

TC-S3

SERVICE MANUAL

Ver 1.0 2001.04

*AEP Model
UK Model
E Model
Australian Model*



TC-S3 is the Tape deck section
in MHC-S7AV/SV7AV/S3.

Dolby noise reduction manufactured under license
from Dolby Laboratories Licensing Corporation.
“DOLBY” and the double-D symbol $\square\square$ are trade-
marks of Dolby Laboratories Licensing Corporation.

Tape deck	Model Name Using Similar Mechanism	NEW
Section	Tape Transport Mechanism Type	TCM-230AWR41/ 230MWR41

SPECIFICATIONS

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	60 – 13,000 Hz (± 3 dB), using Sony TYPE I cassette, 60 – 14,000 Hz (± 3 dB), using Sony TYPE II cassette
Wow and flutter	$\pm 0.15\%$ W.Peak (IEC) 0.1% W.RMS (NAB) $\pm 0.2\%$ W.Peak (DIN)
Dimensions (w/h/d)	Approx. 280 x 128 x 330 mm
Mass	Approx. 2.4 kg

Design and specifications are subject to change
without notice.

STEREO CASSETTE DECK

9-873-837-11
2001D0500-1
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Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

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9. ELECTRICAL PARTS LIST 25

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.

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.

SECTION 1 SERVICING NOTES

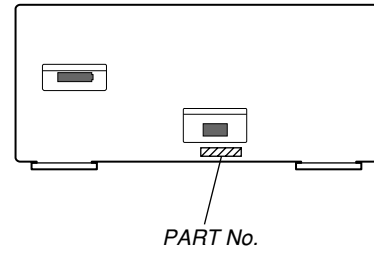
This set is a component of the MHC-S7AV, MHC-SV7AV and MHC-S3.

The MHC-S7AV/SV7AV/S3 system configuration is as shown below, and therefore it does not operate normally unless all four components are connected.

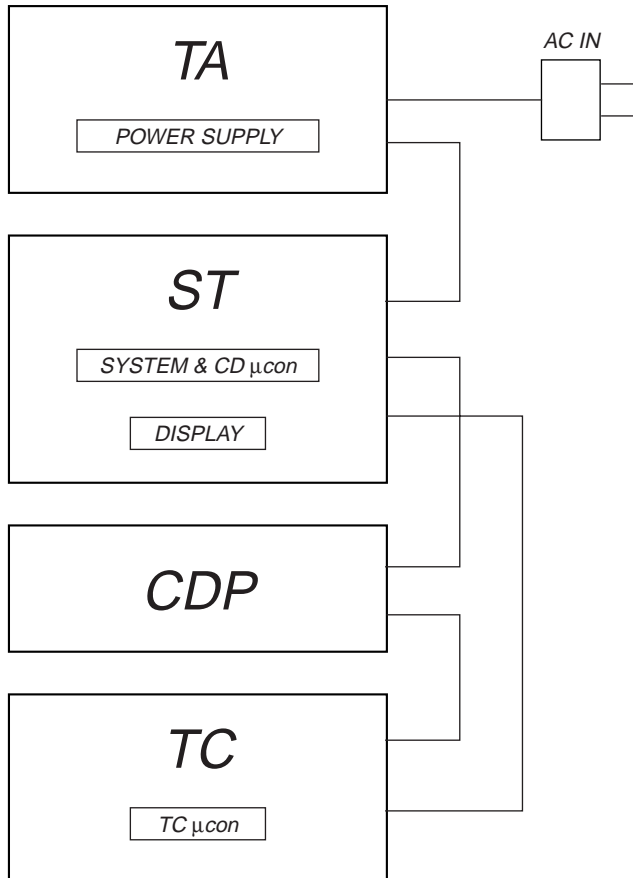
In performing the repair, connect all components with the system cables.

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

• **MODEL IDENTIFICATION**
– Rear Panel –



System Configuration:

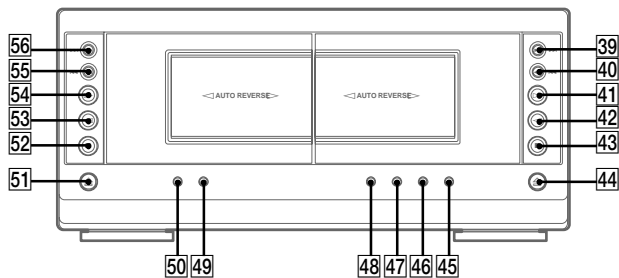


Model	PART No.
AEP and UK models	4-233-093-0□
Australian, Saudi Arabia and Korean models	4-233-093-1□
Singapore model	4-233-093-2□
Thailand and Mexican models	4-233-093-3□

This section is extracted from instruction manual.

LOCATION OF CONTROLS

– Front Panel –



- CD SYNC 46 (20, 21)
- DIRECTION 50 (19, 20, 21)
- DOLBY NR 49 (19, 20)
- EDIT 48 (21)
- HI-DUB 47 (20)
- REC PAUSE/START 45 (20, 21)

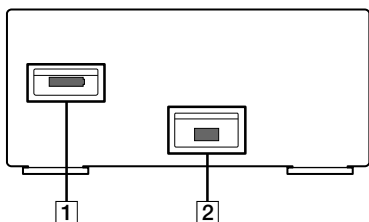
– Deck A –

- ▶ (forward play) 54 (19, 35)
- ◀ (reverse play) 53 (19, 35)
- (stop) 52 (19)
- ▶▶/▶▶▶ (fast forward/go forward) 56 (19)
- ◀◀/◀◀◀ (rewind/go back) 55 (19)
- ▲ (eject) 51 (19)

– Deck B –

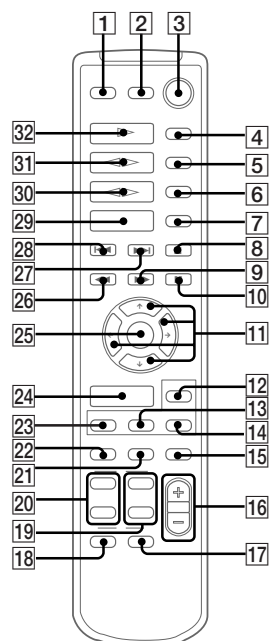
- ▶ (forward play) 41 (19, 20, 35)
- ◀ (reverse play) 42 (19, 20, 35)
- (stop) 43 (19, 20)
- ▶▶/▶▶▶ (fast forward/go forward) 39 (19)
- ◀◀/◀◀◀ (rewind/go back) 40 (19)
- ▲ (eject) 44 (19)

– Rear Panel –



- 1 SYSTEM CONTROL 5 connector (FROM CDP-S3/MCE-VS77)
- 2 SYSTEM CONTROL 4 connector (FROM ST-S5/S3/V577)

Remote Control



CD ▷ [32] (14, 15)
 CHECK [5] (15)
 CLEAR [6] (15)
 CLOCK/TIMER SELECT [17]
 (30)
 CLOCK/TIMER SET [18] (13, 21,
 29)
 DBFB [15] (23)
 DISPLAY [22] (13, 16, 18, 29, 35)
 D.SKIP [4] (14)
 ENTER [25] (10, 12, 13, 15, 17,
 18, 21, 22, 26–30)
 EQ [13] (27)
 EQ ON/OFF [14] (10, 28)
 FUNCTION [24] (10, 14, 15, 20,
 21, 31)
 GROOVE [21] (23)

SET UP [12] (10, 12, 26, 28, 29)
 SLEEP [7] (29)
 SUR [23] (25)
 TAPE A ◀▶ [31] (19, 35)
 TAPE B ◀▶ [30] (19, 20, 35)
 TUNER/BAND [29] (17)
 TUNING + [9] (17)
 TUNING - [26] (17)
 TV CH +/- [19]
 TV VOL +/- [20]
 TV I/⏻ [2]
 TV/VIDEO [1]
 VOL +/- [16]

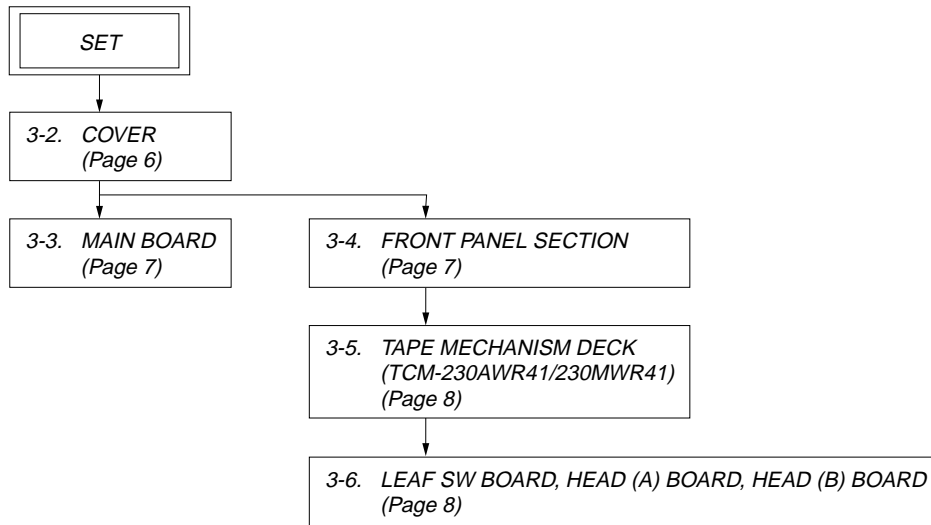
BUTTON DESCRIPTIONS

I/⏻ (power) [3]
 || (pause) [10]
 ■ (stop) [8]
 ◀◀ (go back) [28]
 ▶▶ (go forward) [27]
 ◀◀ (rewind) [26]
 ▶▶ (fast forward) [9]
 ↑/↓/←/→ [11]

SECTION 3 DISASSEMBLY

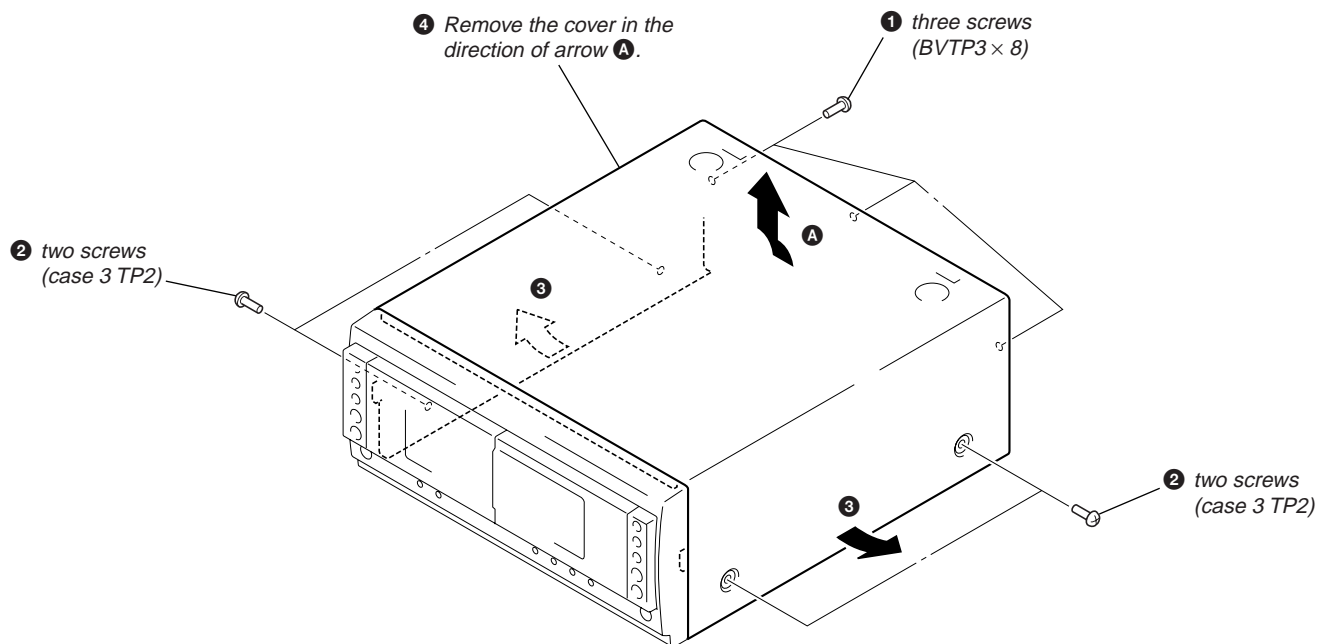
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

