

HCD-ED1

SERVICE MANUAL

Ver 1.1 2001.06
With SUPPLEMENT-1
(9-922-706-81)



US Model
Canadian Model
AEP Model
UK Model
E Model

HCD-ED1 is the tuner, deck, CD and amplifier section in CMT-ED1.

This stereo system is equipped with the Dolby* B-type noise reduction system.

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

CD SECTION	Model Name Using Similar Mechanism	NEW
	Base Unit Type	BU17-BD19
	Optical Pick-up Type	KSS-213BA/S-N
TAPE DECK SECTION	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CMAL2Z076A

SPECIFICATIONS

For the U.S. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 4 ohm loads, both channels driven, from 90 – 15,000 Hz; rated 15 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section

Continuous RMS power output

Canadian model : 15 + 15 watts
(4 ohms at 1 kHz,
0.9% THD)

US, Hong Kong, Singapore, Malaysia models :

15+15 watts
(4 ohms at 1kHz,
5% THD)

AEP, UK, East European, CIS models :

17 + 17 watts
(4 ohms at 1 kHz,
10% THD)

Music power output (AEP, UK, East European, CIS models)

22 + 22 watts

Peak music power output (EXCEPT US, Canadian, AEP, UK, East European, CIS models)
280 watts

DIN power output (AEP, UK, East European, CIS models)

15 + 15 watts
(6 ohms at 1 kHz, DIN)

Inputs

MD IN (phono jacks) : sensitivity 450 mV,
impedance 47 kilohms

Outputs

MD OUT (phono jacks) : sensitivity 250 mV,
impedance 1 kilohm

9-922-706-12

2001F0200-1

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Sony Corporation

Home Audio Company

Shinagawa Tec Service Manual Production Group

PHONES (stereo phone jack) :

accepts headphones of 8 ohms or more
active speaker system, 4 ohms

CD player section

System

Compact disc and digital audio system

Laser

Semiconductor laser
($\lambda=780$ nm)

Laser output

Emission duration: continuous

Max. 44.6 μ W*

*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Wavelength

780 – 790 nm

Frequency response

2 Hz – 20 kHz (± 0.5 dB)

AEP, UK, East European, CIS models :

More than 90 dB

Signal-to-noise ratio

AEP, UK, East European, CIS models :

More than 90 dB

Dynamic range

Tape player section

Recording system

4-track 2-channel stereo

Frequency response (DOLBY NR OFF)

50 – 13,000 Hz (± 3 dB),
using a Sony TYPE I cassette

50 – 14,000 Hz (± 3 dB),
using a Sony TYPE II cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0 MHz
Antenna FM wire antenna
Antenna terminals 75 ohm unbalanced
Intermediate frequency 10.7 MHz

AM tuner section

Tuning range
US, Canadian models: 530–1,710 kHz
(with the tuning interval set at 10 kHz)
531–1,710 kHz
(with the tuning interval set at 9 kHz)
AEP, UK, East European, CIS models: 531–1,602 kHz
(with the tuning interval set at 9 kHz)
530–1,710 kHz
(with the tuning interval set at 10 kHz)
531–1,602 kHz
(with the tuning interval set at 9 kHz)
AM bar antenna, External
Antenna AM bar antenna, External antenna terminal
Intermediate frequency 450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

SONY®

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General

Power requirements	US, Canadian models: 120 V AC, 60 Hz AEP, UK, East European, CIS models : 230 V AC, 50/60 Hz Other models: 110 - 120 V or 220 - 240 V AC, 50/ 60 Hz adjustable with voltage selector
Power consumption	60 watts
Dimensions (w/h/d)	Approx. 127 × 212 × 184 mm (5 × 8 1/8 × 7 1/4 in) incl. projecting parts and controls
Mass	Approx. 3.6 kg (7 lb 15 oz)
Design and specifications are subject to change without notice.	

CAUTION

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

Notes on chip component replacement

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

Flexible Circuit Board Repairing

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

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

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

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

CAUTION	: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNNGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE.
VARNING	: LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

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

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

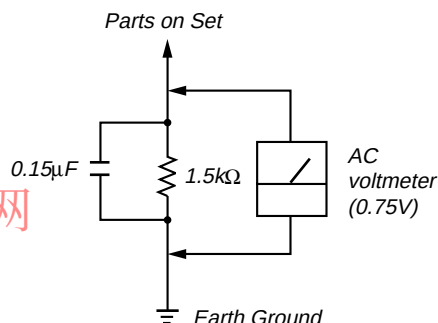


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

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

SERVICING NOTE

<http://jdwxzlw.5d6d.com/?fromuser=森林>

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

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

NOTES ON LASER DIODE EMISSION CHECK

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

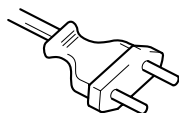
To change the AM tuning interval

The AM tuning interval is factory-preset to 9 kHz (10 kHz in some areas). To change the AM tuning interval to 10 kHz (or 9 kHz), tune in any AM station first, then turn off the power. While holding down TUNING +, turn the power back on. When you change the interval, the AM preset stations will be erased. To reset the interval, repeat the same procedure.

MODEL IDENTIFICATION

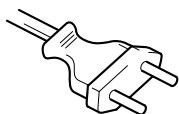
— AC POWER SUPPLY CODE —

AEP, East European, CIS model



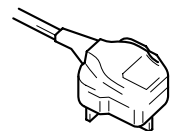
(Without voltage selector)

Singapore, Malaysia,
Hong Kong model



(With voltage selector)

UK model



US, Canadian model

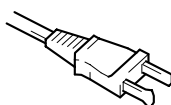


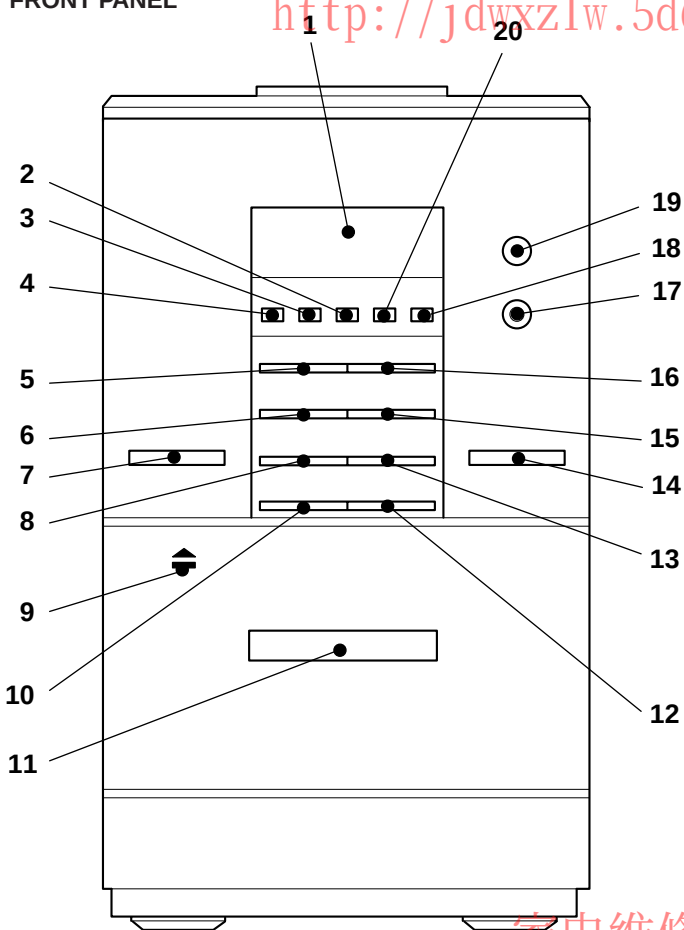
TABLE OF CONTENTS

1. GENERAL	4
2. DISASSEMBLY	
2-1. CD Door, CD Base and Base Unit	6
2-2. Rear Panel	6
2-3. Bottom Cover and Front Panel Block	7
2-4. Door Cover Assy and Mechanical Deck (Cassette)	7
3. MECHANICAL ADJUSTMENTS	8
4. ELECTRICAL ADJUSTMENTS	8
5. DIAGRAMS	
5-1. Circuit Boards Location	13
5-2. IC Pin Function	14
5-3. Schematic Diagram — CD Section —	16
5-4. Printed Wiring Board — CD Section —	19
5-5. Schematic Diagram — Input/Output Section —	21
5-6. Printed Wiring Board — Input/Output Section —	23
5-7. Printed Wiring Board — Deck Section —	25
5-8. Schematic Diagram — Deck Section —	27
5-9. Schematic Diagram — Display Section —	30
5-10. Printed Wiring Board — Display Section —	33
5-11. Schematic Diagram — Power Section —	36
5-12. Printed Wiring Board — Power Section —	39
5-13. IC Block Diagrams	41
6. EXPLODED VIEWS	
6-1. CD Section	45
6-2. Rear Panel Section	46
6-3. Front Panel Section	47
6-4. Mechanism Deck Section (Cassette)	48
6-5. Base Unit Section (BU17-BD19)	49
7. ELECTRICAL PARTS LIST	50

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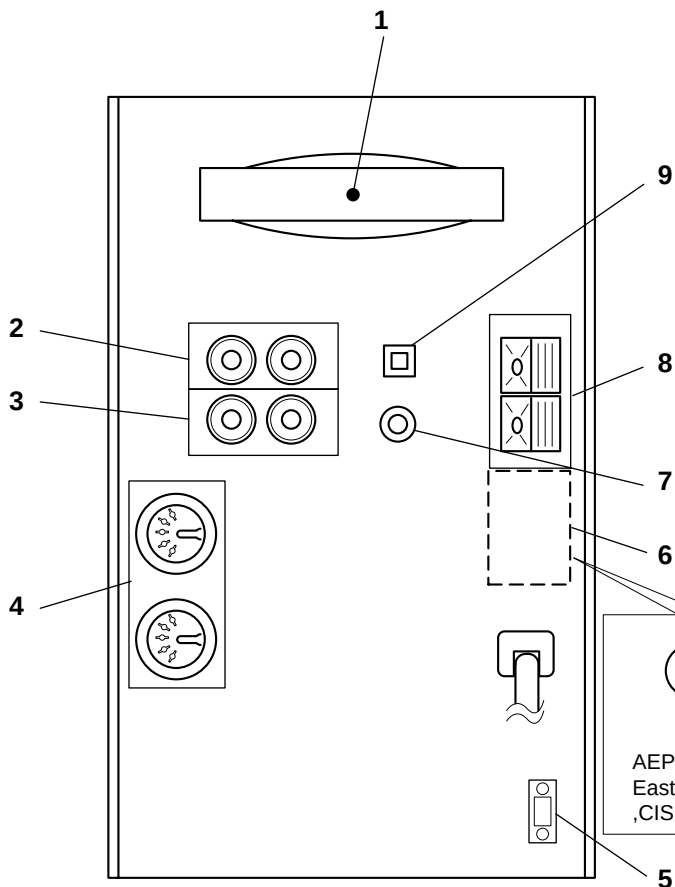
SECTION 1 GENERAL

Location of Parts and Controls FRONT PANEL

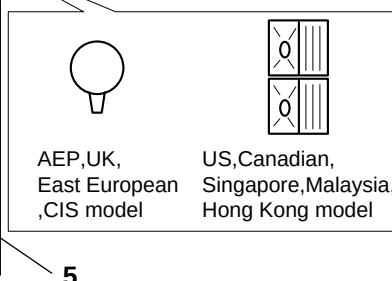


- 1 Display window
- 2 DBFB lamp
- 3 CD SYNC lamp
- 4 REC lamp
- 5 < button
- 6 BAND FM button
- 7 POWER button
- 8 TUNING ≠ <<- button
- 9 ≡ button (Push open)
- 10 VOLUME - button
- 11 DECK Lid
- 12 VOLUME + button
- 13 TUNING >>± + button
- 14 FUNCTION button
- 15 BAND AM button
- 16 > button
- 17 SOUND MODE button
- 18 WIDE lamp
- 19 Remote sensor
- 20 NEAR F. lamp

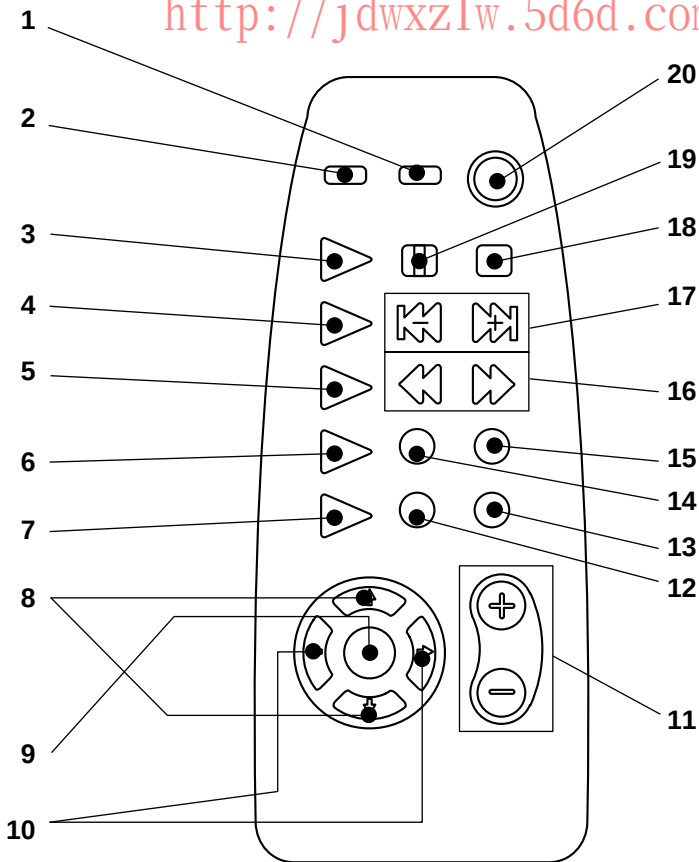
REAR PANEL



- 1 AM ANTENNA
- 2 MD IN jacks
- 3 MD OUT jacks
- 4 SPEAKER jacks
- 5 VOLTAGE SELECT switch (Malaysia, Singapore, Hong Kong models only)
- 6 FM ANTENNA terminal
- 7 PHONES jack
- 8 AM ANTENNA terminals
- 9 OPTICAL terminal



REMOTE

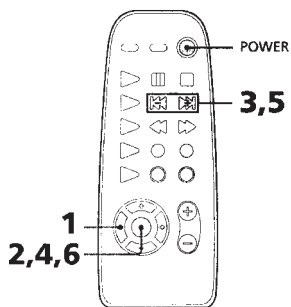


- 1 DISPLAY button
- 2 DBFB button
- 3 CD button
- 4 TUNER/BAND button
- 5 TAPE button
- 6 DIR MODE button
- 7 CD REPEAT button
- 8 / buttons
- 9 ON/OFF button
- 10 / buttons
- 11 VOL (+/-) button
- 12 STEREO/MONO button
- 13 TUNING/PLAY MODE button
- 14 DOLBY NR button
- 15 REC button
- 16 / wind/fast forward buttons
- 17 / MS* buttons
- 18 stop button
- 19 pause button
- 20 POWER switch

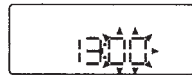
*AMS=Auto Music Sensor

Step 2: Setting the time

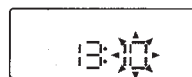
You must set the time before using the timer functions.



- 4 Press ENTER.
The minute indication flashes.



- 5 Press <</>> to set the minutes.

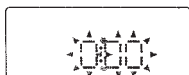


- 6 Press ENTER.
The clock starts working.

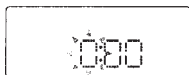
Tip
If you make a mistake, start over from step 1.

This section is extracted from instruction manual.

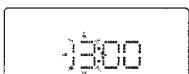
- 1 Press TIMER SET.
The clock of the display begins flashes.
When "DAILY" or "TIMER REC" appears, press <</>> repeatedly so that it disappears.



- 2 Press ENTER.
The hour indication flashes.



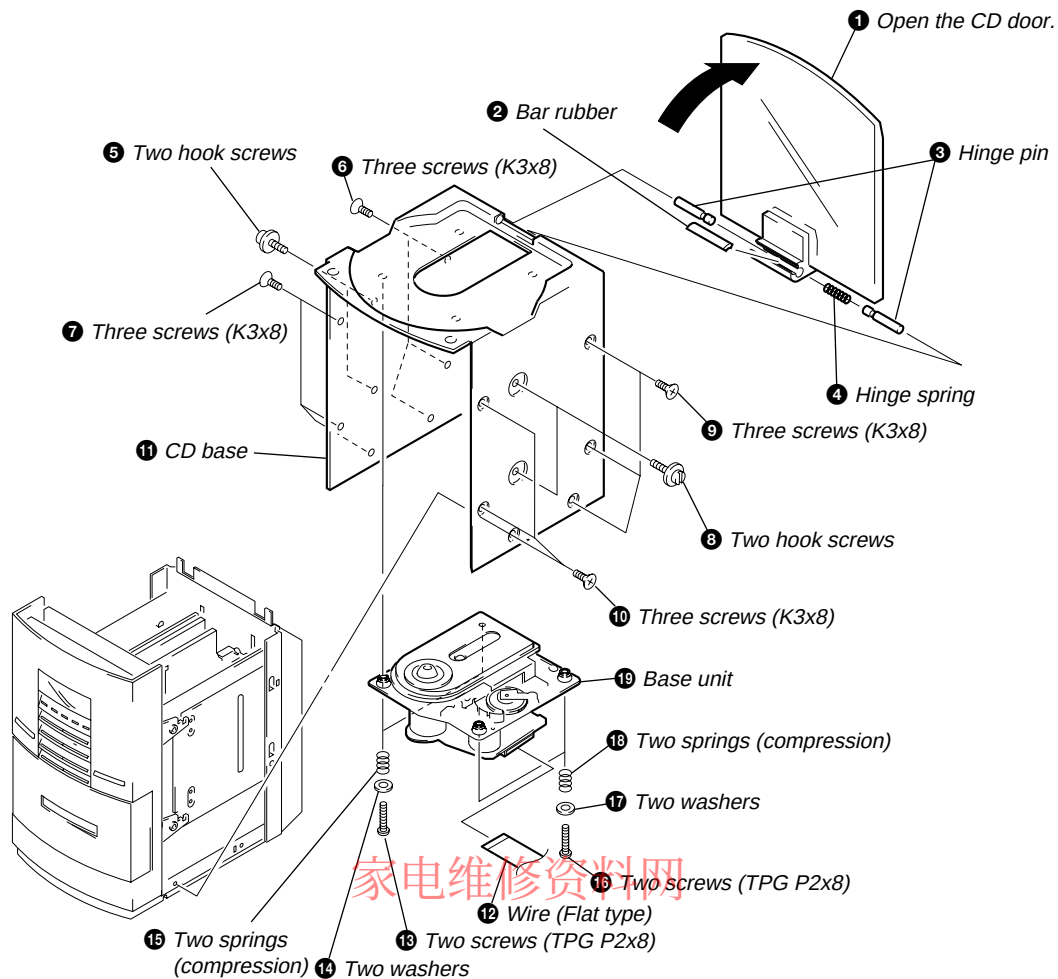
- 3 Press <</>> to set the hour.
The clock uses the 24-hour system.



