Compact disc player CD690/00B/05B/10B

CD692/00B/05B/10B

Service
Service
Service

ServiceManual

TABLE OF CONTENTS **PAGE**

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4822 725 24013

PHILIPS

PCS 60 201

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/00B	: 230V (+6 -10%)
	/05B/10B	: 240V (±10%)
	/17B	: 117V (±10%)
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection		: See circuit diagram Power Supply
4.Power consumption mains,operated		: 10W

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 47kΩ to 68kΩ

Line output

1.Number of channels	: 2
2.Output voltage	: 2 Vrms ± 3dB
3.Unbalance left-right	: max. ± 1,2dB at 1 kHz
4.Output resistance	: 1 kΩ
5.Signal to noise ratio	: min. 84dB from 20 Hz to 20 kHz
6.Total harmonic distortion + noise	: min. 60dB from 20 Hz to 20 kHz
7.Channel separation	: min. 70dB from 20 Hz to 20 kHz
8.Frequence response	: ± 0,5dB from 20 Hz to 20 kHz
9.Frequence response with de-emphasis	: ± 2dB
10.Automatic switched deemphasis with time constant	: 15/50 µs
11.Phase non-linearity	: IIR filter
12.Dynamic range 20Hz-20kHz	: min. 70dB
	: typ. ± 1dB

Variable headphone (low end)

1.Output voltage	: max. 5 Vrms ± 3dB
2.Unbalance left-right	: max. ± 1,2dB
3.Output resistance	: 120 Ω
4.Load impedance range	: 32 Ω to 600 Ω load
5.Output power	: 0 to 30 mW into 30 Ω load
	: 0 to 50 mW into 150 Ω load
	: 0 to 30 mW into 600 Ω load

Audio specs in case of 600 Ω load at 4 Vrms voltage output

6.Signal to noise ratio	: min. 80 dB
7.Dynamic range	: min. 80 dB (20 Hz -20 kHz)
8.Total harmonic distortion	: min. 60 dB (20 Hz - 20 kHz)
9.Channel separation	: min. 70 dB (1 kHz)
	: min. 65 dB (31,5 Hz - 16 kHz)

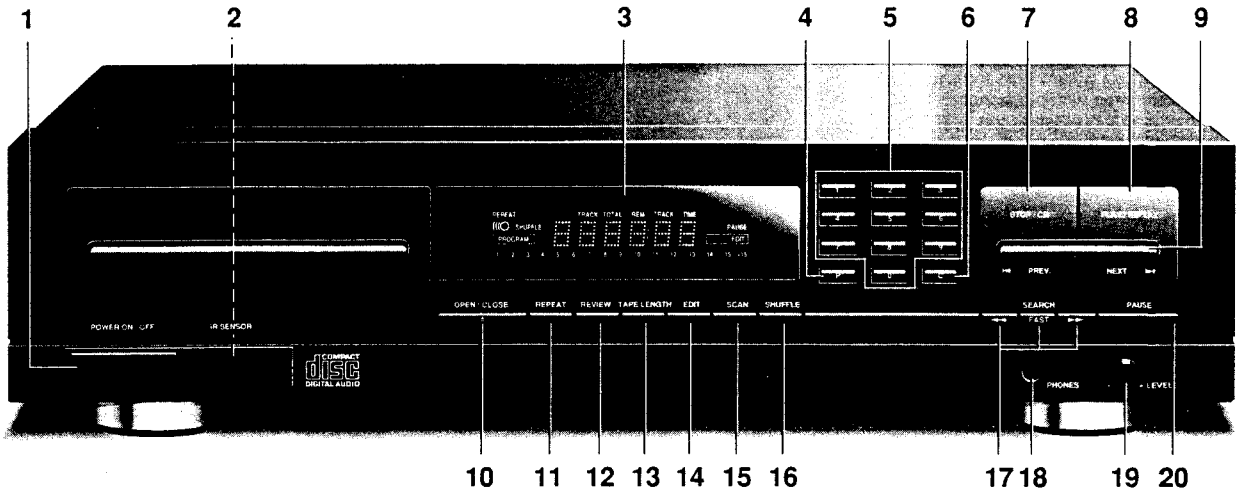
Dimensions and weight

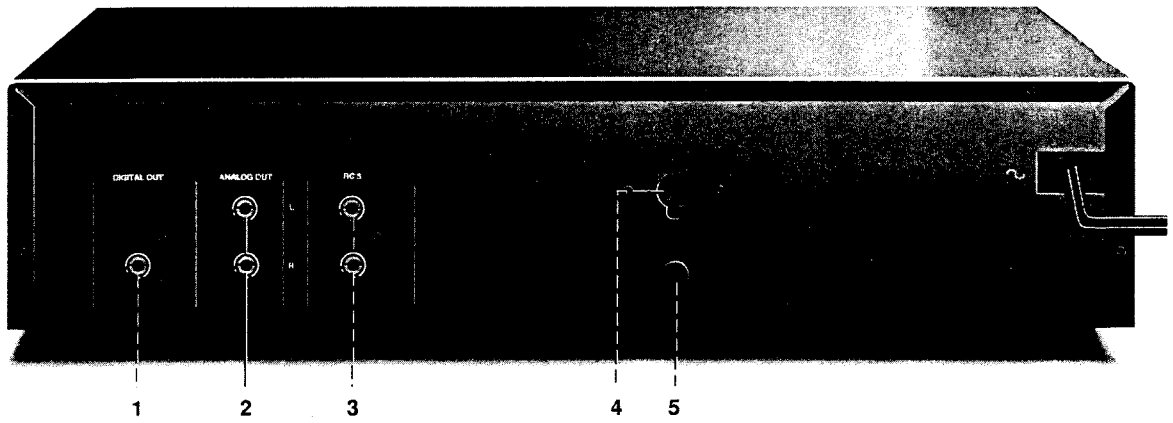
1.Apparatus tray closed	: WxDxH 435 x 300 x 90/106 mm
2.Apparatus tray open	: WxDxH 435 x 445 x 90/106 mm
3.Weight	: 4 kg

Optical read-out system

1.Laser type	: Semiconductor AlGaAs
2.Wavelength	: 780 nm ± 20 nm
3.Light output (c.w.)	: max. 0,5 mW

CONTROLS AND CONNECTIONS





CONTROLS

Indication on Player	Indication in diagram
1. POWER ON/OFF	SK-1(1500)
2. IR SENSOR	1461
3. Display	1450
4. P(rogram)	1429
5. 1-0 digit keys	1420,1421,1422,1427,1428, 1434,1435,1441,1442,1443
6. C(ancel)	1436
7. STOP/CM	1433
8. PLAY/REPLAY	1432
8. REPEAT	1430
9. <PREV(ious) **NEXT>**	1425 1440
10. OPEN/CLOSE	1426
11. REPEAT	1430
12. REVIEW	1431
13. TAPE LENGTH	1447
14. EDIT	1423
15. SCAN	1444
16. SHUFFLE	1446
17. << SEARCH >>	1438 1445
18. PHONES	BU-5
19. LEVEL	3370
20. PAUSE	1439

CONNECTIONS

Indication on Player	Indication in diagram
1. DIGITAL OUT(CD692 only)	BU-4
2. ANALOG OUT	BU-2
3. RC 5(CD690 only)	BU-3
4. Voltage selector(not all versions)	1010
5. Mains fuse holder(not all versions)	287

ESD

(GB) **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.

(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 ditzelfde potentiaal.

(F) **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux decharges statiques (ESD).
Leur longevité pourrait être considérablement ecourtee par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de reparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de securite.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) **WARNUNG**

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

(I) **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta 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 potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remîs à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

S Varning!

Osynlig laserstralning när apparaten är öppnad och spärrenär urkopplad.
Betrakta ej strälen.

SF Varo!

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle.Älä katso säteeseen!

DK Adversel!

Usynlig laserstraling ved abning. Undgá unsaettelse for straling.

DANGER
Invisible laser radiation when open.
Avoid direct exposure to beam

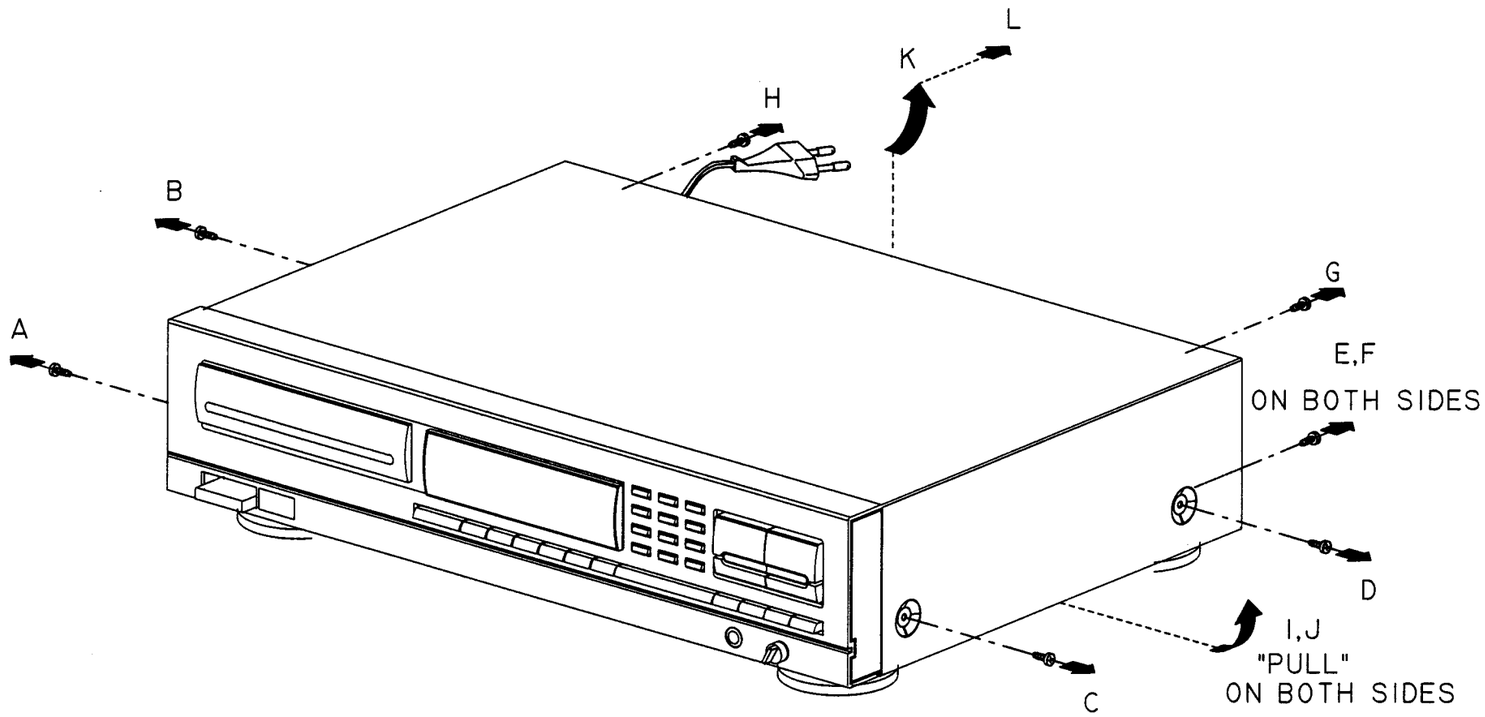
CAUTION
Invisible laser radiation when open.
Avoid exposure to beam.

CLASS 1
LASER PRODUCT
3122 110 03420

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

DISMANTLING INSTRUCTIONS

DEMOUNTING OF COVER



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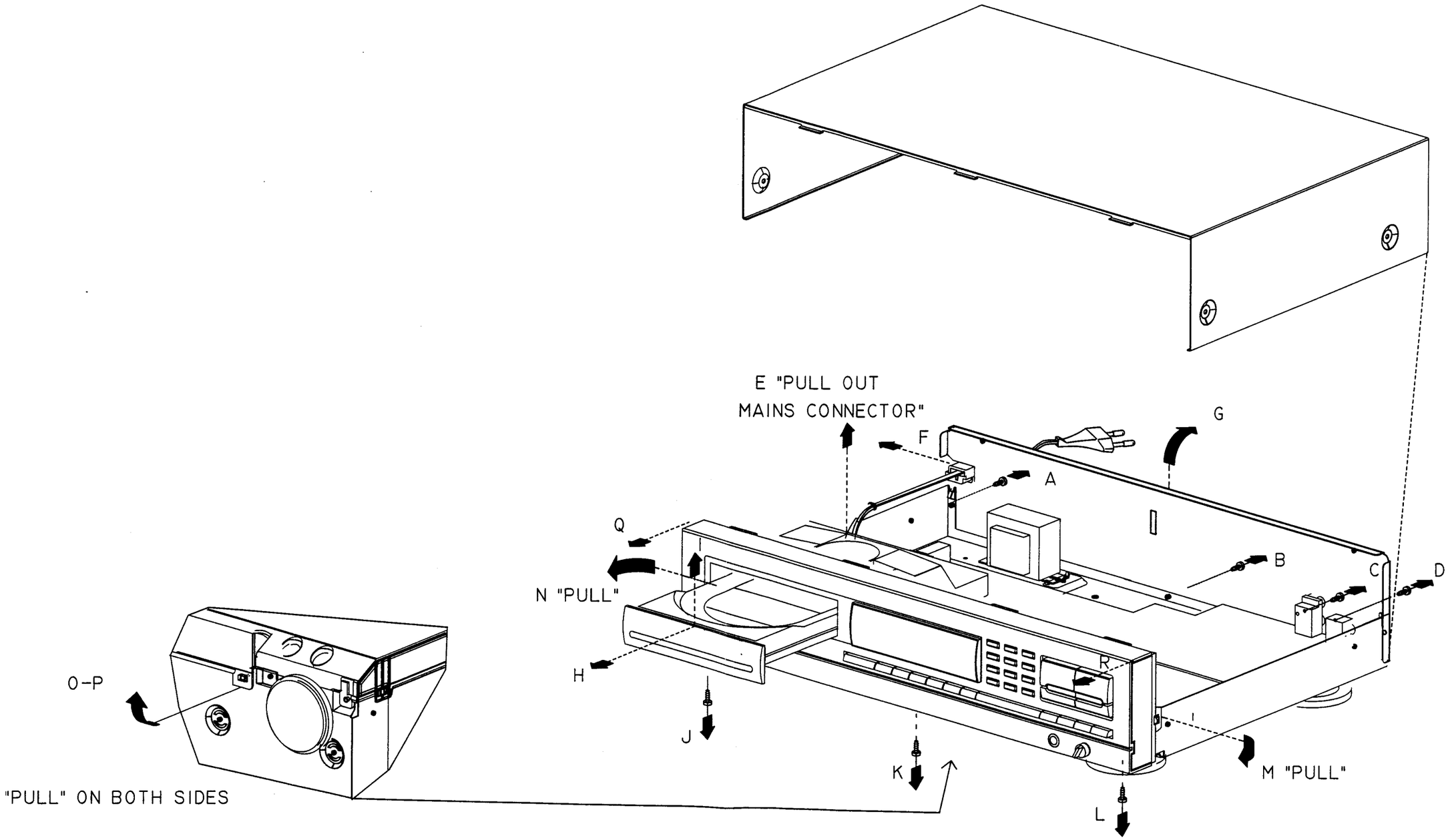
DEMOUNTING BACKPLATE AND FRONT



