

CDP-CE245/CE345

SERVICE MANUAL



Photo: CDP-CE345 (Silver TYPE)

US Model
Canadian Model
CDP-CE245/CE345

AEP Model
UK Model

E Model
CDP-CE345

Australian Model
CDP-CE245/CE345

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM59-5BD32A
Base Unit Name	BU-5BD32A
Optical Pick-up Name	KSS-213BA/F-NP

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser ($\lambda = 780 \text{ nm}$) Emission duration: continuous
Laser output	Max 44.6 μW^* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.
Frequency response	2 Hz to 20 kHz $\pm 0.5 \text{ dB}$
Dynamic range	More than 93 dB
Harmonic distortion	Less than 0.0045 %

Output

	Jack type	Maximum output level	Load impedance
ANALOG OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm

General

Power requirements

Where purchased	Power requirements
US and Canadian	120 V AC, 60 Hz
Australian	240 V AC, 50/60 Hz
AEP, UK and Singapore	220 V - 230 V AC, 50/60 Hz
E and Saudi Arabia	110 V - 120 V or 220 V - 240 V AC, adjustable, 50/60 Hz

Power consumption 11 W

Dimensions (approx.) (w/h/d) 430 \times 110 \times 398 mm (17 \times 4 3/8 \times 15 3/4 in.) incl. projecting parts

Mass (approx.) 5 kg (11 lbs 1 oz.)

Supplied accessories

- Audio connecting cord (1)
- Remote commander (remote) (RM-DC355) (1) (CDP-CE345 only)
- Size AA (R6) batteries (2) (CDP-CE345 only)

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER

SONY®

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check 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 TEST

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 2 V AC range are suitable. (See Fig. A)

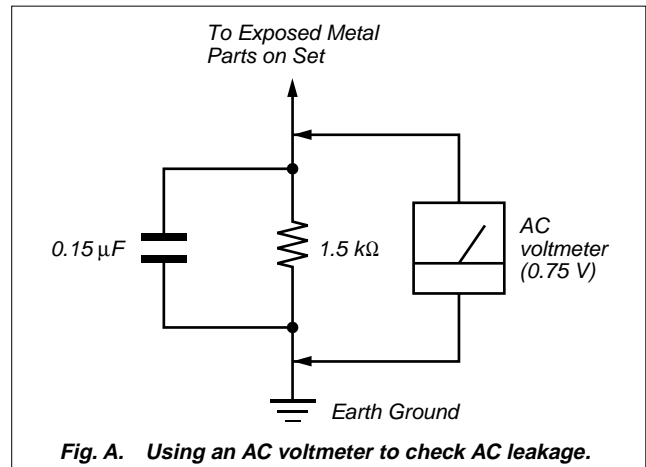


Fig. A. Using an AC voltmeter to check AC leakage.

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

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.

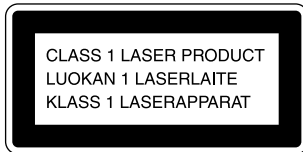
NOTES ON LASER DIODE EMISSION CHECK

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.

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 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

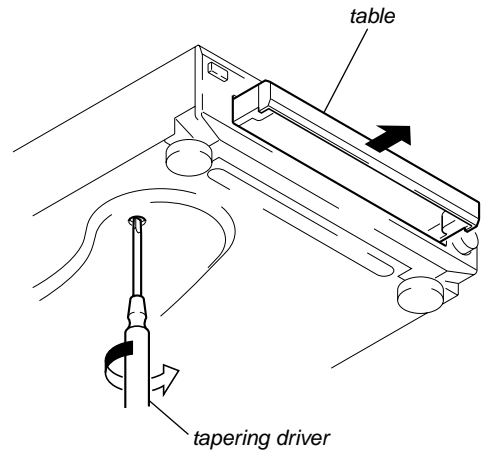
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

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.

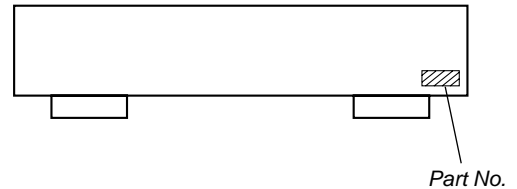
HOW TO OPEN THE DISC TABLE WHEN POWER SWITCH TURNS OFF

Insert a tapering driver into the aperture of the unit bottom, and turn it in the direction of the arrow (to OUT direction).



** To close the disc table, turn the tapering driver in the reverse direction (to IN direction).*

MODEL IDENTIFICATION – BACK PANEL –

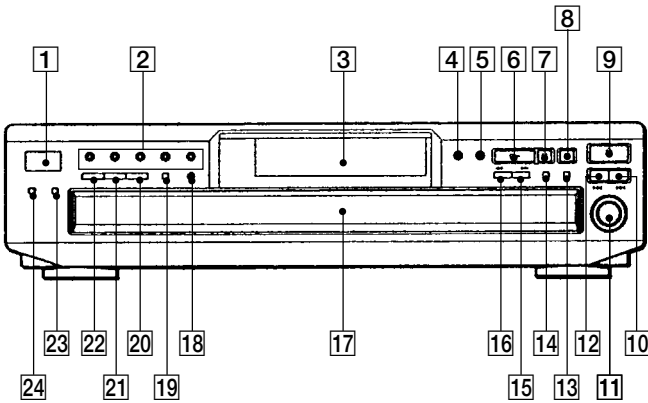


Model	Part No.
CDP-CE245: US model	4-224-877-0□
CDP-CE245: Canadian model	4-224-877-1□
CDP-CE245: Australian model	4-224-877-2□
CDP-CE345: US model	4-224-878-0□
CDP-CE345: Canadian model	4-224-878-1□
CDP-CE345: AEP model	4-224-878-2□
CDP-CE345: UK model	4-224-878-3□
CDP-CE345: Australian model	4-224-878-4□
CDP-CE345: E model	4-224-878-5□
CDP-CE345: Singapore model	4-224-878-6□
CDP-CE345: Saudi Arabia model	4-224-878-7□

SECTION 2 GENERAL

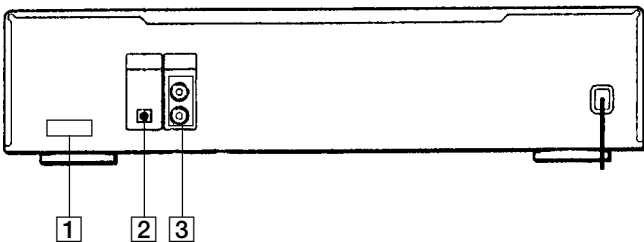
• LOCATION OF CONTROLS

– Front panel –



- 1 POWER button
- 2 DISC1 – DISC5 button
- 3 Fluorescent indicator tube display
- 4 MUSIC SCAN button
- 5 FADER button
- 6 ▷ button
- 7 || button
- 8 ■ button
- 9 ≡ OPEN/CLOSE button
- 10 DISC SKIP button
- 11 |◀◀ AMS ▶▶| control
- 12 EX-CHANGE button
- 13 CLEAR button
- 14 CHECK button
- 15 ▶▶ button
- 16 ◀◀ button
- 17 Disc table
- 18 TIME button
- 19 REPEAT button
- 20 PROGRAM button
- 21 SHUFFLE button
- 22 CONTINUE button
- 23 PEAK SEARCH button
- 24 EDIT/TIME FADE button

– Rear panel –

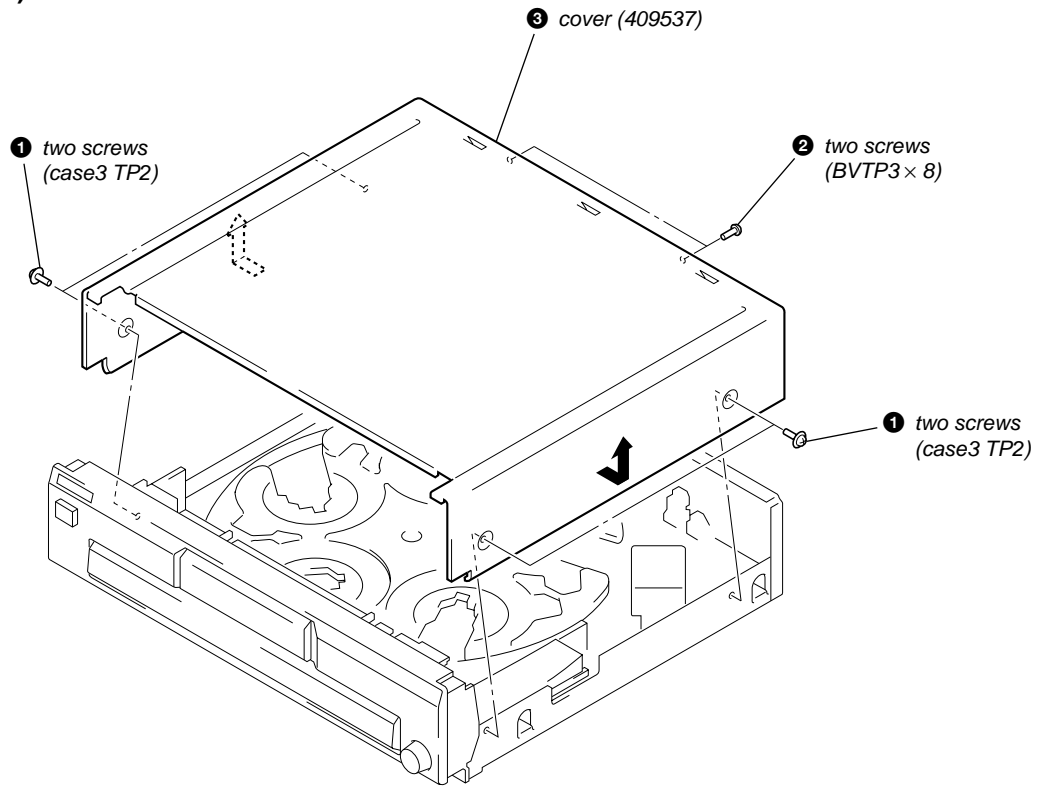


- 1 Voltage selector switch (E and Saudi Arabia models only)
- 2 DIGITAL OUT OPTICAL connector
- 3 ANALOG OUT

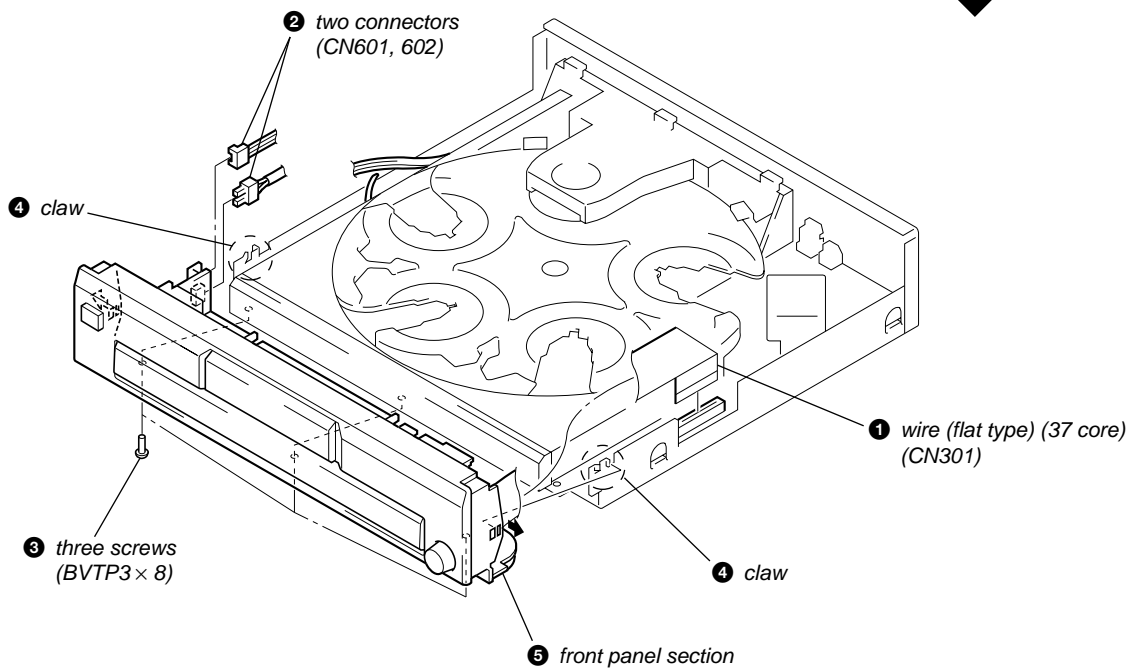
SECTION 3 DISASSEMBLY

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

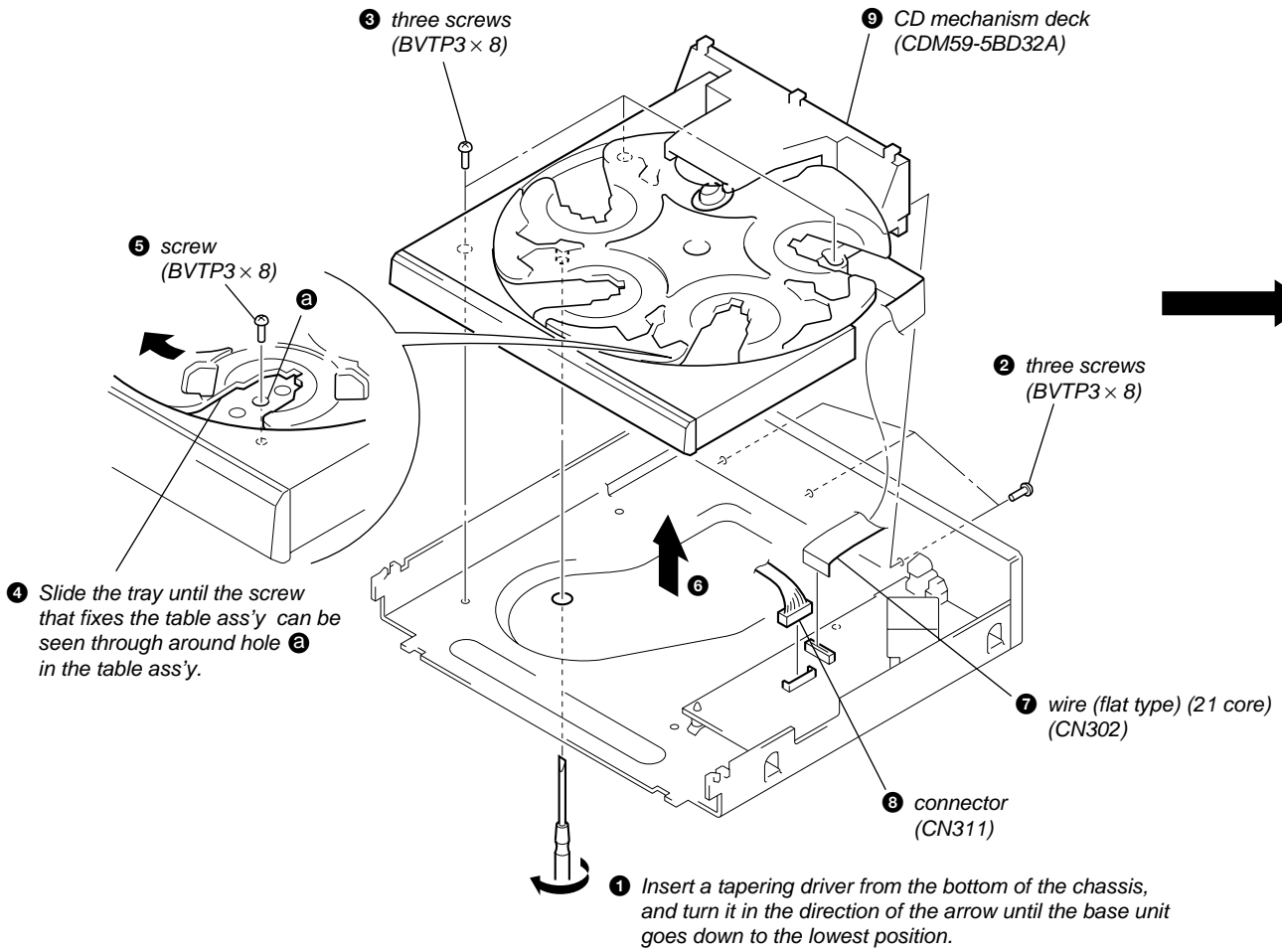
COVER (409537)



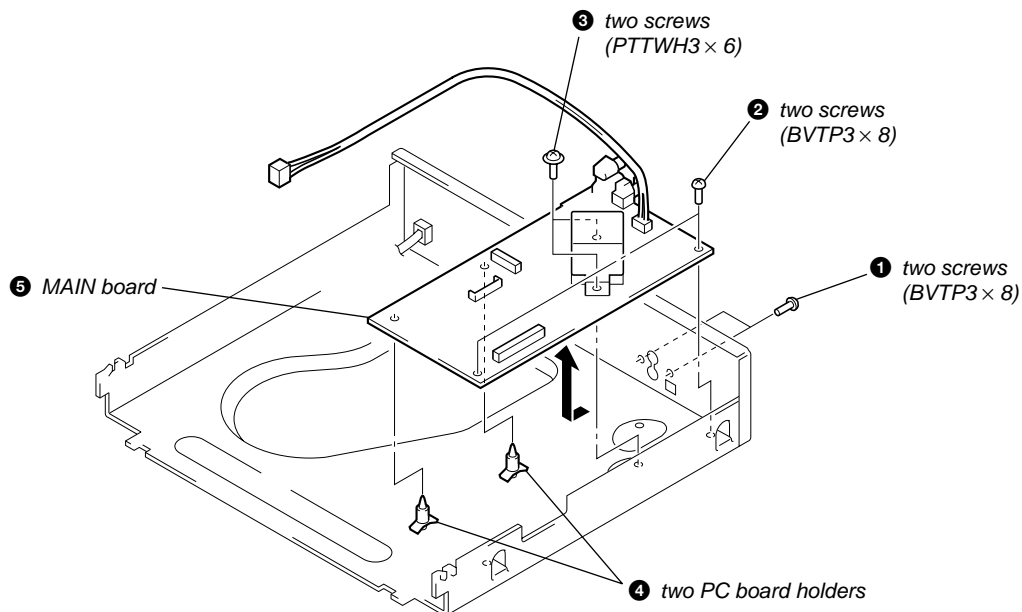
FRONT PANEL SECTION



CD MECHANISM DECK (CDM59-5BD32A)



MAIN BOARD



BASE UNIT (BU-5BD32A)