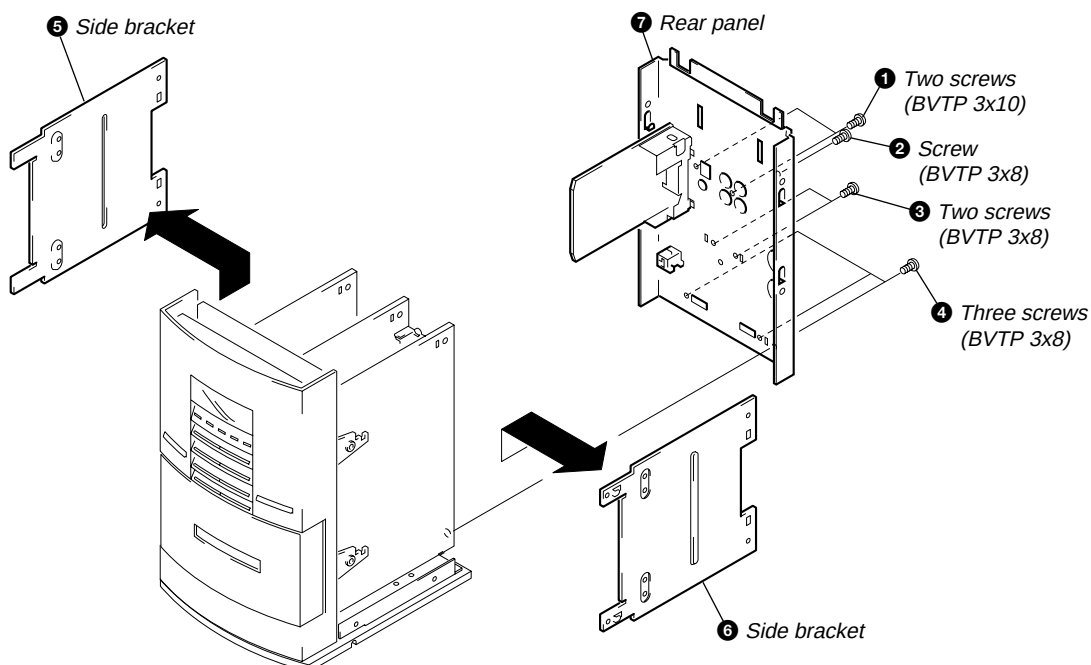
SECTION 2 DISASSEMBLY

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

2-1. CD DOOR, CD BASE AND BASE UNIT

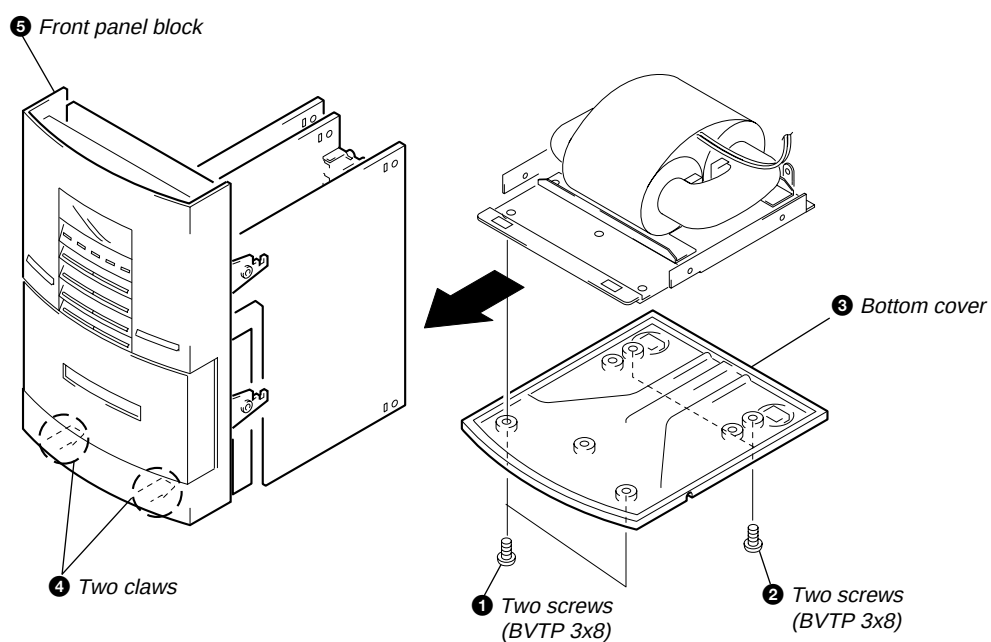


2-2. REAR PANEL



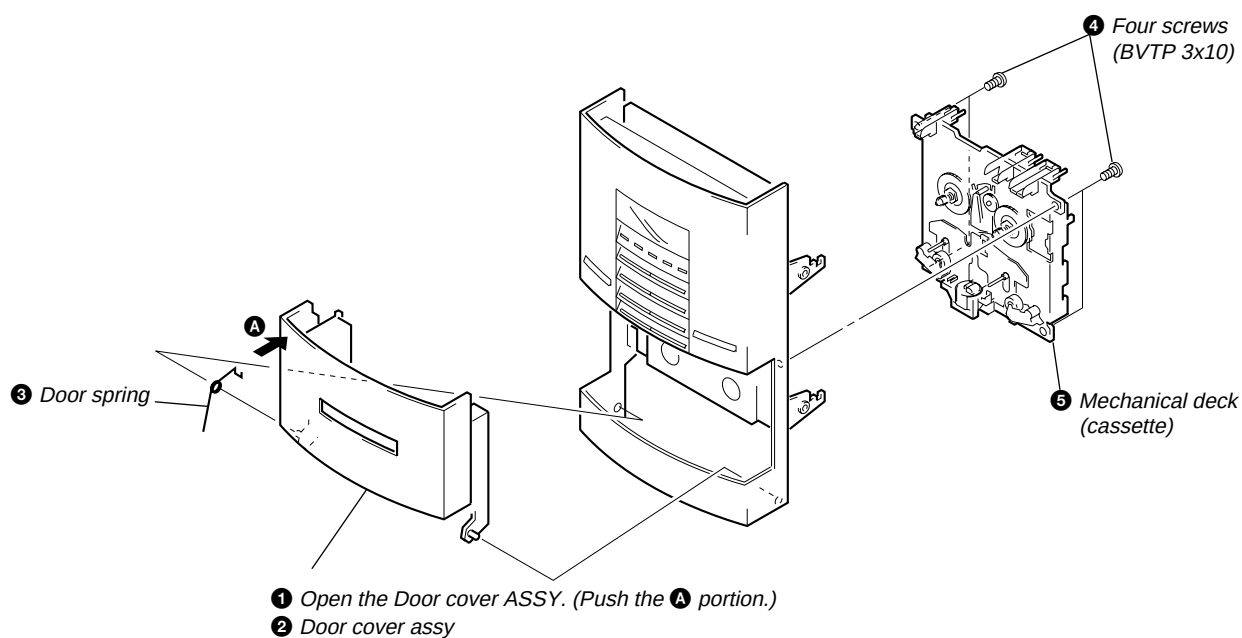
2-3. BOTTOM COVER AND FRONT PANEL BLOCK

<http://jdwxzlw.5d6d.com/?fromuser=森林>



2-4. DOOR COVER ASSY AND MECHANICAL DECK (CASSETTE)

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SECTION 3 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

Torque	Torque meter	Meter reading
FWD	CQ-102C	28 to 71g • cm (0.39 – 0.99 oz • inch)
FWD back tension	CQ-102C	1 to 7g • cm (0.01 – 0.10 oz • inch)
REV	CQ-102RC	28 to 71g • cm (0.39 – 0.99 oz • inch)
REV back tension	CQ-102RC	1 to 7g • cm (0.01 – 0.10 oz • inch)
FF/REW	CQ-201B	56 to 122g • cm (0.78 – 1.69 oz • inch)
FWD tension	CQ-403A	100g or more (3.53 oz or more)
REV tension	CQ-403R	100g or more (3.53 oz or more)

SECTION 4 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775V

1. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
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.

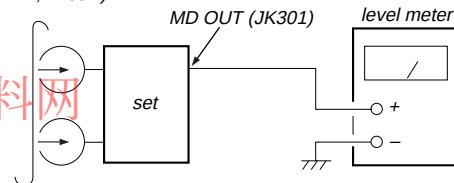
Tape	Signal	Used for
P-4-A100	10 kHz, -10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment

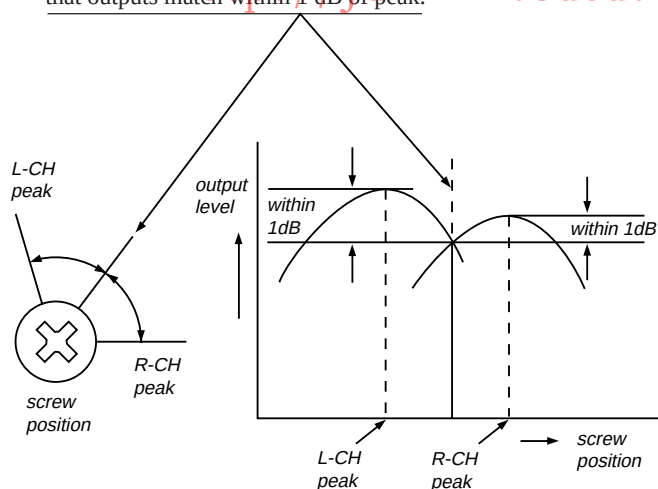
Procedure :

1. Mode : Playback

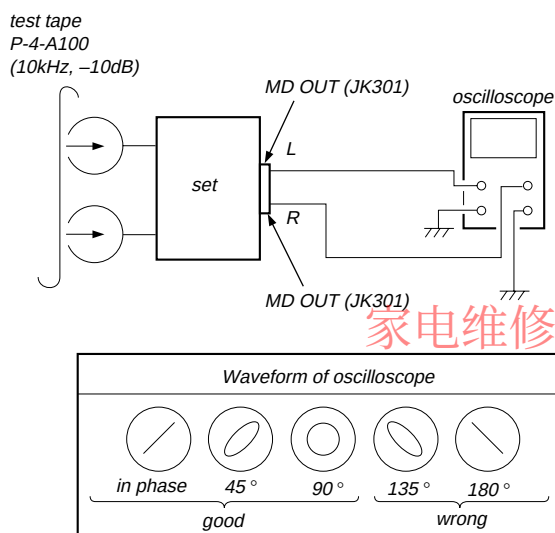
test tape
P-4-A100
(10kHz, -10dB)



- 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 1 dB of peak.

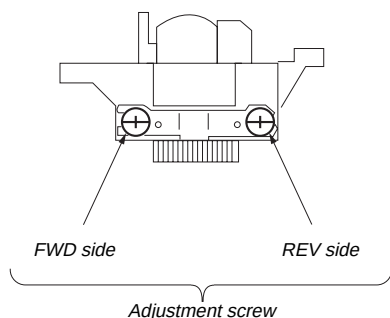


- Mode : Playback



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

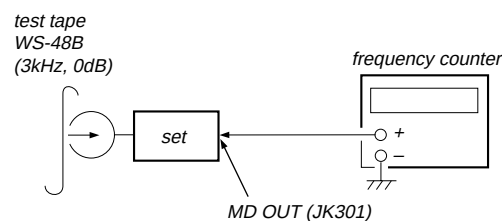
Adjustment Location :



Tape Speed Adjustment

Procedure :

Mode : Playback



- Insert the WS-48B into the deck, and playback.
- Adjust the VR770/RELAY board so that the frequency counter reading becomes 3000 ± 90 Hz.

Adjustment Location : RELAY board

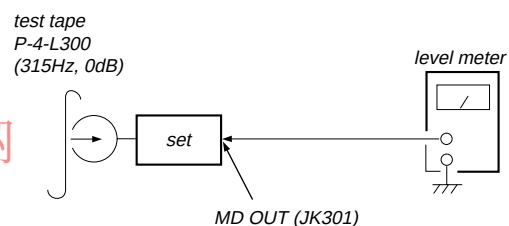
Sample Value of Wow and flutter

W.RMS (JIS) less than 0.3%
(test tape: WS-48B)

Playback Level Adjustment

Procedure :

Mode : Playback



Deck is VR703 (L-CH) and VR704 (R-CH)
so that adjustment within the following adjustment level.

Adjustment level :

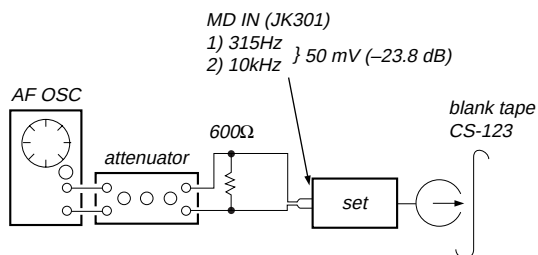
Playback level: 301.5 to 338.3 mV (-8.2 to -7.2 dB) level difference between the channels: within ± 0.5 dB

Adjustment Location : TAPE PREAMP board

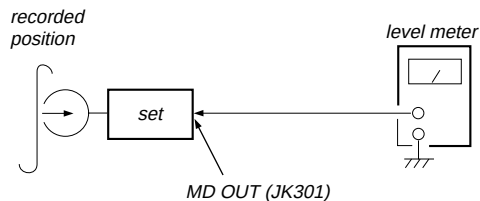
Record Bias Adjustment

Procedure :

1. Mode : Record



2. Mode : Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the VR701 (L-CH) and VR702 (R-CH) on the TAPE PREAMP board to repeat steps 1 and 2.

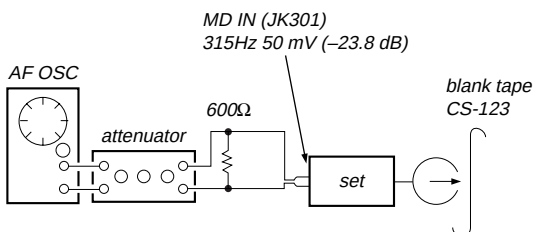
Adjustment level : Playback output of 10kHz level difference against 315Hz reference should be ± 0.5 dB.

Adjustment Location : TAPE PREAMP board

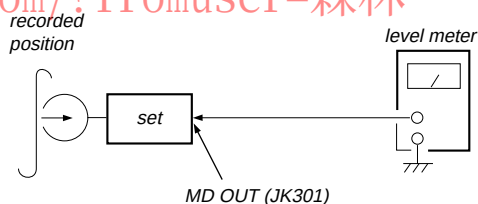
Record Level Adjustment

Procedure :

1. Mode: Record



2. Mode: Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the VR705 (L-CH) and VR706 (R-CH) on the TAPE PREAMP board to repeat steps 1 and 2.

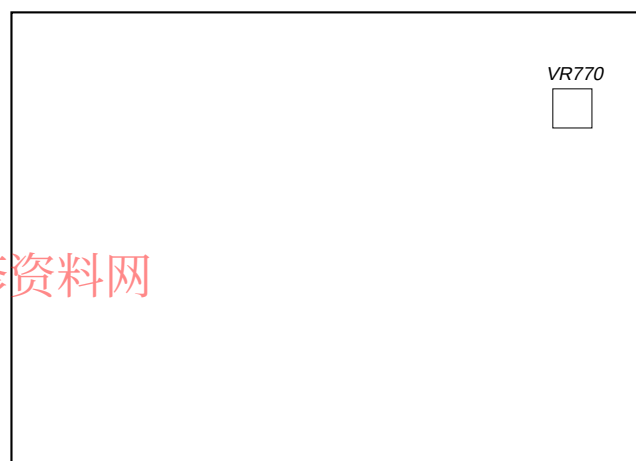
Adjustment level :

Playback level : 47.2 to 53.0 mV (-24.3 to -23.3 dB)

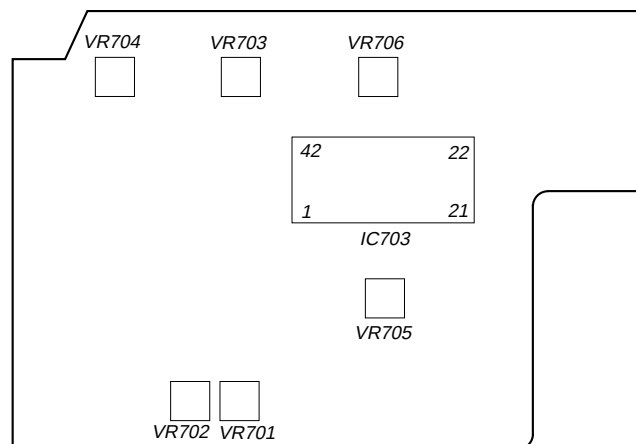
Adjustment Location : TAPE PREAMP board

Adjustment Location

[RELAY BOARD] (Component Side)



[TAPE PREAMP BOARD] (Component Side)

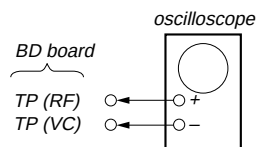


CD SECTION

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than $10M\Omega$ impedance.
4. Clean the object lens by an applicator with lens cleaning liquid when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

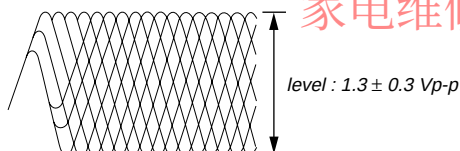
Focus Bias Adjustment



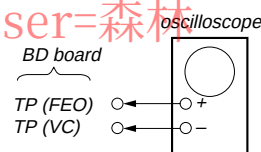
Procedure:

1. Connect oscilloscope to test point TP (RF).
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear.
(Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

- RF signal
VOLT/DIV: 200 mV
TIME/DIV: 500 nS



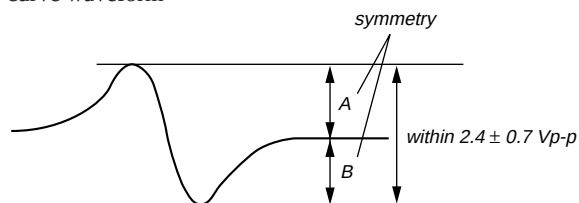
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FEO) and Ground by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

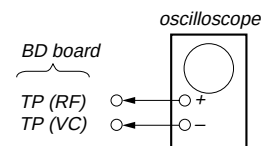
S-curve waveform



6. After check, remove the lead wire connected in step 2.

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

RF Level Check

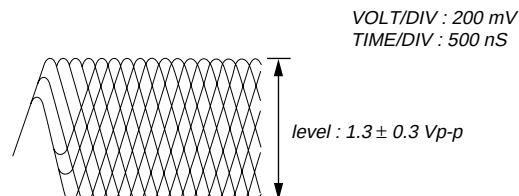


Procedure :

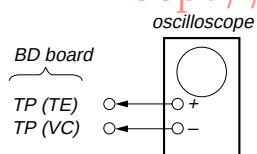
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

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

RF signal waveform



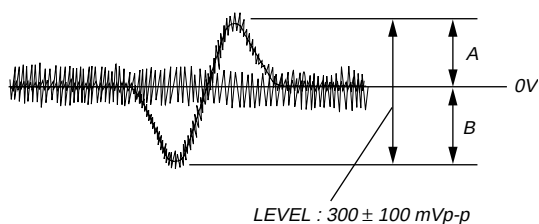
E-F Balance (1 Track Jump) Check (Without remote commander)



Procedure :

1. Connect oscilloscope to test point TP (TE) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "III (Pause)" button. (Becomes the 1 track jump mode)
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

1 track jump waveform



Specified level: • $\frac{A - B}{2(A + B)} \times 100 = \text{less than } \pm 7\%$

• $A + B = 300 \pm 100 \text{ mVp-p}$

6. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

This gain has a margin, so even if it is slightly off.

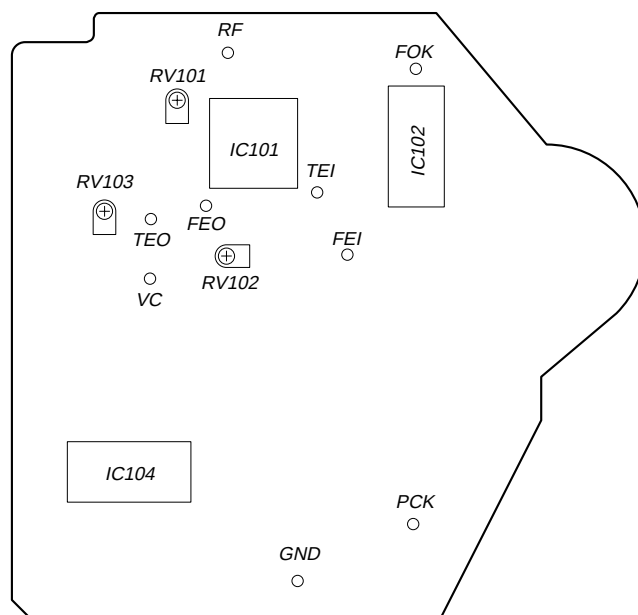
There is no problem.

