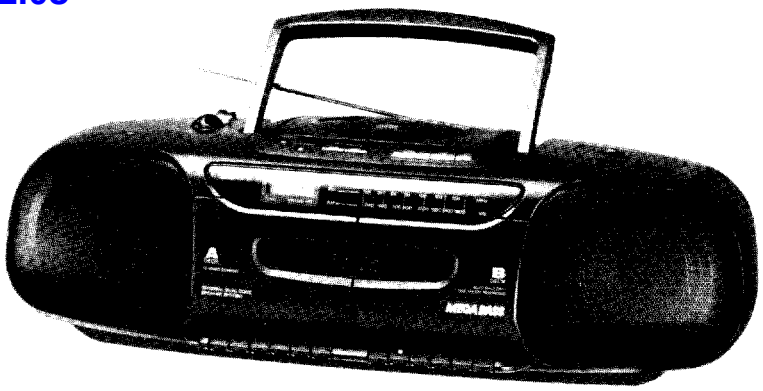
CFD-112

SERVICE MANUAL

AEP Model

Ver 1.1 2002.05



MEGA BASS

Model Name Using Similar Mechanism	CFD-10
Optical Device Name	KSM-2101BAN
Tape Transport Mechanism Type	MF-W308-64

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wave length: 780 nm Emission duration: Continuous Laser output: Less than 44.6 µW (This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.)
Spindle speed	200 r/min (rpm) to 500 r/min (rpm) (CLV)
Error correction	Sony Refined Super Strategy Cross Interleave Reed Solomon Code
Number of channels	2
Frequency response	20–20,000 Hz +1/–2 dB
Wow and flutter	Below measurable limit

Radio section

Frequency range

FM	AM
87.6–107 MHz	531–1602 kHz

IF	FM: 10.7 MHz AM: 455 kHz
Aerial	FM: Telescopic aerial AM: Built-in ferrite bar aerial

Cassette-corder section

Recording system	4-track 2-channel stereo
Frequency response	TYPE I (normal) cassette: 70–10,000 Hz

General

Speaker	Full range: 10 cm dia., 3.2 ohms cone type
Inputs	Mixing microphone input jack (minijack): Sensitivity 3 mV For low impedance microphone
Outputs	Headphones jack (stereo minijack): For 16–68 ohms impedance headphones
Maximum power output	2.3 W + 2.3 W

– Continued on next page –

CD RADIO CASSETTE-CORDER

SONY®

9-959-387-12 **Sony Corporation**
2002E0500-1 **Personal Audio Company**

Published by Sony Engineering Corporation

Power requirements	220–230 V AC, 50 Hz DC 9 V, 6 R20 (size D) batteries
Power consumption	17 W
Battery life	For CD radio cassette-corder:

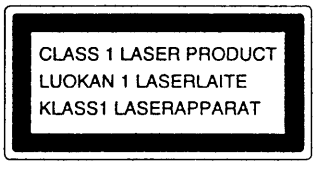
	FM recording	Tape playback	CD playback
Sony SUM-1 (NS)	approx. 15 h	approx. 6 h	approx. 3 h
Sony Alkaline AM1	approx. 24 h	approx. 15 h	approx. 8 h

Dimensions	Approx. 591 × 177 × 267 mm (w/h/d) incl. projecting parts
Mass	5 kg (11 lb) (incl. batteries)
Supplied accessories	Mains lead (1)

Design and specifications subject to change without notice.

Information

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Section	*Title*	*Page*
	Specifications	1
1.	**SERVICING NOTES**	3
2.	**GENERAL**	4
3.	**DISASSEMBLY**	5
4.	**MECHANICAL ADJUSTMENTS**	7
5.	**ELECTRICAL ADJUSTMENTS**	
5-1.	Tape Recorder Section	7
5-2.	Tuner Section	8
5-3.	CD Section	9
6.	**DIAGRAMS**	
6-1.	Tuner Section Block Diagram	12
6-2.	MD/Main/Power Section Block Diagram	13
6-3.	CD Section Block Diagram	15
6-4.	Tuner Section Printed Wiring Board and Schematic Diagram	17
6-5.	MD/Main/Power Section Printed Wiring Boards	20
6-6.	MD/Main/Power Section Schematic Diagram	23
6-7.	CD Section Schematic Diagram	29
6-8.	CD Section Printed Wiring Boards	33
7.	**EXPLODED VIEWS**	39
8.	**ELECTRICAL PARTS LIST**	45

SECTION 1
SERVICING NOTES

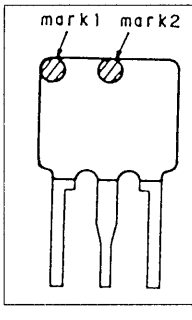
NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

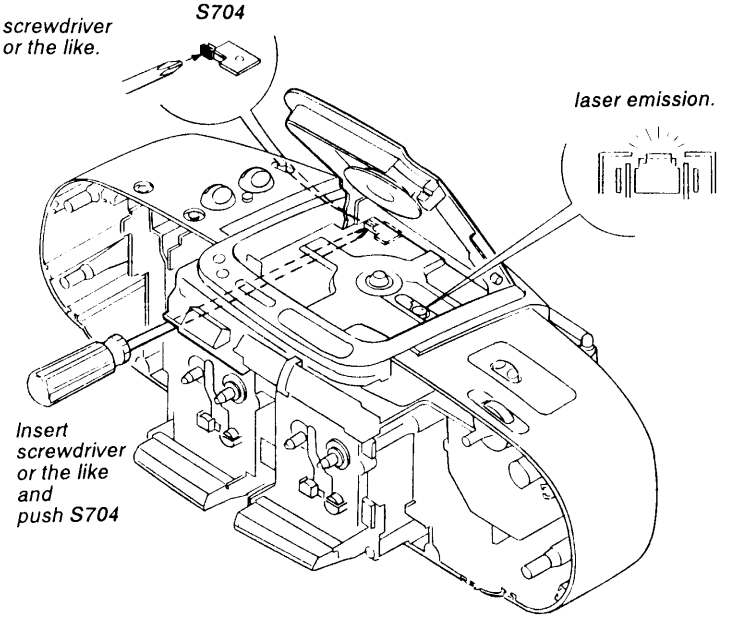
Note:
This set employs three ceramic filters (CF1, 3 and 4) which should have the same color marking to identify their center frequency.



mark 1	mark 2	Carrier Frequency
red	–	10.70 MHz
blue	–	10.67 MHz
orange	–	10.73 MHz
black	–	10.64 MHz
white	–	10.76 MHz
white	white	10.75 MHz
yellow	–	10.79 MHz

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make Function switch to CD position with no disc inserted.
2. Open the lid for CD.
3. Turn on S801 as following figure.
4. Press ▶ key.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down once for the focus search.



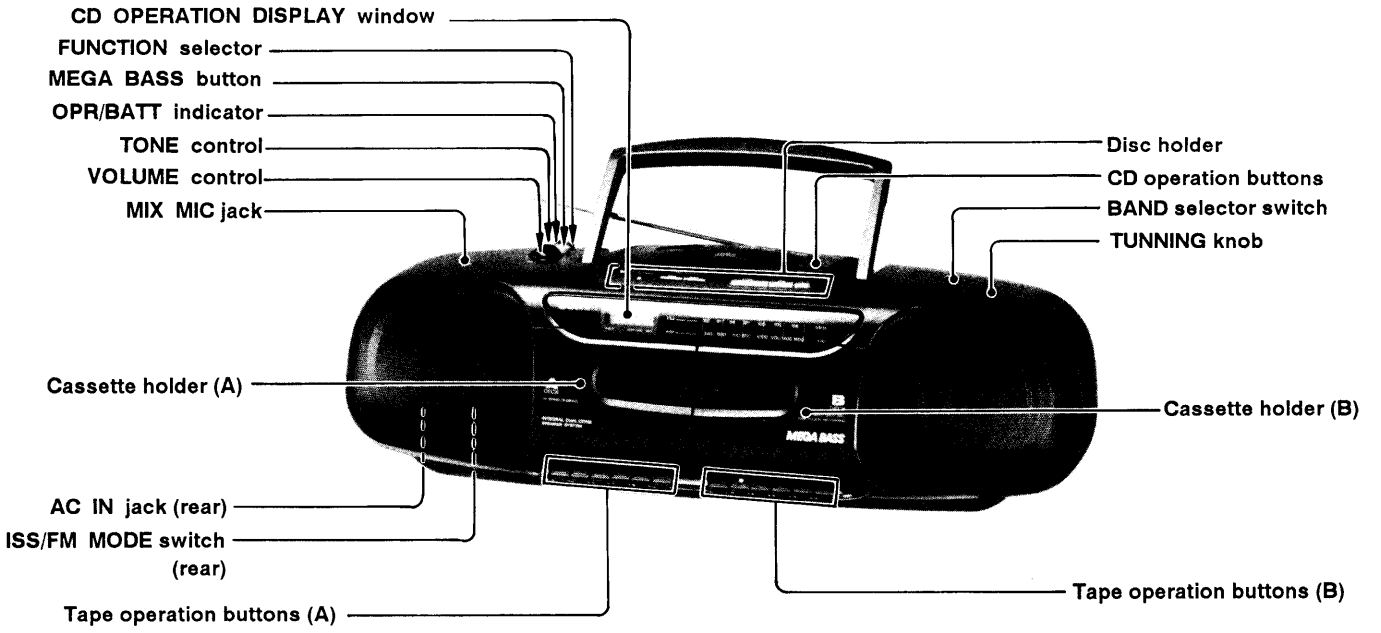
CHUCK PLATE JIG ON REPAIRING

On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig: X-4918-255-1

SECTION 2
GENERAL

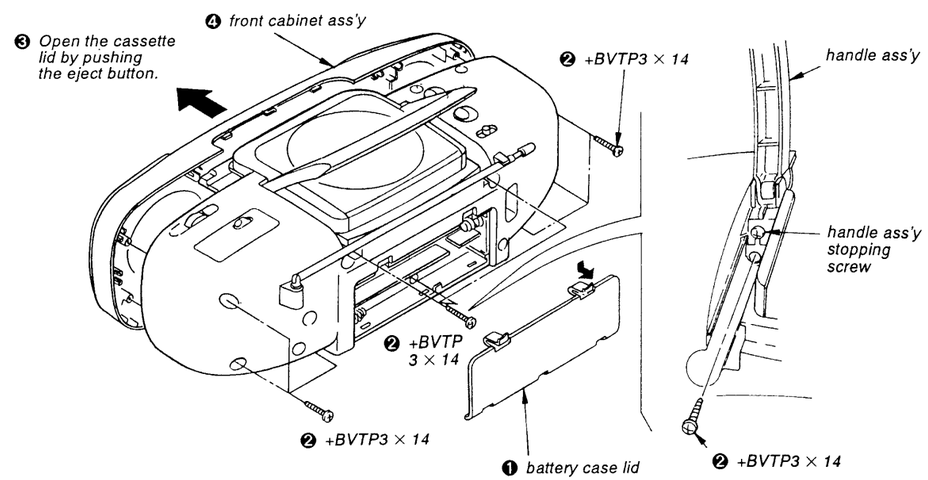
- **Parts Identification**



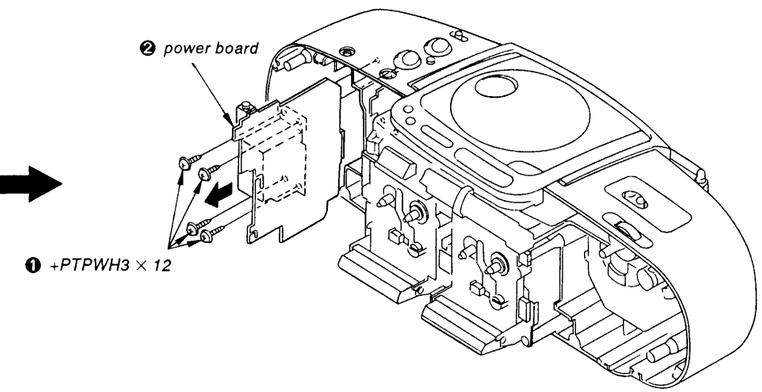
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

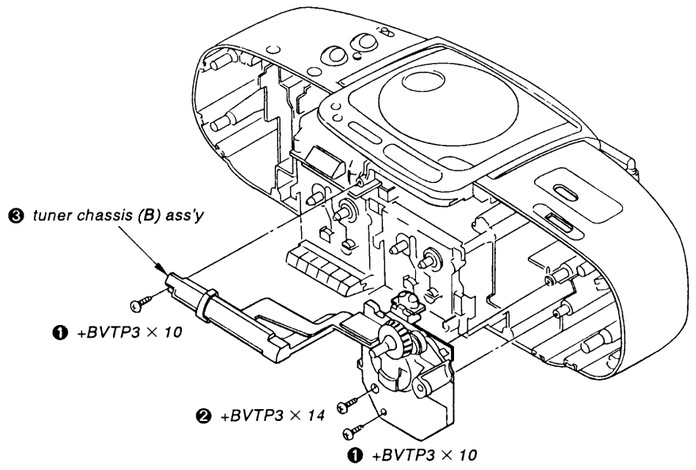
FRONT CABINET ASS'Y



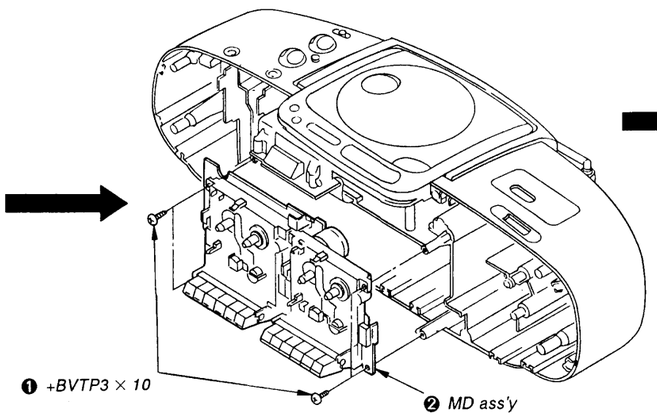
POWER BAORD



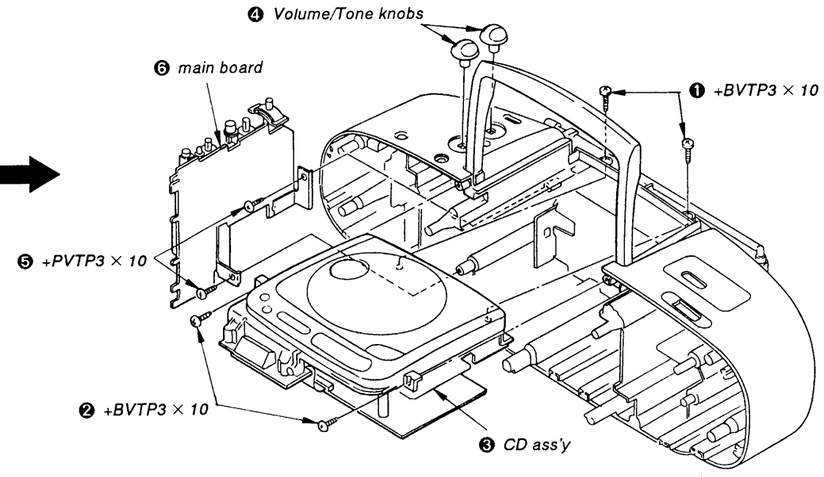
DIAL CHASSIS ASS'Y



MD ASS'Y



CD ASS'Y, MAIN BOARD



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagentizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. Power supply voltge: 9V dc.

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22.5 – 55 g•cm (0.31 – 0.76 oz•inch)	CQ-102C
Fast Forward and Rewind	60 – 120 g•cm (0.83 – 1.67 oz•inch)	CQ-201B
Back Tension	2 – 5g•cm (0.03 – 0.07 oz•inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 150 g (5.29 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

PRECAUTION

1. Adjustments should be performed in the order given.
   Generally playback circuit adjustments should be completed before performing recording circuit adjustments.
2. Adjustments should be performed for both L-ch and R-ch.
   Switches and controls should be set as follows unless otherwise specified.

- Positions of switches and control knobs
  TONE ..... maximum
  MEGA BASS ..... off

- **Standard recording position**
  Adjust the VOLUME knob so that the following regulated input/output signal levels are obtained.

- **Standard input level**

	MIX MIC
Signal source impedance	300 Ω
Input signal level	4.8 mV (– 48 dB)
Frequency	1 kHz

- **Standard output level**

Output Pin	PHONES
Signal source impedance	32 Ω
Output signal level	0.245 V (– 10 dB)

0 dB=0.775 V

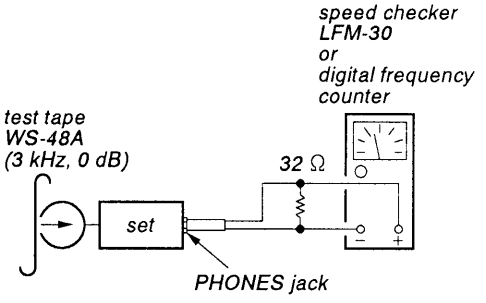
5-1. TAPE RECORDER SECTION

- **Test Tape**

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

Tape Speed Adjustment DECK A DECK B

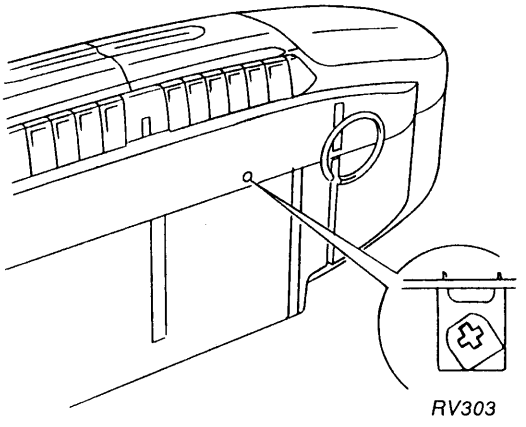
Procedure:
Mode: playback



Speed	Adjustment point	Speed checker reading	Frequency counter
normal	RV303	– 0.5 to 0.5%	3,000 ± 15 Hz

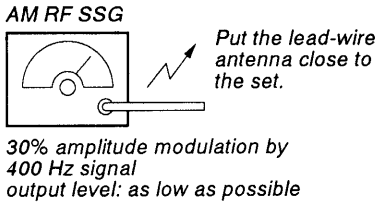
Frequency difference between the top and end should be within 1.5% (45 Hz).

Adjustment Location: MD board

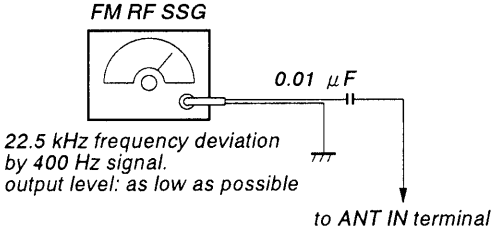


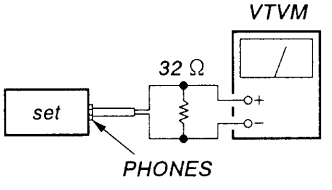
5-2. TUNER SECTION 0dB = 1 μV

[AM]
FUNCTION switch: RADIO
BAND switch: MW, LW



[FM]
FUNCTION switch: RADIO
BAND switch: FM





- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	455 kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	515 kHz
CT4	1,680 kHz

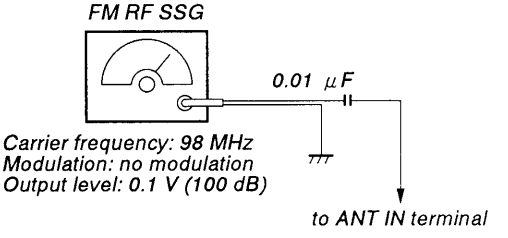
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	600 kHz
CT3	1,400 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	87.35 MHz
CT2	107.8 MHz

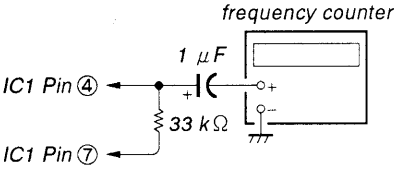
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	87.35 MHz
CT1	107.8 MHz

FM VCO Adjustment

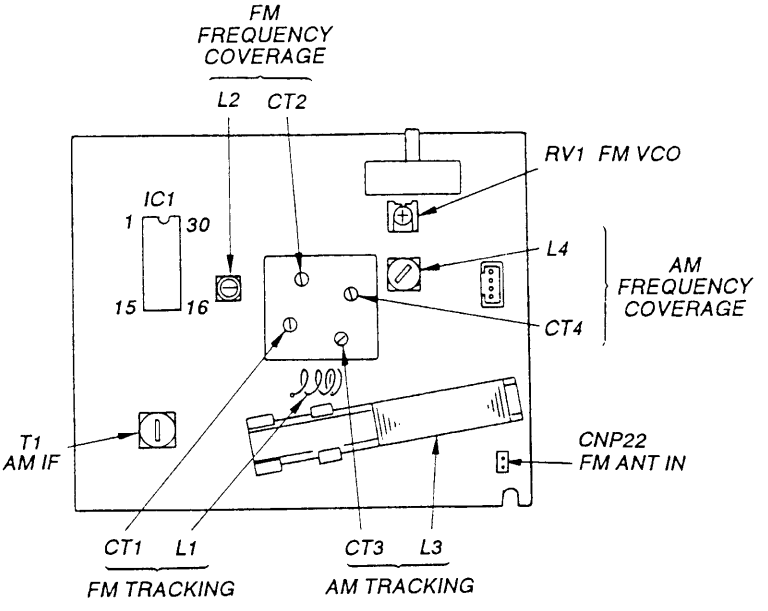
Procedure:



1. Connect frequency counter to the positions shown below.
2. Tune the set to 98 MHz.
3. Adjust RV1 for 76 kHz ± 500 Hz reading on the frequency counter.



