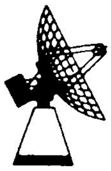
NEC

MODEL RM-3500 (BA)
RM-3500 (BD)
RM-3500 (BS)
RM-3500 (BG)

COMPACT DISC PLAYER STEREO RADIO CASSETTE RECORDER

SERVICE MANUAL

ORDER NO. 499-91-0352



Better Service
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SPECIFICATIONS

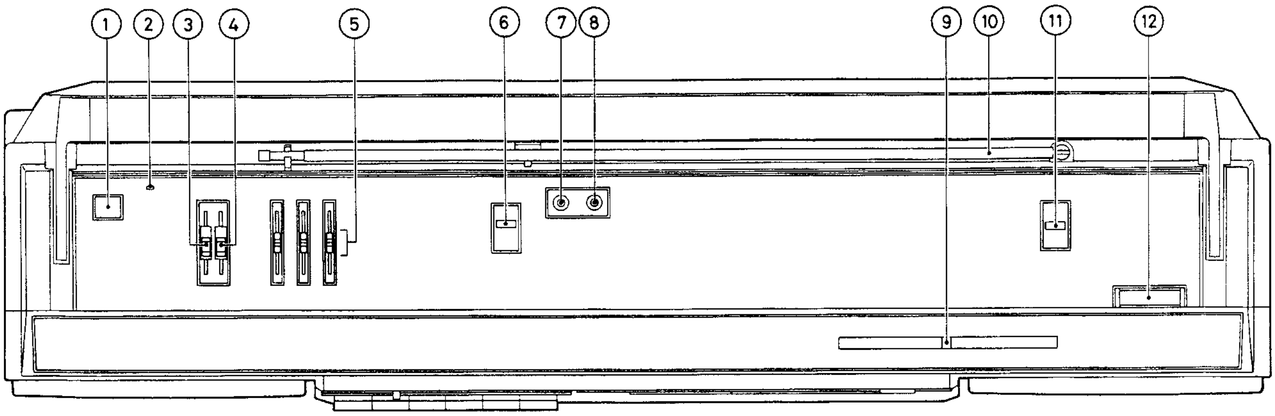
POWER SUPPLY
Mains ...... AC 115/230V,50/60Hz (BG) AC 220V,50Hz (BD,BS) AC 240V,50Hz (BA)
Batteries .... DC 12V,"D"size or UM -1 flashlight batteries x 8
POWER CONSUMPTION 24W
POWER OUTPUT .... 8W total(maximum)
SPEAKERS .... 120mm, 4 ohms, dynamic (x 2)27mm,piezo, (x 2)
DIMENSIONS .... 580(W)x 167(H)x 145(D)mm
WEIGHT .... 4.8kg (without batteries)
RADIO SECTION
Tuning Range .... FM: 87.5-108MHz
MW: 530-1605kHz
SW: 5.8-18.5MHz (BA,BD,BG)
LW: 145-285kHz (BS)
Antenna System .... FM:Telescopic antenna
MW /SW:Built-in ferrite ber antenna(BA,BD,BG)
MW /LW:Built-in ferrite ber antenna(BS)
FM Stereo Separation .... 30 dB (at 1kHz)
STEREO CASSETTE RECORDER SECTION
Type .... 4-track,2-channel stereo or monoral
Tape Speed .... 4.75cm /sec.
Rewind Time .... 120 sec.(approx.)with C 60 cassette tape
Wow and Flutter .... 0.2%(WRMS)
Frequency Response .... 100-8000Hz (normal)
JACKS
External Microphone .... 0.5mV/2.2k ohm
Line In .... 200mV/47k ohm
Line Out .... 2.2k ohm
External Speaker .... 4 ohm
Headphone .... 32 ohm

Specifications may be changed without notice.

NEC Corporation
TOKYO, JAPAN

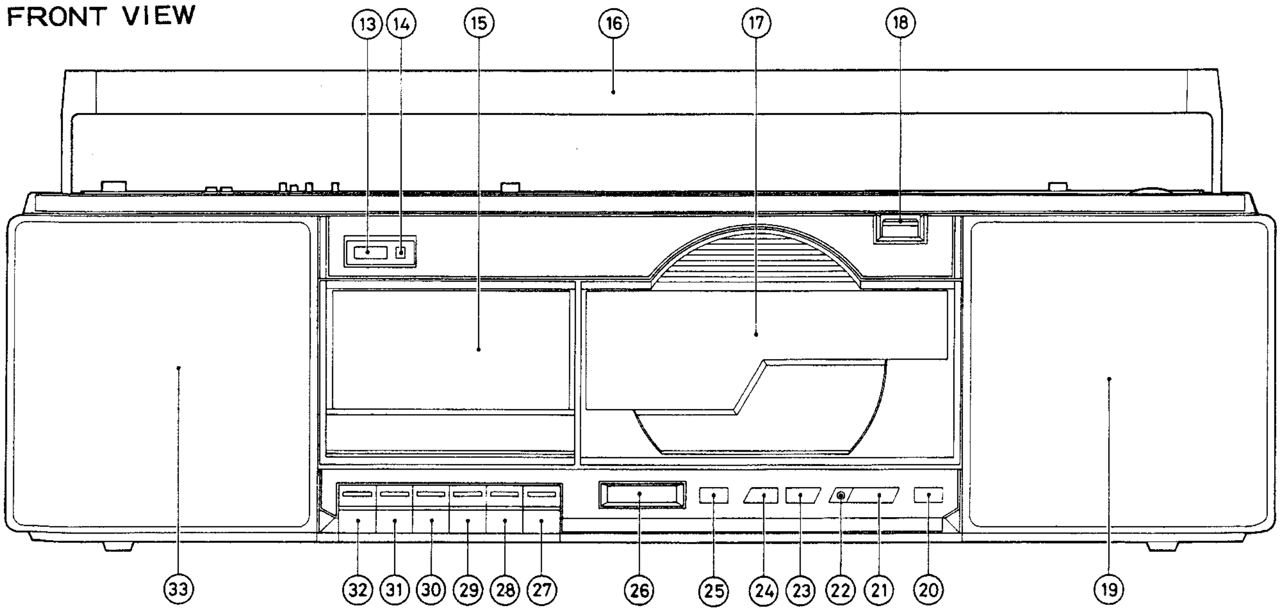
COMPONENTS

TOP VIEW



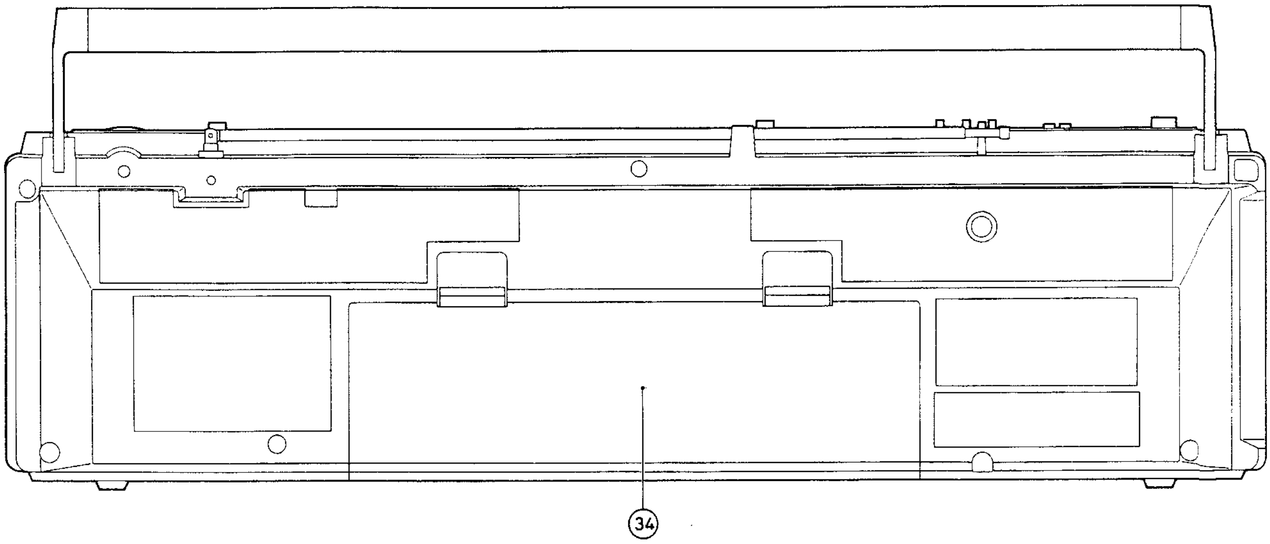
1. Power Switch Knob
2. Built -in Microphone
3. Volume Control Knob, Left Channel
4. Volume Control Knob, Right Channel
5. Graphic Equalizer Control Knob
6. Function Switch Knob
7. EXT. Mic Jack, Left Channel
8. EXT. Mic Jack, Right Channel
9. Dial Pointer
10. Telescopic Antenna
11. Band Select Knob
12. Tuning Knob

FRONT VIEW



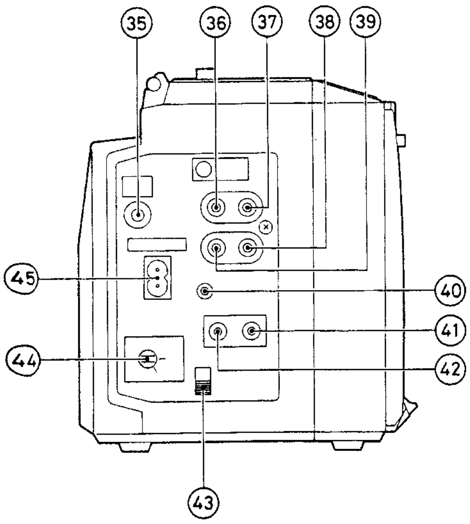
13. Tape Counter
14. Tape Counter Reset Knob
15. Cassette Compartment Cover
16. Handle
17. CD Compartment Cover
18. Eject Button, CD
19. Speaker, Right Channel
20. Stop Button, CD
21. Play/Pause Button, CD
22. CD Pause Indicator
23. Track Skip(▷▷|) Fast Forward (▷▷) Button
24. Track Skip(|◁◁) Fast Reverse(◁◁) Button
25. Repeat Button, CD
26. CD Indicator
27. Pause Button, Cassette
28. Stop/Eject Button, Cassette
29. Fast-Forward Button, Cassette
30. Rewind Button, Cassette
31. Play Button, Cassette
32. Record Button, Cassette
33. Speaker, Left Channel

REAR VIEW



34. Battery Compartment Cover

SIDE VIEW



35. DC Input Jack
36. LINE IN Jack, Left Channel
37. LINE IN Jack, Right Channel
38. LINE OUT Jack, Right Channel
39. LINE OUT Jack, Left Channel
40. Headphones Jack
41. EXT. Speaker Jack, Right Channel
42. EXT. Speaker Jack, Left Channel
43. Beat Cut Switch Knob
44. Voltage Selector Switch(BG)
45. AC Power Cord Connection Socket

DISASSEMBLY

1. Remove the battery cover and batteries.
2. Remove eight screws Ⓐ holding the rear cabinet.

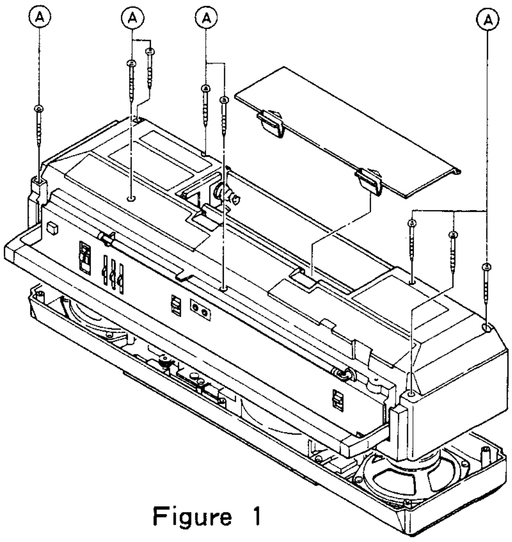


Figure 1

3. Eject for cassette Hausing and remove four screws Ⓑ holding the cassette mechanism.
4. Remove the counter belt.
5. Remove a Spring and four screws Ⓒ holding the CD case support.
6. Remove two CD case support.
7. Eject for CD case Hausing and pull out the CD case Hausing.
   (Attach the spring with the CD case in an open position. The left side on the CD case support is the side with the long shaft).

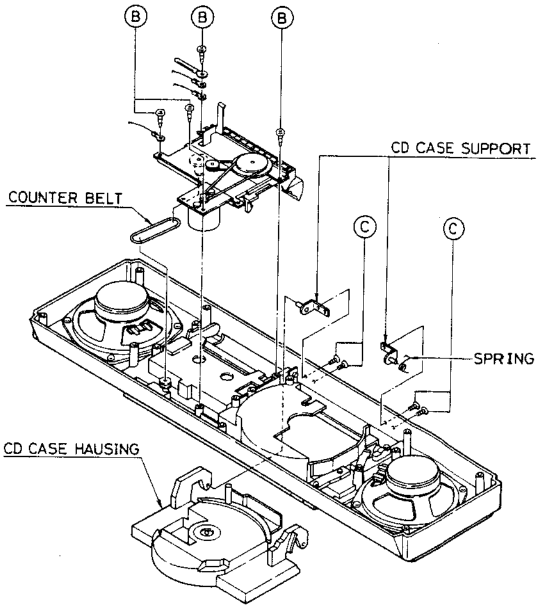


Figure 2

8. Remove six screws Ⓗ holding the CD case.

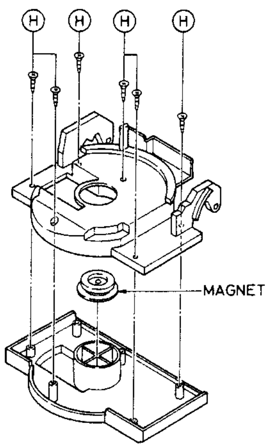


Figure 3

9. Remove three screws Ⓓ holding the CD mechanism, and take off lead wire from lead wire clamper.
   (When attaching the CD mechanical assembly, make sure that the lead wire on the CD mechanical assembly is securely clamped with the wire clamper on the tuner P.C. Board.)
10. Remove two screws Ⓔ holding tuner P.C. Board.
11. Remove five knobs (two volume and three equalizer control).
12. Remove three screws Ⓕ and one screw Ⓖ holding the volume and amplifier P.C. Board.

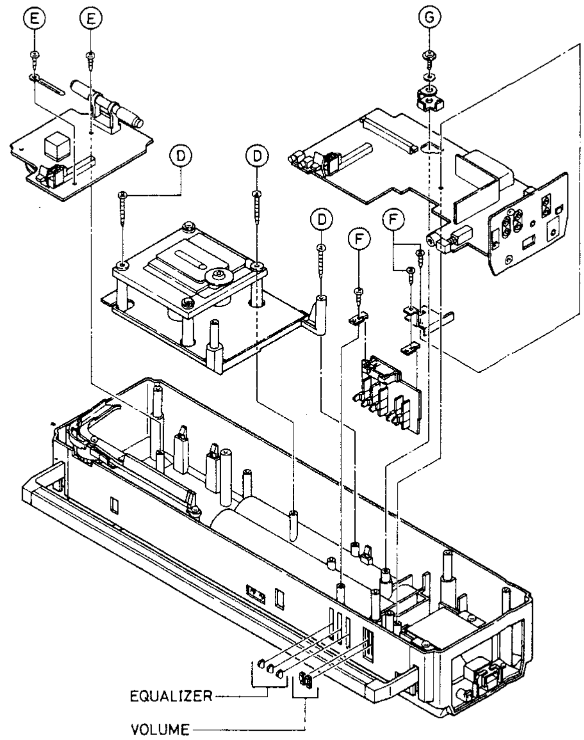


Figure 4

DIAL POINT SETTING

1. Remove Front Cabinet.
2. Remove two screws Ⓐ.
3. Turn the tuning knob counter-clockwise until the PVC on the tuner P.C. Board comes to a stop.
4. Slide the pointer to the check position on the tuner chassis, and fixed the screw.

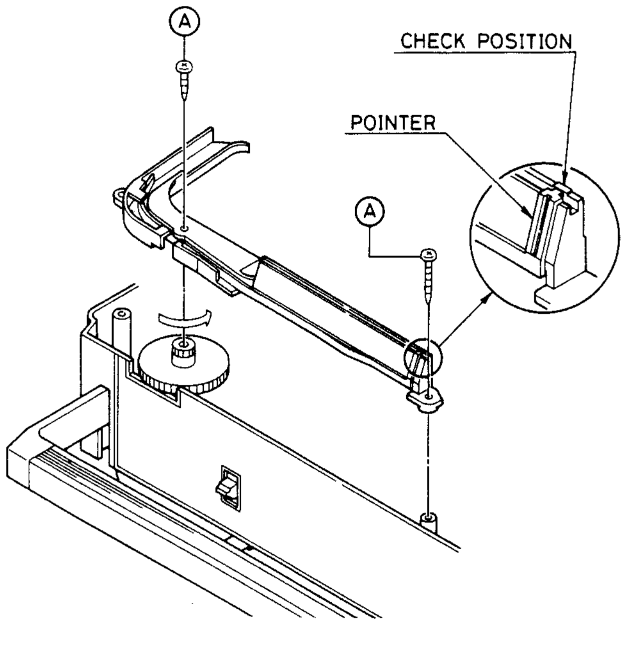


Figure 5

MECHANISM ADJUSTMENT

GENERAL REMARKS

Before attempting to adjust the mechanism, wipe clean all tape contacting surfaces(Pinch Rollers, R/P Head Erase Head and Capstans) as well as the contact surfaces of the driving parts (i.e.,Motor Pulley, Flywheel and FF /Rewind Arm Ass'y) with a piece of soft cloth soaked in alcohol. Grease stains may cause trouble.

CAUTION:

Never attempt to clean the drive belts(Capstan and FF /Rewind Belts) with alcohol soaked fabric, because they are specially surface-treated.
Any belt which has been stained with grease should be replaced.

TAKE-UP TORQUE ADJUSTMENT
(Figure 6)

1. Insert a cassette torque meter and measure in playback mode.
2. If the take-up torque is not adequate (35 to 65 g/cm), wipe the flywheel (44), RF Pulley Arm Ass'y (39) or Take-up Reel, and /or replace the RF Belt (42).

FAST-FORWARD TORQUE ADJUSTMENT
(Figure 6)

1. Measure the Fast-forward Torque.
   Torque of more than 50g/cm is necessary for Fast-forward operation.
2. If the Fast-forward torque is not adequate (over 50 g/cm), wipe the Flywheel(44), RF Pulley Arm Ass'y (39), and /or replace the RF Belt (42).

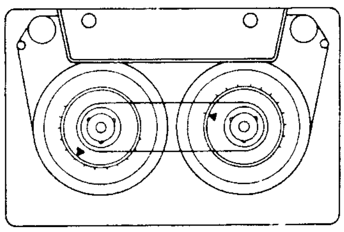


Figure 6

REWIND TORQUE ADJUSTMENT
(Figure 6)

1. Measure the Rewind Torque.
   Torque of more than 50g/cm is necessary for rewind operation.
2. If the Rewind torque is not adequate (over 50 g/cm), wipe the Flywheel(44), RF Pulley Arm Ass'y (39), and /or replace the RF Belt (42).

PINCH ROLLER ADJUSTMENT (Figure 7)

1. While keeping the unit in the playback mode, measure the Pinch Roller contact with a Spring Gauge (0 to 500 g gauge).
   A Pinch Roller force to 260 to 320g is required.
2. Hook the Spring Gauge to the Pinch Roller and pull it away from the Capstan.
   Measure the force at the moment when the Pinch Roller comes in contact with the Capstan (when the Pinch Roller starts revolving).
3. To adjust the contact pressure, bend the Spring (36), and /or replace Spring (36).

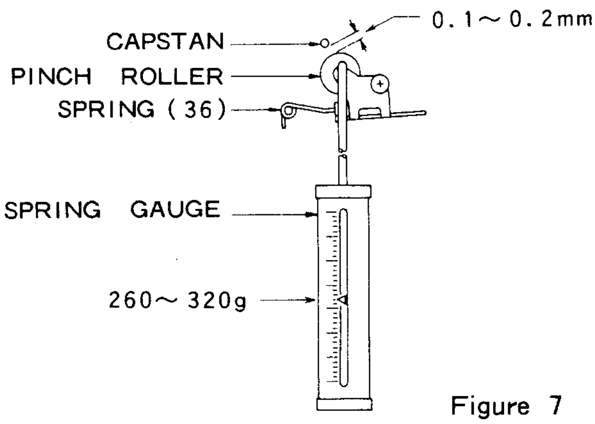


Figure 7

CHECKING OPERATION OF AUTO STOP (Figures 8 and 9)

1. When the tape comes to the end, Sensing Plate Ass'y (28) begings to move due to tape tension and induces Auto Lever (20) action.
   The auto lever is operated by contact with a Claw on the Take-up Reel (52), which releases the Push Button Actuator Ass'y (3).
2. Confirm that Sensing Plate Ass'y and Auto Lever move smoothly as you move the Sensing Plate Ass'y in playback mode.