Therefore, do not perform this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location:

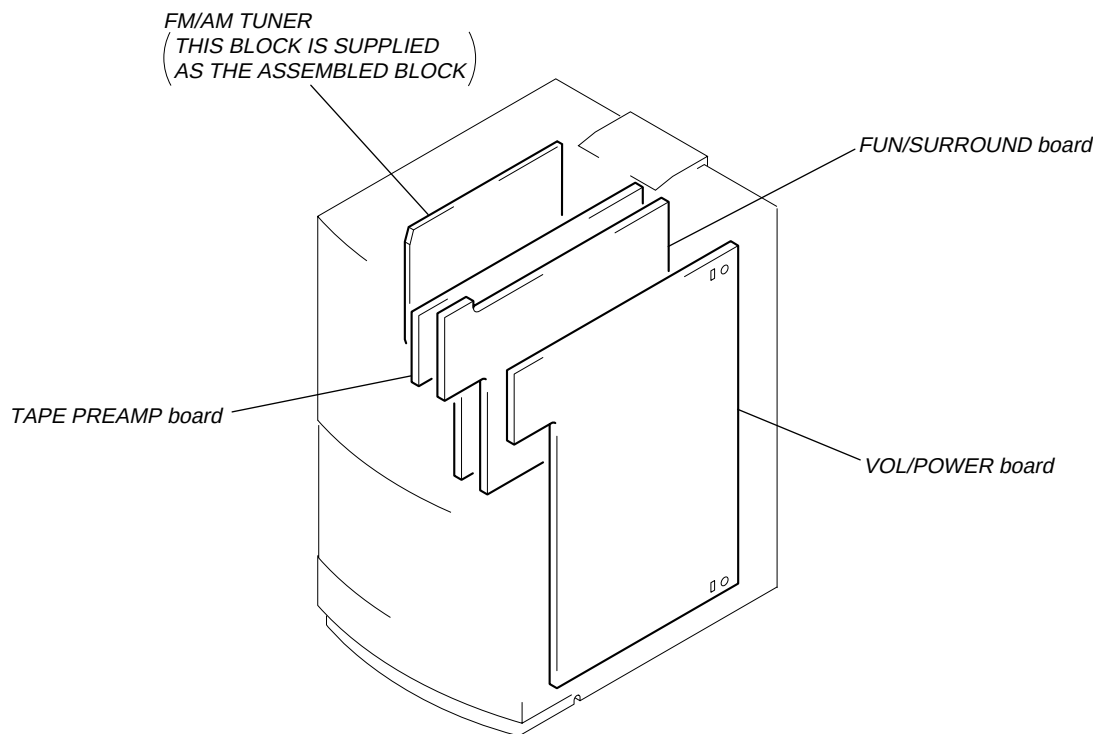
[BD BOARD] — Component Side —



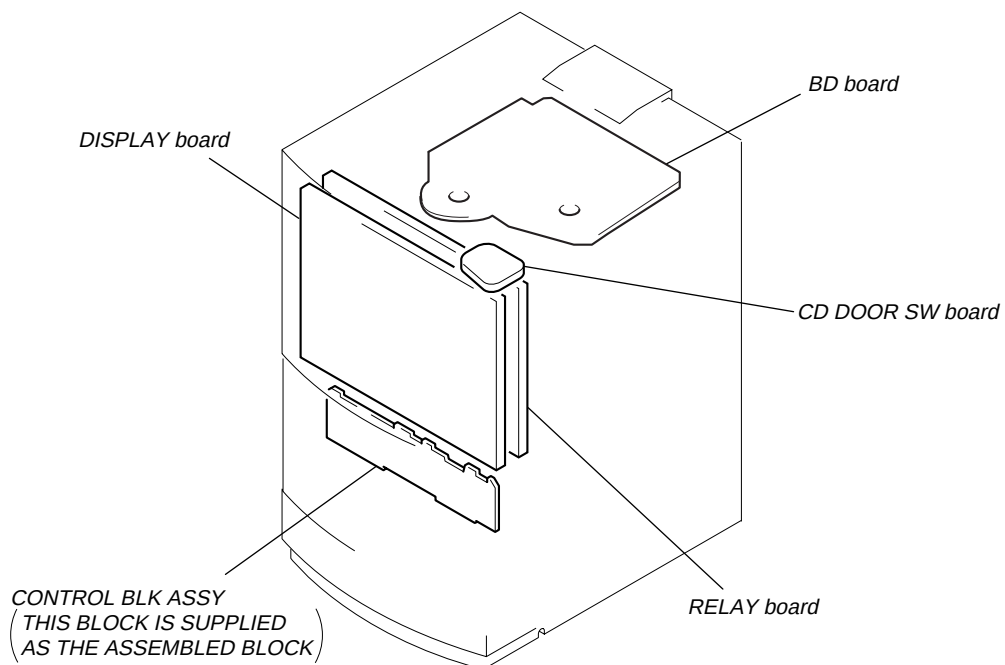
SECTION 5 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION

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5-2. IC PIN FUNCTION

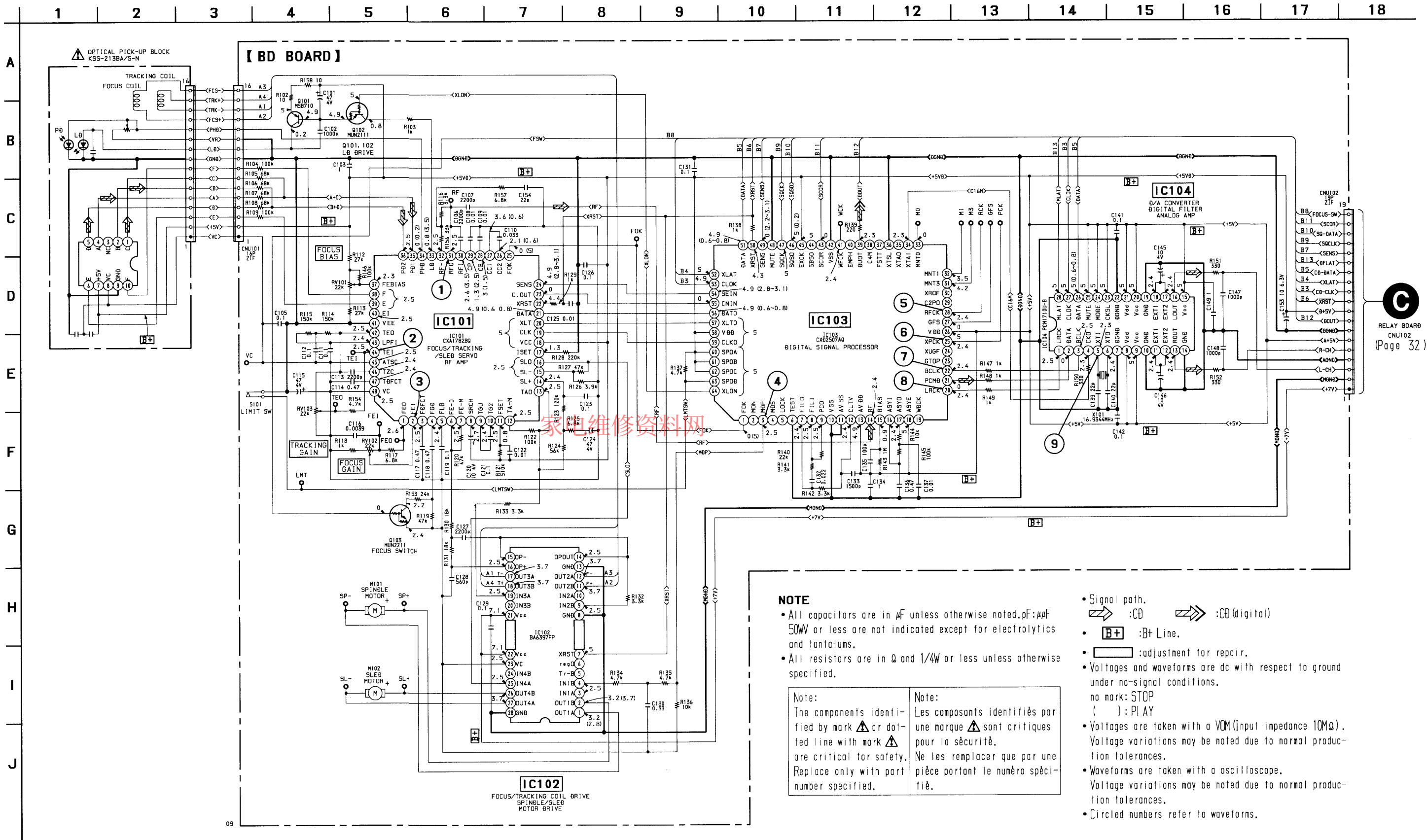
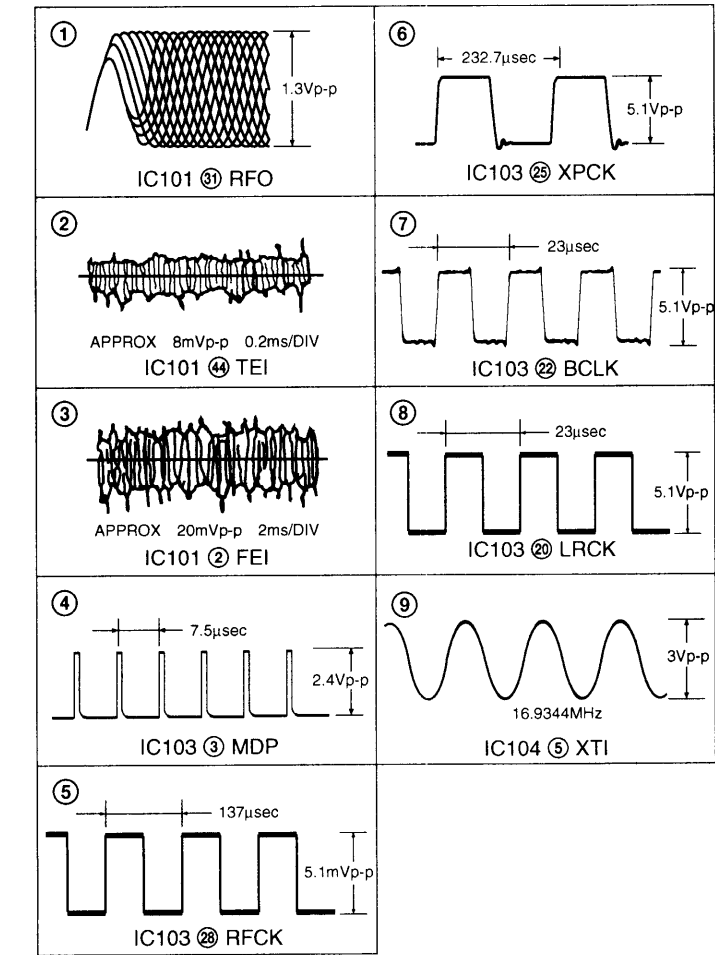
• IC201 MASTER CONTROL (TC9613)

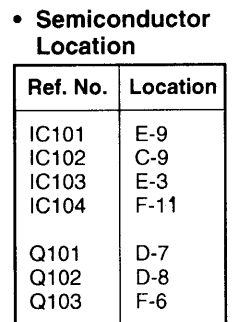
Pin No.	Pin Name	I/O	Function
1	GND	—	Ground
2	XOUT	O	8 MHz Oscillator output
3	XIN	I	8 MHz Oscillator input
4	RESET	I	CPU reset input
5	TUNED	I	Station detector input
6	STEREO	I	Stereo signal input
7	TEST	I	Test pin (Connected to ground)
8	POWDEC	I	Power down detect input
9	REMOTE	I	Remote signal input
10	PLL CE	O	Chip enable output
11	PLL CLK	O	Clock output
12	PLL DATAI	I	Data input
13	PLL DATAO	O	Data output
14	SERVO CK	O	Servo clock output
15	SUB Q	I	Servo subq data & status input
16	DATA	O	Servo command data output
17	MUTE D	O	Digital mute control output
18	CDPOWER	O	CD power supply output
19	CLOSESW	I	Top loading close switch input
20	FSW	O	Servo focus down output
21	SENSE	I	Servo status SENSE input
22	MLAT	O	D/A MLAT output
23	XLAT	O	Servo command latch output
24	XRST	O	Servo chip reset output
25	SCOR	I	Servo SUBQ sync input
26	PLAYSW	I	Tape play switch input
27	MTRSNS	I	Tape motor reel sense input
28	TAPEIN	I	Tape in switch input
29	MOTOR	O	Tape control output
30	SOL	O	Tape control output
31	AMS	I	Tape music search input
32	PLYMUTE	O	Tape play back mute signal output
33	REC/PB	O	Tape control output
34	DOLBYNR	O	Tape control output
35	RECMUTE	O	Tape recording mute signal output
36	BIAS	O	Tape control output
37	REC LED	O	Record LED output
38	CD SYNC	O	CD SYNC LED output
39	WIDE	O	Wide LED output
40	KEYIO 1	I	AD key input (16 keys)
41	KEYIO 2	I	AD key input (16 keys)
42	BANDAREA	—	Band area option (Not used)
43	N.C	—	Not used
44	LOUDSEL	I	Loudness initial select input
45	N.C	—	Not used
46	FRECSW	I	Tape forward record switch input
47	RRECSW	I	Tape reverse record switch input
48	AREF	I	A/D convert reference input (+5V)
49	AGND	I	A/D convert Input ground input
50	GND	—	Ground

Pin No.	Pin Name	I/O	Function
51	VDD	—	+5V power supply
52	NARROW	O	Narrow LED output
53	NORMAL	O	Normal LED output
54	LOUD	O	Loudness on/off control output
55	DBFB	—	Not used (Connected to ground)
56	VOL CLK	O	Volume control clock output
57	VOL DATA	O	Volume control data output
58	VOL STB	O	Volume control strobe output
59	FUNC A	O	TAPE/TUNER control signal output (00: TAPE/01: TUNER)
60	FUNC B	O	CD/MD control signal output (10: CD/11: MD)
61	MDMUTE	O	MD/REC ON mute output
62	POWER	O	System power output
63	MUTE A	O	Audio mute control output
64-91	SEG27-SEG0	O	LCD segment output
92	COM3	O	LCD common 3 output
93	COM2	O	LCD common 2 output
94	COM1	O	LCD common 1 output
95	COM0	O	LCD common 0 output
96	VLC	O	LCD drive power supply output
97	N.C	—	Not used (Connected to ground)
98	N.C	—	Not used (Connected to ground)
99	N.C	—	Not used (Connected to ground)
100	VDD	—	+5V power supply

5-3. SCHEMATIC DIAGRAM — CD SECTION —
• See page 41-43 for IC Block Diagrams.

• Waveforms



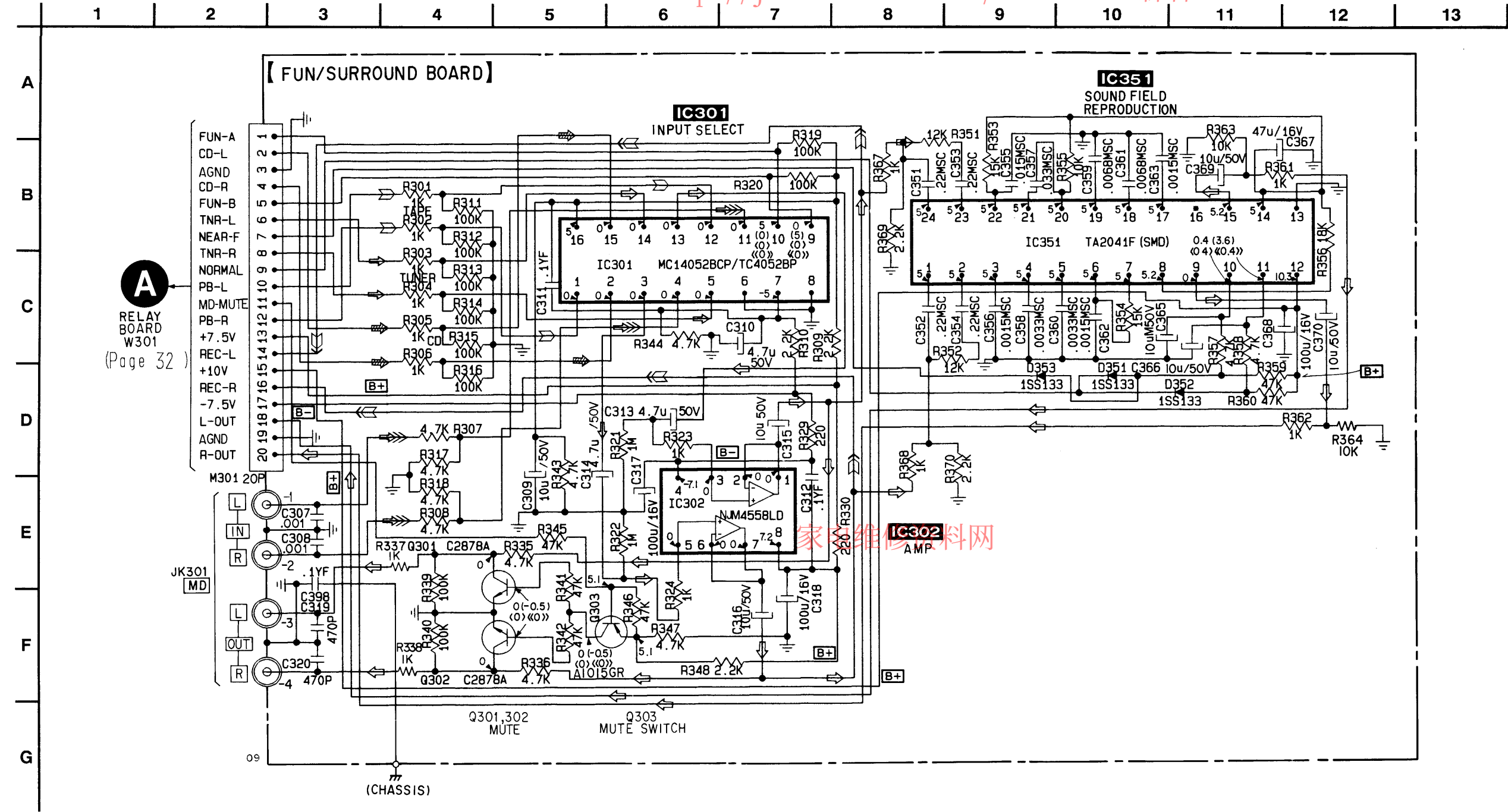


Note:

- : parts extracted from the component side.
- : Through hole.
-  : Pattern from the side which enable seeing.
(The other layer's patterns are not indicated.)

5-5. SCHEMATIC DIAGRAM — INPUT/OUTPUT SECTION —
• See page 43, 44 for IC Block Diagrams.

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Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXX μF in the constant display of capacitors.
- The name if transistor type is simplified as below:
2SA1015GR → A1015GR
2SC2878A → C2878A
- **B+**: B+ Line
B-: B- Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : CD PLAY
< > : PB
<< >> : REC

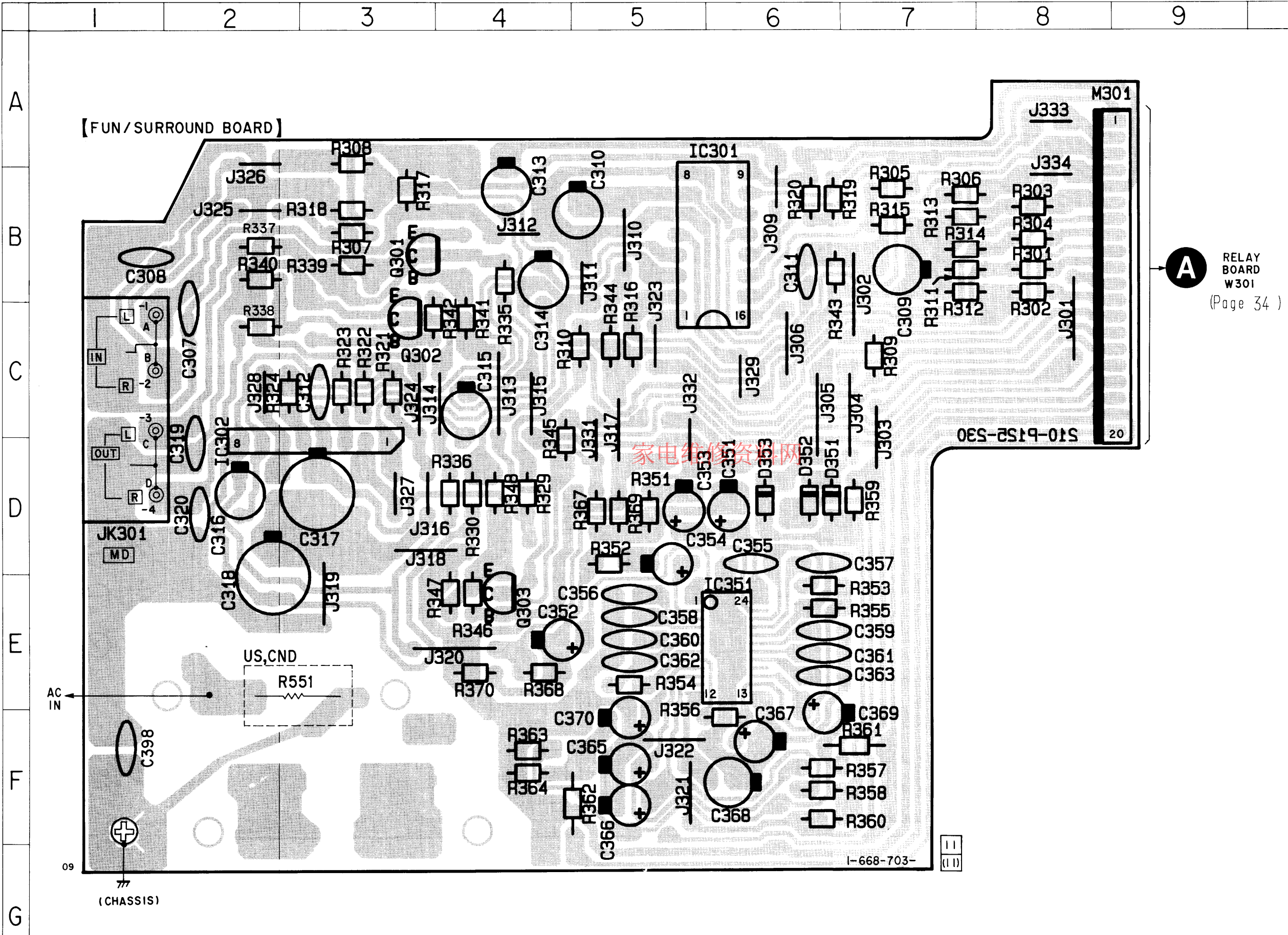
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Ground (GND) mark
⊥ : Analog GND
- Signal path.
⇒ : FM
⇒⇒ : MD
⇒⇒ : PB
⇒⇒ : REC
⇒⇒ : CD

5-6. PRINTED WIRING BOARD — INPUT/OUTPUT SECTION —
• See page 13 for Circuit Boards Location.

Note:
• — : parts extracted from the component side.
• : Pattern from the side which enable seeing
• Abbreviation
CND : Canadian model.

