

CDP-S3

SERVICE MANUAL

Ver 1.0 2001.04

*AEP Model
UK Model
E Model
Australian Model*



CDP-S3 is the CD player section
in MHC-S7AV or MHC-S3.

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM63B-30BD60
Base Unit Name	BU-30BD60
Optical Pick-up Name	OP Assy (A-MAX.3)

SPECIFICATIONS

System	Compact disc and digital audio system
Laser	Semiconductor laser ($\lambda=780$ nm) Emission duration: continuous
Frequency response	2 Hz – 20 kHz (± 0.5 dB)
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
OPTICAL OUT (Square optical connector jack, rear panel)	
Dimensions (w/h/d)	Approx. 280 x 108 x 330 mm
Mass	Approx. 2.7 kg

Design and specifications are subject to change
without notice.

COMPACT DISC PLAYER

9-873-831-11
2001D0500-1
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Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

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

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveforms is output three times.

Notes on chip component replacement

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

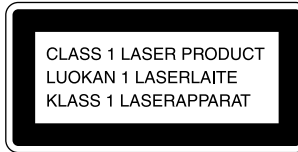
Flexible Circuit Board Repairing

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

CAUTION

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

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



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

The following caution label is located inside the unit.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \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.

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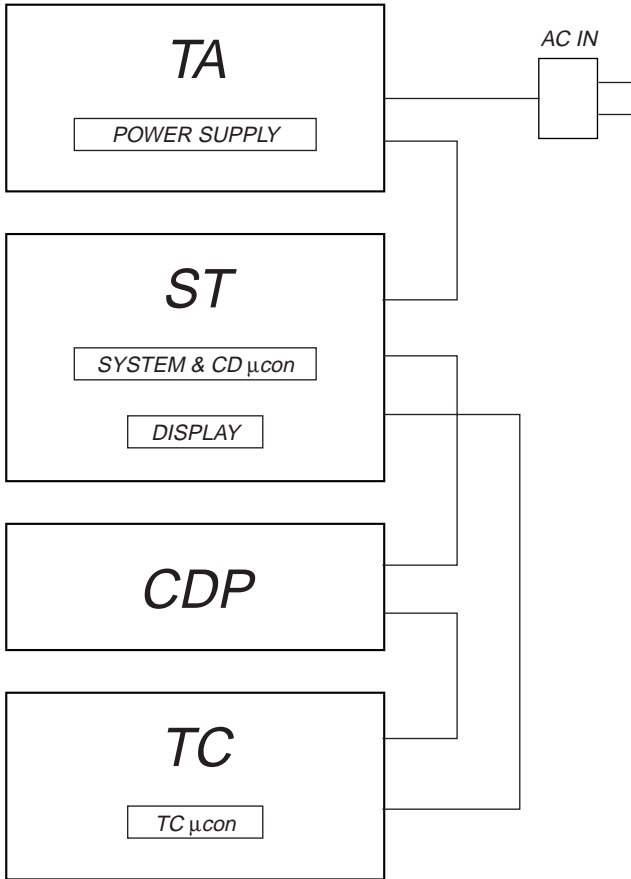
SECTION 1 SERVICING NOTES

This set is a component of the MHC-S7AV or MHC-S3. The MHC-S7AV or MHC-S3 system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.

In performing the repair, connect all components with the system cables.

Note: The precaution to the users is described on the label stuck on the back panel (CD player) and in the troubleshooting section in the Operation Manual.

System Configuration:



CD-TEXT TEST DISC

This unit is able to display the test data (character information) written in the CD on its fluorescent indicator tube.

The CD-TEXT TEST DISC (TGCS-313:4-989-366-01) is used for checking the display.

To check, perform the following procedure.

Checking Method:

1. Press the button to turn the power on, set the disc to the disc table with the "test disc" label facing up, and chuck the disc.
2. Press the button to set CD function, and press the button to playback the disc.
3. The following will be displayed on the liquid crystal display.
Display : 1KHZ/0DB/L R
4. Pressing the or button, select the track. The text data of each track will be displayed.
For details of the displayed contents for each track, refer to "Table 1 : CD-TEXT TEST DISC TEXT Data Contents".

Restrictions in CD-TEXT Display

In this unit, some special characters will not be displayed properly. These will be displayed as a space or a character resembling it.

Table 1 : CD-TEXT TEST DISC TEXT Data Contents (TRACKS No. 1 to 20:Normal Characters)

TRACK No.	Displayed Contents
1	1kHz/0dB/L&R
2	20Hz/0dB/L&R
3	40Hz/0dB/L&R
4	100Hz/0dB/L&R
5	200Hz/0dB/L&R
6	500Hz/0dB/L&R
7	1kHz/0dB/L&R
8	5kHz/0dB/L&R
9	7kHz/0dB/L&R
10	10kHz/0dB/L&R
11	16kHz/0dB/L&R
12	18kHz/0dB/L&R
13	20kHz/0dB/L&R
14	1kHz/0dB/L&R
15	1kHz/-1dB/L&R
16	1kHz/-3dB/L&R
17	1kHz/-6dB/L&R
18	1kHz/-10dB/L&R
19	1kHz/-20dB/L&R
20	1kHz/-60dB/L&R

Note: Track No. 21 to 99 are not displayed.

SECTION 2 GENERAL

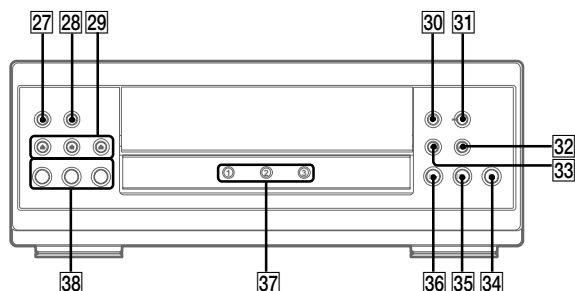
This section is extracted from instruction manual.

Parts Identification

The items are arranged in alphabetical order.

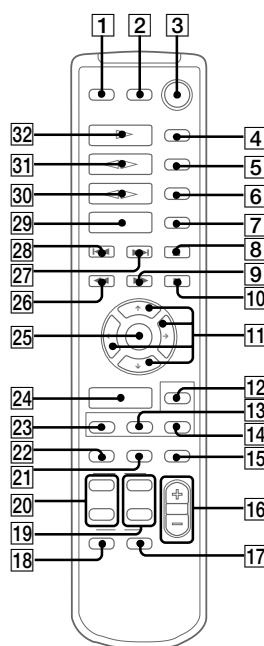
Refer to the pages indicated in parentheses () for details.

Main unit



- DISC 1-3 **38** (14, 15, 21)
- DISC 1-3 indicators **37**
- DISC 1-3 ▲ (eject) **29** (14)
- PLAY MODE **27** (14, 15, 21)
- REPEAT **28** (14)
- ▶ (play) **36** (14, 15)
- ⏸ (pause) **35** (14)
- (stop) **34** (14, 20)
- ⏮ (go back) **33** (14, 15, 21)
- ⏭ (go forward) **32** (14, 15, 21)
- ⏪ (rewind) **30** (14)
- ⏩ (fast forward) **31** (14)

Remote Control



- CD ▷ **32** (14, 15)
- CHECK **5** (15)
- CLEAR **6** (15)
- CLOCK/TIMER SELECT **17** (30)
- CLOCK/TIMER SET **18** (13, 21, 29)
- DBFB **15** (23)
- DISPLAY **22** (13, 16, 18, 29, 35)
- D.SKIP **4** (14)
- ENTER **25** (10, 12, 13, 15, 17, 18, 21, 22, 26-30)
- EQ **13** (27)
- EQ ON/OFF **14** (10, 28)
- FUNCTION **24** (10, 14, 15, 20, 21, 31)
- GROOVE **21** (23)
- SET UP **12** (10, 12, 26, 28, 29)
- SLEEP **7** (29)
- SUR **23** (25)
- TAPE A ◀▶ **31** (19, 35)
- TAPE B ◀▶ **30** (19, 20, 35)
- TUNER/BAND **29** (17)
- TUNING + **9** (17)
- TUNING - **26** (17)
- TV CH +/- **19**
- TV VOL +/- **20**
- TV I/⏻ **2**
- TV/VIDEO **1**
- VOL +/- **16**

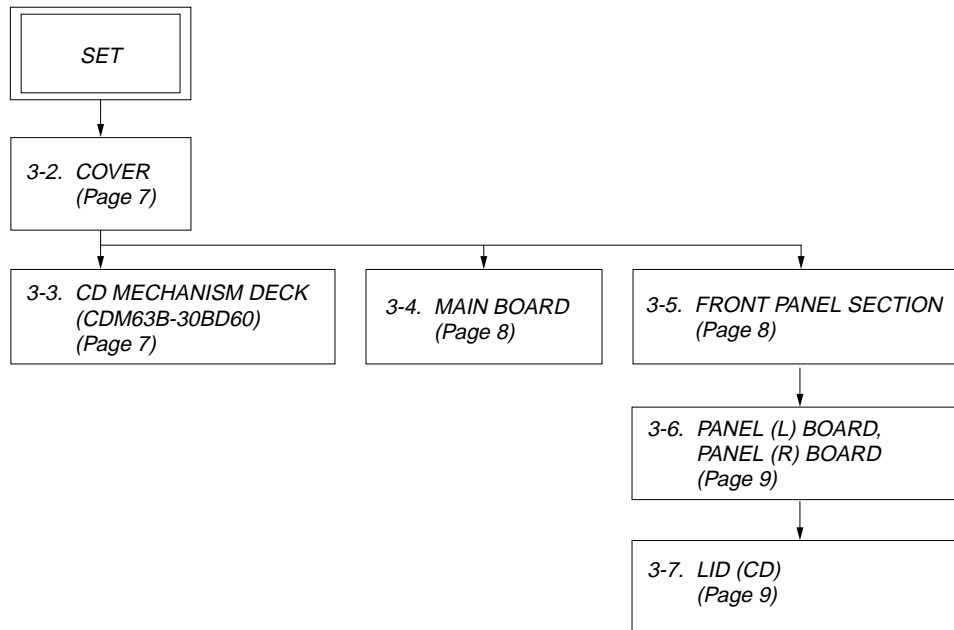
BUTTON DESCRIPTIONS

- I/⏻ (power) **3**
- ⏸ (pause) **10**
- (stop) **8**
- ⏮ (go back) **28**
- ⏭ (go forward) **27**
- ⏪ (rewind) **26**
- ⏩ (fast forward) **9**
- ↑/↓/←/→ **11**

SECTION 3 DISASSEMBLY

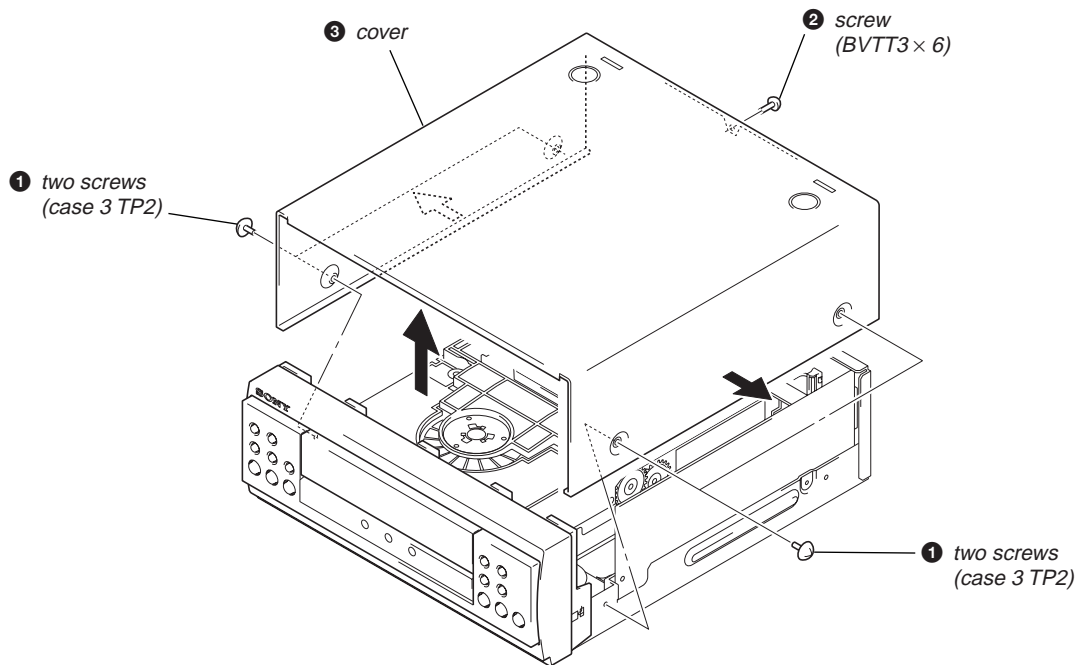
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

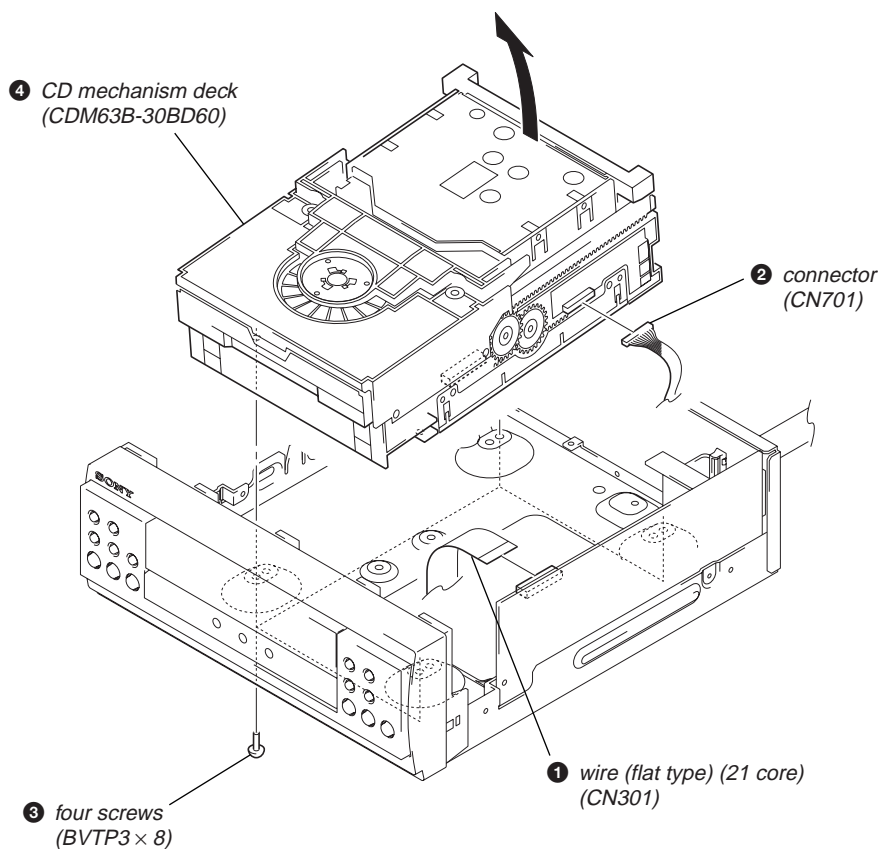


Note: Follow the disassembly procedure in the numerical order given.

