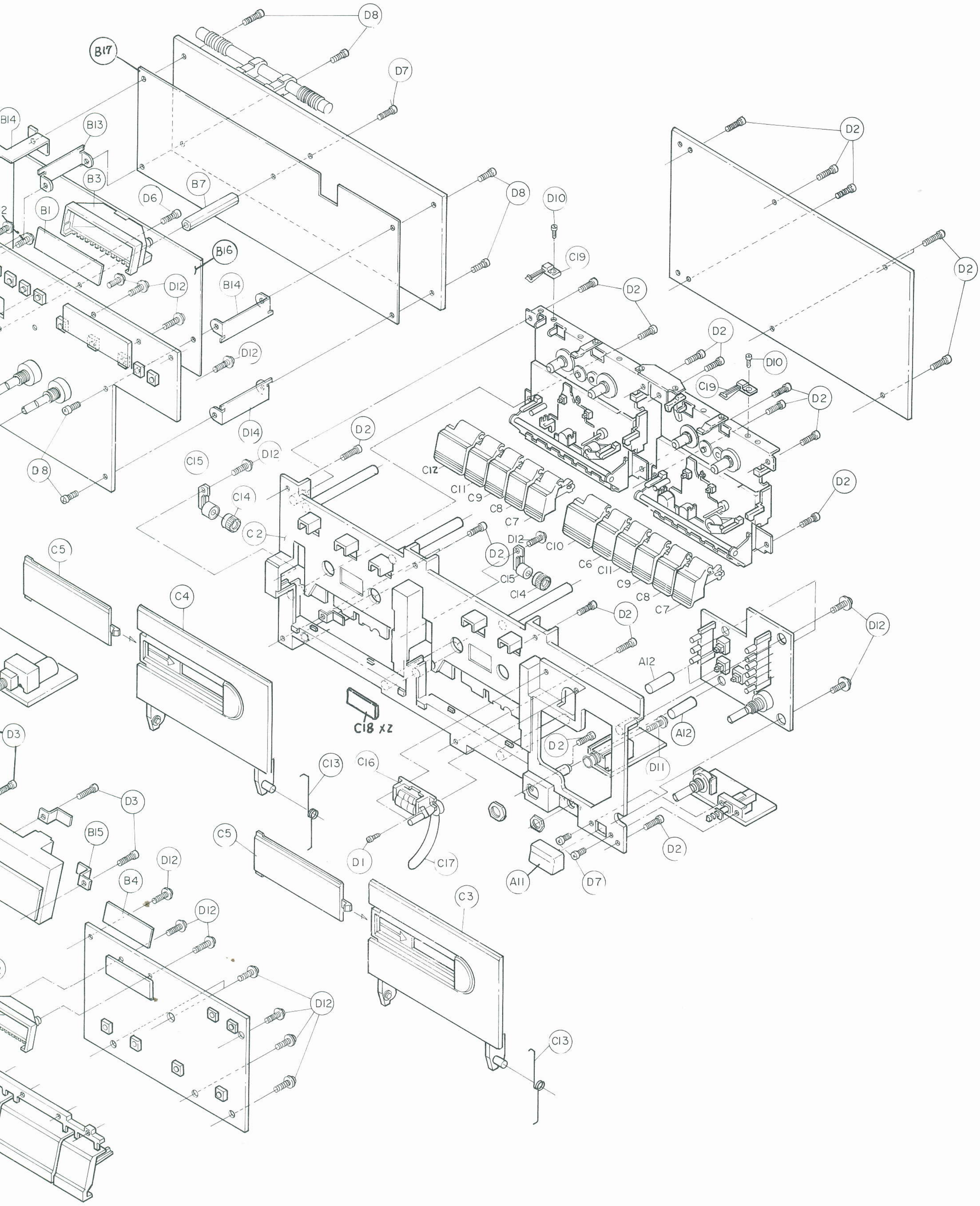
Pos.	Art.-Nr.	Bezeichnung
		Cassettenmechanik
CM 10	287 134	Feder
CM 11	287 135	Pausenhebel
CM 12	287 136	Druckfeder
CM 13	287 137	Sicherungsstöpsel
CM 14	287 138	Feder
CM 21	287 139	Feder
CM 22	287 140	Feder
CM 23	287 141	Mikroschalter
CM 24	287 142	Mikroschalter
CM 29	287 143	Feder
CM 35	287 144	Bandandruckrolle
CM 38	287 145	Tasthebel
CM 39	287 146	Rutschkupplung
CM 40	287 147	Riemen
CM 43	287 148	Schwungmasse
CM 44	287 149	Schwungmasse
CM 47	287 150	Kurvenzahnrad
CM 49	287 151	Zahnrad
CM 51	287 152	Wickelteller L
CM 52	287 153	Wickelteller R
CM 58	287 154	Pulley-Motor
CM 59	287 155	Antriebsriemen
CM 62	287 156	Gleithebel
CM 65	287 157	Wiedergabekopf
CM 66	287 158	A/W-Kopf
CM 67	287 159	Löschkopf
CM 68	287 160	Antriebsmotor
CM 69	287 161	Aufnahmesperrhebel
		CD-Mechanik
CD 1	287 163	CD-Plattenfach
CD 2	287 164	Zahnbügel
CD 5	287 165	Feder
CD 8	287 166	Zentrierscheibe
CD 9	287 141	Mikroschalter
CD 14	287 168	Eject Hebel
CD 17	287 169	Eject Knopf
CD 18	287 170	Mikroschalter
CD 20	287 171	Mikroschalter
CD 23	287 172	Zentrierscheibe

