HCD-CP33

SERVICE MANUAL

Ver 1.2 2003. 05

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model

Note

CD block, tape deck block and tuner pack are supplied with the assembled block.

HCD-CP33 is the Amplifier, MD player, CD player, Tape Deck and Tuner section in CMT-CP33MD.

CD Section	Model Name Using Similar Mechanism	HCD-CP11
	CD Mechanism Type	CDM55-K5BD41
MD Section	Model Name Using Similar Mechanism	HCD-MDX10
	Mechanism Type	MDM-5A
	Optical Pick-up Type	KMS-260A/K1NP
Tape deck Section	Model Name Using Similar Mechanism	HCD-CP11
	Tape Transport Mechanism Type	TCB-020

SPECIFICATIONS

Amplifier section
For the U.S. model

AUDIO POWER SPECIFICATIONS
POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6-Ω loads, both channels driven, from 70 – 20,000 Hz; rated 18 W per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 mW to rated output.

North American model:
Continuous RMS power output (reference):
35 + 35 W
(6 Ω at 1 kHz, 10% THD)
Total harmonic distortion: less than 0.07%
(6 Ω at 1 kHz, 18 W)

European model:
DIN power output (Rated):30 + 30 W
(6 Ω at 1 kHz, DIN, 230 V)
Continuous RMS power output (Reference):
35 + 35 W
(6 Ω at 1 kHz,10% THD, 230 V)
Music power output (Reference):
85 + 85 W

Other models:
The following measured at 230 V AC, 60 Hz
DIN power output (rated): 28 + 28 W
(6 Ω at 1 kHz, DIN)
Continuous RMS power output (reference):
30 + 30 W
(6 Ω at 1 kHz, 10% THD)
The following measured at 220 V AC, 60 Hz
DIN power output (rated): 24 + 24 W
(6 Ω at 1 kHz, DIN)
Continuous RMS power output (reference):
25 + 25 W
(6 Ω at 1 kHz, 10% THD)

Inputs
VIDEO IN (phono jacks): voltage 250 mV, impedance 47 kΩ

Outputs
LINE OUT (phono jack): voltage 250 mV, impedance 1 kΩ
PHONES (stereo minijack):
accepts headphones of 8 Ω ormore.
SPEAKER: accepts impedance of 6 to16 Ω

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (l=780 nm) Emission duration: continuous
Laser output	Max. 44.6 µW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response	2 Hz – 20 kHz

— Continued on next page —

MICRO Hi-Fi COMPONENT SYSTEM

9-929-276-13
2003E16-1

Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

MD deck section

System	MiniDisc digital audio system
Laser	Semiconductor laser (l=780 nm) Emission duration: continuous
Laser output	Max. 44.6 µW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Sampling frequency	44.1 kHz
Frequency response	5 Hz – 20 kHz

Tape deck section

Recording system	4-track 2-channel stereo
Frequency response	(DOLBY NR OFF) 40 – 13,000 Hz (±3 dB), using Sony TYPE I cassettes 40 – 14,000 Hz (±3 dB), using Sony TYPE II cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	
North American model:	87.5 – 108.0 MHz (100 kHz step)
Tourist model: 7	6.0 – 108.0 MHz (50 kHz step)
Other models:	87.5 – 108.0 MHz (50 kHz step)
Antenna	FM lead antenna
Antenna terminals	75 Ω unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
Pan-American model:	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
European model: 5	31 – 1,602 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna External antenna terminals
Intermediate frequency	450 kHz

GENARAL

Power requirements	
North American model:	120 V AC, 60 Hz
European model:	230 V AC, 50/60 Hz
Australian and Thai models:	220 – 240 V AC, 50/60 Hz
Other models:	110 – 120 V or 220 – 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	75 W
Dimensions (w/h/d) incl. projecting parts and controls	
Amplifier/Tuner/Tape/MD/CD section:	Approx. 190 × 252 × 280 mm
Mass	
Amplifier/Tuner/Tape/MD/CD section:	Approx. 7.5 kg
Supplied accessories	Remote (1) Size AA (R6) batteries (2) AM loop antenna (1) FM lead antenna (1)

Design and specifications are subject to change without notice.

TABLE OF CONTENTS

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down 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 from more than 30 cm away from the objective lens.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

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

The following caution label is located inside the unit.

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

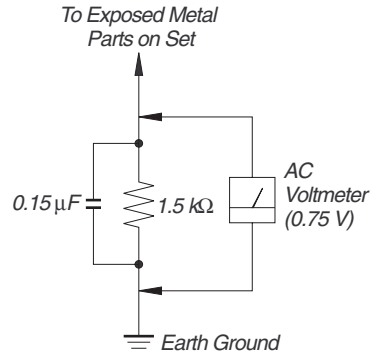
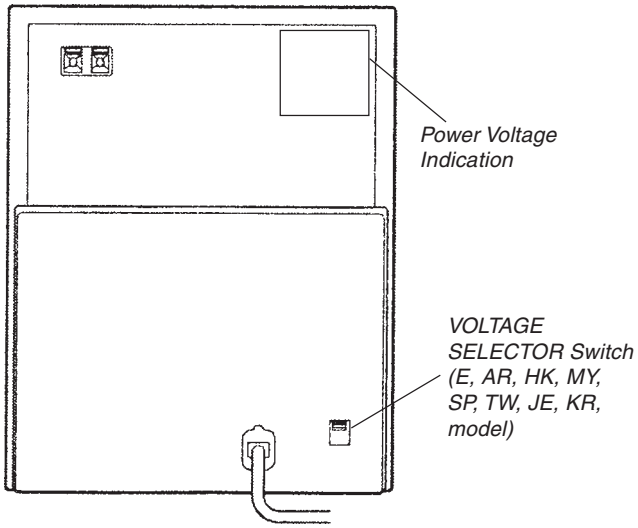


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION
– Back Panel –

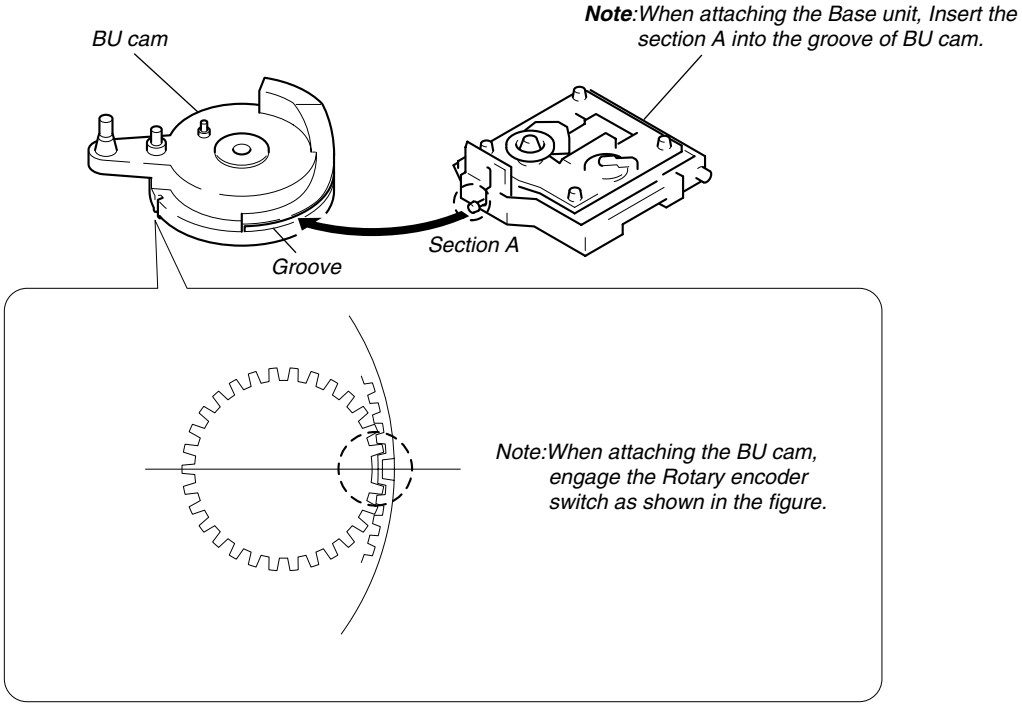


Model	Power Voltage Incdication
US, CND models	AC: 120 V 60 Hz 75 W
AEP, UK, AED models	AC: 230 V 50 Hz 75 W
AUS, TH models	AC: 220 – 240V 50/60 Hz 75 W
E, AR, HK, MY, SP, TW, JE, KR models	AC: 110 – 120/ 220 – 240 V 50/60 Hz 75 W

- Abbreviation
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  TW : Taiwan model.
  HK : Hong Kong model.
  AR : Argentine model.
  CND : Canadian model.
  AED : North European model.
  KR : Korean model.
  TH : Thai model.
  JE : Tourist model.

SECTION 1
SERVICING NOTE

NOTE FOR INSTALLATION (ROTARY ENCODER)



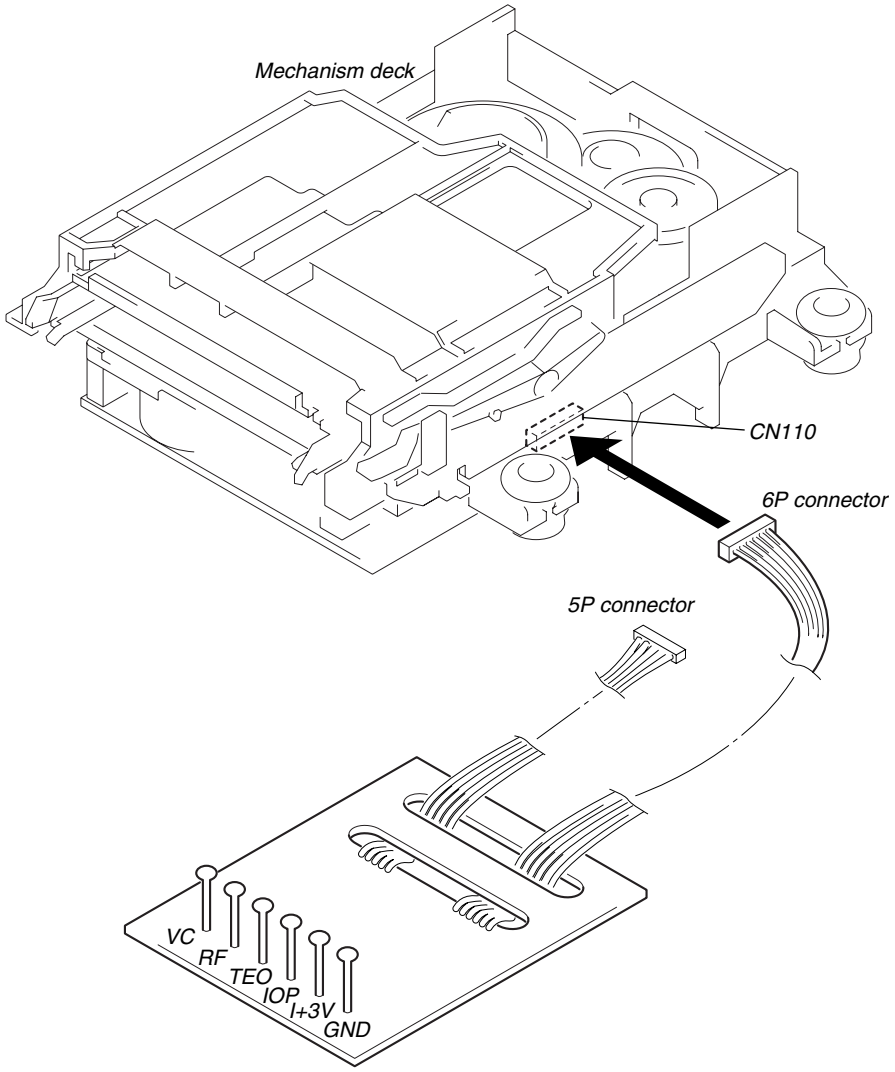
CD-TEXT

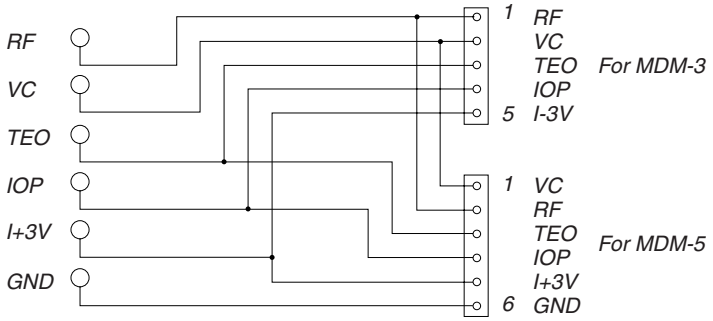
This unit is provided with a simple CD-TEXT display function.
The CD-TEXT contents of 50 tracks are displayed on the fluorescent display tube.
Since the function is simple, some special characters may not be displayed, or may be displayed as other characters.

JIG FOR CHECKING BD BOARD WAVEFORM

The special jig (J-2501-149-A) is useful for checking the waveform of the BD board. The names of terminals and the checking items to be performed are shown as follows.

GND : Ground
I+3V : For measuring IOP (Check the deterioration of the optical pick-up laser)
IOP : For measuring IOP (Check the deterioration of the optical pick-up laser)
TEO : TRK error signal (Traverse adjustment)
VC : Reference level for checking the signal
RF : RF signal (Check jitter)





IOP Data Recording and Display When optical Pick-up and Non-volatile Memory (IC171 of BD board) are Replaced

The IOP value labeled on the optical pick-up can be recorded in the non-volatile memory. By recording the value, it will eliminate the need to look at the value on the label of the optical pick-up. When replacing the optical pick-up or non-volatile memory (IC171 of BD board), record the IOP value on the optical pick-up according to the following procedure.

Record Precedure:

1. With the power ON, press the [CD ■] button while pressing the [MD REC ●] and [MD ■] buttons together.
2. Press the [I◀◀ (R)], [▶▶I (R)] button to display "Service", and press the [ENTER/YES (R)] button.
3. Press the [I◀◀ (R)], [▶▶I (R)] button to display "Iop Write", and press the [ENTER/YES (R)] button.
4. The display changes to "Ref=@@@.@" (@ is an arbitrary number) and the digits which can be changed, blink.
5. Input the IOP value labeled on the optical pick-up.
   To select the value : Press the [I◀◀ (R)], [▶▶I (R)] button.
6. When the [ENTER/YES (R)] button is pressed, the display changes to "Measu=###.#" (# is an arbitrary number).
7. The adjustment value that is obtained by the adjustment described in separate section of Manual, can be saved in this set up. However, leave the value as it is and press the [ENTER/YES (R)] button.
8. "Complete!!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will change to "Iop Write".

Display Precedure:

1. With the power ON, press the [CD ■] button while pressing the [MD REC ●] and [MD ■] buttons together.
2. Press the [I◀◀ (R)], [▶▶I (R)] button to display "Service", and press the [ENTER/YES (R)] button.
3. Press the [I◀◀ (R)], [▶▶I (R)] button to display "Iop Read", and press the [ENTER/YES (R)] button.
4. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ : indicates the Iop value labeled on the pick-up.
   ##.# : indicates the Iop value after adjustment
5. To end, press [MENU/NO (R)] button to display "Iop Read".

Checks Prior to Parts Replacement and Adjustments

Before performing repairs, perform the following checks to determine the faulty locations up to a certain extent.
Details of the procedures are described in "6 Electrical Adjustments".

	Criteria for Determination (Unsatisfactory if specified value is not satisfied)	Measure if unsatisfactory:
Laser power check	• 0.9 mW power Specified value : 0.84 to 0.92 mW • 7.0 mW power Specified value : 6.8 to 7.2 mW	• Clean the optical pick-up • Adjust again • Replace the optical pick-up
	Iop (at 7mW) • Labeled on the optical pickup Iop value ± 10mA	• Replace the optical pick-up
Traverse check	• Traverse waveform Specified value : Below 10% offset	• Replace the optical pick-up
Focus bias check	• Error rate check Specified value : For points a, b, and c C1 error : Below 220 AD error : Below 2	• Replace the optical pick-up
C PLAY check	• Error rate check Specified value: a.When using test disc (MDW-74/AU-1) C1 error : Below 80 AD error : Below 2 b.When using check disc (TDYS-1) C1 error : Below 50	• Replace the optical pick-up
Self-recording/playback check (REC/PLAY)	• CPLAY error rate check Specified value: C1 error : Below 80 AD error : Below 2	If always unsatisfactory: • Replace the overwrite head • Check for disconnection of the circuits around the overwrite head
		If occasionally unsatisfactory: • Check if the overwrite head is distorted • Check the mechanism around the sled
TEMP check (Temperature compensation offset check)	• Unsatisfactory if displayed as T=@@ (##) NG NG (@@, ## are both arbitrary numbers)	• Check for disconnection of the circuits around D101 (BD board) • Check the signals around IC101, IC121, CN102, CN103 (BD board)

Note:
The criteria for determination above is intended merely to determine if satisfactory or not, and does not serve as the specified value for adjustments.
When performing adjustments, use the specified values for adjustments.

Retry Cause Display Mode

- In this test mode, the causes for retry of the unit during recording can be displayed on the fluorescent indicator tube. During playback, the "track mode" for obtaining track information will be set.
  This is useful for locating the faulty part of the unit.
- The following will be displayed :
  During recording and stop : Retry cause, number of retries, and number of retry errors.
  During playback : Information such as type of disc played, part played, copyright.
  These are displayed in hexadecimal.

Precedure:

1. Load a recordable disc whose contents can be erased into the unit.
2. Press the [FUNCTION] button and set the function to "MD".
3. Press the [MENU/NO] button. When "Edit/Menu" is displayed on the fluorescent indicator tube, rotate the [AMS] dial to display "All Erase?".
4. Press the [ENTER/YES] button.
5. "All Erase??" is displayed on the fluorescent indicator tube.
6. Press the [ENTER/YES] button to display "Complete!!", and press the [■] button immediately. Wait for about 10 seconds while pressing the button.
7. When the "TOC" displayed on the fluorescent display tube goes off, release the [■] button.
8. Press the [MD REC ●] button to start recording. Then press the [MD ►II] button and start recording.
9. To check the "track mode", press the [MD ►II] button to start play.
10. To exit the test mode, press the [I/⏻] button, and turn OFF the power. When "TOC" disappears, disconnect the power plug from the outlet. If the test mode cannot be exited, refer to "Forced Reset" on page 8.

Fig. 1 Reading the Test Mode Display (During recording and stop)

[RTs@@c##c**]
Fluorescent display tube display

@@ : Cause of retry
: Number of retries
** : Number of retry errors

Fig. 2 Reading the Test Mode Display (During playback)

[@@####**$$]
Fluorescent display tube display

@@ : Parts No. (name of area named on TOC)
: Cluster
** : Sector } Address (Physical address on disc)
$$: Track mode (Track information such as copyright information of each part)

Reading the Retry Cause Display

	Higher Bits				Lower Bits				Hexa-decimal	Cause of Retry	Occurring conditions
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0			
Binary	0	0	0	0	0	0	0	1	01	shock	When track jump (shock) is detected
	0	0	0	0	0	0	1	0	02	ader5	When ADER was counted more than five times continuously
	0	0	0	0	0	1	0	0	04	Discontinuous adress	When ADIP address is not continuous
	0	0	0	0	1	0	0	0	08	DIN unlock	When DIN unlock is detected
	0	0	0	1	0	0	0	0	10	FCS incorrect	When not in focus
	0	0	1	0	0	0	0	0	20	IVR rec error	When ABCD signal level exceeds the specified range
	0	1	0	0	0	0	0	0	40	CLV unlock	When CLV is unlocked
	1	0	0	0	0	0	0	0	80	Access fault	When access operation is not performed normally

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example

When 42 is displayed:
Higher bit : 4 = 0100 ⟶ b6
Lower bit : 2 = 0010 ⟶ b1
In this case, the retry cause is combined of "CLV unlock" and "ader5".

When A2 is displayed:
Higher bit : A = 1010 ⟶ b7+b5
Lower bit : 2 = 0010 ⟶ b2
The retry cause in this case is combined of "access fault", "IVR rec error", and "ader5".

Reading the Track Mode Display

	Higher Bits				Lower Bits				Hexa-decimal	Details	
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0		When 0	When 1
Binary	0	0	0	0	0	0	0	1	01	Emphasis OFF	Emphasis ON
	0	0	0	0	0	0	1	0	02	Monaural	Stereo
	0	0	0	0	0	1	0	0	04	This is 2-bit display. Normally 01.	
	0	0	0	0	1	0	0	0	08	01:Normal audio. Others:Invalid	
	0	0	0	1	0	0	0	0	10	Audio (Normal)	Invalid
	0	0	1	0	0	0	0	0	20	Original	Digital copy
	0	1	0	0	0	0	0	0	40	Copyright	No copyright
	1	0	0	0	0	0	0	0	80	Write prohibited	Write allowed

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example When 84 is displayed:
Higher bit : 8 = 1000 ⟶ b7
Lower bit : 4 = 0100 ⟶ b2
In this case, as b2 and b7 are 1 and others are 0, it can be determined that the retry cause is combined of “emphasis OFF”, “monaural”, “original”, “copyright exists”, and “write allowed”.

Example When 07 is displayed:
Higher bit : 0 = 1000 ⟶ All 0
Lower bit : 7 = 0111 ⟶ b0+b1+b2
In this case, as b0, b1, and b2 are 1 and others are 0, it can be determined that the retry cause is combined of “emphasis ON”, “stereo”, “original”, “copyright exists”, and “write prohibited”.

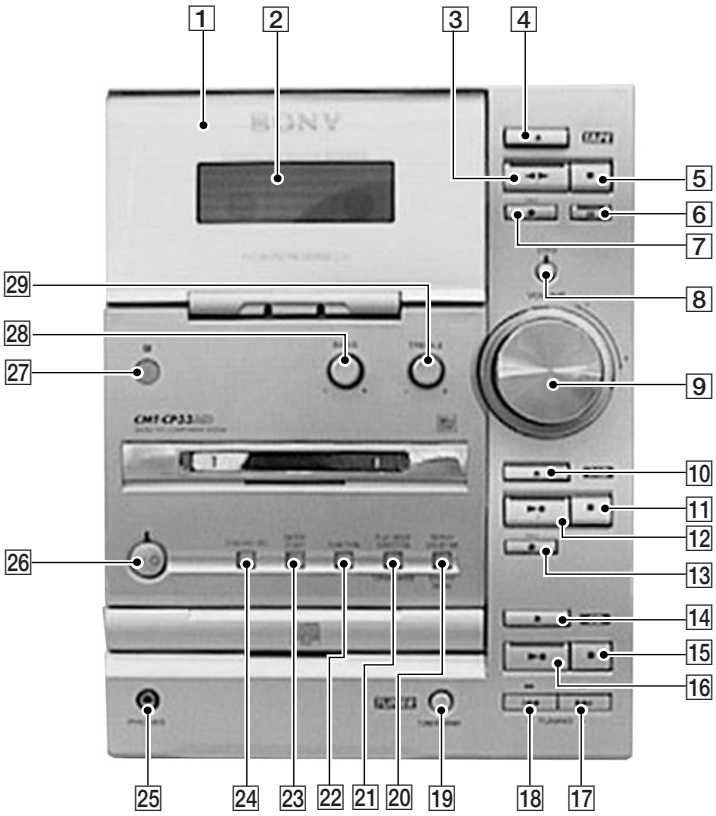
Hexadecimal ⟶ Binary Conversion Table

Hexadecimal	Binary	Hexadecimal	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	B	1011
4	0100	C	1100
5	0101	D	1101
6	0110	E	1110
7	0111	F	1111

SECTION 2
GENERAL

LOCATION OF CONTROLS

• Front View



1 TAPE deck
2 Liquid crystal display
3 TAPE ◀▶ button
4 TAPE ⏏ button
5 TAPE ■ button
6 TAPE ❚❚ button
7 TAPE REC ● button
8 DSG button and indicator
9 VOLUME knob
10 MD ⏏ button
11 MD ■ button
12 MD ▶❚❚ button
13 MD REC ● button
14 CD ⏏ button
15 CD ■ button
16 CD ▶❚❚ button
17 CD ▶▶❙ button
18 CD ❙◀◀ button
19 TUNER/BAND button
20 REPEAT DOLBY NR button and indicator
21 PLAY MODE DIRECTION button and indicator
22 FUNCTION button and indicator
23 ENTER/START button and indicator
24 SYNCHRO REC button and indicator
25 PHONES jack
26 I/⏻ button and indicator
27 Remote sensor
28 BASS knob
29 TREBLE knob

• Rear View

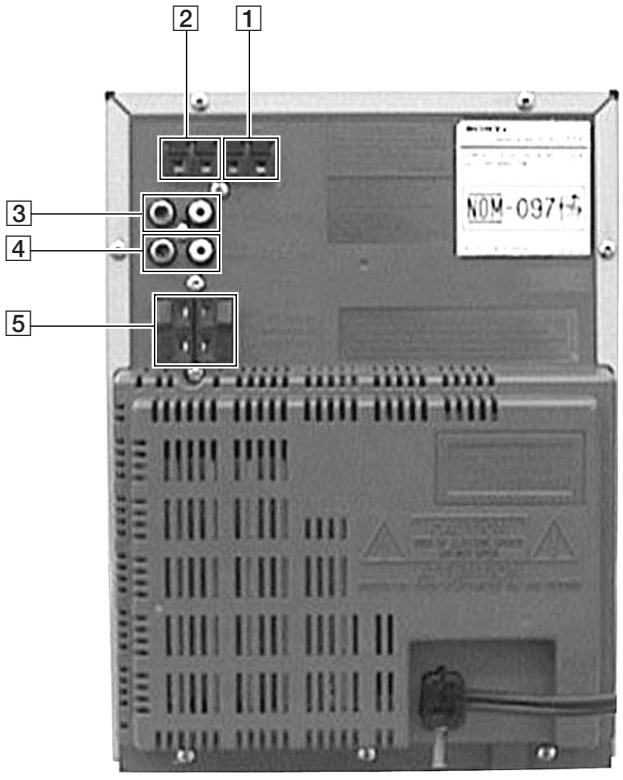


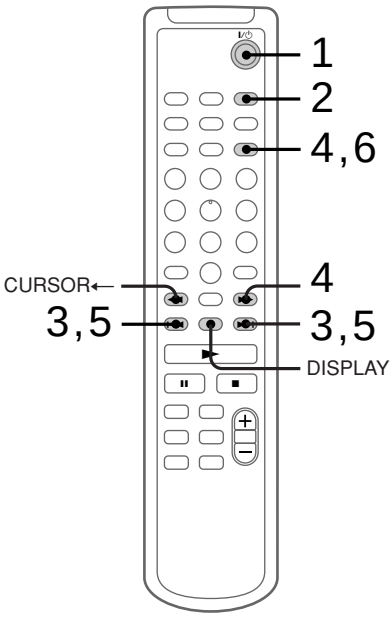
Photo: US model

1 FM ANTENNA terminals
2 AM LOOP ANTENNA terminals
3 LINE OUT jacks
4 VIDEO IN jacks
5 SPEAKER terminals

This section is extracted from instruction manual.

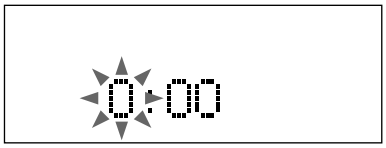
Step 2: Setting the time

You must set the time beforehand to use the timer functions.
The clock is on a 24-hour system for the European model, and a 12-hour system for other models. The 24-hour system is used for illustration purposes.



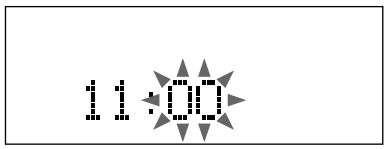
1 Turn on the system.

2 Press CLOCK/TIMER SET.
The clock appears and the hour indication flashes.



3 Press ⏮ or ⏭ to set the hour.

4 Press ENTER/YES or CURSOR→.
The minute indication flashes.



5 Press ⏮ or ⏭ to set the minute.

6 Press ENTER/YES.
The clock starts.

If you made a mistake

Press CURSOR← or → repeatedly until the incorrect item flashes, then set it again.

To change the preset time

You can change the preset time while the system is off.

1 Press DISPLAY to display the clock.
2 Press CLOCK/TIMER SET.
3 Repeat steps 3 to 6 of "Setting the time."

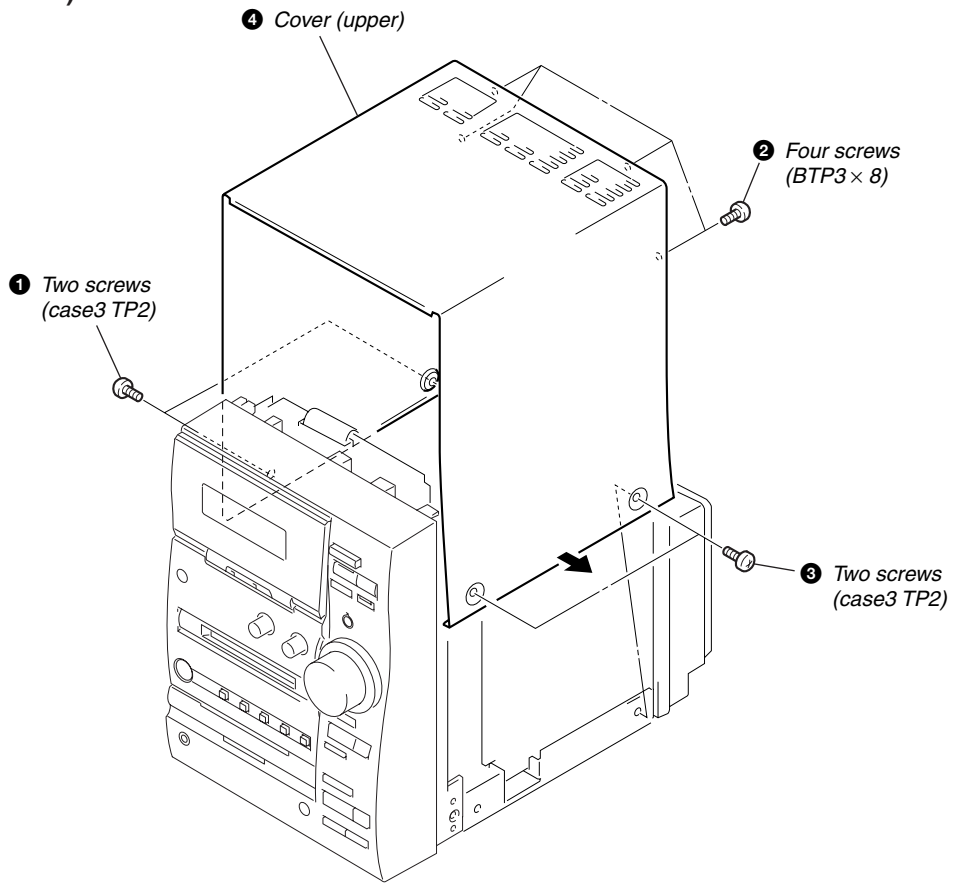
Tip

The upper dot of the colon flashes for the first 30 seconds, and the lower dot flashes for the last 30 seconds of each minute.

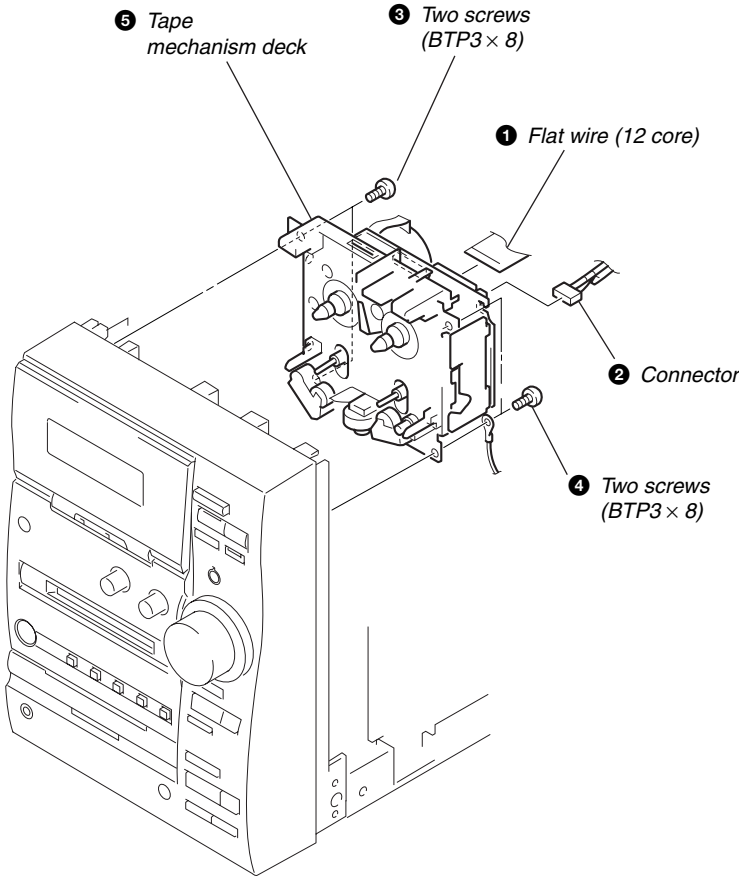
SECTION 3
DISASSEMBLY

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

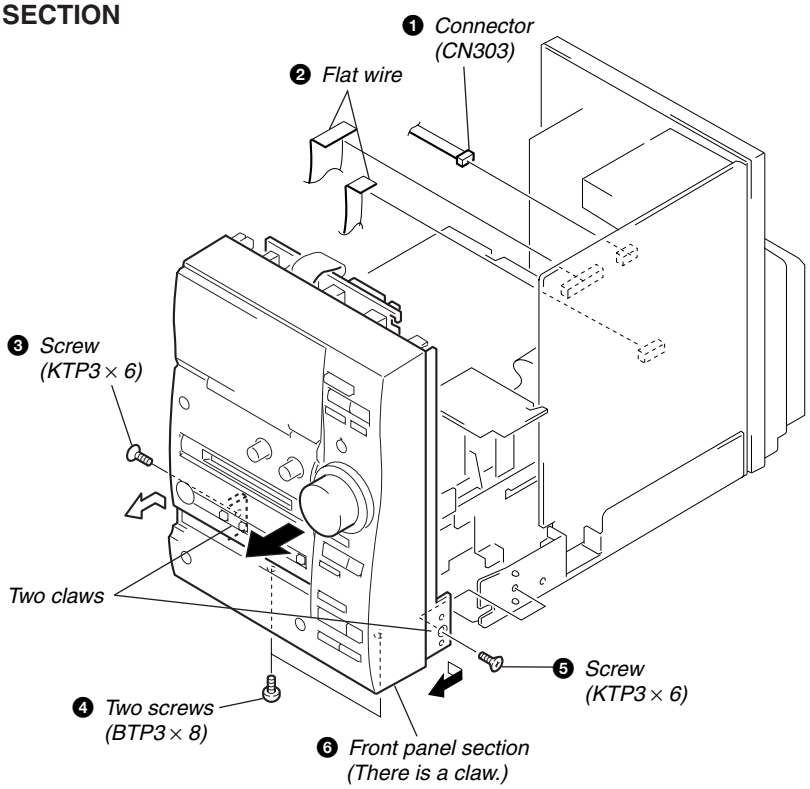
3-1. COVER (UPPER)