- **Adjusting Parts Location**



5-3. CD SECTION

Notes on Adjustment

1. Perform adjustment in service mode.
   After adjustment, be sure to release service mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.

Before Adjustment

Put the set into service mode and perform the following checks. Repair if there are any problems.

- **Sled Motor Check**

1. Press ■ key for long.
2. Press ▶▶| , |◀◀ keys and confirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.
   ▶▶| : FOP moves to the outer circumference
   |◀◀ : FOP moves to the inner circumference
3. Press ■ key for long.
4. Confirm that FOP moving operations stops. If it does not, press ■ key again longer.

- **Focus Search Check**

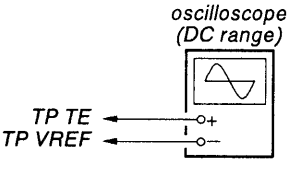
1. Press ■ key.
2. Press ▶ key. (Focus search operation is performed continuously.)
3. Look at the FOP objective lens and confirm that it moves up and down smoothly, with no catching or abnormal noises.
4. Press ■ key for long.
5. Confirm that focus search operation stops. If it does not, press ■ key again longer.

How to Put the Set into Service Mode

1. Short-circuit between TP TEST and ground on the CD main board.
2. Tune POWER on. (Set the FUNCTION switch to CD position.)
3. LCD801 indicator blinks the test mode pattern.

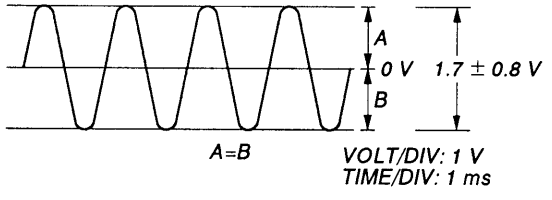
E-F Balance Adjustment

This adjustment is to be done when the optical block is replaced.



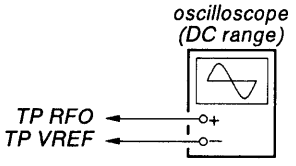
Adjustment Procedure:

1. Connect the oscilloscope between TP TE and TP VREF.
2. Put the set into service mode. (See page 10)
3. Press ▶▶| and |◀◀ keys to move the FOP to the center.
4. Insert disc (YEDS-18) and press ▶ key.
5. Adjust RV701 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
6. Release service mode after adjustment is completed.



Focus Bias Adjustment

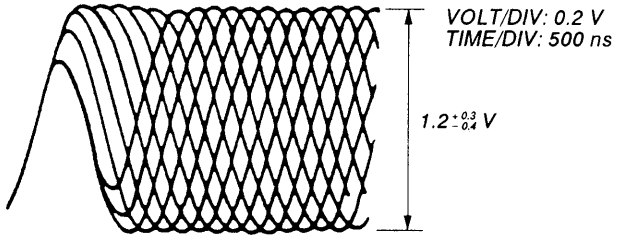
This adjustment is to be done when the optical block is replaced.



Adjustment Procedure:

1. Connect the oscilloscope between TP RFO and TP VREF.
2. Put the set into service mode. (See page 9)
3. Press ▶▶| and |◀◀ keys to move the FOP to the center. (Move the FOP to the music area on the disc to enable easy visibility of the eye pattern.)
4. Insert disc (YEDS-18) and press ▶ key.
5. Press ❙❙ key (Tracking and sledding go on).
6. Adjust RV702 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
7. Release service mode after adjustment is completed.

- RF signal reference waveform (eye pattern)



When observing the eye patern, set the oscilloscope for AC range and raise vertical sensitivity.

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

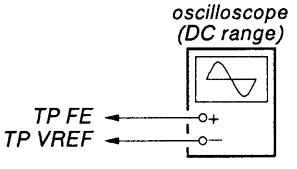
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Gain / Symptoms	Focus	Tracking
• The time until music starts becomes longer for STOP ➡ ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed). (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP ➡ ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed).	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

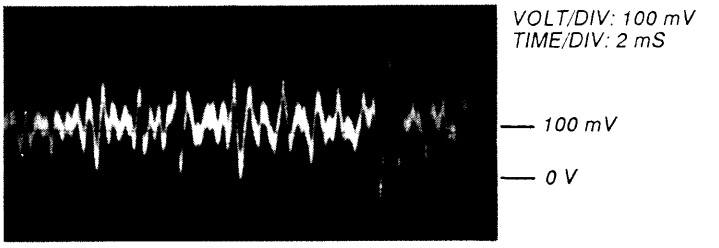
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.



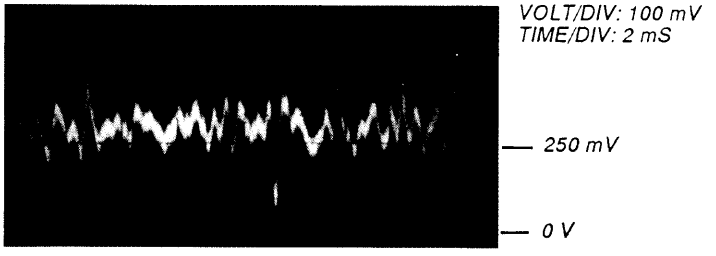
Procedure:

1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Put the set into service mode.
3. Insert disc (YEDS-18) and press ▶ PLAY button. (Focus on)
4. Press ⏸ key. (Tracking and sledding go on.)
5. Connect oscilloscope between TP FE and TP VREF.
6. Adjustment RV703 so that the waveform is as shown in the figure below. (focus gain adjustment)

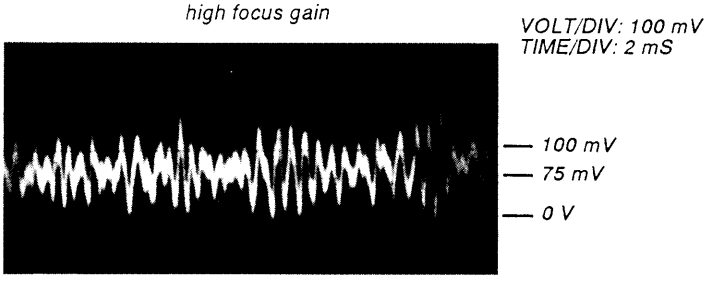


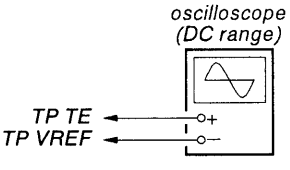
- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain



high focus gain

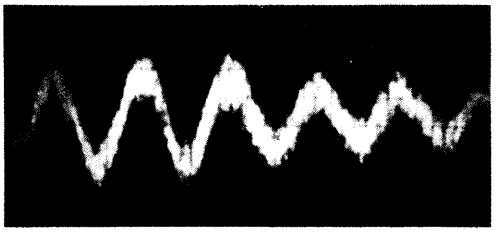




7. Connect the oscilloscope between TP TE and TP VREF.
8. Adjust RV704 so that the waveform is as shown in the figure below. (tracking gain adjustment)

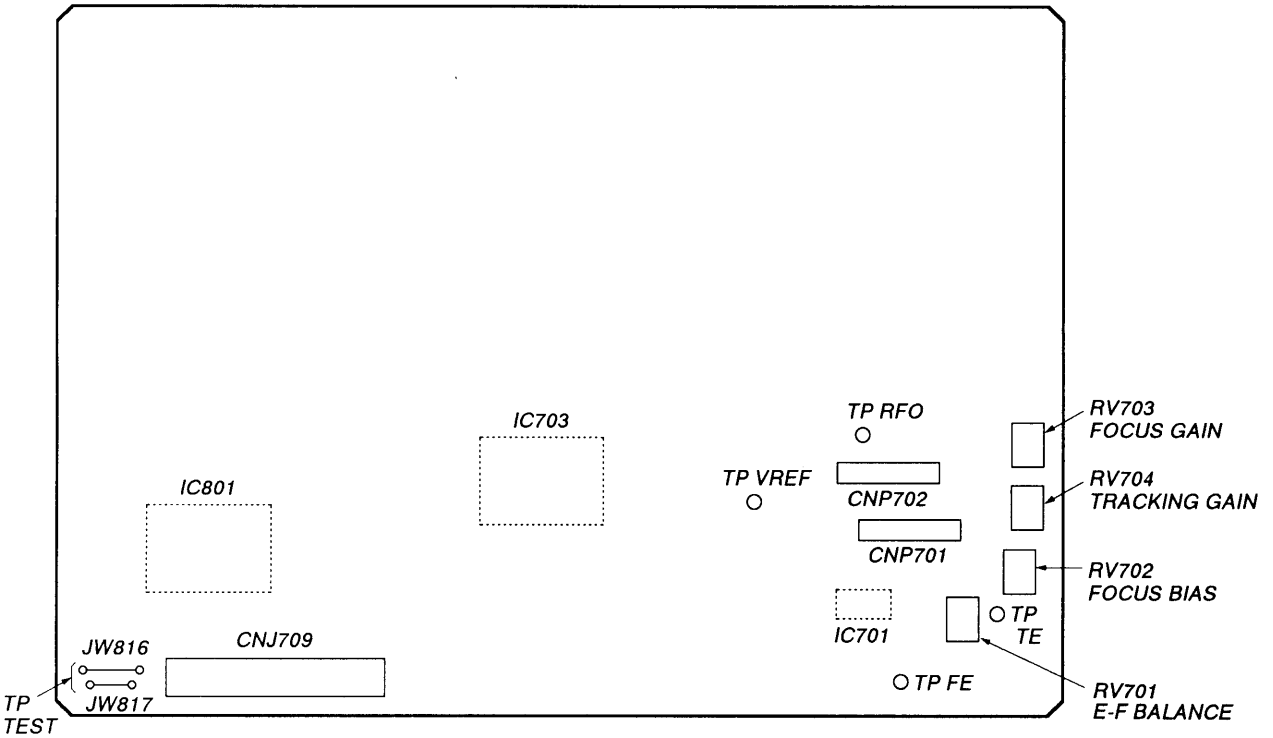
- Incorrect Examples (fundamental wave appears)

low track gain



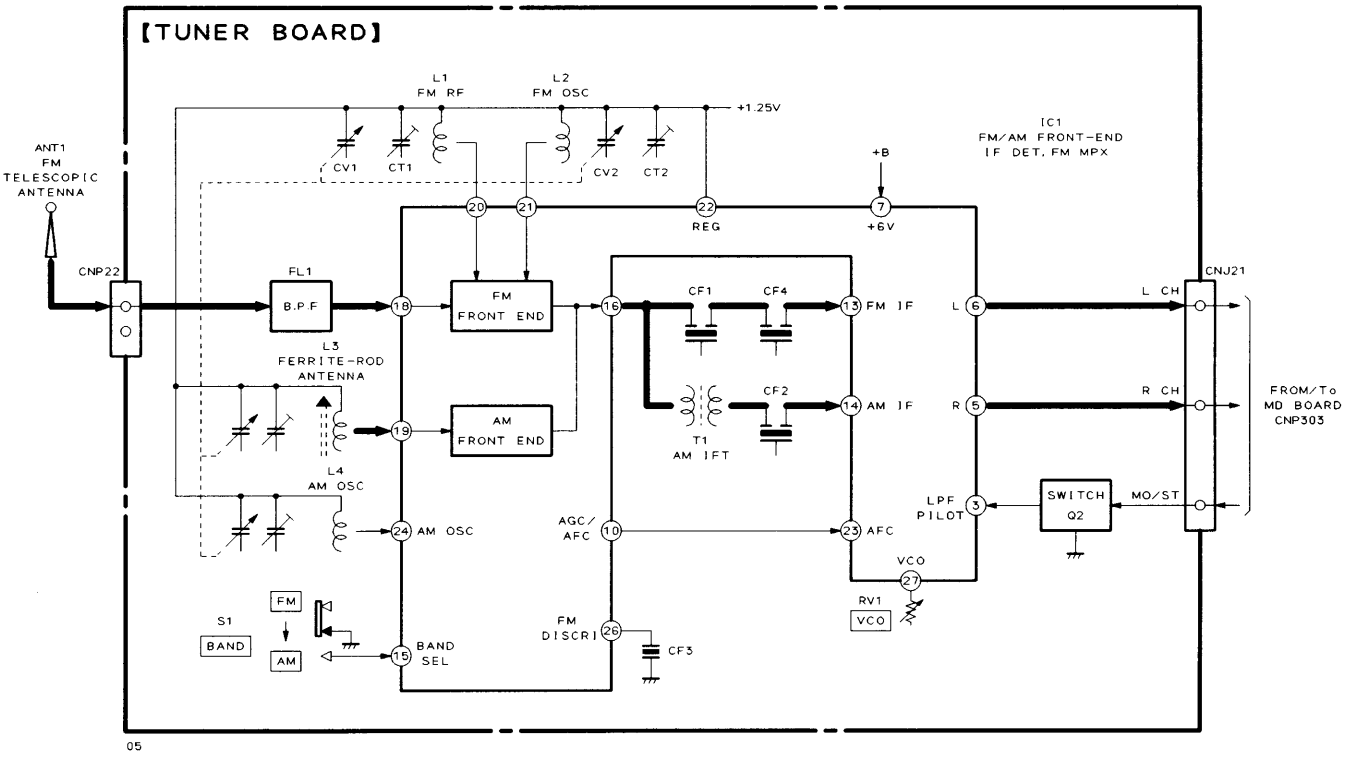
high track gain
(higher fundamental wave than for low gain)

Adjustment Location: CD main board (conductor side)