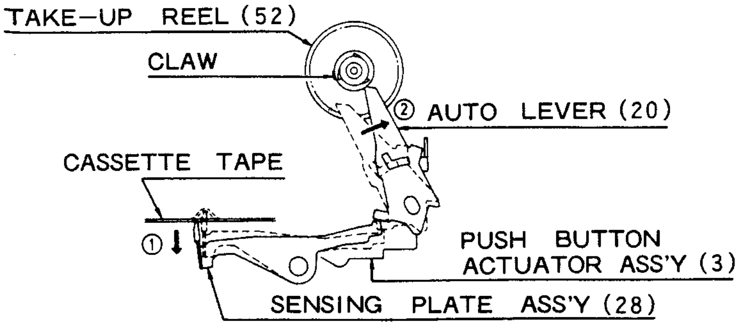


Figure 8

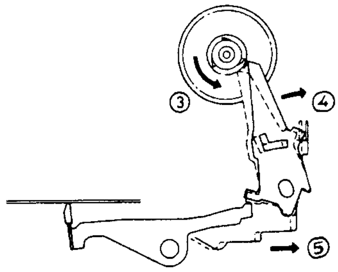


Figure 9

PICKUP REPLACEMENT

CAUTION ON REPLACEMENT

A laser diode mounted inside a pickup is very susceptible to external static electricity.
Though it will operate correctly after replacement, it may be subject to bad affection during replacement or its life may be shortened. When replacing, use conductive gum mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

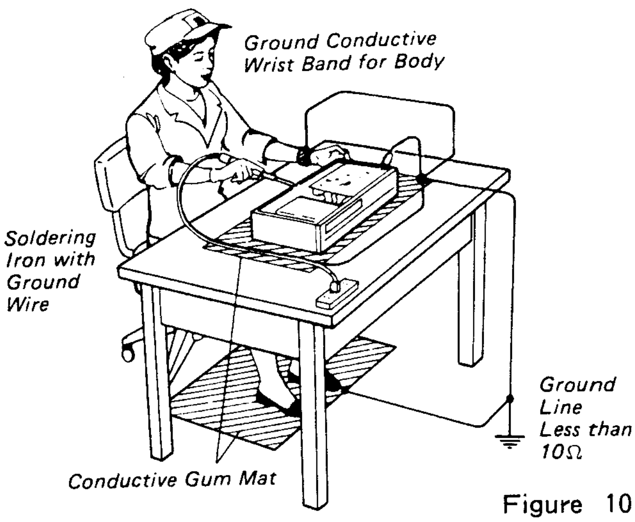


Figure 10

1. Remove CD mechanism assembly by referring to Disassembly Instructions.

2. Remove two screws Ⓐ fixing CD mechanism and disconnect four wire connectors (Figure 11)

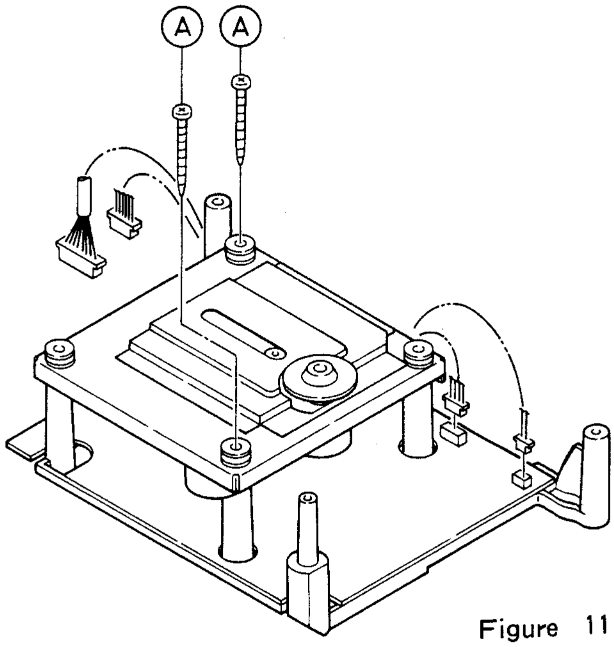


Figure 11

3. Remove two screws Ⓑ fixing pickup shaft (Figure 12)

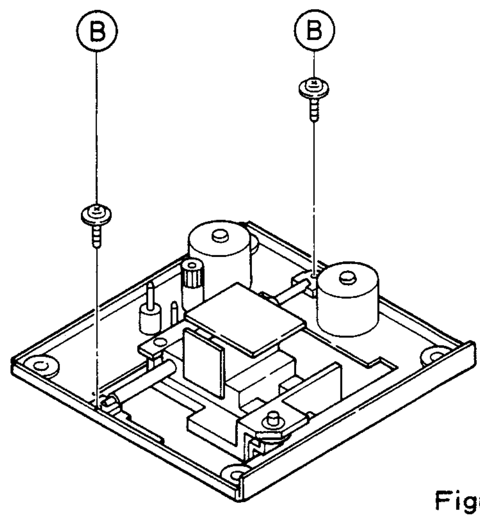


Figure 12

4. Pull out the pickup assembly (Figure 13)
(When attaching the pickup, use the wire clamper to firmly attach the two wire connectors on the pickup to the chassis.)

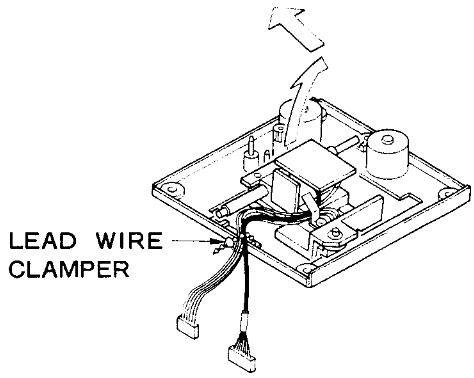


Figure 13

5. Remove three screws Ⓒ fixing slide pickup base (Figure 14)

6. Refer to the drawings of exploded view/compact disc mechanism in page 38/page 40 for the detal informations.

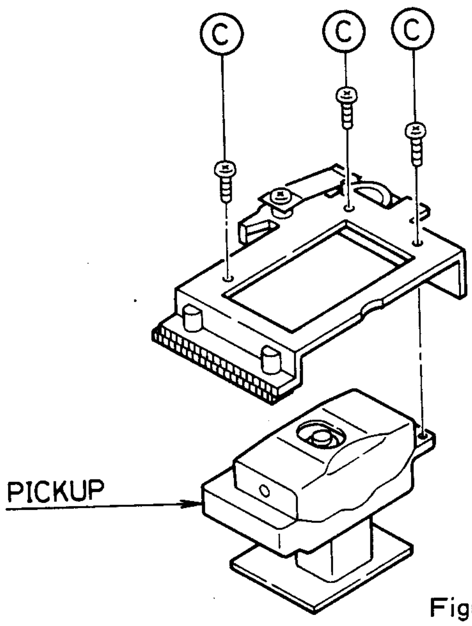


Figure 14

7. When the disc motor has been replaced or the turntable has been removed, attach the turntable so that the height of the turntable and CD chassis is 13mm. Also, when the turntable has been turned, check to see that it is not eccentric.

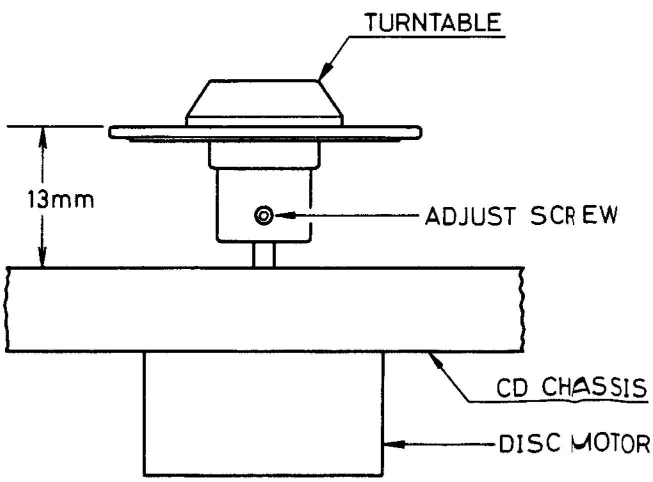


Figure 15

STANDARD MAINTENANCE

Whenever a unit is brought in for service or repair, it should be cleaned and lubricated and the head should be demagnetized.

1. Cleaning: Clean the head and all tape handling surfaces using standard cleaner and cotton swabs. Wipe dry.
2. Demagnetization: Do not use magnetized tools near the head, since they can magnetize it. With normal use, the head will retain small amounts of residual magnetism which results in increased noise and loss of high-frequency response. Use a standard tape head demagnetizer to demagnetize the playback head.
3. Lubrication: Use a high-grade of specially formulated lubricant in the appropriate places. Lubrication is normally required only when parts tend to bind, or after long periods of use.
   Use all lubricants sparingly and avoid contact with other parts.

CIRCUIT ADJUSTMENT

PRE-ADJUSTMENT PROCEDURES

1. Be sure to demagnetize and clean the head before proceeding with Head Adjustment.
2. Never use a magnetized screwdriver for the Head Adjustment.

TAPE SPEED (Figure 16)

1. Open the cassette lid.
2. Connect a Frequency counter to the Headphone Jack parallel with a 32 ohm non-reactive dummy load.
3. Adjust the pot, resistor in the mortor to make the counter reading 3000Hz while playing back 3000Hz test tape.

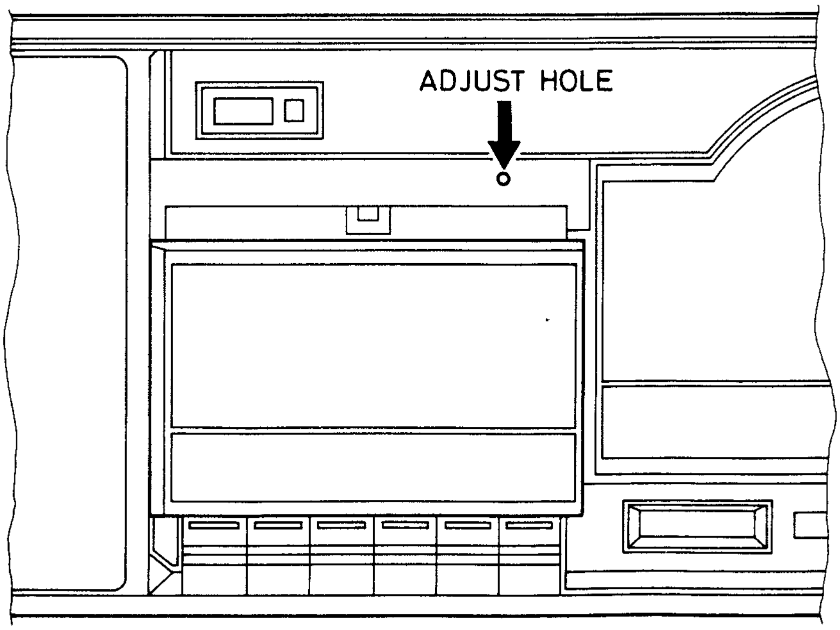


Figure 16

RECORD /PLAYBACK HEAD AZIMUTH ADJUSTMENT (Figure 17)

1. Connect a VTVM or Oscilloscope to each of the Headphone Jack(Dummy load 32 ohm).
2. Playback an 8kHz test tape and turn the Azimuth Adjustment Screw to obtain the maximum output of the left and right channels.
3. When the output level of the left and right channels differs, readjust to make the both channels at the same level.
4. After adjustment, secure the screw with paint or glue.

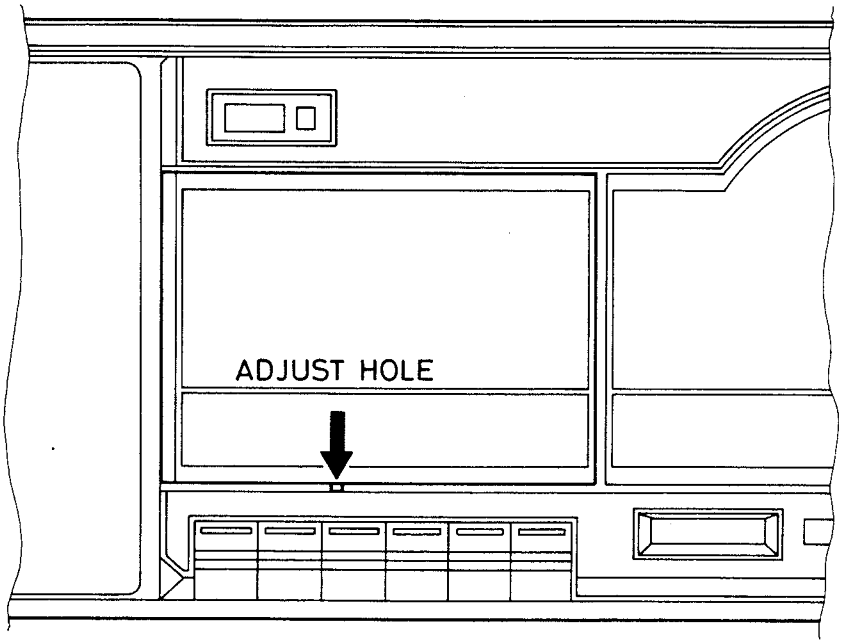


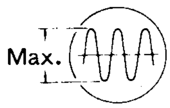
Figure 17

TUNER ALIGNMENT PROCEDURES

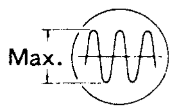
Equipment required

1. AM S.G.
2. Loop Antenna
3. Voltmeter
4. Oscilloscope
5. Frequency Counter
6. FM S.G.
7. FM Sweep Generator
8. Dummy load 330k ohm, 32ohm

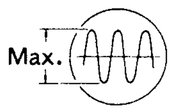
AM IF ALIGNMENT (Figures 18 and 19)(Band Select Switch:MW)

Step	Alignment	Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
	IF Calibration	1000kHz	1000kHz	T2	Obtain sine—wave and maximum amplitude.  Adjust AM S.G. output so that the proper adjustment can be obtained.

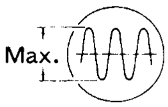
LW ALIGNMENT (Figures 19 and 20)(BS)(Band Select Switch:LW)

Step	Alignment	Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
1	Tuning Range Calibration	145kHz	Low End	L4	Obtain sine—wave and maximum amplitude. 
2		290kHz	High End	TC6	
3	Adjustment of Tracking	145kHz	Low End	L7	
4		290kHz	High End	TC4	
5	Repeat the above adjustment.				

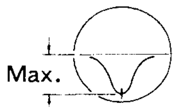
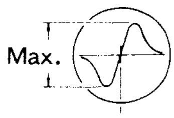
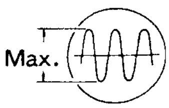
SW ALIGNMENT (Figures 19 and 20)(BA,BD,BG)(Band Select Switch:SW)

Step	Alignment	Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
1	Tuning Range Calibration	5.8MHz	Low End	L4	Obtain sine—wave and maximum amplitude. 
2		18.5MHz	High End	TC6	
3	Adjustment of Tracking	7MHz	7MHz	L7	
4		14MHz	14MHz	TC4	
5	Repeat the above adjustment.				

MW ALIGNMENT (Figures 19 and 20) (Band Select Switch:MW)

Step	Alignment	Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
1	Tuning Range Calibration	515kHz	Low End	L3	Obtain sine—wave and maximum amplitude.
2		1650kHz	High End	TC5	
3	Adjustment of Tracking	600kHz	600kHz	L6	
4		1400kHz	1400kHz	TC3	
5	Repeat the above adjustment.				

FM ALIGNMENT (Figures 19, 21, 22 and 23) (Band Select Switch:FM)

Step	Alignment	Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
1	IF Calibration	10.7MHz	Low End	Turn L5 fully counter - clockwise.	
2				T1	Obtain symetrical curve and maximum amplitude.  10.7MHz
3				L5	Obtain S curve and maximum amplitude.  10.7MHz
4	Tuning Range Calibration	87.5MHz	Low End	L2	Obtain sine—wave and maximum amplitude.
5		109MHz	High End	TC2	
6	Adjustment of Tracking	90MHz	90MHz	L1	
7		106MHz	106MHz	TC1	
8	Repeat the above adjustments.				

FM STEREO ADJUSTMENT (Figures 19 and 24)

1. Connect a frequency counter with a 300k ohm dummy load to test points TP6 and TP2.
2. Set positions:

   Function Switch :RADIO position

   Band Select Switch :FM STEREO position
3. Adjust VR1 on the Tuner P.C. Board for a frequency counter reading of 38.0kHz.

REMARKS:

1) When aligning FM IF, the symmetrical curve may not be obtained by setting the marker of the Sweep Generator (10.7MHz). This is due to the ceramic filter used in the unit.
Regardless of the marker, align the curve as symmetrically as possible with peak output.
2) When aligning the Tuning Range and adjusting the Tracking, proceed with alignment in a sequence of FM→AM.
3) Use a screwdriver with a plastic grip for all alignments.

TUNER ALIGNMENT SET UP

IF CALIBRATION, AM

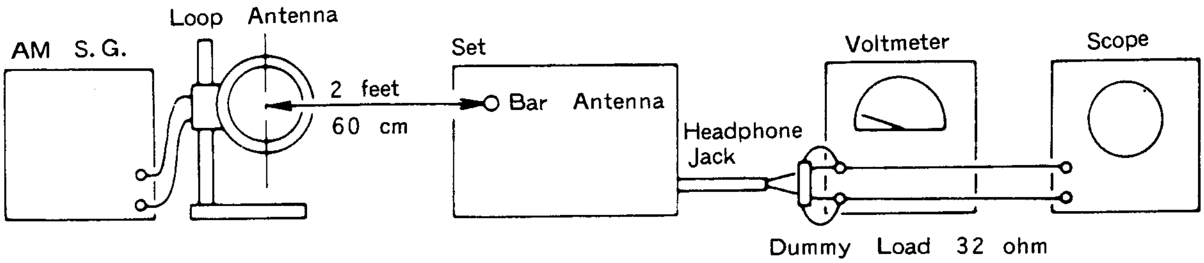


Figure 18

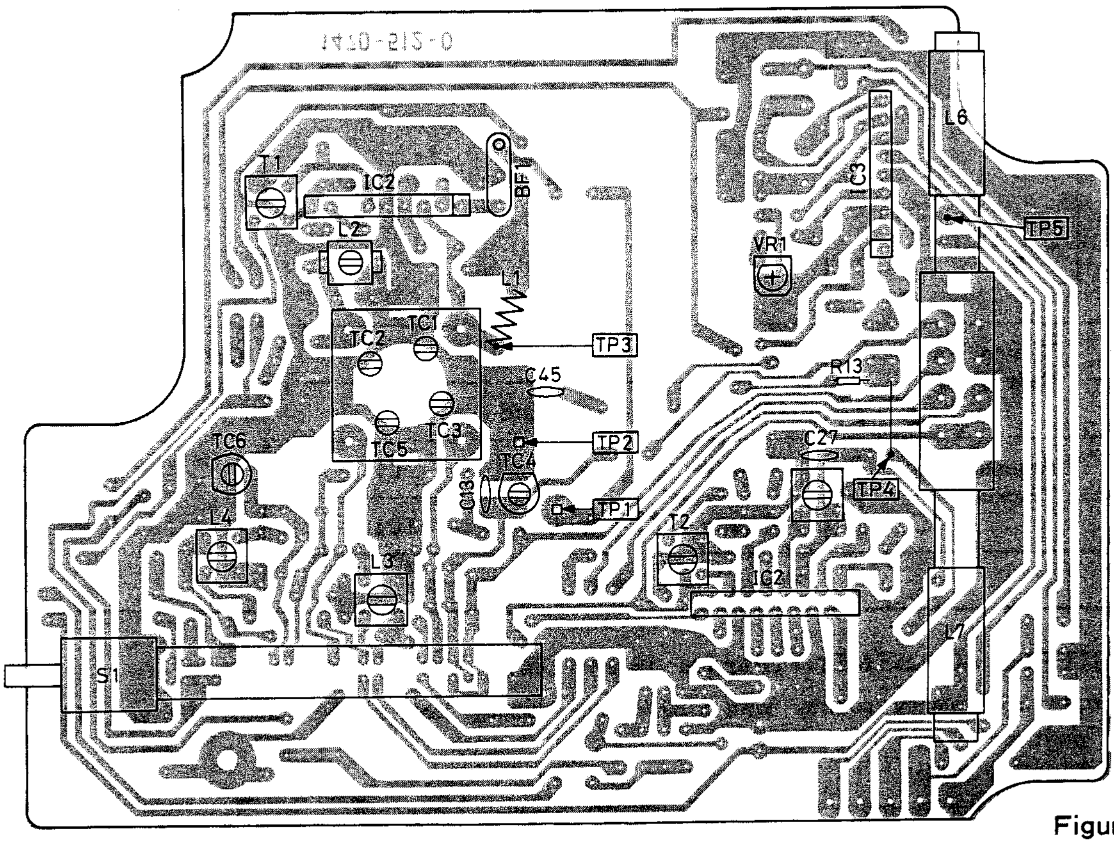


Figure 19

TUNING RANGE CALIBRATION, AM

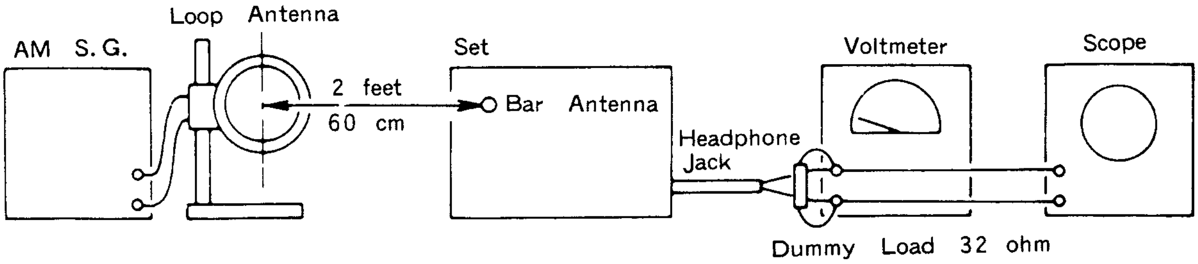


Figure 20

IF CALIBRATION, FM

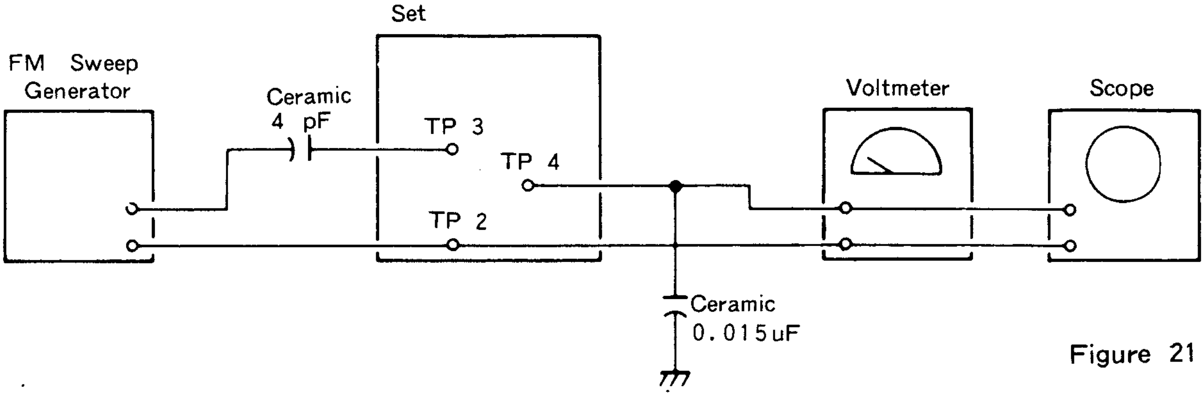


Figure 21

TUNING RANGE CALIBRATION, FM

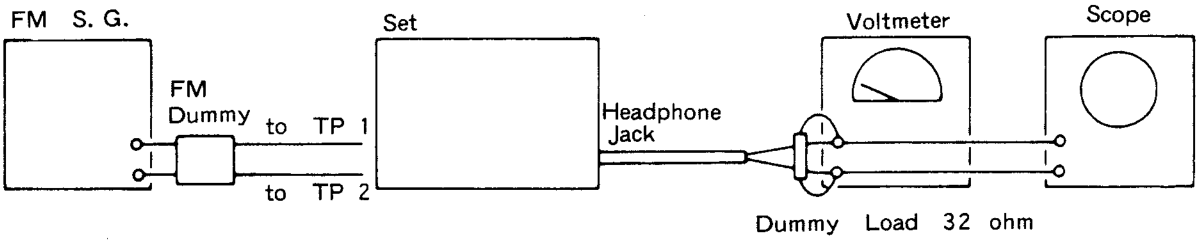
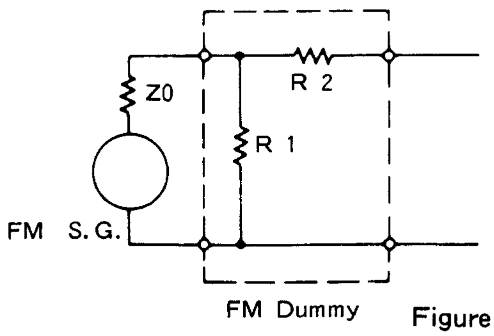