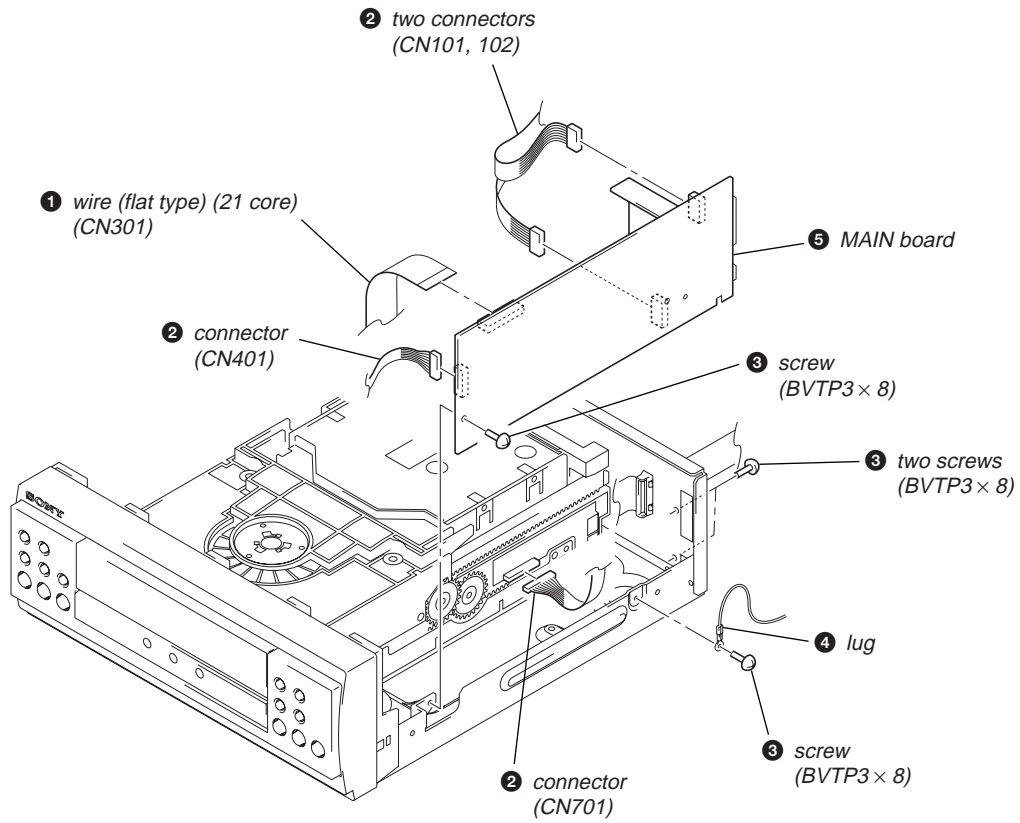
3-2. COVER



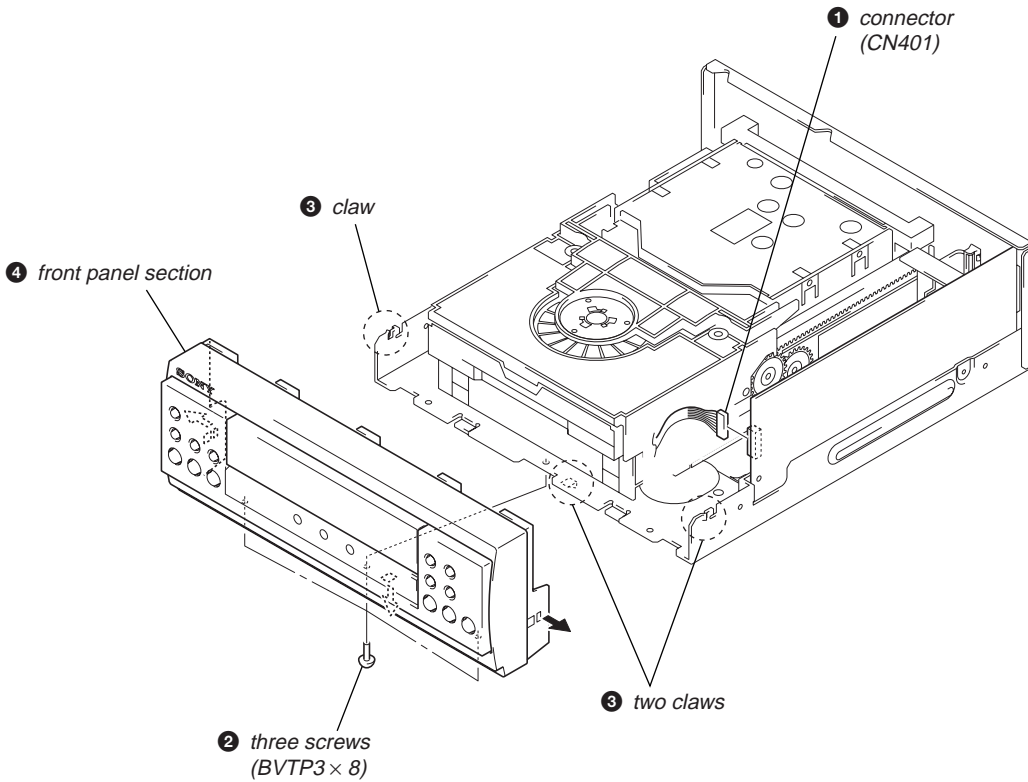
3-3. CD MECHANISM DECK (CDM63B-30BD60)



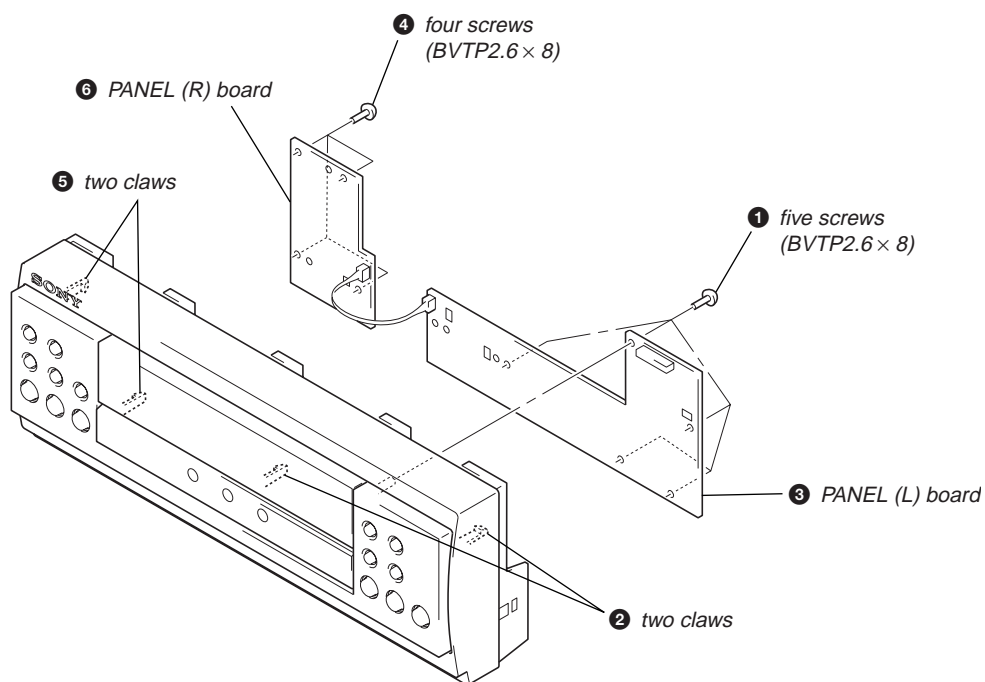
3-4. MAIN BOARD



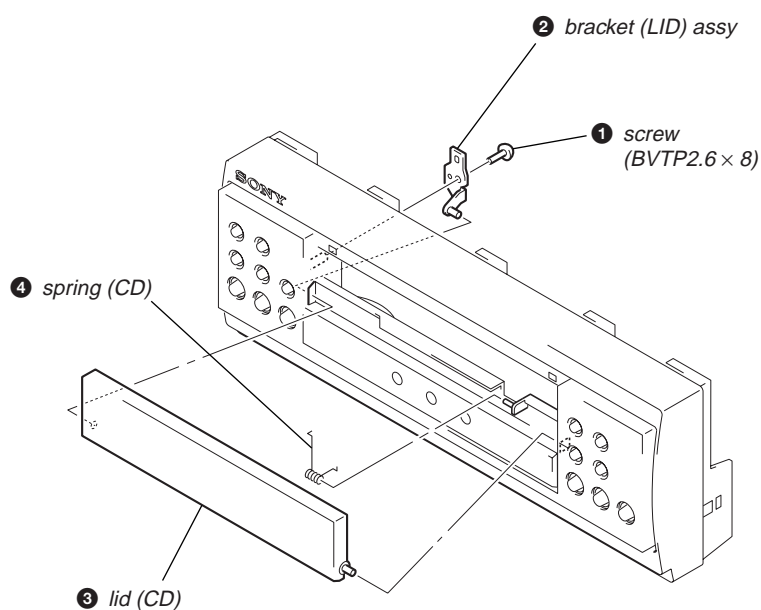
3-5. FRONT PANEL SECTION



3-6. PANEL (L) BOARD, PANEL (R) BOARD



3-7. LID (CD)



SECTION 4 TEST MODE

Note: Use flowing buttons in the test mode.

no mark : Button of CD unit (CDP-S3)



*1 : Button of amplifier unit (TA-S7AV or TA-S3)

*2 : Button of tuner unit (ST-S5 or ST-S3)

[CD Delivery Mode]

- 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 the *1 button to turn the power on.
2. Turn the **FILE SELECT** *1 knob to set the CD function.
3. While pressing the **EQ ON/OFF** *1 button, press the *1 button.
4. The message "LOCK" is displayed on the fluorescent indicator tube of tuner unit and turn the power off automatically, and the CD delivery mode is set.


[GC Test Mode]

Enter the GC Test Mode

Procedure 1:

1. Press the *1 button to turn the power on.
2. While pressing the both **PLAY MODE** and  buttons, press the  (DISC 1) button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Procedure 2:

1. Press the *1 button to turn the power on.
2. While pressing the both **STEREO/MONO** *2 and **CINEMA STUDIO C** *1 buttons, press the **CLOCK/TIMER** *2 button.
3. LEDs and fluorescent indicator tube are all turned on of all units.

Version Display Mode

Procedure:

1. Enter the GC test mode.
2. Each time the **DISC 1** or **TUNER MEMORY** *2 button is pressed, microcomputer or mechanism deck version is displayed of each unit.
3. Press the **DISC 3** or **TUNING +** *2 button to detail is displayed the version.

Key Check Mode

Procedure:

1. Enter the GC test mode.
2. Press the **DISC 2** or **TUNING -** *2 button to set the key check mode, and displays "K 0 J 0 V 0" on the fluorescent indicator tube of tuner unit.
3. All buttons are pressed of CD unit, all LEDs are blinking of CD unit. (not change the display of fluorescent indicator tube)






Releasing the GC Test Mode

To release from this mode, press three buttons in the same manner as entering this mode or disconnect the power cord.

[CD Service Mode]

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

Procedure:



1. Press the *1 button to turn the power on.
2. Turn the **FILE SELECT** *1 knob to set the CD function.
3. While pressing the both **PLAY MODE** and  buttons, press the  button.
4. Set to the CD service mode.
5. With the CD in stop status, press the  button to move the optical pick-up to outside track, or press the  button to inside track.
6. To release from this mode, perform as follows.
 - 1) Move the optical pick-up to the most inside track.
 - 2) Disconnect the power cord.

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

[CD Cancellation Mode of Repeat Limitation]

- This mode can cancel the CD repeat limitation (5 times).

Procedure:

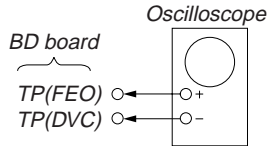
1. Press the *1 button to turn the power on.
2. Turn the **FILE SELECT** *1 knob to set the CD function.
3. While pressing the both **PLAY MODE** and  buttons, press the **REPEAT** button.
4. CD repeat limitation is canceled.
5. To release this mode, disconnect the power cord.

SECTION 5 ELECTRICAL ADJUSTMENTS

Note :

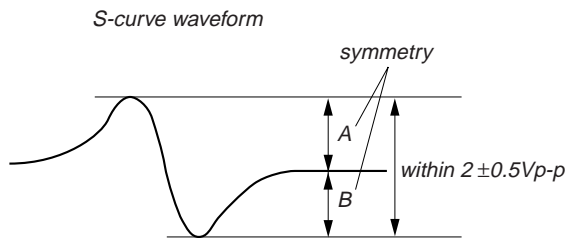
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use LUV-P01 (4-999-032-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



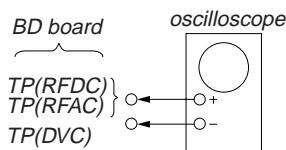
Procedure :

1. Connect an oscilloscope to TP (FEO).
2. Connect between TP (FEO) and TP (DVC) ($\approx 1.65\text{ V}$) by lead wire.
3. Turn Power switch on.
4. Load a disc (LUV-P01) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
5. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $2 \pm 0.5\text{ Vp-p}$.



6. After check, remove the lead wire connected in step 2.
- Note :**
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
 - Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

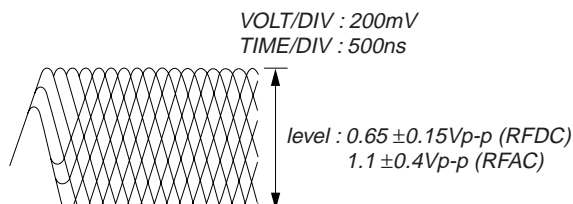


Procedure :

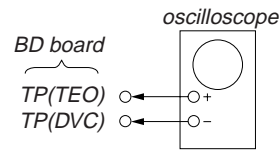
1. Connect an oscilloscope CH1 to TP (RFDC) and CH2 to TP (RFAC).
2. Turn Power switch on.
3. Load a disc (LUV-P01) and playback.
4. Confirm that oscilloscope waveform is clear and check if RF signal level is correct or not.

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

RF signal waveform

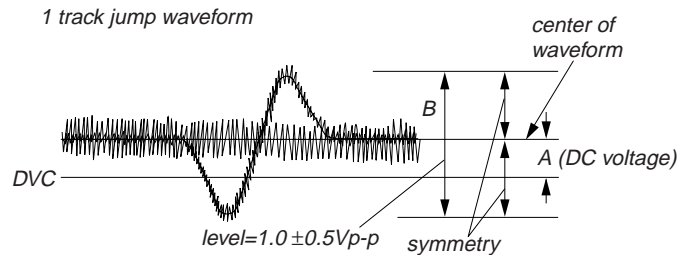


E-F Balance (1 Track jump) Check



Procedure :

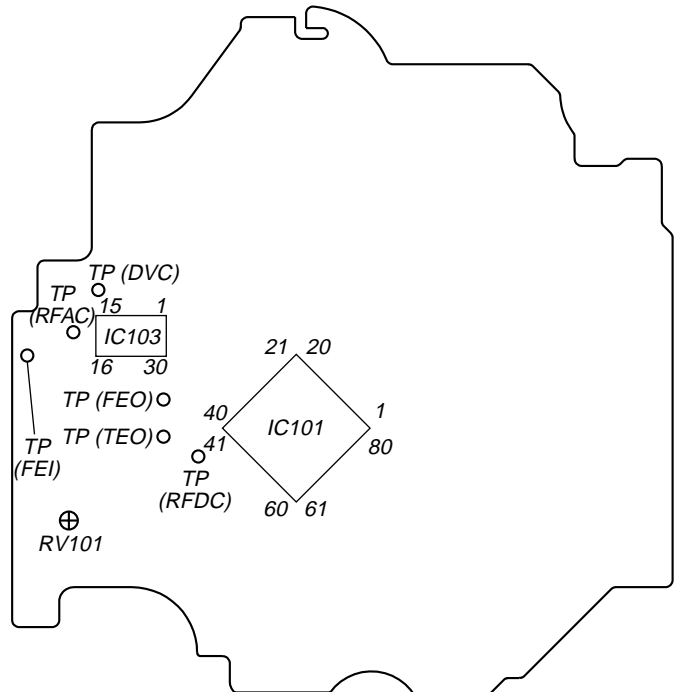
1. Connect an oscilloscope to TP (TEO) and TP (DVC).
2. Turn Power switch on.
3. Load a disc (LUV-P01) and playback the number nine track.
4. Press the button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.



6. Adjust RV101 on the BD board so that the center of waveform becomes the same voltage of DVC. (i.e. A=0V)

Adjustment Location:

[BD BOARD] (Conductor Side)

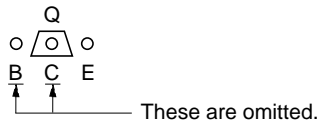
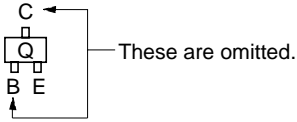


SECTION 6 DIAGRAMS

6-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS (In addition to this, the necessary note is printed in each block)

Note on Printed Wiring Boards:

- ○ — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- △ : internal component.
- ■ : Pattern from the side which enables seeing.
- Indication of transistor.



