

HCD-DX8

SERVICE MANUAL


Ver 1.3 2003.07

*E Model
Australian Model*



HCD-DX8 is the tuner, tape player, CD player and amplifier section in MHC-DX8.

This stereo system is equipped with the Dolby B-type noise reduction system*.

* Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism	HCD-BX7
	CD Mechanism Type	CDM58-K2BD38
	Base Unit Name	BU-K2BD38
	Optical Pick-up Block Name	KSM-213DAP
	Optical Pick-up Name	KSS-213D
TAPE DECK SECTION	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	TCM-230AWR11

SPECIFICATIONS

Amplifier section

The following measured at AC 120, 220, 240V
50/60 Hz
DIN power output (rated) 160 + 160 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
200 + 200 watts
(6 ohms at 1 kHz,
10% THD)

Inputs
MD/VIDEO (AUDIO) IN: voltage 450 mV/250 mV,
(phono jacks) impedance 47 kilohms
MIC: sensitivity 1 mV,
(phone jack) impedance 10 kilohms
Outputs
PHONES: accepts headphones of 8
(stereo mini jack) ohms or more
FRONT SPEAKER: accepts impedance of 6 to
16 ohms
SATELLITE SPEAKER: accepts impedance of 6 to
16 ohms

CD player section

System Compact disc and digital
audio system
Laser Semiconductor laser
($\lambda=780\text{nm}$)
Emission duration:
continuous
Laser output Max. 44.6 μW *
*This output is the value
measured at a distance of
200 mm from the
objective lens surface on
the Optical Pick-up Block
with 7 mm aperture.
Frequency response 2 Hz – 20 kHz ($\pm 0.5\text{ dB}$)
Wavelength 780 – 790 nm
Signal-to-noise ratio More than 90 dB
Dynamic range More than 90 dB
CD OPTICAL DIGITAL OUT
(Square optical connector jack, rear panel)
Wavelength 660 nm
Output Level -18 dBm

— Continued on next page —

COMPACT DISC DECK RECEIVER

9-929-221-14
2003G05-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

Tape player section

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

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	531 – 1,602 kHz
Middle Eastern models:	(with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements	
Australian models:	230 - 240 V AC, 50/60 Hz
Mexican models:	120 V AC, 60 Hz
Other models:	120 V, 220 V or 230 - 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	250 watts
Dimensions (w/h/d)	Approx. 280 x 360 x 425 mm
Mass :	Approx. 9.5 kg

Design and specifications are subject to change
without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED
LINE WITH MARK \triangle 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

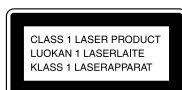
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter 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.

MODEL IDENTIFICATION

— BACK PANEL —

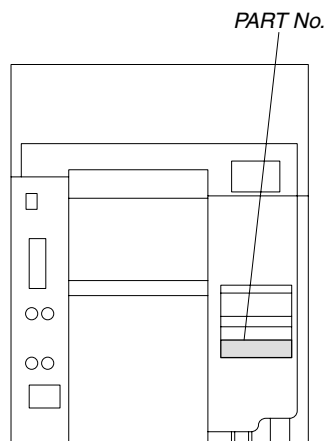


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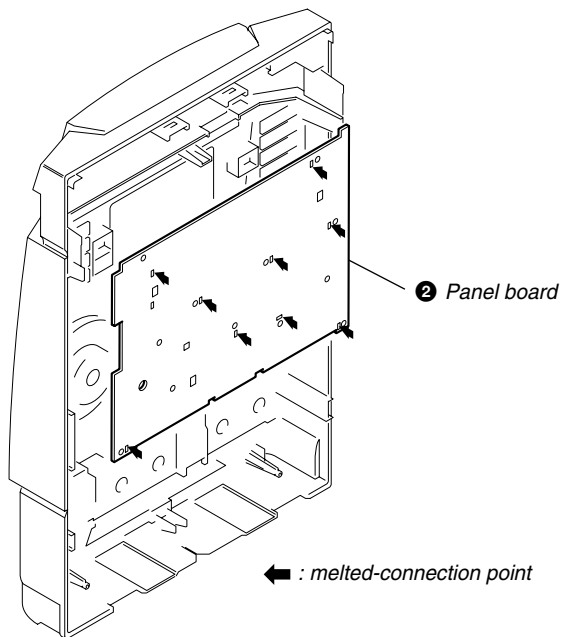
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MODEL	PART No.
E2, E3, EA, MY, SP, AR models	4-225-040-3□
MX, AUS models	4-225-040-4□

- Abbreviation

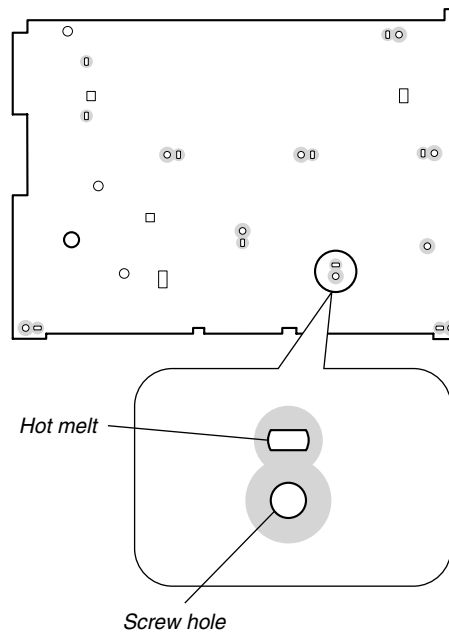
AR : Argentine	EA : Saudi Arabia
AUS : Australian	MY : Malaysia
E2 : 120 V AC Area in E model	MX : Mexican
E3 : 240 V AC Area in E model	SP : Singapore

SECTION 1 SERVICE NOTE



1 Cut the nine melted-connection points with cutting pliers.

Note for installing the panel board

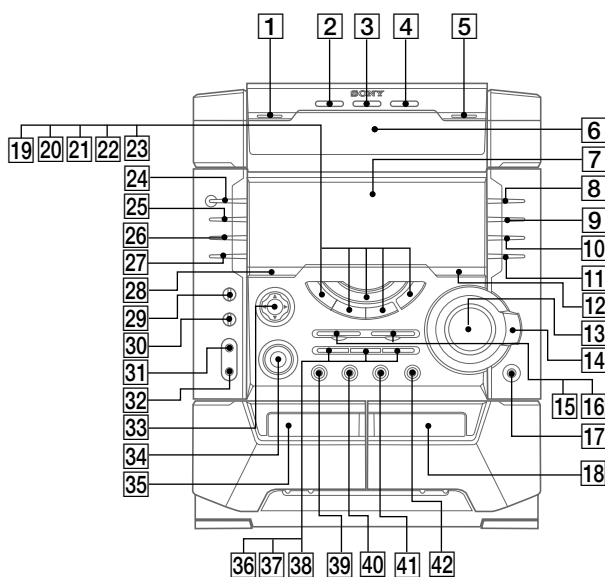


Attach the panel board with
six screws (+BVTP 2.6 × 8)
after the board is removed once.
Do not tighten the screws excessively.

SECTION 2 GENERAL

LOCATION OF CONTROLS

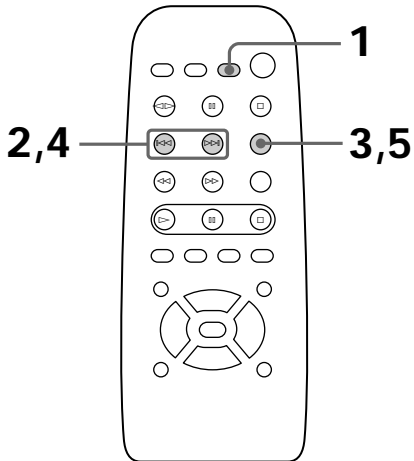
• Front view



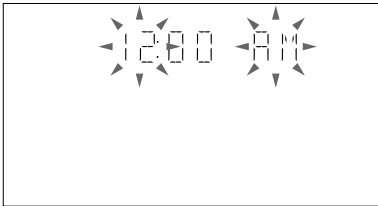
- 1** DISC SKIP button
- 2** DISC 1 button and indicator
- 3** DISC 2 button and indicator
- 4** DISC 3 button and indicator
- 5** ▲ OPEN/CLOSE button
- 6** CD disc tray
- 7** Fluorescent indicator tube
- 8** EDIT, TUNER, MEMORY button
- 9** PLAY MODE, STEREO/MONO button
- 10** REPEAT, DOLBY NR button
- 11** DIRECTION button
- 12** SURROUND button
- 13** VOLUME knob
- 14** Shuttle knob
- 15** ■ button
- 16** <D> button
- 17** PHONES jack
- 18** Tape deck-B
- 19** TAPE A/B button
- 20** CD button
- 21** Function indicator
- 22** TUNER/BAND button
- 23** MD (VIDEO) button
- 24** I/⏻ button and indicator
- 25** DISPLAY button
- 26** SPECTRUM button
- 27** EQ EDIT button
- 28** GROOVE button
- 29** ECHO LEVEL knob (Saudi Arabia model)
- 30** MIC LEVEL knob
- 31** MIC2 jack (Saudi Arabia model)
- 32** MIC1 jack (Saudi Arabia model)
MIC jack (except Saudi Arabia model)
- 33** <L, R, Δ, ∇ button and indicator
- 34** V-GROOVE button and indicator
- 35** Tape deck-A
- 36** – ⏮ button
- 37** ⏸ button
- 38** ⏭ + button
- 39** KARAOKE PON button
- 40** CD SYNC HI-DUB
- 41** REC PAUSE/START button and indicator
- 42** ENTER button

Step 3: Setting the time

You must set the time before using the timer functions.

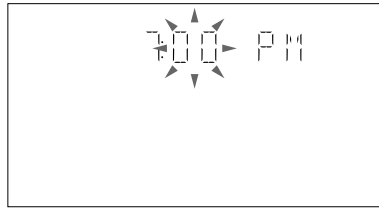


- 1** Press CLOCK/TIMER SET.
The hour indication flashes.



- 2** Press ◀◀ or ▶▶ repeatedly to set the hour.

- 3** Press ENTER.
The minute indication flashes.



- 4** Press ◀◀ or ▶▶ repeatedly to set the minute.
- 5** Press ENTER.
The clock starts working.

Tip

If you've made a mistake, start over from step 1.

To change the time

The previous explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:

- 1** Press CLOCK/TIMER SET.
- 2** Press ◀◀ or ▶▶ repeatedly to select SET CLOCK.
- 3** Press ENTER.
- 4** Perform steps 2 through 5 above.

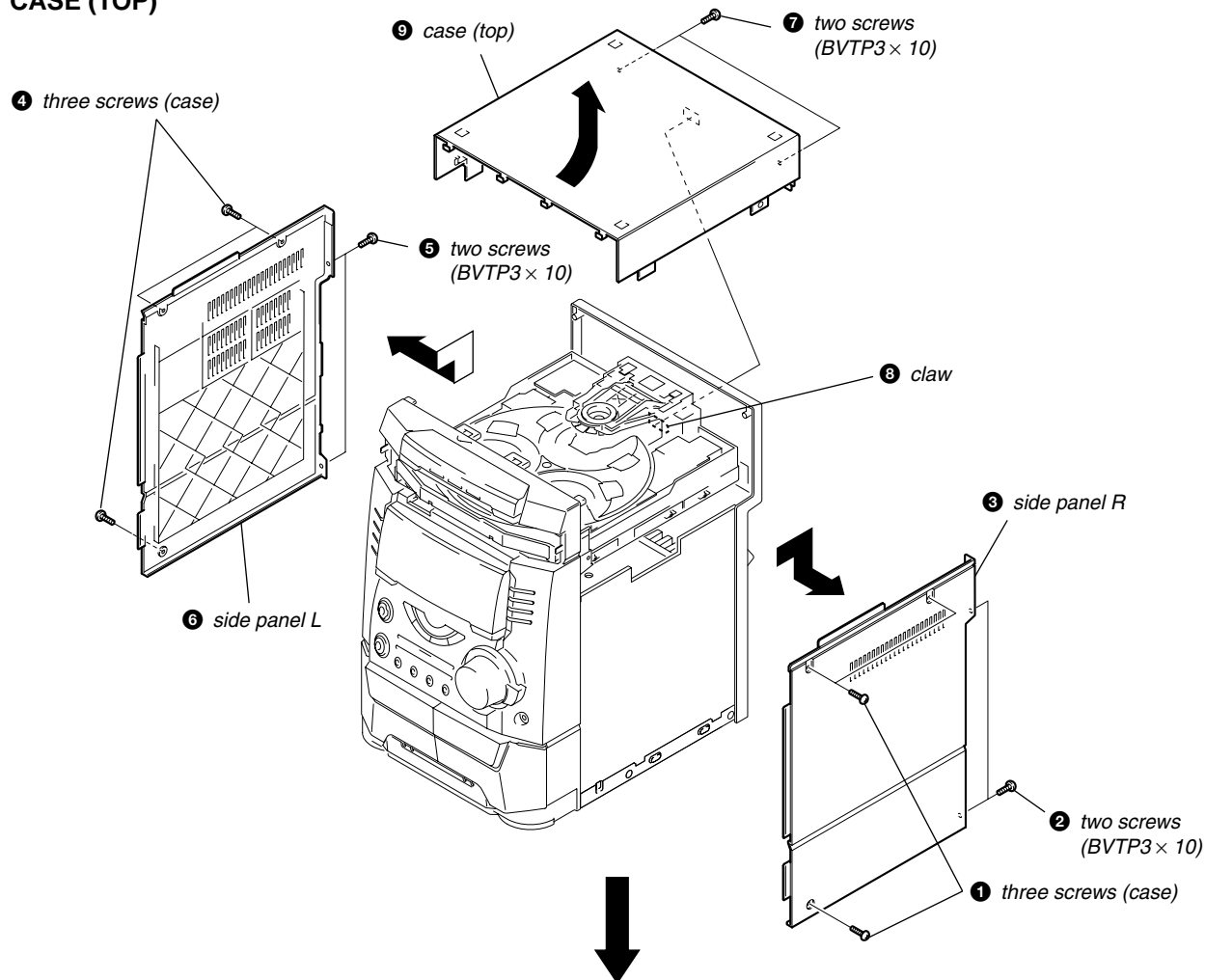
Note

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

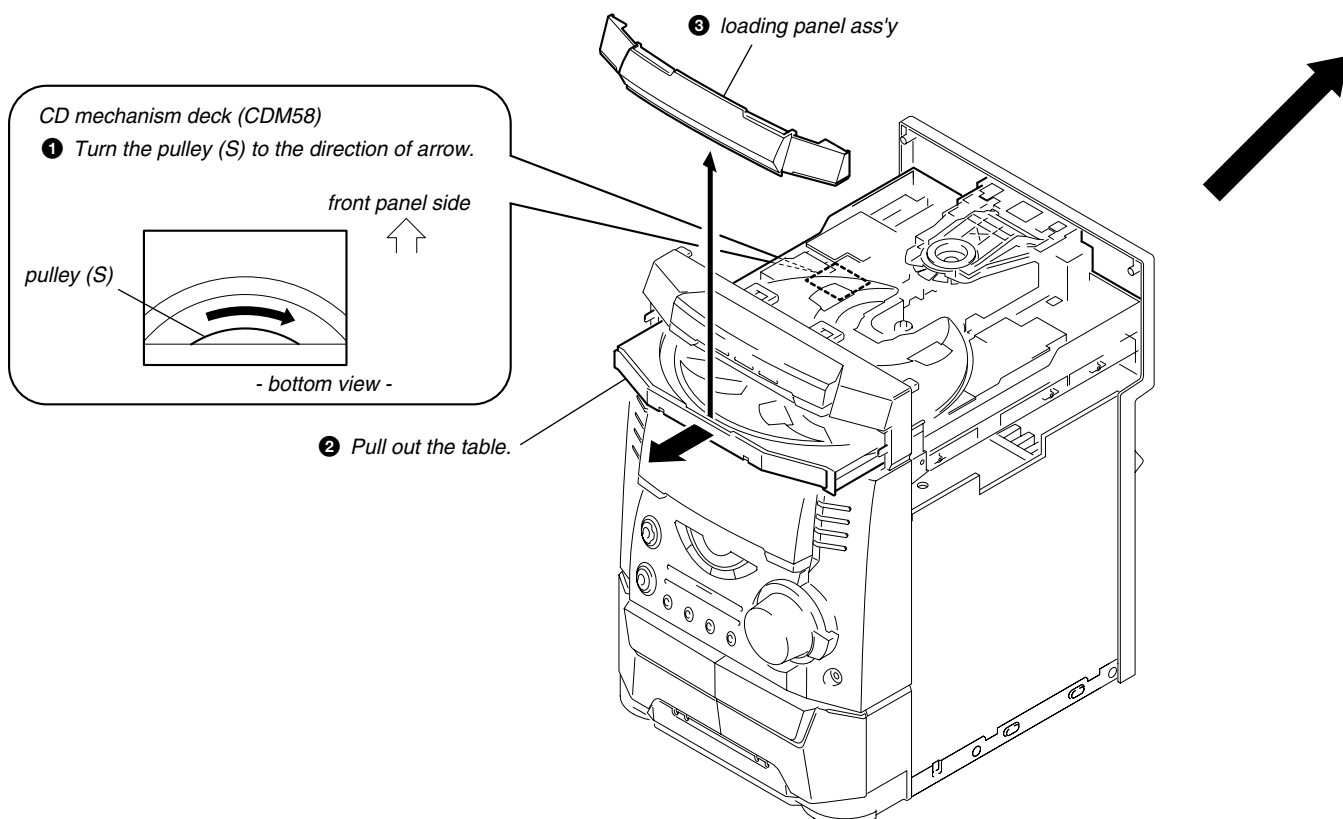
SECTION 3 DISASSEMBLY

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

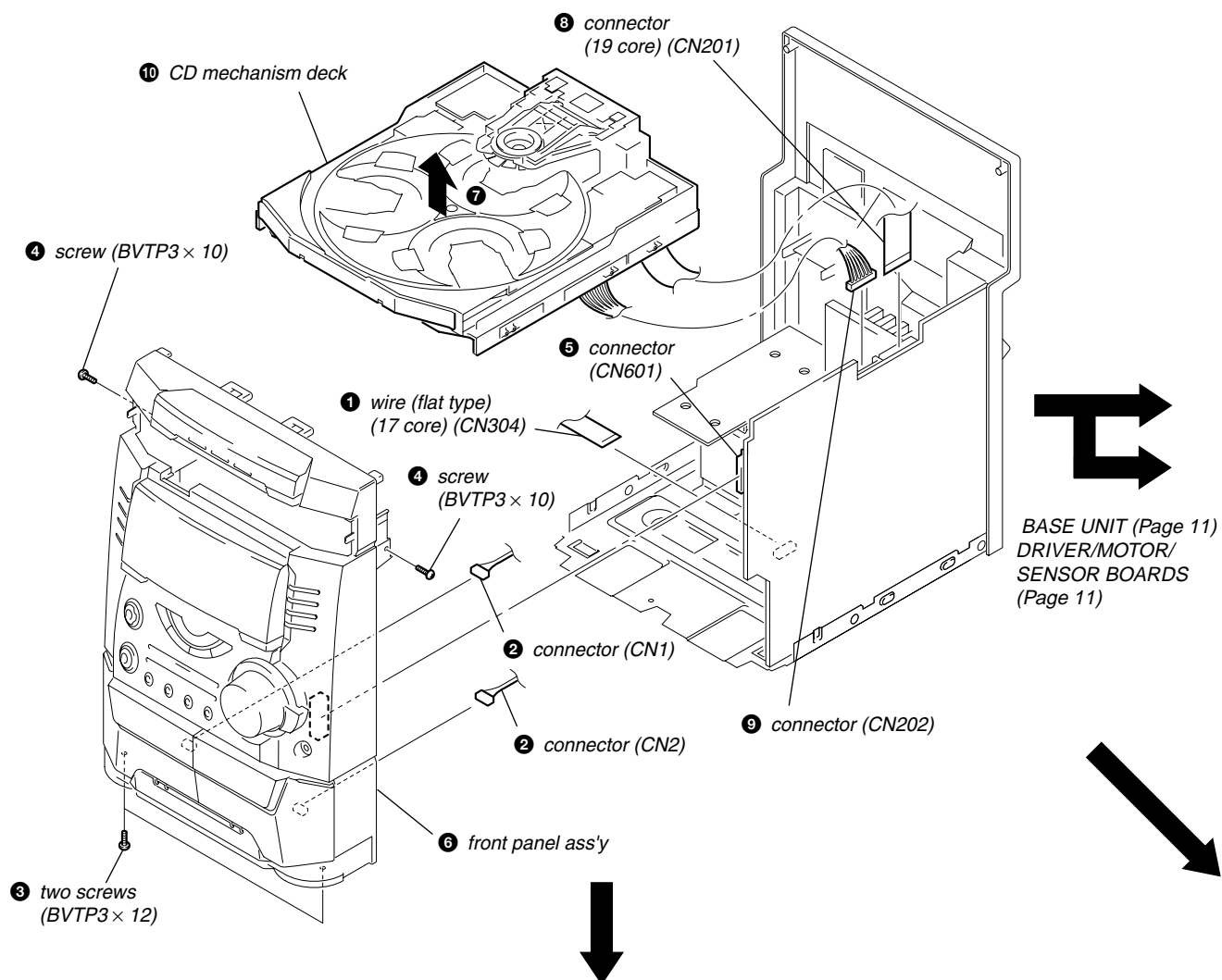
CASE (TOP)



