

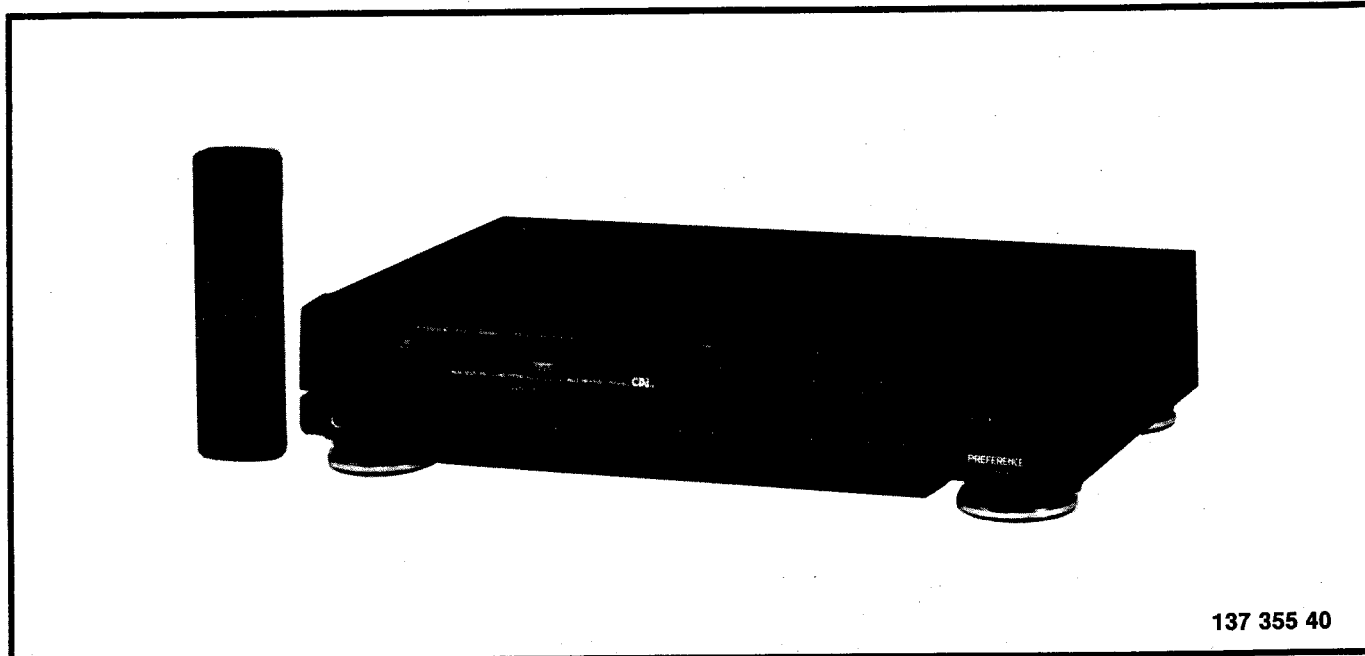
SERVICE MANUAL



COMPACT DISC PLAYER WITH RAD-9060 WIRELESS REMOTE CONTROL

AD-9060

(EUROPE)



137 355 40

SPECIFICATIONS

System Compact disc digital audio
Remote Control (RAD-9060) 25-function
wireless remote control

AUDIO CHARACTERISTICS

Frequency Response 20 Hz – 20 kHz ± 0.7 dB
Harmonic Distortion Less than 0.008% (1 kHz)
(20kHz Low Pass Filter)
Dynamic Range More than 96 dB
S/N Ratio More than 100 dB
Wow and Flutter Below measurable limits
Channel Separation More than 95 dB (1 kHz)
Output Voltage (maximum) 2 Vrms

FUNCTIONS

Track/Program Selection With FFWD and FBACK buttons
Index Selection With SCAN/INDEX \blacktriangleright and \blacktriangleleft buttons
Scanning (fast forward/fast back)
Play mode: 2-speed search with sound
Pause mode: 2-speed search without sound
Each/Remain/Total Time Display With DISPLAY button
during the PLAY mode

PROGRAM FUNCTIONS

Program Memory 16 selections

Edit Disc Play
Tape Length Selection C-46, C-60, C-90
Display Side AB editing time display
Introscan Play 10 seconds/track
Random Play With the RANDOM PLAY button during
the PLAY mode
Repeat Play One track/all tracks/all programmed tracks
Program Reset With STOP button during
PROGRAMMED PLAY mode
Pause Each track
Disc Loading Motor-driven, horizontal loading

DIGITAL SIGNAL PROCESSING

Optical Pickup 3-beam laser
Sampling Frequency 44.1 kHz
Filters 18-bit, 8 times oversampling digital filter
2-pole active filter

D/A Conversion Advanced 1 Bit, D/A converters

GENERAL

Power Requirements (50 Hz) AC 110/220V
20 Watts
Dimensions (WxHxD) 440 x 94 x 275 mm
Weight (approximate) 3.6 kg

– Specifications and design are subject to change without notice. –

REFERENCE No. WM-570576

SAFETY CERTIFICATION

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

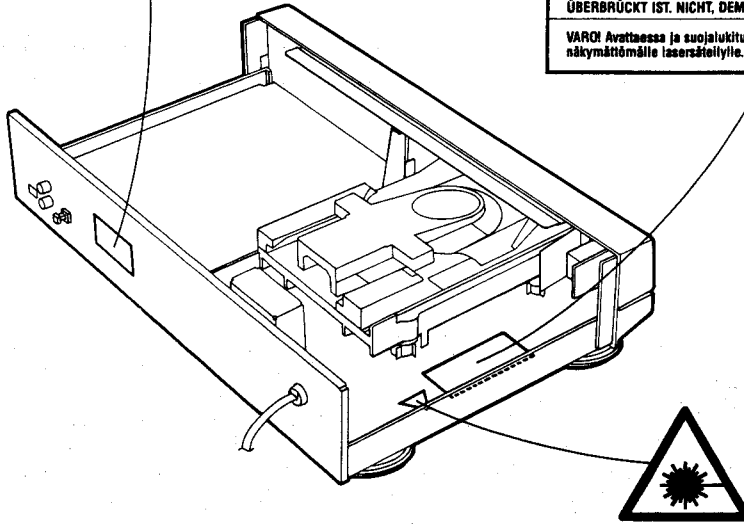
CAUTION—INVISIBLE LASER RADIATION
WHEN OPEN AND INTERLOCKS DEFEATED.
AVOID EXPOSURE TO BEAM.

ADVARSEL—USYNLIG LASER STRÅLING VED ÅBNING,
NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARNING—OSYNLIG LASER STRÅLNING NÅR
DENNA DEL ÅR ÖPPNAD OCH SPÄRR ÅR URKOPPLAD.
STRÅLEN ÅR FARLIG.

VORSICHT—UNSICHTBARE LASERSTRAHLUNG TRITTS AUS,
WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG
ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.

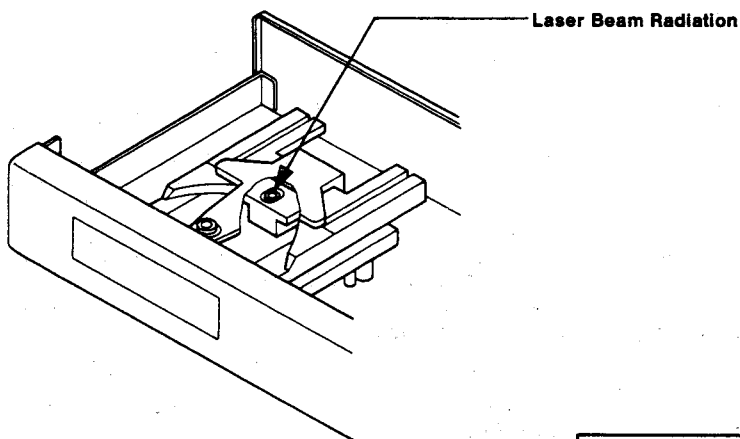
VARO! Avattaessa ja suojauslaitus ohitettaessa olet silmiinsä
näkyvättömälle lasersäteilylle. Älä katso säteeseen.



CAUTION - USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT QUALIFIED SERVICE PERSONNEL.

LASER BEAM RADIATION SPOT

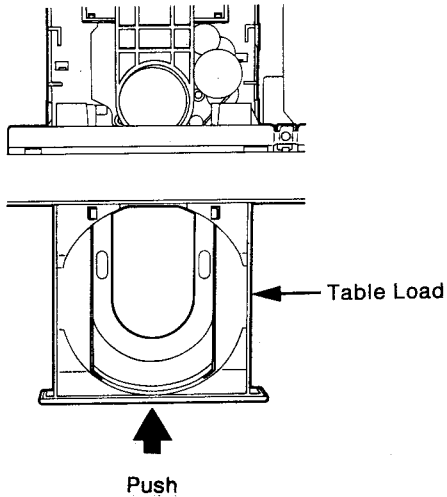


Laser Diode Properties
Material: Ga-Al-As
Wavelength: 755 - 815 nm (25°C)
Laser Output: Continuous Wave max.0.5 mW

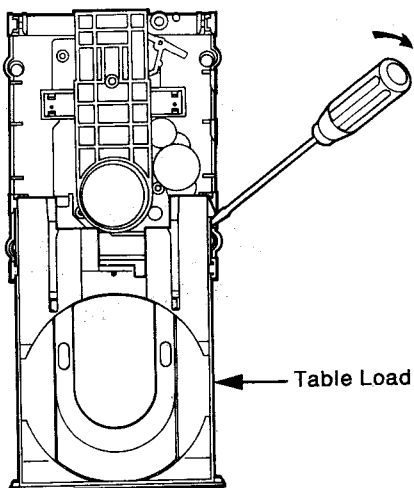
DISASSEMBLY PROCEDURES

REMOVING THE DISC TRAY

1. Apply Power Switch to the set and press the OPEN/CLOSE button to open the table load.
2. Apply OFF the Power Switch while the table load is open, and push the table load back in by hand to close it.

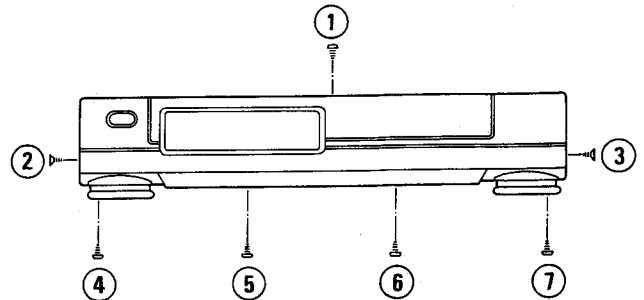


3. Pull out the table load by hand to open it again. The table load will disengage easily and come out smoothly.
4. Now remove the table load from the cabinet while pressing the tab in the direction of the arrow in the diagram below.

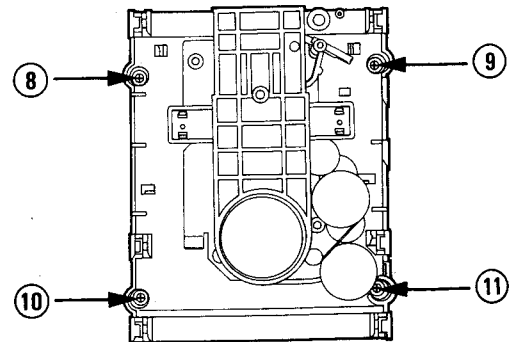


REMOVING THE MECHANISM

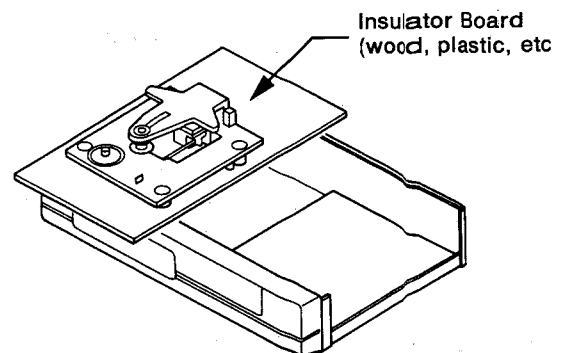
1. Take out the seven screws (1 ~ 7 in the diagram below) with which the Cabinet Front is mounted in place and remove the Cabinet Front.



2. Take out the four screws (8 ~ 11 in the diagram below) with which the mechanism is mounted in place and remove the mechanism.



- The mechanism should be removed with the lead wires still attached, and then placed on a wooden or plastic sheet as shown below to adjust the mechanism.



CD PLAYER ADJUSTMENT PROCEDURES

BEFORE CHECKING OR ADJUSTING CD PLAYER

1. Procedures for all adjustments for the CD player from start to finish are described below.
2. If no problems are found after each item is checked when the pick-up is replaced, there is no need to adjust all items again.

SETTING OF INITIAL POSITION OF VOLUME

1. Set the variable resistors to the initial positions listed below:

P101 (FOCUS GAIN)	Mechanical Center
P102 (FOCUS BALANCE)	Mechanical Center
P103 (TRACKING BALANCE)	Mechanical Center
P104 (TRACKING GAIN)	Mechanical Center
P105 (TRACKING OFFSET)	Mechanical Center
P106 (KICK GAIN)	Mechanical Center

PLL FREE RUN FREQUENCY ADJUSTMENT

1. Connect the frequency counter to the **PCK** terminal (CN08-2) to **GND**. (Use a 10:1 probe.)
2. Short the **HF** terminal (CN09-3) to **GND** through the capacitor (0.1 μ ~1 μ F).
3. Adjust the PLL coil T101 until the frequency counter indicator reads 4.3218MHz (4.317~4.327MHz) in the STOP mode.

