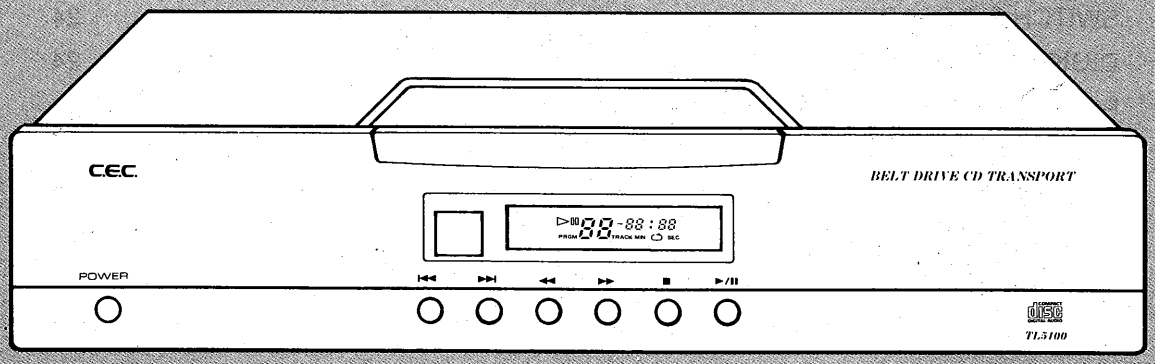
BELT DRIVE CD TRANSPORT

C.E.C.

TL5100

SERVICE MANUAL

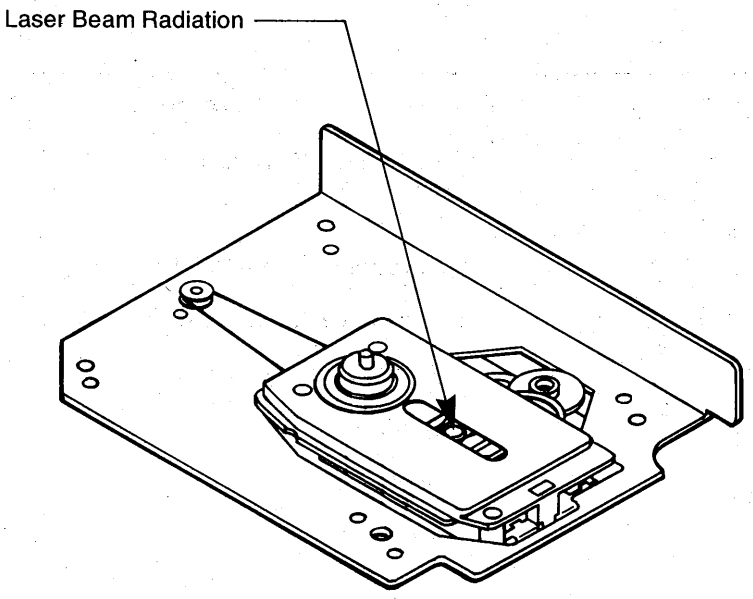


COMPACT disc DIGITAL AUDIO

CONTENTS

Schematic Diagram(SERVO) is separately attached.

LASER BEAM RADIATION SPOT



Laser Diode Properties
Material:Ga-Al-As
Wavelength: 755-815nm(25℃)
Laser Output: Continuous Wave max.0.7mW

SPECIFICATIONS

This SPECIFICATIONS is applicable to Model TL5100.

1. General Characteristics

No.	Item	Description	Note
1	Product type	Belt-drive CD Transport	
2	Brand	C.E.C.	
3	System	Conformed to the Red Book	
4	Laser pickup	3-beram tracking system	
5	Disc loading	Top loading	
6	Error correction	CIRC	
7	Digital filter	None	
8	D/A converter	None	
9	Output		
	Digital	RCA coaxial, XLR	
10	Electrical ratings		
	a) Power requirement	AC 230V, 50Hz	
	b) Power consumption	14W	
11	Display	6 digits FL tube	
12	Key function	7 keys (Main power, 6 functions)	
13	Remote control functions	20 keys	
14	Dimensions (approx.)		Unit: mm
	a) Size, Weight (net)	435(W) x 290(D) x 100(H), 9.7kg	
	b) Carton size, Weight (gross)	535(W) x 375(D) x 148(H), 11.3kg	
15	Accessories		
	a) Owners manual	1 English	
	b) Cable	1 AC Power Cord Set	
	c) Remote control unit	1 and 2 Batteries (Size AA)	
16	Safety regulation	IEC class I	
17	Radio interference regulation	EC directive	
18	Laser regulation	IEC rules	

SPECIFICATIONS (Continued)

2. Key Functions

	Function	Description	Set	Remote
1	Power	Power on/off	1	—
2	Play/pause	Start/pause to play back	1	1
3	Stop	Stop to play back, deletion of programs	1	1
4	F.F (▶▶I)	Skip track (forward)	1	1
5	F.B (I◀◀)	Skip track (backward)	1	1
6	Search (▶▶)	Searching forward	1	1
7	Search (◀◀)	Searching backward	1	1
8	Display	Time display	—	1
9	Repeat	Repeat to play back a disc or programmed.	—	1
10	Program	Program (20 tracks)	—	1
11	Clear	Deletion of program one by one	—	1
12	10 keys	1~9,0	—	10
		Total	7	20

3. Mechanical Performance

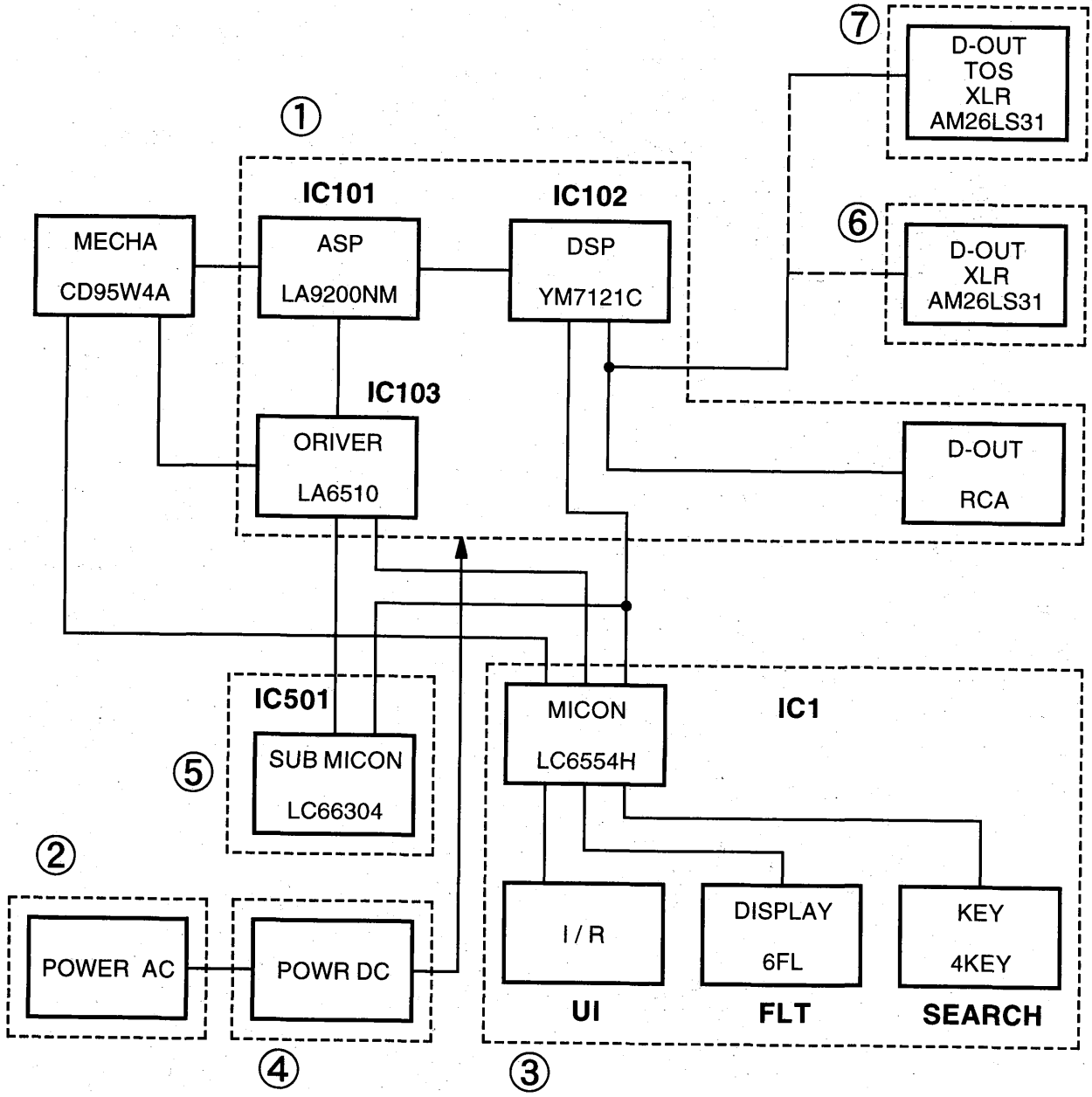
No.	Item	Spec.			Condition, Test disc
		Nominal	Limit	Unit	
1	Searching time				Philips SBC444
	(1) Play	7	10	Sec.	Track 1 → Track 24
	(2) Track back	7	10	Sec.	Track 24 → Track 1
2	Playability				
	(1) Wedge	900	600	μm	Philips SBC444A
	(2) Black dot	800	600	μm	Philips SBC444A
	(3) Finger print	no audible noise			Philips SBC444A
	(4) Eccentricity	140	70	μm	TEAC MCD-142,-141
	(5) Vert. deviation	no audible noise			TEAC MCD-151

SPECIFICATIONS (Continued)

4. Electrical Performance

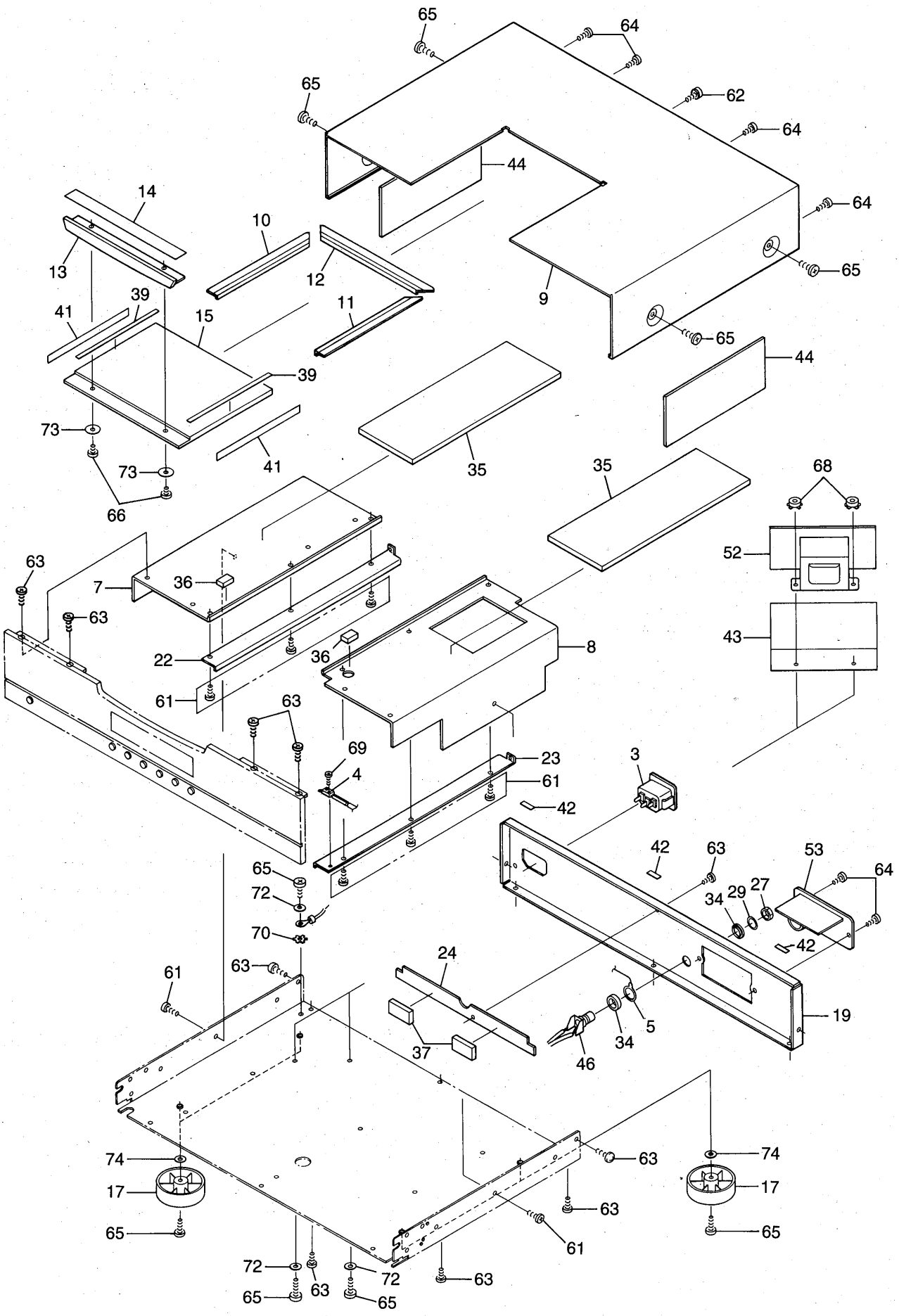
No.	Item	Spec.			Condition, FREQ/Level
		Nominal	Limit	Unit	
1	Coaxial digital output	0.5	±0.1	Vp-p	75Ω, EIAJ CP-340
2	Balanced digital output	5	±1.0	Vp-p	110Ω, EIAJ CP-340