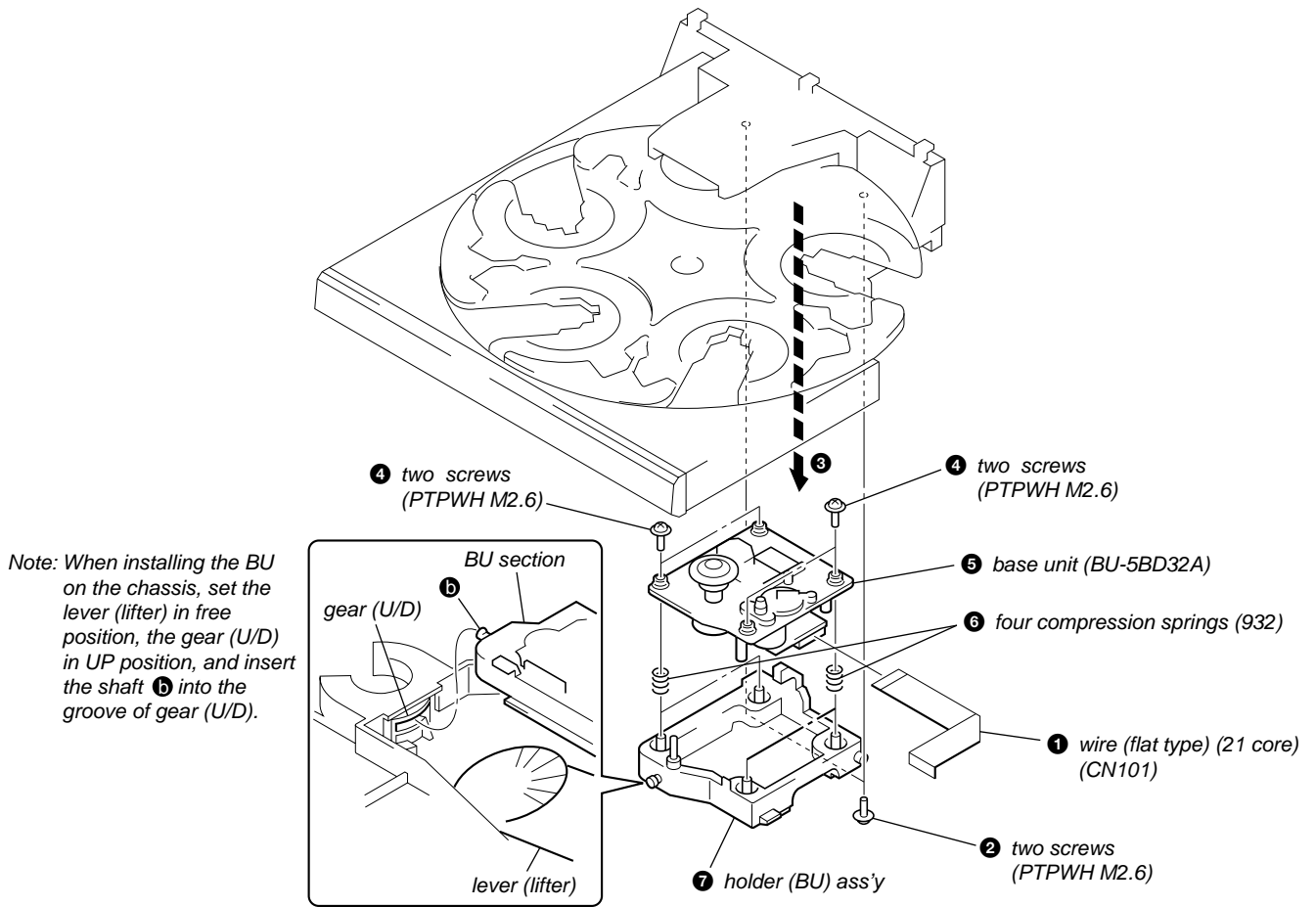
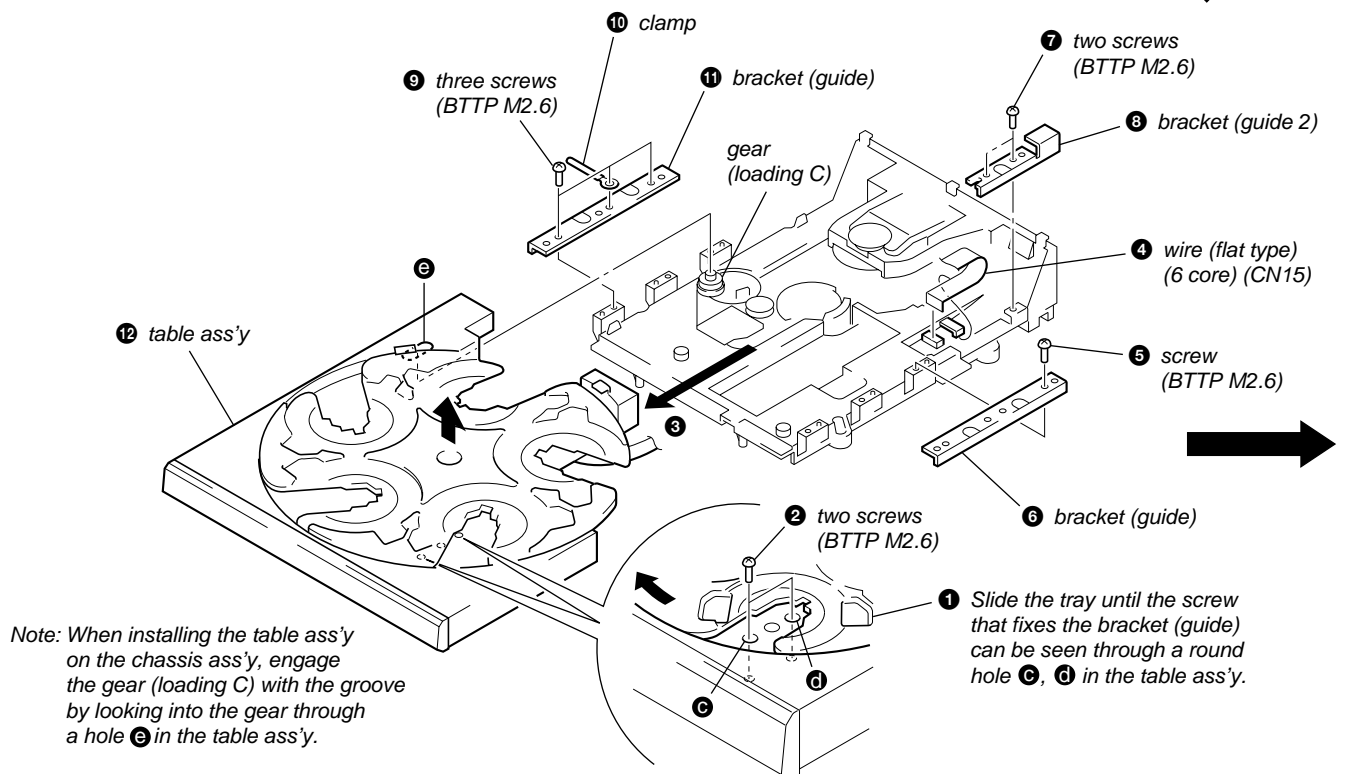
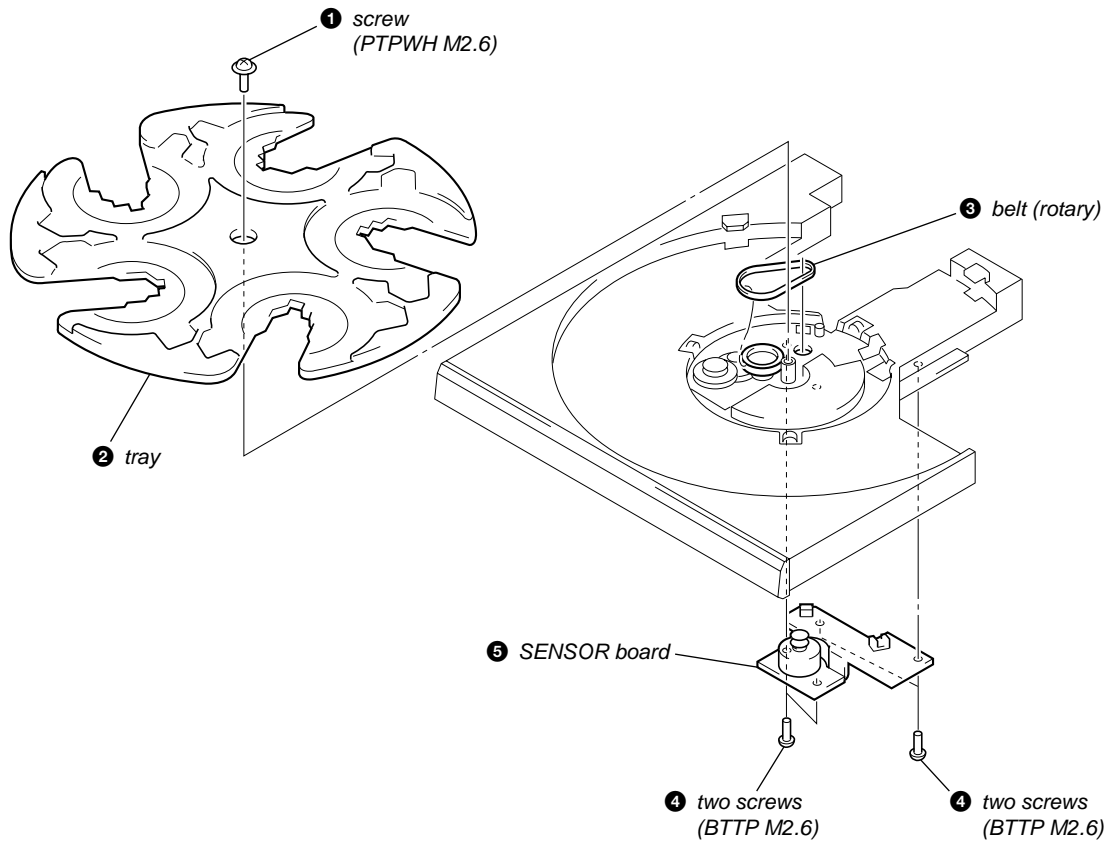


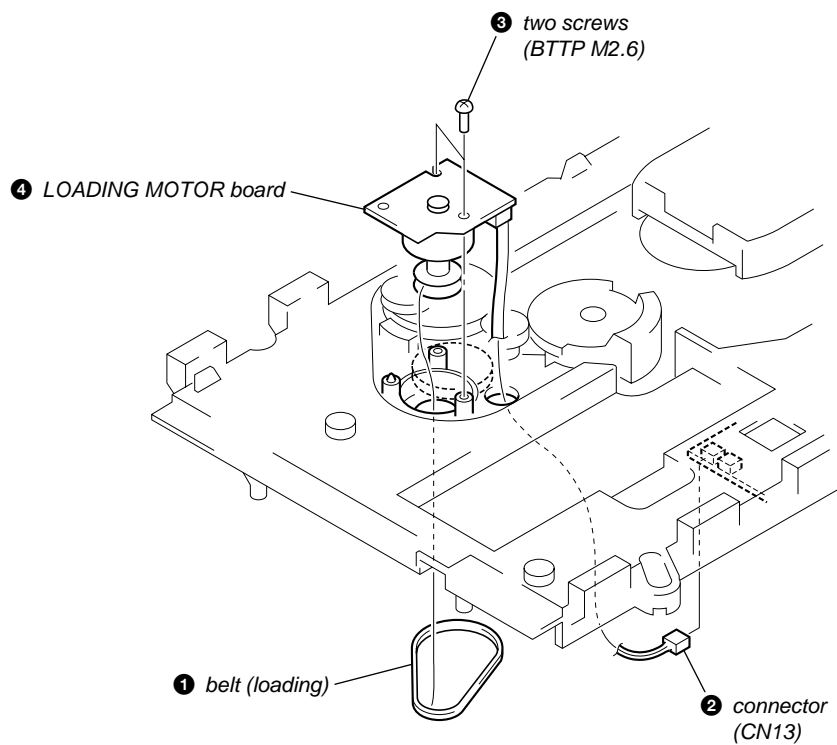
TABLE ASS'Y



TRAY, BELT (ROTARY), SENSOR BOARD

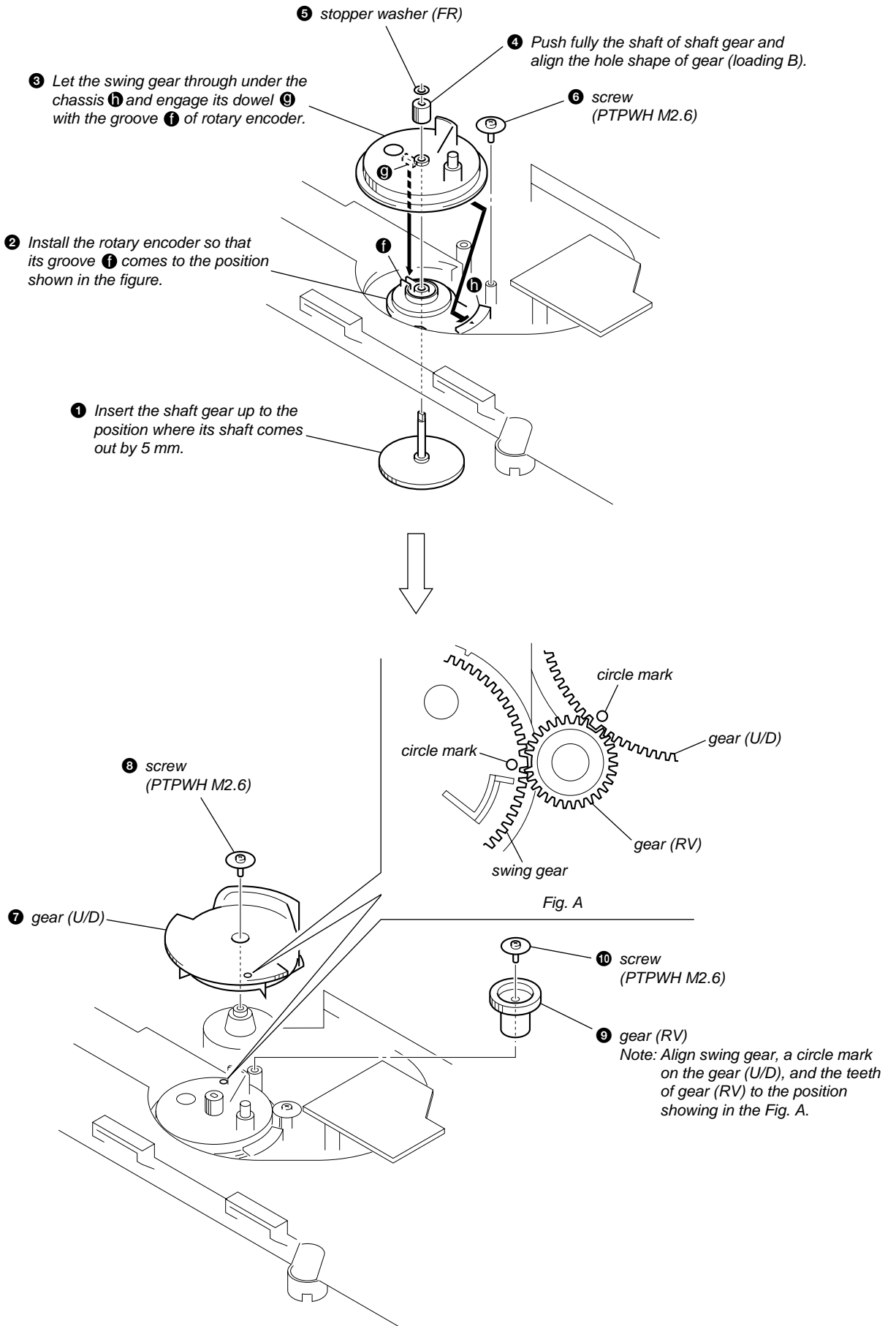


BELT (LOADING), LOADING MOTOR BOARD



ADJUSTING PHASE OF SWING GEAR AND GEAR (U/D)

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



SECTION 4 TEST MODE

ADJ MODE

NOTE: This mode cannot be performed without a general remote commander.

1. Chuck the CD first, and then turn OFF the power.
2. Short-circuit the test point TP1 (ADJ) of the MAIN board and ground with a lead wire.
3. Press the **[POWER]** button to turn ON the power. The CD is playback automatically and the ADJ mode is set.
4. To exit the mode, press the **[POWER]** button to turn OFF the power.

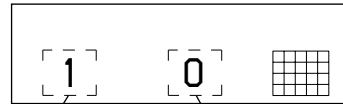
- Prohibits high speed search during accessing
- Ignores even if GFS becomes "L"

ADJ Mode Special Function Table

Button	Function
PROGRAM	Auto gain display (Focus, Tracking and Sledding)
CONTINUE	Servo average display 1 (VC, FE and RF)
SHUFFLE	Servo average display 2 (TE and Traverse)
FADER	RFCK → GFS → Error rate display

FLUORESCENT INDICATOR TUBE, LED ALL LIT, AND KEY CHECK MODE

1. Short-circuit the test TP2 (AFADJ) of the MAIN board and ground with a lead wire.
2. Press the **[POWER]** button to turn ON the power. The whole fluorescent indicator tube lights up.
3. All buttons have individual button numbers. When a button is pressed, the button number is counted up and displayed.



Count up display Displays button number

When remote controller signals are received, "RM **" will be displayed.

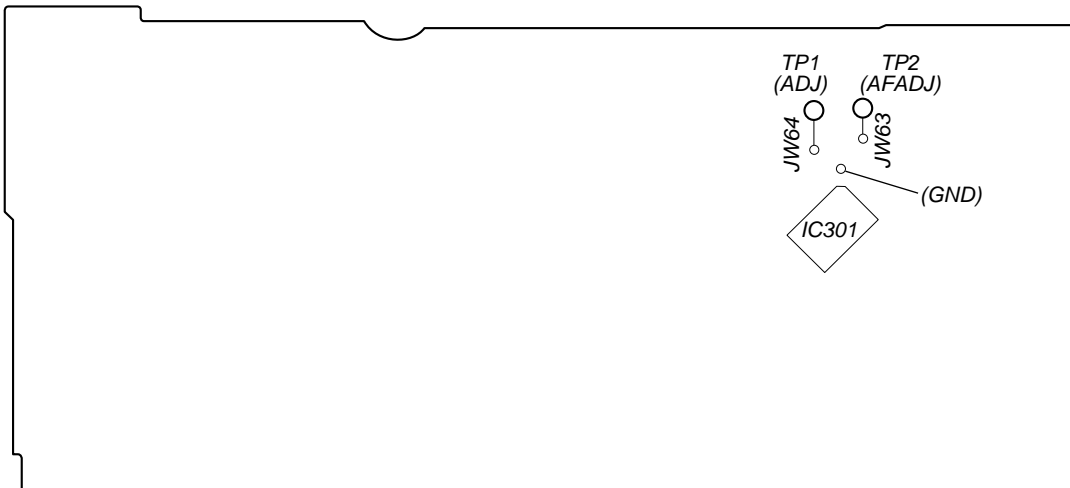
(** are the numbers corresponding to the remote controller buttons.)

When using the remote controller, switch the **[CD1/2/3]** switch to CD1.

4. To exit the mode, press the **[POWER]** button to turn OFF the power.

Checking Location:

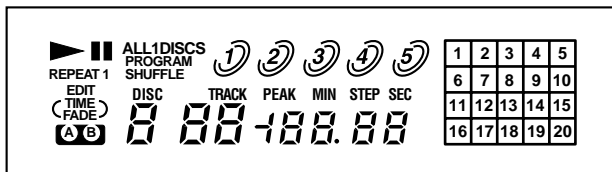
– MAIN BOARD (Conductor Side) –



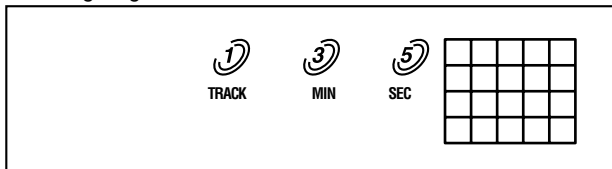
Buttons and Corresponding Button Numbers

Button	Button Number or Display
CONTINUE	12
SHUFFLE	11
PROGRAM	10
REPEAT	9
DISC1	20
DISC2	19
DISC3	18
DISC4	17
DISC5	16
▷ (PLAY)	Partial lighting 1
⏸ (PAUSE)	Partial lighting 2
■ (STOP)	All lit (LED lighting)
EX-CHANGE	25
DISC SKIP	24
⏪ OPEN/CLOSE	32
AMS (button)	26
AMS (knob)	When rotated clockwise: The music calendar numerals light up in ascending order. When rotated counterclockwise: The music calendar numerals light up in descending order.
FADER	36
MUSIC SCAN	37
CLEAR	27
CHECK	28
▶▶	29
◀◀	30
PEAK SEARCH	21
TIME	8
TIME/TEXT	22

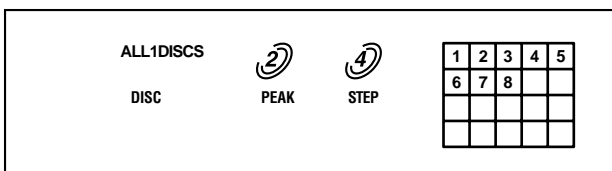
All lit



Partial lighting 1



↕ Light alternately



Partial lighting 2



↕ Light alternately



AGING MODE

For the aging mode, three modes of all mode, disc table mode, and loading mode are available.

This set has the Aging mode for operation check of the mechanism deck.

- If a failure occurred
The aging operation stops and a faulty status is displayed on the fluorescent indicator tube.
- If no failure occurs
The aging operation continues repeatedly.

Note: Do not use the test disc when performing aging.

Aging will not be performed properly if discs with tracks shorter than 4 seconds are used.

Aging method 1

(When using the aging remote controller (J-2501-123-A):

1. Set the remote controller [CD1/2/3] switch to CD1.
2. Press the [POWER] button and turn ON the power.
3. Set discs on all trays.
(More than two discs if five are not available.)
4. Press the [AGING START] button of the aging remote controller.
5. Aging starts, and the fluorescent indicator tube will display the following.
6. To exit the mode, press the [POWER] button to turn OFF the power.