TRACKING BALANCE ADJUSTMENT

1. Load the disc (Modern Wave II) and play track number 1.
2. Short the **TEST** terminal (CN09-1) of μ COM and then the **TROF** terminal (CN09-6) to **GND** (Tracking servo off mode).
3. Attach the low-pass filter as shown in fig.1 to the tracking error terminal **TE** (CN09-5) and connect it into the oscilloscope and DC voltmeter.

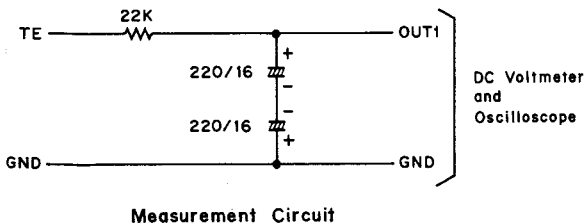


Fig.1

4. Adjust the Tracking Balance VR (P103) so that the DC voltmeter reading is 0V \pm 50mV (Oscilloscope waveform is symmetric to + (plus) and - (minus) about the zero level.)

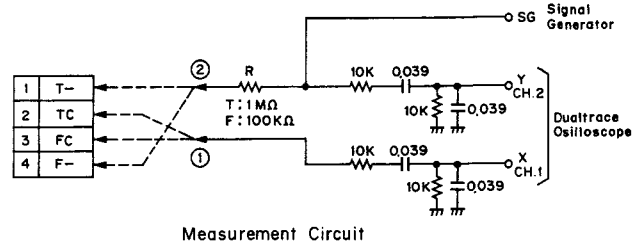
FOCUS BALANCE ADJUSTMENT

(Eye Pattern Adjustment)

1. Load the disc (Modern Wave II) and play track number 1.
2. Connect the oscilloscope to the **HF** terminal (CN09-3). In this mode, adjust the Focus Balance VR (P102) so that the waveform shows maximum and clear.

TRACKING GAIN ADJUSTMENT

Use the measurement tools as shown in fig.2, and adjust the following.

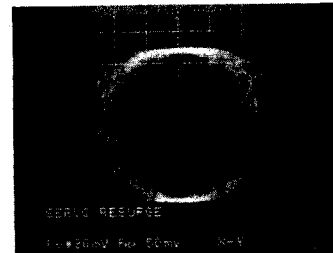


Oscilloscope
X-Y Mode
(X:5mV/div, Y:20mV/div)

Fig.2

Tracking gain adjustment

1. Place the Tracking Gain VR (P104) in the mechanical center position. Load the disc (Modern Wave II) and start playback.
2. Connect the ① measurement circuit as shown in fig.2 to the **TC** terminal (CN10-2) and connect the ② measurement circuit to the **T -** (minus) terminal (CN10-1) through the 1.0 Ω resistor.
3. Now Input a signal of 1.2kHz, 1.2Vrms from the Audio signal generator to the ② measurement tool.
4. Set the oscilloscope to be the X-Y operation, and while observing the lissajous waveform adjust the Tracking Gain VR (P104) to the point where the phase difference is 90° (like a circle) as shown in fig.3 above.



X-Y Mode X:5mV/div
Y:20mV/div

Fig.3

TRACKING OFFSET ADJUSTMENT

1. Connect the DC voltmeter to the **TC** terminal (CN10-2) in the STOP mode and short the **TOF** terminal (CN09-2) to **GND**. Then adjust the Tracking Offset VR (P105) until -50mV (30~70mV) shows.

NOTE:

Perform this adjustment once again after adjusting the TRACKING BALANCE and TRACKING GAIN signals.

CD PLAYER ADJUSTMENT PROCEDURES (Continued)

KICK GAIN ADJUSTMENT

1. Place the test disc (Modern Wave II) on the tray and play and the pause.
2. Set the oscilloscope to "NORMAL TRIG.," and set the EXT. TRIG. pin to external trigger, and input the trigger from test terminal THD (CN08-1) to the oscilloscope.
3. Next connect test terminal HF (CN09-3) pin to Channel 1 of the oscilloscope, and connect test terminal TE (CN09-5) to Channel 2.
4. As this moment, adjust the Kick Gain VR (P106) so that Kick Gain pulse waveform is as shown in fig.4.

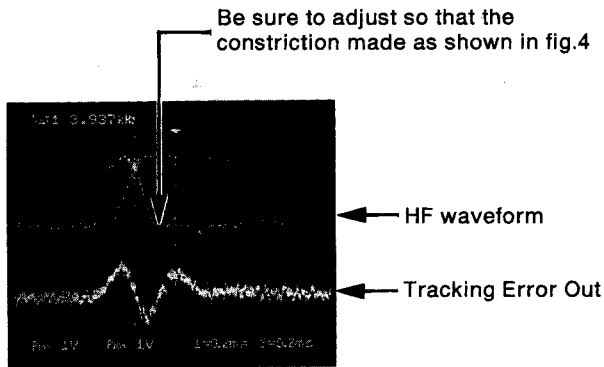


Fig.4

FOCUS GAIN ADJUSTMENT

1. Place the Focus Gain VR (P101) in the center position. Load the disc (Modern Wave II) and start playback.
2. Connect the ① measurement circuit as shown in fig.2 into the FC terminal (CN10-3) and connect the ② measurement circuit to the F - (minus) terminal (CN10-4) through the 100kΩ resistor.
3. Input a signal of 1.0kHz, 1.2Vrms from the audio signal generator to the ② measurement circuit.
4. Set the oscilloscope to be the X-Y operation, and while observing the lissajous waveform adjust the Focus Gain VR (P101) to the point where the phase difference is 90° (like a circle) as shown in fig.3 above.

ADJUSTMENT OF TURNTABLE HEIGHT

This adjustment must be performed when the Spindle Motor is replaced.

1. Load the disc (Modern Wave II) and play the track number 1. Connect the oscilloscope and oscilloscope into the FC terminal (CN10-3) through the low-pass filter as shown in Fig.5.

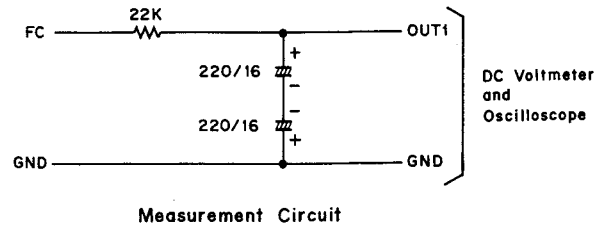
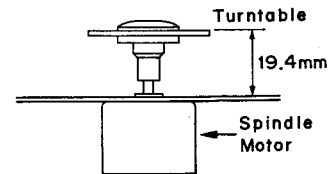
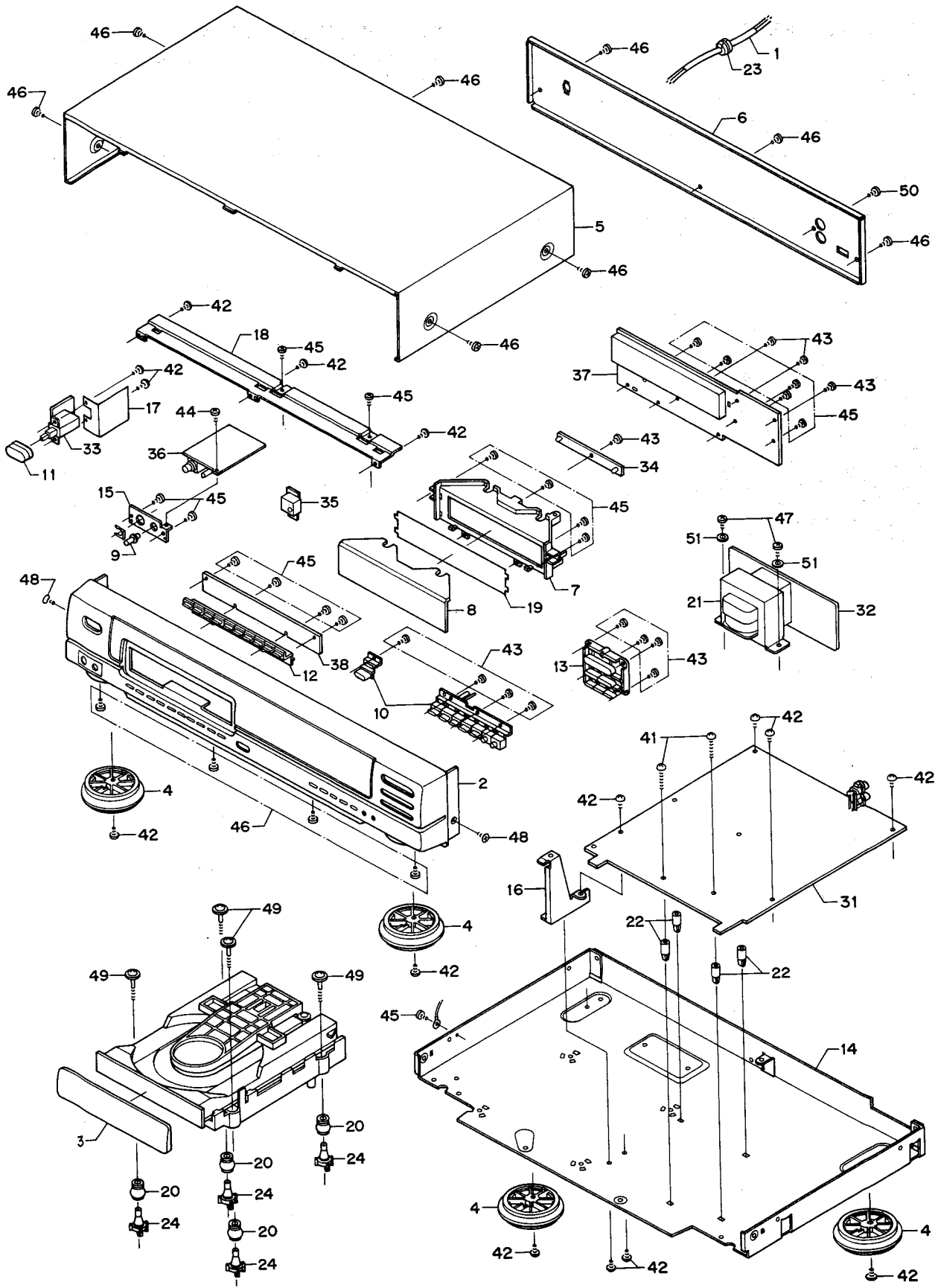


Fig.5

2. If the voltmeter does not show under the range of:
 Inner peripheral $+0.5V \pm 0.2V$
 Outer Peripheral $+0.5V \pm 0.35V$ readjust the height of the turntable. Raise the turntable when the voltmeter indicates + (plus), and when - (minus), lower it. (The amount of shift has capacity of about 1.4mm ~ 1.85mm at the rate of 1V.)