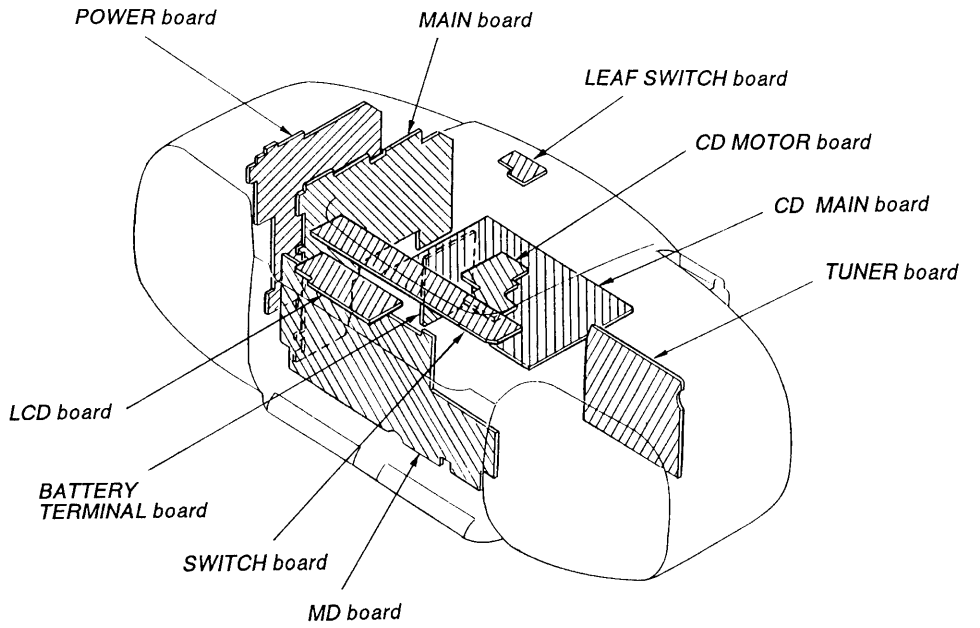


SECTION 6
DIAGRAMS

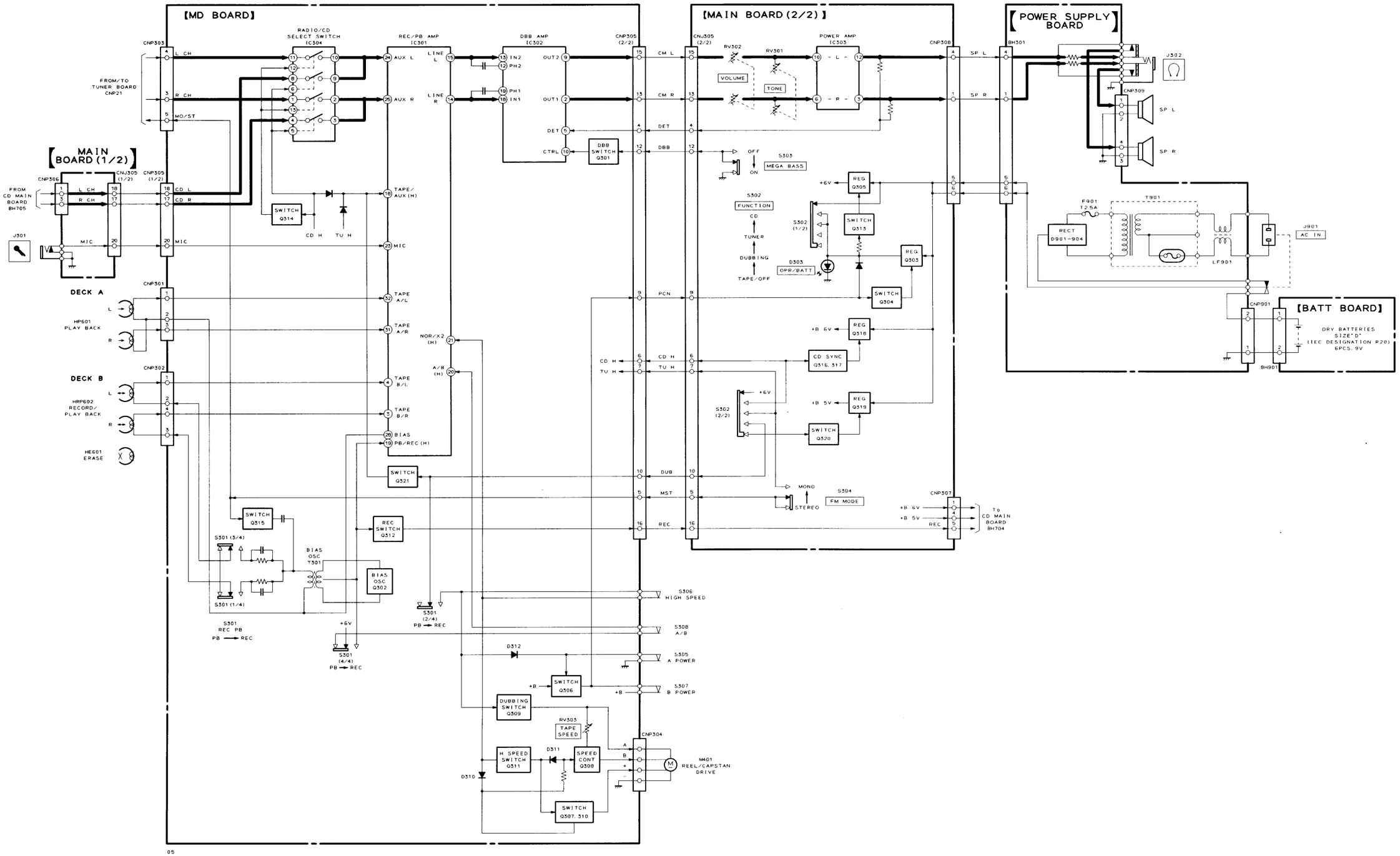
6-1. TUNER SECTION BLOCK DIAGRAM



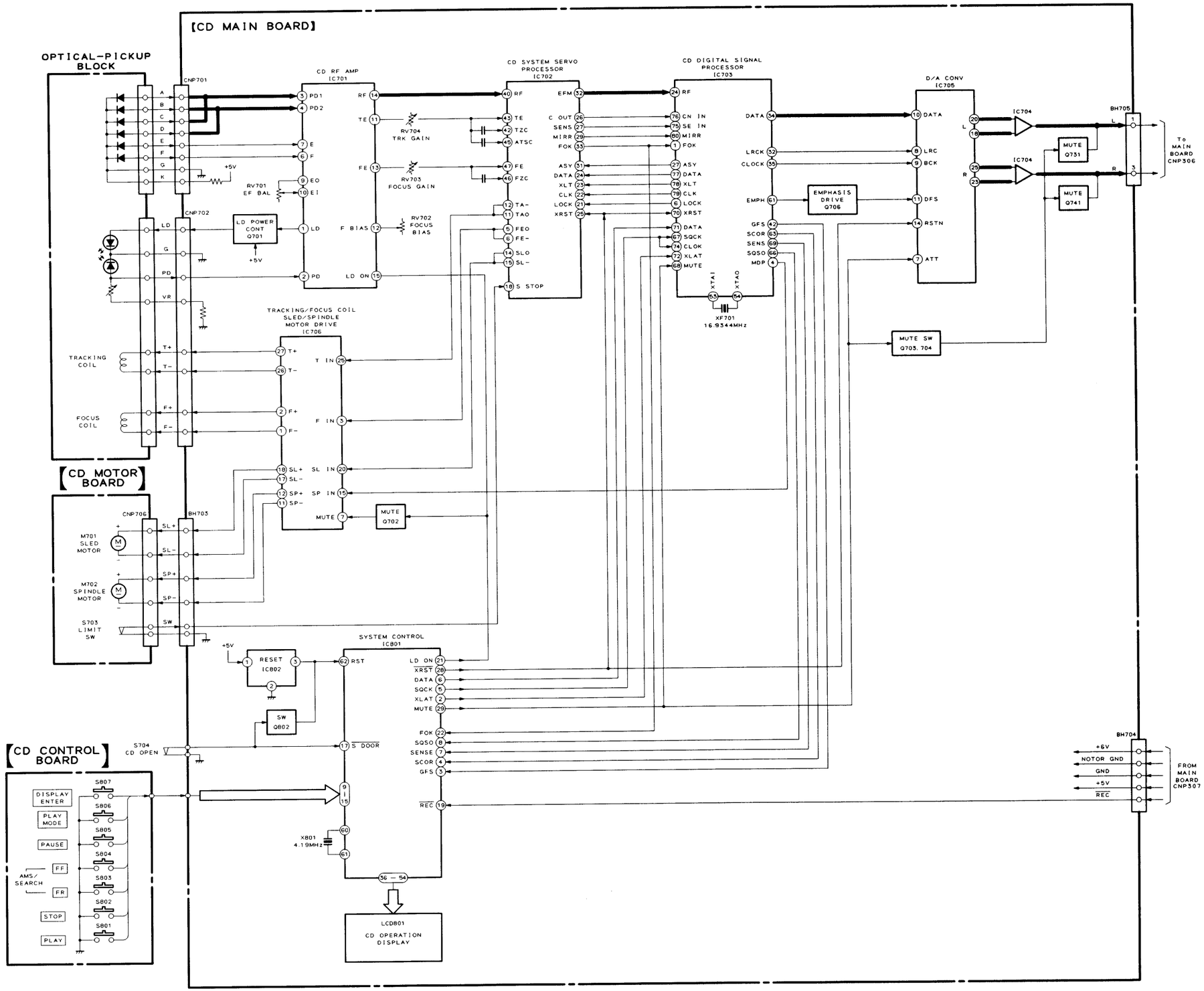
- **Circuit Boards Location**



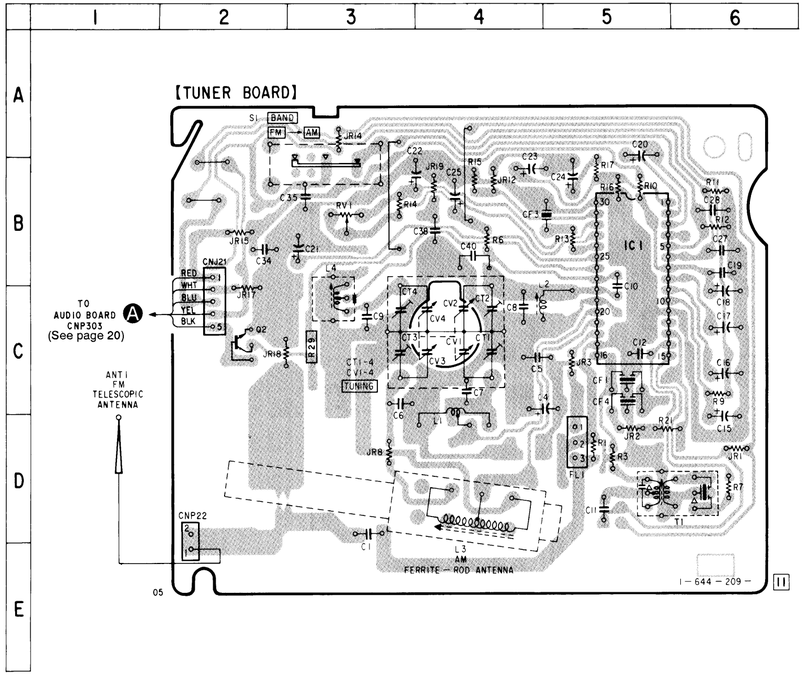
6-2. MD/MAIN/POWER SECTION BLOCK DIAGRAM



6-3. CD SECTION BLOCK DIAGRAM

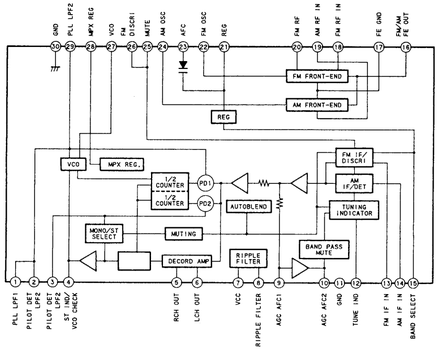


6-4. TUNER SECTION PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM • See page 38 for Semiconductor Lead Layouts.



• IC Block Diagram

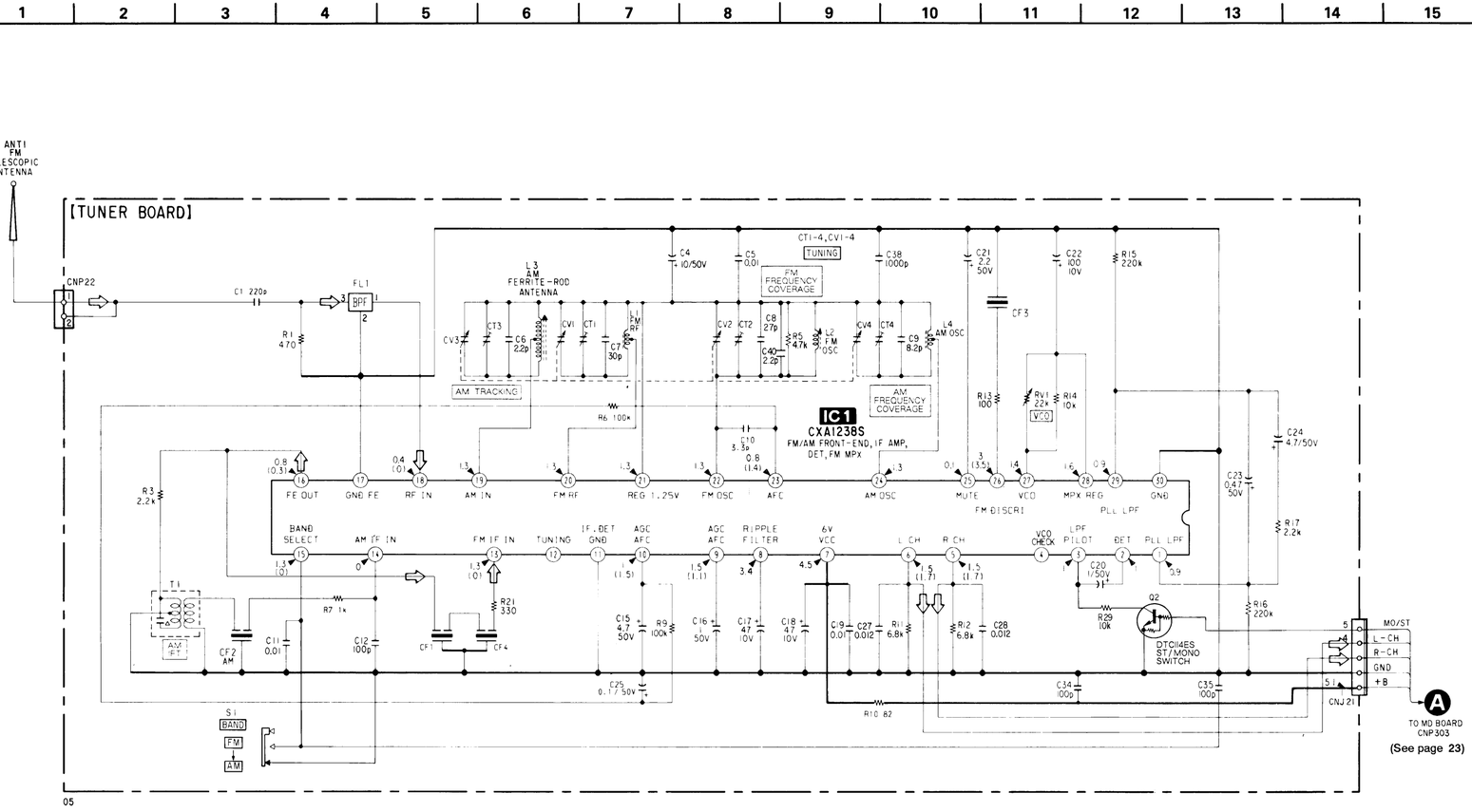
IC1 CXA1238S



• Semiconductor Location

Ref. No.	Location
IC1	B-5
Q2	C-2

Note :
- ○——: parts extracted from the component side.
- ⊡: indicates side identified with part number.
- △: internal component.



Note
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △: internal component.

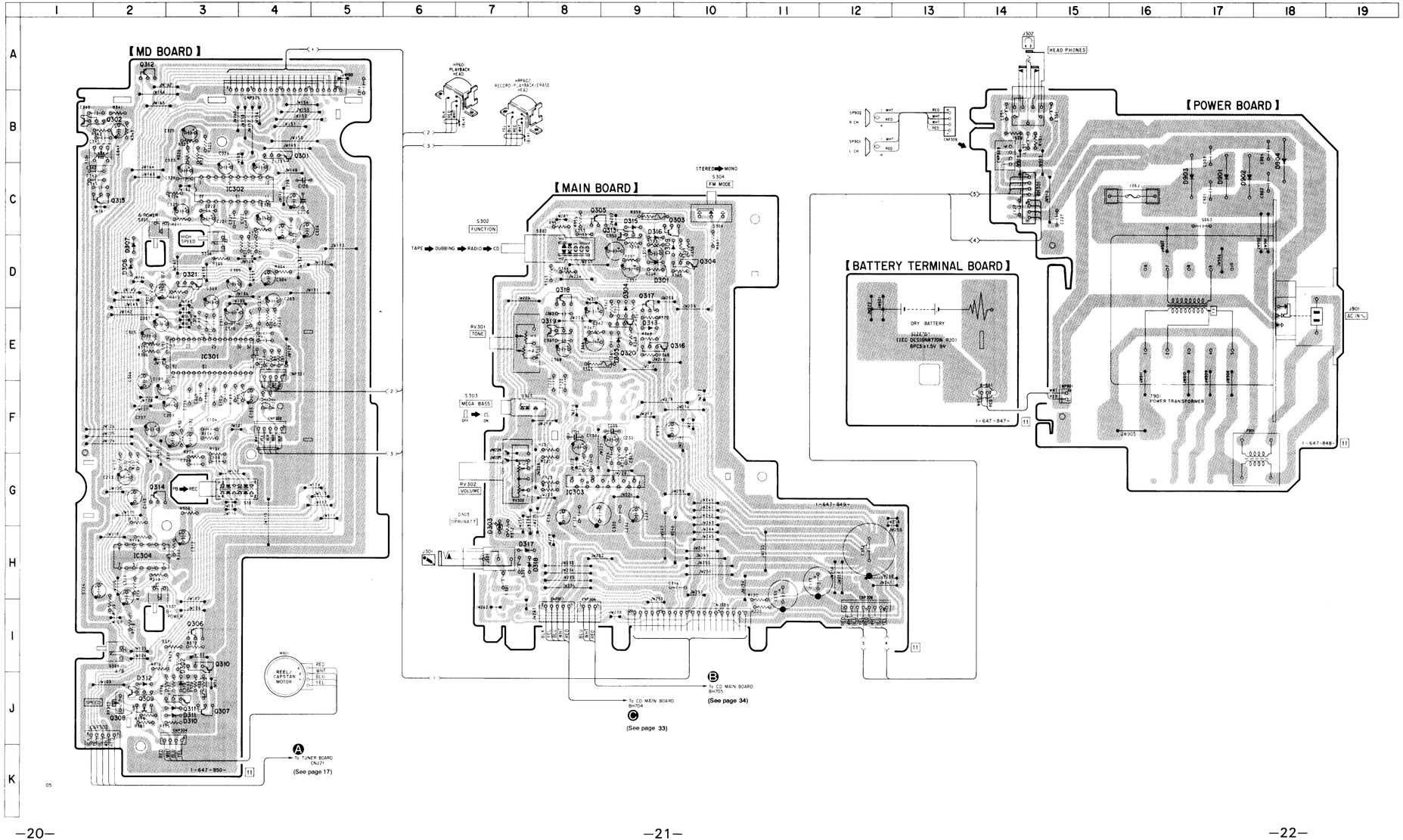
- ▬▬: B - Line.
- ▭: adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ FM

6-5. MD/MAIN/POWER SECTION PRINTED WIRING BOARDS

• See page 38 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D301	D-9
D302	J-3
D303	G-7
D304	D-9
D305	E-9
D306	D-2
D307	D-2
D309	D-9
D310	J-3
D311	J-3
D312	J-2
D313	E-9
D315	C-9
D316	C-9
D317	H-7
D318	H-7
D901	C-17
D902	C-17
D903	C-16
D904	C-18
IC301	E-3
IC302	C-3
IC303	G-8
IC304	H-2
Q301	B-4
Q302	B-1
Q303	C-9
Q304	D-9
Q305	C-8
Q306	I-3
Q307	J-3
Q308	J-2
Q309	J-2
Q310	J-3
Q311	J-3
Q312	A-2
Q313	C-9
Q314	G-2
Q315	C-2
Q316	E-9
Q317	D-9
Q318	E-8
Q319	E-8
Q320	E-9
Q321	D-3



6-6. MD/MAIN/POWER SECTION SCHEMATIC DIAGRAM

Note on Printed Wiring Board:
- o——— : parts extracted from the component side.

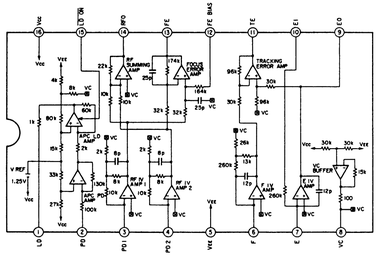
Note on Schematic Diagram:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- -⊡- : fusible resistor.

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

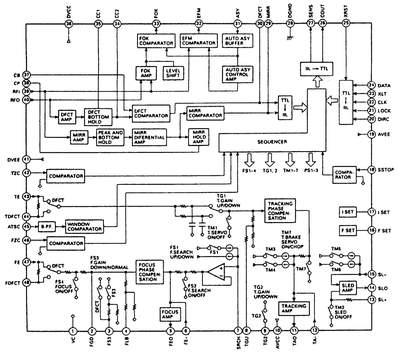
- ▭ : panel designation.
- ▬ : B + Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark : STOP
  - ( ) : TAPE REC
  - [ ] : RADIO
  - < > : MEGA BASS ON
  - ⟨⟨ ⟩⟩ : CD PLAY
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
  - ⇨ : PB (DECK A)
  - ⇨ : REC (DECK A)
  - ⇨ : CD
- ＊ : Impossible to measure the voltage at the marked points.

• IC Block Diagrams

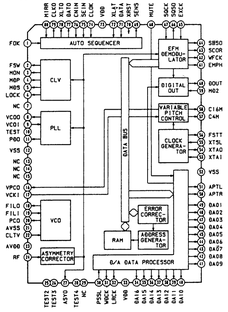
IC701 CXA1421M



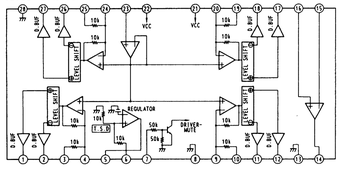
IC702 CXA1372AQ



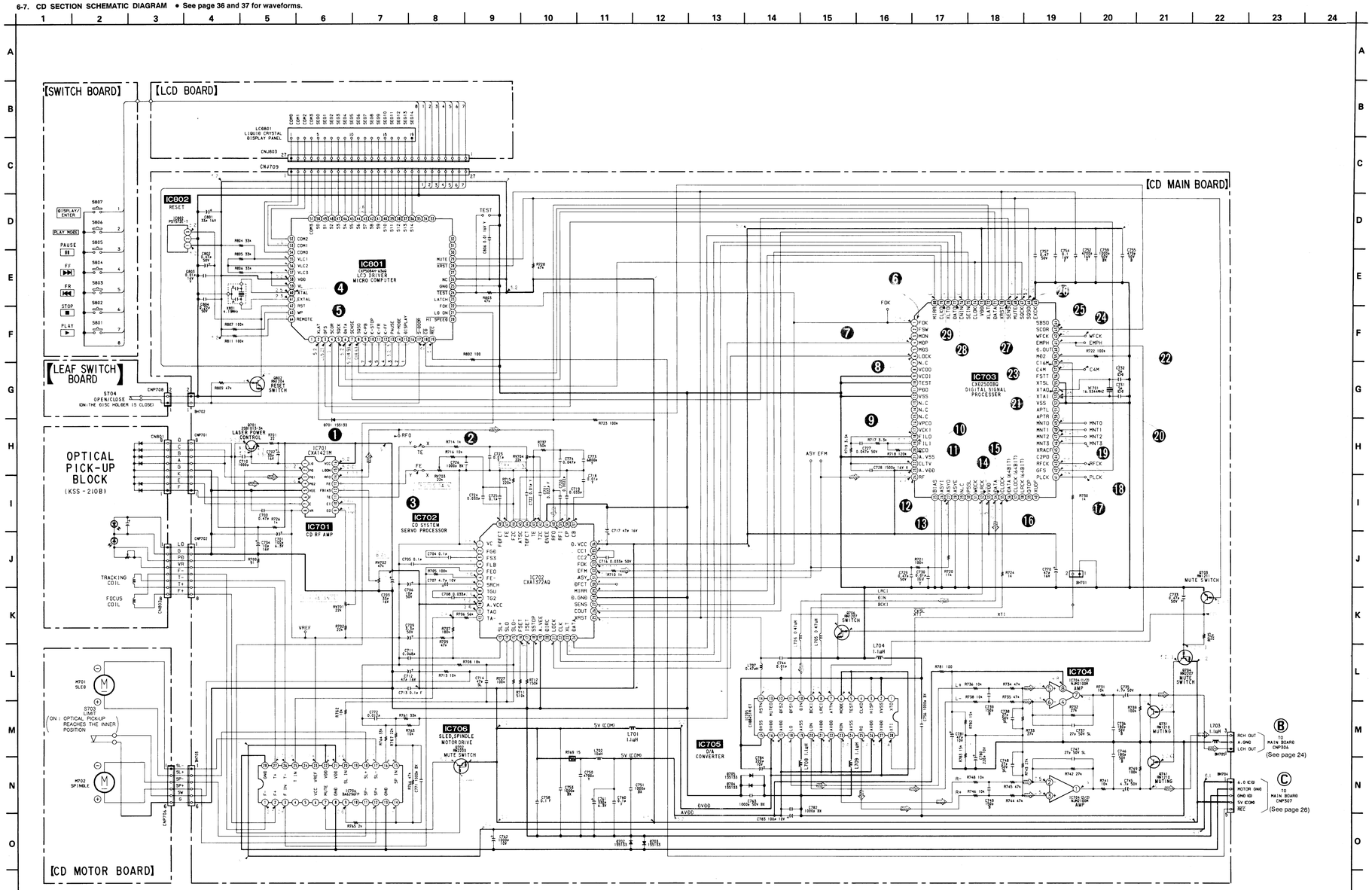
IC703 CXD2500BQ



IC706 BA6296FP



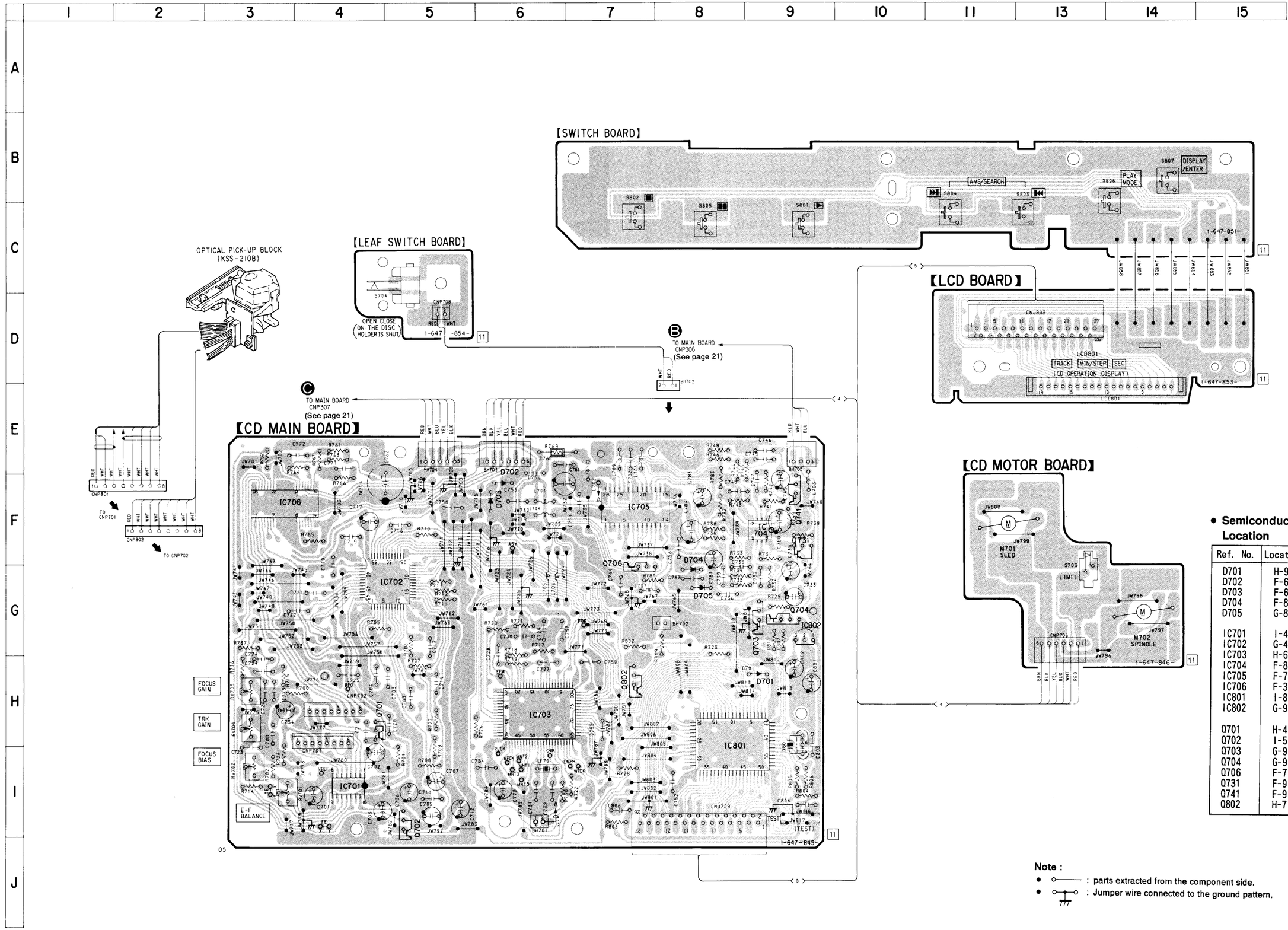
6-7. CD SECTION SCHEMATIC DIAGRAM • See page 36 and 37 for waveforms.



