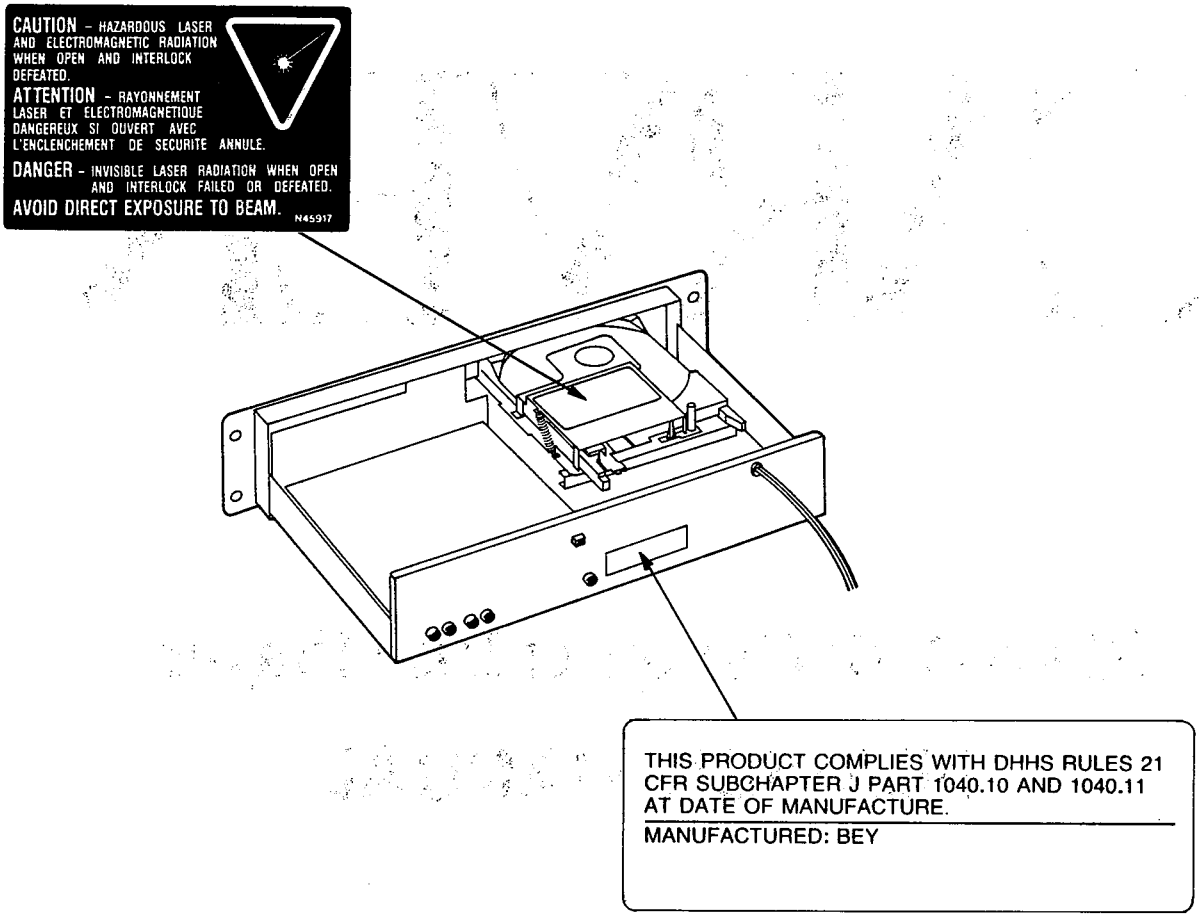
CARVER

SD/A-490t Compact Disc Player

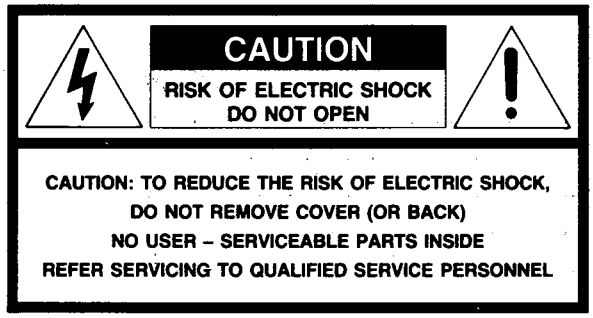
SERVICE MANUAL

CONTENTS

SAFETY INFORMATION



CAUTION



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

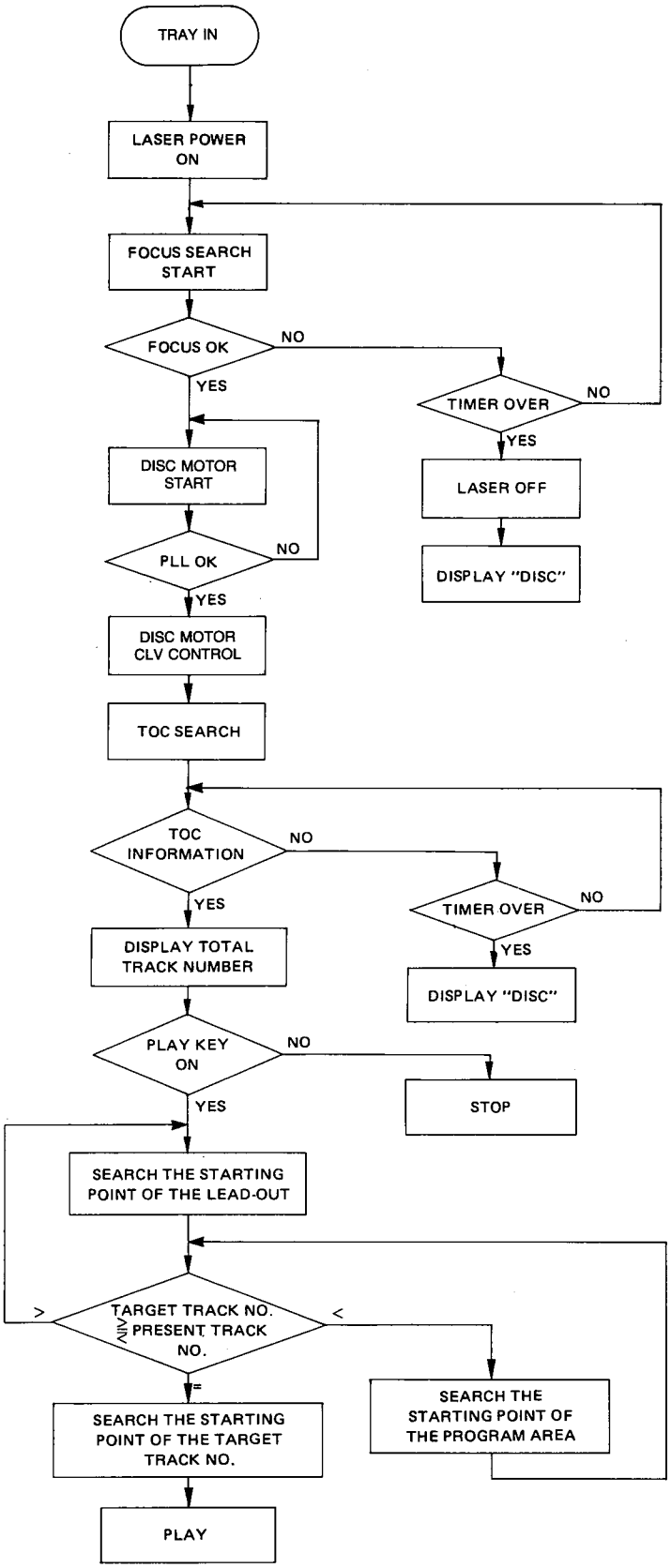
SPECIFICATIONS

		Nominal	Limit	Unit
Decoding	:	1-bit linear,two channels		
Frequency response (8Hz-20kHz)	:	+0.2	+1.0	dB
		−1.0	−1.5	dB
De-emphasis error	:	+0.5	+1.0	dB
		−1.0	−2.0	dB
Output Level at 0dB	:	2.5volts±0.5V	±1.5	dB
Harmonic Distortion	:	0.25	0.8	%
(W/20kHz L.P.F at 1kHz,0dB)				
Signal-to Noise Ratio (w/I.E.C.-AL.P.F.)	:	104	90	dB
Channel Separation (EQ:OFF)	:	88	82	dB
(W/20kHz L.P.F at 1kHz) (EQ:ON)	:	17±1.5	17±2	dB
Channel Balance at 1kHz, 0dB	:	±0.5	±1	dB
Wow and Flutter	:	Unmeasurable (quartz crystal accuracy)		
Supply Voltage	:	120V AC(US),220V AC(EX)		
Power Consumption	:	30W		
Dimensions (W×H×D)	:	483×96×311		mm
	:	(19×3.8×12.25)		(in)
Net weight	:	4.5Kg(9.941bs.)		

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: If replacement of tubes should ever become necessary, please replace with Carver parts only in order to guarantee published specifications for Harmonic Distortion.

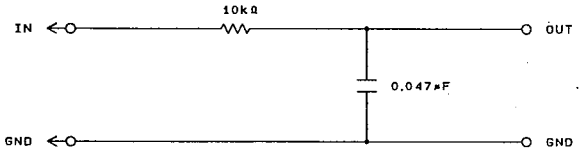
ACTION FLOW CHART



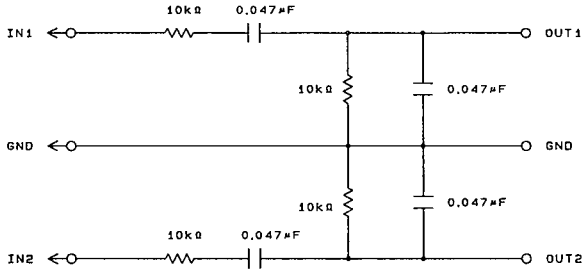
ALIGNMENT METHOD

Equipment Needed:

Oscilloscope, 2 channel, 35 MHz minimum
AF Oscillator
Laser power meter (e.g. Leader LPM-8000)
AC voltmeter, 2 channel
Frequency counter
Test disc, high quality (e.g. Sony YEDS-18, CBS CD-1, etc.)
Jigs (as shown):
  Low-pass filter (LPF)
  Band-pass filter (BPF)



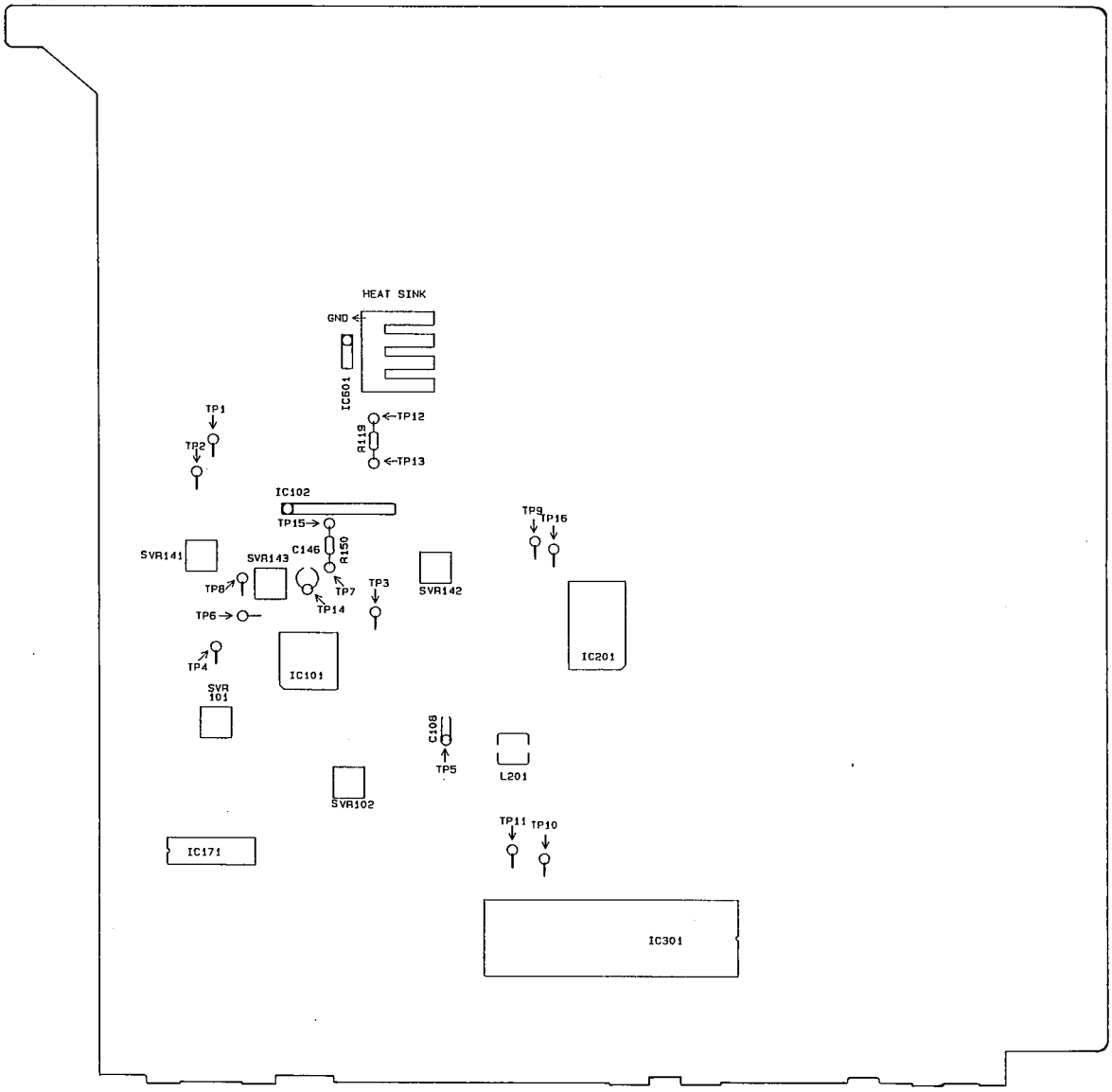
LPF



BPF

P.C.B Test Point

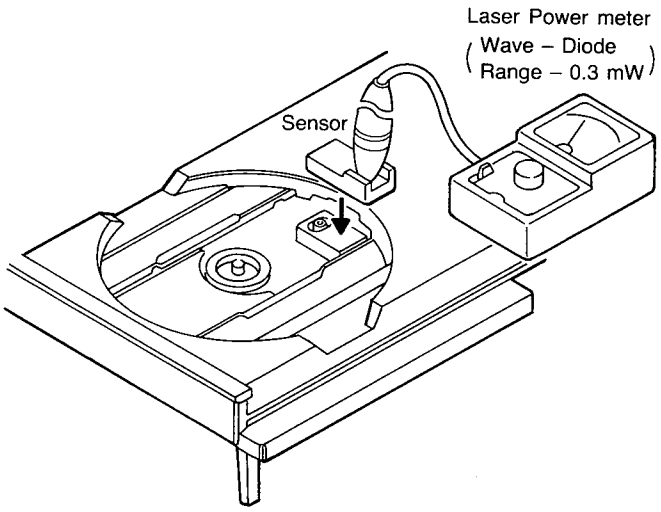
Fig.1



Alignment Method:

1. Laser Output Check (disc out)

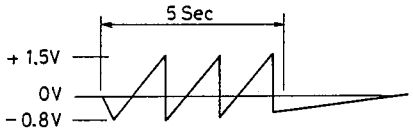
1. Apply power meter sensor to pickup.
2. Switch Power ON, and check meter during 5 seconds focus search for laser output = 0.08 - 0.3 mW (0.12 mW typical).



2. Focus Search Signal Check (disc out)

Scope setting:
V: 1.0 V/div, DC in
H: 0.5-1.0 sec/div

1. Connect scope to TP1 (FC).
2. Switch power ON, and check focus search wave; also check for smooth movement of lens.



3. Focus Offset Adjustment (disc out)

(Note: DVM may be used)
Scope setting (use LPF):
V: 10 mV/div, DC in

1. Connect scope to TP1 (FC).
2. Leave power ON minimum 30 sec.
3. Adjust SVR101 for 0 ±10 mV DC.

4. Tracking Offset Adjustment (disc out)

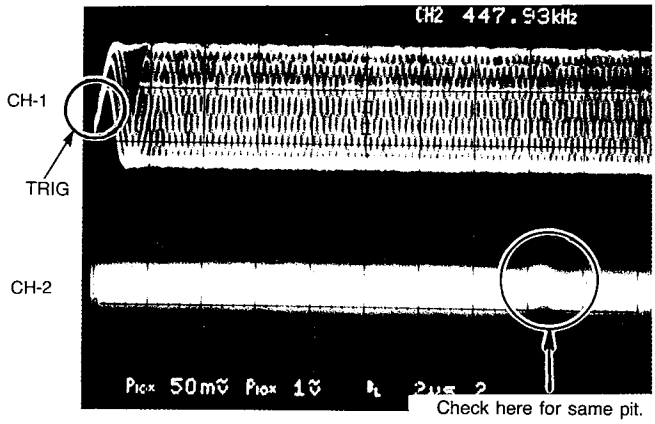
(Note: DVM may be used)
Scope setting (use LPF):
V: 10 mV/div, DC in

1. Connect scope to TP2 (TC).
2. Connect TP3 (TOFF) to GND.
3. Adjust SVR142 for 0 ±10 mV DC.

5. E-signal Same Pit Check (disc in)

(This checks that 3 beams are all on same track)
Scope setting:
CH1: 0.5 V/div, AC in
CH2: 0.05 V/div, AC in
H: 2 μSec/div
TRIG: CH1, bottom part of wave

1. Connect scope: CH1 to TP5(C108)(RF); CH2 to TP4(E).
2. Press PLAY (music part of disc), and check wave.



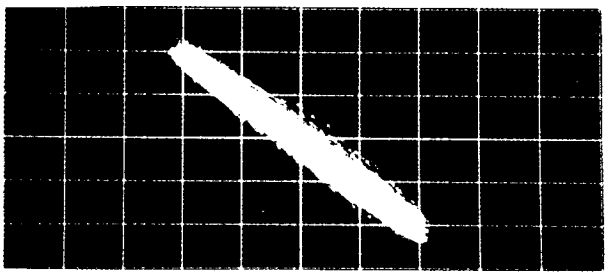
Check here for same pit.