Pos.	Art.-Nr.	Bezeichnung
CD 25	287 173	Feder
CD 26	287 174	Antriebsteller
CD 29	287 175	Dämpferzahnrad
CD 31	287 176	Feder
CD 37	287 177	Antriebsrolle
CD 38	287 178	Riemen
CD 39	287 179	Motor (Laser)
CD 41	287 180	Motor (Antrieb)
CD 47	287 181	Lager
CD 48	287 182	Lager
CD 50	287 183	Antriebsrolle
CD 51	287 184	Gewindestange
CD 52	287 185	Pick up
CD 53	287 186	Gleitstange
CD 57	287 187	Gewindewinkel
CD 62	287 188	Umschalter Single–DC
CD 63	287 189	Arm Umschalter
		Grundplatte CD
IC 201	283 095	IC CXA 1081 M
IC 202	283 096	IC CXA 1082 AQ
IC 401	283 145	IC CXP 5024 H
IC 701	287 191	IC UPD 6376 CX
IC 702	274 480	IC NJM 4560 DX
Q 201	283 101	Transistor 2 SB 1185 E
Q 202	283 102	Transistor 2 SD 1762 E
Q 203	247 649	Transistor 2 SC 1741 R
Q 204	287 192	Transistor 2 SA 854
Q 301	269 095	Transistor 2 SC 2060 Q
Q 302	281 504	Transistor 2 SA 934 R
Div.	247 648	Transistor 2 SC 1740
Q 501	268 328	Transistor 2 SA 1015 Y
705-6	287 193	Transistor DTA 143 ES
Q 901	287 194	Transistor BA 17805
Q 902	283 142	IC MC 7905 CT
VR 301	283 105	Steller 20 K
VR 601	283 106	Steller 1 K
Div.	287 195	Diode
X 401	281 411	Quarz 4 MHz
X 601	287 196	Keramikfilter 16.93 MHz
SP 001	287 197	CPC-S 1211

Änderungen vorbehalten! Subject to change! Sous réserve de modification!

