

# Bang & Olufsen

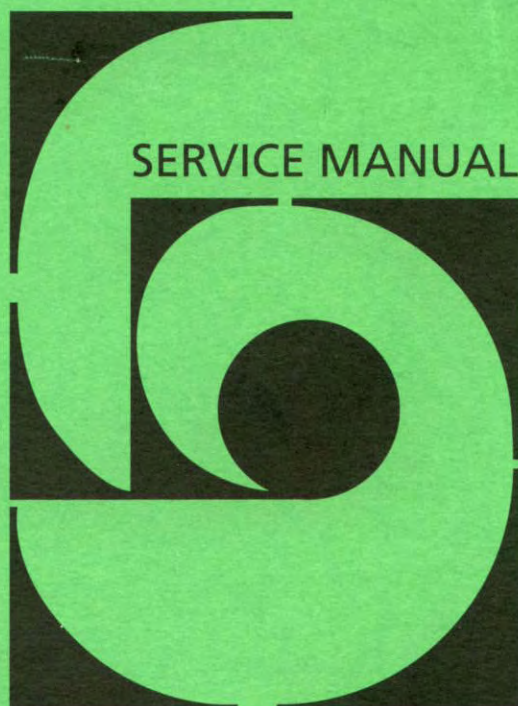
## BeoSound Century

Type 2651, 2652, 2653, 2654



### Circuit Description

- 3540178 Danish
- 3540179 English
- 3540180 German
- 3540181 French

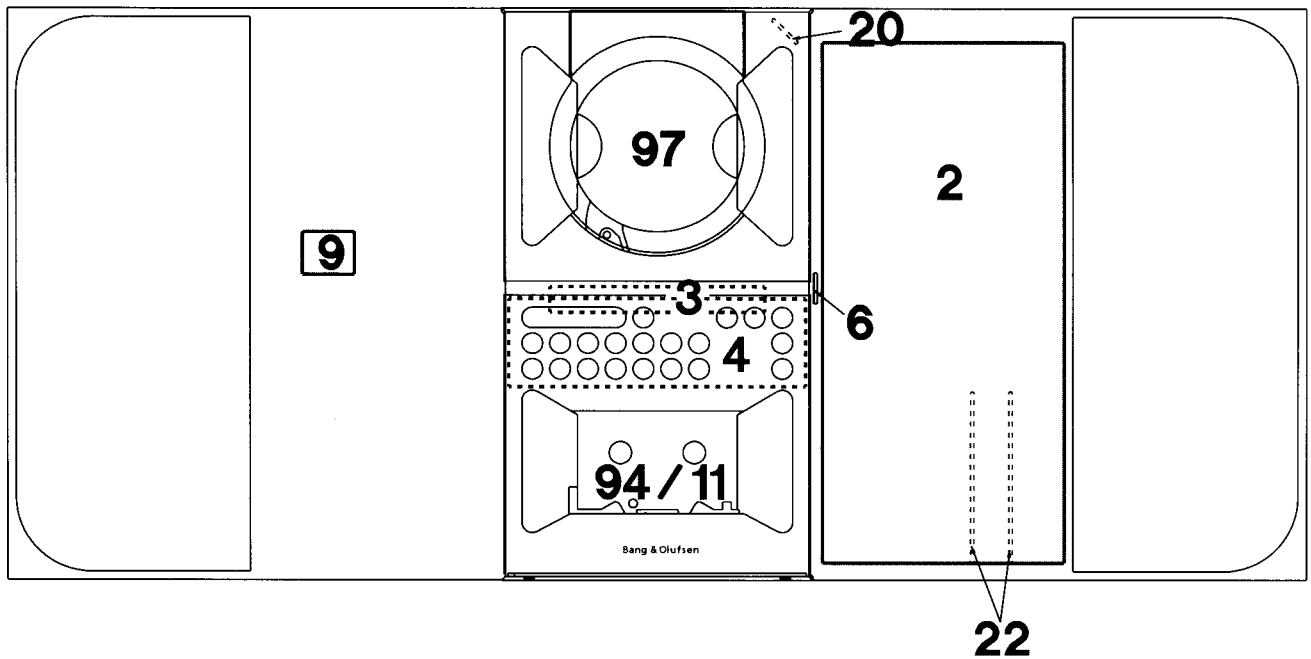




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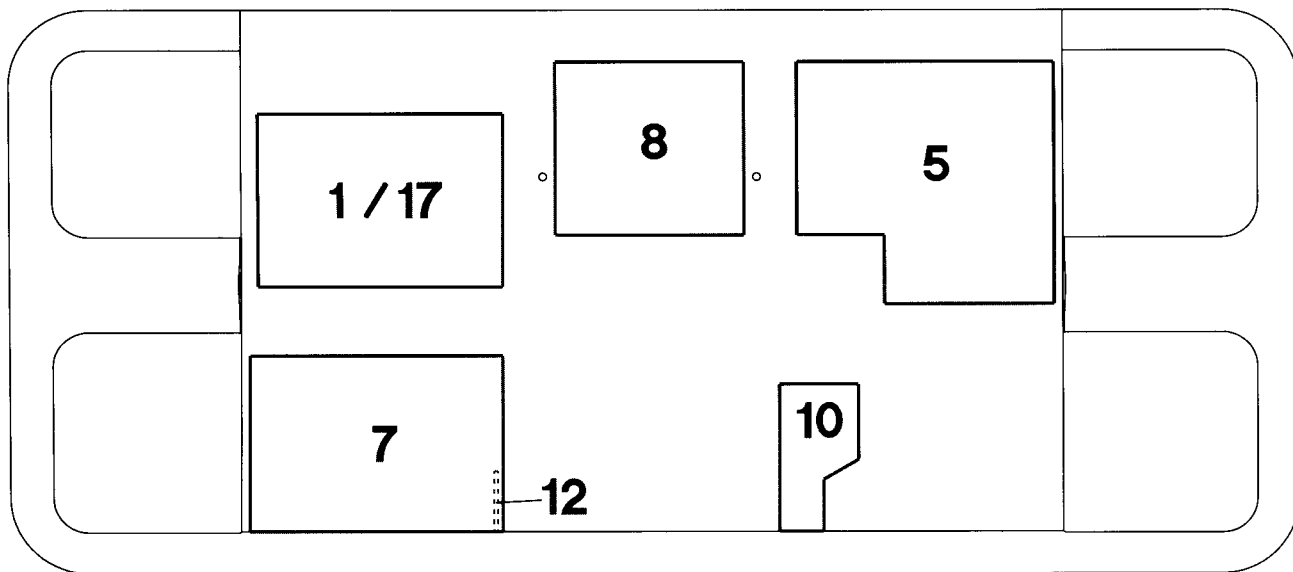
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*Seen from the front*

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*Seen from the back*

**SPECIFICATION GUIDELINES FOR SERVICE USE****BeoSound Century**

FM range	Type 2651 EU
FM-MW-LW range	Type 2652 GB, 2653 USA/CAN, 2654 JAP
Operation	Direct, easy-touch pushbuttons
Optional extra	Beolink 1000, one-way
Cabinet finish	Black
Front cover	Grey-Red-Blue-Green, type 6037

**Acoustic system:**

Active speakers	2 x 2 output amplifier
Output amplifier	Class G
Sound Pressure Level	95 dB IEC noise/3m/stereo/room
Frequency response	75 - 20,000 Hz +4 - 8 dB
Cabinet principle	Bass Reflex
Crossover frequency	3500 Hz
Active crossover network	24 dB/octave Linkwitz/Riley
Woofer	10 cm - 4"
Tweeter	1.8 cm - ¾"
Net volume	1.1 litres

**Tuner:**

Pretuned radio programs	30 FM or AM
FM section:	
FM range	87.5 - 108.0 MHz EU/GB 76.0 - 90.0 MHz JAP
FM aerial impedance	75 Ω
Sensitivity	< 1,4µV 26 dB S/N mono < 45µV 50 dB S/N stereo
Quieting sensitivity	> 66 dB mono > 63 dB stereo
Signal-to-noise ratio	< 0,8% mono < 1,0% stereo
Total Harmonic Distortion	40 - 15,000 Hz ±1.5 dB
Frequency response	> 33 dB 1kHz
Channel separation	> 75 dB
Image rejection	> 80 dB
IF rejection	
AM section:	
AM range	LW 150 - 279 kHz GB MW 522 - 1610 kHz GB MW 520 - 1710 kHz USA/CAN
Antenna	Loop 18.1µH
Sensitivity	< 4mV/m 26dB S/N 156kHz < 1.8mV/m 26 dB S/N 558kHz
Signal-to-noise ratio	> 47dB 50mV/m 963kHz
Total Harmonic Distortion	< 3% 50mV/m noise 963kHz
Selectivity S9	> 42 dB 1494kHz
Image rejection	> 40 dB 270kHz > 30 dB 1494kHz
IF rejection	> 65 dB 270kHz > 50 dB 558kHz

**Tape recorder:**

Compact cassette	C46 - C120
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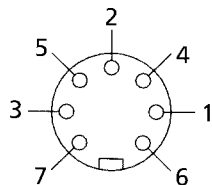
Tape transport	Auto reverse
Tape recording system	HX PRO
Record level	Auto Record Level
Noise reduction	NR
Tape switch	Auto ferro/chrome
Tape head	Dynalloy (Hard permalloy)
Wow and flutter	< 0.15% DIN
Speed deviation	< ±2%
Fast forward	< 120 sec. C60
Frequency range	50 - 14,000 Hz ±3 dB chrome
Signal-to-noise ratio	> 53 dB ferro
	> 62 dB ferro with noise reduction
	> 56 dB chrome
	> 64 dB chrome with noise reduction
Distortion	< 3% D3/315 Hz
Channel separation	> 35 dB 1 kHz
Channel unbalance	< 2 dB
Erasure	> 70 dB
Erasure frequency	80 kHz

**CD player:**

Disc types	12 cm (5") and 8 cm (3")
Converter system	Bitstream
Frequency range	20 - 20,000 kHz +0.5 dB/-2 dB
Signal-to-noise ratio	> 94 dB A-weighted
Harmonic distortion	< 0.025% at 0 dB/1 kHz

**Connections:**

Audio Aux



Pin 1	N.C.
Pin 2	Signal ground
Pin 3	AF in left 0.25-2V RMS 47kΩ
Pin 4	N.C.
Pin 5	AF in right 0.25-2V RMS 47kΩ
Pin 6	N.C.
Pin 7	N.C.

Power supply	230V AC 2651 EU
	240V AC 2652 GB
	120V AC 2653 USA/CAN
	100V AC 2654 JAP
Power consumption	Max. 50 watts
	1 watt in stand-by
Total dimensions W x H x D	75 x 37 x 17 cm
	75 x 33.5 x 11 cm on wall bracket
Weight	12 kg

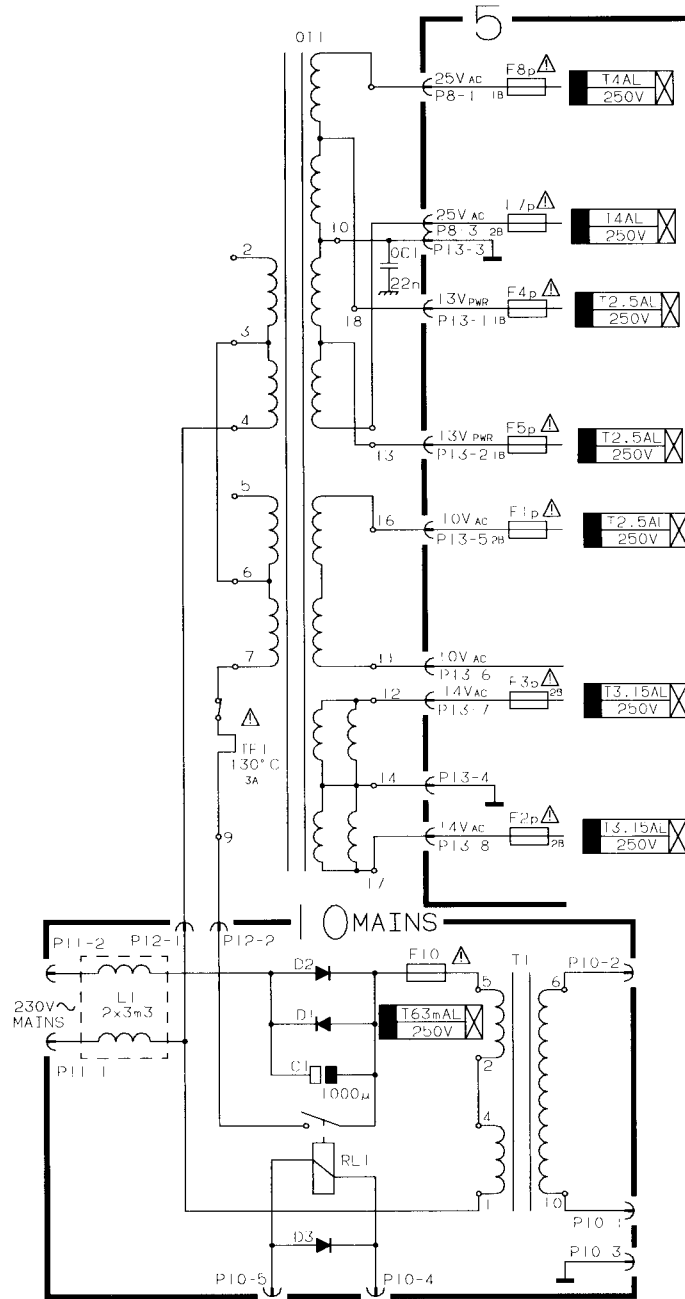
**Optional accessories:**

Beolink 1000	Type 1501, 1502 Italy
Carrying handle/active FM antenna	Type 2036
AM loop antenna	8720043
Wall bracket	Type 2088

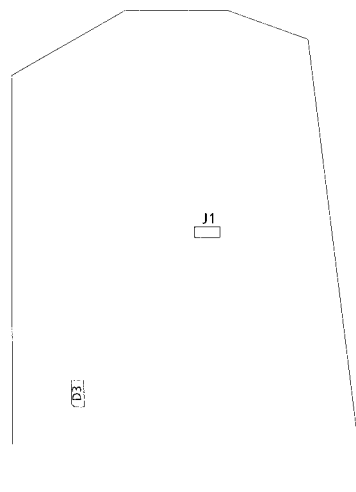
**Subject to change without notice**

WIRING OF TRANSFORMER

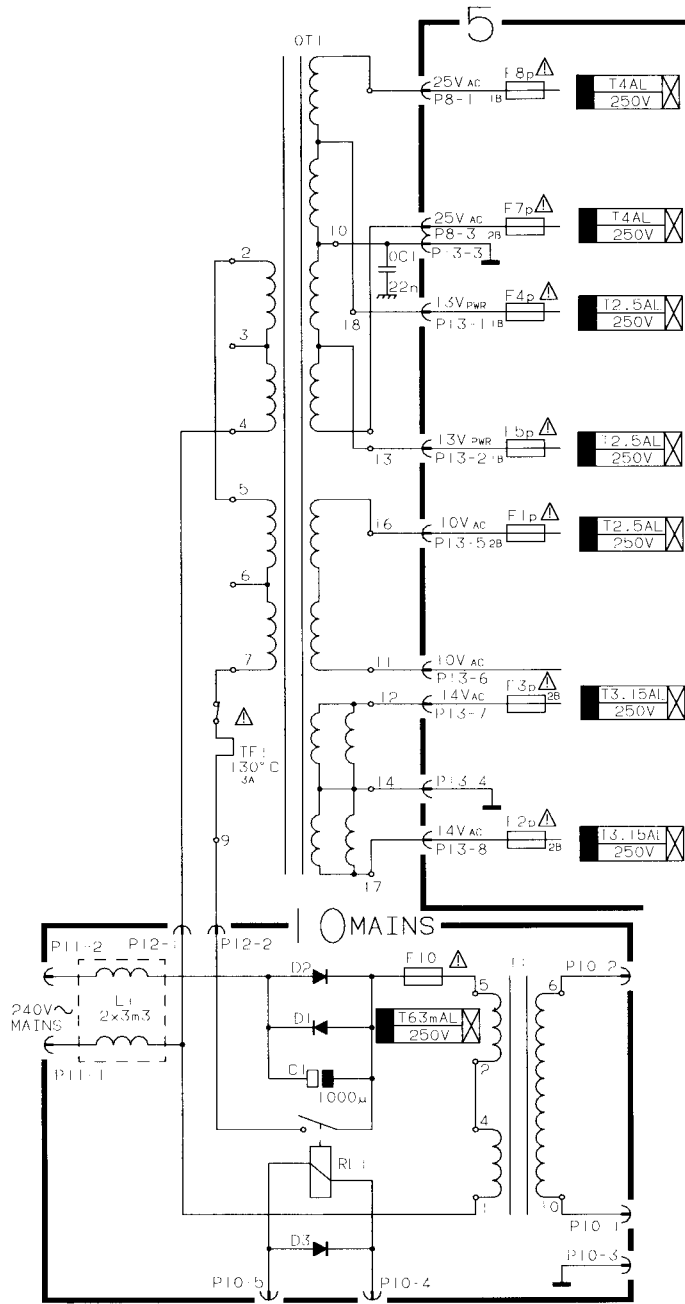
Type 2651  
EU 230V~



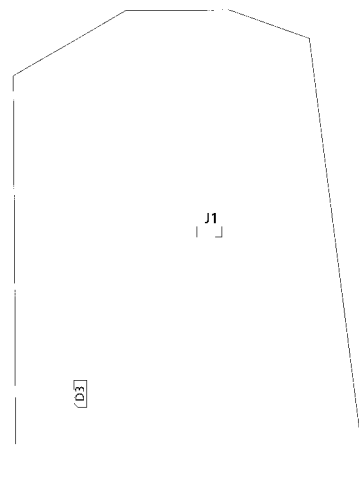
PCB 10, Mains



**Type 2652**  
**GB 240V~**

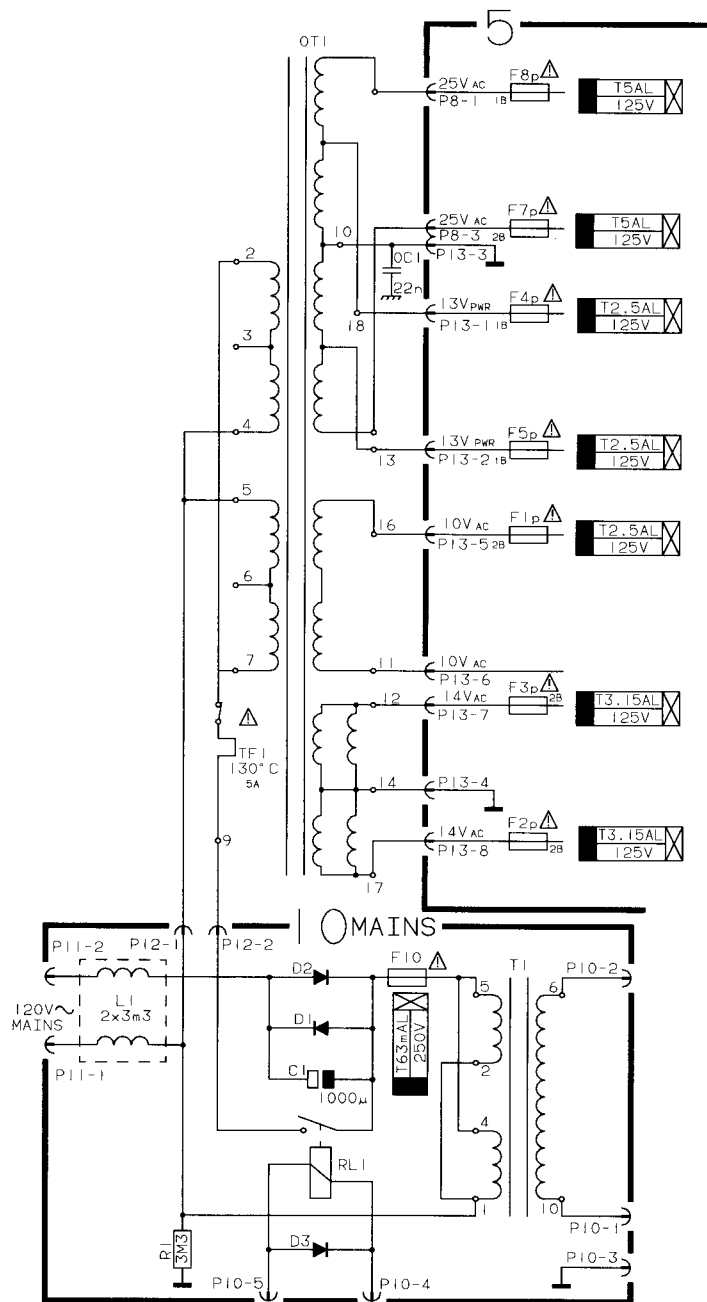


**PCB 10, Mains**

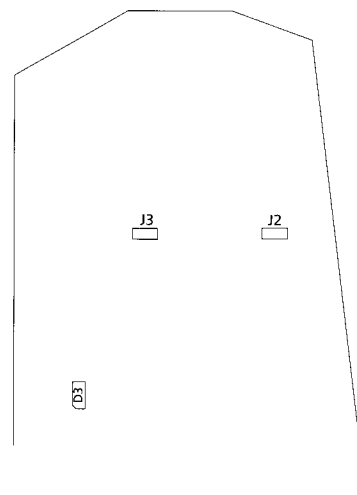




Type 2653  
CDN, USA 120V~



PCB 10, Mains



### BRIEF OPERATION GUIDE

BeoSound Century is primarily designed for closeup operation. Only the relevant buttons light up. Use Beolink 1000 for remote control (see User's guide).

#### RADIO:

Turn on the radio



#### DISPLAY:

P 1

Change display indication (display = frequency)



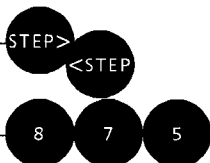
88.8

Tune into and store all FM radio stations in the area



88.8

Searches up/down the frequencies for an acceptable signal  
Key in frequency (ex. 87.5MHz)



88.8

Store the station on a vacant program number (0-30)



P 30

Store the station to a program number (0-30)



P 2

Erase the station from program no.



P

Switching between FM/AM (not all types)



88.8

Browse through program numbers



3

Key in exact program number



30

Select another source

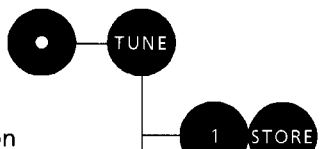


Switch to stand-by



#### ACTIVE ANTENNA OPTION:

Select active antenna option



1

Cut out active antenna option

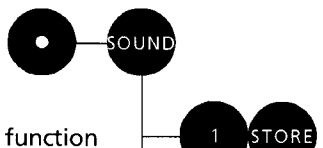


0

#### REMOTE CONTROL:

(No light in buttons)

Disable the remote control function



1

Regain the remote control function



0

#### COMPACT DISC:

Raise the CD-clamp



Lower the CD-clamp



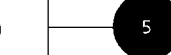
Start playing the CD (Display = track no.)



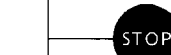
Browse through tracks



Select track number (ex. 5)



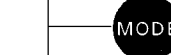
Pause the CD player



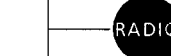
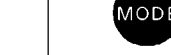
Resume playing after stop, or change display indication (display = track time)  
Change display indication (display = remaining time)



Random play status (display indication is blinking)  
Random play on/off (display indication rotates when random play is on)



Select another source



Switch to stand-by



#### AUXILLARY SOURCE:

Open auxilay input (start now auxilary source)



Switch to stand-by



#### SOUND ADJUSTMENTS:

Raises/lowers the levels



Volume level



Store all sound levels



Loudspeaker balance



Bass level

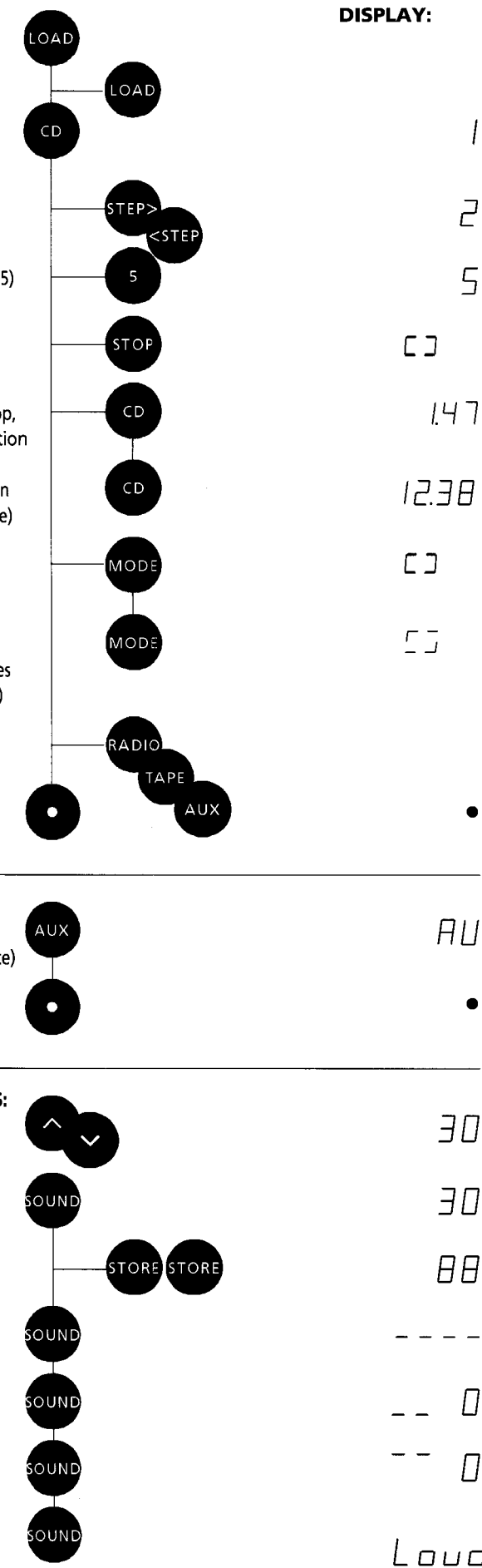


Treble level



Loudness





**TAPE RECORDER:**

Start playing the tape

Play the other side (turn)

Play from the beginning

Browse through tracks

Pause the tape recorder

Fast forwards/rewinds the tape

Erase tape (no source)

Resume playing after stop

Noise reduction status

Noise reduction on/off (display indication blinks when noise reduction is off)

Select another source

Recording pause mode (display blinks alternately)

Auto reverse status

Auto reverse on/off (display indication blinks when auto reverse is off)

Start recording track 4 (ex.) on CD (only if CD is selected as source)