6. Diffraction Grating Check (disc in)

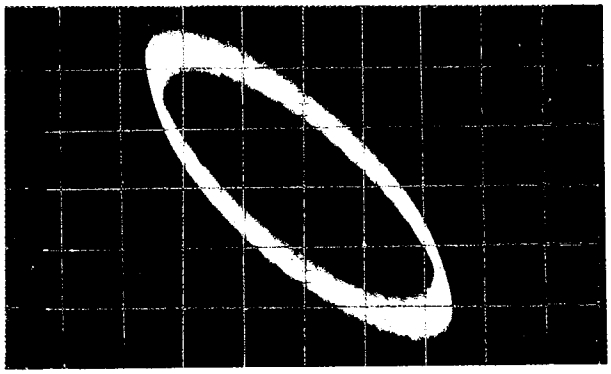
Scope setting (use BPF):
X/Y: 20 mV/div, DC in

1. Connect scope: X (hor) to TP4 (E), Y (vert) to TP6 (F).
2. Press PLAY, then SKIP to move laser to middle of disc.
3. Connect TP7 (TOFS) to GND (tracking off), and check Lissajous wave. (max error 45 degrees)

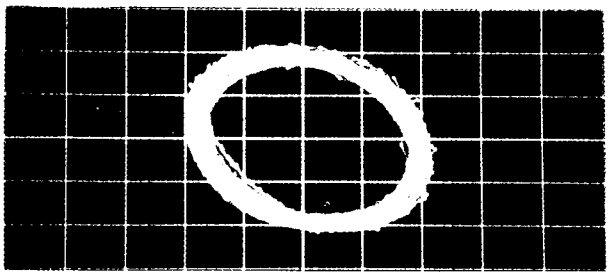
GOOD



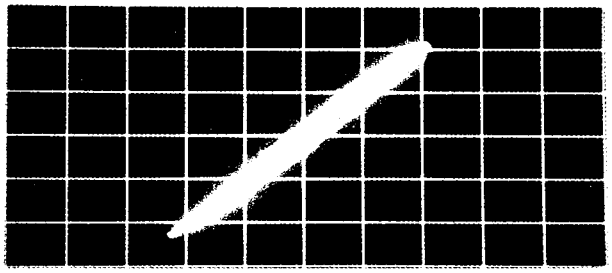
LIMIT MAX (45°)



INCORRECT (90°)



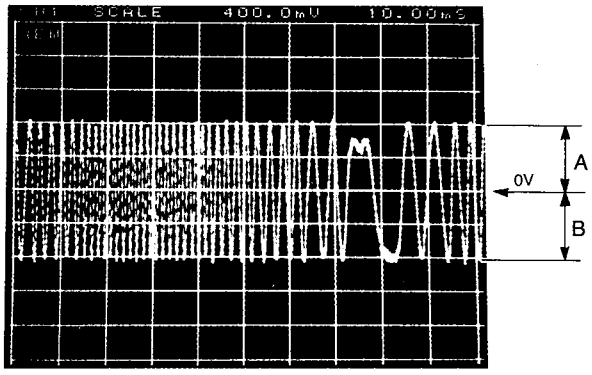
INCORRECT (180°)



7. E/F Balance Adjustment (disc in)

Scope setting:
V: 0.5 V/div, DC in
H: 5 mSec/div (or sweep stop)

1. Connect scope to TP8 (TE).
2. Connect TP9 (DEMO) to TP10 (+5 V), then press PLAY.
3. Connect TP7 (TOFS) to GND (tracking off).
4. Connect TP11 to GND (LASER ON).
5. Adjust SVR141 for 0 V ±150 mV unbalance (offset).



Adjust for A = B ±150 mV

8. Focus Gain Adjustment (disc in)

1. Connect 2CH AC VM (use BPF): CH1 to TP1 (FC), CH2 to TP12 (FSW).
2. Press PLAY.
3. Connect AF Osc (1 kHz, 1.5 Vrms) to TP13, through 220K resistor.
4. Adjust SVR102; first for CH1 maximum, then for CH1-CH2=13 ±1 dB.

9. Tracking Gain Adjustment (disc in)

1. Connect 2CH AC VM (use BPF): CH1 to TP2 (TC), CH2 to TP14 (TPRO).
2. Press PLAY.
3. Connect AF Osc (1.2 kHz, 250 mVrms) to TP15, through 220K resistor.
4. Adjust SVR143; first for CH1 maximum, then for CH1-CH2=5 ±1 dB.

10. VCO Adjustment (disc in or out)

1. Connect frequency counter to TP16 (FSEQ/PCK).
2. Press RESET (stop).
3. Adjust L201 for 4.3218 ±0.01 MHz.

NOTES:

FAILURE OF CHECKS:

1. Failure of Laser Output Check means that characteristic of laser diode or output monitor diode has changed; complete failure may occur soon. Adjustment is not recommended, laser pickup assy should be replaced.
2. Failure of E-signal Same Pit Check means diffraction grating severely misaligned; failure of Diffraction Grating Check means less-severely misaligned. This may result in poor tracking (skip). Since this is usually caused by damage to laser pickup assy, it should be replaced. (Adjustment is not recommended. It requires to do both checks at same time, using two scopes; and is usually not successful.)

DEMO PLAY STATE:

Connect TP9 (DEMO) to TP10 (+5 V), then press PLAY. The system is brought into Play state by LSI (not by microcomputer).
In this case, the system can not be turned off even if tracking servo is stopped.
This is necessary for E/F Balance adjustment, and can also be helpful when troubleshooting for cause of problems.

TRANSPORT CHECKING

Pick-Up Head Replacement

How to remove pick-up head.

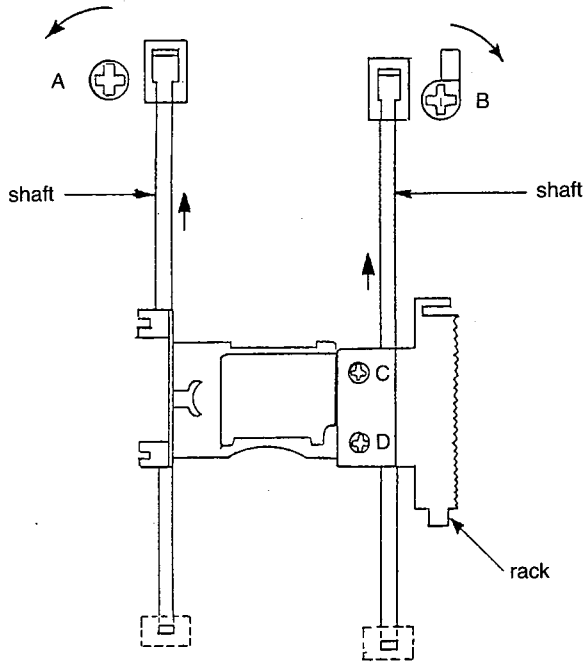
1) Rotate the stoppers labeled "A" and "B" in the directions shown in the Figure below.
2) Remove both shafts and slide the pick-up head off the shafts.
3) Remove the two screws labeled "C" and "D".

How to install pick-up head.

1) Attach the rack to the pick-up head with screws "C" and "D".
2) Slide the pick-up head onto both shafts, as shown in the Figure below.
3) Slide shafts into place, and rotate the stoppers labeled "A" and "B" into locking position.

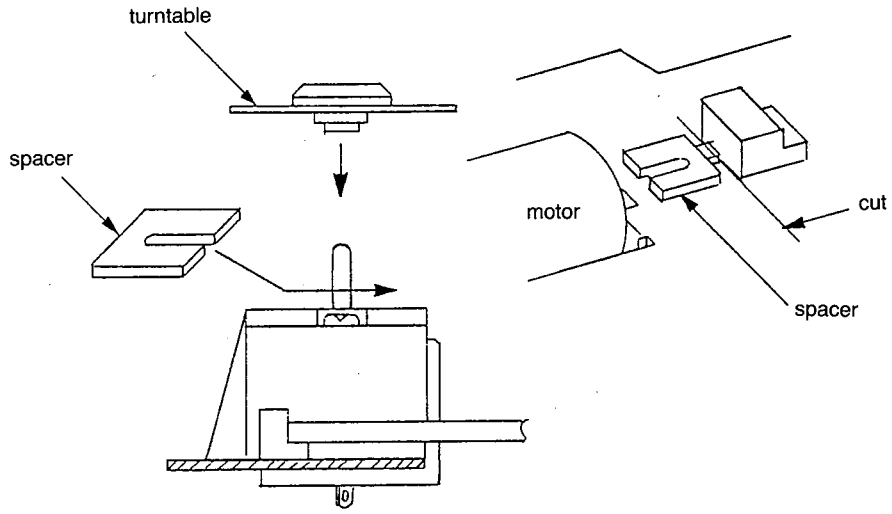
Cautions on Replacement of Pick-up

1. Do not touch the terminals on the pick-up with your hand when removing the laser pick-up.
2. Cover the work bench with a conductive mat which is also grounded.
3. Before proceeding with job, always touch the conductive mat or ground lead with both hands to discharge electric charges developed on your body.
4. To protect your vision do not expose your eyes to the direct laser light. The beam is focused at a distance of 2 mm from the lens.

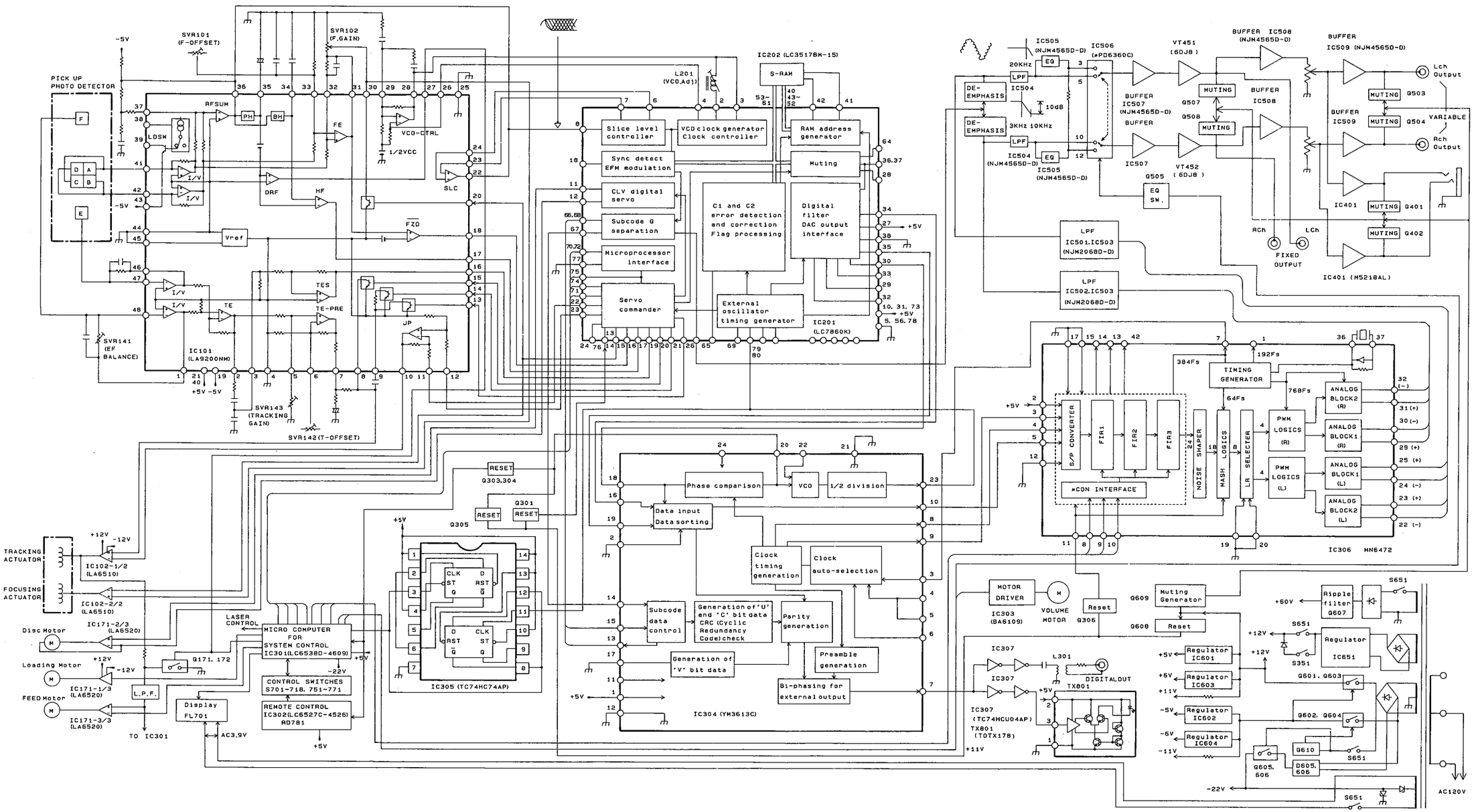


Motor Replacement

If the disc motor is defective, replace it with a new one as shown in the Figure below.

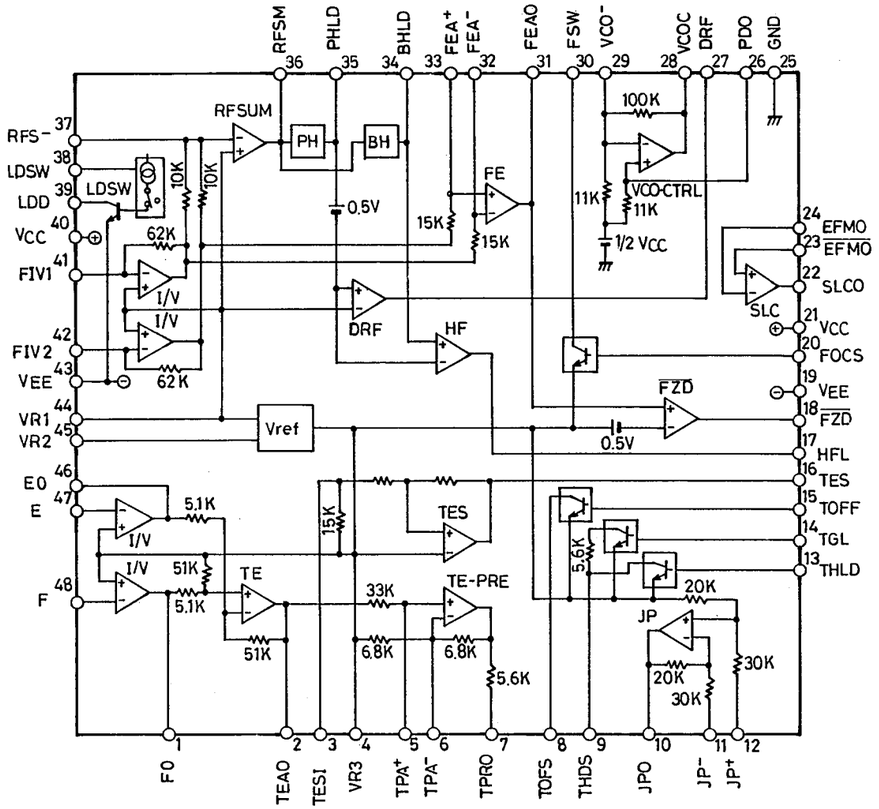


BLOCK DIAGRAM

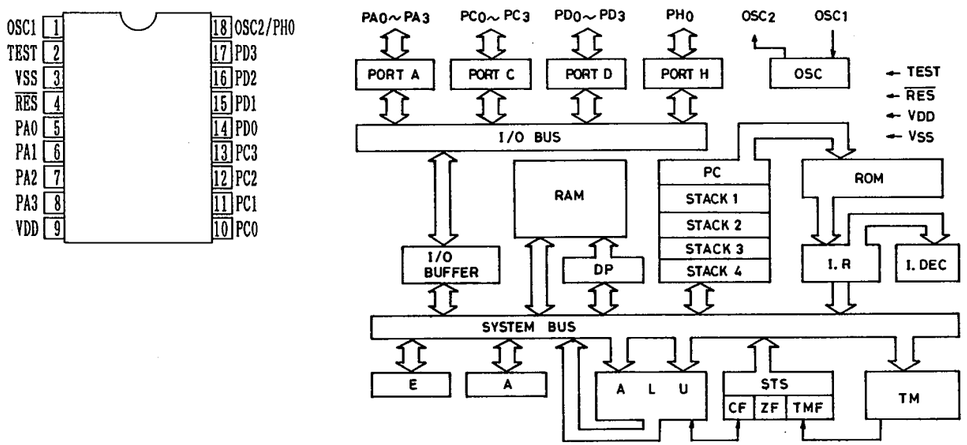


IC BLOCK DIAGRAMS

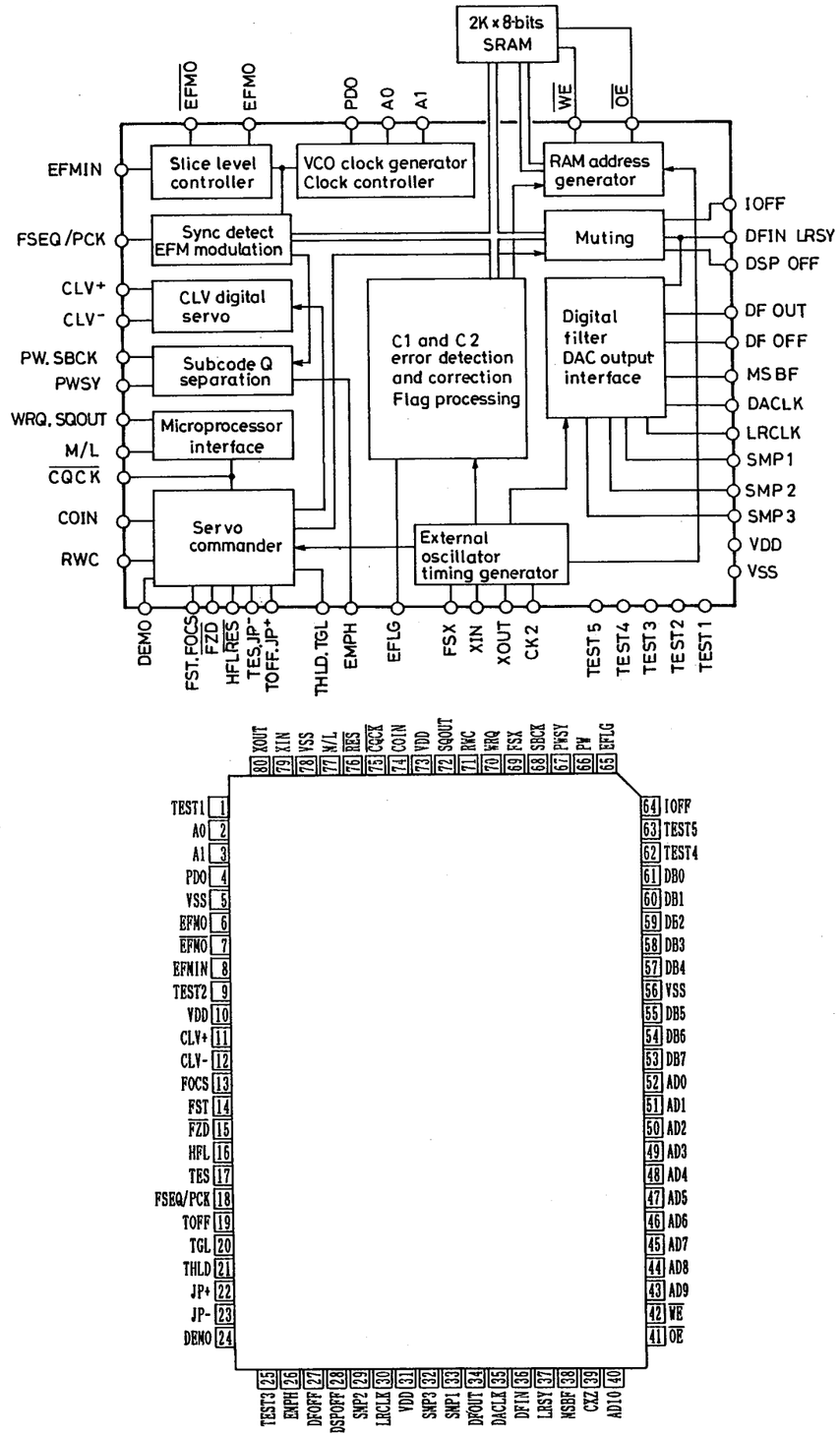
LA9200NM (IC101)