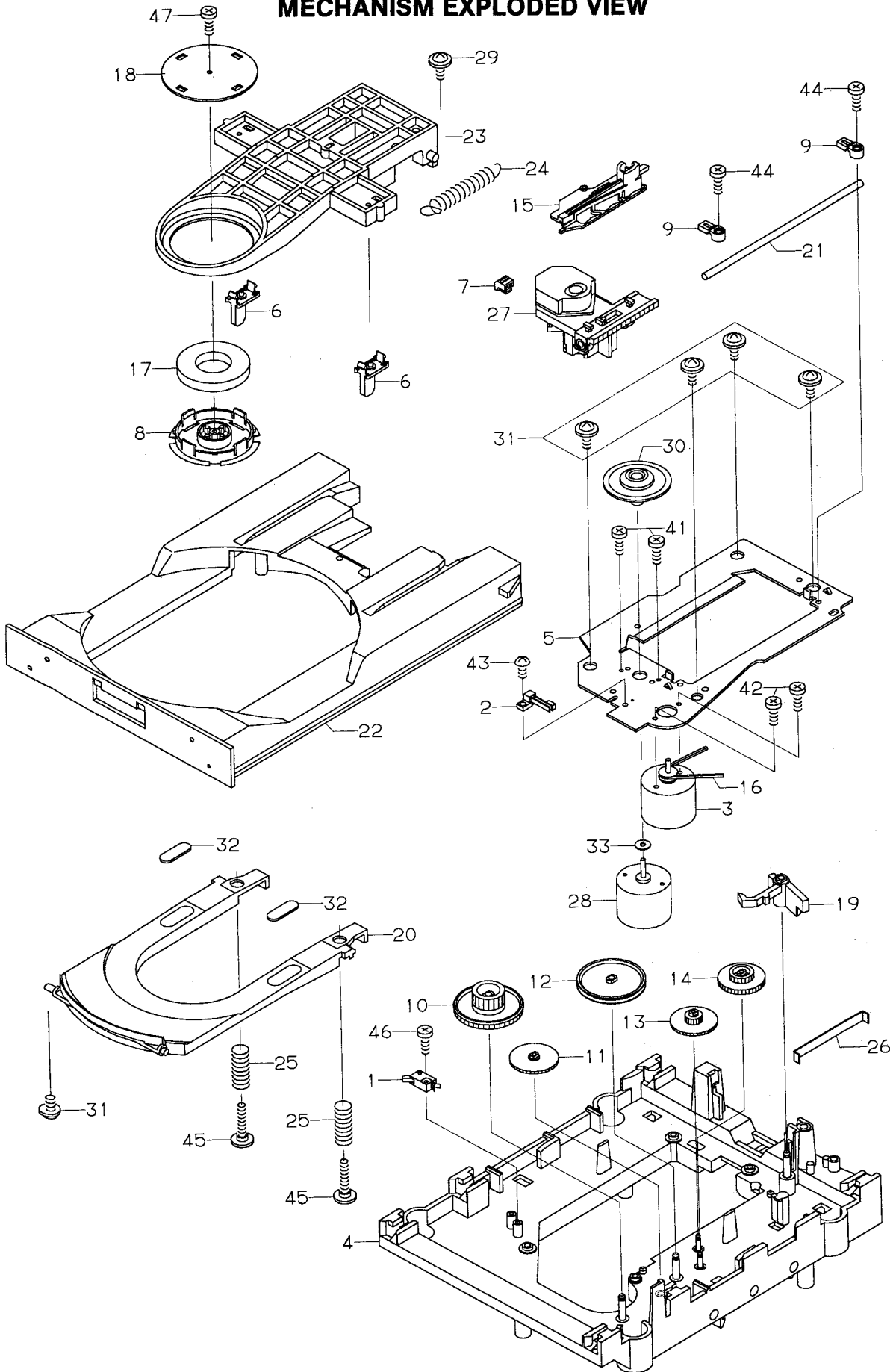
CABINET & CHASSIS EXPLODED VIEW



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE				41	411 020 7007	SCR S-TPG BRZ 3X20	2
	620 211 1667	Inner Carton	1	42	411 020 8004	SCR S-TPG BRZ 3X8	15
	620 210 6076	Pad,Left	1	43	411 021 1202	SCR S-TPG BIN 2X8	12
	620 210 6083	Pad,Right	1	44	411 021 2704	SCR S-TPG BIN 2.6X6	1
	620 211 4286	Label,Barcode	1	45	411 021 3107	SCR S-TPG BIN 2.6X8	18
	620 059 6596	Patching Sheet	1	46	411 021 6603	SCR S-TPG BIN 3X8	12
	620 148 8012	Sheet Polyethylene	1	47	411 021 9109	SCR S-TPG BIN 4X6	2
	614 188 3793	Inspection Sheet	1	48	411 022 4608	SCR S-TPG FLT 3X8	2
ACCESSORIES				49	412 024 6300	SPECIAL SCREW	4
	620 017 7955	Connector 4P Assy	1	50	412 034 8509	SPECIAL SCREW	1
	620 037 3500	RCA Cord 1000mm Black	1	51	411 086 5801	WASHER SPR 4	2
or	620 021 7408	RCA Cord 1000mm Black	1	NOTES:			
	620 211 1360	Instruction Manual	1	1.	Parts order must contain Model Number, Part Number and Description.		
	614 188 3298	Guarantee Card	1	2.	Ordering quantity of screws and resistors must be multiple of 10 pcs.		
	614 188 3793	Inspection Sheet	1	PRODUCT SAFETY NOTICE Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.			
	620 057 8783	Bag Fan	1				
	620 211 3340	Opto Connector, DIG I/O	1				
	620 211 3364	Remocon, RAD-9060	1				
CABINET							
	614 224 3695	Label Safety	1				
	614 231 6832	Label Safety	1				
	620 211 2572	Adhesive Sheet	1				
	620 125 8424	Wire Band	8				
	614 188 3793	Inspection Sheet	1				
	614 191 3698	Label	1				
	620 210 2986	Assy,Connector-S,4P [CN15W]	1				
	620 210 3006	Assy,Connector-S,3P [CN16W]	1				
1	Δ 614 023 3384	Power Cord	1				
or	Δ 614 023 3100	Power Cord	1				
2	620 211 1643	Assy,Cabinet,Front	1				
3	620 211 1650	Assy,Panel,Tray	1				
4	620 198 6969	Assy,Foot	4				
5	620 198 0639	Cover	1				
6	620 209 9019	Panel,Rear	1				
7	620 198 0585	Panel,Meter	1				
8	620 198 0578	Window,Meter	1				
9	620 198 0615	Knob,Rotary,Volume	1				
10	620 198 0554	Button,Mode	1				
11	620 198 0622	Button,Power	1				
12	620 209 9002	Button,10 Key	1				
13	620 210 8377	Button,Select	1				
14	620 198 0646	Chassis,Main	1				
15	620 198 0677	Bracket-E,Headphone	1				
16	620 198 0660	Support,Front	1				
17	620 211 1407	Shield,Power,Switch	1				
18	620 198 0684	Reinforcement,Front	1				
19	620 198 7201	Filter	1				
20	620 209 4816	Cushion,Rubber	4				
21	Δ 620 210 1590	Power Trans	1				
22	620 050 4409	Mount P.C.B	4				
23	620 053 2129	Bushing (Power Cord)	1				
or	620 053 2136	Bushing (Power Cord)	1				
24	620 115 4375	Holder Mecha	4				
31	620 211 2022	Assy,PCB,Main	1				
32	620 210 2016	Assy,PCB,Trans	1				
33	620 210 2023	Assy,PCB,Switch,Power	1				
34	620 210 2030	Assy,PCB,Lamp	1				
35	620 210 2047	Assy,PCB,Remocon 1	1				
36	620 210 2054	Assy,PCB,Headphone	1				
37	620 211 2008	Assy,PCB,Display	1				
38	620 210 2078	Assy,PCB,Ten Key	1				