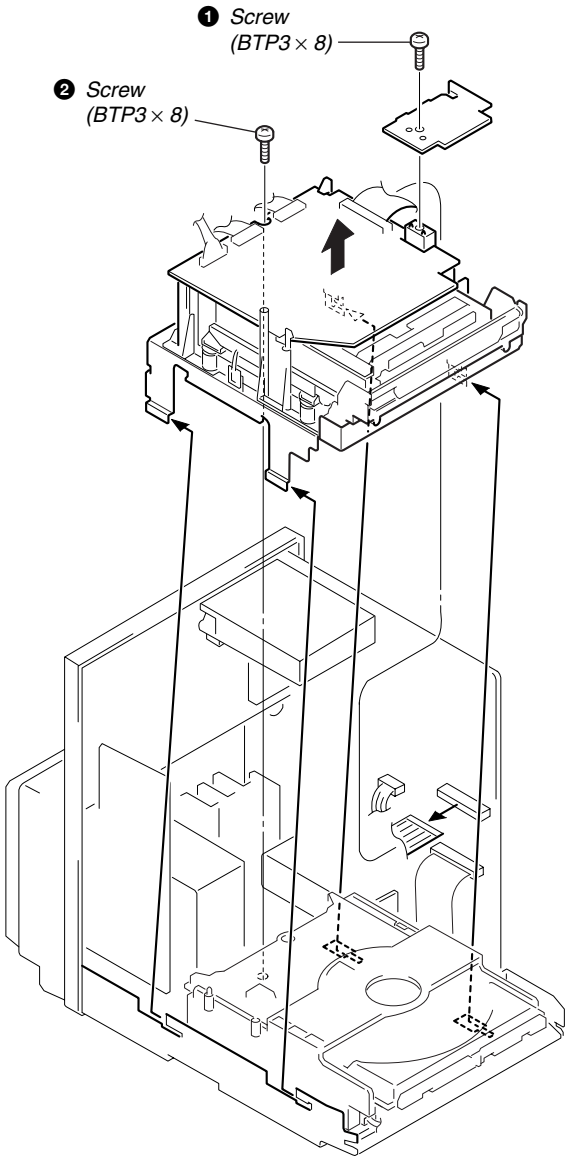
3-2. TAPE MECHANISM DECK



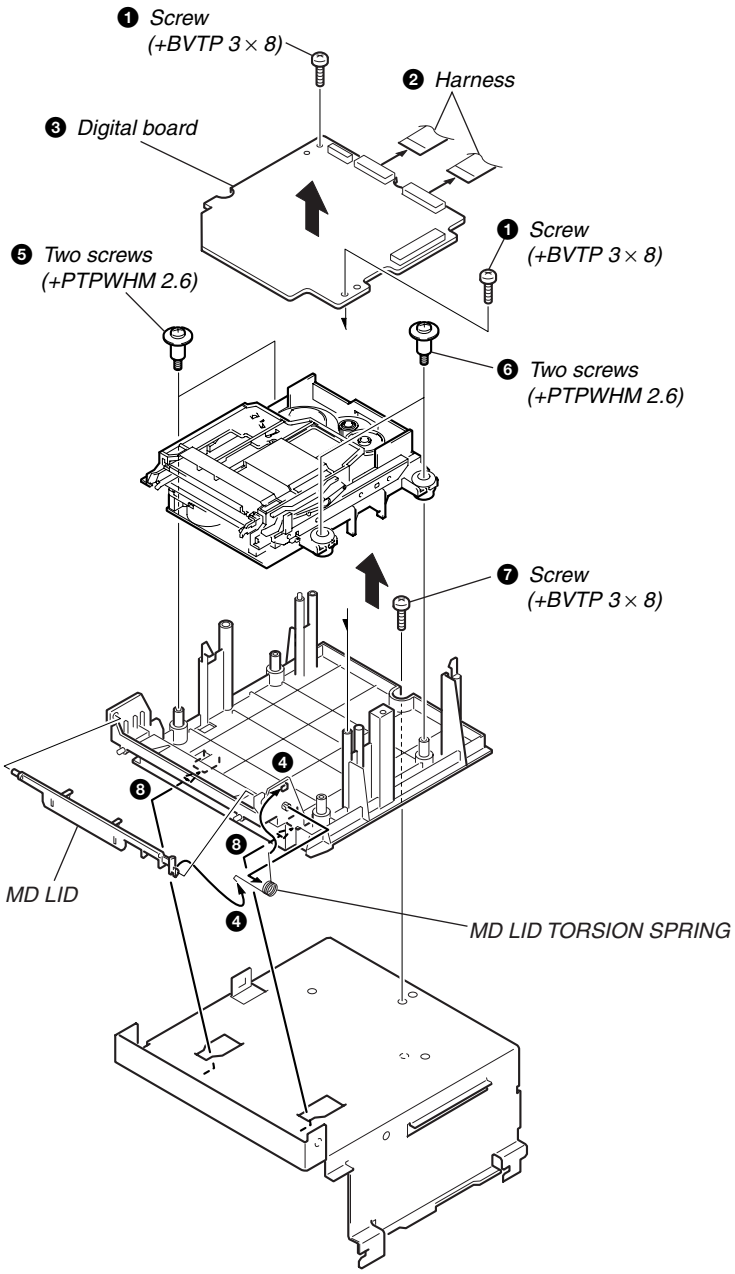
3-3. FRONT PAENL SECTION



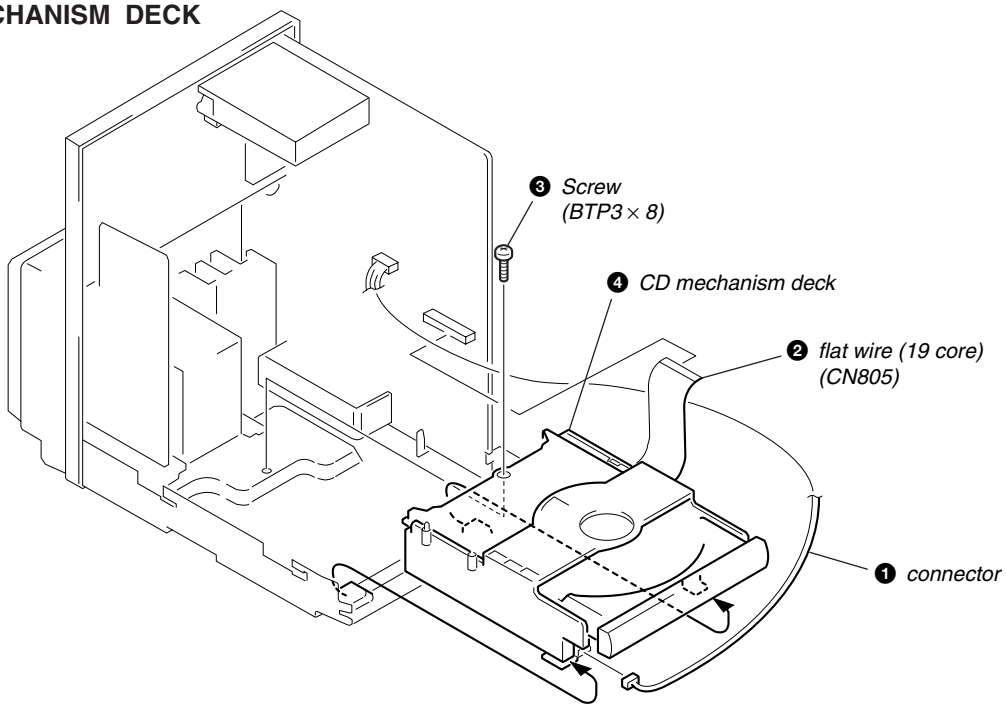
3-4. MD MECHANISM DECK



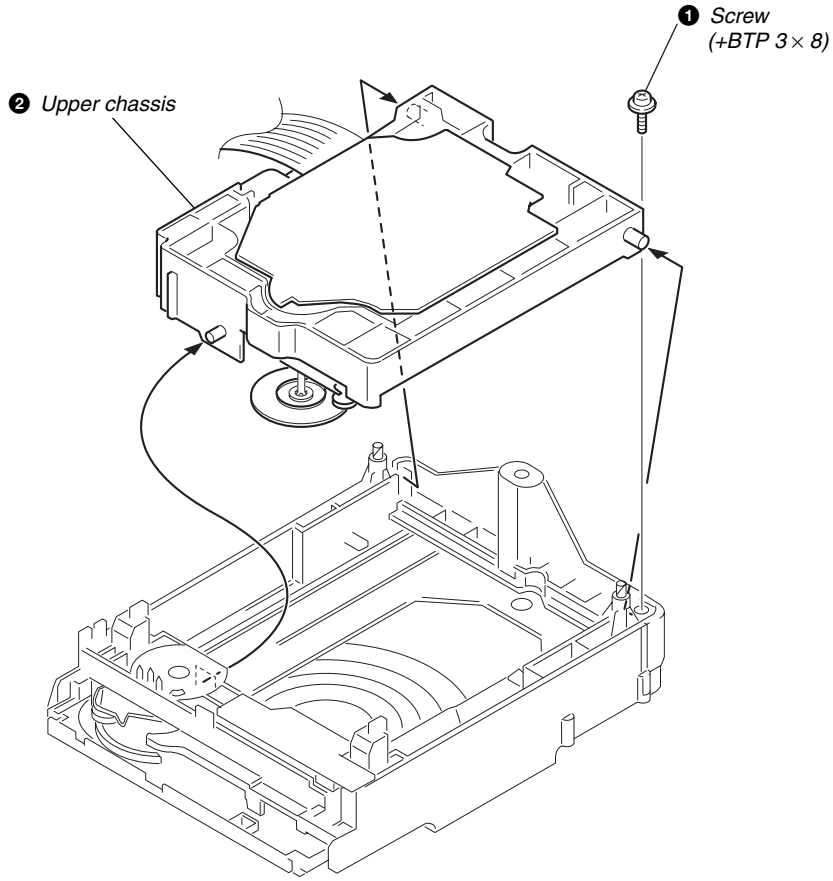
3-5. DIGITAL BOARD



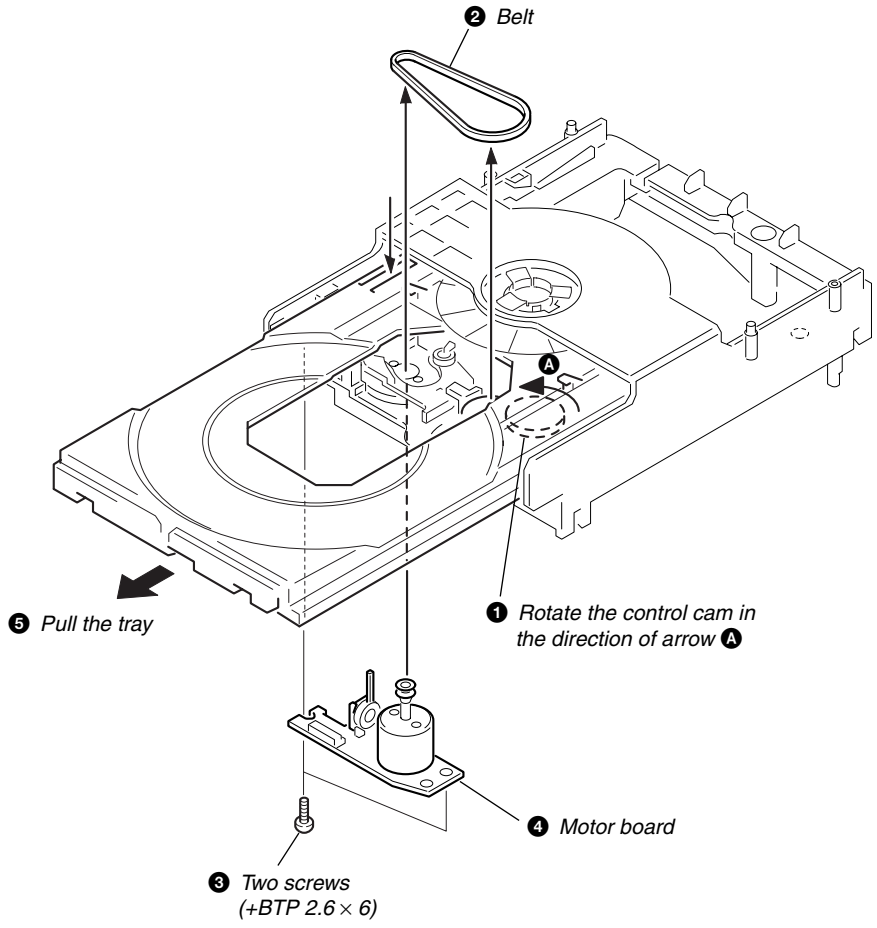
3-6. CD MECHANISM DECK



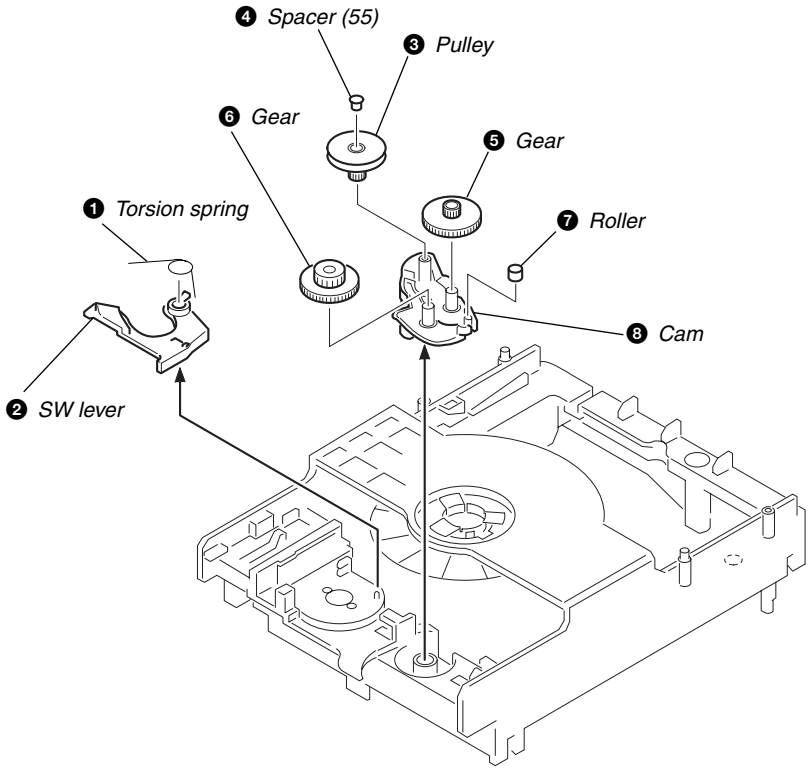
3-7. UPPER CHASSIS



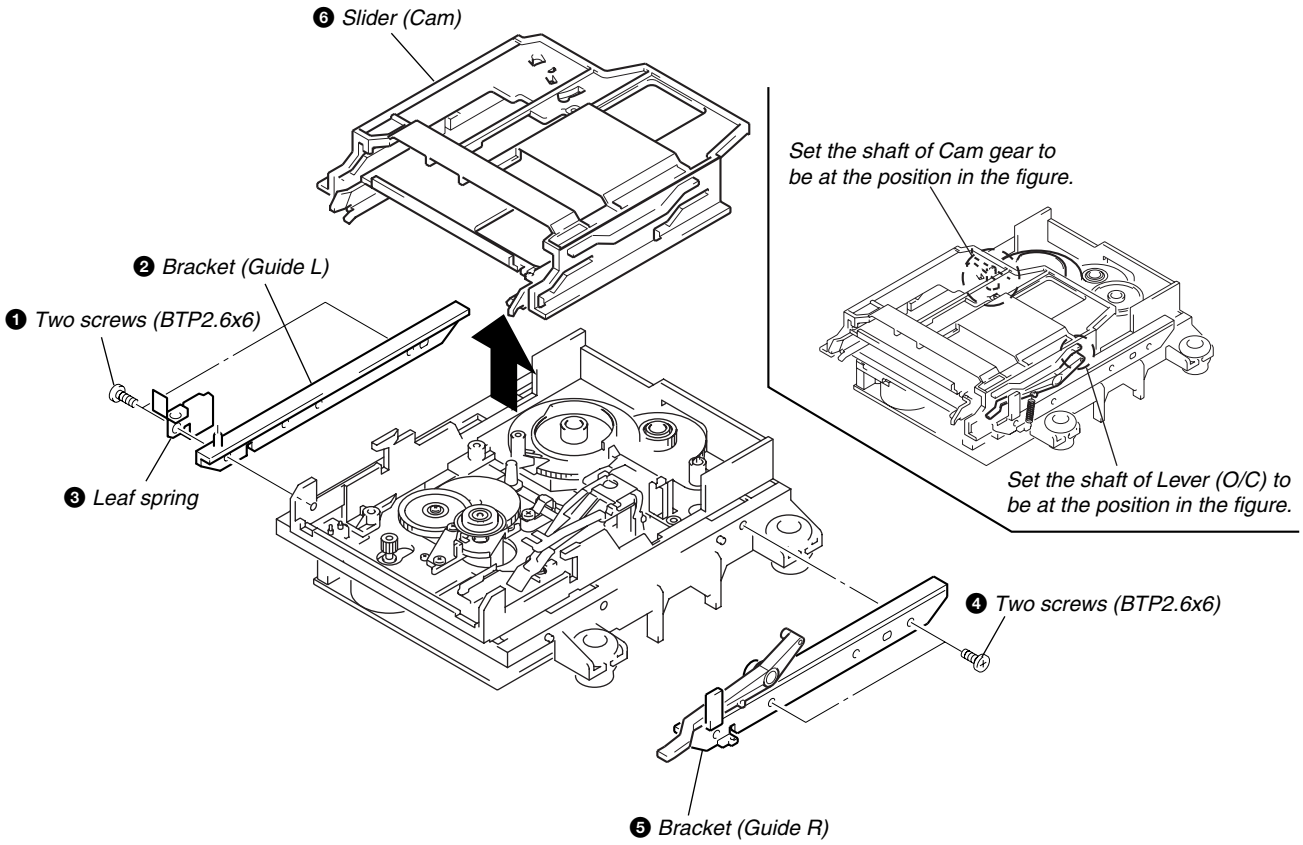
3-8. TRAY



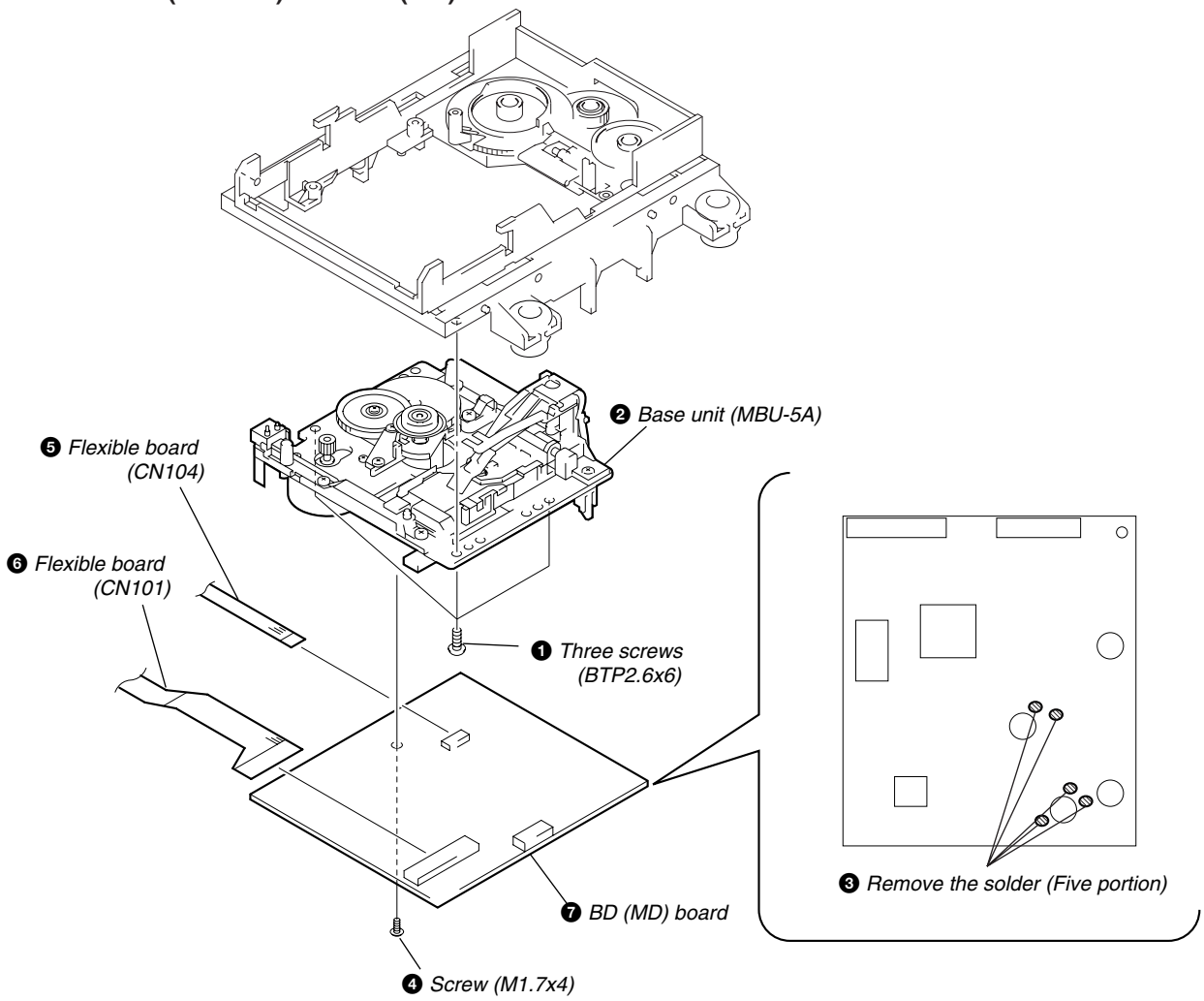
3-9. CAM



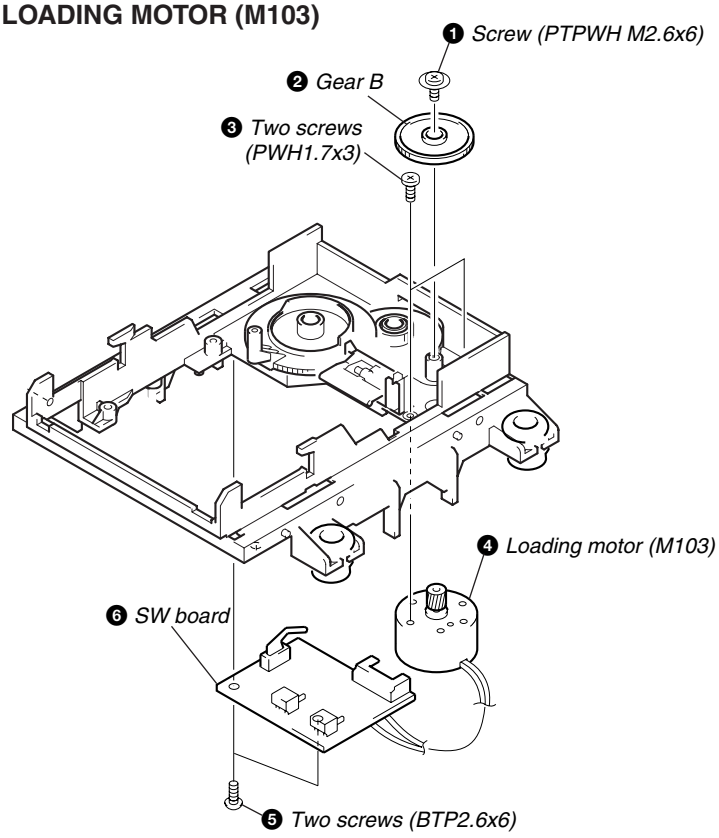
3-10. SLIDER (CAM)



3-11. BASE UNIT (MBU-5A) AND BD (MD) BOARD



3-12. SW BOARD AND LOADING MOTOR (M103)



SECTION 4
SERVICE MODE

[Panel Test Mode]

Procedure:

1. Set to standby state.
2. Press three buttons of PLAY MODE DIRECTION, CD ■, and DSG simultaneously.
3. Liquid crystal display and LED are all turned on.
4. Pless MD ⏏ to enter the version display mode. (destination, MC, CD, ST, TC, TA, TM)
5. Press MD ▶II to enter the KEY, VOL, check mode. (◀◀ I◀◀ and ▶▶ ▶▶I must be pressed for several seconds.)
6. To exit from this mode, press the buttons in the same way as step 2.

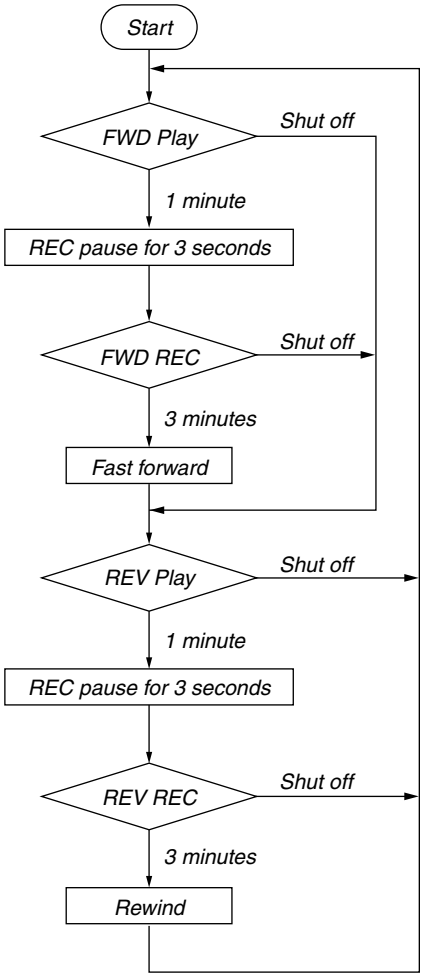
[Tape Deck Aging Mode]

This mode can be used for operation check of tape deck section.

Procedure:

1. Set a tape in the tape deck.
2. Set to standby state.
3. Press three buttons of TAPE ■, CD ■, (CD), and TAPE simultaneously.
4. The aging is executed in bellow sequence.
5. To exit from the aging mode, press the I/⏻ button to turn the power OFF.

Aging mode sequence:



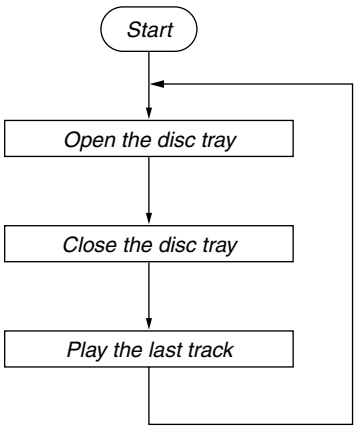
[CD Aging Mode]

This mode can be used for operation check of CD section.

Procedure:

1. Load a CD disc.
2. Set to standby state.
3. Press three buttons of TAPE ■, CD ■, and TUNER simultaneously.
4. The aging is executed in bellow sequence.
5. To exit from the aging mode, press the I/⏻ button to turn the power OFF.

Aging mode sequence:



[Cold Reset]

Clears all the memories and starts up the machine again.

Procedure:

1. POWEWR ON state is in progress.
2. Press three buttons of CD ■, PLAY MODE DIRECTION, and MD ⏏ simultaneously.

[Hot Reset]

Starts up the machine again holding the memory data.

Procedure:

1. POWEWR ON state is in progress.
2. Press three buttons of CD ■, PLAY MODE DIRECTION, and MD ▶II simultaneously.

SECTION 5
TEST MODE (MD)

5-1. PRECAUTIONS FOR USE OF TEST MODE

- Use the RM-SJ373 supplied remote control (R).
- As loading related operations will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.
  Even if the MD ⏏ button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.
  Therefore, it will be ejected while rotating.
  Be sure to press the MD ⏏ button after pressing the MENU/NO (R) button and the rotation of disc is stopped.

5-1-1. Recording laser emission mode and operating buttons

- Continuous recording mode (CREC MODE)
- Laser power check mode (LDPWR CHECK)
- Laser power adjustment mode (LDPWR ADJUST)
- Traverse (MO) check (EF MO CHECK)
- Traverse (MO) adjustment (EF MO ADJUST)
- When pressing the MD REC ● button.

5-2. SETTING THE TEST MODE

The following are two methods of entering the test mode.

Procedure 1: With the power ON, press the CD ■ button while pressing the MD ■ and MD REC ● buttons together.
When the test mode is set, "Check" will be displayed. ⏮ (R), ⏭ (R) switches between the following four groups;
···⟷ Check ⟷ Adjust ⟷ Service ⟷ Develop ⟷ ···.

Procedure 2: With the power ON, press the CD ■ button while pressing the MD ■ and SYNCHRO REC buttons together.
When the test mode is set, "TEMP CHECK" will be displayed. By setting the test mode using this procedure, only the "Check" group of procedure 1 can be executed.

5-3. EXITING THE TEST MODE

Press the button, I/⏻

5-4. BASIC OPERATIONS OF THE TEST MODE

All operations are performed using the ⏮ (R), ⏭ (R), ENTER/YES (R) button, and MENU/NO (R) button.
The functions of these buttons are as follows.

Function name	Function
⏮ (R) ⏭ (R)	Changes parameters and modes
ENTER/YES (R) button	Proceeds onto the next step. Finalizes input.
MENU/NO (R) button	Returns to previous step. Stops operations.

[MC Cold Reset]
Clears the MD memory.

Procedure:
1. POWEWR ON. FUNCTION MD.
2. Press CD ■, MD ■ and REPEAT simultaneously.

[MD SERVICE END]
Ends the service mode and clears the nonvolatile moemory.

Procedure:
1. The service mode is in progress.
2. Press CD ■, MD ■ and ENTER/START simultaneously.

[MD FLASH UP-DATE]
Writes data in the FLASH ROM from the disk.
Procedure:
1. POWER ON.
2. Press CD ■, MD ■ and I/⏻ simultaneously.

5-5. SELECTING THE TEST MODE

There are 31 types of test modes as shown below. The groups can be switched |◀◀ (R)|, |▶▶| (R)|. After selecting the group to be used. After setting a certain group, |◀◀ (R)|, |▶▶| (R)| between these modes.
Refer to "Group" in the table for details selected.
All items used for servicing can be treated using group S. So be carefully not to enter other groups by mistake.

Display	Contents	Mark	Group (∗)
TEMP CHECK	Temperature compensation offset check		C S
LDPWR CHECK	Laser power check		C S
EF MO CHECK	Traverse (MO) check		C S
EF CD CHECK	Traverse (CD) check		C S
FBIAS CHECK	Focus bias check		C S
S curve CHECK	S letter check	(X)	C
VERIFY MODE	Non-volatile memory check	(X)	C
DETRK CHECK	Detrack check	(X)	C
TEMP ADJUST	Temperature compensation offset adjustment		A S
LDPWR ADJUST	Laser power adjustment		A S
EF MO ADJUST	Traverse (MO) adjustment		A S
EF CD ADJUST	Traverse (CD) adjustment		A S
FBIAS ADJUST	Focus bias adjustment		A S
EEP MODE	Non-volatile memory control	(X) (!)	D
MANUAL CMD	Command transmission	(X)	D
SVDATA READ	Status display	(X)	D
ERR DP MODE	Error history display, clear		S
SLED MOVE	Sled check	(X)	D
ACCESS MODE	Access check	(X)	D
0920 CHECK	Outermost circumference check	(X)	D
HEAD ADJUST	Head position check	(X)	D
CPLAY2 MODE	Same functions as CPLAY MODE	(X)	D
CREC2 MODE	Same functions as CREC MODE	(X)	D
ADJ CLEAR	Initialization of non-volatile memory of adjustment value		A S
AG Set (MO)	Auto gain output level adjustment (MO)		A S
AG Set (CD)	Auto gain output level adjustment (CD)		A S
Iop Read	IOP data display		C S
Iop Write	IOP data write		A S
INFORMATION	Microprocessing version display		C S
CPLAY MODE	Continuous play mode		C A S D
CREC MODE	Continuous recording mode		C A S D

Group (∗)
C: Check A: Adjust
S: Service D: Develop

- For details of each adjustment mode, refer to "6. Electrical Adjustments".
- If a different mode has been selected by mistake, press the |MENU/NO (R)| button to exit that mode.
- Modes with (X) in the Mark column are not used for servicing and therefore are not described in detail. If these modes are set accidentally, press the |MENU/NO (R)| button to exit the mode immediately. Be especially careful not to set the modes with (!) as they will overwrite the non-volatile memory and reset it, and as a result, the unit will not operate normally.

5-5-1. Operating the Continuous Playback Mode

1. Entering the continuous playback mode
   ① Set the disc in the unit. (Whichever recordable discs or discs for playback only are available.)
   ② Press the |◀◀ (R) and ▶▶| (R) buttons and display "CPLAY MODE".
   ③ Press the ENTER/YES (R) button to change the display to "CPLAY MID".
   ④ When access completes, the display changes to "C1 = □□□□ AD = □□".
   Note : The numbers "□" displayed show you error rates and ADER.

2. Changing the parts to be played back
   ① Press the ENTER/YES (R) button during continuous playback to change the display as below.
   "CPLAY MID" → "CPLAY OUT" → "CPLAY IN" ┐
   ↑ ┘
   When pressed another time, the parts to be played back can be moved.
   ② When access completes, the display changes to "C1 = □□□□ AD = □□".
   Note : The numbers "□" displayed show you error rates and ADER.
3. Ending the continuous playback mode
   ① Press the MENU/NO (R) button. The display will change to "CPLAY MODE".
   ② Press the MD ⏏ button to remove the disc.
   Note : The playback start addresses for IN, MID, and OUT are as follows.
   IN 40h cluster
   MID 300h cluster
   OUT 700h cluster

5-5-2. Operating the Continuous Recording Mode (Use only when performing self-recording/palyback check.)

1. Entering the continuous recording mode
   ① Set a recordable disc in the unit.
   ② Press the |◀◀ (R) and ▶▶| (R) buttons and display "CREC MODE".
   ③ Press the ENTER/YES (R) button to change the display to "CREC MID".
   ④ When access completes, the display changes to "CREC (□□□□)" and "REC" indicator lights up.
   Note : The numbers "□" displayed shows you the recording position addresses.
2. Changing the parts to be recorded
   ① When the ENTER/YES (R) button is pressed during continuous recording, the display changes as below.
   "CPLAY MID" → "CPLAY OUT" → "CPLAY IN" ┐
   ↑ ┘
   When pressed another time, the parts to be recorded can be changed. "REC" indicator goes off.
   ② When access completes, the display changes to "CREC (□□□□)" and "REC" indicator lights up.
   Note : The numbers "□" displayed shows you the recording position addresses.
3. Ending the continuous recording mode
   ① Press the MENU/NO (R) button. The display changes to "CREC MODE" and "REC" indicator goes off.
   ② Press the MD ⏏ button to remove the disc.
   Note 1 : The recording start addresses for IN, MID, and OUT are as follows.
   IN 40h cluster
   MID 300h cluster
   OUT 700h cluster
   Note 2 : The MENU/NO (R) button can be used to stop recording anytime.
   Note 3 : Do not perform continuous recording for long periods of time above 5 minutes.
   Note 4 : During continuous recording, be careful not to apply vibration.

5-5-3. Non-Volatile Memory Mode (EEP MODE)

This mode reads and writes the contents of the non-volatile memory.
It is not used in servicing. If set accidentally, press the MENU/NO (R) button immediately to exit it.

5-6. FUNCTIONS OF OTHER BUTTONS

Function	Contents
MD ▶II	Sets continuous playback when pressed in the STOP state. When pressed during continuous playback, the tracking servo turns ON/OFF.
MD REC ●	Continuous recording.
MD ■	Stops continuous playback and continuous recording.
▶▶ ∗	The sled moves to the outer circumference only when this is pressed.
◀◀ ∗	The sled moves to the inner circumference only when this is pressed.
CLEAR (R)	Switches between the pit and groove modes when pressed.
PLAY MODE	Switches the spindle servo mode (CLV S ⟷ CLV A).
DISPLAY (R)	Switches the displayed contents each time the button is pressed
MD ⏏	Ejects the disc

∗ This function works only when the MD ■ button is pressed and "MD" is displayed. In other cases, it works everytime the MD ■ button is pressed.

5-7. TEST MODE DISPLAYS

Each time the DISPLAY (R) button is pressed, the display changes in the following order.

1. Mode display

Displays "TEMP ADJUST", "CPLAYMODE", etc.

2. Error rate display

Displays the error rate in the following way.

C1 = □□□□ AD = □□

C1 = Indicates the C1 error.

AD = Indicates ADER.

3. Address display

The address is displayed as follows. (MO:recordable disc, CD:playback only disc)

Pressing the CLEAR button switches between the groove display and pit display.

h = □□□□ s = □□□□ (MO pit and CD)

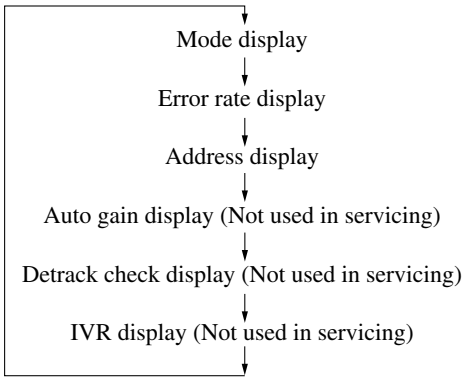
h = □□□□ a = □□□□ (MO groove)

h = Indicates the header address.

s = Indicates the SUBQ address.

a = Indicates the ADIP address.

Note: "–" is displayed when servo is not imposed.



4. Auto gain display (Not used in servicing)

The auto gain is displayed as follows.

AG = □□ / □□ [OK]

5. Detrack check display (Not used in servicing)

The detrack is displayed as follows.

ADR = □□□□□□□

6. IVR display (Not used in servicing)

The IVR is displayed as follows.

[□□] [□□] [□□]

MEANINGS OF OTHER DISPLAYS

Display	Contents	
	When Lit	When Off
▶II/MD ∗	During continuous playback	STOP (CLV: OFF) (Light off)
	(CLV: ON) (Green)	
▶II/MD ∗	Tracking servo OFF (Unber)	Tracking servo ON (Green)
REC	Recording mode ON	Recording mode OFF
SYNC	CLV low speed mode	CLV normal mode
LEVEL-SYNC	ABCD adjustment completed	
OVER	Tracking offset cancel ON	Tracking offset cancel OFF
1	Tracking auto gain OK	
REPEAT	Focus auto gain OK	
TRACK	Pit	Groove
DISC	High reflection	Low reflection
SHUFFLE	CLV S	CLV A
MONO	CLV LOCK	CLV UNLOCK

∗ Differentiate MD ▶II by the color of the button indicator.