Stop recording pause mode

Start recording

Pause the recording

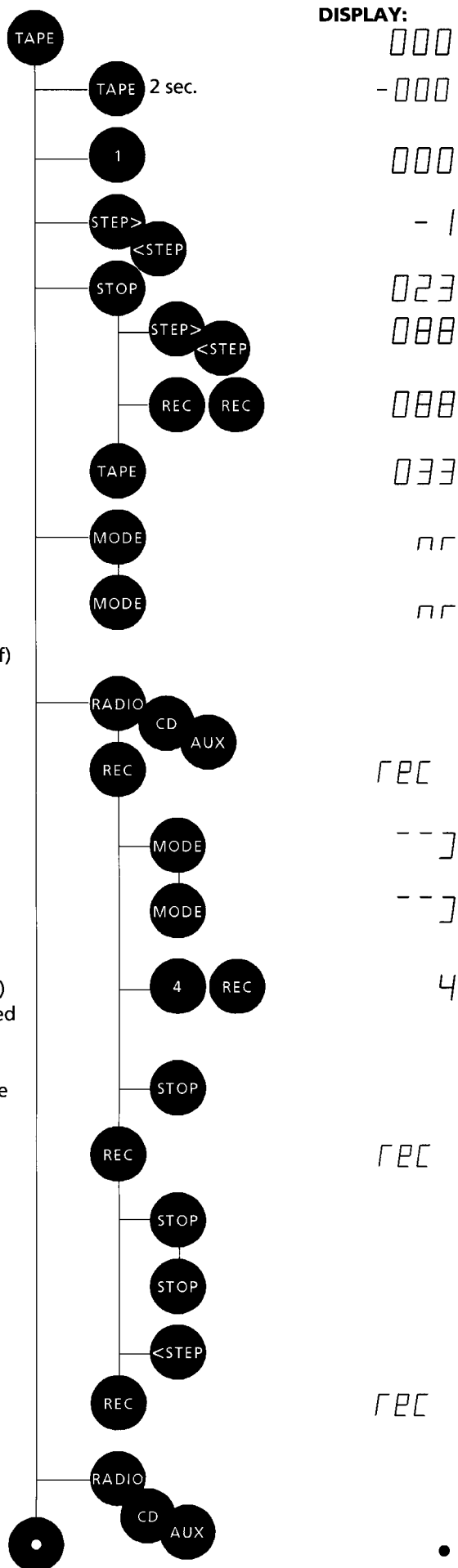
Stop recording completely

Return to approx. recording start

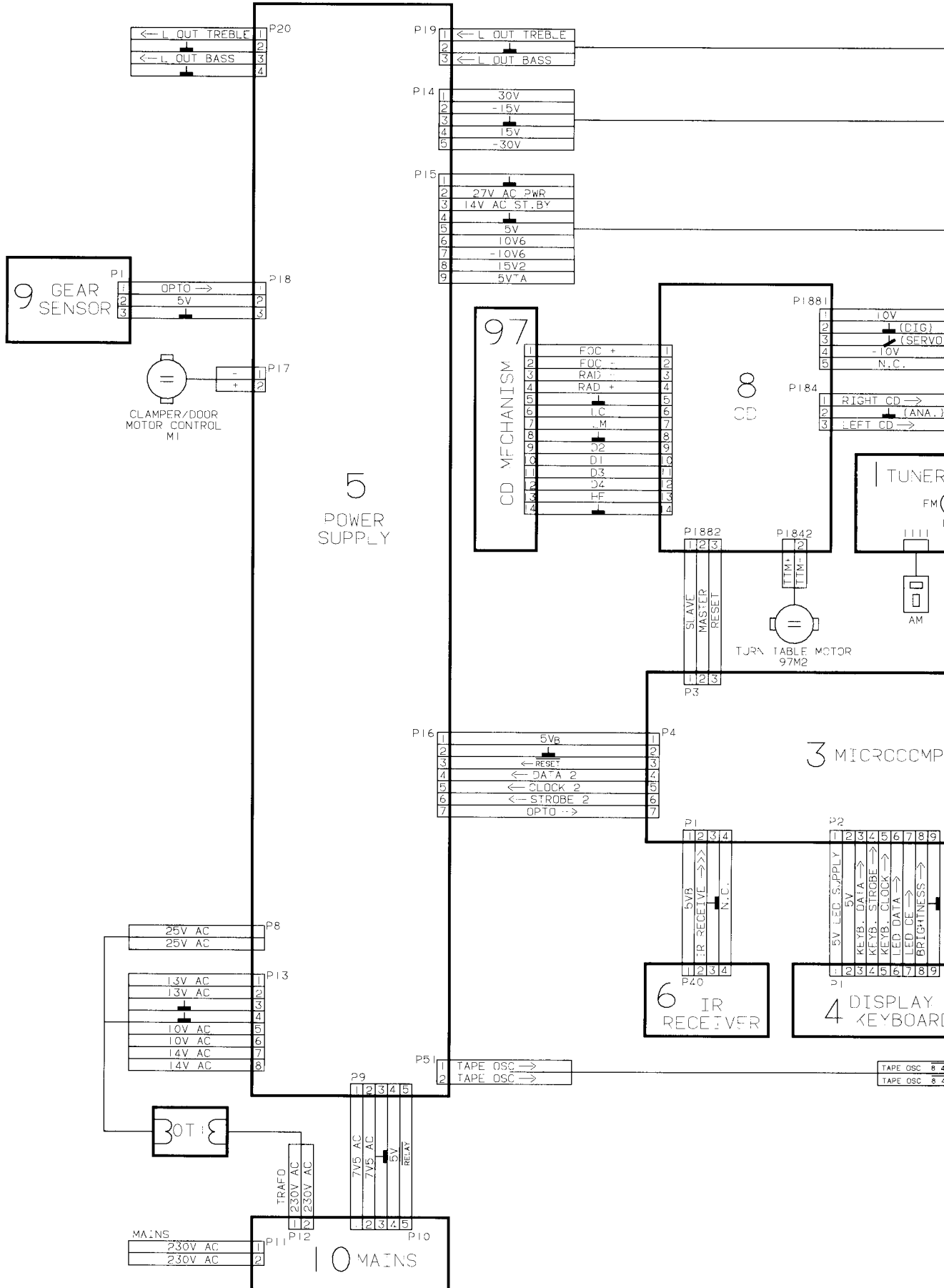
Resume recording after pause

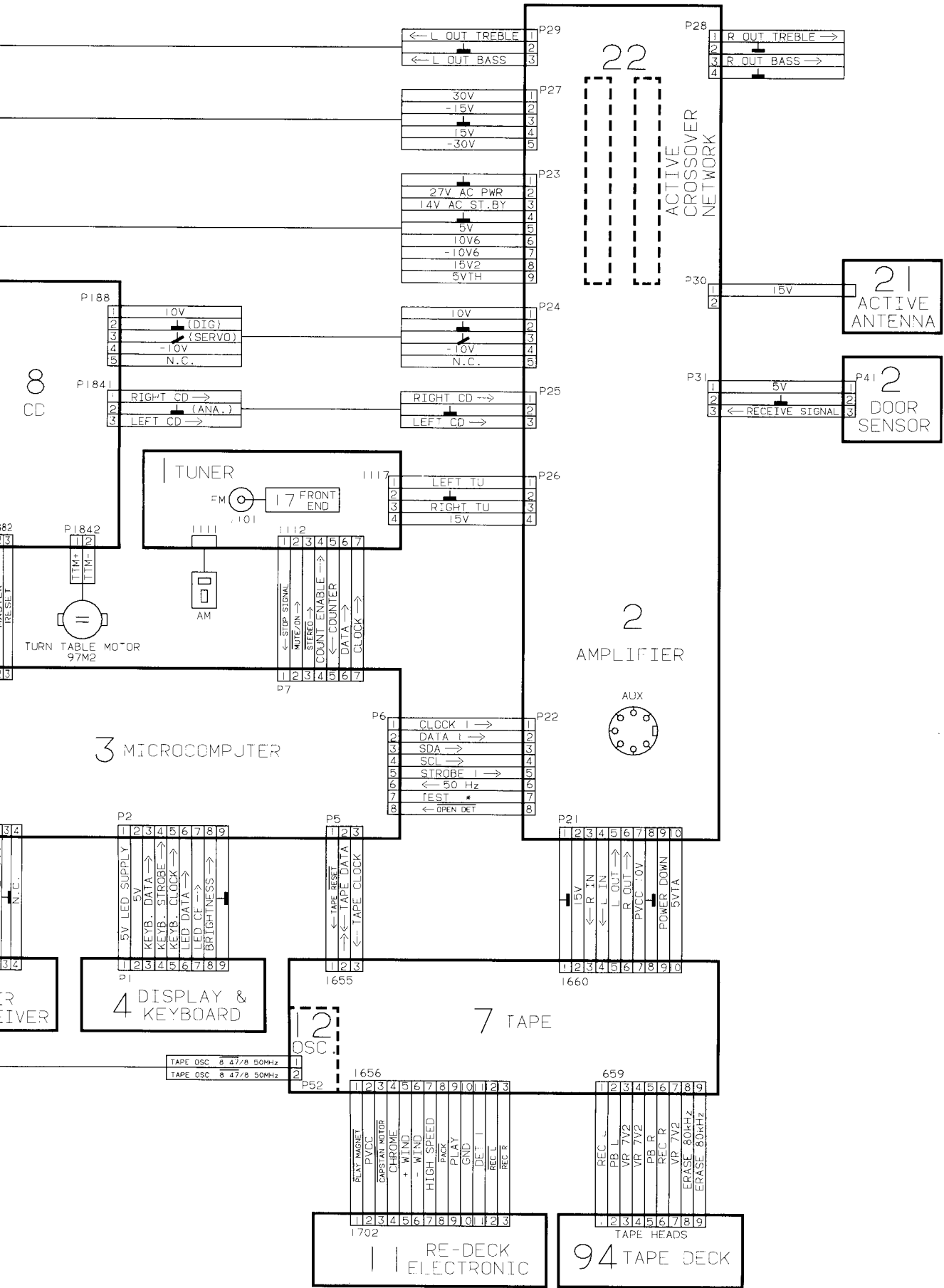
Select another source

Switch to stand-by

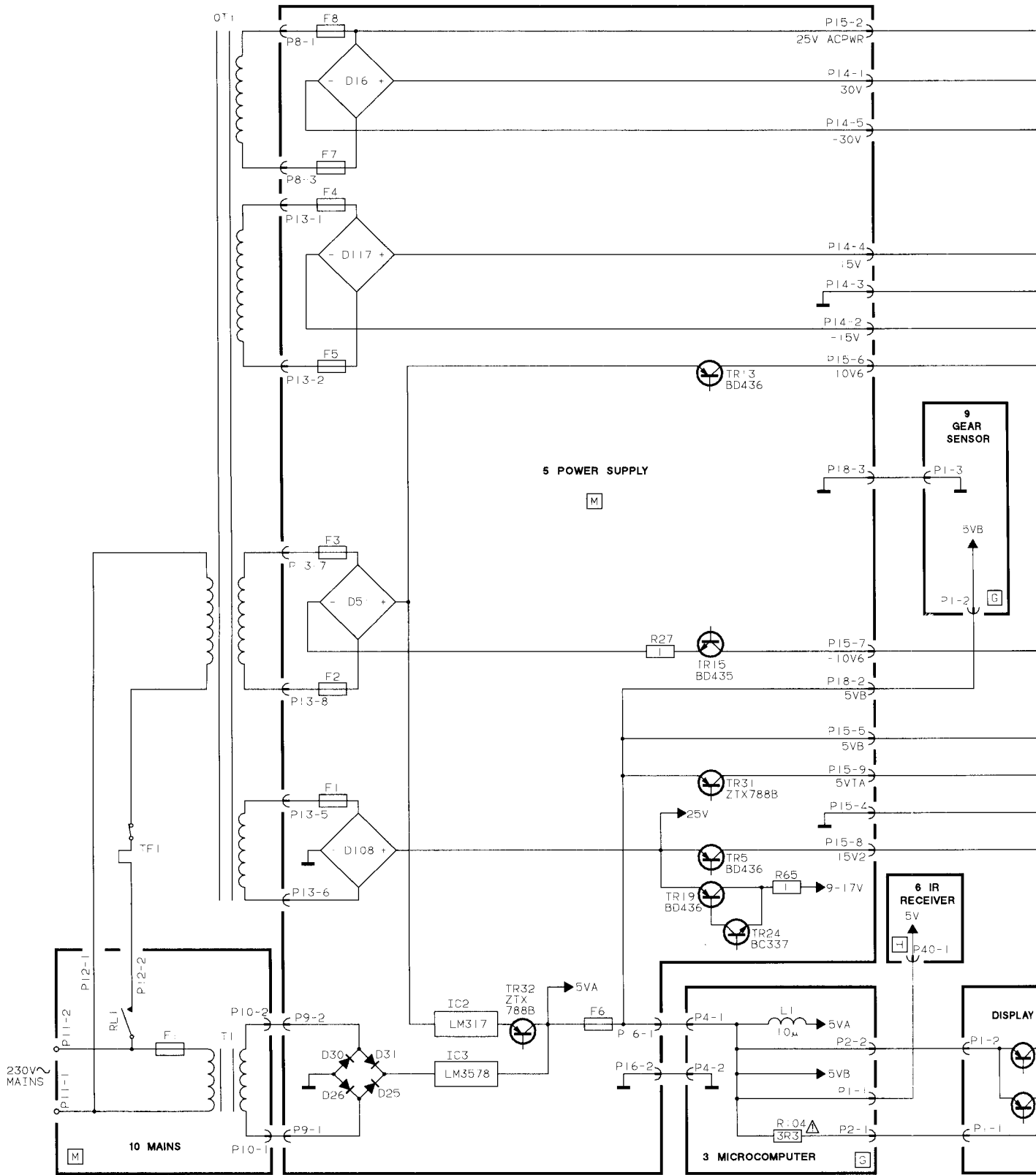


WIRING DIAGRAM

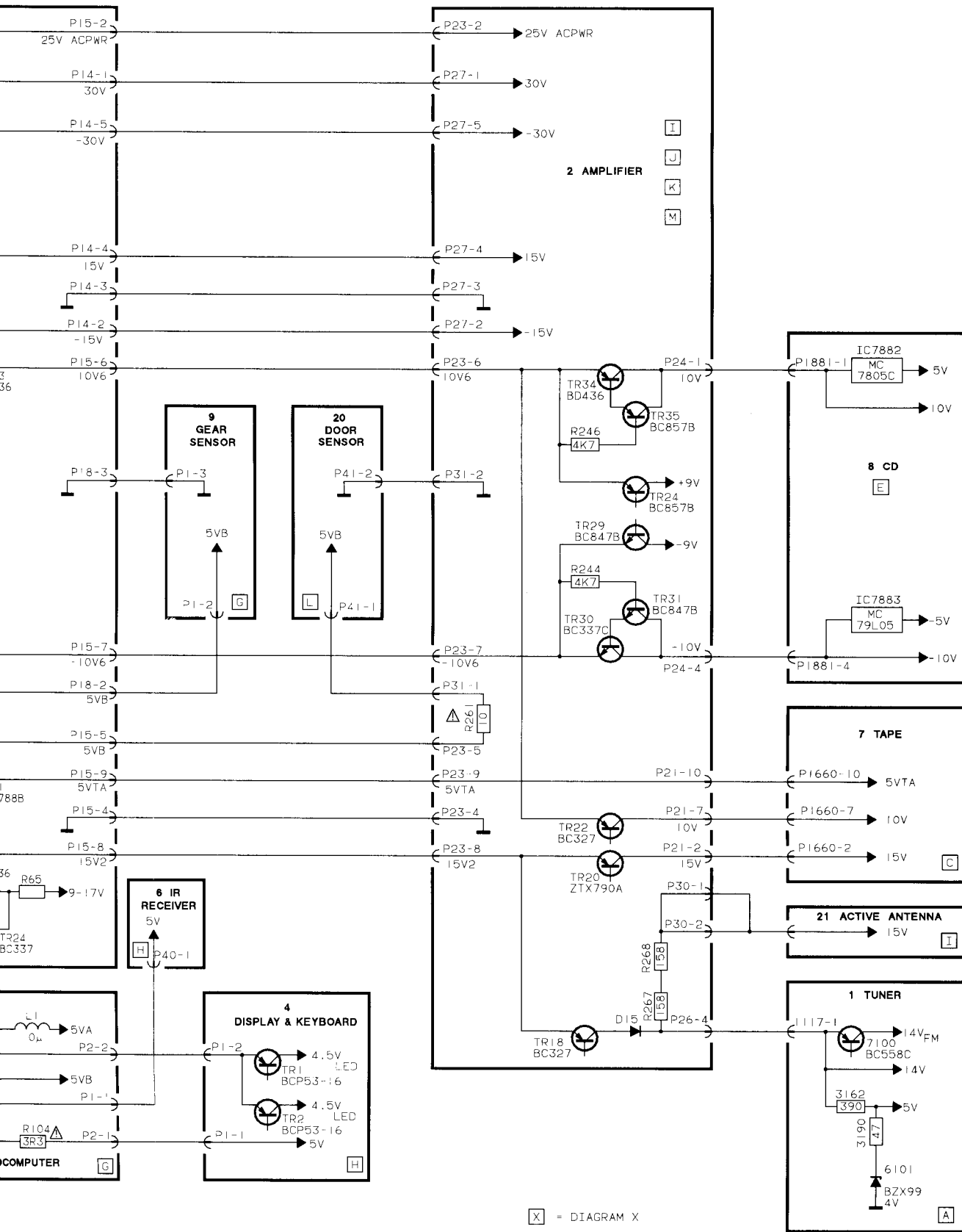




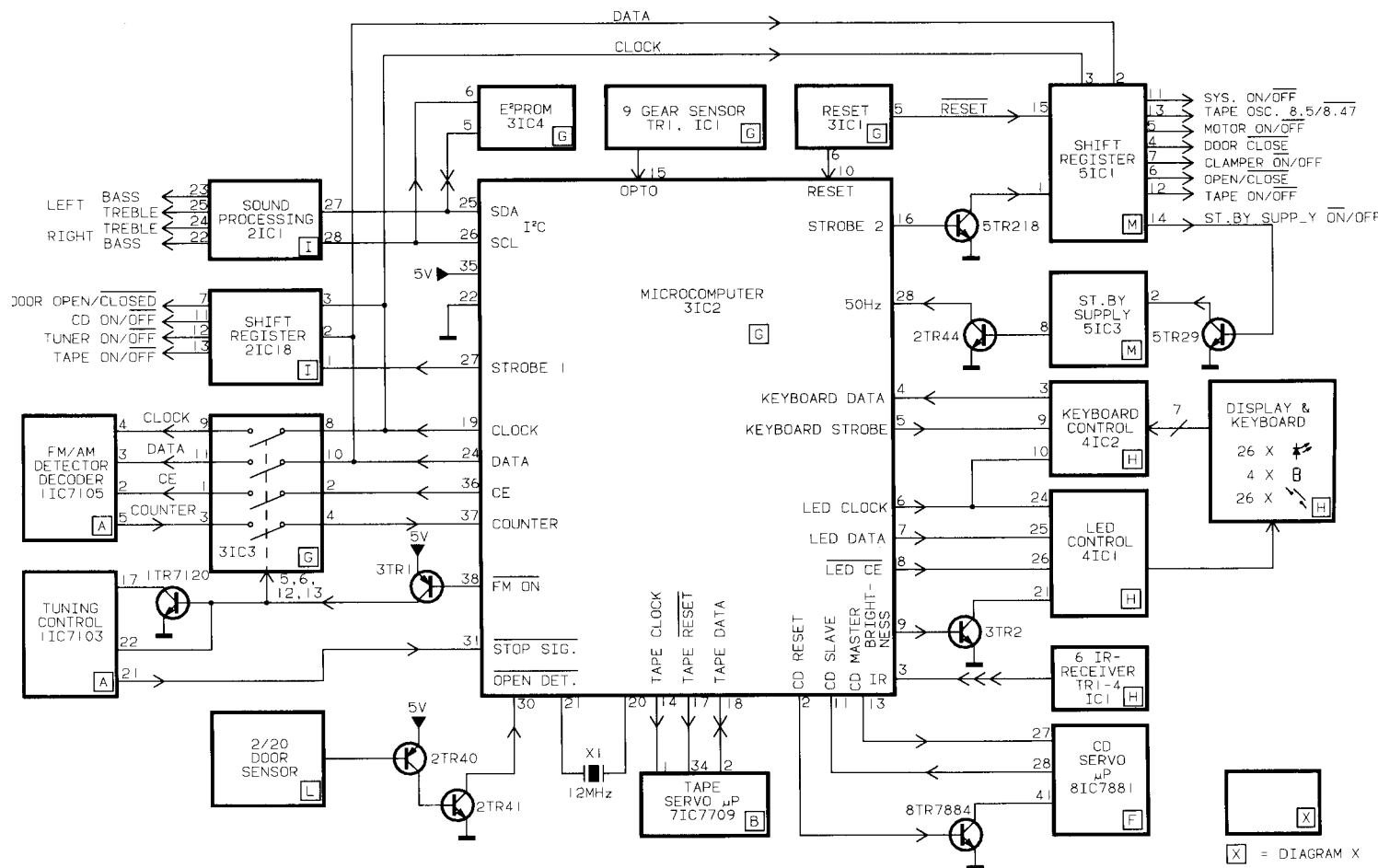
BLOCK DIAGRAM FOR POWER SUPPLY



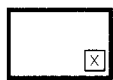
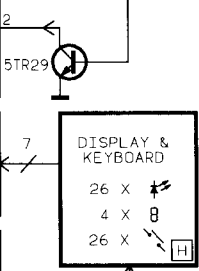




BLOCK DIAGRAM FOR SYSTEM CONTROL

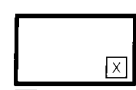
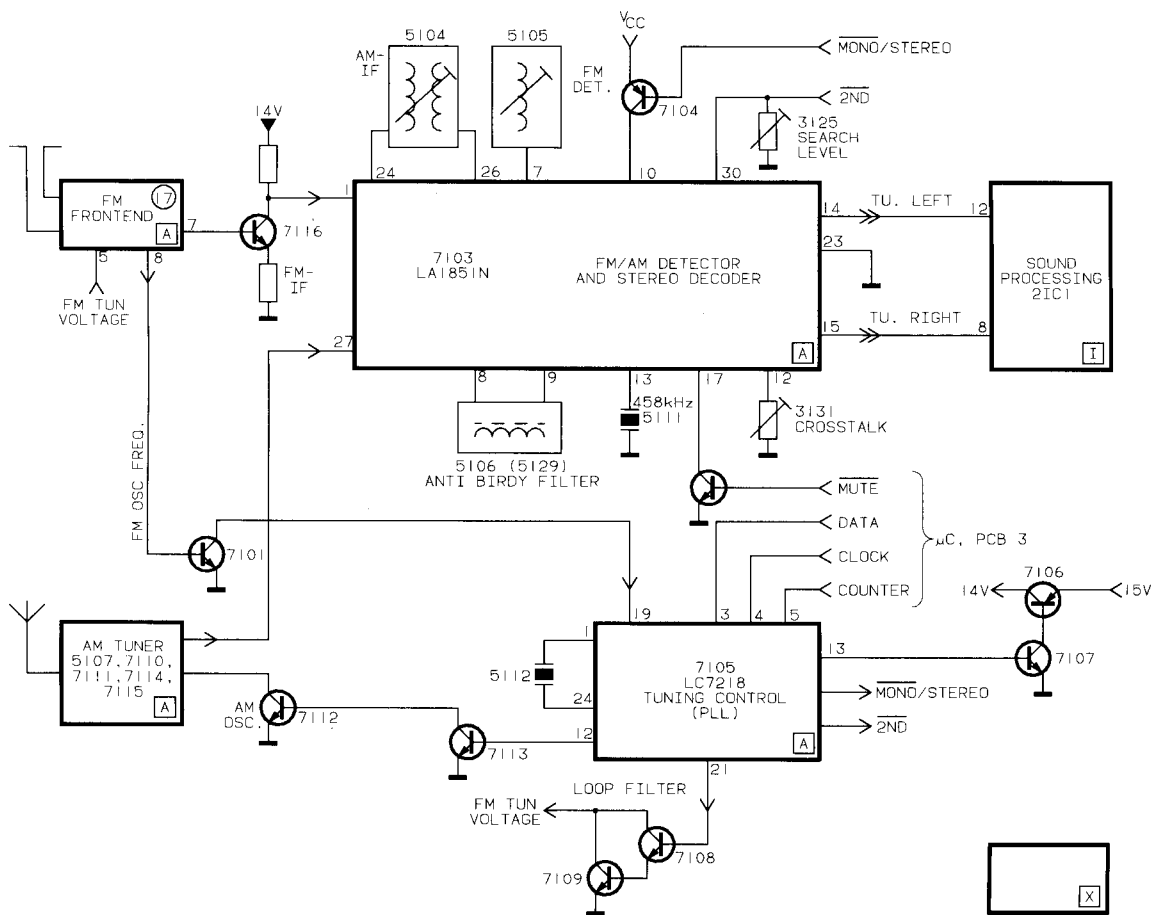


- 11 → SYS. ON/OFF
- 13 → TAPE OSC. 8.5/8.47
- 5 → MOTOR ON/OFF
- 4 → DOOR CLOSE
- 7 → CLAMPER ON/OFF
- 6 → OPEN/CLOSE
- 12 → TAPE ON/OFF
- 14 → ST.BY SUPPLY ON/OFF