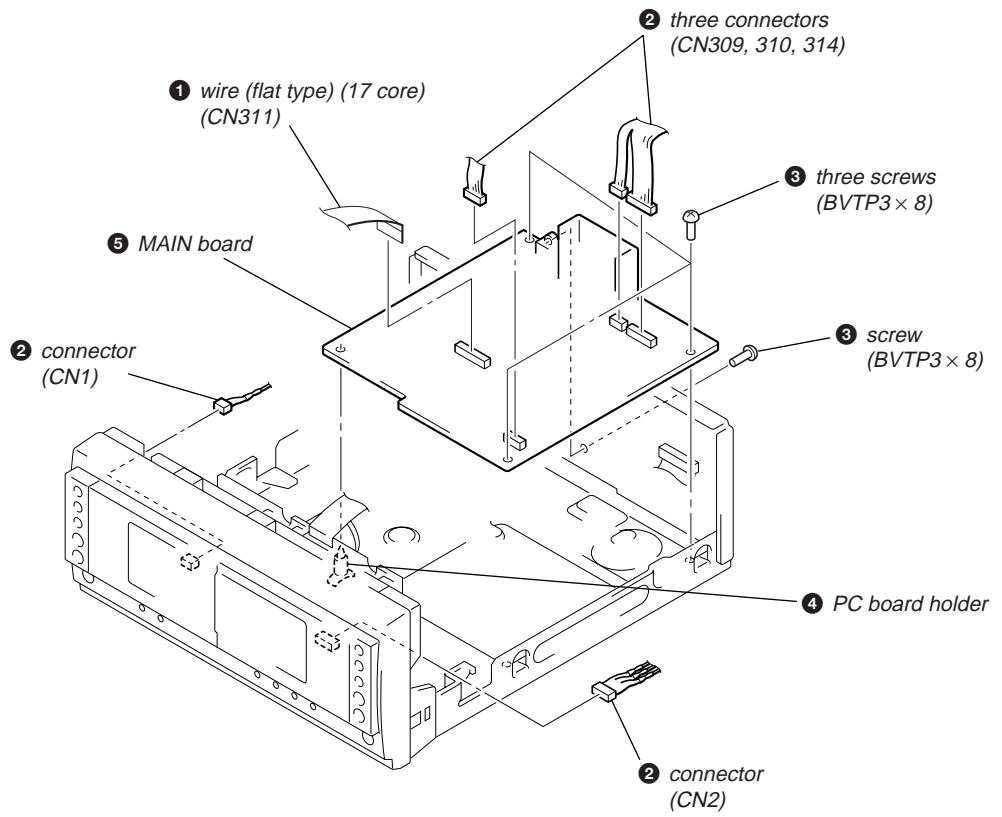


Note: Follow the disassembly procedure in the numerical order given.

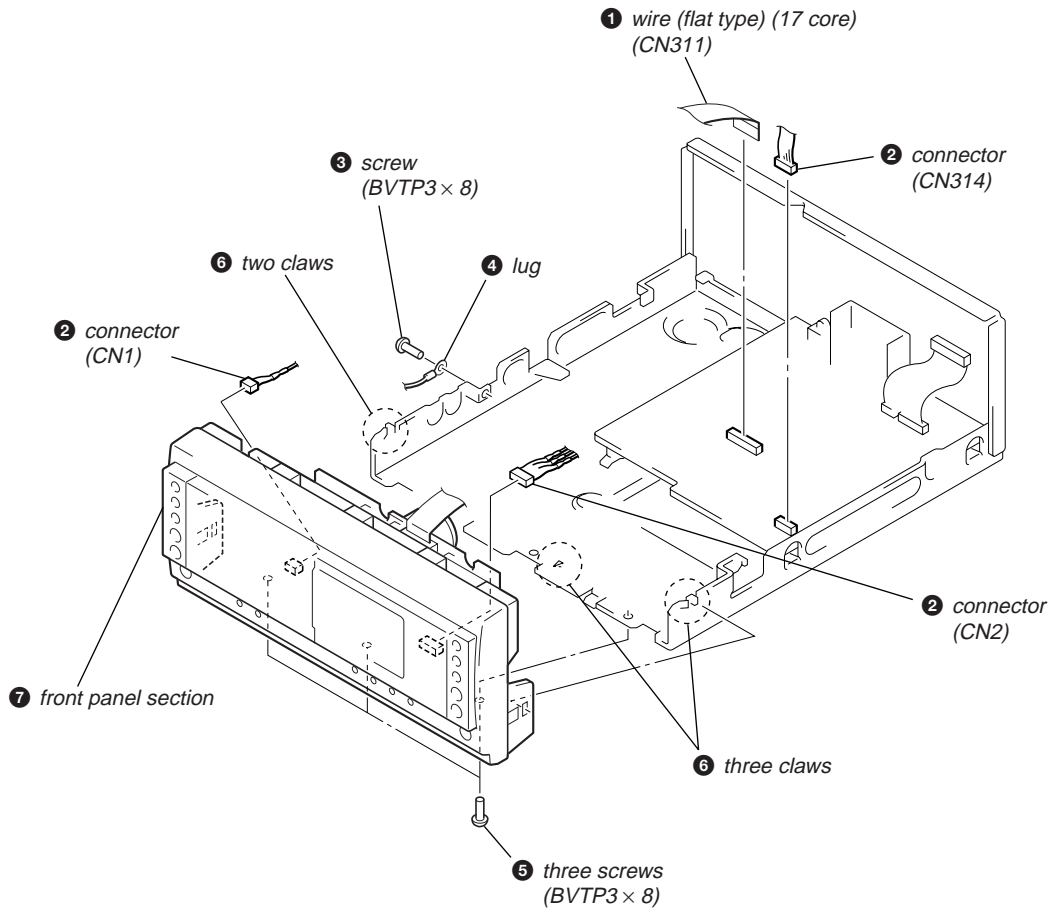
3-2. COVER



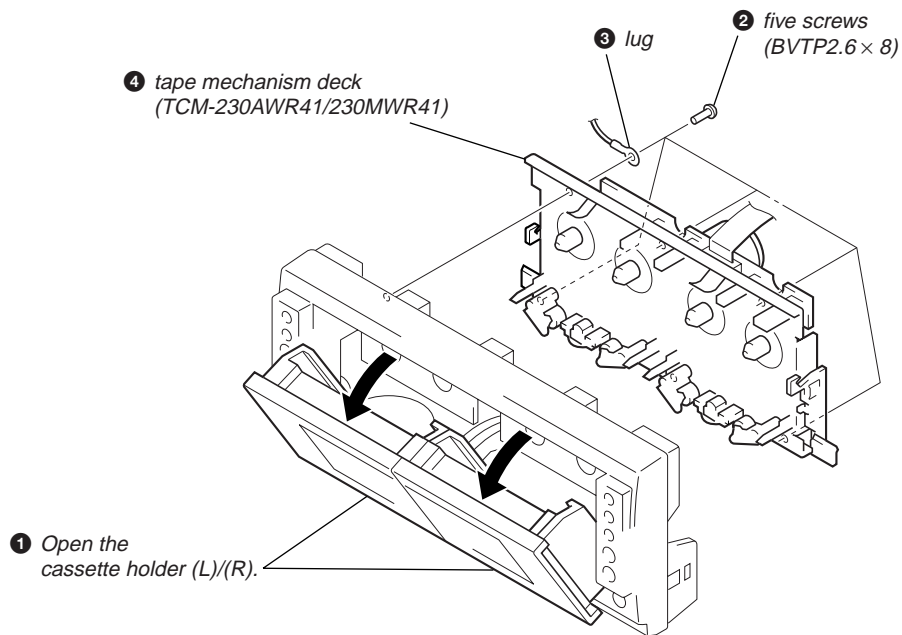
3-3. MAIN BOARD



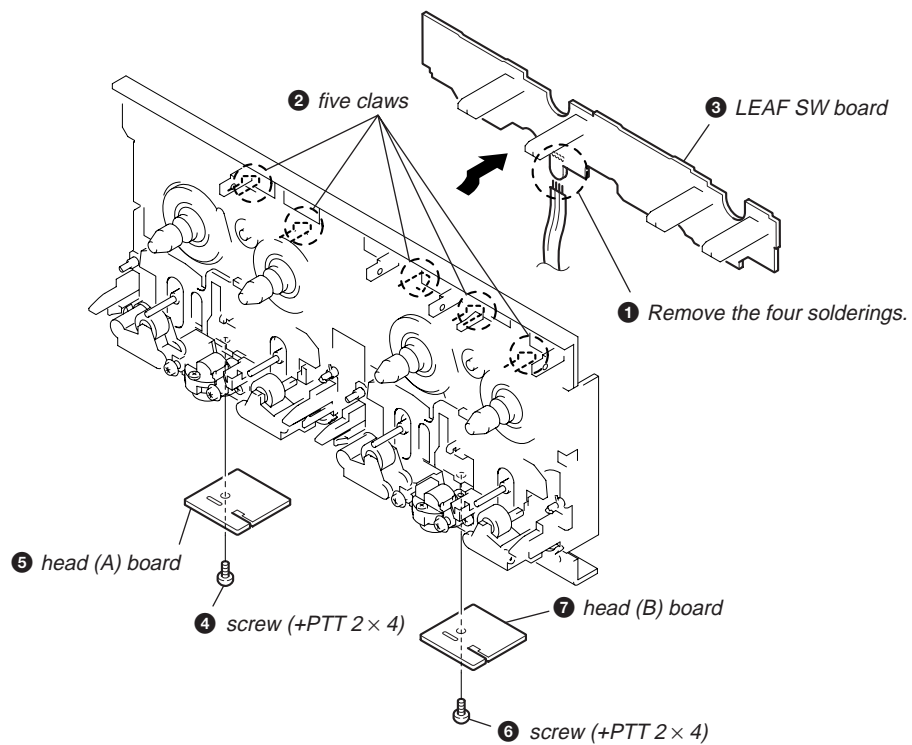
3-4. FRONT PANEL SECTION



3-5. TAPE MECHANISM DECK (TCM-230AWR41/230MWR41)



3-6. LEAF SW BOARD, HEAD (A) BOARD, HEAD (B) BOARD



SECTION 4 TEST MODE

Note: Use following buttons in the test mode.

no mark : Button of Tape unit (TC-S3)


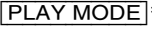


*1 : Button of amplifier unit (TA-S7AV or TA-S3)

*2 : Button of CD unit (CDP-S3)


[MC Test Mode]

Enter the MC Test Mode

Procedure:

1. Press the *1 button to turn the power on.
2. While pressing the both *2 and *2 buttons, press the *2 button.
3. "GROOVE" indication blinks on the fluorescent indicator tube in the midst of MC test mode.

Releasing the MC Test Mode

To release from this mode, press the *1 button or disconnect the power cord.

[DECK Test Mode]

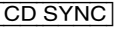
In the DECK test mode, it operates as follows.

Cancellation of the linear mute of DOLBY IC (IC301)

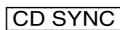
- It become cancellation automatically when it is possible to enter a MC test mode.

AMS checking

Procedure:



1. Enter the MC test mode.
2. Insert a test tape AMS-110A or AMS-120 to Deck A.
3. Set TAPE A function.
4. Press the  button to enter the AMS test mode.
5. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the ASM signal twice.
6. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
7. When the check is complete, a message of either OK or NG appears.

(To check an AMS of the B deck, select TAPE B function.

After that, press .)


ALC checking

Procedure:

1. Enter the MC test mode.
 2. Insert a tape into Deck B.
 3. During Recording, Keep holding down the below keys.
*2 + 
- ALC could keep ON while these keys keep being pressed, ALC could keep OFF while keys are released.

Double speed REC mode



Procedure:

1. Enter the MC test mode
 2. Insert a tape into Deck B.
 3. During Recording, keep holding down the below key.

- Double speed recording is going on while the key keeps being pressed.

REC/PLAY checking

- The mode to PLAY by rewinding recording contents automatically.

Procedure:

1. If recording A surface, it returns automatically at the point of the recording beginning and it replays when pressing TAPE B .
2. If recording B surface, it returns automatically at the point of the recording beginning and it replays when pressing TAPE B .

SECTION 5 MECHANICAL ADJUSTMENTS

Precaution

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

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

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

SECTION 6 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775 V

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

- Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, -10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300J	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment

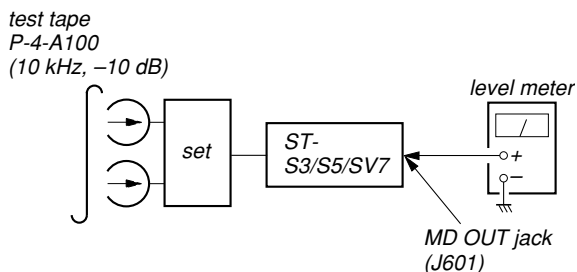
DECK A

DECK B

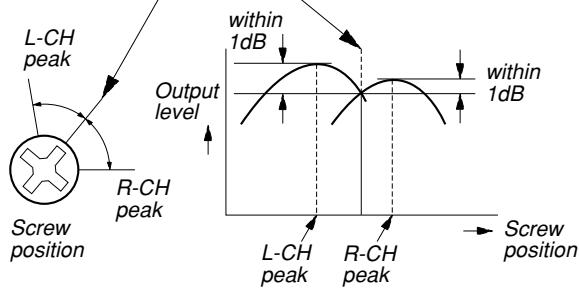
Note: Perform this adjustments for both decks

Procedure:

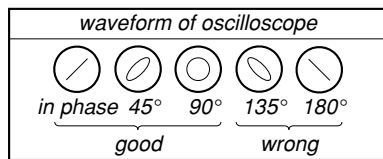
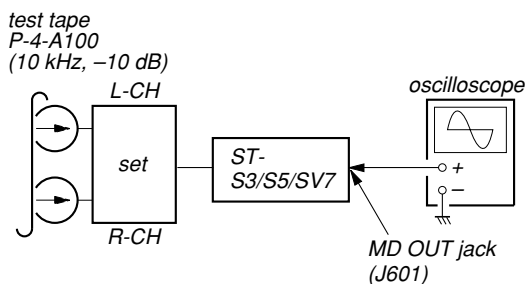
1. Mode: Playback



- Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.