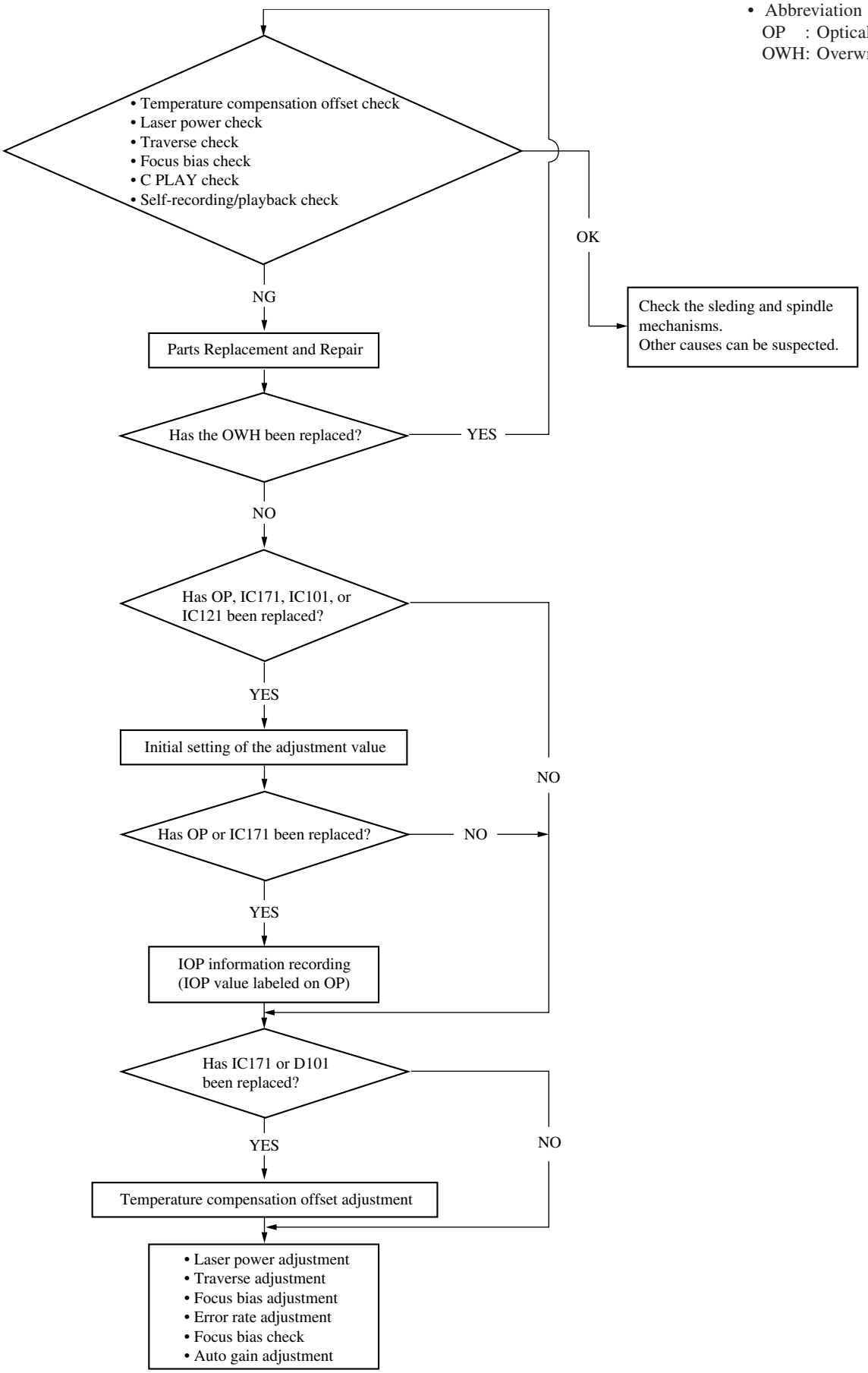
SECTION 6
ELECTRICAL ADJUSTMENTS

MD SECTION

6-1. Parts Replacement and Adjustment

- Check and adjust the MDM and MBU as follows.
  The procedure changes according to the part replaced

- Abbreviation
  OP : Optical pick-up
  OWH: Overwrite head

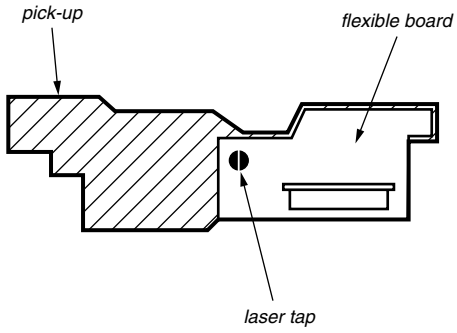


6-2. PRECAUTIONS FOR CHECKING LASER DIODE EMISSINON

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

6-3. PRECAUTIONS FOR USE OF OPTICAL PICK-UP (KMS-260A)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

6-4. PRECAUTIONS FOR ADJUSTMENTS

1) When replacing the following parts, perform the adjustments and checks with **O** in the order shown in the following table.

	Optical Pick-up	BD Board			
		IC171	D101	IC101, IC121	IC192
1. Initial setting of adjustment value	O	O	×	O	×
2. Recording of IOP information (Value written in the pick-up)	O	O	×	×	×
3. Temperature compensation offset adjustment	×	O	O	×	×
4. Laser power adjustment	O	O	×	O	O
5. Traverse adjustment	O	O	×	O	×
6. Focus bias adjustment	O	O	×	O	×
7. Error rate check	O	O	×	O	×
8. Auto gain output level adjustment	O	O	×	O	×

2) Set the test mode when performing adjustments.
After completing the adjustments, exit the test mode.
Perform the adjustments and checks in "group S" of the test mode.
3) Perform the adjustments to be needed in the order shown.
4) Use the following tools and measuring devices.
- Check Disc (MD) TDYS-1
(Parts No. 4-963-646-01)
- Test Disk (MDW-74/AU-1) (Parts No. 8-892-341-41)
- Laser power meter LPM-8001 (Parts No. J-2501-046-A)
or MD Laser power meter 8010S (Parts No. J-2501-145-A)
- Oscilloscope (Measure after performing CAL of prove.)
- Digital voltmeter
- Thermometer
- Jig for checking BD board waveform
(Parts No. : J-2501-149-A)

5) When observing several signals on the oscilloscope, etc., make sure that VC and ground do not connect inside the oscilloscope.
(VC and ground will become short-circuited.)
6) Using the above jig enables the waveform to be checked without the need to solder.
(Refer to Servicing Note on page 9.)
7) As the disc used will affect the adjustment results, make sure that no dusts nor fingerprints are attached to it.

Note:
When performing laser power checks and adjustment (electrical adjustment), use of the new MD laser power meter 8010S (J-2501-145-A) instead of the conventional laser power meter is convenient. It sharply reduces the time and trouble to set the laser power meter sensor onto the objective lens of the optical pick-up.

6-5. CREATING CONTINUOUSLY RECORDED DISC

* This disc is used in focus bias adjustment and error rate check. The following describes how to create a continuous recording disc.

1. Insert a disc (blank disc) commercially available.
2. Rotate the [AMS] dial and display "CREC MODE".
3. Press the [ENTER/YES] button again to display "CREC MID". Display "CREC (0300)" and start to recording.
4. Complete recording within 5 minutes.
5. Press the [MENU/NO] button and stop recording .
6. Press the [MD ⏏] button and remove the disc.

The above has been how to create a continuous recorded data for the focus bias adjustment and error rate check.

Note :
• Be careful not to apply vibration during continuous recording.

6-6. Checks Prior to Repairs

These checks are performed before replacing parts according to "approximate specifications" to determine the faulty locations. For details, refer to "Checks Prior to Parts Replacement and Adjustments" (See page 11).

6-6-1. Temperature Compensation Offset Check

When performing adjustments, set the internal temperature and room temperature to 22 to 28°C.

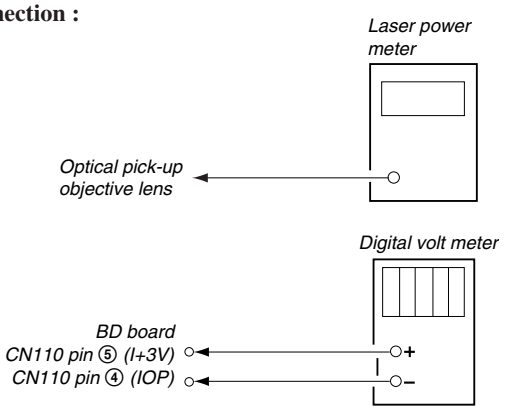
Checking Procedure:

1. Rotate the AMS dial to display "TEMP CHECK".
2. Press the ENTER/YES button.
3. "T=@@(##) OK" should be displayed. If "T=@@ (##) NG" is displayed, it means that the results are bad.
   (@@ indicates the current value set, and ## indicates the value written in the non-volatile memory.)

6-6-2. Laser Power Check

Before checking, check the IOP value of the optical pick-up. (Refer to 7-8. Recording and Displaying IOP Information.)

Connection :



Checking Procedure:

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ■ button and display the "MD", and then press the ◀◀ button or ▶▶ button to move the optical pick-up.)
   Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Then, rotate the AMS dial and display "LDPWR CHECK" (C02).
3. Press the ENTER/YES button once and display "LD 0.9 mW $ ⬚". Check that the reading of the laser power meter become 0.84 to 0.92 mW.
4. Press the ENTER/YES button once more and display "LD 7.0 mW $ ⬚". Check that the reading the laser power meter and digital volt meter satisfy the specified value.

Specified Value :

Laser power meter reading : 7.0 ± 0.2 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)

KMS260A
27X40
B0825

(For details of the method for checking this value, refer to "7-8. Recording and Displaying IOP Information".)

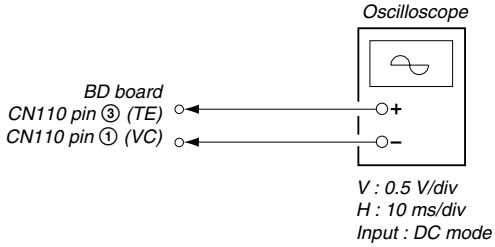
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

5. Press the MENU/NO button and display "LDPWR CHECK" and stop the laser emission.
   (The MENU/NO button is effective at all times to stop the laser emission.)

Note 1: After step 4, each time the ENTER/YES button is pressed, the display will be switched between "LD 0.7 mW $ ⬚", "LD 6.2 mW $ ⬚", and "LD WP $ ⬚". Nothing needs to be performed here.

6-6-3. Traverse Check

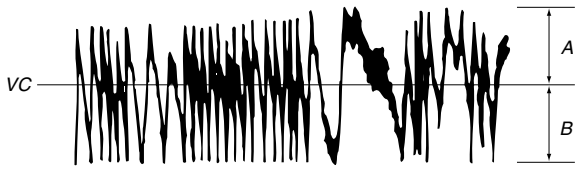
Connection :



Checking Procedure:

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the ■ button and display the "MD", and then press the ▶▶ button and move the optical pick-up outside the pit.
4. Rotate the AMS dial and display "EF MO CHECK"(C03).
5. Press the ENTER/YES button and display "EFB = ⬚ MO-R". (Laser power READ power/Focus servo ON/tracking servo OFF/ spindle (S) servo ON)
6. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial. (Read power traverse checking)

(Traverse Waveform)

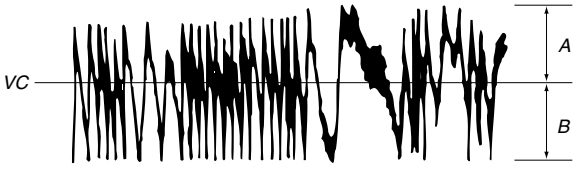


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

7. Press the ENTER/YES button and display "EFB = ⬚ MO-W".
8. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial. (Write power traverse checking)

(Traverse Waveform)



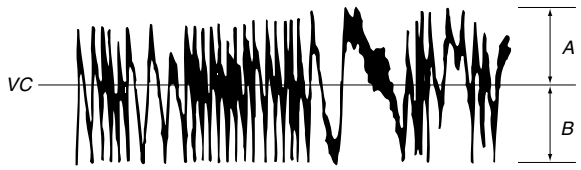
Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

9. Press the ENTER/YES button display "EFB = ⬚ MO-P". Then, the optical pick-up moves to the pit area automatically and servo is imposed.

10. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial.

(Traverse Waveform)

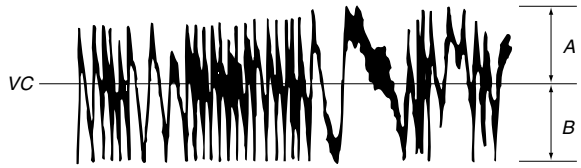


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

11. Press the ENTER/YES button display "EF MO CHECK" The disc stops rotating automatically.
12. Press the MD ⏏ button and remove the disc.
13. Load the check disc (MD) TDYS-1.
14. Roteto the AMS dial and display "EF CD CHECK".
15. Press the ENTER/YES button and display "EFB = □□ CD". Servo is imposed automatically.
16. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial.

(Traverse Waveform)



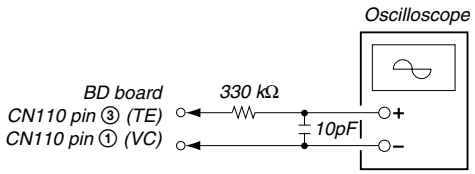
Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

17. Press the ENTER/YES button and display "EF CD CHECK".
18. Press the MD ⏏ button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.

Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



6-6-4. Focus Bias Check

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. Press the MENU/NO button when "C1 = □□□□ AD = □□" is displayed.
5. Rotate the AMS dial and display "FBIAS CHECK".
6. Press the ENTER/YES button and display " □□□□/□□ c = □□". The first four digits indicate the C1 error rate, the two digits after "/" indicate ADER, and the 2 digits after "c =" indicate the focus bias value.
   Check that the C1 error is below 220 and ADER is below 2.
7. Press the ENTER/YES button and display " □□□□/□□ b = □□". Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES button and display " □□□□/□□ a = □□". Check that the C1 error is below 220 and ADER is below 2.
9. Press the MENU/NO button, next press the MD ⏏ button, and remove the test disc.

6-6-5. C PLAY Checking

MO Error Rate Check

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. If the C1 error rate is below 80, check that ADER is below 2.
6. Press the MENU/NO button, stop playback, press the MD ⏏ button, and test disc.

CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. The display changes to "C = □□□□ AD = □□".
5. Check that the C1 error rate is below 50.
6. Press the MENU/NO button, stop playback, press the MD ⏏ button, and the test disc.

6-6-6. Self-Recording/playback Check

Prepare a continuous recording disc using the unit to be repaired and check the error rate.

Checking Procedure :

1. Insert a recordable disc (blank disc) into the unit.
2. Rotate the AMS dial to display "CREC MODE".
3. Press the ENTER/YES button to display the "CREC MID".
4. When recording starts, "REC" is displayed, this becomes "CREC (@@@@)" (@@@@ is the address), and recording starts.
5. About 1 minute later, press the MENU/NO button to stop continuous recording.
6. Rotate the AMS dial to display "C PLAY MODE".
7. Press the ENTER/YES button to display "C PLAY MID".
8. "C1 = □□□□ AD = □□" will be displayed.
9. Check that the C1 error becomes below 80 and the AD error below 2.
10. Press the MENU/NO button to stop playback, and press the MD ⏏ button and remove the disc.

6-7. Initial Setting of Adjustment Value

Note:
Mode which sets the adjustment results recorded in the non-volatile memory to the initial setting value. However the results of the temperature compensation offset adjustment will not change to the initial setting value.
If initial setting is performed, perform all adjustments again excluding the temperature compensation offset adjustment.
For details of the initial setting, refer to "6-4. Precautions on Adjustments" and execute the initial setting before the adjustment as required.

Setting Procedure :
1. Rotate the AMS dial to display "ADJ CLEAR".
2. Press the ENTER/YES button. "Complete!" will be displayed momentarily and initial setting will be executed, after which "ADJ CLEAR" will be displayed.

6-8. Recording and Displaying the IOP Information

The IOP data can be recorded in the non-volatile memory. The IOP value on the label of the optical pickup and the IOP value after the adjustment will be recorded. Recording these data eliminates the need to read the label on the optical pick-up.

Recording Procedure :
1. With the power ON, press the MD ■ button while pressing the CD ■ and MD REC ● buttons together.
2. Rotate the AMS dial to display "Service", and press ENTER/YES button.
3. Rotate the AMS dial to display "Iop.Write", and press the ENTER/YES button.
4. The display becomes Ref=@@@.@ (@ is an arbitrary number) and the numbers which can be changed will blink.
5. Input the IOP value written on the optical pick-up.
   To select the number : Rotate the dial.
   To select the digit : Press the MD WALKMAN SYNC button.
6. When the ENTER/YES button is pressed, the display becomes "Measu=@@@.@" (@ is an arbitrary number).
7. As the adjustment results are recorded for the 6 value. Leave it as it is and press the ENTER/YES button.
8. "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".

Display Procedure :
1. Rotate the AMS dial to display "Iop.Read".
2. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ indicates the Iop value labeled on the pick-up.
   ##.# indicates the Iop value after adjustment
3. To end, press the MENU/NO button to display "Iop Read".

6-9. TEMPERATURE COMPENSATION OFFSET ADJUSTMENT

Save the temperature data at that time in the non-volatile memory as 25 ˚C reference data.

Note :
1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22 ˚C to 28 ˚C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature of 22 ˚C to 28 ˚C.
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

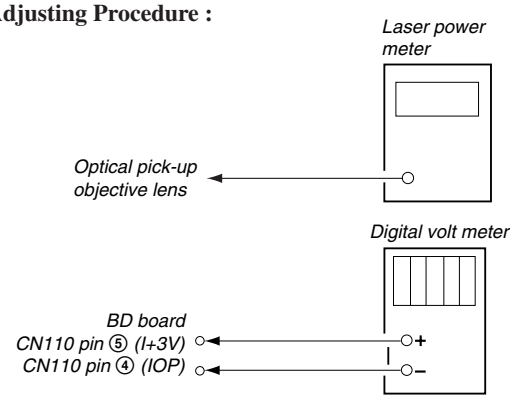
Adjusting Procedure :
1. Rotate the AMS dial and display "TEMP ADJUST".
2. Press the ENTER/YES button and select the "TEMP ADJUST" mode.
3. "TEMP = □□ OK" and the current temperature data will be displayed.
4. To save the data, press the ENTER/YES button.
   When not saving the data, press the MENU/NO button.
5. When the ENTER/YES button is pressed, "TEMP = □□ SAVE" will be displayed and turned back to "TEMP ADJUST" display then. When the MENU/NO button is pressed, "TEMP ADJUST" will be displayed immediatelly.

Specified Value :
The "TEMP = □□" should be within "E0 - EF", "F0 - FF", "00 - 0F", "10 - 1F" and "20 - 2F".

6-10. LASER POWER ADJUSTMENT

Check the IOP value of the optical pick-up before adjustments. (Refer to 7-8. Recording and Displaying IOP Information.)

Connection :
Adjusting Procedure :



1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ■ button and display the "MD", and then press the ◀◀ button or ▶▶ button to move the optical pick-up.)
   Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Rotate the AMS dial and display "LDPWR ADJUST". (Laser power : For adjustment)
3. Press the ENTER/YES button once and display "LD 0.9 mW $ □□".
4. Rotate the AMS dial so that the reading of the laser power meter becomes 0.85 to 0.91 mW. Press the ENTER/YES button after setting the range knob of the laser power meter, and save the adjustment results. ("LD SAVE $ □□" will be displayed for a moment.)
5. Then "LD 7.0 mW $ □□" will be displayed.

6. Rotate the AMS dial so that the reading of the laser power meter becomes 6.9 to 7.1 mW, press the ENTER/YES button and save it.

Note : Do not perform the emission with 7.0 mW more than 15 seconds continuously.

7. Then, rotate the AMS dial and display "LDPWR CHECK".
8. Press the ENTER/YES button once and display "LD 0.9 mW $ ▯▯". Check that the reading of the laser power meter become 0.85 to 0.91 mW.
9. Press the ENTER/YES button once more and display "LD 7.0 mW $ ▯▯". Check that the reading the laser power meter and digital volt meter satisfy the specified value.
   Note down the digital voltmeter reading value.

Specified Value :

Laser power meter reading : 7.0 ± 0.1 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)

KMS260A
27X40
B0825

(For details of the method for checking this value, refer to "7-8. Recording and Displaying IOP Information".)

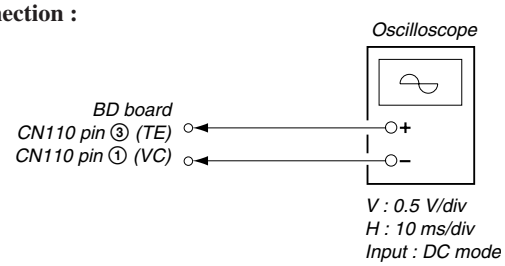
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

10. Press the MENU/NO button and display "LDPWR CHECK" and stop the laser emission.
    (The MENU/NO button is effective at all times to stop the laser emission.)
11. Rotate the AMS knob to display "Iop.Write".
12. Press the ENTER/YES button. When the display becomes Ref=@@@.@ (@ is an arbitrary number), press the ENTER/YES button to display "Measu=@@@.@" (@ is an arbitrary number).
13. The numbers which can be changed will blink. Input the Iop value noted down at step 9.
    To select the number : Rotate the AMS dial.
    To select the digit : Press the AMS dial.
14. When the ENTER/YES button is pressed, "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".

Note 1: After step 4, each time the ENTER/YES button is pressed, the display will be switched between "LD 0.7 mW $ ▯▯", "LD 6.2 mW $ ▯▯", and "LD WP $ ▯▯". Nothing needs to be performed here.

6-11. TRAVERSE ADJUSTMENT

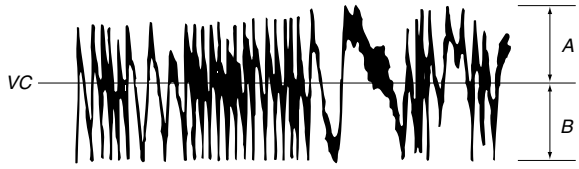
Connection :



Adjusting Procedure :

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the ■ button and display the "MD", and then press the ■ button and display the "MD", and then press the ▶▶ button and move the optical pick-up outside the pit.
4. Rotate the AMS dial and display "EF MO ADJUS" (C11).
5. Press the ENTER/YES button and display "EFB = ▯▯ MO-R". (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Rotate the AMS dial so that the waveform of the oscilloscope becomes the specified value.
   (When the AMS dial is rotated, the ▯▯ of "EFB= ▯▯" changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Read power traverse adjustment)

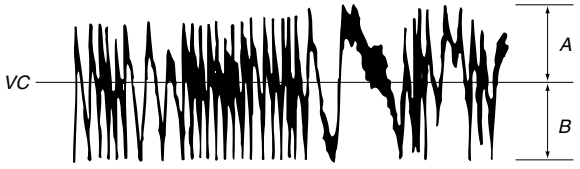
(Traverse Waveform)



Specification A = B

7. Press the ENTER/YES button and save the result of adjustment to the non-volatile memory ("EFB = ▯▯ SAVE" will be displayed for a moment. Then "EFB = ▯▯ MO-W" will be displayed).
8. Rotate the AMS dial so that the waveform of the oscilloscope becomes the specified value.
   (When the AMS dial is rotated, the ▯▯ of "EFB- ▯▯" changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Write power traverse adjustment)

(Traverse Waveform)

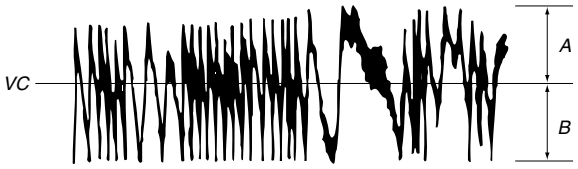


Specification A = B

9. Press the ENTER/YES button, and save the adjustment results in the non-volatile memory. ("EFB = ▯▯ SAVE" will be displayed for a moment.)
10. "EFB = ▯▯ MO-P". will be displayed.
    The optical pick-up moves to the pit area automatically and servo is imposed.

11. Rotate the AMS dial until the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

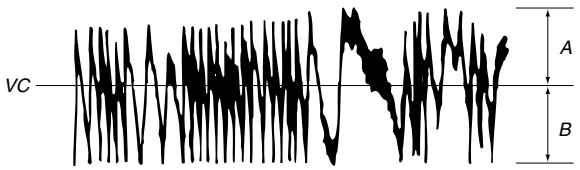
(Traverse Waveform)



Specification A = B

12. Press the ENTER/YES button, and save the adjustment results in the non-volatile memory. ("EFB = □□ SAVE" will be displayed for a moment.)
    Next "EF MO ADJUST" is displayed. The disc stops rotating automatically.
13. Press the MD ⏏ button and remove the disc.
14. Load the check disc (MD) TDYS-1.
15. Roteto AMS dial and display "EF CD ADJUST".
16. Press the ENTER/YES button and display "EFB = □□ CD". Servo is imposed automatically.
17. Rotate the AMS dial so that the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)

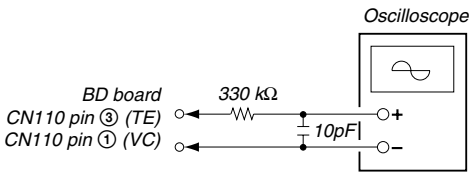


Specification A = B

18. Press the ENTER/YES button, display "EFB = □□ SAVE" for a moment and save the adjustment results in the non-volatile memory.
    Next "EF CD ADJUST" will be displayed.
19. Press the MD ⏏ button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.

Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



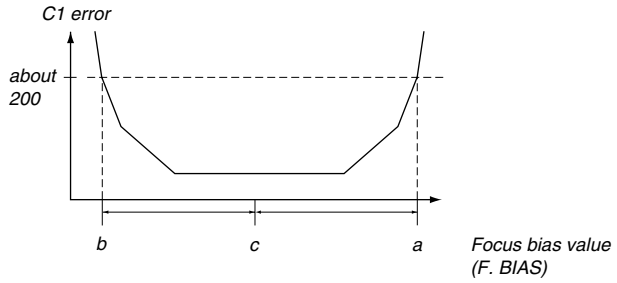
6-12. FOCUS BIAS ADJUSTMENT

Adjusting Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER YES button and display "CPLAY MID".
4. Press the MENU/NO button when "C1 = □□□□ AD = □□" is displayed.
5. Rotate the AMS dial and display "FBIAS ADJUS".
6. Press the ENTER/YES button and display " □□□□/□□ a = □□". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [a =] indicate the focus bias value.
7. Rotate the AMS dial in the clockwise direction and find the focus bias value at which the C1 error rate becomes about 200 (Refer to Note 2).
8. Press the ENTER/YES button and display " □□□□/□□ b = □□".
9. Rotate the AMS dial in the counterclockwise direction and find the focus bias value at which the C1 error rate becomes about 200.
10. Press the ENTER/YES button and display " □□□□/□□ c = □□".
11. Check that the C1 error rate is below 50 and ADER is 00. Then press the ENTER/YES button.
12. If the "(□□)" in "□□ - □□ - □□ (□□)" is above 20, press the ENTER/YES button.
    If below 20, press the MENU/NO button and repeat the adjustment from step 2.
13. Press the MD ⏏ button to remove the test disc.

Note 1 : The relation between the C1 error and focus bias is as shown in the following figure. Find points a and b in the following figure using the above adjustment. The focal point position C is automatically calculated from points a and b.

Note 2 : As the C1 error rate changes, perform the adjustment using the average vale.



6-13. ERROR RATE CHECK

6-13-1. CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. Check that the C1 error rate is below 20.
6. Press the MENU/NO button, stop playback, press the MD ⏏ button, and remove the test disc.

6-13-2. MO Error Rate Check

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. If the C1 error rate is below 50, check that ADER is 00.
6. Press the MENU/NO button, stop playback, press the MD ⏏ button, and remove the test disc.

6-14. FOCUS BIAS CHECK

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. Press the MENU/NO button when "C1 = □□□□ AD = □□" is displayed.
5. Rotate the AMS dial and display "FBIAS CHECK".
6. Press the ENTER/YES button and display " □□□□/□□ c = □□". The first four digits indicate the C1 error rate, the two digits after "/" indicate ADER, and the 2 digits after "c =" indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is below 2.
7. Press the ENTER/YES button and display " □□□□/□□ b = □□". Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES button and display " □□□□/□□ a = □□". Check that the C1 error is below 220 and ADER is below 2.
9. Press the MENU/NO button, next press the MD ⏏ button, and remove the continuously recorded disc.

Note 1 : If the C1 error and ADER are above other than the specified value at points a (step 8. in the above) or b (step 7. in the above), the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

6-15. Auto Gain Control Output Level Adjustment

Be sure to perform this adjustment when the pickup is replaced. If the adjustment results becomes "Adjust NG!", the pickup may be faulty or the servo system circuits may be abnormal.

6-15-1. CD Auto Gain Control Output Level Adjustment

Adjusting Procedure :

1. Insert the check disc (MD) TDYS-1.
2. Rotate the AMS dial to display "AG Set (CD)".
3. When the ENTER/YES button is pressed, the adjustment will be performed automatically.
   "Complete!!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (CD)".
4. Press the MD ⏏ button to remove the disc.

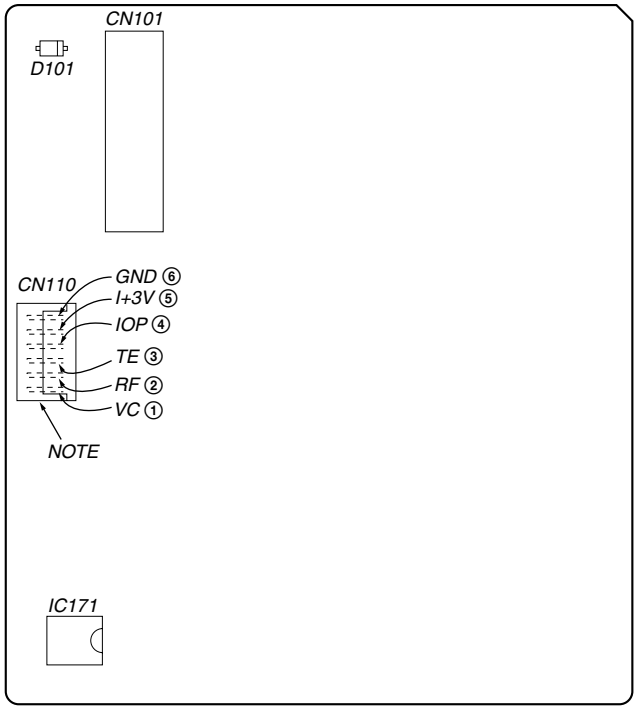
6-15-2. MO Auto Gain Control Output Level Adjustment

Adjusting Procedure :

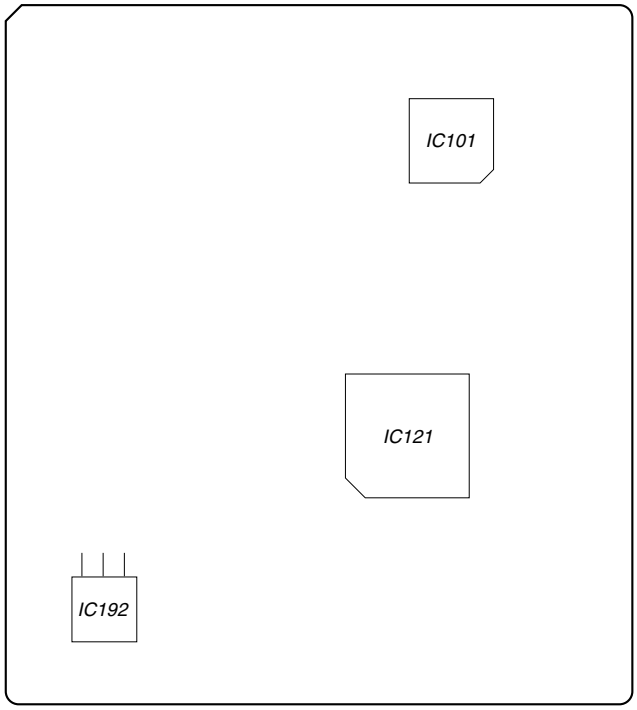
1. Insert the reference disc (MDW-74/AU-1) for recording.
2. Rotate the AMS dial to display "AG Set (MO)".
3. When the ENTER/YES button is pressed, the adjustment will be performed automatically.
   "Complete!!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (MO)".
4. Press the MD ⏏ button to remove the disc.

6-16. ADJUSTING POINTS AND CONNECTING POINTS

[BD BOARD] (SIDE A)



[BD BOARD] (SIDE B)



NOTE: It is useful to use the jig. for checking the waveform. (Refer to Servicing Note on page 6.)

DECK SECTION

0 dB=0.775 V

Note: Confirm each contents of this section first of all. If the results are not satisfied, do the adjustment.

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

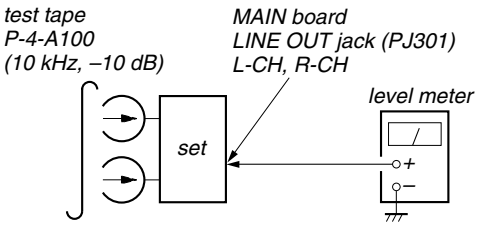
• Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment

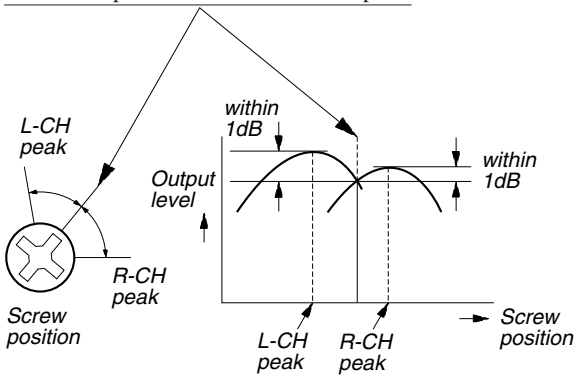
Record/Playback Head Azimuth Adjustment

Procedure:

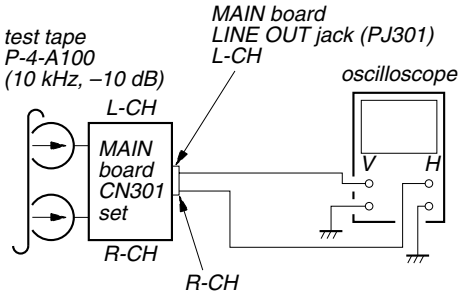
1. Mode: Playback

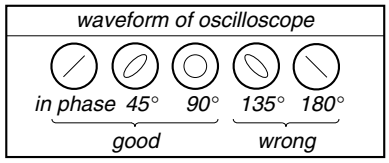


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



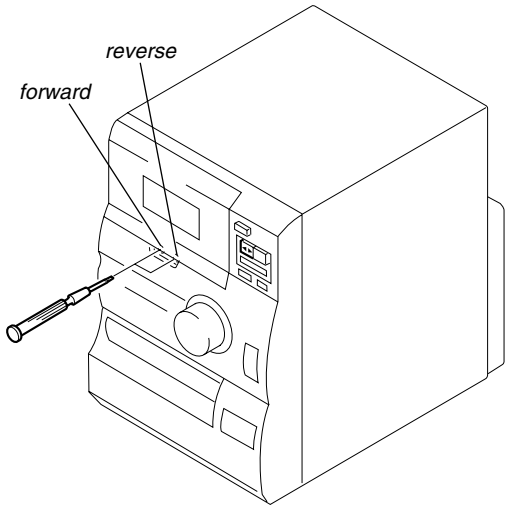
3. Mode: Playback





4. Repeat step 1 to 3 in playback (REV) mode.
5. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location:



SECTION 7
DIAGRAMS

NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGARAMS

Note on Printed Wiring Board:

- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern from the side which enables seeing.

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 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

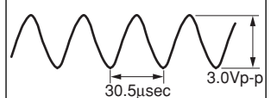
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B– Line.
- ▭ : adjustment for repair.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : TUNER
  - Σ : TAPE PLAY
  - Σ» : TAPE RECORD
  - ⇨ : CD PLAY (ANALOG OUT)
  - ⇨ : CD PLAY (OPTICAL OUT)
- Abbreviation
  - AUS : Australian model.
  - SP : Singapore model.
  - MY : Malaysia model.
  - TW : Taiwan model.
  - HK : Hong Kong model.
  - AR : Argentine model.
  - CND : Canadian model.
  - AED : North European model.
  - KR : Korean model.
  - TH : Thai model.
  - JE : Tourist model.

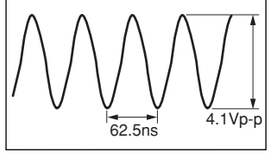
• Waveforms

– MAIN Board –

① IC306 ⑪

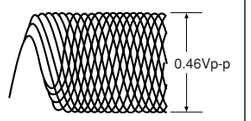


② IC306 ⑬



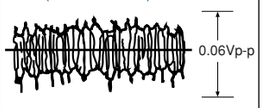
– BD (1/2) SECTION –

① IC101 ①, ② (I, J) (PLAY mode)



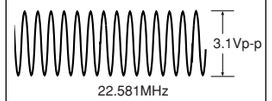
② IC101 ④ (A) (PLAY mode)

③ IC101 ⑧, ⑨ (E, F) (PLAY mode)

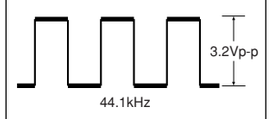


– BD (2/2) SECTION –

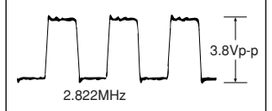
④ IC121 ⑯ (OSCI)



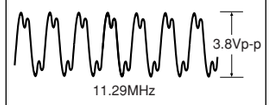
⑤ IC121 ㉗ (LRCK)



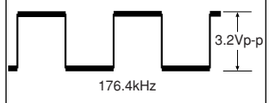
⑥ IC121 ㉘ (XBCK)



⑦ IC121 ㉙ (FS256)

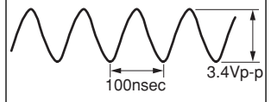


⑧ IC121 ㉚ (FS4)

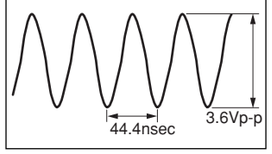


– DIGITAL Board –

① IC316 ⑬



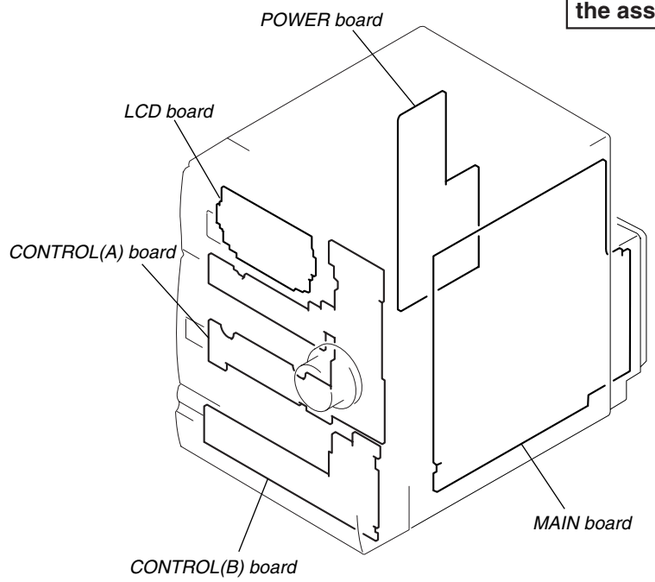
② IC202 ⑧

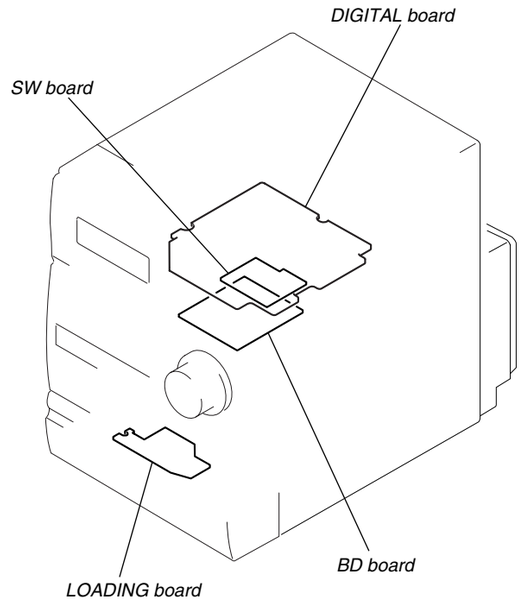


7-1. CIRCUIT BOARDS LOCATION

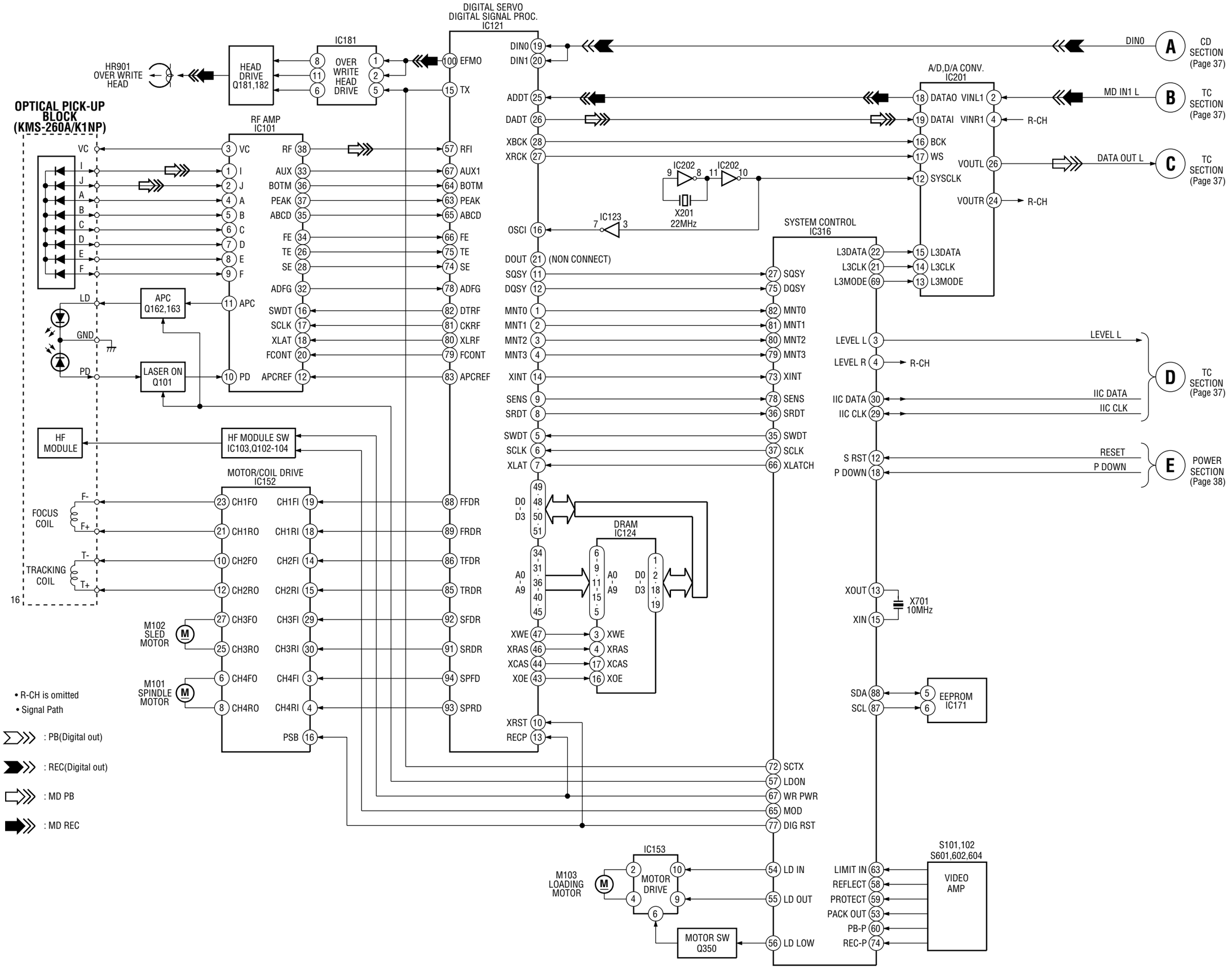
Note

CD block, tape deck block and tuner pack are supplied with the assembled block.