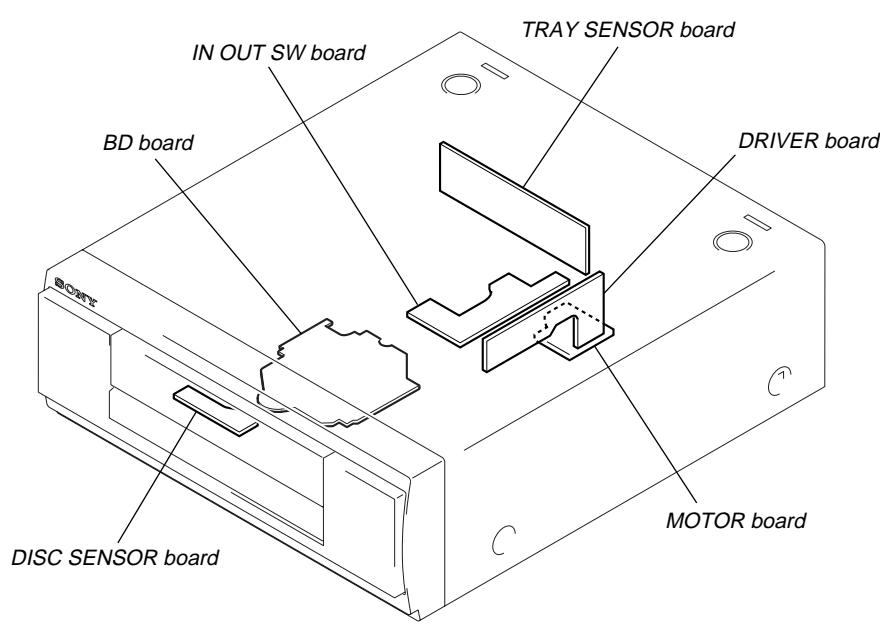
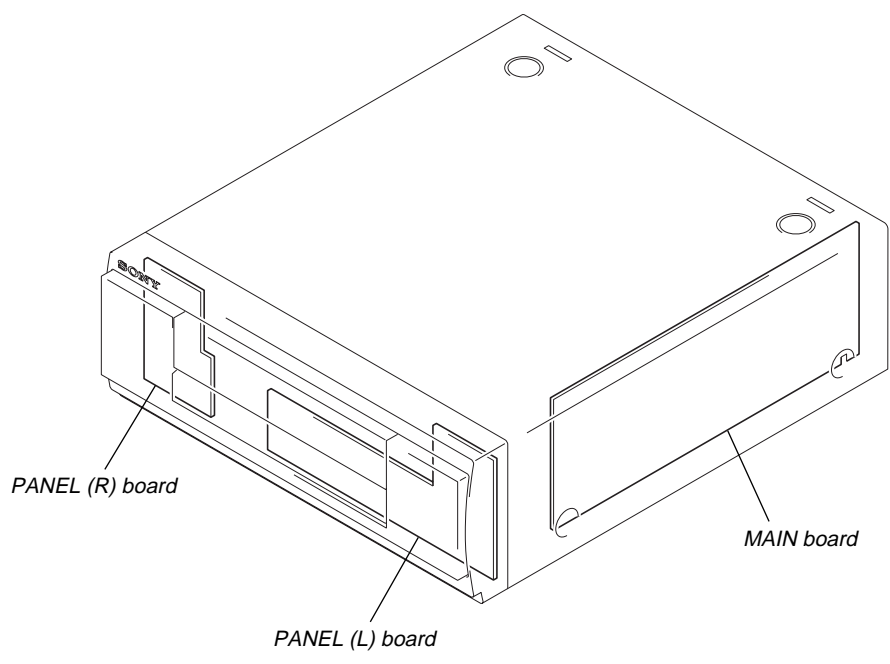
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{ W}$ or less unless otherwise specified.
- △ : internal component.
- □ : panel designation.

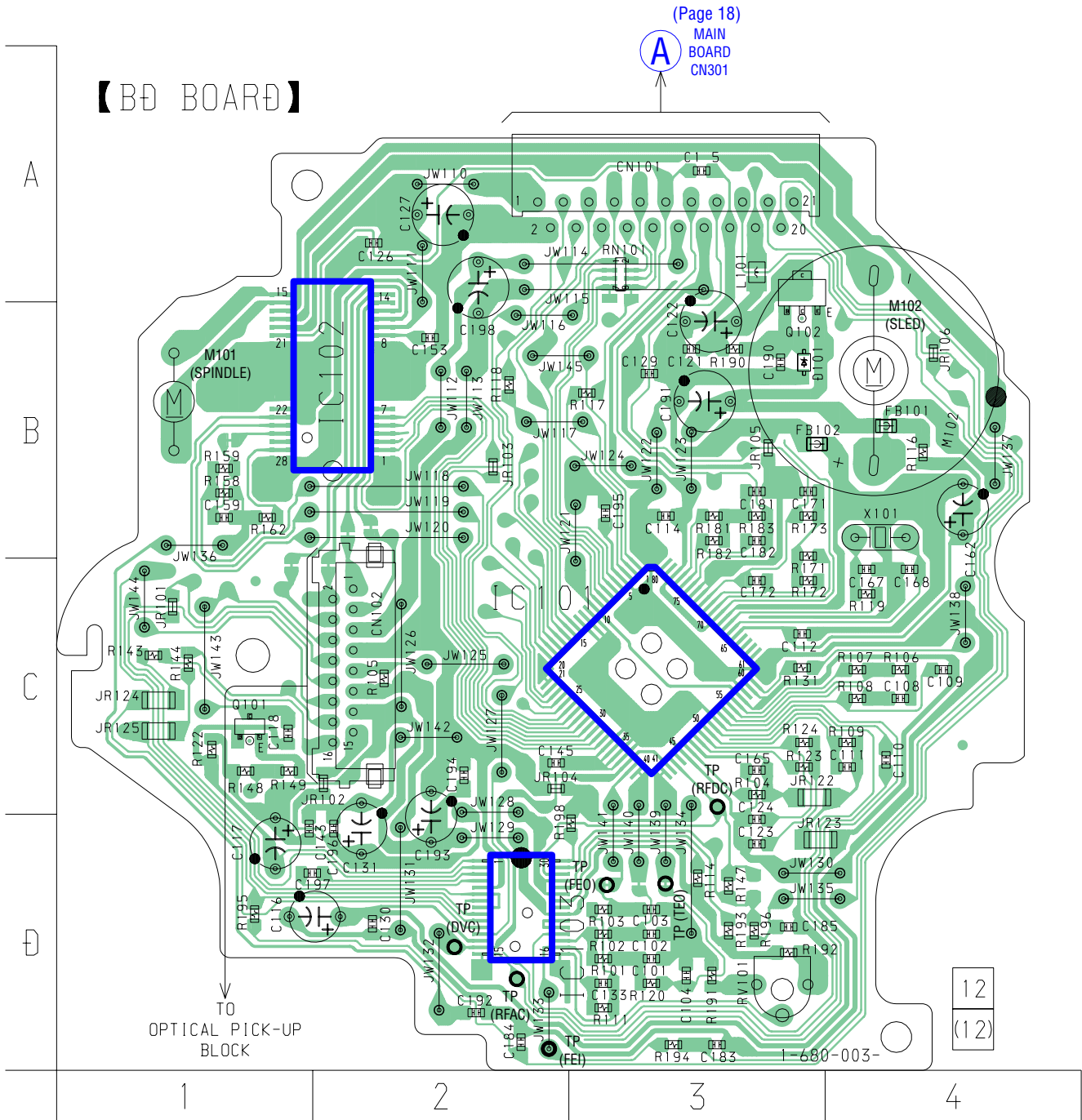
Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

- — : B+ Line.
- Voltages are taken with a VOM (Input impedance $10\text{ M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ⇨ : CD PLAY

• **Circuit Boards Location**



6-2. PRINTED WIRING BOARD – BD Section – • See page 13 for Circuit Boards Location.

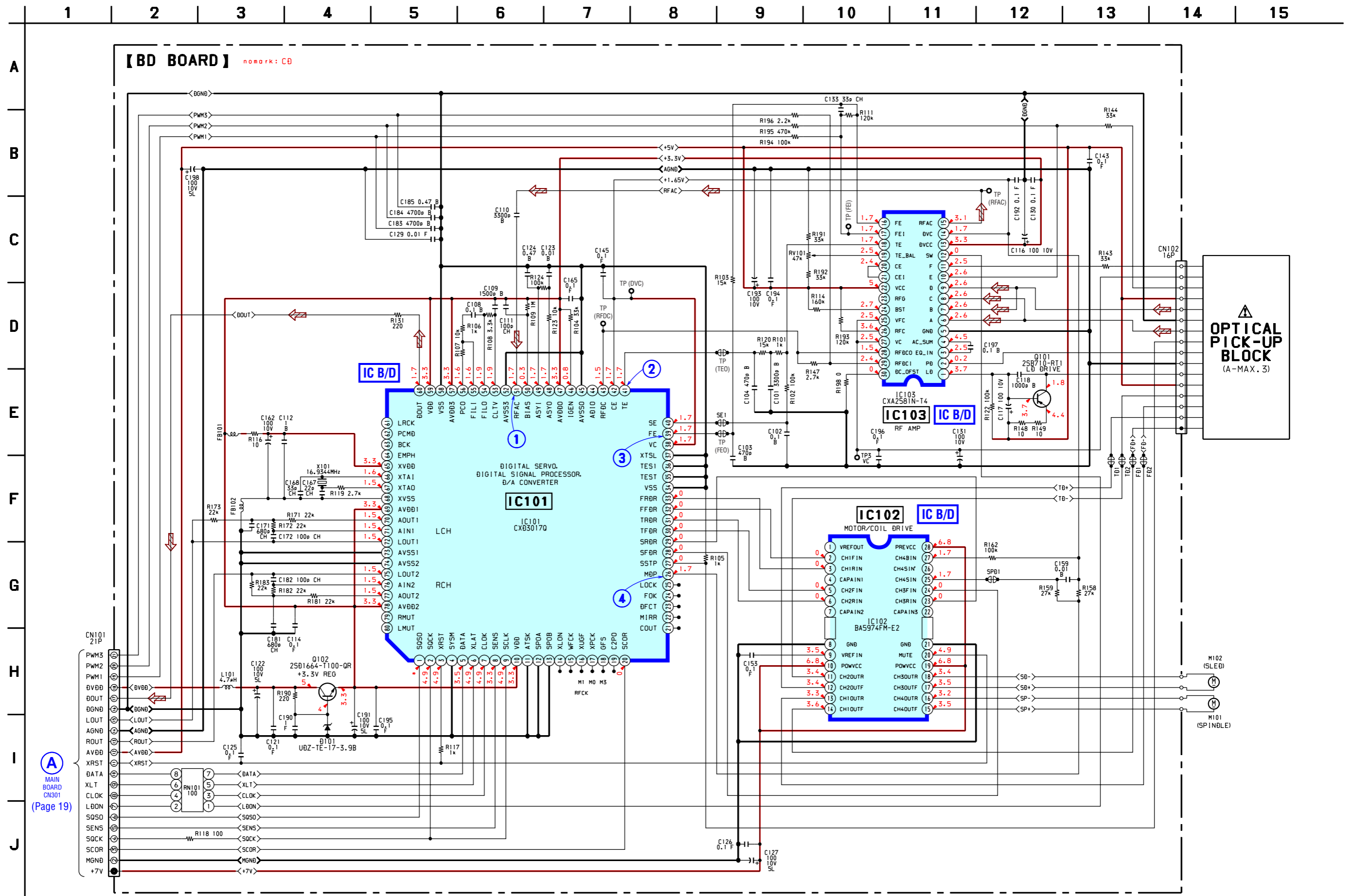


• Semiconductor Location

Ref. No.	Location
D101	B-3
IC101	C-3
IC102	B-2
IC103	D-2
Q101	C-1
Q102	A-3

There are a few cases that the part printed on this diagram isn't mounted in this model.

6-3. SCHEMATIC DIAGRAM – BD Section – • See page 22 for Waveforms. • See page 22 for IC Block Diagrams.

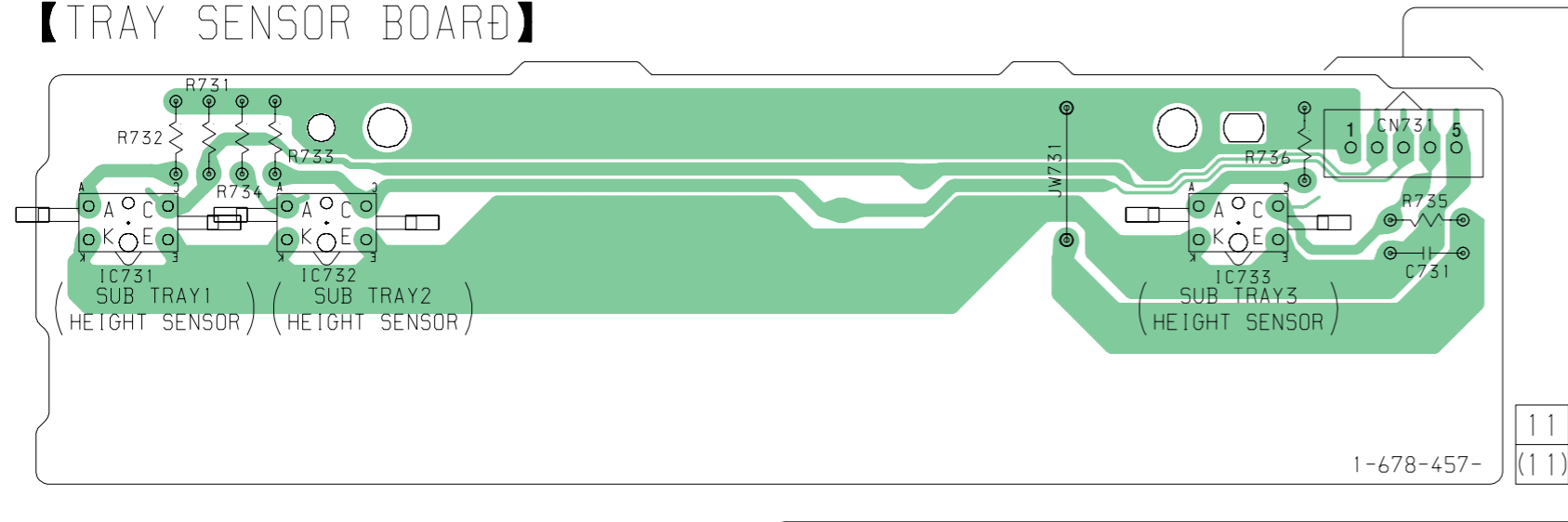


Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

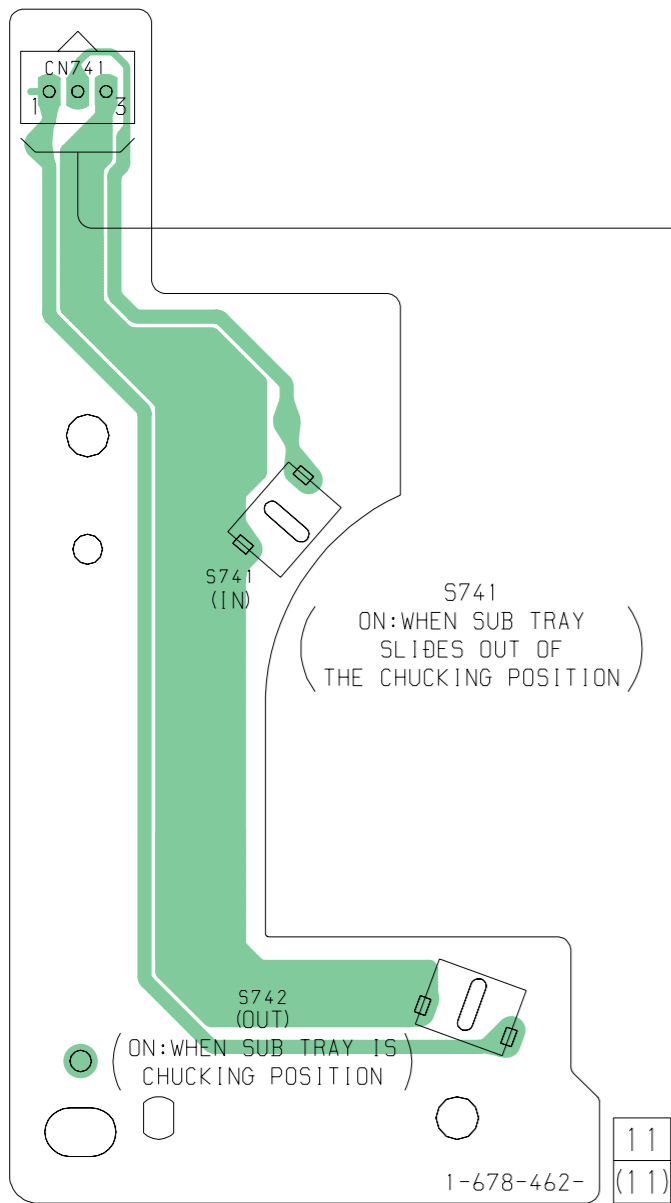
• Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark : CD PLAY

6-4. PRINTED WIRING BOARDS – CD CHANGER Section – • See page 13 for Circuit Boards Location.

