

# TC-TX313/TX515

## SERVICE MANUAL

US Model  
Tourist Model  
TC-TX515

AEP Model  
UK Model  
E Model  
TC-TX313/TX515

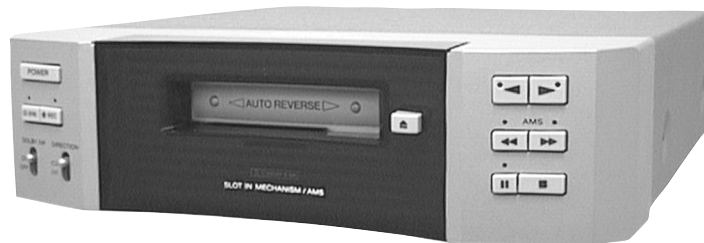


Photo: TC-TX515

- TC-TX313 is the optional stereo cassette deck that can be used only with section DHC-MD313.
- TC-TX515 is the optional stereo cassette deck that can be used only with section DHC-MD515.

### SPECIFICATIONS

Recording system	4-track 2-channel stereo (DOLBY NR OFF)
Frequency response	50 - 14,000 Hz ( $\pm 3$ dB), using Sony TYPE I cassettes 50 - 15,000 Hz ( $\pm 3$ dB), using Sony TYPE II cassettes
Input	TAPE IN (phono jacks): impedance 47 kilohms
Output	TAPE OUT (phono jacks): voltage 550 mV impedance 47 kilohms

#### General

Power requirements	120 V AC, 60 Hz
US model:	220 - 230 V AC, 50 / 60 Hz
AEP, UK model:	110 - 120 V or 220 - 240 V AC, 50 / 60 Hz
E, Tourist model:	Adjustable with the voltage selector
Power consumption	12 W
Dimensions	Approx. 215 × 60 × 195 mm (w / h / d) incl. projecting parts and controls
Mass	Approx. 2.5 kg
Supplied accessories:	Audio connecting cords (2)

*Design and specifications are subject to change without notice.*

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	—

#### 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.**

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  $\square$  are trademarks of Dolby Laboratories Licensing Corporation.

#### 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.

## STEREO CASSETTE DECK



# SONY®

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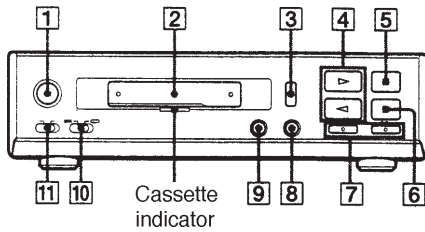
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## SECTION 1 GENERAL

• TC-TX313

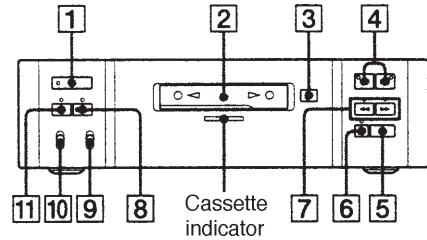
### Parts and Controls



- 1** POWER switch  
Only the power to this set is turn on.
- 2** Cassette slot  
With a cassette inserted, the cassette indicator is illuminated red when the power is turned on.
- 3** ≡ (eject) button
- 4** ◁ (lower side play)/ ▷ (upper side play) button  
Even without cassette, the power to this set and the DHC-MD313 will be turned on when one of these buttons is pressed.
- 5** ▯ (pause) button
- 6** π (stop) button
- 7** ◀◀/▶▶ (fast forward, fast backward/AMS) button
- 8** ○ REC (recording) button
- 9** CD SYNC (CD synchro) button  
This button allows CD synchro recording to be executed as this set is interlocked with the DHC-MD313.
- 10** DIRECTION switch
- 11** DOLBY NR (Dolby Noise Reduction) switch

• TC-TX515

### Parts and Controls



- 1** POWER switch  
Only the power to this set is turn on.
- 2** Cassette slot  
With a cassette inserted, the cassette indicator is illuminated red when the power is turned on.
- 3** ▲ (eject) button
- 4** ◀ (lower side play)/ ▶ (upper side play) button
- 5** ■ (stop) button
- 6** ▯ (pause) button
- 7** ◀◀/▶▶ (fast forward, fast backward/AMS) button
- 8** ● REC (recording) button
- 9** DIRECTION switch
- 10** DOLBY NR (Dolby Noise Reduction) switch
- 11** CD SYNC (CD synchro) button  
This button allows CD synchro recording to be executed as this set is interlocked with the DHC-MD515.

## SECTION 2 TEST MODE

### 2-1. CHECKING THE ITEMS OF TEST MODE

The set allows you to check the items of the test mode although this may not be directly related with the adjustment.

#### 1 Setting/Releasing the Test Mode:

##### 1) Setting

With power OFF, short between test pin ① and pin ② of CN09 on the LOW-VOLTAGE board. (See page 15.)

Then, turn power ON to enter the test mode.

##### 2) Releasing

Open between pin ① and pin ② of CN09.

#### 2 Items of Test Mode

##### 1) Memory Stop

1-1) In side A record mode, press the REW (◀◀) button.

The tape is rewind to the start point of recording and stopped.

1-2) In side B record mode, press the FF (▶▶) button.

The tape is rewind to the start point of recording and stopped.

##### 2) Memory Play

2-1) In side A record mode, press the FWD Auto Play

(▶+◀◀) buttons simultaneously. The tape is rewind to the start point of recording and FWD played.

2-2) In side B record mode, press the REV Auto Play

(◀+▶▶) buttons simultaneously. The tape is rewind to the start point of recording and REV played.

##### 3) All LED Flickering

When no tape is inserted, all LED indicators are flickering.

##### 4) Aging Operation

When tape with record erase preventing claw is inserted for both sides A and B, enter the aging operation start command by pressing [■] and [CD SYNC] simultaneously. The system will change the direction to one side and perform the following operations:

① Rewind in REW mode until side A of tape is stopped.

② Playback tape in FWD mode for 1 minute.

③ Pause mode.

④ Record tape for 3 minutes.

⑤ Forward tape in FF mode to the end of side A of tape.

⑥ Shut off and switch to side B.

⑦ Playback tape in REV mode for 1 minute.

⑧ Pause mode.

⑨ Record tape for 3 minutes.

⑩ Forward tape in FF mode to the end of side B of tape.

⑪ Shut off and switch to side A.

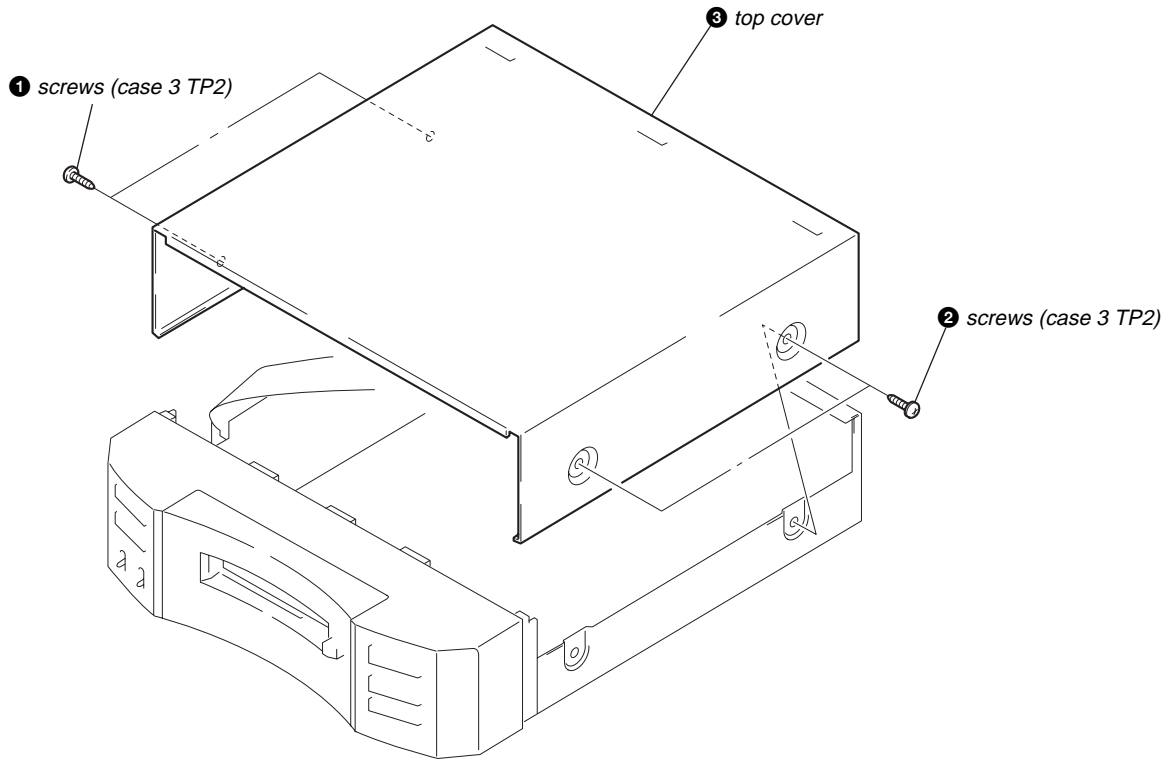
⑫ Repeat the procedure from ② to ⑪.

⑬ Pressing the STOP (■) button will release the set from these operations.

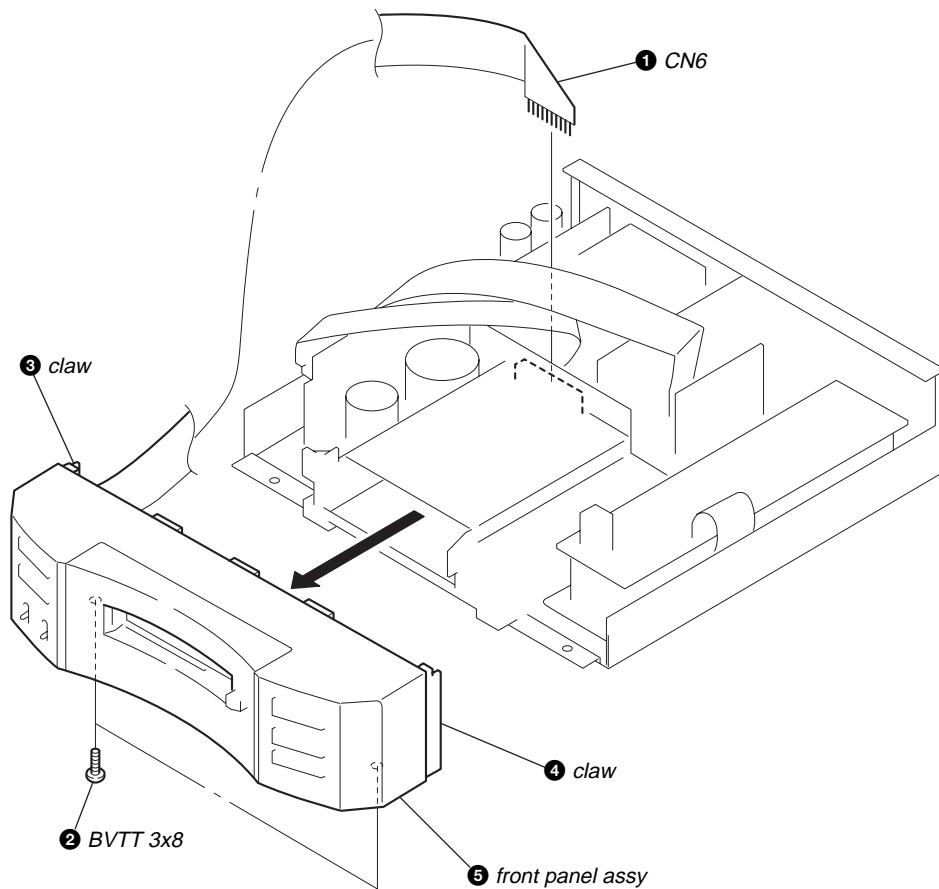
## SECTION 3 DISASSEMBLY

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

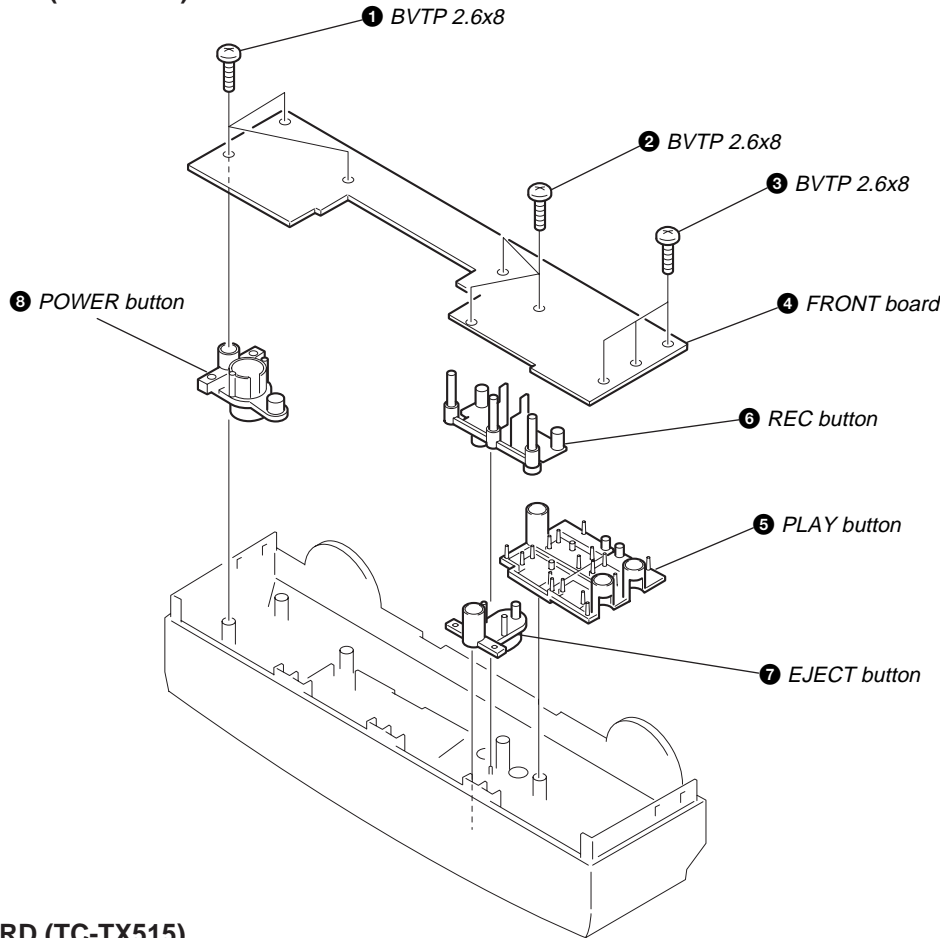
### 3-1. TOP COVER



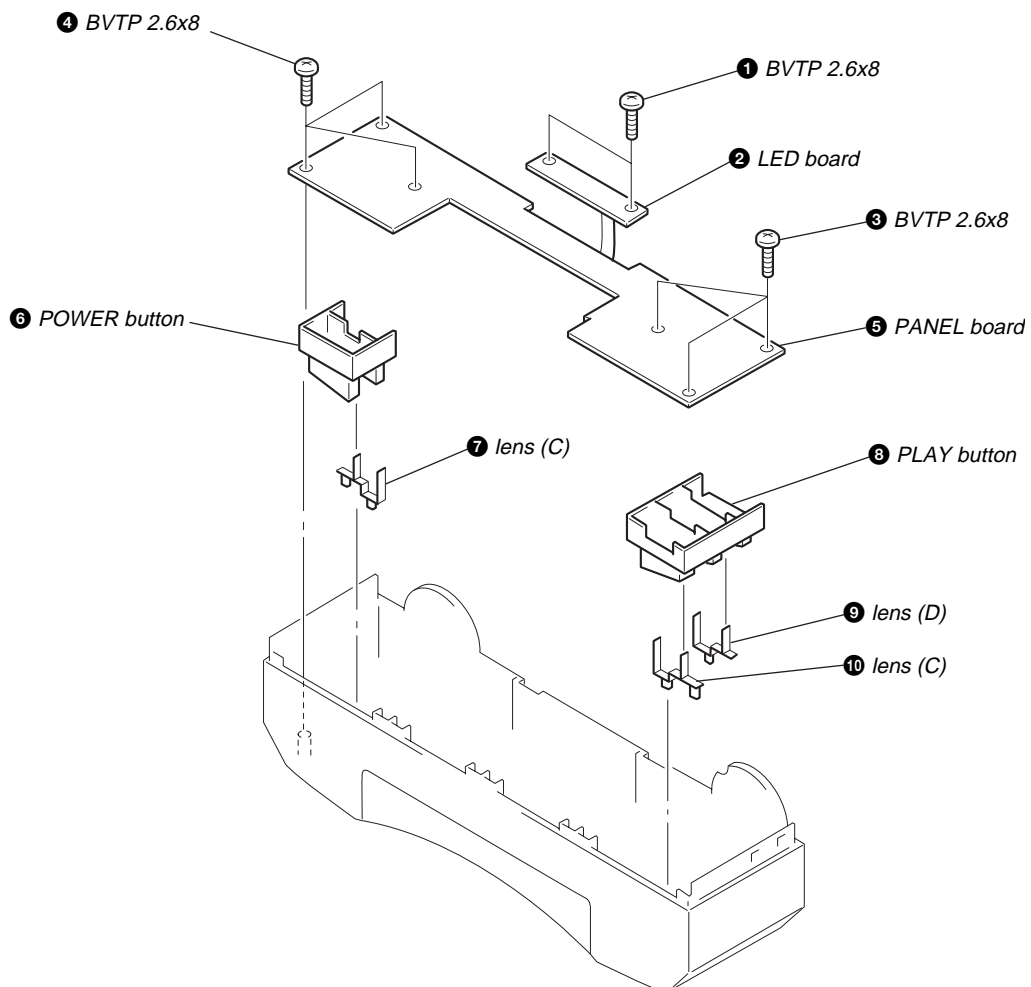
### 3-2. FRONT PANEL ASSY



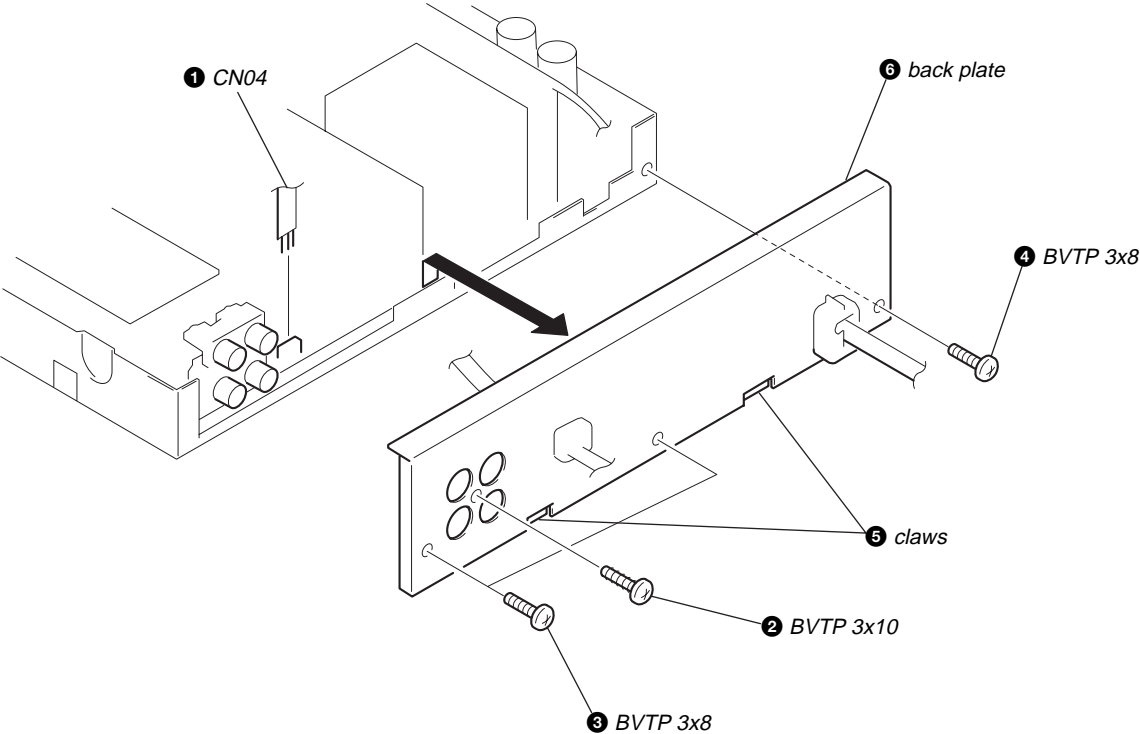
### 3-3. FRONT BOARD (TC-TX313)



