

HCD-GNX60/GNX70/ GX9900

SERVICE MANUAL

Ver.1.0 2005. 03



Photo : HCD-GNX70

- HCD-GNX60/GNX70/GX9900 are the Amplifier, CD player, tape deck and tuner section in MHC-GNX60/GNX70/GX9900.

US Model
HCD-GX9900
E Model
Australian Model
HCD-GNX60/GNX70

CD Section	Model Name Using Similar Mechanism	HCD-GN880
	CD Mechanism Type	CDM74-F1BD81
	Base Unit Name	BU-F1BD81A
	Optical Pick-up Name	KSM-215DCP/C2NP
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CMAT5Z2

SPECIFICATIONS

AUDIO POWER SPECIFICATION (MHC-GX9900 USA model only) POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6-ohm loads, both channels driven, from 120 Hz – 10 kHz; rates 230 watts per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 miliwatts to rated output.

Amplifier section MHC-GX9900

Total harmonic distortion Less than 0.1%
(6 ohms at 1 kHz, 100 W)

MHC-GNX70

The following are measured at

Mexican model: AC 127 V, 60 Hz
Other models: AC 120, 220, 240 V, 60 Hz
DIN power output (rated) 170 + 170 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
220 + 220 watts (6 ohms at 1 kHz, 10% THD)

MHC-GNX60

The following are measured at

Mexican model: AC 127 V, 60 Hz
Brazil model: AC 127 V or 220 V, 60 Hz
Other models: AC 120, 220, 240 V, 50/60 Hz
DIN power output (rated) 150 + 150 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
200 + 200 watts (6 ohms at 1 kHz, 10% THD)

Inputs

VIDEO/MD (AUDIO) IN (phono jacks):
voltage 250/450 mV,
impedance 47 kilohms
TV (AUDIO) IN (phono jack):
voltage 250 mV,
impedance 47 kilohms
MIC (phone jack):
sensitivity 1 mV,
impedance 10 kilohms

Outputs

PHONES (stereo mini jack): accepts headphones of
8 ohms or more
FRONT SPEAKER: Use only the supplied speaker
• SS-GNX100 (MHC-GNX70/GX9900)
• SS-GNX60 (MHC-GNX60)
SURROUND SPEAKER: Use only the supplied speaker
• SS-RSX80 (MHC-GNX70/GX9900)

Disc player section

System Compact disc and digital audio system
Laser Semiconductor laser (λ=780 nm)
Emission duration: continuous
Laser Output Max. 44.6 mW*
*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 (±0.5 dB)
Wave length 780 – 790 nm
Signal-to-noise ratio More than 90 dB
Dynamic range More than 90 dB

OPTICAL CD DIGITAL OUT (Square optical connector jack, rear panel) (For MHC-GNX60/GNX70)

Wave length 660 nm
Output Level –18 dBm

– Continued on next page –

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Audio Group

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Mini Hi-Fi COMPONENT SYSTEM

SONY®

HCD-GNX60/GNX70/GX9900

Tape deck section

Recording system	4-track 2-channel stereo
Frequency response	50 – 13,000 Hz (± 3 dB), using Sony TYPE I tape

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

North and Latin American models:

530 – 1,710 kHz
(with the interval set at 10 kHz)

531 – 1,710 kHz
(with the interval set at 9 kHz)

Other models:

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

530 – 1,710 kHz
(with the interval set at 10 kHz)

Antenna AM loop antenna

Antenna terminals External antenna terminal

Intermediate frequency 450 kHz

General

Power requirements

North American model:	120 V AC, 60Hz
Australian model:	230 – 240 V AC, 50/60 Hz
Argentina model:	220 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector

Power consumption

MHC-GX9900	250 watts
MHC-GNX70	225 watts
MHC-GNX60	200 watts
Dimensions (w/h/d) (Approx.)	280 × 360 × 398.5 mm
Mass (Approx.)	
HCD-GNX70	12.1 kg
HCD-GX9900	11.8 kg
HCD-GNX60	11.3 kg

Design and specifications are subject to change without notice.

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.

CAUTION

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

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

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

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.

SAFETY CHECK-OUT

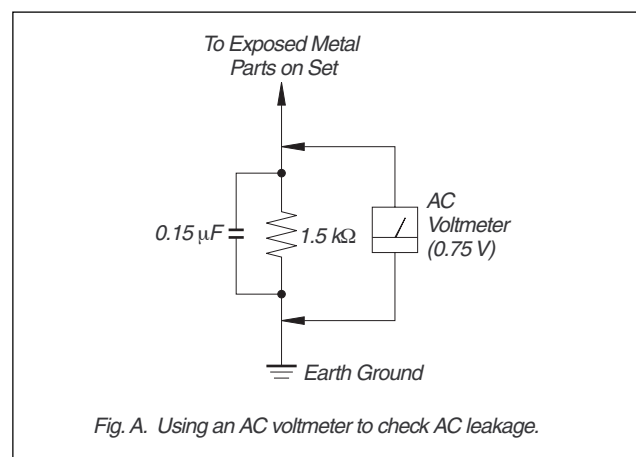
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

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

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



Unleaded solder

Boards requiring use of unleaded solder are printed with the lead free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Unleaded solder has the following characteristics.

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

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SECTION 1

SERVICING NOTES

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

The laser diode in the optical pick-up block may suffer electrostatic 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.

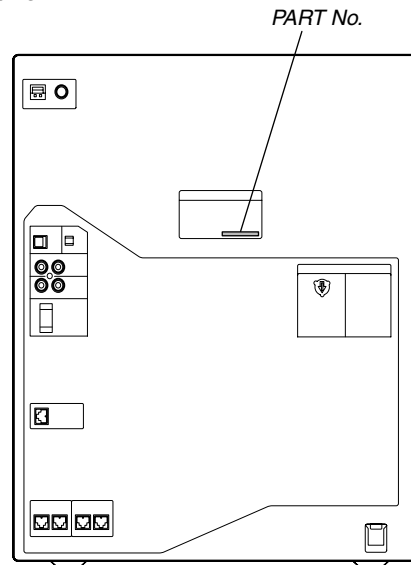
NOTES ON LASER DIODE EMISSION CHECK

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 DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “CD section adjustment” and check that the S curve waveform is output several times.

- **MODEL IDENTIFICATION**
 - **Back Panel** –



MODEL	PART No.
GNX60: E2, E3 models	2-547-454-0□
GNX70: E2, E3 models	2-547-456-0□
GX9900 model	2-547-458-0□
GNX60: AR model	2-588-965-0□
GNX60: E51 model	2-588-966-0□
GNX70: AUS model	2-588-967-0□
GNX70: E51 model	2-588-968-0□
GNX60: AUS model	2-588-974-0□

- Abbreviation
AR : Argentine model
E2 : 120 V AC Area in E model
E3 : 240 V AC Area in E model
E51 : Chilean and Peruvian model
AUS : Australian model

This section is extracted from instruction manual.

Remote control

ALPHABETICAL ORDER

A – E

- ALBUM + 14
- ALBUM – 16
- CD 24
- CLEAR 18
- CLOCK/TIMER SELECT 2
- CLOCK/TIMER SET 4
- DISC SKIP 13
- DISPLAY 26
- ENTER 12
- EQ 17

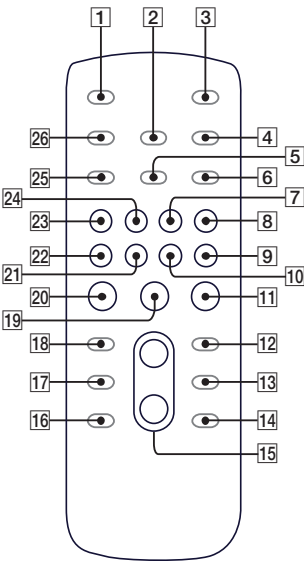
F – Z

- FM MODE 6
- FUNCTION 8
- PLAY MODE 5
- REPEAT 6
- SLEEP 1

- TAPE 23
 - TUNER/BAND 7
 - TUNER MEMORY 25
 - TUNING MODE 5
 - VOLUME +/- 15
- The + button has a tactile dot.*

SYMBOLS

- I/⏻ (power) 3
- (stop) 11
- || (pause) 19
- ▶ (play) 20
- ◀◀ (go backward) 22
- ▶▶+ (go forward) 21
- ◀◀ (rewind) 10
- ▶▶ (fast forward) 9

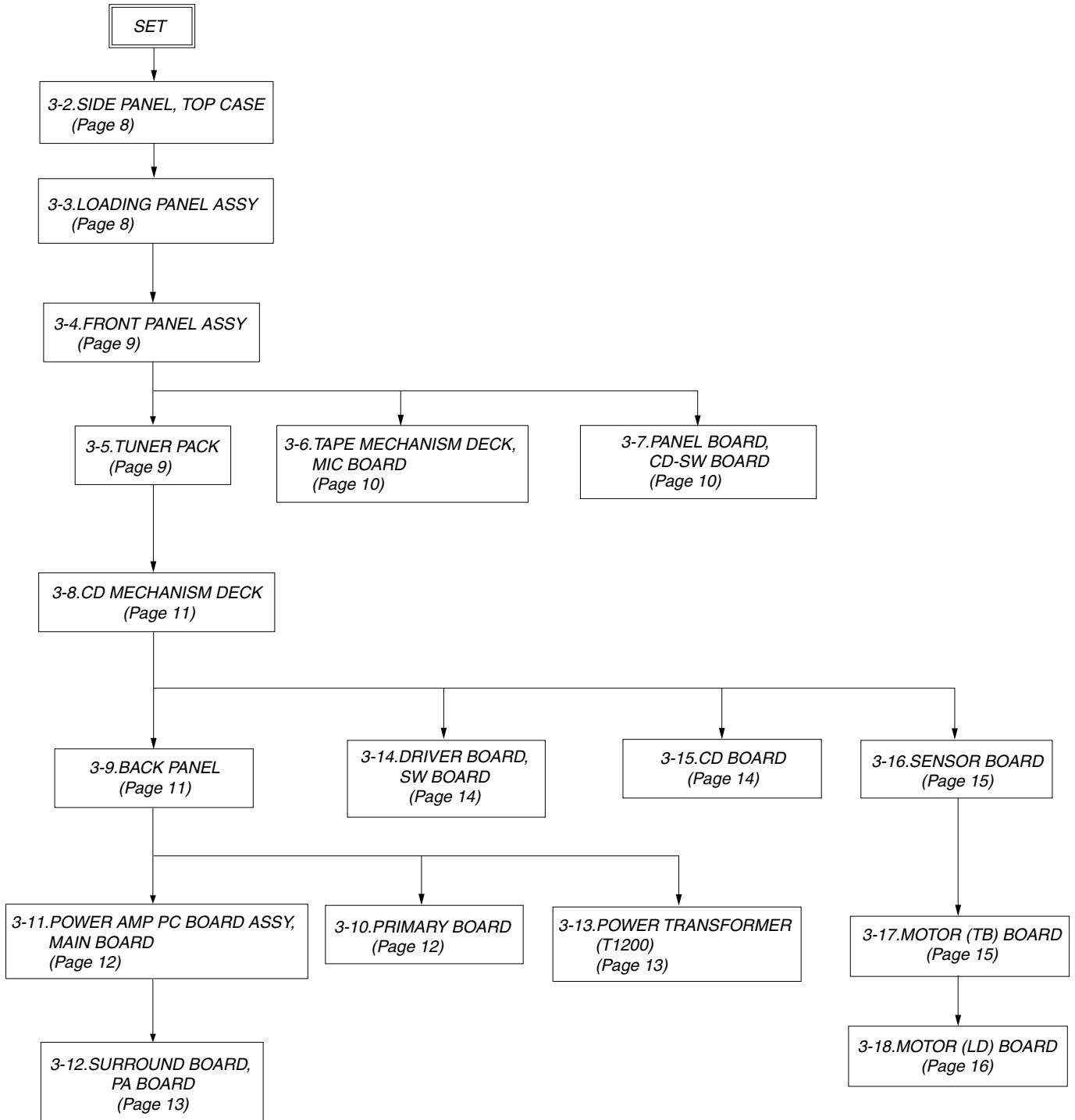


* Use the tactile dot as a reference when operating the system.

SECTION 3 DISASSEMBLY

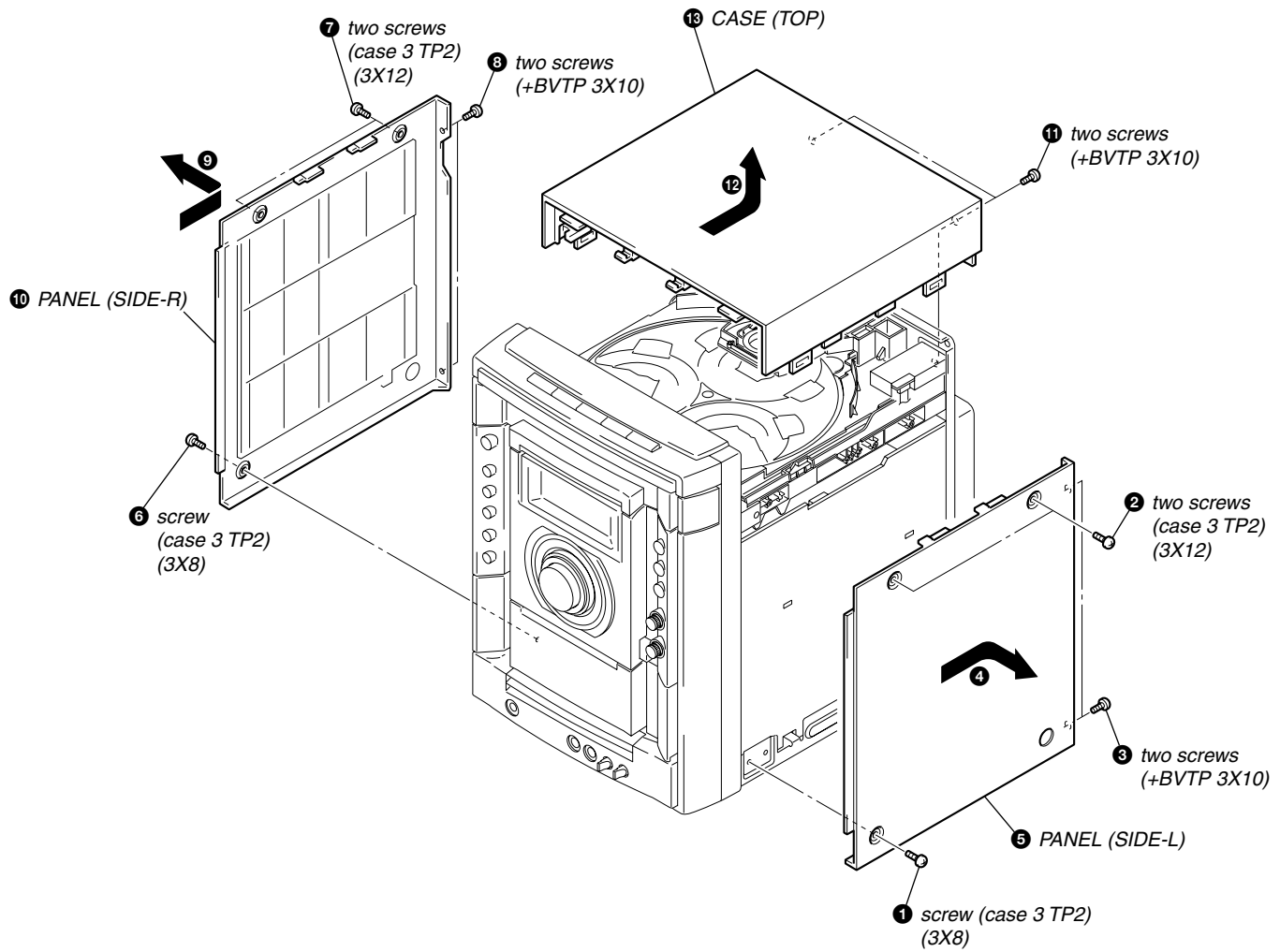
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

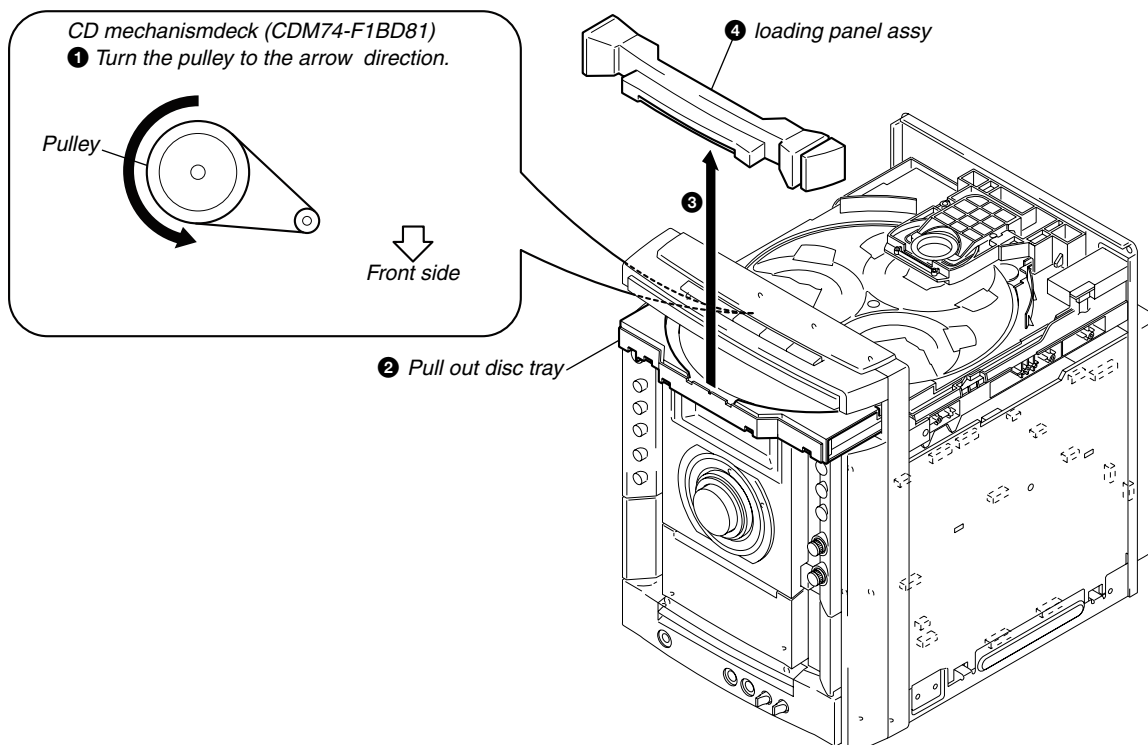


Note: Follow the disassembly procedure in the numerical order given.