FUNCTIONAL BLOCK DIAGRAM

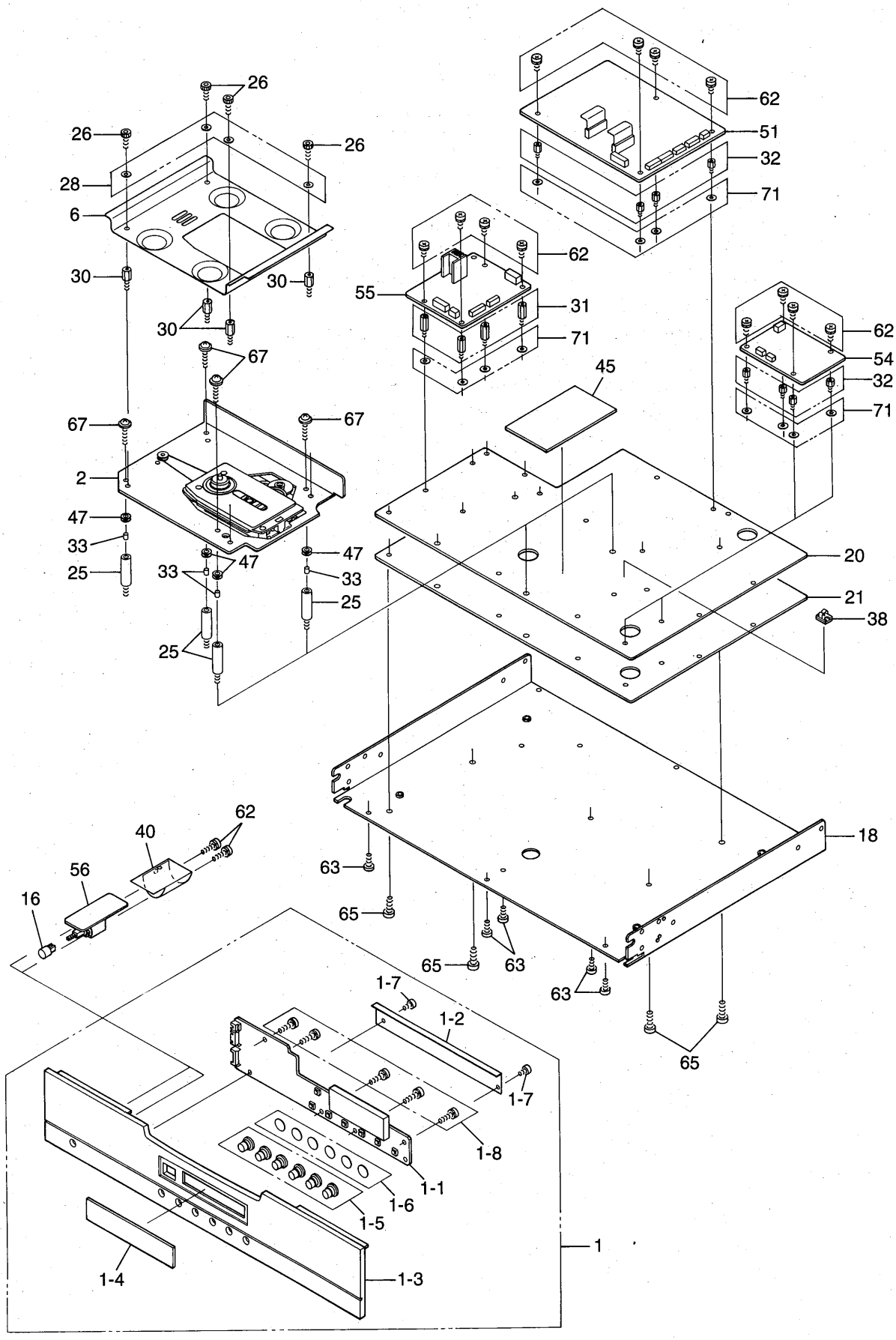


① SERVO	⑤ MICON
② POWER	⑥ DIGI-OUT
③ DISPLAY	⑦ DIGI-OUT
④ SECOND,POWER	

CABINET EXPLODED VIEW (1)



CABINET EXPLODED VIEW (2)



PARTS LIST SECTION

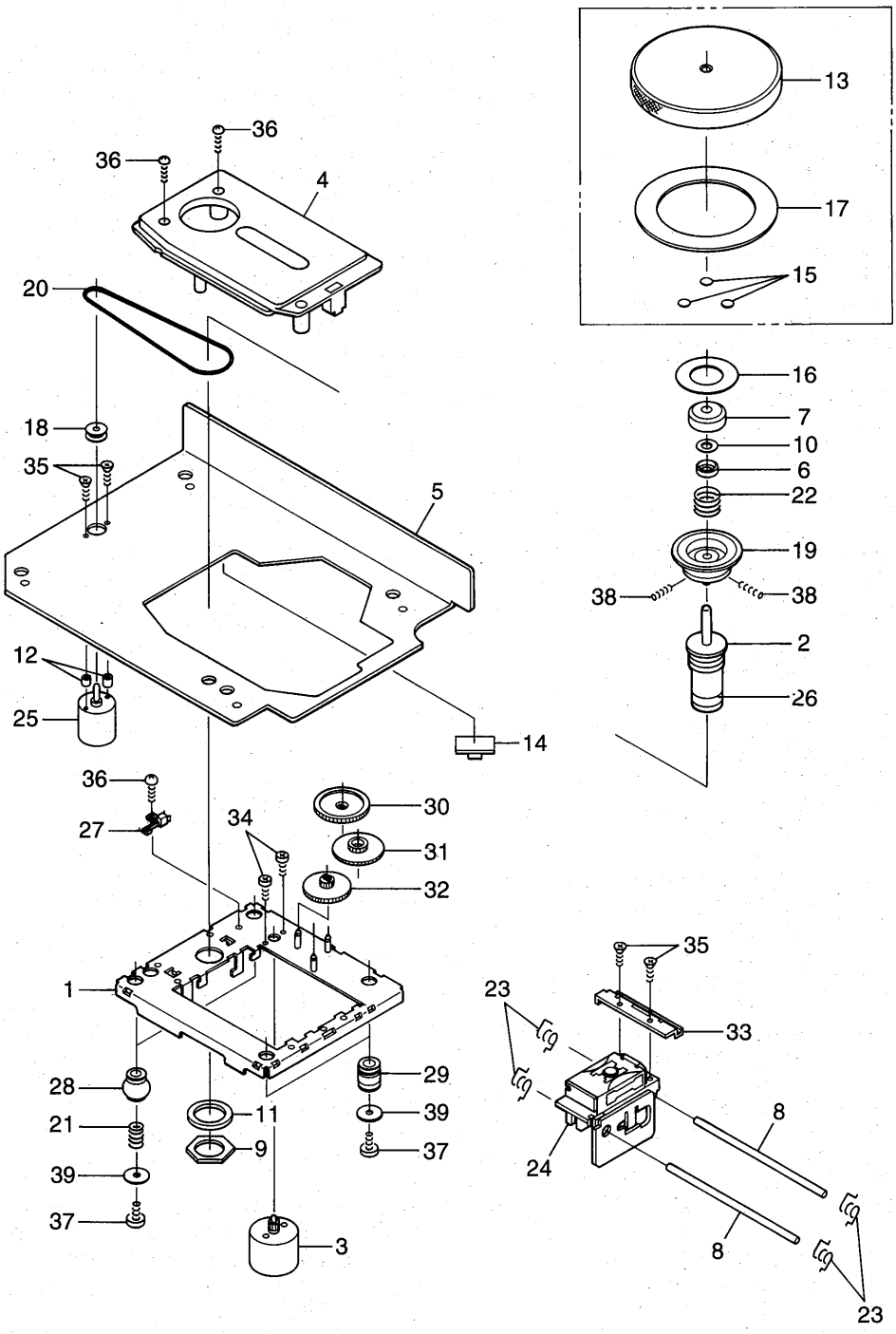
NOTES

- PC boards shown are viewed from parts side.
- Parts marked with * require longer delivery time.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are safely critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Before returning the appliance to the customer, make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit.
- Parts of [ ] mark can be used only with the version designated.
  [US] : U.S.A. [C] : CANADA [GE] : GENERAL EXPORT [E] : EUROPE
  [UK] : U.K. [A] : AUSTRALIA