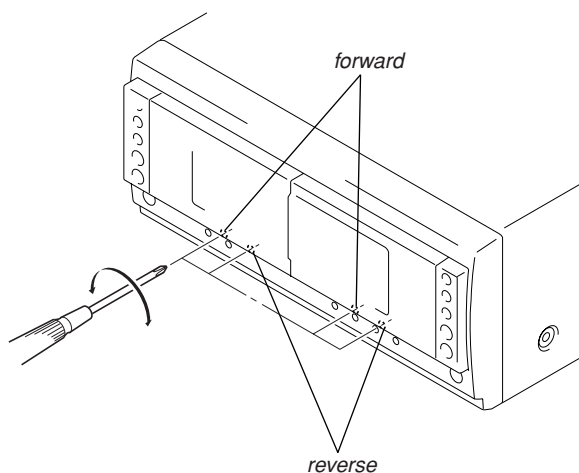


- Mode: Playback



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

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



Note: Use following buttons in the test mode.

no mark : Button of Tape unit (TC-S3)

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

*2 : Button of CD unit (CDP-S3)

Tape Speed Adjustment **DECK B**

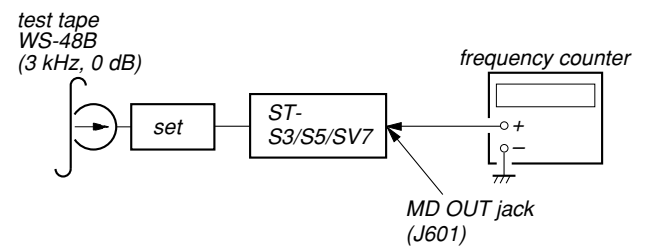
Note: Start the Tape Speed adjustment as below after setting to the test mode.

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

Procedure:

- Turn the power switch on.
- While pressing the both **PLAY MODE***2 and **STOP***2 buttons, press the **DISC 3***2 button.
(The "GROOVE" on the fluorescent indicator tube display while in the test mode.)
To exit from the test mode, press the **POWER***1 button.

Mode: Playback



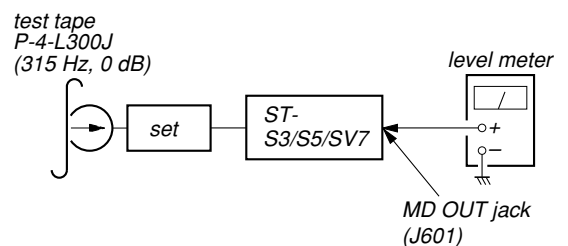
- Insert the WS-48B into the deck B.
- Press the **PLAY** button on the deck B.
- Press the **HI-DUB** button in playback mode.
Then at HIGH speed mode.
- Adjust RV1001 on the LEAF SW board so that frequency counter reads $6,000 \pm 30$ Hz.
- Press the **HI-DUB** button.
Then back to NORMAL speed mode.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

Adjustment Location: LEAF SW board

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

Procedure:

Mode: Playback



- Confirm that level difference between the channels is with ± 0.5 dB.
- After check, adjust the following RVs.
Deck A is RV302 (L-CH), Deck B is RV303 (L-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

MD OUT jack (J601) PB level: 334.4 to 748.7 mV
(-6.8 ± 0.5 dB)

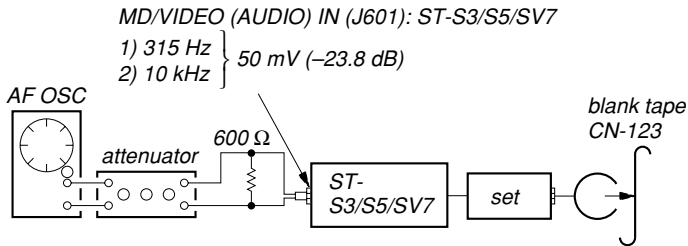
Adjustment Location: MAIN board

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

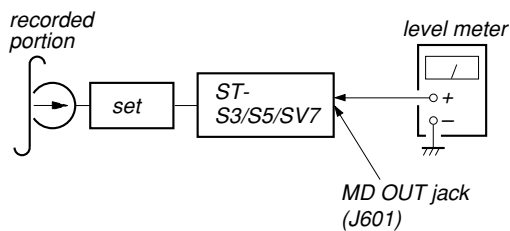
REC Bias Adjustment **DECK B**

Procedure:

1. Insert a tape into Deck B.
2. After press **REC PAUSE/START** button, press **REC PAUSE/START** button, then recording start.
3. Mode: Record



4. Mode: Playback



5. Confirm the playback signal recorded in step 3 becomes adjustable level as follows.

If these levels are not adjustable level, adjust the RV304 (L-CH) and RV354 (R-CH) on the MAIN board to repeat steps 4 and 5.

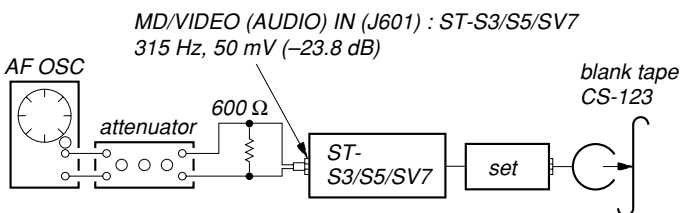
Adjustable level: Playback output of 315 Hz to playback output of 10 kHz: ± 1.0 dB

Adjustment Location: MAIN board

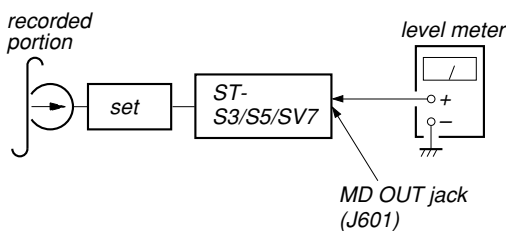
REC Level Adjustment **DECK B**

Procedure:

1. Insert a tape into Deck B.
2. After press **REC PAUSE/START** button, press **REC PAUSE/START** button, then recording start.
3. Mode: Record



4. Mode: Playback



5. Confirm the play back signal recorded in step 3 becomes adjustable level as follows.

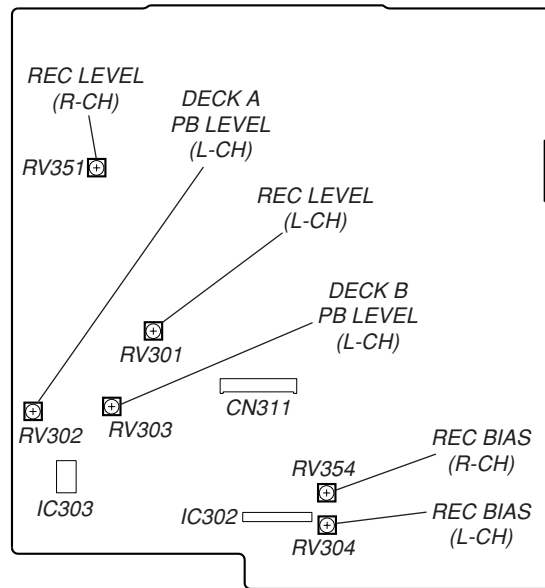
If these levels are not adjustable level, adjust the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 4 and 5.

Adjustable level:

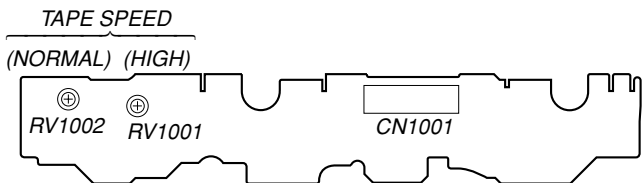
MD OUT jack PB level: 47.2 to 53.0 mV (-27.3 to -26.3 dB)

Adjustment Location: MAIN board

[MAIN BOARD] (Component Side)



[LEAF SW BOARD] (Component Side)

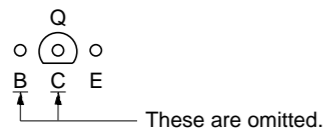
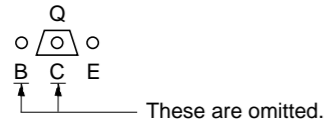


SECTION 7 DIAGRAMS

7-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Boards:

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



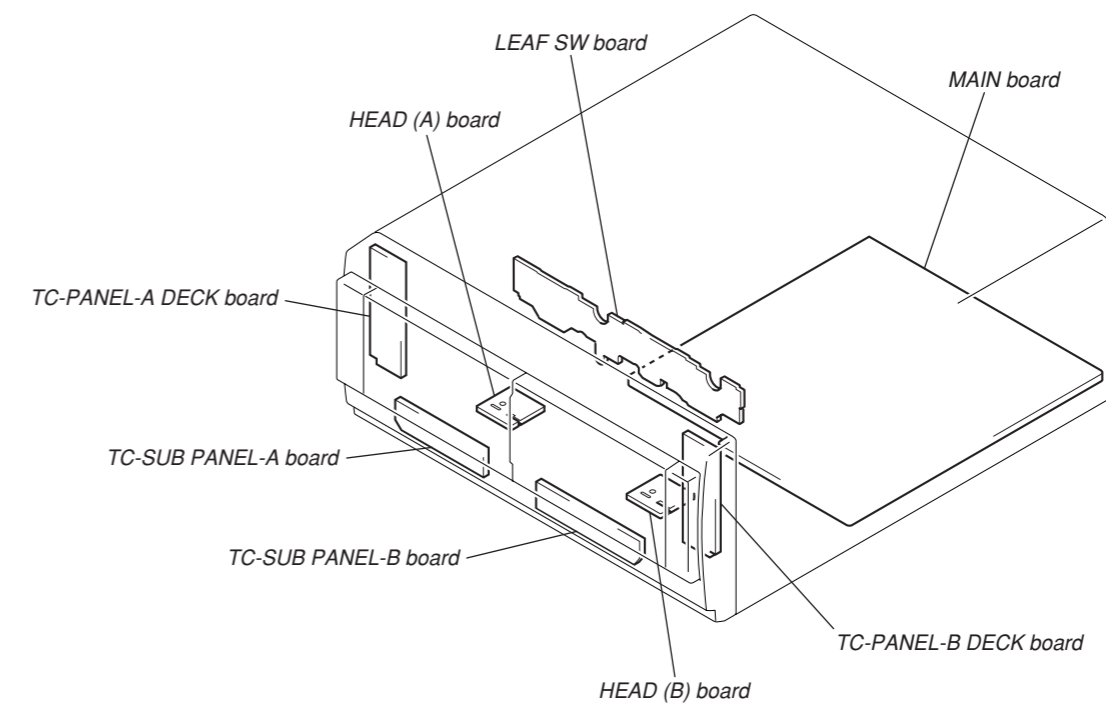
Note on Schematic Diagram:

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

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

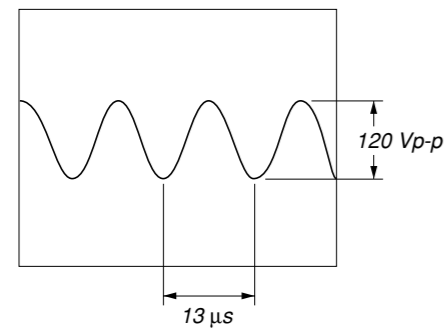
- : B+ Line.
- - - : B- Line.
- Voltagages and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- () : PB
- << >> : REC
- Voltagages are taken with a VOM (Input impedance $10\text{ M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ⊞ : PB
- ⊞ : REC

• Circuit Boards Location

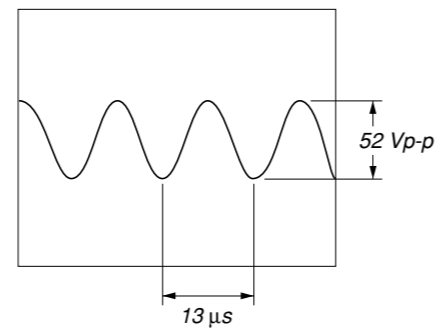


• Waveforms – MAIN Board –

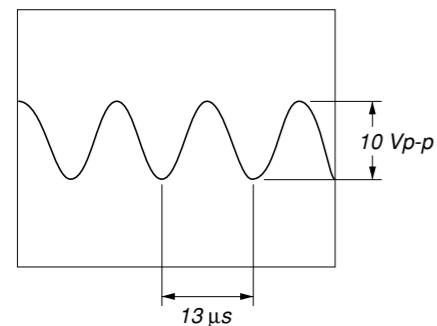
① T301 ④ (DECK-B REC mode)



