

HCD-RG444

SERVICE MANUAL

AEP Model

Ver 1.0 2004.05



- HCD-RG444 is the tuner, deck, CD and amplifier section in MHC-RG444S.

CD Section	Model Name Using Similar Mechanism	HCD-RG222
	CD Mechanism Type	CDM74-F1BD81
	Optical Pick-up Name	KSM-215DCP/C2NP
Tape deck Section	Model Name Using Similar Mechanism	HCD-RG222
	Tape Transport Mechanism Type	CWM43FF-05

SPECIFICATIONS

Amplifier section

Front speaker
DIN power output (rated): 100 + 100 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 120 + 120 watts (6 ohms at 1 kHz, 10% THD)
Music power output (reference): 240 + 240 watts (6 ohms at 1 kHz, 10% THD)
Sub woofer
DIN power output (rated): 100 watts (6 ohms at 60 Hz, DIN)
Continuous RMS power output (reference): 120 watts (6 ohms at 50 Hz, 10% THD)
Music power output (reference): 240 watts (6 ohms at 50 Hz, 10% THD)
Inputs
GAME INPUT AUDIO L/R (phono jacks): voltage 250 mV, impedance 47 kilohms
GAME INPUT VIDEO (phono jack): 1Vp-p, 75 ohms

Outputs

PHONES (stereo mini jack):

accepts headphones of 8 ohms or more

VIDEO OUT (phono jack):

max. output level 1Vp-p, unbalanced, Sync negative, load impedance 75 ohms

SPEAKER:

accepts impedance of 6 to 16 ohms

SUB WOOFER OUT:

accepts impedance of 6 to 16 ohms

CD player section

System

Compact disc and digital audio system

Laser

Semiconductor laser ($\lambda=780$ nm)

Emission duration:

continuous

Frequency response

2 Hz – 20 kHz (± 0.5 dB)

Wavelength

780 – 790 nm

Signal-to-noise ratio

More than 90 dB

Dynamic range

More than 90 dB

Tape deck section

Recording system

4-track 2-channel, stereo

Frequency response

50 – 13,000 Hz (± 3 dB), using Sony TYPE I cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range

87.5 – 108.0 MHz (50-kHz step)

Antenna

FM lead antenna

Antenna terminals

75 ohms unbalanced

Intermediate frequency

10.7 MHz

AM tuner section

Tuning range

531 – 1,602 kHz (with the tuning interval set at 9 kHz)

Antenna

AM loop antenna

Antenna terminals

External antenna terminal

Intermediate frequency

450 kHz

– Continued on next page –

MINI HI-FI COMPONENT SYSTEM

9-877-899-01
2004E1678-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

General

Power requirements :	230 V AC, 50/60 Hz
Power consumption :	275 watts
	0.25 watts (at the Power Saving Mode)
Dimensions (w/h/d) incl. projecting parts and controls	
Amplifier/Tuner/Tape/CD section:	Approx. 280 × 327 × 425 mm
Mass	Approx. 10.0 kg

Design and specifications are subject to change without notice.

The release method of a CD disc tray LOCK function

There is a disc lock function for the disc theft prevention for a demonstration at a shop front in this machine.

Procedue:

1. Press the  button to turn the set on.
2. Press two buttons of  and  (EJECT) simultaneously for five seconds.
3. The message "LOCKED" is displayed and the tray is locked. (Even if exiting from this mode, the tray is still locked.)
4. Press two buttons of  and  (EJECT) simultaneously for five seconds again.
5. The message "UNLOCKED" is displayed and the tray is unlocked.
6. To exit from this mode, press the  button to turn the set off.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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.

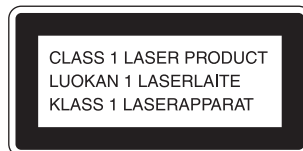
NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

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.

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



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

CAUTION

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

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 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.

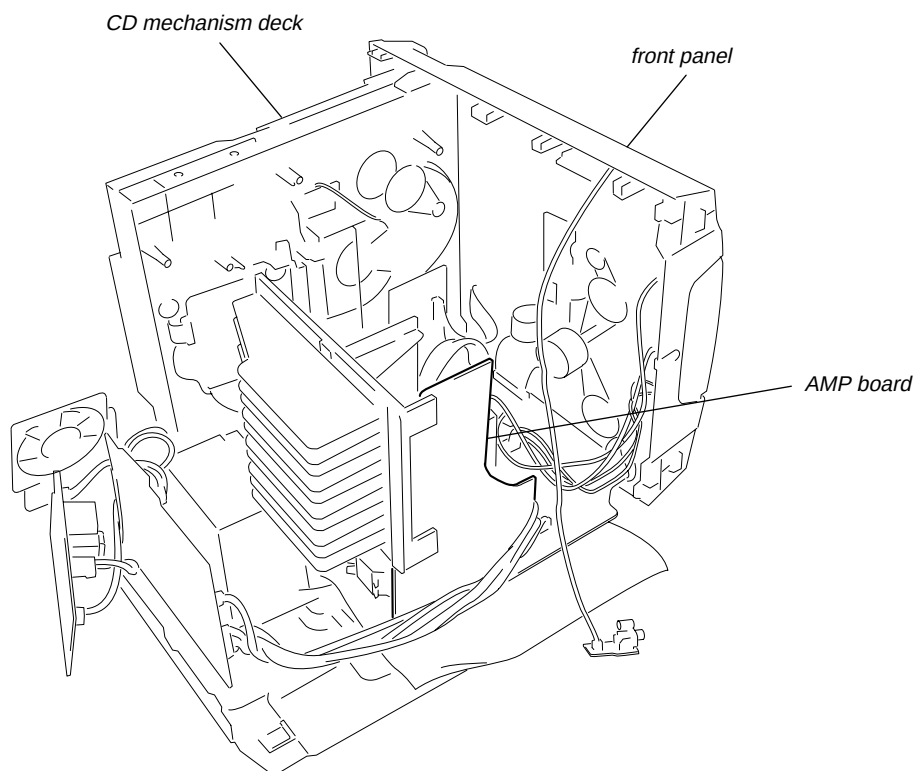
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SECTION 1 SERVICING NOTE

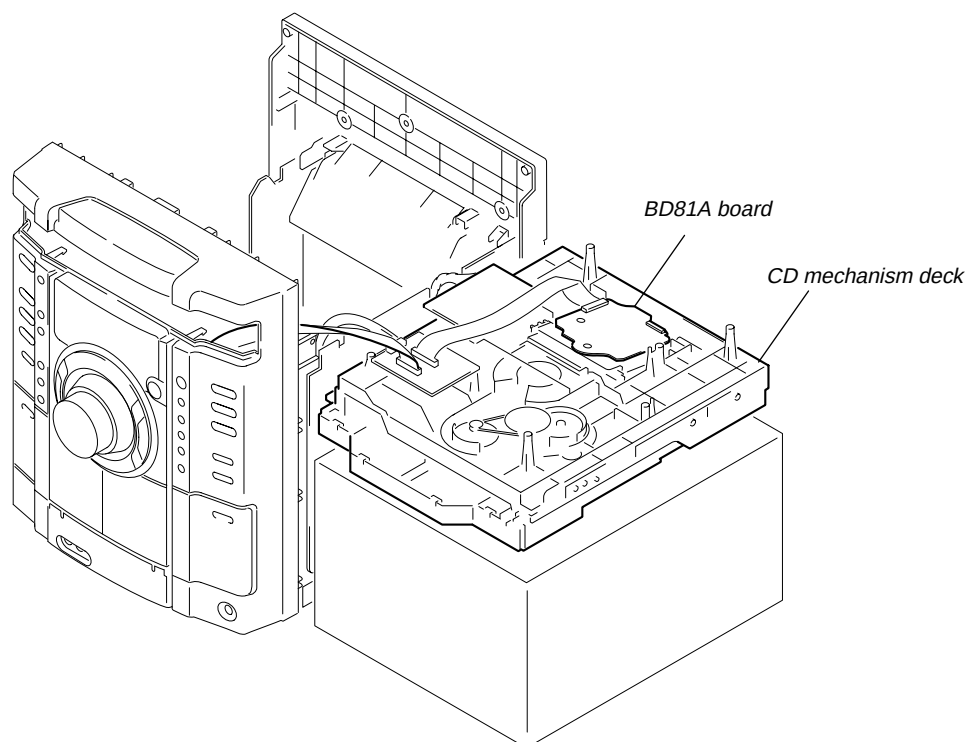
• SERVICE POSITION -1 (AMP BOARD)

To inspect the AMP board, turn both of the front panel and the CD mechanism deck so that the left side of the product faces down.



• SERVICE POSITION -2 (BD81A BOARD)

Remove the CD mechanism deck and place it on top of the pedestal as shown. Inspect the BD81A board in this set up.



List of button locations and reference pages

Use this page to find the location of buttons and other parts of the system that are mentioned in the text.

TAPE A/B **33** (18, 19, 20, 24)

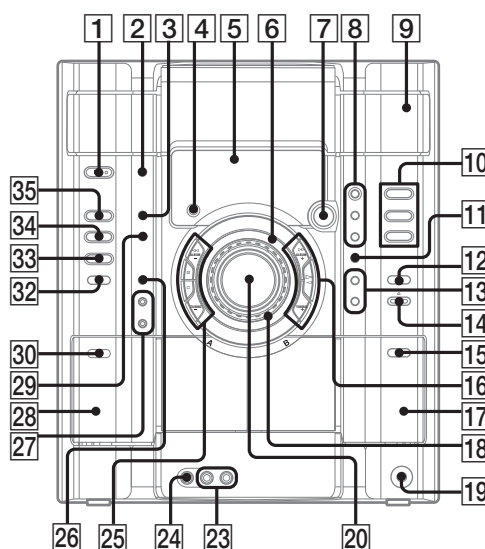
Name of button/part	Reference page
---------------------	----------------

ALPHABETICAL ORDER

ALBUM + **[16]** (12, 14, 19)
 ALBUM - **[25]** (12, 14, 19)
 CD **[35]** (9, 11, 14, 19, 20)
 CD SYNC **[27]** (19)
 Deck A **[28]** (18)
 Deck B **[17]** (18, 19, 20, 24)
 DISC 1 - 3 **[10]** (12, 14, 35)
 DISC SKIP/EX-CHANGE **[12]**
 (11, 12, 14, 19)
 Disc tray **[9]** (11)
 DISPLAY **[2]** (17, 27, 28)
 Display window **[5]**
 EFFECT ON/OFF **[8]** (22)
 ENTER **[11]** (14, 15, 22)
 EQ BAND **[7]** (22)
 GAME **[32]** (20, 23, 30)
 GAME INPUT AUDIO L/R jacks
[23] (20, 29)
 GAME INPUT VIDEO jack **[24]**
 (29)
 GAME MIXING **[26]** (23)
 GROOVE **[8]** (21)
 ILLUMINATION **[3]** (28)
 Operation Dial
 (- EQ +/||<<< >>>||) **[6]** (12,
 14, 19, 22)

P FILE **13** (22)
 PHONES jack **19**
 PLAY MODE **29** (12, 14, 18, 19,
 20, 35)
 Power illuminator **18** (28)
 PRESET EQ **13** (22)
 REC PAUSE/START **27** (19, 20,
 23, 24)
 Remote sensor **4**
 SURROUND **8** (23)
 TAPE A/B **33** (18, 19, 20, 24)
 TUNER/BAND **34** (15, 16, 20)
 TUNING MODE **29** (15, 16, 35)
 TUNING + **16** (15, 16)
 TUNING - **25** (15, 16)
 VOLUME control **20** (21)

I/⏻ (power) **1** (8, 16, 27, 30, 33, 35)
 ⏸ (pause) **25** (12, 19)
 ⏏ (eject) **14** (11)
 PUSH ⏏ (deck B) (eject) **15** (18)
 ■ (stop) **25** (12, 19, 24, 35)
 ►► (fast forward) **16** (12, 19)
 ▷ (play) **16** (12, 18, 19)
 ◀◀ (rewind) **25** (12, 19)
 ⏏ PUSH (deck A) (eject) **30** (18)



Remote control

ALPHABETICAL ORDER

- A – E
- ALBUM – [13] (12, 14)
- ALBUM + [11] (12, 14)
- CD [18] (11, 14)
- CLEAR [15] (14)
- CLOCK/TIMER SELECT [2] (26, 27)
- CLOCK/TIMER SET [3] (10, 25, 26)
- DISC SKIP [10] (12, 14)
- DISPLAY [21] (17, 27, 28)
- ENTER [9] (10, 14, 15, 25, 26)
- EQ [14] (22)

F – Z

- FM MODE [4] (17)
- FUNCTION [6] (11, 14, 15, 16)
- PLAY MODE [20] (12, 14, 18)
- REPEAT [4] (13)
- SLEEP [22] (25)
- TAPE [17]
- TUNER BAND [5] (15, 16)
- TUNER MEMORY [19] (15)
- TUNING MODE [20] (15, 16)
- VOLUME +/- [12] (21, 25)

BUTTON DESCRIPTIONS

- I/⏻ (power) [1] (8, 26)
- ◀◀/▶▶ (rewind/fast forward) [7] (12, 19)
- /+ (tuning) [16] (15)
- ◀◀/▶▶ (go back/go forward) [16] (10, 12, 19)
- ▶ (play) [8] (12, 18)
- ⏸ (pause) [8] (12, 19)
- (stop) [8] (12, 19)

Setting the clock

Use buttons on the remote for the operation.

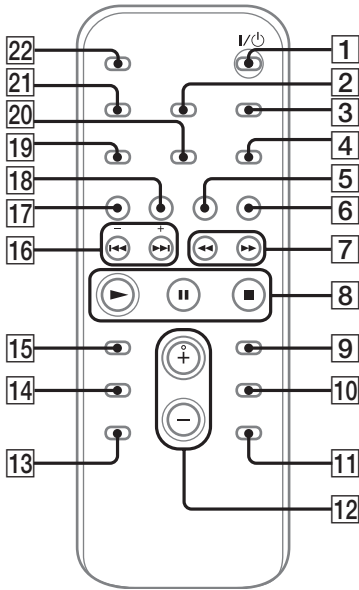
- 1 Press I/⏻ to turn on the system.
 - 2 Press CLOCK/TIMER SET.
 - 3 Press ◀◀ or ▶▶ repeatedly to set the hour.
 - 4 Press ENTER.
 - 5 Press ◀◀ or ▶▶ repeatedly to set the minute.
 - 6 Press ENTER.
- The clock starts working.

To adjust the clock

- 1 Press CLOCK/TIMER SET.
- 2 Press ◀◀ or ▶▶ repeatedly to select “CLOCK SET”, then press ENTER.
- 3 Do the same procedures as step 3 to 6 above.

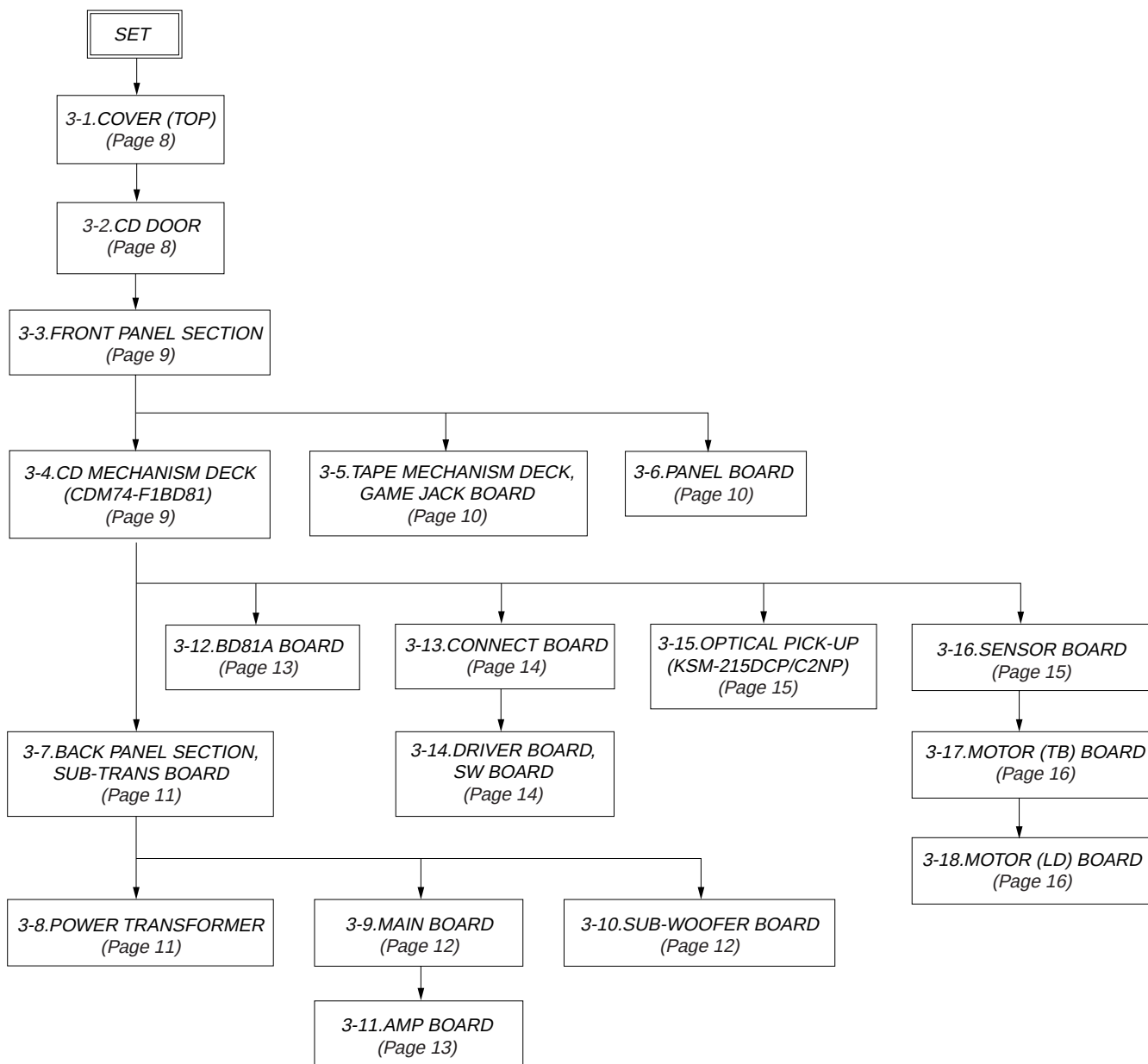
Notes

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.



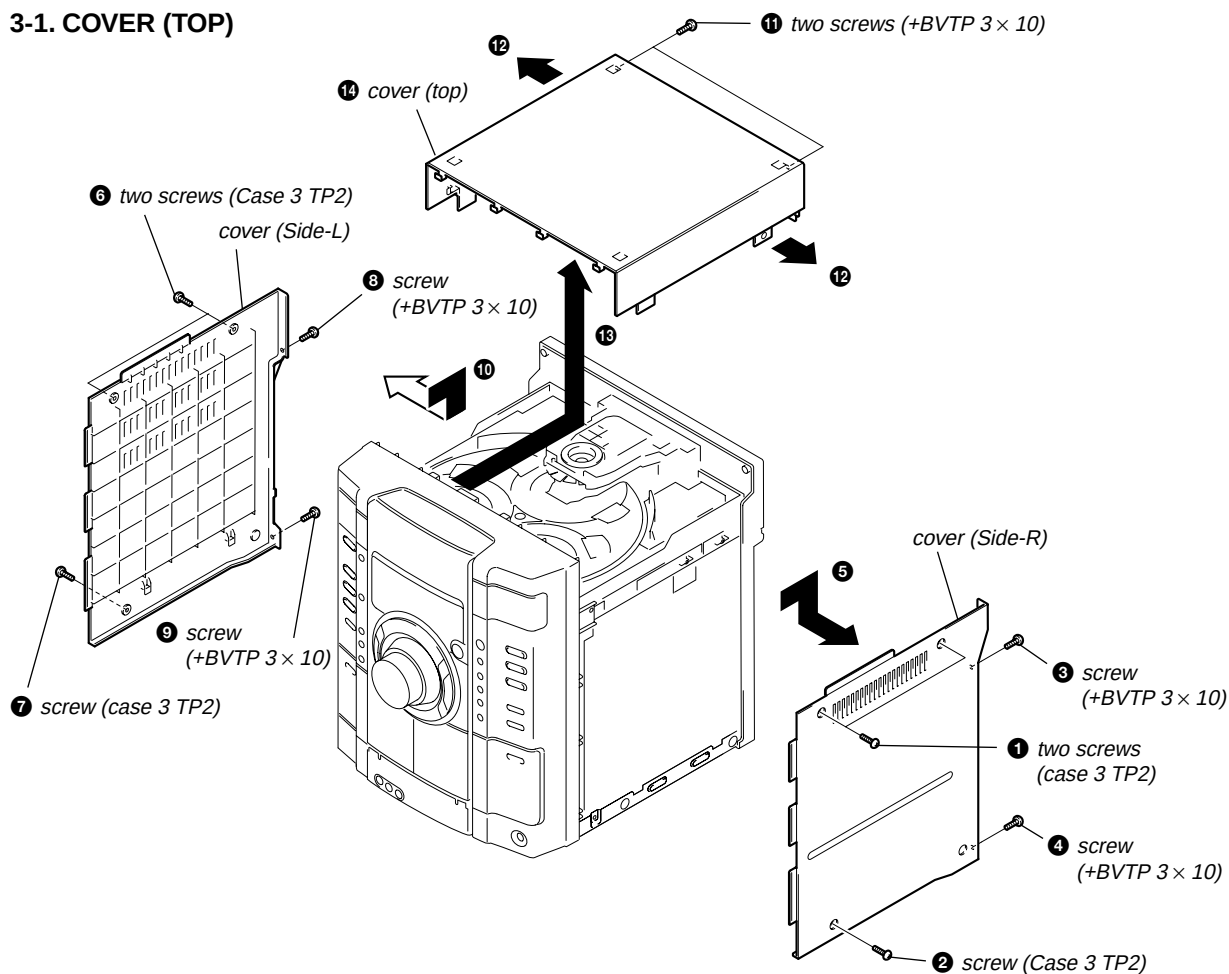
SECTION 3 DISASSEMBLY

Note: Disassemble the unit in the order as shown below.

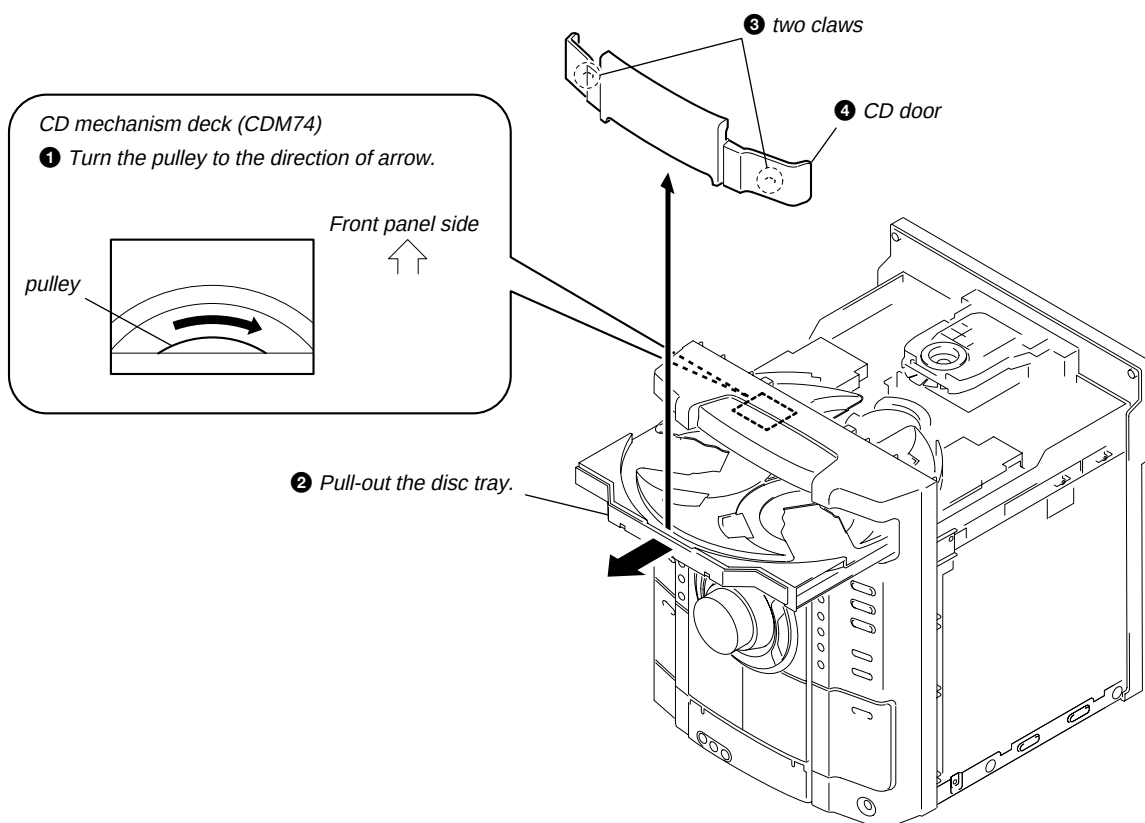


Note: Follow the disassembly procedure in the numerical order given.

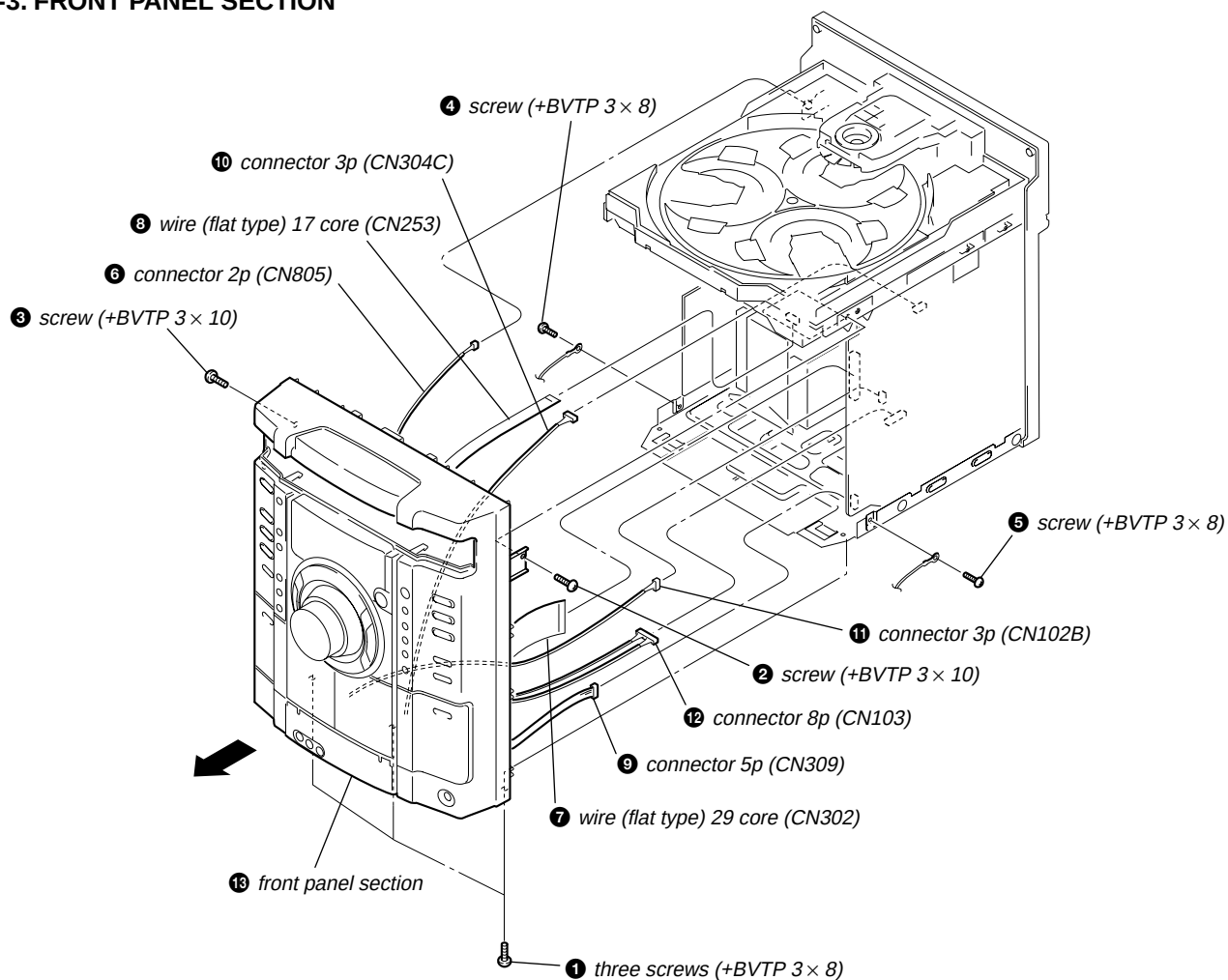
3-1. COVER (TOP)



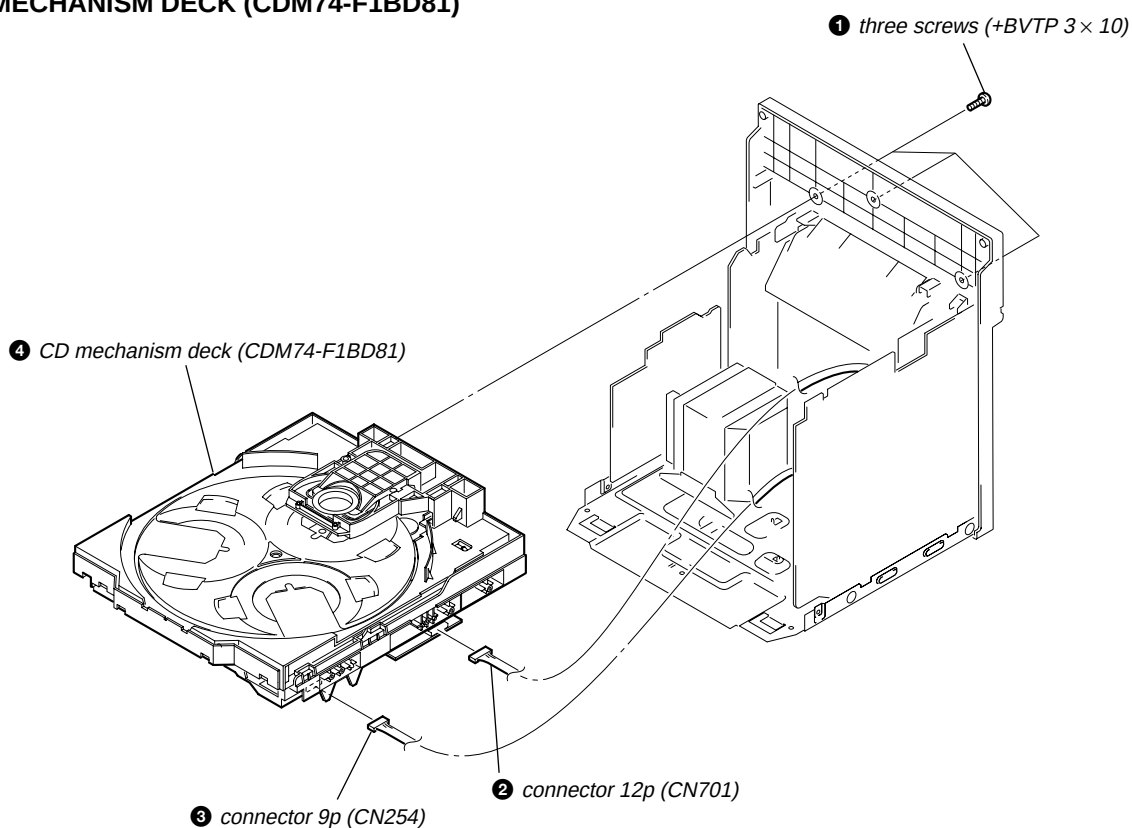
3-2. CD DOOR



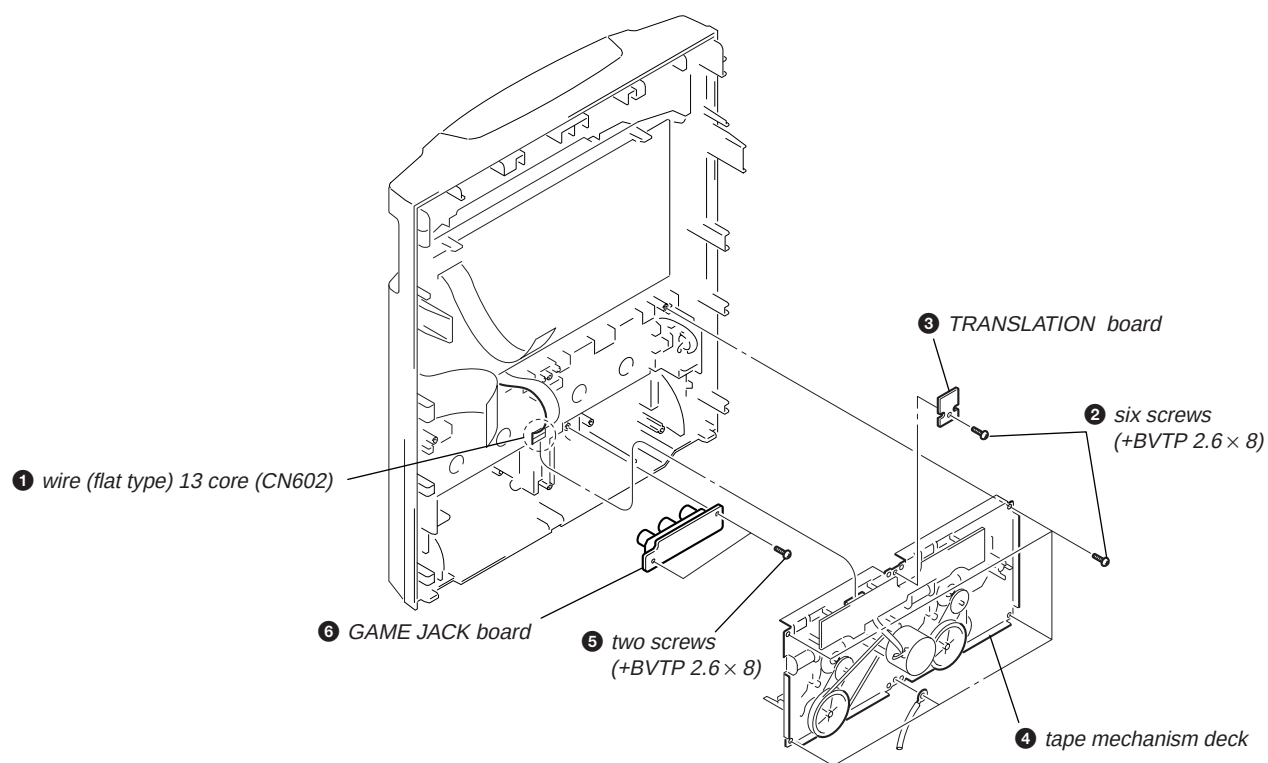
3-3. FRONT PANEL SECTION



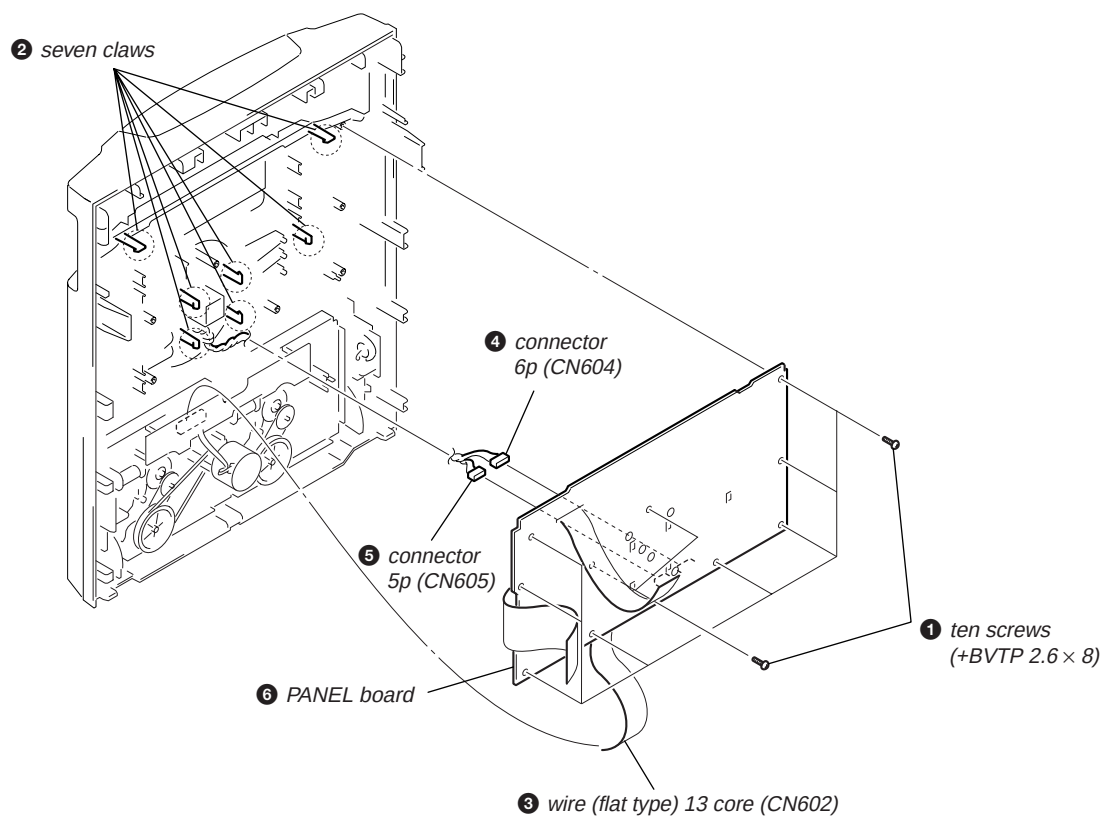
3-4. CD MECHANISM DECK (CDM74-F1BD81)



