

HCD-RV20/RV50/RV60

SERVICE MANUAL

E Model

Ver 1.1 2003.08



(Photo: HCD-RV50)

- HCD-RV20/RV50/RV60 is the tuner, deck, CD and amplifier section in MHC-RV20/RV50/RV60.

CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM74-30BD62
	Base Unit Name	BU-30BD62
	Optical Pick-up Name	A-MAX.3
Tape Deck Section	Model Name Using Similar Machanism	NEW
	Tape Transport Mechanism Type	RV20: CWM43FF-13 RV50/RV60: CWM43RR-23

SPECIFICATIONS

Amplifier section

HCD-RV20:

The following measured at AC 120, 127, 220, 240 V, 50/60 Hz

DIN power output (rated):

80 + 80 watts
(6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference):

100 + 100 watts (6 ohms at
1 kHz, 10% THD)

HCD-RV60:

Front speaker

The following measured at AC 120, 127, 220, 240 V, 50/60 Hz

DIN power output (rated):

160 + 160 watts
(6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference):

200 + 200 watts (6 ohms at
1 kHz, 10% THD)

Music power output (reference):

400 + 400 watts (6 ohms at
1 kHz, 10% THD)

HCD-RV50:

The following measured at AC 120, 127, 220, 240 V, 50/60 Hz

DIN power output (rated):

115 + 115 watts
(6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference):

140 + 140 watts (6 ohms at
1 kHz, 10% THD)

Inputs

HCD-RV20:

GAME INPUT AUDIO L/R (phono jacks):
voltage 250 mV,
impedance 47 kilohms

GAME INPUT VIDEO (phono jack):
1 Vp-p, 75 ohms

MIC (phone jack):
sensitivity 1 mV,
impedance 10 kilohms

Outputs

PHONES (stereo mini jack):
accepts headphones of
8 ohms or more

VIDEO OUT (phono jack):
max. output level
1 Vp-p, unbalanced, Sync
negative, load impedance
75 ohms

SPEAKER:
accepts impedance of 6 to
16 ohms

– Continued on next page –

COMPACT DISC DECK RECEIVER

9-877-378-02

2003H04-1

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Home Audio Company

Published by Sony Engineering Corporation

SONY®

HCD-RV20/RV50/RV60

HCD-RV50/RV60:

MD (VIDEO) IN L/R (phono jacks):
voltage 450/250 mV,
impedance 47 kilohms

GAME INPUT AUDIO L/R (phono jacks):
voltage 250 mV,
impedance 47 kilohms

GAME INPUT VIDEO (phono jack):
1 Vp-p, 75 ohms

MIC (phone jack):
sensitivity 1 mV,
impedance 10 kilohms

Outputs

PHONES (stereo mini jack):
accepts headphones of
8 ohms or more

VIDEO OUT (phono jack):
max. output level 1 Vp-p,
unbalanced, Sync
negative, load impedance 75 ohms

MD (VIDEO) OUT L/R (phono jacks):
impedance 1 kilohms

SPEAKER:
accepts impedance of 6 to
16 ohms

SURROUND SPEAKER (HCD-RV60 only)
accepts impedance of 24
ohms

CD player section

System Compact disc and digital
audio system

Laser Semiconductor laser
($\lambda=780$ nm)
Emission duration:
continuous

Frequency response 2 Hz – 20 kHz (± 0.5 dB)

Wavelength 780 – 790 nm

Signal-to-noise ratio More than 90 dB

Dynamic range More than 90 dB

Video color system format
NTSC, PAL

Tape deck section

Recording system 4-track 2-channel stereo

Frequency response 50 – 13,000 Hz (± 3 dB),
using Sony TYPE I
cassettes

Wow and flutter $\pm 0.15\%$ W.Peak (IEC)
0.1% W.RMS (NAB)
 $\pm 0.2\%$ W.Peak (DIN)

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0 MHz

Antenna FM lead antenna

Antenna terminals 75 ohms unbalanced

Intermediate frequency 10.7 MHz

AM tuner section

Tuning range

Middle Eastern model: 531 – 1,602 kHz (with the tuning
interval set at 9 kHz)

Other models: 530 – 1,710 kHz (with the tuning
interval set at 10 kHz)

531 – 1,602 kHz (with the tuning
interval set at 9 kHz)

Antenna AM loop antenna

Antenna terminals External antenna terminal

Intermediate frequency 450 kHz

Speaker

HCD-RV20:

Speaker system 3-way, 3-unit,
bass-reflex type

Speaker units

Woofers: 13 cm, cone type

Sub woofer: 13 cm, cone type

Tweeter: 5 cm, cone type

Nominal impedance 6 ohms

Dimensions (w/h/d) Approx. 240 × 325 × 243 mm

Mass Approx. 4.3 kg net per
speaker

Front speaker SS-RV990 for HCD-RV60/RV50:

Speaker system 3-way, 3-unit, bass-reflex
type

Speaker units

Sub Woofer: 15 cm, cone type

Woofers: 15 cm, cone type

Tweeter: 5 cm, cone type

Nominal impedance 6 ohms

Dimensions (w/h/d) Approx. 240 × 363 × 290 mm

Mass Approx. 4.7 kg net per
speaker

Surround speaker SS-RSV60 for HCD-RV60:

Speaker system 3-way, 3-unit, bass-reflex
type

Speaker units

Woofers: 13 cm, cone type

Tweeter: 5 cm, cone type

Super tweeter: 2 cm, dome type

Nominal impedance 24 ohms

Dimensions (w/h/d) Approx. 195 × 325 × 225 mm

Mass Approx. 2.3 kg net per
speaker

General

Power requirements

Saudi Arabian model: 120 – 127 V/220 V or
230 – 240 V AC,
50/60 Hz
Adjustable with voltage
selector

Thai model: 220 V AC, 50/60 Hz

Other models: 120 V, 220 V or 230 –
240 V AC, 50/60 Hz
Adjustable with voltage
selector

Power consumption

HCD-RV20: 110 watts

HCD-RV50: 135 watts

HCD-RV60: 190 watts

Dimensions (w/h/d)

HCD-RV20: Approx. 280 × 325 × 407 mm

HCD-RV50/RV60: Approx. 280 × 325 × 407 mm

Mass

HCD-RV20: Approx. 8.5 kg

HCD-RV50: Approx. 9.0 kg

HCD-RV60: Approx. 11.5 kg

Supplied accessories:

AM loop antenna (1)
Remote Commander (1)
Batteries (2)
FM lead antenna (1)
Speaker pads
HCD-RV20 (8)
HCD-RV50 (8)
HCD-RV60 (16)
Video cable (1)

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

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.**

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.

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

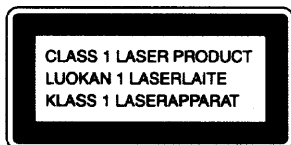
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter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

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

NOTES ON LASER DIODE EMISSION CHECK

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

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



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

SETTING AND RELEASING THE CD DISC TRAY LOCK FUNCTION

This set has a disc tray lock function to prevent discs for demonstration at shops from theft. While this lock function is set, the tray will not be delivered out even when the OPEN/CLOSE button is pressed.

Setting method:

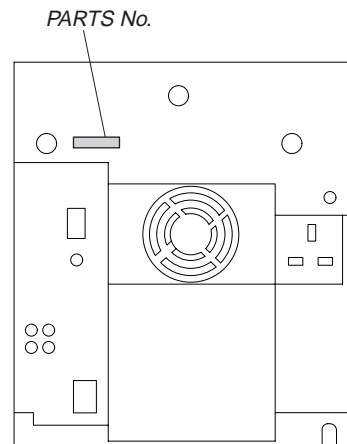
Press the OPEN/CLOSE button while pressing the STOP button. After a few seconds, the message “LOCKED” will appear on the fluorescent indicator tube with the tray locked.

Releasing method:

Just as the lock is set, press the OPEN/CLOSE button while pressing the STOP button. After a few seconds, the message “UNLOCKED” will appear with the lock released.

MODEL IDENTIFICATION

– BACK PANEL –



MODEL	PARTS No.
RV20: E3, E15, SP, MY, PL	4-264-151-0□
RV20: EA	4-264-151-1□
RV50: E3, E15, SP, MY, PL	4-264-151-2□
RV50: EA	4-264-151-3□
RV60: EA	4-264-151-4□
RV60: E3, E15, SP, MY, PL	4-264-151-5□
RV20: TH	4-264-151-6□
RV50: TH	4-264-151-7□
RV60: TH	4-264-151-8□

• Abbreviation

- E3 : 240 V AC area in E model
- EA : Saudi Arabia model
- MY : Malaysia model
- SP : Singapore model
- TH : Thai model

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SECTION 1
GENERAL

This section is extracted from instruction manual.

• HCD-RV20

Additional Information

Remote control

ALPHABETICAL ORDER

- A - N**
 ALBUM +/- [26] (10, 13)
 CD [24] (8, 9, 12, 13, 17, 20)
 CLEAR [9] (14)
 CLOCK/TIMER SELECT [2] (25, 26)
 CLOCK/TIMER SET [3] (8, 24, 25)
 DISPLAY [8] (26, 27, 32)
 D. SKIP [11] (10, 13)
 EFFECT ON/OFF [23] (21)
 ENTER [24] (8, 13, 16, 24, 25)
 GAME [6] (20, 22, 29)
 GROOVE [21] (21, 32)
 KARAOKE/MPX [17] (23)
 KEY CONTROL #P [18] (23)
 NEXT [28] (10, 12, 15)
 Number buttons [29] (11, 12, 14)

BUTTON DESCRIPTIONS

- I/O (power) [4] (7, 17, 24, 32)
 ◀/▶ (rewind/fast forward) [27] (10, 19, 33)
 ▶/▶▶ (go back/go forward) [28] (7, 10, 19)
 ▶ (play) [13] (10, 19, 23, 37)
 || (pause) [16] (7, 10, 19)
 ■ (stop) [15] (10, 17, 19, 20, 23, 32)
 ↑/↓/↔ (cursor) [22] (8, 24)
 RETURN ↻ [14] (12)

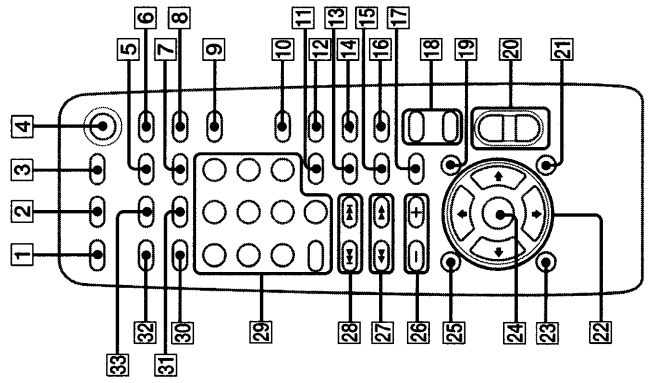
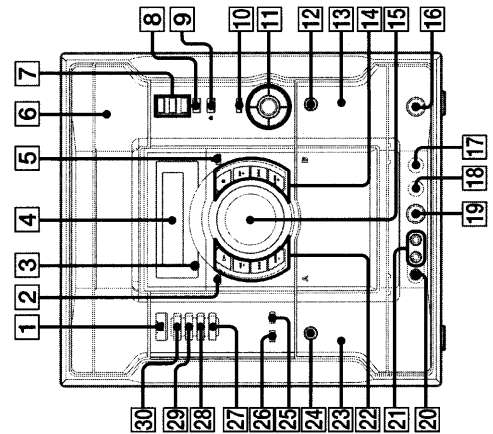
Main Unit
List of button locations and reference pages

Name of button/part	Reference page
Illustration number	
TAPE A/B [26] (19, 20, 23)	↑

Main unit

ALPHABETICAL ORDER

- A - L**
 ALBUM + [14] (10, 13)
 ALBUM - [26] (10, 13)
 CD [24] (8, 9, 12, 13, 17, 20)
 CD SYNC [26] (20)
 Deck A [23] (19)
 Deck B [13] (19, 20)
 DISC 1 - 3 [7] (10, 13)
 DISC SKIP/EX-CHANGE [8] (9, 10, 13)
 Disc tray [6] (9)
 DISPLAY [2] (26, 27, 32)
 Display window [4]
 ECHO LEVEL [17] (23)
 EFFECT ON/OFF [10] (21, 23)
 GAME [27] (20, 22, 29)
 GAME EQ [11] (21, 23)
 GAME INPUT AUDIO L/R jacks [21] (29)
 GAME INPUT VIDEO jack [20] (29)
 GAME MIXING [1] (22)
 GROOVE [1] (21, 32)
- M - Z**
 MIC jack [19] (23)
 MIC LEVEL [18] (23)
 MOVIE EQ [11] (21, 23)
 MUSIC EQ [11] (21, 23)
 PHONES jack [16]
 Remote sensor [3]
 REC PAUSE/START [25] (20, 22, 23)
 TAPE A/B [26] (19, 20, 23)
 TUNER/BAND [29] (16, 17, 18, 20)
 VOLUME control [15] (24)
- M - Z**
 I/O (power) [1] (7, 17, 24, 32)
 || (pause) [5] (7, 10, 19)
 ▲ (eject) [9] (9)
 ■ (stop) [14] (10, 17, 19, 20, 23, 32)
 ▶▶▶ (fast forward) [14] (10, 16, 19, 33)
 ▶▶ (go forward) [14] (7, 10, 16, 19)
 ▷ (play) [22] (10, 19, 23, 37)
 ◀◀ (rewind) [22] (10, 16, 19)
 ◀ (go back) [22] (7, 10, 16, 19)
 ▲ PUSH (deck A) (eject) [24] (19)
 PUSH ▲ (deck B) (eject) [12] (19)



List of button locations and reference pages

How to use this page

Use this page to find the location of buttons and other parts of the system that are mentioned in the text.



Main unit

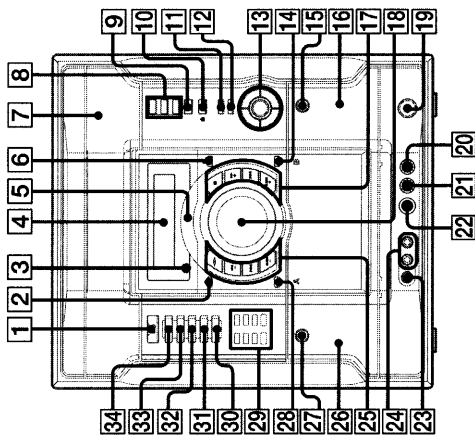
ALPHABETICAL ORDER

- A - O**
 ALBUM + **17** (12, 15)
 ALBUM - **23** (12, 15)
 CD **34** (9, 11, 14, 15, 19, 20, 22, 23)
 CD SYNC **28** (22)
 CINEMA SPACE***1** **29** (26)
 Deck A **29** (21)
 Deck B **16** (21, 22, 23, 27, 30)
 DIRECTION **29** (21, 22, 23, 27)
 DISC 1 - 3 **8** (12, 15)
 DISC SKIP/EX-CHANGE **9** (11, 12, 15)
 Disc tray **7** (11)
 DISPLAY **2** (31, 32, 40)
 Display window **4**
 ECHO LEVEL **20** (27)
 EDIT **29** (23)
 EFFECT ON/OFF **11** (25, 27)
 ENTER **12** (10, 15, 18, 19, 25, 29, 30)
 FM MODE **29** (20)
 GAME **30** (23, 26, 36)
 GAME EQ **13** (25, 27)
 GAME INPUT AUDIO L/R jacks **24** (35)
 GAME INPUT VIDEO jack **23** (35)
 GAME MIXING **29** (26)
 GROOVE **13** (24, 40)
 ILLUMINATION **28** (33)
 KARAOKE/MPX **29** (27)
 MD (VIDEO) **31** (23, 36)
 MIC jack **22** (27)
 MIC LEVEL **21** (27)
 MOVIE EQ **13** (25, 27)
 MUSIC EQ **13** (25, 27)

BUTTON DESCRIPTIONS

- P - Z**
 I/⏻ (power) **1** (8, 19, 29, 36, 40)
 II (pause) **6** (8, 12, 21)
 ▲ (eject) **10** (11)
 ⏮/⏪/⏩/⏭ (10, 25, 29)
 ■ (stop) **17** (12, 19, 21, 22, 27, 40)
 ▶ + (fast forward) **17** (12, 18, 21, 41)
 ▶ (go forward) **17** (8, 12, 18, 22)
 ◀ (play) **25** (12, 21, 22, 27, 45)
 ◀◀ (rewind) **25** (12, 18, 21)
 ◀ (go back) **25** (8, 12, 18, 22)
 ▲ PUSH (deck A) (eject) **27** (21)
 ▲ PUSH (deck B) (eject) **15** (21)

*1. MHC-RV50 only
 *2. MHC-RV60 only



continued

Remote control

ALPHABETICAL ORDER

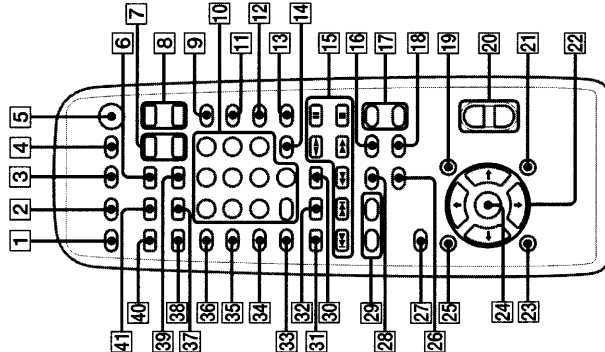
- A - O**
 ALBUM +/- **29** (12, 15)
 CD **40** (9, 11, 14, 15, 19, 20, 22, 23)
 CINEMA SPACE **26** (26)
 CLEAR **13** (16)
 CLOCK/TIMER SELECT **2** (30, 31)
 CLOCK/TIMER SET **3** (10, 29, 30)
 DIMMER **24** (33)
 DISPLAY **36** (31, 32, 40)
 D. SKIP **11** (12, 15)
 EFFECT ON/OFF **18** (25, 27)
 ENTER **24** (10, 15, 18, 25, 29, 30)
 GAME **37** (23, 26, 36)
 GAME EQ **23** (25, 27)
 GAME MIXING **33** (26)
 KARAOKE/MPX **16** (27)
 KEY CONTROL #P **17** (27)
 MD (VIDEO) **39** (23, 36)
 MOVIE EQ **13** (25, 27)
 MUSIC EQ **25** (25, 27)
 NEXT **32** (13, 14, 17)
 Number buttons **10** (13, 14, 16)
 ON SCREEN **14** (33)

P - Z

- P FILE **21** (25)
 PLAY MODE **28** (12, 15, 21)
 PRESET +/- **15** (18, 20)
 PREV **31** (13, 14, 17)
 REPEAT **17** (15)
 SLEEP **1** (29)
 SPECIAL MENU **33** (16)
 SPECTRUM***2** **35**
 SURROUND SPEAKER MODE***1** **27** (24)
 TAPE A/B **6** (21, 22, 23, 27)
 TUNER/BAND **41** (18, 20, 23)
 TUNING +/- **15** (18, 20)
 TV CH +/- **8** (9)
 TV/VIDEO **9** (9)
 TV VOL +/- **7** (9)
 VOL +/- **20** (29)

Notes for the supplied remote

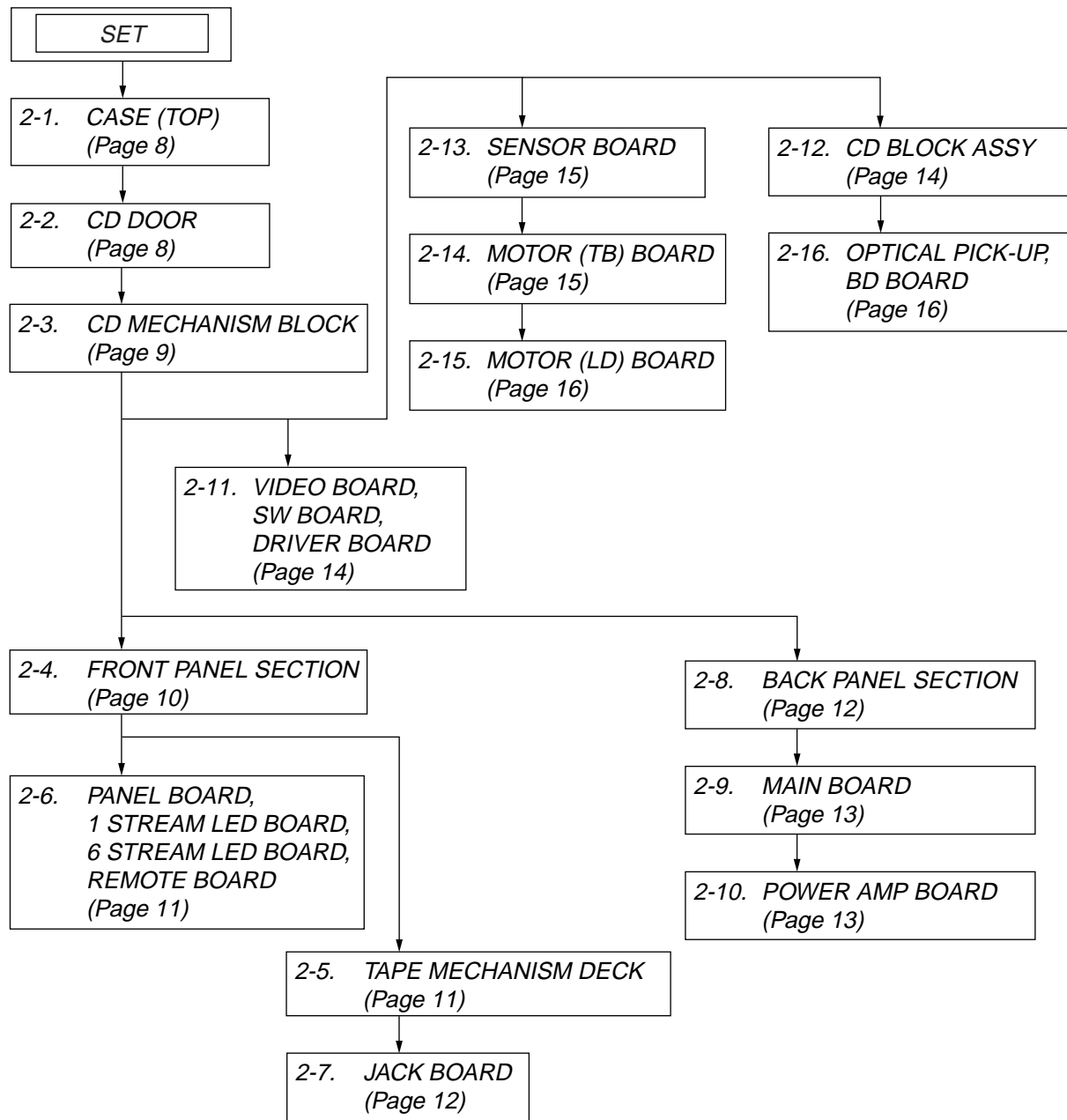
*1. MHC-RV60 only
 *2. The SPECTRUM button is not available.



Sony Corporation Printed in Thailand

SECTION 2 DISASSEMBLY

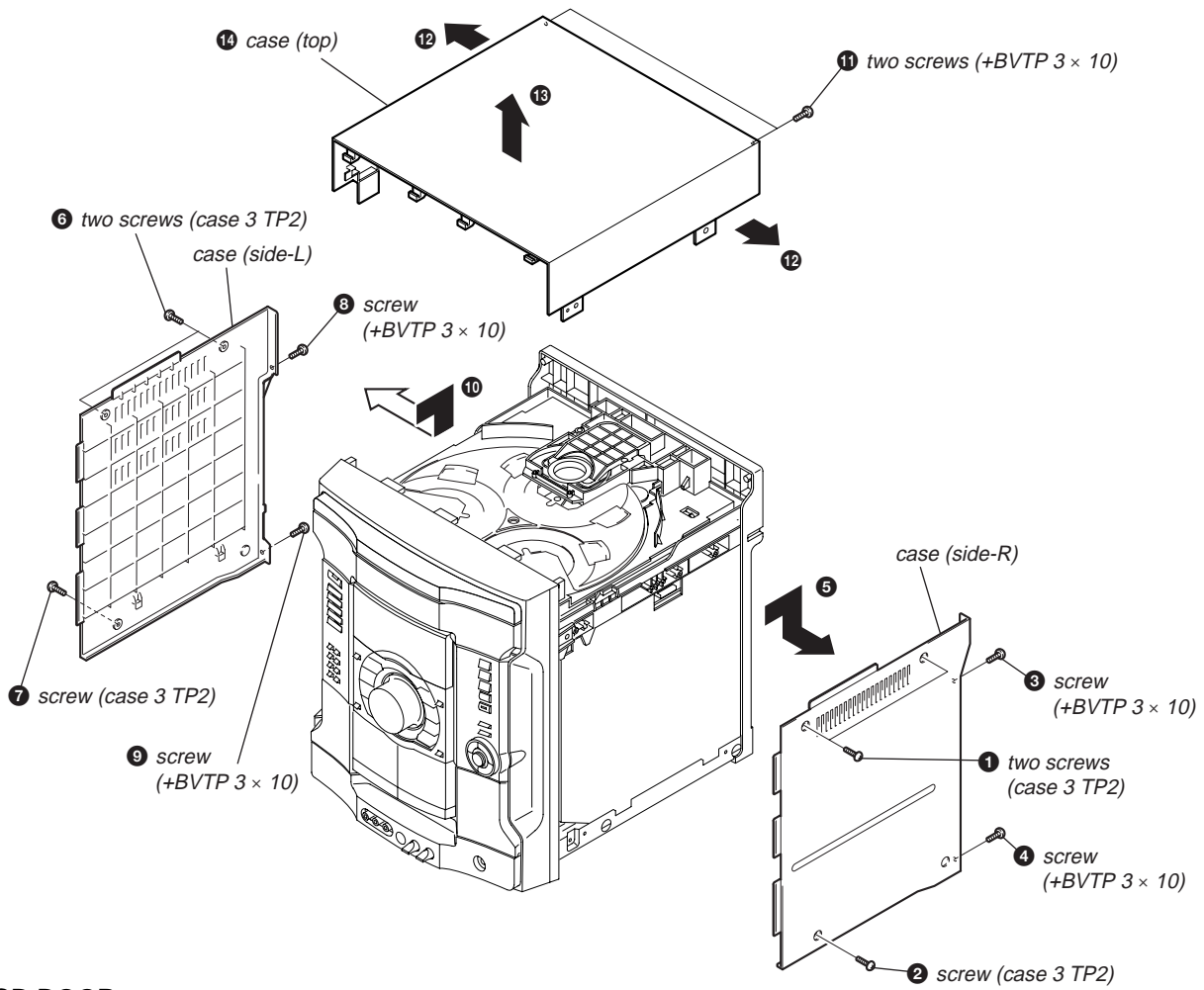
Note : Disassemble the unit in the order as shown below.



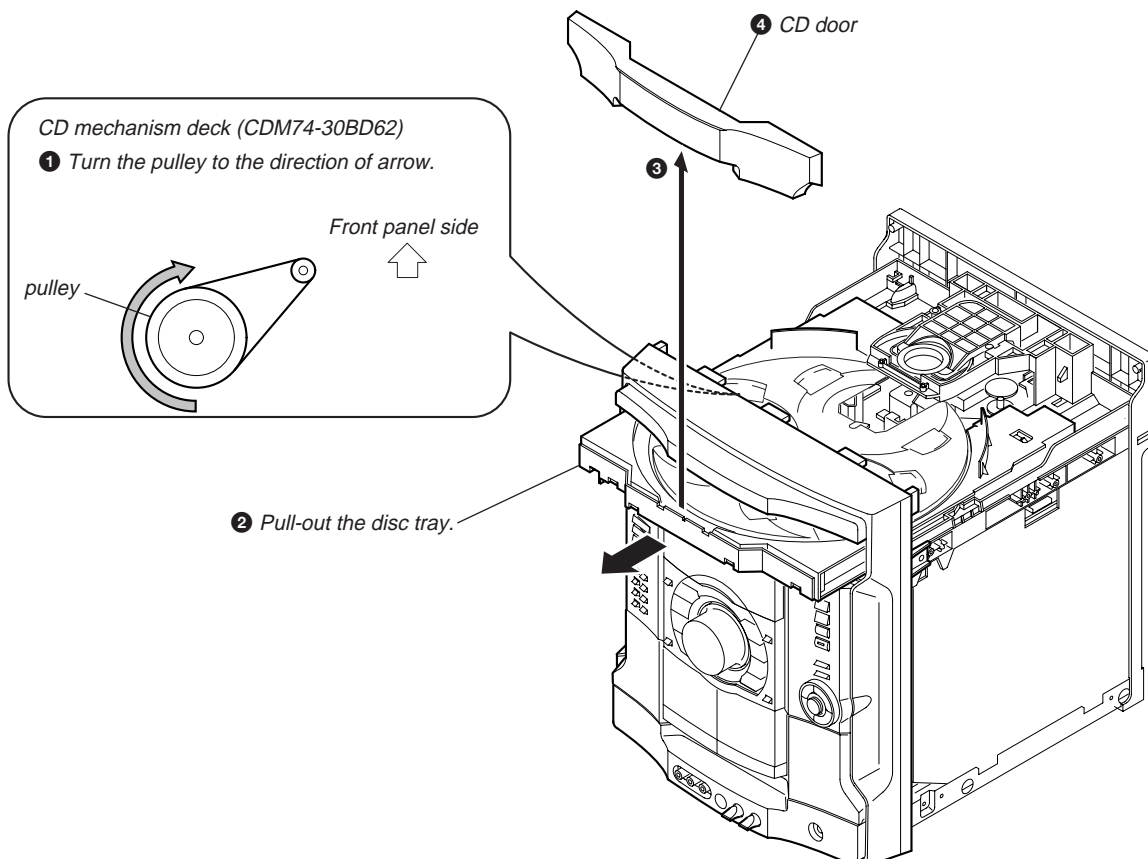
HCD-RV20/RV50/RV60

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

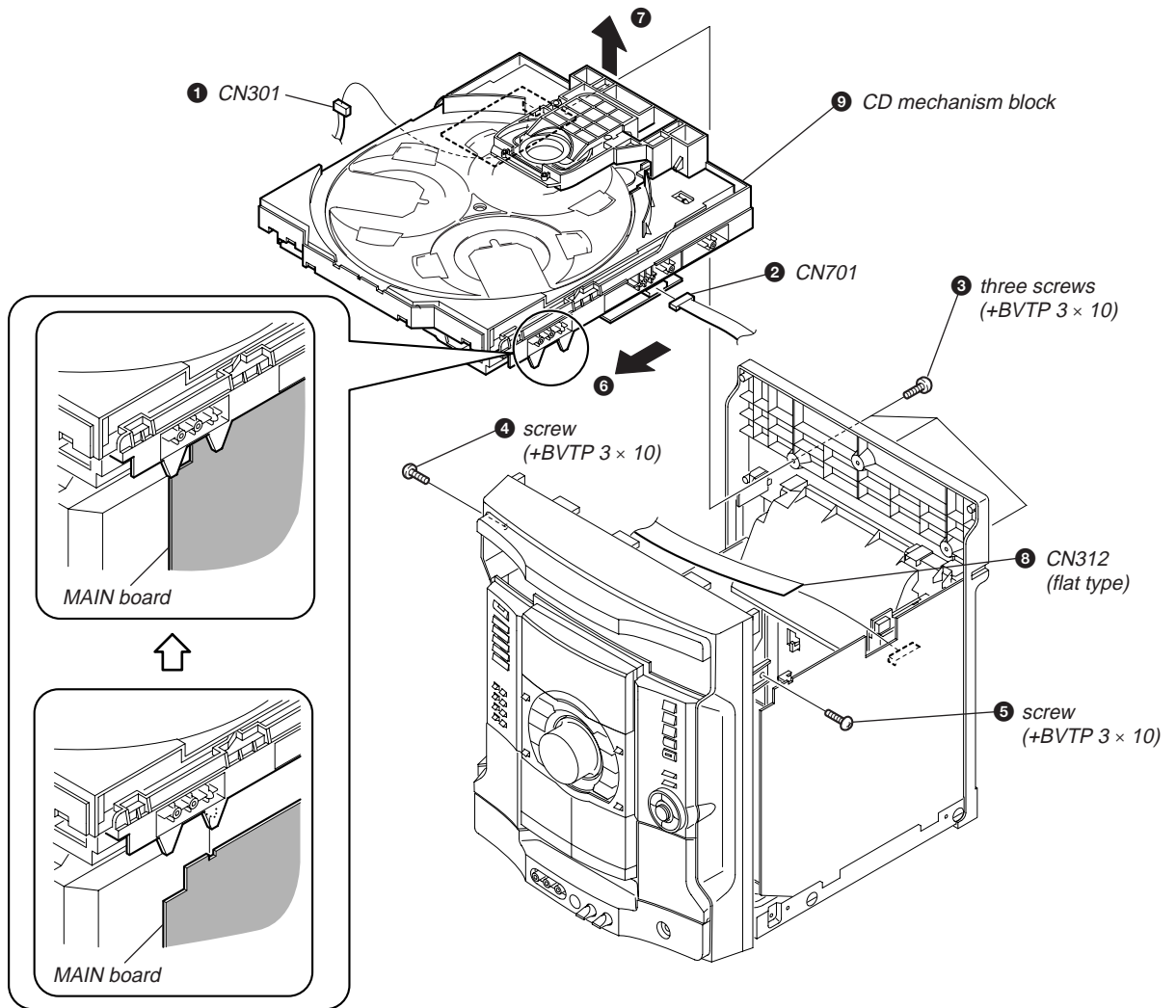
2-1. CASE (TOP)