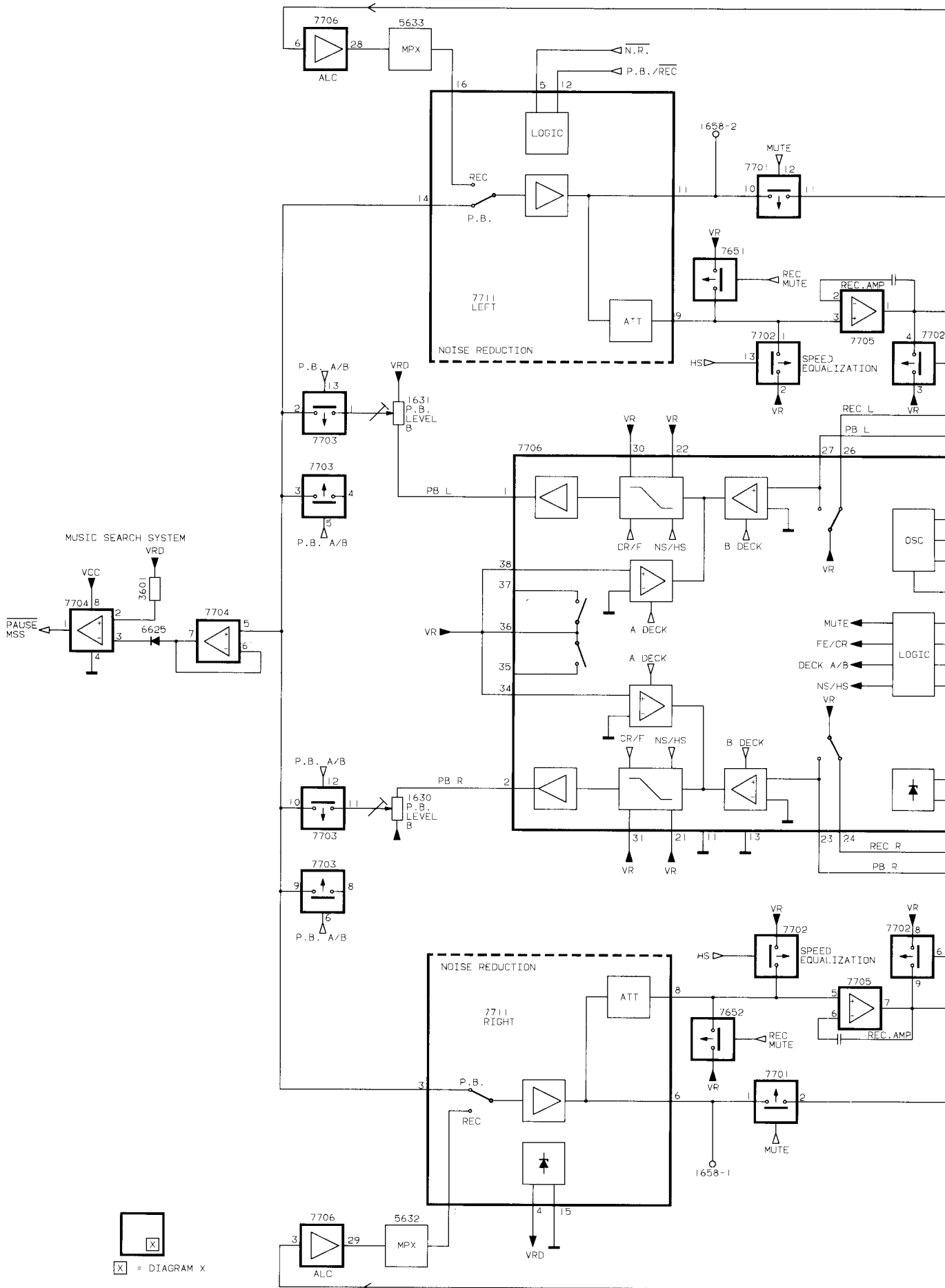
X = DIAGRAM X

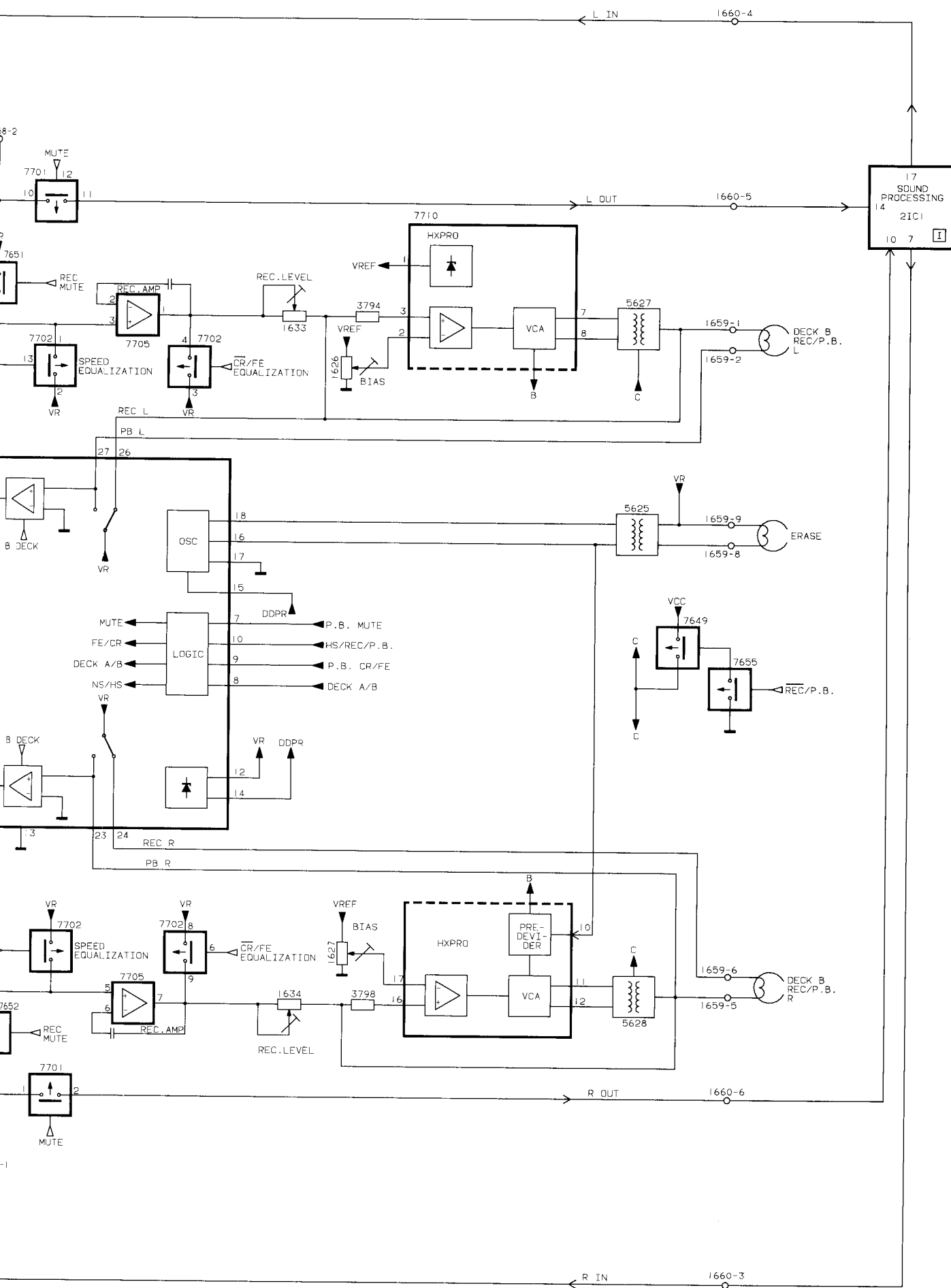
**BLOCK DIAGRAM FOR TUNER**



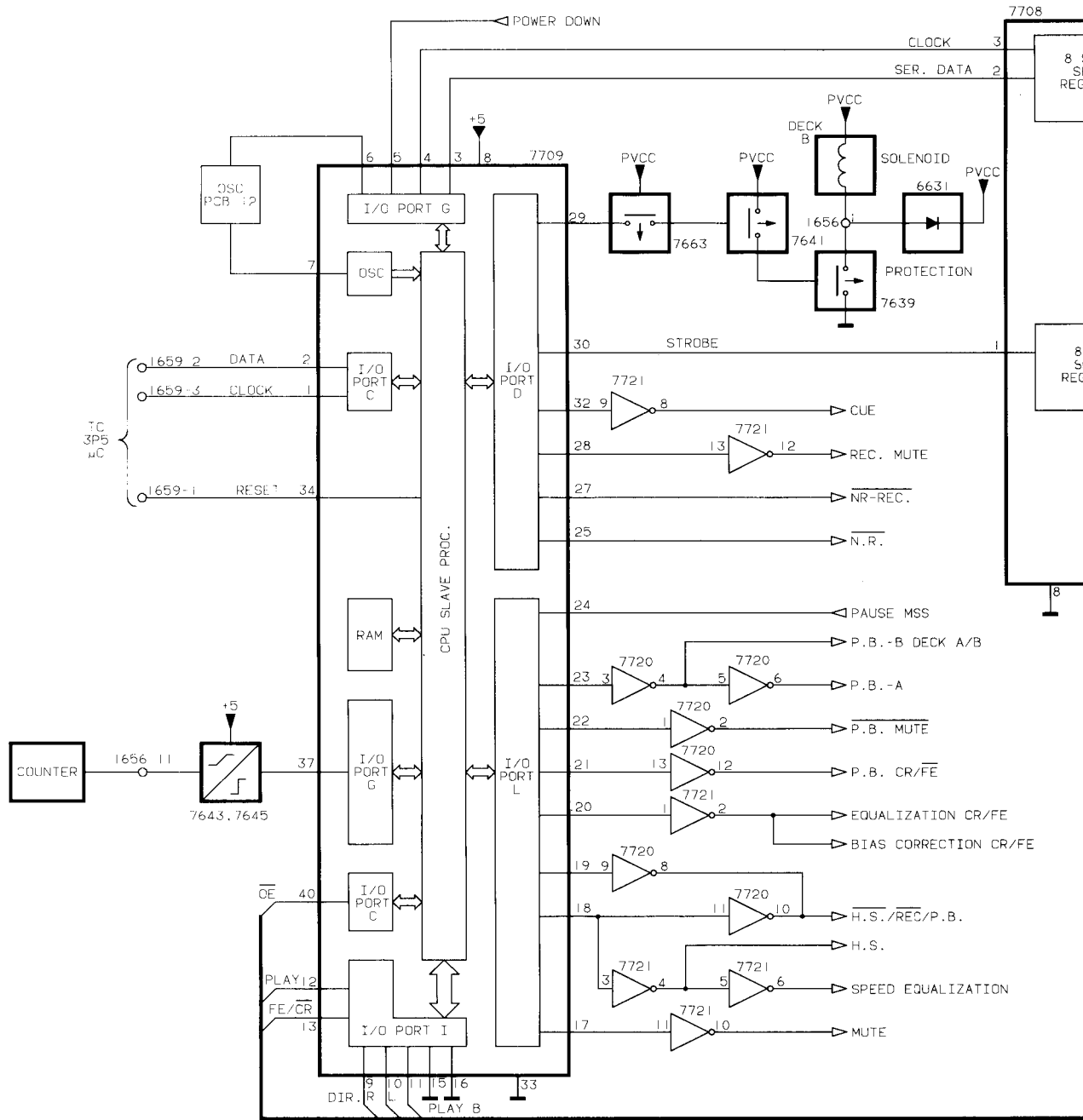
X = DIAGRAM X

BLOCK DIAGRAM FOR TAPE ANALOG

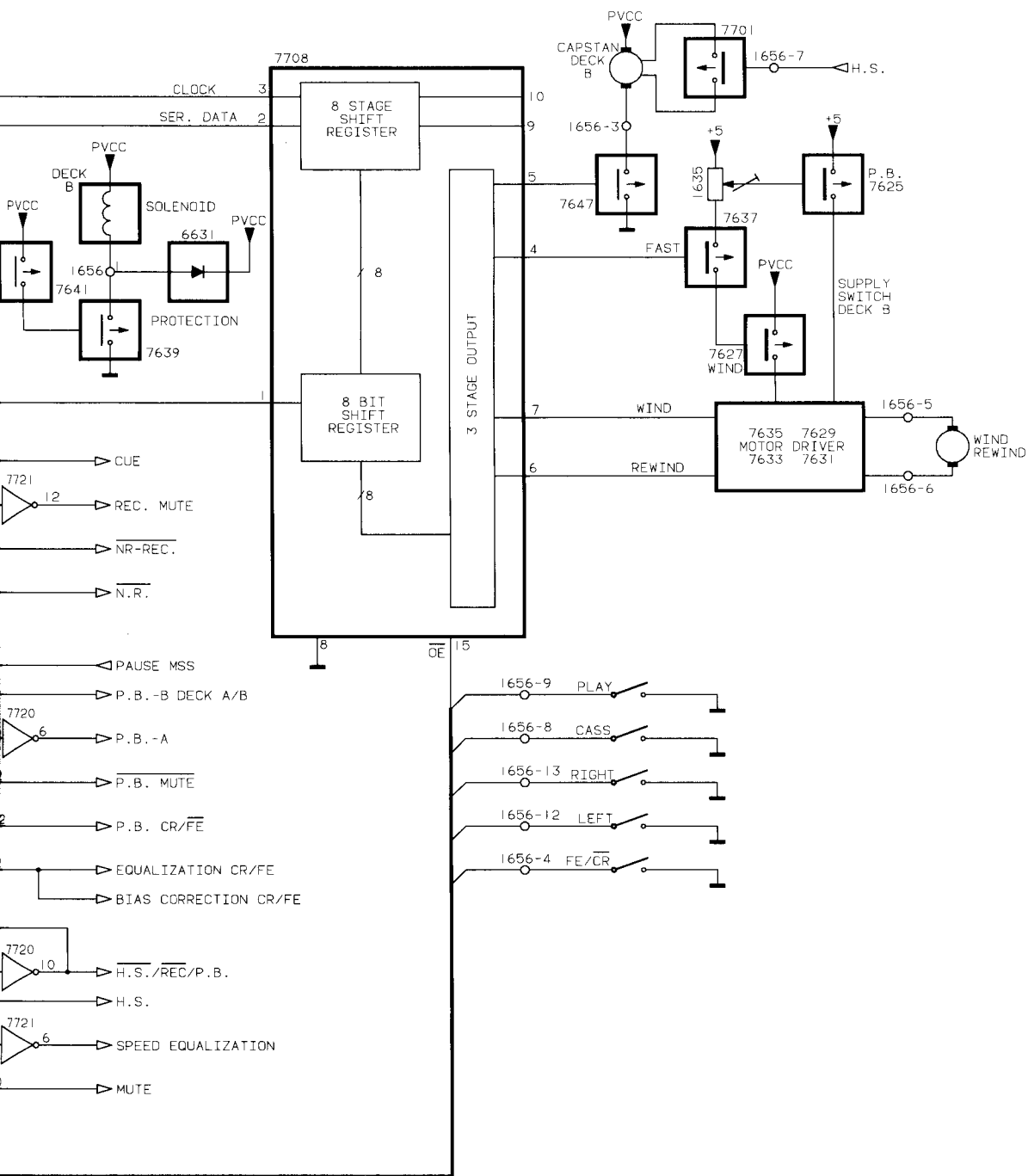




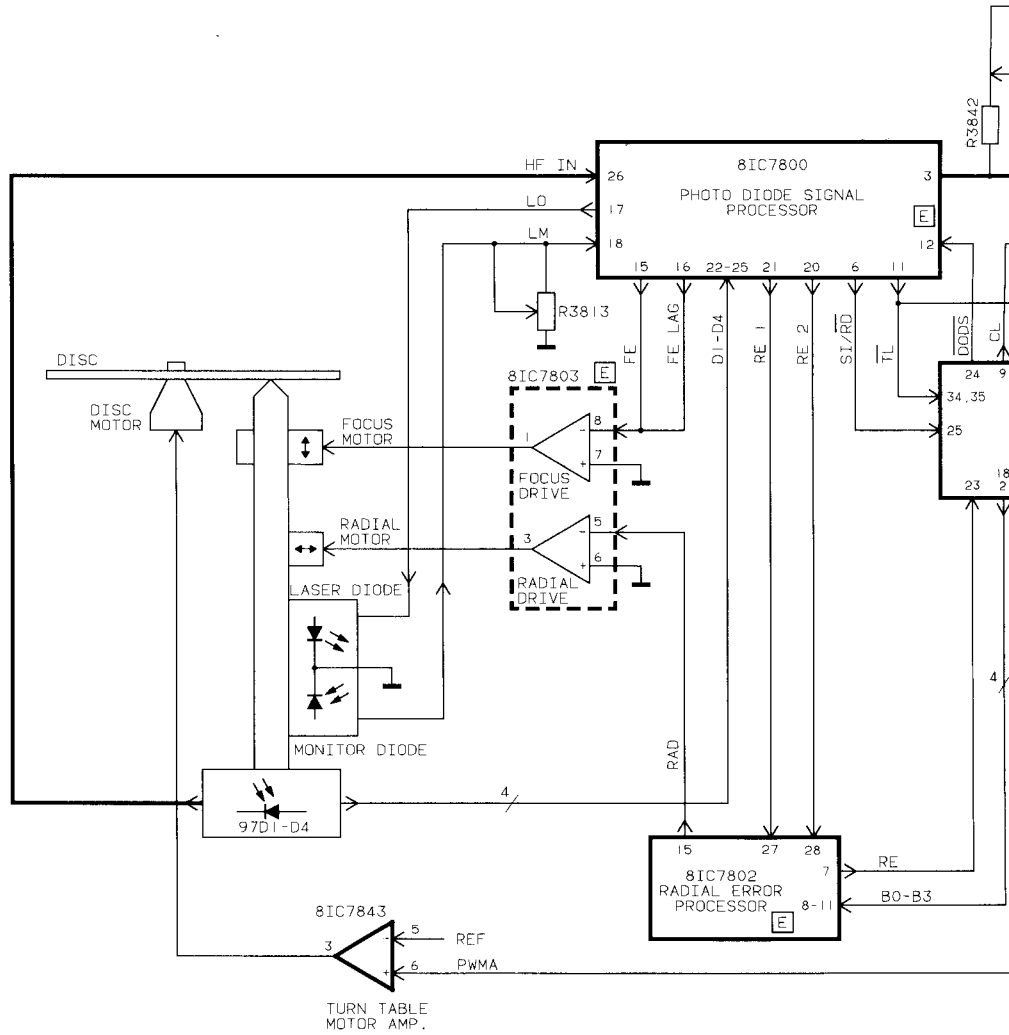
BLOCK DIAGRAM FOR TAPE DIGITAL

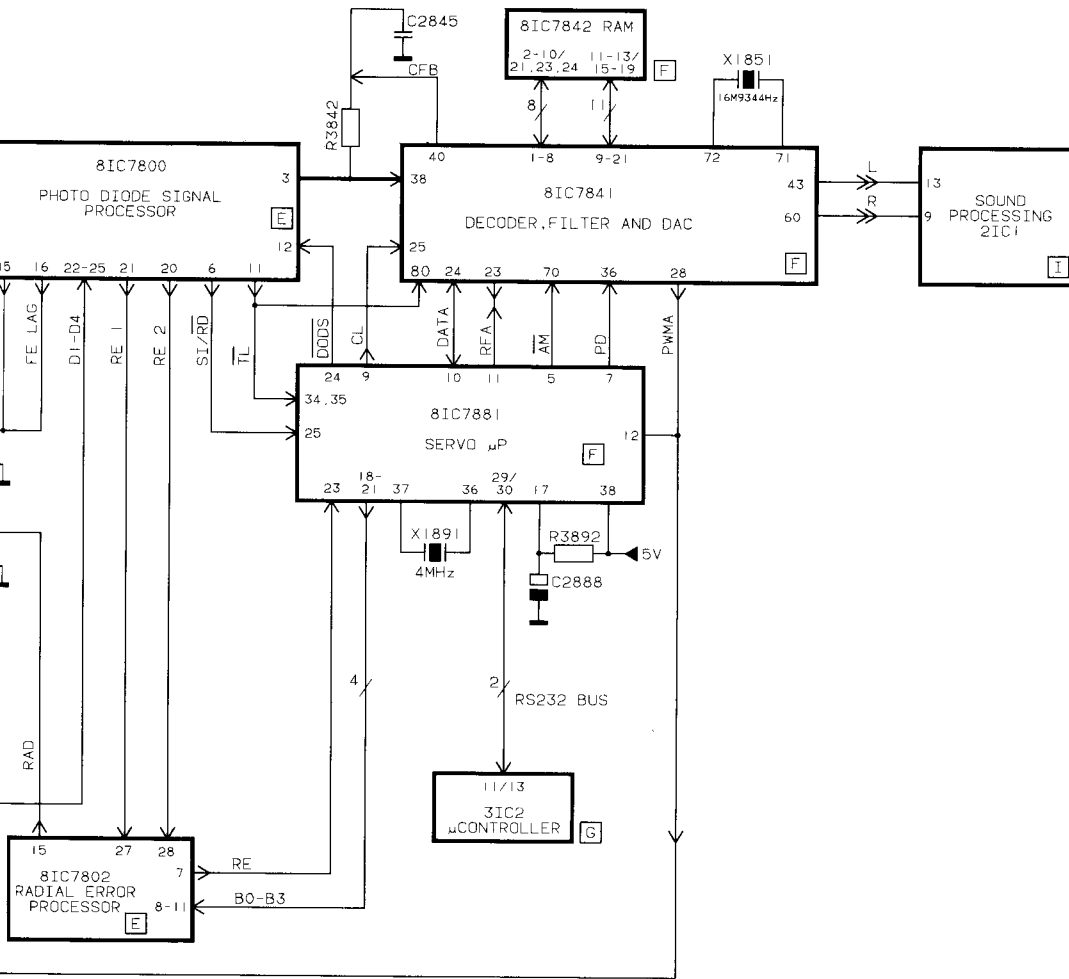


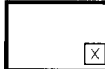




BLOCK DIAGRAM FOR CD





  
 X = DIAGRAM X

BLOCK DIAGRAM FOR AMPLIFIER

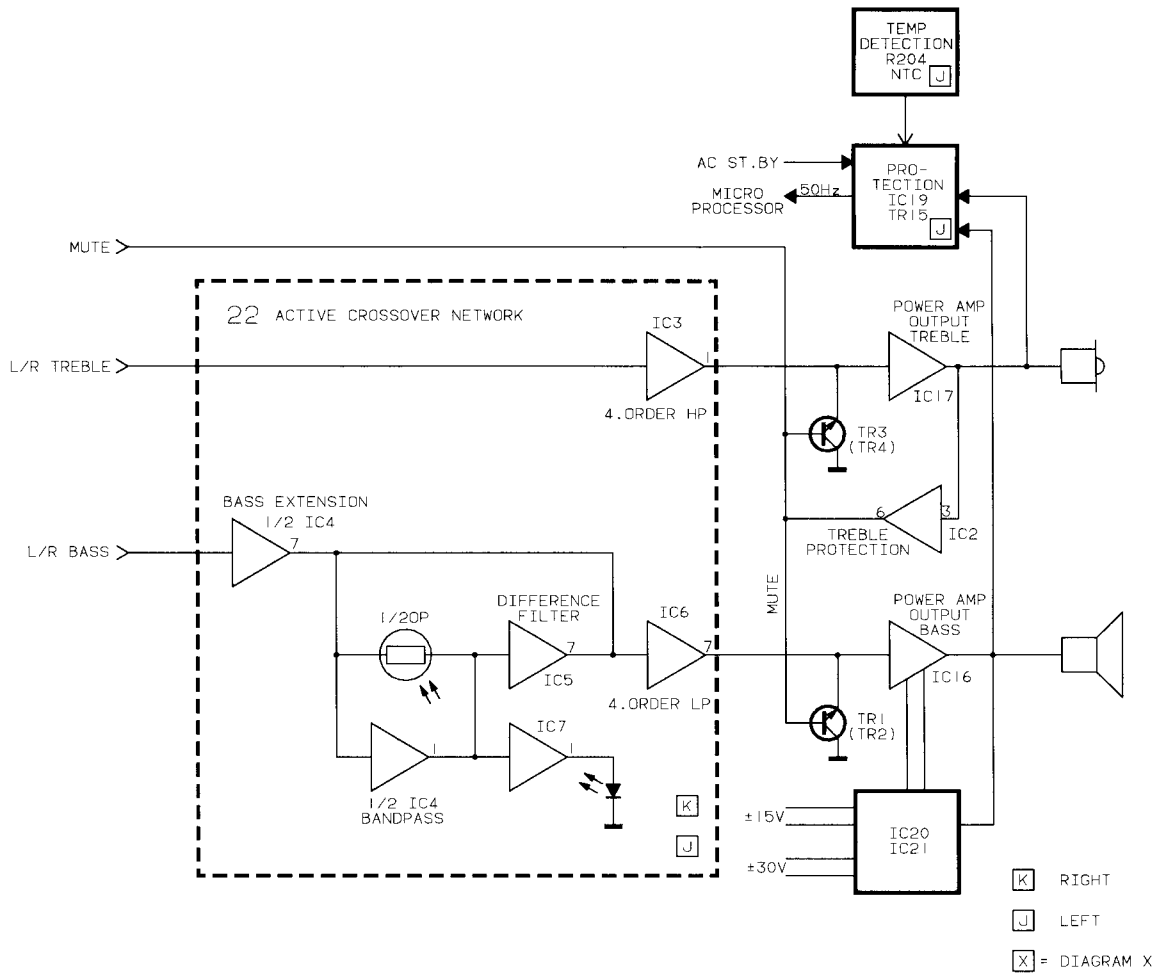
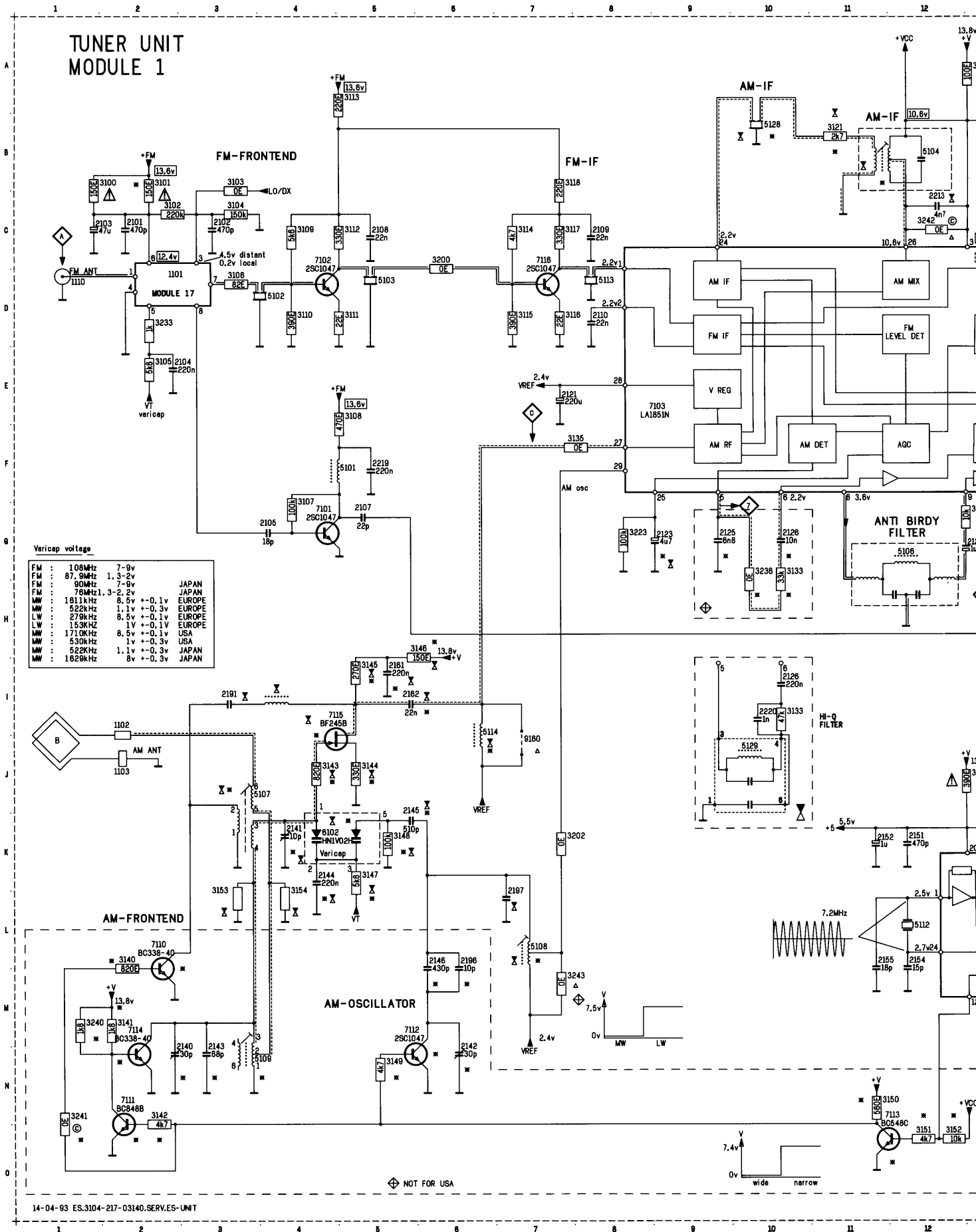
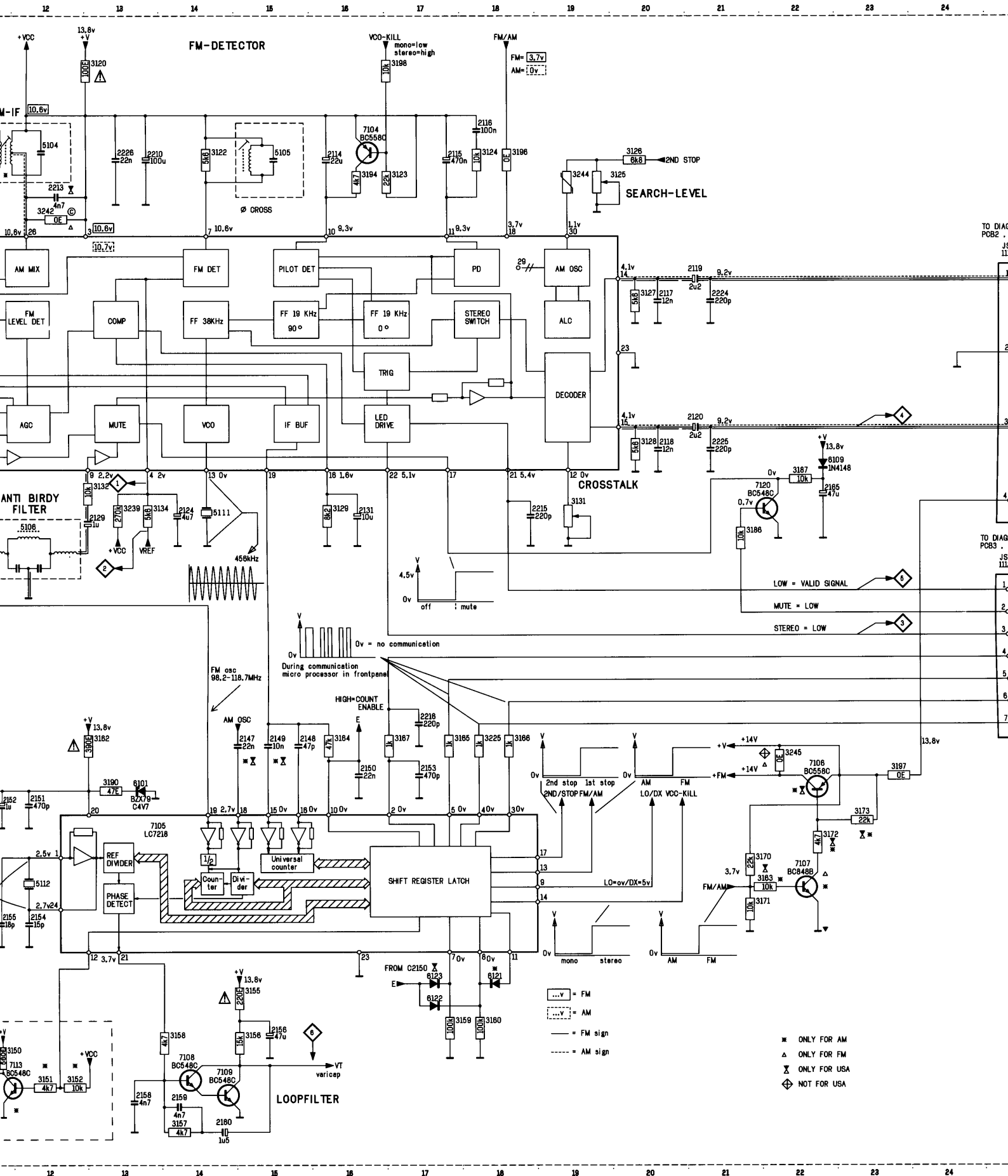
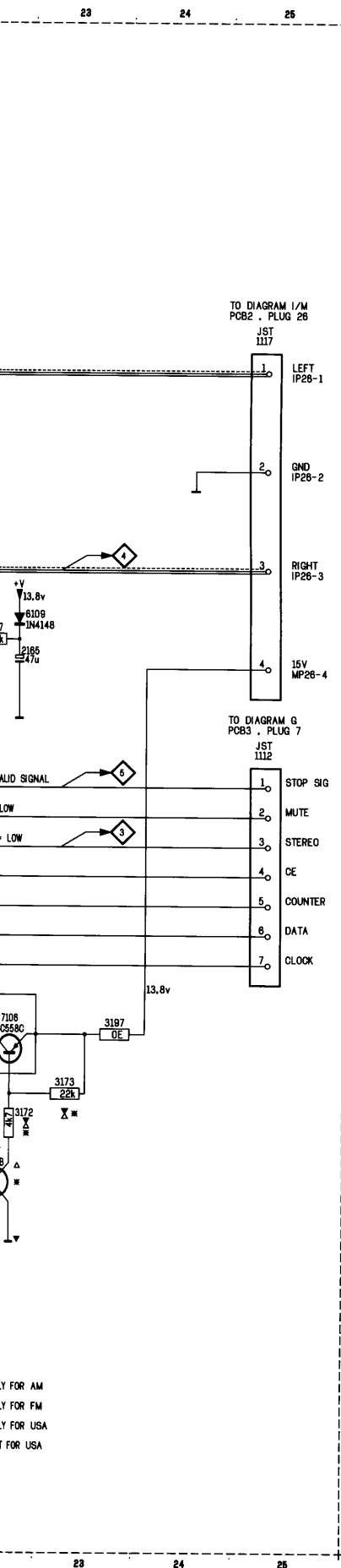


DIAGRAM A FM/AM DECODER





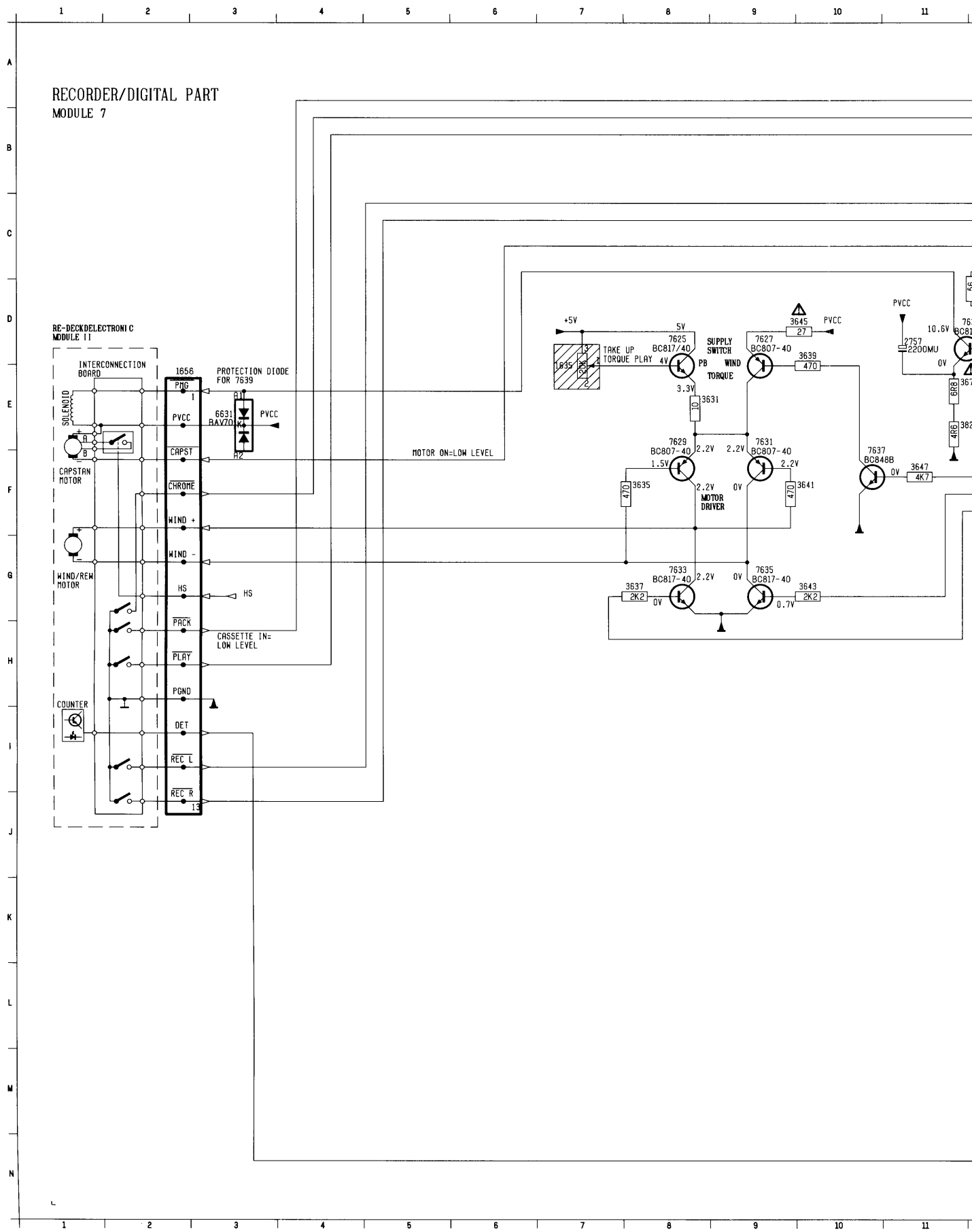




1101	D2	3187	F22
2101	C2	3190	K13
2102	C3	3194	B16
2103	C1	3196	B18
2104	E2	3197	J23
2105	G4	3198	A17
2107	O5	3200	C6
2108	C5	3202	K7
2109	C8	3223	G8
2110	D8	3225	J18
2114	B16	3233	D2
2115	B17	3236	G10
2116	B18	3239	G13
2117	D20	3240	M1
2118	F20	3241	M1
2119	D21	3242	C12
2120	F21	3243	M7
2121	E7	3244	B19
2123	G9	3245	J22
2124	G14	5101	F5
2125	G9	5102	D4
2126	G10	5103	D5
2126	I10	5104	B12
2129	G13	5105	B15
2131	G16	5106	G12
2140	N2	5107	J3
2141	K4	5108	L7
2142	M6	5109	M3
2143	M3	5111	G14
2144	K4	5112	L12
2145	J5	5113	D8
2146	L6	5114	I6
2147	J15	5128	B10
2148	J15	5129	J10
2149	J15	6101	K13
2150	J16	6102	K4
2151	K12	6109	F22
2152	K11	6121	M18
2153	J17	6123	M17
2154	L12	7101	D4
2155	L11	7102	C4
2156	M15	7103	E9
2158	O13	7104	B16
2159	O14	7105	K13
2160	O14	7106	J22
2161	I5	7107	L22
2162	I5	7108	M14
2165	G22	7109	O14
2191	I3	7110	L2
2196	L6	7111	M2
2197	L7	7112	M5
2210	B13	7113	M12
2213	C12	7114	M2
2215	O18	7115	I4
2216	J17	7116	C7
2219	F5	7120	G22
2220	I10	9160	J7
2224	D21		
2225	F21		
2226	B13		
3100	B2		
3101	B2		
3102	C2		
3103	B3		
3104	C3		
3105	E2		
3106	D3		
3107	G4		
3108	E5		
3109	C4		
3110	D4		
3111	O5		
3112	C5		
3113	A5		
3114	C7		
3115	D7		
3116	D7		
3117	C7		
3118	B7		
3120	A13		
3121	B11		
3122	B14		
3123	B17		
3124	B18		
3125	B20		
3126	B20		
3127	D20		
3128	F20		
3129	G16		
3131	G19		
3132	G13		
3133	G10		
3139	I10		
3134	G13		
3135	F9		
3140	L2		
3141	M2		
3142	M2		
3143	J4		
3144	J5		
3145	I5		
3146	H6		
3147	K5		
3148	K5		
3149	M5		
3150	M11		
3151	O12		
3152	O12		
3153	L3		
3154	L4		
3155	M15		
3156	M15		
3157	O14		
3158	M14		
3159	M17		
3160	M18		
3162	J13		
3163	L22		
3164	J16		
3165	J17		
3166	J18		
3167	J17		
3170	L21		
3171	L21		
3172	K22		
3173	K23		
3186	G21		

Y FOR AM  
 Y FOR FM  
 Y FOR USA  
 T FOR USA

DIAGRAM B TAPE DIGITAL (PCB DRAWING SEE PAGE 2-13)