• Semiconductor Location

Ref. No.	Location
D351	D-6
D352	D-6
D353	D-6
IC301	B-5
IC302	C-2
IC351	E-6
Q301	B-3
Q302	C-3
Q303	E-4



A
RELAY BOARD
W301
(Page 34)

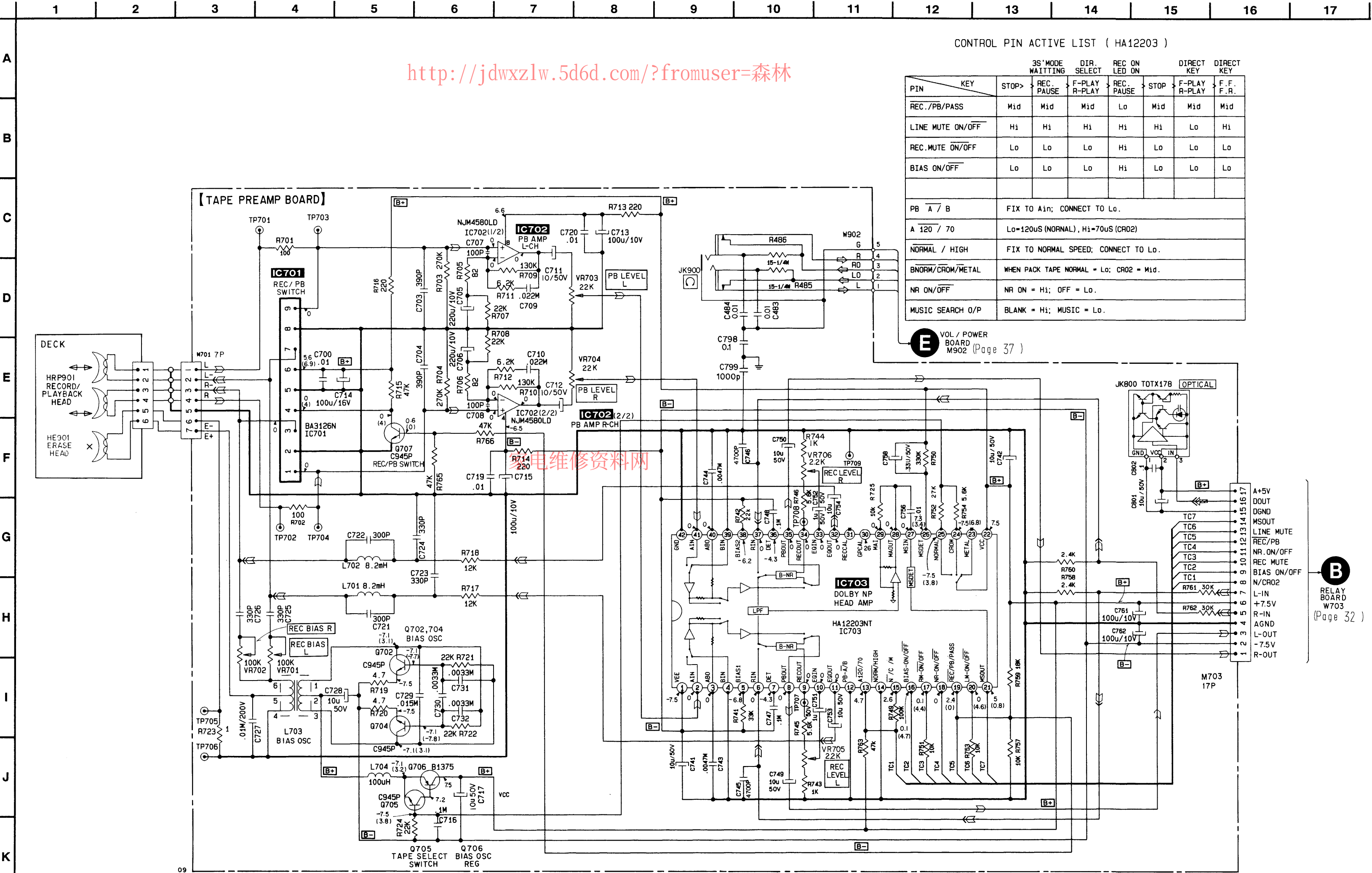
5-8. SCHEMATIC DIAGRAM — DECK SECTION —
• See page 43 for IC Block Diagrams.

• Semiconductor Location

Ref. No.	Location
IC701	D-8
IC702	B-8
IC703	C-4
Q702	F-4
Q704	E-4
Q705	F-4
Q706	F-3
Q707	C-7

Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXX μF in the constant display of capacitors.
- The name of transistor type is simplified as below:
2SB1375 $\rightarrow$ B1375
2SC945P $\rightarrow$ C945P
- **B+**: B+ Line
B-: B- Line
□: adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : PB
() : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Ground (GND) mark
- Signal path.
▬ : PB
▬▬ : REC
▬▬▬ : CD (digital)



5-9. SCHEMATIC DIAGRAM — DISPLAY SECTION —
• See page 14, 15 for IC Pin Functions.

Note:

- All capacitors are in μF unless otherwise noted. pF ; μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXX μF in the constant display of capacitors.
- $\text{---}\text{---}$: fusible resistor.
- The name of transistor type is simplified as below:
2SA966Y $\rightarrow$ A966Y
2SC945P $\rightarrow$ C945P
- B+ : B+ Line
 B- : B- Line
 --- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : CD PLAY
< : PB
<< >> : REC
- Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Ground (GND) mark
 $\downarrow$: Digital GND
 --- : Analog GND
 --- : Motor GND

Note:

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

Note:

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

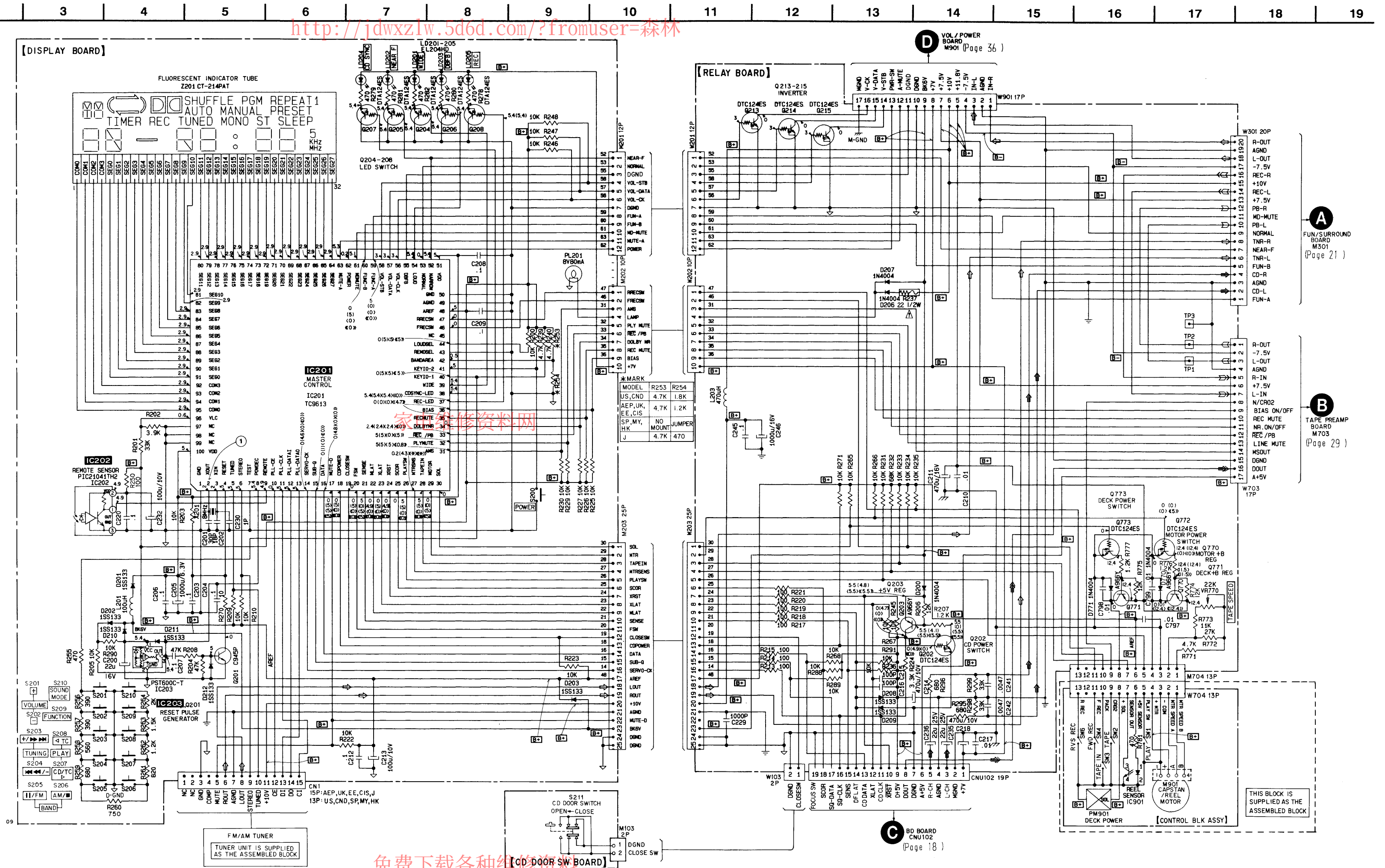
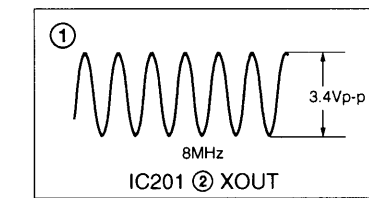
Signal path.

- --- : FM
- --- : PB
- --- : REC
- --- : CD
- --- : CD (digital)

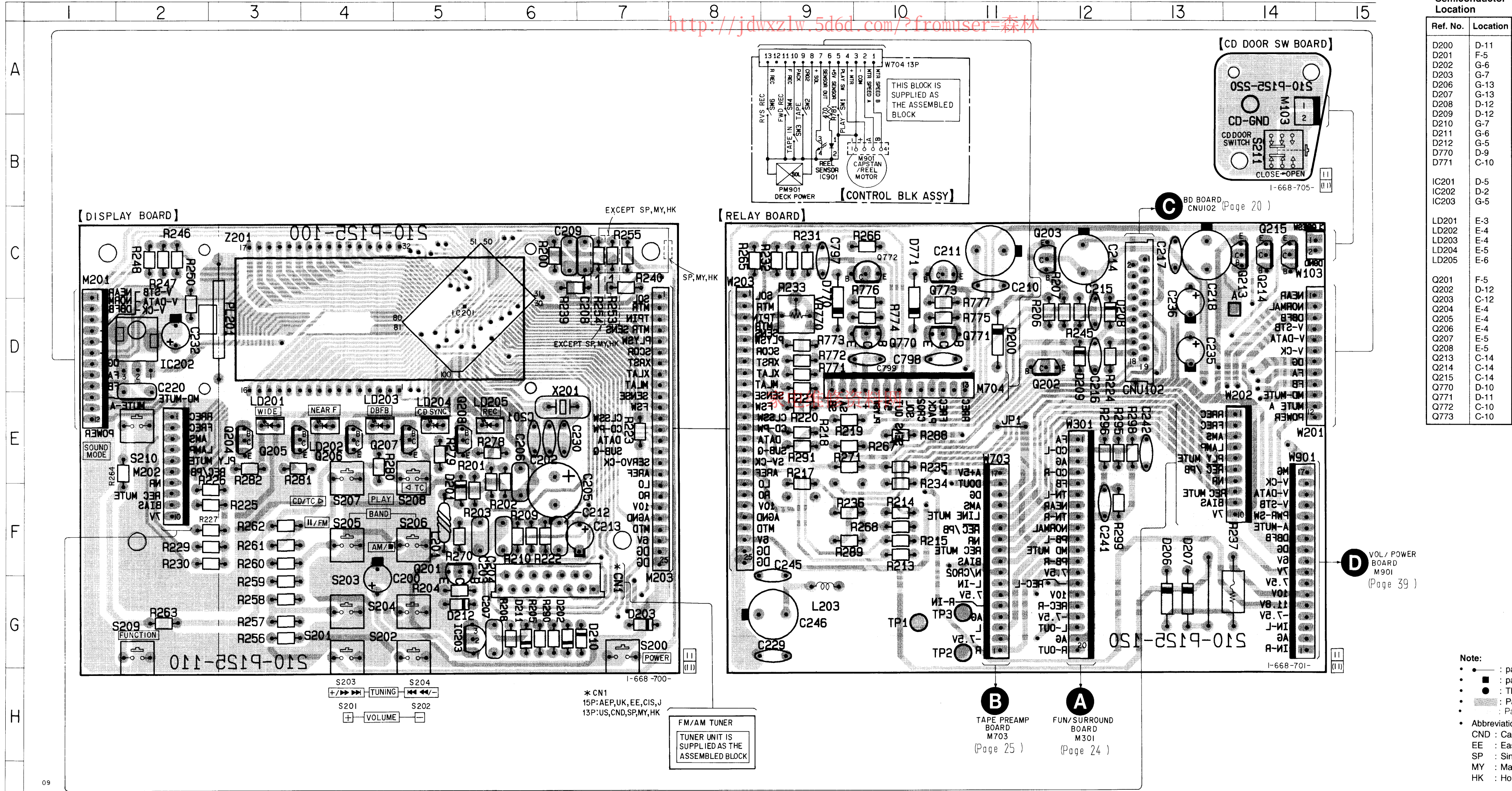
Abbreviation

- CND : Canadian model.
- EE : East European model.
- SP : Singapore model.
- MY : Malaysia model.
- HK : Hong Kong model.

Waveform

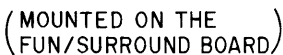


5-10. PRINTED WIRING BOARD — DISPLAY SECTION —
• See page 13 for Circuit Boards Location.

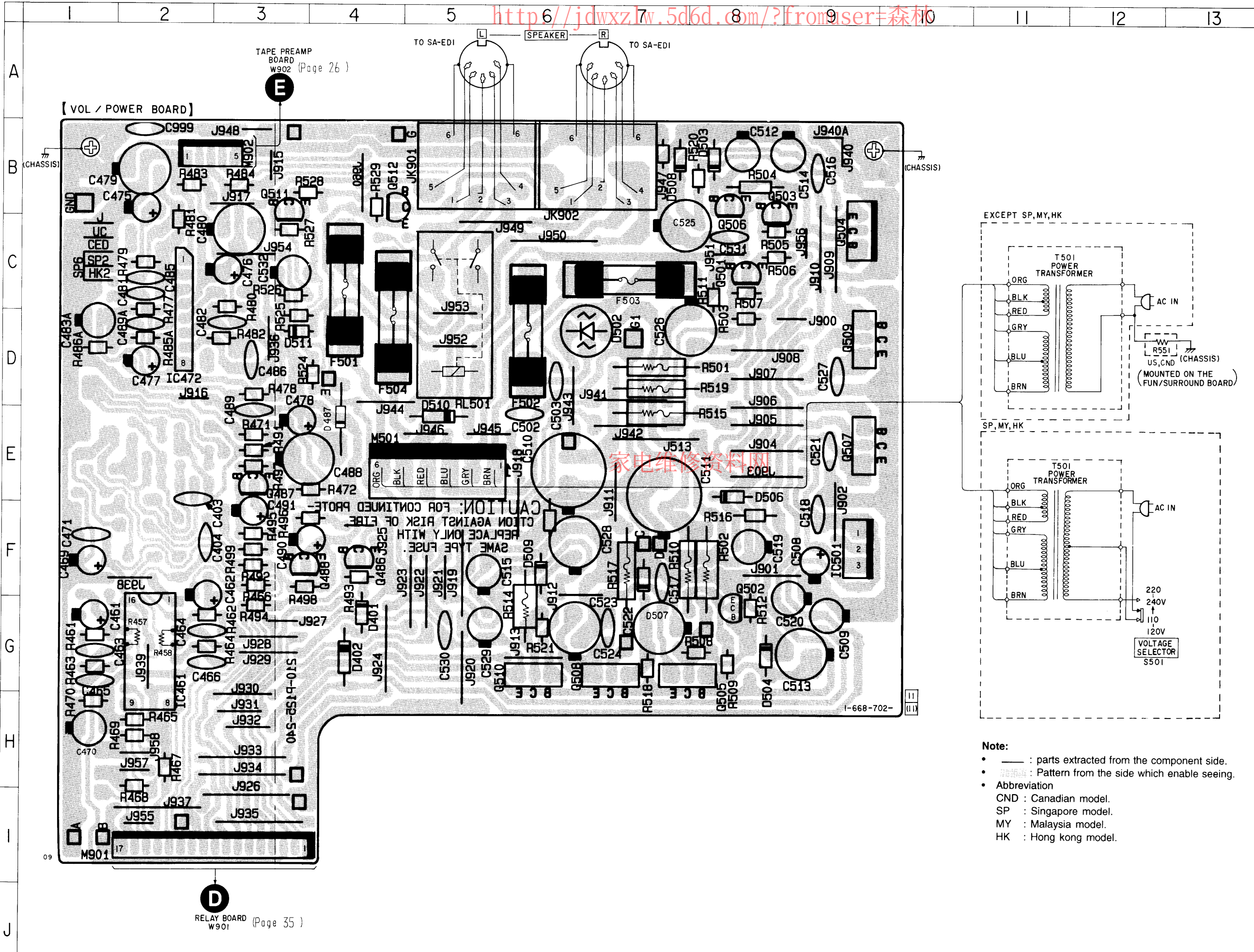


-  : B+ Line
-  : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
- Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.

- Signal path.
 : FM
- Abbreviation
 CND : Canadian model.
 SP : Singapore model.
 MY : Malaysia model.
 HK : Hong kong model.

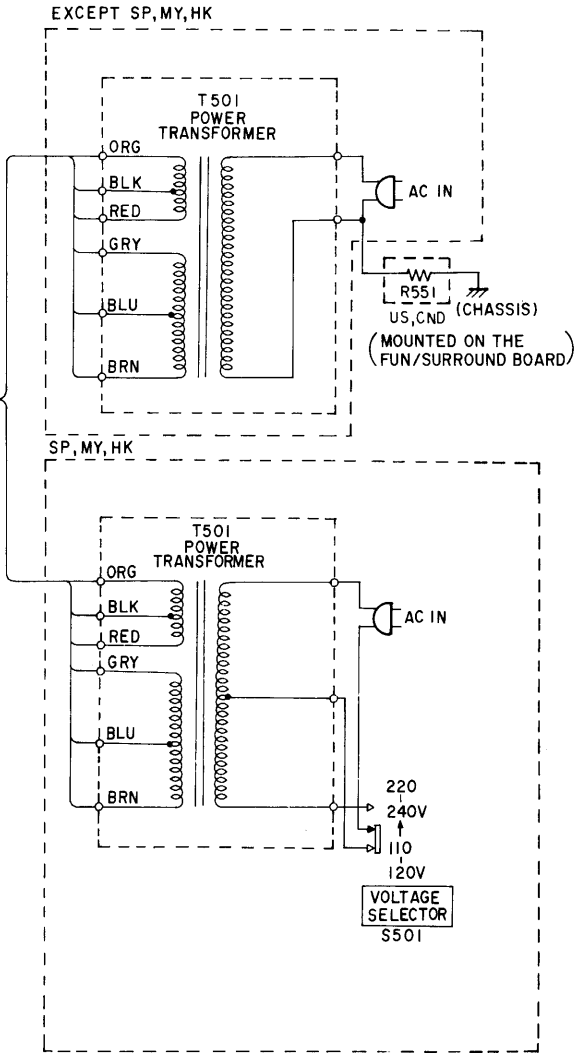


5-12. PRINTED WIRING BOARD — POWER SECTION —
• See page 13 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D401	G-4
D402	G-4
D487	E-4
D502	D-6
D503	B-8
D504	G-8
D506	E-8
D507	G-7
D508	B-7
D509	F-6
D510	E-5
D511	D-3
IC461	G-2
IC472	D-2
IC501	F-9
Q486	F-4
Q487	E-3
Q488	F-4
Q501	C-8
Q502	F-8
Q503	B-8
Q504	C-9
Q505	H-8
Q506	C-8
Q507	E-9
Q508	G-6
Q509	D-9
Q510	G-6
Q511	B-3
Q512	B-4

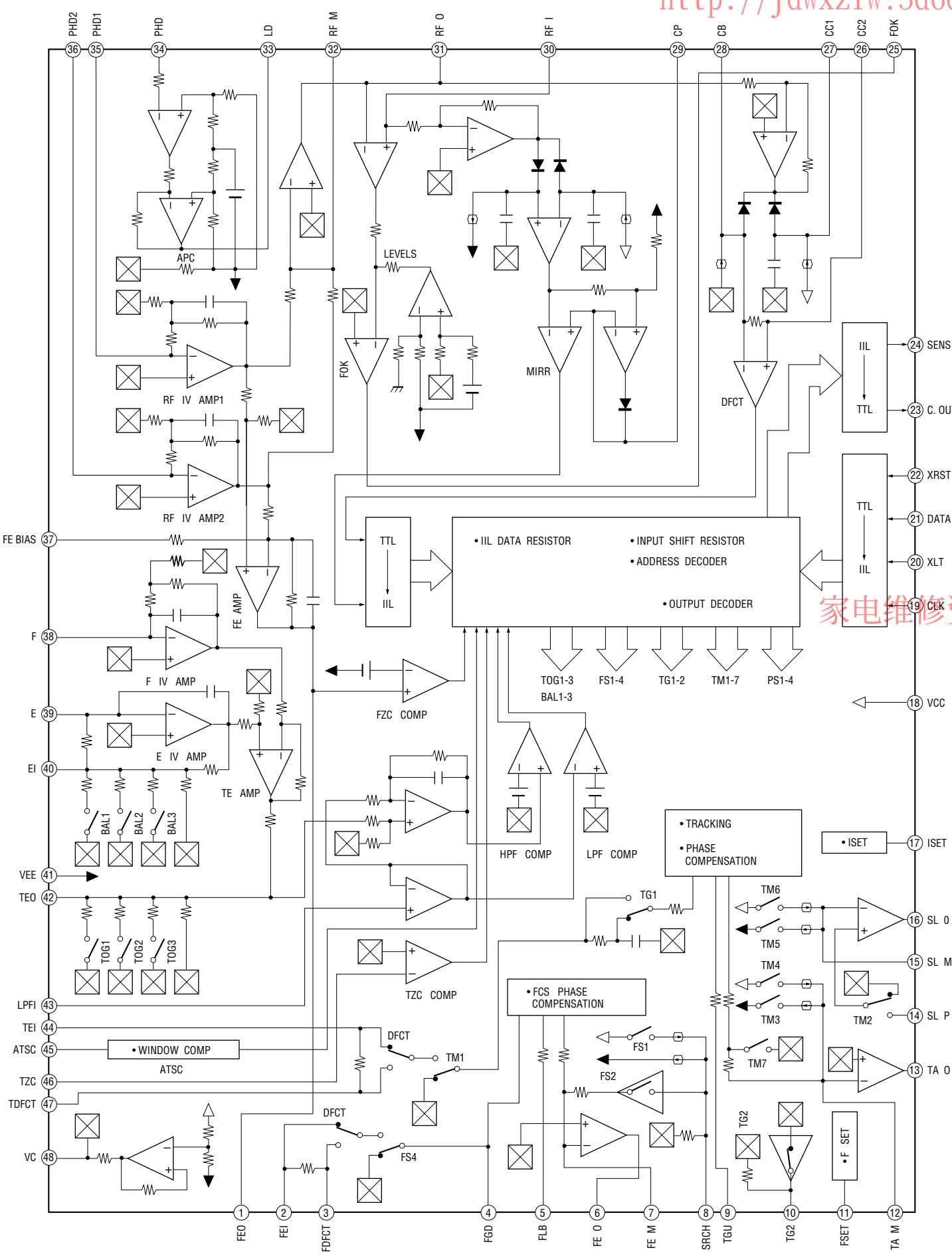


Note:

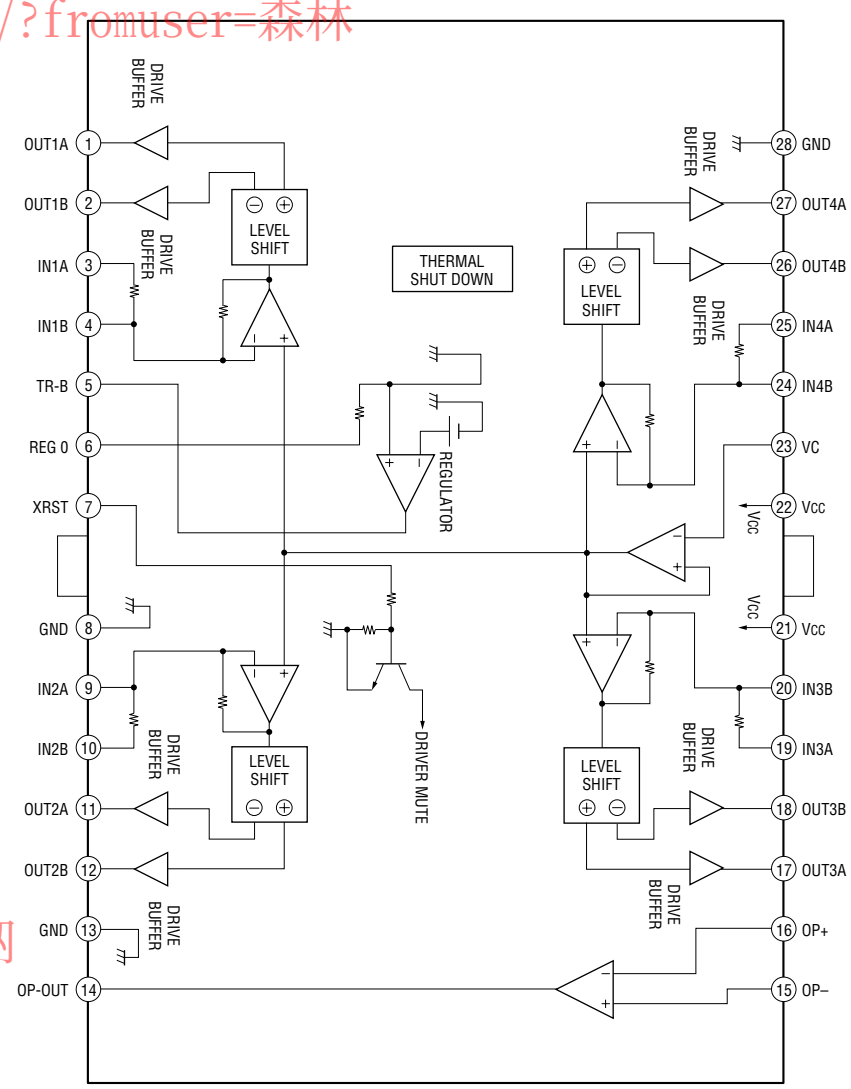
- : parts extracted from the component side.
- Pattern from the side which enable seeing.
- Abbreviation
CND : Canadian model.
SP : Singapore model.
MY : Malaysia model.
HK : Hong kong model.

5-13. IC BLOCK DIAGRAMS

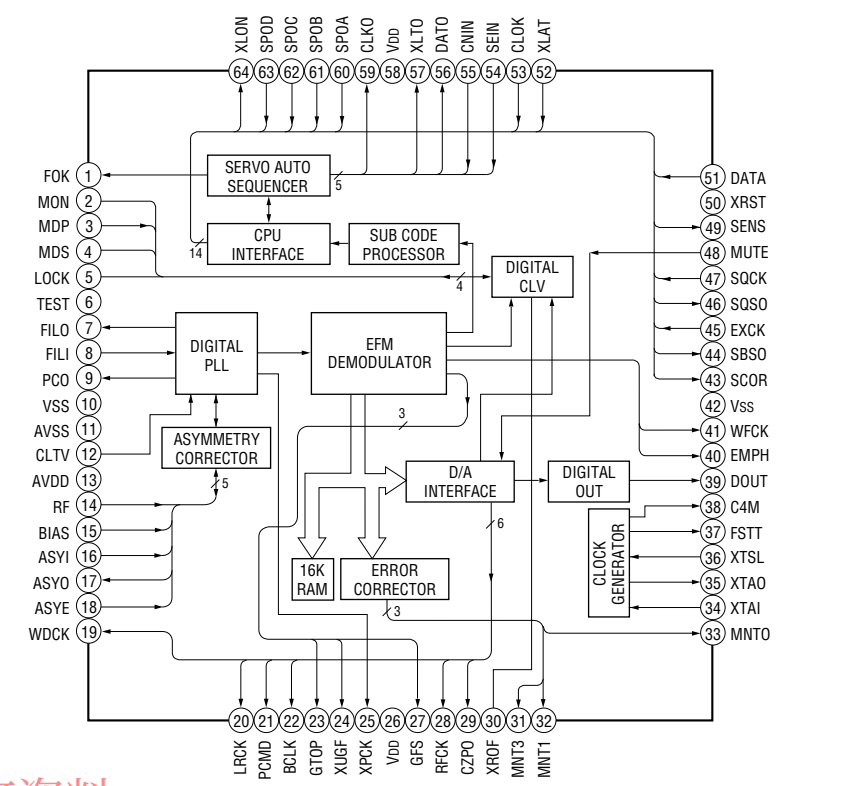
CD SECTION
IC101 CXA1782BQ



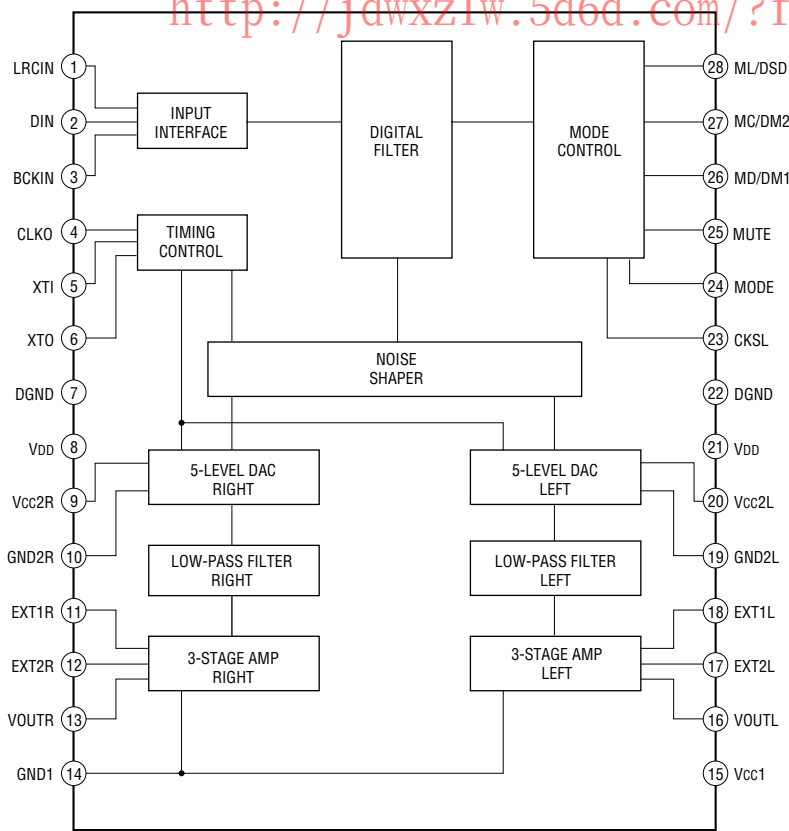
IC102 BA6397FP



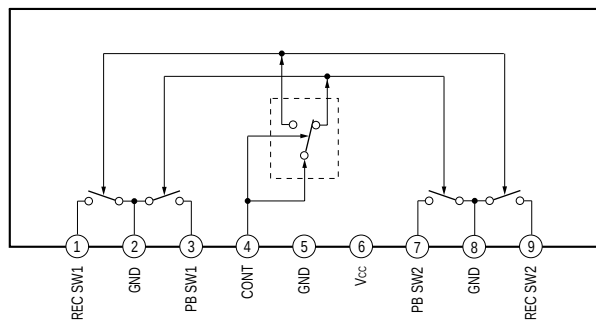
IC103 CXD2507AQ



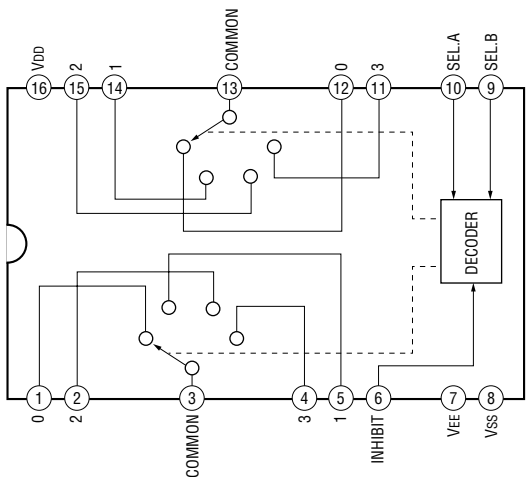
IC104 PCM1710U-B



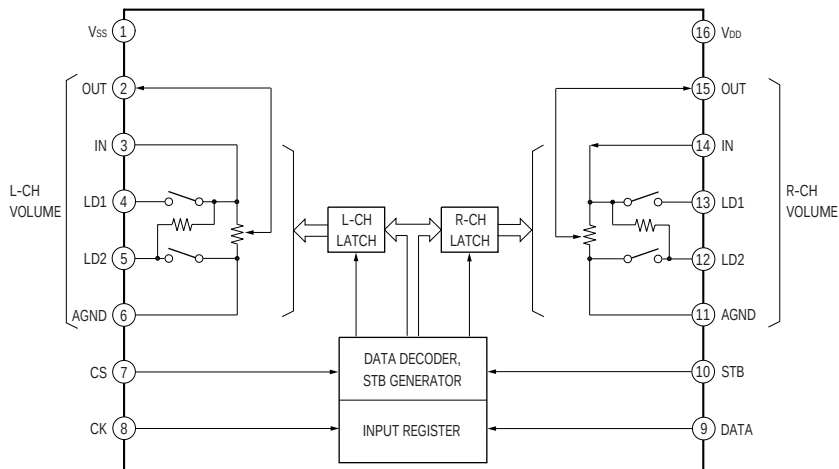
DECK SECTION IC701 BA3126N



INPUT/OUTPUT SECTION IC301 MC14052BCP

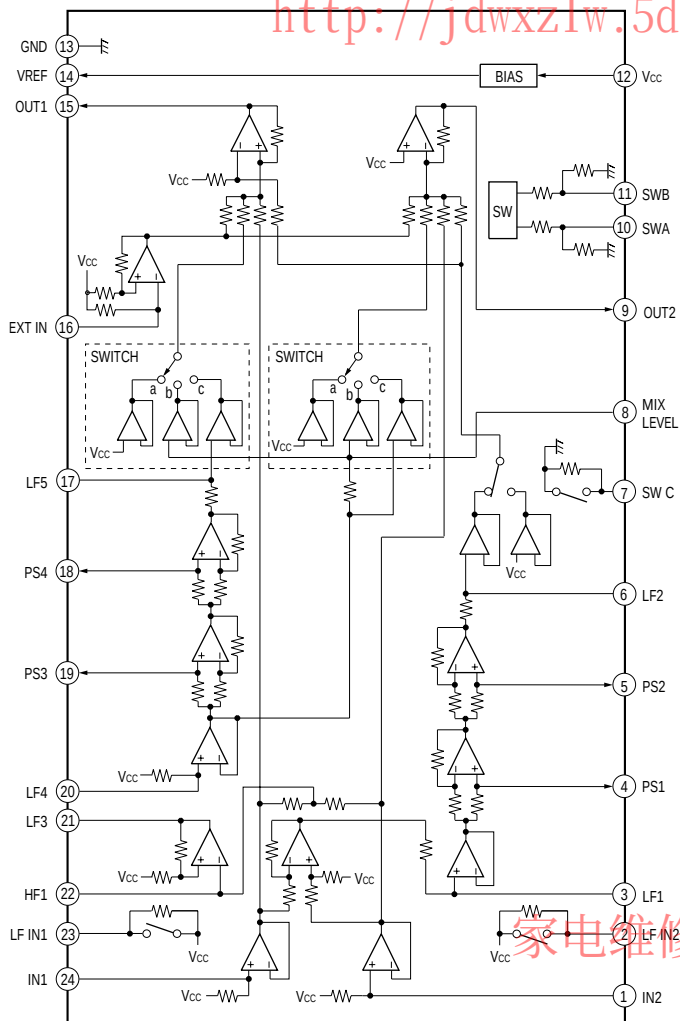


POWER SECTION IC461 TC9260P



IC351 TA2041F

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SECTION 6 EXPLODED VIEWS

NOTE:

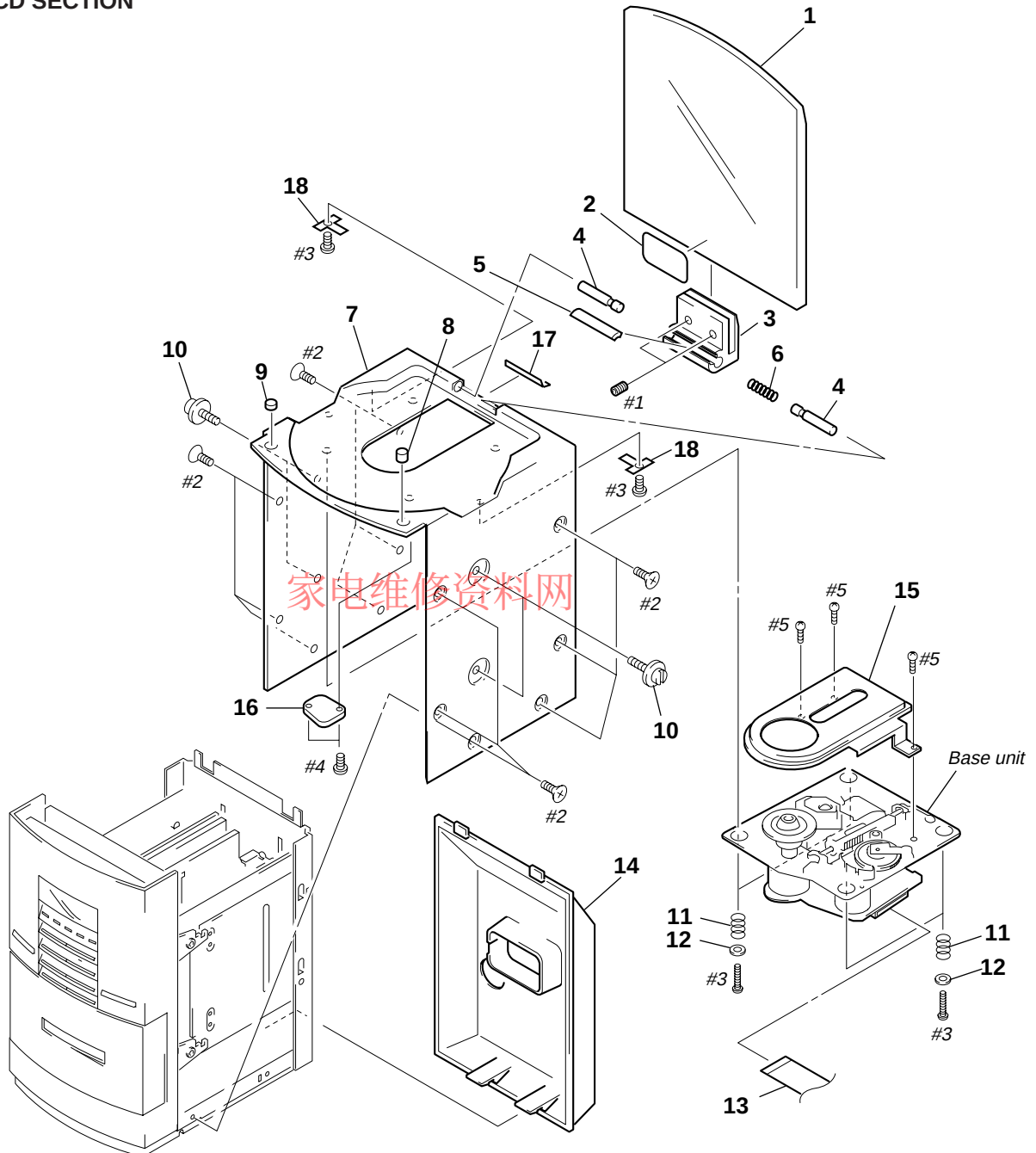
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded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

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CND : Canadian model
EE : East European model
HK : Hong Kong model
SP : Singapore model
MY : Malaysia model

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

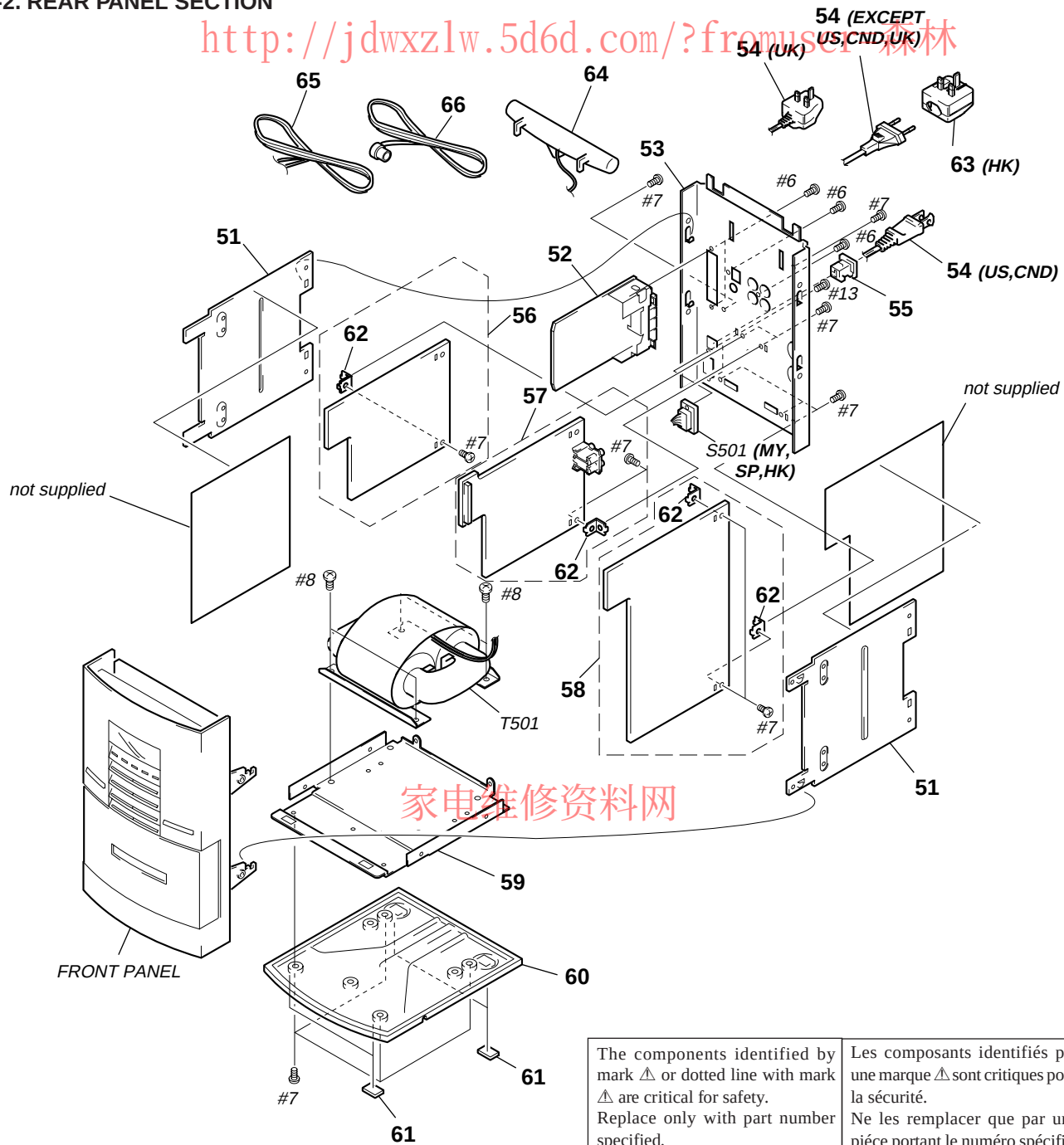
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CD SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-997-375-01	GLASS DOOR W/PRINGING		11	4-948-503-01	SPRING (BU), COMPRESSION	
2	4-997-373-01	HINGE PLATE		12	4-997-372-01	WASHER	
3	4-997-355-01	DOOR HINGE		13	1-783-091-11	WIRE (FLAT TYPE)	
4	4-997-365-01	HINGE PIN		* 14	4-997-350-01	BACK COVER (US,CND,MY,SP,HK)	
5	4-997-370-01	BAR RUBBER		* 14	4-997-350-11	BACK COVER (AEP,UK,EE,CIS)	
6	4-997-356-01	HINGE SPRING		15	4-997-353-01	PICK UP COVER	
7	4-997-349-01	CD BASE		* 16	A-4407-244-A	CD DOOR SW BOARD, COMPLETE	
8	4-997-367-01	PUSH BUTTON		17	4-977-376-01	STOP SPRING	
9	4-997-369-01	CUSHION		18	4-977-371-01	STOPPER	
10	4-997-345-01	HOOK SCREW					