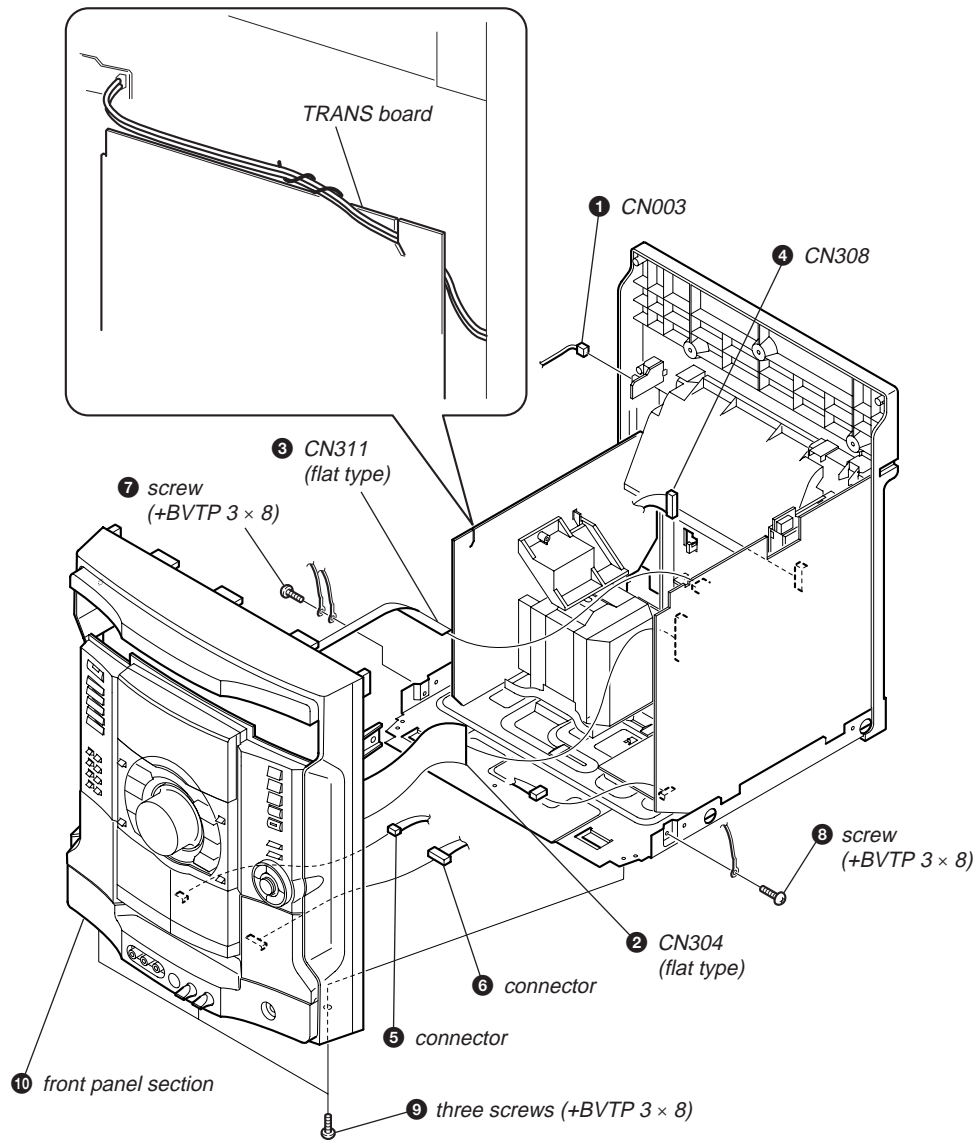
2-2. CD DOOR



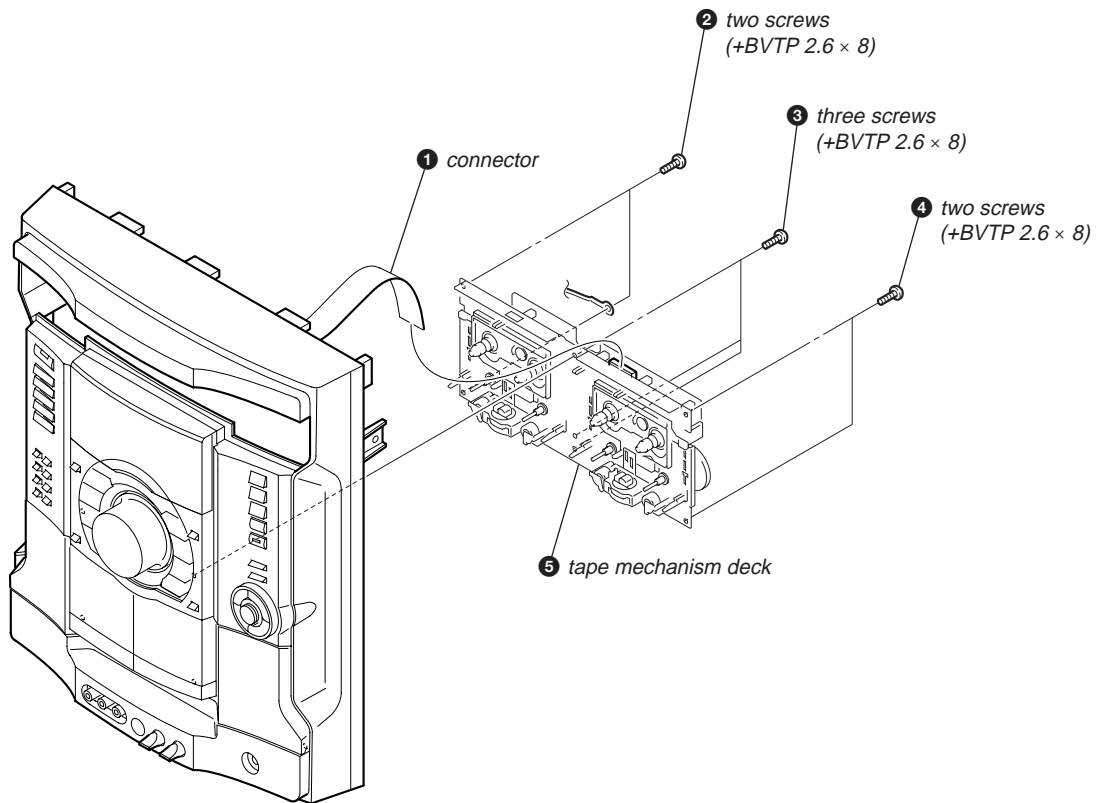
2-3. CD MECHANISM BLOCK



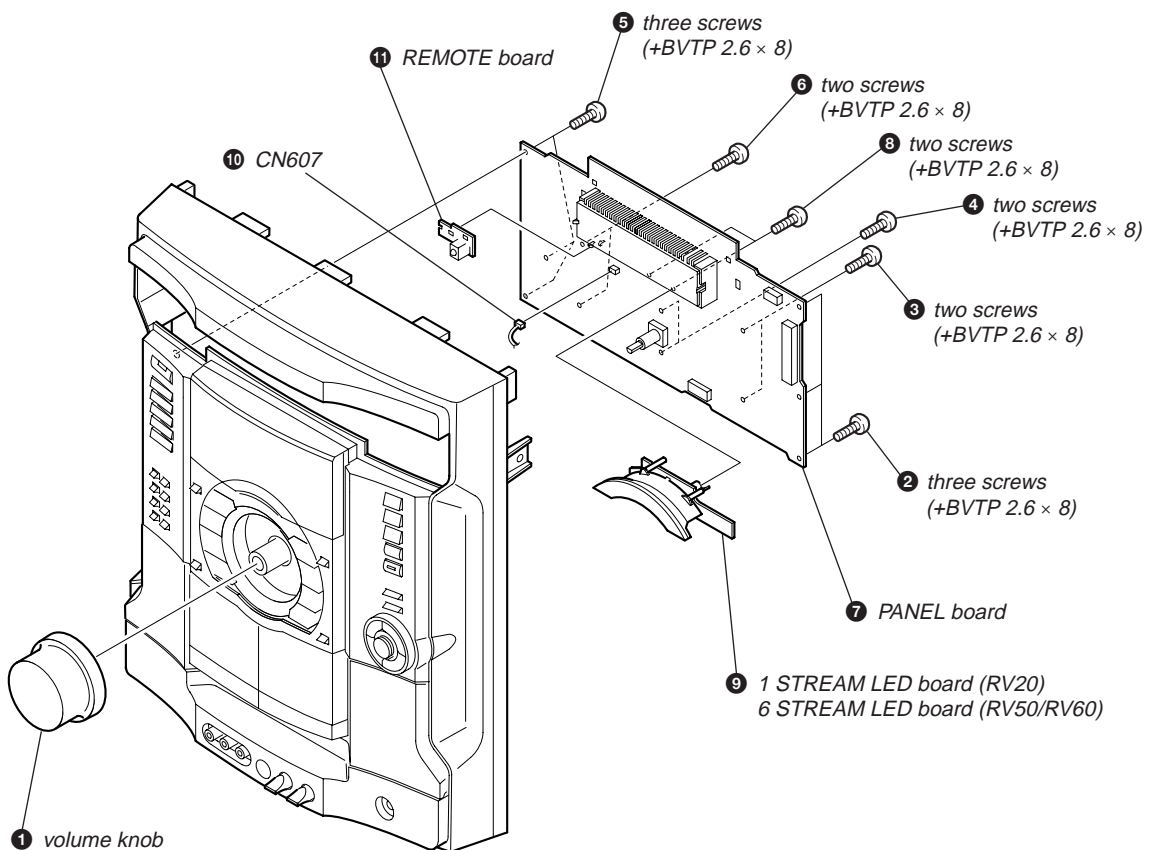
2-4. FRONT PANEL SECTION



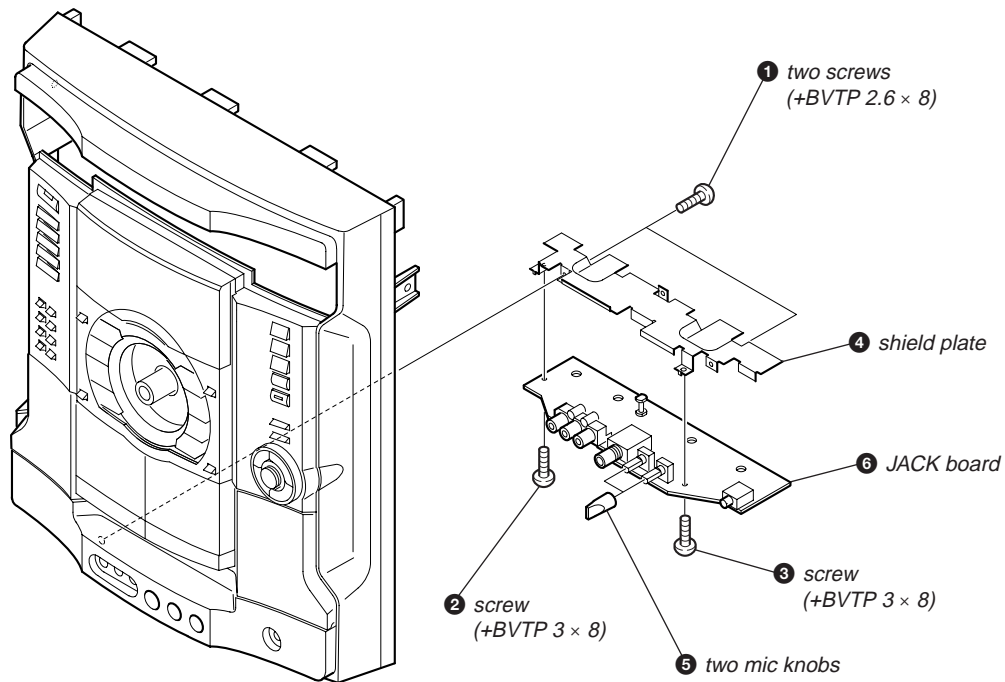
2-5. TAPE MECHANISM DECK



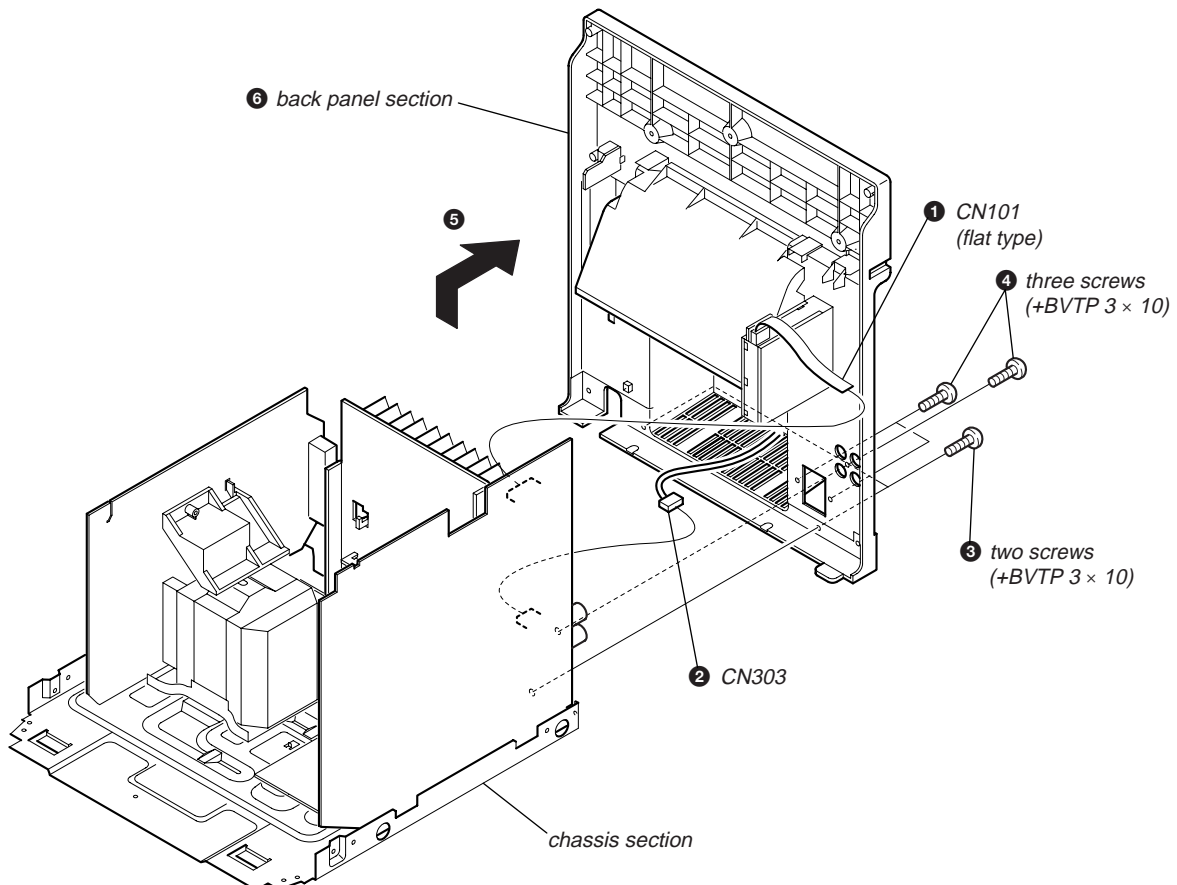
2-6. PANEL BOARD, 1 STREAM LED BOARD, 6 STREAM LED BOARD, REMOTE BOARD



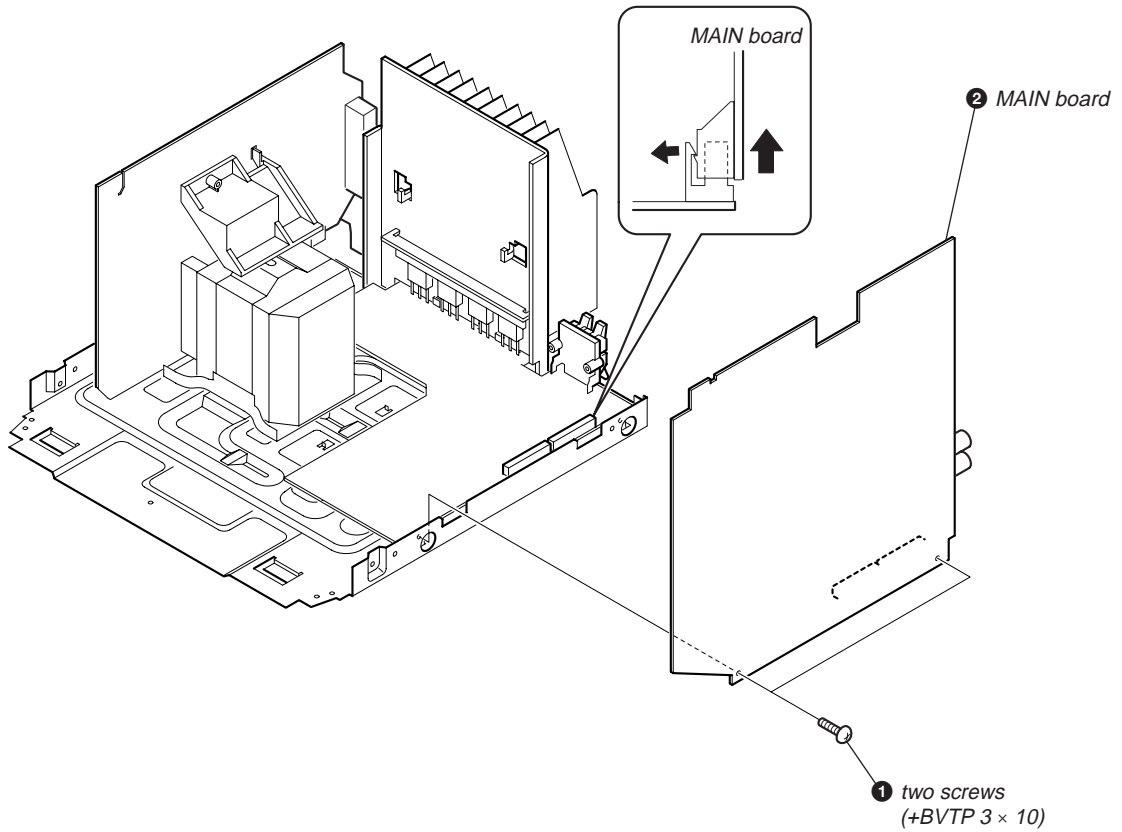
2-7. JACK BOARD



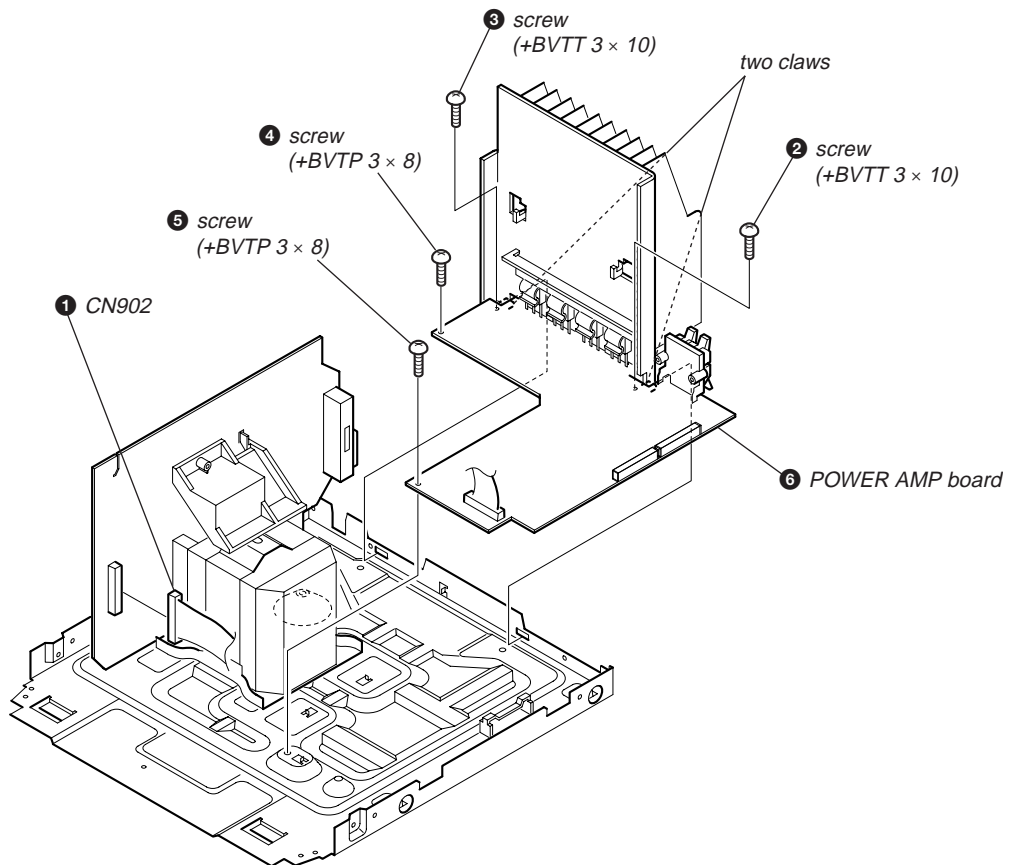
2-8. BACK PANEL SECTION



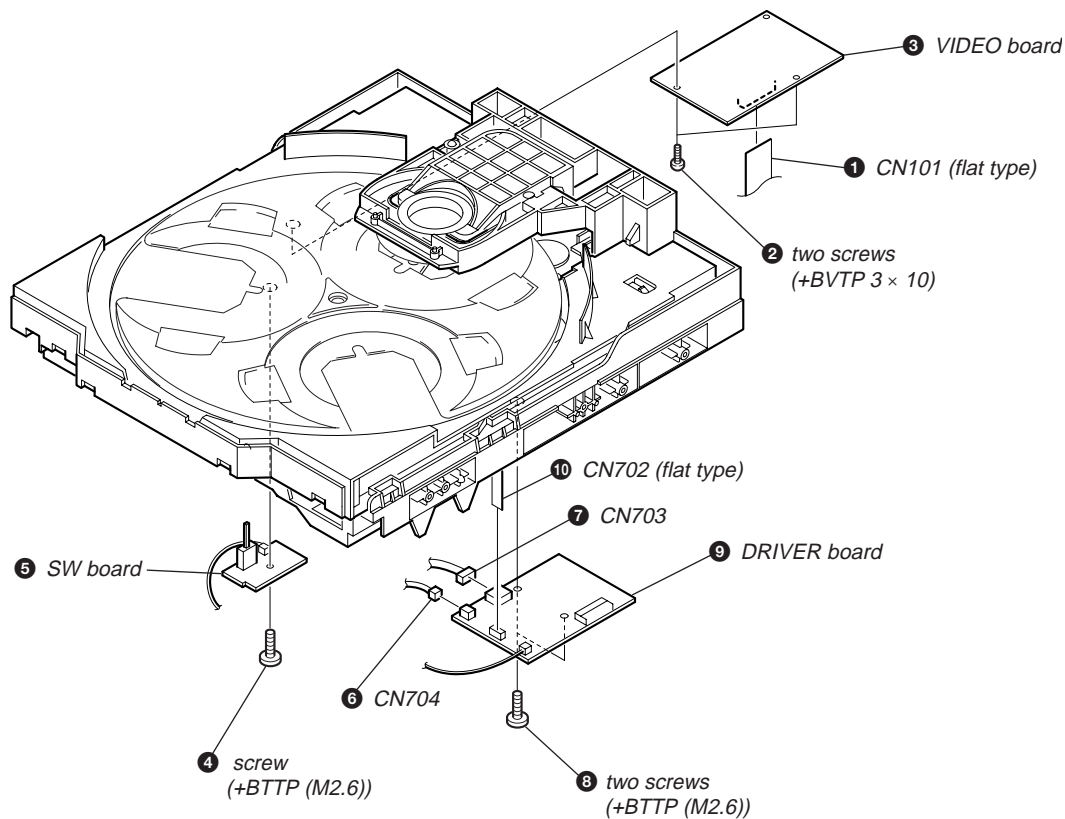
2-9. MAIN BOARD



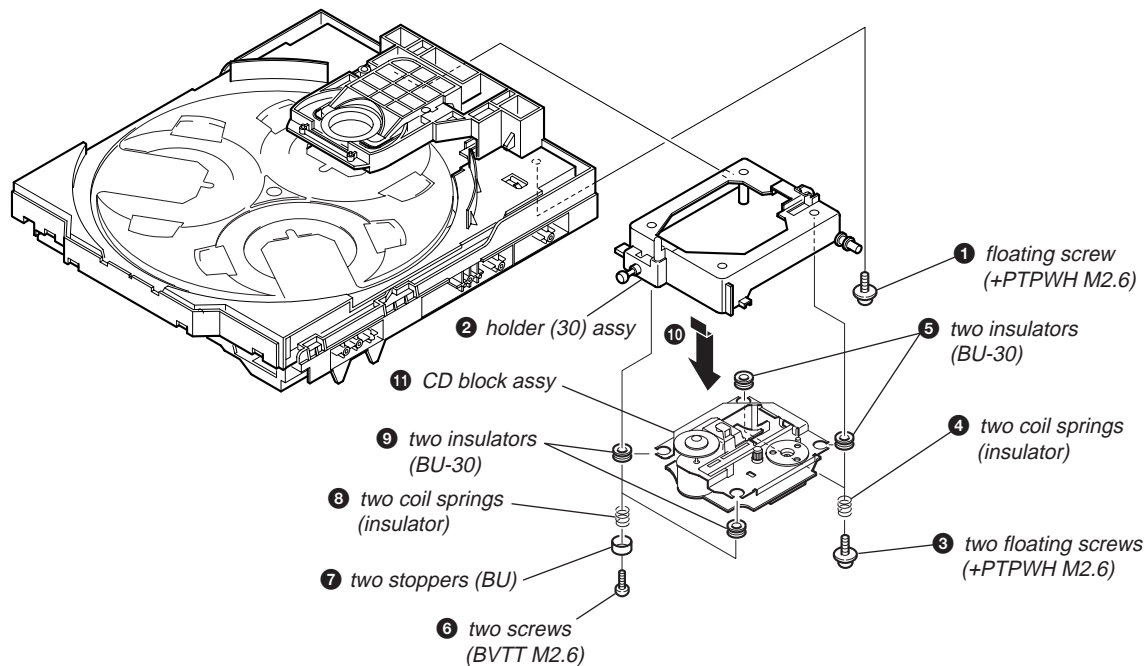
2-10. POWER AMP BOARD



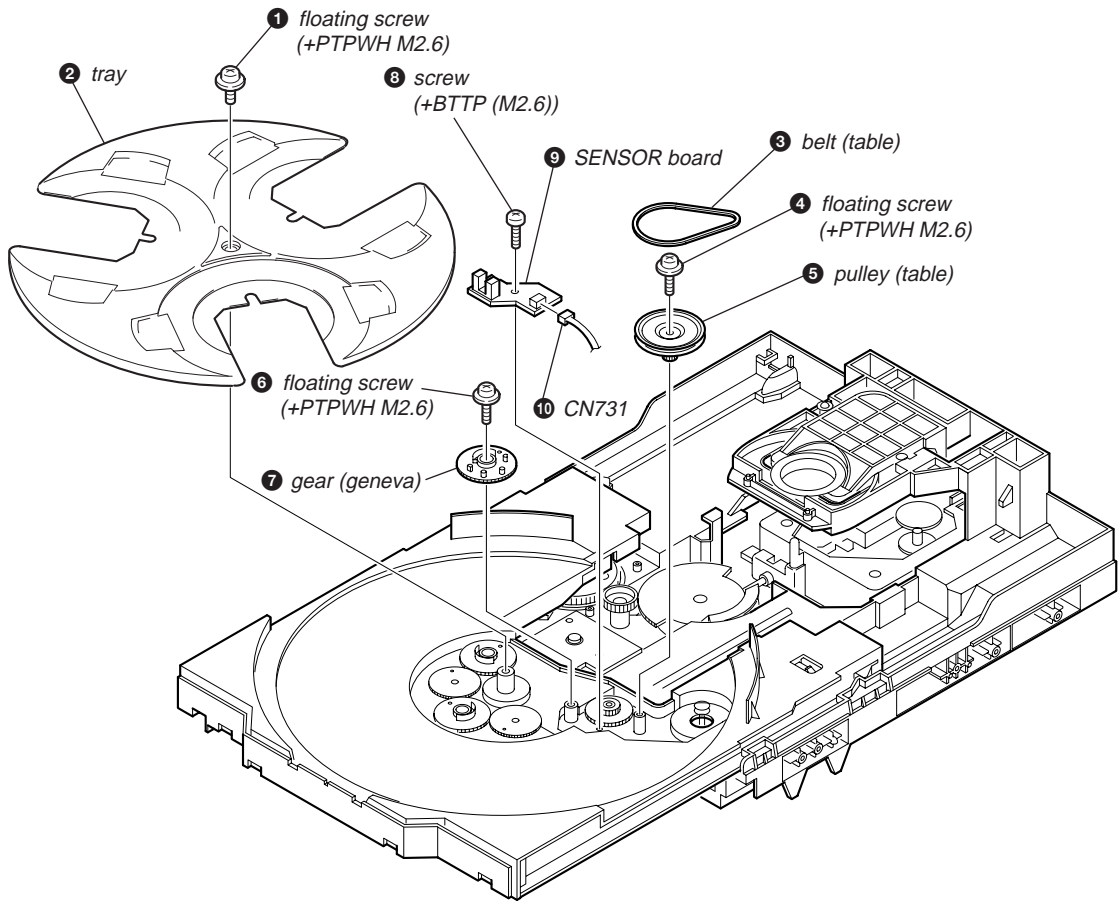
2-11. VIDEO BOARD, SW BOARD, DRIVER BOARD



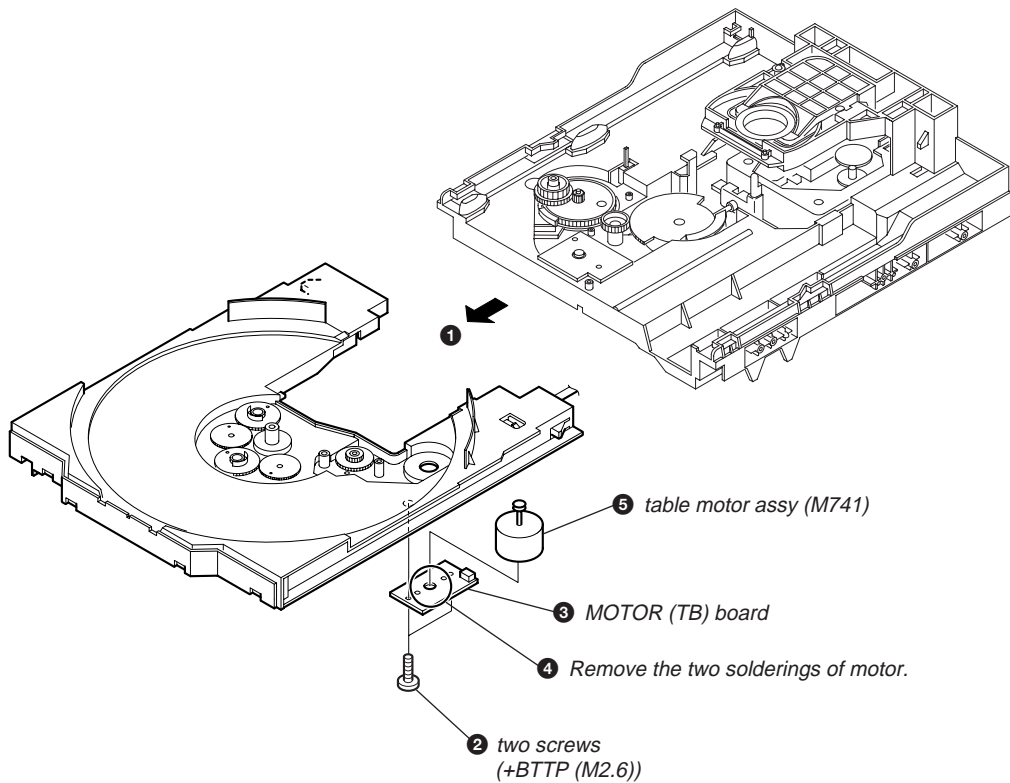
2-12. CD BLOCK ASSY



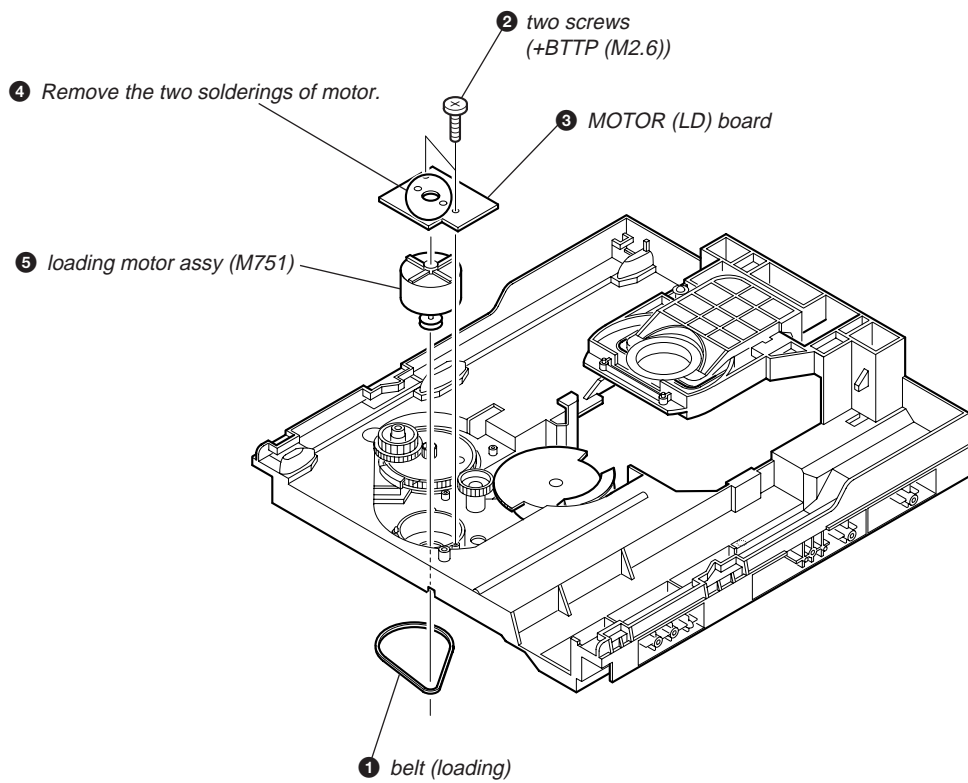
2-13. SENSOR BOARD



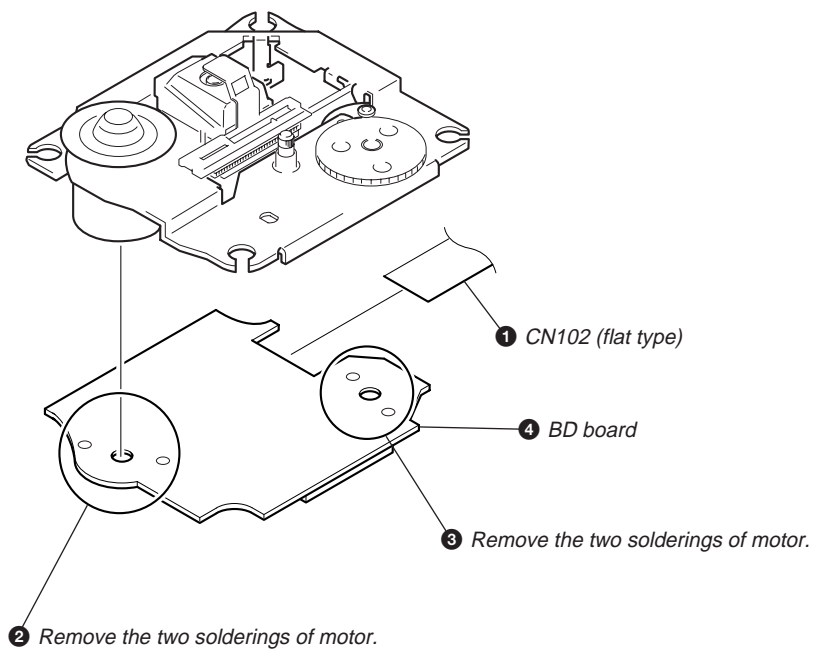
2-14. MOTOR (TB) BOARD



2-15. MOTOR (LD) BOARD



2-16. BD BOARD



SECTION 3 DIAGRAMS

3-1. IC PIN DESCRIPTION

• IC601 LC876696B-5IG9 (SYSTEM CONTROL, FLD CONTROL) (PANEL BOARD) (RV20)

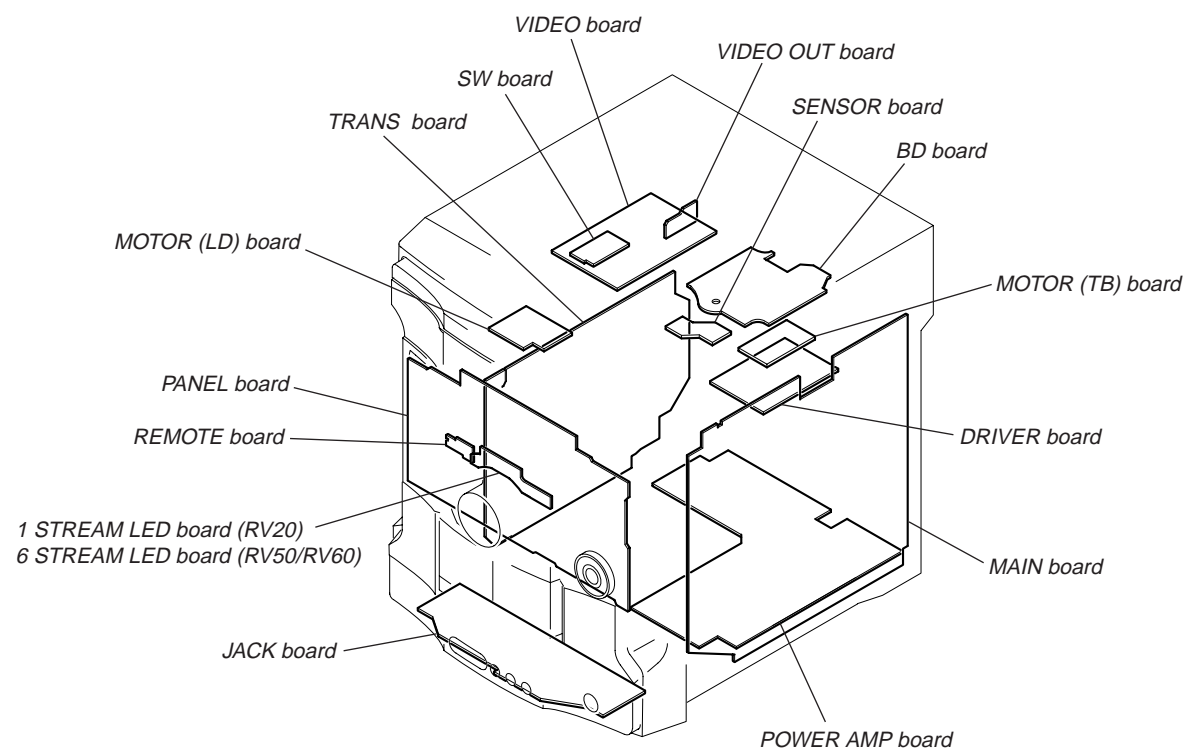
• IC601 LC876696B-5IH0 (SYSTEM CONTROL, FLD CONTROL) (PANEL BOARD) (RV50/RV60)

Pin No.	Pin Name	I/O	Pin Description
1	SYS MUTE	O	System mute signal output
2	BU1924 DATA	I	Not used in this set. (Connected to ground.)
3	PWR DOWN	I	Power down signal input
4	LC78646 RESET	O	CD reset signal output
5	LC78646 CE	O	CD CE signal output
6	LC78646 CE (MP3)	O	CD CE (MP3) signal output
7	M61519 CLK	O	Clock signal output
8	BU2099FV LCK	O	LCK signal output
9	LC72121 CE	O	CE signal output
10	LC78684 SYNC	I	SYNC signal input
11	RESET	I	Reset signal input from the IC603
12	XT1	I	Oscillator connect pin (32.768 kHz)
13	XT2	O	Oscillator connect pin (32.768 kHz)
14	VSS1	—	Ground pin
15	CF1	I	Ceramic vibrator connect pin (8.64 MHz)
16	CF2	O	Ceramic vibrator connect pin (8.64 MHz)
17	VDD	—	Power supply pin (+3.3 V)
18	TAPE A STAT	I	Tape A start signal input
19	TAPE B STAT	I	Tape B start signal input
20	CD ENCODER	I	CD encoder switch signal input
21	SW ON/OFF SENSOR	I	Switch control on/off signal input
22	STREAM IN	I	Stream in signal input
23	VACS	I	VACS signal input
24	KEY2	I	Key signal input 2
25	KEY1	I	Key signal input 1
26	KEY0	I	Key signal input 0
27	PROTECTOR (HOLD)	I	Protector (Hold) signal input
28	REMOCON IN	I	Remote control signal input from the RM601
29	BU1924 CLK	I	Not used in this set. (Connected to ground.)
30 – 41	G12 – G1	O	FLD control signal output
42 – 45	P1 – P4	O	FLD control signal output
46	VDD3	—	Power supply pin (+3.3 V)
47 – 50	P5 – P8	O	FLD control signal output
51	VPP	—	Ground pin
52 – 55	P9 – P12	O	FLD control signal output
56	SW1 (a) P13	O	FLD control signal output
57	SW2 (b) P14	O	FLD control signal output
58	SW3 (c) P15	O	FLD control signal output
59	SW4 (d) P16	O	FLD control signal output
60	SW5 P17	O	FLD control signal output
61	SW6 P18	O	FLD control signal output
62	SW7 P19	O	FLD control signal output
63	SW8 P20	O	FLD control signal output
64, 65	P21, P22	O	FLD control signal output
66	ENTER LED	O	Not used in this set. (Open)
67	MD/VIDEO LED	O	RV20: Not used. (Open) RV50/RV60: GAME LED (LED610) drive signal output
68	GAME LED	O	RV20: GAME LED (LED612) drive signal output RV50/RV60: MD/VIDEO LED (LED612) drive signal output
69	TAPE LED	O	TAPE A/B LED (LED609) drive signal output
70	TUNER LED	O	TUNER/BAND LED (LED608) drive signal output

HCD-RV20/RV50/RV60

Pin No.	Pin Name	I/O	Pin Description
71	CD LED	O	CD LED (LED607) drive signal output
72	VDD4	—	Power supply pin (+3.3 V)
73	CD VDD	—	CD power supply pin
74	TUNER TUNED	I	Tuner tuning signal input from the TU701 (tuner pack)
75	TUNER STEREO	I	Tuner stereo signal input from the TU701 (tuner pack)
76	CD DRF	I	CD DRF signal input
77	CD WRQ	I	CD WRQ signal input
78	CD NUMBER SENSOR	I	CD number sensor signal input
79	TAPE AMS IN	I	Tape AMS signal input
80	VR ENCODER A	I	VR encoder (VR601) signal input
81	VR ENCODER B	I	VR encoder (VR601) signal input
82	TAPE REEL A	I	Tape reel A signal input
83	TAPE REEL B	I	Tape reel B signal input
84	MODE SW IN	I	Mode switch signal input
85	STREAM 1 LED	O	Stream LED drive signal output
86	STREAM 2 LED/CD MUTE	O	RV20: CD mute signal output RV50/RV60: Stream LED drive signal output
87	STREAM 3 LED	O	RV20: Not used. (Open) RV50/RV60: Stream LED drive signal output
88	STREAM 4 LED/ MECHA VCC	O	RV20: Mechanism power control signal output “L”: ON, “H”: OFF RV50/RV60: Stream LED drive signal output
89	VSS2	—	Ground pin
90	VDD2	—	Power supply pin (+3.3 V)
91	STREAM 5 LED/ TAPE SOL A	O	RV20: Tape SOL A control signal output “L”: ON, “H”: OFF RV50/RV60: Stream LED drive signal output
92	STREAM 6 LED/ TAPE SOL B	O	RV20: Tape SOL B control signal output “L”: ON, “H”: OFF RV50/RV60: Stream LED drive signal output
93	POWER LED	O	POWER LED (LED614) drive signal output
94	POWER RELAY	O	Power relay signal output
95	LC72121/M61529/ BU2099FV DO	O	Serial data signal output
96	LC72121 DI	I	Serial data signal input
97	LC72121/BU2099FV CLK	O	Serial clock signal output
98	LC78646/LC78684 DO	O	Serial data signal output
99	LC78646/LC78684 DI	I	Serial data signal input
100	LC78646/LC78684 CLK	O	Serial clock signal output

3-2. CIRCUIT BOARDS LOCATION



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

for schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μpF
- 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.
- % : indicates tolerance.
- Δ : internal component.
- \square : 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.
- □ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- no mark : FM
- () : CD
- [] : TAPE

- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.

- Circled numbers refer to waveforms.

• Signal path.