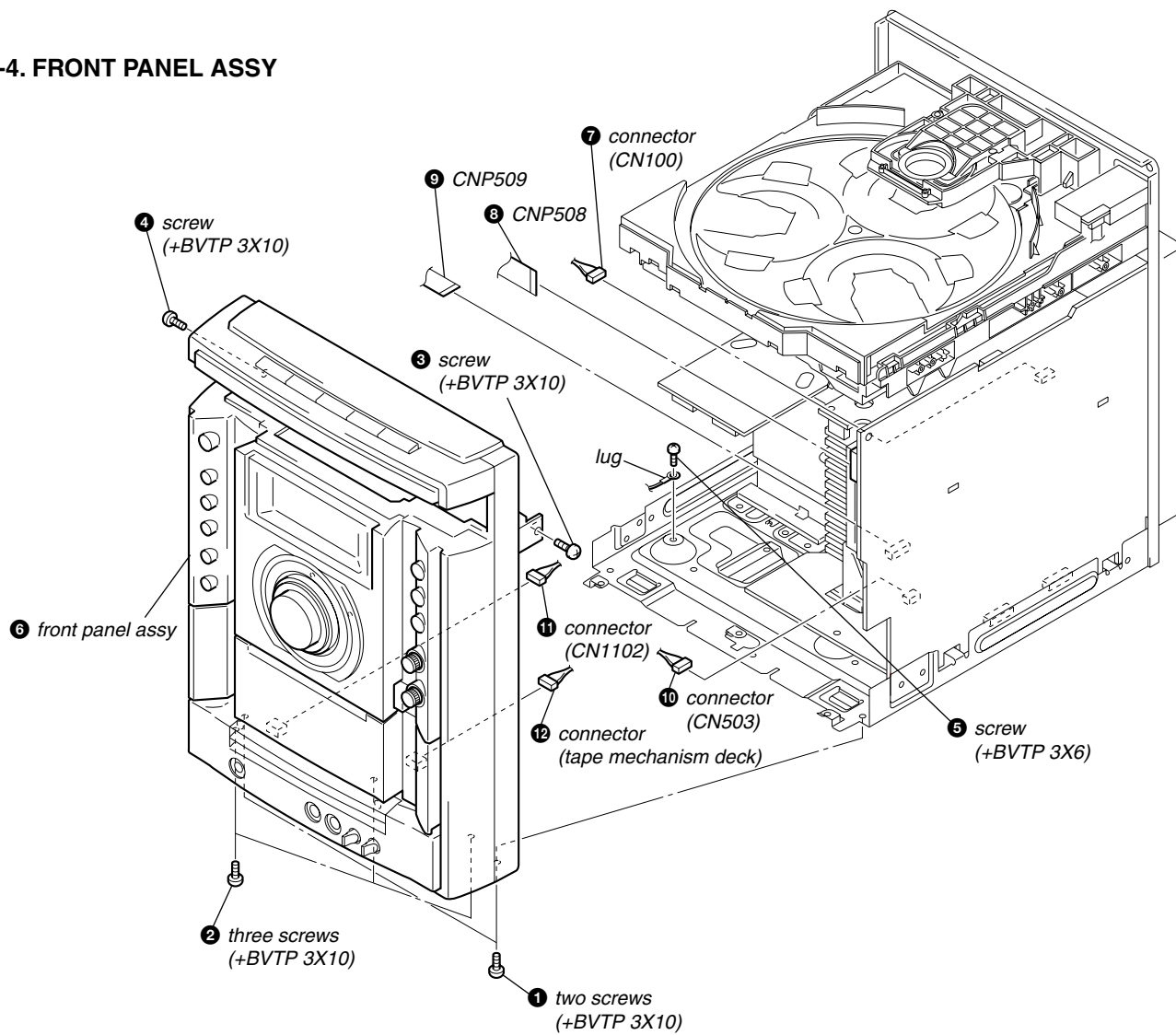
3-2. SIDE PANEL, TOP CASE



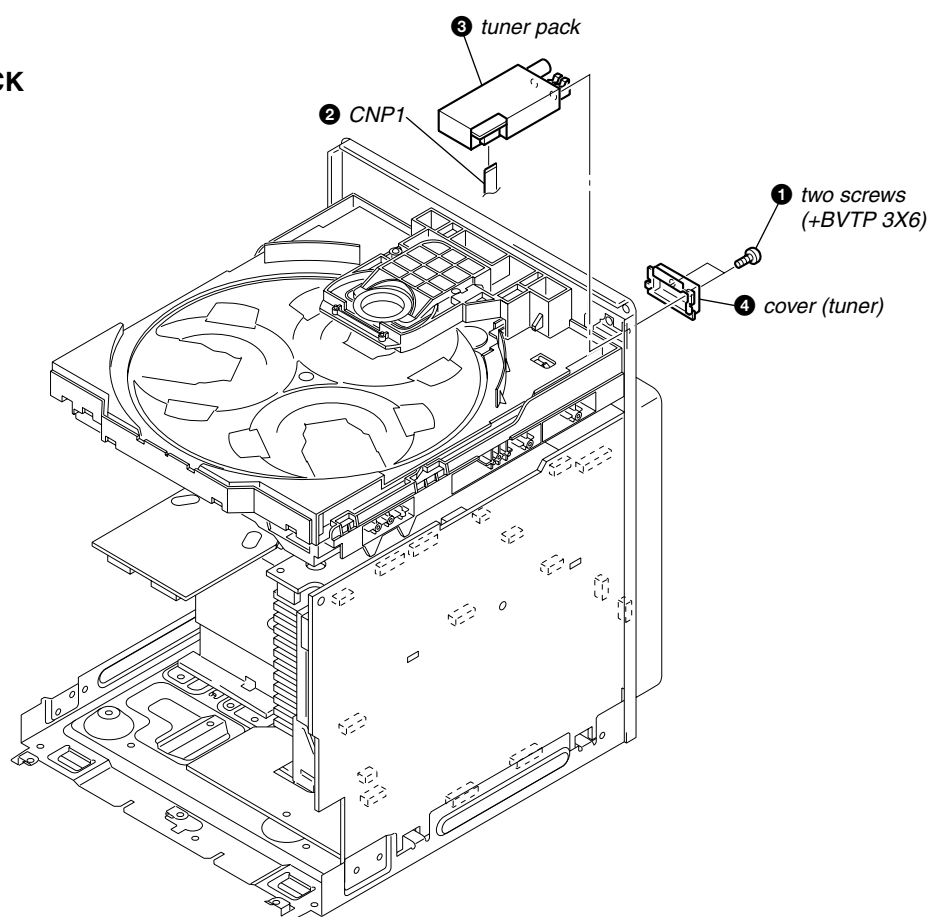
3-3. LOADING PANEL ASSY



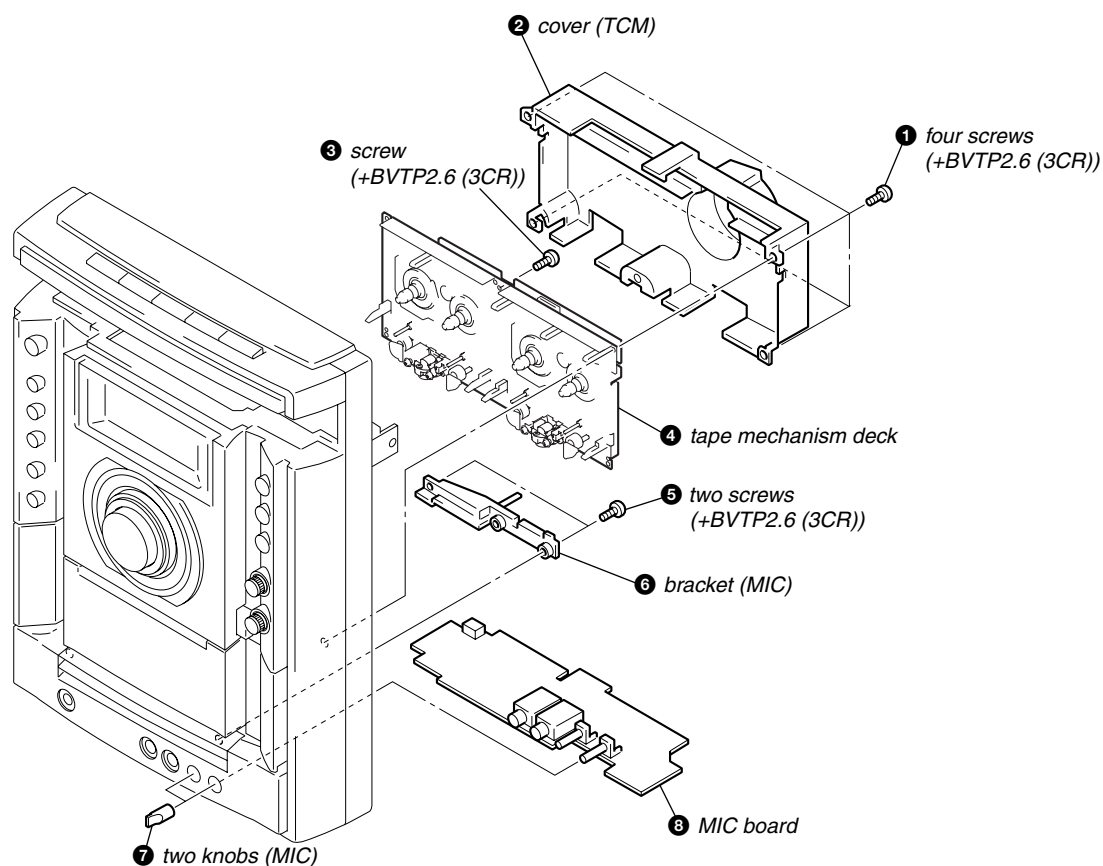
3-4. FRONT PANEL ASSY



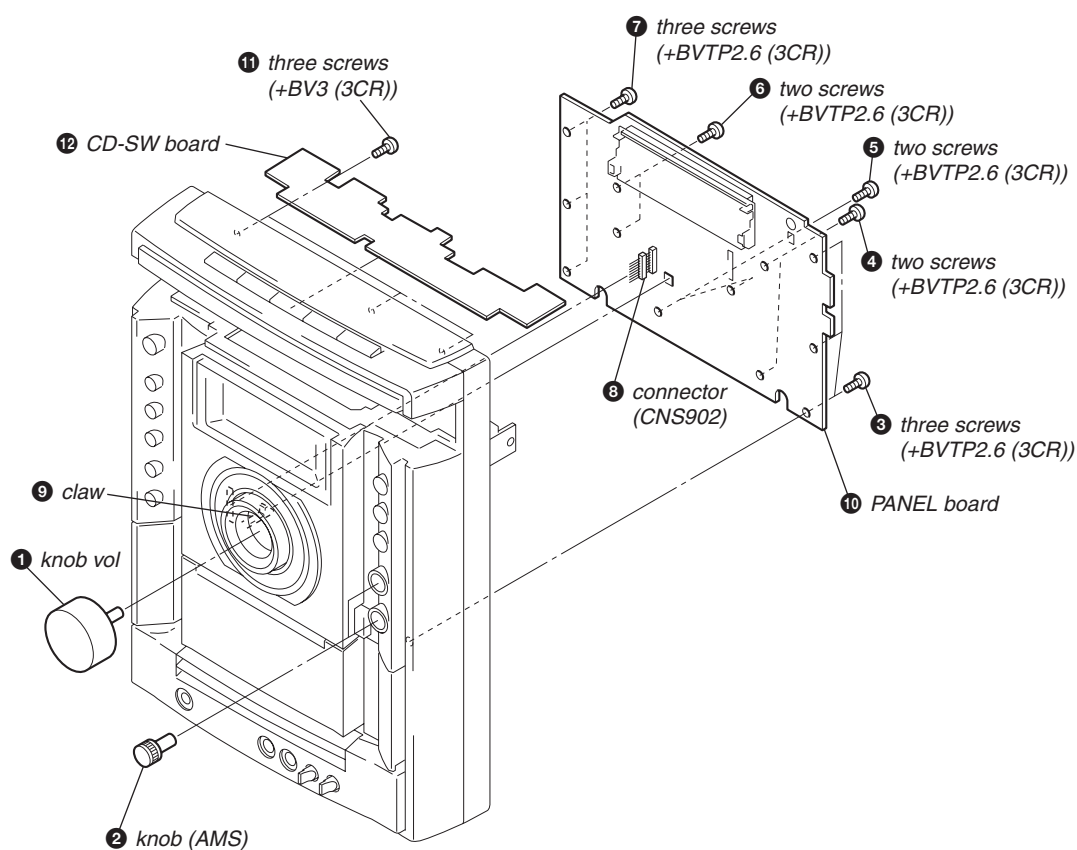
3-5. TUNER PACK



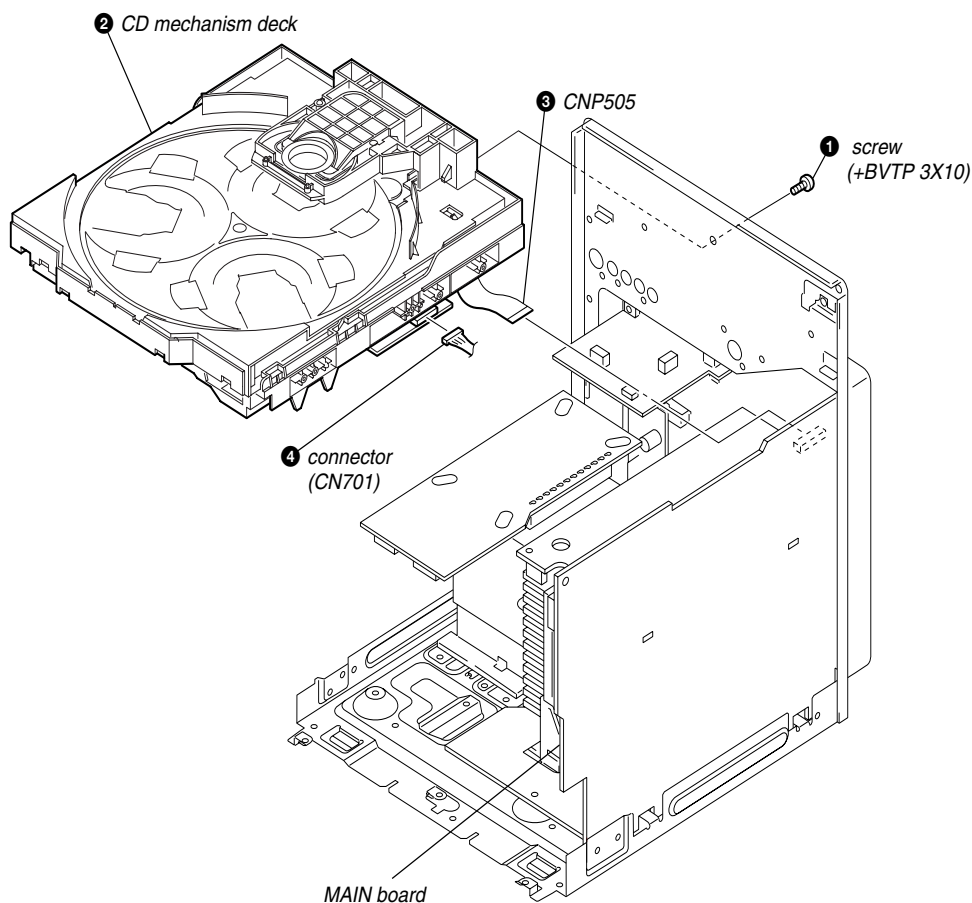
3-6. TAPE MECHANISM DECK, MIC BOARD



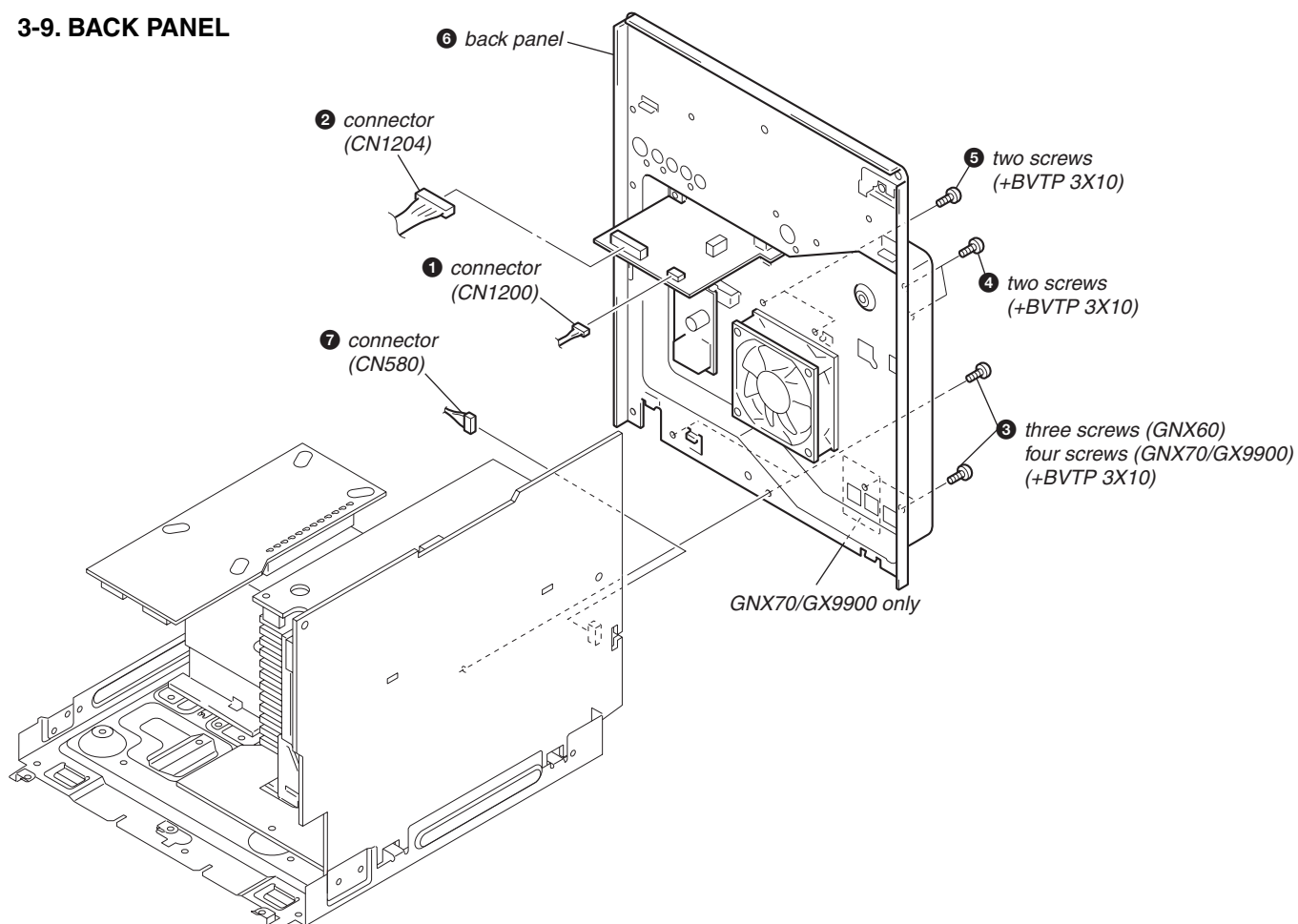
3-7. PANEL BOARD, CD-SW BOARD



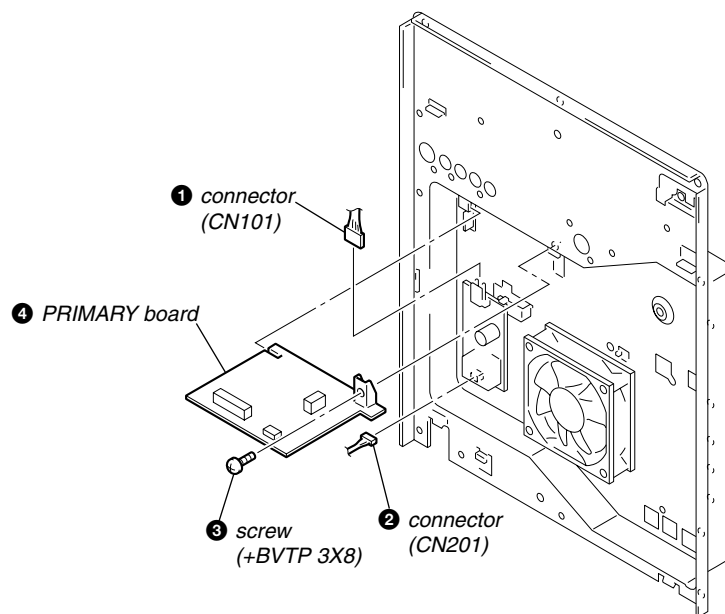
3-8. CD MECHANISM DECK



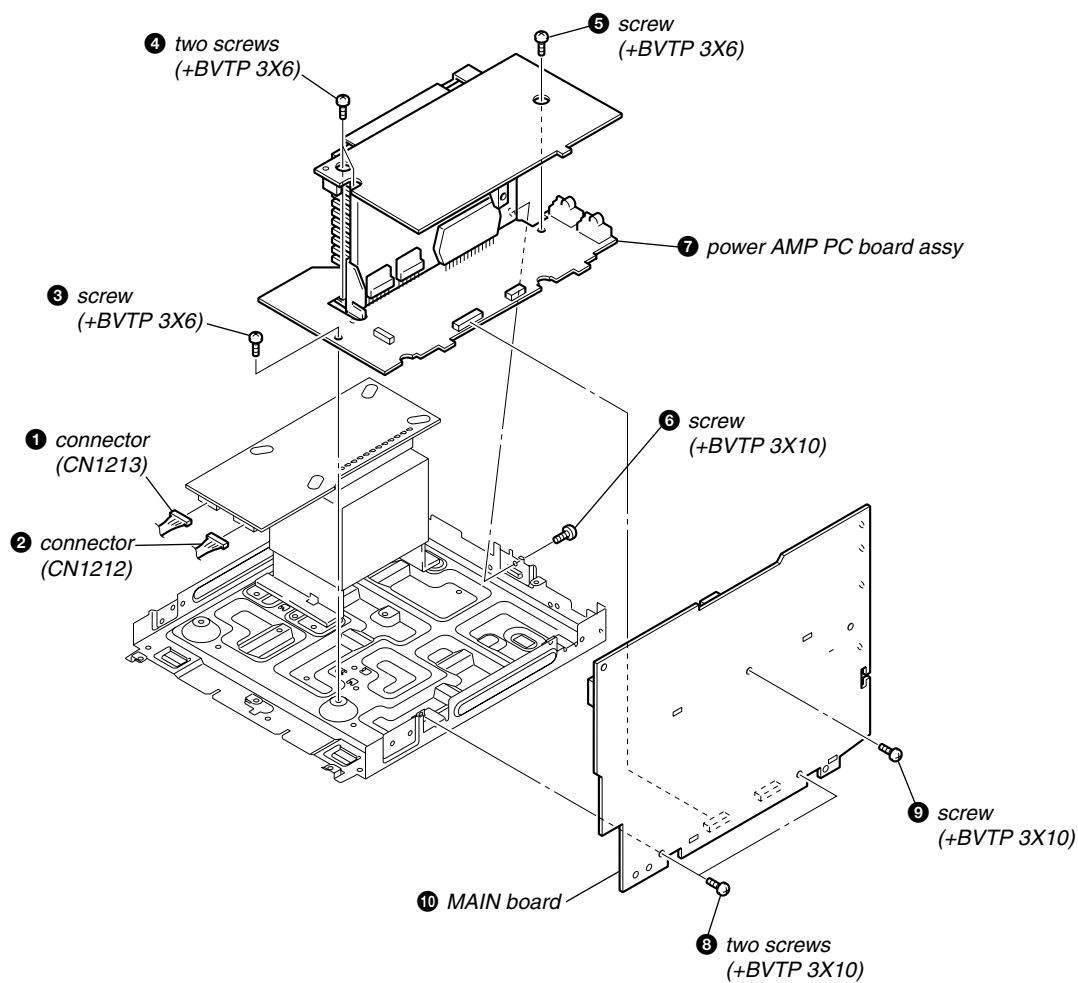
3-9. BACK PANEL



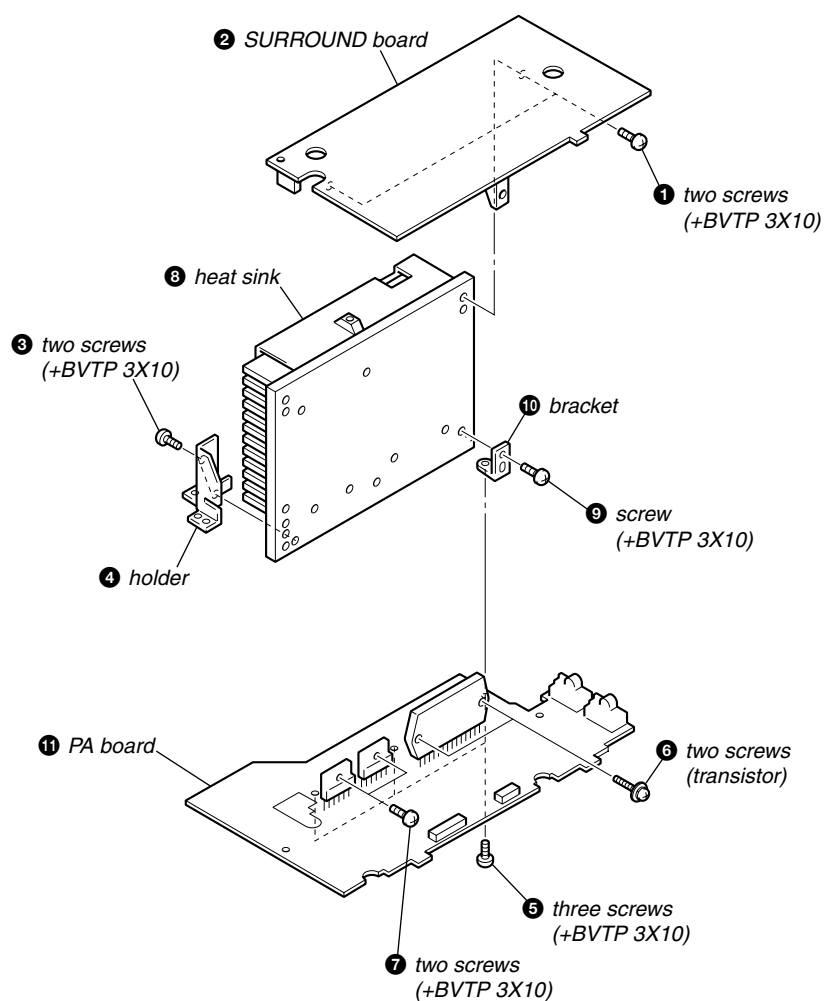
3-10. PRIMARY BOARD



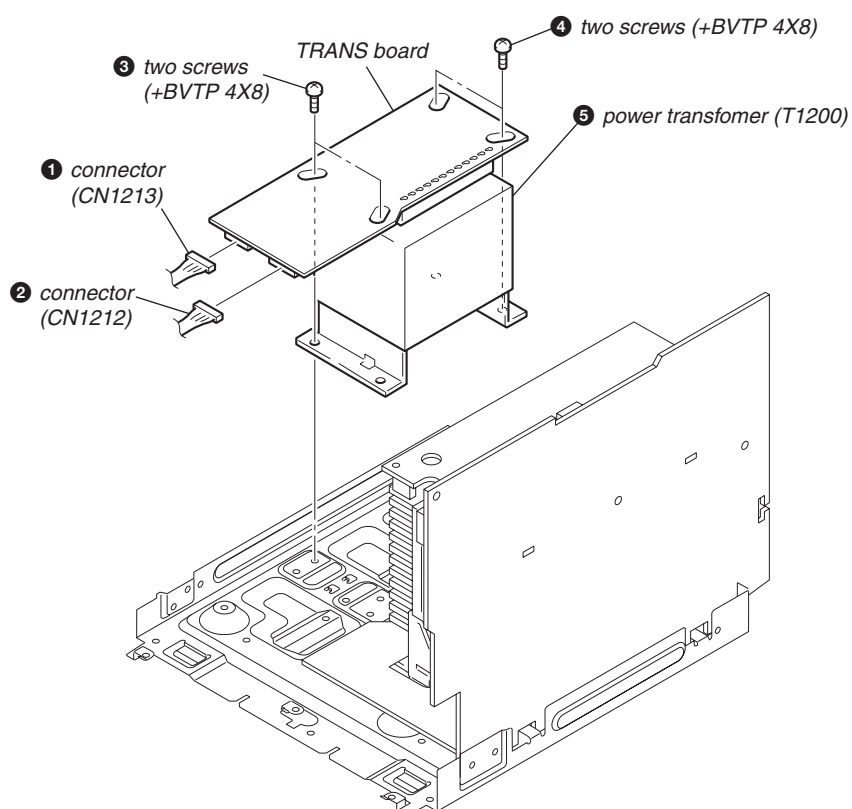
3-11. POWER AMP PC BOARD ASSY, MAIN BOARD



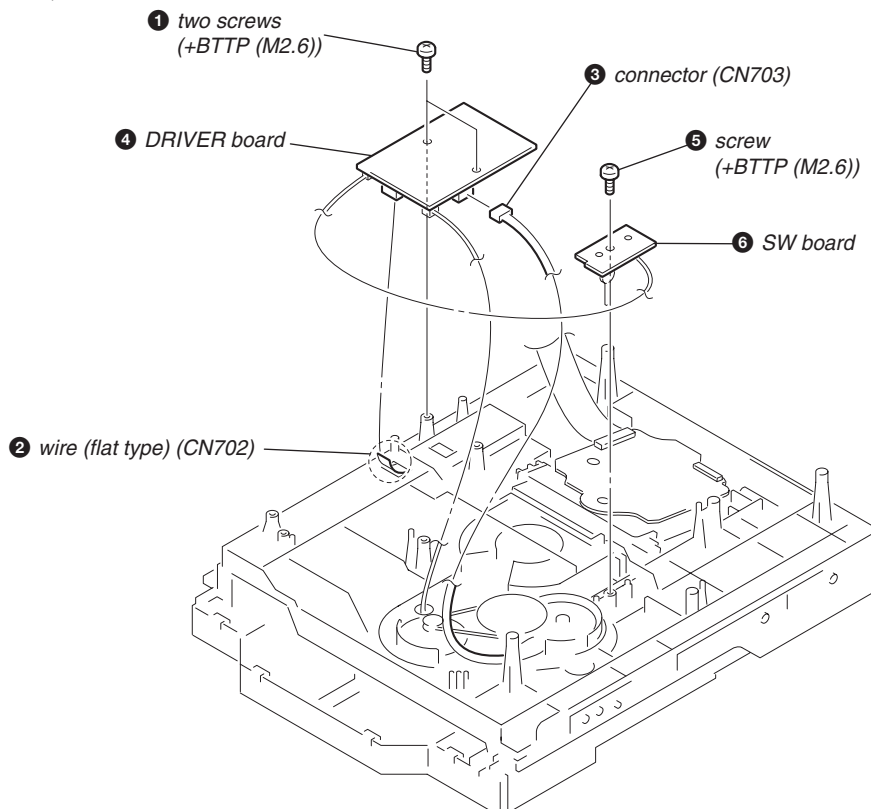
3-12. SURROUND BOARD, PA BOARD



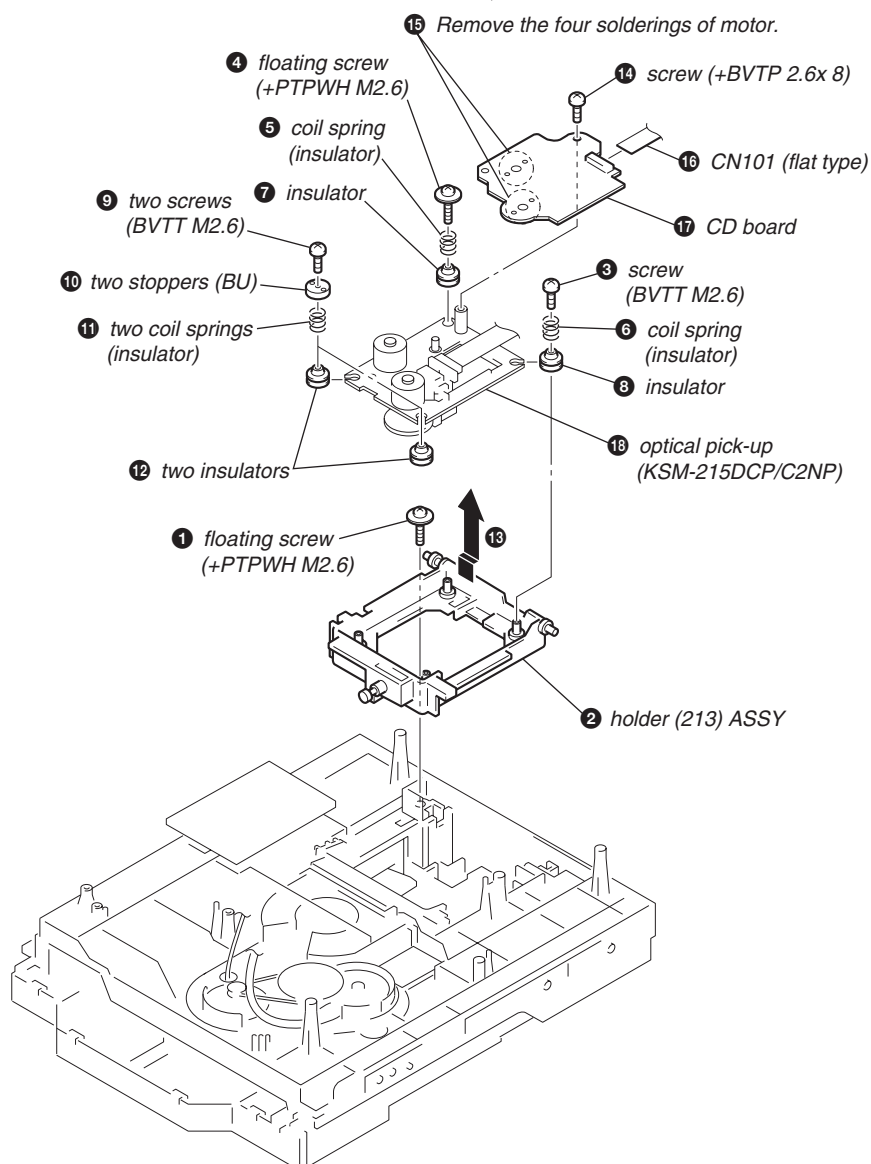
3-13. POWER TRANSFORMER (T1200)



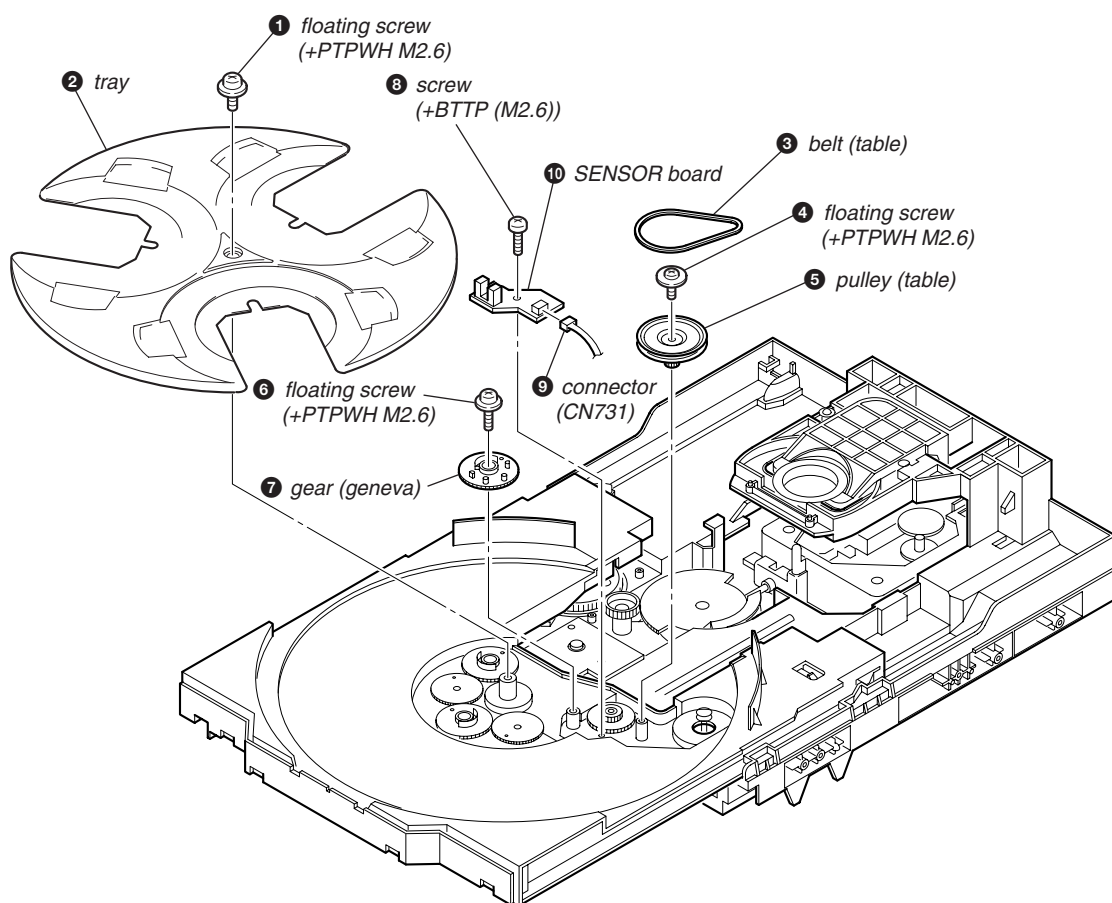
3-14. DRIVER BOARD, SW BOARD



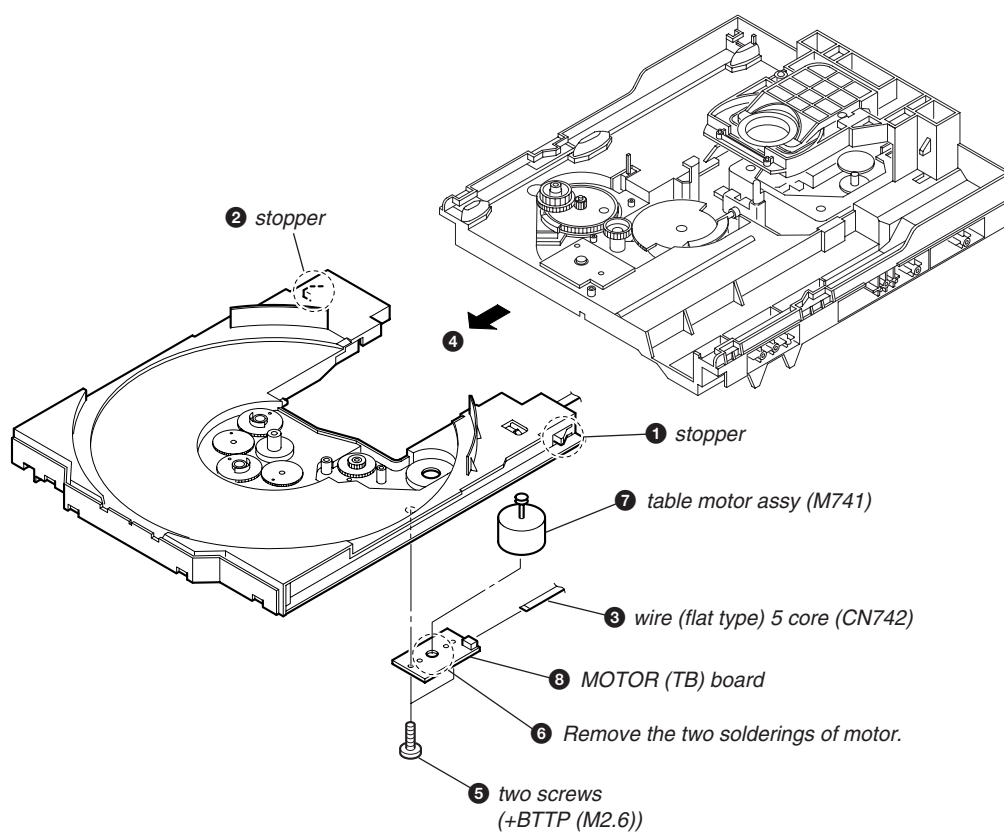
3-15. CD BOARD



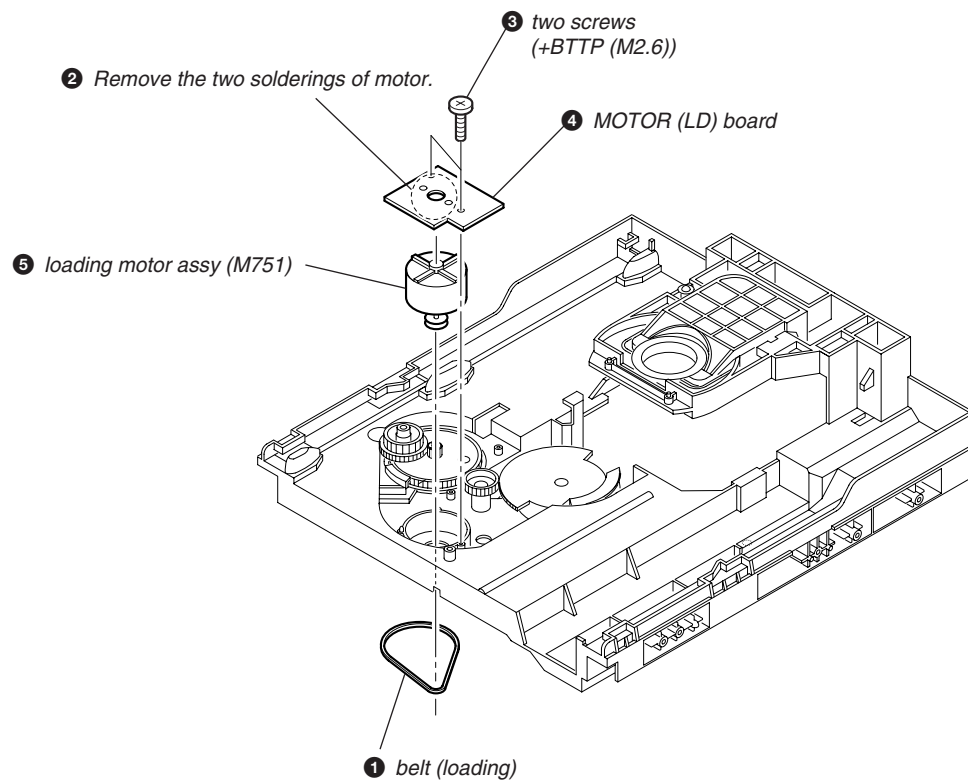
3-16. SENSOR BOARD



3-17. MOTOR (TB) BOARD



3-18. MOTOR (LD) BOARD



SECTION 4

TEST MODE

[GC TEST MODE]

- This mode is used to check the fluorescent indicator tube, LEDs, keys, MASTER VOLUME jog, OPERATION DIAL jog, AMS jog, destination, software version and VACS level.

Procedure:

- Press button, button and button simultaneously.
- All LEDs and segments in fluorescent indicator tube are lighted up. All LEDs are lighted up in red color. If the system is turned on, the LED is lighted up in green color.
- When you want to enter the software version display mode, press button. The model and destination are displayed.
- Each time button is pressed, the display changes from MC version, GC version, SYS version, CD version, CDDM version, CDMA version, CDMB version, BDA version, BDB version, ST version, TC version, TA version and TM version in this order, and returns to the MC version display.
- When button is pressed while the version numbers are being displayed except model and destination, the date of the software creation appear. When button is pressed again, the display returns to the software version display. When button is pressed while the date of the software creation is being displayed, the date of the software creation is displayed in the same order of software version display.
- Press button, the key check mode is activated.
- In the key check mode, the fluorescent indicator tube displays "K 0 JOV0E0 X0".
Each time a button is pressed, "K" value increases. However, once a button has been pressed, it is no longer taken into account.
"J" value increases in the manner of 0,1, 2, 3 ... if knob is turned clockwise, or it decreases in the manner of 0, 9, 8, 7 ... if knob is turned counter-clockwise.
"V" value increases in the manner of 0,1, 2, 3 ... if knob is turned clockwise, or it decreases in the manner of 0, 9, 8, 7 ... if knob is turned counter-clockwise.
"E" value increases in the manner of 0,1, 2, 3 ... if knob is turned clockwise, or it decreases in the manner of 0, 9, 8, 7 ... if knob is turned counter-clockwise.
- When button is pressed after all LEDs and segments in fluorescent indicator tube light up, the fluorescent indicator tube displays "VACS A+B APCC". A is VACS level which is triggered by signal level, B is VACS level which is triggered by temperature and CC is VACS level which is triggered by APVACS (Abuse Protection VACS).
The signal level, which will trigger VACS A is shown in the center area of fluorescent indicator tube.
- When button is pressed after all LEDs and segments in fluorescent indicator tube light up, alternate segments in fluorescent indicator tube would light up. If you press button again, another half of alternate segments in fluorescent indicator tube would light up. Pressing button again would cause all segments lights up.
- To release 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, and Tape.

Procedure:

* To enter MC Test Mode

- Press button, button and button simultaneously.
- The CD ring indicators, TAPE A and TAPE B indicators flash on the fluorescent indicator tube. The function is changed to VIDEO.

* Check of Amplifier

- Press button repeatedly until a message "GEQ MAX" appears on the fluorescent indicator tube. GEQ increases to its maximum.
- Press button repeatedly until a message "GEQ MIN" appears on the fluorescent indicator tube. GEQ decreases to its minimum.
- Press button repeatedly until a message "GEQ FLAT" appears on the fluorescent indicator tube. GEQ set to flat.
- When the knob is turned clockwise even slightly, the sound volume increases to its maximum and a message "VOLUME MAX" appears on the fluorescent indicator tube.
- When the knob is turned counter-clockwise even slightly, the sound volume decreases to its minimum and a message "VOLUME MIN" appears on the fluorescent indicator tube.

* Tape function

- When a tape is inserted in Deck B and recording is started, the function is changed to VIDEO automatically. When button is pressed during recording in function, ALC (Automatic Level Control) is turned on.
- During recording, turn knob to counter clockwise rotation will change the function to TAPE B and rewind the tape in deck B until the recording start position and playback of the tape in deck B is started. If the button is pressed for a pause and pressed again to resume recording during recording time, when the tape in deck B is rewind, the tape in deck B will be rewind until the position where the pause is applied.

* To release MC Test mode.

- To release this mode, press button.
- The cold reset is enforced at the same time.

[COLD RESET]

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

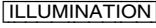
Procedure:

- Press button, button, and button simultaneously.
- The fluorescent indicator tube becomes blank for a while, and the set is reset.

[VACS ON/OFF]

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

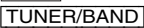
Procedure:

- Press  button to turn the set ON.
- Press  button and  button simultaneously. The message “VACS OFF” or “VACS ON” appears on the fluorescent indicator tube.

[TUNER STEP CHANGE]

- The step interval of AM channels can be toggled between 9 kHz and 10 kHz.

Procedure:

- Press  button to turn the set ON.
- Press  button repeatedly to select the “AM”.
- Press  button to turn the set OFF.
- Press  button and  button simultaneously. The system will turn ON automatically. The message “AM 9k STEP” or AM 10k STEP” appears on the fluorescent indicator tube and thus the channel step is changed.

[CD SERVICE MODE]

- This mode let you move the CD sled motor freely. Use this mode when you want to clean the optical pick-up.

Procedure:

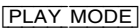
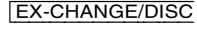
- Press  button to turn the set ON.
- Select CD function.
- Press ,  button, and  button simultaneously.
- The CD service mode is activated. The message “SERVICE MODE” appears.
- With the CD in stop status, turn  knob to clockwise rotation to move the optical pick-up to outside track, or turn  knob to counterclockwise rotation to move to inside track. The message “SLED OUT” or “SLED IN” appears on the fluorescent indicator tube.
- To turn on or off the laser, press  button. The message “LASER ON” or “LASER OFF” appears on the fluorescent indicator tube.
- To release this mode, press  button.

[AGING MODE]

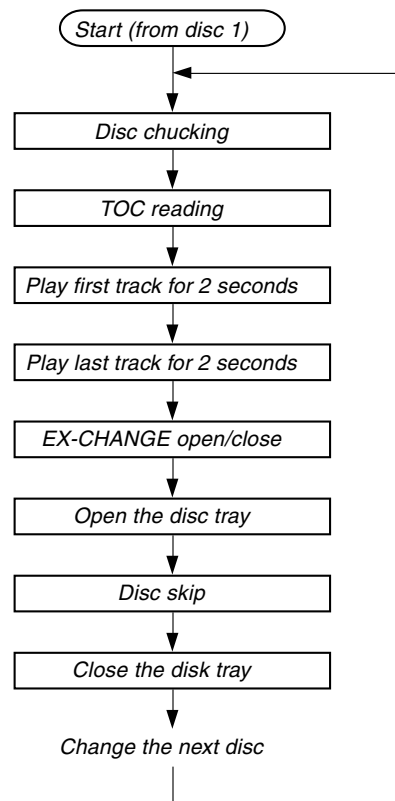
This mode can be used for operation check of CD section.

- If an error occurs, the aging operation would stops and the status is displayed.
- If there are no error occurs, the aging operation would continues repeatedly.

Procedure:

- Press  button to turn the set ON
- Select CD function.
- Load three discs on the disc tray.
- Press  button repeatedly to select the “ALL DISCS” mode, and press the  button repeatedly to select “REPEAT OFF” mode.
- Press ,  button, and  button simultaneously.
- Aging operation is started.
- To release this mode, press  button or disconnect the power cord to turn the power OFF.

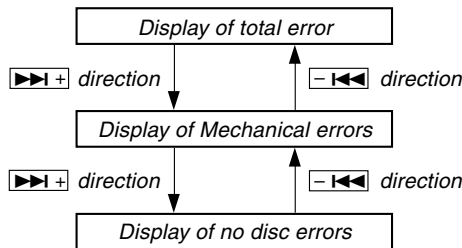
Aging mode sequence:



• Display when an error occurred (CD Error Code Mode)

Procedure:

1. Press button, button and button simultaneously to enter the error code display mode.
2. The fluorescent indicator tube displays the number of total error.
3. Each time knob is rotated, display change as below.



4. To clear the error record, operate the cold reset. (Refer to the "COLD RESET")
5. To release this mode, press the button or disconnect the power cord to turn the power OFF.

- 1) Display of total error

Display

Em**Ed**

EM**: The number of mechanical errors.

ED**: The number of no disc errors after chucking the disc.

- 2) Display of mechanical errors

Display

M*\$\$%&##00

M*: The number of mechanical error ("00" is latest one)

(Rotate knob in the direction of either to display next error)

\$\$: Not used

%%: Loading related error (Second figure is not used)

D: Stop by the problem other than mechanical problem while closing.

E: Stop by the problem other than mechanical problem while opening.

C: Stop by the problem other than mechanical problem while chucking up.

F: Stop by the problem other than mechanical problem while chucking down.

&&: Emerging error

01: Stop while chucking up.

02: Stop while chucking up.

03: Time-out of EX-CHANGE open.

05: Time-out of EX-CHANGE close.

##: Not used

- 3) Display of no disc errors

Display

D*\$\$%&##00

D*: The number of mechanical error ("00" is latest one)

(Rotate knob in the direction of either to display next error)

\$\$: Error type

01: Focus error

02: GFS error

03: Setup error

%%: Not used

&&:

00: No disc judgment without chucking retry.

01: No disc judgment after chucking retry.

##: The state when judged as no disc

01: Stop

02: Setup

03: TOC reading

04: Access

05: Playback

06: Pause

07: Manual search (Play)

08: Manual search (Pause)

[CD REPEAT 5 LIMIT OFF MODE]

- The number of repeat for CD playback is 5 times when the repeat mode is "REPEAT ALL". This mode enables CD to repeat playback for limitless times.

Procedure:

1. Press button to turn the set ON.
2. Select CD function.
3. Press button, button and button simultaneously to enter the CD repeat 5 limit off mode and the message "LIMIT OFF" appears on the fluorescent indicator tube.
4. To release this mode, operate the cold reset. (Refer to the "COLD RESET")

[CD SHIP MODE (WITH MEMORY CLEAR)]

- This mode moves the optical pick-up to the position durable to vibration and clears all data including preset data stored in the RAM to initial conditions. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press button to turn the set ON.
2. Select CD function.
3. Press button, button and button simultaneously. The set will power off automatically.
4. After the "STANDBY" blinking display finish, a message "LOCK" appears on the fluorescent indicator tube and the CD ship mode is set.