6-2. REAR PANEL SECTION



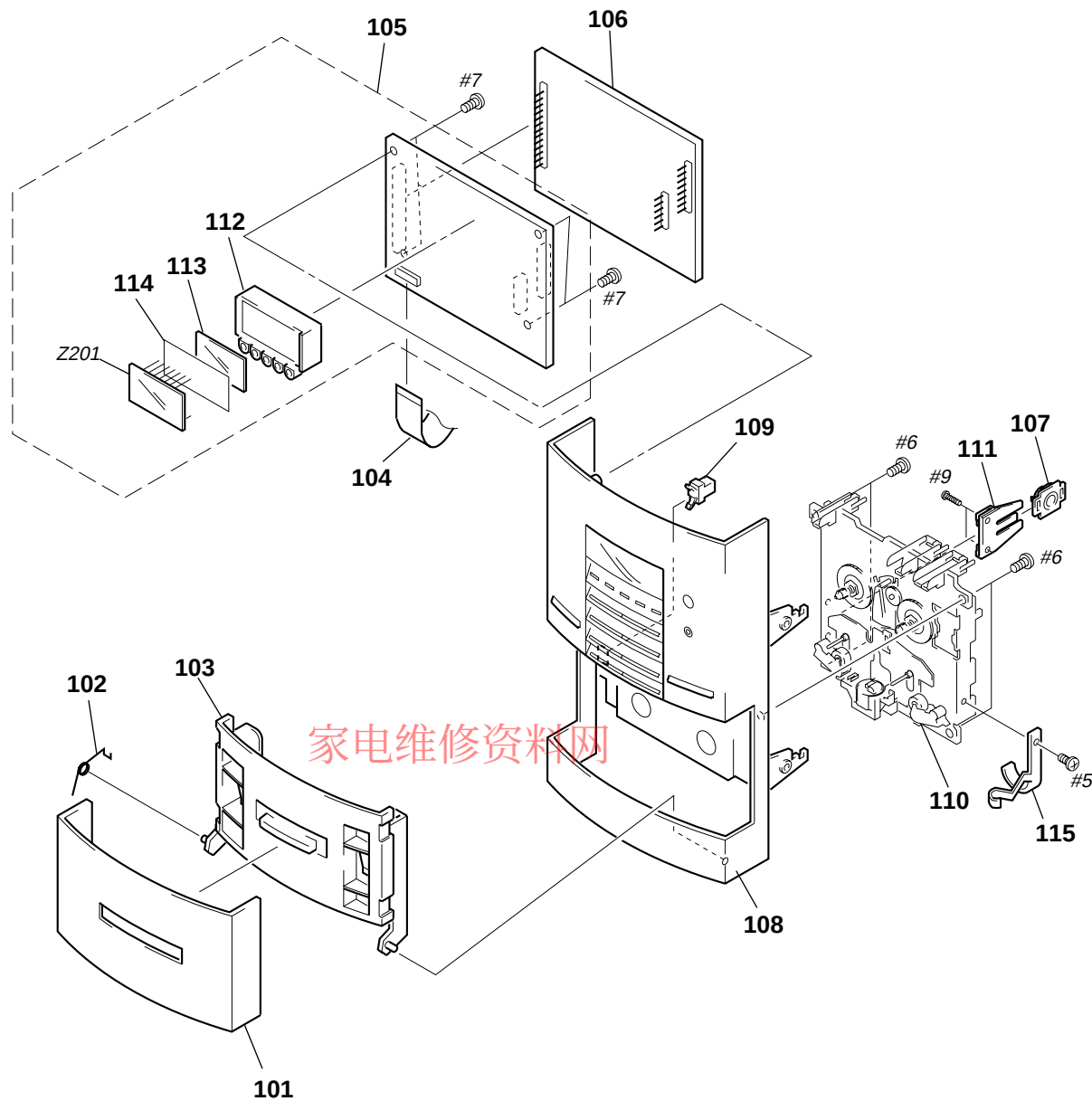
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	4-997-363-01	SIDE BRACKET		* 58	A-4407-239-A	VOL/POWER BOARD, COMPLETE	
52	1-693-400-21	FM/AM TUNER (AEP,UK,EE,CIS)				(AEP,UK,EE,CIS)	
52	1-693-400-31	FM/AM TUNER (US,CND)		* 58	A-4407-240-A	VOL/POWER BOARD, COMPLETE (US,CND)	
52	1-693-400-41	FM/AM TUNER (MY,SP,HK)		* 58	A-4407-241-A	VOL/POWER BOARD, COMPLETE (MY,SP,HK)	
* 53	4-997-368-11	REAR PANEL (AEP)		* 59	4-997-364-01	BOTTOM BOARD	
* 53	4-997-368-21	REAR PANEL (UK)		60	4-997-352-01	BOTTOM COVER	
* 53	4-997-368-31	REAR PANEL (EE,CIS)		61	4-997-366-01	RUBBER FOOT	
* 53	4-997-368-41	REAR PANEL (US,CND)		* 62	4-997-378-01	PC BOARD BRACKET	
* 53	4-997-368-51	REAR PANEL (MY,SP)		Δ 63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 53	4-997-368-61	REAR PANEL (HK)		64	X-4949-451-1	AM ANT SUB ASSY	
Δ 54	1-551-478-00	CORD, POWER (POLAR.SPT-2)(US,CND)		65	1-501-659-11	ANTENNA (FM) (US,CND,MY,SP,HK)	
Δ 54	1-555-750-00	CORD, POWER (AEP,EE,CIS,MY,SP,HK)		66	1-501-985-11	LEAD, ANTENNA (AEP,UK,EE,CIS)	
Δ 54	1-751-535-11	CORD, POWER (UK)		Δ S501	1-771-308-11	SELECTOR, POWER (MY,SP,HK)	
55	4-997-358-01	AC CORD BUSHING		Δ T501	1-431-697-21	TRANSFORMER, POWER (AEP,UK,EE,CIS)	
* 56	A-4407-243-A	TAPE PREAMP BOARD, COMPLETE		Δ T501	1-431-697-31	TRANSFORMER, POWER (US,CND)	
* 57	A-4407-242-A	FUN/SURROUND BOARD, COMPLETE		Δ T501	1-431-697-41	TRANSFORMER, POWER (MY,SP,HK)	

6-3. FRONT PANEL SECTION

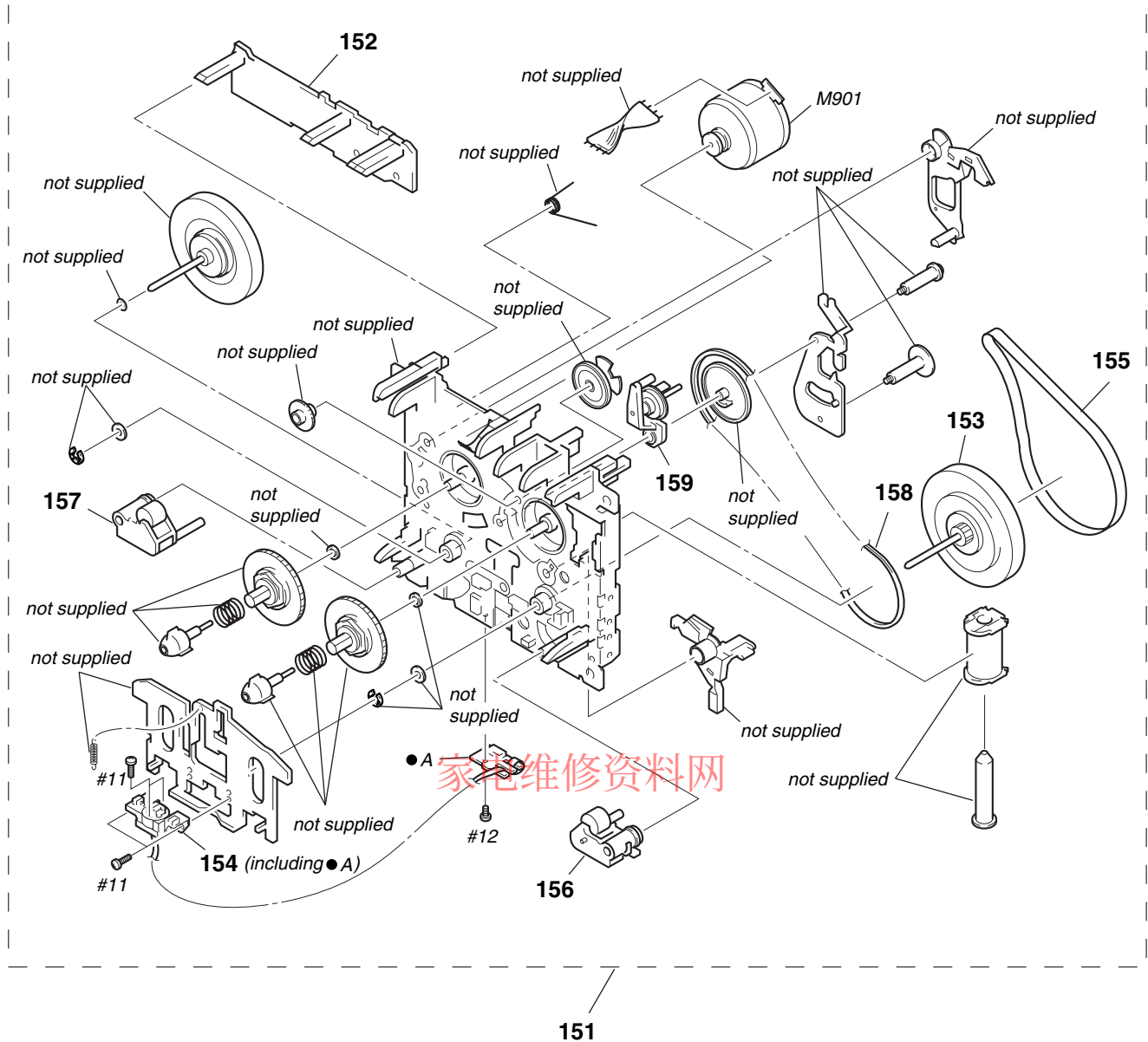
<http://jdwxzlw.5d6d.com/?fromuser=森林>



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-997-351-01	DOOR COVER		108	X-4949-449-1	FRONT PANEL SUB ASSY	
102	4-997-354-01	DOOR SPRING		109	4-997-362-01	DOOR LATCH	
103	X-4949-450-1	CASS DOOR SUB ASSY		110	1-759-548-11	DECK, MECHANICAL	
104	1-773-009-11	WIRE (FLAT TYPE) (15 CORE) (AEP,UK,EE,CIS)		111	4-997-357-01	GEAR HOLDER	
104	1-751-688-11	WIRE (FLAT TYPE) (13 CORE) (US,CND,MY,SP,HK)		112	4-997-381-01	LCD HOLDER	
* 105	A-4407-247-A	DISPLAY BOARD, COMPLETE (AEP,UK,EE,CIS)		113	4-997-382-01	LIGHT BAR	
* 105	A-4407-248-A	DISPLAY BOARD, COMPLETE (US,CND)		114	4-997-383-01	DISPLAY FILTER	
* 105	A-4407-249-A	DISPLAY BOARD, COMPLETE (MY,SP,HK)		115	4-997-374-01	SOLDER LUG	
* 106	A-4407-245-A	RELAY BOARD, COMPLETE		Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL	
107	4-997-361-01	GEAR DAMPER					

6-4. MECHANISM DECK SECTION (CASSETTE)

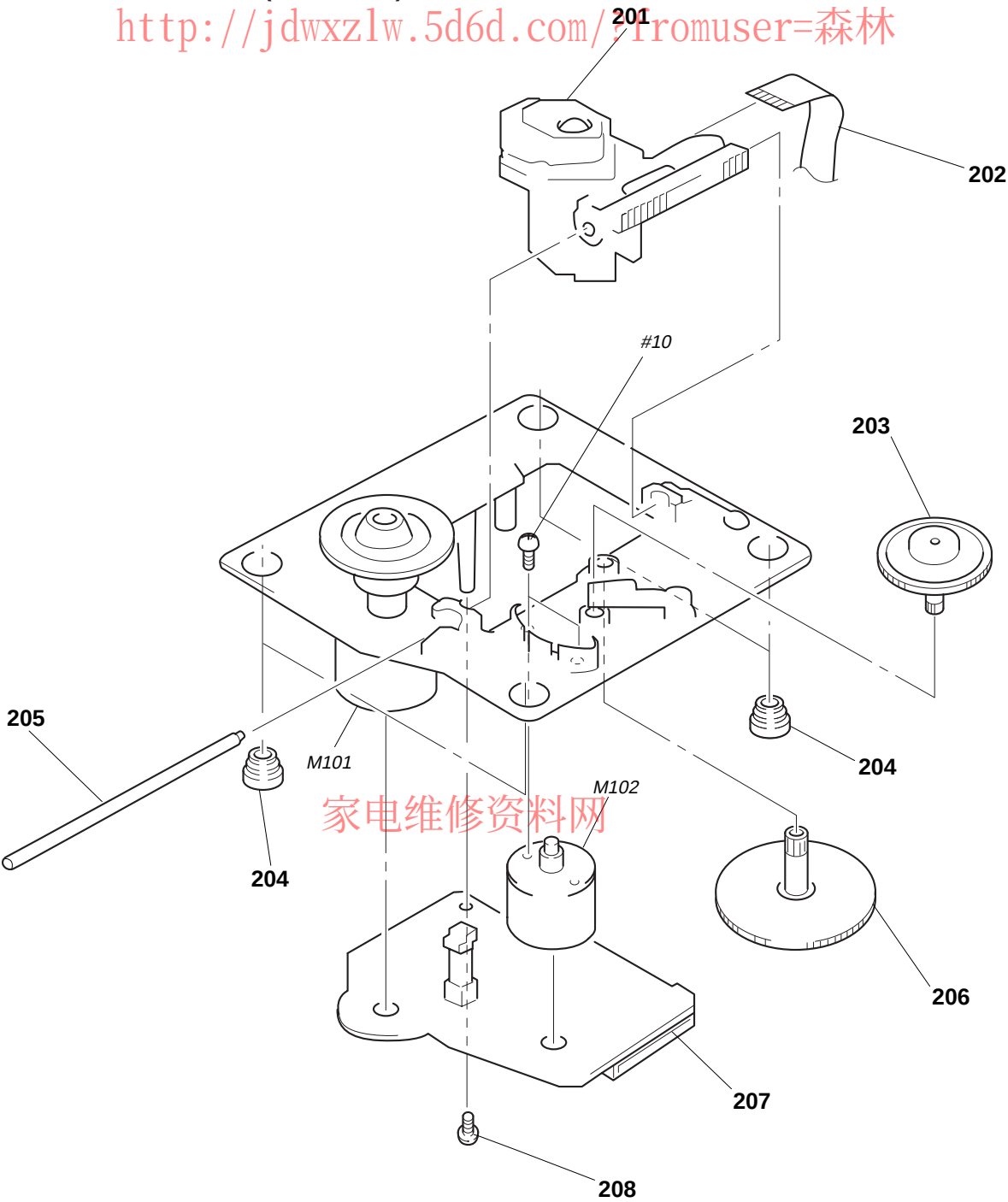
<http://jdwxzlw.5d6d.com/?fromuser=森林>



Ref. No.	Part No.	Description	Remark
151	1-759-548-11	DECK, MECHANICAL	
152	X-4949-565-1	CONTROL BLK ASSY	
153	X-4949-566-1	CLUTCH BLK ASSY	
154	X-4949-563-1	PLA TE HD BLK ASSY	
155	4-997-983-01	BEL T MAIN	
156	X-4949-568-1	ROLLER PINCH BLK R ASSY	
157	X-4949-569-1	ROLLER PINCH BLK L ASSY	
158	4-997-984-01	F/R BEL T	
159	X-4949-567-1	CLUTCH BLK2 ASSY	
M901	X-4949-564-1	MTR MAIN BLK ASSY (CAPST AN/REEL)	

6-5. BASE UNIT SECTION (BU17-BD19)

<http://jdwxzlw.5d6d.com/?fromuser=森林>



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Δ 201	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N		206	4-917-564-01	GEAR (P), FLATNESS	
202	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)		* 207	A-4673-402-B	BD BOARD, COMPLETE	
203	4-917-567-01	GEAR (M)		208	4-951-620-01	SCREW (2.6X8), +BVTP	
204	4-951-940-01	INSULATOR (BU)		M101	X-4950-066-1	MOTOR ASSY (SPINDLE)	
205	4-917-565-01	SHAFT, SLED		M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 7 ELECTRICAL PARTS LIST

Note:

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

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

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

• 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, -X mean standardized parts, so they may have some difference from the original one.

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

RESISTORS

All resistors are in ohms

METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

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

Abbreviation

CND: Canadian model

EE: East European model

HK: Hong Kong model

SP: Singapore model

MY: Malaysia model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4673-402-B	BD BOARD, COMPLETE *****		C146	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
		< CAPACITOR >		C147	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C101	1-126-607-11	ELECT CHIP 47uF 20%	4V	C148	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C102	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V	C149	1-164-346-11	CERAMIC CHIP 1uF	16V
C103	1-164-346-11	CERAMIC CHIP 1uF	16V				
C105	1-163-038-91	CERAMIC CHIP 0.1uF	25V	C153	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C106	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	C154	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
						< CONNECTOR >	
C107	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P	
C108	1-164-232-11	CERAMIC CHIP 0.01uF	50V	CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P	
C109	1-164-232-11	CERAMIC CHIP 0.01uF	50V			< IC >	
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V	IC101	8-752-074-34	IC CXA1782CQ	
C111	1-163-038-91	CERAMIC CHIP 0.1uF	25V	IC102	8-759-291-06	IC BA6397FP	
				IC103	8-752-372-94	IC CXD2507AQ	
C112	1-163-038-91	CERAMIC CHIP 0.1uF	25V	IC104	8-759-185-29	IC PCM1710U-B	
C113	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V			< MOTOR >	
C114	1-164-005-11	CERAMIC CHIP 0.47uF	25V	M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
C115	1-126-607-11	ELECT CHIP 47uF 20%	4V	M102	X-4917-504-1	MOTOR ASSY (SLED)	
C116	1-163-016-00	CERAMIC CHIP 0.0039uF 10%	50V			< TRANSISTOR >	
				Q101	8-729-010-08	TRANSISTOR MSB710-R	
C117	1-164-005-11	CERAMIC CHIP 0.47uF	25V	Q102	8-729-424-08	TRANSISTOR UN2111	
C118	1-107-823-11	CERAMIC CHIP 0.47uF 10%	16V	Q103	8-729-421-22	TRANSISTOR UN2211	
C119	1-163-038-91	CERAMIC CHIP 0.1uF	25V			< RESISTOR >	
C120	1-135-201-11	TANTALUM CHIP 10uF 20%	4V	R102	1-216-001-00	METAL CHIP 10 5%	1/10W
C121	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R103	1-216-049-91	METAL GLAZE 1K 5%	1/10W
				R104	1-216-097-91	METAL GLAZE 100K 5%	1/10W
C122	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R105	1-216-093-00	METAL CHIP 68K 5%	1/10W
C123	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R106	1-216-093-00	METAL CHIP 68K 5%	1/10W
C124	1-126-607-11	ELECT CHIP 47uF 20%	4V				
C125	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R107	1-216-093-00	METAL CHIP 68K 5%	1/10W
C126	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R108	1-216-093-00	METAL CHIP 68K 5%	1/10W
				R109	1-216-097-91	METAL GLAZE 100K 5%	1/10W
C127	1-164-695-11	CERAMIC CHIP 0.0022uF 5%	50V	R112	1-216-083-00	METAL CHIP 27K 5%	1/10W
C128	1-163-135-00	CERAMIC CHIP 560PF 5%	50V	R113	1-216-083-00	METAL CHIP 27K 5%	1/10W
C129	1-163-038-91	CERAMIC CHIP 0.1uF	25V				
C130	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R114	1-216-101-00	METAL CHIP 150K 5%	1/10W
C131	1-163-038-91	CERAMIC CHIP 0.1uF	25V	R115	1-216-101-00	METAL CHIP 150K 5%	1/10W
				R116	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C132	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V	R117	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
C133	1-163-145-00	CERAMIC CHIP 0.0015uF 5%	50V	R118	1-216-049-91	METAL GLAZE 1K 5%	1/10W
C134	1-164-346-11	CERAMIC CHIP 1uF	16V				
C135	1-163-251-11	CERAMIC CHIP 100PF 5%	50V	R119	1-216-089-91	METAL GLAZE 47K 5%	1/10W
C136	1-164-005-11	CERAMIC CHIP 0.47uF	25V	R120	1-216-089-91	METAL GLAZE 47K 5%	1/10W
				R121	1-216-114-00	METAL GLAZE 510K 5%	1/10W
C137	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C139	1-163-235-11	CERAMIC CHIP 22PF 5%	50V				
C140	1-163-235-11	CERAMIC CHIP 22PF 5%	50V				
C141	1-163-038-91	CERAMIC CHIP 0.1uF	25V				
C142	1-163-038-91	CERAMIC CHIP 0.1uF	25V				
C145	1-135-201-11	TANTALUM CHIP 10uF 20%	4V				

