

# Service Manual

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74 CD - 42/21B/22B/25B  
74 CD - 52/21B/22B/25B  
Compact disc player

This service manual explains them by extracting the different specifications from those of the model CD - 42MKII/CD - 52MKII, based on model CD - 42/CD - 52. For both electrical and mechanical information on the after - sales service which is not stated, all information is described in the model CD - 32/CD - 42/CD - 52 service manual(Code number 4822 725 50948).

The dispatch of the parts for after - sales service has to be referred to this service manual, with the first priority.

For this reason, please use this service manual with referring to the model CD - 32/CD - 42/CD - 52 service manual, without fail.

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**model CD - 42MKII / CD - 52MKII**

Different Parts between model CD-42 and CD-42MKII

PAGE	POS. NO.	CD-42	CD-42MKII	DESCRIPTION
10	1	4822 444 40472	4822 444 40614	Front
	141	4822 462 41859	4822 462 41859	Foot, 高さ 18mm
	141		4822 462 41955	Foot, 高さ 14mm(New)
	301		4822 321 10445	Ac-cord /21B
	301		4822 321 10249	Ac-cord /22B
	301		4822 321 10719	Flex, Mains /25B
	303		4822 272 10303	Adapter, Voltage adapter /21B
	309	4822 736 21187	4822 736 21525	User's Manual, CD-42MKII
	455	4822 600 70644	4822 600 70675	Box for CD-42MKII
34	2547	4822 124 41334	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
	2657	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2658	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2659	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2660	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
35	2678	4822 124 23268	4822 124 80294	Capacitor, 3300 $\mu$ F 20% 16V
	2679	4822 124 41853	4822 124 80295	Capacitor, 1000 $\mu$ F 20% 16V
	2680	4822 124 40433	4822 124 80297	Capacitor, 220 $\mu$ F 20% 6.3V
	2683	4822 124 21189	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
	2684	4822 124 21189	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
37	6611	4822 209 86234	4822 209 31153	IC, NJM2114D
	6612	4822 209 86234	4822 209 31153	IC, NJM2114D
	5001	4822 146 31035	4822 146 31035	Mains Transformer /21B
	5001	4822 146 31004	4822 146 31004	Mains Transformer /22B/25B

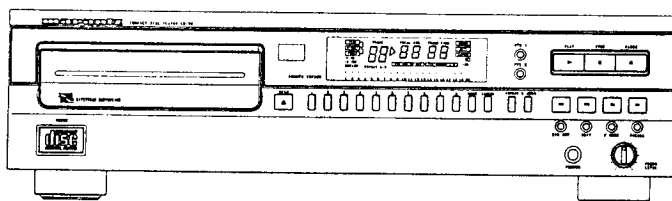
Different Parts between model CD-52 and CD-52MKII

PAGE	POS. NO.	CD-52	CD-52MKII	DESCRIPTION
10	1	4822 444 40476	4822 444 40613	Front
	141	4822 462 41859	4822 462 41859	Foot, 高さ 18mm
	141	4822 462 41955	4822 462 41955	Foot, 高さ 14mm(New)
	301		4822 321 10445	Ac-cord /21B
	301		4822 321 10249	Ac-cord /22B
	301		4822 321 10719	Flex, Mains /25B
	303		4822 272 10303	Adapter, Voltage adapter /21B
	309	4822 736 21196	4822 736 21524	User's Manual, CD-52MKII
	455	4822 600 70643	4822 600 70676	Box for CD-52MKII
34	2547	4822 124 41334	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
	2657	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2658	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2659	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	2660	4822 124 41525	4822 124 80293	Capacitor, 100 $\mu$ F 20% 25V
	35	2678	4822 124 23268	4822 124 80294
2679		4822 124 41853	4822 124 80295	Capacitor, 1000 $\mu$ F 20% 16V
2680		4822 124 40433	4822 124 80297	Capacitor, 220 $\mu$ F 20% 6.3V
2683		4822 124 21189	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
2684		4822 124 21189	4822 124 80292	Capacitor, 470 $\mu$ F 20% 35V
37	6611	4822 209 86234	4822 209 31153	IC, NJM2114D
	6612	4822 209 86234	4822 209 31153	IC, NJM2114D
	5001	4822 146 31035	4822 146 31035	Mains Transformer /21B
	5001	4822 146 31004	4822 146 31004	Mains Transformer /22B/25B

# Service Manual

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74CD32 / 01B/02B/05B/07B  
74CD42 / 01B/02B/05B/07B  
74CD52 / 01B/02B/05B/07B  
Compact disc player



## CONTENTS

SECTION .....	PAGE
1 TECHNICAL SPECIFICATIONS .....	1
2 CONTROLS AND CONNECTIONS .....	2
3 FAULT FINDING GUIDE .....	3
4 SERVICING HINTS .....	7
5 EXPLODED VIEW (MECHANICAL PARTS LIST) .....	10
6 BLOCK DIAGRAM .....	13
7 CIRCUIT DIAGRAM AND PARTS LOCATION .....	15
8 ELECTRICAL PARTS LIST .....	34

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## TECHNICAL SPECIFICATIONS : CD-32, CD-42, CD-52

### General

1. Mains voltage : [/01B] 110-120V, 220-240V [/02B] 230V  
[/05B, /07B] 240V
2. Mains frequency : 50Hz
3. Mains voltage selection : By soldering
4. Power consumption mains, operated : 15W

### External RC-5 connection

- Specification : V-in Low : from -2.0V to +1.6V  
V-in High : from +3V to +7.5V  
R-in : from 47 kOhm to 68 kOhm

### Line output

1. Number of channels : 2
2. Output voltage : 2 Vrms +/- 2dB
3. Unbalance left-right : max. +/- 0.25dB
4. Output resistance : 200 Ohm
5. Amplitude linearity : max. +/- 0.2dB from 20 Hz to 20 kHz  
typ. +/- 0.03dB from 20 Hz to 20 kHz
6. Phase non-linearity : max. +/- 1.0° from 20 Hz to 20 kHz  
typ. +/- 0.5° from 20 Hz to 20 kHz
7. Signal to noise ratio : min. 100dB from 20 Hz to 20 kHz  
typ. 105 dB
8. Dynamic range (-60dB) : min. 90dB from 20 Hz to 20 kHz (max. 0.0040 %)  
typ. 96 dB (typ. 0.0025 %)
9. Total harmonic distortion + noise : min. 88dB from 20 Hz to 20 kHz (max. 0.0064 %)  
typ. 92 dB (typ. 0.0032 %)
10. Intermodulation distortion : min. 88dB from 20 Hz to 20 kHz (max. 0.0064 %)  
typ. 92 dB (typ. 0.0032 %)
11. Outband attenuation : min. 60dB above 24.8 kHz
12. Channel separation : min. 86dB from 20 Hz to 20 kHz  
typ. 90 dB
13. Muting during random acces : min. 90dB from 20 Hz to 20 kHz
14. Automatic switched de-emphasis with time constant 15/50  $\mu$ s

### Variable headphone

1. Max. output voltage : 7.4 Vrms
2. Load impedance range : 30-600  $\Omega$
3. Output impedance : 150  $\Omega$
4. Max. output power : 50 mW into 32  $\Omega$   
90 mW into 150  $\Omega$   
50 mW into 600  $\Omega$
5. Signal to noise ratio : min. 90dB
6. Dynamic range : min. 90dB (20 Hz to 20 kHz)
7. THD and noise : min. 80dB (20 Hz to 20 kHz)
8. Intermodulation distortion : min. 80dB (20 Hz to 20 kHz)
9. Channel separation : min. 70dB (20 Hz to 20 kHz)

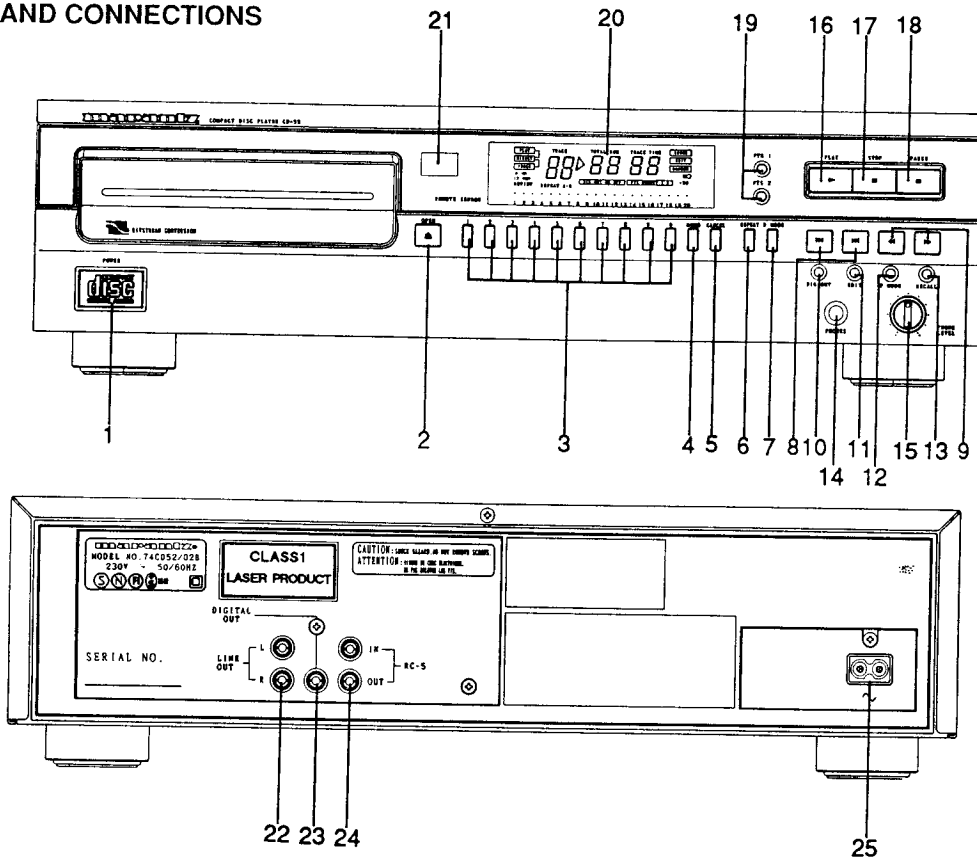
### Dimensions and weight

1. Apparatus tray closed : 420 (W) x 100 (H) x 284 (D), W/O Legs.
2. Apparatus tray open : 420 (W) x 100 (H) x 429 (D)
3. Weight without packing : 4.4 Kg

### Laser diode

1. Wavelength : 780nm +/- 5nm
2. Output power on laserdiode : typ. 3 mW
3. Output power after objective lens : 100  $\mu$ W

## CONTROLS AND CONNECTIONS



### Front of player

1	POWER	1010	13	RE CALL	1046
2	OPEN	1027	14	PHONES	1651
3	'1 ~ 0' digit keys	1020, 1051, 1021, 1028, 1034, 1030, 1050, 1029, 1031, 1033	15	PHONE LEVEL	3691
4	MEMO	1032	16	PLAY	1038
5	CANCEL	1047	17	STOP	1037
6	REPEAT	1035	18	PAUSE	1039
7	D MODE	1052	19	FTS 1, 2	1026, 1023
8	◀ and ▶ (Previous and Next)	1044, 1045	20	Display	1061
9	◀◀ and ▶▶ (Search)	1036, 1040	21	REMOTE SENSOR	1060
10	DIG OUT	1048			
11	EDIT	1049			
12	P MODE	1025			

### Back of player

22	LINE OUT	1008
23	DIGITAL OUT	1008
24	RC-5	1008
25	Mains socket	1009

### DIFFERENCE OF CD52/42/32

	ITEM & CONTENT	CD52	CD42	CD32		ITEM & CONTENT	CD52	CD42	CD32
1	1020 KEY 1	X	-	-	12	1034 KEY 5	X	-	-
2	1021 KEY 3	X	-	-	13	1035 REPEAT	X	-	-
3	1023 FTS 2	X	X	-	14	1046 RECALL	X	-	-
4	1025 P.MODE	X	-	-	15	1047 CANCEL	X	-	-
5	1026 FTS 1	X	X	-	16	1048 DIG.OUT	X	-	-
6	1028 KEY 4	X	-	-	17	1049 EDIT	X	-	-
7	1029 KEY 8	X	-	-	18	1050 KEY 7	X	-	-
8	1030 KEY 6	X	-	-	19	1051 KEY 2	X	-	-
9	1031 KEY 9	X	-	-	20	1052 D.MODE	X	-	-
10	1032 MEMO	X	-	-	21	1060 IR SENSOR	X	X	-
11	1033 KEY 0	X	-	-					

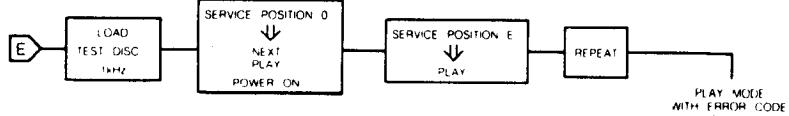
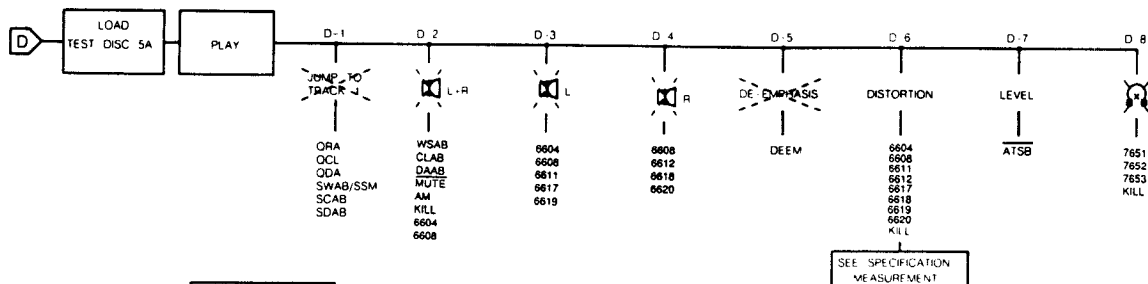
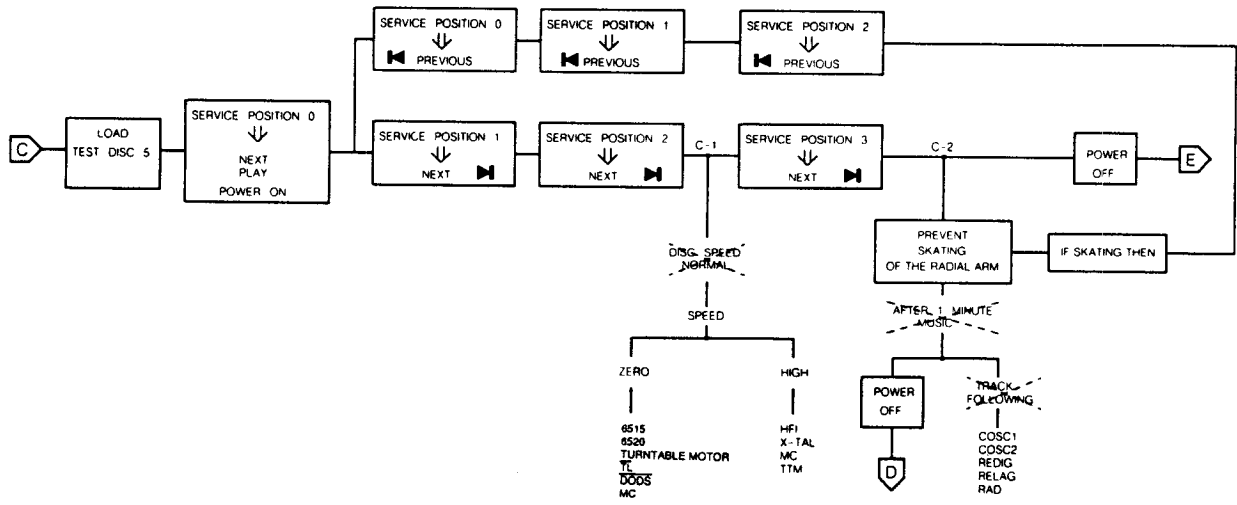
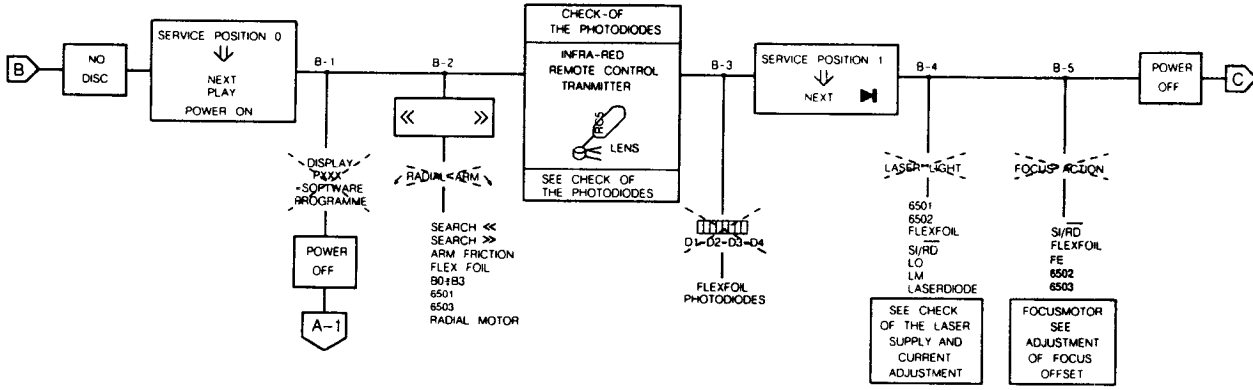
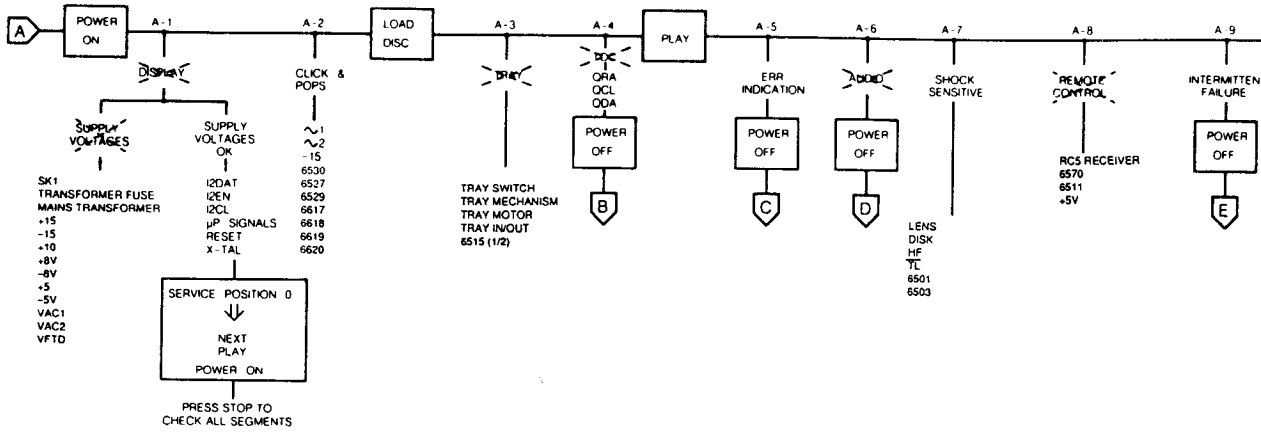
# FAULTFINDING GUIDE

## TROUBLE SHOOTING (FAULT FINDING TREE)

Follow the path of the faultfinding tree beginning at the top left. Perform the actions you come across in the various blocks.  
 Look at the various side branches to find out if the information you see there applies to your problem. If, for instance, you find the indication **Display**, this means that no picture appears on the display.

If you establish this fault, follow the branch and perform the recommended actions. Check the signals mentioned. In a number of branches further reference is made to measurements you could carry out. These measurements are explained in several tables further on in this manual.

### START-UP PROCEDURE



### B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode					Remarks
1	D2 D1 D3 D4	power on	   	-	-	signal 4=6=7=8	Signal depends on Distance lens ← IR LED of remote control

### B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply and the monitor diode form a feedback system.

A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete C.D.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with the replacement circuit for laser assembly.

Step	Signal	Mode			Remarks
1	LO	serv. pos. 2		1.8<V<2.3	
	LM	SK		170<mV<220	
2	LO	serv. pos. 2		1.8<V<2.3	
	LM	SK		170<mV<220	
3	LO	Power on		0V ± 0.2V	No light

After opening SK the led will emit a little more light for a short moment.

### B-4 LASER CURRENT ADJUSTMENT

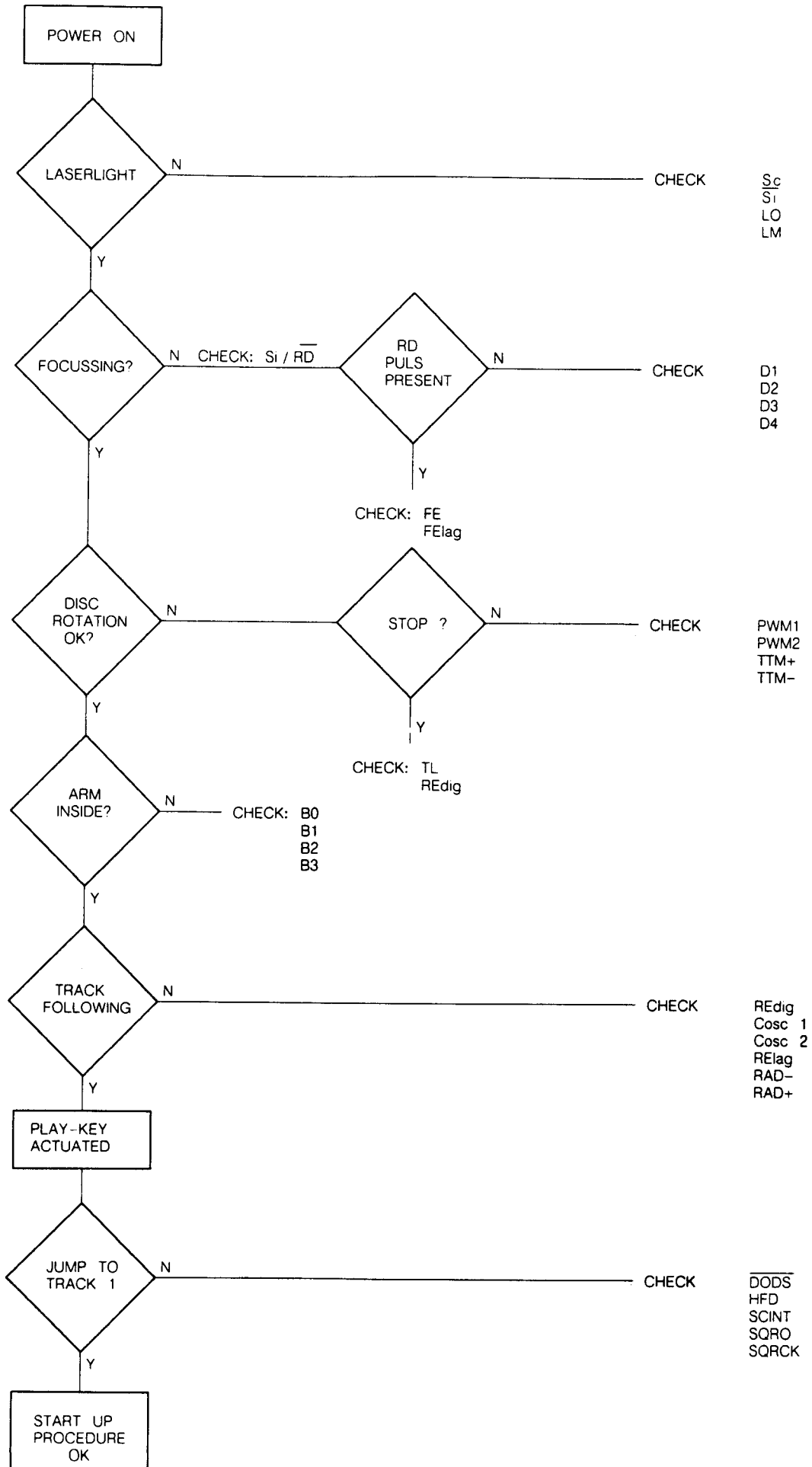
STEP	SIGNAL	MODE					REMARKS
1	--	POWER OFF	--	--	--	--	CHECK IF FLEX-FOIL IS PROPERLY CONNECTED
2	--	POWER OFF			R3519	1kΩ +10% -0	PRE ADJUSTMENT OHMIC VALUE
3	--	POWER OFF	--	--	R3553	--	SET TO MID-POSITION
4	LASER CURRENT ≡ VOLTAGE ACROSS R3501	TEST DISC 5A PLAY	  	--	--	≥15mV	IF < 15mV THEN GO TO STEP 3 AND SET R3519 TO 1/4 OR 3/4. TRY AGAIN
5	LASER CURRENT ≡ VOLTAGE ACROSS R3501	TEST DISC 5A PLAY	  	R3519	50mV	--	--
6	FE-LAG	TEST DISC 5A TRACK 1 PLAY	  	R3533	400mV	--	FINE ADJUSTMENT

### B-5 ADJUSTMENT OF FOCUS-OFFSET

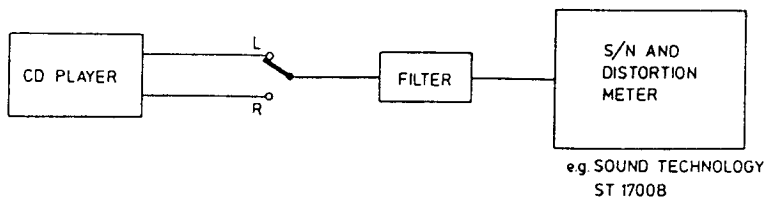
Step	Signal	Mode					Remarks
1	-	Power on no disc	-	-	R3553	-	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5	27	-	R3553	400mV ±	fine adjustment



**START UP PROCEDURE**



## SPECIFICATION MEASUREMENT



30 459 A12

### SYSTEM ERRORS

- ERROR 02 P122 Focus error: no track loss
- ERROR 03 P122 Radial start error: min. exentricity point not found
- ERROR 06 P122 TL error during jump: no positive TL or RP edge during 60 x 8 ms
- ERROR 07 P122 Subcode error: no valid subcode within 3 sec.
- ERROR 08 P122 TOC error: out of lead-in while reading TOC
- ERROR 09 P122 EEPROM cell error: EEPROM cell broken

### OPERATING ERRORS

- ERROR 30 P122 NEXT at a boarder when repeat is off
- ERROR 31 P122 PREVIOUS at a boarder when repeat is off
- ERROR 33 P122 Selected index does not exist
- ERROR 34 P122 No program
- ERROR 35 P122 Program memory full
- ERROR 36 P122 Progamed track is non existing on this CD
- ERROR 37 P122 Selected track is non existing on this CD
- ERROR 39 P122 STORE or CLEAR pressed while in play program
- ERROR 42 P122 Selected track is not a program block
- ERROR 43 P122 FTS store error: memory full
- ERROR 44 P122 FTS store error: no program
- ERROR 46 P122 FTS play error: no FTS program in memory
- ERROR 47 P122 FTS selection error: upper bound of FTS memory (next)
- ERROR 49 P122 FTS selection error: selection request while storing (next/previous)
- ERROR 51 P122 FTS selection error: selection request while storing (review)
- ERROR 52 P122 FTS selection clear error: clear request while storing
- ERROR 54 P122 FTS store error: no record id (TOC) available
- ERROR 56 P122 AB key pressed when not in play mode
- ERROR 57 P122 Store pressed while there is no track selected
- ERROR 60 P122 Fast forward/reverse bound
- ERROR 63 P122 No track possible to play in edit mode
- ERROR 74 P122 Relative time not found
- ERROR 75 P122 Search time out error

## SERVICING HINTS

In the set chip components have been applied.  
For disassembly and assembly of chip components see the figure below.