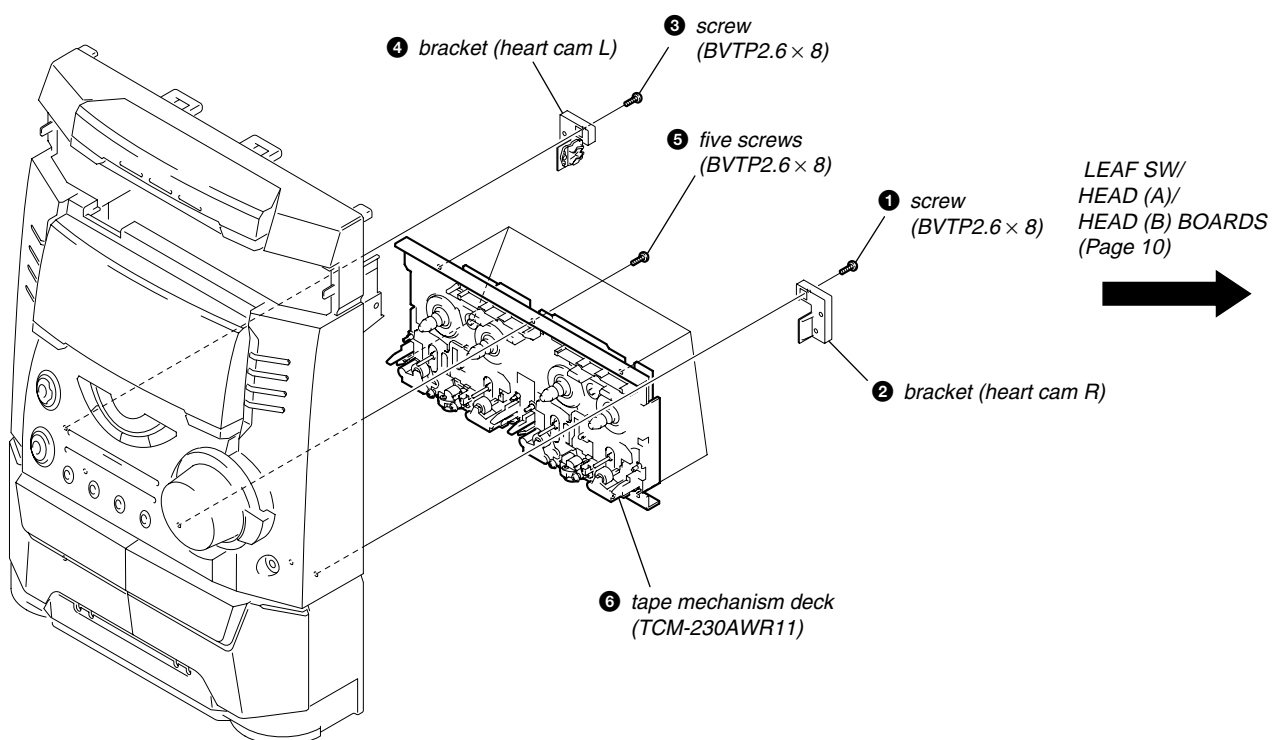
LOADING PANEL ASS'Y



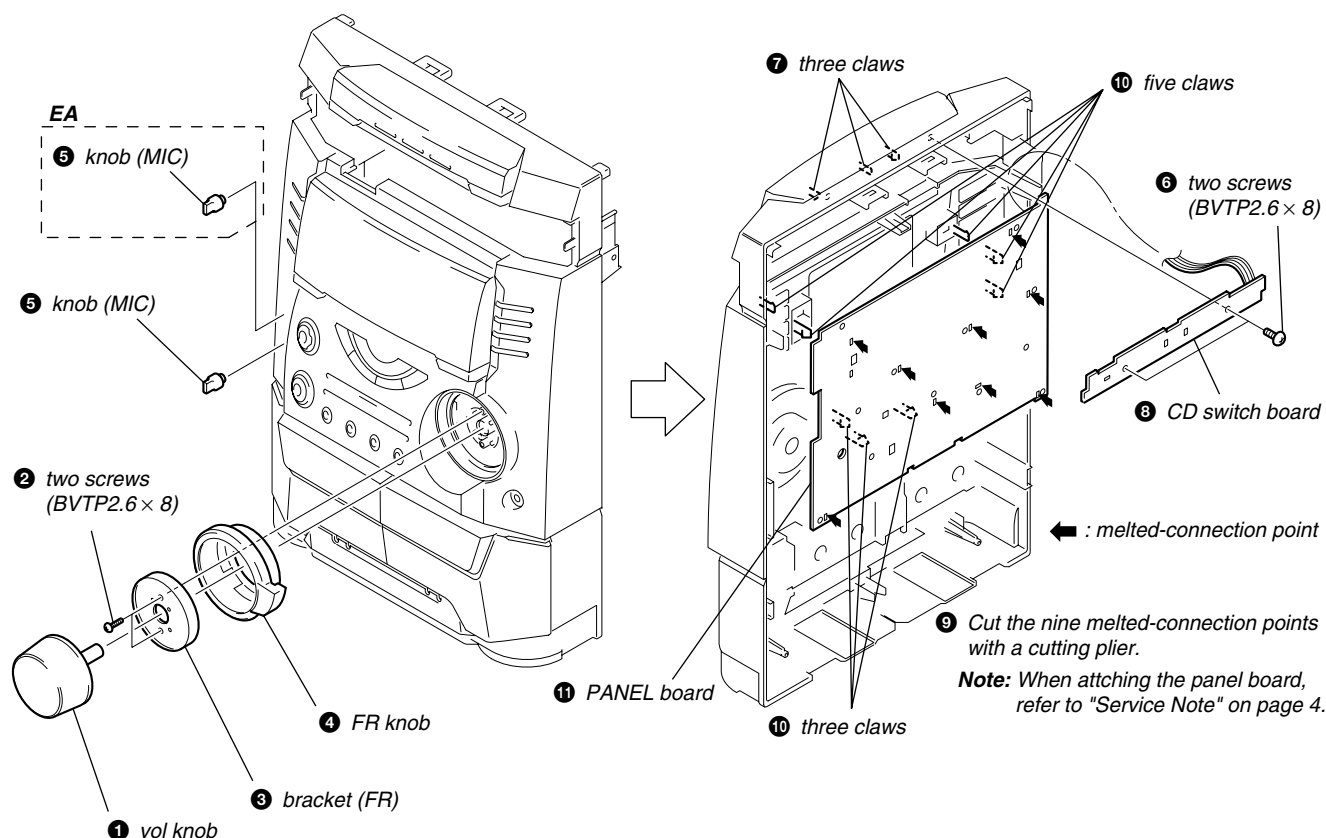
FRONT PANEL ASS'Y



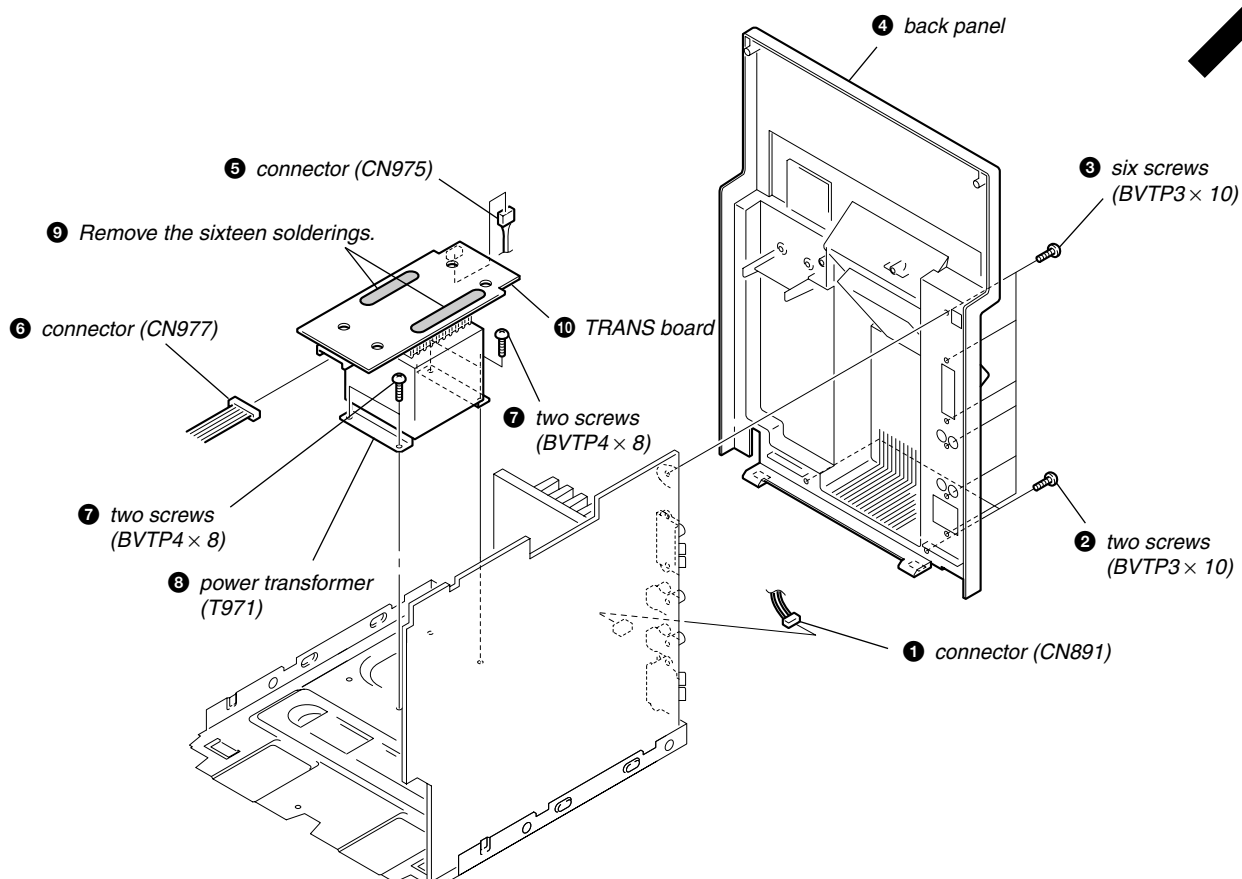
TAPE MECHANISM DECK



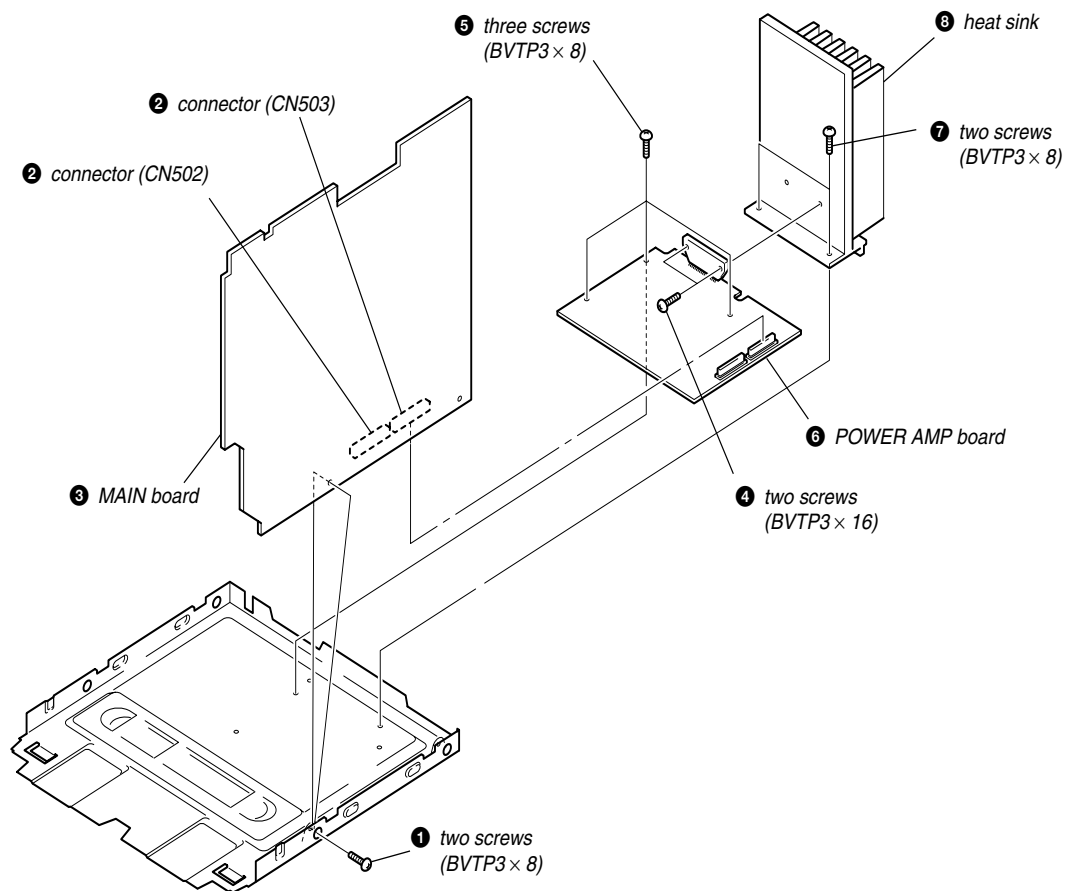
PANEL BOARD



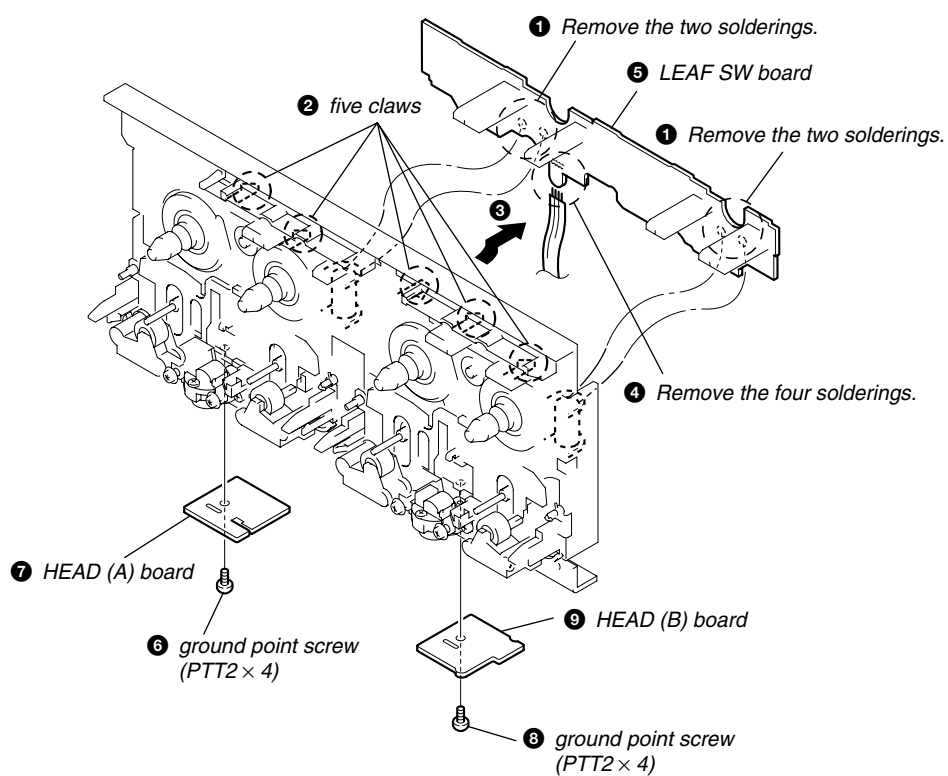
POWER TRANSFORMER (T971), TRANS BOARD



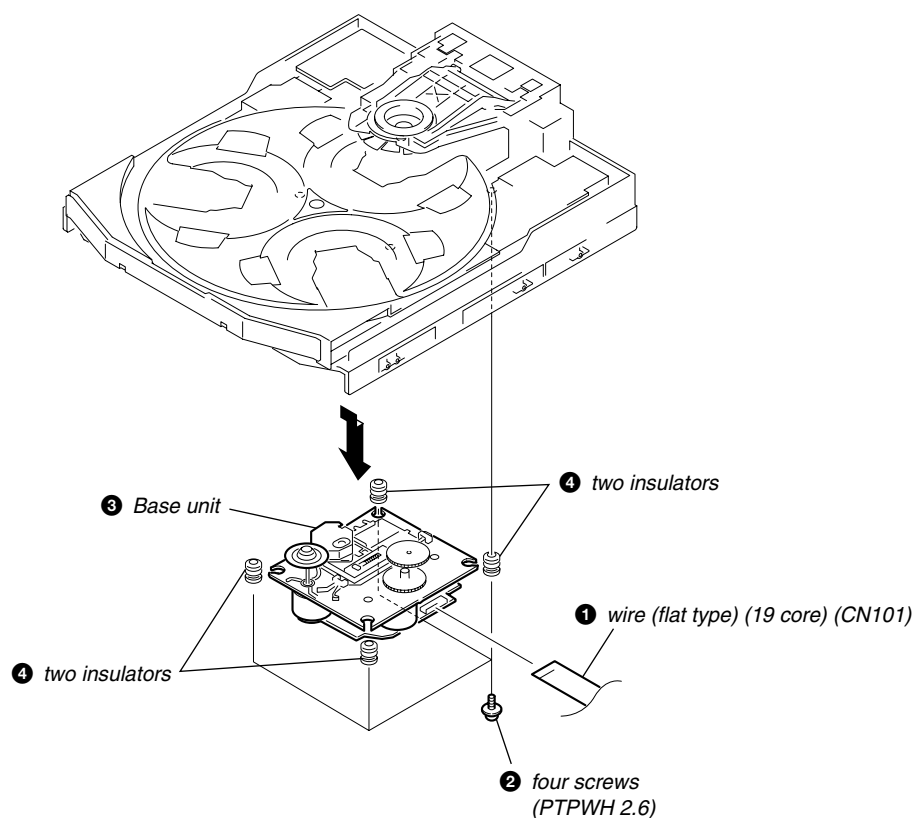
MAIN/POWER AMP BOARDS



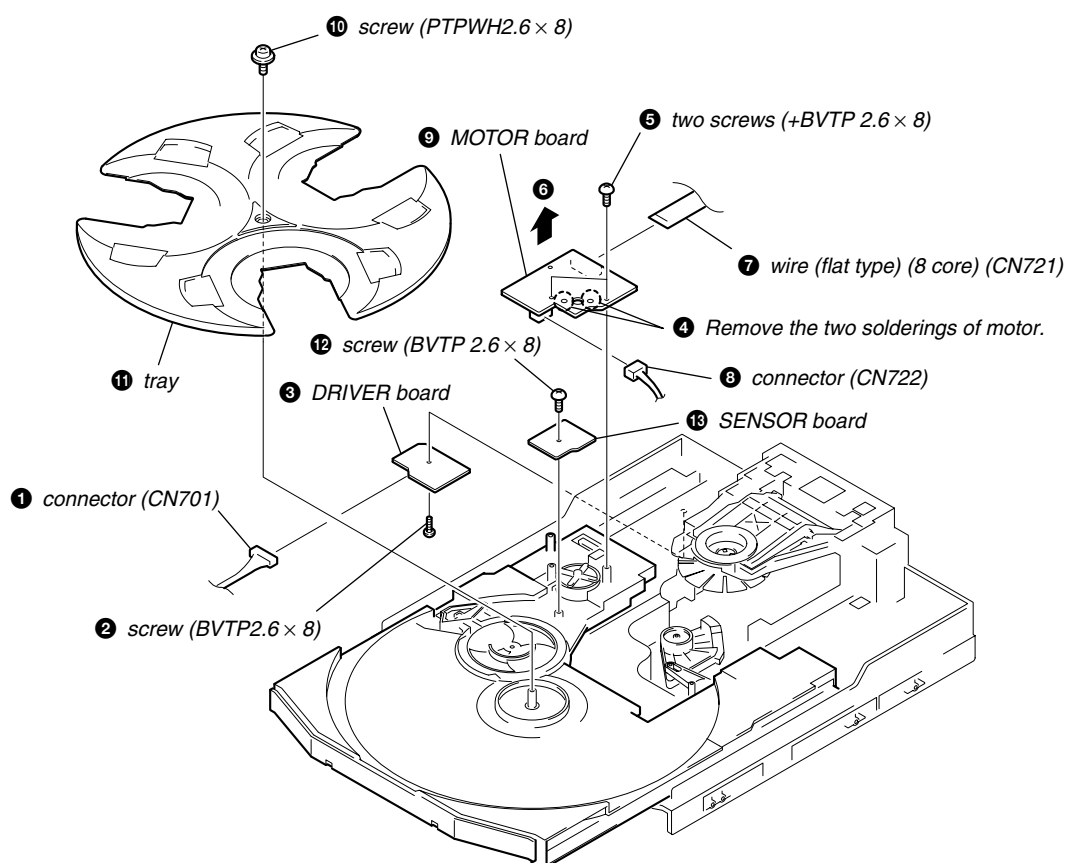
LEAF SW/HEAD (A)/HEAD (B) BOARDS



BASE UNIT (BU-K2BD38)



DRIVER/MOTOR/SENSOR BOARDS



SECTION 4

TEST MODE

[MC 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:

1. Press three buttons **[■]**, **[ENTER]**, and **[I/⏻]** simultaneously.
2. The fluorescent indicator tube displays "COLD RESET" and the set is reset.

[CD Ship Mode]

- This mode moves the pickup 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. Press **[CD]** button and **[I/⏻]** button simultaneously.
3. After the "STANDBY" display blinks six times, a message "LOCK" is displayed on the fluorescent indicator tube, and the CD ship mode is set.

[MC Hot Reset]

- This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press three buttons **[■]**, **[ENTER]**, and **[DISC 1]** simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[CD Service Mode]

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

Procedure:

1. Press **[I/⏻]** button to turn the set ON.
2. Select the function "CD".
3. Press three buttons **[■]**, **[ENTER]**, and **[OPEN/CLOSE]** simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, turn the shuttle knob clockwise to move the pickup to outside track, or turn the shuttle knob counter-clockwise to inside track.
6. To exit from this mode, perform as follows:
 - 1) Move the pickup to the most inside track.
 - 2) Press three buttons in the same manner as step 2.

- Note:**
- Always move the pickup 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.

[VACS ON/OFF Mode]

- This mode is used to switch ON and OFF the VACS (Variable Attenuation Control System).

Procedure:

Press the **[ENTER]** and **[SPECTRUM]** buttons simultaneously. The message "VACS OFF" or "VACS ON" appears.

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

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

Procedure:

1. Press **[I/⏻]** button to turn the set ON.
2. Select the function "TUNER", and press **[TUNER/BAND]** button to select the BAND "AM".
3. Press **[I/⏻]** button to turn the set OFF.
4. Press **[ENTER]** 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.

[GC Test Mode]

- This mode is used to check the software version, FL tube, LED, keyboard and VACS.

Procedure:

1. Press three buttons **[■]**, **[ENTER]**, and **[DISC 2]** simultaneously.
2. LEDs and fluorescent indicator tube are all turned on.
3. When you want to enter the software version display mode, press **[DISC 1]**. The model number and destination are displayed.
4. Each time **[DISC 1]** is pressed, the display changes starting from MC version, GC version, CD version, CM version, ST version, TC version, TA version, TM version and BR version in this order, and returns to the model number and destination display.
5. When **[DISC 3]** is pressed while the version numbers are being displayed except model number and destination, year, month and day of the software creation appear. When **[DISC 3]** is pressed again, the display returns to the software version display. When **[DISC 1]** is pressed while year, month and day of the software creation are being displayed, the year, month and day of creation of the software versions are displayed in the same order of version display.
6. Press **DISC 2** button, and the key check mode is activated.
7. In the key check mode, the fluorescent indicator tube displays "KEY0 VOL0". Each time a button is pressed, "KEY" value increases. However, once a button is pressed, it is no longer taken into account.
"VOL" value increases like 1, 2, 3 ... if rotating **[VOLUME]** knob in "+" direction, or it decreases like 0, 9, 8 ... if rotating in "-" direction.
8. Also when **[DISC 3]** is pressed after lighting of all LEDs and FL tubes, value of VACS appears.
9. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[MC Test Mode]

- This mode is used to check operations of the respective sections of Amplifier, Tuner, CD and Tape.

Procedure:

1. Press the **[I/O]** button to turn on the set.
2. Press the three buttons of **[■]**, **[ENTER]** and **[DISC 3]** simultaneously.
3. A message "TEST MODE" appears on the FL display tube.
4. When **[Δ (CURSOR UP)]** button is pressed, GEQ increases to its maximum and a message "GEQ ALL MA" appears.
5. When **[▽ (CURSOR DOWN)]** button is pressed, GEQ decreases to its minimum and a message "GEQ ALL M1" appears.
6. When **[◀ (CURSOR LEFT)]** or **[▶ (CURSOR RIGHT)]** button is pressed, GEQ is set to flat and a message "GEQ FLAT" appears.
7. When the VOLUME control knob is turned clockwise even slightly, the sound volume increases to its maximum and a message "VOLUME MAX" appears for two seconds, then the display returns to the original display.
8. When the VOLUME control knob is turned counter-clockwise even slightly, the sound volume decreases to its minimum and a message "VOLUME MIN" appears for two seconds, then the display returns to the original display.
9. In the test mode, the default-preset channel is called even when the TUNER is selected and an attempt is made to call the preset channel that has been stored in memory, by operating the Shuttle knob. (It means that the memory is cleared.)
10. When CD is selected and the **[EDIT]** button is pressed, the disc that is being chucked at this moment becomes the default setting. It means that the default disc only is accessed when any other discs are selected even though the display indication changes accordingly. At the same time, the **[DISC SKIP EX-CHANGE]** and **[OPEN/CLOSE]** cannot be accepted. (It means that the tray motor and the turntable motor are disabled of their operation.)
11. When a tape is inserted in Deck B and recording is started, the input source function selects VIDEO automatically.
12. When **[■]** button is pressed to stop recording, the Tape (Deck) B is selected and tape is rewound using the Shuttle knob, tape is rewound, tape is stops at around the record-starting position and playback of the recorded portion of the tape is started. If PAUSE is inserted even once during recording, tape is rewound to the position around the PAUSE position and is played back.
13. When the **[CD SYNC HI-DUB]** Button is press during playback of Deck B, either normal speed or high speed can be selected by this button.
14. Select the desired loop by pressing the **[PLAY MODE]** button. Insert a test tape AMS-110A or AMS-RO to Deck A.
15. Press the **[SPECTRUM]** button to enter the AMS test mode.
16. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the AMS signal twice.
17. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
18. When the check is complete, a message of either OK or NG appears.
19. When you want to exit this mode, press the **[I/O]** button twice. The cold reset is enforced at the same time.

[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 display 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.

- 1) Set a disc in DISC1 tray. Select CONTINUE ALL DISCS (press the **PLAY MODE** button), and REPEAT OFF (press the **REPEAT** button).
- 2) Load the tapes recording use into the decks A and B respectively.
- 3) Press three buttons **■**, **ENTER**, and **DISC SKIP/EX-CHANGE** simultaneously.
- 4) Aging operations of CD and tape are started at the same time.
- 5) To exit the aging mode, perform [MC Cold Reset].

3. Aging Mode in CD section

- 1) Display state

- No error occurs

Display
AGING * * * *

Note:

* * * * : Number of aging operations

Error display

E * * □ ■ ■ ■ \$ \$ % %
① ② ③ ④ ⑤

① * *	The error No. 00 indicates the newest error. As the error No. increases, it means the older error. When you want to retrieve the error history, press the PLAY MODE button in the case of mechanism error. Or press the REPEAT button in the case of NO DISC error.	
② □	M: Mechanism error	D: No disc error
③ ■ ■	Don't care	01: FOCUS ERROR 02: GFS ERROR 03: SETUP ERROR
④ \$ \$	High order digits only D: Stopped during closing due to problems other than mechanism. E: Stopped during opening due to problems other than mechanism. C: Stopped during chucking due to problems other than mechanism. F: Stopped during EX-opening due to problems other than mechanism.	01: NO DISC judgment without chucking retry 02: NO DISC judgment after chucking retry
⑤ % %	Emergency related errors (High order digits only) 1: Stopped during chuck-up 2: Stopped during chuck-down 3: Time out by EX-OPEN 5: Time out by EX-CLOSE	Status at the time of NO DISC judgment (High order digits only) 1: STOP 2: SETUP 3: TOC READ 4: ACCESS 5: PLAY BACK 6: PAUSE 7: MANUAL SEARCH (PLAY) 8: MANUAL SEARCH (PAUSE)

- When the buttons **■**, **ENTER** and **DISC 1** are pressed simultaneously, number of time of the mechanism error and the NO DISC error can be checked.
Display: EMC**EDC** **: Number of times of error (Maximum three times)
EMC: Mechanism error
EDC: NO DISC error

- When aging operation is complete, be sure to perform the MC Cold Reset to reset the error history.

2) Operation during aging mode

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

- (1) The disc tray opens and closes.
- (2) The mechanism accesses DISC 2 and makes an attempt to read TOC. However, since there are no discs, a message "CD2 NO DISC" appears.
- (3) The mechanism accesses DISC 3 and a message "CD3 NO DISC" appears.
- (4) The disc tray turns to select a disc1.
- (5) A disc is chucked.
- (6) TOC of disc is read.
- (7) The pickup accesses to the track 1, and playing 2 seconds.
- (8) The pickup accesses to the last track, and playing 2 seconds.
- (9) Every time when an aging operation of step 1 to step 8 is complete, the display "AGING[*][*][*][*]" value increases as the number of aging operations is counted up.
- (10) Returns to step 1.

3. Aging Mode in Tape Deck section

1) Display state

- No error occurs
Display action now
- Error occurred
Display action last time

NO.	Display action	Action contents	Final timing
1	TAPE A AG-1	Rewind the TAPE A, B	The top of tape
2	TAPE A AG-2	FWD play the TAPE A	2 minutes playing
3	TAPE A AG-3	F.F. the TAPE A	20 second FF or the end of tape
4	TAPE A AG-4	REV play the TAPE A	2 minutes playing
5	TAPE A AG-5	Rewind the TAPE A	The top of tape
6	TAPE B AG-2	FWD play the TAPE B	2 minutes playing
7	TAPE B AG-3	F.F. the TAPE B	20 second FF or the end of tape
8	TAPE B AG-4	REV play the TAPE B	2 minutes playing
9	TAPE B AG-5	Rewind the TAPE B	The top of tape

2) Operation during aging mode

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

- (1) Rewind is executed up to the top of tape A and B.
- (2) A tape on FWD side is played for 2 minutes.
- (3) FF is executed up to either made for 20 second or the end of tape.
- (4) A tape is reversed, and the tape on REV side is played for 2 minutes.
- (5) Rewind is executed up to the top of tape.
- (6) Returns to step 2, and repeat steps from 2 to 5.

[Function Change Mode]

* Select either VIDEO or MD of the external FUNCTION input.

Procedure:

1. Turn on the power.
2. Press the two buttons **ENTER** and **I/O** at the same time.
The main power is turned on and the other function of the previous function is selected and displayed. "MD" or "VIDEO".

SECTION 5 MECHANICAL ADJUSTMENTS

Precaution

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

record/playback heads	pinch rollers
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- 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 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

SECTION 6 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775 V

- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjust.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- 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.)
- The adjustments should be performed for both L-CH and R-CH.
- 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 Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment

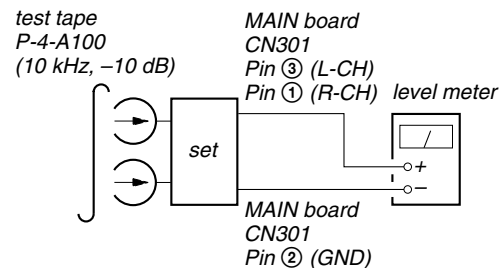
DECK A

DECK B

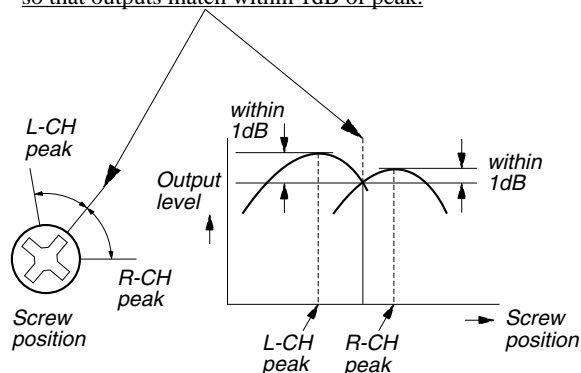
Note: Perform this adjustments for both decks

Procedure:

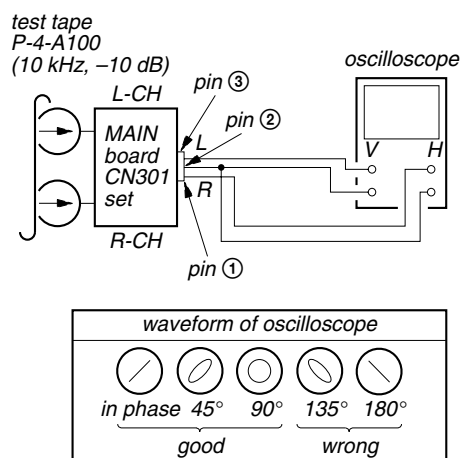
- Mode: Playback



- 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.



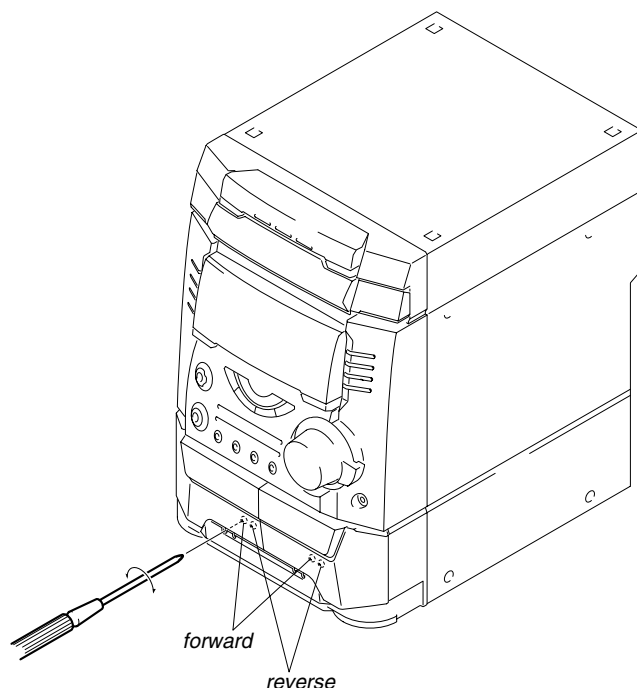
- Mode: Playback



- 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 Adjustment **DECK B**

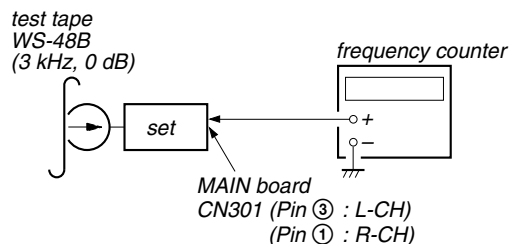
Note: Start the Tape Speed adjustment as below after setting to the test mode.

In the test mode, the tape speed is high during pressing the **CD SYNC HI-DUB** button.

Procedure:

- Turn the power switch on.
- Press the button, **ENTER** button and **DISC 3** button simultaneously.
(The "TEST MODE" on the fluorescent indicator tube display while in the test mode.)
To exit from the test mode, press the button.

Mode: Playback



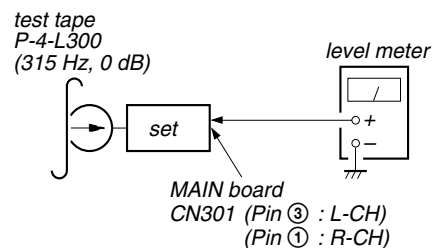
- Insert the WS-48B into the deck B.
- Press the button on the deck B.
- Press the **CD SYNC HI-DUB** button in playback mode.
Then at HIGH speed mode.
- Adjust RV1001 on the LEAF SW board so that frequency counter reads $6,000 \pm 30$ Hz.
- Press the **CD SYNC HI-DUB** button.
Then back to NORMAL speed mode.
- Adjust RV1002 on the LEAF SW board so that frequency counter reads $3,000 \pm 15$ Hz.

Adjustment Location: LEAF SW board

Playback level Adjustment **DECK A** **DECK B**

Procedure:

Mode: Playback



Deck A is RV302 (L-CH) and RV352 (R-CH), Deck B is RV303 (L-CH) and RV353 (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

CN301 PB level: 301.5 to 338.3 mV (-8.2 to -7.2 dB) level difference between the channels: within ± 0.5 dB

Adjustment Location: MAIN board

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

REC Bias Adjustment **DECK B**

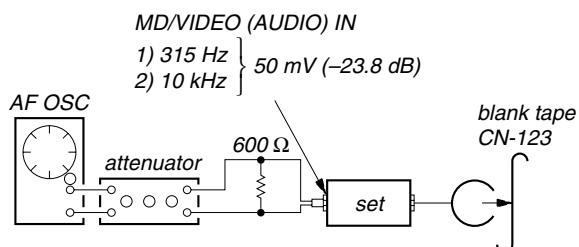
Procedure:

INTRODUCTION

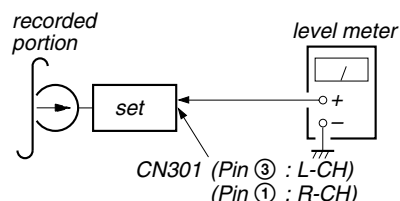
When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set. This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

(If do not operation of stopped from recording complete, and rotate of shuttle knob then rewind to recording start position.)

1. Press **[MD (VIDEO)]** button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press **[REC PAUSE/START]** button, press **[REC PAUSE/START]** button, then recording start.
4. Mode: Record



5. Mode: Playback



6. Confirm playback the signal recorded in step 3 become adjustable level as follows.
If these levels do not adjustable level, adjustment the RV304 (L-CH) and RV354 (R-CH) on the MAIN board to repeat steps 4 and 5.

Adjustable level: Playback output of 315 Hz to playback output of 10 kHz: ± 1.0 dB

Adjustment Location: MAIN board

REC Level Adjustment **DECK B**

Procedure:

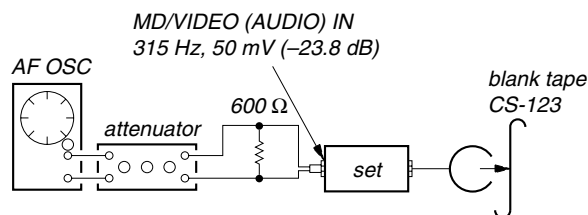
INTRODUCTION

When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set. This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

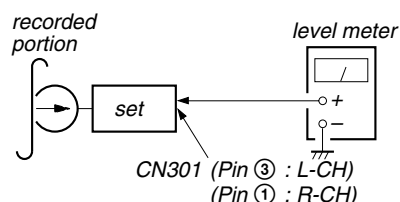
(If do not operation of stopped from recording complete, and rotate of shuttle knob then rewind to recording start position.)

1. Press **[MD (VIDEO)]** button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press **[REC PAUSE/START]** button, press **[REC PAUSE/START]** button, then recording start.

4. Mode: Record



5. Mode: Playback



6. Confirm playback the signal recorded in step 3 become adjustable level as follows.

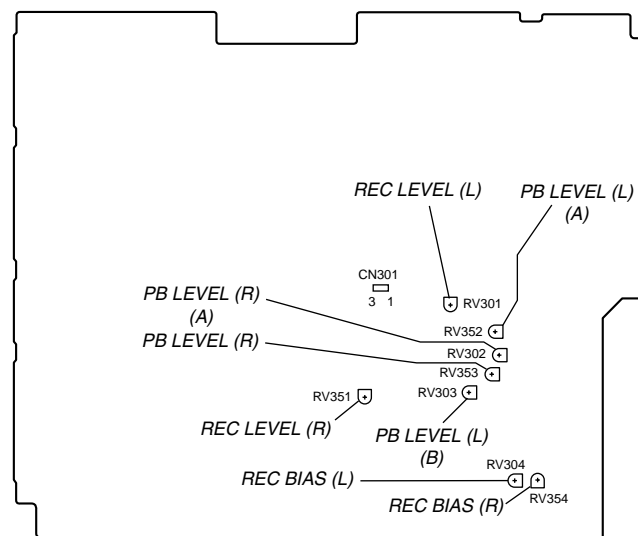
If these levels do not adjustable level, adjustment the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 4 and 5.

Adjustable level:

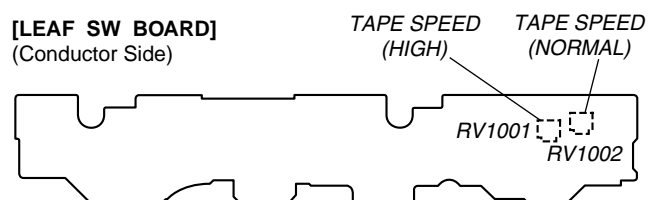
CN301 PB level: 47.2 to 53.0 mV (-24.3 to -23.3 dB)

Adjustment Location: MAIN board

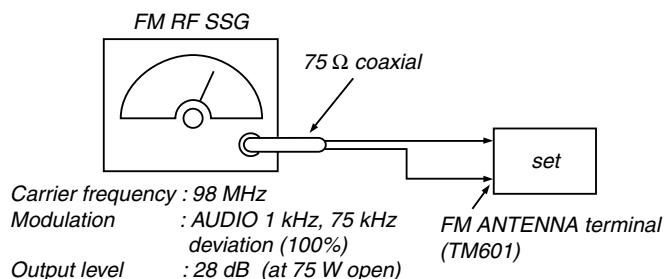
[MAIN BOARD] (Component Side)



[LEAF SW BOARD]
(Conductor Side)



FM Tuned Level Adjustment

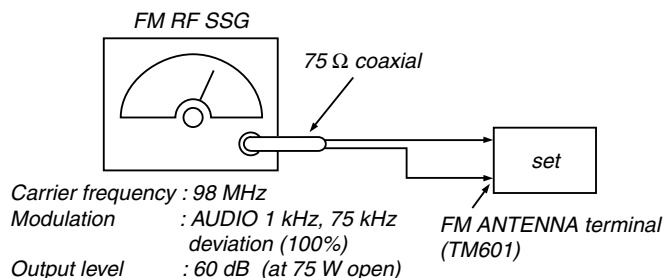


Procedure:

1. Supply a 28 dB 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV611 to the point (moment) when the TUNED indicator on the fluorescent indicator tube will change from going off to going on.

Adjustment Location: MAIN board

Null Adjustment

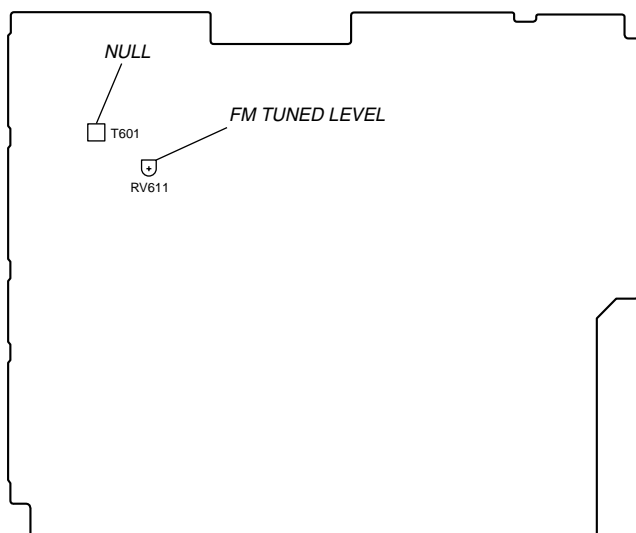


Procedure:

1. Supply a 60 dB 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Measure voltage between pin ② of IC 601. Adjust T601 until the voltage becomes 0 V.

Adjustment Location: MAIN board

[MAIN BOARD] (Component side)

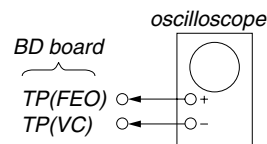


CD SECTION

Note :

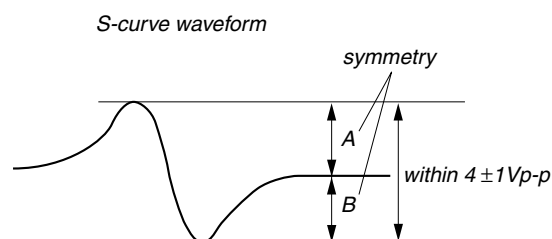
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



Procedure :

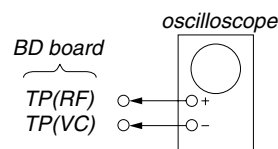
1. Connect oscilloscope to TP (FEO).
2. Connect between TP (FEI) and TP (VC) by lead wire.
3. Connect between TP (AGCCON) and TP (GND) by lead wire.
4. Turn Power switch on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $4 \pm 1 V_{p-p}$.