Figure 22



R1=Z0 Z0=Output impedance of SG

R2=75ohm− Z0/2

Figure 23

FM STEREO ADJUSTMENT

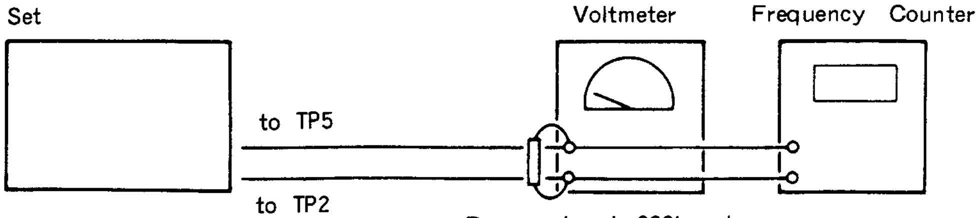
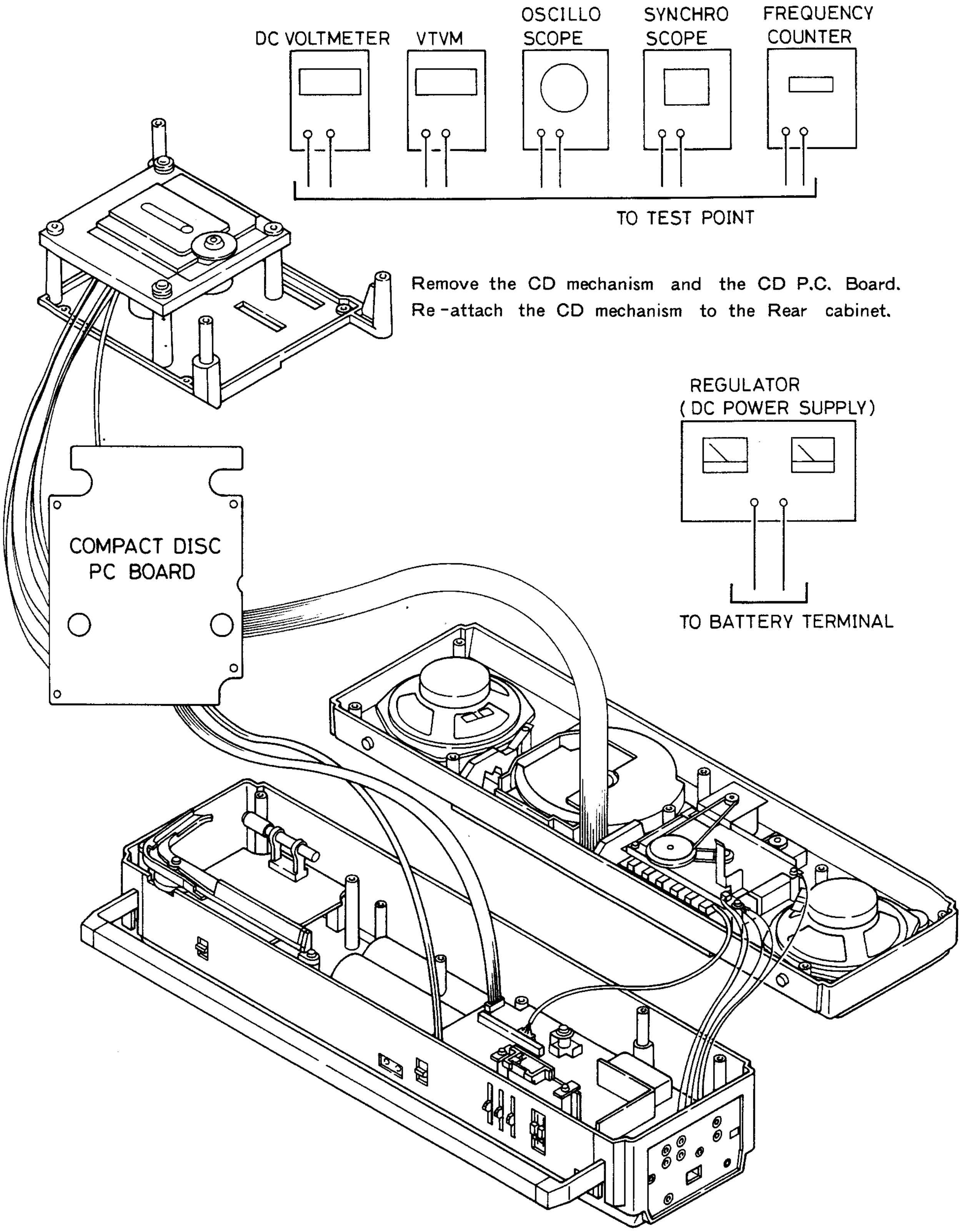


Figure 24

CD ADJUSTMENT PROCEDURE



Remove the CD mechanism and the CD P.C. Board.
Re-attach the CD mechanism to the Rear cabinet.

Figure 25

ADJUSTMENT POINTS

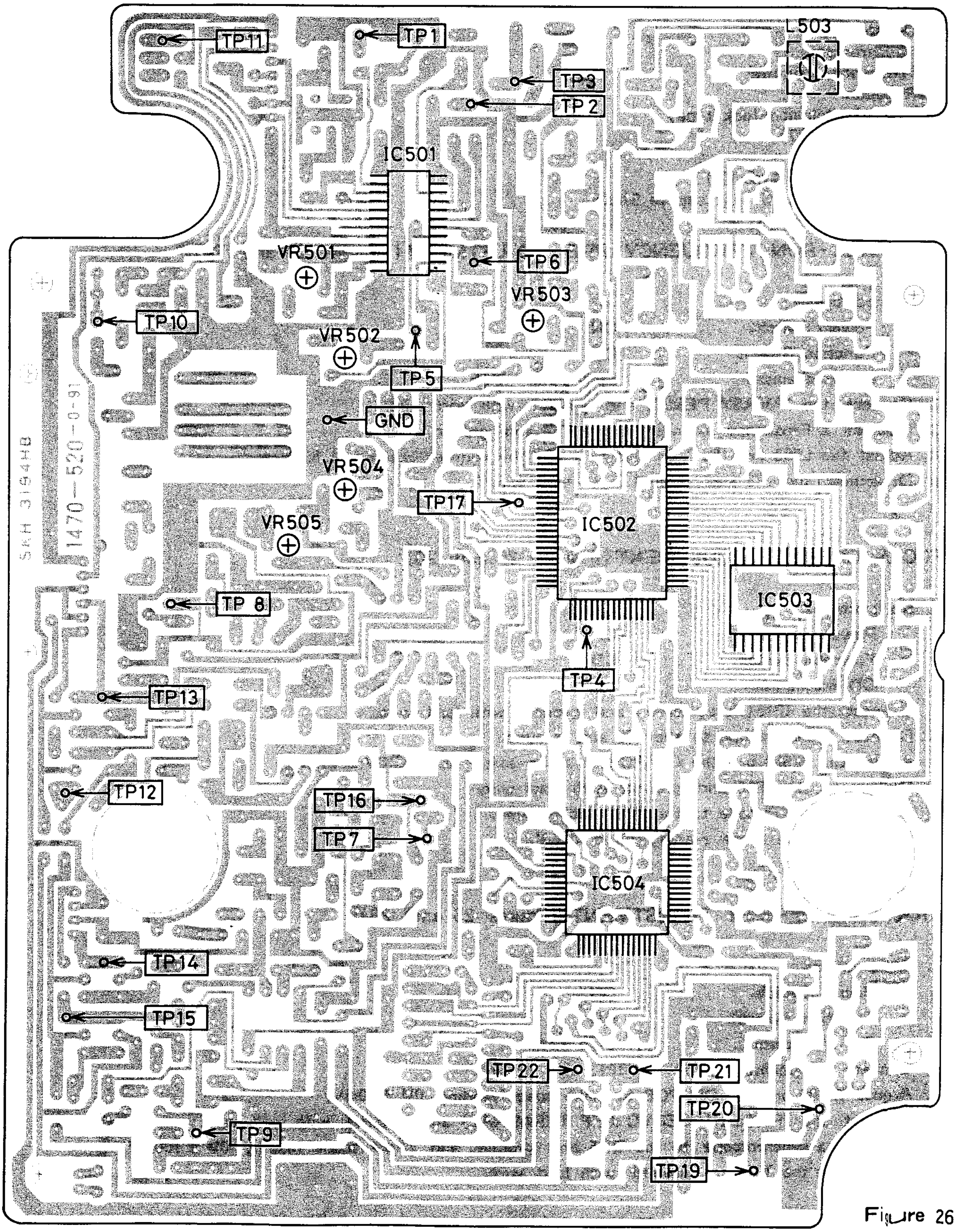


Figure 26

CD PCB ADJUSTMENT

Equipment required

1. DC Voltmeter
2. VTVM
3. Oscilloscope
4. Synchroscope
5. Frequency Counter
6. Regulator
7. Push Switch(non-lock type)
8. JIG (Figure 27)
9. Magnet
10. Test Disc(SONY type Ⅲ)
11. Test Disc(PHILIPS Test sample 5/5A)

PLL FREE-RUN FREQUENCY PRE-ADJUSTMENT(Figures 25 and 26)

1. Set positions:

Power Switch:	ON
Function Switch:	CD
CD Mechanism:	Stop mode

2. Connect the TP3(ASY FEMX) and ground with lead wire.
3. Connect a Frequency counter to the TP4 and ground.
4. Adjust the L503 on the CD PCB to make the counter reading 4.380MHz.
5. Disconnect the TP3 and ground with lead wire.

FOCUS OFF-SET ADJUSTMENT(Figures 25 and 26)

1. Set positions:

Power Switch:	ON
Function Switch:	CD
CD Mechanism:	Stop mode

2. Connect the TP16(Focus servo) and ground with lead wire.
3. Connect Synchroscope to the TP6 and ground.
4. Adjust the VR502 on the CD PCB to make scope reading 0V ±10mV.
5. Disconnect the TP16 and ground with lead wire.
6. Connect Synchroscope to the TP12 and ground.
7. Check to make scope reading 0V ±100mV.

TRACKING OFF-SET ADJUSTMENT(Figures 25 and 26)

1. Set positions:

Power Switch:	ON
Function Switch:	CD
CD Mechanism:	Stop mode

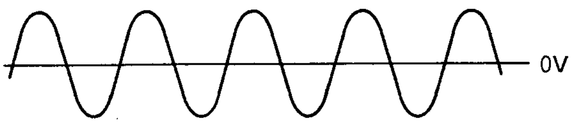
2. Connect a Synchroscope to the TP13 and ground.
3. Adjust VR504 on the CD PCB to make scope reading 0V ±10mV.
4. Connect the TP9(SLED SERVO OFF TERMINAL) and ground with lead wire.
5. Connect a synchroscope to the TP15 and ground, and check scope reading 0V ±100mV.
6. Disconnect the TP9 and ground with lead wire.

CAUTION: This adjustment should be carried out once more after adjusting the tracking gain.

E-F BALANCE ADJUSTMENT (Figures 25 and 26)

1. Set positions:
   - Power Switch: ON
   - Function Switch: CD
2. Connect a Push switch (non-lock type)TP8(Tracking servo off terminal) and ground.(Push switch:push for short position)
3. Connect the TP11(Laser terminal) and ground with lead wire.
4. Connect a Synchroscope to the TP5(TE terminal) and ground.
5. Playingback the test disc.
6. Adjust VR501 on the CD PCB to make scope wave above and below center line(0V) in same shape and size with push switch on position.

CAUTION: Do not keep the push switch depressed for more than two to three seconds. If you do not finish adjustment within this time, release and depress the push switch again for readjustment.



7. Disconnect the TP11 and ground with lead wire.

PLL ADJUSTMENT (Figures 25, 26, 27 and 28)

1. Set positions:
   - Power Switch: ON
   - Function Switch: CD
   - CD Mechanism: Play mode
2. Attach an instrument like the one shown in Figure 27 to TP24.
3. Connect a Synchroscope to the TP17 and ground.(2v /devi., 1ms /devi.)
4. Connect the TP11(laser terminal) and ground with lead wire.
5. Playingback the test disc.
6. Turn on the switch for the instrument.
7. If the waveforms on the synchroscope appear like those in either Figure 28-2 or 28-3, slowly turn the L503 until the waveforms appear like those in Figure 28-1.

CAUTION: Do not keep the push switch depressed for more than two to three seconds. If you do not finish adjustment witin this time, release and depress the push switch again for readjustment.

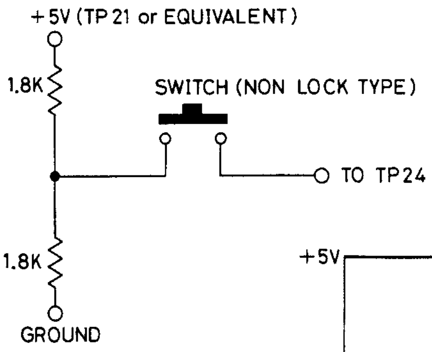


Figure 27

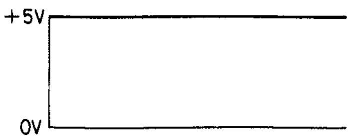


Figure 28-1

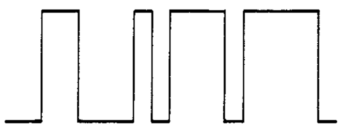


Figure 28-2

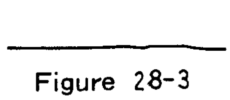


Figure 28-3

8. Disconnect the TP11 and ground with lead wire.

TURNTABLE HEIGHT ADJUSTMENT (Figures 25, 26 and 29)

CAUTION: The turntable height should be re-adjusted when the disc motor or the turntable has been replaced.

1. Set positions:

Power Switch:	ON
Function Switch:	CD
CD Mechanism:	Play mode

2. Attach the turntable to the motor so that upper side of the turntable is 13mm from the surface of the CD mechanism chassis.
3. Connect the TP11 (Laser Terminal) and ground with lead wire.
4. Connect a DC voltmeter to the TP12 (Focus Coil Terminal) and ground.
5. Playingback the test disc.
6. Re-adjust the height of the turntable if the reading on the DC voltmeter is no $0 \pm 0.2V$.

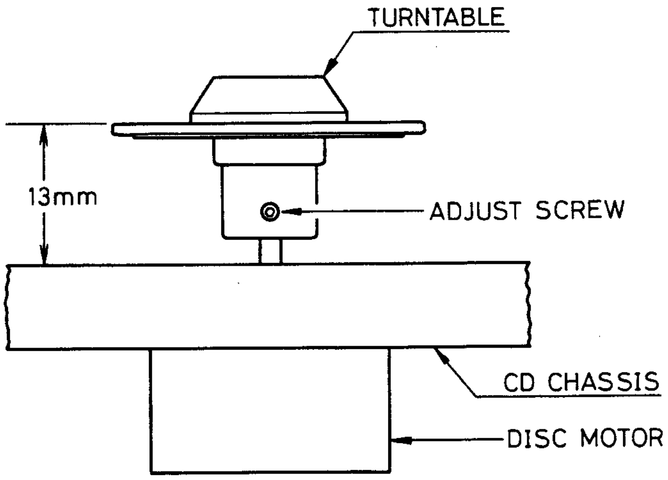


Figure 29

7. Disconnect the TP11 and ground with lead wire.

PICKUP SKEW ADJUSTMENT (Figures 25, 26 and 30)

CAUTION: This adjustment should be made when the pickup has been replaced.

1. Set positions:
   - Power Switch: ON
   - Function Switch: CD
   - CD Mechanism: Play mode
2. Connect the TP11 (Laser Terminal) and ground with lead wire.
3. Connect a Synchroscope to the TP1. (0.5v /devi., 0.5us/devi.)
4. Playingback the test disc.
5. Turn the slide guide on the CD mechanism for adjusting the skew until the amplitude and configuration of the wavefoms (eye pattarn) on the synchroscope are both ideal.
6. Disconnect the TP11 and ground with lead wire.

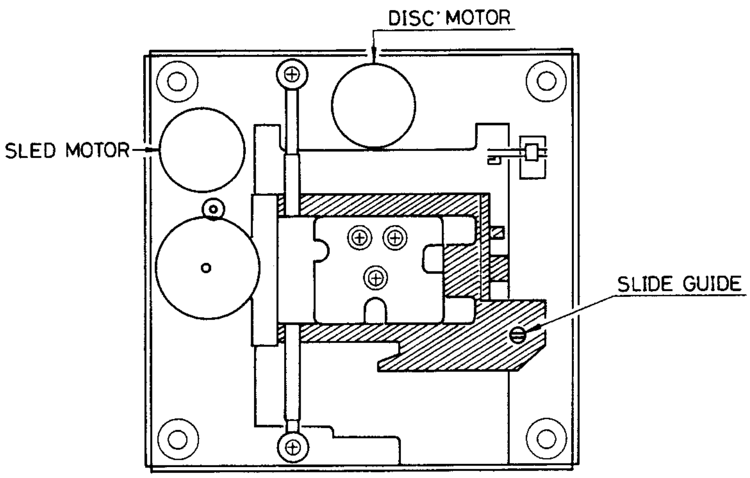


Figure 30

FOCUS GAIN ADJUSTMENT (Figures 24 and 25)

1. Set positions:
   - Power Switch: ON
   - Function Switch: CD
2. Connect the TP11 and ground with lead wire.
3. Connect a VTVM to the TP12 (Forcus coil terminal) and ground.
4. Adjust VR 503 on the CD P.C. Board to make VTVM reading 80±10mVrms while playing back test disc.
5. Disconnect the TP11 and ground with lead wire.