The disc should always rest properly on the turntable.  
To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.

If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used.  
(See drawing "Service disc hold-down")

The set can function normally then.

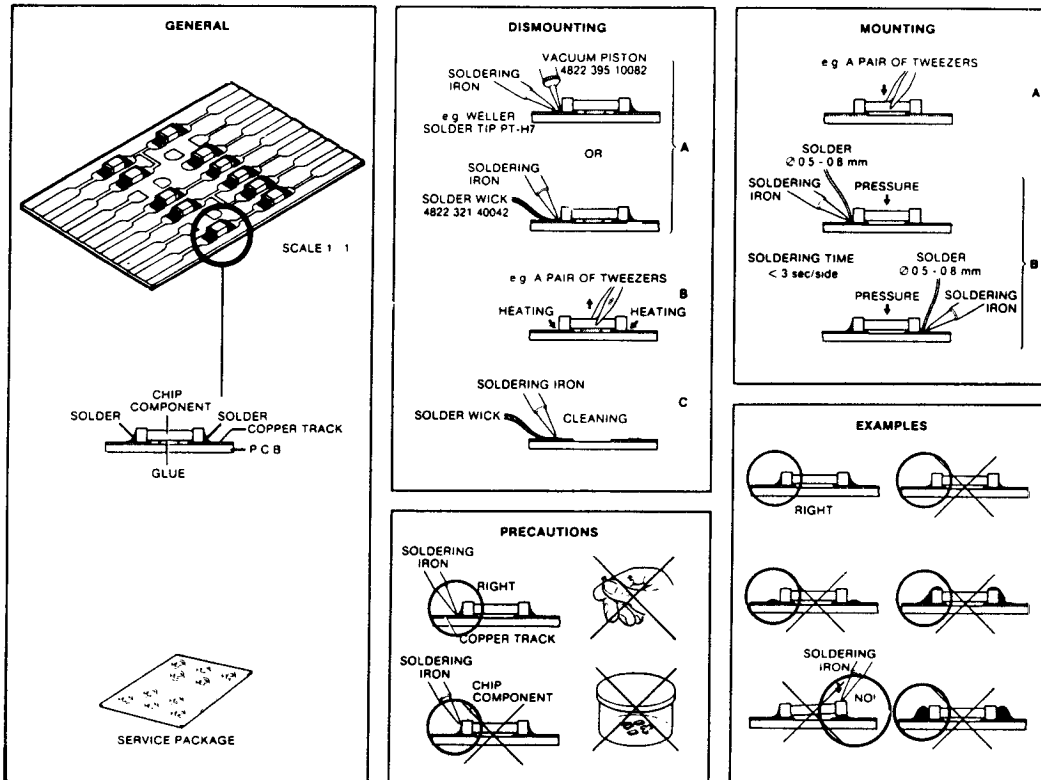
Code number of the disc hold-down is 4822 462 50383.

When the tray mechanism has been disassembled, the tray switch must be activated immediately after pressing the play button in order to ensure normal operation.

To avoid electric shock during servicing, it is recommended to mount an insulation cover over the mains leads on the servo & decoder panel. See drawing MDA 02548. The cover can be ordered under codenumber 4822 444 60655.

## SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A)	4822 397 30096
Disc 65 min 1 kHz without pause	4822 397 30155
Max. diameter disc(58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182
Insulation cover	4822 444 60655



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### ⓐ WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

### ESD



### Ⓝ WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

### ⓕ ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les

### ⓓ WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).

Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen Sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

### ⓔ AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

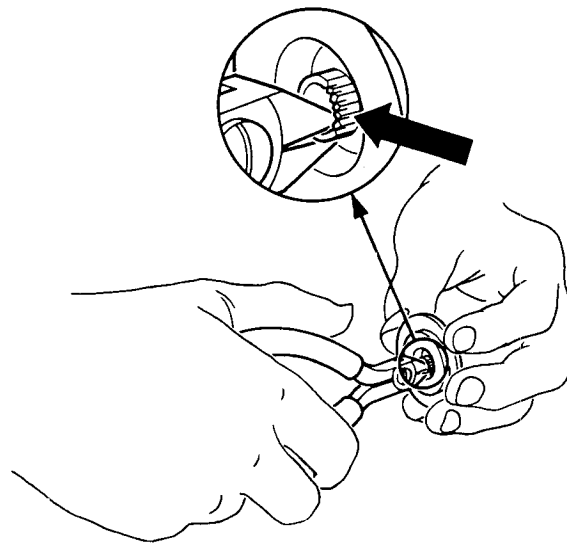
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo

## SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (test disc 5) +	
Disc with DO errors,	
Black spots and fingerprints (test	
Disc 5A)	4822 397 30096
Disc 65 min 1 kHz without pause	4822 397 30155
Max. diameter disc(58.0 mm)	4822 397 60141
Hex screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
With order filter	4822 395 30204
Service cable (4p)	4822 321 21284
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Green LED CQY G11	5322 130 32182
Insulation cover	4822 444 60655

## SERVICE DISC-HOLDDOWN

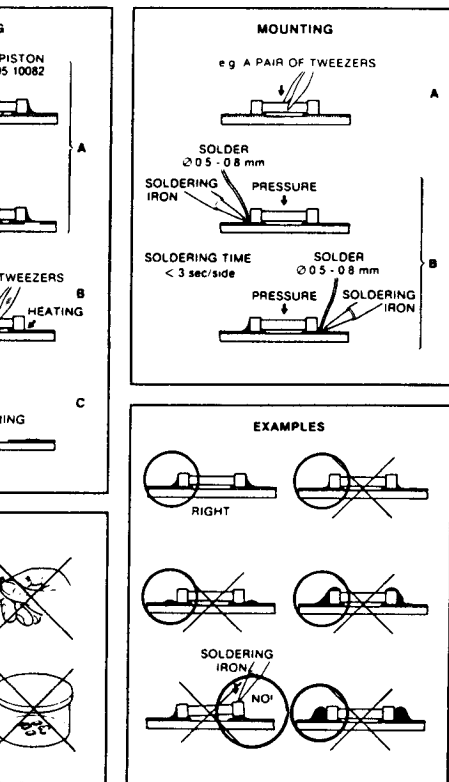
## CABINET



42 565 A12

### Compose a service Disc hold-down in the following way

- Cut in the most inner ring of a disc hold-down (4822 462 50383) with small and sharp nippers, see fig. above.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.



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### NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

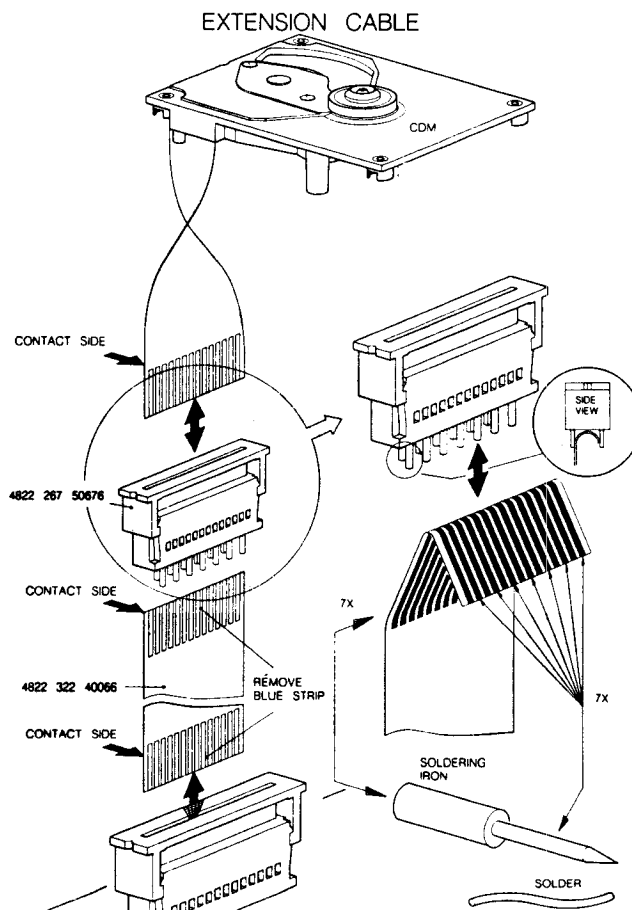
### I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cautela alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

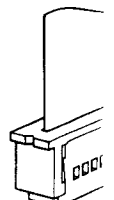
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo

## SERVICE FOIL FOR CDM

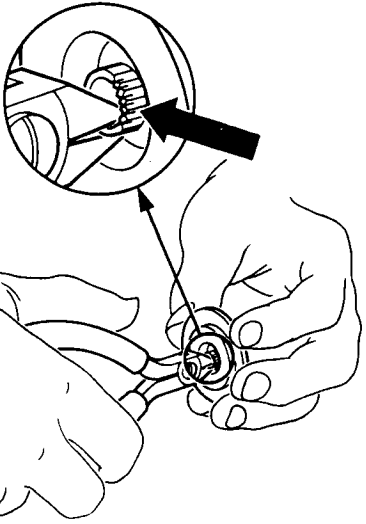


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DDOWN



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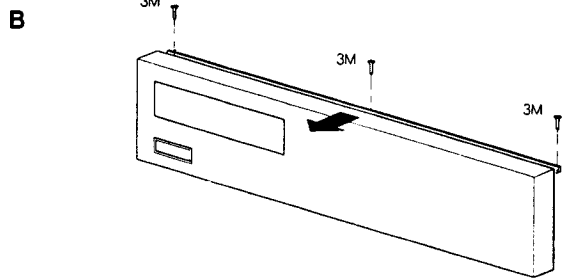
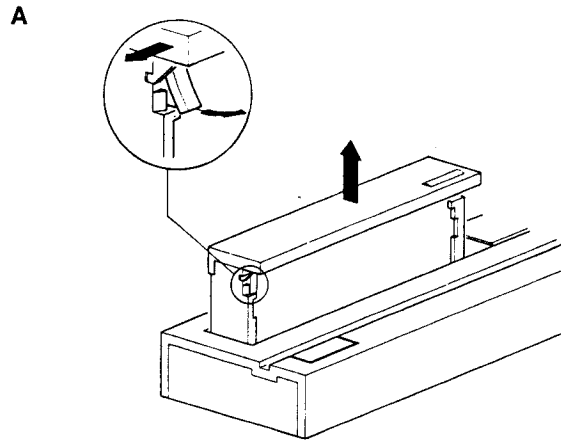
Disc hold-down in the following way

inner ring of a disc hold-down (4822) with small and sharp nippers, see fig.

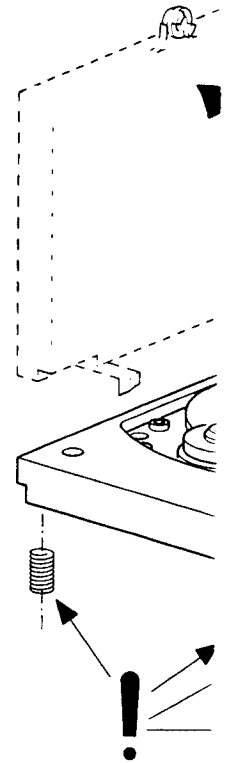
center of the innermost ring slightly with the tip of a pencil or ballpoint, so that it is stable with sufficient force.

Force decreases after certain time of use, the hole has to be enlarged with a pencil or

### CABINET DISASSEMBLY HINTS



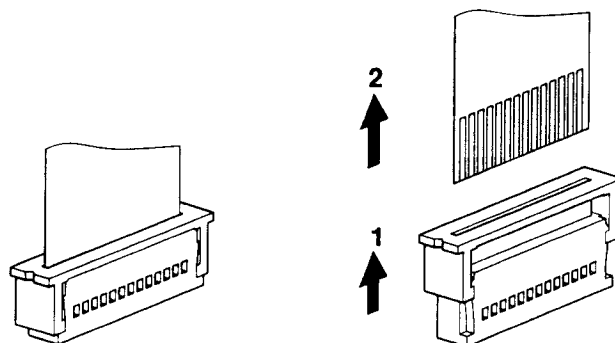
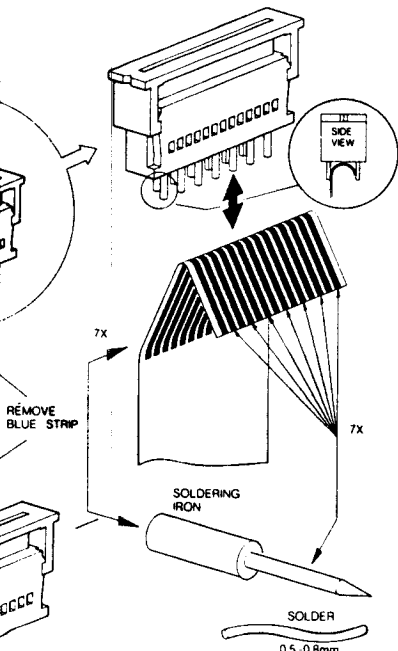
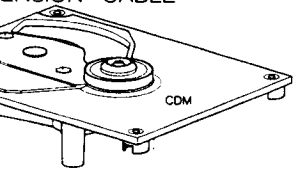
### DISASSEMBLY OF LOADING MECHANISM



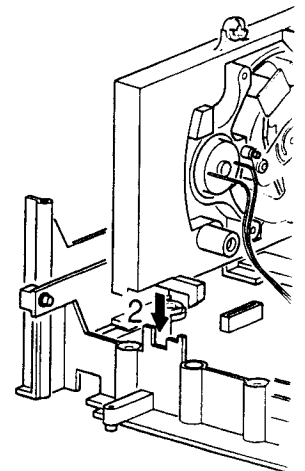
MDA 02137  
916/T19

### CDM

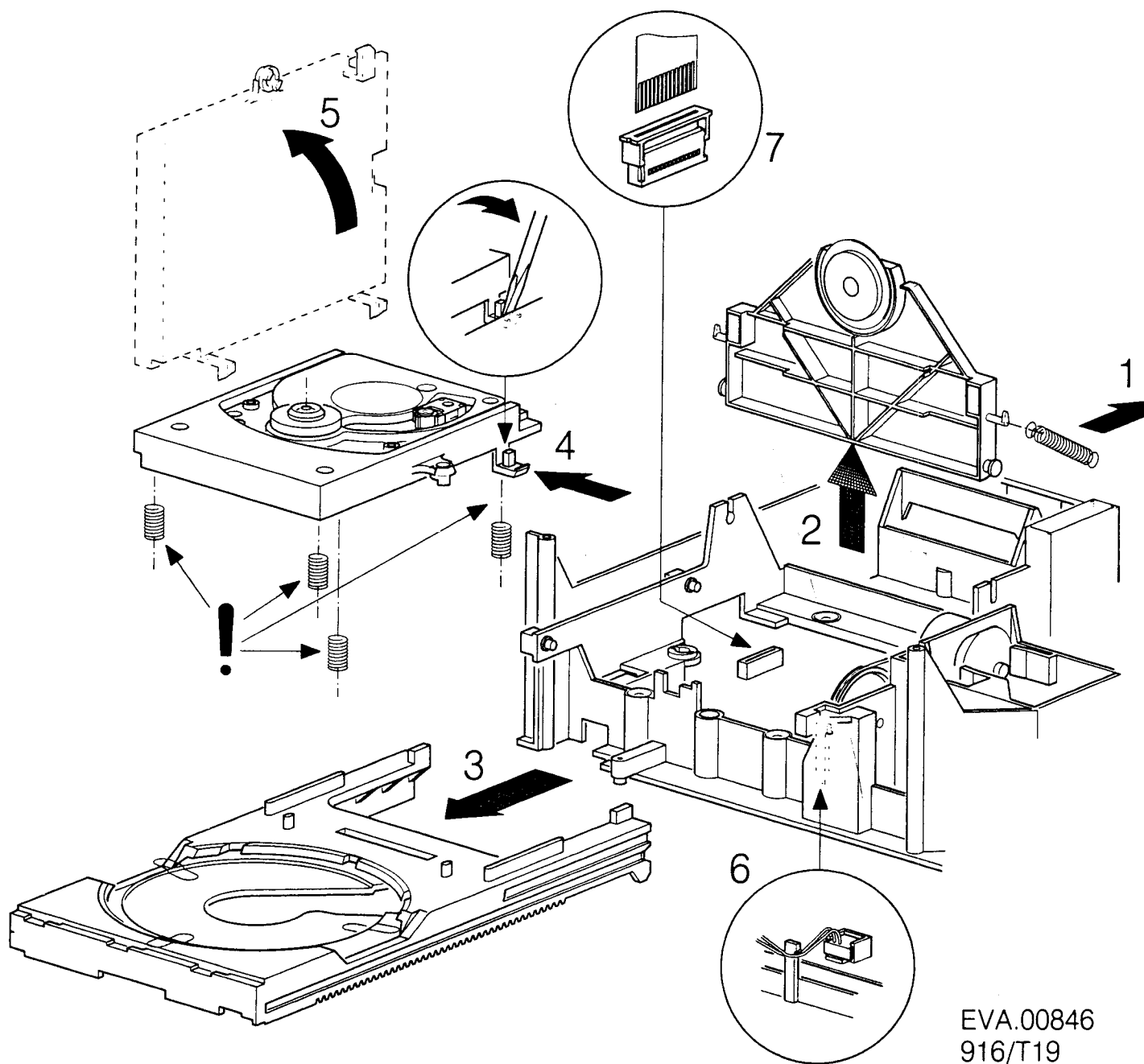
#### EXTENSION CABLE



### PLAY SERVICE POSITION



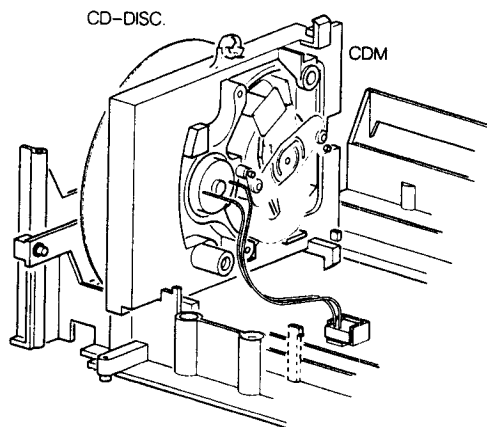
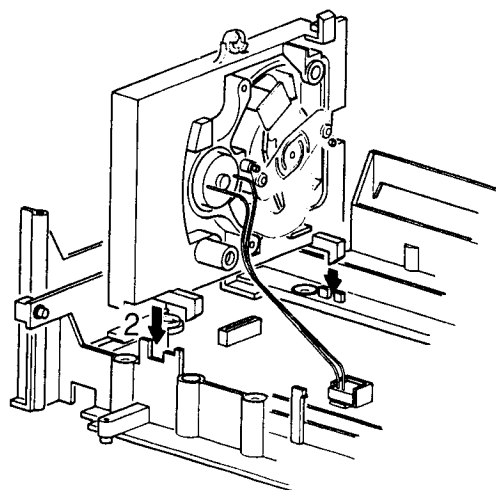
DISASSEMBLY OF LOADING AND CDM



DA 02137  
6/T19

EVA.00846  
916/T19

PLAY SERVICE POSITION



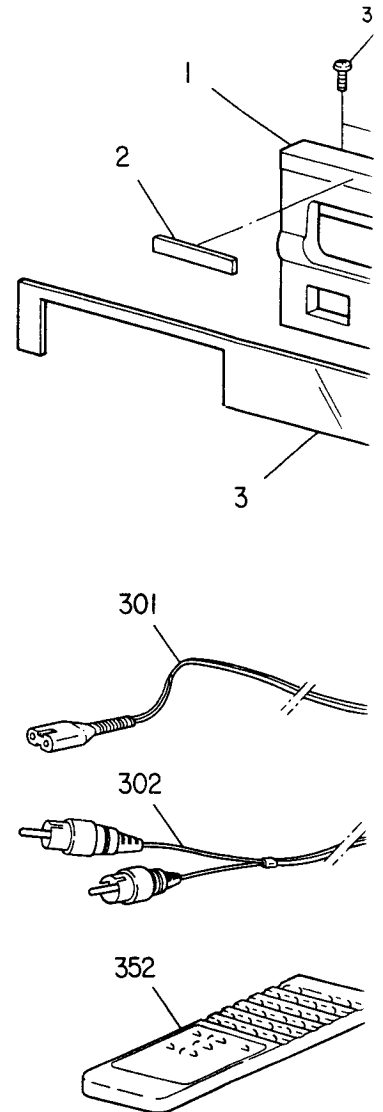
EVA.00848

EVA.00849  
916/T19

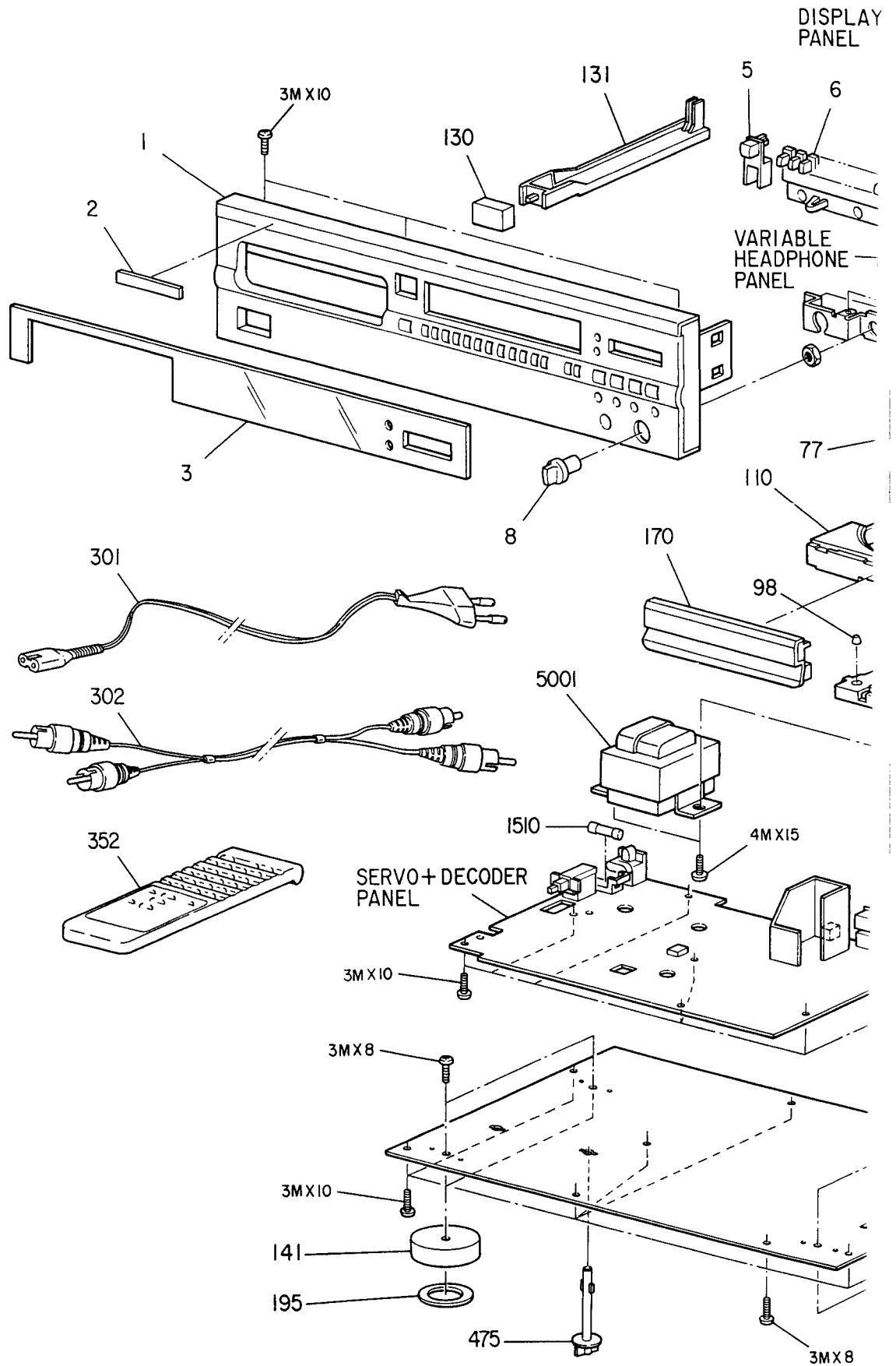
## MECHANICAL PARTS LIST

1	4822 444 40476	Front for CD52
1	4822 444 40472	Front for CD42
1	4822 444 40477	Front for CD32
2	4822 459 10747	Wordmark
3	4822 450 61767	Window for CD52, CD42
3	4822 450 61785	Window for CD32
4	4822 410 61465	Button, push for CD52
4	4822 410 61459	Button, push for CD42
4	4822 410 61517	Button, push for CD32
5	4822 410 61457	Button, push
6	4822 410 61466	Set of knobs for CD52
8	4822 410 61467	Button, Head Phone for CD52
32	4822 402 50276	Bracket, Switch
33	4822 492 52123	Spring, Compres.
55	4822 361 21452	Motor
56	4822 528 81447	Pulley
57	4822 528 81329	Pulley
58	4822 358 10115	Belt, Driving
65	4822 492 51902	Spring, Compres.
69	4822 466 61587	Foam
73	4822 402 61253	Guide
75	4822 402 61252	Guide
77	4822 492 52094	Spring, Compres.
85	4822 691 30209	Mech. Unit CDM-4
86	4822 402 61196	Support
95	4822 466 93011	Plate
96	4822 528 90638	Roller
98	4822 325 50177	Grommet, Cable
110	4822 444 50603	Tray
111	4822 532 51756	Grommet
113	4822 444 60568	Lid
114	4822 528 90639	Roller
116	4822 402 61207	Holder
118	4822 530 80503	Ring, Pressure
120	4822 466 92257	Plate
121	4822 520 40177	Ball
125	4822 492 32883	Spring, Tension
130	4822 410 61458	Button, Push
131	4822 535 93251	Rod
141	4822 462 41859	Foot
167	4822 502 30677	Screw, Selftap
170	4822 454 30456	Plate, Ornament
171	4822 459 11048	Plate, Name
172	4822 459 11047	Plate, Name
185	4822 444 60766	Cover
186	4822 502 30678	Screw, Selftap
195	4822 466 40577	Felt
301	4822 321 10249	AC-Cord for /02B
301	4822 321 10719	AC-Cord for /05B
302	4822 321 22832	Cable, Connect
309	4822 736 21196	User's Manual for CD52
309	4822 736 21187	User's Manual for CD42, CD32
352	4822 218 10419	Remote Control for CD52, CD42
455	4822 600 70643	Box for CD52
455	4822 600 70641	Box for CD42
455	4822 600 70645	Box for CD32
460	4822 600 10294	Cushion
475	4822 535 92907	Key