7. After check, remove the lead wire connected in step 2 and 3.

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.

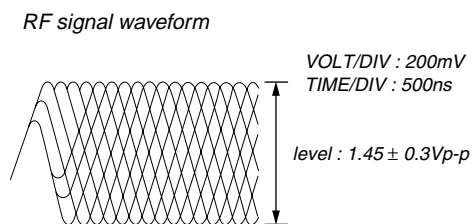
RF Level Check



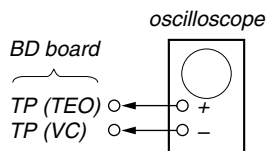
Procedure :

1. Connect oscilloscope to TP (RF).
2. Connect between TP (AGCCON) and TP (GND) by lead wire.
3. Turned Power switch on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note: Clear RF signal waveform means that the shape “◊” can be clearly distinguished at the center of the waveform.

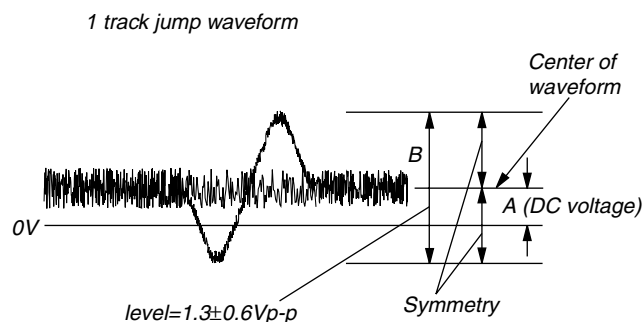


E-F Balance (1 Track Jump) Check



Procedure:

1. Connect oscilloscope to TP (TEO) and TP (VC) board.
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.



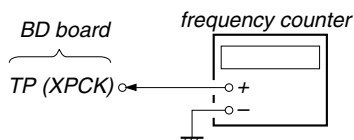
Specification level: $\frac{A}{B} \times 100 = \text{less than } \pm 22\%$

6. After check, remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

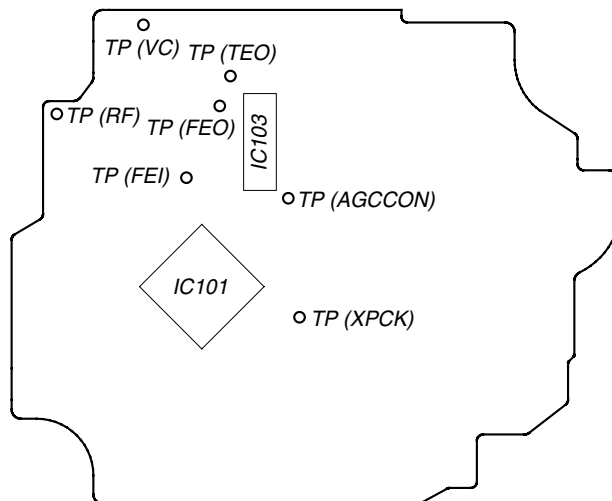
1. Connect frequency counter to test point (XPCK) with lead wire.



2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track.
Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location:




[BD BOARD] (Conductor side)













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:

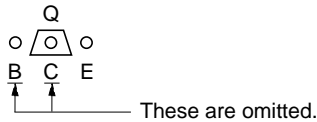
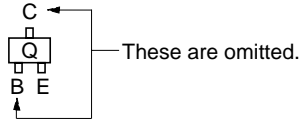
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
-  : nonflammable resistor.
-  : fusible resistor.
-  : 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.

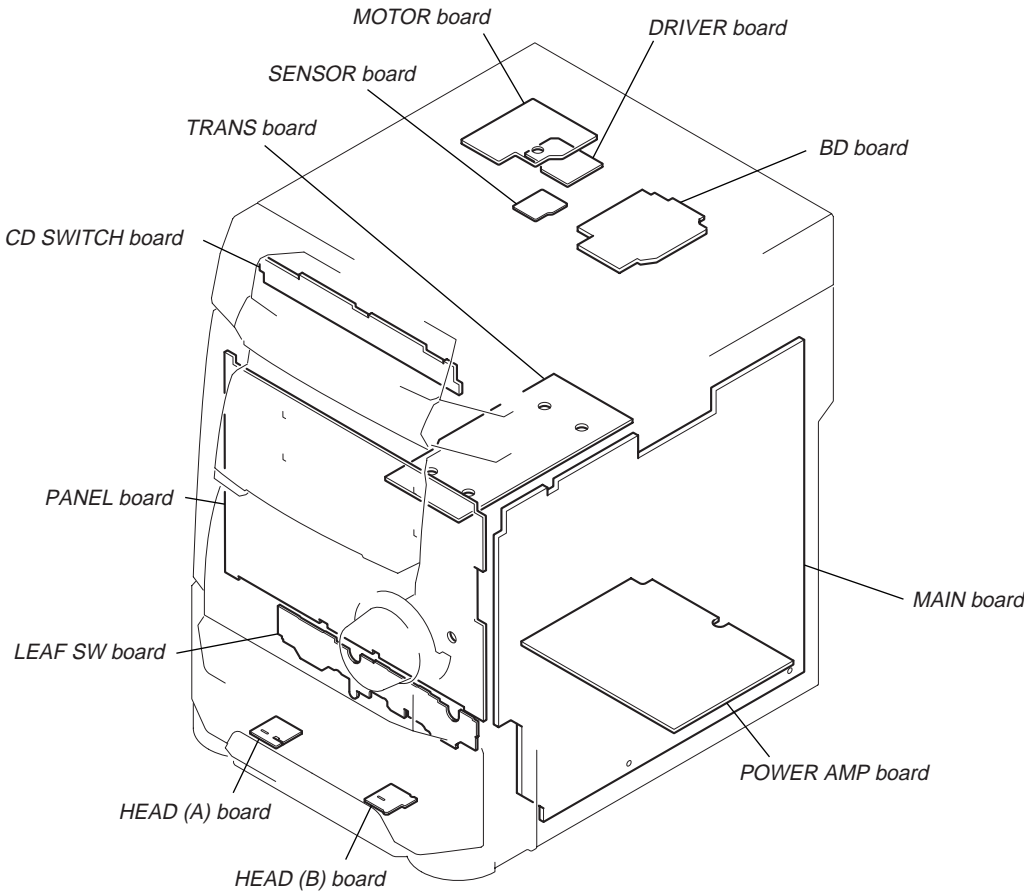
-  : B+ Line.
-  : B- Line.
-  : adjustment for repair.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 -  : FM
 -  : AM
 -  : PB (DECK A)
 -  : PB (DECK B)
 -  : REC (DECK B)
 -  : CD
 -  : digital out
- Abbreviation
 - AUS : Australian model
 - EA : Saudi Arabia model
 - MX : Mexican model

Note on Printed Wiring Boards:

-  : parts extracted from the component side.
-  : parts extracted from the conductor side.
-  : Pattern from the side which enables seeing.
- Indication of transistor.

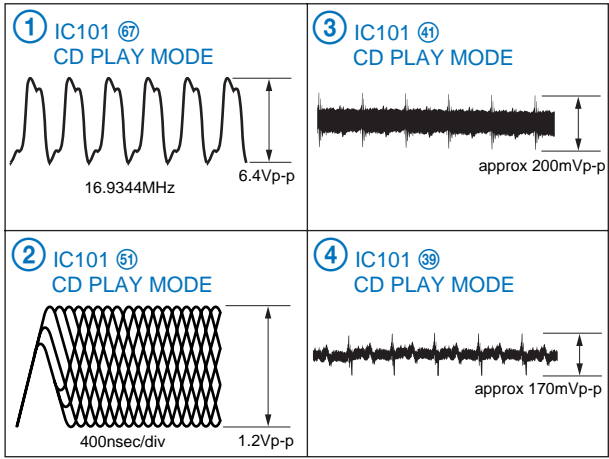


7-1. CIRCUIT BOARDS LOCATION

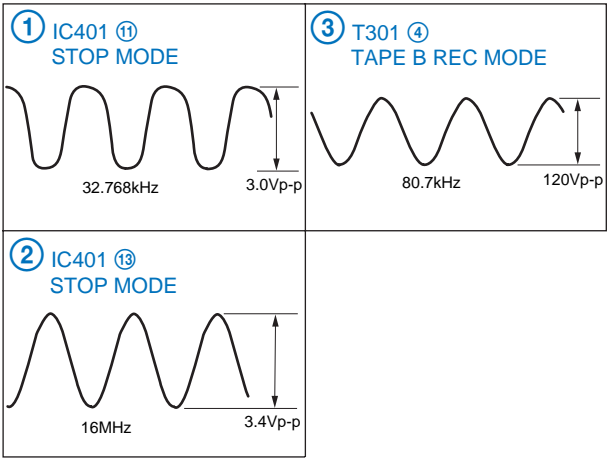


• WAVEFORMS

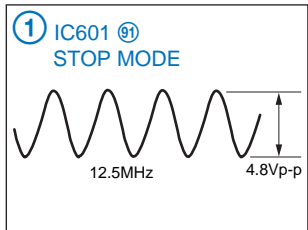
– BD BOARD –



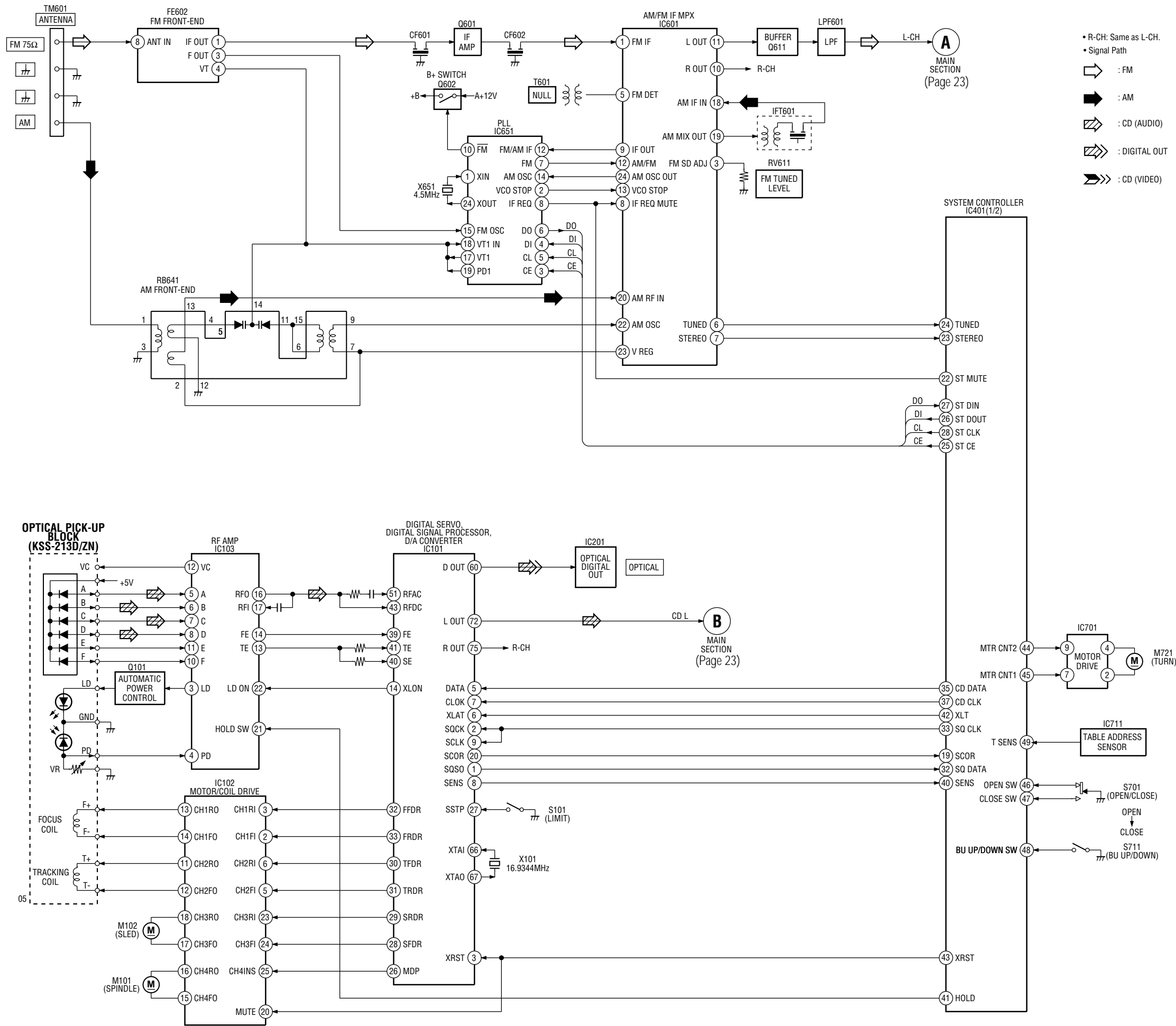
– MAIN BOARD –



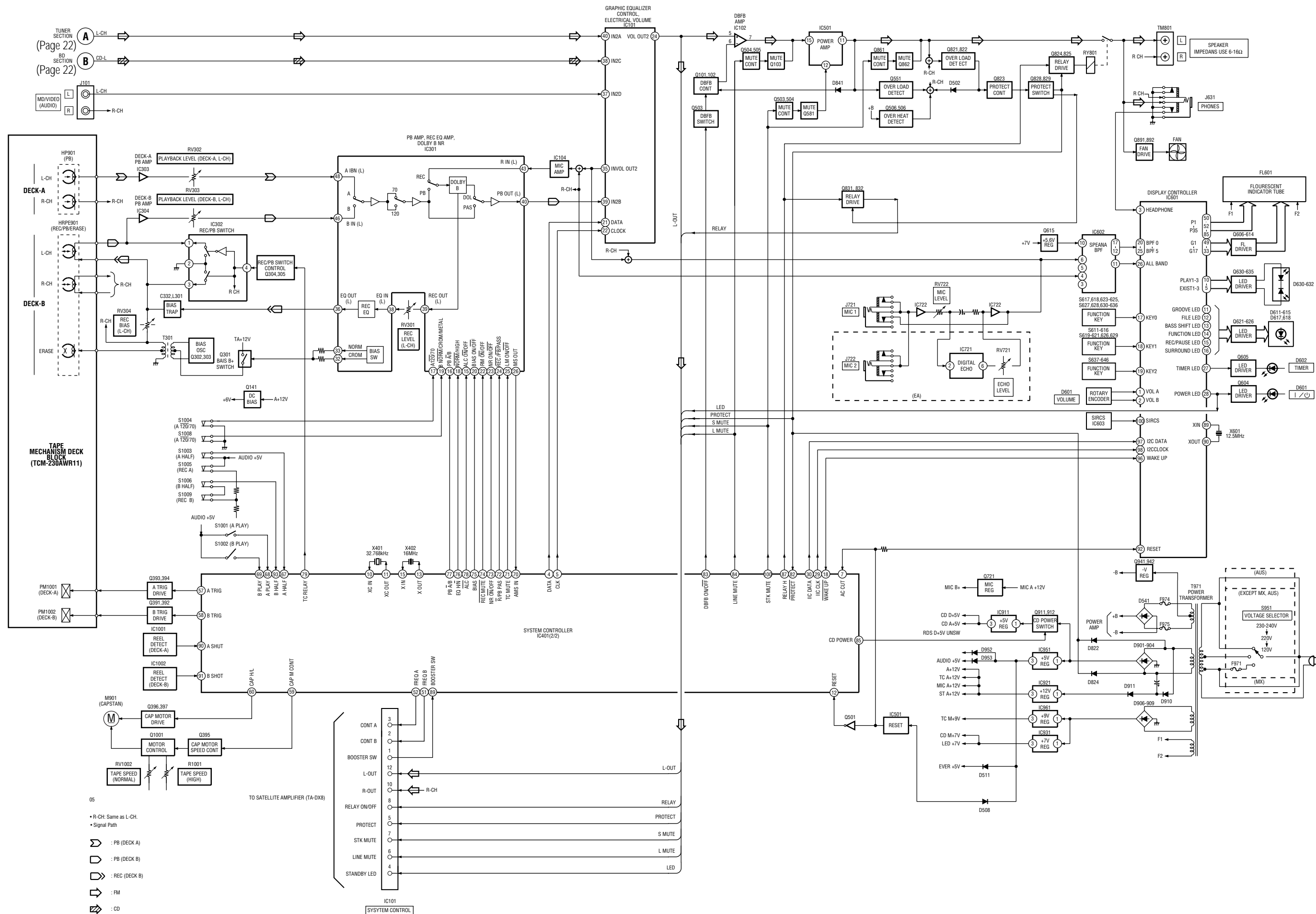
– PANEL BOARD –



7-2. BLOCK DIAGRAMS
- TUNER/CD SECTION -



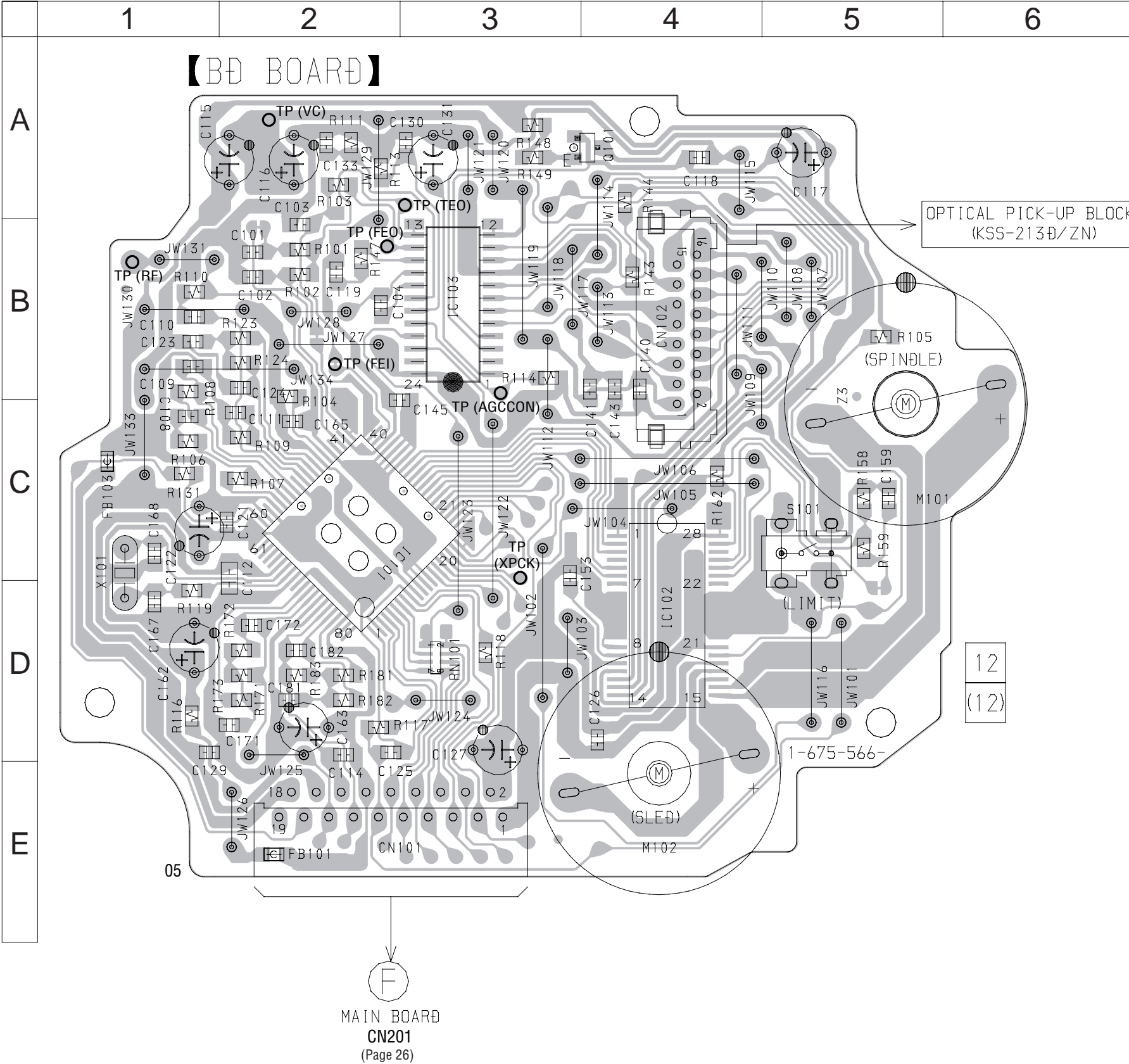
- MAIN SECTION -



7-3. PRINTED WIRING BOARD – BD SECTION –
• See page 21 for Circuit Boards Location.

- **Semiconductor Location**

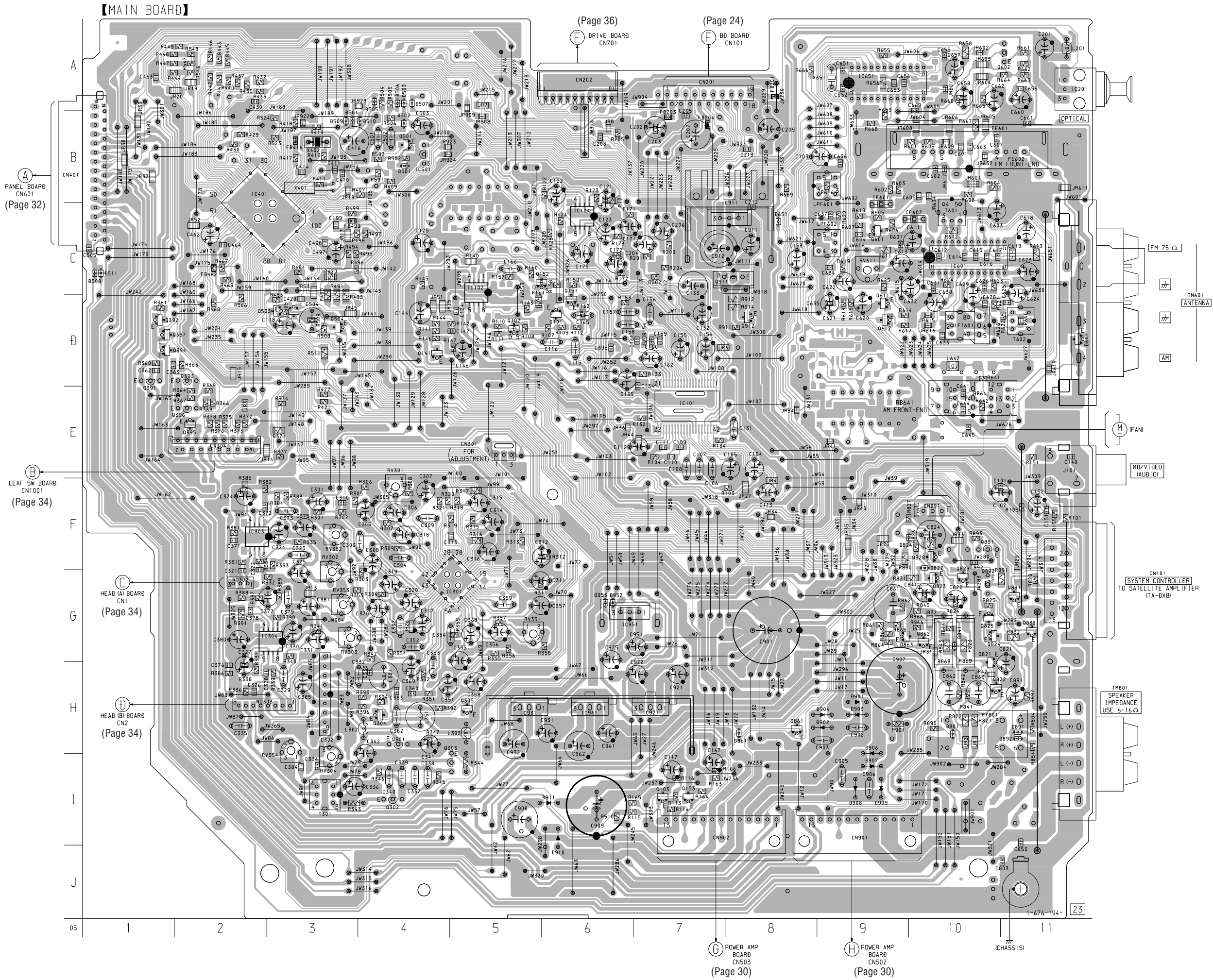
Ref. No.	Location
IC101	C-2
IC102	D-4
IC103	B-3
Q101	A-4

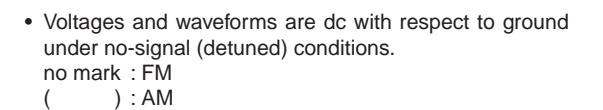


• Semiconductor Location

Ref. No.	Location
D501	B-4
D502	B-4
D503	A-4
D504	B-3
D505	A-4
D506	A-4
D508	C-1
D511	C-1
D601	C-9
D641	D-11
D651	C-8
D801	H-10
D822	F-10
D824	F-9
D841	G-10
D861	H-8
D891	H-11
D892	H-11
D901	H-9
D902	H-9
D903	H-9
D904	H-9
D906	H-9
D907	I-9
D908	I-9
D909	I-9
D910	I-6
D911	I-6
D952	G-6
D953	G-6
IC101	E-7
IC102	C-5
IC104	C-6
IC201	A-11
IC301	G-5
IC302	H-3
IC303	F-2
IC304	G-3
IC401	B-2
IC501	B-4
IC601	C-10
IC651	A-9
IC911	C-8
IC921	H-7
IC931	H-5
IC951	G-6
IC961	H-6
Q101	D-6
Q102	D-5
Q103	I-7
Q141	D-4
Q151	D-6
Q152	C-5
Q153	I-7
Q301	H-4
Q302	I-4
Q303	I-5
Q304	H-4
Q305	H-5
Q391	D-1
Q392	D-1
Q393	D-2
Q394	D-1
Q395	E-2
Q396	E-2
Q397	D-1
Q501	B-4
Q503	D-3
Q504	D-3
Q505	D-3
Q601	C-9
Q602	A-11
Q611	D-9
Q612	D-9
Q821	H-10
Q822	H-10
Q823	G-10
Q824	G-10
Q825	G-10
Q828	F-10
Q829	G-10
Q831	G-11
Q832	G-11
Q861	H-8
Q862	G-10
Q863	G-9
Q891	F-10
Q892	G-10
Q911	C-8
Q912	D-8

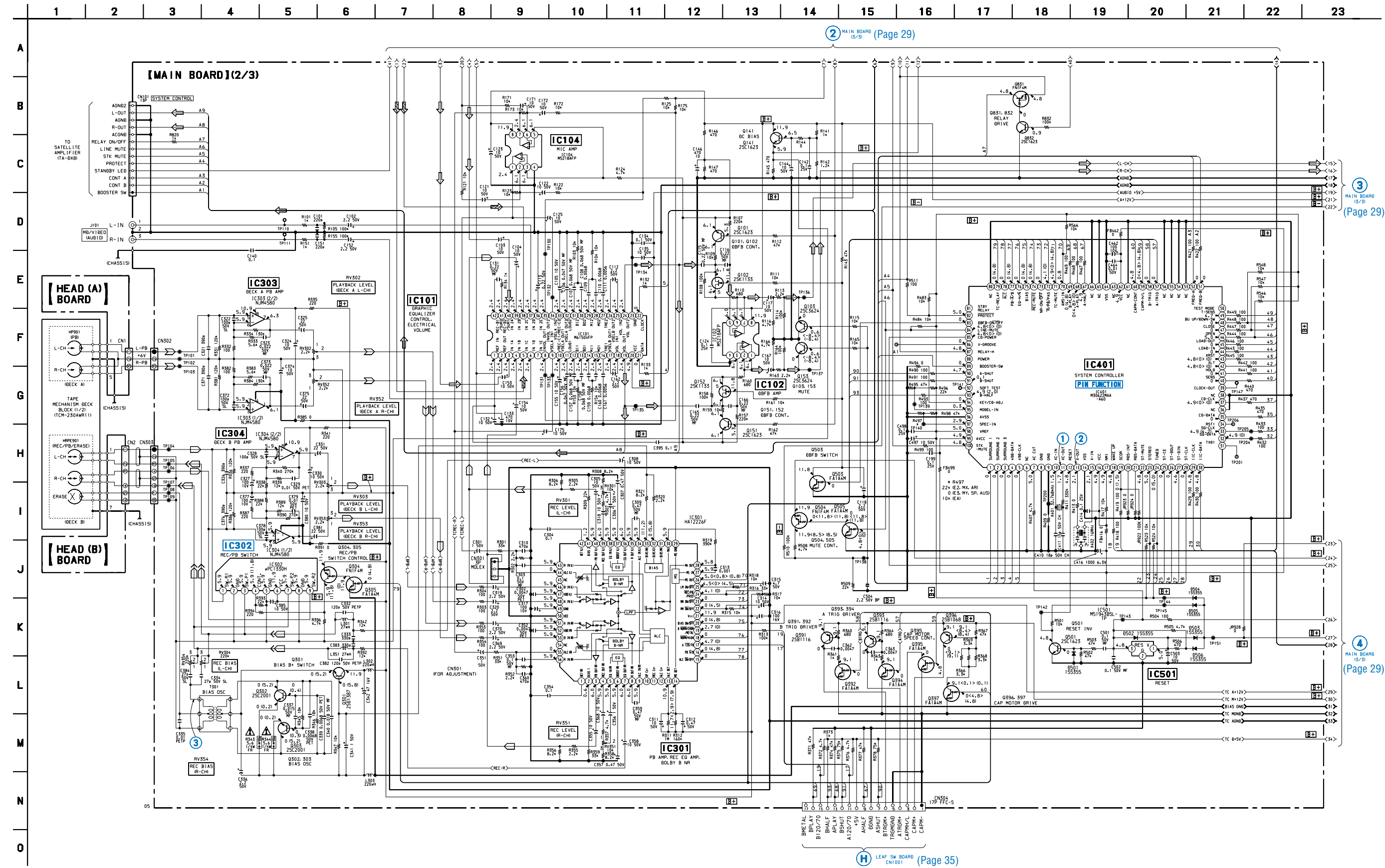
7-5. PRINTED WIRING BOARD – MAIN SECTION – • See page 21 for Circuit Boards Location.





7-7. SCHEMATIC DIAGRAM – MAIN (2/3) SECTION –

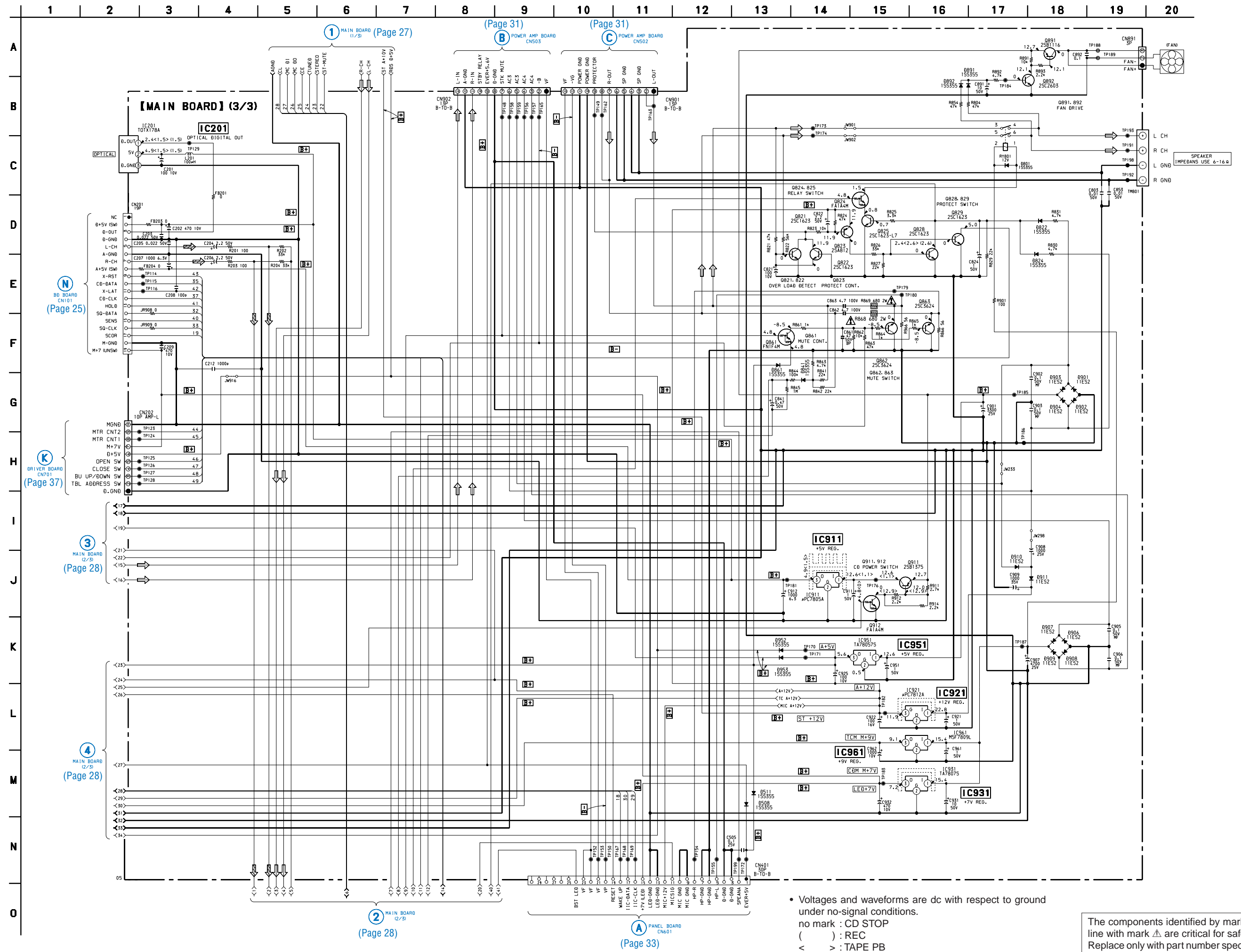
- See page 21 for Waveforms.
- See page 42 for IC Block Diagrams.



• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD STOP
() : REC
< > : TAPE PB

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

7-8. SCHEMATIC DIAGRAM – MAIN (3/3) SECTION –



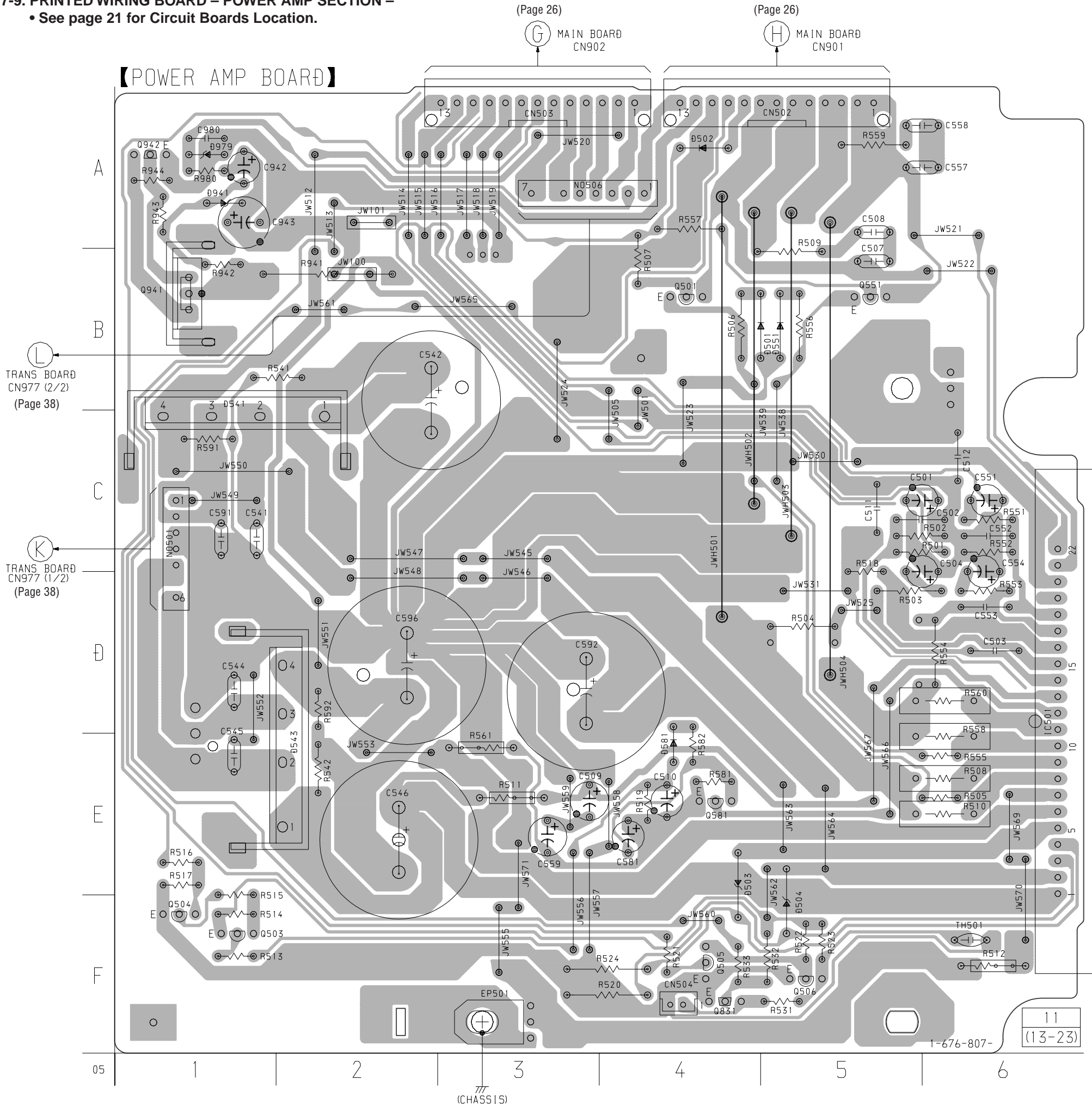
• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD STOP
() : REC
< > : TAPE PB

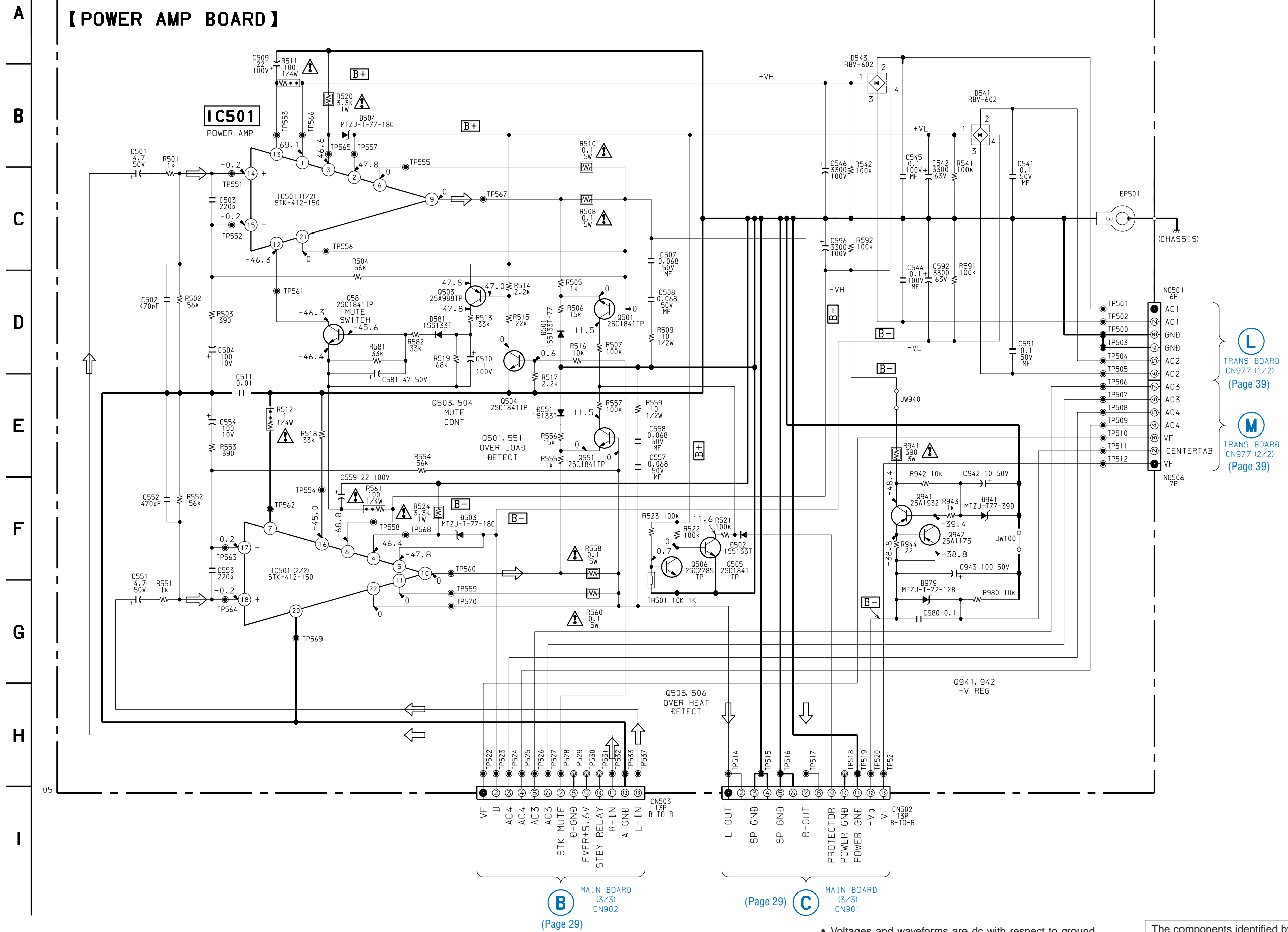
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

7-9. PRINTED WIRING BOARD – POWER AMP SECTION –
• See page 21 for Circuit Boards Location.

• Semiconductor Location


Ref. No.	Location
D501	B-5
D502	A-4
D503	E-4
D504	F-5
D541	C-1
D543	E-2
D551	B-5
D581	E-4
D941	A-1
D979	A-1
IC501	D-6
Q501	B-4
Q503	F-1
Q504	F-1
Q505	F-4
Q506	F-5
Q551	B-5
Q581	E-4
Q941	B-1
Q942	A-1





- Voltages and waveforms are dc with respect to ground under no-signal conditions.

no mark : CD STOP

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

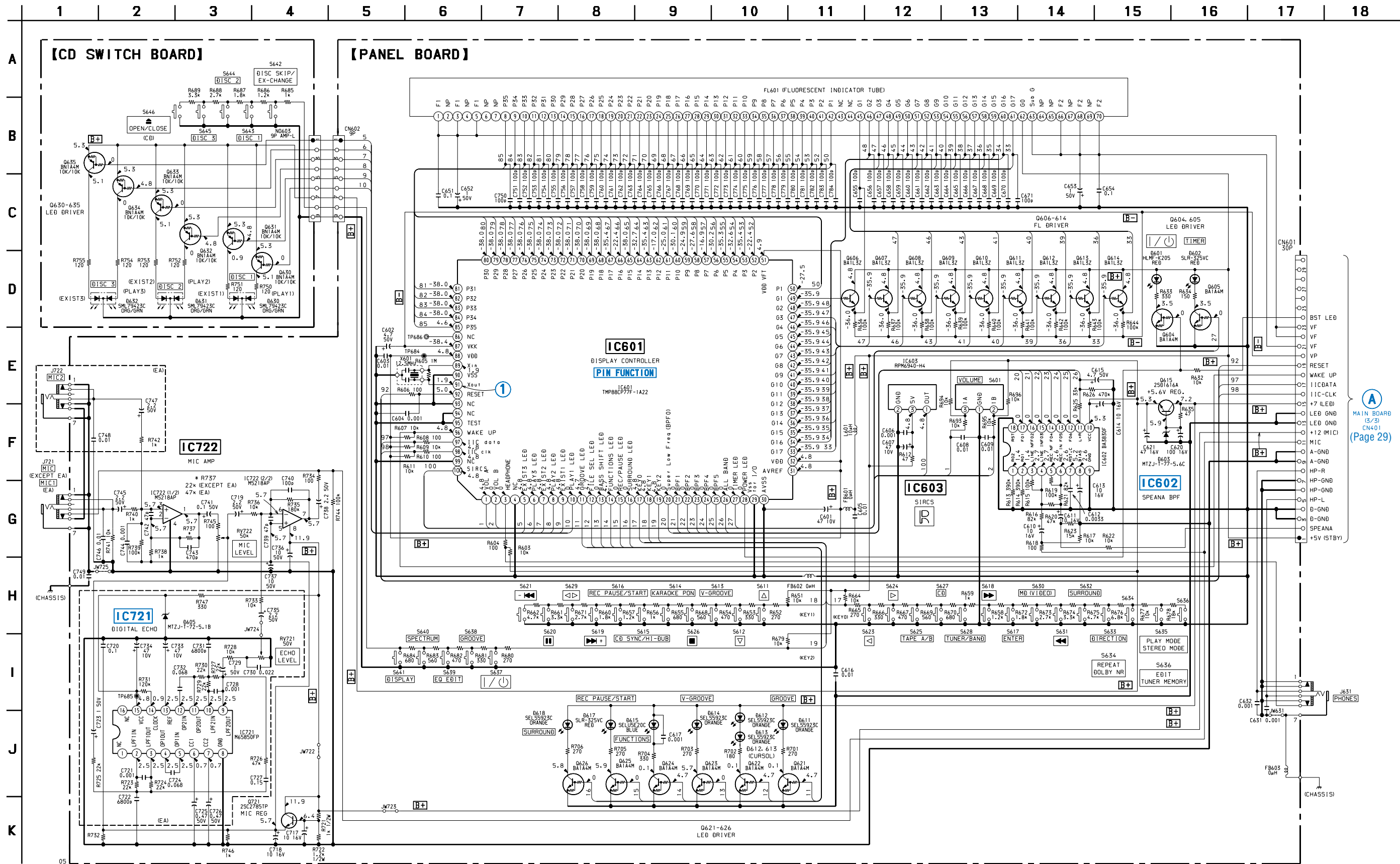
Ref. No.	Location
D630	A-6
D631	A-4
D632	A-3
Q630	A-6
Q631	A-6
Q632	A-3
Q633	A-7
Q634	A-7
Q635	A-2

Ref. No.	Location
D601	A-10
D602	B-2
D603	D-3
D604	C-1
D605	F-9
D611	B-9
D612	E-8
D613	E-9
D614	G-8
D615	D-6
D617	G-5
D618	C-2
IC601	C-6
IC602	F-4
IC603	A-9
IC721	D-9
IC722	G-9



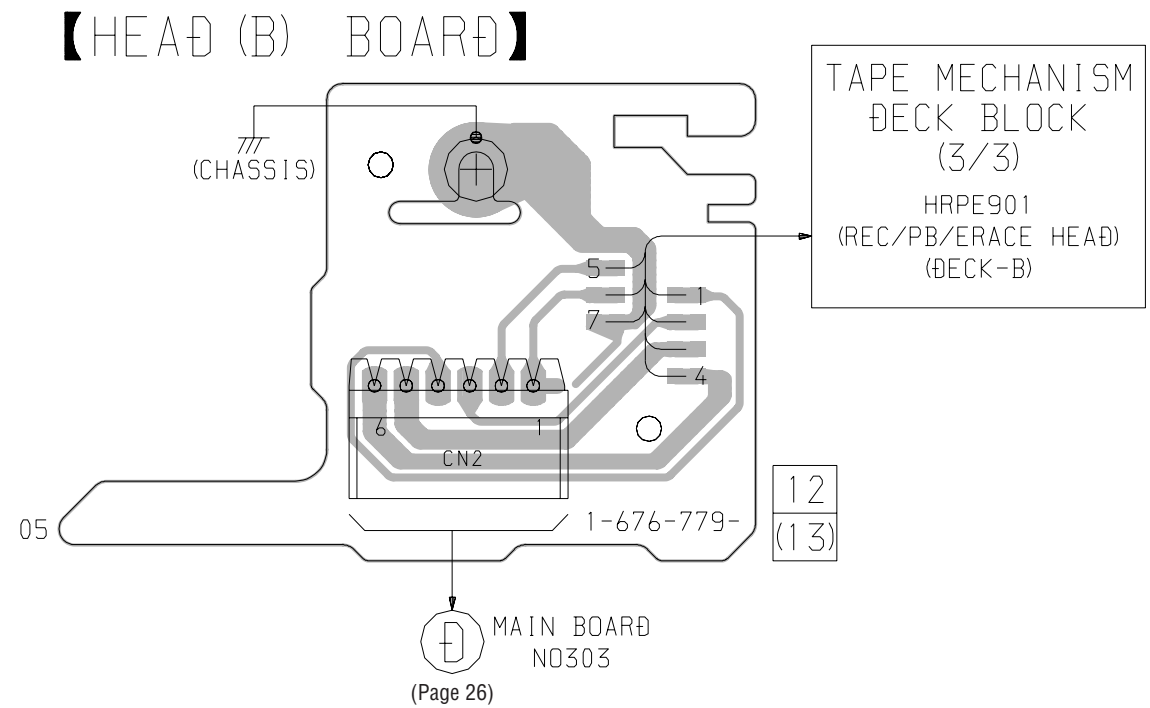
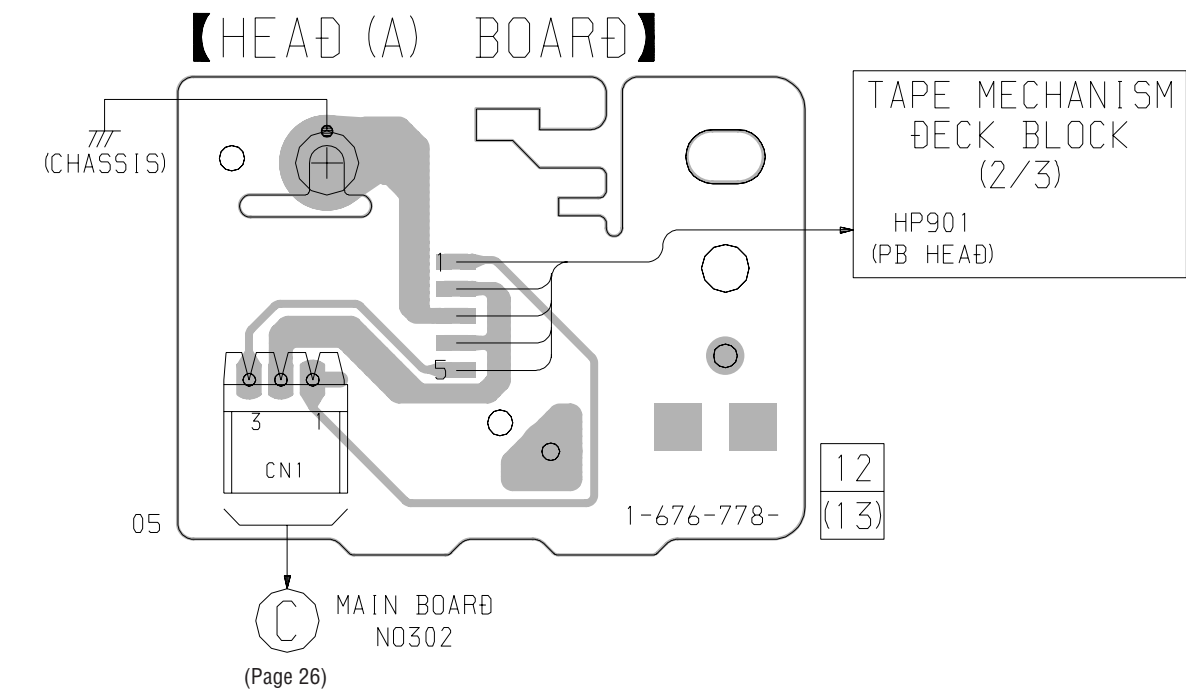
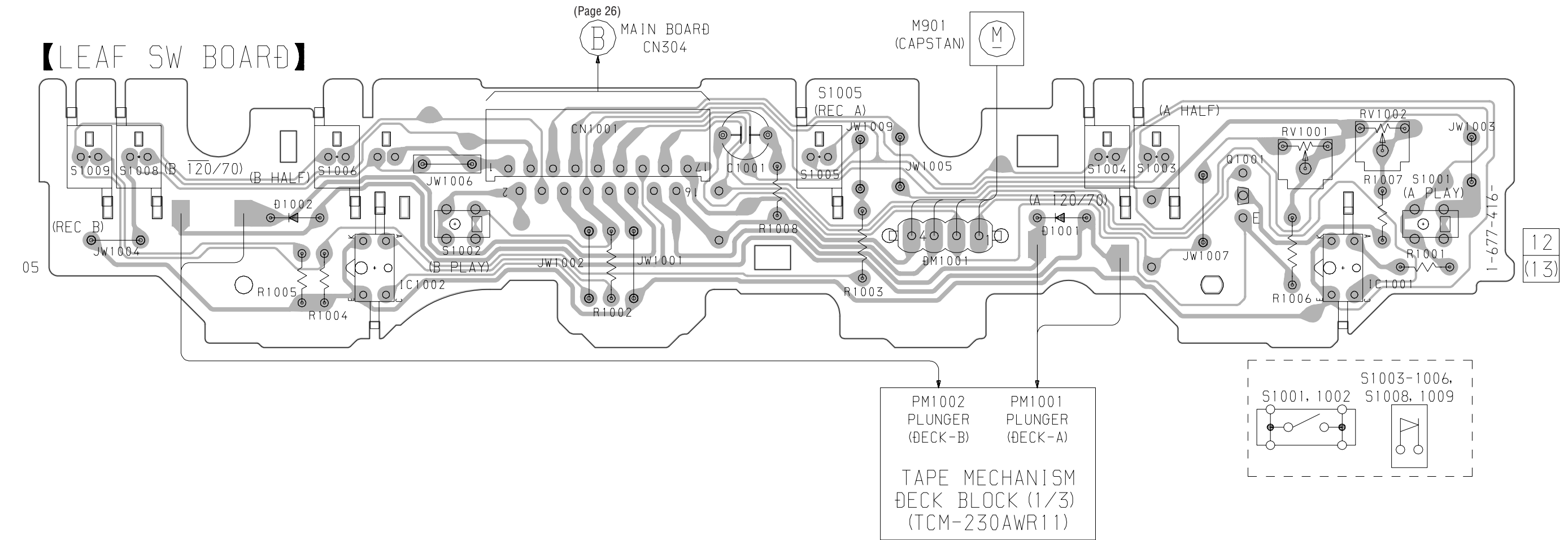
7-12. SCHEMATIC DIAGRAM – PANEL SECTION –

- See page 21 for Waveform.
- See page 42 for IC Block Diagrams.

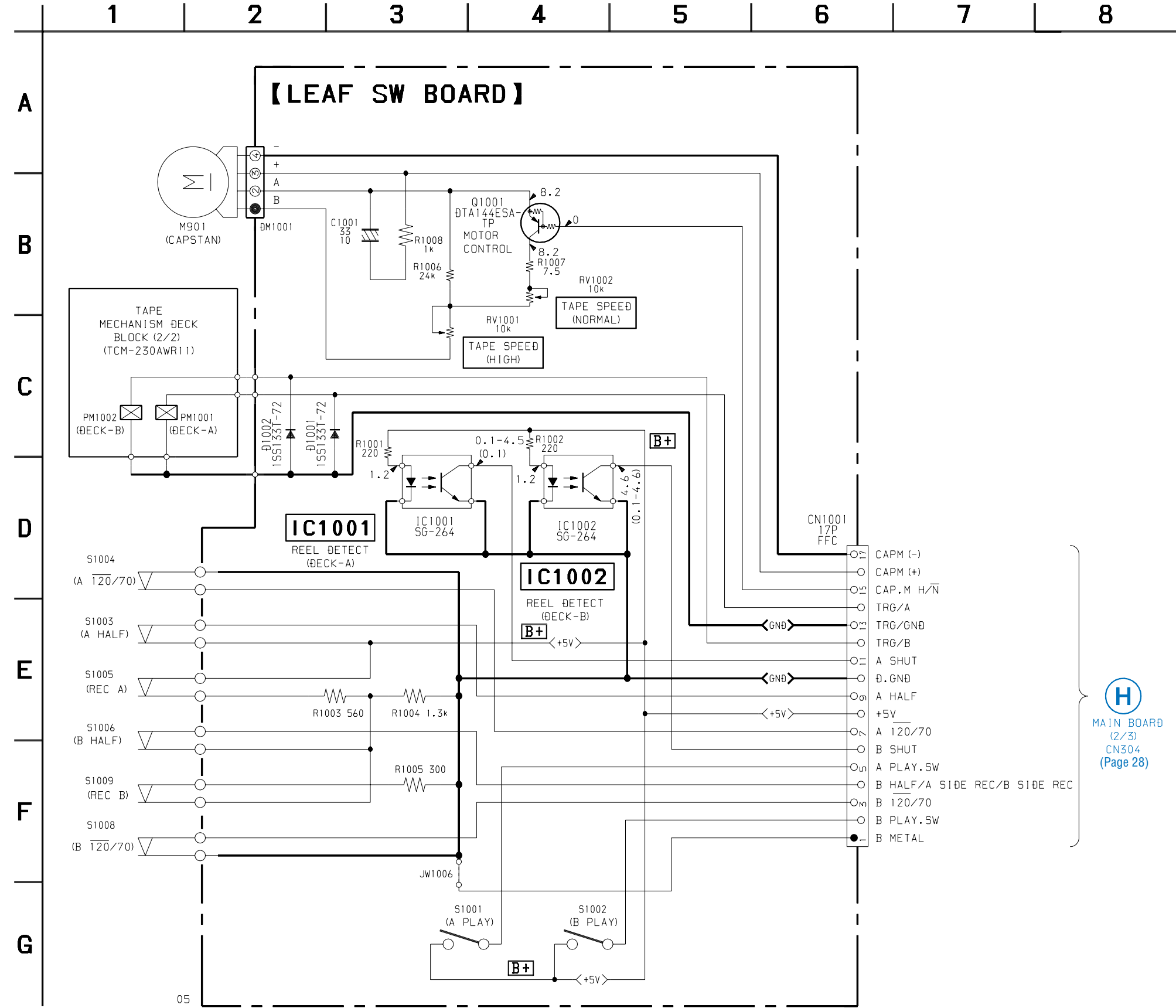


- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark : CD STOP

7-13. PRINTED WIRING BOARDS – LEAF SW SECTION – • See page 21 for Circuit Boards Location.



7-14. SCHEMATIC DIAGRAM – LEAF SW SECTION –

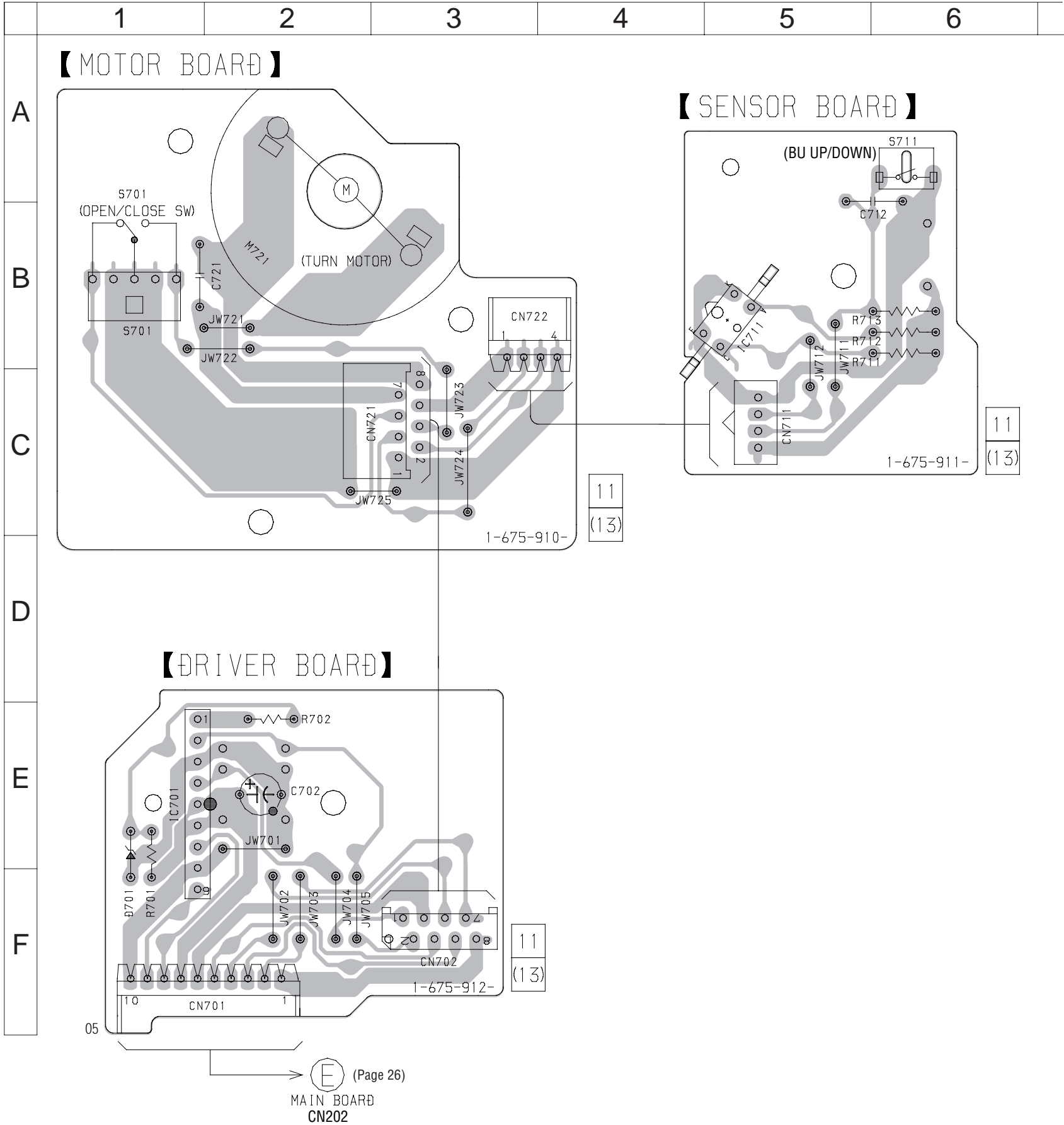


• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : PB (DECK- A)
() : PB (DECK- B)

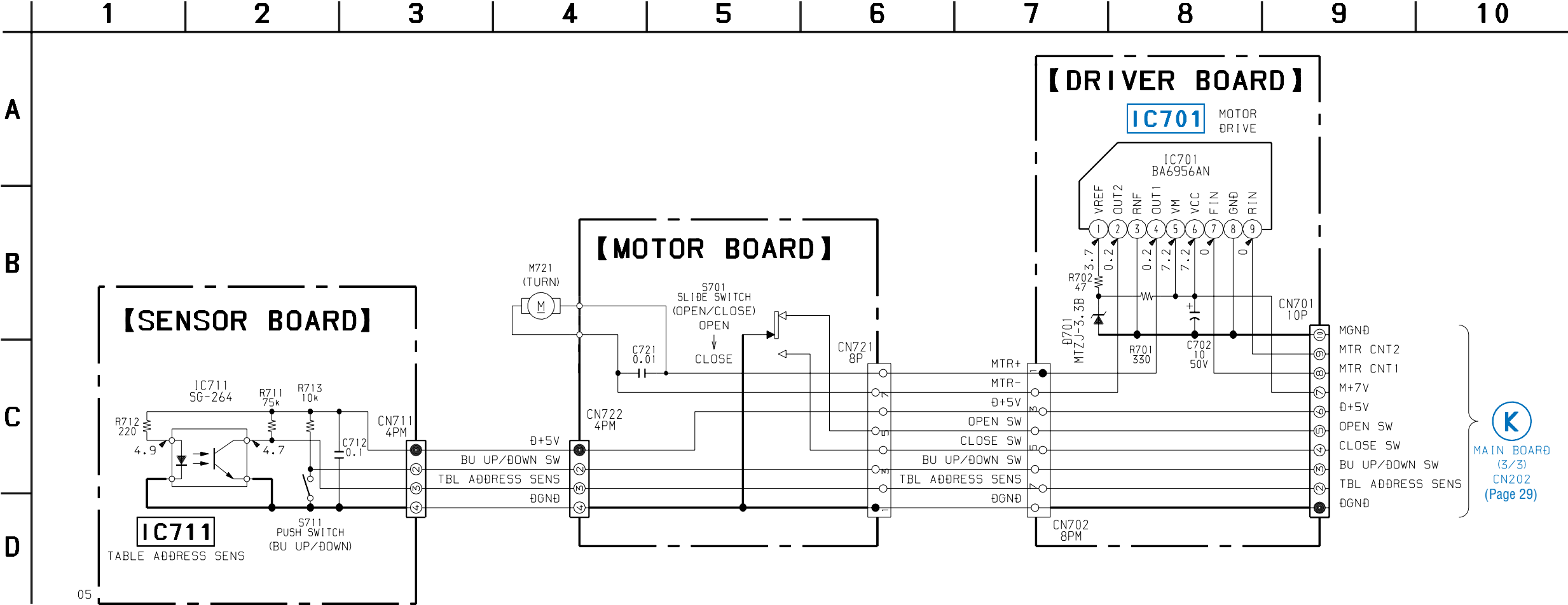
7-15. PRINTED WIRING BOARDS – DRIVER SECTION – • See page 21 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D701	E-1
IC701	E-1
IC711	B-5

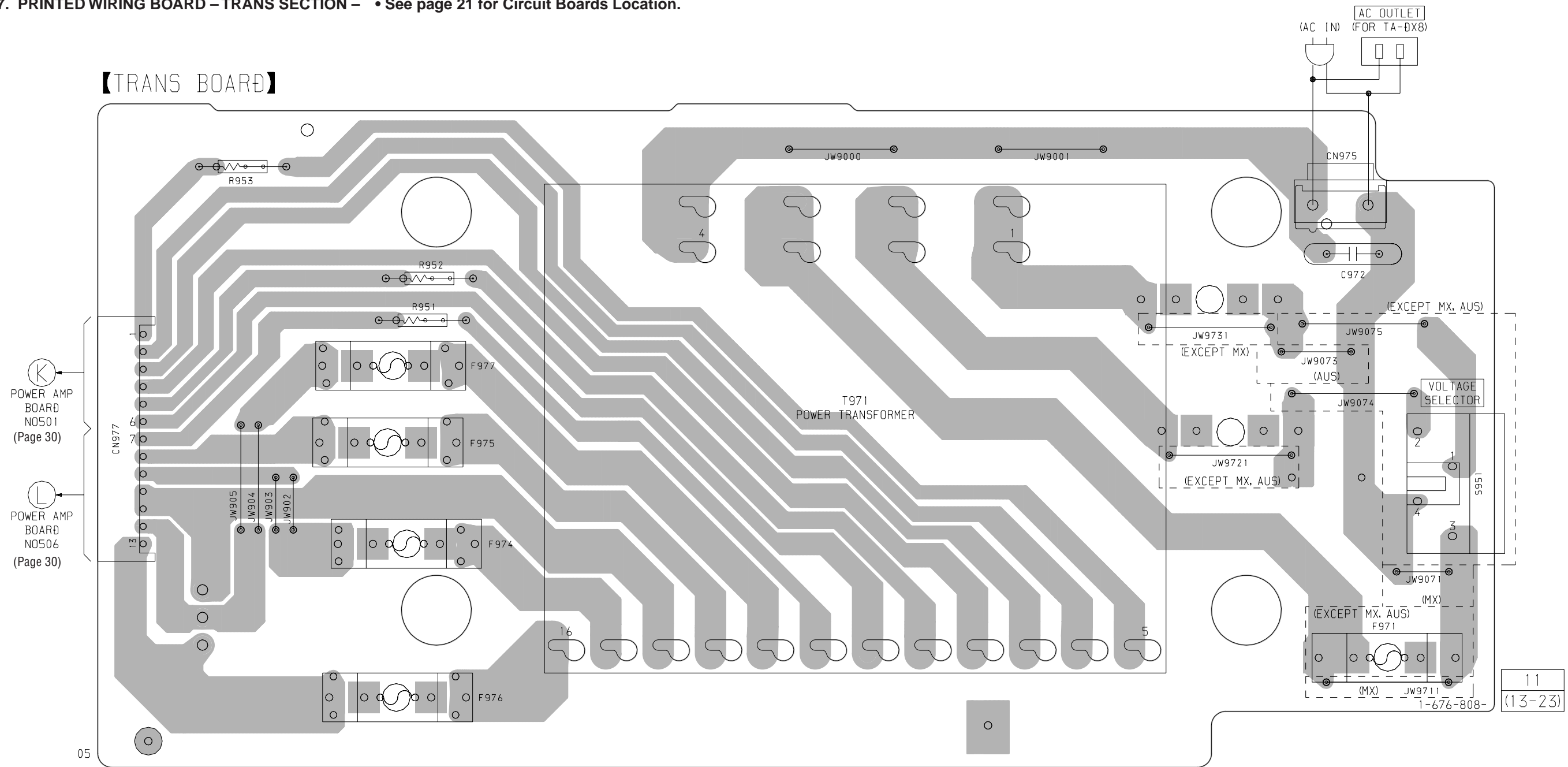


7-16. SCHEMATIC DIAGRAM – DRIVER SECTION –
• See page 42 for IC Block Diagram.