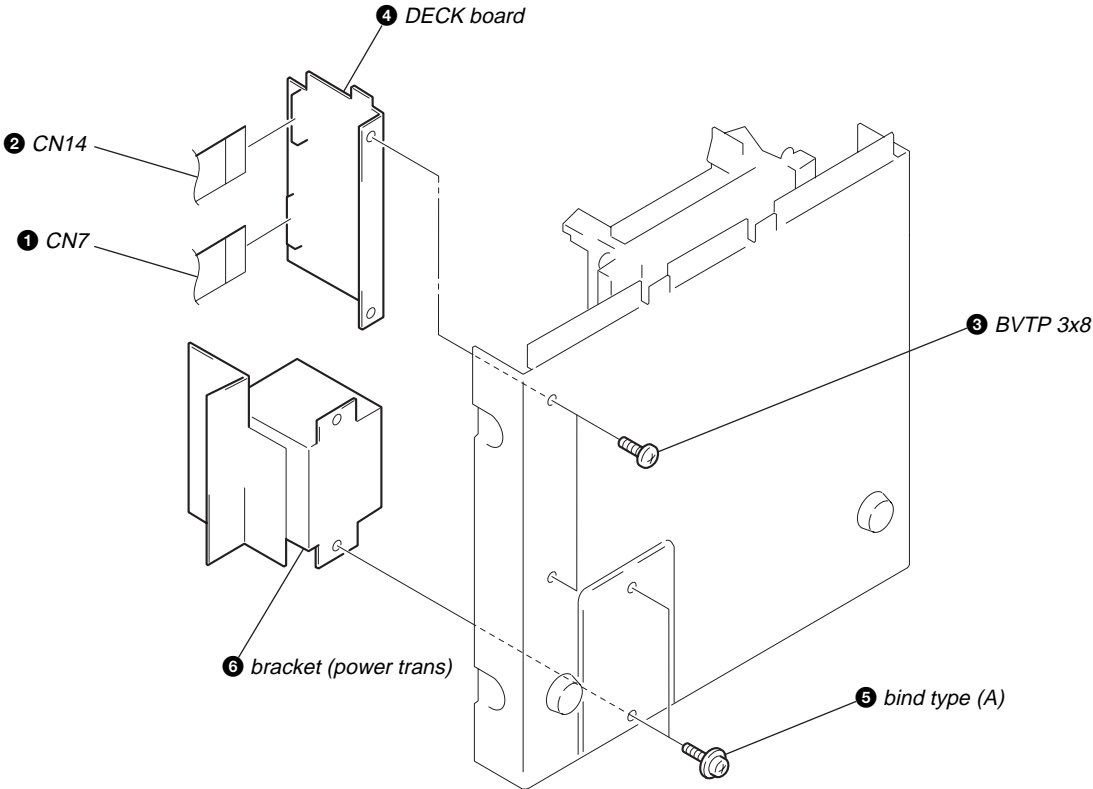
### 3-4. PANEL BOARD (TC-TX515)