MECHANISM EXPLODED VIEW



MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MECHANISM			
	620 125 8424	Wire Band	4
	620 210 2610	Assy,Connector-S,8P [CN1W]	1
	620 210 2603	Assy,Connector-S,8P [CN2W]	1
	620 210 2627	Assy,Connector-S,9P [CN3W]	1
1	614 018 9223	Switch	1
2	620 015 8633	Leaf Switch	1
3	614 231 9727	Assy,Motor	1
4	620 209 5783	Assy,Chassis,Load	1
5	620 209 5110	Chassis,CD Unit	1
6	620 209 4922	Guide,Flap	2
7	620 209 4946	Guide,Pick	1
8	620 205 4513	Holder,Disc	1
9	620 210 1095	Fixer,Shaft Pickup	2
10	620 209 4830	Gear,Pinion Table	1
11	620 209 4847	Gear,Load Table	1
12	620 209 4854	Gear,Pulley	1
13	620 209 4861	Gear,Load Pick	1
14	620 209 4878	Gear,Pinion Pick	1
15	620 209 5066	Gear,Rack	1
16	620 209 4823	Belt,Square	1
17	620 205 4070	Magnet,Disc Clamp	1
18	620 205 4094	Yoke,Magnet	1
19	620 209 5165	Arm,Change	1
20	620 209 5080	Lifter,CD Table	1
21	620 209 5042	Shaft,Slide,Pick	1
22	620 209 5127	Table,Loading	1
23	620 209 5318	Flap,Disc Clamp	1
24	620 209 4977	Spring,Tens,Flap	1
25	620 209 4984	Spring,Comp,Table	2
26	620 209 4953	Spring,Plate	1
27	620 209 6452	Pickup,Laser	1
28	620 211 4477	Motor,2V,Spindle	1
29	620 051 4316	Screw 3X10	1
30	620 082 7478	Turntable Assy	1
31	620 123 0772	Screw Washer 2.6X6	5
32	620 184 9905	Pad Disc (Felt)	2
33	620 125 1487	Washer M1.9X7.0X0.25	1
41	411 099 0701	SCR PAN PCS 1.7X3	2
42	411 146 5307	SCR PAN PCS 2X2.5	2
43	411 107 6404	SCR S-TPG PAN 2.6X6	1
44	412 042 0007	SPECIAL SCREW	2
45	412 040 0405	SPECIAL SCREW	2
46	411 104 6605	SCR TPG PAN 1.7X10	1
47	411 021 0304	SCR S-TPG BIN 2X4	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,MAIN							
31	620 211 2022	Assy,PCB,Main	1	or	405 019 2708	TR 2SC536-F-NP-AA	1
	620 190 1092	Pin Jack 2P WH/RED	1	or	405 019 3804	TR 2SC536-G-NP-AA	1
	620 211 1704	Heat Sink	1	Q111	405 019 2807	TR 2SC536-F-SPA-AC	1
	620 211 6099	Converter,E/O,PLT102	1	or	405 019 3903	TR 2SC536-G-SPA-AC	1
or	620 196 1607	Converter,E/O,TOTX-174	1	or	405 019 2708	TR 2SC536-F-NP-AA	1
CN1	620 021 8405	Plug 8P	1	or	405 019 3804	TR 2SC536-G-NP-AA	1
CN2	620 021 8863	Plug 8P	1	Q112	405 018 2600	TR 2SC3400-AC	1
CN3	620 021 9976	Plug 9P	1	Q501	405 004 4601	TR 2SA608-F-SPA-AC	1
CN4	620 021 6555	Plug 4P	1	or	405 004 5103	TR 2SA608-G-SPA-AC	1
CN5	620 021 8337	Plug 6P	1	or	405 004 4502	TR 2SA608-F-NP-AA	1
CN6P	620 210 5758	Plug,BTMK,15P	1	or	405 004 5004	TR 2SA608-G-NP-AA	1
CN7P	620 210 5758	Plug,BTMK,15P	1	Q601	405 021 0600	TR 2SD1012-G-SPA-AC	1
CN8	620 021 4025	Plug 3P	1	or	405 021 0907	TR 2SD1012-H-SPA-AC	1
CN9	620 021 3950	Plug 6P	1	Q602	405 019 2807	TR 2SC536-F-SPA-AC	1
CN10	620 021 4346	Plug 4P	1	or	405 019 3903	TR 2SC536-G-SPA-AC	1
CN11P	620 210 5765	Plug,BTMK,8P	1	or	405 019 2708	TR 2SC536-F-NP-AA	1
CN13	620 021 8313	Plug 3P	1	or	405 019 3804	TR 2SC536-G-NP-AA	1
CN14	620 021 8306	Plug 2P	1	Q603	405 019 2807	TR 2SC536-F-SPA-AC	1
CN15	620 021 8597	Plug 4P	1	or	405 019 3903	TR 2SC536-G-SPA-AC	1
CN16	620 021 5923	Plug 3P	1	or	405 019 2708	TR 2SC536-F-NP-AA	1
P101	620 006 1360	Potentiometer 22KB	1	or	405 019 3804	TR 2SC536-G-NP-AA	1
P102	620 006 1360	Potentiometer 22KB	1	Q604	405 019 2807	TR 2SC536-F-SPA-AC	1
P103	620 006 1353	Potentiometer 100KB	1	or	405 019 3903	TR 2SC536-G-SPA-AC	1
P104	620 006 1360	Potentiometer 22KB	1	or	405 019 2708	TR 2SC536-F-NP-AA	1
P105	620 006 1360	Potentiometer 22KB	1	or	405 019 3804	TR 2SC536-G-NP-AA	1
P106	620 006 1353	Potentiometer 100KB	1	Q605	405 018 2600	TR 2SC3400-AC	1
RB101	620 190 4062	Resistor 10X10K	1	D101	407 000 3503	VARACTOR DI SVC211SP	1
RB102	620 190 4062	Resistor 10X10K	1	D102	407 133 2206	DIODE WG4148	1
T101	620 212 0782	OSC Coil	1	or	407 008 0405	DIODE GMB01-BT	1
or	620 028 8774	OSC Coil	1	D103	407 133 2206	DIODE WG4148	1
or	620 028 8699	OSC Coil	1	or	407 008 0405	DIODE GMB01-BT	1
X101	620 189 5117	Ceramic OSC 6MHz	1	D104	407 133 2206	DIODE WG4148	1
X102	620 007 3288	Crystal 16.9344MHz	1	or	407 008 0405	DIODE GMB01-BT	1
X601	620 007 3417	Ceramic OSC CSB 455E	1	D105	407 133 2206	DIODE WG4148	1
or	620 007 3301	Ceramic KBR-455BT	1	or	407 008 0405	DIODE GMB01-BT	1
IC101	409 124 6507	IC LA9200NM	1	D106	407 133 2206	DIODE WG4148	1
IC102	409 202 5804	IC LC7860K	1	or	407 008 0405	DIODE GMB01-BT	1
IC103	409 123 7109	IC LC3517BS-15	1	D107	407 133 2206	DIODE WG4148	1
IC104	409 057 4601	IC UPC4570HA	1	or	407 008 0405	DIODE GMB01-BT	1
or	409 018 5104	IC LA6458SS	1	D108	407 133 2206	DIODE WG4148	1
IC105	409 136 9206	IC FA5205P	1	or	407 008 0405	DIODE GMB01-BT	1
IC106	409 203 8507	IC M50954-125SP	1	D109	407 133 2206	DIODE WG4148	1
IC107	409 204 0609	IC YM3613C	1	or	407 008 0405	DIODE GMB01-BT	1
IC108	409 242 8704	IC SM5840CP	1	D111	407 133 2206	DIODE WG4148	1
IC109	409 242 8803	IC PCM67P	1	or	407 008 0405	DIODE GMB01-BT	1
IC110	409 057 4601	IC UPC4570HA	1	D112	407 133 2206	DIODE WG4148	1
or	409 018 5104	IC LA6458SS	1	or	407 008 0405	DIODE GMB01-BT	1
IC111	409 057 4601	IC UPC4570HA	1	D113	407 133 2206	DIODE WG4148	1
or	409 018 5104	IC LA6458SS	1	or	407 008 0405	DIODE GMB01-BT	1
IC112	409 169 7804	IC NJM78M05FA	1	D114	407 133 2206	DIODE WG4148	1
IC113	409 183 1802	IC NJM78M06FA	1	or	407 008 0405	DIODE GMB01-BT	1
IC114	409 136 9503	IC TA79L006P	1	D115	407 133 2206	DIODE WG4148	1
IC501	409 039 6609	IC NJM2904M-T2	1	or	407 008 0405	DIODE GMB01-BT	1
IC601	409 089 1609	IC LC7462M-8172	1	D116	407 133 2206	DIODE WG4148	1
Q101	405 019 2807	TR 2SC536-F-SPA-AC	1	or	407 008 0405	DIODE GMB01-BT	1
or	405 019 3903	TR 2SC536-G-SPA-AC	1	D117	407 133 2206	DIODE WG4148	1
or	405 019 2708	TR 2SC536-F-NP-AA	1	or	407 008 0405	DIODE GMB01-BT	1
or	405 019 3804	TR 2SC536-G-NP-AA	1	D118	407 133 2206	DIODE WG4148	1
Q102	405 021 0600	TR 2SD1012-G-SPA-AC	1	or	407 008 0405	DIODE GMB01-BT	1
or	405 021 0907	TR 2SD1012-H-SPA-AC	1	D119	407 133 2206	DIODE WG4148	1
Q103	405 004 4601	TR 2SA608-F-SPA-AC	1	or	407 008 0405	DIODE GMB01-BT	1
or	405 004 5103	TR 2SA608-G-SPA-AC	1	D120	407 133 2206	DIODE WG4148	1
or	405 004 4502	TR 2SA608-F-NP-AA	1	or	407 008 0405	DIODE GMB01-BT	1
or	405 004 5004	TR 2SA608-G-NP-AA	1	D121	407 051 7307	ZENER DIODE GZS6.2Z-BT	1
Q105	405 019 2807	TR 2SC536-F-SPA-AC	1	D122	407 051 5303	ZENER DIODE GZS24Z-BT	1
or	405 019 3903	TR 2SC536-G-SPA-AC	1	D123	407 051 6904	ZENER DIODE GZS5.6Y-BT	1
or	405 019 2708	TR 2SC536-F-NP-AA	1	D124	407 140 7201	DIODE DSR10C-ET5	1
or	405 019 3804	TR 2SC536-G-NP-AA	1	or	407 005 8602	DIODE ERA15-02	1
Q107	405 021 0600	TR 2SD1012-G-SPA-AC	1	D125	407 140 7201	DIODE DSR10C-ET5	1
or	405 021 0907	TR 2SD1012-H-SPA-AC	1	or	407 005 8602	DIODE ERA15-02	1
Q108	405 021 0600	TR 2SD1012-G-SPA-AC	1	D126	407 140 7201	DIODE DSR10C-ET5	1
or	405 021 0907	TR 2SD1012-H-SPA-AC	1	or	407 005 8602	DIODE ERA15-02	1
Q109	405 004 4601	TR 2SA608-F-SPA-AC	1	D127	407 140 7201	DIODE DSR10C-ET5	1
or	405 004 5103	TR 2SA608-G-SPA-AC	1	or	407 005 8602	DIODE ERA15-02	1
or	405 004 4502	TR 2SA608-F-NP-AA	1	D128	407 140 7201	DIODE DSR10C-ET5	1
or	405 004 5004	TR 2SA608-G-NP-AA	1	or	407 005 8602	DIODE ERA15-02	1
Q110	405 019 2807	TR 2SC536-F-SPA-AC	1	D129	407 140 7201	DIODE DSR10C-ET5	1
or	405 019 3903	TR 2SC536-G-SPA-AC	1	or	407 005 8602	DIODE ERA15-02	1
				D130	407 140 7201	DIODE DSR10C-ET5	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
or	407 005 8602	DIODE ERA15-02	1	C168	403 049 1708	ELECT 1U M 50V	1
D131	407 133 2206	DIODE WG4148	1	C169	403 028 3402	CERAMIC 56P J 50V	1
or	407 008 0405	DIODE GMB01-BT	1	C170	403 059 6502	POLYESTER 0.022U K 50V	1
D132	407 133 2206	DIODE WG4148	1	C171	403 185 0504	MT-POLYEST 1U J 50V	1
or	407 008 0405	DIODE GMB01-BT	1	C172	403 001 1906	CERAMIC 0.01U M 16V	1
D601	407 133 2206	DIODE WG4148	1	C173	403 049 5508	ELECT 10U M 50V	1
or	407 008 0405	DIODE GMB01-BT	1	C174	403 010 7807	CERAMIC 12P J 50V	1
D602	407 133 2206	DIODE WG4148	1	C175	403 010 7807	CERAMIC 12P J 50V	1
or	407 008 0405	DIODE GMB01-BT	1	C176	403 010 7807	CERAMIC 12P J 50V	1
D603	407 133 2206	DIODE WG4148	1	C177	403 001 1906	CERAMIC 0.01U M 16V	1
or	407 008 0405	DIODE GMB01-BT	1	C178	403 121 9509	CERAMIC 0.1U Z 50V	1
D604	407 133 2206	DIODE WG4148	1	C179	403 049 5508	ELECT 10U M 50V	1
or	407 008 0405	DIODE GMB01-BT	1	C181	403 038 7209	ELECT 220U M 6.3V	1
C101	403 030 6309	CERAMIC 68P J 50V	1	C182	403 038 2402	ELECT 100U M 6.3V	1
C102	403 030 6309	CERAMIC 68P J 50V	1	C183	403 038 2402	ELECT 100U M 6.3V	1
C103	403 071 2001	CERAMIC 180P K 50V	1	C184	403 038 2402	ELECT 100U M 6.3V	1
C104	403 048 7701	ELECT 0.47U M 50V	1	C185	403 038 2402	ELECT 100U M 6.3V	1
C105	403 168 6103	MT-POLYEST 0.1U J 50V	1	C186	403 039 3002	ELECT 47U M 6.3V	1
C106	403 058 3601	POLYESTER 0.015U K 50V	1	C187	403 039 3002	ELECT 47U M 6.3V	1
C108	403 050 3708	ELECT 22U M 50V	1	C188	403 050 3708	ELECT 22U M 50V	1
C109	403 069 1207	CERAMIC 1000P K 50V	1	C189	403 050 3708	ELECT 22U M 50V	1
C110	403 071 6207	CERAMIC 220P K 50V	1	C190	403 069 1207	CERAMIC 1000P K 50V	1
C111	403 121 9509	CERAMIC 0.1U Z 50V	1	C191	403 069 1207	CERAMIC 1000P K 50V	1
C112	403 022 7703	CERAMIC 33P J 50V	1	C192	403 057 0809	POLYESTER 0.01U K 50V	1
C113	403 022 7703	CERAMIC 33P J 50V	1	C193	403 057 0809	POLYESTER 0.01U K 50V	1
C114	403 001 1906	CERAMIC 0.01U M 16V	1	C194	403 058 1508	POLYESTER 1500P K 50V	1
C115	403 069 1207	CERAMIC 1000P K 50V	1	C195	403 058 1508	POLYESTER 1500P K 50V	1
C116	403 175 1009	MT-POLYEST 0.15U J 50V	1	C196	403 085 6408	NP-ELECT 4.7U M 16V	1
C117	403 047 1601	ELECT 4.7U M 25V	1	C197	403 085 6408	NP-ELECT 4.7U M 16V	1
C118	403 175 1009	MT-POLYEST 0.15U J 50V	1	C198	403 001 1906	CERAMIC 0.01U M 16V	1
C119	403 071 6207	CERAMIC 220P K 50V	1	C199	403 039 3002	ELECT 47U M 6.3V	1
C120	403 009 1809	CERAMIC 10P J 50V	1	C200	403 001 1906	CERAMIC 0.01U M 16V	1
C121	403 121 9509	CERAMIC 0.1U Z 50V	1	C201	403 039 3002	ELECT 47U M 6.3V	1
C122	403 086 2706	NP-ELECT 1U M 50V	1	C202	403 073 7004	CERAMIC 470P K 50V	1
C123	403 086 2706	NP-ELECT 1U M 50V	1	C203	403 073 7004	CERAMIC 470P K 50V	1
C124	403 049 1708	ELECT 1U M 50V	1	C204	403 069 1207	CERAMIC 1000P K 50V	1
C125	403 049 1708	ELECT 1U M 50V	1	C205	403 001 1906	CERAMIC 0.01U M 16V	1
C126	403 069 1207	CERAMIC 1000P K 50V	1	C206	403 038 7209	ELECT 220U M 6.3V	1
C127	403 086 2706	NP-ELECT 1U M 50V	1	C207	403 049 5508	ELECT 10U M 50V	1
C128	403 002 6207	CERAMIC 0.012U K 25V	1	C208	403 050 1308	ELECT 2.2U M 50V	1
C129	403 002 6207	CERAMIC 0.012U K 25V	1	C209	403 049 5508	ELECT 10U M 50V	1
C130	403 001 5102	CERAMIC 2200P M 16V	1	C210	403 001 1906	CERAMIC 0.01U M 16V	1
C131	403 001 5102	CERAMIC 2200P M 16V	1	C211	403 001 1906	CERAMIC 0.01U M 16V	1
C132	403 086 2706	NP-ELECT 1U M 50V	1	C212	403 001 1906	CERAMIC 0.01U M 16V	1
C133	403 086 2706	NP-ELECT 1U M 50V	1	C213	403 168 6103	MT-POLYEST 0.1U J 50V	1
C134	403 049 5508	ELECT 10U M 50V	1	C214	403 049 1708	ELECT 1U M 50V	1
C135	403 049 5508	ELECT 10U M 50V	1	C215	403 168 6103	MT-POLYEST 0.1U J 50V	1
C136	403 016 2004	CERAMIC 2.2P K 50V	1	C216	403 168 6103	MT-POLYEST 0.1U J 50V	1
C137	403 009 1809	CERAMIC 10P J 50V	1	C217	403 043 3104	ELECT 2200U M 16V	1
C138	403 003 8705	CERAMIC 0.039U K 25V	1	C218	403 043 3104	ELECT 2200U M 16V	1
C139	403 071 6207	CERAMIC 220P K 50V	1	C219	403 072 2703	CERAMIC 0.022U Z 50V	1
C140	403 080 5208	POLYPRO 1000P J 100V	1	C220	403 072 2703	CERAMIC 0.022U Z 50V	1
C141	403 001 1906	CERAMIC 0.01U M 16V	1	C221	403 054 1304	ELECT 47U M 35V	1
C142	403 121 9509	CERAMIC 0.1U Z 50V	1	C222	403 049 5508	ELECT 10U M 50V	1
C143	403 149 7105	POLYPRO 680P J 100V	1	C223	403 054 1304	ELECT 47U M 35V	1
C144	403 121 9509	CERAMIC 0.1U Z 50V	1	C224	403 072 2703	CERAMIC 0.022U Z 50V	1
C145	403 003 6701	CERAMIC 0.033U K 25V	1	C225	403 069 1207	CERAMIC 1000P K 50V	1
C146	403 009 1809	CERAMIC 10P J 50V	1	C226	403 121 9509	CERAMIC 0.1U Z 50V	1
C147	403 121 9509	CERAMIC 0.1U Z 50V	1	C227	403 121 9509	CERAMIC 0.1U Z 50V	1
C148	403 001 1906	CERAMIC 0.01U M 16V	1	C228	403 072 2703	CERAMIC 0.022U Z 50V	1
C149	403 001 1906	CERAMIC 0.01U M 16V	1	C601	403 068 9402	CERAMIC 100P K 50V	1
C150	403 049 5508	ELECT 10U M 50V	1	C602	403 068 9402	CERAMIC 100P K 50V	1
C151	403 042 3600	ELECT 100U M 16V	1	C603	403 069 1207	CERAMIC 1000P K 50V	1
C152	403 042 3600	ELECT 100U M 16V	1	C604	403 168 6103	MT-POLYEST 0.1U J 50V	1
C153	403 069 1207	CERAMIC 1000P K 50V	1	C605	403 039 3002	ELECT 47U M 6.3V	1
C154	403 121 9509	CERAMIC 0.1U Z 50V	1	C606	403 086 2706	NP-ELECT 1U M 50V	1
C155	403 039 3002	ELECT 47U M 6.3V	1	C607	403 049 1708	ELECT 1U M 50V	1
C156	403 001 1906	CERAMIC 0.01U M 16V	1	R101	401 027 9005	CARBON 82K JA 1/6W	1
C157	403 121 9509	CERAMIC 0.1U Z 50V	1	R102	401 027 9005	CARBON 82K JA 1/6W	1
C158	403 039 3002	ELECT 47U M 6.3V	1	R103	401 027 5908	CARBON 68K JA 1/6W	1
C159	403 069 1207	CERAMIC 1000P K 50V	1	R104	401 024 8001	CARBON 1M JA 1/6W	1
C160	403 003 3700	CERAMIC 0.022U Z 25V	1	R105	401 024 7400	CARBON 10K JA 1/6W	1
C161	403 001 1906	CERAMIC 0.01U M 16V	1	R106	401 024 7707	CARBON 100K JA 1/6W	1
C162	403 121 9509	CERAMIC 0.1U Z 50V	1	R107	401 025 4903	CARBON 180K JA 1/6W	1
C163	403 073 7004	CERAMIC 470P K 50V	1	R108	401 026 4308	CARBON 3.3K JA 1/6W	1
C164	403 073 7004	CERAMIC 470P K 50V	1	R109	401 025 4903	CARBON 180K JA 1/6W	1
C165	403 073 7004	CERAMIC 470P K 50V	1	R111	401 025 4606	CARBON 18K JA 1/6W	1
C166	403 073 7004	CERAMIC 470P K 50V	1	R112	401 024 7707	CARBON 100K JA 1/6W	1
C167	403 049 5508	ELECT 10U M 50V	1	R113	401 024 8001	CARBON 1M JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
R114	401 026 1604	CARBON 270K JA 1/6W	1	R198	401 016 3809	CARBON 2.2K JA 1/4W	1
R115	401 024 7707	CARBON 100K JA 1/6W	1	R199	401 025 8208	CARBON 22K JA 1/6W	1
R116	401 021 1906	CARBON 560 JA 1/4W	1	R200	401 025 8208	CARBON 22K JA 1/6W	1
R118	401 016 4806	CARBON 22K JA 1/4W	1	R201	401 025 8208	CARBON 22K JA 1/6W	1
R119	401 016 4806	CARBON 22K JA 1/4W	1	R202	401 025 8208	CARBON 22K JA 1/6W	1
R120	401 026 1307	CARBON 27K JA 1/6W	1	R203	401 027 5908	CARBON 68K JA 1/6W	1
R121	401 024 7400	CARBON 10K JA 1/6W	1	R204	401 024 7400	CARBON 10K JA 1/6W	1
R122	401 024 6403	CARBON 10 JA 1/6W	1	R205	401 024 8001	CARBON 1M JA 1/6W	1
R123	401 025 2305	CARBON 150K JA 1/6W	1	R206	401 016 2604	CARBON 220 JA 1/4W	1
R124	401 024 7707	CARBON 100K JA 1/6W	1	R207	401 025 3807	CARBON 180 JA 1/6W	1
R125	401 025 7805	CARBON 2.2K JA 1/6W	1	R208	401 027 2303	CARBON 560 JA 1/6W	1
R126	401 026 0607	CARBON 270 JA 1/6W	1	R209	401 027 2303	CARBON 560 JA 1/6W	1
R128	401 026 7408	CARBON 39K JA 1/6W	1	R210	401 027 2303	CARBON 560 JA 1/6W	1
R129	401 025 1902	CARBON 15K JA 1/6W	1	R211	401 027 2303	CARBON 560 JA 1/6W	1
R130	401 025 1902	CARBON 15K JA 1/6W	1	R212	401 027 2303	CARBON 560 JA 1/6W	1
R131	401 026 1307	CARBON 27K JA 1/6W	1	R213	401 027 2303	CARBON 560 JA 1/6W	1
R132	401 025 8703	CARBON 220K JA 1/6W	1	R215	401 021 1906	CARBON 560 JA 1/4W	1
R133	401 025 8703	CARBON 220K JA 1/6W	1	R216	401 016 2604	CARBON 220 JA 1/4W	1
R134	401 026 1604	CARBON 270K JA 1/6W	1	R217	401 027 2303	CARBON 560 JA 1/6W	1
R135	401 026 1307	CARBON 27K JA 1/6W	1	R218	401 027 2303	CARBON 560 JA 1/6W	1
R136	401 024 6403	CARBON 10 JA 1/6W	1	R219	401 027 2303	CARBON 560 JA 1/6W	1
R137	401 016 4806	CARBON 22K JA 1/4W	1	R220	401 025 7409	CARBON 220 JA 1/6W	1
R138	401 025 8208	CARBON 22K JA 1/6W	1	R221	401 025 7409	CARBON 220 JA 1/6W	1
R139	401 027 9005	CARBON 82K JA 1/6W	1	R222	401 025 7409	CARBON 220 JA 1/6W	1
R140	401 026 1604	CARBON 270K JA 1/6W	1	R223	401 025 7409	CARBON 220 JA 1/6W	1
R141	401 025 0004	CARBON 120K JA 1/6W	1	R224	401 025 7409	CARBON 220 JA 1/6W	1
R142	401 025 0004	CARBON 120K JA 1/6W	1	R225	401 026 0607	CARBON 270 JA 1/6W	1
R143	401 027 0309	CARBON 47K JA 1/6W	1	R226	401 024 9305	CARBON 1.2K JA 1/6W	1
R144	401 027 5908	CARBON 68K JA 1/6W	1	R227	401 024 9305	CARBON 1.2K JA 1/6W	1
R145	401 026 4605	CARBON 33K JA 1/6W	1	R228	401 024 6700	CARBON 100 JA 1/6W	1
R146	401 026 4605	CARBON 33K JA 1/6W	1	R229	401 024 6700	CARBON 100 JA 1/6W	1
R147	401 020 2904	CARBON 47K JA 1/4W	1	R230	401 024 7004	CARBON 1K JA 1/6W	1
R148	401 020 2904	CARBON 47K JA 1/4W	1	R231	401 024 7004	CARBON 1K JA 1/6W	1
R149	401 024 9701	CARBON 12K JA 1/6W	1	R232	401 026 4308	CARBON 3.3K JA 1/6W	1
R150	401 025 4200	CARBON 1.8K JA 1/6W	1	R233	401 026 4308	CARBON 3.3K JA 1/6W	1
R151	401 025 3807	CARBON 180 JA 1/6W	1	R238	401 025 0608	CARBON 1.3K JA 1/6W	1
R152	401 024 9701	CARBON 12K JA 1/6W	1	R239	401 025 0608	CARBON 1.3K JA 1/6W	1
R153	401 024 5604	CARBON 1 JA 1/6W	1	R240	401 025 4200	CARBON 1.8K JA 1/6W	1
R154	401 026 2106	CARBON 3.3 JA 1/6W	1	R241	401 025 4200	CARBON 1.8K JA 1/6W	1
R155	401 012 8105	CARBON 100K JA 1/4W	1	R242	401 027 8305	CARBON 820 JA 1/6W	1
R156	401 012 8105	CARBON 100K JA 1/4W	1	R243	401 027 8305	CARBON 820 JA 1/6W	1
R157	401 020 3901	CARBON 470K JA 1/4W	1	R244	401 024 7004	CARBON 1K JA 1/6W	1
R158	401 020 3901	CARBON 470K JA 1/4W	1	R245	401 024 7004	CARBON 1K JA 1/6W	1
R159	401 027 3003	CARBON 56K JA 1/6W	1	R246	401 024 7707	CARBON 100K JA 1/6W	1
R160	401 027 0309	CARBON 47K JA 1/6W	1	R247	401 024 7707	CARBON 100K JA 1/6W	1
R161	401 024 7400	CARBON 10K JA 1/6W	1	R248	401 025 7805	CARBON 2.2K JA 1/6W	1
R162	401 027 5205	CARBON 680 JA 1/6W	1	R249	401 025 7805	CARBON 2.2K JA 1/6W	1
R163	401 025 5405	CARBON 2.2 JA 1/6W	1	R250	401 027 0309	CARBON 47K JA 1/6W	1
R164	401 025 8208	CARBON 22K JA 1/6W	1	R253	401 027 5205	CARBON 680 JA 1/6W	1
R165	401 025 1902	CARBON 15K JA 1/6W	1	R254	401 025 0004	CARBON 120K JA 1/6W	1
R166	401 012 7009	CARBON 10K JA 1/4W	1	R255	401 026 4605	CARBON 33K JA 1/6W	1
R167	401 027 2600	CARBON 5.6K JA 1/6W	1	R256	401 022 4104	CARBON 68K JA 1/4W	1
R168	401 026 9907	CARBON 4.7K JA 1/6W	1	R257	401 024 7400	CARBON 10K JA 1/6W	1
R169	401 016 2604	CARBON 220 JA 1/4W	1	R258	401 024 7400	CARBON 10K JA 1/6W	1
R170	401 026 9907	CARBON 4.7K JA 1/6W	1	R259	401 027 8602	CARBON 8.2K JA 1/6W	1
R171	401 026 4308	CARBON 3.3K JA 1/6W	1	R260	401 025 8208	CARBON 22K JA 1/6W	1
R172	401 025 7409	CARBON 220 JA 1/6W	1	R261	402 016 4506	FUSIBLE RES 10 J- 1/2W	1
R173	401 025 8208	CARBON 22K JA 1/6W	1	R263	402 016 4506	FUSIBLE RES 10 J- 1/2W	1
R174	401 024 7004	CARBON 1K JA 1/6W	1	R264	402 016 4506	FUSIBLE RES 10 J- 1/2W	1
R175	401 025 7805	CARBON 2.2K JA 1/6W	1	R265	401 026 3905	CARBON 330 JA 1/6W	1
R176	401 027 9005	CARBON 82K JA 1/6W	1	R266	401 024 7400	CARBON 10K JA 1/6W	1
R177	401 025 8208	CARBON 22K JA 1/6W	1	R267	402 039 2800	FUSIBLE RES 10 JA 1/4W	1
R178	401 025 8208	CARBON 22K JA 1/6W	1	R268	402 039 2800	FUSIBLE RES 10 JA 1/4W	1
R179	401 024 7707	CARBON 100K JA 1/6W	1	R501	401 055 1408	OXIDE-MT 15 JA 1/2W	1
R180	401 024 7707	CARBON 100K JA 1/6W	1	R502	401 027 0507	CARBON 470K JA 1/6W	1
R181	401 024 7400	CARBON 10K JA 1/6W	1	R503	401 024 7004	CARBON 1K JA 1/6W	1
R182	401 020 2904	CARBON 47K JA 1/4W	1	R504	401 024 7400	CARBON 10K JA 1/6W	1
R183	401 012 7009	CARBON 10K JA 1/4W	1	R505	401 026 9907	CARBON 4.7K JA 1/6W	1
R184	401 024 7004	CARBON 1K JA 1/6W	1	R601	401 025 0004	CARBON 120K JA 1/6W	1
R185	401 025 5405	CARBON 2.2 JA 1/6W	1	R602	401 027 9005	CARBON 82K JA 1/6W	1
R186	401 025 5405	CARBON 2.2 JA 1/6W	1	R603	401 026 9907	CARBON 4.7K JA 1/6W	1
R187	401 027 1801	CARBON 51K JA 1/6W	1	R604	401 027 0309	CARBON 47K JA 1/6W	1
R188	401 027 1801	CARBON 51K JA 1/6W	1	R605	401 024 7400	CARBON 10K JA 1/6W	1
R189	401 025 4903	CARBON 180K JA 1/6W	1	R606	401 024 7400	CARBON 10K JA 1/6W	1
R190	401 025 4903	CARBON 180K JA 1/6W	1	R607	401 024 7004	CARBON 1K JA 1/6W	1
R191	401 026 1000	CARBON 2.7K JA 1/6W	1	R608	401 024 7004	CARBON 1K JA 1/6W	1
R192	401 027 0309	CARBON 47K JA 1/6W	1	R609	401 026 0607	CARBON 270 JA 1/6W	1
R193	401 025 1605	CARBON 1.5K JA 1/6W	1	R610	401 027 5205	CARBON 680 JA 1/6W	1
R197	401 024 8001	CARBON 1M JA 1/6W	1	R611	401 024 7400	CARBON 10K JA 1/6W	1