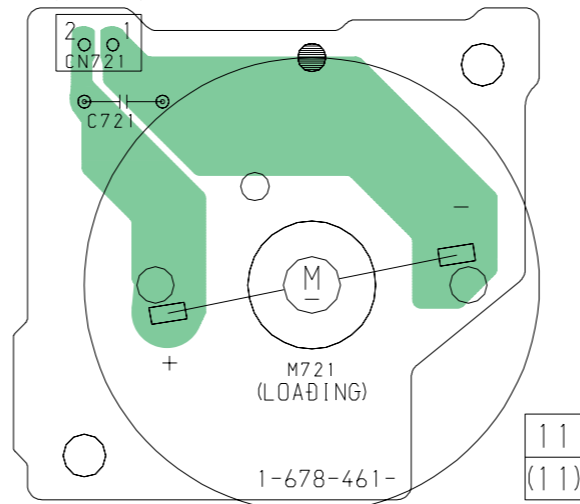
【TRAY SENSOR BOARD】



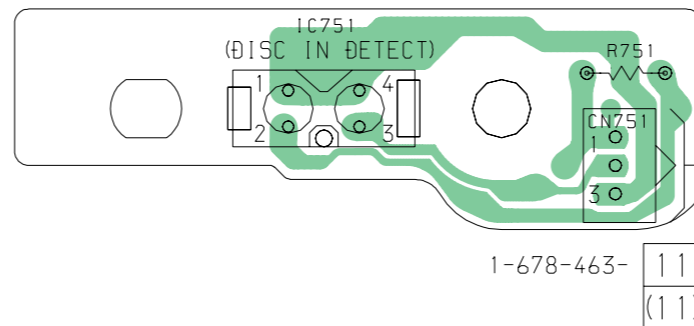
【IN OUT SW BOARD】



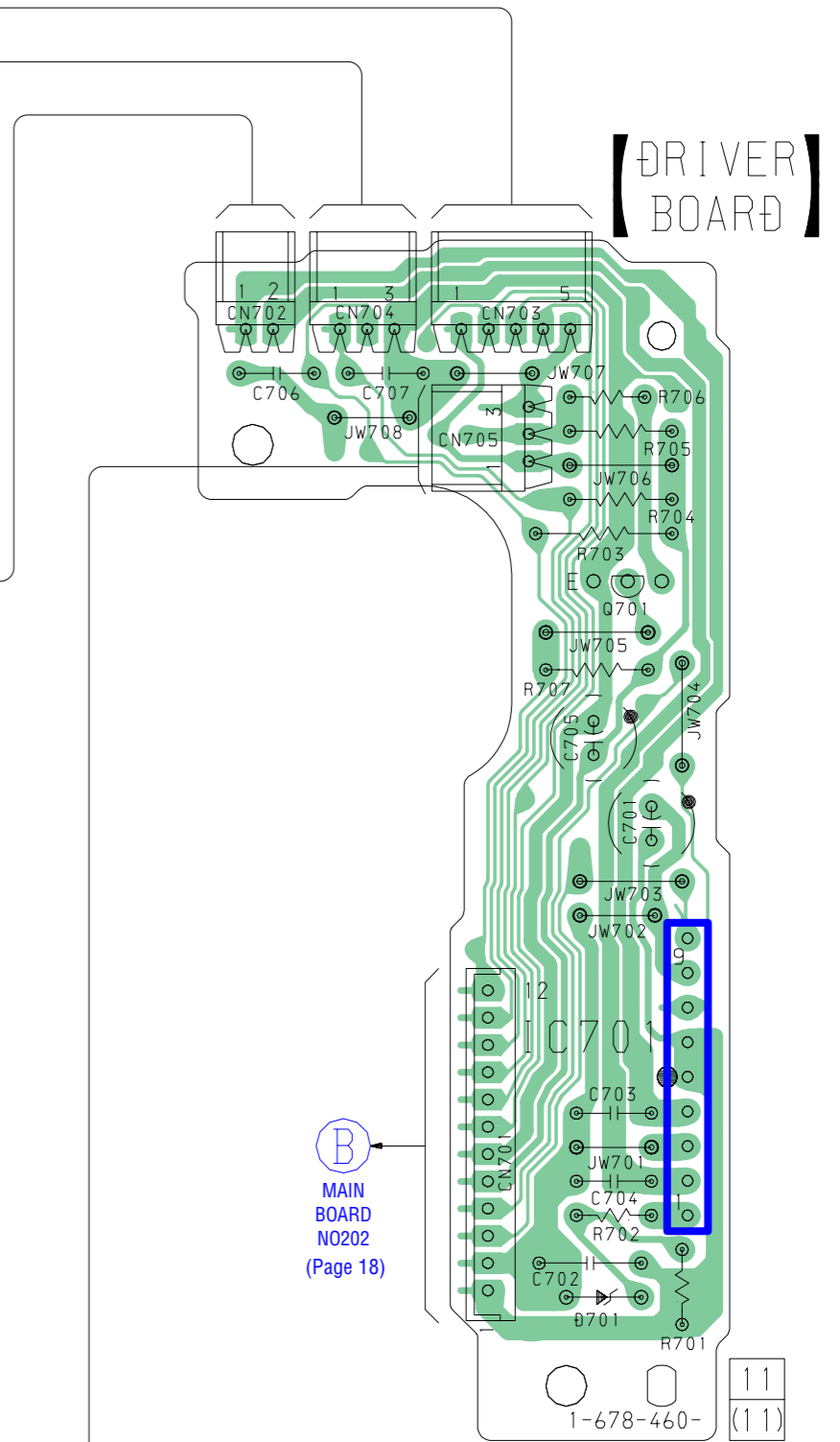
【MOTOR BOARD】



【DISC SENSOR BOARD】

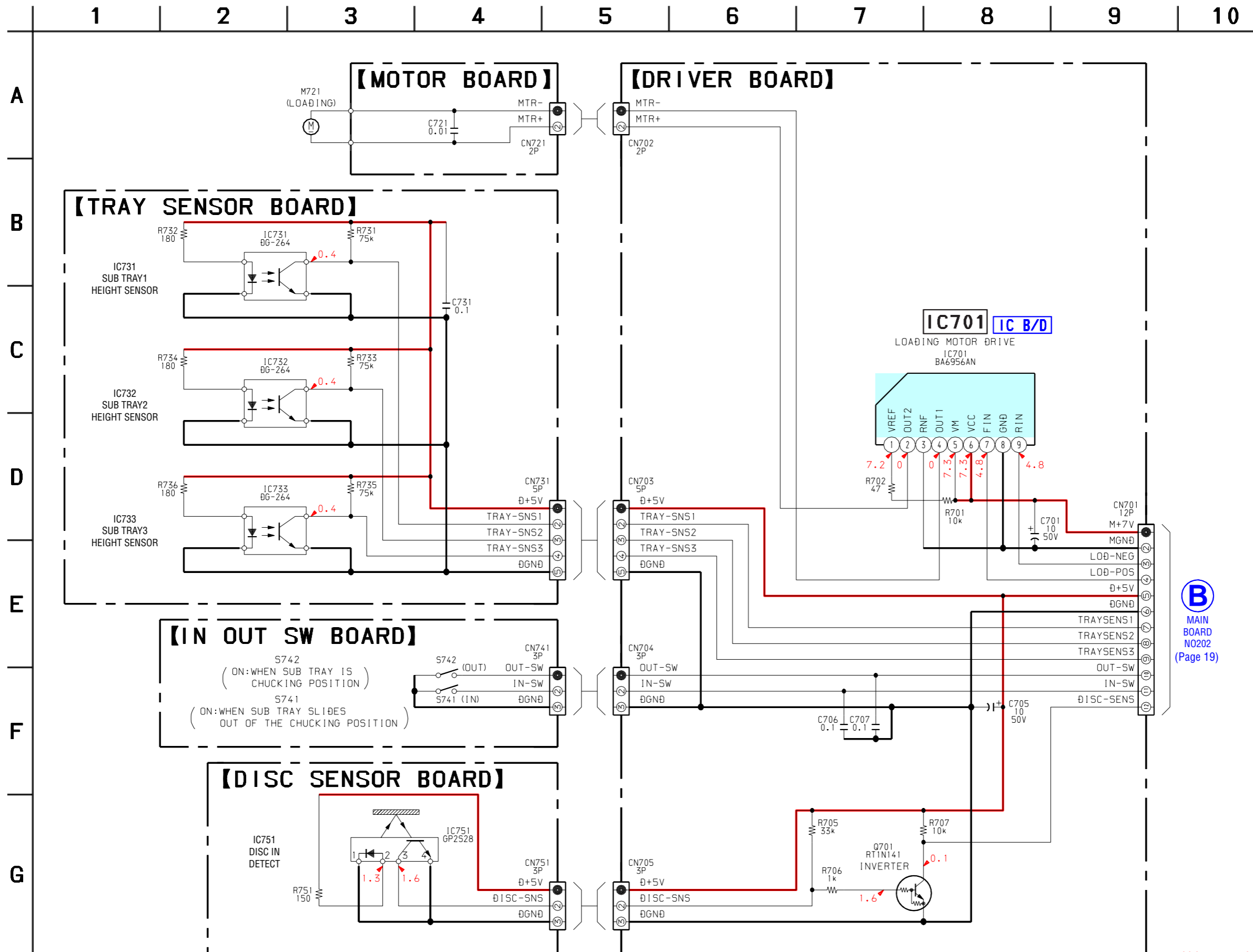


【DRIVER BOARD】



There are a few cases that the part isn't mounted in model is printed on diagrams.

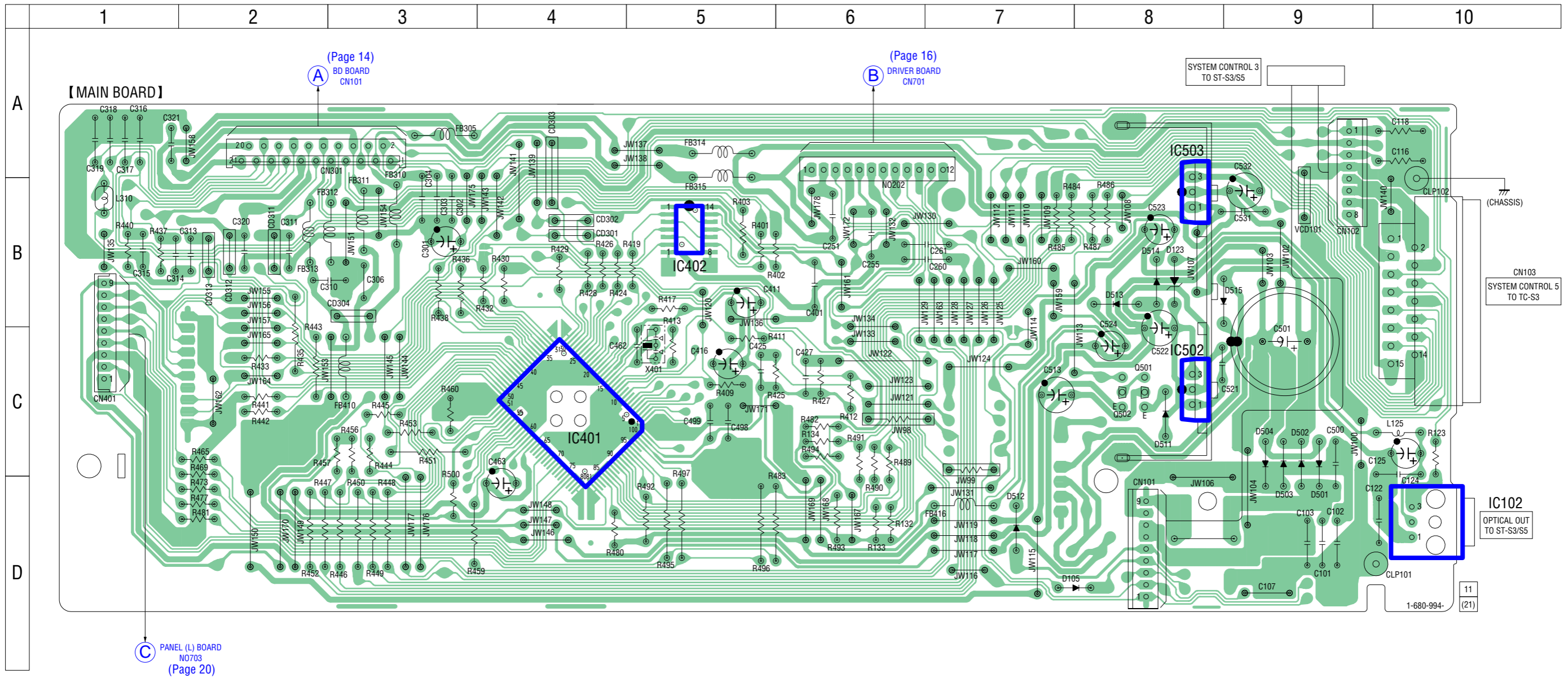
6-5. SCHEMATIC DIAGRAM – CD CHANGER Section – • See page 22 for IC Block Diagram.



B
MAIN BOARD NO202 (Page 19)

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

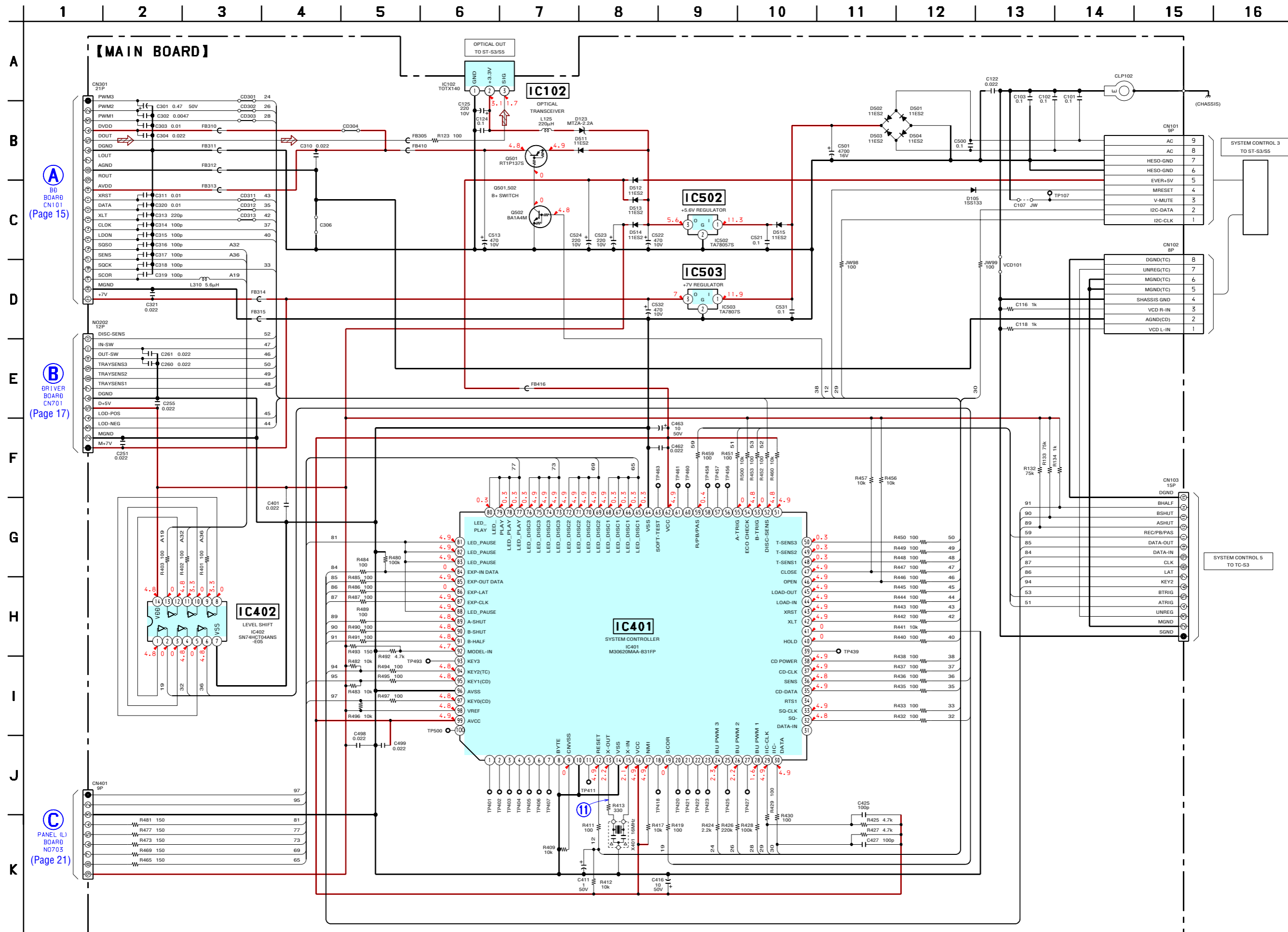
6-6. PRINTED WIRING BOARD – MAIN Section – • See page 13 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D103	D-9	IC102	D-10
D104	D-9	IC401	C-4
D105	D-7	IC402	B-5
D123	B-8	IC502	C-8
D501	C-9	IC503	B-8
D502	C-9		
D503	C-9	Q501	C-8
D504	C-9	Q502	C-8
D511	C-8		
D512	D-7		
D513	B-8		
D514	B-8		

6-7. SCHEMATIC DIAGRAM – MAIN Section – • See page 22 for Waveform.