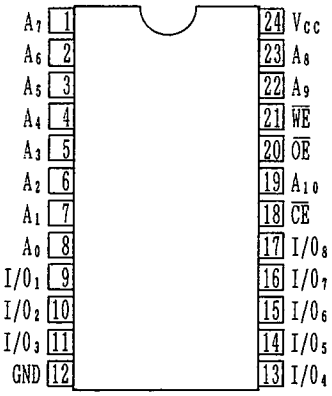
LC6527C-4526 (IC302)



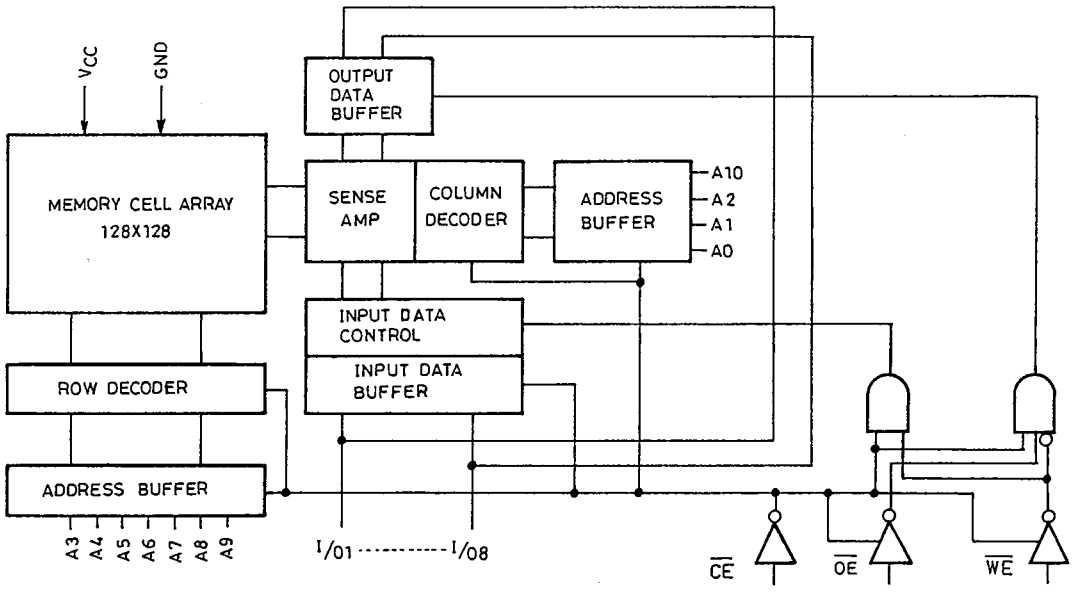
LC7860K (IC201)



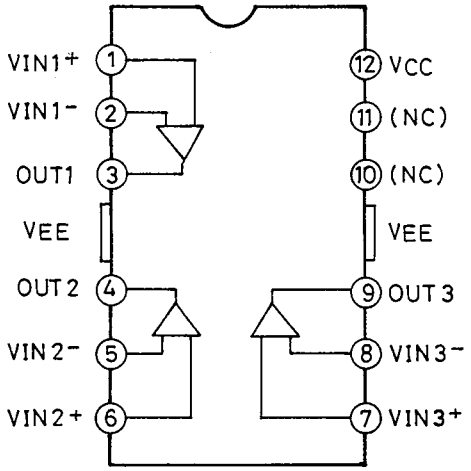
LC3517BM-15 (IC202)



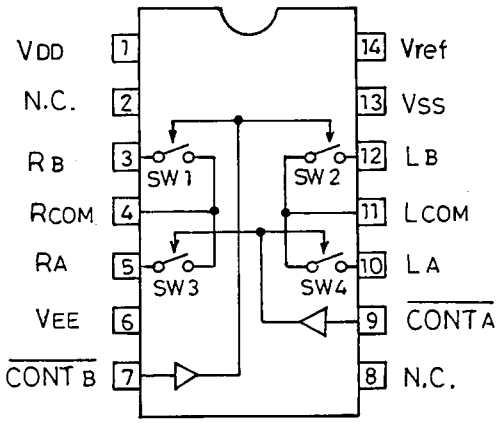
A0 to A10	: Address input
WE	: Read/write control input
OE	: Output enable input
CE	: Chip enable input
I/01 to I/08	: Data input/output
VCC/GND	: Power supply pin



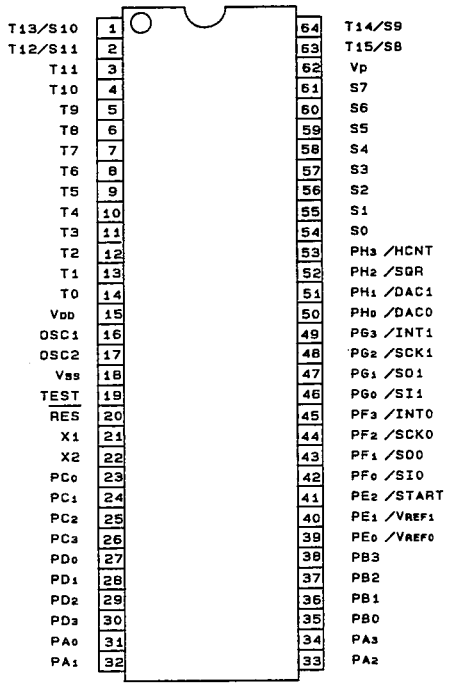
LA6520 (IC171)



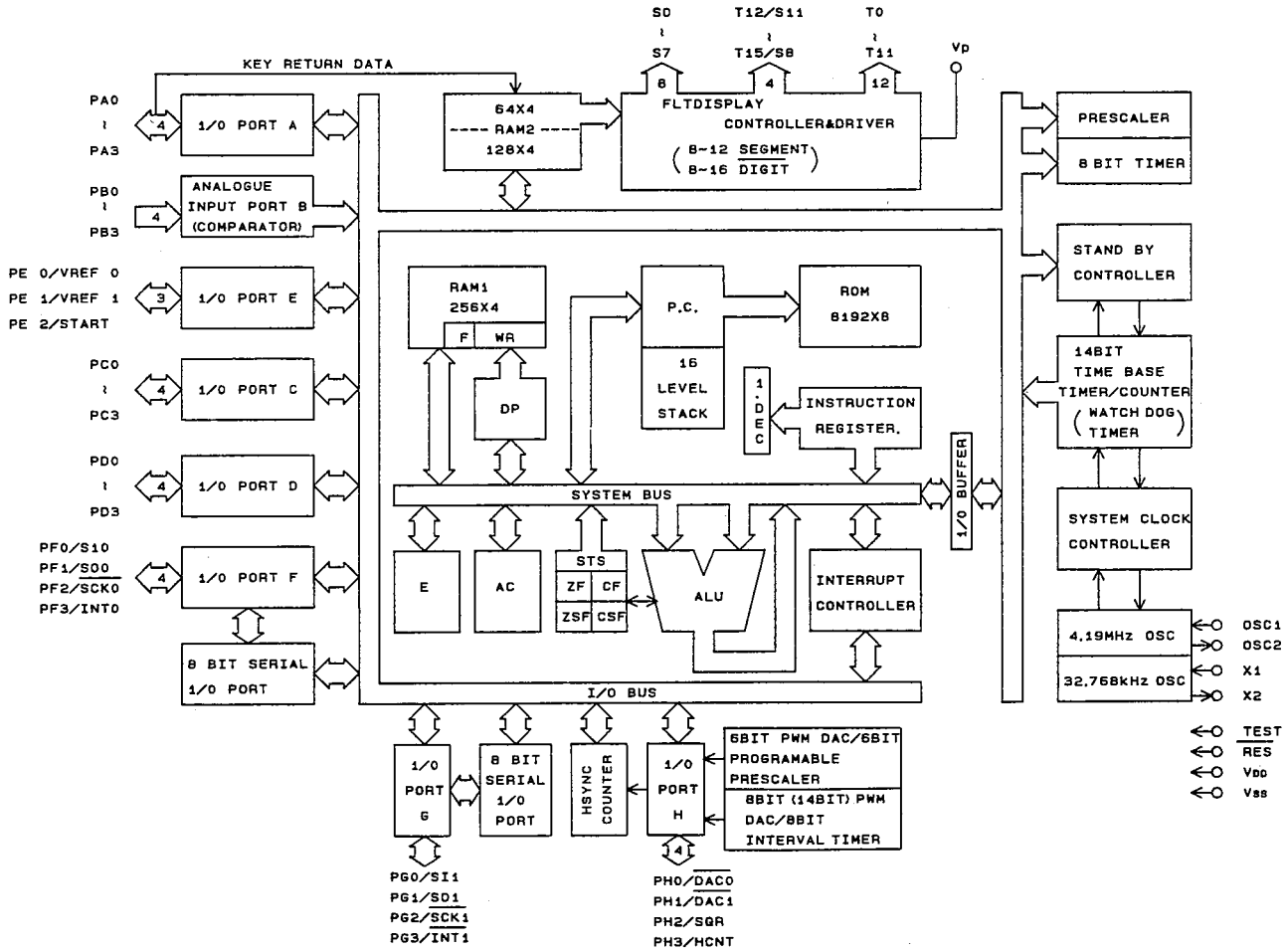
UPD6360C (IC506)



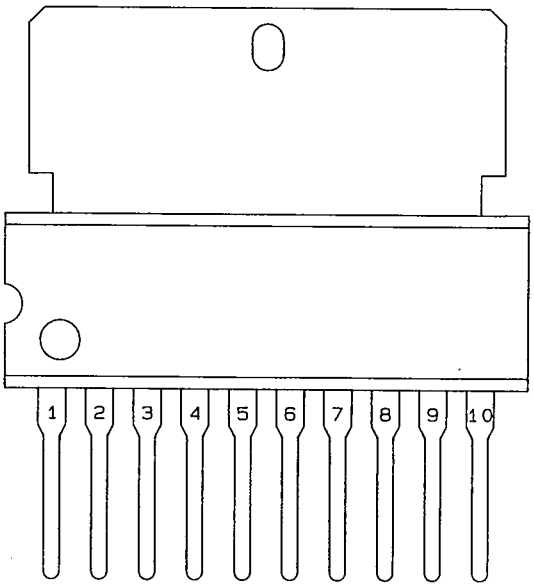
LC6538D-4609 (IC301)

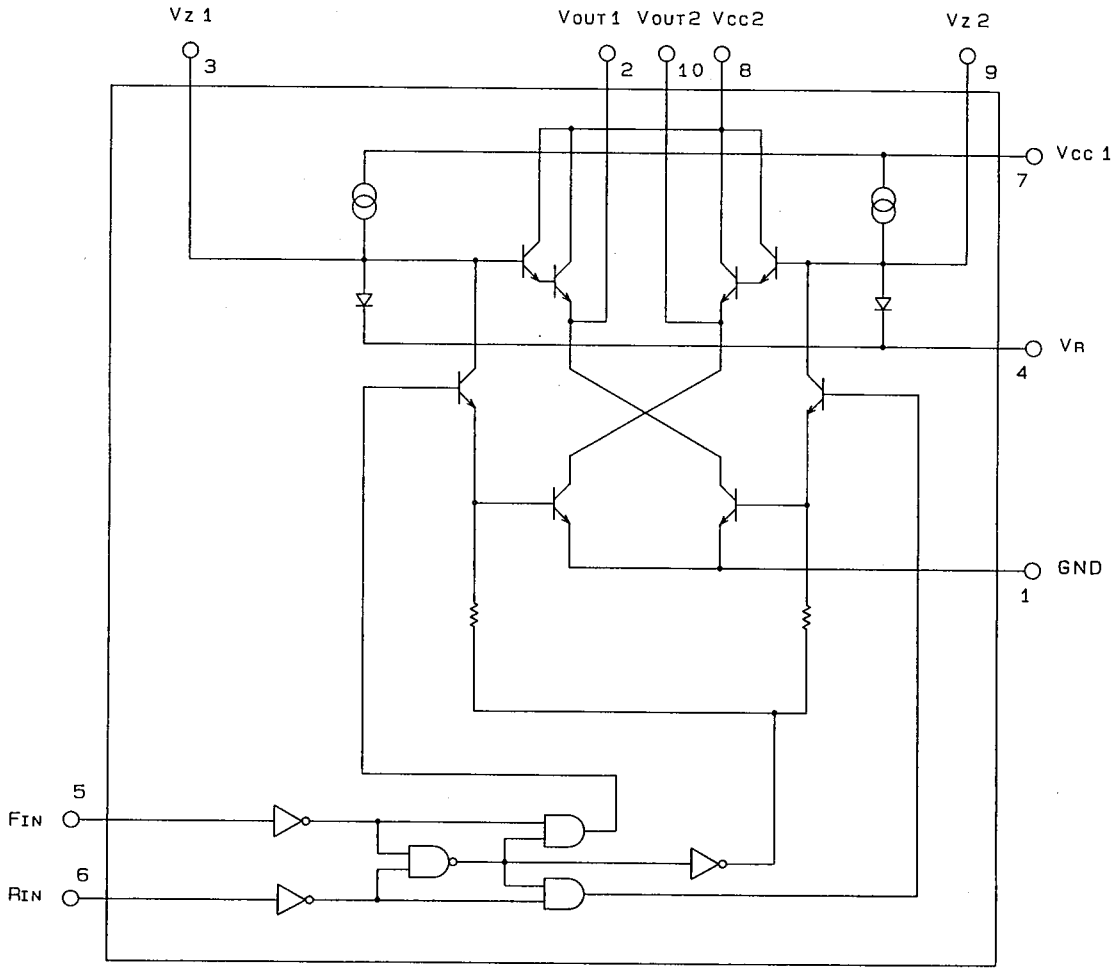


RAM	:	Data memory
F	:	Flag
WR	:	Working register
AC	:	Accumulator
ALU	:	Arithmetic and logic unit
DP	:	Data pointer
E	:	Eregister
CTL	:	Control register
OSC	:	Oscillator
I.DEC	:	Instruction decoder
CF.CSF	:	Carry flag, carry save flag
ZF.ZSF	:	Zero flag,Zero save flag
STS	:	Status register
ROM	:	Program memory
PC	:	Program counter