RECORDER/DIGITAL PART  
MODULE 7

RE-DECKELECTRONIC  
MODULE 11

INTERCONNECTION  
BOARD

SOLENOID

CAPSTAN  
MOTOR

WIND/REW  
MOTOR

COUNTER

1656

PVCC

CAPST

CHROME

WIND +

WIND -

HS

PACK

PLAY

PGND

DET

REC L

REC R

IS

PROTECTION DIODE  
FOR 7639

6631  
BAV20

PVCC

H2

HS

CASSETTE IN=  
LOW LEVEL

MOTOR ON=LOW LEVEL

+5V

5V

7625  
BC817-40

TAKE UP  
TORQUE PLAY 4V

3.3V

3631

7629  
BC807-40

1.5V

2.2V

2.2V

2.2V

0V

2.2V

0V

2.2V

0.7V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

7627  
BC807-40

SUPPLY  
SWITCH

WIND  
TORQUE

0V

2.2V

2.2V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

3645

27

PVCC

3639

470

7631  
BC807-40

2.2V

2.2V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

2.2V

0V

PVCC

10.6V

7637  
BC848B

0V

3647

4K7

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

0V

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0V

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0V

0V

0V

0V

0V

0V

0V

0V

0V

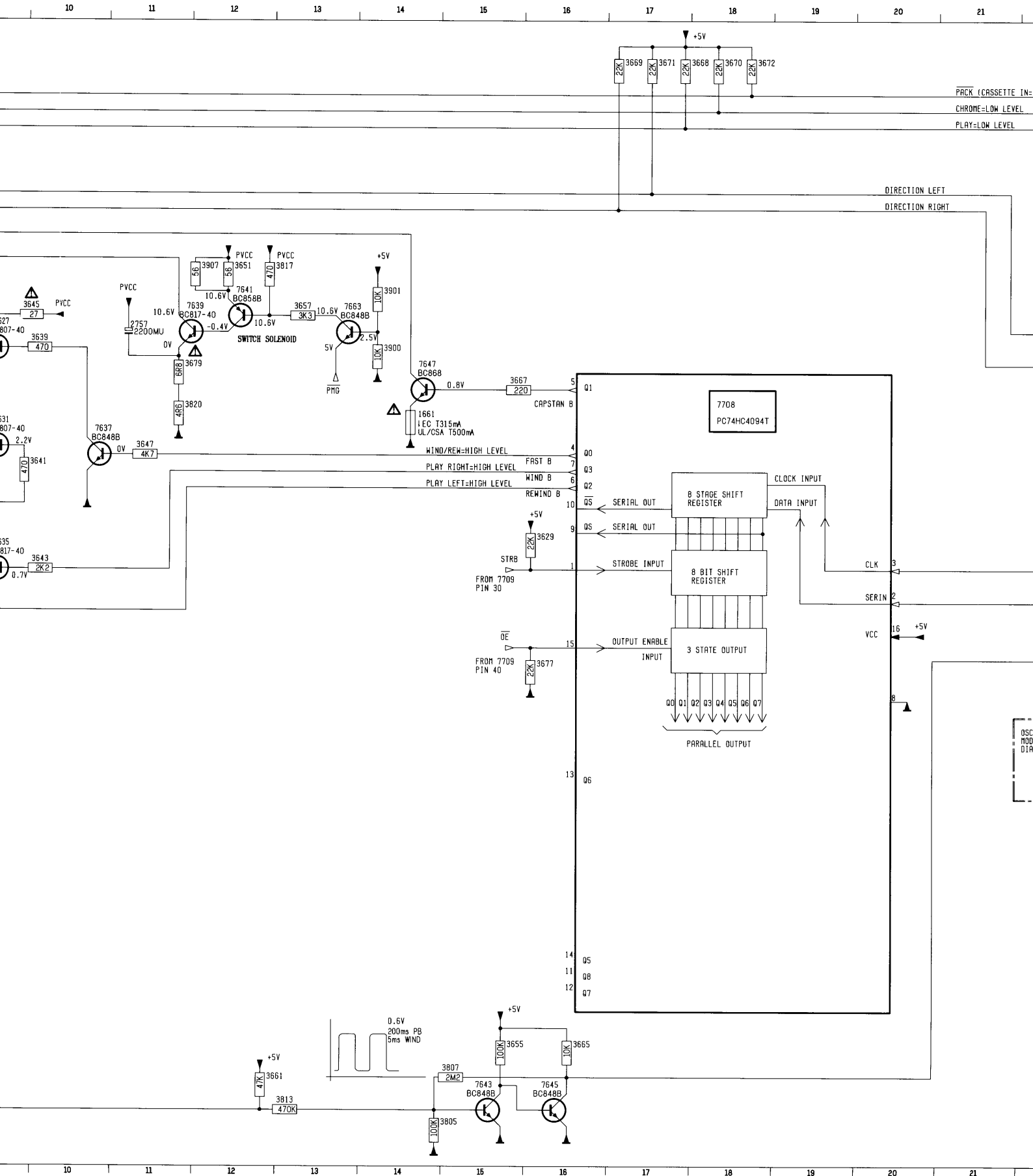
0V

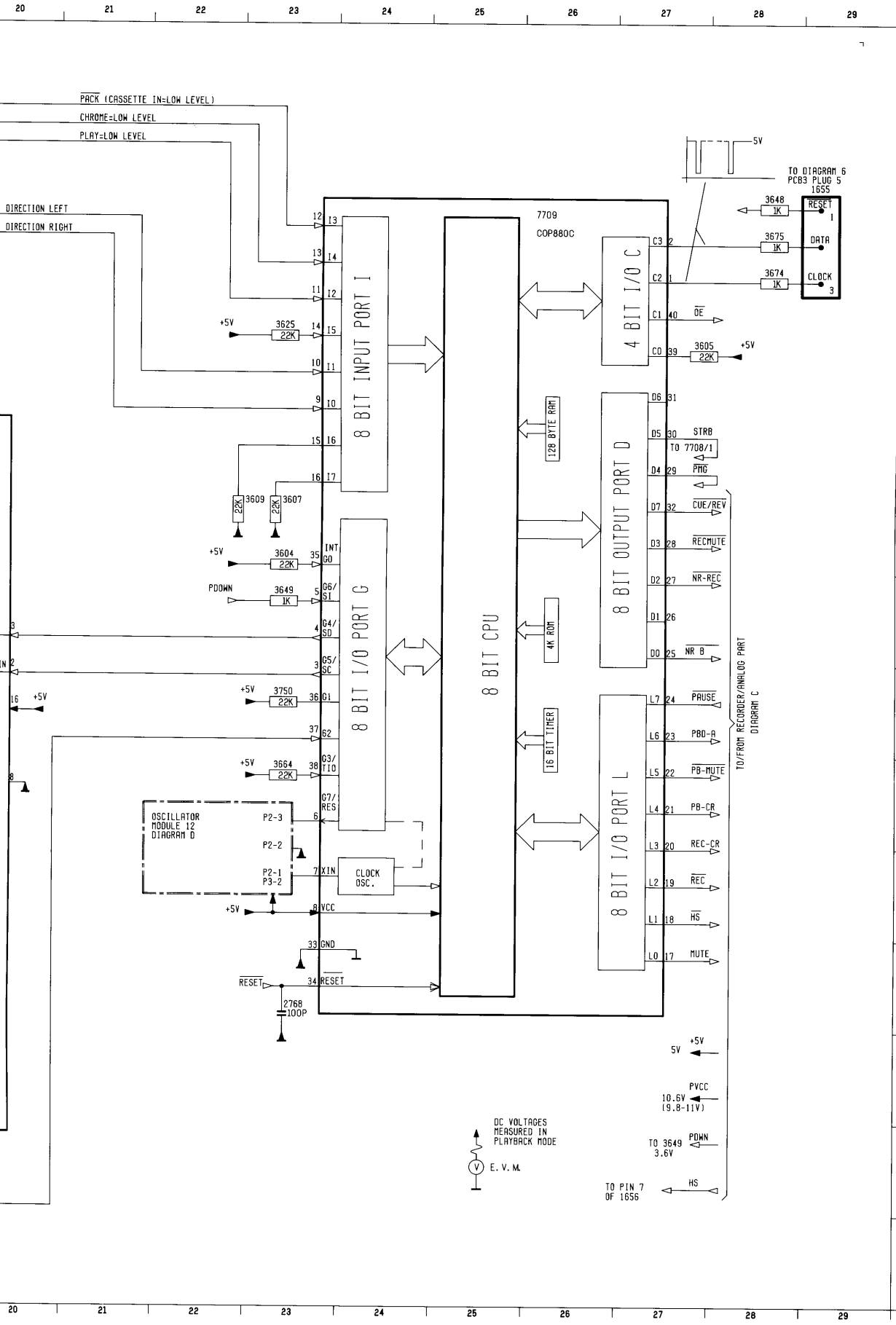
0V

0V

0V

0V



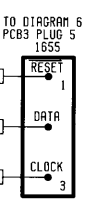


- 1635 E 7
- 1656 B29
- 1656 E 2
- 1661 E14
- A 2757 D11
- 2768 K23
- 3604 F23
- 3605 D27
- 3607 F23
- 3609 F22
- 3625 D23
- 3629 G16
- B 3631 E 8
- 3635 F 8
- 3637 G 8
- 3639 D10
- 3641 F 9
- 3643 G10
- 3645 D10
- 3647 F11
- C 3648 B28
- 3649 G23
- 3651 H12
- 3655 H15
- 3657 D13
- 3661 H12
- 3664 I23
- 3665 H16
- D 3667 E15
- 3668 A17
- 3669 A17
- 3670 A18
- 3671 A17
- 3672 A18
- 3674 C28
- 3675 C28
- E 3677 H16
- 3679 E11
- 3750 H23
- 3805 N14
- 3807 M15
- 3813 N13
- 3817 C12
- 3820 E11
- F 3900 D14
- 3901 D14
- 3907 C12
- 6631 E 3
- 7625 D 8
- 7627 D 9
- 7629 E 8
- 7631 E 9
- G 7633 G 8
- 7635 G 9
- 7637 E10
- 7639 D12
- 7641 D12
- 7643 M15
- 7645 M16
- 7647 E14
- H 7663 D13
- 7708 E18
- 7709 C26

DC VOLTAGES  
MEASURED IN  
PLAYBACK MODE  
E. V. M.

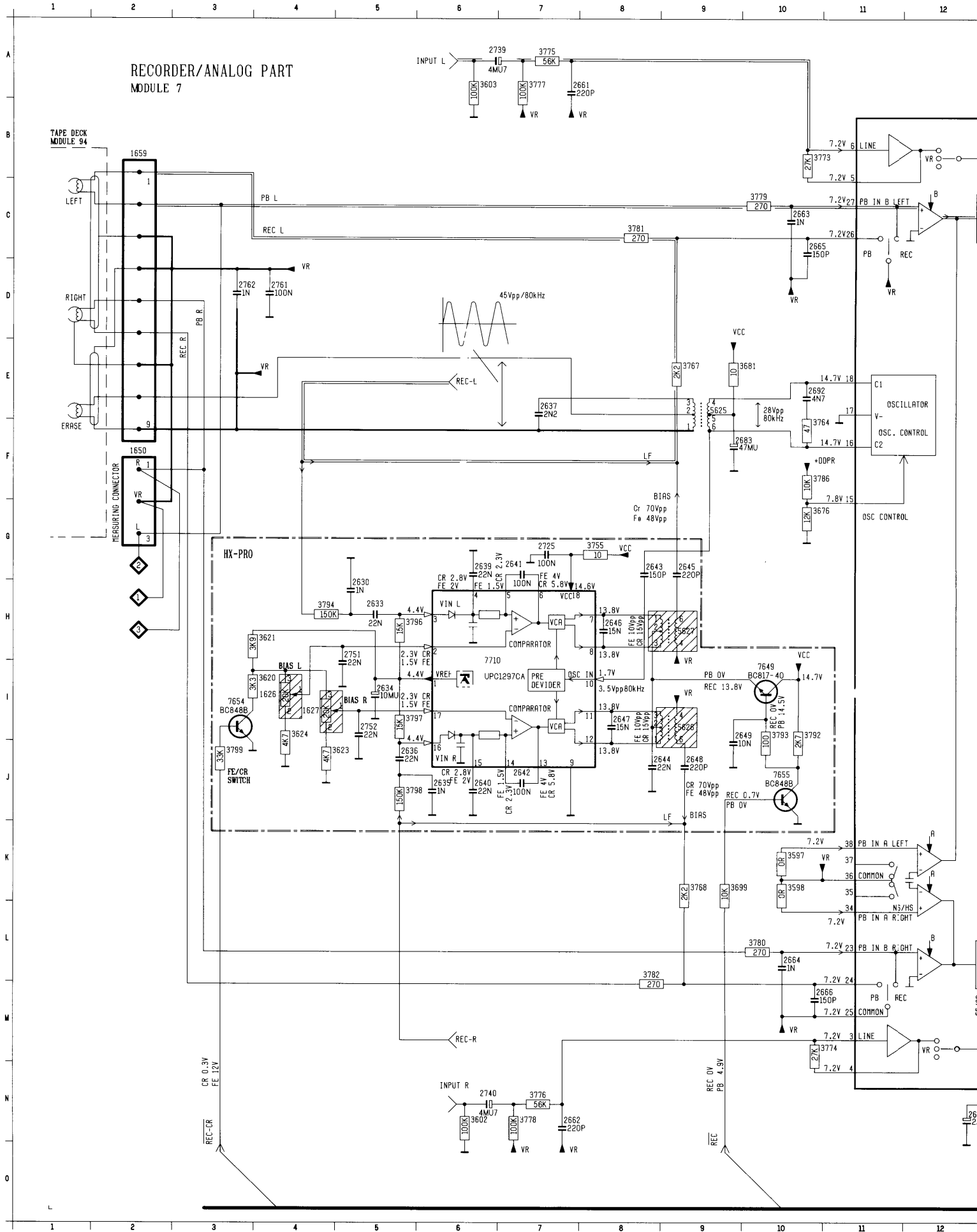
TO PIN 7  
OF 1656

TO/FROM RECORDER/ANALOG PART  
DIAGRAM C



TO DIAGRAM 6  
PCB3 PLUG 5  
1655

DIAGRAM C TAPE ANALOG (PCB DRAWING SEE PAGE 2-13)



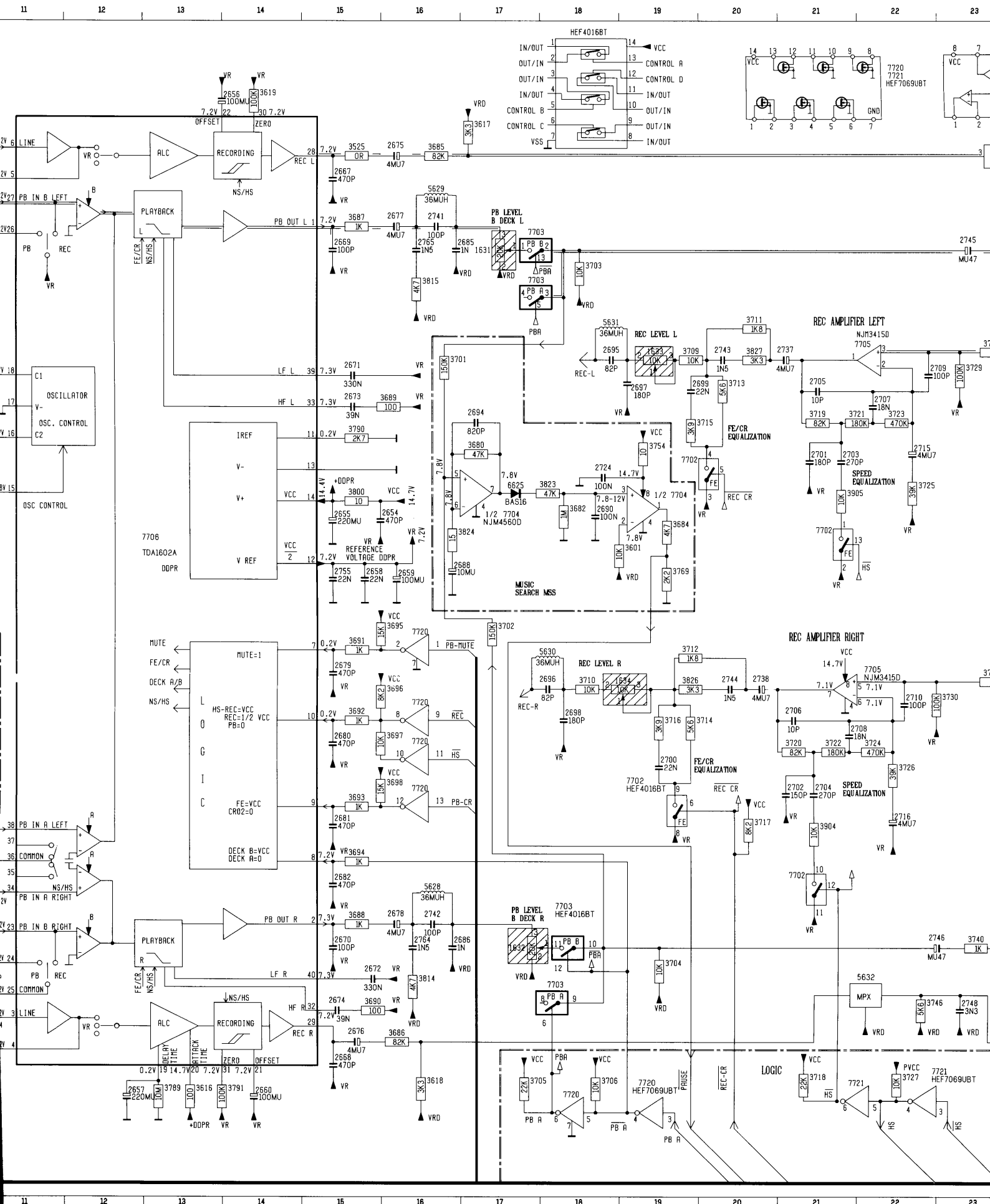
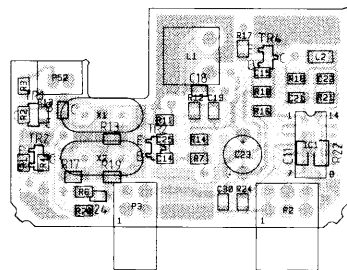
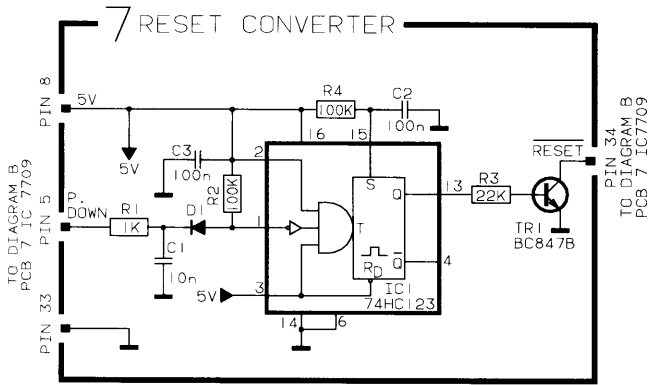
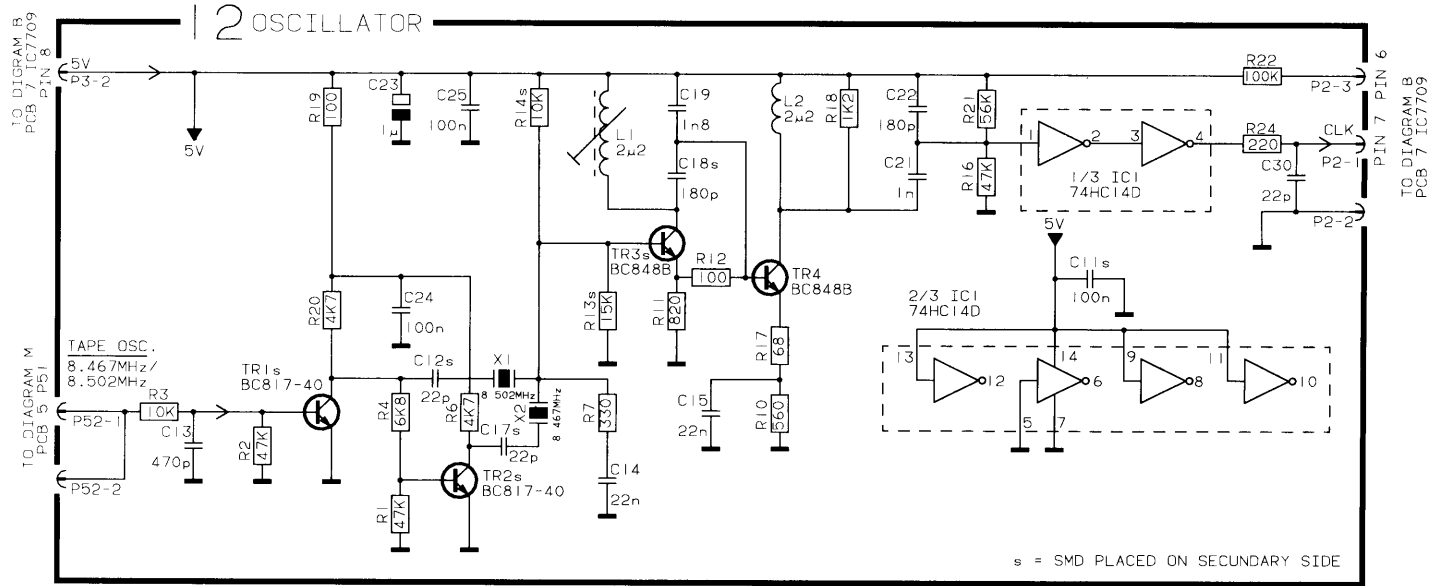
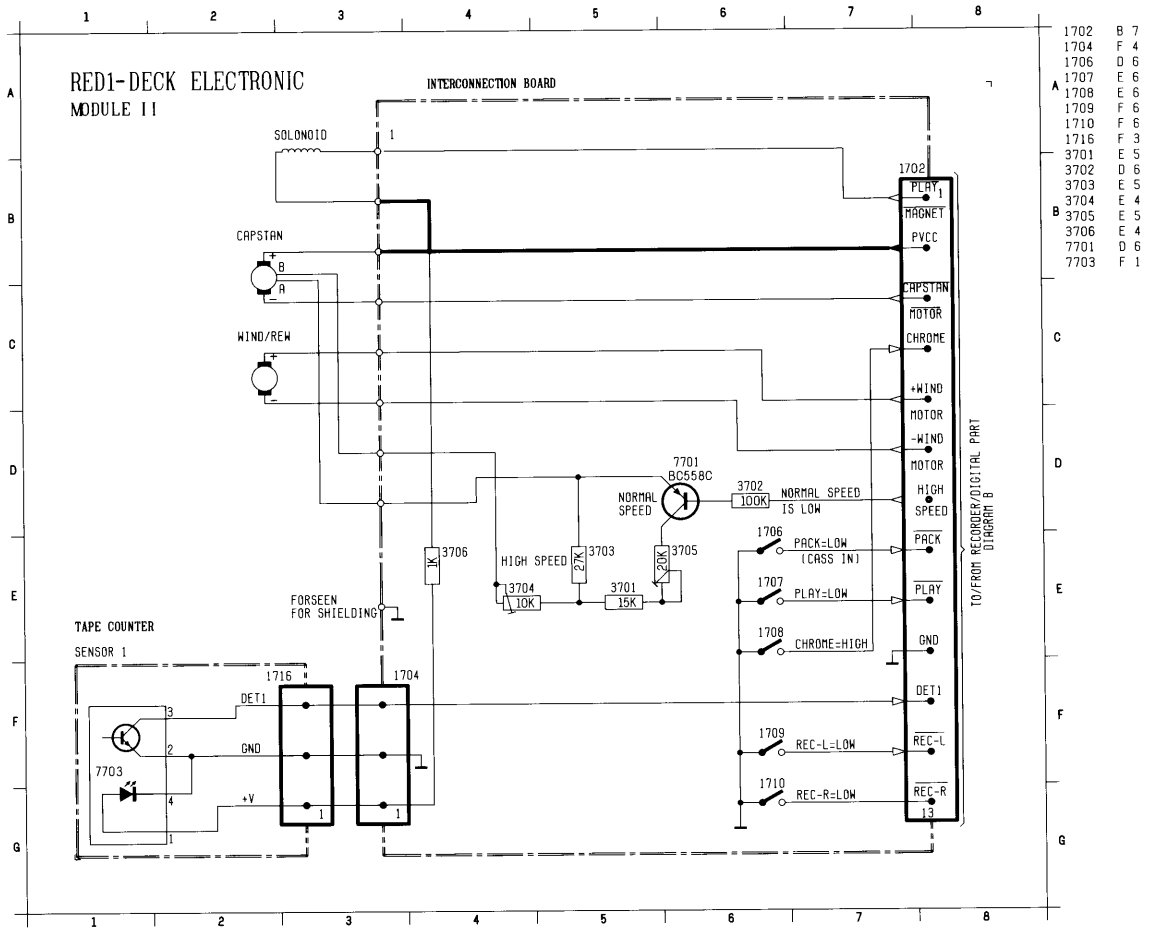






DIAGRAM D OSCILLATOR & RE-DECK ELECTRONIC & RESET CONVERTER





1701	A 3	1706	C 3	1708	C 6	1710	C 2	3701	B 3	3703	B 3	3705	B 3	7701	B 4
1704	C 3	1707	C 5	1709	C 6	1716	A 1	3702	B 3	3704	B 3	3706	B 4	7703	B 1

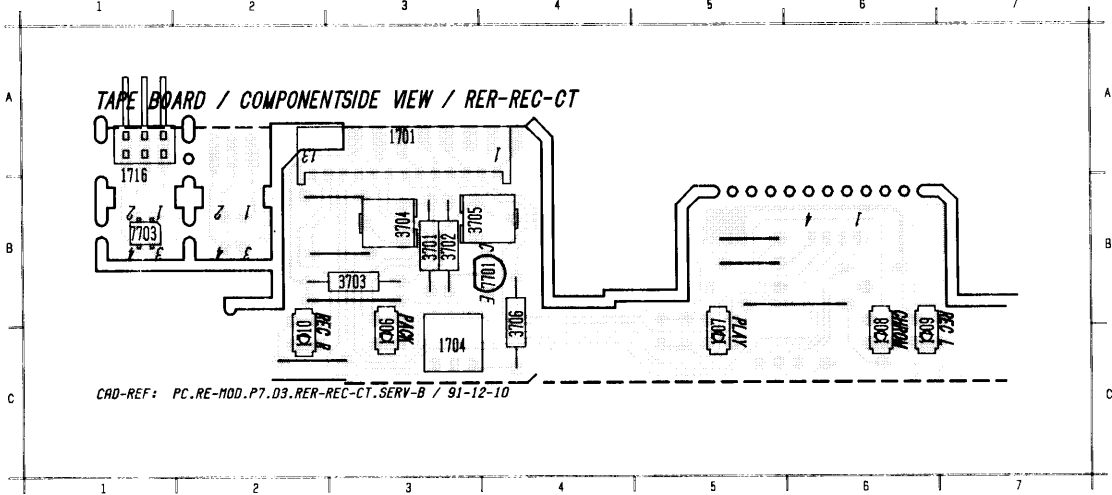
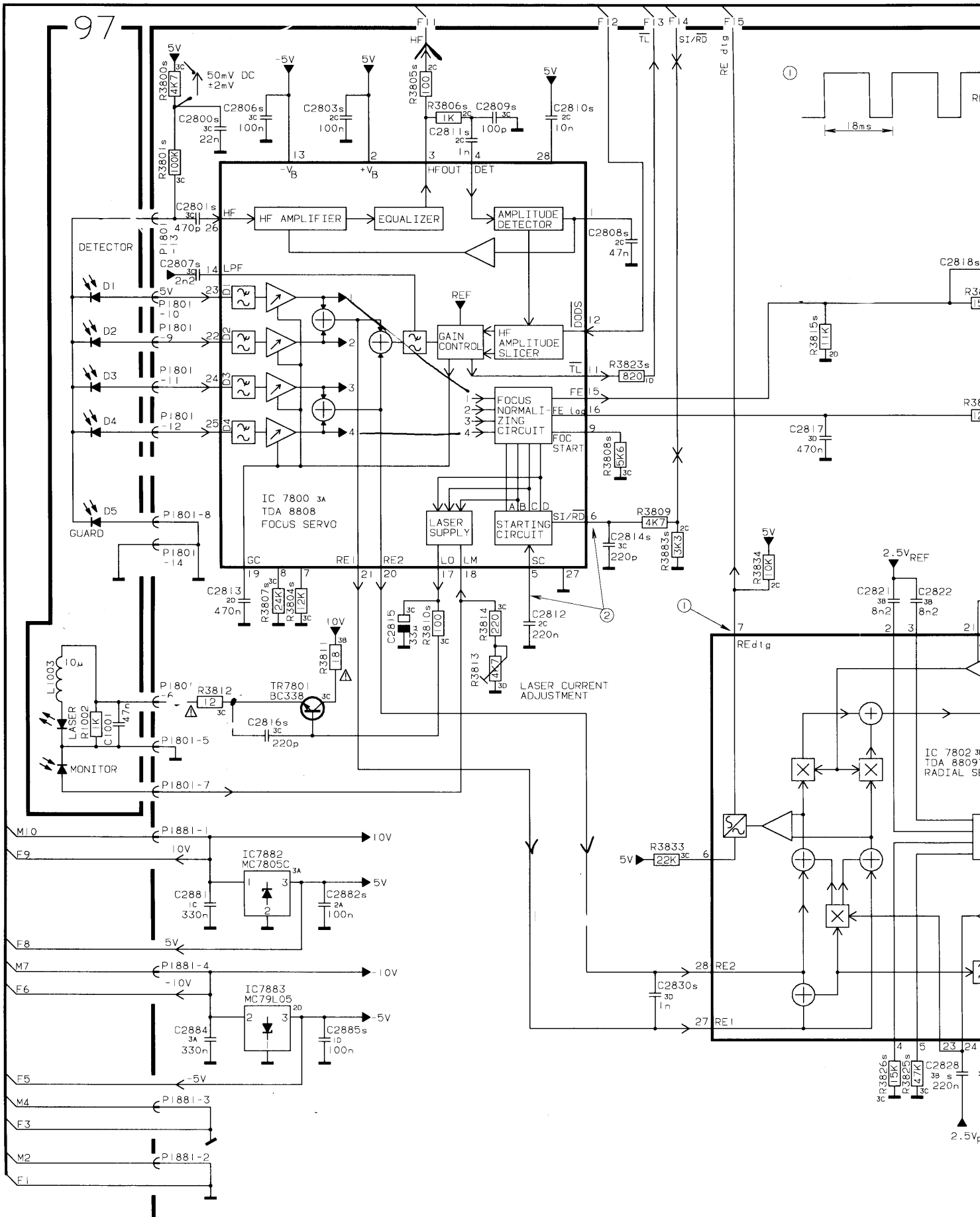
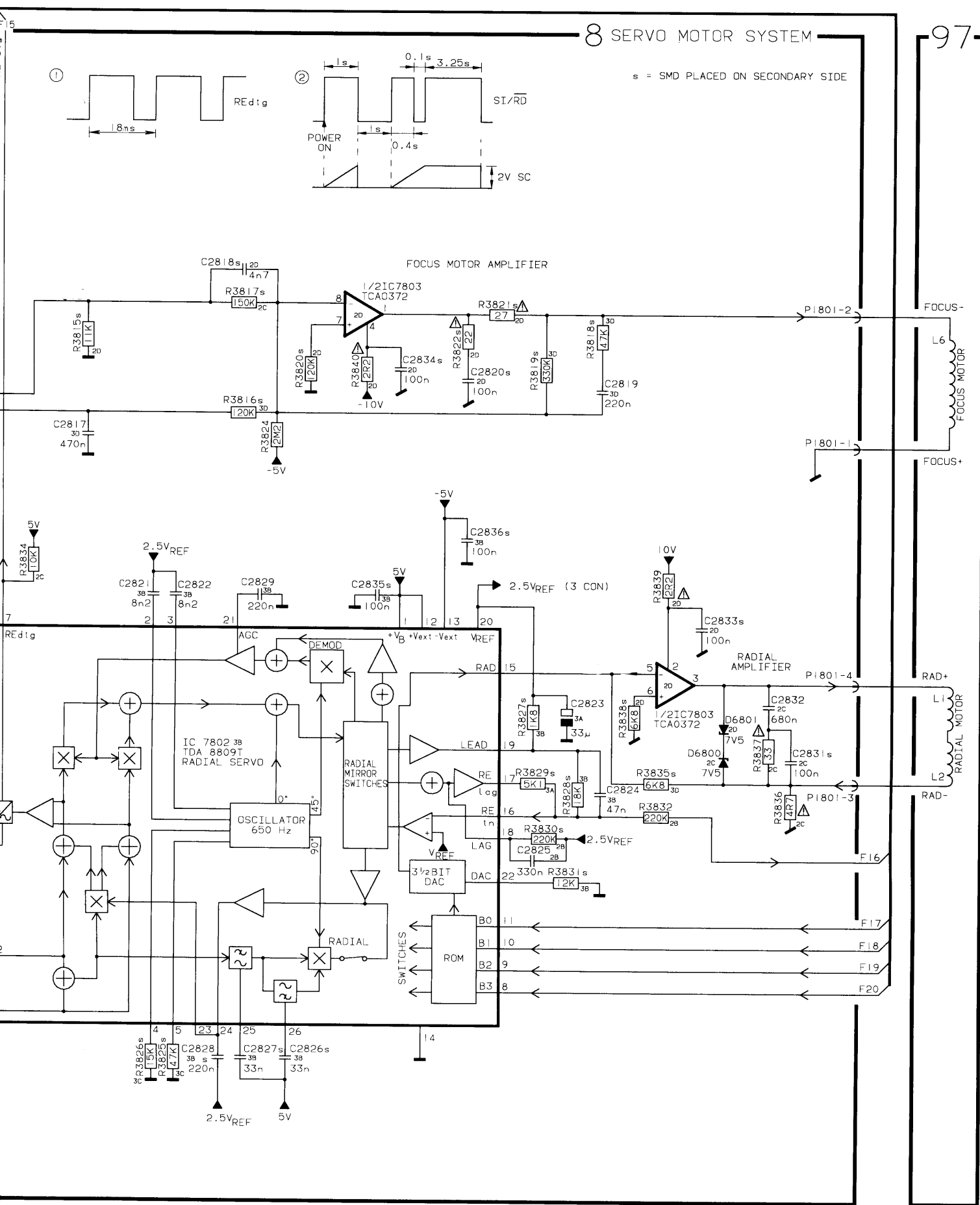


DIAGRAM E CD SERVO (PCB DRAWING SEE PAGE 2-16)