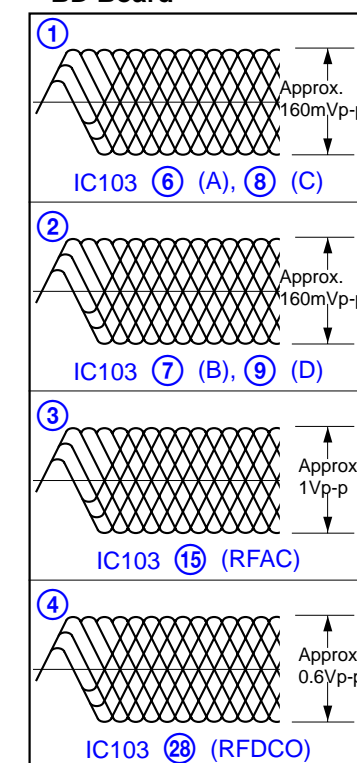
- \rightarrow : FM
- \rightarrow : AM
- \rightarrow : PB (DECK A)
- \rightarrow : PB (DECK B)
- \rightarrow : REC (DECK B)
- \rightarrow : CD
- \rightarrow : digital out
- \rightarrow : VIDEO

for printed wiring boards:

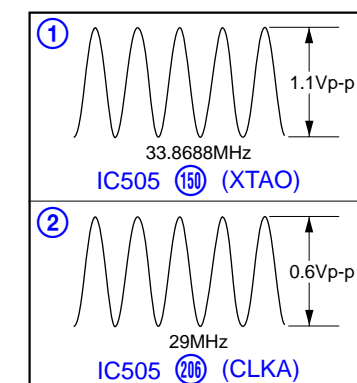
- \circ : parts extracted from the component side.
- \bullet : parts extracted from the conductor side.
- \blacksquare : parts mounted on the conductor side.
- : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

• Waveforms

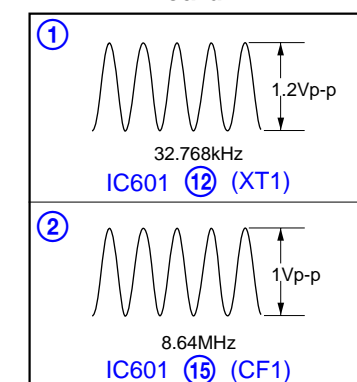
– BD Board –



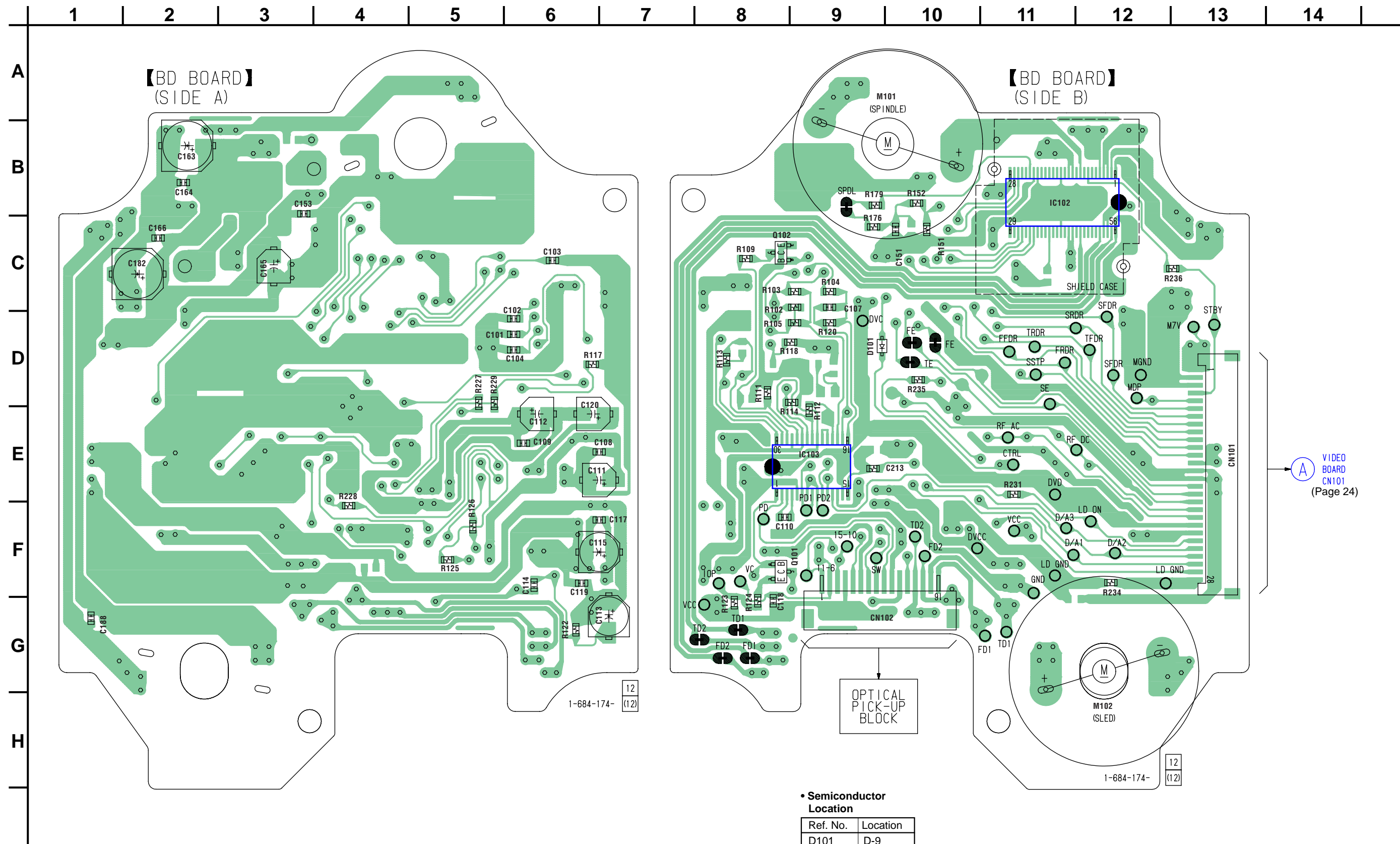
– VIDEO Board –



– PANEL Board –



3-3. PRINTED WIRING BOARD — CD MECHANISM SECTION (1/2) — • Refer to page 19 for Circuit Boards Location.

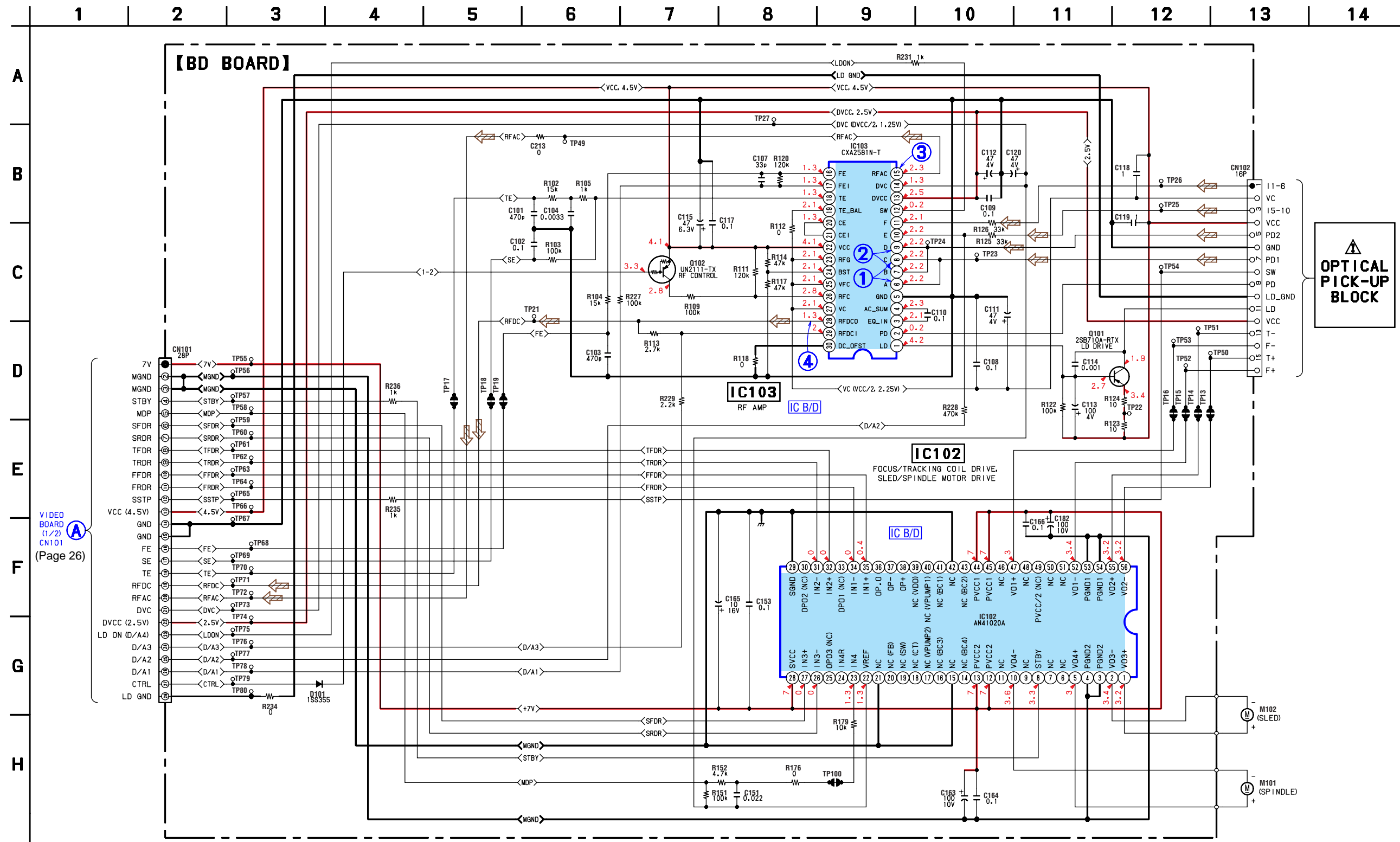


VIDEO BOARD
CN101
(Page 24)

• Semiconductor Location

Ref. No.	Location
D101	D-9
IC102	B-11
IC103	E-9
Q101	F-8
Q102	C-8

3-4. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (1/2) — • Refer to page 19 for Waveforms. • Refer to page 43 for IC Block Diagrams.

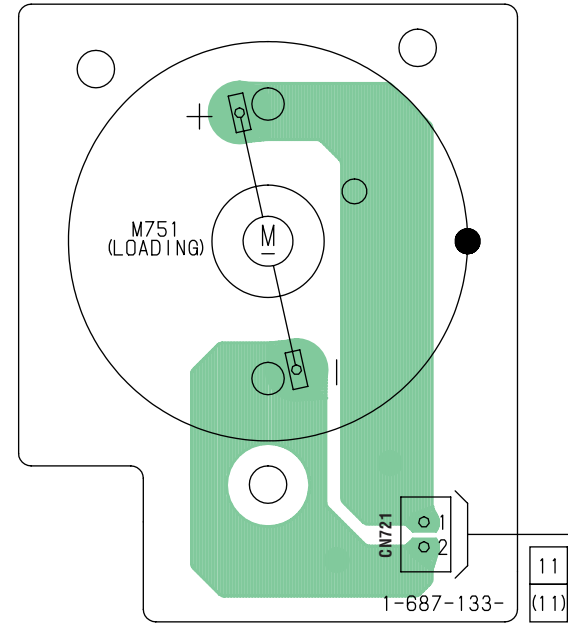


3-5. PRINTED WIRING BOARDS — CD MECHANISM SECTION (2/2) — • Refer to page 19 for Circuit Boards Location.

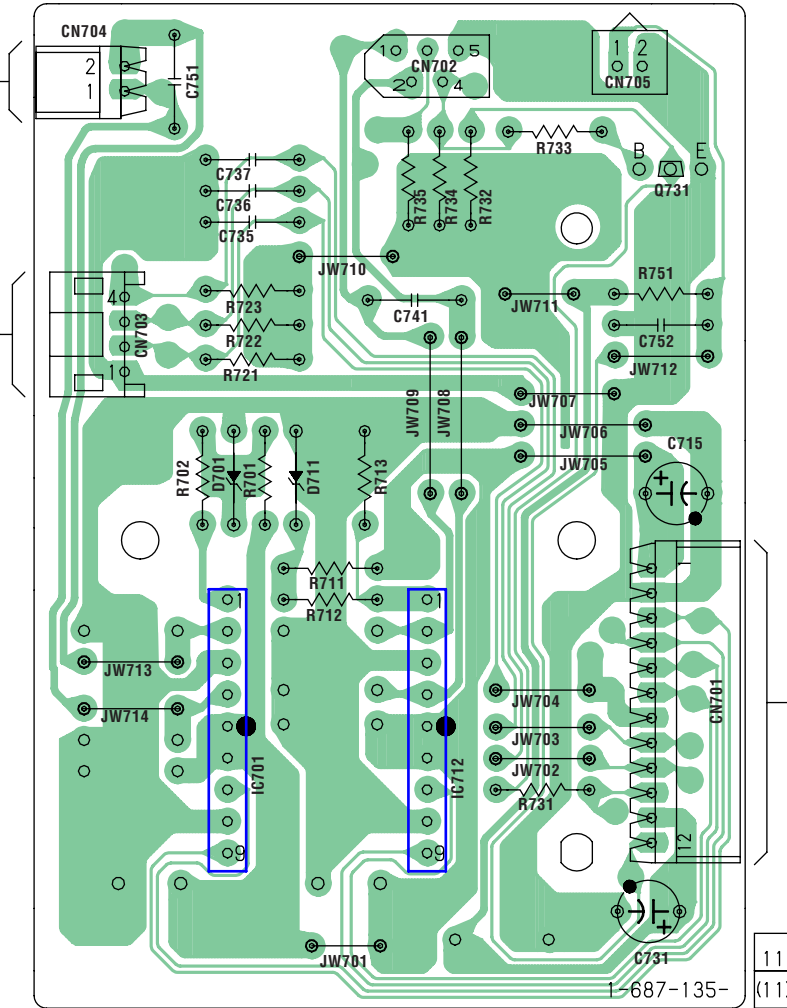
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A
B
C
D
E
F
G
H

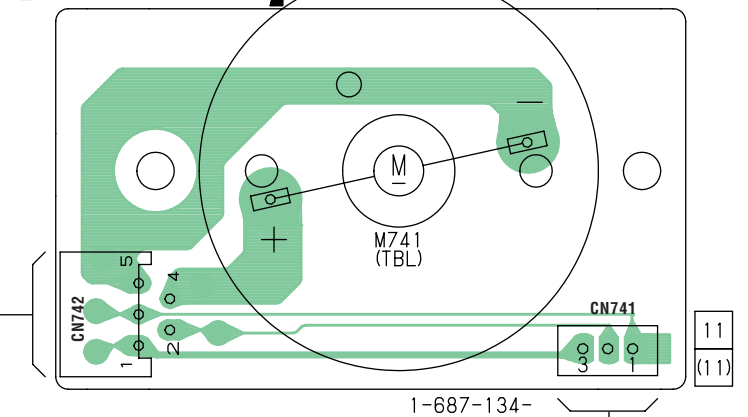
【MOTOR (LD) BOARD】



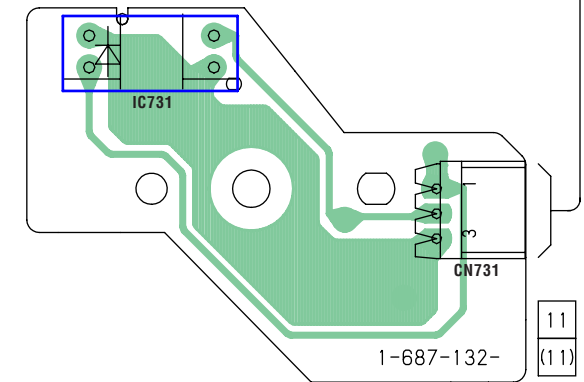
【DRIVER BOARD】



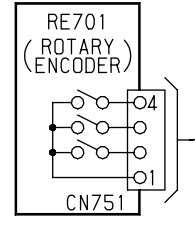
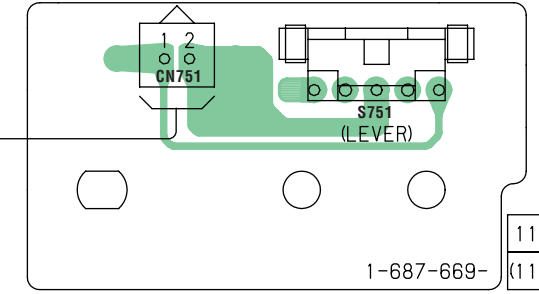
【MOTOR (TB) BOARD】



【SENSOR BOARD】



【SW BOARD】

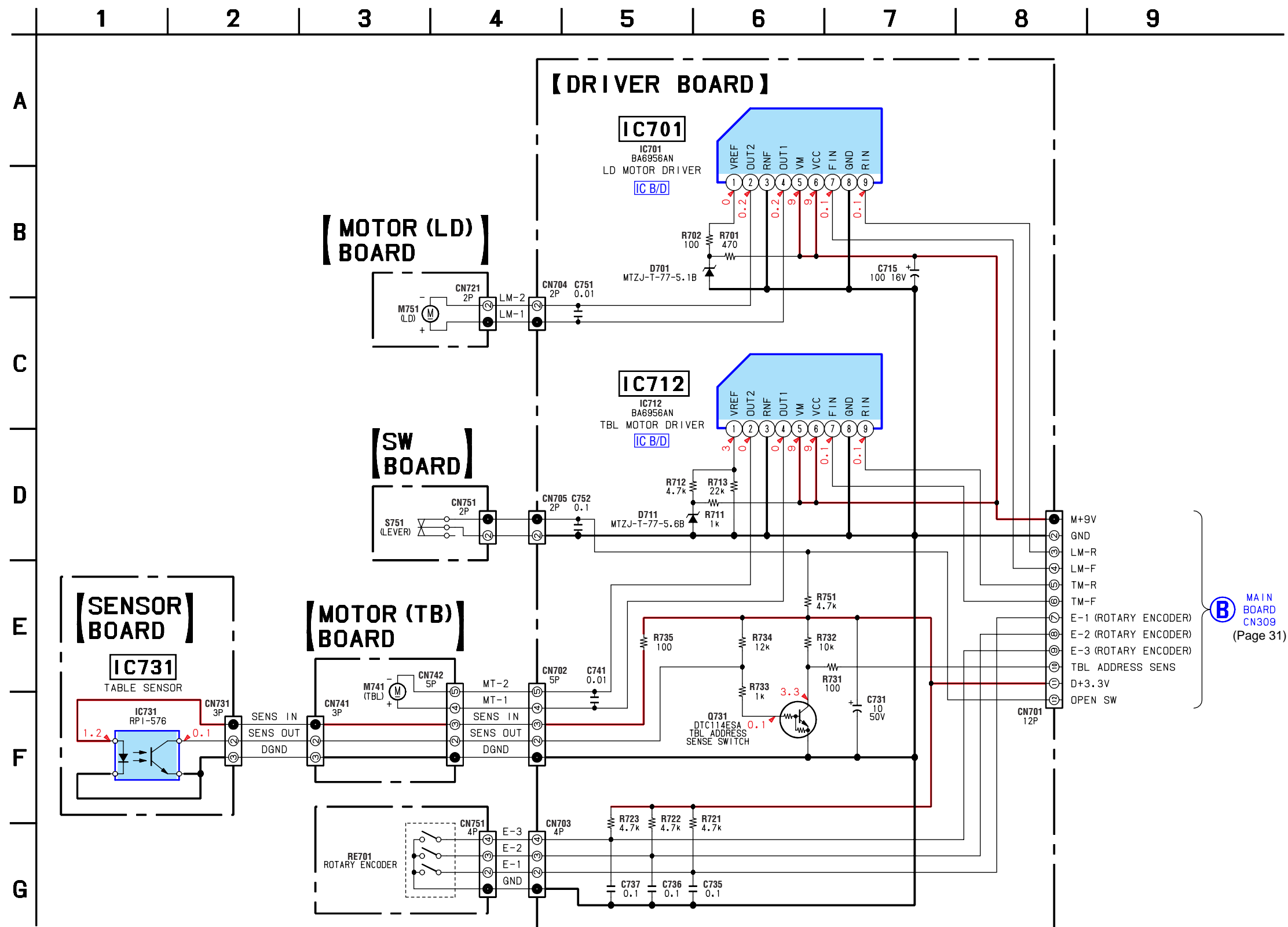


B MAIN BOARD CN309 (Page 28)

• Semiconductor Location

Ref. No.	Location
D701	D-6
D711	D-7
IC701	F-6
IC712	F-7
IC731	E-11
Q731	C-9

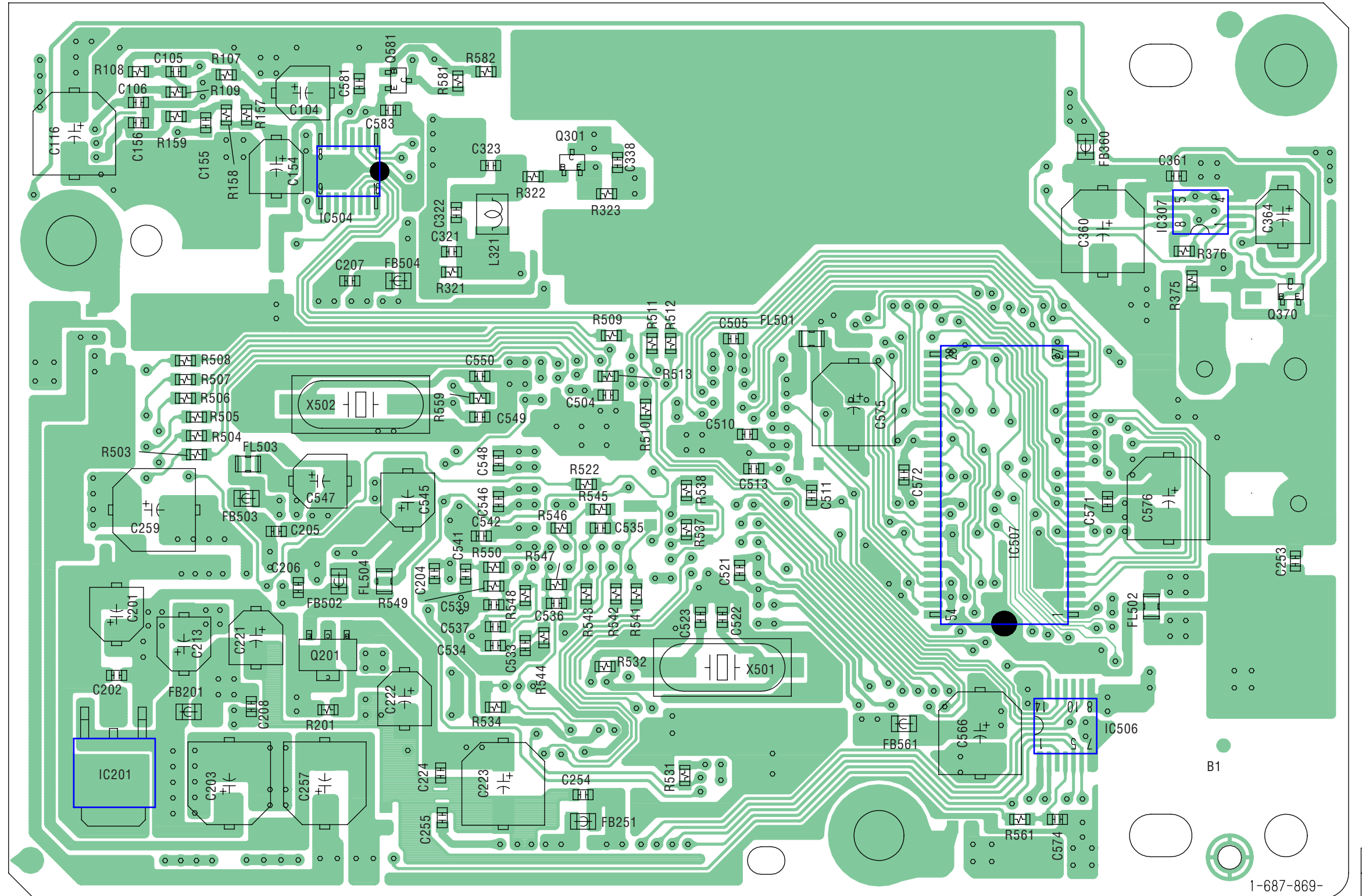
3-6. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (2/2) — • Refer to page 44 for IC Block Diagrams.



14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

【VIDEO BOARD】(SIDE B)

A
B
C
D
E
F
G
H
I



• Semiconductor Location

Ref. No.	Location
IC102	B-13
(IC201)	H-13
IC202	H-13
(IC307)	C-3
(IC504)	C-10
IC505	E-8
(IC506)	H-3
(IC507)	F-4
IC508	E-4
(Q201)	G-10
(Q301)	C-8
(Q370)	D-2
(Q581)	B-10

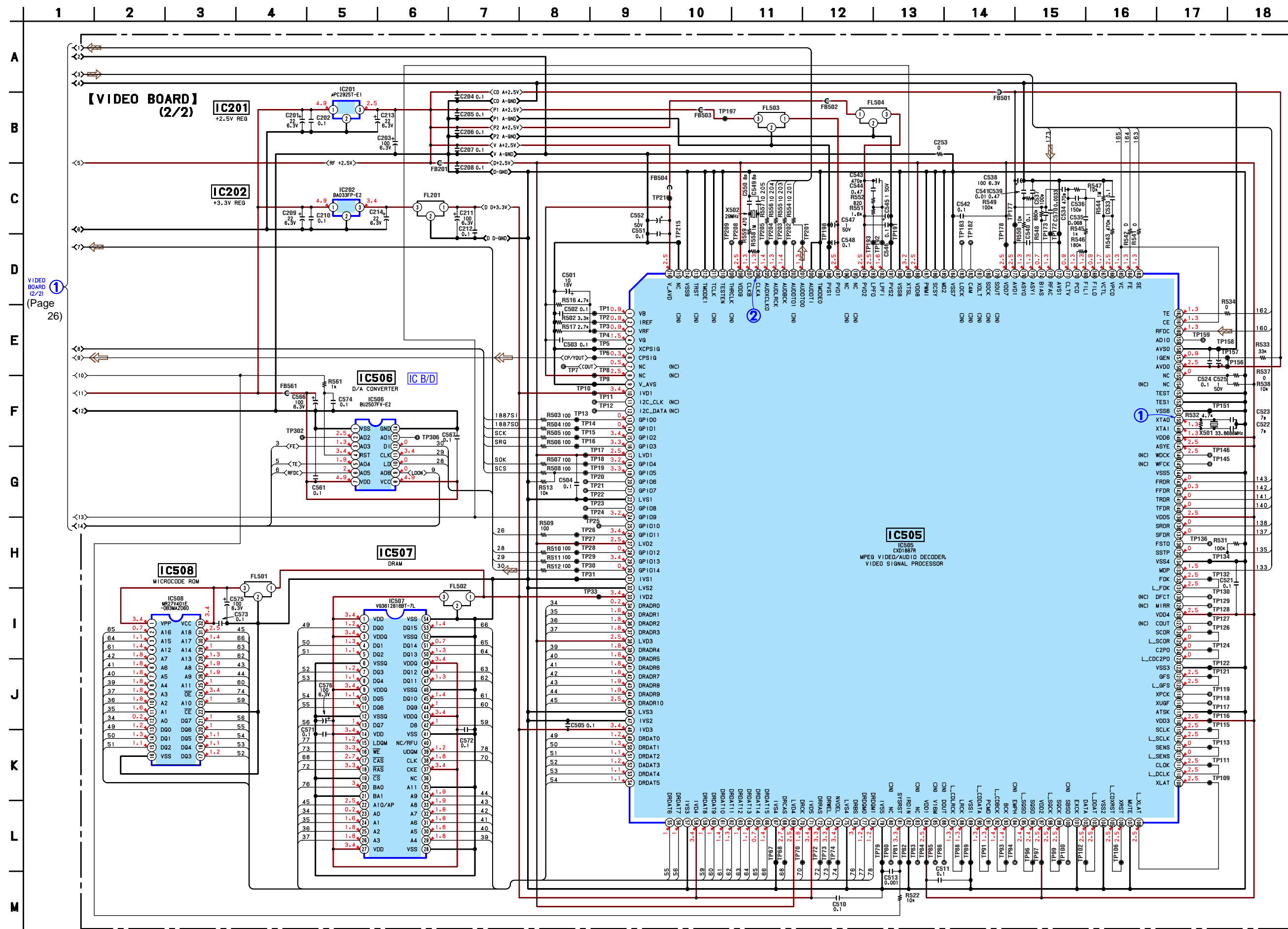
(): SIDE B

11
(11)

1-687-869-

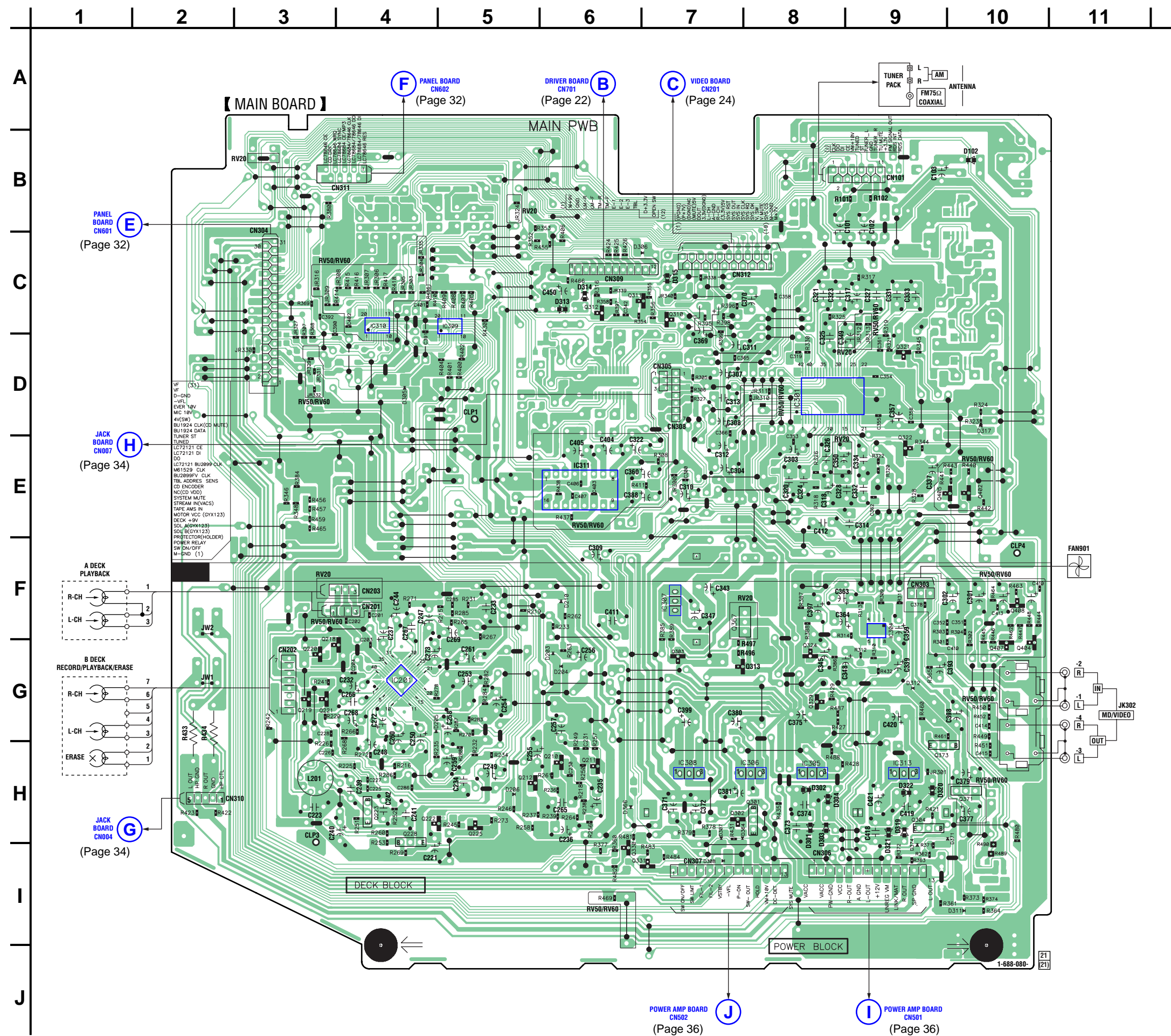
• Refer to page 19 for Waveforms.

3-9. SCHEMATIC DIAGRAM — VIDEO SECTION (2/2) — • Refer to page 45 for IC Block Diagram.



VIDEO BOARD (2/2) (Page 26)

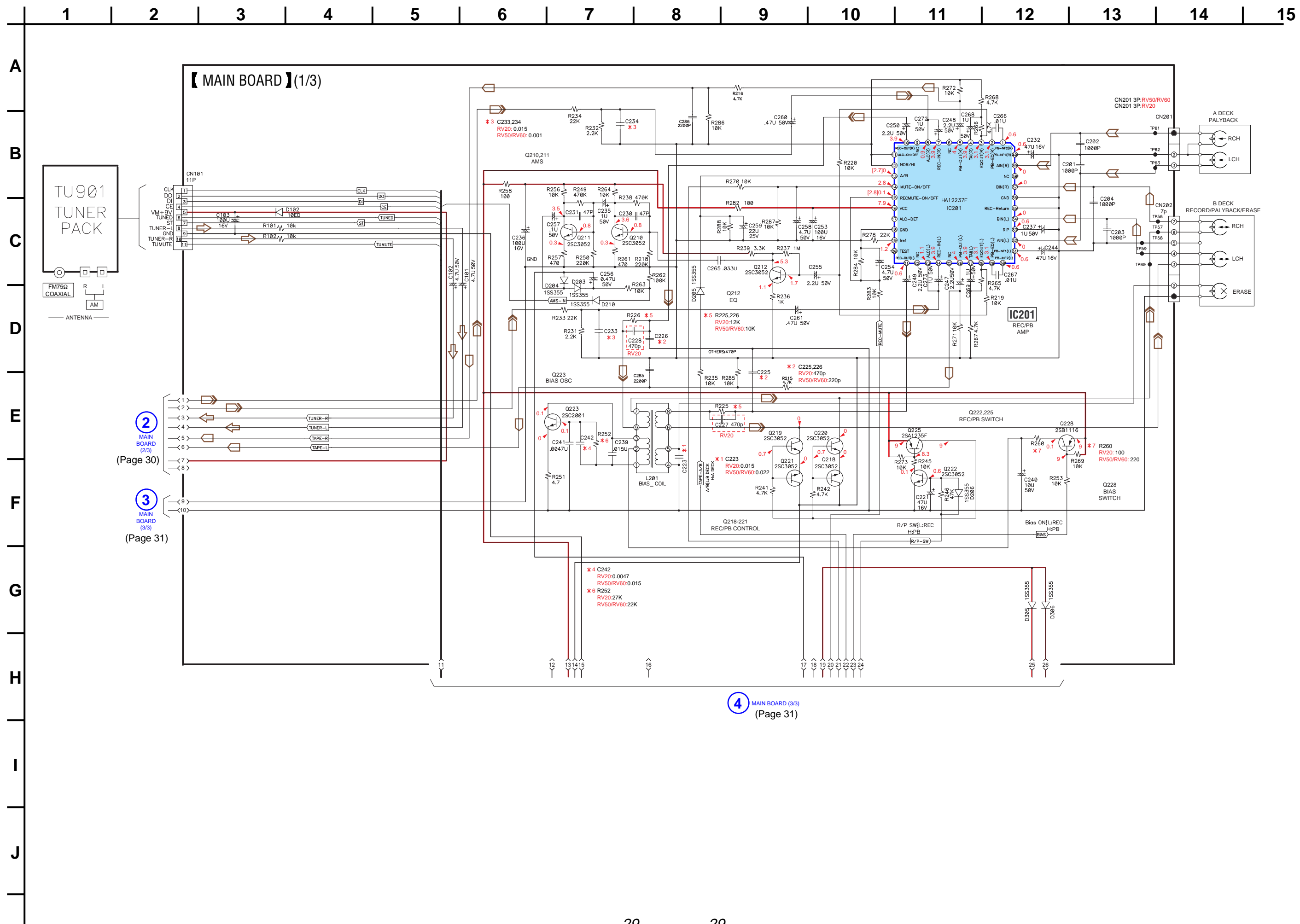
3-10. PRINTED WIRING BOARD — MAIN SECTION — • Refer to page 19 for Circuit Boards Location.



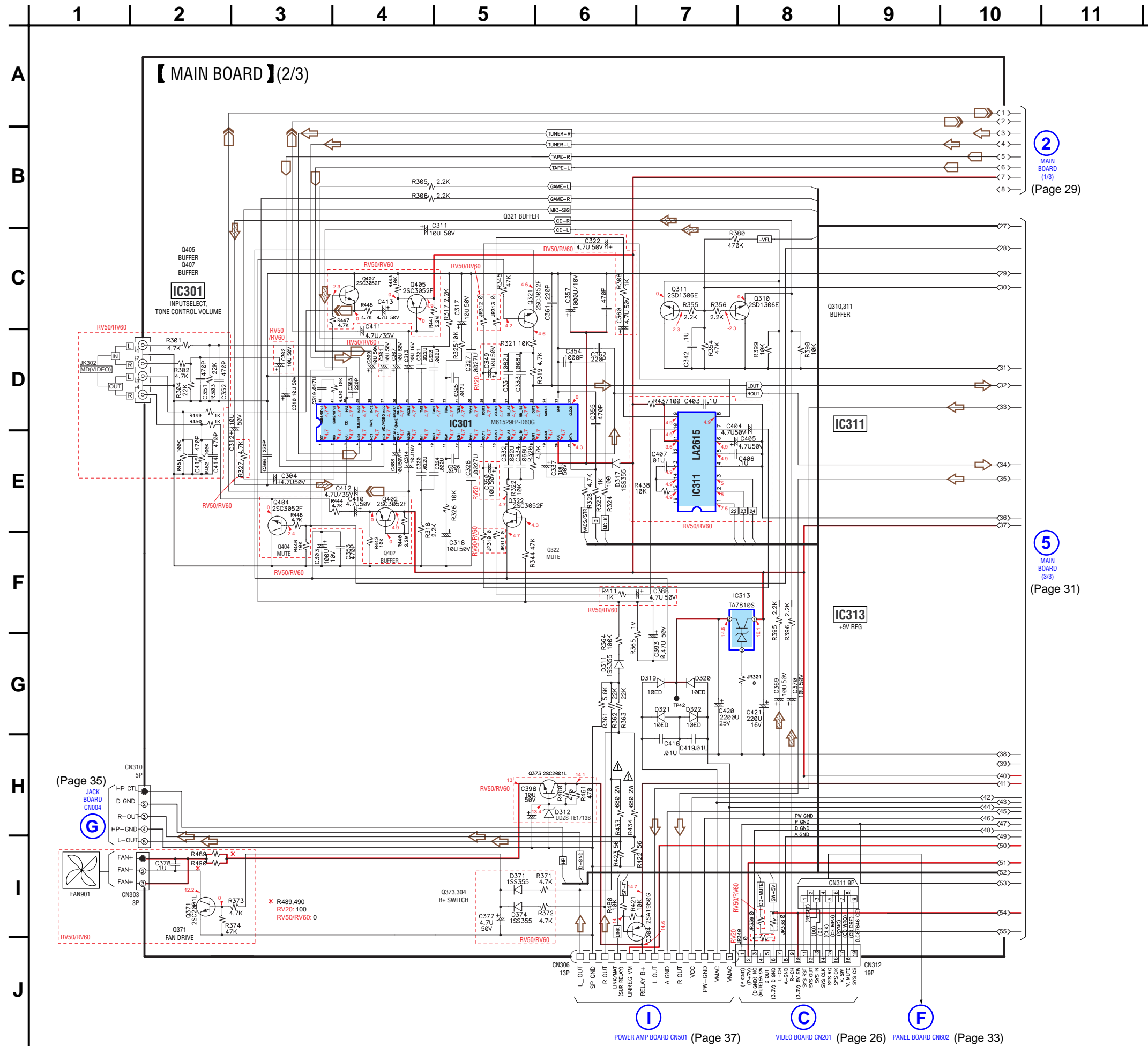
• Semiconductor Location

Ref. No.	Location
D102	B-10
D203	G-6
D204	G-6
D205	G-4
D206	H-5
D210	F-6
D301	H-8
D302	H-8
D303	H-8
D304	H-8
D305	D-4
D306	C-6
D307	H-7
D308	I-7
D311	I-10
D312	G-9
D313	C-6
D314	C-6
D315	C-7
D317	D-10
D319	H-9
D320	H-9
D321	H-9
D322	H-9
D364	H-7
D366	H-6
D371	H-10
D374	I-9
IC201	G-4
IC301	D-8
IC304	F-9
IC305	H-8
IC306	H-8
IC307	F-7
IC308	H-7
IC309	C-5
IC310	C-4
IC311	E-6
IC313	H-9
Q210	H-6
Q211	H-6
Q212	H-5
Q218	G-3
Q219	G-3
Q220	G-3
Q221	G-3
Q222	H-4
Q223	H-4
Q225	H-5
Q228	H-4
Q301	H-8
Q302	H-7
Q303	G-7
Q304	H-9
Q310	C-7
Q311	C-6
Q312	C-6
Q313	G-8
Q321	D-9
Q322	E-9
Q324	G-8
Q329	G-8
Q330	I-6
Q331	I-6
Q367	F-7
Q371	H-10
Q373	H-9
Q402	E-10
Q404	G-10
Q405	E-9
Q407	G-10
Q408	F-10