Aging method 2

(When no aging remote controller):

1. Press the [POWER] button and turn ON the power.
2. Set discs on all trays.
(More than two discs if five are not available.)
3. All mode:
Press the [CONTINUE], [■] and [CHECK] buttons at the same time.
Disc table mode:
Press the [CONTINUE], [■] and [DISC SKIP] buttons at the same time.
Loading mode:
Press the [CONTINUE], [■] and [EX-CHANGE] buttons at the same time.
4. Aging starts, and the fluorescent indicator tube will display the following.
5. To exit the mode, press the [POWER] button to turn OFF the power.

Code No.	Status	All mode	Disc table mode	Loading mode	Display in Normal operation	Display in case of failure
0	CLOSE (Tray closed)	○	×	○	A-0	Err 0
1	TOC reading	○	○	○	A-1	Err 1
2	Access to last track	○	×	×	A-2	Err 2
3	Play of last track (3 sec)	○	×	×	Counter display	Err 3
4	EX OPEN (Tray opened while chucking)	○	×	○	A-4	Err 4
5	EX SKIP (Disc tray rotated)	○	×	×	A-5	Err 5
6	EX CLOSE (Tray closed)	○	×	○	A-6	Err 6
7	Access to first track	○	×	×	A-7	Err 7
8	Play of first track (3 sec)	○	×	×	Counter display	Err 8
9	OPEN (tray opened)	○	×	○	A-9	Err 9
A	DISC SKIP (Disc tray rotated, Ond next disc was selected)	○	○	×	A-A	Err A

The discs are selectie in the order of DISC1 →DISC2 → DISC3 → DISC4 → DISC5 → DISC1 → Empty trays are skipped.

MECHANISM DECK CHECK MODE

For the mechanism deck check mode, two modes of disc table mode and loading mode are available.

In the mechanism deck check mode, the disc table turning time and the loading time in each section are measured and displayed.

1. Disc table mode:

Press the **POWER** switch while pressing **CHECK**, **OPEN/CLOSE** and **REPEAT** buttons simultaneously.

Loading mode:

Press the **POWER** switch while pressing **CHECK**, **OPEN/CLOSE** and **TIME** buttons simultaneously.

Display contents

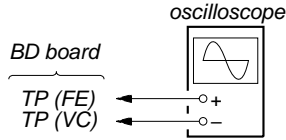
Mode	Check command	Display
Disc table mode (Table turning time measurement)	0: Right one turn	r 12.5
	1: Left one Turn	L 10.2
	2: Measurement end	r 12.5
	3: Undefined	
Table mode (Loading time measurement)	4: Star position	Sta --.
	5: Open → Close	CLo 10.2
	6: Close → BU up	UP 0.7
	7: BU up → EX open	EoP 6.2
	8: EX open → EX close	ECL 10.3
	9: EX close → BU down	don 1.2
	A: BU down → Open	oPn 9.3
	FF: Measurement end	CLo 10.2

SECTION 5 ELECTRICAL CHECKING

Note:

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

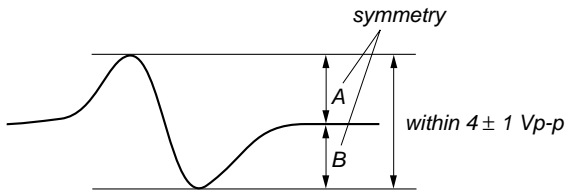
S-Curve Check



Procedure:

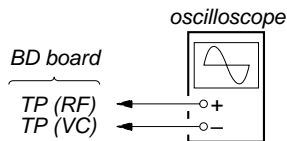
1. Connect oscilloscope to TP (FE) and TP (VC) on the BD board.
2. Connect between TP (FE1) and TP (VC) with lead wire.
3. Connect between TP (AGCCON) and TP (GND) with lead wire.
4. Turned power switch ([POWER] button) on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4 ± 1 Vp-p.

S-curve waveform



7. After check, remove the lead wire connected in step 2 and 3.
- Note:**
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
 - Take sweep time as long as possible and light up the brightness to obtain best waveform.

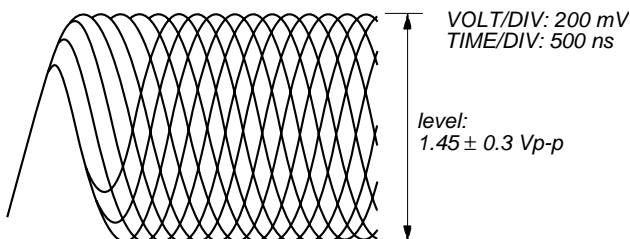
RF Level Check



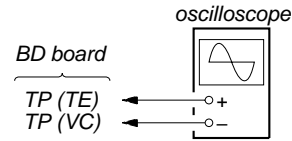
Procedure:

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

Note: Clear RF signal waveform means that the shape "0" can be clearly distinguished at the center of the waveform.



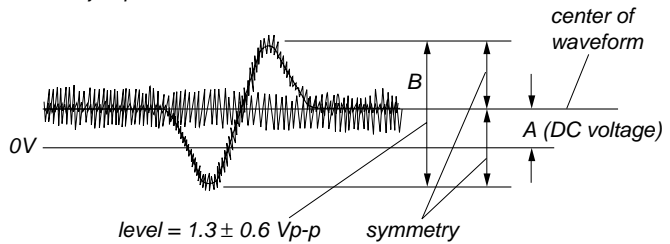
E-F Balance (1 Track Jump) Check



Procedure :

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

1 track jump waveform



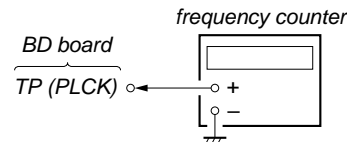
Specified level: $\frac{A}{B} \times 100 = \text{less than } \pm 22\%$

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

RF PLL Free-run Frequency Check

Procedure :

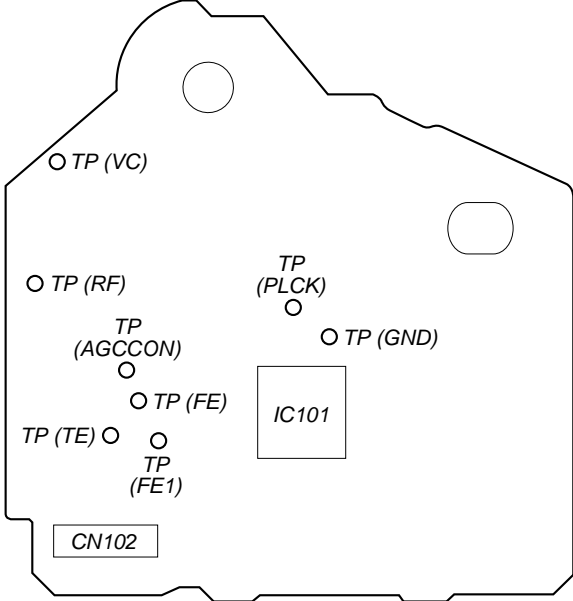
1. Connect frequency counter to TP (PLCK) with lead wire.



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

Checking Location:

- BD BOARD (Conductor Side) -



MEMO

SECTION 6 DIAGRAMS

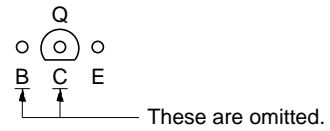
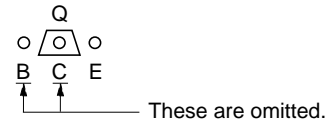
6-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

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

Caution:
 Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
 (Conductor Side)
 Parts face side: Parts on the parts face side seen from the parts face are indicated.
 (Component Side)

• Indication of transistor



Note on Schematic Diagram:

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

Note:

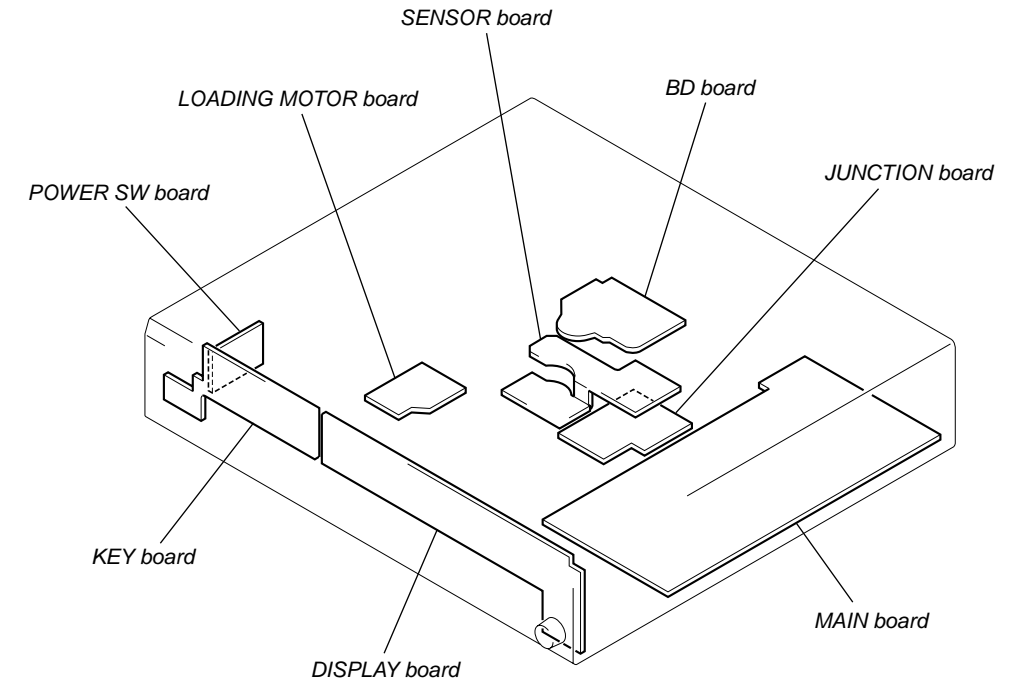
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Note:

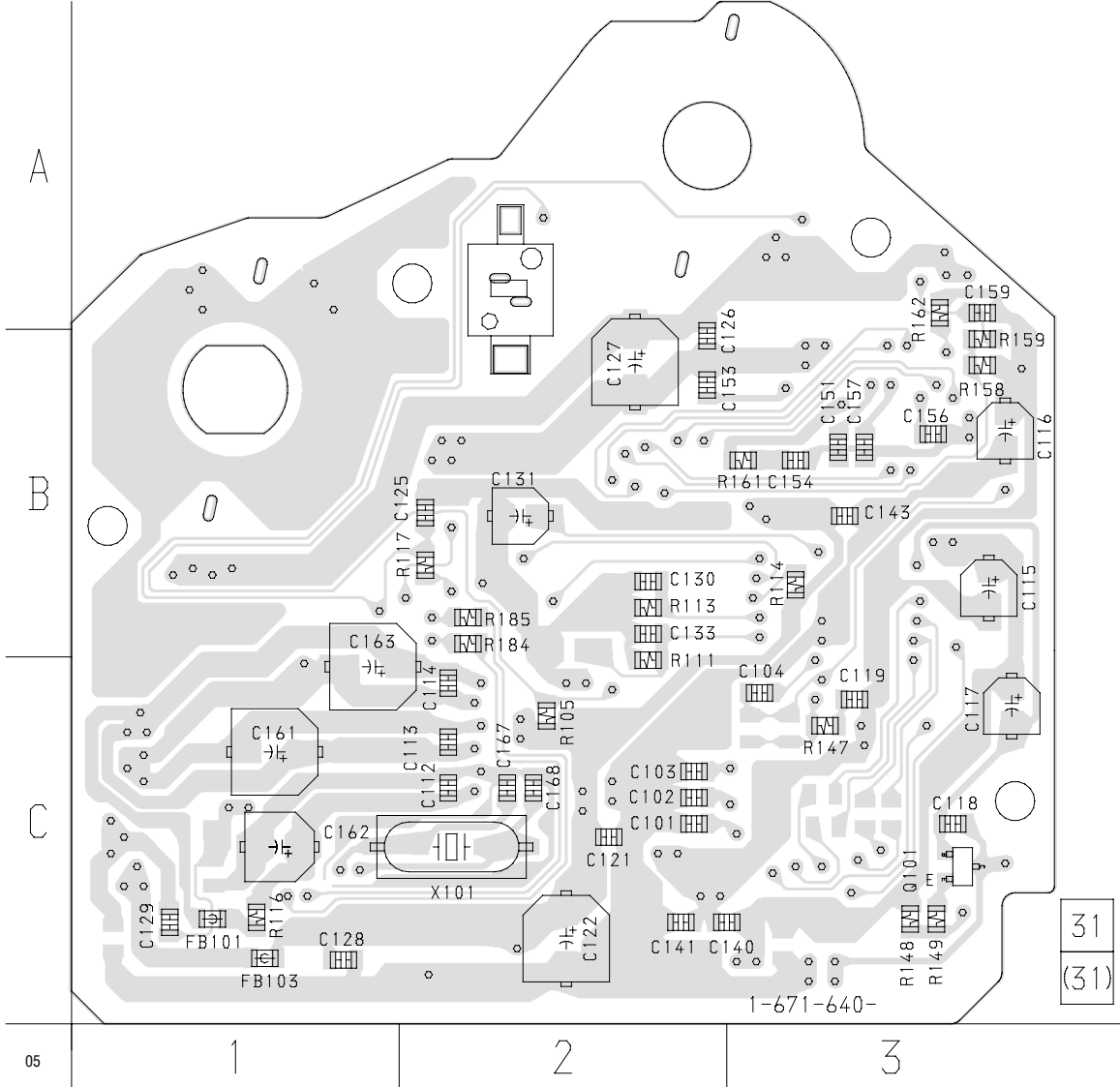
Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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



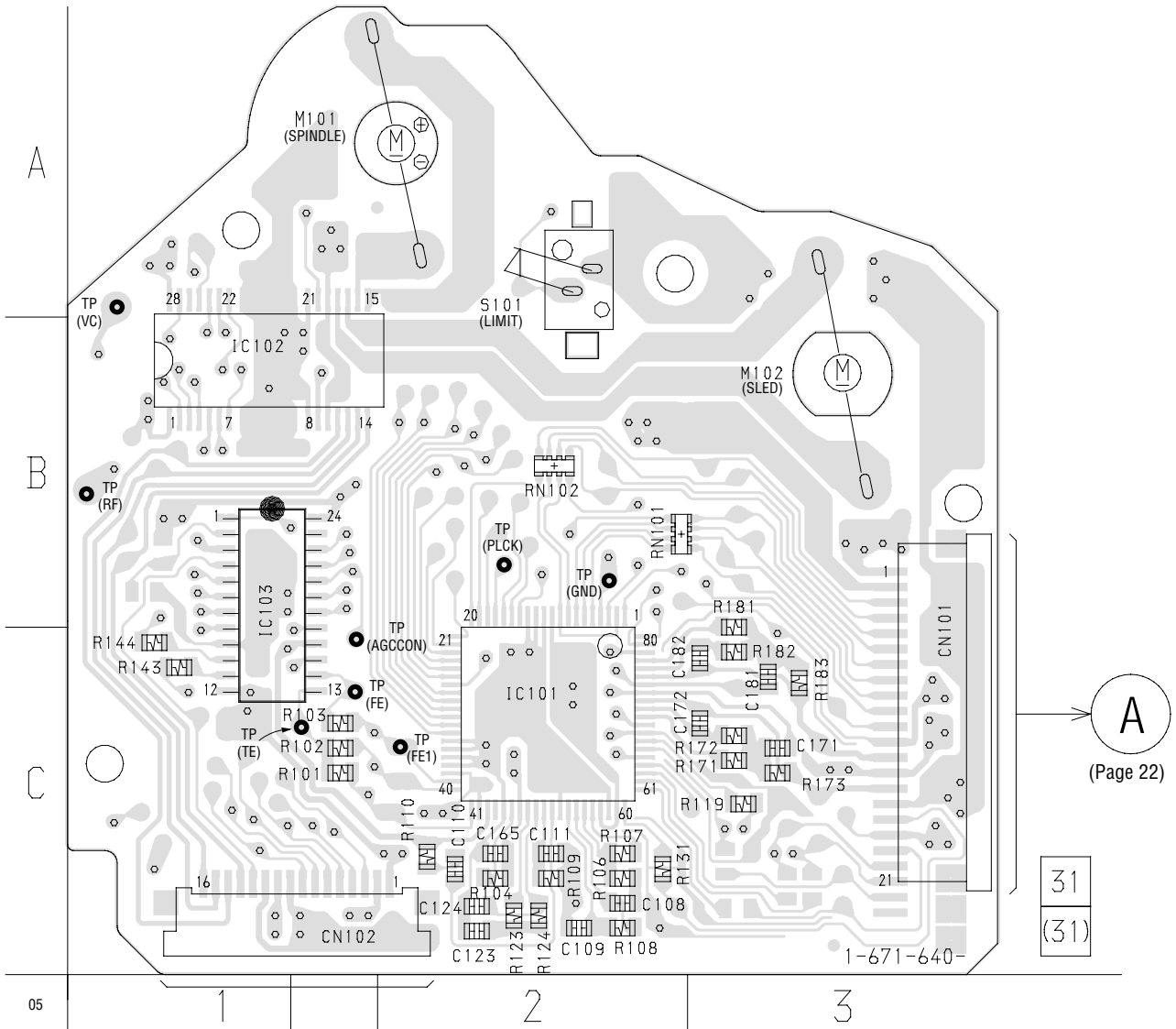
【 BD BOARD 】 (COMPONENT SIDE)



• Semiconductor Location

Ref. No.	Location
Q101	C-3

【 BD BOARD 】 (CONDUCTOR SIDE)

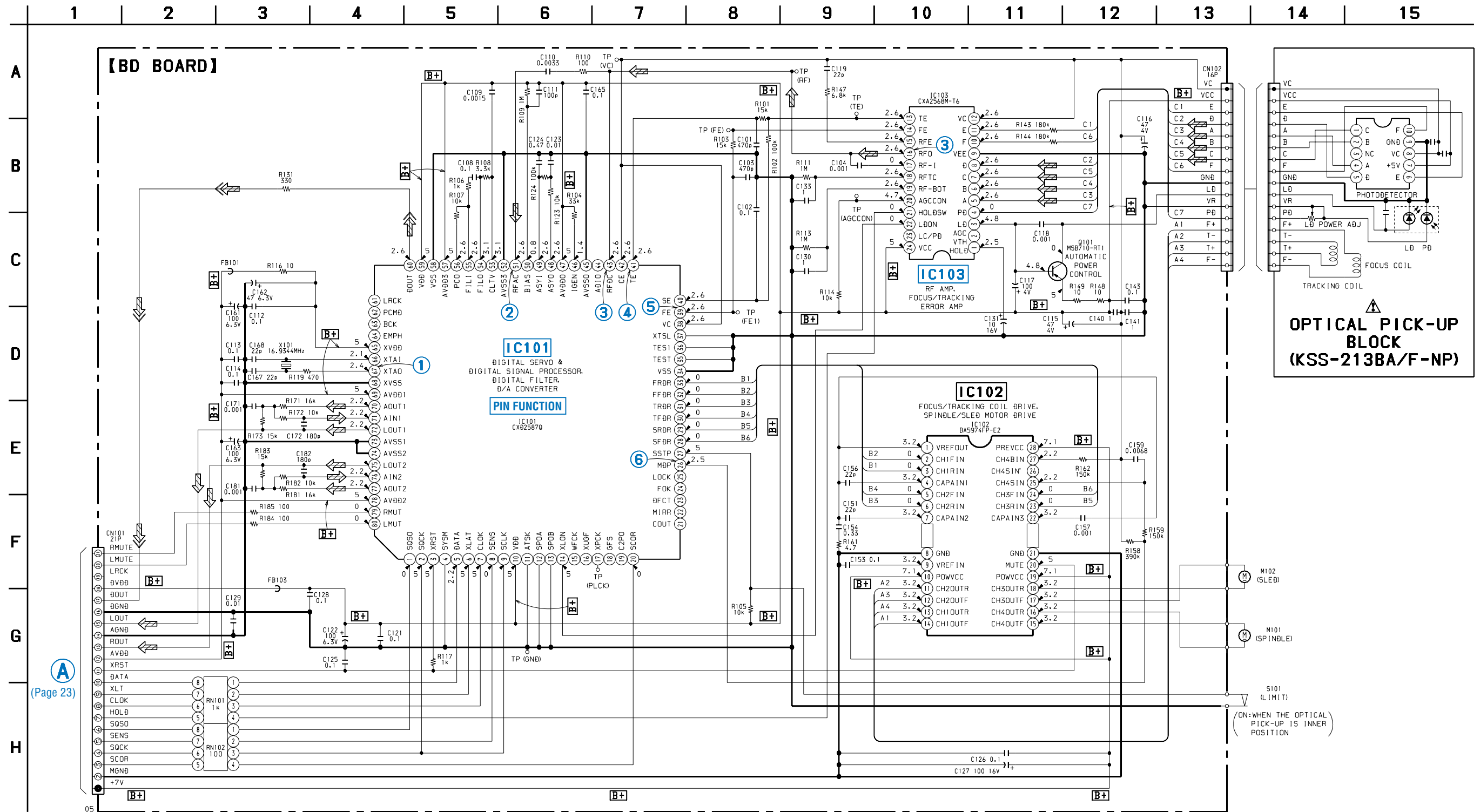


OPTICAL PICK-UP BLOCK
KSS-213BA/F-NP

• Semiconductor Location

Ref. No.	Location
IC101	C-2
IC102	B-1
IC103	B-1

6-3. SCHEMATIC DIAGRAM – BD Board – • See page 26 for Waveforms. • See page 26 for IC Block Diagrams.