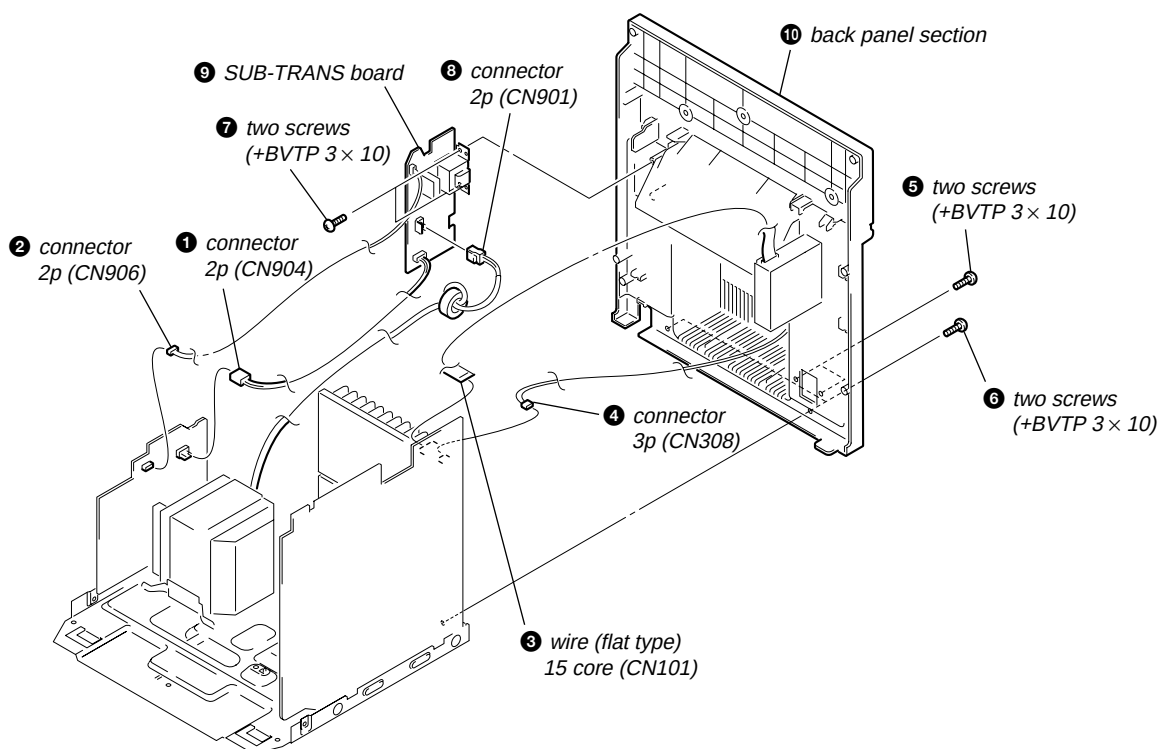
3-5. TAPE MECHANISM DECK, GAME JACK BOARD



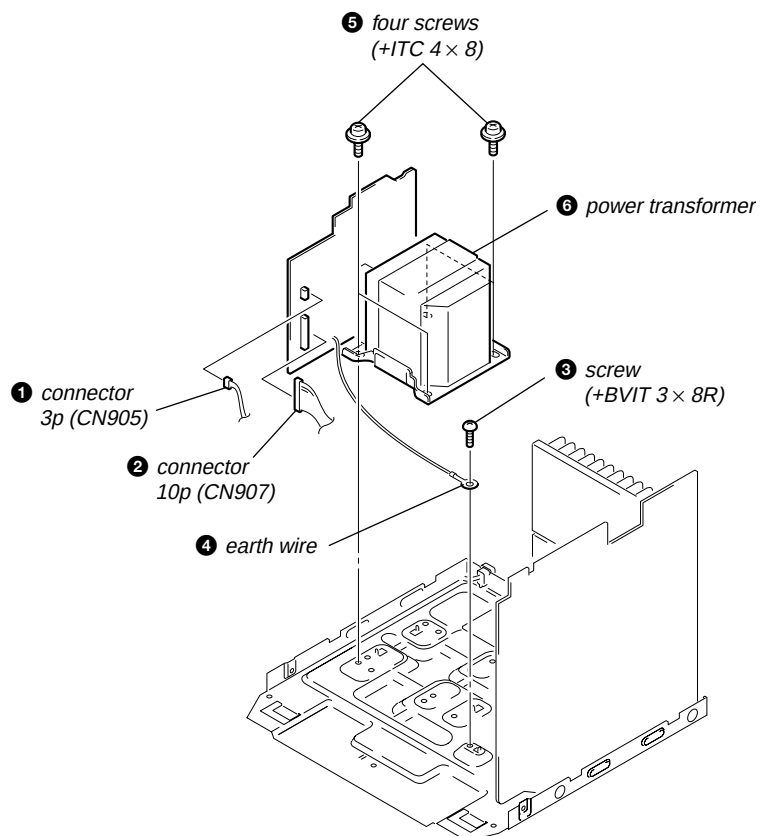
3-6. PANEL BOARD



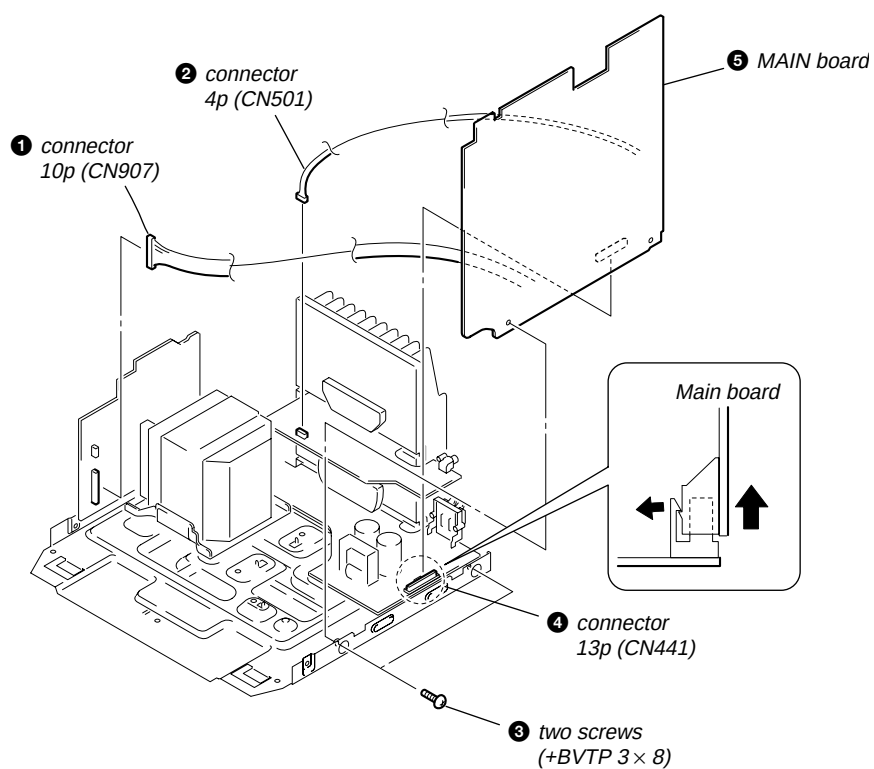
3-7. BACK PANEL SECTION, SUB-TRANS BOARD



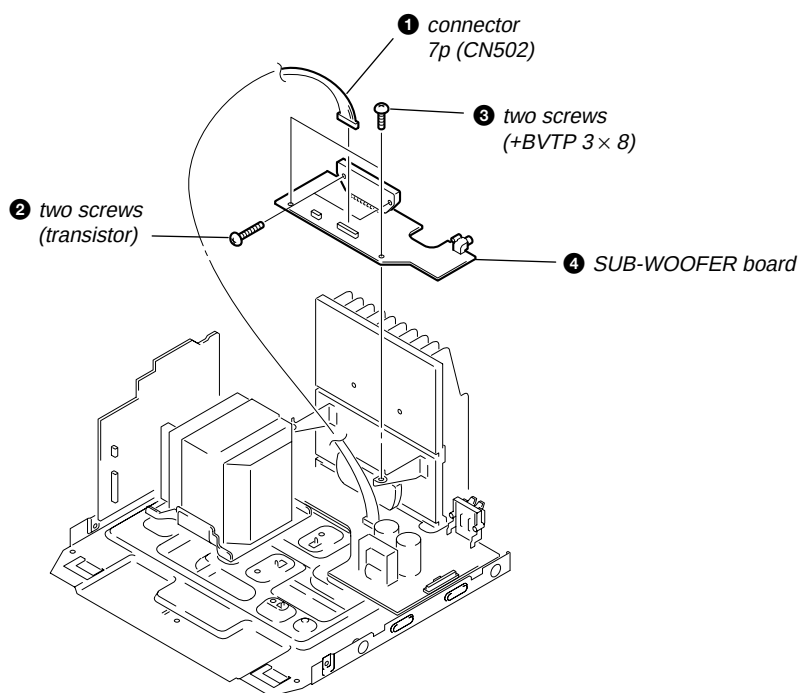
3-8. POWER TRANSFORMER



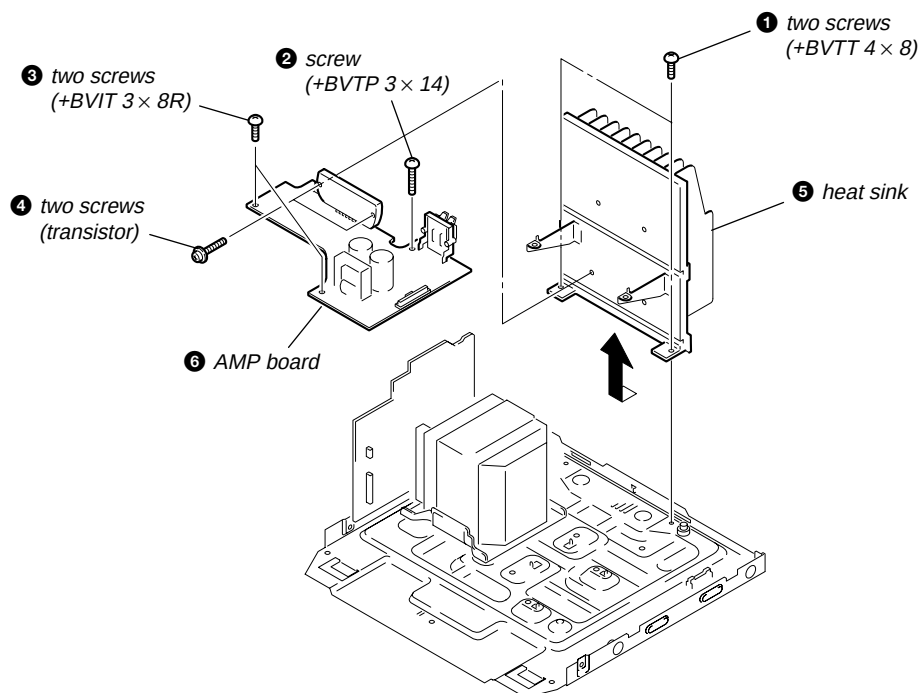
3-9. MAIN BOARD



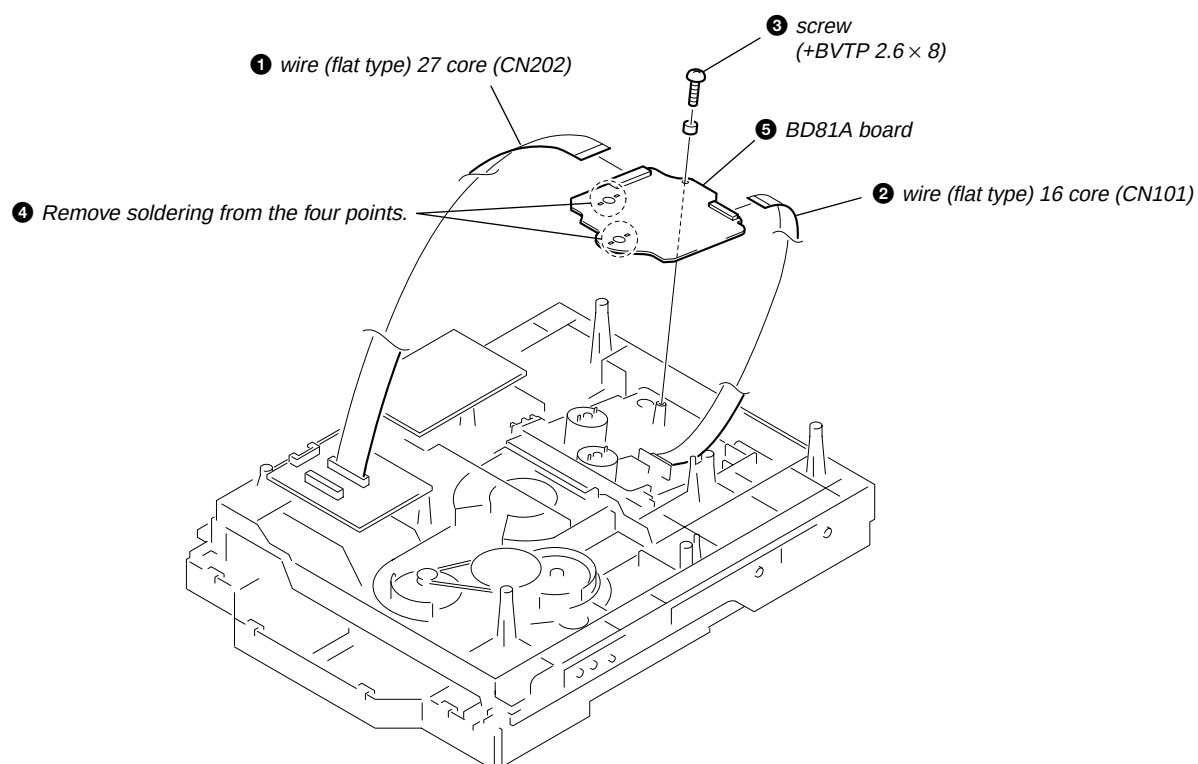
3-10. SUB-WOOFER BOARD



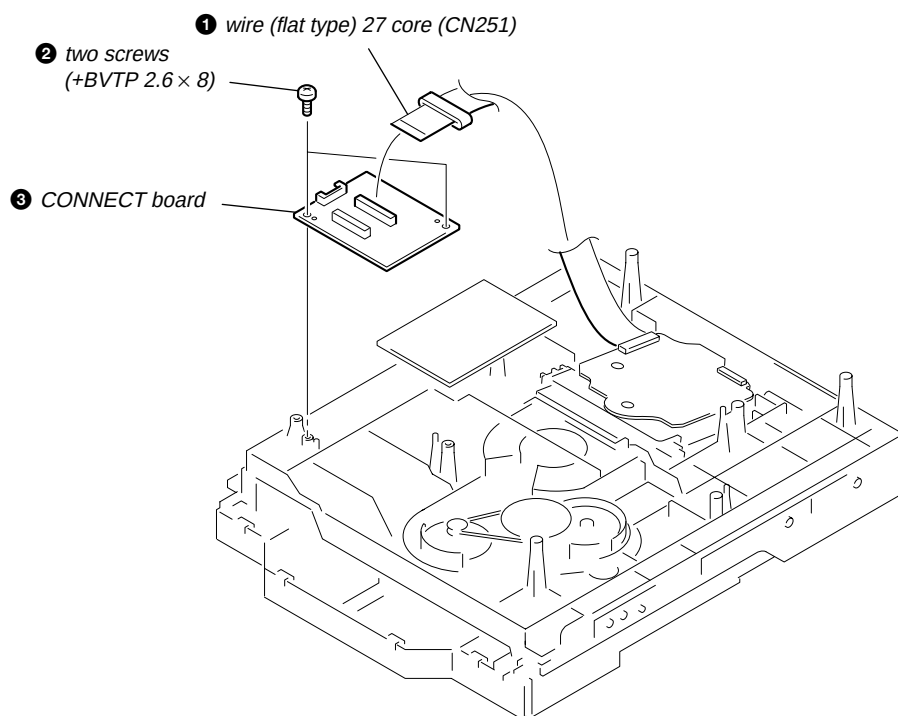
3-11. AMP BOARD



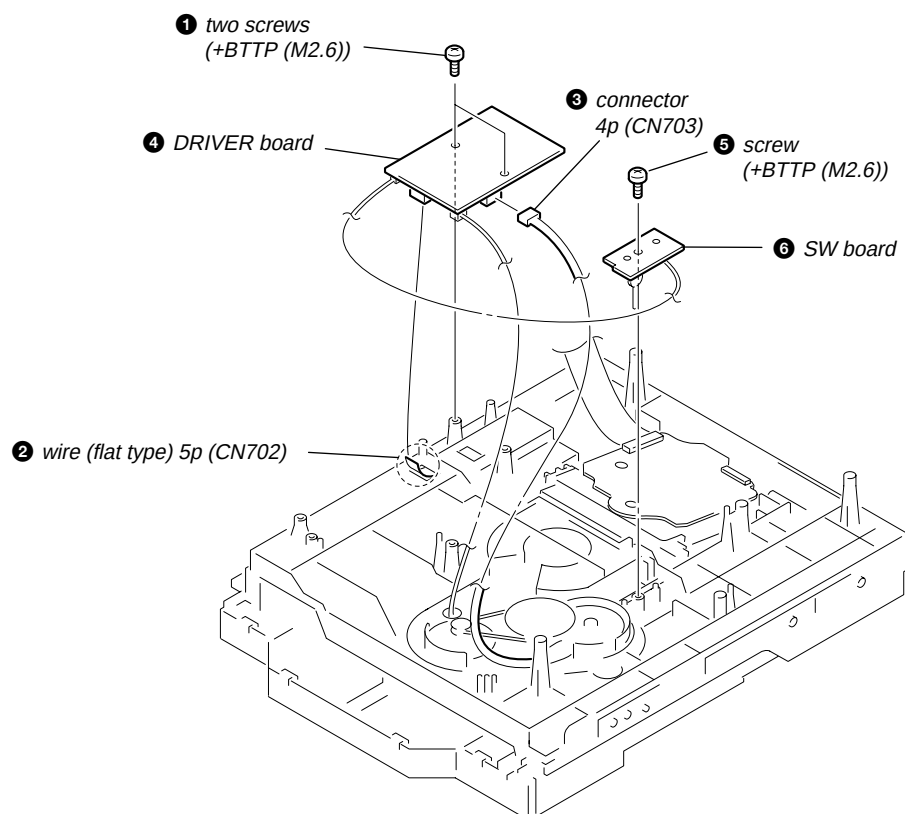
3-12. BD81A BOARD



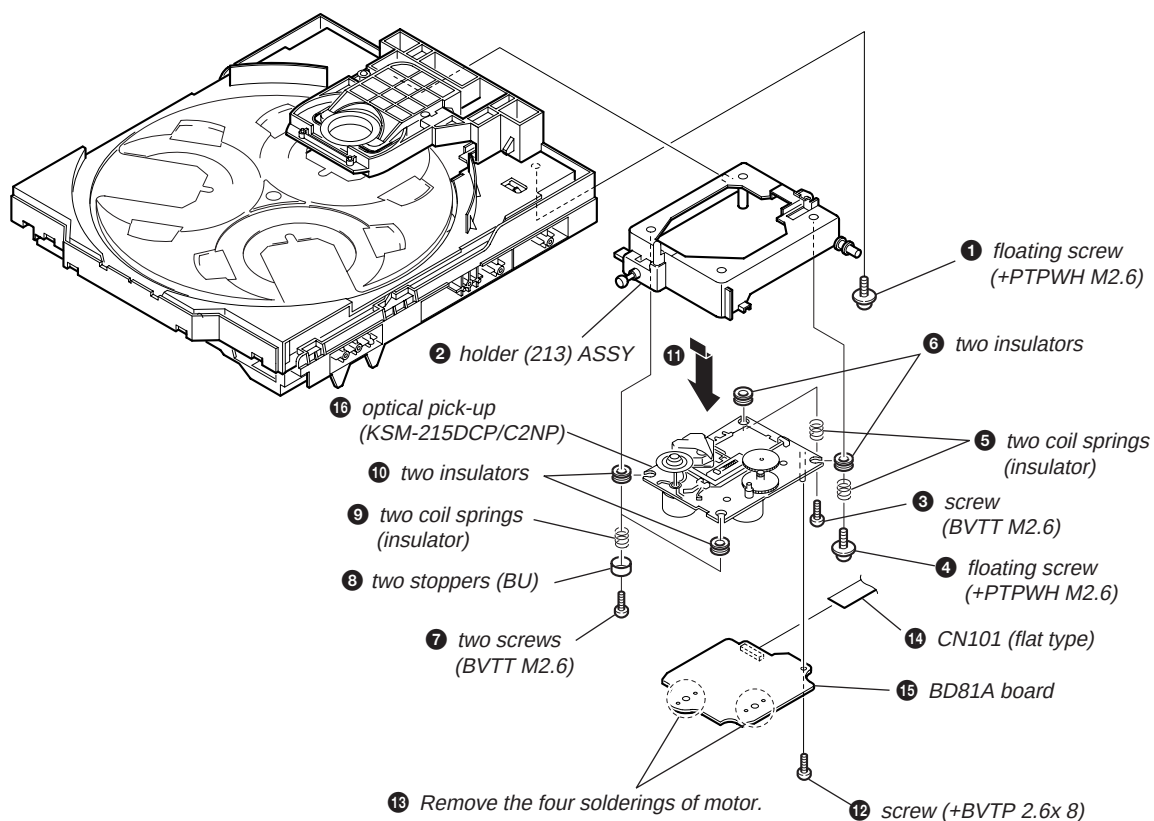
3-13. CONNECT BOARD



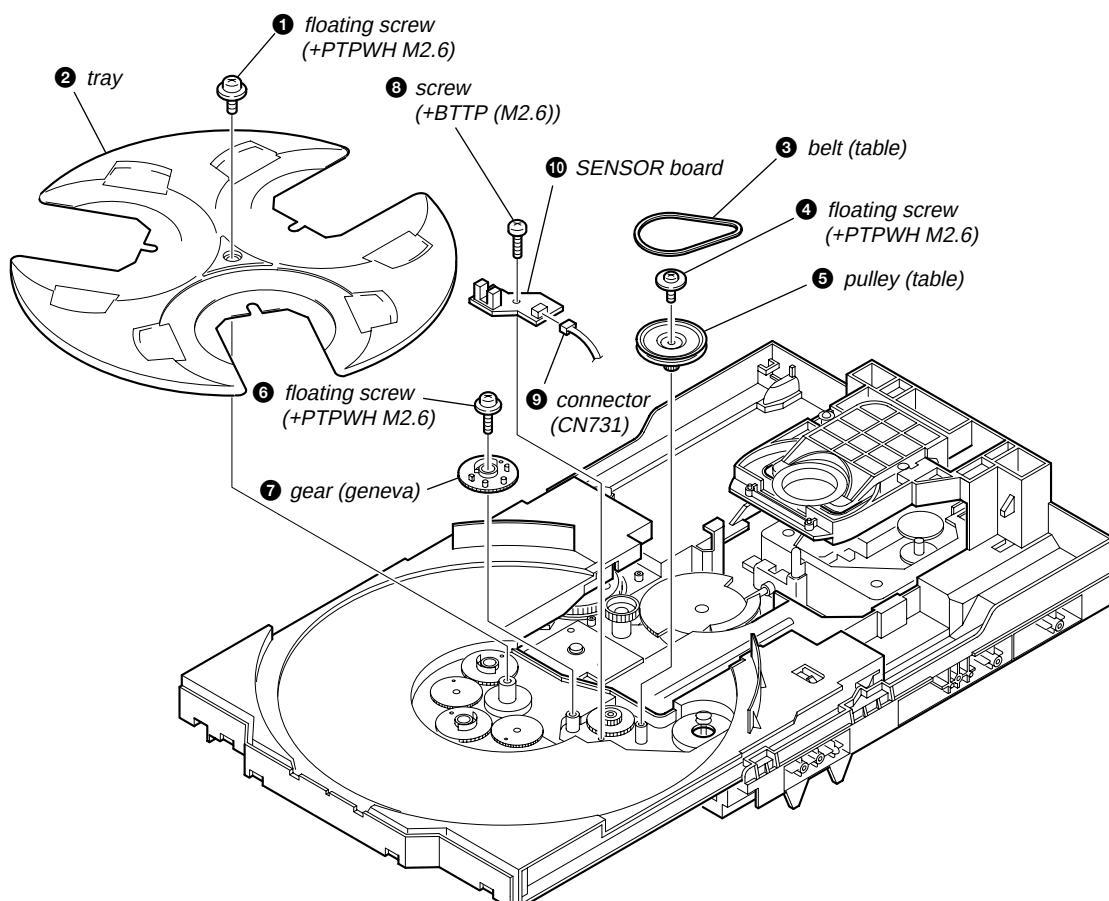
3-14. DRIVER BOARD, SW BOARD



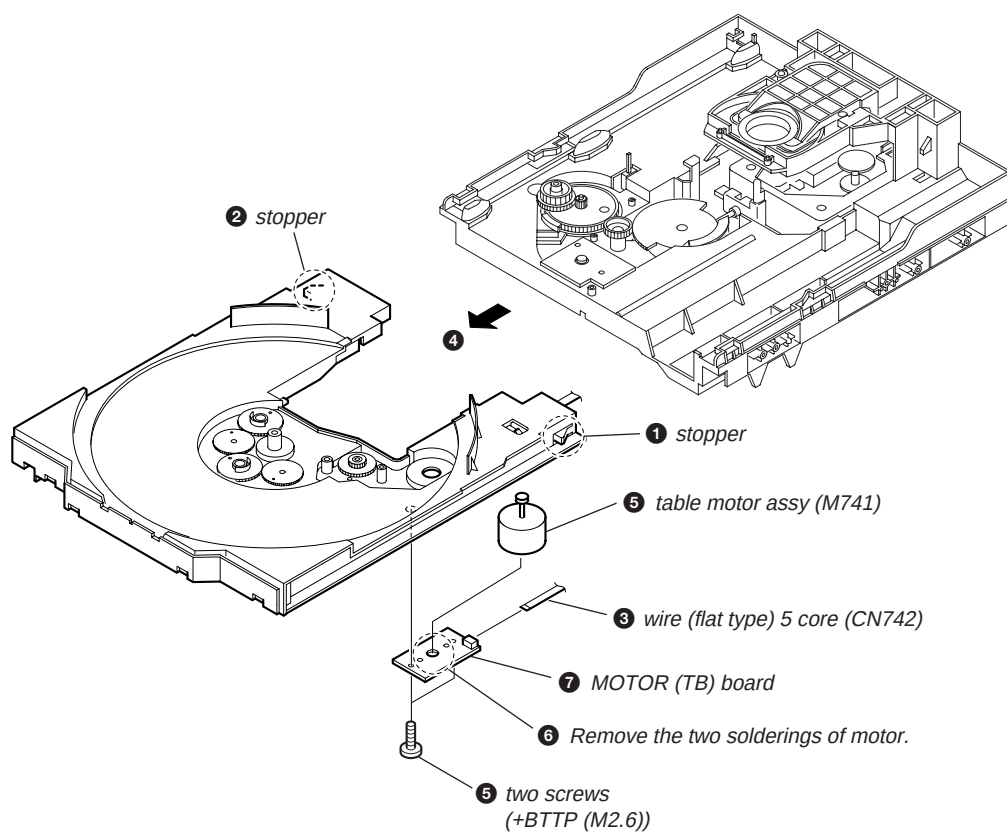
3-15. OPTICAL PICK-UP (KSM-215DCP/C2NP)



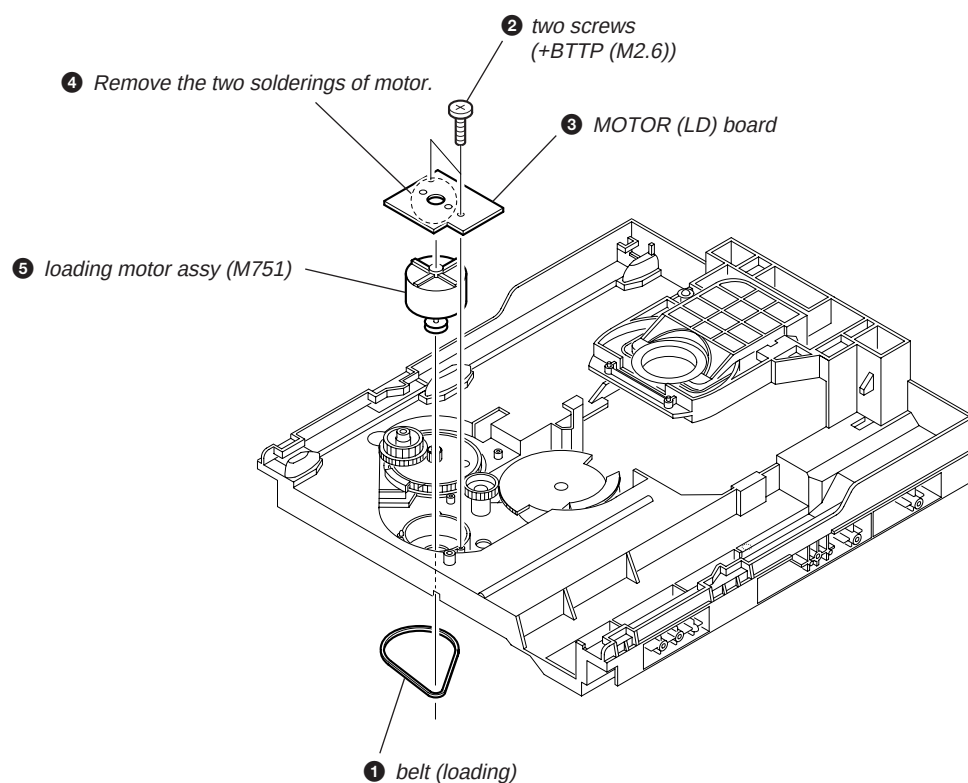
3-16. SENSOR BOARD



3-17. MOTOR (TB) BOARD



3-18. MOTOR (LD) BOARD



SECTION 4

TEST MODE

[Change-over of AM Tuner Step between 9 kHz and 10 kHz]

- A step of AM channels can be changed over between 9 kHz and 10 kHz.

Procedure:

- Press **I/⏻** button to turn the set ON.
- Select the function "TUNER", and press **TUNER/BAND** button to select the BAND "AM".
- Press **I/⏻** button to turn the set OFF.
- Press **TUNER/BAND** and **I/⏻** buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9 k STEP" or "AM 10 k STEP", and thus the channel step is changed over.

[Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

- Press three buttons **■**, **PLAY MODE/TUNING MODE**, and **DISC 1** simultaneously.
- The fluorescent indicator tube displays "COLD RESET" and the set is reset.

[Aging Mode]

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

- If an error occurred:
The aging operation stops and is displayed status.
- If no error occurs:
The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select "CD" of the function.

- Set three discs in tray. Select ALL DISCS, and REPEAT OFF.
- Load the tapes recording use into both decks.
- Press three buttons **■**, **PLAY MODE/TUNING MODE**, and **DISP SKIP/EX-CHANGE** simultaneously.
- Aging operations of CD and tape are started at the same time.
- To exit the aging mode, perform [Cold Reset].