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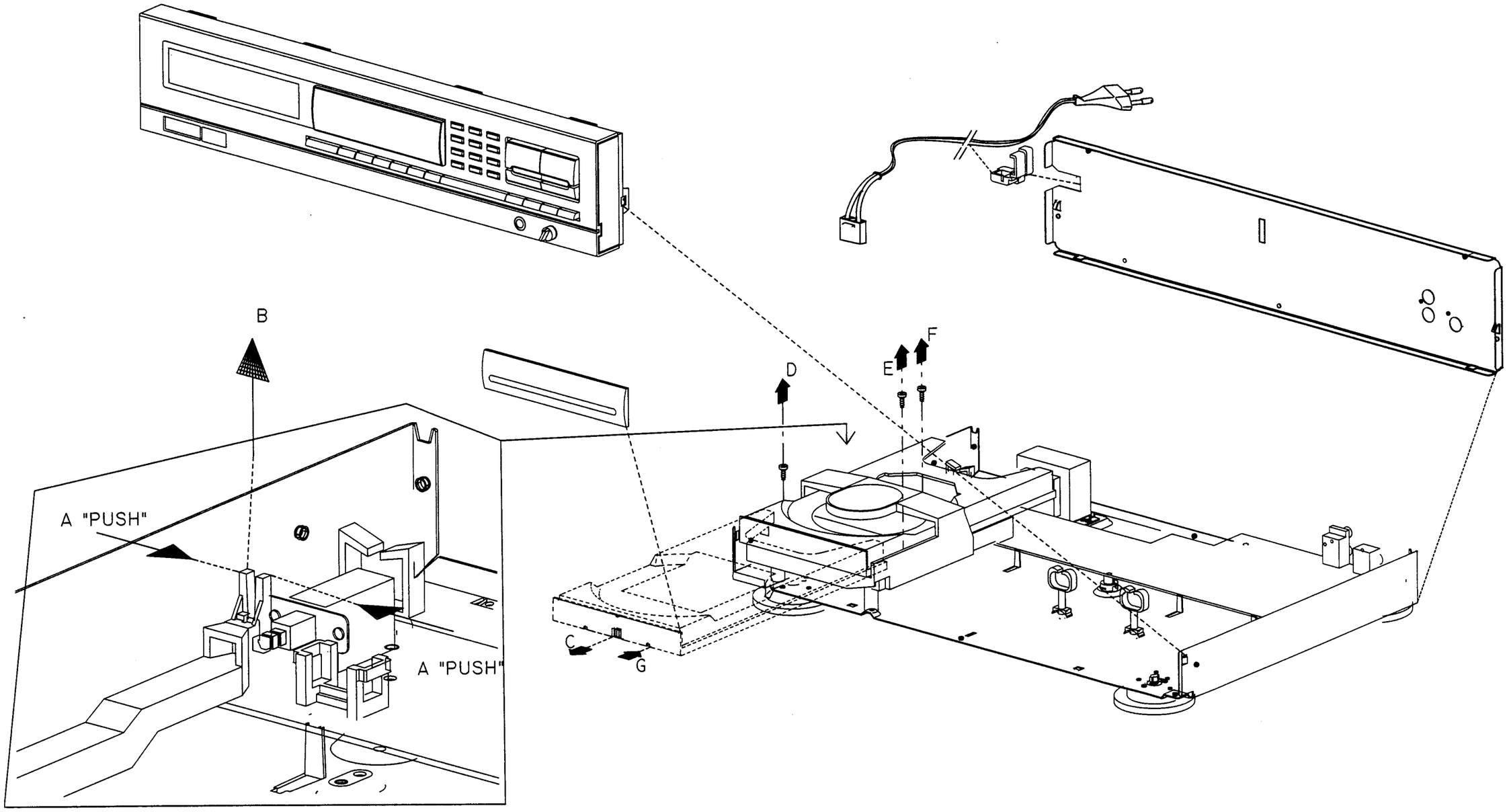
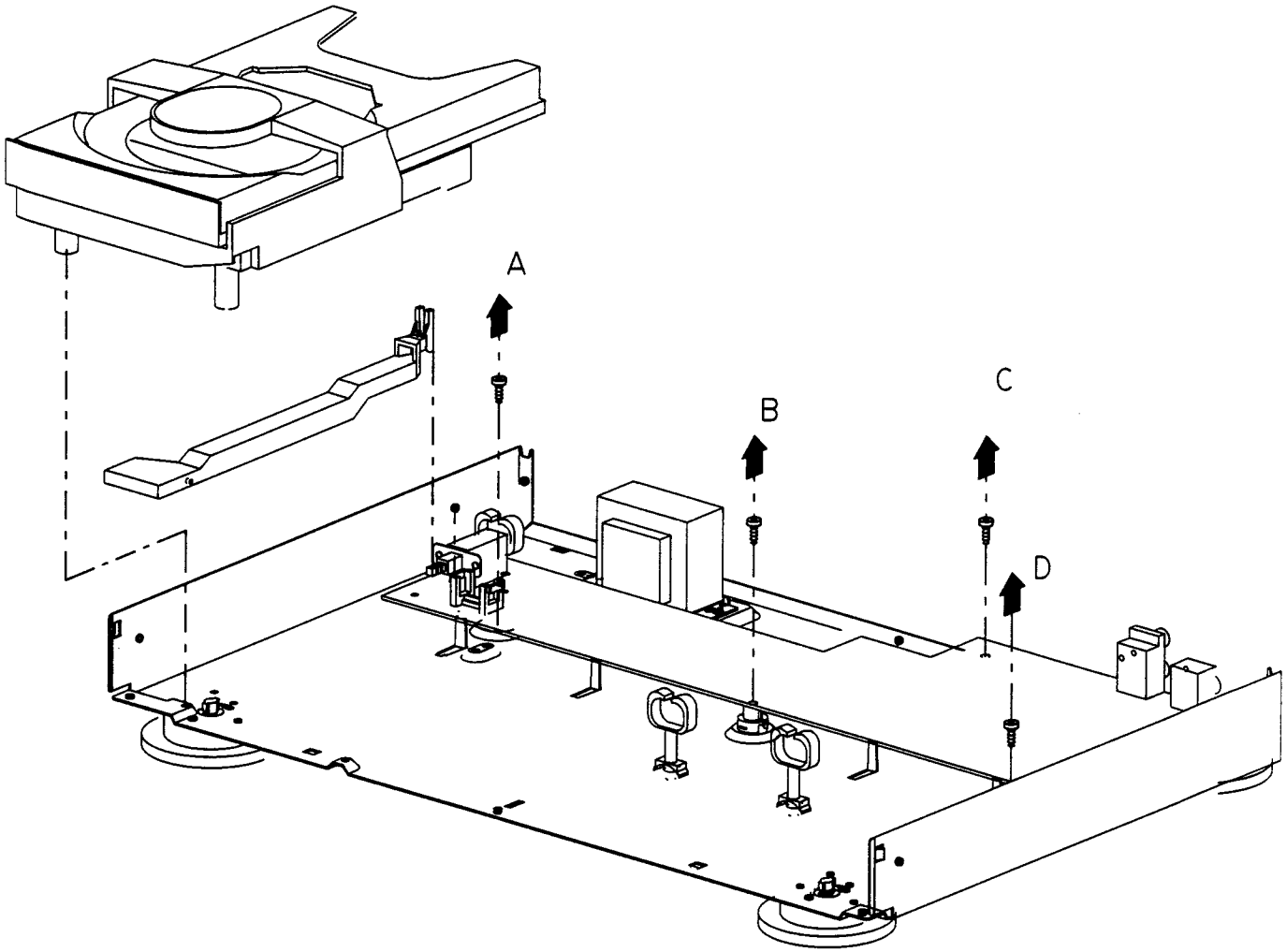
DEMOUNTING OF LOADER



HAS.1068

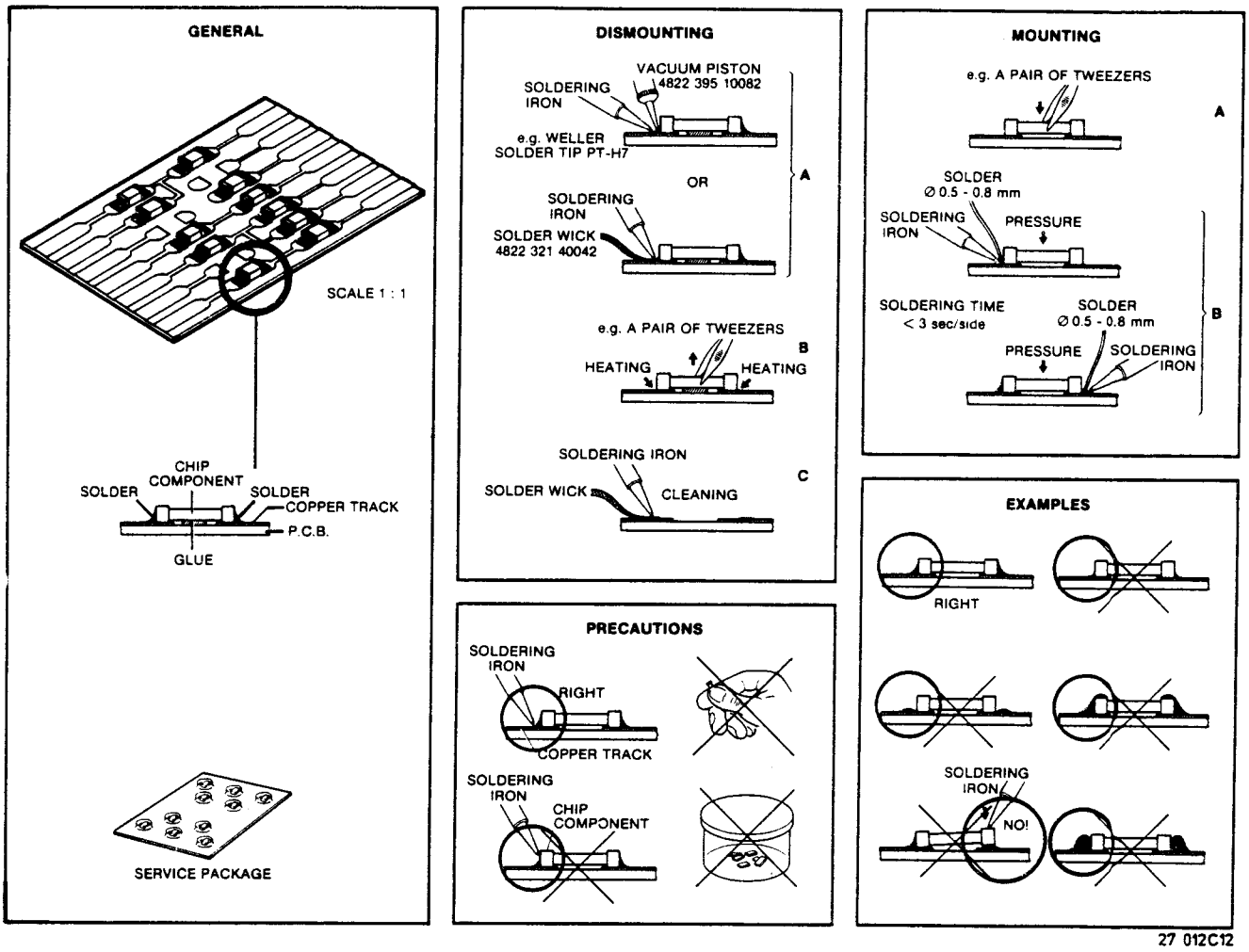
DEMOUNTING OF MONOBOARD



HAS.1069

SERVICING HINTS

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



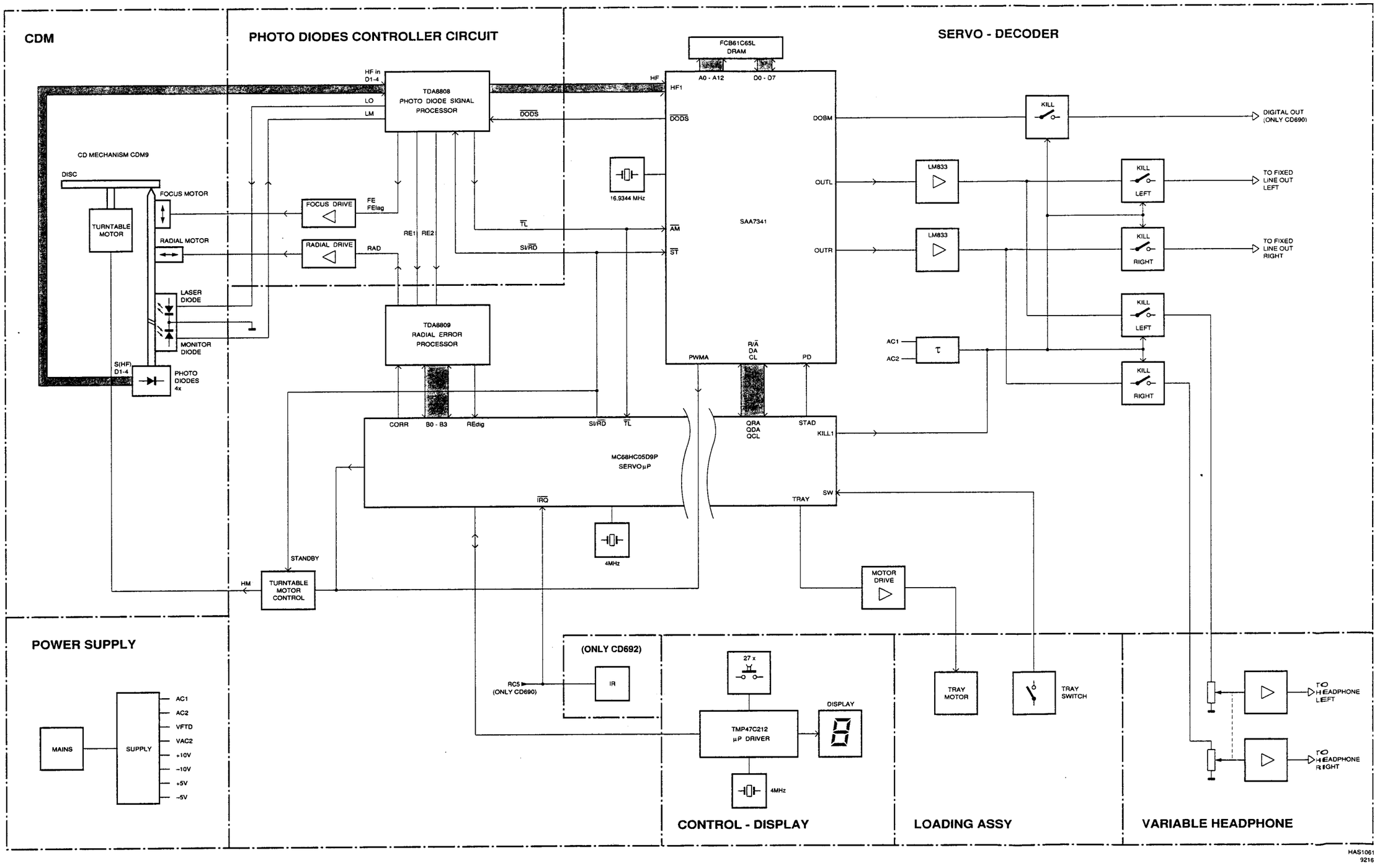
27 012C12

SERVICE TOOLS

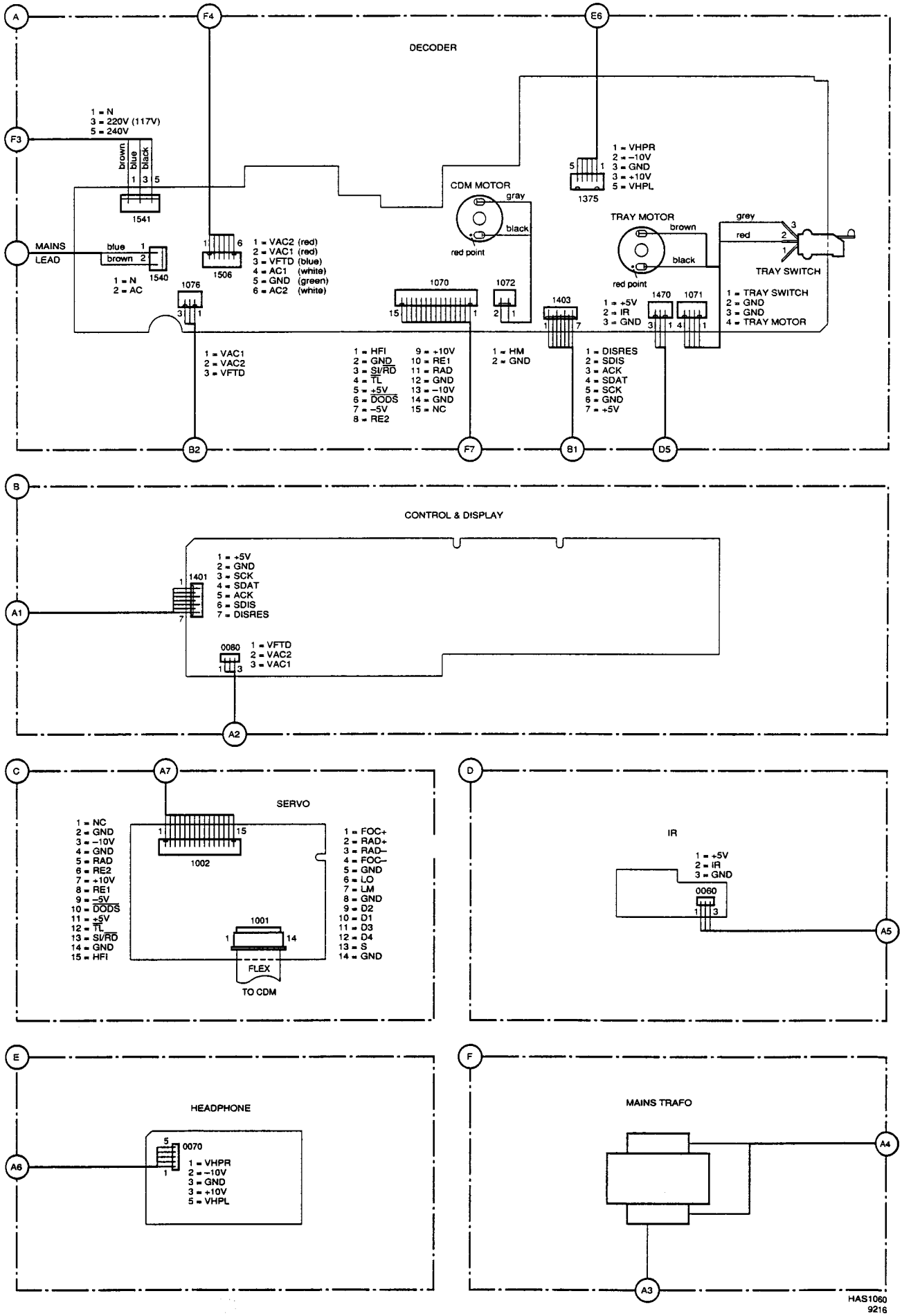
Audio signal disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A	4822 397 30096
Disc (65 min 1kHz)without pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	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
Infra red remote control e.g.	4822 218 10324

A0-A12 - Address outputs to external RAM
AGC - Automatic Gain Control
AM - Additional mute
B0-B3 - Control bits for radial circuit
BEQ - Equalizer reference current input
CL - Microprocessor interface clock input
Cosc1 - Capacitor wobble oscillator
Cosc2 - Capacitor wobble oscillator
D0-D7 - Data inputs/outputs to external RAM
D1-4 - Photodiode currents
DA - Microprocessor interface data input/putput line
DE1L - Pin 1 for external de-emphasis capacitor and resistor
DE1R - Pin 1 for external de-emphasis capacitor and resistor
DE2L - Pin 2 for external de-emphasis capacitor and resistor
DE2R - Pin 2 for external de-emphasis capacitor and resistor
DEC - Decoupling input internal bypass
DEEM - Output for external de-emphasis switches
DET - HF detector voltage input
DIV4 - Divide by 4 input
DMUTE - Digital mute
DOBM - Digital audio output
DODS - Drop out detector suppression
FE - Focus error signal
FE lag - Focus error signal for LAG network
HF - HF output for DEMOD
HF-in - HF current input to HF amplifier
HF-out - HF amplifier and equalizer voltage output
HFD - High-frequency detector
HFI - Inverting data slicer input
HFI - Non-inverting data slicer input
HM - Motor control signal
IREF - Current reference output
KO - Kill out
KTC - Kill time capacitor connection
LM - Laser monitor diode input
LO - Laser amplifier current output
MACC - Motor accelerate signal
MBRA - Motor brake signal
MHAL - Hall effect detector for motor
NRST - Reset input
OC - VCO control
OUTL - Left channel output
OUTR - Right channel output
PD - Phase detector
PLLH - PLL on hold reset
PWMA - Pulse width modulated motor control acceleration
PWMB - Pulse width modulated motor control brake signal
QCL - Q-channel clock signal
QRA - Q-channel request aknowledge
R/A - Request/acknowledge
RADout - Output of RE2-RE1 input
RE - Radial error signal (Amplified RE2-
RE dig - Radial error digital
RE lag - Radial error signal for LAG network
RE1 - Radial error signal 1
RE2 - Radial error signal 2
Rosc - Resistor wobble oscillator
RST - Device reset
Rwob - Wobble generator input
Sc _ - Starting up capacitor input
Si/RD - On/off control for laser supply and focus
ST - Standby mode
TL - Track loss output signal
WE - Write enable
XIN - Oscillator signal input
XOUT - Oscillator output