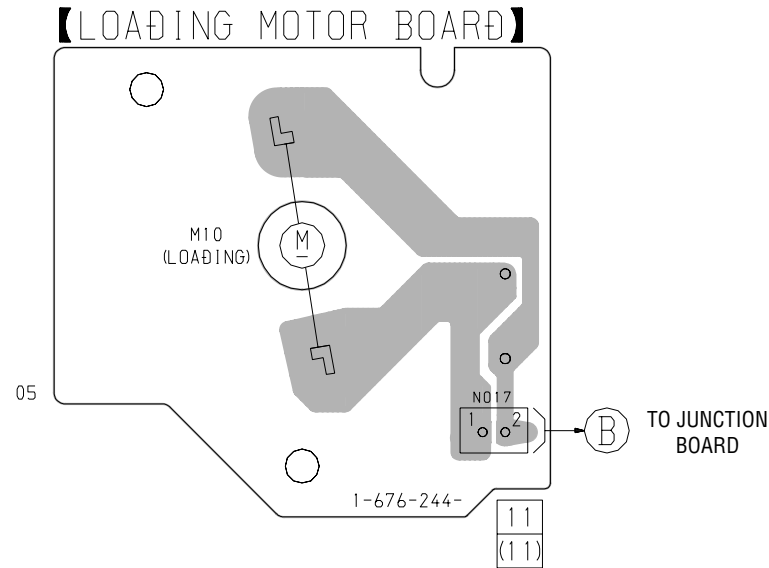
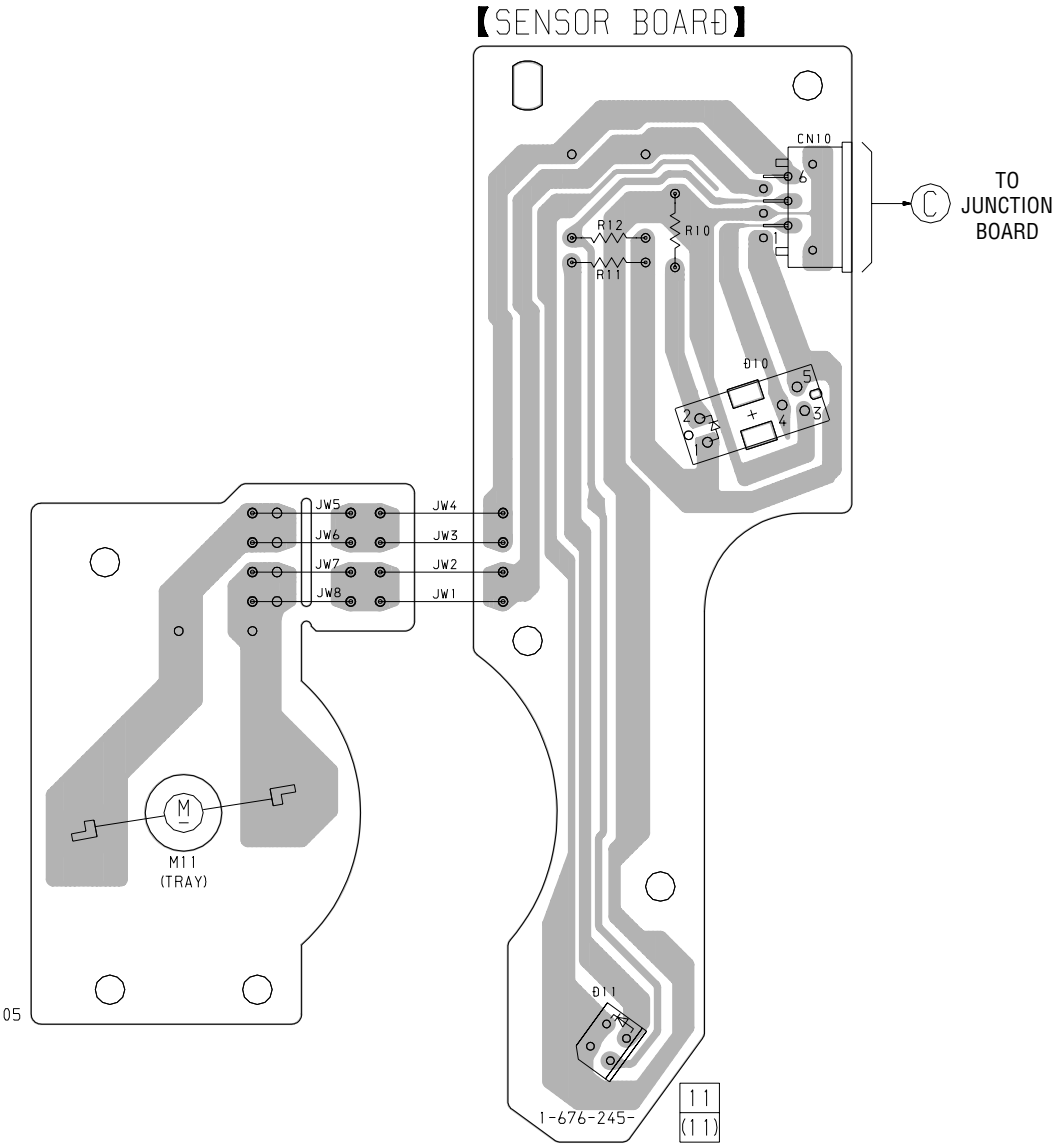
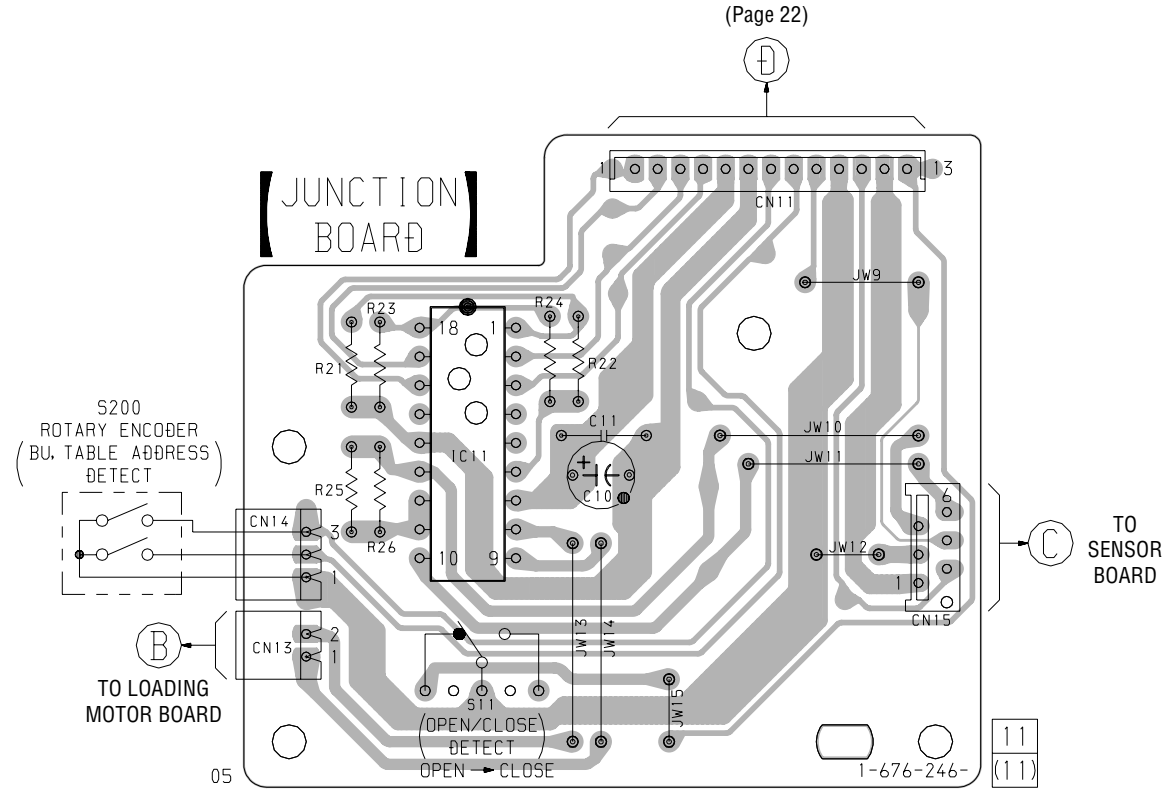


(Page 23)

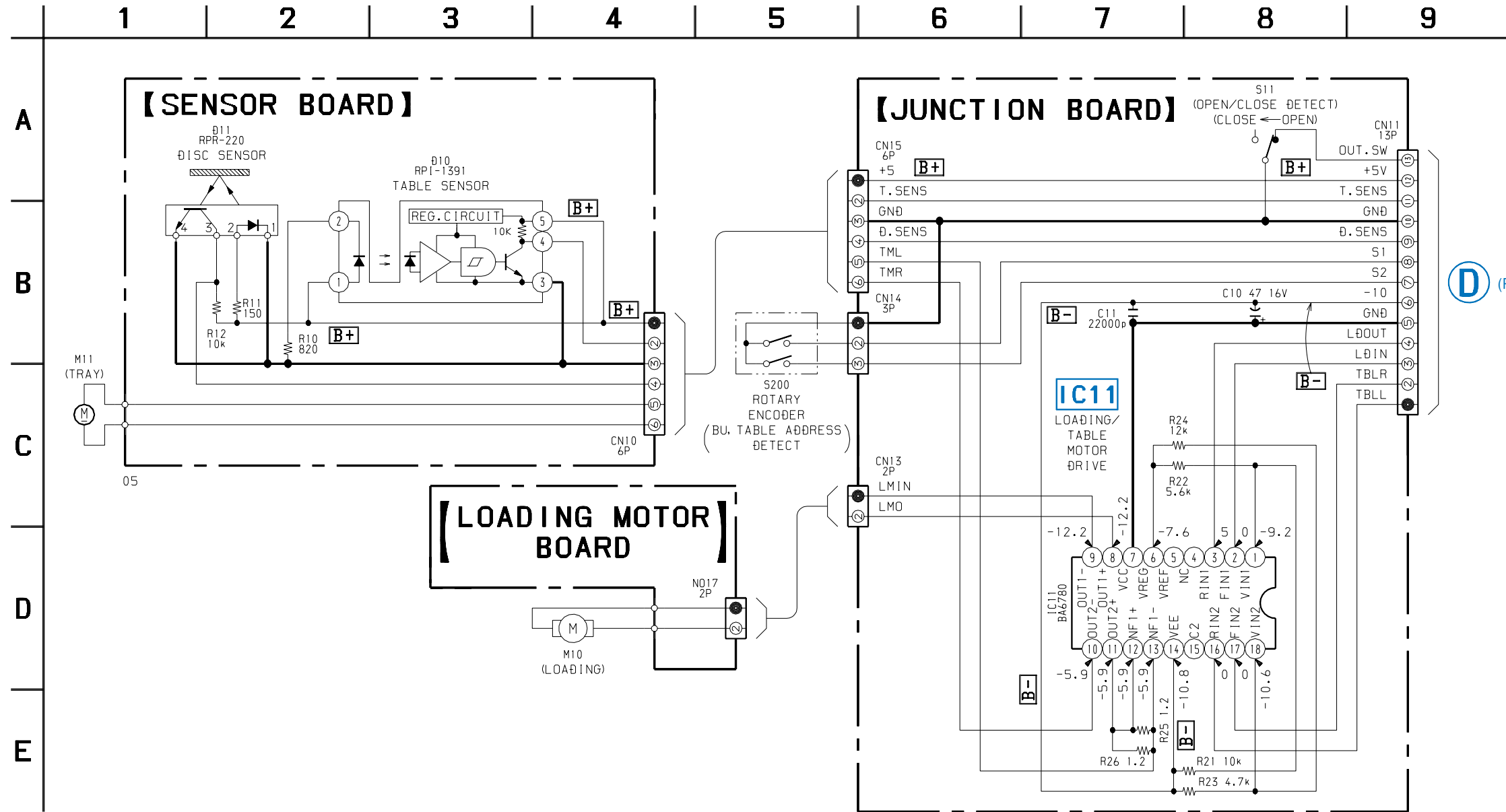
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

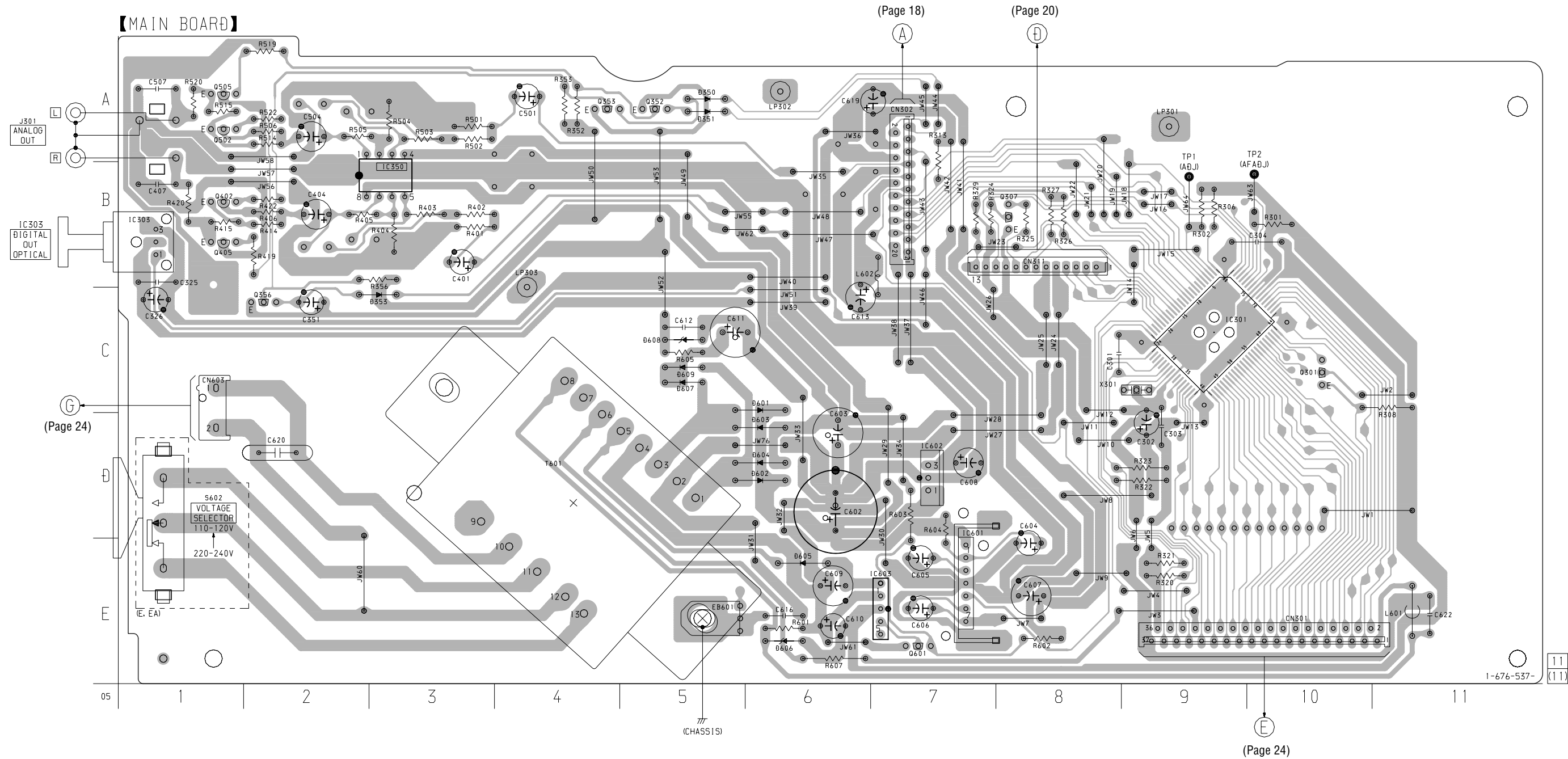
6-4. PRINTED WIRING BOARDS – JUNCTION/SENSOR/LOADING MOTOR Boards – • See page 17 for Circuit Boards Location.



6-5. SCHEMATIC DIAGRAM – JUNCTION/SENSOR/LOADING MOTOR Boards – • See page 26 for IC Block Diagram.



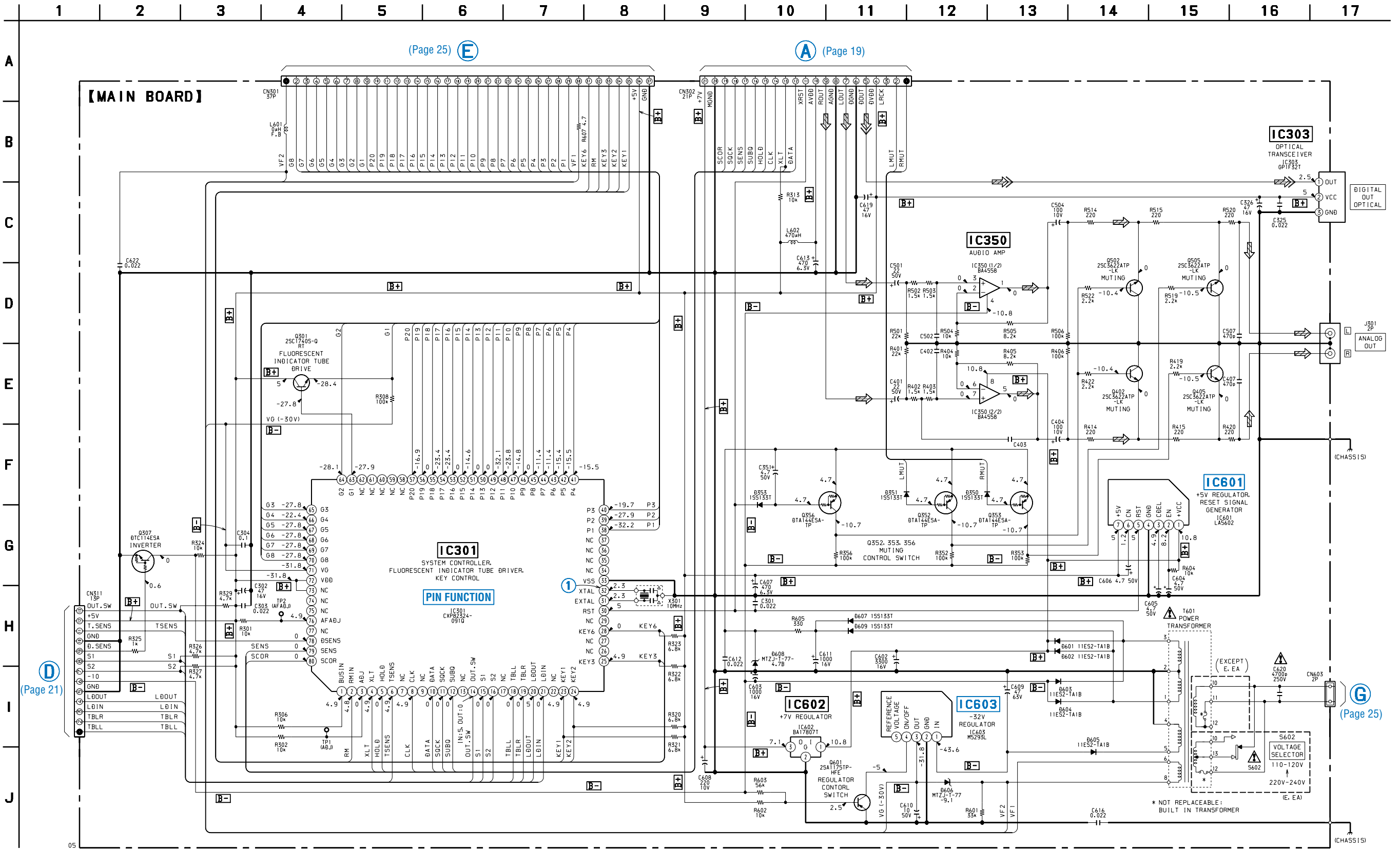
D (Page 23)