[CD SHIP MODE (WITHOUT MEMORY CLEAR)]

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

Procedure:

1. Press  button to turn the set ON.
2. Select CD function.
3. Press  button and  button simultaneously. The set will power off automatically.
4. After the "STANDBY" blinking display finish, the message "LOCK" appears on the fluorescent indicator tube and the CD ship mode is set.

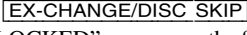
[CD POWER MANAGE]

- This mode let you switch on or off, the power supply to the BU during TUNER function.
- When CD POWER is set to OFF, the power supply to the BU is cut off during TUNER function. It will increase the time taken to access CD when function change from TUNER to CD but it will improve tuner reception.
- When CD POWER is set to ON, the power supply to the BU is not cut off during TUNER function. It will reduce the time taken to access CD when function change from TUNER to CD but it will decrease tuner reception performance.

Procedure:

1. Press  button to turn the set ON.
2. Select CD function.
3. Press  button to turn the set OFF.
4. Press  button and  button simultaneously. The set will power on automatically.
5. The message "CD POWER ON" or "CD POWER OFF" appears on the fluorescent indicator tube.

[CD TRAY LOCK MODE]

- This mode let you lock the disc trays. When this mode is activated, the disc tray will not open when  button or  button is pressed. The message "LOCKED" appears on the fluorescent indicator tube.

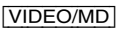
Procedure:

1. Press  button to turn the set ON.
2. Select CD function.
3. Press  button and  button simultaneously and hold down until "LOCKED" or "UNLOCKED" appears on the fluorescent indicator tube (around 5 seconds).

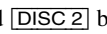
[VIDEO/MD SWITCHING]

- This mode let you switch from VIDEO to MD and vice-versa.

Procedure:

1. Press  button to turn the set ON.
2. Select VIDEO function.
3. Press  button and  button simultaneously. The function will change to MD. Press the same buttons again to change from MD to VIDEO.

[REMOTE COMMANDER DISABLE MODE]

- This mode let you disable the remote commander reception. When this mode is activated, the set will not response if the button on the remote commander is pressed. The message "RemoteDisable" will be displayed on the fluorescent indicator tube. Use this mode during aging to avoid disturbance.
- Procedure:
 1. Press  button,  button and  button simultaneously. The message "RemoteDisable" appears on the fluorescent indicator tube. To enable the remote commander reception, press the same buttons again. The message "RemoteEnable" appears on the fluorescent indicator tube.

SECTION 5 MECHANICAL ADJUSTMENTS

Precaution

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

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 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

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

- Test Tape

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

RECORD/PLAYBACK HEAD AZIMUTH ADJUST-MENT

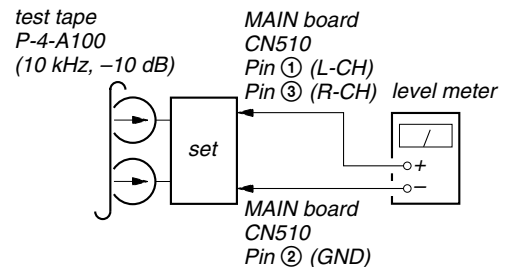
DECK A

DECK B

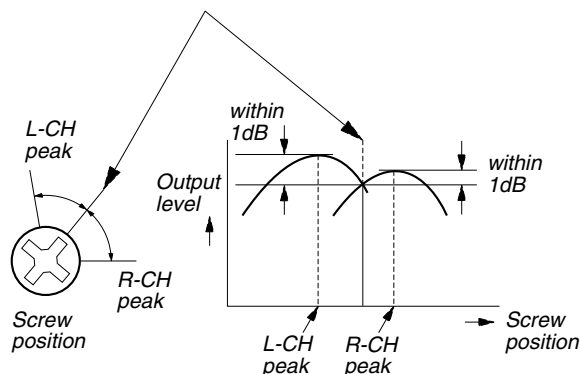
Note: Perform this adjustments for both decks

Procedure:

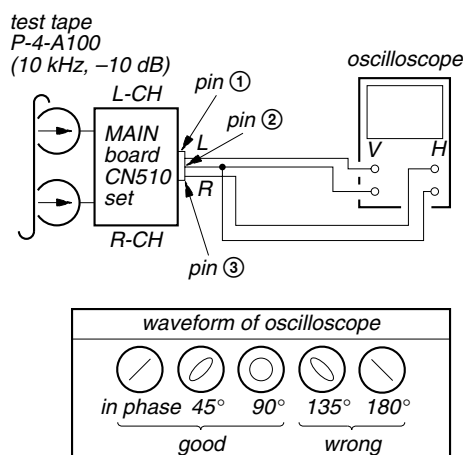
1. Mode: Playback



- 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.

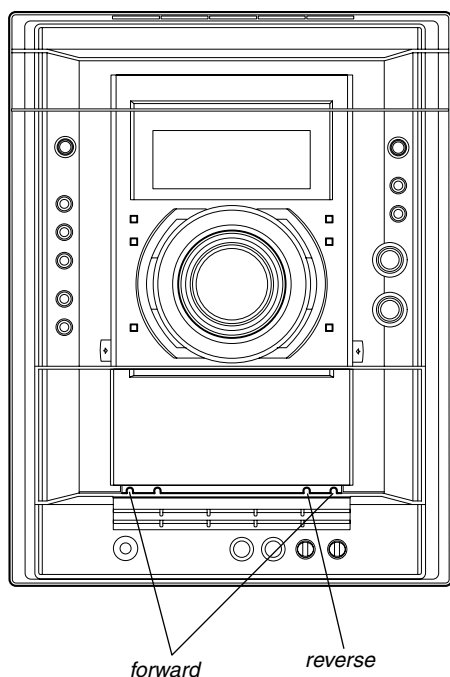


- Mode: Playback



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

Adjustment Location: Playback Head (Deck A).
Record/Playback/Erase Head (Deck B).



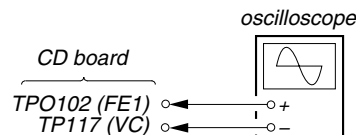
CD SECTION

Note:

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

S-curve Check

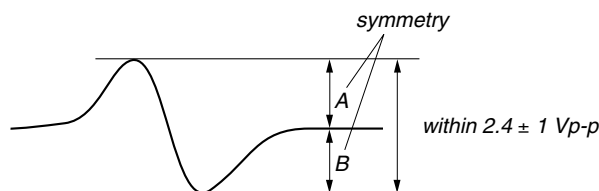
Connection:



Procedure:

- Connect an oscilloscope to test point TPO102 (FE1) and TP117 (VC) on the CD board.
- Turn the power on.
- Put the disc (YEDS-18) in and turned power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out)
- Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 1 Vp-p.

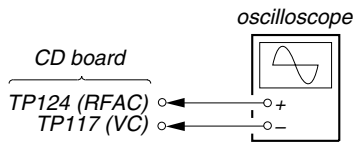
S-curve waveform



Note:

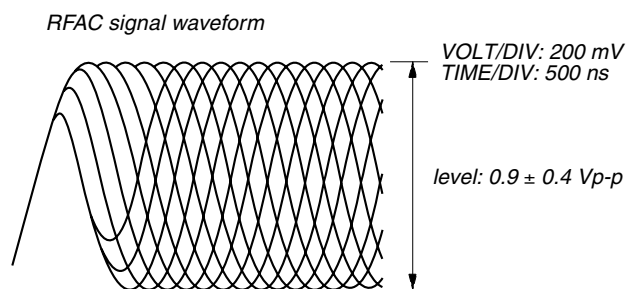
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

Checking Location: CD board (SIDE B)
(See page 24.)

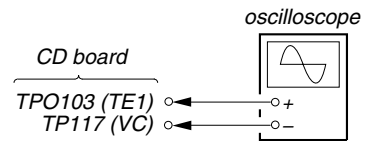
RFAC Level Check**Connection:****Procedure:**

1. Connect an oscilloscope to test point TP124 (RFAC) and TP117 (VC) on the CD board.
2. Turn the power on.
3. Put the disc (YEDS-18) in to playback the number five track.
4. Confirm that oscilloscope waveform is clear and check RFAC signal level is correct or not.

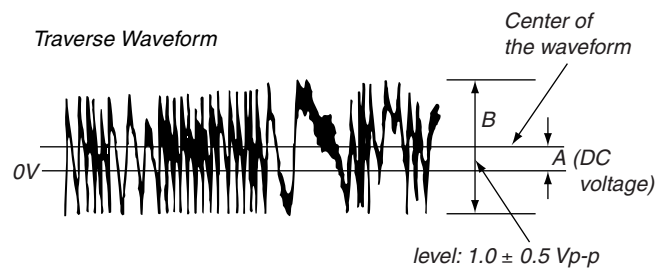
Note: A clear RFAC signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.



Checking Location: CD board (SIDE B)
(See page 24.)

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

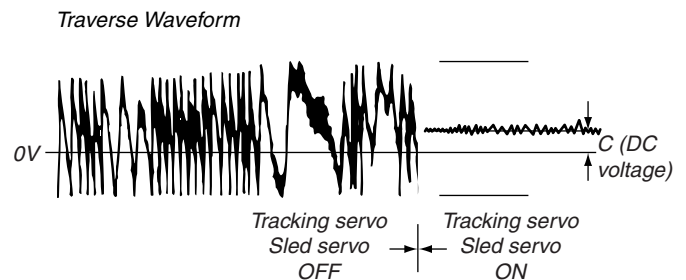
1. Connect an oscilloscope to test point TPO103 (TE1) and TP117 (VC) on the CD board.
2. Turn the power on.
3. Select the function “CD”.
4. Press three buttons of [ENTER], [▶▶], and [SURROUND MODE] simultaneously to set the CD service mode.
5. Put the disc (YEDS-18) in to playback the number five track.
6. Press the [◀◀] button. The message “TRAVERSE” is displayed. (The tracking servo and the sledding servo are turned OFF)
7. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
Confirm the following :
 $A/B \times 100 = \text{less than } \pm 22\%$



8. Press the [◀◀] button. The message “TRAVERSE” is displayed. (The tracking servo and sledding servo are turned ON)
Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 5.
9. To exit from this mode, perform as follows.
 - 1) Move the optical pick-up to the most inside track.
 - 2) Press three buttons of [■], [CLEAR], and [DISPLAY] simultaneously. (cold reset)

Notes:

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

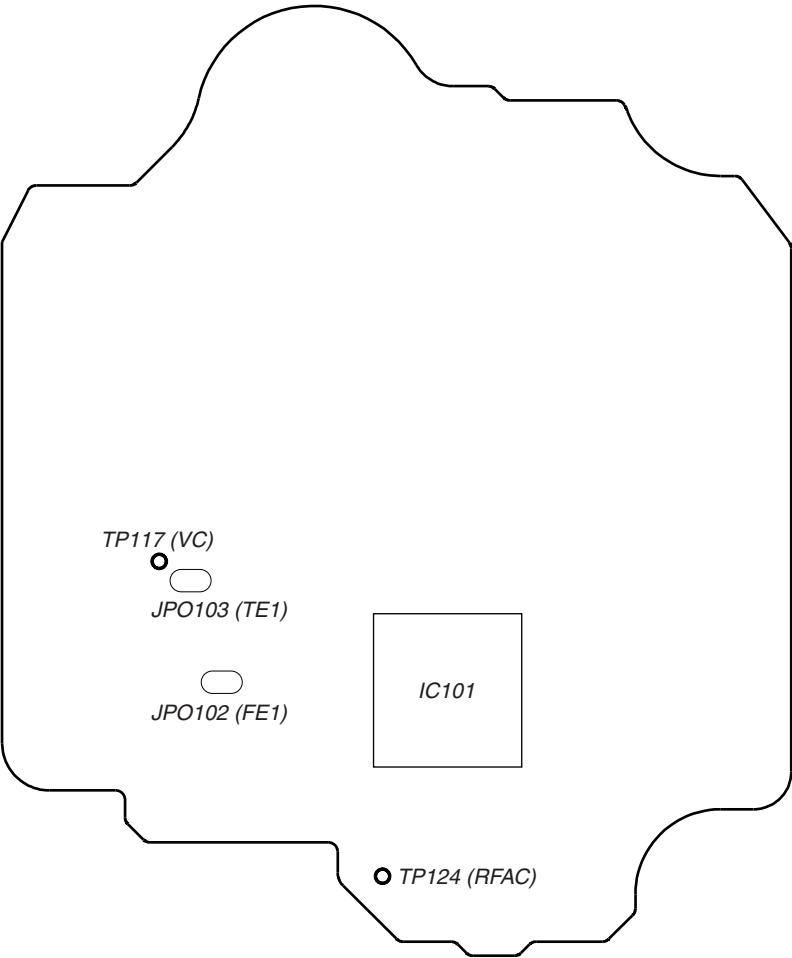


Checking Location: CD board (SIDE B) (See page 24.)

HCD-GNX60/GNX70/GX9900

Checking Location:

– CD BOARD (SIDE B) –



SECTION 7 DIAGRAMS

For schematic diagrams.

Note:

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

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

-  : panel designation.
-  : B+ Line.
-  : B- Line.
-  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
CD board
no mark: CD PLAY
Other board
no mark: TUNER (FM/AM)
() : CD PLAY
< > : TAPE PLAY
[] : TAPE REC
* : Impossible to measure
- 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 an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 : TUNER (FM/AM)
 : TAPE PLAY (DECK A)
 : TAPE PLAY (DECK B)
 : RECORD
 : CD PLAY
 : MIC INPUT

• Abbreviation

AR : Argentine model
AUS : Australian model
E2 : 120V AC Area in E model
E3 : 240V AC Area in E model
E51 : Chilean and Peruvian model

Note on Printed Wiring Boards:

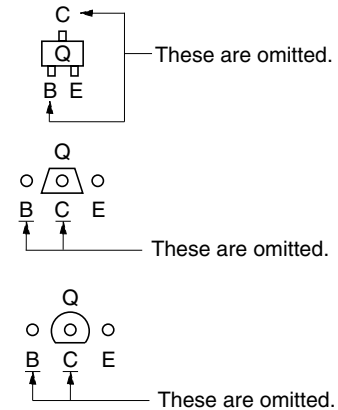
Note:

-  : parts extracted from the component side.
-  : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:

Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Side A)
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Side B)

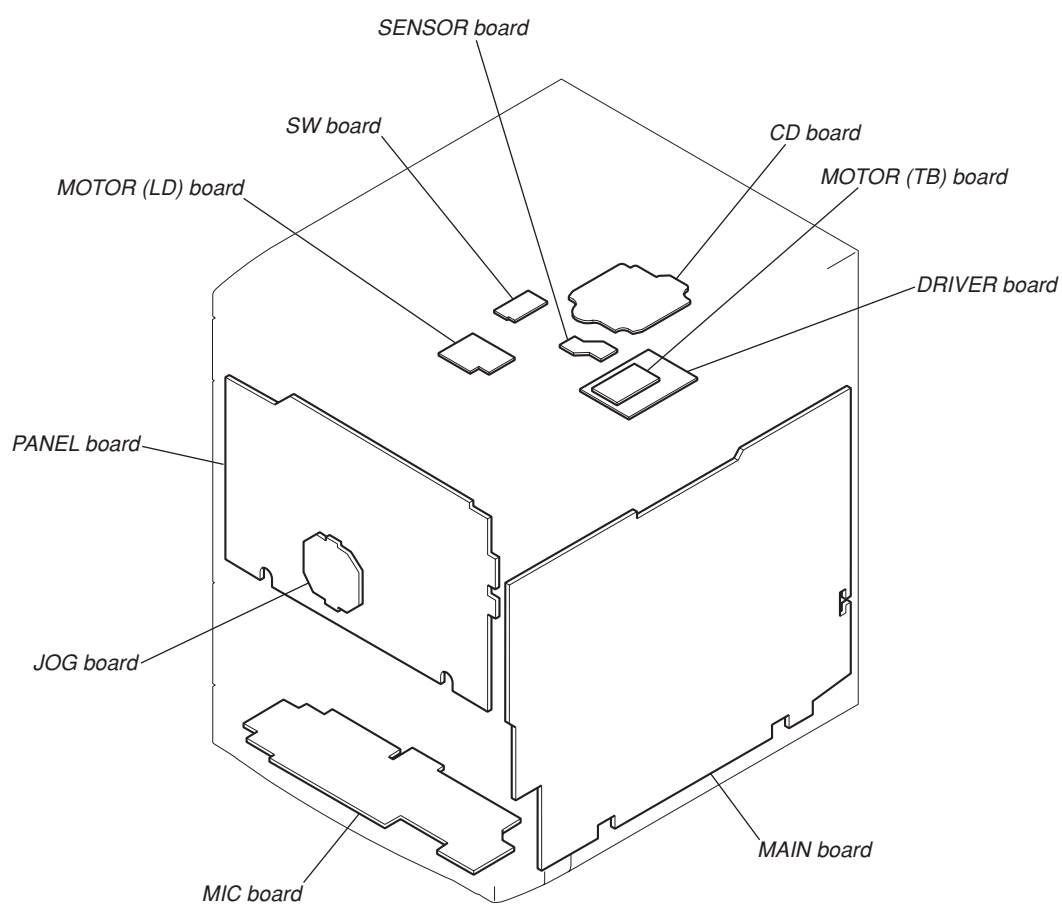
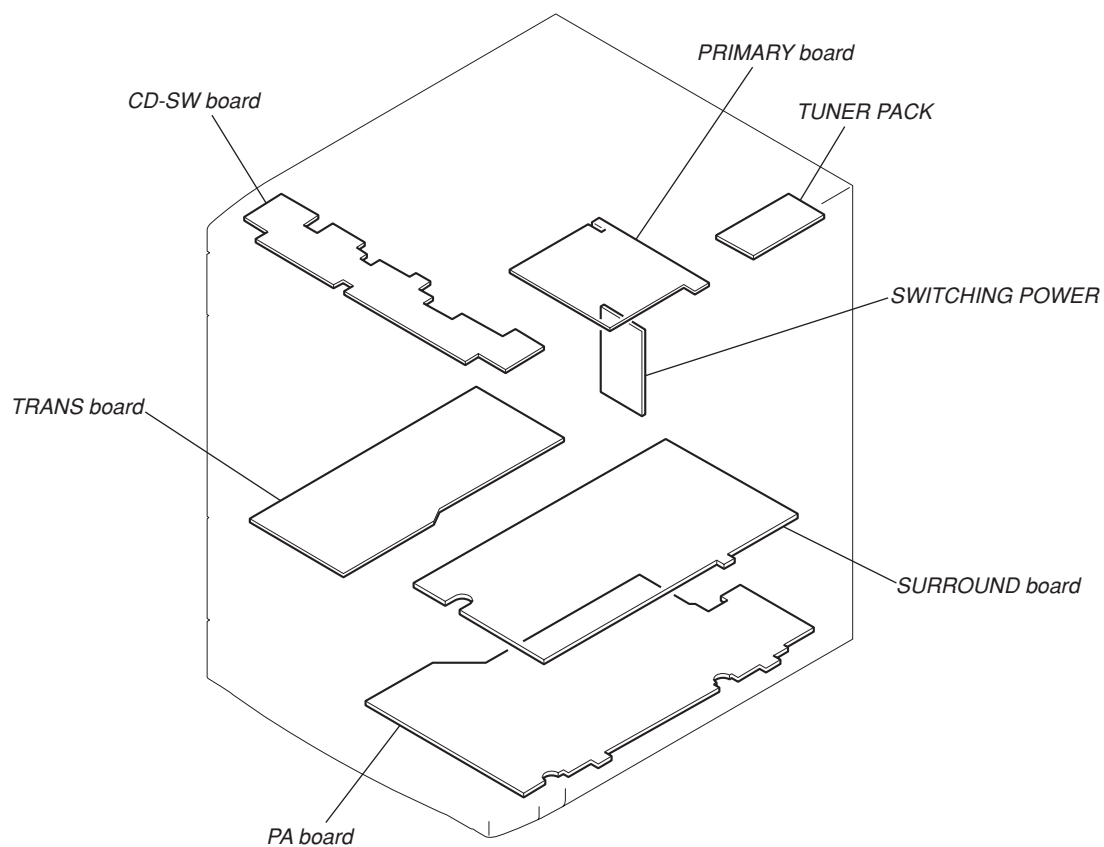
- Indication of transistor.



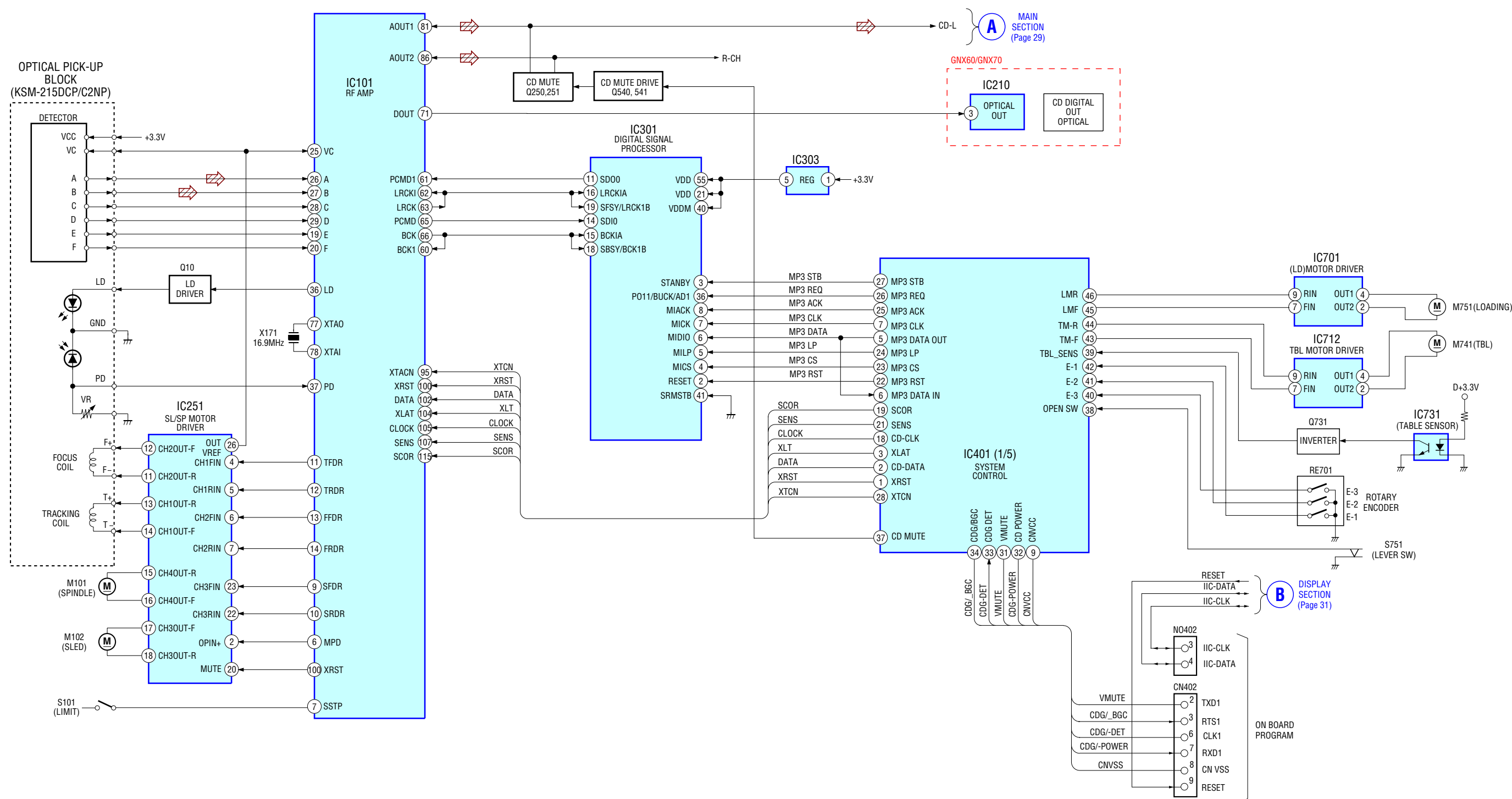
• Abbreviation

AR : Argentine model
AUS : Australian model
E2 : 120V AC Area in E model
E3 : 240V AC Area in E model
E51 : Chilean and Peruvian model

7-1. CIRCUIT BOARD LOCATION

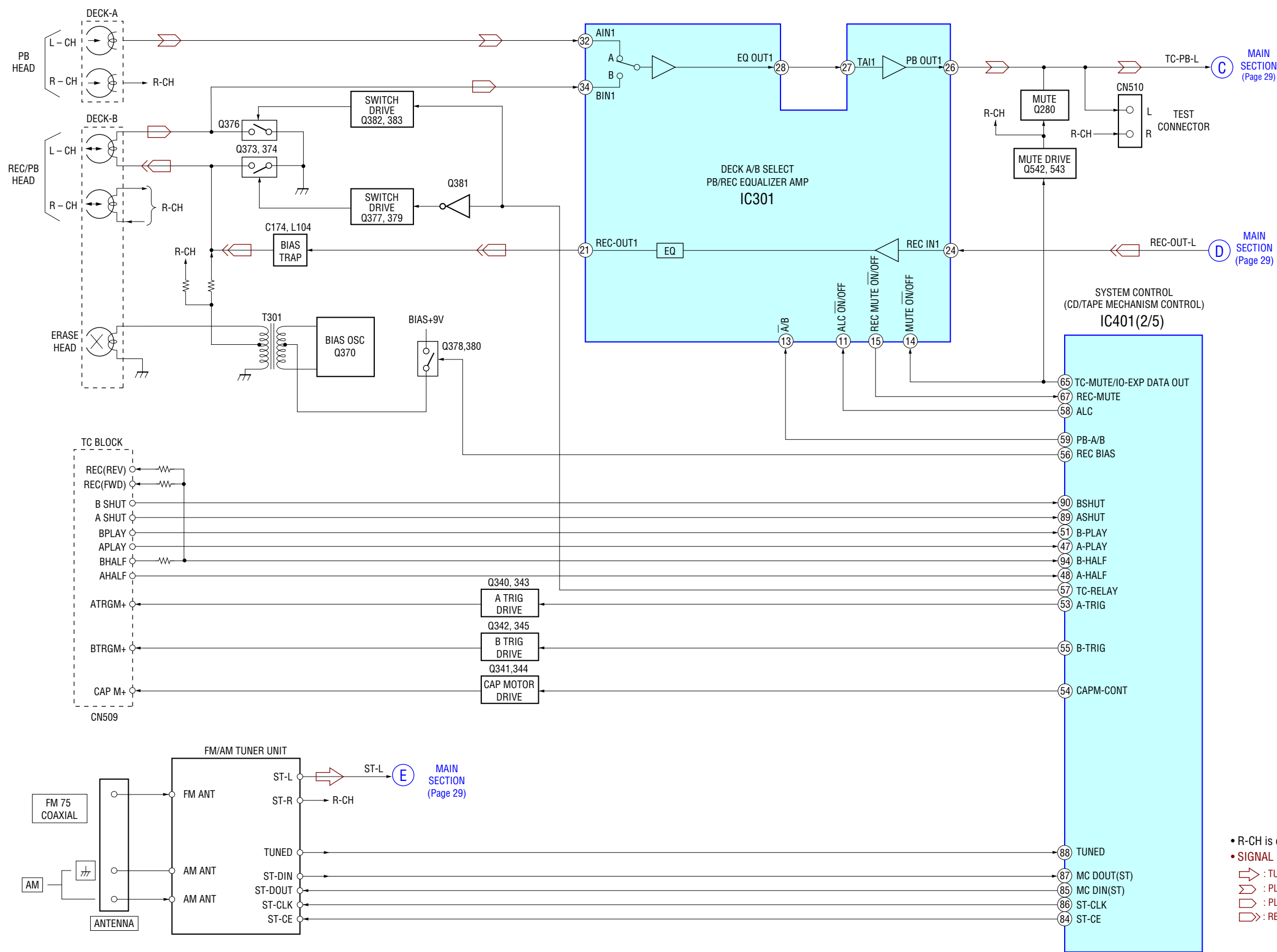


7-2. BLOCK DIAGRAM – CD SECTION –

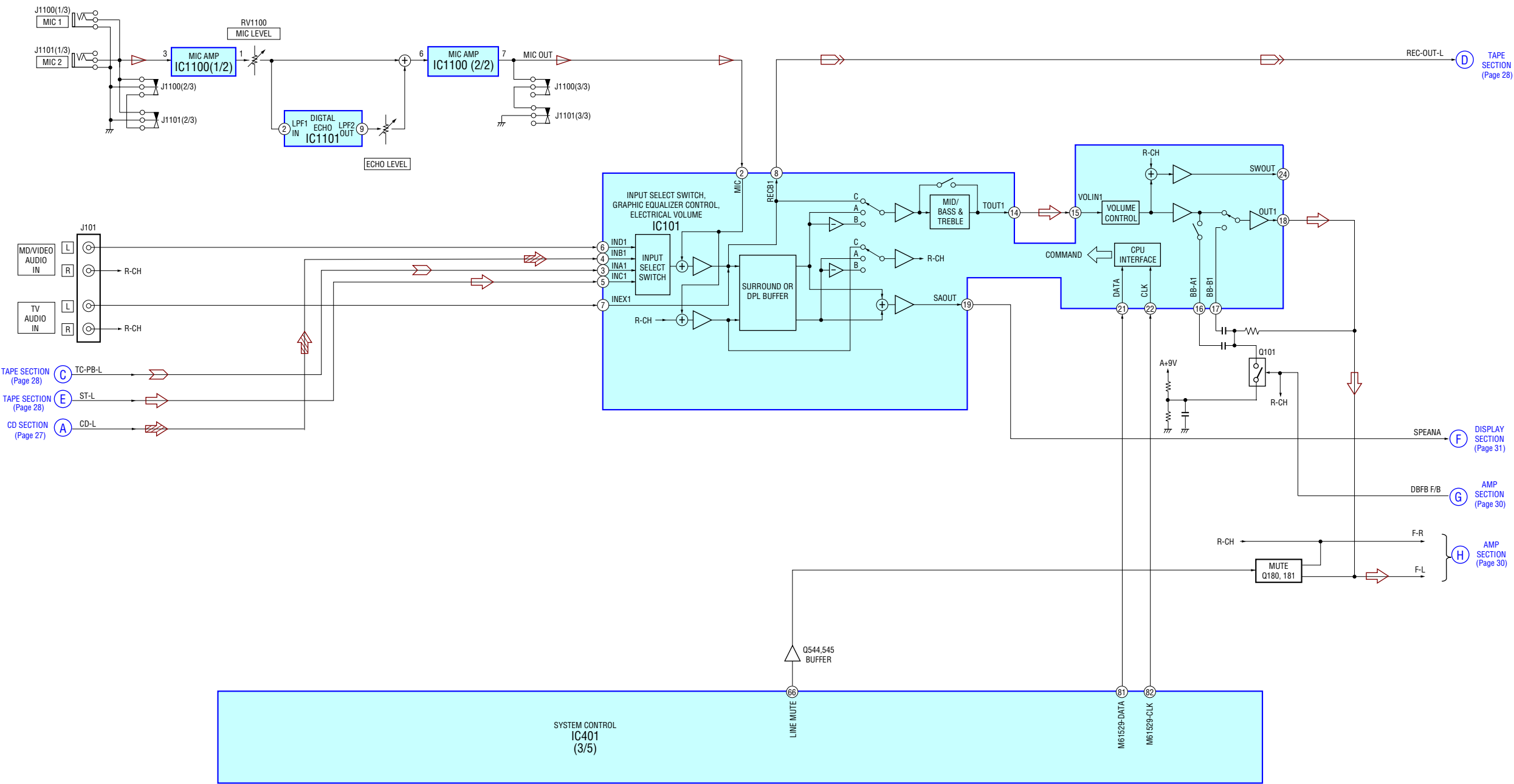


- R-CH is omitted due to same as L-CH.
- **SIGNAL PATH**
 : CD

7-3. BLOCK DIAGRAM –TAPE SECTION –

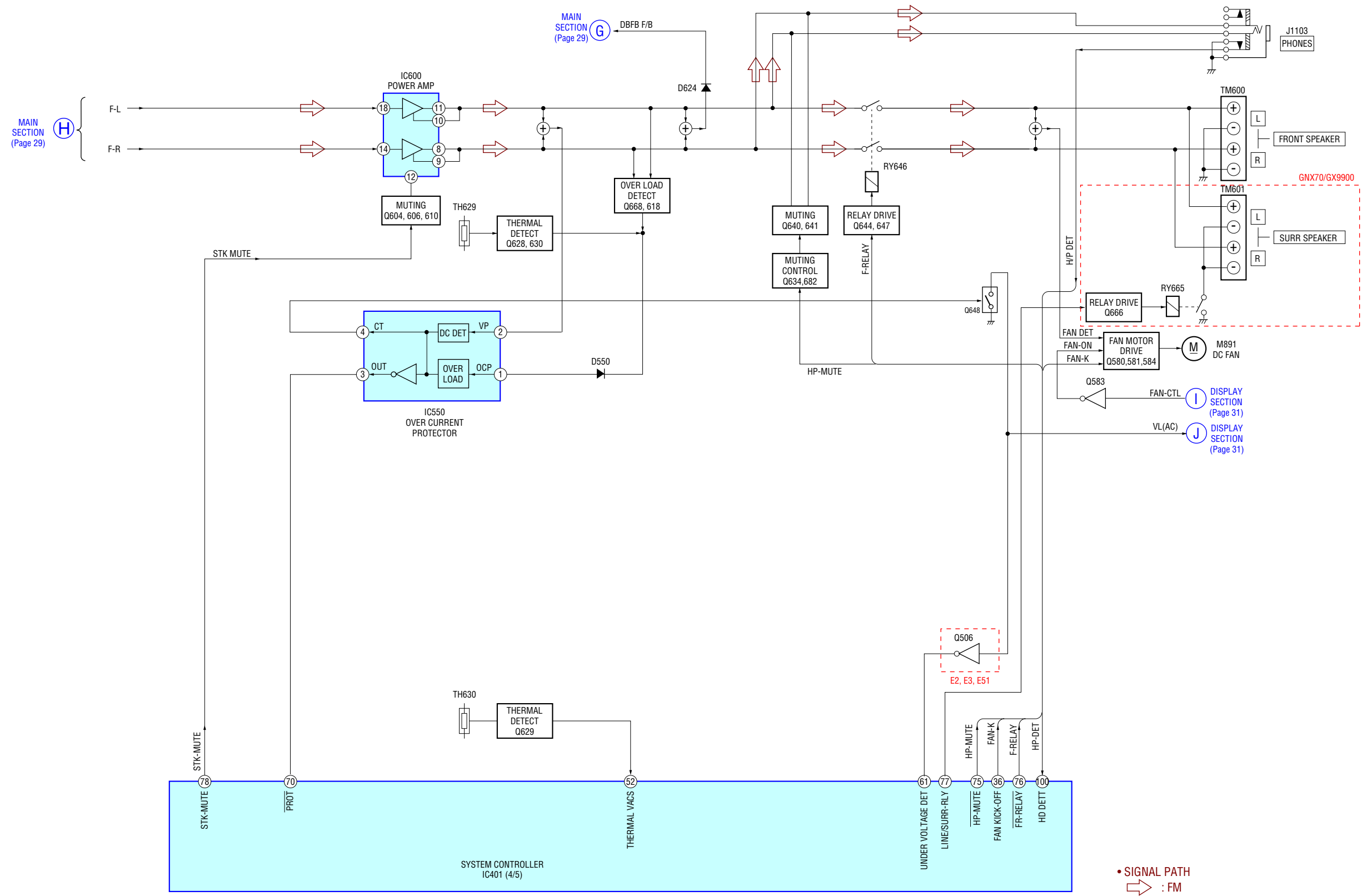


7-4. BLOCK DIAGRAM – MAIN SECTION –

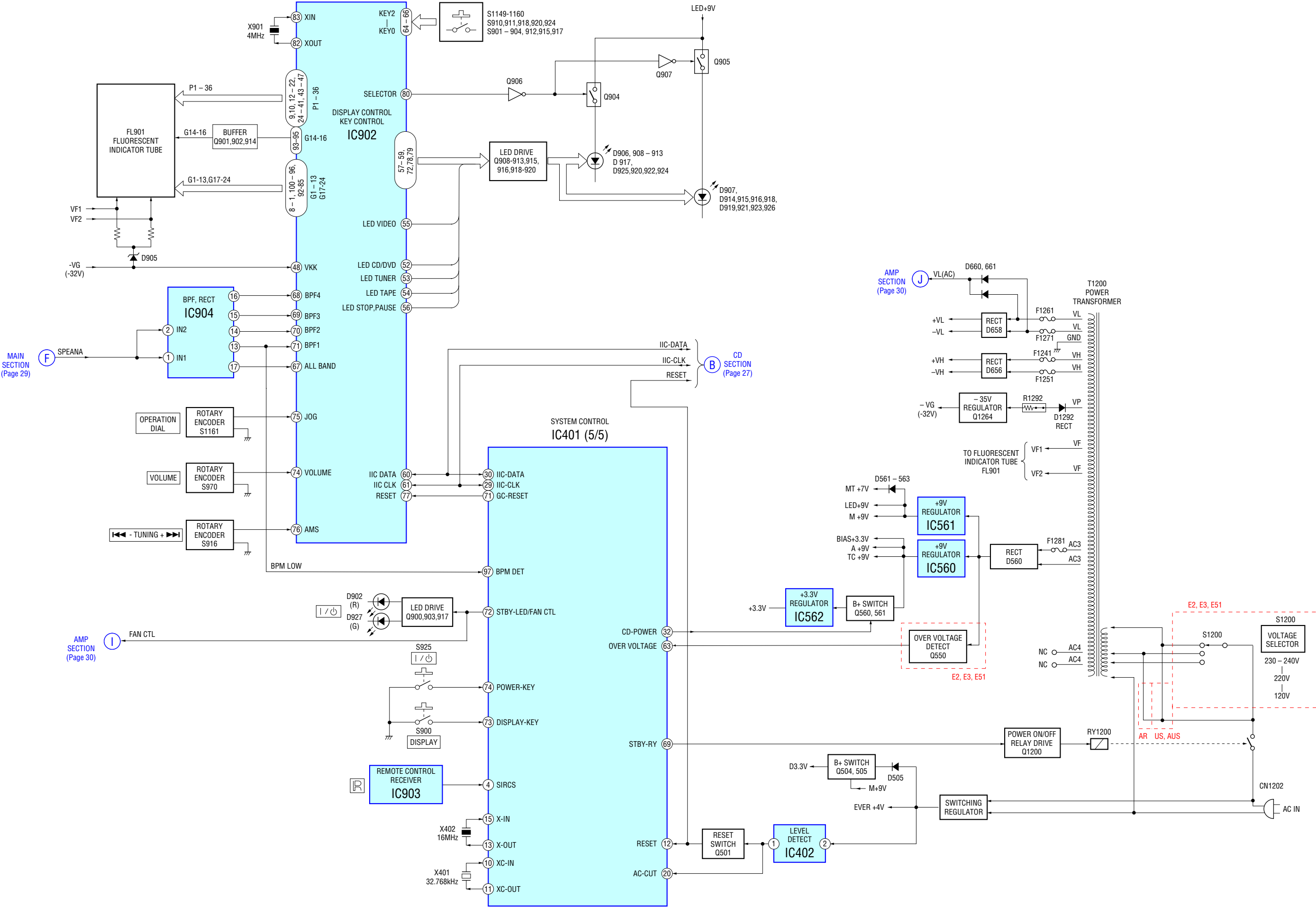


- R-CH is omitted due to same as L-CH.
- SIGNAL PATH
 - ➡ : TUNER (FM/AM)
 - ➡ : CD
 - ➡ : TAPE PLAY
 - ➡ : RECORD
 - ➡ : MIC INPUT