2. Aging mode in CD section

1) Operation during aging mode

- In the aging mode, the program is executed in the following sequence.
 - The disc tray opens and closes.
 - The disc tray turns to select a disc 3.
 - The pick-up accesses to the first track, and plays 3 seconds.
 - The pick-up accesses to the last track, and plays 3 seconds.
 - The disc tray opens and closes.
 - The disc tray turns to select a disc 1.
 - The same operation starts like step (3).
 - After a disc 1 aging operation, a disc 2 is selected.
 - When an aging operation of a disc 3 is completed, the display "AGING ****" value increases.
 - If no error occurs, the aging operation continues repeatedly.

2) Error display

Disc error	
Display	Error
E00D01022	Focus error (No disc)
E00D02022	Sub Q error (Focus is good)
E00D02023	TOC reading error
E00D02014	Access error (Unable within regular time)

Mechanism error	
Display	Error
E00M__E_0	Error during opening tray
E00M__C_2	EX-CHANGE disc error
E00M__D_0	Error during closing tray
E00M__F_3	EX-OPEN error
E00M__D_5	EX-CLOSE error
E00M__C_2	Chuck-up error
E00M__C_3	Unchucking error

3. Aging mode in Tape Deck section

1) Operation during aging mode

- In the aging mode, the program is executed in the following sequence.

Step	Operation	Display
1	Rewind the TAPE A	TAPE AAG-1
2	Rewind the TAPE B	TAPE BAG-2
3	Play the TAPE A (1 minute)	TAPE AAG-2
4	Stop the TAPE A (1 second)	TAPE AAG-3
5	Play the TAPE A (3 minutes)	TAPE AAG-4
6	Rewind(AMS) the TAPE A	TAPE AAG-5
7	F.F.(AMS) the TAPE A	TAPE AAG-6
8	Play the TAPE B (1 minute)	TAPE BAG-2
9	Stop the TAPE B (1 second)	TAPE BAG-3
10	Record the TAPE B (3 minutes)	TAPE BAG-4
11	Rewind(AMS) the TAPE B	TAPE BAG-5
12	F.F.(AMS) the TAPE B	TAPE BAG-6

2) Error display

- If error occurred, the display remains like "TAPE BAG-2".

4. Exiting from the aging mode

- Be sure to perform Cold Reset to exit from the aging mode.

[PANEL Test Mode]

- All fluorescent segments and LEDs are tested.
- Keyboard check.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **PLAY** **MODE/TUNING MODE** and **ENTER** simultaneously.
3. All segments and LEDs (without STANDBY LED) are turned on.
4. Press **■** and **ENTER** buttons simultaneously, and the key check mode is activated.
5. The message “KEY 0 0 0” is displayed.
Each time a button is pressed, the key code number is displayed.
6. Press **■** and **ENTER** buttons simultaneously, and the key count mode is activated.
7. The message “KEYCNT 0” is displayed.
Each time a button is pressed, “KEYCNT 0” value increased. However, once a button is pressed, it is no longer taken into account.
8. Press **■** and **ENTER** buttons simultaneously, and the head phone detect mode is activated.
9. The message “H_P OFF” is displayed when a headphone jack is not inserted.
“H_P ON” is displayed when a headphone jack is inserted.
10. Press **■** and **ENTER** buttons simultaneously, and the volume control detect mode is activated.
11. The message “VOLUME FLAT” is displayed.
“VOLUME UP” is displayed if rotating **MASTER VOLUME** knob clockwise, or “VOLUME DOWN” is displayed if rotating counterclockwise.
12. To exit from the GC test mode after the head phone detect mode, press **■** and **ENTER** buttons simultaneously.

[Version and Destination Display Mode]

- The version or destination is displayed.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **PLAY** **MODE/TUNING MODE** and **DISC 2** simultaneously.
3. The destination is displayed.
4. Press **DISPLAY** buttons simultaneously.
5. The version is displayed.
6. To exit from this mode, press **I/⏻** button to turn the set OFF.

[CD Service Mode]

- This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pick-up.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. Select the function “CD”.
3. To enter the test mode, press three buttons **■**, **PLAY** **MODE/TUNING MODE**, and **▲** simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, press **▶▶** button to move the pick-up to outside track, or press **◀◀** button to inside track.
6. To exit from this mode, perform as follows:
 - 1) Move the pick-up to the most inside track.
 - 2) Press **I/⏻** button to turn the set OFF.

- Note:**
- Always move the pick-up to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
 - Do not run the sled motor excessively, otherwise the gear can be chipped.

[MC Test Mode]

- This mode is used to test the function of the equalizer.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **PLAY** **MODE/TUNING MODE** and **DISC 3** simultaneously.
3. Press the **EQ +** button.
The function of the equalizer is set to “MIN”.
4. Press the **EQ -** button.
The function of the equalizer is set to “MAX”.
5. Press the **PRESET EQ** button.
The function of the equalizer is set to “EQ FLAT”.
6. **MASTER VOLUME** up and down.
“VOLUME MIN” “VOLUME 16” “VOLUME MAX” is displayed.
7. Press the **GROOVE** button.
The message “VACS OFF” or “VACS ON” is displayed.
8. To exit from this mode, press **I/⏻** button to turn the set OFF.

[CD Ship Mode (LOCK)]

- This mode moves the pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. Select the function “CD”.
3. Press **I/⏻** button to turn the set OFF.
4. Press **CD** button and **I/⏻** button simultaneously.
5. The “STANDBY” display blinks instantaneously, and the CD ship mode is set.

[CD Ship (LOCK) & COLD RESET MODE]

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. Select the function “CD”.
3. Press **I/⏻** button to turn the set OFF.
4. Press three buttons **■**, **CD** and **DISPLAY** simultaneously.
5. The “STANDBY” display blinks instantaneously and CD ship mode is set.
6. To fluorescent indicator tube displays “COLD RESET” and the set is reset.

[Disc Tray Lock]

Procedure:

1. Press the **I/⏻** button to turn the set ON.
2. Press two buttons of **■** and **▲** simultaneously for five seconds.
3. The message “LOCKED” is displayed and the tray is locked. (Even if exiting from this mode, the tray is still locked.)
4. Press two buttons of **■** and **▲** simultaneously for five seconds again.
5. The message “UNLOCKED” is displayed and the tray is unlocked.
6. To exit from this mode, press the **I/⏻** button to turn the set OFF.

[CD Repeat 5 Times Limit Release Mode]**Procedure:**

1. Press  button to turn the set ON.
2. Select the function "CD".
3. Press three buttons ,  and  simultaneously.
4. The message "LIMIT OFF" is displayed.
5. Press  button the set OFF.

[AMP TEST MODE]**Procedure:**

1. Press  button to turn the set ON.
2. To enter the test mode, press three buttons ,   and  simultaneously.
3. Press the  button.
The message "V0 0 0" " 000" is displayed.
4. Press the  button.
The message "DBFB ON" "DBFB OFF" is displayed.
5. Press the  button.
The message "SURROUND ON" "SURROUND OFF" is displayed.
6. Press the  button.
The message "LOW" "MID" "HIGH" is displayed.
7. Press  button to turn the set OFF.

SECTION 5 MECHANICAL ADJUSTMENTS

• TAPE MECHANISM DECK SECTION

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback heads	pinch rollers
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 – 6.96 mN • m (31 to 71 g • cm) (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 – 0.59 mN • m 2 to 6 g • cm (0.03 – 0.08 oz • inch)
REV	CQ-102RC	3.06 – 6.96 mN • m (31 to 71 g • cm) (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 – 0.59 mN • m (2 to 6 g • cm) (0.03 – 0.08 oz • inch)
FF/REV	CQ-201B	6.96 – 14.02 mN • m (71 to 143 g • cm) (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 mN • m (100 • cm or more) (3.53 oz • inch or more)
REV tension	CQ-403R	9.80 mN • m (100 • cm or more) (3.53 oz • inch or more)

SECTION 6 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB = 0.775 V

Precaution

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
WS-48B	3 kHz, 0 dB	Tape Speed Check

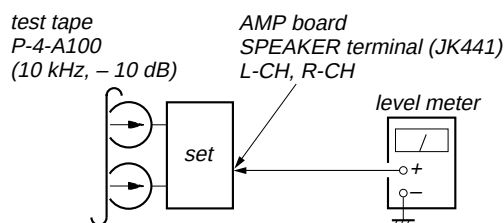
Record/Playback Head Azimuth Adjustment

DECKA | DECKB

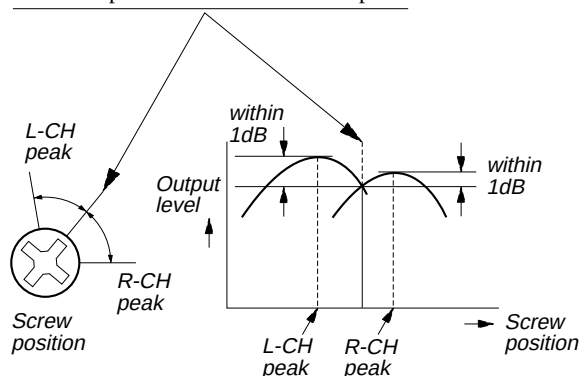
Note : Perform this adjustments for both desks.

Procedure:

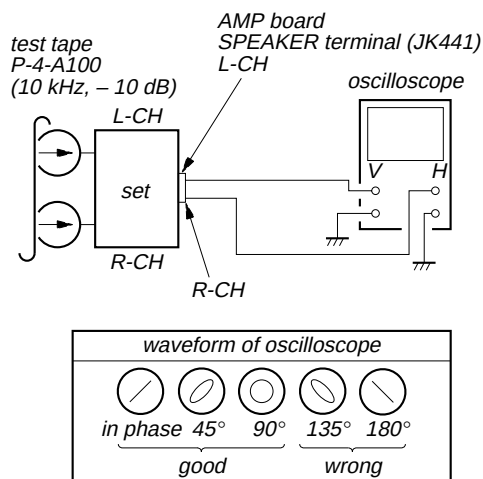
1. Mode: Playback



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.



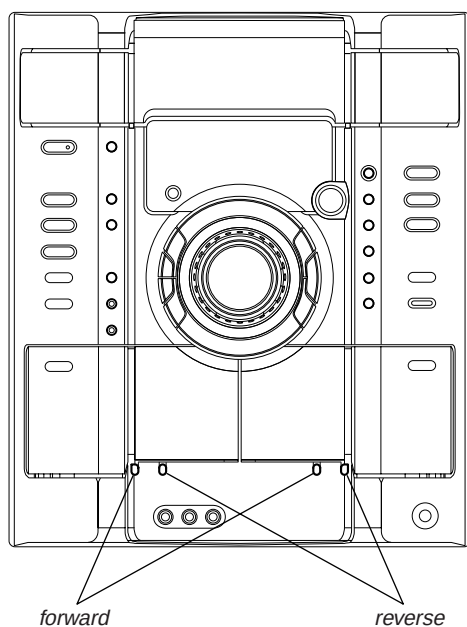
3. Mode: Playback



4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Playback Head (Deck A)

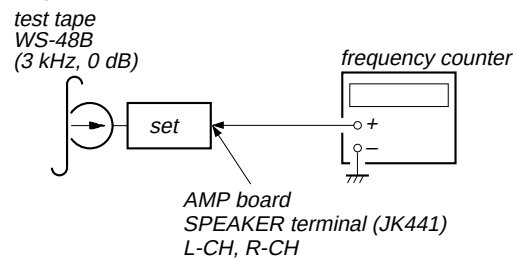
Record/Playback/Erase Head (Deck B)



Tape Speed Check

DECKA **DECKB**

Mode: Playback



1. Insert the WS-48B into the deck.
2. Press the  button on the deck.
3. Confirm that the frequency counter reads $3,000 \pm 90$ Hz.

Sample value of Wow and Flutter: 0.3% or less W.RMS (JIS)
(WS-48B)

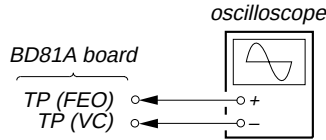
CD SECTION

Note:

1. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
2. Use an oscilloscope with more than 10MΩ impedance.
3. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-curve Check

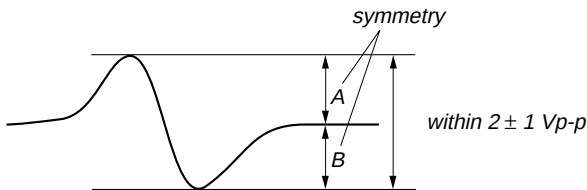
Connection:



Procedure:

1. Connect an oscilloscope to test point TP (FEO) and TP (VC) on the BD81A board.
2. Turn the power on.
3. Put the disc (YEDS-18) in and press the button and actuate the focus search. (actuate the focus search when disc table is moving in and out)
4. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2 ± 1 Vp-p.

S-curve waveform

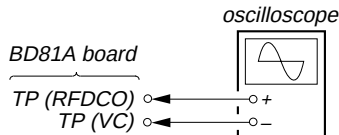


- Note:**
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
 - Take sweep time as long as possible and light up the brightness to obtain best waveform.

Checking Location: BD81A board (Side B)

RFDC Level Check

Connection:

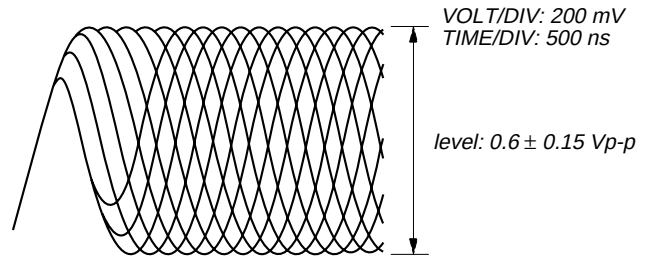


Procedure:

1. Connect an oscilloscope to test point (RFDCO) and TP (VC) on the BD81A board.
2. Turn the power on.
3. Put the disc (YEDS-18) in to playback the number five track.
4. Confirm that oscilloscope waveform is clear and check RFDC signal level is correct or not.

Note: A clear RFDC signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

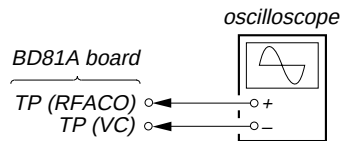
RFDC signal waveform



Checking Location: BD81A board (Side B)

RFAC Level Check

Connection:

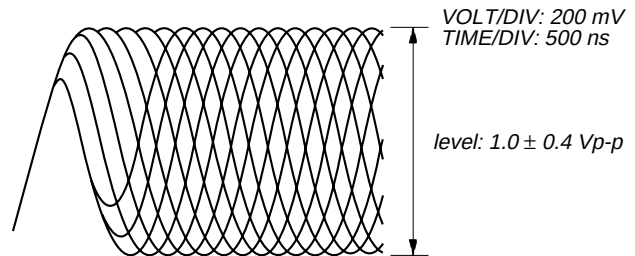


Procedure:

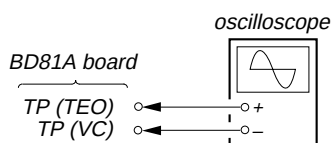
1. Connect an oscilloscope to test point TP (RFACO) and TP (VC) on the BD81A board.
2. Turn the power on.
3. Put the disc (YEDS-18) in to playback the number five track.
4. Confirm that oscilloscope waveform is clear and check RFAC signal level is correct or not.

Note: A clear RFAC signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

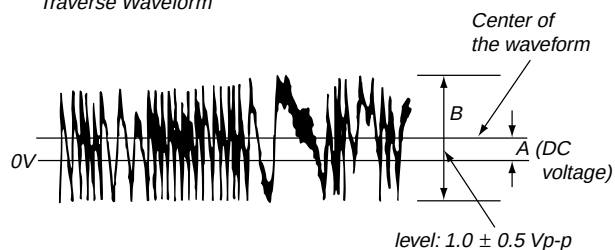
RFAC signal waveform



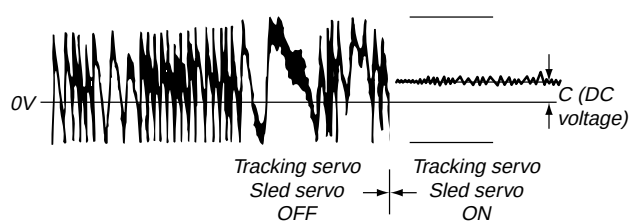
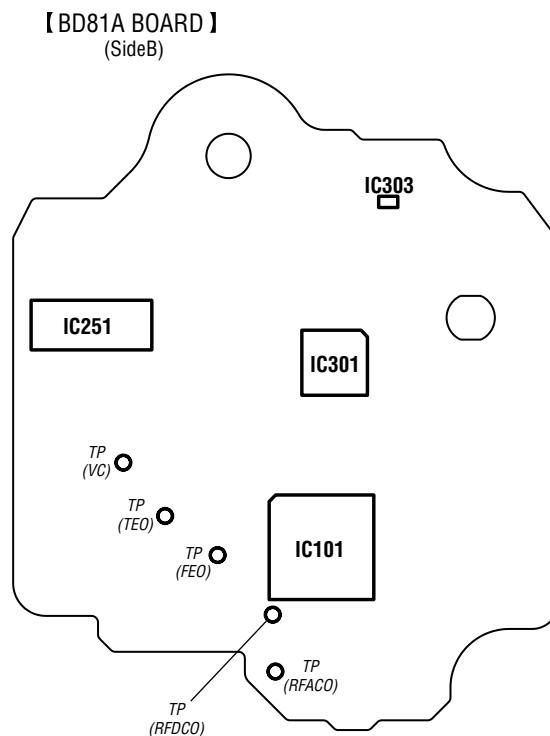
Checking Location: BD81A board (Side B)

E-F Balance Adjustment**Connection:****Procedure:**

1. Connect an oscilloscope to test point TP (TEO) and TP (VC) on the BD81A board.
2. Press three buttons , , and  simultaneously enter the CD test mode.
3. Put the disc (YEDS-18) in to playback the number five track.
4. Press the  button. If it plays, press the  button again. (The tracking servo and the sledding servo are turned OFF)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 10\%$

Traverse Waveform

6. Press the  button. (The tracking servo and sledding servo are turned ON)
 7. To exit from this mode, turn the power off.
- Notes:
- Always move the optical pick-up to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
 - Do not run the sled motor excessively, otherwise the gear can be chipped.

Traverse Waveform**Checking Location:** BD81A board (Side B)**Checking Location:****- BD81A BOARD (Side B) -**

MEMO

SECTION 7
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. (p: pF)
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- Δ : internal component.
- $\square$: panel designation.

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

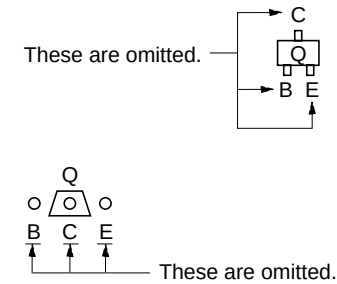
- — : B+ Line.
- - - - : B- Line.
- $\square$: adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω).
Voltage variations may be noted due to normal production tolerances.
no mark : FM
() : CD STOP
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - ➡ : TUNER
 - ➡ : PB (DECK A)
 - ➡ : PB (DECK B)
 - ➡ : REC (DECK B)
 - ➡ : CD
 - ➡ : AUDIO

Note on Printed Wiring Boards:

- $\circ$: parts extracted from the component side.
- ▨ : Pattern from the side which enables seeing.

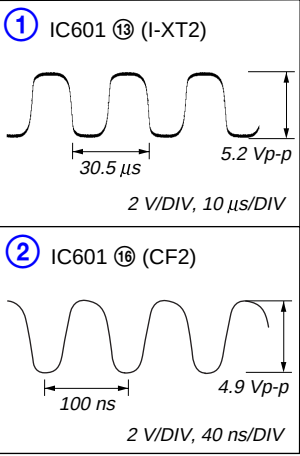
Caution:
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.

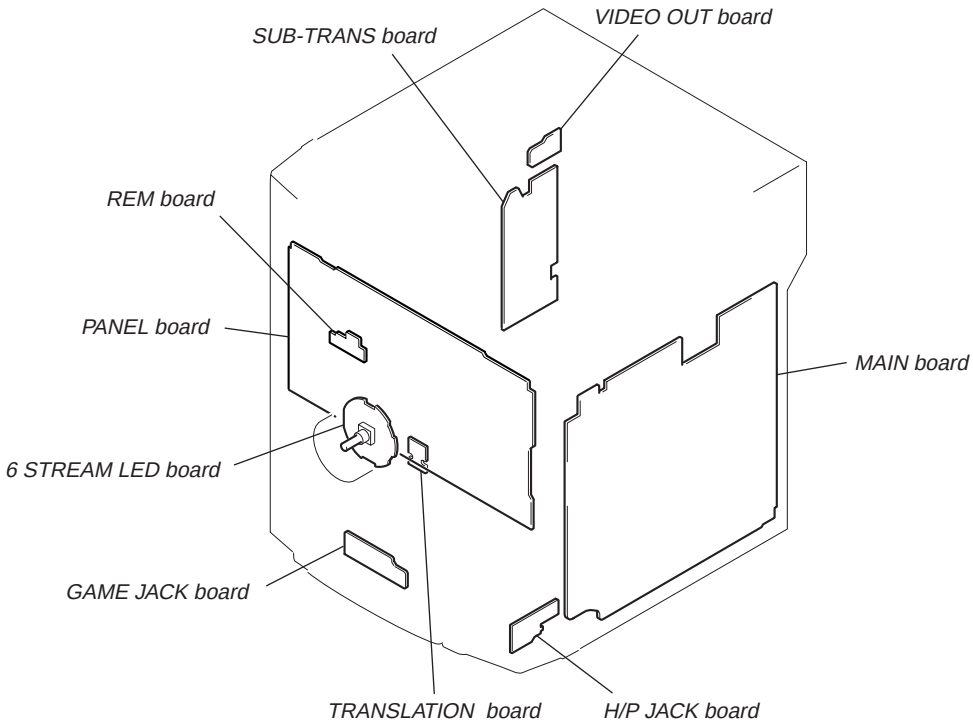
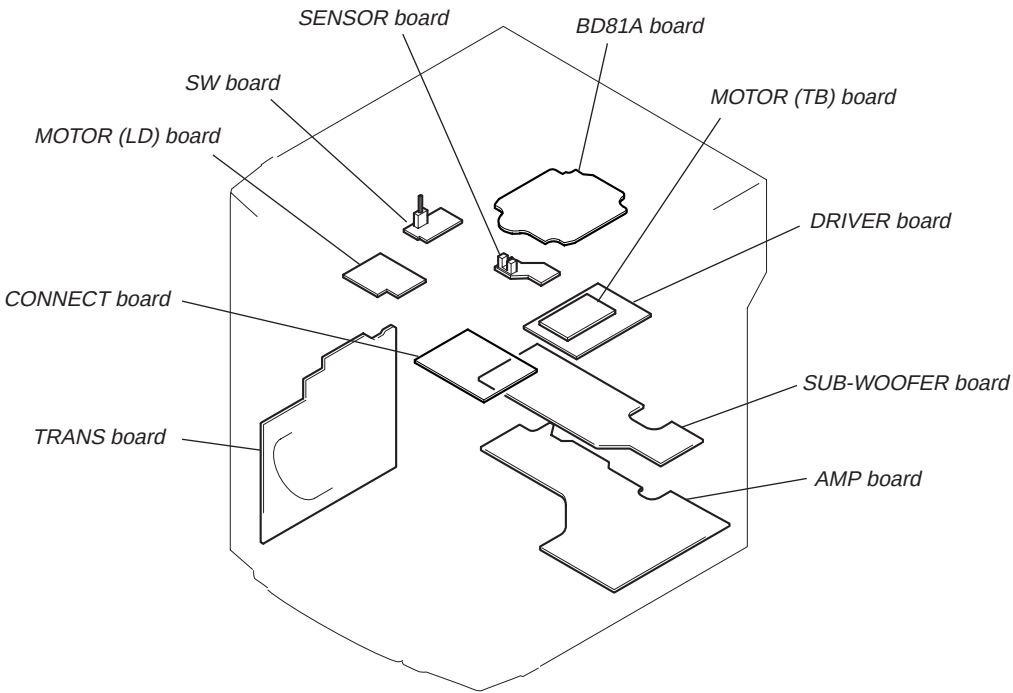