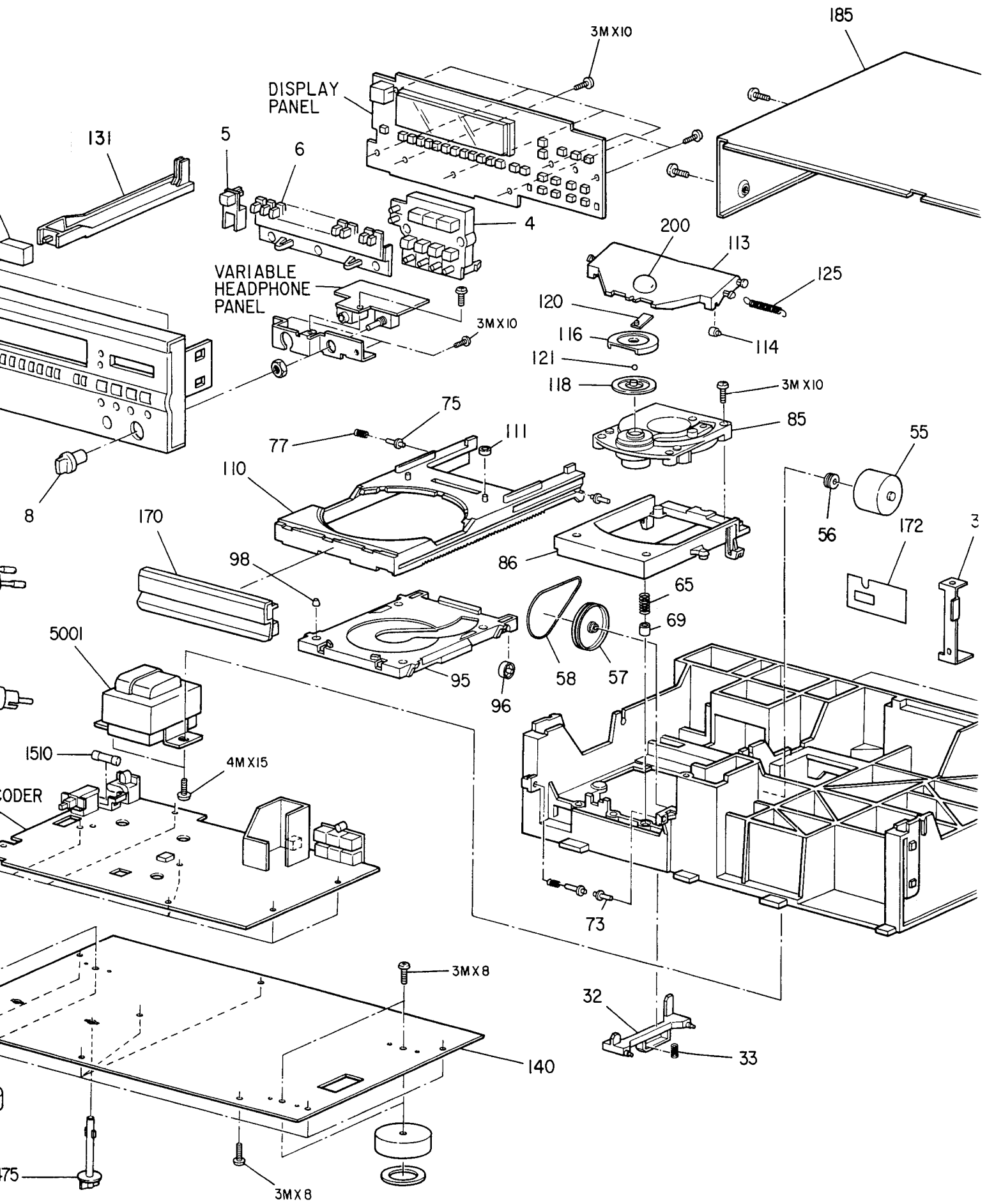
## EXPLODED VIEW

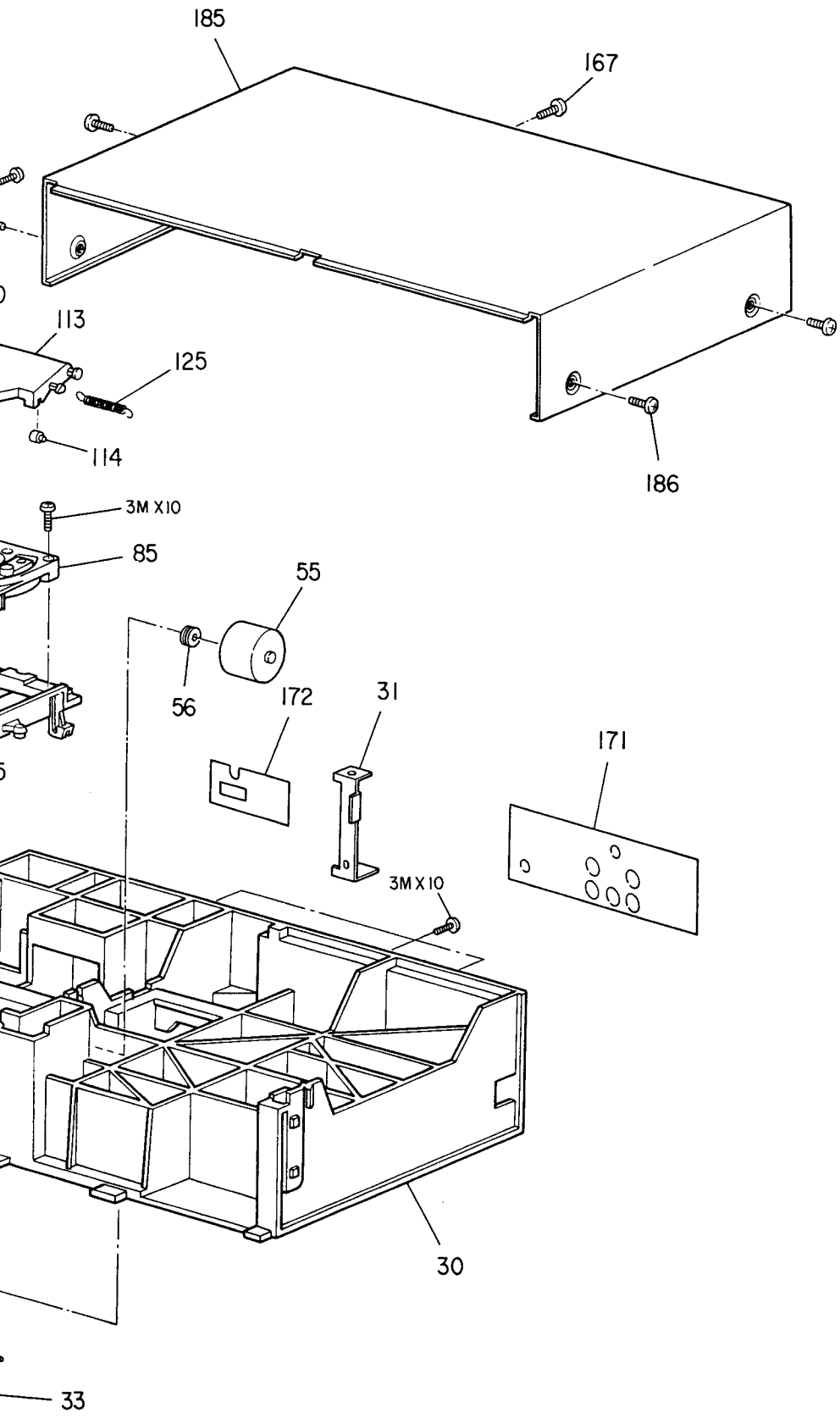


EXPLODED VIEW

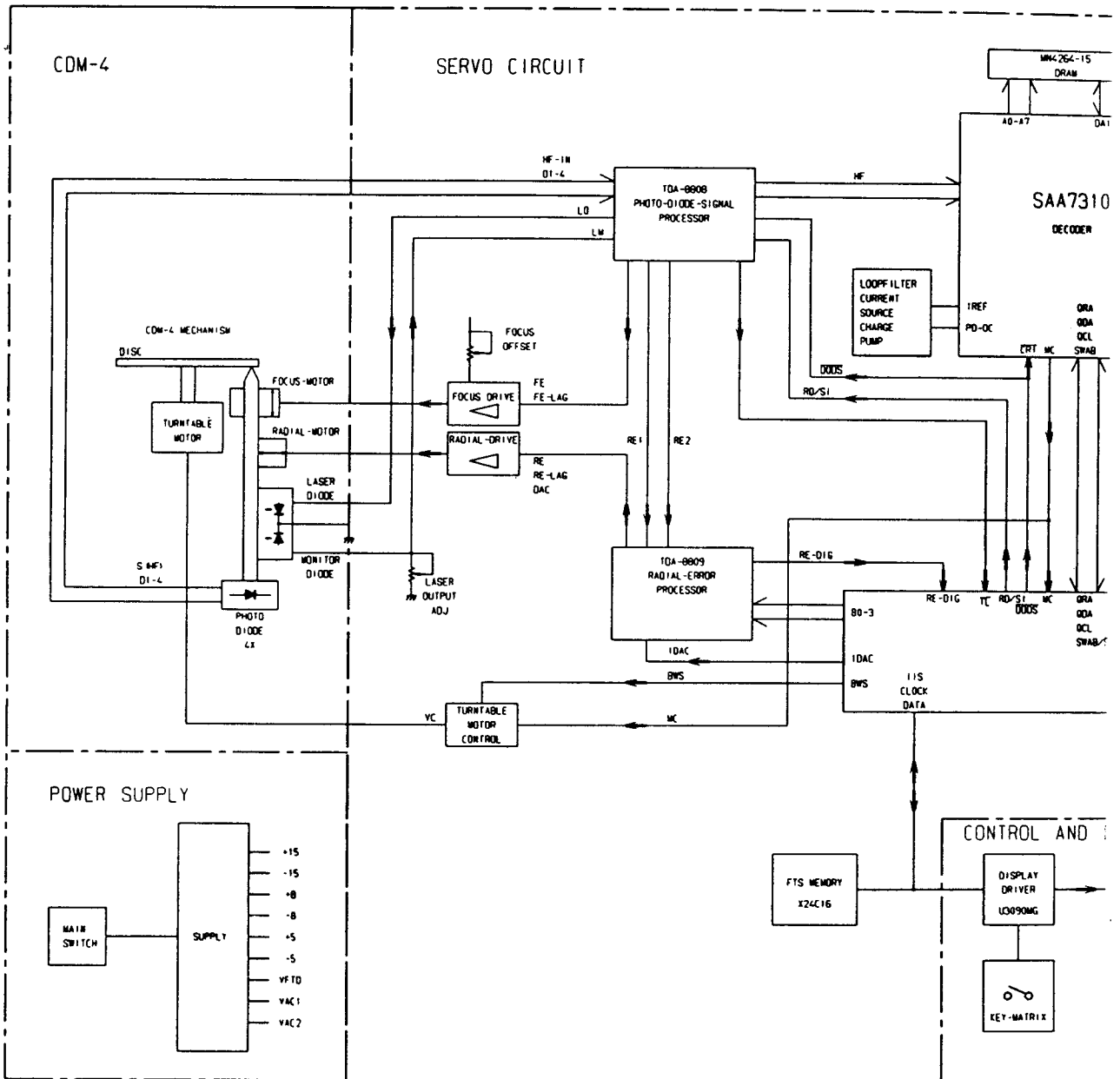






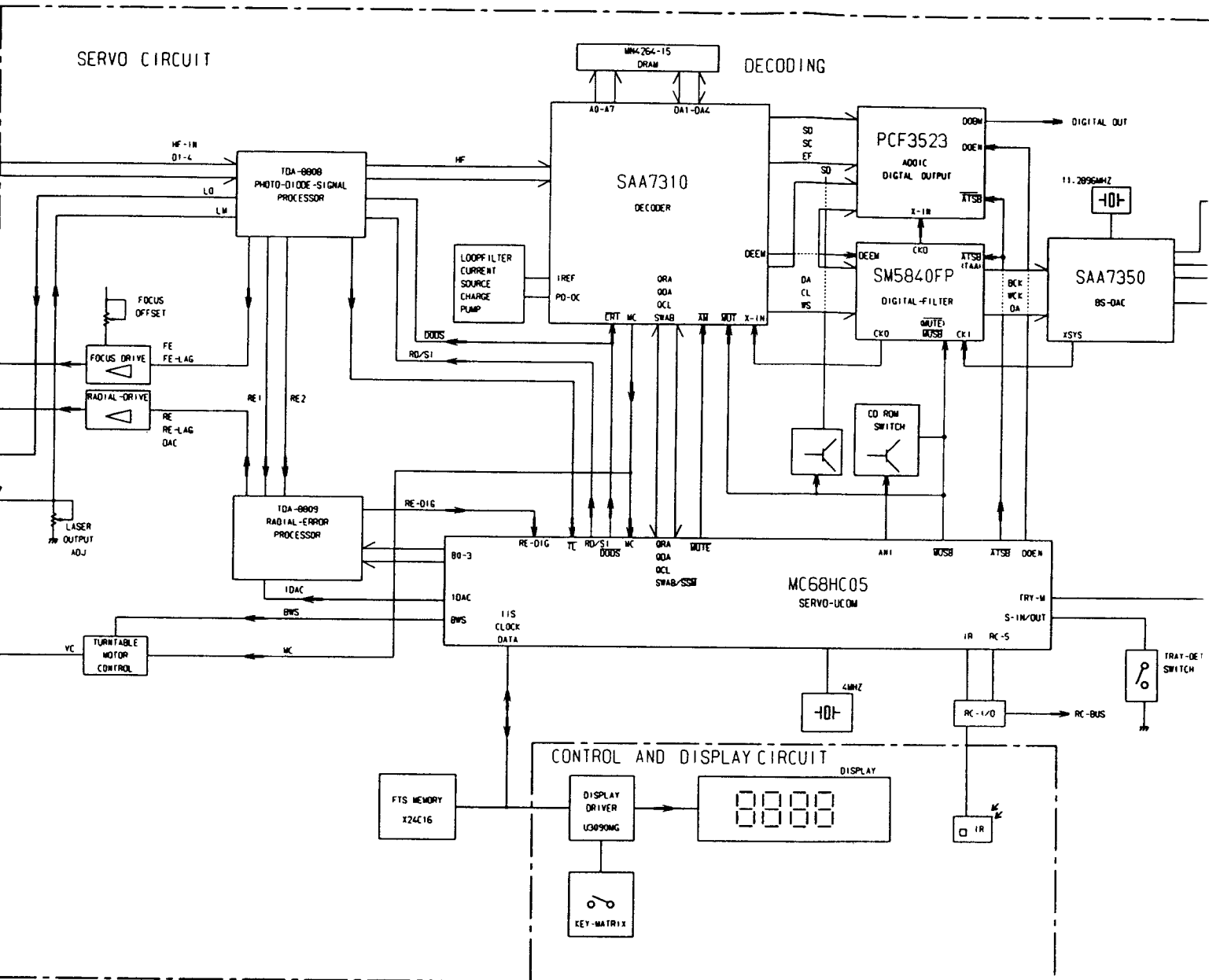


# BLOCK DIAGRAM



AGC-----AUTOMATIC GAIN CONTROL  
 B0-B3-----CONTROL BITS FOR RADIAL CIRCUIT  
 BEQ-----EQUALIZER REFERENCE CURRENT INPUT  
 BGC-----DC AND LF GAIN CONTROL REFERENCE INPUT  
 COSC1-----CAPACITOR WOBBLE OSCILLATOR  
 COSC2-----CAPACITOR WOBBLE OSCILLATOR  
 DEC-----DECOUPLING INPUT OF INKRUAT BYPASS  
 DET-----HF DETECTOR VOLTAGE INPUT  
 DIV4-----DIVIDE BY 4 INPUT  
 DODS-----DROP OUT DETECTOR SUPPRESSION  
 D1-4-----PHOTOIODE CURRENTS  
 FE-----FOCUS ERROR SIGNAL  
 FE LAG----FOCUS ERROR SIGNAL FOR LAG NETWORK  
 HF-----HF OUTPUT FOR DEMOD  
 HFD-----HF DETECTOR OUTPUT FOR DEMOD  
 HF IN----HF CURRENT INPUT TO HF AMPLIFIRE  
 HF OUT---HF AMPLIFIRE AND EQUALIZER VOLTAGE OUTPUT

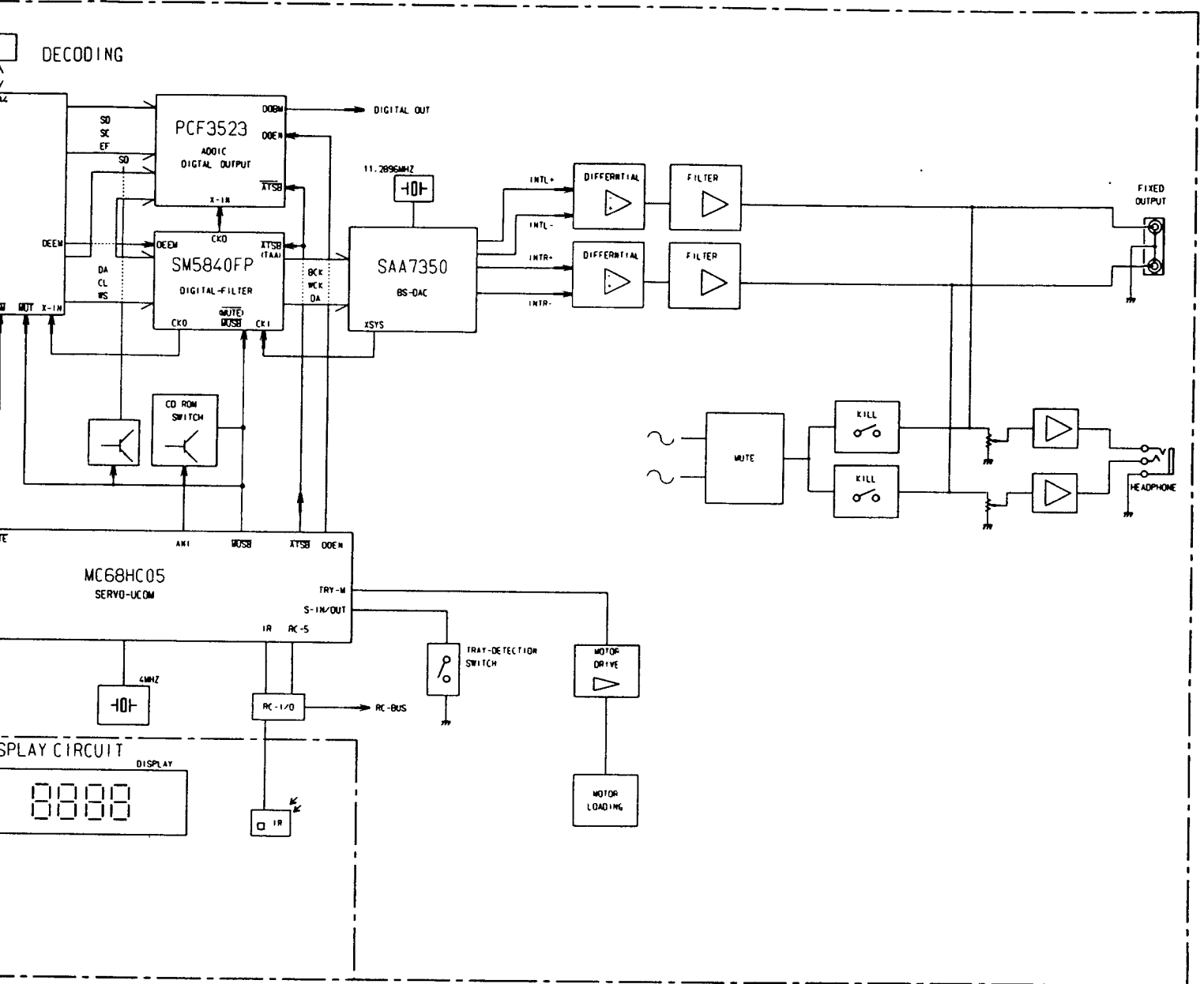
LM-----LASER MONITOR DIODE INPUT  
 LO-----LASER AMPLIFIRE CURRENT OUTPL  
 MC-----MONITOR CONTROL SIGNAL  
 OFFSET IN--OFFSET IN-OFFSET CONTROL INPL  
 OFFSET OUT--OFFSET OUT-OFFSET CONTROL OU  
 PLLH-----PLL ON HOLD OUTPUT  
 RADOUT----OUTPUT OF RE2-RE1 INPUT  
 RE-----RADIAL ERROR SIGNAL  
 ROSC-----RESISTOR WOBBLE OSCILLATOR  
 RWOB-----WOBBLE GENERATOR INPUT  
 RE1-----RADIAL ERROR SIGNAL 1  
 RE2-----RADIAL ERROR SIGNAL 2  
 RE DIG----RADIAL ERROR DIGITAL  
 RE LAG----RADIAL ERROR SIGNAL FOR LAG I  
 SC-----STARTING UP CAPACITOR INPUT  
 SI/RD-----ON/OFF CONTROL FOR LASER SUPP  
 CIRCUIT.READY SIGNAL.STARTING



CONTROL  
 RADIAL CIRCUIT  
 CE CURRENT INPUT  
 CONTROL REFERENCE INPUT  
 OSCILLATOR  
 OSCILLATOR  
 OF INKRUAT BYPASS  
 GE INPUT  
  
 SUPPRESSION  
 TS  
 E FOR LAG NETWORK  
 DD  
 T FOR DEMOD  
 TO HF AMPLIFIRE  
 EQUALIZER VOLTAGE OUTPUT

LM-----LASER MONITOR DIODE INPUT  
 LO-----LASER AMPLIFIRE CURRENT OUTPUT  
 MC-----MONITOR CONTROL SIGNAL  
 OFFSET IN-OFFSET IN-OFFSET CONTROL INPUT  
 OFFSET OUT-OFFSET OUT-OFFSET CONTROL OUTPUT  
 PLLH-----PLL ON HOLD OUTPUT  
 RADOUT----OUTPUT OF RE2-RE1 INPUT  
 RE-----RADIAL ERROR SIGNAL  
 ROSC-----RESISTOR WOBBLE OSCILLATOR  
 RWOB-----WOBBLE GENERATOR INPUT  
 RE1-----RADIAL ERROR SIGNAL 1  
 RE2-----RADIAL ERROR SIGNAL 2  
 RE DIG----RADIAL ERROR DIGITAL  
 RE LAG----RADIAL ERROR SIGNAL FOR LAG NETWORK  
 SC-----STARTING UP CAPACITOR INPUT  
 S1/RD-----ON/OFF CONTROL FOR LASER SUPPLY AND FOCUS  
 CIRCUIT-READY SIGNAL-STARTING UP

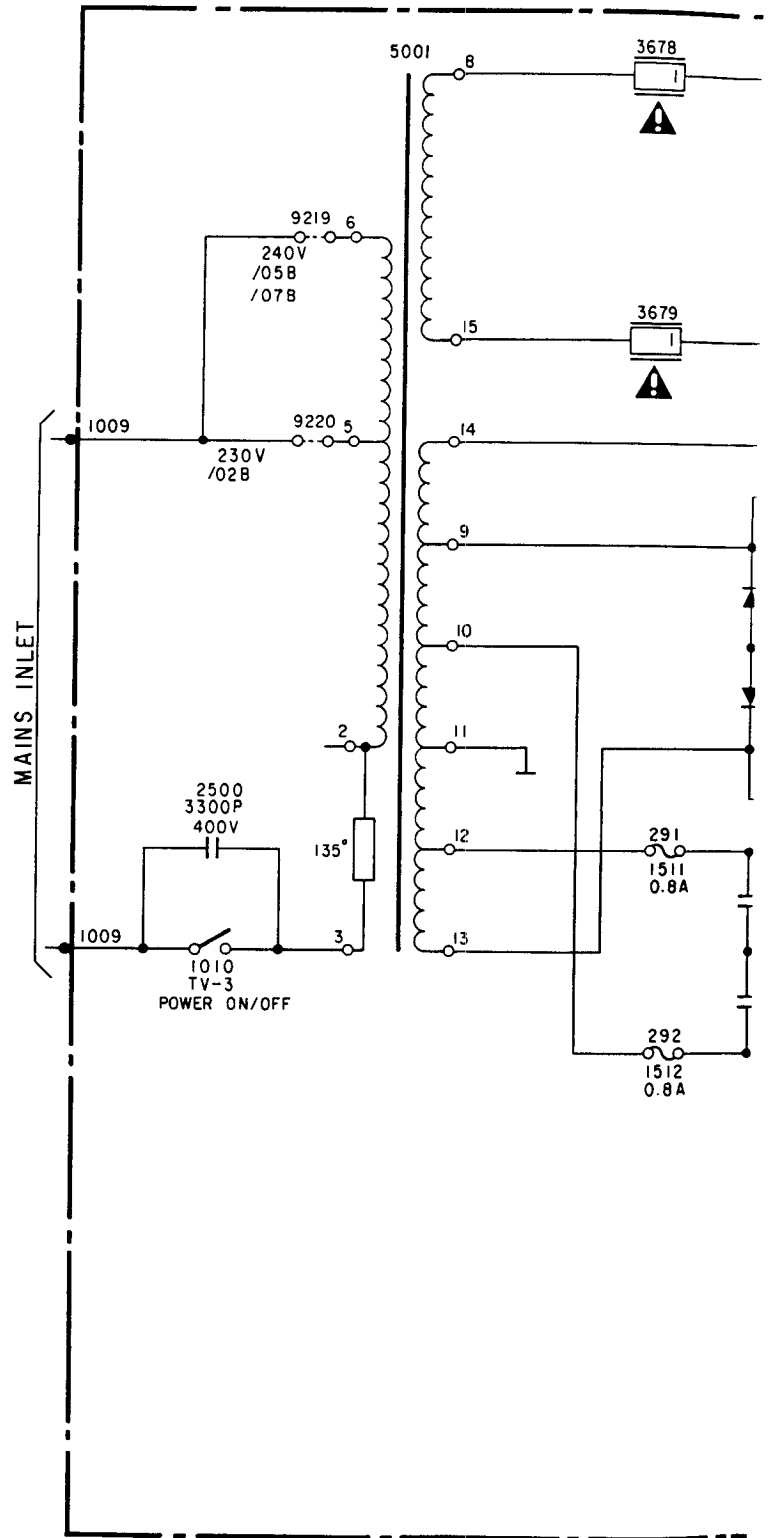
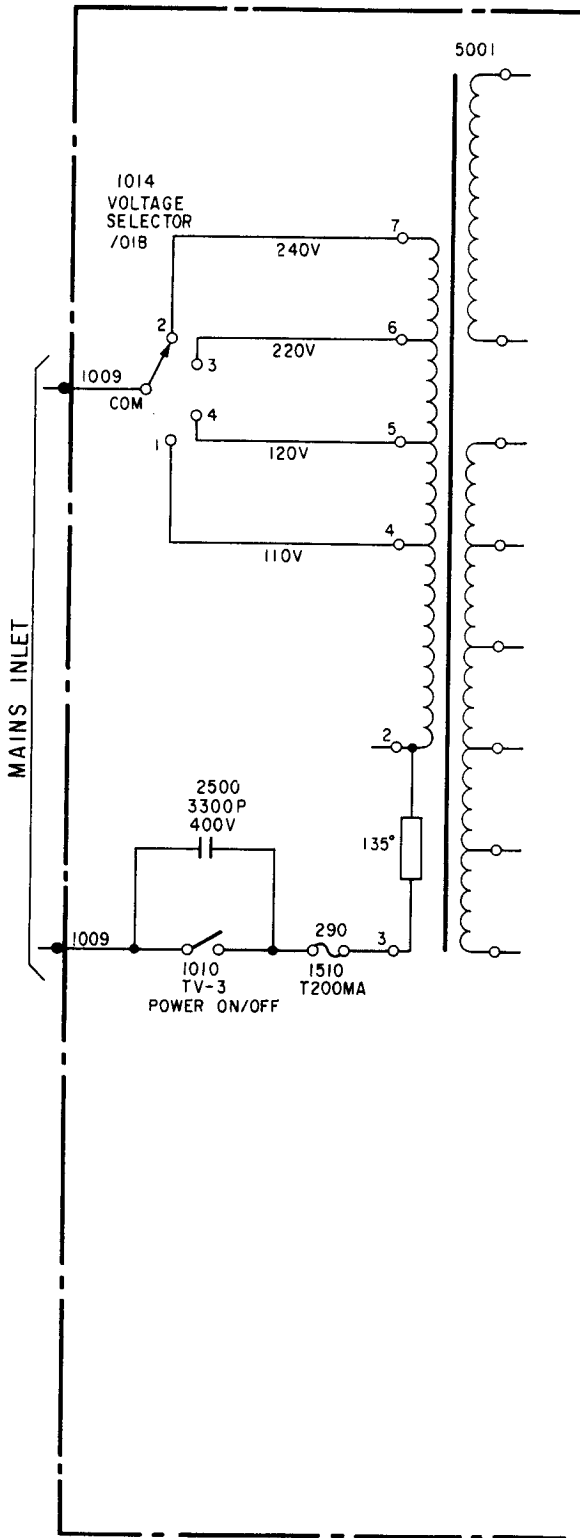
TL-----TRACK LOSS OUTPUT SIGNAL  
 TTM+ ----CONTROL VOLTAGE FOR TURN  
 TTM- ----CONTROL VOLTAGE FOR TURN  
 VEXT- ---SUPPLY CONNECTION  
 VEXT+ ---SUPPLY CONNECTION  
 TCMF-----TURNTABLE CONTROL MOTOR  
 BWS-----BAND WIDTH SWITCH 8 OR 1  
 ANI-----DIGITAL DATA INFORMATION  
 AM-----ADDITIONAL MUTE  
 ATSB ----ATTENUATION OF AUDIO LEV  
 CD ROM---DIGITAL DATA INFOMATION  
 SWITCH  
 CFM-----CLOCK EIGHT TO FOURTEEN  
 CL-----CLOCK SIGNAL DECODER TO  
 BCK-----CLOCK SIGNAL FILTER TO C  
 CREF-----REFERENCE CURRENT  
 CRTI-----COUNTER RESET INHIBIT  
 IDAC-----ANTI SKATING CONTROL