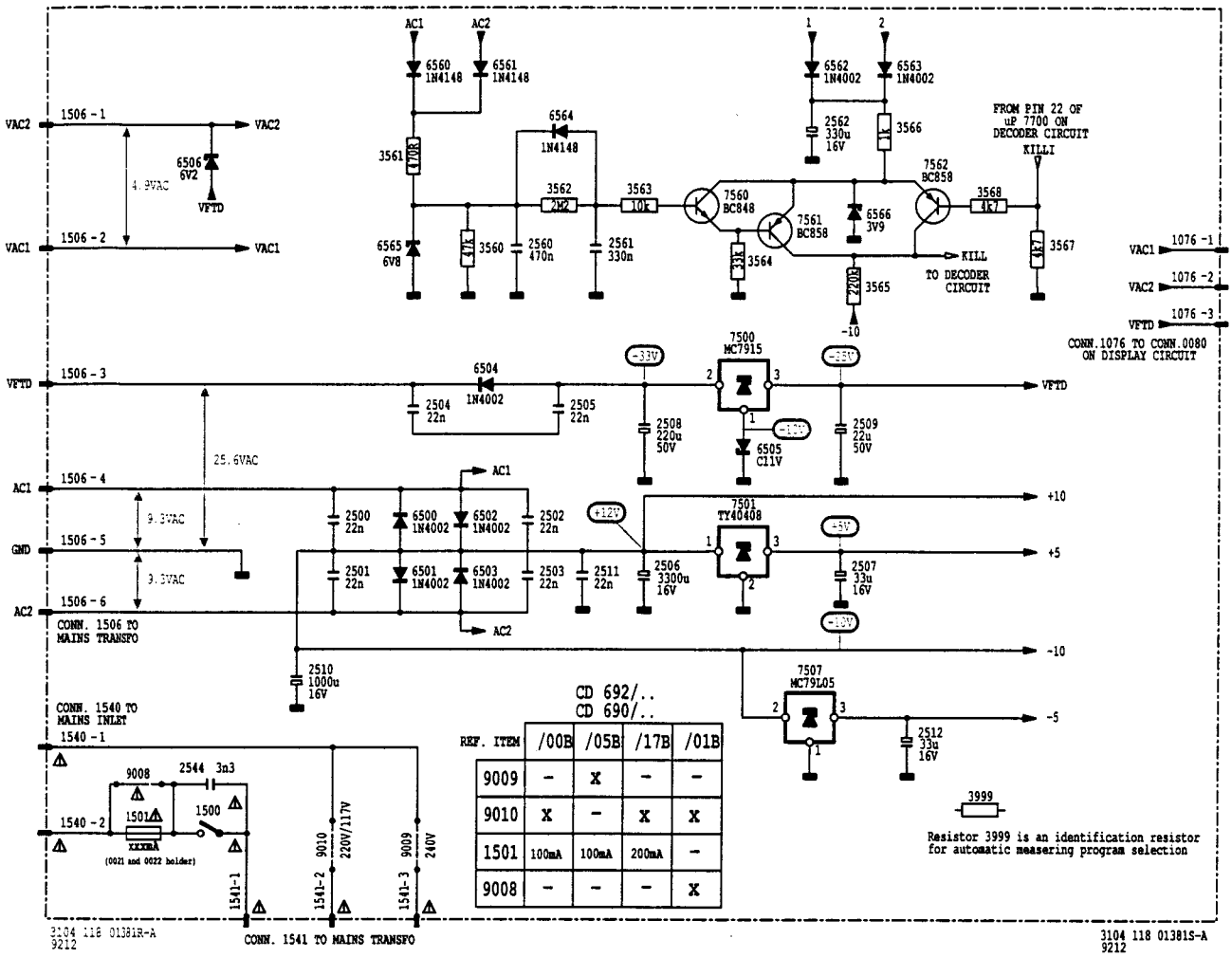
BLOCK DIAGRAM



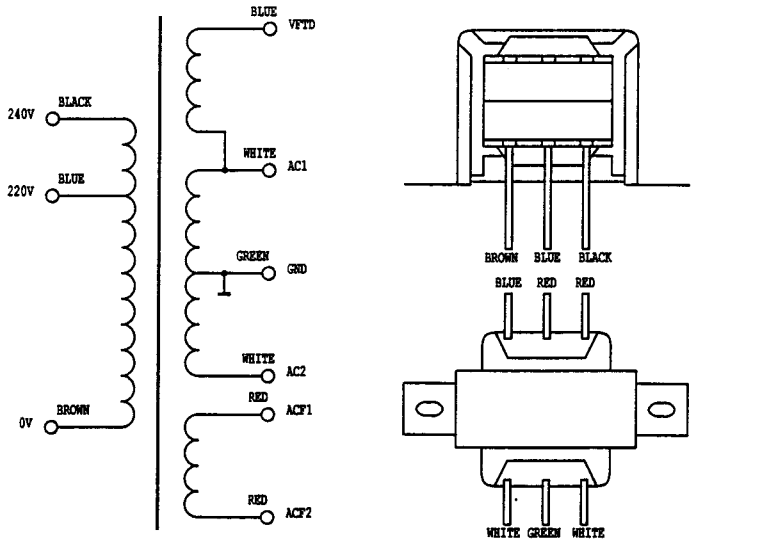
WIRING DIAGRAM



POWER SUPPLY DIAGRAM

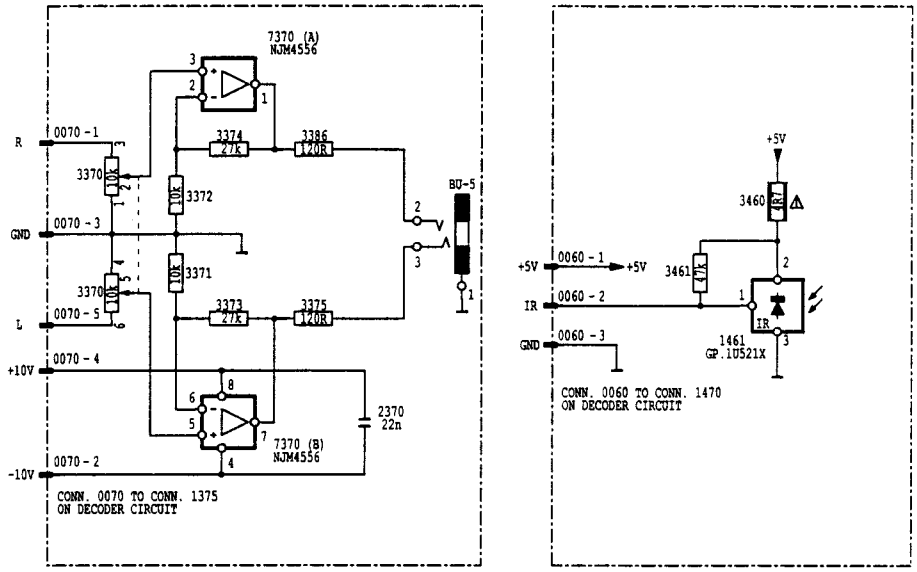


TRANSFORMER CONNECTIONS



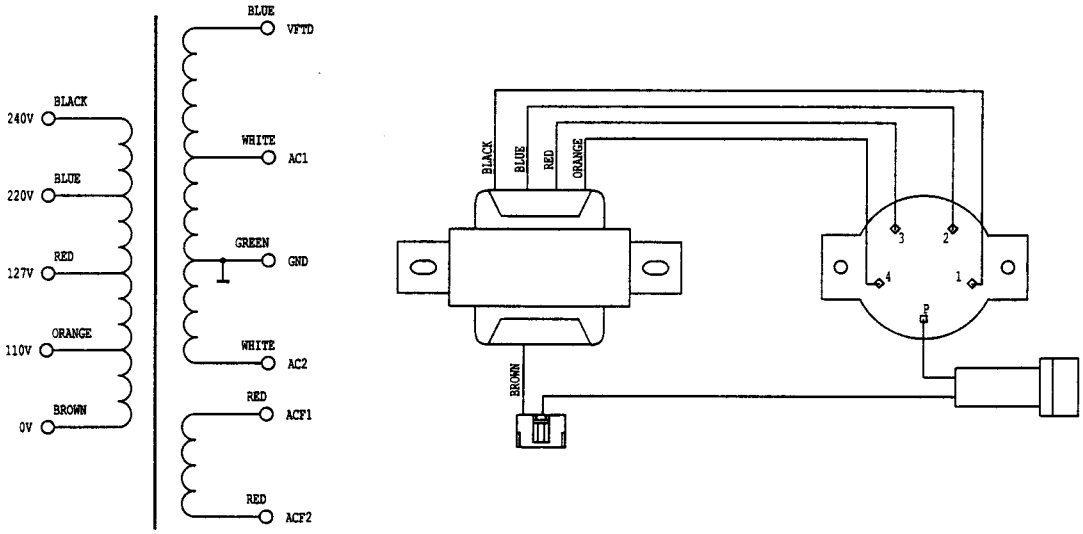
HAS1024
9212

HEADPHONE & IR CIRCUIT DIAGRAM



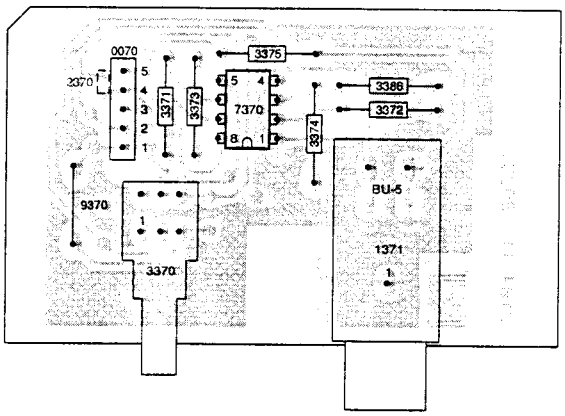
3104 118 01381S-C
9212

TRANSFORMER CONNECTIONS



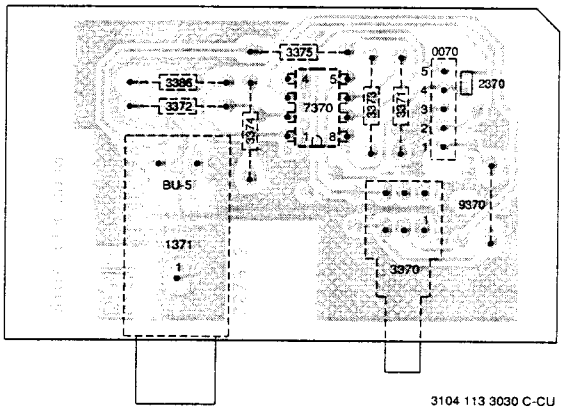
HAS1055
9213

HEADPHONE PANEL COMPONENT SIDE



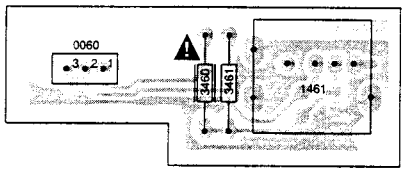
3104 113 3030 C-COMP
9216

SOLDER SIDE



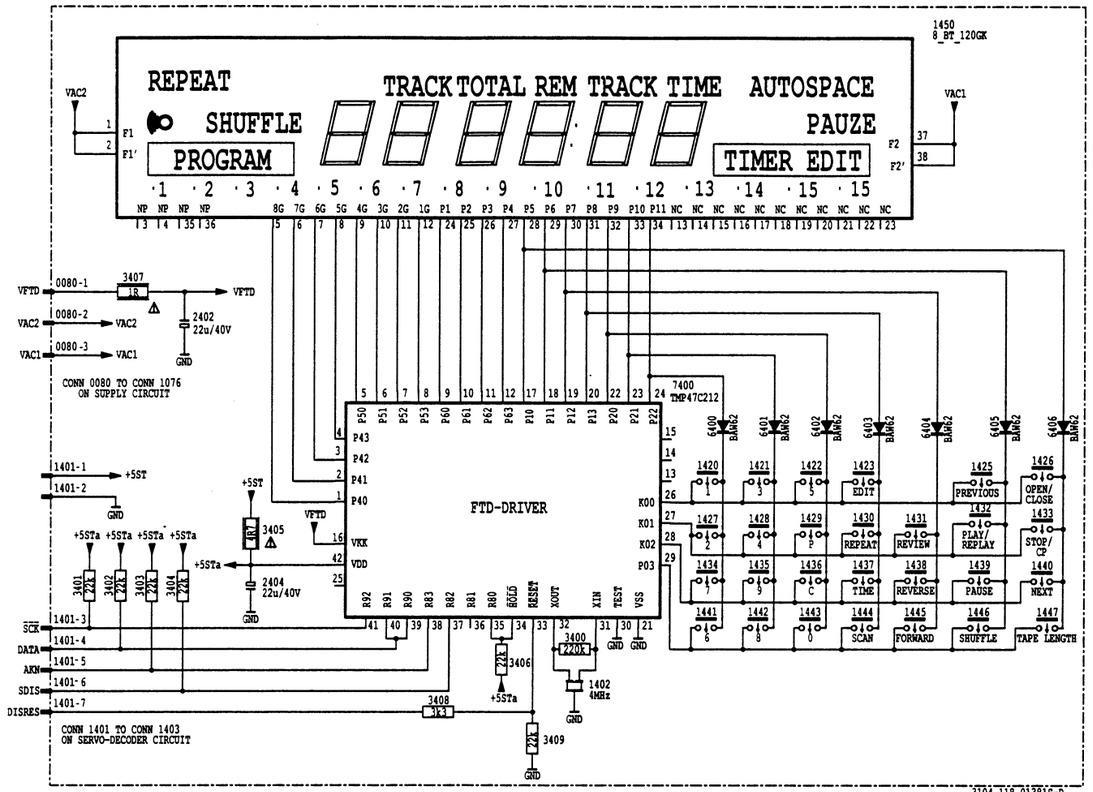
3104 113 3030 C-CU
9216

IR PANEL

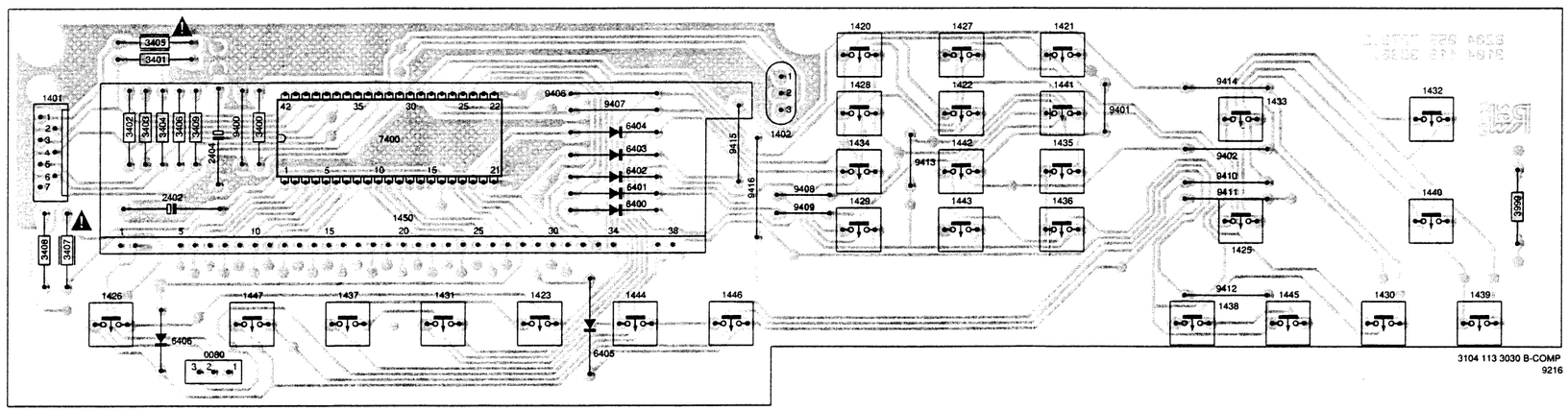


3104 113 3030 D-COMP
9216

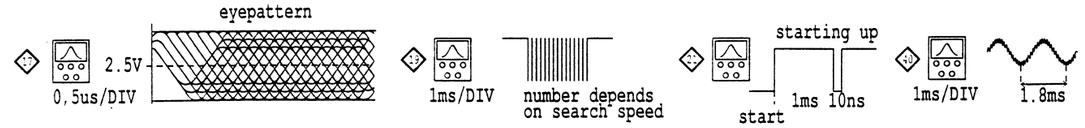
CONTROL & DISPLAY CIRCUIT DIAGRAM



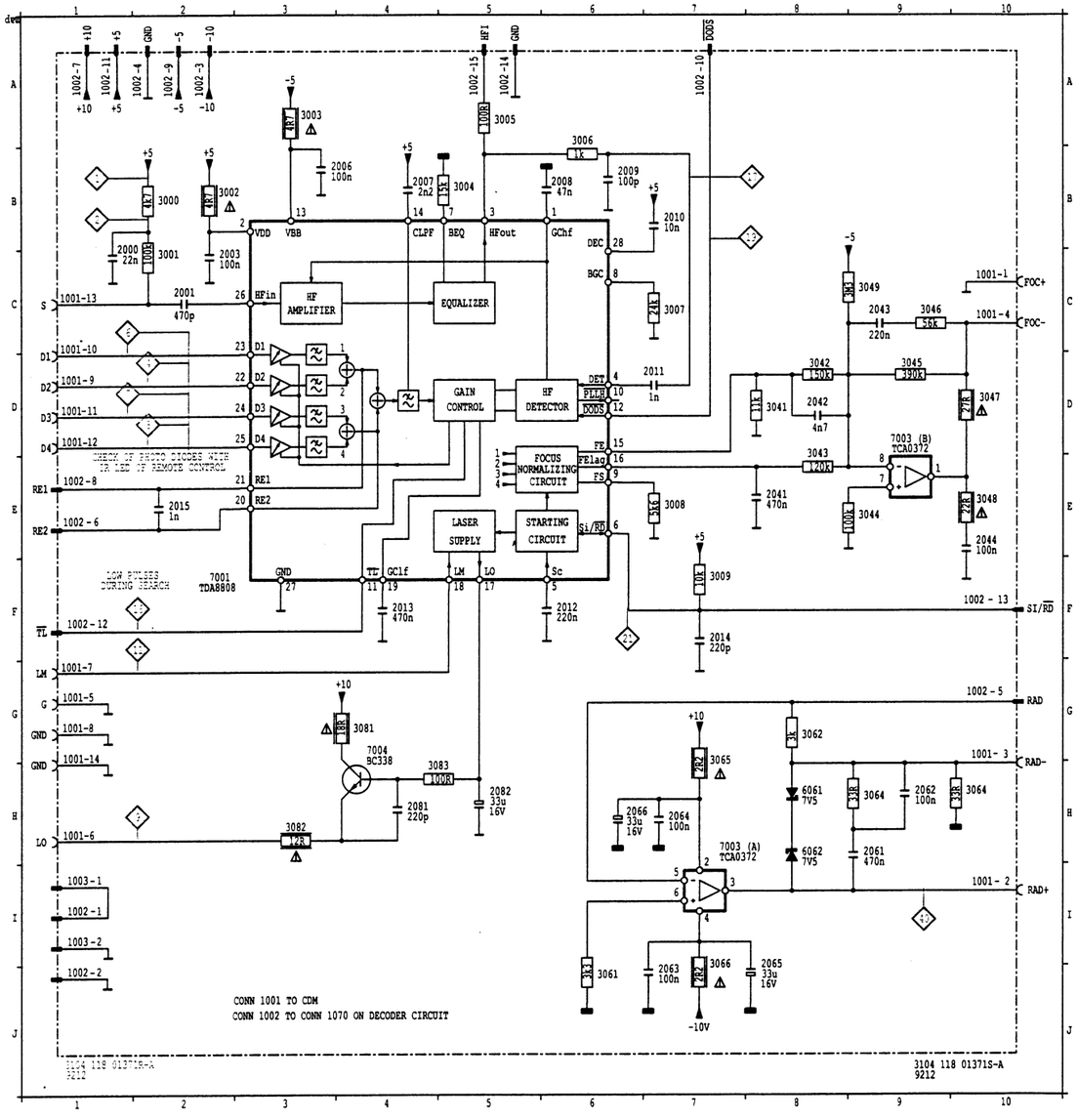
CONTROL & DISPLAY PANEL



DIODE SIGNAL CONTROLLER CIRCUIT DIAGRAM

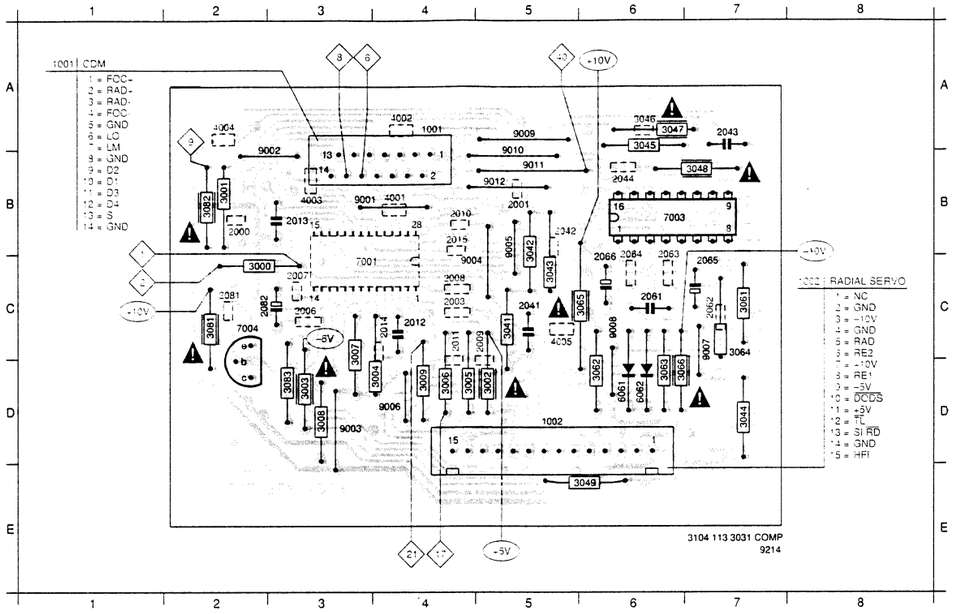


1001	C10	1001	D 1	1001-7	G 1	1002	A 5	1002	I 1	1003	I 1	2008	B 6	2014	F 7	2061	H 9	2081	H 4	3004	B 5	3041	D 8	3047	D10	3064	H 9	6061	H 8
1001	C10	1001	C 1	1001-8	G 1	1002	A 2	1002	J 1	2000	C 1	2009	B 6	2015	B 2	2062	H 9	2082	H 5	3005	A 5	3042	D 8	3048	E10	3065	H 7	6062	H 8