Note :
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- : fusible resistor.

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

- : panel designation.
- : B+ Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no signal (detuned) conditions.
  no mark : STOP
  ( ) : CD PLAY
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path
  CD
  ✳ : Impossible to measure the voltage at the marked points.



- **Semiconductor Location**

Ref. No.	Location
D701	H-9
D702	F-6
D703	F-6
D704	F-8
D705	G-8
IC701	I-4
IC702	G-4
IC703	H-6
IC704	F-8
IC705	F-7
IC706	F-3
IC801	I-8
IC802	G-9
Q701	H-4
Q702	I-5
Q703	G-9
Q704	G-9
Q706	F-7
Q731	F-9
Q741	F-9
Q802	H-7

Note :

- ○——— : parts extracted from the component side.
- ○—⏚—○ : Jumper wire connected to the ground pattern.

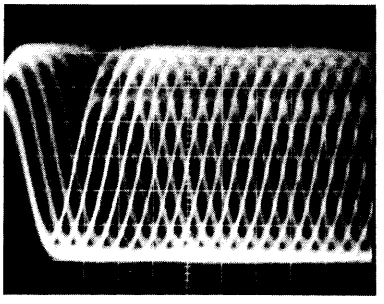
- **IC Pin Description**

CD MAIN BOARD IC801 CXP5084H-636Q

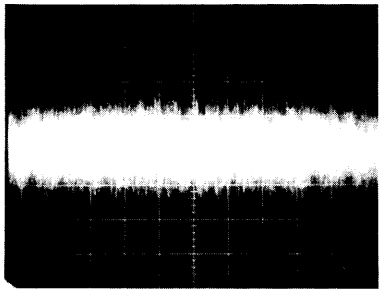
Pin No.	Name	I/O	Description
1	—	—	not used
2	XLAT	O	System latch
3	GFS	I	Guard frame SYNC
4	SCOR	I	SUB Q SYNC signal
5	SQCK	O	System clock
6	DATA	O	System data
7	SENSE	I	Sense
8	SQSO	I	SUB Q
9	K-PB	I	PLAY key input
10	K-STOP	I	STOP key input
11	K-FR	I	⏮, ⏪ key input
12	K-FF	I	⏭, ⏩ key input
13	PAUSE	I	⏸ key input
14	P-MODE	I	PLAY MODE key input
15	DISPLAY	I	Remain key input
16	—	—	not used
17	$\overline{\text{S-DOOR}}$	I	CD holder open/close detection
18	$\overline{\text{CD}}$	I	Low at Function CD (not used)
19	$\overline{\text{REC}}$	I	Low at Rec
20	$\overline{\text{HI SPEED}}$	I	Low at High Speed Rec (not used)
21	LD ON	O	Laser ON, BTL Mute
22	FOK	I	Focus OK input ⎍
23	LATCH	O	DF latch output (not used)
24	$\overline{\text{TEST}}$	I	Test terminal
25	GND	—	GND
26	NC	—	not used
27	—	—	not used
28	$\overline{\text{XRST}}$	O	Systen reset
29	MUTE	O	Mute at high, digital and analog mute
30 ~ 35	—	—	not used
36 ~ 50	S14 ~ S0	O	LCD segment pin (15 pcs.)
51 ~ 54	COM3 ~ COM0	O	LCD common pin 1/4 duty
55 ~ 57	V_{LC1} ~ V_{LC3}	O	LCD bias supply pin 1/3 Bias
58	V_{DD}	—	V_{DD}
59	V_L	O	Cut-off output
60	XTAL	—	Clock output (4.19 MHz)
61	EXTAL	—	Clock input (4.19 MHz)
62	RST	I/O	Reset pin
63	WP	I	On at Wakeup "High"
64	REMOTE	I	Remote

- **Waveforms**

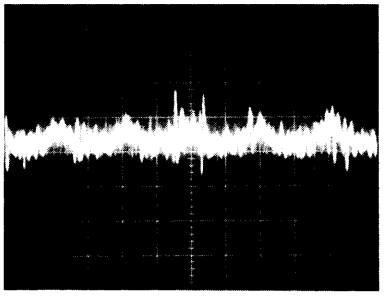
❶ TP RFO 1.2Vp-p 1 μs/DIV



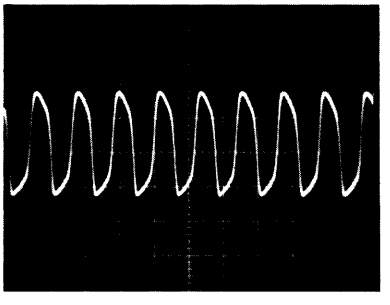
❷ TP TE 600mVp-p 2 μs/DIV



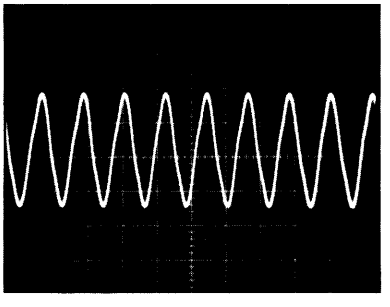
❸ TP FE 10mV/DIV 5ms/DIV



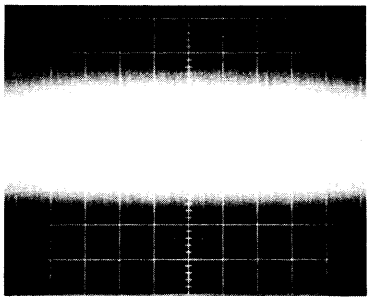
❹ IC801 ⑥⓪ 6Vp-p 0.2 μs/DIV



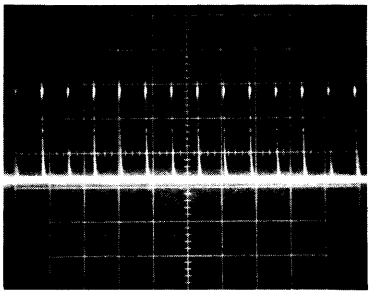
❺ IC801 ⑥① 6.5Vp-p 0.2 μs/DIV



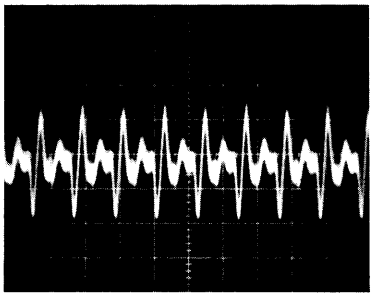
❻ IC703 ① 200mVp-p 10 μs/DIV



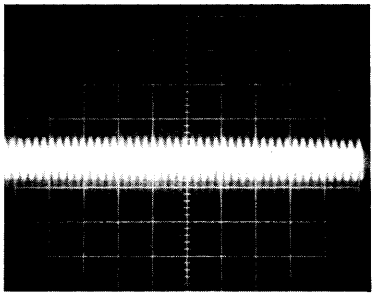
❼ IC703 ④ 2.8Vp-p 10 μs/DIV



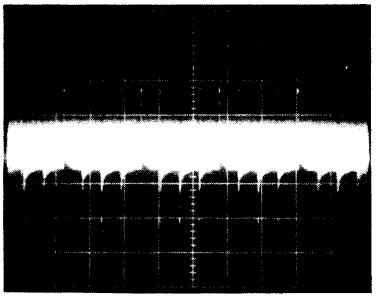
❽ IC703 ⑥ 320mVp-p 0.1 μs/DIV



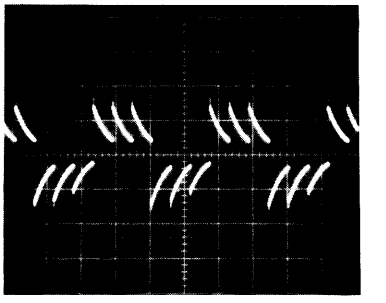
❾ IC703 ⑱ 120mVp-p 50 μs/DIV



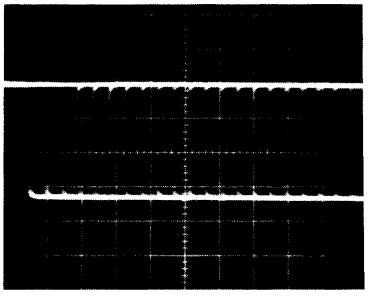
❿ IC703 ⑲ 200mVp-p 5 μs/DIV



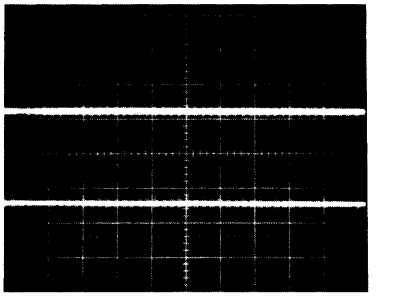
⓫ IC703 ⑳ 6Vp-p 5 μs/DIV



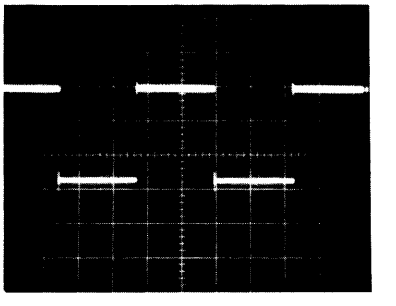
⓬ IC703 ㉔ 3.5Vp-p 1 μs/DIV



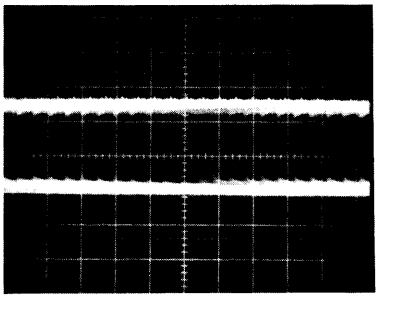
⓭ IC703 ㉗ 5.5Vp-p 1 μs/DIV



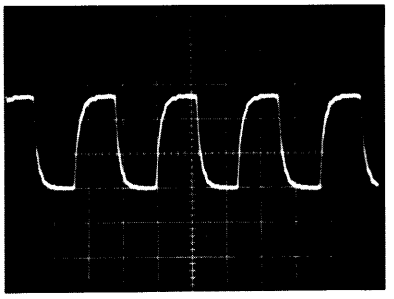
⓮ IC703 ㉜ 5.4Vp-p 5 μs/DIV



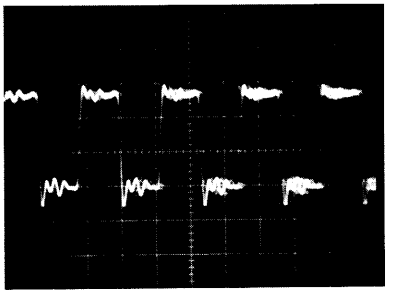
⓯ IC703 ㉞ 6Vp-p 1 μs/DIV



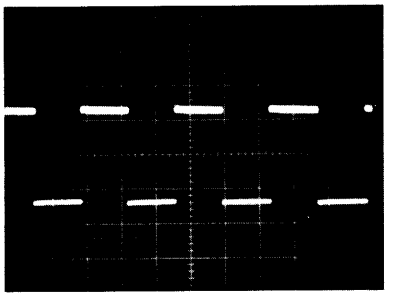
⑯ IC703 ㉟ 5.4Vp-p 0.2 μs/DIV



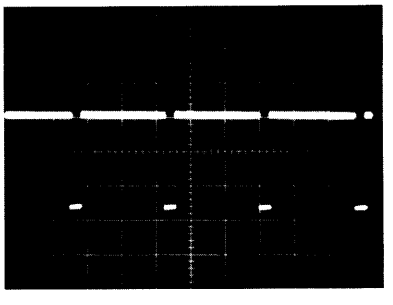
⑰ IC703 ㊶ 7Vp-p 0.1 μs/DIV



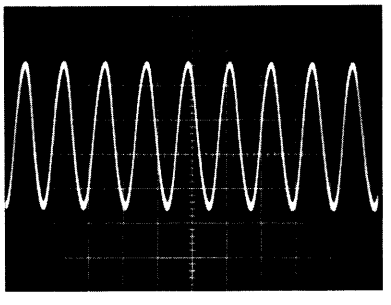
⑱ IC703 ㊸ 5.4Vp-p 50 μs/DIV



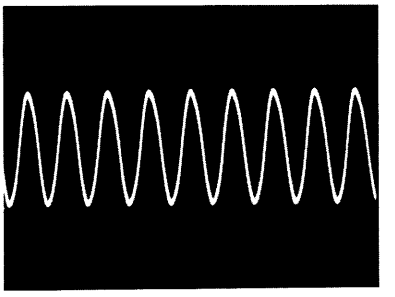
⑲ IC703 ㊻ 5.4Vp-p 50 μs/DIV



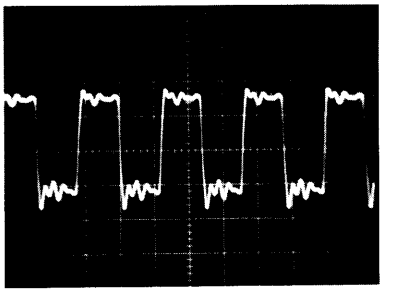
⑳ IC703 ㊸ 2.3Vp-p 0.05 μs/DIV



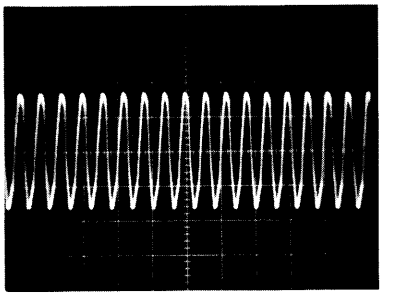
㉑ IC703 ㊹ 6.8Vp-p 0.05 μs/DIV



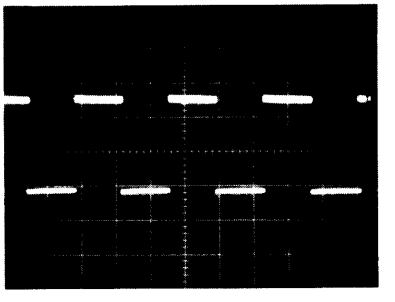
㉒ IC703 ㊼ 7Vp-p 0.1 μs/DIV



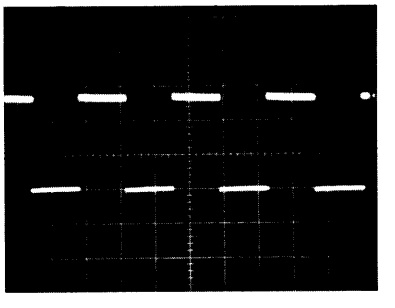
㉓ IC703 ㊽ 6.8Vp-p 0.1 μs/DIV



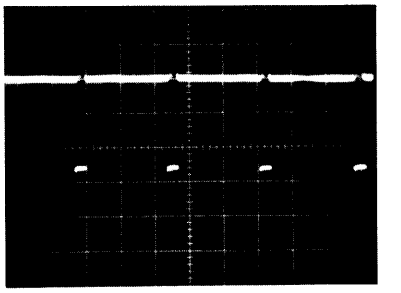
㉔ IC703 ㊷ 5.4Vp-p 50 μs/DIV



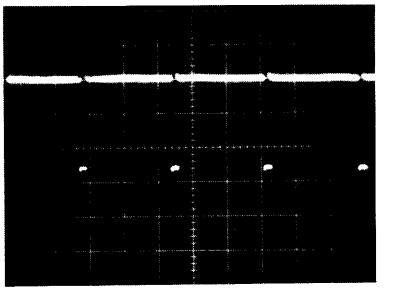
㉕ IC703 ㊸ 5.4Vp-p 50 μs/DIV



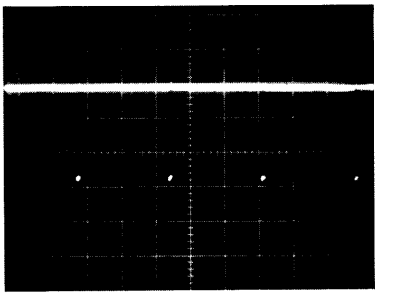
㉖ IC703 ㊻ 5.2Vp-p 5ms/DIV



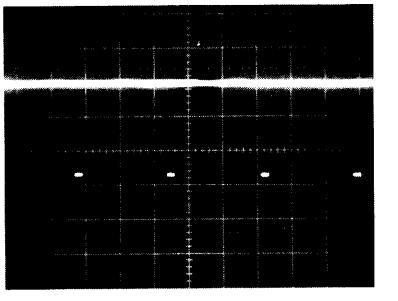
㉗ IC703 ㊾ 5.2Vp-p 5ms/DIV



㉘ IC703 ㊼ 5Vp-p 5ms/DIV

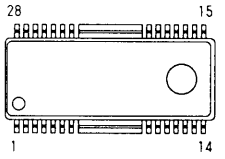


㉙ IC703 ㊾ 5.2Vp-p 5ms/DIV

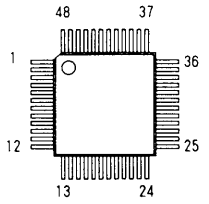


• Semiconductor Lead Layouts

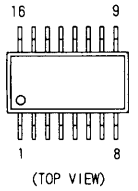
BA6296FP



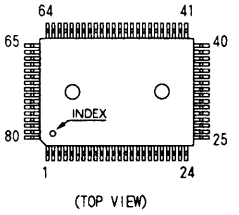
CXA1372AQ



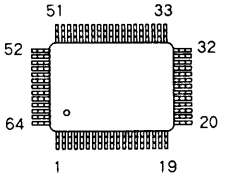
CXA1421M



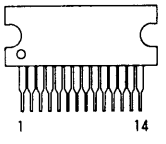
CXD2500BQ



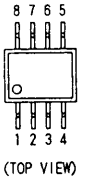
CXP5084H-636Q



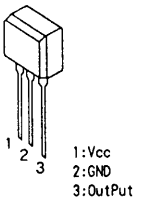
LA4598



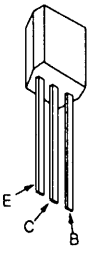
NJM2100M



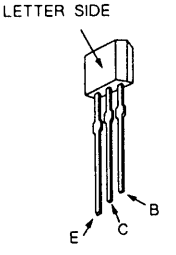
PST572E



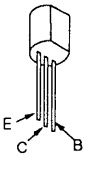
DTC114ES
DTC124ES
RN1202
RN1207
RN1210
RN1211
RN2207



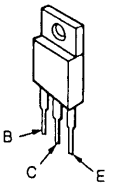
DTC144ES
2SA1175-HFE
2SC2785-HFE



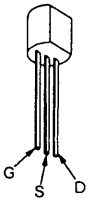
2SA952-K2
2SB1013-4
2SC1815-GR
2SC945-P



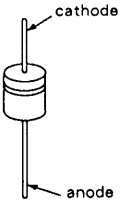
2SD1266-P



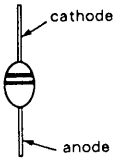
2SK104H
2SK105A-30



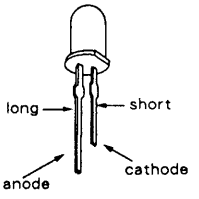
RD5.6ES-B2
RD6.8ES-B2
RD8.2ES-B2
1SS119
1SS133