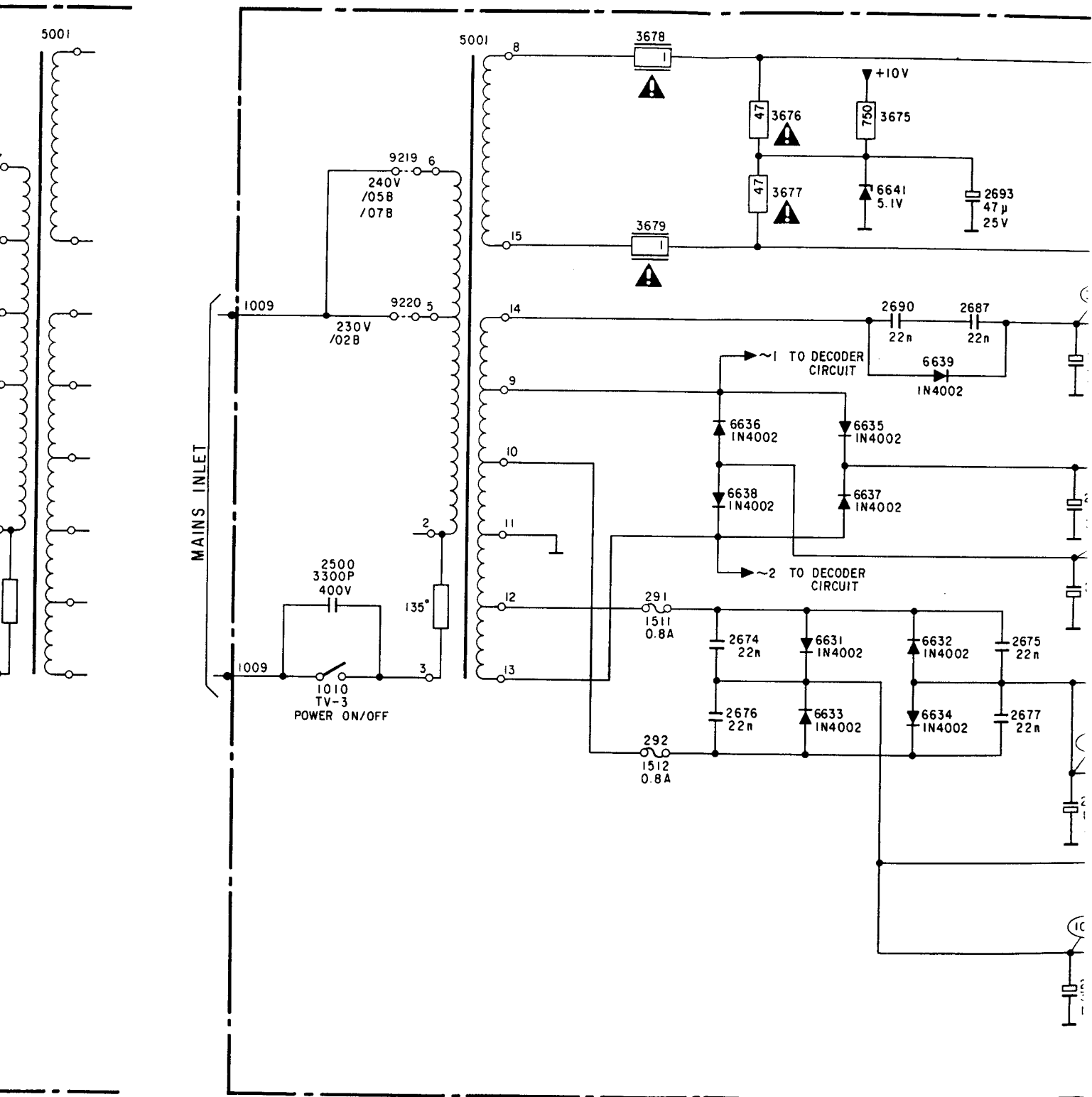
TL-----TRACK LOSS OUTPUT SIGNAL  
 TTM+ ----CONTROL VOLTAGE FOR TURNTABLE MOTOR  
 TTM- ----CONTROL VOLTAGE FOR TURNTABLE MOTOR  
 VEXT- ---SUPPLY CONNECTION  
 VEXT+ ---SUPPLY CONNECTION  
 TCMF-----TURNTABLE CONTROL MOTOR PULSE  
 BWS-----BAND WIDTH SWITCH 8 OR 12CM DISC  
 ANI-----DIGITAL DATA INFORMATION ON DISC SIGNAL  
 AM-----ADDITIONAL MUTE  
 ATSB ----ATTENUATION OF AUDIO LEVEL IN SEARCH POSITION  
 CD ROM---DIGITAL DATA INFORMATION ON DISC SIGNAL SWITCH  
 CEFM-----CLOCK EIGHT TO FOURTEEN MODULATOR  
 CL-----CLOCK SIGNAL DECODER TO FILTER  
 BCK-----CLOCK SIGNAL FILTER TO DAC  
 CREF-----REFERENCE CURRENT  
 CRTI-----COUNTER RESET INHIBIT  
 IDAC-----ANTI SKATING CONTROL

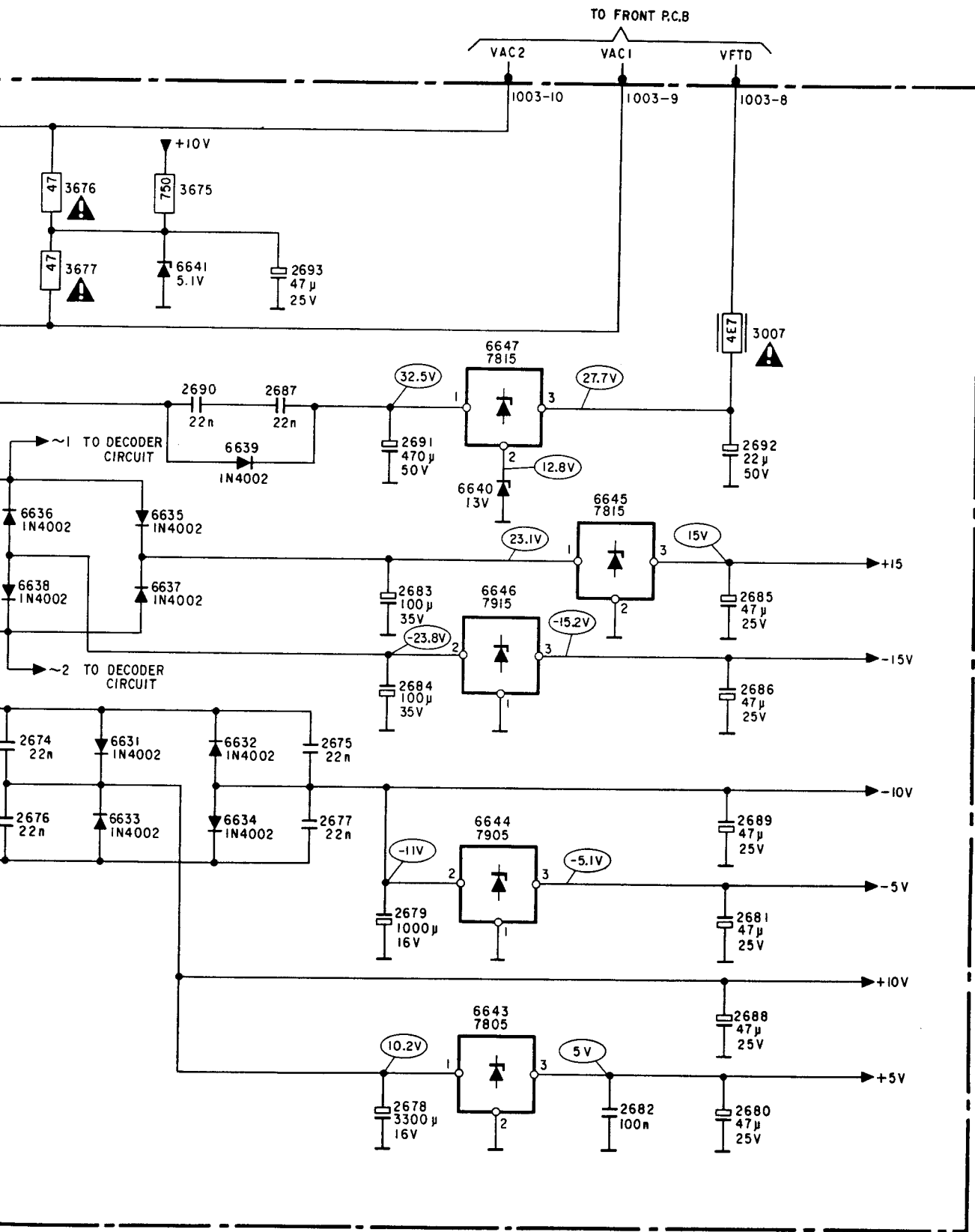
DA-----DATA SIGNAL DECODER TO FILTER  
 DEEM-----DEEMPHASIS  
 DOBM-----DIGITAL OUT SIGNAL  
 DOEM-----DIGITAL OUTPUTENABLE  
 EF-----ERROR FLAG DECODER TO FILTER  
 MUTE ----MUTE SIGNAL  
 MUSB-----SOFT MUTE SIGNAL  
 PD/OC-----PHASE DETECTOR-OSCILLATOR CONTROL  
 QCL-----Q-CHANNEL CLOCK SIGNAL  
 QDA-----Q-CHANNEL DATA SIGNAL  
 QRA-----Q-CHANNEL REQUEST AKNOWLEDGE  
 SC-----SUBCODE CLOCK DECODER TO FILTER  
 SD-----SUBCODE DATA DECODER TO FILTER  
 SWAB/SSM--SUBCODE WORD/START-STOP MOTOR SIGNAL  
 WS-----WORD SELECT DECODER TO FILTER  
 TRY-M ---TRAY MOTOR CONTROL  
 WCK-----WORD SELECT FILTER TO DAC  
 XIN-----OSCILLATOR SIGNAL IN  
 XSYS-----OSCILLATOR SIGNAL OUT

# POWER SUPPLY CIRCUIT DIAGRAM



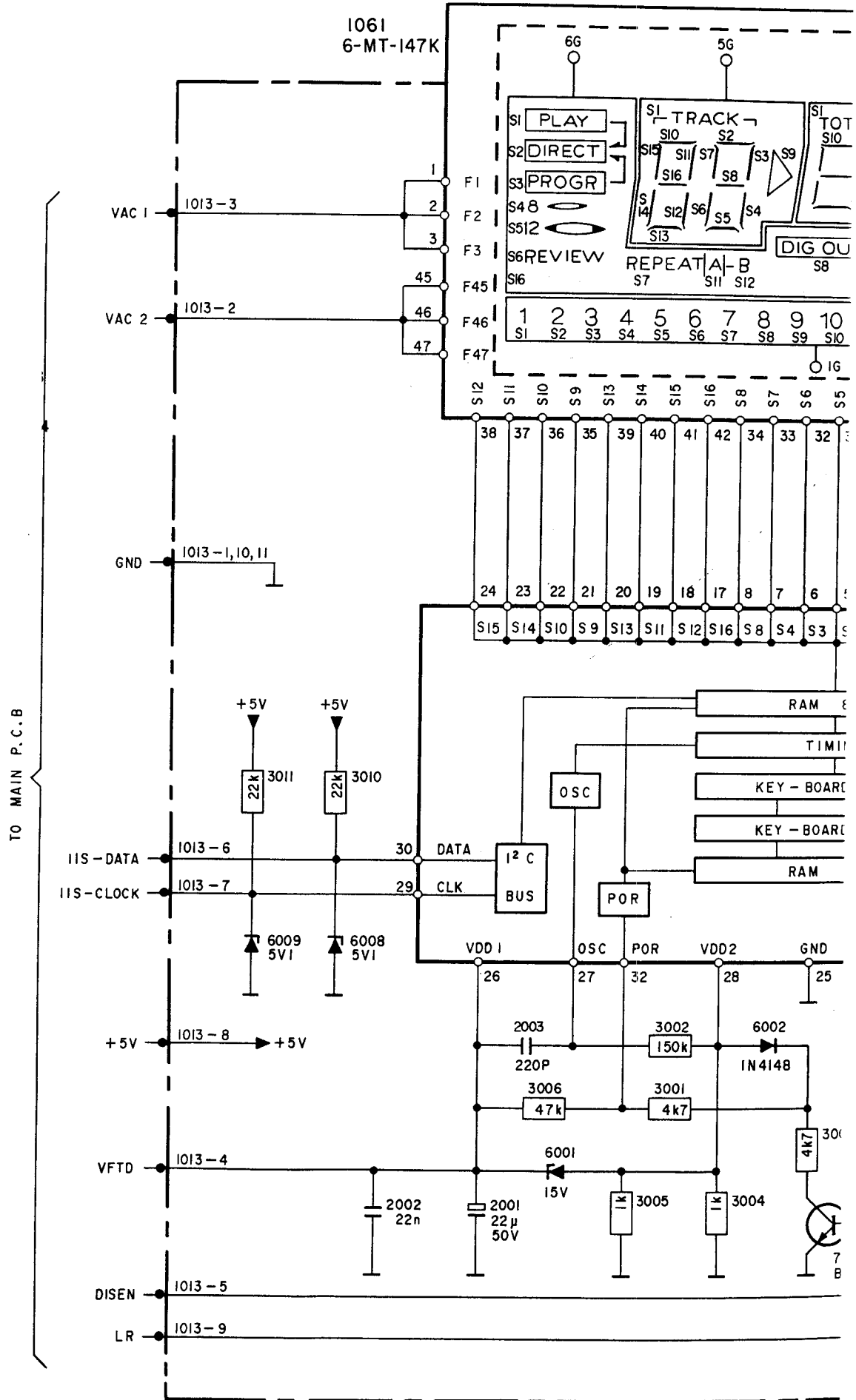
DIAGRAM



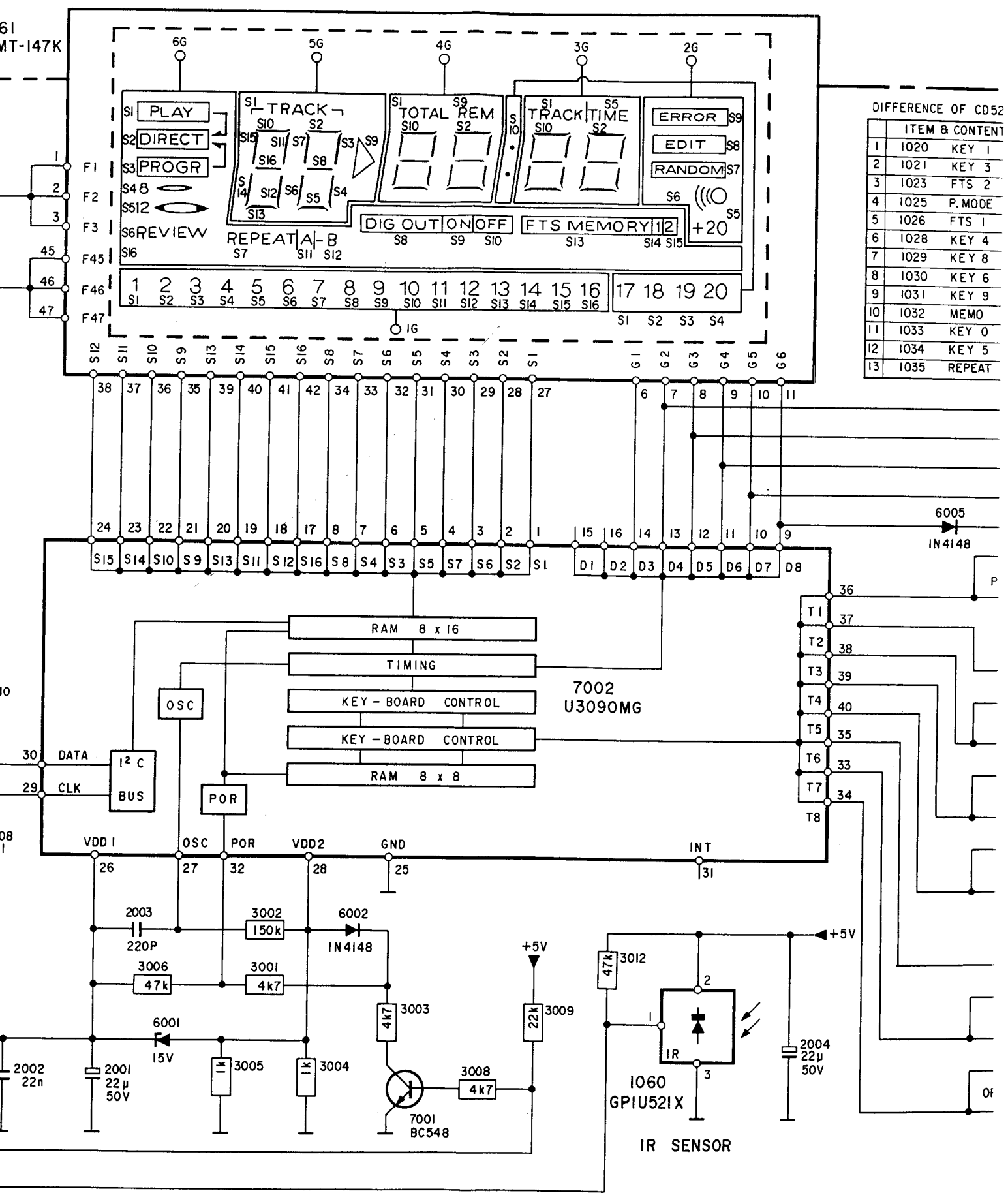




# DISPLAY CIRCUIT DIAGRAM

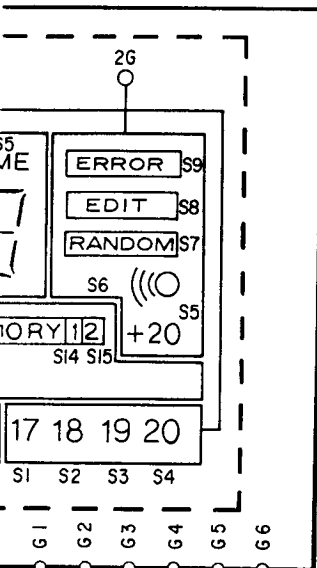


61  
MT-147K



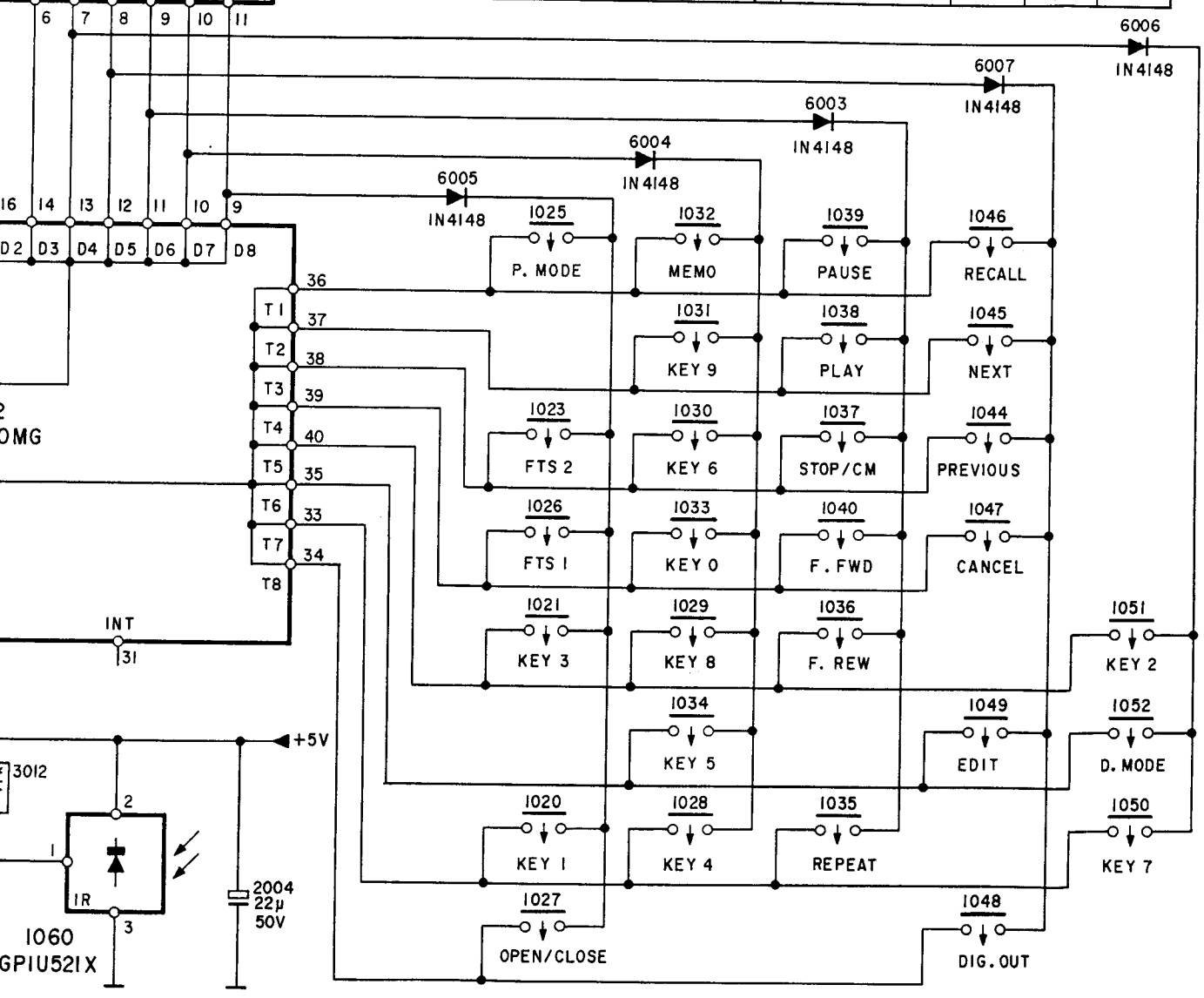
DIFFERENCE OF CD52

ITEM	CONTENT
1	1020 KEY 1
2	1021 KEY 3
3	1023 FTS 2
4	1025 P.MODE
5	1026 FTS 1
6	1028 KEY 4
7	1029 KEY 8
8	1030 KEY 6
9	1031 KEY 9
10	1032 MEMO
11	1033 KEY 0
12	1034 KEY 5
13	1035 REPEAT



DIFFERENCE OF CD52/42/32

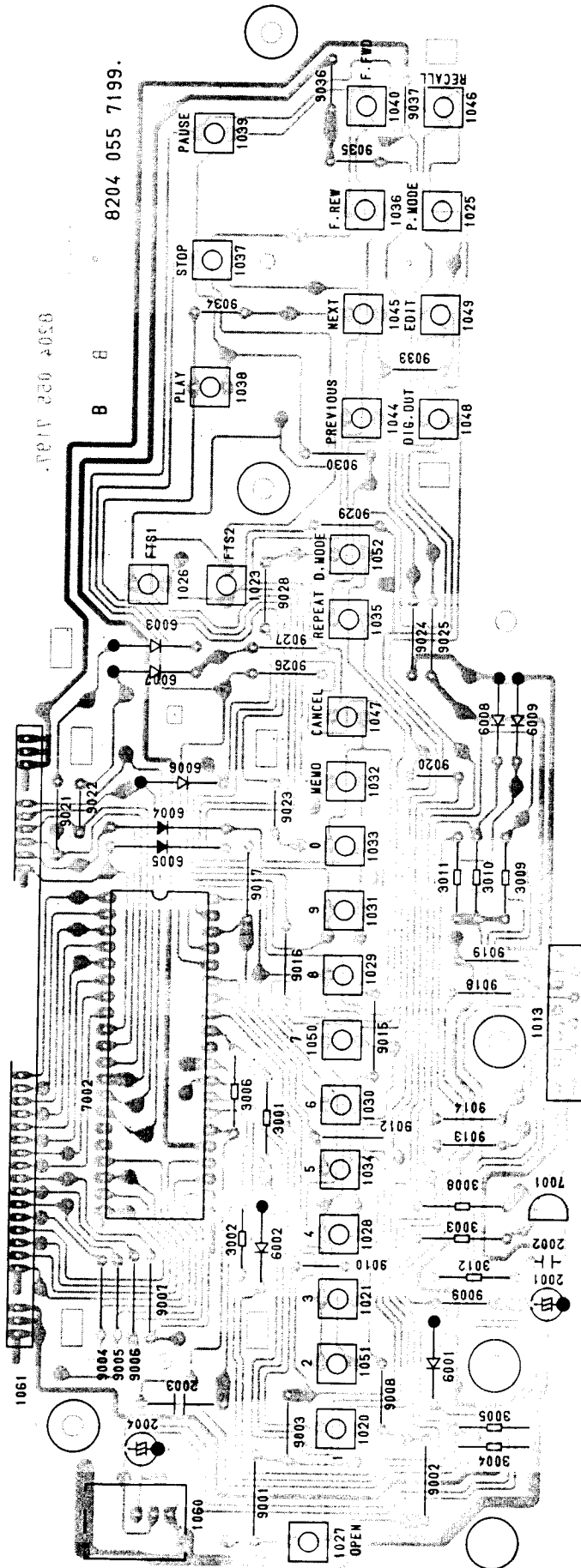
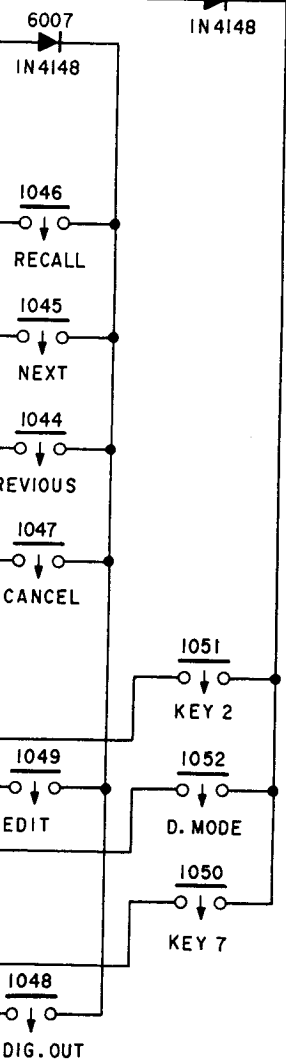
ITEM & CONTENT	CD52	CD42	CD32	ITEM & CONTENT	CD52	CD42	CD32
1 1020 KEY 1	X	—	—	14 1046 RECALL	X	—	—
2 1021 KEY 3	X	—	—	15 1047 CANCEL	X	—	—
3 1023 FTS 2	X	X	—	16 1048 DIG. OUT	X	—	—
4 1025 P. MODE	X	—	—	17 1049 EDIT	X	—	—
5 1026 FTS 1	X	X	—	18 1050 KEY 7	X	—	—
6 1028 KEY 4	X	—	—	19 1051 KEY 2	X	—	—
7 1029 KEY 8	X	—	—	20 1052 D. MODE	X	—	—
8 1030 KEY 6	X	—	—	21 1060 IR RCIVER	X	X	—
9 1031 KEY 9	X	—	—	22 2004 ELCO	X	X	—
10 1032 MEMO	X	—	—	23 3012 FLM RST	X	X	—
11 1033 KEY 0	X	—	—	24 3691 POTM IOKA	X	—	—
12 1034 KEY 5	X	—	—	25 6004 DIODE	X	X	—
13 1035 REPEAT	X	—	—	26 6006 DIODE	X	X	—