(A)
BU BOARD
CN101
(Page 15)

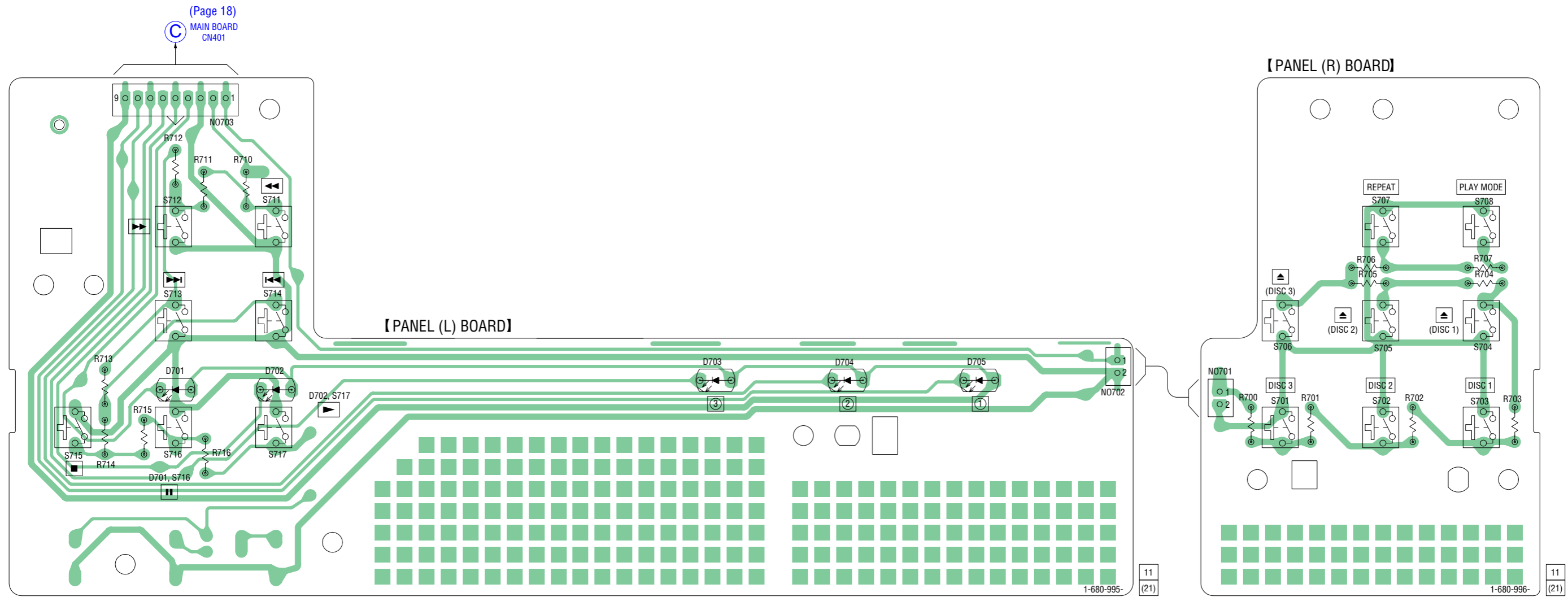
(B)
DRIVER BOARD
CN701
(Page 17)

(C)
PANEL I/O BOARD
NO703
(Page 21)

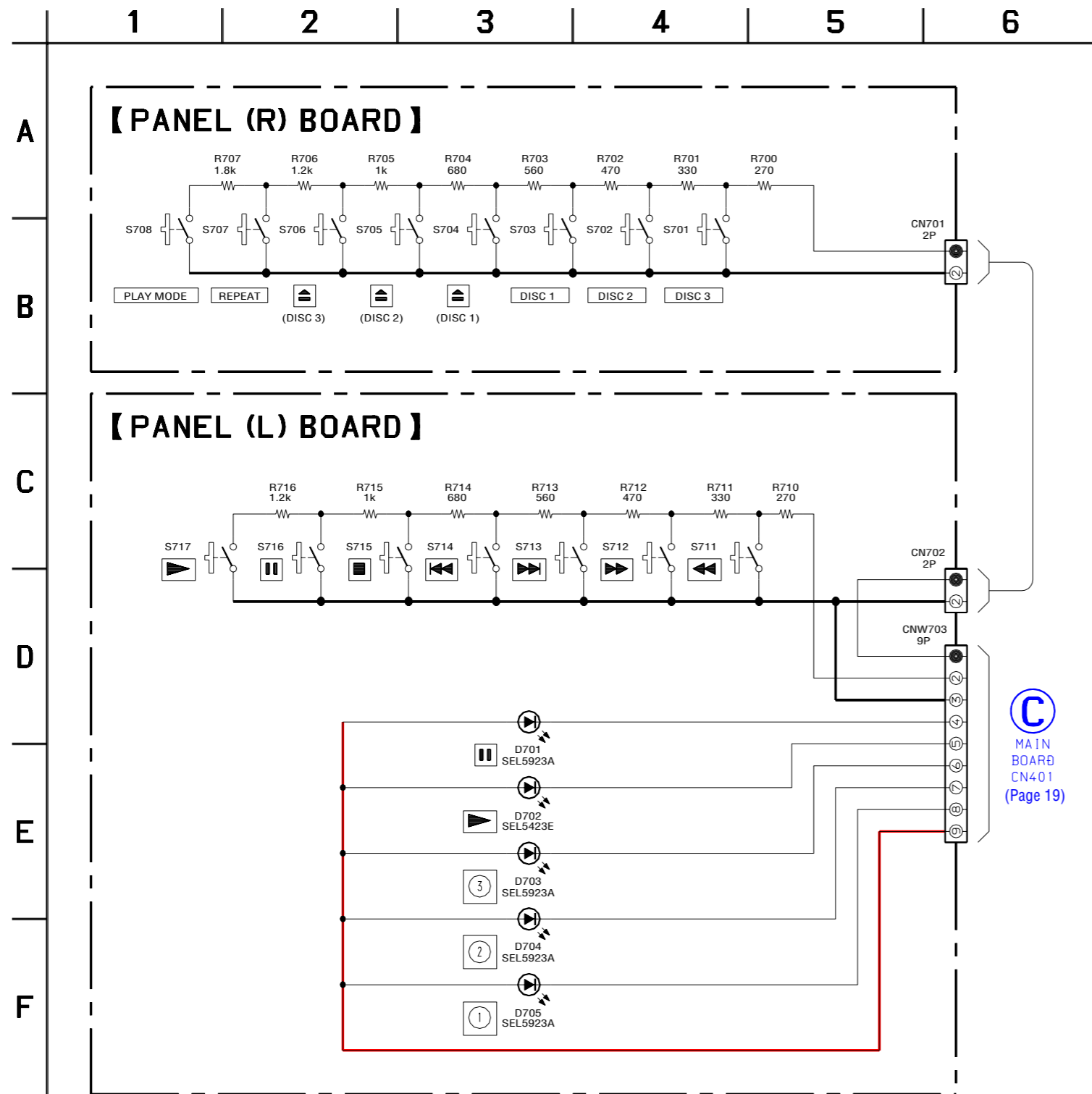
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

6-8. PRINTED WIRING BOARDS – PANEL Section – • See page 13 for Circuit Boards Location.



6-9. SCHEMATIC DIAGRAM – PANEL Section –

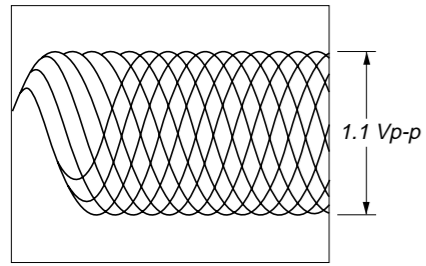


Ⓒ
MAIN BOARD
CN401
(Page 19)

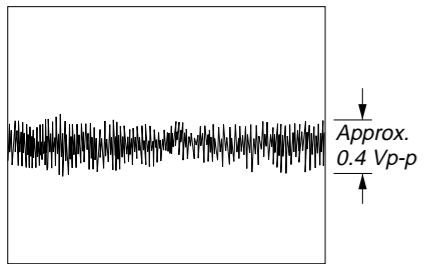
CDP-S3

• Waveforms – BD Board –

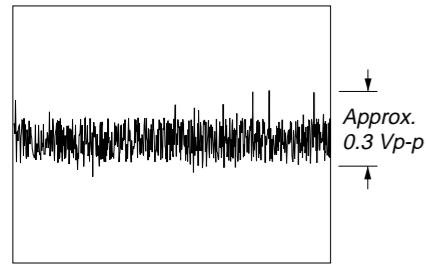
1 IC101 ⑤ (RFAC) (CD Play mode)



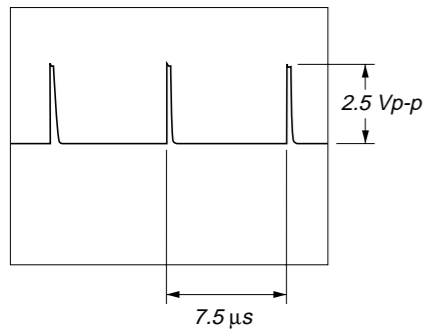
2 IC101 ④ (TE) (CD Play mode)