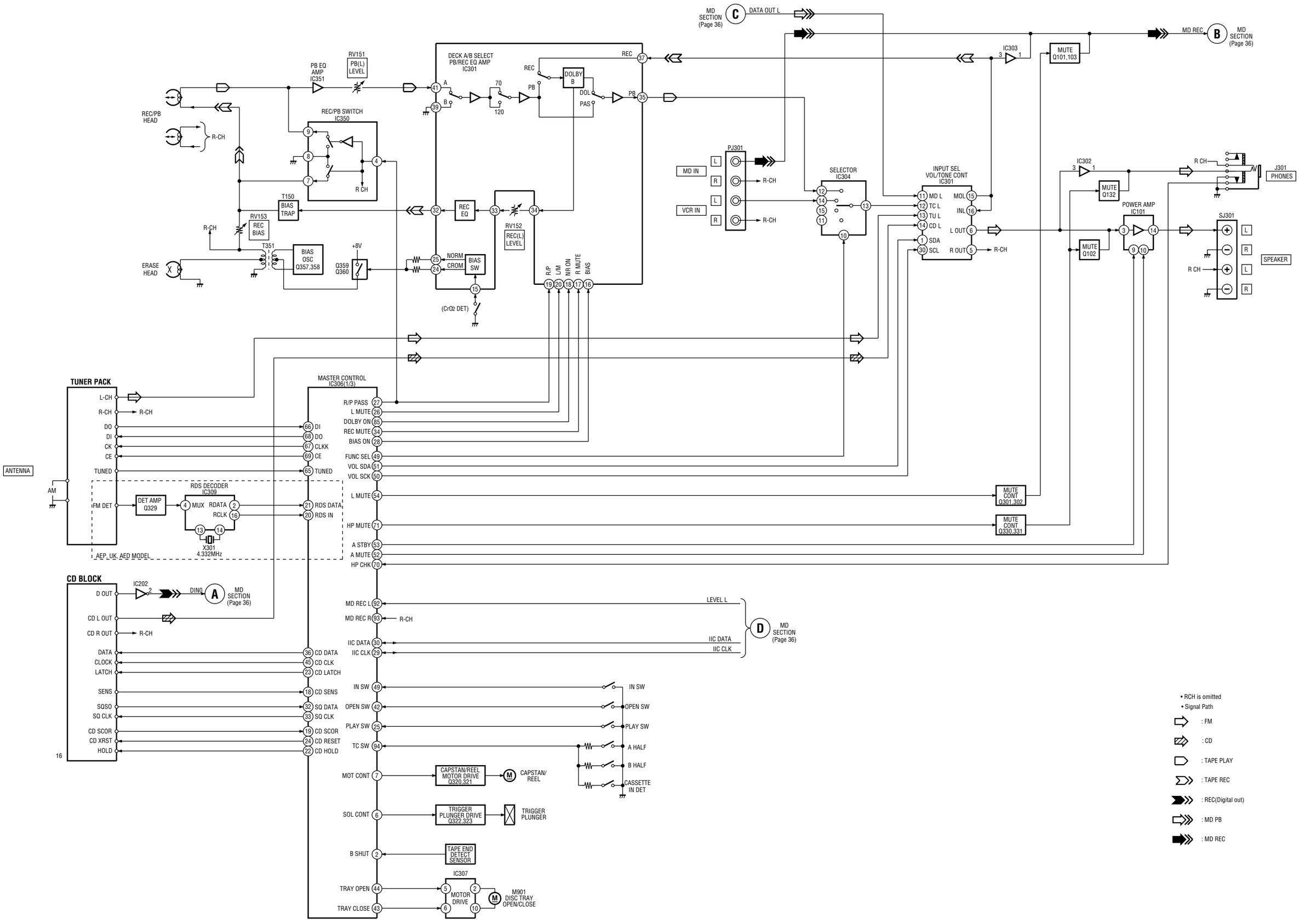




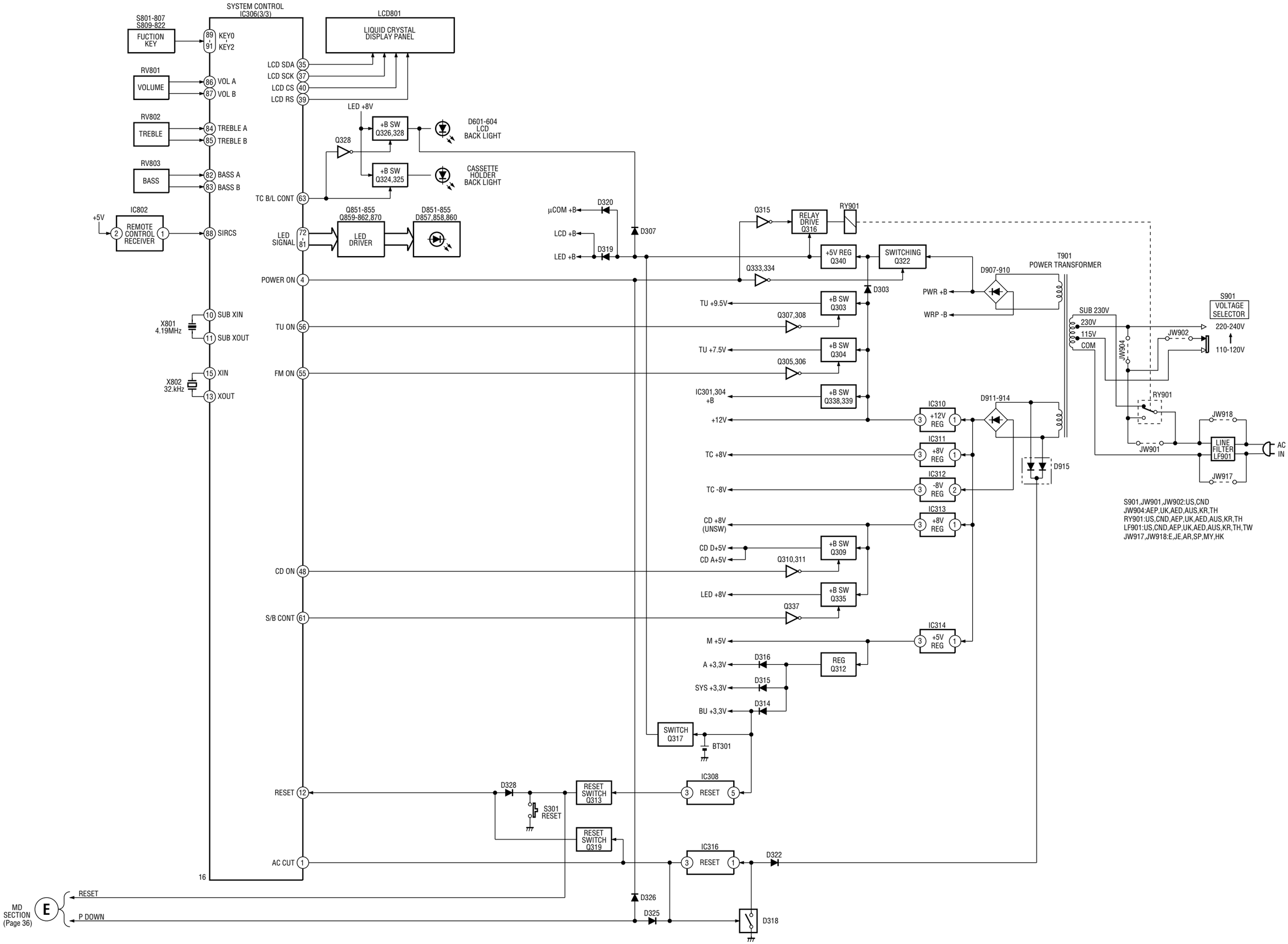
7-2. BLOCK DIAGRAM – BD Section –



7-3. BLOCK DIAGRAM – MAIN Section –

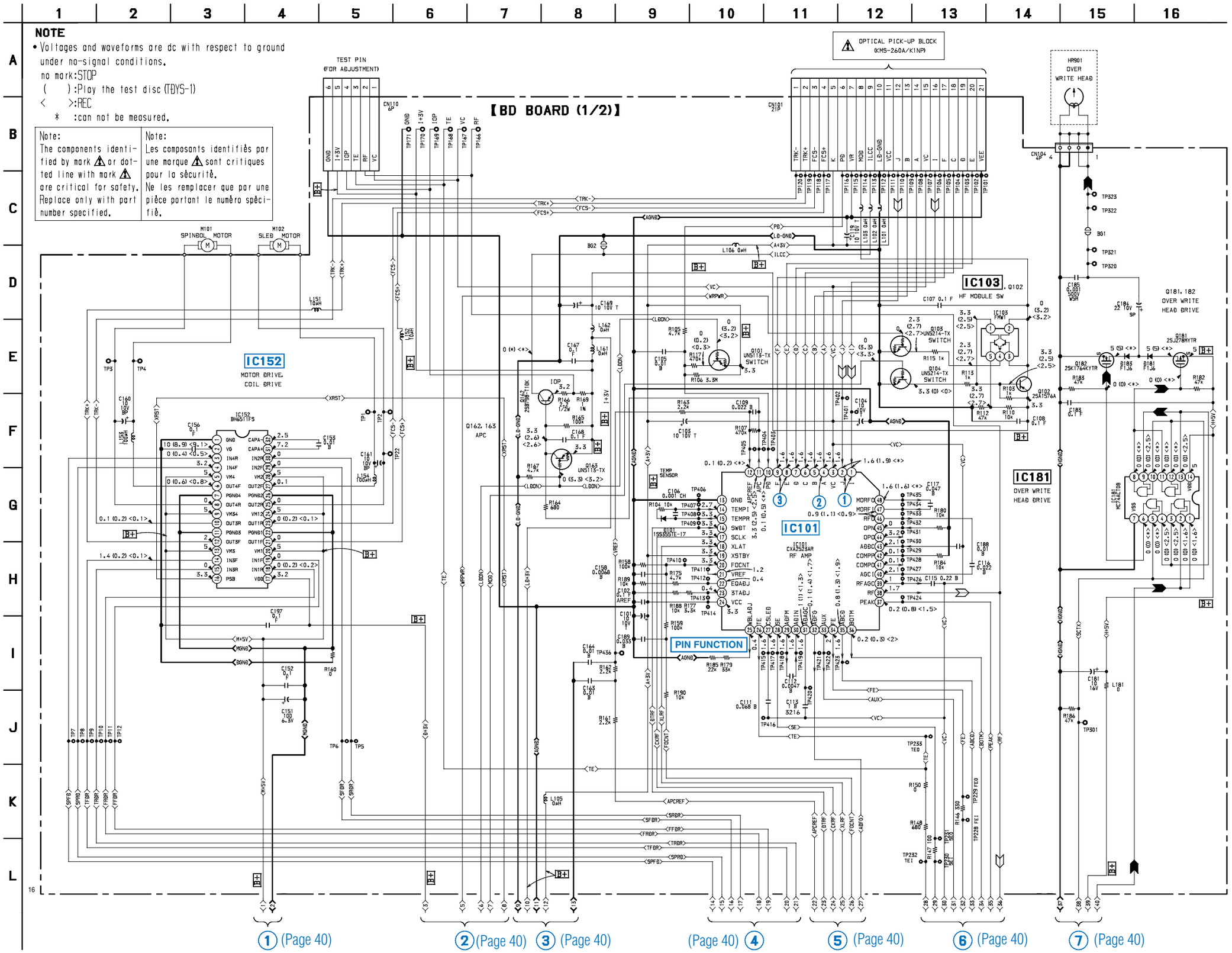


7-4. BLOCK DIAGRAM – POWER Section –



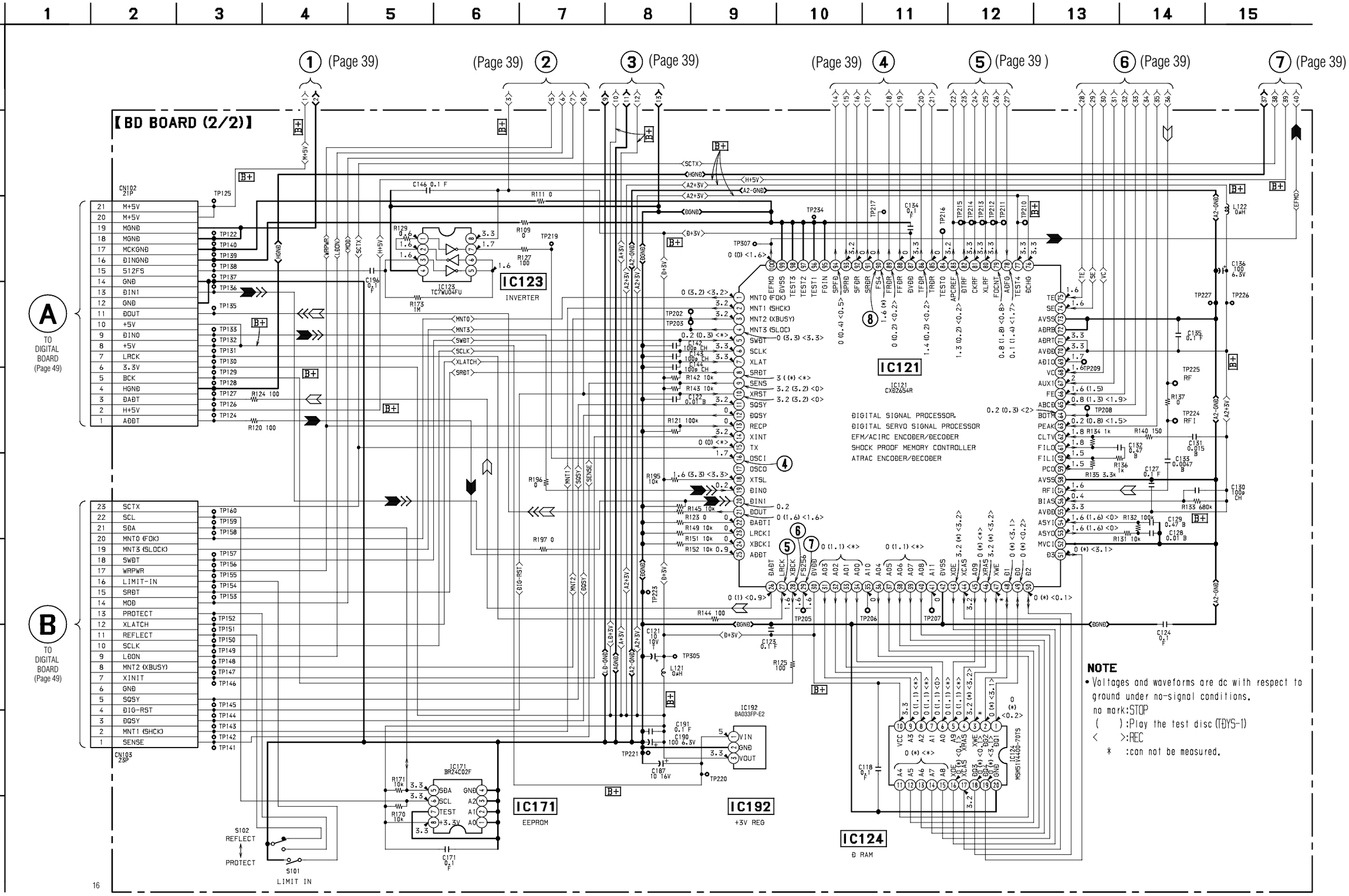
7-5. Schematic Diagram – BD (1/2) Section –

• See page 35 for Waveforms. • See page 52,53 for IC Block Diagrams. • See page 57 for IC Pin Functions.



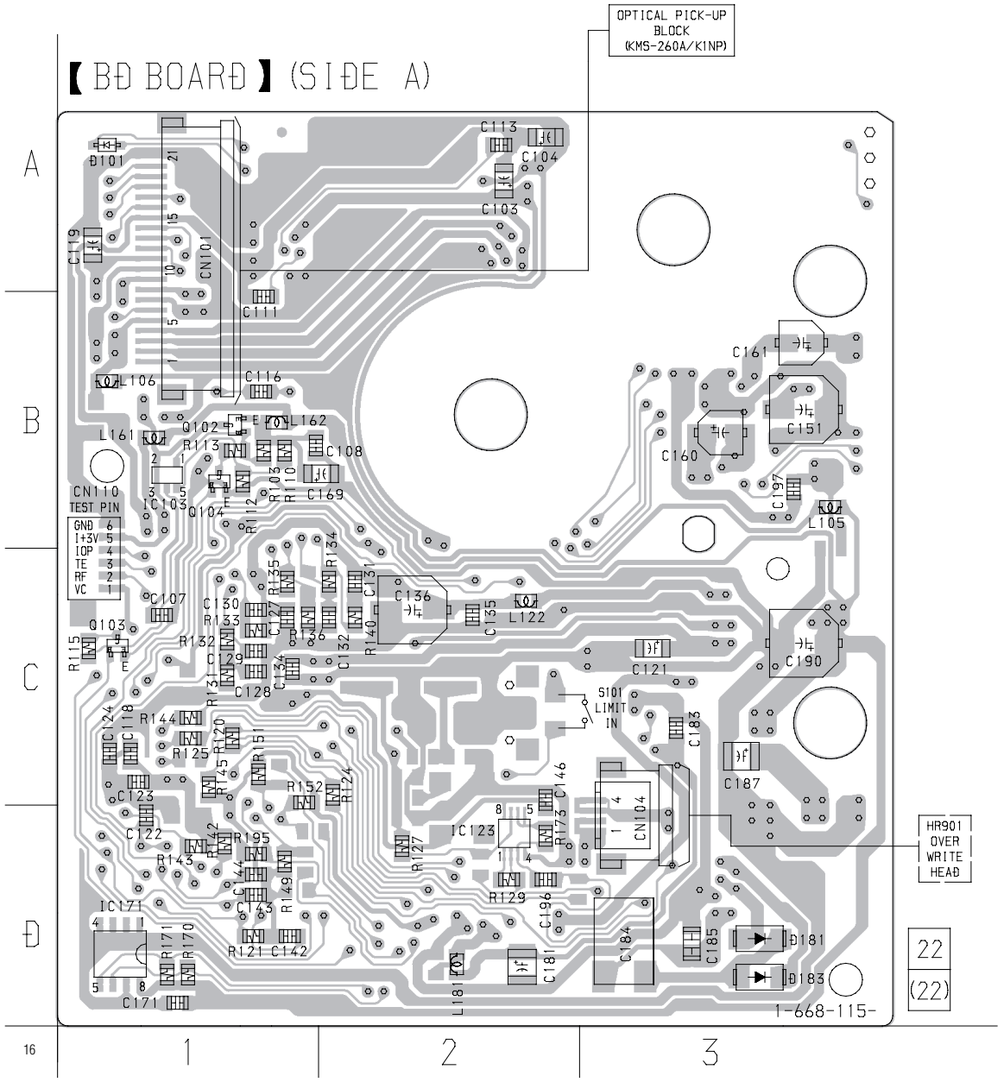
7-6. Schematic Diagram – BD (2/2) Section –

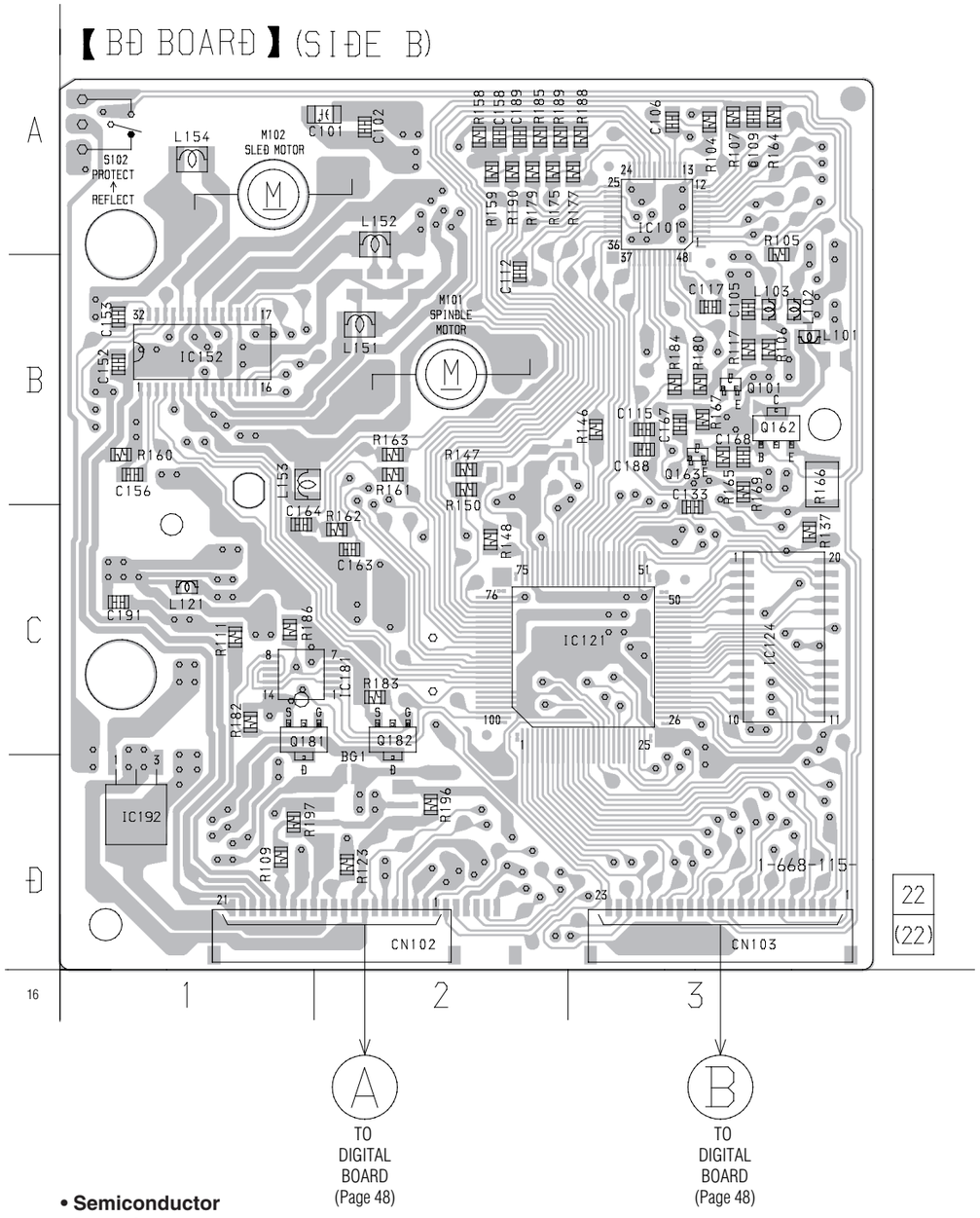
• See page 35 for Waveforms. • See page 53 for IC Block Diagrams. • See page 58 for IC Pin Functions.



7-7. Printed Wiring Board – BD Section –

• See page 35 for Circuit Boards Location.





• Semiconductor Location

Ref. No.	Location
D101	A-1
D181	D-3
D183	D-3
IC103	B-1
IC123	D-2
IC171	D-1
Q102	B-1
Q103	B-1
Q104	B-1

• Semiconductor Location

Ref. No.	Location
IC101	A-3
IC121	C-3
IC124	C-3
IC152	B-1
IC181	C-1
IC192	D-1
Q101	B-3
Q162	B-3
Q163	B-3
Q181	C-1
Q182	C-2

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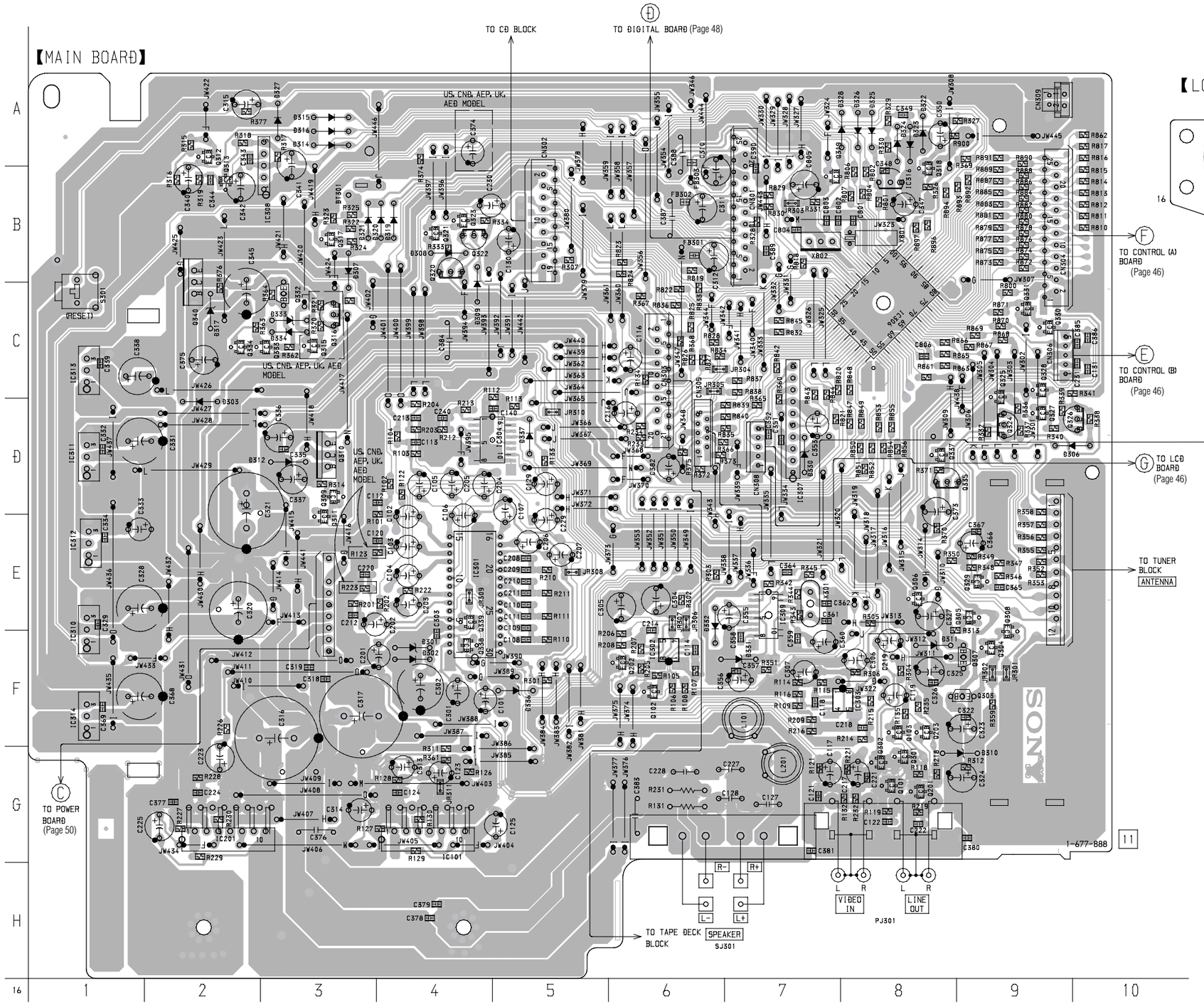
7-8. PRINTED WIRING BOARD – MAIN Section –

• See page 35 for Circuit Boards Location.



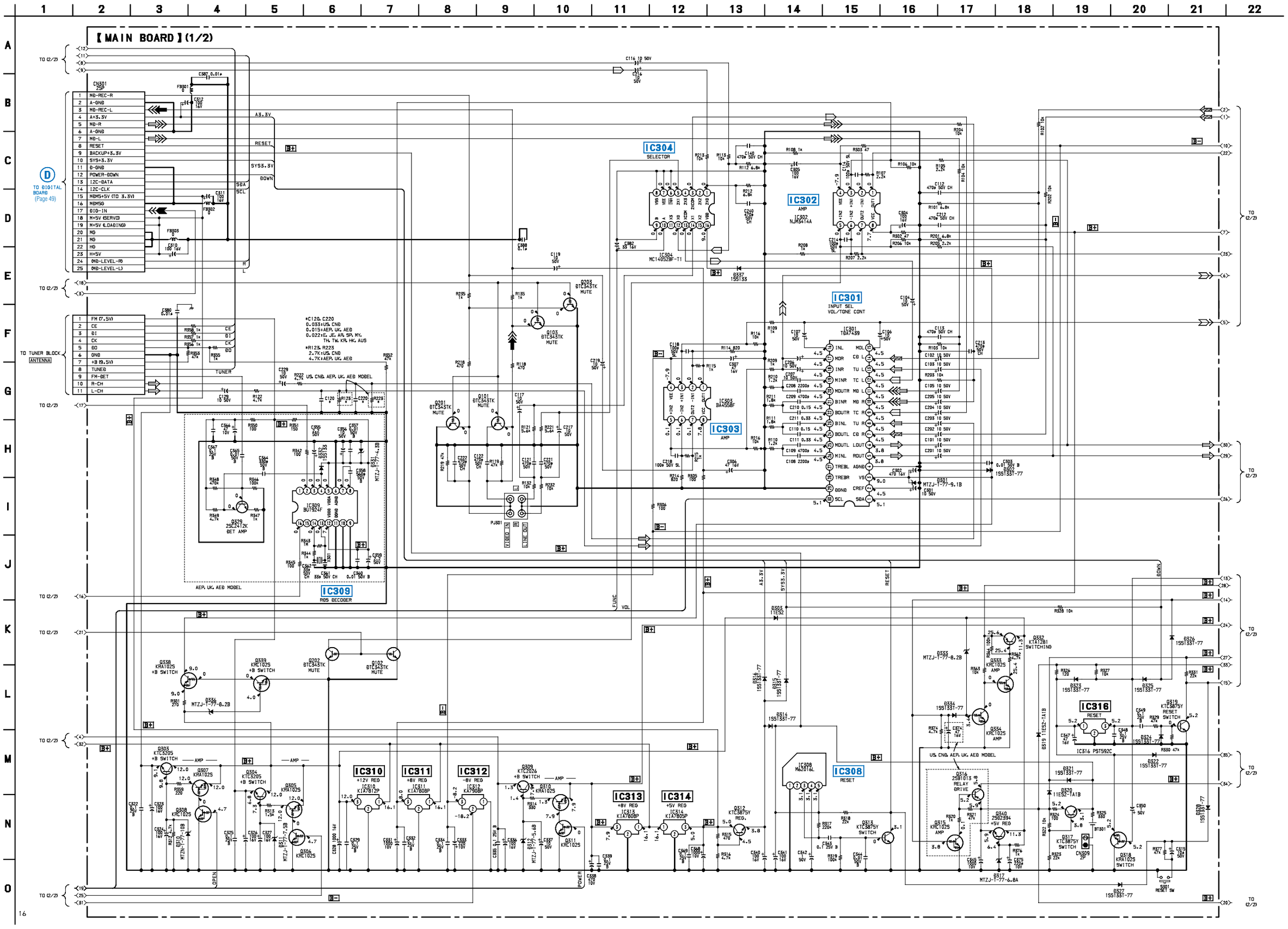
Note

CD block, tape deck block and tuner pack are supplied with the assembled block.

• Semiconductor Location

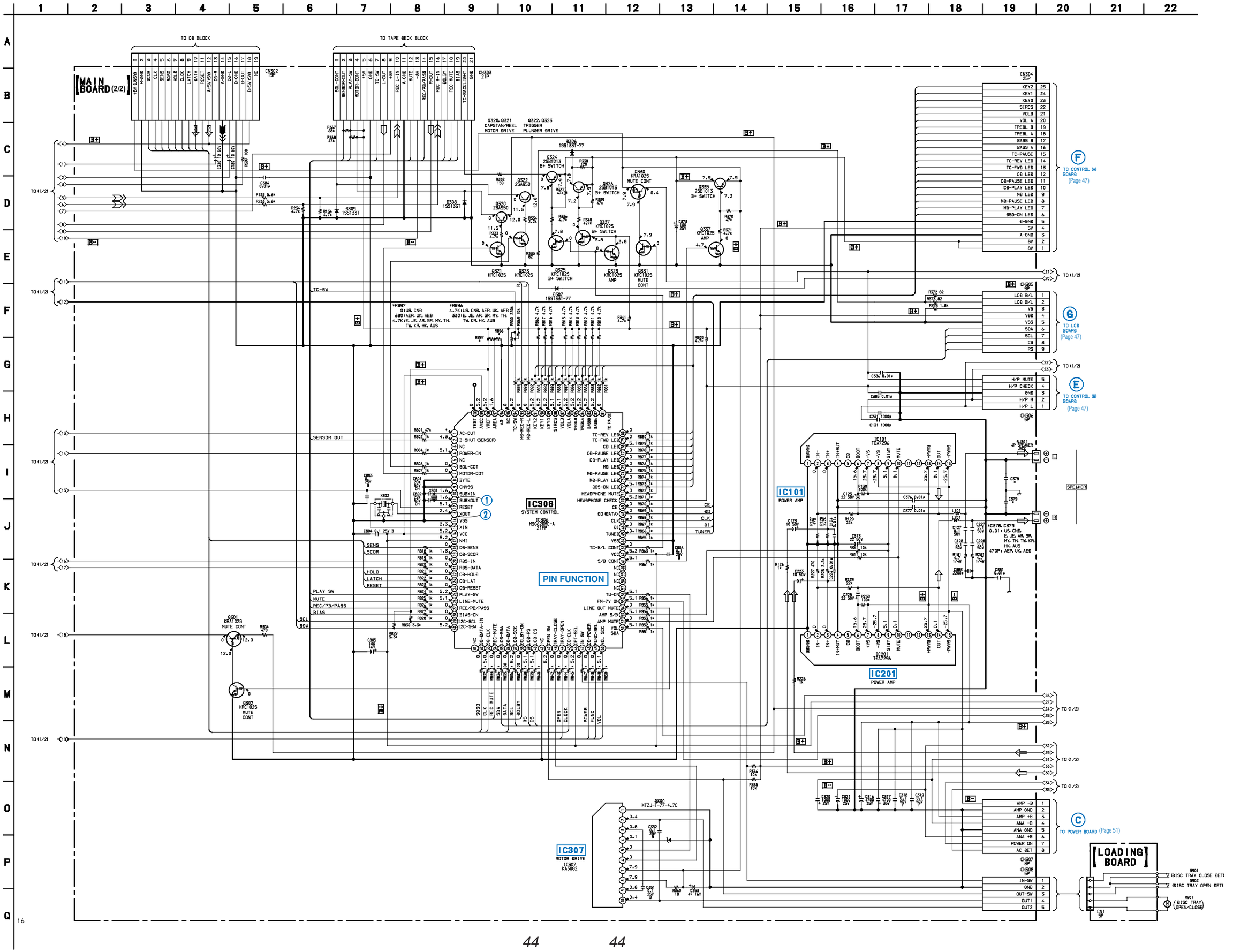
Ref. No.	Location	Ref. No.	Location
D301	F-4	Q101	G-8
D302	F-4	Q102	F-6
D303	D-2	Q103	F-8
D306	D-9	Q201	G-8
D307	B-3	Q202	F-6
D308	B-4	Q203	F-8
D309	C-4	Q301	G-8
D310	G-9	Q302	G-8
D311	F-8	Q303	F-9
D312	D-3	Q304	F-9
D314	A-3	Q305	E-9
D315	A-3	Q306	E-8
D316	A-3	Q307	F-9
D317	C-7	Q308	E-9
D319	B-4	Q309	D-3
D320	B-4	Q310	D-3
D321	B-3	Q311	D-3
D322	A-8	Q312	A-2
D323	A-8	Q313	B-2
D324	A-8	Q315	C-3
D325	A-8	Q316	C-3
D326	A-8	Q317	B-3
D327	A-3	Q318	A-8
D328	A-7	Q319	B-7
D330	D-7	Q320	B-4
D331	F-7	Q321	B-4
D332	E-6	Q322	B-4
D333	C-3	Q323	B-4
D334	C-3	Q324	D-9
D336	F-5	Q325	C-9
D337	D-5	Q326	D-9
		Q327	D-9
IC101	G-4	Q328	C-9
IC201	G-2	Q329	E-9
IC301	E-4	Q330	C-9
IC302	F-6	Q331	C-9
IC303	F-8	Q332	C-3
IC304	D-4	Q333	C-3
IC306	C-8	Q334	C-2
IC307	D-7	Q335	D-8
IC308	B-2	Q337	D-8
IC309	E-7	Q338	F-4
IC310	E-1	Q339	E-4
IC311	D-1	Q340	C-2
IC312	E-1		
IC313	C-1		
IC314	F-1		
IC316	B-8		

7-9. SCHEMATIC DIAGRAM – MAIN Section (1/2) – • See page 54,55 for IC Block Diagram.