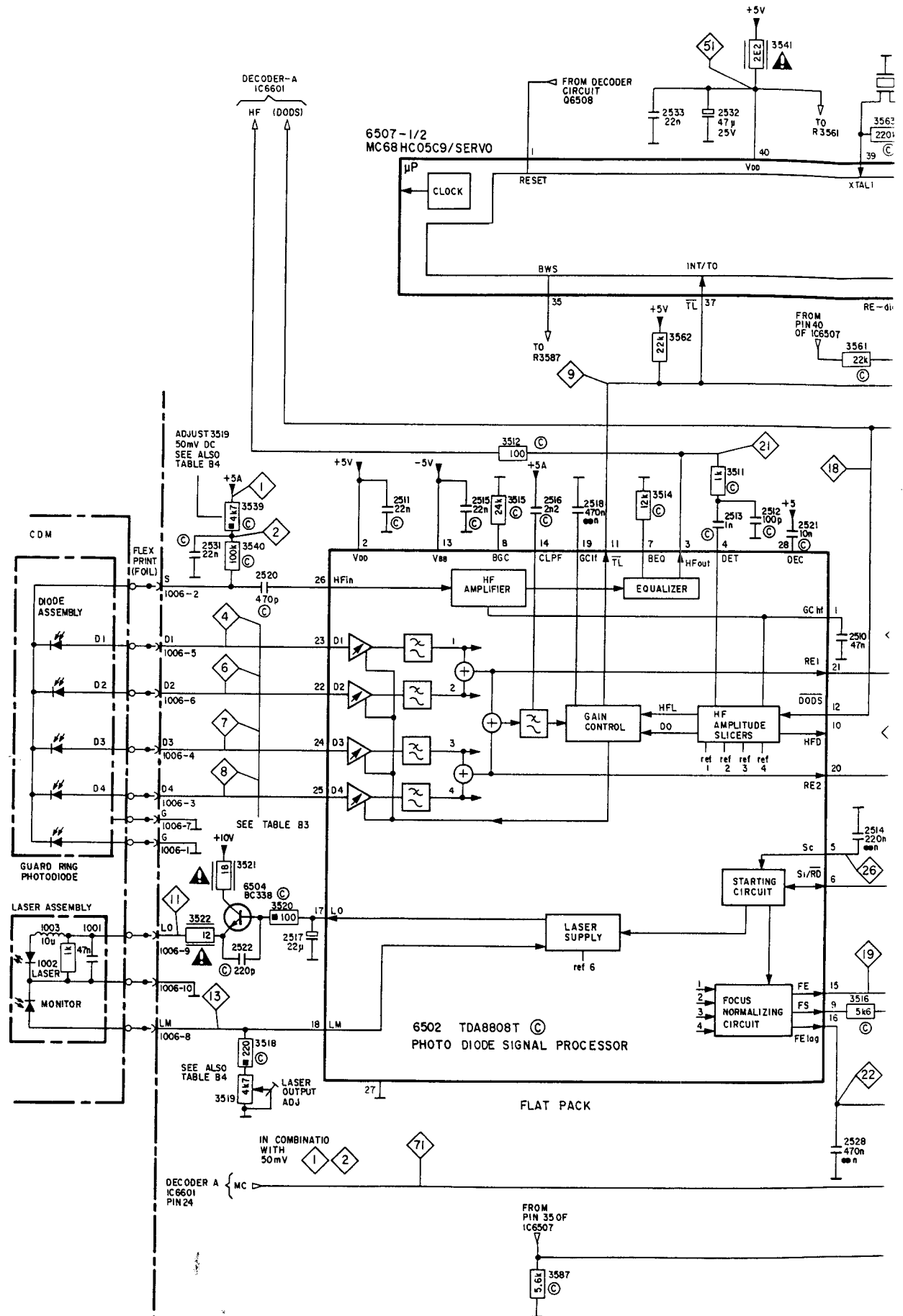
IR SENSOR

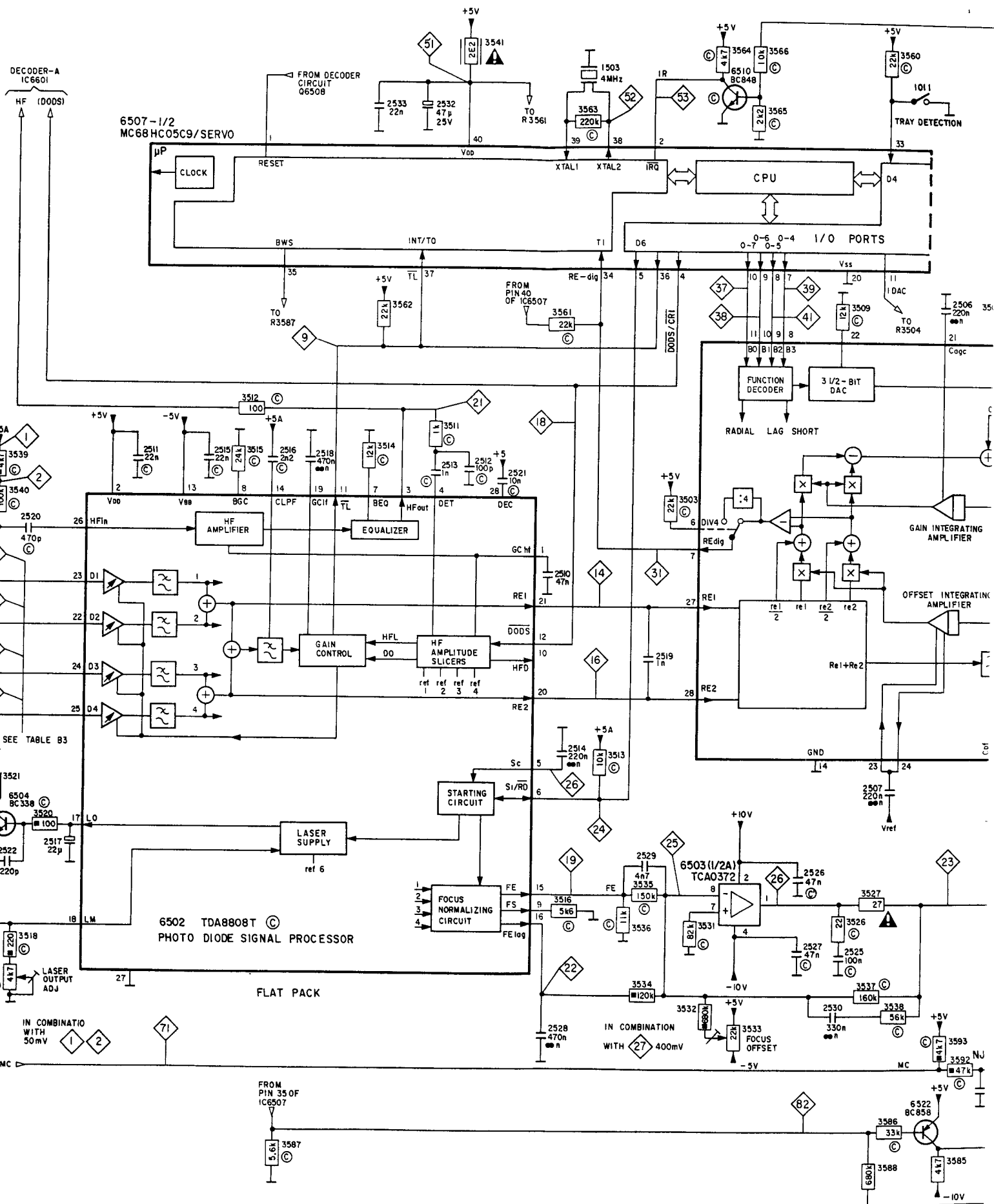
	CD52	CD42	CD32
	X	—	—
	X	—	—
	X	—	—
	X	—	—
	X	—	—
	X	—	—
	X	X	—
	X	—	—
	X	—	—
	X	X	—
	X	—	—
	X	X	—
	X	—	—

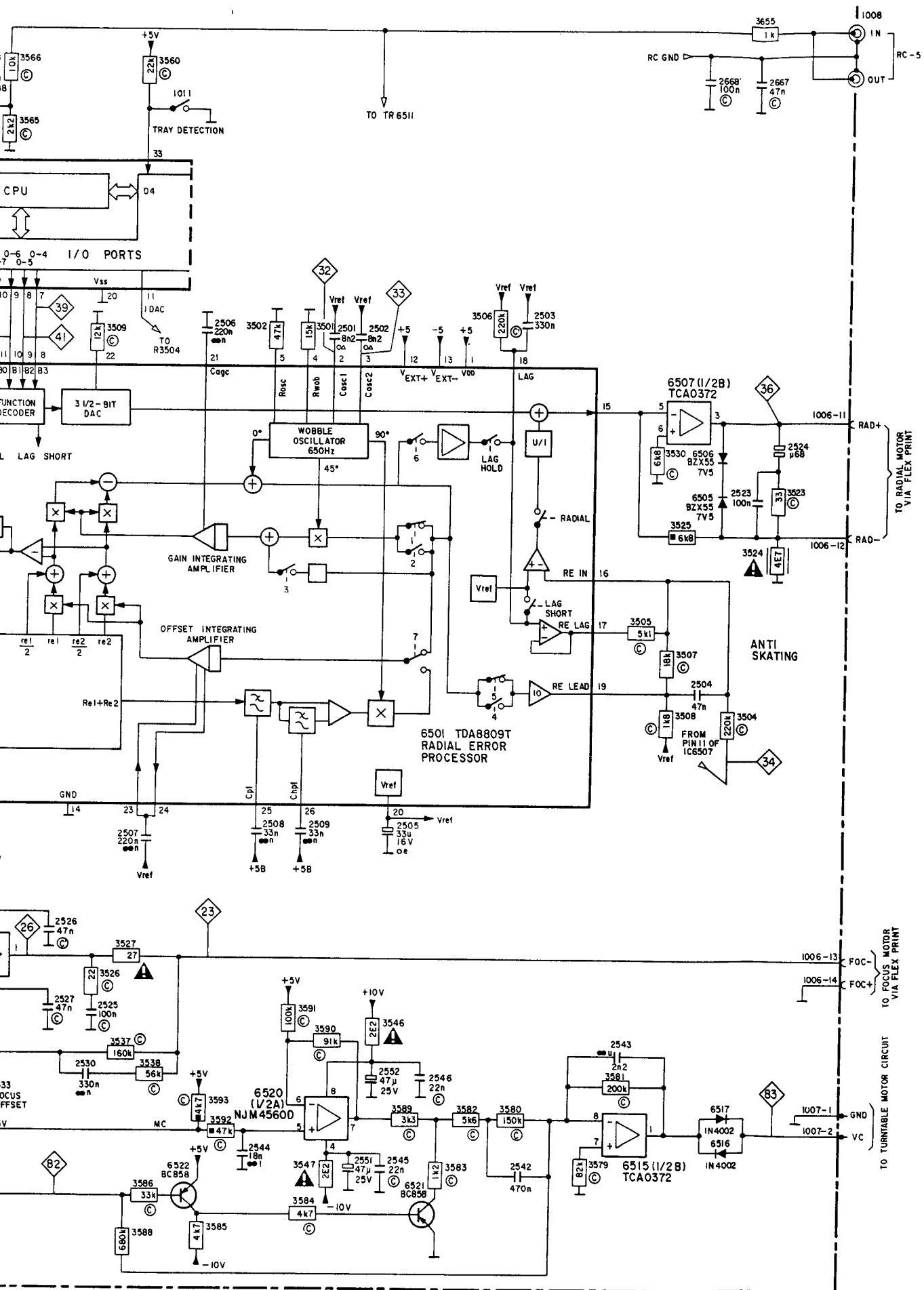
6006  
IN 4148

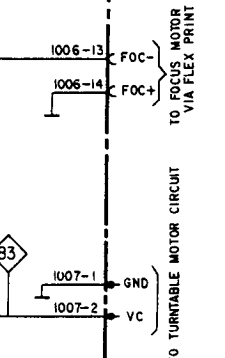
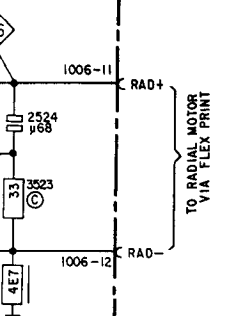
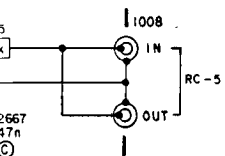


# SERVO CIRCUIT DIAGRAM









1 2 ADJUST R3520  
50mV DC  
SEE ALSO TABLE

4 6 7 8 SEE TABLE B-3

9 LOW PULSES DURING SEARCH

11 13 SEE TABLE B-4

14 16

18 LOW PULSES DURING (TRACK AND TRACK >)

19

SERVICE POS 1

21

EYEPATTERN

22 ADJUST R3568  
400mV DC  
SEE ALSO TABLE B-5

23

SERVICE POS 1

24 26

POWER ON

31

32 33

34

BUMP AGAINST PLAYER IN PLAY MODE

	SERVICE POSITION 0		PLAY MODE
	SEARCH	SEARCH	SEARCH
B3	HIGH	HIGH	ACTIVITY
B2	HIGH	LOW	ACTIVITY
B1	HIGH	HIGH	ACTIVITY
B0	LOW	LOW	ACTIVITY

51

52

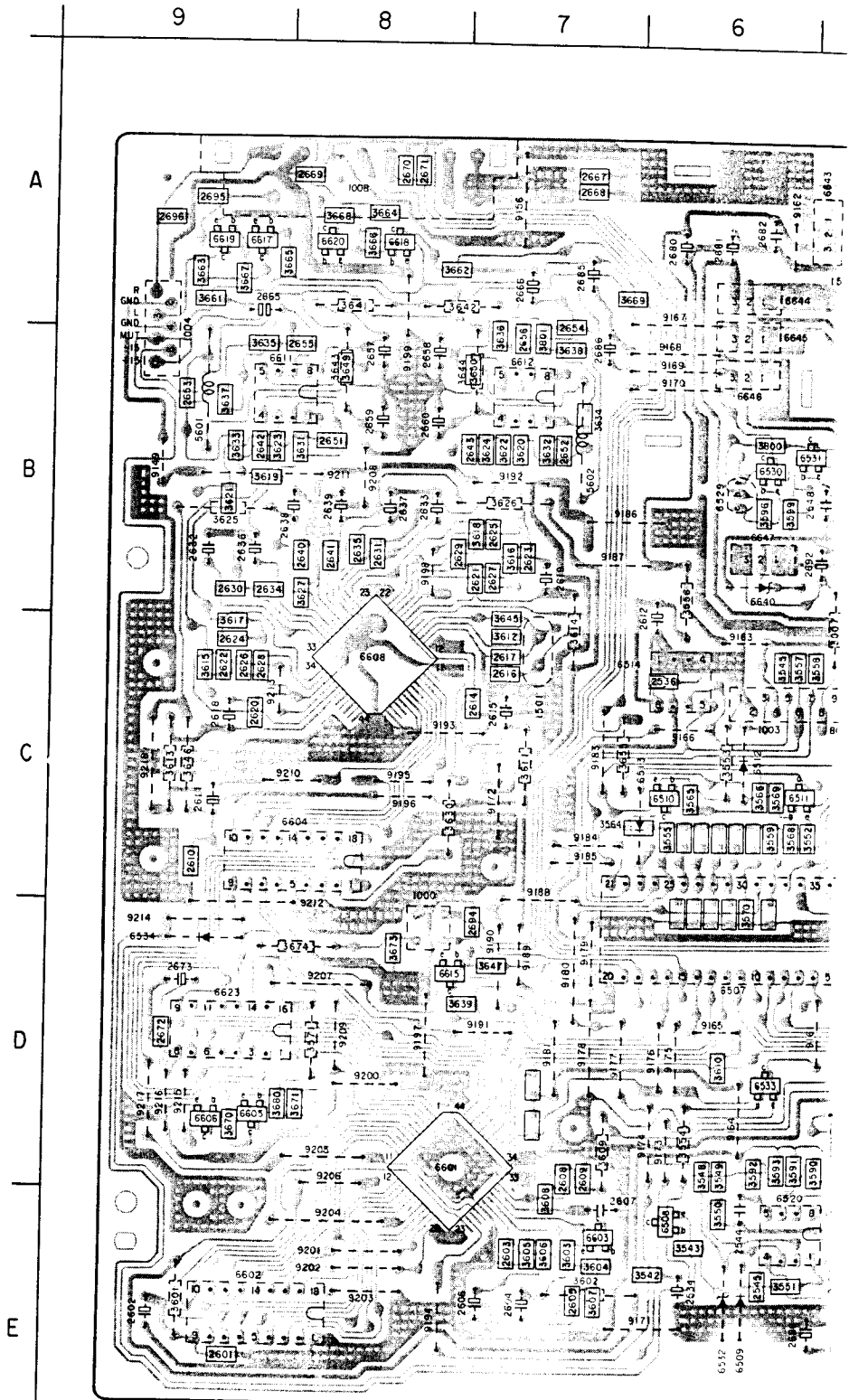
53

0 V FOR 12 cm DISC  
5 V FOR 8 cm DISC  
.1 V AT BEGINNING OF DISC  
-0.6 V AT END OF DISC



# SERVO & DECODER PANEL SOLDER SIDE

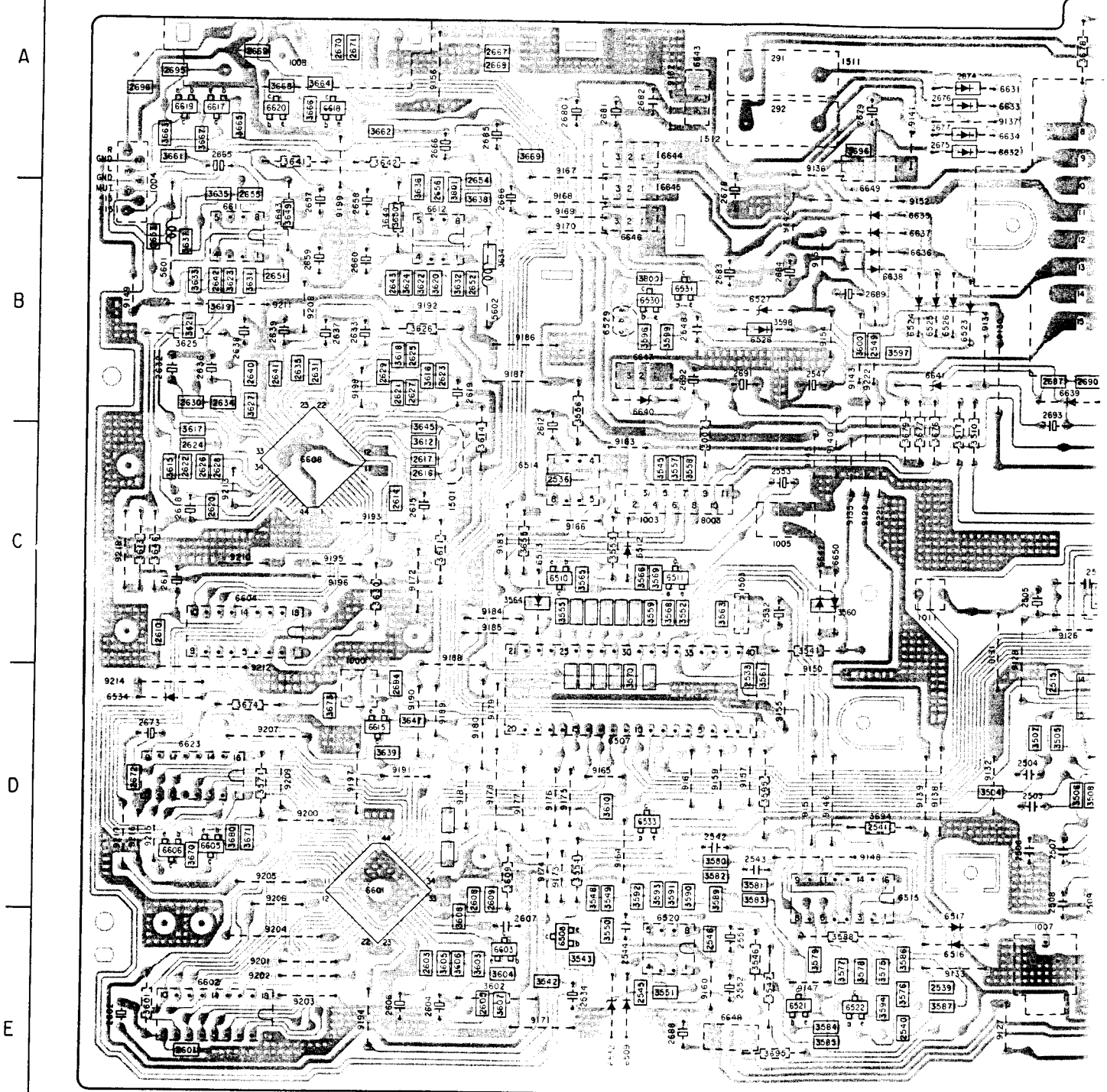
290 B1	1503 C5	2511 C1	2526 D1	2545 C6	2608 D7	2624 C9	2639 B8	2665 A9	2680 A6	2905 A9	3513 C1	3530 D1
291 A5	1510 B1	2512 C1	2527 D1	2546 C5	2609 D7	2625 B7	2640 B8	2666 A7	2681 A6	2906 A9	3514 C1	3531 D1
292 A5	1511 A5	2513 C1	2528 C0	2547 B5	2610 C9	2626 C9	2641 B8	2667 A7	2682 A6	2907 C5	3515 C1	3532 D2
1000 D8	1512 A5	2514 C1	2530 D0	2548 B5	2611 C9	2627 B7	2642 B9	2668 A7	2683 B5	3007 C5	3516 C2	3533 E2
1003 C6	2500 B0	2515 D3	2531 C1	2549 B4	2612 B6	2628 C9	2643 B7	2669 A6	2684 B5	3501 C3	3517 C4	3534 D2
1004 A9	2501 B3	2516 C2	2532 C5	2551 E5	2614 C7	2629 B8	2644 B8	2670 A8	2685 A7	3502 C3	3518 C0	3535 D2
1005 C5	2502 B3	2517 C2	2533 D5	2552 E5	2615 C7	2630 B9	2645 B7	2671 A8	2686 B7	3503 C2	3519 C0	3536 D2
1006 D0	2503 D3	2518 C2	2534 C6	2553 C5	2616 C7	2631 B8	2646 A7	2672 D9	2687 B3	3504 D3	3520 D1	3537 D1
1007 E3	2504 D3	2519 D2	2535 B9	2554 E9	2617 C7	2632 B9	2647 A8	2673 D9	2688 E5	3505 D3	3521 D0	3538 D0
1008 A8	2505 B3	2520 C0	2536 E4	2555 E9	2618 C9	2633 B8	2648 A7	2674 A4	2689 B4	3506 D3	3522 D0	3539 C0
1009 A0	2506 D3	2521 D1	2540 E4	2556 E7	2619 B7	2634 B9	2649 A8	2675 A4	2690 B3	3507 D3	3523 E1	3540 C0
1010 B0	2507 D3	2522 D0	2541 D4	2557 E7	2620 C9	2635 B8	2650 B8	2676 A4	2691 B5	3508 D3	3524 E1	3541 C5
1011 C4	2508 D3	2523 E0	2542 D5	2558 E7	2621 B7	2636 C8	2651 B8	2677 A4	2692 B5	3509 D2	3525 D1	3542 C6
1012 A1	2509 D3	2524 E0	2543 D5	2559 E7	2622 C9	2637 B8	2652 B8	2678 A5	2693 B3	3510 C4	3526 D1	3543 C6
1501 C7	2510 C0	2525 E0	2544 E6	2607 E7	2623 B7	2638 B8	2653 B8	2679 A4	2694 D7	3511 C1	3527 D0	3544 C6
						2639 B8	2660 B8	2679 A4	2694 D7	3512 D2		3545 C6



# R PANEL SOLDER SIDE

290 B1	1503 C5	2511 C1	2526 D1	2545 G6	2608 D7	2624 C9	2639 B8	2665 A9	2680 A6	2695 A9	3513 C1	3530 D1	3546 E5	3561 D5	3580 D6	3595 D6	3610 D6	3625 B9	3643 B8	3658 A
291 A5	1510 B1	2512 C1	2527 D1	2546 E5	2609 D7	2625 C7	2640 B8	2666 A7	2681 A6	2696 A9	3514 C1	3531 D1	3547 E5	3562 C2	3581 D5	3596 B6	3611 C7	3626 B7	3644 B7	3659 A
292 A5	1511 A5	2513 C1	2528 D0	2547 B5	2610 C9	2626 C9	2641 B8	2667 A7	2682 A6	2697 C5	3515 C1	3532 D2	3548 D6	3563 C3	3582 D5	3597 B4	3612 C7	3627 B8	3645 C7	3670 D1
1000 D6	1512 A5	2514 C1	2530 D0	2548 B5	2611 C9	2627 C7	2642 B8	2668 A7	2683 B5	3501 C3	3516 C2	3533 D2	3549 D6	3564 C6	3583 D5	3598 B5	3613 C9	3630 C8	3646 C9	3671 D1
1003 D6	2500 B0	2515 D3	2531 C1	2549 B4	2612 B6	2628 C8	2643 B7	2669 A8	2684 B5	3502 C3	3517 C4	3534 D2	3550 D6	3565 C6	3584 E5	3599 B6	3614 C9	3630 C8	3646 C9	3671 D1
1005 C5	2502 B3	2517 C2	2532 C5	2551 E5	2614 C7	2629 C8	2651 B8	2670 A8	2685 A7	3503 C2	3518 C0	3535 D2	3551 C6	3566 C6	3585 E5	3599 B6	3614 C7	3631 B8	3647 D7	3673 D1
1006 D0	2503 D3	2518 C2	2533 C5	2552 E5	2615 C7	2630 B9	2652 B7	2671 A8	2686 B7	3504 D3	3519 C0	3536 D2	3552 C6	3567 C6	3586 E4	3600 B4	3615 C9	3632 B7	3648 B8	3674 D1
1007 C3	2504 D3	2519 D2	2534 E6	2553 C5	2616 C7	2631 B8	2653 B9	2672 D9	2687 B3	3505 D3	3520 D1	3537 D1	3553 C6	3568 C6	3587 E4	3601 B9	3616 B7	3634 B7	3655 C7	3676 C1
1008 A8	2505 B3	2520 C0	2536 E9	2554 E6	2617 C7	2632 B9	2654 A7	2673 D9	2688 B3	3506 D3	3521 D0	3538 D0	3554 D6	3569 C6	3588 E4	3602 E7	3617 C9	3635 B9	3651 A9	3677 C1
1009 A0	2506 D3	2521 D1	2538 E4	2555 E6	2618 C9	2633 B8	2655 B8	2674 A4	2689 B4	3507 D3	3522 D0	3539 C0	3555 C6	3570 D6	3589 D5	3603 E7	3618 B7	3635 B9	3651 A9	3677 C1
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9                      8                      7                      6                      5                      4                      3