CABINET PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	CEC6K21015300	CARTON	1
	CEC6K40002000	SHEET	2
	CEC6K40002100	SHEET	1
	CEC6K41007200	PAD,TOP	1
	CEC6K41007400	PAD,BOTTON	1
	CEC6K42010300	PAD	2
ACCESSORIES			
	CEC0P10011201	ASSY,MANUAL	1
	CEC4D10000100	BATTERY	2
	CEC4U10000700	REMOCON	1
	CEC4W20003700	PLUG,CORD,RCA,75	1
	CEC6P10001701	MANUAL(EUR)	1
	CEC6P10001700	MANUAL(TAIWAN)	1
	CEC4W10002801	POWER,CORD	1
	CEC4W10003300	POWER,CORD(TAIWAN)	1
CABINET			
	CEC4J13004922	CONNECTOR,7P,XH,ASSY	1
	CEC4J13004923	CONNECTOR,6P,XH,ASSY	1
	CEC4J13004924	CONNECTOR,3P,XH,ASSY	1
	CEC4J13005001	CONNECTOR 8 PH	1
	CEC4J13005029	CONNECTOR,4P,PH,ASSY	1
	CEC4J13005301	CONNECTOR 3P	1
	CEC6P40010606	LALBEL,RATING	1
	CEC6P47001700	LABEL,SAFETY	1
	CEC6P47003500	LABEL,SAFETY	2
	1EA6P47A00300	LABEL,SAFETY	1
	CEC6P49007001	LABEL	1
	F31SR50C2SCTX	FUSE 250V 0.5A	2
	14164559040350	SERIAL NO SHEET	1
	13123608141000	CRAMP WIRE	2
1	CEC0152000900	ASSY,PANEL,FRONT(GOLD)	1
1	CEC0152000901	ASSY,PANEL,FRONT(BLACK)	1
	CEC2462009800	SHEET,FL	1
	CEC2462009900	SHEET,FL	2
1-1	CEC0B10022500	ASSY,PCB,CONTROL	1
1-2	CEC2116002400	COVER,FL	1
1-3	CEC2152005610	PANEL,FRONT(GOLD)	1
1-3	CEC2152005611	PANEL,FRONT(BLACK)	1
1-4	CEC2164005510	WINDOW	1
1-5	CEC2175011201	BUTTON,TACT (GOLD)	6
1-5	CEC2175011200	BUTTON,TACT (BLACK)	6
1-6	CEC2462010200	SHEET	6
1-7	SM2PN303ROSE-	SCR PAN M3X3	2
1-8	CECSM308R007M	SCR BIN+SW M3*8	5
2	CEC0991003100	ASSY,MECHA,CD95W4A	1
3	CEC0J13000800	ASSY,CONNECTOR,INLET	1
4	CEC0J13001500	ASSY,CONNECTOR,SW	1
5	CEC0J13001700	ASSY,CONNECTOR,JUMPER	1
6	CEC2116002300	COVER,MECHA	1
7	CEC2121003400	COVER,INNER,L	1
8	CEC2121003401	COCER,INNER,R	1
9	CEC2121003510	COVER (GOLD)	1
9	CEC2121003511	COVER (BLACK)	1
10	CEC2144003210	DECORATION,L (GOLD)	1
10	CEC2144003211	DECORATION,L (BLACK)	1
11	CEC2144003310	DECORATION,R (GOLD)	1
11	CEC2144003311	DECORATION,R (BLACK)	1
12	CEC2144003410	DECORATION,C (GOLD)	1
12	CEC2144003411	DECORATION,C (BLACK)	1
13	CEC2144003510	DECORATION,F (GOLD)	1
13	CEC2144003511	DECORATION,F (BLACK)	1
14	CEC2144003610	DECORATION,T (GOLD)	1
14	CEC2144003611	DECORATION,T (BLACK)	1
15	CEC2164005400	WINDOW,TOP	1
16	CEC2174004401	BUTTON,PUSH(GOLD)	1
16	CEC2174004402	BUTTON,PUSH(BLACK)	1
17	CEC2251002600	LEG	4
18	CEC2311004102	CHASSIS	1
19	CEC2311004215	CHASSIS,REAR	1
20	CEC2311006000	CHASSIS,SUB	1
21	CEC2311006001	CHASSIS,SUB	1
22	CEC2338006200	ANGLE L	1
23	CEC2338006300	ANGLE R	1
24	CEC2338006400	ANGLE,C	1
25	CEC2373000800	POST,MECHA	4
26	CEC2381002903	CAP,SCREW (M3)	4
27	CEC2382000900	NUT,RCA	1
28	CEC2383001900	WASHER,SPECIAL	4
29	CEC2383002900	WASHER,RCA	1
30	CEC2441004200	SPACER	4
31	CEC2441004201	SPACER	4
32	CEC2441004202	SPACER	8
33	CEC2441004500	SPACER	4
34	CEC2441007000	SPACER,RCA	2
35	CEC2444004801	CUSHION	2
36	CEC2448002900	PAD	2
37	CEC2448003000	PAD	2
38	CEC2453000600	CLAMP,WIRE	1
39	CEC2462005805	SHEET	2
40	CEC2462006300	SHEET POWER	1
41	CEC2462006701	SHEET	2
42	CEC2462007100	SHEET	5
43	CEC2462007801	SHEET,TRANS	1
44	CEC2462009500	SHEET,DAMPER	2
45	CEC2462009700	SHEET,DAMPER	1
46	CEC4J12002400	JACK RCA L	1
47	13425202118000	RUBBER CUSHION	4
51	CEC0B10012707	ASSY,PCB,SERVO	1
52	CEC0B10021941	ASSY,PCB,POWER,230V(EUR)	1
52	CEC0B10021931	ASSY,PCB,POWER,120V(TAIWAN)	1
53	CEC0B10022201	ASSY,PCB,DIGIOUT	1
54	CEC0B10022301	ASSY,PCB,UCOM	1
55	CEC0B10022400	ASSY,PCB,SECOND,POWER	1
56	CEC0B10022410	ASSY,PCB,SW	1
61	SFBDN306ROSE-	SCR S-TPG BIN 3X6	8
62	SFSDS306ROSM-	SCR S-TPG BIN M3X6 SW	15
63	SFBDN308ROSM-	SCR S-TPG BIN 3X8	15
64	SFSDN308ROSM-	SCR BIN 3X8	6
65	SFSDN408ROSM-	SCR S-TPG BIN 4X8	15
66	SM2PN303ROSE-	SCR PAN M3X3	2
67	SM2PY308ROSM-	SCR PAN+FLG M3X8	4
68	SN2HNV40SE---	NUT HEX+OUT TW 4	2
69	ST3PN178ROSM-	SCR TPG PAN 1.7*8	1
70	SVCNN40SE----	WASHER OUT TW	1
71	CECSVS2L30SM-	WASHER SPG M3	12
72	SVS2L40SM----	WASHER 4	3
73	SWZ328ROOR5SE	WASHER Z 3.2X8X0.5	2
74	SWP401201ROSM	WASHER T M4X12X1T	4

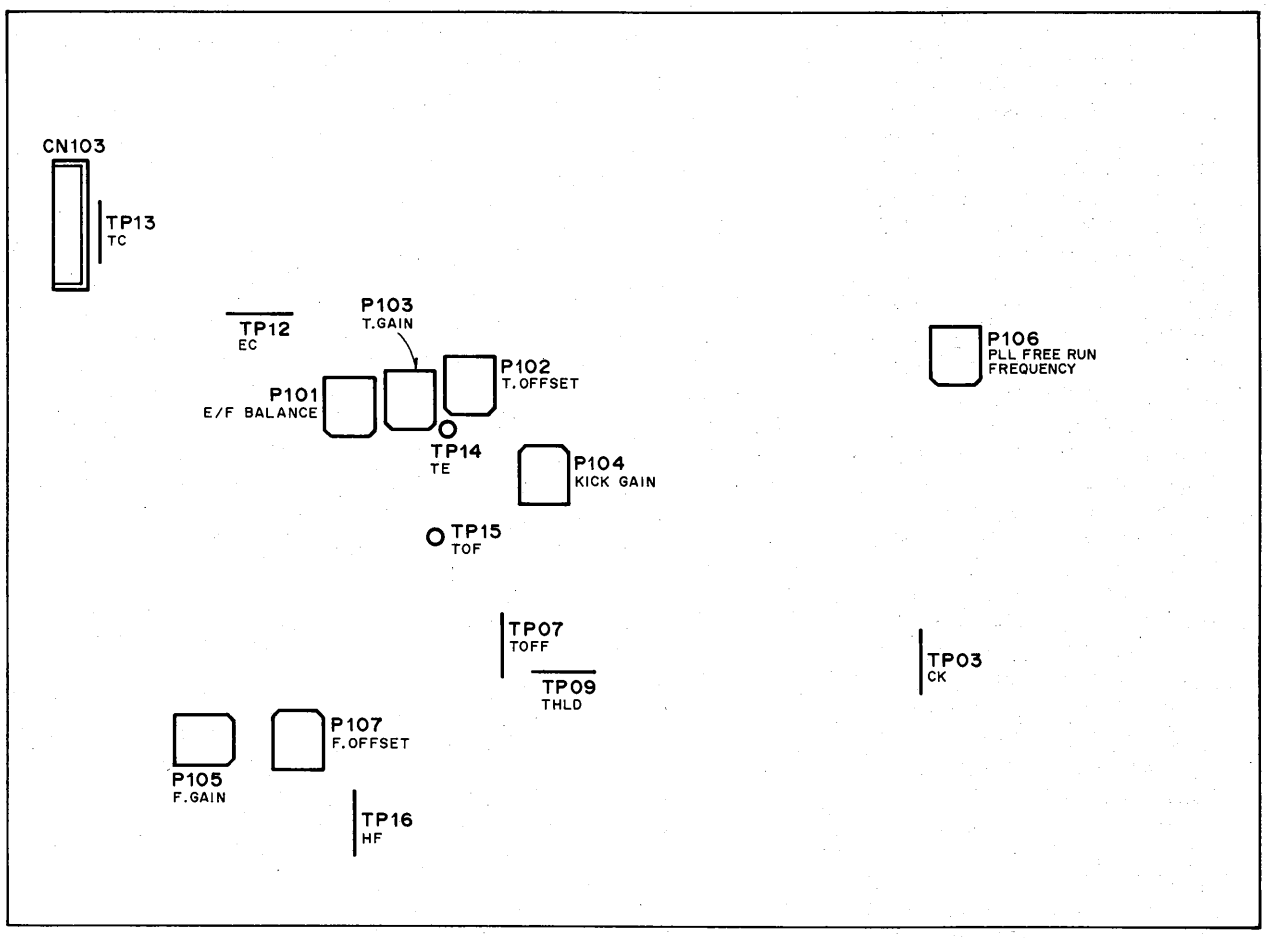
MECHANISM EXPLODED VIEW



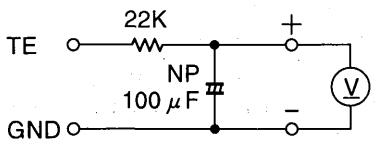
MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MECHA			
	CEC4J13004800	CONNECTOR 6P ASSY	1
	14124729071000	WIRE BAND	2
1	CEC0311000900	ASSY, CHASSIS	1
2	CEC0372000900	ASSY, SHAFT	1
3	CEC0M10000600	ASSY, MOTOR	1
4	CEC2116000510	COVER CD	1
5	CEC2311005600	CHASSIS, MECHA	1
6	CEC2337000200	CAP	1
7	CEC2362000100	GUIDE, CENTER	1
8	CEC2372000300	SHAFT, PICK, UP	2
9	CEC2382000500	NUT M15	1
10	CEC2383001500	WASHER, SPECIAL	1
11	CEC2383002300	WASHER	1
12	CEC2441004502	SPACER	2
13	CEC2451001000	HOLDER, DISC	1
14	CEC2453000200	CLAMP WIRE	1
15	CEC2462007500	SHEET	3
16	CEC2462008600	SHEET, CUSHION	1
17	CEC2462008900	SHEET	1
18	CEC2523000301	PULLEY, MOTOR	1
19	CEC2541001500	TURNTABLE	1
20	CEC2563000300	BELT, SQUARE	1
21	CEC2812000600	SPRING, COMP	2
22	CEC2812001600	SPRING, COMP	1
23	1EA2813A00400	SPRING, TORSION	4
24	*14926445	PICK UP LASER SF-P1EC2	1
25	CEC4M10002700	MOTOR	1
26	CEC6P40010100	LABEL	1
27	42319718650	SW LEAF	1
28	14124459473000	CUSHION RUBBER	2
29	14124459533000	CUSHION RUBBER	2
30	14125519830000	GEAR PINION	1
31	14125519831000	GEAR LOAD B	1
32	14125519832000	GEAR LOAD S	1
33	14125519833000	GEAR RACK	1
34	SE3PN172R5SA-	SCR PAN PCS 1.7X2.5	2
35	SE1FN206ROSA-	SCR FLT PCS2X6	2
36	SFCPN266ROSM-	SCR S-TPG PAN 2.6X6	3
37	SM2DN268ROSE-	SCR BIN M2.6X8	4
38	SSPKN203ROSM-	SCR SET HEX-SCT 2X3	2
39	SWK401201ROSE	WASHER 4	4

P.C.BOARD ALIGNMENT POINTS



ADJUSTMENT PROCEDURES

ITEM	HOW TO CONNECT	ADJ. POINT	ADJ. VALUE
1. PLL FREE RUN FREQUENCY ADJ.	– Connect a frequency counter between TP03 (CK) and GND with 10:1 probes.	P106	4.32 — 4.33 MHz (at the stop mode)
2. T. OFFSET ADJ.	– Connect a DC voltmeter between TP13 (TC) and GND. – Short TP07 (TOFF) and GND.	P102	+100±10mV (at the stop mode)
3. F. OFFSET ADJ.	– Connect a DC voltmeter between TP12 (FC) and GND.	P107	-500±100mV (at the stop mode)
4. E/F BALANCE ADJ.	– Connect a DC voltmeter between TP14 (TE) and GND via low-pass filter as shown below. – After playing the disc, short TP15 (TOF) and GND. 	P101	0±20mV (at the play mode) with test disc MCD111
5. T. GAIN ADJ.	– Connect the servo gain adjustment circuit (fixture) between CN103 and pick-up.	P103	Resurge 90° (Cp=1kHz±50Hz) (at the play mode) with test disc MCD111
6. F. GAIN ADJ.	– Connect the servo gain adjustment circuit (fixture) between CN103 and pick-up.	P105	Resurge 90° (Cp=800Hz±50Hz) (at the play mode) with test disc MCD111

ADJUSTMENT PROCEDURES (Continued)

ITEM	HOW TO CONNECT	ADJ. POINT	ADJ. VALUE
7. KICK GAIN ADJ.	– Connect CH1 and EXT TRG of an oscilloscope to TP16 (HF) and TP09 (THLD) respectively.	P104	1 - 1.5 tracks  10~20% of p-p (at the pause mode) with MCD111
8. T. OFFSET ADJ.	– Connect a DC voltmeter between TP13 (TC) and GND. – Short TP07 (TOFF) and GND.	P102	+100±10mV (at the stop mode)
9. F. OFFSET ADJ.	– Connect a DC voltmeter between TP12 (FC) and GND.	P107	−500±100mV (at the stop mode)

Apply the Servo Gain Adjustment circuit (fixture), after you adjust and confirm its cross point by FFT analyzer, using 2 sets CD players or more (with test disc MCD111).