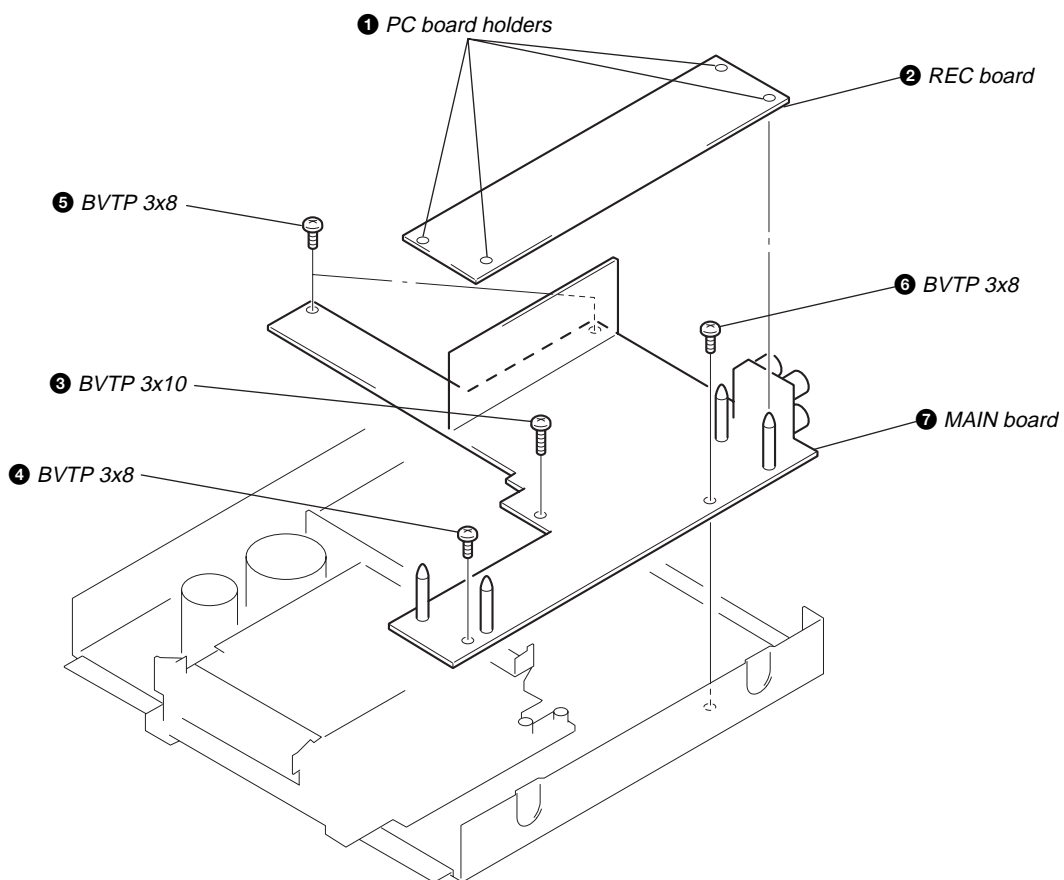
**3-5. BACK PLATE**



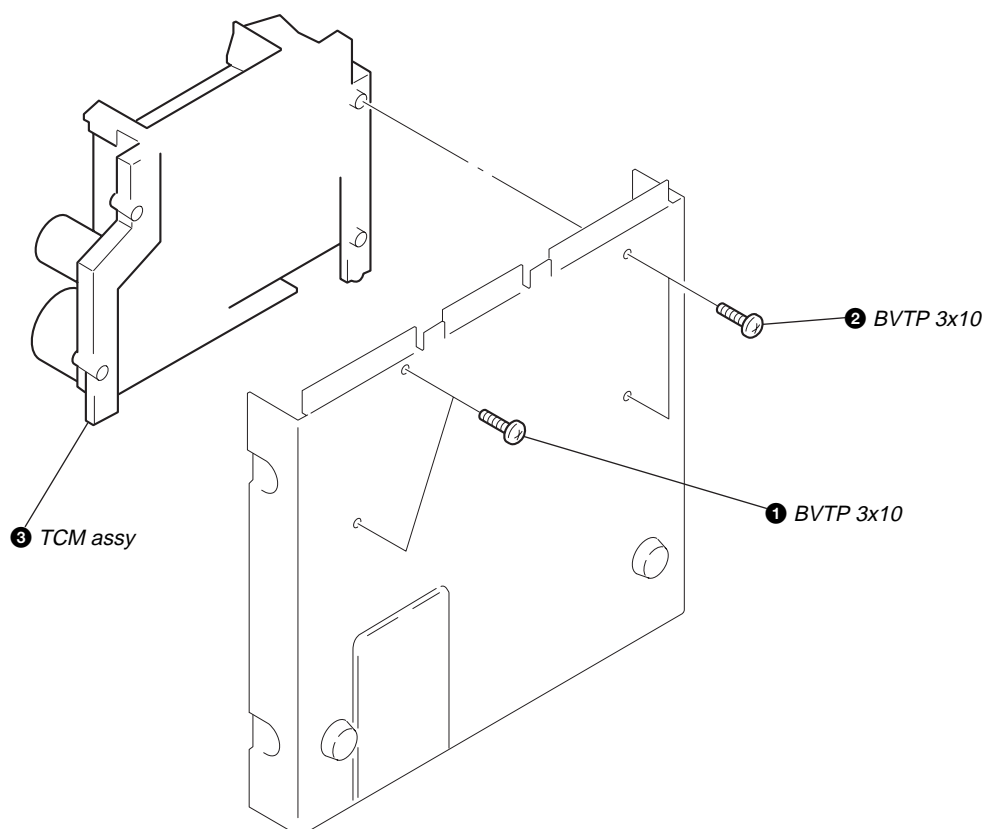
**3-6. BRACKET (POWER TRANS)**



### 3-7. MAIN BOARD

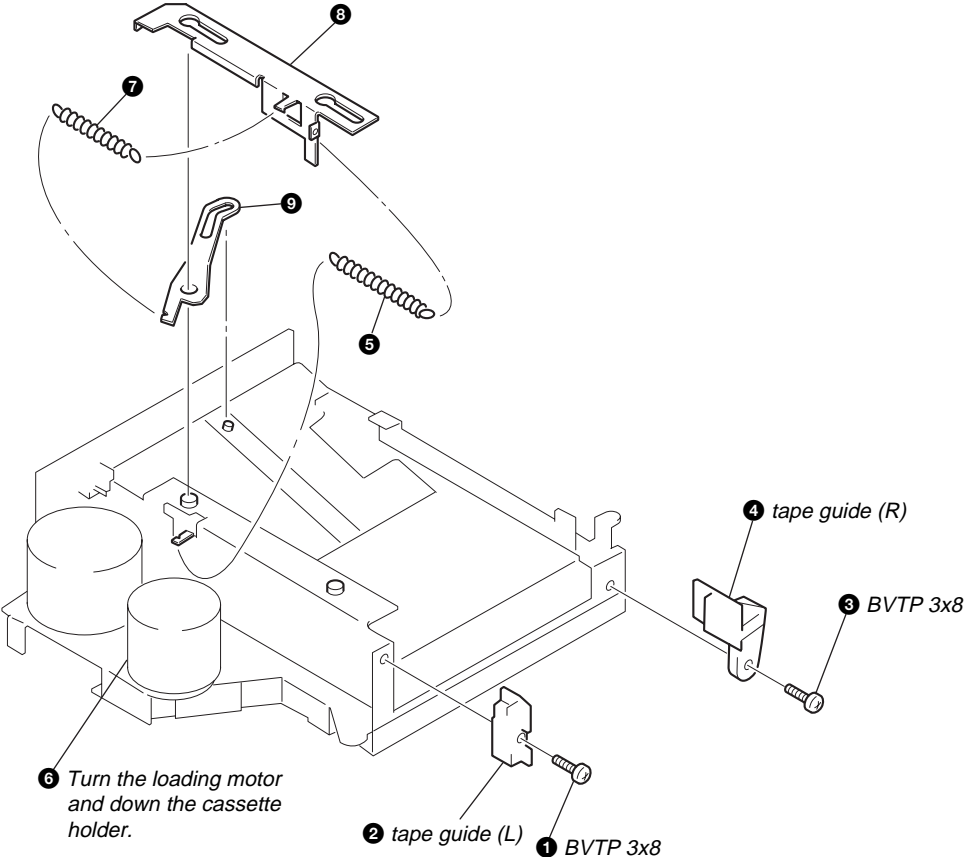


### 3-8. TCM ASSY

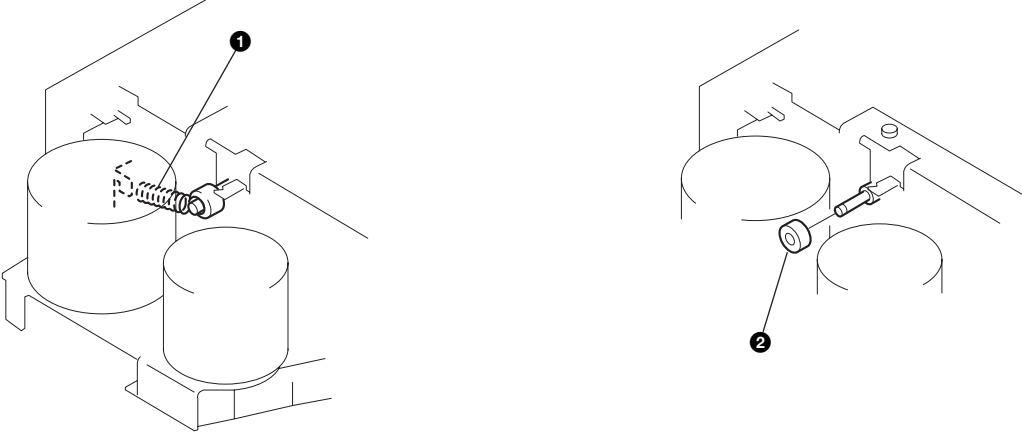




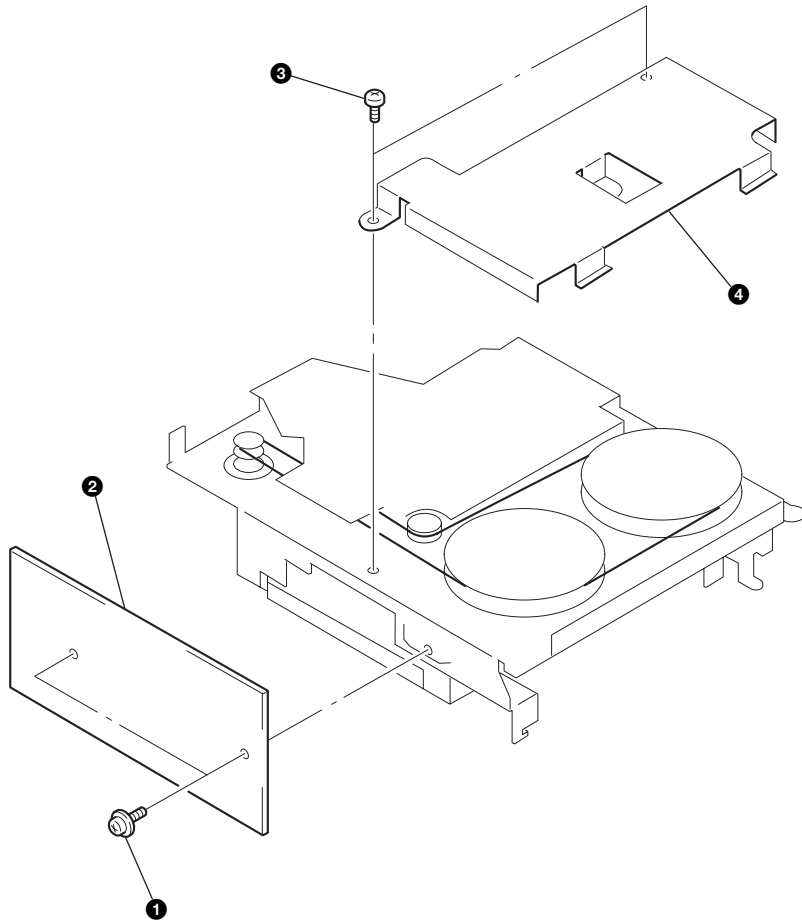
**3-9. LEVER**



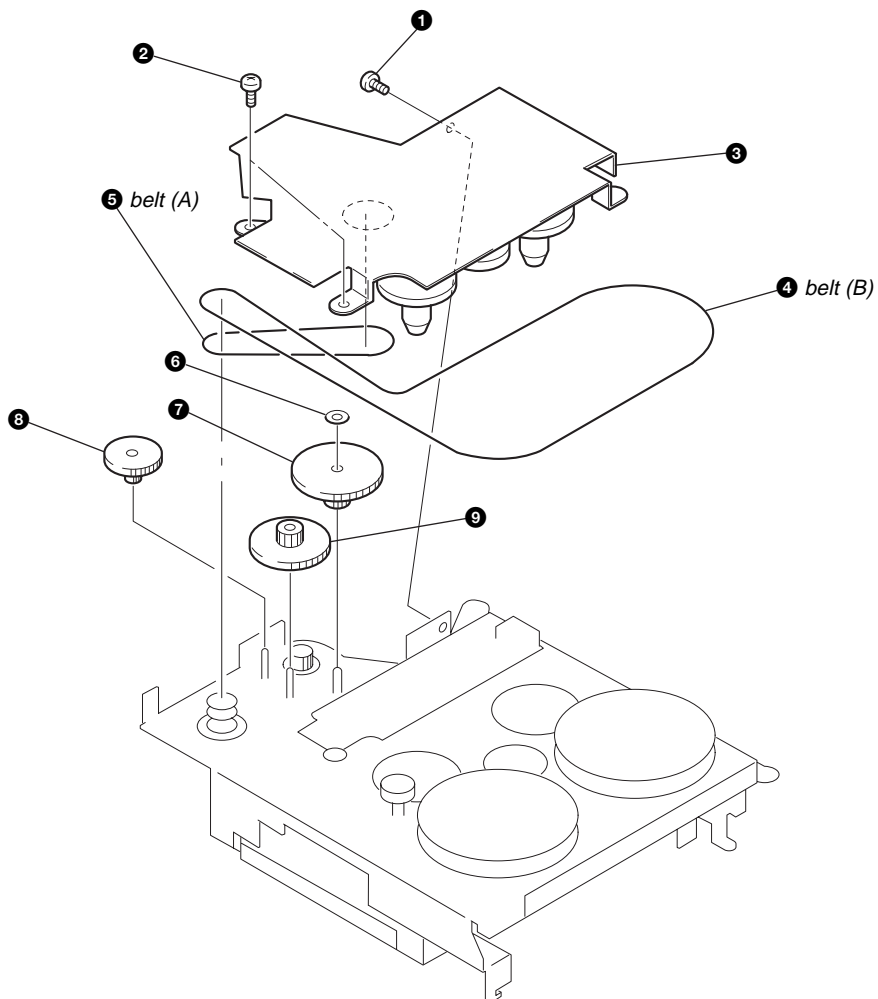
**3-10. TENSION SPRING**



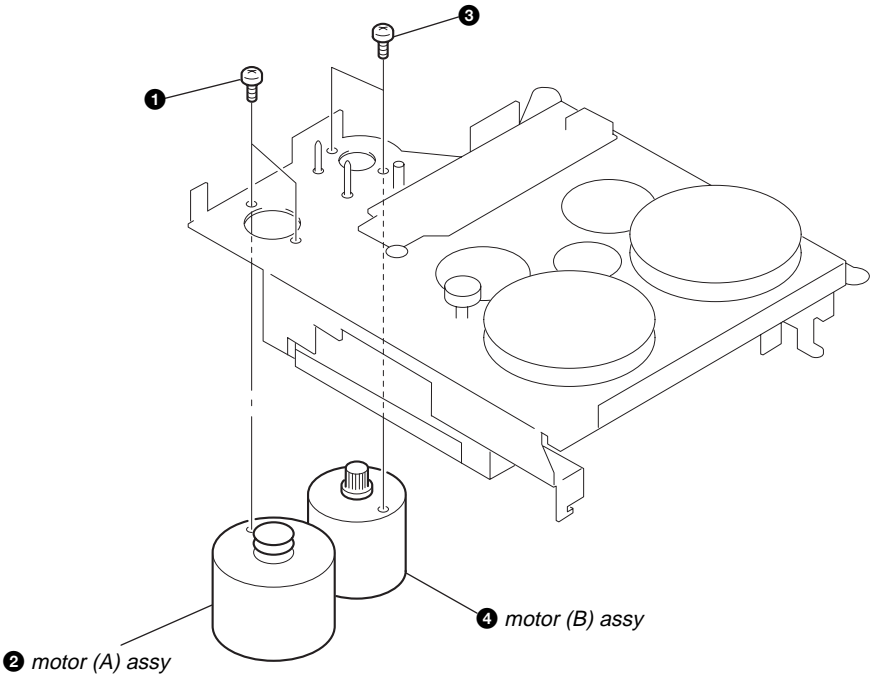
### 3-11. HOUSING



### 3-12. CHASSIS

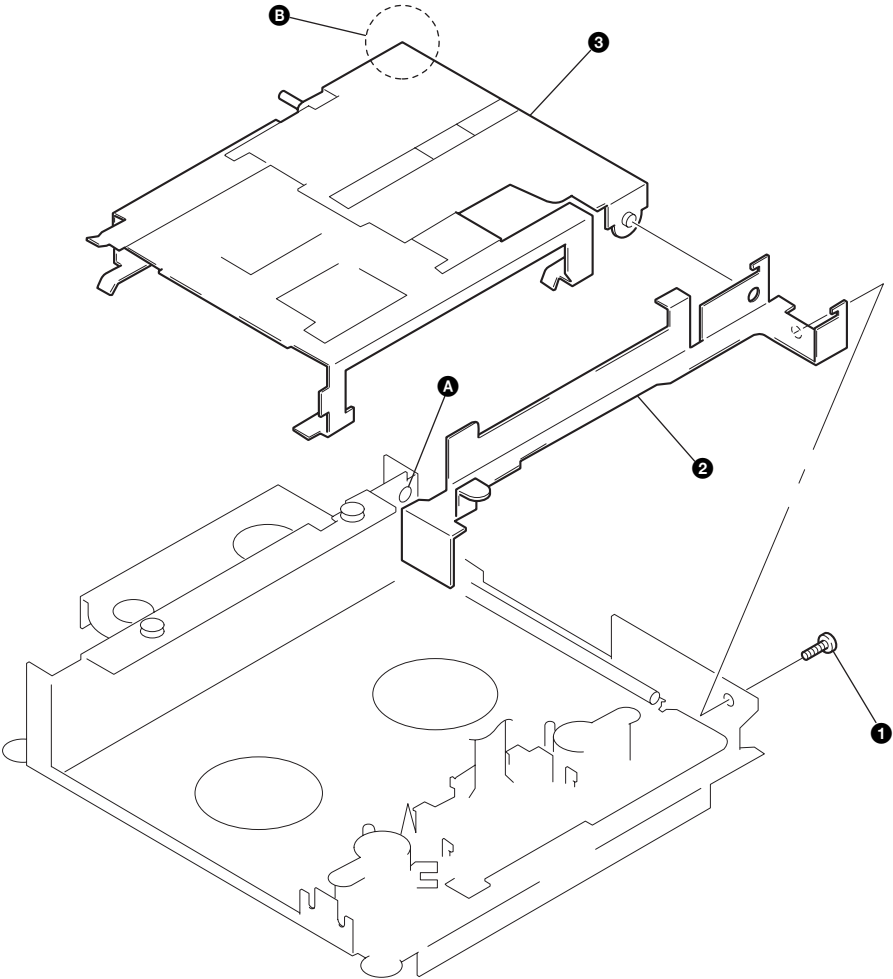


3-13. MOTOR (A)/(B) ASSY

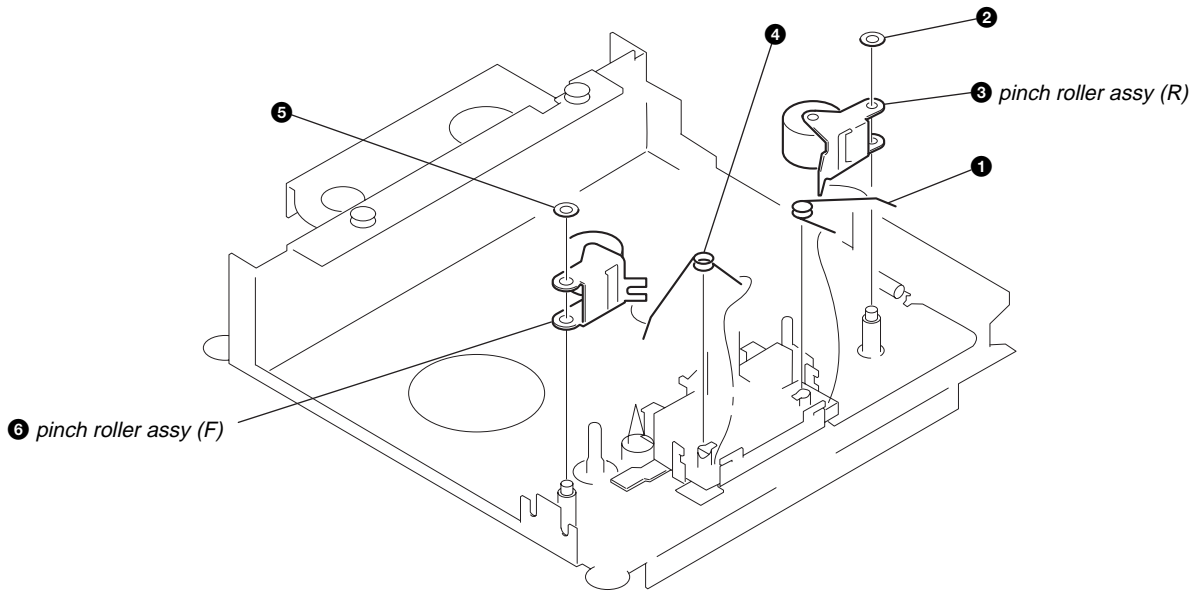


3-14. HEAD PLATE

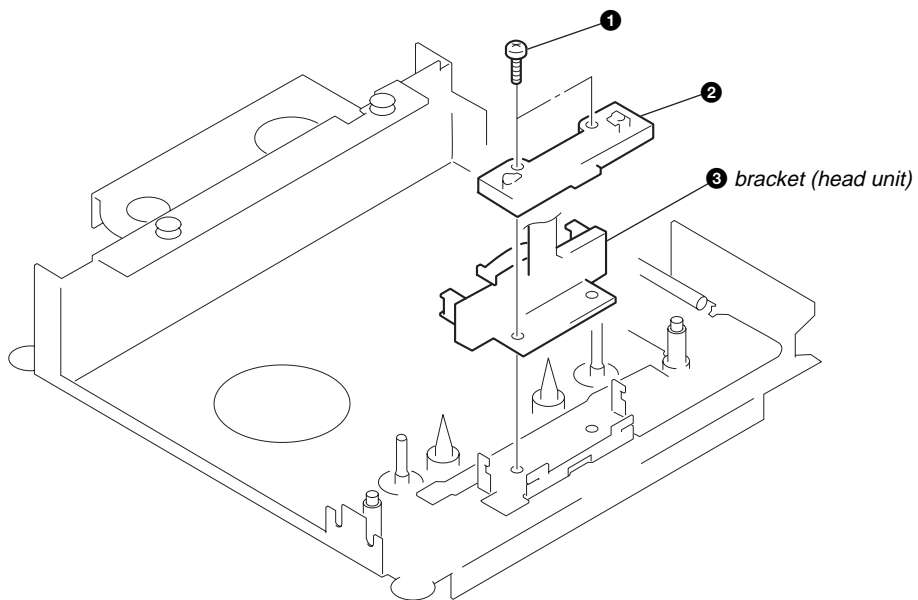
Note : On install, set the portions A and B.



### 3-15. PINCH ROLLER ASSY



### 3-16. BRACKET (HEAD UNIT)



## SECTION 4 MECHANICAL ADJUSTMENTS

### PRECAUTION

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

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

### Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	35 – 80 g • cm (0.49 – 1.11 oz • inch)
FWD Back tension		1 – 7 g • cm (0.012 – 0.097 oz • inch)
REV	CQ-102RC	35 – 80 g • cm (0.49 – 1.11 oz • inch)
REV Back tension		1 – 7 g • cm (0.012 – 0.097 oz • inch)
FF, REW	CQ-201B	more than 40 g • cm (more than 0.56 oz • inch)

## SECTION 5 ELECTRICAL ADJUSTMENTS

### PRECAUTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
  - Switch position  
DOLBY NR switch : OFF  
DIRECTION switch :  $\rightleftarrows$

### Standard Input Level

Input terminal	TAPE IN
source impedance	10 k $\Omega$
input signal level	0.49 V (– 4 dB)

### Standard Output Level

Output terminal	TAPE OUT (L-CH)
load impedance	47 k $\Omega$
output signal level	0.49 V (– 4 dB)

### Test Tape

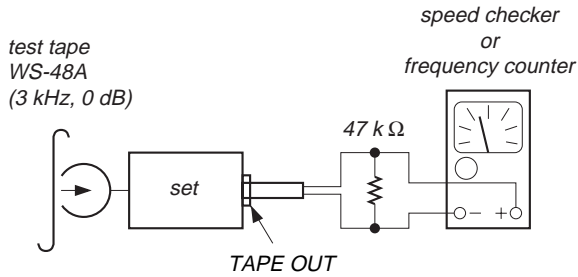
Type	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
P-4-L300	315 Hz, 0 dB	PB Level Adjustment
WS-48A	3 kHz, 0 dB	Tape Speed Adjustment

**0 dB = 0.775 V**

## Tape Speed Adjustment

### Procedure :

1. Mode: FWD playback



### Adjustment Limits : normal speed

Speed checker	Frequency counter
- 3 to + 3 %	2,910 to 3,090 Hz

Confirm that the deviation between tape top and tape end is within 3%.

**Adjustment Location :** Capstan motor volume (See page 15.)

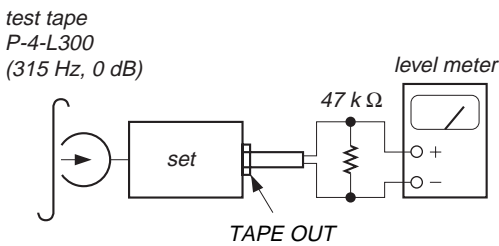
## Sample Value of Wow and flutter

W. RMS (JIS) within 0.3%  
(test tape : WS-48A)

## Playback Level Adjustment

### Procedure :

1. Mode: FWD playback
2. Adjust SFR03 (L-CH) and SFR04 (R-CH) on MAIN board so that the reading on level meter meets the adjustment limits below.



### Adjustment Limits :

TAPE OUT level	Level difference between channels
- 4 ± 2 dB (0.39 to 0.62 V)	within 2 dB

Check that the TAPE OUT level does not change even if Playback and Stop operation is repeated several times.

**Adjustment Location :** MAIN board (See page 15.)

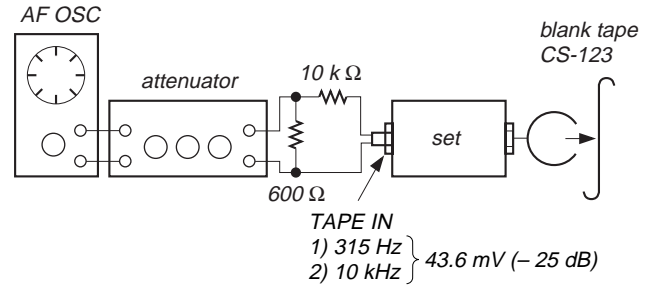
## Record Bias Adjustment

### Setting :

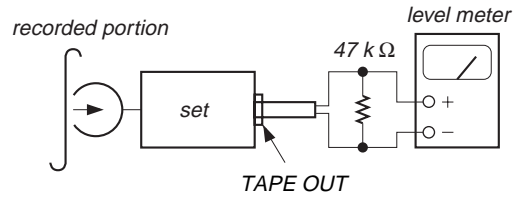
Set to the TEST mode. (See page 4.)

### Procedure :

1. Mode: Record



2. Mode: Playback



3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
4. If these levels do not adjustment level, adjust SFR01 (L-CH) and SFR02 (R-CH) on REC board to repeat step 1 and 2.

**Adjustment Level :** Difference of playback output of 10 kHz to playback output of 315 Hz : 0 ± 0.5 dB

**Adjustment Location :** REC board (See page 15.)

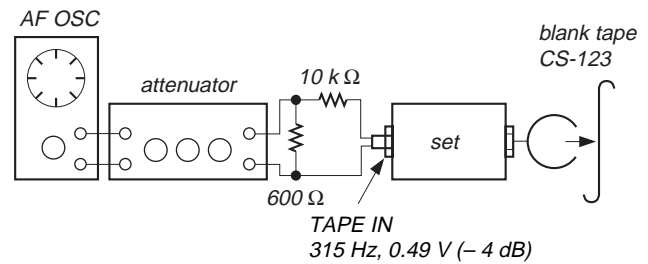
## Record Level Adjustment

### Setting :

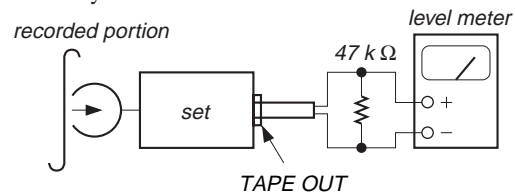
Set to the TEST mode. (See page 4.)

### Procedure :

1. Mode: Record



2. Mode: Playback

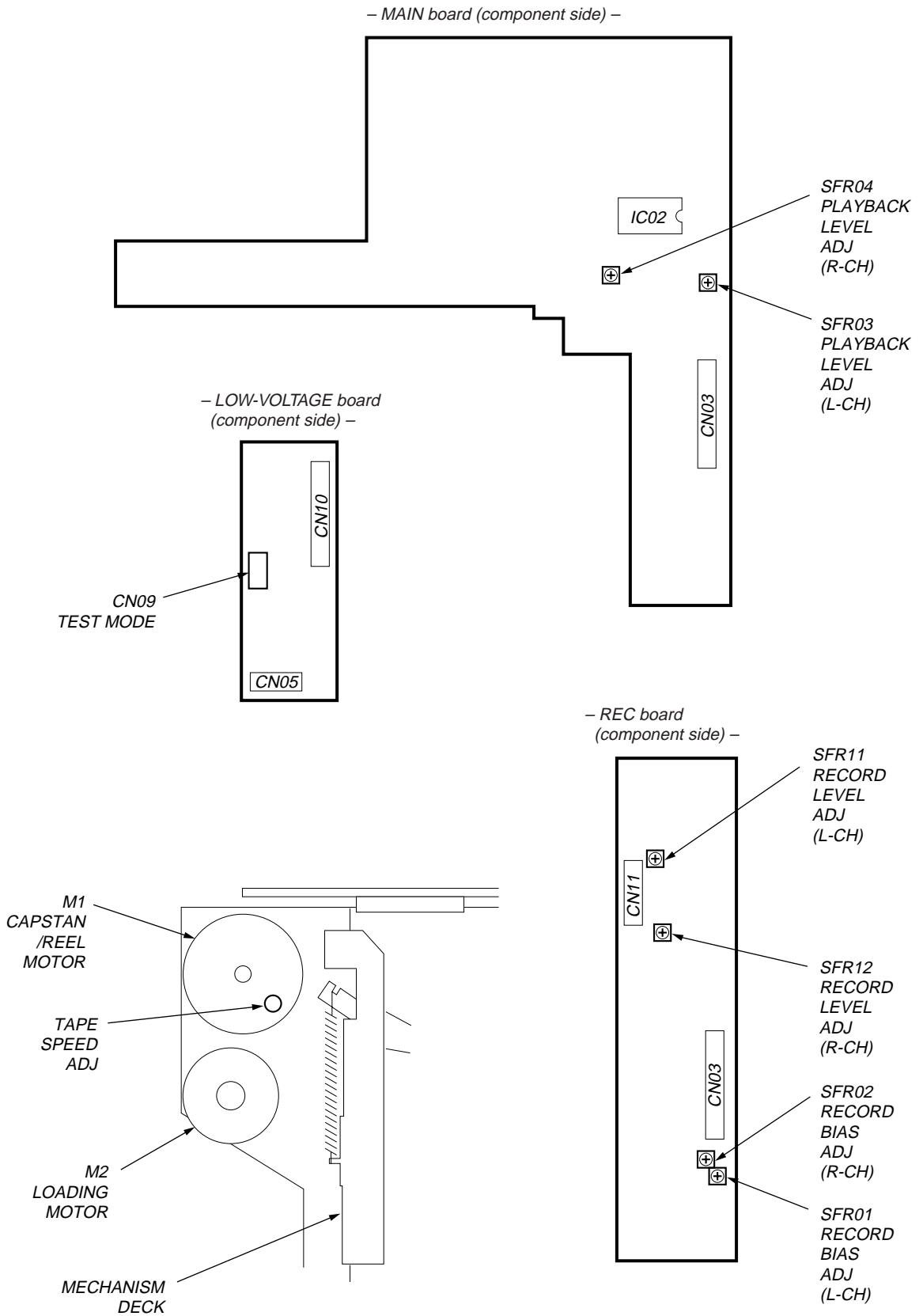


3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
4. If these levels do not adjustment level, adjust SFR11 (L-CH) and SFR12 (R-CH) on REC board to repeat step 1 and 2.