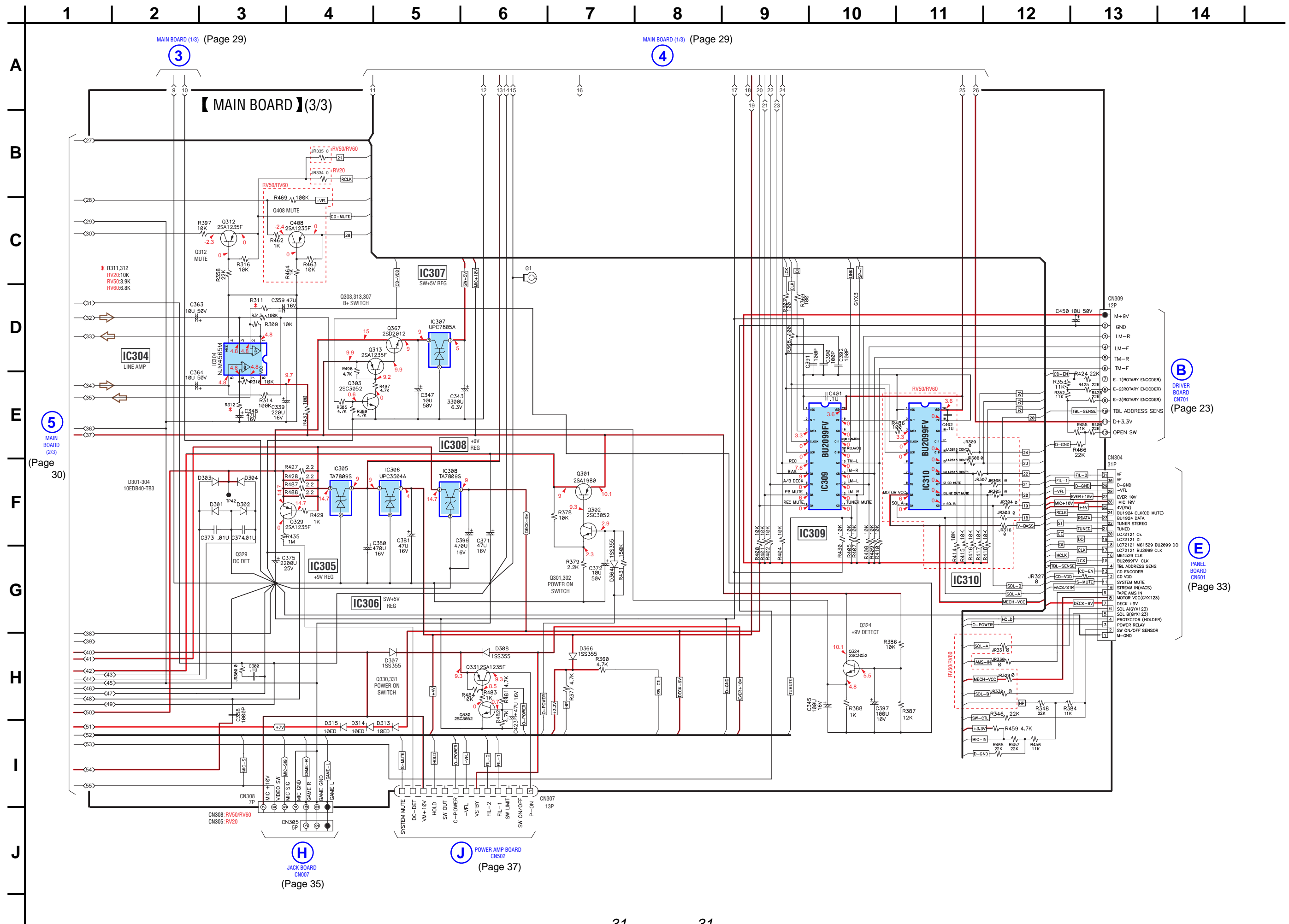
3-11. SCHEMATIC DIAGRAM — MAIN SECTION (1/3) —



3-12. SCHEMATIC DIAGRAM — MAIN SECTION (2/3) —

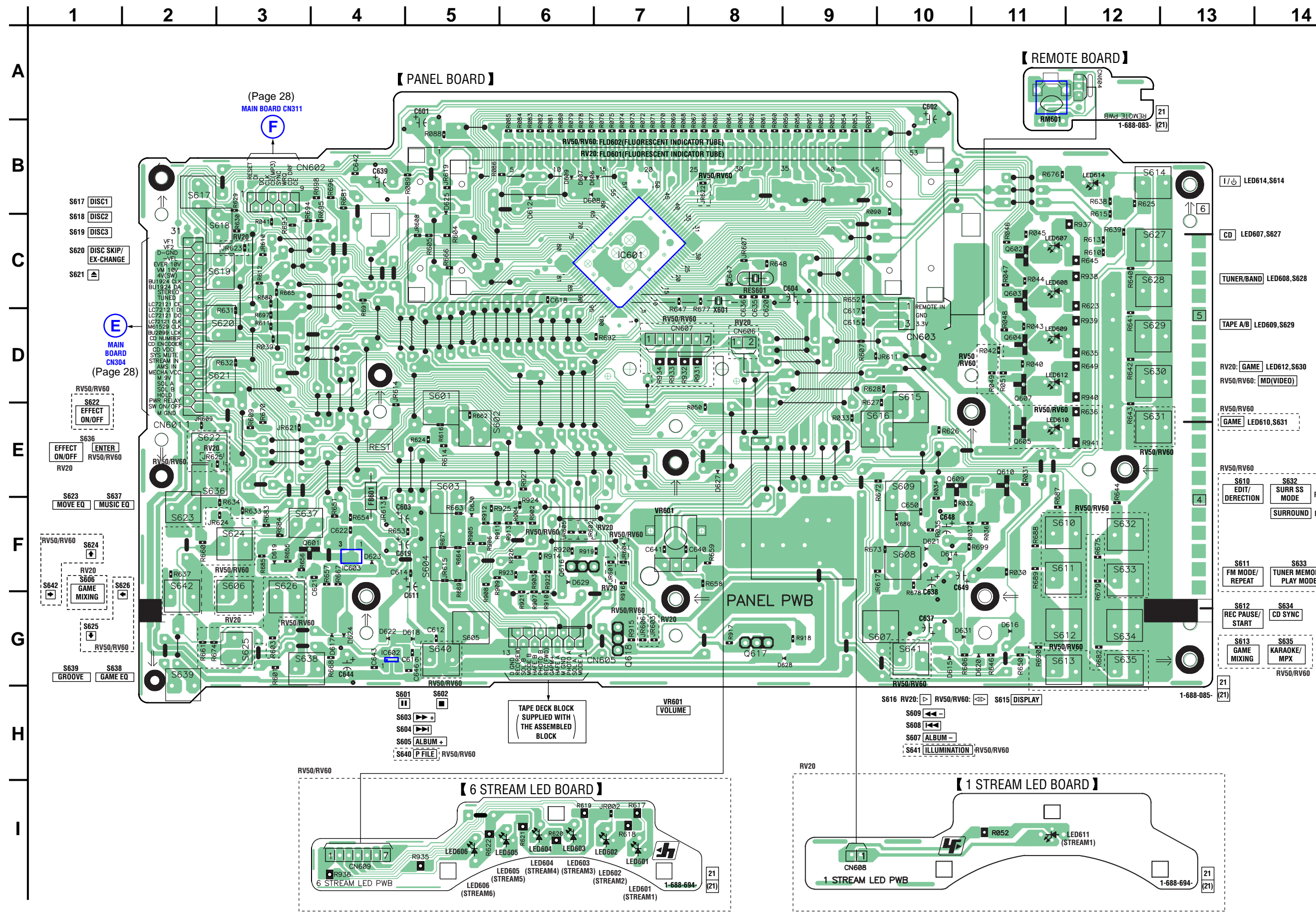


3-13. SCHEMATIC DIAGRAM — MAIN SECTION (3/3) —

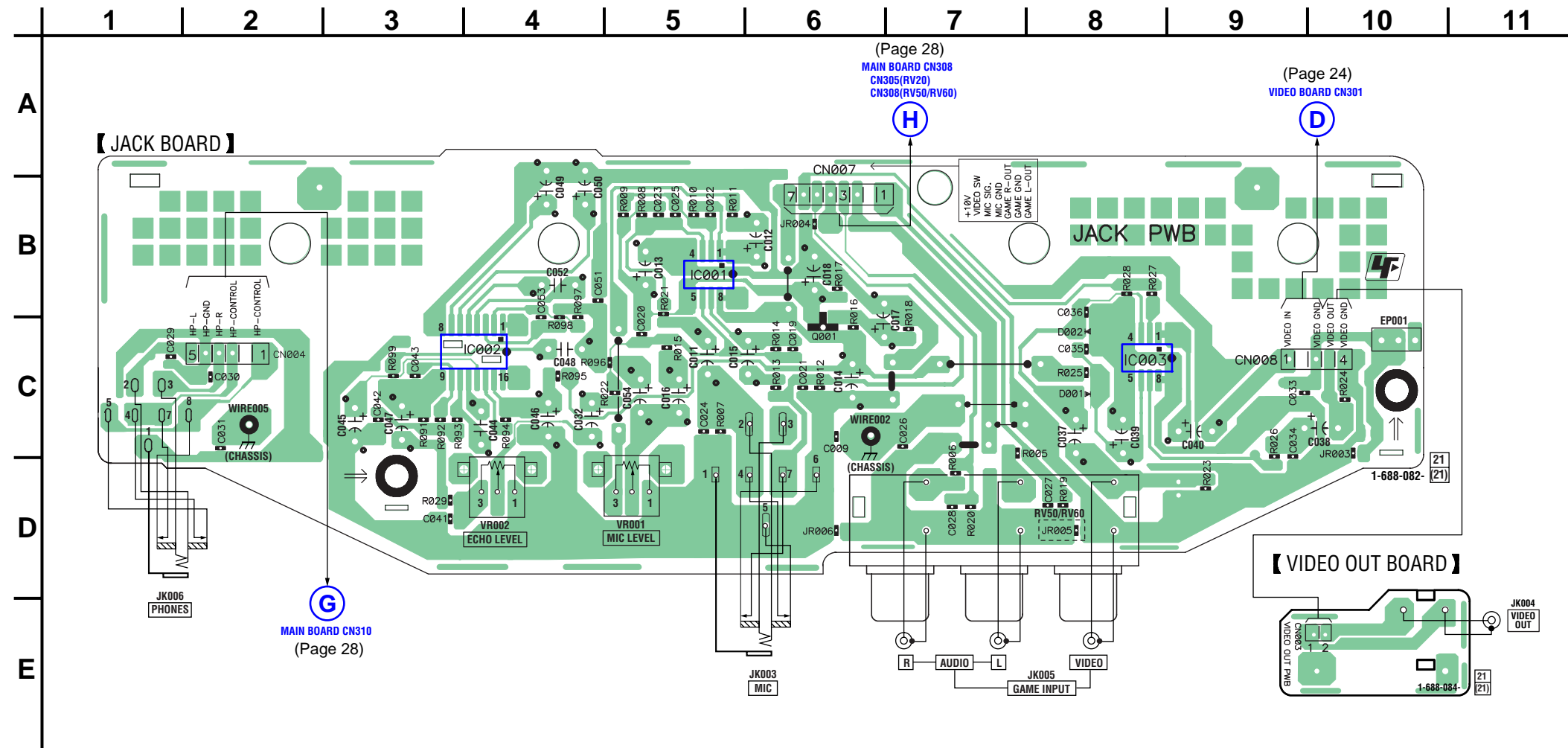


• Refer to page 19 for Circuit Boards Location.

3-14. PRINTED WIRING BOARDS — PANEL SECTION — • Refer to page 34 for Semiconductor Location.



3-16. PRINTED WIRING BOARDS — JACK SECTION — • Refer to page 19 for Circuit Boards Location.



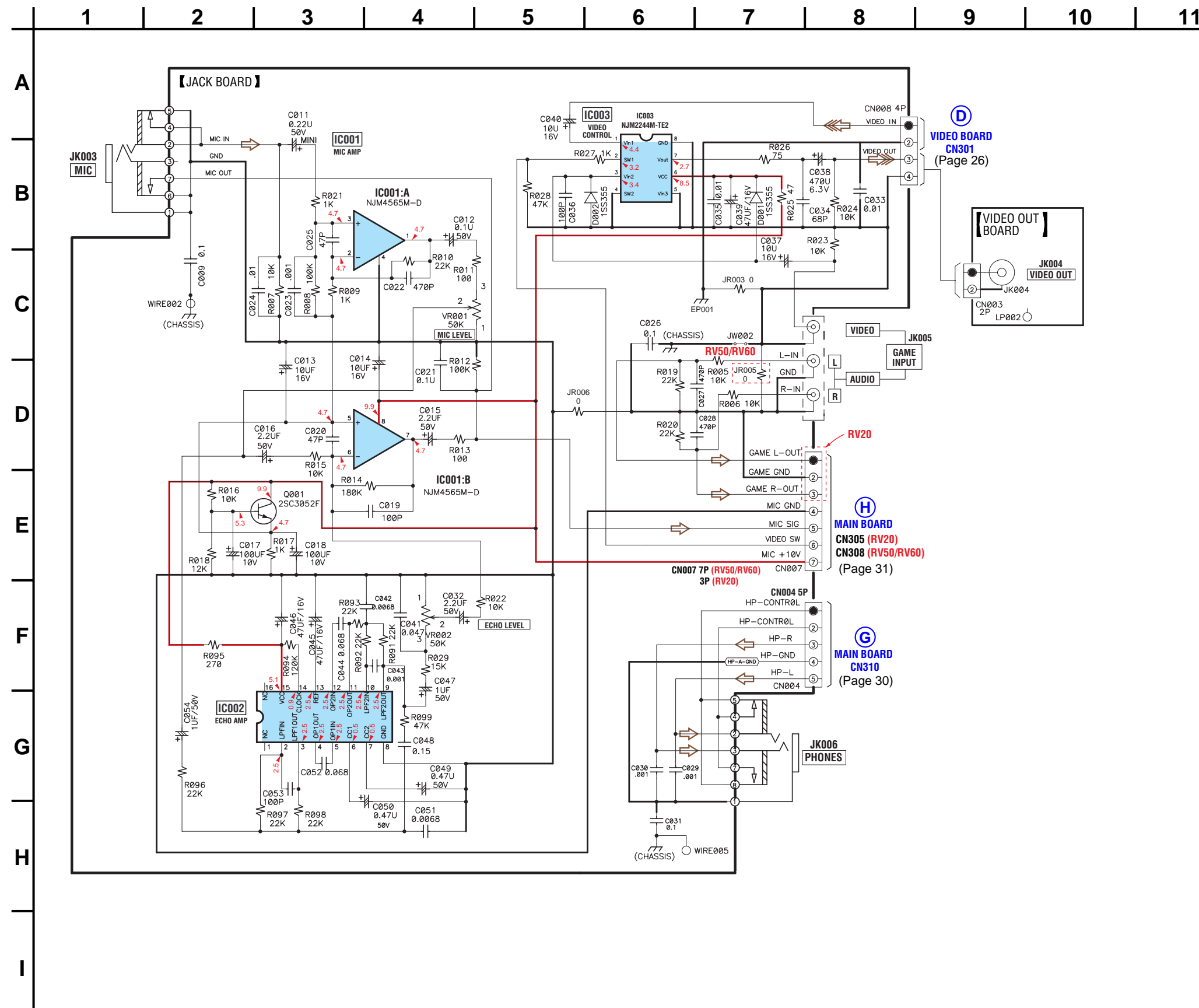
• Semiconductor Location (PANEL SECTION)

Ref. No.	Location	Ref. No.	Location
D606	B-6	LED602	I-7
D607	B-6	LED603	I-6
D608	B-6	LED604	I-6
D609	B-6	LED605	I-6
D612	B-6	LED606	I-5
D614	F-10	LED607	C-11
D615	G-10	LED608	C-11
D616	G-11	LED609	D-11
D617	G-4	LED610	E-11
D618	G-5	LED611	I-11
D619	F-3	LED612	D-11
D620	G-11	LED614	B-12
D621	F-10		
D622	G-4	Q601	F-3
D623	F-4	Q602	C-11
D624	G-4	Q603	C-11
D625	B-5	Q604	D-11
D627	E-8	Q605	E-11
D628	G-8	Q607	D-11
D629	F-6	Q609	E-10
D630	F-5	Q610	E-11
D631	G-10	Q616	F-6
		Q617	G-8
		Q618	G-7
IC601	C-7		
IC602	G-4		
IC603	F-4	RM601	A-11
LED601	I-7		

• Semiconductor Location (JACK SECTION)

Ref. No.	Location
D001	C-8
D002	C-8
IC001	B-5
IC002	C-4
IC003	C-8
Q001	C-6

3-17. SCHEMATIC DIAGRAM — JACK SECTION —

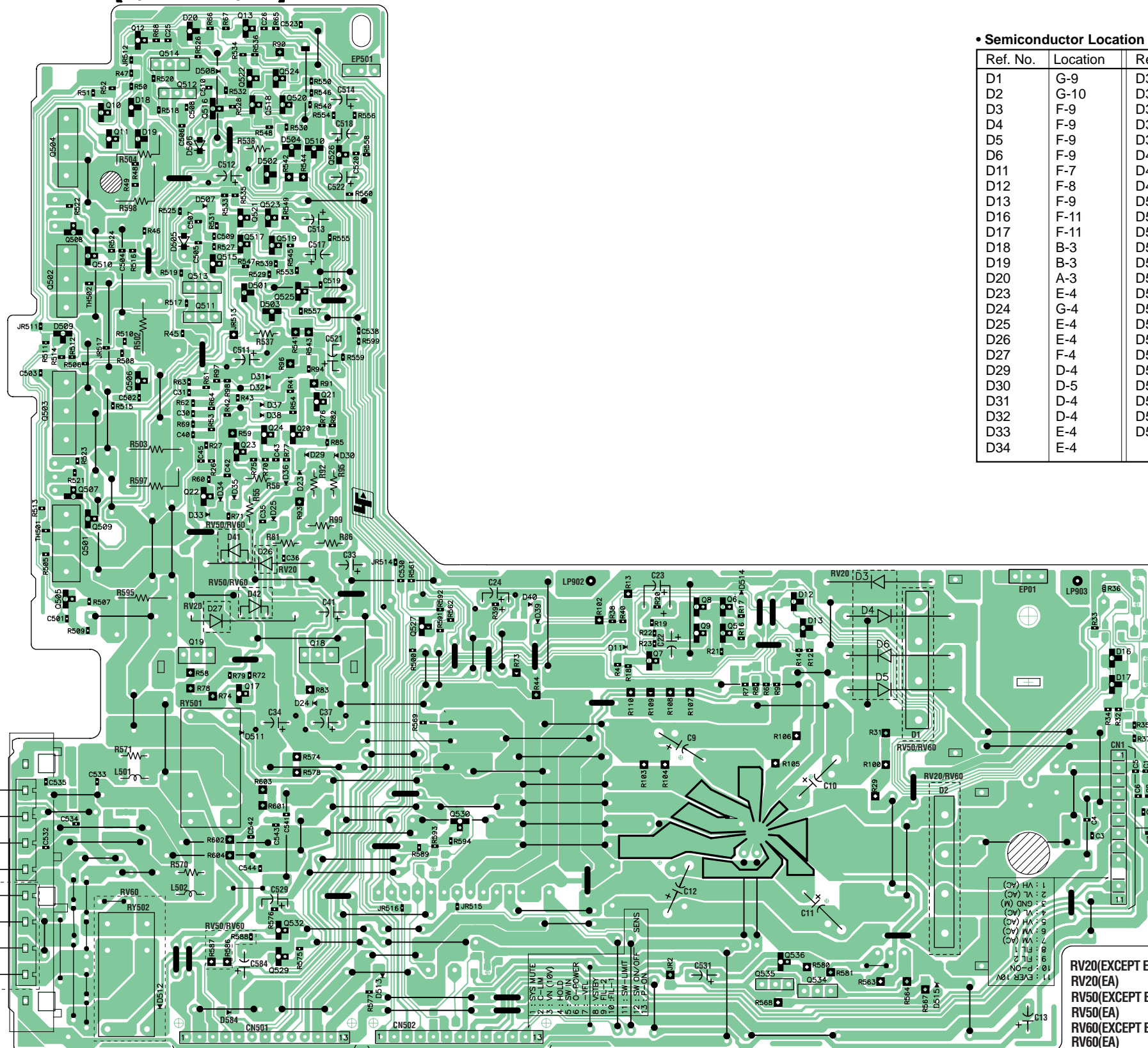


3-18. PRINTED WIRING BOARD — POWER AMP SECTION — • Refer to page 19 for Circuit Boards Location.

1 2 3 4 5 6 7 8 9 10 11

A
B
C
D
E
F
G
H
I

【POWER AMP BOARD】



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	G-9	D35	E-4	Q5	F-8	Q509	E-3
D2	G-10	D36	E-4	Q6	F-8	Q510	C-3
D3	F-9	D37	D-4	Q7	F-7	Q511	C-4
D4	F-9	D38	D-4	Q8	F-8	Q512	A-3
D5	F-9	D39	F-6	Q9	F-8	Q513	C-4
D6	F-9	D40	F-6	Q10	B-3	Q514	A-3
D11	F-7	D41	E-4	Q11	B-3	Q515	C-4
D12	F-8	D42	F-4	Q12	A-3	Q516	B-4
D13	F-9	D501	C-4	Q13	A-4	Q517	C-4
D16	F-11	D502	B-4	Q17	F-4	Q518	B-4
D17	F-11	D503	C-4	Q18	F-4	Q519	C-4
D18	B-3	D504	B-4	Q19	F-3	Q520	B-4
D19	B-3	D505	C-3	Q20	D-4	Q521	B-4
D20	A-3	D506	B-3	Q21	D-5	Q522	A-4
D23	E-4	D507	B-4	Q22	E-4	Q523	B-4
D24	G-4	D508	A-4	Q23	D-4	Q524	A-4
D25	E-4	D509	C-2	Q24	D-4	Q525	C-4
D26	E-4	D510	B-4	Q501	E-2	Q526	B-5
D27	F-4	D511	G-4	Q502	C-2	Q527	F-5
D29	D-4	D512	I-3	Q503	D-2	Q529	I-4
D30	D-5	D513	I-5	Q504	B-2	Q530	H-6
D31	D-4	D514	F-8	Q505	F-2	Q532	H-4
D32	D-4	D515	I-10	Q506	D-3	Q534	I-9
D33	E-4	D584	I-4	Q507	E-2	Q535	I-8
D34	E-4			Q508	C-2	Q536	I-8

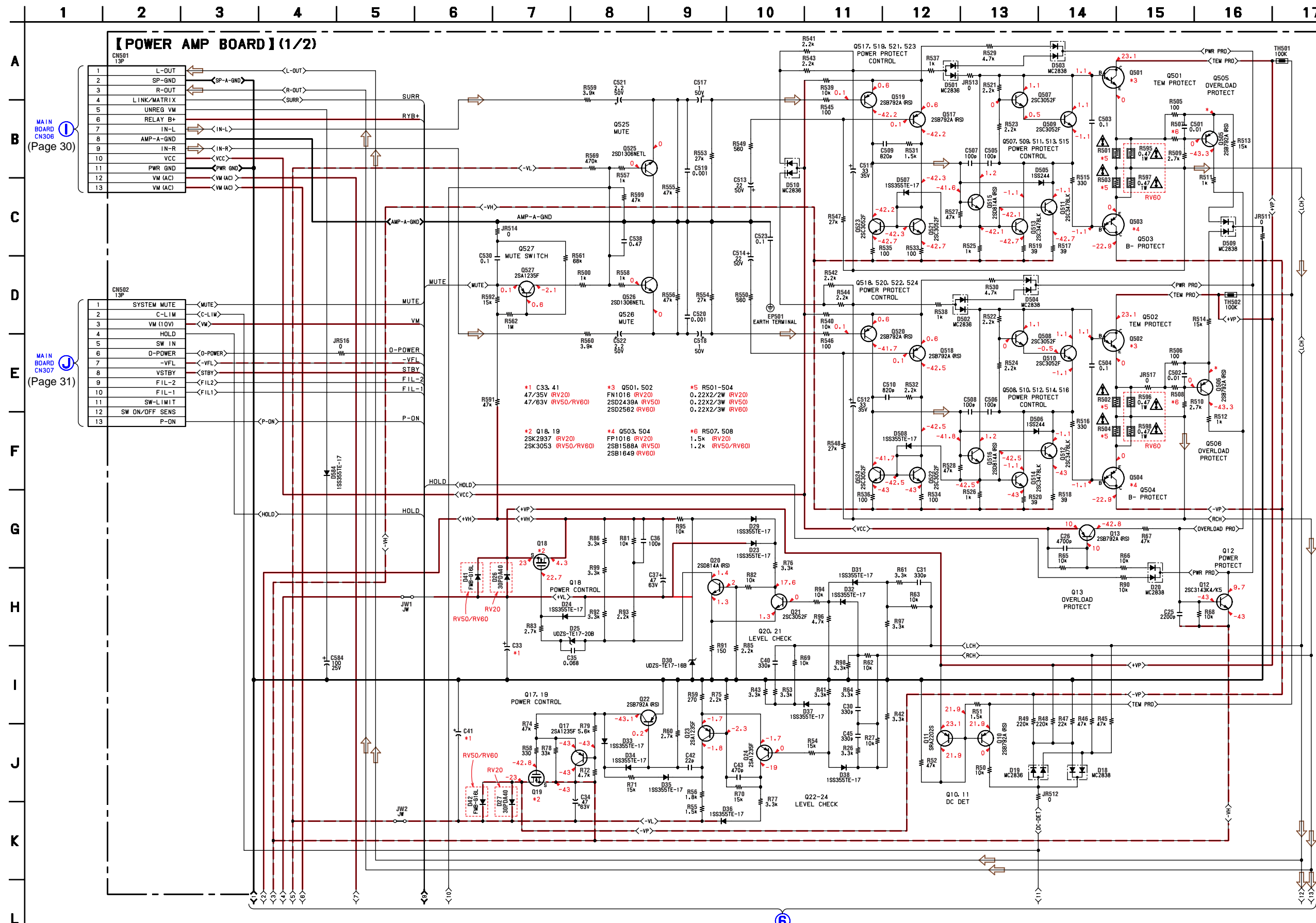
- (K)** TRANS BOARD (Page 39)
CN902 (RV20)
- (L)** TRANS BOARD (Page 40)
CN902 (RV50)
- (M)** TRANS BOARD (Page 41)
CN902 (RV60)

RV20(EXCEPT EA):1-688-863-
RV20(EA) :1-689-643-
RV50(EXCEPT EA):1-688-089-
RV50(EA) :1-689-770-
RV60(EXCEPT EA):1-688-699-
RV60(EA) :1-689-645-

11
(11)

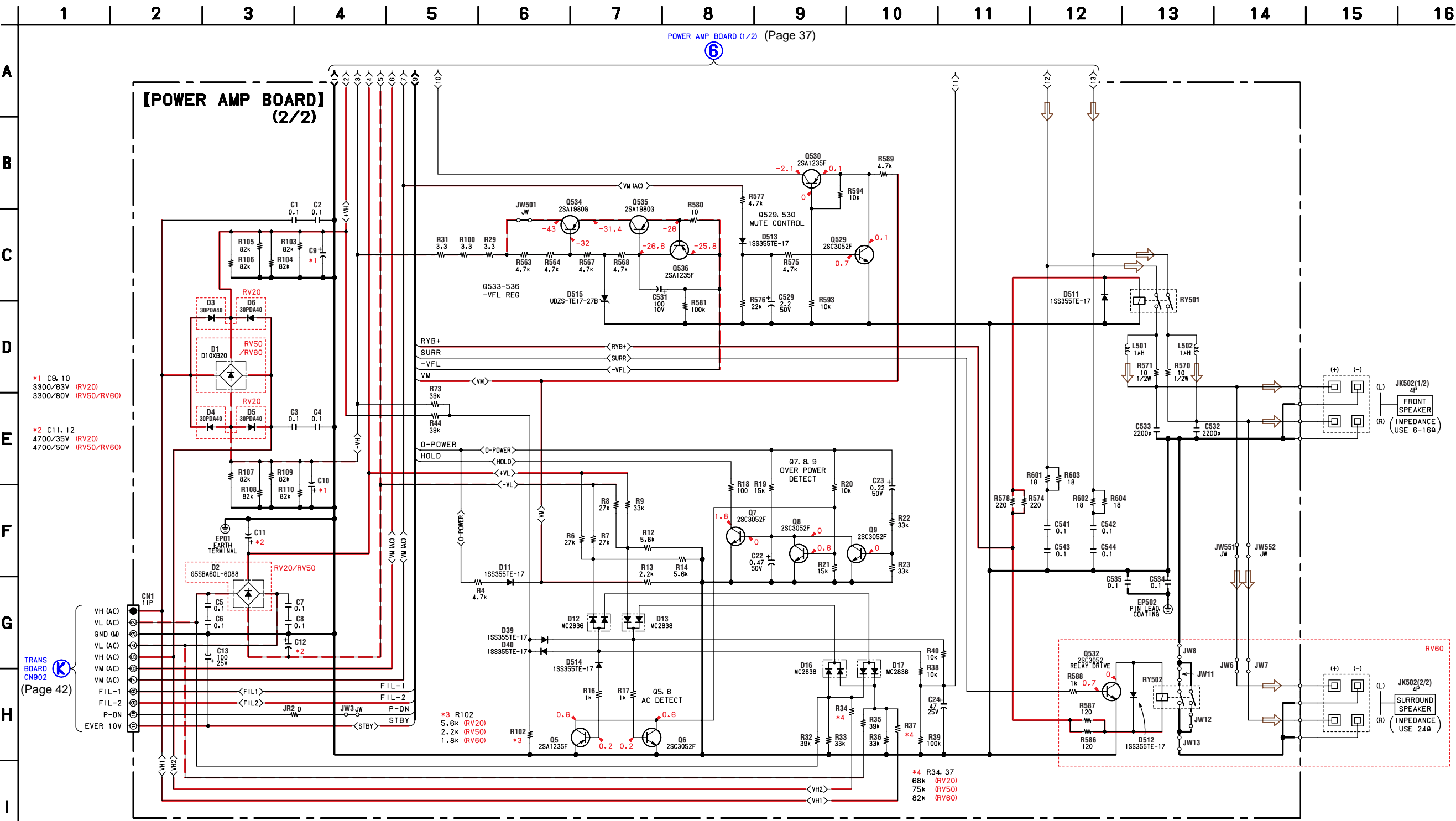
(I) MAIN BOARD CN306 (Page 28)
(J) MAIN BOARD CN307 (Page 28)

3-19. SCHEMATIC DIAGRAM — POWER AMP SECTION (1/2) —

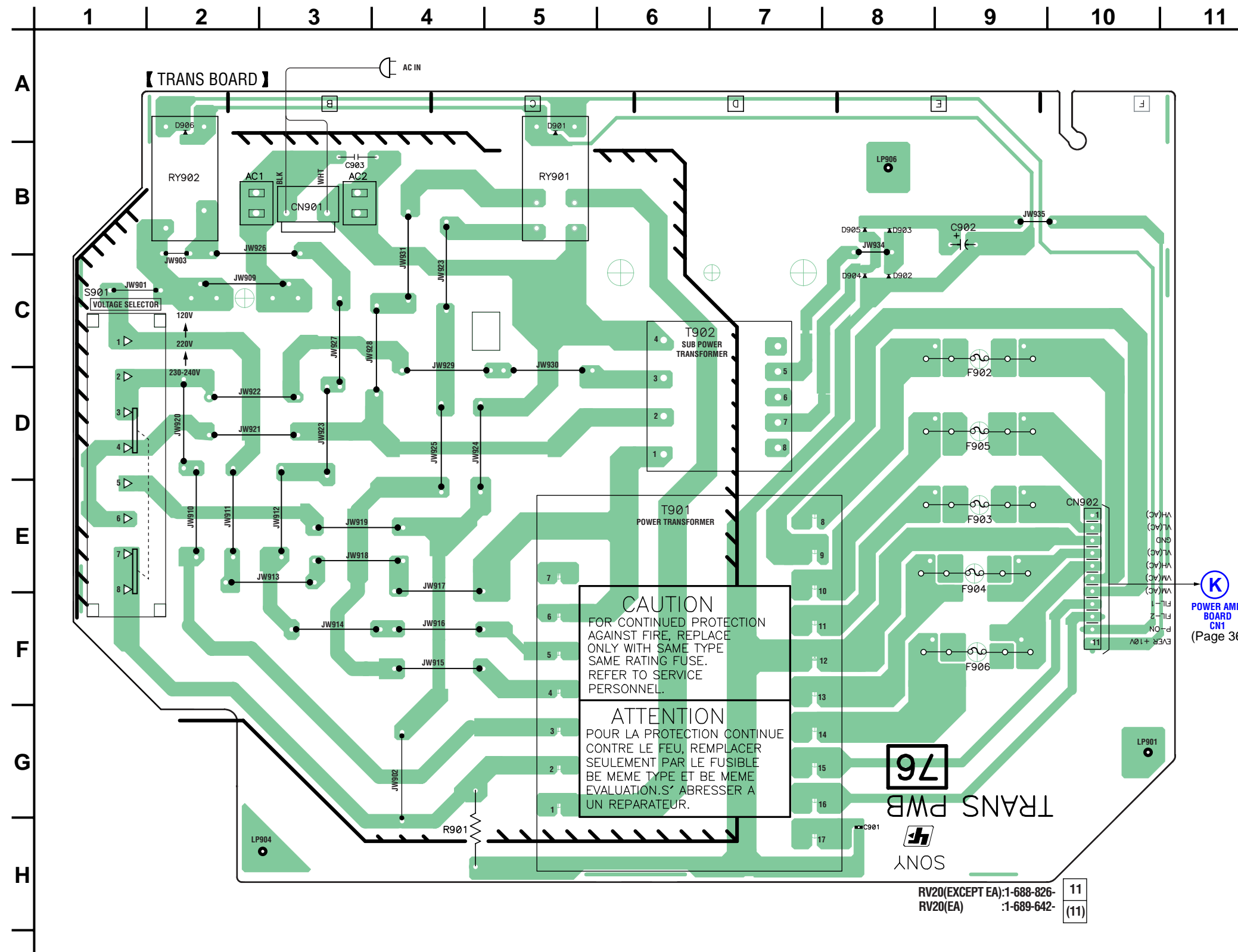


POWER AMP BOARD (2/2) (Page 38)

3-20. SCHEMATIC DIAGRAM — POWER AMP SECTION (2/2) —



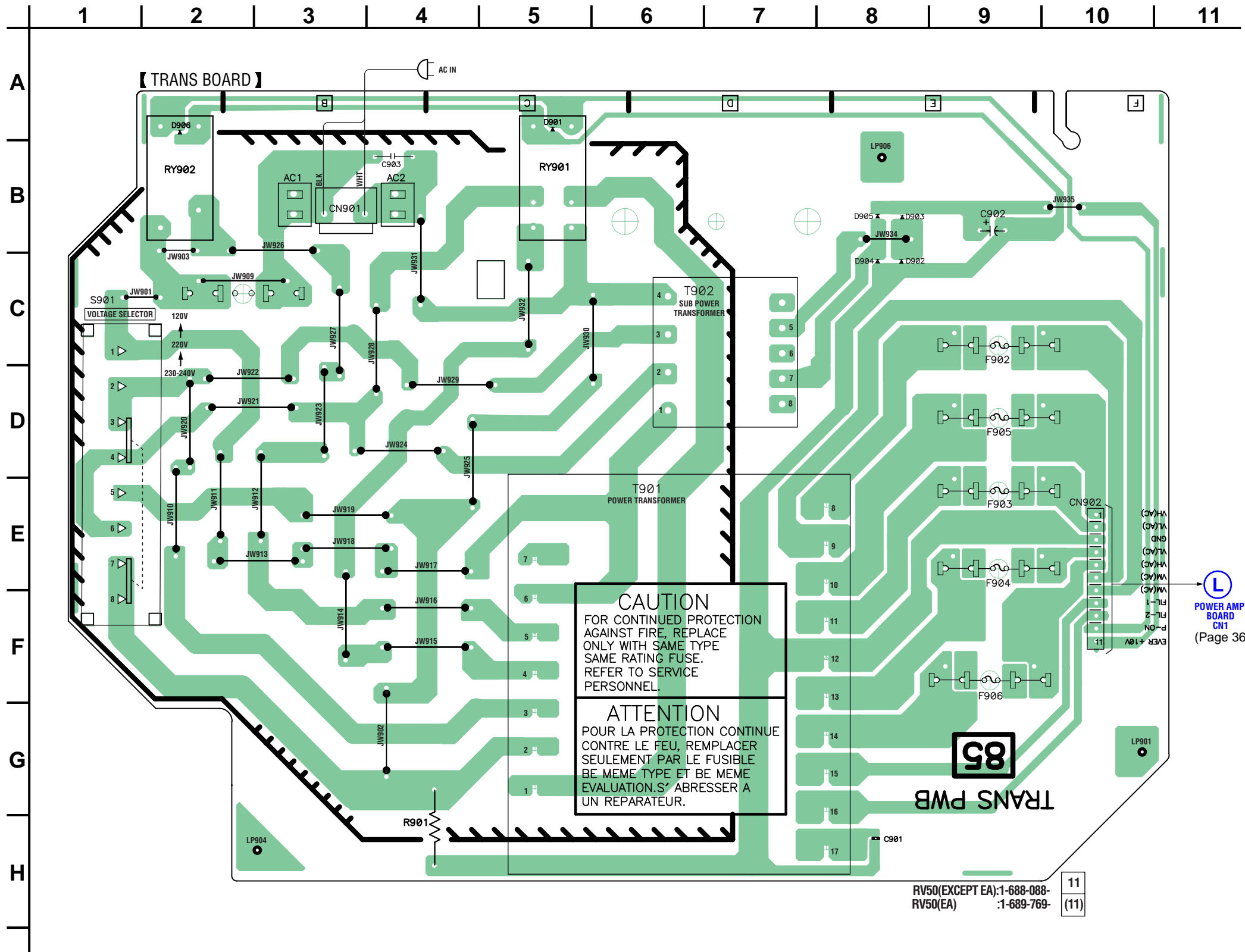
3-21. PRINTED WIRING BOARD — TRANSFORMER SECTION (HCD-RV20) — • Refer to page 19 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D901	A-5
D902	C-8
D903	B-8
D904	C-8
D905	B-8
D906	A-2

3-22. PRINTED WIRING BOARD — TRANSFORMER SECTION (HCD-RV50) — • Refer to page 19 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D901	A-5
D902	C-8
D903	B-8
D904	C-8
D905	B-8
D906	A-2

CAUTION
 FOR CONTINUED PROTECTION AGAINST FIRE, REPLACE ONLY WITH SAME TYPE SAME RATING FUSE. REFER TO SERVICE PERSONNEL.

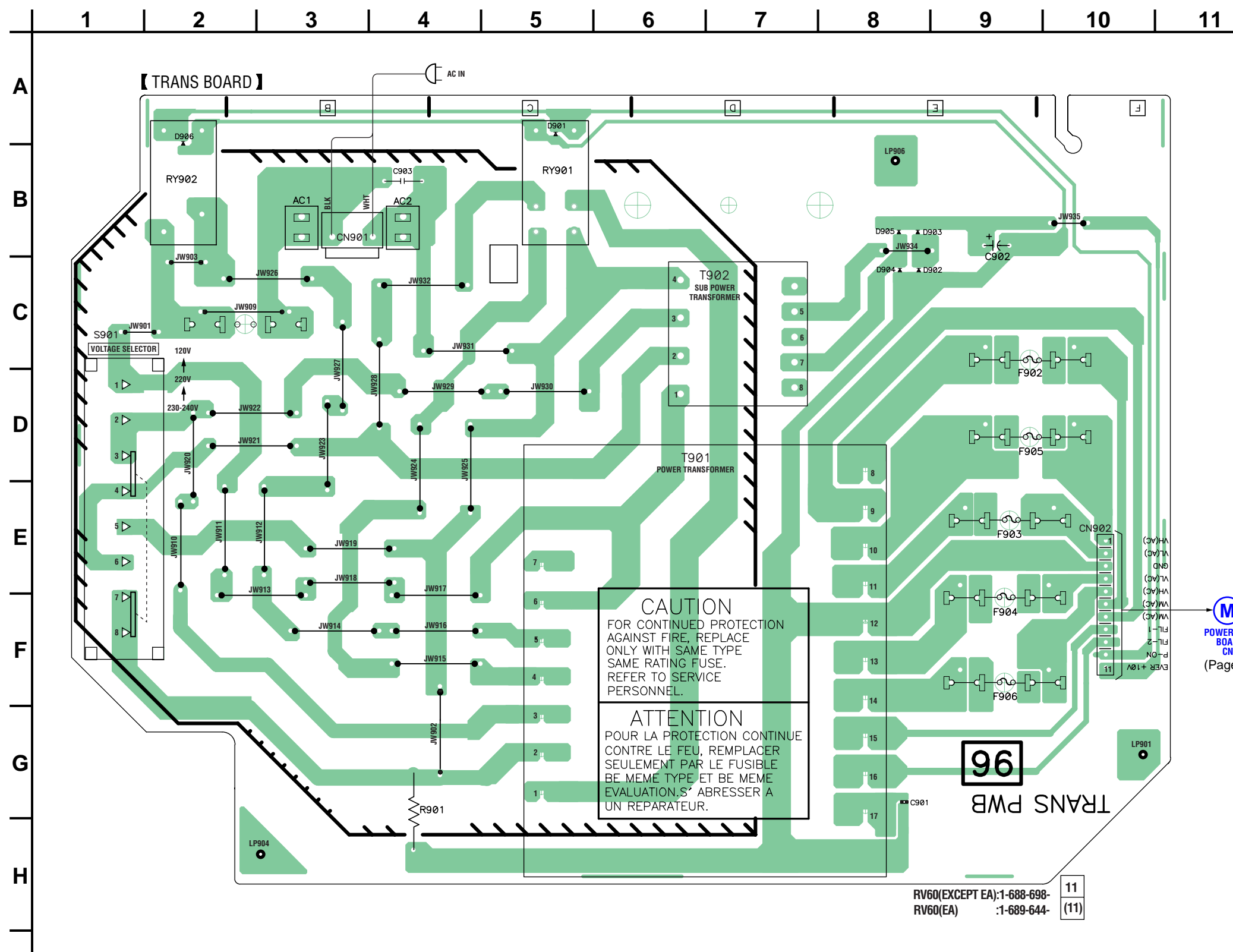
ATTENTION
 POUR LA PROTECTION CONTINUE CONTRE LE FEU, REMPLACER SEULEMENT PAR LE FUSIBLE DE MEME TYPE ET DE MEME EVALUATION. S' ABRESSER A UN REPARATEUR.