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D350	A-5	IC350	B-3
D351	A-5	IC601	E-7
D353	C-3	IC602	D-7
D601	C-6	IC603	E-7
D602	D-6		
D603	D-6	Q301	C-10
D604	D-6	Q307	B-8
D605	E-6	Q352	A-5
D606	E-6	Q353	A-4
D607	C-5	Q356	C-2
D608	C-5	Q402	B-1
D609	C-5	Q405	B-1
		Q502	A-1
IC301	C-9	Q505	A-1
IC303	B-1	Q601	E-7

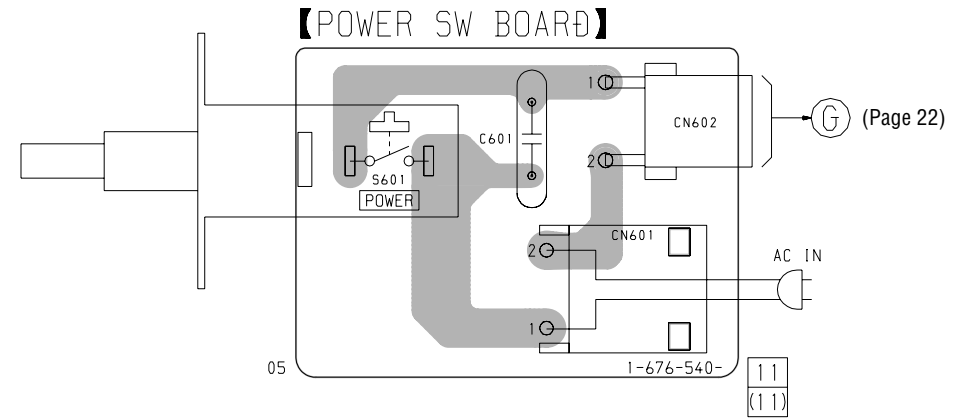
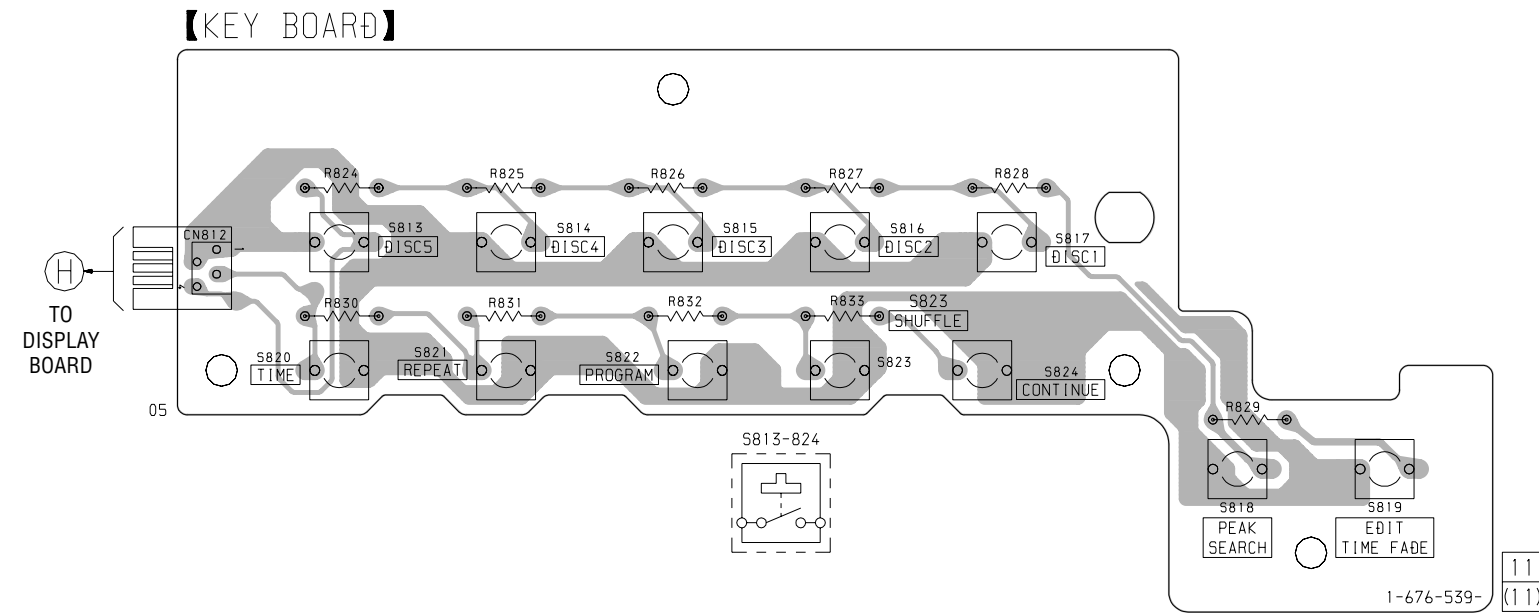
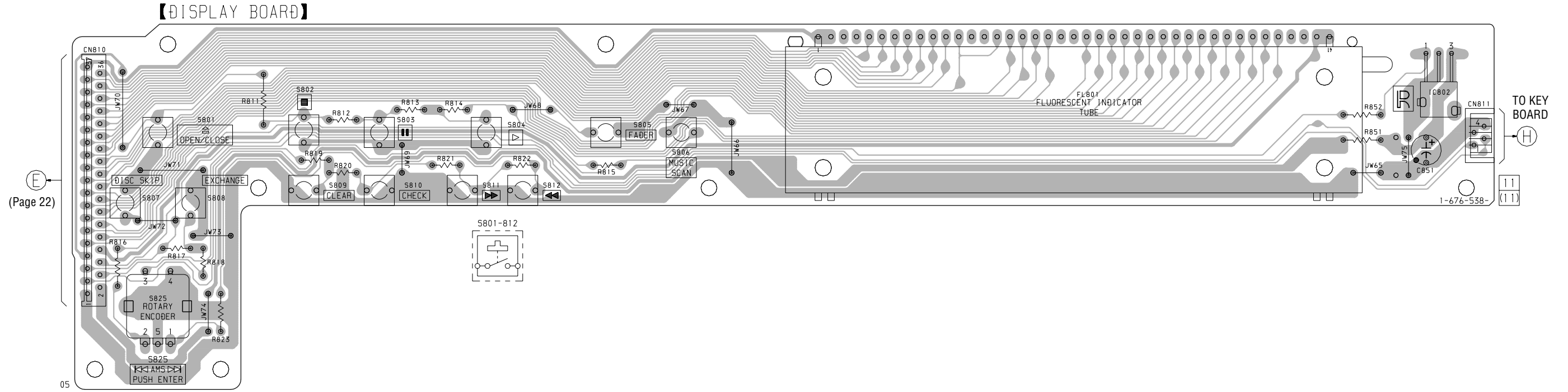
6-7. SCHEMATIC DIAGRAM – MAIN Board – • See page 26 for Waveform. • See page 26 for IC Block Diagrams.



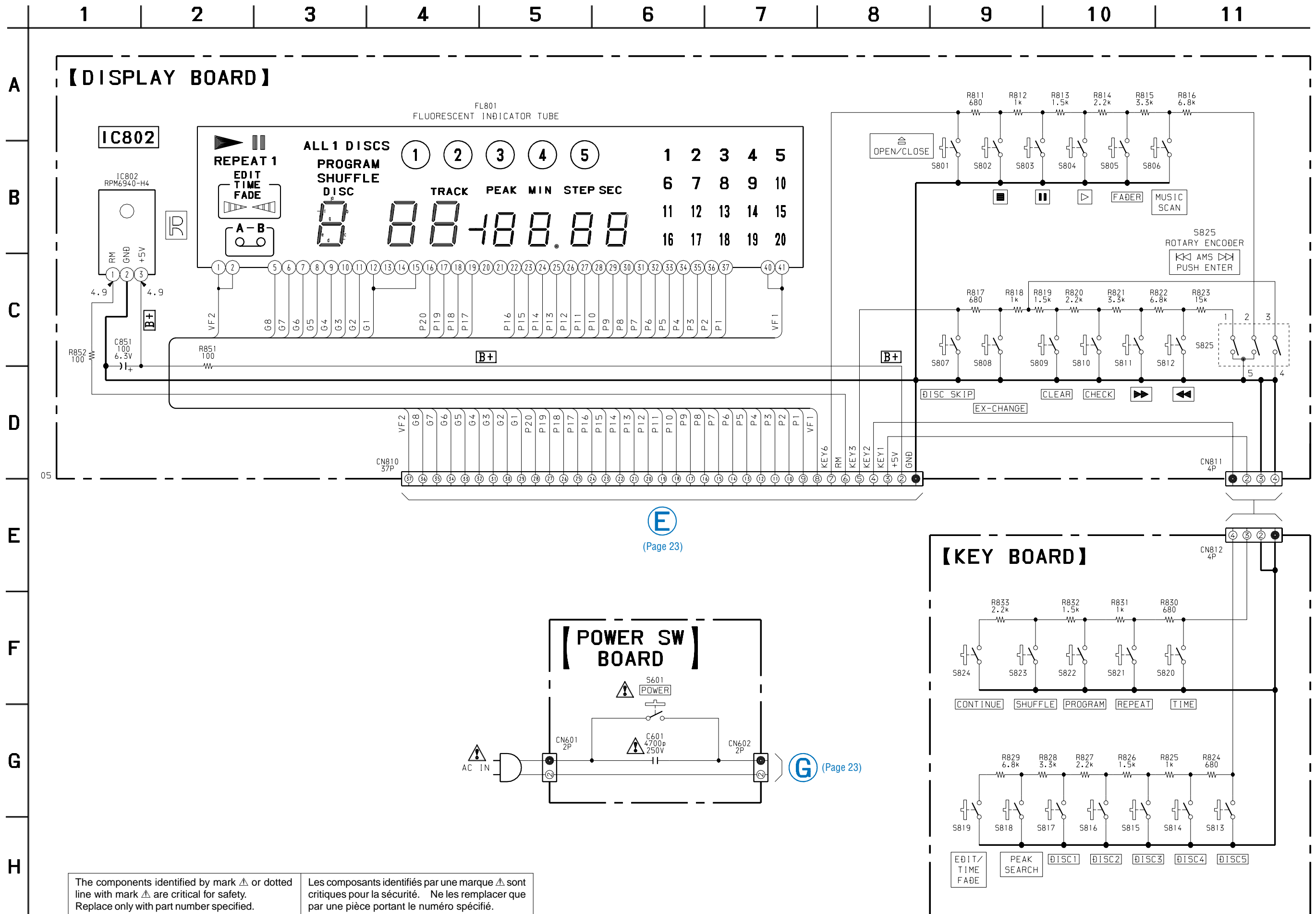
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

6-8. PRINTED WIRING BOARDS – PANEL Section – • See page 17 for Circuit Boards Location.



6-9. SCHEMATIC DIAGRAM – PANEL Section –



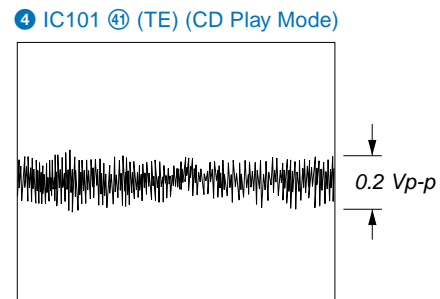
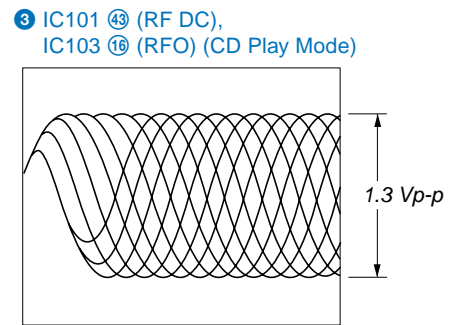
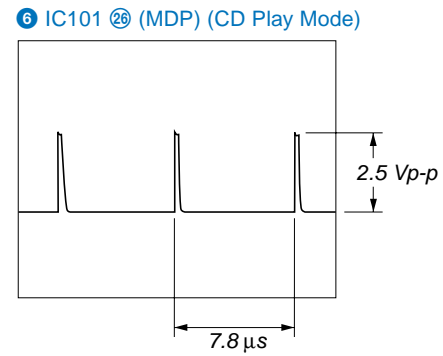
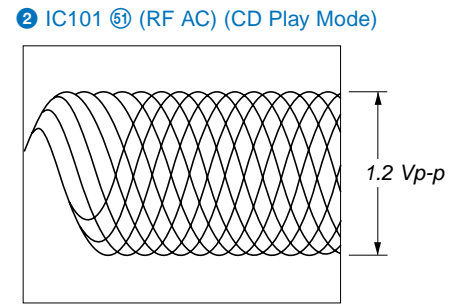
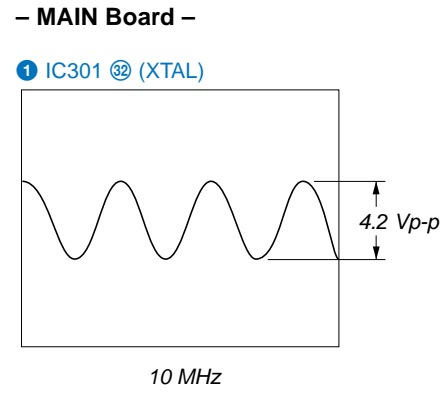
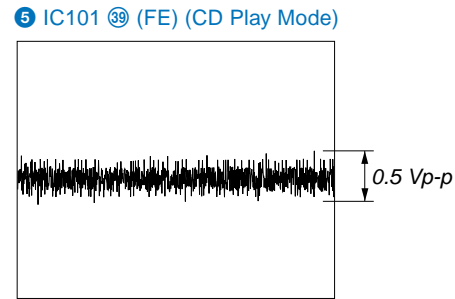
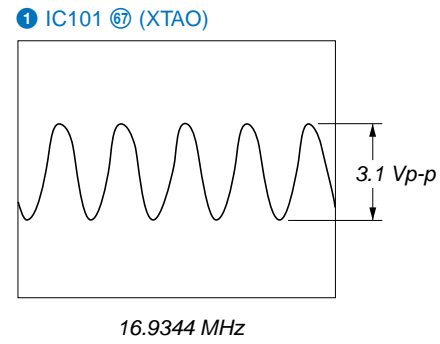
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

E
(Page 23)

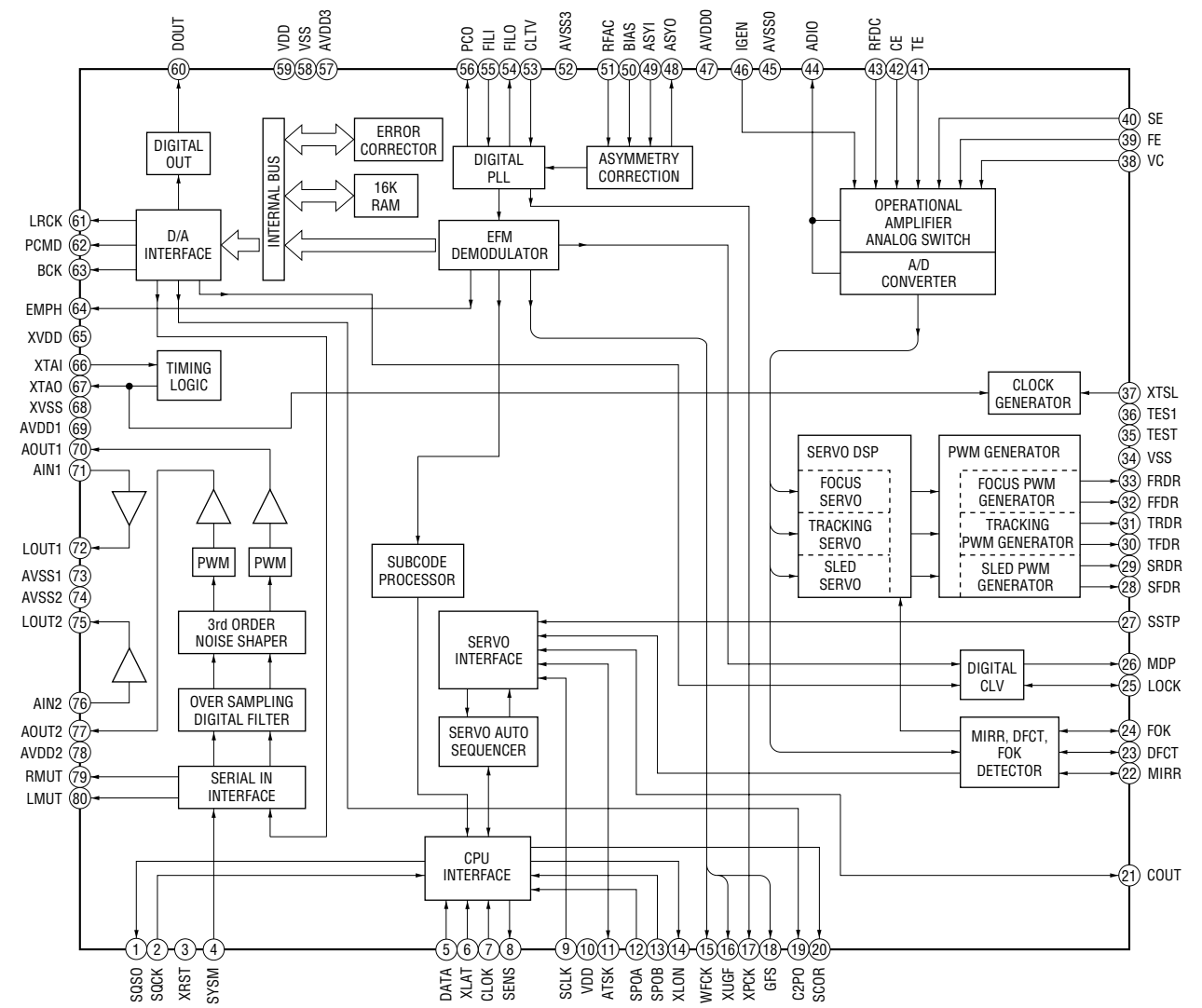
G (Page 23)