③ NO312 ⑥ (L-REC), ③ (R-REC) (DECK-B REC mode)

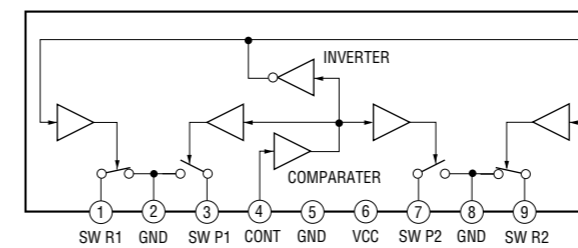


② Q301, 303 (collector) (REC mode)

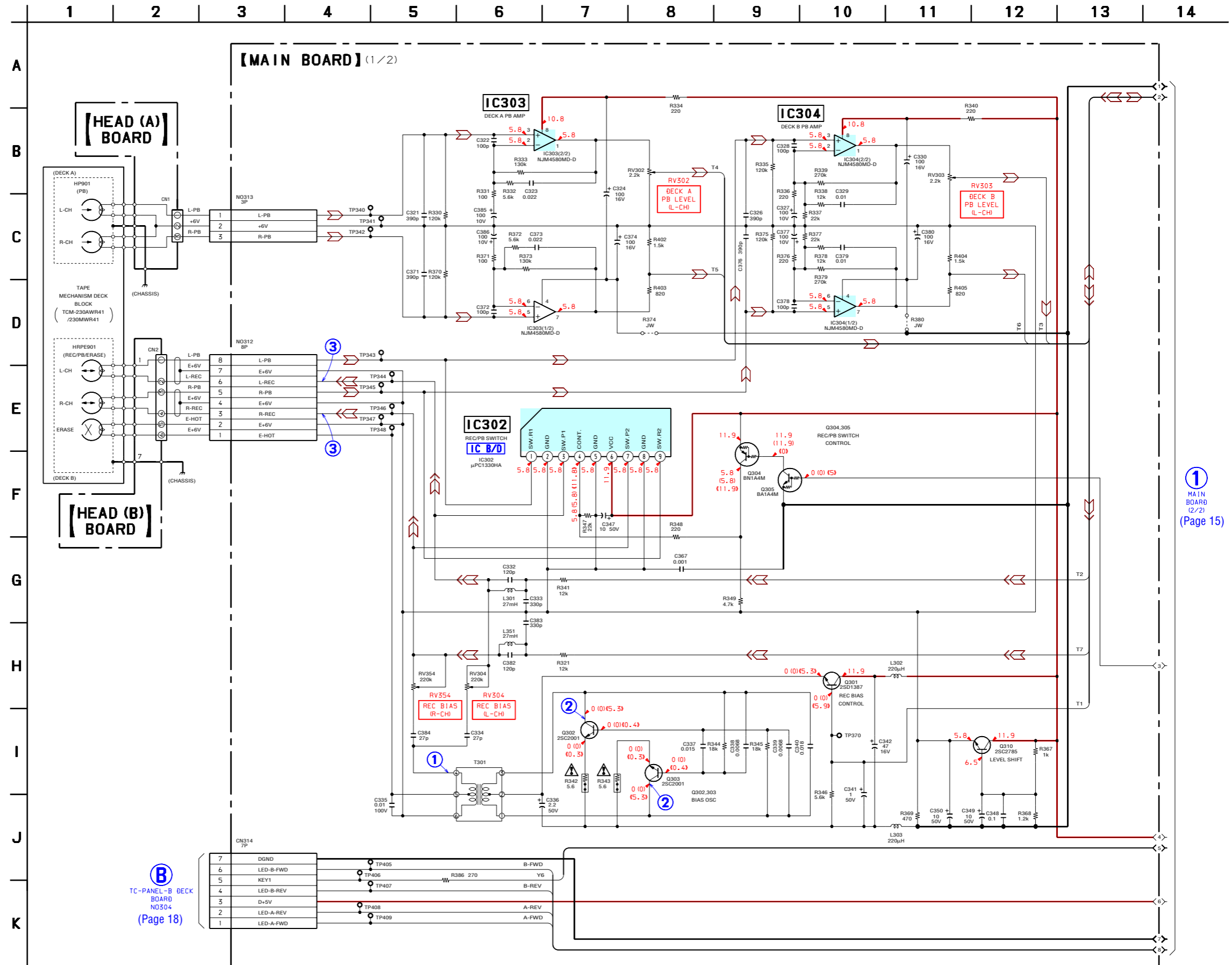


• IC Block Diagram – MAIN Board –

IC302 $\mu\text{PC1330HA}$



7-2. SCHEMATIC DIAGRAM – MAIN Section (1/2) – • See page 13 for Waveforms. • See page 13 for IC Block Diagram.



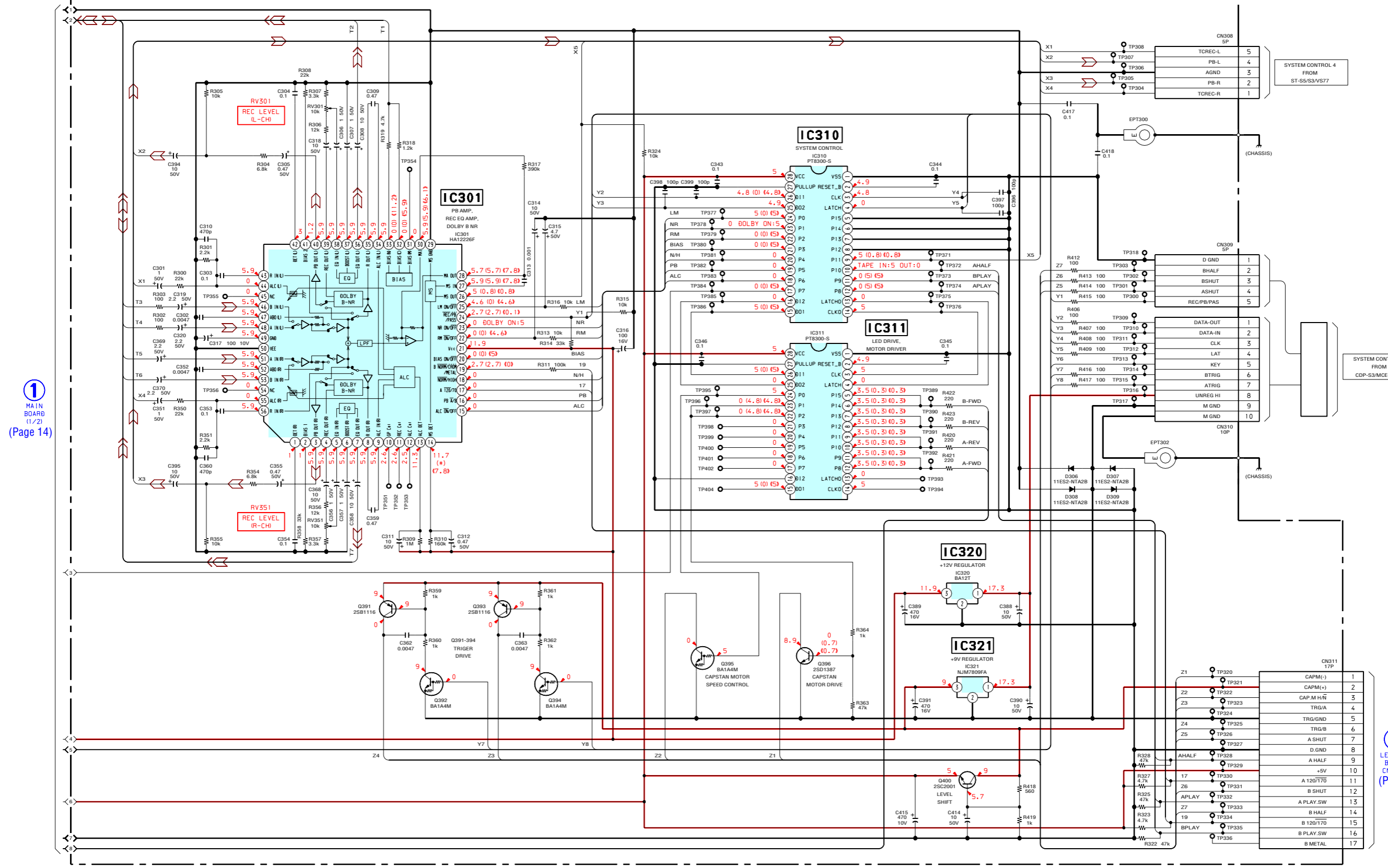
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

A
B
C
D
E
F
G
H
I
J
K

[MAIN BOARD] (2/2)



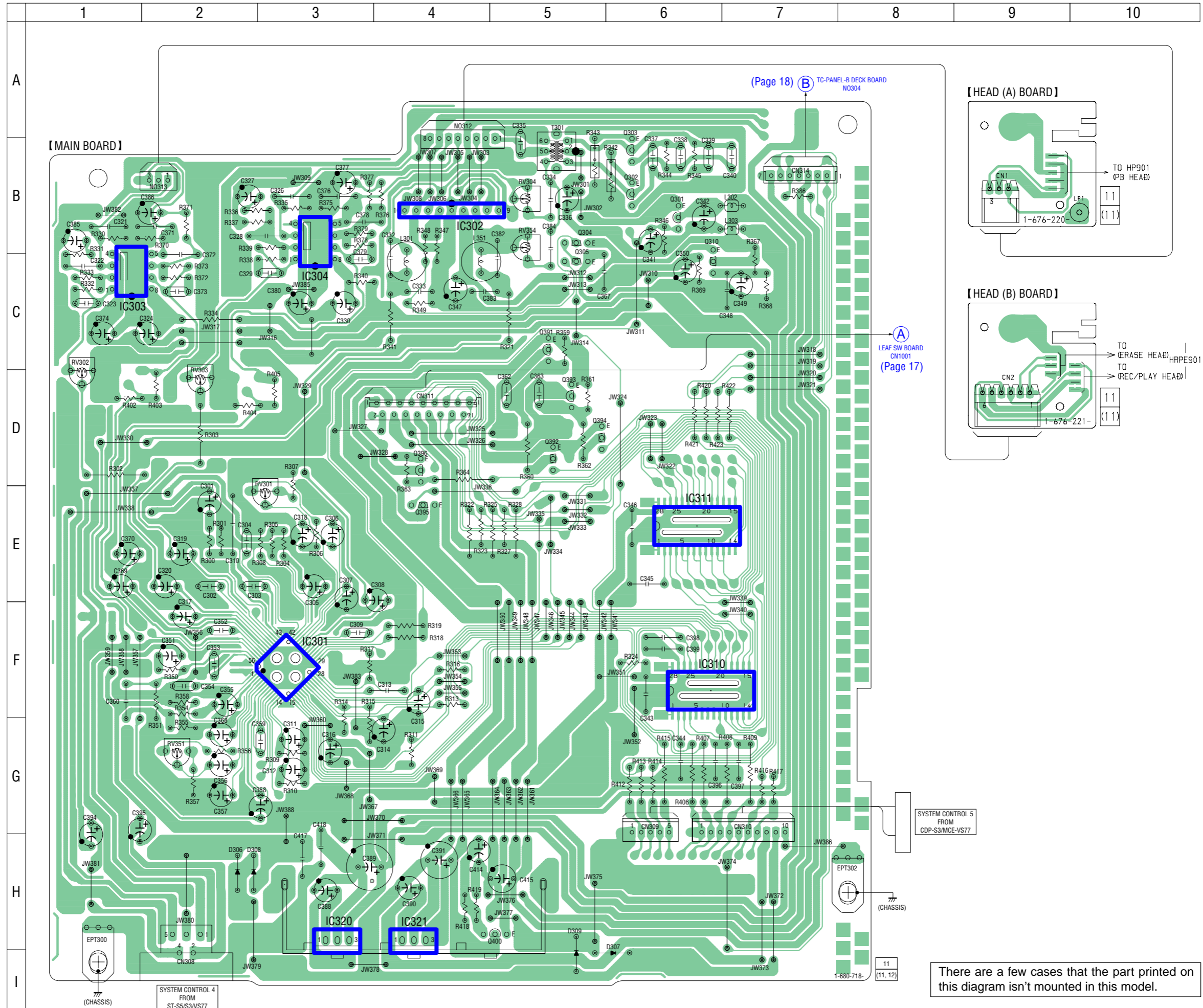
1 MAIN BOARD (1/2) (Page 14)

A LEAF SW BOARD CN1001 (Page 17)