3 IC101 ③ (FE) (CD Play mode)

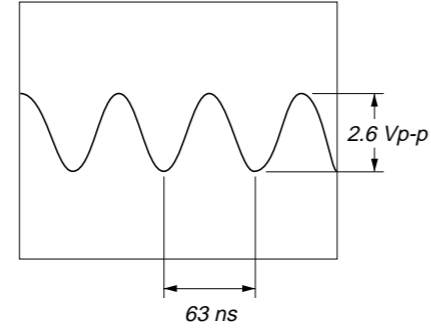


4 IC101 ② (MDP)



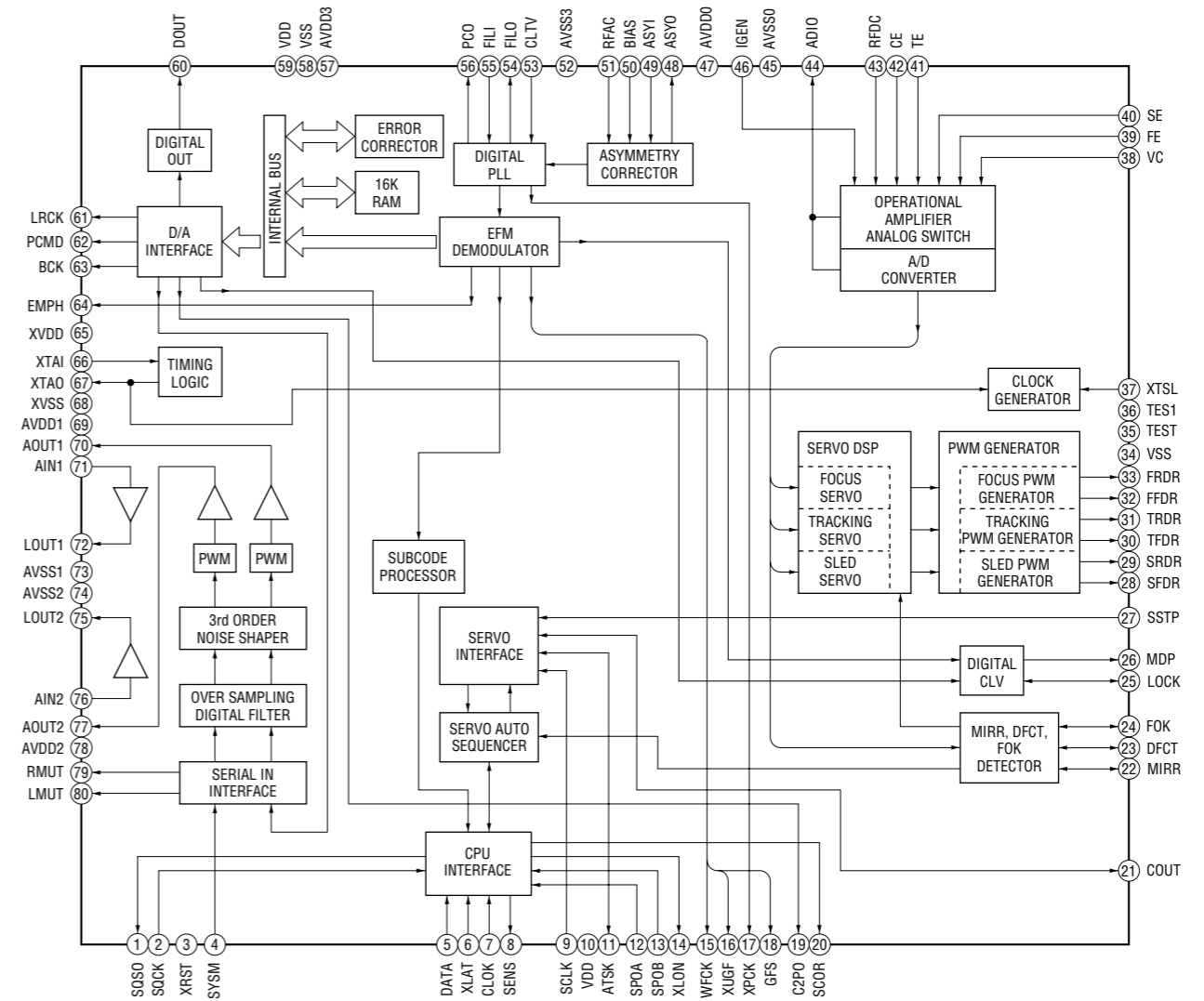
– MAIN Board –

1 IC401 ⑬ (X-OUT)

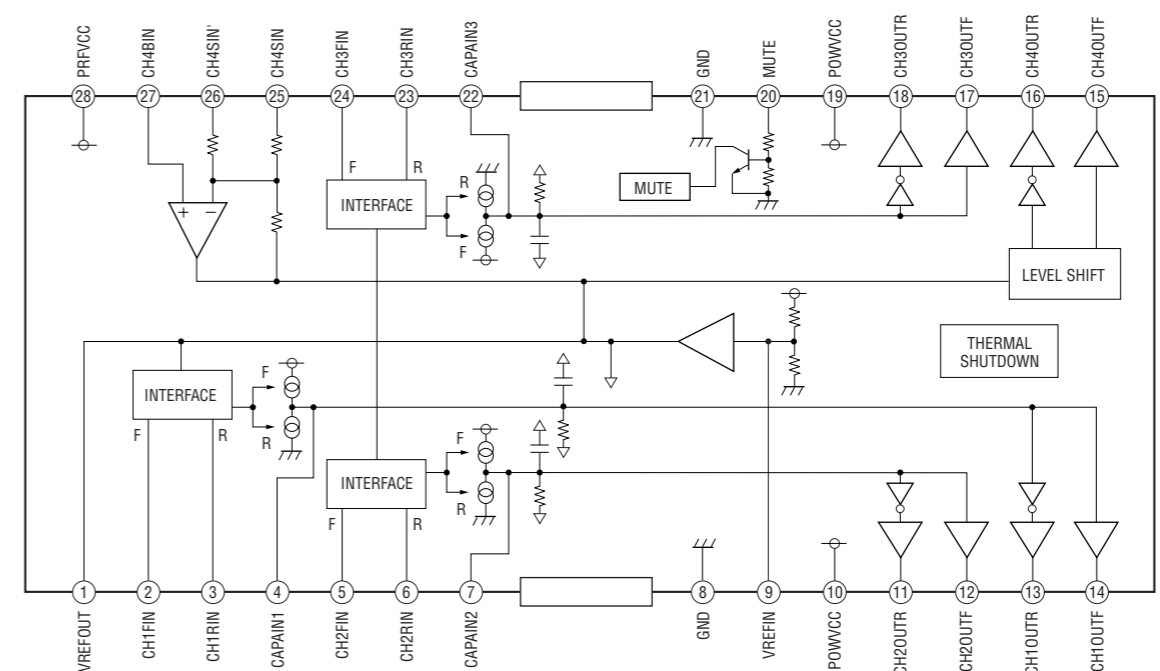


• IC Block Diagrams – BD Board –

IC101 CXD3017Q

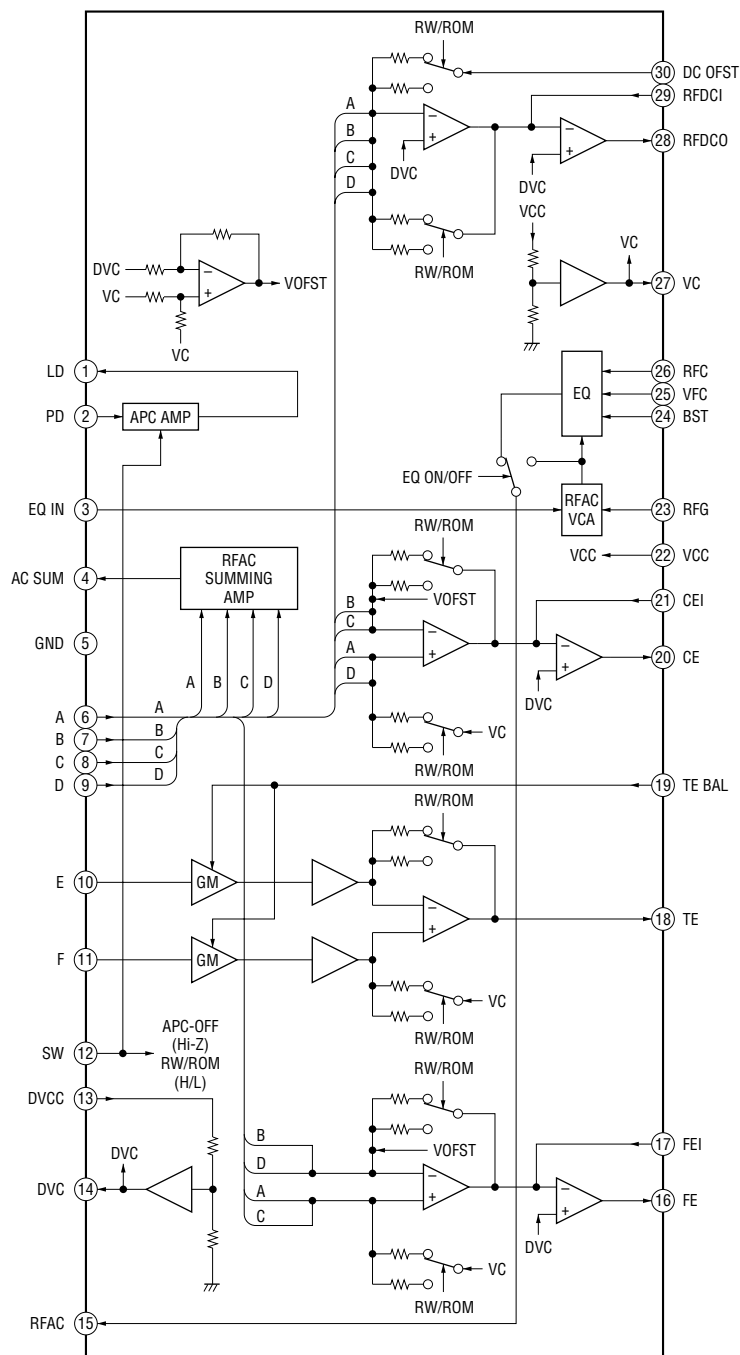


IC102 BA5974FM-E2

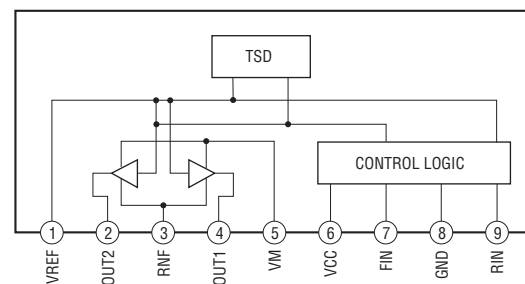


- DRIVER Board -

IC103 CXA2581N-T4



IC701 BA6956AN



6-10. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC401 M30620MAA-B31FP (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1 to 7	—	—	Not used (open)
8	BYTE	I	External data bus line byte selection signal input “L”: 16 bits, “H”: 8 bits Not used (fixed at “L”)
9	CNVSS	—	To flash memory connector
10	—	—	Not used (fixed at “L”)
11	—	—	Not used (open)
12	RESET	I	Reset signal input from the tuner unit (ST-S3/S5)
13	X-OUT	O	System clock output terminal (16 MHz)
14	VSS	—	Ground terminal
15	X-IN	I	System clock input terminal (16 MHz)
16	VCC	—	Power supply terminal (+5V)
17	NMI	I	Non-maskable interrupt input terminal (fixed at “H” in this set)
18	—	—	Not used (open)
19	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD3017Q (IC101)
20 to 23	—	—	Not used (open)
24	BU PWM 3	O	RFDC PWM signal output to the CXA2581N (IC103)
25	—	—	Not used (open)
26	BU PWM 2	O	Tracking error PWM signal output to the CXA2581N (IC103)
27	—	—	Not used (open)
28	BU PWM 1	O	Focus error PWM signal output to the CXA2581N (IC103)
29	IIC-CLK	I/O	Communication data reading clock signal input or transfer clock signal output with the tuner unit (ST-S3/S5)
30	IIC-DATA	I/O	Communication data bus with the tuner system (ST-S3/S5)
31	—	—	Not used
32	SQ-DATA-IN	I	Subcode Q data input from the CXD3017Q (IC101)
33	SQ-CLK	O	Subcode Q data reading clock signal output to the CXD3017Q (IC101)
34	RTS1	—	Not used
35	CD-DATA	O	CD decode data output to the CXD3017Q (IC101)
36	SENS	I	Internal status (SENSE) signal input from the CXD3017Q (IC101)
37	CD-CLK	O	Serial data transfer clock signal output to the CXD3017Q (IC101)
38	CD POWER	O	Power on/off control signal output for the CD mechanism deck section “L”: standby, “H”: power on
39	—	—	Not used (open)
40	HOLD	O	Automatic power control hold signal output to the CXA2581N (IC103)
41	—	—	Not used (fixed at “L”)
42	XLT	O	Serial data latch pulse output to the CXD3017Q (IC101)
43	XRST	O	Reset signal output to the CXD3017Q (IC101)
44	LOAD-IN	O	Loading motor drive signal (load-in direction) output the motor driver (IC701)
45	LOAD-OUT	O	Loading motor drive signal (load-out direction) output the motor driver (IC701)
46	OPEN	I	Sub tray load in/out detect switch (S742) input “L”: sub tray is chucking position
47	CLOSE	I	Sub tray load in/out detect switch (S742) input “L”: sub tray slides out of chucking position
48	T-SENS1	I	Detection input from the disc tray 1 height sensor (IC731) “H”: disc tray 1 position is chucking position
49	T-SENS2	I	Detection input from the disc tray 2 height sensor (IC732) “H”: disc tray 2 position is chucking position

Pin No.	Pin Name	I/O	Description
50	T-SENS3	I	Detection input from the disc tray 3 height sensor (IC733) “H”: disc tray 3 position is chucking position
51	—	—	Not used (fixed at “H”)
52	DISC-SENS	I	Detection input from the disc in detect sensor (IC751)
53	B-TRIG	O	Deck-B trigger plunger drive signal output to the tape deck unit (TC-S3) “H”: trigger plunger on
54	ECO CHECK	—	Not used (fixed at “H”)
55	A-TRIG	O	Deck-A trigger plunger drive signal output to the tape deck unit (TC-S3) “H”: trigger plunger on
56 to 58	—	—	Not used (open)
59	R/PB/PASS	O	Recording/playback/pass selection signal output to the tape deck unit (TC-S3) “L”: recording, center voltage: playback, “H”: pass
60, 61	—	—	Not used (open)
62	VCC	—	Power supply terminal (+5V)
63	SOFT-TEST	O	For software check terminal
64	VSS	—	Ground terminal
65 to 68	LED_DISC1	O	LED drive signal output of the ① indicator (D705) “L”: LED on
69 to 72	LED_DISC2	O	LED drive signal output of the ② indicator (D704) “L”: LED on
73 to 76	LED_DISC3	O	LED drive signal output of the ③ indicator (D703) “L”: LED on
77 to 80	LED_PLAY	O	LED drive signal output of the ► indicator (D702) “L”: LED on
81 to 83	LED_PAUSE	O	LED drive signal output of the ■■ indicator (D701) “L”: LED on
84	EXP-IN DATA	I	Serial data input from the tape deck unit (TC-S3)
85	EXP-OUT DATA	O	Serial data output to the tape deck unit (TC-S3)
86	EXP-LAT	O	Serial data latch pulse signal output to the tape deck unit (TC-S3)
87	EXP-CLK	O	Serial data transfer clock signal output to the tape deck unit (TC-S3)
88	LED_PAUSE	O	LED drive signal output of the ■■ indicator (D701) “L”: LED on
89	A-SHUT	I	Shut off (desk-A) detection signal input from the tape deck unit (TC-S3)
90	B-SHUT	I	Shut off (desk-B) detection signal input from the tape deck unit (TC-S3)
91	B-HALF	I	Detection input from the deck-B cassette detect switch of the tape deck unit (TC-S3) “L”: cassette in
92	MODEL-IN	I	Model destination setting terminal
93	KEY3	—	Not used (open)
94	KEY2 (TC)	I	Key input from the tape deck unit (TC-S3) (A/D input)
95	KEY1 (CD)	I	Key input terminal (A/D input) (S711 to S717) ◀◀, ▶▶, ◀◀, ▶▶, ■, ■■, ► keys input
96	AVSS	—	Ground terminal (for A/D conversion)
97	KEY1 (CD)	I	Key input terminal (A/D input) (S701 to S708) DISC 3, DISC 2, DISC 1, ▲ (DISC1), ▲ (DISC2), ▲ (DISC3), REPEAT, PLAY MODE keys input
98	VREF	I	Reference voltage (+5V) input terminal (for A/D converter)
99	AVCC	—	Power supply terminal (+5V) (for A/D conversion)
100	—	—	Not used (open)

SECTION 7 EXPLODED VIEWS

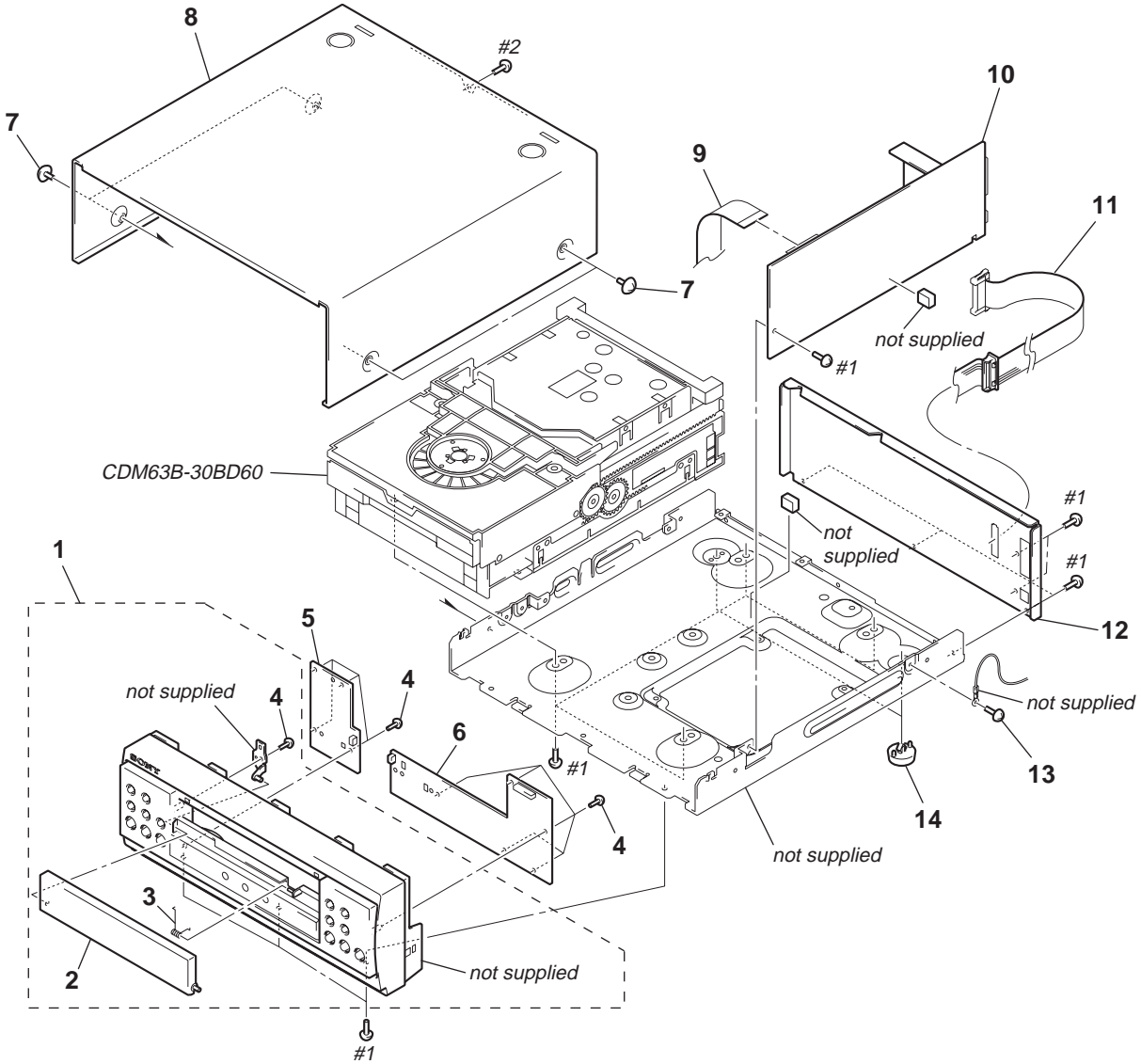
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)
 ↑ ↑
 Parts Color Cabinet's Color

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

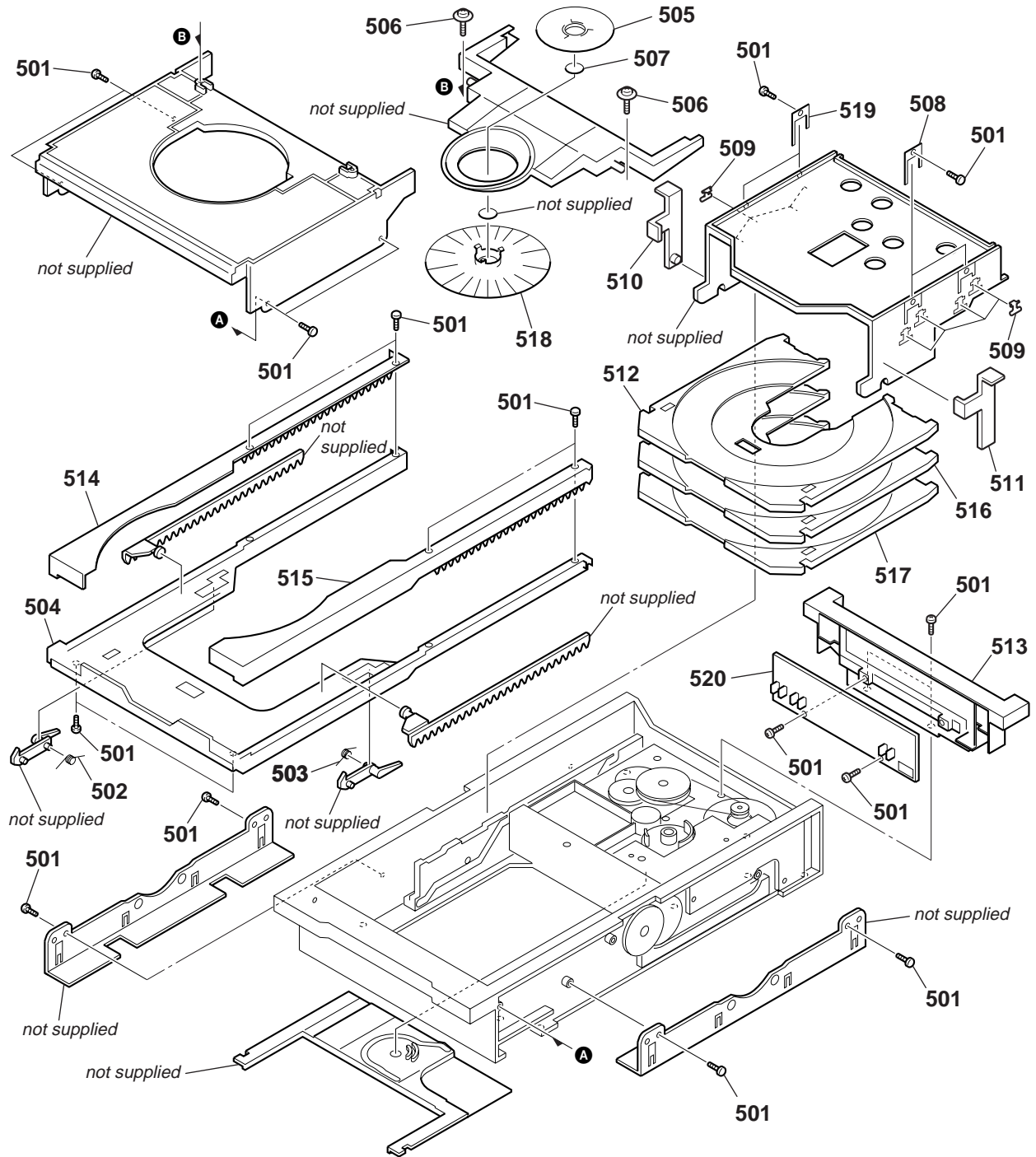
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