7-5. BLOCK DIAGRAM – AMP SECTION –



7-6. BLOCK DIAGRAM – DISPLAY SECTION –



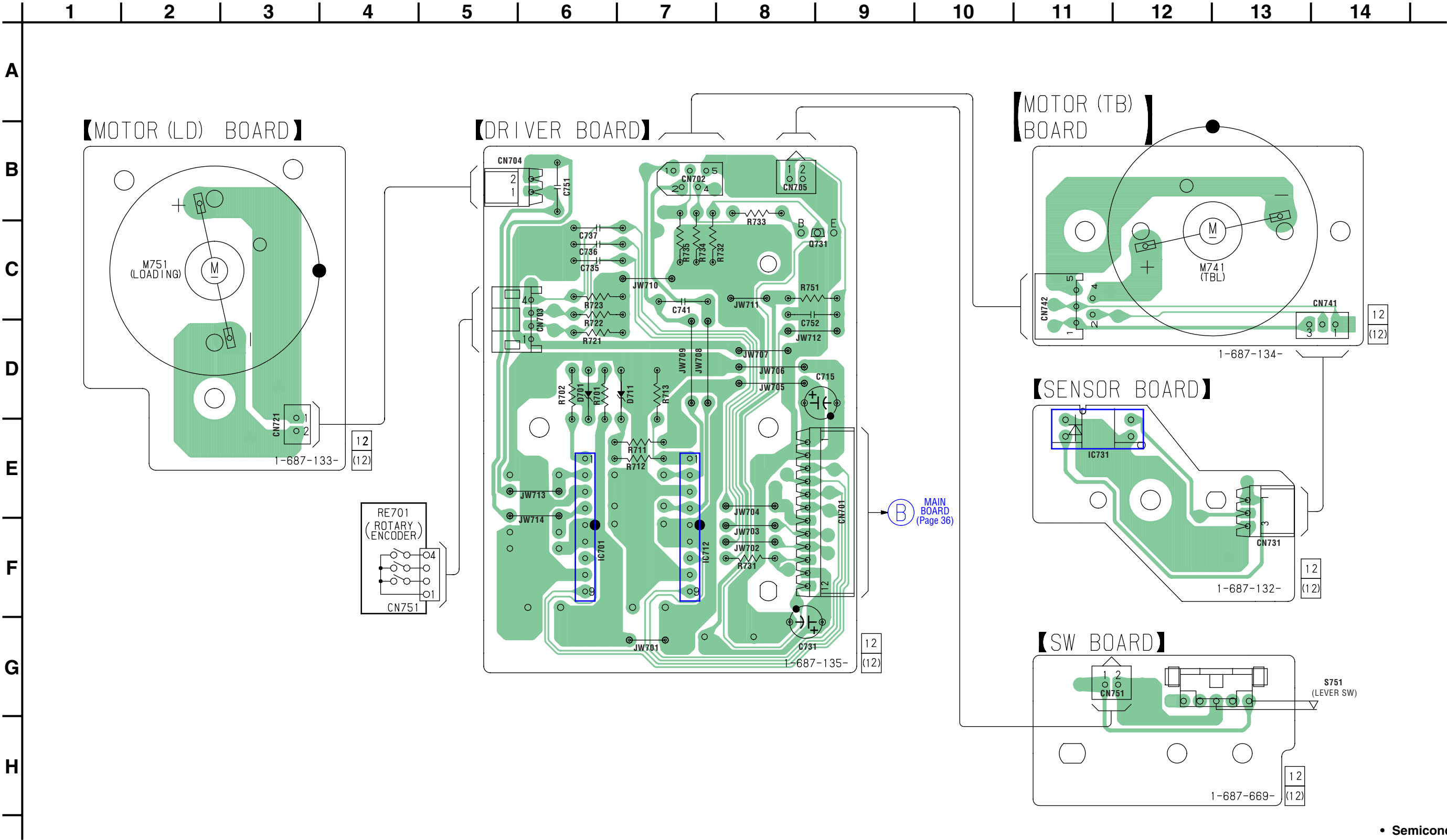




7-9. PRINTED WIRING BOARD – CD MECHANISM BOARDS –

• See page 26 for Circuit Boards Location.

 : Uses unleaded solder.



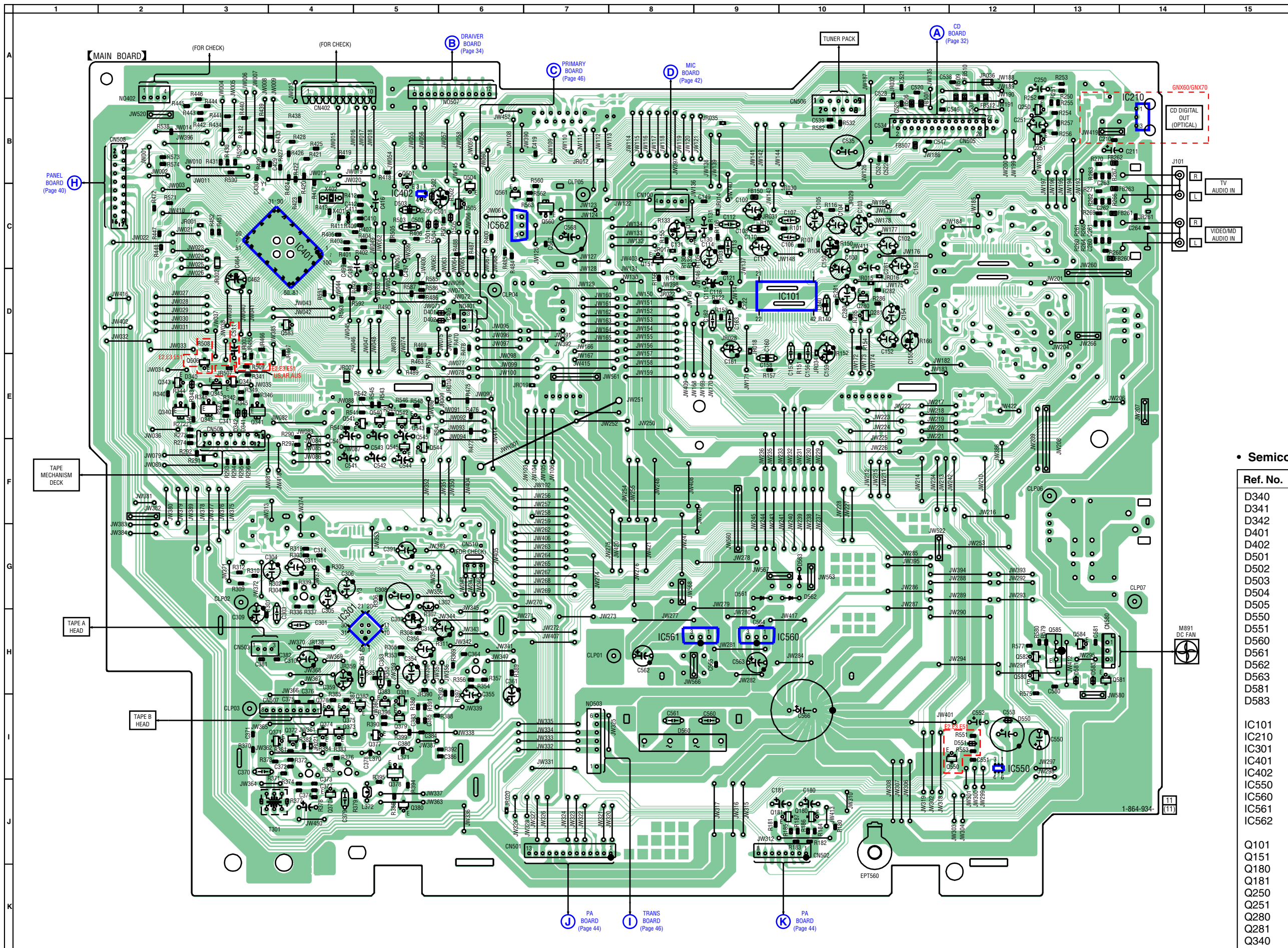
• Semiconductor Location

Ref. No.	Location
D701	D-6
D711	D-7
IC701	F-6
IC712	F-7
IC731	E-11
Q731	C-9



- See page 26 for Circuit Boards Location.

4 : Uses unleaded solder.

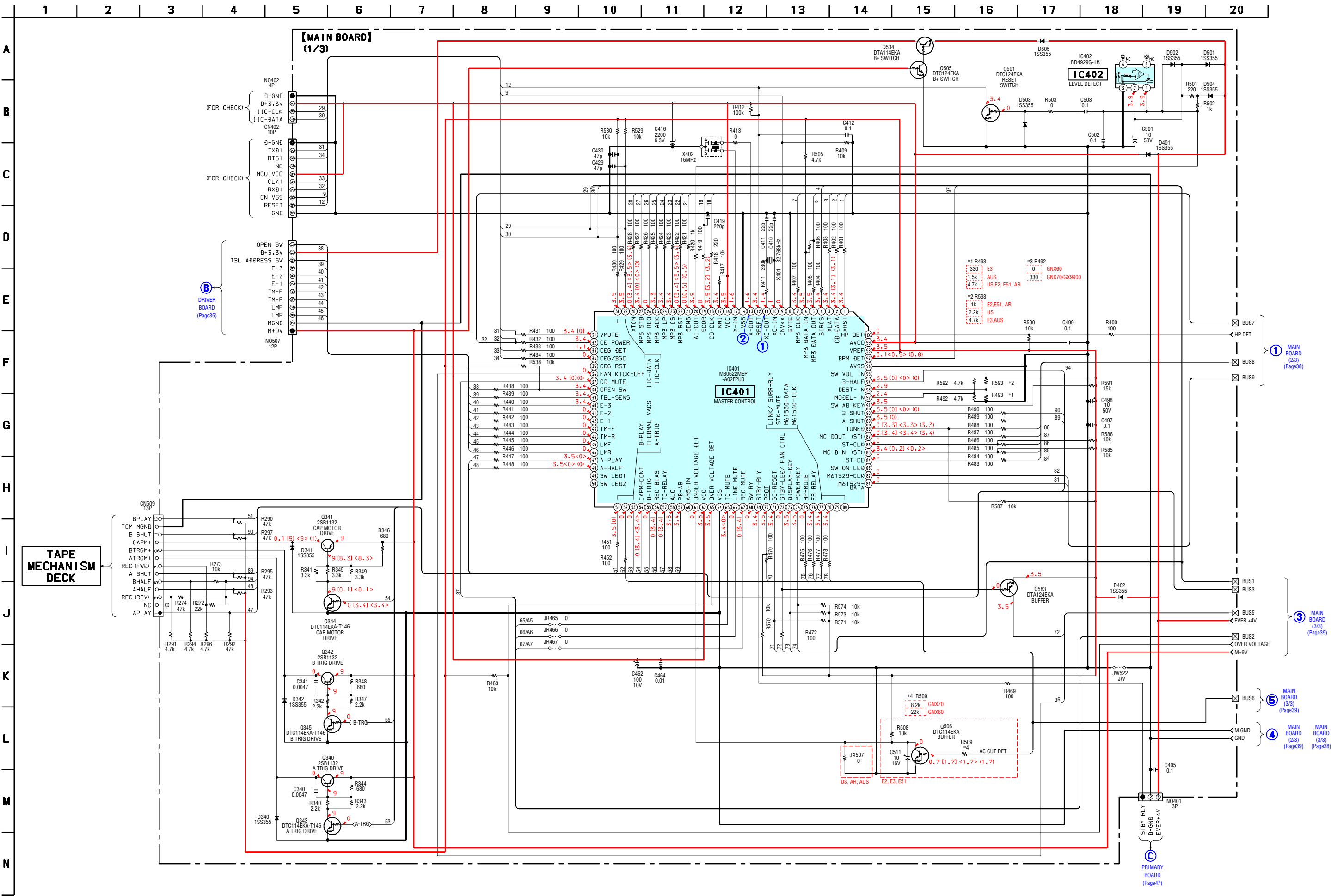


- **Semiconductor Location**

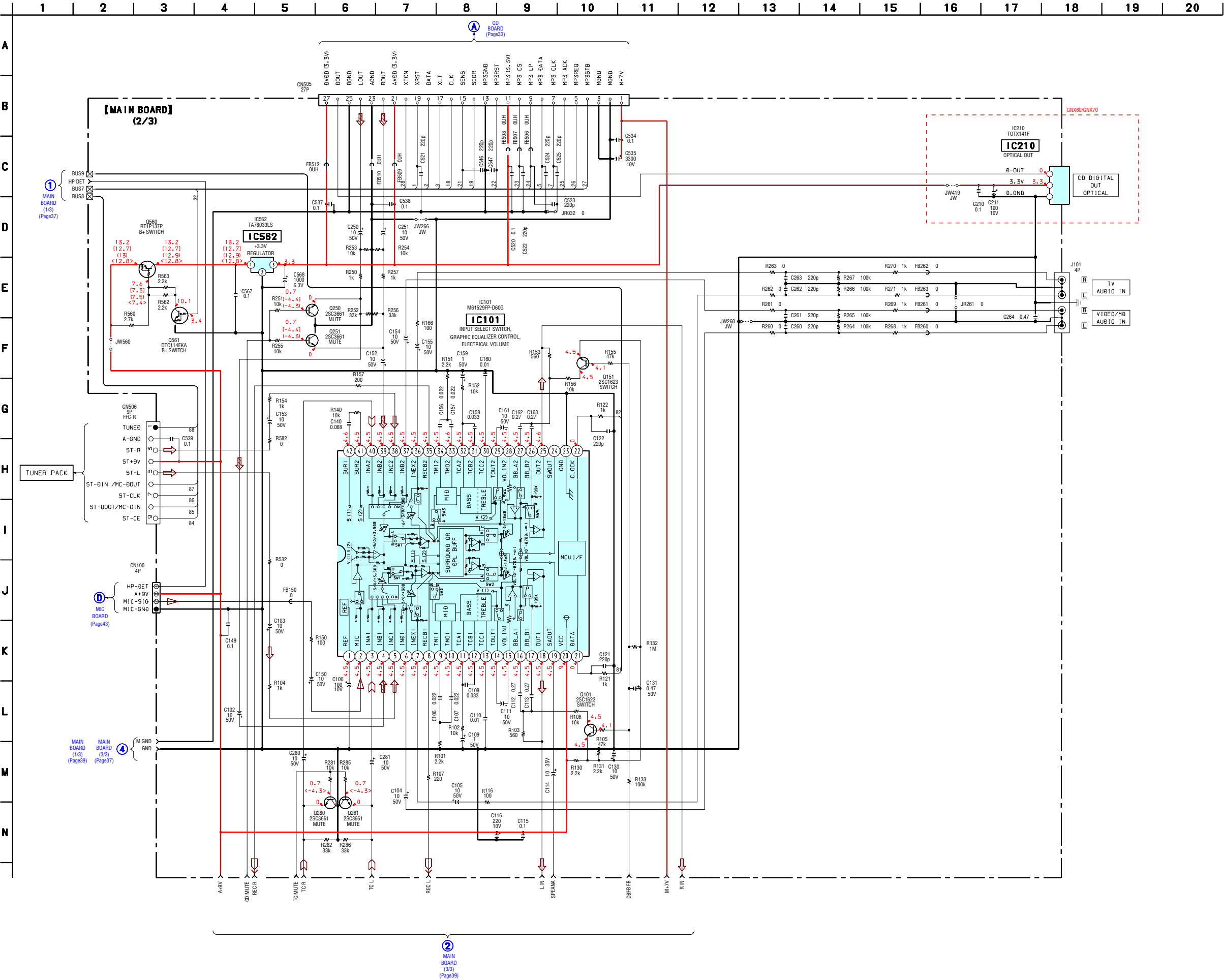
Ref. No.	Location	Ref. No.	Location
D340	E-3	Q341	E-3
D341	E-3	Q342	E-3
D342	E-3	Q343	E-2
D401	D-6	Q344	E-3
D402	D-6	Q345	E-3
D501	C-5	Q370	J-4
D502	C-5	Q371	I-4
D503	C-5	Q372	I-4
D504	C-5	Q373	I-4
D505	C-6	Q374	I-4
D550	I-12	Q375	I-4
D551	I-12	Q376	I-4
D560	I-8	Q377	I-5
D561	G-9	Q378	I-5
D562	G-10	Q379	I-5
D563	G-10	Q380	J-5
D581	H-13	Q381	I-5
D583	H-13	Q382	I-5
		Q383	I-5
IC101	D-10	Q501	B-5
IC210	B-14	Q504	C-6
IC301	H-5	Q505	C-6
IC401	C-4	Q506	E-3
IC402	C-5	Q540	E-5
IC550	I-12	Q541	E-5
IC560	H-9	Q542	E-5
IC561	H-9	Q543	E-5
IC562	C-6	Q544	F-5
		Q545	F-5
Q101	C-8	Q550	I-12
Q151	C-8	Q560	C-7
Q180	J-10	Q561	C-6
Q181	J-10	Q580	H-13
Q250	B-13	Q581	H-13
Q251	B-13	Q582	H-13
Q280	D-10	Q583	D-4
Q281	D-11	Q584	H-13
Q340	E-2	Q585	H-13

7-12. SCHEMATIC DIAGRAM – MAIN BOARD (1/3) –

• See page 48 for Waveforms. • See page 53 for IC Pin Function Description.

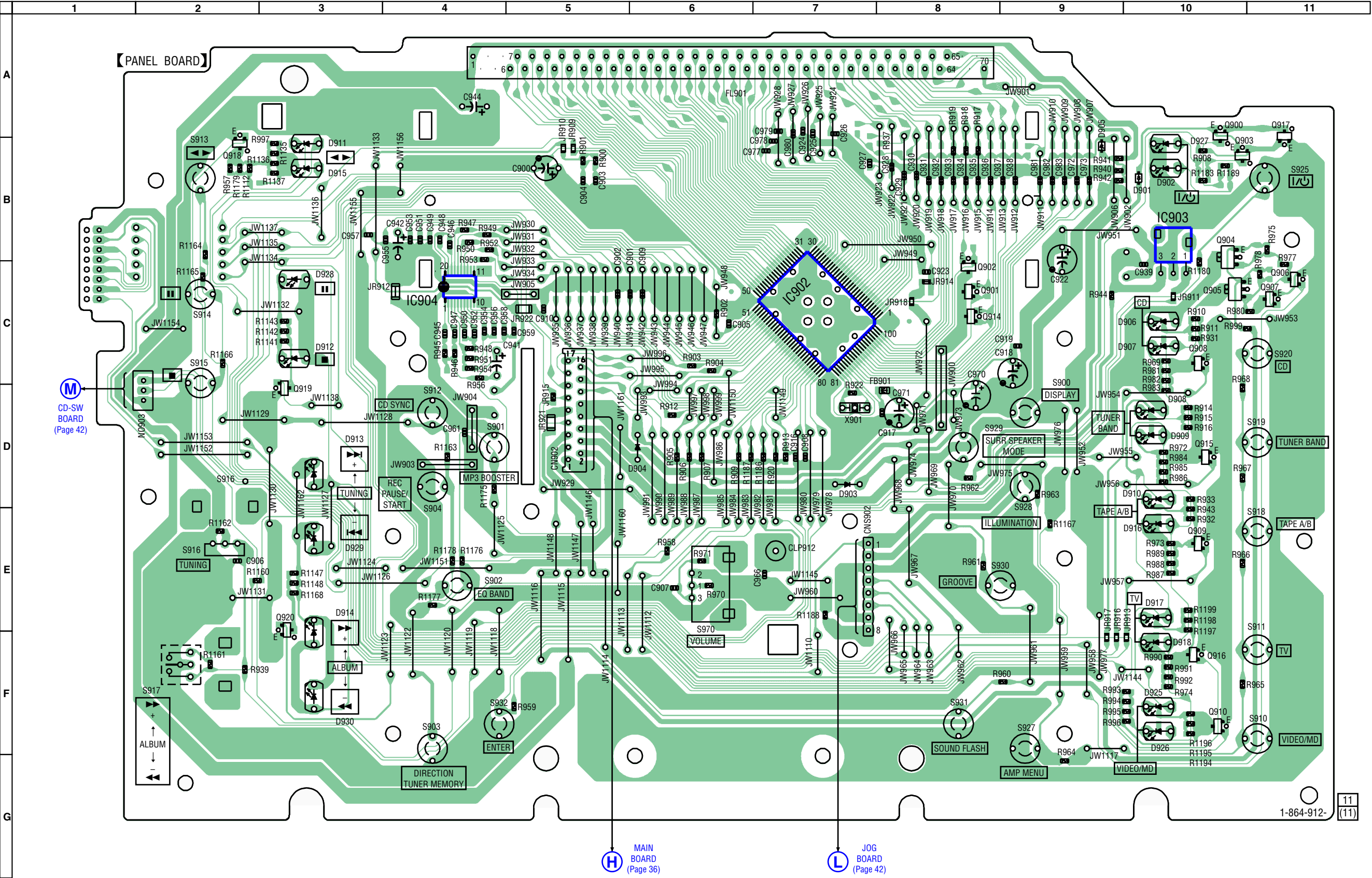


7-13. SCHEMATIC DIAGRAM – MAIN BOARD (2/3) –





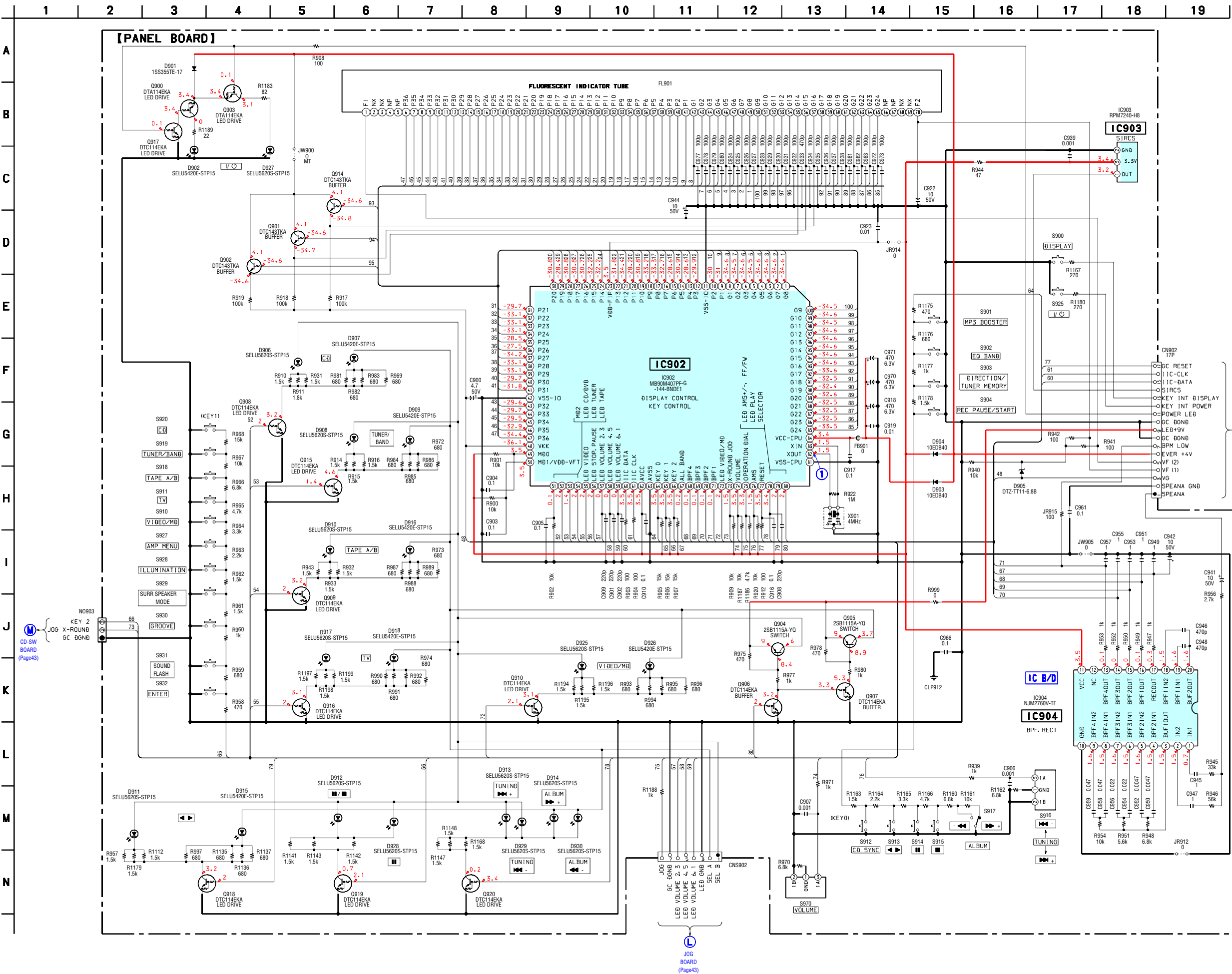
7-15. PRINTED WIRING BOARD – PANEL BOARD – • See page 26 for Circuit Boards Location. : Uses unleaded solder.



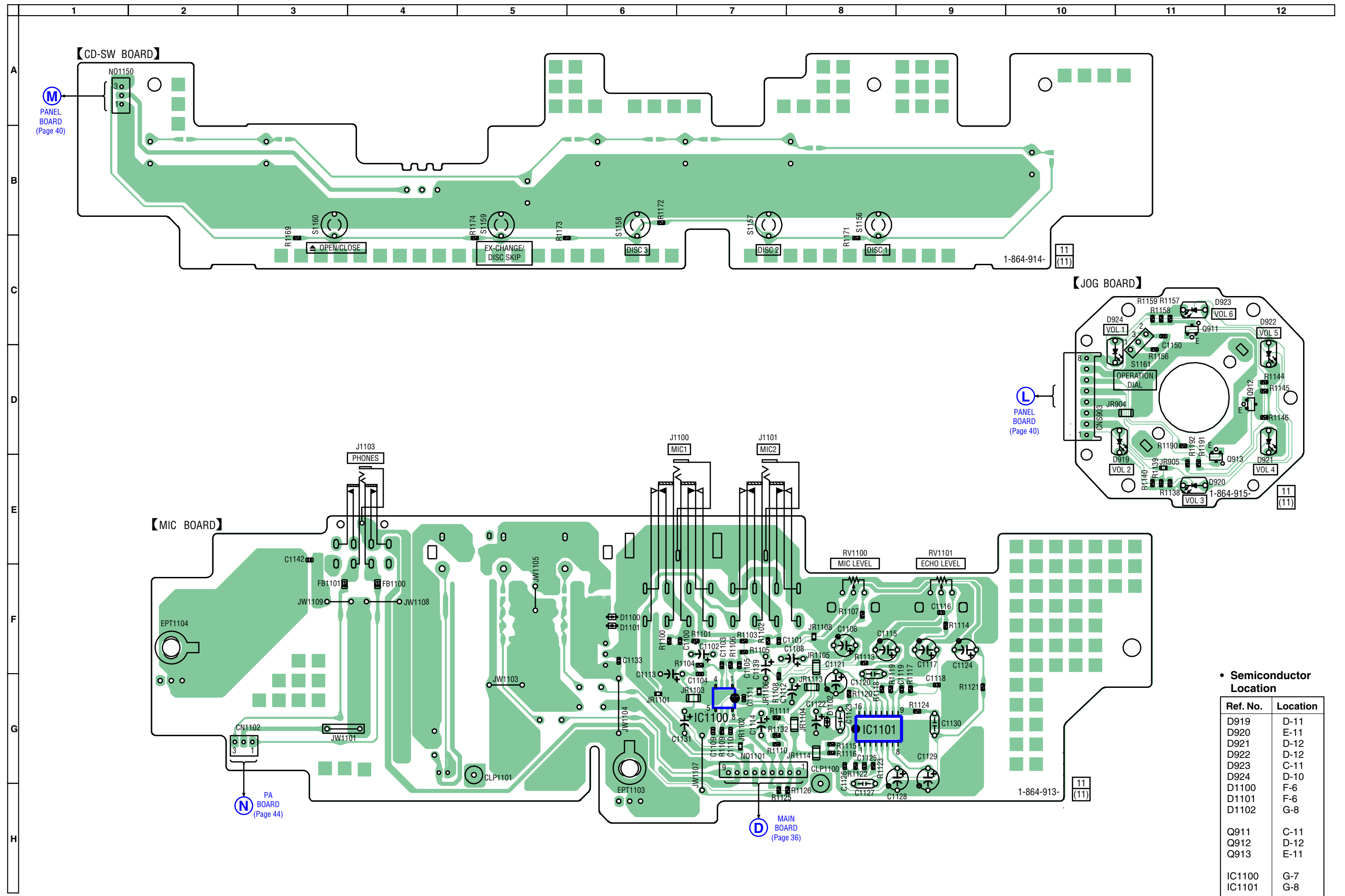
• Semiconductor Location

Ref. No.	Location
D901	B-10
D902	B-10
D903	D-7
D904	D-6
D905	B-9
D906	C-10
D907	C-10
D908	D-10
D909	D-10
D910	D-10
D911	B-3
D912	C-3
D913	D-3
D914	E-3
D915	B-3
D916	E-10
D917	E-10
D918	F-10
D925	F-10
D926	F-10
D927	B-10
D928	C-3
D929	E-3
D930	F-3
IC902	C-7
IC903	B-10
IC904	C-4
Q900	A-10
Q901	C-8
Q902	C-8
Q903	B-10
Q904	B-10
Q905	C-10
Q906	C-11
Q907	C-11
Q908	C-10
Q909	E-10
Q910	F-10
Q914	C-8
Q915	D-10
Q916	F-10
Q917	A-11
Q918	B-2
Q919	D-3
Q920	E-3

7-16. SCHEMATIC DIAGRAM – PANEL BOARD – • See page 48 for IC Block Diagrams. • See page 48 for Waveforms. • See page 55 for IC Pin Function Description.