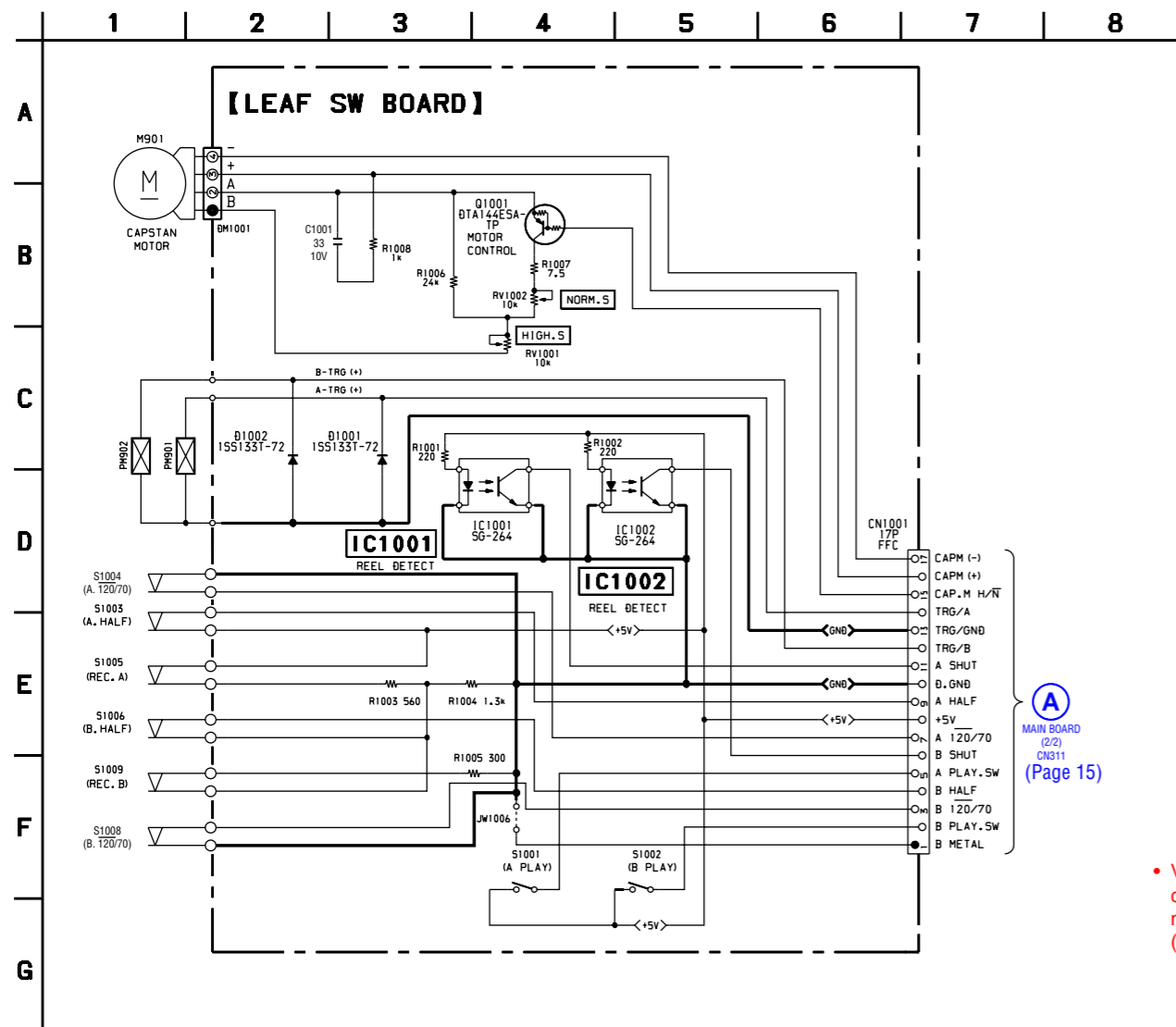
7-4. PRINTED WIRING BOARDS – MAIN Section – • See page 13 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D306	H-2
D307	I-6
D308	H-2
D309	H-5
IC301	F-3
IC302	B-4
IC303	C-1
IC304	B-3
IC310	F-6
IC311	E-6
IC320	H-3
IC321	H-4
Q301	B-6
Q302	B-6
Q303	B-6
Q304	B-5
Q305	C-5
Q310	C-6
Q391	C-5
Q392	D-5
Q393	D-5
Q394	D-5
Q395	E-4
Q396	D-4
Q400	H-5



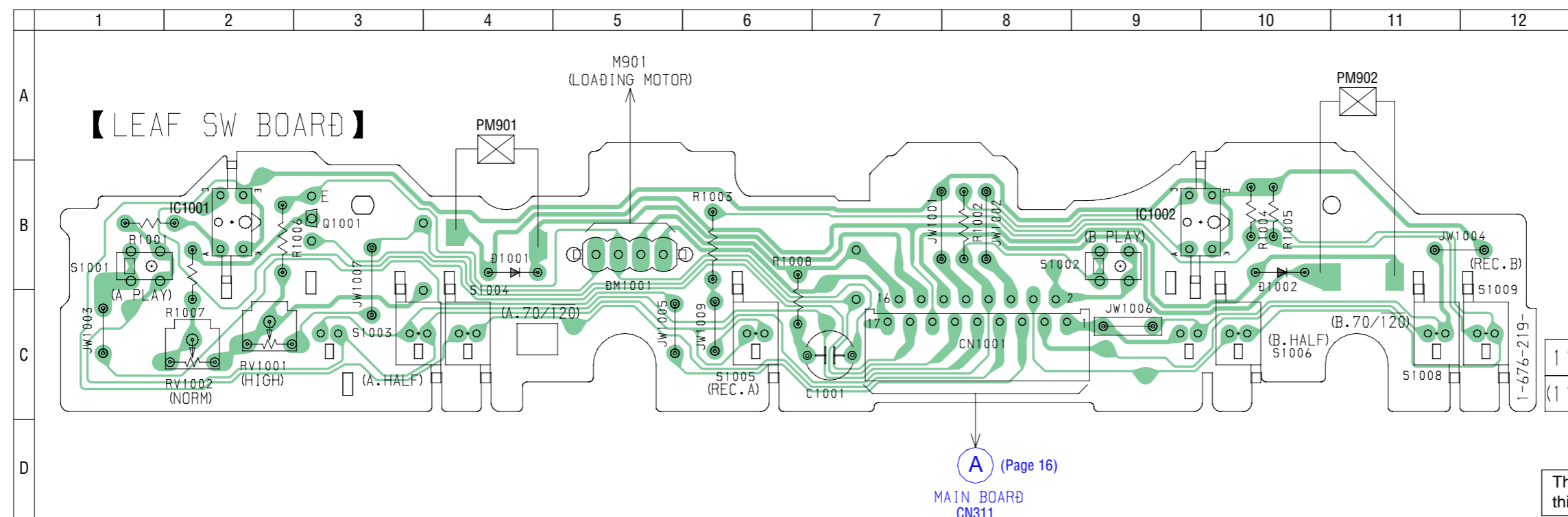
7-5. SCHEMATIC DIAGRAM – LEAF SW Section –



A
MAIN BOARD
(2/2)
CN311
(Page 15)

• Voltages are dc with respect to ground under no-signal conditions.
no mark : TAPE PLAY
() : TAPE REC

7-6. PRINTED WIRING BOARD – LEAF SW Section – • See page 13 for Circuit Boards Location.



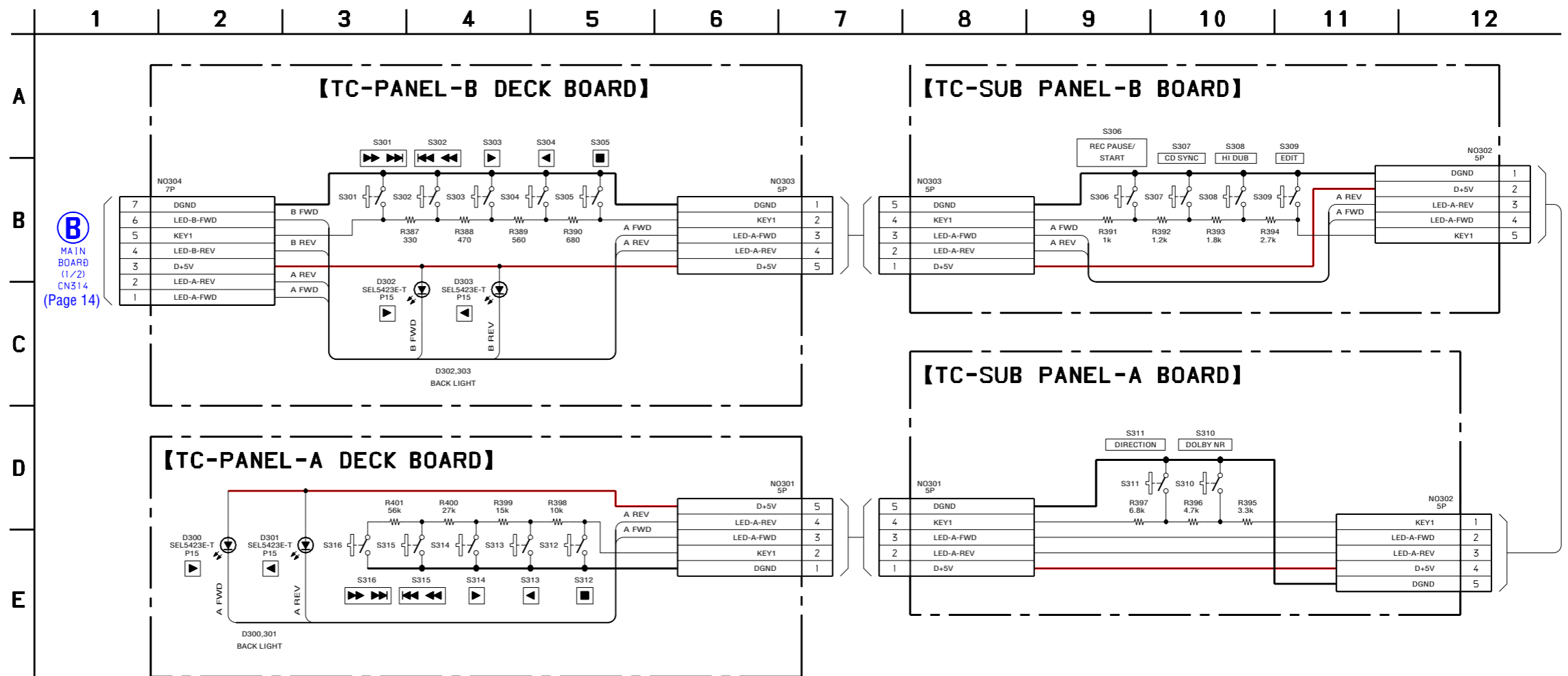
• Semiconductor Location

Ref. No.	Location
D1001	B-4
D1002	B-10
IC1001	B-2
IC1002	B-9
Q1001	B-3

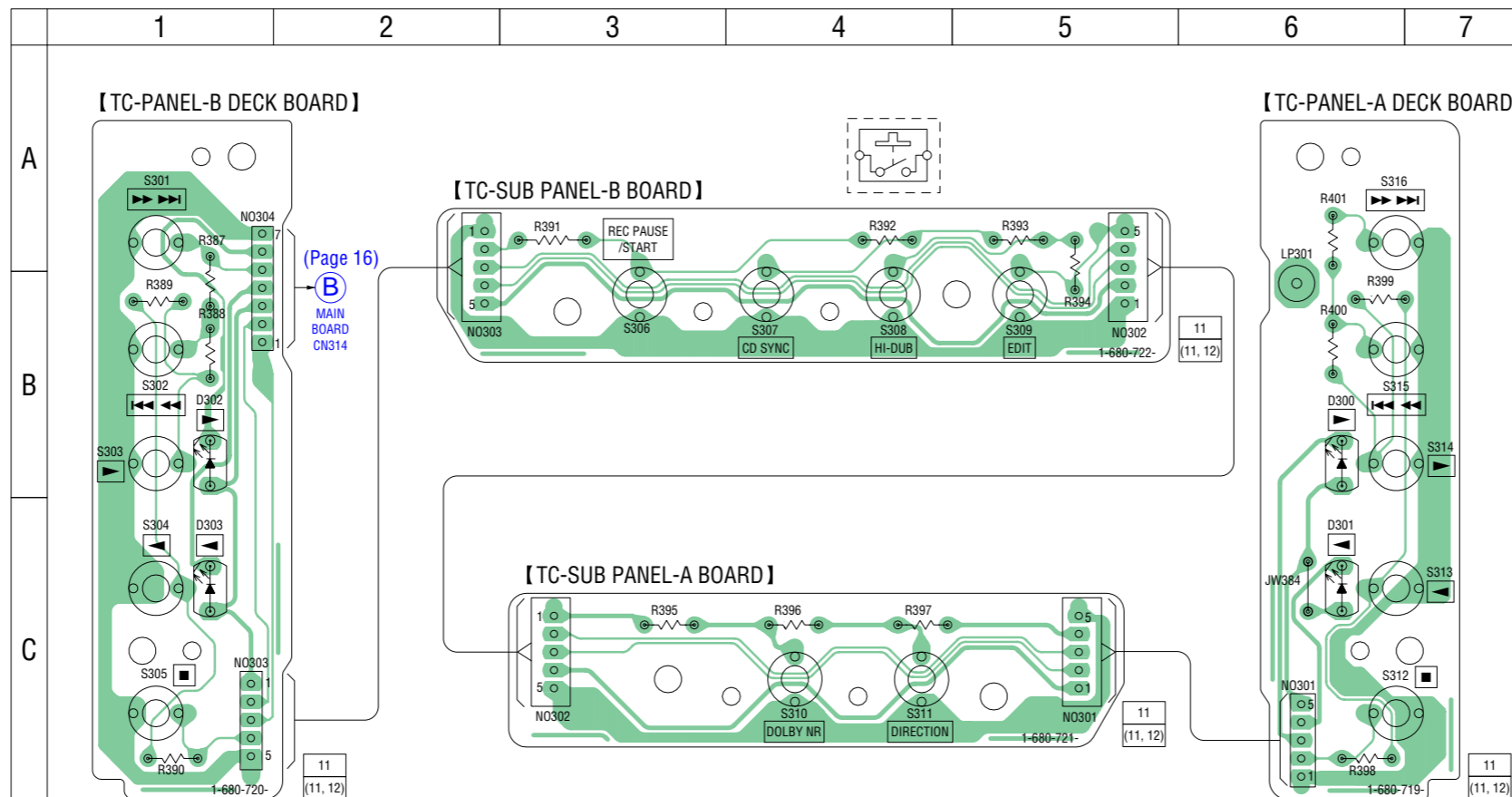
A (Page 16)
MAIN BOARD
CN311

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

7-7. SCHEMATIC DIAGRAM – PANEL Section –



7-8. PRINTED WIRING BOARDS – PANEL Section – • See page 13 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D300	B-6
D301	C-6
D302	B-1
D303	C-1