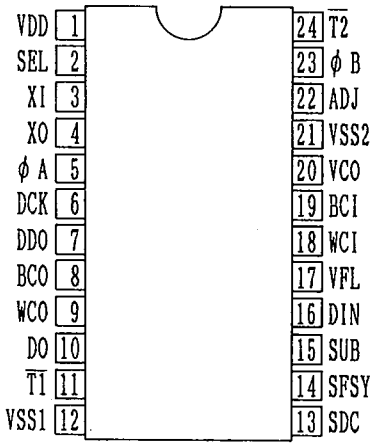


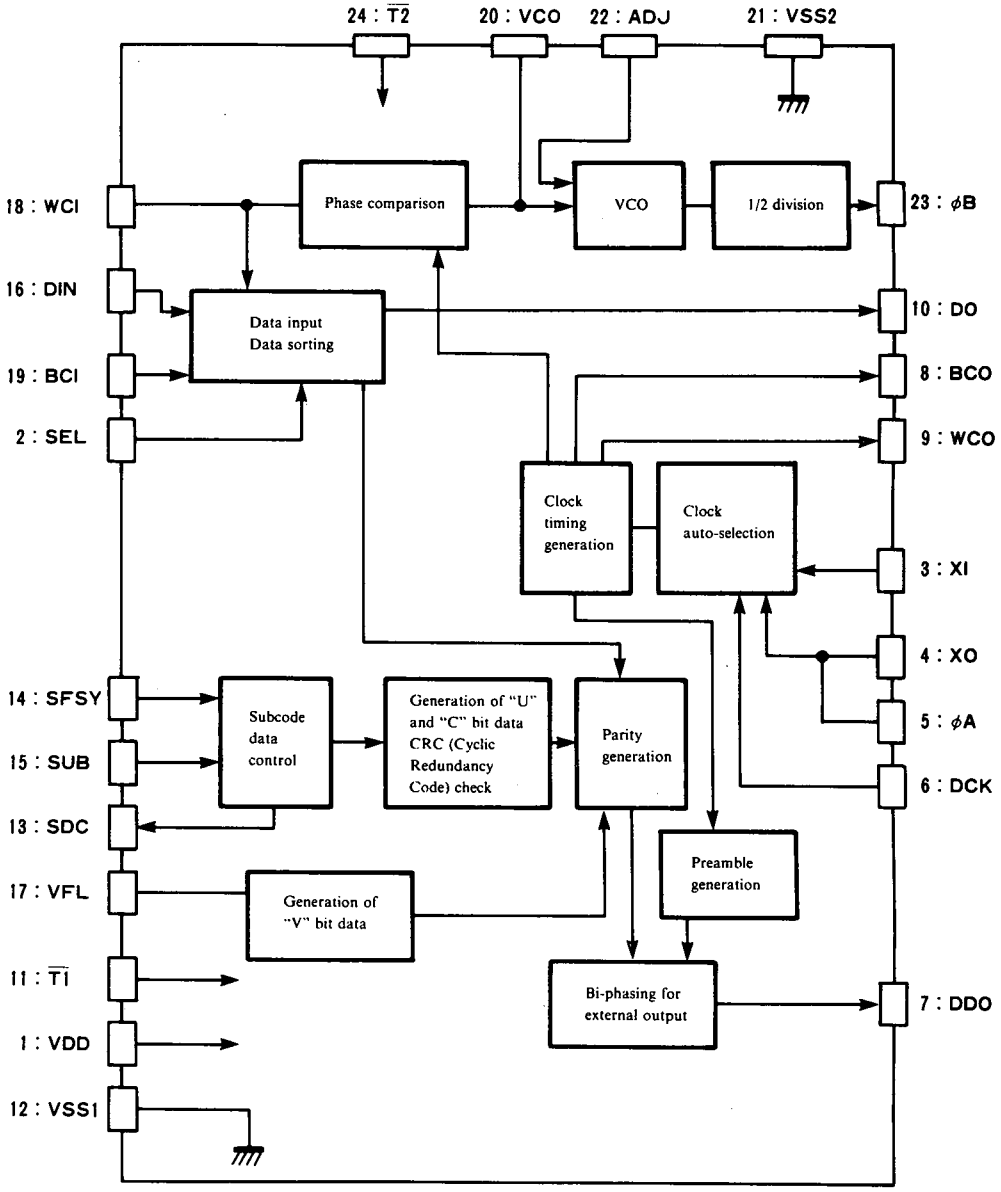
BA6109 (IC303)



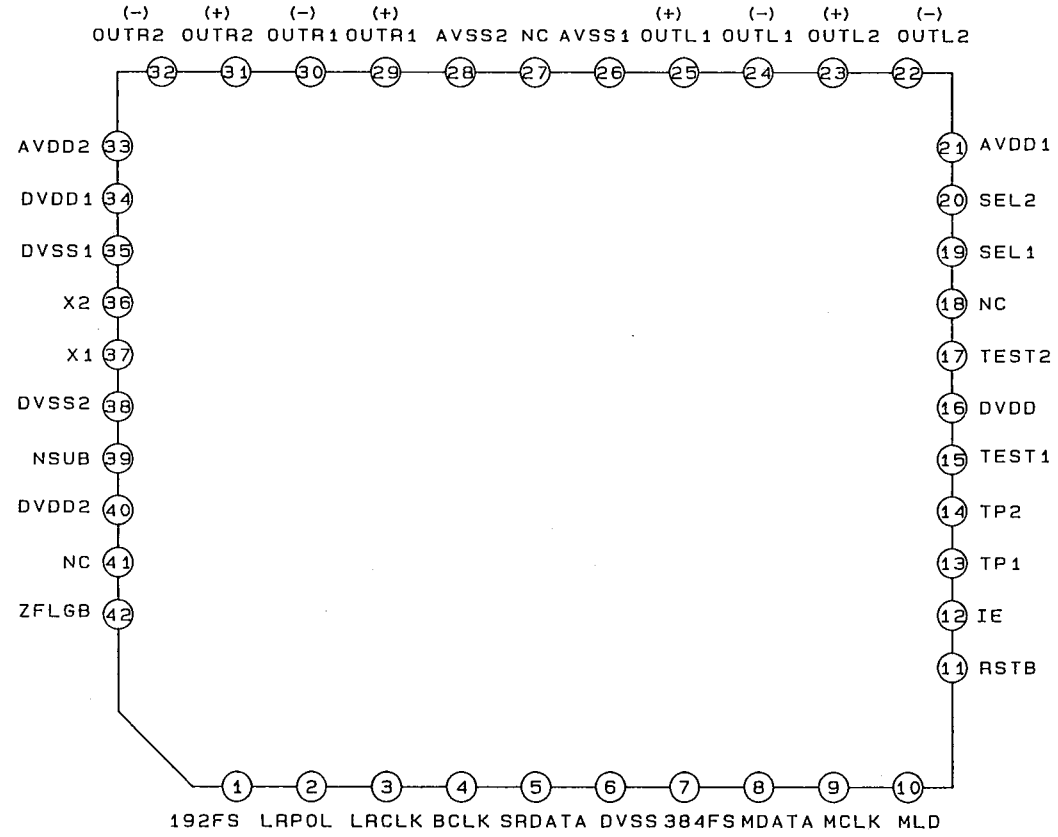


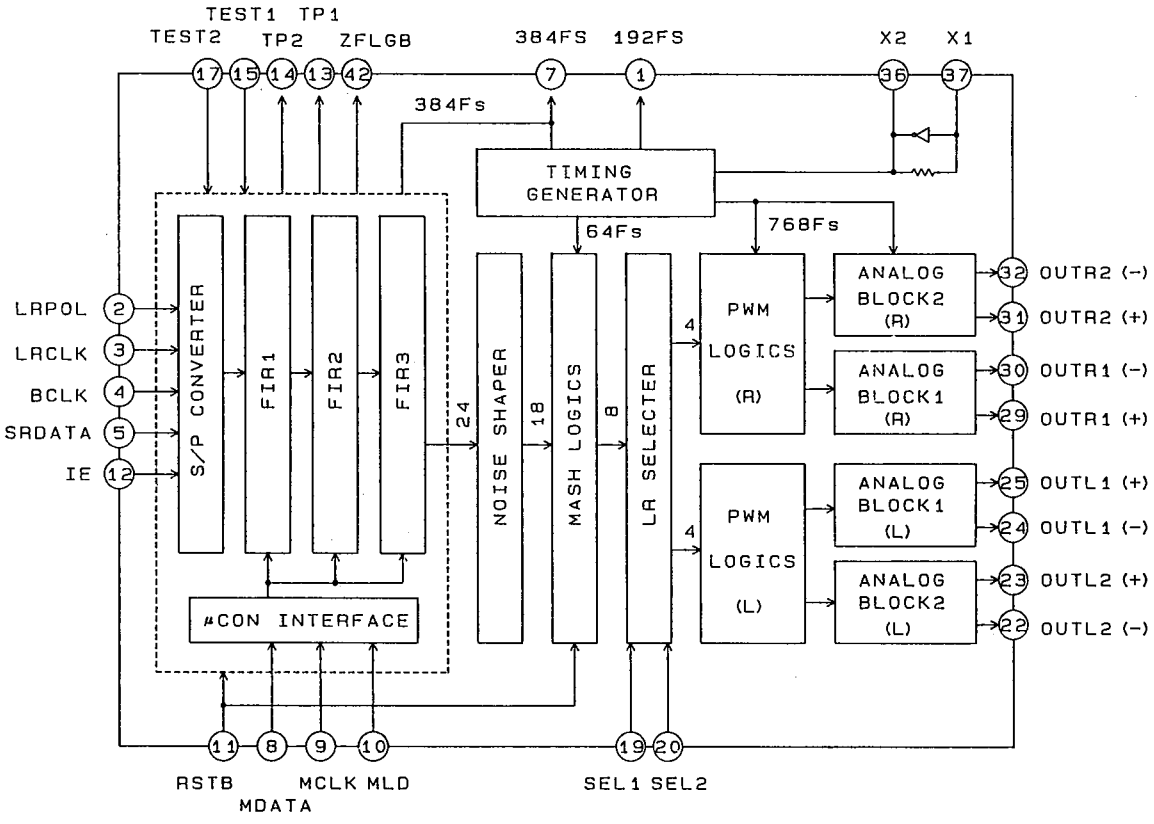
YM3613C (IC304)





MN6472M (IC306)