TRACKING GAIN ADJUSTMENT (Figures 24 and 25)

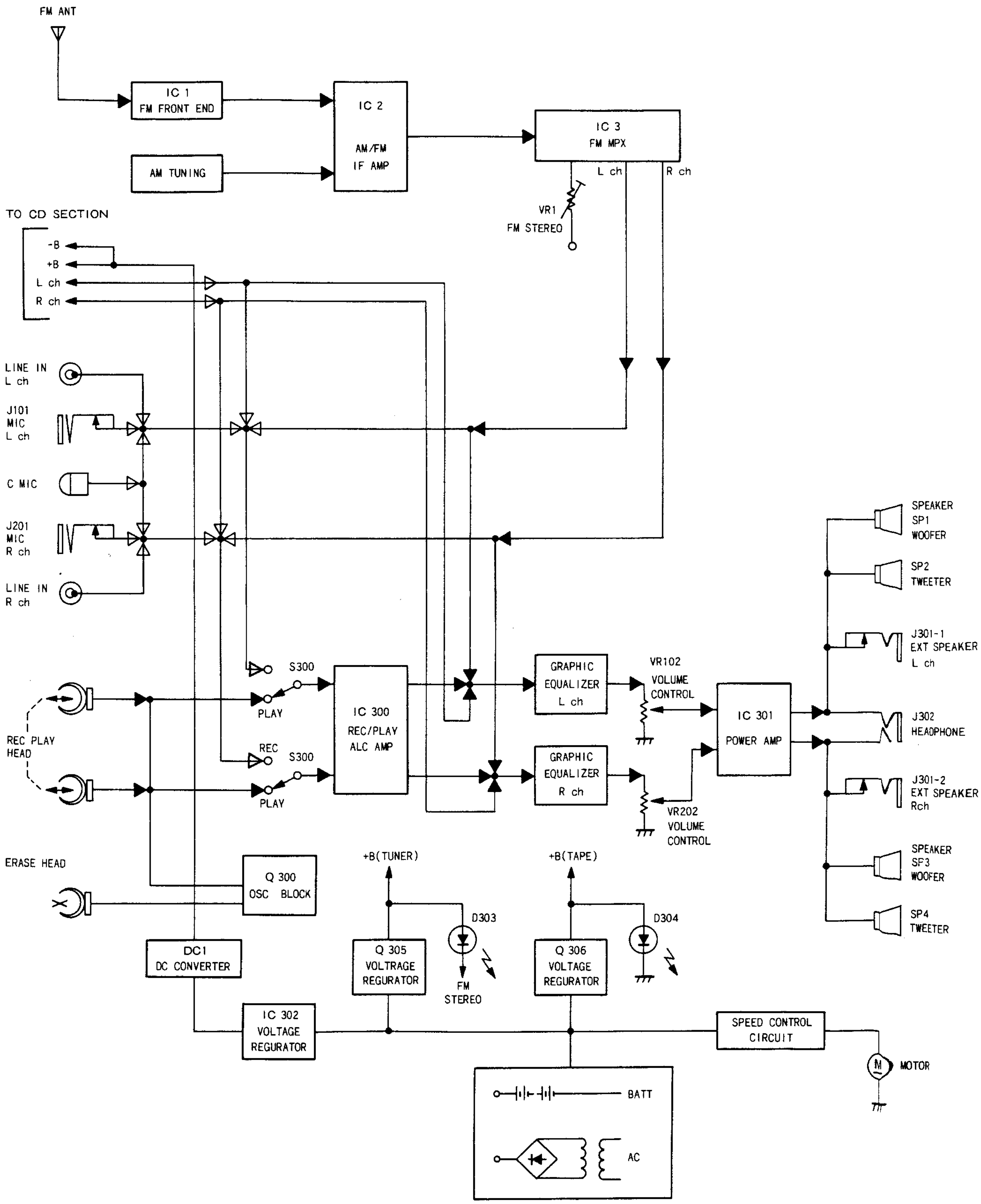
1. Set positions:
   Power Switch: ON
   Function Switch: CD
2. Connect the TP11 and ground with lead wire.
3. Connect a VTVM to the TP13(tracking coil terminal) and ground.
4. Adjust VR505 on the CD PCB to make VTVM reading 0.45 ± 0.05Vrms while playing back test disc.
5. Disconnect TP11 and ground with lead wire.

CHECKING PLAYABLITY

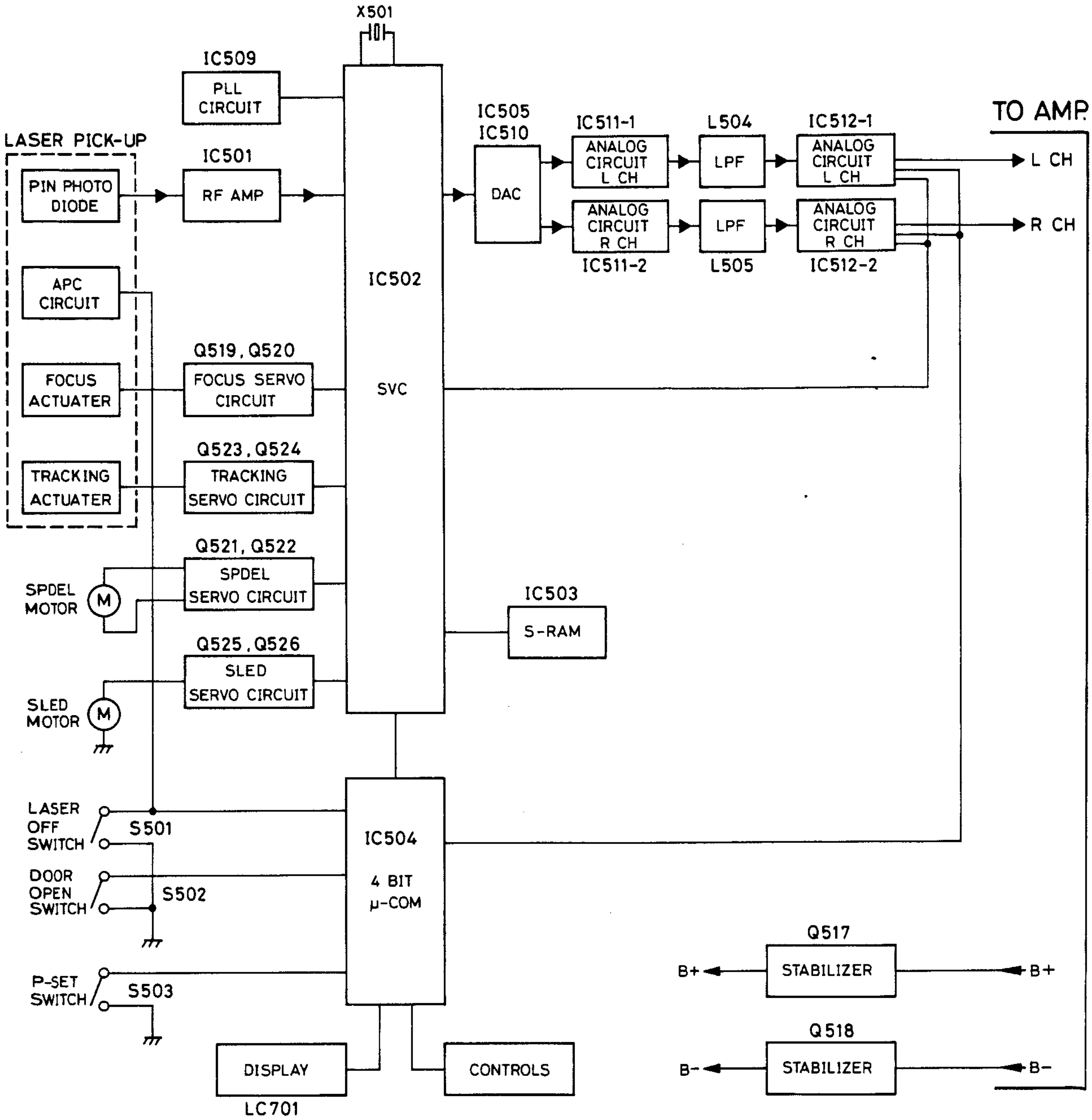
CAUTION: After making adjustments, make the following check and re-adjust when problems persist.

1. Set positions:
   Power Switch: ON
   Function Switch: CD
   CD Mechanism: Play mode
2. Connect the TP11(Laser Terminal) and ground with lead wire.
3. Play the 6 number on the test disc (Philips Test Sample 5A) for 30 seconds and check that there is no noise or unevenness in sound.
4. Play the 13 number on the test disc (Philips Test Sample 5A) for 30 seconds and check that there is no noise or unevenness in sound.
5. Play the 19 number on the test disc (Philips Test Sample 5A) for 30 seconds and check that there is no noise or unevenness in sound.

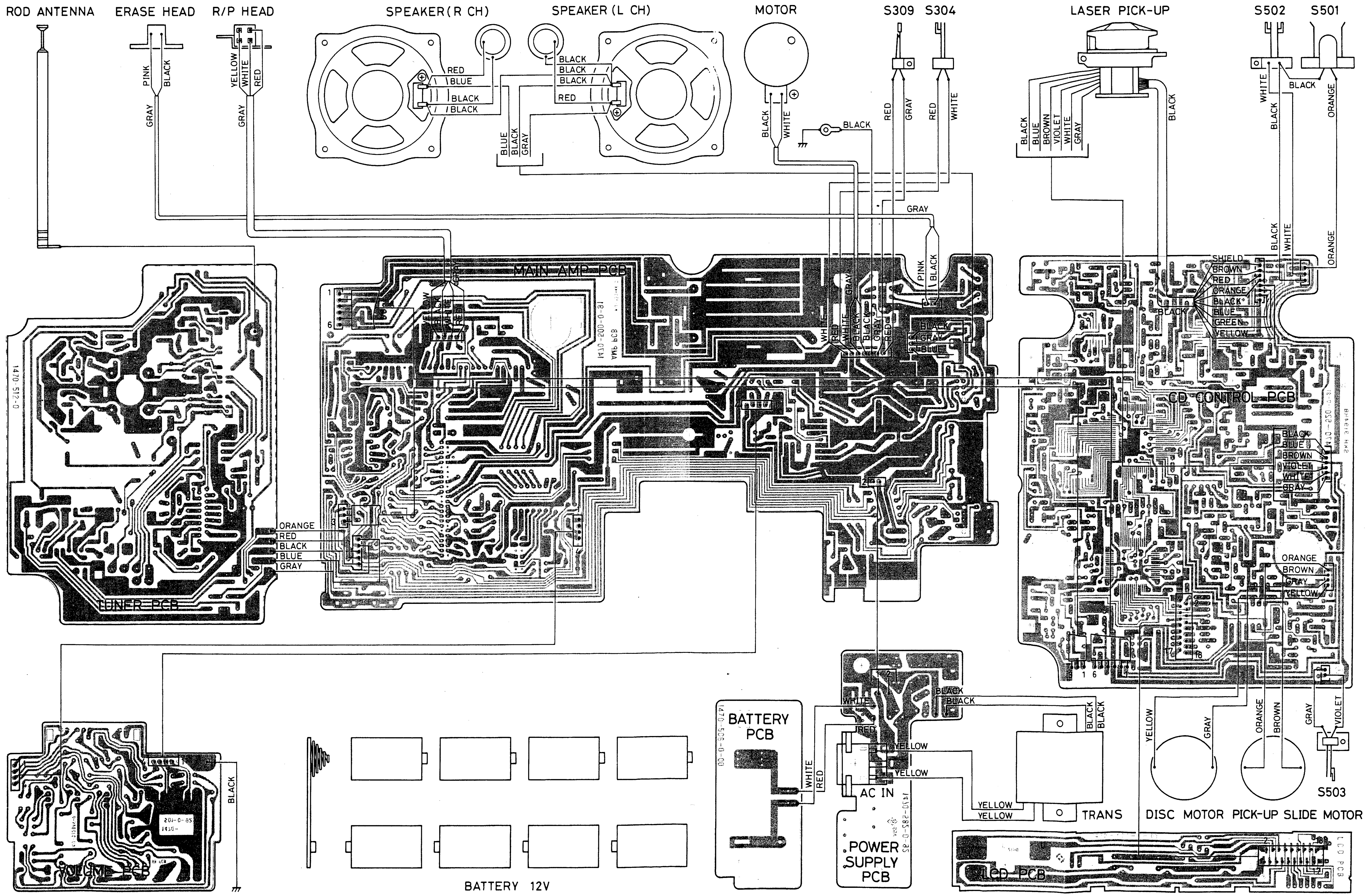
BLOCK DIAGRAM, TUNER /AMP SECTION



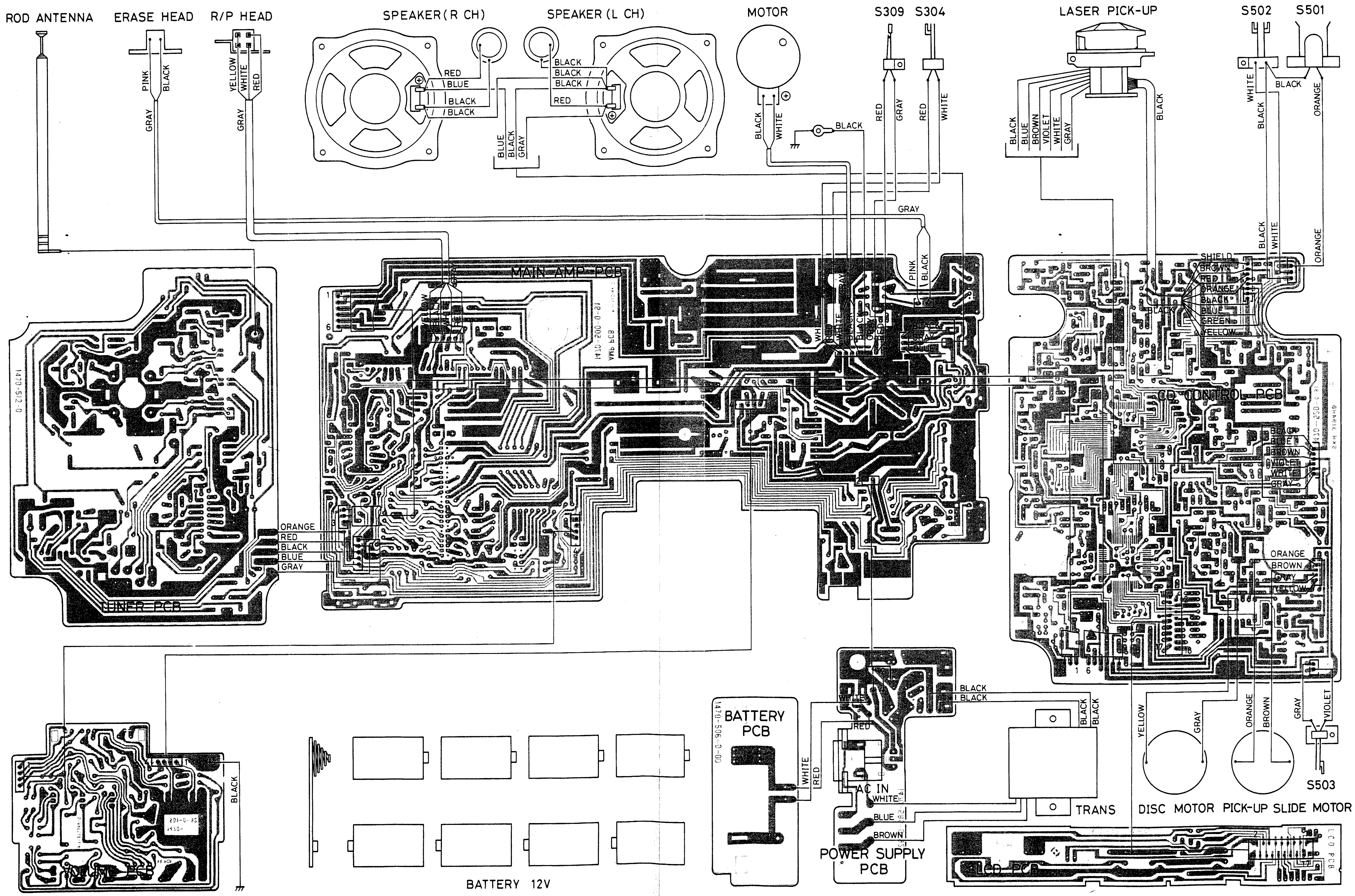
BLOCK DIAGRAM, CD SECTION



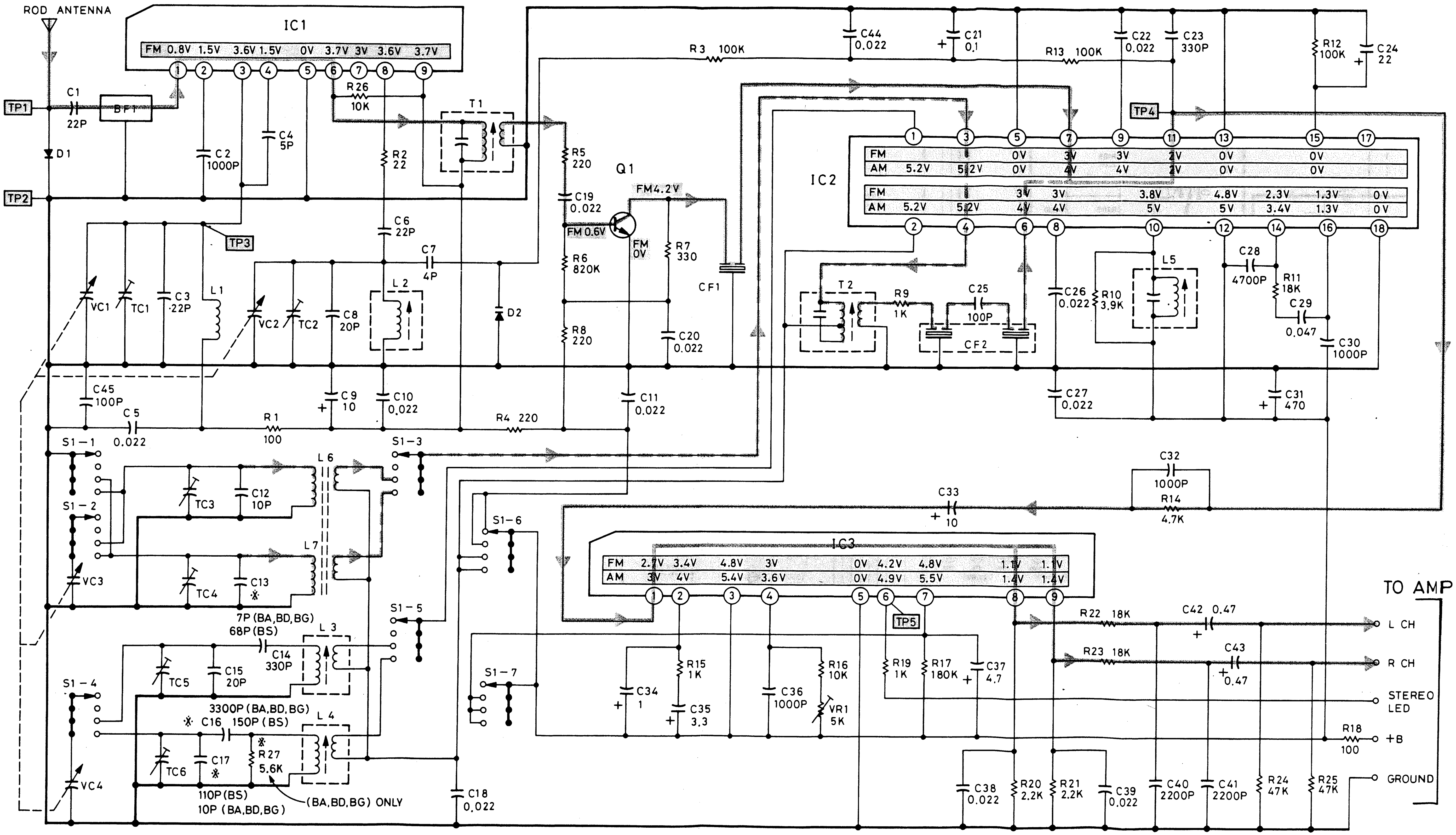
WIRING DIAGRAM (BA,BD,BS)



WIRING DIAGRAM (BG)



TUNER SCHEMATIC DIAGRAM



IC1 ——————TA7358P
IC2 ——————BA4234L
IC3 ——————TA7343AP

Q1 ———————2SC945-P or 2SC1815-GR

D1 ———————1SS176 or 1SS270
D2 ———————SD115

S1———BAND SELECTOR SWITCH (FM STEREO POSITION)

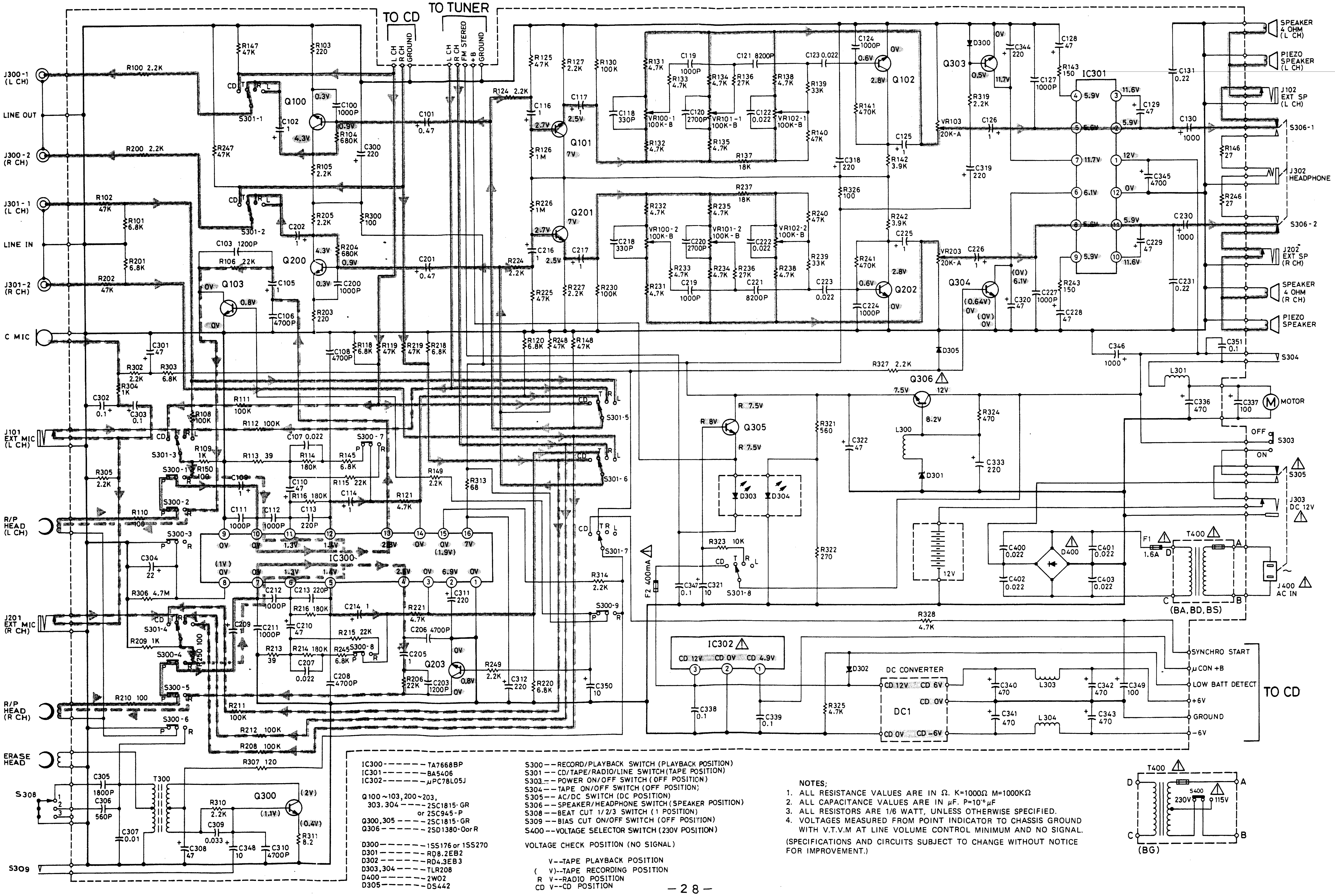
- o FM STEREO
- o FM MONO
- o MW
- o SW (BA,BD,BG) or LW(BS)

VOLTAGE CHECK POSITION
FM V——FM POSITION
AM V——AM POSITION

NOTES;
1. ALL RESISTANCE VALUES ARE IN Ω. K=1000Ω M=1000KΩ
2. ALL CAPACITANCE VALUES ARE IN μF. P=10^{-6}μF
3. ALL RESISTORS ARE 1/6 WATT, UNLESS OTHERWISE SPECIFIED.
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATIONS AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.)