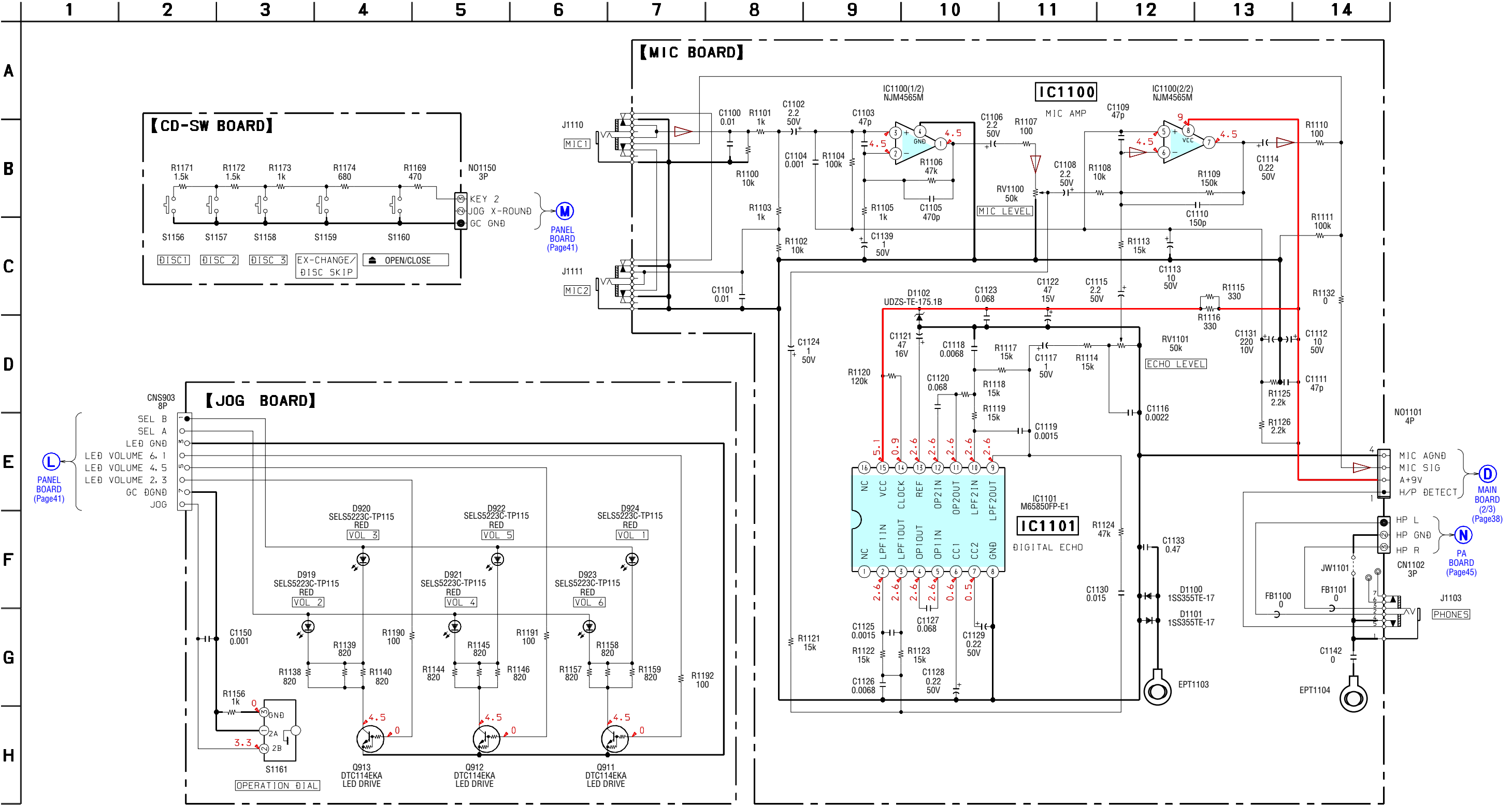


7-17. PRINTED WIRING BOARD – CD-SW, JOG, MIC BOARDS – • See page 26 for Circuit Boards Location.



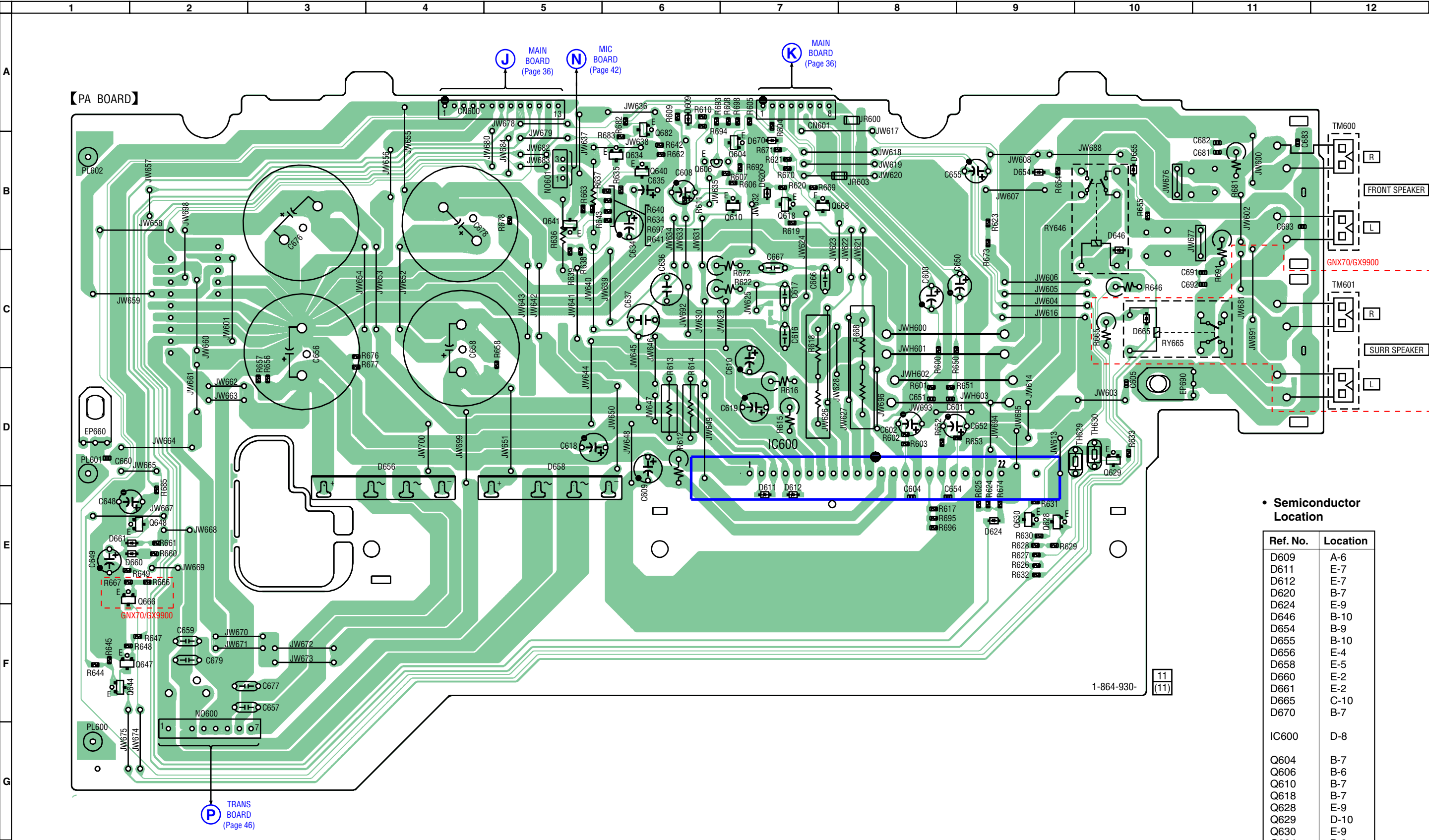
Semiconductor Location	
Ref. No.	Location
D919	D-11
D920	E-11
D921	D-12
D922	D-12
D923	C-11
D924	D-10
D1100	F-6
D1101	F-6
D1102	G-8
Q911	C-11
Q912	D-12
Q913	E-11
IC1100	G-7
IC1101	G-8

7-18. SCHEMATIC DIAGRAM – CD-SW, JOG, MIC BOARDS –



7-19. PRINTED WIRING BOARD – PA BOARD – • See page 26 for Circuit Boards Location.

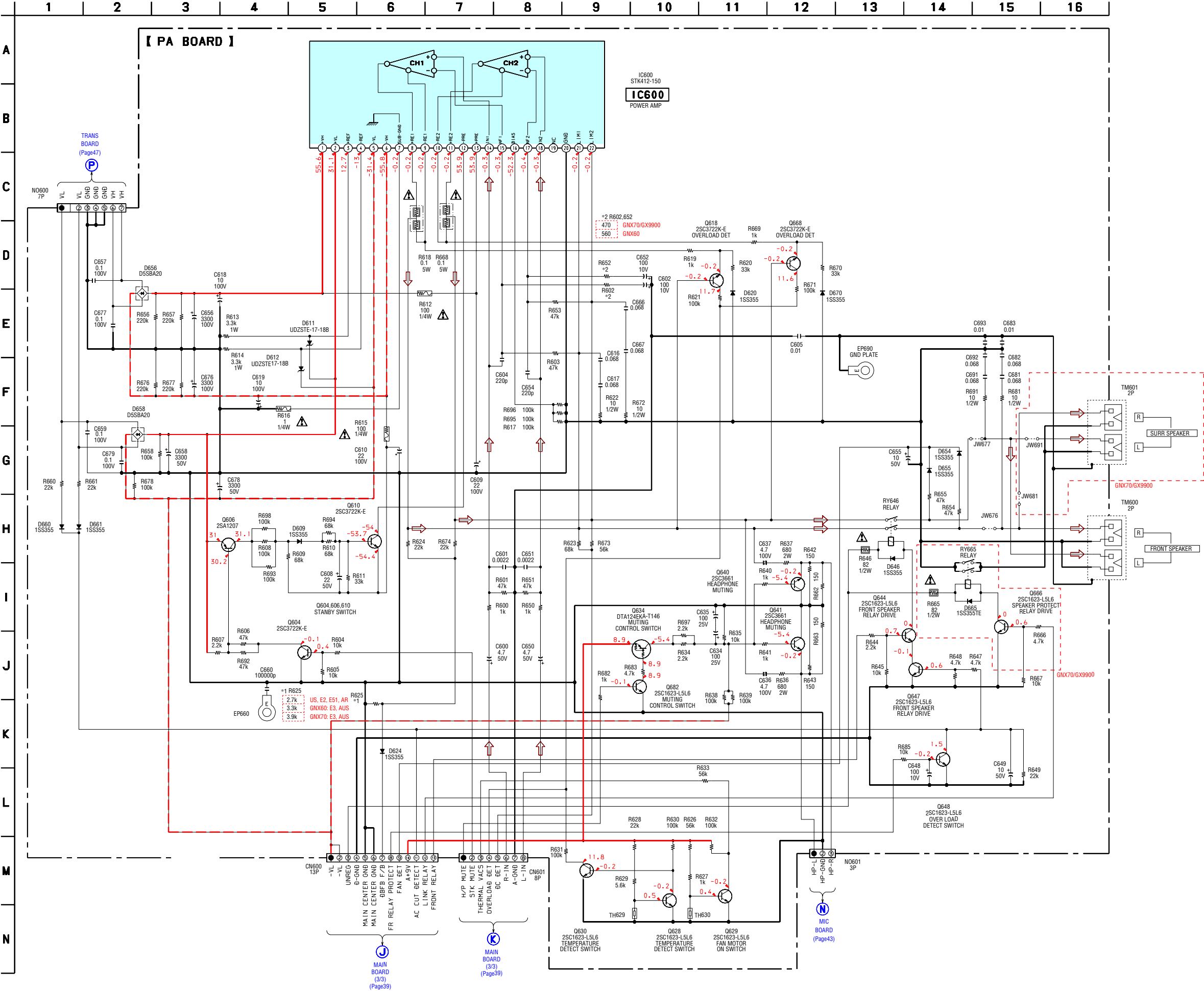
 : Uses unleaded solder.



• Semiconductor Location

Ref. No.	Location
D609	A-6
D611	E-7
D612	E-7
D620	B-7
D624	E-9
D646	B-10
D654	B-9
D655	B-10
D656	E-4
D658	E-5
D660	E-2
D661	E-2
D665	C-10
D670	B-7
IC600	D-8
Q604	B-7
Q606	B-6
Q610	B-7
Q618	B-7
Q628	E-9
Q629	D-10
Q630	E-9
Q634	B-6
Q640	B-6
Q641	B-5
Q644	F-1
Q647	F-1
Q648	E-2
Q666	E-1
Q668	B-7
Q682	A-6

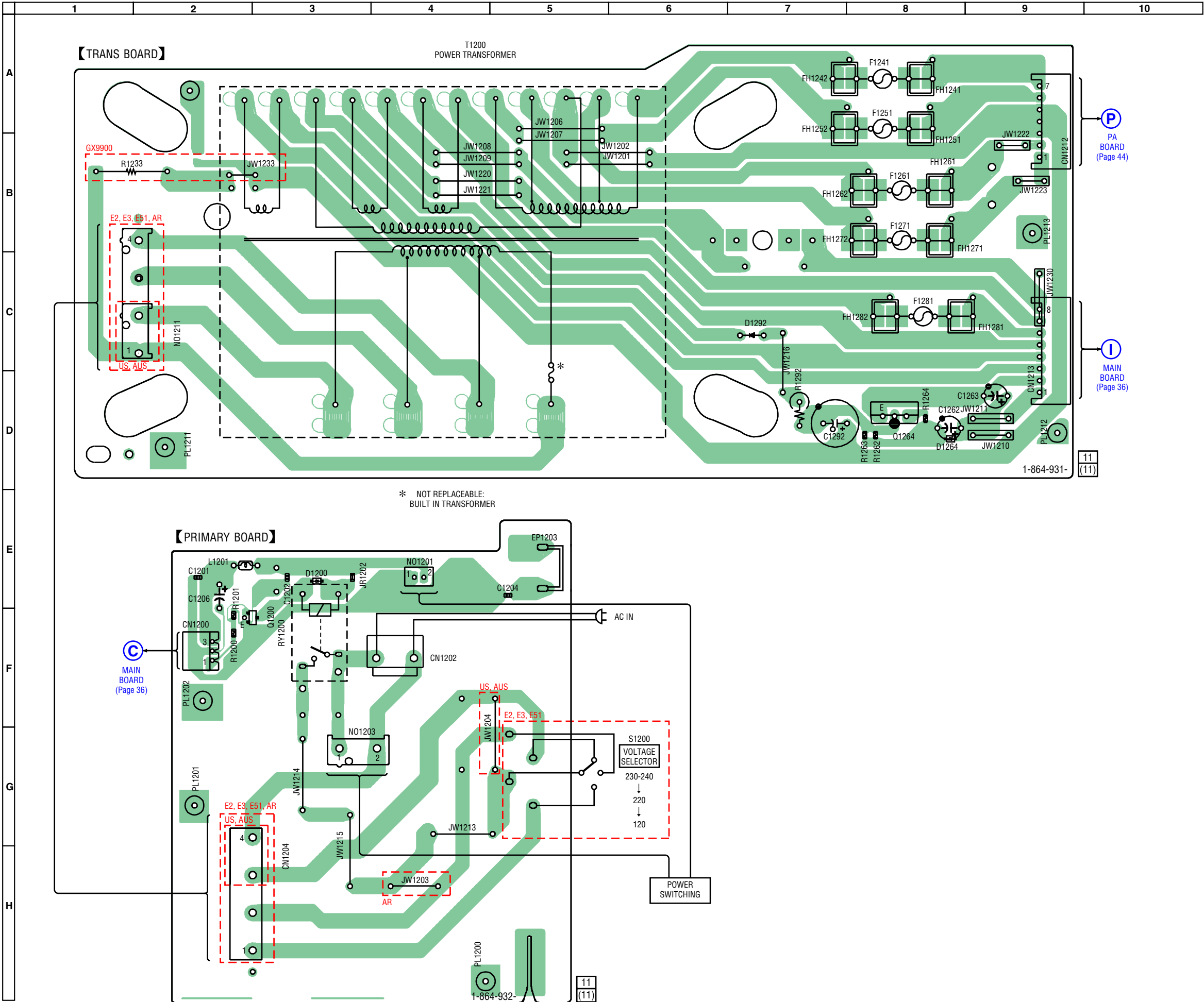
7-20. SCHEMATIC DIAGRAM – PA BOARD –



7-21. PRINTED WIRING BOARD – TRANS, PRIMARY BOARDS –

• See page 26 for Circuit Boards Location.

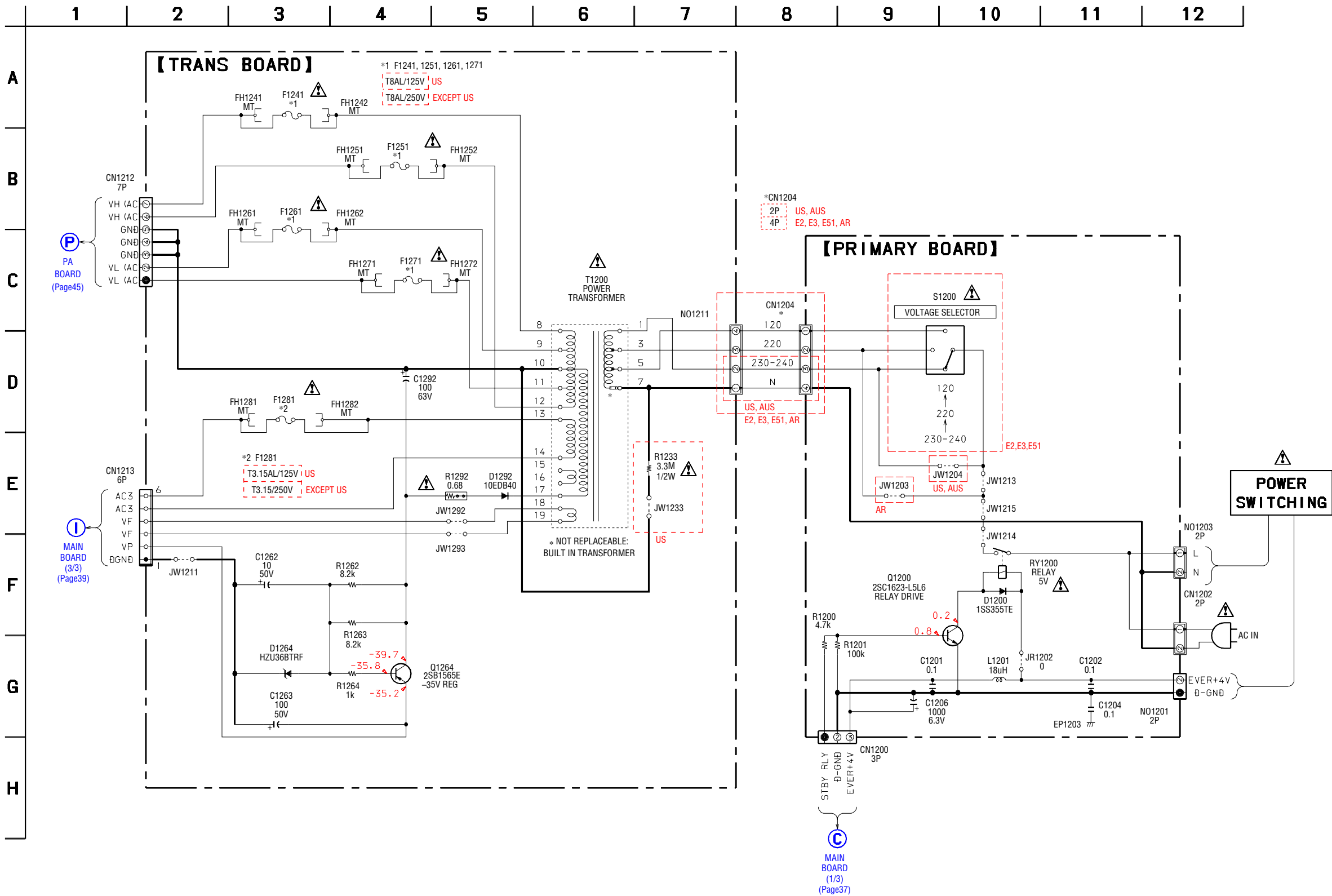
 : Uses unleaded solder.



• Semiconductor Location

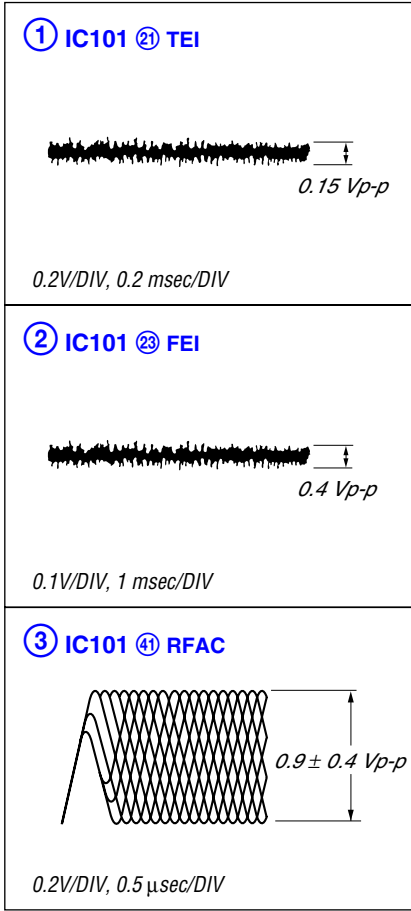
Ref. No.	Location
D1200	E-3
D1264	D-8
D1292	C-7
Q1200	F-3
Q1264	D-8

7-22. SCHEMATIC DIAGRAM – TRANS, PRIMARY BOARD –

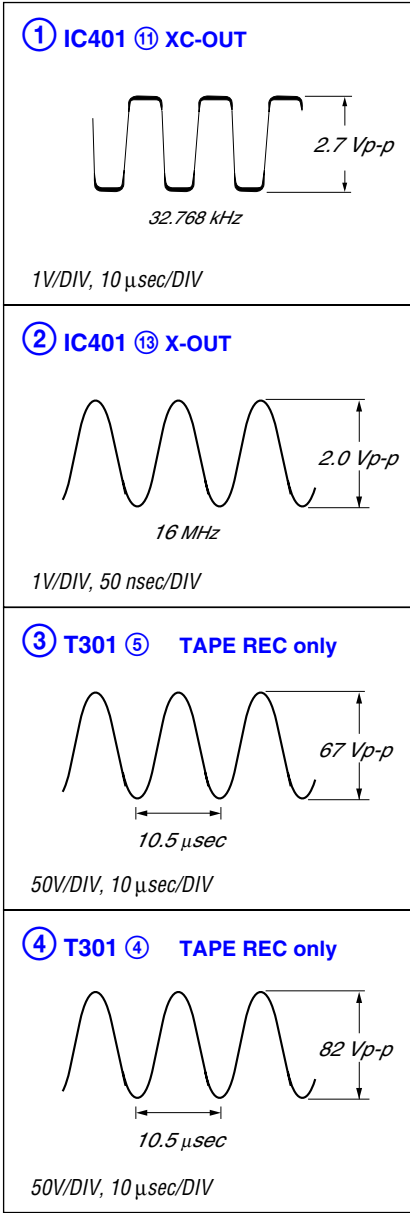


• WAVEFORMS

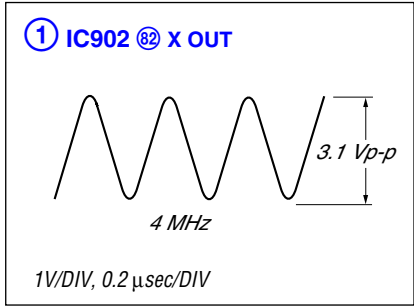
– CD BOARD –



– MAIN BOARD –



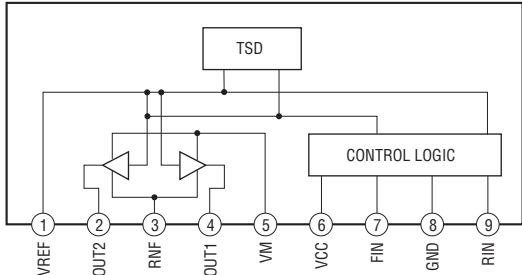
– PANEL BOARD –



• IC Block Diagram

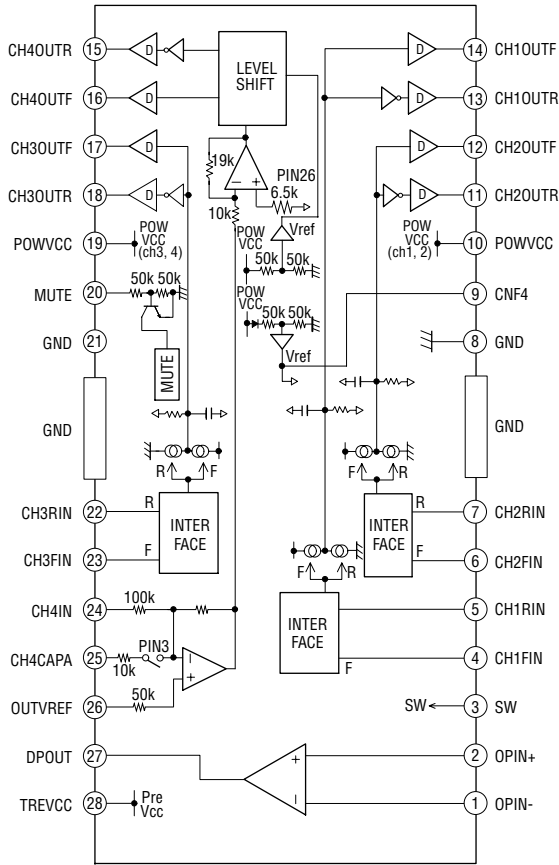
– DRIVER Board –

IC701, 712 BA6956AN



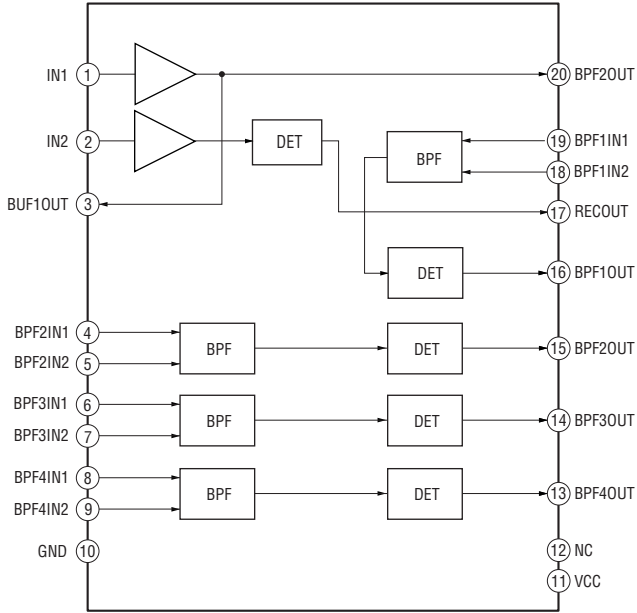
– CD Board –

IC251 BA5947FM-E2



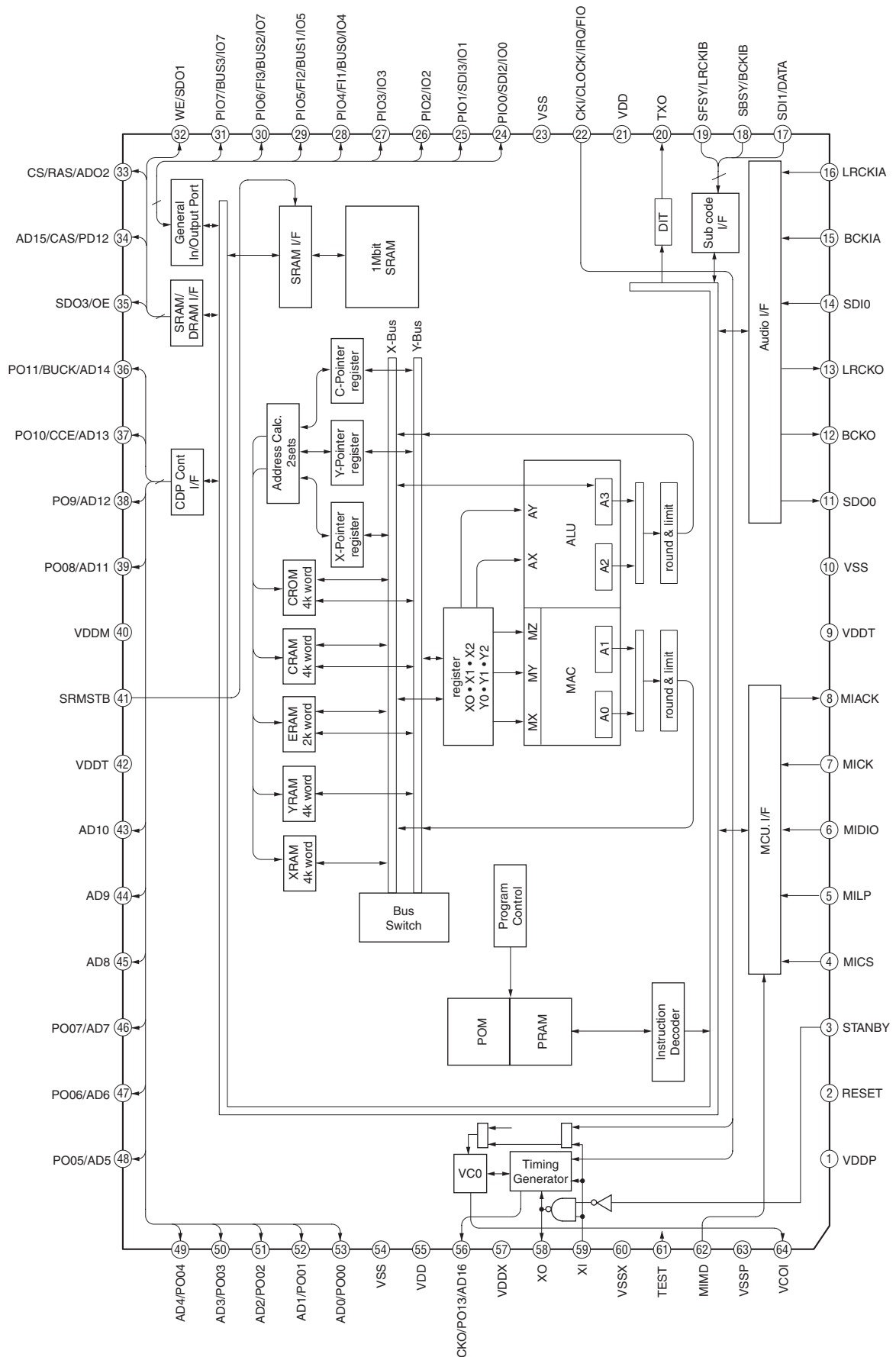
– PANEL Board –

IC904 NJM2760V-TE2



– CD Board –

IC301 TC94A34FG-002



HCD-GNX60/GNX70/GX9900

7-23. IC Pin Function Descriptions

• IC101 CXD3059AR (RF AMP) (CD BOARD)

Pin No.	Pin Name	I/O	Description
1	MIRR	I/O	Not used (Open)
2	DFCT	I/O	Not used (Open)
3	FOK	I/O	Not used (Open)
4	VSS	—	Ground
5	LOCK	I/O	Not used (Open)
6	MDP	O	Spindle motor servo control output
7	SSTP	I	Disk innermost detection signal input
8	IOVSS1	—	Ground
9	SFDR	O	Sled drive signal output
10	SRDR	O	Sled drive signal output
11	TFDR	O	Tracking drive signal output
12	TRDR	O	Tracking drive signal output
13	FFDR	O	Focus drive signal output
14	FRDR	O	Focus drive signal output
15	IOVDD1	—	Power supply (+3.3V)
16	AVDD0	—	Power supply (+3.3V)
17	AVSS0	—	Ground
18	NC	—	Not used (Open)
19	E	I	E signal input
20	F	I	F signal input
21	TEI	I	Tracking error signal input
22	TEO	O	Tracking error signal output
23	FEI	I	Focus error signal input
24	FEO	O	Focus error signal output
25	VC	I/O	Center voltage output from RF amplifier block
26	A	I	A signal input
27	B	I	B signal input
28	C	I	C signal input
29	D	I	D signal input
30	NC	—	Not used (Open)
31	AVDD4	—	Power supply (+3.3V)
32	RFDCO	O	RFDC signal output (Not used)
33	PDSSENS	I	Reference voltage pin
34	AC_SUM	O	RFAC summing amplifier output
35	EG_IN	I	Equalizer circuit input
36	LD	O	APC LD drive signal output
37	PD	I	APC PD signal input
38	NC	—	Not used (Open)
39	RFC	I	Equalizer cut-off frequency adjustment pin
40	AVSS4	—	Ground
41	RFACO	O	RFAC signal output
42	RFACI	I	RFAC signal input or EFM signal input
43	AVDD3	—	Power supply (+3.3V)
44	BIAS	I	Asymmetry circuit constant current input
45	ASYI	I	Asymmetry comparator voltage input
46	ASYO	O	EFM full-swing output
47	VPCO	O	Not used (Open)
48	VCTL	I	Wide-band EFM PLL VCO2 control voltage input

Pin No.	Pin Name	I/O	Description
49	AVSS3	—	Ground
50	CLTV	I	Multiplier VCO1 control voltage input
51	FILO	O	Master PLL (slave = digital PLL) filter output
52	FILI	I	Master PLL filter input
53	PCO	O	Master PLL charge pump output
54	AVDD5	—	Power supply (+3.3V)
55	DDVROUT	O	DC/DC converter output (+2.5V)
56	DDVRSEN	I	DC/DC converter output voltage monitor input
57	AVSS5	—	Ground
58	DDCR	I	DC/DC converter reset input
59	NC	—	Not used (Open)
60	BCKI	I	D/A interface bit clock input
61	PCMDI	I	D/A interface serial data input
62	LRCKI	I	D/A interface LR clock input
63	LRCK	O	D/A interface LR clock output $f = F_s$
64	VSS	—	Ground
65	PCMD	O	D/A interface serial data output
66	BCK	O	D/A interface bit clock output
67	VDD	—	Power supply (+2.5V)
68	EMPH	O	High when the playback disc has emphasis, low it has not
69	EMPHI	I	High when de-emphasis is ON, low when input OFF
70	IOVDD2	—	Power supply (+3.3V)
71	DOUT	O	Digital Out output
72	TEST	I	Test pin (Connected ground)
73	TEST1	I	Test pin (Connected ground)
74	IOVSS2	—	Ground
75	NC	—	Not used (Open)
76	XVSS	—	Ground
77	XTAO	O	Crystal oscillation circuit output
78	XTAI	I	Crystal oscillation circuit input
79	XVDD	—	Power supply (+2.5V)
80	AVDD1	—	Power supply (+3.3V)
81	AOUT1	O	L-ch analog output
82	VREFL	O	L-ch reference voltage
83	AVSS1	—	Ground
84	AVSS2	—	Ground
85	VREFR	O	R-ch reference voltage
86	AOUT2	O	R-ch analog output
87	AVDD2	—	Power supply (+3.3V)
88	NC	—	Not used (Open)
89	IOVDD0	—	Power supply (+3.3V)
90	RMUT	O	Not used (Open)
91	LMUT	O	Not used (Open)
92	NC	—	Not used (Open)
93	XTSL	I	Crystal selection input (Pull down)
94	IOVSS0	—	Ground
95	XTACN	I	Oscillation circuit control (H:Self-oscillation, L:oscillation stop)
96	SQSO	O	Not used (Open)
97	SQCK	I	SQSO readout clock input (Connected to +VDD(+3.3v))
98	SBSO	O	Not used (Open)

HCD-GNX60/GNX70/GX9900

Pin No.	Pin Name	I/O	Description
99	EXCK	I	Not used (Open)
100	XRST	I	System reset input from M30622MEP
101	SYSM	I	Mute input (Connected to ground)
102	DATA	I	Serial data input from M30622MEP
103	VSS	—	ground
104	XLAT	I	Latch input from M30622MEP
105	CLOCK	I	Serial data transfer clock input from M30622MEP
106	VDD	—	Power supply (+2.5V)
107	SENS	O	SENS output to M30622MEP
108	SCLK	I	SENS serial data readout clock input (Connected to +VDD(+3.3v))
109	ATSK	I/O	Not used (Open)
110	WCK	O	Not used (Open)
111	XUGF	O	Not used (Open)
112	XPCK	O	Not used (Open)
113	GFS	O	Not used (Open)
114	C2PO	O	Not used (Open)
115	SCOR	O	High output when the sub code sync, S0 or S1, is detected
116	VDD	—	Power supply (+2.5V)
117	C4M	O	Not used (Open)
118	WDCK	O	Not used (Open)
119	COUT	I/O	Not used (Open)
120	NC	—	Not used (Open)