P.C. BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R613	401 027 8602	CARBON 8.2K JA 1/6W	1
R614	401 021 1906	CARBON 560 JA 1/4W	1
ASSY,PCB,TRANS			
32	620 210 2016	Assy,PCB,Trans	1
	620 022 2587	EC Terminal 1P	2
	△ 423 003 9809	FUSE 250V T0.63A	2
	620 200 0831	Assy,Connector-P,1P	2
	620 207 9158	Fuse Holder,Taping	4
CN5W	620 210 2382	Assy,Connector-S,6P	1
ASSY,PCB,SWITCH,POWER			
33	620 210 2023	Assy,PCB,Switch,Power	1
C1	△ 620 006 6679	Capacitor 0.01MF400V	1
S1	△ 620 211 8574	Switch,Push,Power	1
or	△ 620 015 2358	Power Switch	1
ASSY,PCB,LAMP			
34	620 210 2030	Assy,PCB,Lamp	1
	620 030 7888	Lamp (8V 105mA)	2
CN14W	620 212 0157	Assy,Connector-P,2P	1
ASSY,PCB,REMOCON 1			
35	620 210 2047	Assy,PCB,Remocon 1	1
	620 200 0909	Converter,Remote,DET	1
CN13W	620 210 2993	Assy,Connector-S,3P	1
C701	403 071 6207	CERAMIC 220P K 50V	1
ASSY,PCB,HEADPHONE			
36	620 210 2054	Assy,PCB,Headphone	1
CN15W	620 021 8597	Plug 4P	1
CN16W	620 021 5923	Plug 3P	1
JK301	620 020 1087	Jack 3P	1
VR301	620 200 1418	VR,Rotary,2X20KA,9mm	1
W301	620 211 1940	Assy,Connector-P,Lug,1P	1
IC301	409 039 7309	IC NJM4556S	1
Q301	405 021 0600	TR 2SD1012-G-SPA-AC	1
or	405 021 0907	TR 2SD1012-H-SPA-AC	1
Q302	405 021 0600	TR 2SD1012-G-SPA-AC	1
or	405 021 0907	TR 2SD1012-H-SPA-AC	1
C301	403 086 5509	NP-ELECT 2.2U M 50V	1
C302	403 086 5509	NP-ELECT 2.2U M 50V	1
C303	403 062 0801	POLYESTER 0.047U K 50V	1
C304	403 062 0801	POLYESTER 0.047U K 50V	1
C305	403 039 3002	ELECT 47U M 6.3V	1
C306	403 039 3002	ELECT 47U M 6.3V	1
C307	403 121 9509	CERAMIC 0.1U Z 50V	1
R301	401 025 7805	CARBON 2.2K JA 1/6W	1
R302	401 025 7805	CARBON 2.2K JA 1/6W	1
R303	401 024 7004	CARBON 1K JA 1/6W	1
R304	401 024 7004	CARBON 1K JA 1/6W	1
R305	401 027 0309	CARBON 47K JA 1/6W	1
R306	401 027 0309	CARBON 47K JA 1/6W	1
R307	401 024 9701	CARBON 12K JA 1/6W	1
R308	401 024 9701	CARBON 12K JA 1/6W	1
R309	401 024 6700	CARBON 100 JA 1/6W	1
R310	401 024 6700	CARBON 100 JA 1/6W	1
R311	401 027 5502	CARBON 6.8K JA 1/6W	1
R312	401 027 5502	CARBON 6.8K JA 1/6W	1
ASSY,PCB,DISPLAY			
37	620 211 2008	Assy,PCB,Display	1
	620 200 7540	Cushion,Rubber	2
	620 198 6259	Fluorescent TUBE12BT-26GK	1
CN6	620 210 5772	Socket,BTMK,15S	1
CN7	620 210 5772	Socket,BTMK,15S	1
CN11	620 210 5789	Socket,BTMK,8S	1
CN12W	620 211 0837	Assy,Connector-S,8P	1
S401	620 202 6725	Switch,Tact,Taping (OPEN/CLOSE)	1
S402	620 202 6725	Switch,Tact,Taping (STOP)	1
S403	620 202 6725	Switch,Tact,Taping (FB)	1
S404	620 202 6725	Switch,Tact,Taping (FF)	1
S405	620 202 6725	Switch,Tact,Taping (B. INDEX)	1
S406	620 202 6725	Switch,Tact,Taping (F. INDEX)	1
S407	620 202 6725	Switch,Tact,Taping (MEMORY)	1
S408	620 202 6725	Switch,Tact,Taping (REPEAT)	1
S409	620 202 6725	Switch,Tact,Taping (DISPLAY)	1
S411	620 202 6725	Switch,Tact,Taping (EDIT)	1
S412	620 202 6725	Switch,Tact,Taping (SIDE A/B)	1