7-9. IC PIN FUNCTION DESCRIPTION

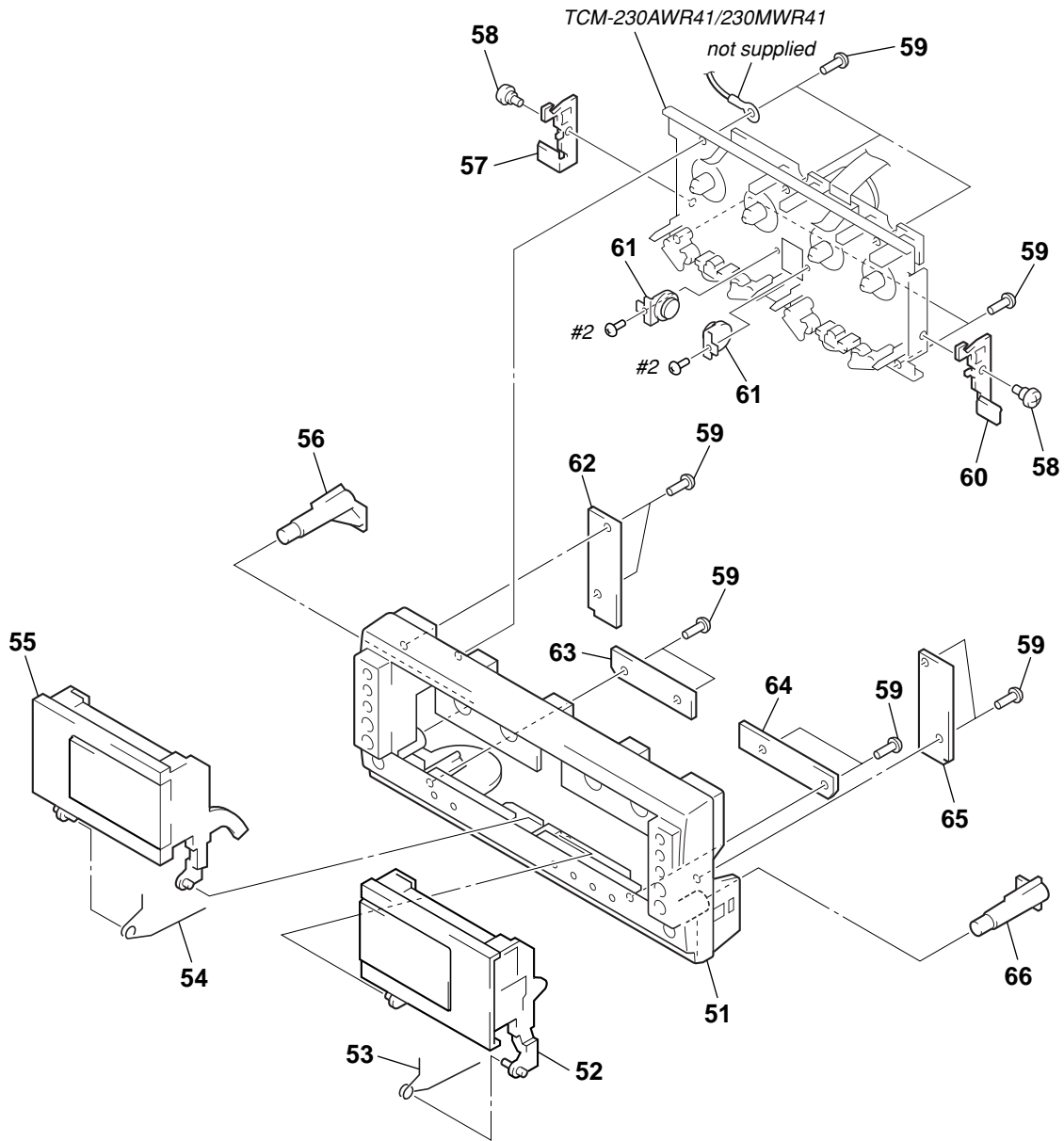
• MAIN BOARD IC310 PT8300-S (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	RESET_B	I	Reset signal input terminal Not used
3	CLK	I	Serial data transfer clock signal input from the CD player section (CDP-S3)
4	LATCH	I	Serial data latch pulse signal input from the CD palyer section (CDP-S3)
5 – 8	P15 – P12	I	Not used (fixed at “L”)
9	P11	I	AMS signal input terminal “L”: AMS in
10	P10	I	Detection input from the deck-A half detect switch “H”: cassette in, “L”: no cassette
11	P9	I	Detection input from the deck-B play detect switch “H”: deck-B play
12	P8	I	Detection input from the deck-A play detect switch “H”: deck-A play
13	LATCHO	O	Serial data latch pulse output to the PT8300-S (IC311)
14	CLKO	O	Serial data transfer clock signal output to the PT8300-S (IC311)
15	DO1	O	Serial data output to the PT8300-S (IC311)
16	DI2	I	Serial data input from the PT8300-S (IC311)
17	P7	O	Tape deck relay on/off control signal output to the μ PC1330H (IC302)
18	P6	O	ALC on/off control signal output to the HA12226F (IC301)
19	P5	O	Deck-A/B selection signal output to the HA12226F (IC301)
20	P4	O	EQ high/normal selection signal output to the HA12226F (IC301)
21	P3	O	Recording bias on/off control signal output to the HA12226F (IC301)
22	P2	O	Recording muting on/off control signal output to the HA12226F (IC301)
23	P1	O	Dolby NR on/off selection signal output to the HA12226F (IC301)
24	P0	O	Tape deck line muting on/off control output to the HA12226F (IC301)
25	DO2	O	Serial data output to the CD player section (CDP-S3)
26	DI1	I	Serial data input from the CD player section (CDP-S3)
27	PULLUP	I	P8 to P15 Control pin for pull-up resisitor (fixed at “L”)
28	VCC	—	Power supply terminal (+5V)

• MAIN BOARD IC311 PT8300-S (LED DRIVE, MOTOR DRIVER)

Pin No.	Pin Name	I/O	Description
1	VSS	—	Ground terminal
2	RESET_B	I	Reset signal input terminal Nor used
3	CLK	I	Serial data transfer clock signal input from the PT8300-S (IC310)
4	LATCH	I	Serial data latch pulse input from the PT8300-S (IC310)
5	P15	O	Not used (connected to pin ⑥)
6	P14	O	LED drive signal output of the B-FWD indicator (D302) “L”: LED on
7	P13	O	Not used (connected to pin ⑧)
8	P12	O	LED drive signal output of the B-REV indicator (D303) “L”: LED on
9	P11	O	Not used (connected to pin ⑩)
10	P10	O	LED drive signal output of the A-REV indicator (D301) “L”: LED on
11	P9	O	Not used (connected to pin ⑪)
12	P8	O	LED drive signal output of the A-FWD indicator (D300) “L”: LED on
13	LATCHO	O	Not used (open)
14	CLKO	O	Not used (open)
15	DO1	O	Not used (open)
16	DI2	I	Not used (fixed at “L”)
17 – 21	P7 – P3	O	Not used (open)
22	P2	O	Not used (connected to pin ⑲)
23	P1	O	Capstan motor on/off control signal output terminal “H”: motor on
24	P0	O	High/normal speed selection signal output of the capstan motor “H”: normal speed, “L”: high speed
25	DO2	O	Serial data output to the PT8300-S (IC310)
26	DI1	I	Serial data input from the PT8300-S (IC310)
27	PULLUP	I	P8 to P15 Control pin for Pull-up resistor (fixed at “L”)
28	VCC	—	Power supply terminal (+5V)

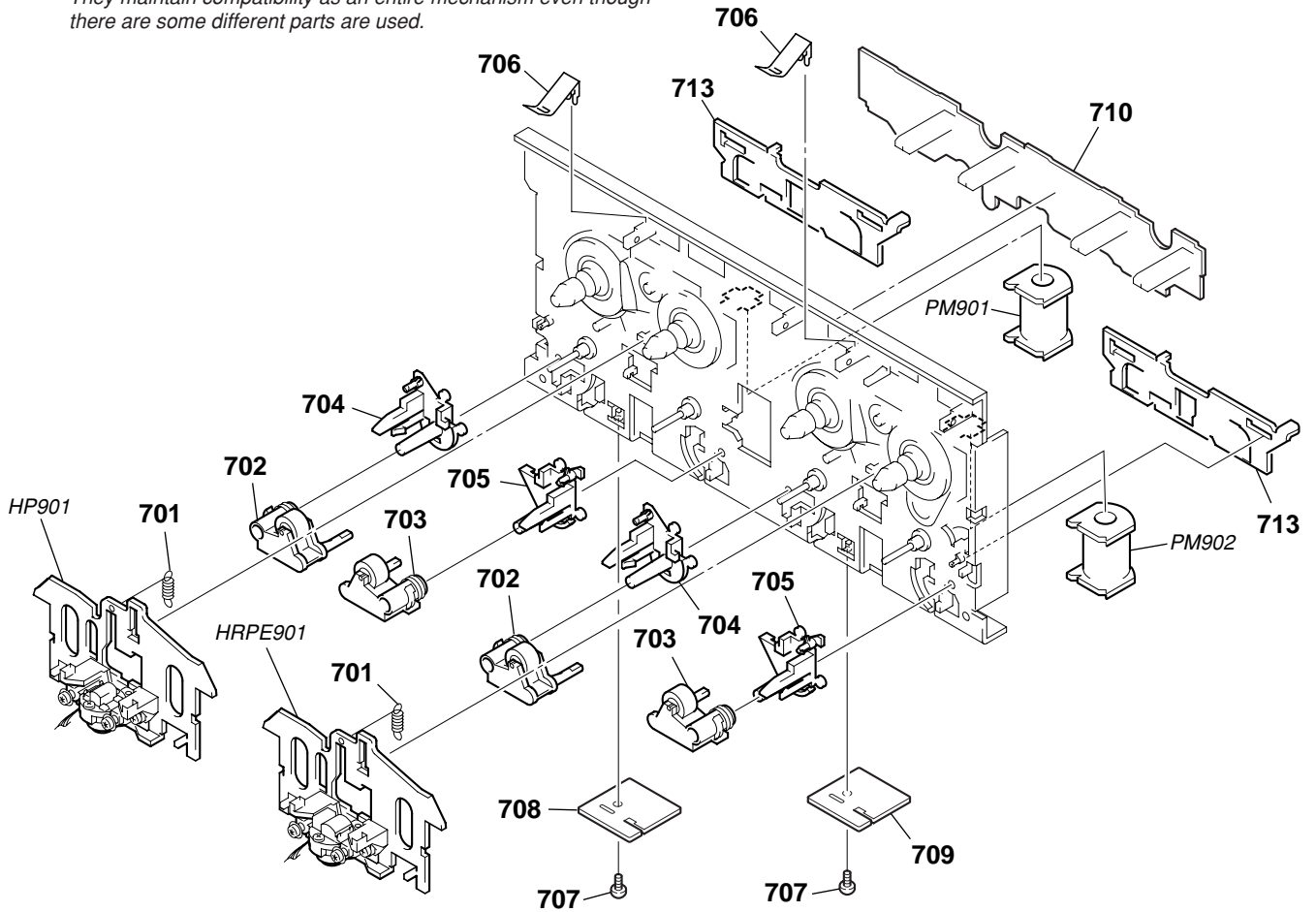
8-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4953-607-1	PANEL ASSY, FRONT		59	4-951-620-01	SCREW (2.6X8), +BVTP	
52	X-4953-606-1	HOLDER (R) ASSY, CASSETTE		60	4-900-889-01	EJECT (LEVER-R)	
53	4-233-091-01	SPRING (R), TORSION		61	4-215-062-01	DAMPER	
54	4-233-090-01	SPRING (L), TORSION		62	1-680-719-11	TC-PANEL-A DECK BOARD	
55	X-4953-605-1	HOLDER (L) ASSY, CASSETTE		63	1-680-721-11	TC-SUB PANEL-A BOARD	
56	4-233-094-01	EJECT (L), BUTTON		64	1-680-722-11	TC-SUB PANEL-B BOARD	
57	4-900-888-01	EJECT (LEVER-L)		65	1-680-720-11	TC-PANEL-B DECK BOARD	
58	3-019-456-11	SCREW, STEP		66	4-233-095-01	EJECT (R), BUTTON	