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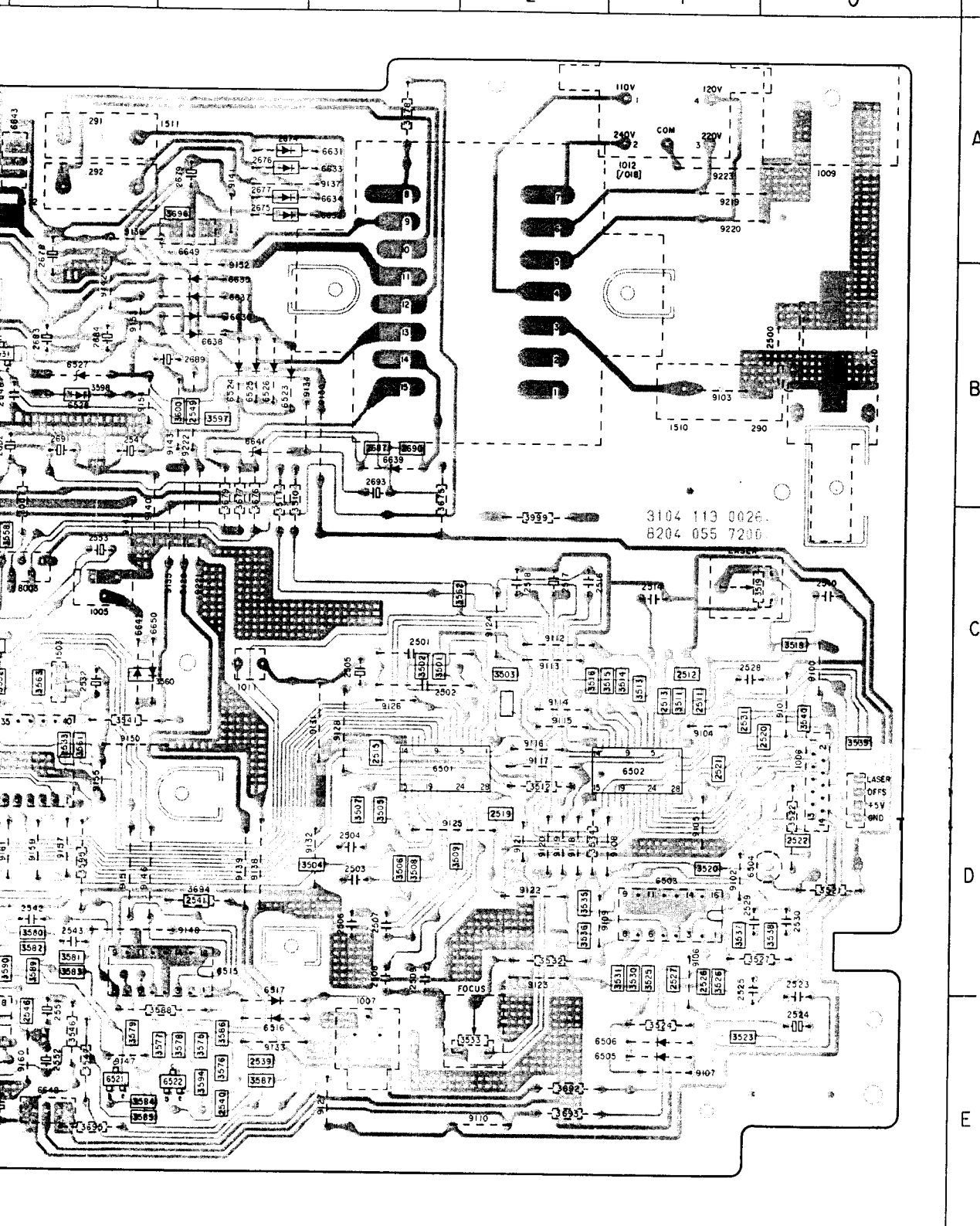
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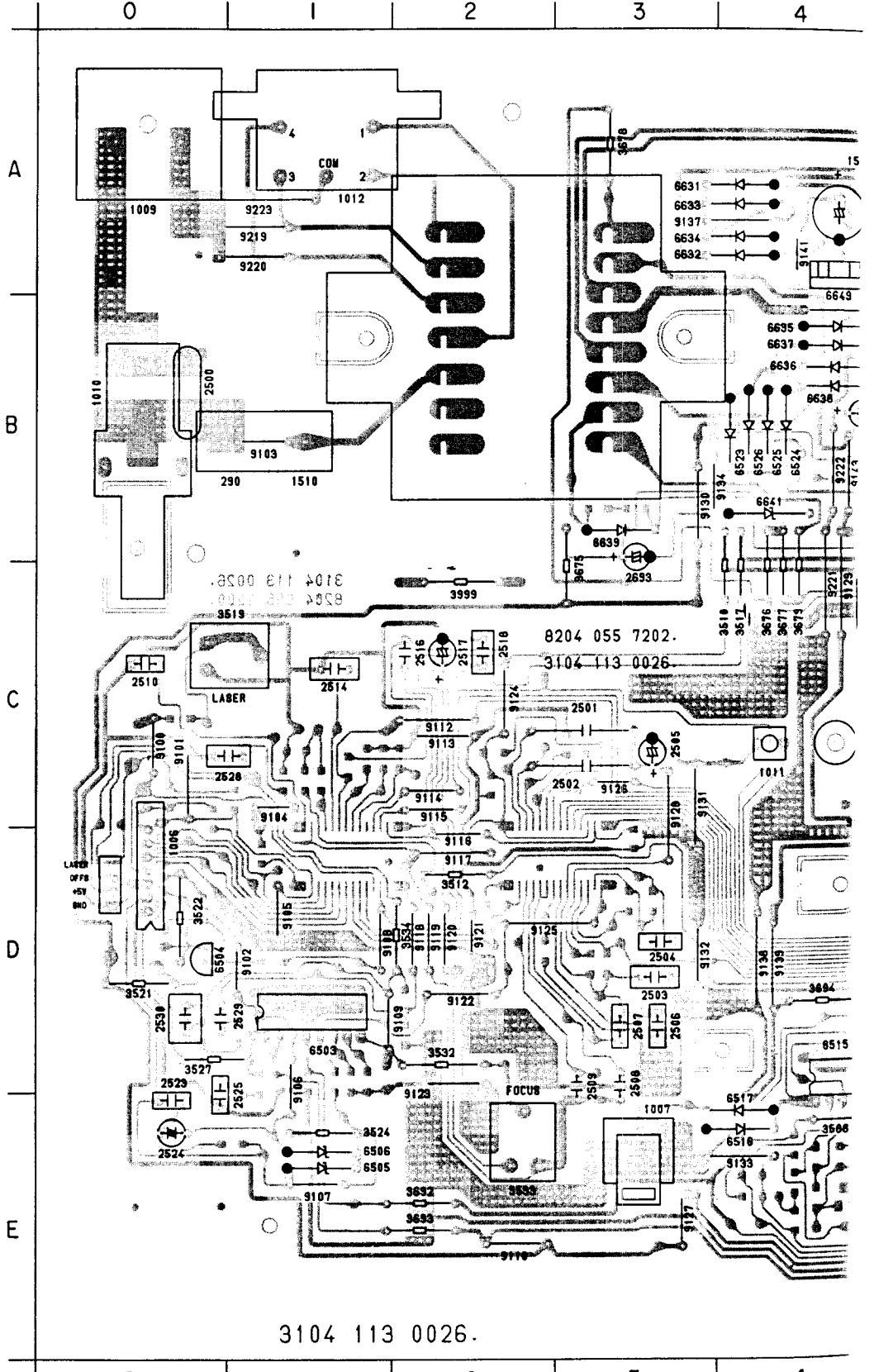
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# SERVO & DECODER PANEL COMPONENT SIDE

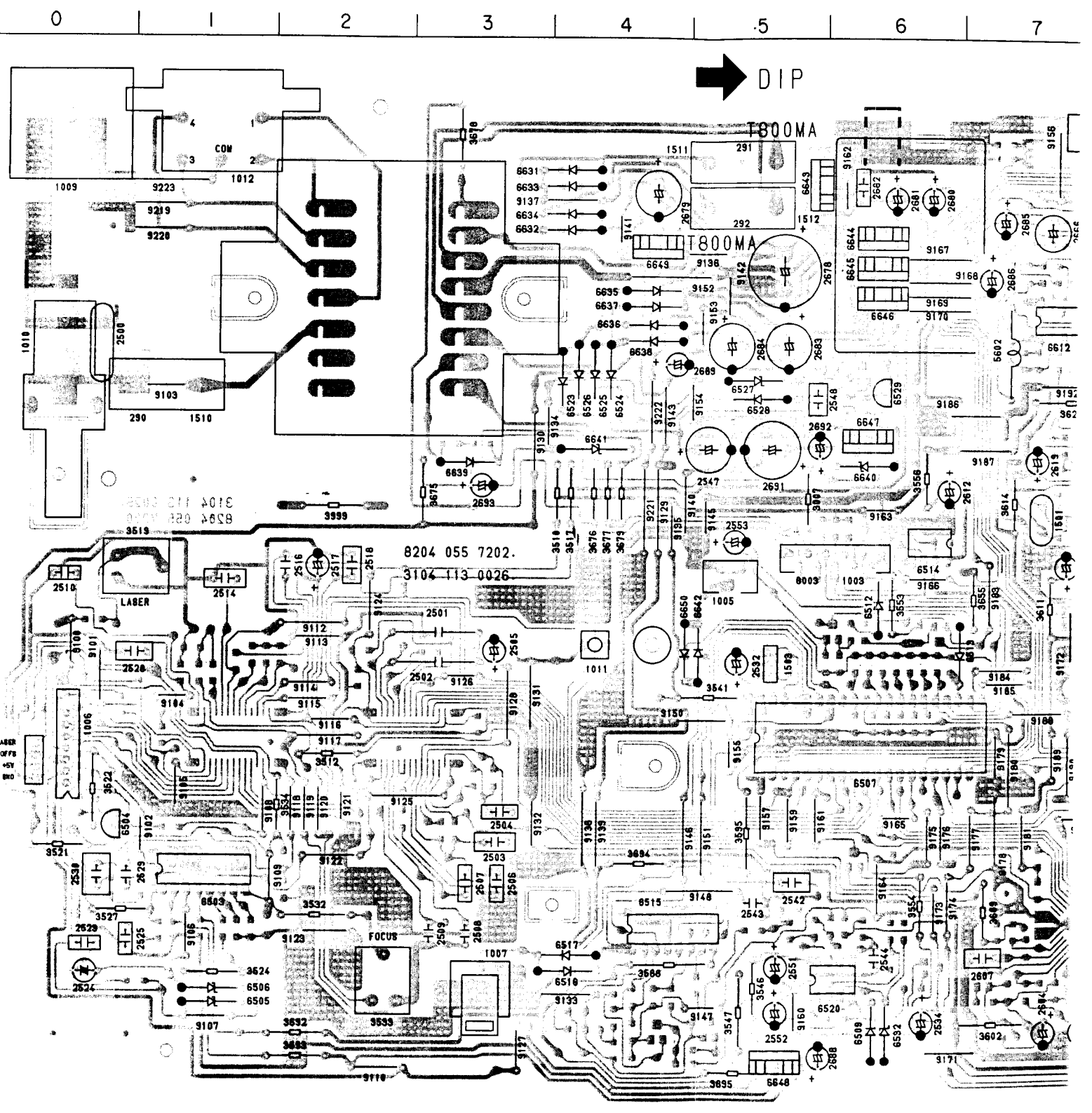
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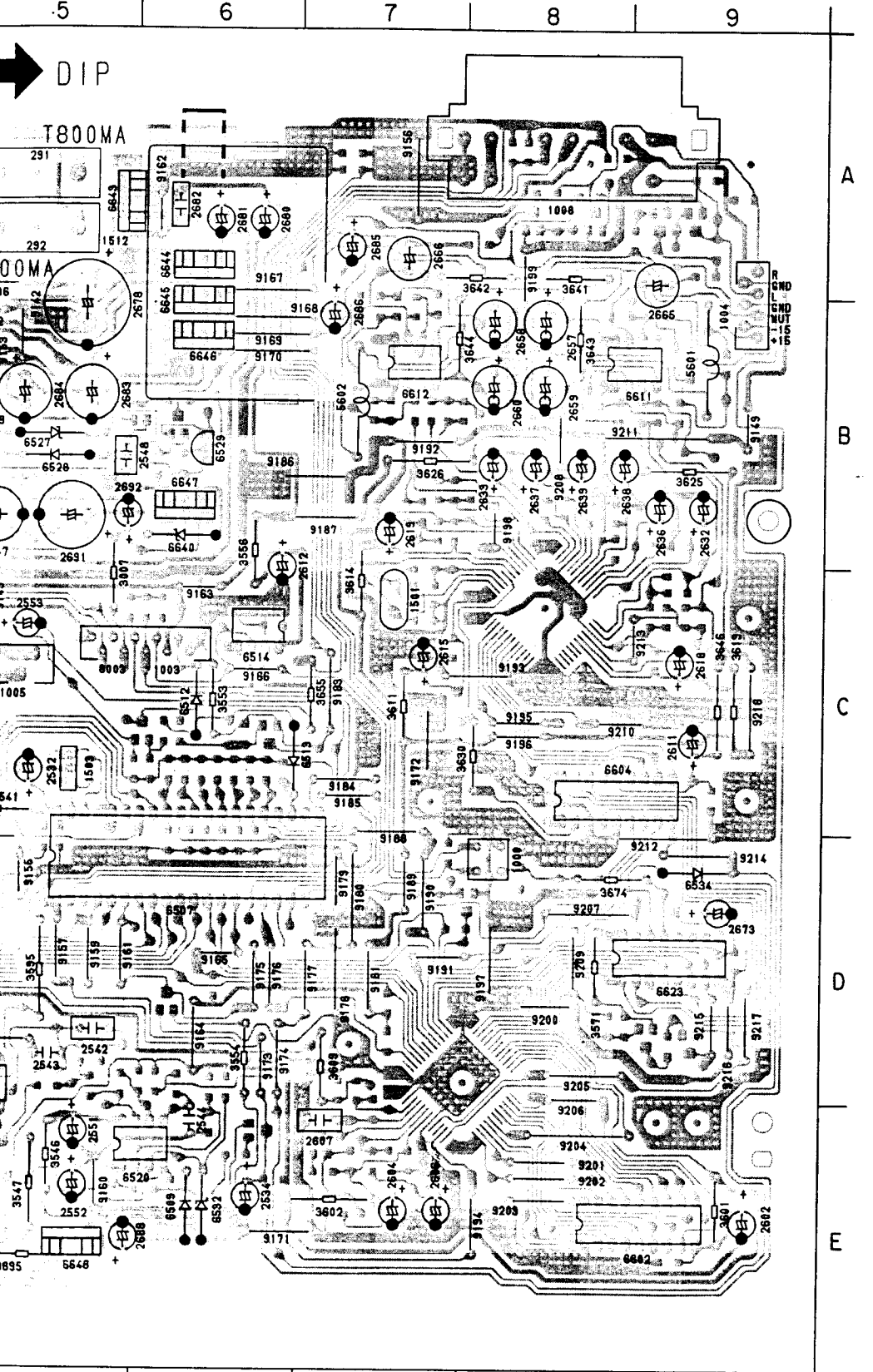
COMPONENT SIDE

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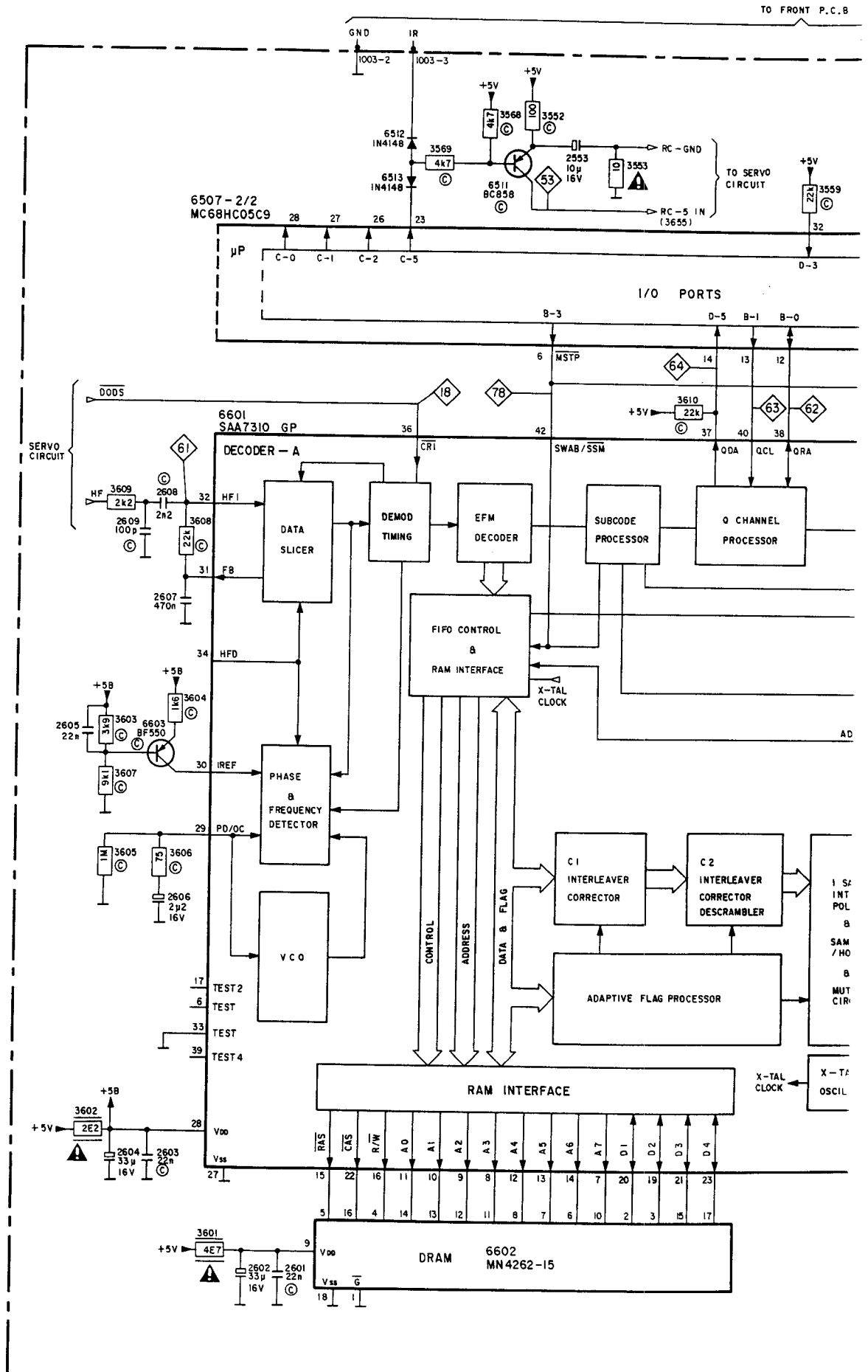


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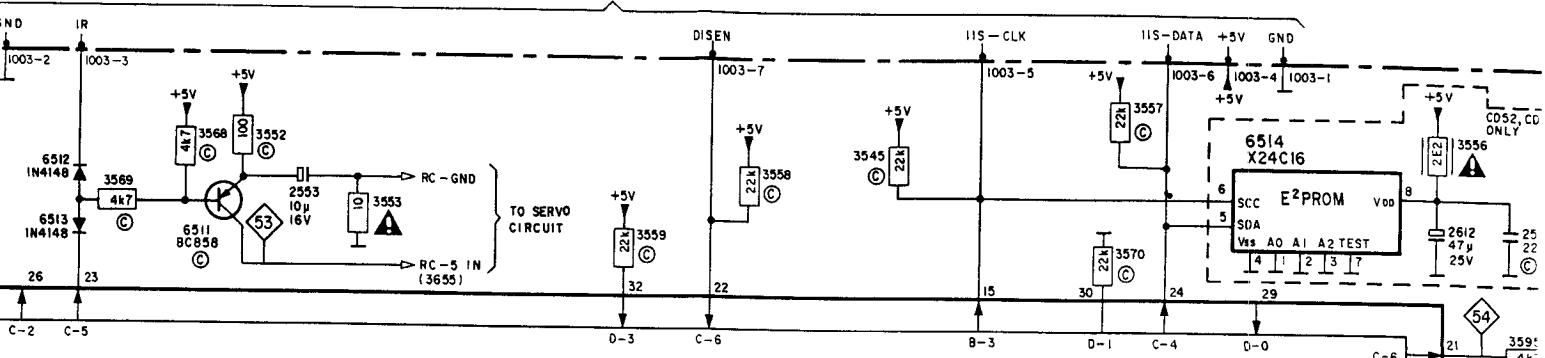
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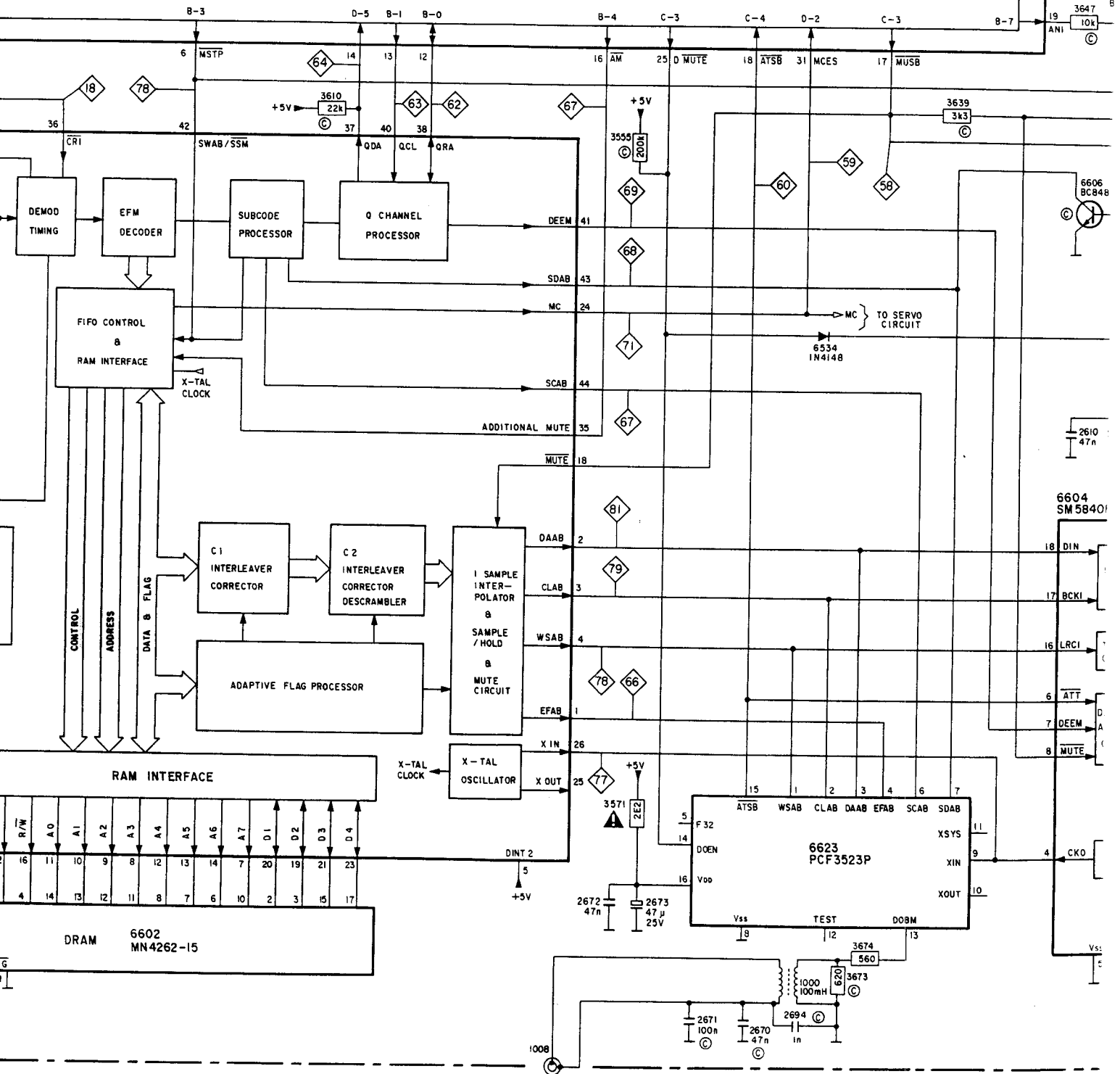
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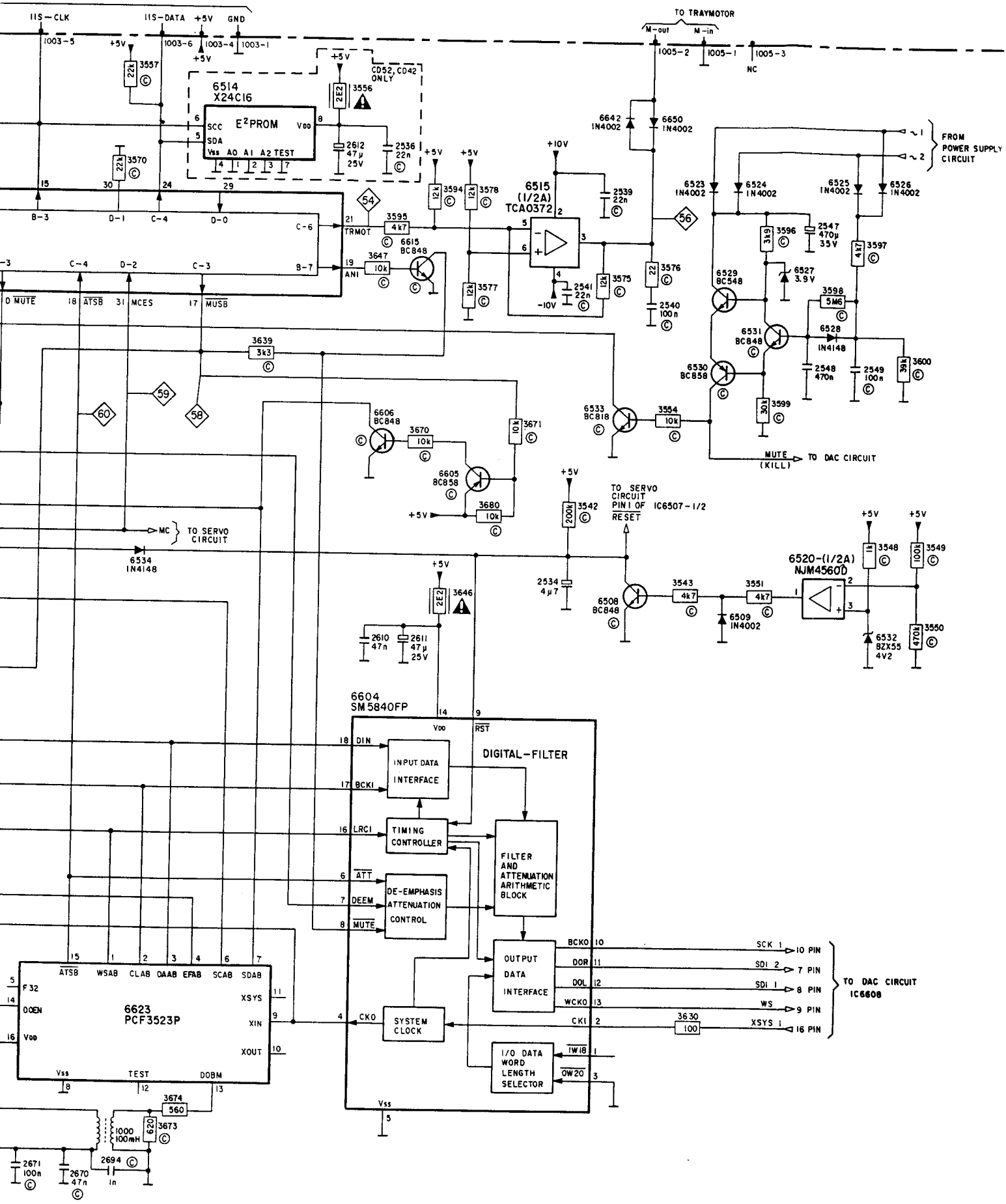
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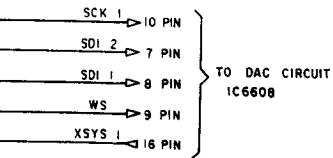
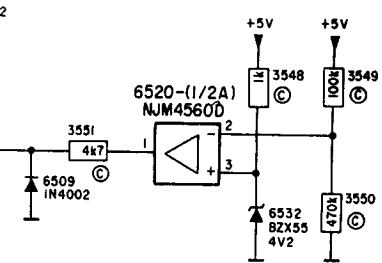
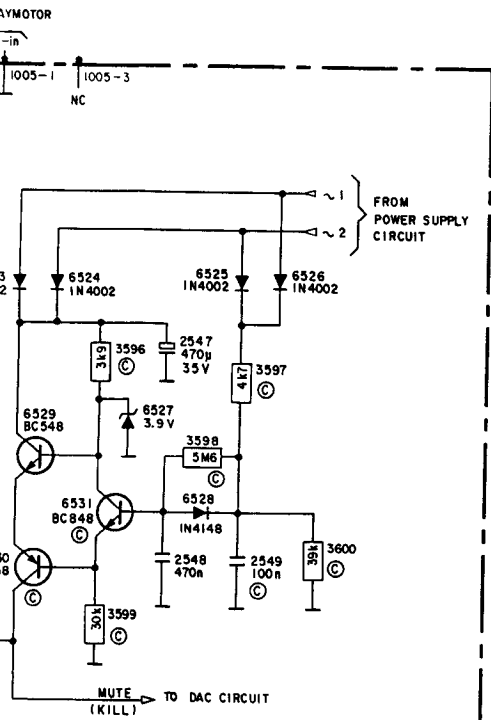