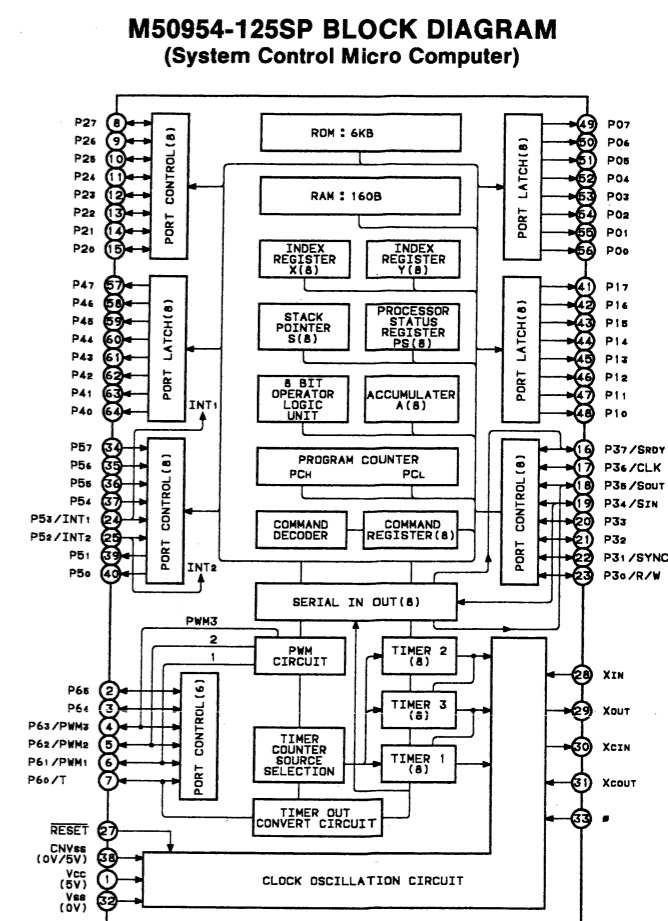
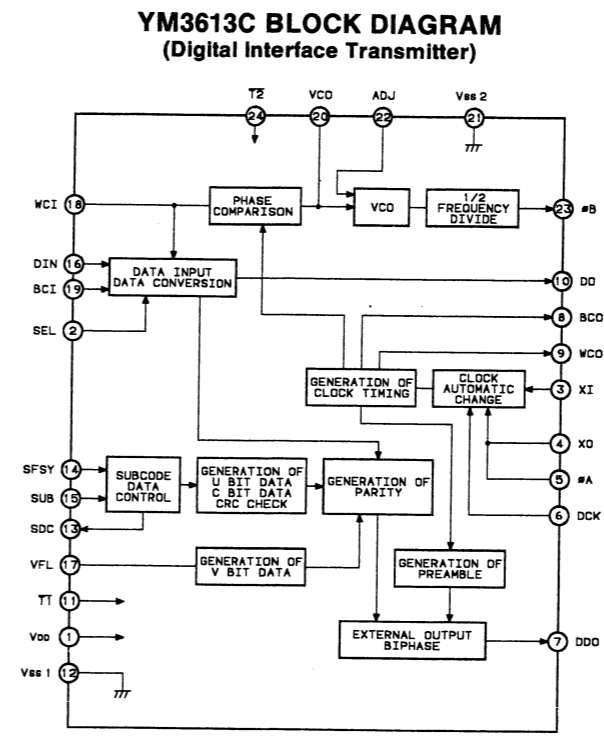
Ref. No.	Part No.	Description	Q'ty
S413	620 202 6725	Switch,Tact,Taping (RANDOM PLAY)	1
S414	620 202 6725	Switch,Tact,Taping (INTRO SCAN)	1
S611	620 202 6725	Switch,Tact,Taping (PLAY)	1
S612	620 202 6725	Switch,Tact,Taping (PAUSE)	1
D401	407 133 2206	DIODE WG4148	1
or	407 008 0405	DIODE GMB01-BT	1
D402	407 133 2206	DIODE WG4148	1
or	407 008 0405	DIODE GMB01-BT	1
D403	407 133 2206	DIODE WG4148	1
or	407 008 0405	DIODE GMB01-BT	1
D404	407 133 2206	DIODE WG4148	1
or	407 008 0405	DIODE GMB01-BT	1
ASSY,PCB,TEN KEY			
38	620 210 2078	Assy,PCB,Ten Key	1
	620 202 6725	Switch,Tact,Taping	10
CN12	620 021 8405	Plug 8P	1

- NOTES:**
- Parts order must contain Model Number, Part Number and Description.
 - Ordering quantity of screws and resistors must be multiple of 10 pcs.

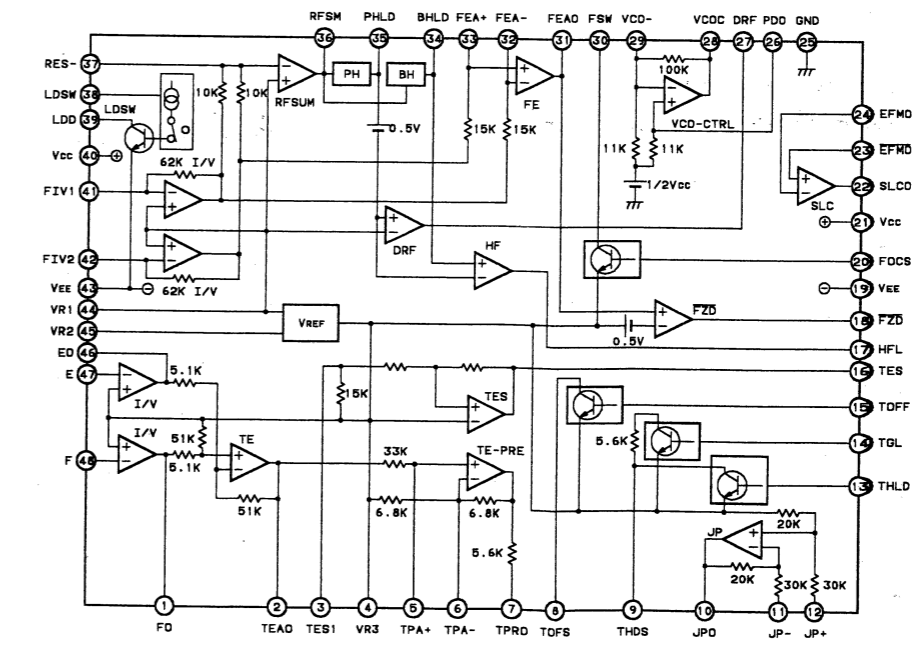
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

IC BLOCK DIAGRAM

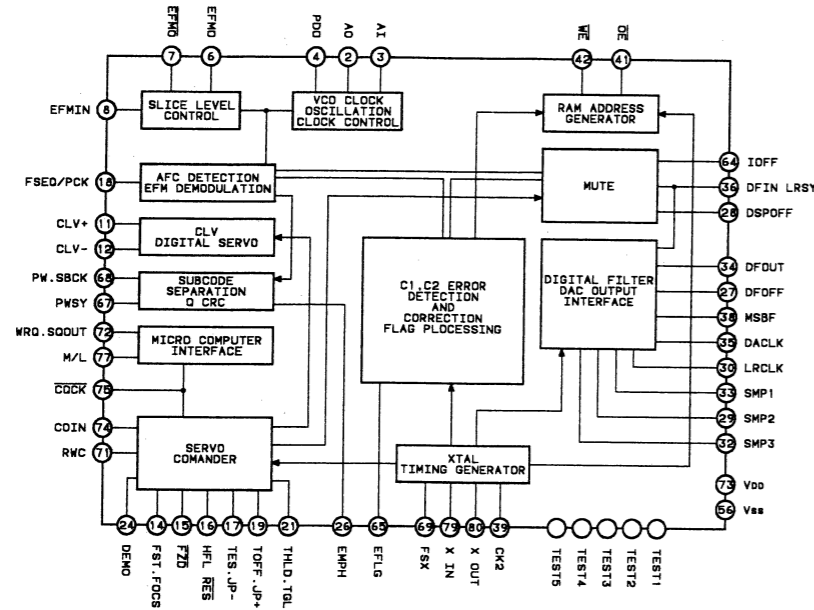


LA9200NM BLOCK DIAGRAM (Servo Signal Processor)

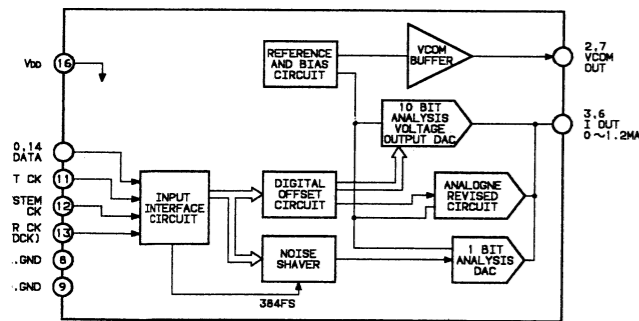


IC BLOCK DIAGRAM (Continued)

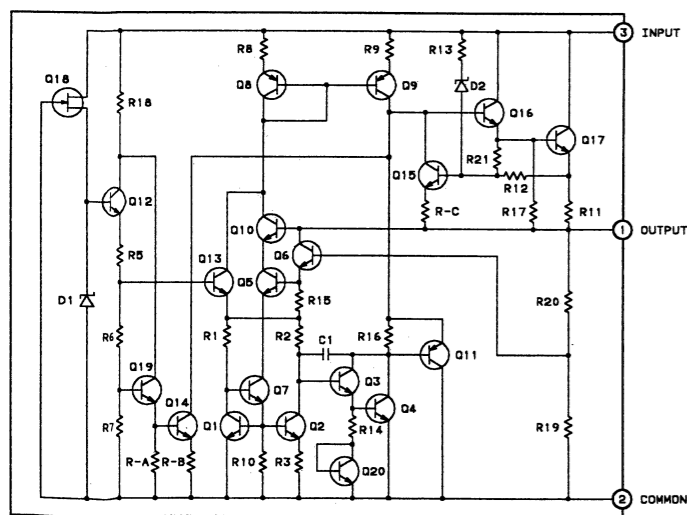
LC7860K BLOCK DIAGRAM
(Digital Signal Processor)



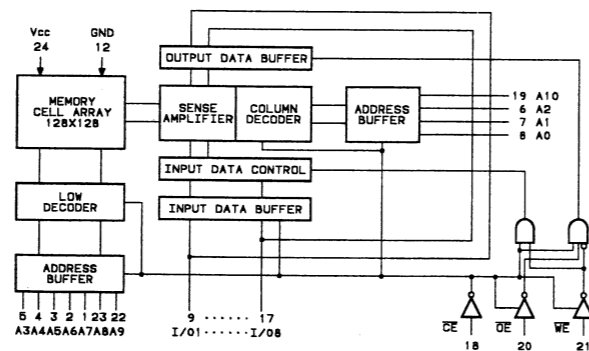
PCM67P BLOCK DIAGRAM
(D/A Converter)



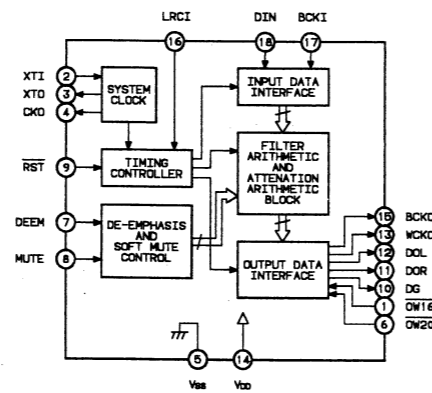
NJM78M05FA BLOCK DIAGRAM
(Constant Voltage Power Supply)



LC3517BS-15 BLOCK DIAGRAM
(Static RAM)

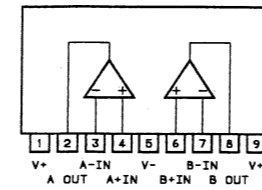


SM5840CP BLOCK DIAGRAM
(Digital Filter)

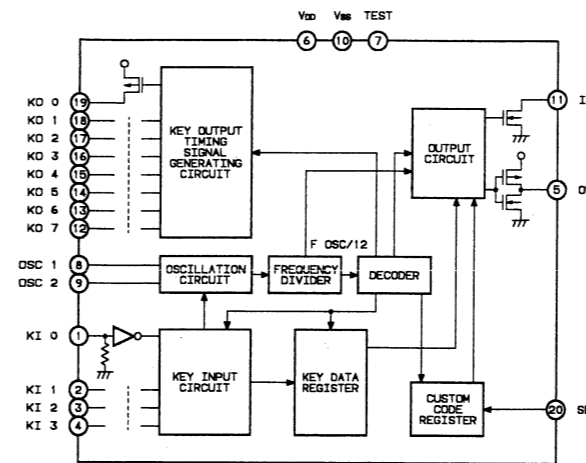


IC BLOCK DIAGRAM (Continued)

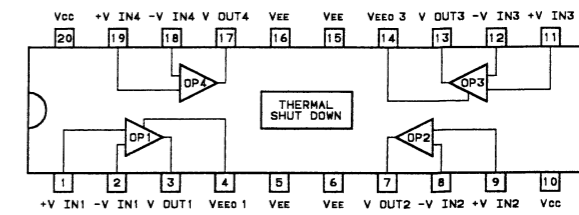
NJM4556S BLOCK DIAGRAM
UPC4570HA BLOCK DIAGRAM
(Dual Operational Amp.)