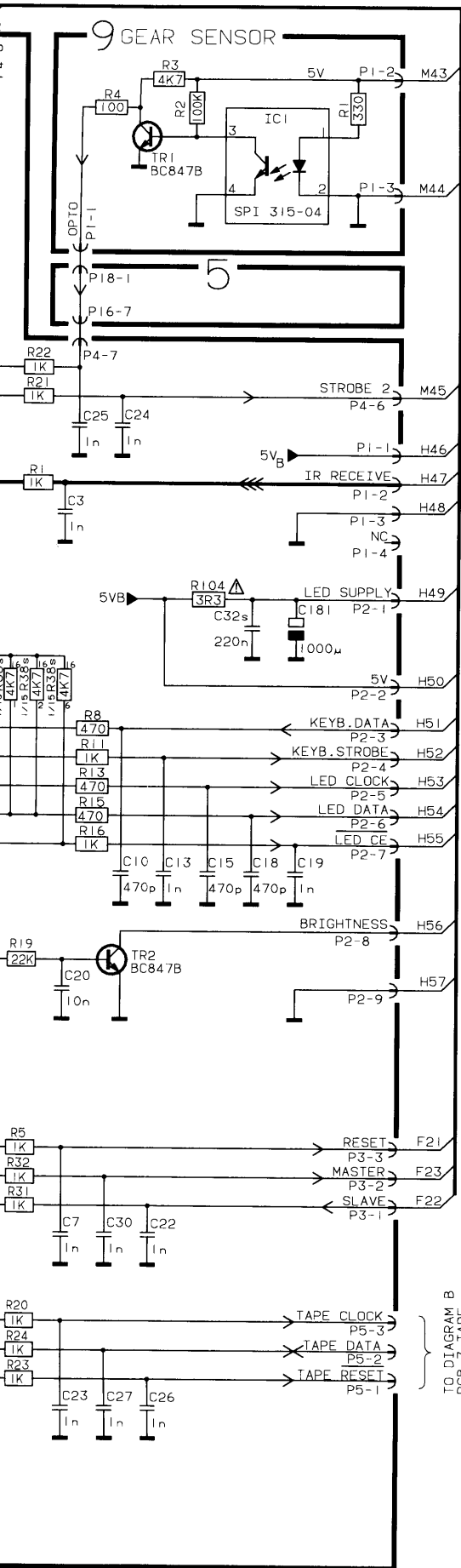












TO DIAGRAM B  
PCB 7 TAPE  
PLUG 1655

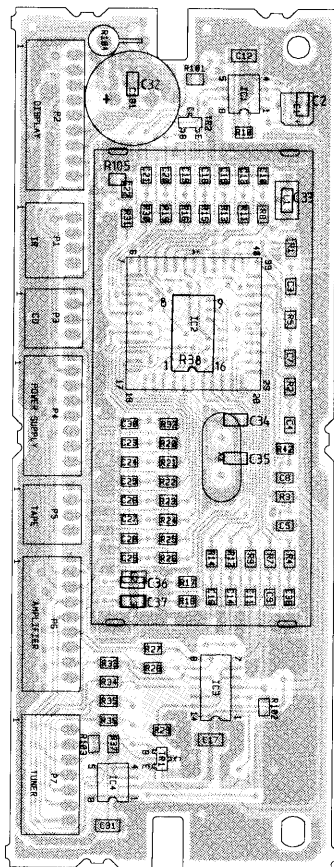
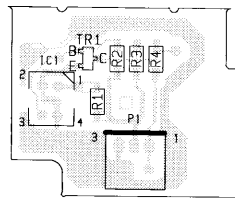
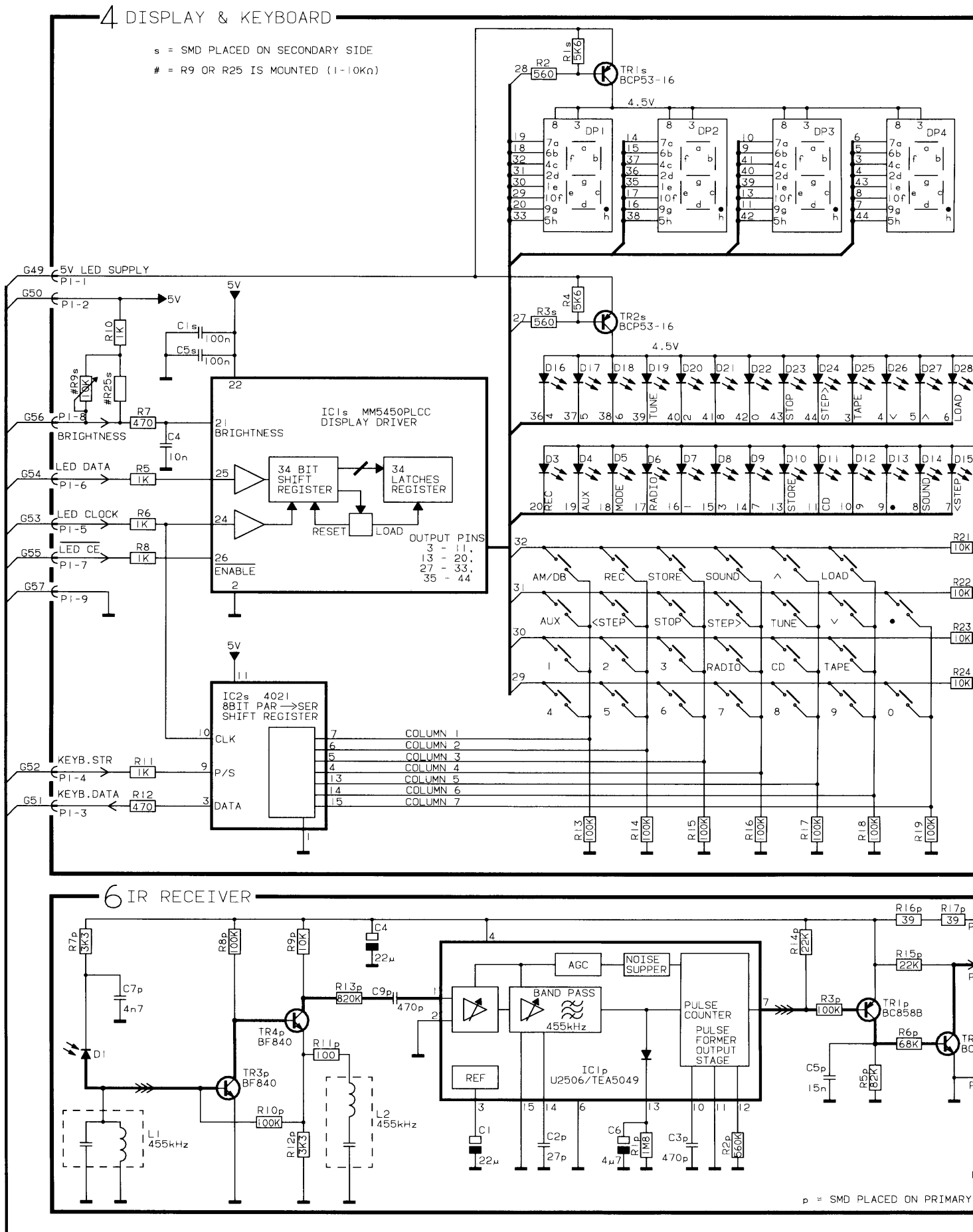
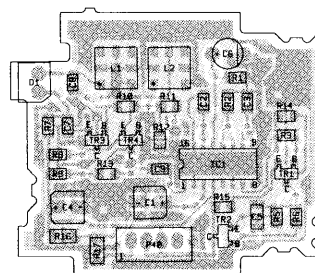
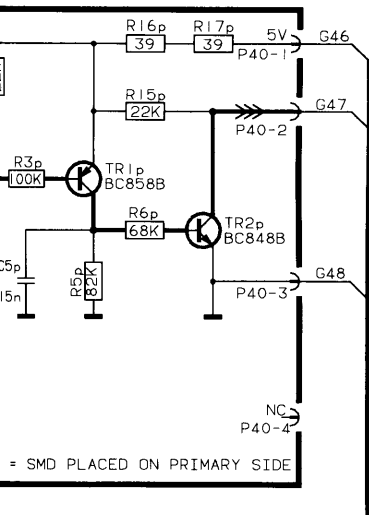
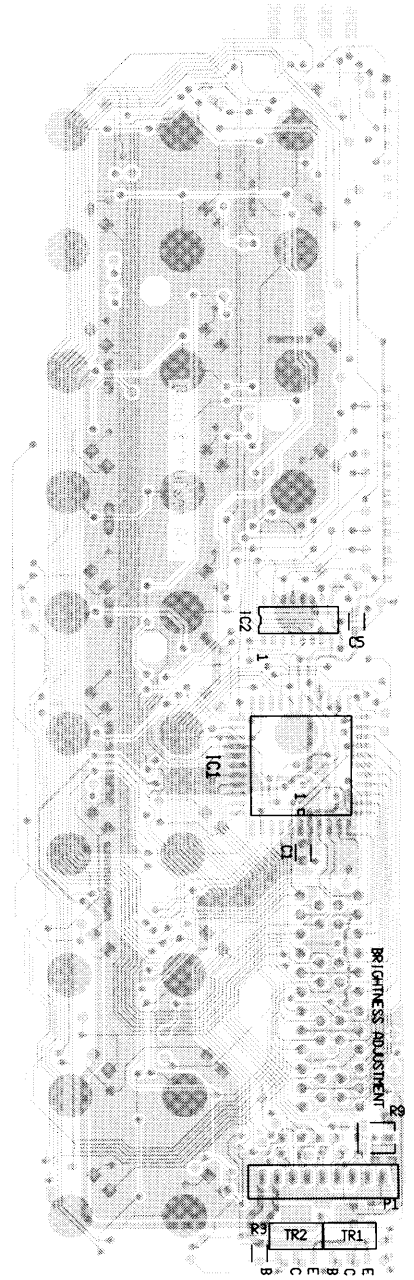
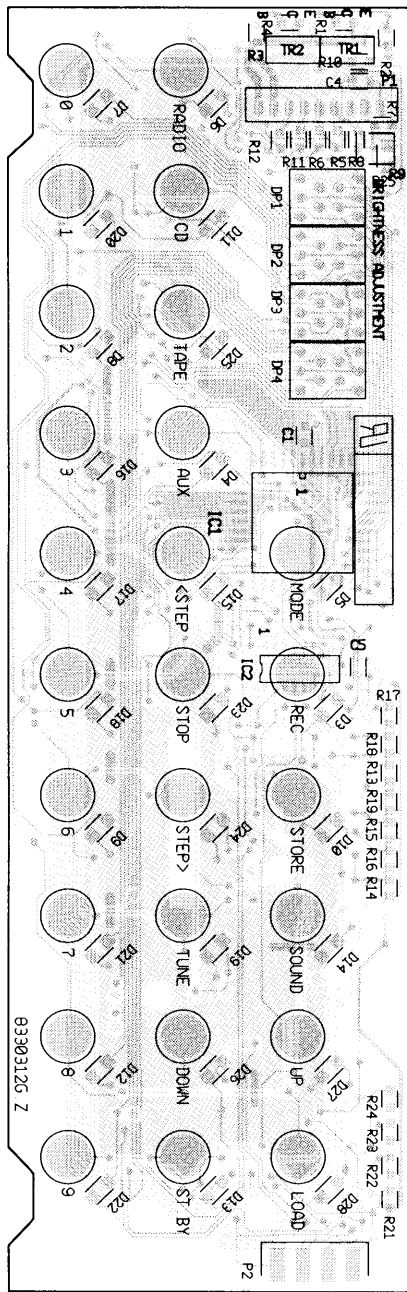
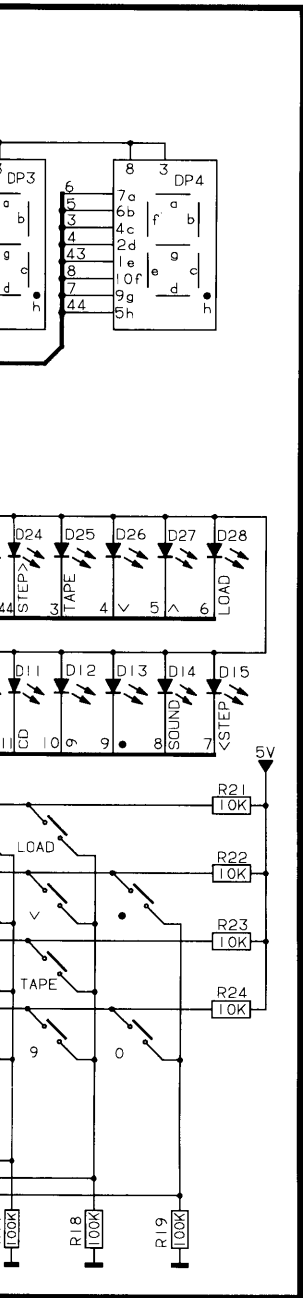
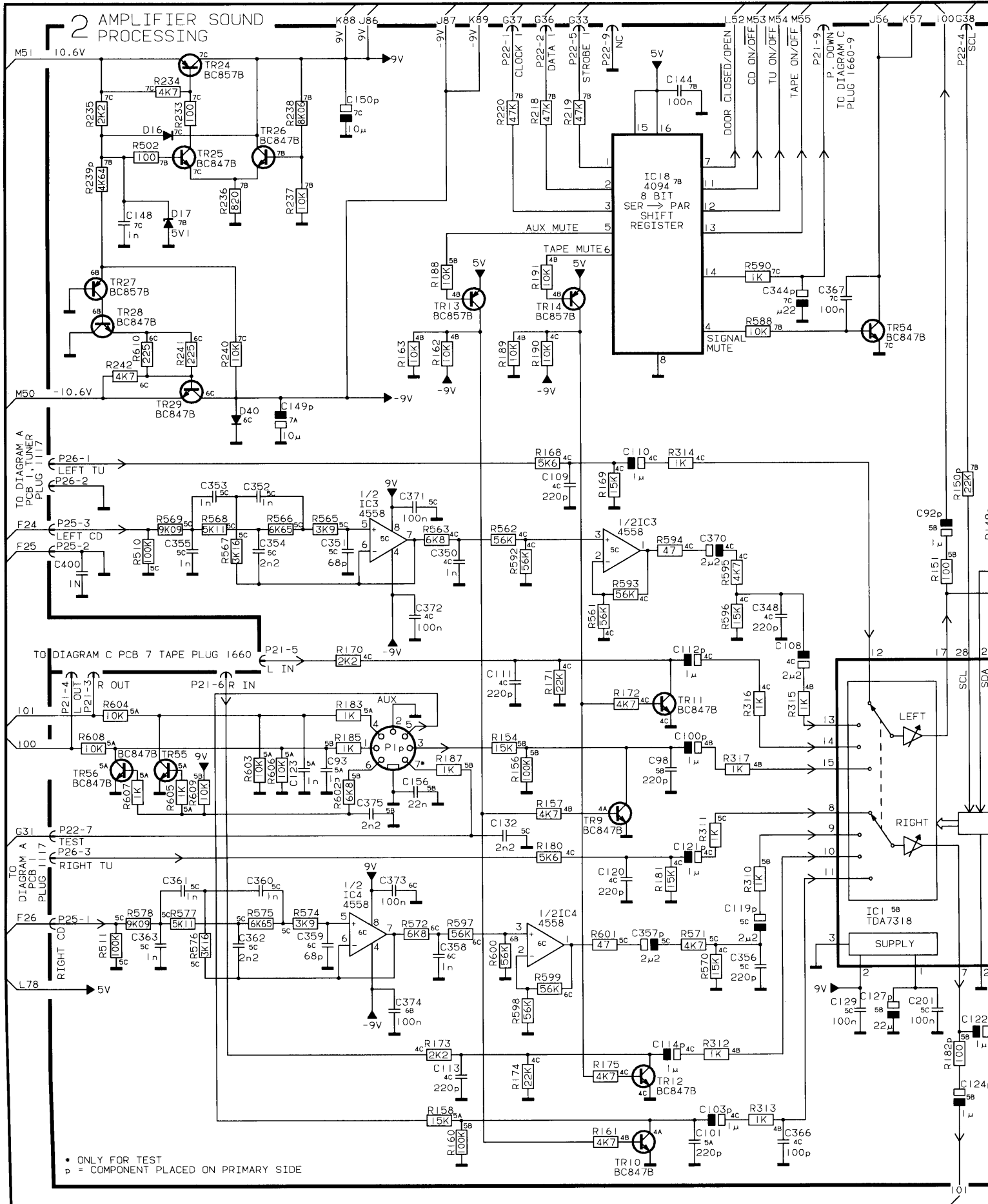


DIAGRAM H DISPLAY / KEYBOARD & IR RECEIVER





**DIAGRAM I AMPLIFIER SOUND PROCESSING & ACTIVE FM ANTENNA**  
(PCB DRAWING FOR PCB 2, SEE PAGE 2-22)



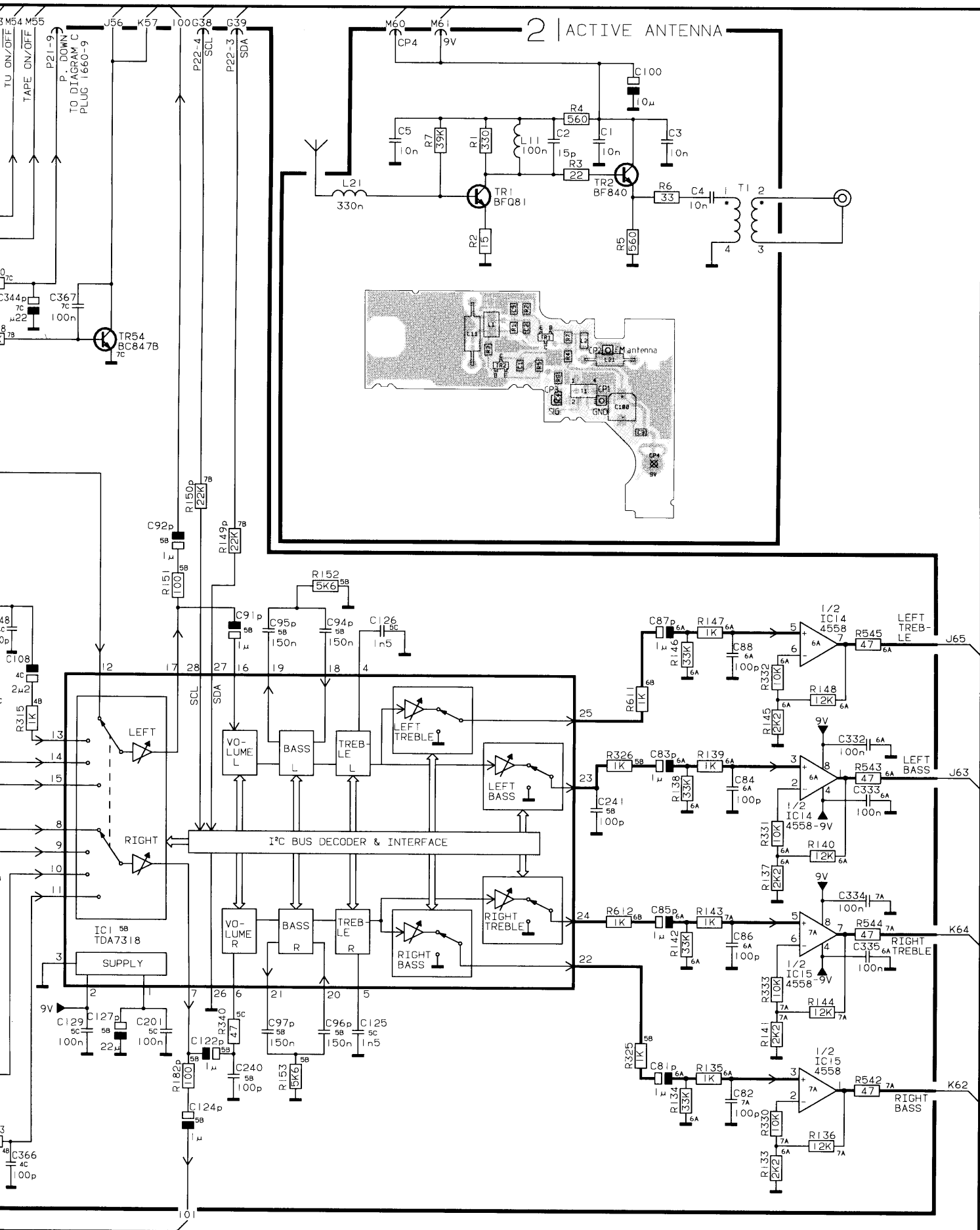
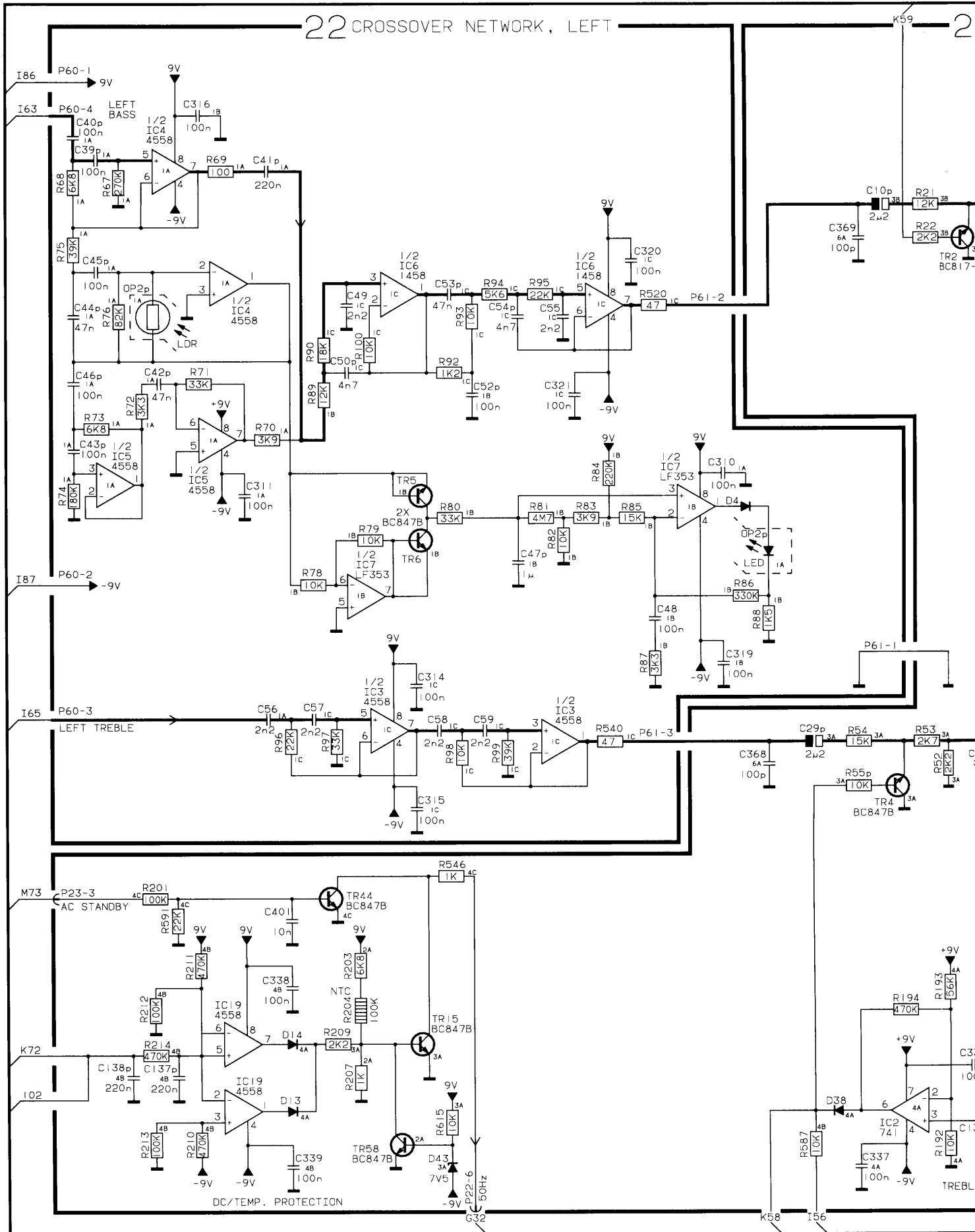
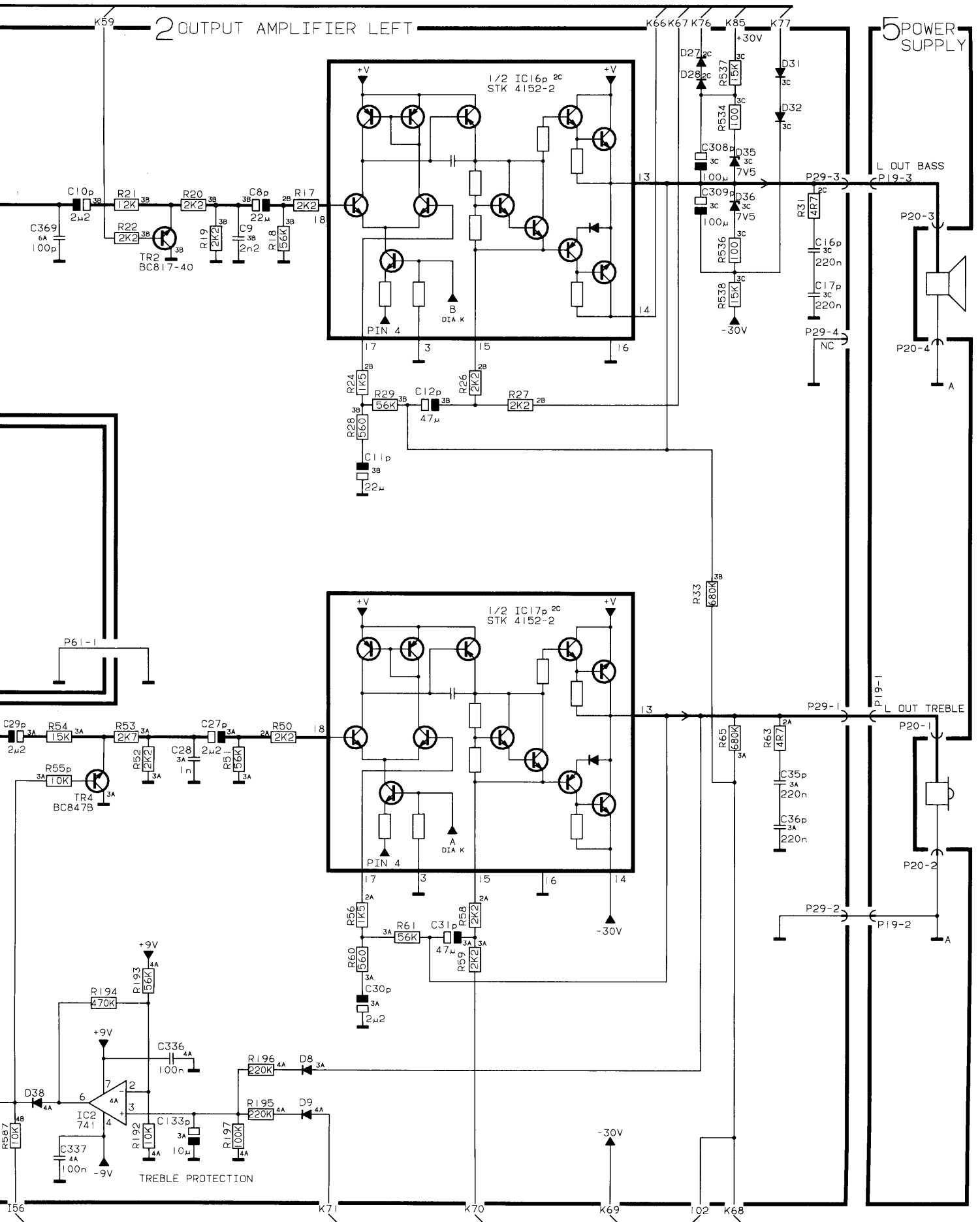
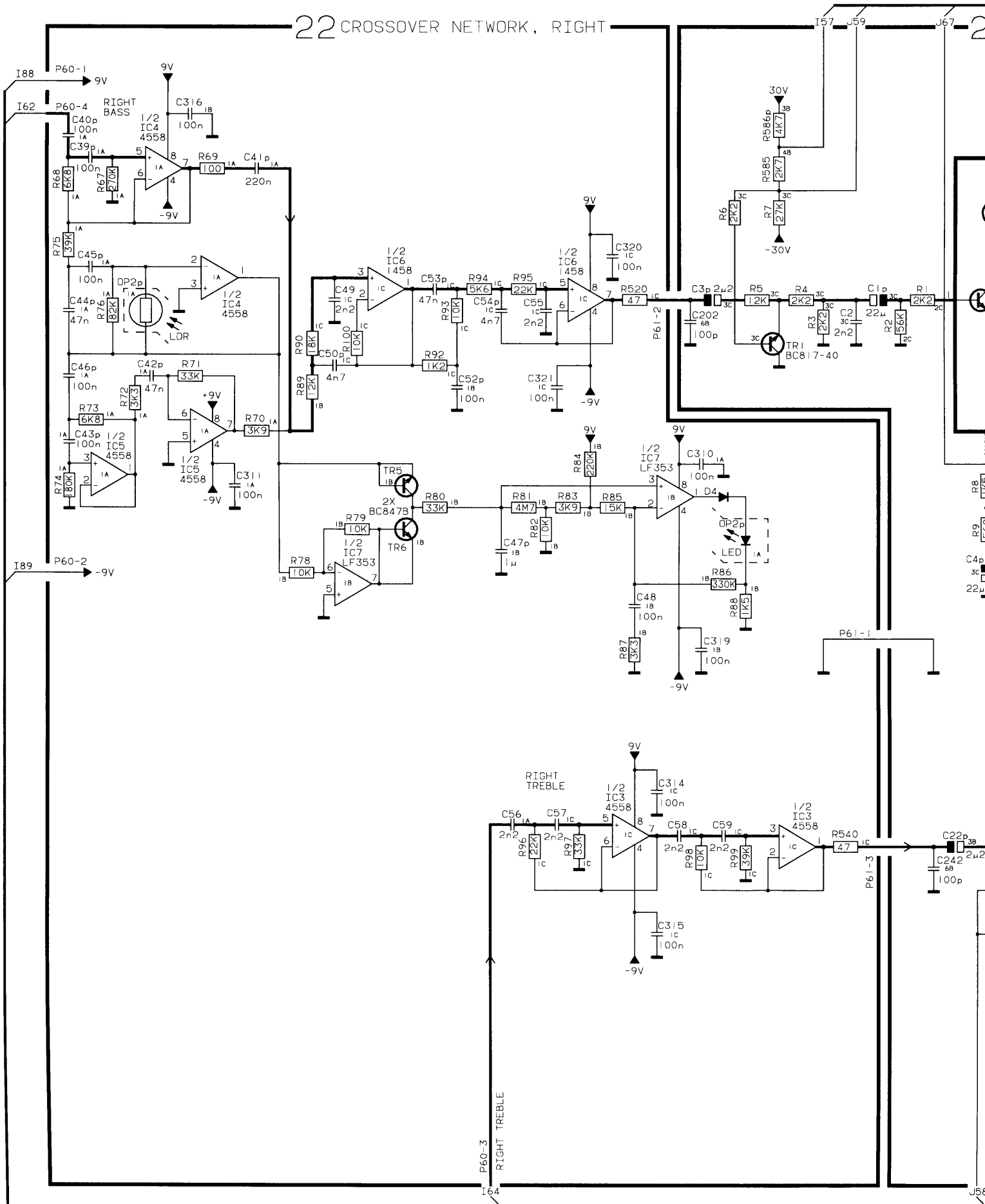


DIAGRAM J OUTPUT AMPLIFIER, LEFT & CROSSOVER NETWORK, LEFT  
(PCB DRAWINGS SEE PAGE 2-22)