SAFETY INTERLOCK

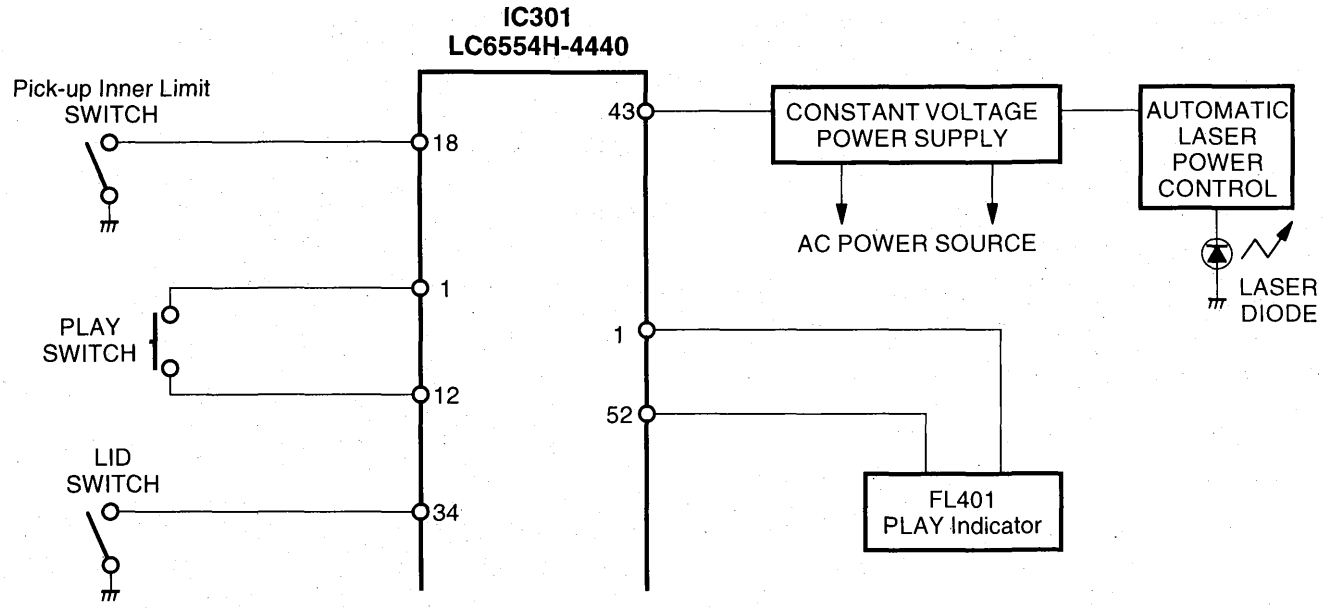
The Digital Compact Disc Player reads the disc signal by detecting the laser beam. It must be avoided for the human body to directly receive the beam. Especially human eyes are badly affected by the beam. Therefore, the unit is equipped with an interlock to prevent the unnecessary laser outputs.

The laser outputs are controlled by the injection or cutoff of the constant voltage source to the laser diode with Pin 43 of IC301 (LC6554H-4440). When Pin 43 is in "L" (Low) level, the laser emits the beam. When Pin 43 is in "H" (High) level, the laser does not emit the beam.
Pin 43 is set in "H" level when the unit is loaded with the disc and it reads the index signals or when the unit is set in the play mode after that. When the unit reads the index signals and the following two conditions are met, the laser emits the beam.

1) When the Pick-up Inner Limit Switch and LID SW are ON. (The LID is closed.)
2) The pickup is located at the area of the minimum internal circumference.

After the above conditions are met and the index signals have been read, the laser emits the beam when the following two conditions are met.

1) When the PLAY button is pressed.
2) When the PLAY indicator is on.



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	CEC0B10012707	ASSY,PCB,SERVO	
	CEC4B10012700	PCB,SERVO	1
	1EA4W3JP0500T	LEAD JUMPER P5.0	27
	1EA4W3JP1000T	LEAD JUMPER P 10.0	53
	CEC6P49007400	LABEL,SERIAL	1
	SWXEA10800--	SPECIAL WASHER	1
C101	CC1H100DABGLC	CERAMIC 10P D 50V	1
C102	CC1H5R0CABGLC	CERAMIC 5P C 50V	1
C103	CC1H5R0CABGLC	CERAMIC 5P C 50V	1
C103	CC1H680JABGLC	CERAMIC 68P J 50V	1
C104	CC1H680JABGLC	CERAMIC 68P J 50V	1
C105	CC1H181JABGLC	CERAMIC 180P J 50V	1
C106	CE1HR47MDFALC	ELECT 0.47U M 50V	1
C107	CE0J101MDFALC	ELECT 100U M 6.3V	1
C108	CE0J101MDFALC	ELECT 100U M 6.3V	1
C109	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C110	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C111	CC1H180JABGLC	CERAMIC 18P J 50V	1
C112	CC1H180JABGLC	CERAMIC 18P J 50V	1
C113	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C114	CE0J101MDFALC	ELECT 100U M 6.3V	1
C115	CF1H103JANALC	POLYESTER 0.01U J 50V	1
C116	CF1H102JANALC	POLYESTER 1000P J 50V	1
C117	CF1H103JANALC	POLYESTER 0.01U J 50V	1
C117	CG1H474JATALC	MT-POLYEST 0.47U J 50V	1
C118	CG1H474JATALC	MT-POLYEST 0.47U J 50V	1
C119	CG1H154JATALC	MT-POLYEST 0.15U J 50V	1
C120	CC1H221JABGLC	CERAMIC 220P J 50V	1
C121	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C122	CE0J101MDFALC	ELECT 100U M 6.3V	1
C123	CE0J101MDFALC	ELECT 100U M 6.3V	1
C124	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C125	CG1H104JATALC	MT-POLYEST 0.1U J 50V	1
C126	CF1H223JANALC	POLYESTER 0.022U J 50V	1
C128	CG1H473JATALC	MT-POLYEST 0.047U J 50V	1
C129	CG1H473JATALC	MT-POLYEST 0.047U J 50V	1
C131	CC1H101JABGLC	CERAMIC 100P J 50V	1
C132	CK1H471KFABNA	CERAMIC 470P K 50V	1
C133	CC1H471JABGLC	CERAMIC 470P J 50V	1
C134	CG1H104JATALC	MT-POLYEST 0.1U J 50V	1
C135	CG1H683JATALC	MT-POLYEST 0.068U J 50V	1
C136	CG1H474JATALC	MT-POLYEST 0.47U J 50V	1
C137	CP1E4R7MBAALC	NP-ELECT 4.7U M 25V	1
C139	CP1H1R0MBAALC	NP-ELECT 1U M 50V	1
C140	CP1C100MBAALC	NP-ELECT 10U M 16V	1
C141	CF1H102JANALC	POLYESTER 1000P J 50V	1
C142	CF1H222JANALC	POLYESTER 2200P J 50V	1
C143	CF1H123JANALC	POLYESTER 0.012U J 50V	1
C144	CF1H123JANALC	POLYESTER 0.012U J 50V	1
C145	CE0J101MDFALC	ELECT 100U M 6.3V	1
C146	CE1H2R2MDFALC	ELECT 2.2U M 50V	1
C147	CE1C221MDFALC	ELECT 220U M 16V	1
C148	CE1C221MDFALC	ELECT 220U M 16V	1
C150	CP1H1R0MBAALC	NP-ELECT 1U M 50V	1
C155	CE1H1R0MDFALC	ELECT 1U M 50V	1
C157	CC1H120JABCLC	CERAMIC 12P J 50V	1
C158	CC1H120JABCLC	CERAMIC 12P J 50V	1
C159	CE0J101MDFALC	ELECT 100U M 6.3V	1
C162	CC1H101JABGLC	CERAMIC 100P J 50V	1
C163	CG1H103JATALC	MT-COMPO 0.01U J 50V	1
C164	CE1H4R7MDFALC	ELECT 4.7U M 50V	1
C165	CE1H4R7MDFALC	ELECT 4.7U M 50V	1
C166	CE0J101MDFALC	ELECT 100U M 6.3V	1
C216	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C219	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C232	CB1E473KADRLC	CERAMIC 0.047U K 25V	1
C235	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C236	CE0J101MDFALC	ELECT 100U M 6.3V	1
C237	CE0J101MDFALC	ELECT 100U M 6.3V	1
C238	CK1H822KAFBLC	CERAMIC 8200P K 50V	1
C241	CK1H121KAFBLC	CERAMIC 120P K 50V	1
C243	CE0J101MDFALC	ELECT 100U M 6.3V	1
C244	CE0J101MDFALC	ELECT 100U M 6.3V	1
C246	CE0J101MDFALC	ELECT 100U M 6.3V	1
C246	CF1H472JANALC	POLYESTER 4700P J 50V	1
C247	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C248	CF1H102JANALC	POLYESTER 1000P J 50V	1
C249	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C250	CP1C220MBAALC	NP-ELECT 22U M 16V	1
CN101	42362008900	PLUG 7P	1
CN102	42362008500	PLUG 6P	1
CN103	42369751200	PLUG 6P	1
CN104	42369749200	PLUG 6P,PH,V	1
CN105	42369749900	PLUG 8P,PH,V	1
CN106	42369749100	PLUG 5P	1
CN107	CEC4J13009302	CONNECTOR,1P,ASSY,OFC	1
CN107	CEC4J13009303	CONNECTOR,1P,ASSY,OFC	1
CN107	CK1H102KAFBNN	CERAMIC 1000P K 50V	1
CN108	42369751000	PLUG 4P,PH,V	1
CN110	42369731300	PLUG 3P,XH,V	1
CN112	CEC4J13011300	CONNECTOR,3P,XH,ASSY	1
D101	DDGMB01---A	DIODE GMB01-BT	1
D102	DDGMB01---A	DIODE GMB01-BT	1
D103	DDGMB01---A	DIODE GMB01-BT	1
D104	DDGMB01---A	DIODE GMB01-BT	1
D105	DDGMB01---A	DIODE GMB01-BT	1
D106	DDGMB01---A	DIODE GMB01-BT	1
D107	DDGMB01---A	DIODE GMB01-BT	1
IC101	QLA9200NM--N	IC LA9200NM	1
IC102	QYM7121C---N	IC YM7121C	1
IC103	CEC2384000302	G-SI-GREASE*G746	0
IC103	QLA6510---N	IC LA6510	1
IC103	SFBAN306R0SE-	SCR S-TPG BRZ 3X6	1
IC103	13126201371000	PLATE HEAT SINK	1
IC104	QLA6510---N	IC LA6510	1
IC104	SFBAN306R0SE-	SCR S-TPG BRZ 3X6	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
IC104	13126201371000	PLATE HEAT SINK	1
IC105	CEC4D61003400	IC 74HC4049	1
P101	1EA4R30A06100	POTENTIOMETER,100KB,TP	1
P102	1EA4R30A06200	POTENTIOMETER,20KB,TP	1
P103	1EA4R30A06200	POTENTIOMETER,20KB,TP	1
P104	1EA4R30A06100	POTENTIOMETER,100KB,TP	1
P105	1EA4R30A06200	POTENTIOMETER,20KB,TP	1
P106	1EA4R30A06100	POTENTIOMETER,100KB,TP	1
P107	1EA4R30A06200	POTENTIOMETER,20KB,TP	1
Q101	T2SC3330-S-C	TR 2SC3330-S-AC	1
Q102	T2SA1346—C	TR 2SA1346-AC	1
Q103	T2SC3330-S-C	TR 2SC3330-S-AC	1
Q104	T2SA1346—C	TR 2SA1346-AC	1
Q110	T2SA1529—C	TR 2SA1529-AA	1
R105	RDD5601JPAANA	CARBON 5.6K JA 1/6W	1
R106	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R107	RDD1502JPAANA	CARBON 15K JA 1/6W	1
R108	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R109	RDD1503JPAANA	CARBON 150K JA 1/6W	1
R110	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R111	RDD1001JPAANA	CARBON 1K JA 1/6W	1
R112	RDD8202JPAANA	CARBON 82K JA 1/6W	1
R113	RDD8202JPAANA	CARBON 82K JA 1/6W	1
R115	RDD1001JPAANA	CARBON 1K JA 1/6W	1
R116	RDD1202JPAANA	CARBON 12K JA 1/6W	1
R117	RDD3902JPAANA	CARBON 39K JA 1/6W	1
R118	RDD1502JPAANA	CARBON 15K JA 1/6W	1
R119	RDD3902JPAANA	CARBON 39K JA 1/6W	1
R120	RDD2702JPAANA	CARBON 27K JA 1/6W	1
R121	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R122	RDD2203JPAANA	CARBON 220K JA 1/6W	1
R123	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R123	RDD2700JPAANA	CARBON 270 JA 1/6W	1
R124	RDB1001JPBANA	CARBON 1K JA 1/4W	1
R125	RDB1001JPBANA	CARBON 1K JA 1/4W	1
R126	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R127	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R128	RDD4701JPAANA	CARBON 4.7K JA 1/6W	1
R129	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R131	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R132	RDD3303JPAANA	CARBON 330K JA 1/6W	1
R133	RDD2702JPAANA	CARBON 27K JA 1/6W	1
R134	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R135	RDD2703JPAANA	CARBON 270K JA 1/6W	1
R136	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R137	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R138	RDD1201JPAANA	CARBON 1.2K JA 1/6W	1
R139	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R140	RDD5601JPAANA	CARBON 5.6K JA 1/6W	1
R141	RDD6803JPAANA	CARBON 680K JA 1/6W	1
R142	RDD6802JPAANA	CARBON 68K JA 1/6W	1
R143	RDD2203JPAANA	CARBON 220K JA 1/6W	1
R144	RDD2201JPAANA	CARBON 2.2K JA 1/6W	1
R145	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R146	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R148	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R149	CEC4J11001800	SOCKET 1P	1
R149	RND2R20FPAANN	MT-FILM 2.2F A 1/6W	1
R150	RDD6800JPAANA	CARBON 680 JA 1/6W	1
R151	RDD6800JPAANA	CARBON 680 JA 1/6W	1
R152	RDD68R0JPAANA	CARBON 68 JA 1/6W	1
R153	RDD5603JPAANA	CARBON 560K JA 1/6W	1
R154	RDD5603JPAANA	CARBON 560K JA 1/6W	1
R155	RDD6802JPAANA	CARBON 68K JA 1/6W	1
R156	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R157	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R160	RDD3303JPAANA	CARBON 330K JA 1/6W	1
R161	RDD2203JPAANA	CARBON 220K JA 1/6W	1
R164	RDD2201JPAANA	CARBON 2.2K JA 1/6W	1
R165	RDD2201JPAANA	CARBON 2.2K JA 1/6W	1
R166	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R167	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R168	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R169	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R171	RDD2R70JPAANA	CARBON 2.7 JA 1/6W	1
R172	RDD1001JPAANA	CARBON 1K JA 1/6W	1
R173	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R174	RDD1800JPAANA	CARBON 180 JA 1/6W	1
R175	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R176	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R189	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R190	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R195	RDD1004JPAANA	CARBON 1M JA 1/6W	1
R196	RDD2200JPAANA	CARBON 220 JA 1/6W	1
R197	RDD1001JPAANA	CARBON 1K JA 1/6W	1
R198	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R199	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R200	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R201	RDD5601JPAANA	CARBON 5.6K JA 1/6W	1
R203	RDD4703JPAANA	CARBON 470K JA 1/6W	1
R206	RDD8200JPAANA	CARBON 820 JA 1/6W	1
R221	RDD75R0JPAANA	CARBON 75 JA 1/6W	1
R222	RDD47R0JPAANA	CARBON 47 JA 1/6W	1
R223	RDD4702JPAANA	CARBON 47K JA 1/6W	1
R243	RDD1003JPAANA	CARBON 100K JA 1/6W	1
R244	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R245	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R246	RDD8203JPAANA	CARBON 820K JA 1/6W	1
R247	RDD1502JPAANA	CARBON 15K JA 1/6W	1
R248	RDD2R20JPAANA	CARBON 2.2 JA 1/6W	1
R272	RDD1001JPAANA	CARBON 1K JA 1/6W	1
R279	RDB1001JPBANA	CARBON 1K JA 1/4W	1
R302	RDD1002JPAANA	CARBON 10K JA 1/6W	1
R303	RDD1002JPAANA	CARBON 10K JA 1/6W	1
T101	1EA4L13A00100	TRANS,PULSE	1
TP14	42369737840	RT PIN 0.8 X7L (TE)	1