• IC401 M30622MEP-A02FPUO SYSTEM CONTROL (MAIN Board)

Pin No.	Pin Name	I/O	Description
1	XRST	O	Reset signal output to CXD3053AR
2	CD-DATA	O	Serial data output to CXD3053AR
3	XLAT	O	Serial data latch signal output to CXD3053AR
4	SIRCS	I	Remote control signal input
5	MP3 DATA OUT	O	Serial data output to TC94A34FG
6	MP3 DATA IN	I	Serial data input from TC94A34FG
7	MP3 CLK	O	Serial data transfer clock output to TC94A34FG
8	BYTE	I	Not used (Connected to ground)
9	CNVSS	—	Ground at test (Pull down)
10	XC-IN	I	Sub system clock input (32.768KHz)
11	XC-OUT	O	Sub system clock output (32.768KHz)
12	RESET	I	System reset input
13	X-OUT	O	Main system clock output (16MHz)
14	VSS	—	Ground
15	X-IN	I	Main system clock input (16MHz)
16	VCC	—	Power supply (+5V)
17	NMI	I	Not used (Pull up with resistor)
18	CD-CLK	O	CD data clock output
19	SCOR	I	Sub code sync (S0+S1) detection signal input
20	AC-CUT	I	AC off detection signal input
21	SENS	I	Internal status detection monitor input from CXD3059AR
22	MP3 RST	O	Reset signal output to TC94A34FG
23	MP3 CS	O	Chip select signal output to TC94A34FG
24	MP3 LP	O	Latch pulse output to TC94A34FG
25	MP3 ACK	I	Acknowledge signal input from TC94A34FG
26	MP3 REQ	I	Request signal input to TC94A34FG
27	MP3 STB	O	Standby mode signal output to TC94A34FG
28	XTCN	O	Oscillation on/off control signal output to CXD3053AR
29	IIC-CLK	I/O	IIC bus serial clock input/output
30	IIC-DATA	I/O	IIC bus serial data input/output
31	VMUTE	O	CDG video signal muting on/off control signal output
32	CD POWER	O	Not used (Open)
33	CDG DET	I	Not used (Open)
34	CDG/BGC	O	Not used (Open)
35	CDG RST	O	Not used (Open)
36	FAN KICK-OFF	O	Fan kick off pulse to start up fan rotation signal output
37	CD MUTE	O	CD muting on/off control signal output
38	OPEN SW	I	Eject detection signal input
39	TBL-SENS	I	Disc tray position detection signal input
40	E-3	I	Disc tray status detection signal input
41	E-2	I	Disc tray status detection signal input
42	E-1	I	Disc tray status detection signal input
43	TM-F	O	Table motor control signal output
44	TM-R	O	Table motor control signal output
45	LMF	O	Table loading motor control signal output
46	LMR	O	Table loading motor control signal output
47	A-PLAY	I	Deck A playback detection signal input
48	A-HALF	I	Deck A cassette detection signal input
49	SW LED1	O	Not used (Open)

HCD-GNX60/GNX70/GX9900

Pin No.	Pin Name	I/O	Description
50	SW LED2	O	Not used (Open)
51	B-PLAY	I	Deck B playback detection signal input
52	THERMAL VACS	I	Thermal VACS detection input
53	A-TRIG	O	Deck A side trigger plunger drive signal output
54	CAPM-CONT	O	Capstan motor drive signal output
55	B-TRIG	O	Deck B side trigger plunger drive signal output
56	REC BIAS	O	Recording bias on/off control signal output
57	TC-RELAY	O	Recording/playback selection signal output
58	ALC	O	Automatic limiter control signal output
59	PB-AB	O	Deck A/B playback selection signal output
60	AMS-IN	I	Not used.
61	UNDER VOLTAGE DET	I	Under-voltage protection detection input
62	VCC	—	Power supply(+3.3V)
63	OVER VOLTAGE	I	Over-voltage protection detection input
64	VSS	—	Ground
65	TC MUTE	O	Tape playback muting on/off signal output
66	LINE MUTE	O	Line muting on/off signal output
67	REC MUTE	O	Recording muting on/off signal output
68	SW RY	O	Not used (Open)
69	STBY-RLY	O	Main power on/off signal output
70	PROT	I	Speaker protect detection signal input
71	GC-RESET	O	GC reset signal output
72	STBY-LED/FAN CTRL	O	POWER indicator LED drive signal output
73	DISPLAY-KEY	I	DISPLAY key press detection Interrupt signal input
74	POWER-KEY	I	POWER key press detection Interrupt signal input
75	HP-MUTE	O	Headphone muting on/off signal output
76	FR RELAY	O	front speakers relay drive signal output
77	LINK/SURR-RLY	O	Surround speaker mode control signal output
78	STK-MUTE	O	Power amplifier and sub woofer amplifier on/off control signal output
79	M61530-DATA	O	Not used (Open)
80	M61530-CLK	O	Not used (Open)
81	M61529-DATA	O	Serial data output to M61529FP
82	M61529-CLK	O	Serial transfer clock signal output to M61529FP
83	SW ON LED	O	Not used (Open)
84	ST-CE	O	PLL chip enable signal output to the tuner unit
85	MC DIN (ST)	O	PLL serial data output to the tuner unit
86	ST-CLK	I	PLL serial transfer clock signal output to the tuner unit
87	MC DOUT (ST)	I	PLL serial data input from the tuner unit
88	TUNED	I	Tuning detection signal input from the tuner unit
89	A SHUT	I	Shut off detection signal input from deck A side reel pulse detector
90	B SHUT	I	Shut off detection signal input from deck A side reel pulse detector
91	SW AD KEY	I	Not used (pull up)
92	MODEL-IN	I	Model input
93	DEST-IN	I	Destination input
94	B-HALF	I	Deck B cassette , forward side recording tab and reverse side recording tab detection signal input
95	SW VOL IN	I	Subwoofer on/off signal input
96	AVSS	—	Ground
97	BPF DET	I	Low frequency signal input from NJM2760 for RANDOM mode
98	VREF	I	A/D reference voltage input
99	AVCC	—	Power supply (+3.3V)
100	HP DET	I	Headphone connection detection signal input

• IC902 MB90M407PF-G-144E1 DISPLAY CONTROL (PANEL Board)

Pin No.	Pin Name	I/O	Description
1 to 8	G8 to G1	O	FLD grid signal output
9, 10	P1,P2	O	FLD segment signal output
11	VSS-IO	—	Ground
12 to 22	P3 to P13	O	FLD segment signal output
23	VDD-FIP	—	Power supply (+3.3V)
24 to 41	P14 to P31	O	FLD segment signal output
42	VSS-IO	—	Ground
43 to 47	P32 to P36	O	FLD segment signal output
48	VKK	—	Power supply (-35V)
49	MD0	I	MD0 signal at test
50	MD1/VDD-VFT	I	Not used (pull up)
51	MD2	I	Not used (pull down)
52	LED CD/DVD	O	LED drive signal output
53	LED TUNER	O	LED drive signal output
54	LED TAPE	O	LED drive signal output
55	LED VIDEO	O	LED drive signal output
56	LED STOP,PAUSE	O	LED drive signal output
57	LED VOLUME 2,3	O	LED drive signal output
58	LED VOLUME 4,5	O	LED drive signal output
59	LED VOLUME 6,1	O	LED drive signal output
60	IIC DATA	I/O	IIC bus serial data input/output
61	IIC CLK	I/O	IIC bus serial clock input/output
62	AVCC	—	Power supply (+3.3V)
63	AVSS	—	Ground
64 to 66	KEY0 to KEY2	I	Key input (A/D)
67	ALL BAND	I	Audio L+R signal input
68 to 71	BPF4 to BPF1	I	Spectrum analyzer signal input
72	LED VIDEO/MD	O	LED drive signal output
73	X-ROUND JOG	O	X-ROUND JOG encoder signal input
74	VOLUME	I	Volume encoder signal input
75	OPERATION DIAL	I	JOG dial encoder signal input
76	AMS	I	AMS dial signal input
77	RESET	I	Reset input
78	LED AMS+/-,FF/FW	O	LED drive signal output
79	LED PLAY	O	LED drive signal output
80	SELECTOR	O	LED group select signal output
81	VSS-CPU	—	Ground
82	XOUT	O	Crystal oscillator output (4MHz)
83	XIN	I	Crystal oscillator input (4MHz)
84	VCC-CPU	—	Power supply (+3.3V)
85 to 100	G24 to G9	O	FLD grid signal output

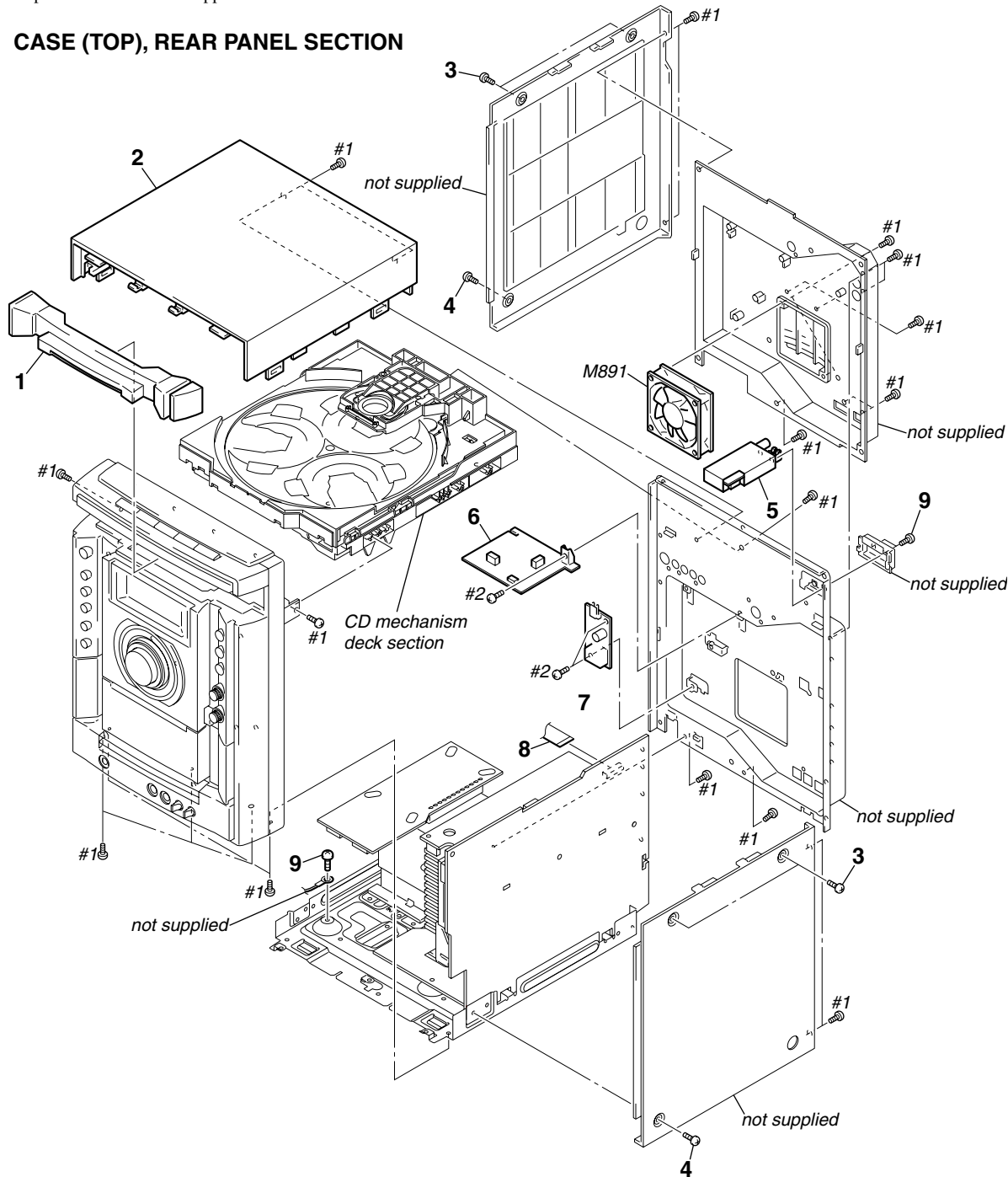
SECTION 8
EXPLODED VIEWS

- NOTE:**
- -XX, -X mean standardized parts, so they may have some differences from the original one.
 - Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories are given in the last of this parts list.
- Abbreviation
AR : Argentine model
AUS : Australian model
E2 : 120V AC Area in E model
E3 : 240V AC Area in E model
E51 : Chilean and Peruvian model

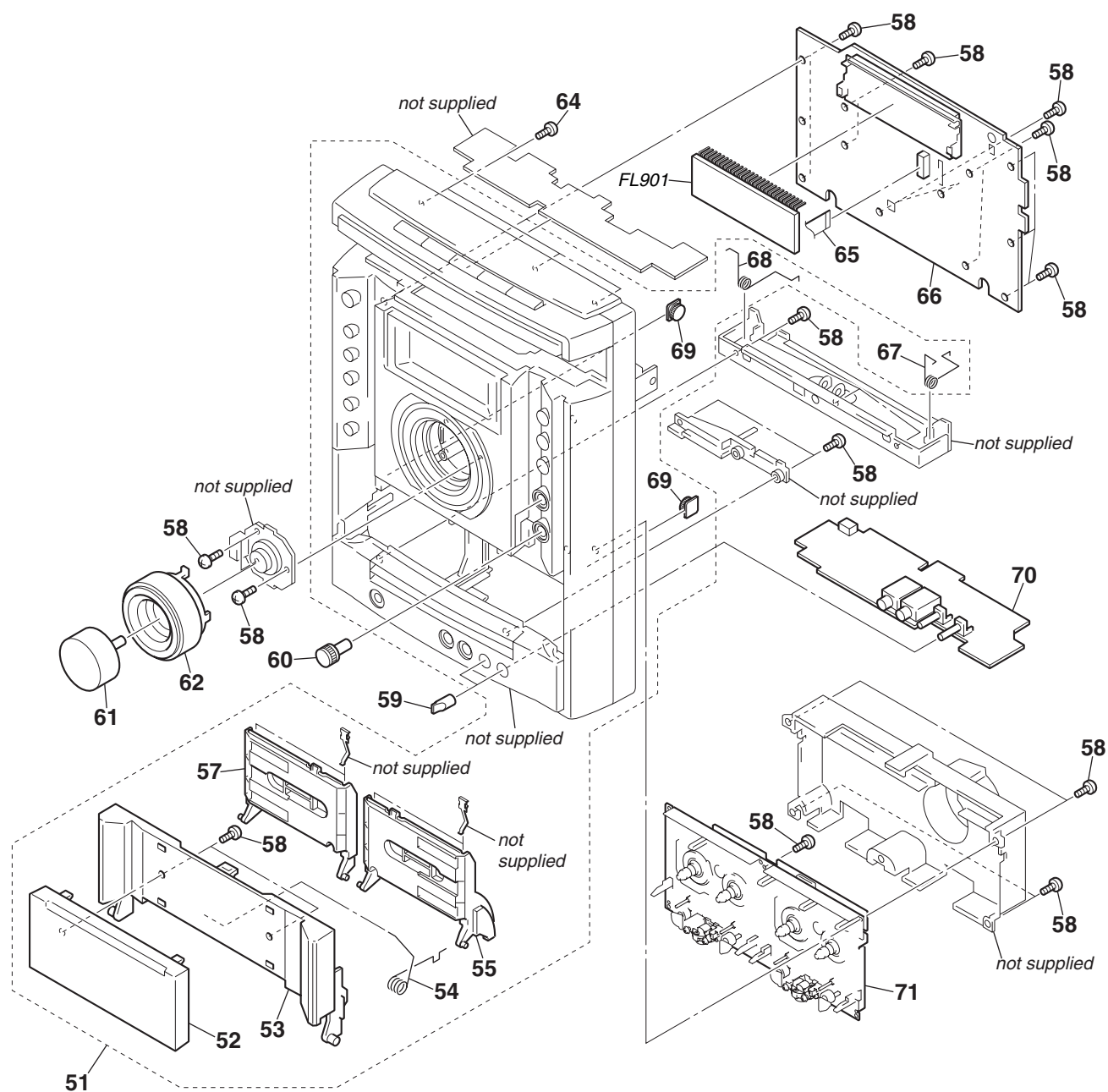
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

8-1. CASE (TOP), REAR PANEL SECTION



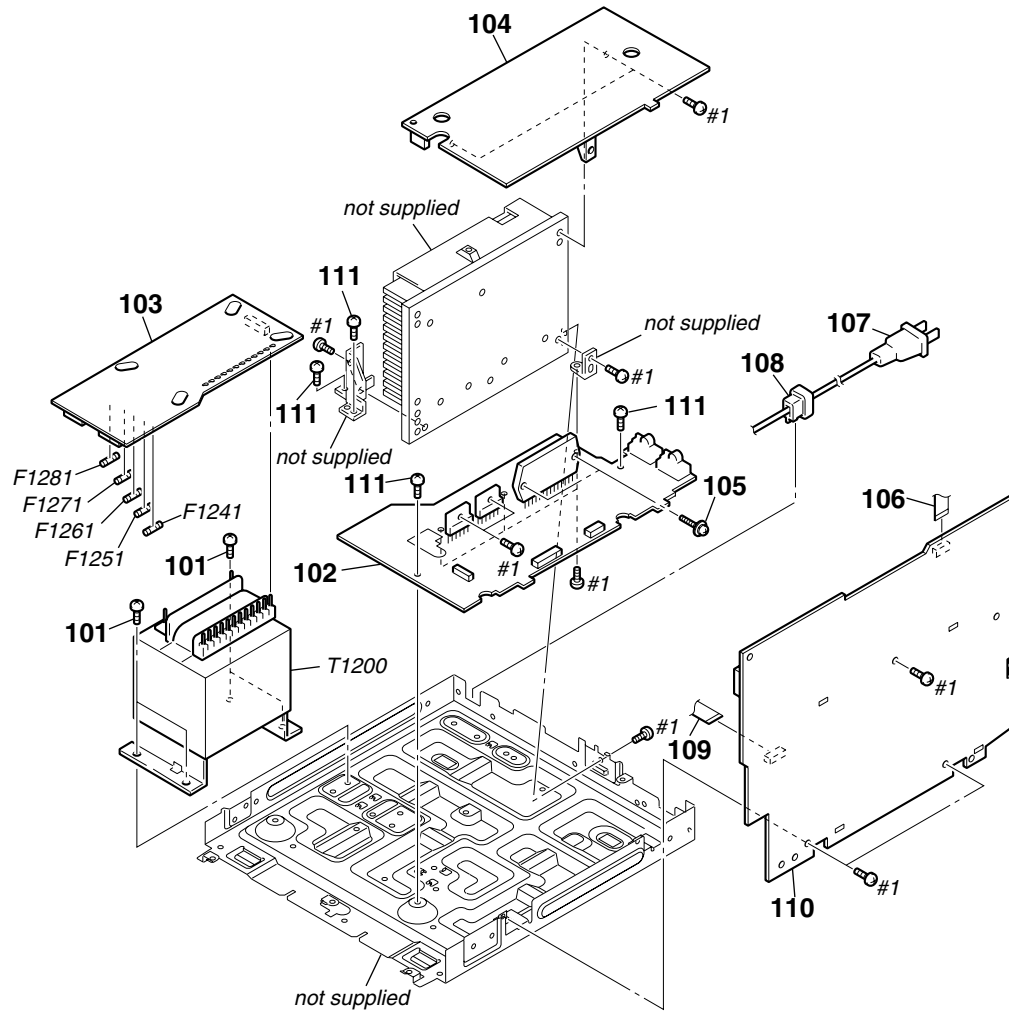
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	X-2025-402-1	LOADING PANEL ASSY (GNX60: E2, E51, AR)		5	1-693-672-11	TUNER (TM-10U) (GX9900)	
1	X-2025-404-1	LOADING PANEL ASSY (GNX70: E2, E51)		6	A-1089-510-A	PRIMARY BOARD, COMPLETE (E2, E3, E51)	
1	X-2025-406-1	LOADING PANEL ASSY (GX9900)		6	A-1089-525-A	PRIMARY BOARD, COMPLETE (US, AUS)	
1	X-2050-804-1	LOADING PANEL ASSY (GNX60: E3, AUS)		6	A-1113-478-A	PRIMARY BOARD, COMPLETE (AR)	
1	X-2050-805-1	LOADING PANEL ASSY (GNX70: E3, AUS)		 7	1-468-737-21	POWER, SWITCHING	
2	2-342-117-01	CASE (TOP) (GNX60/GNX70)		8	1-824-048-12	WIRE (FLAT TYPE) (27 CORE)	
2	2-342-117-21	CASE (TOP) (GX9900)		9	3-077-331-21	+BV3 (3-CR)	
3	3-363-099-32	SCREW (CASE 3 TP2)		M891	1-763-372-11	FAN, DC	
4	3-363-099-02	SCREW (CASE 3 TP2)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
5	1-693-671-11	TUNER (TM-10E) (GNX60/GNX70)		#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

8-2. FRONT PANEL SECTION



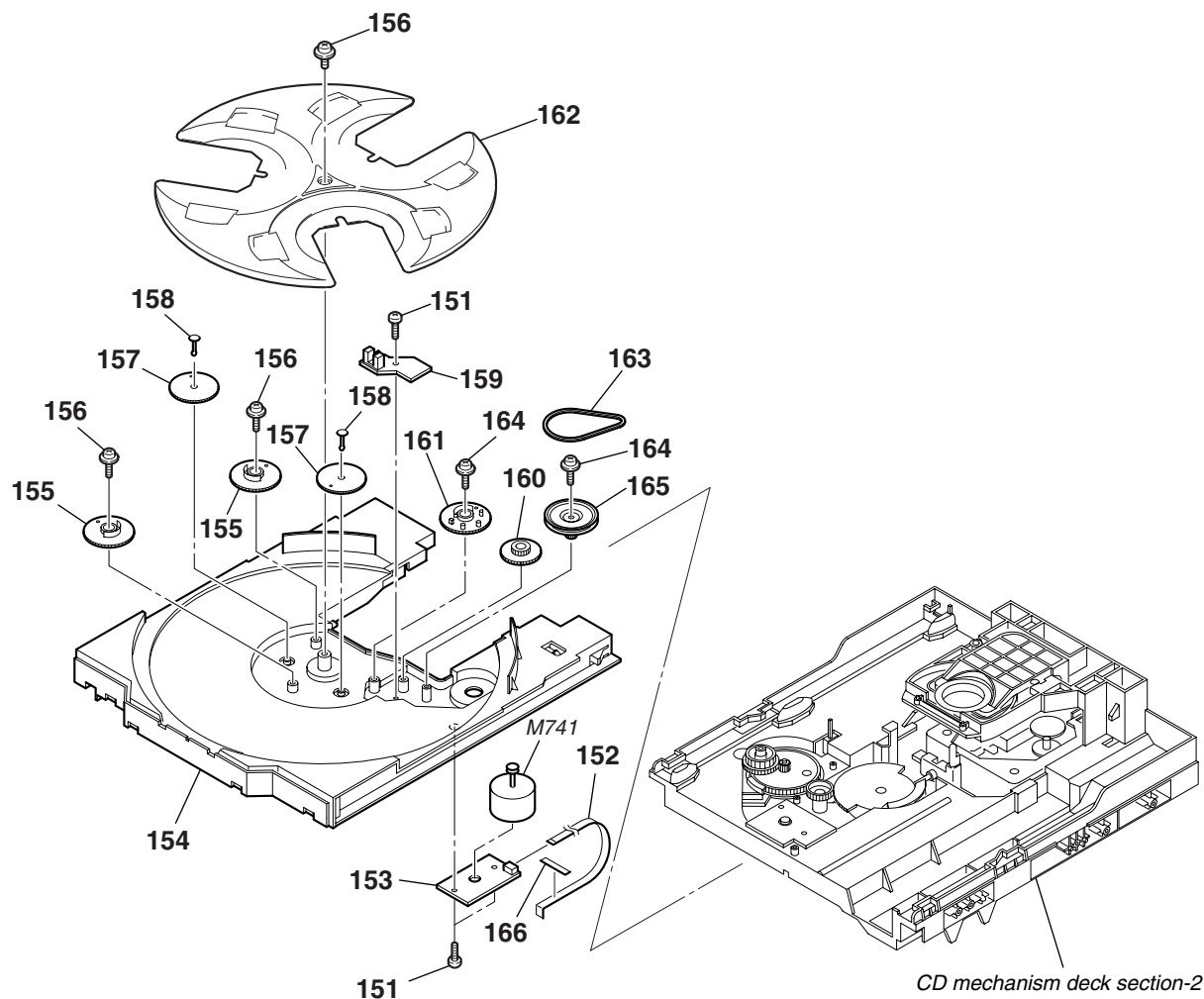
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
51	X-2025-397-1	FRONT PANEL ASSY (GNX60)		61	4-252-575-01	KNOB VOL	
51	X-2025-399-1	FRONT PANEL ASSY (GNX70)		62	X-2025-430-1	KNOB JOG ASSY	
51	X-2025-429-1	FRONT PANEL ASSY (GX9900)		64	3-077-331-21	+BV3 (3-CR)	
52	2-342-128-01	ESCUTHEON (LID)		65	1-828-992-11	WIRE (FLAT TYPE) (17 CORE)	
53	2-342-108-01	LID (TC)					
54	2-342-134-01	SPRING (LID)		66	A-1089-463-A	PANEL BOARD, COMPLETE	
55	2-342-111-01	HOLDER (TC-R)		67	2-342-136-01	SPRING (R)	
57	2-342-110-01	HOLDER (TC-L)		68	2-342-135-01	SPRING (L)	
58	3-087-053-01	+BVTP2.6 (3CR)		69	4-224-104-11	DAMPER	
59	4-224-578-21	KNOB (MIC)		70	A-1089-466-A	MIC BOARD, COMPLETE	
				71	1-797-165-11	DECK, MECHANICAL (CMAT5Z2)	
60	2-342-104-01	KNOB (AMS)		FL901	1-519-794-21	VACUUM FLUORESCENT DISPLAYS	

8-3. CHASSIS SECTION



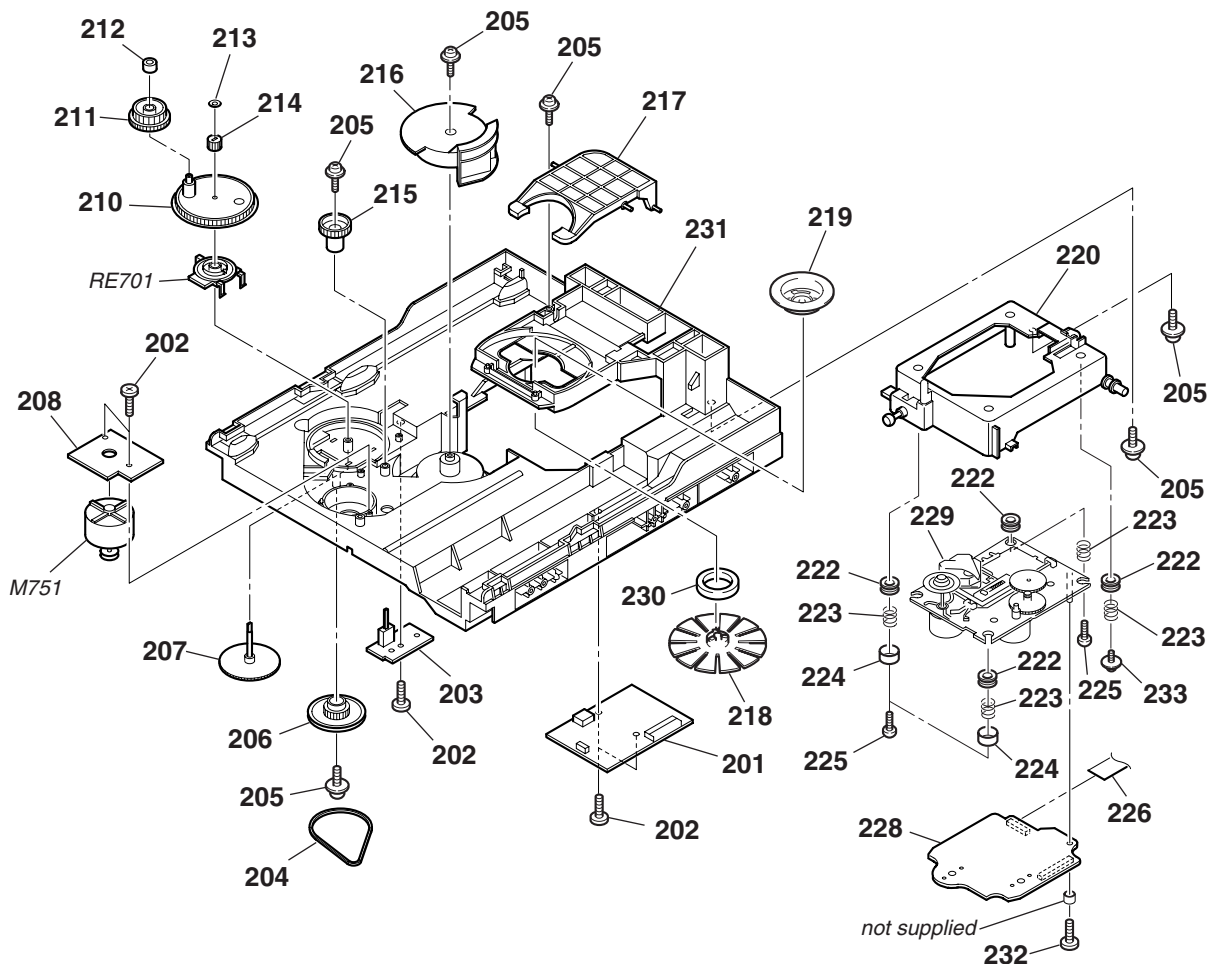
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	4-900-386-01	SCREW		110	A-1105-026-A	MAIN BOARD, COMPLETE (GNX70: E3)	
102	A-1089-504-A	PA BOARD, COMPLETE (GNX60: E3, AUS)		110	A-1105-027-A	MAIN BOARD, COMPLETE (GNX70: E51)	
102	A-1089-530-A	PA BOARD, COMPLETE (GNX70: E3, AUS)		110	A-1105-028-A	MAIN BOARD, COMPLETE (GNX70: AUS)	
102	A-1089-586-A	PA BOARD, COMPLETE (GX9900)		111	3-077-331-21	+BV3 (3-CR)	
102	A-1110-893-A	PA BOARD, COMPLETE (GNX60: E2, E51, AR)					
102	A-1110-912-A	PA BOARD, COMPLETE (GNX70: E2, E51)		△ F1241	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V)	(GX9900)
103	A-1089-507-A	TRANS BOARD, COMPLETE (GNX60/GNX70)		△ F1241	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V)	(GNX60/GNX70)
103	A-1089-588-A	TRANS BOARD, COMPLETE (GX9900)		△ F1251	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V)	(GX9900)
104	A-1089-321-A	SURROUND BOARD, COMPLETE		△ F1251	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V)	(GNX60/GNX70)
105	3-905-609-31	SCREW (TRANSISTOR)		△ F1261	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V)	(GX9900)
106	1-828-956-11	WIRE (FLAT TYPE) (9 CORE)		△ F1261	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V)	(GNX60/GNX70)
△ 107	1-777-071-53	CORD, POWER (E51)		△ F1271	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V)	(GX9900)
△ 107	1-783-820-11	CORD, POWER (GX9900)		△ F1271	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V)	(GNX60/GNX70)
△ 107	1-783-941-12	CORD, POWER (AR)		△ F1281	1-533-451-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/125V)	(GX9900)
△ 107	1-827-295-22	CORD, POWER (AUS)		△ F1281	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V)	(GNX60/GNX70)
△ 107	1-829-627-31	POWER-SUPPLY CORD (E2, E3)		△ T1200	1-443-542-11	POWER TRANSFORMER (GNX60)	
* 108	3-703-244-00	BUSHING (2104), CORD (US, E51, AR, AUS)		△ T1200	1-443-543-11	POWER TRANSFORMER (GNX70)	
108	3-703-571-11	BUSHING (S) (4516), CORD (E2, E3)		△ T1200	1-443-544-11	POWER TRANSFORMER (GX9900)	
109	1-828-972-11	WIRE (FLAT TYPE) (13 CORE)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
110	A-1089-297-A	MAIN BOARD, COMPLETE (GNX60: E2)					
110	A-1089-299-A	MAIN BOARD, COMPLETE (GNX70: E2)					
110	A-1089-301-A	MAIN BOARD, COMPLETE (GX9900)					
110	A-1105-022-A	MAIN BOARD, COMPLETE (GNX60: E3)					
110	A-1105-023-A	MAIN BOARD, COMPLETE (GNX60: E51)					
110	A-1105-024-A	MAIN BOARD, COMPLETE (AR)					
110	A-1105-025-A	MAIN BOARD, COMPLETE (GNX60: AUS)					

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



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	4-218-253-32	SCREW (M2.6), +BTTP		160	4-243-820-01	GEAR (TABLE)	
152	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)		161	4-243-819-01	GEAR (GENEVA)	
153	1-687-134-12	MOTOR (TB) BOARD		162	4-243-816-01	TRAY	
154	4-243-815-01	TABLE (LOADING)		163	4-243-823-01	BELT (TABLE)	
155	4-245-571-02	GEAR (STOPPER)		164	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
156	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		165	4-243-821-01	PULLEY (TABLE)	
157	4-245-570-01	GEAR (JOINT)		166	3-231-598-01	SHEET (BA)	
158	4-245-572-01	BUSHING (GEAR)		M741	A-4723-963-A	MOTOR ASSY, TABLE	
159	1-687-132-12	SENSOR BOARD					

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



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	1-687-135-12	DRIVER BOARD		218	X-4955-774-2	PULLEY (SM) ASSY, CHUCKING	
202	4-218-253-52	SCREW (M2.6), +BTTP		219	4-221-688-01	PULLEY (B), CHUCKING	
203	1-687-669-12	SW BOARD		220	X-4955-536-1	HOLDER (213) ASSY	
204	4-244-034-01	BELT (LOADING)		222	4-227-549-11	INSULATOR	
205	4-218-252-52	SCREW (+PTPWH M2.6), FLOATING					
206	4-225-844-01	GEAR (LOADING A)		223	4-227-045-11	SPRING (INSULATOR), COIL	
207	4-224-613-01	GEAR (SHAFT)		224	4-231-151-01	STOPPER (BU)	
208	1-687-133-12	MOTOR (LD) BOARD		225	4-218-253-42	SCREW (M2.6), +BTTP	
210	4-244-108-01	GEAR, SWING		226	1-827-992-11	WIRE (FLAT TYPE) (16 CORE)	
211	4-224-609-01	GEAR (LOADING C)		228	A-4751-045-A	CD BOARD, COMPLETE	
212	4-224-608-01	COLLAR, SWING		△ 229	8-820-244-01	OPTICAL PICK-UP KSM-215DCP/C2NP	
213	3-016-533-01	WASHER (FR), STOPPER		230	1-471-035-11	MAGNET ASSY	
214	4-224-611-01	GEAR (LOADING B)		231	4-243-817-22	CHASSIS	
215	4-224-606-01	GEAR (RV)		232	3-087-053-01	+BVTP2.6 (3CR)	
216	4-243-818-01	GEAR (U/D)		233	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
217	4-243-822-02	LEVER (LIFTER)					
				M751	A-4737-553-A	MOTOR ASSY, LOADING	
				RE701	1-477-680-12	ENCODER, ROTARY	