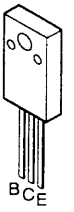
U05G



SLZ-135B-01-T1



2SD1666K-RS



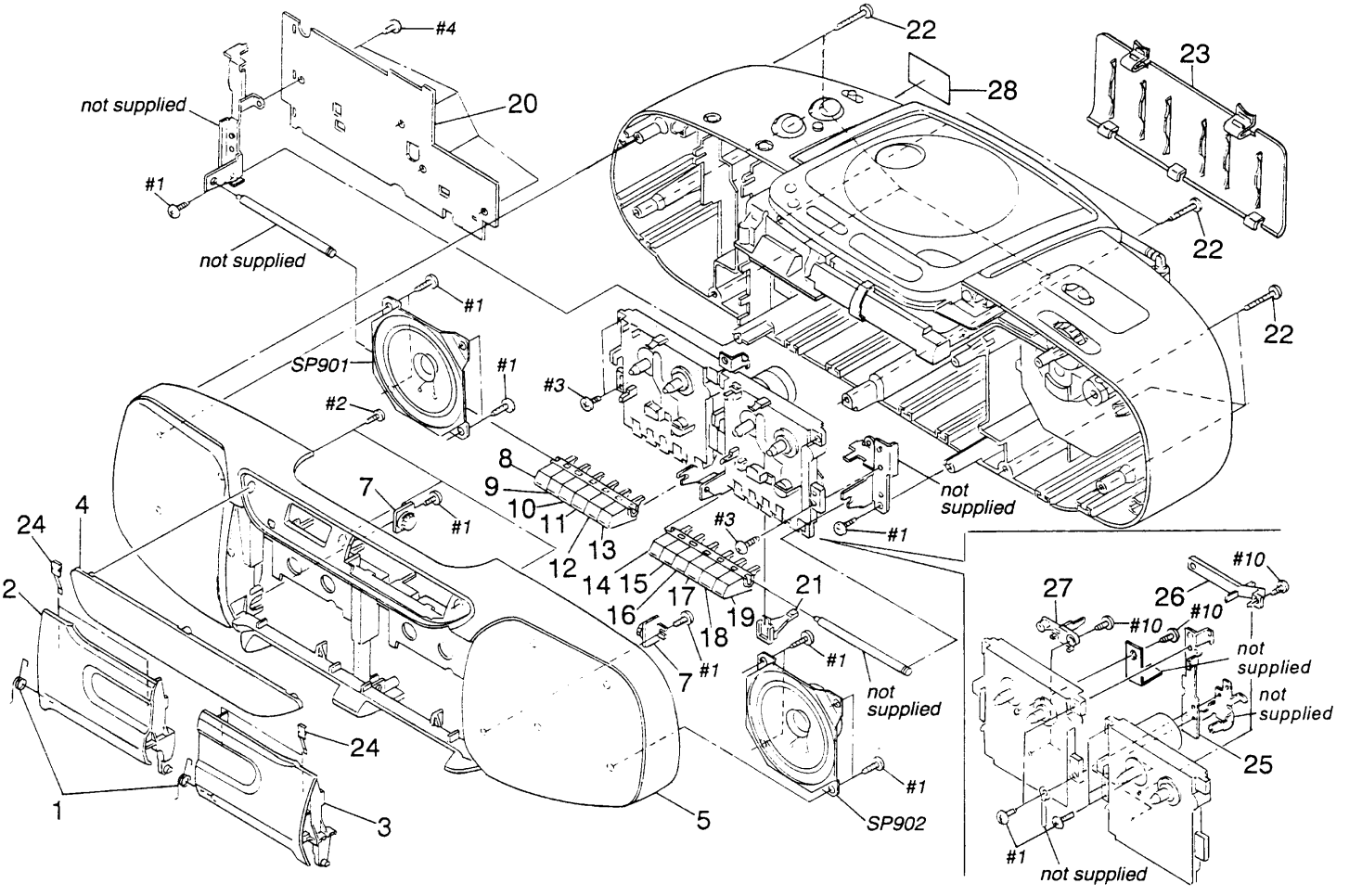
SECTION 7
EXPLODED VIEWS

NOTE :

- -XX and -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) ..... (RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

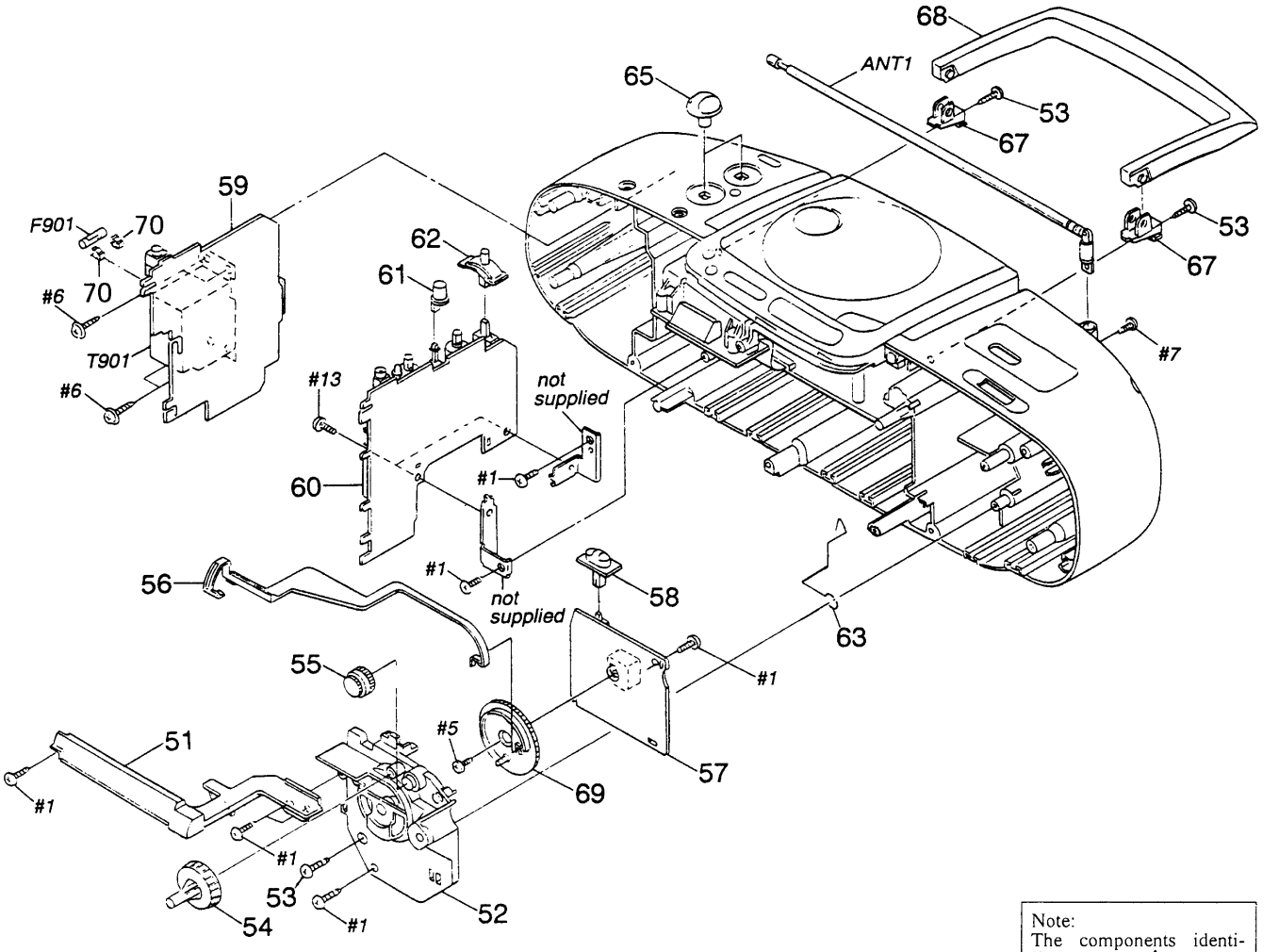
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) FRONT CABINET ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remark
1	3-388-196-01	SPRING, CASSETTE OPEN	
2	A-3300-364-A	HOLDER (L) ASSY, CASSETTE	
3	A-3200-365-A	HOLDER (R) ASSY, CASSETTE	
4	3-911-388-01	PANEL	
5	X-3366-599-1	CABINET (FRONT) SUB ASSY	
7	3-351-377-11	DAMPER	
8	3-388-177-01	BUTTON (S/E-A), MD	
9	3-388-182-01	BUTTON (HSD-A), MD	
10	3-388-180-01	BUTTON (PLAY-A), MD	
11	3-388-179-01	BUTTON (REW-A), MD	
12	3-388-178-01	BUTTON (FF-A), MD	
13	3-388-181-01	BUTTON (PAUSE-A), MD	
14	3-388-165-01	BUTTON (S/E-B), MD	
15	3-388-170-01	BUTTON (REC-B), MD	
16	3-388-168-01	BUTTON (PLAY-B), MD	
17	3-388-167-01	BUTTON (REW-B), MD	
18	3-388-166-01	BUTTON (FF-B), MD	
19	3-388-169-01	BUTTON (PAUSE-B), MD	
* 20	A-3264-631-A	MD BOARD, COMPLETE	
* 21	3-389-274-01	LEVER, PLAY	
22	3-325-679-31	SCREW, TAPPING +BV 3X14	
23	3-368-522-01	LID, BATTERY CASE	
24	3-308-823-11	SPRING	
25	3-380-160-01	JOINT (MD)	
* 26	3-380-451-01	LEVER (REC)	
* 27	3-380-452-01	LEVER (MD-B)	
* 28	4-941-548-01	LABEL, CLASS(1)	
SP901	1-504-269-21	SPEAKER (10CM)	
SP902	1-504-269-21	SPEAKER (10CM)	

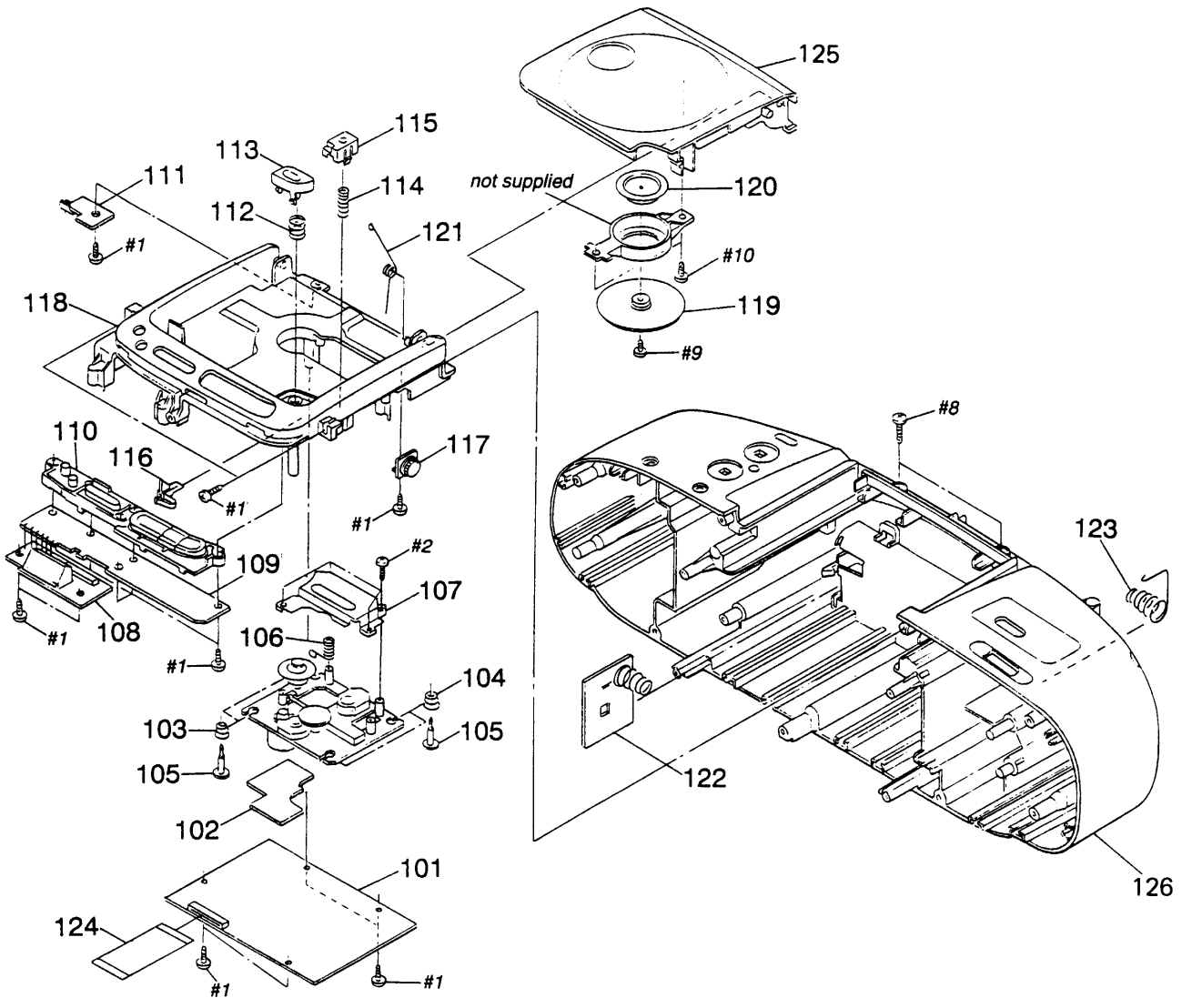
(2) REAR CABINET ASSEMBLY SECTION



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

Ref. No.	Part No.	Description	Remark
* 51	3-388-184-01	CHASSIS (A), TUNER	
* 52	3-388-185-01	CHASSIS (B), TUNER	
53	3-325-679-31	SCREW, TAPPING +BV 3X14	
54	3-388-183-01	KNOB (TUNING)	
* 55	3-388-187-01	GEAR, MIDWAY	
56	3-388-186-01	POINTER	
* 57	A-3264-715-A	TUNER BOARD, COMPLETE	
58	3-388-188-01	KNOB (2 BAND)	
* 59	1-647-848-11	POWER BOARD	
* 60	A-3264-633-A	MAIN BOARD, COMPLETE	
61	3-386-946-01	BUTTON (DBB)	
62	3-388-164-01	KNOB (FUNCTION)	
* 63	3-389-272-01	TERMINAL, ANTENNA	
65	3-386-950-01	KNOB (ROTARY)	
* 67	3-388-216-01	HOLDER, HANDLE	
68	X-3366-600-1	HANDLE ASSY	
69	3-388-189-01	GEAR, TUNING CAPACITOR	
70	1-533-217-31	HOLDER, FUSE	
ANT1	1-501-378-11	ANTENNA, TELESCOPIC (FM)	
⚠F901	1-532-286-00	FUSE (T2.5A)	
⚠T901	1-450-517-11	TRANSFORMER, POWER	

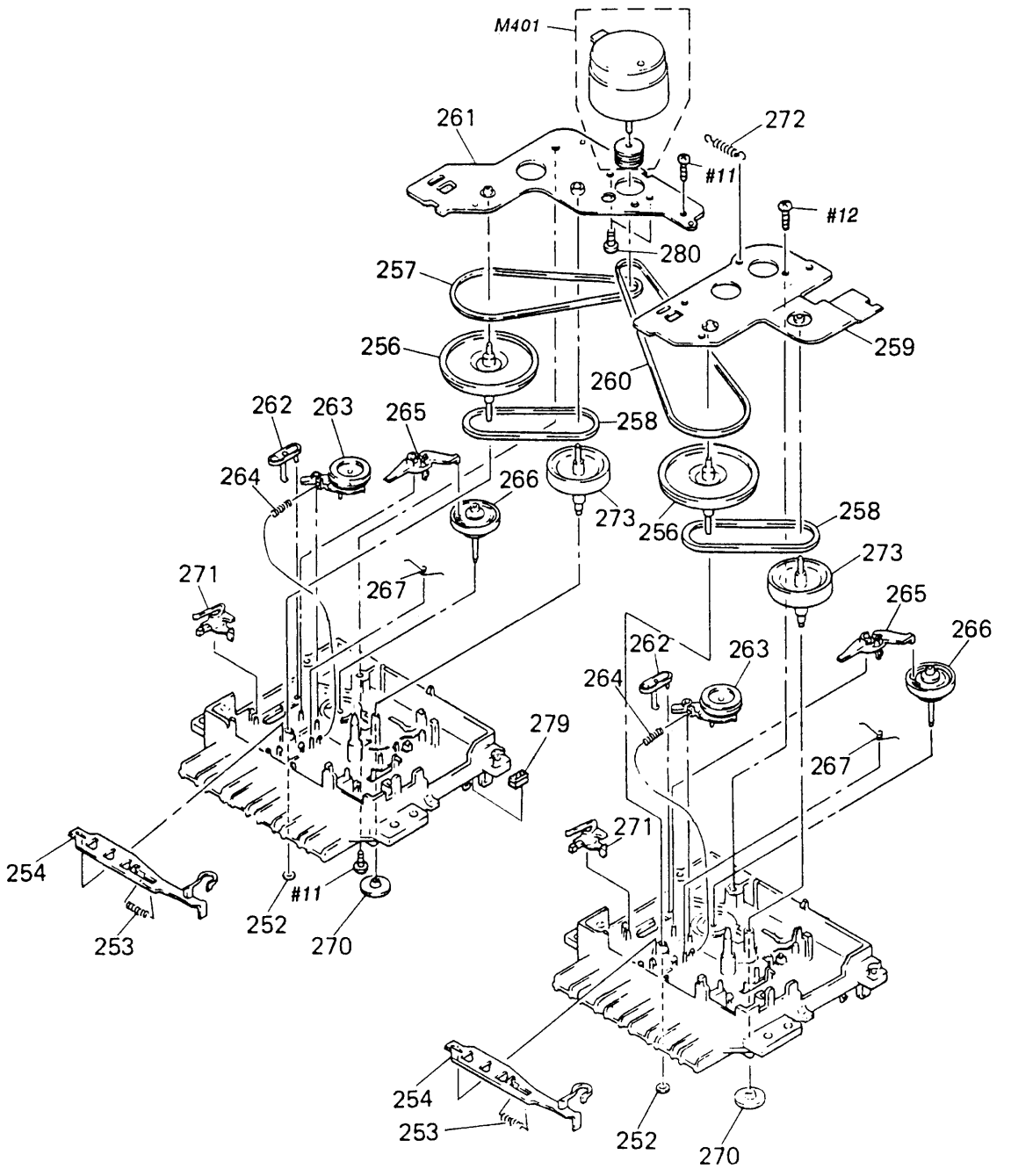
(3) CD ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remark
* 101	A-3264-357-A	CD MAIN BOARD, COMPLETE	
* 102	1-647-846-11	CD MOTOR BOARD	
103	4-922-858-11	DAMPER (GREEN)	
104	4-922-858-01	DAMPER (PINK)	
105	4-931-373-01	SCREW, CD FITTING	
106	4-931-358-01	SPRING	
107	4-928-936-01	COVER, CD	
* 108	1-647-853-11	LCD BOARD	
* 109	1-647-851-11	SWITCH BOARD	
110	3-388-210-01	BUTTON (CD)	
* 111	1-647-854-11	LEAF SWITCH BOARD	
112	3-388-204-01	SPRING (CD OPEN BUTTON)	
113	3-388-205-01	BUTTON (CD OPEN)	
114	3-388-206-01	SPRING (CD LIFT)	