P.C.BOARD PARTS LIST (Continued)

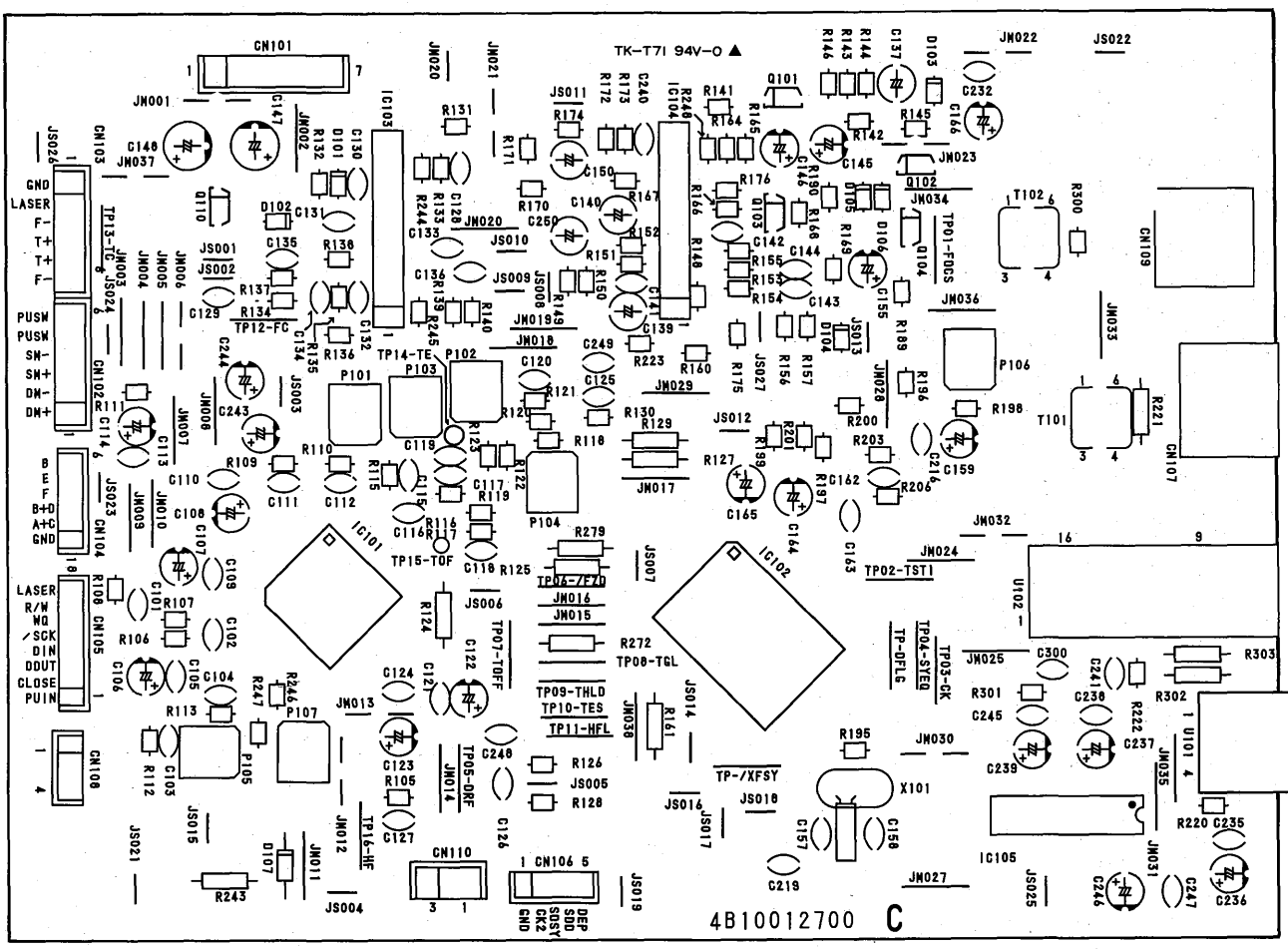
Ref. No.	Part No.	Description	Q'ty
TP15	42369737840	RT PIN 0.8 X7L (TOF)	1
X101	42259711010	CRYSTAL 16.9344MHZ	1
	CEC0B10021941	ASSY,PCB,POWER,230V(EUR)	
	CEC4B10021900	PCB,POWER	1
EC01	42372008300	EC TERMINAL 1P	1
EC02	42372008300	EC TERMINAL 1P	1
F01	CEC4J20000100	FUSE HOLDER	1
F01	CEC4J20000100	FUSE HOLDER	1
F02	CEC4J20000100	FUSE HOLDER	1
F02	CEC4J20000100	FUSE HOLDER	1
J01	1EA4W3JP0750N	LEAD JUMPER P7.5	1
S01	CEC4J13010700	CONNECTOR,1-2P,ASSY	1
T01	CEC4L50004670	POWER,TRANS	1
W01	CEC4W30002852	WIRE 5P	1
WH01	1EA4J11A01300	SOCKET,HOLDER,5P	1
	CEC0B10021931	ASSY,PCB,POWER,120V(TAIWAN)	
	CEC4B10021900	PCB,POWER	1
EC01	42372008300	EC TERMINAL 1P	1
EC02	42372008300	EC TERMINAL 1P	1
F01	CEC4J20000100	FUSE HOLDER	1
F01	CEC4J20000100	FUSE HOLDER	1
F02	CEC4J20000100	FUSE HOLDER	1
F02	CEC4J20000100	FUSE HOLDER	1
J04	1AV4W3JP0750N	LEAD JUMPER P7.5	1
S01	CEC4J13010700	CONNECTOR,1-2P,ASSY	1
T01	CEC4L50004670	POWER,TRANS	1
W01	CEC4W30002852	WIRE 5P	1
WH01	CEC4J11000805	SOCKET HOLDER,5P	1
	CEC0B10022201	ASSY,PCB,DIGIOUT	
	CEC2336006030	PLATE	1
	CEC4B10022200	PCB,DIGIOUT	1
	SM2EN30100SM-	SCR BIND,M3X10	2
	SVTNN30SM—	WASHER UCHIBA	2
C501	CU1C470MAAANN	OS-SOLID 47U M 16V	1
C502	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C503	CG1H104JATALC	MT-POLYEST 0.1U J 50V	1
C504	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C505	CG1H104JATALC	MT-POLYEST 0.1U J 50V	1
C510	CK1H221KFABNA	CERAMIC 220P K 50V	1
C511	CK1H221KFABNA	CERAMIC 220P K 50V	1
CN501	42369767000	PLUG S3BXHA	1
CN502	CEC4J11003000	SOCKET XLM-3-32PCV	1
IC501	QAM26LS31--N	IC AM26LS31PC	1
R501	RND1100FPAANN	MT-FILM 110 FA 1/6W	1
T501	CEC4L13000100	TRANS,PULSE,SC916-01(110)	1