**Adjustment Level :** Playback output level of 315 Hz :  
- 4 ± 2 dB (0.39 to 0.62 V)

**Adjustment Location :** REC board (See page 15.)

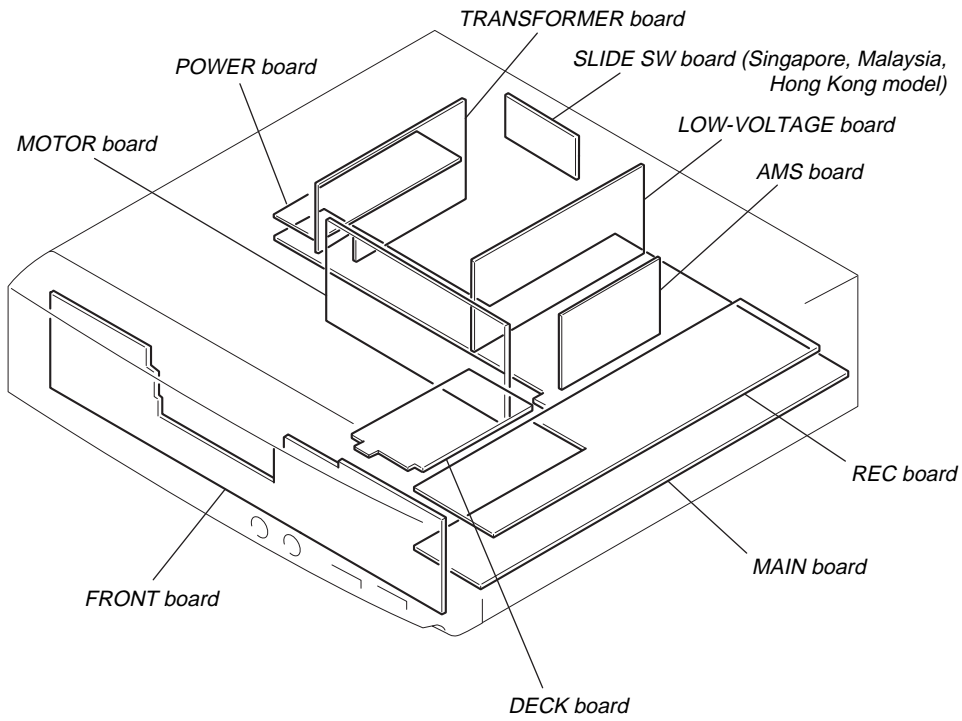
**Adjustment Location :**



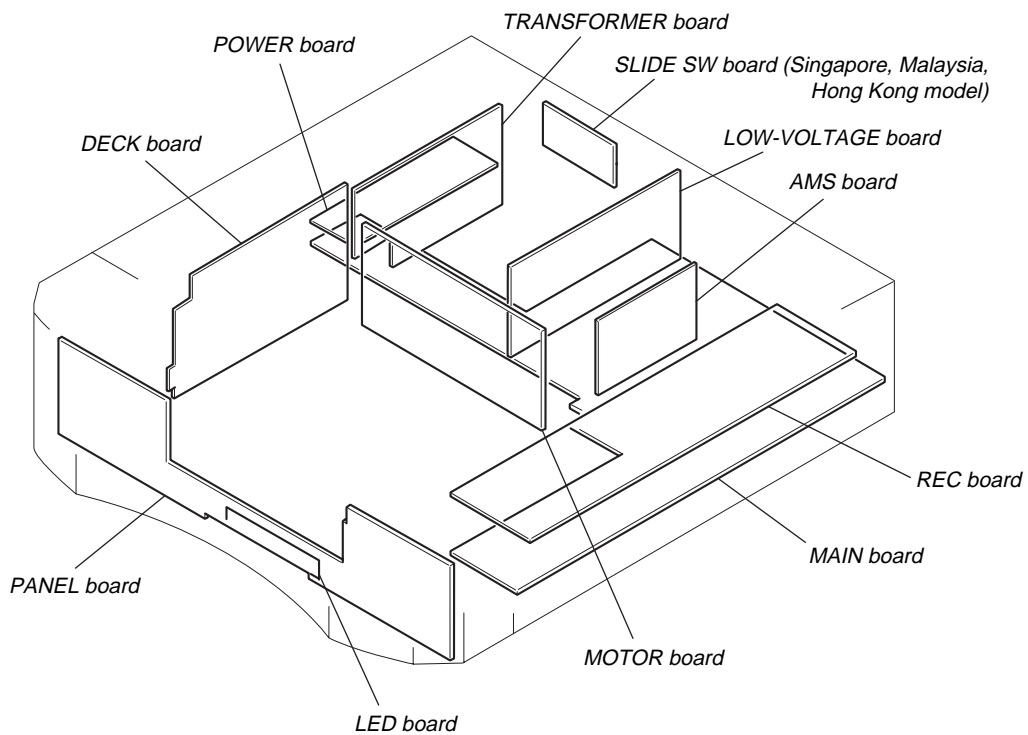
# SECTION 6 DIAGRAMS

## 6-1. CIRCUIT BOARDS LOCATION

• TC-TX313

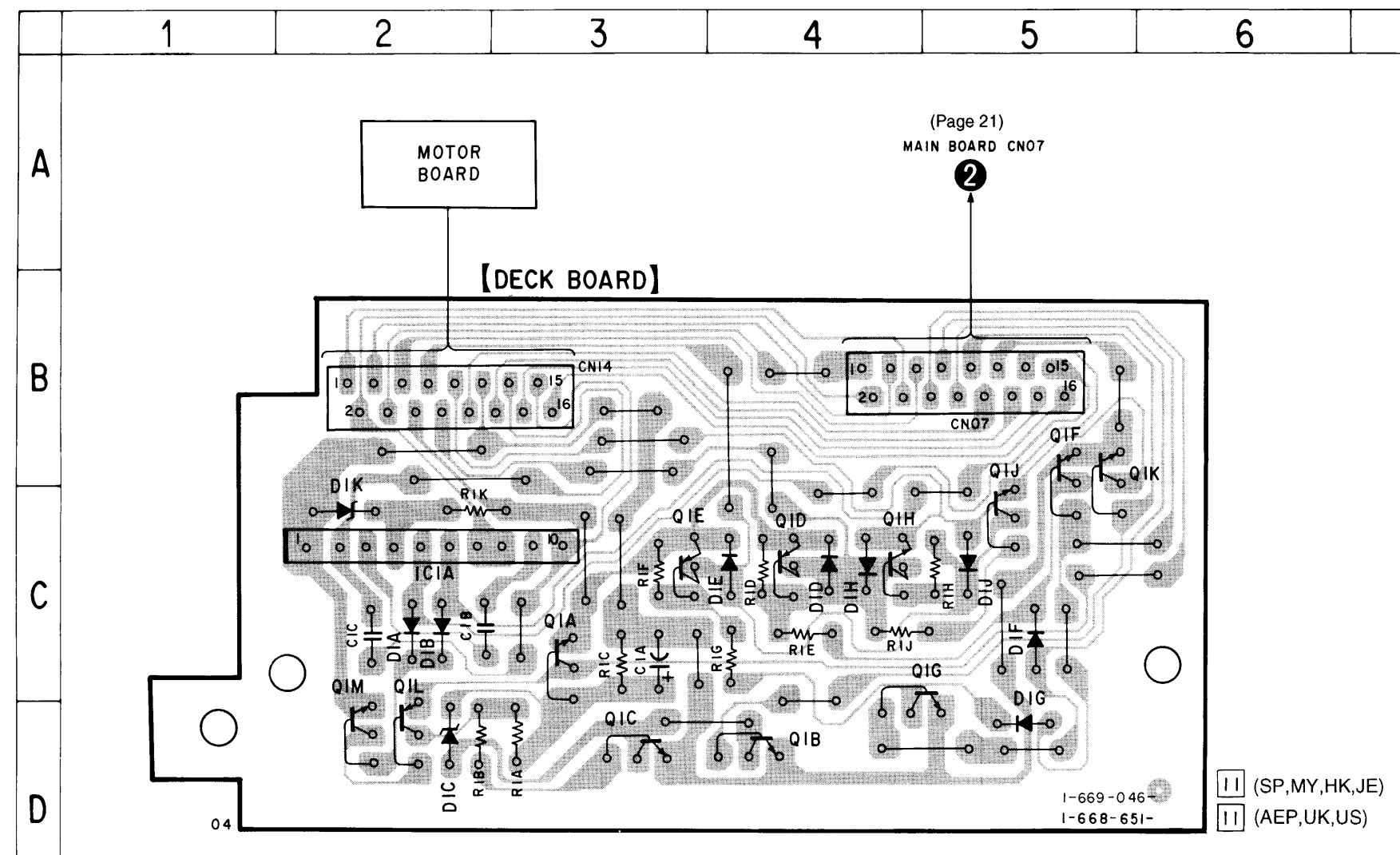


• TC-TX515





6-2. PRINTED WIRING BOARD — DECK SECTION —

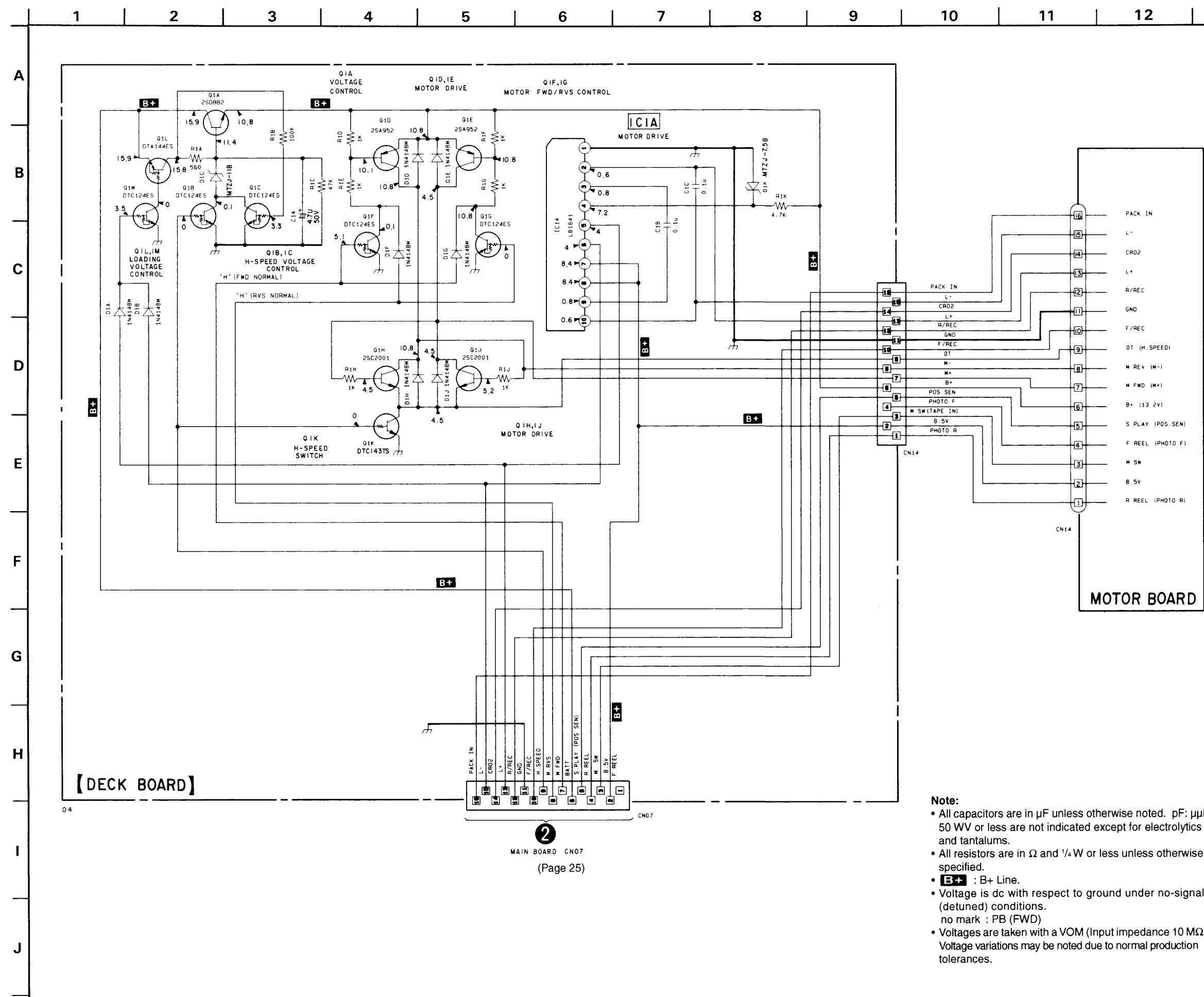


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1A	C-2	Q1A	C-3
D1B	C-2	Q1B	D-4
D1C	D-2	Q1C	D-3
D1D	C-4	Q1D	C-4
D1E	C-4	Q1E	C-3
D1F	C-5	Q1F	B-5
D1G	D-5	Q1G	D-4
D1H	C-4	Q1H	C-4
D1J	C-5	Q1J	C-5
D1K	C-2	Q1K	B-5
		Q1L	D-2
IC1A	C-2	Q1M	D-2

- Note:
- — : parts extracted from the component side.
  - ▨ : Pattern from the side which enables seeing.

6-3. SCHEMATIC DIAGRAM — DECK SECTION — • Refer to page 26 for IC Block Diagrams.



- Note:
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ ;  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
  - B+** : B+ Line.
  - Voltage is dc with respect to ground under no-signal (detuned) conditions. no mark ; PB (FWD)
  - Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.

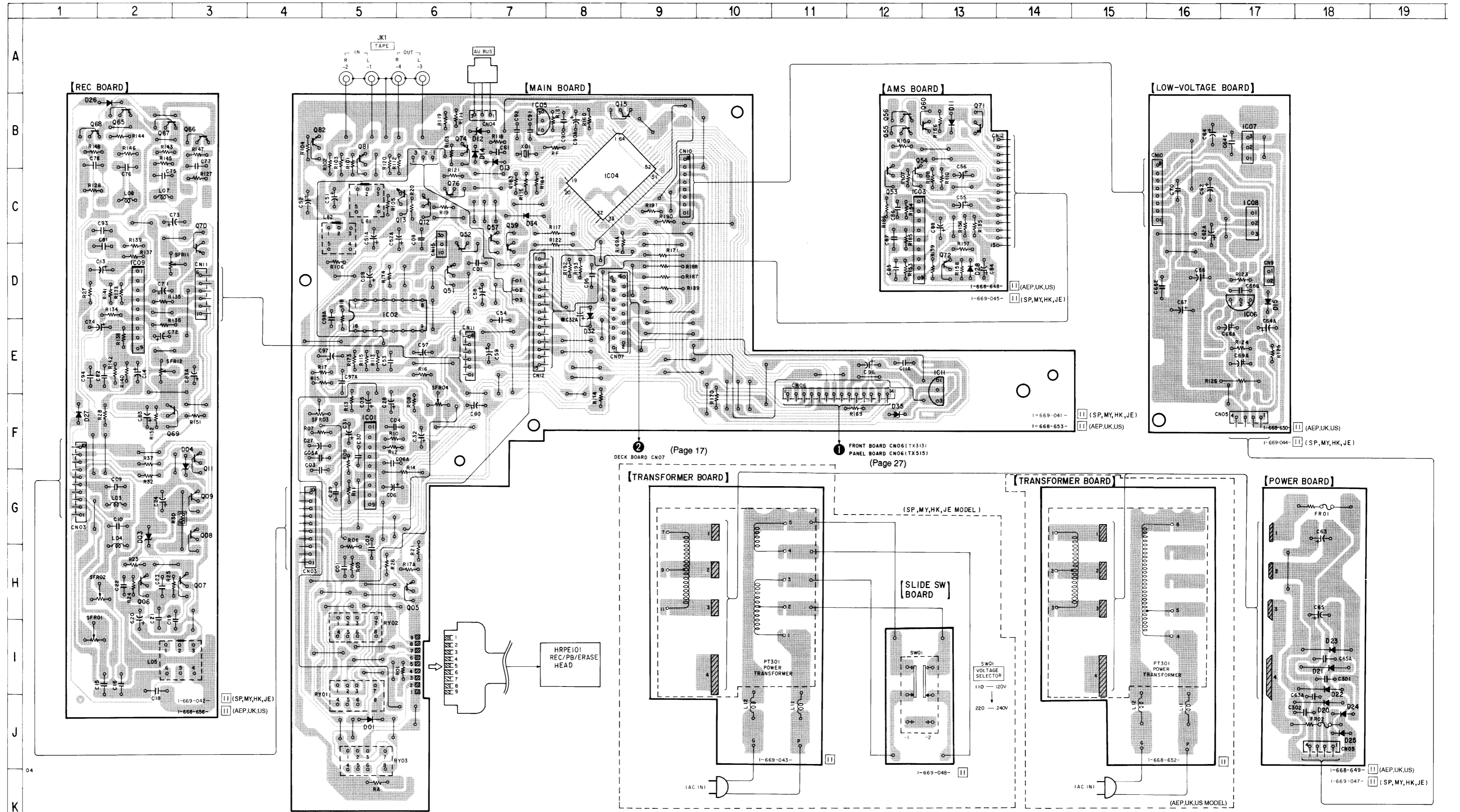
6-4. PRINTED WIRING BOARDS — MAIN SECTION —

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D01	J-5	Q05	H-6
D03	G-2	Q06	H-2
D04	F-3	Q07	H-3
D11	B-13	Q08	G-3
D12	B-7	Q09	G-3
D13	B-7	Q11	F-3
D14	B-6	Q12	C-6
D15	D-17	Q13	C-5
D20	J-18	Q15	B-8
D21	I-18	Q51	D-6
D22	I-18	Q52	D-6
D23	I-18	Q53	C-12
D24	J-18	Q54	C-12
D25	J-18	Q55	B-12
D26	B-2	Q56	B-12
D27	F-1	Q57	C-7
D28	D-13	Q59	C-7
D32	D-8	Q60	B-12
D34	C-7	Q65	B-2
D35	F-12	Q66	B-3
		Q67	B-2
IC01	F-5	Q68	B-1
IC02	D-5	Q69	F-2
IC03	C-12	Q70	C-3
IC04	C-8	Q71	B-13
IC05	B-7	Q72	D-13
IC06	D-17	Q74	C-6
IC07	B-17	Q76	C-6
IC08	C-17	Q81	B-5
IC09	D-2	Q82	B-4
IC11	E-13		

Note:

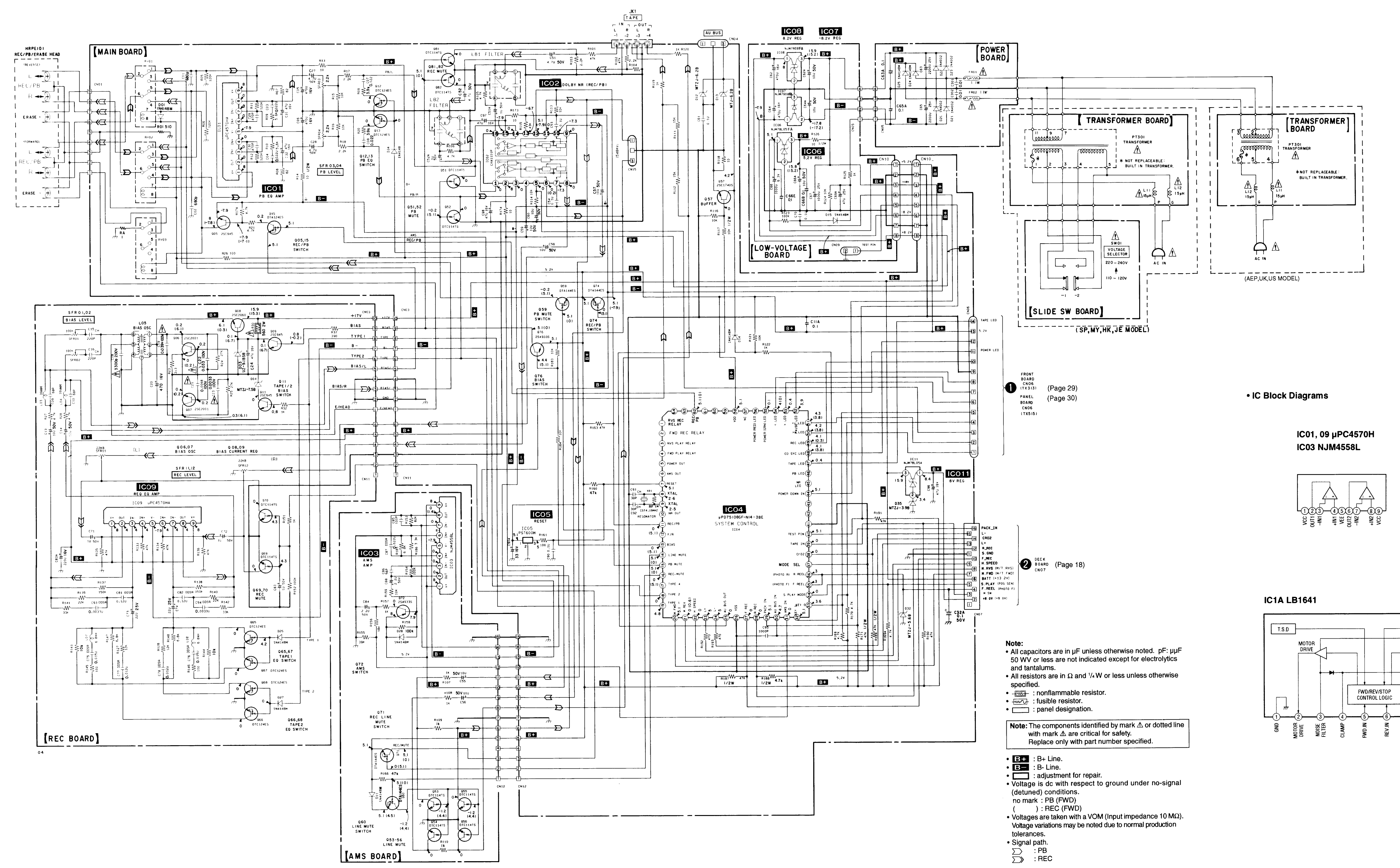
- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : indicates side identified with part number.
- ▨ : Pattern from the side which enables seeing.



6-5. SCHEMATIC DIAGRAM — MAIN SECTION —

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N



1 FRONT BOARD CN04 (TX313) (Page 29)  
 2 PANEL BOARD CN05 (TX313) (Page 30)  
 3 CN06 (TX515)

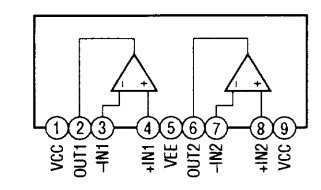
4 DECK BOARD CN07 (Page 18)

**Note:**  
 • All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.  
 • All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.  
 • : nonflammable resistor.  
 • : fusible resistor.  
 • : panel designation.  
**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

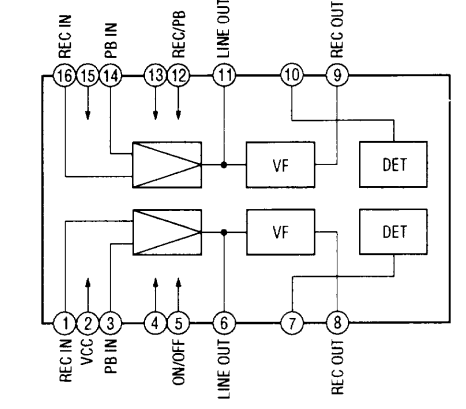
• : B+ Line.  
 • : B- Line.  
 • : adjustment for repair.  
 • Voltage is dc with respect to ground under no-signal (detuned) conditions.  
 • no mark : PB (FWD)  
 • ( ) : REC (FWD)  
 • Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.  
 • : Signal path.  
 • : PB  
 • : REC

• IC Block Diagrams

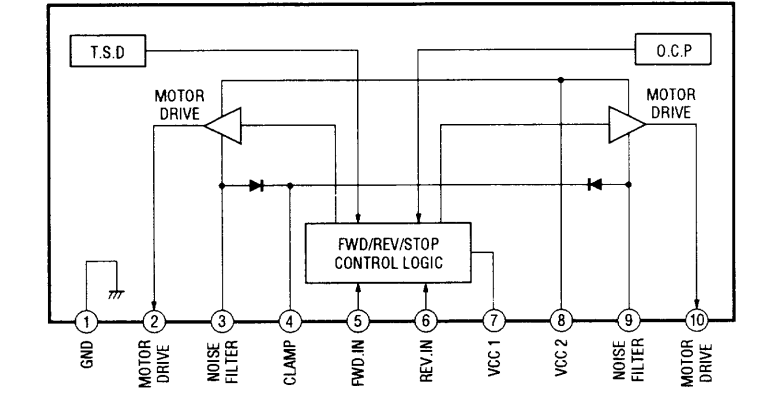
IC01, 09  $\mu\text{PC4570H}$   
IC03 NJM4558L



IC02 CXA1101P



IC1A LB1641



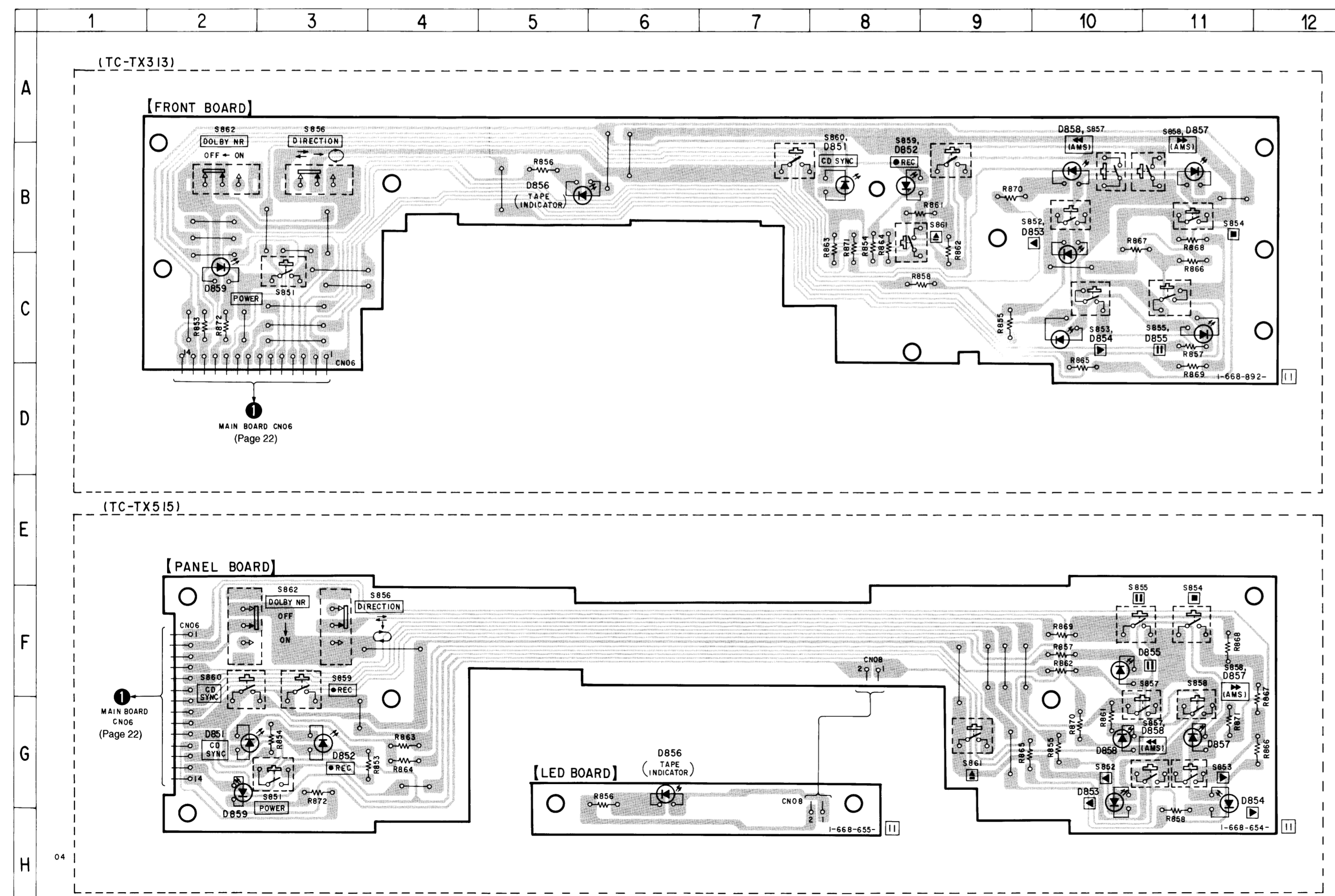
TC-TX313/TX515

6-6. PRINTED WIRING BOARDS — FRONT PANEL SECTION —

**Semiconductor Location**

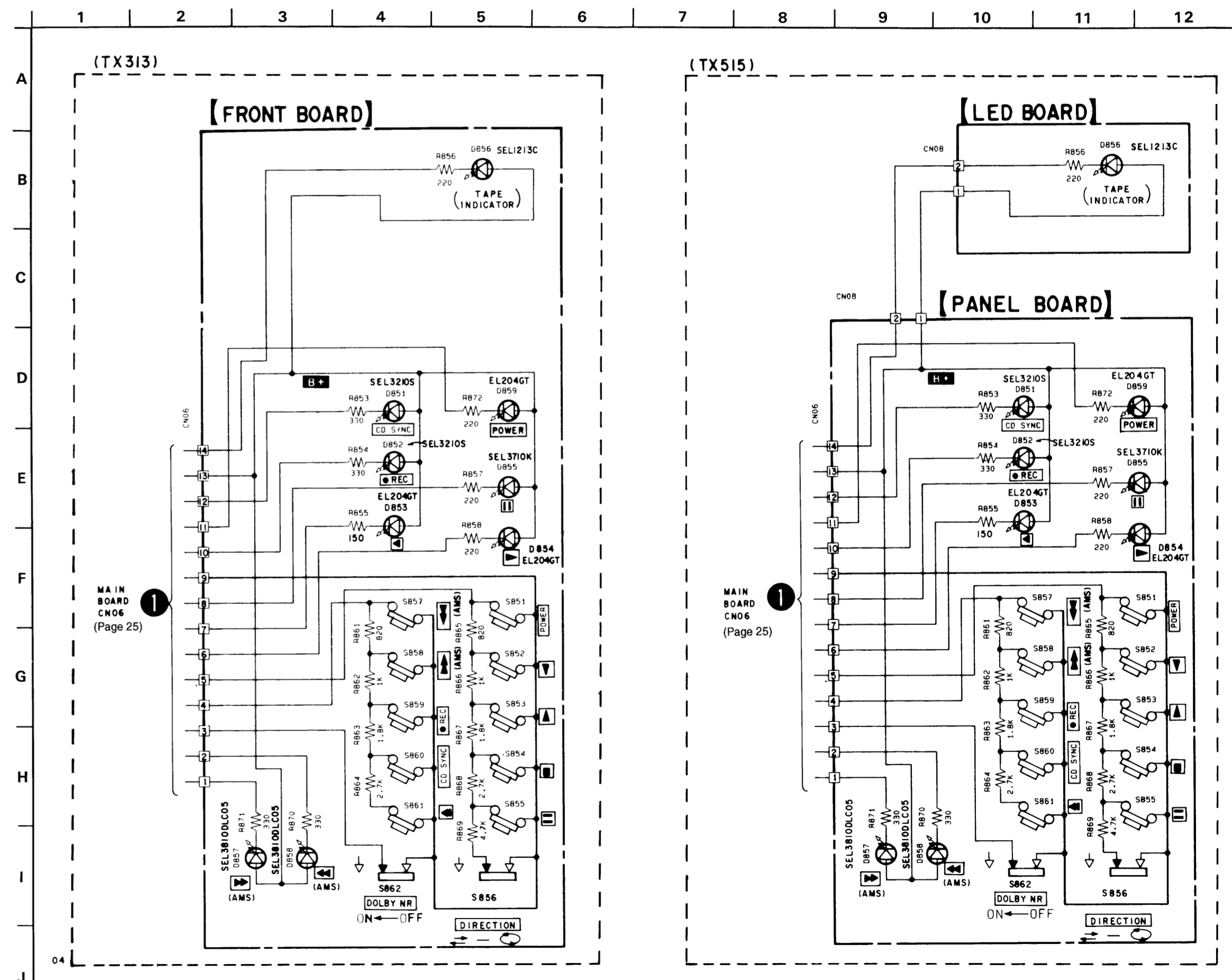
Ref. No.	Location
D851	B-8
(D851)	G-2
D852	B-8
(D852)	G-3
D853	B-10
(D853)	G-10
D854	C-10
(D854)	G-11
D855	C-11
(D855)	F-10
D856	B-5
(D856)	G-6
D857	B-11
(D857)	G-11
D858	B-10
(D858)	G-10
D859	C-2
(D859)	G-2

( ) : LED, PANEL board (TC-TX515)



Note:  
 ○ : parts extracted from the component side.  
 ● : Pattern from the side which enables seeing.

6-7. SCHEMATIC DIAGRAM — FRONT PANEL SECTION —



Note:  
 • All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$   
 50 WV or less are not indicated except for electrolytics and tantalums.  
 • All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.  
 • : panel designation.  
 B+ : B+ Line.

## 6-8. IC PIN DESCRIPTION

### • IC04 $\mu$ PD75108GF-N14-3BE (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1	RVS REC RELAY	O	RVS REC relay control output (Not used in this set.)
2	FWD REC RELAY	O	FWD REC relay control output (Not used in this set.)
3	RVS PLAY RELAY	O	RVS PLAY relay control output (Not used in this set.)
4	FWD PLAY RELAY	O	FWD PLAY relay control output (Not used in this set.)
5	POWER OUT	O	Power output (Not used in this set.)
6	AMS OUT	O	AMS gain control output (Not used in this set.)
7	RESET	I	Reset input (L : Reset)
8	XTAL	—	Oscillator circuit (4.19 MHz)
9	XTAL	—	Oscillator circuit (4.19 MHz)
10	NR OUT	O	Noise reduction signal output (Not used in this set.)
11	REC/PB	O	REC/PB select output (H : REC, L : PB)
12	F/R	O	RVS/FWD select output (H : RVS, L : FWD) (Not used in this set.)
13	BIAS	O	Bias oscillation control output (H : ON, L : OFF)
14	LINE MUTE	O	Line mute control output (H : OFF, L : ON)
15	PB.MUTE	O	PB mute control output (H : OFF, L : ON)
16	REC.MUTE	O	REC mute control output (H : OFF, L : ON)
17	TAPE 4	O	REC equalizer select output (H : METAL) (Not used in this set.)
18	TAPE 2	O	REC equalizer select output (H : CrO <sub>2</sub> )
19	TAPE 1	O	REC equalizer select output (H : NORMAL)
20	M.FWD	O	Reel motor forward direction rotation output
21	M.REV	O	Reel motor reverse direction rotation output
22	H.SPEED	O	Tape speed control output
23	L+	O	Loading motor forward direction rotation output
24	L-	O	Loading motor reverse direction rotation output
25	AU BUS OUT	O	AU BUS signal output
26	VSS	—	Ground
27	F.REC	I	Mechanism deck FWD REC PROOF claw detection signal input (H : REC inhibit)
28	R.REC	I	Mechanism deck RVS REC PROOF claw detection signal input (H : REC inhibit)
29	PACK IN	I	Loading detection signal input
30	AU BUS IN	I	AU BUS signal input
31	AMS IN	I	AMS signal input
32	KEY 1	I	Key switch input 1
33	KEY 0	I	Key switch input 0
34	S.PLAY MODE	I	Mechanism deck tape position detection signal input
35	F.REEL	I	Mechanism deck FWD reel sensor detection signal input
36	R.REEL	I	Mechanism deck RVS reel sensor detection signal input
37	MODE SEL	I	Connect to Ground in this set.
38	CrO <sub>2</sub>	I	Mechanism deck CrO <sub>2</sub> switch input
39	TAPE IN	I	Mechanism deck HALF switch input
40	TEST PIN	I	Input for test mode. (L : Test mode)
41	NC	I	Connect to Ground in this set.
42, 43	NC	O	Not used in this set.
44	POWER DOWN IN	I	Power detection input
45	NR.LED	O	NR LED output (Not used in this set.)
46	PB.LED	O	PLAYBACK LED output (Not used in this set.)
47	TAPE.LED	O	Tape indicator LED output
48	CD SYNC.LED	O	CD SYNC LED output
49	REC.LED	O	REC LED output
50	>>.LED	O	▶▶ LED output
51	<<.LED	O	◀◀ LED output
52	PAUSE.LED	O	PAUSE LED output

Pin No.	Pin Name	I/O	Pin Description
53	>.LED	O	▶ LED output
54	<.LED	O	◀ LED output
55	POWER(GRN)LED	O	POWER LED output
56	POWER(RED)LED	O	POWER LED output (Not used in this set.)
57	NC	—	Not used in this set.
58	VDD	—	Power supply pin
59 – 61	NC	—	Not used in this set.
62	REC/PB	O	REC/PB select output (H : REC, L : PB)
63, 64	NC	—	Not used in this set.