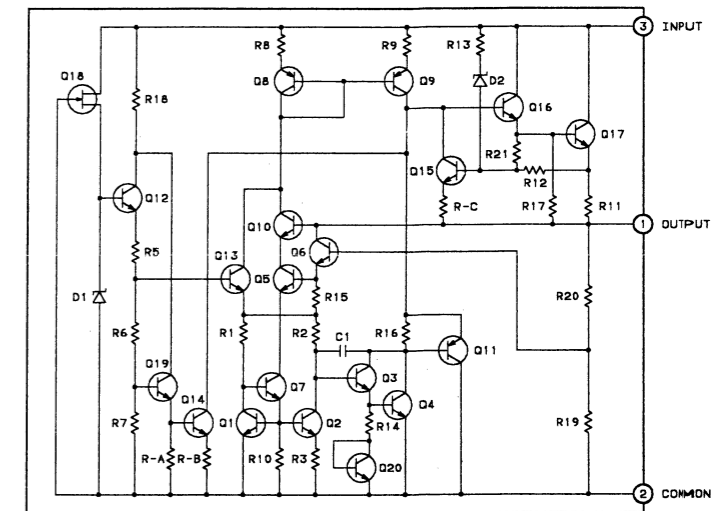
LC7462M-8172 BLOCK DIAGRAM
(Key Control Circuit)



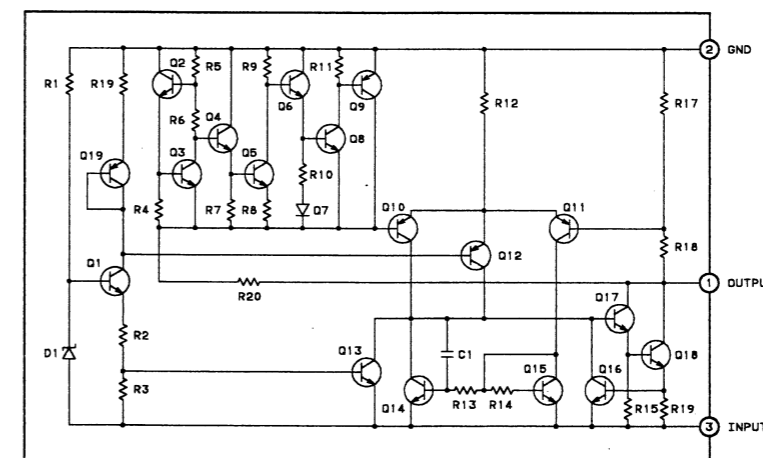
FA5205P BLOCK DIAGRAM
(FC/TC Driver & Motor Driver)



NJM78M06FA BLOCK DIAGRAM
(Constant Voltage Power Supply)



TA79L006P BLOCK DIAGRAM
(Constant Voltage Power Supply)



REFERENCE VOLTAGE (CD Main P.C.Board Section)

MAIN P.C.BOARD

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC101	LA9200NM	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	1.2V	3.8V	0V	3.7V	0V	0V	1.7V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		4.4V	2.3V	2.1V	2.1V	0V	2.2V	0V	2.3V	2.3V	0V	0.5V	0.5V	0.5V	0V	0.4V	0.4V	0.4V	3.2V	0.4V	4.9V
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
		0V	0.4V	-0.3V	0V	0V	0V	0V	0V	-	-	-	-	-	-	-	-	-	-	-	

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC102	LC7860K	0V	2.2V	2.2V	3.3V	0V	2.1V	1.4V	2.3V	0V	4.4V	0V	0V	0V	2.2V	3.7V	3.7V	0V	0V	0V	0V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		0V	0V	0V	0V	0V	0V	4.4V	0V	0.8V	2.2V	4.4V	1.8V	0.8V	0V	1.9V	0V	2.1V	4.4V	0V	2.1V
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
		3.0V	3.9V	2.1V	2.0V	2.0V	2.0V	0V	1.3V	0V	0V	1.3V	1.3V	0V	0V	0V	3.0V	3.0V	2.9V	1.5V	
		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		3.0V	0V	0V	0V	2.0V	0.3V	0V	1.0V	0V	0V	0V	4.5V	4.7V	0V	4.5V	0V	0V	0V	2.0V	1.9V

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC103	LC3517BS	2.3V	2.3V	2.3V	2.3V	1.5V	1.5V	1.5V	1.5V	1.5V	1.5V	1.5V	0V	3.5V	3.4V	3.5V	1.5V	3.5V	0V	2.4V	3.4V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		4.4V	2.3V	2.4V	5.0V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC104	UPC4570HA	6.1V	0V	0V	0V	-5.9V	0V	0V	0V	6.1V	-	-	-	-	-	-	-	-	-	-	-
IC105	FA5205P0	0V	0V	-13.0V	-12.9V	-13.0V	0V	0V	0V	12.3V	0V	0V	0V	0V	-13.0V	-13.0V	-13.0V	0V	0V	0V	12.3V

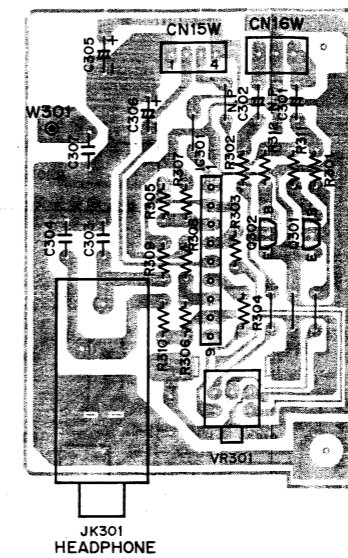
IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC106	M50954	5.0V	0V	0V	0V	0V	5.0V	0V	4.4V	5.0V	4.8V	5.0V	5.0V	4.4V	4.3V	5.0V	0V	5.0V	0V	0V	0V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		0V	0V	5.0V	5.0V	0V	0V	5.0V	2.1V	0.9V	0V	4.8V	0V	0V	0V	0V	0V	0V	-23.7V	-23.6V	-23.6V
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
		-21.4V	-21.5V	-21.4V	-21.5V	-21.4V	-21.4V	-21.4V	-21.5V	-21.5V	-21.5V	-21.5V	-21.5V	-23.5V	-23.6V	-15.5V	-23.6V	-7.5V	-7.6V	-7.5V	
		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
		-0.6V	-2.8V	-5.1V	-5.2V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IC PIN NUMBERS DC VOLTAGES																					
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC107	YM3613C	5.0V	0V	2.3V	2.3V	0.8V	4.9V	2.2V	2.0V	2.5V	0V	4.9V	0V	4.5V	0.2V	1.6V	0V	0V	2.4V	2.4V	1.6V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		0V	0V	0V	4.9V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

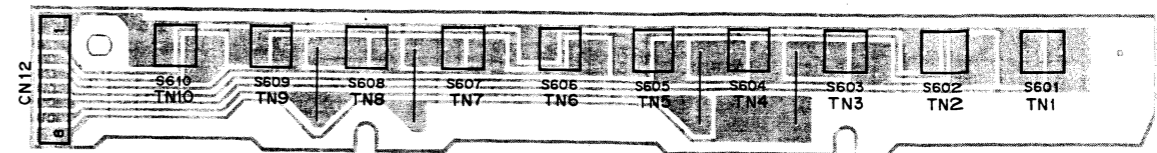
IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC108	SM5840CP	5.0V	1.5V	3.4V	1.2V	0V	4.9V	5.0V	3.9V	4.9V	3.0V	0V	0V	3.6V	5.0V	0.8V	2.5V	2.2V	0V
IC109	PCM67P	5.0V	3.5V	3.5V	2.9V	4.2V	3.5V	3.5V	0V	0V	0V	1.3V	1.4V	3.6V	0V	5.0V	5.0V	-	-
IC110	UPC4570HA	6.1V	1.3V	3.5V	3.5V	-5.9V	0V	0V	0V	6.1V	-	-	-	-	-	-	-	-	-
IC111	UPC4570HA	6.1V	0V	0V	0V	-5.9V	3.5V	3.5V	1.2V	6.1V	-	-	-	-	-	-	-	-	-
IC112	NJM78M05FA	5.0V	0V	10.0V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IC113	NJM78M06FA	6.1V	0V	12.5V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IC114	TA79L006P	-5.9V	0V	-13.0V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IC501	NJM2904M	0.7V	0.1V	0V	0V	0V	0V	0V	1.5V	-	-	-	-	-	-	-	-	-	-

TRANSISTOR DC VOLTAGES														
Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E
Q101	2SC536	0.6V	0V	0V	Q107	2SD1012	-3.3V	0V	0V	Q111	2SC536	0.6V	0V	0V
Q102	2SD1012	0.5V	0V	0V	Q108	2SD1012	-3.3V	0V	0V	Q112	2SC3400	-1.5V	0V	0V
Q103	2SA608	4.8V	1.5V	5.4V	Q109	2SA608	5.9V	-3.3V	0V	Q501	2SA608	0.7V	1.4V	1.4V
Q105	2SC536	0V	4.9V	0V	Q110	2SC536	0V	5.9V	0V					

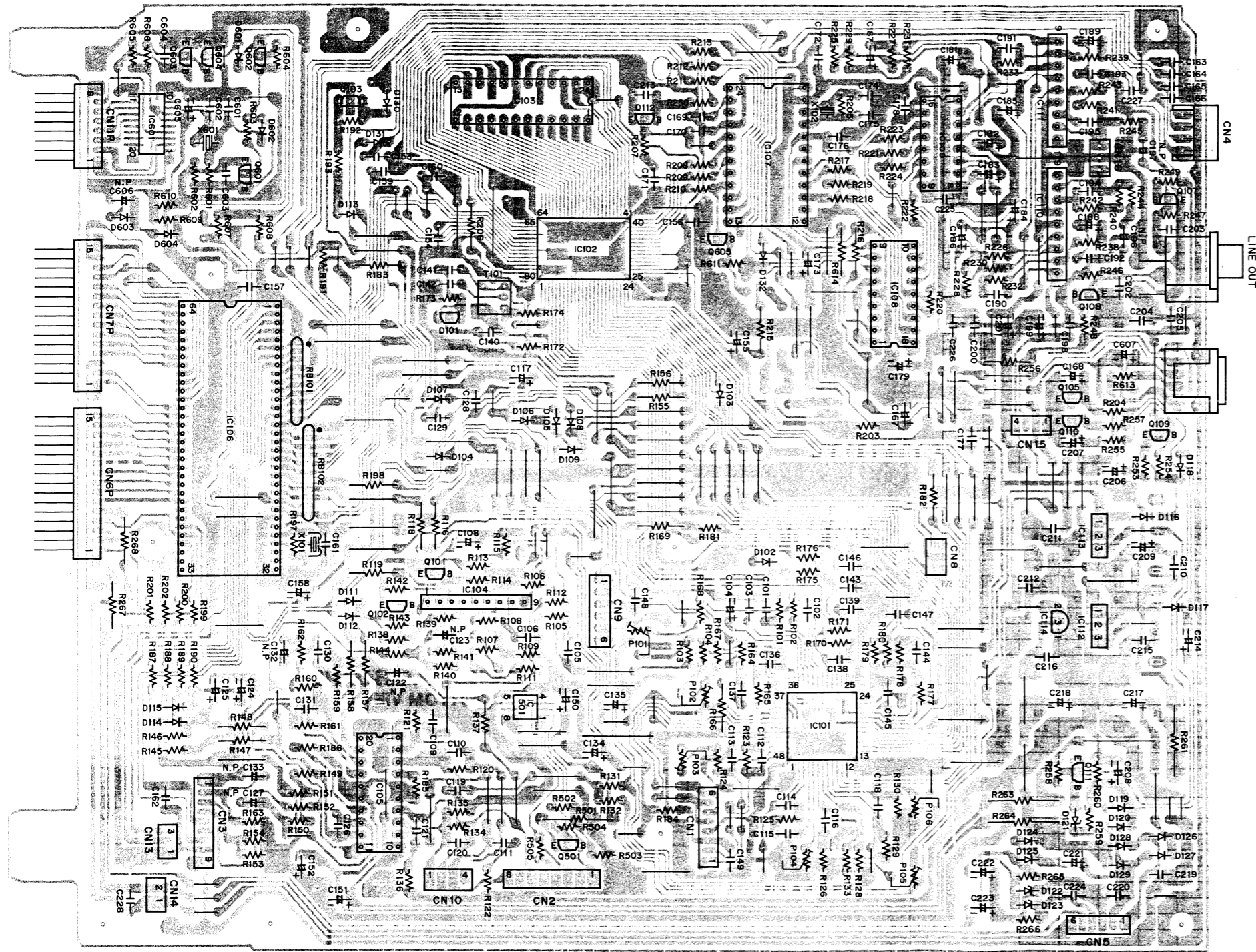
HEADPHONE P.C.BOARD (BOTTOM VIEW)