• Waveforms
– BD Board –

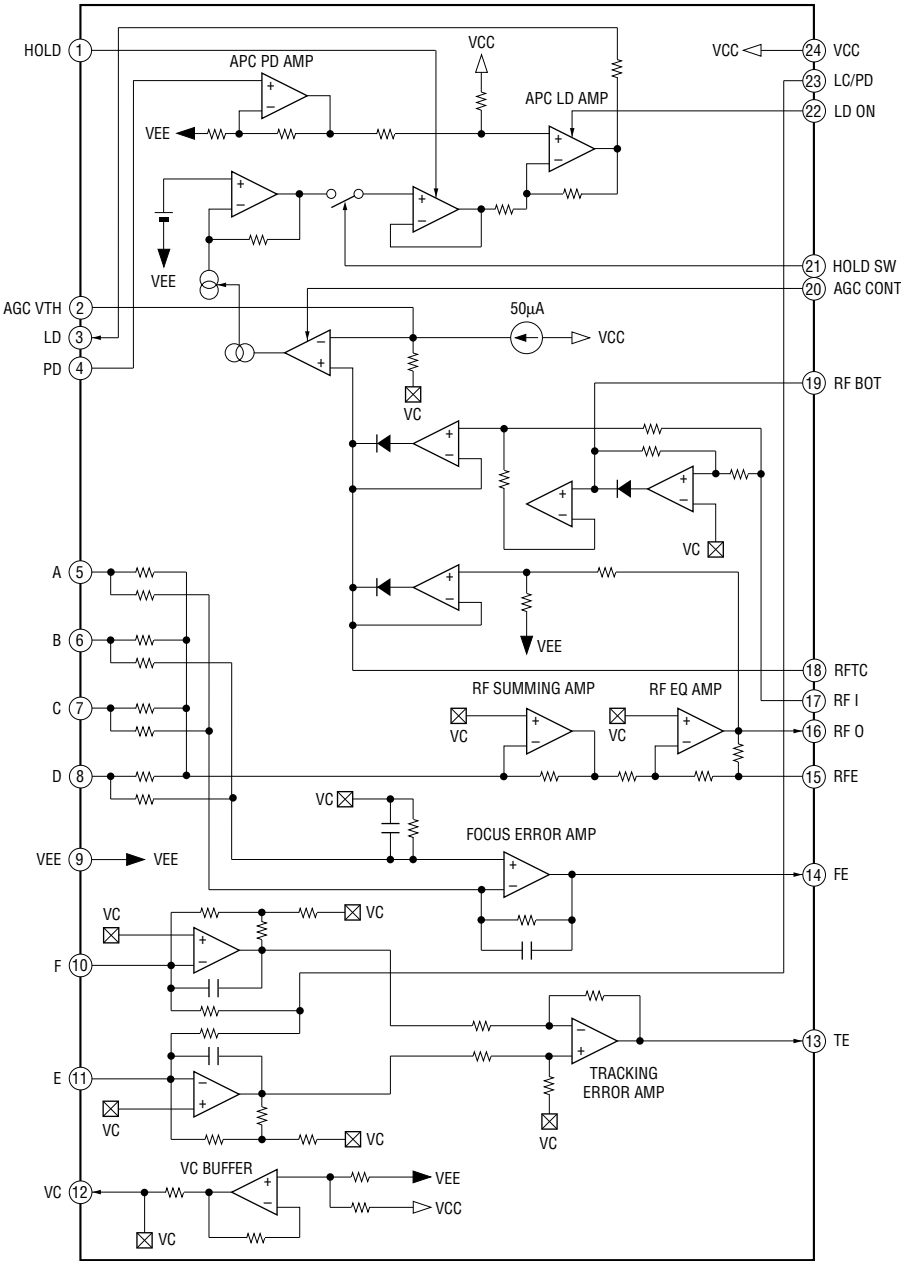


• IC Block Diagrams
– BD BOARD –

IC101 CXD2587Q

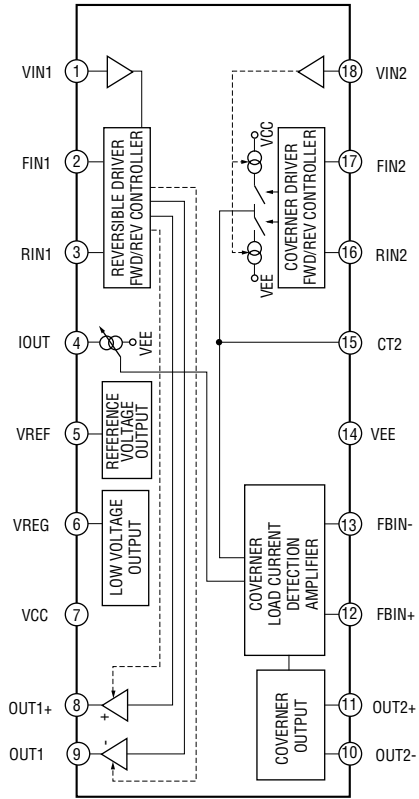


IC103 CXA2568M-T6



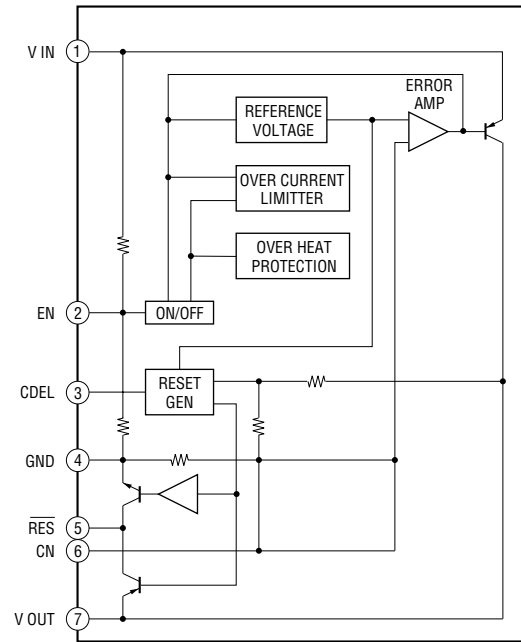
– JUNCTION Board –

IC11 BA6780

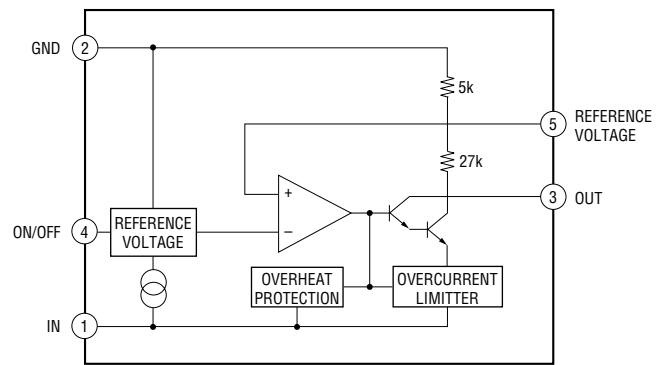


– MAIN Board –

IC601 LA5602



IC603 M5293L



6-10. IC PIN FUNCTION DESCRIPTION

• BD BOARD IC101 CXD2587Q

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, DIGITAL FILTER, D/A CONVERTER)

Pin No.	Pin Name	I/O	Description
1	SQSO	O	Subcode Q data output to the system controller (IC301)
2	SQCK	I	Subcode Q data reading clock signal input from the system controller (IC301)
3	XRST	I	System reset signal input from the system controller (IC301) “L”: reset
4	SYSM	I	Analog line muting on/off control signal input terminal “H”: line muting on Not used (fixed at “L”)
5	DATA	I	Command serial data input from the system controller (IC301)
6	XLAT	I	Command latch pulse input from the system controller (IC301)
7	CLOK	I	Command serial data transfer clock signal input from the system controller (IC301)
8	SENS	O	Internal status monitor output to the system controller (IC301)
9	SCLK	I	SENSE serial data reading clock input from the system controller (IC301)
10	VDD	—	Power supply terminal (+5V) (digital system)
11	ATSK	I/O	Input pin for anti-shock Not used (fixed at “L”)
12	SPOA	I	Microcomputer escape interface input A terminal Not used (fixed at “L”)
13	SPOB	I	Microcomputer escape interface input B terminal Not used (fixed at “L”)
14	XLON	O	Microcomputer escape interface output to the CXA2568M (IC103)
15	WFCK	O	WFCK output terminal Not used (open)
16	XUGF	O	Not used (open)
17	XPCK	O	Not used (open)
18	GFS	O	Not used (open)
19	C2PO	O	Not used (open)
20	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller (IC301)
21	COUT	I/O	Numbers of track counted signal input/output terminal Not used (open)
22	MIRR	I/O	Mirror signal input/output terminal Not used (open)
23	DFCT	I/O	Defect signal input/output terminal Not used (open)
24	FOK	I/O	Focus OK input/output terminal Not used (open)
25	LOCK	I/O	GFS is sampled by 460 Hz “H” when GFS is “H” Not used (open)
26	MDP	O	Spindle motor (M101) servo drive signal output to the BA5974FP (IC102)
27	SSTP	I	Limit in detect switch (S101) input terminal
28	SFDR	O	Sled servo drive PWM signal (+) output to the BA5974FP (IC102)
29	SRDR	O	Sled servo drive PWM signal (-) output to the BA5974FP (IC102)
30	TFDR	O	Tracking servo drive PWM signal (+) output to the BA5974FP (IC102)
31	TRDR	O	Tracking servo drive PWM signal (-) output to the BA5974FP (IC102)
32	FFDR	O	Focus servo drive PWM signal (+) output to the BA5974FP (IC102)
33	FRDR	O	Focus servo drive PWM signal (-) output to the BA5974FP (IC102)
34	VSS	—	Ground terminal (digital system)
35	TEST	I	Input terminal for the test (fixed at “L”)
36	TES1	I	Input terminal for the test (fixed at “L”)
37	XTSL	I	Input terminal for the system clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “L” in this set)
38	VC	I	Middle point voltage (+2.5V) input from the CXA2568M (IC103)
39	FE	I	Focus error signal input from the CXA2568M (IC103)
40	SE	I	Sled error signal input from the CXA2568M (IC103)
41	TE	I	Tracking error signal input from the CXA2568M (IC103)
42	CE	I	Command chip enable signal input from the CXA2568M (IC103)

Pin No.	Pin Name	I/O	Description
43	RFDC	I	RF signal input from the CXA2568M (IC103)
44	ADIO	O	Monitor output of the A/D converter input signal Not used (open)
45	AVSS0	—	Ground terminal (digital system)
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	—	Power supply terminal (+5V) (digital system)
48	ASYO	O	Playback EFM full-swing output terminal
49	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
50	BIAS	I	Playback EFM asymmetry circuit constant current input terminal
51	RFAC	I	EFM signal input from the CXA2568M (IC103)
52	AVSS3	—	Ground terminal (digital system)
53	CLTV	I	Internal VCO control voltage input of the playback master PLL
54	FILO	O	Filter output for master clock of the playback master PLL
55	FILI	I	Filter input for master clock of the playback master PLL
56	PCO	O	Phase comparison output for master clock of the playback EFM master PLL
57	AVDD3	—	Power supply terminal (+5V) (digital system)
58	VSS	—	Ground terminal (digital system)
59	VDD	—	Power supply terminal (+5V) (digital system)
60	DOUT	O	Digital audio signal output to the DIGITAL OUT OPTICAL (IC303)
61	LRCK	O	L/R sampling clock signal (44.1 kHz) output terminal Not used (open)
62	PCMD	O	D/A interface serial data output terminal Not used (open)
63	BCK	O	Bit clock signal (2.8224 MHz) output terminal Not used (open)
64	EMPH	O	De-emphasis control signal output terminal Not used (open)
65	XVDD	—	Power supply terminal (+5V) (crystal oscillator system)
66	XTAI	I	System clock input terminal (16.9344 MHz)
67	XTAO	O	System clock output terminal (16.9344 MHz)
68	XVSS	—	Ground terminal (crystal oscillator system)
69	AVDD1	—	Power supply terminal (+5V) (analog system)
70	AOUT1	O	L-ch analog audio signal output terminal
71	AIN1	I	L-ch operational amplifiers input terminal
72	LOUT1	O	L-ch line output terminal
73	AVSS1	—	Ground terminal (analog system)
74	AVSS2	—	Ground terminal (analog system)
75	LOUT2	O	R-ch line output terminal
76	AIN2	I	R-ch operational amplifiers input terminal
77	AOUT2	O	R-ch analog audio signal output terminal
78	AVDD2	—	Power supply terminal (+5V) (analog system)
79	RMUT	O	R-ch line muting on/off control signal output terminal
80	LMUT	O	L-ch line muting on/off control signal output terminal

• MAIN BOARD IC301 CXP84648-066Q
(SYSTEM CONTROLLER, FLUORESCENT INDICATOR TUBE DRIVER, KEY CONTROL)

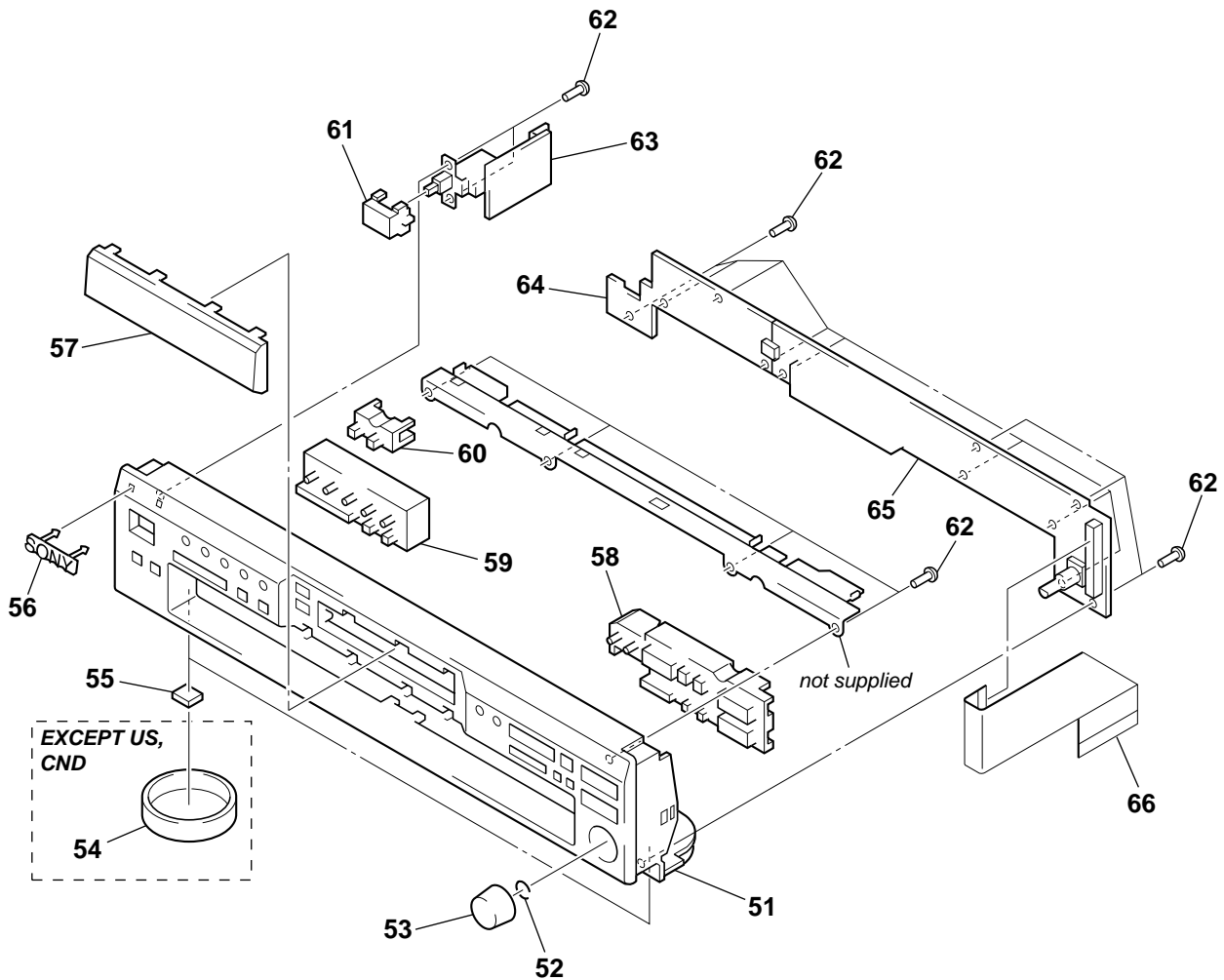
Pin No.	Pin Name	I/O	Description
1	BUSIN	I	Sircs remote control signal input terminal Not used (pull up)
2	RMIN	I	Remote control signal input from the remote control receiver (IC802)
3	ADJ	I	Setting terminal for the test mode “L” active
4	XLT	O	Serial data latch pulse signal output to the CXD2587Q (IC101)
5	HOLD	O	Laser power control signal output to the CXD2587Q (IC101) “H” active
6	TSENS	I	Detect signal input from the table sensor (D10)
7	NC	O	Not used (open)
8	CLK	O	Serial data transfer clock signal output to the CXD2587Q (IC101)
9	NC	O	Not used (open)
10	DATA	O	Serial data output to the CXD2587Q (IC101)
11	SQCK	O	Sub-code Q data reading clock signal output to the CXD2587Q (IC101)
12	SUBQ	I	Sub-code Q data signal input from the CXD2587Q (IC101)
13	NC	O	Not used (open)
14	OUT.SW	I	Detect signal input from the open/close detect switch (S11)
15, 16	S1, S2	I	Detect signal input from the tray address detect switch (S200)
17	NC	O	Not used (open)
18	TBLL	O	Table motor drive signal (counterclockwise) output to the BA6780 (IC11)
19	TBLR	O	Table motor drive signal (clockwise) output to the BA6780 (IC11)
20	LOAD IN	O	Loading motor (M11) drive signal output to the BA6780 (IC11) *1
21	LOAD OUT	O	Loading motor (M11) drive signal output to the BA6780 (IC11) *1
22	NC	O	Not used (open)
23	KEY1	I	Key input terminal (A/D input) (S820 to S824) TIME, REPEAT, PROGRAM, SHUFFLE, CONTINUE keys input
24	KEY2	I	Key input terminal (A/D input) (S813 to S819) DISC 5 to DISC 1, PEAK SEARCH, EDIT/TIME FADE keys input
25	KEY3	I	Key input terminal (A/D input) (S807 to S821, S825) DISC SKIP, EX-CHANGE, CLEAR, CHECK, ►►, ◀◀, ◀◀◀ AMS ▷▷ keys input
26, 27	NC	O	Not used (open)
28	KEY6	I	Key input terminal (A/D input) (S801 to S806) ⊕ OPEN/CLOSE, ■, ■■, ▷, FADER, MUSIC SCAN keys input
29	NC	O	Not used (open)
30	$\overline{\text{RST}}$	I	System reset signal input from the reset signal generator (IC601) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
31	EXTAL	I	Main system clock input terminal (10 MHz)
32	XTAL	O	Main system clock output terminal (10 MHz)
33	VSS	—	Ground terminal
34 to 37	NC	O	Not used (open)

*1 Loading motor (M11) control

Terminal	Operation			
	OFF	OUT	IN	BRAKE
LOAD IN (pin ⑳)	“L”	“L”	“H”	“H”
LOAD OUT (pin ㉑)	“L”	“H”	“L”	“H”

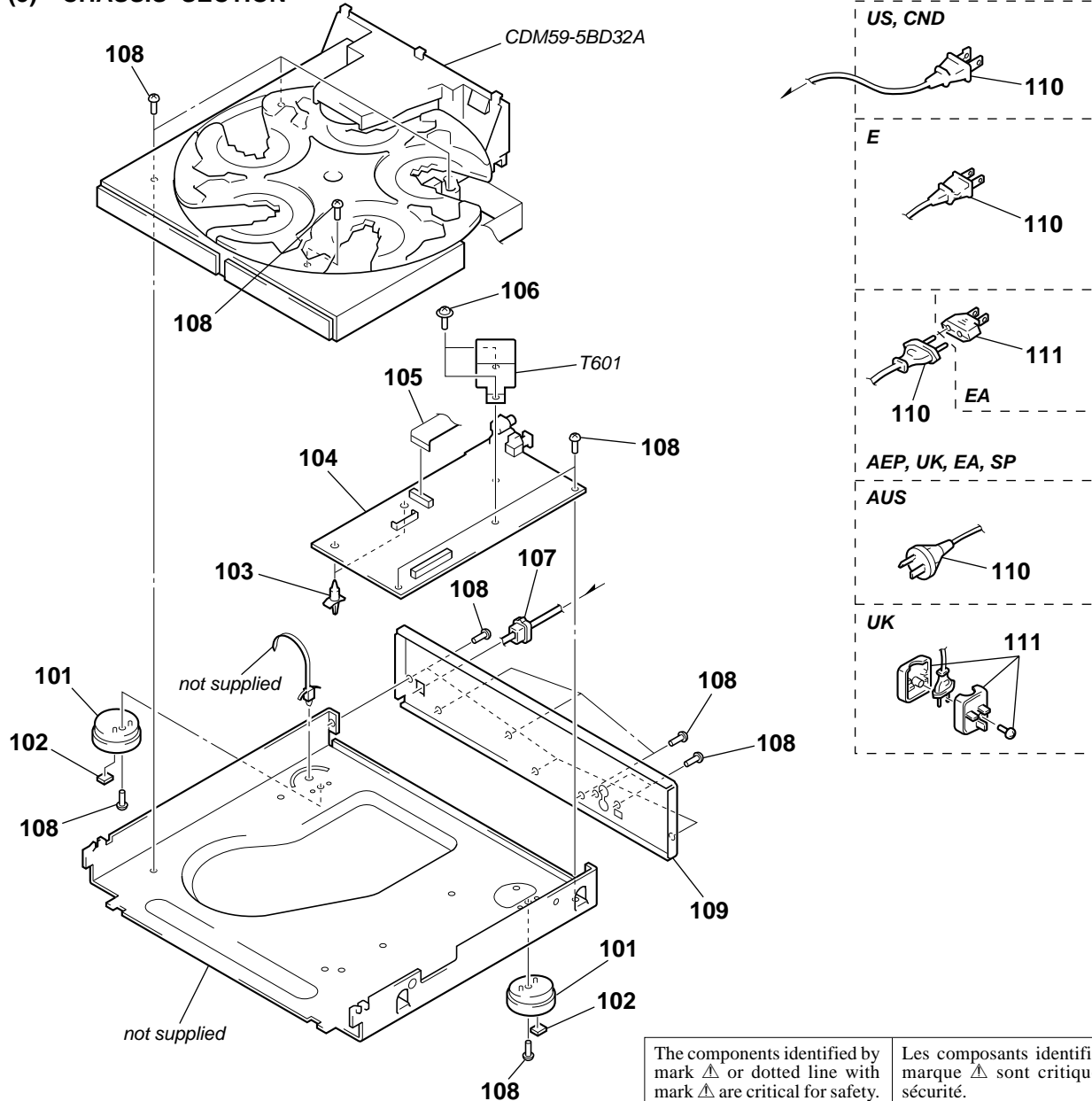
Pin No.	Pin Name	I/O	Description
38 to 57	P1 to P20	O	Segment drive signal output to the fluorescent indicator tube (FL801)
58 to 62	NC	O	Not used (open)
63 to 70	G1 to G8	O	Grid drive signal output to the fluorescent indicator tube (FL801)
71	VG	—	Power supply terminal (-30V) (for fluorescent indicator tube drive)
72, 73	VDD	—	Power supply terminal (+5V)
74, 75	NC	O	Not used (open)
76	AFADJ	I	Setting terminal for the test mode "L" active
77	BUSOUT	O	Sircs remote control signal output terminal Not used (open)
78	DSSENS	I	Detect signal input from the disc sensor (D11)
79	SENS	I	Internal status (SENSE) signal input from the CXD2587Q (IC101)
80	SCOR	I	Sub-code sync (S0+S1) detection signal input from the CXD2587Q (IC101)