## SECTION 7 EXPLODED VIEWS

**NOTE:**

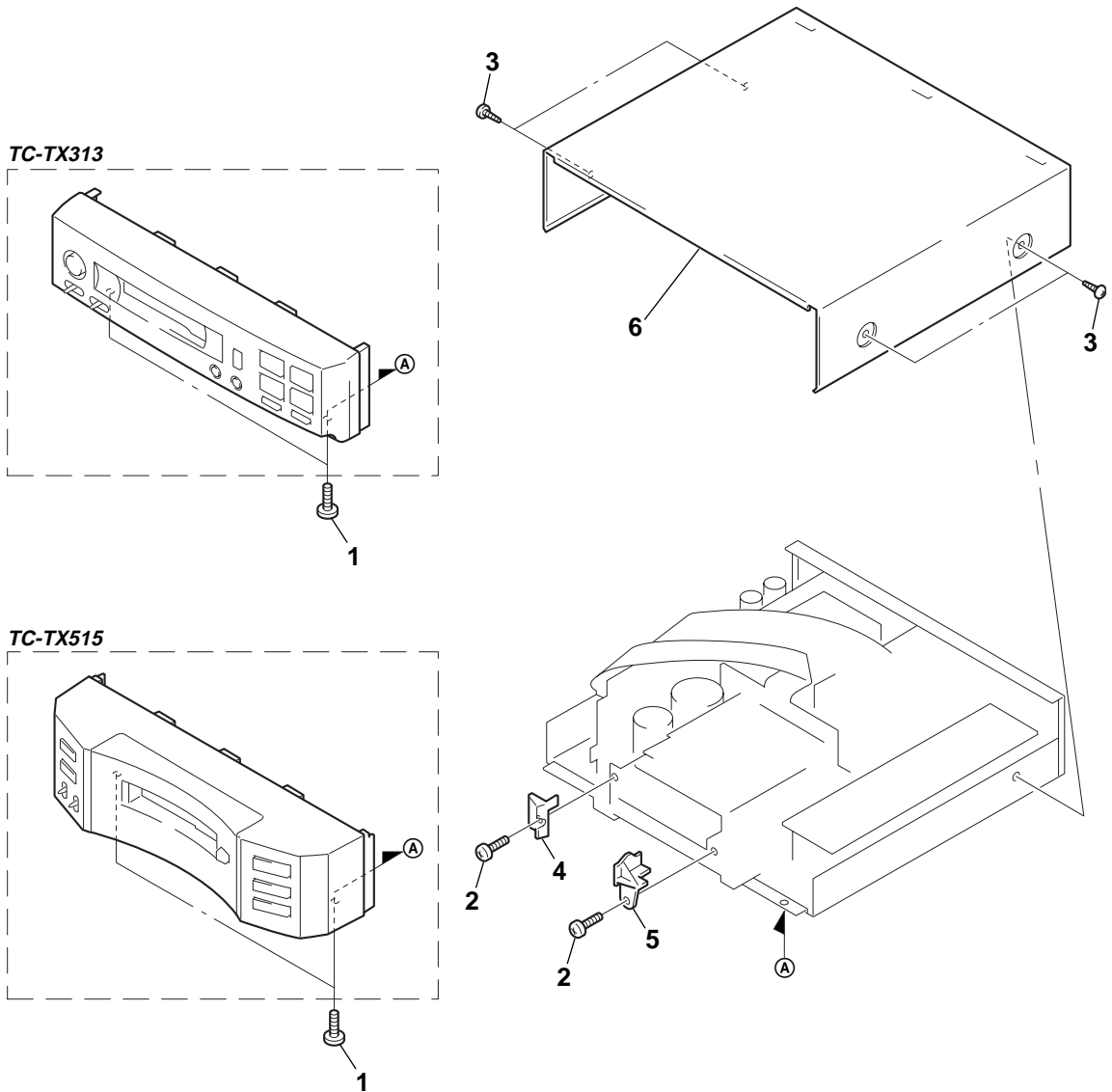
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation  
 SP : Singapore model  
 MY : Malaysia model  
 HK : Hong Kong model  
 JE : Tourist model

- -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

- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

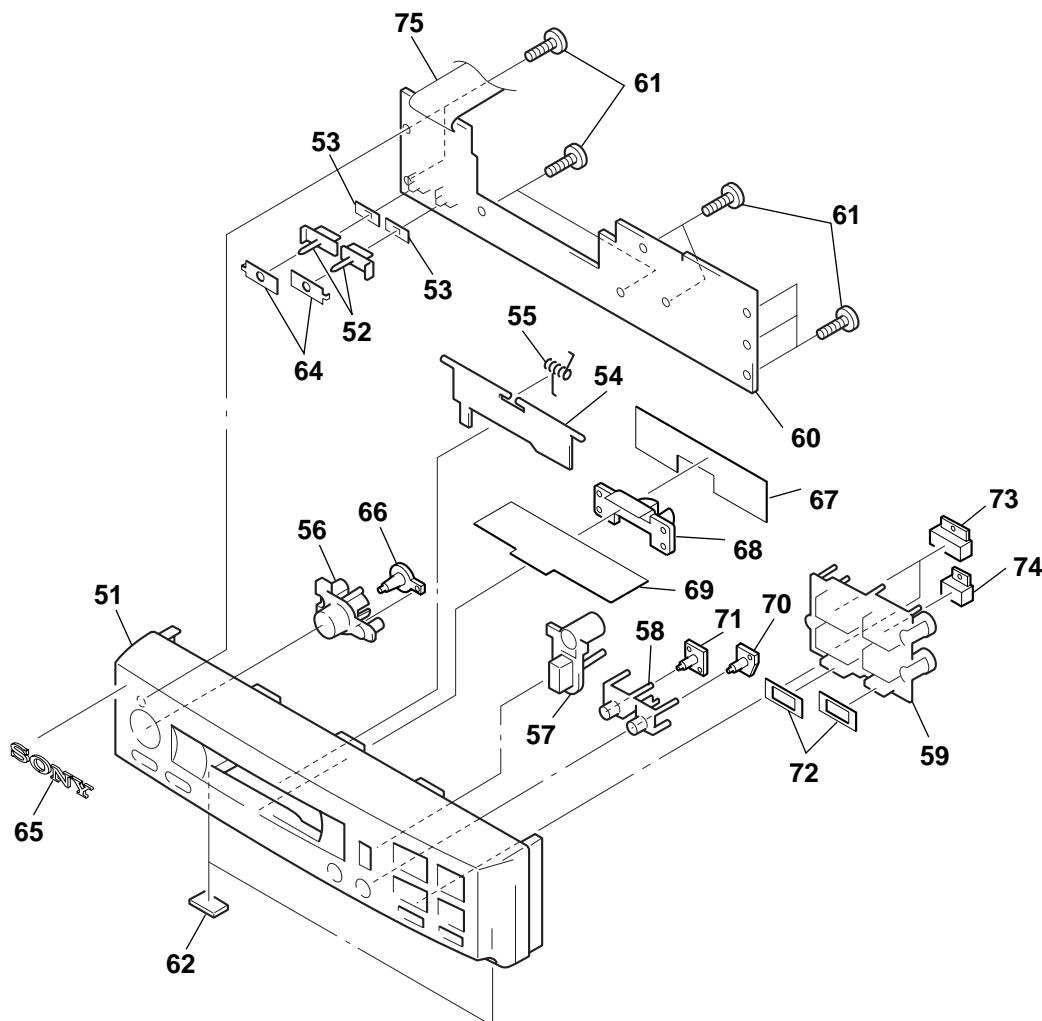
The components identified by mark  $\Delta$  or dotted line with mark.  $\Delta$  are critical for safety. Replace only with part number specified.

### 7-1. TOP COVER SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	7-685-872-09	SCREW +BVTT 3X8 (S)		* 5	3-020-437-01	TAPE GUIDE (R)	
2	4-951-620-01	SCREW (2.6X8), +BVTP		* 6	3-020-400-01	TOP COVER (TX515)	
3	3-363-099-51	SCREW (CASE 3 TP2)		* 6	3-021-541-01	TOP COVER (TX313)	
* 4	3-020-436-01	TAPE GUIDE (L)					

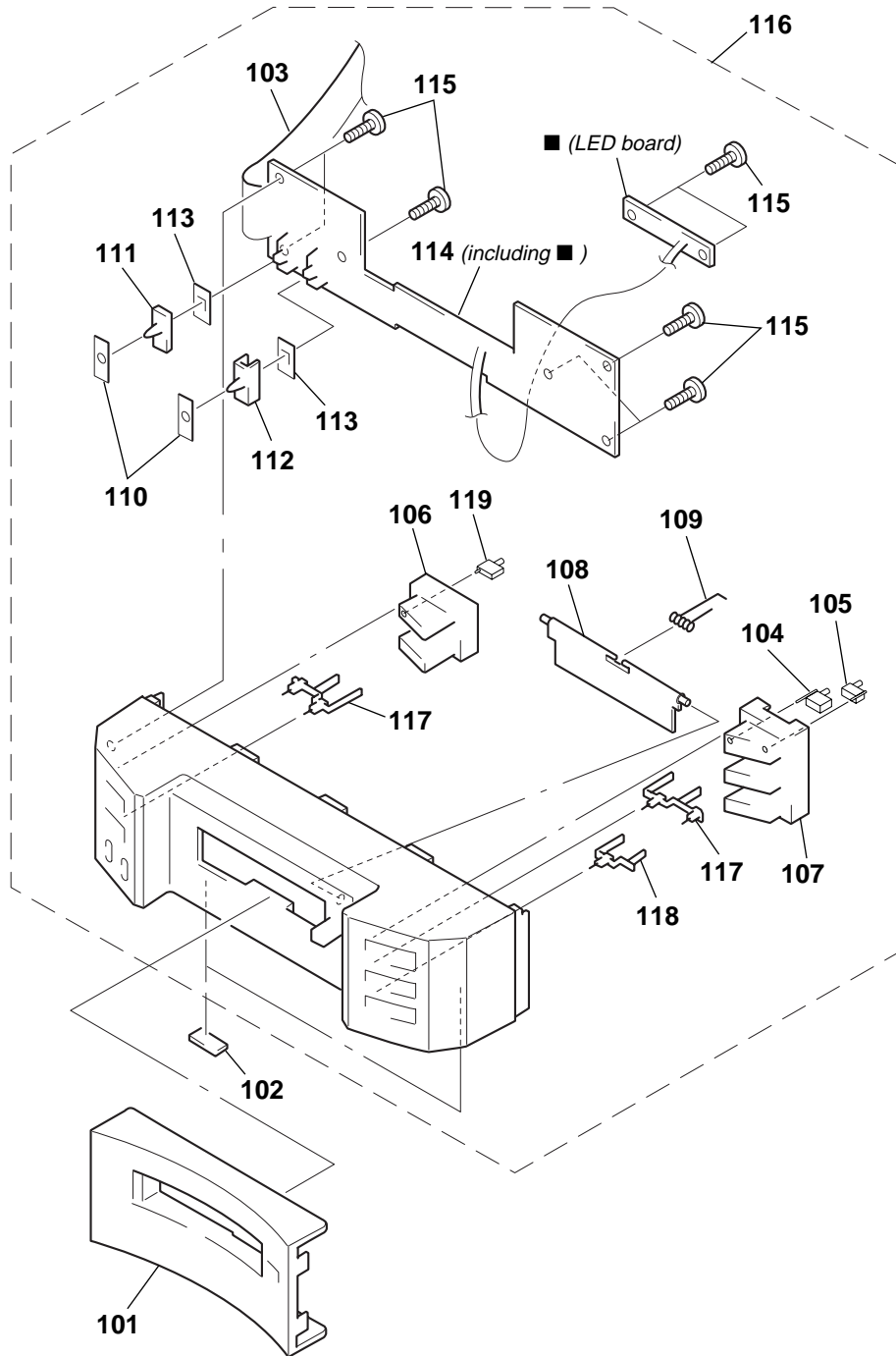
**7-2. FRONT PANEL SECTION  
(TC-TX313)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-021-944-01	FRONT PANEL		64	3-021-565-01	KNOB PAD	
52	3-021-557-01	DOLBY KNOB		65	4-962-708-01	EMBLEM (4-A), SONY	
53	3-020-421-01	SWITCH PAD		66	3-021-560-01	POWER LENS	
54	3-021-555-01	DOOR CASSETTE		67	3-021-572-01	EVA SHEET (A)	
55	3-020-419-01	DOOR SPRING		68	3-021-567-01	TAPE INDICATOR	
56	3-021-556-01	POWER BUTTON		69	3-021-571-01	PVC SHEET (B)	
57	3-021-559-01	EJECT BUTTON		70	3-021-569-01	REC.LENS	
58	3-021-570-01	REC.BUTTON		71	3-021-568-01	CD SYNCHRO LENS	
59	3-021-558-01	PLAY BUTTON		72	3-021-566-01	PVC SHEET (A)	
* 60	A-2007-757-A	FRONT BOARD, COMPLETE		73	3-021-562-01	PLAY BUTTON LENS (B)	
61	4-951-620-01	SCREW (2.6X8), +BVTP		74	3-021-561-01	PLAY BUTTON LENS (A)	
62	3-020-401-01	FOOT (FRONT)		75	3-022-176-01	BRACKET (FLEXIBLE D)	
63	3-021-564-01	DIRECTION KNOB					

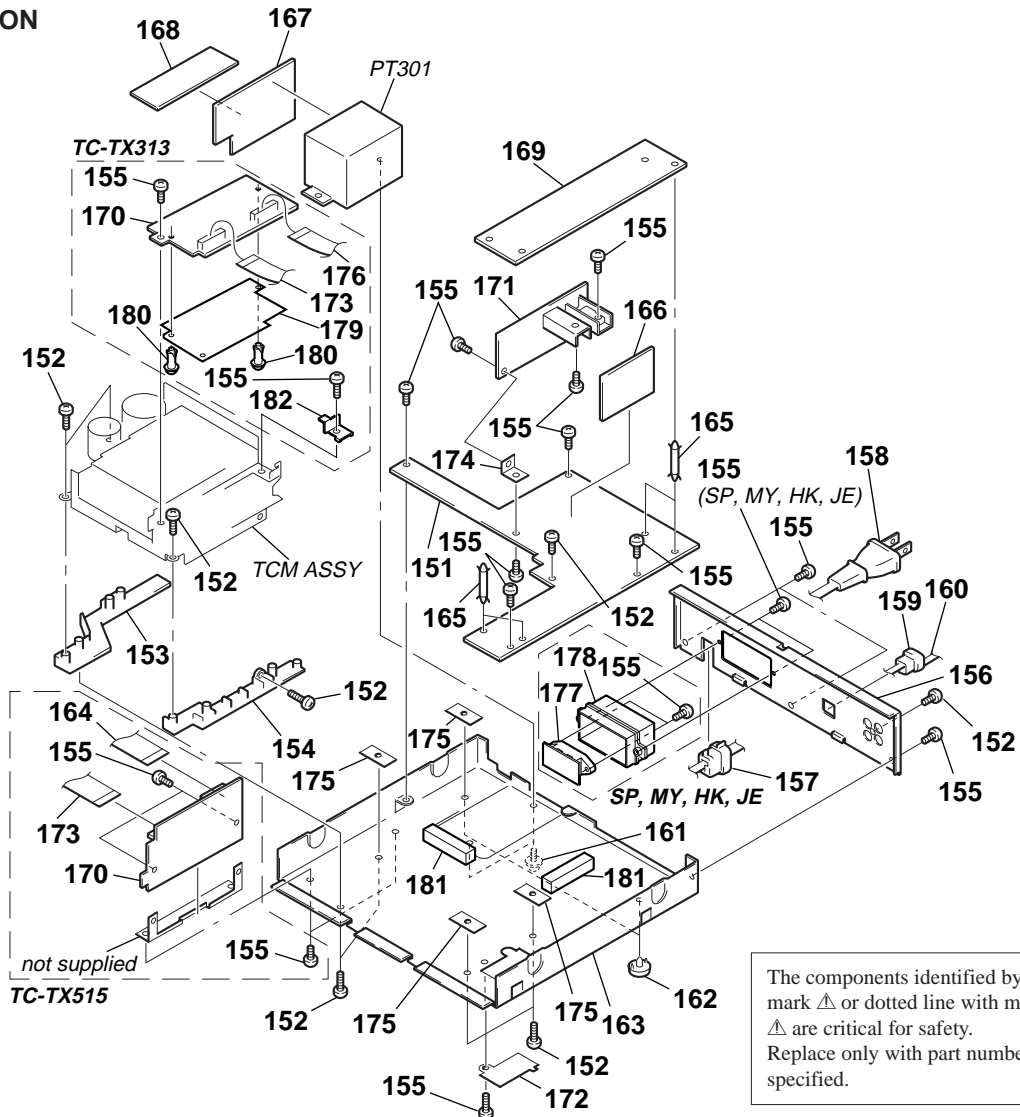


**7-3. FRONT PANEL SECTION  
(TC-TX515)**



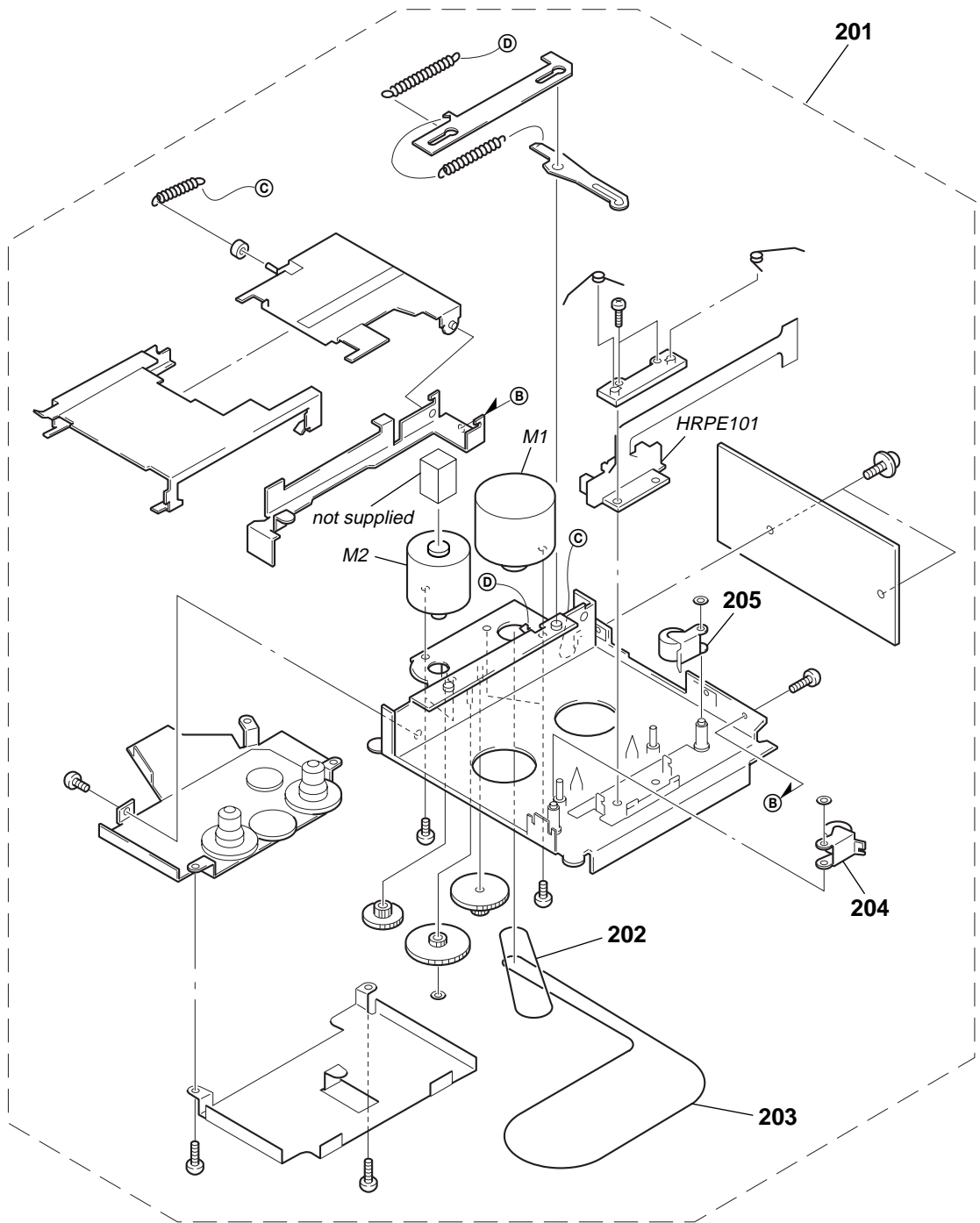
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-020-398-01	FRONT WINDOW		111	3-020-410-01	DOLBY KNOB	
102	3-020-401-01	FOOT (FRONT)		112	3-020-418-01	DIRECTION KNOB	
103	3-020-963-01	BRACKET (FLEXIBLE C)		113	3-020-421-01	SWITCH PAD	
104	3-020-413-01	LENS (A)		* 114	A-2056-697-A	PANEL BOARD, COMPLETE	
105	3-020-414-01	LENS (B)		115	4-951-620-01	SCREW (2.6X8), +BVTP	
106	3-020-409-01	POWER BUTTON		116	A-2004-639-A	PANEL ASSY, FRONT	
107	3-020-411-01	PLAY BUTTON		117	3-020-415-01	LENS (C)	
108	3-020-408-01	DOOR CASSETTE		118	3-020-416-01	LENS (D)	
109	3-020-419-01	DOOR SPRING		119	3-020-417-01	POWER INDICATOR	
110	3-020-422-01	KNOB PAD					