L
 POWER AMP BOARD CN1
 (Page 36)

RV50 (EXCEPT EA): 1-688-088-
 RV50 (EA) : 1-689-769-

11
 (11)

3-23. PRINTED WIRING BOARD — TRANSFORMER SECTION (HCD-RV60) — • Refer to page 19 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D901	A-5
D902	C-8
D903	B-8
D904	C-8
D905	B-8
D906	A-2

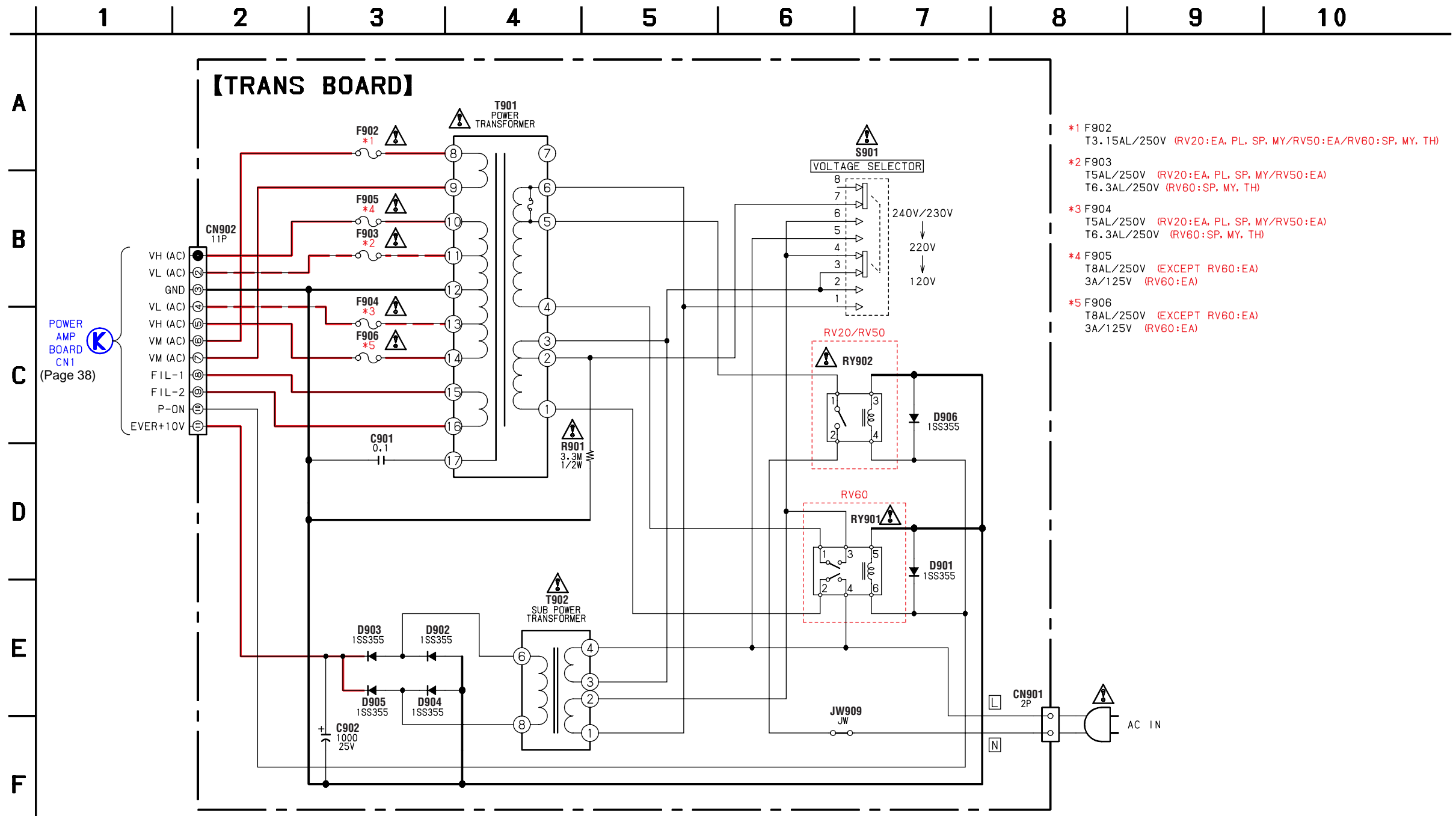
CAUTION
 FOR CONTINUED PROTECTION AGAINST FIRE, REPLACE ONLY WITH SAME TYPE SAME RATING FUSE. REFER TO SERVICE PERSONNEL.

ATTENTION
 POUR LA PROTECTION CONTINUE CONTRE LE FEU, REMPLACER SEULEMENT PAR LE FUSIBLE DE MEME TYPE ET DE MEME EVALUATION. S' ABRESSER A UN REPARATEUR.

RV60(EXCEPT EA):1-688-698-
 RV60(EA) :1-689-644-

11
 (11)

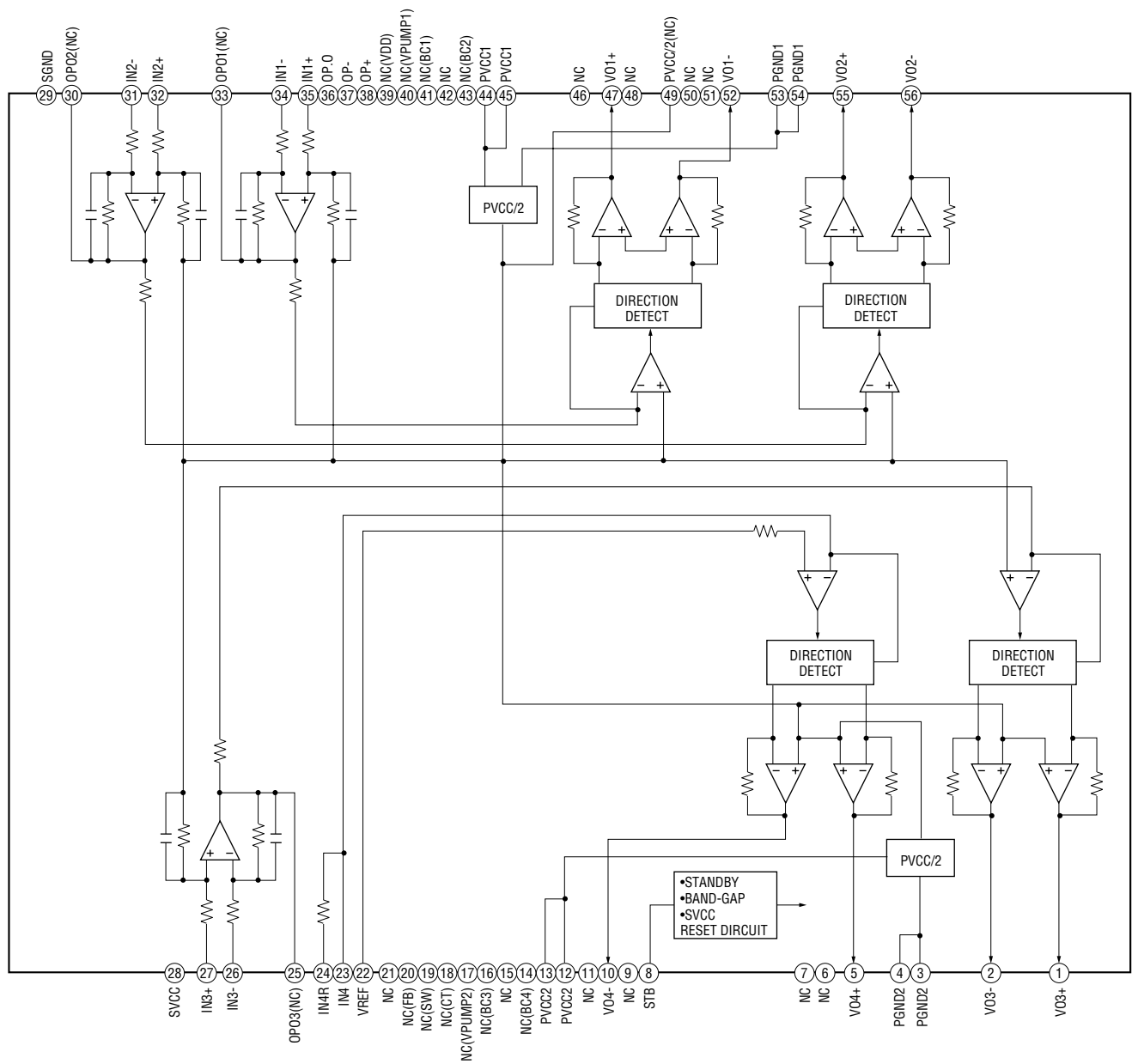
3-24. SCHEMATIC DIAGRAM — TRANSFORMER SECTION —



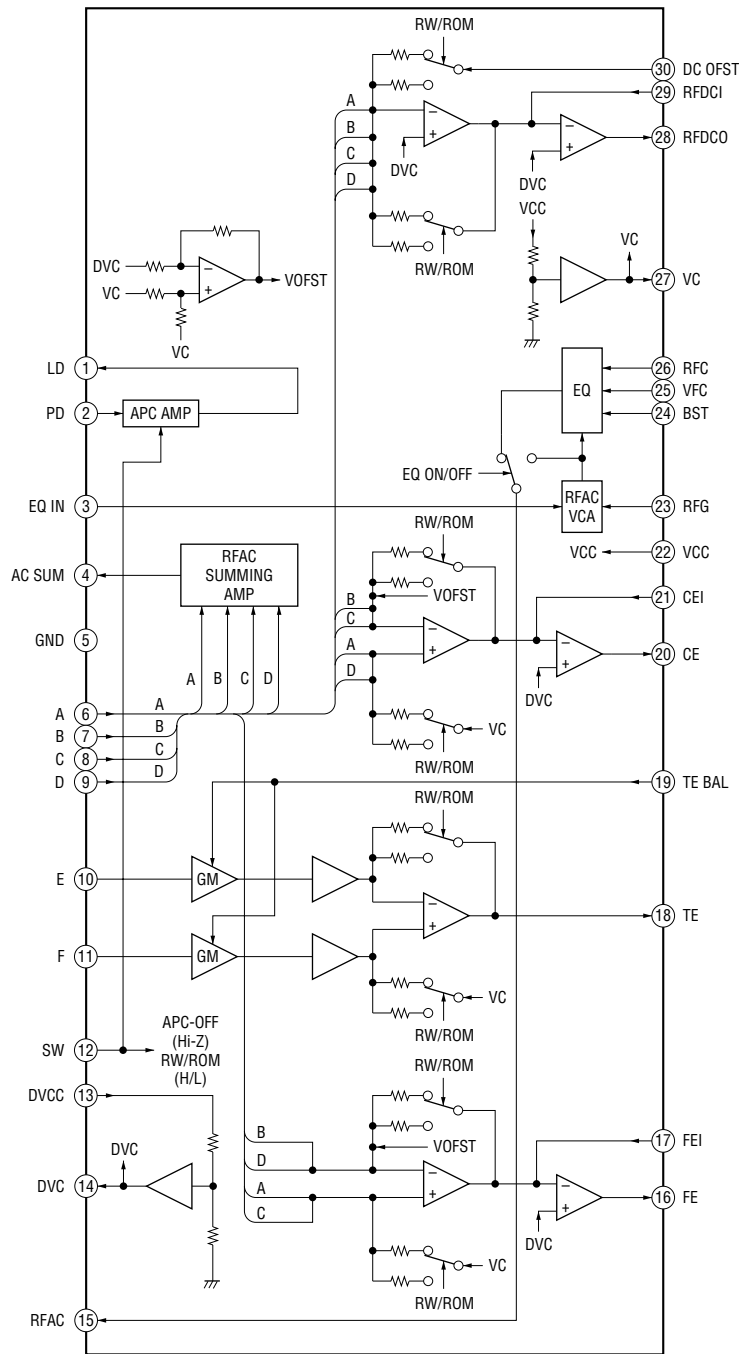
- *1 F902
T3.15AL/250V (RV20:EA, PL, SP, MY/RV50:EA/RV60:SP, MY, TH)
- *2 F903
T5AL/250V (RV20:EA, PL, SP, MY/RV50:EA)
T6.3AL/250V (RV60:SP, MY, TH)
- *3 F904
T5AL/250V (RV20:EA, PL, SP, MY/RV50:EA)
T6.3AL/250V (RV60:SP, MY, TH)
- *4 F905
T8AL/250V (EXCEPT RV60:EA)
3A/125V (RV60:EA)
- *5 F906
T8AL/250V (EXCEPT RV60:EA)
3A/125V (RV60:EA)

3-25. IC BLOCK DIAGRAMS

IC102 AN41020A (BD BOARD)

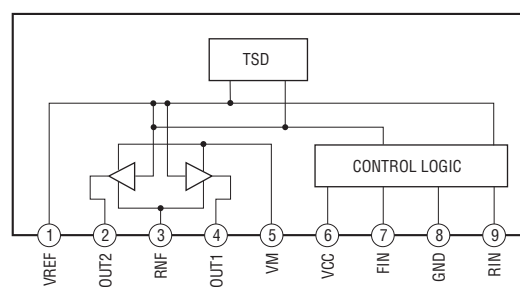


IC103 CXA2581N-T4 (BD BOARD)

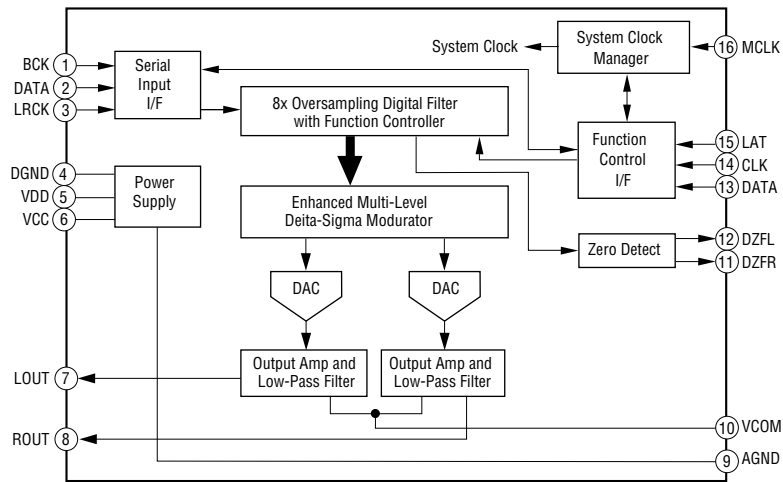


IC701 BA6956AN (DRIVER BOARD)

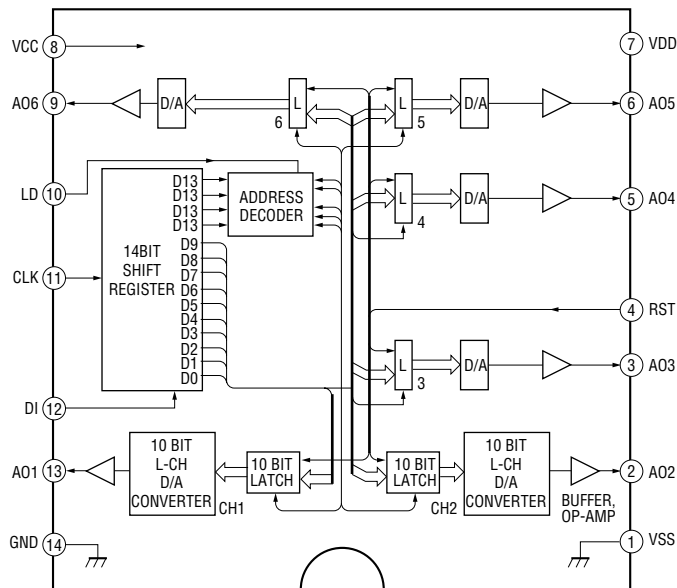
IC712 BA6956AN (DRIVER BOARD)



IC504 PCM1748E/2K (VIDEO BOARD)



IC506 BU2507FV-E2 (VIDEO BOARD)



SECTION 4 EXPLODED VIEWS

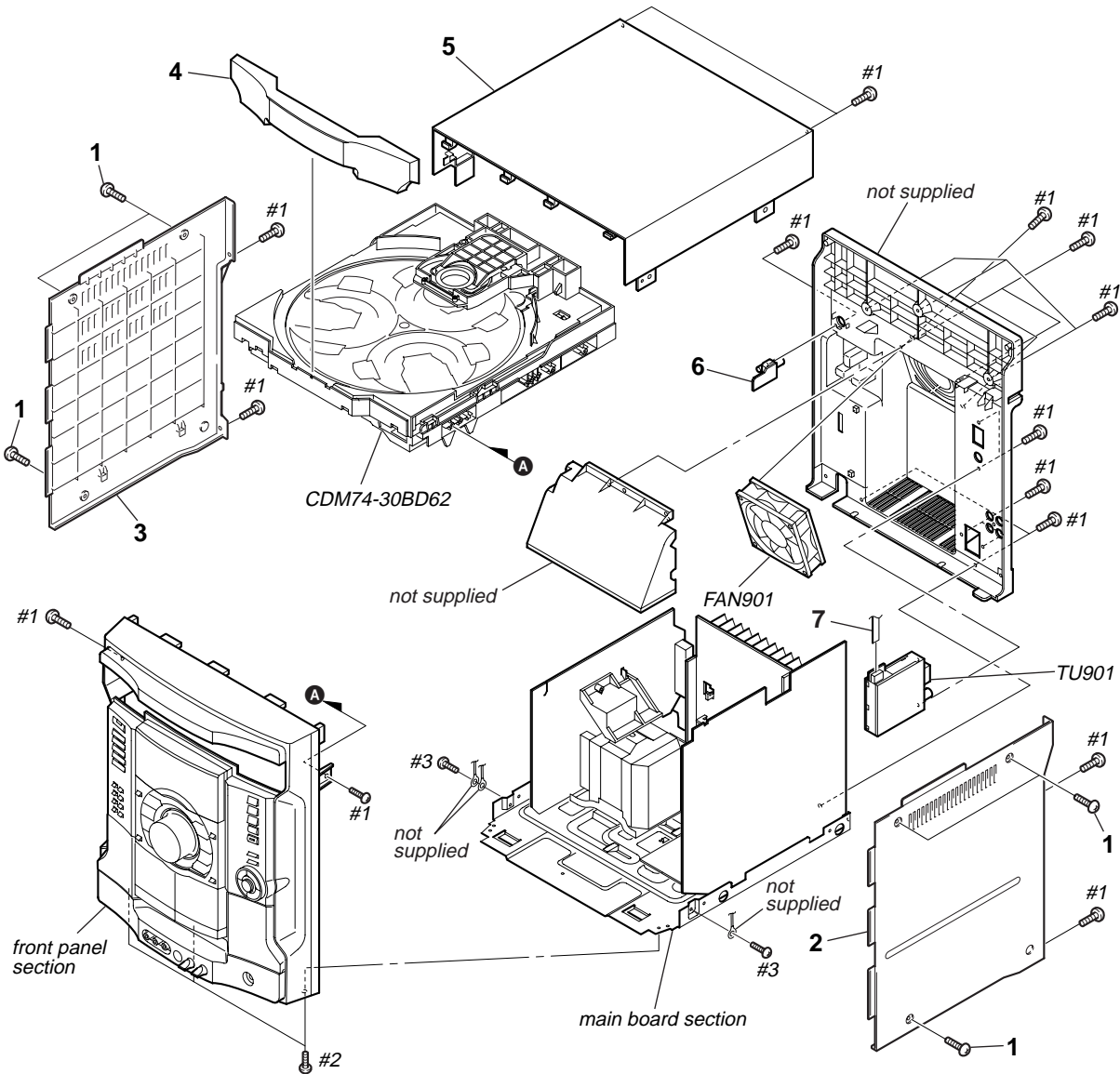
NOTE:

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

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Accessories are given in the last of this parts list.

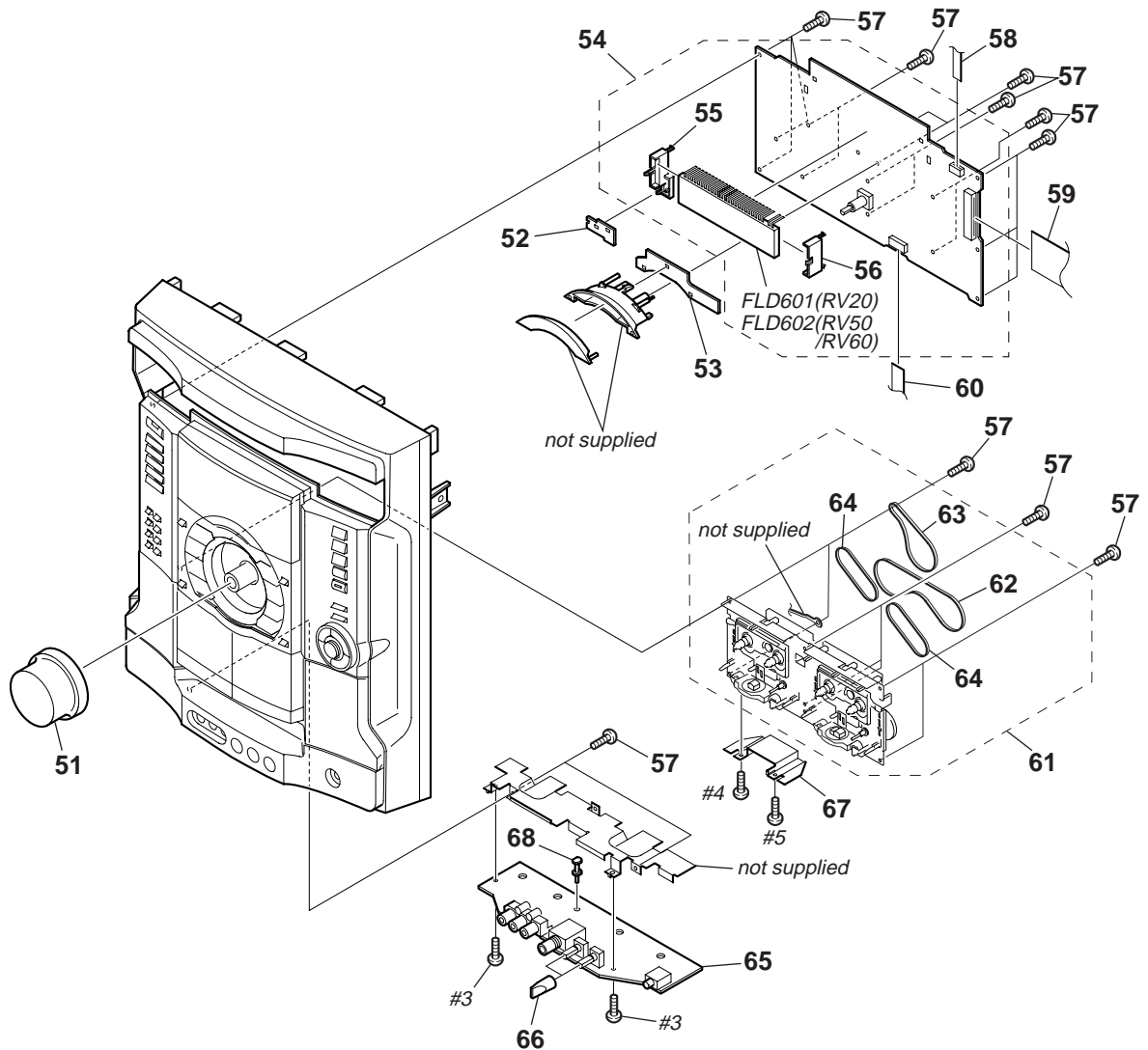
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

4-1. MAIN SECTION



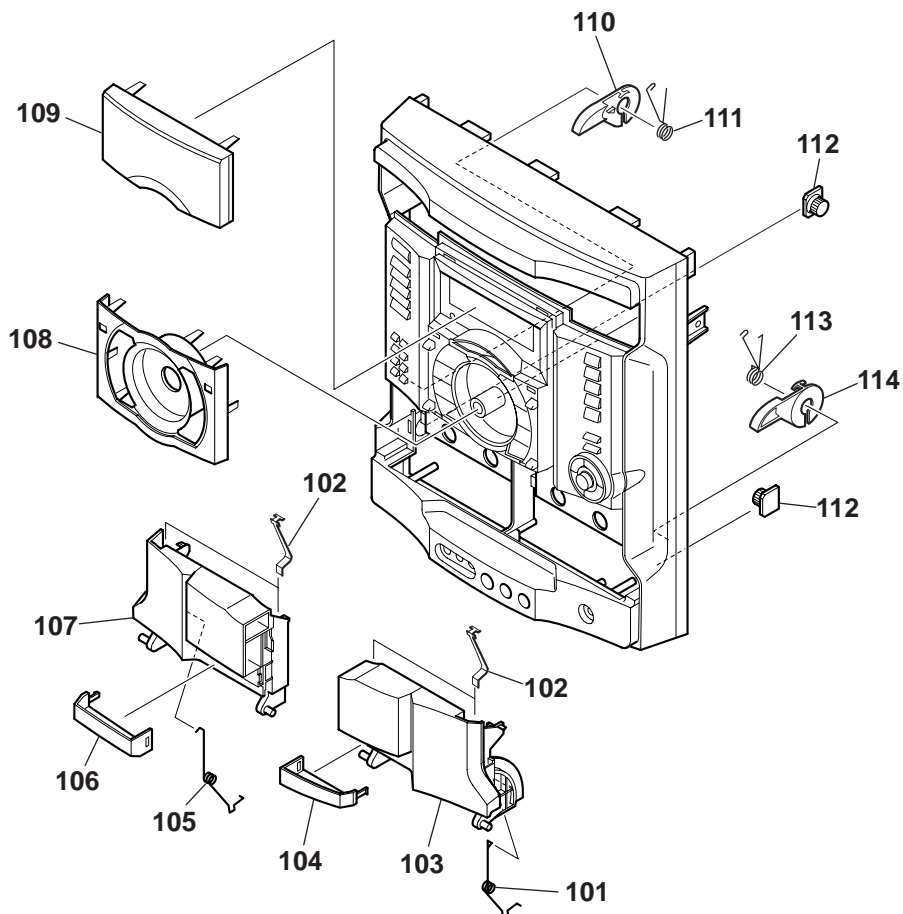
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-363-099-41	SCREW (CASE 3 TP2)		6	1-688-084-21	VIDEO OUT BOARD	
2	4-245-184-31	CASE (SIDE-R)		7	1-769-939-11	WIRE (FLAT TYPE) (11 CORE)	
3	4-245-183-21	CASE (SIDE-L) (EA)		FAN901	1-763-738-31	FAN, DC	
3	4-245-183-31	CASE (SIDE-L) (EXCEPT EA)		TU901	1-693-628-11	TUNER PACK (FM/AM)	
4	4-246-172-01	CD DOOR (RV20)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
4	4-246-172-21	CD DOOR (RV50)		#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
4	4-246-172-41	CD DOOR (RV60)		#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
5	4-244-849-11	CASE (TOP)					

4-2. FRONT PANEL SECTION (1)



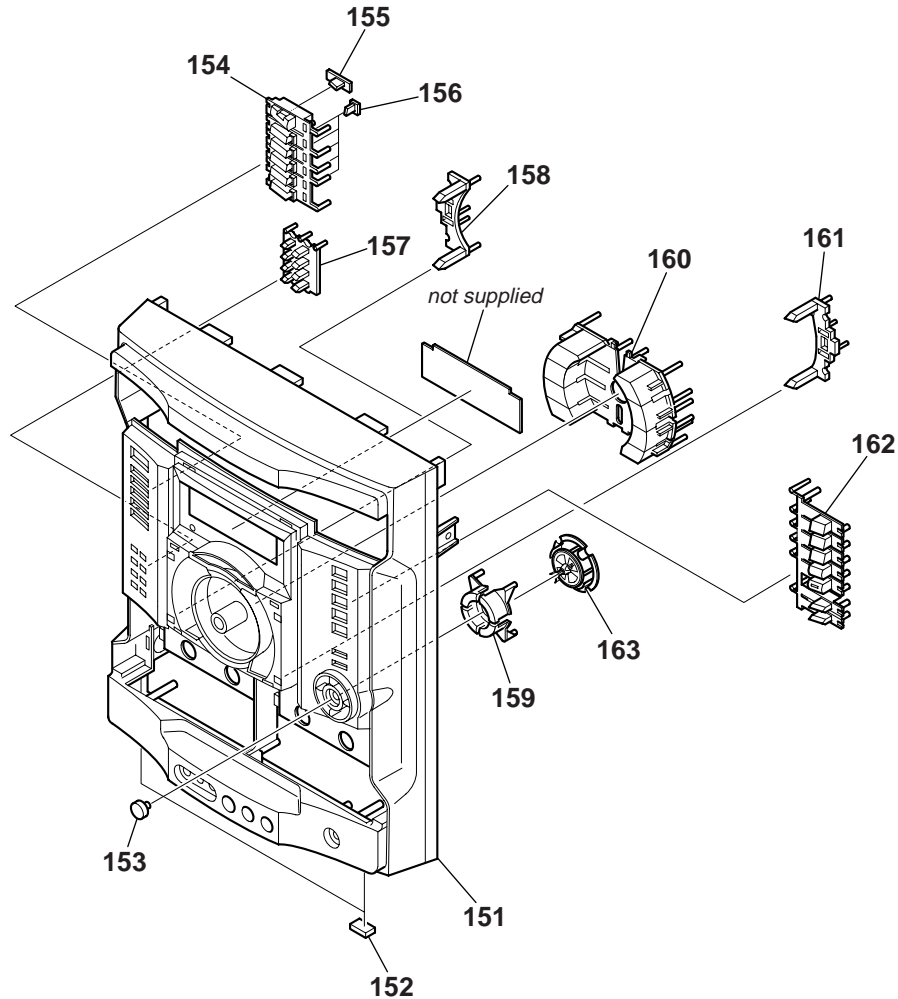
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-244-686-01	VOLUME KNOB		59	1-773-322-11	WIRE (FLAT TYPE) (31 CORE)	
52	1-688-083-21	REMOTE BOARD		60	1-827-145-11	WIRE (FLAT TYPE) (13 CORE)	
53	1-688-081-21	6 STREAM LED BOARD (RV50/RV60)		61	1-796-485-41	DECK, MECHANICAL (RV20)	
53	1-688-694-21	1 STREAM LED BOARD (RV20)		61	1-796-487-31	DECK, MECHANICAL (RV50/RV60)	
54	A-4734-204-A	PANEL BOARD, COMPLETE (RV20:EXCEPT TH)		62	4-243-608-01	BELT (BR) (RV50/RV60)	
54	A-4734-305-A	PANEL BOARD, COMPLETE (RV50:EXCEPT TH)		63	4-243-609-01	BELT (AF) (RV50/RV60)	
54	A-4734-368-A	PANEL BOARD, COMPLETE (RV60:EXCEPT TH)		64	4-243-610-01	BELT (AL) (RV50/RV60)	
54	A-4747-809-A	PANEL BOARD, COMPLETE (RV20:TH)		65	A-4734-201-A	JACK BOARD, COMPLETE	
54	A-4747-817-A	PANEL BOARD, COMPLETE (RV60:TH)		66	4-238-628-12	MIC KNOB	
54	A-4748-202-A	PANEL BOARD, COMPLETE (RV50:TH)		67	4-245-758-01	PLATE (HEAD), SHIELD (RV50/RV60)	
55	4-244-690-01	FL HOLDER (L) (RV20)		* 68	4-958-674-31	SPACER, MINIATURE CARD	
55	4-244-902-01	FL HOLDER (L) (RV50)		FLD601	1-518-863-11	INDICATOR TUBE, FLUORESCENT (RV20)	
56	4-244-691-01	FL HOLDER (R) (RV20)		FLD602	1-518-871-11	INDICATOR TUBE, FLUORESCENT (RV50/RV60)	
56	4-244-903-01	FL HOLDER (R) (RV50)		#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
57	4-951-620-01	SCREW (2.6X8), +BVTP		#4	7-685-853-04	SCREW +BVTT 2X6 (S) (RV50/RV60)	
58	1-769-914-11	WIRE (FLAT TYPE) (9 CORE)		#5	7-685-862-09	SCREW +BVTT 2.6X6 (S) (RV50/RV60)	

4-3. FRONT PANEL SECTION (2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-244-701-01	CASS DOOR SPRING (B)		108	4-244-661-01	SUB PANEL (RV20)	
102	4-238-631-01	TAPE SPRING		108	4-244-661-11	SUB PANEL (RV50/RV60)	
103	4-244-666-01	CASS DOOR (R) (RV20)		109	4-244-669-01	DISPLAY WINDOW	
103	4-244-666-11	CASS DOOR (R) (RV50/RV60)		110	4-231-824-01	CAM (A), HEART	
104	4-244-668-01	CASS WINDOW (R)		111	4-231-836-01	SPRING (HEART CAM-A)	
105	4-244-700-01	CASS DOOR SPRING (A)		112	4-224-104-11	DAMPER	
106	4-244-667-01	CASS WINDOW (L)		113	4-231-841-01	SPRING (HEART CAM-B)	
107	4-244-663-01	CASS DOOR (L) (RV20)		114	4-231-825-01	CAM (B), HEART	
107	4-244-663-11	CASS DOOR (L) (RV50/RV60)					

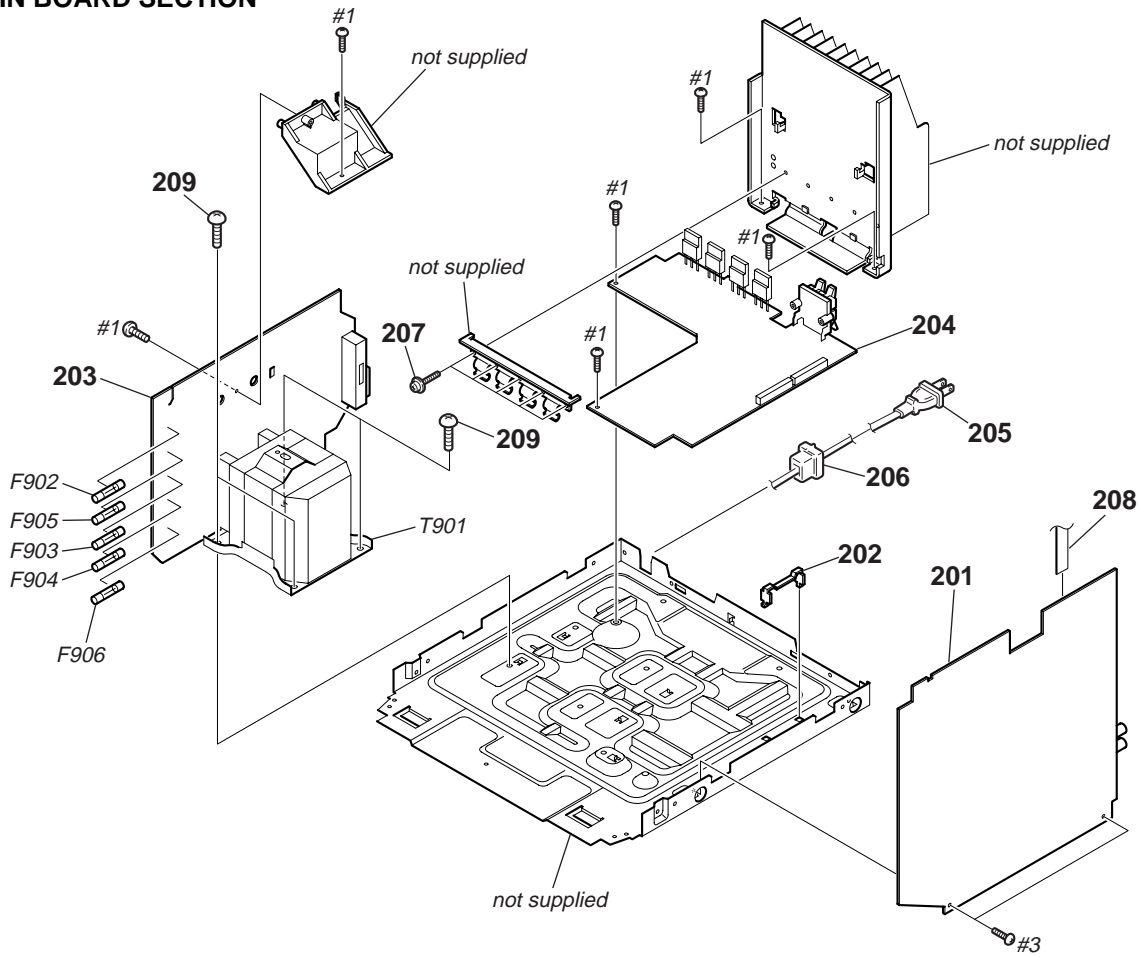
4-4. FRONT PANEL SECTION (3)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	4-244-660-51	FRONT PANEL (RV20)		158	4-246-086-01	DISPLAY BUTTON (A) (RV20)	
151	4-244-899-31	FRONT PANEL (RV50)		158	4-246-092-01	DISPLAY BUTTON (B) (RV50/RV60)	
151	4-244-899-41	FRONT PANEL (RV60)		159	4-244-684-01	EQ BUTTON (RV20)	
152	4-225-252-01	CUSHION (FOOT)		159	4-244-684-11	EQ BUTTON (RV50/RV60)	
153	4-244-680-01	GAME MIXING BUTTON (RV20)		160	4-244-906-01	CONTROL BUTTON (B) (RV20)	
153	4-244-900-01	CURSOL BUTTON (RV50/RV60)		160	4-244-906-11	CONTROL BUTTON (B) (RV50/RV60)	
154	4-244-676-01	FUNCTION BUTTON (RV20)		161	4-246-087-01	PAUSE BUTTON (A) (RV20)	
154	4-244-676-11	FUNCTION BUTTON (RV50/RV60)		161	4-246-093-01	PAUSE BUTTON (B) (RV50/RV60)	
155	4-244-677-01	POWER LENS		162	4-244-679-01	DISC BUTTON (RV20)	
156	4-244-678-11	FUNCTION LENS		162	4-244-679-11	DISC BUTTON (RV50/RV60)	
157	4-244-683-01	RECORD BUTTON (A) (RV20)		163	4-244-687-01	GAME MIXING HOLDER (RV20)	
157	4-244-908-01	RECORD BUTTON (B) (RV50/RV60)		163	4-244-901-01	CURSOL HOLDER (RV50/RV60)	