(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-224-861-01	PANEL, FRONT (CE245)		58	4-224-864-11	BUTTON (PLAY) (▷. ■. ■. ≡ OPEN/CLOSE. EX-CHANGE. DISC SKIP) (SILVER)	
51	4-224-861-11	PANEL, FRONT (CE345: BLACK)		59	4-224-862-01	BUTTON (DISC) (BLACK)	
51	4-224-861-31	PANEL, FRONT (CE345: SILVER)		59	4-224-862-11	BUTTON (DISC) (SILVER)	
52	3-354-981-01	SPRING (SUS), RING		60	4-224-863-01	BUTTON (MODE) (BLACK)	
53	4-224-868-01	KNOB (AMS) (BLACK)		60	4-224-863-11	BUTTON (MODE) (SILVER)	
53	4-224-868-11	KNOB (AMS) (SILVER)		61	3-931-429-21	BUTTON (POWER) (Ⓞ) (BLACK)	
54	4-977-593-01	RING (DIA. 50), ORNAMENTAL (EXCEPT US, CND)		61	4-227-979-01	BUTTON (POWER) (Ⓞ) (SILVER)	
* 55	4-978-398-21	CUSHION		62	4-951-620-01	SCREW (2.6X8), +BVTP	
56	4-996-698-41	EMBLEM, SONY		63	1-676-540-11	POWER SW BOARD	
57	4-224-866-01	WINDOW (FL) (CE245)		64	1-676-539-11	KEY BOARD	
57	4-224-866-11	WINDOW (FL) (CE345)		65	A-4725-007-A	DISPLAY BOARD, COMPLETE	
58	4-224-864-01	BUTTON (PLAY) (▷. ■. ■. ≡ OPEN/CLOSE. EX-CHANGE. DISC SKIP) (BLACK)		66	1-792-486-11	WIRE (FLAT TYPE) (37 CORE)	

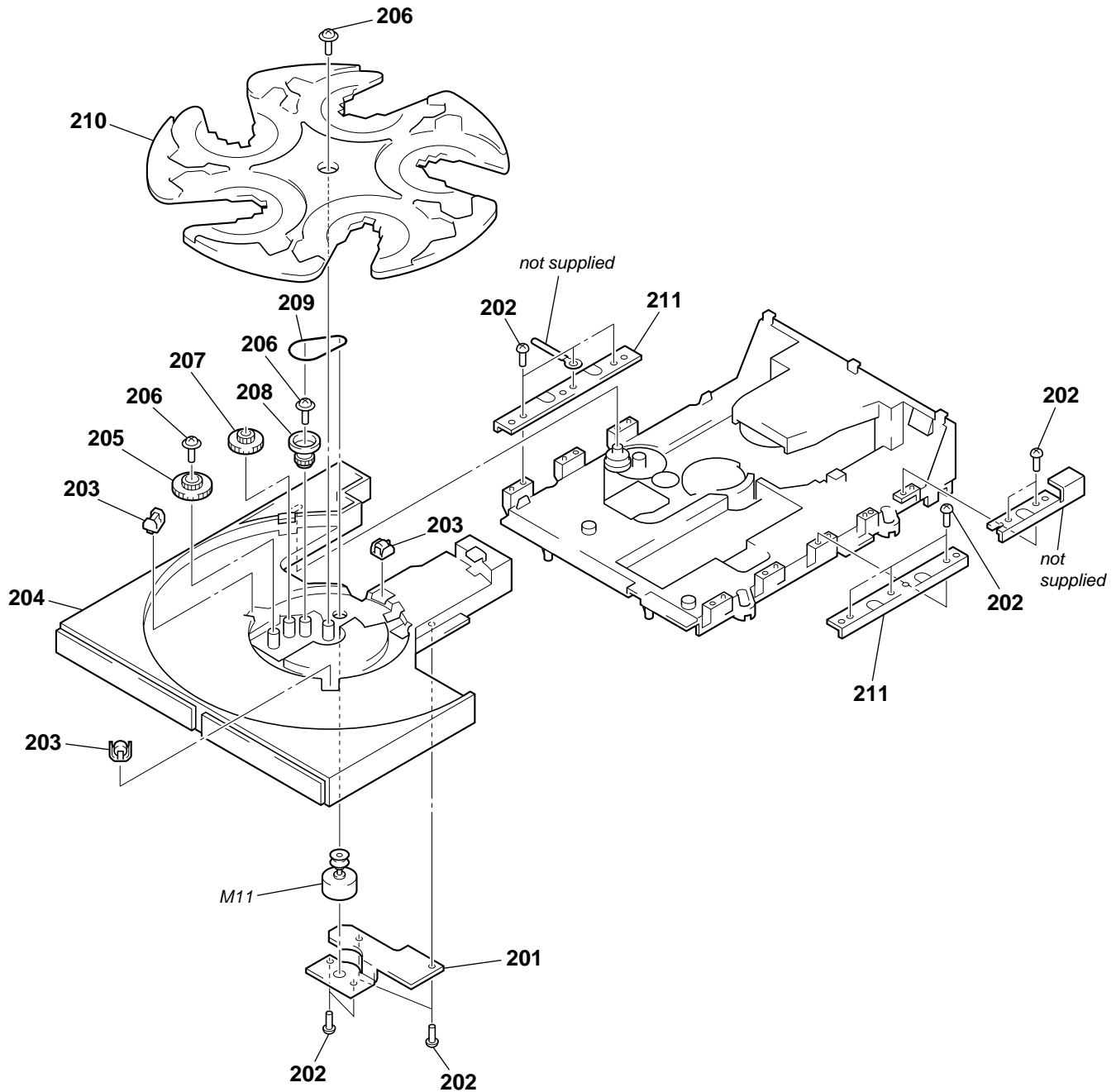
(3) CHASSIS SECTION



<p>The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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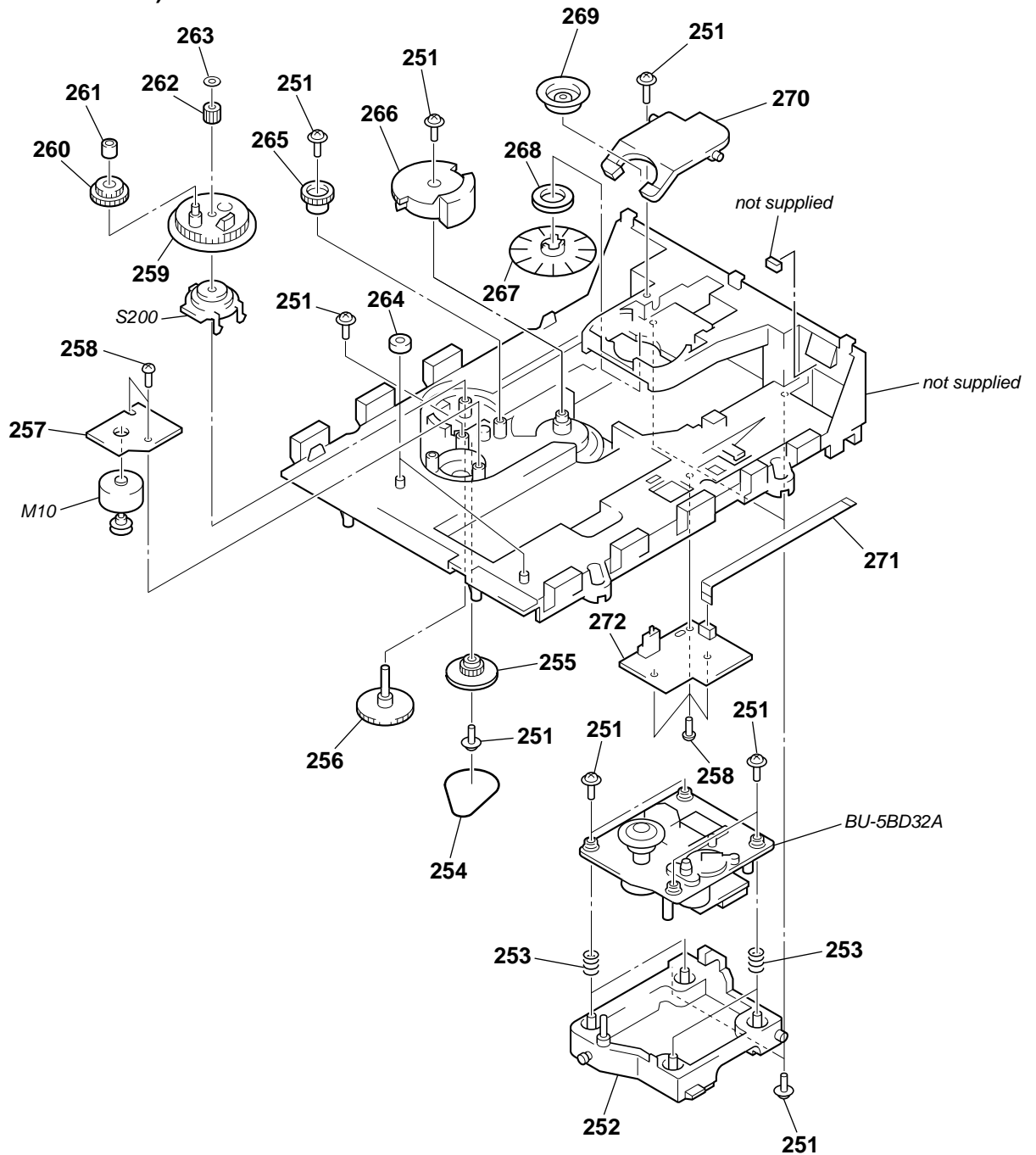
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-977-591-11	FOOT (F50150S)		109	4-224-878-21	PANEL, BACK (CE345: AEP)	
* 102	4-978-398-21	CUSHION		109	4-224-878-31	PANEL, BACK (CE345: UK)	
103	4-943-687-01	HOLDER, PC BOARD		109	4-224-878-41	PANEL, BACK (CE345: AUS)	
104	A-4725-005-A	MAIN BOARD, COMPLETE (US, CN)		109	4-224-878-52	PANEL, BACK (CE345: E)	
104	A-4725-009-A	MAIN BOARD, COMPLETE (AEP, UK, SP, AUS)		109	4-224-878-61	PANEL, BACK (CE345: SP)	
104	A-4725-010-A	MAIN BOARD, COMPLETE (E, EA)		109	4-224-878-71	PANEL, BACK (CE345: EA)	
105	1-792-130-11	WIRE (FLAT TYPE) (21 CORE)		\triangle 110	1-558-943-41	CORD, POWER (E)	
106	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		\triangle 110	1-575-651-21	CORD, POWER (AEP, UK, EA, SP)	
107	3-703-571-11	BUSHING (S) (FBS002), CORD (E)		\triangle 110	1-590-926-11	CORD, POWER (CND)	
107	4-966-267-11	BUSHING (FBS001), CORD (EXCEPT E)		\triangle 110	1-696-845-11	CORD, POWER (AUS)	
108	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		\triangle 110	1-783-531-31	CORD, POWER (US)	
109	4-224-877-01	PANEL, BACK (CE245: US)		\triangle 111	1-569-008-31	ADAPTOR, CONVERSION (EA)	
109	4-224-877-11	PANEL, BACK (CE245: CND)		\triangle 111	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
109	4-224-877-41	PANEL, BACK (CE245: AUS)		\triangle T601	1-435-342-11	TRANSFORMER, POWER (US, CN)	
109	4-224-878-01	PANEL, BACK (CE345: US)		\triangle T601	1-435-343-11	TRANSFORMER, POWER (AEP, UK, SP, AUS)	
109	4-224-878-11	PANEL, BACK (CE345: CND)		\triangle T601	1-435-344-11	TRANSFORMER, POWER (E, EA)	

(4) CD MECHANISM DECK SECTION-1
(CDM59-5BD32A)



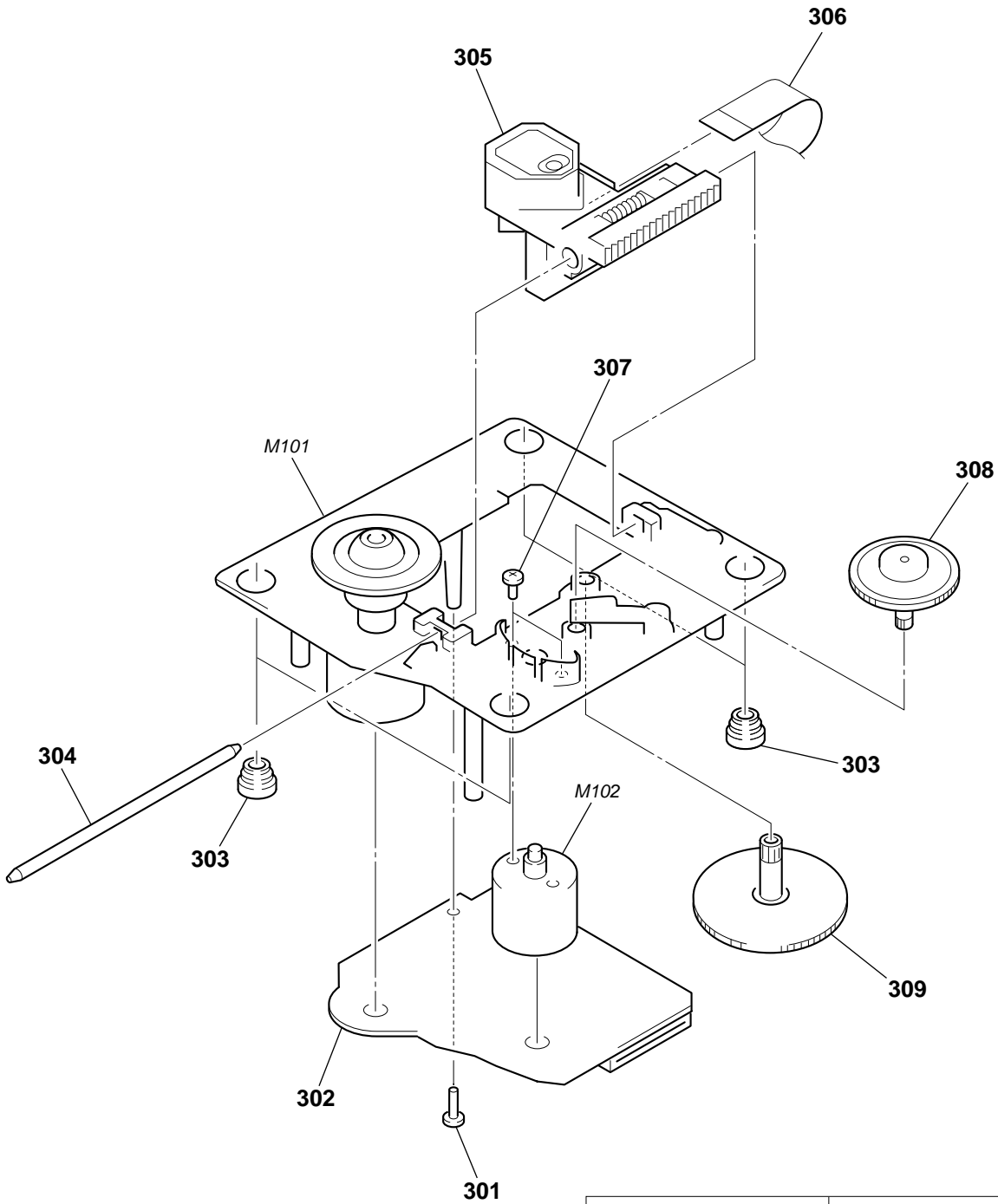
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	1-676-245-11	SENSOR BOARD		207	4-224-616-01	GEAR (RM-M)	
202	4-218-253-01	SCREW (M2.6), +BTTTP		208	4-224-615-01	GEAR (RM-B)	
* 203	X-4947-960-1	ROLLER ASSY		209	4-225-328-01	BELT (ROTARY)	
204	4-224-602-01	TABLE		210	4-224-603-01	TRAY	
205	4-224-617-01	GEAR (RM-E)		211	4-224-619-01	BRACKET (GUIDE)	
206	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		M11	A-4672-867-A	MOTOR ASSY, ROTARY (TRAY)	

(5) CD MECHANISM DECK SECTION-2
(CDM59-5BD32A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING		* 264	4-951-619-21	CUSHION (A)	
252	X-4952-312-1	HOLDER (BU) ASSY		265	4-224-606-01	GEAR (RV)	
253	4-959-996-21	SPRING (932), COMPRESSION		266	4-224-605-01	GEAR (U/D)	
254	4-225-885-01	BELT (LOADING)		267	X-4952-019-1	PULLEY (A) ASSY, CHUCKING	
255	4-225-844-01	GEAR (LOADING A)		268	1-471-061-11	MAGNET ASSY	
256	4-224-613-01	GEAR (SHAFT)		269	4-221-688-01	PULLEY (B), CHUCKING	
257	1-676-244-11	LOADING MOTOR BOARD		270	4-224-618-01	LEVER (LIFTER)	
258	4-218-253-01	SCREW (M2.6), +BTTP		271	1-791-930-11	WIRE (FLAT TYPE) (6 CORE)	
259	4-224-607-01	GEAR, SWING		272	1-676-246-11	JUNCTION BOARD	
260	4-224-609-01	GEAR (LOADING C)		M10	A-4672-879-A	MOTOR ASSY, LOADING	
261	4-224-608-01	COLLAR, SWING		S200	1-418-746-11	ENCODER, ROTARY (BU, TABLE ADDRESS DETECT)	
262	4-224-611-01	GEAR (LOADING B)					
263	3-016-533-21	WASHER (FR), STOPPER					

(6) BASE UNIT SECTION
(BU-5BD32A)



<p>The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	4-951-620-01	SCREW (2.6X8), +BVTP		307	3-713-786-51	SCREW +P 2X3	
* 302	A-4724-494-A	BD BOARD, COMPLETE		308	4-917-567-21	GEAR (M)	
303	4-951-940-41	INSULATOR (BU)		309	4-917-564-01	GEAR (P), FLATNESS	
304	4-917-565-01	SHAFT, SLED		M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
\triangle 305	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP		M102	X-4917-504-1	MOTOR ASSY (SLED)	
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)					

SECTION 8 ELECTRICAL PARTS LIST

BD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX 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
- Abbreviation
AUS : Australian model EA : Saudi Arabia model
CND : Canadian model SP : Singapore model