1001	I10	1001-13	C 1	1002	G10	1002	A 2	1002	F 1	2001	C 2	2010	B 7	2041	E 8	2063	J 7	3000	B 2	3006	A 9	3043	E 8	3049	C 9	3066	J 7	7001	F 2
1001	G10	1001-14	G 1	1002	F10	1002	A 2	1002	E 1	2003	C 2	2011	D 6	2042	D 8	2064	H 7	3001	C 2	3007	C 7	3044	E 9	3061	J 6	3081	G 4	7004	G 4
1001	D 1	1001-3	G 1	1002	A 7	1002	A 1	1002	E 1	2006	B 3	2012	F 6	2043	C 9	2065	J 8	3002	B 2	3008	E 7	3045	D 9	3062	G 8	3082	H 3		
1001	D 1	1001-6	H 1	1002	A 5	1002	A 1	1003	I 1	2007	B 4	2013	F 4	2044	E10	2066	H 6	3003	A 3	3009	F 7	3046	C 9	3064	H10	3083	H 4		

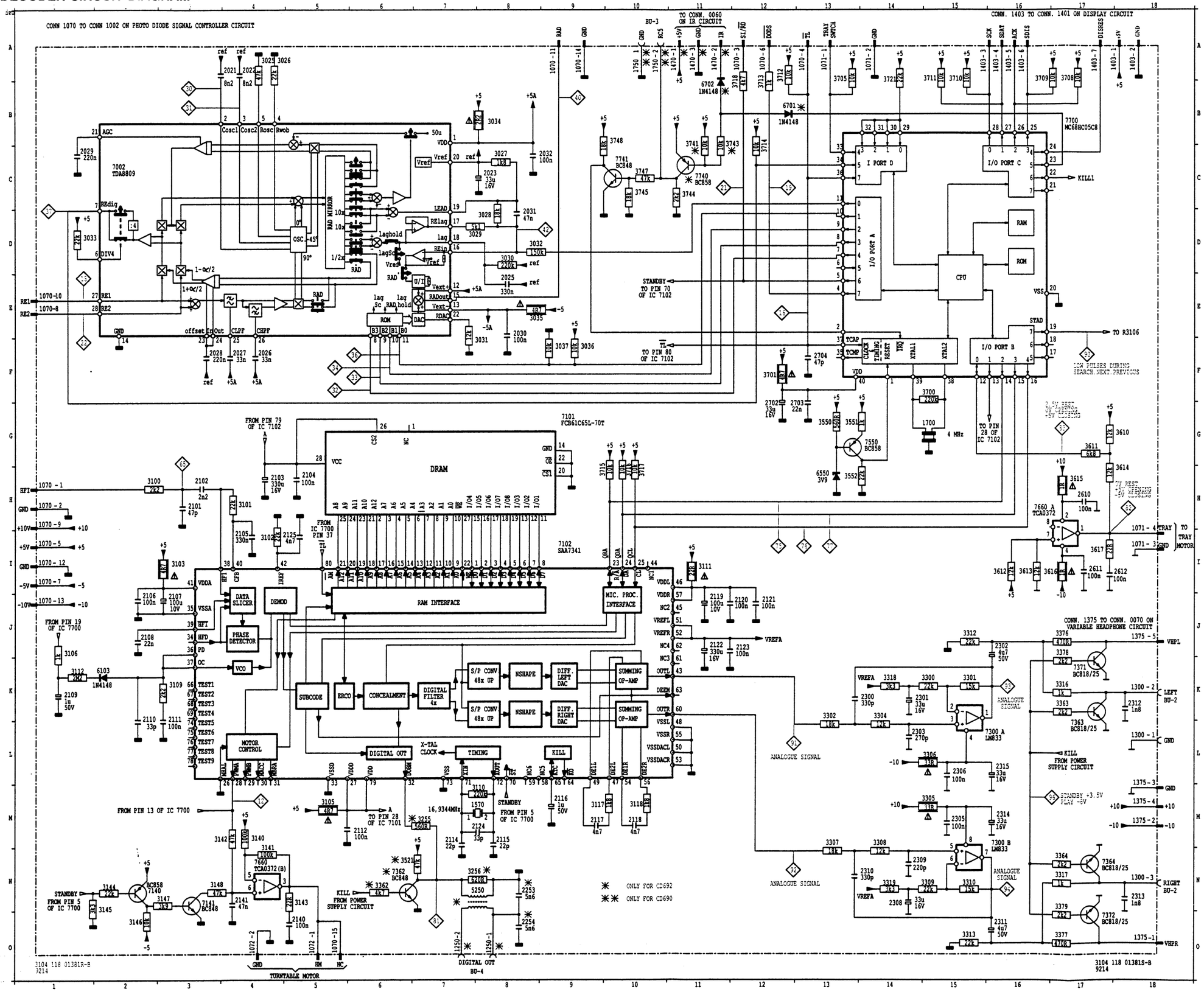


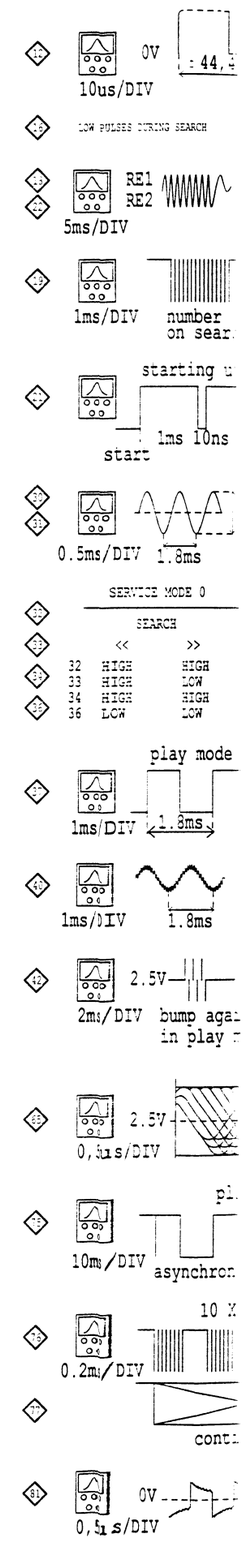
DIODE SIGNAL CONTROLLER PANEL COMPONENT SIDE

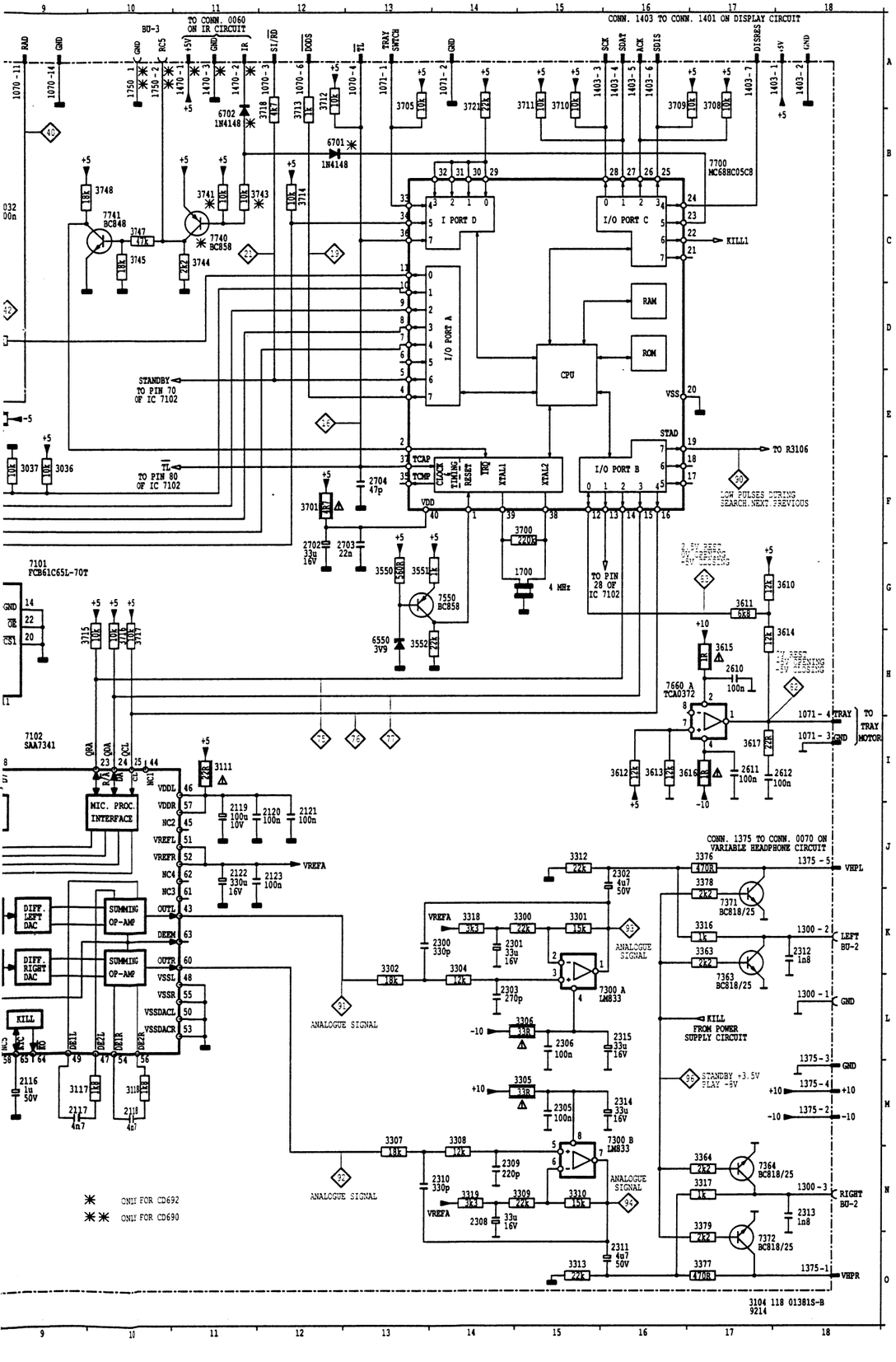
1001	A4	2008	C4	2015	B4	2063	C6	3001	B2	3008	D3	3046	A6	3064	C7	4002	A4	7003	B6	9006	D4		
1002	D5	2009	C5	2041	C5	2064	C6	3002	D5	3009	D4	3047	A6	3065	C6	4003	B3	7004	C2	9007	D7		
2000	B2	2010	B4	2042	B5	2065	C7	3003	D3	3041	C5	3048	B7	3066	D7	4004	A2	9001	B3	9008	C6		
2001	B5	2011	C4	2043	A7	2066	C6	3004	D4	3042	C5	3049	E5	3081	C2	4005	C5	9002	B2	9009	A5		
2003	C4	2012	C4	2044	B6	2081	C2	3005	D4	3043	C5	3061	C7	3082	B2	6061	D6	9003	D3	9010	B5		
2006	C3	2013	B3	2061	C6	2082	C2	3006	D4	3044	D7	3062	D6	3083	D3	6062	D6	9004	C4	9011	B5		
2007	C3	2014	C4	2062	C7	3000	C2	3007	D3	3045	A6	3063	D6	4001	B4	7001	C3	9005	C5	9012	B5		