## 7-4. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151	A-2007-767-A	MAIN BOARD, COMPLETE (SP,MY,HK,JE)		* 167	1-668-652-11	TRANSFORMER BOARD (AEP,UK,US)	
* 151	A-2056-691-A	MAIN BOARD, COMPLETE (AEP,UK,US)		* 167	1-669-043-11	TRANSFORMER BOARD (SP,MY,HK,JE)	
152	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		* 168	1-668-649-11	POWER BOARD (AEP,UK,US)	
* 153	3-020-425-01	DECK CHASSIS (L)		* 168	1-669-047-11	POWER BOARD (SP,MY,HK,JE)	
* 154	3-020-434-01	DECK CHASSIS (R)		* 169	A-2007-768-A	REC BOARD, COMPLETE (SP,MY,HK,JE)	
155	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		* 169	A-2056-692-A	REC BOARD, COMPLETE (AEP,UK,US)	
* 156	3-021-912-01	BACK PLATE (TX515:AEP,UK)		* 170	1-668-651-11	DECK BOARD (AEP,UK,US)	
* 156	3-021-924-01	BACK PLATE (TX515:SP,MY,HK,JE)		* 170	1-669-046-11	DECK BOARD (SP,MY,HK,JE)	
* 156	3-021-943-01	BACK PLATE (TX313:AEP,UK)		* 171	1-668-650-11	LOW-VOLTAGE BOARD (AEP,UK,US)	
* 156	3-021-968-01	BACK PLATE (TX313:SP,MY,HK)		* 171	1-669-044-11	LOW-VOLTAGE BOARD (SP,MY,HK,JE)	
* 156	3-024-252-01	BACK PLATE (TX515:US)		* 172	3-020-439-01	BOTTOM COVER	
157	3-020-432-01	CORD STOPPER		173	3-020-962-01	BRACKET (FLEXIBLE B)	
▲ 158	3-021-914-01	BRACKET (AC CORD) (EXCEPT UK,US)		* 174	3-020-429-01	BACK PLATE BRACKET (A)	
▲ 158	3-021-917-01	BRACKET (AC CORD) (UK)		175	3-020-438-01	HEMELON WASHER	
▲ 158	3-021-977-01	BRACKET (AC CORD) (US)		176	3-021-552-01	BRACKET (FLEXIBLE A) (TX313)	
159	3-020-426-01	CORD BUSHING		* 177	1-669-048-11	SLIDE SW BOARD (SP,MY,HK,JE)	
160	3-020-433-01	BRACKET (3P WIRE) (AU BUS)		178	3-021-922-01	SWITCH COVER (SP,MY,HK,JE)	
161	3-020-440-01	BIND TYPE (A)		179	3-021-548-01	DECK PC BOARD SHEET (TX313)	
162	3-020-399-01	FOOT (REAR)		180	3-021-550-01	P-RIVET (TX313)	
* 163	3-020-428-01	BOTTOM PLATE		181	3-021-549-01	CUSHION (TX313)	
164	3-020-961-01	BRACKET (FLEXIBLE A) (TX515)		182	3-021-545-01	DECK BRACKET (TX313)	
* 165	3-020-435-01	PC BOARD HOLDER		▲ PT301	3-021-913-01	BRACKET (POWER TRANS) (AEP,UK)	
* 166	1-668-648-11	AMS BOARD (AEP,UK,US)		▲ PT301	3-021-925-01	BRACKET (POWER TRANS) (SP,MY,HK,JE)	
* 166	1-669-045-11	AMS BOARD (SP,MY,HK,JE)		▲ PT301	3-021-976-01	BRACKET (POWER TRANS) (US)	

### 7-5.TCM ASSY SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 201	A-2004-641-A	TCM ASSY		205	3-020-450-01	PINCH ROLLER ASSY (R)	
202	3-020-444-01	BELT (A)		HRPE101	3-020-446-01	BRACKET (HEAD UNIT)	
203	3-020-445-01	BELT (B)		M1	3-020-447-01	MOTOR (A) ASSY (REEL/CAPSTAN)	
204	3-020-443-01	PINCH ROLLER ASSY (F)		M2	3-020-448-01	MOTOR (B) ASSY (LOADING)	

**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 :  $\mu$ , for example:  
uA.. :  $\mu$ A..    uPA.. :  $\mu$ PA..  
uPB.. :  $\mu$ PB..    uPC.. :  $\mu$ PC..    uPD.. :  $\mu$ PD..
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H

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

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

- Abbreviation  
SP : Singapore model  
MY : Malaysia model  
HK : Hong Kong model  
JE : Tourist model

Ref. No.	Part No.	Description	Remark		
*	1-668-648-11	AMS BOARD (AEP,UK,US)			
*	1-669-045-11	AMS BOARD (SP,MY,HK,JE)			
		*****			
		< CAPACITOR >			
C55	1-124-907-11	ELECT	10uF	20%	50V
C56	1-124-907-11	ELECT	10uF	20%	50V
C84	1-126-961-11	ELECT	2.2uF	20%	50V
C85	1-162-282-31	CERAMIC	100PF	10%	50V
C86	1-162-217-31	CERAMIC	56PF	5%	50V
C87	1-101-005-00	CERAMIC	22000PF		50V
C88	1-126-961-11	ELECT	2.2uF	20%	50V
		< DIODE >			
D11	8-719-901-33	DIODE 1SS133			
D28	8-719-901-33	DIODE 1SS133			
		< IC >			
IC03	8-759-505-55	IC NJM4558L			
		< TRANSISTOR >			
Q53	8-729-029-68	TRANSISTOR DTC114TSA			
Q54	8-729-029-68	TRANSISTOR DTC114TSA			
Q55	8-729-029-68	TRANSISTOR DTC114TSA			
Q56	8-729-029-68	TRANSISTOR DTC114TSA			
Q60	8-729-900-65	TRANSISTOR DTA144ES			
Q71	8-729-900-65	TRANSISTOR DTA144ES			
Q72	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		< RESISTOR >			
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-417-11	CARBON	1K	5%	1/4W
R109	1-249-417-11	CARBON	1K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R153	1-249-440-11	CARBON	82K	5%	1/4W
R154	1-247-879-11	CARBON	100K	5%	1/4W
R155	1-249-436-11	CARBON	39K	5%	1/4W
R156	1-249-432-11	CARBON	18K	5%	1/4W
R157	1-249-417-11	CARBON	1K	5%	1/4W
R158	1-247-879-11	CARBON	100K	5%	1/4W
R159	1-247-855-11	CARBON	10K	5%	1/4W
R166	1-247-871-11	CARBON	47K	5%	1/4W
R185	1-249-427-11	CARBON	6.8K	5%	1/4W
R186	1-247-843-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
*	1-668-651-11	DECK BOARD (AEP,UK,US)			
*	1-669-046-11	DECK BOARD (SP,MY,HK,JE)			
		*****			
		< CAPACITOR >			
	3-020-961-01	BRACKET (FLEXIBLE A) (TX515)			
	3-020-962-01	BRACKET (FLEXIBLE B)			
	3-021-552-01	BRACKET (FLEXIBLE A) (TX313)			
		< CAPACITOR >			
C1A	1-126-963-11	ELECT	4.7uF	20%	50V
C1B	1-164-159-11	CERAMIC	0.1uF		50V
C1C	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN07	1-568-835-11	SOCKET, CONNECTOR 16P			
CN14	1-580-123-11	SOCKET, CONNECTOR 16P			
		< DIODE >			
D1A	8-719-901-33	DIODE 1SS133			
D1B	8-719-901-33	DIODE 1SS133			
D1C	8-719-921-80	DIODE MTZJ-11B			
D1D	8-719-901-33	DIODE 1SS133			
D1E	8-719-901-33	DIODE 1SS133			
D1F	8-719-901-33	DIODE 1SS133			
D1G	8-719-901-33	DIODE 1SS133			
D1H	8-719-901-33	DIODE 1SS133			
D1J	8-719-901-33	DIODE 1SS133			
D1K	8-719-921-63	DIODE MTZJ-7.5B			
		< IC >			
IC1A	8-759-822-09	IC LB1641			
		< TRANSISTOR >			
Q1A	8-729-188-23	TRANSISTOR 2SD882-P			
Q1B	8-729-029-86	TRANSISTOR DTC124ESA			
Q1C	8-729-029-86	TRANSISTOR DTC124ESA			
Q1D	8-729-195-23	TRANSISTOR 2SA952			
Q1E	8-729-195-23	TRANSISTOR 2SA952			
Q1F	8-729-029-86	TRANSISTOR DTC124ESA			
Q1G	8-729-029-86	TRANSISTOR DTC124ESA			
Q1H	8-729-142-46	TRANSISTOR 2SC2001-LK			
Q1J	8-729-142-46	TRANSISTOR 2SC2001-LK			
Q1K	8-729-029-94	TRANSISTOR DTC143TSA			
Q1L	8-729-422-57	TRANSISTOR UN4111			
Q1M	8-729-029-86	TRANSISTOR DTC124ESA			

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< RESISTOR >					
R1A	1-247-825-11	CARBON	560 5% 1/4W	S852	1-571-760-11	SWITCH, KEY BOARD (◀)	
R1B	1-247-879-11	CARBON	100K 5% 1/4W	S853	1-571-760-11	SWITCH, KEY BOARD (▶)	
R1C	1-247-871-11	CARBON	47K 5% 1/4W	S854	1-571-760-11	SWITCH, KEY BOARD (■)	
R1D	1-249-417-11	CARBON	1K 5% 1/4W	S855	1-571-760-11	SWITCH, KEY BOARD (▣)	
R1E	1-249-417-11	CARBON	1K 5% 1/4W	S856	1-771-304-11	SWITCH, SLIDE (DIRECTION)	
R1F	1-249-417-11	CARBON	1K 5% 1/4W	S857	1-571-760-11	SWITCH, KEY BOARD (◀◀ (AMS))	
R1G	1-249-417-11	CARBON	1K 5% 1/4W	S858	1-571-760-11	SWITCH, KEY BOARD (▶▶ (AMS))	
R1H	1-249-417-11	CARBON	1K 5% 1/4W	S859	1-571-760-11	SWITCH, KEY BOARD (● REC)	
R1J	1-249-417-11	CARBON	1K 5% 1/4W	S860	1-571-760-11	SWITCH, KEY BOARD (CD SYNC)	
R1K	1-247-847-11	CARBON	4.7K 5% 1/4W	S861	1-571-760-11	SWITCH, KEY BOARD (▲)	
*****				S862	1-771-304-11	SWITCH, SLIDE (DOLBY NR)	
*	A-2007-757-A	FRONT BOARD, COMPLETE (TX313)	*****	*****			
*	3-021-575-01	LED COVER (A)		*	1-668-650-11	LOW-VOLTAGE BOARD (AEP,UK,US)	
*	3-021-576-01	LED COVER (B)		*	1-669-044-11	LOW-VOLTAGE BOARD (SP,MY,HK,JE)	
*	3-021-577-01	LED COVER (C)		*****			
	3-022-176-01	BRACKET (FLEXIBLE D)				< CAPACITOR >	
		< DIODE >		C62	1-126-941-11	ELECT	470uF 20% 16V
D851	8-719-028-88	LED SEL3210S-D-LC05 (CD SYNC)		C62A	1-124-907-11	ELECT	10uF 20% 50V
D852	8-719-028-88	LED SEL3210S-D-LC05 (● REC)		C64	1-126-941-11	ELECT	470uF 20% 16V
D853	8-719-047-69	LED EL204GT (◀)		C64A	1-124-907-11	ELECT	10uF 20% 50V
D854	8-719-047-69	LED EL204GT (▶)		C66	1-124-471-00	ELECT	1000uF 20% 6.3V
D855	8-719-028-87	LED SEL3710K-D-LC05 (▣)		C66A	1-124-907-11	ELECT	10uF 20% 50V
D856	8-719-300-79	LED SEL1213C (TAPE INDICATOR)		C66B	1-162-851-11	CERAMIC	0.1uF 10% 16V
D857	8-719-023-78	LED SEL3810DLC05 (▶▶ (AMS))		C66E	1-162-851-11	CERAMIC	0.1uF 10% 16V
D858	8-719-023-78	LED SEL3810DLC05 (◀◀ (AMS))		C67	1-126-942-61	ELECT	1000uF 20% 25V
D859	8-719-047-69	LED EL204GT (POWER)		C69A	1-104-664-11	ELECT	47uF 20% 25V
		< RESISTOR >		C70	1-164-159-11	CERAMIC	0.1uF 50V
R853	1-249-411-11	CARBON	330 5% 1/4W			< CONNECTOR >	
R854	1-249-411-11	CARBON	330 5% 1/4W	CN10	1-784-406-11	CONNENTOR, BOARD TO BOARD 8P	
R855	1-249-407-11	CARBON	150 5% 1/4W			< DIODE >	
R856	1-249-409-11	CARBON	220 5% 1/4W	D15	8-719-901-33	DIODE 1SS133	
R857	1-249-409-11	CARBON	220 5% 1/4W			< IC >	
R858	1-249-409-11	CARBON	220 5% 1/4W	IC06	8-759-708-05	IC NJM78L05A	
R861	1-249-416-11	CARBON	820 5% 1/4W	IC07	8-759-990-36	IC RC7908FA	
R862	1-249-417-11	CARBON	1K 5% 1/4W	IC08	8-759-982-07	IC RC7808FA	
R863	1-249-420-11	CARBON	1.8K 5% 1/4W			< RESISTOR >	
R864	1-247-841-11	CARBON	2.7K 5% 1/4W	R123	1-247-879-11	CARBON	100K 5% 1/4W
R865	1-249-416-11	CARBON	820 5% 1/4W	R124	1-247-855-11	CARBON	10K 5% 1/4W
R866	1-249-417-11	CARBON	1K 5% 1/4W	R125	1-249-417-11	CARBON	1K 5% 1/4W
R867	1-249-420-11	CARBON	1.8K 5% 1/4W	R126	1-260-076-11	CARBON	10 5% 1/2W
R868	1-247-841-11	CARBON	2.7K 5% 1/4W	*****			
R869	1-247-847-11	CARBON	4.7K 5% 1/4W			< SWITCH >	
R870	1-249-411-11	CARBON	330 5% 1/4W	S851	1-571-760-11	SWITCH, KEY BOARD (POWER)	
R871	1-249-411-11	CARBON	330 5% 1/4W				
R872	1-249-409-11	CARBON	220 5% 1/4W				

**MAIN**

Ref. No.	Part No.	Description	Remark
*	A-2007-767-A	MAIN BOARD, COMPLETE (SP,MY,HK,JE)	
*	A-2056-691-A	MAIN BOARD, COMPLETE (AEP,UK,US)	
		*****	
	3-020-433-01	BRACKET (3P WIRE) (AU BUS)	
		< CAPACITOR >	
C01	1-162-292-31	CERAMIC	680PF 10% 50V
C02	1-162-292-31	CERAMIC	680PF 10% 50V
C03	1-136-157-00	FILM	0.022uF 5% 50V
C04	1-136-157-00	FILM	0.022uF 5% 50V
C05	1-126-941-11	ELECT	470uF 20% 16V
C06	1-126-941-11	ELECT	470uF 20% 16V
C07	1-136-157-00	FILM	0.022uF 5% 50V
C08	1-136-157-00	FILM	0.022uF 5% 50V
C11A	1-161-772-11	CERAMIC	0.1uF 10% 25V
C27	1-126-963-11	ELECT	4.7uF 20% 50V
C28	1-126-963-11	ELECT	4.7uF 20% 50V
C29	1-162-290-31	CERAMIC	470PF 10% 50V
C30	1-162-290-31	CERAMIC	470PF 10% 50V
C31	1-104-664-11	ELECT	47uF 20% 16V
C32	1-104-664-11	ELECT	47uF 20% 16V
C32A	1-126-956-11	ELECT	0.1uF 20% 50V
C51	1-126-963-11	ELECT	4.7uF 20% 50V
C51A	1-124-903-11	ELECT	1uF 20% 50V
C52	1-126-963-11	ELECT	4.7uF 20% 50V
C52A	1-124-903-11	ELECT	1uF 20% 50V
C53	1-136-165-00	FILM	0.1uF 5% 50V
C54	1-136-165-00	FILM	0.1uF 5% 50V
C57	1-124-907-11	ELECT	10uF 20% 50V
C58	1-124-907-11	ELECT	10uF 20% 50V
C59	1-124-907-11	ELECT	10uF 20% 50V
C60	1-124-907-11	ELECT	10uF 20% 50V
C61	1-164-159-11	CERAMIC	0.1uF 50V
C90	1-164-159-11	CERAMIC	0.1uF 50V
C90A	1-104-663-11	ELECT	33uF 20% 16V
C91	1-164-057-11	CERAMIC	30PF 5% 50V
C92	1-164-057-11	CERAMIC	30PF 5% 50V
C95	1-162-294-31	CERAMIC	0.001uF 10% 50V
C96	1-104-664-11	ELECT	47uF 20% 16V
C97	1-104-664-11	ELECT	47uF 20% 16V
C98	1-104-664-11	ELECT	47uF 20% 16V
		< CONNECTOR >	
CN04	1-574-314-11	CORD (WITH CONNECTOR) (AU BUS)	
* CN07	1-568-835-11	SOCKET, CONNECTOR 16P	
CN10	1-784-407-11	CONNECTOR, BOARD TO BOARD 8P	
		< DIODE >	
D01	8-719-901-33	DIODE	1SS133
D12	8-719-921-54	DIODE	MTZJ-6.2B
D13	8-719-921-54	DIODE	MTZJ-6.2B
D14	8-719-901-33	DIODE	1SS133
D32	8-719-109-89	DIODE	RD5.6ESB2