HCD-RV20/RV50/RV60

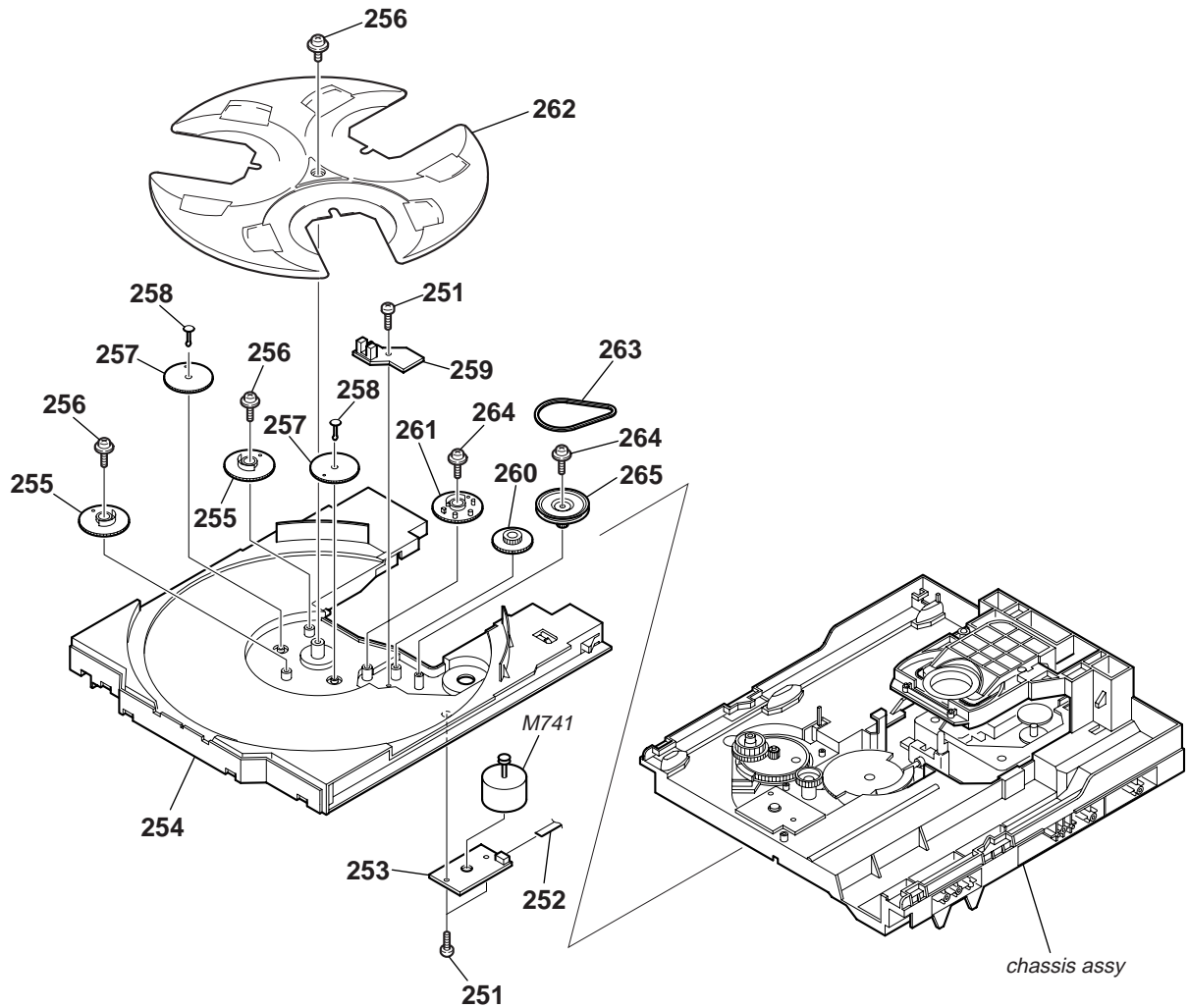
4-5. MAIN BOARD SECTION



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

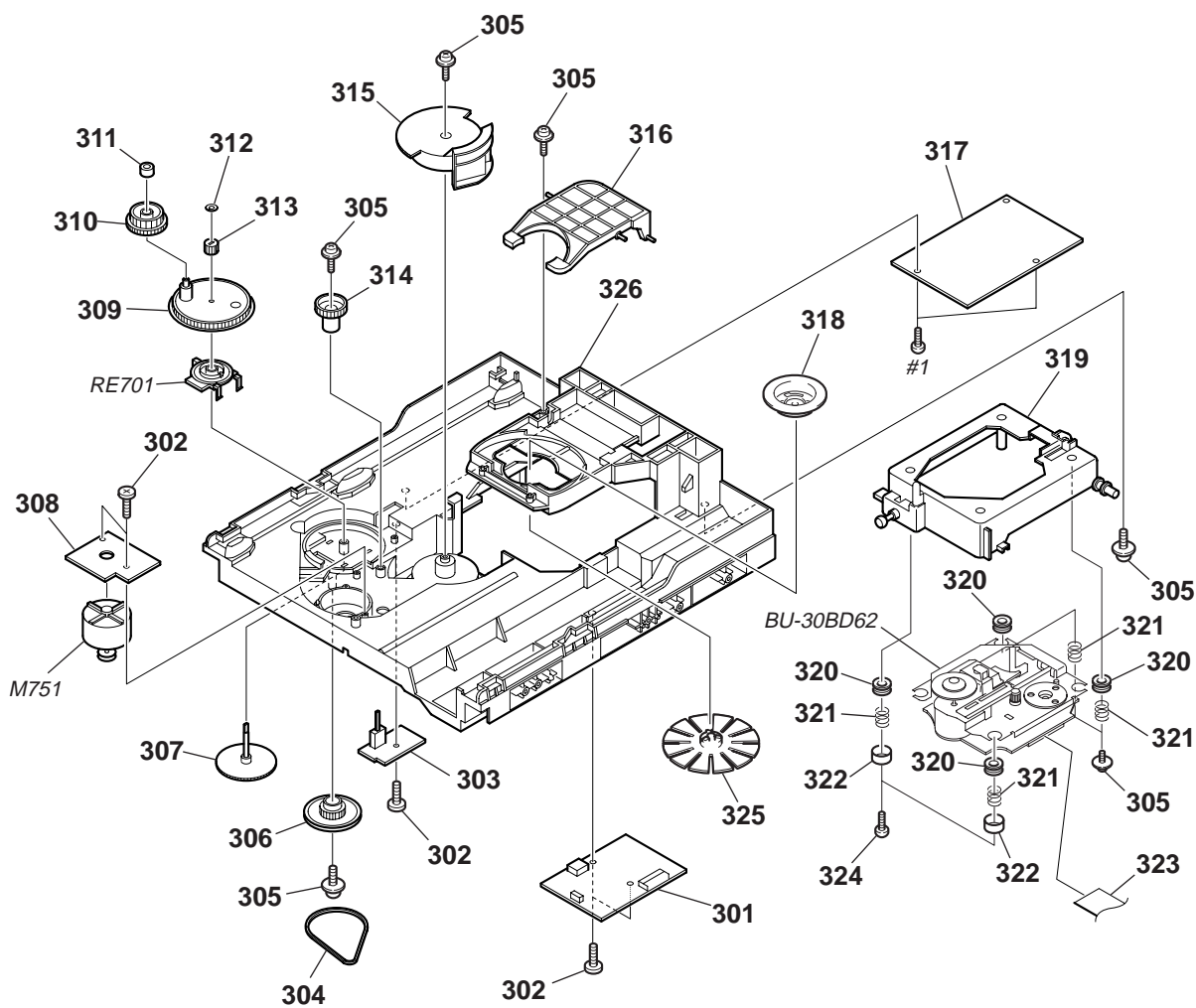
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	A-4734-196-A	MAIN BOARD, COMPLETE (RV20:EXCEPT EA,PL)		\triangle F903	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	
201	A-4734-296-A	MAIN BOARD, COMPLETE (RV50)				(RV20:EA,PL,SP,MY/RV50:EA)	
201	A-4734-357-A	MAIN BOARD, COMPLETE (RV60)		\triangle F903	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
201	A-4747-395-A	MAIN BOARD, COMPLETE (RV20:EA,PL)				(RV60:SP,MY,TH)	
* 202	4-988-533-12	HOLDER, PWB		\triangle F904	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	
						(RV20:EA,PL,SP,MY/RV50:EA)	
203	1-688-088-11	TRANS BOARD (RV50)		\triangle F904	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
203	1-689-642-11	TRANS BOARD (RV20)				(RV60:SP,MY,TH)	
203	1-689-644-11	TRANS BOARD (RV60)		\triangle F905	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V)	
204	A-4734-209-A	POWER AMP BOARD, COMPLETE				(EXCEPT RV60:EA)	
		(RV20:EXCEPT EA)		\triangle F905	1-576-665-11	FUSE (3A/125V) (RV60:EA)	
204	A-4734-307-A	POWER AMP BOARD, COMPLETE		\triangle F906	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V)	
		(RV50:EXCEPT EA)				(EXCEPT RV60:EA)	
204	A-4734-371-A	POWER AMP BOARD, COMPLETE		\triangle F906	1-576-665-11	FUSE (3A/125V) (RV60:EA)	
		(RV60:EXCEPT EA)		\triangle T901	1-439-860-11	TRANSFORMER, POWER	
204	A-4748-191-A	POWER AMP BOARD, COMPLETE (RV20:EA)				(RV20:E3,E15,PL,SP,MY,TH)	
204	A-4748-234-A	POWER AMP BOARD, COMPLETE (RV60:EA)		\triangle T901	1-439-861-11	TRANSFORMER, POWER (RV50:E3,E15,PL,TH)	
204	A-4748-250-A	POWER AMP BOARD, COMPLETE (RV50:EA)					
\triangle 205	1-777-071-83	CORD, POWER (EA,PL,SP,MY)		\triangle T901	1-439-862-11	TRANSFORMER, POWER	
						(RV60:E3,E15,PL,SP,MY,TH)	
\triangle 205	1-791-901-12	CORD, POWER (E3,E15)		\triangle T901	1-439-995-11	TRANSFORMER, POWER (RV20:EA)	
\triangle 205	1-824-818-11	CORD, POWER (WITH CONNECTOR) (TH)		\triangle T901	1-439-996-11	TRANSFORMER, POWER (RV50:EA)	
* 206	3-703-244-00	BUSHING (2104), CORD (EA,PL,SP,MY)		\triangle T901	1-439-997-11	TRANSFORMER, POWER (RV60:EA)	
206	3-703-571-11	BUSHING (S) (4516), CORD (E3,E15,TH)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
207	3-905-609-01	SCREW (TRANSISTOR)					
208	1-590-578-11	WIRE (FLAT TYPE) (19 CORE)		#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
209	4-900-386-01	SCREW		#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
\triangle F902	1-533-470-11	FUSE, GLASS TUBE (DIA.5) (T3.15AL/250V)					
		(RV20:EA,PL,SP,MY/RV50:EA/RV60:SP,MY,TH)					

4-6. CD MECHANISM DECK SECTION (1)
(CDM74-30BD62)



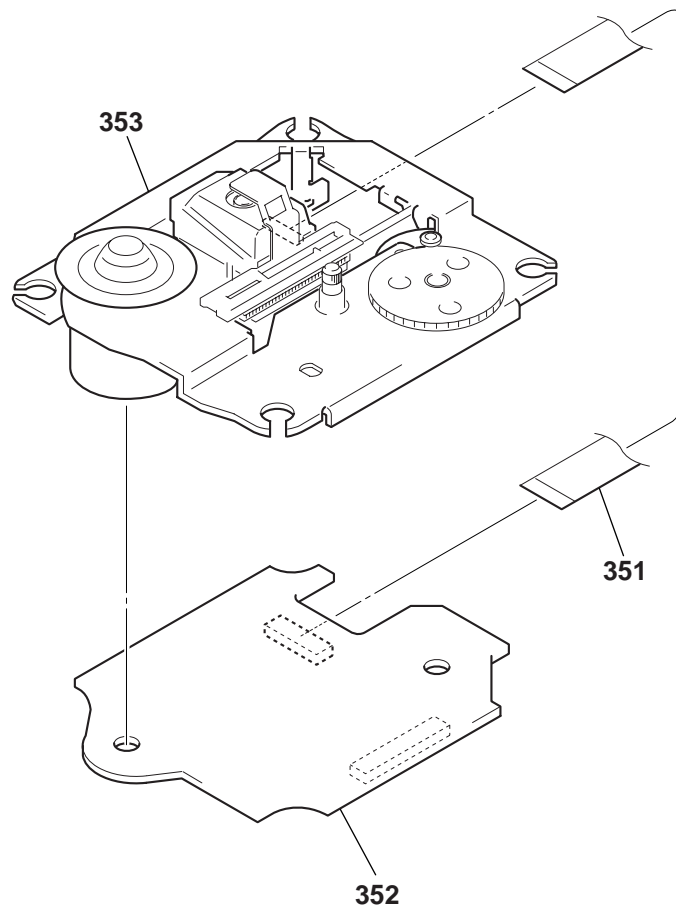
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	4-218-253-21	SCREW (M2.6), +BTTP		259	1-687-132-11	SENSOR BOARD	
252	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)		260	4-243-820-01	GEAR (TABLE)	
253	1-687-134-11	MOTOR (TB) BOARD		261	4-243-819-01	GEAR (GENEVA)	
254	4-243-815-01	TABLE (LOADING)		262	4-243-816-01	TRAY	
255	4-245-571-02	GEAR (STOPPER)		263	4-243-823-01	BELT (TABLE)	
256	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		264	4-985-672-11	SCREW (+PTPWH M2.6), FLOATING	
257	4-245-570-01	GEAR (JOINT)		265	4-243-821-01	PULLEY (TABLE)	
258	4-245-572-01	BUSHING (GEAR)		M741	A-4723-963-A	MOTOR ASSY, TABLE (TABLE)	

4-7. CD MECHANISM DECK SECTION (2) (CDM74-30BD62)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	1-687-135-11	DRIVER BOARD		316	4-243-822-01	LEVER (LIFTER)	
302	4-218-253-31	SCREW (M2.6), +BTTP		317	A-4734-551-A	VIDEO BOARD, COMPLETE	
303	1-687-669-11	SW BOARD		318	4-231-513-01	PULLEY (B) (BU-30), CHUCKING	
304	4-244-034-01	BELT (LOADING)		319	X-4955-537-1	HOLDER (30) ASSY	
305	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING		320	4-231-451-01	INSULATOR (BU-30)	
306	4-225-844-01	GEAR (LOADING A)		321	4-227-045-11	SPRING (INSULATOR), COIL	
307	4-224-613-01	GEAR (SHAFT)		322	4-231-151-01	STOPPER (BU)	
308	1-687-133-11	MOTOR (LD) BOARD		323	1-823-899-11	WIRE (FLAT TYPE) (28 CORE)	
309	4-244-108-01	GEAR, SWING		324	4-218-253-21	SCREW (M2.6), +BTTP	
310	4-224-609-01	GEAR (LOADING C)		325	X-4955-756-1	PULLEY (A) ASSY, CHUCKING	
311	4-224-608-01	COLLAR, SWING		326	4-243-817-01	CHASSIS	
312	3-016-533-11	WASHER (FR), STOPPER		M751	A-4737-553-A	MOTOR ASSY, LOADING (LOADING)	
313	4-224-611-01	GEAR (LOADING B)		RE701	1-477-680-11	ENCODER, ROTARY	
314	4-224-606-01	GEAR (RV)		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
315	4-243-818-01	GEAR (U/D)					

4-8. OPTICAL PICK-UP SECTION
(BU-30BD62)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
351	1-782-817-11	WIRE (FLAT TYPE) (16 CORE)		\triangle 353	A-4735-189-A	OP ASSY (A-MAX.3)	
352	A-4728-371-A	BD BOARD, COMPLETE					

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

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

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

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-4728-371-A	BD BOARD, COMPLETE *****				< RESISTOR >	
		< CAPACITOR >		R102	1-216-835-11	METAL CHIP 15K 5% 1/10W	
				R103	1-216-845-11	METAL CHIP 100K 5% 1/10W	
				R104	1-216-835-11	METAL CHIP 15K 5% 1/10W	
				R105	1-216-821-11	METAL CHIP 1K 5% 1/10W	
				R109	1-216-845-11	METAL CHIP 100K 5% 1/10W	
				R111	1-216-846-11	METAL CHIP 120K 5% 1/10W	
				R112	1-216-864-11	METAL CHIP 0 5% 1/10W	
				R113	1-216-826-11	METAL CHIP 2.7K 5% 1/10W	
				R114	1-216-841-11	METAL CHIP 47K 5% 1/10W	
				R117	1-216-841-11	METAL CHIP 47K 5% 1/10W	
				R118	1-216-864-11	METAL CHIP 0 5% 1/10W	
				R120	1-216-846-11	METAL CHIP 120K 5% 1/10W	
				R122	1-216-845-11	METAL CHIP 100K 5% 1/10W	
				R123	1-216-797-11	METAL CHIP 10 5% 1/10W	
				R124	1-216-797-11	METAL CHIP 10 5% 1/10W	
				R125	1-216-839-11	METAL CHIP 33K 5% 1/10W	
				R126	1-216-839-11	METAL CHIP 33K 5% 1/10W	
				R151	1-216-845-11	METAL CHIP 100K 5% 1/10W	
				R152	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
				R176	1-216-864-11	METAL CHIP 0 5% 1/10W	
				R179	1-216-833-11	METAL CHIP 10K 5% 1/10W	
				R227	1-216-845-11	METAL CHIP 100K 5% 1/10W	
				R228	1-216-853-11	METAL CHIP 470K 5% 1/10W	
				R229	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
				R231	1-216-821-11	METAL CHIP 1K 5% 1/10W	
				R234	1-216-864-11	METAL CHIP 0 5% 1/10W	
				R235	1-216-821-11	METAL CHIP 1K 5% 1/10W	
				R236	1-216-821-11	METAL CHIP 1K 5% 1/10W	

				1-687-135-11	DRIVER BOARD *****		
		< CONNECTOR >				< CAPACITOR >	
CN101	1-784-877-21	CONNECTOR, FFC (LIF(NON-ZIF)) 28P				C715	1-126-933-11 ELECT 100uF 20% 16V
CN102	1-794-424-11	CONNECTOR, FCC/FPC 16P				C731	1-126-964-11 ELECT 10uF 20% 50V
		< DIODE >				C735	1-164-159-21 CERAMIC 0.1uF 50V
D101	8-719-988-61	DIODE 1SS355TE-17				C736	1-164-159-21 CERAMIC 0.1uF 50V
		< IC >				C737	1-164-159-21 CERAMIC 0.1uF 50V
IC102	8-759-713-70	IC AN41020A				C741	1-162-306-11 CERAMIC 0.01uF 30% 16V
IC103	8-752-089-74	IC CXA2581N-T4				C751	1-162-306-11 CERAMIC 0.01uF 30% 16V
		< TRANSISTOR >				C752	1-164-159-21 CERAMIC 0.1uF 50V
Q101	8-729-049-31	TRANSISTOR 2SB710A-RTX					
Q102	8-729-424-08	TRANSISTOR UN2111					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< CONNECTOR >					
CN701	1-785-338-11	PIN, CONNECTOR (LIGHT ANGLE) 12P		C030	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
CN702	1-784-766-11	CONNECTOR, FFC 5P		C031	1-164-156-11	CERAMIC CHIP 0.1uF	25V
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P		C032	1-124-257-00	ELECT 2.2uF 20%	50V
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGLE) 2P		C033	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
		< DIODE >		C034	1-162-951-11	CERAMIC CHIP 68PF 5%	50V
D701	8-719-921-42	DIODE MTZJ-5.1A		C035	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
D711	8-719-109-69	DIODE RD3.6ES-B2		C036	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
		< IC >		C037	1-126-157-11	ELECT 10uF 20%	16V
IC701	8-759-598-69	IC BA6956AN		C038	1-119-941-11	ELECT 470uF 20%	6.3V
IC712	8-759-598-69	IC BA6956AN		C039	1-124-589-11	ELECT 47uF 20%	16V
		< TRANSISTOR >		C040	1-126-157-11	ELECT 10uF 20%	16V
Q731	8-729-029-66	TRANSISTOR DTC114ESA		C041	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
		< RESISTOR >		C042	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V
R701	1-249-413-11	CARBON 470 5% 1/4W		C043	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
R702	1-247-807-31	CARBON 100 5% 1/4W		C044	1-130-493-00	MYLAR 0.068uF 5%	50V
R711	1-249-417-11	CARBON 1K 5% 1/4W		C045	1-124-589-11	ELECT 47uF 20%	16V
R712	1-249-425-11	CARBON 4.7K 5% 1/4W		C046	1-124-589-11	ELECT 47uF 20%	16V
R713	1-249-433-11	CARBON 22K 5% 1/4W		C047	1-126-160-11	ELECT 1uF 20%	50V
R721	1-249-425-11	CARBON 4.7K 5% 1/4W		C048	1-136-167-00	FILM 0.15uF 5%	50V
R722	1-249-425-11	CARBON 4.7K 5% 1/4W		C049	1-124-465-00	ELECT 0.47uF 20%	50V
R723	1-249-425-11	CARBON 4.7K 5% 1/4W		C050	1-124-465-00	ELECT 0.47uF 20%	50V
R731	1-247-807-31	CARBON 100 5% 1/4W		C051	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V
R732	1-249-429-11	CARBON 10K 5% 1/4W		C052	1-130-493-00	MYLAR 0.068uF 5%	50V
R733	1-249-417-11	CARBON 1K 5% 1/4W		C053	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
R734	1-249-430-11	CARBON 12K 5% 1/4W		C054	1-126-160-11	ELECT 1uF 20%	50V
R735	1-247-807-31	CARBON 100 5% 1/4W				< CONNECTOR >	
R751	1-249-425-11	CARBON 4.7K 5% 1/4W		* CN006	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
*****						< DIODE >	
A-4734-201-A		JACK BOARD, COMPLETE		D001	8-719-988-61	DIODE 1SS355TE-17	
		*****		D002	8-719-988-61	DIODE 1SS355TE-17	
		< CAPACITOR >				< IC >	
C009	1-164-156-11	CERAMIC CHIP 0.1uF 25V		IC001	8-759-710-97	IC NJM4565M-D	
C011	1-124-464-11	ELECT 0.22uF 20% 50V		IC002	8-759-496-40	IC M65850FP	
C012	1-124-463-00	ELECT 0.1uF 20% 50V		IC003	8-759-295-90	IC NJM2244M-TE2	
C013	1-126-157-11	ELECT 10uF 20% 16V				< JACK >	
C014	1-126-157-11	ELECT 10uF 20% 16V		JK003	1-770-226-11	JACK (LARGE TYPE) (MIC)	
C015	1-124-257-00	ELECT 2.2uF 20% 50V		JK005	1-764-592-11	JACK 3P (GAME INPUT VIDEO/AUDIO L,R)	
C016	1-124-257-00	ELECT 2.2uF 20% 50V		JK006	1-793-829-11	JACK, HEADPHONE (PHONES)	
C017	1-124-584-00	ELECT 100uF 20% 10V				< JUMPER RESISTOR >	
C018	1-124-584-00	ELECT 100uF 20% 10V		JR003	1-216-864-11	METAL CHIP 0 5% 1/10W	
C019	1-162-953-11	CERAMIC CHIP 100PF 5% 50V		JR004	1-216-864-11	METAL CHIP 0 5% 1/10W	
C020	1-162-949-11	CERAMIC CHIP 47PF 5% 50V		JR005	1-216-864-11	METAL CHIP 0 5% 1/10W	
C021	1-164-156-11	CERAMIC CHIP 0.1uF 25V		JR006	1-216-864-11	METAL CHIP 0 5% 1/10W	(RV50/RV60)
C022	1-163-005-11	CERAMIC CHIP 470PF 10% 50V				< TRANSISTOR >	
C023	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		Q001	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
C024	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V				< RESISTOR >	
C025	1-162-949-11	CERAMIC CHIP 47PF 5% 50V		R005	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C026	1-164-156-11	CERAMIC CHIP 0.1uF 25V		R006	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C027	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		R007	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C028	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		R008	1-216-845-11	METAL CHIP 100K 5% 1/10W	
C029	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V					

HCD-RV20/RV50/RV60

JACK **MAIN**

Ref. No.	Part No.	Description	Remark
R009	1-216-821-11	METAL CHIP 1K 5%	1/10W
R010	1-216-837-11	METAL CHIP 22K 5%	1/10W
R011	1-216-809-11	METAL CHIP 100 5%	1/10W
R012	1-216-845-11	METAL CHIP 100K 5%	1/10W
R013	1-216-809-11	METAL CHIP 100 5%	1/10W
R014	1-216-848-11	METAL CHIP 180K 5%	1/10W
R015	1-216-833-11	METAL CHIP 10K 5%	1/10W
R016	1-216-833-11	METAL CHIP 10K 5%	1/10W
R017	1-216-821-11	METAL CHIP 1K 5%	1/10W
R018	1-216-834-11	METAL CHIP 12K 5%	1/10W
R019	1-216-837-11	METAL CHIP 22K 5%	1/10W
R020	1-216-837-11	METAL CHIP 22K 5%	1/10W
R021	1-216-821-11	METAL CHIP 1K 5%	1/10W
R022	1-216-833-11	METAL CHIP 10K 5%	1/10W
R023	1-216-833-11	METAL CHIP 10K 5%	1/10W
R024	1-216-833-11	METAL CHIP 10K 5%	1/10W
R025	1-216-805-11	METAL CHIP 47 5%	1/10W
R026	1-218-285-11	METAL CHIP 75 5%	1/10W
R027	1-216-821-11	METAL CHIP 1K 5%	1/10W
R028	1-216-841-11	METAL CHIP 47K 5%	1/10W
R029	1-216-835-11	METAL CHIP 15K 5%	1/10W
R091	1-216-837-11	METAL CHIP 22K 5%	1/10W
R092	1-216-837-11	METAL CHIP 22K 5%	1/10W
R093	1-216-837-11	METAL CHIP 22K 5%	1/10W
R094	1-216-846-11	METAL CHIP 120K 5%	1/10W
R095	1-216-814-11	METAL CHIP 270 5%	1/10W
R096	1-216-837-11	METAL CHIP 22K 5%	1/10W
R097	1-216-837-11	METAL CHIP 22K 5%	1/10W
R098	1-216-837-11	METAL CHIP 22K 5%	1/10W
R099	1-216-841-11	METAL CHIP 47K 5%	1/10W
< VARIABLE RESISTOR >			
VR001	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL)	
VR002	1-223-983-11	RES, VAR, CARBON 50K (ECHO LEVEL)	

A-4734-196-A	MAIN BOARD, COMPLETE (RV20:EXCEPT EA,PL)		
A-4734-296-A	MAIN BOARD, COMPLETE (RV50)		
A-4734-357-A	MAIN BOARD, COMPLETE (RV60)		
A-4747-395-A	MAIN BOARD, COMPLETE (RV20:EA,PL)		

7-685-872-09	SCREW +BVTT 3X8 (S)		
< CAPACITOR >			
C101	1-126-963-11	ELECT 4.7uF 20%	50V
C102	1-126-963-11	ELECT 4.7uF 20%	50V
C103	1-126-933-11	ELECT 100uF 20%	16V
C201	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C202	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C203	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C204	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C221	1-126-947-11	ELECT 47uF 20%	16V
C223	1-137-350-11	FILM 0.015uF 5%	100V
C223	1-137-395-11	MYLAR 0.022uF 5%	100V (RV50/RV60)
C225	1-162-960-11	CERAMIC CHIP 220PF 10%	50V (RV50/RV60)

Ref. No.	Part No.	Description	Remark
C225	1-162-962-11	CERAMIC CHIP 470PF 10%	50V (RV20)
C226	1-162-960-11	CERAMIC CHIP 220PF 10%	50V (RV50/RV60)
C226	1-162-962-11	CERAMIC CHIP 470PF 10%	50V (RV20)
C227	1-162-962-11	CERAMIC CHIP 470PF 10%	50V (RV20)
C228	1-162-962-11	CERAMIC CHIP 470PF 10%	50V (RV20)
C230	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C231	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C232	1-126-947-11	ELECT 47uF 20%	16V
C233	1-130-471-00	MYLAR 0.001uF 5%	50V (RV50/RV60)
C233	1-130-485-00	MYLAR 0.015uF 5%	50V (RV20)
C234	1-130-471-00	MYLAR 0.001uF 5%	50V (RV50/RV60)
C234	1-130-485-00	MYLAR 0.015uF 5%	50V (RV20)
C235	1-126-960-11	ELECT 1uF 20%	50V
C236	1-126-933-11	ELECT 100uF 20%	16V
C237	1-126-960-11	ELECT 1uF 20%	50V
C239	1-130-485-00	MYLAR 0.015uF 5%	50V
C240	1-126-964-11	ELECT 10uF 20%	50V
C241	1-130-479-00	MYLAR 0.0047uF 5%	50V
C242	1-130-479-00	MYLAR 0.0047uF 5%	50V (RV50/RV60)
C242	1-130-485-00	MYLAR 0.015uF 5%	50V (RV20)
C244	1-126-947-11	ELECT 47uF 20%	16V
C247	1-126-961-11	ELECT 2.2uF 20%	50V
C248	1-126-961-11	ELECT 2.2uF 20%	50V
C249	1-126-961-11	ELECT 2.2uF 20%	50V
C250	1-126-961-11	ELECT 2.2uF 20%	50V
C253	1-126-933-11	ELECT 100uF 20%	16V
C254	1-126-963-11	ELECT 4.7uF 20%	50V
C255	1-126-961-11	ELECT 2.2uF 20%	50V
C256	1-126-959-11	ELECT 0.47uF 20%	50V
C257	1-126-956-11	ELECT 0.1uF 20%	50V
C258	1-126-963-11	ELECT 4.7uF 20%	50V
C259	1-128-551-11	ELECT 22uF 20%	25V
C260	1-126-959-11	ELECT 0.47uF 20%	50V
C261	1-126-959-11	ELECT 0.47uF 20%	50V
C265	1-130-489-00	MYLAR 0.033uF 5%	50V
C266	1-130-483-00	MYLAR 0.01uF 5%	50V
C267	1-130-483-00	MYLAR 0.01uF 5%	50V
C268	1-126-960-11	ELECT 1uF 20%	50V
C269	1-126-960-11	ELECT 1uF 20%	50V
C272	1-126-960-11	ELECT 1uF 20%	50V
C273	1-126-960-11	ELECT 1uF 20%	50V
C285	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C286	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C300	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C301	1-126-964-11	ELECT 10uF 20%	50V (RV50/RV60)
C302	1-126-964-11	ELECT 10uF 20%	50V (RV50/RV60)
C303	1-104-665-11	ELECT 100uF 20%	10V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C304	1-126-963-11	ELECT	4.7uF	20%	50V	C372	1-126-964-11	ELECT	10uF	20%	50V
C307	1-126-964-11	ELECT	10uF	20%	50V	C373	1-130-483-00	MYLAR	0.01uF	5%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V	C374	1-130-483-00	MYLAR	0.01uF	5%	50V
C309	1-126-964-11	ELECT	10uF	20%	50V	C375	1-126-943-11	ELECT	2200uF	20%	25V
C310	1-126-964-11	ELECT	10uF	20%	50V	C377	1-126-963-11	ELECT	4.7uF	20%	50V
											(RV50/RV60)
C311	1-126-964-11	ELECT	10uF	20%	50V	C378	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C312	1-126-964-11	ELECT	10uF	20%	50V						(RV50/RV60)
C313	1-107-714-11	ELECT	10uF	20%	16V	C380	1-126-935-11	ELECT	470uF	20%	16V
C314	1-107-714-11	ELECT	10uF	20%	16V	C381	1-126-947-11	ELECT	47uF	20%	16V
C317	1-126-964-11	ELECT	10uF	20%	50V	C388	1-126-963-11	ELECT	4.7uF	20%	50V
											(RV50/RV60)
C318	1-126-964-11	ELECT	10uF	20%	50V	C390	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C319	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	C391	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C320	1-130-487-00	MYLAR	0.022uF	5%	50V	C392	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C321	1-130-487-00	MYLAR	0.022uF	5%	50V	C393	1-126-959-11	ELECT	0.47uF	20%	50V
C322	1-126-963-11	ELECT	4.7uF	20%	50V	C397	1-104-665-11	ELECT	100uF	20%	10V
						C398	1-126-964-11	ELECT	10uF	20%	50V
											(RV50/RV60)
C323	1-130-487-00	MYLAR	0.022uF	5%	50V	C399	1-126-935-11	ELECT	470uF	20%	16V
C324	1-130-487-00	MYLAR	0.022uF	5%	50V	C401	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C325	1-130-491-00	MYLAR	0.047uF	5%	50V	C402	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C326	1-130-491-00	MYLAR	0.047uF	5%	50V						(RV50/RV60)
C327	1-130-476-00	MYLAR	0.0027uF	5%	50V	C403	1-164-156-11	CERAMIC CHIP	0.1uF		25V
											(RV50/RV60)
C328	1-130-476-00	MYLAR	0.0027uF	5%	50V	C404	1-126-963-11	ELECT	4.7uF	20%	50V
C331	1-130-494-11	MYLAR	0.082uF	5%	50V						(RV50/RV60)
C332	1-130-494-11	MYLAR	0.082uF	5%	50V	C405	1-126-963-11	ELECT	4.7uF	20%	50V
C333	1-130-493-00	MYLAR	0.068uF	5%	50V						(RV50/RV60)
C334	1-130-493-00	MYLAR	0.068uF	5%	50V	C406	1-164-156-11	CERAMIC CHIP	0.1uF		25V
											(RV50/RV60)
C337	1-126-964-11	ELECT	10uF	20%	50V	C407	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C339	1-126-934-11	ELECT	220uF	20%	16V						(RV50/RV60)
C342	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C410	1-126-963-11	ELECT	4.7uF	20%	50V
C343	1-126-917-11	ELECT	3300uF	20%	6.3V						(RV50/RV60)
C345	1-126-933-11	ELECT	100uF	20%	16V	C411	1-107-713-11	ELECT	4.7uF	20%	35V
											(RV50/RV60)
C347	1-126-964-11	ELECT	10uF	20%	50V	C412	1-107-713-11	ELECT	4.7uF	20%	35V
C348	1-126-947-11	ELECT	47uF	20%	16V	C413	1-126-963-11	ELECT	4.7uF	20%	50V
C349	1-126-964-11	ELECT	10uF	20%	50V						(RV50/RV60)
						C414	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
											(RV50/RV60)
C350	1-126-964-11	ELECT	10uF	20%	50V	C415	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
											(RV50/RV60)
C351	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C418	1-130-483-00	MYLAR	0.01uF	5%	50V
											(RV50/RV60)
C352	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C419	1-130-483-00	MYLAR	0.01uF	5%	50V
						C420	1-126-943-11	ELECT	2200uF	20%	25V
						C421	1-126-934-11	ELECT	220uF	20%	16V
C353	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C423	1-126-947-11	ELECT	47uF	20%	16V
C354	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C450	1-126-964-11	ELECT	10uF	20%	50V
C355	1-162-962-11	CERAMIC CHIP	470PF	10%	50V						< CONNECTOR >
C356	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	CN101	1-568-830-11	CONNECTOR, FFC 11P			
						* CN202	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
C357	1-126-926-11	ELECT	1000uF	20%	10V	* CN203	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P (RV20)			
C358	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	CN303	1-564-506-11	PLUG, CONNECTOR 3P (RV50/RV60)			
C359	1-126-947-11	ELECT	47uF	20%	16V	CN304	1-784-792-11	CONNECTOR, FFC 31P			
C360	1-126-963-11	ELECT	4.7uF	20%	50V						
						* CN305	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P (RV20)			
						CN306	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
C361	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	CN307	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
C362	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	* CN308	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
C363	1-126-964-11	ELECT	10uF	20%	50V						(RV50/RV60)
C364	1-126-964-11	ELECT	10uF	20%	50V						
C365	1-162-960-11	CERAMIC CHIP	220PF	10%	50V						
C366	1-162-960-11	CERAMIC CHIP	220PF	10%	50V						
C369	1-126-964-11	ELECT	10uF	20%	50V						
C370	1-126-964-11	ELECT	10uF	20%	50V						
C371	1-126-947-11	ELECT	47uF	20%	16V						

HCD-RV20/RV50/RV60

MAIN

Ref. No.	Part No.	Description	Remark
CN310	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CN311	1-568-828-11	CONNECTOR, FFC 9P	
CN312	1-784-780-11	CONNECTOR, FFC 19P	
		< DIODE >	
D102	6-500-522-21	DIODE 10EDB40-TB3	
D203	8-719-988-61	DIODE 1SS355TE-17	
D204	8-719-988-61	DIODE 1SS355TE-17	
D205	8-719-988-61	DIODE 1SS355TE-17	
D206	8-719-988-61	DIODE 1SS355TE-17	
D210	8-719-988-61	DIODE 1SS355TE-17	
D301	6-500-522-21	DIODE 10EDB40-TB3	
D302	6-500-522-21	DIODE 10EDB40-TB3	
D303	6-500-522-21	DIODE 10EDB40-TB3	
D304	6-500-522-21	DIODE 10EDB40-TB3	
D305	8-719-988-61	DIODE 1SS355TE-17	
D306	8-719-988-61	DIODE 1SS355TE-17	
D307	8-719-988-61	DIODE 1SS355TE-17	
D308	8-719-988-61	DIODE 1SS355TE-17	
D311	8-719-988-61	DIODE 1SS355TE-17	
D312	8-719-083-63	DIODE UDZS-TE17-13B (RV50/RV60)	
D313	6-500-522-21	DIODE 10EDB40-TB3	
D314	6-500-522-21	DIODE 10EDB40-TB3	
D315	6-500-522-21	DIODE 10EDB40-TB3	
D317	8-719-988-61	DIODE 1SS355TE-17	
D319	6-500-522-21	DIODE 10EDB40-TB3	
D320	6-500-522-21	DIODE 10EDB40-TB3	
D321	6-500-522-21	DIODE 10EDB40-TB3	
D322	6-500-522-21	DIODE 10EDB40-TB3	
D364	8-719-988-61	DIODE 1SS355TE-17	
D366	8-719-988-61	DIODE 1SS355TE-17	
D371	8-719-988-61	DIODE 1SS355TE-17 (RV50/RV60)	
D374	8-719-988-61	DIODE 1SS355TE-17 (RV50/RV60)	
		< EARTH TERMINAL >	
* G1	1-537-738-21	TERMINAL, EARTH	
		< IC >	
IC201	6-702-130-01	IC HA12237F	
IC301	6-703-650-11	IC M61529FP-D60G	
IC304	8-759-710-97	IC NJM4565M-D	
IC305	8-759-701-59	IC NJM78M09FA	
IC306	6-701-760-01	IC uPC3504AHF	
IC307	8-759-039-69	IC uPC7805AHF	
IC308	8-759-701-59	IC NJM78M09FA	
IC309	6-704-046-01	IC BU2099FV	
IC310	6-704-046-01	IC BU2099FV (RV50/RV60)	
IC311	8-759-652-01	IC LA2615 (RV50/RV60)	
IC313	8-759-231-57	IC TA7810S	
		< JACK >	
JK302	1-694-884-11	TERMINAL BOARD (4P) (MD (VIDEO) IN/OUT)	
		< JUMPER RESISTOR >	
JR300	1-216-864-11	METAL CHIP	0 5% 1/10W
JR301	1-216-864-11	METAL CHIP	0 5% 1/10W