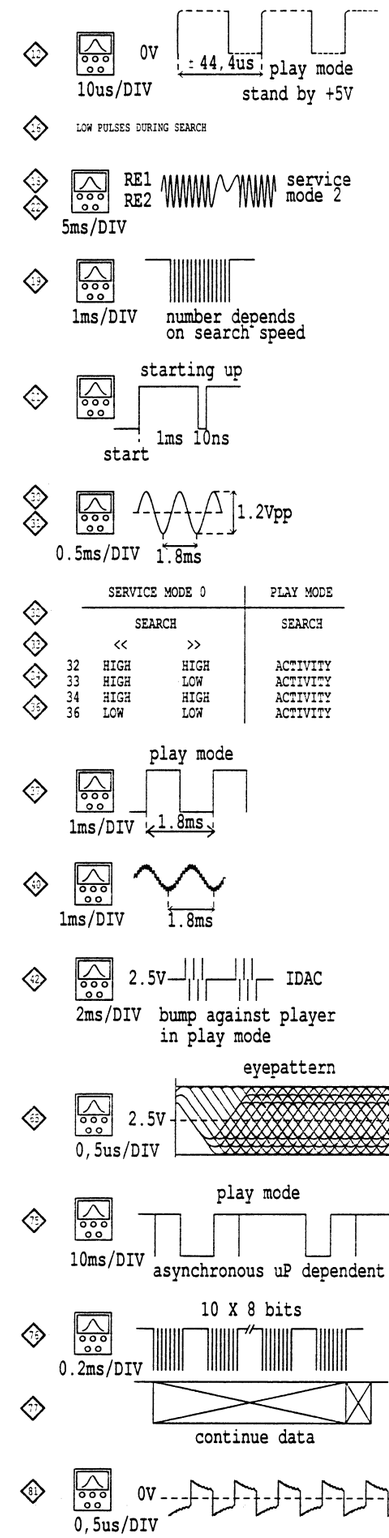


SERVO & DECODER CIRCUIT DIAGRAM







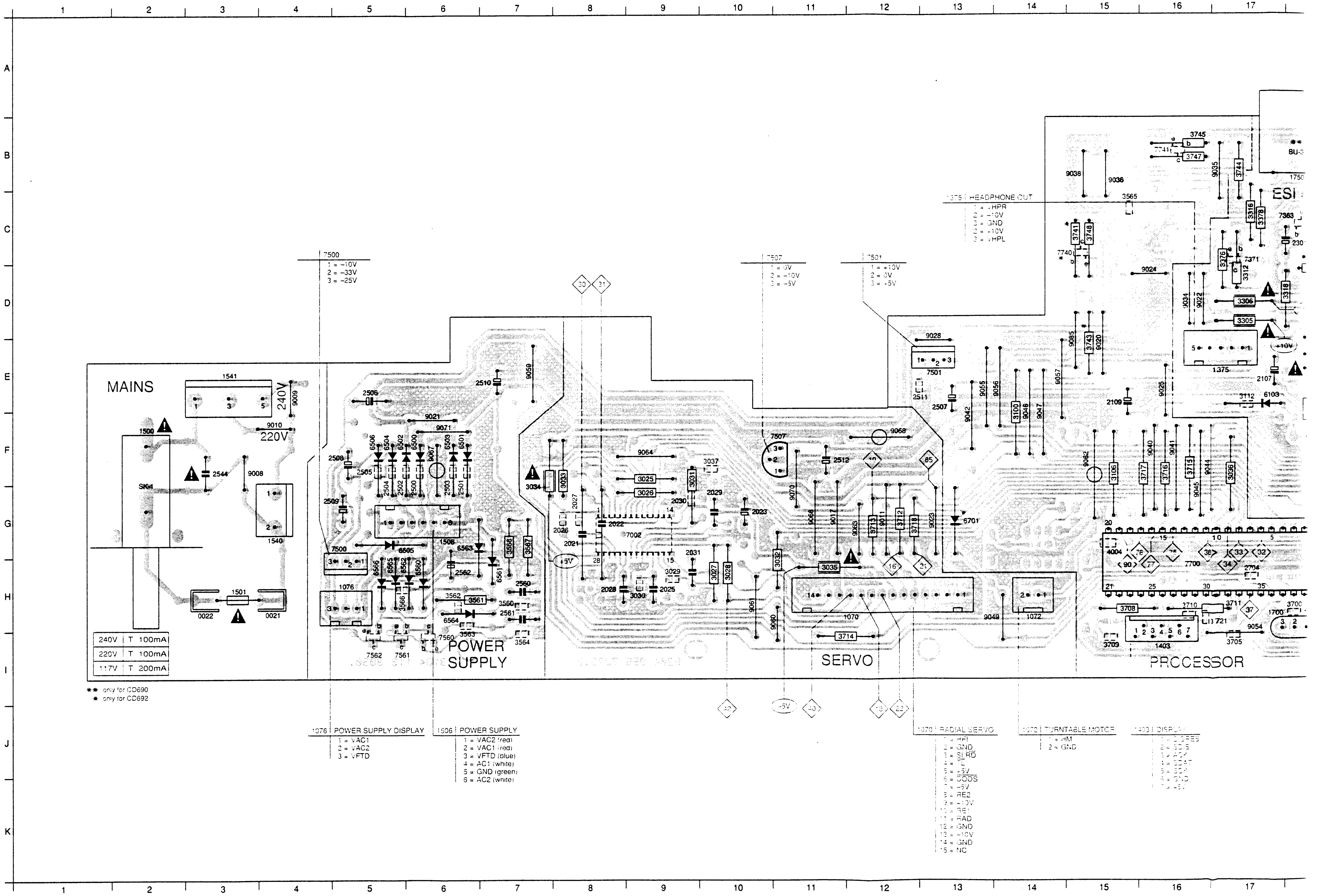


	SERVICE MODE 0		PLAY MODE
	SEARCH		SEARCH
	<<	>>	
32	HIGH	HIGH	ACTIVITY
33	HIGH	LOW	ACTIVITY
34	HIGH	HIGH	ACTIVITY
36	LOW	LOW	ACTIVITY

SERVO & DECODER PANEL COMPONENT SIDE

0021	H4	1403	I16	1701	H18	2029	G10	2107	E17	2117	E19	2140	I22	2306	C19	2500	G6	2509	G4	2611	H19	3029	H9	3100	F14
0022	H3	1470	I19	1750	B18	2030	G9	2108	F19	2118	D20	2141	H22	2308	C22	2501	G6	2510	E6	2612	I21	3030	H9	3101	F19
1070	H11	1500	F2	2021	G8	2031	G9	2109	E15	2119	E19	2253	E22	2309	D21	2502	G5	2511	E12	2702	H18	3031	G9	3102	E18
1071	I20	1501	H3	2022	G8	2101	E19	2110	F18	2120	D20	2254	B21	2310	C21	2503	G6	2512	F11	2703	H18	3032	H11	3103	E18
1072	H14	1506	G6	2023	G10	2102	F18	2111	E18	2121	E19	2300	C18	2311	C20	2504	G5	2544	F3	2704	H17	3033	G8	3105	G23
1076	H5	1540	G4	2025	H9	2103	E22	2112	E21	2122	D20	2301	C18	2312	C18	2505	F5	2560	H7	3025	F9	3034	G7	3106	F15
1250	B21	1541	E3	2026	G8	2104	G21	2114	E22	2123	E20	2302	C19	2313	C20	2506	E5	2561	H7	3026	G9	3035	H11	3109	F18
1300	B19	1570	D22	2027	G8	2105	F19	2115	E22	2124	E21	2303	D18	2314	D19	2507	E13	2562	H6	3027	H10	3036	F17	3110	D21
1375	E17	1700	H17	2028	H8	2106	E19	2116	D22	2125	E18	2305	D19	2315	D18	2508	F4	2610	H20	3028	H10	3037	F10	3111	E18

3112	E17	3146	D21	3304	C18	3316	C17	3378	C17	3564	I7	3614	H21	3710	H16	3721	H17	4003	B22	6504	F5	6565	H5
3117	E19	3147	D23	3305	D17	3317	B20	3379	C21	3565	C15	3615	H20	3711	H17	3741	C15	4004	G15	6505	G5	6566	H5
3118	D20	3148	H23	3306	D17	3318	D18	3550	H19	3566	H5	3616	H20	3712	G12	3743	E15	4006	D19	6506	F5	6701	G13
3140	H22	3251	G23	3307	D22	3319	D21	3551	H19	3567	G7	3617	I20	3713	G12	3744	B17	5250	E23	6550	H19	6702	G19
3141	I22	3255	G23	3308	D21	3362	C23	3552	H18	3568	G7	3700	H18	3714	I11	3745	B16	6103	E17	6560	H6	7002	G9
3142	G20	3256	G23	3309	C21	3363	C19	3560	H7	3610	H22	3701	H19	3715	F16	3747	B16	6500	F6	6561	H7	7101	G21
3143	I22	3300	C18	3310	C21	3364	B21	3561	H6	3611	H22	3705	I17	3716	F16	3748	C15	6501	F6	6562	H6	7102	E20
3144	D23	3301	C18	3312	D17	3376	D17	3562	H6	3612	H22	3708	H15	3717	F16	4001	B22	6502	F5	6563	G6	7140	D23
3145	E23	3302	D18	3313	C21	3377	C21	3563	I6	3613	H22	3709	I15	3718	G12	4002	E18	6503	F6	6564	H6	7141	H23



** only for CD690
* only for CD692

7500
1 = −10V
2 = −33V
3 = −25V

7507
1 = 0V
2 = −10V
3 = −5V

7501
1 = +10V
2 = 0V
3 = +5V

1375 | HEADPHONE OUT
1 = VHPR
2 = −10V
3 = GND
2 = +10V
3 = VHPL

1076 | POWER SUPPLY DISPLAY
1 = VAC1
2 = VAC2
3 = VFTD

1506 | POWER SUPPLY
1 = VAC2 (red)
2 = VAC1 (red)
3 = VFTD (blue)
4 = AC1 (white)
5 = GND (green)
6 = AC2 (white)

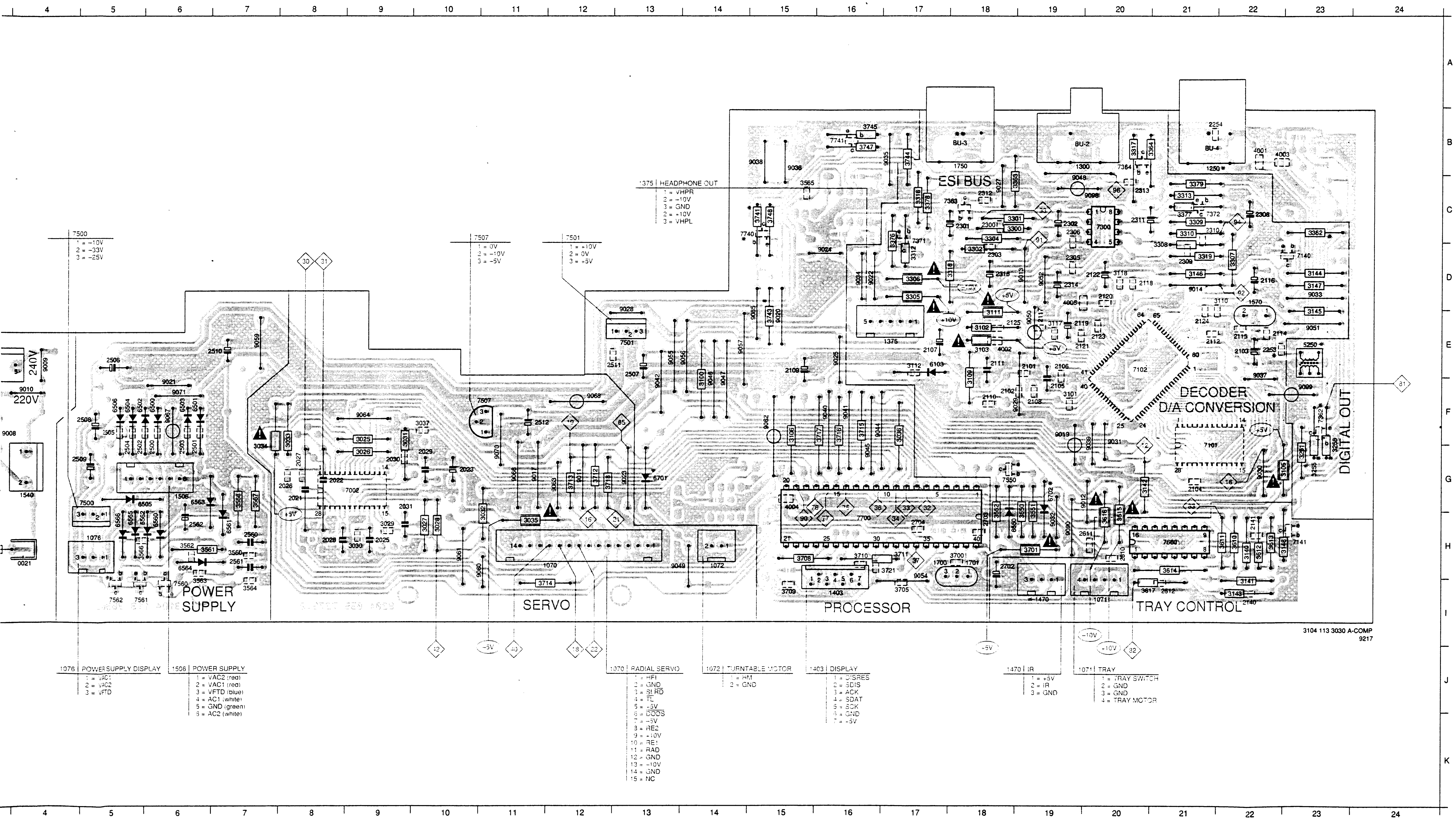
1070 | RADIAL SERVO
1 = HFI
2 = GND
3 = SI$\overline{RD}$
4 = $\overline{TL}$
5 = +5V
6 = $\overline{DODS}$
7 = −5V
8 = RE2
9 = +10V
10 = RE1
11 = RAD
12 = GND
13 = −10V
14 = GND
15 = NC

1072 | TURNTABLE MOTOR
1 = HM
2 = GND

1403 | DISPLAY
1 = [illegible]
2 = SDIS
3 = ACK
4 = SDAT
5 = SCK
6 = GND
7 = +5V

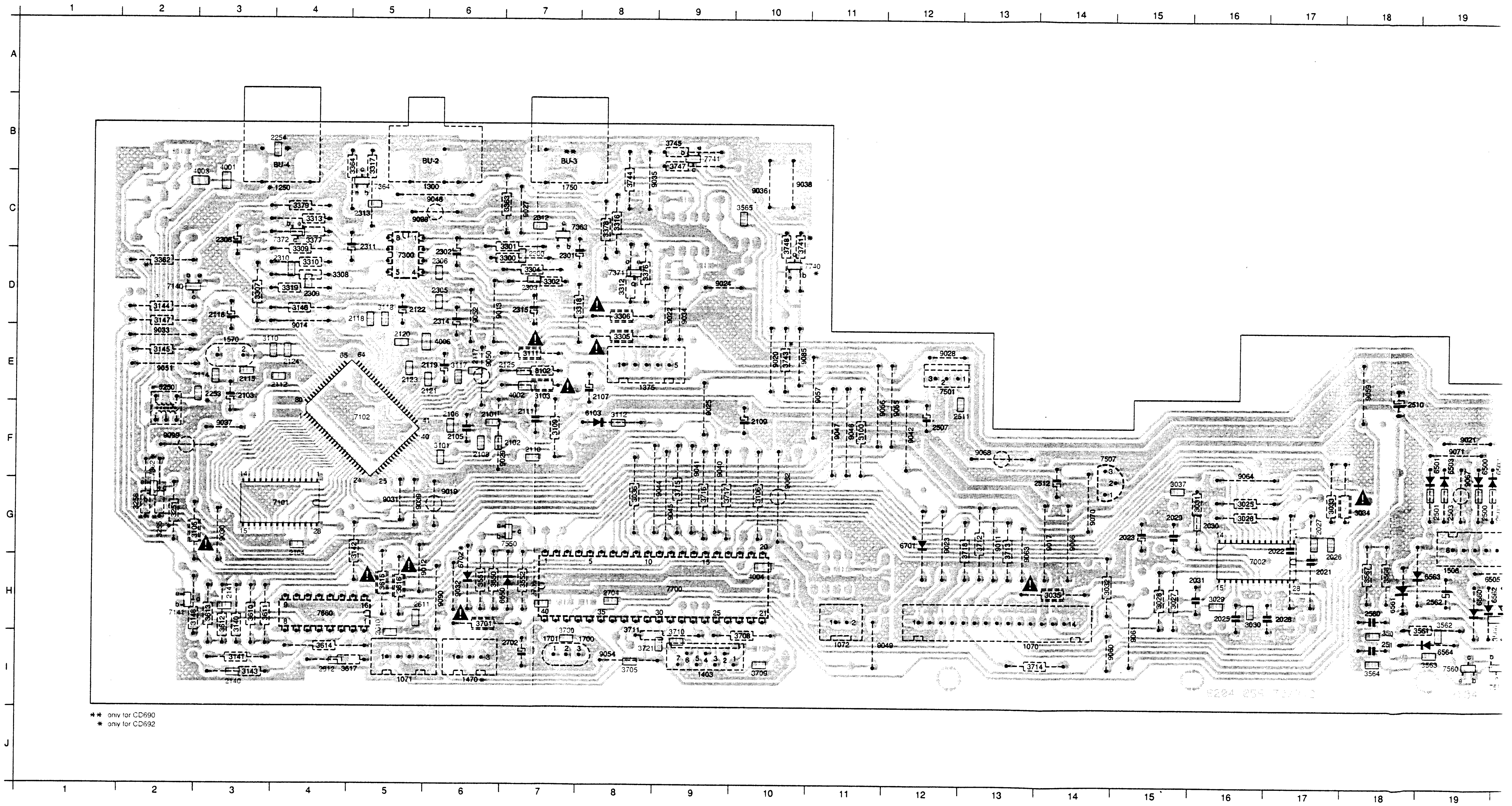
IPONENT SIDE

E17	2117	E19	2140	I22	2306	C19	2500	G6	2509	G4	2611	H19	3029	H9	3100	F14	3112	E17	3146	D21	3304	C18	3316	C17	3378	C17	3564	I7	3614	H21	3710	H16	3721	H17	4003	B22	6504	F5	6565	H5	7300	C20	7550	G18	9009	E4	9021	F6	9031	F20	9040	F16	9050	E19	9061	H10	9085	E15
F19	2118	D20	2141	H22	2308	C22	2501	G6	2510	E6	2612	I21	3030	H9	3101	F19	3117	E19	3147	D23	3305	D17	3317	B20	3379	C21	3565	C15	3615	H20	3711	H17	3741	C15	4004	G15	6505	G5	6566	H5	7362	F23	7560	I6	9010	F4	9022	D16	9032	H19	9041	F16	9051	E23	9062	F15	9090	H19
E15	2119	E19	2253	E22	2309	D21	2502	G5	2511	E12	2702	H18	3031	G9	3102	E18	3118	D20	3148	H23	3306	D17	3318	D18	3550	H19	3566	H5	3616	H20	3712	G12	3743	E15	4006	D19	6506	F5	6701	G13	7363	C17	7561	I5	9011	G12	9023	G13	9033	D23	9042	F13	9052	D19	9063	G12	9098	C20
F18	2120	D20	2254	B21	2310	C21	2503	G6	2512	F11	2703	H18	3032	H11	3103	E18	3140	H22	3251	G23	3307	D22	3319	D21	3551	H19	3567	G7	3617	I20	3713	G12	3744	B17	5250	E23	6550	H19	6702	G19	7364	B20	7562	I5	9012	G20	9024	D16	9034	D16	9044	F16	9054	H17	9064	F9	9099	F23
E18	2121	E19	2300	C18	2311	C20	2504	G5	2544	F3	2704	H17	3033	G8	3105	G23	3141	I22	3255	G23	3308	D21	3362	C23	3552	H18	3568	G7	3700	H18	3714	I11	3745	B16	6103	E17	6560	H6	7002	G9	7371	C17	7660	H21	9013	D19	9025	E16	9035	B17	9045	G16	9055	E13	9066	G11		
E21	2122	D20	2301	C18	2312	C18	2505	F5	2560	H7	3025	F9	3034	G7	3106	F15	3142	G20	3256	G23	3309	C21	3363	C19	3560	H7	3610	H22	3701	H19	3715	F16	3747	B16	6500	F6	6561	H7	7101	G21	7372	C21	7700	H16	9014	D21	9027	C18	9036	B15	9046	F14	9056	E14	9067	F6		
E22	2123	E20	2302	C19	2313	C20	2506	E5	2561	H7	3026	G9	3035	H11	3109	F18	3143	I22	3300	C18	3310	C21	3364	B21	3561	H6	3611	H22	3705	I17	3716	F16	3748	C15	6501	F6	6562	H6	7102	E20	7500	G4	7740	C14	9017	G11	9028	E13	9037	E22	9047	F14	9057	E14	9068	F12		
E22	2124	E21	2303	D18	2314	D19	2507	E13	2562	H6	3027	H10	3036	F17	3110	D21	3144	D23	3301	C18	3312	D17	3376	D17	3562	H6	3612	H22	3708	H15	3717	F16	4001	B22	6502	F5	6563	G6	7140	D23	7501	E13	7741	B16	9019	F19	9029	F19	9038	B14	9048	C19	9059	E7	9070	G11		
D22	2125	E18	2305	D19	2315	D18	2508	F4	2610	H20	3028	H10	3037	F10	3111	E18	3145	E23	3302	D18	3313	C21	3377	C21	3563	I6	3613	H22	3709	I15	3718	G12	4002	E18	6503	F6	6564	H6	7141	H23	7507	F10	9008	F3	9020	E15	9030	G22	9039	G20	9049	H13	9060	H11	9071	F6		