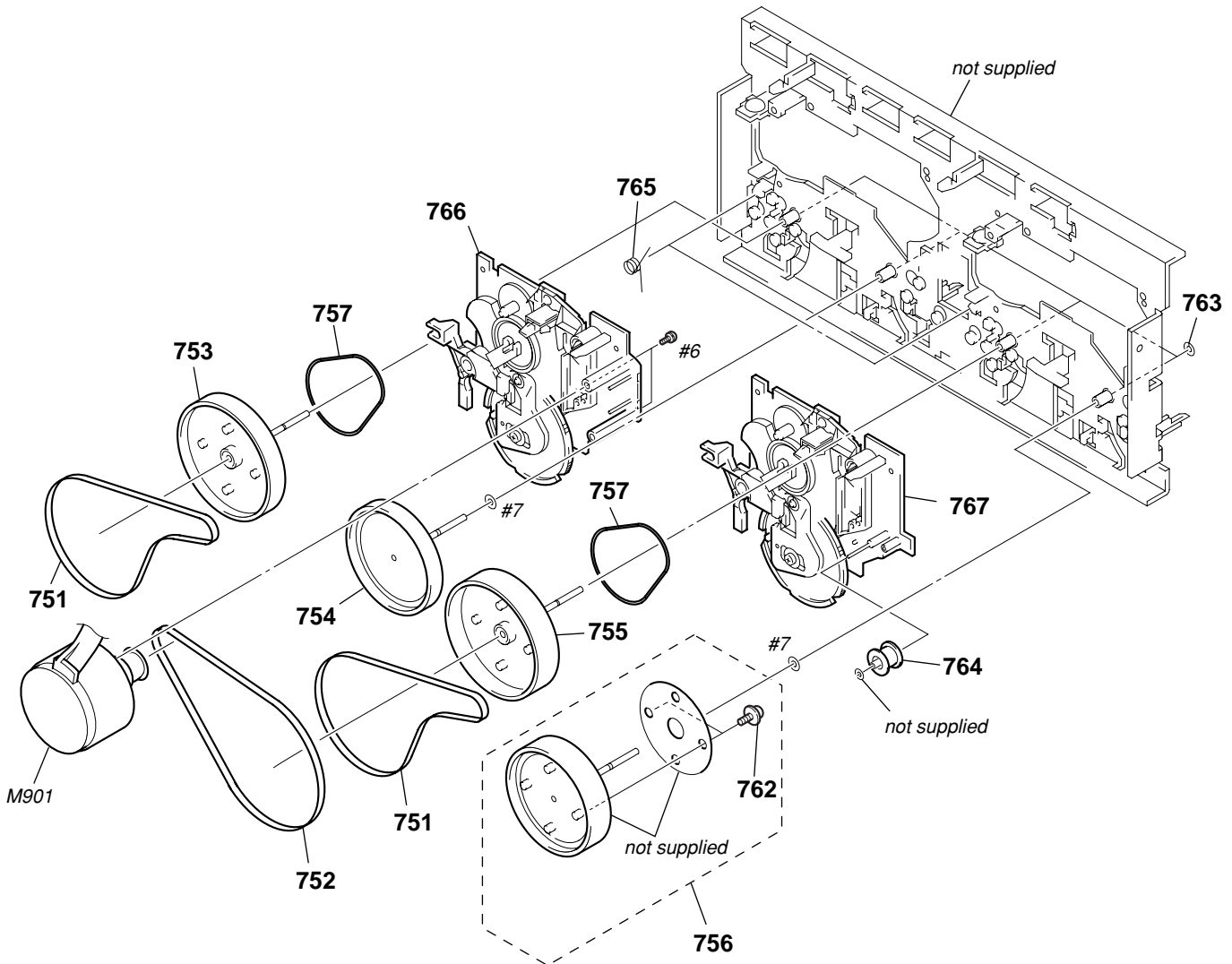
**8-3. TAPE MECHANISM DECK SECTION-1
(TCM-230AWR41/230MWR41)**

*Note: Two different types of tape mechanism are used depending on models.
They maintain compatibility as an entire mechanism even though
there are some different parts are used.*



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
701	3-016-574-11	SPRING (HEAD), TENSION		709	1-676-221-11	HEAD (B) BOARD	
702	3-016-565-01	BASE (PINCH LEVER REV)		710	A-2007-838-A	LEAF SW BOARD, COMPLETE	
703	3-016-564-01	BASE (PINCH LEVER FWD)		713	3-016-566-01	SLIDER, REVERSE	
704	X-3374-156-4	PINCH LEVER (REV) ASSY		HP901	A-2004-771-A	BASE (A) ASSY, HEAD	
705	X-3374-155-4	PINCH LEVER (FWD) ASSY		HRPE901A	A-2004-772-A	BASE (B) ASSY, HEAD	
706	4-229-083-01	SPRING (CASSETTE), LEAF		PM901	1-454-887-32	SOLENOID, PLUNGER	
707	4-227-872-11	SCREW (+PTT 2X4), GROUND POINT		PM902	1-454-887-32	SOLENOID, PLUNGER	
708	1-676-220-11	HEAD (A) BOARD					

8-4. TAPE MECHANISM DECK SECTION-2
(TCM-230AWR41/230MWR41)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
751	3-041-946-01	BELT (CAPSTAN B)		762	3-318-203-62	SCREW (B1.7X4), TAPPING	
752	4-227-239-01	BELT (CAPSTAN C)		763	3-019-208-01	WASHER, STOPPER	
753	X-3378-042-1	FLYWHEEL (B-FWD) ASSY		764	3-040-580-11	PULLEY (TENSION)	
754	X-3378-043-1	FLYWHEEL (B-REV) ASSY		765	4-228-450-11	SPRING (REVERSE SLIDER), TORSION	
755	X-3378-040-1	FLYWHEEL (A-FWD) ASSY		766	A-2004-793-A	CHASSIS (A) ASSY, SUB	
756	X-3378-041-1	FLYWHEEL (A-REV) ASSY		767	A-2004-794-A	CHASSIS (B) ASSY, SUB	
757	3-041-947-01	BELT (FR)		M901	X-3378-241-1	MOTOR ASSY (CAPSTAN)	

SECTION 9
ELECTRICAL PARTS LIST

HEAD (A)

HEAD (B)

LEAF SW

MAIN

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
TH : Thailand 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.

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-676-220-11	HEAD (A) BOARD *****		R1008	1-249-417-11	CARBON 1K 5% 1/4W	
		< CONNECTOR >				< VARIABLE RESISTOR >	
* CN1	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P *****		RV1001	1-241-785-11	RES, ADJ, CARBON 10K	
				RV1002	1-241-785-11	RES, ADJ, CARBON 10K	
						< SWITCH >	
	1-676-221-11	HEAD (B) BOARD *****		S1001	1-570-953-11	SWITCH, PUSH (1 KEY) (A PLAY)	
		< CONNECTOR >		S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (B PLAY)	
CN2	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P *****		S1003	1-771-333-11	SWITCH, LEAF (A.HALF)	
				S1004	1-771-205-11	SWITCH, LEAF (A.120/70)	
				S1005	1-771-205-11	SWITCH, LEAF (REC.A)	
	A-2007-838-A	LEAF SW BOARD, COMPLETE *****		S1006	1-771-333-11	SWITCH, LEAF (B.HALF)	
		< CAPACITOR >		S1008	1-771-205-11	SWITCH, LEAF (B.120/70)	
C1001	1-107-716-11	ELECT 33uF 20% 10V		S1009	1-771-205-11	SWITCH, LEAF (REC.B)	
		< CONNECTOR >				*****	
CN1001	1-568-860-21	SOCKET, CONNECTOR 17P		A-2007-873-A	MAIN BOARD, COMPLETE (EXCEPT TH)		
		< DIODE >		A-4725-734-A	MAIN BOARD, COMPLETE (TH) *****		
D1001	8-719-911-19	DIODE 1SS133T-72		7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		
D1002	8-719-911-19	DIODE 1SS133T-72				< CAPACITOR >	
		< PHOTO INTERRUPTER >		C301	1-126-960-11	ELECT 1uF 20% 50V	
IC1001	8-749-014-38	PHOTO INTERRUPTER SG-264		C302	1-130-479-00	MYLAR 0.0047uF 5% 50V	
IC1002	8-749-014-38	PHOTO INTERRUPTER SG-264		C303	1-136-165-00	FILM 0.1uF 5% 50V	
		< TRANSISTOR >		C304	1-136-165-00	FILM 0.1uF 5% 50V	
Q1001	8-729-029-56	TRANSISTOR DTA144ESA-TP		C305	1-126-959-11	ELECT 0.47uF 20% 50V	
		< RESISTOR >		C306	1-126-960-11	ELECT 1uF 20% 50V	
R907	1-247-879-11	CARBON 100K 5% 1/4W		C307	1-126-960-11	ELECT 1uF 20% 50V	
R1001	1-249-409-11	CARBON 220 5% 1/4W		C308	1-126-964-11	ELECT 10uF 20% 50V	
R1002	1-249-409-11	CARBON 220 5% 1/4W		C309	1-137-194-11	FILM 0.47uF 5% 50V	
R1003	1-249-414-11	CARBON 560 5% 1/4W		C310	1-162-290-31	CERAMIC 470PF 10% 50V	
R1004	1-247-834-11	CARBON 1.3K 5% 1/4W		C311	1-126-964-11	ELECT 10uF 20% 50V	
R1005	1-247-818-11	CARBON 300 5% 1/4W		C312	1-126-959-11	ELECT 0.47uF 20% 50V	
R1006	1-247-864-11	CARBON 24K 5% 1/4W		C313	1-162-294-31	CERAMIC 0.001uF 10% 50V	
R1007	1-247-780-00	CARBON 7.5 5% 1/4W		C314	1-126-964-11	ELECT 10uF 20% 50V	
				C315	1-126-963-11	ELECT 4.7uF 20% 50V	
				C316	1-126-933-11	ELECT 100uF 20% 16V	
				C317	1-104-665-11	ELECT 100uF 20% 10V	
				C318	1-126-964-11	ELECT 10uF 20% 50V	
				C319	1-126-961-11	ELECT 2.2uF 20% 50V	
				C320	1-126-961-11	ELECT 2.2uF 20% 50V	