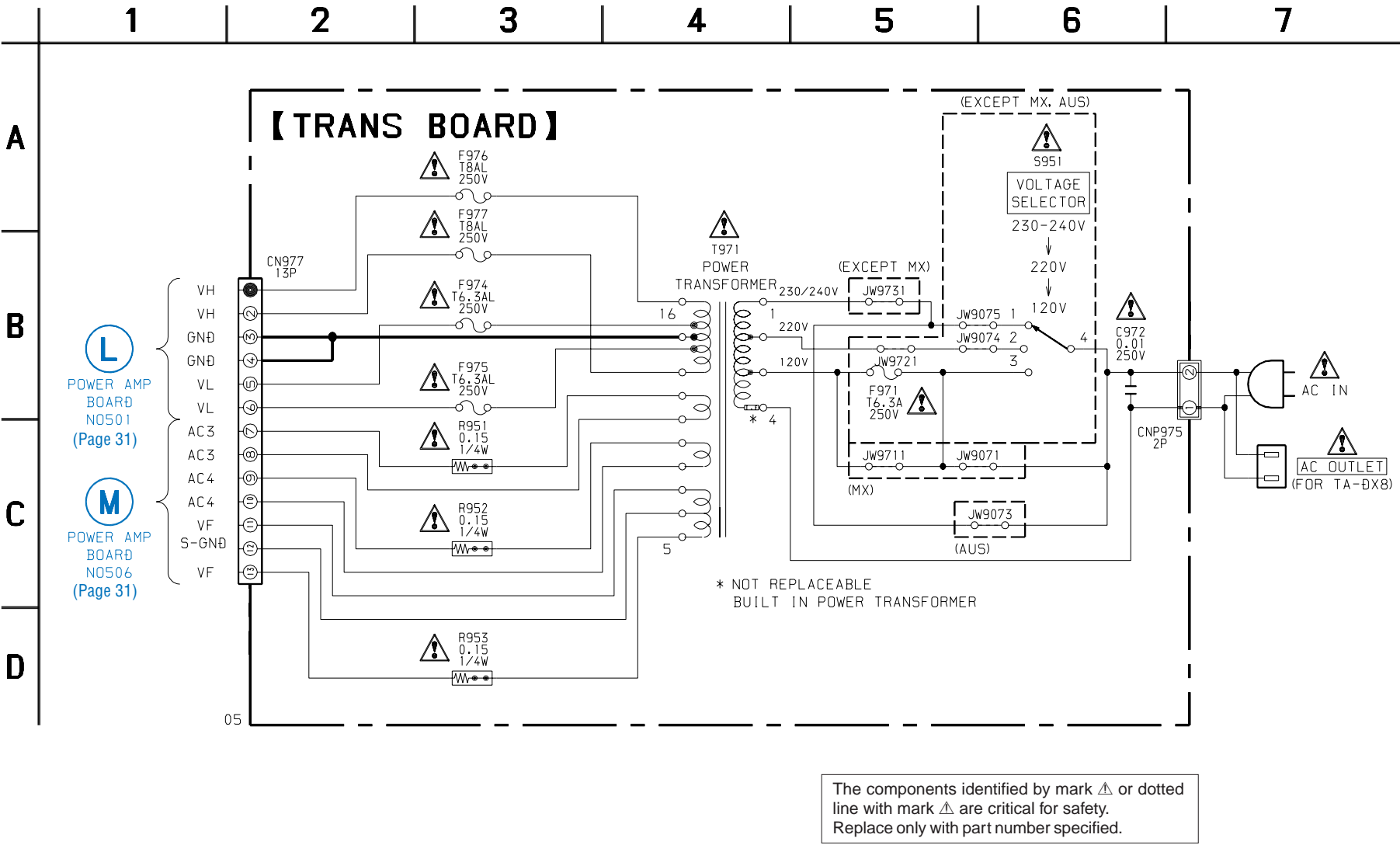


• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD (STOP)

7-17. PRINTED WIRING BOARD –TRANS SECTION – • See page 21 for Circuit Boards Location.



7-18. SCHEMATIC DIAGRAM – TRANS SECTION –



7-19. IC PIN FUNCTION DESCRIPTION

• IC401 SYSTEM CONTROLLER (M30622MAA-A60) (MAIN BOARD)

Pin No.	Pin Name	I/O	Description
1	SURROUND 1	O	Surround control signal output. Not used.
2	SURROUND 2	O	Surround control signal output. Not used.
3	SURROUND 3	O	Surround control signal output. Not used.
4	498-DATA	O	Data signal output for IC101 (M61504FP)
5	498-CLK	O	Clock signal output for IC101 (M61504FP)
6	N.C	I	Not used.
7	AC-CUT	I	AC CUT ON (L) / OFF (H) CHECK
8	GND	—	Connected to ground.
9	GND	—	Connected to ground.
10	XC IN	I	SUB CLOCK input. (32.768kHz)
11	XC OUT	O	SUB CLOCK output. (32.768kHz)
12	RESET	I	System reset input.
13	X-OUT	O	MAIN SYSTEM CLOCK output. (16MHz)
14	VSS	—	Connected to ground.
15	X-IN	I	MAIN SYSTEM CLOCK input. (16MHz)
16	VCC	—	Power supply. (+5V)
17	NMI	I	PULL UP (EVER +5V)
18	WAKE_UP	I	WAKE UP signal input. (L)
19	SCOR	I	CD Q-data request signal input.
20	RDS-INT	I	RDS interrupt signal input. (Connected to ground)
21	RDS-DATA	I	RDS data signal input. (Connected to ground)
22	ST-MUTE	O	Tuner mute signal output.
23	STEREO	I	STEREO detect signal input. L=ON, H=OF
24	TUNED	I	TUNED detect signal input. L=ON, H=OFF
25	ST-CE	O	TUNER chip eneble output.
26	ST-DOUT	O	TUNER data output.
27	ST-DIN	I	TUNER data input.
28	ST-CLK	O	TUNER clock signal output.
29	IIC_CLK	O	IIC SCL output.
30	IIC_DATA	O	IIC SDA output.
31	TXDI	—	Not used.
32	SQ-DATA	I	Subcode Q data input. (CD data)
33	SQ-CLK	I	Subcode Q data input. (CD clock)
34	RST1	I	Not used.
35	CD-DATA	I	CD data input.
36	N.C	I	Not used.
37	CD-CLK	I	CD clock input.
38	N.C	I	Not used.
39	CLOCK-OUT	O	Clock check signal output. (Not used)
40	SENS	I	BD condition signal input.
41	HOLD	O	MODE signal input.
42	XLT	O	CD latch signal output.
43	XRST	O	CD reset signal output.
44	LOAD-IN	I	Loading motor control signal input.
45	LOAD-OUT	O	Loading motor control signal output.
46	OPEN	I	Tray open detect signal input.
47	CLOSE	I	Tray close detect signal input.
48	UP/DOWN SW	I	Pick-up up/down detect signal input.
49	T-SENS	I	CD table detect signal input.
50	TEST MODE	I	Not used.

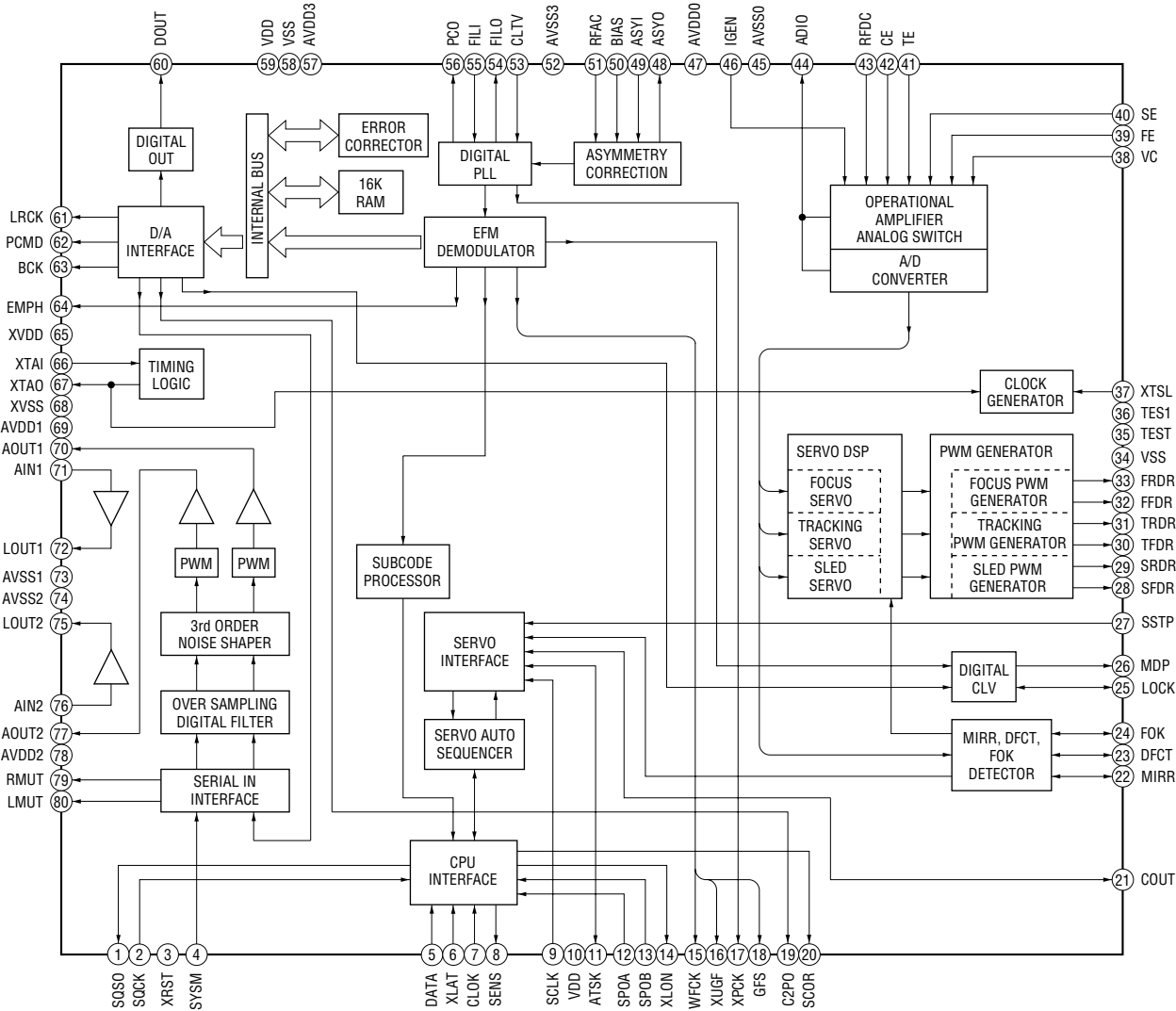
Pin No.	Pin Name	I/O	Description
51	FREQ-B	I	Sound control signal to the satellite amplifier (TA-DX8).
52	FREQ-A	I	Sound control signal to the satellite amplifier (TA-DX8).
53	N.C	I	Not used.
54	N.C	I	Not used.
55	N.C	I	Not used.
56	N.C	I	Not used.
57	A TRIG	O	A deck trigger control signal output.H=ON, L=OFF
58	B TRIG	O	B deck trigger control signal output.H=ON, L=OFF
59	CAPM-H/L	O	Capstan motor High/Low speed control signal output.
60	CAPM-CONT	O	Capstan motor REV/FWD/STOP control signal output.H=REV, L=FWD/STOP
61	N.C	I	Not used.
62	VCC	—	POWER SUPPLY (+5V)
63	N.C	I	Not used.
64	VSS	—	Ground.
65	N.C	I	Not used.
66	N.C	I	Not used.
67	A HALF	I	A deck half detect signal input.
68	A PLAY	I	A deck play detect signal input.
69	B PLAY	I	B deck play detect signal input.
70	AMS-IN	I	AMS signal input. L=ON,H=OFF
71	TC-MUTE	O	Tape deck line mute ON/OFF signal output. H=ON, L=OFF
72	R/PB/PAS	I	REC/PB/PASS select signal input.
73	NR-ON/OFF	O	DOLBY NR ON/OFF signal output. H=ON, L=OFF
74	REC-MUTE	O	REC mute ON/OFF signal output. L=ON, H=OFF
75	BAIS	O	BIAS ON/OFF signal output.H=ON, L=OFF
76	EQ-H/N	O	EQ High/Normal select signal output. H=High, L=Normal
77	PB-A/B	O	Playback deckA/B select signal output. H=deckB, L=deckA
78	ALC	O	ALC ON/OFF signal output. L=ON, H=OFF
79	TC-RELAY	O	Tape deck relay ON/OFF signal output. H=ON, L=OFF
80	N.C	I	Not used.
81	STBY-RELAY	O	STANDBY relay control signal output. (Not used)
82	PROTECT	I	Speaker protect signal input. L=ON, H=OFF
83	DBFB-ON/OFF	O	DBFD control signal output. H=ON, L=OFF
84	LINE-MUTE	O	Line mute signal output. L=ON, H=OFF
85	CD-POWER	O	CD-POWER ON/OFF signal output. H=ON, L=OFF
86	F-SHIFT	O	Not used.
87	RELAY-H	O	Speaker terminal relay control signal output. H=ON, L=OFF
88	POWER	O	POWER ON/OFF signal output. H=ON, L=OFF
89	BOOSTER SW	I	Booster switch input from the satellite amplifier (TA-DX8).
90	A SHUT	I	A deck reel pulse detect signal input.
91	B SHUT	I	B deck reel pulse detect signal input.
92	SOFT-TEST	O	Not used.
93	B HALF	I	B deck half detect signal input.
94	KEY/CD ADJ	O	KEY (for jig) / CD adjust.
95	MODEL-IN	I	Model select signal input.
96	AVSS	—	Analog ground.
97	SPEC-IN	I	Version select signal input.
98	VREF	—	Analog Reference Voltage
99	AVCC	—	Analog Power Supply
100	STK-MUTE	O	Power amplifier mute ON/OFF signal output. H=ON, L=OFF

• IC601 DISPLAY CONTROLLER (TMP88CP77F-1A22) (PANEL BOARD)

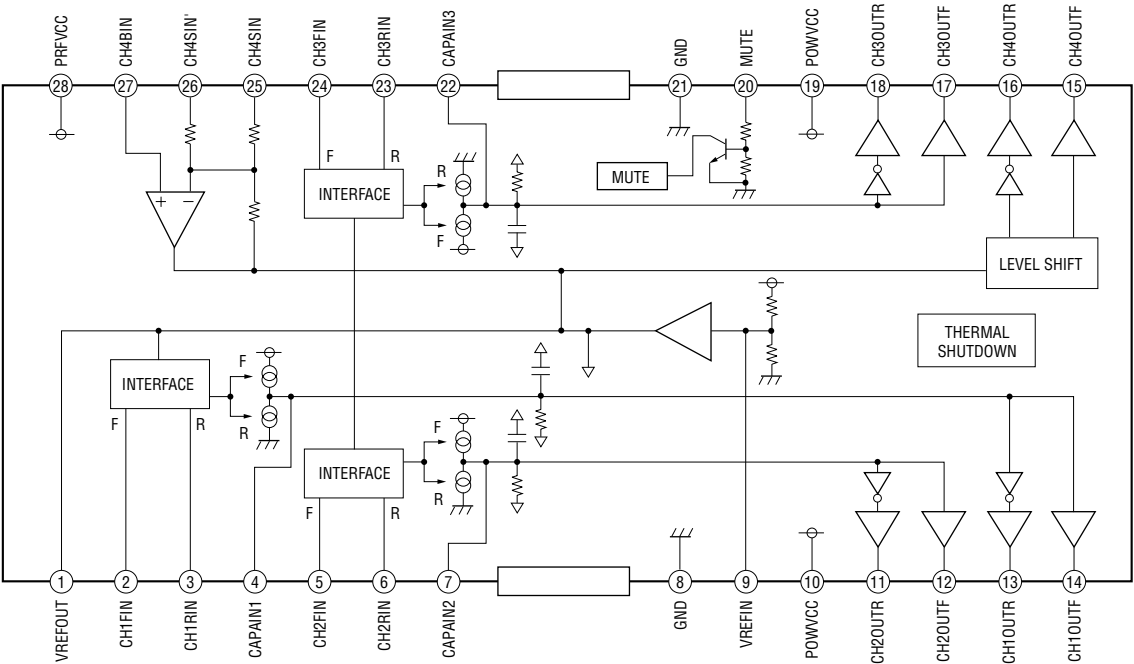
Pin No.	Pin Name	I/O	Description
1	VOL A	I	VOLUME A signal input.
2	VOL B	I	VOLUME B signal input.
3	HEADPHONE	I	Headphone detect signal input. H=ON, L=OFF
4	N.C	I	Not used.
5	EXIST3 LED	O	EXIST LED of disc3 drive signal output.
6	PLAY3 LED	O	PLAY LED of disc3 drive signal output.
7	EXIST2 LED	O	EXIST LED of disc2 drive signal output.
8	PLAY2 LED	O	PLAY LED of disc2 drive signal output.
9	EXIST1 LED	O	EXIST LED of disc1 drive signal output.
10	PLAY1 LED	O	PLAY LED of disc1 drive signal output.
11	GROOVE LED	O	GROOVE LED drive signal output.(high active).
12	FILE SEL LED	O	Cursol LED drive signal output.
13	BASS SHIFT LED	O	V-GROOVE LED drive signal output.
14	FUNCTIONS LED	O	Functions LED drive signal output.
15	REC/PAUSE	O	REC/PAUSE LED drive signal output.(high active)
16	SURROUND	O	SURROUND LED drive signal output.(high active)
17-19	KEY0-2	I	KEY input. (AD)
20	Super Low Freq (BPF 0)	I	BPF input. (AD)
21-25	BPF1-5	I	BPF input. (AD)
26	ALL BAND	I	BPF input. (AD)
27	TIMER LED	O	TIMER LED driver output.
28	POWER	O	I/LED output.
29	VSS	—	Ground.
30	AVSS	—	Ground.
31	AVREF	—	Analog reference voltage.
32	VDD	—	Power supply (+5V)
33-49	G17-1	O	FL gride signal output.
50	P1	O	FL segment signal output.
51	VDD VFT	—	Power supply (+5V)
52-85	P2-35	O	FL segment signal output.
86	N.C	I	Not used.
87	VKK	—	–30V driving power for FL.
88	VDD	—	Power supply (+5V)
89	Xin	I	12.5MHz (Xin)
90	VSS	—	Ground.
91	Xout	O	12.5MHz (Xout)
92	RESET	I	RESET (low active)
93-94	N.C	I	Not used.
95	TEST	I	Connected to ground.
96	WAKE UP	O	WAKE UP signal output for master controller. (PULL UP)
97	I2C data	O	IIC SDA
98	I2C clk	O	IIC SCL
99	N.C	I	Not used.
100	SIRCS	I	Remote commander input. (input capture)

7-20. IC BLOCK DIAGRAMS
– BD Board –

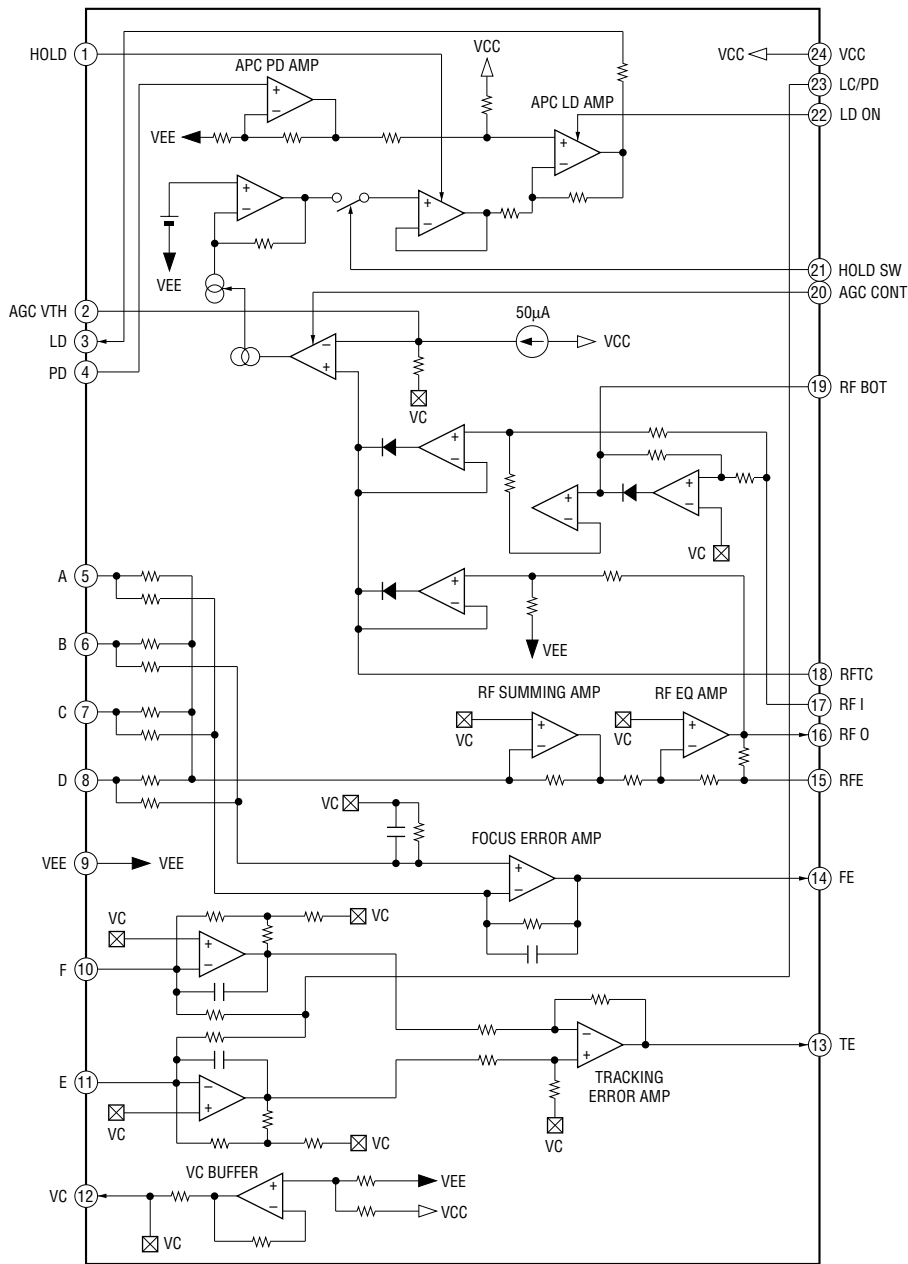
IC101 CXD2587Q



IC102 BA5974FP-E2

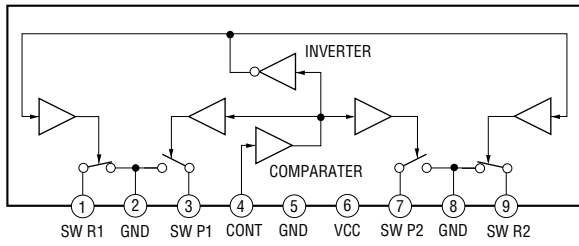


IC103 CXA2568M-T6

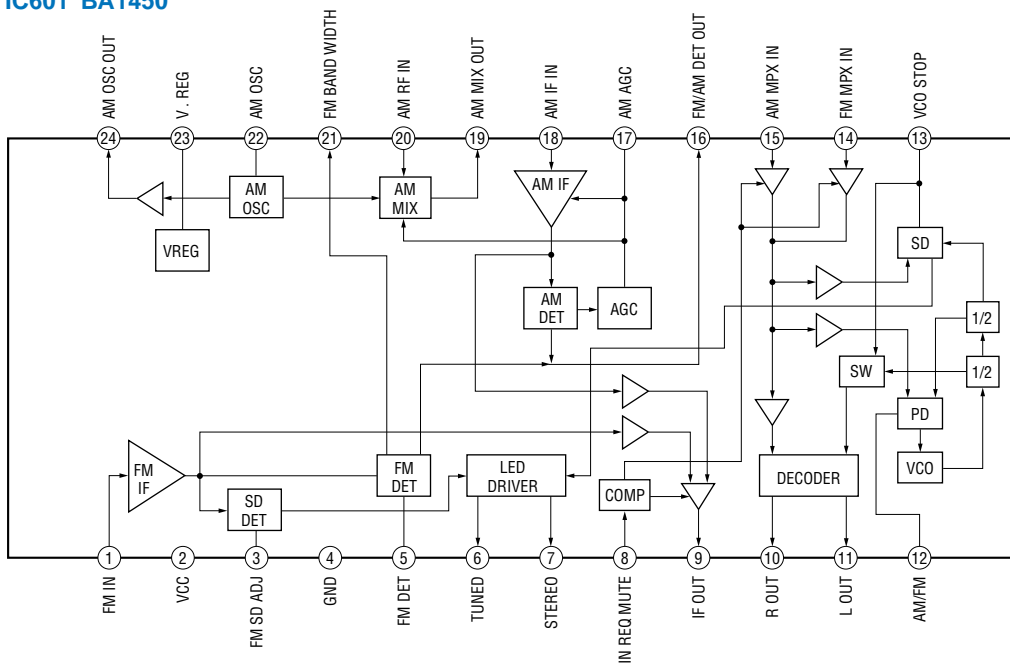


– MAIN Board –

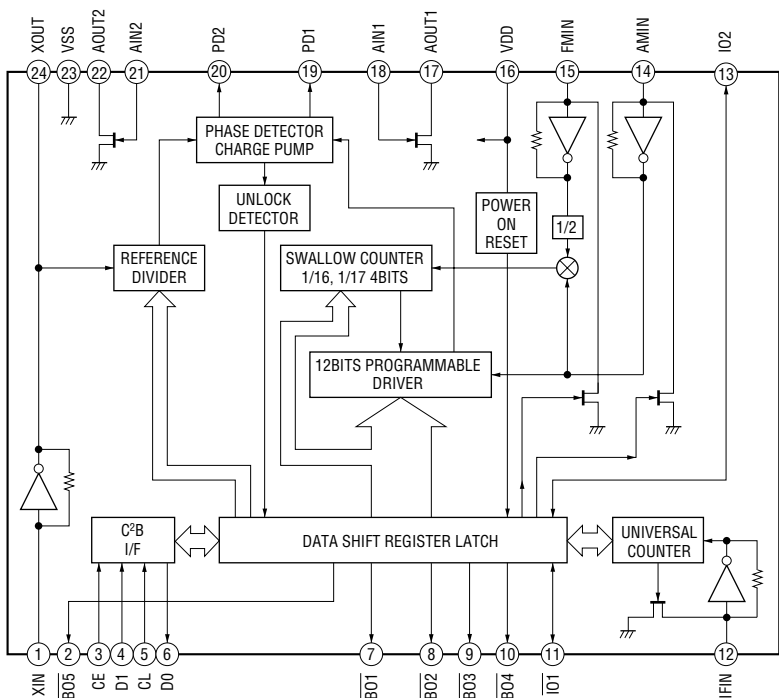
IC302 μ PC1330HA



IC601 BA1450

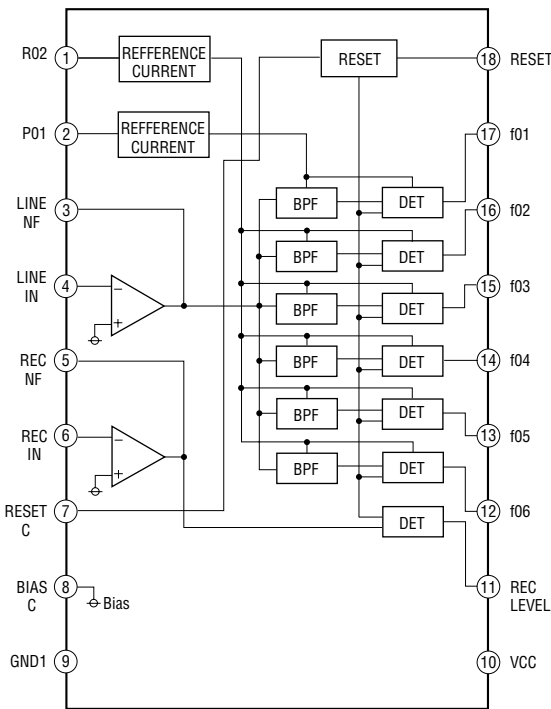


IC651 LC72130

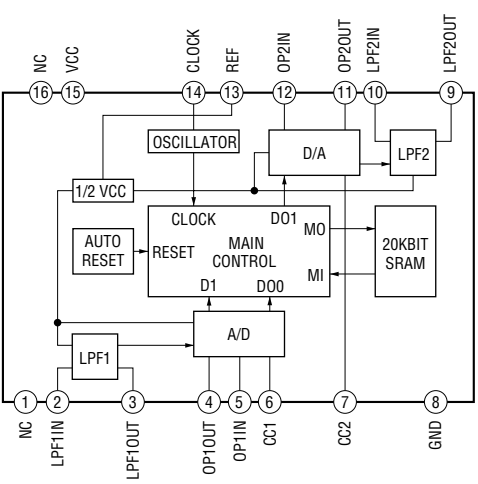


- PANEL Board -

IC602 BA3830F-E2

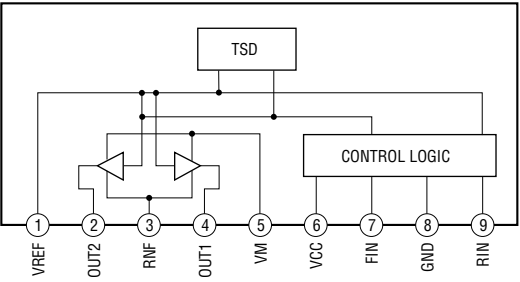


IC721 M65850FP (EA model only)