Ref. No.	Part No.	Description	Q'ty
	CEC0B10022301	ASSY,PCB,UCOM	
	CEC4B10022300	PCB,UCOM	1
C501	CE0J221MBXALC	ELECT 220U M 6.3V	1
C502	CK1H104ZFHJNA	CERAMIC 0.1U JZ 50V	1
CN501	42369731300	PLUG 3P,XH,V	1
CN502	42369749000	PLUG 3P	1
CN503	42369751000	PLUG 4P,PH,V	1
D502	DDGMA01—-A	DIODE GMA01-BT	1
IC501	QXXGA0022681N	IC LC66304A-4H66	1
Q503	T2SD1012-G-SC	TR 2SD1012-G-SPA-AC	1
Q504	T2SD1012-G-SC	TR 2SD1012-G-SPA-AC	1
Q505	T2SD1012-G-SC	TR 2SD1012-G-SPA-AC	1
R501	RDD2202JPAANA	CARBON 22K JA 1/6W	1
R504	CECRDD120000N	CARBON 120 JA 1/6W	1
R504	CEC4J11001800	SOCKET 1P	1
R505	CEC4J11001800	SOCKET 1P	1
R505	RDD8R20JPAAAN	CARBON 8.2 JA 1/6W	1
R506	CEC4J11001800	SOCKET 1P	1
R506	RND1R50FPAANN	MT-FILM 1.5 FA 1/6W	1
R508	RDD6801JPAANA	CARBON 6.8K JA 1/6W	1
R509	RDD6801JPAANA	CARBON 6.8K JA 1/6W	1
R510	RDD6801JPAANA	CARBON 6.8K JA 1/6W	1
X501	1EA4V10A01100	RESONATOR,CERAMIC,4.32MHZ	1
	CEC0B10022400	ASSY,PCB,SECOND,POWER	
	CEC4B10022400	PCB,SECOND,POWER	1
C201	CE1C332MDNANN	ELECT 3300U M 1/6W	1
C202	CE1C332MDNANN	ELECT 3300U M 1/6W	1
C203	CE0J101MDFALC	ELECT 100U M 6.3V	1
C204	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C205	CE0J101MDFALC	ELECT 100U M 6.3V	1
C206	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C207	CE0J101MDFALC	ELECT 100U M 6.3V	1
C208	CK1H104ZFAFNA	CERAMIC 0.1U Z 50V	1
C209	CE1H331MDFANN	ELECT 330U M 50V	1
C210	CE1H470MAEALC	ELECT 47U M 50V	1
C211	CE1H470MAEALC	ELECT 47U M 50V	1
C212	CE1H470MAEALC	ELECT 47U M 50V	1
C213	CF1H103KANALC	POLYESTER 0.01U K 50V	1
C214	CF1H103KANALC	POLYESTER 0.01U K 50V	1
C215	CE1H331MDFANN	ELECT 330U M 50V	1
CN201	CEC4J13003205	CONNECTOR,5P	1
CN202	42369731300	PLUG 3P,XH,V	1
CN203	42369731600	PLUG 6P	1
CN204	42369734100	PLUG 7P	1
CN205	42369749200	PLUG 6P,PH,V	1
D201	DD1A3-I—-C	DIODE 1A3-I	1
D202	DD1A3-I—-C	DIODE 1A3-I	1
D203	DD1A3-I—-C	DIODE 1A3-I	1
D204	DD1A3-I—-C	DIODE 1A3-I	1
D205	DD1A3-I—-C	DIODE 1A3-I	1
D206	DD1A3-I—-C	DIODE 1A3-I	1
D207	DZMTZJ5.1B-A	ZENER DIODE MTZJ5.1B-T-77	1

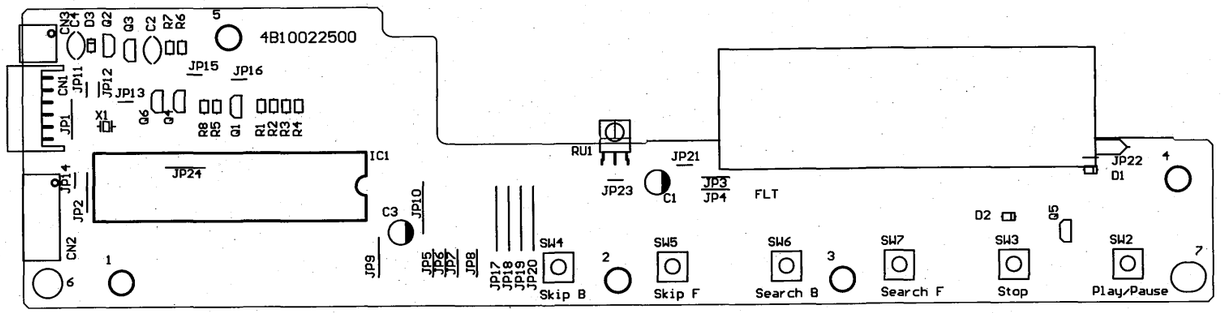
P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
D208	DDGMA01—-A	DIODE GMA01-BT	1
D209	DDGMA01—-A	DIODE GMA01-BT	1
IC201	CECM620135500	PLATE HEAT SINK	1
IC201	CECQTA780500N	IC TA7805	1
IC201	CEC2384000302	G-SI-GREASE*G746	0
IC201	SFBAN308R0SM-	SCR S-TPG BRZ 3X8	1
IC202	QTA78L006AP-N	IC TA78L006AP	1
IC203	QTA79L006P-N	IC TA79L006P	1
IC204	CECQTA79L003N	IC TA79L024	1
IC205	CECQUPC22700N	IC UPC2270	1
JA01	1EA4W3JP0500T	LEAD JUMPER P5.0	1
JA02	1EA4W3JP0500T	LEAD JUMPER P5.0	1
JA03	1EA4W3JP0500T	LEAD JUMPER P5.0	1
JA04	1EA4W3JP0500T	LEAD JUMPER P5.0	1
JA05	1EA4W3JP0500T	LEAD JUMPER P5.0	1
JC01	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC02	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC03	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC04	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC05	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC06	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC07	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC08	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC09	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC10	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC11	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC12	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC13	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC14	1EA4W3JP1000T	LEAD JUMPER P10.0	1
JC15	1EA4W3JP1000T	LEAD JUMPER P10.0	1
Q201	T2SA1346—C	TR 2SA1346-AC	1
R201	RDD47R0JPAANA	CARBON 47 JA 1/6W	1
R202	RDD47R0JPAANA	CARBON 47 JA 1/6W	1
R203	RDD1003JPAANA	CARBON 100K JA 1/6W	1
RF201	RFXEA00810R0N	FUSIBLE RES 10 J- 1/2W	1
RF202	RFXEA00810R0N	FUSIBLE RES 10 J- 1/2W	1
RF204	RFXEA0151000N	FUSIBLE RES 100 JA 1/4W	1
	CEC0B10022410	ASSY,PCB,SW	
	CEC4B10022410	PCB,SW	1
	42239709700	CAPACITOR 0.01MF400V	1
	13126114014000	COVER SAFTY	1
CN01	CEC4J10005600	PLUG 2P-5286	1
S01	1EA4S11A03300	SWITCH,PUSH,POWER	1