MAIN

Ref. No.	Part No.	Description	Remark
C321	1-162-289-31	CERAMIC	390PF 10% 50V
C322	1-162-282-31	CERAMIC	100PF 10% 50V
C323	1-136-157-00	FILM	0.022uF 5% 50V
C324	1-126-933-11	ELECT	100uF 20% 16V
C326	1-162-289-31	CERAMIC	390PF 10% 50V
C327	1-104-665-11	ELECT	100uF 20% 10V
C328	1-162-282-31	CERAMIC	100PF 10% 50V
C329	1-136-153-00	FILM	0.01uF 5% 50V
C330	1-126-933-11	ELECT	100uF 20% 16V
C332	1-162-283-31	CERAMIC	120PF 10% 50V
C333	1-162-288-31	CERAMIC	330PF 10% 50V
C334	1-162-209-31	CERAMIC	27PF 5% 50V
C335	1-137-150-11	MYLAR	0.01uF 5% 100V
C336	1-126-961-11	ELECT	2.2uF 20% 50V
C337	1-136-155-00	FILM	0.015uF 5% 50V
C338	1-130-481-00	MYLAR	0.0068uF 5% 50V
C339	1-130-481-00	MYLAR	0.0068uF 5% 50V
C340	1-136-156-00	FILM	0.018uF 5% 50V
C341	1-126-960-11	ELECT	1uF 20% 50V
C342	1-104-660-11	ELECT	47uF 20% 16V
C343	1-164-159-11	CERAMIC	0.1uF 50V
C344	1-164-159-11	CERAMIC	0.1uF 50V
C345	1-164-159-11	CERAMIC	0.1uF 50V
C346	1-164-159-11	CERAMIC	0.1uF 50V
C347	1-126-964-11	ELECT	10uF 20% 50V
C348	1-164-159-11	CERAMIC	0.1uF 50V
C349	1-126-964-11	ELECT	10uF 20% 50V
C350	1-126-964-11	ELECT	10uF 20% 50V
C351	1-126-960-11	ELECT	1uF 20% 50V
C352	1-130-479-00	MYLAR	0.0047uF 5% 50V
C353	1-136-165-00	FILM	0.1uF 5% 50V
C354	1-136-165-00	FILM	0.1uF 5% 50V
C355	1-126-959-11	ELECT	0.47uF 20% 50V
C356	1-126-960-11	ELECT	1uF 20% 50V
C357	1-126-960-11	ELECT	1uF 20% 50V
C358	1-126-964-11	ELECT	10uF 20% 50V
C359	1-137-194-11	FILM	0.47uF 5% 50V
C360	1-162-290-31	CERAMIC	470PF 10% 50V
C362	1-130-479-00	MYLAR	0.0047uF 5% 50V
C363	1-130-479-00	MYLAR	0.0047uF 5% 50V
C367	1-162-294-31	CERAMIC	0.001uF 10% 50V
C368	1-126-964-11	ELECT	10uF 20% 50V
C369	1-126-961-11	ELECT	2.2uF 20% 50V
C370	1-126-961-11	ELECT	2.2uF 20% 50V
C371	1-162-289-31	CERAMIC	390PF 10% 50V
C372	1-162-282-31	CERAMIC	100PF 10% 50V
C373	1-136-157-00	FILM	0.022uF 5% 50V
C374	1-126-933-11	ELECT	100uF 20% 16V
C376	1-162-289-31	CERAMIC	390PF 10% 50V
C377	1-104-665-11	ELECT	100uF 20% 10V
C378	1-162-282-31	CERAMIC	100PF 10% 50V
C379	1-136-153-00	FILM	0.01uF 5% 50V
C380	1-126-933-11	ELECT	100uF 20% 16V
C382	1-162-283-31	CERAMIC	120PF 10% 50V
C383	1-162-288-31	CERAMIC	330PF 10% 50V
C384	1-162-209-31	CERAMIC	27PF 5% 50V
C385	1-104-665-11	ELECT	100uF 20% 10V
C386	1-104-665-11	ELECT	100uF 20% 10V

Ref. No.	Part No.	Description	Remark
C388	1-126-964-11	ELECT	10uF 20% 50V
C389	1-126-935-11	ELECT	470uF 20% 16V
C390	1-126-964-11	ELECT	10uF 20% 50V
C391	1-126-935-11	ELECT	470uF 20% 16V
C394	1-126-964-11	ELECT	10uF 20% 50V
C395	1-126-964-11	ELECT	10uF 20% 50V
C396	1-162-282-31	CERAMIC	100PF 10% 50V
C397	1-162-282-31	CERAMIC	100PF 10% 50V
C398	1-162-282-31	CERAMIC	100PF 10% 50V
C399	1-162-282-31	CERAMIC	100PF 10% 50V
C414	1-126-964-11	ELECT	10uF 20% 50V
C415	1-126-935-11	ELECT	470uF 20% 10V
C417	1-164-159-11	CERAMIC	0.1uF 50V
C418	1-164-159-11	CERAMIC	0.1uF 50V
< CONNECTOR >			
* CN308	1-566-856-11	SOCKET, CONNECTOR 5P	(SYSTEM CONTROL 4)
CN309	1-794-569-11	PIN, CONNECTOR 5P	(SYSTEM CONTROL 5)
CN310	1-580-176-11	PIN, CONNECTOR 10P	(SYSTEM CONTROL 5)
CN311	1-784-778-11	CONNECTOR, FFC 17P	
* CN314	1-568-934-11	PIN, CONNECTOR 7P	
< DIODE >			
D306	8-719-024-99	DIODE 11ES2-NTA2B	(EXCEPT TH)
D306	8-719-200-82	DIODE 11ES2-NTA1B	(TH)
D307	8-719-024-99	DIODE 11ES2-NTA2B	(EXCEPT TH)
D307	8-719-200-82	DIODE 11ES2-NTA1B	(TH)
D308	8-719-024-99	DIODE 11ES2-NTA2B	(EXCEPT TH)
D308	8-719-200-82	DIODE 11ES2-NTA1B	(TH)
D309	8-719-024-99	DIODE 11ES2-NTA2B	(EXCEPT TH)
D309	8-719-200-82	DIODE 11ES2-NTA1B	(TH)
< GROUND TERMINAL >			
* EPT300	1-537-738-21	TERMINAL, EARTH	
* EPT302	1-537-738-21	TERMINAL, EARTH	
< IC >			
IC301	8-759-652-02	IC HA12226F	
IC302	8-759-143-54	IC uPC1330HA	
IC303	8-759-710-59	IC NJM4580D-D	
IC304	8-759-710-59	IC NJM4580D-D	
IC310	6-800-467-01	IC PT8300-S	
IC311	6-800-467-01	IC PT8300-S	
IC320	8-759-394-35	IC BA12T	
IC321	8-759-701-59	IC NJM7809FA	
< COIL >			
L301	1-410-780-11	INDUCTOR	27uH
L302	1-414-193-41	INDUCTOR	220uH
L303	1-414-193-41	INDUCTOR	220uH
L351	1-410-780-11	INDUCTOR	27uH
< TRANSISTOR >			
Q301	8-729-801-93	TRANSISTOR	2SD1387-34-TP
Q302	8-729-142-46	TRANSISTOR	2SC2001TP-LK
Q303	8-729-142-46	TRANSISTOR	2SC2001TP-LK

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q304	8-729-422-57	TRANSISTOR	BN1A4M-TP	R349	1-249-425-11	CARBON 4.7K 5%	1/4W
Q305	8-729-900-80	TRANSISTOR	BA1A4M-TP	R350	1-249-433-11	CARBON 22K 5%	1/4W
Q310	8-729-119-78	TRANSISTOR	2SC2785TP-HFE	R351	1-249-421-11	CARBON 2.2K 5%	1/4W
Q391	8-729-140-04	TRANSISTOR	2SB1116-TP-LK	R354	1-249-427-11	CARBON 6.8K 5%	1/4W
Q392	8-729-900-80	TRANSISTOR	BA1A4M-TP	R355	1-249-429-11	CARBON 10K 5%	1/4W
Q393	8-729-140-04	TRANSISTOR	2SB1116-TP-LK	R356	1-249-430-11	CARBON 12K 5%	1/4W
Q394	8-729-900-80	TRANSISTOR	BA1A4M-TP	R357	1-247-843-11	CARBON 3.3K 5%	1/4W
Q395	8-729-900-80	TRANSISTOR	BA1A4M-TP	R358	1-249-435-11	CARBON 33K 5%	1/4W
Q396	8-729-801-93	TRANSISTOR	2SD1387-34-TP	R359	1-249-417-11	CARBON 1K 5%	1/4W
Q400	8-729-142-46	TRANSISTOR	2SC2001TP-LK	R360	1-249-417-11	CARBON 1K 5%	1/4W
< RESISTOR >				R361	1-249-417-11	CARBON 1K 5%	1/4W
R300	1-249-433-11	CARBON 22K 5%	1/4W	R362	1-249-417-11	CARBON 1K 5%	1/4W
R301	1-249-421-11	CARBON 2.2K 5%	1/4W	R363	1-249-437-11	CARBON 47K 5%	1/4W
R302	1-247-807-31	CARBON 100 5%	1/4W	R364	1-249-417-11	CARBON 1K 5%	1/4W
R303	1-247-807-31	CARBON 100 5%	1/4W	R367	1-249-417-11	CARBON 1K 5%	1/4W
R304	1-249-427-11	CARBON 6.8K 5%	1/4W	R368	1-249-418-11	CARBON 1.2K 5%	1/4W
R305	1-249-429-11	CARBON 10K 5%	1/4W	R369	1-249-413-11	CARBON 470 5%	1/4W
R306	1-249-430-11	CARBON 12K 5%	1/4W	R370	1-247-881-00	CARBON 120K 5%	1/4W
R307	1-247-843-11	CARBON 3.3K 5%	1/4W	R371	1-247-807-31	CARBON 100 5%	1/4W
R308	1-249-433-11	CARBON 22K 5%	1/4W	R372	1-249-426-11	CARBON 5.6K 5%	1/4W
R309	1-247-903-00	CARBON 1M 5%	1/4W	R373	1-247-882-11	CARBON 130K 5%	1/4W
R310	1-247-884-11	CARBON 160K 5%	1/4W	R375	1-247-881-00	CARBON 120K 5%	1/4W
R311	1-249-441-11	CARBON 100K 5%	1/4W	R376	1-249-409-11	CARBON 220 5%	1/4W
R313	1-249-429-11	CARBON 10K 5%	1/4W	R377	1-249-433-11	CARBON 22K 5%	1/4W
R314	1-249-435-11	CARBON 33K 5%	1/4W	R378	1-249-430-11	CARBON 12K 5%	1/4W
R315	1-249-429-11	CARBON 10K 5%	1/4W	R379	1-247-889-00	CARBON 270K 5%	1/4W
R316	1-249-429-11	CARBON 10K 5%	1/4W	R386	1-249-410-11	CARBON 270 5%	1/4W
R317	1-247-893-11	CARBON 390K 5%	1/4W	R402	1-249-419-11	CARBON 1.5K 5%	1/4W
R318	1-249-418-11	CARBON 1.2K 5%	1/4W	R403	1-249-416-11	CARBON 820 5%	1/4W
R319	1-249-425-11	CARBON 4.7K 5%	1/4W	R404	1-249-419-11	CARBON 1.5K 5%	1/4W
R321	1-249-430-11	CARBON 12K 5%	1/4W	R405	1-249-416-11	CARBON 820 5%	1/4W
R322	1-249-437-11	CARBON 47K 5%	1/4W	R406	1-247-807-31	CARBON 100 5%	1/4W
R323	1-249-425-11	CARBON 4.7K 5%	1/4W	R407	1-247-807-31	CARBON 100 5%	1/4W
R324	1-249-429-11	CARBON 10K 5%	1/4W	R408	1-247-807-31	CARBON 100 5%	1/4W
R325	1-249-437-11	CARBON 47K 5%	1/4W	R409	1-247-807-31	CARBON 100 5%	1/4W
R327	1-249-425-11	CARBON 4.7K 5%	1/4W	R412	1-247-807-31	CARBON 100 5%	1/4W
R328	1-249-437-11	CARBON 47K 5%	1/4W	R413	1-247-807-31	CARBON 100 5%	1/4W
R330	1-247-881-00	CARBON 120K 5%	1/4W	R414	1-247-807-31	CARBON 100 5%	1/4W
R331	1-247-807-31	CARBON 100 5%	1/4W	R415	1-247-807-31	CARBON 100 5%	1/4W
R332	1-249-426-11	CARBON 5.6K 5%	1/4W	R416	1-247-807-31	CARBON 100 5%	1/4W
R333	1-247-882-11	CARBON 130K 5%	1/4W	R417	1-247-807-31	CARBON 100 5%	1/4W
R334	1-249-409-11	CARBON 220 5%	1/4W	R418	1-249-414-11	CARBON 560 5%	1/4W
R335	1-247-881-00	CARBON 120K 5%	1/4W	R419	1-249-417-11	CARBON 1K 5%	1/4W
R336	1-249-409-11	CARBON 220 5%	1/4W	R420	1-249-409-11	CARBON 220 5%	1/4W
R337	1-249-433-11	CARBON 22K 5%	1/4W	R421	1-249-409-11	CARBON 220 5%	1/4W
R338	1-249-430-11	CARBON 12K 5%	1/4W	R422	1-249-409-11	CARBON 220 5%	1/4W
R339	1-247-889-00	CARBON 270K 5%	1/4W	R423	1-249-409-11	CARBON 220 5%	1/4W
R340	1-249-409-11	CARBON 220 5%	1/4W	< VARIABLE RESISTOR >			
R341	1-249-430-11	CARBON 12K 5%	1/4W	RV301	1-241-764-11	RES, ADJ, CARBON 10K	
△ R342	1-212-851-00	FUSIBLE 5.6 5%	1/4W F	RV302	1-241-762-11	RES, ADJ, CARBON 2.2K	
△ R343	1-212-851-00	FUSIBLE 5.6 5%	1/4W F	RV303	1-241-762-11	RES, ADJ, CARBON 2.2K	
R344	1-249-432-11	CARBON 18K 5%	1/4W	RV304	1-241-768-11	RES, ADJ, CARBON 220K	
R345	1-249-432-11	CARBON 18K 5%	1/4W	RV351	1-241-764-11	RES, ADJ, CARBON 10K	
R346	1-249-426-11	CARBON 5.6K 5%	1/4W	RV354	1-241-768-11	RES, ADJ, CARBON 220K	
R347	1-249-433-11	CARBON 22K 5%	1/4W				
R348	1-249-409-11	CARBON 220 5%	1/4W				

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

MEMO