- DRIVER Board -

IC701 BA6956AN



SECTION 8 EXPLODED VIEWS

NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE (WHITE) . . . (RED)

↑
 Parts Color Cabinet's Color

- Abbreviation

AR : Argentine model

AUS : Australian model

E2 : 120 V AC Area in E model

E3 : 240 V AC Area in E model

EA : Saudi Arabia model

MX : Mexican model

MY : Malaysia model

SP : Singapore model

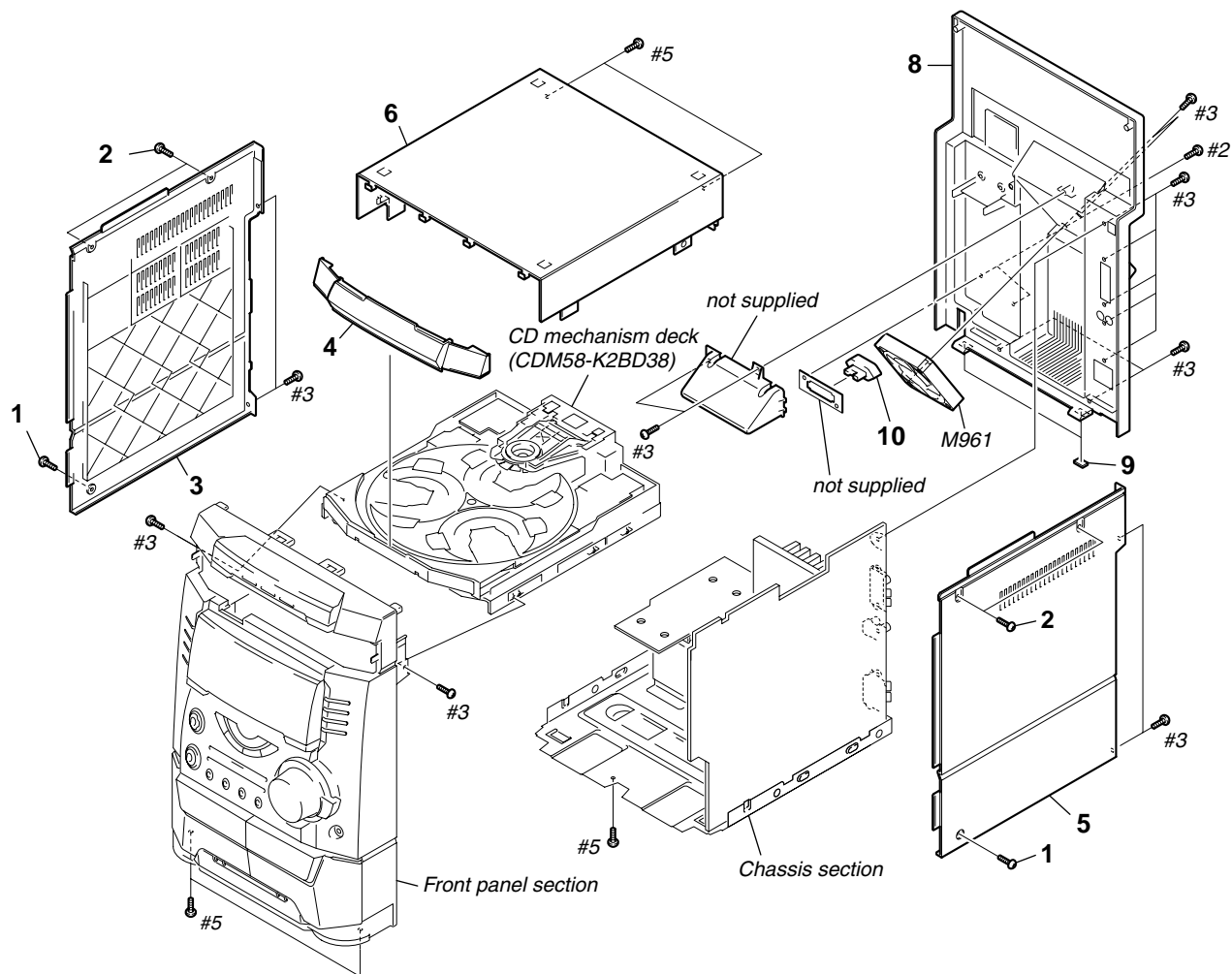
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

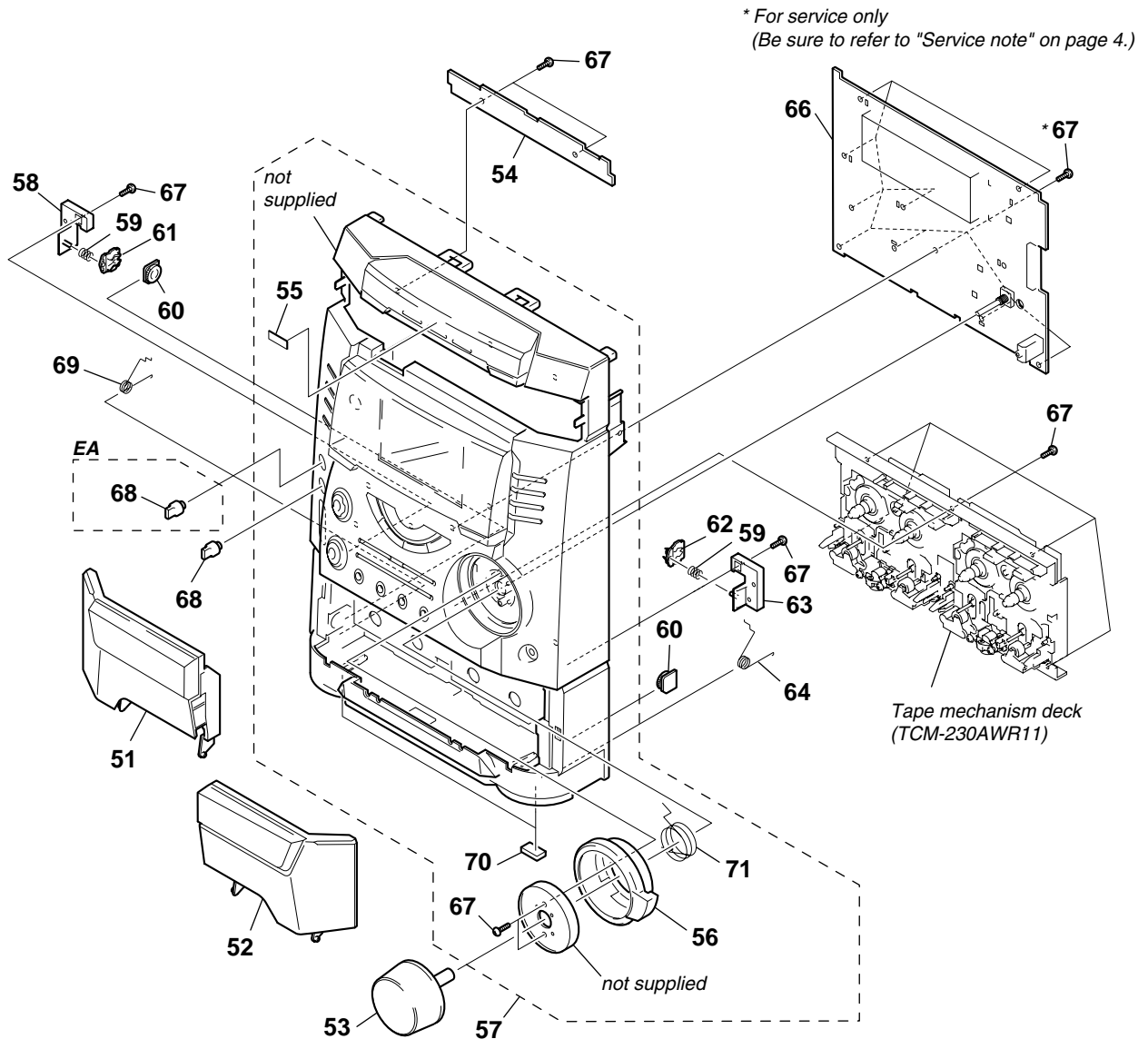
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

(1) COVER SECTION



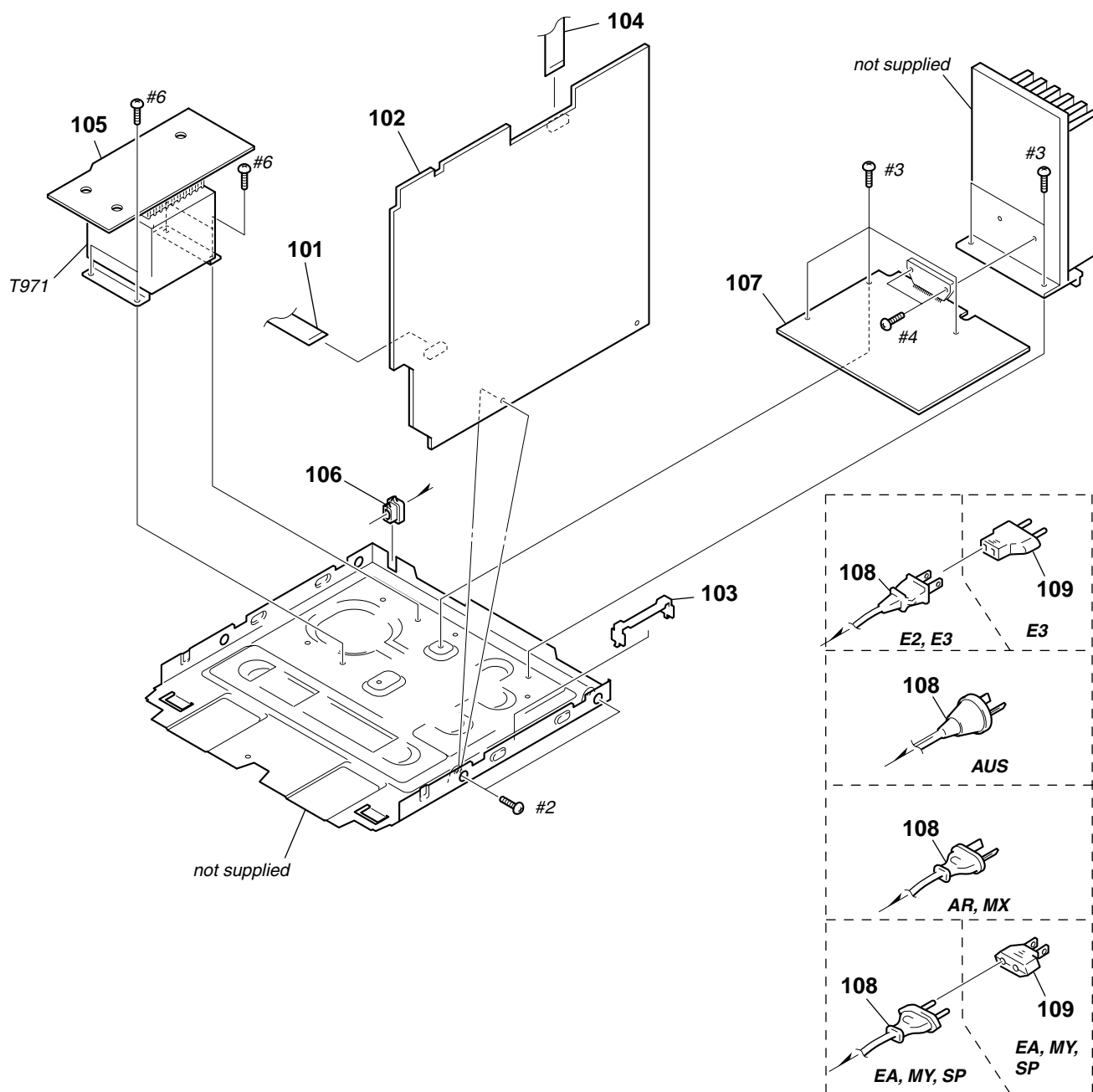
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)		6	4-224-550-41	CASE (TOP)	
2	3-363-099-41	SCREW (CASE 3 TP2)		8	4-225-040-31	BACK PANEL (E2, E3, EA, MY, SP, AR)	
3	4-225-038-21	SIDE PANEL L		8	4-225-040-41	BACK PANEL (MX, AUS)	
4	X-4952-776-1	LOADING PANEL ASSY		9	4-225-252-01	CUSHION (FOOT)	
		(E2, EA, MY, SP, MX, AR, AUS)		Δ 10	1-526-794-11	OUTLET, AC	
4	X-4952-777-1	LOADING PANEL ASSY (E3)					
5	4-225-039-21	SIDE PANEL R		M961	1-763-072-11	FAN, D.C.	



(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4952-790-1	TC HOLDER (L) ASSY (E3)		59	4-224-803-01	SPRING (PUSH), COMPRESSION COIL	
51	X-4953-019-1	TC HOLDER (L) ASSY (E2, EA, MY, SP, MX, AR, AUS)		60	4-224-104-11	DAMPER	
52	X-4952-729-1	TC HOLDER (R) ASSY (E2, EA, MY, SP, MX, AR, AUS)		61	4-224-560-01	CAM (L), HEART	
52	X-4952-793-1	TC HOLDER (R) ASSY (E3)		62	4-224-559-01	CAM (R), HEART	
53	4-225-032-01	VOL KNOB		63	4-224-561-01	BRACKET (HEART CAM R)	
54	A-4428-077-A	CD SWITCH BOARD, COMPLETE		64	4-225-053-01	SPRING R	
55	4-962-708-71	EMBLEM (4-A), SONY		66	A-4473-082-A	PANEL BOARD, COMPLETE (EXCEPT EA)	
56	4-225-033-01	FR KNOB		66	A-4473-084-A	PANEL BOARD, COMPLETE (EA)	
57	X-4952-667-1	FRONT PANEL ASSY (E3)		67	4-951-620-01	SCREW (2.6X8), +BVTP	
57	X-4952-668-1	FRONT PANEL ASSY (E2, EA, MY, SP, MX, AR, AUS)		68	4-224-578-01	KNOB (MIC)	
58	4-224-562-01	BRACKET (HEART CAM L)		69	4-225-052-01	SPRING L	
				70	4-225-252-01	CUSHION (FOOT)	
				71	4-225-054-01	SPRING FR	

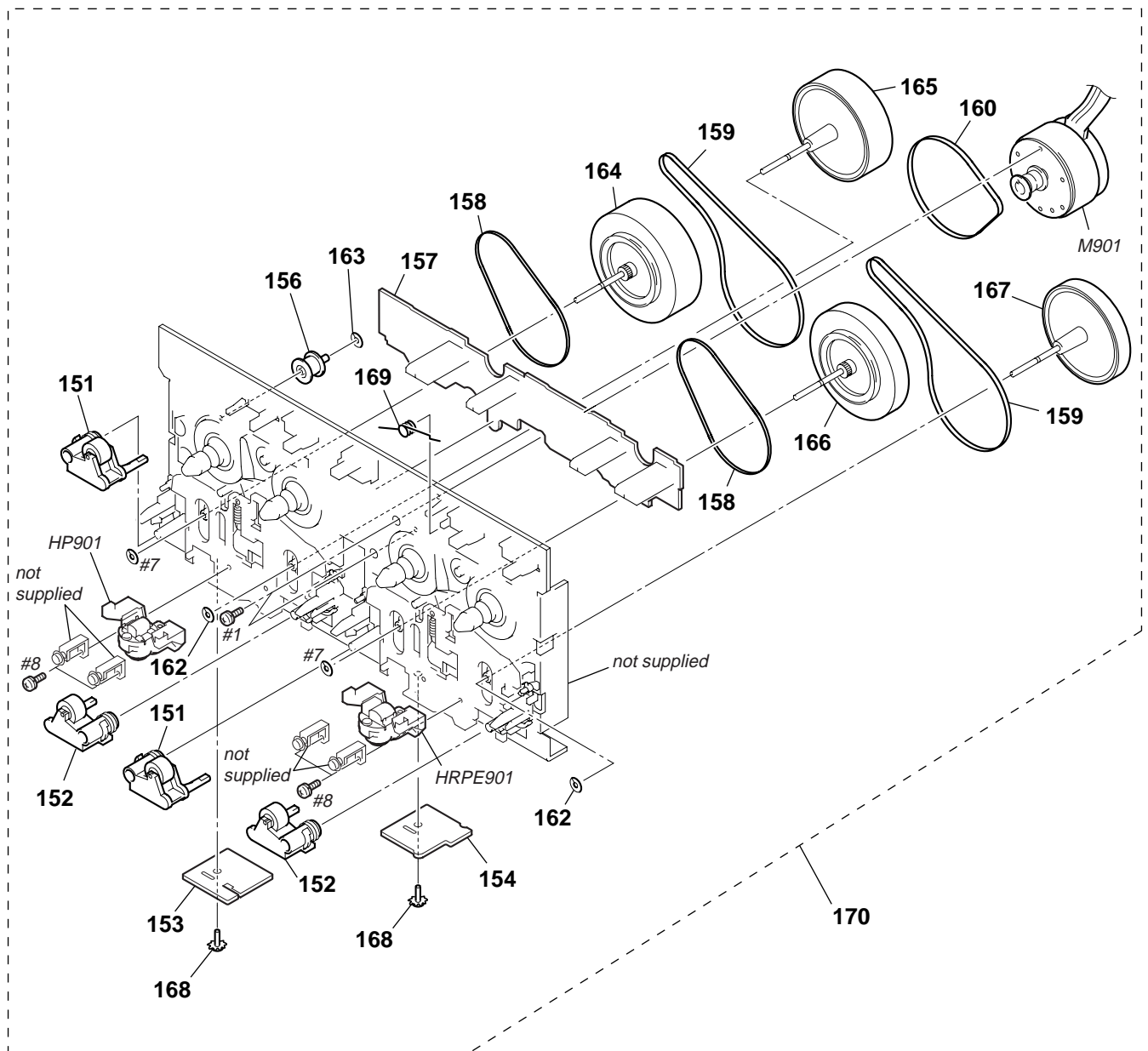
(3) CHASSIS SECTION



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Replace only with part number specified.

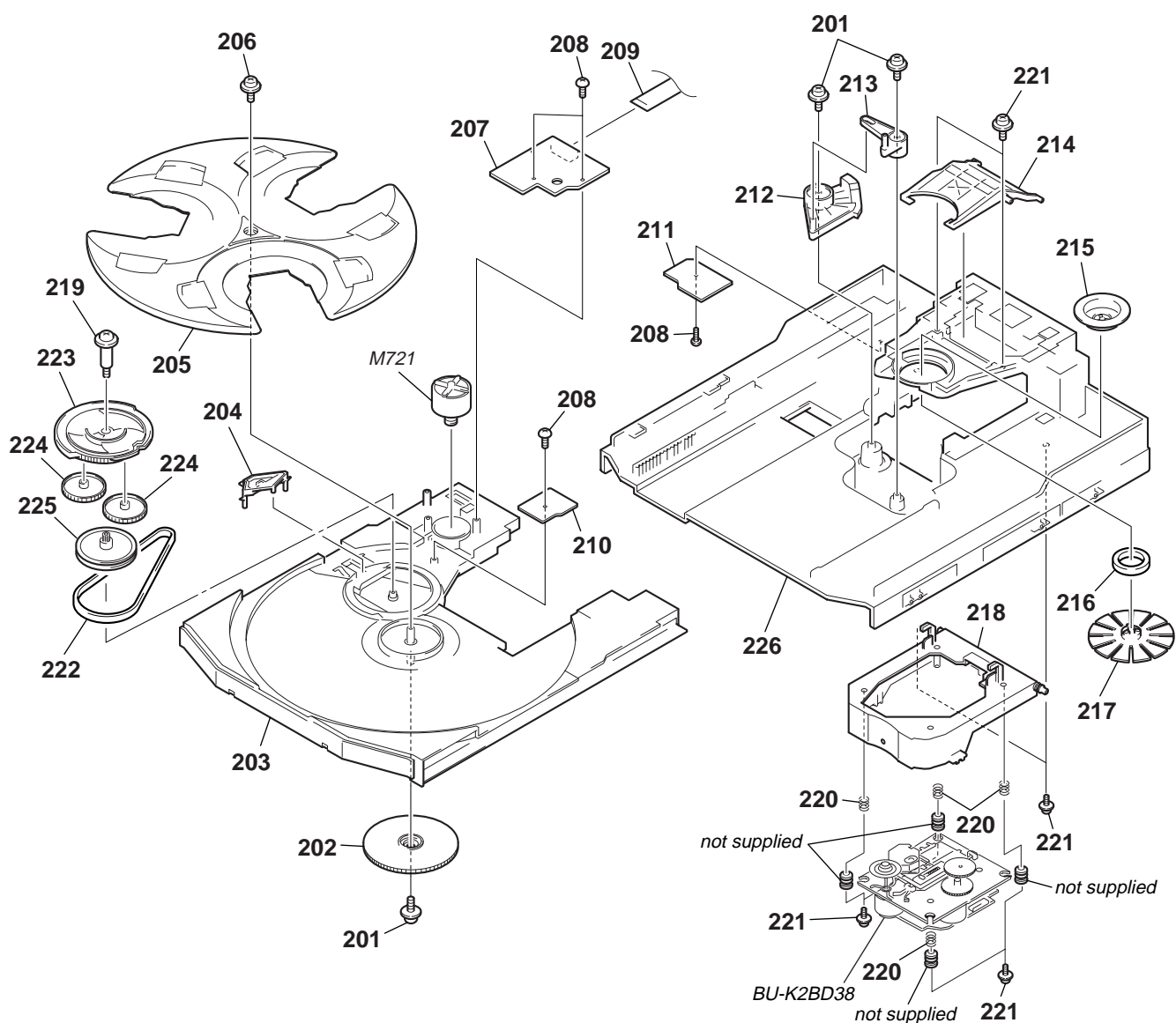
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	1-773-045-11	WIRE (FLAT TYPE) (17 CORE)		107	A-4428-483-A	POWER AMP BOARD, COMPLETE	
102	A-4428-487-A	MAIN BOARD, COMPLETE (E3, MY, SP, AUS)		△ 108	1-575-653-11	CORD, POWER (E3)	
102	A-4473-085-A	MAIN BOARD, COMPLETE (EA)		△ 108	1-696-847-11	CORD, POWER (AUS)	
102	A-4473-094-A	MAIN BOARD, COMPLETE (E2)		△ 108	1-777-071-21	CORD, POWER (MY, SP)	
102	A-4473-097-A	MAIN BOARD, COMPLETE (MX, AR)		△ 108	1-777-071-51	CORD, POWER (EA)	
* 103	4-988-533-01	HOLDER, PWB		△ 108	1-783-941-11	CORD, POWER (MX, AR)	
104	1-773-122-11	WIRE (FLAT TYPE) (19 CORE)		△ 108	1-791-901-11	CORD, POWER (E2)	
105	1-676-808-11	TRANS BOARD		△ 109	1-569-007-11	ADAPTOR, CONVERSION 2P (E3)	
* 106	3-703-244-00	BUSHING (2104), CORD (E3, EA, MY, SP, AR, AUS)		△ 109	1-569-008-21	ADAPTOR, CONVERSION (EA, MY, SP)	
106	3-703-571-11	BUSHING (S) (4516), CORD (E2, MX)		△ T971	1-435-325-11	POWER TRANSFORMER	

(4) TAPE MECHANISM DESK SECTION (TCM-230AWR11)



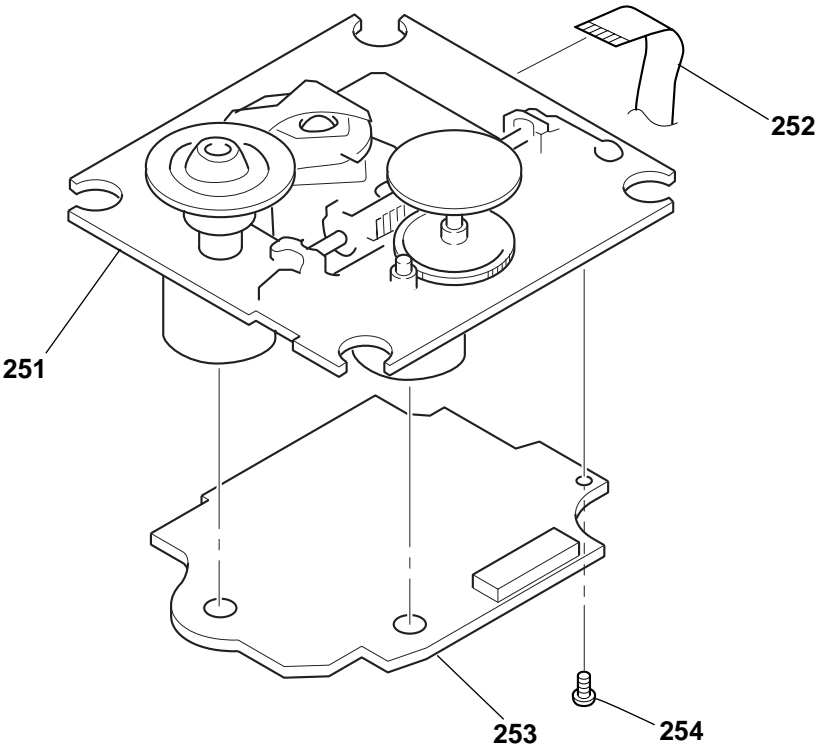
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3374-156-5	PINCH LEVER (REV) ASSY		164	X-3378-041-1	FLYWHEEL (A-REV) ASSY	
152	X-3374-155-5	PINCH LEVER (FWD) ASSY		165	X-3378-040-1	FLYWHEEL (A-FWD) ASSY	
153	A-2007-839-A	HEAD (A) BOARD, COMPLETE		166	X-3378-043-1	FLYWHEEL (B-REV) ASSY	
154	A-2007-840-A	HEAD (B) BOARD, COMPLETE		167	X-3378-042-1	FLYWHEEL (B-FWD) ASSY	
155	3-040-580-02	PULLEY (TENSION)		168	4-227-872-11	SCREW (+PTT 2X4), GROUND POINT	
156							
157	A-2007-838-A	LEAF SW BOARD, COMPLETE		169	4-227-455-02	SPING (HALF), TORSION	
158	3-041-947-01	BELT (FR)		170	A-2100-894-A	TAPE MECHANISM DECK (TCM-230AWR11)	
159	3-041-946-01	BELT (CAPSTAN B)		HP901	X-4954-985-1	BLOCK (A) ASSY, HEAD (PB)	
160	4-227-239-01	BELT (CAPSTAN C)		HRPE901	X-4954-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE)	
162	3-019-208-01	WASHER, STOPPER		M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY)	
163	3-016-533-01	WASHER (FR), STOPPER				(CAPSTAN/REEL)	

(5) CD MECHANISM DESK SECTION
(CMD58-K2BD38)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	4-933-134-11	SCREW (+PTPWH M2.6X8)		215	4-221-688-01	PULLEY (B), CHUCKING	
202	4-221-679-01	CAM (RELAY)		216	1-471-035-11	MAGNET ASSY	
203	4-221-675-01	TABLE		217	X-4952-019-1	PULLEY (A) ASSY, CHUCKING	
204	4-221-686-01	LEVER (CHANGE)		218	X-4951-889-1	HOLDER (BU) ASSY	
205	4-221-676-01	TRAY		219	4-222-097-01	SCREW, STEP	
206	4-933-134-51	SCREW (+PTPWH 2.6X8)		220	4-227-045-11	SPRING (INSULATOR), COIL	
207	1-675-910-11	MOTOR BOARD		221	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
208	4-951-620-01	SCREW (2.6X8), +BVTP		222	4-222-095-01	BELT	
209	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)		223	4-221-678-02	CAM (CONTROL)	
210	1-675-911-11	SENSOR BOARD		224	4-221-683-01	GEAR (U)	
211	1-675-912-11	DRIVER BOARD		225	4-221-685-01	PULLEY (S)	
212	X-4952-608-1	CAM (U/D) ASSY		226	4-221-674-03	CHASSIS	
213	4-221-681-01	LEVER (EX)		M721	A-4672-826-A	MOTOR ASSY (TURN)	
214	4-221-682-01	LEVER (LIFTER)					

(6) BASE UNIT SECTION
(BU-K2BD38)



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	Remark	Ref. No.	Part No.	Description	Remark
\triangle 251	A-4735-357-A	BASE ASSY, OP (KSM-213D)		253	A-4724-934-A	BD BOARD, COMPLETE	
252	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)		254	4-951-620-01	SCREW (2.6X8), +BVTP	

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 and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

• Abbreviation

AR : Argentine model	EA : Saudi Arabia model
AUS : Australian model	MX : Mexican model
E2 : 120 V AC Area in E model	MY : Malaysia model
E3 : 240 V AC Area in E model	SP : Singapore model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-4724-934-A	BD BOARD, COMPLETE *****		C171	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
		< CAPACITOR >		C172	1-163-123-00	CERAMIC CHIP 180PF 5% 50V	
C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		C181	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C102	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V					
C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		C182	1-163-123-00	CERAMIC CHIP 180PF 5% 50V	
C104	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V				< CONNECTOR >	
C108	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		CN101	1-784-741-11	CONNECTOR, FFC 19P	
				CN102	1-793-907-11	CONNECTOR, FFC/FPC 16P	
C109	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V				< FERRITE BEAD >	
C110	1-164-182-11	CERAMIC CHIP 0.0033uF 10% 50V		FB101	1-500-445-21	FERRITE 0uH	
C111	1-163-251-11	CERAMIC CHIP 100PF 5% 50V		FB103	1-500-445-21	FERRITE 0uH	
C112	1-107-682-11	CERAMIC CHIP 1uF 10% 16V				< IC >	
C114	1-163-038-00	CERAMIC CHIP 0.1uF 25V		IC101	8-752-386-85	IC CXD2587Q	
				IC102	8-759-549-28	IC BA5974FP-E2	
C115	1-104-665-11	ELECT 100uF 20% 10V		IC103	8-752-085-51	IC CXA2568M-T6	
C116	1-104-665-11	ELECT 100uF 20% 10V				< TRANSISTOR >	
C117	1-104-665-11	ELECT 100uF 20% 10V		Q101	8-729-049-31	TRANSISTOR 2SB710-RTX	
C118	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V				< RESISTOR >	
C119	1-163-235-11	CERAMIC CHIP 22PF 5% 50V		R101	1-216-077-00	RES-CHIP 15K 5% 1/10W	
				R102	1-216-097-00	RES-CHIP 100K 5% 1/10W	
C121	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R103	1-216-077-00	RES-CHIP 15K 5% 1/10W	
C122	1-104-665-11	ELECT 100uF 20% 10V		R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C123	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V		R105	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C124	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V					
C125	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R106	1-216-049-11	RES-CHIP 1K 5% 1/10W	
				R107	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C126	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R108	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C127	1-104-665-11	ELECT 100uF 20% 10V		R109	1-216-121-00	RES-CHIP 1M 5% 1/10W	
C129	1-163-031-11	CERAMIC CHIP 0.01uF 50V		R110	1-216-025-00	RES-CHIP 100 5% 1/10W	
C130	1-164-346-11	CERAMIC CHIP 1uF 16V					
C131	1-126-964-11	ELECT 10uF 20% 50V		R111	1-216-121-00	RES-CHIP 1M 5% 1/10W	
				R113	1-216-121-00	RES-CHIP 1M 5% 1/10W	
C133	1-164-346-11	CERAMIC CHIP 1uF 16V		R114	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C140	1-164-346-11	CERAMIC CHIP 1uF 16V		R116	1-216-001-00	METAL CHIP 10 5% 1/10W	
C141	1-164-346-11	CERAMIC CHIP 1uF 16V		R117	1-216-049-11	RES-CHIP 1K 5% 1/10W	
C143	1-163-038-00	CERAMIC CHIP 0.1uF 25V					
C145	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R118	1-216-025-00	RES-CHIP 100 5% 1/10W	
				R119	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
C153	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V					
C162	1-104-665-11	ELECT 100uF 20% 10V					
C163	1-104-665-11	ELECT 100uF 20% 10V					
C165	1-163-038-00	CERAMIC CHIP 0.1uF 25V					
C167	1-163-237-11	CERAMIC CHIP 27PF 5% 50V					
C168	1-163-235-11	CERAMIC CHIP 22PF 5% 50V					

BD	CD SWITCH	DRIVER	HEAD (A)	HEAD (B)	LEAF SW
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Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R124	1-216-097-00	RES-CHIP	100K	5%	1/10W	S644	1-771-410-21	SWITCH, TACTILE (DISC 2)			
R131	1-216-033-00	METAL CHIP	220	5%	1/10W	S645	1-771-410-21	SWITCH, TACTILE (DISC 3)			
						S646	1-771-410-21	SWITCH, TACTILE (▲ OPEN/CLOSE (CD))	*****		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W						
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W						
R147	1-216-069-00	METAL CHIP	6.8K	5%	1/10W		1-675-912-11	DRIVER BOARD			
R148	1-216-001-00	METAL CHIP	10	5%	1/10W			*****			
R149	1-216-001-00	METAL CHIP	10	5%	1/10W			< CAPACITOR >			
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W						
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W	C702	1-126-964-51	ELECT	10uF	20%	50V
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W			< CONNECTOR >			
R171	1-216-078-00	RES-CHIP	16K	5%	1/10W						
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R173	1-216-077-00	RES-CHIP	15K	5%	1/10W	CN701	1-785-336-11	PIN, CONNECTOR (LIGHT ANGLE) 10P			
R181	1-216-078-00	RES-CHIP	16K	5%	1/10W	CN702	1-785-550-11	CONNECTOR, FFC/FPC 8P			
R182	1-216-073-00	METAL CHIP	10K	5%	1/10W			< DIODE >			
R183	1-216-077-00	RES-CHIP	15K	5%	1/10W						
RN101	1-233-576-11	RES, CHIP NETWORK 100				D701	8-719-983-63	DIODE MTZJ-T-72-3.3B			
		< SWITCH >						< IC >			
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)				IC701	8-759-598-69	IC BA6956AN			
		< VIBRATOR >						< RESISTOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)	*****			R701	1-249-411-11	CARBON	330	5%	1/4W
						R702	1-249-401-11	CARBON	47	5%	1/4W