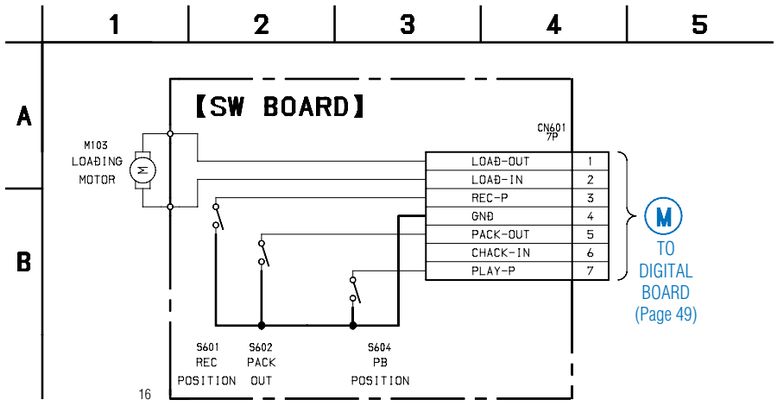


7-10. SCHEMATIC DIAGRAM – MAIN Section (2/2) –

• See page 54,55 for IC Block Diagrams. • See page 35 for Waveforms.

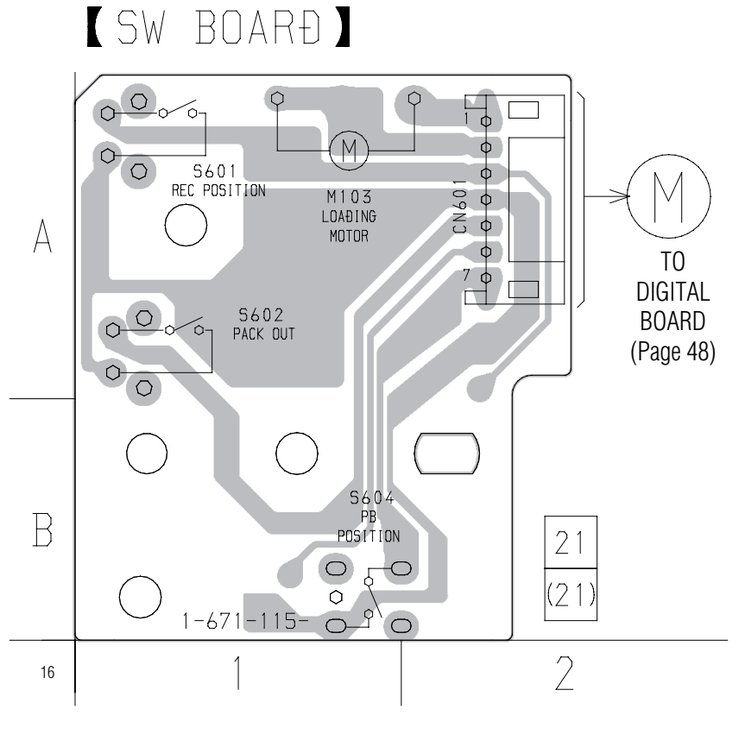


7-11. Schematic Diagram – BD SWITCH Section –



7-12. Printed Wiring Board – BD SWITCH Section –

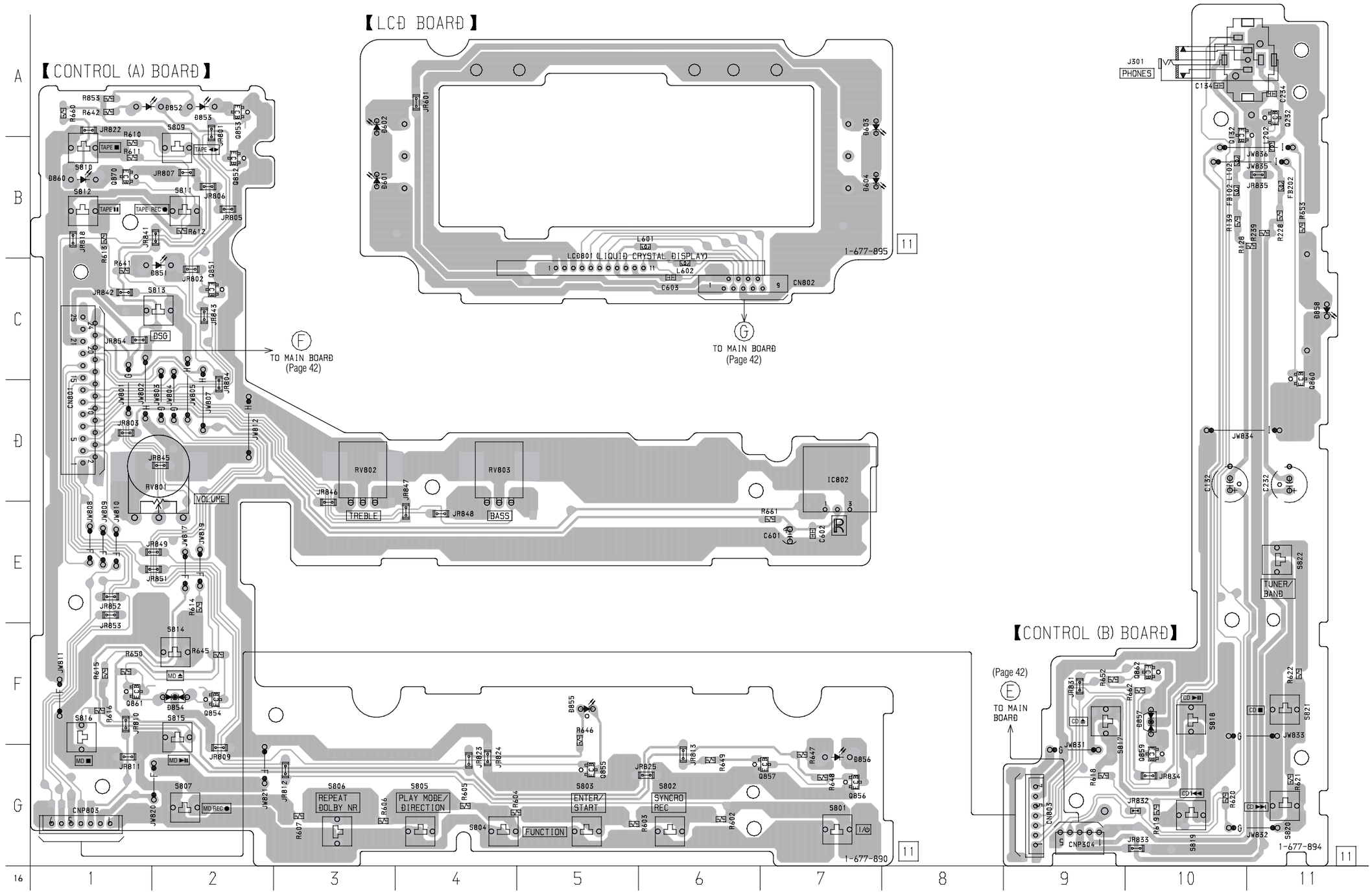
• See page 35 for Circuit Boards Location.



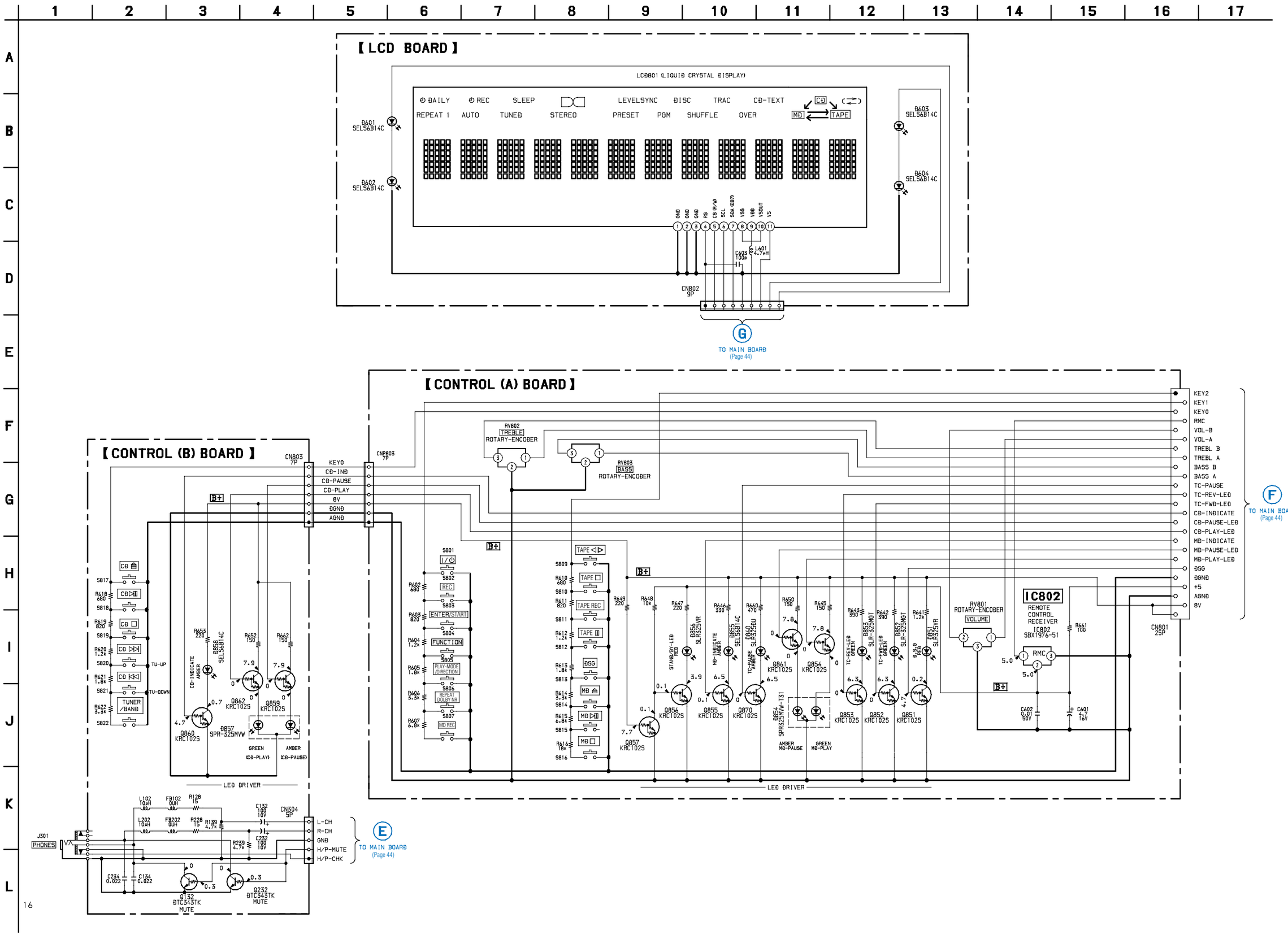
7-13. PRINTED WIRING BOARDS – CONTROL Section – • See page 35 for Circuit Boards Location.

• Semiconductor

Ref. No.	Location
D601	B-3
D602	A-3
D603	A-7
D604	B-7
D851	C-2
D852	A-2
D853	A-2
D854	F-2
D855	F-5
D856	G-7
D857	F-10
D858	C-11
D860	B-1
IC802	D-7
Q132	A-10
Q232	A-11
Q851	C-2
Q852	B-2
Q853	A-2
Q854	F-2
Q855	G-5
Q856	G-7
Q857	G-7
Q859	F-10
Q860	C-11
Q861	F-1
Q862	F-10
Q870	B-1



7-14. SCHEMATIC DIAGRAM – CONTROL Section –

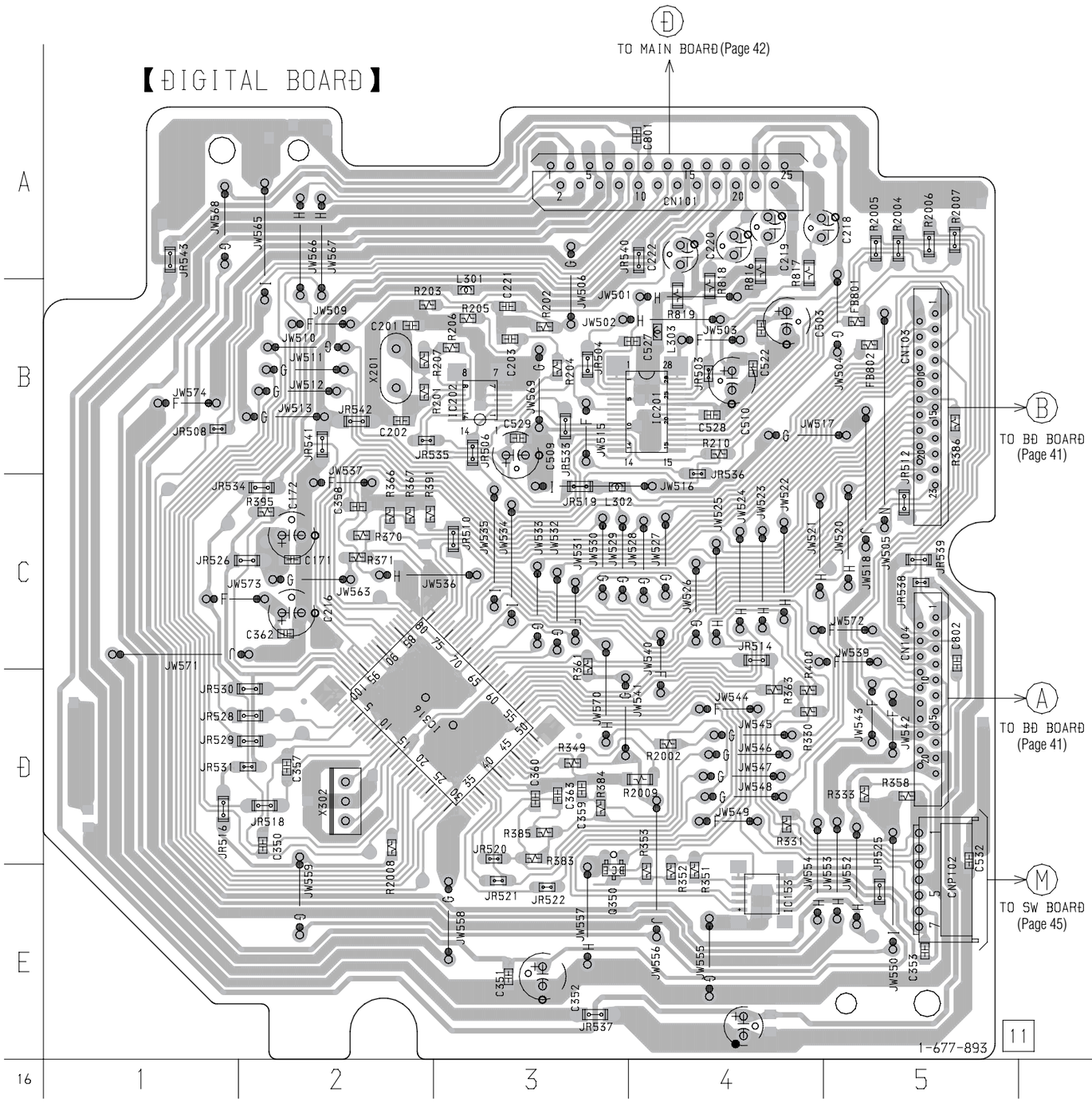


7-15. Printed Wiring Board – DIGITAL Section –

• See page 35 for Circuit Boards Location.

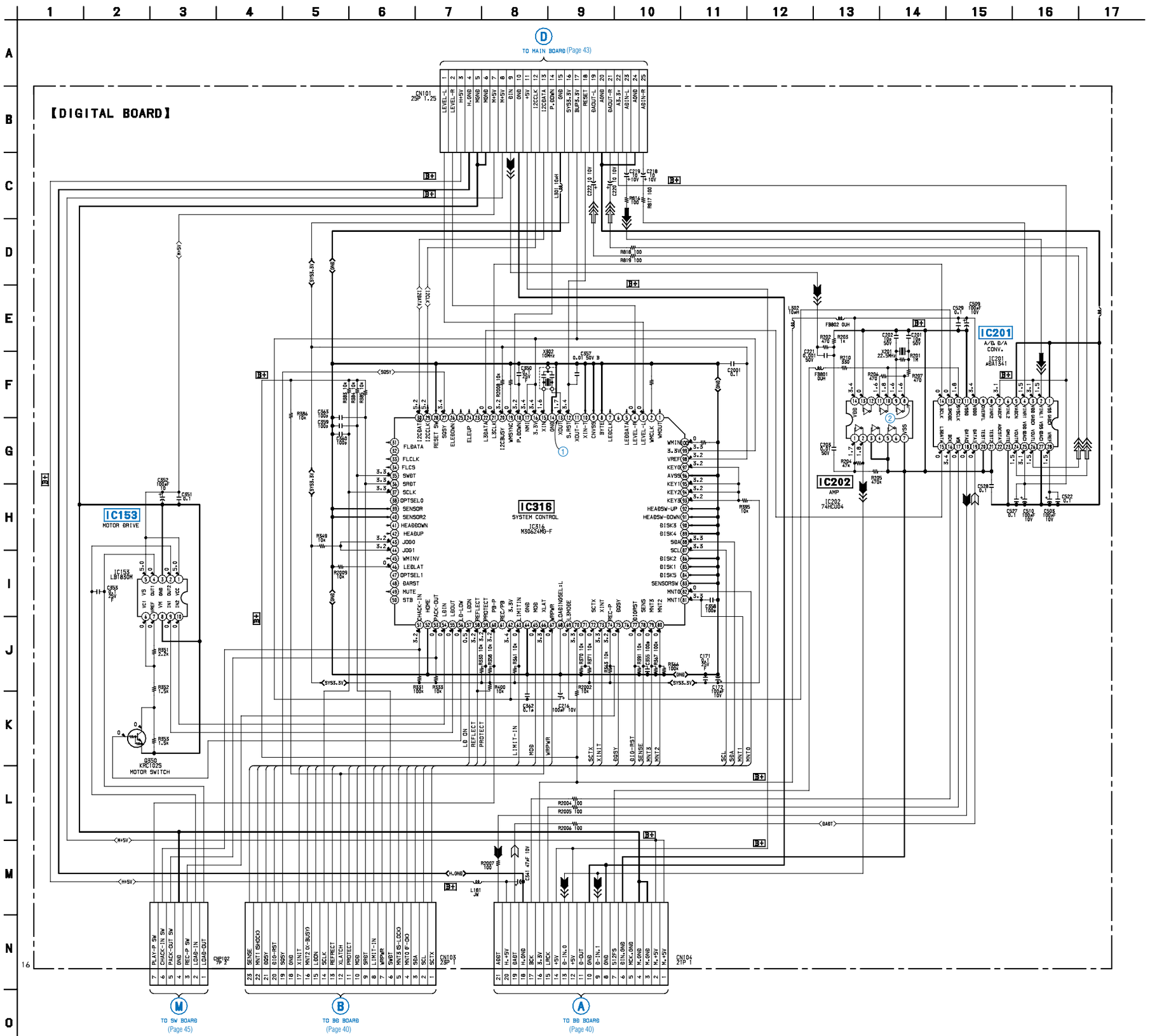
• **Semiconductor Location**

Ref. No.	Location
IC153	E-4
IC201	B-4
IC202	B-3
IC316	D-2
Q350	E-3



7-16. Schematic Diagram – DIGITAL Section –

• See page 35 for Waveforms.

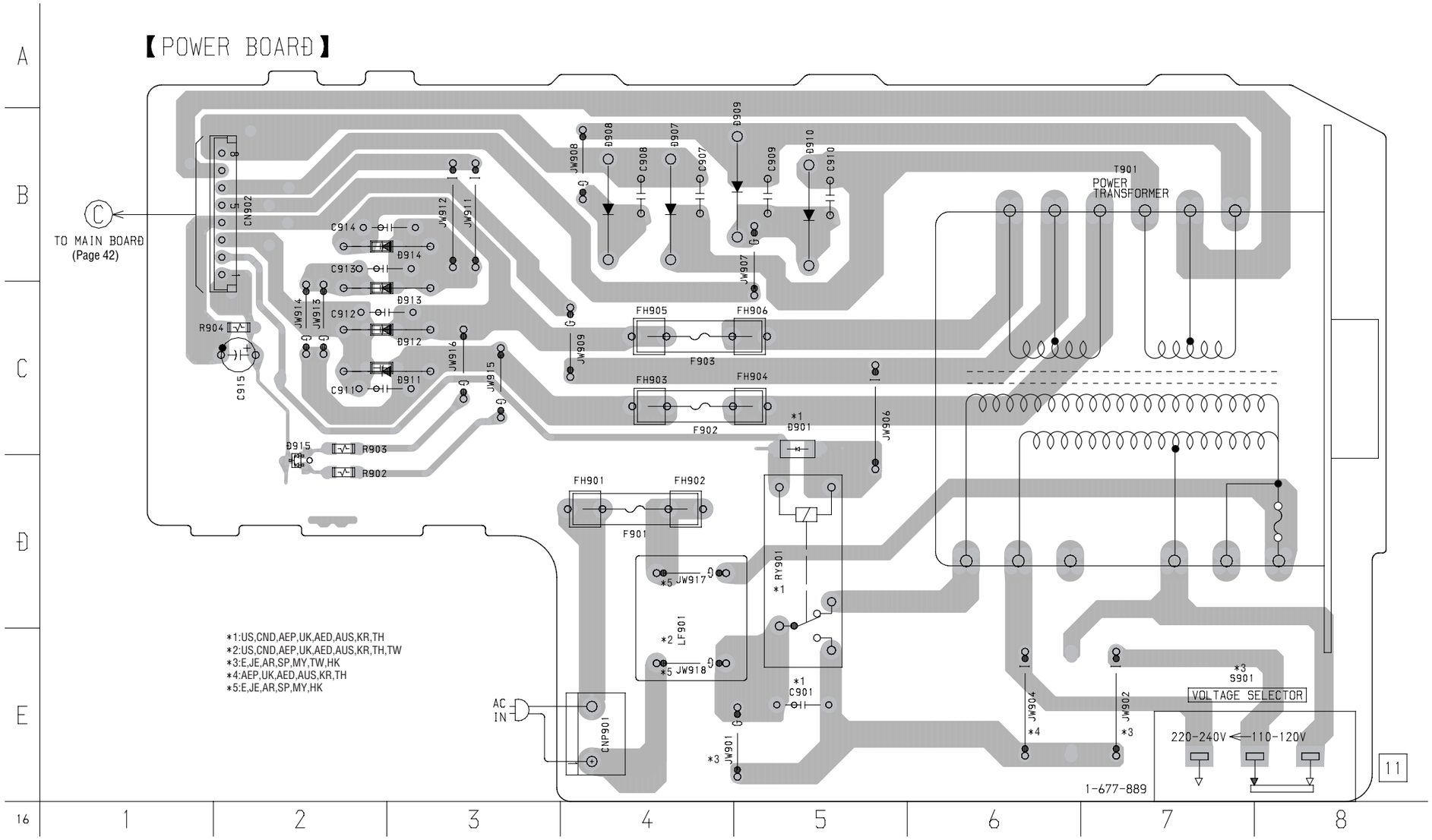


7-17. PRINTED WIRING BOARD – POWER Section –

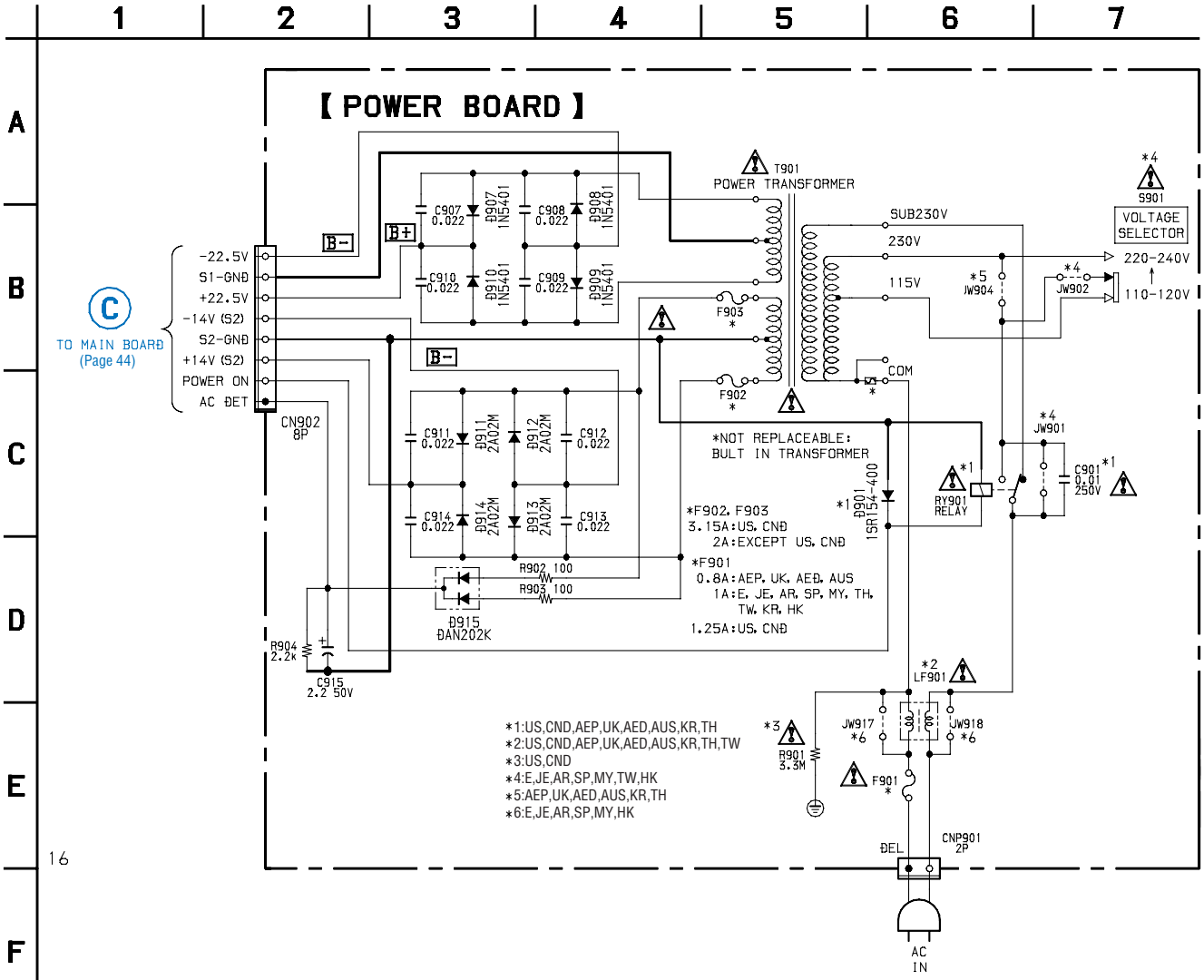
• See page 35 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D901	C-5
D907	B-4
D908	B-4
D909	B-4
D910	B-5
D911	C-2
D912	C-2
D913	C-2
D914	B-2
D915	D-2



7-18. SCHEMATIC DIAGRAM – POWER Section –

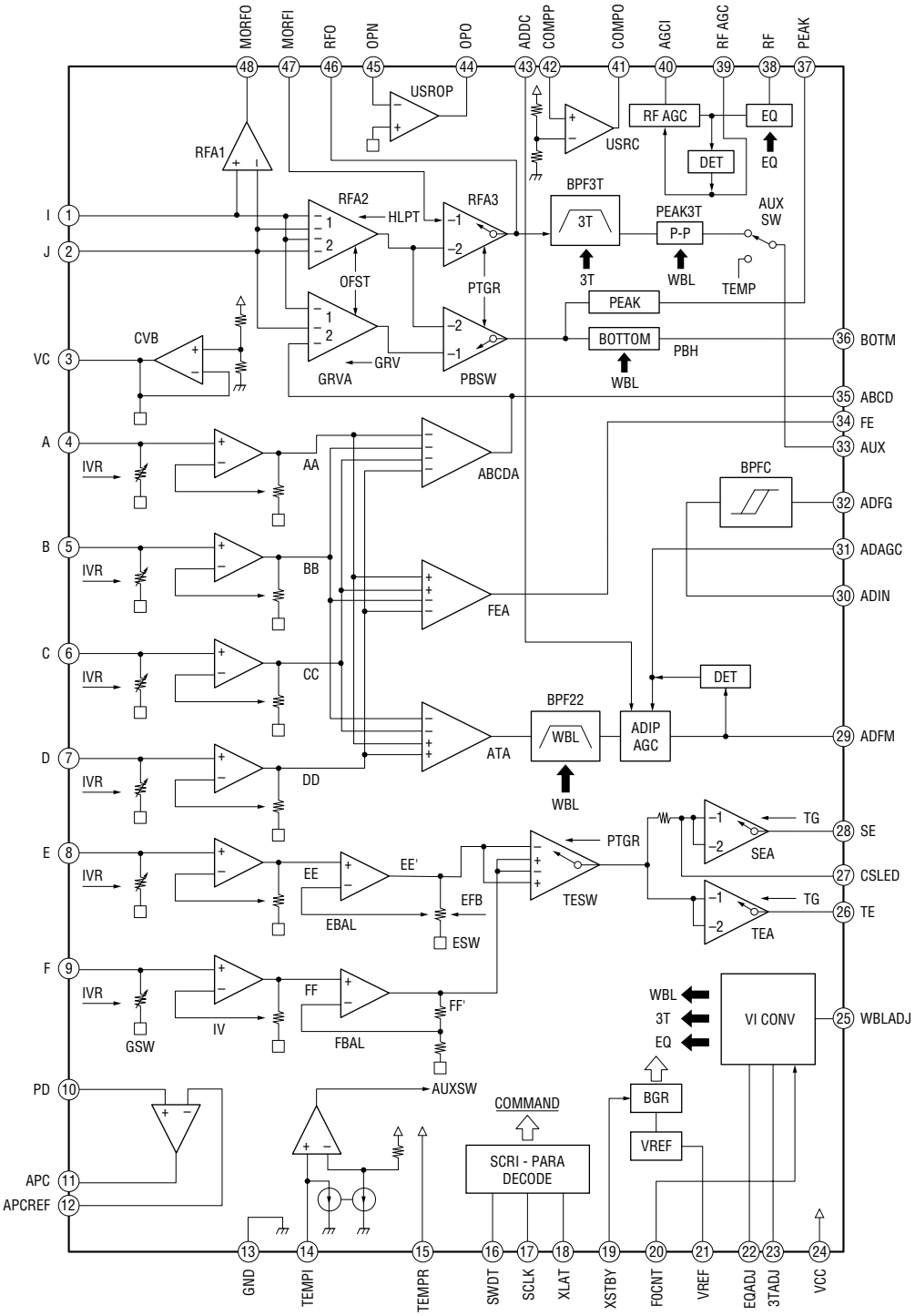


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

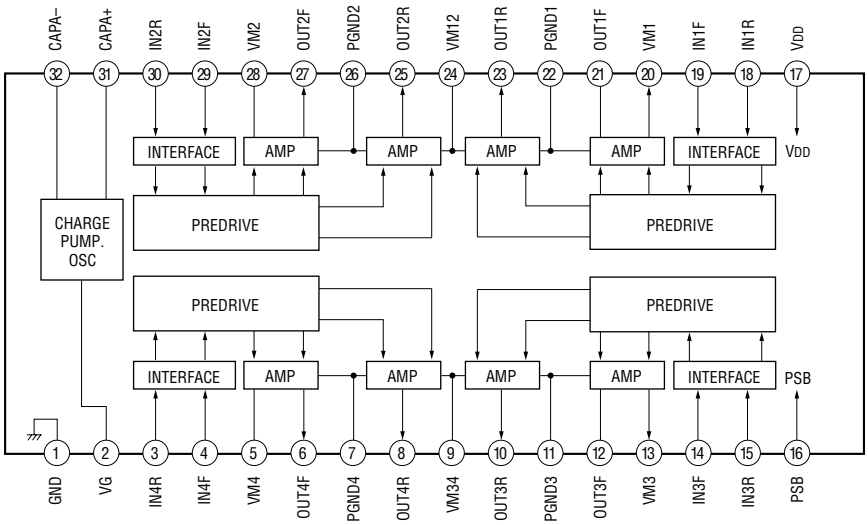
7-19. IC BLOCK DIAGRAMS

– BD Board –

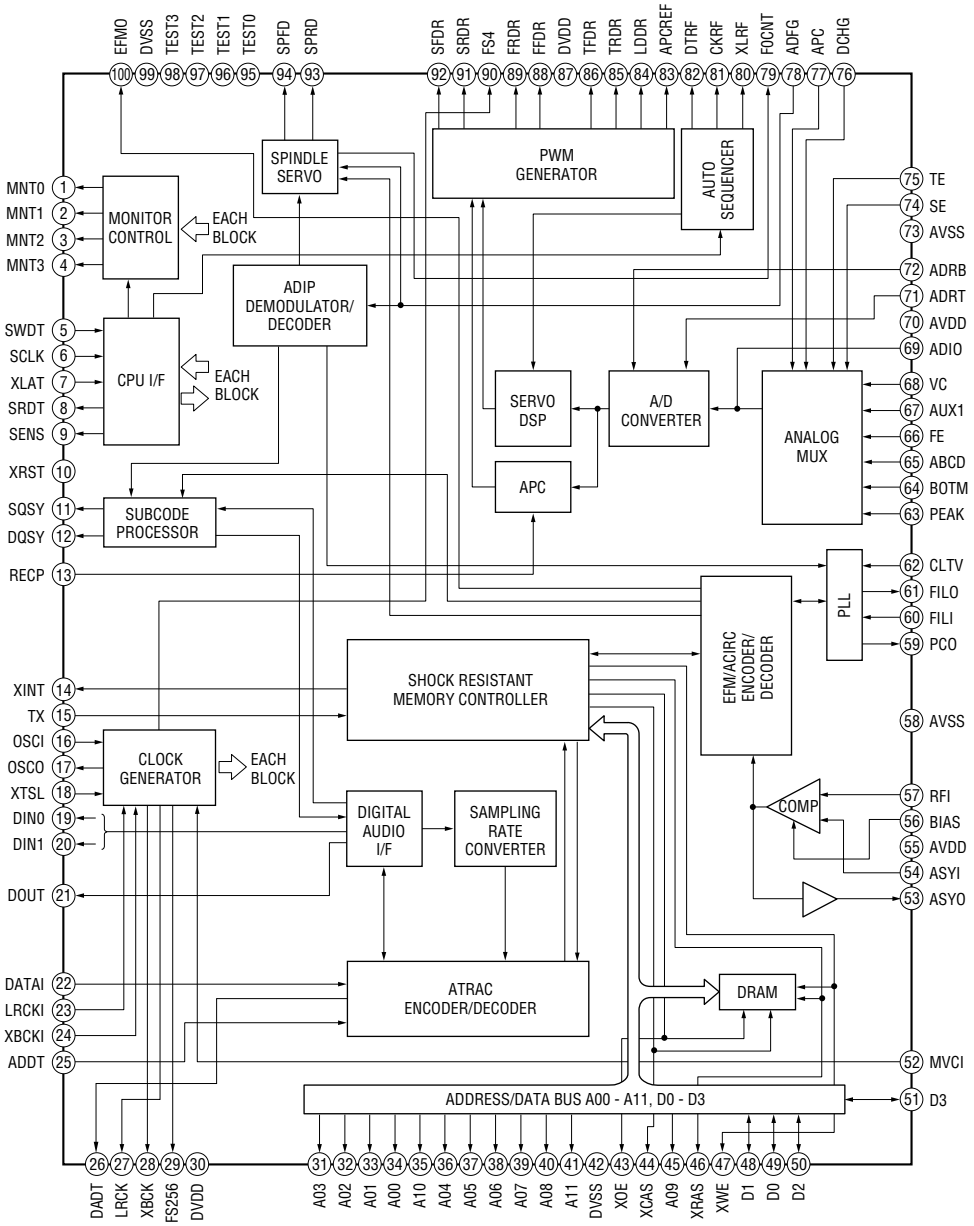
IC101 CXA2523AR



IC152 BH6511FS-E2

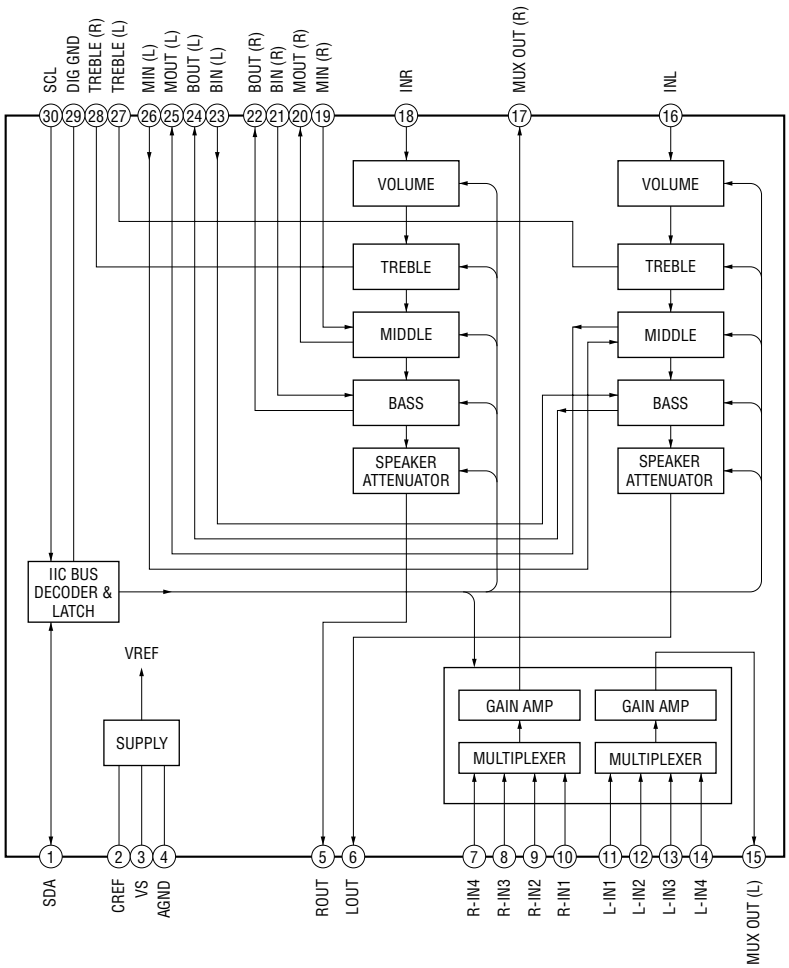


IC121 CXD2654R

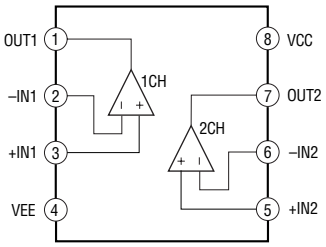


– MAIN Board –

IC301 TDA7439



IC302 NJM3414AM-TE2



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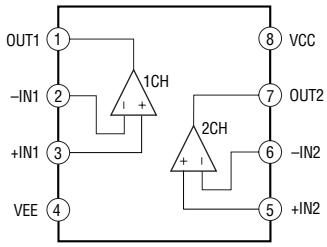
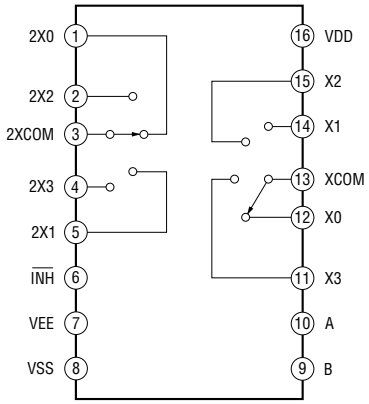
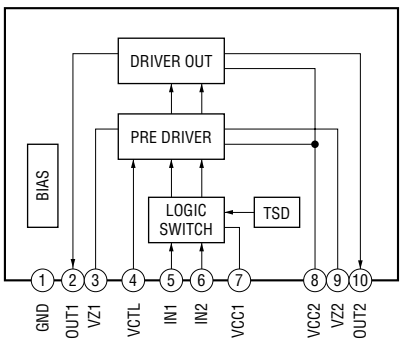