7-1. GENERAL SECTION



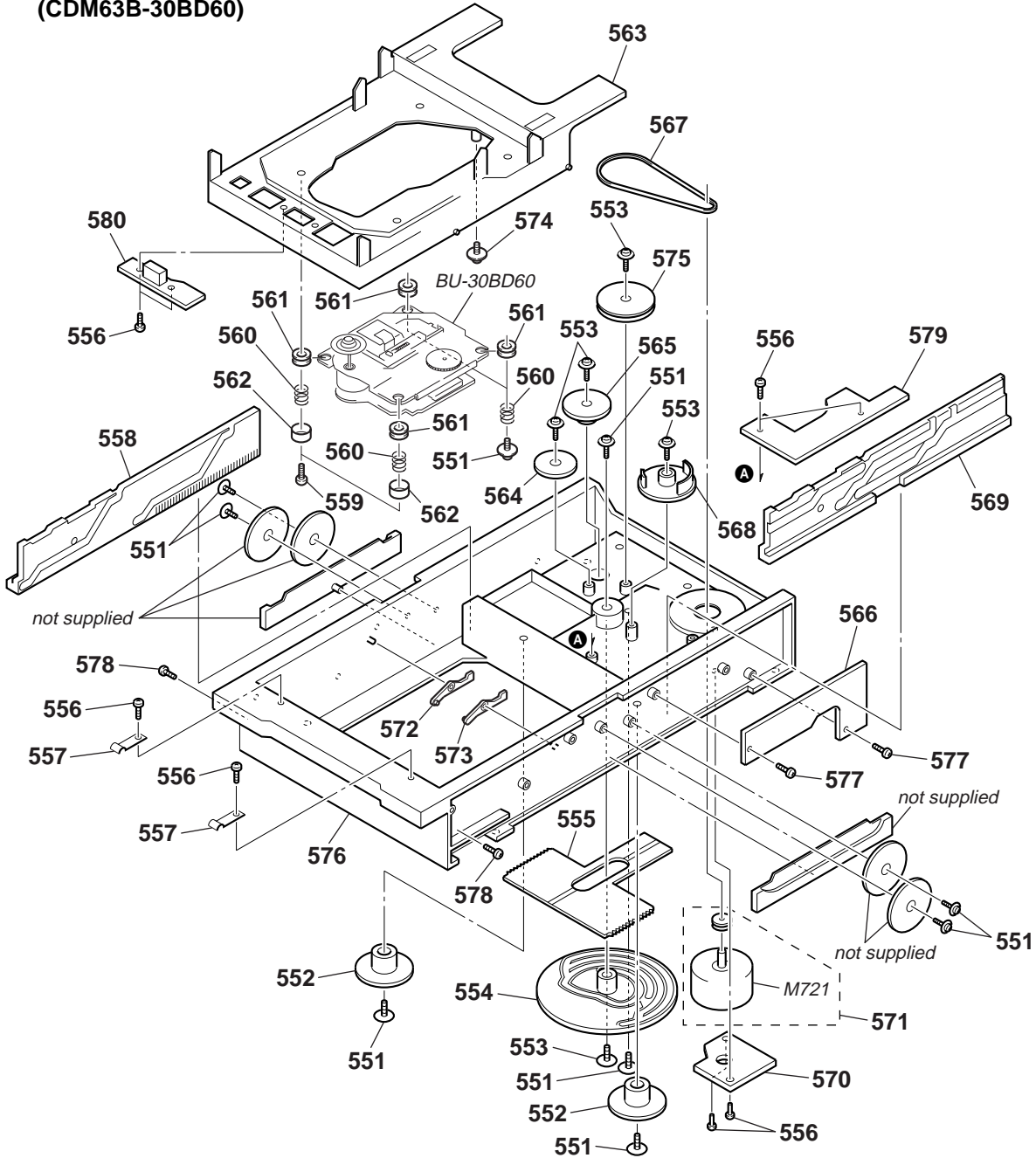
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4953-613-1	PANEL ASSY, FRONT		10	A-4725-658-A	MAIN BOARD, COMPLETE	
2	4-233-136-01	LID (CD)		11	1-757-633-11	CORD (WITH CONNECTOR) 17P	
3	4-233-147-01	SPRING (CD)		12	4-233-135-01	PANEL, BACK (AEP, UK)	
4	4-951-620-01	SCREW (2.6X8), +BVTP		12	4-233-135-11	PANEL, BACK (Korea, Australian)	
5	1-680-996-11	PANEL (R) BOARD		12	4-233-135-31	PANEL, BACK (Mexican)	
6	1-680-995-11	PANEL (L) BOARD		13	3-970-608-01	SUMITITE (B3), +BV	
7	3-363-099-21	SCREW (CASE 3 TP2)		14	4-965-822-01	FOOT	
8	4-233-134-11	COVER		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
9	1-823-055-11	WIRE (FLAT TYPE) (21 CORE)		#2	7-685-871-01	SCREW +BVTT 3X6 (S)	

7-2. CD MECHANISM DECK SECTION-1
(CDM63B-30BD60)



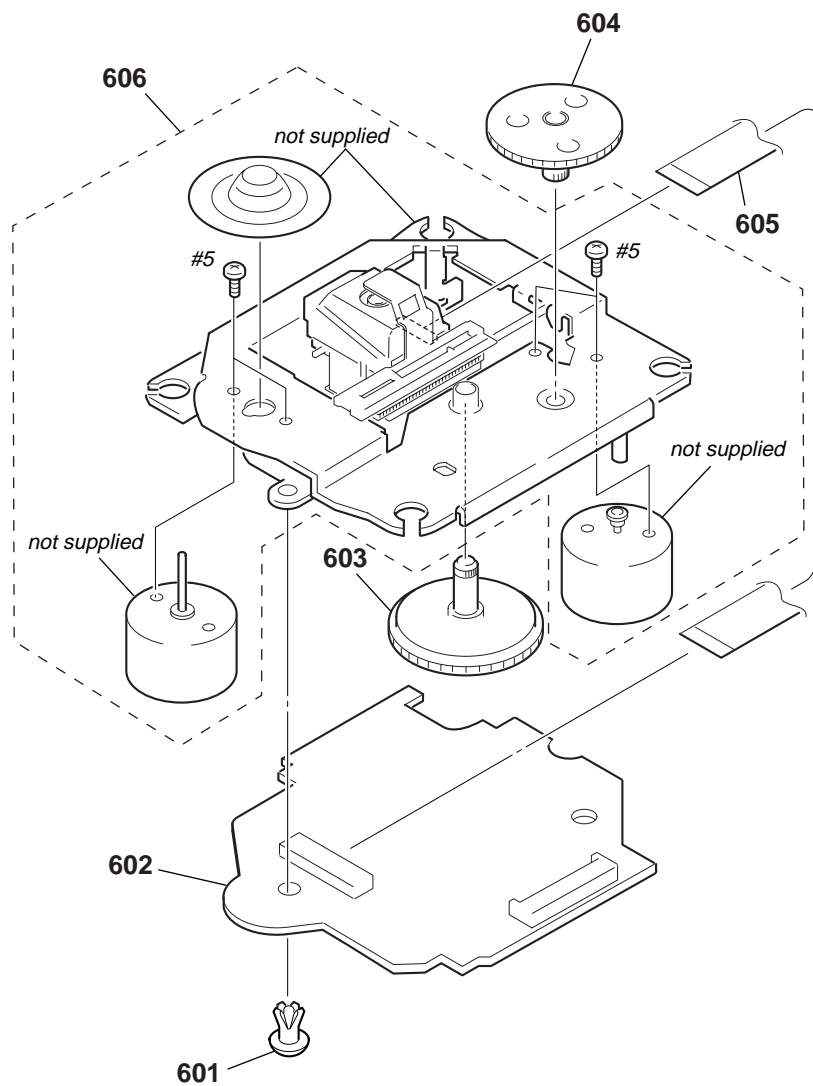
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
501	4-218-253-01	SCREW (M2.6), +BTTP		511	4-228-964-01	SLIDER (STOCKER. R)	
502	4-228-996-01	SPRING (R), TORSION		512	4-228-970-02	TRAY (SUB)	
503	4-228-995-01	SPRING (L), TORSION		513	4-229-001-01	HOLDER (SENSOR)	
504	4-228-972-02	TRAY (MAIN)		514	4-228-975-02	COVER (TRAY. L)	
505	4-231-971-01	PULLEY (30B), CHUCKING		515	4-228-978-02	COVER (TRAY. R)	
506	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		516	4-228-970-12	TRAY (SUB)	
507	4-228-414-01	BRACKET (YOKE)		517	4-228-970-22	TRAY (SUB)	
508	4-228-980-01	SPRING (STOCKER), LEAF		518	X-4953-307-1	PULLEY (A) ASSY, CHUCKING	
509	4-228-981-02	STOPPER (TRAY)		519	4-234-423-01	SPRING (STOCKER L), LEAF	
510	4-228-963-01	SLIDER (STOCKER. L)		520	1-678-457-11	TRAY SENSOR BOARD	

7-3. CD MECHANISM DECK SECTION-2
(CDM63B-30BD60)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
551	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		567	4-228-968-01	BELT	
552	4-229-002-02	GEAR (SLIDER)		568	4-228-998-01	GEAR (DETECTION)	
553	4-218-254-21	SCREW (M2.6), +PTPWH		569	4-228-976-01	SLIDER (BU. R)	
554	4-228-971-01	CAM		570	1-678-461-11	MOTOR BOARD	
555	4-228-974-02	RACK (CENTER)		571	X-4952-971-2	MOTOR ASSY	
556	4-218-253-01	SCREW (M2.6), +BTTP		572	4-228-999-02	LEVER (MAIN. L)	
557	4-228-969-02	SPRING (TABLE), LEAF		573	4-229-000-02	LEVER (MAIN. R)	
558	4-228-977-01	SLIDER (BU. L)		574	4-227-899-01	SCREW (DIA. 12), FLOATING	
559	4-951-620-01	SCREW (2.6X8), +BVTP		575	4-229-003-01	PULLEY	
560	4-227-045-11	SPRING (INSULATOR), COIL		576	4-228-988-01	CHASSIS	
561	4-231-451-01	INSULATOR (BU-30)		577	4-218-253-61	SCREW (M2.6), +BTTP	
562	4-231-151-01	STOPPER (BU)		578	4-218-253-71	SCREW (M2.6), +BTTP	
563	4-231-517-03	HOLDER (BU30)		579	1-678-462-11	IN OUT SW BOARD	
564	4-228-985-01	GEAR (PULLEY)		580	1-678-463-11	DISC SENSOR BOARD	
565	4-228-997-02	GEAR (CAM)		M721	1-541-632-12	MOTOR, DC (LOADING)	
566	1-678-460-11	DRIVER BOARD					

7-4. BASE UNIT SECTION
(BU-30BD60)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
601	3-531-576-11	RIVET		605	1-757-710-11	WIRE (FLAT TYPE) (16 CORE)	
602	A-4725-531-A	BD BOARD, COMPLETE		\triangle 606	A-4735-188-A	BU-30 (60) ASSY	
603	4-233-832-01	GEAR (LB)		#5	7-627-853-28	SCREW, PRECISION +P 2X3 TYPE3	
604	4-233-831-01	GEAR (LA)					

BD

**SECTION 8
ELECTRICAL PARTS LIST**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

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

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-4725-531-A	BD BOARD, COMPLETE *****					
		< CAPACITOR >					
C101	1-162-967-11	CERAMIC CHIP	0.0033uF 10%	50V			
C102	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V			
C103	1-162-962-11	CERAMIC CHIP	470PF 10%	50V			
C104	1-162-962-11	CERAMIC CHIP	470PF 10%	50V			
C108	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V			
C109	1-162-965-11	CERAMIC CHIP	0.0015uF 10%	50V			
C110	1-162-967-11	CERAMIC CHIP	0.0033uF 10%	50V			
C111	1-162-927-11	CERAMIC CHIP	100PF 5%	50V			
C112	1-109-982-11	CERAMIC CHIP	1uF 10%	10V			
C114	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C116	1-104-665-11	ELECT	100uF 20%	10V			
C117	1-104-665-11	ELECT	100uF 20%	10V			
C118	1-162-964-11	CERAMIC CHIP	0.001uF 10%	50V			
C121	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C122	1-124-584-00	ELECT	100uF 20%	10V			
C123	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V			
C124	1-107-823-11	CERAMIC CHIP	0.47uF 10%	16V			
C125	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C126	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C127	1-124-584-00	ELECT	100uF 20%	10V			
C129	1-162-974-11	CERAMIC CHIP	0.01uF	50V			
C130	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C131	1-104-665-11	ELECT	100uF 20%	10V			
C133	1-162-921-11	CERAMIC CHIP	33PF 5%	50V			
C143	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C145	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C153	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C159	1-162-970-11	CERAMIC CHIP	0.01uF 10%	25V			
C162	1-104-665-11	ELECT	100uF 20%	10V			
C165	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C167	1-162-919-11	CERAMIC CHIP	22PF 5%	50V			
C168	1-162-921-11	CERAMIC CHIP	33PF 5%	50V			
C171	1-115-412-11	CERAMIC CHIP	680PF 5%	25V			
C172	1-162-927-11	CERAMIC CHIP	100PF 5%	50V			
C181	1-115-412-11	CERAMIC CHIP	680PF 5%	25V			
C182	1-162-927-11	CERAMIC CHIP	100PF 5%	50V			
C183	1-162-968-11	CERAMIC CHIP	0.0047uF 10%	50V			
C184	1-162-968-11	CERAMIC CHIP	0.0047uF 10%	50V			
C185	1-107-823-11	CERAMIC CHIP	0.47uF 10%	16V			
C190	1-115-156-11	CERAMIC CHIP	1uF	10V			
C191	1-124-584-00	ELECT	100uF 20%	10V			
C192	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C193	1-104-665-11	ELECT	100uF 20%	10V			
C194	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C195	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C196	1-163-038-11	CERAMIC CHIP	0.1uF	25V			
C197	1-107-826-11	CERAMIC CHIP	0.1uF 10%	16V			
C198	1-124-584-00	ELECT	100uF 20%	10V			
		< CONNECTOR >					
CN101	1-568-864-11	CONNECTOR, FFC 21P					
CN102	1-793-907-11	CONNECTOR, FFC/FPC 16P					
		< DIODE >					
D101	8-719-422-12	DIODE UDZ-TE-17-3.9B					
		< FERRITE BEAD >					
FB101	1-500-445-21	FERRITE	0uH				
FB102	1-500-445-21	FERRITE	0uH				
		< IC >					
IC101	8-752-402-31	IC CXD3017Q					
IC102	8-759-827-41	IC BA5974FM-E2					
IC103	8-752-089-74	IC CXA2581N-T4					
		< SHORT >					
JR101	1-216-295-11	SHORT	0				
JR102	1-216-295-11	SHORT	0				
JR103	1-216-295-11	SHORT	0				
JR104	1-216-295-11	SHORT	0				
JR105	1-216-295-11	SHORT	0				
JR106	1-216-295-11	SHORT	0				
JR122	1-216-296-11	SHORT	0				
JR123	1-216-296-11	SHORT	0				
JR124	1-216-296-11	SHORT	0				
JR125	1-216-296-11	SHORT	0				
		< COIL >					
L101	1-469-553-21	INDUCTOR	4.7uH				
		< TRANSISTOR >					
Q101	8-729-010-08	TRANSISTOR	MSB710-RT1				