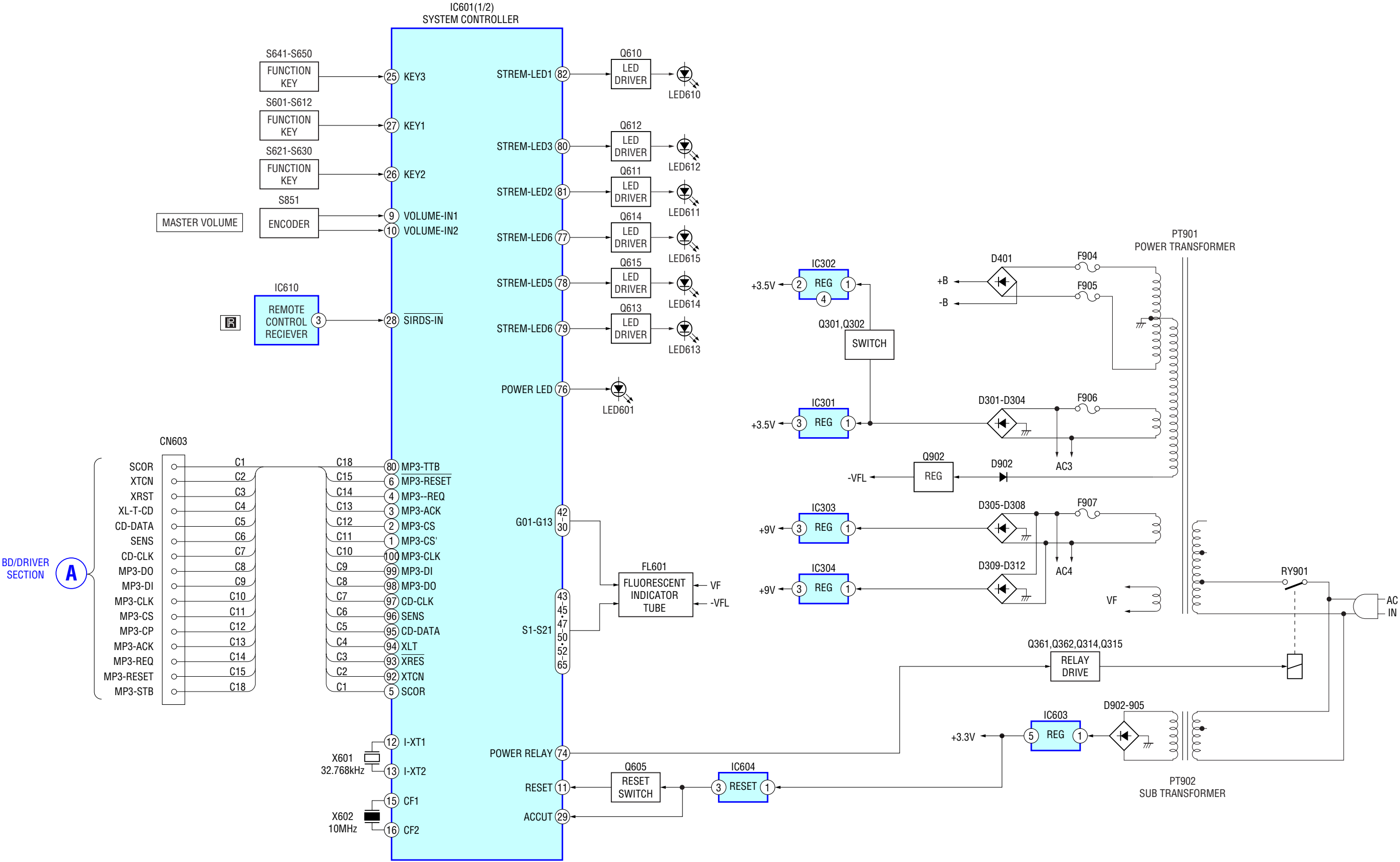
• Waveforms

– PANEL BOARD –

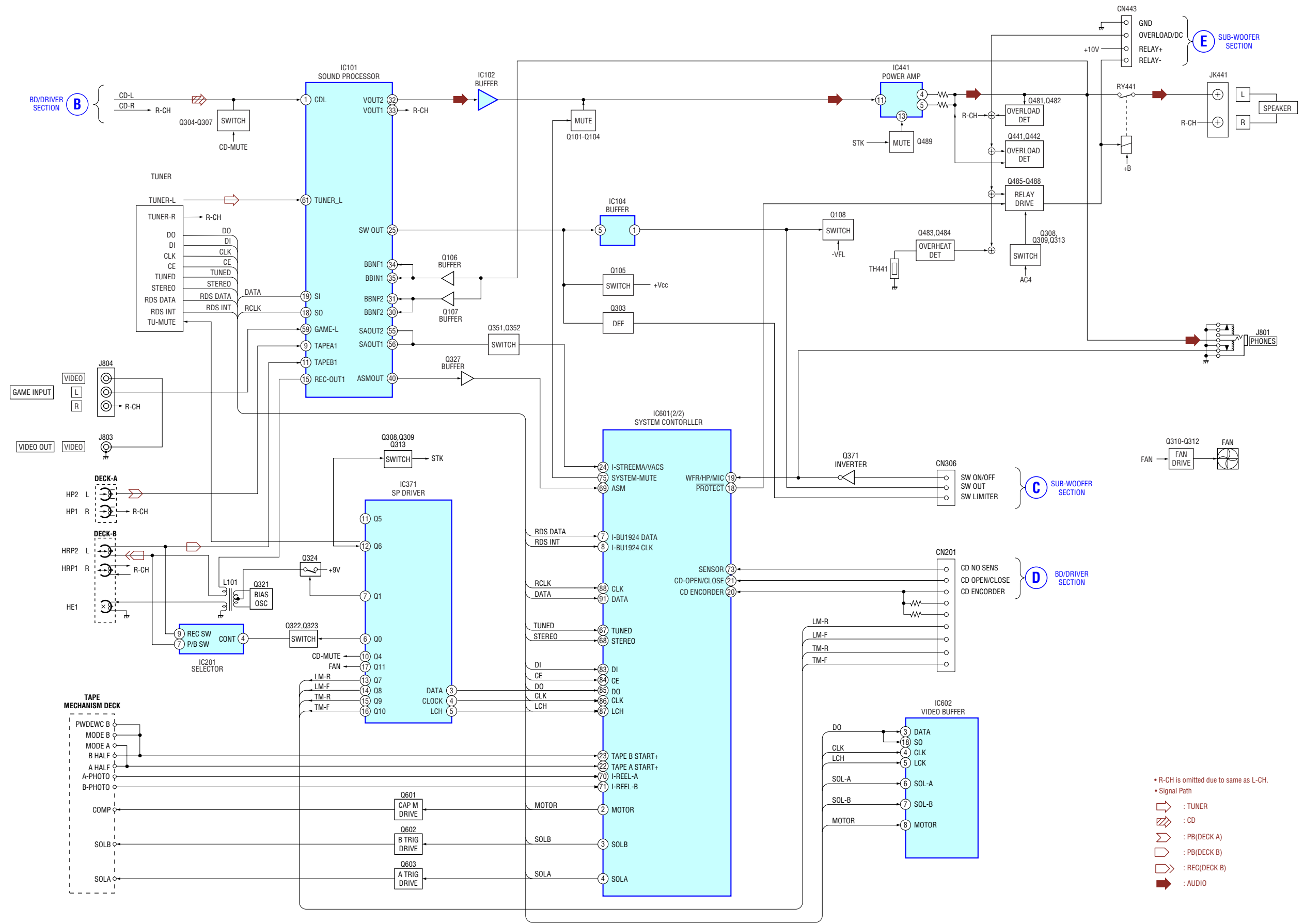


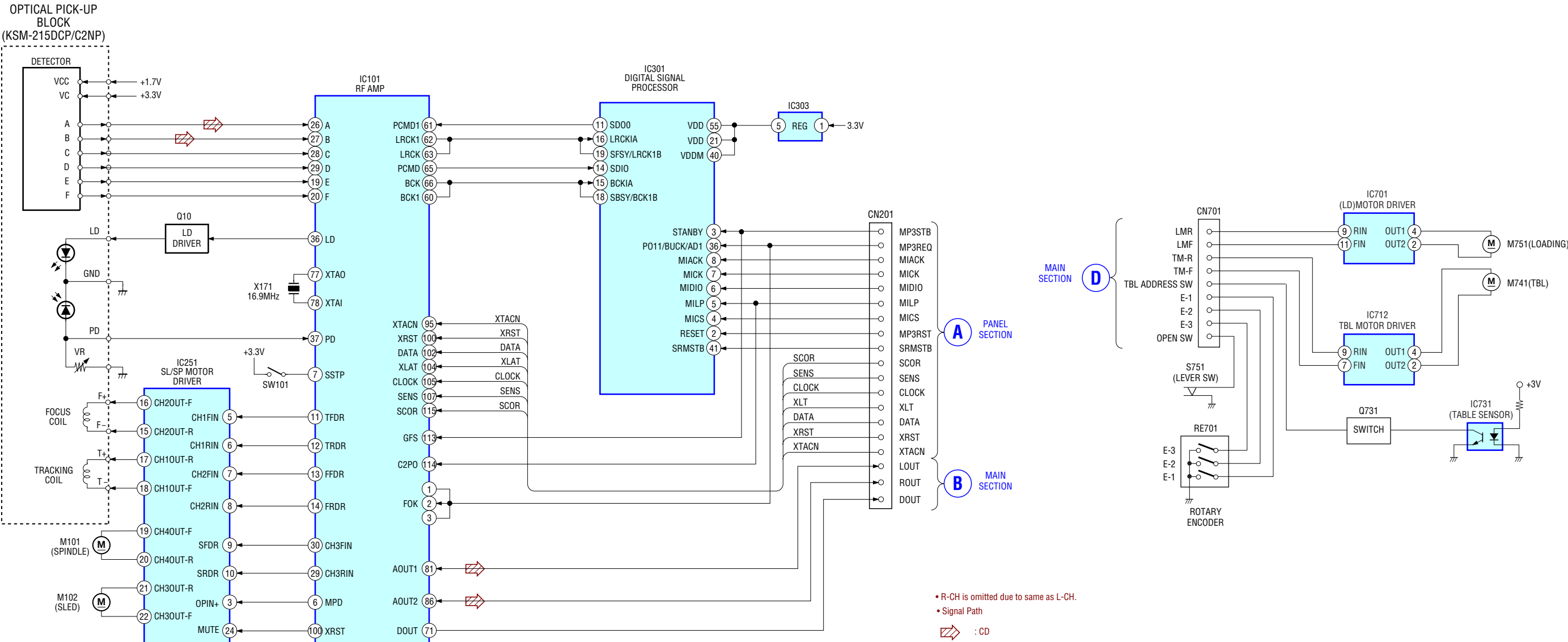
• Circuit Boards Location



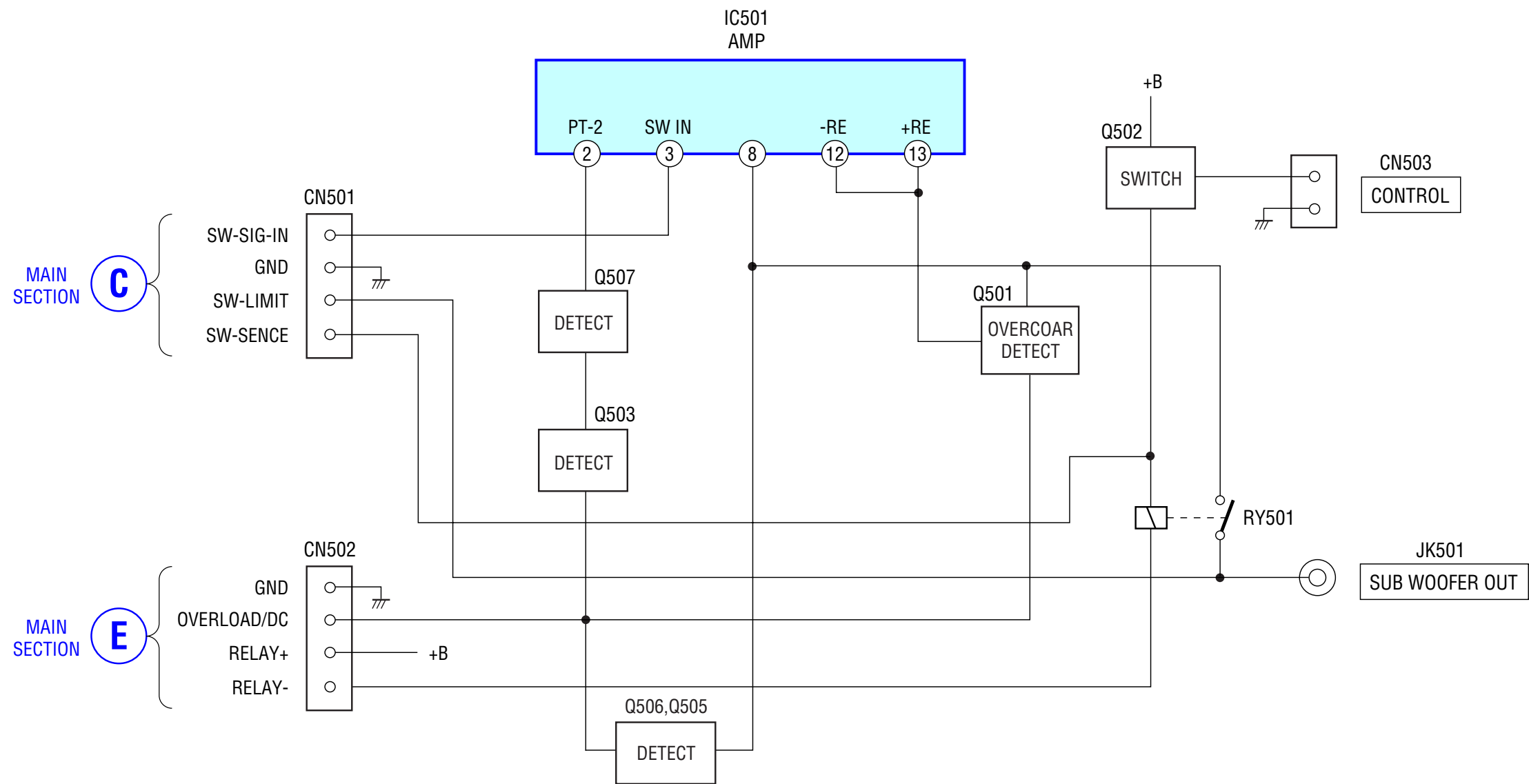


- MAIN SECTION -





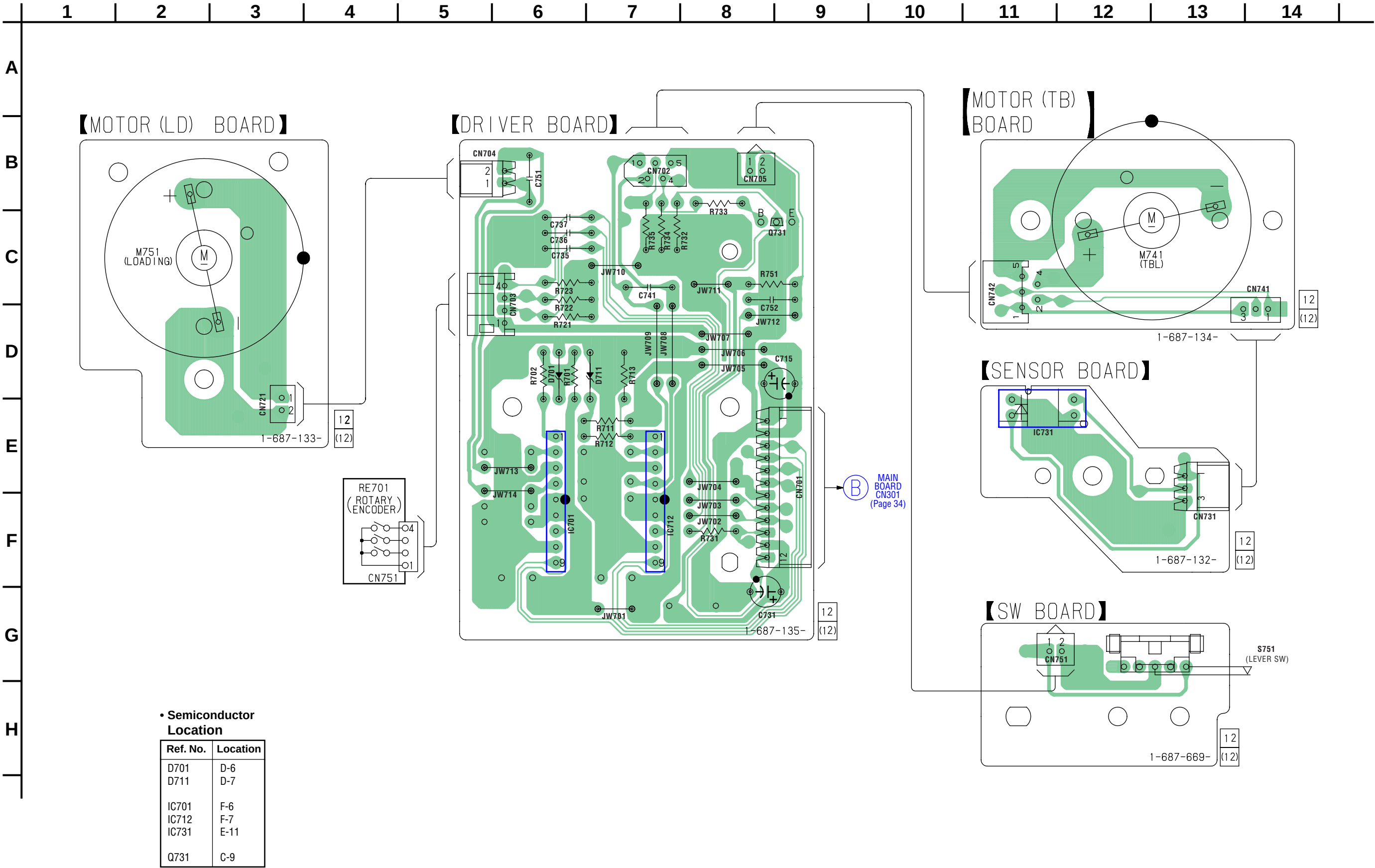
- SUB-WOOFER SECTION -



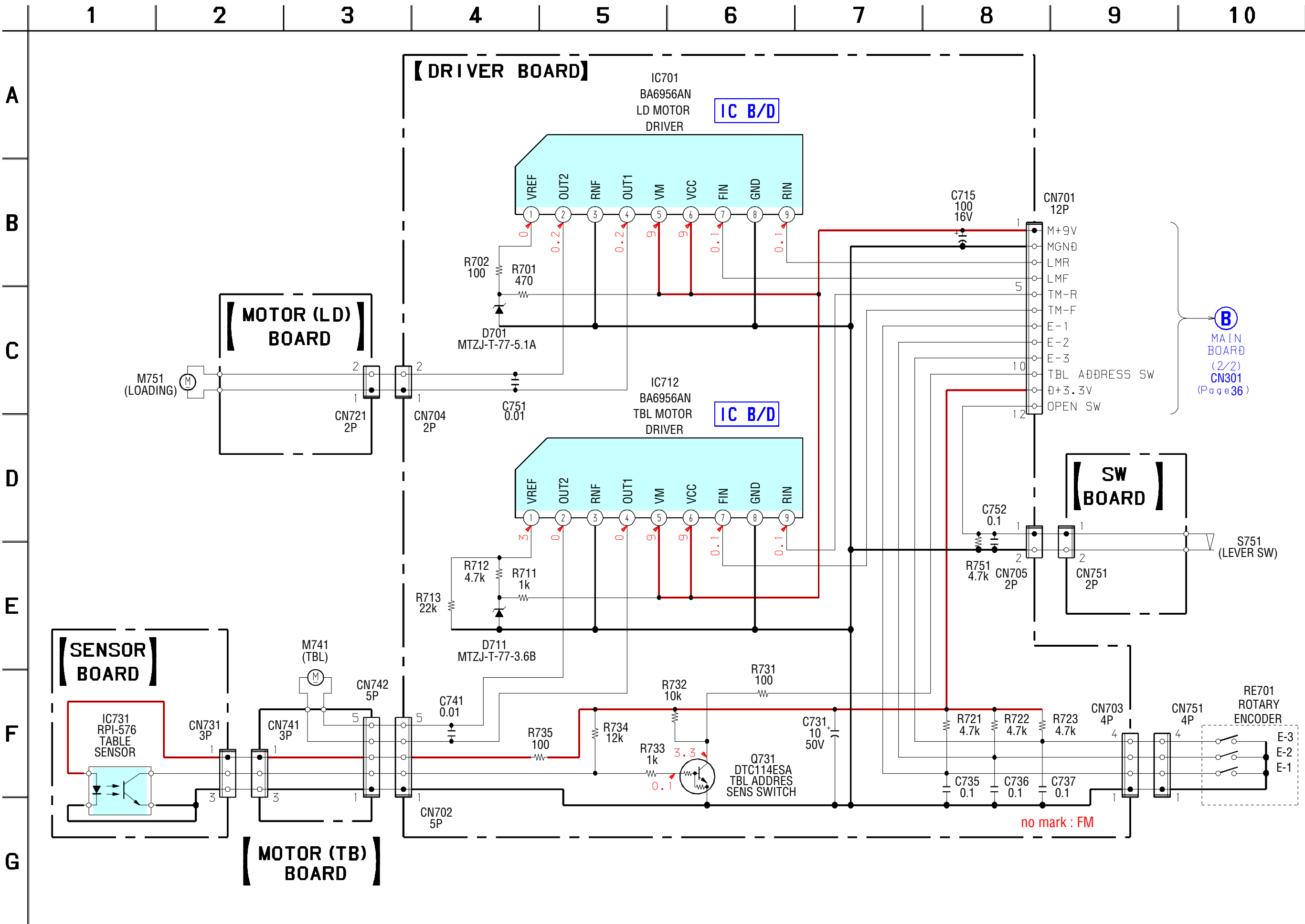


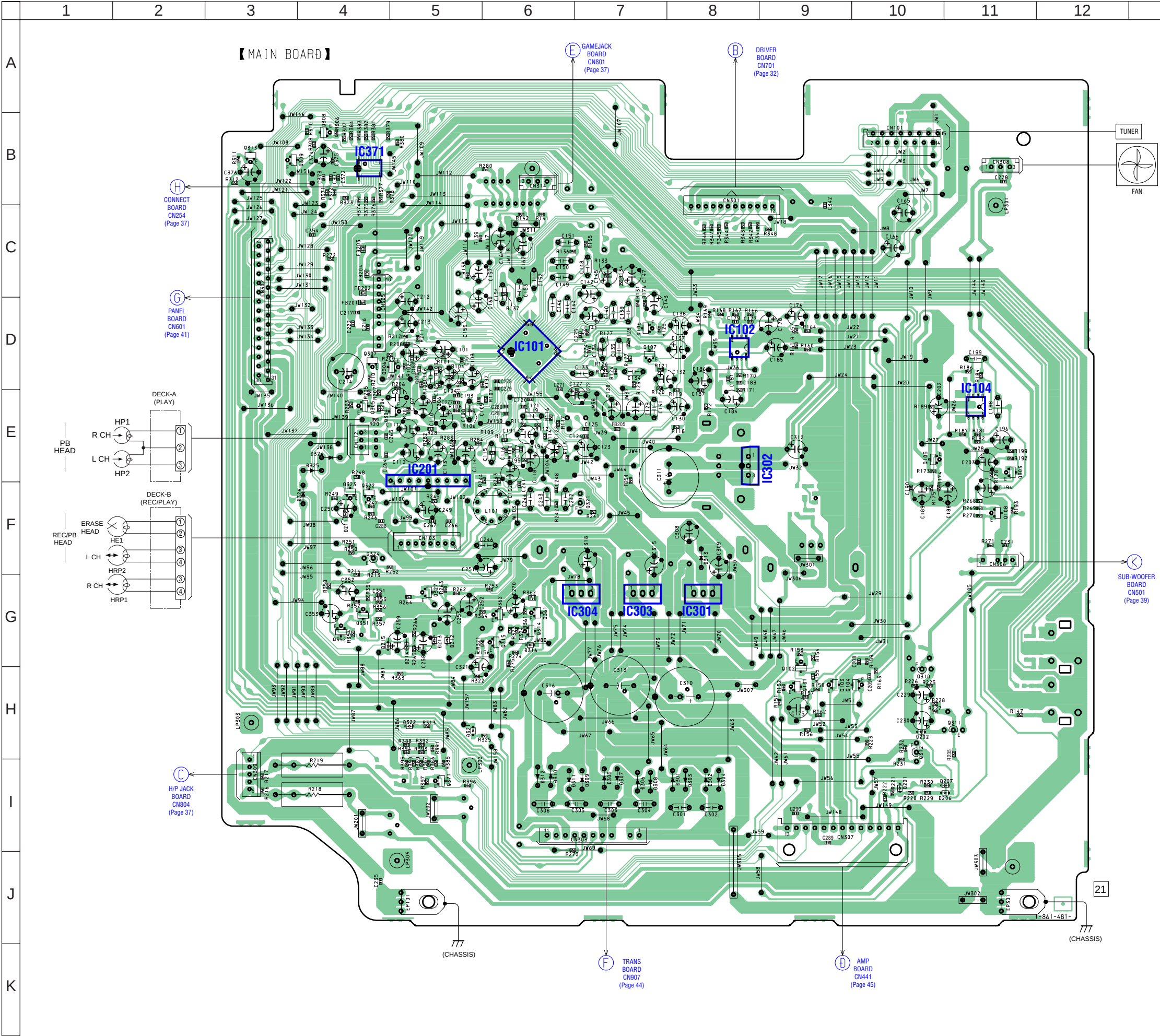
• See page 50 for IC Pin Function Description. • See page 47, 48 for IC Block Diagrams.





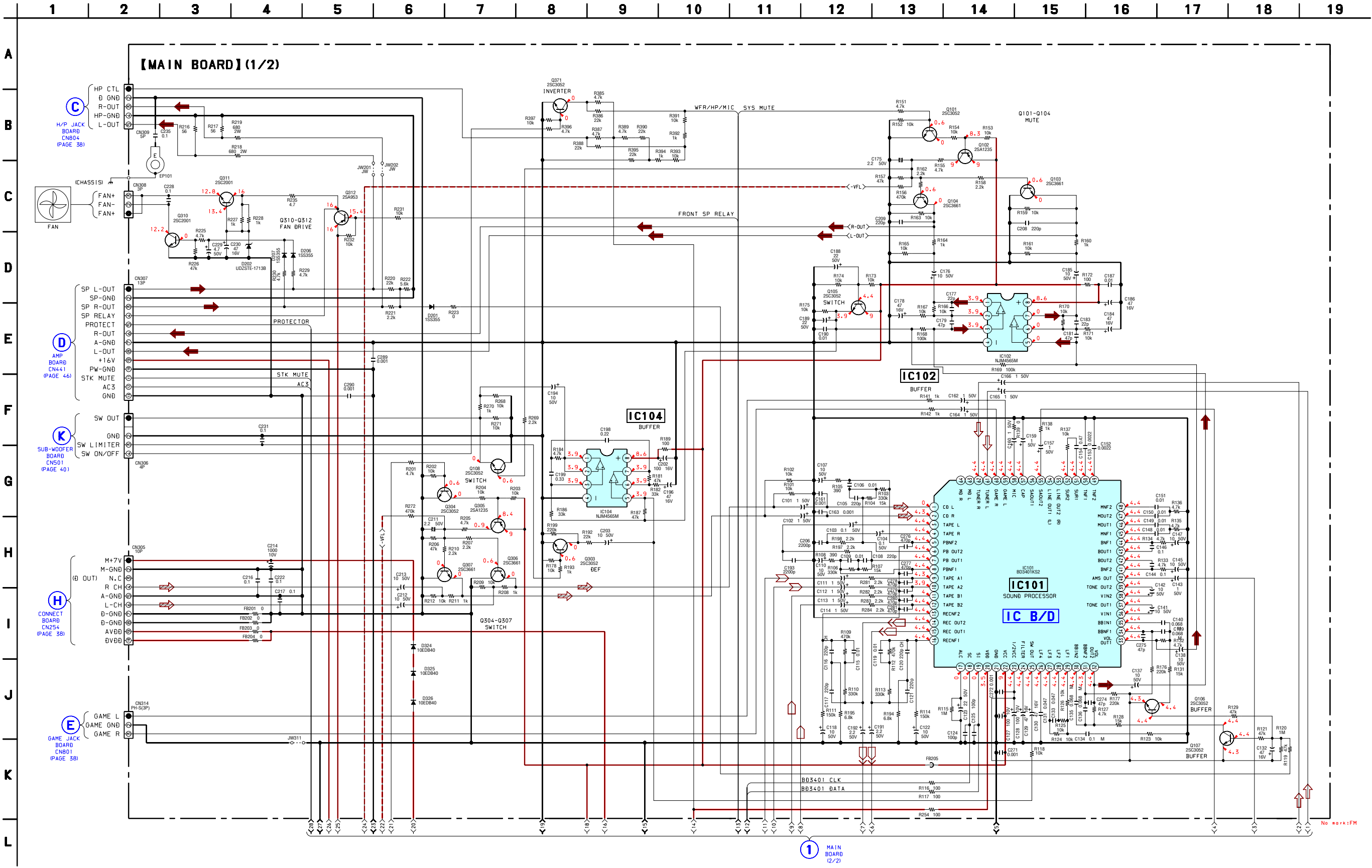
7-5. SCHEMATIC DIAGRAM – CD MECHANISM SECTION – • See page 47 for IC Block Diagrams.



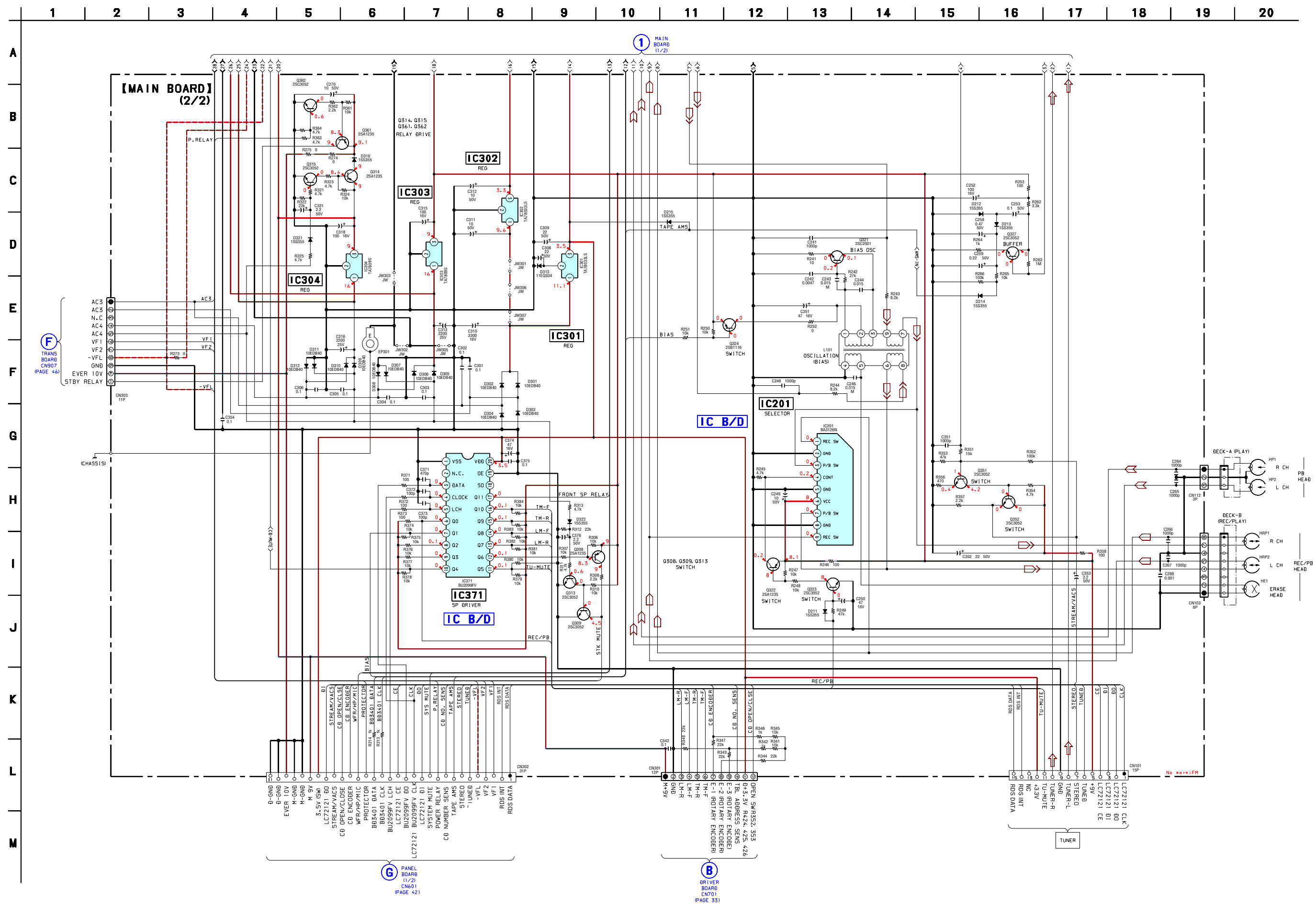


Semiconductor Location			
Ref. No.	Location	Ref. No.	Location
D201	I-10	IC303	G-7
D202	H-10	IC304	G-7
D206	I-10	IC371	B-4
D207	I-10		
D211	F-4	Q101	H-9
D212	G-5	Q102	H-9
D213	G-5	Q103	H-9
D214	G-5	Q104	H-10
D215	G-4	Q105	E-10
D301	I-8	Q106	D-7
D302	I-8	Q107	D-7
D303	I-8	Q108	F-11
D304	I-8	Q303	E-11
D305	I-7	Q304	E-4
D306	I-7	Q305	E-4
D307	I-7	Q306	B-4
D308	I-7	Q307	B-4
D309	I-7	Q308	B-4
D310	I-6	Q309	B-3
D311	I-6	Q310	H-10
D312	I-6	Q311	H-11
D313	F-8	Q312	H-10
D316	G-6	Q313	B-3
D321	H-5	Q314	G-6
D322	H-5	Q315	G-6
D324	E-4	Q321	F-7
D325	E-4	Q322	F-4
D326	F-4	Q323	F-4
		Q324	F-4
IC101	D-6	Q327	G-5
IC102	D-8	Q351	G-4
IC104	D-11	Q352	G-4
IC201	E-5	Q361	G-6
IC301	G-8	Q362	G-6
IC302	E-9	Q371	I-5

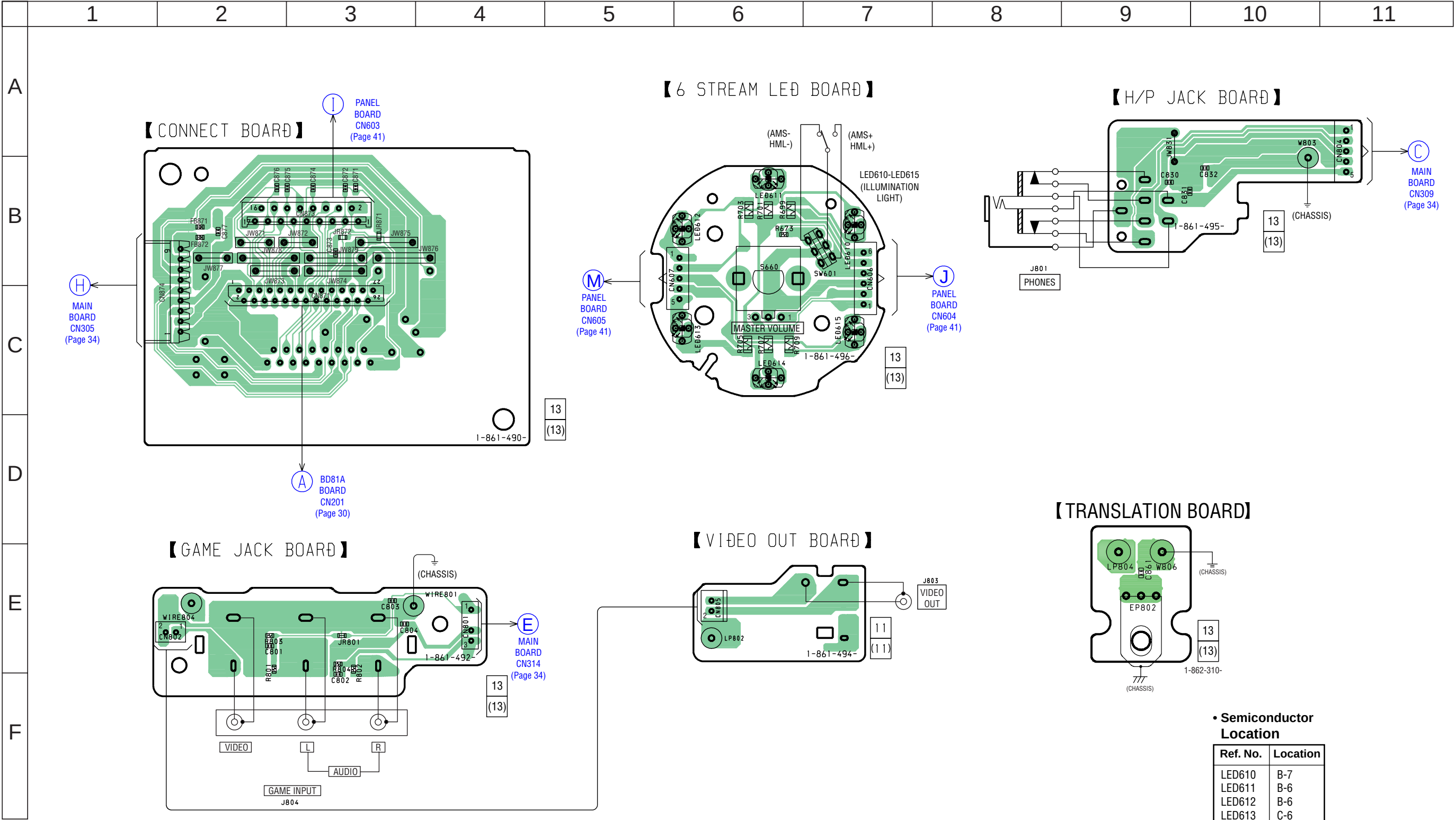
7-7. SCHEMATIC DIAGRAM – MAIN SECTION (1/2) – • See page 49 for IC Block Diagrams.

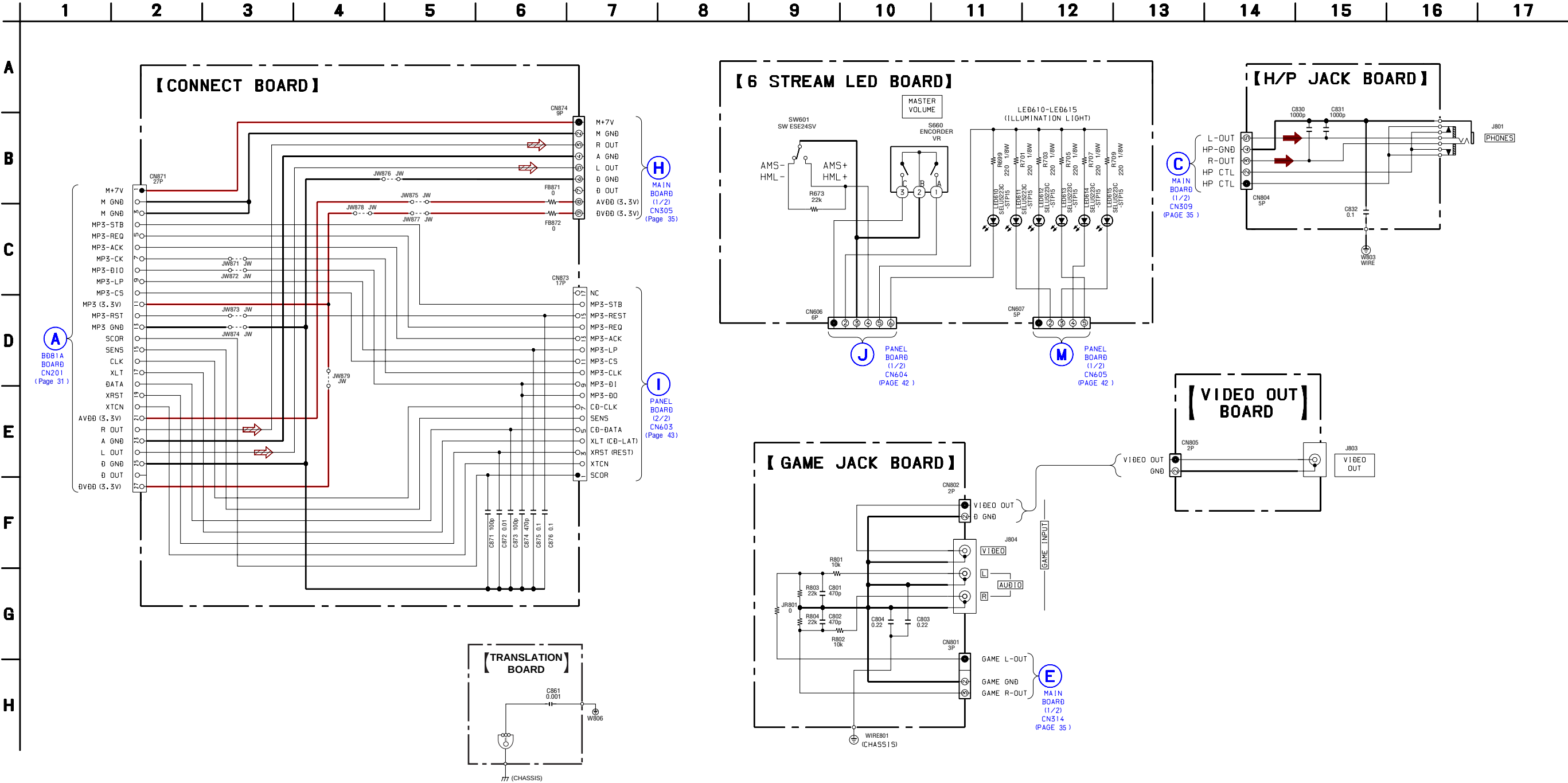


7-8. SCHEMATIC DIAGRAM – MAIN SECTION (2/2) – • See page 49 for IC Block Diagrams.



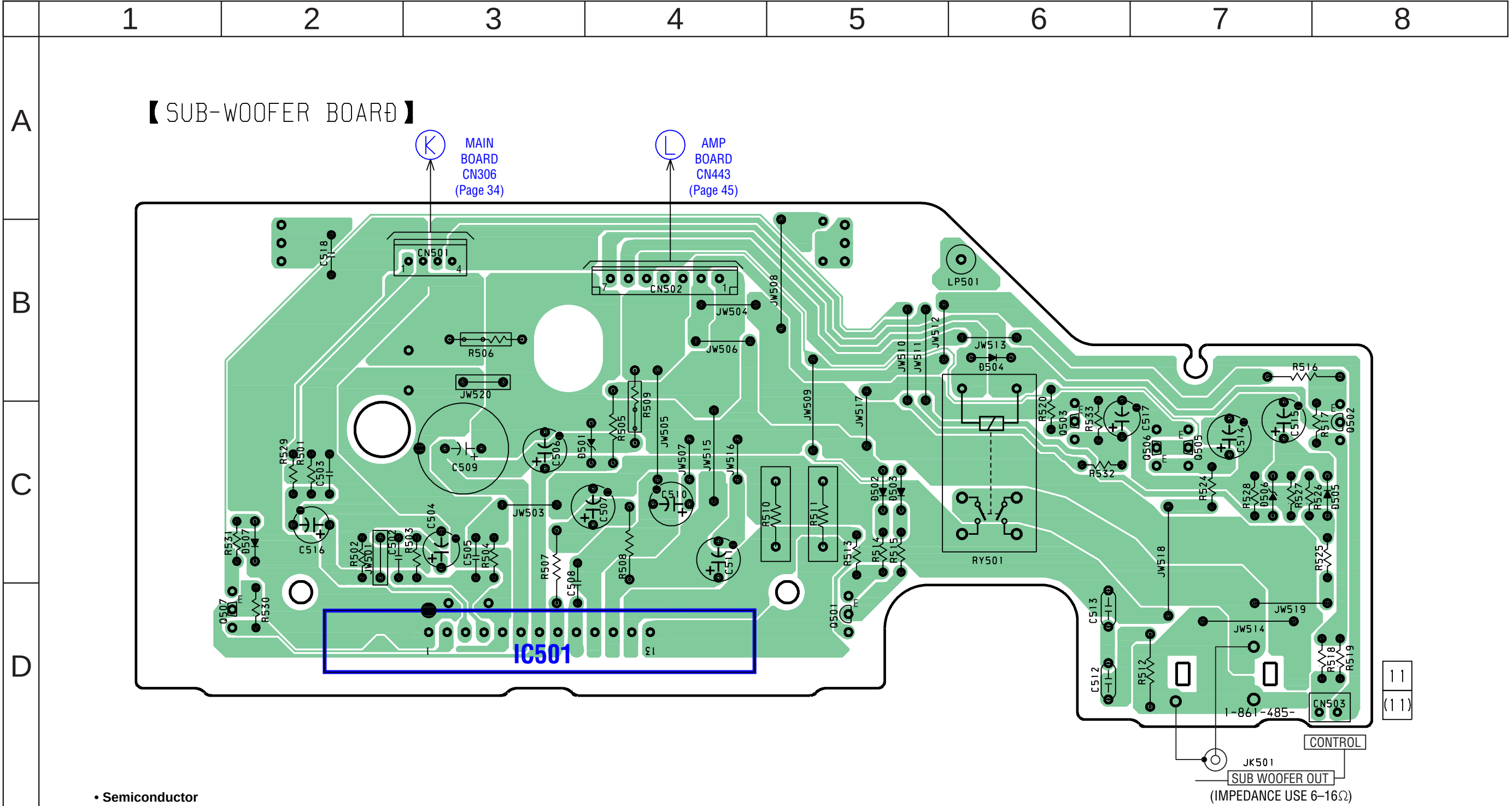
7-9. PRINTED WIRING BOARD – PANEL COMB SECTION – • See page 25 for Circuit Boards Location. • : Uses unleaded solder.