AMPLIFIER SCHEMATIC DIAGRAM



IC300--------TA7668BP
IC301--------BA5406
IC302--------μPC78L05J

Q100~103, 200~203,
303, 304-----2SC1815-GR
or 2SC945-P
Q300, 305-----2SC1815-GR
Q306--------2SD1380-O or R

D300--------1SS176 or 1SS270
D301--------RD8.2EB2
D302--------RD4.3EB3
D303, 304-----TLR208
D400--------2WO2
D305--------DS442

S300--RECORD/PLAYBACK SWITCH (PLAYBACK POSITION)
S301--CD/TAPE/RADIO/LINE SWITCH (TAPE POSITION)
S303--POWER ON/OFF SWITCH (OFF POSITION)
S304--TAPE ON/OFF SWITCH (OFF POSITION)
S305--AC/DC SWITCH (DC POSITION)
S306--SPEAKER/HEADPHONE SWITCH (SPEAKER POSITION)
S308--BEAT CUT 1/2/3 SWITCH (1 POSITION)
S309--BIAS CUT ON/OFF SWITCH (OFF POSITION)
S400--VOLTAGE SELECTOR SWITCH (230V POSITION)

VOLTAGE CHECK POSITION (NO SIGNAL)

V--TAPE PLAYBACK POSITION
(V)--TAPE RECORDING POSITION
R V--RADIO POSITION
CD V--CD POSITION

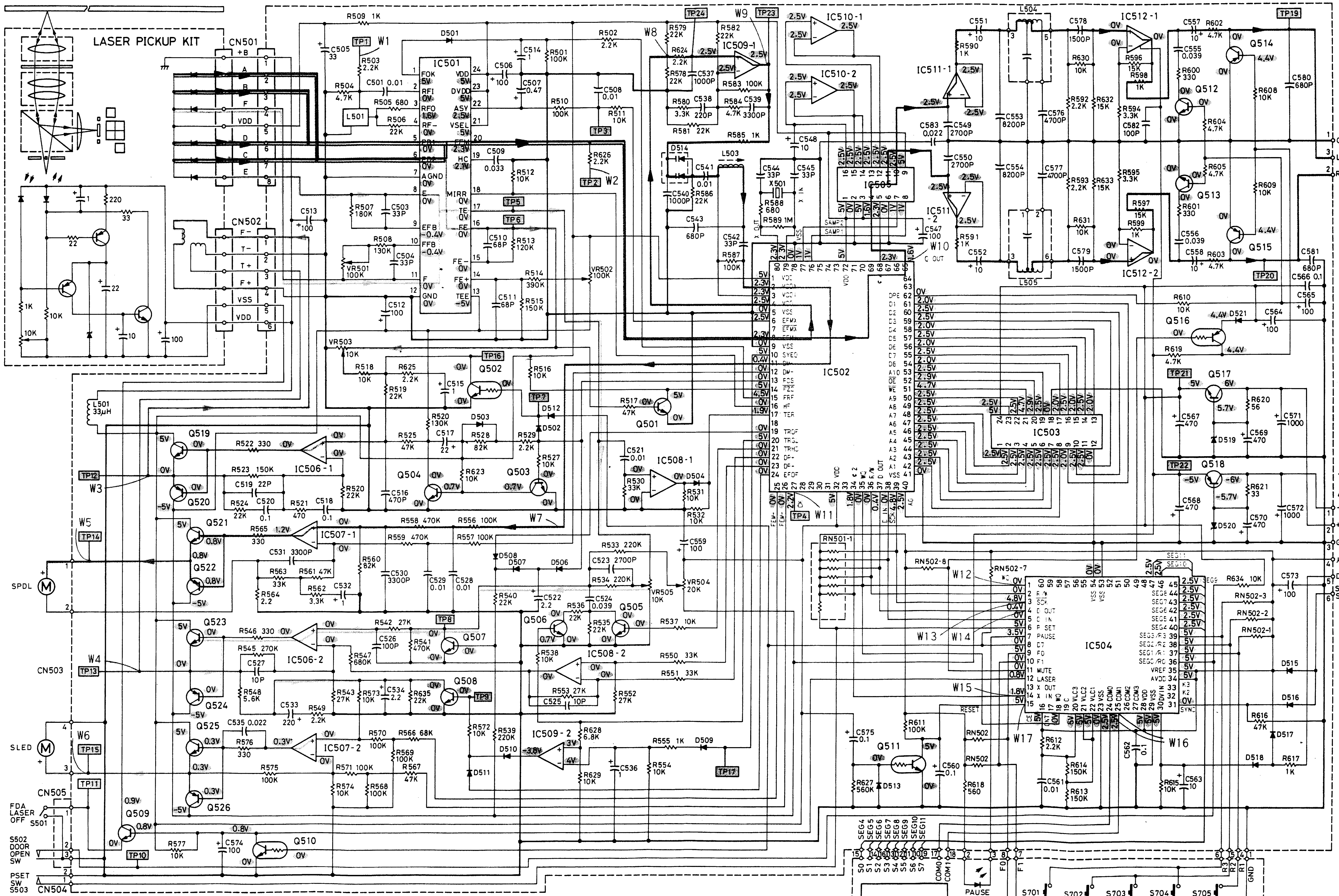
NOTES;

1. ALL RESISTANCE VALUES ARE IN Ω. K=1000Ω M=1000KΩ
2. ALL CAPACITANCE VALUES ARE IN μF. P=10^{-6}μF
3. ALL RESISTORS ARE 1/6 WATT, UNLESS OTHERWISE SPECIFIED.
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATIONS AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.)

CD SCHEMATIC DIAGRAM

PLAYBACK SIGNAL
FOCUS SERVO SIGNAL
TRACKING SERVO SIGNAL
SLED SERVO SIGNAL
SPINDLE SERVO SIGNAL



IC501————CX20109
IC502————YM3805
IC503————HM6116LFP-3
IC504————H50723-401
IC505————YM3015
IC506~512———NJM2068D

Q501,503~509————2SC2458-GR or 2SC2785-E or F
Q502,510,511———DTC114TS
Q512,513————2SD467-C
Q514,515,518————2SA1048-GR
Q517————2SD1423AS
Q519,521,523,525———2SC1384NC-S
Q520,522,524,526———2SA684-S

Q516————DTA114TS

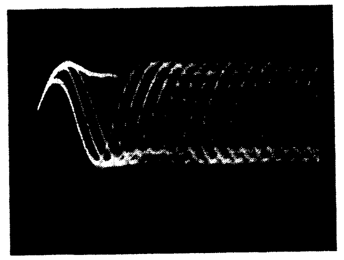
D501 504,506 513, 515 518,521———1SS176 OR 1SS270
D514————SVC203SP
D519,520————RD5.6EB3

NOTES;
1. ALL RESISTANCE VALUES ARE IN Ω. K=1000Ω M=1000KΩ
2. ALL CAPACITANCE VALUES ARE IN μF. P=10⁻⁶μF
3. ALL RESISTORS ARE 1/6 WATT, UNLESS OTHERWISE SPECIFIED.
4. VOLTAGES MEASURED FROM POINT INDICATOR TO CHASSIS GROUND WITH V.T.V.M AT LINE VOLUME CONTROL MINIMUM AND NO SIGNAL.

(SPECIFICATIONS AND CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.)

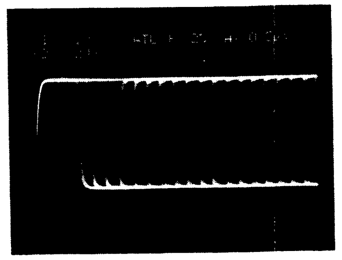
WAVEFORMS OF MAIN CIRCUIT

W1



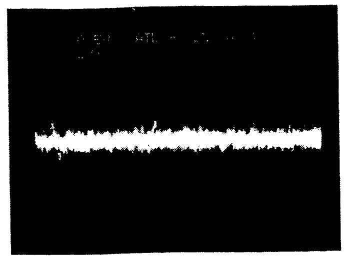
Eye Pattern Signal
TP1◄►GND
DC Level:1.4V
1.8VP-P
Play Mode

W2



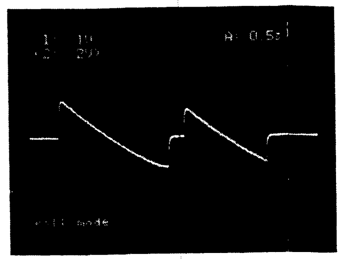
EFM
TP2◄►GND
5VP-P
Play Mode

W3-1



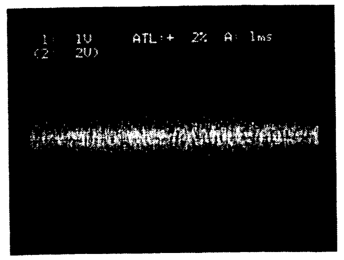
Focus Drive
TP12◄►GND
0.5VP-P
Play Mode

W3-2



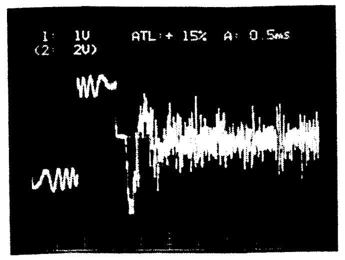
Focus Drive
TP12◄►GND
2VP-P
Focus Search Mode

W4-1



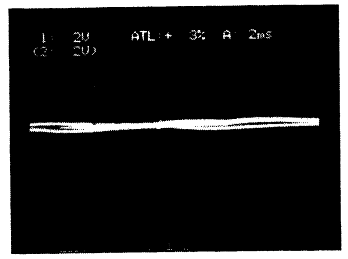
Tracking Drive
TP13◄►GND
2VP-P
Play Mode

W4-2



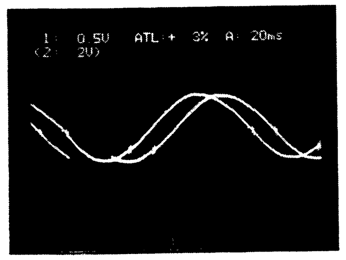
Tracking Drive
TP13◄►GND
Track Jump
FF or FB Mode

W5



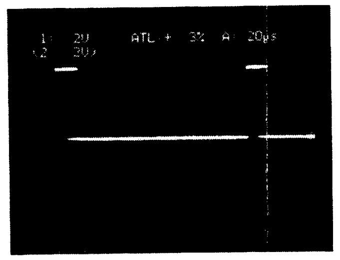
Spindle Motor Drive
TP14◄►GND
Play Mode

W6



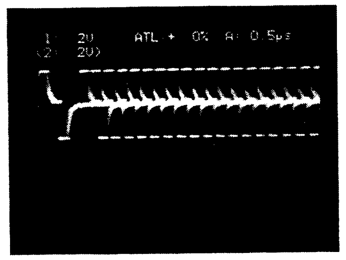
Sled Motor Drive
TP15◄►GND
Play Mode

W7



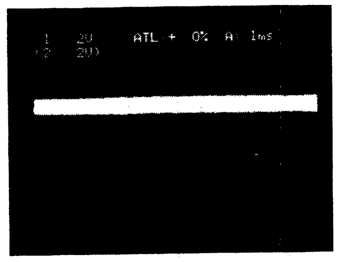
Spindle Drive Signal
IC502 11 ◄►GND
Play Mode

W8



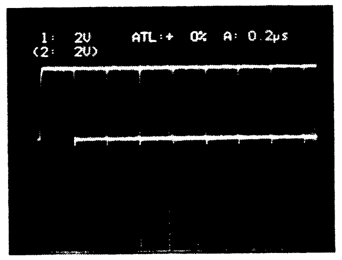
PLL Error Signal
IC502 4◄►GND
Play Mode

W9



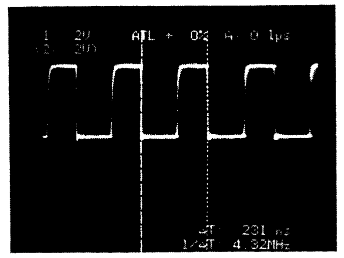
PLL Control Signal
DC Level:2.5V
Play Mode

W10



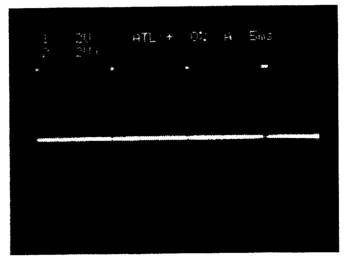
Digital Signal Output
IC505 4◄►GND
Play Mode

W11



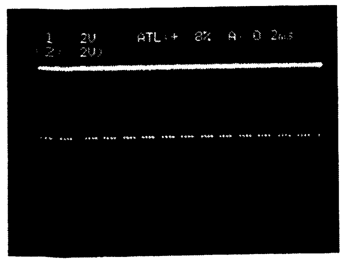
PLL OSC Moniter
TP4◄►GND
f=4.3218MHz
Play Mode

W12



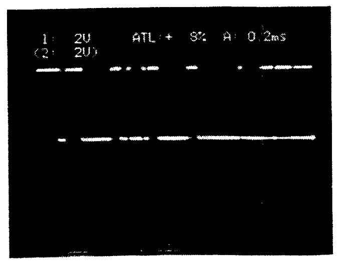
WQ
IC504 1◄►GND
Play Mode

W13



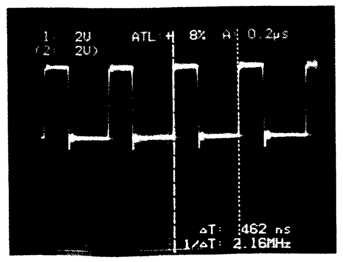
SCK
IC504 3◄►GND
Play Mode

W14



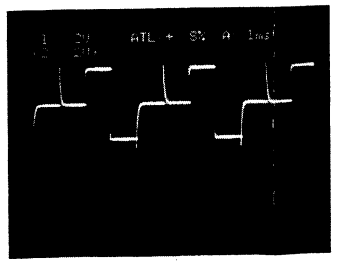
D Out
IC504 4◄►GND
Play Mode

W15



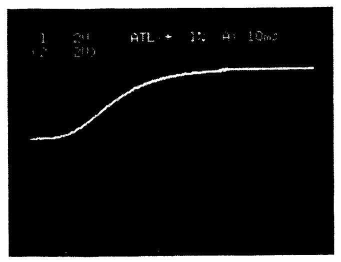
uCOM CK
IC504 14 ◄►GND
f=2.1609MHz
All Mode

W16



LCD Drive
IC504 24◄►IC504 25
All Mode

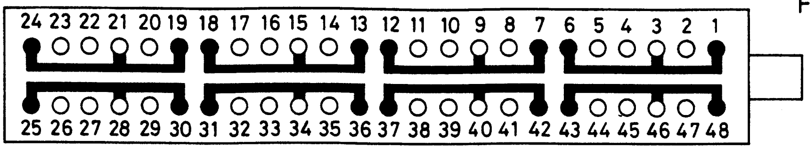
W17



Reset
IC504 15◄►GND
Power on Reset:40ms
Power ON

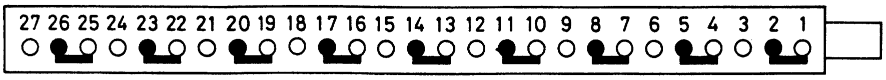
SWITCH CONNECTION VIEW (BOTTOM VIEW)

S1
BAND SELECT

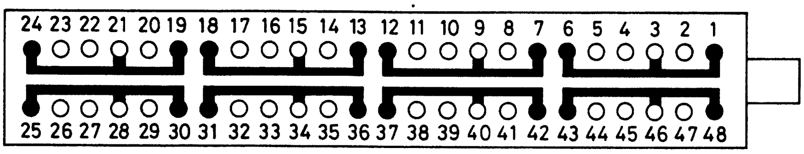


FM STEREO
FM MONO
MW
SW or LW

S300
REC/PLAY
RECORD ↔ PLAYBACK

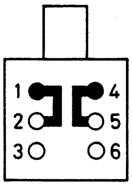


S301
FUNCTION



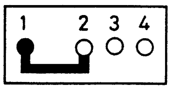
LINE IN
RADIO
TAPE
CD

S303
POWER

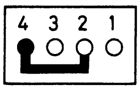


OFF
ON

S308
BEAT CUT

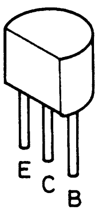


S400
VOLTAGE SELECT
115V↔230V

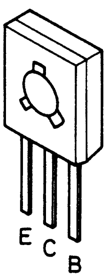


TRANSISTOR VIEW

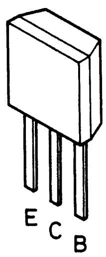
Q1, Q100, Q101, Q102, Q103, Q200, Q201, Q203, Q300, Q303, Q304, Q305, Q512, Q513, Q519, Q520, Q521, Q522, Q523, Q524, Q525, Q526



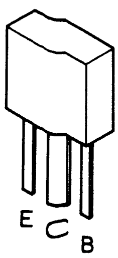
Q306



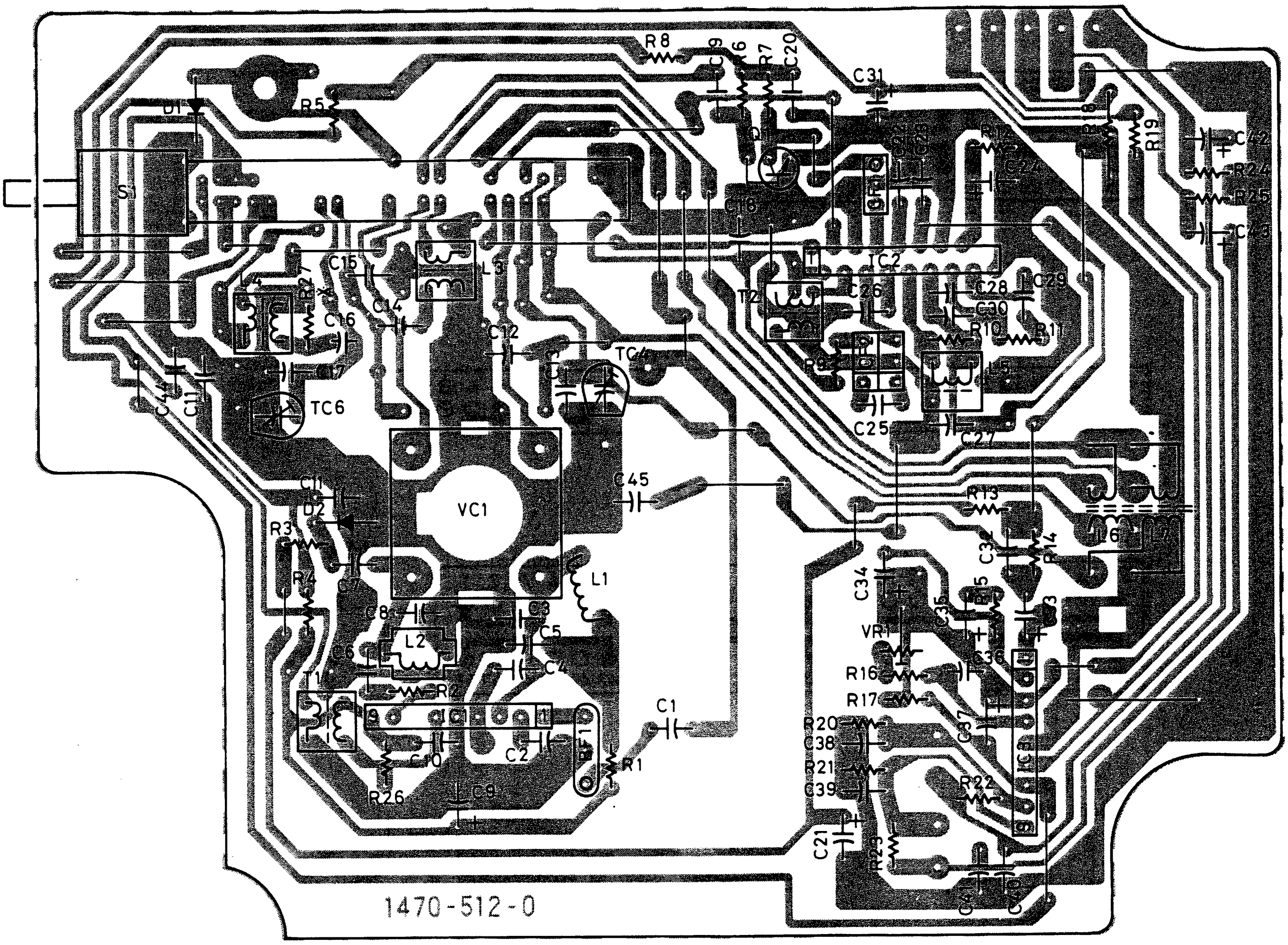
Q501, Q502, Q503, Q504, Q505, Q506, Q507, Q508, Q509, Q510, Q511, Q514, Q515, Q518