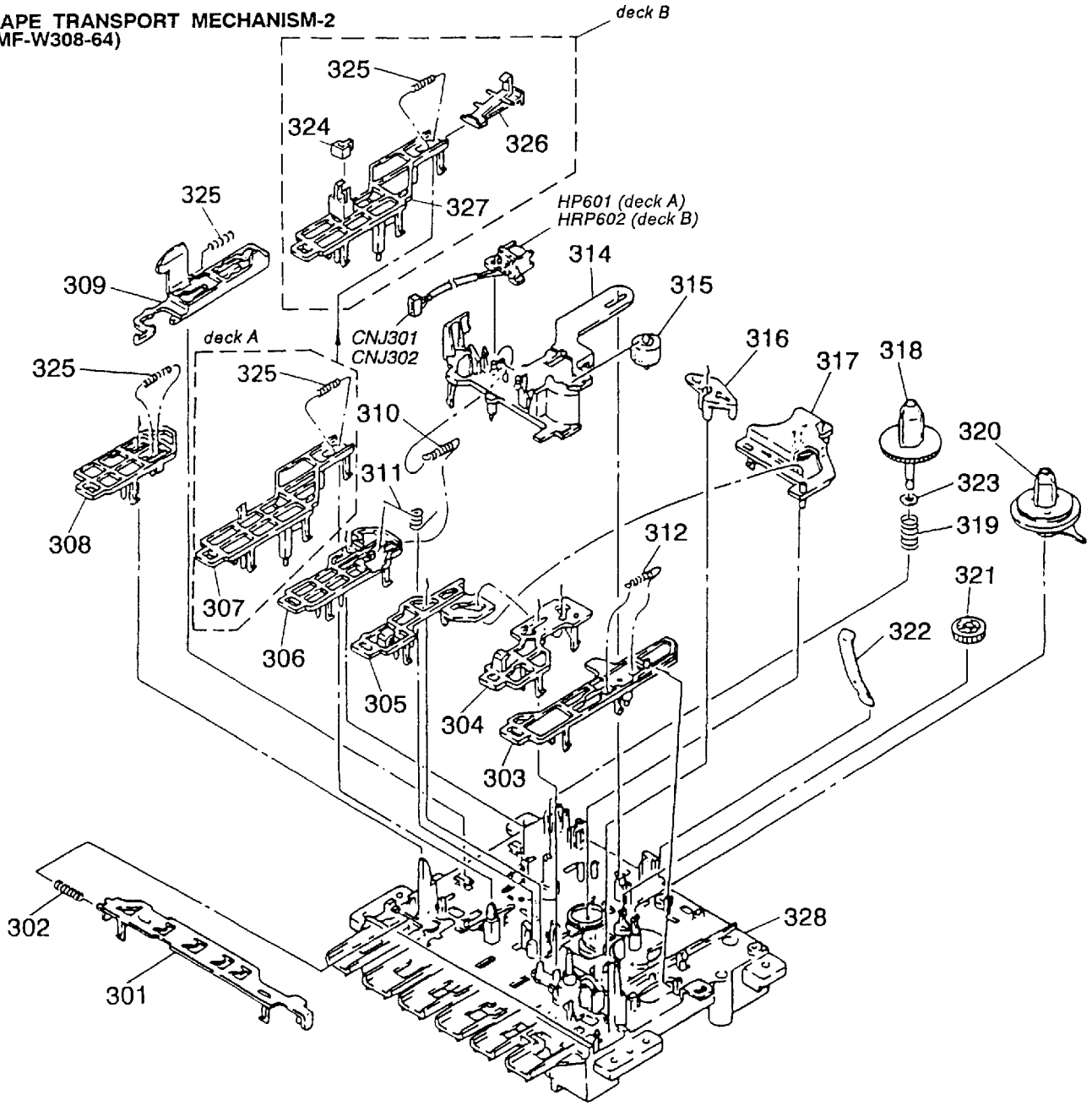
Ref. No.	Part No.	Description	Remark
* 115	3-388-202-01	LEVER, CD LIFT	
* 116	3-388-203-01	CLAW, LOCK	
117	3-351-377-11	DAMPER	
118	3-388-201-01	CABINET (UPPER)	
119	3-704-435-01	PLATE (M), CHUCK	
120	1-452-531-11	MAGNET	
121	3-388-211-01	SPRING (CD OPEN)	
* 122	1-647-847-11	BATTERY TERMINAL BOARD	
123	3-368-494-01	SPRING (+, -), BATTERY COIL	
124	1-751-445-11	WIRE, PARALLEL (FFC) (27 CORE)	
125	X-3368-897-1	HOLDER SUB ASSY (CD)	
126	3-388-215-21	CABINET (REAR)	

(4) TAPE TRANSPORT MECHANISM-1 (MF-W308-64)



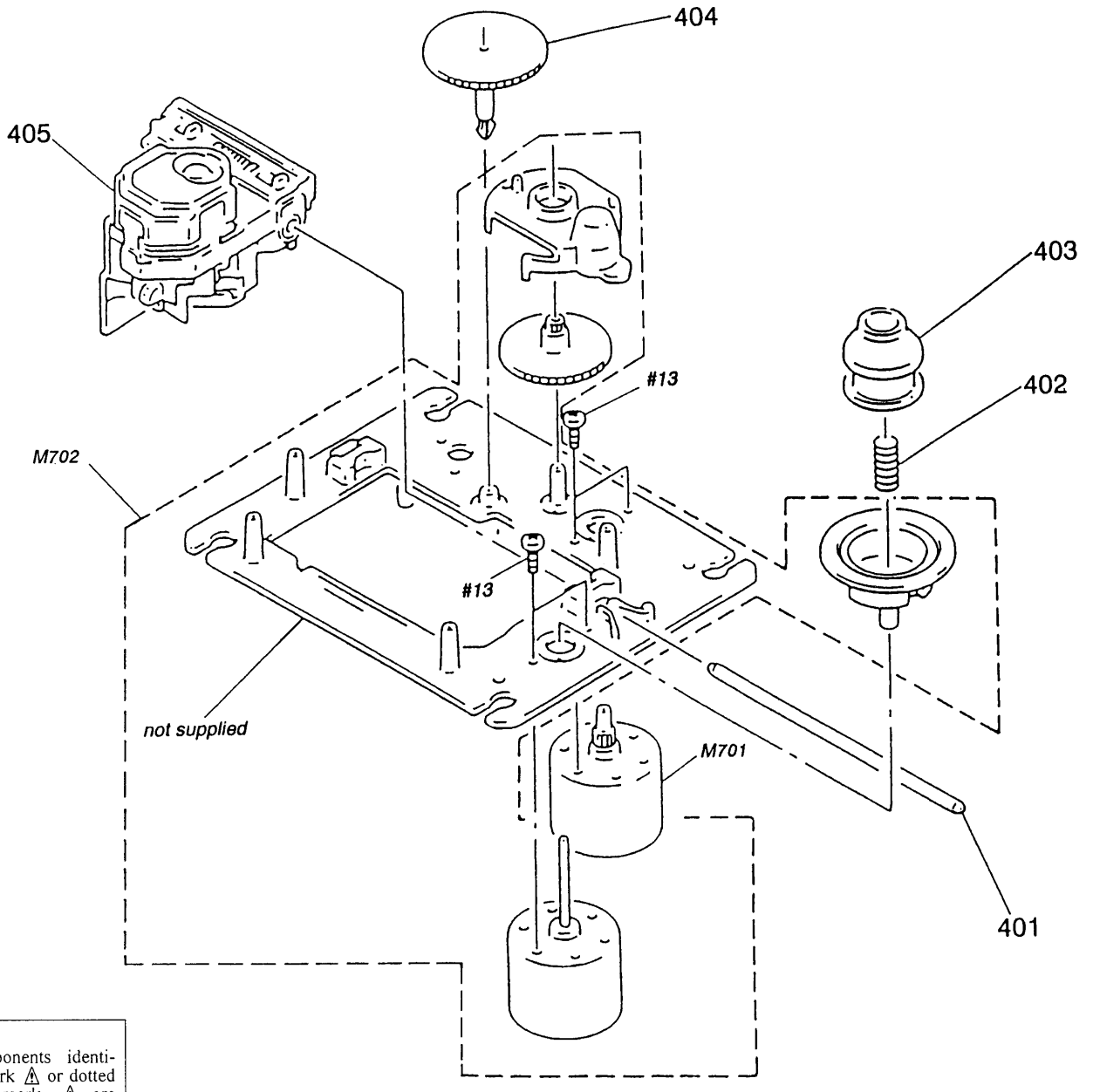
Ref. No.	Part No.	Description	Remark
252	3-343-358-01	RING, RETAINING	
253	4-932-656-01	SPRING, COMPRESSION	
254	4-928-996-11	LEVER, SW	
256	X-4920-923-1	WHEEL (W) ASSY, CAPSTAN	
257	3-369-312-01	BELT (59X1)	
258	4-928-974-01	BELT (MIDWAY)	
* 259	X-4918-598-1	PLATE ASSY, GROUND	
260	3-378-419-01	BELT	
261	X-4920-921-1	PLATE (W) ASSY, GROUND	
262	4-928-961-01	PLATE, PAUSE LOCK	
263	X-4920-346-1	LEVER (S) ASSY, IDLER	
264	3-905-168-01	SPRING, COMPRESSION	
265	4-928-986-01	LEVER (S), SHUT-OFF	
266	X-4918-582-1	PLATE ASSY, TAKE-UP REEL	
267	4-928-958-01	SPRING, FR RETURN	
270	4-928-967-01	GEAR (C), MIDWAY	
271	4-928-987-01	LEVER (T), SHUT-OFF	
272	3-378-420-01	SPRING, TENSION	
273	X-4920-922-1	PULLEY (W) ASSY, FR	
279	4-934-522-01	CUSHION	
280	3-343-251-01	SCREW (M2.6X2.5)	
M401	X-4920-924-1	MOTOR ASSY (REEL/CAPSTAN)	

(5) TAPE TRANSPORT MECHANISM-2 (MF-W308-64)



Ref. No.	Part No.	Description	Remark
301	4-932-695-01	SLIDER (FR), LOCK	
302	4-932-656-01	SPRING, COMPRESSION	
303	4-928-994-01	LEVER, PAUSE	
304	4-928-993-01	LEVER, FF	
305	4-928-992-01	LEVER, REW	
306	4-928-991-01	LEVER, PLAY	
307	4-921-195-01	LEVER (AC), REC	
308	4-928-985-11	LEVER, STOP	
309	4-936-206-01	SLIDER (S), EJECT	
310	4-928-972-01	SPRING, TENSION	
311	4-928-973-01	SPRING	
312	3-313-372-01	SPRING, TENSION	
314	4-932-693-03	DECK (S), HEAD	
315	4-928-962-01	PINCH ROLLER	
316	4-928-982-01	LEVER (C)	
317	X-4920-347-1	LEVER (S) ASSY, FR	
318	4-928-978-01	GEAR (C), SUPPLY REEL	
319	3-343-381-01	SPRING, COMPRESSION	
320	X-4920-350-1	GEAR (S) ASSY, T REEL	
321	3-343-285-01	GEAR, FF	
322	4-928-957-01	RETAINER, CASSETTE	
323	4-931-795-11	WASHER	
325	4-932-648-01	SPRING, COMPRESSION	
326	4-928-960-02	CLAW, SAFETY	
327	4-934-511-01	LEVER (S), REC	
328	X-4920-348-1	CHASSIS (S) ASSY, MECHANICAL	
* CNJ301	1-691-561-11	HOUSING, CONNECTOR 4P (DECK-A)	
* CNJ302	1-691-562-11	HOUSING, CONNECTOR 5P (DECK-B)	
HE601	1-543-876-13	HEAD (ERASE)	
HP601	1-543-628-11	HEAD, MAGNETIC (PB) (DECK-A)	
HRP602	1-543-714-11	HEAD, MAGNETIC (REC/PB) (DECK-B)	

(6) OPTICAL PICK-UP SECTION (KSM-2101BAN)



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

Ref. No.	Part No.	Description	Remark
401	4-917-565-01	SHAFT, SLED	
402	2-625-191-01	SPRING, COMPRESSION	
403	2-625-186-01	RING (C), CENTER	
404	2-625-188-02	GEAR (A)	
⚠405	8-848-137-11	PICK-UP, OPTICAL KSS-210B	
M701	X-2625-132-1	GEAR ASSY, MOTOR (SLED)	
M702	X-2625-133-2	CHASSIS ASSY, TT (SPINDLE)	

SECTION 8
ELECTRICAL PARTS LIST

BATTERY TERMINAL

CD MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-647-847-11	BATTERY TERMINAL BOARD			
		**********			
	3-389-273-01	SPRING (-), BATTERY COIL			
**********					
*	A-3264-357-A	CD MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C700	1-136-173-00	FILM	0.47uF	5%	50V
C701	1-124-443-00	ELECT	100uF	20%	10V
C702	1-124-034-51	ELECT	33uF	20%	16V
C703	1-124-034-51	ELECT	33uF	20%	16V
C704	1-136-165-00	FILM	0.1uF	5%	50V
C705	1-136-165-00	FILM	0.1uF	5%	50V
C706	1-124-907-11	ELECT	10uF	20%	50V
C707	1-131-375-00	TANTALUM	4.7uF	10%	10V
C708	1-130-489-00	MYLAR	0.033uF	5%	50V
C709	1-123-382-00	ELECT	3.3uF	20%	100V
C710	1-162-294-31	CERAMIC	0.001uF	10%	50V
C711	1-130-493-00	MYLAR	0.068uF	5%	50V
C712	1-124-477-11	ELECT	47uF	20%	25V
C713	1-162-851-11	CERAMIC	0.1uF		16V
C714	1-162-215-31	CERAMIC	47PF	5%	50V
C716	1-130-489-00	MYLAR	0.033uF	5%	50V
C717	1-124-477-11	ELECT	47uF	20%	25V
C718	1-162-306-11	CERAMIC	0.01uF	20%	16V
C719	1-130-489-00	MYLAR	0.033uF	5%	50V
C720	1-130-475-00	MYLAR	0.0022uF	5%	50V
C721	1-161-494-00	CERAMIC	0.022uF		25V
C722	1-162-306-11	CERAMIC	0.01uF	20%	16V
C723	1-162-306-11	CERAMIC	0.01uF	20%	16V
C724	1-130-489-00	MYLAR	0.033uF	5%	50V
C725	1-136-165-00	FILM	0.1uF	5%	50V
C726	1-162-294-31	CERAMIC	0.001uF	10%	50V
C727	1-130-491-00	MYLAR	0.047uF	5%	50V
C728	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C729	1-136-173-00	FILM	0.47uF	5%	50V
C730	1-162-306-11	CERAMIC	0.01uF	20%	16V

Ref. No.	Part No.	Description			Remark
C731	1-102-942-00	CERAMIC	5.0PF	+-0.5PF	50V
C732	1-102-942-00	CERAMIC	5.0PF	+-0.5PF	50V
C733	1-124-902-00	ELECT	0.47uF	20%	50V
C734	1-126-157-11	ELECT	10uF	20%	16V
C735	1-124-927-11	ELECT	4.7uF	20%	100V
C736	1-162-285-31	CERAMIC	180PF	10%	50V
C737	1-162-209-31	CERAMIC	27PF	5%	50V
C738	1-162-209-31	CERAMIC	27PF	5%	50V
C739	1-162-284-31	CERAMIC	150PF	10%	50V
C744	1-162-306-11	CERAMIC	0.01uF	20%	16V
C745	1-124-927-11	ELECT	4.7uF	20%	100V
C746	1-162-285-31	CERAMIC	180PF	10%	50V
C747	1-162-209-31	CERAMIC	27PF	5%	50V
C748	1-162-209-31	CERAMIC	27PF	5%	50V
C749	1-162-284-31	CERAMIC	150PF	10%	50V
C750	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C751	1-162-294-31	CERAMIC	0.001uF	20%	50V
C752	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C753	1-162-294-31	CERAMIC	0.001uF	20%	50V
C754	1-162-851-11	CERAMIC	0.1uF		16V
C755	1-162-290-31	CERAMIC	470PF	10%	50V
C756	1-162-294-31	CERAMIC	0.001uF	20%	50V
C757	1-136-173-00	FILM	0.47uF	5%	50V
C758	1-162-851-11	CERAMIC	0.1uF		16V
C759	1-162-294-31	CERAMIC	0.001uF	10%	50V
C760	1-162-851-11	CERAMIC	0.1uF		16V
C761	1-124-442-00	ELECT	330uF	20%	6.3V
C762	1-124-473-11	ELECT	1000uF	20%	10V
C763	1-162-294-31	CERAMIC	0.001uF	10%	50V
C770	1-124-477-11	ELECT	47uF	20%	25V
C771	1-162-294-31	CERAMIC	0.001uF	10%	50V
C772	1-130-484-00	MYLAR	0.012uF	5%	50V
C773	1-161-329-00	CERAMIC	0.0068uF	20%	16V
C774	1-130-491-00	MYLAR	0.047uF	5%	50V
C780	1-126-176-11	ELECT	220uF	20%	10V
C781	1-124-126-00	ELECT	47uF	20%	10V
C782	1-162-294-31	CERAMIC	0.001uF	20%	50V
C783	1-124-443-00	ELECT	100uF	20%	10V
C784	1-126-176-11	ELECT	220uF	20%	10V
C801	1-124-034-51	ELECT	33uF	20%	16V

CD MAIN

Ref. No.	Part No.	Description			Remark
C802	1-124-902-00	ELECT	0.47uF	20%	50V
C803	1-162-306-11	CERAMIC	0.01uF	20%	16V
C804	1-136-169-00	FILM	0.22uF	5%	50V
C806	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< CONNECTOR >			
* CNP701	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
* CNP702	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
* CNJ709	1-569-919-11	SOCKET, CONNECTOR 27P			
		< DIODE >			
D701	8-719-901-33	DIODE 1SS133			
D702	8-719-901-33	DIODE 1SS133			
D703	8-719-901-33	DIODE 1SS133			
D704	8-719-901-33	DIODE 1SS133			
D705	8-719-901-33	DIODE 1SS133			
		< IC >			
IC701	8-752-039-03	IC CXA1421M			
IC702	8-752-058-77	IC CXA1372AQ			
IC703	8-752-352-93	IC CXD2500BQ			
IC704	8-759-710-55	IC NJM2100M			
IC705	8-759-093-98	IC CXD8451M			
IC706	8-759-518-59	IC BA6296FP			
IC801	8-752-830-87	IC CXP5084H-636Q			
IC802	8-759-520-90	IC PST572E			
		< COIL >			
L701	1-410-397-11	FERRITE BEADS INDUCTOR	1.1uH		
L702	1-410-509-11	INDUCTOR	10uH		
L703	1-410-397-21	FERRITE BEADS INDUCTOR	1.1uH		
L704	1-410-397-21	FERRITE BEADS INDUCTOR	1.1uH		
L705	1-410-314-11	INDUCTOR	0.47uH		
L706	1-410-314-11	INDUCTOR	0.47uH		
L707	1-410-314-31	INDUCTOR	0.47uH		
L708	1-410-397-21	FERRITE BEADS INDUCTOR	1.1uH		
L709	1-410-397-21	FERRITE BEADS INDUCTOR	1.1uH		
		< TRANSISTOR >			
Q701	8-729-801-84	TRANSISTOR 2SB1013-4			
Q702	8-729-900-36	TRANSISTOR DTC124ES			
Q703	8-729-206-29	TRANSISTOR RN1211			
Q704	8-729-206-36	TRANSISTOR RN2207			
Q706	8-729-206-25	TRANSISTOR RN1207			
Q731	8-729-206-28	TRANSISTOR RN1210			
Q741	8-729-206-28	TRANSISTOR RN1210			
Q802	8-729-900-89	TRANSISTOR DTC144ES			

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R700	1-247-806-11	CARBON	91	5%	1/4W
R701	1-249-397-11	CARBON	22	5%	1/4W
R702	1-249-433-11	CARBON	22K	5%	1/4W
R705	1-249-441-11	CARBON	100K	5%	1/4W
R706	1-249-438-11	CARBON	56K	5%	1/4W
R707	1-247-885-00	CARBON	180K	5%	1/4W
R708	1-249-432-11	CARBON	18K	5%	1/4W
R709	1-249-437-11	CARBON	47K	5%	1/4W
R710	1-249-417-11	CARBON	1K	5%	1/4W
R711	1-247-896-11	CARBON	510K	5%	1/4W
R712	1-247-883-00	CARBON	150K	5%	1/4W
R713	1-249-429-11	CARBON	10K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-247-887-00	CARBON	220K	5%	1/4W
R716	1-249-429-11	CARBON	10K	5%	1/4W
R717	1-249-423-11	CARBON	3.3K	5%	1/4W
R718	1-247-881-00	CARBON	120K	5%	1/4W
R719	1-249-423-11	CARBON	3.3K	5%	1/4W
R720	1-247-856-00	CARBON	11K	5%	1/4W
R721	1-249-441-11	CARBON	100K	5%	1/4W
R722	1-249-441-11	CARBON	100K	5%	1/4W
R723	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-417-11	CARBON	1K	5%	1/4W
R725	1-249-433-11	CARBON	22K	5%	1/4W
R726	1-249-417-11	CARBON	1K	5%	1/4W
R727	1-249-441-11	CARBON	100K	5%	1/4W
R728	1-249-437-11	CARBON	47K	5%	1/4W
R730	1-249-417-11	CARBON	1K	5%	1/4W
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-249-434-11	CARBON	27K	5%	1/4W
R733	1-249-434-11	CARBON	27K	5%	1/4W
R734	1-249-437-11	CARBON	47K	5%	1/4W
R735	1-249-437-11	CARBON	47K	5%	1/4W
R736	1-249-429-11	CARBON	10K	5%	1/4W
R737	1-247-883-00	CARBON	150K	5%	1/4W
R738	1-249-429-11	CARBON	10K	5%	1/4W
R739	1-249-441-11	CARBON	100K	5%	1/4W
R741	1-249-429-11	CARBON	10K	5%	1/4W
R742	1-249-434-11	CARBON	27K	5%	1/4W
R743	1-249-434-11	CARBON	27K	5%	1/4W
R744	1-249-437-11	CARBON	47K	5%	1/4W
R745	1-249-437-11	CARBON	47K	5%	1/4W
R746	1-249-429-11	CARBON	10K	5%	1/4W
R748	1-249-429-11	CARBON	10K	5%	1/4W
R749	1-249-441-11	CARBON	100K	5%	1/4W
R761	1-249-435-11	CARBON	33K	5%	1/4W
R762	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No.	Part No.	Description			Remark
R763	1-249-429-11	CARBON	10K	5%	1/4W
R764	1-249-435-11	CARBON	33K	5%	1/4W
R765	1-247-838-00	CARBON	2K	5%	1/4W
R766	1-249-437-11	CARBON	47K	5%	1/4W
R767	1-249-433-11	CARBON	22K	5%	1/4W
R769	1-247-690-11	CARBON	15	5%	1/4W
R781	1-247-807-11	CARBON	100	5%	1/4W
R782	1-249-431-11	CARBON	15K	5%	1/4W
R783	1-249-431-11	CARBON	15K	5%	1/4W
R802	1-247-807-11	CARBON	100	5%	1/4W
R803	1-249-437-11	CARBON	47K	5%	1/4W
R804	1-249-435-11	CARBON	33K	5%	1/4W
R805	1-249-435-11	CARBON	33K	5%	1/4W
R806	1-249-435-11	CARBON	33K	5%	1/4W
R807	1-249-441-11	CARBON	100K	5%	1/4W
R809	1-249-437-11	CARBON	47K	5%	1/4W
R811	1-249-441-11	CARBON	100K	5%	1/4W
		< VARIABLE RESISTOR >			
RV701	1-230-497-11	RES, ADJ, CARBON 22K (E-F BALANCE)			
RV702	1-237-288-11	RES, ADJ, CARBON 47K (FOCUS BIAS)			
RV703	1-230-497-11	RES, ADJ, CARBON 22K (FOCUS GAIN)			
RV704	1-230-497-11	RES, ADJ, CARBON 22K (TRK GAIN)			
		< VIBRATOR >			
X801	1-567-775-11	VIBRATOR, CERAMIC (4.19MHz)			
XF701	1-579-345-11	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
*	1-647-846-11	CD MOTOR BOARD			
		**********			
		< CONNECTOR >			
CNP706	1-695-108-11	CONNECTOR 6P			
		< SWITCH >			
S703	1-571-936-11	SWITCH, LEAF (LIMIT)			
**********					
*	1-647-853-11	LCD BOARD			
		*********			
*	3-389-271-01	BRACKET, LCD			
		< CONNECTOR >			
* CNJ803	1-569-919-11	SOCKET, CONNECTOR 27P			
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-089-11	DISPLAY PANEL, LIQUID CRYSTAL			