HCD-GNX60/GNX70/GX9900

CD CD-SW DRIVER

Ref. No.	Part No.	Description	Remarks			
< IC >						
IC101	8-752-425-12	IC CXD3059AR				
IC251	6-705-808-01	IC BA5947FM-E2				
IC301	6-705-365-01	IC TC94A34FG-002				
IC303	6-705-807-01	IC BH15FB1WG				
< TRANSISTOR >						
Q10	6-551-120-01	TRANSISTOR 2SA2119K				
< RESISTOR >						
R10	1-216-791-11	METAL CHIP	3.3	5%	1/10W	
R11	1-216-864-11	SHORT CHIP	0			
R12	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R13	1-218-446-11	METAL CHIP	1	5%	1/10W	
R111	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R112	1-216-835-11	METAL CHIP	15K	5%	1/10W	
R113	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R114	1-216-835-11	METAL CHIP	15K	5%	1/10W	
R121	1-216-835-11	METAL CHIP	15K	5%	1/10W	
R131	1-216-857-11	METAL CHIP	1M	5%	1/10W	
R132	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R133	1-216-848-11	METAL CHIP	180K	5%	1/10W	
R141	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R142	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R143	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	
R151	1-216-864-11	SHORT CHIP	0			
R161	1-216-809-11	METAL CHIP	100	5%	1/10W	
R162	1-216-841-11	METAL CHIP	47K	5%	1/10W	
R163	1-216-809-11	METAL CHIP	100	5%	1/10W	
R165	1-216-864-11	SHORT CHIP	0			
R171	1-216-817-11	METAL CHIP	470	5%	1/10W	
R172	1-216-857-11	METAL CHIP	1M	5%	1/10W	
R173	1-216-295-91	SHORT CHIP	0			
R181	1-216-809-11	METAL CHIP	100	5%	1/10W	
R182	1-216-809-11	METAL CHIP	100	5%	1/10W	
R191	1-216-864-11	SHORT CHIP	0			
R201	1-500-445-21	FERRITE, EMI (SMD) (2012)				
R203	1-216-864-11	SHORT CHIP	0			
R204	1-500-445-21	FERRITE, EMI (SMD) (2012)				
R205	1-216-864-11	SHORT CHIP	0			
R251	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R252	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R253	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R301	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R302	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R303	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R305	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R306	1-216-864-11	SHORT CHIP	0			
R307	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R313	1-216-813-11	METAL CHIP	220	5%	1/10W	
R351	1-216-809-11	METAL CHIP	100	5%	1/10W	
R352	1-216-809-11	METAL CHIP	100	5%	1/10W	
R353	1-216-809-11	METAL CHIP	100	5%	1/10W	
R354	1-216-809-11	METAL CHIP	100	5%	1/10W	
R401	1-216-809-11	METAL CHIP	100	5%	1/10W	
R402	1-216-809-11	METAL CHIP	100	5%	1/10W	
R403	1-216-809-11	METAL CHIP	100	5%	1/10W	

Ref. No.	Part No.	Description	Remarks			
R404	1-216-809-11	METAL CHIP	100	5%	1/10W	
R405	1-216-809-11	METAL CHIP	100	5%	1/10W	
R406	1-216-809-11	METAL CHIP	100	5%	1/10W	
R407	1-216-809-11	METAL CHIP	100	5%	1/10W	
R408	1-216-809-11	METAL CHIP	100	5%	1/10W	
R409	1-216-809-11	METAL CHIP	100	5%	1/10W	
R410	1-216-809-11	METAL CHIP	100	5%	1/10W	
R411	1-216-809-11	METAL CHIP	100	5%	1/10W	
R412	1-216-809-11	METAL CHIP	100	5%	1/10W	
R419	1-216-809-11	METAL CHIP	100	5%	1/10W	
R502	1-216-864-11	SHORT CHIP	0			
< SWITCH >						
S101	1-771-853-11	SWITCH DETECTION (LIMIT)				
< VIBRATOR >						
X171	1-767-408-21	VIBRATOR, CRYSTAL (16.9MHz)				

CD-SW BOARD						

< RESISTOR >						
R1169	1-216-817-11	METAL CHIP	470	5%	1/10W	
R1171	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	
R1172	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	
R1173	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R1174	1-216-819-11	METAL CHIP	680	5%	1/10W	
< SWITCH >						
S1156	1-762-875-21	SWITCH, KEYBOARD (DISC 1)				
S1157	1-762-875-21	SWITCH, KEYBOARD (DISC 2)				
S1158	1-762-875-21	SWITCH, KEYBOARD (DISC 3)				
S1159	1-762-875-21	SWITCH, KEYBOARD (EX-CHANGE/DISC SKIP)				
S1160	1-762-875-21	SWITCH, KEYBOARD (▲ OPEN/CLOSE)				

1-687-135-12 DRIVER BOARD						

< CAPACITOR >						
C715	1-126-933-11	ELECT	100uF	20%	16V	
C731	1-126-964-11	ELECT	10uF	20%	50V	
C735	1-164-159-11	CERAMIC	0.1uF		50V	
C736	1-164-159-11	CERAMIC	0.1uF		50V	
C737	1-164-159-11	CERAMIC	0.1uF		50V	
C741	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C751	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C752	1-164-159-11	CERAMIC	0.1uF		50V	
< CONNECTOR >						
CN701	1-785-338-11	PIN, CONNECTOR (LIGHT ANGLE) 12P				
CN702	1-784-766-11	CONNECTOR, FFC 5P				
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P				
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGRE) 2P				
< DIODE >						
D701	8-719-947-16	DIODE MTZJ-T-72-5.1A				
D711	8-719-983-66	DIODE MTZJ-T-72-3.6B				

DRIVER

JOG

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< IC >					
IC701	8-759-598-69	IC BA6956AN		R1146	1-216-820-11	METAL CHIP 820 5% 1/10W	
IC712	8-759-598-69	IC BA6956AN		R1156	1-216-821-11	METAL CHIP 1K 5% 1/10W	
		< TRANSISTOR >		R1157	1-216-820-11	METAL CHIP 820 5% 1/10W	
Q731	8-729-029-66	TRANSISTOR DTC114ESA		R1158	1-216-820-11	METAL CHIP 820 5% 1/10W	
		< RESISTOR >		R1159	1-216-820-11	METAL CHIP 820 5% 1/10W	
R701	1-249-413-11	CARBON 470 5% 1/4W		R1190	1-216-809-11	METAL CHIP 100 5% 1/10W	
R702	1-247-807-31	CARBON 100 5% 1/4W		R1191	1-216-809-11	METAL CHIP 100 5% 1/10W	
R711	1-247-831-91	CARBON 1K 5% 1/4W		R1192	1-216-809-11	METAL CHIP 100 5% 1/10W	
R712	1-247-847-91	CARBON 4.7K 5% 1/4W				< SWITCH >	
R713	1-247-863-91	CARBON 22K 5% 1/4W		S1161	1-479-203-11	ENCODER (ROTARY) (OPERATION DIAL)	
R721	1-247-847-91	CARBON 4.7K 5% 1/4W				*****	
R722	1-247-847-91	CARBON 4.7K 5% 1/4W		A-1089-297-A		MAIN BOARD, COMPLETE (GNX60: E2)	
R723	1-247-847-91	CARBON 4.7K 5% 1/4W		A-1089-299-A		MAIN BOARD, COMPLETE (GNX70: E2)	
R731	1-247-807-31	CARBON 100 5% 1/4W		A-1089-301-A		MAIN BOARD, COMPLETE (GX9900)	
R732	1-249-429-11	CARBON 10K 5% 1/4W		A-1105-022-A		MAIN BOARD, COMPLETE (GNX60: E3)	
R733	1-247-831-91	CARBON 1K 5% 1/4W		A-1105-023-A		MAIN BOARD, COMPLETE (GNX60: E51)	
R734	1-249-430-11	CARBON 12K 5% 1/4W		A-1105-024-A		MAIN BOARD, COMPLETE (AR)	
R751	1-247-807-31	CARBON 100 5% 1/4W		A-1105-025-A		MAIN BOARD, COMPLETE (GNX60: AUS)	
		*****		A-1105-026-A		MAIN BOARD, COMPLETE (GNX70: E3)	
				A-1105-027-A		MAIN BOARD, COMPLETE (GNX70: E51)	
				A-1105-028-A		MAIN BOARD, COMPLETE (GNX70: AUS)	

				7-685-646-79		SCREW +BVTP 3X8 TYPE2 IT-3	
		JOG BOARD				< CAPACITOR >	
		*****		C100	1-104-658-91	ELECT 100uF 20% 10V	
		< CAPACITOR >		C102	1-126-964-11	ELECT 10uF 20% 50V	
C1150	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		C103	1-126-964-11	ELECT 10uF 20% 50V	
		< CONNECTOR >		C104	1-126-964-11	ELECT 10uF 20% 50V	
* CNS903	1-562-573-11	SOCKET, CONNECTOR 8P		C105	1-126-964-11	ELECT 10uF 20% 50V	
		< DIODE >		C106	1-136-157-00	FILM 0.022uF 5% 50V	
D919	8-719-071-44	DIODE SELS5223C-TP15 (VOL 2)		C107	1-136-157-00	FILM 0.022uF 5% 50V	
D920	8-719-071-44	DIODE SELS5223C-TP15 (VOL 3)		C108	1-136-159-00	FILM 0.033uF 5% 50V	
D921	8-719-071-44	DIODE SELS5223C-TP15 (VOL 4)		C109	1-126-960-11	ELECT 1uF 20% 50V	
D922	8-719-071-44	DIODE SELS5223C-TP15 (VOL 5)		C110	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
D923	8-719-071-44	DIODE SELS5223C-TP15 (VOL 6)		C111	1-126-964-11	ELECT 10uF 20% 50V	
D924	8-719-071-44	DIODE SELS5223C-TP15 (VOL 1)		C112	1-136-170-00	FILM 0.27uF 5% 50V	
		< JUMPER RESISTOR >		C113	1-136-170-00	FILM 0.27uF 5% 50V	
JR904	1-216-296-11	SHORT CHIP 0		C114	1-126-964-11	ELECT 10uF 20% 50V	
JR905	1-216-864-11	SHORT CHIP 0		C115	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
		< TRANSISTOR >		C116	1-126-923-91	ELECT 220uF 20% 10V	
Q911	8-729-027-43	TRANSISTOR DTC114EKA-T146		C121	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
Q912	8-729-027-43	TRANSISTOR DTC114EKA-T146		C122	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
Q913	8-729-027-43	TRANSISTOR DTC114EKA-T146		C130	1-126-964-11	ELECT 10uF 20% 50V	
		< RESISTOR >		C131	1-126-959-11	ELECT 0.47uF 20% 50V	
R1138	1-216-820-11	METAL CHIP 820 5% 1/10W		C140	1-136-495-11	FILM 0.068uF 5% 50V	
R1139	1-216-820-11	METAL CHIP 820 5% 1/10W		C149	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
R1140	1-216-820-11	METAL CHIP 820 5% 1/10W		C150	1-126-964-11	ELECT 10uF 20% 50V	
R1144	1-216-820-11	METAL CHIP 820 5% 1/10W		C152	1-126-964-11	ELECT 10uF 20% 50V	
R1145	1-216-820-11	METAL CHIP 820 5% 1/10W		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	1-136-157-00	FILM 0.022uF 5% 50V	
				C157	1-136-157-00	FILM 0.022uF 5% 50V	
				C158	1-136-159-00	FILM 0.033uF 5% 50V	
				C159	1-126-960-11	ELECT 1uF 20% 50V	

HCD-GNX60/GNX70/GX9900

MAIN

Ref. No.	Part No.	Description	Remarks		
C160	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C161	1-126-964-11	ELECT	10uF	20%	50V
C162	1-136-170-00	FILM	0.27uF	5%	50V
C163	1-136-170-00	FILM	0.27uF	5%	50V
C180	1-126-963-11	ELECT	4.7uF	20%	50V
C181	1-126-963-11	ELECT	4.7uF	20%	50V
C210	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C211	1-104-658-91	ELECT	100uF	20%	10V
C250	1-126-964-11	ELECT	10uF	20%	50V
C251	1-126-964-11	ELECT	10uF	20%	50V
C260	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C261	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C262	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C263	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C264	1-165-647-91	CERAMIC CHIP	0.47uF	10%	6.3V
C280	1-126-964-11	ELECT	10uF	20%	50V
C281	1-126-964-11	ELECT	10uF	20%	50V
C301	1-136-967-11	FILM	0.012uF	5%	100V
C303	1-136-497-81	FILM	0.1uF	5%	50V
C304	1-126-964-11	ELECT	10uF	20%	50V
C305	1-126-960-11	ELECT	1uF	20%	50V
C306	1-126-961-11	ELECT	2.2uF	20%	50V
C307	1-126-964-11	ELECT	10uF	20%	50V
C308	1-126-925-91	ELECT	470uF	20%	10V
C309	1-126-947-11	ELECT	47uF	20%	35V
C310	1-126-964-11	ELECT	10uF	20%	50V
C311	1-126-964-11	ELECT	10uF	20%	50V
C312	1-126-964-11	ELECT	10uF	20%	50V
C314	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C340	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C341	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C351	1-136-967-11	FILM	0.012uF	5%	100V
C353	1-136-497-81	FILM	0.1uF	5%	50V
C354	1-126-157-11	ELECT	10uF	20%	16V
C355	1-126-960-11	ELECT	1uF	20%	50V
C356	1-126-961-11	ELECT	2.2uF	20%	50V
C359	1-126-947-11	ELECT	47uF	20%	35V
C361	1-126-964-11	ELECT	10uF	20%	50V
C364	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C370	1-137-150-11	FILM	0.01uF	5%	100V
C371	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C372	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C373	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C374	1-126-947-11	ELECT	47uF	20%	35V
C375	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C376	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C377	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C378	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C379	1-130-481-00	MYLAR	0.0068uF	5%	50V
C380	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C381	1-164-670-11	CERAMIC CHIP	1200PF	5%	16V
C382	1-164-670-11	CERAMIC CHIP	1200PF	5%	16V
C383	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C384	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C385	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C386	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V

Ref. No.	Part No.	Description	Remarks		
C391	1-126-933-11	ELECT	100uF	20%	16V
C405	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C410	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C411	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C412	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C416	1-104-656-11	ELECT	2200uF	20%	6.3V
C419	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C429	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C430	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C462	1-104-658-91	ELECT	100uF	20%	10V
C464	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C497	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C498	1-126-964-11	ELECT	10uF	20%	50V
C499	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C501	1-126-964-11	ELECT	10uF	20%	50V
C502	1-136-497-81	FILM	0.1uF	5%	50V
C503	1-136-497-81	FILM	0.1uF	5%	50V
C507	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C511	1-126-157-11	ELECT	10uF	20%	16V
C520	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C521	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C522	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C523	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C524	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C525	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C534	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C535	1-126-928-11	ELECT	3300uF	20%	10V
C537	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C538	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C539	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C540	1-126-960-11	ELECT	1uF	20%	50V
C541	1-126-960-11	ELECT	1uF	20%	50V
C542	1-126-960-11	ELECT	1uF	20%	50V
C543	1-126-960-11	ELECT	1uF	20%	50V
C544	1-126-960-11	ELECT	1uF	20%	50V
C545	1-126-960-11	ELECT	1uF	20%	50V
C546	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C547	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C550	1-126-933-11	ELECT	100uF	20%	16V
C551	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C552	1-126-961-11	ELECT	2.2uF	20%	50V
C553	1-126-942-61	ELECT	1000uF	20%	25V
C560	1-130-483-00	MYLAR	0.01uF	5%	50V
C561	1-130-483-00	MYLAR	0.01uF	5%	50V
C562	1-126-933-11	ELECT	100uF	20%	16V
C563	1-126-925-91	ELECT	470uF	20%	10V
C564	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
C565	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
C566	1-128-548-11	ELECT	4700uF	20%	25V
C567	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
C568	1-126-916-11	ELECT	1000uF	20%	6.3V
C580	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C581	1-164-156-11	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

* CN100	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN402	1-785-336-11	PIN, CONNECTOR (LIGHT ANGLE) 10P

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
CN501	1-573-845-11	CONNECTOR, BOARD TO BOARD 13P				< JUMPER RESISTOR >	
* CN502	1-774-876-21	CONNECTOR, BOARD TO BOARD 8P		JR001	1-216-864-11	SHORT CHIP	0
* CN503	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		JR002	1-216-296-11	SHORT CHIP	0
CN505	1-779-295-11	CONNECTOR, FFC (LIF (NON-ZIF)) 27P		JR003	1-216-864-11	SHORT CHIP	0
CN506	1-568-441-11	SOCKET, CONNECTOR 9P		JR007	1-216-296-11	SHORT CHIP	0
* CN507	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P		JR009	1-216-864-11	SHORT CHIP	0
* CN508	1-569-934-11	SOCKET, CONNECTOR 17P		JR010	1-216-864-11	SHORT CHIP	0
* CN509	1-569-930-11	SOCKET, CONNECTOR 13P		JR012	1-216-864-11	SHORT CHIP	0
* CN510	1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P		JR014	1-216-864-11	SHORT CHIP	0
CN580	1-564-506-11	PLUG, CONNECTOR 3P		JR015	1-216-864-11	SHORT CHIP	0
		< DIODE >		JR016	1-216-864-11	SHORT CHIP	0
D340	8-719-988-61	DIODE 1SS355TE-17		JR017	1-216-864-11	SHORT CHIP	0
D341	8-719-988-61	DIODE 1SS355TE-17		JR018	1-216-864-11	SHORT CHIP	0
D342	8-719-988-61	DIODE 1SS355TE-17		JR019	1-216-864-11	SHORT CHIP	0
D401	8-719-988-61	DIODE 1SS355TE-17		JR020	1-216-864-11	SHORT CHIP	0
D402	8-719-988-61	DIODE 1SS355TE-17		JR021	1-216-864-11	SHORT CHIP	0
D501	8-719-988-61	DIODE 1SS355TE-17		JR022	1-216-864-11	SHORT CHIP	0
D502	8-719-988-61	DIODE 1SS355TE-17		JR028	1-216-864-11	SHORT CHIP	0
D503	8-719-988-61	DIODE 1SS355TE-17		JR029	1-216-864-11	SHORT CHIP	0
D504	8-719-988-61	DIODE 1SS355TE-17		JR030	1-216-864-11	SHORT CHIP	0
D505	8-719-988-61	DIODE 1SS355TE-17		JR031	1-216-864-11	SHORT CHIP	0
D550	8-719-988-61	DIODE 1SS355TE-17		JR032	1-216-864-11	SHORT CHIP	0
D551	8-719-988-61	DIODE 1SS355TE-17 (E2, E3, E51)		JR034	1-216-864-11	SHORT CHIP	0
D560	8-719-028-23	DIODE D3SBA20-4101		JR035	1-216-864-11	SHORT CHIP	0
D561	6-500-522-21	DIODE 10EDB40-TB3		JR036	1-216-296-11	SHORT CHIP	0
D562	6-500-522-21	DIODE 10EDB40-TB3		JR138	1-216-864-11	SHORT CHIP	0
D563	6-500-522-21	DIODE 10EDB40-TB3		JR261	1-216-864-11	SHORT CHIP	0
D581	8-719-056-82	DIODE UDZ-TE-17-6.2B		JR359	1-216-864-11	SHORT CHIP	0
D583	8-719-056-83	DIODE UDZ-TE-17-6.8B		JR390	1-216-864-11	SHORT CHIP	0
		< FERRITE BEAD >		JR465	1-216-864-11	SHORT CHIP	0
FB150	1-216-864-11	SHORT CHIP	0	JR466	1-216-864-11	SHORT CHIP	0
FB260	1-216-864-11	SHORT CHIP	0	JR467	1-216-864-11	SHORT CHIP	0
FB261	1-216-864-11	SHORT CHIP	0	JR507	1-216-864-11	SHORT CHIP	0 (US, AR, AUS)
FB262	1-216-864-11	SHORT CHIP	0			< COIL >	
FB263	1-216-864-11	SHORT CHIP	0	L302	1-414-189-31	INDUCTOR	100uH
FB506	1-500-283-11	INDUCTOR, FERRITE BEAD		L370	1-410-780-11	INDUCTOR	27mH
FB507	1-500-283-11	INDUCTOR, FERRITE BEAD		L371	1-410-780-11	INDUCTOR	27mH
FB508	1-500-283-11	INDUCTOR, FERRITE BEAD		L372	1-414-189-31	INDUCTOR	100uH
FB509	1-500-283-11	INDUCTOR, FERRITE BEAD				< TRANSISTOR >	
FB510	1-500-283-11	INDUCTOR, FERRITE BEAD		Q101	8-729-120-28	TRANSISTOR	2SC1623-L5L6
FB512	1-500-283-11	INDUCTOR, FERRITE BEAD		Q151	8-729-120-28	TRANSISTOR	2SC1623-L5L6
		< IC >		Q180	8-729-802-80	TRANSISTOR	2SC3661
IC101	6-703-650-11	IC M61529FP-D60G		Q181	8-729-802-80	TRANSISTOR	2SC3661
IC210	8-749-019-25	IC TOTX141 (DIGITAL OUT) (GNX60/GNX70)		Q250	8-729-802-80	TRANSISTOR	2SC3661
IC301	6-702-130-01	IC HA12237F		Q251	8-729-802-80	TRANSISTOR	2SC3661
IC401	6-805-072-01	IC M30622MEP-A02FPU0		Q280	8-729-802-80	TRANSISTOR	2SC3661
IC402	6-705-809-01	IC BD4929G-TR		Q281	8-729-802-80	TRANSISTOR	2SC3661
IC550	6-703-610-01	IC RT8H015C-T112-1		Q340	8-729-903-46	TRANSISTOR	2SB1132-P
IC560	8-759-394-36	IC BA09T		Q341	8-729-903-46	TRANSISTOR	2SB1132-P
IC561	6-703-550-01	IC TA7809LS		Q342	8-729-903-46	TRANSISTOR	2SB1132-P
IC562	6-702-771-01	IC TA78033LS		Q343	8-729-027-43	TRANSISTOR	DTC114EKA-T146
		< JACK >		Q344	8-729-027-43	TRANSISTOR	DTC114EKA-T146
J101	1-794-981-11	JACK, PIN 4P (TV, VIDEO/MD)		Q345	8-729-027-43	TRANSISTOR	DTC114EKA-T146
				Q370	8-729-141-75	TRANSISTOR	2SD596DV345

HCD-GNX60/GNX70/GX9900

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q371	8-729-802-80	TRANSISTOR 2SC3661		R166	1-216-809-11	METAL CHIP 100 5%	1/10W
Q372	8-729-802-80	TRANSISTOR 2SC3661		R180	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q373	8-729-802-80	TRANSISTOR 2SC3661					
Q374	8-729-802-80	TRANSISTOR 2SC3661		R181	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q375	8-729-802-80	TRANSISTOR 2SC3661		R182	1-216-841-11	METAL CHIP 47K 5%	1/10W
				R183	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q376	8-729-802-80	TRANSISTOR 2SC3661		R184	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q377	6-550-580-01	TRANSISTOR 2SA1235TP-1F		R185	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q378	6-550-185-01	TRANSISTOR RT1P137P-TP-1					
Q379	8-729-027-43	TRANSISTOR DTC114EKA-T146		R186	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q380	8-729-027-43	TRANSISTOR DTC114EKA-T146		R187	1-216-833-11	METAL CHIP 10K 5%	1/10W
				R250	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q381	8-729-027-43	TRANSISTOR DTC114EKA-T146		R251	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q382	8-729-027-23	TRANSISTOR DTA114EKA-T146		R252	1-216-839-11	METAL CHIP 33K 5%	1/10W
Q383	8-729-027-43	TRANSISTOR DTC114EKA-T146					
Q389	8-729-027-43	TRANSISTOR DTC114EKA-T146		R253	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q501	8-729-901-00	TRANSISTOR DTC124EK		R254	1-216-833-11	METAL CHIP 10K 5%	1/10W
				R255	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q504	8-729-027-23	TRANSISTOR DTA114EKA-T146		R256	1-216-839-11	METAL CHIP 33K 5%	1/10W
Q505	8-729-901-00	TRANSISTOR DTC124EK		R257	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q506	8-729-027-43	TRANSISTOR DTC114EKA-T146 (E2, E3, E51)					
Q540	8-729-027-31	TRANSISTOR DTA124EKA-T146		R260	1-216-864-11	SHORT CHIP 0	
Q541	8-729-027-43	TRANSISTOR DTC114EKA-T146		R261	1-216-864-11	SHORT CHIP 0	
				R262	1-216-864-11	SHORT CHIP 0	
Q542	8-729-027-31	TRANSISTOR DTA124EKA-T146		R263	1-216-864-11	SHORT CHIP 0	
Q543	8-729-027-43	TRANSISTOR DTC114EKA-T146		R264	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q544	8-729-027-31	TRANSISTOR DTA124EKA-T146					
Q545	8-729-027-43	TRANSISTOR DTC114EKA-T146		R265	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q550	8-729-014-97	TRANSISTOR FA1L3Z-T1B (E2, E3, E51)		R266	1-216-845-11	METAL CHIP 100K 5%	1/10W
				R267	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q560	6-550-185-01	TRANSISTOR RT1P137P-TP-1		R268	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q561	8-729-027-43	TRANSISTOR DTC114EKA-T146		R269	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q580	8-729-120-28	TRANSISTOR 2SC1623-L5L6					
Q581	8-729-027-43	TRANSISTOR DTC114EKA-T146		R270	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q582	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R271	1-216-821-11	METAL CHIP 1K 5%	1/10W
				R272	1-216-837-11	METAL CHIP 22K 5%	1/10W
Q583	8-729-027-31	TRANSISTOR DTA124EKA-T146		R273	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q584	8-729-027-43	TRANSISTOR DTC114EKA-T146		R274	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q585	8-729-026-68	TRANSISTOR 2SD2525 (TP)					
		< RESISTOR >		R281	1-216-833-11	METAL CHIP 10K 5%	1/10W
R101	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	R282	1-216-839-11	METAL CHIP 33K 5%	1/10W
R102	1-216-833-11	METAL CHIP 10K 5%	1/10W	R285	1-216-833-11	METAL CHIP 10K 5%	1/10W
R103	1-216-818-11	METAL CHIP 560 5%	1/10W	R286	1-216-839-11	METAL CHIP 33K 5%	1/10W
R104	1-216-821-11	METAL CHIP 1K 5%	1/10W	R290	1-216-841-11	METAL CHIP 47K 5%	1/10W
R105	1-216-841-11	METAL CHIP 47K 5%	1/10W				
				R291	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R106	1-216-833-11	METAL CHIP 10K 5%	1/10W	R292	1-216-841-11	METAL CHIP 47K 5%	1/10W
R107	1-216-813-11	METAL CHIP 220 5%	1/10W	R293	1-216-841-11	METAL CHIP 47K 5%	1/10W
R116	1-216-809-11	METAL CHIP 100 5%	1/10W	R294	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R121	1-216-821-11	METAL CHIP 1K 5%	1/10W	R295	1-216-841-11	METAL CHIP 47K 5%	1/10W
R122	1-216-821-11	METAL CHIP 1K 5%	1/10W				
				R296	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R130	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	R297	1-216-841-11	METAL CHIP 47K 5%	1/10W
R131	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	R301	1-216-827-11	METAL CHIP 3.3K 5%	1/10W
R132	1-216-857-11	METAL CHIP 1M 5%	1/10W	R302	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R133	1-216-845-11	METAL CHIP 100K 5%	1/10W	R303	1-216-833-11	METAL CHIP 10K 5%	1/10W
R140	1-216-833-11	METAL CHIP 10K 5%	1/10W				
				R304	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R150	1-216-809-11	METAL CHIP 100 5%	1/10W	R305	1-216-841-11	METAL CHIP 47K 5%	1/10W
R151	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	R306	1-216-837-11	METAL CHIP 22K 5%	1/10W
R152	1-216-833-11	METAL CHIP 10K 5%	1/10W	R307	1-216-857-11	METAL CHIP 1M 5%	1/10W
R153	1-216-818-11	METAL CHIP 560 5%	1/10W	R308	1-216-809-11	METAL CHIP 100 5%	1/10W
R154	1-216-821-11	METAL CHIP 1K 5%	1/10W				
				R309	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R155	1-216-841-11	METAL CHIP 47K 5%	1/10W	R310	1-216-809-11	METAL CHIP 100 5%	1/10W
R156	1-216-833-11	METAL CHIP 10K 5%	1/10W	R311	1-216-864-11	SHORT CHIP 0	
R157	1-216-813-11	METAL CHIP 220 5%	1/10W	R312	1-216-809-11	METAL CHIP 100 5%	1/10W
				R319	1-216-825-11	METAL CHIP 2.2K 5%	1/10W

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R336	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R409	1-216-833-11	METAL CHIP	10K	5%	1/10W
R337	1-216-833-11	METAL CHIP	10K	5%	1/10W	R411	1-216-851-11	METAL CHIP	330K	5%	1/10W
R339	1-216-837-11	METAL CHIP	22K	5%	1/10W						
R340	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R412	1-216-845-11	METAL CHIP	100K	5%	1/10W
R341	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R413	1-216-864-11	SHORT CHIP	0		
						R417	1-216-833-11	METAL CHIP	10K	5%	1/10W
R342	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R418	1-216-813-11	METAL CHIP	220	5%	1/10W
R343	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R419	1-216-809-11	METAL CHIP	100	5%	1/10W
R344	1-216-819-11	METAL CHIP	680	5%	1/10W						
R345	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R420	1-216-821-11	METAL CHIP	1K	5%	1/10W
R346	1-216-819-11	METAL CHIP	680	5%	1/10W	R421	1-216-809-11	METAL CHIP	100	5%	1/10W
						R422	1-216-809-11	METAL CHIP	100	5%	1/10W
R347	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R423	1-216-809-11	METAL CHIP	100	5%	1/10W
R348	1-216-819-11	METAL CHIP	680	5%	1/10W	R424	1-216-809-11	METAL CHIP	100	5%	1/10W
R349	1-216-827-11	METAL CHIP	3.3K	5%	1/10W						
R351	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R425	1-216-809-11	METAL CHIP	100	5%	1/10W
R352	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R426	1-216-809-11	METAL CHIP	100	5%	1/10W
						R427	1-216-809-11	METAL CHIP	100	5%	1/10W
R353	1-216-833-11	METAL CHIP	10K	5%	1/10W	R428	1-216-809-11	METAL CHIP	100	5%	1/10W
R354	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R429	1-216-809-11	METAL CHIP	100	5%	1/10W
R355	1-216-841-11	METAL CHIP	47K	5%	1/10W						
R356	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R430	1-216-809-11	METAL CHIP	100	5%	1/10W
R357	1-216-833-11	METAL CHIP	10K	5%	1/10W	R431	1-216-809-11	METAL CHIP	100	5%	1/10W
						R432	1-216-809-11	METAL CHIP	100	5%	1/10W
R369	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R433	1-216-809-11	METAL CHIP	100	5%	1/10W
R370	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R434	1-216-809-11	METAL CHIP	100	5%	1/10W
R371	1-216-829-11	METAL CHIP	4.7K	5%	1/10W						
R372	1-216-833-11	METAL CHIP	10K	5%	1/10W	R438	1-216-809-11	METAL CHIP	100	5%	1/10W
R373	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R439	1-216-809-11	METAL CHIP	100	5%	1/10W
						R440	1-216-809-11	METAL CHIP	100	5%	1/10W
R374	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R441	1-216-809-11	METAL CHIP	100	5%	1/10W
R375	1-216-833-11	METAL CHIP	10K	5%	1/10W	R442	1-216-809-11	METAL CHIP	100	5%	1/10W
R376	1-216-829-11	METAL CHIP	4.7K	5%	1/10W						
R377	1-216-805-11	METAL CHIP	47	5%	1/10W	R443	1-216-809-11	METAL CHIP	100	5%	1/10W
R378	1-216-833-11	METAL CHIP	10K	5%	1/10W	R444	1-216-809-11	METAL CHIP	100	5%	1/10W
						R445	1-216-809-11	METAL CHIP	100	5%	1/10W
R379	1-216-797-11	METAL CHIP	10	5%	1/10W	R446	1-216-809-11	METAL CHIP	100	5%	1/10W
R380	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R447	1-216-809-11	METAL CHIP	100	5%	1/10W
R381	1-216-825-11	METAL CHIP	2.2K	5%	1/10W						
R382	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R448	1-216-809-11	METAL CHIP	100	5%	1/10W
R383	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R451	1-216-809-11	METAL CHIP	100	5%	1/10W
						R452	1-216-809-11	METAL CHIP	100	5%	1/10W
R384	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R463	1-216-833-11	METAL CHIP	10K	5%	1/10W
R385	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R469	1-216-809-11	METAL CHIP	100	5%	1/10W
R386	1-216-803-11	METAL CHIP	33	5%	1/10W						
R387	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R470	1-216-809-11	METAL CHIP	100	5%	1/10W
R388	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R472	1-216-809-11	METAL CHIP	100	5%	1/10W
						R475	1-216-809-11	METAL CHIP	100	5%	1/10W
R389	1-216-837-11	METAL CHIP	22K	5%	1/10W	R476	1-216-809-11	METAL CHIP	100	5%	1/10W
R390	1-216-833-11	METAL CHIP	10K	5%	1/10W	R477	1-216-809-11	METAL CHIP	100	5%	1/10W
R391	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R392	1-216-833-11	METAL CHIP	10K	5%	1/10W	R478	1-216-809-11	METAL CHIP	100	5%	1/10W
R393	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R484	1-216-809-11	METAL CHIP	100	5%	1/10W
						R485	1-216-809-11	METAL CHIP	100	5%	1/10W
R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R486	1-216-809-11	METAL CHIP	100	5%	1/10W
R395	1-216-841-11	METAL CHIP	47K	5%	1/10W	R487	1-216-809-11	METAL CHIP	100	5%	1/10W
R396	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R397	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R488	1-216-809-11	METAL CHIP	100	5%	1/10W
R399	1-216-833-11	METAL CHIP	10K	5%	1/10W	R489	1-216-809-11	METAL CHIP	100	5%	1/10W
						R490	1-216-809-11	METAL CHIP	100	5%	1/10W
R400	1-216-809-11	METAL CHIP	100	5%	1/10W	R492	1-216-815-11	METAL CHIP	330	5%	1/10W
R401	1-216-809-11	METAL CHIP	100	5%	1/10W						
R402	1-216-809-11	METAL CHIP	100	5%	1/10W	R492	1-216-864-11	SHORT CHIP	0 (GNX60)		
R403	1-216-809-11	METAL CHIP	100	5%	1/10W						
R404	1-216-809-11	METAL CHIP	100	5%	1/10W	R493	1-216-815-11	METAL CHIP	330	5%	1/10W
											(E3)
R405	1-216-809-11	METAL CHIP	100	5%	1/10W	R493	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R406	1-216-809-11	METAL CHIP	100	5%	1/10W						(AUS)
R407	1-216-809-11	METAL CHIP	100	5%	1/10W						