7-11. PRINTED WIRING BOARD – SUB-WOOFER SECTION –

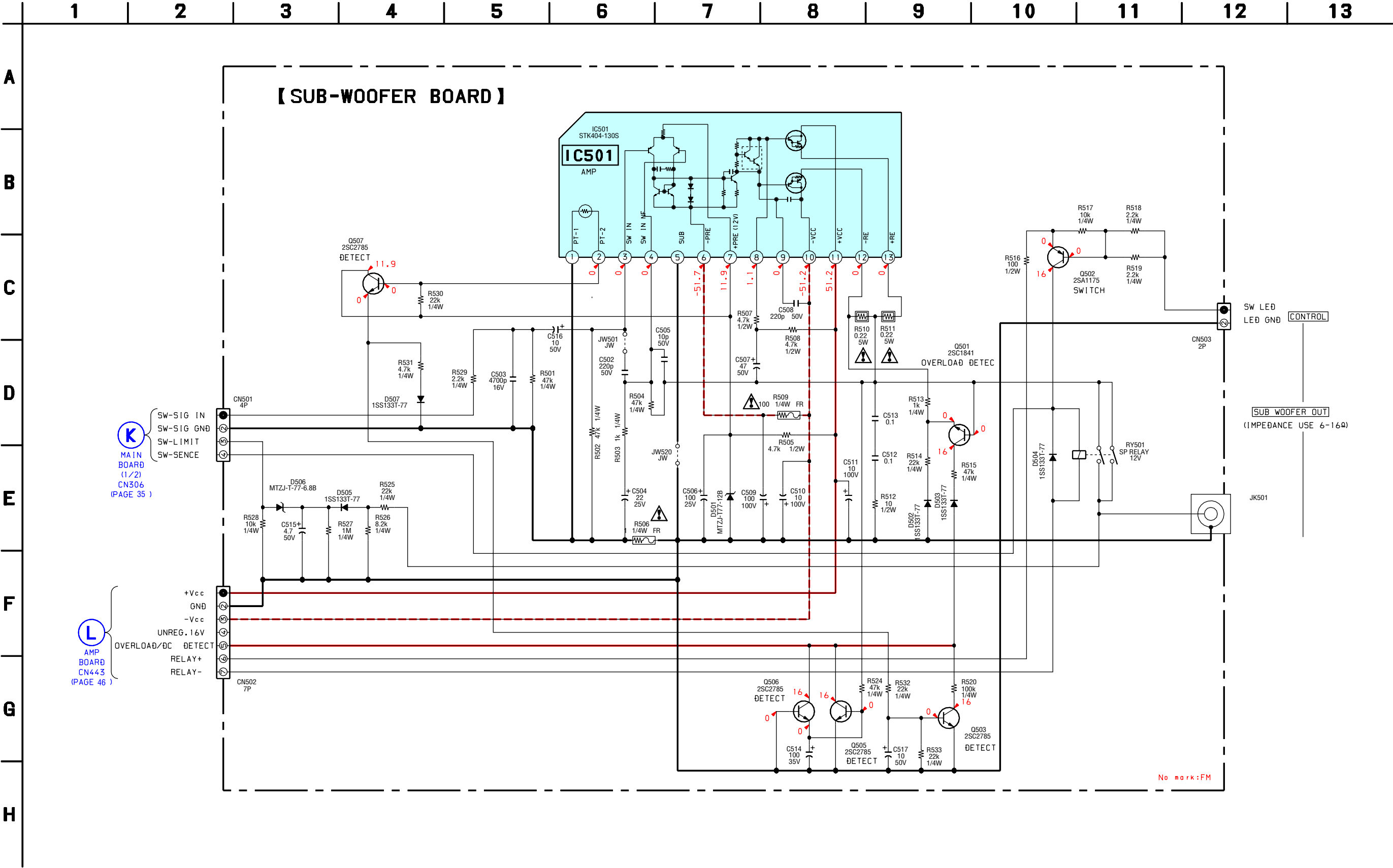
• See page 25 for Circuit Boards Location. •  : Uses unleaded solder.

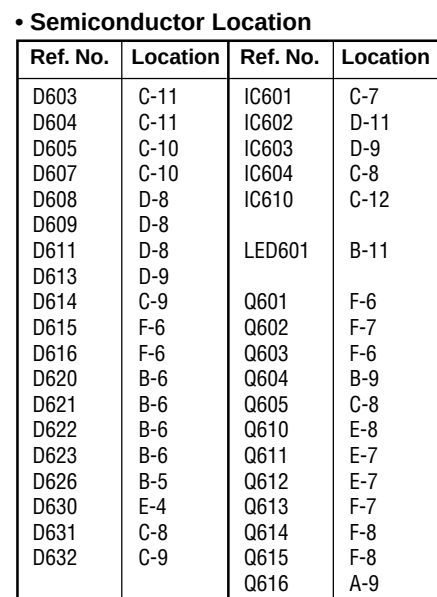


• Semiconductor Location

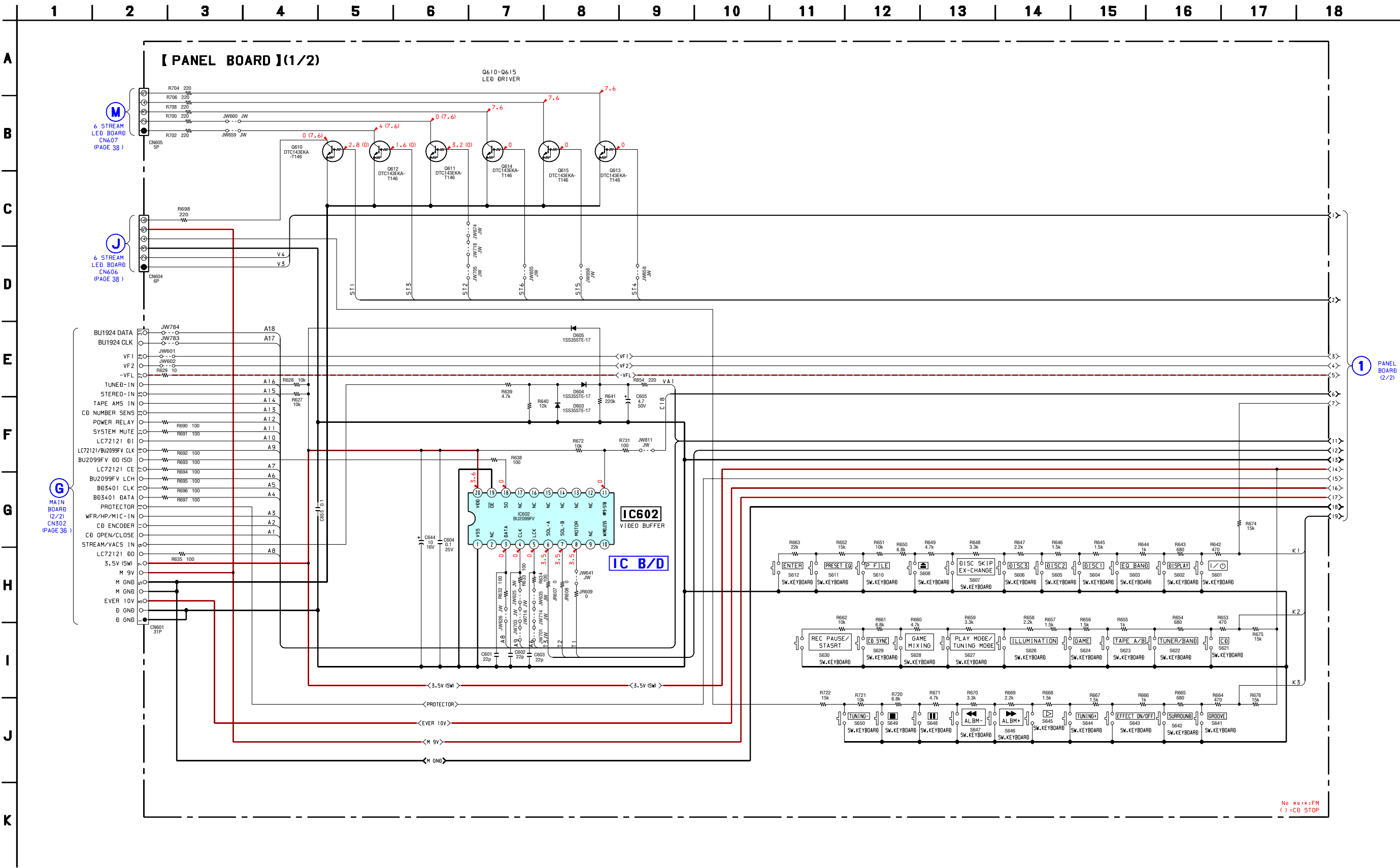
Ref. No.	Location
D501	C-3
D502	C-5
D503	C-5
D504	B-6
D505	C-8
D506	C-7
D507	C-2
IC501	D-3
Q501	D-5
Q502	C-8
Q503	C-6
Q505	C-7
Q506	C-7
Q507	D-1

7-12. SCHEMATIC DIAGRAM – SUB-WOOFER SECTION –



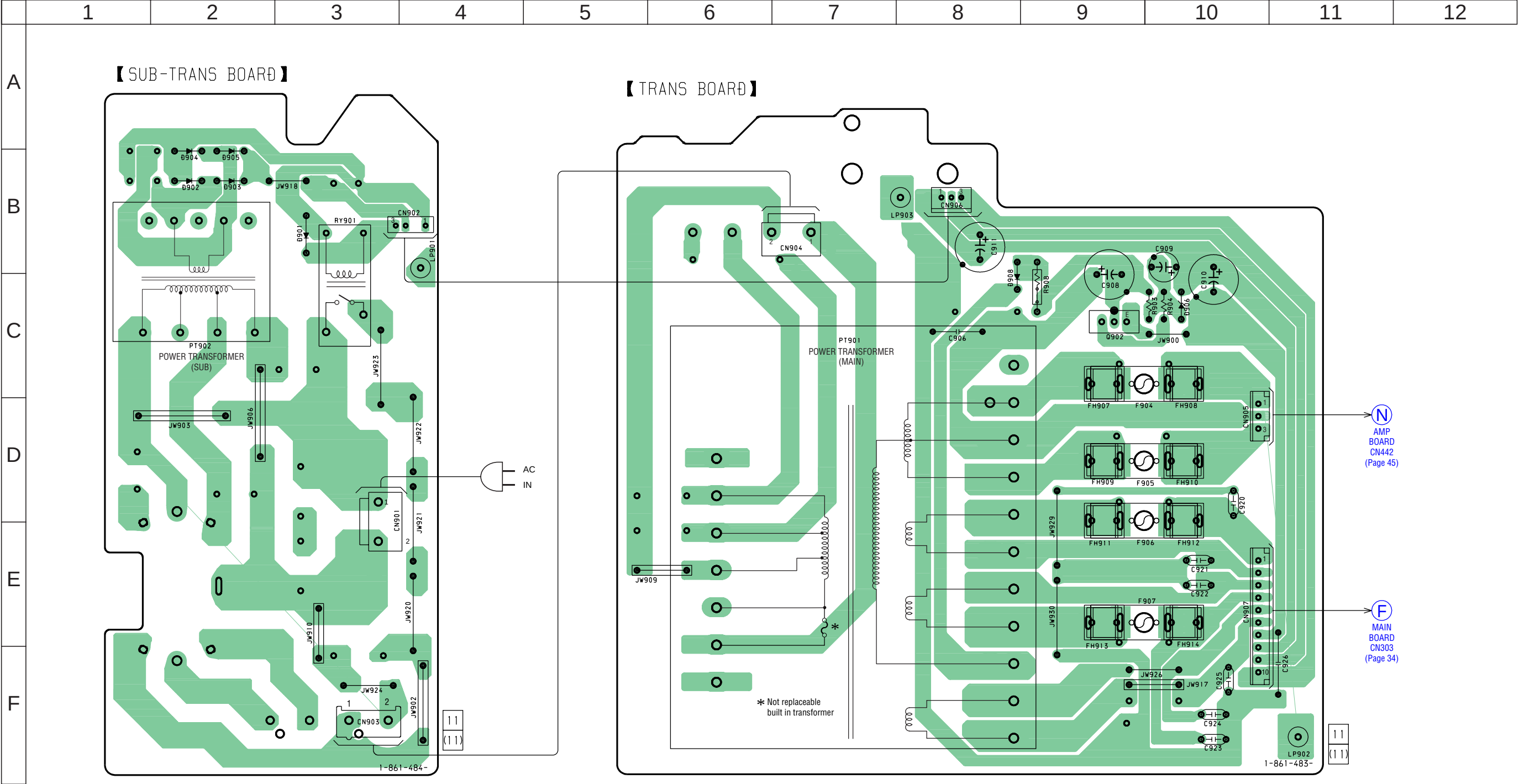


7-14. SCHEMATIC DIAGRAM – PANEL SECTION (1/2) – • See page 49 for IC Block Diagrams.



• See page 53 for IC Pin Function Description. • See page 25 for Waveforms.

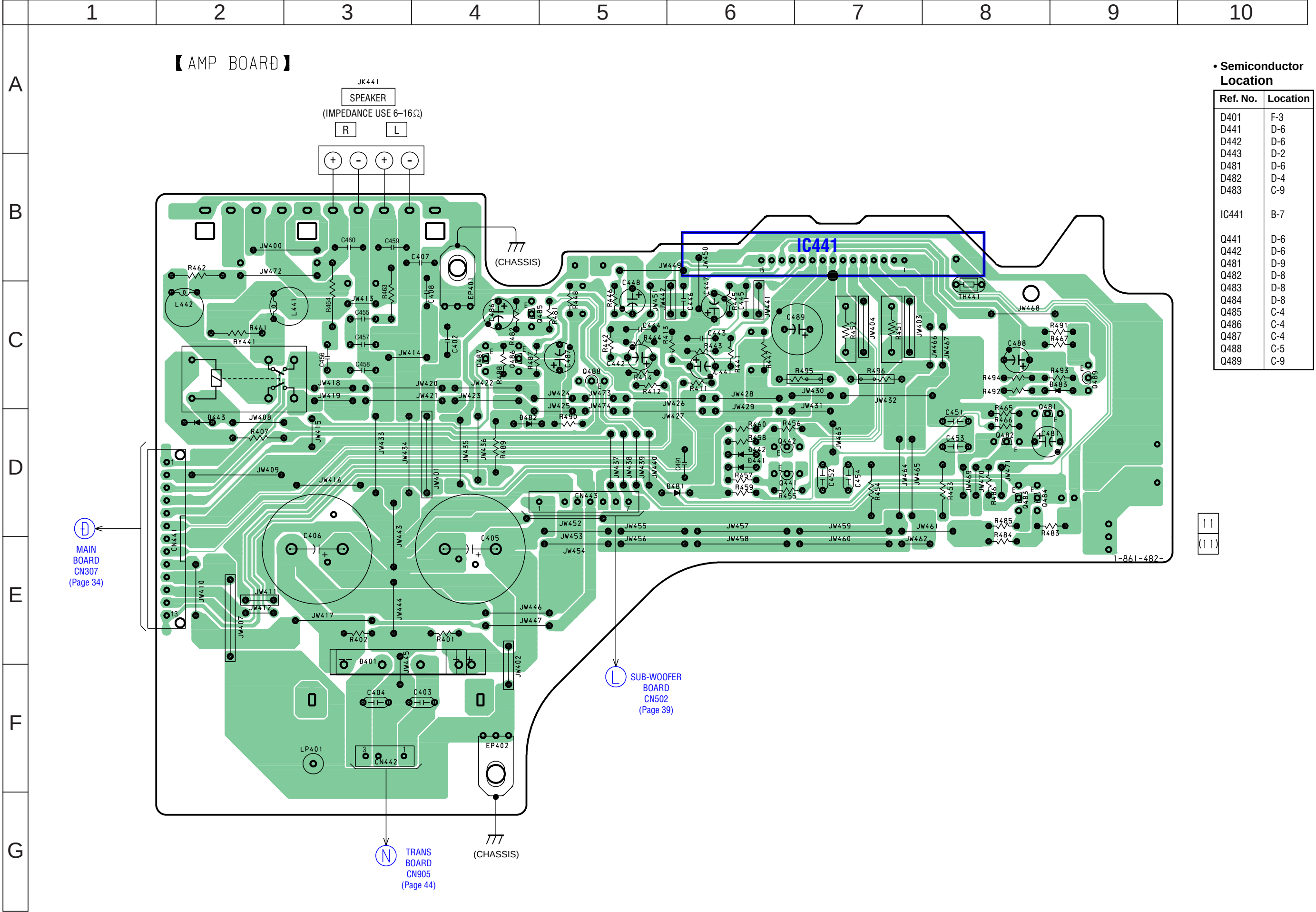




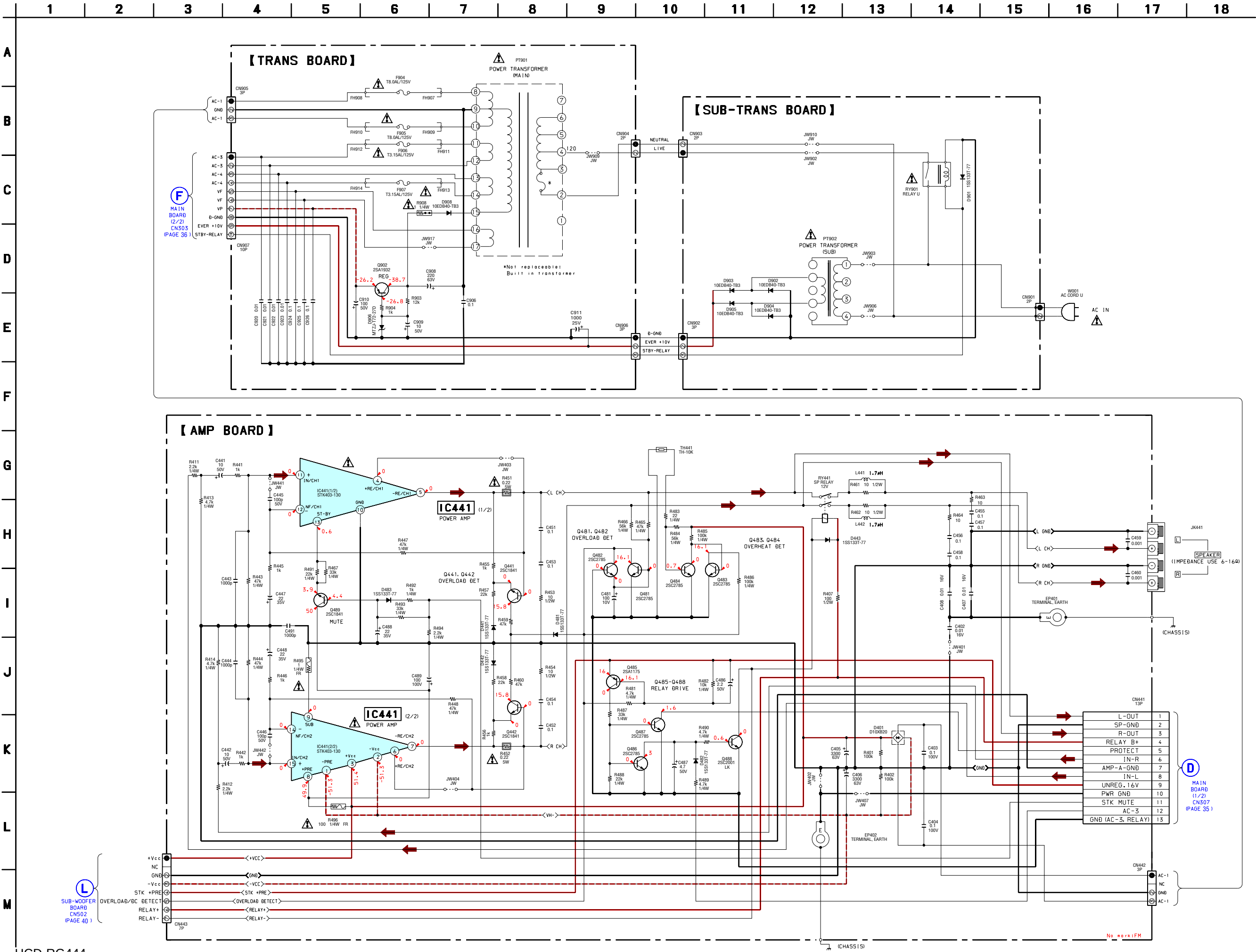
• Semiconductor Location

Ref. No.	Location
D901	B-3
D902	B-2
D903	B-2
D904	B-2
D905	B-2
D906	C-10
D908	C-8
Q902	C-9

7-17. PRINTED WIRING BOARD – AMP SECTION – • See page 25 for Circuit Boards Location. •  : Uses unleaded solder.

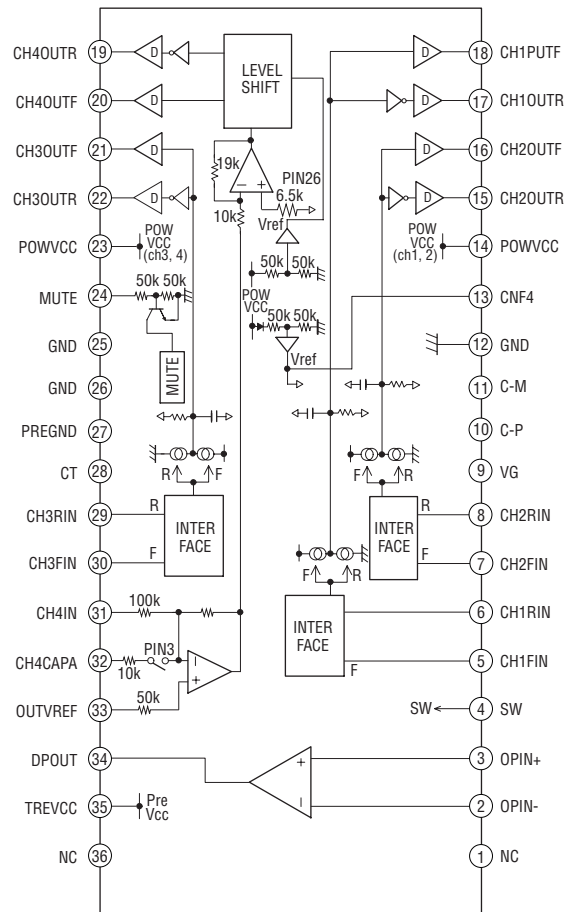


7-18. SCHEMATIC DIAGRAM – AMP POWER SECTION –

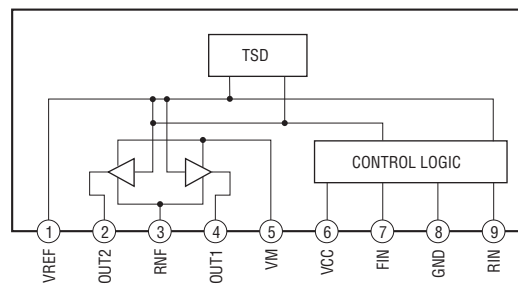


• IC Block Diagrams

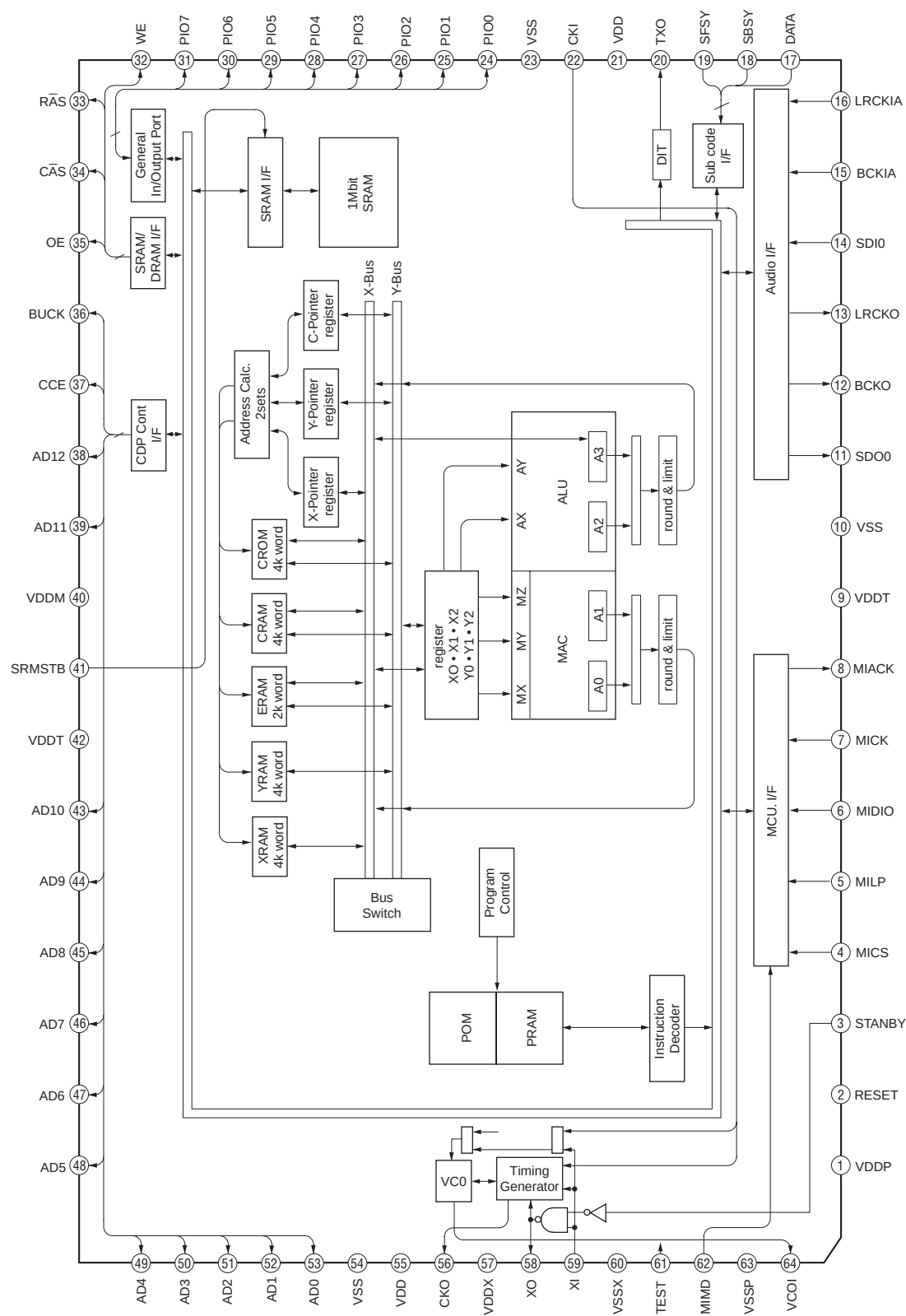
IC251 BA5947FM (BD81A BOARD)



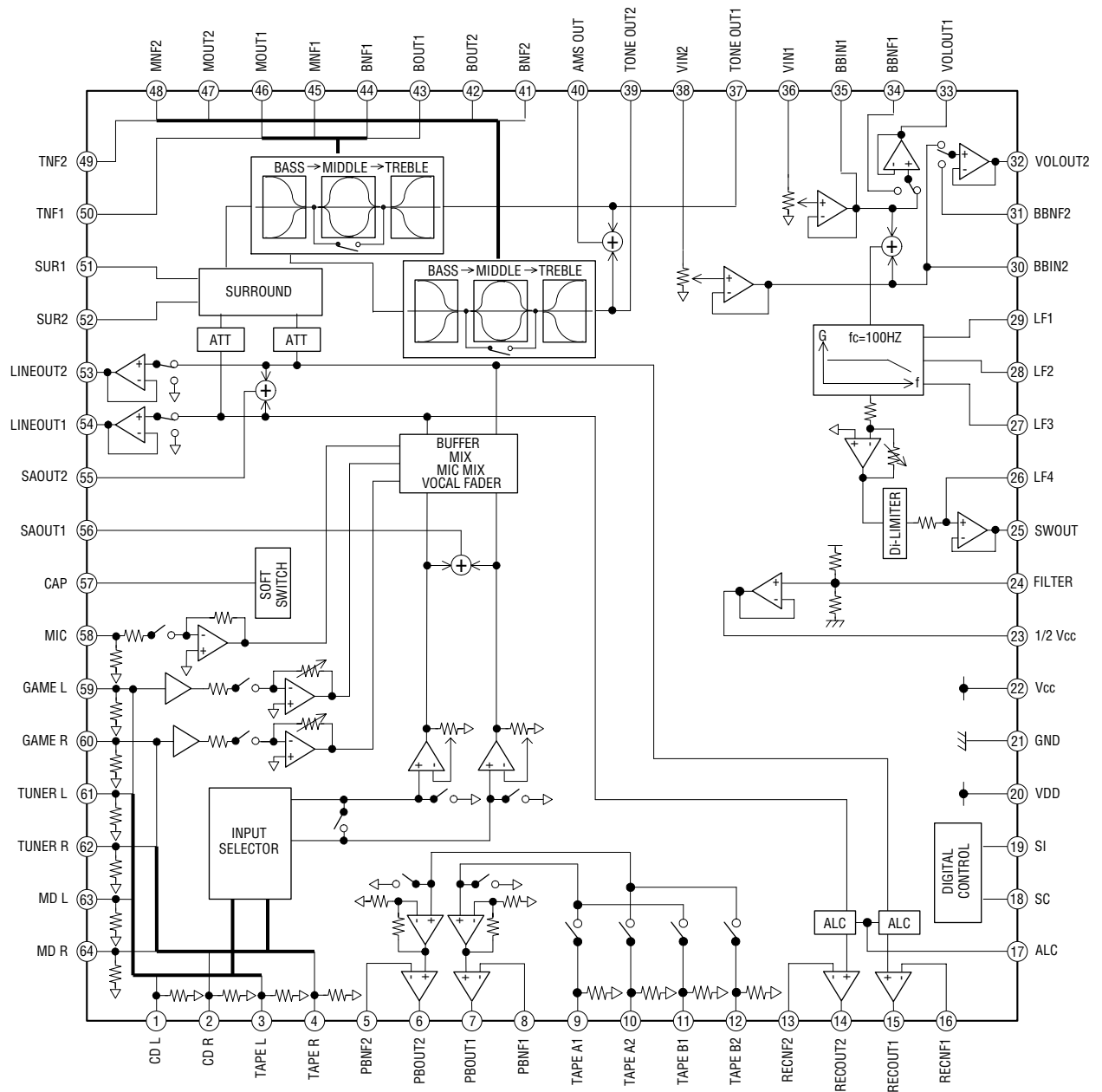
IC701, 712 BA6956AN (DRIVER BOARD)



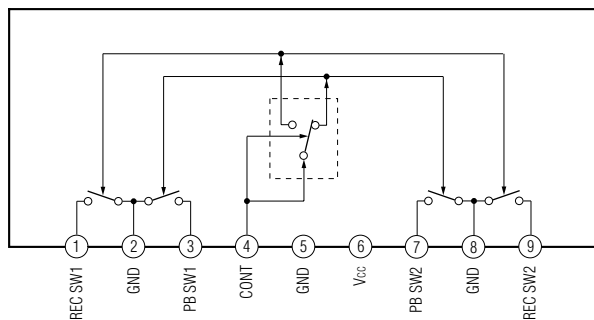
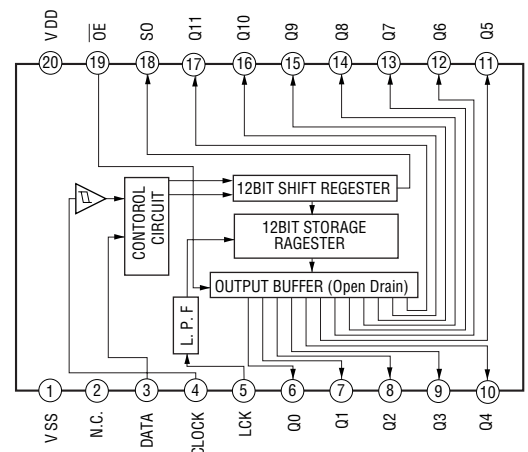
IC301 TC94A34FG-002 (BD81A BOARD)



IC101 BD3401KS2 (MAIN BOARD)



IC201 BA3126N (MAIN BOARD)

IC371 BU2099FV (MAIN BOARD)
IC602 BU2099FV (PANEL BOARD)

HCD-RG444

• IC Pin Function Description

• IC101 CXD3059AR (RF AMP) (BD81A BOARD)

Pin No	Pin Name	I/O	Description
1	MIRR	I/O	Mirror signal input/output (Not used)
2	DFCT	I/O	Defect signal input/output (Not used)
3	FOK	I/O	Focus OK signal input/output (Not used)
4	VSS	—	Internal digital ground
5	LOCK	I/O	GFS is sampled at 460Hz; when GFS is high , this pin outputs a high signal If GFS is low eight consecutive
6	MDP	O	Spindle motor servo control output
7	SSTP	I	Disk innermost detection signal input
8	IOVSS1	—	I/O digital ground
9	SFDR	O	Sled drive output
10	SRDR	O	Sled drive output
11	TFDR	O	Tracking drive output
12	TRDR	O	Tracking drive output
13	FFDR	O	Focus drive output
14	FRDR	O	Focus drive output
15	IOVDD1	—	I/O digital power supply
16	AVDD0	—	Analog power supply
17	AVSS0	—	Analog ground
18	NC	—	Not used
19	E	I	E signal input
20	F	I	F signal input
21	TEI	I	Tracking error signal input to DSSP block
22	TEO	O	Tracking error signal output from RF amplifier block
23	FEI	I	Focus error signal input to DSSP block
24	FEO	O	Focus error signal output from RF amplifier block
25	VC	I/O	Center voltage output from RF amplifier block
26	A	I	A signal input
27	B	I	B signal input
28	C	I	C signal input
29	D	I	D signal input
30	NC	—	Not used
31	AVDD4	—	Analog power supply
32	RFDCO	O	RFDC signal output (Not used)
33	PDSSENS	I	Reference voltage pin for PD
34	AC_SUM	O	RFAC summing amplifier output
35	EQ_IN	I	Equalizer circuit input
36	LD	O	APC amplifier output
37	PD	I	APC amplifier input
38	NC	—	Not used
39	RFC	I	Equalizer cut-off frequency adjustment pin
40	AVSS4	—	Analog ground
41	RFACO	O	RFAC signal output
42	RFACI	I	RFAC signal input or EFM signal input
43	AVDD3	—	Analog power supply
44	BIAS	I	Asymmetry circuit constant current input
45	ASYI	I	Asymmetry comparator voltage input
46	ASYO	O	EFM full-swing output (Low = VSS, High = VDD)
47	VPCO	O	Wide-band EFM PLL charge pump output
48	VCTL	I	Wide-band EFM PLL VCO2 control voltage input
49	AVSS3	—	Analog ground