DISPLAY

FUN/SURROUND

Ref. No.	Part No.	Description	Remark
		< DIODE >	
LD201	8-719-989-30	DIODE EL204HD (WIDE)	
LD202	8-719-989-30	DIODE EL204HD (NEAR F)	
LD203	8-719-989-30	DIODE EL204HD (DBFB)	
LD204	8-719-989-30	DIODE EL204HD (CD SYNC)	
LD205	8-719-989-30	DIODE EL204HD (REC)	
		< CONNECTOR >	
M201	1-784-348-11	CONNECTOR 12P	
M202	1-784-347-11	CONNECTOR 10P	
M203	1-784-349-11	CONNECTOR 25P	
		< LAMP >	
PL201	1-517-743-11	LAMP	
		< TRANSISTOR >	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-900-63	TRANSISTOR DTA124ES	
Q205	8-729-900-63	TRANSISTOR DTA124ES	
Q206	8-729-900-63	TRANSISTOR DTA124ES	
Q207	8-729-900-63	TRANSISTOR DTA124ES	
Q208	8-729-900-63	TRANSISTOR DTA124ES	
		< RESISTOR >	
R200	1-249-429-11	CARBON 10K 5% 1/4W	
R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-424-11	CARBON 3.9K 5% 1/4W F	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-437-11	CARBON 47K 5% 1/4W	
R205	1-249-429-11	CARBON 10K 5% 1/4W	
R208	1-249-437-11	CARBON 47K 5% 1/4W	
R209	1-249-429-11	CARBON 10K 5% 1/4W	
R210	1-249-429-11	CARBON 10K 5% 1/4W	
R222	1-249-429-11	CARBON 10K 5% 1/4W	
R223	1-249-429-11	CARBON 10K 5% 1/4W	
R225	1-249-429-11	CARBON 10K 5% 1/4W	
R226	1-249-429-11	CARBON 10K 5% 1/4W	
R227	1-249-429-11	CARBON 10K 5% 1/4W	
R229	1-249-429-11	CARBON 10K 5% 1/4W	
R230	1-249-429-11	CARBON 10K 5% 1/4W	
R239	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R240	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R246	1-249-429-11	CARBON 10K 5% 1/4W	
R247	1-249-429-11	CARBON 10K 5% 1/4W	
R248	1-249-429-11	CARBON 10K 5% 1/4W	
R250	1-247-807-31	CARBON 100 5% 1/4W	
R253	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R254	1-249-420-11	CARBON 1.8K 5% 1/4W F	(US,CND,AEP,UK,EE,CIS)
R254	1-249-418-11	CARBON 1.2K 5% 1/4W F	(US,CND) (AEP,UK,EE,CIS)
R255	1-249-413-11	CARBON 470 5% 1/4W F	
R256	1-249-412-11	CARBON 390 5% 1/4W F	
R257	1-249-412-11	CARBON 390 5% 1/4W F	
R258	1-249-414-11	CARBON 560 5% 1/4W F	
R259	1-249-415-11	CARBON 680 5% 1/4W F	

Ref. No.	Part No.	Description	Remark
R260	1-247-828-11	CARBON 750 5% 1/4W	
R261	1-249-416-11	CARBON 820 5% 1/4W F	
R262	1-249-418-11	CARBON 1.2K 5% 1/4W F	
R263	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R264	1-247-838-00	CARBON 2K 5% 1/4W	
R270	1-249-393-11	CARBON 10 5% 1/4W F	
R278	1-249-413-11	CARBON 470 5% 1/4W F	
R279	1-249-413-11	CARBON 470 5% 1/4W F	
R280	1-249-413-11	CARBON 470 5% 1/4W F	
R281	1-249-413-11	CARBON 470 5% 1/4W F	
R282	1-249-413-11	CARBON 470 5% 1/4W F	
R290	1-249-429-11	CARBON 10K 5% 1/4W	
		< SWITCH >	
S200	1-571-760-11	SWITCH, KEY BOARD (POWER)	
S201	1-571-760-11	SWITCH, KEY BOARD (VOLUME +)	
S202	1-571-760-11	SWITCH, KEY BOARD (VOLUME -)	
S203	1-571-760-11	SWITCH, KEY BOARD (TUNING +/▶▶▶▶)	
S204	1-571-760-11	SWITCH, KEY BOARD (TUNING ◀◀◀◀/-)	
S205	1-571-760-11	SWITCH, KEY BOARD (BAND ■/FM)	
S206	1-571-760-11	SWITCH, KEY BOARD (BAND AM/■)	
S207	1-571-760-11	SWITCH, KEY BOARD (PLAY ◀ TC)	
S208	1-571-760-11	SWITCH, KEY BOARD (PLAY CD/TC ▶)	
S209	1-571-760-11	SWITCH, KEY BOARD (FUNCTION)	
S210	1-571-760-11	SWITCH, KEY BOARD (SOUND MODE)	
		< VIBRATOR >	
X201	1-767-791-11	VIBRATOR, CRYSTAL (8MHz)	
		< LIQUID CRYSTAL DISPLAY >	
Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL	

*	A-4407-242-A	FUN/SURROUND BOARD, COMPLETE	

*	4-997-378-01	PC BOARD BRACKET	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
		< CAPACITOR >	
C307	1-102-074-00	CERAMIC 0.001uF 10% 50V	
C308	1-102-074-00	CERAMIC 0.001uF 10% 50V	
C309	1-124-907-11	ELECT 10uF 20% 50V	
C310	1-126-963-11	ELECT 4.7uF 20% 50V	
C311	1-161-772-11	CERAMIC 0.1uF 10% 25V	
C312	1-161-772-11	CERAMIC 0.1uF 10% 25V	
C313	1-126-963-11	ELECT 4.7uF 20% 50V	
C314	1-126-963-11	ELECT 4.7uF 20% 50V	
C315	1-124-907-11	ELECT 10uF 20% 50V	
C316	1-124-907-11	ELECT 10uF 20% 50V	
C317	1-124-443-00	ELECT 100uF 20% 10V	
C318	1-124-443-00	ELECT 100uF 20% 10V	
C319	1-102-114-00	CERAMIC 470PF 10% 50V	
C320	1-102-114-00	CERAMIC 470PF 10% 50V	
C351	1-137-378-11	FILM 0.22uF 5% 50V	
C352	1-137-378-11	FILM 0.22uF 5% 50V	

FUN/SURROUND

RELAY

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C353	1-137-378-11	FILM	0.22uF	5%	50V	R317	1-249-425-11	CARBON	4.7K	5%	1/4W F
C354	1-137-378-11	FILM	0.22uF	5%	50V	R318	1-249-425-11	CARBON	4.7K	5%	1/4W F
C355	1-137-371-11	FILM	0.015uF	5%	50V	R319	1-249-441-11	CARBON	100K	5%	1/4W
C356	1-137-365-11	FILM	0.0015uF	5%	50V	R320	1-249-441-11	CARBON	100K	5%	1/4W
C357	1-130-489-00	MYLAR	0.033uF	5%	50V	R321	1-247-903-00	CARBON	1M	5%	1/4W
C358	1-137-367-11	FILM	0.0033uF	5%	50V	R322	1-247-903-00	CARBON	1M	5%	1/4W
C359	1-130-481-00	MYLAR	0.0068uF	5%	50V	R323	1-249-417-11	CARBON	1K	5%	1/4W F
C360	1-137-367-11	FILM	0.0033uF	5%	50V	R324	1-249-417-11	CARBON	1K	5%	1/4W F
C361	1-130-481-00	MYLAR	0.0068uF	5%	50V	R329	1-247-815-91	CARBON	220	5%	1/4W
C362	1-137-365-11	FILM	0.0015uF	5%	50V	R330	1-247-815-91	CARBON	220	5%	1/4W
C363	1-137-365-11	FILM	0.0015uF	5%	50V	R335	1-249-425-11	CARBON	4.7K	5%	1/4W F
C365	1-124-907-11	ELECT	10uF	20%	50V	R336	1-249-425-11	CARBON	4.7K	5%	1/4W F
C366	1-124-907-11	ELECT	10uF	20%	50V	R337	1-249-417-11	CARBON	1K	5%	1/4W F
C367	1-104-664-11	ELECT	47uF	20%	16V	R338	1-249-417-11	CARBON	1K	5%	1/4W F
C368	1-124-443-00	ELECT	100uF	20%	10V	R339	1-249-441-11	CARBON	100K	5%	1/4W
C369	1-124-907-11	ELECT	10uF	20%	50V	R340	1-249-441-11	CARBON	100K	5%	1/4W
C370	1-124-907-11	ELECT	10uF	20%	50V	R341	1-249-437-11	CARBON	47K	5%	1/4W
C398	1-161-772-11	CERAMIC	0.1uF	10%	25V	R342	1-249-437-11	CARBON	47K	5%	1/4W
< DIODE >						R343	1-249-425-11	CARBON	4.7K	5%	1/4W F
D351	8-719-920-76	DIODE 1S2076				R344	1-249-425-11	CARBON	4.7K	5%	1/4W F
D352	8-719-920-76	DIODE 1S2076				R345	1-249-437-11	CARBON	47K	5%	1/4W
D353	8-719-920-76	DIODE 1S2076				R346	1-249-437-11	CARBON	47K	5%	1/4W
< IC >						R347	1-249-425-11	CARBON	4.7K	5%	1/4W F
IC301	8-759-000-48	IC MC14052BCP				R348	1-249-421-11	CARBON	2.2K	5%	1/4W F
IC302	8-759-505-55	IC NJM4558L				R351	1-249-430-11	CARBON	12K	5%	1/4W
IC351	8-759-497-89	IC TA-2041F				R352	1-249-430-11	CARBON	12K	5%	1/4W
< JACK >						R353	1-249-431-11	CARBON	15K	5%	1/4W
JK301	1-784-362-11	JACK, PIN 4P (MD IN/OUT)				R354	1-249-431-11	CARBON	15K	5%	1/4W
< CONNECTOR >						R355	1-249-429-11	CARBON	10K	5%	1/4W
M301	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P				R356	1-249-432-11	CARBON	18K	5%	1/4W
< TRANSISTOR >						R357	1-249-425-11	CARBON	4.7K	5%	1/4W F
Q301	8-729-231-55	TRANSISTOR 2SC2878-AB				R358	1-249-425-11	CARBON	4.7K	5%	1/4W F
Q302	8-729-231-55	TRANSISTOR 2SC2878-AB				R359	1-249-437-11	CARBON	47K	5%	1/4W
Q303	8-729-201-53	TRANSISTOR 2SA1015-GR				R360	1-249-437-11	CARBON	47K	5%	1/4W
< RESISTOR >						R361	1-249-417-11	CARBON	1K	5%	1/4W F
R301	1-249-417-11	CARBON	1K	5%	1/4W F	R362	1-249-417-11	CARBON	1K	5%	1/4W F
R302	1-249-417-11	CARBON	1K	5%	1/4W F	R363	1-249-429-11	CARBON	10K	5%	1/4W
R303	1-249-417-11	CARBON	1K	5%	1/4W F	R364	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-417-11	CARBON	1K	5%	1/4W F	R367	1-249-417-11	CARBON	1K	5%	1/4W F
R305	1-249-417-11	CARBON	1K	5%	1/4W F	R368	1-249-417-11	CARBON	1K	5%	1/4W F
R306	1-249-417-11	CARBON	1K	5%	1/4W F	R369	1-249-421-11	CARBON	2.2K	5%	1/4W F
R307	1-249-425-11	CARBON	4.7K	5%	1/4W F	R370	1-249-421-11	CARBON	2.2K	5%	1/4W F
R308	1-249-425-11	CARBON	4.7K	5%	1/4W F	△ R551	1-202-725-00	SOLID	3.3M	10%	1/2W (US,CND)
R309	1-249-421-11	CARBON	2.2K	5%	1/4W F	*****					
R310	1-249-421-11	CARBON	2.2K	5%	1/4W F	* A-4407-245-A RELAY BOARD, COMPLETE *****					
R311	1-249-441-11	CARBON	100K	5%	1/4W	< CAPACITOR >					
R312	1-249-441-11	CARBON	100K	5%	1/4W	C210	1-161-051-00	CERAMIC	0.01uF	10%	50V
R313	1-249-441-11	CARBON	100K	5%	1/4W	C211	1-126-941-11	ELECT	470uF	20%	16V
R314	1-249-441-11	CARBON	100K	5%	1/4W	C214	1-124-472-11	ELECT	470uF	20%	10V
R315	1-249-441-11	CARBON	100K	5%	1/4W	C215	1-102-106-00	CERAMIC	100PF	10%	50V
R316	1-249-441-11	CARBON	100K	5%	1/4W	C216	1-102-106-00	CERAMIC	100PF	10%	50V
						C217	1-161-051-00	CERAMIC	0.01uF	10%	50V
						C218	1-124-472-11	ELECT	470uF	20%	10V

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RELAY

TAPE PREAMP

Ref. No.	Part No.	Description	Remark
C229	1-102-074-00	CERAMIC 0.001uF 10% 50V	
C235	1-126-233-11	ELECT 22uF 20% 50V	
C236	1-126-233-11	ELECT 22uF 20% 50V	
C241	1-102-125-00	CERAMIC 4700PF 10% 50V	
C242	1-102-125-00	CERAMIC 4700PF 10% 50V	
C245	1-161-772-11	CERAMIC 0.1uF 10% 25V	
C246	1-126-942-61	ELECT 1000uF 20% 16V	
C789	1-161-051-00	CERAMIC 0.01uF 10% 50V	
C797	1-161-051-00	CERAMIC 0.01uF 10% 50V	
C799	1-161-051-00	CERAMIC 0.01uF 10% 50V	

< CONNECTOR >

CNU102 1-770-067-11 CONNECTOR, FFC/FPC 19P

< DIODE >

D200	8-719-911-55	DIODE U05G
D206	8-719-911-55	DIODE U05G
D207	8-719-911-55	DIODE U05G
D208	8-719-920-76	DIODE 1S2076
D209	8-719-920-76	DIODE 1S2076

D770	8-719-911-55	DIODE U05G
D771	8-719-911-55	DIODE U05G

< COIL >

L203 1-408-096-00 INDUCTOR 470uH

< CONNECTOR >

* M704 1-564-715-11 PIN, CONNECTOR (SMALL TYPE) 13P

< TRANSISTOR >

Q202	8-729-029-86	TRANSISTOR DTC124ESA
Q203	8-729-200-36	TRANSISTOR 2SA966-Y
Q213	8-729-029-86	TRANSISTOR DTC124ESA
Q214	8-729-029-86	TRANSISTOR DTC124ESA
Q215	8-729-029-86	TRANSISTOR DTC124ESA

Q770	8-729-200-36	TRANSISTOR 2SA966-Y
Q771	8-729-200-36	TRANSISTOR 2SA966-Y
Q772	8-729-029-86	TRANSISTOR DTC124ESA
Q773	8-729-029-86	TRANSISTOR DTC124ESA

< RESISTOR >

R206	1-249-430-11	CARBON 12K 5% 1/4W
R207	1-249-418-11	CARBON 1.2K 5% 1/4W F
R213	1-247-807-31	CARBON 100 5% 1/4W
R214	1-247-807-31	CARBON 100 5% 1/4W
R215	1-247-807-31	CARBON 100 5% 1/4W
R217	1-247-807-31	CARBON 100 5% 1/4W
R218	1-247-807-31	CARBON 100 5% 1/4W
R219	1-247-807-31	CARBON 100 5% 1/4W
R220	1-247-807-31	CARBON 100 5% 1/4W
R221	1-247-807-31	CARBON 100 5% 1/4W
R224	1-247-843-11	CARBON 3.3K 5% 1/4W
R231	1-249-429-11	CARBON 10K 5% 1/4W
R232	1-249-439-11	CARBON 68K 5% 1/4W
R233	1-249-429-11	CARBON 10K 5% 1/4W
R234	1-249-429-11	CARBON 10K 5% 1/4W

R235	1-249-429-11	CARBON 10K 5% 1/4W
R236	1-249-429-11	CARBON 10K 5% 1/4W
△ R237	1-212-966-00	FUSIBLE 22 5% 1/2W F
R245	1-249-429-11	CARBON 10K 5% 1/4W
R265	1-249-429-11	CARBON 10K 5% 1/4W
R266	1-249-429-11	CARBON 10K 5% 1/4W
R267	1-249-429-11	CARBON 10K 5% 1/4W
R268	1-249-429-11	CARBON 10K 5% 1/4W
R271	1-249-429-11	CARBON 10K 5% 1/4W
R288	1-249-429-11	CARBON 10K 5% 1/4W
R289	1-249-429-11	CARBON 10K 5% 1/4W
R291	1-249-429-11	CARBON 10K 5% 1/4W
R295	1-249-415-11	CARBON 680 5% 1/4W F
R296	1-249-415-11	CARBON 680 5% 1/4W F
R298	1-249-435-11	CARBON 33K 5% 1/4W
R299	1-249-435-11	CARBON 33K 5% 1/4W
R771	1-249-425-11	CARBON 4.7K 5% 1/4W F
R772	1-249-434-11	CARBON 27K 5% 1/4W
R773	1-247-856-00	CARBON 11K 5% 1/4W
R774	1-249-430-11	CARBON 12K 5% 1/4W
R775	1-249-430-11	CARBON 12K 5% 1/4W
R776	1-249-418-11	CARBON 1.2K 5% 1/4W F
R777	1-249-418-11	CARBON 1.2K 5% 1/4W F

< VARIABLE RESISTOR >

VR770 1-230-497-11 RES, ADJ, CARBON 22K

< CONNECTOR >

* W103	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
W201	1-784-351-11	CONNECTOR 12P
W202	1-784-350-11	CONNECTOR 10P
W203	1-784-352-11	CONNECTOR 25P
W301	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P
W703	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P
W901	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P

* A-4407-243-A TAPE PREAMP BOARD, COMPLETE

* 4-997-378-01 PC BOARD BRACKET
7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S

< CAPACITOR >

C483	1-161-051-00	CERAMIC 0.01uF 10% 50V
C484	1-161-051-00	CERAMIC 0.01uF 10% 50V
C700	1-161-051-00	CERAMIC 0.01uF 10% 50V
C703	1-102-113-00	CERAMIC 390PF 10% 50V
C704	1-102-113-00	CERAMIC 390PF 10% 50V
C705	1-104-666-11	ELECT 220uF 20% 10V
C706	1-104-666-11	ELECT 220uF 20% 10V
C707	1-102-106-00	CERAMIC 100PF 10% 50V
C708	1-102-106-00	CERAMIC 100PF 10% 50V
C709	1-137-372-11	FILM 0.022uF 5% 50V
C710	1-137-372-11	FILM 0.022uF 5% 50V
C711	1-124-907-11	ELECT 10uF 20% 50V
C712	1-124-907-11	ELECT 10uF 20% 50V