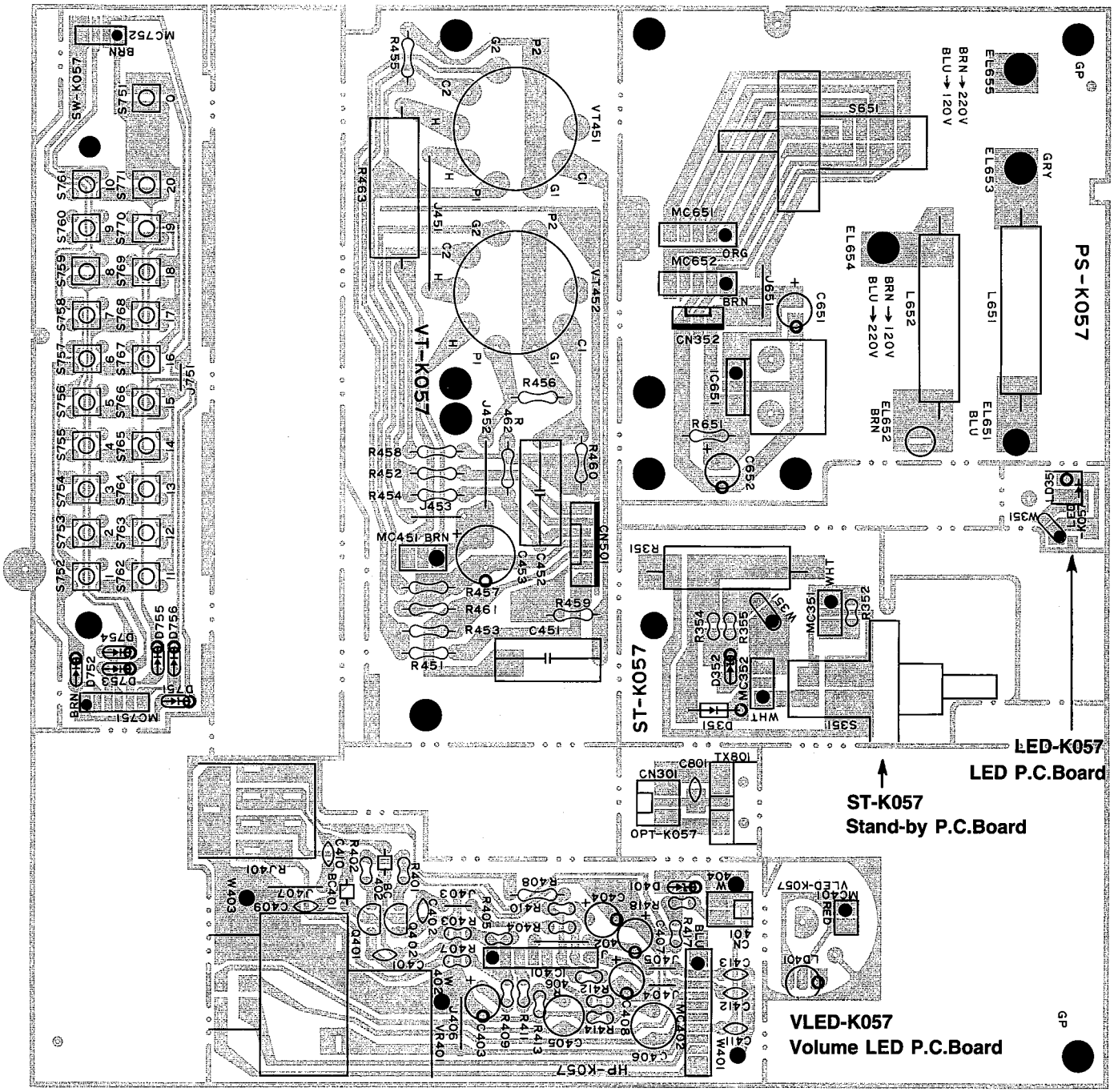


PCB COMPONENT SIDE VIEWS

SW-K057
Switch P.C.Board

VT-K057
Vacuum Tube P.C.Board

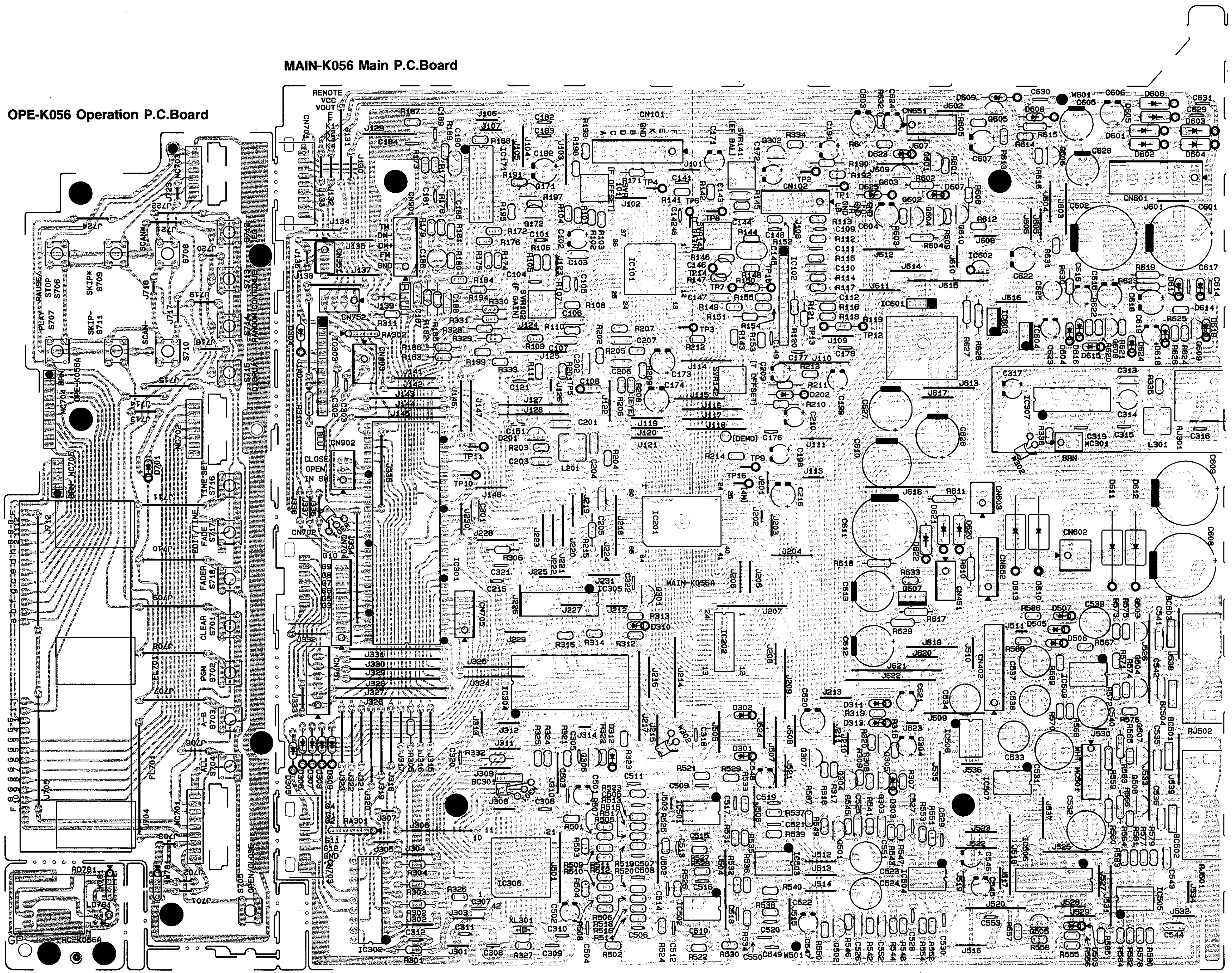
PS-K057
Power Supply P.C.Board



HP-K057 Headphone P.C.Board

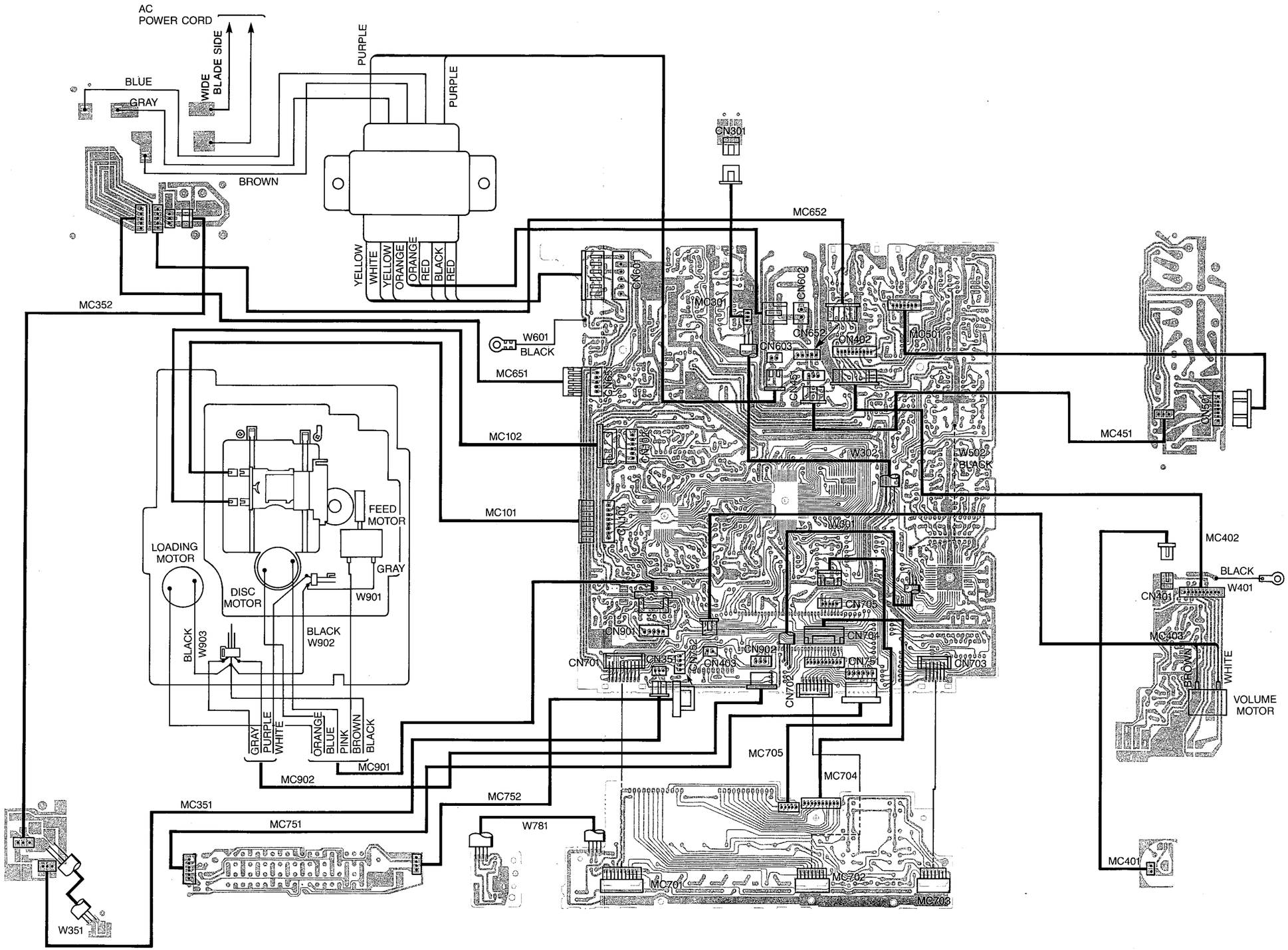
MAIN-K056 Main P.C.Board

OPE-K056 Operation P.C.Board



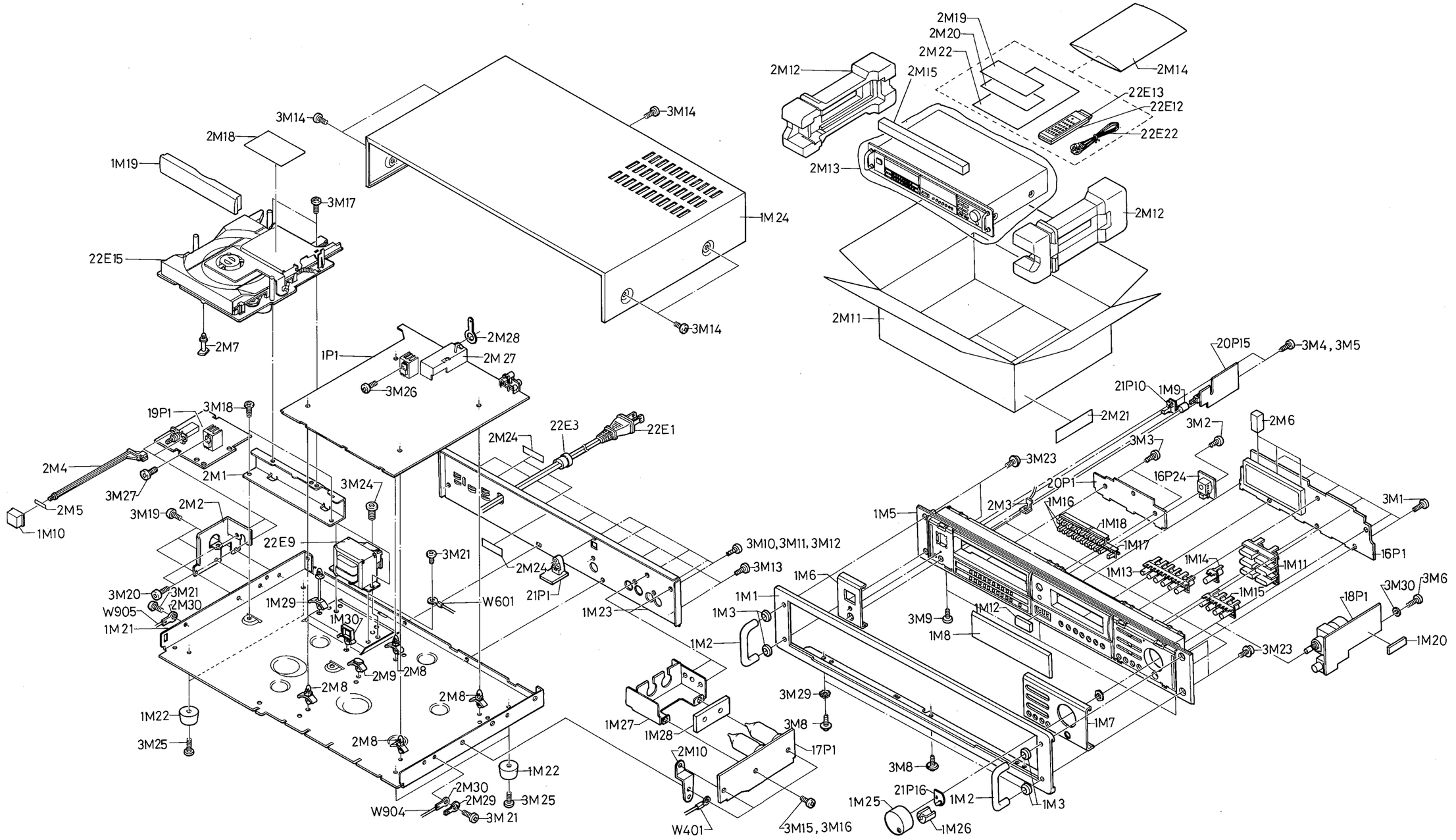
RC-K056
Remote Control P.C.Board

WIRING DIAGRAM

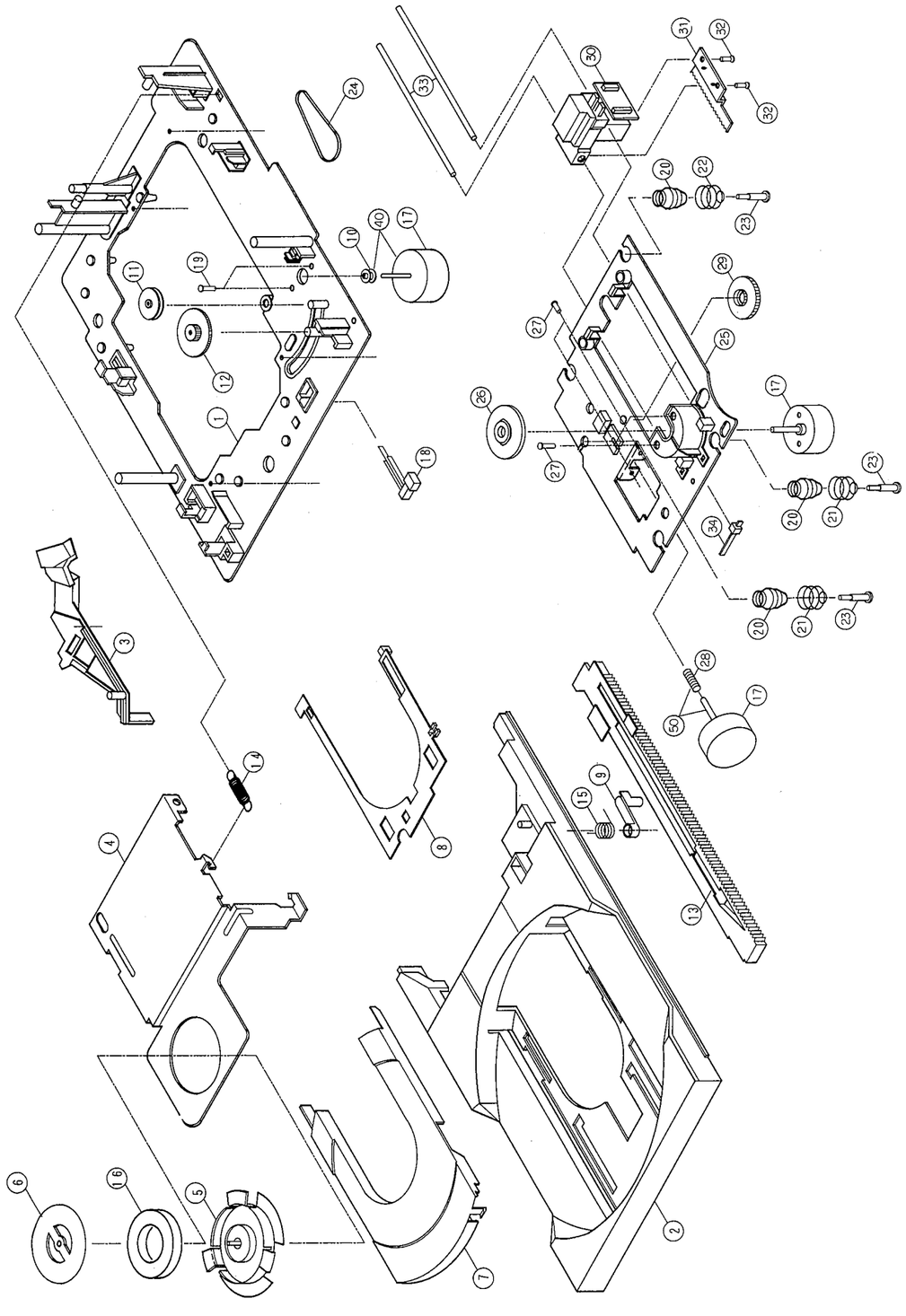


EXPLODED VIEWS

Main Unit and Packing



CD Mechanism



VOLTAGE CONVERSION

220V/50Hz Version

Bill of Materials

Q'ty	Part No.	Description
1	530-10091-00	LABEL 220V AC/50HZ
1	530-10159-00	LABEL VOLTAGE CONVERSION
1	530-10013-00	LABEL MILITARY CONVERSION

Directions for change (120V to 220V)

1. Locate Power Supply P.C. Board (PS-K057) in left rear corner of unit.
2. Solder Brown lead wire from Power Transformer to Terminal EL655 (see Figure 2).
3. Solder Blue lead wire from Power Transformer to Terminal EL654.
4. Apply the label 530-10091-00 over the AC 120V 60HZ 0.12A printing near the linecord.
5. Using spray adhesive,mount the Voltage Conversion Label (530-10159-00) to the inside of the top cover.
6. Apply the Military Conversion Label (530-10013-00) to the bottom of unit.

***220V/50Hz Version**
PS-K057 POWER SUPPLY P.C.BOARD

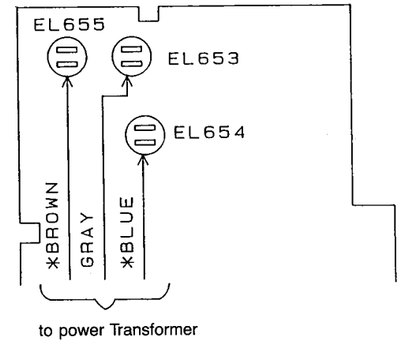


Fig.2

Directions for Change (220V to 120V)

1. Locate Power Supply P.C. Board (PS-K057) in left rear corner of unit.
2. Solder Brown lead wire from Power Transformer to Terminal EL654 (see Figure 3).
3. Solder Blue lead wire from Power Transformer to Terminal EL655.
4. Remove the 220V AC/50HZ label near the linecord.

NOTE: Gray lead wire from Power Transformer soldered to Terminal EL653 is the common connection for both 120V and 220V power Supplies.

***120V/60Hz Version**
PS-K057 POWER SUPPLY P.C.BOARD

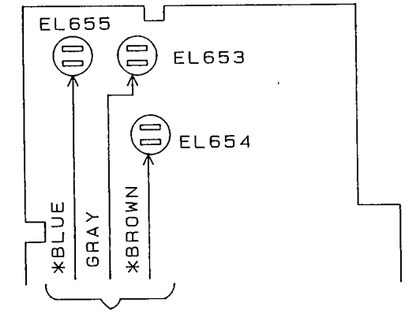
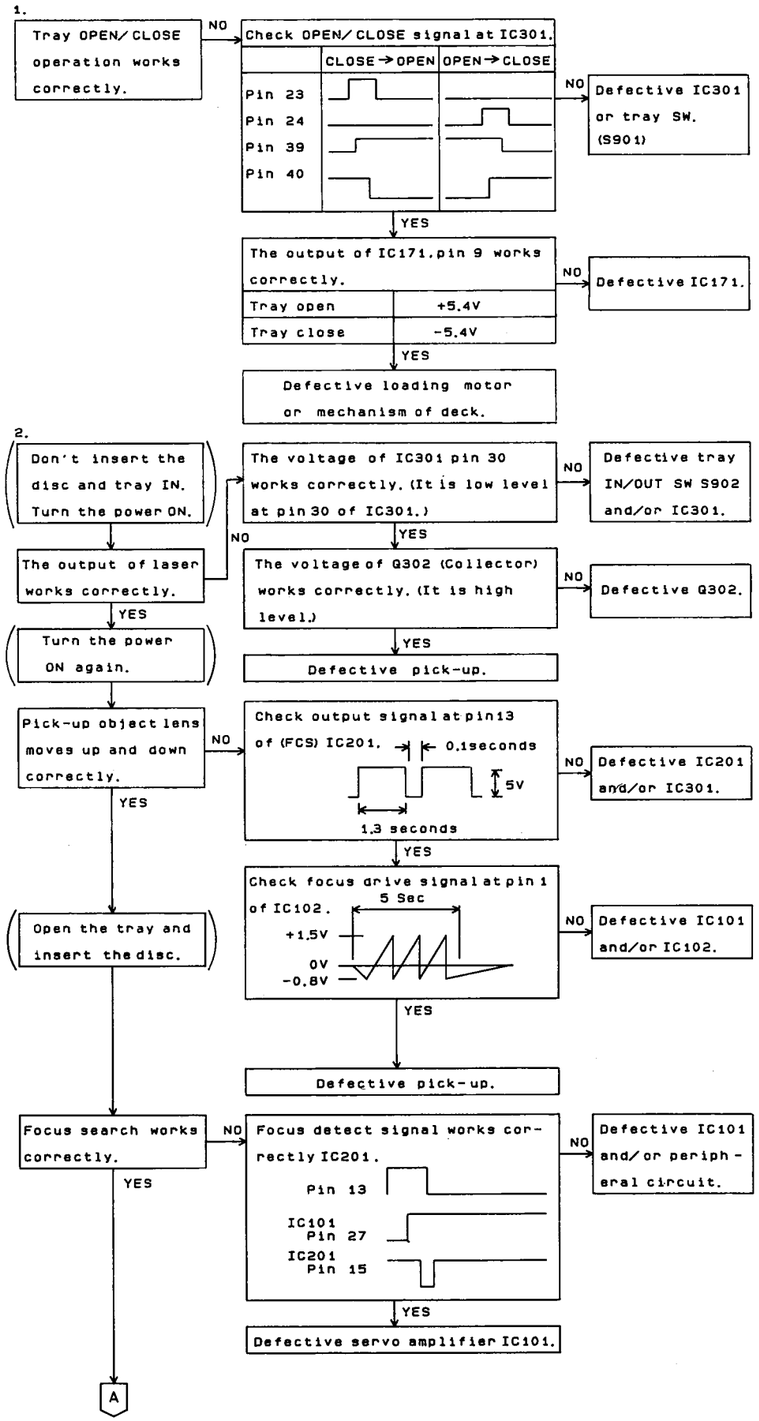
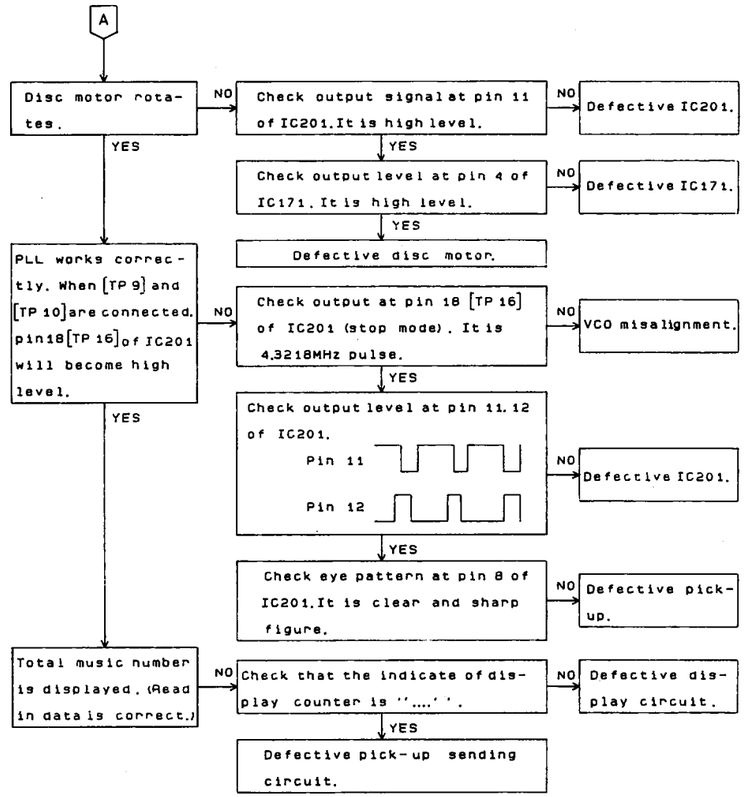
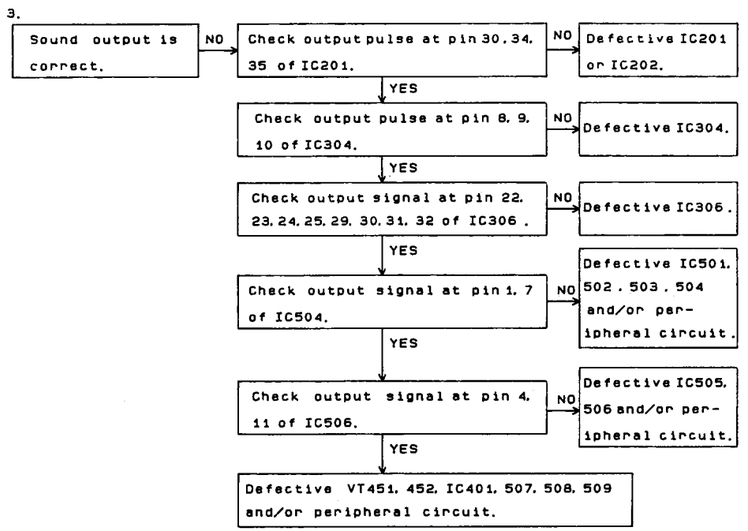