Ref. No.	Part No.	Description	Remark
D34	8-719-055-76	DIODE	1N4148
D35	8-719-109-72	DIODE	RD3.9ES-B2
		< IC >	
IC01	8-759-112-93	IC	uPC4570HA-1
IC02	8-752-057-19	IC	CXA1101P
IC04	8-759-497-87	IC	uPD75108GF-N14-3BE
IC05	8-759-165-85	IC	PST600H-T
IC11	8-759-708-05	IC	NJM78L05A
		< JACK >	
JK1	1-770-614-21	JACK, PIN 4P (TAPE IN/OUT)	
		< FILTER >	
L81	1-234-023-11	FILTER, MPX	
L82	1-234-023-11	FILTER, MPX	
		< TRANSISTOR >	
Q05	8-729-194-57	TRANSISTOR	2SC945-P
Q12	8-729-029-86	TRANSISTOR	DTC124ESA
Q13	8-729-029-86	TRANSISTOR	DTC124ESA
Q15	8-729-900-63	TRANSISTOR	DTA124ES
Q51	8-729-029-68	TRANSISTOR	DTC114TSA
Q52	8-729-029-68	TRANSISTOR	DTC114TSA
Q57	8-729-119-78	TRANSISTOR	2SC403SP-51
Q59	8-729-900-65	TRANSISTOR	DTA144ES
Q74	8-729-900-65	TRANSISTOR	DTA144ES
Q76	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q81	8-729-029-68	TRANSISTOR	DTC114TSA
Q82	8-729-029-68	TRANSISTOR	DTC114TSA
		< RESISTOR >	
R01	1-249-442-11	CARBON	510 5% 1/4W
R05	1-247-881-00	CARBON	120K 5% 1/4W
R06	1-247-881-00	CARBON	120K 5% 1/4W
R07	1-249-404-00	CARBON	82 5% 1/4W
R08	1-249-404-00	CARBON	82 5% 1/4W
R09	1-247-849-11	CARBON	5.6K 5% 1/4W
R10	1-247-849-11	CARBON	5.6K 5% 1/4W
R11	1-247-881-00	CARBON	120K 5% 1/4W
R12	1-247-881-00	CARBON	120K 5% 1/4W
R13	1-249-393-11	CARBON	10 5% 1/4W
R14	1-260-076-11	CARBON	10 5% 1/2W
R15	1-247-855-11	CARBON	10K 5% 1/4W
R16	1-247-855-11	CARBON	10K 5% 1/4W
R17	1-247-839-11	CARBON	2.2K 5% 1/4W
R17A	1-247-847-11	CARBON	4.7K 5% 1/4W
R18	1-247-839-11	CARBON	2.2K 5% 1/4W
R19	1-249-424-11	CARBON	3.9K 5% 1/4W
R20	1-249-424-11	CARBON	3.9K 5% 1/4W
R21	1-247-847-11	CARBON	4.7K 5% 1/4W
R26	1-247-807-11	CARBON	100 5% 1/4W

Ref. No.	Part No.	Description	Remark
R101	1-247-871-11	CARBON 47K 5%	1/4W
R102	1-247-871-11	CARBON 47K 5%	1/4W
R103	1-247-839-11	CARBON 2.2K 5%	1/4W
R104	1-247-839-11	CARBON 2.2K 5%	1/4W
R105	1-247-847-11	CARBON 4.7K 5%	1/4W
R106	1-247-847-11	CARBON 4.7K 5%	1/4W
R111	1-249-431-11	CARBON 15K 5%	1/4W
R112	1-249-431-11	CARBON 15K 5%	1/4W
R113	1-247-855-11	CARBON 10K 5%	1/4W
R114	1-247-855-11	CARBON 10K 5%	1/4W
R115	1-247-870-11	CARBON 43K 5%	1/4W
R116	1-247-855-11	CARBON 10K 5%	1/4W
R117	1-260-111-11	CARBON 10K 5%	1/2W
R118	1-249-393-11	CARBON 10 5%	1/4W
R119	1-249-417-11	CARBON 1K 5%	1/4W
R120	1-249-417-11	CARBON 1K 5%	1/4W
R121	1-247-855-11	CARBON 10K 5%	1/4W
R122	1-260-099-11	CARBON 1K 5%	1/2W
R160	1-247-871-11	CARBON 47K 5%	1/4W
R161	1-247-807-11	CARBON 100 5%	1/4W
R163	1-247-871-11	CARBON 47K 5%	1/4W
R169	1-247-847-11	CARBON 4.7K 5%	1/4W
R169A	1-247-847-11	CARBON 4.7K 5%	1/4W
R171	1-260-119-11	CARBON 47K 5%	1/2W
R173	1-249-393-11	CARBON 10 5%	1/4W
R174	1-249-393-11	CARBON 10 5%	1/4W
R183	1-247-855-11	CARBON 10K 5%	1/4W
R184	1-247-855-11	CARBON 10K 5%	1/4W
R187	1-260-119-11	CARBON 47K 5%	1/2W
R188	1-260-107-11	CARBON 4.7K 5%	1/2W
R189	1-260-119-11	CARBON 47K 5%	1/2W
R190	1-247-871-11	CARBON 47K 5%	1/4W
R191	1-247-871-11	CARBON 47K 5%	1/4W
R192	1-249-413-11	CARBON 470 5%	1/4W
R193	1-249-413-11	CARBON 470 5%	1/4W
RA	1-249-381-11	CARBON 1 5%	1/4W
RF	1-247-903-00	CARBON 1M 5%	1/4W
< RELAY >			
RY01	1-755-244-11	RELAY	
RY02	1-755-244-11	RELAY	
RY03	1-755-244-11	RELAY	
< VARIABLE RESISTOR >			
SFR03	1-238-598-11	RES, ADJ, CARBON 2.2K	
SFR04	1-238-598-11	RES, ADJ, CARBON 2.2K	
< VIBRATOR >			
X01	1-767-130-11	VIBRATOR, CERAMIC (4.19MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-2056-697-A	PANEL BOARD, COMPLETE (TX515) (including LED BOARD)	
*****			
	3-020-963-01	BRACKET (FLEXIBLE C)	
	3-021-253-01	HOLDER LED	
< DIODE >			
D851	8-719-028-88	LED SEL3210S-D-LC05 (CD SYNC)	
D852	8-719-028-88	LED SEL3210S-D-LC05 (● REC)	
D853	8-719-047-69	LED EL204GT (◀)	
D854	8-719-047-69	LED EL204GT (▶)	
D855	8-719-028-87	LED SEL3710K-D-LC05 (■)	
< RESISTOR >			
R853	1-249-411-11	CARBON 330 5%	1/4W
R854	1-249-411-11	CARBON 330 5%	1/4W
R855	1-249-407-11	CARBON 150 5%	1/4W
R856	1-249-409-11	CARBON 220 5%	1/4W
R857	1-249-409-11	CARBON 220 5%	1/4W
R858	1-249-409-11	CARBON 220 5%	1/4W
R861	1-249-416-11	CARBON 820 5%	1/4W
R862	1-249-417-11	CARBON 1K 5%	1/4W
R863	1-249-420-11	CARBON 1.8K 5%	1/4W
R864	1-247-841-11	CARBON 2.7K 5%	1/4W
R865	1-249-416-11	CARBON 820 5%	1/4W
R866	1-249-417-11	CARBON 1K 5%	1/4W
R867	1-249-420-11	CARBON 1.8K 5%	1/4W
R868	1-247-841-11	CARBON 2.7K 5%	1/4W
R869	1-247-847-11	CARBON 4.7K 5%	1/4W
R870	1-249-411-11	CARBON 330 5%	1/4W
R871	1-249-411-11	CARBON 330 5%	1/4W
R872	1-249-409-11	CARBON 220 5%	1/4W
< SWITCH >			
S851	1-571-760-11	SWITCH, KEY BOARD (POWER)	
S852	1-571-760-11	SWITCH, KEY BOARD (◀)	
S853	1-571-760-11	SWITCH, KEY BOARD (▶)	
S854	1-571-760-11	SWITCH, KEY BOARD (■)	
S855	1-571-760-11	SWITCH, KEY BOARD (■)	
S856	1-771-304-11	SWITCH, SLIDE (DIRECTION)	
S857	1-571-760-11	SWITCH, KEY BOARD (◀◀ (AMS))	
S858	1-571-760-11	SWITCH, KEY BOARD (▶▶ (AMS))	
S859	1-571-760-11	SWITCH, KEY BOARD (● REC)	
S860	1-571-760-11	SWITCH, KEY BOARD (CD SYNC)	
S861	1-571-760-11	SWITCH, KEY BOARD (▲)	
S862	1-771-304-11	SWITCH, SLIDE (DOLBY NR)	

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<b>POWER</b>	<b>REC</b>
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Ref. No.	Part No.	Description	Remark			
*	1-668-649-11	POWER BOARD (AEP,UK,US)				
*	1-669-047-11	POWER BOARD (SP,MY,HK,JE)				
		*****				
		< CAPACITOR >				
C63	1-126-943-11	ELECT	2200uF	20%	25V	
C65	1-126-943-11	ELECT	2200uF	20%	25V	
C301	1-102-129-00	CERAMIC	10000PF	10%	50V	
C302	1-102-129-00	CERAMIC	10000PF	10%	50V	
C63A	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C65A	1-162-851-11	CERAMIC	0.1uF	10%	16V	
		< DIODE >				
D20	8-719-200-02	DIODE 10E2				
D21	8-719-200-02	DIODE 10E2				
D22	8-719-200-02	DIODE 10E2				
D23	8-719-200-02	DIODE 10E2				
D24	8-719-901-33	DIODE 1SS133				
D25	8-719-901-33	DIODE 1SS133				
		< RESISTOR >				
△FR01	1-213-036-11	FUSIBLE	1	5%	1W	F
△FR02	1-213-036-11	FUSIBLE	1	5%	1W	F
		*****				
*	A-2056-692-A	REC BOARD, COMPLETE (AEP,UK,US)				
*	A-2007-768-A	REC BOARD, COMPLETE (SP,MY,HK,JE)				
		*****				
		< CAPACITOR >				
C09	1-164-066-11	CERAMIC	68PF	5%	50V	
C10	1-164-066-11	CERAMIC	68PF	5%	50V	
C13	1-124-907-11	ELECT	10uF	20%	50V	
C14	1-124-907-11	ELECT	10uF	20%	50V	
C15	1-164-077-11	CERAMIC	220PF	10%	50V	
C16	1-164-077-11	CERAMIC	220PF	10%	50V	
△C18	1-104-990-11	FILM	0.0033uF	5%	200V	
△C19	1-137-464-11	FILM	0.039uF	5%	100V	
C20	1-126-941-11	ELECT	470uF	20%	16V	
△C21	1-137-392-11	FILM	0.0068uF	5%	100V	
△C22	1-137-390-11	FILM	0.0033uF	5%	100V	
△C23	1-137-390-11	FILM	0.0033uF	5%	100V	
C24	1-104-664-11	ELECT	47uF	20%	16V	
C71	1-124-903-11	ELECT	1uF	20%	50V	
C72	1-124-903-11	ELECT	1uF	20%	50V	
C73	1-126-233-11	ELECT	22uF	20%	50V	
C74	1-126-233-11	ELECT	22uF	20%	50V	
C75	1-136-155-00	FILM	0.015uF	5%	50V	
C76	1-136-155-00	FILM	0.015uF	5%	50V	
C77	1-136-154-00	FILM	0.012uF	5%	50V	
C78	1-136-154-00	FILM	0.012uF	5%	50V	
C81	1-136-166-00	FILM	0.12uF	5%	50V	
C82	1-136-166-00	FILM	0.12uF	5%	50V	

Ref. No.	Part No.	Description	Remark			
C83	1-124-903-11	ELECT	1uF	20%	50V	
C83A	1-104-666-11	ELECT	220uF	20%	16V	
C93	1-130-477-00	MYLAR	0.0033uF	5%	50V	
C94	1-130-477-00	MYLAR	0.0033uF	5%	50V	
		< DIODE >				
D03	8-719-010-62	DIODE UZ-9.1BSB				
D04	8-719-921-63	DIODE MTZJ-7.5B				
D26	8-719-901-33	DIODE 1SS133				
D27	8-719-901-33	DIODE 1SS133				
		< IC >				
IC09	8-759-112-93	IC uPC4570HA-1				
		< COIL >				
L03	1-416-568-11	COIL, CHOKE	39mH			
L04	1-416-568-11	COIL, CHOKE	39mH			
L05	1-431-706-11	TRANSFORMER, BIAS OSCILLATION				
L07	1-416-567-11	COIL, CHOKE	6.8mH			
L08	1-416-567-11	COIL, CHOKE	6.8mH			
		< TRANSISTOR >				
Q06	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q07	8-729-142-46	TRANSISTOR 2SC2001-LK				
Q08	8-729-140-96	TRANSISTOR 2SD774-34				
Q09	8-729-194-57	TRANSISTOR 2SC945-P				
Q11	8-729-194-57	TRANSISTOR 2SC945-P				
Q65	8-729-029-86	TRANSISTOR DTC124ESA				
Q66	8-729-029-86	TRANSISTOR DTC124ESA				
Q67	8-729-029-86	TRANSISTOR DTC124ESA				
Q68	8-729-029-86	TRANSISTOR DTC124ESA				
Q69	8-729-029-68	TRANSISTOR DTC114TSA				
Q70	8-729-029-68	TRANSISTOR DTC114TSA				
		< RESISTOR >				
R23	1-249-387-11	CARBON	3.3	5%	1/4W	
R24	1-249-434-11	CARBON	27K	5%	1/4W	
R25	1-249-434-11	CARBON	27K	5%	1/4W	
R27	1-247-847-11	CARBON	4.7K	5%	1/4W	
R28	1-247-847-11	CARBON	4.7K	5%	1/4W	
△R30	1-216-455-11	METAL OXIDE	560	5%	2W	F
R32	1-249-417-11	CARBON	1K	5%	1/4W	
R37	1-249-412-11	CARBON	390	5%	1/4W	
R127	1-249-430-11	CARBON	12K	5%	1/4W	
R128	1-249-430-11	CARBON	12K	5%	1/4W	
R133	1-247-871-11	CARBON	47K	5%	1/4W	
R134	1-247-871-11	CARBON	47K	5%	1/4W	
R135	1-247-871-11	CARBON	47K	5%	1/4W	
R136	1-247-871-11	CARBON	47K	5%	1/4W	
R137	1-247-883-00	CARBON	150K	5%	1/4W	
R138	1-247-883-00	CARBON	150K	5%	1/4W	
R139	1-247-863-11	CARBON	22K	5%	1/4W	
R140	1-247-863-11	CARBON	22K	5%	1/4W	

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



**REC**

**SLIDE SW**

**TRANSFORMER**

Ref. No.	Part No.	Description	Remark
R141	1-247-867-11	CARBON 33K 5%	1/4W
R142	1-247-867-11	CARBON 33K 5%	1/4W
R143	1-247-855-11	CARBON 10K 5%	1/4W
R144	1-247-855-11	CARBON 10K 5%	1/4W
R145	1-247-807-11	CARBON 100 5%	1/4W
R146	1-247-807-11	CARBON 100 5%	1/4W
R147	1-249-427-11	CARBON 6.8K 5%	1/4W
R148	1-249-427-11	CARBON 6.8K 5%	1/4W
R151	1-249-417-11	CARBON 1K 5%	1/4W
R152	1-247-879-11	CARBON 100K 5%	1/4W
< VARIABLE RESISTOR >			
SFR01	1-238-603-11	RES, ADJ, CARBON 100K	
SFR02	1-238-603-11	RES, ADJ, CARBON 100K	
SFR11	1-238-601-11	RES, ADJ, CARBON 22K	
SFR12	1-238-601-11	RES, ADJ, CARBON 22K	
*****			
*	1-669-048-11	SLIDE SW BOARD (SP,MY,HK,JE)	
*****			
< SWITCH >			
△ SW01	3-021-926-01	BRACKET (SLIDE SW) (VOLTAGE SELECTOR)	
*****			
*	1-668-652-11	TRANSFORMER BOARD (AEP,UK,US)	
*	1-669-043-11	TRANSFORMER BOARD (SP,MY,HK,JE)	
*****			
< COIL >			
△ L11	1-416-566-11	COIL, CHOKE 15uH	
△ L12	1-416-566-11	COIL, CHOKE 15uH	
< TRANSFORMER >			
△ PT301	3-021-913-01	BRACKET (POWER TRANS) (AEP,UK)	
△ PT301	3-021-925-01	BRACKET (POWER TRANS) (SP,MY,HK,JE)	
△ PT301	3-021-976-01	BRACKET (POWER TRANS) (US)	
*****			
MISCELLANEOUS			
*****			
△ 158	3-021-914-01	BRACKET (AC CORD) (EXCEPT UK,US)	
△ 158	3-021-917-01	BRACKET (AC CORD) (UK)	
△ 158	3-021-977-01	BRACKET (AC CORD) (US)	
HRPE101	3-020-446-01	BRACKET (HEAD UNIT)	
M1	3-020-447-01	MOTOR (A) ASSY (REEL/CAPSTAN)	
M2	3-020-448-01	MOTOR (B) ASSY (LOADING)	
△ PT301	3-021-913-01	BRACKET (POWER TRANS) (AEP,UK)	
△ PT301	3-021-925-01	BRACKET (POWER TRANS) (SP,MY,HK,JE)	
△ PT301	3-021-976-01	BRACKET (POWER TRANS) (US)	
*****			

Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			
*****			
	3-020-441-01	BRACKET (PATCH CORD)	
△	1-569-008-11	ADAPTOR, CONVERSION 2P (SP,MY,JE)	
△	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
	3-860-838-13	MANUAL, INSTRUCTION (ENGLISH) (TX515)	
	3-860-838-22	MANUAL, INSTRUCTION (FRENCH,SPANISH)	(TX515:AEP,SP,MY,HK)
	3-860-838-32	MANUAL, INSTRUCTION (PORTUGUESE,DUTCH, ITALIAN,SWEDISH) (TX515:AEP)	
	3-860-838-42	MANUAL, INSTRUCTION (GERMAN) (TX515:AEP)	
	3-860-838-52	MANUAL, INSTRUCTION (CHINESE)	(TX515:SP,MY,HK)
	3-860-838-61	MANUAL, INSTRUCTION (KOREAN, PORTUGUESE) (JE)	
	3-860-887-12	MANUAL, INSTRUCTION (ENGLISH) (TX313)	
	3-860-887-22	MANUAL, INSTRUCTION (FRENCH, SPANISH)	(TX313:AEP,SP,MY,HK)
	3-860-887-32	MANUAL, INSTRUCTION (PORTUGUESE,DUTCH, ITALIAN,SWEDISH) (TX313:AEP)	
	3-860-887-42	MANUAL, INSTRUCTION (GERMAN) (TX313:AEP)	
	3-860-887-52	MANUAL, INSTRUCTION (CHINESE)	(TX313:SP,MY,HK)

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