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Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C713	1-124-443-00	ELECT	100uF	20%	10V	< CONNECTOR >					
C714	1-104-665-11	ELECT	100uF	20%	16V	* M701	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
C715	1-124-443-00	ELECT	100uF	20%	10V	* M703	1-766-720-21	CONNECTOR, BOARD TO BOARD 17P			
C716	1-137-399-11	FILM	0.1uF	5%	50V	< TRANSISTOR >					
C717	1-124-907-11	ELECT	10uF	20%	50V	< TRANSISTOR >					
C719	1-161-051-00	CERAMIC	0.01uF	10%	50V	< TRANSISTOR >					
C720	1-161-051-00	CERAMIC	0.01uF	10%	50V	Q702	8-729-194-57	TRANSISTOR	2SC945-P		
C721	1-102-981-00	CERAMIC	300PF	5%	50V	Q704	8-729-194-57	TRANSISTOR	2SC945-P		
C722	1-102-981-00	CERAMIC	300PF	5%	50V	Q705	8-729-194-57	TRANSISTOR	2SC945-P		
C723	1-102-112-00	CERAMIC	330PF	10%	50V	Q706	8-729-141-83	TRANSISTOR	2SB1094-LK		
C724	1-102-112-00	CERAMIC	330PF	10%	50V	Q707	8-729-194-57	TRANSISTOR	2SC945-P		
C725	1-102-112-00	CERAMIC	330PF	10%	50V	< RESISTOR >					
C726	1-102-112-00	CERAMIC	330PF	10%	50V	R485	1-249-395-11	CARBON	15	5%	1/4W F
C727	1-104-993-91	FILM	0.01uF	5%	200V	R486	1-249-395-11	CARBON	15	5%	1/4W F
C728	1-124-907-11	ELECT	10uF	20%	50V	R701	1-247-807-31	CARBON	100	5%	1/4W
C729	1-137-371-11	FILM	0.015uF	5%	50V	R702	1-247-807-31	CARBON	100	5%	1/4W
C730	1-137-367-11	FILM	0.0033uF	5%	50V	R703	1-247-889-00	CARBON	270K	5%	1/4W
C731	1-137-367-11	FILM	0.0033uF	5%	50V	R704	1-247-889-00	CARBON	270K	5%	1/4W
C732	1-137-367-11	FILM	0.0033uF	5%	50V	R705	1-249-404-00	CARBON	82	5%	1/4W F
C741	1-124-907-11	ELECT	10uF	20%	50V	R706	1-249-404-00	CARBON	82	5%	1/4W F
C742	1-124-907-11	ELECT	10uF	20%	50V	R707	1-247-863-91	CARBON	22K	5%	1/4W
C743	1-137-368-11	FILM	0.0047uF	5%	50V	R708	1-247-863-91	CARBON	22K	5%	1/4W
C744	1-137-368-11	FILM	0.0047uF	5%	50V	R709	1-247-882-11	CARBON	130K	5%	1/4W
C745	1-102-125-00	CERAMIC	4700PF	10%	50V	R710	1-247-882-11	CARBON	130K	5%	1/4W
C746	1-102-125-00	CERAMIC	4700PF	10%	50V	R711	1-247-850-11	CARBON	6.2K	5%	1/4W
C747	1-137-399-11	FILM	0.1uF	5%	50V	R712	1-247-850-11	CARBON	6.2K	5%	1/4W
C748	1-137-399-11	FILM	0.1uF	5%	50V	R713	1-247-815-91	CARBON	220	5%	1/4W
C749	1-124-907-11	ELECT	10uF	20%	50V	R714	1-247-815-91	CARBON	220	5%	1/4W
C750	1-124-907-11	ELECT	10uF	20%	50V	R715	1-249-437-11	CARBON	47K	5%	1/4W
C751	1-124-903-11	ELECT	1uF	20%	50V	R716	1-247-815-91	CARBON	220	5%	1/4W
C752	1-124-903-11	ELECT	1uF	20%	50V	R717	1-249-430-11	CARBON	12K	5%	1/4W
C753	1-124-907-11	ELECT	10uF	20%	50V	R718	1-249-430-11	CARBON	12K	5%	1/4W
C754	1-124-907-11	ELECT	10uF	20%	50V	R719	1-249-389-11	CARBON	4.7	5%	1/4W F
C756	1-161-051-00	CERAMIC	0.01uF	10%	50V	R720	1-249-389-11	CARBON	4.7	5%	1/4W F
C758	1-126-962-11	ELECT	3.3uF	20%	50V	R721	1-247-863-91	CARBON	22K	5%	1/4W
C761	1-124-443-00	ELECT	100uF	20%	10V	R722	1-247-863-91	CARBON	22K	5%	1/4W
C762	1-124-443-00	ELECT	100uF	20%	10V	R723	1-249-381-11	CARBON	1	5%	1/4W F
C798	1-161-772-11	CERAMIC	0.1uF	10%	25V	R724	1-247-863-91	CARBON	22K	5%	1/4W
C799	1-102-074-00	CERAMIC	0.001uF	10%	50V	R725	1-249-429-11	CARBON	10K	5%	1/4W
C801	1-124-907-11	ELECT	10uF	20%	50V	R741	1-249-435-11	CARBON	33K	5%	1/4W
C802	1-161-772-11	CERAMIC	0.1uF	10%	25V	R742	1-247-863-91	CARBON	22K	5%	1/4W
< IC >						R743	1-249-417-11	CARBON	1K	5%	1/4W F
IC701	8-759-508-69	IC BA3126N									
IC702	8-759-261-93	IC NJM4580LD									
IC703	8-759-363-21	IC HA12203NT									
JK800	8-749-923-04	IC TOTX178 (OPTICAL)									
< JACK >						R744	1-249-417-11	CARBON	1K	5%	1/4W F
JK900	1-784-361-11	JACK (SMALL TYPE)(C)									
< COIL >						R745	1-249-426-11	CARBON	5.6K	5%	1/4W
L701	1-410-774-11	INDUCTOR 8.2mH									
L702	1-410-774-11	INDUCTOR 8.2mH									
L703	1-431-707-11	TRANSFORMER, BIAS OSCILLATION									
L704	1-410-521-11	INDUCTOR 100uH									
						R746	1-249-426-11	CARBON	5.6K	5%	1/4W
						R749	1-249-441-11	CARBON	100K	5%	1/4W
						R750	1-247-891-00	CARBON	330K	5%	1/4W
						R751	1-249-429-11	CARBON	10K	5%	1/4W
						R752	1-249-434-11	CARBON	27K	5%	1/4W
						R753	1-249-429-11	CARBON	10K	5%	1/4W
						R754	1-249-426-11	CARBON	5.6K	5%	1/4W
						R757	1-249-429-11	CARBON	10K	5%	1/4W
						R758	1-247-840-00	CARBON	2.4K	5%	1/4W
						R759	1-249-432-11	CARBON	18K	5%	1/4W
						R760	1-247-840-00	CARBON	2.4K	5%	1/4W
						R761	1-247-866-11	CARBON	30K	5%	1/4W
						R762	1-247-866-11	CARBON	30K	5%	1/4W

TAPE PREAMP

VOL/POWER

Ref. No.	Part No.	Description	Remark
R763	1-249-437-11	CARBON 47K 5% 1/4W	
R765	1-249-437-11	CARBON 47K 5% 1/4W	
R766	1-249-437-11	CARBON 47K 5% 1/4W	
< VARIABLE RESISTOR >			
VR701	1-230-499-11	RES, ADJ, CARBON 100K	
VR702	1-230-499-11	RES, ADJ, CARBON 100K	
VR703	1-230-497-11	RES, ADJ, CARBON 22K	
VR704	1-230-497-11	RES, ADJ, CARBON 22K	
VR705	1-230-495-11	RES, ADJ, CARBON 2K	
VR706	1-230-495-11	RES, ADJ, CARBON 2K	

*	A-4407-239-A	VOL/POWER BOARD, COMPLETE	

		(AEP,UK,EE,CIS)	
*	A-4407-240-A	VOL/POWER BOARD, COMPLETE (US,CND)	

*	A-4407-241-A	VOL/POWER BOARD, COMPLETE (MY,SP,HK)	

	1-533-293-11	FUSE HOLDER	
*	4-997-378-01	PC BOARD BRACKET	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
< CAPACITOR >			
C403	1-136-173-00	FILM 0.47uF 5% 50V	
C404	1-136-173-00	FILM 0.47uF 5% 50V	
C461	1-126-960-11	ELECT 1uF 20% 50V	
C462	1-126-960-11	ELECT 1uF 20% 50V	
C463	1-137-364-11	FILM 0.001uF 5% 50V	
C464	1-137-364-11	FILM 0.001uF 5% 50V	
C465	1-137-378-11	FILM 0.22uF 5% 50V	
C466	1-137-378-11	FILM 0.22uF 5% 50V	
C469	1-126-933-11	ELECT 100uF 20% 16V	
C470	1-126-925-11	ELECT 470uF 20% 10V	
C471	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C475	1-126-964-11	ELECT 10uF 20% 50V	
C476	1-126-964-11	ELECT 10uF 20% 50V	
C477	1-137-399-11	FILM 0.1uF 5% 50V	
C478	1-137-399-11	FILM 0.1uF 5% 50V	
C479	1-126-948-11	ELECT 100uF 20% 35V	
C480	1-126-948-11	ELECT 100uF 20% 35V	
C481	1-102-106-00	CERAMIC 100PF 10% 50V	
C482	1-102-106-00	CERAMIC 100PF 10% 50V	
C483A	1-124-443-00	ELECT 100uF 20% 10V	
C485	1-102-106-00	CERAMIC 100PF 10% 50V	
C486	1-102-106-00	CERAMIC 100PF 10% 50V	
C488	1-126-924-11	ELECT 330uF 20% 10V	
C489	1-161-063-00	CERAMIC 0.1uF 10% 50V	
C490	1-126-963-11	ELECT 4.7uF 20% 50V	
C491	1-126-963-11	ELECT 4.7uF 20% 50V	
C502	1-102-129-00	CERAMIC 0.01uF 10% 50V	
C503	1-102-129-00	CERAMIC 0.01uF 10% 50V	
C508	1-126-964-11	ELECT 10uF 20% 50V	
C509	1-126-947-11	ELECT 47uF 20% 35V	

Ref. No.	Part No.	Description	Remark
C510	1-126-943-11	ELECT 220uF 20% 25V	
C511	1-126-951-11	ELECT 470uF 20% 35V	
C512	1-126-924-11	ELECT 330uF 20% 10V	
C513	1-126-924-11	ELECT 330uF 20% 10V	
C514	1-126-933-11	ELECT 100uF 20% 16V	
C515	1-126-933-11	ELECT 100uF 20% 16V	
C516	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C517	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C518	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C519	1-126-923-11	ELECT 220uF 20% 10V	
C520	1-126-923-11	ELECT 220uF 20% 10V	
C521	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C522	1-126-924-11	ELECT 330uF 20% 10V	
C523	1-126-924-11	ELECT 330uF 20% 10V	
C525	1-126-924-11	ELECT 330uF 20% 10V	
C526	1-126-924-11	ELECT 330uF 20% 10V	
C527	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C528	1-126-924-11	ELECT 330uF 20% 10V	
C529	1-126-933-11	ELECT 100uF 20% 16V	
C530	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C531	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C532	1-126-933-11	ELECT 100uF 20% 16V	
C999	1-161-772-11	CERAMIC 0.1uF 10% 25V	
< DIODE >			
D401	8-719-920-76	DIODE 1S2076	
D402	8-719-920-76	DIODE 1S2076	
D487	8-719-200-02	DIODE 10E2	
D502	8-719-067-67	DIODE W02G	
D503	8-719-001-64	DIODE UZL-12L2	
D504	8-719-910-25	DIODE HZ12B2L	
D506	8-719-001-85	DIODE UZL-12H3	
D507	8-719-001-76	DIODE UZL-12M3	
D508	8-719-001-42	DIODE UZL-11M1	
D509	8-719-935-81	DIODE UZL-7L2	
D510	8-719-200-02	DIODE 10E2	
D511	8-719-920-76	DIODE 1S2076	
< FUSE >			
△ F501	1-532-350-11	FUSE, TIME-LAG (T4AL 250V)	
		(AEP,UK,EE,CIS,MY,SP,HK)	
△ F501	1-532-746-11	FUSE, GLASS TUBE (4A 125V)(US,CND)	
△ F502	1-532-259-11	FUSE, TIME-LAG (T1.6AL 250V)	
		(AEP,UK,EE,CIS,MY,SP,HK)	
△ F502	1-532-742-11	FUSE, GLASS TUBE (1.6A 125V)(US,CND)	
△ F503	1-532-259-11	FUSE, TIME-LAG (T1.6AL 250V)	
		(AEP,UK,EE,CIS,MY,SP,HK)	
△ F503	1-532-742-11	FUSE, GLASS TUBE (1.6A 125V)(US,CND)	
△ F504	1-532-350-11	FUSE, TIME-LAG (T4AL 250V)	
		(AEP,UK,EE,CIS,MY,SP,HK)	
△ F504	1-532-746-11	FUSE, GLASS TUBE (4A 125V)(US,CND)	
< IC >			
IC461	8-759-497-88	IC TC9260P	
IC472	8-759-261-93	IC NJM4580LD	
IC501	8-759-701-57	IC NJM78M06FA	

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< JACK >				R492	1-247-843-11	CARBON	3.3K 5% 1/4W
JK901	1-784-353-11	JACK (DIN)(SPEAKER L)		R493	1-249-437-11	CARBON	47K 5% 1/4W
JK902	1-784-353-11	JACK (DIN)(SPEAKER R)		R494	1-249-437-11	CARBON	47K 5% 1/4W
< CONNECTOR >				R495	1-249-425-11	CARBON	4.7K 5% 1/4W F
M501	1-564-234-11	PLUG, CONNECTOR (PIN CONTACT)8P		R496	1-249-425-11	CARBON	4.7K 5% 1/4W F
* M901	1-766-720-21	CONNECTOR, BOARD TO BOARD 17P		R497	1-249-441-11	CARBON	100K 5% 1/4W
M902	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P		R498	1-249-441-11	CARBON	100K 5% 1/4W
< TRANSISTOR >				R499	1-247-895-91	CARBON	470K 5% 1/4W
Q486	8-729-201-53	TRANSISTOR 2SA1015-GR		△ R501	1-213-044-51	FUSIBLE	2.2 5% 1W F
Q487	8-729-231-55	TRANSISTOR 2SC2878-AB		△ R502	1-212-946-11	FUSIBLE	3.3 5% 1/2W F
Q488	8-729-231-55	TRANSISTOR 2SC2878-AB		R503	1-249-429-11	CARBON	10K 5% 1/4W
Q501	8-729-281-53	TRANSISTOR 2SC1815-GR		R504	1-249-421-11	CARBON	2.2K 5% 1/4W F
Q502	8-729-201-53	TRANSISTOR 2SA1015-GR		R505	1-247-863-91	CARBON	22K 5% 1/4W
Q503	8-729-201-53	TRANSISTOR 2SA1015-GR		R506	1-249-429-11	CARBON	10K 5% 1/4W
Q504	8-729-209-15	TRANSISTOR 2SD2012		R507	1-249-437-11	CARBON	47K 5% 1/4W
Q505	4-997-377-01	ISOLATION FILM		R508	1-249-437-11	CARBON	47K 5% 1/4W
Q505	8-729-017-51	TRANSISTOR 2SB632K-E		R509	1-247-807-31	CARBON	100 5% 1/4W
Q506	8-729-281-53	TRANSISTOR 2SC1815-GR		△ R510	1-215-869-11	METAL OXIDE	1K 5% 1W F
Q507	4-997-377-01	ISOLATION FILM		R511	1-247-863-91	CARBON	22K 5% 1/4W
Q507	8-729-188-23	TRANSISTOR 2SD882-P		R512	1-249-431-11	CARBON	15K 5% 1/4W
Q508	4-997-377-01	ISOLATION FILM		△ R514	1-212-853-00	FUSIBLE	6.8 5% 1/4W F
Q508	8-729-188-23	TRANSISTOR 2SD882-P		△ R515	1-213-048-00	FUSIBLE	3.3 5% 1W F
Q509	4-997-377-01	ISOLATION FILM		R516	1-249-413-11	CARBON	470 5% 1/4W F
Q509	8-729-188-23	TRANSISTOR 2SD882-P		△ R517	1-213-064-51	FUSIBLE	15 5% 1W F
Q510	8-729-017-51	TRANSISTOR 2SB632K-E		R518	1-249-413-11	CARBON	470 5% 1/4W F
Q511	8-729-201-53	TRANSISTOR 2SA1015-GR		△ R519	1-212-946-11	FUSIBLE	3.3 5% 1/2W F
Q512	8-729-265-52	TRANSISTOR 2SC2655		R520	1-249-413-11	CARBON	470 5% 1/4W F
< RESISTOR >				R521	1-249-413-11	CARBON	470 5% 1/4W F
R457	1-247-863-91	CARBON	22K 5% 1/4W	R524	1-249-381-11	CARBON	1 5% 1/4W F
R458	1-247-863-91	CARBON	22K 5% 1/4W	R525	1-247-887-00	CARBON	220K 5% 1/4W
R461	1-249-429-11	CARBON	10K 5% 1/4W	R526	1-249-441-11	CARBON	100K 5% 1/4W
R462	1-249-429-11	CARBON	10K 5% 1/4W	R527	1-249-441-11	CARBON	100K 5% 1/4W
R463	1-247-895-91	CARBON	470K 5% 1/4W	R528	1-249-425-11	CARBON	4.7K 5% 1/4W F
R464	1-247-895-91	CARBON	470K 5% 1/4W	R529	1-249-437-11	CARBON	47K 5% 1/4W
R465	1-249-425-11	CARBON	4.7K 5% 1/4W F	< RELAY >			
R466	1-247-815-91	CARBON	220 5% 1/4W	RL501	1-755-242-11	RELAY	
R467	1-249-429-11	CARBON	10K 5% 1/4W	*****			
R468	1-249-429-11	CARBON	10K 5% 1/4W	MISCELLANEOUS			
R469	1-249-429-11	CARBON	10K 5% 1/4W	*****			
R470	1-249-425-11	CARBON	4.7K 5% 1/4W F	13	1-783-091-11	WIRE (FLAT TYPE)	
R471	1-249-417-11	CARBON	1K 5% 1/4W F	52	1-693-400-21	FM/AM TUNER (AEP,UK,EE,CIS)	
R472	1-249-417-11	CARBON	1K 5% 1/4W F	52	1-693-400-31	FM/AM TUNER (US,CND)	
R477	1-249-441-11	CARBON	100K 5% 1/4W	52	1-693-400-41	FM/AM TUNER (MY,SP,HK)	
R478	1-249-441-11	CARBON	100K 5% 1/4W	△ 54	1-551-478-00	CORD, POWER (POLAR.SPT-2)(US,CND)	
R479	1-249-426-11	CARBON	5.6K 5% 1/4W	△ 54	1-555-750-00	CORD, POWER (AEP,EE,CIS,MY,SP,HK)	
R480	1-249-426-11	CARBON	5.6K 5% 1/4W	△ 54	1-751-535-11	CORD, POWER (UK)	
R481	1-249-430-11	CARBON	12K 5% 1/4W	△ 63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
R482	1-249-430-11	CARBON	12K 5% 1/4W	65	1-501-659-11	ANTTENA (FM) (US,CND,MY,SP,HK)	
R483	1-249-417-11	CARBON	1K 5% 1/4W F	66	1-501-985-11	LEAD, ANTTENA (AEP,UK,EE,CIS)	
R484	1-249-417-11	CARBON	1K 5% 1/4W F	104	1-773-009-11	WIRE (FLAT TYPE) (15 CORE) (AEP,UK,EE,CIS)	
R485A	1-249-429-11	CARBON	10K 5% 1/4W	104	1-751-688-11	WIRE (FLAT TYPE) (13 CORE)	
R486A	1-249-429-11	CARBON	10K 5% 1/4W			(US,CND,MY,SP,HK)	
R491	1-247-843-11	CARBON	3.3K 5% 1/4W	110	1-759-548-11	DECK, MECHANICAL	
				151	1-759-548-11	DECK, MECHANICAL	
				△ 201	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N	

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Ref. No.	Part No.	Description	Remark
202	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M901	X-4949-564-1	MTR MAIN BLK ASSY (CAPSTAN/REEL)	
△ S501	1-771-308-11	SELECTOR, POWER (MY,SP,HK)	
△ T501	1-431-697-21	TRANSFORMER, POWER (AEP,UK,EE,CIS)	
△ T501	1-431-697-31	TRANSFORMER, POWER (US,CND)	
△ T501	1-431-697-41	TRANSFORMER, POWER (MY,SP,HK)	
Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL	

HARDWARE LIST

* #1	7-683-254-08	SET-SCT, HEX. 5X5 FLAT POINT
#2	7-682-248-09	SCREW +K 3X8
#3	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT
#4	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#5	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S
#6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#8	7-685-880-09	SCREW +BVTT 4X6 (S)
* #9	7-627-000-02	SCREW,PRECISION+P M1.7X10 TYPE1
#10	7-621-255-15	SCREW +P 2X3
#11	7-627-553-88	SCREW,PRECISION+P 2X7
#12	7-627-554-28	SCREW,PRECISION+P M2X5 TYPE1
#13	7-682-546-09	SCREW +B 3X5

家电维修资料网

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HCD-ED1

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SONY®

SERVICE MANUAL

1998. 04

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-1

File this supplement with the service manual.

• CHANGES OF LAMP

(ENG-98003)

- The lamp on the DISPLAY board was changed to a type which use LED from following serial numbers.

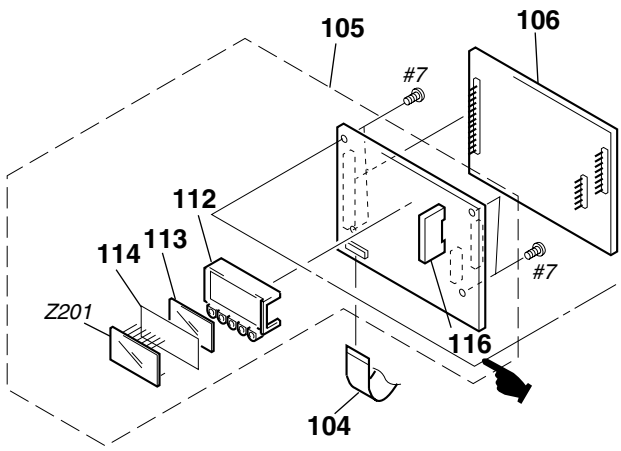
MODEL	: Serial numbers
US, CND Model	: 8107801 onward
AEP Model	: 5155844 onward
	: 4107801 onward
UK Model	: 6107951 onward
EE, CIS Model	: 7104797 onward
MY, SP Model	: 3153682 onward
HK Model	: 3105301 onward

• Abbreviation
CND : Canadian model
EE : East European model
MY : Malaysia model
SP : Singapore model
HK : Hong Kong model

DIFFERENCE TABLE

家电维修资料网

 : Indicates changed portion.

Page	FORMER TYPE (use lamp)				NEW TYPE (use LED)			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
47	*** EXPLODED VIEWS ***				*** EXPLODED VIEWS ***			
					*116	1-670-517-11	LED BOARD	
								
52	*** ELECTRICAL PARTS LIST ***				*** ELECTRICAL PARTS LIST ***			
	*** DISPLAY BOARD ***				*** DISPLAY BOARD ***			
	PL201	1-517-743-11	LAMP					

MEMO

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家电维修资料网

REVISION HISTORY

<http://jdwxzlw.5d6d.com/?fromuser=森林>

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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