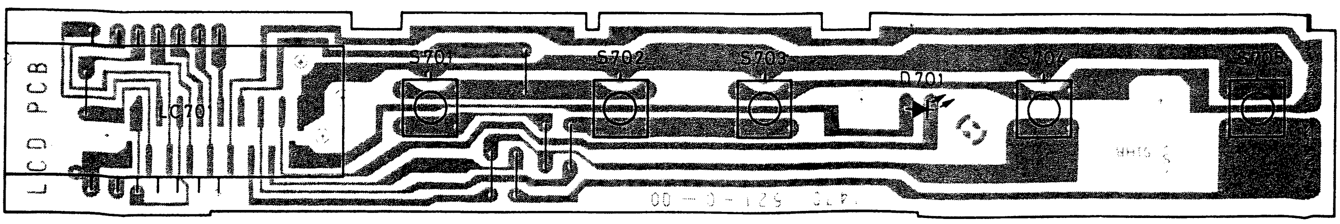
Q517



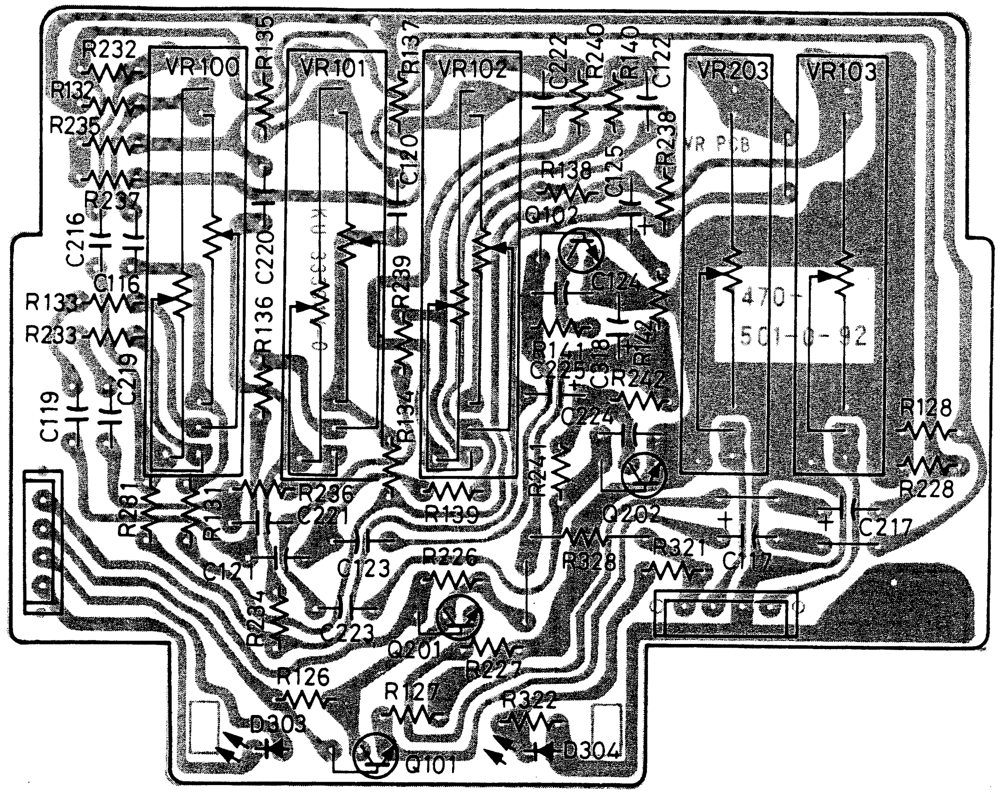
TUNER P.C. BOARD



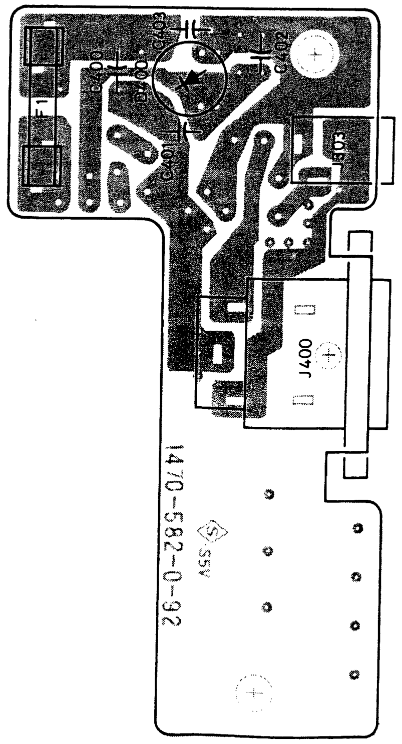
LCD P.C. BOARD



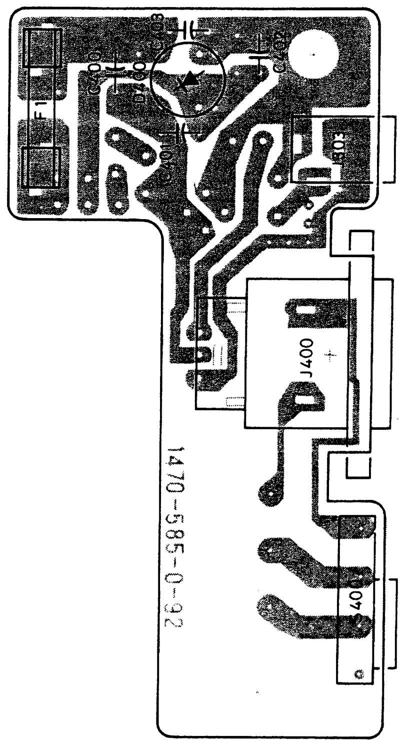
EQUALIZER VOLUME P.C. BOARD



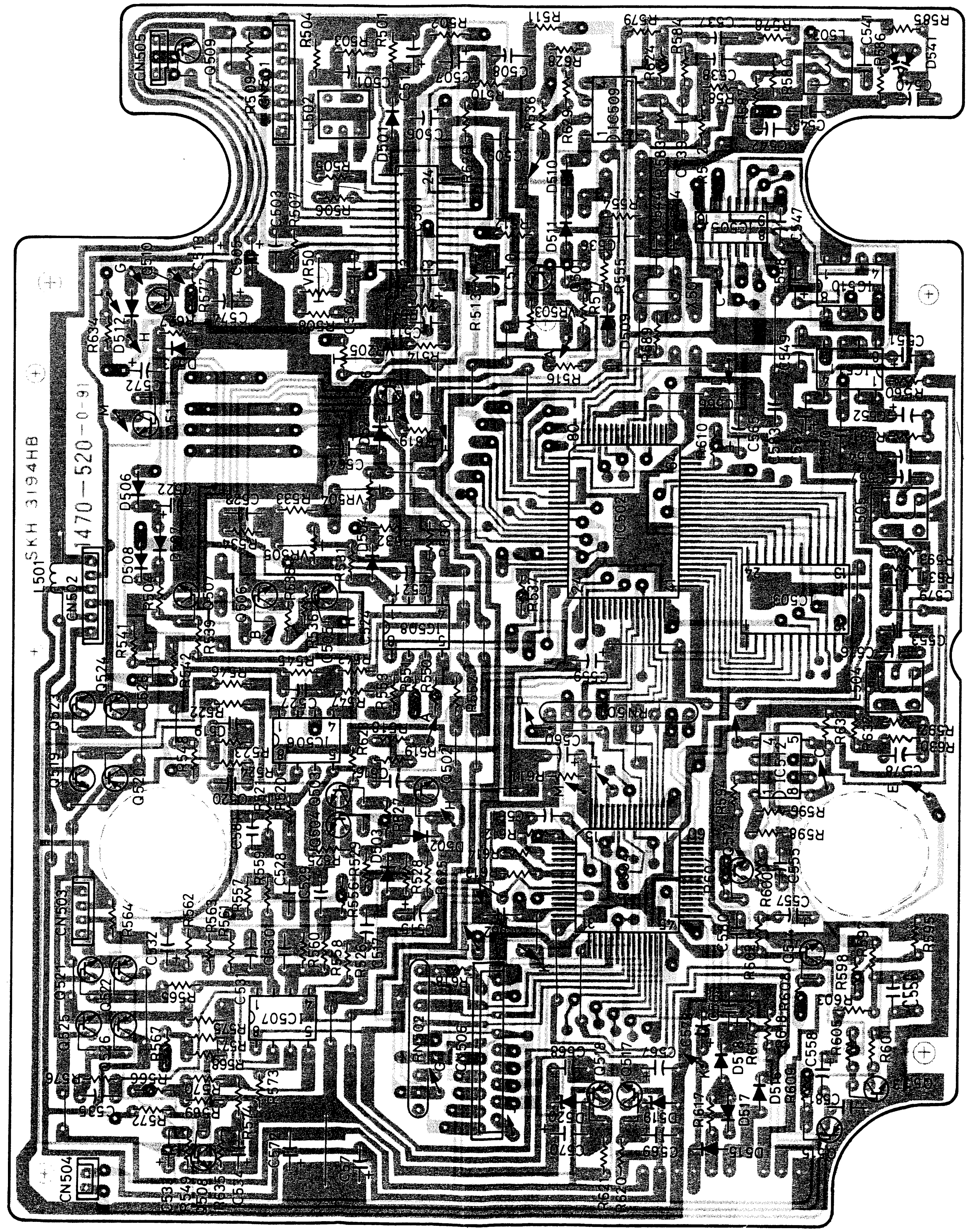
POWER SUPPLY P.C. BOARD
(BA,BD,BS)



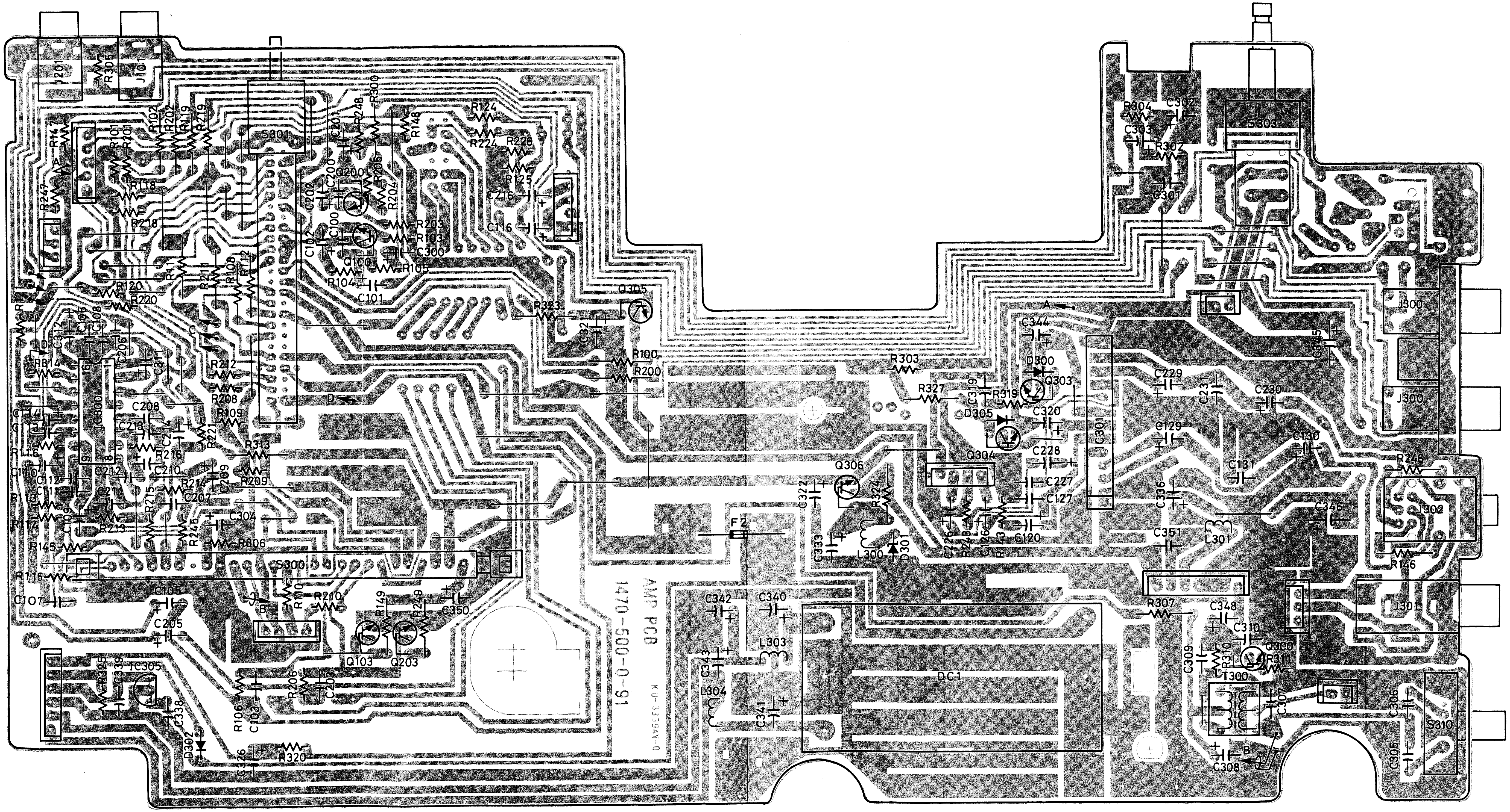
(BG)