**DIAGRAM K OUTPUT AMPLIFIER, RIGHT & CROSSOVER NETWORK, RIGHT**  
(PCB DRAWINGS SEE PAGE 2-22)





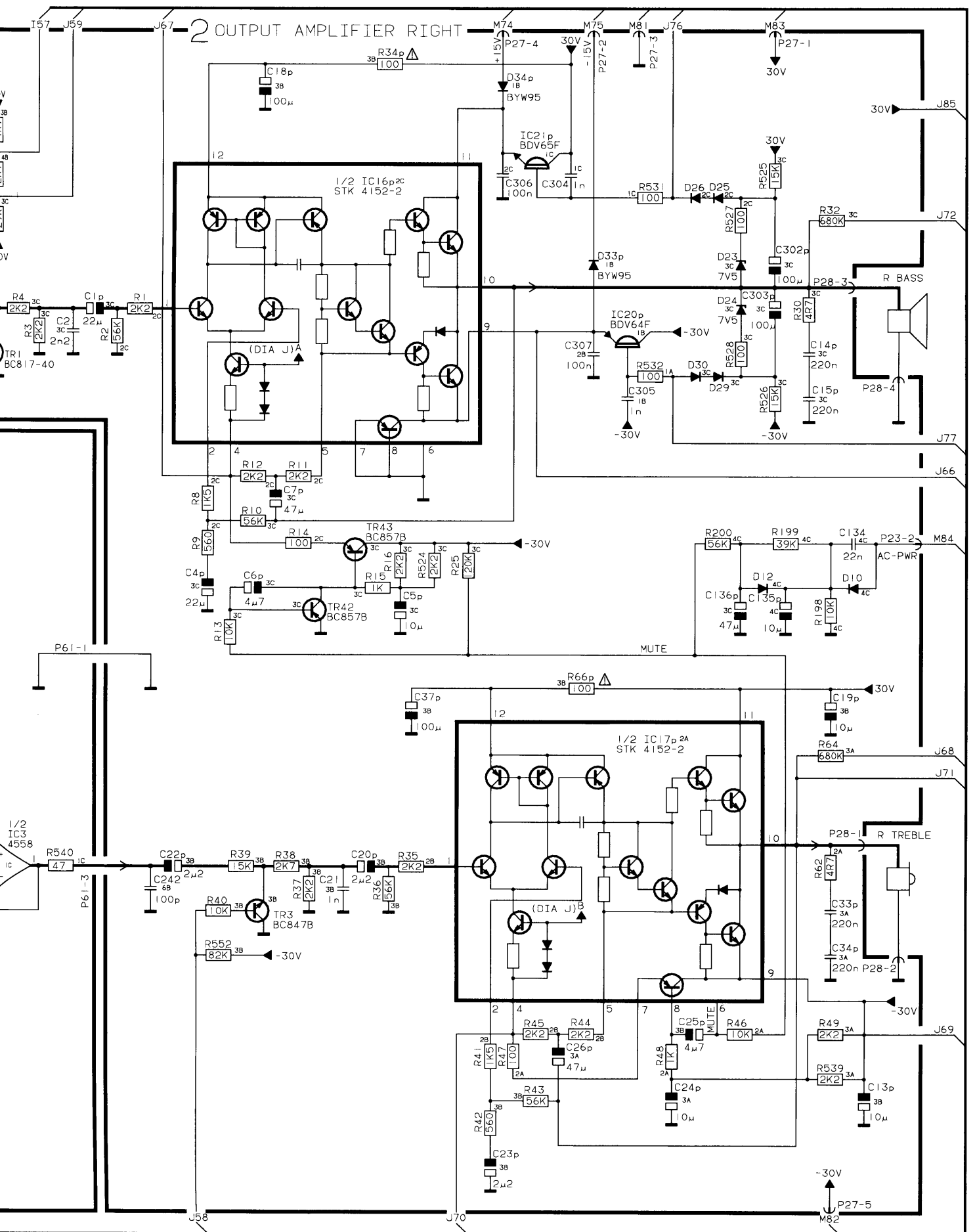
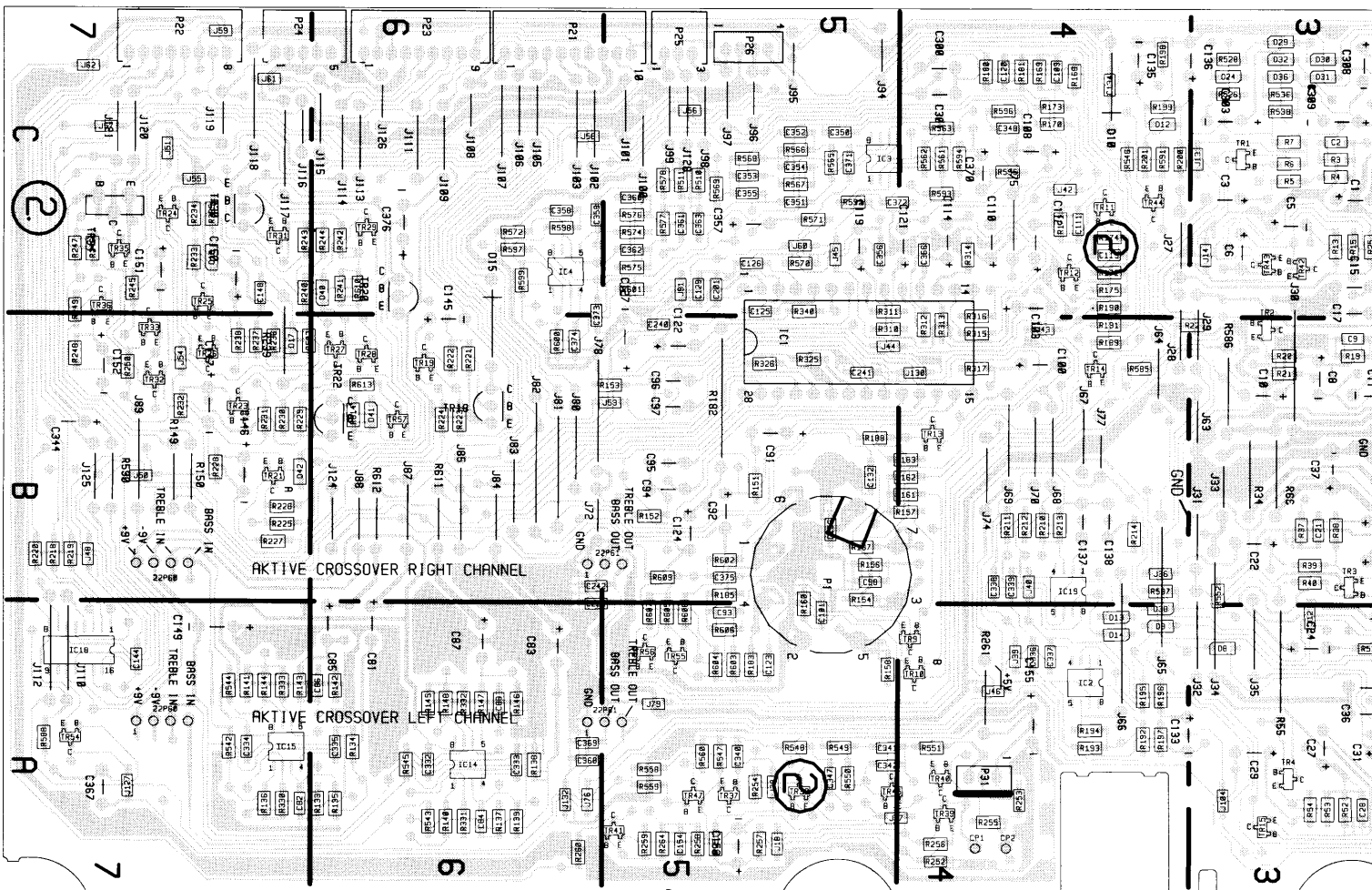
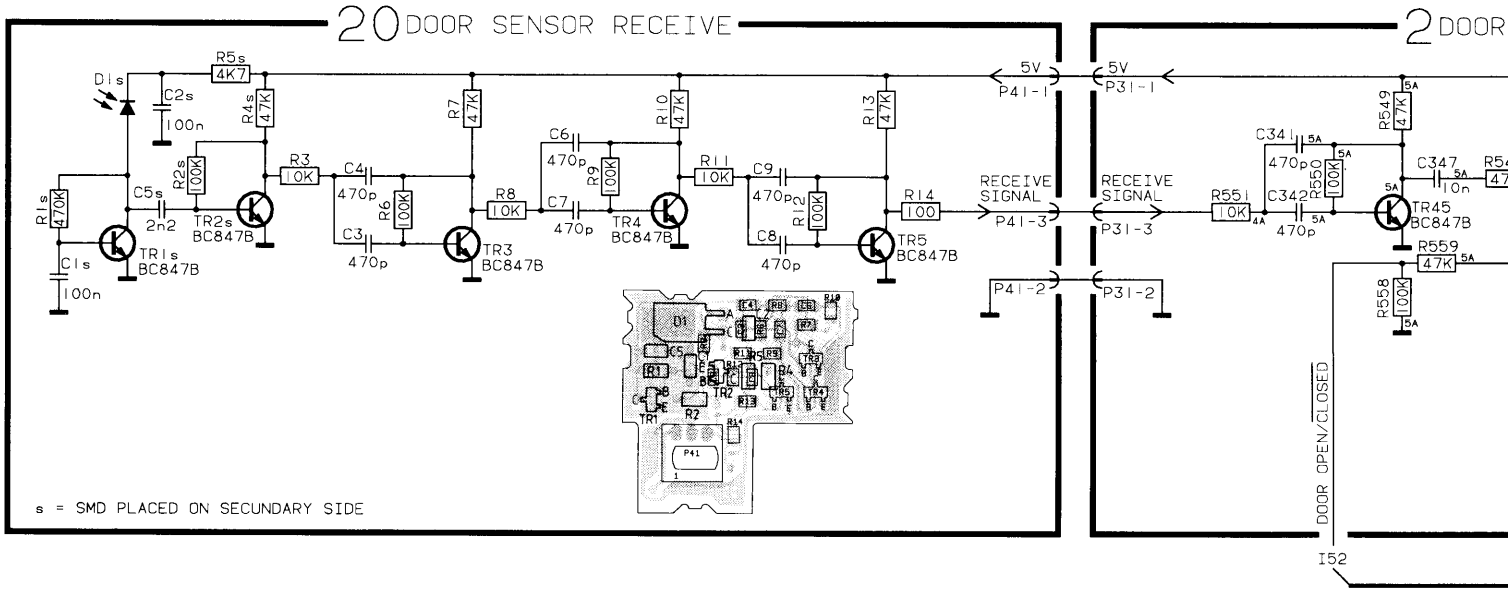
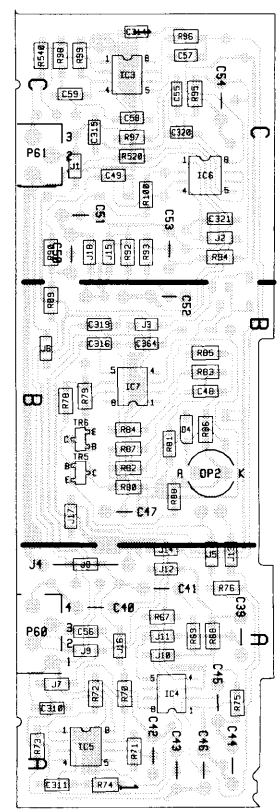
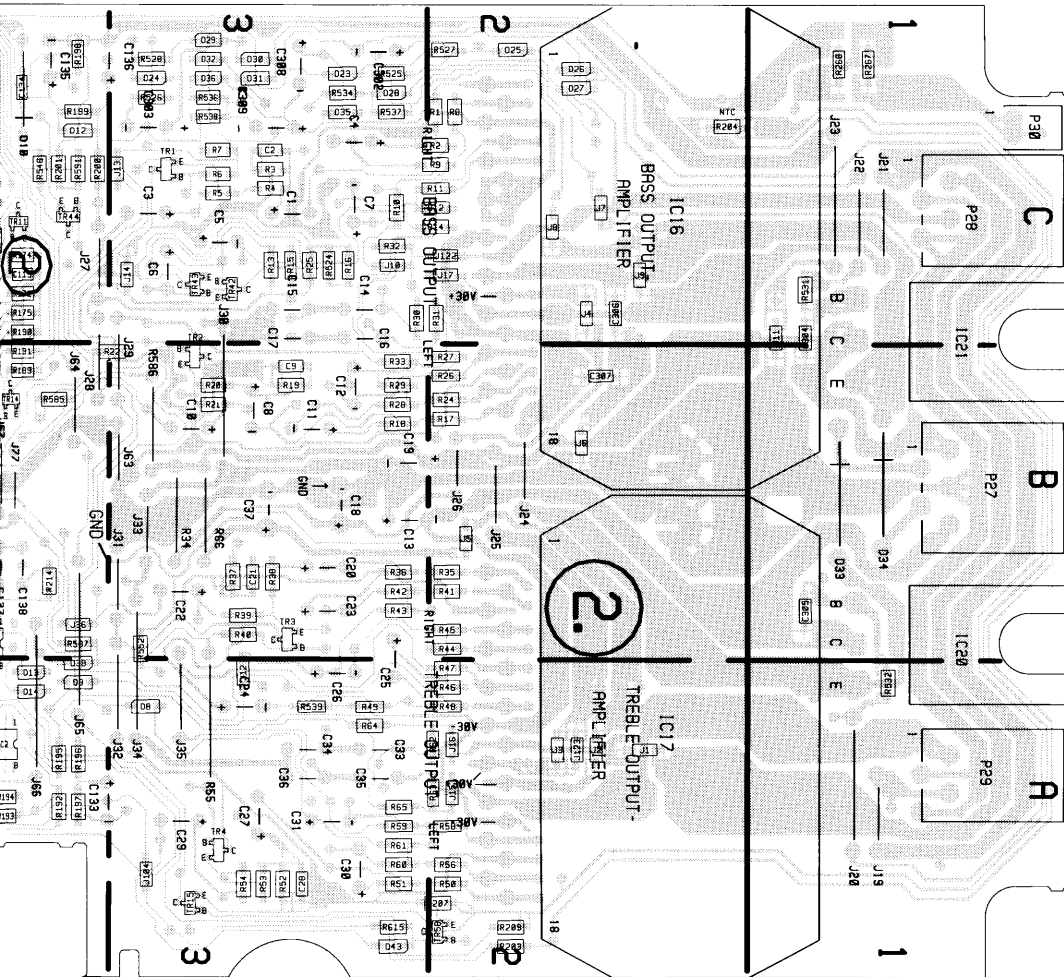
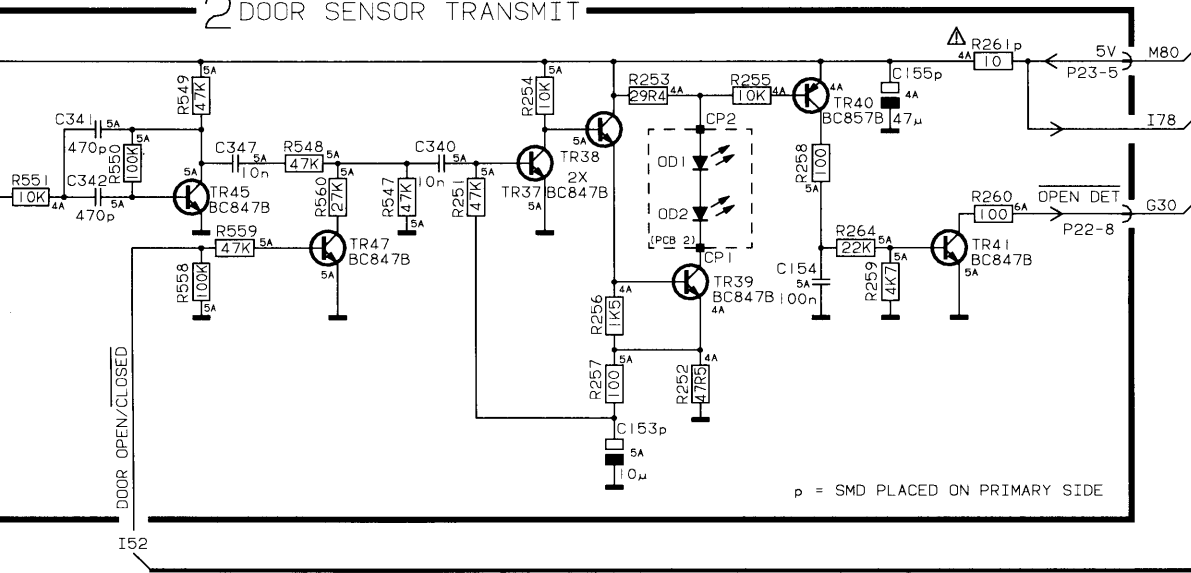


DIAGRAM L DOOR SENSOR TRANSMIT & DOOR SENSOR RECEIVE

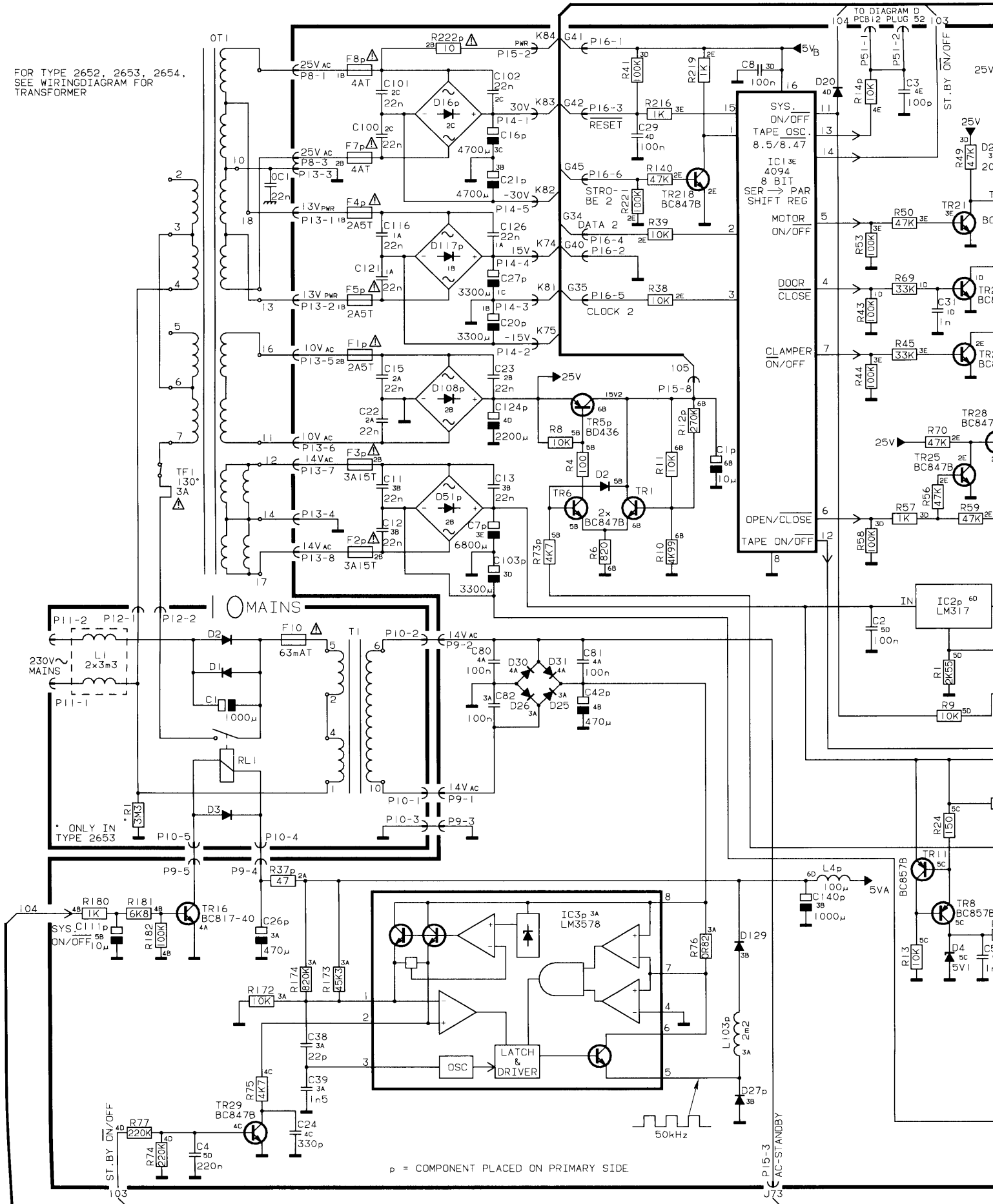


# 2 DOOR SENSOR TRANSMIT

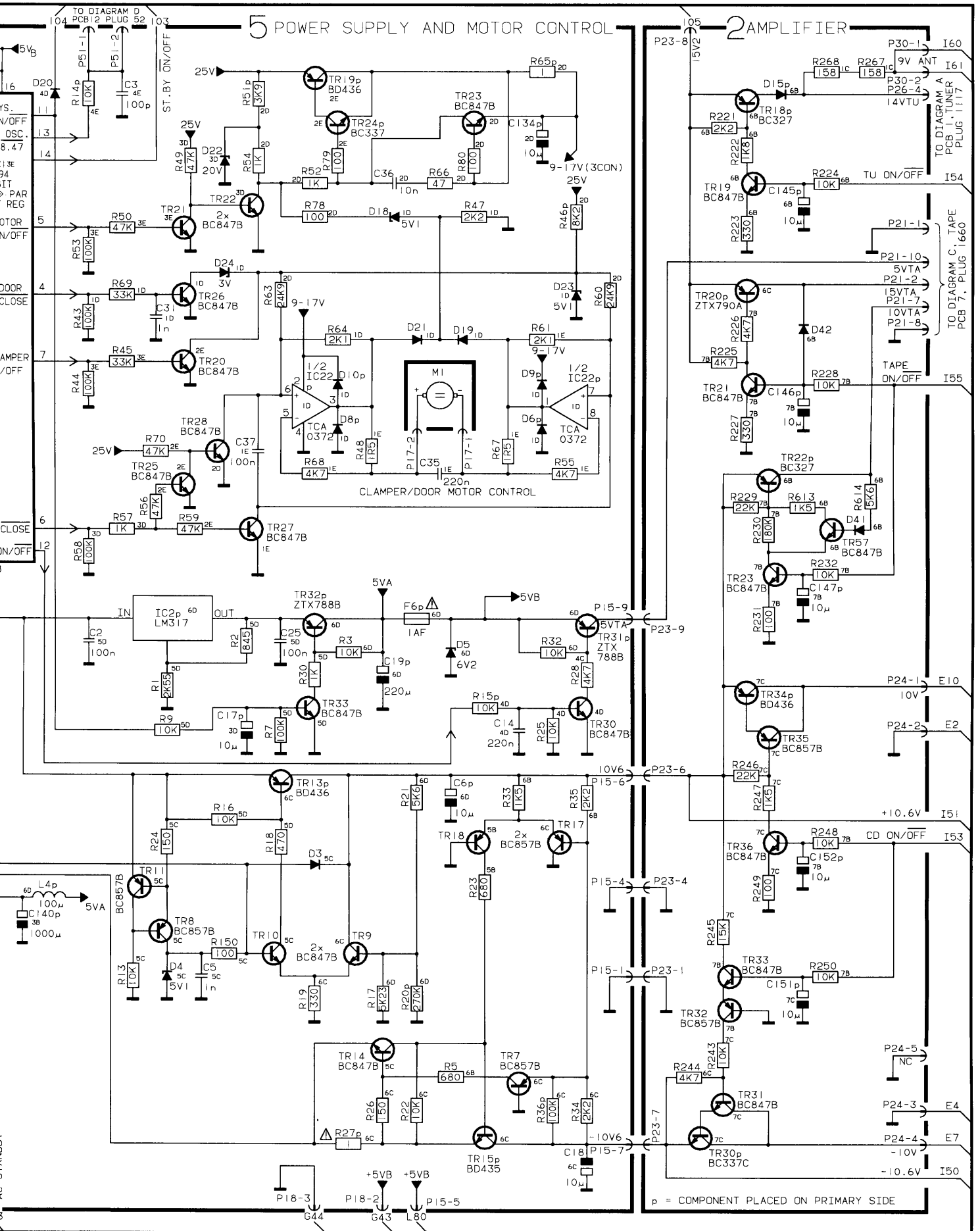


**DIAGRAM M MAINS & POWER SUPPLY / MOTOR CONTROL & AMPLIFIER POWER SUPPLY**  
(PCB DRAWINGS FOR PCB 5 & 10, SEE PAGE 2-24, PCB DRAWING FOR PCB 2 SEE PAGE 2-22)

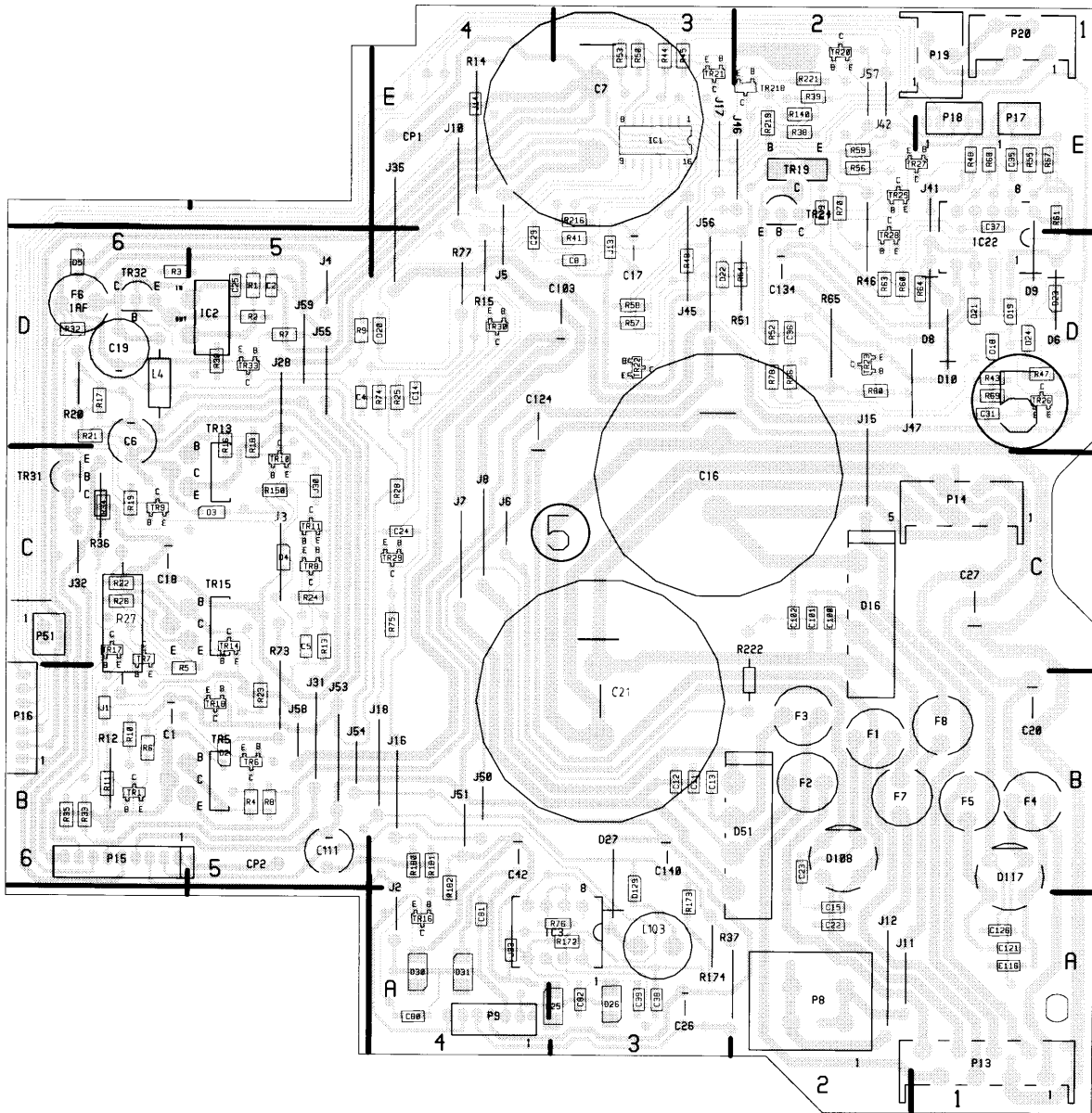
FOR TYPE 2652, 2653, 2654.  
SEE WIRINGDIAGRAM FOR  
TRANSFORMER



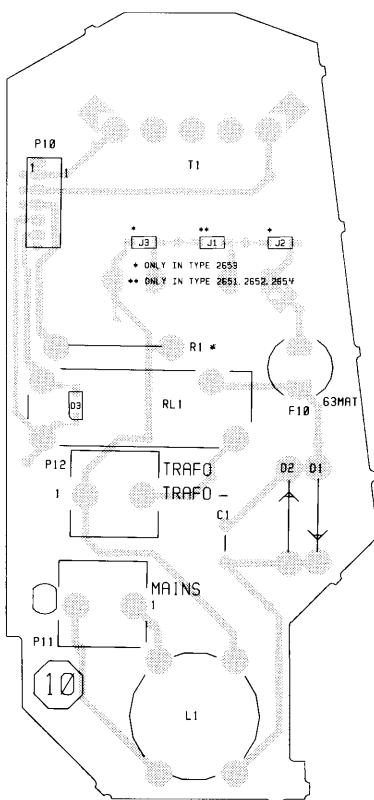
p = COMPONENT PLACED ON PRIMARY SIDE



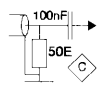
PCB 5, POWER SUPPLY & MOTOR CONTROL



PCB 10, MAINS



**TUNER Adjustment table**

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
<b>VARICAP ALIGNMENT</b>						
<b>FM</b> 87.5 - 108MHz			108 MHz	check	6	7...9V
			87.5MHz	check		1.3...2V
<b>AM</b> (2 band version) 530 - 1700kHz			1700kHz	5108		8.5V ± 0.1V
			530kHz	check		1V ± 0.3V
<b>LW</b> 153 - 279kHz			279kHz	5108		8.5V ± 0.1V
			153kHz	check		1V ± 0.1V
<b>MW</b> (3 band version) 522 - 1611kHz		1611kHz	2142	8.5V ± 0.1V		
		522kHz	check	1.1V ± 0.3V		
<b>FM IF</b>						
<b>FM</b>	98 MHz 1mVrf mod = 1kHz Δf = 75kHz	A	98MHz	5105	1 2	0V ± 20mV
<b>STEREO CROSTALK</b>						
<b>FM</b>	98MHz 1mVrf 90% L + 9% pilot	A	98MHz	check	3	low < 1V
				3131	4	R min. out
<b>SEARCH SENSITIVITY</b>						
<b>FM</b>	98MHz 15μV mod = 1kHz Δf = 75kHz	A	98MHz	3125	5	Switches just from High to Low
<b>AM - IF</b>						
<b>MW</b>	1494kHz Δf = 10kHz low as possible		1494kHz	5104	7	symmetrical and max height
<b>AM - RF</b>						
<b>MW</b> mod= 1 kHz 30% AM	558kHz	B *	558kHz	5107	7	MAX
	1494kHz		1494kHz	2141		MAX
<b>MW</b> only /01/17 mod= 1 kHz 30% AM	560kHz		560kHz	5107		MAX
	1600kHz		1600kHz	2141		MAX
<b>LW</b> mod= 1 kHz 30% AM	156kHz		156kHz	5109		MAX
	270kHz		270kHz	2140		MAX

\* input via inductive coupling

↑ repeat ↓



## ADJUSTMENT PROCEDURE

## TUNER

See section 2 for component location drawing and test points, if necessary.

- Place PCB 2 in service position (see dismantling, section 6). Adjustments on PCB 1 Tuner are now accessible.  
(See Tuner adjustment table)

## TAPE RECORDER

Indications are for the left channel (right channel in brackets).

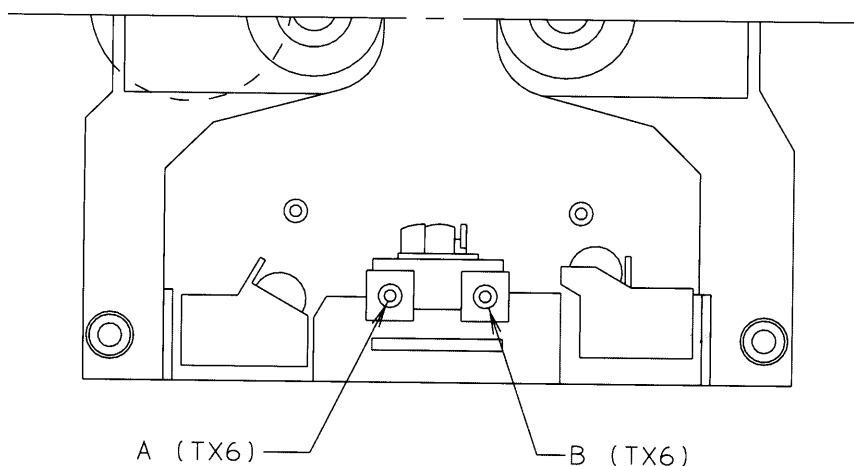
When using an audio oscillator with signal output at all four pins of the DIN plug, the audio oscillator must be disconnected during recording in order to avoid faulty measurements.