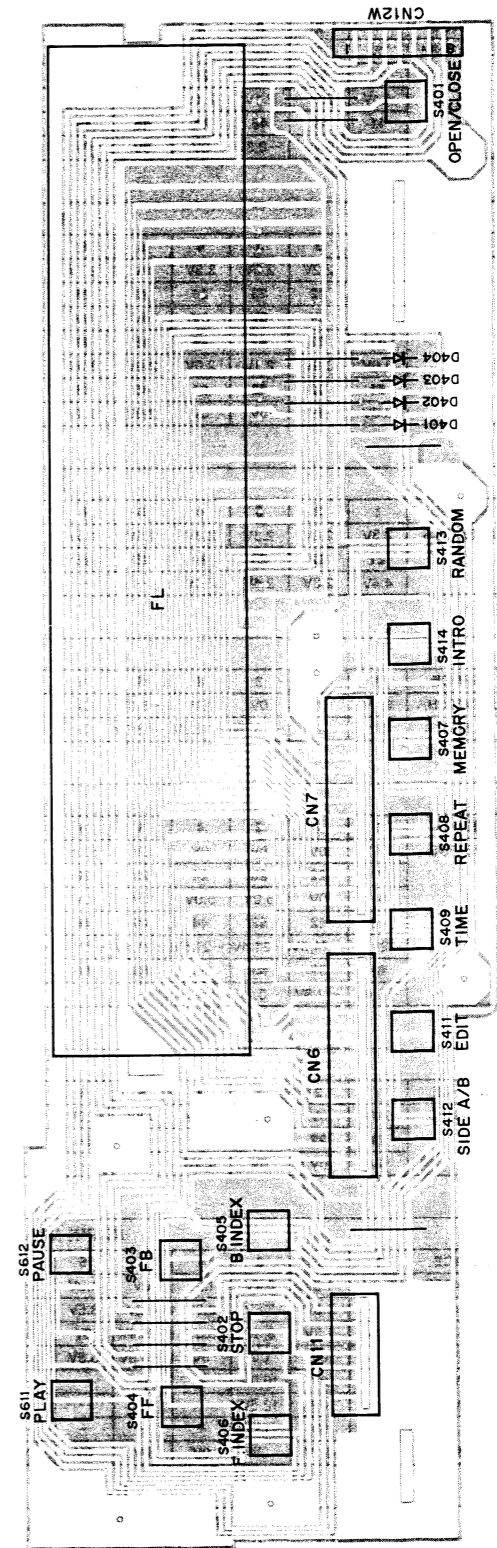
TEN KEY P.C.BOARD (BOTTOM VIEW)



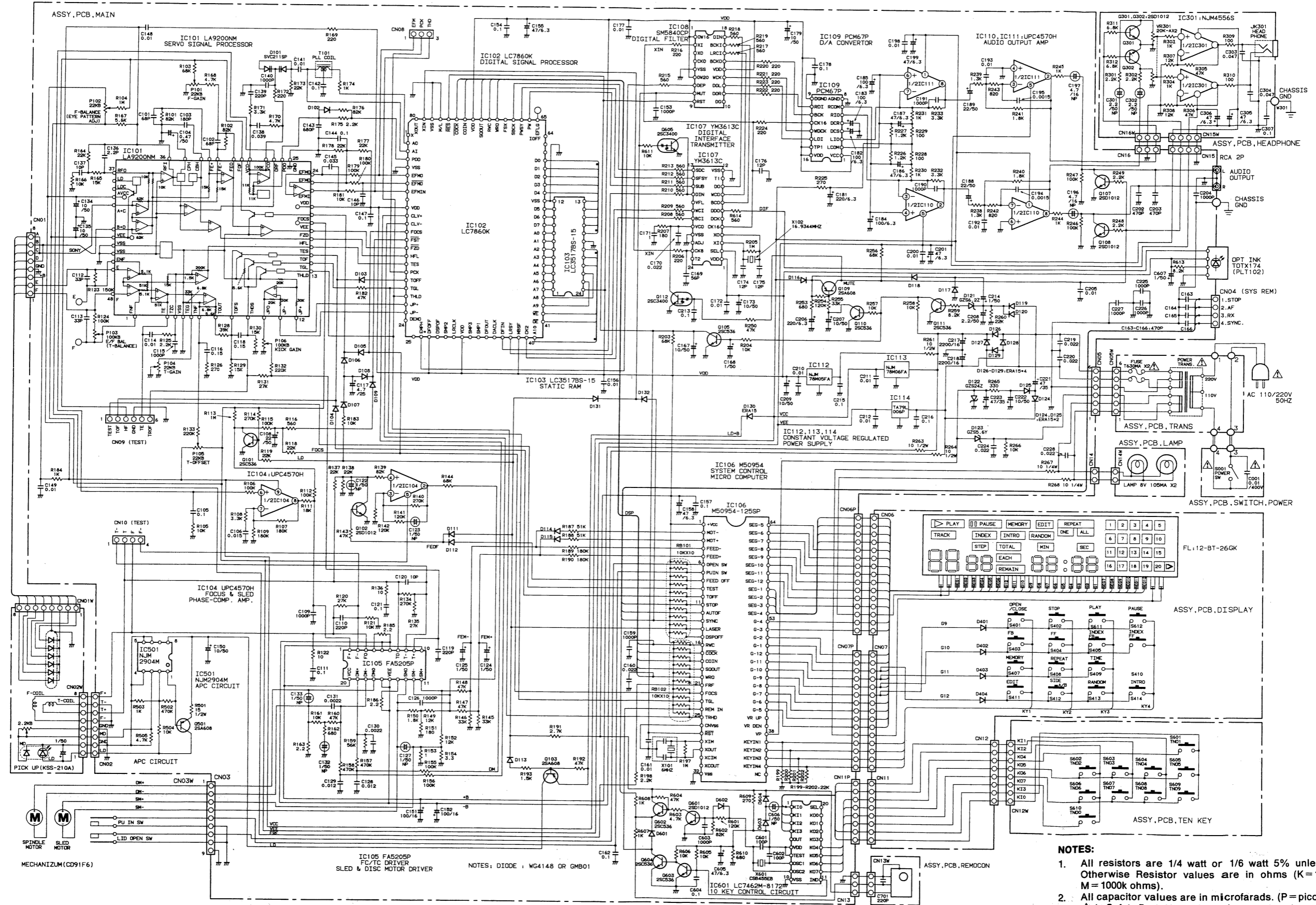
**MAIN P.C. BOARD
(BOTTOM VIEW)**



**DISPLAY P.C. BOARD
(BOTTOM VIEW)**

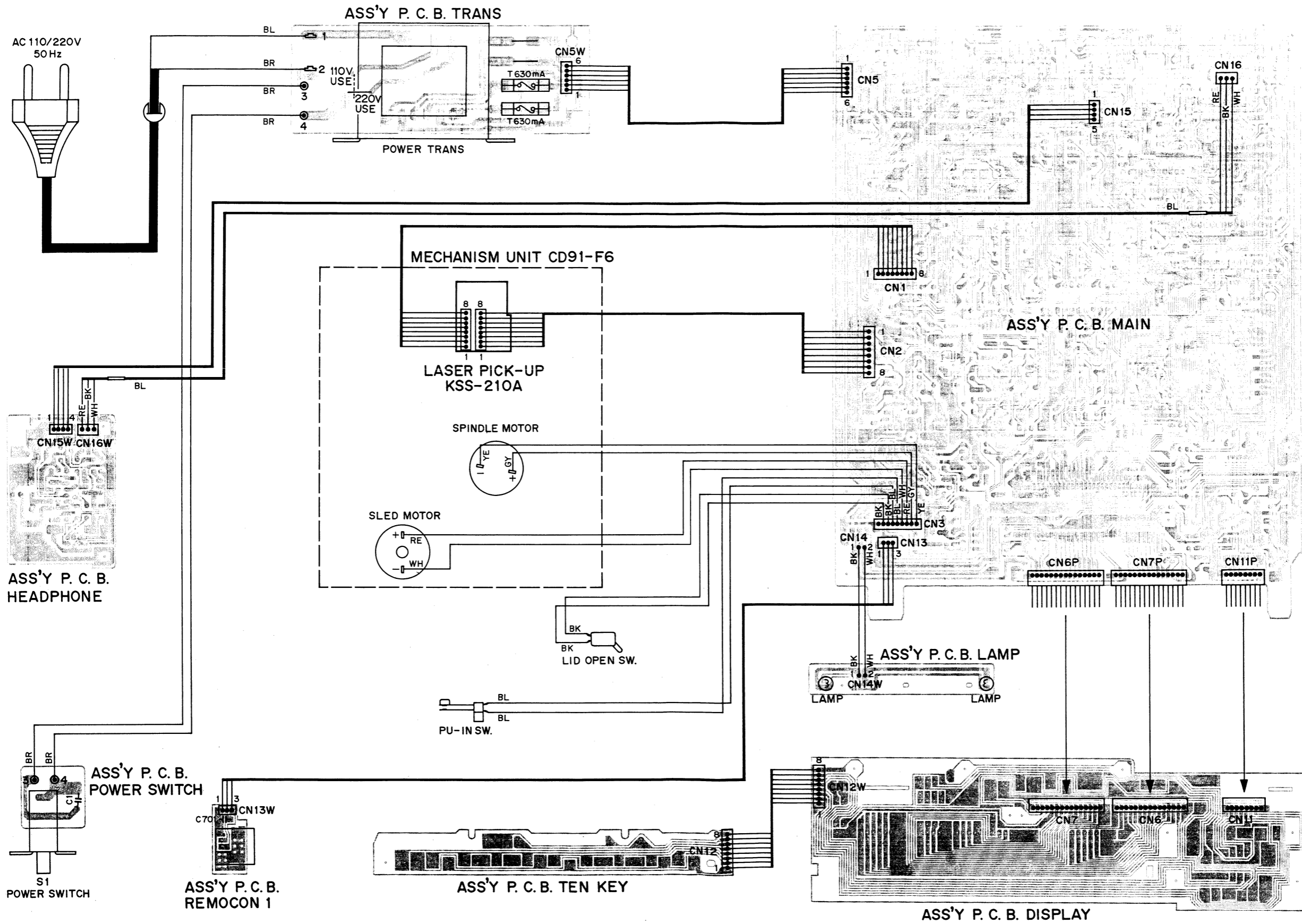


SCHEMATIC DIAGRAM


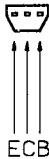


- NOTES:**
1. All resistors are 1/4 watt or 1/6 watt 5% unless marked. Otherwise Resistor values are in ohms (K = 1000 ohms, M = 1000k ohms).
 2. All capacitor values are in microfarads. (P = picofarads).
 3. Δ is Safety Part. Use only replacement parts recommended by the manufacturer.
 4. This is a basic schematic diagram.

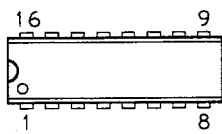
POINT TO POINT WIRING DIAGRAM



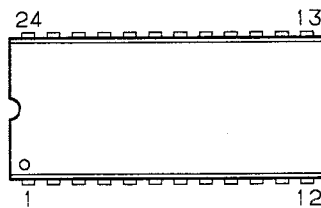
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SC3400 2SC536 2SD1012	 ECB	 ECB
TERMINAL NAME		
B → BASE C → COLLECTOR E → EMITTER		

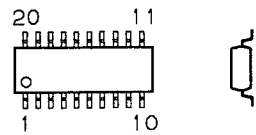
PCM67P TOP VIEW



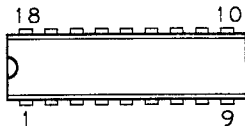
YM3613C TOP VIEW



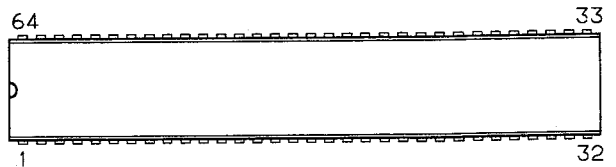
LC7462M-8172 TOP/SIDE VIEWS



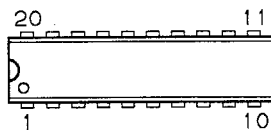
SM5840CP TOP VIEW



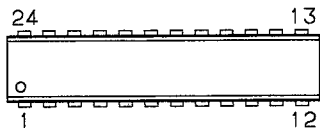
M50954-125SP TOP VIEW



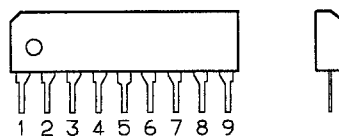
FA5205P TOP VIEW



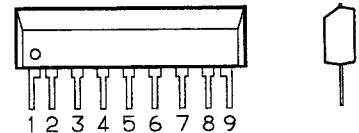
LC3517BS-15 TOP VIEW



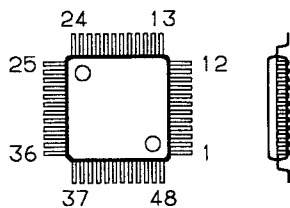
NJM4556S FRONT/SIDE VIEWS



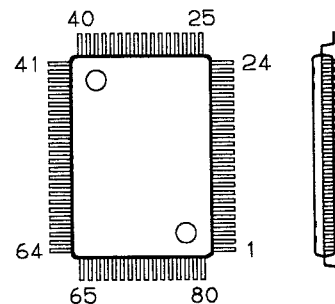
UPC4570HA FRONT/SIDE VIEWS



LA9200NM TOP/SIDE VIEWS

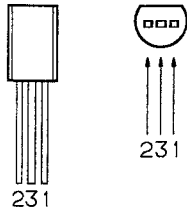


LC7860K TOP/SIDE VIEWS

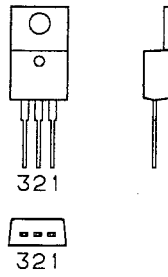


IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

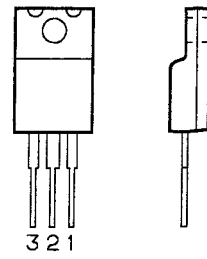
TA79L006P TOP/SIDE VIEWS



NJM78M05FA TOP/SIDE VIEWS



NJM78M06FA TOP/SIDE VIEWS



Bezeichnung/Description
 SERVICE MANUAL
 Teile-Nr./Parts No. WM570576
 Menge/Quantity 1
 Lagerort LS-Nr. 38E06
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 SANYO FISHER Vertriebs GmbH