Ref.No.	Part No.	Description			Remark
*	1-647-854-11	LEAF SWITCH BOARD			
		**********			
		< CONNECTOR >			
* CNP708	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P			
		< SWITCH >			
S704	1-570-013-11	SWITCH, LEAF (OPEN/CLOSE)			
**********					
*	A-3264-633-A	MAIN BOARD, COMPLETE			
		**********			
	3-386-946-01	BUTTON (DBB)			
	3-388-164-01	KNOB (FUNCTION)			
	7-682-547-04	SCREW +P 3X6			
		< CAPACITOR >			
C120	1-161-020-11	CERAMIC	0.039uF	10%	16V
C124	1-162-294-31	CERAMIC	0.001uF	10%	50V
C125	1-161-043-00	CERAMIC	0.0022uF	10%	50V
C130	1-124-126-00	ELECT	47uF	20%	10V
C131	1-124-443-00	ELECT	100uF	20%	10V
C132	1-130-495-00	MYLAR	0.1uF	5%	50V
C133	1-124-473-11	ELECT	1000uF	20%	10V
C220	1-161-020-11	CERAMIC	0.039uF	10%	16V
C224	1-162-294-31	CERAMIC	0.001uF	10%	50V
C225	1-161-043-00	CERAMIC	0.0022uF	10%	50V
C230	1-124-126-00	ELECT	47uF	20%	10V
C231	1-124-443-00	ELECT	100uF	20%	10V
C232	1-130-495-00	MYLAR	0.1uF	5%	50V
C233	1-124-473-11	ELECT	1000uF	20%	10V
C313	1-124-916-11	ELECT	22uF	20%	63V
C316	1-162-282-31	CERAMIC	100PF	10%	50V
C317	1-162-282-31	CERAMIC	100PF	10%	50V
C330	1-124-120-11	ELECT	220uF	20%	25V
C332	1-126-017-11	ELECT	6800uF	20%	16V
C350	1-124-927-11	ELECT	4.7uF	20%	100V
C351	1-126-176-11	ELECT	220uF	20%	10V
C352	1-126-176-11	ELECT	220uF	20%	10V
C353	1-161-494-00	CERAMIC	0.022uF		25V
C360	1-161-494-00	CERAMIC	0.022uF		25V
C362	1-126-176-11	ELECT	220uF	20%	10V
C363	1-161-494-00	CERAMIC	0.022uF		25V
C365	1-161-494-00	CERAMIC	0.022uF		25V
C366	1-126-176-11	ELECT	220uF	20%	10V
C367	1-161-494-00	CERAMIC	0.022uF		25V
C368	1-124-126-00	ELECT	47uF	20%	10V

MAIN **MD**

Ref.No.	Part No.	Description	Remark
		< CONNECTOR >	
CNJ305	1-580-848-11	SOCKET, CONNECTOR(PC BOARD) 20P	
* CNP306	1-695-105-11	PIN, CONNECTOR (PC BOARD) 3P	
* CNP307	1-695-107-11	PIN, CONNECTOR (PC BOARD) 5P	
* CNP308	1-691-579-11	PIN, CONNECTOR (PC BOARD) 8P	
		< DIODE >	
D301	8-719-109-97	DIODE RD6.8ES-B2	
D303	8-719-903-39	LED SLZ-135B-01-T1 (OPR/BATT)	
D304	8-719-109-97	DIODE RD6.8ES-B2	
D305	8-719-109-89	DIODE RD5.6ES-B2	
D309	8-719-901-33	DIODE 1SS133	
D313	8-719-901-33	DIODE 1SS133	
D315	8-719-901-33	DIODE 1SS133	
D316	8-719-901-33	DIODE 1SS133	
D317	8-719-901-33	DIODE 1SS133	
D318	8-719-901-33	DIODE 1SS133	
		< IC >	
IC303	8-759-060-21	IC LA4598	
		< JACK >	
J301	1-563-330-11	JACK (MIX MIC)	
		< COIL >	
L301	1-410-324-11	INDUCTOR 4.7uH	
L302	1-410-324-11	INDUCTOR 4.7uH	
		< TRANSISTOR >	
Q303	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q304	8-729-206-20	TRANSISTOR RN1202	
Q305	8-729-195-23	TRANSISTOR 2SA952-K2	
Q313	8-729-194-57	TRANSISTOR 2SC945-P	
Q316	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q317	8-729-206-20	TRANSISTOR RN1202	
Q318	8-729-819-68	TRANSISTOR 2SD1666K-RS	
Q319	8-729-819-68	TRANSISTOR 2SD1666K-RS	
Q320	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R120	1-247-903-00	CARBON 1M 5% 1/4W	
R121	1-249-426-11	CARBON 5.6K 5% 1/4W	
R122	1-249-429-11	CARBON 10K 5% 1/4W	
R130	1-247-807-11	CARBON 100 5% 1/4W	
R220	1-247-903-00	CARBON 1M 5% 1/4W	
R221	1-249-426-11	CARBON 5.6K 5% 1/4W	
R222	1-249-429-11	CARBON 10K 5% 1/4W	
R230	1-247-807-11	CARBON 100 5% 1/4W	

Ref.No.	Part No.	Description	Remark
R307	1-249-417-11	CARBON 1K 5% 1/4W	
⚠R350	1-219-113-11	FUSIBLE 6.8 5% 1/4W	F
R351	1-249-416-11	CARBON 820 5% 1/4W	
R352	1-249-410-11	CARBON 270 5% 1/4W	
R353	1-249-408-11	CARBON 180 5% 1/4W	
R354	1-249-421-11	CARBON 2.2K 5% 1/4W	
R355	1-249-437-11	CARBON 47K 5% 1/4W	
R356	1-249-414-11	CARBON 560 5% 1/4W	
R357	1-247-804-11	CARBON 75 5% 1/4W	
R358	1-247-887-00	CARBON 220K 5% 1/4W	
R359	1-249-421-11	CARBON 2.2K 5% 1/4W	
R360	1-249-421-11	CARBON 2.2K 5% 1/4W	
R361	1-249-411-11	CARBON 330 5% 1/4W	
R362	1-247-807-11	CARBON 100 5% 1/4W	
R363	1-249-433-11	CARBON 22K 5% 1/4W	
R364	1-249-433-11	CARBON 22K 5% 1/4W	
⚠R365	1-219-149-11	FUSIBLE 1 5% 1/4W	F
R366	1-249-411-11	CARBON 330 5% 1/4W	
R367	1-247-807-11	CARBON 100 5% 1/4W	
R368	1-247-887-00	CARBON 220K 5% 1/4W	
R369	1-249-421-11	CARBON 2.2K 5% 1/4W	
R370	1-249-421-11	CARBON 2.2K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV301	1-241-745-11	RES, VAR, CARBON 20K/20K (TONE)	
RV302	1-223-403-11	RES, VAR, CARBON 20K/20K (VOLUME)	
		< SWITCH >	
S302	1-571-345-11	SWITCH, LEVER SLIDE (FUNCTION)	
S303	1-572-006-11	SWITCH, PUSH (1 KEY) (MEGA BASS)	
S304	1-692-117-11	SWITCH, SLIDE (FM MODE)	
**********			
*	A-3264-631-A	MD BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C101	1-162-291-31	CERAMIC 560PF 10% 50V	
C102	1-162-291-31	CERAMIC 560PF 10% 50V	
C103	1-124-126-00	ELECT 47uF 20% 10V	
C104	1-162-840-11	CERAMIC 0.012uF 10% 16V	
C105	1-162-290-31	CERAMIC 470PF 10% 50V	
C106	1-162-832-11	CERAMIC 0.0027uF 10% 16V	
C107	1-124-927-11	ELECT 4.7uF 20% 100V	
C108	1-162-291-31	CERAMIC 560PF 10% 50V	
C109	1-124-927-11	ELECT 4.7uF 20% 100V	
C111	1-162-282-31	CERAMIC 100PF 10% 50V	
C112	1-161-374-11	CERAMIC 0.0015uF 20% 50V	
C113	1-124-903-11	ELECT 1uF 20% 50V	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C114	1-124-902-00	ELECT	0.47uF	20%	50V
C121	1-124-903-11	ELECT	1uF	20%	50V
C122	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C123	1-124-925-11	ELECT	2.2uF	20%	100V
C126	1-162-282-31	CERAMIC	100PF	10%	50V
C201	1-162-291-31	CERAMIC	560PF	10%	50V
C202	1-162-291-31	CERAMIC	560PF	10%	50V
C203	1-124-126-00	ELECT	47uF	20%	10V
C204	1-162-840-11	CERAMIC	0.012uF	10%	16V
C205	1-162-290-31	CERAMIC	470PF	10%	50V
C206	1-162-832-11	CERAMIC	0.0027uF	10%	16V
C207	1-124-927-11	ELECT	4.7uF	20%	100V
C208	1-162-291-31	CERAMIC	560PF	10%	50V
C209	1-124-927-11	ELECT	4.7uF	20%	100V
C211	1-162-282-31	CERAMIC	100PF	10%	50V
C212	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C213	1-124-903-11	ELECT	1uF	20%	50V
C214	1-124-902-00	ELECT	0.47uF	20%	50V
C221	1-124-903-11	ELECT	1uF	20%	50V
C222	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C223	1-124-925-11	ELECT	2.2uF	20%	100V
C226	1-162-282-31	CERAMIC	100PF	10%	50V
C301	1-124-126-00	ELECT	47uF	20%	10V
C302	1-124-927-11	ELECT	4.7uF	20%	100V
C303	1-124-907-11	ELECT	10uF	20%	50V
C304	1-124-907-11	ELECT	10uF	20%	50V
C305	1-124-907-11	ELECT	10uF	20%	50V
C306	1-124-903-11	ELECT	1uF	20%	50V
C307	1-124-902-00	ELECT	0.47uF	20%	50V
C308	1-161-494-00	CERAMIC	0.022uF		25V
C309	1-124-443-00	ELECT	100uF	20%	10V
C310	1-161-494-00	CERAMIC	0.022uF		25V
C311	1-126-176-11	ELECT	220uF	20%	10V
C312	1-124-126-00	ELECT	47uF	20%	10V
C314	1-162-282-31	CERAMIC	100PF	10%	50V
C318	1-162-282-31	CERAMIC	100PF	10%	50V
C320	1-124-902-00	ELECT	0.47uF	20%	50V
C321	1-162-844-11	CERAMIC	0.027uF	10%	16V
C322	1-162-844-11	CERAMIC	0.027uF	10%	16V
C323	1-124-034-51	ELECT	33uF	20%	16V
C324	1-124-907-11	ELECT	10uF	20%	50V
C325	1-124-916-11	ELECT	22uF	20%	63V
C326	1-124-464-11	ELECT	0.22uF	20%	50V
C327	1-124-443-00	ELECT	100uF	20%	10V
C328	1-161-494-00	CERAMIC	0.022uF		25V
C340	1-161-379-00	CERAMIC	0.01uF	20%	25V
C341	1-161-327-00	CERAMIC	0.0033uF	30%	16V
C342	1-130-471-00	MYLAR	0.001uF	5%	50V

Ref. No.	Part No.	Description			Remark
C343	1-162-284-31	CERAMIC	150PF	10%	50V
C344	1-124-126-00	ELECT	47uF	20%	10V
C345	1-161-494-00	CERAMIC	0.022uF		25V
C370	1-161-494-00	CERAMIC	0.022uF		25V

< CONNECTOR >

Ref. No.	Part No.	Description			
CNP301	1-506-986-11	PIN, CONNECTOR (PC BOARD)	4P		
CNP302	1-506-987-11	PIN, CONNECTOR (PC BOARD)	5P		
* CNP303	1-695-107-11	PIN, CONNECTOR (PC BOARD)	5P		
CNP304	1-506-986-11	PIN, CONNECTOR (PC BOARD)	4P		
CNP305	1-580-849-11	PIN, CONNECTOR (PC BOARD)	20P		

< DIODE >

D302	8-719-110-08	DIODE	RD8.2ES-B2
D306	8-719-901-33	DIODE	1SS133
D307	8-719-901-33	DIODE	1SS133
D310	8-719-901-33	DIODE	1SS133
D311	8-719-901-33	DIODE	1SS133
D312	8-719-901-33	DIODE	1SS133

< IC >

IC301	8-759-048-59	IC	BA3423S
IC302	8-759-048-60	IC	BA3870
IC304	8-759-932-33	IC	BU4066B

< TRANSISTOR >

Q301	8-729-900-36	TRANSISTOR	DTC124ES
Q302	8-729-281-53	TRANSISTOR	2SC1815-GR
Q306	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q307	8-729-819-68	TRANSISTOR	2SD1666K-RS
Q308	8-729-115-30	TRANSISTOR	2SK105A-30
Q309	8-729-206-20	TRANSISTOR	RN1202
Q310	8-729-195-23	TRANSISTOR	2SA952-K2
Q311	8-729-206-20	TRANSISTOR	RN1202
Q312	8-729-206-20	TRANSISTOR	RN1202
Q314	8-729-206-20	TRANSISTOR	RN1202
Q315	8-729-206-20	TRANSISTOR	RN1202
Q321	8-729-206-20	TRANSISTOR	RN1202

< RESISTOR >

R101	1-249-409-11	CARBON	220	5%	1/4W
R102	1-249-409-11	CARBON	220	5%	1/4W
R103	1-247-807-11	CARBON	100	5%	1/4W
R104	1-247-889-00	CARBON	270K	5%	1/4W
R105	1-249-425-11	CARBON	4.7K	5%	1/4W
R106	1-249-429-11	CARBON	10K	5%	1/4W
R107	1-249-425-11	CARBON	4.7K	5%	1/4W
R109	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-425-11	CARBON	4.7K	5%	1/4W

MD POWER

Ref. No.	Part No.	Description				Remark
R112	1-249-426-11	CARBON	5.6K	5%	1/4W	
R113	1-249-429-11	CARBON	10K	5%	1/4W	
R114	1-249-429-11	CARBON	10K	5%	1/4W	
R201	1-249-409-11	CARBON	220	5%	1/4W	
R202	1-249-409-11	CARBON	220	5%	1/4W	
R203	1-247-807-11	CARBON	100	5%	1/4W	
R204	1-247-889-00	CARBON	270K	5%	1/4W	
R205	1-249-425-11	CARBON	4.7K	5%	1/4W	
R206	1-249-429-11	CARBON	10K	5%	1/4W	
R207	1-249-425-11	CARBON	4.7K	5%	1/4W	
R209	1-249-417-11	CARBON	1K	5%	1/4W	
R211	1-249-425-11	CARBON	4.7K	5%	1/4W	
R212	1-249-426-11	CARBON	5.6K	5%	1/4W	
R213	1-249-429-11	CARBON	10K	5%	1/4W	
R214	1-249-429-11	CARBON	10K	5%	1/4W	
R301	1-247-903-00	CARBON	1M	5%	1/4W	
R302	1-249-435-11	CARBON	33K	5%	1/4W	
R303	1-249-435-11	CARBON	33K	5%	1/4W	
R304	1-249-435-11	CARBON	33K	5%	1/4W	
R305	1-249-435-11	CARBON	33K	5%	1/4W	
R306	1-249-416-11	CARBON	820	5%	1/4W	
R308	1-247-807-11	CARBON	100	5%	1/4W	
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R320	1-249-425-11	CARBON	4.7K	5%	1/4W	
R321	1-249-424-11	CARBON	3.9K	5%	1/4W	
R322	1-247-903-00	CARBON	1M	5%	1/4W	
R324	1-249-402-11	CARBON	56	5%	1/4W	
R325	1-249-441-11	CARBON	100K	5%	1/4W	
R326	1-249-418-11	CARBON	1.2K	5%	1/4W	
R340	1-249-411-11	CARBON	330	5%	1/4W	
R341	1-249-393-11	CARBON	10	5%	1/4W	
R342	1-249-435-11	CARBON	33K	5%	1/4W	
R371	1-249-421-11	CARBON	2.2K	5%	1/4W	
R372	1-247-887-00	CARBON	220K	5%	1/4W	
R373	1-247-811-31	CARBON	150	5%	1/4W	
R374	1-247-804-11	CARBON	75	5%	1/4W	
R375	1-249-441-11	CARBON	100K	5%	1/4W	
R376	1-249-429-11	CARBON	10K	5%	1/4W	
R377	1-249-421-11	CARBON	2.2K	5%	1/4W	
R378	1-249-429-11	CARBON	10K	5%	1/4W	
R379	1-249-418-11	CARBON	1.2K	5%	1/4W	
R380	1-249-422-11	CARBON	2.7K	5%	1/4W	
⚠R381	1-219-162-11	FUSIBLE	3.3	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV303	1-230-494-11	RES, ADJ, CARBON 1K				
		< SWITCH >				
S301	1-572-325-11	SWITCH, SLIDE (REC/PB)				
S305	1-692-080-11	SWITCH, PUSH (1 KEY) (A-POWER)				
S306	1-692-080-11	SWITCH, PUSH (1 KEY) (HI SPEED)				
S307	1-692-080-11	SWITCH, PUSH (1 KEY) (B-POWER)				
S308	1-692-080-11	SWITCH, PUSH (1 KEY) (A/B)				
		< TRANSFORMER >				
T301	1-433-346-11	TRANSFORMER, BIAS OSCILLATOR				
**********						
*	1-647-848-11	POWER BOARD				
		**********				
	1-533-217-31	HOLDER, FUSE				
		< CAPACITOR >				
C127	1-162-282-31	CERAMIC	100PF	10%	50V	
C227	1-162-282-31	CERAMIC	100PF	10%	50V	
C901	1-101-005-00	CERAMIC	22000PF		50V	
C902	1-101-005-00	CERAMIC	22000PF		50V	
C903	1-101-005-00	CERAMIC	22000PF		50V	
C904	1-101-005-00	CERAMIC	22000PF		50V	
C905	1-101-005-00	CERAMIC	22000PF		50V	
		< CONNECTOR >				
* CNP309	1-695-106-11	PIN, CONNECTOR (PC BOARD) 4P				
* CNP901	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P				
		< DIODE >				
D901	8-719-911-55	DIODE U05G				
D902	8-719-911-55	DIODE U05G				
D903	8-719-911-55	DIODE U05G				
D904	8-719-911-55	DIODE U05G				
		< FUSE >				
⚠F901	1-532-286-00	FUSE (T2.5A)				
		< JACK >				
J302	1-566-891-11	JACK (PHONES)				
⚠J901	1-526-838-11	INLET, AC 2P (AC IN)				
		< COIL >				
L151	1-410-324-11	INDUCTOR	4.7uH			
L251	1-410-324-11	INDUCTOR	4.7uH			
L351	1-410-324-11	INDUCTOR	4.7uH			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< LINE FILTER >			
⚠LF901	1-424-150-21	TRANSFORMER, LINE FILTER			
		< RESISTOR >			
R151	1-247-807-11	CARBON	100	5%	1/4W
R251	1-247-807-11	CARBON	100	5%	1/4W
		< TRANSFORMER >			
⚠T901	1-450-517-11	TRANSFORMER, POWER			
**********					
*	1-647-851-11	SWITCH BOARD			
		**********			
		< SWITCH >			
S801	1-572-198-11	SWITCH, KEY BOARD (▶ PLAY)			
S802	1-572-198-11	SWITCH, KEY BOARD (■ STOP)			
S803	1-572-198-11	SWITCH, KEY BOARD (⏮ AMS/SEARCH)			
S804	1-572-198-11	SWITCH, KEY BOARD (⏭ AMS/SEARCH)			
S805	1-572-198-11	SWITCH, KEY BOARD (⏸ PAUSE)			
S806	1-572-198-11	SWITCH, KEY BOARD (PLAY MODE)			
S807	1-572-198-11	SWITCH, KEY BOARD (DISPLAY/ENTER)			
**********					
*	A-3264-715-A	TUNER BOARD, COMPLETE			
		**********			
*	3-378-438-01	CUSHION, SARANET			
	3-388-189-01	GEAR, TUNING CAPACITOR			
	7-621-770-87	SCREW +P 2.6X5			
		< CAPACITOR >			
C1	1-163-189-00	CERAMIC MELF	220PF	10%	50V
C4	1-124-907-11	ELECT	10uF	20%	50V
C5	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C6	1-163-159-00	CERAMIC MELF	2.2PF	10%	50V
C7	1-163-168-00	CERAMIC MELF	30PF	5%	50V
C8	1-102-961-00	CERAMIC	27PF	5%	50V
C9	1-163-155-00	CERAMIC MELF	8.2PF	10%	50V
C10	1-163-150-00	CERAMIC MELF	3.3PF	10%	50V
C11	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C12	1-163-181-00	CERAMIC MELF	100PF	10%	50V
C15	1-124-927-11	ELECT	4.7uF	20%	100V
C16	1-124-903-11	ELECT	1uF	20%	50V
C17	1-124-126-00	ELECT	47uF	20%	10V
C18	1-124-126-00	ELECT	47uF	20%	10V
C19	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C20	1-124-903-11	ELECT	1uF	20%	50V
C21	1-124-925-11	ELECT	2.2uF	20%	100V
C22	1-124-443-00	ELECT	100uF	20%	10V
C23	1-124-902-00	ELECT	0.47uF	20%	50V
C24	1-124-927-11	ELECT	4.7uF	20%	100V
C25	1-124-463-00	ELECT	0.1uF	20%	50V
C27	1-162-840-11	CERAMIC	0.012uF	10%	50V
C28	1-162-840-00	CERAMIC	0.012uF	10%	50V
C34	1-163-181-00	CERAMIC MELF	100PF	10%	50V
C35	1-163-181-00	CERAMIC MELF	100PF	10%	50V
C38	1-162-397-11	CERAMIC MELF	0.001uF	10%	50V
C40	1-163-159-00	CERAMIC MELF	2.2PF	10%	50V
		< FILTER >			
CF1	1-577-327-81	FILTER, CERAMIC			
CF2	1-239-249-11	ENCAPSULATED COMPONENT			
CF3	1-577-327-81	FILTER, CERAMIC			
CF4	1-577-327-81	FILTER, CERAMIC			
		< CONNECTOR >			
* CNP22	1-691-573-11	PIN, CONNECTOR (PC BOARD) 2P			
		< TRIMMER >			
CT1-4 CV1-4	1-151-695-11	CAP, VAR			
		< FILTER >			
FL1	1-236-022-11	FILTER, BAND PASS			
		< IC >			
IC1	8-752-050-20	IC CXA1238S			
		< JUMPER RESISTOR >			
JR1	1-216-296-00	METAL CHIP	0	5%	1/8W
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W
JR8	1-216-296-00	METAL CHIP	0	5%	1/8W
JR12	1-216-296-00	METAL CHIP	0	5%	1/8W
JR14	1-216-296-00	METAL CHIP	0	5%	1/8W
JR15	1-216-296-00	METAL CHIP	0	5%	1/8W
JR17	1-216-296-00	METAL CHIP	0	5%	1/8W
JR18	1-216-296-00	METAL CHIP	0	5%	1/8W
JR19	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L1	1-428-776-11	COIL, AIR-CORE			
L2	1-460-205-11	COIL (WITH CORE)			
L3	1-402-158-11	ANTENNA, FERRITE-ROD (MW)			
L4	1-406-475-11	COIL (OSC)			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