Test tapes used for adjustment:

Azimuth	6k3 Hz $\pm 1\%$ /level -20 dB	Part No. 6780036
Wow	3,150 Hz $\pm 0.1\%$ /wow: 0.08%	Part No. 6780037
Torque	SRK-CT 0-100 g	Part No. 6780046
Level	333 Hz $\pm 1\%$ /250 pWb $\pm 0.5$ dB	Part No. 6780035
Cr <sub>2</sub>	ABEX TCC 203B	Part No. 6780135
Fe <sub>2</sub> O <sub>3</sub>	BASF R 723 DG	Part No. 6780067

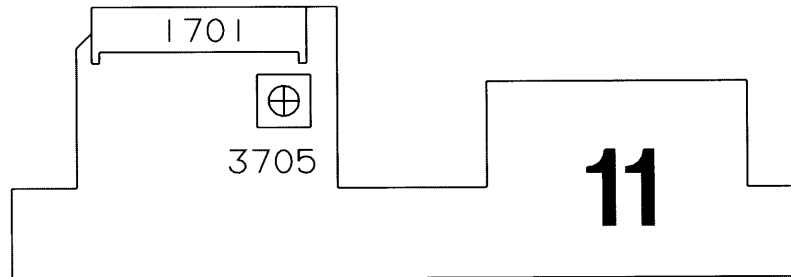
## Azimuth

- Load Azimuth tape, part No. 6780036.
- Connect the two inputs of an oscilloscope to 2P21-5 (L OUT) and 2P21-6 (R OUT) respectively from Tape PCB 7.
- Press TAPE, and adjust the screw A (side 1) until the two curves on the oscilloscope are in phase at maximum amplitude.
- Press TAPE for 1.5 secs., thereby obtaining the reverse direction (side 2), and adjust the screw B until the two curves on the oscilloscope are in phase at maximum amplitude.
- Repeat this procedure as a check.



**Speed**

- Load Wow tape, part No. 6780037 (the adjustment must be made at the centre of the tape).
- Connect a Wow/Flutter meter or a frequency counter to 2P21-5 (L OUT).
- Press TAPE. After 30 seconds' operation, adjust 3705 on PCB 11 to 3,150 Hz  $\pm 0.3\%$  (see section 6 for service position of PCB 11).

**Take-up torque**

- Load Torque cassette, part No. 6780046.
- Place PCB 2 in service position (see dismantling, section 6).
- Press TAPE, and adjust 1635 on PCB 7 to a take-up torque of 45-50 g-cm.

**Playback level**

Use a Pegel Level reference tape 250 pWb/mm, part No. 6780035 (\*Level reference tape 200 pWb/mm is mentioned as an alternative in brackets\*):

- Place PCB 2 in service position (see dismantling, section 6).
- Connect an AF voltmeter to test point 8 (9) on PCB 7 or to 2P21-5 (2P21-6).
- Press TAPE, and then press MODE until NR is flashing in the display (the noise reduction system is disconnected).
- Adjust 1631 (1632) on PCB 7 to 620 mV (\*550 mV/200 pWb/mm\*).

**TEST MODE 22**

The tape recorder noise reduction system is connected automatically when recording.

Electric recording adjustments in the tape recorder section must be made with the noise reduction system disconnected, which is done in test mode:

- Connect the product to a mains outlet.
- Within 30 secs., press: • 2650. The display reads: 8888 when the product is in test mode.
- Press AUX REC REC 22 (22 = disconnection of noise reduction system).
- Test mode is abandoned by pressing • or disconnecting the mains voltage.

**HX filter**

- Place PCB 2 in service position (see dismantling, section 6).
- Short-circuit capacitor 2657 on PCB7 (Automatic Level Control off).
- Connect a DC voltmeter to IC 7710 pin 6 (13) on PCB 7.
- Load CrO<sub>2</sub> standard tape, part No. 6780135.
- Carry out the procedure mentioned under TEST MODE 22 above.
- Adjust coil 5627 (5626) on PCB 7 to minimum DC voltage.
- Remove the jumper across 2657 after the adjustment has been completed.

**Bias**

- Place PCB 2 in service position (see dismantling, section 6).
- Short-circuit capacitor 2657 on PCB7 (Automatic Level Control off).
- Connect an audio oscillator to the AUX input, 333 Hz/30 mV.
- Connect an AF voltmeter to test point 2 (3) on PCB 7 or to 2P21-5 (2P21-6).
- Load CrO<sub>2</sub> standard tape, part No. 6780135.
- Carry out the procedure mentioned under TEST MODE 22 above.
- Adjust the audio oscillator until 30 mV is measured.
- Adjust 1626 (1627) on PCB 7 until the playback level at 333 Hz and 12,500 Hz is the same (approx. 30 mV) by first recording and then playing back 333 Hz and 12,500 Hz. Press AUX REC REC 22 every time a recording is made and <STEP and TAPE every time the recorded piece is to be

reproduced. STOP must not be used. (Less bias produces a treble boost, more bias a treble drop.)

- Check the adjustment with an Fe<sub>2</sub>O<sub>3</sub> standard tape, part No. 6780067. If the result deviates significantly, adjust to the mean value between CrO<sub>2</sub>/Fe<sub>2</sub>O<sub>3</sub>.
- Remove the jumper across 2657 after the adjustment has been completed.

**Record current**

- Place PCB 2 in service position (see dismantling, section 6).
- Short-circuit capacitor 2657 on PCB 7 (Automatic Level Control off).
- Connect an audio oscillator to the AUX input, 333 Hz/100 mV.
- Connect an AF voltmeter to test point 2 (3) on PCB 7 or to 2P21-5 (2P21-6).
- Load CrO<sub>2</sub> standard tape, part No. 6780135.
- Carry out the procedure mentioned under TEST MODE 22 above.
- Adjust the audio oscillator until 200 mV is measured.
- Adjust 1633 (1634) on PCB 7 until the playback level is 200 mV by first recording and then playing back 333 Hz. Press AUX REC REC 22 every time a recording is made and <STEP and TAPE every time the recorded piece is to be reproduced. STOP must not be used.

**CD**

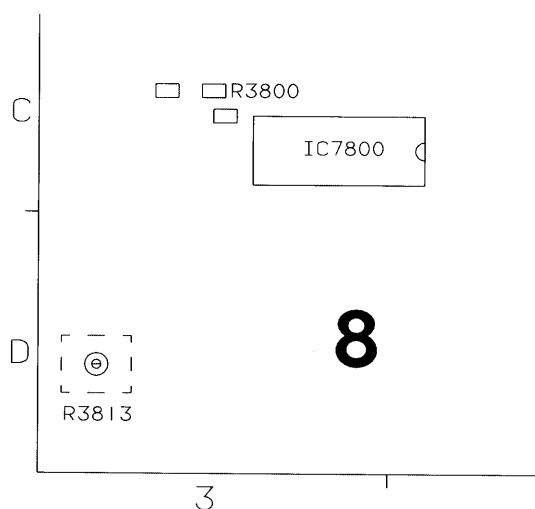
The optical pick-up is extremely sensitive to static electricity. The work site must therefore be protected against static electricity. Careless treatment of the optical pick-up may reduce its life dramatically.

The CD drive mechanism and PCB 8 must be connected when the product is connected to a mains outlet.

**Laser current**

Important:

Preset the laser current potentiometer, 8R3813, when replacing the CD drive mechanism, and check the connection to the monitor diode before connecting the product to a mains outlet.



- Remove the rear panel (see dismantling, section 6).
- Connect an ohmmeter from pin 18 to pin 27 of 8IC7800.
- Adjust 8R3813, coordinate 3D, until 1 Kohm is measured.
- Connect a DC voltmeter across 8R3800, coordinate 3C.
- Connect the product to a mains outlet, and press LOAD. Load test disc No. 5 (CD without errors, part No. 3634031).
- Press CD. The voltage across 8R3800 must be higher than 15 mV, otherwise the product has to be switched off and the error found.
- If the voltage across 8R3800 is higher than 15 mV, play track 1 on test disc 5, and adjust 8R3813 until 50 mV ±2 mV is measured.

NOTE: If the voltage across 8R3800 is less than 25 mV, the CD may stop shortly after having been started. The adjustment must therefore be made immediately after starting.

**LOUDSPEAKER**

**Adjustment of bass/treble level**

Has to be carried out only when replacing a speaker unit, PCB 2 Amplifier, PCB 3 Microprocessor or 3IC4.

**TEST MODE 13**

This test mode allows manual adjustment of the bass and treble levels of the speakers, and it is available in stand-by only.

- Connect the product to a mains outlet.
- Within 30 secs., press: • 2650. The display reads: 8888 when the product is in test mode.
- Press 13.

The present adjustment is shown in the display:

- 'X ' = left treble.
- ' X ' = left bass.
- ' X ' = right treble.
- ' X ' = right bass.

Test mode is abandoned by pressing • or disconnecting the mains voltage.

**Replacement of PCB 2 Amplifier**

- Connect the new PCB 2 Amplifier with the exception of 2P28 (R OUT) and 2P29 (L OUT).
- Transfer the label concerning speaker adjustment from the old PCB 2 to the new PCB 2.
- Connect an AC voltmeter to that speaker unit which has the weakest output according to the label.

LB (left bass):	X.XX V <sub>AC</sub>	2P29-3	RB (right bass):	X.XX V <sub>AC</sub>	2P28-3
LT (left treble):	X.XX V <sub>AC</sub>	2P29-1	RT (right treble):	X.XX V <sub>AC</sub>	2P28-1
Left ground:		2P29-2	Right ground:		2P28-2/4

- Connect an audio oscillator to the AUX input.  
Bass : 700 Hz/1 mV.  
Treble : 7200 Hz/1 mV.
- Carry out the procedure mentioned under TEST MODE 13 above.
- Adjust to maximum output: Display = 9999. If necessary, select speaker by means of STEP> (the active speaker flashes) and then press 9.
- Press STORE.
- Press AUX.
- Press ^ until the volume reaches maximum (display = 72). Adjust balance, bass and treble to neutral level, and loudness off.
- Adjust the audio oscillator output voltage until: the voltage on the AC voltmeter = weakest output on label.
- Measure and make a note of the voltage at the three other speaker outputs by means of the AC voltmeter:

LB (left bass, 700Hz):	X.XX V <sub>AC</sub>	2P29-3
LT (left treble, 7200Hz):	X.XX V <sub>AC</sub>	2P29-1
Left ground:		2P29-2

RB (right bass, 700Hz):	X.XX V <sub>AC</sub>	2P28-3
RT (right treble, 7200Hz):	X.XX V <sub>AC</sub>	2P28-1
Right ground:		2P28-2/4

- The difference between the rated voltage stated on the label and the measured voltage has to be calculated for the three speaker units:

$$\frac{\text{Rated voltage}}{\text{Measured voltage}} = X$$

X	CODE
≥ 1.00	9
0.87	8
0.75	7
0.65	6
0.56	5
0.49	4
0.42	3
0.37	2
0.32	1

- Perform TEST MODE 13, and enter the digit (CODE) corresponding to the calculated difference (X) between the three speaker units.
- Press STORE when all four speaker units have the desired coding.
- Press AUX, and check that the measured voltages correspond to those stated on the label.

Test mode is abandoned by pressing • or disconnecting the mains voltage.

**Replacement of PCB 3 or 3IC4**

The bass and treble levels of the speakers are stored electronically in IC4 (EEPROM) on PCB 3. When replacing PCB 3 or 3IC4, the original bass and treble level values have to be stored again:

- If the old values are accessible, enter them in TEST MODE 13. Press STORE when all four speaker units have the desired coding.
- If the old values are not accessible, see: Replacement of PCB 2 Amplifier.

**Replacement of a speaker unit**

A measured value in dB is printed on the back of the new speaker unit. This value is used for adjusting the sound level, which is done in TEST MODE 13:

- Make a note of the value printed on the back of the new speaker unit, and replace the old unit with the new one.
- Carry out the procedure described under TEST MODE 13.
- The rated value printed on the back of the speaker unit may be either positive or negative:
  - Pos.: If the rated value printed on the back of the speaker unit is positive, dampen the unit in question by X number of steps. If necessary, select speaker by means of STEP> (the active speaker flashes), and then enter a new digit (see table).
  - Neg.: If the rated value printed on the back of the speaker unit is negative, dampen the three other units by X number of steps. Select the three speakers by means of STEP> (the active speaker flashes), and then enter new digits (see table).

Rated value in dB	X steps down
0.00	0 steps down
+/- 0.25	
+/- 0.50	
+/- 0.75	1 step down
+/- 1.00	
+/- 1.25	
+/- 1.50	
+/- 1.75	
+/- 2.00	2 steps down

- Press STORE when all four speaker units have the desired coding.

Test mode is abandoned by pressing • or disconnecting the mains voltage.

**REPAIR TIPS**  
**Lubrication**

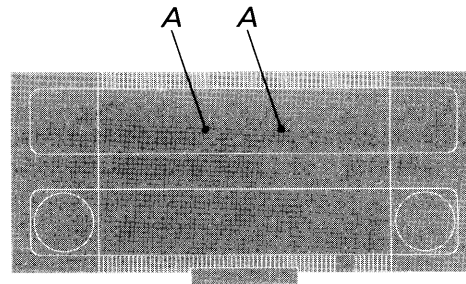
The need for subsequent lubrication is minimal. In connection with major checks and replacement of mechanical parts it may be necessary to apply a little lubricant (see exploded view, section 4).

**Replacement of CD drive mechanism**

The optical pick-up is extremely sensitive to static electricity. The work site must therefore be protected against static electricity. Careless treatment of the optical pick-up may reduce its life dramatically.

The CD drive mechanism and PCB 8 must be connected when the product is connected to a mains outlet.

- Loosen the two transport screws A for CD.



- Remove the CD front frame (see dismantling, section 6, if necessary).
- Remove the CD cover plate by loosening the four pins (marked with arrows).
- Make a depth adjustment by bending the spring-loaded fitting.
- Make the lateral centring by adjusting the two springs laterally on the spring-loaded fitting.

**TAPE**  
**Wow frequencies**

WOW FREQUENCIES		
Frequency	Fault source	Pos. no.
1.7 Hz	Pinch roller, left	9407
1.7 Hz	Pinch roller, right	9411
4.1 Hz	Driving belt	9455
6.0 Hz	Flywheel left	9438
7.6 Hz	Flywheel right	9451
29.6 Hz	Motor (capstan)	9453

**TEST FUNCTIONS**

BeoSound Century can be brought into TEST MODE, thereby providing the following possibilities:

- Display of tuner variant.
- Gearbox test.
- Keyboard test.
- LED test.
- Display of software version.
- Presetting of EEPROM 3IC4.
- Continuous operation of tape recorder.
- Speaker sound level adjustment.
- CD test.

**TEST MODE**

In test mode the product can be operated in the ordinary way with the exception of the digits (selection of new test mode).

- Connect the product to a mains outlet.
- Within 30 secs., press: • 2650. The display reads: 8888 when the product is in test mode.

Test mode is abandoned by pressing • or disconnecting the mains voltage.

**Display of tuner variant**

- Bring the product into TEST MODE.
- Press 08      Display      Variant  
                  0:              Tuner variant error  
                  1:              EU  
                  2:              GB  
                  3:              USA  
                  4:              JAP

**Gearbox test**

- Bring the product into TEST MODE.
- Press 09.      Door sensor is disconnected.
- Press 17.      Door is closed. Remove glass door.
- Press 16.      Door is opened.
- Press 18.      CD clamper is opened.
- Press 19.      CD clamper is closed.

**Keyboard test**

- Bring the product into TEST MODE.
- Press 05  
The display shows the row and column number of the key:

r1c1	MODE	r3c5	TUNE
r1c2	REC	r3c6	∨
r1c3	STORE	r3c7	•
r1c4	SOUND	r2c1	0
r1c5	∧	r2c2	1
r1c6	LOAD	r2c3	2
r2c4	RADIO	r4c1	3
r2c5	CD	r4c2	4
r2c6	TAPE	r4c3	5
r3c1	AUX	r4c4	6
r3c2	<STEP	r4c5	7
r3c3	STOP	r4c6	8
r3c4	STEP>	r4c7	9

- Disconnect the mains voltage to abandon TEST MODE 05, or press 06 on a Beolink 1000 remote control terminal.

**LED test**

- Bring the product into TEST MODE.
- Press 23.  
All LED's are switched on.

**Display of software version**

- Bring the product into TEST MODE.
- Press 26.  
Display: X.XX

**Presetting of EEPROM**

- Bring the product into TEST MODE.
- Press 07.
- Display: 07. Flashes while presetting.  
The preset programmes are deleted.  
Volume = 30; balance, bass and treble in neutral; loudness on.  
Noise reduction on.  
Autoreverse on.  
Speaker sound level adjustment is not affected.
- Disconnect the mains voltage when the preset procedure has been completed.

**Continuous operation of tape recorder**

- Bring the product into TEST MODE.
- Press TAPE.
- Press 38.
- The tape recorder plays continuously, i.e. 30 secs. on side 2, 30 secs. on side 1 etc., until 37 is pressed.

**Speaker sound level adjustment**

To be performed when replacing PCB 3 Microprocessor, 3IC4, PCB 2 Amplifier or a speaker unit. See section 5 for adjustment procedure.

**CD test**

- Bring the product into TEST MODE.
- Press CD. The following error messages will be displayed in test mode when playing a CD (disc without errors, part No. 3634031):

Display:

- 2: Focus error.  
Has a CD been loaded?  
Does the laser switch on? LO 8IC7800-17.  
Does the FE output regulate? FE 8IC7800-15.  
Does the focus motor regulate? FOC+ 8P1801-1/FOC- 8P1801-2.
- 3: Radial error.  
Does the RAD output regulate? RAD 8IC7802-15.  
Does the radial motor regulate? RAD+ 8P1801-4/RAD- 8P1801-3.
- 4: Turntable motor error.  
Does the PWMA output regulate? PWMA 8IC7841-28.  
Does the turntable motor receive DC voltage? TTM+ 8P1842-1/TTM- 8P1842-2.
- 5: TL is low for more than 50 msec.  
Check TL 8IC7800-11.
- 6: Jump/Step error.  
Check eyepattern. HF 8C2843, test point 3.  
Check data transmission. R/A, DATA and CLK 8IC7881-11/10/9.
- 7: Subcode error, no subcode within 3 secs.  
Check data transmission.
- 8: TOC error. Outside the "lead in" area while TOC (program content) is being read.  
Check laser arm mechanics.
- 30: Communication error between PCB 3 Microcomputer and Servo microprocessor.  
Check data transmission. Master/Slave 8IC7881-27/28.

Remove the CD if you like.

- Press 40. Laser switches on, and focus is searched for (focus is searched for every time 40 is pressed).
- Press 42. Turntable motor starts, and the laser switches on and goes into starting position.
- Press 43. Turntable motor stops, and the laser switches off and goes into stop position.
- Press 44. Laser arm moves towards extreme outside position.
- Press 45. Laser arm moves towards the centre.



Load the CD (LOAD).

- Press 46. CD starts playing from lead in (display = 0). No sound is produced by the speakers.
- Press 47. CD brakes and stops playing.
- Press CD.
- Press 48. CD winds towards the extreme outside position and stops there.
- Press 49. CD winds towards the centre and stops there.

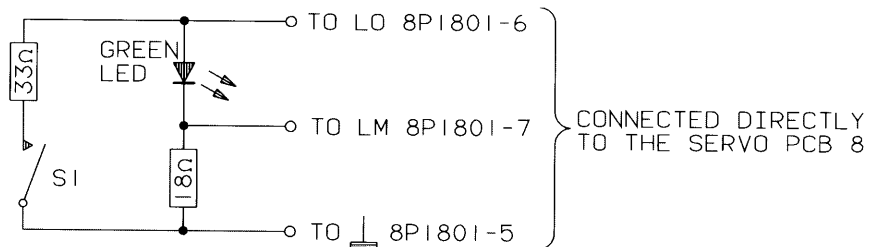
Test mode is abandoned by pressing • or disconnecting the mains voltage.

### Checking the laser supply

The laser, the laser supply in 81C7800 and the monitor diode form a feed-back system. A defect in the laser supply may result in destruction of the laser.

As it is impossible to check and repair a feed-back if one part of the system is missing, the laser supply can be checked by means of the below circuit.

The green LED replaces the laser. The voltage across the 18ohm resistor is the feed-back voltage for the monitor. The 33ohm resistor and the switch make it possible to change the power consumption from the laser supply.



Green LED, e.g. CQY94, part no. 8330054.

Remove the flex PCB from P1801 on the PCB8.

Connect the above-mentioned circuit to P1801 on the PCB8.

Connect S1 (pin 6 of 81C7800) to ground.

When  $\overline{SI}$  (Start Initialization) low, the laser supply can be switched on in TESTMODE. Then press CD and 40.

Measure the LO voltage on pin 6 of 8P1801.

S1 open:  
LO from 1.8 V to 2.3 V  
LM from 170 mV to 220 mV  
The green LED emits little light

S1 closed:  
LO from 1.8 V to 2.3 V  
LM from 170 mV to 220 mV  
The green LED emits little light

During the change from S1 closed to S1 open, the LED will shortly emit more light than usual. The feed-back system ensures that the same amount of current passes through the LED irrespective of whether S1 is open or closed.

## EINSTELLVORGANG

## TUNER

Siehe evtl. Abschnitt 2 wegen Komponentenplatzierungsskizze und Meßpunkte.

- PCB 2 in Service-Position bringen (siehe hierzu Abschnitt 6 'Zerlegung'). Einstellungen auf PCB1 Tuner sind jetzt zugänglich. (Tuner-Einstellungstabelle am Seite 5-1)

## CASSETTEN-RECORDER

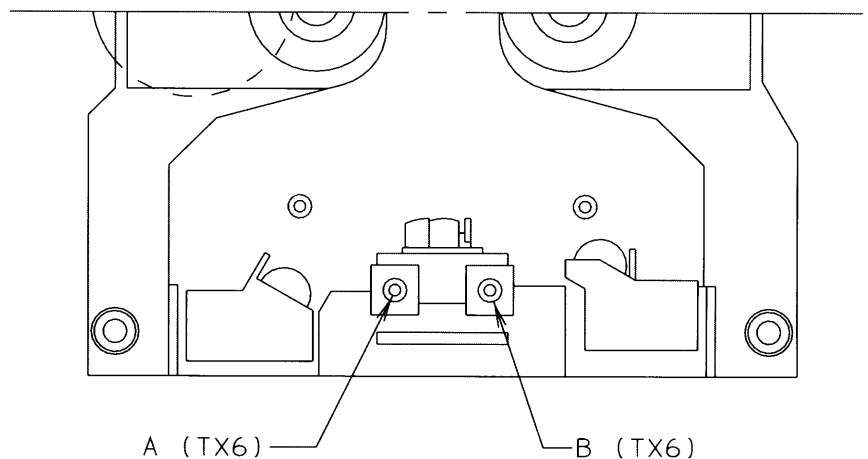
Die Hinweise beziehen sich auf den linken Kanal (die in Klammern angeführten Hinweise beziehen sich auf den rechten Kanal).  
Bei Anwendung eines Tongenerators, der Signale an alle vier Anschlüsse des DIN-Steckers hinausgibt, muß der Tongenerator bei Wiedergabebetrieb abgeschaltet werden, um Falschmessungen zu vermeiden.

Für die Einstellungen zu benutzende Test-Cassetten:

Azimut	6.3kHz±1%Pegel -20dB	Bestell-Nr. 6780036
Wow	3150Hz±0,1%/-Wow: <0,08%	Bestell-Nr. 6780037
'Torque'	SRK-CT 0-100g	Bestell-Nr. 6780046
Pegel	333Hz±1%/250pWb±0,5dB	Bestell-Nr. 6780035
CrO <sub>2</sub>	ABEX TCC 203B	Bestell-Nr. 6780135
Fe <sub>2</sub> O <sub>3</sub>	BASF R 723 DG	Bestell-Nr. 6780067

## Azimut

- Azimut-Cassette einlegen (Bestell-Nr. 6780036).
- Die beiden Eingänge eines Oszilloskops an 2P21-5 (L OUT) bzw. 2P21-6 (R OUT) von Tape PCB 7 anschließen.
- TAPE drücken, und mit der Schraube A (Cassettenseite 1) so lange abgleichen, bis die beiden Kurven am Oszilloskop bei max. Amplitude gleichphasig sind.
- TAPE >1,5 s Drücken, wodurch 'Reverse'-Richtung (Cassettenseite 2) erzielt wird, und mit der Schraube B so lange abgleichen, bis die beiden Kurven am Oszilloskop bei max. Amplitude gleichphasig sind.
- Zur Kontrolle den Vorgang wiederholen.



**DISMANTLING**

When the rear panel is removed, PCB 1 Tuner, PCB 5 Power supply and Motor control, PCB 7 Tape, PCB 8 CD and PCB 10 Mains are accessible. All other components can be serviced from the front, including adjustment of PCB 1 Tuner and PCB 7 Tape.

**Glass door**

- Pull straight out of the sliding bracket.

**Front fabric frame**

- Remove two screws from the corners of the rear panel.
- Pull out the front fabric frame a little at the bottom, outside corner and push it out to the side.

**Handle/PCB 21 Active antenna**

- Remove two screws.
- Pull the handle straight back (because of the socket).

**ZERLEGUNG BS2000**

Wird der Rückwandteil entfernt, so sind die folgenden Platinen zugänglich: PCB 1 Tuner, PCB 5 Stromversorgung und Motorsteuerung (Power Supply and Motor Control), PCB 7 Tape, PCB 8 CD und PCB 10 Netzteil (Mains). Alle übrigen Komponenten können von der Frontseite aus gewartet werden, einschl. Einstellung von PCB 1 Tuner und PCB 7 Tape.

**Glastür**

- Glastür aus dem Schlitten herausziehen.

**Frontstoffrahmen**

- In den Ecken des Rückwandteils 2 Schrauben entfernen.
- Frontstoffrahmen an der unteren äußeren Ecke ein wenig herausziehen und zur Seite hin verschieben.

**Handgriff/PCB 21 Aktivantenne**

- 2 Schrauben entfernen.
- Handgriff gerade nach hinten ziehen (wegen Steckverbindung)

**DESASSEMBLAGE, BS2000**

Après avoir déposé la face arrière, il est possible d'accéder aux cartes "PCB 1 Tuner" (sélecteur de canaux), "PCB 5 Power supply and motor control" (alimentation électrique et commande moteur), "PCB 7 Tape" (platine-cassettes), PCB 8 CD" (platine laser) et "PCB 10 Mains" (secteur). Le service de maintenance peut intervenir sur tous les autres composants depuis la face avant, même pour régler les cartes "PCB 1 Tuner" et "PCB 7 Tape".

**Porte vitrée**

- La sortir du chariot en tirant vers soi.

**Panneau frontal décoratif en tissu**

- Enlever 2 vis dans les coins de la face arrière.
- Tirer légèrement sur le panneau frontal décoratif en tissu en le prenant sur l'extérieur du coin inférieur. Repousser sur le côté.

**Poignée/carte "PCB 21 Active antenna" (antenne active)**

- Enlever 2 vis.
- Une fiche oblige de tirer la poignée vers l'arrière et à l'horizontale.

**Rear panel**

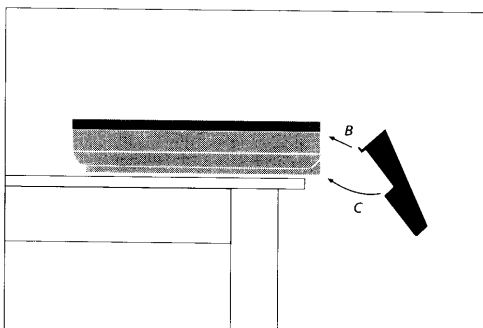
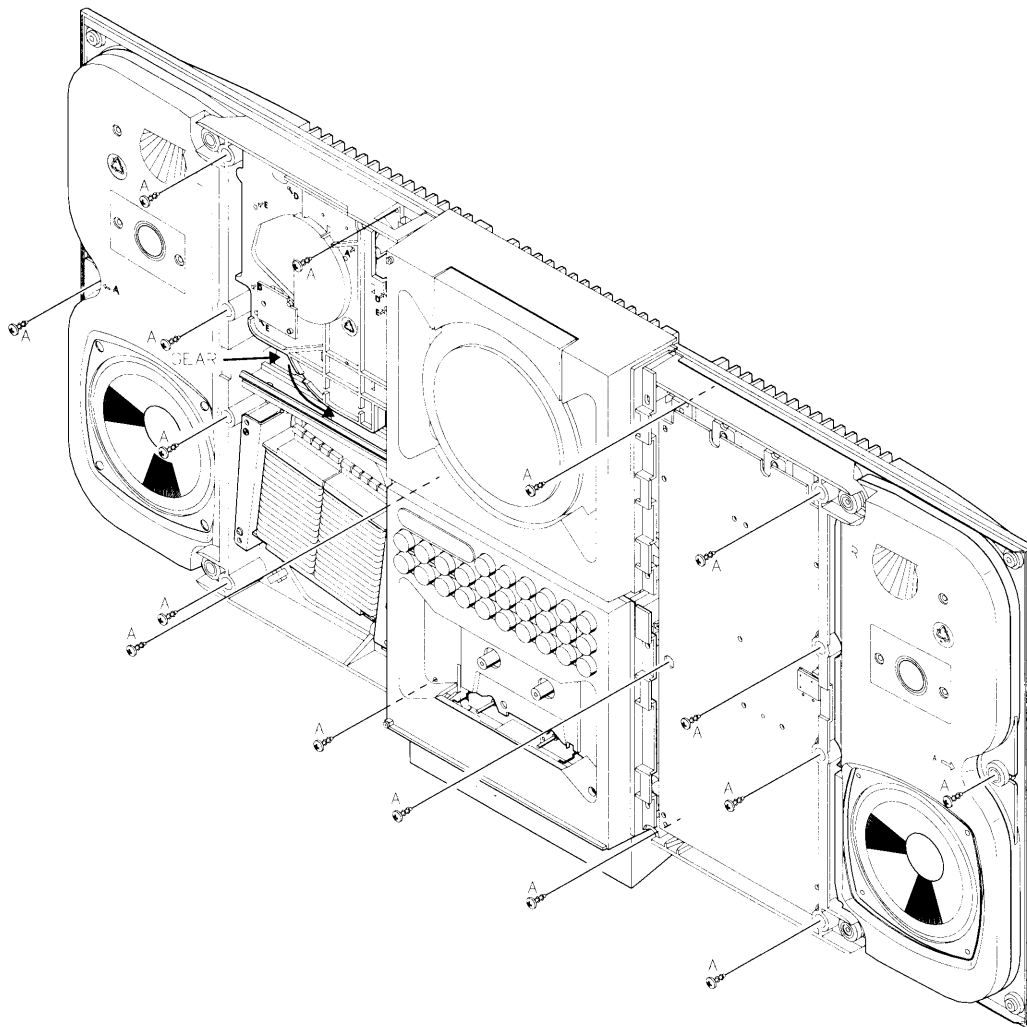
- Remove the two covers (or handle) on the rear panel (two screws).
- Remove 16 screws marked A behind the front fabric frames. The screw A behind the gearbox becomes visible when the gear of the gearbox is turned anticlockwise.
- Remove plug 2P30, coordinate 1C.
- Pull the rear panel straight back when the foot has been removed (remount chassis on foot).

**Rückwandteil**

- Die beiden Deckel (oder den Handgriff) am Rückwandteil (2 Schrauben) entfernen.
- Hinter den Frontstoffrahmen 16 Schrauben (Markierung A) entfernen. Die Schraube A hinter dem Getriebe kommt zum Vorschein, wenn das Zahnrad des Getriebes gegen den Uhrzeigersinn gedreht wird.
- Steckverbindung 2P30, Koordinate 1C, abmontieren.
- Rückwandteil nach Entfernen des Fußes gerade nach hinten ziehen (Chassis wieder auf Fuß montieren).