HCD-GNX60/GNX70/GX9900

MAIN MIC

Ref. No.	Part No.	Description	Remarks
R493	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (US, E2, E51, AR)	
R500	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R501	1-216-813-11	METAL CHIP 220 5% 1/10W	
R502	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R503	1-216-864-11	SHORT CHIP 0	
R505	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R508	1-216-833-11	METAL CHIP 10K 5% 1/10W (E2, E3, E51)	
R509	1-216-832-11	METAL CHIP 8.2K 5% 1/10W (GNX70: E2, E3, E51)	
R509	1-216-837-11	METAL CHIP 22K 5% 1/10W (GNX60: E2, E3, E51)	
R529	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R530	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R532	1-216-864-11	SHORT CHIP 0	
R538	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R540	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R541	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R542	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R543	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R544	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R545	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R546	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R547	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R548	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R551	1-216-842-11	METAL CHIP 56K 5% 1/10W (E2, E3, E51)	
R553	1-216-824-11	METAL CHIP 1.8K 5% 1/10W (E2, E3, E51)	
R560	1-216-826-11	METAL CHIP 2.7K 5% 1/10W	
R562	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R563	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R570	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R571	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R573	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R574	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R575	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R577	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R579	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R580	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R582	1-216-864-11	SHORT CHIP 0	
R585	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R586	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R587	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R591	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R592	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R593	1-216-821-11	METAL CHIP 1K 5% 1/10W (E2, E51, AR)	
R593	1-216-825-11	METAL CHIP 2.2K 5% 1/10W (GX9900)	
R593	1-216-829-11	METAL CHIP 4.7K 5% 1/10W (E3, AUS)	
< TRANSFORMER >			
T301	1-433-372-11	TRANSFORMER, BIAS OSCILLATION	

Ref. No.	Part No.	Description	Remarks
< VIBRATOR >			
X401	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	
X402	1-795-482-11	VIBRATOR, CERAMIC (16MHz)	

A-1089-466-A		MIC BOARD, COMPLETE *****	
< CAPACITOR >			
C1100	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1101	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1102	1-124-257-00	ELECT 2.2uF 20% 50V	
C1103	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C1104	1-115-416-11	CERAMIC CHIP 0.001uF 5% 25V	
C1105	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C1106	1-124-257-00	ELECT 2.2uF 20% 50V	
C1108	1-124-257-00	ELECT 2.2uF 20% 50V	
C1109	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C1110	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C1111	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C1112	1-124-261-00	ELECT 10uF 20% 50V	
C1113	1-124-261-00	ELECT 10uF 20% 50V	
C1114	1-124-464-11	ELECT 0.22uF 20% 50V	
C1115	1-126-961-11	ELECT 2.2uF 20% 50V	
C1116	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C1117	1-126-960-11	ELECT 1uF 20% 50V	
C1118	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C1119	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C1120	1-136-495-11	FILM 0.068uF 5% 50V	
C1121	1-124-589-11	ELECT 47uF 20% 16V	
C1122	1-124-589-11	ELECT 47uF 20% 16V	
C1123	1-136-495-11	FILM 0.068uF 5% 50V	
C1124	1-126-960-11	ELECT 1uF 20% 50V	
C1125	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C1126	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C1127	1-136-495-11	FILM 0.068uF 5% 50V	
C1128	1-126-957-11	ELECT 0.22uF 20% 50V	
C1129	1-126-957-11	ELECT 0.22uF 20% 50V	
C1130	1-136-155-00	FILM 0.015uF 5% 50V	
C1131	1-126-176-11	ELECT 220uF 20% 10V	
C1133	1-113-619-11	CERAMIC CHIP 0.47uF 10V	
C1139	1-126-160-11	ELECT 1uF 20% 50V	
C1142	1-216-864-11	SHORT CHIP 0	
< CONNECTOR >			
CN1102	1-785-329-11	PIN, CONNECTOR (LIGHT ANGLE) 3P	
< DIODE >			
D1100	8-719-988-61	DIODE 1SS355TE-17	
D1101	8-719-988-61	DIODE 1SS355TE-17	
D1102	8-719-976-99	DIODE DTZ5.1B	
< JUMPER RESISTOR >			
FB1100	1-216-864-11	SHORT CHIP 0	
FB1101	1-216-864-11	SHORT CHIP 0	

MIC

MOTOR (LD)

MOTOR (TB)

PA

Ref. No.	Part No.	Description	Remarks
		< IC >	
IC1100	8-759-710-97	IC NJM4565M-D	
IC1101	8-759-496-41	IC M65850FP-E1	
		< JACK >	
J1100	1-817-629-11	JACK (LARGE TYPE) (MIC 1)	
J1101	1-817-629-11	JACK (LARGE TYPE) (MIC 2)	
J1103	1-794-702-11	JACK, HEADPHONE (PHONES)	
		< JUMPER RESISTOR >	
JR1101	1-216-864-11	SHORT CHIP 0	
JR1102	1-216-864-11	SHORT CHIP 0	
JR1103	1-216-296-11	SHORT CHIP 0	
JR1104	1-216-296-11	SHORT CHIP 0	
JR1105	1-216-296-11	SHORT CHIP 0	
JR1106	1-216-864-11	SHORT CHIP 0	
JR1108	1-216-864-11	SHORT CHIP 0	
JR1113	1-216-296-11	SHORT CHIP 0	
JR1114	1-216-296-11	SHORT CHIP 0	
		< RESISTOR >	
R1100	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R1101	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R1102	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R1103	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R1104	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R1105	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R1106	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R1107	1-216-809-11	METAL CHIP 100 5% 1/10W	
R1108	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R1109	1-216-847-11	METAL CHIP 150K 5% 1/10W	
R1110	1-216-809-11	METAL CHIP 100 5% 1/10W	
R1111	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R1113	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1114	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1115	1-216-815-11	METAL CHIP 330 5% 1/10W	
R1116	1-216-815-11	METAL CHIP 330 5% 1/10W	
R1117	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1118	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1119	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1120	1-216-846-11	METAL CHIP 120K 5% 1/10W	
R1121	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1122	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1123	1-216-835-11	METAL CHIP 15K 5% 1/10W	
R1124	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R1125	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R1126	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R1132	1-216-864-11	SHORT CHIP 0	
		< VARIABLE RESISTOR >	
RV1100	1-227-452-11	RES, VAR, CARBON 50K (MIC LEVEL)	
RV1101	1-227-452-11	RES, VAR, CARBON 50K (ECHOLEVEL)	

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

Ref. No.	Part No.	Description	Remarks
	1-687-134-12	MOTOR (TB) BOARD	

		< CONNECTOR >	
CN742	1-784-727-11	CONNECTOR, FFC 5P	

A-1089-504-A		PA BOARD, COMPLETE (GNX60: E3, AUS)	
A-1089-530-A		PA BOARD, COMPLETE (GNX70: E3, AUS)	
A-1089-586-A		PA BOARD, COMPLETE (GX9900)	
A-1110-893-A		PA BOARD, COMPLETE (GNX60: E2, E51, AR)	
A-1110-912-A		PA BOARD, COMPLETE (GNX70: E2, E51)	

		< CAPACITOR >	
C600	1-126-963-11	ELECT 4.7uF 20% 50V	
C601	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C602	1-104-658-91	ELECT 100uF 20% 10V	
C604	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C605	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C608	1-126-965-91	ELECT 22uF 20% 50V	
C609	1-128-560-11	ELECT 22uF 20% 100V	
C610	1-128-560-11	ELECT 22uF 20% 100V	
C616	1-136-495-11	FILM 0.068uF 5% 50V	
C617	1-136-495-11	FILM 0.068uF 5% 50V	
C618	1-128-582-11	ELECT 10uF 20% 100V	
C619	1-128-582-11	ELECT 10uF 20% 100V	
C634	1-104-665-11	ELECT 100uF 20% 25V	
C635	1-104-665-11	ELECT 100uF 20% 25V	
C636	1-107-721-11	ELECT 4.7uF 20% 100V	
C637	1-107-721-11	ELECT 4.7uF 20% 100V	
C648	1-104-658-91	ELECT 100uF 20% 10V	
C649	1-126-964-11	ELECT 10uF 20% 50V	
C650	1-126-963-11	ELECT 4.7uF 20% 50V	
C651	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C652	1-104-658-91	ELECT 100uF 20% 10V	
C654	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C655	1-126-964-11	ELECT 10uF 20% 50V	
C656	1-127-815-11	ELECT 3300uF 20% 100V	
C657	1-130-777-00	MYLAR 0.1uF 5% 100V	
C658	1-127-811-11	ELECT 3300uF 20% 50V	
C659	1-130-777-00	MYLAR 0.1uF 5% 100V	
C660	1-131-992-91	CERAMIC CHIP 100000PF 35V	
C666	1-136-495-11	FILM 0.068uF 5% 50V	
C667	1-136-495-11	FILM 0.068uF 5% 50V	
C676	1-127-815-11	ELECT 3300uF 20% 100V	
C677	1-130-777-00	MYLAR 0.1uF 5% 100V	
C678	1-127-811-11	ELECT 3300uF 20% 50V	
C679	1-130-777-00	MYLAR 0.1uF 5% 100V	
C681	1-110-563-11	CERAMIC CHIP 0.068uF 10% 16V	
C682	1-110-563-11	CERAMIC CHIP 0.068uF 10% 16V	
C683	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C691	1-110-563-11	CERAMIC CHIP 0.068uF 10% 16V	
C692	1-110-563-11	CERAMIC CHIP 0.068uF 10% 16V	
C693	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
		< CONNECTOR >	
CN600	1-764-865-41	CONNECTOR, BOARD TO BOARD 13P	

HCD-GNX60/GNX70/GX9900

PA

Ref. No.	Part No.	Description	Remarks
CN601	1-784-031-41	CONNECTOR, BOARD TO BOARD 8P	
		< DIODE >	
D609	8-719-988-61	DIODE 1SS355TE-17	
D611	8-719-056-93	DIODE UDZ-TE-17-18B	
D612	8-719-056-93	DIODE UDZ-TE-17-18B	
D620	8-719-988-61	DIODE 1SS355TE-17	
D624	8-719-988-61	DIODE 1SS355TE-17	
D646	8-719-988-61	DIODE 1SS355TE-17	
D654	8-719-988-61	DIODE 1SS355TE-17	
D655	8-719-988-61	DIODE 1SS355TE-17	
D656	8-719-500-60	DIODE D5SBA20	
D658	8-719-500-60	DIODE D5SBA20	
D660	8-719-988-61	DIODE 1SS355TE-17	
D661	8-719-988-61	DIODE 1SS355TE-17	
D665	8-719-988-61	DIODE 1SS355TE-17 (GNX70/GX9900)	
D670	8-719-988-61	DIODE 1SS355TE-17	
		< IC >	
IC600	8-749-017-06	IC STK412-150	
		< JUMPER RESISTOR >	
JR600	1-216-296-11	SHORT CHIP 0	
JR603	1-216-296-11	SHORT CHIP 0	
		< TRANSISTOR >	
Q604	8-729-924-99	TRANSISTOR 2SC3722K-E	
Q606	8-729-821-00	TRANSISTOR 2SA1207	
Q610	8-729-924-99	TRANSISTOR 2SC3722K-E	
Q618	8-729-924-99	TRANSISTOR 2SC3722K-E	
Q628	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q629	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q630	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q634	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q640	8-729-802-80	TRANSISTOR 2SC3661	
Q641	8-729-802-80	TRANSISTOR 2SC3661	
Q644	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q647	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q648	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q666	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(GNX70/GX9900)
Q668	8-729-924-99	TRANSISTOR 2SC3722K-E	
Q682	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R600	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R601	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R602	1-216-817-11	METAL CHIP 470 5% 1/10W	(GNX70/GX9900)
R602	1-216-818-11	METAL CHIP 560 5% 1/10W	(GNX60)
R603	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R604	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R605	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R606	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R607	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R608	1-216-845-11	METAL CHIP 100K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R609	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R610	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R611	1-216-839-11	METAL CHIP 33K 5% 1/10W	
△R612	1-245-605-51	FUSIBLE 100 5% 1/4W	
R613	1-215-872-11	METAL OXIDE 3.3K 5% 1W	
R614	1-215-872-11	METAL OXIDE 3.3K 5% 1W	
△R615	1-245-605-51	FUSIBLE 100 5% 1/4W	
△R616	1-217-637-00	FUSIBLE 1 5% 1/4W	
R617	1-216-845-11	METAL CHIP 100K 5% 1/10W	
△R618	1-234-798-11	ENCAPSULATED COMPONENT	
R619	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R620	1-216-839-11	METAL CHIP 33K 5% 1/10W	
R621	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R622	1-245-711-31	CARBON 10 5% 1/2W	
R623	1-216-843-11	METAL CHIP 68K 5% 1/10W	
R624	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R625	1-216-826-11	METAL CHIP 2.7K 5% 1/10W	(US, E2, E51, AR)
R625	1-216-827-11	METAL CHIP 3.3K 5% 1/10W	(GNX60: E3, AUS)
R625	1-216-828-11	METAL CHIP 3.9K 5% 1/10W	(GNX70: E3, AUS)
R626	1-216-842-11	METAL CHIP 56K 5% 1/10W	
R627	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R628	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R629	1-216-830-11	METAL CHIP 5.6K 5% 1/10W	
R630	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R631	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R632	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R633	1-216-842-11	METAL CHIP 56K 5% 1/10W	
R634	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R635	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R636	1-215-891-11	METAL OXIDE 680 5% 2W	
R637	1-215-891-11	METAL OXIDE 680 5% 2W	
R638	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R639	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R640	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R641	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R642	1-216-811-11	METAL CHIP 150 5% 1/10W	
R643	1-216-811-11	METAL CHIP 150 5% 1/10W	
R644	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R645	1-216-833-11	METAL CHIP 10K 5% 1/10W	
△R646	1-260-086-31	CARBON 82 5% 1/2W	
R647	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R648	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R649	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R650	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R651	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R652	1-216-817-11	METAL CHIP 470 5% 1/10W	(GNX70/GX9900)
R652	1-216-818-11	METAL CHIP 560 5% 1/10W	(GNX60)
R653	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R654	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R655	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R656	1-216-849-11	METAL CHIP 220K 5% 1/10W	
R657	1-216-849-11	METAL CHIP 220K 5% 1/10W	
R658	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R660	1-216-837-11	METAL CHIP 22K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R661	1-216-837-11	METAL CHIP	22K	5%	1/10W	C907	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R662	1-216-811-11	METAL CHIP	150	5%	1/10W	C908	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
R663	1-216-811-11	METAL CHIP	150	5%	1/10W	C909	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
△ R665	1-260-086-31	CARBON	82	5%	1/2W (GNX70/GX9900)	C910	1-164-156-11	CERAMIC CHIP	0.1uF		25V
R666	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (GNX70/GX9900)	C916	1-164-156-11	CERAMIC CHIP	0.1uF		25V
R667	1-216-833-11	METAL CHIP	10K	5%	1/10W (GNX70/GX9900)	C917	1-164-156-11	CERAMIC CHIP	0.1uF		25V
						C918	1-119-941-91	ELECT	470uF	20%	6.3V
						C919	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C922	1-124-261-00	ELECT	10uF	20%	50V
△ R668	1-234-798-11	ENCAPSULATED COMPONENT				C923	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R669	1-216-821-11	METAL CHIP	1K	5%	1/10W	C924	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R670	1-216-839-11	METAL CHIP	33K	5%	1/10W	C925	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R671	1-216-845-11	METAL CHIP	100K	5%	1/10W	C926	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R672	1-245-711-31	CARBON	10	5%	1/2W						
R673	1-216-842-11	METAL CHIP	56K	5%	1/10W	C927	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R674	1-216-837-11	METAL CHIP	22K	5%	1/10W	C928	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R676	1-216-849-11	METAL CHIP	220K	5%	1/10W	C929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R677	1-216-849-11	METAL CHIP	220K	5%	1/10W	C930	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R678	1-216-845-11	METAL CHIP	100K	5%	1/10W	C931	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R681	1-245-711-31	CARBON	10	5%	1/2W	C932	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R682	1-216-821-11	METAL CHIP	1K	5%	1/10W	C933	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
R683	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C934	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R685	1-216-833-11	METAL CHIP	10K	5%	1/10W	C935	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R691	1-245-711-31	CARBON	10	5%	1/2W	C936	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R692	1-216-841-11	METAL CHIP	47K	5%	1/10W	C937	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R693	1-216-845-11	METAL CHIP	100K	5%	1/10W	C938	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R694	1-216-843-11	METAL CHIP	68K	5%	1/10W	C939	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R695	1-216-845-11	METAL CHIP	100K	5%	1/10W	C941	1-124-261-00	ELECT	10uF	20%	50V
R696	1-216-845-11	METAL CHIP	100K	5%	1/10W	C942	1-124-261-00	ELECT	10uF	20%	50V
R697	1-216-825-11	METAL CHIP	2.2K	5%	1/10W						
R698	1-216-845-11	METAL CHIP	100K	5%	1/10W	C944	1-124-261-00	ELECT	10uF	20%	50V
		< RELAY >				C945	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
RY646	1-755-500-11	RELAY				C946	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
RY665	1-755-500-11	RELAY (GNX70/GX9900)				C947	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
		< THERMISTOR >				C948	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
TH629	1-807-796-11	THERMISTOR				C949	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
TH630	1-807-796-11	THERMISTOR				C950	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
		< TERMINAL >				C951	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
TM600	1-780-001-21	TERMINAL BOARD (SPEAKER) (FRONT SPEAKER)				C952	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
TM601	1-780-001-21	TERMINAL BOARD (SPEAKER) (SURR SPEAKER) (GNX70/GX9900)				C953	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
*****						C954	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
A-1089-463-A	PANEL BOARD, COMPLETE					C955	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
	*****					C956	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
	< CAPACITOR >					C957	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C900	1-126-163-11	ELECT	4.7uF	20%	50V	C958	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C901	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C959	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C902	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C961	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C903	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C966	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C904	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C970	1-119-941-91	ELECT	470uF	20%	6.3V
C905	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C971	1-119-941-91	ELECT	470uF	20%	6.3V
C906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V						
						C972	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C973	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C977	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C978	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C979	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C980	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C981	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C982	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
						C983	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

HCD-GNX60/GNX70/GX9900

PANEL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< CONNECTOR >				< TRANSISTOR >			
* CN902	1-569-934-11	SOCKET, CONNECTOR 17P		Q900	8-729-027-23	TRANSISTOR DTA114EKA-T146	
CNS902	1-819-074-11	BOARD TO BOARD HEADER (8P)		Q901	8-729-027-56	TRANSISTOR DTC143TKA-T146	
< DIODE >				Q902	8-729-027-56	TRANSISTOR DTC143TKA-T146	
D901	8-719-988-61	DIODE 1SS355TE-17		Q903	8-729-027-23	TRANSISTOR DTA114EKA-T146	
D902	6-501-228-01	DIODE SELU5420E-STP15 (I/⏏)		Q904	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
D903	6-500-522-21	DIODE 10EDB40-TB3		Q905	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
D904	6-500-522-21	DIODE 10EDB40-TB3		Q906	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D905	8-719-056-83	DIODE UDZ-TE-17-6.8B		Q907	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D906	6-501-227-01	DIODE SELU5620S-STP15 (CD)		Q908	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D907	6-501-228-01	DIODE SELU5420E-STP15 (CD)		Q909	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D908	6-501-227-01	DIODE SELU5620S-STP15 (TUNER/BAND)		Q910	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D909	6-501-228-01	DIODE SELU5420E-STP15 (TUNER/BAND)		Q914	8-729-027-56	TRANSISTOR DTC114EKA-T146	
D910	6-501-227-01	DIODE SELU5620S-STP15 (TAPE A/B)		Q915	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D911	6-501-227-01	DIODE SELU5620S-STP15 (◀▶)		Q916	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D912	6-501-227-01	DIODE SELU5620S-STP15 (■)		Q917	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D913	6-501-227-01	DIODE SELU5620S-STP15 (TUNING/▶▶1+)		Q918	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D914	6-501-227-01	DIODE SELU5620S-STP15 (ALBUM/▶▶+)		Q919	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D915	6-501-228-01	DIODE SELU5420E-STP15 (◀▶)		Q920	8-729-027-43	TRANSISTOR DTC114EKA-T146	
D916	6-501-228-01	DIODE SELU5420E-STP15 (TAPE A/B)		< RESISTOR >			
D917	6-501-227-01	DIODE SELU5620S-STP15 (TV)		R900	1-216-833-11	METAL CHIP 10K 5%	1/10W
D918	6-501-228-01	DIODE SELU5420E-STP15 (TV)		R901	1-216-833-11	METAL CHIP 10K 5%	1/10W
D925	6-501-227-01	DIODE SELU5620S-STP15 (VIDEO/MD)		R902	1-216-833-11	METAL CHIP 10K 5%	1/10W
D926	6-501-228-01	DIODE SELU5420E-STP15 (VIDEO/MD)		R903	1-216-809-11	METAL CHIP 100 5%	1/10W
D927	6-501-227-01	DIODE SELU5620S-STP15 (I/⏏)		R904	1-216-809-11	METAL CHIP 100 5%	1/10W
D928	6-501-227-01	DIODE SELU5620S-STP15 (■)		R905	1-216-835-11	METAL CHIP 15K 5%	1/10W
D929	6-501-227-01	DIODE SELU5620S-STP15 (TUNING/◀◀ -)		R906	1-216-835-11	METAL CHIP 15K 5%	1/10W
D930	6-501-227-01	DIODE SELU5620S-STP15 (ALBUM/◀◀ -)		R907	1-216-835-11	METAL CHIP 15K 5%	1/10W
< JUMPER RESISTOR >				R908	1-216-809-11	METAL CHIP 100 5%	1/10W
FB901	1-216-864-11	SHORT CHIP 0		R909	1-216-833-11	METAL CHIP 10K 5%	1/10W
< FLUORESCENT INDICATOR >				R910	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
FL901	1-519-794-21	VACUUM FLUORESCENT DISPLAYS		R911	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
< IC >				R912	1-216-809-11	METAL CHIP 100 5%	1/10W
IC902	6-805-078-01	IC MB90M407PF-G-144E1		R914	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
IC903	6-600-210-01	IC RPM7240-H8		R915	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
IC904	6-705-678-01	IC NJM2760V-TE2		R916	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
< JUMPER RESISTOR/RESISTOR >				R917	1-216-845-11	METAL CHIP 100K 5%	1/10W
JR909	1-216-864-11	SHORT CHIP 0		R918	1-216-845-11	METAL CHIP 100K 5%	1/10W
JR910	1-216-864-11	SHORT CHIP 0		R919	1-216-845-11	METAL CHIP 100K 5%	1/10W
JR911	1-216-864-11	SHORT CHIP 0		R920	1-216-833-11	METAL CHIP 10K 5%	1/10W
JR912	1-216-296-11	SHORT CHIP 0		R922	1-216-857-11	METAL CHIP 1M 5%	1/10W
JR913	1-216-864-11	SHORT CHIP 0		R931	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
JR914	1-216-864-11	SHORT CHIP 0		R932	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
JR915	1-216-809-11	METAL CHIP 100 5%	1/10W	R933	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
JR916	1-216-864-11	SHORT CHIP 0		R939	1-216-821-11	METAL CHIP 1K 5%	1/10W
JR917	1-216-864-11	SHORT CHIP 0		R940	1-216-833-11	METAL CHIP 10K 5%	1/10W
JR918	1-216-864-11	SHORT CHIP 0		R941	1-216-809-11	METAL CHIP 100 5%	1/10W
JR921	1-216-296-11	SHORT CHIP 0		R942	1-216-809-11	METAL CHIP 100 5%	1/10W
JR922	1-216-296-11	SHORT CHIP 0		R943	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
				R944	1-216-805-11	METAL CHIP 47 5%	1/10W
				R945	1-216-839-11	METAL CHIP 33K 5%	1/10W
				R946	1-216-842-11	METAL CHIP 56K 5%	1/10W
				R947	1-216-821-11	METAL CHIP 1K 5%	1/10W
				R948	1-218-867-11	METAL CHIP 6.8K 0.5%	1/10W
				R949	1-216-821-11	METAL CHIP 1K 5%	1/10W
				R950	1-216-821-11	METAL CHIP 1K 5%	1/10W

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R951	1-216-830-11	METAL CHIP	5.6K	5%	1/10W	R1164	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R952	1-216-821-11	METAL CHIP	1K	5%	1/10W	R1165	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R953	1-216-821-11	METAL CHIP	1K	5%	1/10W	R1166	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R954	1-216-833-11	METAL CHIP	10K	5%	1/10W	R1167	1-216-814-11	METAL CHIP	270	5%	1/10W
R956	1-216-826-11	METAL CHIP	2.7K	5%	1/10W	R1168	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R957	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R1175	1-216-817-11	METAL CHIP	470	5%	1/10W
R958	1-216-817-11	METAL CHIP	470	5%	1/10W	R1176	1-216-819-11	METAL CHIP	680	5%	1/10W
R959	1-216-819-11	METAL CHIP	680	5%	1/10W	R1177	1-216-821-11	METAL CHIP	1K	5%	1/10W
R960	1-216-821-11	METAL CHIP	1K	5%	1/10W	R1178	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R961	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R1179	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R962	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R1180	1-216-814-11	METAL CHIP	270	5%	1/10W
R963	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R1183	1-216-808-11	METAL CHIP	82	5%	1/10W
R964	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R1186	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R965	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R1187	1-216-833-11	METAL CHIP	10K	5%	1/10W
R966	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R1188	1-216-821-11	METAL CHIP	1K	5%	1/10W
R967	1-216-833-11	METAL CHIP	10K	5%	1/10W	R1189	1-216-801-11	METAL CHIP	22	5%	1/10W
R968	1-216-835-11	METAL CHIP	15K	5%	1/10W	R1194	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R969	1-216-819-11	METAL CHIP	680	5%	1/10W	R1195	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R970	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	R1196	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R971	1-216-821-11	METAL CHIP	1K	5%	1/10W	R1197	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R972	1-216-819-11	METAL CHIP	680	5%	1/10W	R1198	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R973	1-216-819-11	METAL CHIP	680	5%	1/10W	R1199	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R974	1-216-819-11	METAL CHIP	680	5%	1/10W	< SWITCH >					
R975	1-216-817-11	METAL CHIP	470	5%	1/10W	S900	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)			
R977	1-216-821-11	METAL CHIP	1K	5%	1/10W	S901	1-762-875-21	SWITCH, KEYBOARD (MP3 BOOSTER)			
R978	1-216-817-11	METAL CHIP	470	5%	1/10W	S902	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)			
R980	1-216-821-11	METAL CHIP	1K	5%	1/10W	S903	1-762-875-21	SWITCH, KEYBOARD			
R981	1-216-819-11	METAL CHIP	680	5%	1/10W			(DIRECTION/TUNER MEMORY)			
R982	1-216-819-11	METAL CHIP	680	5%	1/10W	S904	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)			
R983	1-216-819-11	METAL CHIP	680	5%	1/10W	S910	1-762-875-21	SWITCH, KEYBOARD (VIDEO/MD)			
R984	1-216-819-11	METAL CHIP	680	5%	1/10W	S911	1-762-875-21	SWITCH, KEYBOARD (TV)			
R985	1-216-819-11	METAL CHIP	680	5%	1/10W	S912	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)			
R986	1-216-819-11	METAL CHIP	680	5%	1/10W	S913	1-762-875-21	SWITCH, KEYBOARD (◀▶)			
R987	1-216-819-11	METAL CHIP	680	5%	1/10W	S914	1-762-875-21	SWITCH, KEYBOARD (⏮⏭)			
R988	1-216-819-11	METAL CHIP	680	5%	1/10W	S915	1-762-875-21	SWITCH, KEYBOARD (■)			
R989	1-216-819-11	METAL CHIP	680	5%	1/10W	S916	1-479-229-11	ROTARY ENCODER (TUNING)			
R990	1-216-819-11	METAL CHIP	680	5%	1/10W	S917	1-771-963-11	SWITCH, ROTARY (ALBUM)			
R991	1-216-819-11	METAL CHIP	680	5%	1/10W	S918	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)			
R992	1-216-819-11	METAL CHIP	680	5%	1/10W	S919	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
R993	1-216-819-11	METAL CHIP	680	5%	1/10W	S920	1-762-875-21	SWITCH, KEYBOARD (CD)			
R994	1-216-819-11	METAL CHIP	680	5%	1/10W	S925	1-762-875-21	SWITCH, KEYBOARD (⏮/⏭)			
R995	1-216-819-11	METAL CHIP	680	5%	1/10W	S927	1-762-875-21	SWITCH, KEYBOARD (AMP MENU)			
R996	1-216-819-11	METAL CHIP	680	5%	1/10W	S928	1-762-875-21	SWITCH, KEYBOARD (ILLUMINATION)			
R997	1-216-819-11	METAL CHIP	680	5%	1/10W	S929	1-762-875-21	SWITCH, KEYBOARD (SURR SPEAKER MODE)			
R999	1-216-864-11	SHORT CHIP	0			S930	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
R1112	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	S931	1-762-875-21	SWITCH, KEYBOARD (SOUND FLASH)			
R1135	1-216-819-11	METAL CHIP	680	5%	1/10W	S932	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
R1136	1-216-819-11	METAL CHIP	680	5%	1/10W	S970	1-418-725-51	ENCODER, ROTARY (12 TYPE) (VOLUME)			
R1137	1-216-819-11	METAL CHIP	680	5%	1/10W	< VIBRATOR >					
R1141	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	X901	1-781-282-51	VIBRATOR, CERAMIC (4MHz)			
R1142	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	*****					
R1143	1-216-823-11	METAL CHIP	1.5K	5%	1/10W						
R1147	1-216-823-11	METAL CHIP	1.5K	5%	1/10W						
R1148	1-216-823-11	METAL CHIP	1.5K	5%	1/10W						
R1160	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W						
R1161	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R1162	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W						
R1163	1-216-823-11	METAL CHIP	1.5K	5%	1/10W						

HCD-GNX60/GNX70/GX9900

- PRIMARY
- SENSOR
- SURROUND
- SW
- TRANS

Ref. No.	Part No.	Description	Remarks
	A-1089-510-A	PRIMARY BOARD, COMPLETE (E2, E3, E51)	
	A-1089-525-A	PRIMARY BOARD, COMPLETE (US, AUS)	
	A-1113-478-A	PRIMARY BOARD, COMPLETE (AR)	

< CAPACITOR >			
C1201	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C1202	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C1204	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C1206	1-126-916-11	ELECT	1000uF 20% 6.3V
< CONNECTOR >			
CN1200	1-785-329-11	PIN, CONNECTOR (LIGHT ANGLE) 3P	
CN1202	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P	
CN1204	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P	
CN1204	1-568-106-11	PIN, CONNECTOR (3.96mm PITCH) 4P	(US, AUS)
			(E2, E3, E51, AR)
< DIODE >			
D1200	8-719-988-61	DIODE 1SS355TE-17	
< JUMPER RESISTOR >			
JR1202	1-216-864-11	SHORT CHIP	0
< COIL >			
L1201	1-410-666-31	INDUCTOR	18uH
< TRANSISTOR >			
Q1200	8-729-120-28	TRANSISTOR	2SC1623-L5L6
< RESISTOR >			
R1200	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1201	1-216-845-11	METAL CHIP	100K 5% 1/10W
< RELAY >			
△ RY1200	1-755-299-11	RELAY	
< SWITCH >			
△ S1200	1-771-291-31	SWITCH, POWER (VOLTAGE SELECTOR)	(E2, E3, E51)

	1-687-132-12	SENSOR BOARD	

< CONNECTOR >			
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P	
< IC >			
IC731	6-600-022-01	IC RPI-576	

	A-1089-321-A	SURROUND BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remarks
	1-687-669-12	SW BOARD	*****
	1-786-514-11	SWITCH, LEVER (SLIDE) (LEVEL SW)	*****
	A-1089-507-A	TRANS BOARD, COMPLETE (GNX60/GNX70)	
	A-1089-588-A	TRANS BOARD, COMPLETE (GX9900)	*****
	< CAPACITOR >		
C1262	1-126-964-11	ELECT 10uF	20% 50V
C1263	1-126-968-11	ELECT 100uF	20% 50V
C1292	1-128-576-11	ELECT 100uF	20% 63V
	< CONNECTOR >		
* CN1212	1-564-522-11	PLUG, CONNECTOR 7P	
* CN1213	1-564-521-11	PLUG, CONNECTOR 6P	
	< DIODE >		
D1264	8-719-071-83	DIODE HZU36BTRF	
D1292	6-500-522-21	DIODE 10EDB40-TB3	
	< FUSE HOLDER >		
FH1241	1-533-217-41	HOLDER, FUSE	
FH1242	1-533-217-41	HOLDER, FUSE	
FH1251	1-533-217-41	HOLDER, FUSE	
FH1252	1-533-217-41	HOLDER, FUSE	
FH1261	1-533-217-41	HOLDER, FUSE	
FH1262	1-533-217-41	HOLDER, FUSE	
FH1271	1-533-217-41	HOLDER, FUSE	
FH1272	1-533-217-41	HOLDER, FUSE	
FH1281	1-533-217-41	HOLDER, FUSE	
FH1282	1-533-217-41	HOLDER, FUSE	
	< TRANSISTOR >		
Q1264	8-729-024-93	TRANSISTOR 2SB1565E	
	< RESISTOR >		
△ R1233	1-219-237-11	SOLID 3.3M	20% 1/2W (GX9900)
R1262	1-216-832-11	METAL CHIP 8.2K	5% 1/10W
R1263	1-216-832-11	METAL CHIP 8.2K	5% 1/10W
R1264	1-216-821-11	METAL CHIP 1K	5% 1/10W
△ R1292	1-219-124-11	FUSIBLE 0.68	5% 1/4W

	MISCELLANEOUS		

△	1-569-007-11	ADAPTOR, CONVERSION 2P (E3)	
△	1-569-008-21	ADAPTOR, CONVERSION 2P (E51)	
5	1-693-671-11	TUNER (TM-10E) (GNX60/GNX70)	
5	1-693-672-11	TUNER (TM-10U) (GX9900)	
△ 7	1-468-737-21	POWER, SWITCHING	
8	1-824-048-12	WIRE (FLAT TYPE) (27 CORE)	
65	1-828-992-11	WIRE (FLAT TYPE) (17 CORE)	
71	1-797-165-11	DECK, MECHANICAL (CMAT5Z2)	
106	1-828-956-11	WIRE (FLAT TYPE) (9 CORE)	
△ 107	1-777-071-53	CORD, POWER (E51)	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
△ 107	1-783-820-11	CORD, POWER (GX9900)		△ F1261	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V) (GNX60/GNX70)	
△ 107	1-783-941-12	CORD, POWER (AR)					
△ 107	1-827-295-22	CORD, POWER (AUS)		△ F1271	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V) (GX9900)	
△ 107	1-829-627-31	POWER-SUPPLY CORD (E2, E3)		△ F1271	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V) (GNX60/GNX70)	
109	1-828-972-11	WIRE (FLAT TYPE) (13 CORE)		△ F1281	1-533-451-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/125V) (GX9900)	
152	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)		△ F1281	1-533-470-12	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V) (GNX60/GNX70)	
226	1-827-992-11	WIRE (FLAT TYPE) (16 CORE)		FL901	1-519-794-21	VACUUM FLUORESCENT DISPLAYS	
△ 229	8-820-244-01	OPTICAL PICK-UP KSM-215DCP/C2NP		M741	A-4723-963-A	MOTOR ASSY, TABLE	
230	1-471-035-11	MAGNET ASSY		M751	A-4737-553-A	MOTOR ASSY, LOADING	
△ F1241	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V) (GX9900)		M891	1-763-372-11	FAN, DC	
△ F1241	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V) (GNX60/GNX70)		RE701	1-477-680-12	ENCODER, ROTARY	
△ F1251	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V) (GX9900)		△ T1200	1-443-542-11	POWER TRANSFORMER (GNX60)	
△ F1251	1-576-655-12	FUSE, GLASS TUBE (DIA. 5) (T8AL/250V) (GNX60/GNX70)		△ T1200	1-443-543-11	POWER TRANSFORMER (GNX70)	
△ F1261	1-576-537-12	FUSE, GLASS TUBE (DIA.5) (T8AL/125V) (GX9900)		△ T1200	1-443-544-11	POWER TRANSFORMER (GX9900)	

REVISION HISTORY

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