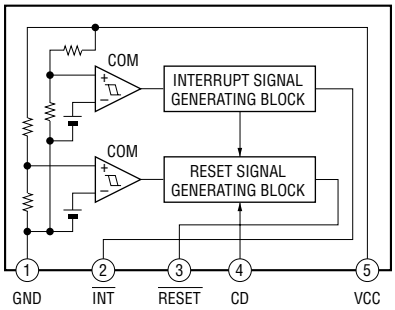
IC304 MC14052BF-T1



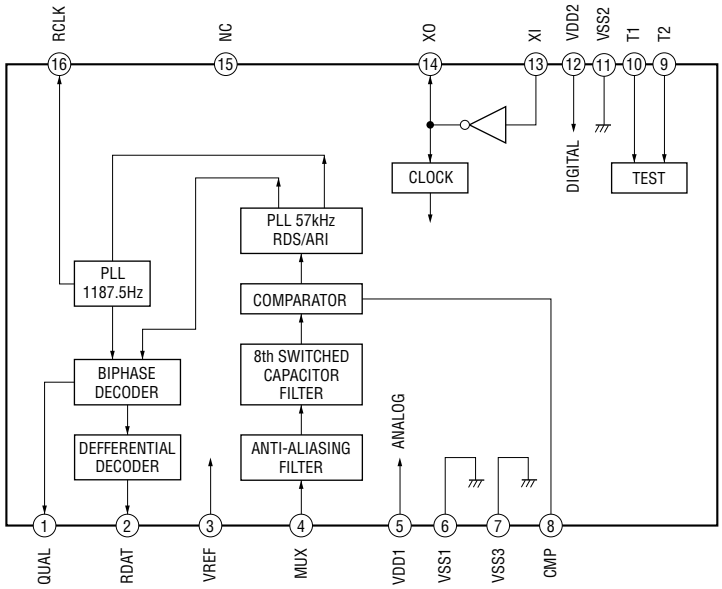
IC307 KA3082



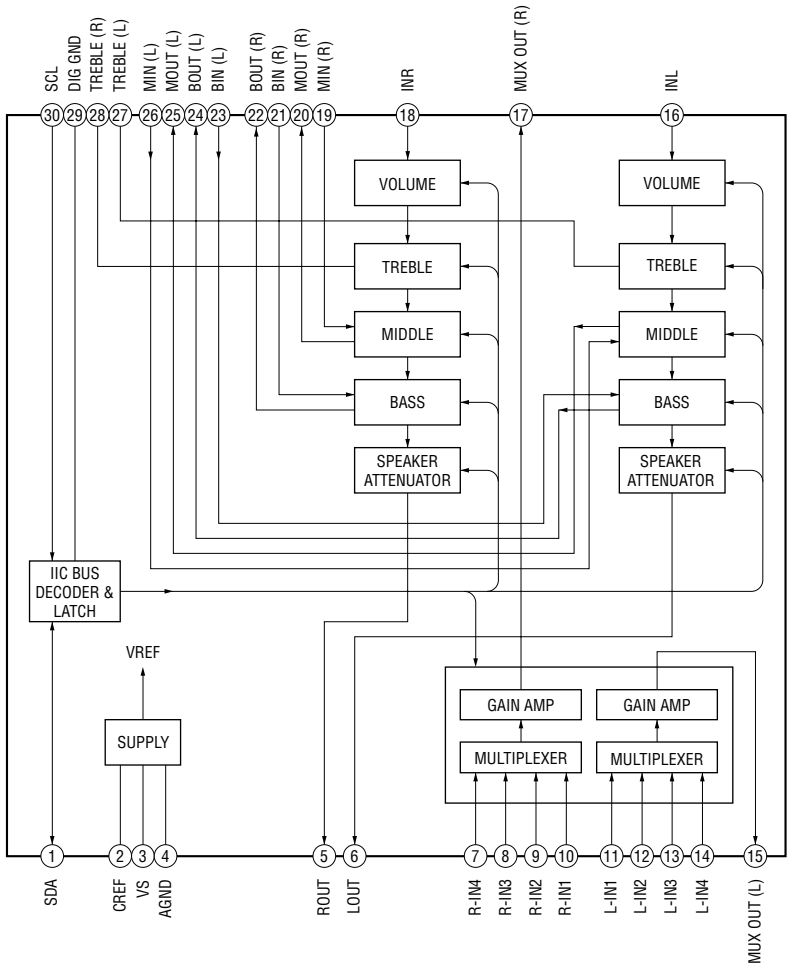
IC308 M62016L



IC309 BU1924F-E2

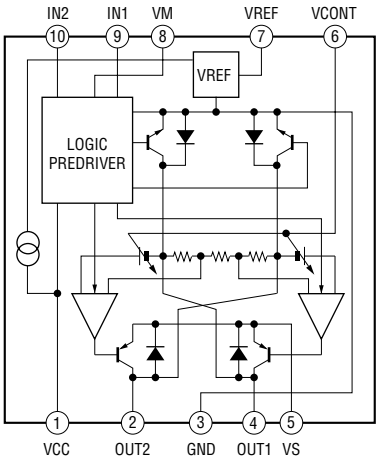


IC101, 201 TDA7296



– DIGITAL Board –

IC153 LB1830M-S-TE-L



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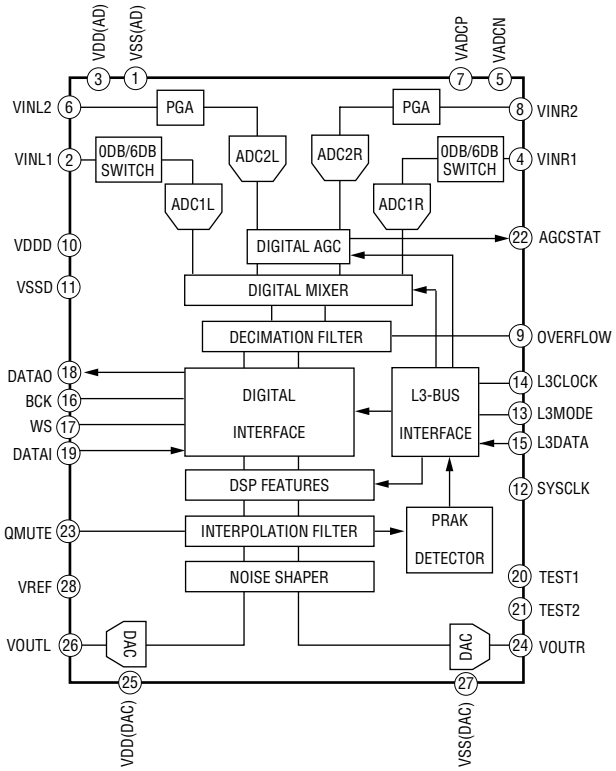


7-20. IC PIN FUNCTIONS

• IC101 RF Amplifier (CXA2523AR) (BD board)

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input
2	J	I	I-V converted RF signal J input
3	VC	O	Middle point voltage (+1.5V) generation output
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input
11	APC	O	Laser APC output
12	APCREF	I	Reference voltage input for setting laser power
13	GND	—	Ground
14	TEMPI	I	Temperature sensor connection
15	TEMPR	O	Reference voltage output for the temperature sensor
16	SWDT	I	Serial data input from the CXD2650R or CXD2652AR
17	SCLK	I	Serial clock input from the CXD2650R or CXD2652AR
18	XLAT	I	Latch signal input from the CXD2650R or CXD2652AR “L”: Latch
19	XSTBY	I	Stand by signal input “L”: Stand by
20	F0CNT	I	Center frequency control voltage input of BPF22, BPF3T, EQ from the CXD2650R or CXD2652AR
21	VREF	O	Reference voltage output (Not used)
22	EQADJ	I/O	Center frequency setting pin for the internal circuit EQ
23	3TADJ	I/O	Center frequency setting pin for the internal circuit BPF3T
24	Vcc	—	+3V power supply
25	WBLADJ	I/O	Center frequency setting pin for the internal circuit BPF22
26	TE	O	Tracking error signal output to the CXD2650R or CXD2652AR
27	CSLED	—	External capacitor connection pin for the sled error signal LPF
28	SE	O	Sled error signal output to the CXD2650R or CXD2652AR
29	ADFM	O	FM signal output of ADIP
30	ADIN	I	ADIP signal comparator input ADFM is connected with AC coupling
31	ADAGC	—	External capacitor connection pin for AGC of ADIP
32	ADFG	O	ADIP duplex signal output to the CXD2650R or CXD2652AR
33	AUX	O	I3 signal/temperature signal output to the CXD2650R or CXD2652AR (Switching with a serial command)
34	FE	O	Focus error signal output to the CXD2650R or CXD2652AR
35	ABCD	O	Light amount signal output to the CXD2650R or CXD2652AR
36	BOTM	O	RF/ABCD bottom hold signal output to the CXD2650R or CXD2652AR
37	PEAK	O	RF/ABCD peak hold signal output to the CXD2650R or CXD2652AR
38	RF	O	RF equalizer output to the CXD2650R or CXD2652AR
39	RFAGC	—	External capacitor connection pin for the RF AGC circuit
40	AGCI	I	Input to the RF AGC circuit The RF amplifier output is input with AC coupling
41	COMPO	O	User comparator output (Not used)
42	COMPP	I	User comparator input (Fixed at “L”)
43	ADDC	I/O	External capacitor pin for cutting the low band of the ADIP amplifier
44	OPO	O	User operation amplifier output (Not used)
45	OPN	I	User operation amplifier inversion input (Fixed at “L”)
46	RFO	O	RF amplifier output
47	MORFI	I	Groove RF signal is input with AC coupling
48	MORFO	O	Groove RF signal output

• Abbreviation
APC: Auto Power Control
AGC: Auto Gain Control

• IC121 Digital Signal Processor, Digital Servo Signal Processor, EFM/ACIRC Encoder/Decoder, Shock-proof Memory Controller, ATRAC Encoder/Decoder, 2M Bit DRAM (CXD2654R) (BD board)

Pin No.	Pin Name	I/O	Function
1	MNT0 (FOK)	O	FOK signal output to the system control (monitor output) "H" is output when focus is on
2	MNT1 (SHCK)	O	Track jump detection signal output to the system control (monitor output)
3	MNT2 (XBUSY)	O	Monitor 2 output to the system control (monitor output)
4	MNT3 (SLOC)	O	Monitor 3 output to the system control (monitor output)
5	SWDT	I	Writing data signal input from the system control
6	SCLK	I (S)	Serial clock signal input from the system control
7	XLAT	I (S)	Serial latch signal input from the system control
8	SRDT	O (3)	Reading data signal output to the system control
9	SENS	O (3)	Internal status (SENSE) output to the system control
10	XRST	I (S)	Reset signal input from the system control "L": Reset
11	SQSY	O	Subcode Q sync (SCOR) output to the system control "L" is output every 13.3 msec. Almost all, "H" is output
12	DQSY	O	Digital In U-bit CD format or MD format subcode Q sync (SCOR) output to the system control
13	RECP	I	Laser power switching input from the system control "H": Recording, "L": Playback
14	XINT	O	Interrupt status output to the system control
15	TX	I	Recording data output enable input from the system control
16	OSCI	I	System clock input (512Fs=22.5792 MHz)
17	OSCO	O	System clock output (512Fs=22.5792 MHz) (Not used)
18	XTSL	I	System clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (Fixed at "H")
19	DIN0	I	Digital audio input (Optical input)
20	DIN1	I	Digital audio input (Optical input)
21	DOUT	O	Digital audio output (Optical output)
22	DADTI	I	Serial data input
23	LRCKI	I	LR clock input "H" : Lch, "L" : R ch
24	XBCKI	I	Serial data clock input
25	ADDT	I	Data input from the A/D converter
26	DADT	O	Data output to the D/A converter
27	LRCK	O	LR clock output for the A/D and D/A converter (44.1 kHz)
28	XBCK	O	Bit clock output to the A/D and D/A converter (2.8224 MHz)
29	FS256	O	11.2896 MHz clock output (Not used)
30	DVDD	—	+3V power supply (Digital)
31 to 34	A03 to A00	O	DRAM address output
35	A10	O	DRAM address output (Not used)
36 to 40	A04 to A08	O	DRAM address output
41	A11	O	DRAM address output (Not used)
42	DVSS	—	Ground (Digital)
43	XOE	O	Output enable output for DRAM
44	XCAS	O	$\overline{CAS}$ signal output for DRAM
45	A09	O	Address output for DRAM
46	XRAS	O	$\overline{RAS}$ signal output for DRAM
47	XWE	O	Write enable signal output for DRAM (Used : CXD2652AR, Not used : CXD2650R)

* I (S) stands for Schmidt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Function
48	D1	I/O	Data input/output for DRAM
49	D0	I/O	
50, 51	D2, D3	I/O	
52	MVCI	I (S)	Clock input from an external VCO (Fixed at “L”)
53	ASYO	O	Playback EFM duplex signal output
54	ASYI	I (A)	Playback EFM comparator slice level input
55	AVDD	—	+3V power supply (Analog)
56	BIAS	I (A)	Playback EFM comparator bias current input
57	RFI	I (A)	Playback EFM RF signal input
58	AVSS	—	Ground (Analog)
59	PCO	O (3)	Phase comparison output for the recording/playback EFM master PLL
60	FILI	I (A)	Filter input for the recording/playback EFM master PLL
61	FILO	O (A)	Filter output for the recording/playback EFM master PLL
62	CLTV	I (A)	Internal VCO control voltage input for the recording/playback EFM master PLL
63	PEAK	I (A)	Light amount signal peak hold input from the CXA2523R
64	BOTM	I (A)	Light amount signal bottom hold input from the CXA2523R
65	ABCD	I (A)	Light amount signal input from the CXA2523R
66	FE	I (A)	Focus error signal input from the CXA2523R
67	AUX1	I (A)	Auxiliary A/D input
68	VC	I (A)	Middle point voltage (+1.5V) input from the CXA2523R
69	ADIO	O (A)	Monitor output of the A/D converter input signal (Not used)
70	AVDD	—	+3V power supply (Analog)
71	ADRT	I (A)	A/D converter operational range upper limit voltage input (Fixed at “H”)
72	ADRB	I (A)	A/D converter operational range lower limit voltage input (Fixed at “L”)
73	AVSS	—	Ground (Analog)
74	SE	I (A)	Sled error signal input from the CXA2523R
75	TE	I (A)	Tracking error signal input from the CXA2523R
76	DCHG	I (A)	Connected to +3V power supply
77	APC	I (A)	Error signal input for the laser digital APC (Fixed at “L”)
78	ADFG	I (S)	ADIP duplex FM signal input from the CXA2523R (22.05 ± 1 kHz)
79	F0CNT	O	Filter f0 control output to the CXA2523R
80	XLRF	O	Control latch output to the CXA2523R
81	CKRF	O	Control clock output to the CXA2523R
82	DTRF	O	Control data output to the CXA2523R
83	APCREF	O	Reference PWM output for the laser APC
84	TEST0	O	PWM output for the laser digital APC (Not used)
85	TRDR	O	Tracking servo drive PWM output (–)

• Abbreviation
EFM: Eight to Fourteen Modulation
PLL : Phase Locked Loop
VCO: Voltage Controlled Oscillator

• IC306 System Control (M30620MCA-A37FP) (MAIN board)

Pin No.	Pin Name	I/O	Function
1	AC-CUT	I	AC cut check on(L)/OFF(H)
2	B-SHUT	I	TCM-B REEL PULSE (A/D use)
3	NC	—	Not used
4	POWER ON	O	Main power ON(H)/OFF(L)
5	NC	—	Not used
6	SOL-COT	O	TCM-B triger out ON(H)/OFF(L)
7	MOTOR-COT	O	Capstan (forward rotation-STOP)
8	BYTE	—	For external data bus width selection
9	CNVSS	—	For processor mode selection
10	SUBXIN	I	SUB clock in
11	SUBXOUT	O	SUB clock out
12	RESET	I	Sysetem reset in
13	XOUT	O	Main system clock out
14	VSS	—	Vss
15	XIN	I	Main system clock in(16MHz)
16	VCC	—	Power supply(+5V)
17	NMI	—	Pull up(EVER +5V) Not used
18	CD-SENS	I	From CXD2587Q SENS
19	CD-SCOR	I	CD Q-DATA REQUEST
20	RDS-INT	I	RDS int
21	RDS-DATA	I	RDS data
22	CD-HOLD	O	Mode
23	CD-LAT	O	CD LAT
24	CD RESET	O	CD RESET
25	PLAY-SW	I	TCM-B play sw in HeadDown(H) / Up(L)
26	LINE-MUTE	O	TC line mute ON(H)/OFF(L)
27	REC/PB/PASS	O	REC(L)/PB(Z) SingleNoUse → PASS(H)
28	BIAS-ON	O	BIAS ON(H)/OFF(L)
29	I2C_SCL	I	IIC SCL
30	I2C_SCA	I	IIC SDA
31	NC	—	Not used
32	SQ-DATA-IN	I	CD data in
33	SQ-CLK	I/O	(Note) : SQ CLK : Input when CD-POWER is (L)
34	REC-MUTE	O	REC mute ON(L)/OFF(H)
35	LCD-SDA	O	FL(LCD) data
36	CD-DATA	O	CD data
37	LCD-SCK	O	FL(LCD) clk
38	DOLBY ON	O	DOLBY NR ON(H)/OFF(L)
39	LCD-RS	O	FL reset
40	LCD-CS	O	FL chip select
41	NC	—	researved for Flash Re-Write(1)
42	OPEN-SW	I	CD mecha open switch
43	TRAY CLOSE	O	LOAD in
44	TRAY OPEN	O	LOAD out
45	CD-CLK	O	CD CLK
46	OPT SEL	I	researved for Flash Re-Write(2)
47	IN SW	I	BD32 CDM55
48	CD-POWER	O	CD-power ON(H)/OFF(L)
49	FUNC_SEL	O	L:TAPE, H:LINE IN
50	VOL-SCK	O	Volume clock

Pin No.	Pin Name	I/O	Function
51	VOL-SDA	O	Volume Data
52	AMP-MUTE	O	TA LINE-mute ON(H)/OFF(L)
53	AMP S/B	O	STK:tda7296 ON(H)/OFF(L)
54	LINE OUT MUTE	O	REC out control(MUTE:HIGH)
55	FM7V ON	O	FM FEP
56	TU ON	O	TUNER power ON/OFF
57	NC	—	Not used
58	NC	—	Not used
59	NC	—	Not used
60	NC	—	Not used
61	S/B CONT	O	LED 1
62	VCC	—	POWER supply(+5V)
63	TC B/L CON	O	LCD in TC holder
64	VSS	—	Vss
65	TUNED	I	TUNED IN(L)/OFF(H)
66	DI	I	TUNER data in
67	CLK	O	TUNER clock
68	DO	O	TUNER data out
69	CE	O	TUNER chip ENB
70	HP CHECK	I	Headphones detetion : Connected (H)/Not connected (L)
71	HP MUTE	O	HEADPHONE mute ON(H)/OFF(L)
72	DGS ON LED	O	LED 2
73	MD PLAY LED	O	LED 3
74	MD PAUSE LED	O	LED 4
75	MD LED	O	LED 5
76	CD PLAY LED	O	LED 6
77	CD PAUSE LED	O	LED 7
78	CD LED	O	LED 8
79	TC FWD LED	O	LED 9
80	TC REV LED	O	LED 10
81	TC PAUSE LED	O	LED 11
82	BASS A	I	Bass(A)
83	BASS B	I	Bass(B)
84	TREBLE A	I	Treble(A)
85	TREBLE B	I	Treble(B)
86	VOLA	I	volume(A)
87	VOLB	I	volume(B)
88	SIRCS	I	remote commander input
89	KEY0	I	KEY-line(0)
90	KEY1	I	KEY-line(1)
91	KEY2	I	KEY-line(2)
92	MD REC L	I	MD REC signal(L)
93	MD REC R	I	MD REC signal(R)
94	TC SW	I	B deck HALF
95	NC	—	CP33MD : Fixed to Vcc
96	AG	—	Analog Ground
97	AREA	I	SPEC in
98	VREF	—	Analog Reference Voltage
99	AVCC	—	Analog Power Supply
100	TEST	O	SOFT check out

SECTION 8
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- 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 this parts list.
- Abbreviation
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  TW : Taiwan model.
  HK : Hong Kong model.
  AR : Argentine model.
  CND : Canadian model.
  AED : North European model.
  KR : Korean model.
  TH : Thai model.
  JE : Tourist model.

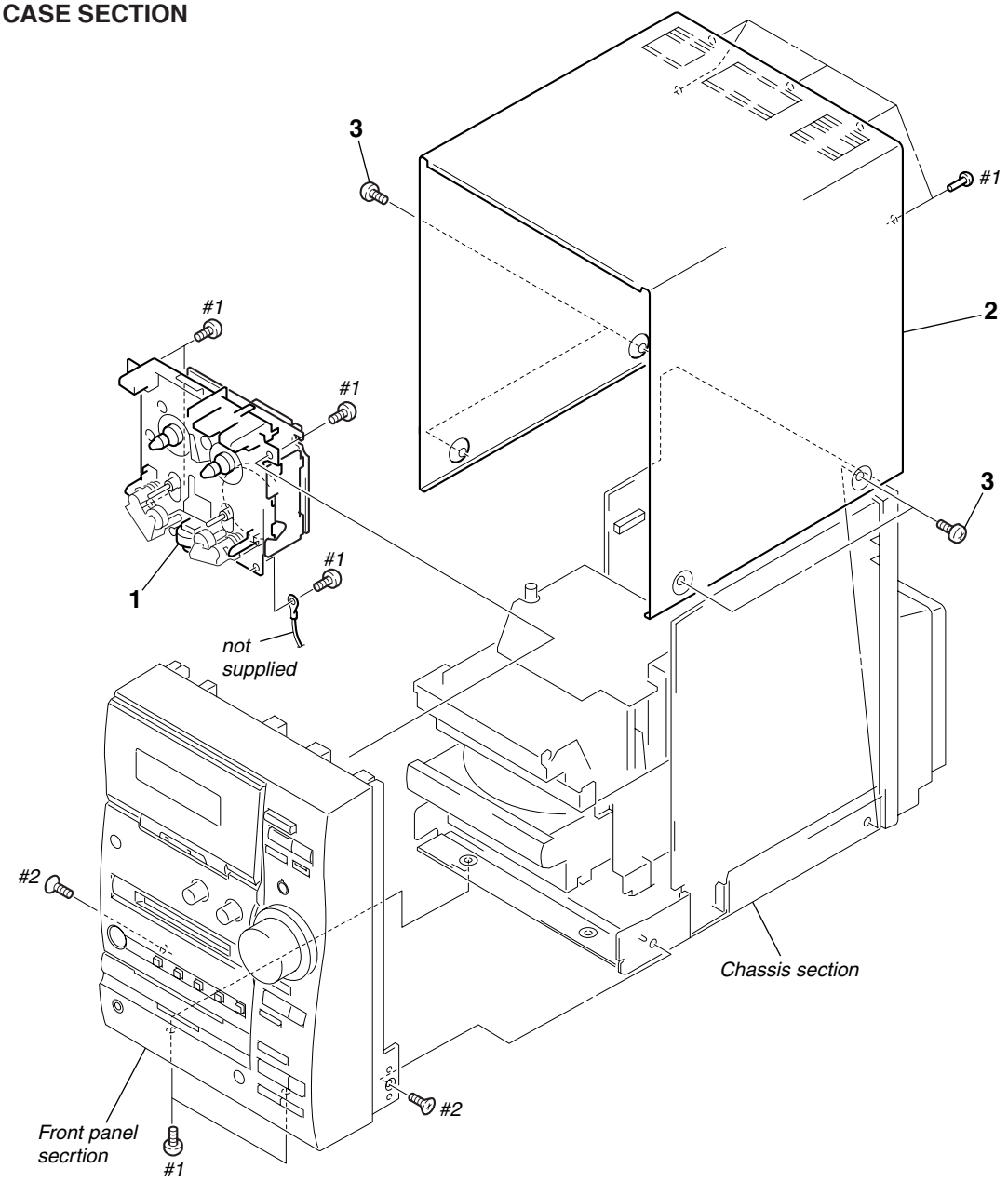
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note

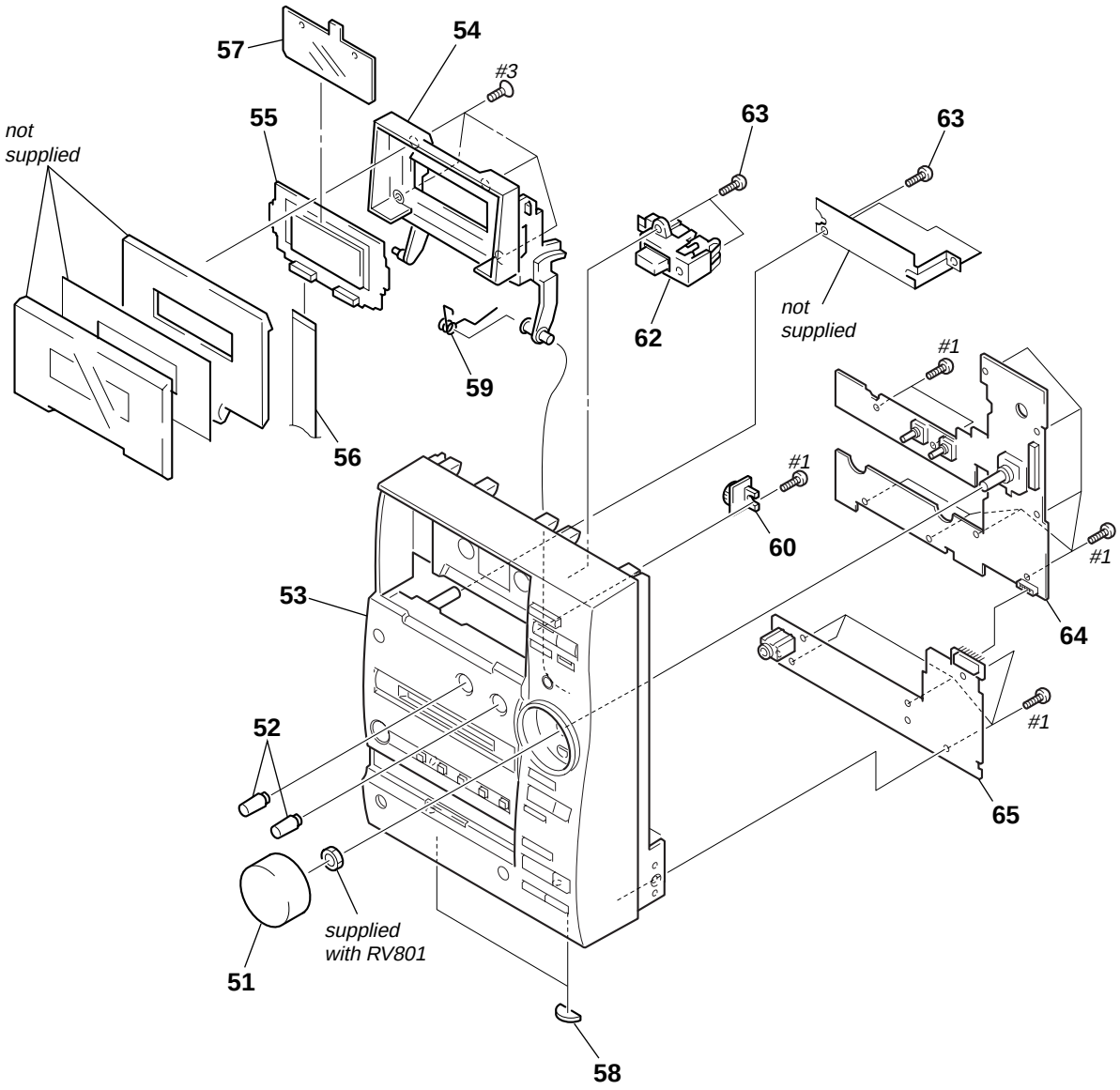
CD block, tape deck block and tuner pack are supplied with the assembled block.

8-1. UPPER CASE SECTION



Ref. No.	Part No.	Description	Remarks
1	1-772-623-11	DECK,MECHANICAL (TAPE DECK BLOCK)	
2	4-217-341-21	UPPER CASE	
3	4-221-580-01	SCREW, CASE	

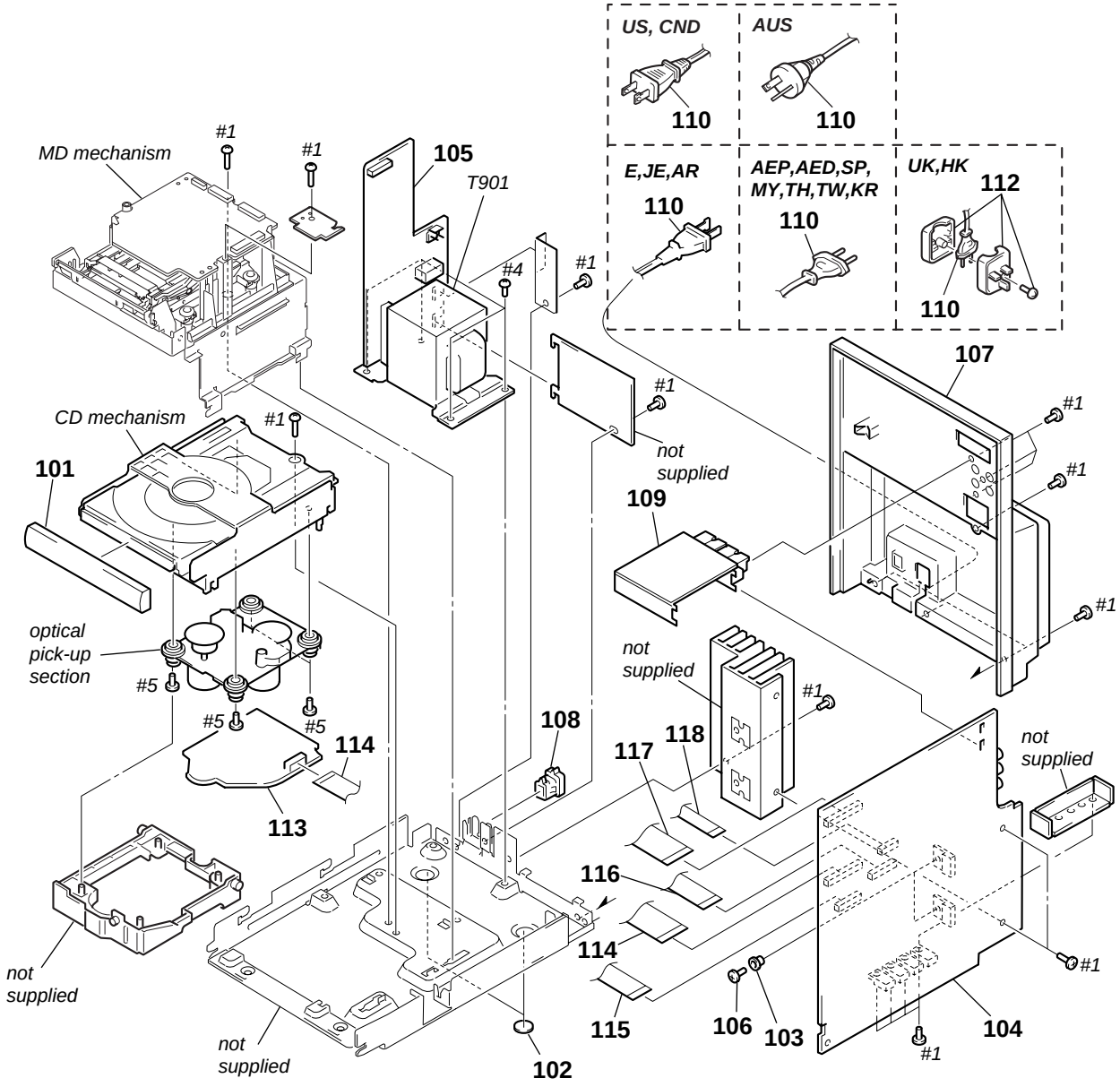
8-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks
51	4-228-281-01	KNOB(VOLUME)	
52	4-227-282-01	KNOB(BASS)	
53	X-4952-862-1	PANEL SUB ASSY, FRONT (AEP,UK,AED)	
53	X-4952-863-1	PANEL SUB ASSY, FRONT (US,CND,E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)	
54	X-4952-867-1	HOLDER SUB ASSY, CASSETTE	
55	1-677-895-11	LCD BOARD	
56	1-792-769-11	WIRE(FLAT TYP) (9 CORE)	

Ref. No.	Part No.	Description	Remarks
57	4-217-319-01	PLATE, LCD LIGHT	
58	4-218-204-01	FOOT(FRONT)	
59	4-228-286-01	SPRING (OPEN CASSETTE)	
60	3-351-377-11	GEAR, DAMPER	
62	X-4949-669-2	LEVER (LOCK) ASSY	
63	4-931-757-31	SCREW(DIA.2.6X8)(IT3B),TAPPING	
64	A-4473-146-A	CONTROL (A) BOARD, COMPLETE	
65	A-4473-145-A	CONTROL (B) BOARD, COMPLETE	