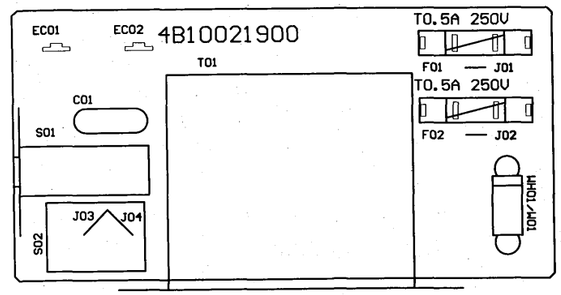
SERVO P.C.BOARD



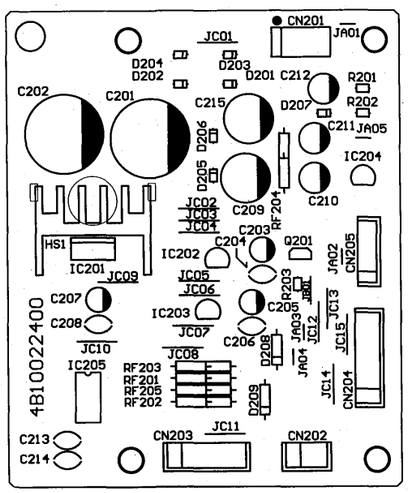
CONTROL P.C.BOARD



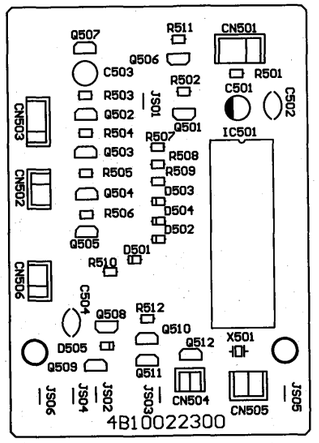
POWER P.C.BOARD



SECOND POWER P.C.BOARD

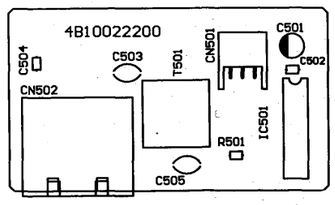


μ COM P.C.BOARD

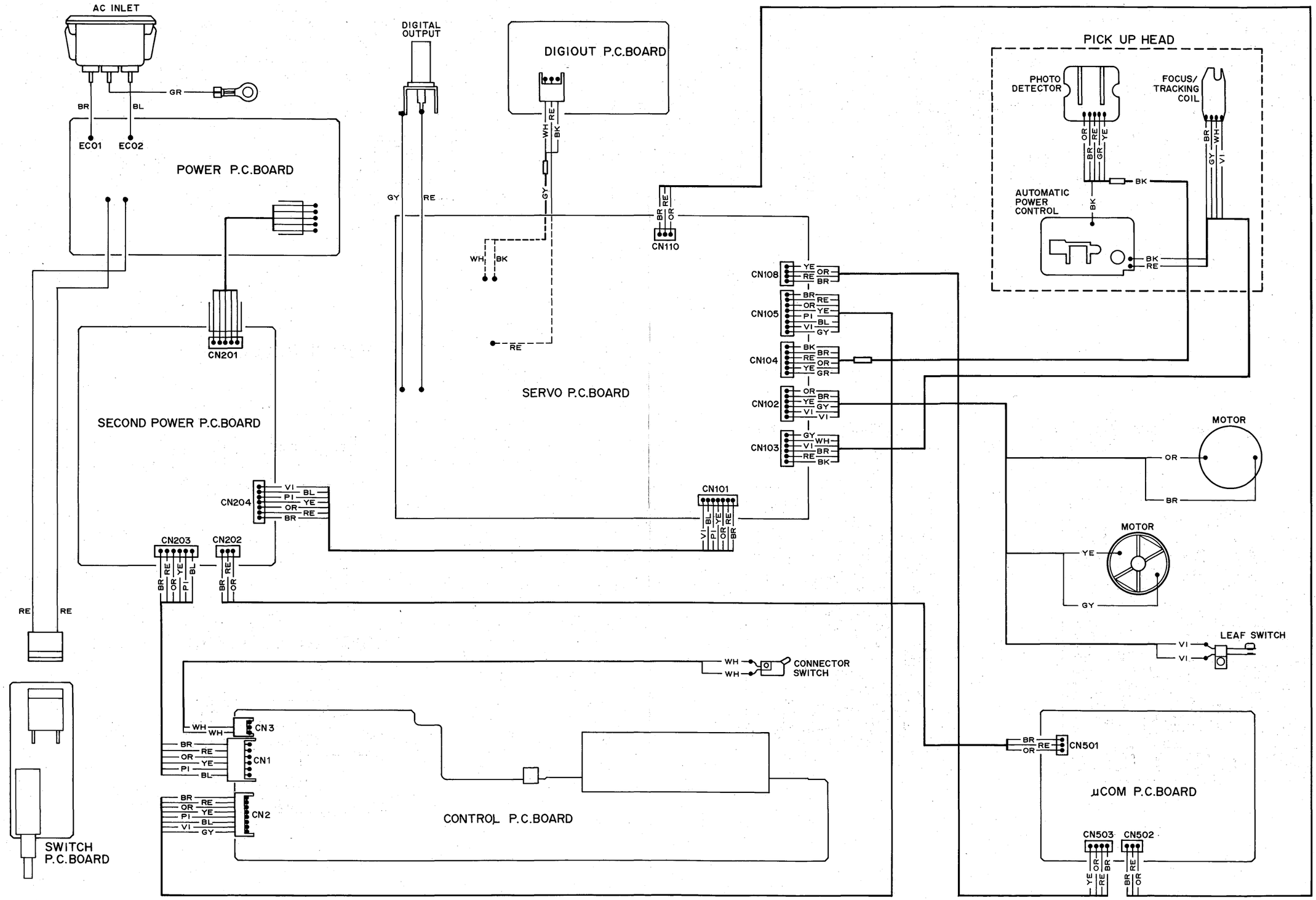


SWITCH P.C.BOARD

DIGIOUT P.C.BOARD

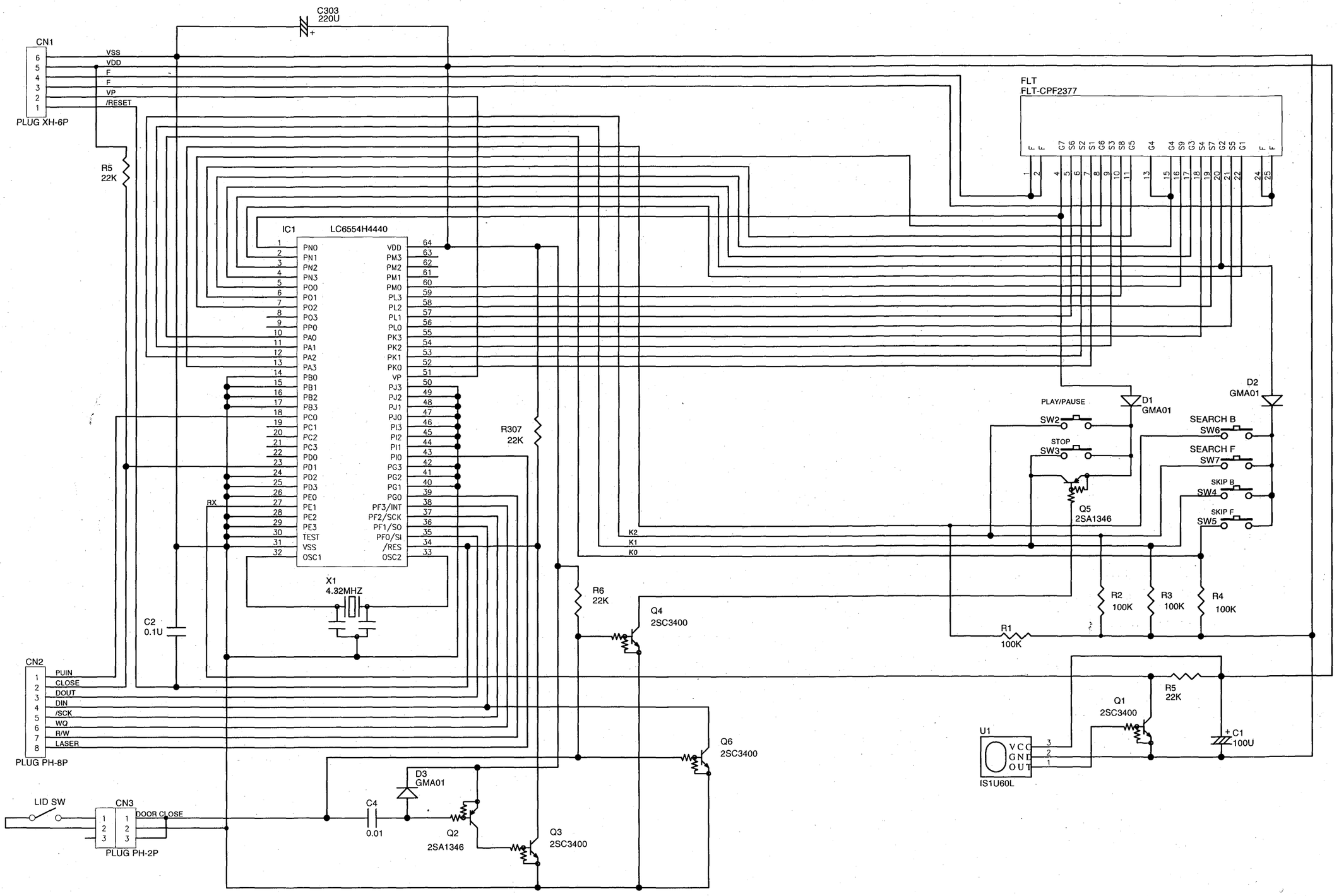


POINT TO POINT WIRING DIAGRAM



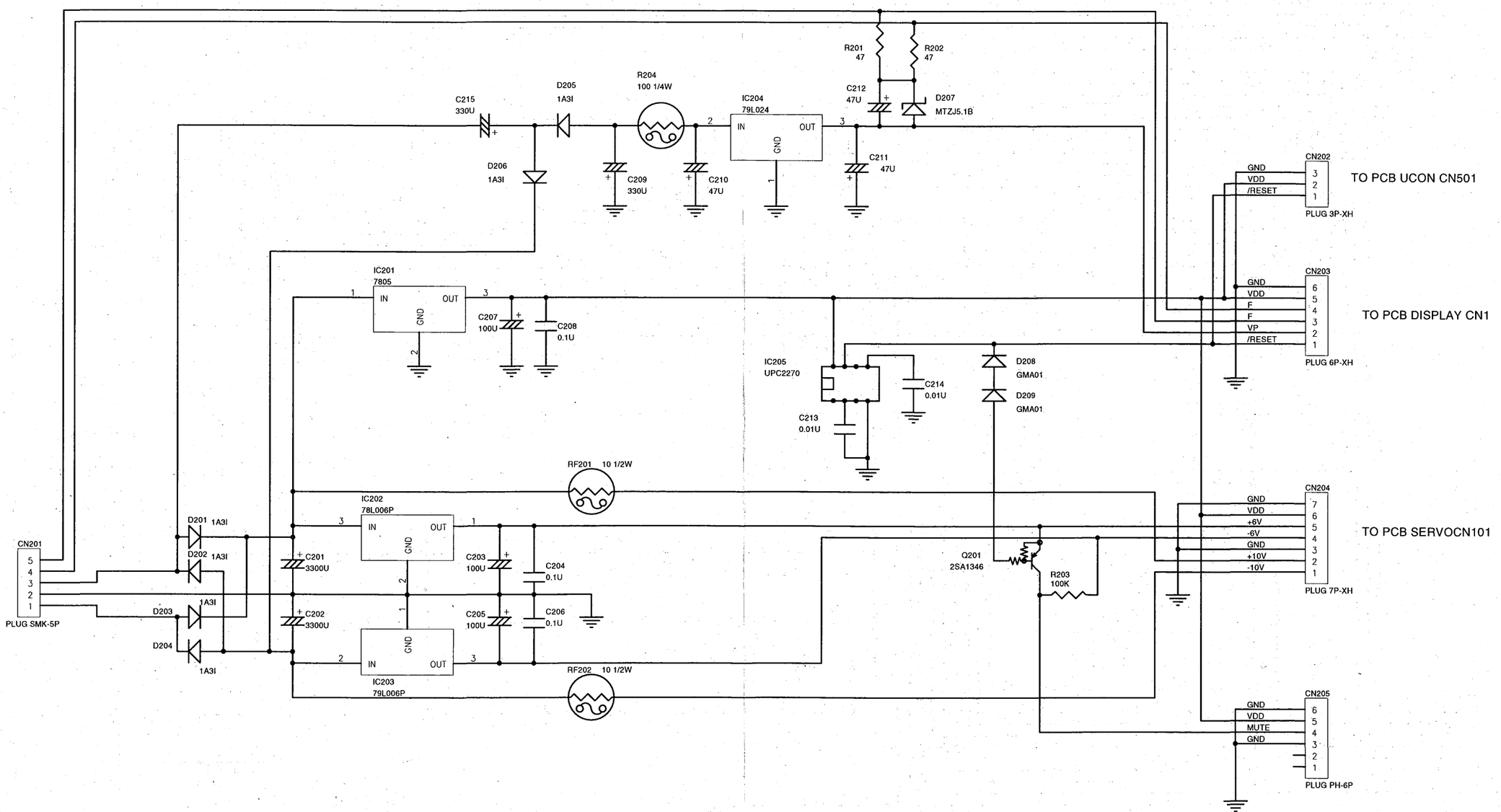
SCHEMATIC DIAGRAM (Continued)

DISPLAY

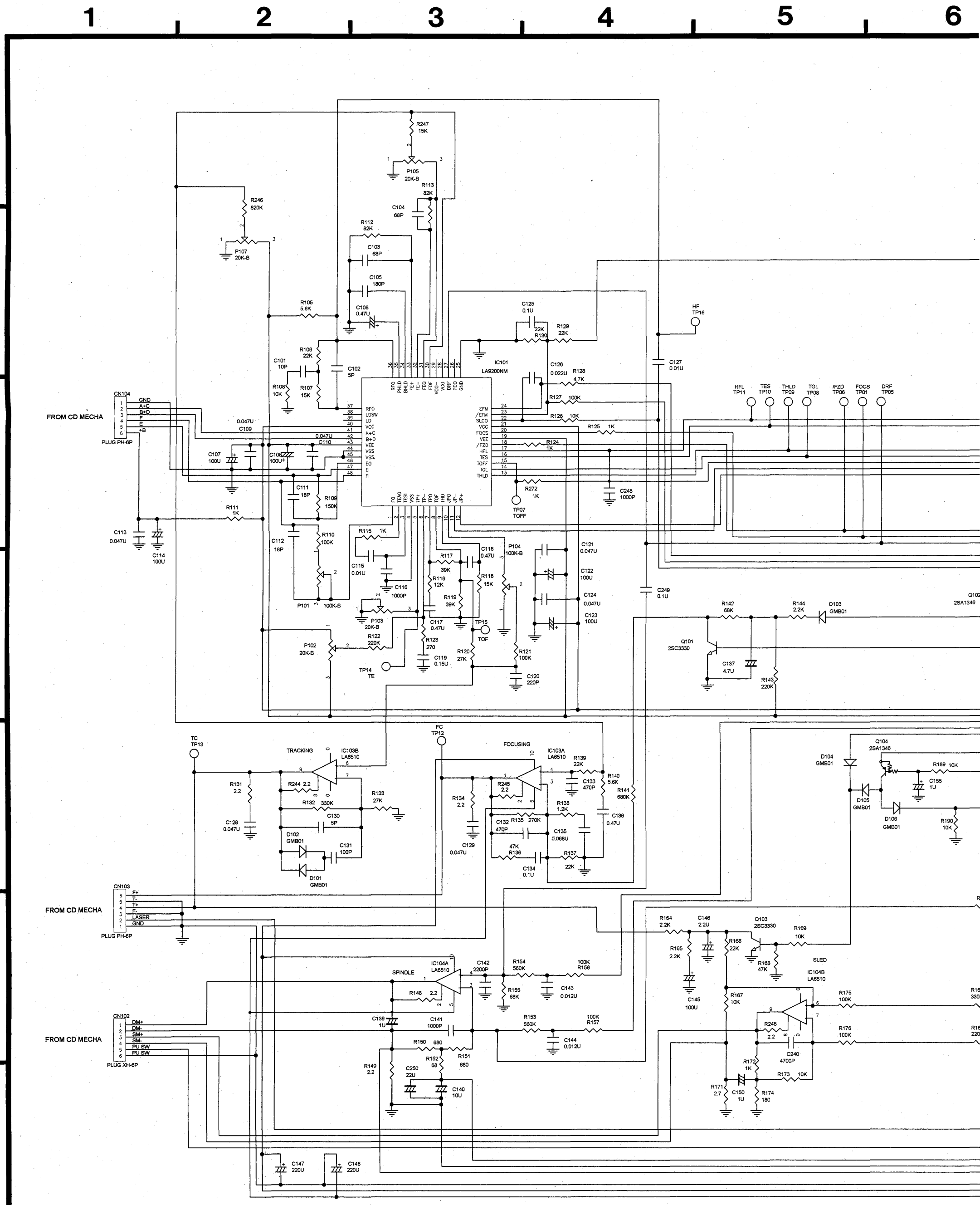


SCHEMATIC DIAGRAM (Continued)