	A-4428-077-A	CD SWITCH BOARD, COMPLETE						1-676-220-12	HEAD (A) BOARD		
		*****						*****			
		< LED >						< CONNECTOR >			
D630	8-719-056-13	LED SML79423C-TP15 (DISC 1)									
D631	8-719-056-13	LED SML79423C-TP15 (DISC 2)				* CN1	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	*****		
D632	8-719-056-13	LED SML79423C-TP15 (DISC 3)									
		< TRANSISTOR >						1-676-221-12	HEAD (B) BOARD		

								< CONNECTOR >			
Q630	8-729-422-57	TRANSISTOR BN1A4M-TP				CN2	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P	*****		
Q631	8-729-422-57	TRANSISTOR BN1A4M-TP									
Q632	8-729-422-57	TRANSISTOR BN1A4M-TP						A-2007-838-A	LEAF SW BOARD, COMPLETE		
Q633	8-729-422-57	TRANSISTOR BN1A4M-TP						*****			
Q634	8-729-422-57	TRANSISTOR BN1A4M-TP						< CAPACITOR >			
		< RESISTOR >									
R685	1-249-417-11	CARBON	1K	5%	1/4W						
R686	1-249-418-11	CARBON	1.2K	5%	1/4W	C1001	1-107-716-11	ELECT	33uF	20%	10V
R687	1-249-420-11	CARBON	1.8K	5%	1/4W			< CONNECTOR >			
R688	1-249-422-11	CARBON	2.7K	5%	1/4W						
R689	1-247-843-11	CARBON	3.3K	5%	1/4W	CN1001	1-568-860-21	SOCKET, CONNECTOR 17P			
								< DIODE >			
R750	1-249-406-11	CARBON	120	5%	1/4W						
R751	1-249-406-11	CARBON	120	5%	1/4W						
R752	1-249-406-11	CARBON	120	5%	1/4W						
R753	1-249-406-11	CARBON	120	5%	1/4W	D1001	8-719-911-19	DIODE 1SS133T-72			
R754	1-249-406-11	CARBON	120	5%	1/4W	D1002	8-719-911-19	DIODE 1SS133T-72			
								< PHOTO INTERRUPTER >			
R755	1-249-406-11	CARBON	120	5%	1/4W						
		< SWITCH >				IC1001	8-749-014-38	PHOTO INTERRUPTER SG-264			
						IC1002	8-749-014-38	PHOTO INTERRUPTER SG-264			
S642	1-771-410-21	SWITCH, TACTILE (DISC SKIP/EX-CHANGE)									
S643	1-771-410-21	SWITCH, TACTILE (DISC 1)									

Ref. No.	Part No.	Description	Remark			
< TRANSISTOR >						
Q1001	8-729-029-56	TRANSISTOR	DTA144ESA-TP			
< RESISTOR >						
R907	1-247-879-11	CARBON	100K	5%	1/4W	
R1001	1-249-409-11	CARBON	220	5%	1/4W	
R1002	1-249-409-11	CARBON	220	5%	1/4W	
R1003	1-249-414-11	CARBON	560	5%	1/4W	
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W	
R1005	1-247-818-11	CARBON	300	5%	1/4W	
R1006	1-247-864-11	CARBON	24K	5%	1/4W	
R1007	1-247-780-00	CARBON	7.5	5%	1/4W	
R1008	1-249-417-11	CARBON	1K	5%	1/4W	
< VARIABLE RESISTOR >						
RV1001	1-241-785-11	RES, ADJ, CARBON 10K				
RV1002	1-241-785-11	RES, ADJ, CARBON 10K				
< SWITCH >						
S1001	1-570-953-11	SWITCH, PUSH (1 KEY) (A PLAY)				
S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (B PLAY)				
S1003	1-771-333-11	SWITCH, LEAF (A HALF)				
S1004	1-771-536-11	SWITCH, LEAF (A 120/70)				
S1005	1-771-536-11	SWITCH, LEAF (REC A)				
S1006	1-771-333-11	SWITCH, LEAF (B HALF)				
S1008	1-771-536-11	SWITCH, LEAF (B 120/70)				
S1009	1-771-536-11	SWITCH, LEAF (REC B)				

A-4428-487-A		MAIN BOARD, COMPLETE (E3, MY, SP, AUS)				
A-4473-085-A		MAIN BOARD, COMPLETE (EA)				
A-4473-094-A		MAIN BOARD, COMPLETE (E2)				
A-4473-097-A		MAIN BOARD, COMPLETE (MX, AR)				

7-685-646-79		SCREW +BVTP 3X8 TYPE2 N-S				
< CAPACITOR/SHORT >						
C101	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C102	1-126-961-11	ELECT	2.2uF	20%	50V	
C103	1-126-964-11	ELECT	10uF	20%	50V	
C104	1-126-964-11	ELECT	10uF	20%	50V	
C105	1-126-964-11	ELECT	10uF	20%	50V	
C106	1-136-161-00	MYLAR	0.047uF	5%	50V	
C107	1-136-495-11	MYLAR	0.068uF	5%	50V	
C108	1-136-495-11	MYLAR	0.068uF	5%	50V	
C109	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C110	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C111	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C112	1-126-961-11	ELECT	2.2uF	20%	50V	
C113	1-126-957-11	ELECT	0.22uF	20%	50V	
C115	1-136-169-00	MYLAR	0.22uF	5%	50V	
C116	1-136-169-00	MYLAR	0.22uF	5%	50V	
C117	1-126-964-11	ELECT	10uF	20%	50V	
C118	1-126-961-11	ELECT	2.2uF	20%	50V	
C121	1-126-964-11	ELECT	10uF	20%	50V	
C122	1-126-964-11	ELECT	10uF	20%	50V	
C123	1-126-964-11	ELECT	10uF	20%	50V	

Ref. No.	Part No.	Description	Remark			
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C125	1-126-964-11	ELECT	10uF	20%	50V	
C131	1-136-169-00	MYLAR	0.22uF	5%	50V	
C132	1-126-964-11	ELECT	10uF	20%	50V	
C133	1-126-925-11	ELECT	470uF	20%	10V	
C134	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C135	1-126-964-11	ELECT	10uF	20%	50V	
C140	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C144	1-126-964-11	ELECT	10uF	20%	50V	
C146	1-126-925-11	ELECT	470uF	20%	10V	
C151	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C152	1-126-961-11	ELECT	2.2uF	20%	50V	
C153	1-126-964-11	ELECT	10uF	20%	50V	
C154	1-126-964-11	ELECT	10uF	20%	50V	
C155	1-126-964-11	ELECT	10uF	20%	50V	
C156	1-136-161-00	MYLAR	0.047uF	5%	50V	
C157	1-136-495-11	MYLAR	0.068uF	5%	50V	
C158	1-136-495-11	MYLAR	0.068uF	5%	50V	
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C160	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C161	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C162	1-126-961-11	ELECT	2.2uF	20%	50V	
C165	1-136-169-00	MYLAR	0.22uF	5%	50V	
C166	1-136-169-00	MYLAR	0.22uF	5%	50V	
C167	1-126-964-11	ELECT	10uF	20%	50V	
C171	1-126-964-11	ELECT	10uF	20%	50V	
C172	1-126-964-11	ELECT	10uF	20%	50V	
C175	1-126-964-11	ELECT	10uF	20%	50V	
C199	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C201	1-104-665-11	ELECT	100uF	20%	10V	
C202	1-126-925-11	ELECT	470uF	20%	10V	
C203	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C204	1-126-961-11	ELECT	2.2uF	20%	50V	
C205	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C206	1-126-961-11	ELECT	2.2uF	20%	50V	
C207	1-126-916-11	ELECT	1000uF	20%	6.3V	
C208	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C209	1-126-925-11	ELECT	470uF	20%	10V	
C212	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C301	1-126-960-11	ELECT	1uF	20%	50V	
C302	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C303	1-136-165-00	MYLAR	0.1uF	5%	50V	
C304	1-136-165-00	MYLAR	0.1uF	5%	50V	
C305	1-126-964-11	ELECT	10uF	20%	50V	
C306	1-126-960-11	ELECT	1uF	20%	50V	
C307	1-126-959-11	ELECT	0.47uF	20%	50V	
C308	1-126-964-11	ELECT	10uF	20%	50V	
C309	1-137-194-81	MYLAR	0.47uF	5%	50V	
C310	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C311	1-126-964-11	ELECT	10uF	20%	50V	
C312	1-126-959-11	ELECT	0.47uF	20%	50V	
C313	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C314	1-126-964-11	ELECT	10uF	20%	50V	
C315	1-126-963-11	ELECT	4.7uF	20%	50V	
C316	1-126-933-11	ELECT	100uF	20%	16V	
C317	1-104-665-11	ELECT	100uF	20%	10V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C318	1-126-964-11	ELECT	10uF	20%	50V	C414	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C319	1-126-961-11	ELECT	2.2uF	20%	50V	C416	1-126-916-11	ELECT	1000uF	20%	6.3V
C320	1-126-961-11	ELECT	2.2uF	20%	50V						
C321	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	C462	1-104-665-11	ELECT	100uF	20%	10V
C322	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C463	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
						C464	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C323	1-136-157-00	MYLAR	0.022uF	5%	50V	C497	1-126-964-11	ELECT	10uF	20%	50V
C324	1-126-964-11	ELECT	10uF	20%	50V	C498	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C325	1-126-965-11	ELECT	22uF	20%	50V	C501	1-136-165-00	MYLAR	0.1uF	5%	50V
C326	1-163-131-00	CERAMIC CHIP	390PF	5%	50V						
C327	1-104-665-11	ELECT	100uF	20%	10V	C502	1-136-165-00	MYLAR	0.1uF	5%	50V
						C503	1-126-964-11	ELECT	10uF	20%	50V
C328	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C504	1-109-953-11	ELECT	2.2uF	20%	50V
C329	1-130-483-00	MYLAR	0.01uF	5%	50V	C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C330	1-126-964-11	ELECT	10uF	20%	50V	C601	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C331	1-126-965-11	ELECT	22uF	20%	50V						
C332	1-137-427-11	MYLAR	120PF	5%	50V	C602	1-163-031-11	CERAMIC CHIP	0.01uF		50V
						C603	1-104-664-11	ELECT	47uF	20%	16V
C333	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	C604	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C334	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	C605	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C335	1-137-150-11	MYLAR	0.01uF	5%	100V	C607	1-216-295-00	SHORT	0		
C336	1-126-961-11	ELECT	2.2uF	20%	50V						
C337	1-136-155-00	FILM	0.015uF	5%	50V	C611	1-104-664-11	ELECT	47uF	20%	16V
						C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C338	1-130-481-00	MYLAR	0.0068uF	5%	50V	C613	1-126-960-11	ELECT	1uF	20%	50V
C339	1-130-481-00	MYLAR	0.0068uF	5%	50V	C614	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C340	1-136-156-00	MYLAR	0.018uF	5%	50V	C615	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C341	1-126-960-11	ELECT	1uF	20%	50V						
C342	1-104-664-11	ELECT	47uF	20%	16V	C616	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
						C617	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C351	1-126-960-11	ELECT	1uF	20%	50V	C618	1-126-957-11	ELECT	0.22uF	20%	50V
C352	1-130-479-00	MYLAR	0.0047uF	5%	50V	C619	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C353	1-136-165-00	MYLAR	0.1uF	5%	50V	C620	1-126-962-11	ELECT	3.3uF	20%	50V
C354	1-136-165-00	MYLAR	0.1uF	5%	50V						
C355	1-126-964-11	ELECT	10uF	20%	50V	C621	1-126-962-11	ELECT	3.3uF	20%	50V
						C622	1-104-664-11	ELECT	47uF	20%	16V
C356	1-126-960-11	ELECT	1uF	20%	50V	C623	1-126-964-11	ELECT	10uF	20%	50V
C357	1-126-959-11	ELECT	0.47uF	20%	50V	C624	1-126-960-11	ELECT	1uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V	C625	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C359	1-137-194-81	MYLAR	0.47uF	5%	50V						
C360	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	C626	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
						C628	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C362	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C629	1-126-965-11	ELECT	22uF	20%	50V
C363	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C630	1-126-964-11	ELECT	10uF	20%	50V
C368	1-126-964-11	ELECT	10uF	20%	50V	C631	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C369	1-126-961-11	ELECT	2.2uF	20%	50V						
C370	1-126-961-11	ELECT	2.2uF	20%	50V	C632	1-126-933-11	ELECT	100uF	20%	16V
						C633	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C371	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	C634	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C372	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C635	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C373	1-136-157-00	MYLAR	0.022uF	5%	50V	C636	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C374	1-126-964-11	ELECT	10uF	20%	50V						
C375	1-126-965-11	ELECT	22uF	20%	50V	C637	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
						C641	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C376	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	C644	1-163-087-00	CERAMIC CHIP	4PF		50V
C377	1-104-665-11	ELECT	100uF	20%	10V	C645	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C378	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C651	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C379	1-130-483-00	MYLAR	0.01uF	5%	50V						
C380	1-126-964-11	ELECT	10uF	20%	50V	C652	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
						C653	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C381	1-126-965-11	ELECT	22uF	20%	50V	C655	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C382	1-137-427-11	MYLAR	120PF	5%	50V	C656	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C383	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	C657	1-104-664-11	ELECT	47uF	20%	16V
C384	1-163-103-00	CERAMIC CHIP	27PF	5%	50V						
C385	1-126-964-11	ELECT	10uF	20%	50V	C658	1-126-961-11	ELECT	2.2uF	20%	50V
						C659	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C395	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C660	1-104-664-11	ELECT	47uF	20%	16V
C410	1-163-233-11	CERAMIC CHIP	18PF	5%	50V	C661	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C411	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	C662	1-126-959-11	ELECT	0.47uF	20%	50V

MAIN

Ref. No.	Part No.	Description	Remark		
C663	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C669	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C803	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C821	1-104-665-11	ELECT	100uF	20%	10V
C822	1-126-961-11	ELECT	2.2uF	20%	50V
C824	1-126-960-11	ELECT	1uF	20%	50V
C841	1-126-959-11	ELECT	0.47uF	20%	50V
C853	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C861	1-107-717-11	ELECT	47uF	20%	50V
C862	1-107-721-11	ELECT	4.7uF	20%	100V
C863	1-107-721-11	ELECT	4.7uF	20%	100V
C891	1-126-964-11	ELECT	10uF	20%	50V
C892	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C901	1-126-941-11	ELECT	3300uF	20%	25V
C902	1-136-165-00	MYLAR	0.1uF	5%	50V
C903	1-136-165-00	MYLAR	0.1uF	5%	50V
C905	1-136-165-00	MYLAR	0.1uF	5%	50V
C906	1-136-165-00	MYLAR	0.1uF	5%	50V
C907	1-128-548-11	ELECT	4700uF	20%	25V
C908	1-126-942-61	ELECT	1000uF	20%	25V
C909	1-126-952-11	ELECT	1000uF	20%	35V
C911	1-126-960-11	ELECT	1uF	20%	50V
C912	1-126-916-11	ELECT	1000uF	20%	6.3V
C921	1-126-960-11	ELECT	1uF	20%	50V
C922	1-126-933-11	ELECT	100uF	20%	16V
C925	1-104-665-11	ELECT	100uF	20%	10V
C931	1-126-964-11	ELECT	10uF	20%	50V
C932	1-126-925-11	ELECT	470uF	20%	10V
C951	1-126-960-11	ELECT	1uF	20%	50V
C961	1-126-960-11	ELECT	1uF	20%	50V
C962	1-126-926-11	ELECT	1000uF	20%	10V
< CERAMIC FILTER >					
CF601	1-760-023-11	FILTER, CERAMIC			
CF602	1-760-023-11	FILTER, CERAMIC			
< CONNECTOR >					
* CN101	1-565-291-11	SOCKET, CONNECTOR 13P	(SYSTEM CONTROL)		
CN201	1-569-913-11	SOCKET, CONNECTOR 19P			
CN202	1-785-336-11	PIN, CONNECTOR (LIGHT ANGLE) 10P			
* CN301	1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P			
* CN304	1-569-934-11	SOCKET, CONNECTOR 17P			
CN401	1-793-766-11	CONNECTOR, BOARD TO BOARD 30P			
* CN891	1-564-506-11	PLUG, CONNECTOR 3P			
CN901	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
CN902	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
< DIODE >					
D501	8-719-988-61	DIODE	1SS355TE-17		
D502	8-719-988-61	DIODE	1SS355TE-17		
D503	8-719-988-61	DIODE	1SS355TE-17		
D504	8-719-988-61	DIODE	1SS355TE-17		
D505	8-719-988-61	DIODE	1SS355TE-17		
D506	8-719-988-61	DIODE	1SS355TE-17		
D508	8-719-988-61	DIODE	1SS355TE-17		
D509	8-719-988-61	DIODE	1SS355TE-17		

Ref. No.	Part No.	Description	Remark
D510	8-719-988-61	DIODE 1SS355TE-17	
D511	8-719-988-61	DIODE 1SS355TE-17	
D601	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D641	8-719-914-42	DIODE DA204K-T-146	
D651	8-719-988-61	DIODE 1SS355TE-17	
D801	8-719-988-61	DIODE 1SS355TE-17	
D822	8-719-988-61	DIODE 1SS355TE-17	
D824	8-719-988-61	DIODE 1SS355TE-17	
D841	8-719-988-61	DIODE 1SS355TE-17	
D861	8-719-988-61	DIODE 1SS355TE-17	
D891	8-719-988-61	DIODE 1SS355TE-17	
D892	8-719-988-61	DIODE 1SS355TE-17	
D901	8-719-200-82	DIODE 11ES2-TB5	
D902	8-719-200-82	DIODE 11ES2-TB5	
D903	8-719-200-82	DIODE 11ES2-TB5	
D904	8-719-200-82	DIODE 11ES2-TB5	
D906	8-719-200-82	DIODE 11ES2-TB5	
D907	8-719-200-82	DIODE 11ES2-TB5	
D908	8-719-200-82	DIODE 11ES2-TB5	
D909	8-719-200-82	DIODE 11ES2-TB5	
D910	8-719-200-82	DIODE 11ES2-TB5	
D911	8-719-200-82	DIODE 11ES2-TB5	
D952	8-719-988-61	DIODE 1SS355TE-17	
D953	8-719-988-61	DIODE 1SS355TE-17	
< SHORT >			
FB201	1-216-295-00	SHORT	0
FB203	1-216-295-00	SHORT	0
FB204	1-216-295-00	SHORT	0
FB416	1-216-295-00	SHORT	0
FB462	1-216-295-00	SHORT	0
FB499	1-216-295-00	SHORT	0
< FRONT END >			
FE601	1-693-477-11	FRONT END (3 GANGS)	
< IC >			
IC101	8-759-652-04	IC M61504FP-TP	
IC102	8-759-099-06	IC M5218AFP-TE1	
IC104	8-759-099-06	IC M5218AFP-TE1	
IC201	8-749-923-04	IC TOTX178A (OPTICAL)	
IC301	8-759-652-02	IC HA12226F	
IC302	8-759-143-54	IC uPC1330HA	
IC303	8-759-656-83	IC NJM4580MD-TE	
IC304	8-759-656-83	IC NJM4580MD-TE	
IC401	8-759-677-43	IC M30622MAA-A60	
IC501	8-759-635-63	IC M51943BSL-TP	
IC601	8-759-652-00	IC BA1450	
IC651	8-759-288-54	IC LC72130	
IC911	8-759-039-69	IC uPC7805AHF	
IC921	8-759-088-08	IC uPC7812AHF	
IC931	8-759-071-48	IC TA7807S	
IC951	8-759-158-62	IC TA78057S	
IC961	8-759-701-59	IC M5F7809L	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< IF TRANSFORMER >		JR923	1-216-295-00	SHORT 0	
IFT601	1-435-295-11	TRANSFORMER, IF		JR924	1-216-295-00	SHORT 0	
		< JACK >		JR928	1-216-295-00	SHORT 0	
J101	1-793-987-11	JACK, PIN 2P (MD/VIDEO (AUDIO))				< COIL/SHORT >	
		< SHORT/RESISTOR >		L201	1-414-189-31	INDUCTOR 100uH	
JR1	1-216-296-00	SHORT 0		L301	1-410-780-11	INDUCTOR 27mH	
JR2	1-216-296-00	SHORT 0		L302	1-414-193-41	INDUCTOR 220uH	
JR3	1-216-296-00	SHORT 0		L303	1-414-193-41	INDUCTOR 220uH	
JR4	1-216-296-00	SHORT 0		L351	1-410-780-11	INDUCTOR 27mH	
JR6	1-216-296-00	SHORT 0		L642	1-216-296-00	SHORT 0	
						< LOW-PASS FILTER >	
JR7	1-216-296-00	SHORT 0		LPF601	1-234-458-11	FILTER, LOW PASS	
JR8	1-216-295-00	SHORT 0		LPF602	1-234-458-11	FILTER, LOW PASS	
JR13	1-216-296-00	SHORT 0				< TRANSISTOR >	
JR14	1-216-296-00	SHORT 0		Q101	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR15	1-216-296-00	SHORT 0		Q102	8-729-144-85	FET 2SK1133-T1B	
				Q103	8-729-107-45	TRANSISTOR 2SC3624A-T1L15L16	
JR17	1-216-296-00	SHORT 0		Q141	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR18	1-216-295-00	SHORT 0		Q151	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR19	1-216-296-00	SHORT 0					
JR23	1-216-296-00	SHORT 0		Q152	8-729-144-85	FET 2SK1133-T1B	
JR25	1-216-296-00	SHORT 0		Q153	8-729-107-45	TRANSISTOR 2SC3624A-T1L15L16	
				Q301	8-729-801-93	TRANSISTOR 2SD1387-34-TP	
JR26	1-216-296-00	SHORT 0		Q302	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
JR27	1-216-296-00	SHORT 0		Q303	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
JR29	1-216-296-00	SHORT 0					
JR31	1-216-295-00	SHORT 0		Q304	8-729-113-69	TRANSISTOR FN1F4M-T1M32	
JR32	1-216-296-00	SHORT 0		Q305	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
				Q391	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
JR33	1-216-296-00	SHORT 0		Q392	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR34	1-216-295-00	SHORT 0		Q393	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
JR36	1-216-295-00	SHORT 0					
JR37	1-216-296-00	SHORT 0		Q394	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR38	1-216-296-00	SHORT 0		Q395	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
				Q396	8-729-116-57	TRANSISTOR 2SB1068TP-K	
JR42	1-216-295-00	SHORT 0		Q397	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR44	1-216-296-00	SHORT 0		Q501	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR51	1-216-296-00	SHORT 0					
JR52	1-216-296-00	SHORT 0		Q503	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR54	1-216-295-00	SHORT 0		Q504	8-729-113-69	TRANSISTOR FN1F4M-T1M32	
				Q505	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR140	1-216-296-00	SHORT 0		Q601	8-729-201-27	TRANSISTOR 2SC2715Y-TE85L	
JR601	1-216-296-00	SHORT 0		Q602	8-729-422-57	TRANSISTOR BN1A4M-TP	
JR602	1-216-295-00	SHORT 0					
JR603	1-216-296-00	SHORT 0		Q611	8-729-120-28	TRANSISTOR 2SC2412K-T-146-QR	
JR604	1-216-296-00	SHORT 0		Q612	8-729-120-28	TRANSISTOR 2SC2412K-T-146-QR	
				Q821	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR605	1-216-296-00	SHORT 0		Q822	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR606	1-216-296-00	SHORT 0		Q823	8-729-216-22	TRANSISTOR 2SA812-T1-M5M6	
JR607	1-216-295-00	SHORT 0					
JR608	1-216-296-00	SHORT 0		Q824	8-729-113-13	TRANSISTOR FA1A4M-T1L33	
JR609	1-216-295-00	SHORT 0		Q825	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
				Q828	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR611	1-216-296-00	SHORT 0		Q829	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR615	1-216-295-00	SHORT 0		Q831	8-729-113-69	TRANSISTOR FN1F4M-T1M32	
JR616	1-216-295-00	SHORT 0					
JR619	1-216-295-00	SHORT 0		Q832	8-729-120-28	TRANSISTOR 2SC1623-T1-L5L6	
JR634	1-216-295-00	SHORT 0		Q861	8-729-113-69	TRANSISTOR FN1F4M-T1M32	
				Q862	8-729-107-45	TRANSISTOR 2SC3624A-T1L15L16	
JR640	1-216-295-00	SHORT 0		Q863	8-729-107-45	TRANSISTOR 2SC3624A-T1L15L16	
JR908	1-216-295-00	SHORT 0		Q891	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
JR909	1-216-295-00	SHORT 0					
JR912	1-216-296-00	SHORT 0 (EXCEPT EA, AR)					
JR922	1-216-097-00	RES-CHIP 100K 5% 1/10W					

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
Q892	8-729-620-05	TRANSISTOR	2SC2603TP-EF			R302	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
Q911	8-729-141-83	TRANSISTOR	2SB1375			R303	1-216-025-00	RES-CHIP	100	5%	1/10W
Q912	8-729-113-13	TRANSISTOR	FA1A4M-T1L33			R304	1-216-025-00	RES-CHIP	100	5%	1/10W
< RESISTOR >						R305	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R101	1-216-049-11	RES-CHIP	1K	5%	1/10W	R306	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W	R307	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W	R308	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R105	1-216-097-00	RES-CHIP	100K	5%	1/10W	R309	1-216-081-00	METAL CHIP	22K	5%	1/10W
R107	1-216-105-00	RES-CHIP	220K	5%	1/10W	R311	1-216-121-00	RES-CHIP	1M	5%	1/10W
R108	1-216-097-00	RES-CHIP	100K	5%	1/10W	R312	1-216-102-00	RES-CHIP	160K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W	R313	1-216-097-00	RES-CHIP	100K	5%	1/10W
R110	1-216-045-00	METAL CHIP	680	5%	1/10W	R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W	R316	1-216-234-00	RES-CHIP	33K	5%	1/8W
R112	1-216-089-00	RES-CHIP	47K	5%	1/10W	R317	1-216-222-00	RES-CHIP	10K	5%	1/8W
R113	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-097-00	RES-CHIP	100K	5%	1/10W	R319	1-216-111-00	METAL CHIP	390K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W	R320	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R116	1-216-065-00	RES-CHIP	4.7K	5%	1/10W	R321	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R121	1-216-224-00	RES-CHIP	12K	5%	1/8W	R331	1-216-099-00	METAL CHIP	120K	5%	1/10W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W	R332	1-216-025-00	RES-CHIP	100	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W	R333	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R124	1-216-065-00	RES-CHIP	4.7K	5%	1/10W	R334	1-216-100-00	RES-CHIP	130K	5%	1/10W
R125	1-216-073-00	METAL CHIP	10K	5%	1/10W	R335	1-216-033-00	METAL CHIP	220	5%	1/10W
R132	1-216-049-11	RES-CHIP	1K	5%	1/10W	R336	1-216-099-00	METAL CHIP	120K	5%	1/10W
R133	1-216-049-11	RES-CHIP	1K	5%	1/10W	R337	1-216-033-00	METAL CHIP	220	5%	1/10W
R134	1-216-049-11	RES-CHIP	1K	5%	1/10W	R338	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-049-11	RES-CHIP	1K	5%	1/10W	R339	1-216-075-00	METAL CHIP	12K	5%	1/10W
R142	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	R340	1-216-107-00	METAL CHIP	270K	5%	1/10W
R143	1-216-089-00	RES-CHIP	47K	5%	1/10W	R341	1-216-033-00	METAL CHIP	220	5%	1/10W
R144	1-216-295-00	SHORT	0			R342	1-216-075-00	METAL CHIP	12K	5%	1/10W
R145	1-216-041-00	METAL CHIP	470	5%	1/10W	△ R343	1-219-787-17	FUSIBLE	5.6	5%	1/4W F
R146	1-216-041-00	METAL CHIP	470	5%	1/10W	△ R344	1-219-787-17	FUSIBLE	5.6	5%	1/4W F
R147	1-216-041-00	METAL CHIP	470	5%	1/10W	R345	1-216-079-00	METAL CHIP	18K	5%	1/10W
R151	1-216-049-11	RES-CHIP	1K	5%	1/10W	R346	1-216-079-00	METAL CHIP	18K	5%	1/10W
R153	1-216-073-00	METAL CHIP	10K	5%	1/10W	R347	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W	R351	1-216-085-00	METAL CHIP	33K	5%	1/10W
R155	1-216-097-00	RES-CHIP	100K	5%	1/10W	R352	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R157	1-216-105-00	RES-CHIP	220K	5%	1/10W	R353	1-216-025-00	RES-CHIP	100	5%	1/10W
R158	1-216-097-00	RES-CHIP	100K	5%	1/10W	R354	1-216-025-00	RES-CHIP	100	5%	1/10W
R159	1-216-073-00	METAL CHIP	10K	5%	1/10W	R355	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R160	1-216-045-00	METAL CHIP	680	5%	1/10W	R356	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R161	1-216-222-00	RES-CHIP	10K	5%	1/8W	R357	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R162	1-216-089-00	RES-CHIP	47K	5%	1/10W	R358	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R359	1-216-085-00	METAL CHIP	33K	5%	1/10W
R164	1-216-097-00	RES-CHIP	100K	5%	1/10W	R360	1-216-045-00	METAL CHIP	680	5%	1/10W
R165	1-216-073-00	METAL CHIP	10K	5%	1/10W	R361	1-216-049-11	RES-CHIP	1K	5%	1/10W
R166	1-216-065-00	RES-CHIP	4.7K	5%	1/10W	R363	1-216-049-11	RES-CHIP	1K	5%	1/10W
R171	1-216-075-00	METAL CHIP	12K	5%	1/10W	R364	1-216-045-00	METAL CHIP	680	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W	R366	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W	R367	1-216-089-00	RES-CHIP	47K	5%	1/10W
R175	1-216-073-00	METAL CHIP	10K	5%	1/10W	R368	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R201	1-216-025-00	RES-CHIP	100	5%	1/10W	R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R202	1-216-085-00	METAL CHIP	33K	5%	1/10W	R371	1-216-238-91	RES-CHIP	47K	5%	1/8W
R203	1-216-025-00	RES-CHIP	100	5%	1/10W	R372	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R204	1-216-085-00	METAL CHIP	33K	5%	1/10W	R373	1-216-049-11	RES-CHIP	1K	5%	1/10W
R301	1-216-085-00	METAL CHIP	33K	5%	1/10W	R374	1-216-089-00	RES-CHIP	47K	5%	1/10W
						R375	1-216-094-00	RES-CHIP	75K	5%	1/10W
						R376	1-216-065-00	RES-CHIP	4.7K	5%	1/10W