TUNER

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q2	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R1	1-249-413-11	CARBON	470	5%	1/4W
R3	1-249-421-11	CARBON	2.2K	5%	1/4W
R6	1-249-441-11	CARBON	100K	5%	1/4W
R7	1-249-417-11	CARBON	1K	5%	1/4W
R9	1-249-441-11	CARBON	100K	5%	1/4W
R10	1-249-404-00	CARBON	82	5%	1/4W
R11	1-249-427-11	CARBON	6.8K	5%	1/4W
R12	1-249-427-11	CARBON	6.8K	5%	1/4W
R13	1-247-807-11	CARBON	100	5%	1/4W
R14	1-249-429-11	CARBON	10K	5%	1/4W
R15	1-215-477-00	METAL	220K	1%	1/6W
R16	1-215-477-00	METAL	220K	1%	1/6W
R17	1-249-421-11	CARBON	2.2K	5%	1/4W
R21	1-249-411-11	CARBON	330	5%	1/4W
R29	1-249-429-11	CARBON	10K	5%	1/4W
		< VARIABLE RESISTOR >			
RV1	1-238-601-11	RES, ADJ, CARBON 22K (VCO)			
		< SWITCH >			
S1	1-571-547-11	SWITCH, SLIDE (BAND)			
		< TRANSFORMER >			
T1	1-239-249-11	ENCAPSULATED COMPONENT			
		MISCELLANEOUS			
120	1-452-531-11	MAGNET			
324	1-543-876-13	HEAD (ERASE)			
⚠405	8-848-137-11	PICK-UP, OPTICAL KSS-210B			
ANT1	1-501-515-11	ANTENNA, TELESCOPIC (FM)			
* CNJ301	1-691-561-11	HOUSING, CONNECTOR 4P			
* CNJ302	1-691-562-11	HOUSING, CONNECTOR 5P			
HE601	1-751-445-11	WIRE, PARALLEL (FFC) (27 CORE)			
HP601	1-543-628-11	HEAD, MAGNETIC (PB) (DECK-A)			
HRP602	1-543-714-11	HEAD, MAGNETIC (REC/PB) (DECK-B)			
M401	X-4920-924-1	MOTOR ASSY (REEL/CAPSTAN)			
M701	X-2625-132-1	GEAR ASSY, MOTOR (SLED)			
M702	X-2625-133-2	CHASSIS ASSY, TT (SPINDLE)			
M704	X-2625-132-1	GEAR ASSY, MOTOR (SLED)			
SP901	1-504-269-21	SPEAKER (10CM)			
SP902	1-504-269-21	SPEAKER (10CM)			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
⚠	1-575-131-11	CORD, POWER	
	3-758-307-51	MANUAL, INSTRUCTION (ENGLISH, SPANISH ITALIAN, DUTCH)	
	3-758-307-81	MANUAL, INSTRUCTION (GERMAN)	
*	3-911-331-01	INDIVIDUAL CARTON	
*	3-906-187-01	CUSHION (L)	
*	3-906-188-01	CUSHION (R)	
		HARDWARE LIST	
#1	7-685-647-79	SCREW, TAPPING +BV 3X10	
#2	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#3	7-682-548-04	SCREW +BVTT 3X8 (S)	
#4	7-685-870-01	SCREW +BVTT 3X5 (S)	
#5	7-621-770-87	SCREW +P 2.6X5	
#6	7-685-648-79	SCREW, TOTSU PTPWH 3X12, TYPE2	
#7	7-682-148-15	SCREW +P 3X8	
#8	7-685-547-19	SCREW +BTP 3X10 TYPE2 N-S (US, AEP)	
#9	7-621-772-00	SCREW +B 2X3	
#10	7-685-133-19	SCREW +P 2.6X6 TYPE2	
#11	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
#12	7-685-144-11	SCREW +P 3X5 TYPE2 NON-SLIT	
#13	7-621-255-15	SCREW +P 2X3	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

CFD-112

SONY
SERVICE MANUAL

AEP Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject: **1. Correction**
2. Addition of AEP model and Italian model

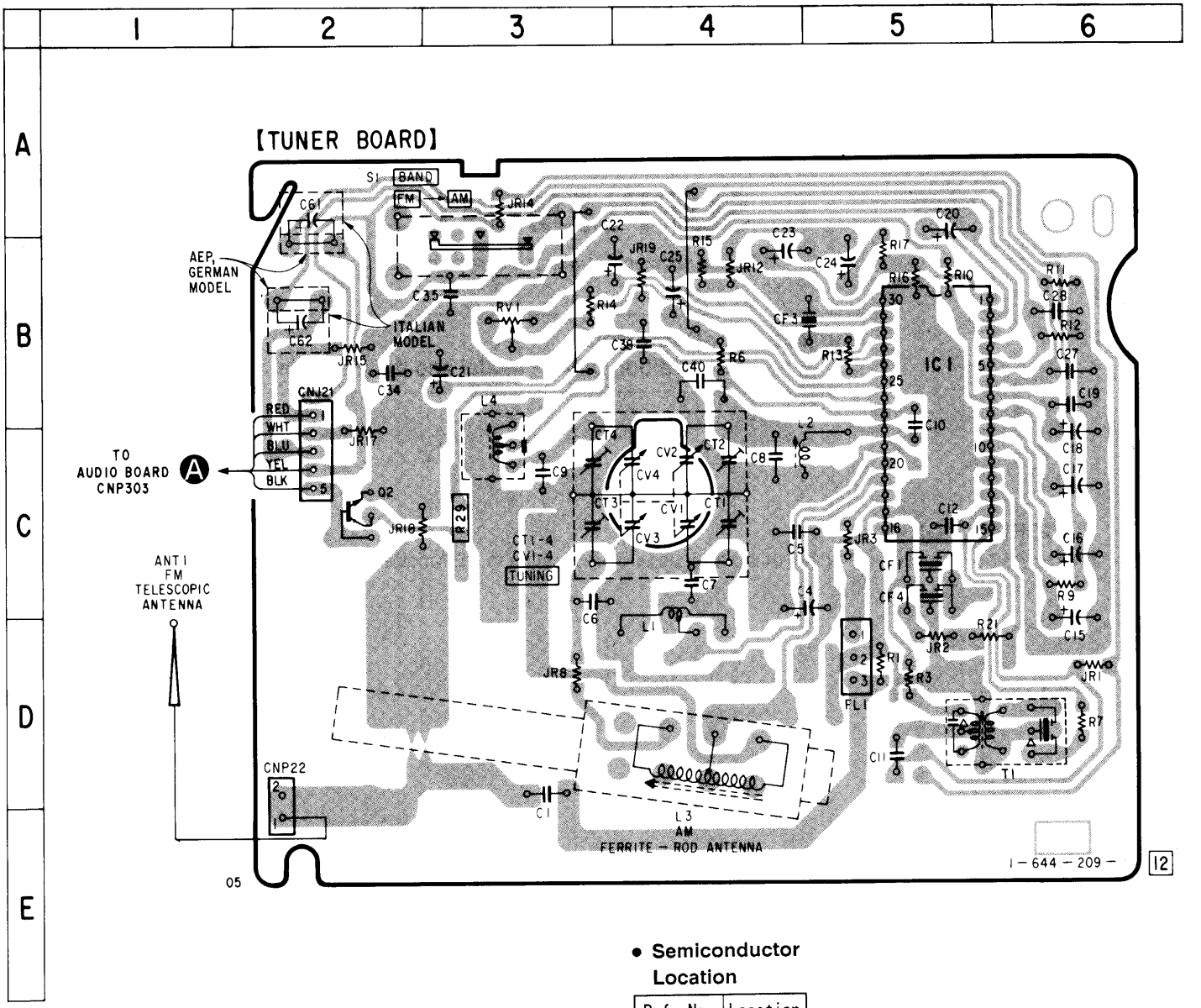
1. CORRECTION

Revise your original service model of the front page of destination to AEP model from German model.

2. ADDITION OF AEP MODEL AND ITALIAN MODEL

2-1. TUNER SECTION PRINTED WIRING BOARD

Page 17



- **Semiconductor Location**

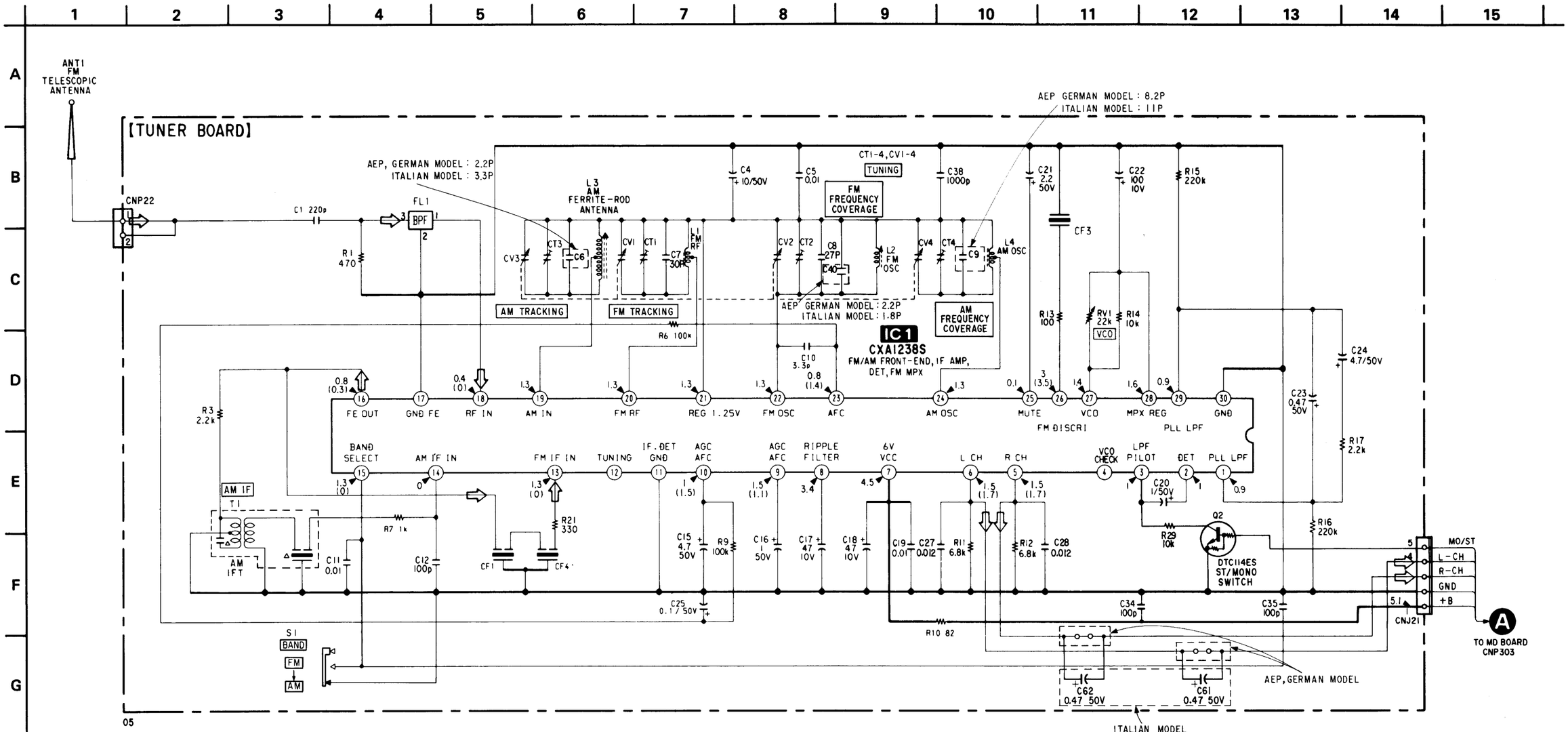
Ref. No.	Location
IC1	B-5
Q2	C-2

Note :

- ○——— : parts extracted from the component side.
- [ ]⊢ : indicates side identified with part number.
- △ : internal component.

2-2. TUNER SECTION SCHEMATIC DIAGRAM

Page 18-19



Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- ▬ : B + Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

2-3. ELECTRICAL ADJUSTMENTS

Page 8

No mark : AEP, German Model
( ) : Italian Model

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	515 kHz (516 kHz)
CT4	1,680 kHz (1,630 kHz)

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	87.35 MHz (87.35 MHz)
CT2	107.8 MHz (108.3 MHz)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	87.35 MHz (87.35 MHz)
CT1	107.8 MHz (108.3 MHz)

2-4. EXPLODED VIEWS

Page	Ref. No.	Part No.	Description
39	4	3-911-388-01 3-911-388-11	PANEL (AEP, German) PANEL (Italian)
40	57	*A-3264-715-A *A-3264-815-A	TUNER BOARD, COMPLETE (AEP, German) TUNER BOARD, COMPLETE (Italian)

2-5. ELECTRICAL PARTS LIST

Page	Ref. No.	Part No.	Description
51		*A-3264-715-A *A-3264-815-A	TUNER BOARD, COMPLETE (AEP, German) TUNER BOARD, COMPLETE (Italian)
	C6	1-162-325-11 1-163-150-00	CERAMIC MELF 2.2PF 10% 50V (AEP, German) CERAMIC MELF 3.3PF 10% 50V (Italian)
	C9	1-162-383-11 1-163-158-00	CERAMIC MELF 8.2PF 10% 50V (AEP, German) CERAMIC MELF 11PF 5% 50V (Italian)
	C40	1-162-348-11 1-162-347-11	CERAMIC MELF 2.2PF 10% 50V (AEP, German) CERAMIC MELF 1.8PF 20% 50V (Italian)
	C61	1-124-902-00	ELECT 0.47μF 20% 50V (Italian)
	C62	1-124-902-00	ELECT 0.47μF 20% 50V (Italian)

2-6. ACCESSORY

Page	Part No.	Description
52	3-758-307-51 3-758-307-81 3-758-307-91	MANUAL, INSTRUCTION (ENGLISH, SPANISH, ITALIAN, DUTCH) MANUAL, INSTRUCTION (GERMAN) (German) MANUAL, INSTRUCTION (DANISH, FINNISH) (AEP)

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

MEMO

Printing Method for Large Sized Documents Such As Circuit Diagrams

Printing the page that exceeds A4-size two pages (or letter size) is possible by specifying the print range. (Acrobat Reader Version 4.0 or later)

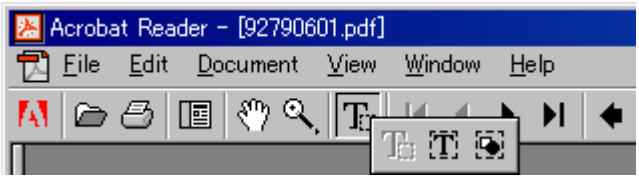
1. The enlarged print is made, if a smaller range than A4 size is specified and the A4 size is selected as a print paper.
2. Almost real sized print is made, if the range is specified, meeting the print paper size.
3. The reduced print is made, if a larger range than the print paper size is specified.

Printing by Specifying a Range

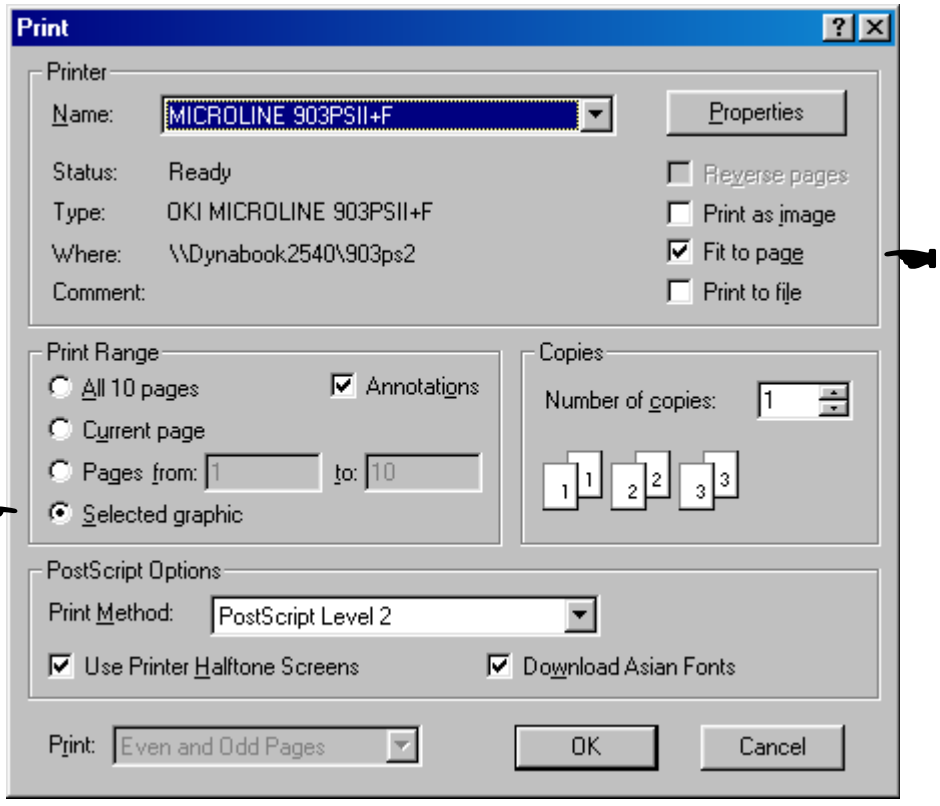
In printing out the drawings such as a schematic diagram and a printed wiring board larger than the printed paper size, they can be printed by specifying the range. (Acrobat Reader Version 4.0 or later)

1. Display the page to be printed.
2. From the File menu, select [Page Setup] and set the paper size.
3. From the Command bar, select [Graphic Select Tool].

   (Keep pressing  , select )



4. Dragging the cursor, enclose the range on the page to be printed.
5. From the File menu, select [Print] and make sure that the [Selected Graphic] is already checked. Also, if [Fit to page] is checked, the selected range is enlarged or reduced (and rotated as necessary) meeting the paper size.



6. To cancel the printed range, click an arbitrary position on the screen.

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	1994.03 1994.11	New Supplement-1
1.1	2002.05	Correction of Part No. for 314 of Exploded Views (SPM-02013)