SECOND POWER

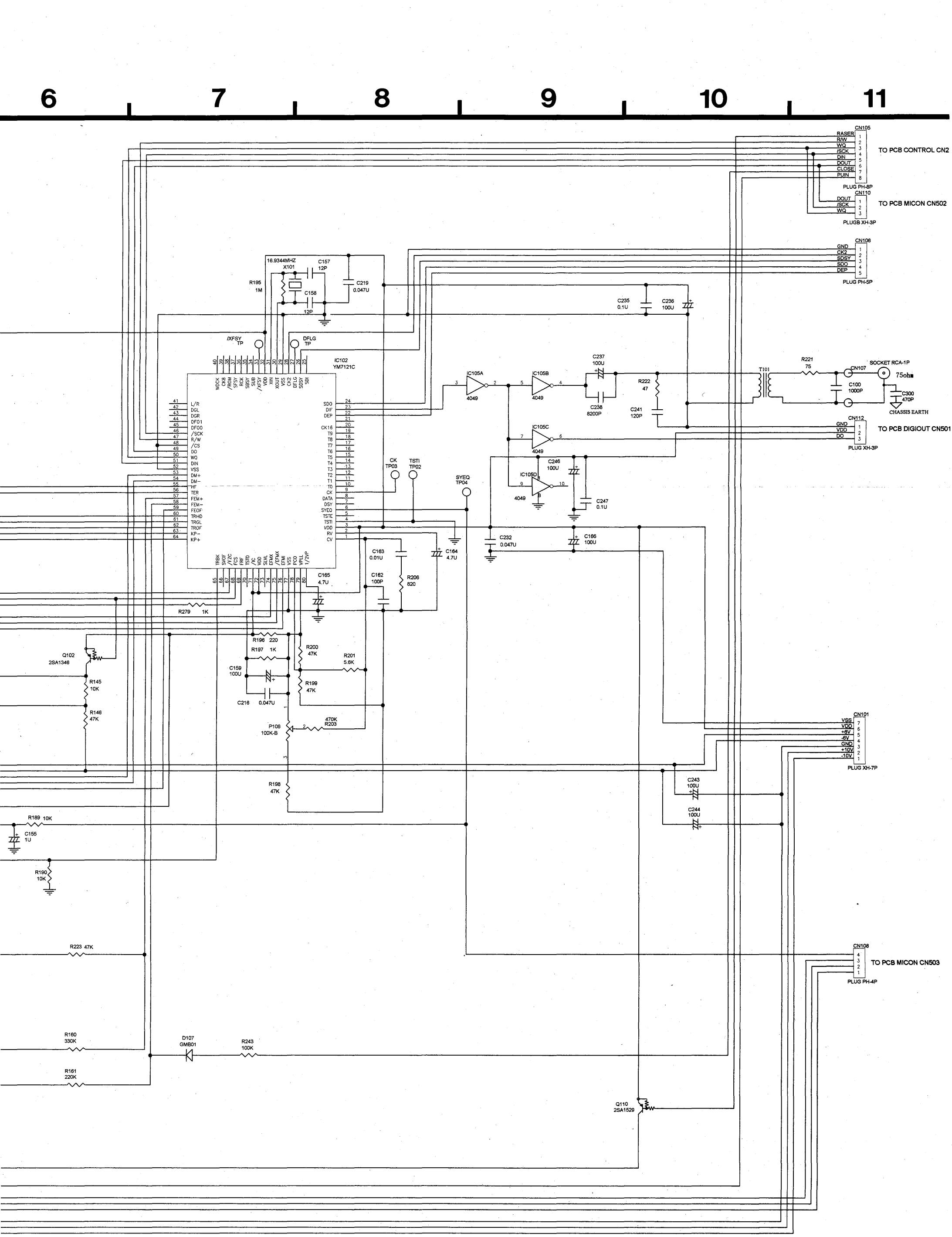


SCHEMATIC DIAGRAM Belt Drive CD Transport TL5100



NOTES:

1. All resistors values are indicated in "ohm" (K=1
2. All capacitors values are indicated in "μF"(P=1
3. All voltages indicated on the schematics are me
   following conditons.
   a. Use a V.T.V.M



ed in "ohm" (K=10^3, M=10^6).
ated in "μF"(P=10^{-12}).
chematics are measured under the

b. All voltages ±10% with respect to chassis ground.
c. No signals at input terminals.
d. AC input at 230 or 240 volts 50Hz, and 120 volts 60Hz.

4. This is a basic schematic diagram.

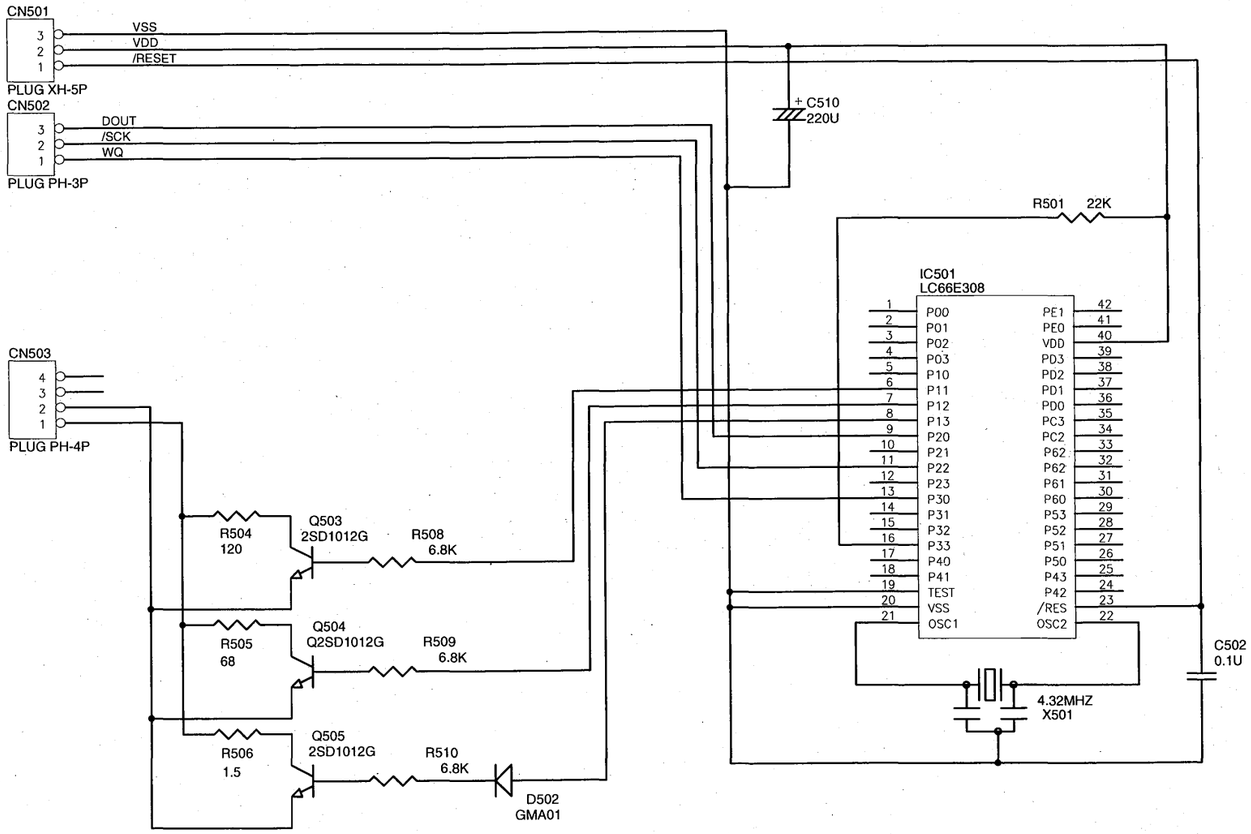
serves the right to make any changes or modifications without notice for improvements.

PRODUCT SAFETY NOTE:

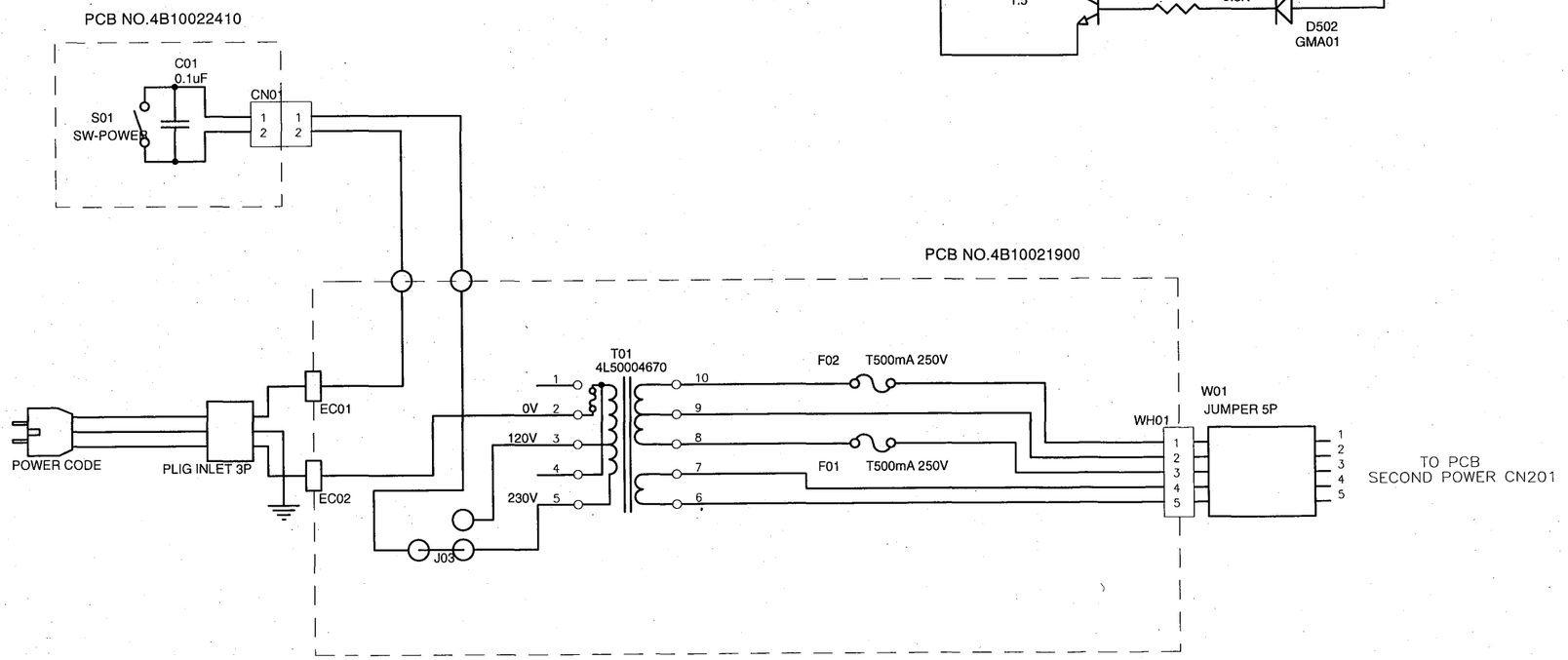
1. Products marked with a ⚠ have special characteristics important to safety.
2. Before replacing any of these components, read carefully the product safety notice of this service manual.
3. Don't degrade the safety of the product through improper servicing.
4. Before returning the appliance to the customer, make leakage current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit.

SCHEMATIC DIAGRAM (Continued)

μCOM

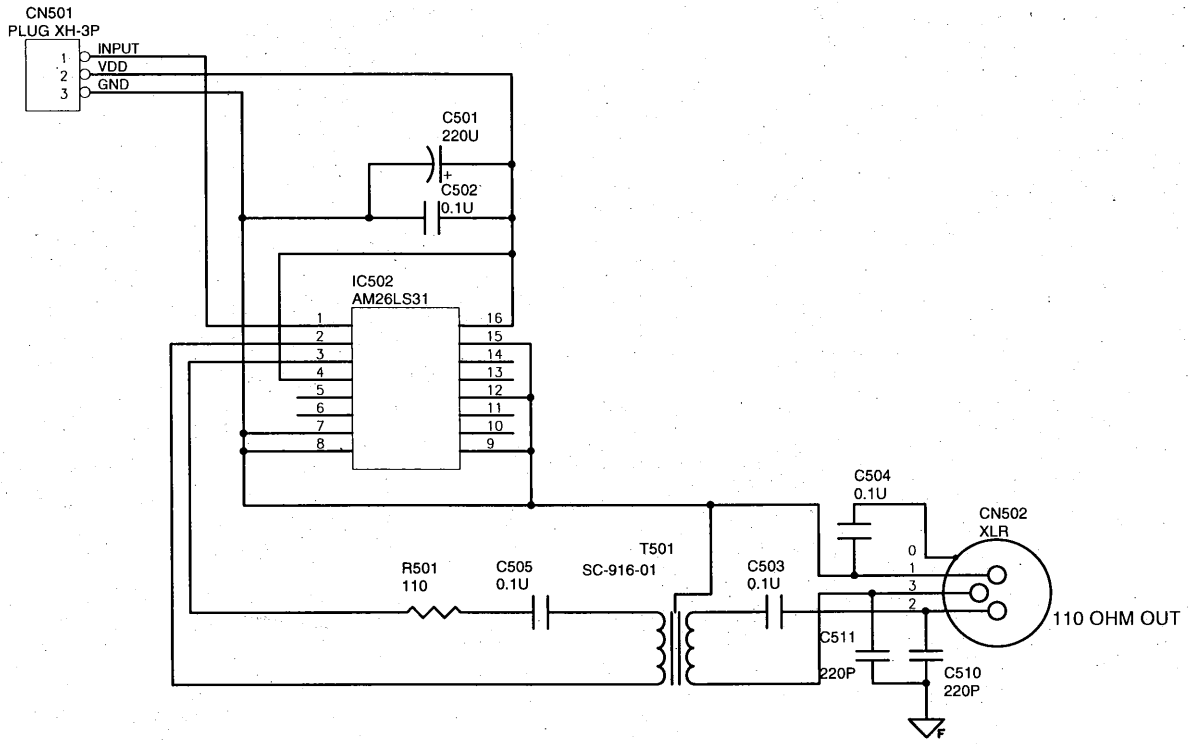


POWER



SCHEMATIC DIAGRAM (Continued)

DIGIOUT



C.E.C.

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