Pin No.	Pin Name	I/O	Description
50	CLTV	I	Multiplier VCO1 control voltage input
51	FILO	O	Master PLL (slave = digital PLL) filter output
52	FILI	I	Master PLL filter input
53	PCO	O	Master PLL charge pump output
54	AVDD5	—	Analog power supply
55	DDVROUT	O	DC/DC converter output
56	DDVRSEN	I	DC/DC converter output voltage monitor pin
57	AVSS5	—	Analog ground
58	DDCR	I	DC/DC converter reset pin
59	NC	—	Not used
60	BCKI	I	D/A interface bit clock input
61	PCMDI	I	D/A interface serial data input (2's COMP, MSB first)
62	LRCKI	I	D/A interface LR clock input
63	LRCK	O	D/A interface LR clock output $f = F_s$
64	VSS	—	Internal digital ground
65	PCMD	O	D/A interface serial data output (2's COMP, MSB first)
66	BCK	O	D/A interface bit clock output
67	VDD	—	Internal digital power supply
68	EMPH	O	High when the playback disc has emphasis, low it has not
69	EMPHI	I	High when de-emphasis is ON, low when input OFF
70	IOVDD2	—	I/O digital power supply
71	DOUT	O	Digital Out output
72	TEST	I	Test pin Normally ground
73	TES1	I	Test pin Normally ground
74	IOVss2	—	I/O digital ground
75	NC	—	Not used
76	XVSS	—	Master clock ground
77	XTAO	O	Crystal oscillation circuit output
78	XTAI	I	Crystal oscillation circuit input
79	XVDD	—	Master clock power supply
80	AVDD1	—	Analog power supply
81	AOUT1	O	Lch analog output
82	VREFL	O	Lch reference voltage
83	AVSS1	—	Analog ground
84	AVSS2	—	Analog ground
85	VREFR	O	Rch reference voltage
86	AOUT2	O	Rch analog output
87	AVDD2	—	Analog power supply
88	NC	—	Not used
89	IOVDD0	—	I/O digital power supply
90	RMUT	O	Rch "0" detection flag (Not used)
91	LMUT	O	Lch "0" detection flag (Not used)
92	NC	—	Not used
93	XTSL	I	Crystal selection input (Not used)
94	IOVSS0	—	I/O digital ground
95	XTACN	I	Oscillation circuit control Self-oscillation when high, oscillation stop when low
96	SQSO	O	Subcode Q 80-bit and PCM peak and level data output CD TEXT data output
97	SQCK	I	SQSO readout clock input

Pin No.	Pin Name	I/O	Description
98	SBSO	O	Subcode P to W serial output
99	EXCK	I	SBSO readout clock input
100	XRST	I	System reset Reset when low
101	SYSM	I	Mute input Muted when high
102	DATA	I	Serial data input from CPU
103	VSS	—	Internal digital ground
104	XLAT	I	Latch input from CPU The serial data is latched at the falling edge
105	CLOCK	I	Serial data transfer clock input from CPU
106	VDD	—	Internal digital power supply
107	SENS	O	SENS output to CPU
108	SCLK	I	SENS serial data readout clock input
109	ATSK	I/O	Anti-shock input/output
110	WFCK	O	WFCK output (Not used)
111	XUGF	O	XUGF output (Not used)
112	XPCK	O	XPCK output (Not used)
113	GFS	O	GFS output (Not used)
114	C2PO	O	C2PO output (Not used)
115	SCOR	O	High output when the subcode sync, S0 or S1, is detected
116	VDD	—	Internal digital power supply
117	C4M	O	4 2336MHz output (Not used)
118	WDCK	O	Word clock output $f = 2Fs$ (Not used)
119	COUT	I/O	Track number count signal input/output (Not used)
120	NC	—	Not used

• IC601 LC876996A-53H2-E (SYSTEM CONTROLLER) (PANEL BOARD)

Pin No	Pin Name	I/O	Description
1	O-MP3 CS	O	CS output to CD Digital Processor
2	O-MP3 LP MOTER	O	LP output to CD Digital Processor and Motor signal output
3	I-MP3 ACK SOL-B	I	ACK input from CD Digital Processor and Motor signal input
4	O-MP3 REQ SOL-A	O	REQ output to CD Digital Processor and Motor signal output
5	I-SCOR	I	CD Scor input
6	O-MP3 RESET	O	RESET output to CD Digital Processor
7	I-BU1924 DATA	I	Data input
8	I-BU1924 CLK	I	Clock input
9	I-VOLUME-IN1	I	Volume signal input from the encoder
10	I-VOLUME-IN2	I	Volume signal input from the encoder
11	RESET	I	Reset input
12	I-XT1	I	Connection for input a crystal resonator
13	I-XT2	O	Connection for input a crystal resonator
14	VSS1	—	Ground
15	CF1	I	Connection for input a ceramic resonator
16	CF2	O	Connection for input a ceramic resonator
17	VDD1	—	Power supply
18	I-PROTECT	I	Power amplifier circuit protection signal input
19	WFR/HP/MIC-IN	I	SubWoofor or Headphone detection signal input
20	I-CD ENCODER	I	Signal input from the CD encoder
21	I-CD OPEN/CLOSE	I	CD tray open switch signal input
22	I-TAPE A START	I	TAPE A switches signal input
23	I-TAPE B START	I	TAPE B switches signal input
24	I-STREAM/VACS	I	Stream/Vacs signal input
25	I-KEY 3	I	Function key input
26	I-KEY 2	I	Function key input
27	I-KEY 1	I	Function key input
28	I-SIRDS-IN	I	Data input from the remote contorol receiver
29	I-AC CUT	I	Power down signal input
30	G13	O	FL tube grid signal output
31	G12	O	FL tube grid signal output
32	G11	O	FL tube grid signal output
33	G10	O	FL tube grid signal output
34	G9	O	FL tube grid signal output
35	G8	O	FL tube grid signal output
36	G7	O	FL tube grid signal output
37	G6	O	FL tube grid signal output
38	G5	O	FL tube grid signal output
39	G4	O	FL tube grid signal output
40	G3	O	FL tube grid signal output
41	G2	O	FL tube grid signal output
42	G1	O	FL tube grid signal output
43	S1	O	FL tube segment signal output
44	S2	O	FL tube segment signal output
45	S3	O	FL tube segment signal output
46	VDD3	—	Power supply
47	S4	O	FL tube segment signal output
48	S5	O	FL tube segment signal output
49	S6	O	FL tube segment signal output
50	S7/METER-SW1	O	FL tube segment signal output

Pin No	Pin Name	I/O	Description
51	-VPP	—	Power supply (-)
52	S8/METER-SW2	O	FL tube segment signal output
53	S9/METER-SW3	O	FL tube segment signal output
54	S10/SW1	O	FL tube segment signal output
55	S11/SW2	O	FL tube segment signal output
56	S12/SW3	O	FL tube segment signal output
57	S13/SW4	O	FL tube segment signal output
58	S14/SW5	O	FL tube segment signal output
59	S15/SW6	O	FL tube segment signal output
60	S16/SW7	O	FL tube segment signal output
61	S17/SW8	O	FL tube segment signal output
62	S18/SW9	O	FL tube segment signal output
63	S19/SW10	O	FL tube segment signal output
64	S20	O	FL tube segment signal output
65	S21	O	FL tube segment signal output
66	I-SPEC/MODE/METER	I	METER swich input
67	I-TUNED-IN	I	Tuning a frequency signal input
68	I-STEREO-IN	I	Stereo tuning signal input
69	I-ASM-IN	I	ASM signal input
70	I-REEL-A-IN	I	A deck photo sensor signal input
71	I-REEL-B-IN	I	B deck photo sensor signal input
72	VDD4	—	Power supply
73	I-CD Num Sensor	O	Table address sensor swich signal input
74	O-POWER-RELAY	O	POWER RELAY control output
75	O-SYSTEM-MUTE	O	System muting signal output
76	O-POWER-LED	O	POWER LED control signal output
77	STREAM-LED6 SOLB	O	Illumination LED control signal output
78	STREAM-LED5 SOLA	O	Illumination LED control signal output
79	STREAM-LED4 MOTOR	O	Illumination LED control signal output
80	STREAM-LED3 MP3-STB	O	Illumination LED control signal output
81	STREAM-LED2	O	Illumination LED control signal output
82	STREAM-LED1	O	Illumination LED control signal output
83	I-LC72121 DI	I	Data input from Tuner
84	O-LC72121 CE	O	Chip select output to Tuner
85	O-LC72121/BU2099FV DO	O	Data input from Tuner and SP Driver
86	O-LC72121/BU2099FV CLK	O	Clock output to Tuner and SP Driver
87	O-BU2099FV LCH	O	LCH output to SP Driver
88	O-BD3401 CLK	O	Clock output to Sound Processor
89	VSS2	—	Ground
90	VDD2	—	Power supply
91	O-BD3401 DATA	O	Data output toSound Processor
92	O-XTCN	O	CD xtcn signal output
93	O-XRES(RESET)	O	CD reset signal output
94	O-XLT(CD-LAT)	O	CD xlt signal output
95	O-CD-DATA	O	CD data output
96	I-SENS	I	CD sens input
97	O-CD-CLK	O	CD clk output
98	O-MP3-DO	O	Clock output to CD Digital Processor
99	I-MP3-DI	I	Data input from CD Digital Processor
100	O-MP3-CLK	O	Clock output to CD Digital Processor

SECTION 8

EXPLODED VIEWS

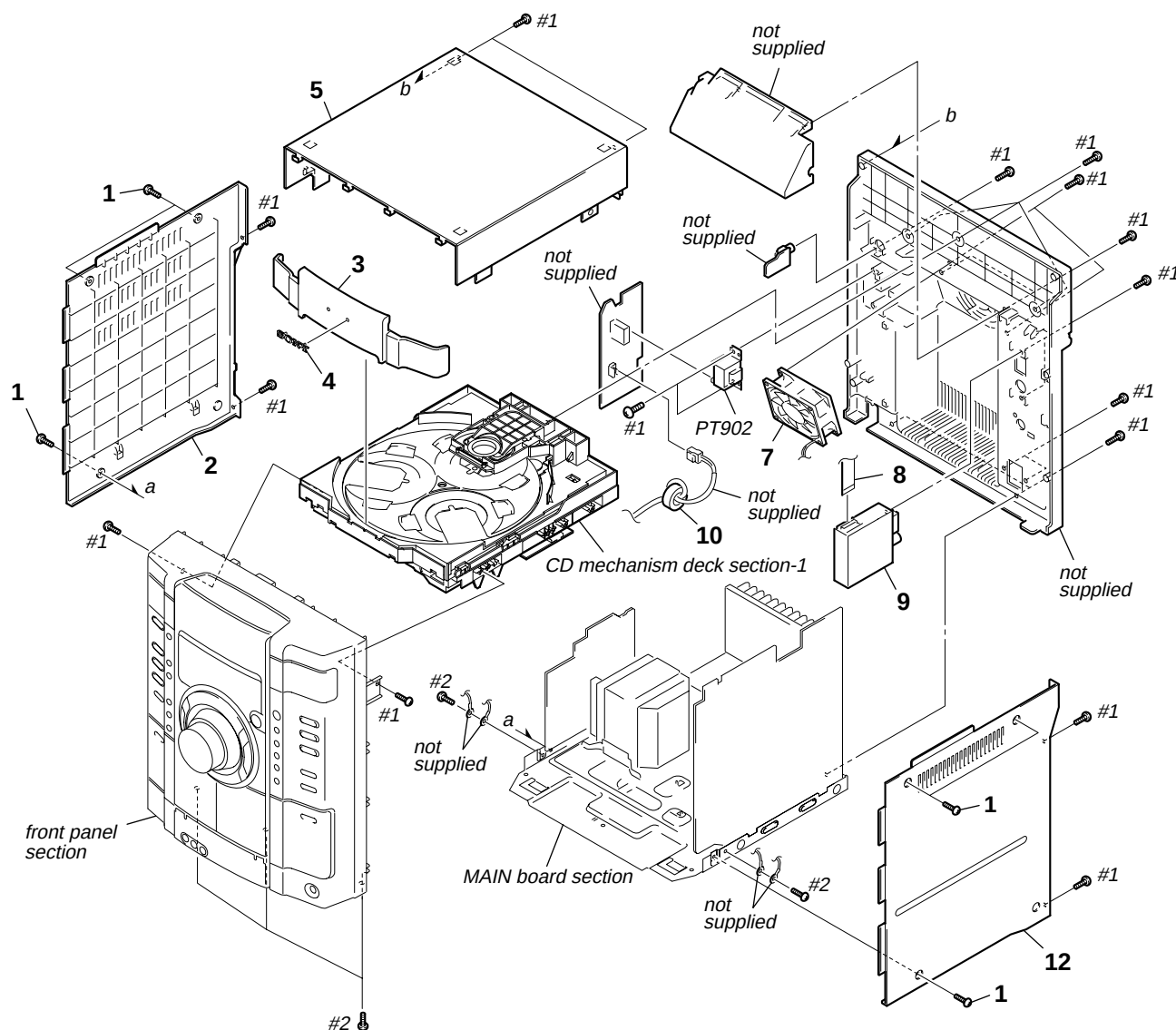
NOTE:

- -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.

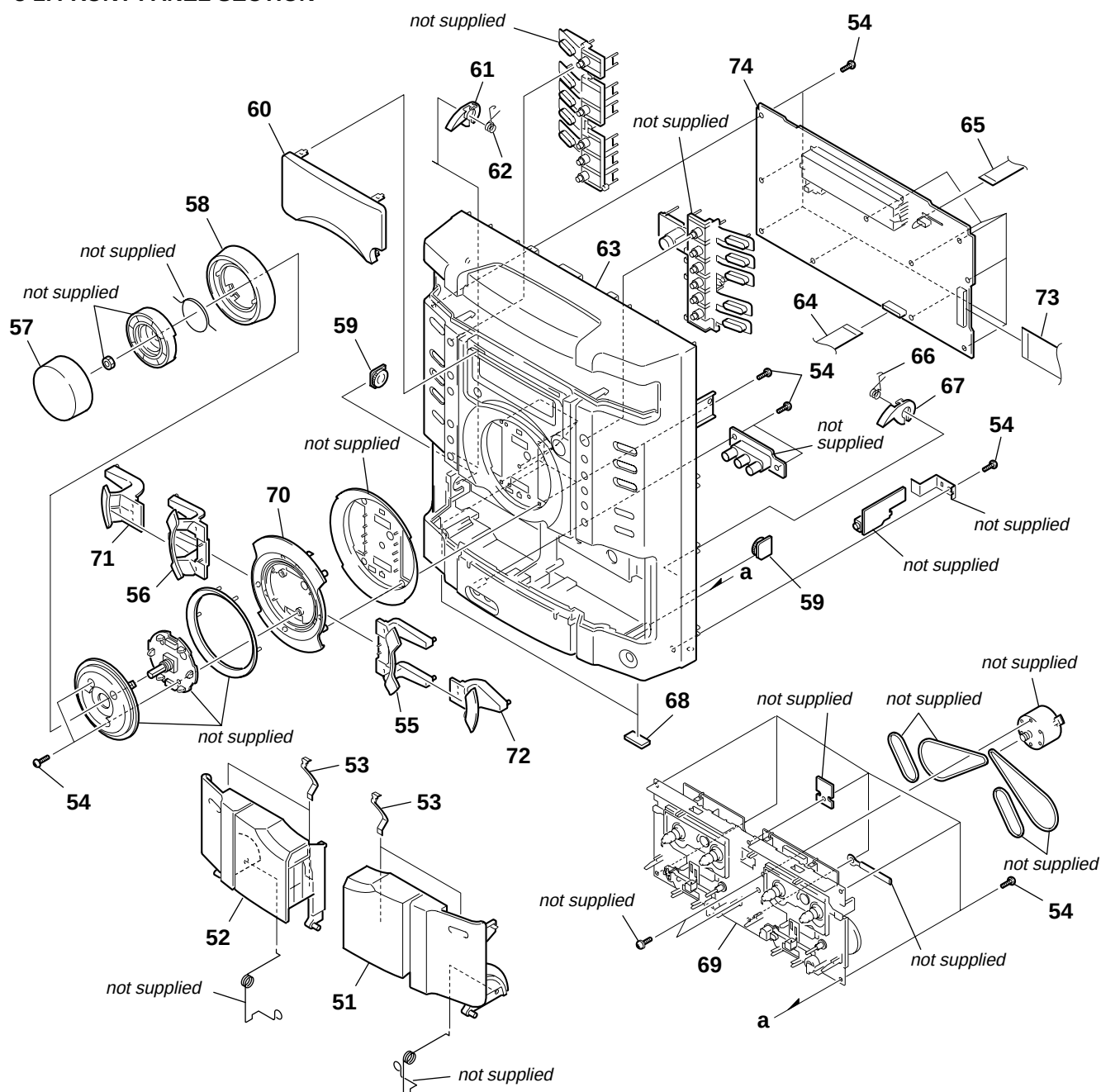
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

8-1. MAIN SECTION



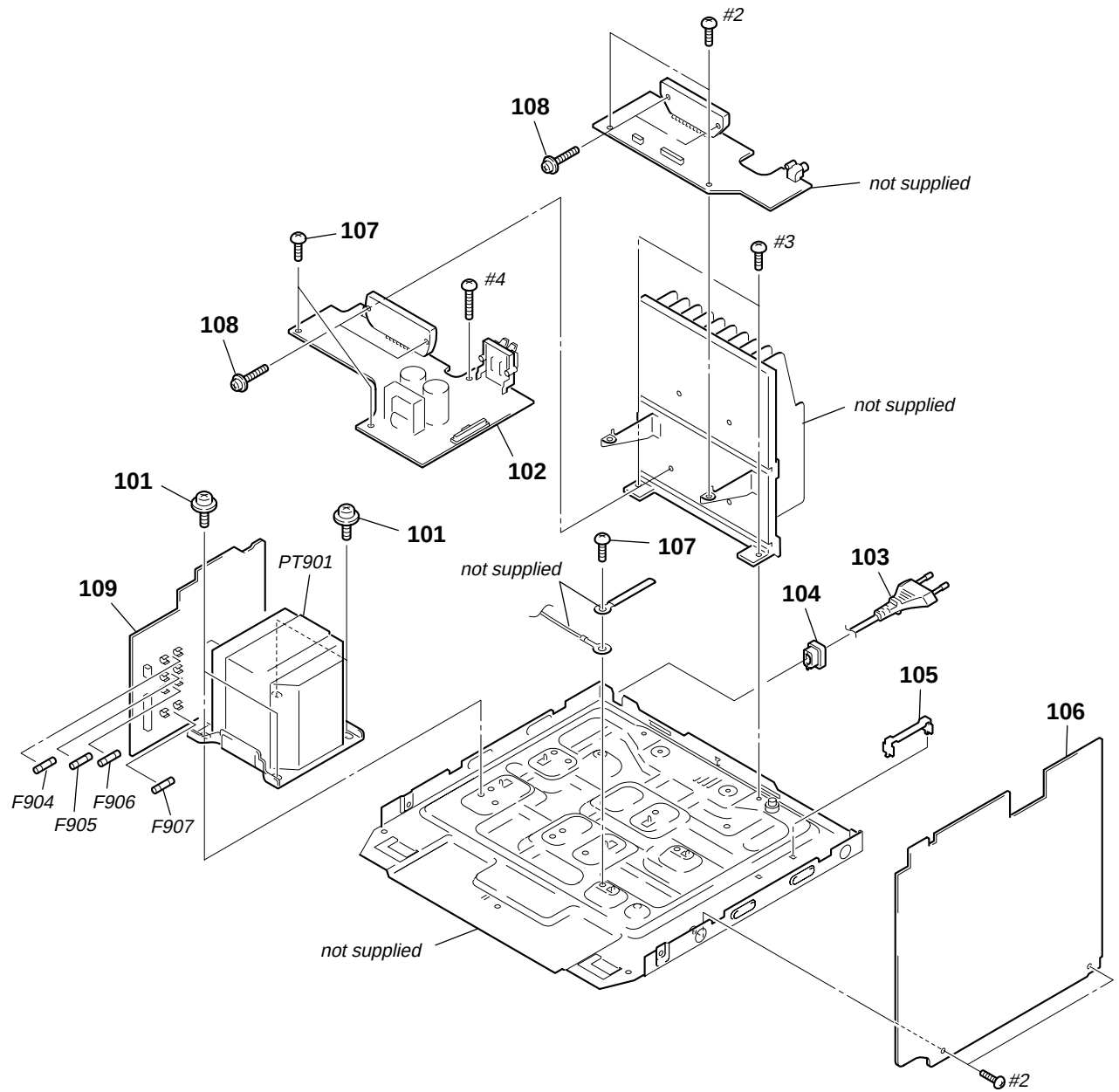
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-363-099-32	SCREW (CASE 3 TP2)		9	1-693-616-11	TUNER (FM/AM)	
2	4-245-183-71	CASE (SIDE-L)		10	1-400-285-11	F-BEAD, E2515MRT	
3	4-252-196-31	DOOR, CD		12	4-245-184-71	CASE (SIDE-R)	
4	3-038-018-01	EMBLEM, SONY		△ PT902	X-4956-293-1	SUB TRANS ASSY	
5	4-244-849-71	CASE (TOP)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
7	1-763-117-13	FAN, DC		#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
8	1-777-353-11	WIRE (FLAT TYPE) (15 CORE)					

8-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	4-252-202-01	DOOR (B), CASS		63	4-252-195-31	PANEL, FRONT	
52	4-252-201-01	DOOR (A), CASS		64	1-769-975-11	WIRE (FLAT TYPE) (13 CORE)	
53	4-238-631-01	TAPE SPRING		65	1-773-048-11	WIRE (FLAT TYPE) (17 CORE)	
54	4-951-620-01	SCREW (2.6X8), +BVTP		66	4-231-841-01	SPRING (HEART CAM-B)	
55	4-252-207-11	BUTTON, FF/ALBUM		67	4-231-825-01	CAM (B), HEART	
56	4-252-208-11	BUTTON, FR/ALBUM		68	4-225-252-01	CUSHION (FOOT)	
57	4-252-214-01	KNOB, VOLUME		69	1-796-485-51	DECK, MECHANICAL (CWM43FF-05)	
58	X-4956-295-1	RING ASSY, KNOB		70	4-252-200-01	BUTTON COVER	
59	4-224-104-41	DAMPER		71	4-252-206-01	BUTTON, STOP	
60	4-773-198-11	WINDOW, DISPLAY		72	4-252-205-01	BUTTON, PLAY	
61	4-231-824-01	CAM (A), HEART		73	1-773-317-11	WIRE (FLAT TYPE) (31 CORE)	
62	4-231-836-01	SPRING (HEART CAM-A)		74	A-4750-763-A	PANEL BOARD, COMPLETE	

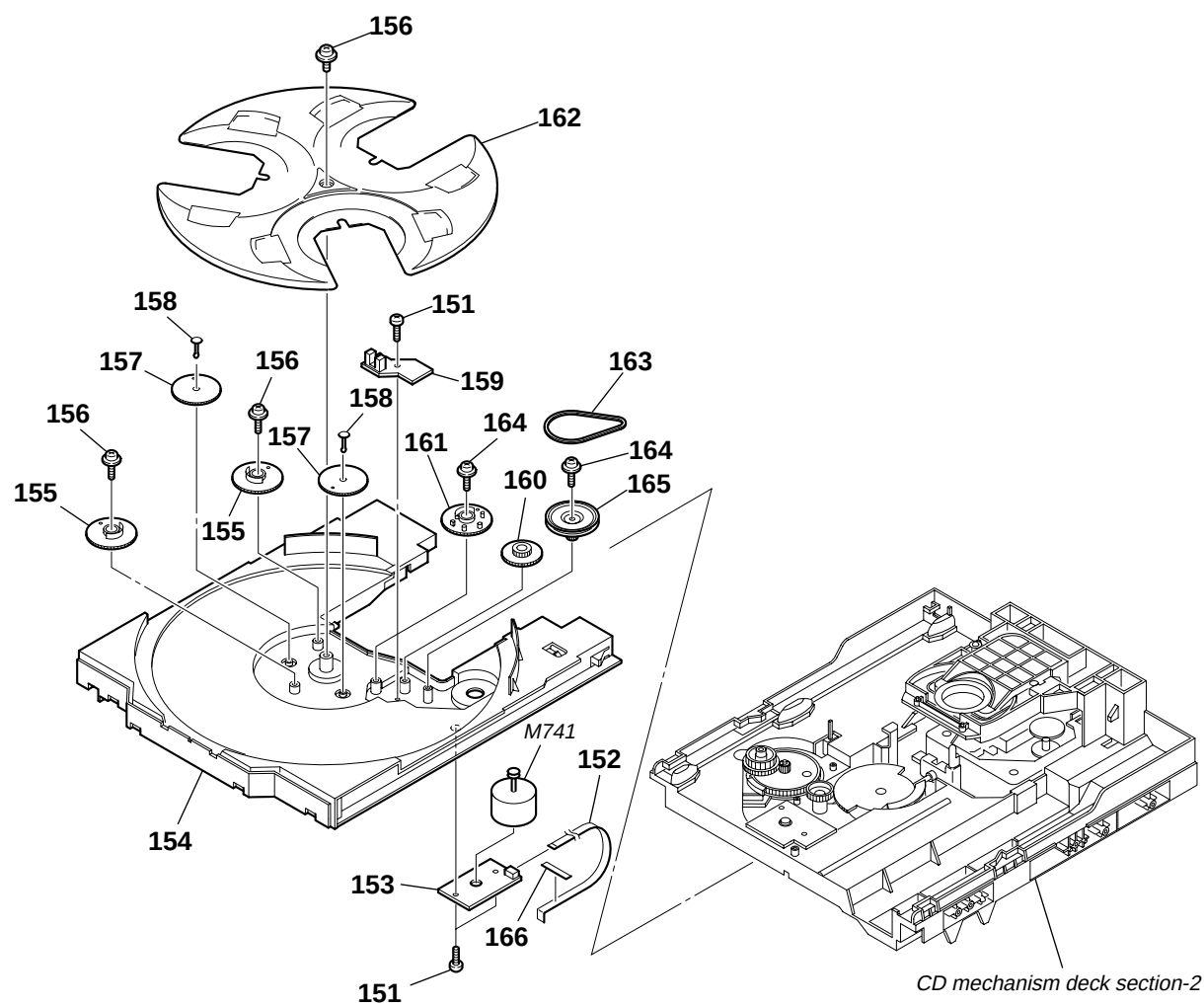
8-3. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	4-242-527-01	S-SCREW, ITC+4-8 R		△ PT901	1-443-234-11	TRANSFORMER, POWER	
102	A-4750-768-A	AMP BOARD, COMPLETE		△ F904	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8.0AL/250V)	
△ 103	1-777-071-83	CORD, POWER		△ F905	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8.0AL/250V)	
* 104	3-703-244-00	BUSHING (2104), CORD		△ F906	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V)	
105	4-988-533-01	HOLDER, PWB		△ F907	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V)	
106	A-4750-761-A	MAIN BOARD, COMPLETE		#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
107	4-242-539-01	BVIT3B+3-8R W/O SLOT		#3	7-685-881-09	SCREW +BVTT 4X8	
108	3-905-609-41	SCREW (TRANSISTOR)		#4	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
109	A-4752-618-A	TRANS BOARD, COMPLETE					

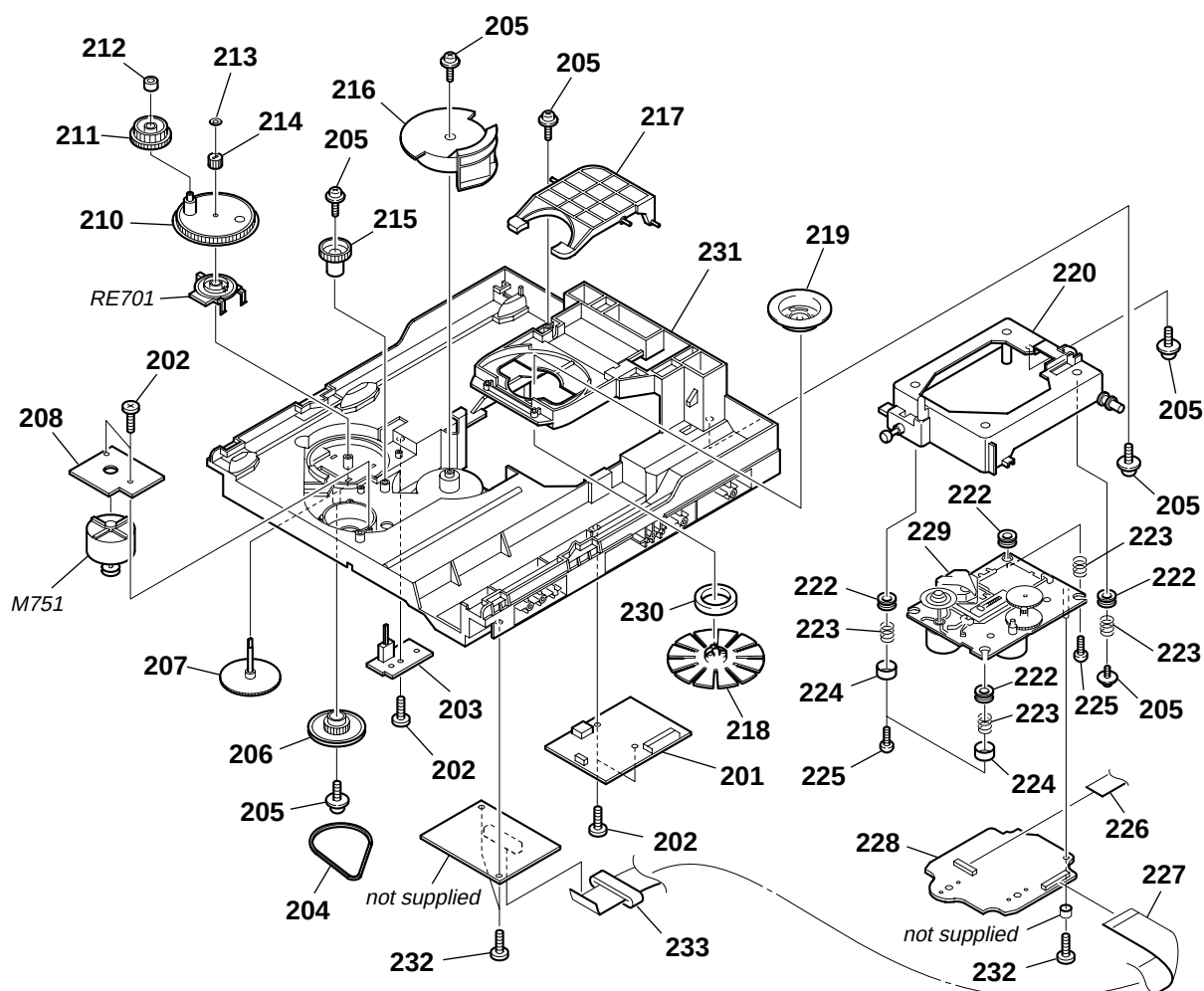
The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

8-4. CD MECHANISM DECK SECTION -1 (CDM74-F1BD81)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	4-218-253-21	SCREW (M2.6), +BTTP		160	4-243-820-01	GEAR (TABLE)	
152	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)		161	4-243-819-01	GEAR (GENEVA)	
153	1-687-134-12	MOTOR (TB) BOARD		162	4-243-816-01	TRAY	
154	4-243-815-01	TABLE (LOADING)		163	4-243-823-01	BELT (TABLE)	
155	4-245-571-02	GEAR (STOPPER)		164	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
156	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		165	4-243-821-01	PULLEY (TABLE)	
157	4-245-570-01	GEAR (JOINT)		166	3-231-598-01	SHEET (BA)	
158	4-245-572-01	BUSHING (GEAR)		M741	A-4723-963-A	MOTOR ASSY, TABLE	
159	1-687-132-12	SENSOR BOARD					

8-5. CD MECHANISM DECK SECTION -2 (CDM74-F1BD81)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	1-687-135-12	DRIVER BOARD		219	4-231-189-01	PULLEY (B), CHUCKING	
202	4-218-253-31	SCREW (M2.6), +BTTP		220	X-4955-536-1	HOLDER (213) ASSY	
203	1-687-669-12	SW BOARD		222	4-227-549-11	INSULATOR	
204	4-244-034-01	BELT (LOADING)		223	4-227-045-31	SPRING (INSULATOR), COIL	
205	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		224	4-231-151-01	STOPPER (BU)	
206	4-225-844-01	GEAR (LOADING A)		225	4-218-253-31	SCREW (M2.6), +BTTP	
207	4-224-613-01	GEAR (SHAFT)		226	1-827-992-11	WIRE (FLAT TYPE) (16 CORE)	
208	1-687-133-12	MOTOR (LD) BOARD		227	1-773-251-11	WIRE (FLAT TYPE) (27 CORE)	
210	4-244-108-01	GEAR, SWING		228	A-4751-431-A	BD81A BOARD, COMPLETE	
211	4-224-609-01	GEAR (LOADING C)		△ 229	8-820-244-01	OPTICAL PICK-UP (KSM-215DCP/C2NP)	
212	4-224-608-01	COLLAR, SWING		230	1-471-035-11	MAGNET ASSY	
213	3-016-533-11	WASHER (FR), STOPPER		231	4-243-817-01	CHASSIS	
214	4-224-611-01	GEAR (LOADING B)		232	4-951-620-01	SCREW (2.6X8), +BVTP	
215	4-224-606-01	GEAR (RV)		233	1-469-854-11	CORE, FERRITE	
216	4-243-818-01	GEAR (U/D)		M751	A-4736-655-A	MOTOR ASSY, LOADING	
217	4-243-822-02	LEVER (LIFTER)		RE701	1-477-680-12	ENCODER, ROTARY	
218	X-4955-707-3	PULLEY (A5) ASSY, CHUCKING					