SERVO & DECODER PANEL SOLDER SIDE

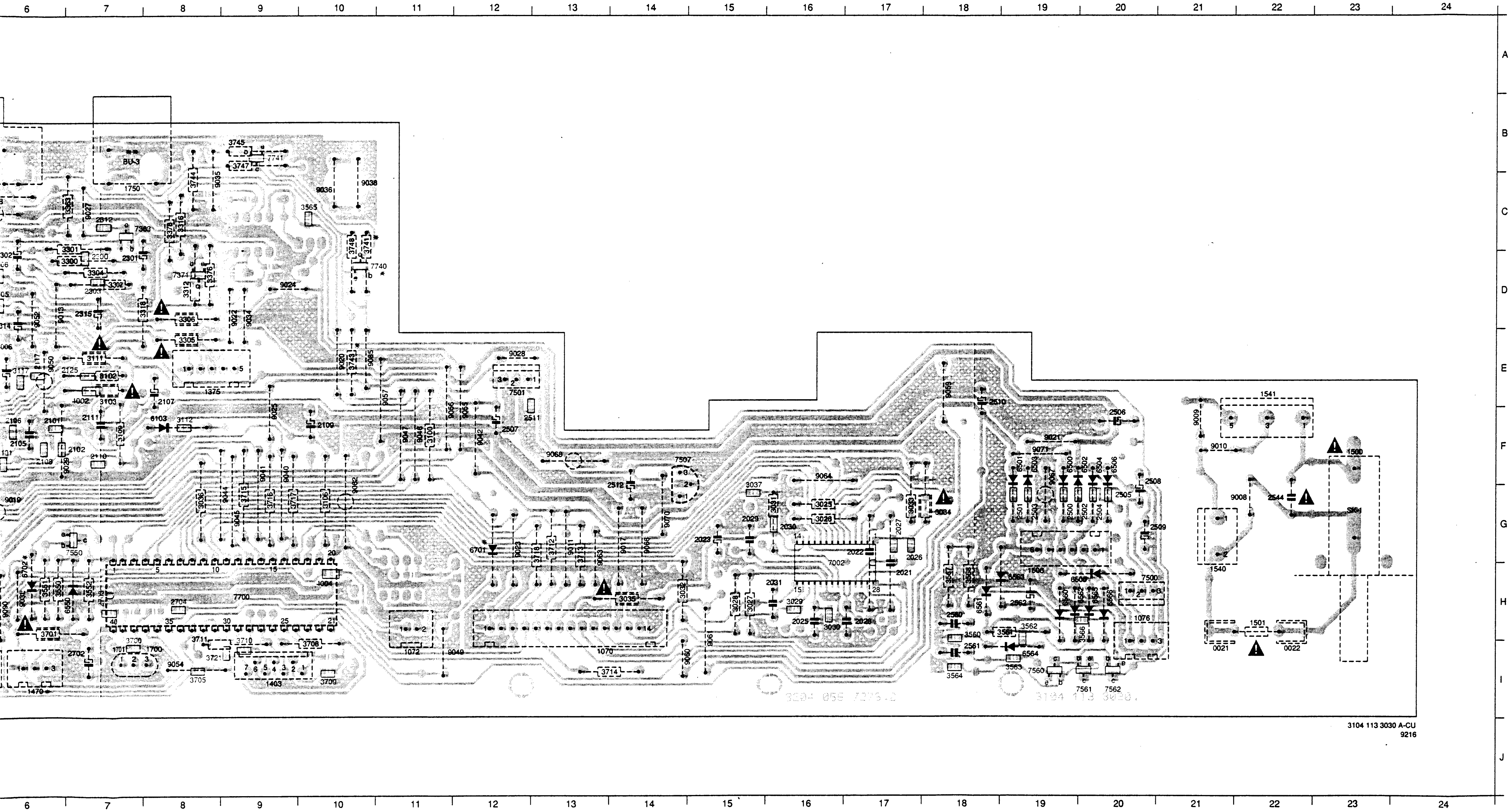
0021	I21	1403	I9	1701	I7	2029	G15	2107	E8	2117	E6	2140	I3	2306	D6	2500	G19	2509	G20	2611	H5	3029	H16	3100	F11	3112	F8	3146	D4	3304	D7	3316	C8	3378	C8	3564	I18	3614	I4	3710	I9	3721	I8	4003	C2	6504	F20	6565	H20	7300	D5	7550	G7	9009
0022	I22	1470	I6	1750	C7	2030	G16	2108	F6	2118	D4	2141	H3	2308	C3	2501	G19	2510	E18	2612	I4	3030	H16	3101	F6	3117	E6	3147	D2	3305	E8	3317	C5	3379	C4	3565	C10	3615	H5	3711	I8	3741	D10	4004	H10	6505	H19	6566	H20	7362	F2	7560	I19	9010
1070	I13	1500	F23	2021	H17	2031	H16	2109	F10	2119	E5	2253	E3	2309	D4	2502	G20	2511	F12	2702	I7	3031	G16	3102	E7	3118	D5	3148	H3	3306	D8	3318	D8	3550	H6	3566	I20	3616	H5	3712	G13	3743	E10	4006	E6	6506	F20	6701	G12	7363	C7	7561	I19	9011
1071	I5	1501	H22	2022	G17	2101	F6	2110	F7	2120	E5	2254	B3	2310	D3	2503	G19	2512	G13	2703	H7	3032	H14	3103	E7	3140	I3	3251	G2	3307	D3	3319	D4	3551	H6	3567	H18	3617	I4	3713	G13	3744	C8	5250	E2	6550	H7	6702	H6	7364	C5	7562	I20	9012
1072	I11	1506	H19	2023	G15	2102	F7	2111	F7	2121	E5	2300	D7	2311	D5	2504	G20	2544	G22	2704	H8	3033	G17	3105	G3	3141	I3	3255	G2	3308	D4	3362	D2	3552	H7	3568	H18	3700	I7	3714	I13	3745	B9	6103	F8	6560	H19	7002	H16	7371	D8	7660	H4	9013
1076	H20	1540	H21	2025	H16	2103	E3	2112	E3	2122	D5	2301	D7	2312	C7	2505	G20	2560	H18	3025	G16	3034	G18	3106	G10	3142	H5	3256	G2	3309	D4	3363	C7	3560	H18	3610	H3	3701	H6	3715	G9	3747	B9	6500	F19	6561	H18	7101	G4	7372	C3	7700	H9	9014
1250	C3	1541	E22	2026	G17	2104	H4	2114	E2	2123	E5	2302	D6	2313	C5	2506	F20	2561	I18	3026	G16	3035	H14	3109	F7	3143	I3	3300	D6	3310	D4	3364	C5	3561	H18	3611	H3	3705	I8	3716	G9	3748	D10	6501	F19	6562	H20	7102	F5	7500	H20	7740	D10	9017
1300	C5	1570	E3	2027	G17	2105	F6	2115	E3	2124	E4	2303	D7	2314	D6	2507	F12	2562	H19	3027	H15	3036	G8	3110	E3	3144	D2	3301	C6	3312	D8	3376	D8	3562	H19	3612	I3	3708	I10	3717	G9	4001	B3	6502	F20	6563	H19	7140	D2	7501	E12	7741	B9	9019
1375	E8	1700	I8	2028	H17	2106	F6	2116	D3	2125	E6	2305	D6	2315	D7	2508	F20	2610	I5	3028	H15	3037	G15	3111	E7	3145	E2	3302	D7	3313	C4	3377	C4	3563	I19	3613	H3	3709	I10	3718	G13	4002	E7	6503	F19	6564	I19	7141	H2	7507	F14	9008	G21	9020



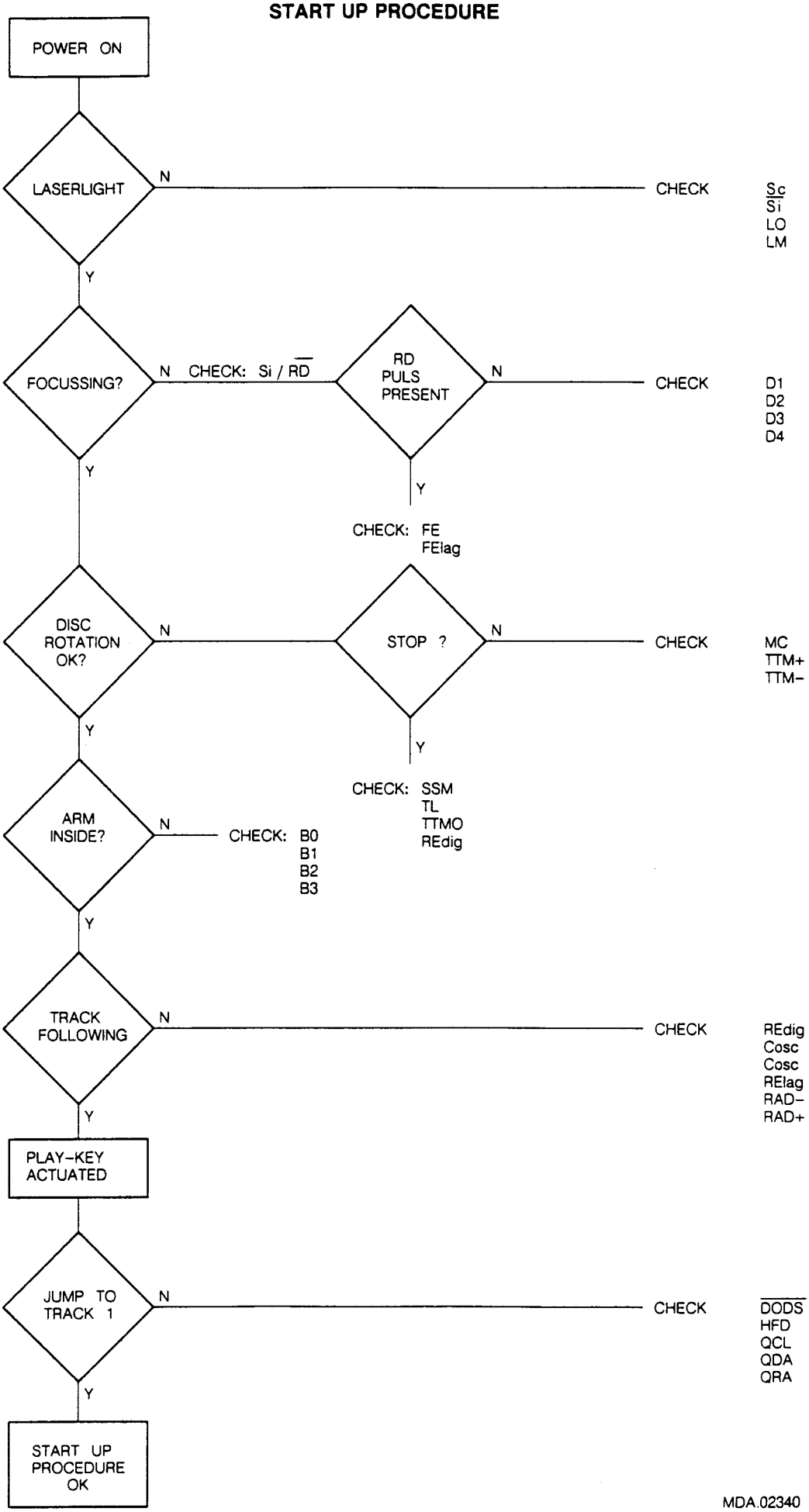
** only for CD690
* only for CD692

2500	G19	2509	G20	2611	H5	3029	H16	3100	F11	3112	F8	3146	D4	3304	D7	3316	C8	3378	C8	3564	I18	3614	I4	3710	I9
2501	G19	2510	E18	2612	I4	3030	H16	3101	F6	3117	E6	3147	D2	3305	E8	3317	C5	3379	C4	3565	C10	3615	H5	3711	I8
2502	G20	2511	F12	2702	I7	3031	G16	3102	E7	3118	D5	3148	H3	3306	D8	3318	D8	3550	H6	3566	I20	3616	H5	3712	G13
2503	G19	2512	G13	2703	H7	3032	H14	3103	E7	3140	I3	3251	G2	3307	D3	3319	D4	3551	H6	3567	H18	3617	I4	3713	G13
2504	G20	2544	G22	2704	H8	3033	G17	3105	G3	3141	I3	3255	G2	3308	D4	3362	D2	3552	H7	3568	H18	3700	I7	3714	I13
2505	G20	2560	H18	3025	G16	3034	G18	3106	G10	3142	H5	3256	G2	3309	D4	3363	C7	3560	H18	3610	H3	3701	H6	3715	G9
2506	F20	2561	I18	3026	G16	3035	H14	3109	F7	3143	I3	3300	D6	3310	D4	3364	C5	3561	H18	3611	H3	3705	I8	3716	G9
2507	F12	2562	H19	3027	H15	3036	G8	3110	E3	3144	D2	3301	C6	3312	D8	3376	D8	3562	H19	3612	I3	3708	I10	3717	G9
2508	F20	2610	I5	3028	H15	3037	G15	3111	E7	3145	E2	3302	D7	3313	C4	3377	C4	3563	I19	3613	H3	3709	I10	3718	G13

3721	I8	4003	C2	6504	F20	6565	H20	7300	D5	7550	G7	9009	F21	9021	F19	9031	G5	9040	F9	9050	E6	9061	I15	9085	E10
3741	D10	4004	H10	6505	H19	6566	H20	7362	F2	7560	I19	9010	F21	9022	D9	9032	H6	9041	F9	9051	E2	9062	G10	9090	H6
3743	E10	4006	E6	6506	F20	6701	G12	7363	C7	7561	I19	9011	G13	9023	G12	9033	E2	9042	F12	9052	D6	9063	H13	9098	C5
3744	C8	5250	E2	6550	H7	6702	H6	7364	C5	7562	I20	9012	H6	9024	D9	9034	D9	9044	G9	9054	I8	9064	F16	9099	F2
3745	B9	6103	F8	6560	H19	7002	H16	7371	D8	7660	H4	9013	D6	9025	F9	9035	C8	9045	G9	9055	F12	9066	G14		
3747	B9	6500	F19	6561	H18	7101	G4	7372	C3	7700	H9	9014	E4	9027	C7	9036	C10	9046	F11	9056	F12	9067	G19		
3748	D10	6501	F19	6562	H20	7102	F5	7500	H20	7740	D10	9017	G14	9028	E12	9037	F3	9047	F11	9057	E11	9068	F13		
4001	B3	6502	F20	6563	H19	7140	D2	7501	E12	7741	B9	9019	G6	9029	F7	9038	C10	9048	C5	9059	E18	9070	G14		
4002	E7	6503	F19	6564	I19	7141	H2	7507	F14	9008	G21	9020	E10	9030	G3	9039	G5	9049	I11	9060	I15	9071	F19		