8-3. CHASSIS SECTION

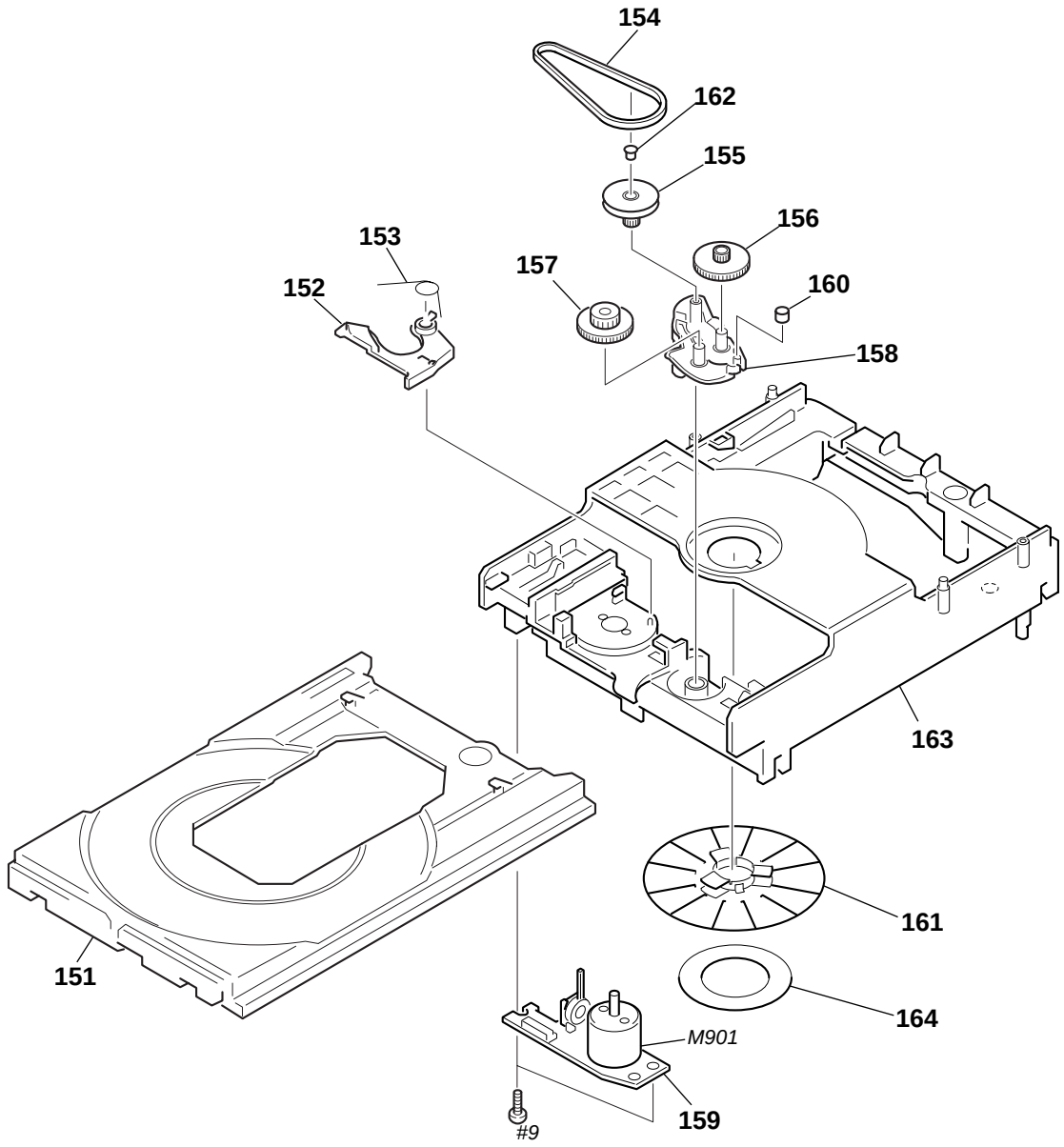


Ref. No.	Part No.	Description	Remarks
101	4-228-282-01	LID(CD)	
102	4-217-355-01	FOOT	
* 103	4-217-354-01	BUSHING, INSULATING	
104	A-4473-144-A	MAIN BOARD, COMPLETE (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)	
104	A-4473-152-A	MAIN BOARD, COMPLETE (AEP,UK,AED)	
104	A-4473-153-A	MAIN BOARD, COMPLETE (US,CND)	
105	1-677-889-11	POWER BOARD	
106	4-931-757-31	SCREW(DIA.2.6X8)(IT3B),TAPPING	
107	4-228-280-01	PANEL, BACK (AEP,UK,AED)	
107	4-228-280-11	PANEL, BACK (US,CND,AUS)	
107	4-228-280-21	PANEL, BACK (E,JE,AR,SP,MY,TH,TW,KR,HK)	
108	4-217-350-01	STOPPER, CORD	
109	A-4428-924-A	TUNER BLOCK	
⚠110	1-690-608-11	CORD, POWER (AUS)	

Ref. No.	Part No.	Description	Remarks
⚠110	1-696-169-11	CORD, POWER (AEP,UK,AED,SP,MY,TH,TW,KR,HK)	
⚠110	1-775-789-81	CORD, POWER (E,JE,AR)	
⚠110	1-783-531-71	CORD, POWER (US,CND)	
⚠112	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK,HK)	
113	A-4699-893-A	BD BOARD, COMPLETEw	
114	1-792-767-11	WIRE (FLAT TYP) (25 CORE)	
115	1-792-765-11	WIRE (FLAT TYP) (19 CORE)	
116	1-792-766-11	WIRE (FLAT TYP) (21 CORE)	
117	1-792-768-11	WIRE (FLAT TYP) (25 CORE)	
118	1-792-769-11	WIRE (FLAT TYP) (9 CORE)	
⚠T901	1-435-385-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-435-386-11	TRANSFORMER, POWER (AEP,UK,AED,AUS,TH,KR)	
⚠T901	1-435-628-11	TRANSFORMER, POWER (E,JE,AR,SP,MY,TW,HK)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

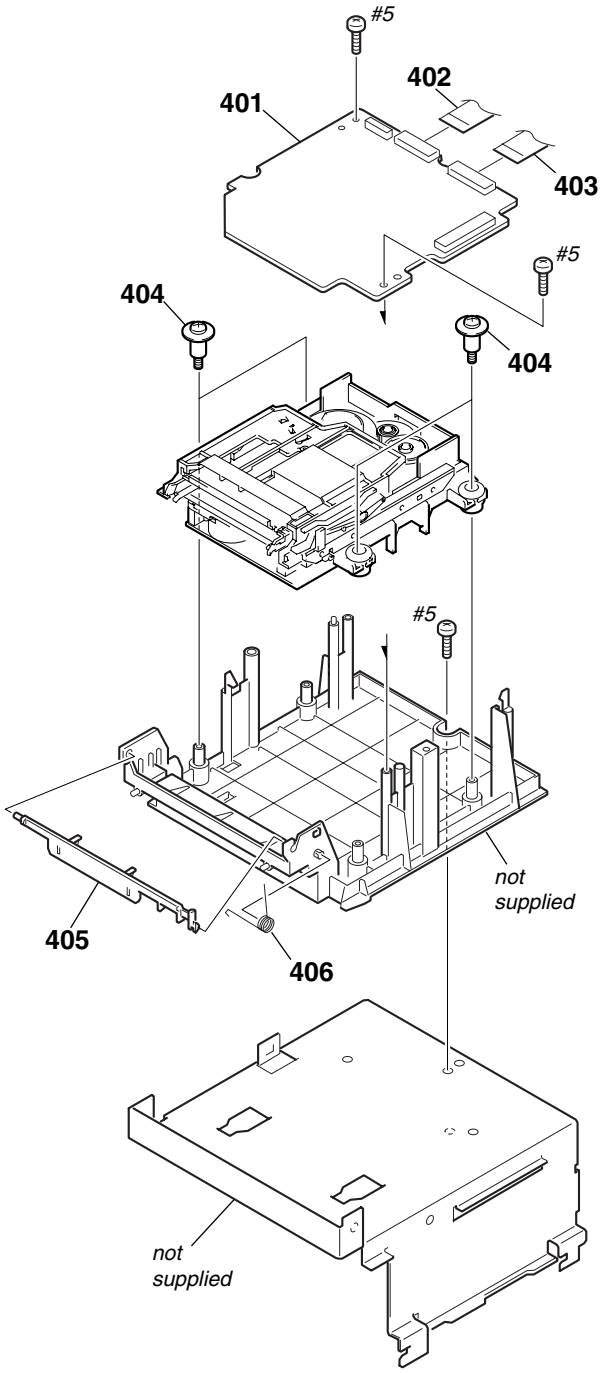
8-4. CD MECHANISM DECK SECTION (CDM55-K5BD41)



Ref. No.	Part No.	Description	Remarks
151	4-224-894-01	TRAY	
152	4-220-229-02	LEVER (SW)	
153	4-220-239-01	SPRING, TORSION	
154	4-221-816-01	BELT (CDM55)	
155	4-220-234-01	PULLEY (LDG)	
156	4-220-237-02	GEAR (A)	
157	4-220-238-02	GEAR (B)	
158	4-220-233-02	CAM(CDM55)	

Ref. No.	Part No.	Description	Remarks
159	1-676-599-11	LOADING BOARD	
160	4-221-815-02	ROLLER	
161	X-4952-811-2	PULLEY (AT) ASSY	
162	4-227-598-01	SPACER (55)	
163	4-225-884-03	CHASSIS (55D)	
164	4-231-777-02	SHEET (KH2)	
M901	A-4672-891-A	MOTOR (LD) ASSY (OPEN/CLOSE)	

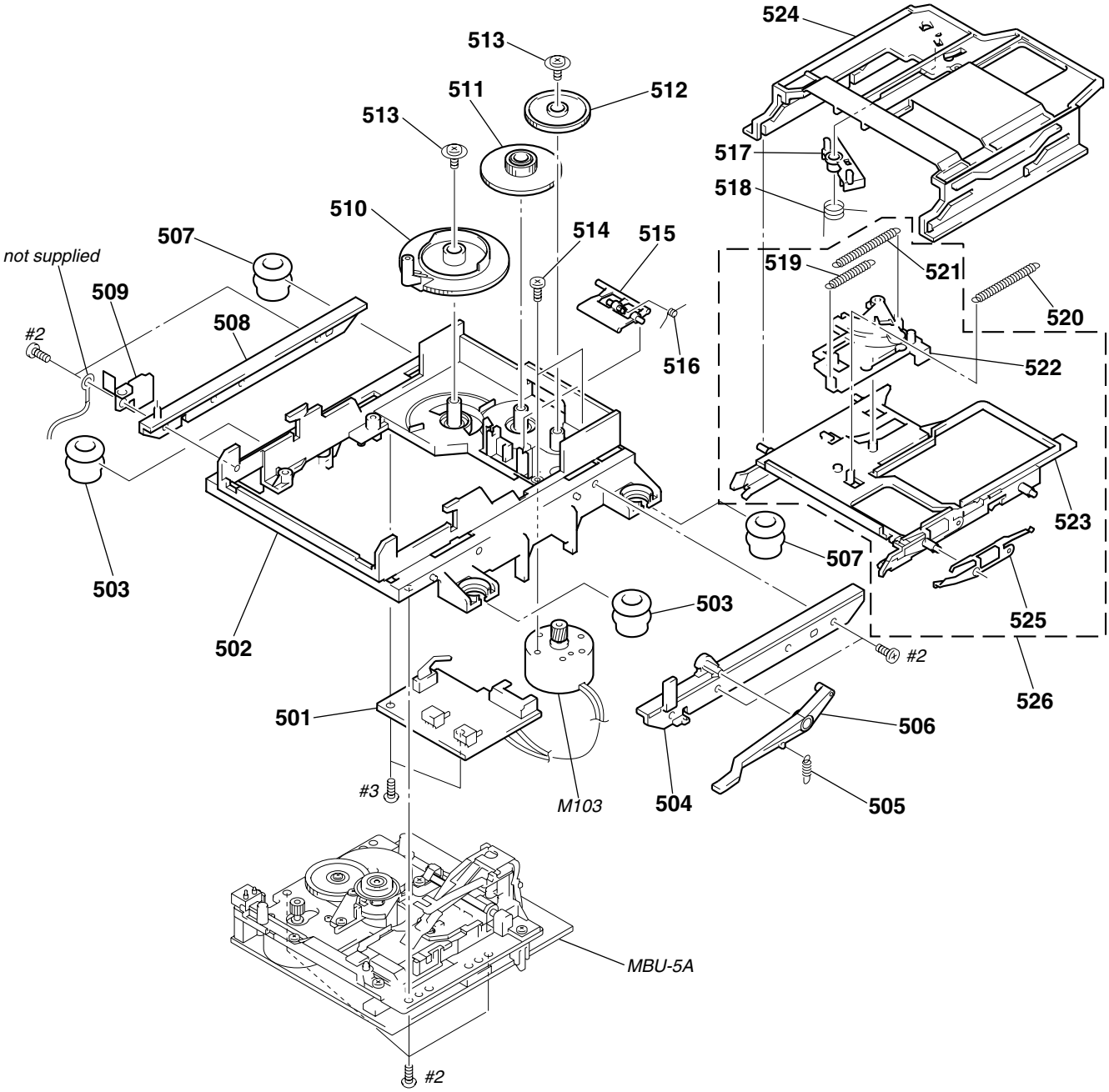
8-5. DIGITAL BOARD



Ref. No.	Part No.	Description	Remark
401	A-4473-149-A	DIGITAL BOARD, COMPLETE	
402	1-792-770-11	WIRE (FLAT TYP) (21 CORE)	
403	1-792-771-11	WIRE (FLAT TYP) (23 CORE)	

Ref. No.	Part No.	Description	Remark
404	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
405	4-228-314-01	LID(MD)	
406	4-228-315-01	SPRING (MD LID), TORSION	

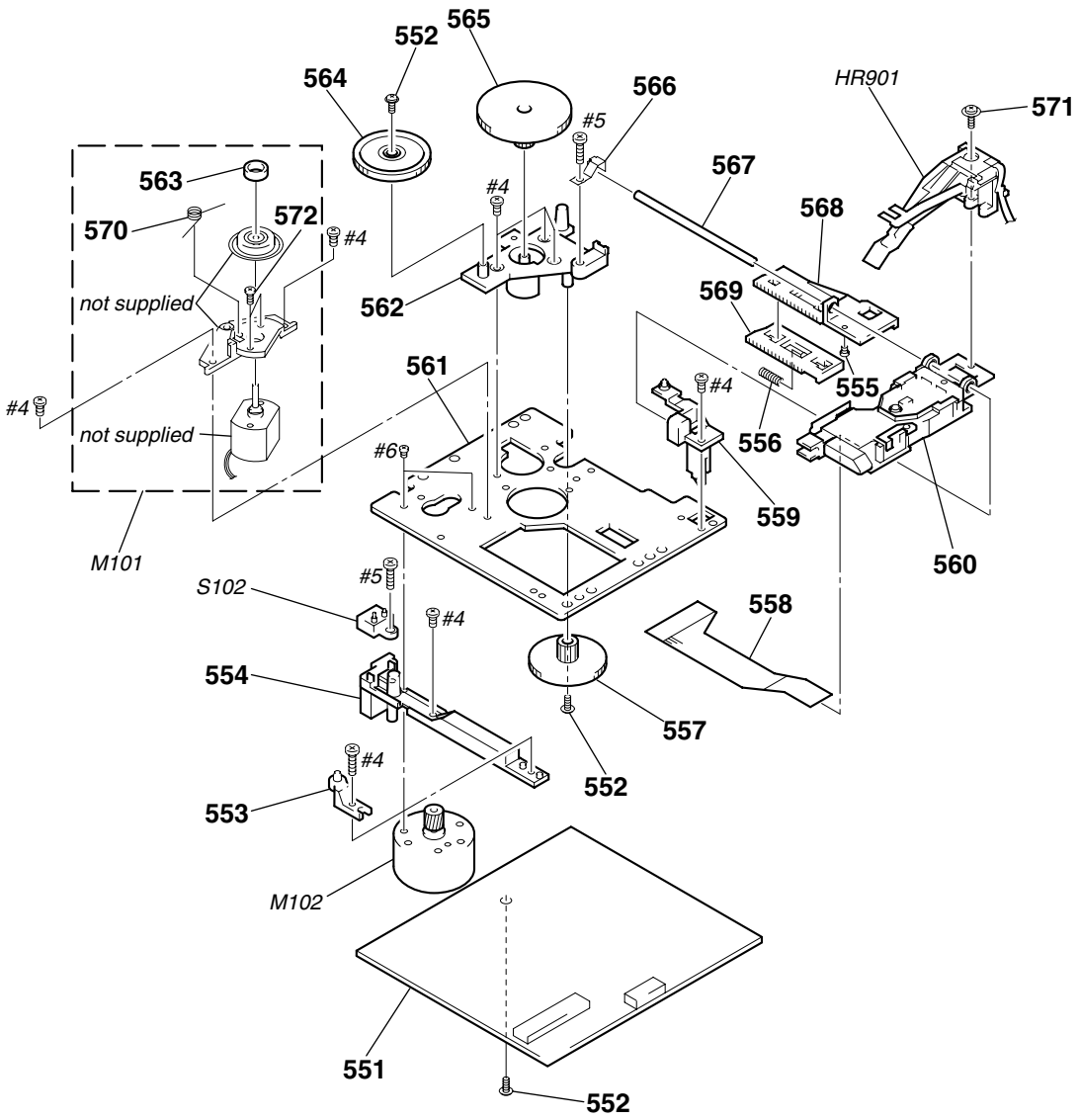
8-6. MD MECHANISM SECTION-1 (MDM-5A)



Ref. No.	Part No.	Description	Remark
* 501	1-671-115-21	SW BOARD	
* 502	4-996-217-01	CHASSIS	
503	4-996-223-11	INSULATOR (F)	
* 504	4-996-218-01	BRACKET (GUIDE R)	
505	4-996-277-01	SPRING (O/C), TENSION	
506	4-996-226-01	LEVER (O/C)	
507	4-999-347-01	INSULATOR (R)	
* 508	4-996-225-01	BRACKET (GUIDE L)	
509	4-988-466-11	SPRING (ELECTROSTATIC), LEAF	
510	4-996-219-01	GEAR (CAM GEAR)	
511	4-996-220-01	GEAR (A)	
512	4-996-221-01	GEAR (B)	
513	4-933-134-01	SCREW (+PTPWH M2.6X6)	

Ref. No.	Part No.	Description	Remark
514	4-996-224-01	SCREW (1.7X3), +PWH	
515	4-996-227-01	LEVER (HEAD)	
516	4-996-229-01	SPRING (HEAD LEVER), TORSION	
517	4-996-212-01	LEVER (LIMITTER)	
518	4-996-213-01	SPRING (LIMITTER), TORSION	
519	4-996-214-01	SPRING (SLIDER), TENSION	
520	4-966-216-01	SPRING (HOLDER), TENSION	
521	4-996-215-11	SPRING (LOCK LEVER), TENSION	
522	X-4949-246-1	SLIDER ASSY	
523	X-4949-245-1	HOLDER ASSY	
* 524	4-996-211-11	SLIDER (CAM)	
525	4-998-763-01	SPRING (SHUTTER), LEAF	
526	A-4680-409-A	HOLDER ASSY	
M103	X-4949-264-1	MOTOR ASSY, LOADING	

8-7. MD MECHANISM SECTION-1 (MDM-5A)



Ref. No.	Part No.	Description	Remark
551	A-4699-893-A	BD BOARD, COMPLETE	
552	3-372-761-01	SCREW (M1.7), TAPPING	
* 553	4-996-267-01	BASE (BU-D)	
* 554	4-996-255-01	BASE (BU-C)	
555	4-900-590-01	SCREW, PRECISION SMALL	
556	4-996-258-01	SPRING, COMPRESSION	
557	4-996-262-01	GEAR (SL-C)	
* 558	1-667-954-11	FLEXIBLE BOARD	
* 559	4-210-664-11	BASE (BU-A)	
⚠560	A-4672-541-A	OPTICAL PICK-UP BLOCK KMS-260A	
* 561	4-996-252-01	CHASSIS, BU	
* 562	4-996-254-01	BASE (BU-B)	
563	4-967-688-11	MAGNET, ABSORPTION	

Ref. No.	Part No.	Description	Remark
564	4-996-260-01	GEAR (SL-A)	
565	4-996-261-01	GEAR (SL-B)	
566	4-996-264-01	SPRING (SHAFT), LEAF	
567	4-996-265-01	SHAFT, MAIN	
568	4-996-256-11	SL (BASE)	
569	4-996-257-01	RACK (SL)	
570	4-996-263-01	SPRING (CLV), TORSION	
571	4-988-560-01	SCREW (+P 1.7X6)	
572	4-211-036-01	SCREW (1.7X2.5), +PWH	
HR901	1-500-502-11	HEAD, OVER WRITE	
M101	A-4672-475-A	MOTOR ASSY, SPINDLE	
M102	A-4672-474-A	MOTOR ASSY, SLED	
S102	1-762-148-21	SWITCH, PUSH (2 KEY)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 9
ELECTRICAL PARTS LIST

BD

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

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

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

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  TW : Taiwan model.
  HK : Hong Kong model.
  AR : Argentine model.
  CND : Canadian model.
  AED : North European model.
  KR : Korean model.
  TH : Thai model.
  JE : Tourist model.

Ref. No.	Part No.	Description			Remarks
	A-4699-893-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-125-822-11	TANTALUM	10uF	20.00%	10V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-125-822-11	TANTALUM	10uF	20.00%	10V
C104	1-125-822-11	TANTALUM	10uF	20.00%	10V
C105	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5.00%	50V
C107	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C108	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-164-344-11	CERAMIC CHIP	0.068uF	10.00%	25V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-109-982-11	CERAMIC CHIP	1uF	10.00%	10V
C115	1-164-489-11	CERAMIC CHIP	0.22uF	10.00%	16V
C116	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C117	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C118	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C119	1-125-822-11	TANTALUM	10uF	20.00%	10V
C121	1-125-822-11	TANTALUM	10uF	20.00%	10V
C122	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C128	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10.00%	16V
C130	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C131	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C132	1-107-823-11	CERAMIC CHIP	0.47uF	10.00%	16V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C142	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C143	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C144	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C146	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C153	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C156	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C158	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C160	1-104-601-11	ELECT CHIP	10uF	20.00%	10V
C161	1-104-601-11	ELECT CHIP	10uF	20.00%	10V
C163	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C164	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C168	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C169	1-125-822-11	TANTALUM	10uF	20.00%	10V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C181	1-104-913-11	TANTAL. CHIP	10uF	20.00%	16V
C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C184	1-117-970-11	ELECT CHIP	22uF	20.00%	10V
C185	1-164-611-11	CERAMIC CHIP	0.001uF	10.00%	500V
C187	1-104-913-11	TANTAL. CHIP	10uF	20.00%	16V
C188	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C189	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C190	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C191	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C196	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C197	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-569-479-51	CONNECTOR, FPC 21P			
CN102	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
CN103	1-784-834-21	CONNECTOR,FFC(LIF(NON-ZIF))23P			
CN104	1-770-687-11	CONNECTOR, FFC/FPC 4P			
CN110	1-695-440-21	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D181	8-719-046-86	DIODE F1J6TP			
D183	8-719-046-86	DIODE F1J6TP			
		< IC >			
IC101	8-752-080-95	IC CXA2523AR			
IC103	8-729-903-10	TRANSISTOR FMW1-T-148			
IC121	8-752-389-44	IC CXD2654R			
IC123	8-759-096-87	IC TC7WU04FU(TE12R)			
IC124	8-759-498-44	IC MSM51V4400-70TS-K			
IC152	8-759-430-25	IC BH6511FS-E2			
IC171	8-759-487-04	IC BR24C02F-E2			
IC181	8-759-481-17	IC MC74ACT08DTR2			
IC192	8-759-460-72	IC BA033FP-E2			

BD CONTROL (A)

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L101	1-414-813-11	FERRITE	0uH		
L102	1-414-813-11	FERRITE	0uH		
L103	1-414-813-11	FERRITE	0uH		
L105	1-414-813-11	FERRITE	0uH		
L106	1-414-813-11	FERRITE	0uH		
L121	1-414-813-11	FERRITE	0uH		
L122	1-414-813-11	FERRITE	0uH		
L151	1-412-029-11	INDUCTOR CHIP	10uH		
L152	1-412-029-11	INDUCTOR CHIP	10uH		
L153	1-412-032-11	INDUCTOR CHIP	100uH		
L154	1-412-032-11	INDUCTOR CHIP	100uH		
L161	1-414-813-11	FERRITE	0uH		
L162	1-414-813-11	FERRITE	0uH		
L181	1-216-295-91	SHORT	0		
		< TRANSISTOR >			
Q101	8-729-403-35	TRANSISTOR	RN2304-TE85L		
Q102	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q103	8-729-028-99	TRANSISTOR	RN1307-TE85L		
Q104	8-729-028-99	TRANSISTOR	RN1307-TE85L		
Q162	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q163	8-729-403-35	TRANSISTOR	RN2304-TE85L		
Q181	8-729-018-75	TRANSISTOR	2SJ278MYTR		
Q182	8-729-017-65	TRANSISTOR	2SK1764KYTR		
		< RESISTOR >			
R103	1-216-049-91	RES-CHIP	1K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R106	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R109	1-216-295-91	SHORT	0		
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-295-91	SHORT	0		
R112	1-216-089-91	RES-CHIP	47K	5%	1/10W
R113	1-216-049-91	RES-CHIP	1K	5%	1/10W
R115	1-216-049-91	RES-CHIP	1K	5%	1/10W
R117	1-216-113-00	METAL CHIP	470K	5%	1/10W
R120	1-216-025-91	RES-CHIP	100	5%	1/10W
R121	1-216-097-91	RES-CHIP	100K	5%	1/10W
R123	1-216-295-91	SHORT	0		
R124	1-216-025-91	RES-CHIP	100	5%	1/10W
R125	1-216-025-91	RES-CHIP	100	5%	1/10W
R127	1-216-025-91	RES-CHIP	100	5%	1/10W
R129	1-216-295-91	SHORT	0		
R130	1-216-295-91	SHORT	0		
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-097-91	RES-CHIP	100K	5%	1/10W
R133	1-216-117-00	METAL CHIP	680K	5%	1/10W
R134	1-216-049-91	RES-CHIP	1K	5%	1/10W
R135	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R136	1-216-049-91	RES-CHIP	1K	5%	1/10W
R137	1-216-295-91	SHORT	0		
R140	1-216-029-00	METAL CHIP	150	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-025-91	RES-CHIP	100	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-037-00	METAL CHIP	330	5%	1/10W
R147	1-216-025-91	RES-CHIP	100	5%	1/10W
R148	1-216-045-00	METAL CHIP	680	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-295-91	SHORT	0		
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R158	1-216-097-91	RES-CHIP	100K	5%	1/10W
R159	1-216-097-91	RES-CHIP	100K	5%	1/10W
R160	1-216-295-91	SHORT	0		
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R162	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-045-00	METAL CHIP	680	5%	1/10W
R165	1-216-097-91	RES-CHIP	100K	5%	1/10W
R166	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R167	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R169	1-219-724-11	METAL CHIP	1	1%	1/4W
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-121-91	RES-CHIP	1M	5%	1/10W
R175	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R177	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R179	1-216-085-00	METAL CHIP	33K	5%	1/10W
R180	1-216-073-00	METAL CHIP	10K	5%	1/10W
R182	1-216-089-91	RES-CHIP	47K	5%	1/10W
R183	1-216-089-91	RES-CHIP	47K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R185	1-216-081-00	METAL CHIP	22K	5%	1/10W
R186	1-216-089-91	RES-CHIP	47K	5%	1/10W
R188	1-216-073-00	METAL CHIP	10K	5%	1/10W
R189	1-216-073-00	METAL CHIP	10K	5%	1/10W
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W
R195	1-216-073-00	METAL CHIP	10K	5%	1/10W
R196	1-216-295-91	SHORT	0		
R197	1-216-295-91	SHORT	0		
R198	1-216-296-91	SHORT	0		
		< SWITCH >			
S101	1-762-596-21	SWITCH, PUSH (1 KEY) (LIMIT IN)			

****

	A-4473-146-A	CONTROL (A) BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C601	1-124-259-11	ELECT	4.7uF	20.00%	16V
C602	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
		< CONNECTOR >			
* CN801	1-565-650-11	SOCKET, CONNECTOR 25P			
		< CONNECTOR >			
CNP803	1-794-454-11	PIN, CONNECTOR			

Ref. No.	Part No.	Description				Remarks
		< DIODE >				
D851	8-719-074-42	DIODE	SLR325VR-T31			
D852	8-719-050-06	DIODE	SLR-325MGT31			
D853	8-719-050-06	DIODE	SLR-325MGT31			
D854	8-719-064-11	DIODE	SPR-325MVW			
D855	8-719-075-50	DIODE	SELS6B14C-TP5			
D856	8-719-074-42	DIODE	SLR325VR-T31			
D860	8-719-074-40	DIODE	SLR325DU-T31			
		< IC >				
IC802	8-742-132-00	IC SBX1976-51P				
		< JUMPER RESISTOR >				
JR801	1-216-296-91	SHORT	0			
JR802	1-216-296-91	SHORT	0			
JR803	1-216-296-91	SHORT	0			
JR804	1-216-296-91	SHORT	0			
JR805	1-216-296-91	SHORT	0			
JR806	1-216-296-91	SHORT	0			
JR807	1-216-296-91	SHORT	0			
JR809	1-216-296-91	SHORT	0			
JR810	1-216-296-91	SHORT	0			
JR811	1-216-296-91	SHORT	0			
JR812	1-216-296-91	SHORT	0			
JR813	1-216-296-91	SHORT	0			
JR818	1-216-296-91	SHORT	0			
JR822	1-216-296-91	SHORT	0			
JR823	1-216-296-91	SHORT	0			
JR824	1-216-296-91	SHORT	0			
JR825	1-216-296-91	SHORT	0			
JR841	1-216-296-91	SHORT	0			
JR842	1-216-296-91	SHORT	0			
JR843	1-216-296-91	SHORT	0			
JR845	1-216-296-91	SHORT	0			
JR846	1-216-296-91	SHORT	0			
JR847	1-216-296-91	SHORT	0			
JR848	1-216-296-91	SHORT	0			
JR849	1-216-296-91	SHORT	0			
JR851	1-216-296-91	SHORT	0			
JR852	1-216-296-91	SHORT	0			
JR853	1-216-296-91	SHORT	0			
		< TRANSISTOR >				
Q851	8-729-038-67	TRANSISTOR	KRC102S			
Q852	8-729-038-67	TRANSISTOR	KRC102S			
Q853	8-729-038-67	TRANSISTOR	KRC102S			
Q854	8-729-038-67	TRANSISTOR	KRC102S			
Q855	8-729-038-67	TRANSISTOR	KRC102S			
Q856	8-729-038-67	TRANSISTOR	KRC102S			
Q857	8-729-038-67	TRANSISTOR	KRC102S			
Q861	8-729-038-67	TRANSISTOR	KRC102S			
Q870	8-729-038-67	TRANSISTOR	KRC102S			
		< RESISTOR >				
R602	1-216-045-00	METAL CHIP	680	5%	1/10W	
R603	1-216-047-91	RES-CHIP	820	5%	1/10W	
R604	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R605	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R606	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R607	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R610	1-216-045-00	METAL CHIP	680	5%	1/10W	
R611	1-216-047-91	RES-CHIP	820	5%	1/10W	
R612	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R613	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R614	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R615	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R616	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R641	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R642	1-216-039-00	METAL CHIP	390	5%	1/10W	
R643	1-216-039-00	METAL CHIP	390	5%	1/10W	
R645	1-216-029-00	METAL CHIP	150	5%	1/10W	
R646	1-216-037-00	METAL CHIP	330	5%	1/10W	
R647	1-216-033-00	METAL CHIP	220	5%	1/10W	
R648	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R649	1-216-033-00	METAL CHIP	220	5%	1/10W	
R650	1-216-029-00	METAL CHIP	150	5%	1/10W	
R660	1-216-041-00	METAL CHIP	470	5%	1/10W	
		< VARIABLE RESISTOR >				
RV801	1-473-392-11	ENCODER, ROTARY (VOLUME)				
RV802	1-418-859-11	ENCODER, ROTARY (TREBLE)				
RV803	1-418-859-11	ENCODER, ROTARY (BASS)				
		< SWITCH >				
S801	1-571-760-11	SWITCH, KEY BOARD (I/⏻)				
S802	1-571-760-11	SWITCH, KEY BOARD (SYNCRO REC)				
S803	1-571-760-11	SWITCH, KEY BOARD (ENTER/START)				
S804	1-571-760-11	SWITCH, KEY BOARD (FUNCTION)				
S805	1-571-760-11	SWITCH, KEY BOARD (PLAY MODE/DIRECTION)				
S806	1-571-760-11	SWITCH, KEY BOARD (REPEAT DOLBY NR)				
S807	1-571-760-11	SWITCH, KEY BOARD (MD REC ●)				
S809	1-571-760-11	SWITCH, KEY BOARD (TAPE ◀▶)				
S810	1-571-760-11	SWITCH, KEY BOARD (TAPE ■)				
S811	1-571-760-11	SWITCH, KEY BOARD (TAPE REC ●)				
S812	1-571-760-11	SWITCH, KEY BOARD (TAPE ❚❚)				
S813	1-571-760-11	SWITCH, KEY BOARD (DSG)				
S814	1-571-760-11	SWITCH, KEY BOARD (MD ⏏)				
S815	1-571-760-11	SWITCH, KEY BOARD (MD ▶❚❚)				
S816	1-571-760-11	SWITCH, KEY BOARD (MD ■)				
**********						
	A-4473-145-A	CONTROL (B) BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C132	1-124-584-00	ELECT	100uF	20%	10V	
C134	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C232	1-124-584-00	ELECT	100uF	20%	10V	
C234	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
		< CONNECTOR >				
CN803	1-794-469-11	CONNECTOR, BOARD TO BOARD				
		< DIODE >				
D857	8-719-064-11	DIODE	SPR-325MVW			
D858	8-719-075-51	DIODE	SELS6B14C-LF62			

CONTROL (B) DIGITAL

Ref. No.	Part No.	Description			Remarks
		< FERRITE BEAD >			
FB102	1-469-144-21	FERRITE	0UH		
FB202	1-469-144-21	FERRITE	0UH		
		< JACK >			
J301	1-794-453-11	JACK (PHONES)			
		< JUMPER RESISTOR >			
JR831	1-216-296-91	SHORT	0		
JR832	1-216-296-91	SHORT	0		
JR833	1-216-296-91	SHORT	0		
JR834	1-216-296-91	SHORT	0		
JR835	1-216-296-91	SHORT	0		
		< COIL >			
L102	1-412-006-31	INDUCTOR CHIP	10uH		
L202	1-412-006-31	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q132	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q232	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q859	8-729-038-67	TRANSISTOR	KRC102S		
Q860	8-729-038-67	TRANSISTOR	KRC102S		
Q862	8-729-038-67	TRANSISTOR	KRC102S		
		< RESISTOR >			
R128	1-216-005-00	METAL CHIP	15	5%	1/10W
R139	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R228	1-216-005-00	METAL CHIP	15	5%	1/10W
R239	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R618	1-216-045-00	METAL CHIP	680	5%	1/10W
R619	1-216-047-91	RES-CHIP	820	5%	1/10W
R620	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R621	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R622	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R652	1-216-029-00	METAL CHIP	150	5%	1/10W
R653	1-216-033-00	METAL CHIP	220	5%	1/10W
R662	1-216-029-00	METAL CHIP	150	5%	1/10W
		< SWITCH >			
S817	1-571-760-11	SWITCH, KEY BOARD (CD ⏏)			
S818	1-571-760-11	SWITCH, KEY BOARD (CD ▶II)			
S819	1-571-760-11	SWITCH, KEY BOARD (CD ■)			
S820	1-571-760-11	SWITCH, KEY BOARD (CD ▶▶I)			
S821	1-571-760-11	SWITCH, KEY BOARD (CD I◀◀)			
S822	1-571-760-11	SWITCH, KEY BOARD (TUNER/BAND)			

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	A-4473-149-A	DIGITAL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C172	1-124-584-00	ELECT	100uF	20%	10V
C201	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C202	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C203	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C216	1-124-584-00	ELECT	100uF	20%	10V
C218	1-124-261-00	ELECT	10uF	20%	50V
C219	1-124-261-00	ELECT	10uF	20%	50V
C220	1-124-261-00	ELECT	10uF	20%	50V
C221	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C222	1-124-261-00	ELECT	10uF	20%	50V
C341	1-124-589-11	ELECT	47uF	20%	16V
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C352	1-124-584-00	ELECT	100uF	20%	10V
C353	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C355	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C357	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C358	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C359	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C360	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C362	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C363	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C503	1-124-584-00	ELECT	100uF	20%	10V
C509	1-124-584-00	ELECT	100uF	20%	10V
C510	1-124-584-00	ELECT	100uF	20%	10V
C522	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C527	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C528	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C529	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C818	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C819	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C2001	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN101	1-565-650-11	SOCKET, CONNECTOR 25P			
CN103	1-794-474-11	CONNECTOR, FFC/FPC			
CN104	1-793-601-11	CONNECTOR, FFC/FPC (ZIF) 21P			
		< FERRITE BEAD >			
FB801	1-469-144-21	FERRITE	0UH		
FB802	1-469-144-21	FERRITE	0UH		
		< IC >			
IC153	8-759-481-19	IC	LB1830M-S-TE-L		
IC201	8-759-553-65	IC	UDA1341TS		
IC202	8-759-564-53	IC	MC74HCU04ADTR2		
IC316	8-759-657-09	IC	M30624MG-A16FP		
		< JUMPER RESISTOR >			
JR503	1-216-295-91	SHORT	0		
JR504	1-216-296-91	SHORT	0		
JR506	1-216-296-91	SHORT	0		
JR508	1-216-295-91	SHORT	0		
JR510	1-216-296-91	SHORT	0		
JR512	1-216-296-91	SHORT	0		
JR514	1-216-296-91	SHORT	0		
JR516	1-216-296-91	SHORT	0		
JR518	1-216-296-91	SHORT	0		
JR519	1-216-296-91	SHORT	0		
JR520	1-216-295-91	SHORT	0		
JR521	1-216-295-91	SHORT	0		
JR522	1-216-295-91	SHORT	0		
JR525	1-216-296-91	SHORT	0		
JR526	1-216-296-91	SHORT	0		