Ref. No.	Part No.	Description	Remark
JR303	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR304	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR305	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR306	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR307	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR308	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR309	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR310	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR311	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR312	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR313	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR316	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR324	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)
JR327	1-216-864-11	METAL CHIP	0 5% 1/10W
JR329	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR330	1-216-864-11	METAL CHIP	0 5% 1/10W
JR331	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR332	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR335	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR338	1-216-864-11	METAL CHIP	0 5% 1/10W
JR339	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)
JR340	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)
		< COIL >	
L201	1-424-849-11	COIL, OSCILLATION (BIAS) (RV20)	
L201	1-437-220-11	TRANSFORMER, BIAS OSCILLATION	(RV50/RV60)
		< TRANSISTOR >	
Q210	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q211	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q212	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q218	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q219	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q220	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q221	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q222	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q223	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q225	6-550-289-01	TRANSISTOR 2SA1235F	
Q228	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q301	6-550-296-01	TRANSISTOR 2SA1980G	
Q302	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R257	1-216-817-11	METAL CHIP 470	5% 1/10W
Q304	6-550-296-01	TRANSISTOR 2SA1980G		R258	1-216-809-11	METAL CHIP 100	5% 1/10W
Q310	8-729-052-79	TRANSISTOR 2SD1306NETL		R260	1-216-809-11	METAL CHIP 100	5% 1/10W
Q311	8-729-052-79	TRANSISTOR 2SD1306NETL					(RV20)
Q312	6-550-289-01	TRANSISTOR 2SA1235F		R260	1-216-813-11	METAL CHIP 220	5% 1/10W (RV50/RV60)
Q313	6-550-289-01	TRANSISTOR 2SA1235F		R261	1-216-817-11	METAL CHIP 470	5% 1/10W
Q321	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R262	1-216-845-11	METAL CHIP 100K	5% 1/10W
Q322	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R263	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q324	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R264	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q329	6-550-289-01	TRANSISTOR 2SA1235F		R265	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q330	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R266	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q331	6-550-289-01	TRANSISTOR 2SA1235F		R267	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q367	8-729-209-15	TRANSISTOR 2SD2012		R268	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q371	8-729-142-46	TRANSISTOR 2SC2001-LK (RV50/RV60)		R269	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q373	8-729-142-46	TRANSISTOR 2SC2001-LK (RV50/RV60)		R270	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q402	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV50/RV60)		R271	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q404	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV50/RV60)		R272	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV50/RV60)		R273	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q407	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV50/RV60)		R278	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q408	6-550-289-01	TRANSISTOR 2SA1235F (RV50/RV60)		R282	1-216-809-11	METAL CHIP 100	5% 1/10W
		< RESISTOR >		R283	1-216-833-11	METAL CHIP 10K	5% 1/10W
R101	1-216-833-11	METAL CHIP 10K	5% 1/10W	R284	1-216-833-11	METAL CHIP 10K	5% 1/10W
R102	1-216-833-11	METAL CHIP 10K	5% 1/10W	R285	1-216-833-11	METAL CHIP 10K	5% 1/10W
R215	1-216-829-11	METAL CHIP 4.7K	5% 1/10W	R286	1-216-833-11	METAL CHIP 10K	5% 1/10W
R216	1-216-829-11	METAL CHIP 4.7K	5% 1/10W	R287	1-216-833-11	METAL CHIP 10K	5% 1/10W
R218	1-216-849-11	METAL CHIP 220K	5% 1/10W	R288	1-216-833-11	METAL CHIP 10K	5% 1/10W
R219	1-216-833-11	METAL CHIP 10K	5% 1/10W	R301	1-216-829-11	METAL CHIP 4.7K	5% 1/10W (RV50/RV60)
R220	1-216-833-11	METAL CHIP 10K	5% 1/10W	R302	1-216-829-11	METAL CHIP 4.7K	5% 1/10W (RV50/RV60)
R225	1-216-833-11	METAL CHIP 10K	5% 1/10W (RV50/RV60)	R303	1-216-837-11	METAL CHIP 22K	5% 1/10W (RV50/RV60)
R225	1-216-834-11	METAL CHIP 12K	5% 1/10W (RV20)	R304	1-216-837-11	METAL CHIP 22K	5% 1/10W (RV50/RV60)
R226	1-216-833-11	METAL CHIP 10K	5% 1/10W (RV50/RV60)	R305	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R226	1-216-834-11	METAL CHIP 12K	5% 1/10W (RV20)	R306	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R231	1-216-825-11	METAL CHIP 2.2K	5% 1/10W	R307	1-216-809-11	METAL CHIP 100	5% 1/10W
R232	1-216-825-11	METAL CHIP 2.2K	5% 1/10W	R308	1-216-821-11	METAL CHIP 1K	5% 1/10W (RV50/RV60)
R233	1-216-837-11	METAL CHIP 22K	5% 1/10W	R309	1-216-833-11	METAL CHIP 10K	5% 1/10W
R234	1-216-837-11	METAL CHIP 22K	5% 1/10W	R310	1-216-833-11	METAL CHIP 10K	5% 1/10W
R235	1-216-833-11	METAL CHIP 10K	5% 1/10W	R311	1-216-828-11	METAL CHIP 3.9K	5% 1/10W (RV50)
R236	1-216-821-11	METAL CHIP 1K	5% 1/10W	R311	1-216-833-11	METAL CHIP 10K	5% 1/10W (RV20)
R237	1-216-857-11	METAL CHIP 1M	5% 1/10W	R311	1-218-867-11	METAL CHIP 6.8K	5% 1/10W (RV60)
R238	1-216-853-11	METAL CHIP 470K	5% 1/10W	R312	1-216-828-11	METAL CHIP 3.9K	5% 1/10W (RV50)
R239	1-216-827-11	METAL CHIP 3.3K	5% 1/10W	R312	1-216-833-11	METAL CHIP 10K	5% 1/10W (RV20)
R241	1-216-829-11	METAL CHIP 4.7K	5% 1/10W	R312	1-218-867-11	METAL CHIP 6.8K	5% 1/10W (RV60)
R242	1-216-829-11	METAL CHIP 4.7K	5% 1/10W	R313	1-216-845-11	METAL CHIP 100K	5% 1/10W
R245	1-216-833-11	METAL CHIP 10K	5% 1/10W	R314	1-216-845-11	METAL CHIP 100K	5% 1/10W
R246	1-216-841-11	METAL CHIP 47K	5% 1/10W	R316	1-216-833-11	METAL CHIP 10K	5% 1/10W
R249	1-216-853-11	METAL CHIP 470K	5% 1/10W	R317	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R250	1-216-849-11	METAL CHIP 220K	5% 1/10W	R318	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R251	1-216-793-11	METAL CHIP 4.7	5% 1/10W	R319	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R252	1-216-837-11	METAL CHIP 22K	5% 1/10W (RV50/RV60)				
R252	1-216-838-11	METAL CHIP 27K	5% 1/10W (RV20)				
R253	1-216-833-11	METAL CHIP 10K	5% 1/10W				
R256	1-216-833-11	METAL CHIP 10K	5% 1/10W				

HCD-RV20/RV50/RV60

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R320	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R408	1-216-833-11	METAL CHIP	10K 5% 1/10W
R321	1-216-833-11	METAL CHIP	10K 5% 1/10W	R409	1-216-833-11	METAL CHIP	10K 5% 1/10W
R322	1-216-833-11	METAL CHIP	10K 5% 1/10W	R410	1-216-833-11	METAL CHIP	10K 5% 1/10W
R323	1-216-821-11	METAL CHIP	1K 5% 1/10W	R411	1-216-821-11	METAL CHIP	1K 5% 1/10W
R324	1-216-809-11	METAL CHIP	100 5% 1/10W	R414	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R325	1-216-833-11	METAL CHIP	10K 5% 1/10W	R415	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R326	1-216-833-11	METAL CHIP	10K 5% 1/10W	R416	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R327	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)	R417	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R328	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R418	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R330	1-216-833-11	METAL CHIP	10K 5% 1/10W	R421	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R344	1-216-841-11	METAL CHIP	47K 5% 1/10W	R422	1-216-806-11	METAL CHIP	56 5% 1/10W
R345	1-216-841-11	METAL CHIP	47K 5% 1/10W	R423	1-216-806-11	METAL CHIP	56 5% 1/10W
R346	1-216-837-11	METAL CHIP	22K 5% 1/10W	R424	1-216-837-11	METAL CHIP	22K 5% 1/10W
R348	1-216-837-11	METAL CHIP	22K 5% 1/10W	R425	1-216-837-11	METAL CHIP	22K 5% 1/10W
R352	1-218-717-11	METAL CHIP	11K 5% 1/10W	R426	1-216-837-11	METAL CHIP	22K 5% 1/10W
R353	1-218-717-11	METAL CHIP	11K 5% 1/10W	R427	1-216-134-00	METAL CHIP	2.2 5% 1/8W
R354	1-216-841-11	METAL CHIP	47K 5% 1/10W	R428	1-216-134-00	METAL CHIP	2.2 5% 1/8W
R355	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R429	1-216-821-11	METAL CHIP	1K 5% 1/10W
R356	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R430	1-216-833-11	METAL CHIP	10K 5% 1/10W
R358	1-216-837-11	METAL CHIP	22K 5% 1/10W	R431	1-216-847-11	METAL CHIP	150K 5% 1/10W
R360	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R432	1-216-809-11	METAL CHIP	100 5% 1/10W
R361	1-216-830-11	METAL CHIP	5.6K 5% 1/10W	△R433	1-215-891-11	METAL OXIDE	680 5% 2W F
R362	1-216-837-11	METAL CHIP	22K 5% 1/10W	△R434	1-215-891-11	METAL OXIDE	680 5% 2W F
R363	1-216-837-11	METAL CHIP	22K 5% 1/10W	R435	1-216-857-11	METAL CHIP	1M 5% 1/10W
R364	1-216-845-11	METAL CHIP	100K 5% 1/10W	R437	1-216-809-11	METAL CHIP	100 5% 1/10W (RV50/RV60)
R365	1-216-857-11	METAL CHIP	1M 5% 1/10W	R438	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R368	1-216-809-11	METAL CHIP	100 5% 1/10W	R440	1-216-861-11	METAL CHIP	2.2M 5% 1/10W (RV50/RV60)
R369	1-216-809-11	METAL CHIP	100 5% 1/10W	R441	1-216-861-11	METAL CHIP	2.2M 5% 1/10W (RV50/RV60)
R371	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)	R442	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R372	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)	R443	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R373	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)	R444	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)
R374	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)	R445	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)
R377	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R446	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R378	1-216-833-11	METAL CHIP	10K 5% 1/10W	R447	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)
R379	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R448	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)
R380	1-216-853-11	METAL CHIP	470K 5% 1/10W	R449	1-216-821-11	METAL CHIP	1K 5% 1/10W (RV50/RV60)
R384	1-218-717-11	METAL CHIP	11K 5% 1/10W	R450	1-216-821-11	METAL CHIP	1K 5% 1/10W (RV50/RV60)
R385	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R451	1-216-845-11	METAL CHIP	100K 5% 1/10W (RV50/RV60)
R386	1-216-833-11	METAL CHIP	10K 5% 1/10W	R452	1-216-845-11	METAL CHIP	100K 5% 1/10W (RV50/RV60)
R387	1-216-834-11	METAL CHIP	12K 5% 1/10W	R455	1-218-717-11	METAL CHIP	11K 5% 1/10W
R388	1-216-821-11	METAL CHIP	1K 5% 1/10W				
R389	1-216-829-11	METAL CHIP	4.7K 5% 1/10W				
R395	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R396	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R397	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R398	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R399	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R400	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R401	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R402	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R404	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R405	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R406	1-216-837-11	METAL CHIP	22K 5% 1/10W				
R407	1-216-833-11	METAL CHIP	10K 5% 1/10W				

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

MAIN

MOTOR (LD)

MOTOR (TB)

PANEL

Ref. No.	Part No.	Description	Remark
R456	1-218-717-11	METAL CHIP	11K 5% 1/10W
R457	1-216-837-11	METAL CHIP	22K 5% 1/10W
R459	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R460	1-216-817-11	METAL CHIP	470 5% 1/10W
R461	1-216-817-11	METAL CHIP	470 5% 1/10W (RV50/RV60)
R462	1-216-821-11	METAL CHIP	1K 5% 1/10W (RV50/RV60)
R463	1-216-833-11	METAL CHIP	10K 5% 1/10W (RV50/RV60)
R464	1-216-821-11	METAL CHIP	1K 5% 1/10W (RV50/RV60)
R465	1-216-837-11	METAL CHIP	22K 5% 1/10W
R466	1-216-837-11	METAL CHIP	22K 5% 1/10W
R469	1-216-845-11	METAL CHIP	100K 5% 1/10W (RV50/RV60)
R480	1-216-833-11	METAL CHIP	10K 5% 1/10W
R481	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R482	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R483	1-216-821-11	METAL CHIP	1K 5% 1/10W
R484	1-216-833-11	METAL CHIP	10K 5% 1/10W
R486	1-216-809-11	METAL CHIP	100 5% 1/10W (RV50/RV60)
R487	1-216-134-00	METAL CHIP	2.2 5% 1/8W
R488	1-216-134-00	METAL CHIP	2.2 5% 1/8W
R489	1-216-174-00	METAL CHIP	100 5% 1/8W (RV20)
R489	1-216-296-11	SHORT CHIP	0 (RV50/RV60)
R490	1-216-174-00	METAL CHIP	100 5% 1/8W (RV20)
R490	1-216-296-00	SHORT CHIP	0 (RV50/RV60)
R496	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R497	1-216-829-11	METAL CHIP	4.7K 5% 1/10W

1-687-133-11	MOTOR (LD) BOARD	*****	

1-687-134-11	MOTOR (TB) BOARD	*****	

< CONNECTOR >			
CN742	1-784-727-11	CONNECTOR, FFC 5P	

A-4734-204-A	PANEL BOARD, COMPLETE (RV20:EXCEPT TH)		
A-4734-305-A	PANEL BOARD, COMPLETE (RV50:EXCEPT TH)		
A-4734-368-A	PANEL BOARD, COMPLETE (RV60:EXCEPT TH)		
A-4747-809-A	PANEL BOARD, COMPLETE (RV20:TH)		
A-4747-817-A	PANEL BOARD, COMPLETE (RV60:TH)		
A-4748-202-A	PANEL BOARD, COMPLETE (RV50:TH) *****		
4-244-690-01	FL HOLDER (L) (RV20)		
4-244-691-01	FL HOLDER (R) (RV20)		
4-244-902-01	FL HOLDER (L) (RV50)		
4-244-903-01	FL HOLDER (R) (RV50)		
< CAPACITOR >			
C601	1-124-247-11	ELECT	10uF 20% 35V

Ref. No.	Part No.	Description	Remark
C602	1-124-247-11	ELECT	10uF 20% 35V
C603	1-124-589-11	ELECT	47uF 20% 16V
C604	1-124-261-00	ELECT	10uF 20% 50V
C611	1-126-916-11	ELECT	1000uF 20% 6.3V
C612	1-115-156-11	CERAMIC CHIP	1uF 10V
C614	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C615	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V
C616	1-115-156-11	CERAMIC CHIP	1uF 10V
C617	1-162-961-11	CERAMIC CHIP	330PF 10% 50V
C618	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C619	1-124-234-00	ELECT	22uF 20% 16V
C620	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C621	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C622	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C635	1-162-917-11	CERAMIC CHIP	15PF 5% 50V
C636	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
C637	1-124-464-11	ELECT	0.22uF 20% 50V
C638	1-124-464-11	ELECT	0.22uF 20% 50V
C639	1-126-947-11	ELECT	47uF 20% 35V
C640	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C641	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C642	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C643	1-115-156-11	CERAMIC CHIP	1uF 10V
C644	1-124-234-00	ELECT	22uF 20% 16V
C646	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C647	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C648	1-124-257-00	ELECT	2.2uF 20% 50V
C649	1-124-234-00	ELECT	22uF 20% 16V
C650	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
< CONNECTOR >			
CN601	1-784-753-11	CONNECTOR, FFC 31P	
CN602	1-784-731-11	CONNECTOR, FFC 9P	
CN603	1-816-422-11	PIN, CONNECTOR 3P	
CN605	1-784-735-11	CONNECTOR, FFC 13P	
* CN607	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	(RV50/RV60)
< DIODE >			
D606	8-719-988-61	DIODE 1SS355TE-17	
D607	8-719-988-61	DIODE 1SS355TE-17	
D608	8-719-988-61	DIODE 1SS355TE-17	
D609	8-719-988-61	DIODE 1SS355TE-17	
D612	8-719-988-61	DIODE 1SS355TE-17	
D614	8-719-988-61	DIODE 1SS355TE-17	
D615	8-719-988-61	DIODE 1SS355TE-17	
D616	8-719-988-61	DIODE 1SS355TE-17	
D617	8-719-988-61	DIODE 1SS355TE-17	
D618	8-719-988-61	DIODE 1SS355TE-17	
D619	8-719-988-61	DIODE 1SS355TE-17	
D620	8-719-988-61	DIODE 1SS355TE-17	
D621	8-719-988-61	DIODE 1SS355TE-17	
D622	8-719-988-61	DIODE 1SS355TE-17	
D623	8-719-988-61	DIODE 1SS355TE-17	
D624	8-719-988-61	DIODE 1SS355TE-17	
D625	8-719-988-61	DIODE 1SS355TE-17	
D627	8-719-988-61	DIODE 1SS355TE-17	
D628	8-719-988-61	DIODE 1SS355TE-17	
D629	8-719-988-61	DIODE 1SS355TE-17	

HCD-RV20/RV50/RV60

PANEL

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D630	8-719-988-61	DIODE 1SS355TE-17				< TRANSISTOR >	
D631	8-719-988-61	DIODE 1SS355TE-17					
		< COIL >					
FB601	1-412-473-21	INDUCTOR (SMALL TYPE)					
		< FLUORESCENT INDICATOR >					
FLD601	1-518-863-11	INDICATOR TUBE, FLUORESCENT (RV20)		Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
FLD602	1-518-871-11	INDICATOR TUBE, FLUORESCENT (RV50/RV60)		Q602	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< IC >		Q603	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC601	6-802-911-01	IC LC876696B-5IG9 (RV20)		Q604	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC601	6-802-912-01	IC LC876696B-5IH0 (RV50/RV60)		Q605	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV50/RV60)	
IC602	6-704-045-01	IC MM1574A					
IC603	8-759-533-04	IC M62703ML-E1		Q607	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< JUMPER RESISTOR >		Q609	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
JR601	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)	Q610	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
JR602	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)	Q616	8-729-140-04	TRANSISTOR 2SB1116A-L	
JR603	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)	Q617	8-729-140-04	TRANSISTOR 2SB1116A-L	
JR604	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)				
JR605	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)	Q618	8-729-116-56	TRANSISTOR 2SB1068-L	
JR606	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)			< RESISTOR >	
JR607	1-216-864-11	METAL CHIP	0 5% 1/10W	R030	1-216-809-11	METAL CHIP	100 5% 1/10W
JR608	1-216-864-11	METAL CHIP	0 5% 1/10W	R031	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
JR609	1-216-864-11	METAL CHIP	0 5% 1/10W	R032	1-216-848-11	METAL CHIP	180K 5% 1/10W
JR610	1-216-864-11	METAL CHIP	0 5% 1/10W	R033	1-216-837-11	METAL CHIP	22K 5% 1/10W
JR611	1-216-864-11	METAL CHIP	0 5% 1/10W	R034	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
JR613	1-216-864-11	METAL CHIP	0 5% 1/10W	R035	1-216-841-11	METAL CHIP	47K 5% 1/10W
JR614	1-216-864-11	METAL CHIP	0 5% 1/10W	R036	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
JR615	1-216-864-11	METAL CHIP	0 5% 1/10W	R037	1-216-817-11	METAL CHIP	470 5% 1/10W
JR617	1-216-864-11	METAL CHIP	0 5% 1/10W	R039	1-216-809-11	METAL CHIP	100 5% 1/10W
JR619	1-216-864-11	METAL CHIP	0 5% 1/10W	R040	1-216-845-11	METAL CHIP	100K 5% 1/10W
JR621	1-216-864-11	METAL CHIP	0 5% 1/10W	R041	1-216-845-11	METAL CHIP	100K 5% 1/10W
JR622	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)	R042	1-216-845-11	METAL CHIP	100K 5% 1/10W (RV50/RV60)
JR623	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)	R043	1-216-845-11	METAL CHIP	100K 5% 1/10W
JR624	1-216-864-11	METAL CHIP	0 5% 1/10W (RV50/RV60)	R044	1-216-845-11	METAL CHIP	100K 5% 1/10W
JR625	1-216-864-11	METAL CHIP	0 5% 1/10W (RV20)	R045	1-216-845-11	METAL CHIP	100K 5% 1/10W
		< DIODE >		R046	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
LED607	6-500-414-01	LED HL-30105Q2AT (CD)		R047	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
LED608	6-500-414-01	LED HL-30105Q2AT (TUNER/BAND)		R048	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
LED609	6-500-414-01	LED HL-30105Q2AT (TAPE A/B)		R049	1-216-829-11	METAL CHIP	4.7K 5% 1/10W (RV50/RV60)
LED610	6-500-414-01	LED HL-30105Q2AT (GAME) (RV50/RV60)		R050	1-216-821-11	METAL CHIP	1K 5% 1/10W
LED612	6-500-414-01	LED HL-30105Q2AT (GAME) (RV20)		R051	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
LED612	6-500-414-01	LED HL-30105Q2AT (MD/VIDEO) (RV50/RV60)		R053	1-216-841-11	METAL CHIP	47K 5% 1/10W
LED614	6-500-415-01	LED HL-30105Q2IT (POWER)		R054	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R055	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R056	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R057	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R058	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R059	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R060	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R061	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R062	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R063	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R064	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R065	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R066	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R067	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R068	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R069	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R070	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R071	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R072	1-216-841-11	METAL CHIP	47K 5% 1/10W

PANEL

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R073	1-216-841-11	METAL CHIP	47K 5% 1/10W	R647	1-200-397-11	METAL	4.7M 5% 1/10W
R074	1-216-841-11	METAL CHIP	47K 5% 1/10W	R648	1-216-819-11	METAL CHIP	680 5% 1/10W
R075	1-216-841-11	METAL CHIP	47K 5% 1/10W	R649	1-216-198-11	RES-CHIP	1K 5% 1/8W
R076	1-216-841-11	METAL CHIP	47K 5% 1/10W	R650	1-216-843-11	METAL CHIP	68K 5% 1/10W
R077	1-216-841-11	METAL CHIP	47K 5% 1/10W				(RV50/RV60)
R078	1-216-841-11	METAL CHIP	47K 5% 1/10W	R651	1-216-833-11	METAL CHIP	10K 5% 1/10W
R079	1-216-841-11	METAL CHIP	47K 5% 1/10W	R652	1-216-809-11	METAL CHIP	100 5% 1/10W
R080	1-216-841-11	METAL CHIP	47K 5% 1/10W	R653	1-216-805-11	METAL CHIP	47 5% 1/10W
R081	1-216-841-11	METAL CHIP	47K 5% 1/10W	R654	1-216-833-11	METAL CHIP	10K 5% 1/10W
R082	1-216-841-11	METAL CHIP	47K 5% 1/10W	R655	1-216-841-11	METAL CHIP	47K 5% 1/10W
R083	1-216-841-11	METAL CHIP	47K 5% 1/10W	R656	1-216-841-11	METAL CHIP	47K 5% 1/10W
R084	1-216-841-11	METAL CHIP	47K 5% 1/10W	R657	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R085	1-216-841-11	METAL CHIP	47K 5% 1/10W	R658	1-216-833-11	METAL CHIP	10K 5% 1/10W
R086	1-216-841-11	METAL CHIP	47K 5% 1/10W	R659	1-216-833-11	METAL CHIP	10K 5% 1/10W
R087	1-216-820-11	METAL CHIP	820 5% 1/10W	R660	1-216-835-11	METAL CHIP	15K 5% 1/10W
R088	1-216-820-11	METAL CHIP	820 5% 1/10W				(RV50/RV60)
R089	1-216-827-11	METAL CHIP	3.3K 5% 1/10W	R661	1-216-837-11	METAL CHIP	22K 5% 1/10W
R090	1-216-827-11	METAL CHIP	3.3K 5% 1/10W				(RV50/RV60)
R601	1-216-839-11	METAL CHIP	33K 5% 1/10W	R662	1-216-819-11	METAL CHIP	680 5% 1/10W
R603	1-216-843-11	METAL CHIP	68K 5% 1/10W	R663	1-216-821-11	METAL CHIP	1K 5% 1/10W
			(RV50/RV60)	R664	1-216-823-11	METAL CHIP	1.5K 5% 1/10W
R604	1-216-833-11	METAL CHIP	10K 5% 1/10W	R665	1-216-809-11	METAL CHIP	100 5% 1/10W
R605	1-216-833-11	METAL CHIP	10K 5% 1/10W	R666	1-216-841-11	METAL CHIP	47K 5% 1/10W
R606	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R667	1-216-813-11	METAL CHIP	220 5% 1/10W
R607	1-216-849-11	METAL CHIP	220K 5% 1/10W	R668	1-216-809-11	METAL CHIP	100 5% 1/10W
R609	1-216-833-11	METAL CHIP	10K 5% 1/10W	R669	1-216-823-11	METAL CHIP	1.5K 5% 1/10W
R610	1-216-835-11	METAL CHIP	15K 5% 1/10W	R670	1-216-845-11	METAL CHIP	100K 5% 1/10W
R611	1-216-809-11	METAL CHIP	100 5% 1/10W	R671	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R612	1-216-809-11	METAL CHIP	100 5% 1/10W	R672	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
R613	1-216-821-11	METAL CHIP	1K 5% 1/10W	R673	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R614	1-216-821-11	METAL CHIP	1K 5% 1/10W	R674	1-216-839-11	METAL CHIP	33K 5% 1/10W
R615	1-216-821-11	METAL CHIP	1K 5% 1/10W				(RV50/RV60)
R616	1-216-817-11	METAL CHIP	470 5% 1/10W	R675	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
R623	1-216-198-11	RES-CHIP	1K 5% 1/8W	R676	1-216-821-11	METAL CHIP	1K 5% 1/10W
R624	1-216-835-11	METAL CHIP	15K 5% 1/10W	R677	1-216-851-11	METAL CHIP	330K 5% 1/10W
R625	1-216-817-11	METAL CHIP	470 5% 1/10W	R678	1-216-841-11	METAL CHIP	47K 5% 1/10W
R626	1-216-819-11	METAL CHIP	680 5% 1/10W	R679	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R627	1-216-821-11	METAL CHIP	1K 5% 1/10W	R680	1-216-809-11	METAL CHIP	100 5% 1/10W
R628	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R681	1-216-833-11	METAL CHIP	10K 5% 1/10W
R629	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R682	1-218-867-11	METAL CHIP	6.8K 5% 1/10W
R630	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R683	1-216-833-11	METAL CHIP	10K 5% 1/10W
R631	1-216-827-11	METAL CHIP	3.3K 5% 1/10W	R684	1-216-835-11	METAL CHIP	15K 5% 1/10W
R632	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R685	1-216-837-11	METAL CHIP	22K 5% 1/10W
R633	1-218-867-11	METAL CHIP	6.8K 5% 1/10W	R686	1-218-867-11	METAL CHIP	6.8K 5% 1/10W
R634	1-216-833-11	METAL CHIP	10K 5% 1/10W	R687	1-216-833-11	METAL CHIP	10K 5% 1/10W
R635	1-216-198-11	RES-CHIP	1K 5% 1/8W	R688	1-216-835-11	METAL CHIP	15K 5% 1/10W
R636	1-216-198-11	RES-CHIP	1K 5% 1/8W	R689	1-216-837-11	METAL CHIP	22K 5% 1/10W
R637	1-216-843-11	METAL CHIP	68K 5% 1/10W	R690	1-216-839-11	METAL CHIP	33K 5% 1/10W
			(RV50/RV60)				(RV50/RV60)
R638	1-216-835-11	METAL CHIP	15K 5% 1/10W	R691	1-216-833-11	METAL CHIP	10K 5% 1/10W
R639	1-216-817-11	METAL CHIP	470 5% 1/10W	R692	1-216-809-11	METAL CHIP	100 5% 1/10W
R640	1-216-819-11	METAL CHIP	680 5% 1/10W	R693	1-216-809-11	METAL CHIP	100 5% 1/10W
R641	1-216-821-11	METAL CHIP	1K 5% 1/10W	R694	1-216-809-11	METAL CHIP	100 5% 1/10W
R642	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R695	1-216-809-11	METAL CHIP	100 5% 1/10W
R643	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R696	1-216-809-11	METAL CHIP	100 5% 1/10W
R644	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R697	1-216-809-11	METAL CHIP	100 5% 1/10W
R645	1-216-198-11	RES-CHIP	1K 5% 1/8W	R698	1-216-809-11	METAL CHIP	100 5% 1/10W
R646	1-216-849-11	METAL CHIP	220K 5% 1/10W	R699	1-216-821-11	METAL CHIP	1K 5% 1/10W
				R902	1-216-841-11	METAL CHIP	47K 5% 1/10W

HCD-RV20/RV50/RV60

PANEL	POWER AMP
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Ref. No.	Part No.	Description	Remark
R903	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R904	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R905	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R906	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R907	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R908	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R909	1-216-837-11	METAL CHIP 22K	5% 1/10W
R910	1-216-837-11	METAL CHIP 22K	5% 1/10W
R911	1-216-837-11	METAL CHIP 22K	5% 1/10W
R912	1-216-837-11	METAL CHIP 22K	5% 1/10W
R913	1-216-837-11	METAL CHIP 22K	5% 1/10W
R914	1-216-837-11	METAL CHIP 22K	5% 1/10W
R915	1-216-833-11	METAL CHIP 10K	5% 1/10W
R916	1-216-821-11	METAL CHIP 1K	5% 1/10W
R917	1-216-833-11	METAL CHIP 10K	5% 1/10W
R918	1-216-821-11	METAL CHIP 1K	5% 1/10W
R919	1-216-833-11	METAL CHIP 10K	5% 1/10W
R920	1-216-821-11	METAL CHIP 1K	5% 1/10W
R921	1-216-841-11	METAL CHIP 47K	5% 1/10W
R922	1-218-717-11	METAL CHIP 11K	5% 1/10W
R923	1-218-717-11	METAL CHIP 11K	5% 1/10W
R924	1-218-717-11	METAL CHIP 11K	5% 1/10W
R925	1-218-717-11	METAL CHIP 11K	5% 1/10W
R926	1-216-837-11	METAL CHIP 22K	5% 1/10W
R927	1-216-837-11	METAL CHIP 22K	5% 1/10W
R931	1-216-182-00	RES-CHIP 220	5% 1/8W
R932	1-216-182-00	RES-CHIP 220	5% 1/8W (RV50/RV60)
R933	1-216-182-00	RES-CHIP 220	5% 1/8W (RV50/RV60)
R934	1-216-182-00	RES-CHIP 220	5% 1/8W (RV50/RV60)
R937	1-216-198-11	RES-CHIP 1K	5% 1/8W
R938	1-216-198-11	RES-CHIP 1K	5% 1/8W
R939	1-216-198-11	RES-CHIP 1K	5% 1/8W
R940	1-216-198-11	RES-CHIP 1K	5% 1/8W
R941	1-216-198-11	RES-CHIP 1K	5% 1/8W (RV50/RV60)
< VIBRATOR >			
RES601	1-795-880-11	VIBRATOR, CERAMIC (8.64MHz)	
< SWITCH >			
S601	1-762-875-21	SWITCH, KEYBOARD (■)	
S602	1-762-875-21	SWITCH, KEYBOARD (■)	
S603	1-762-875-21	SWITCH, KEYBOARD (▶▶ +)	
S604	1-762-875-21	SWITCH, KEYBOARD (▶▶▶)	
S605	1-762-875-21	SWITCH, KEYBOARD (ALBUM +)	
S606	1-762-875-21	SWITCH, KEYBOARD (GAME MIXING) (RV20)	
S607	1-762-875-21	SWITCH, KEYBOARD (ALBUM -)	
S608	1-762-875-21	SWITCH, KEYBOARD (◀◀◀)	
S609	1-762-875-21	SWITCH, KEYBOARD (◀◀◀-)	
S610	1-762-196-21	SWITCH, TACTILE (EDIT/DIRECTION)	(RV50/RV60)
S611	1-762-196-21	SWITCH, TACTILE (FM MODE/REPEAT)	(RV50/RV60)
S612	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)	
S613	1-762-196-21	SWITCH, TACTILE (GAME MIXING)	(RV50/RV60)

Ref. No.	Part No.	Description	Remark
S614	1-762-875-21	SWITCH, KEYBOARD (POWER)	
S615	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)	
S616	1-762-875-21	SWITCH, KEYBOARD (▷) (RV20)	
S616	1-762-875-21	SWITCH, KEYBOARD (<▷) (RV50/RV60)	
S617	1-762-875-21	SWITCH, KEYBOARD (DISC 1)	
S618	1-762-875-21	SWITCH, KEYBOARD (DISC 2)	
S619	1-762-875-21	SWITCH, KEYBOARD (DISC 3)	
S620	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)	
S621	1-762-875-21	SWITCH, KEYBOARD (▲)	
S622	1-762-196-21	SWITCH, TACTILE (EFFECT ON/OFF)	(RV50/RV60)
S623	1-762-875-21	SWITCH, KEYBOARD (MOVIE EQ)	
S624	1-762-196-21	SWITCH, TACTILE (♣) (RV50/RV60)	
S625	1-762-196-21	SWITCH, TACTILE (♠) (RV50/RV60)	
S626	1-762-196-21	SWITCH, TACTILE (♠) (RV50/RV60)	
S627	1-762-875-21	SWITCH, KEYBOARD (CD)	
S628	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)	
S629	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)	
S630	1-762-875-21	SWITCH, KEYBOARD (GAME) (RV20)	
S630	1-762-875-21	SWITCH, KEYBOARD (MD (VIDEO))	(RV50/RV60)
S631	1-762-196-21	SWITCH, TACTILE (GAME) (RV50/RV60)	
S632	1-762-196-21	SWITCH, TACTILE (SURROUND) (RV50)	
S632	1-762-196-21	SWITCH, TACTILE (SURR SS MODE) (RV60)	
S633	1-762-196-21	SWITCH, TACTILE (TUNER MEMORY/ PLAY MODE) (RV50/RV60)	
S634	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)	
S635	1-762-196-21	SWITCH, TACTILE (KARAOKE MPX)	(RV50/RV60)
S636	1-762-875-21	SWITCH, KEYBOARD (EFFECT ON/OFF) (RV20)	
S636	1-762-875-21	SWITCH, KEYBOARD (ENTER) (RV50/RV60)	
S637	1-762-875-21	SWITCH, KEYBOARD (MUSIC EQ)	
S638	1-762-875-21	SWITCH, KEYBOARD (GAME EQ)	
S639	1-762-875-21	SWITCH, KEYBOARD (GROOVE)	
S640	1-762-196-21	SWITCH, TACTILE (P FILE) (RV50/RV60)	
S641	1-762-196-21	SWITCH, TACTILE (ILLUMINATION)	(RV50/RV60)
S642	1-762-196-21	SWITCH, TACTILE (♣) (RV50/RV60)	
< ROTARY ENCODER >			
VR601	1-477-194-11	ENCODER, ROTARY (12 TYPE) (VOLUME)	
< VIBRATOR >			
X601	1-760-252-12	VIBRATOR, CRYSTAL (32.768kHz)	

A-4734-209-A	POWER AMP BOARD, COMPLETE		(RV20:EXCEPT EA)
A-4734-307-A	POWER AMP BOARD, COMPLETE		(RV50:EXCEPT EA)
A-4734-371-A	POWER AMP BOARD, COMPLETE		(RV60:EXCEPT EA)
A-4748-191-A	POWER AMP BOARD, COMPLETE (RV20:EA)		
A-4748-234-A	POWER AMP BOARD, COMPLETE (RV60:EA)		
A-4748-250-A	POWER AMP BOARD, COMPLETE (RV50:EA)		*****
< CAPACITOR >			
C1	1-165-319-11	CERAMIC CHIP 0.1uF	50V

HCD-RV20/RV50/RV60

POWER AMP

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D40	8-719-988-61	DIODE 1SS355TE-17		Q20	6-550-317-01	TRANSISTOR 2SD814A(RS)	
D41	8-719-312-08	DIODE FMB-G16L (RV50/RV60)		Q21	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D42	8-719-312-08	DIODE FMB-G16L (RV50/RV60)		Q22	6-550-316-01	TRANSISTOR 2SB792A(RS)	
D501	6-500-334-01	DIODE MC2836		Q23	6-550-289-01	TRANSISTOR 2SA1235F	
D502	6-500-334-01	DIODE MC2836		Q24	6-550-289-01	TRANSISTOR 2SA1235F	
D503	6-500-335-01	DIODE MC2838		Q501	6-550-291-01	TRANSISTOR FN1016 (RV20)	
D504	6-500-335-01	DIODE MC2838		Q501	6-550-310-01	TRANSISTOR 2SD2439A (RV50)	
D505	8-719-970-83	DIODE HSS82-TJ		Q501	6-550-320-01	TRANSISTOR 2SD2562 (RV60)	
D506	8-719-970-83	DIODE HSS82-TJ		Q502	6-550-291-01	TRANSISTOR FN1016 (RV20)	
D507	8-719-988-61	DIODE 1SS355TE-17		Q502	6-550-310-01	TRANSISTOR 2SD2439A (RV50)	
D508	8-719-988-61	DIODE 1SS355TE-17		Q502	6-550-320-01	TRANSISTOR 2SD2562 (RV60)	
D509	6-500-335-01	DIODE MC2838		Q503	6-550-292-01	TRANSISTOR FP1016 (RV20)	
D510	6-500-334-01	DIODE MC2836		Q503	6-550-319-01	TRANSISTOR 2SB1649 (RV60)	
D511	8-719-988-61	DIODE 1SS355TE-17		Q503	6-550-389-01	TRANSISTOR 2SB1588A (RV50)	
D512	8-719-988-61	DIODE 1SS355TE-17 (RV60)		Q504	6-550-292-01	TRANSISTOR FP1016 (RV20)	
D513	8-719-988-61	DIODE 1SS355TE-17		Q504	6-550-319-01	TRANSISTOR 2SB1649 (RV60)	
D514	8-719-988-61	DIODE 1SS355TE-17		Q504	6-550-389-01	TRANSISTOR 2SB1588A (RV50)	
D515	8-719-083-70	DIODE UDZS-TE17-27B		Q505	6-550-316-01	TRANSISTOR 2SB792A(RS)	
D584	8-719-988-61	DIODE 1SS355TE-17		Q506	6-550-316-01	TRANSISTOR 2SB792A(RS)	
		< EARTH TERMINAL >		Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
* EP01	1-537-738-21	TERMINAL, EARTH		Q508	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
* EP501	1-537-738-21	TERMINAL, EARTH		Q509	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< TERMINAL BOARD >		Q510	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
JK502	1-694-877-21	TERMINAL BOARD (8P) (FRONT SPEAKER, SURROUND SPEAKER) (RV60)		Q511	6-550-413-01	TRANSISTOR 2SC3478LK	
JK502	1-694-884-11	TERMINAL BOARD (4P) (SPEAKER) (RV20/RV50)		Q512	6-550-413-01	TRANSISTOR 2SC3478LK	
		< JUMPER RESISTOR >		Q513	6-550-413-01	TRANSISTOR 2SC3478LK	
JR2	1-216-296-11	SHORT CHIP 0		Q514	6-550-413-01	TRANSISTOR 2SC3478LK	
JR511	1-216-864-11	METAL CHIP 0 5% 1/10W		Q515	6-550-317-01	TRANSISTOR 2SD814A(RS)	
JR512	1-216-864-11	METAL CHIP 0 5% 1/10W		Q516	6-550-317-01	TRANSISTOR 2SD814A(RS)	
JR513	1-216-296-11	SHORT CHIP 0		Q517	6-550-316-01	TRANSISTOR 2SB792A(RS)	
JR514	1-216-864-11	METAL CHIP 0 5% 1/10W		Q518	6-550-316-01	TRANSISTOR 2SB792A(RS)	
JR516	1-216-864-11	METAL CHIP 0 5% 1/10W		Q519	6-550-316-01	TRANSISTOR 2SB792A(RS)	
JR517	1-216-864-11	METAL CHIP 0 5% 1/10W		Q520	6-550-316-01	TRANSISTOR 2SB792A(RS)	
		< COIL >		Q521	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
L501	1-422-009-13	COIL, AIR-CORE		Q522	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
L502	1-422-009-13	COIL, AIR-CORE		Q523	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< TRANSISTOR >		Q524	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q5	6-550-289-01	TRANSISTOR 2SA1235F		Q525	8-729-052-79	TRANSISTOR 2SD1306NETL	
Q6	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q526	8-729-052-79	TRANSISTOR 2SD1306NETL	
Q7	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q527	6-550-289-01	TRANSISTOR 2SA1235F	
Q8	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q529	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q9	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q530	6-550-289-01	TRANSISTOR 2SA1235F	
Q10	6-550-316-01	TRANSISTOR 2SB792A(RS)		Q532	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (RV60)	
Q11	8-729-055-91	TRANSISTOR SRA2202SF		Q534	6-550-296-01	TRANSISTOR 2SA1980G	
Q12	6-550-646-01	TRANSISTOR 2SC3143K4/K5-TB		Q535	6-550-296-01	TRANSISTOR 2SA1980G	
Q13	6-550-316-01	TRANSISTOR 2SB792A(RS)		Q536	6-550-289-01	TRANSISTOR 2SA1235F	
Q17	6-550-289-01	TRANSISTOR 2SA1235F				< RESISTOR >	
Q18	6-550-040-01	FET 2SK3053 (RV50/RV60)		R4	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
Q18	6-550-293-01	FET 2SK2937 (RV20)		R6	1-216-838-11	METAL CHIP 27K 5% 1/10W	
Q19	6-550-040-01	FET 2SK3053 (RV50/RV60)		R7	1-216-838-11	METAL CHIP 27K 5% 1/10W	
Q19	6-550-293-01	FET 2SK2937 (RV20)		R8	1-216-838-11	METAL CHIP 27K 5% 1/10W	
				R9	1-216-839-11	METAL CHIP 33K 5% 1/10W	
				R12	1-216-830-11	METAL CHIP 5.6K 5% 1/10W	
				R13	1-216-206-00	RES-CHIP 2.2K 5% 1/8W	
				R14	1-216-830-11	METAL CHIP 5.6K 5% 1/10W	
				R16	1-216-821-11	METAL CHIP 1K 5% 1/10W	
				R17	1-216-821-11	METAL CHIP 1K 5% 1/10W	