START UP PROCEDURE



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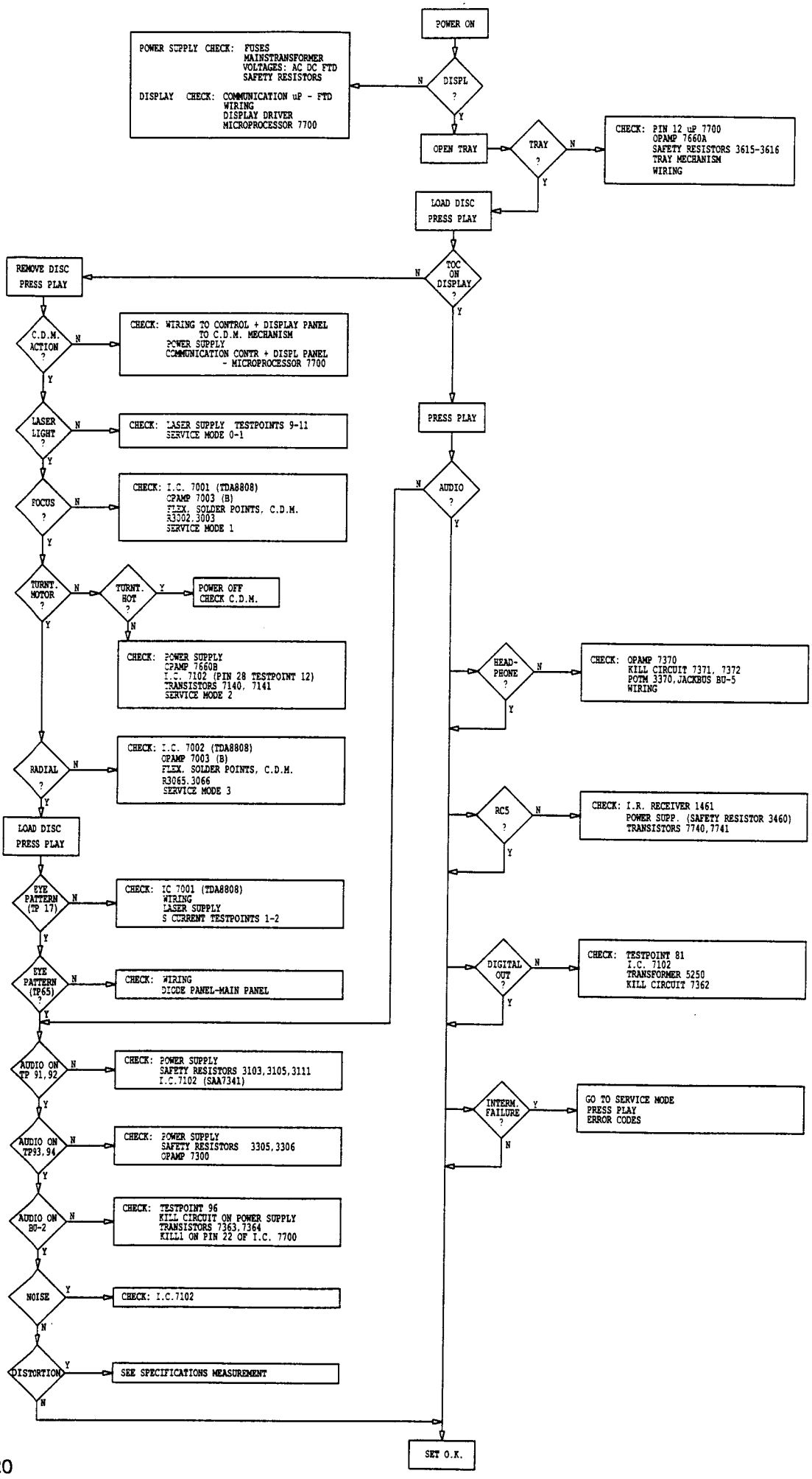
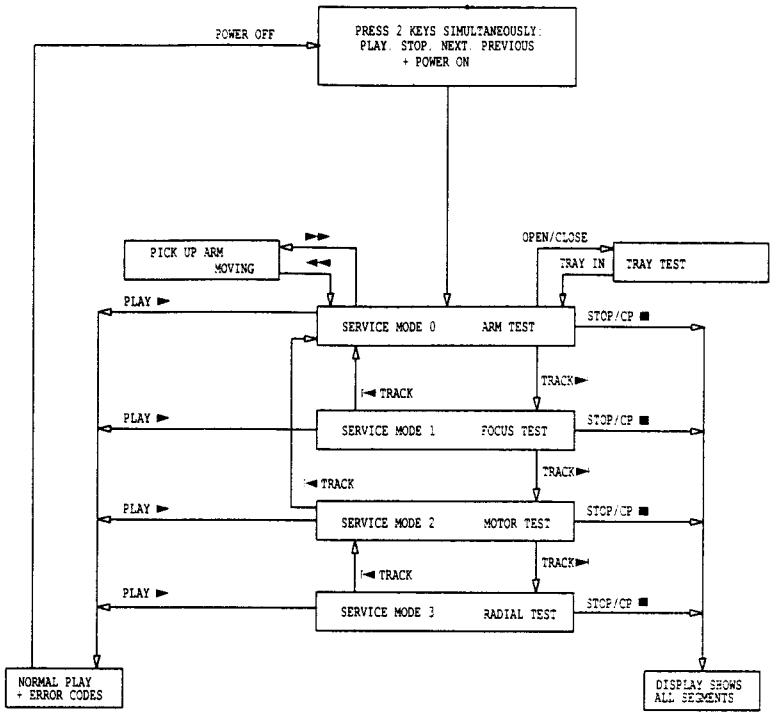
T07-941

FAULTFINDING GUIDE



HAS1063
9214

SERVICE TEST PROGRAM



ERROR CODE TABLE

SYSTEM ERRORS

01Err	Tray error
02Err	Focus error
03Err	Radial error
04Err	Disc error : DRD becomes not low
05Err	TL low to long
06Err	Jump error
07Err	Subcode error
08Err	TOC error
09Err	Decoder SAA7341(CD4+) error

OPERATING ERRORS

36Err	Programmed track is not existing on this CD
37Err	Selected track is not existing on this CD
40Err	Finding error
41Err	Review error
43Err	Program pressed while playing
44Err	Cancel pressed while not in review
45Err	Program pressed while no track selected
46Err	Program pressed while scanning program
49Err	Search pressed in scan
50Err	Edit pressed in play mode
51Err	No track possible to play in edit mode
52Err	Tape pressed while not in time-input mode
54Err	Not allowed keys pressed in edit-play/pause
55Err	Not allowed key pressed in edit time-input
57Err	Fast forward pressed while not in play
58Err	Fast reverse pressed while not in play
61Err	Fast pressed while not in play

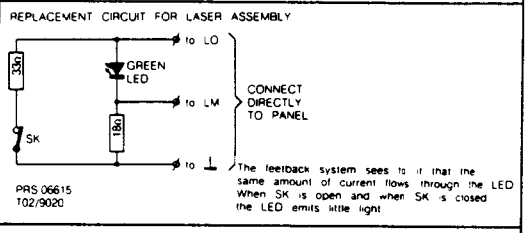
CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	⌀	▭	🔍	Remarks
1	D2 D1 D3 D4	power on	4 6 7 8	–	–	signal 4E6E7E8	Signal depends on Distance lens ↔ IR LED of remote control

T-23366A

CHECK OF LASER SUPPLY

The laser, the lasersupply plus 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 teh replacement circuit for laser assembly.

Step	Signal	Mode	◇	▭	Remarks
1	LO	serv. pos. 2 SK	9 V	1.8<V <2.3	
	LM		11 V	170<mV <220	
2	LO	serv. pos. 2 SK	9 V	1.8<V <2.3	
	LM		11 V	170<mV <220	
3	LO	Power on	9 V	0V ± 0.2V	No light

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

T-23366B

CHECK OF CDM-9

Step	Signal	Mode	◇	⌐V¬
1	S current = voltage across R3000	Test disc 5A play	1 V 2 mV DC	56<mV<76

WARNINGS

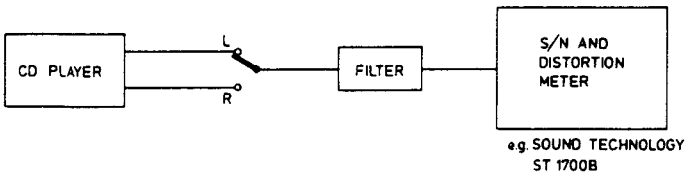
1. Never disconnect flex when power is on.
2. Laser power is adjusted during the production process and may not be readjusted.

SPECIFICATIONS MEASUREMENT

Signal	Mode	◇			Remarks
BU2-L	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12

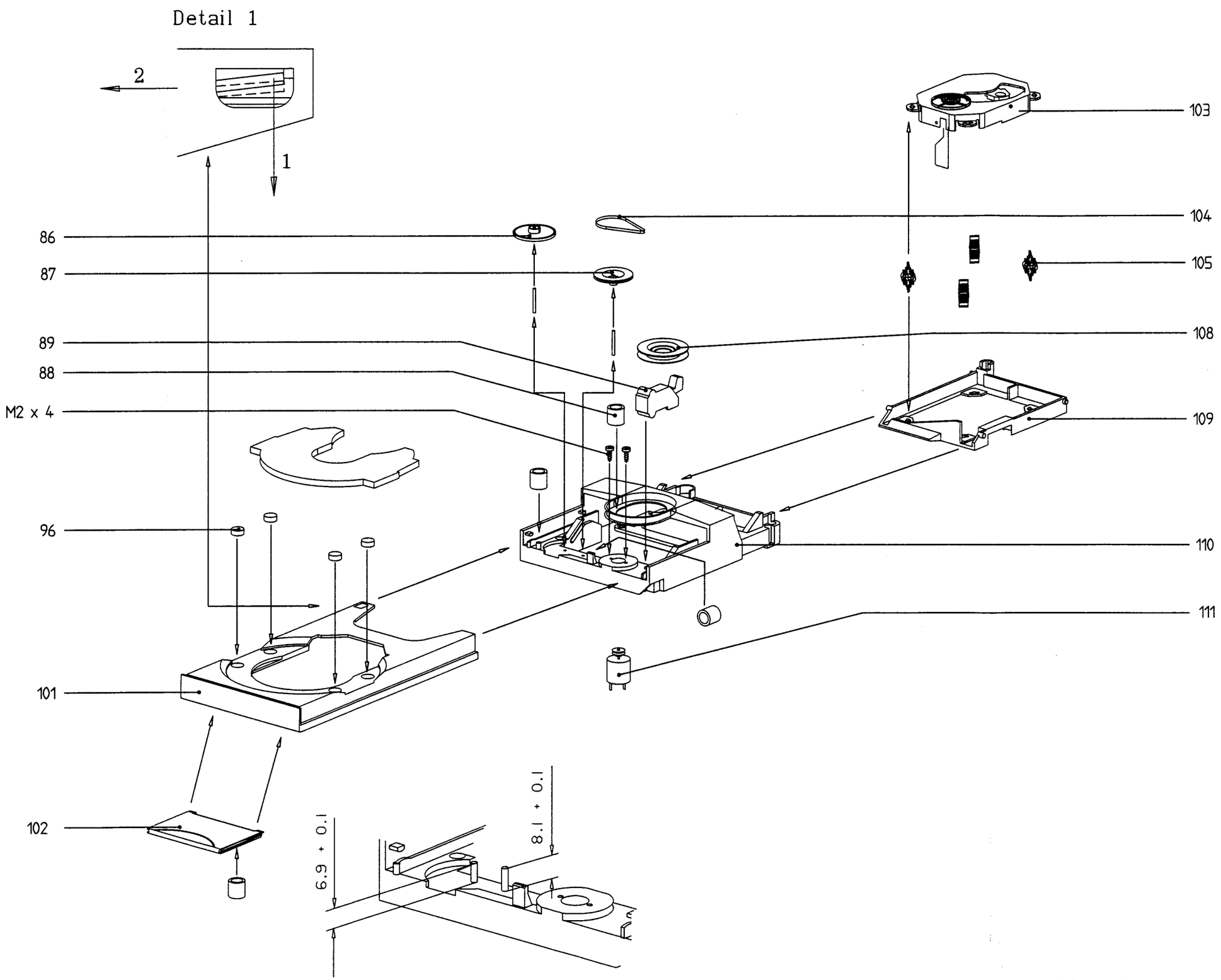
T-23366M

Filter = 13th order filter 4822 395 30204



30 459 A12

LOADER



HAS.1071

MECHANICAL PARTSLIST

Partslist cabinet

1		4822 444 40553	FRONT CD690
1		4822 444 40554	FRONT CD692
15		4822 410 61966	KNOBUNIT(NOSE)
16		4822 410 61967	KNOBUNIT(10-KEY)
17		4822 410 61968	KNOBUNIT
21		4822 459 10887	WORDMARK
22		4822 450 61895	WINDOW
23		4822 450 61894	IR WINDOW(only CD692)
51		4822 410 61965	KNOB
52		4822 535 93317	POWERROD
53		4822 413 41722	VOLUME KNOB
54		4822 462 71808	CAP
71		4822 444 40555	TRAY FRONT
151		4822 444 60843	COVER
255		4822 462 41479	FOOT
283	▲	4822 532 60948	BUSHING
300	▲	4822 321 10809	MAINS CORD /00B
301	▲	4822 321 10811	MAINS CORD /05B
302	▲	4822 321 10849	MAINS CORD /17B
303	▲	4822 321 10828	MAINS CORD /10B
308		4822 321 22832	CINCH CABLE SBC1072
340		4822 736 21428	INSTRUCTION FOR USE
365		4822 218 10411	RD6830/01

Partslist loader

86	4822 528 81464	DRIVE PINION
87	4822 528 81465	PULLEY
88	4822 325 60379	DAMPING GROMMET
89	4822 276 13222	SWITCH
96	4822 462 41902	ORNAMENTAL TULE
101	4822 462 30555	TRAY
102	4822 444 60844	COVER PLATE
103	4822 691 20748	CDM9 DC/63
104	4822 358 31168	BELT
105	4822 466 93065	SUSPENSION
108	4822 402 61412	CLAMPER ASSY
109	4822 464 50908	SUB CHASSIS
110	4822 464 50896	CHASSIS
111	4822 361 21492	MOTOR

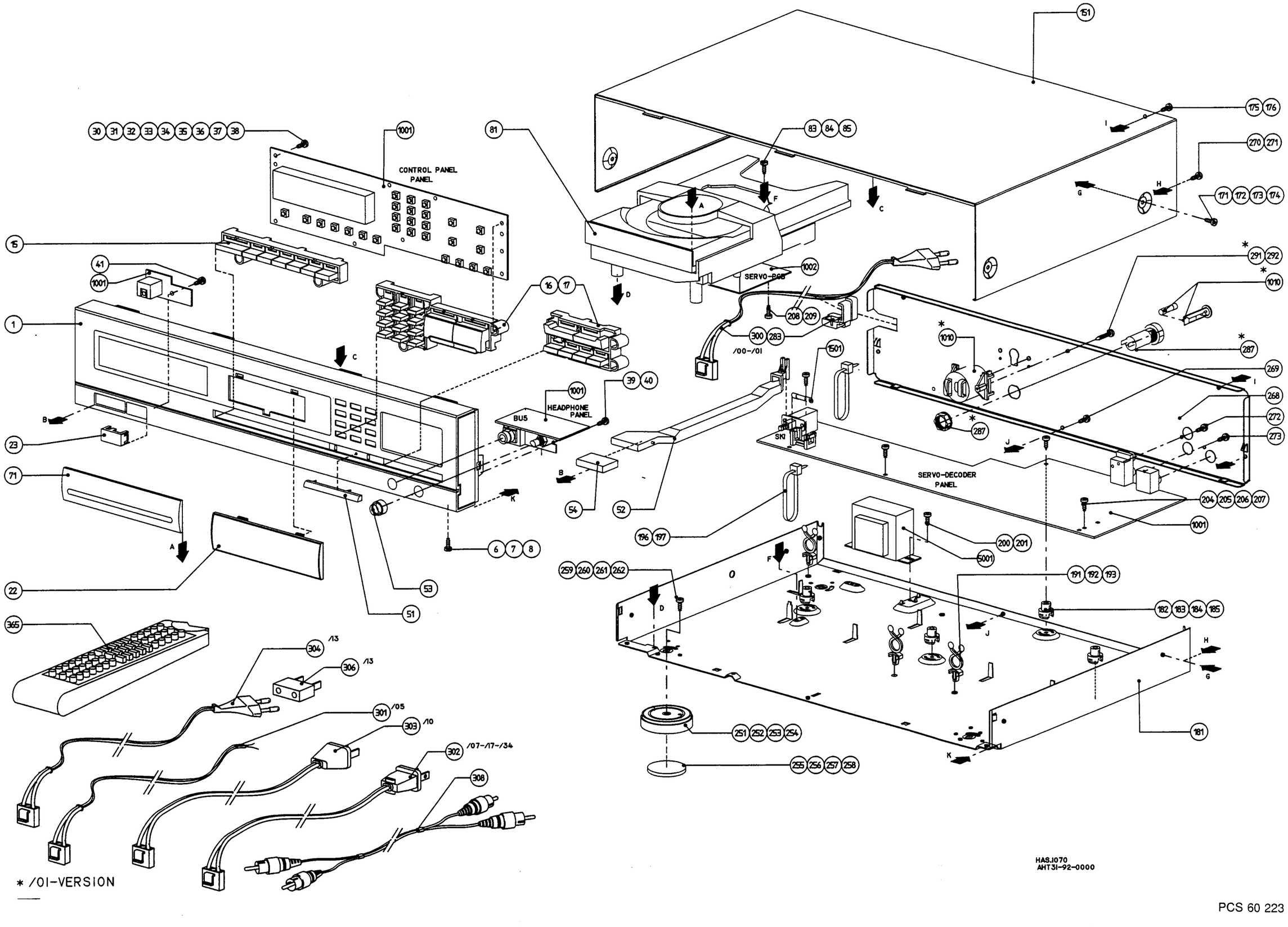
The following parts are only available during production period on special request.