Fig.3

TROUBLESHOOTING GUIDE





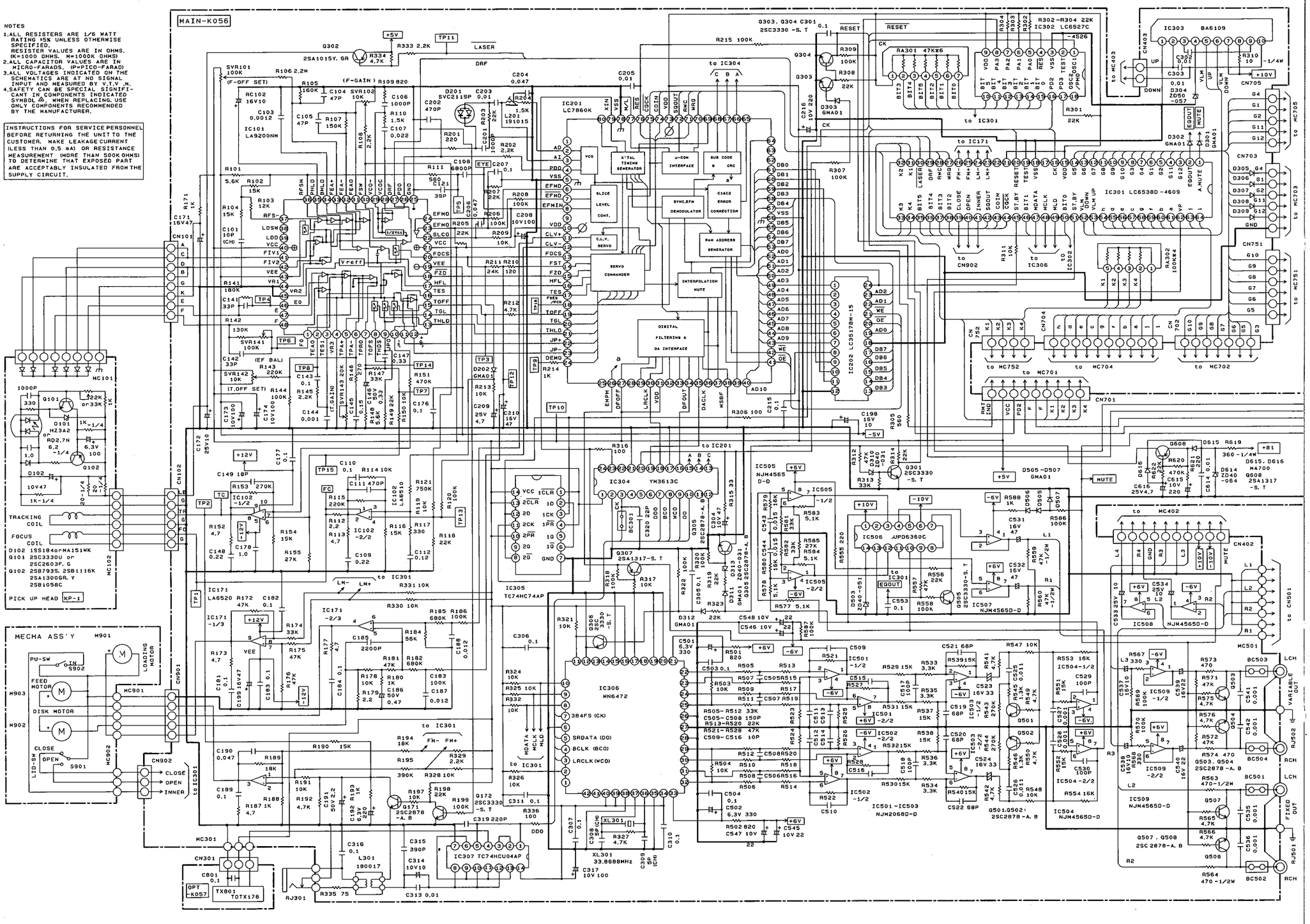


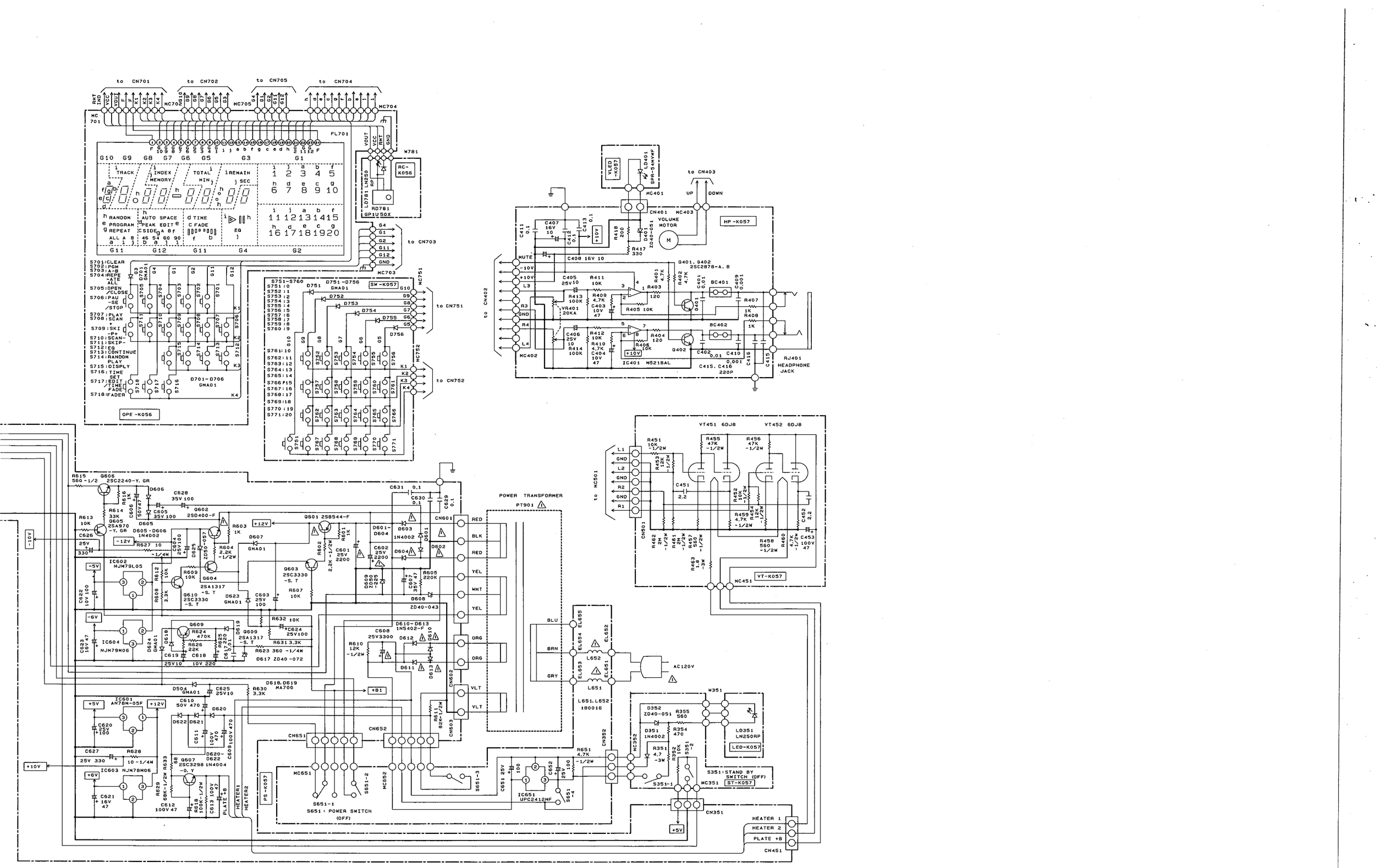
SCHEMATIC DIAGRAM

NOTES

1. ALL RESISTERS ARE 1/6 WATT RATING ±5% UNLESS OTHERMISE SPECIFIED. RESISTER VALUES ARE IN OHMS. (K=1000 OHMS, M=1000K OHMS)
2. ALL CAPACITOR VALUES ARE IN MICRO-FARADS. (P=PICO-FARAD)
3. ALL VOLTAGES INDICATED ON THE SCHEMATICS ARE AT NO SIGNAL INPUT AND MEASURED BY V,T,V .M.
4. SAFETY CAN BE SPECIAL SIGNIFICANT IN COMPONENTS INDICATED SYMBOL △. WHEN REPLACING, USE ONLY COMPONENTS RECOMMENDED BY THE MANUFACTURER.

INSTRUCTIONS FOR SERVICE PERSONNEL
BEFORE RETURNING THE UNIT TO THE CUSTOMER, MAKE LEAKAGE CURRENT (LESS THAN 0.5 mA) OR RESISTANCE MEASUREMENT (MORE THAN 500K OHMS) TO DETERMINE THAT EXPOSED PART ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.




to CN701
to CN702
to CN705
to CN704
MC701
MC705
MC704
MC 701
FL701
W781
RC-K056
RD781 GP1U50X
LD781 LN250
TRACK
INDEX MEMORY
TOTAL MIN
REMAIN
SEC
RANDOM
PROGRAM
REPEAT
ALL A B
AUTO SPACE
PEAK EDIT
CSIDE
TIME
FADE
EQ
to CN703
MC703
S701:CLEAR
S702:PGM
S703:A-B
S704:REPEAT ALL
S705:OPEN /CLOSE
S706:PAUSE /STOP
S707:PLAY
S708:SCAN
S709:SKIP
S710:SCAN-
S711:SKIP-
S712:EQ
S713:CONTINUE
S714:RANDOM PLAY
S715:DISPLY
S716:TIME SET /TIME FADE
S717:EDIT
S718:FADER
D701~D706 GMA01
OPE -K056
S751~S760
D751~D756 GMA01
SW-K057
to CN751
to CN752
MC751
MC752
R615 560 -1/2
Q606 2SC2240-Y, GR
D606
C628 35V 100
R614 33K
Q605 2SA970 -Y, GR
D605
C606 1K
C605 35V 100
Q602 2SD400-F
D605~D606 1N4002
R613 10K
C626 25V 330
-12V
R627 10 -1/4W
C624 25V100
D625
ZD40-057
R603 1K
R604 2.2K -1/2W
D607 GMA01
+12V
Q601 2SB544-F
R602 2.2K -1/2W
R601 1K
C601 25V 2200
D601~ D604 1N4002
C602 25V 2200
D604
D602
D601
CN601
RED
BLK
RED
YEL
WHT
YEL
ORG
ORG
VLT
VLT
C631 0.1
C630 0.1
C629 0.1
POWER TRANSFORMER PT901
-10V
IC602 NJM79L05
-5V
R609 10K
R612 10K
R608 3.3K
C622 10V 100
Q604 2SA1317 -S, T
Q610 2SC3330 -S, T
D623 GMA01
C603 25V 100
R607 10K
R603 2SC3330 -S, T
D609 2SB544 -F
C607 35V 47
R605 220K
D608 ZD40-043
-6V
IC604 NJM79M06
C623 16V 47
Q609
R624 470K
R626 22K
D624 GMA01
D618
C619
C618
R625 220
C617 25V10
10V 220
25V10
R632 10K
C624 25V100
Q609 2SA1317 -S, T
R631 3.3K
R623 360 -1/4W
D617 ZD40 -072
D619
R610 12K -1/2W
C608 25V3300
D612
D610~D613 1N5402-F
D611
D613
CN602
D504 GMA01
C625 25V10
R630 3.3K
D618,D619 MA700
+B1
IC601 AN78M-05F
+5V
+12V
C610 50V 470
D620
D622
D621
C611 100V 470
C609 100V 470
C620 25V +100
C627 25V 330
R628 10 -1/4W
IC603 NJM78M06
+6V
+10V
Q607 2SC3298 -0, Y
1N4004
R633 68K-1/2W
R629 68K-1/2W
R616 100K-1/2W
C612 100V 47
C613 100V 47
PLATE +B
HEATER1
HEATER2
PS-K057
CN651
CN652
MC651
MC652
S651-1
S651-2
S651-3
S651-4
S651 : POWER SWITCH (OFF)
C651 25V 100
C652 25V 100
R651 4.7K -1/2W
IC651 UPC2412MF
CN352
MC352
BLU
BRN
GRY
EL654
EL655
EL652
EL653
EL651
L652
L651
AC120V
L651.L652 180016
W351
D352 ZD40-051
R355 560
D351 1N4002
R354 470
R351 4.7 -3W
R352 10K
S351-1
S351-2
S351:STAND BY SWITCH (OFF)
ST-K057
LED-K057
LD351 LN250RP
MC351
CN351
+5V
HEATER 1
HEATER 2
PLATE +B
CN451
to MC501
L1
GND
L2
GND
R2
GND
R1
VT451 6DJ8
VT452 6DJ8
R451 10K -1/2W
R453 12K -1/2W
R455 47K -1/2W
R456 47K -1/2W
C451 2.2
R452 12K -1/2W
R454 12K -1/2W
R459 4.7K -1/2W
C452 2.2
R462 2M -1/2W
R461 2M -1/2W
R457 560 -1/2W
R458 560 -1/2W
R460
R463 1.8 -3W
C453 4.7K -1/2W 100V 47
CN501
MC451
VT-K057
VLED -K057
LD401 SPR-54KYWF
MC401
to CN403
UP
DOWN
CN401
MC403
HP-K057
VOLUME MOTOR
C411 0.1
C407 16V 10
C413 0.1
C414 0.1
+10V
R418 200
D401~ D402 ZD40-051
R417 330
C408 16V 10
MUTE
-10V
+10V
L3
R3
GND
R4
L4
MC402
to CN402
Q401, Q402 2SC2878-A, B
C405 25V10
R411 10K
R403 120
R405 10K
VR401 20KA
R413 100K
R409 4.7K
C403 10V 47
R402 4.7K
R401 4.7K
C401 0.01
C409 0.001
BC401
R407 1K
R408 1K
C406 25V 10
R414 100K
R412 10K
R410 4.7K
C404 10V 47
R404 120
R406 10K
Q402
BC402
C402 0.01
C410 0.001
C415, C416 220P
C416
C415
IC401 M5218AL
RJ401 HEADPHONE JACK

PARTS LIST

MAIN PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
1E 1	1	MAIN-K056	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D201	1	SVC211SP-B,C	DIODE
D202,301~303	4	GMA01	DIODE
D304	1	ZD50-057	ZENER DIODE,1/2W,5.7V
D305~309	5	GMA01	DIODE
D310	1	ZD40-031	ZENER DIODE,2/5W,3.1V
D311,312	2	GMA01	DIODE
D313	1	ZD40-031	ZENER DIODE,2/5W,3.1V
D503	1	ZD40-051	ZENER DIODE,2/5W, 5.1V
D504~507	4	GMA01	DIODE
D601~606	6	1N4002	DIODE
D607	1	GMA01	DIODE
D608	1	ZD40-043	ZENER DIODE,2/5W,4.3V
D609	1	ZD50-225	ZENER DIODE,1/2W,22.5V
D610~613	4	1N5402-F	DIODE
D614	1	ZD40-064	ZENER DIODE,2/5W,6.4V
D615,616	2	MA700	DIODE
D617	1	ZD40-072	ZENER DIODE,2/5W, 7.2V
D618,619	2	MA700	DIODE
D620~622	3	1N4004	DIODE
D623,624	2	GMA01	DIODE
D625	1	ZD50-057	ZENER DIODE,1/2W,5.7V
Q171	1	2SC2878-A,B	TRANSISTOR
Q172,301	2	2SC3330-S,T	TRANSISTOR
Q302	1	2SA1015-Y,GR	TRANSISTOR
Q303,304	2	2SC3330-S,T	TRANSISTOR
Q305	1	2SC2878-A,B	TRANSISTOR
Q306	1	2SC3330-S,T	TRANSISTOR
Q307	1	2SA1317-S,T	TRANSISTOR
Q501~504	4	2SC2878-A,B	TRANSISTOR
Q505	1	2SC3330-S,T	TRANSISTOR
Q507,508	2	2SC2878-A,B	TRANSISTOR
Q601	1	2SB544-F	TRANSISTOR
Q602	1	2SD400-F	TRANSISTOR
Q603	1	2SC3330-S,T	TRANSISTOR
Q604	1	2SA1317-S,T	TRANSISTOR
Q605	1	2SA970-Y,GR	TRANSISTOR
Q606	1	2SC2240-Y,GR	TRANSISTOR
Q607	1	2SC3298-O,Y	TRANSISTOR
Q608,609	2	2SA1317-S,T	TRANSISTOR
Q610	1	2SC3330-S,T	TRANSISTOR
IC101	1	LA9200NM	IC
IC102	1	LA6510	IC
IC171	1	LA6520	IC
IC201	1	LC7860K	IC
IC202	1	LC3517BM-15	IC
IC301	1	LC6538D-4609	IC
IC302	1	LC6527C-4526	IC
IC303	1	BA6109	IC
IC304	1	YM3613C	IC
IC305	1	TC74HC74AP	IC
IC306	1	MN6472M	IC
IC307	1	TC74HCU04AP	IC
IC501~503	3	NJM2068D-D	IC
IC504,505	2	NJM4565D-D	IC
IC506	1	UPD6360C	IC
IC507~509	3	NJM4565D-D	IC
IC601	1	UPC78M05HF	IC
IC602	1	NJM79L05A	IC
IC603	1	NJM78M06FA	IC
IC604	1	NJM79M06FA	IC
CAPACITORS			
C101	1	HE40SJCH100D	CERAMIC CAPACITOR
C102	1	NS-16TW100M	ELECTROLYTIC CAPACITOR
C103	1	MY-50VU122J	MYLAR CAPACITOR
C104,105	2	HE40SJSL470K	CERAMIC CAPACITOR
C106	1	MY-50VU102J	MYLAR CAPACITOR
C107	1	MY-50VU223J	MYLAR CAPACITOR
C108	1	MY-50VU682J	MYLAR CAPACITOR
C109	1	XB10SJYF224Z	IBL. CERAMIC CAPACITOR
C110	1	MY-50VU104J	MYLAR CAPACITOR
C111	1	HE40SJYB471K	CERAMIC CAPACITOR
C112	1	MY-50VU124J	MYLAR CAPACITOR
C121	1	HE40SJSL390J	CERAMIC CAPACITOR
C141,142	2	HE40SJSL330J	CERAMIC CAPACITOR
C143	1	MY-50VU104J	MYLAR CAPACITOR
C144	1	MY-50VU102J	MYLAR CAPACITOR
C145	1	MY-50VU154J	MYLAR CAPACITOR
C146	1	NP-50TWR33M	ELECTROLYTIC CAPACITOR
C147	1	50SMC334J	METALLIZED FILM CAPACITOR
C148	1	XB10SJYF224Z	IBL. CERAMIC CAPACITOR
C149	1	HE40SJSL180K	CERAMIC CAPACITOR
C171	1	NS-16TW470M	ELECTROLYTIC CAPACITOR
C172	1	NS-25TW100M	ELECTROLYTIC CAPACITOR
C173,174	2	NS-10TW101M	ELECTROLYTIC CAPACITOR
C176~178, 181~184	7	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C185	1	MY-50VU222J	MYLAR CAPACITOR
C186	1	ES-50TWR47M	ELECTROLYTIC CAPACITOR