Explosionsdarstellung Gehäuse
Exploded view housing




D8
B17
D7
B14
B13
B3
D6
B7
B1
B16
D12
B14
D12
D14
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D10
C19
D2
D2
D10
C19
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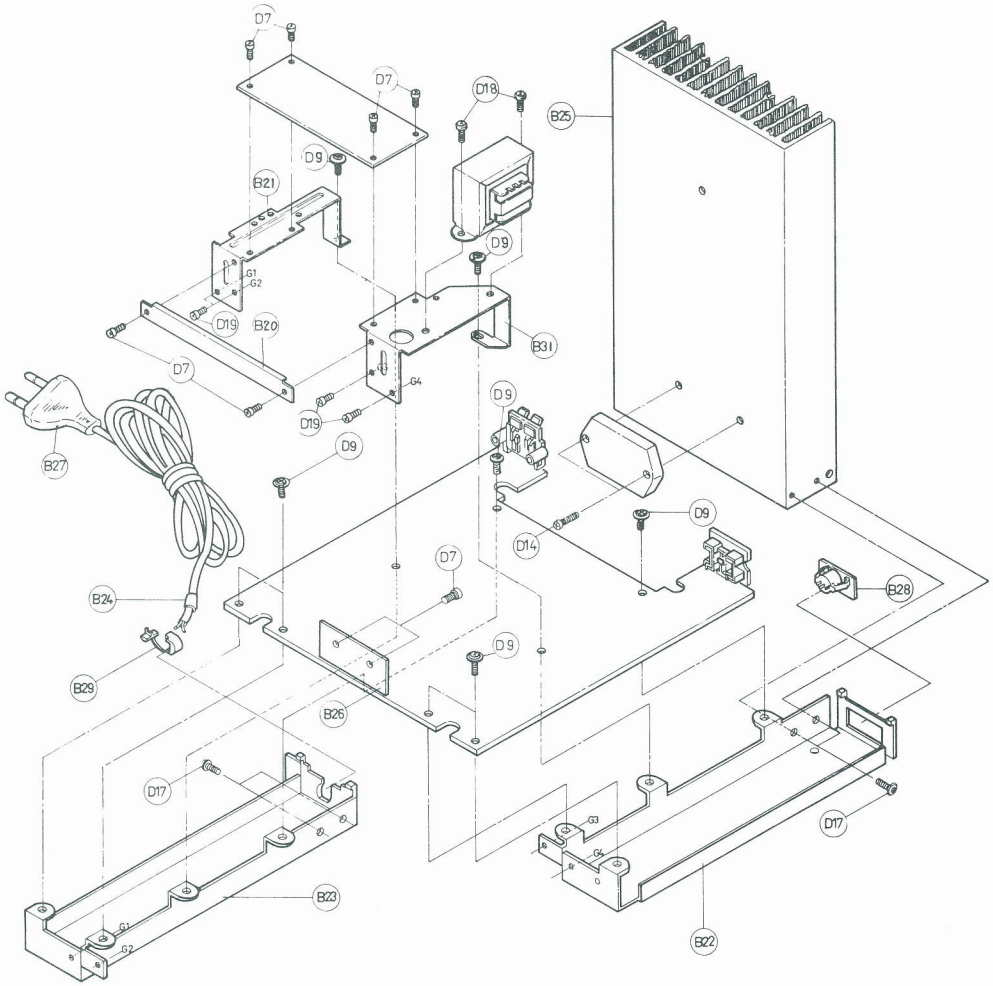
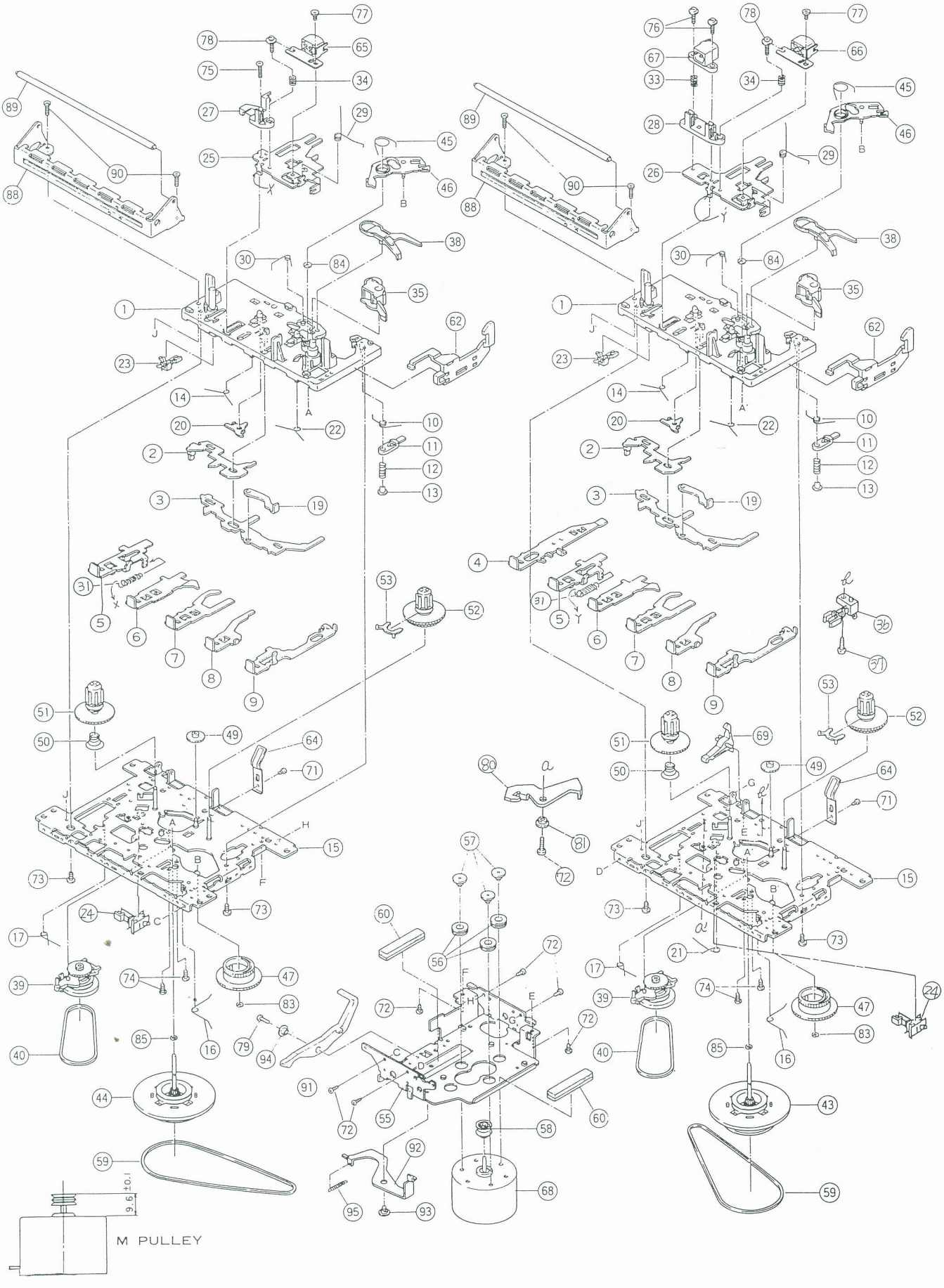
C15
D12
C14
C2
C12
C11
C9
C8
C7
D12
C10
D2
C15
C14
C6
C11
C9
C8
C7
D2
D12
A12
A12
C5
C4
C18 x2
D2
D11
D3
C13
C16
D3
B15
C5
D1
C17
A11
D7
D2
D12
B4
D12
C3
D12
C13

Explosionsdarstellung Netzteil/Endstufe
Exploded view power supply/output amplifier



Explosionsdarstellung Cassettenmechanik
Exploded view cassette mechanism



Explosionsdarstellung CD-Mechanik
Exploded view CD mechanism