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

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R377	1-216-089-00	RES-CHIP	47K	5%	1/10W	R497	1-216-081-00	METAL CHIP	22K	5%	1/10W
R378	1-216-094-00	RES-CHIP	75K	5%	1/10W						
R381	1-216-099-00	METAL CHIP	120K	5%	1/10W	R497	1-216-295-00	SHORT	(E2, MX, AR)		
R382	1-216-025-00	RES-CHIP	100	5%	1/10W	R498	1-216-089-00	RES-CHIP	47K	5%	1/10W
R383	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	R499	1-216-025-00	RES-CHIP	100	5%	1/10W
						R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R384	1-216-100-00	RES-CHIP	130K	5%	1/10W	R502	1-216-089-00	RES-CHIP	47K	5%	1/10W
R385	1-216-296-00	SHORT	0			R503	1-216-089-00	RES-CHIP	47K	5%	1/10W
R386	1-216-099-00	METAL CHIP	120K	5%	1/10W	R504	1-216-025-00	RES-CHIP	100	5%	1/10W
R387	1-216-033-00	METAL CHIP	220	5%	1/10W	R505	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R388	1-216-081-00	METAL CHIP	22K	5%	1/10W	R506	1-216-041-00	METAL CHIP	470	5%	1/10W
						R508	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R389	1-216-075-00	METAL CHIP	12K	5%	1/10W	R509	1-216-081-00	METAL CHIP	22K	5%	1/10W
R390	1-216-107-00	METAL CHIP	270K	5%	1/10W	R510	1-216-097-00	RES-CHIP	100K	5%	1/10W
R391	1-216-296-00	SHORT	0			R511	1-216-174-00	RES-CHIP	100	5%	1/8W
R392	1-216-075-00	METAL CHIP	12K	5%	1/10W	R523	1-216-073-00	METAL CHIP	10K	5%	1/10W
R393	1-216-081-00	METAL CHIP	22K	5%	1/10W						
R394	1-216-033-00	METAL CHIP	220	5%	1/10W	R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R396	1-216-065-00	RES-CHIP	4.7K	5%	1/10W	R546	1-216-073-00	METAL CHIP	10K	5%	1/10W
R407	1-216-065-00	RES-CHIP	4.7K	5%	1/10W	R547	1-216-073-00	METAL CHIP	10K	5%	1/10W
R409	1-216-295-00	SHORT	0			R548	1-216-073-00	METAL CHIP	10K	5%	1/10W
R411	1-216-109-00	METAL CHIP	330K	5%	1/10W	R566	1-216-073-00	METAL CHIP	10K	5%	1/10W
						R601	1-216-295-00	SHORT	0		
R413	1-216-295-00	SHORT	0			R602	1-216-029-00	METAL CHIP	150	5%	1/10W
R417	1-216-073-00	METAL CHIP	10K	5%	1/10W	R603	1-216-037-00	METAL CHIP	330	5%	1/10W
R418	1-216-025-00	RES-CHIP	100	5%	1/10W	R604	1-216-017-00	RES-CHIP	47	5%	1/10W
R419	1-216-025-00	RES-CHIP	100	5%	1/10W	R605	1-216-045-00	METAL CHIP	680	5%	1/10W
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R421	1-216-025-00	RES-CHIP	100	5%	1/10W	R606	1-216-037-00	METAL CHIP	330	5%	1/10W
R422	1-216-025-00	RES-CHIP	100	5%	1/10W	R607	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R429	1-216-025-00	RES-CHIP	100	5%	1/10W	R608	1-216-017-00	RES-CHIP	47	5%	1/10W
R430	1-216-025-00	RES-CHIP	100	5%	1/10W	R610	1-216-045-00	METAL CHIP	680	5%	1/10W
R432	1-216-025-00	RES-CHIP	100	5%	1/10W	R611	1-216-182-00	RES-CHIP	220	5%	1/8W
R433	1-216-025-00	RES-CHIP	100	5%	1/10W	R612	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R435	1-216-041-00	METAL CHIP	470	5%	1/10W	R613	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R437	1-216-041-00	METAL CHIP	470	5%	1/10W	R614	1-216-041-00	METAL CHIP	470	5%	1/10W
R440	1-216-041-00	METAL CHIP	470	5%	1/10W	R615	1-216-049-11	RES-CHIP	1K	5%	1/10W
R441	1-216-025-00	RES-CHIP	100	5%	1/10W	R616	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R442	1-216-025-00	RES-CHIP	100	5%	1/10W	R617	1-216-041-00	METAL CHIP	470	5%	1/10W
R443	1-216-025-00	RES-CHIP	100	5%	1/10W	R618	1-216-049-11	RES-CHIP	1K	5%	1/10W
R444	1-216-025-00	RES-CHIP	100	5%	1/10W	R619	1-216-025-00	RES-CHIP	100	5%	1/10W
R445	1-216-025-00	RES-CHIP	100	5%	1/10W	R620	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R446	1-216-025-00	RES-CHIP	100	5%	1/10W	R621	1-216-075-00	METAL CHIP	12K	5%	1/10W
R447	1-216-025-00	RES-CHIP	100	5%	1/10W	R622	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R448	1-216-025-00	RES-CHIP	100	5%	1/10W	R623	1-216-073-00	METAL CHIP	10K	5%	1/10W
R449	1-216-025-00	RES-CHIP	100	5%	1/10W	R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R467	1-216-025-00	RES-CHIP	100	5%	1/10W	R625	1-216-073-00	METAL CHIP	10K	5%	1/10W
R468	1-216-025-00	RES-CHIP	100	5%	1/10W	R641	1-216-097-00	RES-CHIP	100K	5%	1/10W
R469	1-216-025-00	RES-CHIP	100	5%	1/10W	R642	1-216-073-00	METAL CHIP	10K	5%	1/10W
R483	1-216-073-00	METAL CHIP	10K	5%	1/10W	R655	1-216-073-00	METAL CHIP	10K	5%	1/10W
R484	1-216-073-00	METAL CHIP	10K	5%	1/10W	R656	1-216-222-00	RES-CHIP	10K	5%	1/8W
R490	1-216-174-00	RES-CHIP	100	5%	1/8W	R658	1-216-174-00	RES-CHIP	100	5%	1/8W
R491	1-216-174-00	RES-CHIP	100	5%	1/8W	R659	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R493	1-216-174-00	RES-CHIP	100	5%	1/8W	R660	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R494	1-216-295-00	SHORT	0			R661	1-216-025-00	RES-CHIP	100	5%	1/10W
R495	1-216-089-00	RES-CHIP	47K	5%	1/10W	R662	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R496	1-216-081-00	METAL CHIP	22K	5%	1/10W	R663	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R497	1-216-073-00	METAL CHIP	10K	5%	1/10W	R664	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
(EA)						R665	1-216-025-00	RES-CHIP	100	5%	1/10W
						R666	1-216-073-00	METAL CHIP	10K	5%	1/10W

MAIN

MOTOR

PANEL

Ref. No.	Part No.	Description	Remark
R667	1-216-222-00	RES-CHIP 10K 5%	1/8W
R668	1-216-049-11	RES-CHIP 1K 5%	1/10W
R669	1-216-065-00	RES-CHIP 4.7K 5%	1/10W
R804	1-216-089-00	RES-CHIP 47K 5%	1/10W
R820	1-216-049-11	RES-CHIP 1K 5%	1/10W
R821	1-216-238-91	RES-CHIP 47K 5%	1/8W
R822	1-216-240-00	RES-CHIP 56K 5%	1/8W
R823	1-216-222-00	RES-CHIP 10K 5%	1/8W
R824	1-216-073-00	METAL CHIP 10K 5%	1/10W
R825	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R826	1-216-085-00	METAL CHIP 33K 5%	1/10W
R827	1-216-081-00	METAL CHIP 22K 5%	1/10W
R829	1-216-230-00	RES-CHIP 22K 5%	1/8W
R830	1-216-214-00	RES-CHIP 4.7K 5%	1/8W
R831	1-216-214-00	RES-CHIP 4.7K 5%	1/8W
R832	1-216-097-00	RES-CHIP 100K 5%	1/10W
R841	1-216-081-00	METAL CHIP 22K 5%	1/10W
R842	1-216-081-00	METAL CHIP 22K 5%	1/10W
R843	1-216-214-00	RES-CHIP 4.7K 5%	1/8W
R844	1-216-097-00	RES-CHIP 100K 5%	1/10W
R845	1-216-121-00	RES-CHIP 1M 5%	1/10W
R854	1-216-089-00	RES-CHIP 47K 5%	1/10W
R861	1-216-049-11	RES-CHIP 1K 5%	1/10W
R862	1-216-073-00	METAL CHIP 10K 5%	1/10W
R863	1-216-089-00	RES-CHIP 47K 5%	1/10W
R864	1-216-049-11	RES-CHIP 1K 5%	1/10W
R865	1-216-049-11	RES-CHIP 1K 5%	1/10W
R866	1-216-019-00	METAL CHIP 56 5%	1/10W
△ R868	1-215-891-11	METAL OXIDE 680 5%	2W F
△ R869	1-215-891-11	METAL OXIDE 680 5%	2W F
R891	1-216-222-00	RES-CHIP 10K 5%	1/8W
R892	1-216-065-00	RES-CHIP 4.7K 5%	1/10W
R893	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R901	1-249-405-11	CARBON 100 5%	1/4W
R911	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R912	1-216-206-00	RES-CHIP 2.2K 5%	1/8W
R914	1-216-206-00	RES-CHIP 2.2K 5%	1/8W
△ R916	1-219-120-51	FUSIBLE 0.15 5%	1/4W F
R966	1-216-019-00	METAL CHIP 56 5%	1/10W
< ENCAPSULATED COMPONENT >			
RB641	1-234-457-11	ENCAPSULATED COMPONENT (AM FRONT-END)	
< VARIABLE RESISTOR >			
RV301	1-241-764-11	RES, ADJ, CARBON 10K	
RV302	1-241-762-11	RES, ADJ, CARBON 2.2K	
RV303	1-241-762-11	RES, ADJ, CARBON 2.2K	
RV304	1-241-768-11	RES, ADJ, CARBON 220K	
RV351	1-241-764-11	RES, ADJ, CARBON 10K	
RV352	1-241-762-11	RES, ADJ, CARBON 2.2K	
RV353	1-241-762-11	RES, ADJ, CARBON 2.2K	
RV354	1-241-768-11	RES, ADJ, CARBON 220K	
RV611	1-241-765-11	RES, ADJ, CARBON 22K	
< RELAY >			
RY801	1-755-372-11	RELAY	

Ref. No.	Part No.	Description	Remark
< TRANSFORMER >			
T301	1-423-980-11	TRANSFORMER, BIAS OSCILLATION	
T601	1-435-195-11	TRANSFORMER, DISCRIMINATOR	
< TERMINAL >			
TM601	1-694-555-11	TERMINAL BOARD (4P) (ANTENNA)	
TM801	1-694-635-11	TERMINAL BOARD (4P) (SPEAKER, IMPEDANCE USE 6-16Ω)	
< VIBRATOR >			
X401	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	
X402	1-781-107-21	VIBRATOR, CERAMIC (16MHz)	
X651	1-760-549-31	VIBRATOR, CRYSTAL (4.5MHz)	

	1-675-910-11	MOTOR BOARD	*****
< CAPACITOR >			
C721	1-162-306-11	CERAMIC 0.01uF 30% 16V	
< CONNECTOR >			
CN721	1-770-516-31	CONNECTOR, FFC 8P	
CN722	1-785-330-11	PIN, CONNECTOR (LIGHT ANGLE) 4P	
< SWITCH >			
S701	1-771-822-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE)	

A-4473-082-A		PANEL BOARD, COMPLETE (EXCEPT EA)	
A-4473-084-A		PANEL BOARD, COMPLETE (EA)	*****
4-224-584-01		HOLDER (FL)	
< CAPACITOR >			
C601	1-124-589-11	ELECT 47uF 20% 16V	
C602	1-126-163-11	ELECT 4.7uF 20% 50V	
C603	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C604	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C605	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C606	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C607	1-104-664-11	ELECT 47uF 20% 10V	
C608	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C609	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C610	1-126-157-11	ELECT 10uF 20% 16V	
C611	1-126-157-11	ELECT 10uF 20% 16V	
C612	1-162-303-11	CERAMIC 0.0033uF 30% 16V	
C613	1-126-157-11	ELECT 10uF 20% 16V	
C614	1-126-157-11	ELECT 10uF 20% 16V	
C615	1-126-963-11	ELECT 4.7uF 20% 50V	
C616	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C617	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C620	1-126-933-11	ELECT 100uF 20% 16V	
C621	1-104-664-11	ELECT 47uF 20% 16V	
C631	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C632	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C651	1-164-159-11	CERAMIC 0.1uF 50V	

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

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C652	1-126-960-11	ELECT	1uF	20%	50V	C741	1-124-463-00	ELECT	0.1uF	20%	50V
C653	1-126-960-11	ELECT	1uF	20%	50V	C742	1-162-215-31	CERAMIC	47PF	5%	50V
C654	1-164-159-11	CERAMIC	0.1uF		50V	C743	1-162-290-31	CERAMIC	470PF	10%	50V
						C744	1-162-294-31	CERAMIC	0.001uF	10%	50V
C655	1-162-282-31	CERAMIC	100PF	10%	50V						
C656	1-162-282-31	CERAMIC	100PF	10%	50V	C745	1-126-961-11	ELECT	2.2uF	20%	50V
C657	1-162-282-31	CERAMIC	100PF	10%	50V	C746	1-162-306-11	CERAMIC	0.01uF	30%	16V
C658	1-162-282-31	CERAMIC	100PF	10%	50V	C747	1-126-961-11	ELECT	2.2uF	20%	50V
C659	1-162-282-31	CERAMIC	100PF	10%	50V						(EA)
						C748	1-162-306-11	CERAMIC	0.01uF	30%	16V
C660	1-162-282-31	CERAMIC	100PF	10%	50V						(EA)
C661	1-162-282-31	CERAMIC	100PF	10%	50V	C749	1-162-306-11	CERAMIC	0.01uF	30%	16V
C662	1-162-282-31	CERAMIC	100PF	10%	50V						
C663	1-162-282-31	CERAMIC	100PF	10%	50V	C750	1-162-282-31	CERAMIC	100PF	10%	50V
C664	1-162-282-31	CERAMIC	100PF	10%	50V	C751	1-162-282-31	CERAMIC	100PF	10%	50V
						C752	1-162-282-31	CERAMIC	100PF	10%	50V
C665	1-162-282-31	CERAMIC	100PF	10%	50V	C753	1-162-282-31	CERAMIC	100PF	10%	50V
C666	1-162-282-31	CERAMIC	100PF	10%	50V	C754	1-162-282-31	CERAMIC	100PF	10%	50V
C667	1-162-282-31	CERAMIC	100PF	10%	50V						
C668	1-162-282-31	CERAMIC	100PF	10%	50V	C755	1-162-282-31	CERAMIC	100PF	10%	50V
C669	1-162-282-31	CERAMIC	100PF	10%	50V	C756	1-162-282-31	CERAMIC	100PF	10%	50V
						C757	1-162-282-31	CERAMIC	100PF	10%	50V
C670	1-162-282-31	CERAMIC	100PF	10%	50V	C758	1-162-282-31	CERAMIC	100PF	10%	50V
C671	1-162-282-31	CERAMIC	100PF	10%	50V	C759	1-162-282-31	CERAMIC	100PF	10%	50V
C717	1-126-157-11	ELECT	10uF	20%	16V						
C718	1-126-157-11	ELECT	10uF	20%	16V	C760	1-162-282-31	CERAMIC	100PF	10%	50V
C719	1-126-961-11	ELECT	2.2uF	20%	50V	C761	1-162-282-31	CERAMIC	100PF	10%	50V
						C762	1-162-282-31	CERAMIC	100PF	10%	50V
C720	1-164-159-11	CERAMIC	0.1uF		50V	C763	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C764	1-162-282-31	CERAMIC	100PF	10%	50V
C721	1-162-294-31	CERAMIC	0.001uF	10%	50V						
					(EA)	C765	1-162-282-31	CERAMIC	100PF	10%	50V
C722	1-162-305-11	CERAMIC	0.0068uF	30%	16V	C766	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C767	1-162-282-31	CERAMIC	100PF	10%	50V
C723	1-126-960-11	ELECT	1uF	20%	50V	C768	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C769	1-162-282-31	CERAMIC	100PF	10%	50V
C724	1-136-495-11	MYLAR	0.068uF	5%	50V						
					(EA)	C770	1-162-282-31	CERAMIC	100PF	10%	50V
C725	1-126-959-11	ELECT	0.47uF	20%	50V	C771	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C772	1-162-282-31	CERAMIC	100PF	10%	50V
C726	1-124-465-00	ELECT	0.47uF	20%	50V	C773	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C774	1-162-282-31	CERAMIC	100PF	10%	50V
C727	1-136-167-00	MYLAR	0.15uF	5%	50V						
					(EA)	C775	1-162-282-31	CERAMIC	100PF	10%	50V
C728	1-162-294-31	CERAMIC	0.001uF	10%	50V	C776	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C777	1-162-282-31	CERAMIC	100PF	10%	50V
C729	1-126-960-11	ELECT	1uF	20%	50V	C778	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C779	1-162-282-31	CERAMIC	100PF	10%	50V
C730	1-161-494-00	CERAMIC	0.022uF		25V						
					(EA)	C780	1-162-282-31	CERAMIC	100PF	10%	50V
C731	1-162-305-11	CERAMIC	0.0068uF	30%	16V	C781	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C782	1-162-282-31	CERAMIC	100PF	10%	50V
C732	1-136-495-11	MYLAR	0.068uF	5%	50V	C783	1-162-282-31	CERAMIC	100PF	10%	50V
					(EA)	C784	1-162-282-31	CERAMIC	100PF	10%	50V
C733	1-104-664-11	ELECT	47uF	20%	10V			< CONNECTOR >			
					(EA)	CN601	1-793-767-11	CONNECTOR, BOARD TO BOARD 30P			
C734	1-124-589-11	ELECT	47uF	20%	16V			< DIODE >			
					(EA)						
C735	1-124-257-00	ELECT	2.2uF	20%	50V	D601	8-719-057-30	LED HLMF-K205-2UL (I/Ⓛ)			
					(EA)	D602	8-719-063-93	LED SLR325VC-N-T32 (TIMER)			
C736	1-126-964-11	ELECT	10uF	20%	50V	D603	8-719-921-48	DIODE MTZJ-T-72-5.6C			
C737	1-126-964-11	ELECT	10uF	20%	50V	D605	8-719-109-85	DIODE MTZJ-T-72-5.1B (EA)			
C738	1-126-961-11	ELECT	2.2uF	20%	50V	D611	8-719-071-41	LED SELS5923C-TP15 (GROOVE)			
C739	1-162-215-31	CERAMIC	47PF	5%	50V						
						D612	8-719-071-41	LED SELS5923C-TP15 (CURSOL)			
C740	1-162-282-31	CERAMIC	100PF	10%	50V	D613	8-719-071-41	LED SELS5923C-TP15 (CURSOL)			

PANEL

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description				Remark	
D614	8-719-071-41	LED SELS5923C-TP15 (V-GROOVE)					R609	1-249-429-11	CARBON	10K	5%	1/4W		
D615	8-719-072-82	LED SELU5E20C-STP15 (FUNCTION)					R610	1-247-807-31	CARBON	100	5%	1/4W		
D617	8-719-063-93	LED SLR325VC-N-T32 (REC PAUSE/START)					R611	1-249-429-11	CARBON	10K	5%	1/4W		
							R612	1-249-401-11	CARBON	47	5%	1/4W		
D618	8-719-071-41	LED SELS5923C-TP15 (SURROUND)												
		< INDUCTOR >					R613	1-247-893-11	CARBON	390K	5%	1/4W		
							R614	1-247-893-11	CARBON	390K	5%	1/4W		
							R615	1-249-441-11	CARBON	100K	5%	1/4W		
FB601	1-412-473-21	INDUCTOR	0uH					R616	1-249-440-11	CARBON	82K	5%	1/4W	
FB602	1-412-473-21	INDUCTOR	0uH					R617	1-249-429-11	CARBON	10K	5%	1/4W	
FB603	1-412-473-21	INDUCTOR	0uH											
		< FLUORESCENT INDICATOR TUBE >					R618	1-249-441-11	CARBON	100K	5%	1/4W		
							R619	1-249-441-11	CARBON	100K	5%	1/4W		
							R620	1-249-437-11	CARBON	47K	5%	1/4W		
FL601	1-517-928-11	INDICATOR TUBE, FLUORESCENT					R621	1-249-440-11	CARBON	82K	5%	1/4W		
		< IC >					R622	1-249-429-11	CARBON	10K	5%	1/4W		
IC601	8-759-652-49	IC TMP88CP77F-1A22					R623	1-249-431-11	CARBON	15K	5%	1/4W		
IC602	8-759-570-21	IC BA3830F-E2					R625	1-249-435-11	CARBON	33K	5%	1/4W		
IC603	8-759-648-23	IC RPM6940-H4					R626	1-247-895-00	CARBON	470K	5%	1/4W		
IC721	8-759-496-40	IC M65850FP (EA)					R632	1-249-429-11	CARBON	10K	5%	1/4W		
IC722	8-759-634-51	IC M5218AP					R633	1-249-411-11	CARBON	330	5%	1/4W		
		< JACK >					R634	1-249-407-11	CARBON	150	5%	1/4W		
							R635	1-249-401-11	CARBON	47	5%	1/4W		
							R636	1-249-441-11	CARBON	100K	5%	1/4W		
J631	1-785-569-11	JACK (SMALL TYPE) (PHONES)					R637	1-249-441-11	CARBON	100K	5%	1/4W		
J721	1-785-569-11	JACK (SMALL TYPE) (MIC) (EXCEPT EA)					R638	1-249-441-11	CARBON	100K	5%	1/4W		
J721	1-785-569-11	JACK (SMALL TYPE) (MIC1) (EA)												
J722	1-785-569-11	JACK (SMALL TYPE) (MIC2) (EA)					R639	1-249-441-11	CARBON	100K	5%	1/4W		
		< COIL >					R640	1-249-441-11	CARBON	100K	5%	1/4W		
							R641	1-249-441-11	CARBON	100K	5%	1/4W		
L601	1-410-509-11	INDUCTOR	10uH					R642	1-249-441-11	CARBON	100K	5%	1/4W	
		< TRANSISTOR >					R643	1-249-441-11	CARBON	100K	5%	1/4W		
							R644	1-249-441-11	CARBON	100K	5%	1/4W		
Q604	8-729-900-80	TRANSISTOR	BA1A4M-TP					R651	1-249-429-11	CARBON	10K	5%	1/4W	
Q605	8-729-900-80	TRANSISTOR	BA1A4M-TP					R652	1-249-410-11	CARBON	270	5%	1/4W	
Q606	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R653	1-249-411-11	CARBON	330	5%	1/4W	
Q607	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R654	1-249-413-11	CARBON	470	5%	1/4W	
Q608	8-729-900-74	TRANSISTOR	BA1L3Z-TP											
							R655	1-249-415-11	CARBON	680	5%	1/4W		
							R656	1-249-417-11	CARBON	1K	5%	1/4W		
Q609	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R657	1-249-418-11	CARBON	1.2K	5%	1/4W	
Q610	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R658	1-249-418-11	CARBON	1.2K	5%	1/4W	
Q611	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R659	1-249-417-11	CARBON	1K	5%	1/4W	
Q612	8-729-900-74	TRANSISTOR	BA1L3Z-TP											
Q613	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R660	1-249-420-11	CARBON	1.8K	5%	1/4W	
							R661	1-247-843-11	CARBON	3.3K	5%	1/4W		
Q614	8-729-900-74	TRANSISTOR	BA1L3Z-TP					R662	1-249-425-11	CARBON	4.7K	5%	1/4W	
Q615	8-729-111-29	TRANSISTOR	2SD1616A-TP-LK					R664	1-249-429-11	CARBON	10K	5%	1/4W	
Q621	8-729-900-80	TRANSISTOR	BA1A4M-TP					R665	1-249-410-11	CARBON	270	5%	1/4W	
Q622	8-729-900-80	TRANSISTOR	BA1A4M-TP											
Q623	8-729-900-80	TRANSISTOR	BA1A4M-TP					R666	1-249-411-11	CARBON	330	5%	1/4W	
							R667	1-249-413-11	CARBON	470	5%	1/4W		
Q624	8-729-900-80	TRANSISTOR	BA1A4M-TP					R668	1-249-414-11	CARBON	560	5%	1/4W	
Q625	8-729-900-80	TRANSISTOR	BA1A4M-TP					R669	1-249-414-11	CARBON	560	5%	1/4W	
Q626	8-729-900-80	TRANSISTOR	BA1A4M-TP					R670	1-249-415-11	CARBON	680	5%	1/4W	
Q721	8-729-119-79	TRANSISTOR	2SC2785TP-FEK											
		< RESISTOR >					R671	1-249-422-11	CARBON	2.7K	5%	1/4W		
							R672	1-249-420-11	CARBON	1.8K	5%	1/4W		
							R673	1-249-422-11	CARBON	2.7K	5%	1/4W		
R603	1-249-429-11	CARBON	10K	5%	1/4W		R674	1-247-843-11	CARBON	3.3K	5%	1/4W		
R604	1-247-807-31	CARBON	100	5%	1/4W		R675	1-249-425-11	CARBON	4.7K	5%	1/4W		
R605	1-247-903-00	CARBON	1M	5%	1/4W									
R606	1-247-807-31	CARBON	100	5%	1/4W		R676	1-249-427-11	CARBON	6.8K	5%	1/4W		
R607	1-249-429-11	CARBON	10K	5%	1/4W		R677	1-249-429-11	CARBON	10K	5%	1/4W		
							R678	1-249-432-11	CARBON	18K	5%	1/4W		
R608	1-247-807-31	CARBON	100	5%	1/4W		R679	1-249-429-11	CARBON	10K	5%	1/4W		

POWER AMP

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POWER AMP

SENSOR

Ref. No.	Part No.	Description	Remark		
C552	1-162-294-31	CERAMIC	0.001uF	10%	50V
C553	1-162-286-31	CERAMIC	220PF	10%	50V
C554	1-104-665-11	ELECT	100uF	20%	10V
C557	1-136-495-11	MYLAR	0.068uF	5%	50V
C558	1-136-495-11	MYLAR	0.068uF	5%	50V
C559	1-128-560-11	ELECT	22uF	20%	100V
C581	1-126-967-11	ELECT	47uF	20%	50V
C591	1-130-777-00	MYLAR	0.1uF	5%	100V
C592	1-127-752-11	ELECT	3300uF	20%	63V
C596	1-127-755-11	ELECT	3300uF	20%	100V
C942	1-126-964-11	ELECT	10uF	20%	50V
C943	1-126-968-11	ELECT	100uF	20%	50V
C980	1-164-159-11	CERAMIC	0.1uF		50V
< CONNECTOR >					
CN502	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P			
CN503	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P			
< DIODE >					
D501	8-719-911-19	DIODE 1SS133T-72			
D502	8-719-911-19	DIODE 1SS133T-72			
D503	8-719-922-03	DIODE MTZJ-T-77-18C			
D504	8-719-922-03	DIODE MTZJ-T-77-18C			
D541	8-719-302-38	DIODE RBV-602-01			
D543	8-719-302-38	DIODE RBV-602-01			
D551	8-719-911-19	DIODE 1SS133T-72			
D581	8-719-911-19	DIODE 1SS133T-72			
D941	8-719-110-90	DIODE MTZJ-T-77-39D			
D979	8-719-110-31	DIODE MTZJ-T-72-12B			
< EARTH TERMINAL >					
* EP501	1-537-738-21	TERMINAL, EARTH			
< IC >					
IC501	8-749-017-06	IC STK412-150			
< TRANSISTOR >					
Q501	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA			
Q503	8-729-140-82	TRANSISTOR 2SA988TP-PAFAEA			
Q504	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA			
Q505	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA			
Q506	8-729-119-79	TRANSISTOR 2SC2785TP-FEK			
Q551	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA			
Q581	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA			
Q941	8-729-048-52	TRANSISTOR 2SA1932 (TP)			
Q942	8-729-119-76	TRANSISTOR 2SA1175TP-HFE			
< RESISTOR >					
R501	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-438-11	CARBON	56K	5%	1/4W
R503	1-249-412-11	CARBON	390	5%	1/4W
R504	1-249-438-11	CARBON	56K	5%	1/4W
R505	1-249-417-11	CARBON	1K	5%	1/4W
R506	1-249-431-11	CARBON	15K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
△ R508	1-219-718-11	METAL	0.1	10%	5W F
R509	1-260-076-11	CARBON	10	5%	1/2W
△ R510	1-219-718-11	METAL	0.1	10%	5W F

Ref. No.	Part No.	Description	Remark		
△ R511	1-212-881-11	FUSIBLE	100	5%	1/4W F
△ R512	1-202-972-61	FUSIBLE	1	5%	1/4W F
R513	1-249-435-11	CARBON	33K	5%	1/4W
R514	1-249-421-11	CARBON	2.2K	5%	1/4W
R515	1-249-433-11	CARBON	22K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-421-11	CARBON	2.2K	5%	1/4W
R518	1-249-435-11	CARBON	33K	5%	1/4W
R519	1-249-439-11	CARBON	68K	5%	1/4W
△ R520	1-215-872-11	METAL OXIDE	3.3K	5%	1W F
R521	1-249-441-11	CARBON	100K	5%	1/4W
R522	1-249-441-11	CARBON	100K	5%	1/4W
R523	1-249-441-11	CARBON	100K	5%	1/4W
△ R524	1-215-872-11	METAL OXIDE	3.3K	5%	1W F
R541	1-249-441-11	CARBON	100K	5%	1/4W
R542	1-249-441-11	CARBON	100K	5%	1/4W
R551	1-249-417-11	CARBON	1K	5%	1/4W
R552	1-249-438-11	CARBON	56K	5%	1/4W
R553	1-249-412-11	CARBON	390	5%	1/4W
R554	1-249-438-11	CARBON	56K	5%	1/4W
R555	1-249-417-11	CARBON	1K	5%	1/4W
R556	1-249-431-11	CARBON	15K	5%	1/4W
R557	1-249-441-11	CARBON	100K	5%	1/4W
△ R558	1-219-718-11	METAL	0.1	10%	5W F
R559	1-260-076-11	CARBON	10	5%	1/2W
△ R560	1-219-718-11	METAL	0.1	10%	5W F
△ R561	1-212-881-11	FUSIBLE	100	5%	1/4W F
R581	1-249-435-11	CARBON	33K	5%	1/4W
R582	1-249-435-11	CARBON	33K	5%	1/4W
R591	1-249-441-11	CARBON	100K	5%	1/4W
R592	1-249-441-11	CARBON	100K	5%	1/4W
△ R941	1-216-478-11	METAL OXIDE	390	5%	3W F
R942	1-249-429-11	CARBON	10K	5%	1/4W
R943	1-249-417-11	CARBON	1K	5%	1/4W
R944	1-249-393-11	CARBON	10	5%	1/4W
R980	1-249-429-11	CARBON	10K	5%	1/4W
< THERMISTOR >					
TH501	1-807-796-11	THERMISTOR			

	1-675-911-11	SENSOR BOARD			

< CAPACITOR >					
C712	1-164-159-11	CERAMIC	0.1uF		50V
< PHOTO INTERRUPTER >					
IC711	8-749-014-38	PHOTO INTERRUPTER SG-264			
< RESISTOR >					
R711	1-247-876-11	CARBON	75K	5%	1/4W
R712	1-249-409-11	CARBON	220	5%	1/4W
R713	1-249-429-11	CARBON	10K	5%	1/4W
< SWITCH >					
S711	1-771-821-11	SWITCH, PUSH (1 KEY) (BU UP/DOWN)			

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

TRANS

Ref. No.	Part No.	Description	Remark
	1-676-808-11	TRANS BOARD *****	
	1-533-293-11	FUSE HOLDER < CAPACITOR >	
△ C972	1-113-925-11	CERAMIC 0.01uF 20% 250V < CONNECTOR >	
CN975	1-564-321-00	PIN, CONNECTOR 2P	
* CN977	1-564-528-11	PLUG, CONNECTOR 13P < FUSE >	
△ F971	1-532-506-31	FUSE (T6.3AL/250) (EXCEPT MX, AUS)	
△ F974	1-532-506-31	FUSE (T6.3AL/250)	
△ F975	1-532-506-31	FUSE (T6.3AL/250)	
△ F976	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250)	
△ F977	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250) < RESISTOR >	
△ R951	1-219-120-11	FUSIBLE 0.15 5% 1/4W F	
△ R952	1-219-120-11	FUSIBLE 0.15 5% 1/4W F	
△ R953	1-219-120-11	FUSIBLE 0.15 5% 1/4W F	
		< SWITCH >	
△ S951	1-771-291-11	SWITCH, POWER (VOLTAGE SELECTOR) (EXCEPT MX, AUS) < TRANSFORMER >	
△ T971	1-435-325-11	POWER TRANSFORMER *****	
		MISCELLANEOUS *****	
△ 10	1-526-794-11	OUTLET, AC	
101	1-773-045-11	WIRE (FLAT TYPE) (17 CORE)	
104	1-773-122-11	WIRE (FLAT TYPE) (19 CORE)	
△ 108	1-575-653-11	CORD, POWER (E3)	
△ 108	1-696-847-11	CORD, POWER (AUS)	
△ 108	1-777-071-21	CORD, POWER (MY, SP)	
△ 108	1-777-071-51	CORD, POWER (EA)	
△ 108	1-783-941-11	CORD, POWER (MX, AR)	
△ 108	1-791-901-11	CORD, POWER (E2)	
△ 109	1-569-007-11	ADAPTOR, CONVERSION 2P (E3)	
△ 109	1-569-008-21	ADAPTOR, CONVERSION (EA, MY, SP)	
209	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)	
216	1-471-035-11	MAGNET ASSY	
△ 251	A-4735-357-A	BASE ASSY, OP (KSM-213D)	
252	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)	
HP901	X-4954-985-1	BLOCK (A) ASSY, HEAD (PB)	
HRPE901	X-4954-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE)	
M721	A-4672-826-A	MOTOR ASSY (TURN)	
M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY) (CAPSTAN/REEL)	
M961	1-763-072-11	FAN, D.C.	
△ T971	1-435-325-11	POWER TRANSFORMER *****	

Ref. No.	Part No.	Description	Remark
		***** HARDWARE LIST *****	
#1	7-628-254-05	SCREW +PS 2.6X5	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
#5	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#6	7-685-881-09	SCREW +BVTT 4X8 (S)	
#7	7-623-921-01	WASHER 1.7, NYLON	
#8	7-685-783-09	SCREW +PTT 2X6 (S)	

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

REVISION HISTORY

Clicking the version allows you to jump to the revised page.

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

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