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
C187,188	2	MY-50VU123J	MYLAR CAPACITOR
C189	1	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C190	1	MY-50VU473J	MYLAR CAPACITOR
C191	1	NS-50TW2R2M	ELECTROLYTIC CAPACITOR
C192	1	NS6R3TW221M	ELECTROLYTIC CAPACITOR
C198	1	NS-16TW100M	ELECTROLYTIC CAPACITOR
C199	1	NS-16TW470M	ELECTROLYTIC CAPACITOR
C201	1	MY-50VU102J	MYLAR CAPACITOR
C202	1	ECQP-1471JZ	POLYESTER FILM CAPACITOR
C203	1	MY-50VU103J	MYLAR CAPACITOR
C204	1	MY-50VU473J	MYLAR CAPACITOR
C205	1	MY-50VU103J	MYLAR CAPACITOR
C206	1	MY-50VU473J	MYLAR CAPACITOR
C207	1	MY-50VU104J	MYLAR CAPACITOR
C209	1	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C210	1	NS-16TW470M	ELECTROLYTIC CAPACITOR
C215	1	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C216	1	NS-10TW221M	ELECTROLYTIC CAPACITOR
C301	1	MY-50VU104J	MYLAR CAPACITOR
C302,303	2	HE70SJYF103Z	CERAMIC CAPACITOR
C304	1	NS-10TW470M	ELECTROLYTIC CAPACITOR
C305~307	3	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C308,309	2	HE40SJCH050D	CERAMIC CAPACITOR
C310,311	2	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C313	1	MY-50VU103J	MYLAR CAPACITOR
C314	1	NP-25TW100M	ELECTROLYTIC CAPACITOR
C315	1	HE11SJSL681J	CERAMIC CAPACITOR
C316	1	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C317	1	NS-10TW101M	ELECTROLYTIC CAPACITOR
C319	1	HE70SJSL221J	CERAMIC CAPACITOR
C320	1	HE40SJSL220K	CERAMIC CAPACITOR
C501,502	2	NS6R3TW331M	ELECTROLYTIC CAPACITOR
C503,504	2	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C505~508	4	HE60SJSL151J	CERAMIC CAPACITOR
C509~516	8	HE40SJSL100D	CERAMIC CAPACITOR
C517,518	2	HE50SJSL101J	CERAMIC CONDENSER
C519~522	4	HE40SJSL680J	CERAMIC CAPACITOR
C523,524	2	NP-16TW330M	ELECTROLYTIC CAPACITOR
C525,526	2	MY-50VU113J	MALAR CAPACITOR
C527,528	2	MY-50VU162J	MYLAR CAPACITOR
C529,530	2	HE50SJSL101J	CERAMIC CONDENSER
C531,532	2	NP-16TW470M	ELECTROLYTIC CAPACITOR
C533,534	2	NP-16TW100M	NON-POLAR ELECTROLYTIC CAP.
C535,536	2	MY-50VU102J	MYLAR CAPACITOR
C537,538	2	NP-16TW100M	NON-POLAR ELECTROLYTIC CAP.
C539,540	2	NP-16TW220M	ELECTROLYTIC CAPACITOR
C541,542	2	MY-50VU102J	MYLAR CAPACITOR
C543,544	2	MY-50VU153J	MYLAR CAPACITOR
C545~548	4	NS-16TW220M	ELECTROLYTIC CAPACITOR
C553	1	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C601,602	2	NS-25TW222M-KF	ELECTROLYTIC CAPACITOR!
C603,604	2	NS-25TW101M	ELECTROLYTIC CAPACITOR
C605	1	NS-35TW101M	ELECTROLYTIC CAPACITOR
C606	1	NS-50TW470M	ELECTROLYTIC CAPACITOR
C607	1	NS-35TW470M	ELECTROLYTIC CAPACITOR
C608	1	NS-25TW332M-KF	ELECTROLYTIC CAPACITOR!
C609	1	NS100TW471M-KF	ELECTROLYTIC CAPACITOR!
C610	1	NS-50TW471M-KF	ELECTROLYTIC CAPACITOR!
C611	1	NS100TW471M-KF	ELECTROLYTIC CAPACITOR!
C612,613	2	NS100TW470M-KF	ELECTROLYTIC CAPACITOR!
C614	1	HE70SJYF103Z	CERAMIC CAPACITOR
C615	1	NS-10TW221M	ELECTROLYTIC CAPACITOR
C616	1	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C617	1	HE70SJYF103Z	CERAMIC CAPACITOR
C618	1	NS-10TW221M	ELECTROLYTIC CAPACITOR
C619,620	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C621	1	NS-16TW470M	ELECTROLYTIC CAPACITOR
C622	1	NS-10TW101M	ELECTROLYTIC CAPACITOR
C623	1	NS-16TW470M	ELECTROLYTIC CAPACITOR
C624	1	NS-25TW101M	ELECTROLYTIC CAPACITOR
C625	1	NP-25TW100M	ELECTROLYTIC CAPACITOR
C626,627	2	NS-25TW331M-KF	ELECTROLYTIC CAPACITOR!
C628	1	NS-35TW101M	ELECTROLYTIC CAPACITOR
C629~631	3	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
RESISTORS			
R101	1	KA16ST562J	CARBON RESISTOR
R102	1	KA16ST153J	CARBON RESISTOR
R103	1	KA16ST123J	CARBON RESISTOR
R104	1	KA16ST153J	CARBON RESISTOR
R105	1	KA16ST164J	CARBON RESISTOR
R106	1	KA16ST225J	CARBON RESISTOR
R107	1	KA16ST154J	CARBON RESISTOR
R108	1	KA16ST222J	CARBON RESISTOR
R109	1	KA16ST821J	CARBON RESISTOR
R110	1	KA16ST152J	CARBON RESISTOR
R111	1	KA16ST561J	CARBON RESISTOR
R112	1	KA16ST2R2J	CARBON RESISTOR
R113	1	KA16ST4R7J	CARBON RESISTOR
R114	1	KA16ST103J	CARBON RESISTOR
R115	1	KA16ST224J	CARBON RESISTOR
R116	1	KA16ST153J	CARBON RESISTOR
R117	1	KA16ST331J	CARBON RESISTOR
R118	1	KA16ST223J	CARBON RESISTOR
R119	1	KA16ST103J	CARBON RESISTOR
R120	1	KA16ST104J	CARBON RESISTOR

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
R121	1	KA16ST754J	CARBON RESISTOR
R141	1	KA16ST184J	CARBON RESISTOR
R142	1	KA16ST134J	CARBON RESISTOR
R143	1	KA16ST224J	CARBON RESISTOR
R144	1	KA16ST104J	CARBON RESISTOR
R145	1	KA16ST222J	CARBON RESISTOR
R146	1	KA16ST271J	CARBON RESISTOR
R147	1	KA16ST333J	CARBON RESISTOR
R148	1	KA16ST562J	CARBON RESISTOR
R149	1	KA16ST223J	CARBON RESISTOR
R150	1	KA16ST103J	CARBON RESISTOR
R151	1	KA16ST474J	CARBON RESISTOR
R152	1	KA16ST4R7J	CARBON RESISTOR
R153	1	KA16ST274J	CARBON RESISTOR
R154	1	KA16ST153J	CARBON RESISTOR
R155	1	KA16ST273J	CARBON RESISTOR
R171	1	KA16ST102J	CARBON RESISTOR
R172	1	KA16ST473J	CARBON RESISTOR
R173	1	KA16ST4R7J	CARBON RESISTOR
R174	1	KA16ST333J	CARBON RESISTOR
R175,176	2	KA16ST473J	CARBON RESISTOR
R177	1	KA16ST4R7J	CARBON RESISTOR
R178	1	KA16ST103J	CARBON RESISTOR
R179	1	KA16ST2R2J	CARBON RESISTOR
R180	1	KA16ST102J	CARBON RESISTOR
R181	1	KA16ST473J	CARBON RESISTOR
R182	1	KA16ST684J	CARBON RESISTOR
R183	1	KA16ST104J	CARBON RESISTOR
R184	1	KA16ST563J	CARBON RESISTOR
R185	1	KA16ST684J	CARBON RESISTOR
R186	1	KA16ST104J	CARBON RESISTOR
R187	1	KA16ST4R7J	CARBON RESISTOR
R188	1	KA16ST102J	CARBON RESISTOR
R189	1	KA16ST183J	CARBON RESISTOR
R190	1	KA16ST153J	CARBON RESISTOR
R191	1	KA16ST103J	CARBON RESISTOR
R192	1	KA16ST472J	CARBON RESISTOR
R193	1	KA16ST102J	CARBON RESISTOR
R194	1	KA16ST183J	CARBON RESISTOR
R195	1	KA16ST394J	CARBON RESISTOR
R197	1	KA16ST103J	CARBON RESISTOR
R198	1	KA16ST223J	CARBON RESISTOR
R199	1	KA16ST104J	CARBON RESISTOR
R201	1	KA16ST221J	CARBON RESISTOR
R202	1	KA16ST222J	CARBON RESISTOR
R203	1	KA16ST223J	CARBON RESISTOR
R204	1	KA16ST152J	CARBON RESISTOR
R205	1	KA16ST223J	CARBON RESISTOR
R206	1	KA16ST104J	CARBON RESISTOR
R207	1	KA16ST223J	CARBON RESISTOR
R208	1	KA16ST104J	CARBON RESISTOR
R209	1	KA16ST103J	CARBON RESISTOR
R210	1	KA16ST121J	CARBON RESISTOR
R211	1	KA16ST243J	CARBON RESISTOR
R212	1	KA16ST472J	CARBON RESISTOR
R213	1	KA16ST103J	CARBON RESISTOR
R214	1	KA16ST102J	CARBON RESISTOR
R215	1	KA16ST104J	CARBON RESISTOR
R301~304	4	KA16ST223J	CARBON RESISTOR
R305	1	KA16ST561J	CARBON RESISTOR
R306	1	KA16ST101J	CARBON RESISTOR
R307	1	KA16ST104J	CARBON RESISTOR
R308	1	KA16ST223J	CARBON RESISTOR
R309	1	KA16ST104J	CARBON RESISTOR
R310	1	KA25ST100J	CARBON RESISTOR
R311	1	KA16ST103J	CARBON RESISTOR
R312	1	KA16ST473J	CARBON RESISTOR
R313	1	KA16ST333J	CARBON RESISTOR
R314	1	KA16ST223J	CARBON RESISTOR
R315	1	KA16ST330J	CARBON RESISTOR
R316	1	KA16ST101J	CARBON RESISTOR
R317	1	KA16ST103J	CARBON RESISTOR
R318	1	KA16ST104J	CARBON RESISTOR
R319	1	KA16ST223J	CARBON RESISTOR
R320	1	KA16ST104J	CARBON RESISTOR
R321	1	KA16ST103J	CARBON RESISTOR
R322	1	KA16ST104J	CARBON RESISTOR
R323	1	KA16ST223J	CARBON RESISTOR
R324~326	3	KA16ST103J	CARBON RESISTOR
R327	1	KA16ST472J	CARBON RESISTOR
R328	1	KA16ST103J	CARBON RESISTOR
R329	1	KA16ST222J	CARBON RESISTOR
R330~332	3	KA16ST103J	CARBON RESISTOR
R333	1	KA16ST222J	CARBON RESISTOR
R334	1	KA16ST472J	CARBON RESISTOR
R335	1	KA16ST750J	CARBON RESISTOR
R336	1	KA16ST101J	CARBON RESISTOR
R501,502	2	KA16ST821J	CARBON RESISTOR
R503,504	2	KA16ST103J	CARBON RESISTOR
R505~512	8	KA16ST333J	CARBON RESISTOR
R513~520	8	KA16ST223J	CARBON RESISTOR
R521~528	8	KA16ST473J	CARBON RESISTOR
R529~532	4	KA16ST153J	CARBON RESISTOR
R533~536	4	KA16ST332J	CARBON RESISTOR
R537~540	4	KA16ST153J	CARBON RESISTOR
R541,542	2	KA16ST472J	CARBON RESISTOR

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
R543,544	2	KA16ST274J	CARBON RESISTOR
R545,546	2	KA16ST132J	CARBON RESISTOR
R547,548	2	KA16ST103J	CARBON RESISTOR
R549,550	2	KA16ST472J	CARBON RESISTOR
R551,552	2	KA16ST153J	CARBON RESISTOR
R553,554	2	KA16ST163J	CARBON RESISTOR
R555	1	KA16ST221J	CARBON RESISTOR
R556	1	KA16ST223J	CARBON RESISTOR
R557	1	KA16ST473J	CARBON RESISTOR
R558	1	KA16ST104J	CARBON RESISTOR
R559,560	2	KA50XT473J	CARBON RESISTOR
R563,564	2	KA50XT471J	CARBON RESISTOR
R565,566	2	KA16ST472J	CARBON RESISTOR
R567,568	2	KA16ST331J	CARBON RESISTOR
R569,570	2	KA16ST104J	CARBON RESISTOR
R571,572	2	KA16ST473J	CARBON RESISTOR
R573,574	2	KA16ST471J	CARBON RESISTOR
R575,576	2	KA16ST472J	CARBON RESISTOR
R577,578	2	KA16ST512J	CARBON RESISTOR
R579,580	2	KA16ST163J	CARBON RESISTOR
R581,582	2	KA16ST333J	CARBON RESISTOR
R583,584	2	KA16ST512J	CARBON RESISTOR
R585	1	KA16ST273J	CARBON RESISTOR
R586,587	2	KA16ST104J	CARBON RESISTOR
R588,601	2	KA16ST102J	CARBON RESISTOR
R602	1	KA50XT222J	CARBON RESISTOR
R603	1	KA16ST102J	CARBON RESISTOR
R604	1	KA50XT222J	CARBON RESISTOR
R605	1	KA16ST224J	CARBON RESISTOR
R607	1	KA16ST103J	CARBON RESISTOR
R608	1	KA16ST332J	CARBON RESISTOR
R609	1	KA16ST103J	CARBON RESISTOR
R610	1	KA50XT123J	CARBON RESISTOR
R611	1	KA50XT823J	CARBON RESISTOR
R612,613	2	KA16ST103J	CARBON RESISTOR
R614	1	KA16ST333J	CARBON RESISTOR
R615	1	KA50XT561J	CARBON RESISTOR
R616	1	KA16ST102J	CARBON RESISTOR
R618	1	KA50XT104J	CARBON RESISTOR
R619	1	KA25ST361J	CARBON RESISTOR
R620	1	KA16ST474J	CARBON RESISTOR
R621	1	KA16ST221J	CARBON RESISTOR
R622	1	KA16ST223J	CARBON RESISTOR
R623	1	KA25ST361J	CARBON RESISTOR
R624	1	KA16ST474J	CARBON RESISTOR
R625	1	KA16ST221J	CARBON RESISTOR
R626	1	KA16ST223J	CARBON RESISTOR
R627,628	2	FR25ST100J-LP	FLAME PROOF RESISTOR
R629	1	KA50XT683J	CARBON RESISTOR
R630,631	2	KA16ST332J	CARBON RESISTOR
R632	1	KA16ST103J	CARBON RESISTOR
R633	1	KA16ST680J	CARBON RESISTOR
RA301	1	RA-SP-06473J	NETWORKS RESISTOR
RA302	1	RA-SP-04104J	NETWORKS RESISTOR
SVR101	1	SVR-06T3B104	SEMI-VARIABLE RESISTOR
SVR102	1	SVR-06T3B103	SEMI-VARIABLE RESISTOR
SVR141	1	SVR-06T3B104	SEMI-VARIABLE RESISTOR
SVR142	1	SVR-06T3B103	SEMI-VARIABLE RESISTOR
SVR143	1	SVR-06T3B203	SEMI-VARIABLE RESISTOR
COILS			
L201	1	191015	OSC COIL
L301	1	180017	INDUCTOR
BC301,501~504	5	Z8F503D-00TA	FERRITE BEADS INDUCTOR
MISCELLANEOUS			
W301	1	468S243B12-J-J	3-LEAD,FLAT CABLE
W302	1	468S243B20-J-J	3-LEAD, FLAT CABLE
W502	1	007S240B10-B-B	SOLDER-PLATED WIRE
4E29	1	OSH-1625-MP	HEAT SINK
CN101	1	PI25C-08M	MICRO PLUG
CN102	1	EMCS0660MT6	MICRO PLUG
CN351	1	IL-S03PS2T2-EF	CONNECTOR
CN402	1	IL-S10PS2T2-EF	CONNECTOR
CN403	1	PI25C-02M	MICRO PLUG
CN451	1	PI25C-03M	MICRO PLUG
CN601	1	B6P-VH	CONNECTOR
CN602	1	B2P-VH	CONNECTOR
CN603	1	B2B-XH-A	CONNECTOR
CN651,652	2	PI25C-05M	MICRO PLUG
CN701	1	53114-0910	PCB PLUG
CN702	1	53114-0710	PCB PLUG
CN703	1	53114-0610	PCB PLUG
CN704	1	IL-S10PS2T2-EF	CONNECTOR
CN705	1	IL-S05PS2T2-EF	CONNECTOR
CN751	1	EMCS0660MT6B	MICRO PLUG
CN752	1	EMCS0460MT6	MICRO PLUG
CN901	1	EMCS0560MT6B	MICRO PLUG
CN902	1	EMCS0360MT6B	MICRO PLUG