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

SECTION 9
ELECTRICAL PARTS LIST

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.
 - CAPACITORS:
uF: µF
- COILS
uH: µH
 - RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
 - 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 $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		6 STREAM LED BOARD *****					
		< LED >					
LED610	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C441	1-126-964-11	ELECT 10uF 20% 50V	
LED611	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C442	1-126-964-11	ELECT 10uF 20% 50V	
LED612	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C443	1-162-294-31	CERAMIC 0.001uF 10% 50V	
LED613	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C444	1-162-294-31	CERAMIC 0.001uF 10% 50V	
LED614	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C445	1-162-282-31	CERAMIC 100PF 10% 50V	
LED615	6-500-809-01	DIODE SELU5223C-STP15 (ILLUMINATION LIGHT)		C446	1-162-282-31	CERAMIC 100PF 10% 50V	
		< RESISTOR >		C447	1-126-965-11	ELECT 22uF 20% 50V	
R673	1-216-837-11	METAL CHIP 22K 5% 1/10W		C448	1-126-965-11	ELECT 22uF 20% 50V	
R699	1-216-182-00	RES-CHIP 220 5% 1/8W		C451	1-136-497-81	FILM 0.1uF 5% 50V	
R701	1-216-182-00	RES-CHIP 220 5% 1/8W		C452	1-136-497-81	FILM 0.1uF 5% 50V	
R703	1-216-182-00	RES-CHIP 220 5% 1/8W		C453	1-136-497-81	FILM 0.1uF 5% 50V	
R705	1-216-182-00	RES-CHIP 220 5% 1/8W		C454	1-136-497-81	FILM 0.1uF 5% 50V	
R707	1-216-182-00	RES-CHIP 220 5% 1/8W		C455	1-136-497-81	FILM 0.1uF 5% 50V	
R709	1-216-182-00	RES-CHIP 220 5% 1/8W		C456	1-136-497-81	FILM 0.1uF 5% 50V	
		< SWITCH >		C457	1-136-497-81	FILM 0.1uF 5% 50V	
S660	1-418-632-11	ENCODER, ROTARY (MASTER VOLUME)		C458	1-136-497-81	FILM 0.1uF 5% 50V	
		< SWITCH >		C459	1-162-294-31	CERAMIC 0.001uF 10% 50V	
SW601	1-786-289-11	SWITCH, DETECTION *****		C460	1-162-294-31	CERAMIC 0.001uF 10% 50V	
	A-4750-768-A	AMP BOARD, COMPLETE *****		C481	1-104-658-91	ELECT 100uF 20% 10V	
	7-685-872-09	SCREW +BVTT 3X8 (S)		C486	1-126-961-11	ELECT 2.2uF 20% 50V	
		< CAPACITOR >		C487	1-126-963-11	ELECT 4.7uF 20% 50V	
C402	1-162-306-11	CERAMIC 0.01uF 20% 16V		C488	1-126-965-11	ELECT 22uF 20% 50V	
C403	1-137-749-11	MYLAR 0.1uF 100V		C489	1-128-563-11	ELECT 100uF 20% 100V	
C404	1-137-749-11	MYLAR 0.1uF 100V		C491	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C405	1-135-516-11	ELECT 3300uF 20% 63V				< CONNECTOR >	
C406	1-135-516-11	ELECT 3300uF 20% 63V		CN441	1-778-981-21	CONNECTOR, BOARD TO BOARD 13P	
C407	1-162-306-11	CERAMIC 0.01uF 20% 16V				< DIODE >	
C408	1-162-306-11	CERAMIC 0.01uF 20% 16V		D401	6-500-360-01	DIODE D10XB20	
				D441	8-719-991-33	DIODE 1SS133T-77	
				D442	8-719-991-33	DIODE 1SS133T-77	
				D443	8-719-991-33	DIODE 1SS133T-77	
				D481	8-719-991-33	DIODE 1SS133T-77	
				D482	8-719-991-33	DIODE 1SS133T-77	
				D483	8-719-991-33	DIODE 1SS133T-77	
						< EARTH TERMINAL >	
				* EP401	1-537-738-21	TERMINAL, EARTH	
				* EP402	1-537-738-21	TERMINAL, EARTH	
						< IC >	
				$\triangle$ IC441	6-600-221-01	IC STK403-130	

AMP

BD81A

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< JACK >					
JK441	1-694-884-11	TERMINAL BOARD (4P) (SPEAKER)		R484	1-249-438-11	CARBON 56K 5%	1/4W
		< COIL >		R485	1-249-441-11	CARBON 100K 5%	1/4W
L441	1-422-009-13	COIL, AIR-CORE		R486	1-249-441-11	CARBON 100K 5%	1/4W
L442	1-422-009-13	COIL, AIR-CORE		R487	1-249-435-11	CARBON 33K 5%	1/4W
		< TRANSISTOR >		R488	1-249-433-11	CARBON 22K 5%	1/4W
Q441	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA		R489	1-249-425-11	CARBON 4.7K 5%	1/4W
Q442	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA		R490	1-249-425-11	CARBON 4.7K 5%	1/4W
Q481	8-729-119-79	TRANSISTOR 2SC2785-FEK		R491	1-249-433-11	CARBON 22K 5%	1/4W
Q482	8-729-119-79	TRANSISTOR 2SC2785-FEK		R492	1-249-417-11	CARBON 1K 5%	1/4W
Q483	8-729-119-79	TRANSISTOR 2SC2785-FEK		R493	1-249-435-11	CARBON 33K 5%	1/4W
		< RESISTOR >		R494	1-249-421-11	CARBON 2.2K 5%	1/4W
Q484	8-729-119-79	TRANSISTOR 2SC2785-FEK		△ R495	1-217-831-11	FUSIBLE 1 5%	1/4W
Q485	8-729-119-76	TRANSISTOR 2SA1175-HFE		△ R496	1-212-881-11	FUSIBLE 100 5%	1/4W
Q486	8-729-119-79	TRANSISTOR 2SC2785-FEK					
Q487	8-729-119-79	TRANSISTOR 2SC2785-FEK					
Q488	8-729-142-46	TRANSISTOR 2SC2001-LK					
Q489	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA					
		< RESISTOR >					
R401	1-249-441-11	CARBON 100K 5%	1/4W				
R402	1-249-441-11	CARBON 100K 5%	1/4W				
R407	1-260-087-11	CARBON 100 5%	1/2W				
R411	1-249-421-11	CARBON 2.2K 5%	1/4W				
R412	1-249-421-11	CARBON 2.2K 5%	1/4W				
R413	1-249-425-11	CARBON 4.7K 5%	1/4W				
R414	1-249-425-11	CARBON 4.7K 5%	1/4W				
R441	1-249-417-11	CARBON 1K 5%	1/4W				
R442	1-249-417-11	CARBON 1K 5%	1/4W				
R443	1-249-437-11	CARBON 47K 5%	1/4W				
R444	1-249-437-11	CARBON 47K 5%	1/4W				
R445	1-249-417-11	CARBON 1K 5%	1/4W				
R446	1-249-417-11	CARBON 1K 5%	1/4W				
R447	1-249-437-11	CARBON 47K 5%	1/4W				
R448	1-249-437-11	CARBON 47K 5%	1/4W				
△ R451	1-217-156-00	METAL 0.22 10%	5W				
△ R452	1-217-156-00	METAL 0.22 10%	5W				
R453	1-260-076-11	CARBON 10 5%	1/2W				
R454	1-260-076-11	CARBON 10 5%	1/2W				
R455	1-249-417-11	CARBON 1K 5%	1/4W				
R456	1-249-417-11	CARBON 1K 5%	1/4W				
R457	1-249-433-11	CARBON 22K 5%	1/4W				
R458	1-249-433-11	CARBON 22K 5%	1/4W				
R459	1-249-437-11	CARBON 47K 5%	1/4W				
R460	1-249-437-11	CARBON 47K 5%	1/4W				
R461	1-260-076-11	CARBON 10 5%	1/2W				
R462	1-260-076-11	CARBON 10 5%	1/2W				
R463	1-260-076-11	CARBON 10 5%	1/2W				
R464	1-260-076-11	CARBON 10 5%	1/2W				
R465	1-249-437-11	CARBON 47K 5%	1/4W				
R466	1-249-438-11	CARBON 56K 5%	1/4W				
R467	1-249-435-11	CARBON 33K 5%	1/4W				
R481	1-249-425-11	CARBON 4.7K 5%	1/4W				
R482	1-249-429-11	CARBON 10K 5%	1/4W				
R483	1-247-791-91	CARBON 22 5%	1/4W				

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

BD81A

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C174	1-164-360-11	CERAMIC CHIP 0.1uF	16V	< RESISTOR >			
C181	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R10	1-216-791-11	METAL CHIP 3.3	5% 1/10W
C182	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R11	1-216-864-11	SHORT CHIP 0	
C183	1-124-778-00	ELECT CHIP 22uF	20% 6.3V	R12	1-216-845-11	METAL CHIP 100K	5% 1/10W
C184	1-124-778-00	ELECT CHIP 22uF	20% 6.3V	R13	1-218-446-11	METAL CHIP 1	5% 1/10W
C185	1-164-315-11	CERAMIC CHIP 470PF	5% 50V	R111	1-216-821-11	METAL CHIP 1K	5% 1/10W
C186	1-164-315-11	CERAMIC CHIP 470PF	5% 50V	R112	1-216-835-11	METAL CHIP 15K	5% 1/10W
C194	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R113	1-216-821-11	METAL CHIP 1K	5% 1/10W
C195	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R114	1-216-835-11	METAL CHIP 15K	5% 1/10W
C196	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R121	1-216-835-11	METAL CHIP 15K	5% 1/10W
C201	1-128-995-21	ELECT CHIP 100uF	20% 10V	R131	1-216-857-11	METAL CHIP 1M	5% 1/10W
C203	1-128-995-21	ELECT CHIP 100uF	20% 10V	R132	1-216-833-11	METAL CHIP 10K	5% 1/10W
C209	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	R133	1-216-848-11	METAL CHIP 180K	5% 1/10W
C210	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	R141	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
C211	1-164-230-11	CERAMIC CHIP 220PF	5% 50V	R142	1-216-821-11	METAL CHIP 1K	5% 1/10W
C212	1-162-919-11	CERAMIC CHIP 22PF	5% 50V	R143	1-216-827-11	METAL CHIP 3.3K	5% 1/10W
C213	1-162-919-11	CERAMIC CHIP 22PF	5% 50V	R151	1-216-864-11	SHORT CHIP 0	
C251	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V	R161	1-216-809-11	METAL CHIP 100	5% 1/10W
C252	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R162	1-216-841-11	METAL CHIP 47K	5% 1/10W
C255	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R163	1-216-809-11	METAL CHIP 100	5% 1/10W
C257	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R165	1-216-864-11	SHORT CHIP 0	
C258	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R171	1-216-817-11	METAL CHIP 470	5% 1/10W
C259	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R172	1-216-857-11	METAL CHIP 1M	5% 1/10W
C260	1-128-394-11	ELECT CHIP 220uF	20% 10V	R173	1-216-295-91	SHORT CHIP 0	
C302	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R181	1-216-809-11	METAL CHIP 100	5% 1/10W
C303	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R182	1-216-809-11	METAL CHIP 100	5% 1/10W
C305	1-126-246-11	ELECT CHIP 220uF	20% 4V	R191	1-216-864-11	SHORT CHIP 0	
C306	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R201	1-500-445-21	FERRITE, EMI (SMD) (2012)	
C307	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R203	1-216-864-11	SHORT CHIP 0	
C308	1-126-208-21	ELECT CHIP 47uF	20% 4V	R204	1-500-445-21	FERRITE, EMI (SMD) (2012)	
C309	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R205	1-216-864-11	SHORT CHIP 0	
C310	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R251	1-216-833-11	METAL CHIP 10K	5% 1/10W
C311	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R252	1-216-837-11	METAL CHIP 22K	5% 1/10W
C312	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R253	1-216-833-11	METAL CHIP 10K	5% 1/10W
C313	1-164-360-11	CERAMIC CHIP 0.1uF	16V	R301	1-216-845-11	METAL CHIP 100K	5% 1/10W
C314	1-126-208-21	ELECT CHIP 47uF	20% 4V	R302	1-216-833-11	METAL CHIP 10K	5% 1/10W
C315	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	R303	1-216-845-11	METAL CHIP 100K	5% 1/10W
C316	1-162-966-11	CERAMIC CHIP 0.0022uF	10% 50V	R305	1-216-845-11	METAL CHIP 100K	5% 1/10W
C317	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	R306	1-216-864-11	SHORT CHIP 0	
C318	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	R307	1-216-833-11	METAL CHIP 10K	5% 1/10W
C320	1-216-864-11	SHORT CHIP 0		R313	1-216-813-11	METAL CHIP 220	5% 1/10W
< CONNECTOR >				R351	1-216-809-11	METAL CHIP 100	5% 1/10W
CN101	1-770-425-11	CONNECTOR, FFC/FPC 16P		R352	1-216-809-11	METAL CHIP 100	5% 1/10W
CN201	1-818-350-11	CONNECTOR (FFC) 27P		R353	1-216-809-11	METAL CHIP 100	5% 1/10W
< FERRITE BEAD >				R354	1-216-809-11	METAL CHIP 100	5% 1/10W
FB301	1-500-445-21	FERRITE, EMI (SMD) (2012)		R401	1-216-809-11	METAL CHIP 100	5% 1/10W
< IC >				R402	1-216-809-11	METAL CHIP 100	5% 1/10W
IC101	8-752-425-12	IC CXD3059AR		R403	1-216-809-11	METAL CHIP 100	5% 1/10W
IC251	6-705-808-01	IC BA5947FM		R404	1-216-809-11	METAL CHIP 100	5% 1/10W
IC301	6-705-365-01	IC TC94A34FG-002		R405	1-216-809-11	METAL CHIP 100	5% 1/10W
IC303	6-705-807-01	IC BH15FB1WG		R406	1-216-809-11	METAL CHIP 100	5% 1/10W
< TRANSISTOR >				R407	1-216-809-11	METAL CHIP 100	5% 1/10W
Q10	6-550-363-01	TRANSISTOR 2SB1690KT146		R408	1-216-809-11	METAL CHIP 100	5% 1/10W
				R409	1-216-809-11	METAL CHIP 100	5% 1/10W
				R410	1-216-809-11	METAL CHIP 100	5% 1/10W
				R411	1-216-809-11	METAL CHIP 100	5% 1/10W
				R412	1-216-809-11	METAL CHIP 100	5% 1/10W
				R419	1-216-809-11	METAL CHIP 100	5% 1/10W

BD81A

CONNECT

DRIVER

GAME JACK

H/P JACK

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< SWITCH >				< TRANSISTOR >	
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)		Q731	8-729-029-66	TRANSISTOR DTC114ESA	
		< VIBRATOR >				< RESISTOR >	
X171	1-767-408-21	VIBRATOR, CRYSTAL (16.9MHz)		R701	1-249-413-11	CARBON 470 5% 1/4W	
*****				R702	1-247-807-31	CARBON 100 5% 1/4W	
		CONNECT BOARD		R711	1-249-417-11	CARBON 1K 5% 1/4W	
		*****		R712	1-249-425-11	CARBON 4.7K 5% 1/4W	
		< CAPACITOR >		R713	1-249-433-11	CARBON 22K 5% 1/4W	
C871	1-162-927-11	CERAMIC CHIP 100PF 5% 50V		R721	1-249-425-11	CARBON 4.7K 5% 1/4W	
C872	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		R722	1-249-425-11	CARBON 4.7K 5% 1/4W	
C873	1-162-927-11	CERAMIC CHIP 100PF 5% 50V		R723	1-249-425-11	CARBON 4.7K 5% 1/4W	
C874	1-164-315-11	CERAMIC CHIP 470PF 5% 50V		R731	1-247-807-31	CARBON 100 5% 1/4W	
C875	1-164-156-11	CERAMIC CHIP 0.1uF 25V		R732	1-249-429-11	CARBON 10K 5% 1/4W	
C876	1-164-156-11	CERAMIC CHIP 0.1uF 25V		R733	1-249-417-11	CARBON 1K 5% 1/4W	
		< CONNECTOR >		R734	1-249-430-11	CARBON 12K 5% 1/4W	
CN871	1-779-295-11	CONNECTOR, FFC (LIF (NON-ZIF)) 27P		R735	1-247-807-31	CARBON 100 5% 1/4W	
CN873	1-784-778-11	CONNECTOR, FFC 17P		R751	1-249-425-11	CARBON 4.7K 5% 1/4W	
* CN874	1-564-725-11	PIN, CONNECTOR (SMALL TYPE) 9P		*****			
		< FERRITE BEAD >				GAME JACK BOARD	
FB871	1-216-864-11	SHORT CHIP 0				*****	
FB872	1-216-864-11	SHORT CHIP 0				< CAPACITOR >	
		< SHORT >		C801	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
JR871	1-216-864-11	SHORT CHIP 0		C802	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
JR872	1-216-864-11	SHORT CHIP 0		C803	1-165-128-11	CERAMIC CHIP 0.22uF 16V	
*****				C804	1-165-128-11	CERAMIC CHIP 0.22uF 16V	
		1-687-135-12 DRIVER BOARD				< JACK >	
		*****		J804	1-815-684-11	JACK, PIN 3P (GAME INPUT)	
		< CAPACITOR >				< SHORT >	
C715	1-126-933-11	ELECT 100uF 20% 16V		JR801	1-216-864-11	SHORT CHIP 0	
C731	1-126-964-11	ELECT 10uF 20% 50V				< RESISTOR >	
C735	1-164-159-21	CERAMIC 0.1uF 50V		R801	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C736	1-164-159-21	CERAMIC 0.1uF 50V		R802	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C737	1-164-159-21	CERAMIC 0.1uF 50V		R803	1-216-837-11	METAL CHIP 22K 5% 1/10W	
C741	1-162-306-11	CERAMIC 0.01uF 20% 16V		R804	1-216-837-11	METAL CHIP 22K 5% 1/10W	
C751	1-162-306-11	CERAMIC 0.01uF 20% 16V		*****			
C752	1-164-159-21	CERAMIC 0.1uF 50V				H/P JACK BOARD	
		< CONNECTOR >				*****	
CN701	1-785-338-11	PIN, CONNECTOR (LIGHT ANGLE) 12P				< CAPACITOR >	
CN702	1-784-766-11	CONNECTOR, FFC 5P		C830	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P		C831	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGRE) 2P		C832	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
		< DIODE >				< JACK >	
D701	8-719-921-42	DIODE MTZJ-5.1A		J801	1-785-448-21	JACK (PHONES)	
D711	8-719-109-69	DIODE RD3.6ESB2		*****			
		< IC >				A-4750-761-A MAIN BOARD, COMPLETE	
IC701	8-759-598-69	IC BA6956AN				*****	
IC712	8-759-598-69	IC BA6956AN				7-685-872-09 SCREW +BVTT 3X8 (S)	

MAIN

Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks
< CAPACITOR >							C160	1-126-960-11	ELECT	1uF	20%	50V	
							C161	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V	
C101	1-126-960-11	ELECT	1uF	20%	50V		C162	1-126-960-11	ELECT	1uF	20%	50V	
C102	1-126-960-11	ELECT	1uF	20%	50V		C163	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V	
C103	1-126-956-91	ELECT	0.1uF	20%	50V		C164	1-126-960-11	ELECT	1uF	20%	50V	
C104	1-126-956-91	ELECT	0.1uF	20%	50V								
C105	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C165	1-126-960-11	ELECT	1uF	20%	50V	
							C166	1-126-960-11	ELECT	1uF	20%	50V	
C106	1-131-679-31	FILM	0.01uF	5%	50V		C175	1-109-953-11	ELECT	2.2uF	20%	50V	
C107	1-126-964-11	ELECT	10uF	20%	50V		C176	1-126-964-11	ELECT	10uF	20%	50V	
C108	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C177	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C109	1-131-679-31	FILM	0.01uF	5%	50V								
C110	1-126-964-11	ELECT	10uF	20%	50V		C178	1-126-947-11	ELECT	47uF	20%	35V	
							C179	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C111	1-126-960-11	ELECT	1uF	20%	50V		C181	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C112	1-126-960-11	ELECT	1uF	20%	50V		C183	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C113	1-126-960-11	ELECT	1uF	20%	50V		C184	1-126-947-11	ELECT	47uF	20%	35V	
C114	1-126-960-11	ELECT	1uF	20%	50V								
C115	1-131-679-31	FILM	0.01uF	5%	50V		C185	1-126-964-11	ELECT	10uF	20%	50V	
							C186	1-126-947-11	ELECT	47uF	20%	35V	
C116	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C187	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C117	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C188	1-126-965-91	ELECT	22uF	20%	50V	
C118	1-126-964-11	ELECT	10uF	20%	50V		C189	1-126-965-91	ELECT	22uF	20%	50V	
C119	1-131-679-31	FILM	0.01uF	5%	50V								
C120	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C190	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
							C191	1-126-961-11	ELECT	2.2uF	20%	50V	
C121	1-164-230-11	CERAMIC CHIP	220PF	5%	50V		C192	1-126-961-11	ELECT	2.2uF	20%	50V	
C122	1-126-964-11	ELECT	10uF	20%	50V		C193	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C123	1-126-965-91	ELECT	22uF	20%	50V		C194	1-126-964-11	ELECT	10uF	20%	50V	
C124	1-162-953-11	CERAMIC CHIP	100PF	5%	50V								
C125	1-162-953-11	CERAMIC CHIP	100PF	5%	50V		C196	1-126-947-11	ELECT	47uF	20%	35V	
							C198	1-131-696-11	FILM	0.22uF	5%	50V	
C127	1-104-658-91	ELECT	100uF	20%	10V		C199	1-131-698-31	FILM	0.33uF	5%	50V	
C128	1-104-658-91	ELECT	100uF	20%	10V		C202	1-126-933-11	ELECT	100uF	20%	16V	
C129	1-126-947-11	ELECT	47uF	20%	35V		C203	1-126-964-11	ELECT	10uF	20%	50V	
C130	1-126-947-11	ELECT	47uF	20%	35V								
C131	1-131-688-31	FILM	0.047uF	5%	50V		C206	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
							C208	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
C132	1-126-947-11	ELECT	47uF	20%	35V		C209	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
C133	1-131-688-31	FILM	0.047uF	5%	50V		C211	1-109-953-11	ELECT	2.2uF	20%	50V	
C134	1-136-165-00	FILM	0.1uF	5%	50V		C212	1-126-964-11	ELECT	10uF	20%	50V	
C135	1-131-693-31	FILM	0.12uF	5%	50V								
C136	1-131-693-31	FILM	0.12uF	5%	50V		C213	1-126-964-11	ELECT	10uF	20%	50V	
							C214	1-126-926-11	ELECT	1000uF	20%	10V	
C137	1-126-964-11	ELECT	10uF	20%	50V		C216	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C138	1-126-964-11	ELECT	10uF	20%	50V		C217	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C139	1-131-693-31	FILM	0.12uF	5%	50V		C222	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C140	1-131-693-31	FILM	0.12uF	5%	50V								
C141	1-126-964-11	ELECT	10uF	20%	50V		C228	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
							C229	1-126-963-11	ELECT	4.7uF	20%	50V	
C142	1-126-964-11	ELECT	10uF	20%	50V		C230	1-126-947-11	ELECT	47uF	20%	35V	
C143	1-126-960-11	ELECT	1uF	20%	50V		C231	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C144	1-136-165-00	FILM	0.1uF	5%	50V		C235	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C145	1-126-964-11	ELECT	10uF	20%	50V								
C146	1-136-165-00	FILM	0.1uF	5%	50V		C241	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
							C242	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C147	1-126-964-11	ELECT	10uF	20%	50V		C243	1-131-681-31	FILM	0.015uF	5%	50V	
C148	1-131-679-31	FILM	0.01uF	5%	50V		C244	1-131-681-31	FILM	0.015uF	5%	50V	
C149	1-131-679-31	FILM	0.01uF	5%	50V		C246	1-131-681-31	FILM	0.015uF	5%	50V	
C150	1-131-679-31	FILM	0.01uF	5%	50V								
C151	1-131-679-31	FILM	0.01uF	5%	50V		C248	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
							C249	1-126-964-11	ELECT	10uF	20%	50V	
C152	1-130-475-00	MYLAR	0.0022uF	5%	50V		C250	1-126-947-11	ELECT	47uF	20%	35V	
C153	1-130-475-00	MYLAR	0.0022uF	5%	50V		C251	1-126-947-11	ELECT	47uF	20%	35V	
C154	1-131-700-31	FILM	0.47uF	5%	50V		C252	1-126-933-11	ELECT	100uF	20%	16V	
C157	1-126-960-11	ELECT	1uF	20%	50V								
C159	1-126-960-11	ELECT	1uF	20%	50V								

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C253	1-126-956-91	ELECT	0.1uF 20% 50V	CN308	1-564-506-11	PLUG, CONNECTOR 3P	
C258	1-126-959-11	ELECT	0.47uF 20% 50V	CN309	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
C259	1-126-957-11	ELECT	0.22uF 20% 50V	CN314	1-564-506-11	PLUG, CONNECTOR 3P	
C264	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	< DIODE >			
C265	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D201	8-719-988-61	DIODE 1SS355TE-17	
C266	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D202	8-719-083-63	DIODE UDZSTE-1713B	
C267	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D206	8-719-988-61	DIODE 1SS355TE-17	
C270	1-126-964-11	ELECT	10uF 20% 50V	D207	8-719-988-61	DIODE 1SS355TE-17	
C271	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D211	8-719-988-61	DIODE 1SS355TE-17	
C272	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D212	8-719-988-61	DIODE 1SS355TE-17	
C274	1-162-949-11	CERAMIC CHIP	47PF 5% 50V	D213	8-719-988-61	DIODE 1SS355TE-17	
C275	1-162-949-11	CERAMIC CHIP	47PF 5% 50V	D214	8-719-988-61	DIODE 1SS355TE-17	
C276	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D215	8-719-988-61	DIODE 1SS355TE-17	
C277	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D301	6-500-522-21	DIODE 10EDB40-TB3	
C278	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D302	6-500-522-21	DIODE 10EDB40-TB3	
C279	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D303	6-500-522-21	DIODE 10EDB40-TB3	
C280	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D304	6-500-522-21	DIODE 10EDB40-TB3	
C281	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	D305	6-500-522-21	DIODE 10EDB40-TB3	
C288	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D306	6-500-522-21	DIODE 10EDB40-TB3	
C289	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D307	6-500-522-21	DIODE 10EDB40-TB3	
C290	1-162-971-11	CERAMIC CHIP	0.001uF 10% 50V	D308	6-500-522-21	DIODE 10EDB40-TB3	
C301	1-136-165-00	FILM	0.1uF 5% 50V	D309	6-500-522-21	DIODE 10EDB40-TB3	
C302	1-136-165-00	FILM	0.1uF 5% 50V	D310	6-500-522-21	DIODE 10EDB40-TB3	
C303	1-136-165-00	FILM	0.1uF 5% 50V	D311	6-500-522-21	DIODE 10EDB40-TB3	
C304	1-136-165-00	FILM	0.1uF 5% 50V	D312	6-500-522-21	DIODE 10EDB40-TB3	
C305	1-136-165-00	FILM	0.1uF 5% 50V	D313	8-719-085-36	DIODE 11EQS04-TB5	
C306	1-136-165-00	FILM	0.1uF 5% 50V	D316	8-719-988-61	DIODE 1SS355TE-17	
C308	1-126-965-91	ELECT	22uF 20% 50V	D321	8-719-988-61	DIODE 1SS355TE-17	
C309	1-126-965-91	ELECT	22uF 20% 50V	D322	8-719-988-61	DIODE 1SS355TE-17	
C310	1-126-936-11	ELECT	3300uF 20% 16V	D324	6-500-522-21	DIODE 10EDB40-TB3	
C311	1-126-964-11	ELECT	10uF 20% 50V	D325	6-500-522-21	DIODE 10EDB40-TB3	
C312	1-126-964-11	ELECT	10uF 20% 50V	D326	6-500-522-21	DIODE 10EDB40-TB3	
C313	1-126-943-11	ELECT	2200uF 20% 25V	< EARTH TERMINAL >			
C315	1-126-933-11	ELECT	100uF 20% 16V	EP101	1-537-770-21	TERMINAL BOARD, GROUND	
C316	1-126-943-11	ELECT	2200uF 20% 25V	EP301	1-537-770-21	TERMINAL BOARD, GROUND	
C318	1-126-933-11	ELECT	100uF 20% 16V	< FERRITE BEAD >			
C321	1-126-961-11	ELECT	2.2uF 20% 50V	FB201	1-216-864-11	SHORT CHIP 0	
C342	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB202	1-216-864-11	SHORT CHIP 0	
C351	1-164-357-11	CERAMIC CHIP	0.001uF 5% 50V	FB203	1-216-864-11	SHORT CHIP 0	
C352	1-126-965-91	ELECT	22uF 20% 50V	FB204	1-216-864-11	SHORT CHIP 0	
C353	1-126-961-11	ELECT	2.2uF 20% 50V	FB205	1-543-958-22	BEAD, FERRITE (CHIP) (1608)	
C354	1-164-156-11	CERAMIC CHIP	0.1uF 25V	< IC >			
C371	1-164-362-11	CERAMIC CHIP	470PF 5% 50V	IC101	6-705-852-01	IC BD3401KS2	
C372	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	IC102	8-759-710-97	IC NJM4565M-D	
C373	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	IC104	8-759-710-97	IC NJM4565M-D	
C374	1-126-947-11	ELECT	47uF 20% 35V	IC201	8-759-508-69	IC BA3126N	
C375	1-164-156-11	CERAMIC CHIP	0.1uF 25V	IC301	6-702-771-01	IC TA78033LS	
C376	1-126-961-11	ELECT	2.2uF 20% 50V	IC302	6-702-771-01	IC TA78033LS	
< CONNECTOR >				IC303	8-759-701-59	IC NJM78M09FA	
CN101	1-784-776-11	CONNECTOR, FFC 15P		IC304	8-759-701-59	IC NJM78M09FA	
* CN103	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P		IC371	6-704-046-01	IC BU2099FV	
* CN112	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		< COIL >			
* CN301	1-568-950-11	PIN, CONNECTOR 12P		L101	1-424-849-11	COIL, OSCILLATION (BIAS)	
CN302	1-784-792-11	CONNECTOR, FFC 31P					
CN305	1-568-937-11	PIN, CONNECTOR (STRAIGHT) 10P					
CN307	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P					

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< TRANSISTOR >				R125	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q101	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R126	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q102	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R127	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q103	6-550-889-01	TRANSISTOR	2SC5938-T112-1B	R128	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q104	6-550-889-01	TRANSISTOR	2SC5938-T112-1B	R129	1-216-841-11	METAL CHIP	47K 5% 1/10W
Q105	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R131	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q106	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R132	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q107	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R133	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q108	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R134	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q303	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R135	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q304	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R136	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q305	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R137	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q306	6-550-889-01	TRANSISTOR	2SC5938-T112-1B	R138	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q307	6-550-889-01	TRANSISTOR	2SC5938-T112-1B	R139	1-216-864-11	SHORT CHIP	0 5% 1/10W
Q308	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R141	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q309	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R142	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q310	8-729-142-46	TRANSISTOR	2SC2001-LK	R151	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q311	8-729-142-46	TRANSISTOR	2SC2001-LK	R152	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q312	8-729-041-19	TRANSISTOR	2SA953-T-K	R153	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q313	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R154	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q314	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R155	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q315	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R156	1-216-853-11	METAL CHIP	470K 5% 1/10W
Q321	8-729-142-46	TRANSISTOR	2SC2001-LK	R157	1-216-841-11	METAL CHIP	47K 5% 1/10W
Q322	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R158	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q323	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R159	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q324	8-729-140-04	TRANSISTOR	2SB1116A-L	R160	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q327	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R161	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q351	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R162	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q352	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R163	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q361	6-550-580-01	TRANSISTOR	2SA1235TP-1F	R164	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q362	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R165	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q371	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R166	1-216-833-11	METAL CHIP	10K 5% 1/10W
< RESISTOR >				R167	1-216-833-11	METAL CHIP	10K 5% 1/10W
R101	1-216-833-11	METAL CHIP	10K 5% 1/10W	R168	1-216-845-11	METAL CHIP	100K 5% 1/10W
R102	1-216-833-11	METAL CHIP	10K 5% 1/10W	R169	1-216-845-11	METAL CHIP	100K 5% 1/10W
R103	1-216-851-11	METAL CHIP	330K 5% 1/10W	R170	1-216-833-11	METAL CHIP	10K 5% 1/10W
R104	1-216-835-11	METAL CHIP	15K 5% 1/10W	R171	1-216-833-11	METAL CHIP	10K 5% 1/10W
R105	1-216-816-11	METAL CHIP	390 5% 1/10W	R172	1-216-809-11	METAL CHIP	100 5% 1/10W
R106	1-216-851-11	METAL CHIP	330K 5% 1/10W	R173	1-216-833-11	METAL CHIP	10K 5% 1/10W
R107	1-216-835-11	METAL CHIP	15K 5% 1/10W	R174	1-216-833-11	METAL CHIP	10K 5% 1/10W
R108	1-216-816-11	METAL CHIP	390 5% 1/10W	R175	1-216-833-11	METAL CHIP	10K 5% 1/10W
R109	1-216-853-11	METAL CHIP	470K 5% 1/10W	R176	1-216-849-11	METAL CHIP	220K 5% 1/10W
R110	1-216-851-11	METAL CHIP	330K 5% 1/10W	R177	1-216-849-11	METAL CHIP	220K 5% 1/10W
R111	1-216-847-11	METAL CHIP	150K 5% 1/10W	R178	1-216-833-11	METAL CHIP	10K 5% 1/10W
R112	1-216-853-11	METAL CHIP	470K 5% 1/10W	R181	1-216-837-11	METAL CHIP	22K 5% 1/10W
R113	1-216-851-11	METAL CHIP	330K 5% 1/10W	R182	1-216-841-11	METAL CHIP	47K 5% 1/10W
R114	1-216-847-11	METAL CHIP	150K 5% 1/10W	R184	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R115	1-216-857-11	METAL CHIP	1M 5% 1/10W	R186	1-216-839-11	METAL CHIP	33K 5% 1/10W
R116	1-216-809-11	METAL CHIP	100 5% 1/10W	R187	1-216-841-11	METAL CHIP	47K 5% 1/10W
R117	1-216-809-11	METAL CHIP	100 5% 1/10W	R189	1-216-809-11	METAL CHIP	100 5% 1/10W
R118	1-216-833-11	METAL CHIP	10K 5% 1/10W	R192	1-216-837-11	METAL CHIP	22K 5% 1/10W
R119	1-216-841-11	METAL CHIP	47K 5% 1/10W	R193	1-216-821-11	METAL CHIP	1K 5% 1/10W
R120	1-216-857-11	METAL CHIP	1M 5% 1/10W	R194	1-218-867-11	METAL CHIP	6.8K 0.5% 1/10W
R121	1-216-841-11	METAL CHIP	47K 5% 1/10W	R195	1-218-867-11	METAL CHIP	6.8K 0.5% 1/10W
R123	1-216-833-11	METAL CHIP	10K 5% 1/10W	R197	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R124	1-216-833-11	METAL CHIP	10K 5% 1/10W	R198	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
				R199	1-216-849-11	METAL CHIP	220K 5% 1/10W