**Face arrière**

- Enlever les deux couvercles (ou la poignée) de la face arrière (2 vis).
- Enlever 16 vis repérées par un A sur la face arrière des panneaux frontaux décoratifs en tissu. La vis A masquée par la pignonerie apparaît en tournant la roue dentée dans le sens antihoraire.
- Débrancher la fiche 2P30, coordonnées 1C.
- Déposer la face arrière en la tirant après avoir enlevé l'embase (remonter le châssis sur l'embase).



**CD front frame/PCB 20 Door sensor**

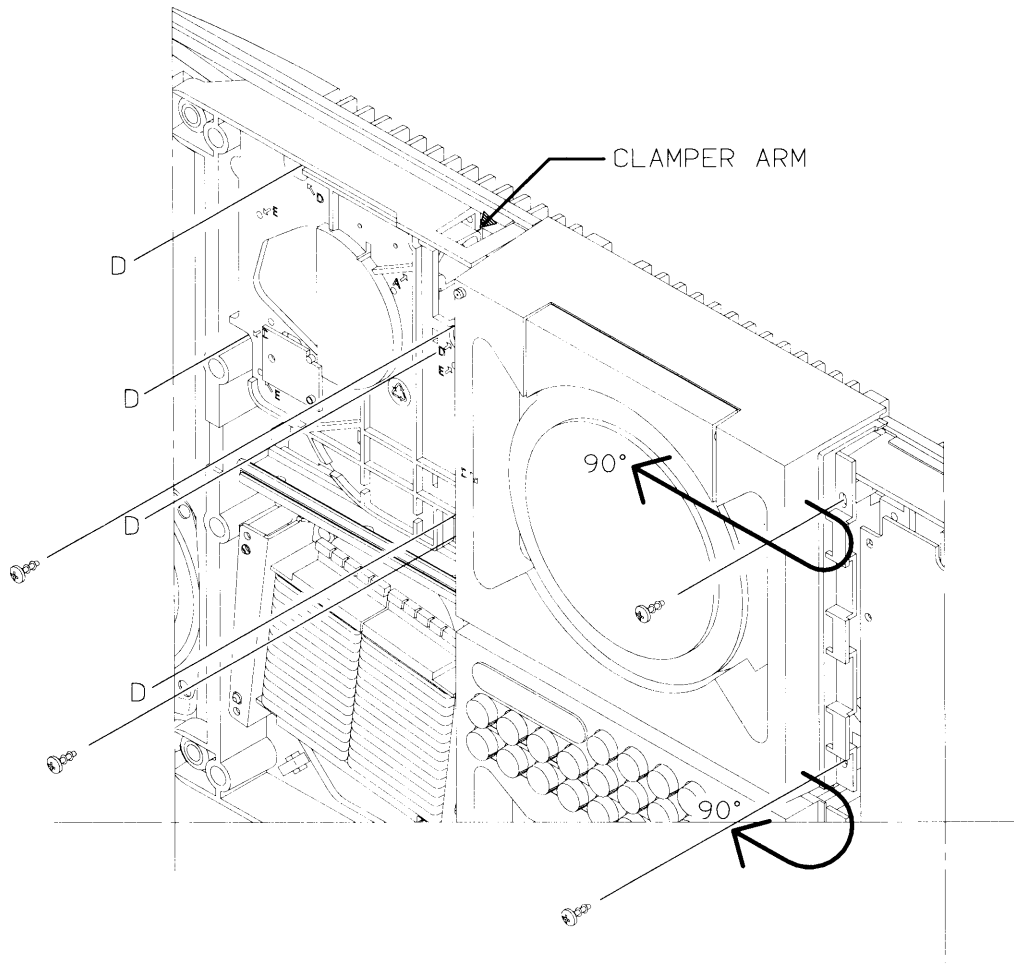
- Remove the front fabric frames.
- Remove the four screws holding the CD front frame.
- Loosen the four gearbox screws marked D, and push the gearbox to the left.
- Take out the CD front frame and turn it 90 degrees towards the left until the clamber arm goes out of mesh with the gearbox.

**CD-Frontrahmen/PCB 20 Türfühler (Door Sensor)**

- Frontstoffrahmen entfernen.
- Die 4 Schrauben des CD-Frontrahmens entfernen.
- Die 4 Schrauben des Getriebes (Markierung D) lösen, und Getriebe nach links verschieben.
- CD-Frontrahmen herausheben und um 90° nach links drehen, bis der 'Clamber'-Arm aus dem Getriebe ausgerastet ist.

**Panneau frontal décoratif de la platine laser/carte "PCB 20 Door sensor" (émetteur-récepteur de la porte)**

- Enlever les panneaux frontaux décoratifs en tissu.
- Enlever les 4 vis maintenant le panneau frontal décoratif de la platine laser.
- Desserrer les 4 vis D de la pignonnerie. Repousser la pignonnerie vers la gauche.
- Sortir le panneau frontal décoratif de la platine laser en le soulevant, le tourner de 90° vers la gauche jusqu'à ce que le levier du dispositif de maintien ne soit plus en prise avec la pignonnerie.



**Tape/Keyboard front frame**

- Remove the front fabric frames.
- Remove the four screws holding the Tape/Keyboard front frame.
- Pull out the Tape/Keyboard front frame when the foot has been removed (remount chassis on foot).

**Gearbox/PCB 9 Gear sensor**

- Remove the front fabric frames.
- Turn the gear of the gearbox anticlockwise until the sliding bracket for the glass door and the CD clamper are in the open position.
- Pull the sliding bracket for the glass door free of the gearbox arm in the open position.
- Remove the four gearbox screws marked D.
- Pull out the gearbox (ease gearbox and clamper arms free) and remove the plugs 5P17 and 5P18.
- Dismantle the gearbox by removing the four screws E.

**Sliding bracket for glass door**

- Pull the sliding bracket for the glass door free of the gearbox arm in the open position.
- Push the sliding bracket down and off.

**Transformer**

- Remove the front fabric frames.
- Remove the Tape/Keyboard front frame.
- Remove plug 10P12.
- Remove five screws.
- Pull out the transformer, and remove 5P13 and 5P18 (pull the two leads out of the spring-loaded socket by pushing a pointed object into the free hole above the lead to be removed).

**Tape/Keyboard-Frontrahmen**

- Frontstoffrahmen entfernen.
- Die 4 Schrauben des Tape/Keyboard-Frontrahmens entfernen.
- Den Tape/Keyboard-Frontrahmen nach Entfernen des Fußes herausziehen (Chassis wieder auf Fuß montieren).

**Getriebe/PCB 9 Getriebefühler**

- Frontstoffrahmen entfernen.
- Zahnrad des Getriebes gegen den Uhrzeigersinn drehen, bis der Schlitten der Glastür und CD-'Clamper' in offener Position stehen.
- Schlitten der Glastür vom Getriebearm in Position 'Offen' freiheben.
- Die 4 Schrauben des Getriebes (Markierung D) entfernen.
- Getriebe herausziehen (Getriebe- und 'Clamper'-Arm vorsichtig herauslösen), und die Steckverbindungen 5P17 und 5P18 abmontieren.
- Zum Zerlegen des Getriebes die 4 Schrauben (Markierung E) entfernen.

**Schlitten für Glastür**

- Schlitten der Glastür vom Getriebearm in Position 'Offen' freiziehen.
- Schlitten nach unten drücken und abnehmen.

**Transformator**

- Frontstoffrahmen entfernen.
- Tape/Keyboard-Frontrahmen entfernen.
- Steckverbindung 10P12 abmontieren.
- 5 Schrauben entfernen.
- Transformator herausziehen und 5P13 und 5P18 abmontieren (die beiden Leitungen aus den Federanschlüssen herausziehen. (Hierzu ist ein spitzer Gegenstand in das freie Loch über jeder der zu lösenden Leitungen hineinzudrücken).

**Panneau frontal décoratif Tape/Keyboard (platine-cassettes/clavier)**

- Déposer les panneaux frontaux décoratifs en tissu.
- Enlever les 4 vis maintenant le panneau frontal décoratif de la platine-cassettes et du clavier.
- Sortir le panneau frontal de la platine-cassettes et du clavier après avoir enlevé l'embase (remonter le châssis sur l'embase).

**Pignonnerie/carte "PCB 9 Gear sensor" (capteur de pignonnerie)**

- Déposer les panneaux frontaux décoratifs en tissu.
- Tourner la roue dentée de la pignonnerie dans le sens antihoraire jusqu'à ce que le chariot de la porte vitrée et le dispositif de maintien du CD soient en position ouverte.
- En position ouverte, dégager le chariot de la porte vitrée du bras de la pignonnerie.
- Enlever les 4 vis D de la pignonnerie.
- Sortir la pignonnerie (dégager avec précaution le bras de la pignonnerie et le levier du dispositif de maintien). Débrancher les fiches 5P17 et 5P18.
- Désassembler la pignonnerie en enlevant les 4 vis E.

**Chariot de la porte vitrée**

- En position ouverte, dégager le chariot de la porte vitrée du bras de la pignonnerie.
- Appuyer sur le chariot pour le dégager.

**Transformateur**

- Déposer les panneaux frontaux décoratifs en tissu.
- Enlever le panneau frontal décoratif de la platine-cassettes et du clavier.
- Débrancher la fiche 10P12.
- Enlever 5 vis.
- Sortir le transformateur en le tirant et débrancher les fiches 5P13 et 5P18 (sortir les deux fils de la fiche à ressort en enfonçant un objet pointu dans l'orifice libre surmontant le fil à dégager).

### PCB 1 Tuner/PCB 17 Front end

Service position for the primary side can be obtained by turning PCB 2 into service position.

- Remove the rear panel.
- Remove three screws, and turn PCB 1 into service position. Remember to connect the ground lead to the antenna plug when reinstalling.

### PCB 1 Tuner/PCB 17 'Front End'

Service-Position für die Primärseite kann dadurch erzielt werden, daß PCB 2 in Service-Position gedreht wird.

- Rückwandteil entfernen.
- 3 Schrauben entfernen, und PCB1 in Service-Position verdrehen. Beim Zusammenbau muß die Masseleitung wieder mit der Antennensteckbuchse verbunden werden.

### Cartes "PCB 1 Tuner" (sélecteur de canaux)/"PCB 17 Front end"

Il est possible d'amener le côté primaire en position de maintenance en pivotant la carte PCB 2 dans une position correspondante.

- Déposer la face arrière.
- Enlever 3 vis et pivoter la carte PCB 1 en position de maintenance. Ne pas oublier de relier le câble de masse à la prise d'antenne lors du montage.

### PCB 2 Amplifier/PCB 22 Active filter

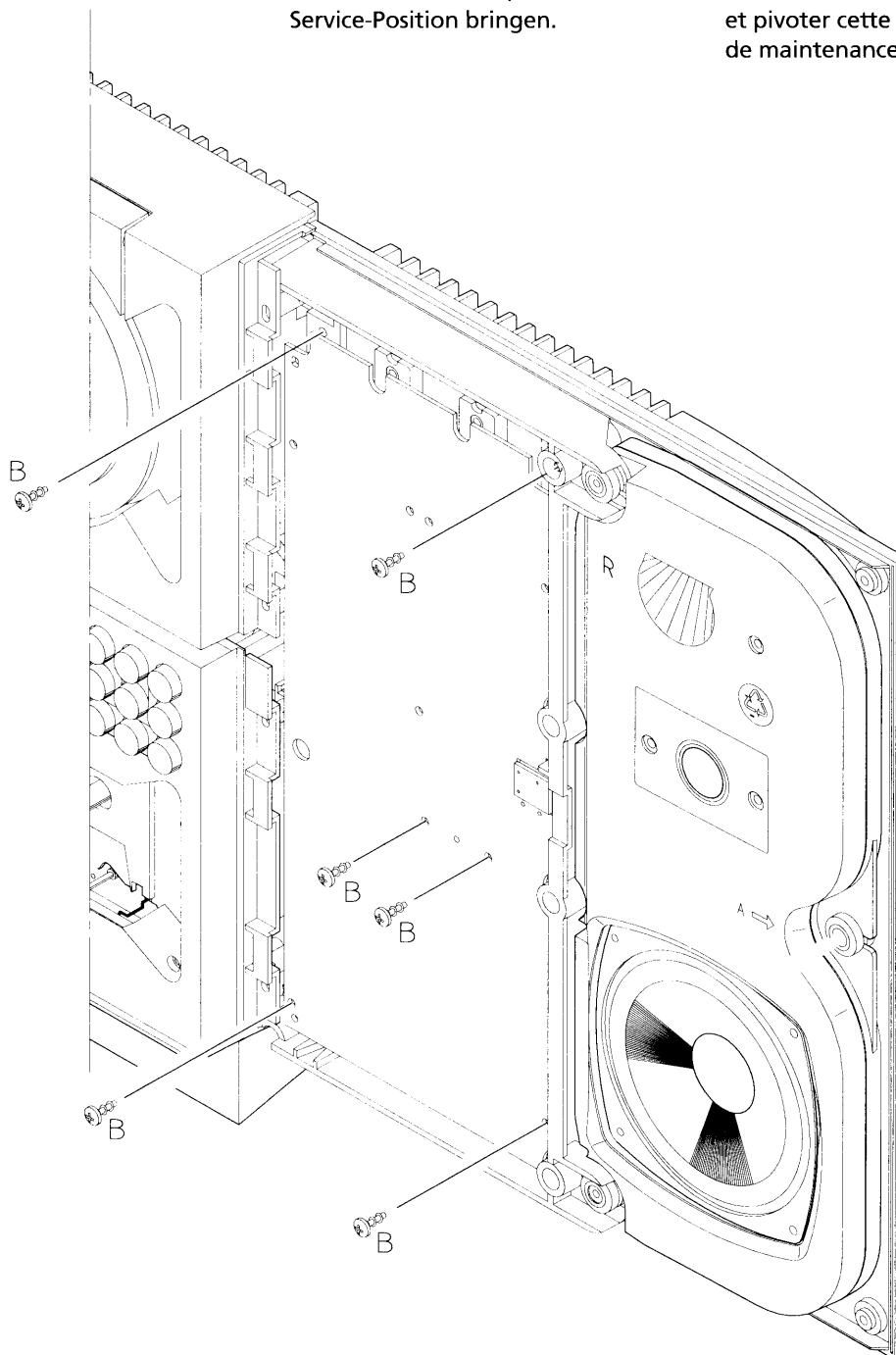
- Remove the right-hand front fabric frame.
- Remove the six screws marked B on PCB 2, and turn PCB 2 into service position.

### PCB 2 Verstärker (Amplifier)/PCB 22 Aktiv-Filter

- Rechten Frontstoffrahmen entfernen.
- Die 6 Schrauben (Markierung B) auf PCB 2 entfernen, und PCB 2 in Service-Position bringen.

### Cartes "PCB 2 Amplifier" (amplificateur)/"PCB 22 Active filter" (filtre actif)

- Déposer le panneau frontal décoratif droit en tissu.
- Enlever les 6 vis B de la carte PCB 2 et pivoter cette carte en position de maintenance.



**PCB 3 Microprocessor**

- Remove the Tape/Keyboard front frame.
- Remove the plugs, lift the spring-loaded pins (one in each side) and pull out PCB 3.

**PCB 4 Display & Keyboard**

- Remove the Tape/Keyboard front frame.
- Remove the stiffening plate and lift PCB 4 free of the Tape/Keyboard front frame.

When replacing contact foil, the cover plate may be cut free of PCB 4 with a knife/scissors.

**PCB 5 Power supply and motor control**

Service position for the primary side can be obtained by removing the gearbox.

- Remove the rear panel.
- Remove the two transport screws for CD as well as the two screws holding the metal rear plate.
- Loosen PCB 5 by means of the two spring-loaded pins, and remove all plugs.

**PCB 6 IR receiver**

- Remove the CD and Tape/Keyboard front frames.
- Pull out PCB 6 into service position.

**PCB 7 Tape/PCB 12 Oscillator**

Service position for the primary side can be obtained by turning PCB 2 into service position.

- Remove the rear panel.
- Loosen PCB 7 by means of the spring-loaded pin.

**PCB 3 Mikroprozessor**

- Tape/Keyboard-Frontrahmen entfernen.
- Steckverbindungen entfernen, Federzapfen anheben (einer auf jeder Seite) und PCB 3 herausziehen.

**PCB 4 Display & Keyboard**

- Tape/Keyboard-Frontrahmen entfernen.
- Versteifungsplatte entfernen, und Tape/Keyboard-Frontrahmen freiheben.

Zum Austausch der Kontaktfolie kann die Abdeckplatte von PCB 4 freigeschnitten werden.

**PCB 5 Stromversorgung und Motorsteuerung (Power Supply and Motor Control)**

Service-Position für die Primärseite kann durch Entfernen des Getriebes erzielt werden.

- Rückwandteil entfernen.
- Die beiden Transportschrauben für den CD-Teil sowie die beiden Schrauben, die die Rückplatte aus Metall festhalten, entfernen.
- PCB 5 mit Hilfe der beiden Federzapfen lösen und alle Steckverbindungen abmontieren.

**PCB 6 IR-Empfänger (IR Receiver)**

- CD- und Tape/Keyboard-Frontrahmen entfernen.
- PCB 6 in Service-Position herausziehen.

**PCB 7 Tape/PCB 12 Oszillator**

Service-Position für die Primärseite kann dadurch erzielt werden, daß PCB 2 in Service-Position gedreht wird.

- Rückwandteil entfernen.
- PCB 7 mit Hilfe des Federzapfens lösen.

**Carte "PCB 3 Microprocessor" (microprocesseur)**

- Déposer le panneau frontal décoratif de la platine-cassettes et du clavier.
- Débrancher les fiches, soulever les ergots élastiques (un de chaque côté) et sortir la carte PCB 3 en la tirant.

**Carte "PCB 4 Display & Keyboard" (affichage et clavier)**

- Déposer le panneau frontal décoratif de la platine-cassettes et du clavier.
- Déposer la plaque de renfort et soulever la carte PCB 4 pour la dégager du panneau frontal décoratif de la platine-cassettes et du clavier.

Pour changer le film de contact, il est possible de découper la plaque de protection afin de l'enlever de la carte PCB 4.

**Carte "PCB 5 Power supply and motor control" (alimentation électrique et commande moteur)**

Il est possible d'amener le côté primaire en position de maintenance en déposant la pignonnerie.

- Déposer la face arrière.
- Enlever les deux vis de transfert du CD ainsi que les deux vis maintenant la plaque métallique arrière.
- Dégager la carte PCB 5 en agissant sur les deux ergots élastiques et débrancher l'ensemble des fiches.

**Carte "PCB 6 IR receiver" (récepteur IR)**

- Déposer le panneau frontal décoratif de la platine laser et de l'ensemble platine-cassettes/clavier.
- Sortir la carte PCB 6 pour l'amener en position de maintenance.

**Cartes "PCB 7 Tape" (platine-cassettes)/"PCB 12 Oscillator" (oscillateur)**

Il est possible d'amener le côté primaire en position de maintenance en pivotant la carte PCB 2 dans une position correspondante.

- Déposer la face arrière.
- Dégager la carte PCB 7 en agissant sur les deux ergots élastiques.



**PCB 8 CD**

- Remove the rear panel.
- Remove the two transport screws for CD as well as the two screws holding the metal rear plate.
- Loosen the spring-loaded pins, and push upwards and out of the holder (watch out for the flat cable to the CD drive mechanism).

**PCB 9 Gear sensor**

See Gearbox.

**PCB 10 Mains**

- Remove the rear panel.
- Remove the Tape/Keyboard front frame.
- Remove the plugs 10P10, 10P11 and 10P12 as well as the screw holding PCB 10.
- Remove the five screws holding the transformer.
- Pull PCB 10 backwards and out of the product by pulling cautiously at the transformer.

**PCB 11 RE-deck electronics**

- Remove the Tape/Keyboard front frame.
- Remove the three screws holding the cover plate, and take out the tape transport mechanism. PCB 11 is located at the very top of the tape transport mechanism.

**PCB 12 Oscillator**

See PCB 7 Tape.

**PCB 17 Front end**

See PCB 1 Tuner.

**PCB 20 Door sensor**

See CD front frame.

**PCB 21 Active antenna**

See Handle.

**PCB 22 Active filter**

See PCB 2 Amplifier.

**PCB 8 CD**

- Rückwandteil entfernen.
- Die beiden Transportschrauben für den CD-Teil sowie die beiden Schrauben, die die Rückplatte aus Metall festhalten, entfernen.
- Federzapfen lösen und anschließend nach oben und aus der Halterung herausdrücken (auf das Flachkabel für das CD-Laufwerk achten!).

**PCB 9 Getriebefühler (Gear Sensor)**

Siehe hierzu Getriebe.

**PCB 10 Netzteil (Mains)**

- Rückwandteil entfernen.
- Tape/Keyboard-Frontrahmen entfernen.
- Steckverbindungen 10P10, 10P11 und 10P12 sowie die Schraube, die PCB 10 festhält, abmontieren.
- Die 5 Schrauben, die den Transformator festhalten, abmontieren.
- Durch vorsichtiges Ziehen am Transformator PCB 10 nach hinten aus dem Gerät herausziehen.

**PCB 11 'RE-Deck elektronik'**

- Tape/Keyboard-Frontrahmen entfernen.
- Die 3 Schrauben, die die Abdeckplatte halten, entfernen und das Tape-Laufwerk herausheben. PCB 11 sitzt ganz oben auf dem Tape-Laufwerk.

**PCB 12 Oszillator**

Siehe hierzu PCB 7 Tape.

**PCB 17 'Front End'**

Siehe hierzu PCB 1 Tuner.

**PCB 20 Türfühler (Door Sensor)**

Siehe hierzu CD-Frontrahmen.

**PCB 21 Aktivantenne (Active Antenna)**

Siehe hierzu Handgriff.

**PCB 22 Aktivfilter (Active Filter)**

Siehe hierzu PCB 2 Verstärker (Amplifier).

**Carte "PCB 8 CD" (platine laser)**

- Déposer la face arrière.
- Enlever les deux vis de transfert du CD ainsi que les deux vis maintenant la plaque métallique arrière.
- Enfoncer les ergots élastiques et repousser la carte vers le haut pour la sortir de son support (faire attention au câble en nappe relié au mécanisme d'entraînement du CD).

**Carte "PCB 9 Gear sensor" (capteur de pignonnerie)**

Voir pignonnerie.

**Carte "PCB 10 Mains" (secteur)**

- Déposer la face arrière.
- Déposer le panneau frontal décoratif de la platine-cassettes et du clavier. Débrancher les fiches 10P10, 10P11 et 10P12 et enlever la vis maintenant la carte PCB 10.
- Enlever les 5 vis maintenant le transformateur.
- Sortir la carte PCB 10 de l'appareil en extrayant prudemment le transformateur.

**Carte "PCB 11 RE-deck electronic"**

- Déposer le panneau frontal décoratif de la platine-cassettes et du clavier.
- Enlever les 3 vis maintenant la plaque de protection et soulever le mécanisme d'entraînement de la cassette. La carte PCB 11 est logée sur le haut du mécanisme.

**Carte "PCB 12 Oscillator" (oscillateur)**

Voir "PCB 7 Tape".

**Carte "PCB 17 Front end"**

Voir "PCB 1 Tuner".

**Carte "PCB 20 Door sensor" (émetteur-récepteur de la porte)**

Voir "panneau frontal décoratif de la platine laser".

**Carte "PCB 21 Active antenna" (antenne active)**

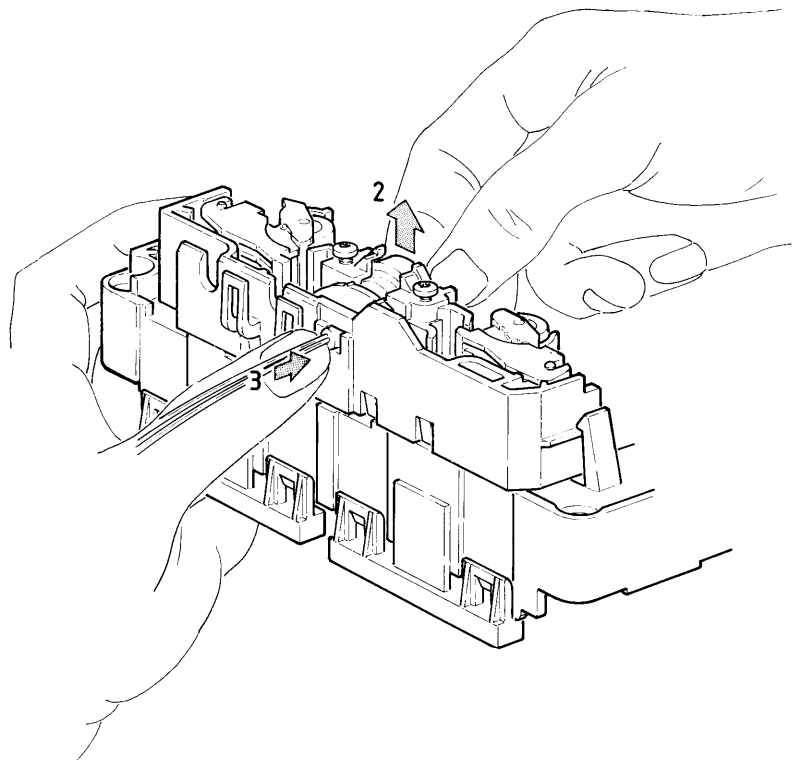
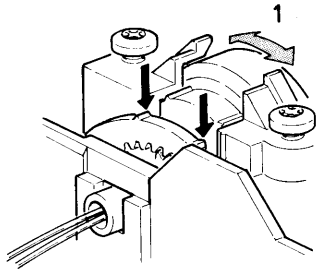
Voir "poignée".

**Carte PCB 22 Active filter (filtre actif)**

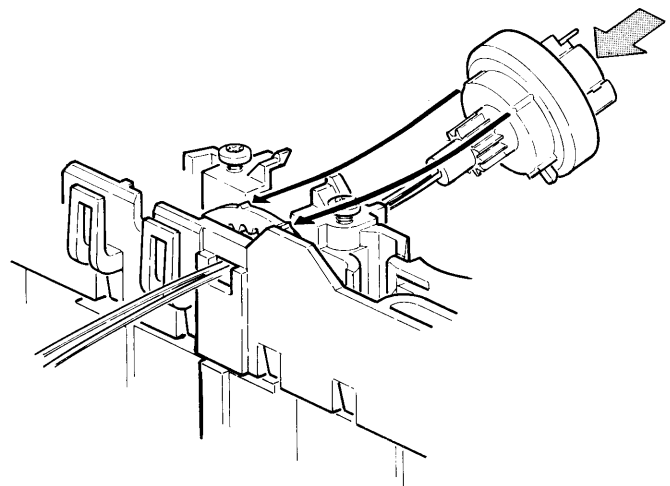
Voir "PCB 2 Amplifier".

**TAPE MECHANISM**

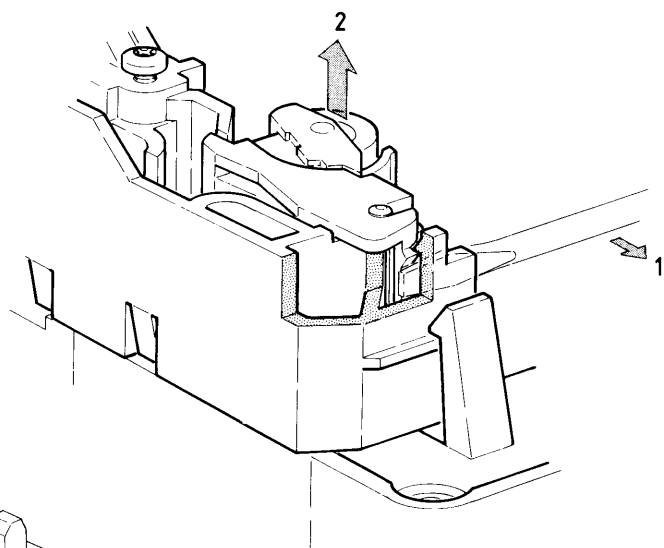
Demounting of rotation head



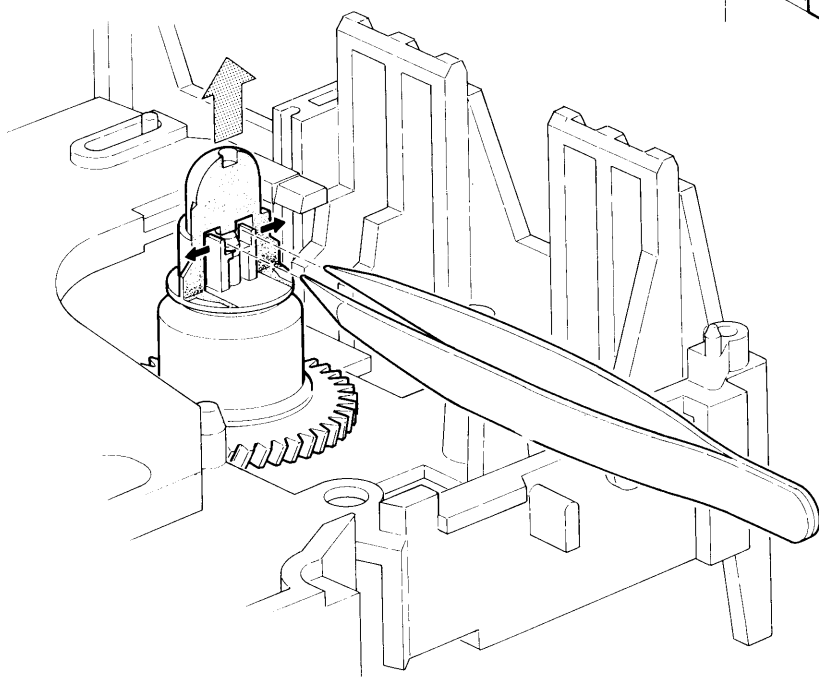
Mounting of rotation head



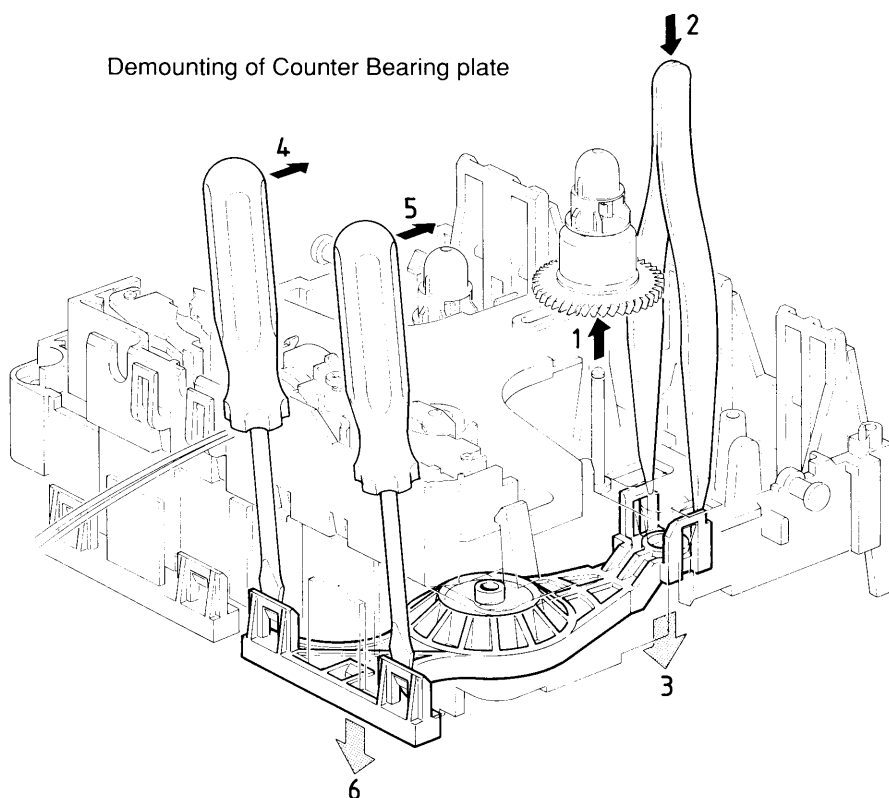
Demounting of pinch roller



Demounting of carrier



Demounting of Counter Bearing plate





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