EXPLODED VIEW

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
MC301	1	MK-ILS03S-K139	MICRO SOCKET ASS'Y
MC501	1	MK-ILS07S-K138	MICRO SOCKET ASS'Y
RJ301	1	YKB11-0378	RCA JACK 1P
RJ501,502	2	YKC21-0297	RCA JACK 2P
TP001~004, 006,008~ 011,016	10	JPW02T34V	JUMPER WIRE
XL301	1	HC49/N33.8688M	QUARTZ OSCILLATOR UNIT

OPERATION PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
16E 1	1	OPE-K056	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D701	1	GMA01	DIODE
SWITCHES			
S701~705	5	EVQQSB05G	LIGHT-TOUCH SWITCH
S706~715	10	EVQQS705G	LIGHT-TOUCH SWITCH
S716~718	3	EVQQSB05G	LIGHT-TOUCH SWITCH
MISCELLANEOUS			
W781	1	2HJS264N06-J-J	4-LEAD,FLAT CABLE
FL701	1	CP5459GR	FLUORESCENCE LAMP
MC701	1	52170-0910	PCB SOCKET
MC702	1	52170-0710	PCB SOCKET
MC703	1	52170-0610	PCB SOCKET
MC704	1	MK-ILS10S-K126	MICRO SOCKET ASS'Y
MC705	1	MK-ILS05S-K125	MICRO SOCKET ASS'Y

REMOTE CONTROL PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
16E24	1	RC-K056	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
LD781	1	LN250RP	LED
MISCELLANEOUS			
RD781	1	GP1U50X	REMOTE CONTROL ASS'Y

VACUUM TUBE PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
17E 1	1	VT-K057	PRINTED CIRCUIT BOARD
CAPACITORS			
C451,452	2	C3NE2A225K	METALIZED FILM CAPACITOR
C453	1	NS100TW470M-KF	ELECTROLYTIC CAPACITOR
RESISTORS			
R451,452	2	KA50XT103J	CARBON RESISTOR
R453,454	2	KA50XT123J	CARBON RESISTOR
R455,456	2	KA50XT473J	CARBON RESISTOR
R457,458	2	KA50XT561J	CARBON RESISTOR
R459,460	2	KA50XT472J	CARBON RESISTOR
R461,462	2	KA50XT205J	CARBON RESISTOR
R463	1	SA-3WT1R8J	METAL OXIDE RESISTOR
MISCELLANEOUS			
CN501	1	IL-S07PS2T2-EF	CONNECTOR
MC451	1	MZ-25C03F-K137	MICRO SOCKET ASS'Y
17E 4	2	P-465	TUBE SOCKET

HEADPHONE PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
18E 1	1	HP-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D401	1	ZD40-051	ZENER DIODE,2/5W, 5.1V
Q401,402	2	2SC2878-A,B	TRANSISTOR
IC401	1	M5218AL	IC
CAPACITORS			
C401,402	2	HE70SJYF103Z	CERAMIC CAPACITOR
C403,404	2	NS-10TW470M	ELECTROLYTIC CAPACITOR
C405,406	2	NP-25TW100M	ELECTROLYTIC CAPACITOR
C407,408	2	NS-16TW100M	ELECTROLYTIC CAPACITOR
C409,410	2	HE50SJYB102K	CERAMIC CAPACITOR
C411~413	3	XC75SJYF104Z	IBL. CERAMIC CAPACITOR
C415,416	2	HE70SJSL221J	CERAMIC CAPACITOR
RESISTORS			
R401,402	2	KA16ST472J	CARBON RESISTOR
R403,404	2	KA16ST121J	CARBON RESISTOR
R405,406	2	KA16ST103J	CARBON RESISTOR
R407,408	2	KA16ST102J	CARBON RESISTOR
R409,410	2	KA16ST472J	CARBON RESISTOR
R411,412	2	KA16ST103J	CARBON RESISTOR
R413,414	2	KA16ST104J	CARBON RESISTOR
R417	1	KA16ST331J	CARBON RESISTOR
R418	1	KA16ST201J	CARBON RESISTOR
VR401	1	V8V16-203A2NF5	ROTARY POTENTIOMETER
COILS			
BC401,402	2	Z8F503D-00TA	FERRITE BEADS INDUCTOR
MISCELLANEOUS			
2W18	4	U9-#18B025	UL TYPE TUBE
CN401	1	IL-S02PS2L2-EF	CONNECTOR
MC402	1	MK-ILS10S-K135	MICRO SOCKET ASS'Y
MC403	1	MZ-25C02F-K136	MICRO SOCKET ASS'Y
RJ401	1	HLJ4318-1-3040	H.P. JACK

POWER SUPPLY PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
19E 1	1	PS-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
IC651	1	UPC2412HF	IC
CAPACITORS			
C651,652	2	NS-25TW101M	ELECTROLYTIC CAPACITOR
RESISTORS			
R651	1	KA50XT472J	CARBON RESISTOR
COILS			
L651,652	2	180016	CHOKE
SWITCHES			
S651	1	ESB-4161005	PUSH SWITCH
MISCELLANEOUS			
CN352	1	PI25C-03M	MICRO PLUG
EL651,652	2	59BS4795	GND LUG
EL653~655	3	S-001P	GND LUG
MC651	1	MZ-25C05F-K132	MICRO SOCKET ASS'Y
MC652	1	MZ-25C05F-K133	MICRO SOCKET ASS'Y
19E 9	1	OSH-1625-MP	HEAT SINK

SWITCH PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
20E 1	1	SW-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D751~756	6	GMA01	DIODE
SWITCHES			
S751~771	21	EVQQSB05G	LIGHT-TOUCH SWITCH
MISCELLANEOUS			
MC751	1	MN-06HUM-K128	MICRO SOCKET ASS'Y
MC752	1	MN-04HUM-K129	MICRO SOCKET ASS'Y

STAND-BY PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
20E15	1	ST-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D351	1	1N4002	DIODE
D352	1	ZD40-051	ZENER DIODE,2/5W, 5.1V
RESISTORS			
R351	1	SA-3WT4R7J	METAL OXIDE RESISTOR
R352	1	KA16ST103J	CARBON RESISTOR
R354	1	KA16ST471J	CARBON RESISTOR
R355	1	KA16ST561J	CARBON RESISTOR
SWITCHES			
S351	1	ESB661	PUSH SWITCH
MISCELLANEOUS			
W351	1	2HJS263N08-J-J	3-LEAD,FLAT CABLE
MC351	1	MK-ILS03S-K130	MICRO SOCKET ASS'Y
MC352	1	MZ-25C03F-K131	MICRO SOCKET ASS'Y

OPTICAL PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
21E 1	1	OPT-K057	PRINTED CIRCUIT BOARD
CAPACITORS			
C801	1	XC75SJYF104Z	18L. CERAMIC CAPACITOR
MISCELLANEOUS			
CN301	1	IL-S03PS2L2-EF	CONNECTOR
TX801	1	TOTX178	OPTICAL TX MODULE

LED PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
21E10	1	LED-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
LD351	1	LN250RP	LED

VOLUME LED PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C.BOARD			
21E16	1	VLED-K057	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
LD401	1	SPR-54MVWF	LED
MISCELLANEOUS			
MC401	1	MK-ILS02S-K134	MICRO SOCKET ASS'Y

EXPLODED VIEW

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
COILS			
22E 9	1	NPT-K0204	POWER TRANSFORMER
MISCELLANEOUS			
W401	1	R-030-10J	CABLE ASS'Y
W601	1	R-030-05J	CABLE ASS'Y
W904,905	2	015Y220B14MDMD	TWISTED WIRE
1M 1	1	N21869-2	FRONT PANEL
1M 2	2	BK4006A-BK1	HANDLE
1M 3	4	N45846	HANDLE SPACER
1M 5	1	N10602-1	FRONT BASE
1M 6	1	N45892-1	SUB PANEL,L
1M 7	1	N45913-1	SUB PANEL,R
1M 8	1	N45890-2	DISPLAY GLASS
1M 9	1	N45646A	PUSH BUTTON
1M10	1	N43866-T-BK1	PUSH BUTTON
1M11	3	N45686	TACT BUTTON
1M12	1	N45603	BUTTON CAP
1M13	1	N45668	TACT BUTTON
1M14	1	N45668-1	TACT BUTTON
1M15	1	N45668-4	TACT BUTTON
1M16	2	BK4162A-13	PUSH BUTTON,6
1M17	1	BK4162A-12	PUSH BUTTON,5
1M18	1	BK4162A-11	PUSH BUTTON,4
1M19	1	N31161-2	TRAY PANEL
1M20	1	N45932	CUSHION
1M21	1	N10601	BOTTOM CHASSIS
1M22	4	TL-011	FOOT
1M23	1	N21875-1	REAR PANEL
1M24	1	N21878-1	CABINET
1M25	1	N31110-T-BK1	KNOB 33
1M26	1	N45522	LED CHIP
1M27	1	N45915	FITTINGS (TUBE)
1M28	1	N45927	CUSHION
1M29	1	KGLS-22S	SPACER
1M30	1	LWS-3S	LOCKING WIRE SADDLE
2M 1	1	N45909	FITTING PLATE
2M 2	1	N45908	FITTING PLATE
2M 3	2	N45508	EARTH PLATE
2M 4	1	N422818	SHAFT(SW)
2M 5	1	BK4115	SHAFT TAPE
2M 6	3	N45916	CUSHION
2M 7	1	MPS-14-0	SPACER
2M 8	4	KGLS-4S	SPACER
2M 9	1	KGPS-3S	SPACER
2M10	1	N44813	FITTINGS (P.C.B.)
2M11	1	N21876-2	INNER CARTON
2M12	2	N21877	PACKING PAD
2M13	1	N41318-1	POLYETHYLENE BAG
2M14	1	N40487	POLYETHYLENE BAG (ACCESSORIES)
2M15	1	N45561	PACKING PAD (CABI)
2M18	1	N45917	LABEL,LASER
2M19	1	N31136	WARRANTY R
2M20	1	N31137	LIMITED WARRANTY
2M21	2	N42235	SHEET, SERIAL NUMBER
2M22	1	OM-1088	INSTRUCTION MANUAL
2M24,M25	3	N45335	LABEL,SERIAL NO.
2M27	1	N45928	SHIELD CASE
2M28	1	N41622A	LUG (TUNING)
2M29,M30	3	2AE-05	LUG
3M 1~M 6	13	TBB+26X08-Y	TAP SCREW B, BIND HEAD, Y
3M 8	3	TBC+30X12-B	TAP SCREW B,WASHER FACED,B
3M 9~M14	18	TBB+30X08-B	TAP SCREW B, BIND HEAD, B
3M15~M21	16	TSB+30X06-Y	TAP SCREW S, BIND HEAD, Y
3M23	4	SSPS2+40X10-B	SCREW-SP ASSY, PAN HEAD,B
3M24	2	TSB+40X06-Y	TAP SCREW S, BIND HEAD, Y
3M25	4	ZC+STR30X14-2Y	TAP SCREW, WASHER FACED, Y
3M26,M27	2	TSB+30X08-B	TAP SCREW S, BIND HEAD, B
3M29	2	2TWX30-Y	TOOTHED LOCK WACHER
3M30	1	2AWX1430-08-Y	PLAIN WASHER, Y
VT451,452	2	6DJ8	VACUUM TUBE
22E 1	1	ACC-041E5-4EE1	LINE CORD
22E 3	1	SR-4N-4	CORD STOPPER
22E12	1	RH-49	REMOTE CONTROL TRANSMITTER
22E13	1	UM-3-2	BATTERY
22E15	1	TCD-201-ASSY1	CD MECHANISM ASSY
22E22	1	PC-063	RCA PIN CORD ASS'Y

OTHER PARTS

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
MISCELLANEOUS			
M901~903	3	MDN-4RA3EZAS	DC MOTOR,ELECTRONIC GOVERNOR
W901	1	571S280N07-C-C	SOLDER-PLATED WIRE
W902,903	2	571S280B10-C-C	SOLDER-PLATED WIRE
MC101	1	MZ-PHR08-K122	MICRO SOCKET ASS'Y
MC102	1	MZ-PHR06-K105	MICRO SOCKET ASS'Y
MC901	1	MN-05HUM-K123	MICRO SOCKET ASS'Y
MC902	1	MN-03HUM-K124	MICRO SOCKET ASS'Y
22E 4,E 5	8	BK-1	CORD CLAMP
22E 6	2	NO.5167	CORD CLAMP
22E16	1	TCD-201	CD MECHANISM
22E18	1	KP-1	PICK UP HEAD

P.C.BOARD ASS'Y

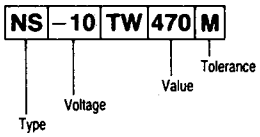
REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
1P 1	1	MAIN-K056	MAIN PCB ASS'Y
16P 1	1	OPE-K056	OPERATION PCB ASS'Y
16P24	1	RC-K056	REMOTE CONTROL PCB ASS'Y
17P 1	1	VT-K057	VACUUM TUBE PCB ASS'Y
18P 1	1	HP-K057	HEADPHONE PCB ASS'Y
19P 1	1	PS-K057	POWER SUPPLY PCB ASS'Y
20P 1	1	SW-K057	SWITCH PCB ASS'Y
20P15	1	ST-K057	STAND-BY PCB ASS'Y
21P 1	1	OPT-K057	OPTICAL PCB ASS'Y
21P10	1	LED-K057	LED PCB ASS'Y
21P16	1	VLED-K057	VOLUME LED PCB ASS'Y

TCD-201-ASSY1CD MECHANISM

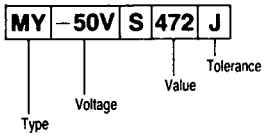
REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
001	1	A81A295	LOADING PLATE OUTSERT
002	1	A81G973	TRAY 201
003	1	A81G974	SWITCH LEVER
004	1	A81P462	CRAMPER ARM
005	1	A81G975	CRAMPER
006	1	A81P463	CRAMPER PLATE
007	1	A81G976	DISK CATCH
008	1	A81G977	LIFTER CAM
009	1	A81G978	LATCH
010	1	A81G235	MOTOR PULLEY
011	1	A81G122	PULLY GEAR
012	1	A81G123	GEAR 3
013	1	A81G581	RACK 11B
014	1	A81S059	CRAMPER SPRING
015	1	A81S060	LATCH SPRING
016	1	A82G057	CRAMPER MAGNET
017	3	MDN-4RA3EZAS	DC MOTOR,ELECTRONIC GOVERNOR
018	1	S01W051	LEAF SWITCH LSC-1223-38
019	2	M20S004	SCREW M2X4 SEMS
020	3	A81G980	FLOAT CUSHION
021	2	A81S061	FLOAT SPRING 201A
022	1	A81S064	FLOAT SPRING 201B
023	3	A81H085	ATTACHMENT SCREW
024	1	A81G131	LOADING BELT
025	1	A81A294	UNIT PLATE 201 OUTSERT
026	1	A81A293	TURNTABLE ASSEMBLY
027	4	M20B003	SCREW M2X3 BIND
028	1	A81G970	WORM GEAR
029	1	A81G971	SLIDE GEAR
030	1	KP-1	PICK UP HEAD
031	1	A81G972	RACK 201
032	2	M26S006	M2.6X6 SCREW
033	2	A81H113	SLIDE SHAFT
034	1	S01W125	LEAF SWITCH LSA1115R6
040	1	A81A308	LOADING MOTOR ASSEMBLY
050	1	A81A309	FEED MOTOR ASSEMBLY

Capacitors Description

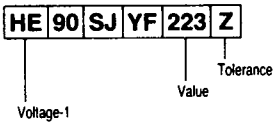
- **Electrolytic**

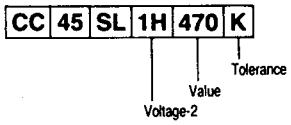


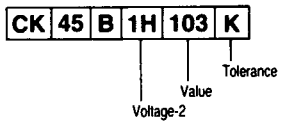
- **Mylar · Styrol**



- **Ceramic**







- **Electrolytic**

Type	Voltage	Value	Tolerance
LL: Low Leak	-10: 10V	R47: 0.47μF	K: ±10%
NP: Non-Pole	-50: 50V	4R7: 4.7μF	M: ±20%
NS: Standard	6R3: 6.3V	470: 47μF	
		471: 470μF	
		472: 4700μF	

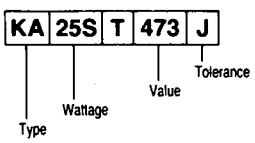
- **Mylar · Styrol**

Type	Voltage	Value	Tolerance
MY: Mylar	-25V: 25V	4R7: 4.7pF	G: ±2%
ST: Styrol	125V: 125V	470: 47pF	J: ±5%
	-63T: 63V	471: 470pF	K: ±10%
		472: 4700pF	M: ±20%
		473: 0.047μF	
		474: 0.47μF	
		(1000pF=0.001μF)	

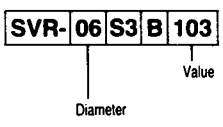
Voltage-1	Voltage-2	Value	Tolerance
HC: 25V	1E: 25V	4R7: 4.7pF	C: ±0.25pF
HE: 50V	1H: 50V	470: 47pF	D: ±0.5pF
H: 100V	2H: 500V	471: 470pF	F: ±1pF
HK: 250V		472: 4700pF	J: ±5%
HM: 500V		473: 0.047μF	K: ±10%
		474: 0.47μF	M: ±20%
		(1000pF=0.001μF)	Z: +80~-20%

Resistors Description

- **Fixed**



- **Semi-Variable**



Type	Wattage	Value	Tolerance	Diameter
CE: Cement Case	-2W: 2W	R47: 0.47Ω	M: ±20%	08: 8φ
FR: Flame Proof	10W: 10W	4R7: 4.7Ω	K: ±10%	10: 10φ
KA: Carbon	16S: 1/6W	470: 47Ω	J: ±5%	06: 6φ
MF: Metal Film	20S: 1/5W	471: 470Ω	G: ±2%	
RF: Fusible	25S: 1/4W	472: 4.7kΩ	F: ±1%	
SA: Metal Oxide	50S: 1/2W	473: 47kΩ	D: ±0.5%	
	50X: 1/2W	474: 470kΩ		
	S3W: 3W	475: 4.7MΩ		

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