I/O PORTS



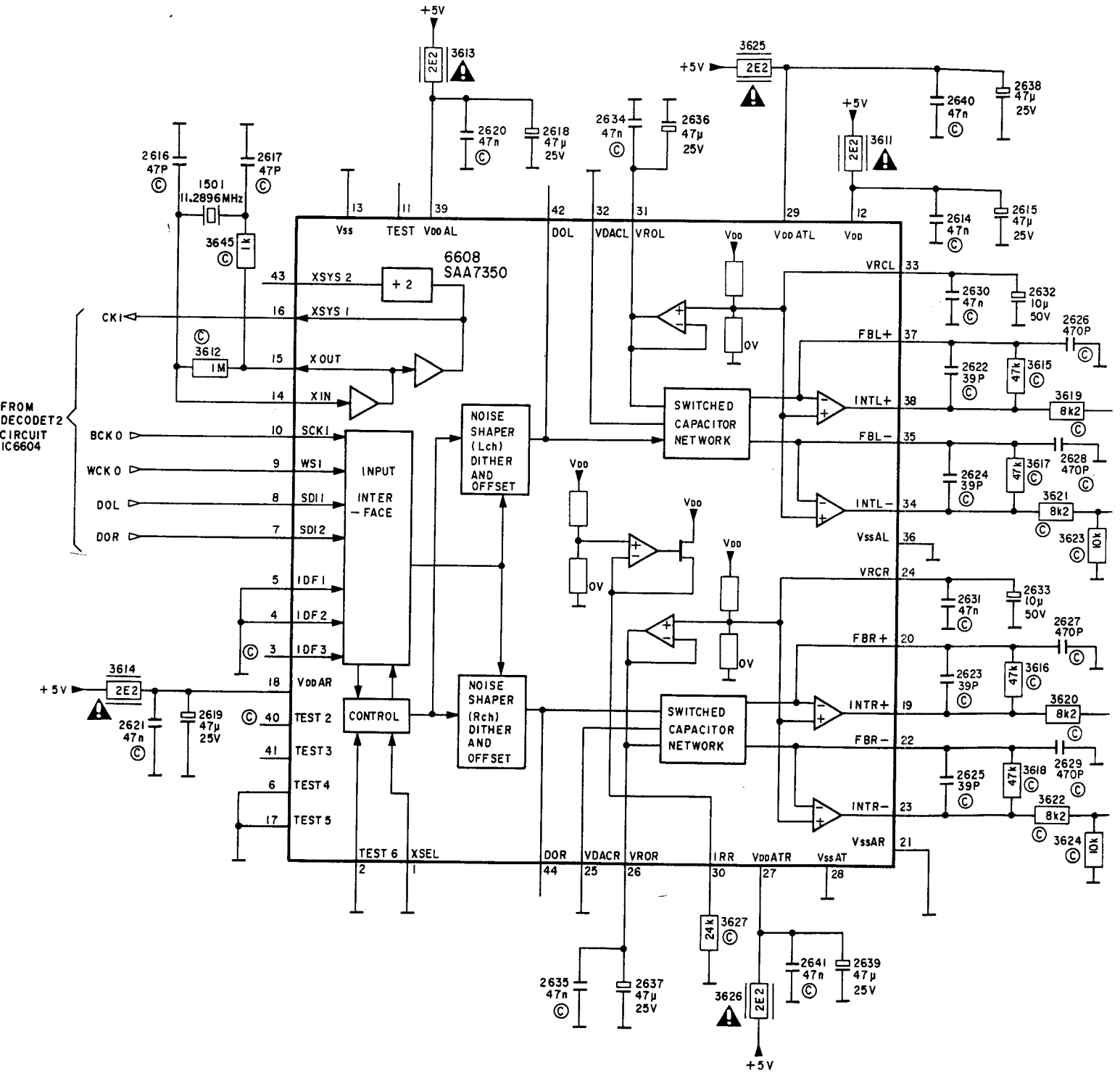


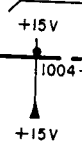
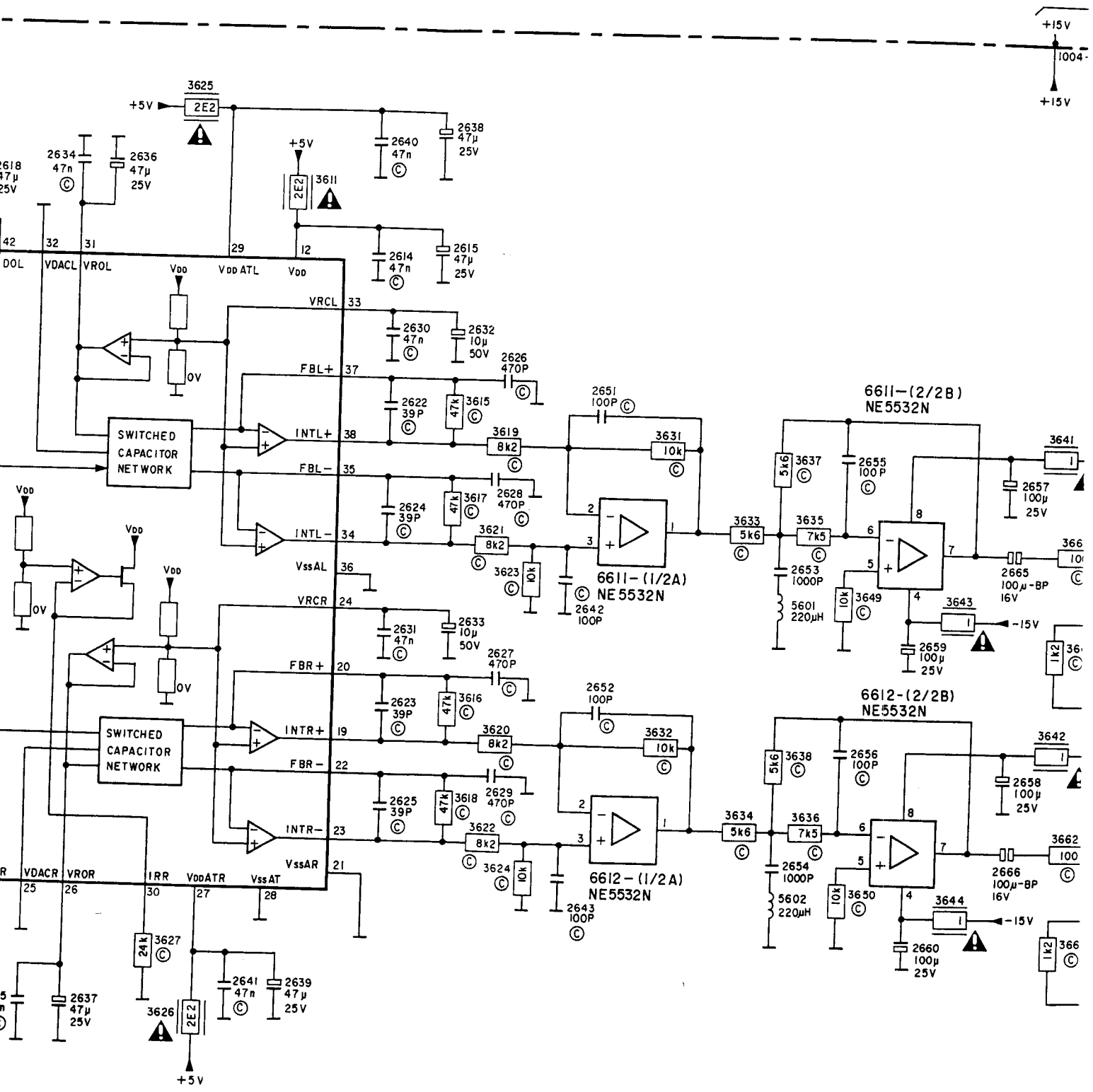




- 68 LOW PULSES DURING NEXT AND PREVIOUS
- 63 ACTIVITY WHEN USING AN IR REMOTE CONTROL
- 64 0V WHILE OPENING  
5V WHILE CLOSING  
2.5V IN REST
- 66 -5V WHILE TRAY IS OPENING  
-5V WHILE TRAY IS CLOSING  
0V IN REST
- 61 EYEPATTERN  
2.5V  
0.5µs/DIV
- 62 PLAY POSITION  
10ms/DIV
- 63 OCL  
0.2ms/DIV
- 64 DATA
- 66 PULSES WHEN THE DISC IS SLOWLY BRAKED BY HAND
- 67 50µs/DIV  
136µs
- 68 ACTIVITY DURING PLAY
- 69 AUDIO SIGNALS DISC: HIGH ON TRACK 76 78 80 82 84 86 88  
LOW ON TRACK 77 79 81 83 85 87 89
- 74 MC SIGNAL  
5µs/DIV  
11µs
- STAND BY POSITION
- BEGINNING PLAY POSITION
- PLAY POSITION
- 77 11 2896 MHz SINEWAVE
- 78 WSAB  
5µs/DIV
- 79 CLAB  
11.34µs
- 81 ACTIVITY DURING PLAY
- 82 11 2896 MHz SINEWAVE
- 81 4V  
1µs  
8V  
POWER ON  
POWER OFF

DAC CIRCUIT DIAGRAM





2618  
47µ  
25V

2634  
47n  
2636  
47µ  
25V

3625  
2E2  
+5V

+5V  
2E2  
3611  
2640  
47n  
2638  
47µ  
25V

V<sub>DD</sub> ATL  
V<sub>DD</sub>  
VRCL 33  
FBL+ 37  
FBL- 35  
INTL+ 38  
INTL- 34  
V<sub>SS</sub> AL 36  
VRCL 33  
FBL+ 37  
FBL- 35  
INTL+ 38  
INTL- 34  
V<sub>SS</sub> AL 36

2630  
47n  
2632  
10µ  
50V  
2626  
470P  
2622  
39P  
47K  
3615  
2628  
470P  
2624  
39P  
47K  
3617  
2628  
470P  
3621  
8K2  
3623  
10K

2651  
100P  
3631  
10K  
6611-(1/2A)  
NE5532N  
2642  
100P  
3633  
5k6

6611-(2/2B)  
NE5532N

3641  
100µ  
25V  
3640  
10  
2665  
100µ-8P  
16V  
366  
10K  
3649  
3643  
2659  
100µ  
25V  
3642  
1K2  
366

2631  
47n  
2633  
10µ  
50V  
2627  
470P  
2623  
39P  
47K  
3616  
2629  
470P  
3620  
8K2  
3622  
8K2  
3624  
10K

2652  
100P  
3632  
10K  
6612-(1/2A)  
NE5532N  
2643  
100P  
3634  
5k6

6612-(2/2B)  
NE5532N

3642  
100µ  
25V  
3641  
10  
2666  
100µ-8P  
16V  
3662  
100  
3650  
3644  
2660  
100µ  
25V  
366  
1K2  
366

2637  
47µ  
25V

3627  
24K  
3626  
2E2  
+5V  
2641  
47n  
2639  
47µ  
25V

3627  
24K  
3626  
2E2  
+5V

+5V  
2E2  
3626  
2641  
47n  
2639  
47µ  
25V

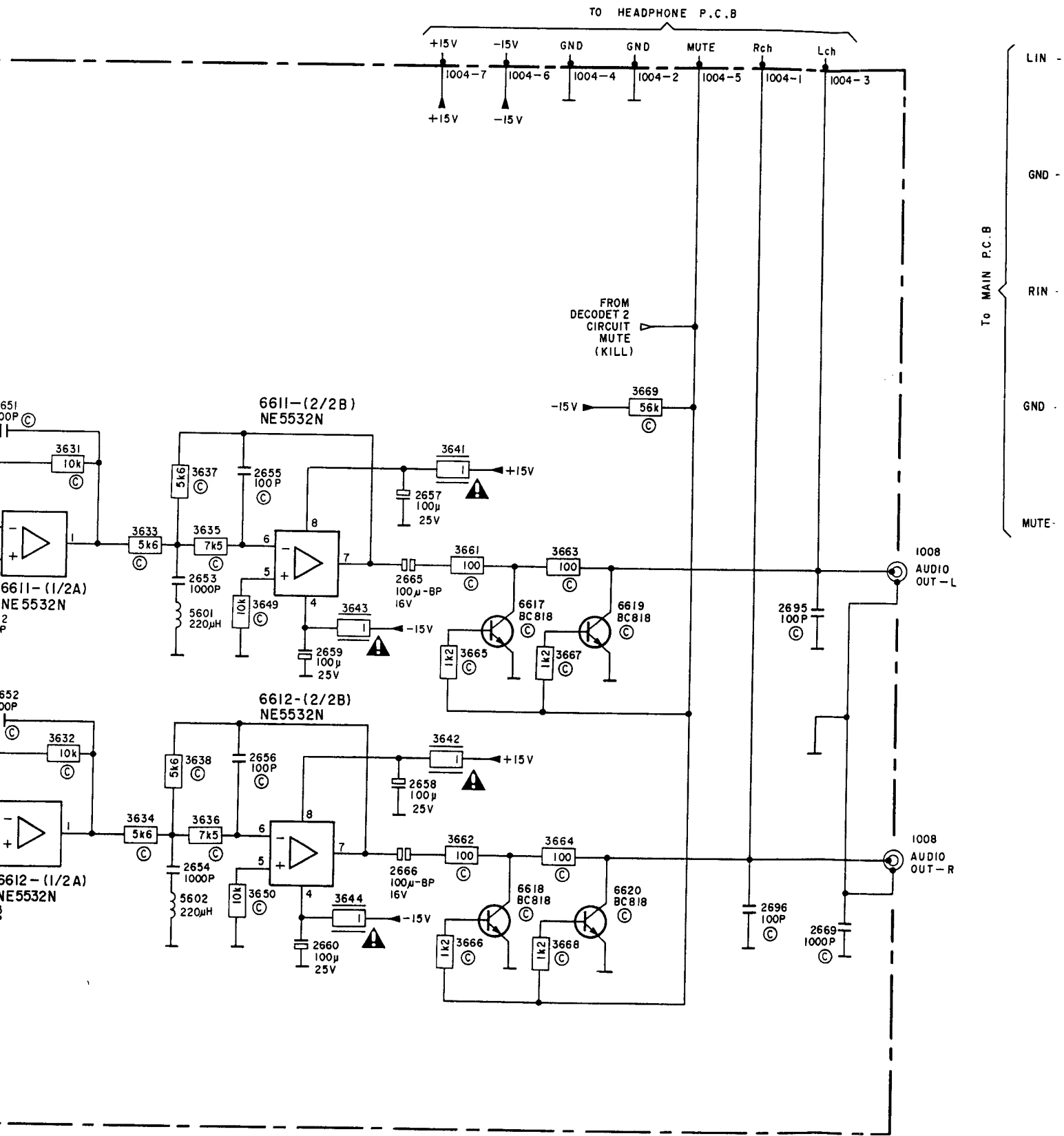
V<sub>DD</sub> ATR  
V<sub>DD</sub>  
VROR 26  
FBR+ 20  
FBR- 22  
INTR+ 19  
INTR- 23  
V<sub>SS</sub> AR 21  
VROR 26  
FBR+ 20  
FBR- 22  
INTR+ 19  
INTR- 23  
V<sub>SS</sub> AR 21

2637  
47µ  
25V  
2641  
47n  
2639  
47µ  
25V

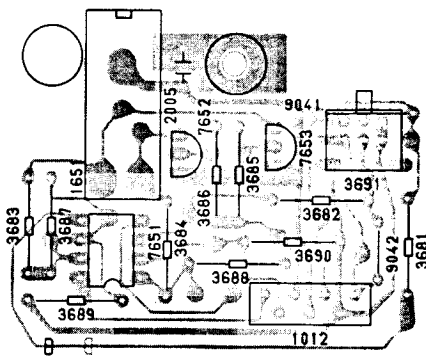
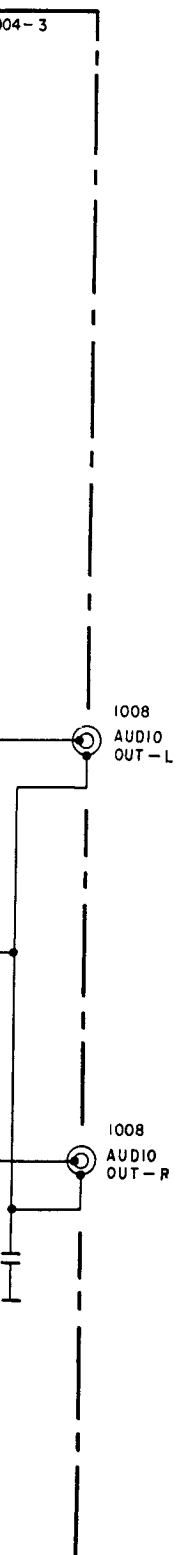
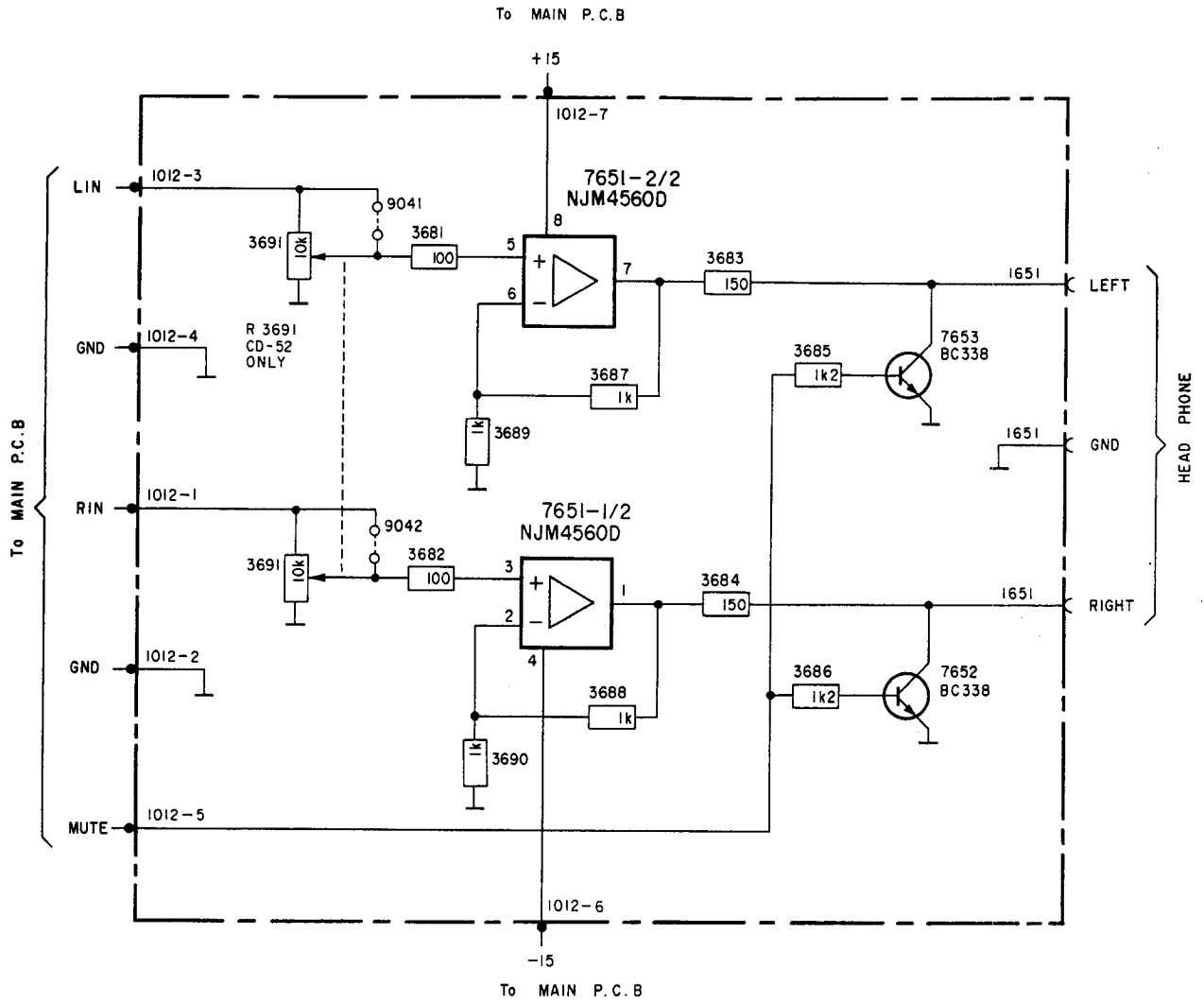
2654  
1000P  
5602  
220µH  
3636  
7k5  
3638  
5k6  
2656  
100P  
3642  
100µ  
25V  
2666  
100µ-8P  
16V  
3662  
100  
3650  
3644  
2660  
100µ  
25V  
366  
1K2  
366

6612-(2/2B)  
NE5532N

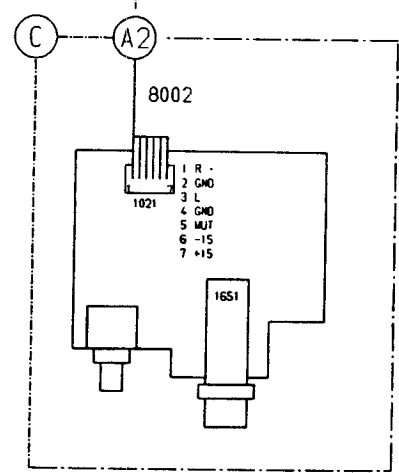
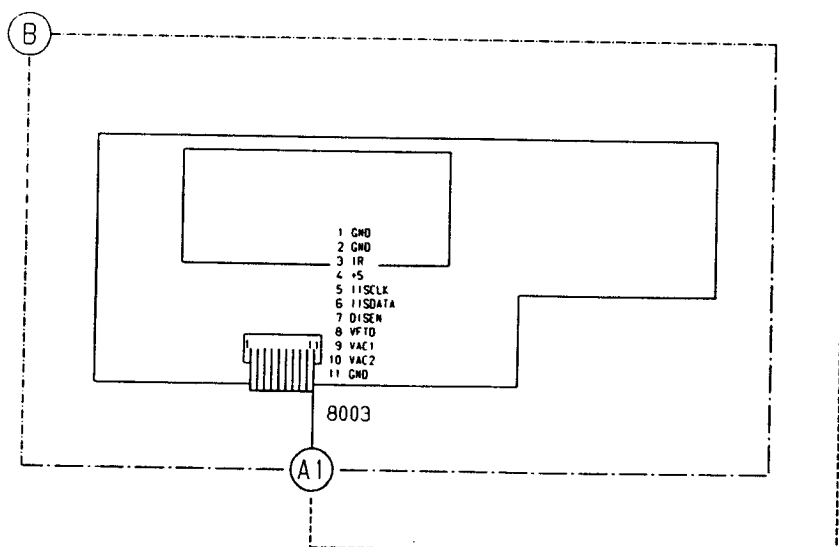
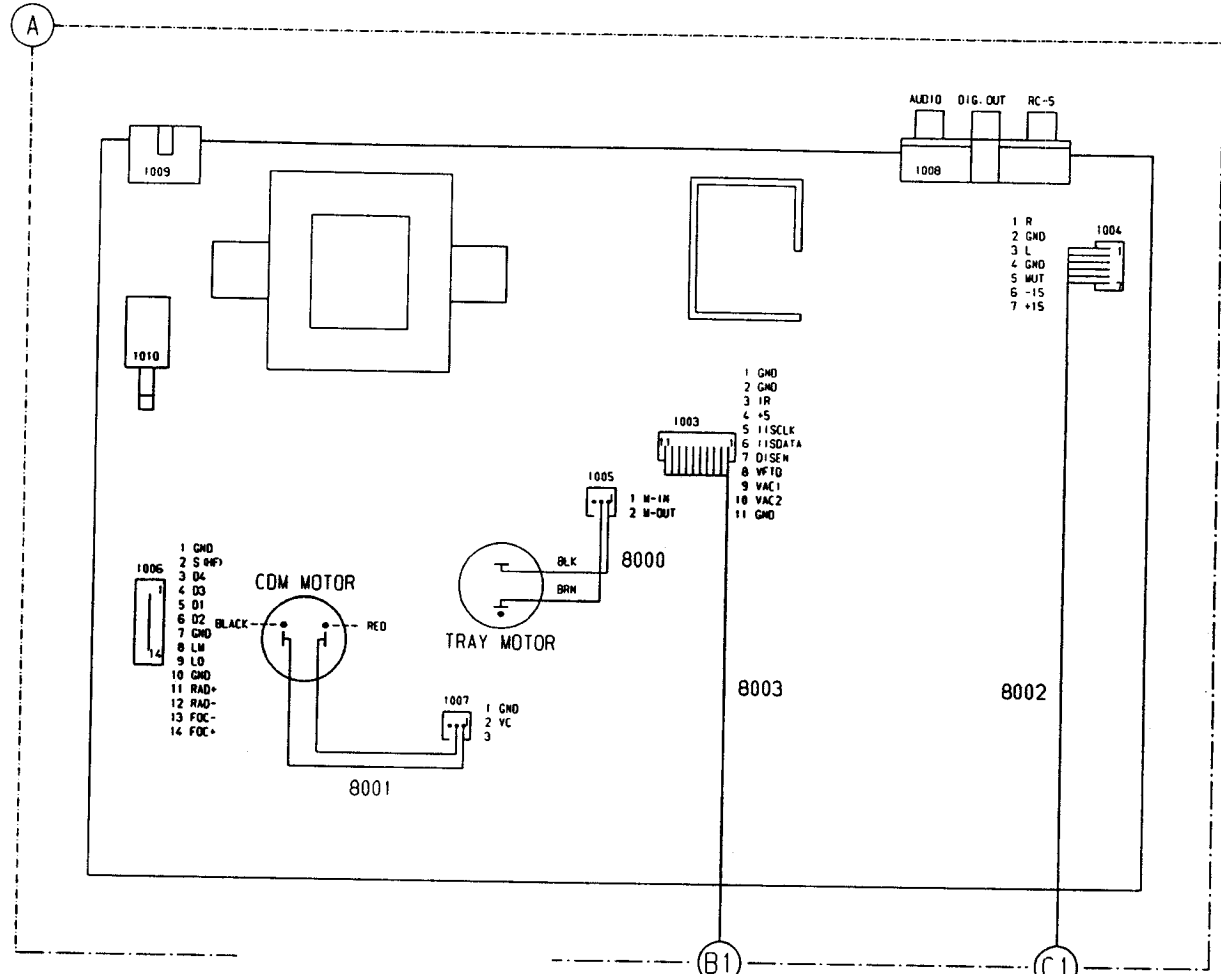
3642  
100µ  
25V  
3641  
10  
2666  
100µ-8P  
16V  
3662  
100  
3650  
3644  
2660  
100µ  
25V  
366  
1K2  
366