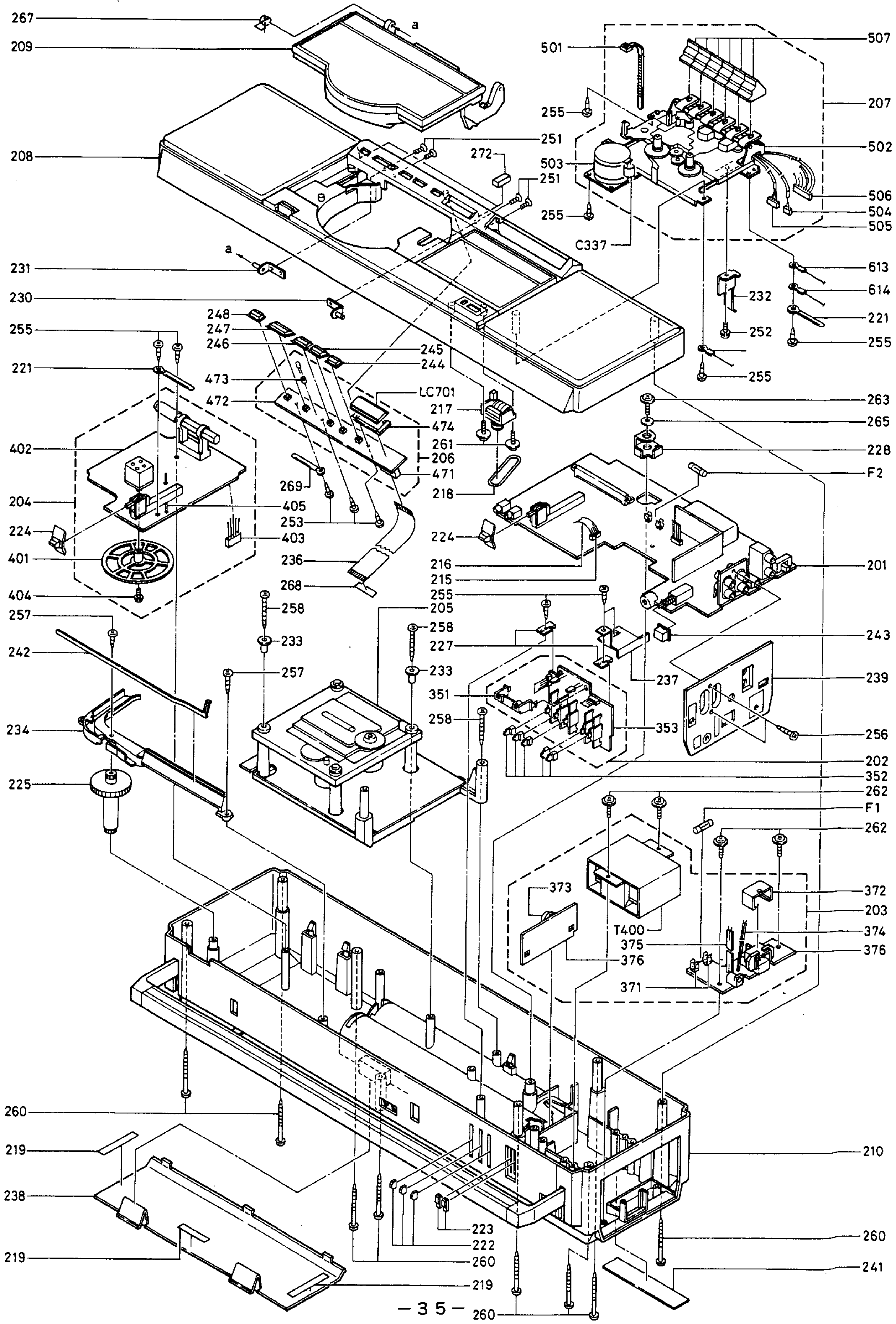
COMPACT DISC AMPLIFIER P.C. BOARD



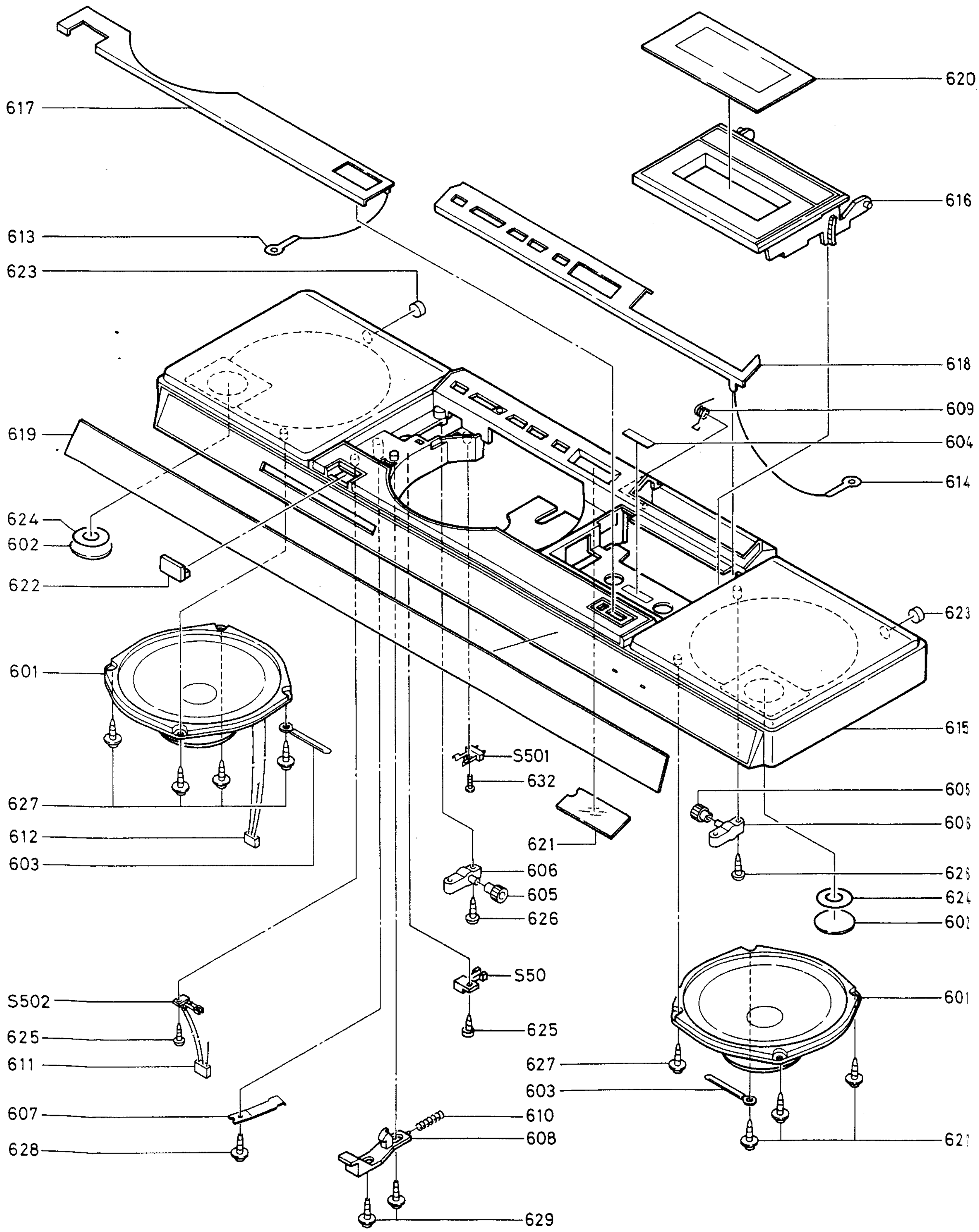
AMPLIFIER P.C. BOARD



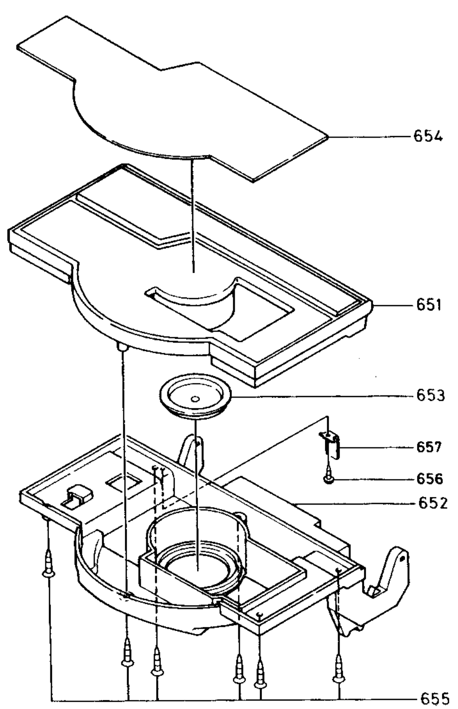
GENERAL UNIT EXPLODED VIEW



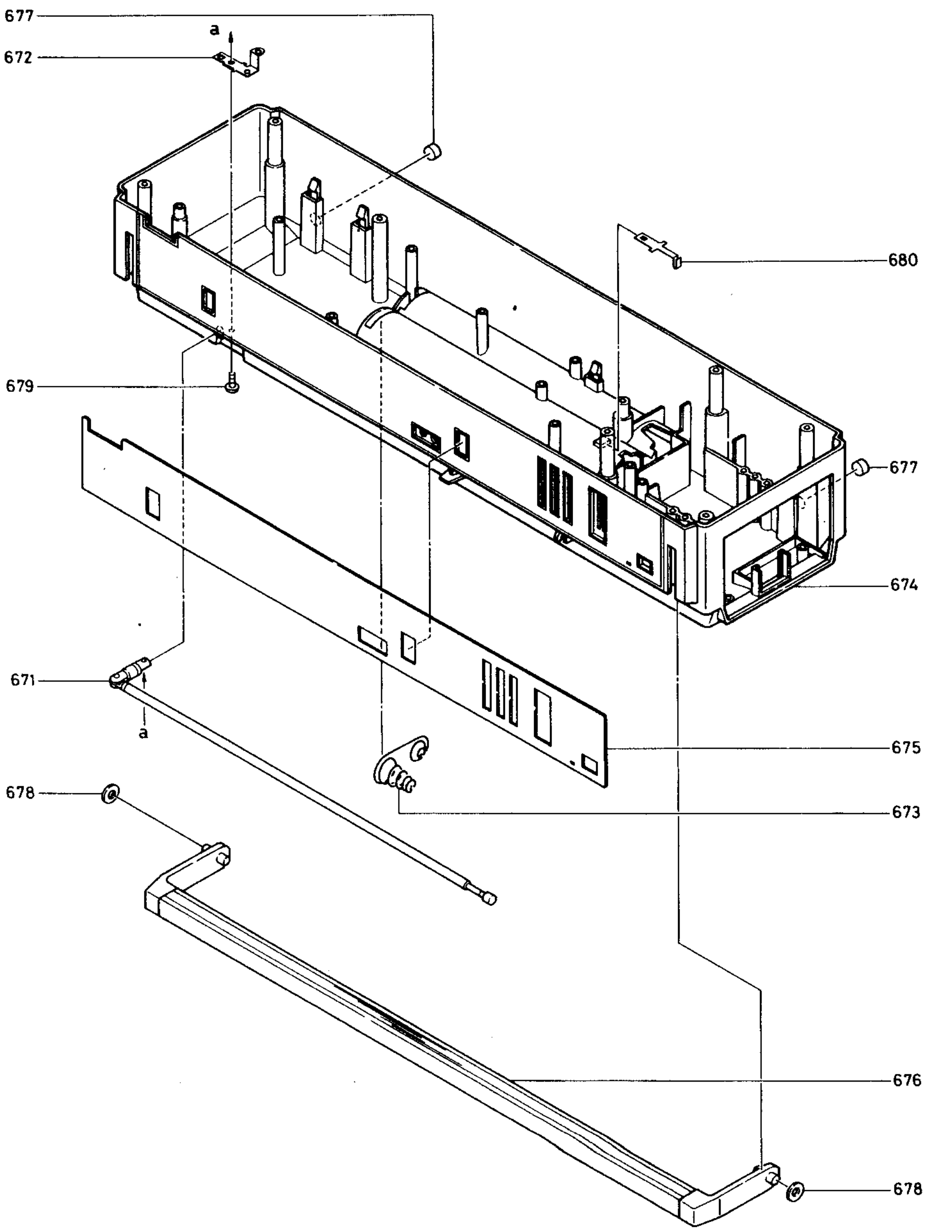
FRONT CABINET EXPLODED VIEW



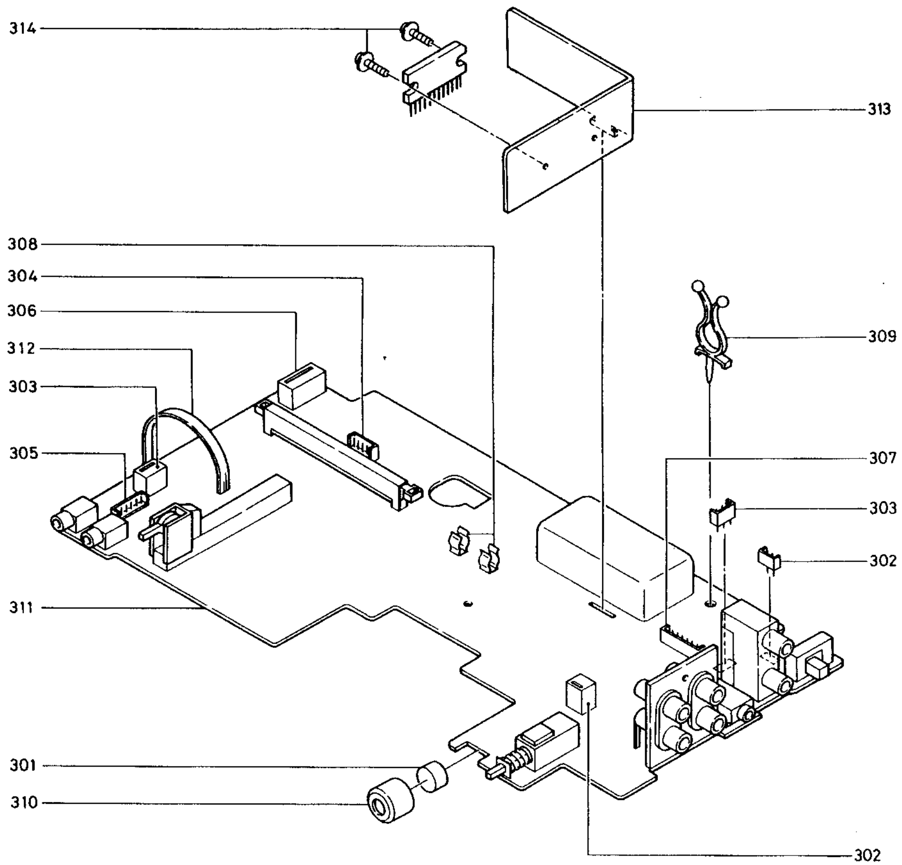
COMPACT DISC CASE



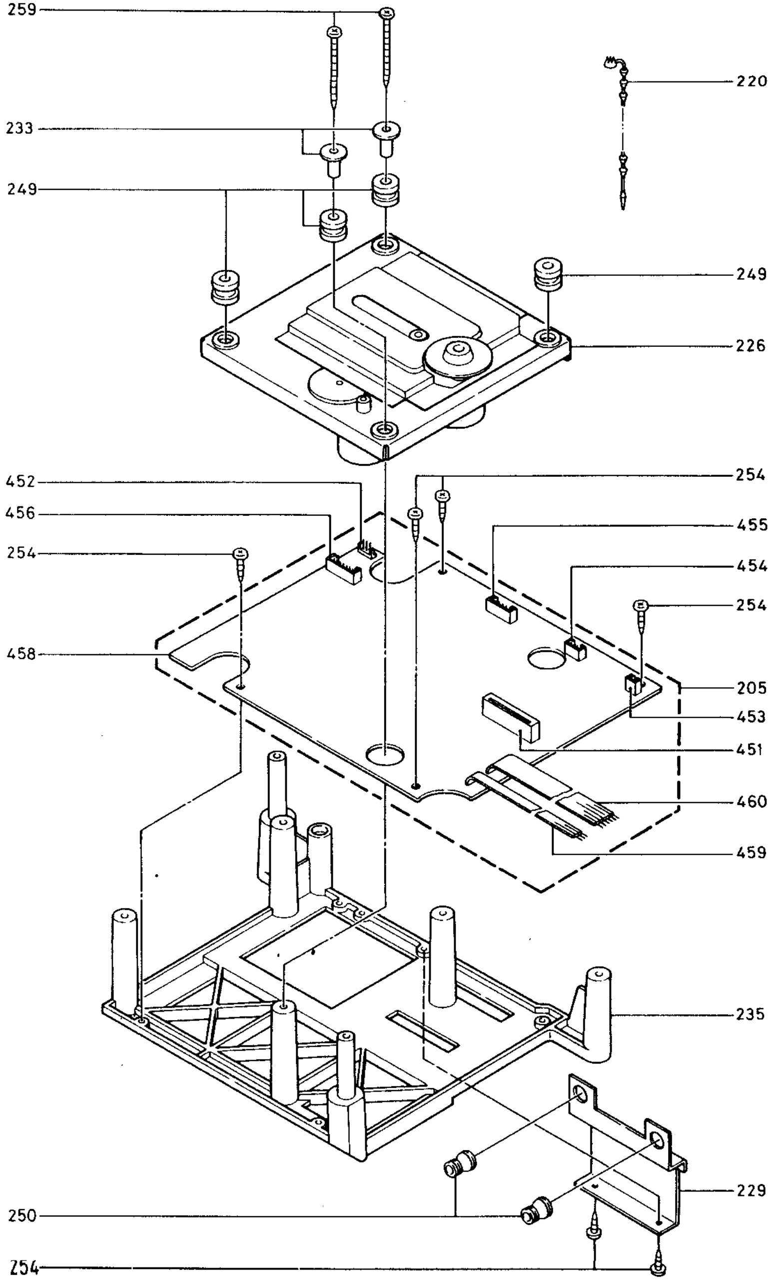
REAR CABINET



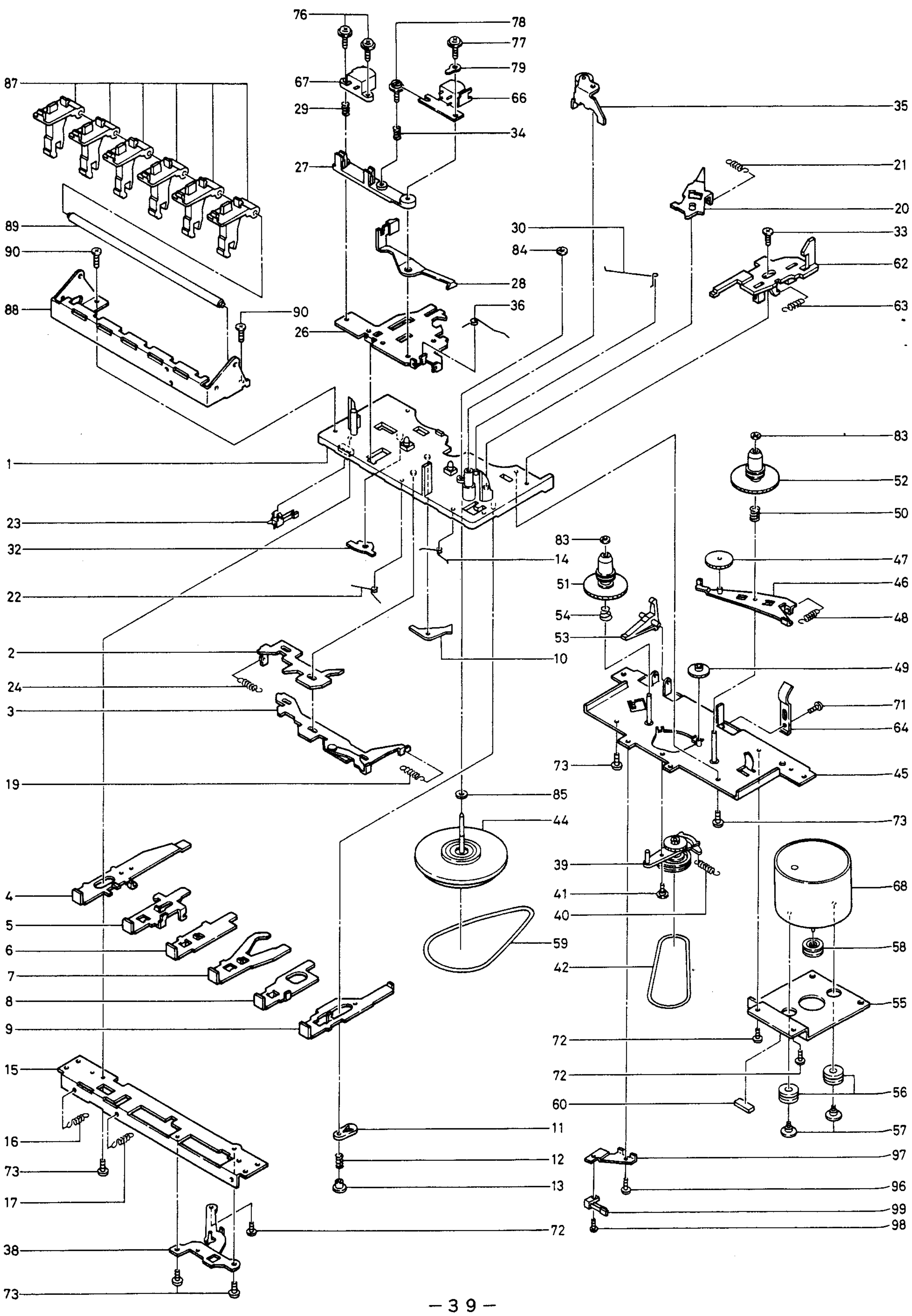
AMPLIFIER



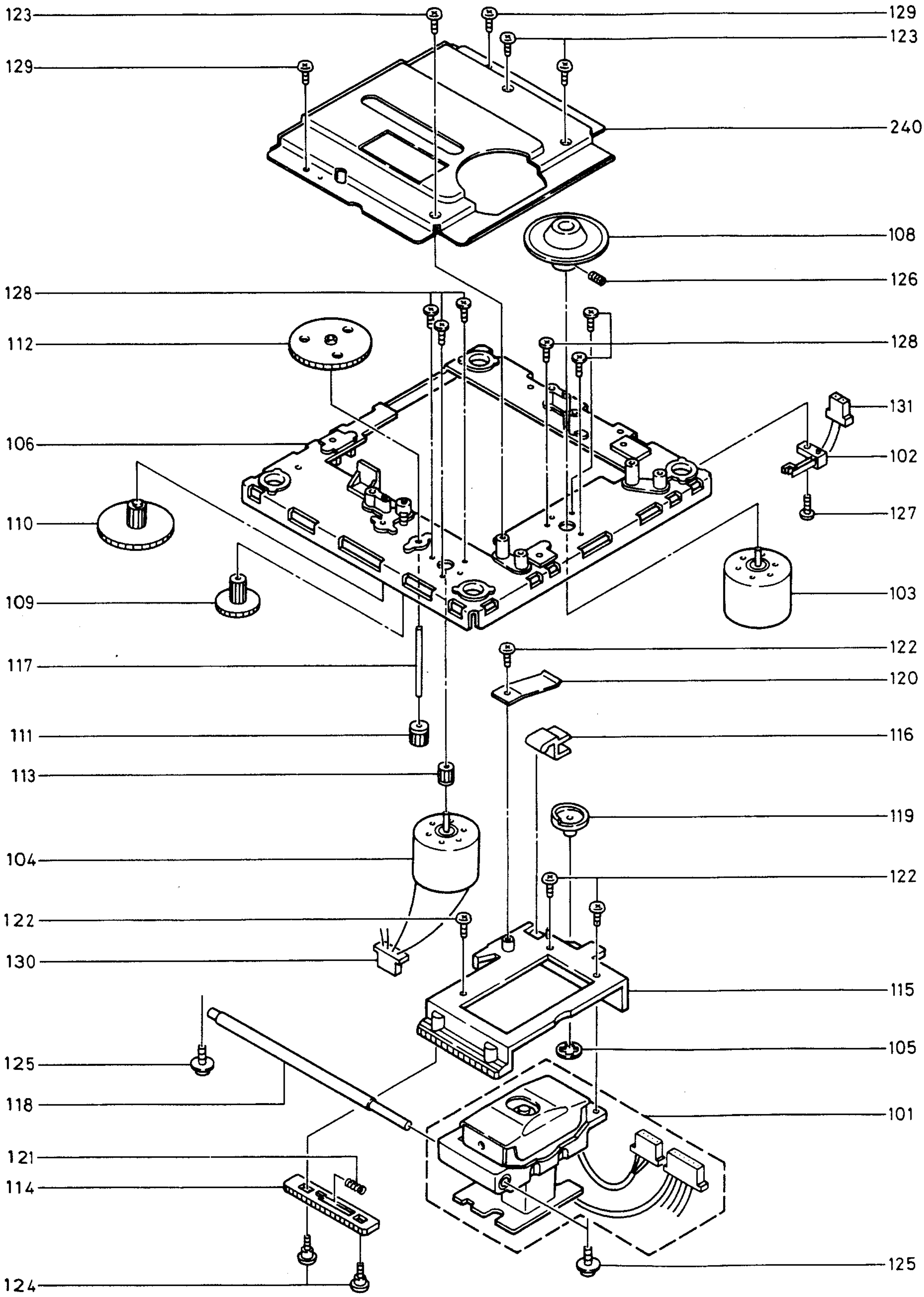
COMPACT DISC



CASSETTE TAPE RECORDER EXPLODED VIEW



COMPACT DISC MECHANISM EXPLODED VIEW



REPLACEMENT PARTS LIST

Note: The components identified by ⚠ mark are critical for safety. Replace only with part number specified.

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL			PARTS NO	DESCRIPTION	QTY
*** ICS ***					
IC300			23936631	IC TA7668BP	1
IC301			23936641	IC BA5406	1
IC001			23936971	IC TA7358P	1
IC302 ⚠			37151073	IC UPC78L05	1
IC501			37901160	IC CX20109	1
IC502			37951181	IC MOS YM-3805	1
IC002			79AA0036	IC BA4234L	1
IC504			79AA0117	IC M50723FP 0037041100	1
IC506	IC507	IC508	79AA0120	IC NJM2068DD	7
IC509	IC510	IC511			
IC512					
IC505			79AAC122	IC YM3015	1
IC503			79AAC210	IC UPD4466-15L	1
*** TRANSISTORS ***					
Q512	Q513		23940026	TR 2SD 467 D	2
Q001	Q100	Q101	35047216	TR,2SC945 P	11
Q102	Q103	Q200			
Q201	Q202	Q203			
Q303	Q304				
Q519	Q521	Q523	35050917	TR 2SC1384 Q	4
Q525					
Q520	Q522	Q524	35500717	2SA684 Q	4
Q526					
Q501	Q503	Q504	35541905	TR,2SC2785(E)	8
Q505	Q506	Q507			
Q508	Q509				
Q502	Q510	Q511	35542709	DTC 114TS	3
Q516			79V05656	DTA 114TS	1
Q300	Q305		35950627	TR.2SC 1815 GR	2
Q306 ⚠			79AA0068	TR 2SD1380 Q	1
Q517			79AA0127	TR 2SD1423A	1
Q514	Q515	Q518	79AAC128	TR 2SA1048GR	3

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL			PARTS NO	DESCRIPTION	QTY
*** DIODES ***					
D001	D300	D305	23940031	DIODE 1SS176	20
D501	D502	D503			
D504	D506	D507			
D508	D509	D510			
D511	D512	D513			
D515	D516	D517			
D518	D521				
D303	D304		36904189	LED TLR208	2
D302			36905330	DIODE RD4.3E B1	1
D519	D520		36905341	DIODE RD5.6E B3	2
D301			36905433	DIODE,ZENER RD8.2E B2	1
D514			79AAC123	DIODE SVC203 SP	1
D701			79AAC151	DIODE LN28P	1
D400 ⚠			79AAC158	DIODE W02	1
*** TRANSFORMERS ***					
T300			79AA0057	OSC TRANS	1
T400 ⚠			79AAC206	POWER TRANS(BA)	1
T400 ⚠			79AA0154	POWER TRANS(BD, BS)	1
T400 ⚠			79AA0207	POWER TRANS(BG)	1
*** VARIABLE RESISTORS ***					
VR001			79AAC033	R,VARIABLE 5KH	1
VR100	VR101	VR102	79AA0041	SLIDE VOLUME 100KH	3
VR103	VR203		79AA0071	SLIDE VOLUME 20K	2
VR503	VR505		79AAC114	SF VOLUME CONTROL 10K	2
VR501	VR502		79AAC115	SF VOLUME CONTROL 100K	2
VR504			79AA0116	SF VOLUME CONTROL 20K	1

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** RELAYS & SWITCHES ***	
S001 S301	79AA0034	LEVER SW	2
S303	79AA0061	PUSH SWITCH	1
S308	79AA0062	SLIDE SWITCH	1
S300	79AA0063	SLIDE SWITCH	1
B102	79AA0084	LEAF SWITCH	1
S502	79AA0130	LEAF SWITCH	1
S501	79AA0131	SENSER SWITCH	1
S701 S702 S703 S704 S705	79AA0149	TACT SWITCH	5
A657	79AA0163	SENSER SWITCH A	1
S400 ⚠	79AA0209	ROTARY SWITCH(BG)	1
		*** COILS & FILTERS ***	
BFC01	23936941	BAND PASS FILTER	1
CFC01	23936951	CERAMIC FILTER	1
L301	23937871	COIL	1
L003	79AA0029	COIL (BA, BD, BG)	1
L003	79AA0078	COIL(BS)	1
L002	79AA0030	OSC COIL	1
L004	79AA0031	COIL	1
CF002	79AA0035	CERAMIC FILTER	1
L303 L304	79AA0067	INDUCTOR 47CK	2
L300	79AA0069	INDUCTOR 100K	1
TC02	79AA0076	AM IFT	1
L001	79AA0077	COIL	1
L503	79AA0113	OSC TRANSFORMER	1
L504 L505	79AA0119	LOW PASS FILLTER	2
L501	79AA0125	INDUCTOR 33CK	1
L502	79AA0126	TRAP COIL	1
		*** PWB ASSYS ***	
A201	79AA0055	AMP PWB ASSY	2
A202	79AA0056	VOLUME PWB ASSY	2
A204	79AA0075	TUNER PWB ASSY	2