BD	DISC SENSOR	DRIVER	IN OUT SW	MAIN
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q102	8-729-920-85	TRANSISTOR	2SD1664-T100-QR		1-678-463-11	DISC SENSOR BOARD *****	
		< RESISTOR >				< PHOTO REFLECTOR >	
R101	1-216-049-11	RES-CHIP	1K 5% 1/10W	IC751	8-749-924-30	PHOTO REFLECTOR GP2S28 (DISC IN DETECT)	
R102	1-216-097-11	RES-CHIP	100K 5% 1/10W			< RESISTOR >	
R103	1-216-077-00	RES-CHIP	15K 5% 1/10W				
R104	1-216-085-00	METAL CHIP	33K 5% 1/10W				
R105	1-216-049-11	RES-CHIP	1K 5% 1/10W				
R106	1-216-049-11	RES-CHIP	1K 5% 1/10W	R751	1-249-407-11	CARBON 150 5% 1/4W	
R107	1-216-073-00	METAL CHIP	10K 5% 1/10W	*****			
R108	1-216-061-00	METAL CHIP	3.3K 5% 1/10W				
R109	1-216-121-11	RES-CHIP	1M 5% 1/10W		1-678-460-11	DRIVER BOARD *****	
R111	1-216-099-00	METAL CHIP	120K 5% 1/10W			< CAPACITOR >	
R114	1-218-745-11	RES-CHIP	160K 5% 1/16W				
R116	1-216-001-00	METAL CHIP	10 5% 1/10W	C701	1-124-261-00	ELECT 10uF 20% 50V	
R117	1-216-049-11	RES-CHIP	1K 5% 1/10W	C705	1-124-261-00	ELECT 10uF 20% 50V	
R118	1-216-025-11	RES-CHIP	100 5% 1/10W	C706	1-164-159-11	CERAMIC 0.1uF 50V	
R119	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	C707	1-164-159-11	CERAMIC 0.1uF 50V	
R120	1-216-077-00	RES-CHIP	15K 5% 1/10W			< CONNECTOR >	
R122	1-216-097-11	RES-CHIP	100K 5% 1/10W	CN701	1-785-324-11	PIN, CONNECTOR (STRAIGHT) 12P	
R123	1-216-073-00	METAL CHIP	10K 5% 1/10W	CN702	1-785-328-11	PIN, CONNECTOR (LIGHT ANGLE) 2P	
R124	1-216-097-11	RES-CHIP	100K 5% 1/10W	CN703	1-785-331-11	PIN, CONNECTOR (LIGHT ANGLE) 5P	
R131	1-216-033-00	METAL CHIP	220 5% 1/10W	CN704	1-785-329-11	PIN, CONNECTOR (LIGHT ANGLE) 3P	
R143	1-216-085-00	METAL CHIP	33K 5% 1/10W	CN705	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P	
R144	1-216-085-00	METAL CHIP	33K 5% 1/10W			< IC >	
R147	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	IC701	8-759-598-69	IC BA6956AN	
R148	1-216-001-00	METAL CHIP	10 5% 1/10W			< TRANSISTOR >	
R149	1-216-001-00	METAL CHIP	10 5% 1/10W	Q701	8-729-029-66	TRANSISTOR RT1N141S-TP	
R158	1-216-083-00	METAL CHIP	27K 5% 1/10W			< RESISTOR >	
R159	1-216-083-00	METAL CHIP	27K 5% 1/10W				
R162	1-216-097-11	RES-CHIP	100K 5% 1/10W				
R171	1-216-081-00	METAL CHIP	22K 5% 1/10W				
R172	1-216-081-00	METAL CHIP	22K 5% 1/10W				
R173	1-216-081-00	METAL CHIP	22K 5% 1/10W				
R181	1-216-081-00	METAL CHIP	22K 5% 1/10W	R701	1-249-429-11	CARBON 10K 5% 1/4W	
R182	1-216-081-00	METAL CHIP	22K 5% 1/10W	R702	1-249-401-11	CARBON 47 5% 1/4W	
R183	1-216-081-00	METAL CHIP	22K 5% 1/10W	R705	1-249-435-11	CARBON 33K 5% 1/4W	
R190	1-216-033-00	METAL CHIP	220 5% 1/10W	R706	1-249-417-11	CARBON 1K 5% 1/4W	
R191	1-216-085-00	METAL CHIP	33K 5% 1/10W	R707	1-249-429-11	CARBON 10K 5% 1/4W	
R192	1-216-085-00	METAL CHIP	33K 5% 1/10W	*****			
R193	1-216-099-00	METAL CHIP	120K 5% 1/10W		1-678-462-11	IN OUT SW BOARD *****	
R194	1-216-097-11	RES-CHIP	100K 5% 1/10W			< SWITCH >	
R195	1-216-113-00	METAL CHIP	470K 5% 1/10W				
R196	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	S741	1-771-821-11	SWITCH, PUSH (1 KEY) (IN)	
R198	1-216-295-11	SHORT	0	S742	1-771-821-11	SWITCH, PUSH (1 KEY) (OUT)	
		< COMPOSITION CIRCUIT BLOCK >		*****			
RN101	1-233-576-11	RES, CHIP NETWORK 100			A-4725-658-A	MAIN BOARD, COMPLETE *****	
		< VARIABLE RESISTOR >					
RV101	1-238-602-11	RES, ADJ, CARBON 47K			7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
		< VIBRATOR >				< CAPACITOR/RESISTOR >	
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)		C101	1-164-159-11	CERAMIC 0.1uF 50V	
*****				C102	1-164-159-11	CERAMIC 0.1uF 50V	
				C103	1-164-159-11	CERAMIC 0.1uF 50V	
				C116	1-249-417-11	CARBON 1K 5% 1/4W	
				C118	1-249-417-11	CARBON 1K 5% 1/4W	

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark	
C122	1-161-494-00	CERAMIC	0.022uF	25V	D513	8-719-024-99	DIODE 11ES2-NTA2B	
C124	1-164-159-11	CERAMIC	0.1uF	50V	D514	8-719-024-99	DIODE 11ES2-NTA2B	
C125	1-126-923-11	ELECT	220uF	20%	10V	D515	8-719-024-99	DIODE 11ES2-NTA2B
C251	1-161-494-00	CERAMIC	0.022uF	25V	< FERRITE BEAD >			
C255	1-161-494-00	CERAMIC	0.022uF	25V	FB305	1-412-473-21	INDUCTOR 0uH	
C260	1-161-494-00	CERAMIC	0.022uF	25V	FB310	1-412-473-21	INDUCTOR 0uH	
C261	1-161-494-00	CERAMIC	0.022uF	25V	FB311	1-412-473-21	INDUCTOR 0uH	
C301	1-126-959-11	ELECT	0.47uF	20%	50V	FB312	1-412-473-21	INDUCTOR 0uH
C302	1-162-600-11	CERAMIC	0.0047uF	20%	16V	FB313	1-412-473-21	INDUCTOR 0uH
C303	1-162-306-11	CERAMIC	0.01uF	20%	16V	FB314	1-412-473-21	INDUCTOR 0uH
C304	1-161-494-00	CERAMIC	0.022uF	25V	FB315	1-412-473-21	INDUCTOR 0uH	
C310	1-161-494-00	CERAMIC	0.022uF	25V	FB410	1-412-473-21	INDUCTOR 0uH	
C311	1-162-306-11	CERAMIC	0.01uF	20%	16V	FB416	1-412-473-21	INDUCTOR 0uH
C313	1-162-286-31	CERAMIC	220PF	10%	50V	< IC >		
C314	1-162-282-31	CERAMIC	100PF	10%	50V	IC102	8-749-019-13 IC TOTX140 (OPTICAL OUT TO ST-S3/S5)	
C315	1-162-282-31	CERAMIC	100PF	10%	50V	IC401	8-759-827-46 IC M30620MAA-B31FP	
C316	1-162-282-31	CERAMIC	100PF	10%	50V	IC402	8-759-269-09 IC SN74HCT04ANS-E05	
C317	1-162-282-31	CERAMIC	100PF	10%	50V	IC502	8-759-158-62 IC TA78057S	
C318	1-162-282-31	CERAMIC	100PF	10%	50V	IC503	8-759-071-48 IC TA7807S	
C319	1-162-282-31	CERAMIC	100PF	10%	50V	< RESISTOR >		
C320	1-162-306-11	CERAMIC	0.01uF	20%	16V	JW98	1-247-807-31 CARBON 100 5% 1/4W	
C321	1-161-494-00	CERAMIC	0.022uF	25V	JW99	1-247-807-31 CARBON 100 5% 1/4W		
C401	1-161-494-00	CERAMIC	0.022uF	25V	< COIL >			
C411	1-126-960-11	ELECT	1uF	20%	50V	L125	1-410-336-11 INDUCTOR 220uH	
C416	1-126-964-11	ELECT	10uF	20%	50V	L310	1-410-467-11 INDUCTOR 5.6uH	
C425	1-162-282-31	CERAMIC	100PF	10%	50V	< TRANSISTOR >		
C427	1-162-282-31	CERAMIC	100PF	10%	50V	Q501	8-729-049-79 TRANSISTOR RT1P137S-TP	
C462	1-161-494-00	CERAMIC	0.022uF	25V	Q502	8-729-900-80 TRANSISTOR BA1A4M-TP		
C463	1-126-964-11	ELECT	10uF	20%	50V	< RESISTOR >		
C498	1-161-494-00	CERAMIC	0.022uF	25V	R123	1-247-807-31 CARBON 100 5% 1/4W		
C499	1-161-494-00	CERAMIC	0.022uF	25V	R132	1-247-876-11 CARBON 75K 5% 1/4W		
C500	1-164-159-11	CERAMIC	0.1uF	50V	R133	1-247-876-11 CARBON 75K 5% 1/4W		
C501	1-126-937-11	ELECT	470uF	20%	10V	R134	1-249-417-11 CARBON 1K 5% 1/4W	
C513	1-126-935-11	ELECT	470uF	20%	10V	R401	1-247-807-31 CARBON 100 5% 1/4W	
C521	1-164-159-11	CERAMIC	0.1uF	50V	R402	1-247-807-31 CARBON 100 5% 1/4W		
C522	1-126-935-11	ELECT	470uF	20%	10V	R403	1-247-807-31 CARBON 100 5% 1/4W	
C523	1-126-934-11	ELECT	220uF	20%	10V	R409	1-249-429-11 CARBON 10K 5% 1/4W	
C524	1-126-934-11	ELECT	220uF	20%	10V	R411	1-247-807-31 CARBON 100 5% 1/4W	
C531	1-164-159-11	CERAMIC	0.1uF	50V	R412	1-249-429-11 CARBON 10K 5% 1/4W		
C532	1-126-935-11	ELECT	470uF	20%	10V	R413	1-249-411-11 CARBON 330 5% 1/4W	
< CONNECTOR >				R417	1-249-429-11	CARBON 10K 5% 1/4W		
* CN101	1-568-419-11	PIN, CONNECTOR 9P		R419	1-247-807-31	CARBON 100 5% 1/4W		
CN102	1-568-373-11	PIN, CONNECTOR 8P		R424	1-249-421-11	CARBON 2.2K 5% 1/4W		
CN103	1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL 5 TO TC-S3)		R425	1-249-425-11	CARBON 4.7K 5% 1/4W		
CN301	1-568-838-11	CONNECTOR, FFC 21P		R426	1-247-887-00	CARBON 220K 5% 1/4W		
* CN401	1-568-936-11	PIN, CONNECTOR 9P		R427	1-249-425-11	CARBON 4.7K 5% 1/4W		
< DIODE >				R428	1-249-441-11	CARBON 100K 5% 1/4W		
D105	8-719-911-19	DIODE 1SS133T-72		R429	1-247-807-31	CARBON 100 5% 1/4W		
D123	8-719-982-96	DIODE MTZJ-T-72-2.2A		R430	1-247-807-31	CARBON 100 5% 1/4W		
D501	8-719-024-99	DIODE 11ES2-NTA2B		R432	1-247-807-31	CARBON 100 5% 1/4W		
D502	8-719-024-99	DIODE 11ES2-NTA2B		R433	1-247-807-31	CARBON 100 5% 1/4W		
D503	8-719-024-99	DIODE 11ES2-NTA2B						
D504	8-719-024-99	DIODE 11ES2-NTA2B						
D511	8-719-024-99	DIODE 11ES2-NTA2B						
D512	8-719-024-99	DIODE 11ES2-NTA2B						

MAIN	MOTOR	PANEL (L)	PANEL (R)	TRAY SENSOR
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Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	
R435	1-247-807-31	CARBON	100	5%	1/4W		1-680-995-11	PANEL (L) BOARD				
R436	1-247-807-31	CARBON	100	5%	1/4W			*****				
R437	1-247-807-31	CARBON	100	5%	1/4W			< LED >				
R438	1-247-807-31	CARBON	100	5%	1/4W							
R440	1-247-807-31	CARBON	100	5%	1/4W	D701	8-719-057-97	LED SEL5923A-TP15 (■)				
R441	1-249-429-11	CARBON	10K	5%	1/4W	D702	8-719-058-03	LED SEL5423E-TP15 (▶)				
R442	1-247-807-31	CARBON	100	5%	1/4W	D703	8-719-057-97	LED SEL5923A-TP15 (⊙)				
R443	1-247-807-31	CARBON	100	5%	1/4W	D704	8-719-057-97	LED SEL5923A-TP15 (⊕)				
						D705	8-719-057-97	LED SEL5923A-TP15 (①)				
R444	1-247-807-31	CARBON	100	5%	1/4W			< RESISTOR >				
R445	1-247-807-31	CARBON	100	5%	1/4W							
R446	1-247-807-31	CARBON	100	5%	1/4W	R710	1-249-410-11	CARBON	270	5%	1/4W	
R447	1-247-807-31	CARBON	100	5%	1/4W	R711	1-249-411-11	CARBON	330	5%	1/4W	
R448	1-247-807-31	CARBON	100	5%	1/4W	R712	1-249-413-11	CARBON	470	5%	1/4W	
						R713	1-249-414-11	CARBON	560	5%	1/4W	
R449	1-247-807-31	CARBON	100	5%	1/4W	R714	1-249-415-11	CARBON	680	5%	1/4W	
R450	1-247-807-31	CARBON	100	5%	1/4W							
R451	1-247-807-31	CARBON	100	5%	1/4W	R715	1-249-417-11	CARBON	1K	5%	1/4W	
R452	1-247-807-31	CARBON	100	5%	1/4W	R716	1-249-418-11	CARBON	1.2K	5%	1/4W	
R453	1-247-807-31	CARBON	100	5%	1/4W			< SWITCH >				
R456	1-249-429-11	CARBON	10K	5%	1/4W							
R457	1-249-429-11	CARBON	10K	5%	1/4W	S711	1-771-410-21	SWITCH, TACTILE (◀◀)				
R459	1-247-807-31	CARBON	100	5%	1/4W	S712	1-771-410-21	SWITCH, TACTILE (▶▶)				
R460	1-249-429-11	CARBON	10K	5%	1/4W	S713	1-771-410-21	SWITCH, TACTILE (▶▶)				
R465	1-249-407-11	CARBON	150	5%	1/4W	S714	1-771-410-21	SWITCH, TACTILE (◀◀)				
						S715	1-771-410-21	SWITCH, TACTILE (■)				
R469	1-249-407-11	CARBON	150	5%	1/4W							
R473	1-249-407-11	CARBON	150	5%	1/4W	S716	1-771-410-21	SWITCH, TACTILE (■)				
R477	1-249-407-11	CARBON	150	5%	1/4W	S717	1-771-410-21	SWITCH, TACTILE (▶)				
R480	1-249-441-11	CARBON	100K	5%	1/4W			*****				
R481	1-249-407-11	CARBON	150	5%	1/4W							
R482	1-249-429-11	CARBON	10K	5%	1/4W		1-680-996-11	PANEL (R) BOARD				
R483	1-249-429-11	CARBON	10K	5%	1/4W			*****				
R484	1-247-807-31	CARBON	100	5%	1/4W			< RESISTOR >				
R485	1-247-807-31	CARBON	100	5%	1/4W							
R486	1-247-807-31	CARBON	100	5%	1/4W	R700	1-249-410-11	CARBON	270	5%	1/4W	
						R701	1-249-411-11	CARBON	330	5%	1/4W	
R487	1-247-807-31	CARBON	100	5%	1/4W	R702	1-249-413-11	CARBON	470	5%	1/4W	
R489	1-247-807-31	CARBON	100	5%	1/4W	R703	1-249-414-11	CARBON	560	5%	1/4W	
R490	1-247-807-31	CARBON	100	5%	1/4W	R704	1-249-415-11	CARBON	680	5%	1/4W	
R491	1-247-807-31	CARBON	100	5%	1/4W							
R492	1-249-425-11	CARBON	4.7K	5%	1/4W	R705	1-249-417-11	CARBON	1K	5%	1/4W	
						R706	1-249-418-11	CARBON	1.2K	5%	1/4W	
R493	1-249-407-11	CARBON	150	5%	1/4W	R707	1-249-420-11	CARBON	1.8K	5%	1/4W	
R494	1-247-807-31	CARBON	100	5%	1/4W			< SWITCH >				
R495	1-247-807-31	CARBON	100	5%	1/4W							
R496	1-249-429-11	CARBON	10K	5%	1/4W	S701	1-771-410-21	SWITCH, TACTILE (DISC 3)				
R497	1-247-807-31	CARBON	100	5%	1/4W	S702	1-771-410-21	SWITCH, TACTILE (DISC 2)				
						S703	1-771-410-21	SWITCH, TACTILE (DISC1)				
R500	1-249-429-11	CARBON	10K	5%	1/4W	S704	1-771-410-21	SWITCH, TACTILE (▲ (DISC 1))				
		< VIBRATOR >				S705	1-771-410-21	SWITCH, TACTILE (▲ (DISC 2))				
X401	1-781-107-21	VIBRATOR, CERAMIC (16MHz)										
		*****				S706	1-771-410-21	SWITCH, TACTILE (▲ (DISC 3))				
	1-678-461-11	MOTOR BOARD				S707	1-771-410-21	SWITCH, TACTILE (REPEAT)				
		*****				S708	1-771-410-21	SWITCH, TACTILE (PLAY MODE)				
		< CAPACITOR >						*****				
C721	1-162-306-11	CERAMIC	0.01uF	30%	16V		1-678-457-11	TRAY SENSOR BOARD				
		*****						*****				
		< CAPACITOR >										
						C731	1-164-159-11	CERAMIC	0.1uF		50V	

TRAY SENSOR

Ref. No.	Part No.	Description	Remark
< PHOTO SENSOR >			
IC731	8-749-081-01	PHOTO SENSOR DG-264	
IC732	8-749-081-01	PHOTO SENSOR DG-264	
IC733	8-749-081-01	PHOTO SENSOR DG-264	
< RESISTOR >			
R731	1-247-876-11	CARBON 75K 5% 1/4W	
R732	1-249-408-11	CARBON 180 5% 1/4W	
R733	1-247-876-11	CARBON 75K 5% 1/4W	
R734	1-249-408-11	CARBON 180 5% 1/4W	
R735	1-247-876-11	CARBON 75K 5% 1/4W	
R736	1-249-408-11	CARBON 180 5% 1/4W	

MISCELLANEOUS			

9	1-823-055-11	WIRE (FLAT TYPE) (21 CORE)	
11	1-757-633-11	CORD (WITH CONNECTOR) 17P	
571	X-4952-971-2	MOTOR ASSY	
605	1-757-710-11	WIRE (FLAT TYPE) (16 CORE)	
△ 606	A-4735-188-A	BU-30 (60) ASSY	
M721	1-541-632-12	MOTOR, DC (LOADING)	

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

MEMO