# HEADPHONE CIRCUIT DIAGRAM



# WIRING DIAGRAM



## SERVO &amp; DECODER PARTSLIST

-II-			-II-		
2500	4822 126 10454	3.3nF 20% 400V	2605	4822 122 32863	22nF 80% 50V
2501	4822 121 51321	8.2μF 1% 63V	2606	4822 124 41576	2.2μF 20% 50V
2502	4822 121 51321	8.2μF 1% 63V	2607	4822 121 51252	470nF 5% 63V
2503	5322 121 42661	330nF 5% 63V	2608	4822 122 31644	2.2nF 10% 63V
2504	4822 121 43526	47nF 5% 100V	2609	4822 122 31765	100pF 5% 50V
2505	4822 124 40272	33μF 20% 16V	2610	4822 122 32542	47nF 10% 63V
2506	4822 121 42408	220nF 5% 63V	2611	4822 124 40433	47μF 20% 25V
2507	4822 121 42408	220nF 5% 63V	2612	4822 124 40433	47μF 20% 25V for CD42, CD52
2508	4822 121 43996	33nF 5% 50V	2614	4822 122 32542	47nF 10% 63V
2509	4822 121 43996	33nF 5% 50V	2615	4822 124 40433	47μF 20% 25V
2510	4822 121 43526	47nF 5% 100V	2616	4822 122 31772	47pF 5% 50V
2511	4822 122 32863	22nF 80% 50V	2617	4822 122 31772	47pF 5% 50V
2512	4822 122 31765	100pF 5% 50V	2618	4822 124 40433	47μF 20% 25V
2513	4822 122 31746	1nF 5% 50V	2619	4822 124 40433	47μF 20% 25V
2514	4822 121 42408	220nF 5% 63V	2620	4822 122 32542	47nF 10% 63V
2515	4822 122 32863	22nF 80% 50V	2621	4822 122 32542	47nF 10% 63V
2516	4822 121 43925	2.2nF 5% 50V	2622	4822 122 31972	39pF 5% 50V
2517	4822 124 41596	22μF 20% 50V	2623	4822 122 31972	39pF 5% 50V
2518	4822 121 51252	470nF 5% 63V	2624	4822 122 31972	39pF 5% 50V
2519	4822 122 31746	1nF 5% 50V	2625	4822 122 31972	39pF 5% 50V
2520	4822 122 31727	470pF 5% 63V	2626	4822 122 31727	470pF 5% 63V
2521	4822 122 32442	10nF 10% 50V	2627	4822 122 31727	470pF 5% 63V
2522	4822 122 31965	220pF 5% 63V	2628	4822 122 31727	470pF 5% 63V
2523	5322 121 42386	100nF 5% 63V	2629	4822 122 31727	470pF 5% 63V
2524	4822 124 41583	0.68μF 20% 50V Bipolar	2630	4822 122 32542	47nF 10% 63V
2525	5322 121 42386	100nF 5% 63V	2631	4822 122 32542	47nF 10% 63V
2526	4822 122 32542	47nF 10% 63V	2632	4822 124 40435	10μF 20% 50V
2527	4822 122 32542	47nF 10% 63V	2633	4822 124 40435	10μF 20% 50V
2528	4822 121 51252	470nF 5% 63V	2634	4822 122 32542	47nF 10% 63V
2529	4822 121 43901	4.7nF 5% 50V	2635	4822 122 32542	47nF 10% 63V
2530	5322 121 42661	330nF 5% 63V	2636	4822 124 40433	47μF 20% 25V
2531	4822 122 32863	22nF 80% 50V	2637	4822 124 40433	47μF 20% 25V
2532	4822 124 40433	47μF 20% 25V	2638	4822 124 40433	47μF 20% 25V
2533	4822 122 32863	22nF 80% 50V	2639	4822 124 40433	47μF 20% 25V
2534	4822 124 41577	4.7μF 20% 50V	2640	4822 122 32542	47nF 10% 63V
2536	4822 122 32863	22nF 80% 50V for CD52, CD42	2641	4822 122 32542	47nF 10% 63V
2539	4822 122 32863	22nF 80% 50V	2642	4822 122 31765	100pF 5% 50V
2540	4822 122 33496	100nF 10% 63V	2643	4822 122 31765	100pF 5% 50V
2541	4822 122 32863	22nF 80% 50V	2651	4822 122 31765	100pF 5% 50V
2542	4822 121 51252	470nF 5% 63V	2652	4822 122 31765	100pF 5% 50V
2543	4822 121 43925	2.2nF 5% 50V	2653	4822 122 31746	1000pF 5% 63V
2544	4822 121 43179	18nF 5% 250V	2654	4822 122 31746	1000pF 5% 63V
2545	4822 122 32863	22nF 80% 50V	2655	4822 122 31765	100pF 5% 50V
2546	4822 122 32863	22nF 80% 50V	2656	4822 122 31765	100pF 5% 50V
2547	4822 124 41334	470μF 20% 35V	2657	4822 124 41525	100μF 20% 25V
2548	4822 121 51252	470nF 5% 63V	2658	4822 124 41525	100μF 20% 25V
2549	4822 122 33496	100nF 10% 63V	2659	4822 124 41525	100μF 20% 25V
2551	4822 124 40433	47μF 20% 25V	2660	4822 124 41525	100μF 20% 25V
2552	4822 124 40433	47μF 20% 25V	2665	4822 124 22339	100μF 20% 16V Bipolar
2553	4822 124 40435	10μF 20% 50V	2666	4822 124 22339	100μF 20% 16V Bipolar
2601	4822 122 32863	22nF 80% 50V	2667	4822 122 32542	47nF 10% 63V
2602	4822 124 40272	33μF 20% 16V	2668	4822 122 33496	100nF 10% 63V
2603	4822 122 32863	22nF 80% 50V	2669	4822 122 31746	1nF 5% 50V
2604	4822 124 40272	33μF 20% 16V	2670	4822 122 32542	47nF 10% 63V





2671	4822 122 33496	100nF 10% 63V
2672	4822 122 32542	47nF 10% 63V
2673	4822 124 40433	47μF 20% 25V
2674	4822 122 32863	22nF 80% 50V
2675	4822 122 32863	22nF 80% 50V
2676	4822 122 32863	22nF 80% 50V
2677	4822 122 32863	22nF 80% 50V
2678	4822 124 23268	3300μF 20% 16V
2679	4822 124 41853	1000μF 20% 16V
2680	4822 124 40433	47μF 20% 25V
2681	4822 124 40433	47μF 20% 25V
2682	5322 121 42386	100nF 5% 63V
2683	5322 124 21189	100μF 20% 40V
2684	5322 124 21189	100μF 20% 40V
2685	4822 124 40433	47μF 20% 25V
2686	4822 124 40433	47μF 20% 25V
2687	4822 122 32863	22nF 80% 50V
2688	4822 124 40433	47μF 20% 25V
2689	4822 124 40433	47μF 20% 25V
2690	4822 122 32863	22nF 80% 50V
2691	4822 124 23172	470μF 20% 50V
2692	4822 124 41596	22μF 20% 50V
2693	4822 124 40433	47μF 20% 25V
2694	4822 122 31746	1nF 5% 50V
2695	4822 122 31765	100pF 5% 50V
2696	4822 122 31765	100pF 5% 50V



3007	4822 052 10478	4.7Ω 5% 0.33W Safety
3501	4822 051 10153	15kΩ 2% 0.25W
3502	4822 051 10473	47kΩ 2% 0.25W
3503	4822 051 10223	22kΩ 2% 0.25W
3504	4822 051 10224	220kΩ 2% 0.25W
3505	4822 051 10512	5.1kΩ 2% 0.25W
3506	4822 051 10224	220kΩ 2% 0.25W
3507	4822 051 20183	18kΩ 5% 0.1W
3508	4822 051 10182	1.8kΩ 2% 0.25W
3509	4822 051 10123	12kΩ 2% 0.25W
3511	4822 051 10102	1kΩ 2% 0.25W
3512	4822 051 10101	100Ω 2% 0.25W
3513	4822 051 10103	10kΩ 2% 0.25W
3514	4822 051 10123	12kΩ 2% 0.25W
3515	4822 051 10243	24kΩ 2% 0.25W
3516	4822 051 10562	5.6kΩ 2% 0.25W
3518	4822 051 10221	220Ω 2% 0.25W
3519	4822 101 10685	4.7kΩ 20% 0.05W
3520	4822 051 10101	100Ω 2% 0.25W
3521	4822 052 10189	18Ω 5% 0.33W Safety
3522	4822 052 10129	12Ω 5% 0.33W Safety
3523	4822 051 10339	33Ω 2% 0.25W
3524	4822 052 10478	4.7Ω 5% 0.33W Safety
3525	4822 051 10682	6.8kΩ 2% 0.25W
3526	4822 051 10229	22Ω 2% 0.25W
3527	4822 052 10279	27Ω 5% 0.33W Safety
3530	4822 051 10682	6.8kΩ 2% 0.25W



3532	4822 050 26804	680kΩ 1% 0.6W
3533	4822 100 11193	22kΩ 20% Potmtr. Lin.
3534	4822 050 21204	120kΩ 1% 0.6W
3535	4822 051 10154	150kΩ 2% 0.25W
3536	4822 111 91494	11kΩ 2% 0.1W
3537	4822 111 91495	160kΩ 2% 0.1W
3538	4822 051 10563	56kΩ 2% 0.25W
3539	4822 051 10472	4.7kΩ 2% 0.25W
3540	4822 051 10104	100kΩ 2% 0.25W
3541	4822 052 10228	2.2Ω 5% 0.33W Safety
3542	4822 051 10204	200kΩ 2% 0.25W
3543	4822 051 10472	4.7kΩ 2% 0.25W
3545	4822 051 10223	22kΩ 2% 0.25W
3546	4822 052 10228	2.2Ω 5% 0.33W Safety
3547	4822 052 10228	2.2Ω 5% 0.33W Safety
3548	4822 051 10102	1kΩ 2% 0.25W
3549	4822 051 10104	100kΩ 2% 0.25W
3550	4822 051 10474	470kΩ 2% 0.25W
3551	4822 051 10472	4.7kΩ 2% 0.25W
3552	4822 051 10101	100Ω 2% 0.25W
3553	4822 052 10109	10Ω 5% 0.33W Safety
3554	4822 050 21003	10kΩ 1% 0.6W
3555	4822 051 10204	200kΩ 2% 0.25W
3556	4822 052 10228	2.2Ω 5% 0.33W Safety for CD42, CD52
3557	4822 051 10223	22kΩ 2% 0.25W
3558	4822 051 10223	22kΩ 2% 0.25W
3559	4822 051 10223	22kΩ 2% 0.25W
3560	4822 051 10223	22kΩ 2% 0.25W
3561	4822 051 10223	22kΩ 2% 0.25W
3562	4822 051 10223	22kΩ 2% 0.25W
3563	4822 051 10224	220kΩ 2% 0.25W
3564	4822 051 10472	4.7kΩ 2% 0.25W
3565	4822 051 20222	2.2kΩ 5% 0.1W
3566	4822 051 10103	10kΩ 2% 0.25W
3568	4822 051 10472	4.7kΩ 2% 0.25W
3569	4822 051 10472	4.7kΩ 2% 0.25W
3570	4822 051 10223	22kΩ 2% 0.25W
3571	4822 052 10228	2.2Ω 5% 0.33W Safety
3575	4822 051 10123	12kΩ 2% 0.25W
3576	4822 051 10229	22Ω 2% 0.25W
3577	4822 051 10123	12kΩ 2% 0.25W
3578	4822 051 10123	12kΩ 2% 0.25W
3579	4822 051 10823	82kΩ 2% 0.25W
3580	4822 051 10154	150kΩ 2% 0.25W
3581	4822 051 10204	200kΩ 2% 0.25W
3582	4822 051 10562	5.6kΩ 2% 0.25W
3583	4822 051 10122	1.2kΩ 2% 0.25W
3584	4822 051 10472	4.7kΩ 2% 0.25W
3585	4822 051 10472	4.7kΩ 2% 0.25W
3586	4822 051 10333	33kΩ 2% 0.25W
3587	4822 051 10562	5.6kΩ 2% 0.25W
3588	4822 050 26804	680kΩ 1% 0.6W
3589	4822 051 10332	3.3kΩ 2% 0.25W
3590	4822 051 10913	91kΩ 2% 0.25W



3592	4822 051 10473	47kΩ 2% 0.25W
3593	4822 051 10472	4.7kΩ 2% 0.25W
3594	4822 050 10123	12kΩ 1% 0.125W
3595	4822 050 24702	4.7kΩ 1% 0.6W
3596	4822 051 10392	3.9kΩ 2% 0.25W
3597	4822 051 10472	4.7kΩ 2% 0.25W
3598	4822 051 10565	5.6MΩ 5% 0.25W
3599	4822 051 10303	30kΩ 2% 0.25W
3600	4822 051 10393	39kΩ 2% 0.25W
3601	4822 052 10228	4.7Ω 5% 0.33W Safety
3602	4822 052 10228	2.2Ω 5% 0.33W Safety
3603	4822 051 10392	3.9kΩ 2% 0.25W
3604	4822 051 10162	1.6kΩ 2% 0.25W
3605	4822 051 10105	1MΩ 5% 0.25W
3606	4822 051 10759	75Ω 2% 0.25W
3607	4822 051 10912	9.1kΩ 2% 0.25W
3608	4822 051 10223	22kΩ 2% 0.25W
3609	4822 050 22202	2.2kΩ 1% 0.6W
3610	4822 051 10223	22kΩ 2% 0.25W
3611	4822 052 10228	2.2Ω 5% 0.33W Safety
3612	4822 051 10105	1MΩ 5% 0.25W
3613	4822 052 10228	2.2Ω 5% 0.33W Safety
3614	4822 052 10228	2.2Ω 5% 0.33W Safety
3615	4822 051 10473	47kΩ 2% 0.25W
3616	4822 051 10473	47kΩ 2% 0.25W
3617	4822 051 10473	47kΩ 2% 0.25W
3618	4822 051 10473	47kΩ 2% 0.25W
3619	4822 051 10822	8.2kΩ 2% 0.25W
3620	4822 051 10822	8.2kΩ 2% 0.25W
3621	4822 051 10822	8.2kΩ 2% 0.25W
3622	4822 051 10822	8.2kΩ 2% 0.25W
3623	4822 051 10103	10kΩ 2% 0.25W
3624	4822 051 10103	10kΩ 2% 0.25W
3625	4822 052 10228	2.2Ω 5% 0.33W Safety
3626	4822 052 10228	2.2Ω 5% 0.33W Safety
3627	4822 051 10243	24kΩ 2% 0.25W
3630	4822 051 10101	100Ω 2% 0.25W
3631	4822 051 10103	10kΩ 2% 0.25W
3632	4822 051 10103	10kΩ 2% 0.25W
3633	4822 051 10562	5.6kΩ 2% 0.25W
3634	4822 051 10562	5.6kΩ 2% 0.25W
3635	4822 051 10752	7.5kΩ 2% 0.25W
3636	4822 051 10752	7.5kΩ 2% 0.25W
3637	4822 051 10562	5.6kΩ 2% 0.25W
3638	4822 051 10562	5.6kΩ 2% 0.25W
3639	4822 051 10332	3.3kΩ 2% 0.25W
3641	4822 052 10108	1Ω 5% 0.33W Safety
3642	4822 052 10108	1Ω 5% 0.33W Safety
3643	4822 052 10108	1Ω 5% 0.33W Safety
3644	4822 052 10108	1Ω 5% 0.33W Safety
3645	4822 051 10102	1kΩ 2% 0.25W
3646	4822 052 10228	2.2Ω 5% 0.33W Safety
3647	4822 051 10103	10kΩ 2% 0.25W
3649	4822 051 10103	10kΩ 2% 0.25W
3650	4822 051 10103	10kΩ 2% 0.25W









3655	4822 050 21002	1kΩ 1% 0.6W
3661	4822 051 10101	100Ω 2% 0.25W
3662	4822 051 10101	100Ω 2% 0.25W
3663	4822 051 10101	100Ω 2% 0.25W
3664	4822 051 10101	100Ω 2% 0.25W
3665	4822 051 10122	1.2kΩ 2% 0.25W
3666	4822 051 10122	1.2kΩ 2% 0.25W
3667	4822 051 10122	1.2kΩ 2% 0.25W
3668	4822 051 10122	1.2kΩ 2% 0.25W
3669	4822 051 10563	56kΩ 2% 0.25W
3670	4822 051 10103	10kΩ 2% 0.25W
3671	4822 051 10103	10kΩ 2% 0.25W
3673	4822 051 10621	620Ω 2% 0.25W
3674	4822 051 10561	560Ω 2% 0.25W
3675	4822 050 27501	750Ω 1% 0.6W
3676	4822 050 10479	47Ω 5% 0.33W Safety
3677	4822 052 10479	47Ω 5% 0.33W Safety
3678	4822 052 10108	1Ω 5% 0.33W Safety
3679	4822 052 10108	1Ω 5% 0.33W Safety
3680	4822 051 10103	10kΩ 2% 0.25W
3800	4822 051 10008	0Ω 5% 0.25W
3801	4822 051 10008	0Ω 5% 0.25W






5601	4822 157 51192	220μH
5602	4822 157 51192	220μH








6501	4822 209 73235	TDA8809T/C2
6502	4822 209 73234	TDA8808T/C3
6503	4822 209 72587	TCA0372DP2
6504	4822 130 44121	BC338
6505	4822 130 30861	BZX79-C7V5
6506	4822 130 30861	BZX79-C7V5
6507	4822 209 62667	MC68HC05D9P/ZC400005
6508	4822 130 61207	BC848
6509	5322 130 30684	1N4002
6510	4822 130 61207	BC848
6511	5322 130 42012	BC858A
6512	4822 130 30621	1N4148 for CD42, CD52
6513	4822 130 30621	1N4148
6514	4822 209 60772	X24C16 for CD42, CD52
6515	4822 209 72587	TCA0372DP2
6516	5322 130 30684	1N4002
6517	5322 130 30684	1N4002
6520	4822 209 83274	NJM4560D
6521	5322 130 42012	BC858A
6522	5322 130 42012	BC858A
6523	5322 130 30684	1N4002
6524	5322 130 30684	1N4002
6525	5322 130 30684	1N4002
6526	5322 130 30684	1N4002
6527	4822 130 31981	BZX79-C3V9
6528	4822 130 30621	1N4148
6529	4822 130 40938	BC548

							
6530	5322	130 42012	BC858A	6641	4822	130 31456	BZV85-C5V1
6531	4822	130 61207	BC848	6642	5322	130 30684	1N4002
6532	4822	130 31554	BZX79-C4V3	6643	4822	209 71579	TY40408
6533	4822	130 42675	BC818	6644	5322	209 11222	MC7905CT
6534	4822	130 30621	1N4148				
6601	4822	209 61759	SAA7310GP/H5	6645	4822	209 80808	MC7815CT
6602	4822	209 70422	MN4264-15	6646	5322	130 41899	MC7915CT
6603	4822	130 42131	BF550	6647	4822	209 80808	MC7815CT
6604	4822	209 30264	SM5840FP	6650	5322	130 30684	1N4002
6605	5322	130 42012	BC858A				
6606	4822	130 61207	BC848	<b>Miscellaneous</b>			
6608	4822	701 11933	SAA7350	0281	4822	492 63076	Spring, clamping
6611	5322	209 86234	NE5532N	0291	4822	256 30274	Holder, Fuse
6612	5322	209 86234	NE5532N	0292	4822	256 30274	Holder, Fuse
6615	4822	130 61207	BC848	1000	4822	148 80281	Transformer for Dig. Out
6617	4822	130 42675	BC818	1003	4822	265 40722	Socket 11P
6618	4822	130 42675	BC818				
6619	4822	130 42675	BC818	1004	4822	267 50621	Socket 7P
6620	4822	130 42675	BC818	1005	4822	264 40207	Connector 3P
6623	4822	209 62588	PCF3523P	1006	4822	267 50676	Connector 14P
6631	5322	130 30684	1N4002	1007	4822	265 30913	Connector 3P
6632	5322	130 30684	1N4002	1008	4822	267 31384	Socket for CD42, CD32
6633	5322	130 30684	1N4002				
6634	5322	130 30684	1N4002	1008	4822	267 31397	Socket for CD52
6635	5322	130 30684	1N4002	1009	4822	267 31383	Inlet
6636	5322	130 30684	1N4002	1010	4822	276 11309	Mains Switch
6637	5322	130 30684	1N4002	1011	4822	276 13106	Tact Switch
6638	5322	130 30684	1N4002	1501	4822	242 71349	11,2896MHz Crystal
6639	5322	130 30684	1N4002				
6640	4822	130 34195	BZX79-C13	1503	4822	242 72527	4MHz Resonator
				1511	4822	070 38001	Fuse 800mA
				1512	4822	070 38001	Fuse 800mA
				5001	4822	146 31004	Mains Transformer

#### HEADPHONE PANEL PARTSLIST

			
2005	4822	121 43925	2.2nF 5% 50V
3681	4822	050 10101	100Ω 2% 0.25W
3682	4822	050 10101	100Ω 2% 0.25W
3683	4822	050 21501	150Ω 1% 0.6W
3684	4822	050 21501	150Ω 1% 0.6W
3685	4822	050 10122	1.2kΩ 2% 0.25W
3686	4822	050 10122	1.2kΩ 2% 0.25W
3687	4822	050 21002	1kΩ 1% 0.6W
3688	4822	050 21002	1kΩ 1% 0.6W
3689	4822	050 21002	1kΩ 1% 0.6W
3690	4822	050 21002	1kΩ 1% 0.6W
3691	4822	102 10433	10kΩ Potm. Twin for CD52
			<b>Miscellaneous</b>
7651	4822	209 83274	NJM4560D
7652	4822	130 44121	BC338
7653	4822	130 44121	BC338
1012	4822	267 50621	Socket 7P
1651	4822	267 31065	Headphone Socket

**CONTROL & DISPLAY PANEL PARTSLIST**

			<b>Miscellaneous</b>		
2001	4822 124 41596	22µF 20% 50V	0250	4822 156 91796	Holder
2002	4822 121 43867	22nF 5% 50V	1013	4822 265 40722	Socket 11P
2003	4822 122 10172	220pF 10% 50V	1020	4822 276 13114	Tact Switch for CD52
2004	4822 124 41596	22µF 20% 50V for CD52, CD42	1021	4822 276 13114	Tact Switch for CD52
			1023	4822 276 13114	Tact Switch for CD52, CD42
			1025	4822 276 13114	Tact Switch for CD52
3001	4822 050 24702	4.7kΩ 1% 0.6W	1026	4822 276 13114	Tact Switch for CD52, CD42
3002	4822 050 21504	150kΩ 1% 0.6W	1027	4822 276 13114	Tact Switch
3003	4822 050 24702	4.7kΩ 1% 0.6W	1028	4822 276 13114	Tact Switch for CD52
3004	4822 050 21002	1kΩ 1% 0.6W	1029	4822 276 13114	Tact Switch for CD52
3005	4822 050 21002	1kΩ 1% 0.6W			
3006	4822 050 24703	47kΩ 1% 0.6W	1030	4822 276 13114	Tact Switch for CD52
3008	4822 050 24702	4.7kΩ 1% 0.6W	1031	4822 276 13114	Tact Switch for CD52
3009	4822 050 22203	22kΩ 1% 0.6W	1032	4822 276 13114	Tact Switch for CD52
3010	4822 050 22203	22kΩ 1% 0.6W	1033	4822 276 13114	Tact Switch for CD52
3011	4822 050 22203	22kΩ 1% 0.6W	1034	4822 276 13114	Tact Switch for CD52
3012	4822 050 24703	47kΩ 1% 0.6W for CD52, CD42	1035	4822 276 13114	Tact Switch for CD52
			1036	4822 276 13114	Tact Switch
			1037	4822 276 13114	Tact Switch
			1038	4822 276 13114	Tact Switch
			1039	4822 276 13114	Tact Switch
  			1040	4822 276 13114	Tact Switch
6001	4822 130 34281	BZX79-C15	1044	4822 276 13114	Tact Switch
6002	4822 130 30621	1N4148	1045	4822 276 13114	Tact Switch
6003	4822 130 30621	1N4148	1046	4822 276 13114	Tact Switch for CD52
6004	4822 130 30621	1N4148 for CD52, CD42	1047	4822 276 13114	Tact Switch for CD52
6005	4822 130 30621	1N4148			
6006	4822 130 30621	1N4148 for CD52, CD42	1048	4822 276 13114	Tact Switch for CD52
6007	4822 130 30621	1N4148	1049	4822 276 13114	Tact Switch for CD52
6008	4822 130 34233	BZX79-B5V1	1050	4822 276 13114	Tact Switch for CD52
6009	4822 130 34233	BZX79-B5V1	1051	4822 276 13114	Tact Switch for CD52
7001	4822 130 40938	BC548	1052	4822 276 13114	Tact Switch for CD52
7002	4822 209 72226	U3090			
			1060	4822 214 51772	IR Receiver GP1U521X for CD52, CD42
			1061	4822 130 90661	Display 6-MT-147GK