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***	
A301	23936261	CONDENSER MICROPHONE	1
L005 T001	23936851	FM IFT	2
TC004 TC006	23936911	TRIMMER CONDENSER(BA,BD,BG)	2
TC004 TC006	79AA0333	TRIMMER CONDENSER(BS)	2
Z004	23937441	AC CORD(BD,BG,BS)	1
Z004	79AA0007	AC CORD(BA)	1
J101 J201	23937931	MINI JACK 3.5	2
A302	23937961	CONNECTOR PIN (2PIN)	2
A304	23937971	CONNECTOR PIN (4PIN)	1
A305	23937981	CONNECTOR PIN (5PIN)	1
A306	23940035	CONNECTOR 6PIN	1
J302	79AA0023	MINI JACK 3.5	1
VC001	79AA0032	POLY VARICON	1
DC001	79AA0058	DC-DC CONVERTER	1
J300	79AA0059	PIN JACK	1
J301	79AA0060	PIN JACK	1
A401	79AA0080	VARICON GEAR	1
L006	79AA0079	BAR ANTENNA(BS)	1
L006	79AA0081	BAR ANTENNA(BA, BD, BG)	1
B101	79AA0083	PICK UP ASSY	1
B103	79AA0085	SPINDLE MOTOR	1
B104	79AA0086	SLED MOTOR	1
X501	79AA0118	X'TAL 8.6436 MHZ	1
A601	79AA0129	SPEAKER	2
A602	79AA0147	PIEZO SPEAKER	2
LC701	79AA0150	LCD DISPLAY	1
J400 ⚠	79AA0155	AC SOCKET(BA, BD, BS)	1
J400 ⚠	79AA0325	AC SOCKET(BG)	1
J303	79AA0156	ADF JACK	1
A671	79AA0171	ROD ANTENNA	1
F001 ⚠	79AA0175	FUSE 400MA250V	1
A242	79AA0185	POINTER	1
		*** APPEARANCE PARTS ***	
A309	79AA0064	WIRE CLIP C	1
A310	79AA0065	MIC HOLDER	1
A351	79AA0072	LED HOLDER	1
A619	79AA0148	DIAL SHEET(BA, BD, BG)	1
A619	79AA0141	DIAL SHEET(BS)	1

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL		PARTS NO	DESCRIPTION	QTY
***		KNOBS & PUSH BUTTONS	***	
A222		23937651	GRAPHIC KNOB	3
A507		79AA0161	PUSH BOTTON	6
A223		79AA0178	VR KNOB	1
A225		79AA0179	TUNING KNOB	1
A243		79AA0186	SWITCH KNOB	1
A224		79AA0009	SWITCH KNOB	2
A244		79AA0187	TACT KNOB A	1
A245		79AA0188	TACT KNOB B	1
A246		79AA0189	TACT KNOB C	1
A247		79AA0190	TACT KNOB D	1
A248		79AA0191	TACT KNOB E	1
***		PRINTED & PACKING MATERIALS	***	
Z009		79AA0194	SPACER L	1
Z010		79AA0195	SPACER R	1
Z011		79AA0196	CARTON BOX	1
Z013		79AA0197	INSTRUCTION BOOKLET	1
***		MECHANICAL PARTS	***	
A218		23936291	COUNTER BELT	1
A220		23936301	LEAD-WIRE CLAMP	1
A308	A371	23936751	FUSE HOLDER	3
A269	A501	23936801	LEAD WIRE CLAMP	3
A219	A635	23937101	HIMERON	10
A604		23937251	TAPE MIRROR	1
A626		23937341	TAPPING SCREW,TP3X15-SNA	2
A404		23938251	P2.6X6XSN-S(SCREW)	1
B001		23938631	MAIN BASE ASSY	1
B002		23938641	SWITCH PLATE	1
B010		23938721	RWD LEVER	1
B012		23938741	PAUSE LEVER SPRING	1
B013		23938751	PAUSE STOPPER	1
B014		23938761	BUTTON LEVER SPRING(C)	1
B016		23938781	BUTTON LEVER SPRING(A)	1
B017		23938791	PLAY BUTTON LEVER SP (S)	1
B019		23938801	ACTUATOR SPRING	1
B020		23938811	AUTO LEVER	1
B021		23938821	AUTO LEVER SPRING	1
B023		23938841	LEAF SWITCH	1
B028		23938871	SENSING PLATE ASSY	1
B030		23938881	HEAD PANEL SPRING(S)	1
B032		23938901	P.P.STOPPER	1

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
B033	23938911	P.M.E SCREW	1
B034	23938921	SPRING	1
B036	23938941	PINCH ROLLER SPRING	1
B038	23938961	METAL GUIDE	1
B040	23938981	RF PULLEY ARM SPRING	1
B042	23939001	RF BELT	1
B048	23939061	T.G PLATE SPRING	1
B051	23939091	SUPPLY REEL ASSY	1
B053	23939111	RECORD SAFETY LEVER	1
B050	23939121	BACK TENSION SPRING	1
B056	23939141	MOTOR RUBBER	2
B063	23939211	EJECT SLIDE LEVER SP	1
B064	23939221	PACK SPRING	1
B024	23939261	SWITCH ACTUATOR SPRING	1
B071	23939271	C TAPPING SCREW M2X3	1
B072	23939281	C TAPPING SCREW M2X4	2
B073	23939291	P TAPPING BIND SCREW M2X5	5
B077	23939321	(+)(-) CAP SCREW M2X7	1
B078	23939331	AZIMUTH SCREW	1
B084	23939381	P.WASHER CUT 1.55X3.8X0.5	1
B097	23939411	SWITCH BRACKET	1
B096	23939421	C TAPPING SCREW M2X5	1
B105	79AA0087	SNAP RING	1
B106	79AA0088	CHASSIS ASSEMBLY	1
B108	79AA0089	TURN TABLE	1
B109	79AA0090	PICK UP GEAR	1
B110	79AA0091	GEAR,LOAD	1
B111	79AA0092	GEAR,PINION	1
B112	79AA0093	GEAR,LOAD	1
B113	79AA0094	GEAR,MOTOR	1
B114	79AA0095	PICK UP GEAR	1
B115	79AA0096	BASE,SLIDE PICK UP	1
B116	79AA0097	SLIDE	1
B117	79AA0098	SHAFT,GEAR	1
B118	79AA0099	PU SHAFT	1
B119	79AA0100	SLIDE GUIDE BASE	1
B120	79AA0101	PLATE	1
B121	79AA0102	SPRING	1
B124	79AA0103	SPECIAL SCREW	1
B126	79AA0104	SPECIAL SCREW	1
B130	79AA0105	CONNECTOR 4PIN	1
B131	79AA0106	CONNECTOR 2PIN	1
A233	79AA0108	COLLAR	4
A229	79AA0111	BASE MECHANISM SUPPORT	1
A235	79AA0112	CHASSIS	1
A607	79AA0133	OPEN SPRING	1

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
A608	79AAC134	OPEN LEVER	1
A609	79AA0135	UP CASE SPRING	1
A610	79AA0136	COM SPRING	1
A615	79AA0137	CASE,SET	1
A616	79AA0138	CASE,UP	1
A617	79AA0139	FRONT PLATE	1
A618	79AA0140	OPERATION PLATE	1
A620	79AA0142	CASSETTE SHEET	1
A621	79AA0143	LCD WINDOW	1
A622	79AA0144	OPEN BUTTON	1
A623 A677	79AA0145	FOOT	2
A624	79AA0146	W FACE	2
A473	79AA0152	LED HOLDER	1
A474	79AA0153	LCD SUPPORTER	1
A372	79AA0157	SOCKET COVER	1
A373	79AA0159	BATTERY TERMINAL C	1
A207	79AA0160	MECHANISM UNIT	2
A209	79AA0162	CD CASE UNIT	2
A673	79AA0165	BATTER TERMINAL B	1
A674	79AA0166	CASE B	1
A676	79AA0168	HANDLE ASSY	1
A678	79AA0170	HANDLE WASHER	1
A675	79AA0172	TOP PLATE	1
A217	79AA0173	TAPE COUNTER	1
F002 ⚠	79AA0174	FUSE 1.6A 250V	1
A232	79AA0181	REC SWITCH SPRING	1
A267	79AA0182	SPL SPRING	1
A238	79AA0183	BATTER COVER	1
A239	79AA0184	JACK BORD(BA,BD,BS)	1
A239	79AA0345	JACK BORD(BG)	1
A230	79AA0198	PIVOT A SET	1
B011	79AT0001	PAUSE LEVER	1
B035	79AT0005	PINCH ROLLER ARM ASSY	1
B044	79AT0007	FLY WHEEL ASSY	1
B058	79AT0009	MOTOR PULLEY	3
B085	79AT0014	P WASHER CUT 2.05X4X0.5	1
B052	79AT0015	TAKE UP REEL ASSY	1
B003	79AT0019	ACTUATOR ASSY,PUSH BUTTON	1
B004	79AT0020	LEVER,REC BUTTON	1
B005	79AT0021	LEVER,PLAY BUTTON	1
B006	79AT0022	LEVER,REW BUTTON	1
B007	79AT0023	LEVER,FF BUTTON	1
B008	79AT0024	LEVER,STOP BUTTON	1
B009	79AT0025	LEVER ASSY,PAUSE BUTTON	1
B026	79AT0026	PANEL,HEAD	1
B027	79AT0027	BASE,HEAD	1
B039	79AT0028	ARM ASSY,REW/FF	1

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
B041	79AT0029	SCREW,SPECIAL	1
B045	79AT0030	BASE ASSY,REEL	1
B046	79AT0031	PLATE ASSY,TAKE UP	1
B047	79AT0032	GEAR,TAKE UP ROLLER	1
B049	79AT0033	GEAR,FF	1
B054	79AT0034	SPRING	1
B057	79AT0035	SPECIAL SCREW	2
B059	79AT0036	MAIN BELT	1
B062	79AT0037	LEVER,EJECT SLIDE	1
B066	79AT0038	R/P HEAD	1
B067	79AT0039	HEAD,ERASE	1
B068	79AT0040	MOTOR	1
B076	79AT0041	SCREW,MACHINE M2*8	2
B079	79AT0042	WASHER,LUG	1
B083	79AT0043	WASHER 1.2*3.8*0.4	2
B087	79AT0044	LEVER,OPERATION	6
B088	79AT0045	FRAME,BUTTON LEVER	1
B089	79AT0046	SHAFT,BUTTON LEVER	1
B090	79AT0047	SCREW,MACHINE	2
B098	79AT0048	SCREW,MACHINE	1
B099	79AT0049	SWITCH,LEAF	1
*** RESISTORS ***			
R564	401KE609	R,CARBON 2.2H 5% 1/6W	1
R311	401KE623	R,CARBON 8.2H 5% 1/6W	1
R002	401KE633	R,CARBON 22H 5% 1/6W	1
R621	401KE637	R,CARBON 33H 5% 1/6W	1
R113 R213	401KE639	R,CARBON 39H 5% 1/6W	2
R620	401KE643	R,CARBON 56H 5% 1/6W	1
R313	401KE645	R,CARBON 68H 5% 1/6W	1
R001 R110 R150 R210 R250 R300	401KE649	R,CARBON 100H 5% 1/6W	6
R143 R243	401KE651	R,CARBON 120H 5% 1/6W	2
R004 R005 R008 R103 R203	401KE657	R,CARBON 220H 5% 1/6W	5
R322	401KE659	R,CARBON 270H 5% 1/6W	1
R007 R522 R546 R565 R576 R600 R601	401KE661	R,CARBON 330H 5% 1/6W	7
R521	401KE665	R,CARBON 470H 5% 1/6W	1
R321 R618	401KE667	R,CARBON 560H 5% 1/6W	2
R505 R588	401KE669	R,CARBON 680H 5% 1/6W	2
R009 R015 R019 R109 R209 R304 R509 R555 R585	401KE673	R,CARBON 1.0K 5% 1/6W	14

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
R590 R591 R598	401KE673	R,CARBON 1.0K 5% 1/6W	14
R599 R617			
R020 R021 R100	401KE681	R,CARBON 2.2K 5% 1/6W	26
R105 R124 R127			
R200 R205 R224			
R227 R249 R302			
R305 R310 R314			
R319 R502 R503			
R529 R549 R592			
R593 R612 R624			
R625 R626			
R562 R580 R584	401KE685	R,CARBON 3.3K 5% 1/6W	5
R594 R595			
R010 R142 R242	401KE687	R,CARBON 3.9K 5% 1/6W	3
R014 R121 R131	401KE689	R,CARBON 4.7K 5% 1/6W	23
R132 R133 R134			
R135 R136 R221			
R231 R232 R233			
R234 R235 R238			
R325 R328 R504			
R602 R603 R604			
R605 R619			
R027 R548	401KE691	R,CARBON 5.6K 5% 1/6W	2
R101 R118 R120	401KE693	R,CARBON 6.8K 5% 1/6W	10
R145 R201 R218			
R220 R245 R308			
R628			
R016 R026 R511	401KE697	R,CARBON 10K 5% 1/6W	25
R512 R516 R518			
R527 R531 R532			
R537 R538 R554			
R572 R573 R574			
R577 R608 R609			
R610 R615 R623			
R629 R630 R631			
R634			
R596 R597 R632	401KE701	R,CARBON 15K 5% 1/6W	4
R633			
R011 R022 R023	401KE703	R,CARBON 18K 5% 1/6W	5
R137 R237			
R106 R115 R206	401KE705	R,CARBON 22K 5% 1/6W	17
R215 R506 R519			
R520 R524 R535			
R536 R540 R578			
R579 R581 R582			
R586 R635			
R136 R236 R542	401KE707	R,CARBON 27K 5% 1/6W	6
R543 R552 R553			
R139 R239 R530	401KE709	R,CARBON 33K 5% 1/6W	6
R550 R551 R563			
R024 R025 R102	401KE713	R,CARBON 47K 5% 1/6W	18
R119 R125 R140			
R147 R148 R219			

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL	PARTS NO	DESCRIPTION	QTY
R225 R240 R247	401KE713	R,CARBON 47K 5% 1/6W	18
R248 R517 R525			
R561 R567 R616			
R566	401KE717	R,CARBON 68K 5% 1/6W	1
R528 R560	401KE719	R,CARBON 82K 5% 1/6W	2
R003 R012 R013	401KE721	R,CARBON 100K 5% 1/6W	24
R108 R111 R112			
R130 R208 R211			
R212 R230 R501			
R510 R533 R556			
R557 R566 R569			
R570 R571 R575			
R583 R587 R611			
R513	401KE723	R,CARBON 120K 5% 1/6W	1
R508 R526	401KE724	R,CARBON 130K 5% 1/6W	2
R515 R523 R613	401KE725	R,CARBON 150K 5% 1/6W	4
R614			
R017 R114 R116	401KE727	R,CARBON 180K 5% 1/6W	6
R214 R216 R507			
R534 R539	401KE729	R,CARBON 220K 5% 1/6W	2
R545	401KE731	R,CARBON 270K 5% 1/6W	1
R514	401KE735	R,CARBON 390K 5% 1/6W	1
R141 R241 R541	401KE737	R,CARBON 470K 5% 1/6W	5
R558 R559			
R627	401KE739	R,CARBON 560K 5% 1/6W	1
R104 R204 R547	401KE741	R,CARBON 680K 5% 1/6W	3
R006	401KE743	R,CARBON 820K 5% 1/6W	1
R126 R226 R589	401KE745	R,CARBON 1.0M 5% 1/6W	3
R306	401KE761	R,CARBON 4.7M 5% 1/6W	1
R246 R326	409HB649	R,CARBON 100H 5% 1/4W	2
R307	409HB651	R,CARBON 120H 5% 1/4W	1
R324	409HB665	R,CARBON 470H 5% 1/4W	1
R327	409HB681	R,CARBON 2.2K 5% 1/4W	1
R323	409HB697	R,CARBON 10K 5% 1/4W	1
R146	409H2649	R,CARBON 100H 5% 1/4W	1
R149	409H2681	R,CARBON 2.2K 5% 1/4W	1
R202	409H2713	R,CARBON 47K 5% 1/4W	1
*** CAPACITORS ***			
C100 C111 C112	421CBC37	C,CERAMIC 50V 1000PF	3
C113 C213	421CBC41	C,CERAMIC 50V 220PF	2
C118 C218	421CBC43	C,CERAMIC 50V 330PF	2
C119 C124 C127	421CBC49	C,CERAMIC 50V 1000PF	9
C200 C211 C212			
C219 C224 C227			
C002	4211K413	C,CERAMIC 50V 1000PF	1
C005	4211K429	C,CERAMIC 50V 0.022UF	1
C018 C019 C020	42110929	C,CERAMIC 50V 0.022UF	6
C022 C026 C027			
C538	42130205	C,CERAMIC 50V 220PF	1
C516	42130209	C,CERAMIC 50V 470PF	1
C543 C580 C581	42130211	C,CERAMIC 50V 680PF	3

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL			PARTS NO	DESCRIPTION	QTY
C526			42130701	C,CERAMIC 50V 100PF	1
C010	C011	C400	421F1397	C,CERAMIC 50V 0.022UF	7
C401	C402	C403			
C583					
C542			423A1033	C,CERAMIC 50V 33PF	1
C013			423A1041	C,CERAMIC 50V 68PF(BS)	1
C007			4231A004	C,CERAMIC 50V 4PF	1
C004			4231A005	C,CERAMIC 50V 5PF	1
C013			4231A012	C,CERAMIC 50V 7PF(BA,BD,BG)	1
C012	C525	C527	4231A015	C,CERAMIC 50V 10PF	3
C017			4231A015	C,CERAMIC 50V 10PF(BA,BD,BG)	1
C015			4231A028	C,CERAMIC 50V 20PF	1
C001	C003	C006	4231A029	C,CERAMIC 50V 22PF	4
C519					
C503	C504	C544	4231A033	C,CERAMIC 50V 33PF	5
C545	C584				
C510	C511		4231A041	C,CERAMIC 50V 68PF	2
C025	C045		4231A045	C,CERAMIC 50V 100PF	2
C023			4231A057	C,CERAMIC 50V 330PF	1
C306			4231A103	C,CERAMIC 50V 560PF	1
C017			42304045	C,CERAMIC 50V 110PF(BS)	1
C008			42314028	C,CERAMIC 50V 20PF	1
C555	C556		427F4070	C,FILM 50V 0.039UF	2
C576	C577		427J9069	C,FILM 50V 4700PF	2
C537	C540		42701113	C,FILM 50V 1000PF	2
C578	C579		42701114	C,FILM 50V 1500PF	2
C530	C531		42701116	C,FILM 50V 3300PF	2
C307	C508	C521	42701119	C,FILM 50V 0.01UF	7
C528	C529	C541			
C561					
C535			42701121	C,FILM 50V 0.022UF	1
C509			42701122	C,FILM 50V 0.033UF	1
C539			42701123	C,FILM 50V 0.047UF	1
C518	C520	C562	42701125	C,FILM 50V 0.1UF	4
C566					
C131	C231		42701127	C,FILM 50V 0.22UF	2
C305			42701134	C,FILM 50V 1800PF	1
C523	C549	C550	42701135	C,FILM 50V 2700PF	3
C553	C554		42701138	C,FILM 50V 8200PF	2
C524			42701142	C,FILM 50V 0.039UF	1
C560	C575		430A8124	C,ELEC 50V 0.1UF	2
C567	C568	C569	430B6019	C,ELEC 10V 470UF	4
C570					
C571	C572		430B6020	C,ELEC 10V 1000UF	2
C300	C311	C312	43011017	C,ELEC 10V 220UF	6
C318	C319	C333			
C009	C321	C548	43011028	C,ELEC 16V 10UF	8
C551	C552	C557			
C558	C563				

MODEL: RM-3500(BA,BD,BS,BG)

SYMBOL			PARTS NO	DESCRIPTION	QTY
C336			43011035	C,ELEC 16V 470UF	1
C021			43014099	C,ELEC 50V 0.1UF	1
C507			43014103	C,ELEC 50V 0.47UF	1
C031			43016012	C,ELEC 10V 470UF	1
C506	C512	C513	43018008	C,ELEC 10V 100UF	10
C547	C559	C564			
C565	C573	C574			
C582					
C349			43018108	C,ELEC 10V 100UF	1
C304			43018211	C,ELEC 10V 22UF	1
C505			43018212	C,ELEC 10V 33UF	1
C110	C128	C210	43018213	C,ELEC 10V 47UF	7
C228	C301	C308			
C320					1
C035			43018225	C,ELEC 25V 3.3UF	1
C037			43018226	C,ELEC 25V 4.7UF	1
C302	C303		43018242	C,ELEC 50V 0.1UF	2
C034			43018248	C,ELEC 50V 10UF	1
C033	C348	C350	43018318	C,ELEC 16V 10UF	3
C024			43018320	C,ELEC 16V 22UF	1
C129	C229	C322	43018322	C,ELEC 16V 47UF	3
C202	C205	C209	43018342	C,ELEC 50V 0.1UF	10
C214	C216	C217			
C225	C226	C514			
C515					
C042	C043	C101	43018346	C,ELEC 50V 0.47UF	4
C201					
C532	C536		43018348	C,ELEC 50V 1UF	2
C534			43018350	C,ELEC 50V 2.2UF	1
C102	C105	C109	43018428	C,ELEC 50V 1UF	8
C114	C116	C117			
C125	C126				
C522			43018429	C,ELEC 50V 2.2UF	1
C517			43019026	C,ELEC 16V 22UF	1
C344			43019030	C,ELEC 16V 220UF	1
C533			43028171	C,ELEC 10V 220UF	1
C340	C341	C342	43026032	C,ELEC 10V 470UF	4
C343					
C130	C230		43911735	C,ELEC 16V 1000UF	2