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

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4724-494-A	BD BOARD, COMPLETE *****					
		< CAPACITOR >					
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V		
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V		
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V		
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V		
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V		
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V		
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V		
C117	1-126-209-11	ELECT CHIP	100uF	20%	4V		
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
C119	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C122	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		
C123	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V		
C124	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V		
C125	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C126	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C127	1-117-681-11	ELECT CHIP	100uF	20%	16V		
C128	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C129	1-163-031-11	CERAMIC CHIP	0.01uF		50V		
C130	1-164-346-11	CERAMIC CHIP	1uF		16V		
C131	1-124-779-00	ELECT CHIP	10uF	20%	16V		
C133	1-164-346-11	CERAMIC CHIP	1uF		16V		
C140	1-164-346-11	CERAMIC CHIP	1uF		16V		
C141	1-164-346-11	CERAMIC CHIP	1uF		16V		
C143	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C151	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C154	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V		
C156	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C157	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V		
C161	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		
C162	1-126-205-11	ELECT CHIP	47uF	20%	6.3V		
C163	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V		
C167	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C168	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		
C171	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
C172	1-163-123-00	CERAMIC CHIP	180PF	5%	50V		
C181	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		
C182	1-163-123-00	CERAMIC CHIP	180PF	5%	50V		
		< CONNECTOR >					
CN101	1-784-360-11	CONNECTOR, FFC (LIF (NON-ZIF)) 21P					
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P					
		< FERRITE BEAD >					
FB101	1-500-445-21	FERRITE	0uH				
FB103	1-500-445-21	FERRITE	0uH				
		< IC >					
IC101	8-752-386-85	IC CXD2587Q					
IC102	8-759-549-28	IC BA5974FP-E2					
IC103	8-752-085-51	IC CXA2568M-T6					
		< TRANSISTOR >					
Q101	8-729-010-08	TRANSISTOR	MSB710-RT1				
		< RESISTOR >					
R101	1-216-077-00	RES-CHIP	15K	5%	1/10W		
R102	1-216-097-00	RES-CHIP	100K	5%	1/10W		
R103	1-216-077-00	RES-CHIP	15K	5%	1/10W		
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W		
R105	1-216-097-00	RES-CHIP	100K	5%	1/10W		
R106	1-216-049-11	RES-CHIP	1K	5%	1/10W		
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W		
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W		
R109	1-216-121-00	RES-CHIP	1M	5%	1/10W		
R110	1-216-025-00	RES-CHIP	100	5%	1/10W		
R111	1-216-121-00	RES-CHIP	1M	5%	1/10W		
R113	1-216-121-00	RES-CHIP	1M	5%	1/10W		
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W		
R116	1-216-001-00	METAL CHIP	10	5%	1/10W		
R117	1-216-049-11	RES-CHIP	1K	5%	1/10W		
R119	1-216-041-00	METAL CHIP	470	5%	1/10W		
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W		

BD	DISPLAY	JUNCTION
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Ref. No.	Part No.	Description	Remark
R124	1-216-097-00	RES-CHIP 100K 5%	1/10W
R131	1-216-037-00	METAL CHIP 330 5%	1/10W
R143	1-216-103-00	METAL CHIP 180K 5%	1/10W
R144	1-216-103-00	METAL CHIP 180K 5%	1/10W
R147	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R148	1-216-001-00	METAL CHIP 10 5%	1/10W
R149	1-216-001-00	METAL CHIP 10 5%	1/10W
R158	1-216-111-00	METAL CHIP 390K 5%	1/10W
R159	1-216-101-00	METAL CHIP 150K 5%	1/10W
R161	1-216-308-00	METAL CHIP 4.7 5%	1/10W
R162	1-216-101-00	METAL CHIP 150K 5%	1/10W
R171	1-216-680-11	METAL CHIP 16K 0.5%	1/10W
R172	1-216-675-11	METAL CHIP 10K 0.5%	1/10W
R173	1-216-679-11	METAL CHIP 15K 0.5%	1/10W
R181	1-216-680-11	METAL CHIP 16K 0.5%	1/10W
R182	1-216-675-11	METAL CHIP 10K 0.5%	1/10W
R183	1-216-679-11	METAL CHIP 15K 0.5%	1/10W
R184	1-216-025-00	RES-CHIP 100 5%	1/10W
R185	1-216-025-00	RES-CHIP 100 5%	1/10W
< NETWORK RESISTOR >			
RN101	1-233-412-11	RES, CHIP NETWORK 1.0K (3216)	
RN102	1-233-576-11	RES, CHIP NETWORK 100	
< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
< VIBRATOR >			
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)	

A-4725-007-A DISPLAY BOARD, COMPLETE			

4-224-880-01 HOLDER (FL)			
< CAPACITOR >			
C851	1-126-968-11	ELECT 100uF 20%	6.3V
< CONNECTOR >			
CN810	1-784-798-11	CONNECTOR, FFC 37P	
CN811	1-750-194-11	CONNECTOR, BOARD TO BOARD 4P	
< FLUORESCENT INDICATOR TUBE >			
FL801	1-517-946-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC802	8-759-648-23	IC RPM6940-H4	
< RESISTOR >			
R811	1-249-415-11	CARBON 680 5%	1/4W
R812	1-249-417-11	CARBON 1K 5%	1/4W
R813	1-249-419-11	CARBON 1.5K 5%	1/4W
R814	1-249-421-11	CARBON 2.2K 5%	1/4W
R815	1-247-843-11	CARBON 3.3K 5%	1/4W
R816	1-249-427-11	CARBON 6.8K 5%	1/4W

Ref. No.	Part No.	Description	Remark
R817	1-249-415-11	CARBON 680 5%	1/4W
R818	1-249-417-11	CARBON 1K 5%	1/4W
R819	1-249-419-11	CARBON 1.5K 5%	1/4W
R820	1-249-421-11	CARBON 2.2K 5%	1/4W
R821	1-247-843-11	CARBON 3.3K 5%	1/4W
R822	1-249-427-11	CARBON 6.8K 5%	1/4W
R823	1-249-431-11	CARBON 15K 5%	1/4W
R851	1-247-807-31	CARBON 100 5%	1/4W
R852	1-247-807-31	CARBON 100 5%	1/4W
< SWITCH >			
S801	1-771-349-21	SWITCH, KEYBOARD (≡ OPEN/CLOSE)	
S802	1-771-349-21	SWITCH, KEYBOARD (■)	
S803	1-771-349-21	SWITCH, KEYBOARD (■)	
S804	1-771-349-21	SWITCH, KEYBOARD (▷)	
S805	1-771-349-21	SWITCH, KEYBOARD (FADER)	
S806	1-771-349-21	SWITCH, KEYBOARD (MUSIC SCAN)	
S807	1-771-349-21	SWITCH, KEYBOARD (DISC SKIP)	
S808	1-771-349-21	SWITCH, KEYBOARD (EX-CHANGE)	
S809	1-771-349-21	SWITCH, KEYBOARD (CLEAR)	
S810	1-771-349-21	SWITCH, KEYBOARD (CHECK)	
S811	1-771-349-21	SWITCH, KEYBOARD (▶▶)	
S812	1-771-349-21	SWITCH, KEYBOARD (◀◀)	
S825	1-475-543-11	ENCODER, ROTARY	
(◀◀ AMS ▶▶) PUSH ENTER			

1-676-246-11 JUNCTION BOARD			

< CAPACITOR >			
C10	1-124-589-11	ELECT 47uF 20%	16V
C11	1-161-494-00	CERAMIC 0.022uF	25V
< CONNECTOR >			
CN11	1-573-911-11	PIN, CONNECTOR 13P	
CN13	1-506-481-11	PIN, CONNECTOR 2P	
* CN14	1-568-941-11	PIN, CONNECTOR 3P	
CN15	1-784-767-11	CONNECTOR, FFC 6P	
< IC >			
IC11	8-759-356-03	IC BA6780	
< RESISTOR >			
R21	1-249-429-11	CARBON 10K 5%	1/4W
R22	1-249-426-11	CARBON 5.6K 5%	1/4W
R23	1-249-425-11	CARBON 4.7K 5%	1/4W
R24	1-249-430-11	CARBON 12K 5%	1/4W
R25	1-249-382-11	CARBON 1.2 5%	1/6W
R26	1-249-382-11	CARBON 1.2 5%	1/6W
< SWITCH >			
S11	1-771-836-11	SWITCH, LEVER (SLIDE)	
(OPEN/CLOSE DETECT)			

KEY

LOADING MOTOR

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-676-539-11	KEY BOARD *****		C603	1-126-942-61	ELECT 1000uF 20%	16V
		< CONNECTOR >		C604	1-126-963-11	ELECT 4.7uF 20%	50V
CN812	1-750-185-11	CONNECTOR, BOARD TO BOARD 4P		C605	1-126-963-11	ELECT 4.7uF 20%	50V
		< RESISTOR >		C606	1-126-963-11	ELECT 4.7uF 20%	50V
R824	1-249-415-11	CARBON 680 5%	1/4W	C607	1-126-941-11	ELECT 470uF 20%	6.3V
R825	1-249-417-11	CARBON 1K 5%	1/4W	C608	1-104-666-11	ELECT 220uF 20%	10V
R826	1-249-419-11	CARBON 1.5K 5%	1/4W	C609	1-128-552-11	ELECT 47uF 20%	63V
R827	1-249-421-11	CARBON 2.2K 5%	1/4W	C610	1-126-964-11	ELECT 10uF 20%	50V
R828	1-247-843-11	CARBON 3.3K 5%	1/4W	C611	1-126-767-11	ELECT 1000uF 20%	16V
R829	1-249-427-11	CARBON 6.8K 5%	1/4W	C612	1-161-494-00	CERAMIC 0.022uF	25V
R830	1-249-415-11	CARBON 680 5%	1/4W	C613	1-126-941-11	ELECT 470uF 20%	6.3V
R831	1-249-417-11	CARBON 1K 5%	1/4W	C616	1-161-494-00	CERAMIC 0.022uF	25V
R832	1-249-419-11	CARBON 1.5K 5%	1/4W	C619	1-104-664-11	ELECT 47uF 20%	16V
R833	1-249-421-11	CARBON 2.2K 5%	1/4W	△C620	1-113-924-11	CERAMIC 0.0047uF 20%	250V
		< SWITCH >		C622	1-161-494-00	CERAMIC 0.022uF	25V
S813	1-771-349-21	SWITCH, KEYBOARD (DISC5)				< CONNECTOR >	
S814	1-771-349-21	SWITCH, KEYBOARD (DISC4)		CN301	1-784-798-11	CONNECTOR, FFC 37P	
S815	1-771-349-21	SWITCH, KEYBOARD (DISC3)		CN302	1-784-782-11	CONNECTOR, FFC 21P	
S816	1-771-349-21	SWITCH, KEYBOARD (DISC2)		CN311	1-573-911-11	PIN, CONNECTOR 13P	
S817	1-771-349-21	SWITCH, KEYBOARD (DISC1)		CN603	1-792-131-11	LEAD (WITH CONNECTOR)	
S818	1-771-349-21	SWITCH, KEYBOARD (PEAK SEARCH)				< DIODE >	
S819	1-771-349-21	SWITCH, KEYBOARD (EDIT/TIME FADE)		D350	8-719-991-33	DIODE 1SS133T-77	
S820	1-771-349-21	SWITCH, KEYBOARD (TIME)		D351	8-719-991-33	DIODE 1SS133T-77	
S821	1-771-349-21	SWITCH, KEYBOARD (REPEAT)		D353	8-719-991-33	DIODE 1SS133T-77	
S822	1-771-349-21	SWITCH, KEYBOARD (PROGRAM)		D601	8-719-200-82	DIODE 11ES2-TA1B	
S823	1-771-349-21	SWITCH, KEYBOARD (SHUFFLE)		D602	8-719-200-82	DIODE 11ES2-TA1B	
S824	1-771-349-21	SWITCH, KEYBOARD (CONTINUE)		D603	8-719-200-82	DIODE 11ES2-TA1B	
		*****		D604	8-719-200-82	DIODE 11ES2-TA1B	
	1-676-244-11	LOADING MOTOR BOARD *****		D605	8-719-200-82	DIODE 11ES2-TA1B	
		*****		D606	8-719-923-60	DIODE MTZJ-T-77-9.1	
	A-4725-005-A	MAIN BOARD, COMPLETE (US, CND)		D607	8-719-991-33	DIODE 1SS133T-77	
	A-4725-009-A	MAIN BOARD, COMPLETE (AEP, UK, SP, AUS)		D608	8-719-921-40	DIODE MTZJ-T-77-4.7B	
	A-4725-010-A	MAIN BOARD, COMPLETE (E, EA) *****		D609	8-719-991-33	DIODE 1SS133T-77	
		*****				< GROUND TERMINAL >	
	7-685-871-01	SCREW +BVTT 3X6 (S)		EB601	1-537-770-21	TERMINAL BOARD, GROUND	
		< CAPACITOR >				< IC >	
C301	1-161-494-00	CERAMIC 0.022uF	25V	IC301	8-752-912-66	IC CXP82324-091Q	
C302	1-104-664-11	ELECT 47uF 20%	16V	IC303	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
C303	1-161-494-00	CERAMIC 0.022uF	25V	IC350	8-759-145-58	IC BA4558	
C304	1-164-159-11	CERAMIC 0.1uF	50V	IC601	8-759-061-65	IC LA5602	
C325	1-161-494-00	CERAMIC 0.022uF	25V	IC602	8-749-011-78	IC BA17807T	
C326	1-104-664-11	ELECT 47uF 20%	16V	IC603	8-759-633-42	IC M5293L	
C351	1-126-963-11	ELECT 4.7uF 20%	50V			< JACK >	
C401	1-126-965-11	ELECT 22uF 20%	50V	J301	1-785-868-11	JACK, PIN 2P (ANALOG OUT)	
C404	1-104-665-11	ELECT 100uF 20%	10V			< COIL >	
C407	1-162-290-31	CERAMIC 470PF 10%	50V	L601	1-412-473-41	INDUCTOR 0uH	
C501	1-126-965-11	ELECT 22uF 20%	50V	L602	1-414-151-21	INDUCTOR 470uH	
C504	1-104-665-11	ELECT 100uF 20%	10V			< TRANSISTOR >	
C507	1-162-290-31	CERAMIC 470PF 10%	50V	Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
C602	1-126-936-11	ELECT 3300uF 20%	16V				

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MAIN	POWER SW	SENSOR
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Ref. No.	Part No.	Description	Remark
Q307	8-729-029-66	TRANSISTOR	DTC114ESA
Q352	8-729-029-56	TRANSISTOR	DTA144ESA
Q353	8-729-029-56	TRANSISTOR	DTA144ESA
Q356	8-729-029-56	TRANSISTOR	DTA144ESA
< RESISTOR >			
R301	1-249-429-11	CARBON	10K 5% 1/4W
R302	1-249-429-11	CARBON	10K 5% 1/4W
R306	1-249-429-11	CARBON	10K 5% 1/4W
R308	1-249-441-11	CARBON	100K 5% 1/4W
R313	1-249-429-11	CARBON	10K 5% 1/4W
R320	1-249-427-11	CARBON	6.8K 5% 1/4W
R321	1-249-427-11	CARBON	6.8K 5% 1/4W
R322	1-249-427-11	CARBON	6.8K 5% 1/4W
R323	1-249-427-11	CARBON	6.8K 5% 1/4W
R324	1-249-429-11	CARBON	10K 5% 1/4W
R325	1-249-417-11	CARBON	1K 5% 1/4W
R326	1-249-425-11	CARBON	4.7K 5% 1/4W
R327	1-249-425-11	CARBON	4.7K 5% 1/4W
R329	1-249-425-11	CARBON	4.7K 5% 1/4W
R352	1-249-441-11	CARBON	100K 5% 1/4W
R353	1-249-441-11	CARBON	100K 5% 1/4W
R356	1-249-441-11	CARBON	100K 5% 1/4W
R401	1-215-453-00	METAL	22K 1% 1/4W
R402	1-215-425-00	METAL	1.5K 1% 1/4W
R403	1-215-425-00	METAL	1.5K 1% 1/4W
R404	1-215-445-00	METAL	10K 1% 1/4W
R405	1-215-443-00	METAL	8.2K 1% 1/4W
R406	1-215-469-00	METAL	100K 1% 1/4W
R414	1-215-405-00	METAL	220 1% 1/4W
R415	1-215-405-00	METAL	220 1% 1/4W
R419	1-249-421-11	CARBON	2.2K 5% 1/4W
R420	1-215-405-00	METAL	220 1% 1/4W
R422	1-249-421-11	CARBON	2.2K 5% 1/4W
R501	1-215-453-00	METAL	22K 1% 1/4W
R502	1-215-425-00	METAL	1.5K 1% 1/4W
R503	1-215-425-00	METAL	1.5K 1% 1/4W
R504	1-215-445-00	METAL	10K 1% 1/4W
R505	1-215-443-00	METAL	8.2K 1% 1/4W
R506	1-215-469-00	METAL	100K 1% 1/4W
R514	1-215-405-00	METAL	220 1% 1/4W
R515	1-215-405-00	METAL	220 1% 1/4W
R519	1-249-421-11	CARBON	2.2K 5% 1/4W
R520	1-215-405-00	METAL	220 1% 1/4W
R522	1-249-421-11	CARBON	2.2K 5% 1/4W
R601	1-249-435-11	CARBON	33K 5% 1/4W
R602	1-249-429-11	CARBON	10K 5% 1/4W
R603	1-249-438-11	CARBON	56K 5% 1/4W
R604	1-249-429-11	CARBON	10K 5% 1/4W
R605	1-249-411-11	CARBON	330 5% 1/4W
R607	1-249-389-11	CARBON	4.7 5% 1/4W

Ref. No.	Part No.	Description	Remark
< SWITCH >			
△ S602	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (E, EA)	
< VIBRATOR >			
X301	1-579-175-11	VIBRATOR, CERAMIC (10MHZ)	

1-676-540-11 POWER SW BOARD *****			
< CAPACITOR >			
△ C601	1-113-924-11	CERAMIC 0.0047uF 20% 250V	
< CONNECTOR >			
* CN601	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P	
* CN602	1-568-226-11	PIN, CONNECTOR 2P	
< SWITCH >			
△ S601	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

1-676-245-11 SENSOR BOARD *****			
< CONNECTOR >			
CN10	1-750-243-11	SOCKET, CONNECTOR 6P	
< DIODE >			
D10	8-749-924-18	PHOTO INTERRUPTER RPI-1391	
D11	8-749-017-45	IC RPR-220CIN	
< RESISTOR >			
R10	1-249-416-11	CARBON 820 5% 1/4W	
R11	1-249-407-11	CARBON 150 5% 1/4W	
R12	1-249-429-11	CARBON 10K 5% 1/4W	

MISCELLANEOUS *****			
66	1-792-486-11	WIRE (FLAT TYPE) (37 CORE)	
105	1-792-130-11	WIRE (FLAT TYPE) (21 CORE)	
△ 110	1-558-943-41	CORD, POWER (E)	
△ 110	1-575-651-21	CORD, POWER (AEP, UK, EA, SP)	
△ 110	1-590-926-11	CORD, POWER (CND)	
△ 110	1-696-845-11	CORD, POWER (AUS)	
△ 110	1-783-531-41	CORD, POWER (US)	
△ 111	1-569-008-31	ADAPTOR, CONVERSION (EA)	
△ 111	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
268	1-471-061-11	MAGNET ASSY	
271	1-791-930-11	WIRE (FLAT TYPE) (6 CORE)	
△ 305	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
M10	A-4672-879-A	MOTOR ASSY, LOADING	
M11	A-4672-867-A	MOTOR ASSY, ROTARY (TRAY)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S200	1-418-746-11	ENCODER, ROTARY (BU, TABLE ADDRESS DETECT)	
△ T601	1-435-342-11	TRANSFORMER, POWER (US, CND)	
△ T601	1-435-343-11	TRANSFORMER, POWER (AEP, UK, SP, AUS)	
△ T601	1-435-344-11	TRANSFORMER, POWER (E, EA)	

ACCESSORIES & PACKING MATERIALS

- 1-476-132-11 REMOTE COMMANDER (RM-DC355) (CE345)
- 1-558-271-11 CORD, CONNECTION
- 4-226-518-11 MANUAL, INSTRUCTION (ENGLISH) (US, AUS)
- 4-226-518-21 MANUAL, INSTRUCTION (ENGLISH, FRENCH,
SPANISH) (AEP, UK, E, EA, SP)
- 4-226-518-31 MANUAL, INSTRUCTION (GERMAN, DUTCH,
ITALIAN, PORTUGUESE) (AEP)

- 4-226-518-41 MANUAL, INSTRUCTION (CHINESE) (E, SP)
- 4-226-518-51 MANUAL, INSTRUCTION (ARABIC) (EA)
- 4-226-518-61 MANUAL, INSTRUCTION (SWEDISH, DANISH,
FINNISH) (North European)
- 4-226-518-71 MANUAL, INSTRUCTION (ENGLISH, FRENCH)
(CND)
- 4-981-643-01 COVER, BATTERY (for RM-DC355) (CE345)

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