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R201	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R281	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R202	1-216-833-11	METAL CHIP	10K	5%	1/10W	R282	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R203	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R204	1-216-833-11	METAL CHIP	10K	5%	1/10W	R283	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R205	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R284	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
						R306	1-216-833-11	METAL CHIP	10K	5%	1/10W
R206	1-216-841-11	METAL CHIP	47K	5%	1/10W	R307	1-216-833-11	METAL CHIP	10K	5%	1/10W
R207	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R308	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R208	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R209	1-216-833-11	METAL CHIP	10K	5%	1/10W	R310	1-216-833-11	METAL CHIP	10K	5%	1/10W
R210	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R311	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R312	1-216-837-11	METAL CHIP	22K	5%	1/10W
R211	1-216-821-11	METAL CHIP	1K	5%	1/10W	R313	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R212	1-216-833-11	METAL CHIP	10K	5%	1/10W	R321	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R213	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R214	1-216-821-11	METAL CHIP	1K	5%	1/10W	R322	1-216-837-11	METAL CHIP	22K	5%	1/10W
R216	1-216-806-11	METAL CHIP	56	5%	1/10W	R323	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R324	1-216-833-11	METAL CHIP	10K	5%	1/10W
R217	1-216-806-11	METAL CHIP	56	5%	1/10W	R325	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R218	1-215-891-11	METAL OXIDE	680	5%	2W	R341	1-216-833-11	METAL CHIP	10K	5%	1/10W
R219	1-215-891-11	METAL OXIDE	680	5%	2W						
R220	1-216-837-11	METAL CHIP	22K	5%	1/10W	R342	1-216-821-11	METAL CHIP	1K	5%	1/10W
R221	1-216-837-11	METAL CHIP	22K	5%	1/10W	R343	1-216-837-11	METAL CHIP	22K	5%	1/10W
						R344	1-216-837-11	METAL CHIP	22K	5%	1/10W
R222	1-216-830-11	METAL CHIP	5.6K	5%	1/10W	R345	1-216-833-11	METAL CHIP	10K	5%	1/10W
R223	1-216-864-11	SHORT CHIP	0			R346	1-216-821-11	METAL CHIP	1K	5%	1/10W
R225	1-216-829-11	METAL CHIP	4.7K	5%	1/10W						
R226	1-216-841-11	METAL CHIP	47K	5%	1/10W	R347	1-216-837-11	METAL CHIP	22K	5%	1/10W
R227	1-216-821-11	METAL CHIP	1K	5%	1/10W	R348	1-216-837-11	METAL CHIP	22K	5%	1/10W
						R351	1-216-835-11	METAL CHIP	15K	5%	1/10W
R228	1-216-821-11	METAL CHIP	1K	5%	1/10W	R352	1-216-845-11	METAL CHIP	100K	5%	1/10W
R229	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R353	1-216-841-11	METAL CHIP	47K	5%	1/10W
R230	1-216-829-11	METAL CHIP	4.7K	5%	1/10W						
R231	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R354	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R232	1-216-833-11	METAL CHIP	10K	5%	1/10W	R356	1-216-817-11	METAL CHIP	470	5%	1/10W
						R357	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R235	1-216-793-11	METAL CHIP	4.7	5%	1/10W	R358	1-216-809-11	METAL CHIP	100	5%	1/10W
R241	1-216-797-11	METAL CHIP	10	5%	1/10W	R361	1-216-833-11	METAL CHIP	10K	5%	1/10W
R242	1-216-838-11	METAL CHIP	27K	5%	1/10W						
R243	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R362	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R244	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R363	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R364	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R245	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R371	1-216-809-11	METAL CHIP	100	5%	1/10W
R246	1-216-809-11	METAL CHIP	100	5%	1/10W	R372	1-216-809-11	METAL CHIP	100	5%	1/10W
R247	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R248	1-216-833-11	METAL CHIP	10K	5%	1/10W	R373	1-216-809-11	METAL CHIP	100	5%	1/10W
R249	1-216-841-11	METAL CHIP	47K	5%	1/10W	R374	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R375	1-216-833-11	METAL CHIP	10K	5%	1/10W
R250	1-216-833-11	METAL CHIP	10K	5%	1/10W	R376	1-216-833-11	METAL CHIP	10K	5%	1/10W
R251	1-216-833-11	METAL CHIP	10K	5%	1/10W	R377	1-216-833-11	METAL CHIP	10K	5%	1/10W
R252	1-216-864-11	SHORT CHIP	0								
R253	1-216-809-11	METAL CHIP	100	5%	1/10W	R378	1-216-833-11	METAL CHIP	10K	5%	1/10W
R254	1-216-809-11	METAL CHIP	100	5%	1/10W	R379	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R380	1-216-833-11	METAL CHIP	10K	5%	1/10W
R262	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R381	1-216-833-11	METAL CHIP	10K	5%	1/10W
R263	1-216-857-11	METAL CHIP	1M	5%	1/10W	R382	1-216-833-11	METAL CHIP	10K	5%	1/10W
R264	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R265	1-216-833-11	METAL CHIP	10K	5%	1/10W	R383	1-216-833-11	METAL CHIP	10K	5%	1/10W
R266	1-216-845-11	METAL CHIP	100K	5%	1/10W	R384	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R385	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R268	1-216-833-11	METAL CHIP	10K	5%	1/10W	R386	1-216-837-11	METAL CHIP	22K	5%	1/10W
R269	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R387	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R270	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R271	1-216-833-11	METAL CHIP	10K	5%	1/10W	R388	1-216-837-11	METAL CHIP	22K	5%	1/10W
R272	1-216-853-11	METAL CHIP	470K	5%	1/10W	R389	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R390	1-216-837-11	METAL CHIP	22K	5%	1/10W
R273	1-216-864-11	SHORT CHIP	0			R391	1-216-833-11	METAL CHIP	10K	5%	1/10W
R274	1-216-864-11	SHORT CHIP	0			R392	1-216-821-11	METAL CHIP	1K	5%	1/10W
R275	1-216-864-11	SHORT CHIP	0								

HCD-RG444

MAIN	MOTOR (LD)	MOTOR (TB)	PANEL
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Ref. No.	Part No.	Description	Remarks
R393	1-216-833-11	METAL CHIP 10K 5%	1/10W
R394	1-216-821-11	METAL CHIP 1K 5%	1/10W
R395	1-216-837-11	METAL CHIP 22K 5%	1/10W
R396	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R397	1-216-833-11	METAL CHIP 10K 5%	1/10W

	1-687-133-12	MOTOR (LD) BOARD	*****

	1-687-134-12	MOTOR (TB) BOARD	*****
		< CONNECTOR >	
CN742	1-784-727-11	CONNECTOR, FFC 5P	

	A-4750-763-A	PANEL BOARD, COMPLETE	*****
		< CAPACITOR >	
C601	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C602	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C603	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C604	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C605	1-126-163-11	ELECT 4.7uF	20% 50V
C606	1-115-156-11	CERAMIC CHIP 1uF	10V
C607	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C608	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C609	1-115-156-11	CERAMIC CHIP 1uF	10V
C610	1-126-916-11	ELECT 1000uF	20% 6.3V
C611	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C612	1-126-157-11	ELECT 10uF	20% 16V
C613	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C614	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C615	1-124-257-00	ELECT 2.2uF	20% 50V
C617	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C618	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C619	1-124-589-11	ELECT 47uF	20% 16V
C620	1-119-772-91	ELECT 47uF	20% 35V
C621	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C622	1-126-163-11	ELECT 4.7uF	20% 50V
C623	1-126-163-11	ELECT 4.7uF	20% 50V
C624	1-162-918-11	CERAMIC CHIP 18PF	5% 50V
C625	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C626	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C628	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C629	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C630	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C631	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C632	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C633	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C634	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C635	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C636	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C637	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C638	1-162-927-11	CERAMIC CHIP 100PF	5% 50V

Ref. No.	Part No.	Description	Remarks
C639	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C640	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C641	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C642	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C643	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C644	1-126-157-11	ELECT 10uF	20% 16V
C646	1-124-234-00	ELECT 22uF	20% 16V
C647	1-124-589-11	ELECT 47uF	20% 16V
C648	1-124-234-00	ELECT 22uF	20% 16V
C649	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C653	1-162-959-11	CERAMIC CHIP 330PF	5% 50V
C654	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C655	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C656	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
		< CONNECTOR >	
CN601	1-784-753-11	CONNECTOR, FFC 31P	
CN602	1-784-774-11	CONNECTOR, FFC 13P	
CN603	1-784-778-11	CONNECTOR, FFC 17P	
* CN604	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P	
CN605	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CN608	1-818-282-11	PIN, CONNECTOR (FOR PWB) 3P	
		< DIODE >	
D603	8-719-988-61	DIODE 1SS355TE-17	
D604	8-719-988-61	DIODE 1SS355TE-17	
D605	8-719-988-61	DIODE 1SS355TE-17	
D607	8-719-988-61	DIODE 1SS355TE-17	
D608	8-719-988-61	DIODE 1SS355TE-17	
D609	8-719-988-61	DIODE 1SS355TE-17	
D611	8-719-988-61	DIODE 1SS355TE-17	
D613	8-719-988-61	DIODE 1SS355TE-17	
D614	8-719-988-61	DIODE 1SS355TE-17	
D615	8-719-988-61	DIODE 1SS355TE-17	
D616	8-719-988-61	DIODE 1SS355TE-17	
D620	8-719-988-61	DIODE 1SS355TE-17	
D621	8-719-988-61	DIODE 1SS355TE-17	
D622	8-719-988-61	DIODE 1SS355TE-17	
D623	8-719-988-61	DIODE 1SS355TE-17	
D626	8-719-988-61	DIODE 1SS355TE-17	
D630	8-719-988-61	DIODE 1SS355TE-17	
D631	8-719-978-33	DIODE DTZ-TT11-6.8B	
D632	8-719-083-57	DIODE UDZSTE-173.6B	
D633	8-719-988-61	DIODE 1SS355TE-17	
		< FLUORESCENT INDICATOR >	
FL601	1-518-976-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC601	6-804-440-01	IC LC876996A-53H2-E	
IC602	6-704-046-01	IC BU2099FV	
IC603	6-704-045-01	IC MM1574ANLE	
IC604	8-759-533-04	IC M62703ML-E1	
		< SHORT >	
JR607	1-216-864-11	SHORT CHIP	0
JR608	1-216-864-11	SHORT CHIP	0

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
JR609	1-216-864-11	SHORT CHIP	0			R633	1-216-809-11	METAL CHIP	100	5%	1/10W
JR614	1-216-864-11	SHORT CHIP	0			R634	1-216-809-11	METAL CHIP	100	5%	1/10W
JR617	1-216-864-11	SHORT CHIP	0			R635	1-216-809-11	METAL CHIP	100	5%	1/10W
JR621	1-216-864-11	SHORT CHIP	0			R636	1-216-833-11	METAL CHIP	10K	5%	1/10W
JR622	1-216-864-11	SHORT CHIP	0			R637	1-216-833-11	METAL CHIP	10K	5%	1/10W
JR623	1-216-864-11	SHORT CHIP	0			R638	1-216-809-11	METAL CHIP	100	5%	1/10W
		< LED >				R639	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R640	1-216-834-11	METAL CHIP	12K	5%	1/10W
LED601	6-500-809-01	DIODE SELU5223C-STP15 (1/10W)				R641	1-216-849-11	METAL CHIP	220K	5%	1/10W
		< TRANSISTOR >				R642	1-216-817-11	METAL CHIP	470	5%	1/10W
Q601	8-729-116-57	TRANSISTOR	2SB1068-K			R643	1-216-819-11	METAL CHIP	680	5%	1/10W
Q602	8-729-140-04	TRANSISTOR	2SB1116A-L			R644	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q603	8-729-140-04	TRANSISTOR	2SB1116A-L			R645	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
Q604	8-729-119-76	TRANSISTOR	2SA1175-HFE			R646	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
Q605	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R647	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
Q610	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R648	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
Q611	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R649	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
Q612	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R650	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
Q613	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R651	1-216-833-11	METAL CHIP	10K	5%	1/10W
Q614	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R652	1-216-835-11	METAL CHIP	15K	5%	1/10W
Q615	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R653	1-216-817-11	METAL CHIP	470	5%	1/10W
Q616	8-729-027-55	TRANSISTOR	DTC143EKA-T146			R654	1-216-819-11	METAL CHIP	680	5%	1/10W
		< RESISTOR >				R655	1-216-821-11	METAL CHIP	1K	5%	1/10W
R601	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R656	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R602	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R657	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R603	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R658	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R604	1-216-841-11	METAL CHIP	47K	5%	1/10W	R659	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R605	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R660	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R606	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R661	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R607	1-216-841-11	METAL CHIP	47K	5%	1/10W	R662	1-216-833-11	METAL CHIP	10K	5%	1/10W
R608	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R663	1-216-837-11	METAL CHIP	22K	5%	1/10W
R609	1-216-837-11	METAL CHIP	22K	5%	1/10W	R664	1-216-817-11	METAL CHIP	470	5%	1/10W
R610	1-216-833-11	METAL CHIP	10K	5%	1/10W	R665	1-216-819-11	METAL CHIP	680	5%	1/10W
R611	1-216-837-11	METAL CHIP	22K	5%	1/10W	R666	1-216-821-11	METAL CHIP	1K	5%	1/10W
R612	1-216-833-11	METAL CHIP	10K	5%	1/10W	R667	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R613	1-216-837-11	METAL CHIP	22K	5%	1/10W	R668	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R614	1-216-837-11	METAL CHIP	22K	5%	1/10W	R669	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R615	1-216-837-11	METAL CHIP	22K	5%	1/10W	R670	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R616	1-216-833-11	METAL CHIP	10K	5%	1/10W	R671	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R617	1-216-837-11	METAL CHIP	22K	5%	1/10W	R672	1-216-833-11	METAL CHIP	10K	5%	1/10W
R618	1-216-833-11	METAL CHIP	10K	5%	1/10W	R674	1-216-835-11	METAL CHIP	15K	5%	1/10W
R619	1-216-837-11	METAL CHIP	22K	5%	1/10W	R675	1-216-835-11	METAL CHIP	15K	5%	1/10W
R620	1-216-837-11	METAL CHIP	22K	5%	1/10W	R676	1-216-835-11	METAL CHIP	15K	5%	1/10W
R621	1-216-833-11	METAL CHIP	10K	5%	1/10W	R677	1-216-864-11	SHORT CHIP	0		
R622	1-216-049-11	RES-CHIP	1K	5%	1/10W	R678	1-216-845-11	METAL CHIP	100K	5%	1/10W
R623	1-216-833-11	METAL CHIP	10K	5%	1/10W	R679	1-216-172-00	RES-CHIP	82	5%	1/8W
R624	1-216-049-11	RES-CHIP	1K	5%	1/10W	R680	1-216-838-11	METAL CHIP	27K	5%	1/10W
R625	1-216-833-11	METAL CHIP	10K	5%	1/10W	R681	1-216-849-11	METAL CHIP	220K	5%	1/10W
R626	1-216-049-11	RES-CHIP	1K	5%	1/10W	R682	1-216-833-11	METAL CHIP	10K	5%	1/10W
R627	1-216-833-11	METAL CHIP	10K	5%	1/10W	R683	1-216-849-11	METAL CHIP	220K	5%	1/10W
R628	1-216-833-11	METAL CHIP	10K	5%	1/10W	R684	1-216-821-11	METAL CHIP	1K	5%	1/10W
R629	1-216-150-91	RES-CHIP	10	5%	1/8W	R685	1-216-841-11	METAL CHIP	47K	5%	1/10W
R630	1-216-809-11	METAL CHIP	100	5%	1/10W	R686	1-216-841-11	METAL CHIP	47K	5%	1/10W
R631	1-216-809-11	METAL CHIP	100	5%	1/10W	R687	1-216-833-11	METAL CHIP	10K	5%	1/10W
R632	1-216-809-11	METAL CHIP	100	5%	1/10W	R688	1-216-817-11	METAL CHIP	470	5%	1/10W
						R689	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R690	1-216-809-11	METAL CHIP	100	5%	1/10W
						R691	1-216-809-11	METAL CHIP	100	5%	1/10W

PANEL

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R692	1-216-809-11	METAL CHIP	100	5%	1/10W	R760	1-216-845-11	METAL CHIP	100K	5%	1/10W
R693	1-216-809-11	METAL CHIP	100	5%	1/10W	R761	1-216-845-11	METAL CHIP	100K	5%	1/10W
R694	1-216-809-11	METAL CHIP	100	5%	1/10W	R762	1-216-845-11	METAL CHIP	100K	5%	1/10W
R695	1-216-809-11	METAL CHIP	100	5%	1/10W	R763	1-216-845-11	METAL CHIP	100K	5%	1/10W
R696	1-216-809-11	METAL CHIP	100	5%	1/10W	R764	1-216-845-11	METAL CHIP	100K	5%	1/10W
R697	1-216-809-11	METAL CHIP	100	5%	1/10W	R765	1-216-845-11	METAL CHIP	100K	5%	1/10W
R698	1-216-182-00	RES-CHIP	220	5%	1/8W	R766	1-216-845-11	METAL CHIP	100K	5%	1/10W
R700	1-216-182-00	RES-CHIP	220	5%	1/8W	R767	1-216-845-11	METAL CHIP	100K	5%	1/10W
R702	1-216-182-00	RES-CHIP	220	5%	1/8W	R768	1-216-845-11	METAL CHIP	100K	5%	1/10W
R704	1-216-182-00	RES-CHIP	220	5%	1/8W	R769	1-216-845-11	METAL CHIP	100K	5%	1/10W
R706	1-216-182-00	RES-CHIP	220	5%	1/8W	R770	1-216-845-11	METAL CHIP	100K	5%	1/10W
R708	1-216-182-00	RES-CHIP	220	5%	1/8W	R771	1-216-841-11	METAL CHIP	47K	5%	1/10W
R710	1-216-833-11	METAL CHIP	10K	5%	1/10W	R772	1-216-821-11	METAL CHIP	1K	5%	1/10W
R711	1-216-833-11	METAL CHIP	10K	5%	1/10W	R773	1-216-809-11	METAL CHIP	100	5%	1/10W
R712	1-216-797-11	METAL CHIP	10	5%	1/10W	R774	1-216-809-11	METAL CHIP	100	5%	1/10W
R713	1-216-797-11	METAL CHIP	10	5%	1/10W	R775	1-216-809-11	METAL CHIP	100	5%	1/10W
R714	1-216-809-11	METAL CHIP	100	5%	1/10W	R776	1-216-817-11	METAL CHIP	470	5%	1/10W
R715	1-216-805-11	METAL CHIP	47	5%	1/10W	R777	1-216-809-11	METAL CHIP	100	5%	1/10W
R716	1-216-837-11	METAL CHIP	22K	5%	1/10W	R778	1-216-809-11	METAL CHIP	100	5%	1/10W
R717	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R779	1-216-809-11	METAL CHIP	100	5%	1/10W
R718	1-216-837-11	METAL CHIP	22K	5%	1/10W	R780	1-216-817-11	METAL CHIP	470	5%	1/10W
R719	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R781	1-216-809-11	METAL CHIP	100	5%	1/10W
R720	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R782	1-216-809-11	METAL CHIP	100	5%	1/10W
R721	1-216-833-11	METAL CHIP	10K	5%	1/10W	R783	1-216-809-11	METAL CHIP	100	5%	1/10W
R722	1-216-835-11	METAL CHIP	15K	5%	1/10W	R784	1-216-809-11	METAL CHIP	100	5%	1/10W
R723	1-216-809-11	METAL CHIP	100	5%	1/10W	R785	1-216-809-11	METAL CHIP	100	5%	1/10W
R725	1-216-809-11	METAL CHIP	100	5%	1/10W	R786	1-216-833-11	METAL CHIP	10K	5%	1/10W
R727	1-220-397-11	METAL CHIP	4.7M	5%	1/10W	R787	1-216-809-11	METAL CHIP	100	5%	1/10W
R728	1-220-397-11	METAL CHIP	4.7M	5%	1/10W	R788	1-216-809-11	METAL CHIP	100	5%	1/10W
R729	1-216-809-11	METAL CHIP	100	5%	1/10W	R789	1-216-841-11	METAL CHIP	47K	5%	1/10W
R730	1-216-809-11	METAL CHIP	100	5%	1/10W	R790	1-216-821-11	METAL CHIP	1K	5%	1/10W
R731	1-216-809-11	METAL CHIP	100	5%	1/10W	R791	1-216-809-11	METAL CHIP	100	5%	1/10W
R732	1-216-853-11	METAL CHIP	470K	5%	1/10W	R792	1-216-809-11	METAL CHIP	100	5%	1/10W
R733	1-216-809-11	METAL CHIP	100	5%	1/10W	R793	1-216-809-11	METAL CHIP	100	5%	1/10W
R734	1-216-821-11	METAL CHIP	1K	5%	1/10W	R794	1-216-809-11	METAL CHIP	100	5%	1/10W
R735	1-216-821-11	METAL CHIP	1K	5%	1/10W	R795	1-216-809-11	METAL CHIP	100	5%	1/10W
R736	1-216-821-11	METAL CHIP	1K	5%	1/10W	R796	1-216-809-11	METAL CHIP	100	5%	1/10W
R737	1-216-845-11	METAL CHIP	100K	5%	1/10W	R797	1-216-821-11	METAL CHIP	1K	5%	1/10W
R738	1-216-845-11	METAL CHIP	100K	5%	1/10W	R798	1-216-821-11	METAL CHIP	1K	5%	1/10W
R739	1-216-845-11	METAL CHIP	100K	5%	1/10W	R799	1-216-821-11	METAL CHIP	1K	5%	1/10W
R740	1-216-845-11	METAL CHIP	100K	5%	1/10W	R854	1-216-813-11	METAL CHIP	220	5%	1/10W
R741	1-216-845-11	METAL CHIP	100K	5%	1/10W	R863	1-216-170-00	RES-CHIP	68	5%	1/8W
R742	1-216-845-11	METAL CHIP	100K	5%	1/10W						
R743	1-216-845-11	METAL CHIP	100K	5%	1/10W			< SWITCH >			
R744	1-216-845-11	METAL CHIP	100K	5%	1/10W	S601	1-762-875-21	SWITCH, KEYBOARD (I/⏏)			
R745	1-216-845-11	METAL CHIP	100K	5%	1/10W	S602	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)			
R746	1-216-845-11	METAL CHIP	100K	5%	1/10W	S603	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)			
R747	1-216-845-11	METAL CHIP	100K	5%	1/10W	S604	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
R748	1-216-845-11	METAL CHIP	100K	5%	1/10W	S605	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
R749	1-216-845-11	METAL CHIP	100K	5%	1/10W	S606	1-762-875-21	SWITCH, KEYBOARD (DISC 3)			
R750	1-216-845-11	METAL CHIP	100K	5%	1/10W	S607	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)			
R751	1-216-845-11	METAL CHIP	100K	5%	1/10W	S608	1-762-875-21	SWITCH, KEYBOARD (▲)			
R752	1-216-845-11	METAL CHIP	100K	5%	1/10W	S610	1-762-875-21	SWITCH, KEYBOARD (P FILE)			
R753	1-216-845-11	METAL CHIP	100K	5%	1/10W	S611	1-762-875-21	SWITCH, KEYBOARD (PRESET EQ)			
R754	1-216-845-11	METAL CHIP	100K	5%	1/10W	S612	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
R755	1-216-845-11	METAL CHIP	100K	5%	1/10W	S621	1-762-875-21	SWITCH, KEYBOARD (CD)			
R756	1-216-845-11	METAL CHIP	100K	5%	1/10W	S622	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
R757	1-216-845-11	METAL CHIP	100K	5%	1/10W	S623	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)			
R758	1-216-845-11	METAL CHIP	100K	5%	1/10W	S624	1-762-875-21	SWITCH, KEYBOARD (GAME)			
R759	1-216-845-11	METAL CHIP	100K	5%	1/10W						

PANEL

REM

SENSOR

SUB-TRANS

SUB-WOOFER

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
S626	1-762-875-21	SWITCH, KEYBOARD (ILLUMINATION)				< RELAY >	
S627	1-762-875-21	SWITCH, KEYBOARD (PLAY MODE/TUNING MODE)		△ RY901	1-755-276-21	RELAY, POWER	
S628	1-762-875-21	SWITCH, KEYBOARD (GAME MIXING)		*****			
S629	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)				SUB-WOOFER BOARD	
S630	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)				*****	
S641	1-762-875-21	SWITCH, KEYBOARD (GROOVE)				< CAPACITOR >	
S642	1-762-875-21	SWITCH, KEYBOARD (SURROUND)		C502	1-162-286-21	CERAMIC	220PF 10% 50V
S643	1-762-875-21	SWITCH, KEYBOARD (EFFECT ON/OFF)		C503	1-162-600-11	CERAMIC	0.0047uF 10% 16V
S644	1-762-875-21	SWITCH, KEYBOARD (TUNING +)		C504	1-104-662-91	ELECT	22uF 20% 25V
S645	1-762-875-21	SWITCH, KEYBOARD (▷)		C505	1-162-199-31	CERAMIC	10PF 5% 50V
S646	1-762-875-21	SWITCH, KEYBOARD (▶▶ ALBUM +)		C506	1-104-665-11	ELECT	100uF 20% 25V
S647	1-762-875-21	SWITCH, KEYBOARD (◀◀ ALBUM -)		C507	1-126-967-11	ELECT	47uF 20% 50V
S648	1-762-875-21	SWITCH, KEYBOARD (■)		C508	1-162-286-21	CERAMIC	220PF 10% 50V
S649	1-762-875-21	SWITCH, KEYBOARD (■)		C509	1-128-563-11	ELECT	100uF 20% 100V
S650	1-762-875-21	SWITCH, KEYBOARD (TUNING -)		C510	1-128-582-11	ELECT	10uF 20% 100V
		< VIBRATOR >		C511	1-128-582-11	ELECT	10uF 20% 100V
X601	1-760-252-12	VIBRATOR, CRYSTAL (32.768kHz)		C512	1-136-497-81	FILM	0.1uF 5% 50V
X602	1-795-004-21	VIBRATOR, CERAMIC (10MHz)		C513	1-136-497-81	FILM	0.1uF 5% 50V
*****				C514	1-126-948-11	ELECT	100uF 20% 35V
		REM BOARD		C515	1-126-963-11	ELECT	4.7uF 20% 50V
		*****		C516	1-126-964-11	ELECT	10uF 20% 50V
		< CONNECTOR >		C517	1-126-964-11	ELECT	10uF 20% 50V
CN610	1-816-423-11	SOCKET, CONNECTOR 3P				< CONNECTOR >	
		< IC >		* CN501	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
IC610	6-600-174-01	IC RPM7240-H4 (■)		* CN502	1-564-510-11	PLUG, CONNECTOR 7P	
		< SHORT >		* CN503	1-564-517-11	PLUG, CONNECTOR 2P	
JR624	1-216-296-11	SHORT CHIP 0				< DIODE >	
*****				D501	8-719-110-31	DIODE RD12ESB2	
	1-687-132-12	SENSOR BOARD		D502	8-719-991-33	DIODE 1SS133T-77	
		*****		D503	8-719-991-33	DIODE 1SS133T-77	
		< CONNECTOR >		D504	8-719-991-33	DIODE 1SS133T-77	
				D505	8-719-991-33	DIODE 1SS133T-77	
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P		D506	8-719-109-97	DIODE RD6.8ESB2	
		< IC >		D507	8-719-991-33	DIODE 1SS133T-77	
IC731	6-600-022-01	IC RPI-576				< IC >	
*****				IC501	6-600-091-01	IC STK404-130S	
		SUB-TRANS BOARD				< JACK >	
		*****		JK501	1-774-785-11	JACK, PIN 1P (SUB WOOFER OUT)	
		< CONNECTOR >				< TRANSISTOR >	
CN901	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P		Q501	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
		< DIODE >		Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D901	8-719-991-33	DIODE 1SS133T-77		Q503	8-729-119-79	TRANSISTOR 2SC2785-FEK	
D902	6-500-522-21	DIODE 10EDB40-TB3		Q505	8-729-119-79	TRANSISTOR 2SC2785-FEK	
D903	6-500-522-21	DIODE 10EDB40-TB3		Q506	8-729-119-79	TRANSISTOR 2SC2785-FEK	
D904	6-500-522-21	DIODE 10EDB40-TB3					
D905	6-500-522-21	DIODE 10EDB40-TB3		Q507	8-729-119-79	TRANSISTOR 2SC2785-FEK	

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

HCD-RG444

SUB-WOOFER	SW	TRANS	TRANSLATION	VIDEO OUT
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Ref. No.	Part No.	Description	Remarks		
< RESISTOR >					
R501	1-249-437-11	CARBON	47K	5%	1/4W
R502	1-249-437-11	CARBON	47K	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-437-11	CARBON	47K	5%	1/4W
R505	1-260-107-11	CARBON	4.7K	5%	1/2W
△ R506	1-217-831-11	FUSIBLE	1	5%	1/4W
R507	1-260-107-11	CARBON	4.7K	5%	1/2W
R508	1-260-107-11	CARBON	4.7K	5%	1/2W
△ R509	1-212-881-11	FUSIBLE	100	5%	1/4W
△ R510	1-217-156-00	METAL	0.22	10%	5W
△ R511	1-217-156-00	METAL	0.22	10%	5W
R512	1-260-076-11	CARBON	10	5%	1/2W
R513	1-249-417-11	CARBON	1K	5%	1/4W
R514	1-249-433-11	CARBON	22K	5%	1/4W
R515	1-249-437-11	CARBON	47K	5%	1/4W
R516	1-260-087-11	CARBON	100	5%	1/2W
R517	1-249-429-11	CARBON	10K	5%	1/4W
R518	1-249-421-11	CARBON	2.2K	5%	1/4W
R519	1-249-421-11	CARBON	2.2K	5%	1/4W
R520	1-249-441-11	CARBON	100K	5%	1/4W
R524	1-249-437-11	CARBON	47K	5%	1/4W
R525	1-249-433-11	CARBON	22K	5%	1/4W
R526	1-249-428-11	CARBON	8.2K	5%	1/4W
R527	1-247-903-00	CARBON	1M	5%	1/4W
R528	1-249-429-11	CARBON	10K	5%	1/4W
R529	1-249-421-11	CARBON	2.2K	5%	1/4W
R530	1-249-433-11	CARBON	22K	5%	1/4W
R531	1-249-425-11	CARBON	4.7K	5%	1/4W
R532	1-249-433-11	CARBON	22K	5%	1/4W
R533	1-249-433-11	CARBON	22K	5%	1/4W
< RELAY >					
RY501	1-755-373-11	RELAY	*****		
	1-687-669-12	SW BOARD	*****		
< SWITCH >					
S751	1-786-514-11	SWITCH, LEVER (SLIDE) (LEVER)	*****		
	A-4752-618-A	TRANS BOARD, COMPLETE	*****		
< CAPACITOR >					
C906	1-164-159-21	CERAMIC	0.1uF		50V
C908	1-128-553-11	ELECT	220uF	20%	63V
C909	1-126-964-11	ELECT	10uF	20%	50V
C910	1-126-968-11	ELECT	100uF	20%	50V
C911	1-126-942-61	ELECT	1000uF	20%	25V
C920	1-131-679-31	FILM	0.01uF	5%	50V
C921	1-131-679-31	FILM	0.01uF	5%	50V
C922	1-131-679-31	FILM	0.01uF	5%	50V
C923	1-131-679-31	FILM	0.01uF	5%	50V
C924	1-136-165-00	FILM	0.1uF	5%	50V
C925	1-136-165-00	FILM	0.1uF	5%	50V
C926	1-164-159-21	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description	Remarks		
< CONNECTOR >					
CN904	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P			
CN905	1-564-506-11	PLUG, CONNECTOR 3P			
* CN906	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
* CN907	1-764-333-11	PLUG, CONNECTOR 10P			
< DIODE >					
D906	8-719-110-69	DIODE RD27ESB4			
D908	6-500-522-21	DIODE 10EDB40-TB3			
< TRANSISTOR >					
Q902	8-729-048-52	TRANSISTOR 2SA1932 (TP)			
< RESISTOR >					
R903	1-249-430-11	CARBON 12K 5% 1/4W			
R904	1-249-417-11	CARBON 1K 5% 1/4W			
△ R908	1-217-831-11	FUSIBLE 1 5% 1/4W			

TRANSLATION BOARD					

< CAPACITOR >					
C861	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V			
< EARTH TERMINAL >					
* EP802	1-537-738-21	TERMINAL, EARTH			

VIDEO OUT BOARD					

< CONNECTOR >					
* CN805	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
< JACK >					
J803	1-774-227-11	JACK, PIN 1P (VIDEO OUT)			

MISCELLANEOUS					

7	1-763-117-13	FAN, DC			
8	1-777-353-11	WIRE (FLAT TYPE) (15 CORE)			
9	1-693-616-11	TUNER (FM/AM)			
10	1-400-285-11	F-BEAD, E2515MRT			
64	1-769-975-11	WIRE (FLAT TYPE) (13 CORE)			
65	1-773-048-11	WIRE (FLAT TYPE) (17 CORE)			
69	1-796-485-51	DECK, MECHANICAL (CWM43FF-05)			
73	1-773-317-11	WIRE (FLAT TYPE) (31 CORE)			
△ 103	1-777-071-83	CORD, POWER			
152	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)			
226	1-827-992-11	WIRE (FLAT TYPE) (16 CORE)			
227	1-773-251-11	WIRE (FLAT TYPE) (27 CORE)			
△ 229	8-820-244-01	OPTICAL PICK-UP (KSM-215DCP/C2NP)			
230	1-471-035-11	MAGNET ASSY			
233	1-469-854-11	CORE, FERRITE			

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
△ F904	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8.0AL/250V)	
△ F905	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8.0AL/250V)	
△ F906	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V)	
△ F907	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V)	
M741	A-4723-963-A	MOTOR ASSY, TABLE	
M751	A-4736-655-A	MOTOR ASSY, LOADING	
△ PT901	1-443-234-11	TRANSFORMER, POWER	
△ PT902	X-4956-293-1	SUB TRANS ASSY	
RE701	1-477-680-12	ENCODER, ROTARY	

The components identified by mark △ or dotted line with mark △ are critical for safety.
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REVISION HISTORY

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