181	Frame
266	Back plate

Screws

Taptite	M3x6:	6,7,8 83,84,85 171,172,173,174 175,176 200,201 269,270,271,272	Plastite	M3x10:	39,40 41 268 273
			Plastite	M3x12:	30,31,32,33,34,35,36,37,38
Taptite	M3x16:	204,205,206,207	Plastite	M3,5x8:	208,209 259,260,261,261

EXPLODED VIEW



ELECTRICAL PARTSLIST

SERVO & DECODER PANEL

MISCELLANEOUS

BU-2	4822 265 20553	ANALOG OUT SOCKET
BU-3	4822 265 20543	RC5 SOCKET (CD690)
BU-4	4822 267 31457	DIGITAL OUT (CD692)
1072	4822 265 20582	CONNECTOR 2P
1403	4822 267 50621	CONNECTOR 7P
1570	4822 242 81151	CRYSTAL 16,9344MHz
1700	4822 242 72527	RESONATOR 4 MHz

CAPACITORS

2021	4822 121 51321	8,2µF 1% 63V
2022	4822 121 51321	8,2µF 1% 63V
2023	4822 124 40272	33µF 20% 16V
2025	5322 121 42661	330nF 5% 63V
2026	4822 122 33342	33nF 10% 63V
2027	4822 122 33342	33nF 10% 63V
2028	4822 121 42408	220nF 5% 63V
2029	4822 121 42408	220nF 5% 63V
2030	4822 122 33496	100nF 10% 63V
2031	4822 121 43526	47nF 5% 100V
2032	4822 122 33496	100nF 10% 63V
2101	5322 122 32452	47pF 5% 63V
2102	4822 122 33175	2,2nF 20% 50V
2103	4822 124 40849	330µF 20% 16V
2104	4822 122 33496	100nF 10% 63V
2105	5322 121 42661	330nF 5% 63V
2106	4822 122 33496	100nF 10% 63V
2107	4822 124 41584	100µF 20% 10V
2108	5322 122 32654	22nF 10% 63V
2109	4822 124 40242	1µF 20% 63V
2110	5322 122 32659	33pF 5% 50V
2111	5322 121 42386	100nF 5% 63V
2112	4822 122 33496	100nF 10% 63V
2114	5322 122 32658	22pF 5% 50V
2115	5322 122 32658	22pF 5% 50V
2116	4822 124 40242	1µF 20% 63V
2117	5322 126 10223	4,7nF 10% 63V
2118	5322 126 10223	4,7nF 10% 63V
2119	4822 124 41584	100µF 20% 10V
2120	4822 122 33496	100nF 10% 63V
2121	4822 122 33496	100nF 10% 63V
2122	4822 124 40849	330µF 20% 16V
2123	4822 122 33496	100nF 10% 63V
2124	5322 122 32659	33pF 5% 50V
2125	5322 126 10223	4,7nF 10% 63V
2140	4822 122 33496	100nF 10% 63V
2141	4822 122 32542	47nF 10% 63V
2253	4822 122 32646	5,6nF 10% 50V
2254	4822 122 32646	5,6nF 10% 50V
2300	5322 122 31863	330pF 5% 50V
2301	4822 124 40272	33µF 20% 16V
2302	4822 124 41577	4,7µF 20% 50V
2303	4822 122 33216	270pF 5% 50V
2305	4822 122 33496	100nF 10% 63V
2306	4822 122 33496	100nF 10% 63V
2308	4822 124 40272	33µF 20% 16V
2309	4822 122 33216	270pF 5% 50V
2310	5322 122 31863	330pF 5% 50V
2311	4822 124 41577	4,7µF 20% 50V
2312	4822 122 33219	1,8nF 10% 50V
2313	4822 122 33219	1,8nF 10% 50V
2314	4822 124 40272	33µF 20% 16V
2315	4822 124 40272	33µF 20% 16V
2500	5322 122 32654	22nF 10% 63V
2501	5322 122 32654	22nF 10% 63V
2502	5322 122 32654	22nF 10% 63V
2503	5322 122 32654	22nF 10% 63V
2504	5322 122 32654	22nF 10% 63V
2505	5322 122 32654	22nF 10% 63V
2506	4822 124 23268	3300µF 20% 16V
2507	4822 124 40272	33µF 20% 16V
2508	5322 124 22094	220µF 20% 50V
2509	4822 124 41596	22µF 20% 50V
2510	4822 124 41853	1000µF 16V
2511	5322 122 32654	22nF 10% 63V
2512	4822 124 40272	33µF 20% 16V
2544 ⚠	4822 126 10454	3,3nF 20% 400V
2560	4822 121 51252	470nF 5% 63V
2561	5322 121 42661	330nF 5% 63V
2562	4822 124 40849	330µF 20% 16V
2610	4822 122 33496	100nF 10% 63V
2611	4822 122 33496	100nF 10% 63V
2612	4822 122 33496	100nF 10% 63V
2702	4822 124 40272	33µF 20% 16V
2703	5322 122 32654	22nF 10% 63V
2704	5322 122 32452	47pF 5% 63V

RESISTORS

3025	4822 050 24703	47k 1% 0,6W
3026	4822 050 22203	22k 1% 0,6W
3027	4822 050 21802	1k8 1% 0,6W
3028	4822 050 21803	18k 1% 0,6W
3029	4822 116 83706	5k1 2% 0,2W
3030	4822 116 83776	220k 2% 0,2W
3031	4822 050 21203	12k 1% 0,6W
3032	4822 050 21504	150k 1% 0,6W

3033		4822 050 22203	22k 1% 0,6W
3034	⚠	4822 052 10228	2Ω2 5% 0,33W
3035	⚠	4822 052 10478	4Ω7 5% 0,33W
3036		4822 050 21003	10k 1% 0,6W
3037		4822 051 20103	10k 5% 0,1W
3100		4822 050 22202	2k2 1% 0,6W
3101		4822 051 20223	22k 5% 0,1W
3102		4822 050 22203	22k 1% 0,6W
3103	⚠	4822 052 10478	4Ω7 5% 0,33W
3105	⚠	4822 052 10478	4Ω7 5% 0,33W
3106		4822 050 21002	1k 1% 0,6W
3109		4822 050 22202	2k2 1% 0,6W
3110		4822 051 20224	220k 5% 0,1W
3111	⚠	4822 052 10229	22Ω 5% 0,33W
3112		4822 051 20225	2M2 5% 0,1W
3117		4822 051 20182	1k8 5% 0,1W
3118		4822 051 20182	1k8 5% 0,1W
3140		4822 116 52234	100k 5% 0,5W
3141		4822 116 52234	100k 5% 0,5W
3142		4822 050 24703	47k 1% 0,6W
3143	⚠	4822 052 10229	22Ω 5% 0,33W
3144		4822 050 22203	22k 1% 0,6W
3145		4822 050 23302	3k3 1% 0,6W
3146		4822 050 21003	10k 1% 0,6W
3147		4822 050 23902	3k9 1% 0,6W
3148		4822 050 24703	47k 1% 0,6W
3255		4822 051 10561	560Ω 2% 0,25W
3256		4822 050 26201	620Ω 1% 0,6W
3300		4822 050 22203	22k 1% 0,6W
3301		4822 116 52244	15k 5% 0,5W
3302		4822 050 21803	18k 1% 0,6W
3304		4822 050 21203	12k 1% 0,6W
3305	⚠	4822 052 10339	33Ω 5% 0,33W
3306	⚠	4822 052 10339	33Ω 5% 0,33W
3307		4822 050 21803	18k 1% 0,6W
3308		4822 050 21203	12k 1% 0,6W
3309		4822 050 22203	22k 1% 0,6W
3310		4822 116 52244	15k 5% 0,5W
3312		4822 050 22203	22k 1% 0,6W
3313		4822 050 22203	22k 1% 0,6W
3316		4822 050 21002	1k 1% 0,6W
3317		4822 050 21002	1k 1% 0,6W
3318		4822 050 23302	3k3 1% 0,6W
3319		4822 050 23302	3k3 1% 0,6W
3362		4822 050 24702	4k7 1% 0,6W
3363		4822 050 22202	2k2 1% 0,6W
3364		4822 050 22202	2k2 1% 0,6W
3376		4822 116 52224	470Ω 5% 0,5W
3377		4822 116 52224	470Ω 5% 0,5W
3378		4822 050 22202	2k2 1% 0,6W
3379		4822 050 22202	2k2 1% 0,6W
3550		4822 051 10561	560Ω 2% 0,25W
3551		4822 050 21002	1k 1% 0,6W
3552		4822 050 22203	22k 1% 0,6W
3560		4822 051 20473	47k 5% 0,1W
3561		4822 116 52224	470Ω 5% 0,5W
3562		4822 051 20225	2M2 5% 0,1W
3563		4822 051 20103	10k 5% 0,1W
3564		4822 051 20333	33k 5% 0,1W
3565		4822 051 20224	220k 5% 0,1W
3566		4822 051 10102	1k 2% 0,25W
3567		4822 050 22203	22k 5% 1/8W
3568		4822 050 24702	4k7 1% 0,6W
3610		4822 050 21203	12k 1% 0,6W
3611		4822 116 52303	8k2 5% 1/8W
3612		4822 050 21203	12k 1% 0,6W
3613		4822 050 21203	12k 1% 0,6W
3614		4822 050 21203	12k 1% 0,6W
3615	⚠	4822 052 10108	1Ω 5% 0,33W
3616	⚠	4822 052 10108	1Ω 5% 0,33W
3617	⚠	4822 052 10229	22Ω 5% 0,33W
3700		4822 051 20224	220k 5% 0,1W
3701	⚠	4822 052 10478	4Ω7 5% 0,33W
3705		4822 051 20103	10k 5% 0,1W
3708		4822 050 21003	10k 1% 0,6W
3709		4822 051 20103	10k 5% 0,1W
3710		4822 051 20103	10k 5% 0,1W
3711		4822 050 21003	10k 1% 0,6W
3712		4822 050 21003	10k 1% 0,6W
3713		4822 050 21002	1k 1% 0,6W
3714		4822 050 21003	10k 1% 0,6W
3715		4822 050 21003	10k 1% 0,6W
3716		4822 050 21003	10k 1% 0,6W
3717		4822 050 21003	10k 1% 0,6W
3718		4822 050 24702	4k7 1% 0,6W
3721		4822 051 20223	22k 5% 0,1W
3741		4822 050 21003	10k 1% 0,6W
3743		4822 050 21003	10k 1% 0,6W
3744		4822 050 22202	2k2 1% 0,6W
3745		4822 050 21803	18k 1% 0,6W
3747		4822 050 24703	47k 1% 0,6W
3748		4822 050 21803	18k 1% 0,6W
4001		4822 051 10008	0Ω 5% 0,25W
4002		4822 051 10008	0Ω 5% 0,25W
4003		4822 051 10008	0Ω 5% 0,25W
4004		4822 051 10008	0Ω 5% 0,25W
4006		4822 051 10008	0Ω 5% 0,25W

COILS

5250	4822 148 80281

DIODES

6103	4822 130 30621	1N4148
6500	5322 130 30684	1N4002
6501	5322 130 30684	1N4002
6502	5322 130 30684	1N4002
6503	5322 130 30684	1N4002
6504	5322 130 30684	1N4002
6505	4822 130 34488	BZX79-B11
6506	4822 130 34167	BZX79-C6V2
6550	4822 130 31981	BZX79-C3V9
6560	4822 130 30621	1N4148
6561	4822 130 30621	1N4148
6562	5322 130 30684	1N4002
6563	5322 130 30684	1N4002
6564	4822 130 30621	1N4148
6565	4822 130 34278	BZX79-F6V8
6566	4822 130 31981	BZX79-C3V9
6701	4822 130 30621	1N4148
6702	4822 130 30621	1N4148

TRANSISTORS & IC's

7002	4822 209 73235	TDA8809T/C2
7101	4822 209 63925	FCB61C65L-70T
7102	4822 209 30388	SAA7341GP
7140	5322 130 42012	BC858
7141	4822 130 61207	BC848
7300	4822 209 83163	LM833N
7362	4822 130 61207	BC848
7363	4822 130 42696	BC818-25
7364	4822 130 42696	BC818-25
7371	4822 130 42696	BC818-25
7372	4822 130 42696	BC818-25
7500	5322 209 86361	MC 7915CT
7501 ⚠	4822 209 71579	TY40408
7507 ⚠	4822 209 73233	MC 79L05ACP
7550	5322 130 42012	BC858
7560	4822 130 61207	BC848
7562	5322 130 42012	BC858
7660	4822 209 72587	TCA0372DP2-
7700	4822 209 31521	MC 68HC05D9-ZC40001
7740	5322 130 42012	BC858
7741	4822 130 61207	BC848

DIODE SIGNAL CONTROLLER PANEL

CAPACITORS

2000	4822 122 33809	22nF 20% 50V
2001	5322 122 32268	470pF 10% 50V
2003	4822 122 33496	100nF 10% 63V
2006	4822 122 33496	100nF 10% 63V
2007	4822 122 33175	2,2nF 20% 50V
2008	4822 122 32542	47nF 10% 63V
2009	5322 122 32531	100pF 5% 50V
2010	4822 122 33177	10nF 20% 50V
2011	5322 122 34123	1nF 10% 50V
2012	4822 121 42408	220nF 5% 63V
2013	4822 121 51252	470nF 5% 63V
2014	4822 122 32575	220pF 10% 500V
2015	5322 122 34123	1nF 10% 50V
2041	4822 121 51252	470nF 5% 63V
2042	5322 126 10223	4,7nF 10% 63V
2043	4822 121 42408	220nF 5% 63V
2044	4822 122 33496	100nF 10% 63V
2061	4822 121 51252	470nF 5% 63V
2062	4822 122 33496	100nF 10% 63V
2063	4822 122 33496	100nF 10% 63V
2064	4822 122 33496	100nF 10% 63V
2065	4822 124 40272	33µF 20% 16V
2066	4822 124 40272	33µF 20% 16V
2081	4822 122 32575	220pF 10% 500V
2082	4822 124 40272	33µF 20% 16V

RESISTORS

3000	4822 050 24702	4k7 1% 0,6W
3001	4822 116 52234	100k 5% 0,5W
3002 ⚠	4822 052 10478	4Ω7 5% 0,33W
3003 ⚠	4822 052 10478	4Ω7 5% 0,33W
3004	4822 050 21503	15k 1%
3005	4822 051 10101	100Ω 5% 1/8W
3006	4822 050 21002	1k 1% 0,6W
3007	4822 050 22403	24k 1% 0,6W
3008	4822 050 25602	5k6 1% 0,6W
3009	4822 050 21003	10k 5% 1/8W
3041	4822 050 21103	11k 1% 0,6W
3042	4822 050 21504	150k 1% 0,6W
3043	4822 050 21204	120k 1% 0,6W
3044	4822 116 52234	100k 5% 0,5W
3045	4822 050 23904	390k 1% 0,6W
3046	4822 051 20563	56k 5% 0,1W
3047	4822 052 10279	27Ω 5% 0,33W
3048 ⚠	4822 052 10229	22Ω 5% 0,33W
3049	4822 050 23305	3M3 1% 0,6W
3061	4822 050 23302	3k3 1% 0,6W
3062	4822 050 23002	3k 1% 0,6W
3063	4822 050 23308	3Ω3 1% 0,6W
3064 ⚠	4822 052 10339	33Ω 5% 0,33W
3065 ⚠	4822 052 10228	2Ω2 5% 0,33W
3066 ⚠	4822 052 10228	2Ω2 5% 0,33W
3081 ⚠	4822 052 10189	18Ω 5% 0,33W
3082 ⚠	4822 052 10129	12Ω 5% 0,33W
3083	4822 051 10101	100Ω 2% 0,25W
4001	4822 051 10008	0Ω 5% 0,25W
4002	4822 051 10008	0Ω 5% 0,25W
4003	4822 051 10008	0Ω 5% 0,25W
4004	4822 051 10008	0Ω 5% 0,25W
4005	4822 051 10008	0Ω 5% 0,25W

DIODES & IC's

6061	4822 130 30861	BZX79-C7V5
6062	4822 130 30861	BZX79-C7V5
7001	4822 209 73234	TDA8808T/C3
7003	4822 209 72587	TCA0372DP2-
7004	4822 130 44121	BC338

CONTROL & DISPLAY PANEL

MISCELLANEOUS

	4822 256 91876	FTD HOLDER
0070	4822 265 30735	CONNECTOR 5P
1401	4822 267 50621	CONNECTOR 7P
1402	4822 242 72527	RESONATOR 4 MHz
1420	4822 276 13114	TACT SWITCH
1421	4822 276 13114	TACT SWITCH
1422	4822 276 13114	TACT SWITCH
1423	4822 276 13114	TACT SWITCH
1425	4822 276 13114	TACT SWITCH
1426	4822 276 13114	TACT SWITCH
1427	4822 276 13114	TACT SWITCH
1428	4822 276 13114	TACT SWITCH
1429	4822 276 13114	TACT SWITCH
1430	4822 276 13114	TACT SWITCH
1431	4822 276 13114	TACT SWITCH
1432	4822 276 13114	TACT SWITCH
1433	4822 276 13114	TACT SWITCH
1434	4822 276 13114	TACT SWITCH
1435	4822 276 13114	TACT SWITCH
1436	4822 276 13114	TACT SWITCH
1437	4822 276 13114	TACT SWITCH
1438	4822 276 13114	TACT SWITCH
1439	4822 276 13114	TACT SWITCH
1440	4822 276 13114	TACT SWITCH
1441	4822 276 13114	TACT SWITCH
1442	4822 276 13114	TACT SWITCH
1443	4822 276 13114	TACT SWITCH
1444	4822 276 13114	TACT SWITCH
1445	4822 276 13114	TACT SWITCH
1446	4822 276 13114	TACT SWITCH
1447	4822 276 13114	TACT SWITCH
1450	4822 130 91085	DISPLAY 8-BT-120GK

CAPACITORS

2402	5322 124 21643	22µF 20% 40V
2404	5322 124 21643	22µF 20% 40V

RESISTORS

3401	4822 050 22203	22k 1% 0,6W
3402	4822 050 22203	22k 1% 0,6W
3403	4822 050 22203	22k 1% 0,6W
3404	4822 050 22203	22k 1% 0,6W
3405 ▲	4822 052 10478	4Ω7 5% 0,33W
3406	4822 050 22203	22k 1% 0,6W
3407 ▲	4822 052 10108	1Ω 5% 0,33W
3408	4822 050 23302	3k3 1% 0,6W
3409	4822 050 22203	22k 1% 0,6W

DIODES

6400	4822 130 30613	BAW62
6401	4822 130 30613	BAW62
6402	4822 130 30613	BAW62
6403	4822 130 30613	BAW62
6404	4822 130 30613	BAW62
6405	4822 130 30613	BAW62
6406	4822 130 30613	BAW62

IC

7400	4822 209 30249	TMP47C212AN

HEADPHONE PANEL

BU-5	4822 267 31453	HEADPHONE SOCKET
2370	5322 122 32654	22nF 10% 63V
3370	4822 101 21199	10kX2 20% 0,025W
3371	4822 050 21003	10k 1% 0,6W
3372	4822 050 21003	10k 1% 0,6W
3373	4822 116 52264	27k 5% 0,5W
3374	4822 116 52264	27k 5% 0,5W
3375	4822 050 21201	120Ω 1% 0,6W
3386	4822 050 21201	120Ω 1% 0,6W
7370	4822 209 82362	NJM4556D

IR PANEL

1461	4822 214 51772	
3460 ▲	4822 052 10478	4Ω7 5% 0,33W
3461	4822 050 24703	47k 1% 0,6W

MISCELLANEOUS

1501 ▲	4822 070 31001	FUSE 100mA
5500 ▲	4822 146 31063	MAINS TRAFO