Ref. No.	Part No.	Description			Remarks
JR528	1-216-296-91	SHORT	0		
JR529	1-216-296-91	SHORT	0		
JR530	1-216-296-91	SHORT	0		
JR531	1-216-295-91	SHORT	0		
JR533	1-216-296-91	SHORT	0		
JR534	1-216-296-91	SHORT	0		
JR535	1-216-295-91	SHORT	0		
JR536	1-216-295-91	SHORT	0		
JR537	1-216-296-91	SHORT	0		
JR538	1-216-295-91	SHORT	0		
JR539	1-216-296-91	SHORT	0		
JR540	1-216-296-91	SHORT	0		
JR541	1-216-296-91	SHORT	0		
JR542	1-216-296-91	SHORT	0		
		< TRANSISTOR >			
Q350	8-729-038-67	TRANSISTOR	KRC102S		
		< RESISTOR >			
R201	1-216-121-91	RES-CHIP	1M	5%	1/10W
R202	1-216-041-00	METAL CHIP	470	5%	1/10W
R203	1-216-049-91	RES-CHIP	1K	5%	1/10W
R204	1-216-089-91	RES-CHIP	47K	5%	1/10W
R205	1-216-113-00	METAL CHIP	470K	5%	1/10W
R206	1-216-041-00	METAL CHIP	470	5%	1/10W
R207	1-216-041-00	METAL CHIP	470	5%	1/10W
R210	1-216-037-00	METAL CHIP	330	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-246-00	RES-CHIP	100K	5%	1/8W
R333	1-216-222-00	RES-CHIP	10K	5%	1/8W
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W
R351	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R352	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R353	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R358	1-216-073-00	METAL CHIP	10K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R363	1-216-222-00	RES-CHIP	10K	5%	1/8W
R366	1-216-097-91	RES-CHIP	100K	5%	1/10W
R367	1-216-097-91	RES-CHIP	100K	5%	1/10W
R370	1-216-073-00	METAL CHIP	10K	5%	1/10W
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W
R383	1-216-073-00	METAL CHIP	10K	5%	1/10W
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W
R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R386	1-216-073-00	METAL CHIP	10K	5%	1/10W
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R816	1-216-174-00	RES-CHIP	100	5%	1/8W
R817	1-216-174-00	RES-CHIP	100	5%	1/8W
R818	1-216-174-00	RES-CHIP	100	5%	1/8W
R819	1-216-174-00	RES-CHIP	100	5%	1/8W
R2002	1-216-222-00	RES-CHIP	10K	5%	1/8W
R2004	1-216-174-00	RES-CHIP	100	5%	1/8W
R2005	1-216-174-00	RES-CHIP	100	5%	1/8W
R2006	1-216-174-00	RES-CHIP	100	5%	1/8W
R2007	1-216-025-91	RES-CHIP	100	5%	1/10W
R2008	1-216-073-00	METAL CHIP	10K	5%	1/10W
R2009	1-216-222-00	RES-CHIP	10K	5%	1/8W

Ref. No.	Part No.	Description	Remarks
		< VIBRATOR >	
X201	1-781-581-11	VIBRATOR, CRYSTAL 22.5MHz	
X302	1-579-175-11	VIBRATOR, CERAMIC 10MHz	
**********			
	1-677-895-11	LCD BOARD	
		**********	
		< CAPACITOR >	
C603	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		< CONNECTOR >	
CN802	1-794-473-11	CONNECTOR, FFC/FPC	
		< DIODE >	
D601	8-719-075-51	DIODE SELS6B14C-LF62	
D602	8-719-075-51	DIODE SELS6B14C-LF62	
D603	8-719-075-51	DIODE SELS6B14C-LF62	
D604	8-719-075-51	DIODE SELS6B14C-LF62	
		< JUMPER RESISTOR >	
JR601	1-216-296-91	SHORT 0	
		< COIL >	
L601	1-412-002-31	INDUCTOR CHIP 4.7uH	
L602	1-412-006-31	INDUCTOR CHIP 10uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD801	1-804-070-11	DISPLAY PANEL, LIQUID CRYSTAL	
**********			
	1-676-599-11	LOADING BOARD	
		**********	
		< CONNECTOR >	
* CN1	1-568-943-11	PIN, CONNECTOR 5P	
		< MOTOR >	
M901	A-4672-891-A	MOTOR (LD) ASSY (OPEN/CLOSE)	
		< SWITCH >	
S1	1-771-799-11	SWITCH, LEVER (SLIDE)	
**********			
	A-4473-153-A	MAIN BOARD, COMPLETE (US,CND)	
		**********	
	A-4473-152-A	MAIN BOARD, COMPLETE (AEP,UK,AED)	
		**********	
	A-4473-144-A	MAIN BOARD, COMPLETE (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)	
		**********	
*	4-217-354-01	BUSHING, INSULATING	
	4-931-757-31	SCREW(DIA.2.6X8)(IT3B),TAPPING	
	7-685-546-14	SCREW+BTP 3X8 TYPE2 N-S	
		< BATTERY >	
BT301	1-528-938-11	BATTERY, LITHIUM ION SECONDARY	

MAIN

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C101	1-126-964-11	ELECT	10uF	20.00%	50V
C102	1-126-964-11	ELECT	10uF	20.00%	50V
C103	1-126-964-11	ELECT	10uF	20.00%	50V
C104	1-126-964-11	ELECT	10uF	20.00%	50V
C105	1-126-964-11	ELECT	10uF	20.00%	50V
C106	1-126-964-11	ELECT	10uF	20.00%	50V
C107	1-126-964-11	ELECT	10uF	20.00%	50V
C108	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C109	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C110	1-164-492-11	CERAMIC CHIP	0.15uF	10.00%	16V
C111	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C112	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C113	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C114	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C116	1-126-964-11	ELECT	10uF	20.00%	50V
C117	1-126-964-11	ELECT	10uF	20.00%	50V
C118	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C119	1-126-964-11	ELECT	10uF	20.00%	50V
C120	1-115-185-11	CERAMIC CHIP	0.033uF	10.00%	50V (US,CND)
C120	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V (AEP,UK,AED)
C120	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)
C121	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C122	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C123	1-126-964-11	ELECT	10uF	20.00%	50V
C124	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C125	1-126-965-11	ELECT	22uF	20.00%	50V
C127	1-130-495-00	MYLAR	0.1uF	5%	50V
C128	1-130-495-00	MYLAR	0.1uF	5%	50V
C129	1-126-964-11	ELECT	10uF	20.00%	50V
C130	1-126-964-11	ELECT	10uF	20.00%	50V
C131	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C140	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C201	1-126-964-11	ELECT	10uF	20.00%	50V
C202	1-126-964-11	ELECT	10uF	20.00%	50V
C203	1-126-964-11	ELECT	10uF	20.00%	50V
C204	1-126-964-11	ELECT	10uF	20.00%	50V
C205	1-126-964-11	ELECT	10uF	20.00%	50V
C206	1-126-964-11	ELECT	10uF	20.00%	50V
C207	1-126-964-11	ELECT	10uF	20.00%	50V
C208	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C209	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C210	1-164-492-11	CERAMIC CHIP	0.15uF	10.00%	16V
C211	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C212	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C213	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C214	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C216	1-126-964-11	ELECT	10uF	20.00%	50V
C217	1-126-964-11	ELECT	10uF	20.00%	50V
C218	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C219	1-126-964-11	ELECT	10uF	20.00%	50V

Ref. No.	Part No.	Description			Remarks
C220	1-115-185-11	CERAMIC CHIP	0.033uF	10.00%	50V (US,CND)
C220	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V (AEP,UK,AED)
C220	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)
C221	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C222	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C223	1-126-964-11	ELECT	10uF	20.00%	50V
C224	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C225	1-126-965-11	ELECT	22uF	20.00%	50V
C227	1-130-495-00	MYLAR	0.1uF	5%	50V
C228	1-130-495-00	MYLAR	0.1uF	5%	50V
C229	1-126-964-11	ELECT	10uF	20.00%	50V
C230	1-126-964-11	ELECT	10uF	20.00%	50V
C231	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C240	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C301	1-126-964-11	ELECT	10uF	20.00%	50V
C302	1-126-941-11	ELECT	470uF	20.00%	16V
C303	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C304	1-104-665-11	ELECT	100uF	20.00%	16V
C305	1-104-665-11	ELECT	100uF	20.00%	16V
C306	1-104-664-11	ELECT	47uF	20.00%	16V
C307	1-104-664-11	ELECT	47uF	20.00%	16V
C310	1-104-665-11	ELECT	100uF	20.00%	16V
C311	1-104-665-11	ELECT	100uF	20.00%	16V
C312	1-104-665-11	ELECT	100uF	20.00%	16V
C313	1-126-965-11	ELECT	22uF	20.00%	50V
C316	1-126-955-11	ELECT	4700uF	20.00%	35V
C317	1-126-955-11	ELECT	4700uF	20.00%	35V
C318	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C319	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C320	1-126-942-61	ELECT	1000uF	20.00%	25V
C321	1-126-942-61	ELECT	1000uF	20.00%	25V
C322	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C323	1-104-665-11	ELECT	100uF	20.00%	16V
C324	1-104-665-11	ELECT	100uF	20.00%	16V
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C326	1-104-665-11	ELECT	100uF	20.00%	16V
C327	1-104-665-11	ELECT	100uF	20.00%	16V
C328	1-126-942-61	ELECT	1000uF	20.00%	16V
C329	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C331	1-126-767-11	ELECT	1000uF	20.00%	10V
C332	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C333	1-104-666-11	ELECT	220uF	20.00%	10V
C334	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C335	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C336	1-104-665-11	ELECT	100uF	20.00%	16V
C337	1-126-964-11	ELECT	10uF	20.00%	50V
C338	1-124-472-11	ELECT	470uF	20%	10V
C339	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C340	1-104-665-11	ELECT	100uF	20.00%	16V
C341	1-104-665-11	ELECT	100uF	20.00%	16V
C342	1-124-903-11	ELECT	1uF	20.00%	50V
C343	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C344	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C345	1-126-767-11	ELECT	1000uF	20.00%	10V
C347	1-104-664-11	ELECT	47uF	20.00%	16V

Ref. No.	Part No.	Description			Remarks
C348	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C349	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C350	1-124-903-11	ELECT	1uF	20.00% 50V	
C351	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C352	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C353	1-104-664-11	ELECT	47uF	20.00% 16V	
C355	1-126-961-11	ELECT	2.2uF	20.00% 50V	
				(AEP,UK,AED)	
C356	1-126-964-11	ELECT	10uF	20.00% 50V	
				(AEP,UK,AED)	
C357	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
				(AEP,UK,AED)	
C358	1-163-006-11	CERAMIC CHIP	560PF	10.00% 50V	
				(AEP,UK,AED)	
C359	1-126-961-11	ELECT	2.2uF	20.00% 50V	
				(AEP,UK,AED)	
C360	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
				(AEP,UK,AED)	
C361	1-163-239-11	CERAMIC CHIP	33PF	5.00% 50V	
				(AEP,UK,AED)	
C362	1-163-239-11	CERAMIC CHIP	33PF	5.00% 50V	
				(AEP,UK,AED)	
C364	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
				(AEP,UK,AED)	
C365	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
				(AEP,UK,AED)	
C366	1-104-664-11	ELECT	47uF	20.00% 10V	
				(AEP,UK,AED)	
C367	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
				(AEP,UK,AED)	
C368	1-126-767-11	ELECT	1000uF	20.00% 10V	
C369	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C373	1-104-665-11	ELECT	100uF	20.00% 25V	
C374	1-104-664-11	ELECT	47uF	20.00% 16V	
				(US,CND,AEP,UK,AED)	
C375	1-104-666-11	ELECT	220uF	20.00% 10V	
C376	1-162-306-11	CERAMIC	0.01uF	30.00% 16V	
C377	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
C378	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
		(US,CND,E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)			
C378	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
				(AEP,UK,AED)	
C379	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
		(US,CND,E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)			
C379	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
				(AEP,UK,AED)	
C380	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
C381	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
		(US,CND,E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)			
C382	1-104-663-11	ELECT	33uF	20.00% 16V	
C383	1-164-161-11	CERAMIC CHIP	0.0022uF	10% 100V	
C384	1-162-306-11	CERAMIC	0.01uF	30.00% 16V	
C385	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
C386	1-163-021-91	CERAMIC CHIP	0.01uF	10.00% 50V	
C387	1-162-306-11	CERAMIC	0.01uF	30.00% 16V	
C388	1-164-159-21	CERAMIC	0.1uF	50V	
C801	1-163-234-11	CERAMIC CHIP	20PF	5.00% 50V	
C802	1-163-235-11	CERAMIC CHIP	22PF	5.00% 50V	
C803	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C804	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C805	1-104-665-11	ELECT	100uF	20.00% 16V	
C806	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN301	1-794-470-11	CONNECTOR, FFC/FPC 25P	
CN304	1-794-470-11	CONNECTOR, FFC/FPC 25P	
CN305	1-794-479-11	CONNECTOR, FFC/FPC	
		< DIODE >	
D301	8-719-929-15	DIODE MTZJ-T-77-9.1B	
D302	8-719-991-33	DIODE 1SS133T-77	
D303	8-719-200-82	DIODE 11ES2-TA1B	
D306	8-719-991-33	DIODE 1SS133T-77	
D307	8-719-991-33	DIODE 1SS133T-77	
D308	8-719-991-33	DIODE 1SS133T-77	
D309	8-719-991-33	DIODE 1SS133T-77	
D310	8-719-921-75	DIODE MTZN-T-77-10B	
D311	8-719-921-63	DIODE MTZJ-T-77-7.5B	
D312	8-719-109-89	DIODE MTZJ-T-77-5.6B	
D314	8-719-991-33	DIODE 1SS133T-77	
D315	8-719-991-33	DIODE 1SS133T-77	
D316	8-719-991-33	DIODE 1SS133T-77	
D317	8-719-109-97	DIODE MTZJ-T-77-6.8A	
D319	8-719-200-82	DIODE 11ES2-TA1B	
D320	8-719-200-82	DIODE 11ES2-TA1B	
D321	8-719-991-33	DIODE 1SS133T-77	
D322	8-719-991-33	DIODE 1SS133T-77	
D323	8-719-991-33	DIODE 1SS133T-77	
D324	8-719-991-33	DIODE 1SS133T-77	
D325	8-719-991-33	DIODE 1SS133T-77	
D326	8-719-991-33	DIODE 1SS133T-77	
D327	8-719-991-33	DIODE 1SS133T-77	
D328	8-719-991-33	DIODE 1SS133T-77	
D330	8-719-921-40	DIODE MTZJ-T-77-4.7C	
D331	8-719-982-11	DIODE MTZJ-T-77-4.3B (AEP,UK,AED)	
D332	8-719-991-33	DIODE 1SS133T-77 (AEP,UK,AED)	
D333	8-719-110-08	DIODE MTZJ-T-77-8.2B	
D334	8-719-991-33	DIODE 1SS133T-77	
D336	8-719-110-08	DIODE MTZJ-T-77-8.2B	
D337	8-719-991-33	DIODE 1SS133T-77	
		< FERRITE BEAD >	
FB301	1-469-144-21	FERRITE 0UH	
FB302	1-469-144-21	FERRITE 0UH	
FB303	1-469-144-21	FERRITE 0UH	
		< IC >	
IC101	8-759-584-38	IC TDA7296	
IC201	8-759-584-38	IC TDA7296	
IC301	8-759-585-01	IC TDA7439	
IC302	8-759-545-66	IC NJM3414AM-TE2	
IC303	8-759-909-71	IC BA4558F-E2	
IC304	8-759-009-06	IC MC14052BF-T1	
IC306	8-759-664-11	IC M30620MCA-A37FP	
IC307	8-759-584-65	IC KA3082	
IC308	8-759-481-02	IC M62016L	
IC309	8-759-557-36	IC BU1924F-E2 (AEP,UK,AED)	

MAIN

Ref. No.	Part No.	Description	Remarks
IC310	8-759-347-19	IC KIA7812PI	
IC311	8-759-584-41	IC KIA7808PI	
IC312	8-759-584-40	IC KA7908	
IC313	8-759-584-41	IC KIA7808PI	
IC314	8-759-324-40	IC KIA7805PI	
IC316	8-759-637-58	IC PST592C-T	
		< JUMPER RESISTOR >	
JR301	1-216-296-91	SHORT 0	
JR302	1-216-296-91	SHORT 0	
JR303	1-216-296-91	SHORT 0	
JR304	1-216-296-91	SHORT 0	
JR305	1-216-296-91	SHORT 0	
JR306	1-216-296-91	SHORT 0	
JR307	1-216-296-91	SHORT 0	
JR308	1-216-296-91	SHORT 0	
JR309	1-216-296-91	SHORT 0	
JR310	1-216-296-91	SHORT 0	
		< COIL >	
L101	1-420-872-00	COIL, AIR-CORE	
L201	1-420-872-00	COIL, AIR-CORE	
		< TRANSISTOR >	
Q101	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q102	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q103	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q201	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q202	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q203	8-729-920-31	TRANSISTOR DTC343TK-T-146	
Q301	8-729-038-54	TRANSISTOR KRA102S	
Q302	8-729-038-67	TRANSISTOR KRC102S	
Q303	8-729-028-54	TRANSISTOR KTC3205-Y-AT	
Q304	8-729-028-54	TRANSISTOR KTC3205-Y-AT	
Q305	8-729-038-54	TRANSISTOR KRA102S	
Q306	8-729-038-67	TRANSISTOR KRC102S	
Q307	8-729-038-54	TRANSISTOR KRA102S	
Q308	8-729-038-67	TRANSISTOR KRC102S	
Q309	8-729-019-00	TRANSISTOR KTC2026	
Q310	8-729-038-54	TRANSISTOR KRA102S	
Q311	8-729-038-67	TRANSISTOR KRC102S	
Q312	8-729-034-51	TRANSISTOR KTC3875	
Q313	8-729-034-51	TRANSISTOR KTC3875	
Q315	8-729-038-67	TRANSISTOR KRC102S	(US,CND,AEP,UK,AED)
Q316	8-729-801-84	TRANSISTOR 2SB1013-TP-34	(US,CND,AEP,UK,AED)
Q317	8-729-034-51	TRANSISTOR KTC3875	
Q318	8-729-038-54	TRANSISTOR KRA102S	
Q319	8-729-034-51	TRANSISTOR KTC3875	
Q320	8-729-202-56	TRANSISTOR 2SA950-Y-TPE2	
Q321	8-729-038-67	TRANSISTOR KRC102S	
Q322	8-729-202-56	TRANSISTOR 2SA950-Y-TPE2	
Q323	8-729-038-67	TRANSISTOR KRC102S	
Q324	8-729-801-84	TRANSISTOR 2SB1013-TP-34	
Q325	8-729-038-67	TRANSISTOR KRC102S	

Ref. No.	Part No.	Description	Remarks
Q326	8-729-801-84	TRANSISTOR 2SB1013-TP-34	
Q327	8-729-038-67	TRANSISTOR KRC102S	
Q328	8-729-038-67	TRANSISTOR KRC102S	
Q329	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	(AEP,UK,AED)
Q330	8-729-038-54	TRANSISTOR KRA102S	
Q331	8-729-038-67	TRANSISTOR KRC102S	
Q332	8-729-052-82	TRANSISTOR KTA1281Y-AT	
Q333	8-729-038-67	TRANSISTOR KRC102S	
Q334	8-729-038-67	TRANSISTOR KRC102S	
Q335	8-729-801-84	TRANSISTOR 2SB1013-TP-34	
Q337	8-729-038-67	TRANSISTOR KRC102S	
Q338	8-729-038-54	TRANSISTOR KRA102S	
Q339	8-729-038-67	TRANSISTOR KRC102S	
Q340	8-729-019-00	TRANSISTOR 2SD2394-G	
		< RESISTOR >	
R101	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R103	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R104	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R105	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R106	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R107	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R108	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R109	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R110	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R111	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R112	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R113	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R114	1-216-047-91	RES-CHIP 820 5% 1/10W	
R115	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R116	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R118	1-216-041-00	METAL CHIP 470 5% 1/10W	
R119	1-216-089-91	RES-CHIP 47K 5% 1/10W	
R121	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R122	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R123	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(US,CND)
R123	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	(AEP,UK,AED)
R126	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R127	1-216-041-00	METAL CHIP 470 5% 1/10W	
R128	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R129	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R130	1-216-097-91	RES-CHIP 100K 5% 1/10W	
R131	1-249-389-11	CARBON 4.7 5% 1/4W F	
R132	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R133	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R134	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R135	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R201	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R204	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R205	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R206	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R207	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R208	1-216-049-91	RES-CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R209	1-216-049-91	RES-CHIP	1K	5%	1/10W
R210	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R211	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R212	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W
R214	1-216-047-91	RES-CHIP	820	5%	1/10W
R215	1-216-049-91	RES-CHIP	1K	5%	1/10W
R216	1-216-073-00	METAL CHIP	10K	5%	1/10W
R218	1-216-041-00	METAL CHIP	470	5%	1/10W
R219	1-216-089-91	RES-CHIP	47K	5%	1/10W
R221	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R222	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R223	1-216-059-00	METAL CHIP	2.7K	5%	1/10W (US,CND)
R223	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (AEP,UK,AED)
R226	1-216-049-91	RES-CHIP	1K	5%	1/10W
R227	1-216-041-00	METAL CHIP	470	5%	1/10W
R228	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R229	1-216-081-00	METAL CHIP	22K	5%	1/10W
R230	1-216-097-91	RES-CHIP	100K	5%	1/10W
R231	1-249-389-11	CARBON	4.7	5%	1/4W F
R232	1-216-073-00	METAL CHIP	10K	5%	1/10W
R233	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R234	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R235	1-216-049-91	RES-CHIP	1K	5%	1/10W
R301	1-216-035-00	METAL CHIP	270	5%	1/10W
R302	1-216-017-91	RES-CHIP	47	5%	1/10W
R303	1-216-017-91	RES-CHIP	47	5%	1/10W
R304	1-216-041-00	METAL CHIP	470	5%	1/10W
R305	1-216-025-91	RES-CHIP	100	5%	1/10W
R306	1-216-025-91	RES-CHIP	100	5%	1/10W
R307	1-216-025-91	RES-CHIP	100	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R313	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R314	1-216-037-00	METAL CHIP	330	5%	1/10W
R315	1-216-041-00	METAL CHIP	470	5%	1/10W
R316	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R317	1-216-105-91	RES-CHIP	220K	5%	1/10W
R318	1-216-081-00	METAL CHIP	22K	5%	1/10W
R319	1-216-097-91	RES-CHIP	100K	5%	1/10W
R320	1-216-049-91	RES-CHIP	1K	5%	1/10W (US,CND,AEP,UK,AED)
R321	1-216-089-91	RES-CHIP	47K	5%	1/10W (US,CND,AEP,UK,AED)
R322	1-216-073-00	METAL CHIP	10K	5%	1/10W
R323	1-216-081-00	METAL CHIP	22K	5%	1/10W
R324	1-216-025-91	RES-CHIP	100	5%	1/10W
R325	1-216-037-00	METAL CHIP	330	5%	1/10W
R326	1-216-027-00	METAL CHIP	120	5%	1/10W
R327	1-216-073-00	METAL CHIP	10K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-089-91	RES-CHIP	47K	5%	1/10W
R330	1-216-089-91	RES-CHIP	47K	5%	1/10W
R331	1-216-081-00	METAL CHIP	22K	5%	1/10W
R332	1-216-029-00	METAL CHIP	150	5%	1/10W
R333	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R334	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R335	1-216-023-00	METAL CHIP	82	5%	1/10W
R336	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R337	1-216-089-91	RES-CHIP	47K	5%	1/10W
R338	1-216-027-00	METAL CHIP	120	5%	1/10W
R339	1-216-089-91	RES-CHIP	47K	5%	1/10W
R340	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R341	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R342	1-216-025-91	RES-CHIP	100	5%	1/10W (AEP,UK,AED)
R343	1-216-121-91	RES-CHIP	1M	5%	1/10W (AEP,UK,AED)
R344	1-216-049-91	RES-CHIP	1K	5%	1/10W (AEP,UK,AED)
R345	1-216-025-91	RES-CHIP	100	5%	1/10W (AEP,UK,AED)
R346	1-216-097-91	RES-CHIP	100K	5%	1/10W (AEP,UK,AED)
R347	1-216-049-91	RES-CHIP	1K	5%	1/10W (AEP,UK,AED)
R348	1-216-113-00	METAL CHIP	470K	5%	1/10W (AEP,UK,AED)
R349	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (AEP,UK,AED)
R350	1-216-025-91	RES-CHIP	100	5%	1/10W (AEP,UK,AED)
R351	1-216-029-00	METAL CHIP	150	5%	1/10W (AEP,UK,AED)
R352	1-216-089-91	RES-CHIP	47K	5%	1/10W
R353	1-216-089-91	RES-CHIP	47K	5%	1/10W
R355	1-216-049-91	RES-CHIP	1K	5%	1/10W
R356	1-216-049-91	RES-CHIP	1K	5%	1/10W
R357	1-216-049-91	RES-CHIP	1K	5%	1/10W
R358	1-216-049-91	RES-CHIP	1K	5%	1/10W
R359	1-216-033-00	METAL CHIP	220	5%	1/10W
R360	1-216-001-00	METAL CHIP	10	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R362	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R363	1-216-073-00	METAL CHIP	10K	5%	1/10W
R364	1-216-097-91	RES-CHIP	100K	5%	1/10W
R365	1-216-073-00	METAL CHIP	10K	5%	1/10W
R366	1-216-073-00	METAL CHIP	10K	5%	1/10W
R367	1-216-093-91	RES-CHIP	68K	5%	1/10W
R368	1-216-089-91	RES-CHIP	47K	5%	1/10W
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W
R370	1-216-089-91	RES-CHIP	47K	5%	1/10W
R371	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R372	1-216-023-00	METAL CHIP	82	5%	1/10W
R373	1-216-023-00	METAL CHIP	82	5%	1/10W
R374	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R375	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R376	1-216-049-91	RES-CHIP	1K	5%	1/10W
R800	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R801	1-216-089-91	RES-CHIP	47K	5%	1/10W
R802	1-216-049-91	RES-CHIP	1K	5%	1/10W
R804	1-216-049-91	RES-CHIP	1K	5%	1/10W
R806	1-216-049-91	RES-CHIP	1K	5%	1/10W
R807	1-216-049-91	RES-CHIP	1K	5%	1/10W
R810	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R811	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R812	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

MAIN POWER

Ref. No.	Part No.	Description			Remarks
R813	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R814	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R815	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R816	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R817	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R818	1-216-049-91	RES-CHIP	1K	5%	1/10W
R819	1-216-049-91	RES-CHIP	1K	5%	1/10W
R820	1-216-049-91	RES-CHIP	1K	5%	1/10W
R821	1-216-049-91	RES-CHIP	1K	5%	1/10W
R822	1-216-049-91	RES-CHIP	1K	5%	1/10W
R823	1-216-049-91	RES-CHIP	1K	5%	1/10W
R824	1-216-049-91	RES-CHIP	1K	5%	1/10W
R825	1-216-049-91	RES-CHIP	1K	5%	1/10W
R826	1-216-049-91	RES-CHIP	1K	5%	1/10W
R827	1-216-049-91	RES-CHIP	1K	5%	1/10W
R828	1-216-049-91	RES-CHIP	1K	5%	1/10W
R829	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R830	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R832	1-216-049-91	RES-CHIP	1K	5%	1/10W
R833	1-216-049-91	RES-CHIP	1K	5%	1/10W
R834	1-216-049-91	RES-CHIP	1K	5%	1/10W
R835	1-216-025-91	RES-CHIP	100	5%	1/10W
R836	1-216-049-91	RES-CHIP	1K	5%	1/10W
R837	1-216-025-91	RES-CHIP	100	5%	1/10W
R838	1-216-049-91	RES-CHIP	1K	5%	1/10W
R839	1-216-049-91	RES-CHIP	1K	5%	1/10W
R840	1-216-049-91	RES-CHIP	1K	5%	1/10W
R842	1-216-049-91	RES-CHIP	1K	5%	1/10W
R843	1-216-049-91	RES-CHIP	1K	5%	1/10W
R844	1-216-049-91	RES-CHIP	1K	5%	1/10W
R845	1-216-049-91	RES-CHIP	1K	5%	1/10W
R847	1-216-049-91	RES-CHIP	1K	5%	1/10W
R848	1-216-049-91	RES-CHIP	1K	5%	1/10W
R849	1-216-049-91	RES-CHIP	1K	5%	1/10W
R850	1-216-049-91	RES-CHIP	1K	5%	1/10W
R851	1-216-049-91	RES-CHIP	1K	5%	1/10W
R852	1-216-049-91	RES-CHIP	1K	5%	1/10W
R853	1-216-049-91	RES-CHIP	1K	5%	1/10W
R854	1-216-049-91	RES-CHIP	1K	5%	1/10W
R855	1-216-049-91	RES-CHIP	1K	5%	1/10W
R856	1-216-049-91	RES-CHIP	1K	5%	1/10W
R861	1-216-049-91	RES-CHIP	1K	5%	1/10W
R862	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R863	1-216-049-91	RES-CHIP	1K	5%	1/10W
R865	1-216-049-91	RES-CHIP	1K	5%	1/10W
R866	1-216-049-91	RES-CHIP	1K	5%	1/10W
R867	1-216-049-91	RES-CHIP	1K	5%	1/10W
R868	1-216-049-91	RES-CHIP	1K	5%	1/10W
R869	1-216-049-91	RES-CHIP	1K	5%	1/10W
R870	1-216-049-91	RES-CHIP	1K	5%	1/10W
R871	1-216-049-91	RES-CHIP	1K	5%	1/10W
R872	1-216-049-91	RES-CHIP	1K	5%	1/10W
R873	1-216-049-91	RES-CHIP	1K	5%	1/10W
R874	1-216-049-91	RES-CHIP	1K	5%	1/10W
R875	1-216-049-91	RES-CHIP	1K	5%	1/10W
R876	1-216-049-91	RES-CHIP	1K	5%	1/10W
R877	1-216-049-91	RES-CHIP	1K	5%	1/10W
R878	1-216-049-91	RES-CHIP	1K	5%	1/10W
R879	1-216-049-91	RES-CHIP	1K	5%	1/10W
R880	1-216-049-91	RES-CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R881	1-216-049-91	RES-CHIP	1K	5%	1/10W
R882	1-216-049-91	RES-CHIP	1K	5%	1/10W
R883	1-216-049-91	RES-CHIP	1K	5%	1/10W
R884	1-216-049-91	RES-CHIP	1K	5%	1/10W
R885	1-216-049-91	RES-CHIP	1K	5%	1/10W
R886	1-216-049-91	RES-CHIP	1K	5%	1/10W
R887	1-216-049-91	RES-CHIP	1K	5%	1/10W
R888	1-216-049-91	RES-CHIP	1K	5%	1/10W
R889	1-216-049-91	RES-CHIP	1K	5%	1/10W
R890	1-216-049-91	RES-CHIP	1K	5%	1/10W
R891	1-216-049-91	RES-CHIP	1K	5%	1/10W
R892	1-216-049-91	RES-CHIP	1K	5%	1/10W
R893	1-216-049-91	RES-CHIP	1K	5%	1/10W
R894	1-216-049-91	RES-CHIP	1K	5%	1/10W
R896	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (US,CND,AEP,UK,AED)
R896	1-216-037-00	METAL CHIP	330	5%	1/10W (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)
R897	1-216-295-91	SHORT	0	(US,CND)	
R897	1-216-045-00	METAL CHIP	680	5%	1/10W (AEP,UK,AED)
R897	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (E,JE,AR,SP,MY,TH,TW,KR,HK,AUS)
R900	1-216-105-91	RES-CHIP	220K	5%	1/10W
		< SWITCH >			
S301	1-762-638-11	SWITCH, TACTILE (RESET)			
		< TERMINAL >			
* SJ301	1-536-708-41	TERMINAL BOARD, PUSH 4P (SPEAKER)			
		< VIBRATOR >			
X301	1-579-242-41	VIBRATOR, CRYSTAL (AEP,UK,AED)			
X801	1-567-098-41	VIBRATOR, CRYSTAL			
X802	1-781-107-21	VIBRATOR, SERAMIC			
**********					
	1-677-889-11	POWER BOARD			
		**********			
	1-533-313-11	HOLDER, FUSE			
		< CAPACITOR >			
⚠ C901	1-113-925-11	CERAMIC	0.01uF	20.00% 250V (US,CND,AEP,UK,AED,AUS,TH,KR)	
C907	1-101-005-00	CERAMIC	22000PF	50V	
C908	1-101-005-00	CERAMIC	22000PF	50V	
C909	1-101-005-00	CERAMIC	22000PF	50V	
C910	1-101-005-00	CERAMIC	22000PF	50V	
C911	1-163-063-91	CERAMIC CHIP	0.022uF	10.00% 50V	
C912	1-163-063-91	CERAMIC CHIP	0.022uF	10.00% 50V	
C913	1-163-063-91	CERAMIC CHIP	0.022uF	10.00% 50V	
C914	1-163-063-91	CERAMIC CHIP	0.022uF	10.00% 50V	
C915	1-126-961-11	ELECT	2.2uF	20.00% 50V	
		< CONNECTOR >			
* CN902	1-766-281-11	PIN, CONNECTOR (PC BOARD) 8P			

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Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CNP901	1-564-321-00	PIN, CONNECTOR 2P	
		< DIODE >	
D901	8-719-053-18	DIODE 1SR154-400TE-25	(US,CND,AEP,UK,AED,AUS,TH,KR)
D907	8-719-902-17	DIODE 1N5401	
D908	8-719-902-17	DIODE 1N5401	
D909	8-719-902-17	DIODE 1N5401	
D910	8-719-902-17	DIODE 1N5401	
D911	8-719-046-07	DIODE 2A02M	
D912	8-719-046-07	DIODE 2A02M	
D913	8-719-046-07	DIODE 2A02M	
D914	8-719-046-07	DIODE 2A02M	
D915	8-719-914-43	DIODE DAN202K-T-146	
		< FUSE >	
⚠F901	1-533-464-11	FUSE, GLASS TUBE (DIA. 5) 0.8A/250V	(AEP,UK,AED,AUS,TH,KR)
⚠F901	1-533-465-11	FUSE, GLASS TUBE (DIA. 5) 1A/250V	(E,JE,AR,SP,MY,TW,HK)
⚠F901	1-576-374-11	FUSE, GLASS TUBE 1.25A/125V (US,CND)	
⚠F902	1-576-375-11	FUSE, GLASS TUBE 3.15A/125V (US,CND)	
⚠F902	1-533-468-11	FUSE, GLASS TUBE (DIA. 5) 2A/250V	(EXCEPT US,CND)
⚠F903	1-576-375-11	FUSE, GLASS TUBE 3.15A/125V (US,CND)	
⚠F903	1-533-468-11	FUSE, GLASS TUBE (DIA. 5) 2A/250V	(EXCEPT US,CND)
		< FILTER >	
LF901	1-424-150-11	LINE FILTER	(US,CND,AEP,UK,AED,AUS,TH,KR,TW)
		< RESISTOR >	
⚠R901	1-202-725-00	SOLID 3.3M 10% 1/2W	(US,CND)
R902	1-216-174-00	RES-CHIP 100 5% 1/8W	
R903	1-216-174-00	RES-CHIP 100 5% 1/8W	
R904	1-216-206-00	RES-CHIP 2.2K 5% 1/8W	
		< SWITCH >	
⚠S901	1-552-921-00	SWITCH, POWER (VOLTAGE SELECTOR)	(E,JE,AR,SP,MY,TW,HK)
		< RELAY >	
⚠RY901	1-755-386-11	RELAY (US,CND,AEP,UK,AED,AUS,TH,KR)	
**********			
*	1-671-115-21	SW BOARD	
		*********	
		< CONNECTOR >	
* CN601	1-506-486-11	PIN, CONNECTOR 7P	

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S601	1-572-126-21	SWITCH, PUSH (1 KEY) (REC POSITION)	
S602	1-572-126-21	SWITCH, PUSH (1 KEY) (PACK OUT)	
S604	1-771-264-11	SWITCH, PUSH(DETECTION)(1 KEY)	(PB POSITION)
**********			
		MISCELLANEOUS	
		**********	
1	1-772-623-11	DECK,MECHANICAL (TAPE DECK BLOCK)	
56	1-792-769-11	WIRE(FLAT TYP) (9 CORE)	
⚠110	1-690-608-11	CORD, POWER (AUS)	
⚠110	1-696-169-11	CORD, POWER	(AEP,UK,AED,SP,MY,TH,TW,KR,HK)
⚠110	1-775-789-81	CORD, POWER (E,JE,AR)	
⚠110	1-783-531-71	CORD, POWER (US,CND)	
112	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK,HK)	
114	1-792-767-11	WIRE (FLAT TYP) (25 CORE)	
115	1-792-765-11	WIRE (FLAT TYP) (19 CORE)	
116	1-792-766-11	WIRE (FLAT TYP) (21 CORE)	
117	1-792-768-11	WIRE (FLAT TYP) (25 CORE)	
118	1-792-769-11	WIRE (FLAT TYP) (9 CORE)	
402	1-792-770-11	WIRE (FLAT TYP) (21 CORE)	
403	1-792-771-11	WIRE (FLAT TYP) (23 CORE)	
⚠560	A-467-254-1A	OPTICAL PICK-UP BLOCK KMS-260A (MD)	
⚠604	8-820-020-02	OPTICAL PICK-UP (KSS-213D/Q-RP) (CD)	
HR901	1-500-502-11	HEAD, OVER LIGHT	
M101	A-4672-475-A	MOTOR ASSY, SPINDLE	
M102	A-4672-474-A	MOTOR ASSY, SLED (MD)	
M102	X-2625-769-1	GEAR ASSY (MB) (RP), MOTOR (SLED) (CD)	
M103	X-4949-264-1	MOTOR ASSY, LOADING	
M901	A-4672-891-A	MOTOR (LD) ASSY (OPEN/CLOSE)	
S102	1-762-148-21	SWITCH, PUSH (2 KEY)	
⚠T901	1-435-385-11	TRANSFORMER, POWER (US,CND)	
⚠T901	1-435-386-11	TRANSFORMER, POWER	(AEP,UK,AED,AUS,TH,KR)
⚠T901	1-435-628-11	TRANSFORMER, POWER	(E,JE,AR,SP,MY,TW,HK)
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-546-14	SCREW +BTP 3X8 TYPE2 N-S	
#2	7-685-245-19	SCREW +KTP 3X6 TYPE2 NON-SLIT	
#3	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT	
#4	7-685-659-14	SCREW +BVTP 4X8 TYPE2 N-S	
#5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#6	7-685-880-09	SCREW +BVTT 4X6 (S)	
#7	7-685-852-04	SCREW +BVTT 2X5 (S)	
#8	7-685-872-09	SCREW +BVTT 3X10 (S)	
#9	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	

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