POWER AMP

Ref. No.	Part No.	Description	Quantity	Tolerance	Remark	Ref. No.	Part No.	Description	Quantity	Tolerance	Remark
R18	1-216-809-11	METAL CHIP	100	5%	1/10W	R72	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R19	1-216-835-11	METAL CHIP	15K	5%	1/10W	R73	1-216-236-11	RES-CHIP	39K	5%	1/8W
R20	1-216-833-11	METAL CHIP	10K	5%	1/10W	R74	1-216-238-11	RES-CHIP	47K	5%	1/8W
R21	1-216-835-11	METAL CHIP	15K	5%	1/10W	R75	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R22	1-216-839-11	METAL CHIP	33K	5%	1/10W	R76	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R23	1-216-839-11	METAL CHIP	33K	5%	1/10W	R77	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R26	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R78	1-216-234-00	RES-CHIP	33K	5%	1/8W
R27	1-216-833-11	METAL CHIP	10K	5%	1/10W	R79	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R29	1-216-138-00	METAL CHIP	3.3	5%	1/8W	R81	1-260-111-11	CARBON	10K	5%	1/2W
R31	1-216-138-00	METAL CHIP	3.3	5%	1/8W	R82	1-216-833-11	METAL CHIP	10K	5%	1/10W
R32	1-216-840-11	METAL CHIP	39K	5%	1/10W	R83	1-216-208-00	RES-CHIP	2.7K	5%	1/8W
R33	1-216-839-11	METAL CHIP	33K	5%	1/10W	R85	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R34	1-216-843-11	METAL CHIP	68K	5%	1/10W	R86	1-249-423-11	CARBON	10K	5%	1/4W
R34	1-216-844-11	METAL CHIP	82K	5%	1/10W (RV20)	R90	1-216-222-00	RES-CHIP	10K	5%	1/8W
R34	1-218-296-11	METAL CHIP	75K	5%	1/10W (RV50)	R91	1-216-178-00	RES-CHIP	150	5%	1/8W
R35	1-216-840-11	METAL CHIP	39K	5%	1/10W	R92	1-249-423-11	CARBON	10K	5%	1/4W
R36	1-216-839-11	METAL CHIP	33K	5%	1/10W	R93	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R37	1-216-843-11	METAL CHIP	68K	5%	1/10W	R94	1-216-833-11	METAL CHIP	10K	5%	1/10W
R37	1-216-844-11	METAL CHIP	82K	5%	1/10W (RV20)	R95	1-260-111-11	CARBON	10K	5%	1/2W
R37	1-218-296-11	METAL CHIP	75K	5%	1/10W (RV50)	R96	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R38	1-216-833-11	METAL CHIP	10K	5%	1/10W	R97	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R39	1-216-845-11	METAL CHIP	100K	5%	1/10W	R98	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R40	1-216-833-11	METAL CHIP	10K	5%	1/10W	R99	1-249-423-11	CARBON	10K	5%	1/4W
R41	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R100	1-216-138-00	METAL CHIP	3.3	5%	1/8W
R42	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R102	1-216-204-00	RES-CHIP	1.8K	5%	1/8W (RV60)
R43	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R102	1-216-206-00	RES-CHIP	2.2K	5%	1/8W (RV50)
R44	1-216-236-11	RES-CHIP	39K	5%	1/8W	R102	1-216-216-00	RES-CHIP	5.6K	5%	1/8W (RV20)
R45	1-216-841-11	METAL CHIP	47K	5%	1/10W	R103	1-216-244-00	RES-CHIP	82K	5%	1/8W
R46	1-216-841-11	METAL CHIP	47K	5%	1/10W	R104	1-216-244-00	RES-CHIP	82K	5%	1/8W
R47	1-216-837-11	METAL CHIP	22K	5%	1/10W	R105	1-216-244-00	RES-CHIP	82K	5%	1/8W
R48	1-216-849-11	METAL CHIP	220K	5%	1/10W	R106	1-216-244-00	RES-CHIP	82K	5%	1/8W
R49	1-216-849-11	METAL CHIP	220K	5%	1/10W	R107	1-216-244-00	RES-CHIP	82K	5%	1/8W
R50	1-216-833-11	METAL CHIP	10K	5%	1/10W	R108	1-216-244-00	RES-CHIP	82K	5%	1/8W
R51	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R109	1-216-244-00	RES-CHIP	82K	5%	1/8W
R52	1-216-841-11	METAL CHIP	47K	5%	1/10W	R110	1-216-244-00	RES-CHIP	82K	5%	1/8W
R53	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R500	1-216-821-11	METAL CHIP	1K	5%	1/10W
R54	1-216-835-11	METAL CHIP	15K	5%	1/10W	△ R501	1-216-381-11	METAL OXIDE	0.22X2		3W F (RV50)
R55	1-260-330-11	CARBON	1.5K	5%	1/2W	△ R501	1-245-235-21	METAL	0.22X2		2W F (RV20)
R56	1-249-420-11	CARBON	1.8K	5%	1/4W	△ R501	1-245-545-11	METAL OXIDE	0.22X2		3W F (RV60)
R58	1-216-186-00	RES-CHIP	330	5%	1/8W	△ R502	1-216-381-11	METAL OXIDE	0.22X2		3W F (RV50)
R59	1-216-184-00	RES-CHIP	270	5%	1/8W	△ R502	1-245-235-21	METAL	0.22X2		2W F (RV20)
R60	1-216-826-11	METAL CHIP	2.7K	5%	1/10W	△ R502	1-245-545-11	METAL OXIDE	0.22X2		3W F (RV60)
R61	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	△ R503	1-216-381-11	METAL OXIDE	0.22X2		3W F (RV50)
R62	1-216-833-11	METAL CHIP	10K	5%	1/10W	△ R503	1-245-235-21	METAL	0.22X2		2W F (RV20)
R63	1-216-833-11	METAL CHIP	10K	5%	1/10W	△ R503	1-245-545-11	METAL OXIDE	0.22X2		3W F (RV60)
R64	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	△ R504	1-216-381-11	METAL OXIDE	0.22X2		3W F (RV50)
R65	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R66	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R67	1-216-841-11	METAL CHIP	47K	5%	1/10W						
R68	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R69	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R70	1-216-835-11	METAL CHIP	15K	5%	1/10W						
R71	1-216-835-11	METAL CHIP	15K	5%	1/10W						

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

HCD-RV20/RV50/RV60

POWER AMP

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
△ R504	1-245-235-21	METAL	0.22X2	R556	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R557	1-216-821-11	METAL CHIP	1K 5% 1/10W
△ R504	1-245-545-11	METAL OXIDE	0.22X2	R558	1-216-821-11	METAL CHIP	1K 5% 1/10W
				R559	1-216-828-11	METAL CHIP	3.9K 5% 1/10W
R505	1-216-809-11	METAL CHIP	100 5% 1/10W	R560	1-216-828-11	METAL CHIP	3.9K 5% 1/10W
R506	1-216-809-11	METAL CHIP	100 5% 1/10W				
R507	1-216-822-11	METAL CHIP	1.2K 5% 1/10W	R561	1-216-843-11	METAL CHIP	68K 5% 1/10W
			(RV50/RV60)	R562	1-216-857-11	METAL CHIP	1M 5% 1/10W
R507	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R563	1-216-214-00	RES-CHIP	4.7K 5% 1/8W
			(RV20)	R564	1-216-214-00	RES-CHIP	4.7K 5% 1/8W
R508	1-216-822-11	METAL CHIP	1.2K 5% 1/10W	R567	1-216-214-00	RES-CHIP	4.7K 5% 1/8W
			(RV50/RV60)	R568	1-216-214-00	RES-CHIP	4.7K 5% 1/8W
R508	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	R569	1-216-853-11	METAL CHIP	470K 5% 1/10W
			(RV20)	R570	1-260-076-21	CARBON	10 5% 1/2W
R509	1-216-826-11	METAL CHIP	2.7K 5% 1/10W	R571	1-260-076-21	CARBON	10 5% 1/2W
R510	1-216-826-11	METAL CHIP	2.7K 5% 1/10W	R574	1-216-182-00	RES-CHIP	220 5% 1/8W
R511	1-216-821-11	METAL CHIP	1K 5% 1/10W	R575	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R512	1-216-821-11	METAL CHIP	1K 5% 1/10W	R576	1-216-837-11	METAL CHIP	22K 5% 1/10W
R513	1-216-835-11	METAL CHIP	15K 5% 1/10W	R577	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R514	1-216-835-11	METAL CHIP	15K 5% 1/10W	R578	1-216-182-00	RES-CHIP	220 5% 1/8W
R515	1-216-815-11	METAL CHIP	330 5% 1/10W	R580	1-216-150-11	RES-CHIP	10 5% 1/8W
R516	1-216-815-11	METAL CHIP	330 5% 1/10W	R581	1-216-246-00	RES-CHIP	100K 5% 1/8W
R517	1-216-804-11	METAL CHIP	39 5% 1/10W	R586	1-216-182-00	RES-CHIP	220 5% 1/8W
R518	1-216-804-11	METAL CHIP	39 5% 1/10W				(RV60)
R519	1-216-804-11	METAL CHIP	39 5% 1/10W	R587	1-216-182-00	RES-CHIP	220 5% 1/8W
R520	1-216-804-11	METAL CHIP	39 5% 1/10W				(RV60)
R521	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R588	1-216-821-11	METAL CHIP	1K 5% 1/10W
R522	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				(RV60)
R523	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R589	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R524	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R591	1-216-841-11	METAL CHIP	47K 5% 1/10W
R525	1-216-821-11	METAL CHIP	1K 5% 1/10W	R592	1-216-835-11	METAL CHIP	15K 5% 1/10W
R526	1-216-821-11	METAL CHIP	1K 5% 1/10W	R593	1-216-833-11	METAL CHIP	10K 5% 1/10W
R527	1-216-841-11	METAL CHIP	47K 5% 1/10W	R594	1-216-833-11	METAL CHIP	10K 5% 1/10W
R528	1-216-841-11	METAL CHIP	47K 5% 1/10W	△ R595	1-245-546-11	METAL OXIDE	0.47 5% 1W F
R529	1-216-829-11	METAL CHIP	4.7K 5% 1/10W				(RV60)
R530	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	△ R596	1-245-546-11	METAL OXIDE	0.47 5% 1W F
							(RV60)
R531	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	△ R597	1-245-546-11	METAL OXIDE	0.47 5% 1W F
R532	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				(RV60)
R533	1-216-809-11	METAL CHIP	100 5% 1/10W	△ R598	1-245-546-11	METAL OXIDE	0.47 5% 1W F
R534	1-216-809-11	METAL CHIP	100 5% 1/10W				(RV60)
R535	1-216-809-11	METAL CHIP	100 5% 1/10W	R599	1-216-841-11	METAL CHIP	47K 5% 1/10W
R536	1-216-809-11	METAL CHIP	100 5% 1/10W	R601	1-216-156-00	RES-CHIP	18 5% 1/8W
R537	1-260-328-11	RES-CHIP	1K 5% 1/2W	R602	1-216-156-00	RES-CHIP	18 5% 1/8W
R538	1-260-328-11	RES-CHIP	1K 5% 1/2W	R603	1-216-156-00	RES-CHIP	18 5% 1/8W
R539	1-216-833-11	METAL CHIP	10K 5% 1/10W	R604	1-216-156-00	RES-CHIP	18 5% 1/8W
R540	1-216-833-11	METAL CHIP	10K 5% 1/10W				
R541	1-216-206-00	RES-CHIP	2.2K 5% 1/8W	< RELAY >			
R542	1-216-206-00	RES-CHIP	2.2K 5% 1/8W	RY501	1-755-373-11	RELAY	
R543	1-216-206-00	RES-CHIP	2.2K 5% 1/8W	RY502	1-755-373-11	RELAY (RV60)	
R544	1-216-206-00	RES-CHIP	2.2K 5% 1/8W	< THERMISTOR >			
R545	1-216-809-11	METAL CHIP	100 5% 1/10W	TH501	1-805-217-21	THERMISTOR (1012)	
R546	1-216-809-11	METAL CHIP	100 5% 1/10W	TH502	1-805-217-21	THERMISTOR (1012)	
R547	1-216-838-11	METAL CHIP	27K 5% 1/10W	*****			
R548	1-216-838-11	METAL CHIP	27K 5% 1/10W				
R549	1-216-818-11	METAL CHIP	560 5% 1/10W				
R550	1-216-818-11	METAL CHIP	560 5% 1/10W				
R553	1-216-838-11	METAL CHIP	27K 5% 1/10W				
R554	1-216-838-11	METAL CHIP	27K 5% 1/10W				
R555	1-216-841-11	METAL CHIP	47K 5% 1/10W				

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REMOTE

SENSOR

SW

TRANS

VIDEO

Ref. No.	Part No.	Description	Remark
	1-688-083-21	REMOTE BOARD *****	
		< CONNECTOR >	
CN604	1-816-423-11	SOCKET, CONNECTOR 3P	
		< IC >	
RM601	6-600-174-01	IC RPM7240-H4 (IR)	

	1-687-132-11	SENSOR BOARD *****	
		< CONNECTOR >	
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P	
		< IC >	
IC731	6-600-022-01	IC RPI-576	

	1-687-669-11	SW BOARD *****	
		< SWITCH >	
S751	1-786-514-11	SWITCH, LEVER (SLIDE) (LEVER)	

	1-688-088-11	TRANS BOARD (RV50)	
	1-689-642-11	TRANS BOARD (RV20)	
	1-689-644-11	TRANS BOARD (RV60) *****	
*	1-533-213-31	HOLDER, FUSE (RV20)	
	1-533-217-31	HOLDER, FUSE (RV50/RV60)	
		< CAPACITOR >	
C901	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C902	1-126-942-61	ELECT 1000uF 20%	25V
		< CONNECTOR >	
CN901	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P	
* CN902	1-764-334-11	PLUG, CONNECTOR 11P	
		< DIODE >	
D901	8-719-988-61	DIODE 1SS355TE-17 (RV20:EA/RV50/RV60)	
D902	8-719-988-61	DIODE 1SS355TE-17	
D903	8-719-988-61	DIODE 1SS355TE-17	
D904	8-719-988-61	DIODE 1SS355TE-17	
D905	8-719-988-61	DIODE 1SS355TE-17	
D906	8-719-988-61	DIODE 1SS355TE-17 (RV20:E3,E15,PL,SP,MY,TH)	
		< RESISTOR >	
△ R901	1-219-237-11	SOLID 3.3M 20%	1/2W F
		< RELAY >	
△ RY901	1-755-276-11	RELAY, POWER (RV60:EA,TH)	

Ref. No.	Part No.	Description	Remark
△ RY901	1-755-496-11	RELAY (RV50:EXCEPT EA,TH/ RV60:EXCEPT EA,TH)	
△ RY902	1-755-276-11	RELAY, POWER (RV20:TH/RV50:EA,TH)	
△ RY902	1-755-496-11	RELAY (RV20:EXCEPT EA,TH)	
		< SWITCH >	
△ S901	1-786-055-21	SELECTOR, VOLTAGE (VOLTAGE SELECTOR) (EA)	
△ S901	1-786-408-11	SW, SL 1-2-3 SWS2301 (VOLTAGE SELECTOR) (EXCEPT EA,TH)	
		< TRANSFORMER >	
△ T902	1-439-736-11	TRANSFORMER, POWER	

	A-4734-551-A	VIDEO BOARD, COMPLETE *****	
		< CAPACITOR >	
C104	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C105	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V
C106	1-164-670-11	CERAMIC CHIP 1200PF	5% 16V
C114	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C115	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C116	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C154	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C155	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V
C156	1-164-670-11	CERAMIC CHIP 1200PF	5% 16V
C201	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C202	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C203	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C204	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C205	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C206	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C207	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C208	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C209	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C210	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C211	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C212	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C213	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C214	1-124-778-00	ELECT CHIP 22uF	20% 6.3V
C221	1-124-779-00	ELECT CHIP 10uF	20% 16V
C222	1-124-779-00	ELECT CHIP 10uF	20% 16V
C223	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C224	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C253	1-216-864-11	METAL CHIP 0	5% 1/10W
C254	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C255	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C257	1-128-065-11	ELECT CHIP 68uF	20% 10V
C258	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C259	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C321	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C322	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C323	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V
C338	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C360	1-126-206-11	ELECT CHIP 100uF	20% 6.3V
C361	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C364	1-124-779-00	ELECT CHIP 10uF	20% 16V

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HCD-RV20/RV50/RV60

VIDEO

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C365	1-126-206-11	ELECT CHIP	100uF 20% 6.3V			< FERRITE BEAD >	
C366	1-126-206-11	ELECT CHIP	100uF 20% 6.3V				
C501	1-124-779-00	ELECT CHIP	10uF 20% 16V	FB201	1-469-869-21	INDUCTOR (EMI FERRITE)	
C502	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB251	1-469-869-21	INDUCTOR (EMI FERRITE)	
C503	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB252	1-469-869-21	INDUCTOR (EMI FERRITE)	
C504	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB360	1-469-869-21	INDUCTOR (EMI FERRITE)	
C505	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB501	1-469-869-21	INDUCTOR (EMI FERRITE)	
C510	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB502	1-469-869-21	INDUCTOR (EMI FERRITE)	
C511	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB503	1-469-869-21	INDUCTOR (EMI FERRITE)	
C513	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	FB504	1-469-869-21	INDUCTOR (EMI FERRITE)	
C521	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FB561	1-469-869-21	INDUCTOR (EMI FERRITE)	
C522	1-162-912-11	CERAMIC CHIP	7PF 0.5PF 50V			< FILTER >	
C523	1-162-912-11	CERAMIC CHIP	7PF 0.5PF 50V	FL201	1-234-177-21	FILTER, CHIP EMI	
C524	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FL501	1-234-177-21	FILTER, CHIP EMI	
C525	1-126-193-11	ELECT	1uF 20% 50V	FL502	1-234-177-21	FILTER, CHIP EMI	
C533	1-164-156-11	CERAMIC CHIP	0.1uF 25V	FL503	1-234-177-21	FILTER, CHIP EMI	
C534	1-164-315-11	CERAMIC CHIP	470PF 5% 50V	FL504	1-234-177-21	FILTER, CHIP EMI	
C535	1-110-563-11	CERAMIC CHIP	0.068uF 10% 16V			< IC >	
C536	1-164-217-11	CERAMIC CHIP	150PF 5% 50V	IC102	8-759-701-40	IC NJM3404AM-T1	
C537	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	IC201	6-700-399-01	IC uPC2925T-E1	
C538	1-126-206-11	ELECT CHIP	100uF 20% 6.3V	IC202	8-759-460-72	IC BA033FP-E2	
C539	1-117-863-11	CERAMIC CHIP	0.47uF 10% 6.3V	IC307	6-702-001-01	IC BD7600FV-E2	
C540	1-164-156-11	CERAMIC CHIP	0.1uF 25V	IC504	8-759-825-13	IC PCM1748E/2K	
C541	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC505	8-752-417-93	IC CXD1887R	
C542	1-164-156-11	CERAMIC CHIP	0.1uF 25V	IC506	6-702-000-01	IC BU2507FV-E2	
C543	1-164-315-11	CERAMIC CHIP	470PF 5% 50V	IC507	6-702-571-01	IC VG3612816BT-7L	
C544	1-117-863-11	CERAMIC CHIP	0.47uF 10% 6.3V	IC508	6-802-909-01	IC MR27V401E-0B3MAZ060	
C545	1-126-193-11	ELECT	1uF 20% 50V			< JUMPER RESISTOR >	
C546	1-164-156-11	CERAMIC CHIP	0.1uF 25V	JW203	1-216-864-11	METAL CHIP 0 5% 1/10W	
C547	1-126-193-11	ELECT	1uF 20% 50V			< COIL >	
C548	1-164-156-11	CERAMIC CHIP	0.1uF 25V	L102	1-410-373-31	INDUCTOR 2.2uH	
C549	1-162-913-11	CERAMIC CHIP	8PF 0.5PF 50V	L321	1-410-381-11	INDUCTOR CHIP 10uH	
C550	1-162-913-11	CERAMIC CHIP	8PF 0.5PF 50V			< TRANSISTOR >	
C551	1-164-156-11	CERAMIC CHIP	0.1uF 25V	Q201	8-729-140-75	TRANSISTOR 2SD999-CLCK	
C552	1-126-193-11	ELECT	1uF 20% 50V	Q301	8-729-602-36	TRANSISTOR 2SA1602-F	
C561	1-164-156-11	CERAMIC CHIP	0.1uF 25V	Q370	8-729-028-96	TRANSISTOR DTC114EUA-T106	
C566	1-126-206-11	ELECT CHIP	100uF 20% 6.3V	Q581	8-729-602-21	TRANSISTOR 2SC4154-F	
C567	1-164-156-11	CERAMIC CHIP	0.1uF 25V			< RESISTOR >	
C570	1-162-967-11	CERAMIC CHIP	0.0033uF 10% 50V	R102	1-216-809-11	METAL CHIP 100 5% 1/10W	
C571	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R107	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C572	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R108	1-216-823-11	METAL CHIP 1.5K 5% 1/10W	
C573	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R109	1-216-823-11	METAL CHIP 1.5K 5% 1/10W	
C574	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R114	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
C575	1-126-206-11	ELECT CHIP	100uF 20% 6.3V	R115	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
C576	1-126-206-11	ELECT CHIP	100uF 20% 6.3V	R152	1-216-809-11	METAL CHIP 100 5% 1/10W	
C581	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R157	1-216-833-11	METAL CHIP 10K 5% 1/10W	
C582	1-124-779-00	ELECT CHIP	10uF 20% 16V	R158	1-216-823-11	METAL CHIP 1.5K 5% 1/10W	
C583	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R159	1-216-823-11	METAL CHIP 1.5K 5% 1/10W	
C584	1-164-156-11	CERAMIC CHIP	0.1uF 25V	R201	1-216-809-11	METAL CHIP 100 5% 1/10W	
C596	1-124-779-00	ELECT CHIP	10uF 20% 16V	R202	1-216-809-11	METAL CHIP 100 5% 1/10W	
C597	1-124-779-00	ELECT CHIP	10uF 20% 16V	R321	1-216-813-11	METAL CHIP 220 5% 1/10W	
		< CONNECTOR >		R322	1-216-864-11	METAL CHIP 0 5% 1/10W	
CN101	1-784-327-21	CONNECTOR, FFC/FPC 28P		R323	1-216-817-11	METAL CHIP 470 5% 1/10W	
CN201	1-778-874-11	CONNECTOR, FFC (LIF(NON-ZIF)) 19P					
CN301	1-794-509-11	PIN, CONNECTOR (PC BOARD) 3P					

HCD-RV20/RV50/RV60

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
7	1-769-939-11	WIRE (FLAT TYPE) (11 CORE)	
58	1-769-914-11	WIRE (FLAT TYPE) (9 CORE)	
59	1-773-322-11	WIRE (FLAT TYPE) (31 CORE)	
60	1-827-145-11	WIRE (FLAT TYPE) (13 CORE)	
61	1-796-485-41	DECK, MECHANICAL (RV20)	
61	1-796-487-31	DECK, MECHANICAL (RV50/RV60)	
△ 205	1-777-071-83	CORD, POWER (EA,PL,SP,MY)	
△ 205	1-791-901-12	CORD, POWER (E3,E15)	
△ 205	1-824-818-11	CORD, POWER (WITH CONNECTOR) (TH)	
208	1-590-578-11	WIRE (FLAT TYPE) (19 CORE)	
252	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)	
323	1-823-899-11	WIRE (FLAT TYPE) (28 CORE)	
351	1-782-817-11	WIRE (FLAT TYPE) (16 CORE)	
△ 353	A-4735-189-A	OP ASSY (A-MAX.3)	
△ F902	1-533-470-11	FUSE, GLASS TUBE (DIA.5) (T3.15AL/250V) (RV20:EA,PL,SP,MY/RV50:EA/RV60:SP,MY,TH)	
△ F903	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V) (RV20:EA,PL,SP,MY/RV50:EA)	
△ F903	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V) (RV60:SP,MY,TH)	
△ F904	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V) (RV20:EA,PL,SP,MY/RV50:EA)	
△ F904	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V) (RV60:SP,MY,TH)	
△ F905	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V) (EXCEPT RV60:EA)	
△ F905	1-576-665-11	FUSE (3A/125V) (RV60:EA)	
△ F906	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V) (EXCEPT RV60:EA)	
△ F906	1-576-665-11	FUSE (3A/125V) (RV60:EA)	
FAN901	1-763-738-31	FAN, DC	
M741	A-4723-963-A	MOTOR ASSY, TABLE (TABLE)	
M751	A-4737-553-A	MOTOR ASSY, LOADING (LOADING)	
RE701	1-477-680-11	ENCODER, ROTARY	
△ T901	1-439-860-11	TRANSFORMER, POWER (RV20:E3,E15,PL,SP,MY,TH)	
△ T901	1-439-861-11	TRANSFORMER, POWER (RV50:E3,E15,PL,TH)	
△ T901	1-439-862-11	TRANSFORMER, POWER (RV60:E3,E15,PL,SP,MY,TH)	
△ T901	1-439-995-11	TRANSFORMER, POWER (RV20:EA)	
△ T901	1-439-996-11	TRANSFORMER, POWER (RV50:EA)	
△ T901	1-439-997-11	TRANSFORMER, POWER (RV60:EA)	
TU901	1-693-628-11	TUNER PACK (FM/AM)	

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

HCD-RV20/RV50/RV60

SONY®

E Model

SERVICE MANUAL

Ver 1.1 2003.08

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Addition of Test Mode, Mechanical Adjustments,
Electrical Adjustments and Block Diagrams.

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1. TEST MODE**[COLD RESET]**

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press three keys of **[■]**, **[GROOVE]** and **[POWER]** simultaneously.
3. The message "COLD RESET" is displayed on the fluorescent indicator tube momentarily, then becomes standby states.

[TUNER STEP CHANGE-OVER]**(Except AEP and UK models)**

- A step of AM channels can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[TUNER BAND]** key to select "AM".
3. Press the **[POWER]** key to turn the power OFF.
4. Press two keys of **[EFFECT ON/OFF]** (RV20) or **[ENTER]** (RV50/RV60) and **[POWER]** simultaneously.
5. The message "9K STEP" or "10K STEP" is displayed on the fluorescent indicator tube, and thus the channel step is changed over.

[CD SHIP MODE]

- This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[CD]** key to select "CD".
3. Press two keys of **[CD]** and **[POWER]** simultaneously.
4. The message "LOCK" is displayed on the fluorescent indicator tube, and the CD ship mode is set.

[CHANGE-OVER FUNCTION OF MD/VIDEO]**(HCD-RV50/RV60 models)**

- This mode is used to enable function of external input to change over between MD and VIDEO.

Procedure:

1. Set to standby state.
2. Press two keys of **[MD(VIDEO)]** and **[POWER]** simultaneously.
3. The message "MD" or "VIDEO" is displayed on the fluorescent indicator tube, and the function of external input is changed over.

[CD TRAY LOCK MODE]

- This mode is used to unable to take sample disc out of tray in the shop.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[CD]** key to select "CD".
3. Set disc on the tray.
4. While pressing the **[■]** key, press the **[▲]** key for 5 seconds.
5. The message "LOCKED" is displayed on the fluorescent indicator tube and the tray is locked. (Even if pressing the **[▲]** key, the message "LOCKED" is displayed on the fluorescent indicator tube and the tray is locked)
6. To release from this mode, while pressing the **[■]** key, press the **[▲]** key for 5 seconds.
7. The message "UNLOCKED" is displayed on the fluorescent indicator tube and the tray is unlocked.

[AMP TEST MODE]

- This mode is used to set the parameter of AMP IC for adjustment of tone quality and VACS level and display VACS status.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press three keys of **[■]**, **[GAME EQ]** and **[EFFECT ON/OFF]** simultaneously.
3. When the AMP test mode is activated, the message "AMP TEST" is displayed on the fluorescent indicator tube momentarily.
4. Press two keys of **[GAME EQ]** and **[DISC 2]** simultaneously, mode is changed over to parameter setting of AMP IC and display of VACS status.
5. When the VACS status, the message VACS level, VACS signal level, and VACS signal hold level is displayed on the fluorescent indicator tube.
6. Press the **[GROOVE]** key, DBFB ON/OFF is changed over.
7. Press the **[GAME MIXING]** key, surround ON/OFF is changed over.
8. Press the cursor **[◀]** and **[▶]** key, EQ band is changed over to LOW, MID or HIGH. (Case of HCD-RV50/RV60)
9. Press the cursor **[▲]** and **[▼]** key, EQ curve adjustment value is changed over between -8dB to +8dB. (Case of HCD-RV50/RV60)
10. To release from this mode, press two keys of **[GAME EQ]** and **[MOVIE EQ]** simultaneously.

[AGING MODE]

- This mode can be used for operation check of CD section and tape deck section.

CD section and tape deck section work in parallel.

If an error occurred:

The aging operation stops only an error occurred sections and display then status.

If no error occurs:

The aging operation continues repeatedly.

Procedure:

- Press the [POWER] key to turn the power ON.
- Press the [CD] key to select "CD".
- Set disc on the tray and set tape into the deck.
- Set the "ALL DISCS" mode and "REV OFF" mode.
- Press three keys of [STOP], [GAME EQ] and [DISC SKIP/EX-CHANGE] simultaneously.
- The message "AGING" is displayed on the fluorescent indicator tube momentarily, then aging operations of CD and tape are started at the same time.
- To release from this mode, operate the "COLD RESET".

1. Display at the Aging Mode

Display operating state of CD section and tape deck section alternately.

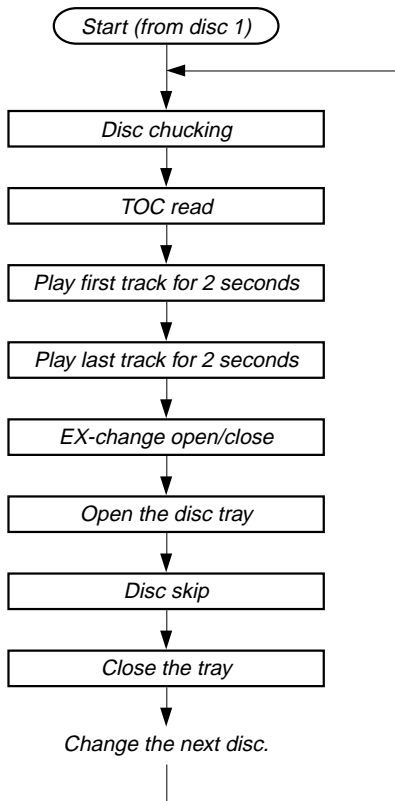
If an error occurred, stop display which that section.

2. CD Section

The sequence during the aging mode is following as below.

Display at the aging mode is the same as the normal operation.

Aging mode sequence (CD section) :

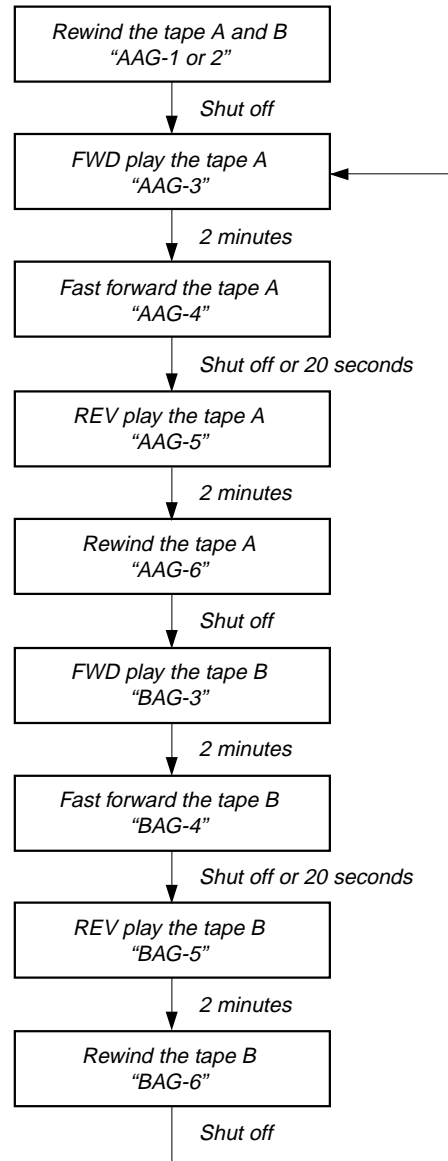


3. Tape Deck Section

The sequence during the aging mode is following as below.

If an error occurred, stop display that step.

Aging mode sequence (tape deck section) :



Note: "*AG-*" is display of each step.

[GC TEST MODE]

- This mode is used to check the fluorescent indicator tube, LED and key.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press three keys of **[■]**, **[GAME EQ]** and **[DISC 2]** simultaneously.
3. Fluorescent indicator tube and LEDs are all turned ON.
4. Press two keys of **[GAME EQ]** and **[DISC 2]** simultaneously, mode is changed over.
5. In the key check mode, press each key, the defined key number of every each key list is displayed on the fluorescent indicator tube.
6. In the key count check mode, "KEYCNT 0" is displayed on the fluorescent indicator tube. Each time a key is pressed, "KEYCNT" value increases. However, once a key is pressed, it is no longer taken into account.
7. In the headphone input check mode, connect the headphone, the message "H_P ON" is displayed on the fluorescent indicator tube, and disconnect the headphone, the message "H_P OFF" is displayed on the fluorescent indicator tube.
8. In the volume check mode, turn the **[VOLUME]** knob, the display on the fluorescent indicator tube is changed over to "VOLUME UP", "VOLUME FLAT" or "VOLUME DOWN"

[MC TEST MODE]

- This mode is used to check operations of Amplifier.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press three keys of **[■]**, **[GAME EQ]** and **[DISC 3]** simultaneously.
3. When the MC test mode is activated, the message "TEST MODE" is displayed on the fluorescent indicator tube momentarily, then VACS level is displayed on the fluorescent indicator tube.
4. Press the **[MUSIC EQ]** key, the display on the fluorescent indicator tube is changed over to "GEQ MAX", press the **[EFFECT ON/OFF]** key, the display on the fluorescent indicator tube is changed over to "GEQ 16", press the **[MOVIE EQ]** key, the display on the fluorescent indicator tube is changed over to "GEQ MIN",
5. Turn the **[VOLUME]** knob, the display on the fluorescent indicator tube is changed over to "VOLUME MAX", "VOLUME MID" or "VOLUME MIN"
6. Press the **[GROOVE]** key, VACS ON/OFF is changed over.
7. When the **[REC PAUSE/START]** key is pressed with a tape set in the deck-B, the function is switched "MD" or "VIDEO" and recording starts. When the **[◀▶]** or **[▶▶]** key is pressed during recording, the tape is rewind back to the beginning of recording, the function is switched to "TAPE B", then playback starts.
8. When the **[CD SYNC]** key is pressed with the test tape (AMS-100, AMS-110A) in the deck, number of space between tunes is counted, then if AMS-110A is set, "OK" is displayed on the fluorescent indicator tube and if AMS-100 is set, "NG" is displayed on the fluorescent indicator tube.
9. To release from this mode, press the **[POWER]** key.

[MODEL, DESTINATION AND VERSION DISPLAY]

- This mode is used to check the model, destination and software version.

Procedure:

1. Set to the standby state.
2. Press three keys of **[■]**, **[GAME EQ]** and **[MOVIE EQ]** simultaneously.
3. When the model, destination and version display mode is activated, the model and destination is displayed on the fluorescent indicator tube.
4. Press two keys of **[GAME EQ]** and **[DISC 2]** simultaneously, mode is changed over to model and destination display mode and version display mode.
5. To release from this mode, press the two keys of **[GAME EQ]** and **[MOVIE EQ]** simultaneously.

[CD ERROR CODE DISPLAY]

- This mode can be used for error display of CD section.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[CD]** key to select "CD".
3. Press three keys of **[■]**, **[GAME EQ]** and **[DISC 1]** simultaneously.

Note: Error code is not displayed on the fluorescent indicator tube.

[CD SERVICE MODE]

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

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[CD]** key to select "CD".
3. Press three keys of **[■]**, **[GAME EQ]** and **[▲]** simultaneously.
4. When the CD service mode is activated, the message "TRAVERS ON" is displayed on the fluorescent indicator tube.
5. Press the **[▶▶]** key, optical pick-up move to outside track and the message "SLED OUT" is displayed on the fluorescent indicator tube.
6. Press the **[◀◀]** key, optical pick-up move to inside track and the message "SLED IN" is displayed on the fluorescent indicator tube..
7. Press the **[MOVIE EQ]** key, traverse ON/OFF is changed over.

[5 REPEAT LIMIT CANCEL]

- Number of repeat for CD playback is 5 times when the repeat mode is "REPEAT". This mode is used to enables CD to repeat playback for limitless times.

Procedure:

1. Press the **[POWER]** key to turn the power ON.
2. Press the **[CD]** key to select "CD".
3. Press three keys of **[■]**, **[GAME EQ]** and **[▶]** (RV20) or **[◀▶]** (RV50/RV60) simultaneously.

2. 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)

3. 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.

• 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-L300	315 Hz, 0 dB	Level Adjustment

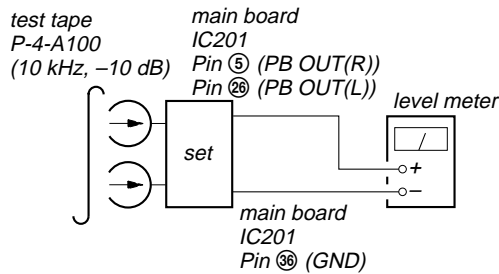
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

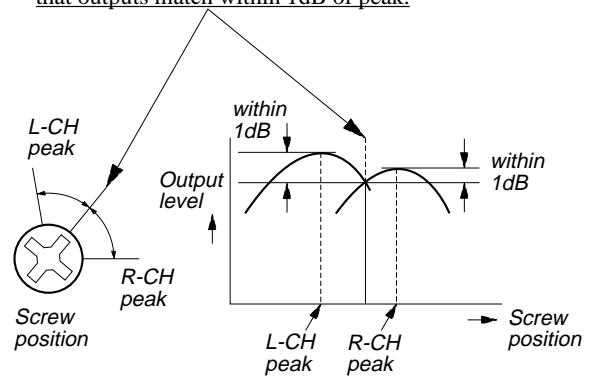
Note: Perform this adjustments for both decks

Procedure:

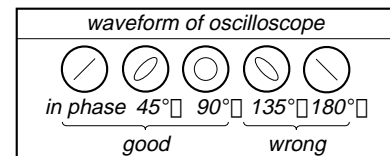
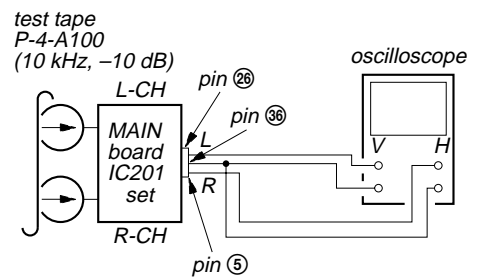
1. Mode: Playback



2. 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.



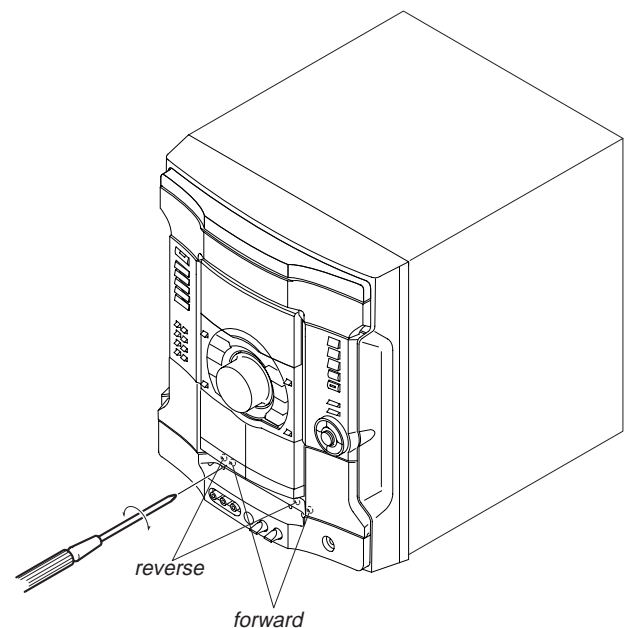
3. Mode: Playback



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

Adjustment Location: Playback (Deck A).

Record/Playback/Erase Head (Deck B).

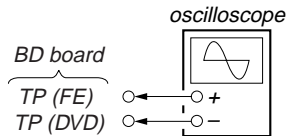


CD SECTION

Note:

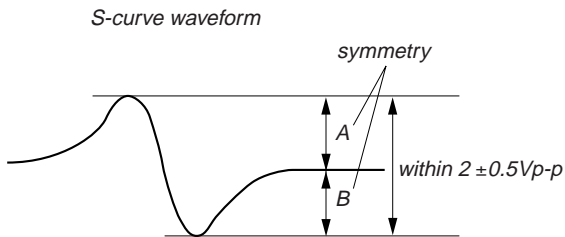
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MW impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal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

S-CURVE CHECK



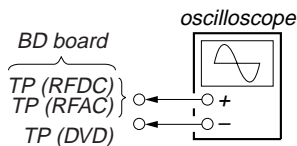
Procedure :

1. Connect an oscilloscope to TP (FE) and TP (DVD) on the BD board.
2. Turn the power ON.
3. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
4. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2 ± 0.5 Vp-p.



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

RF LEVEL CHECK

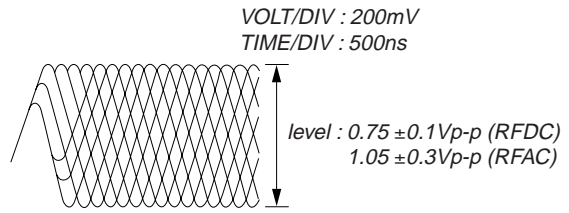


Procedure :

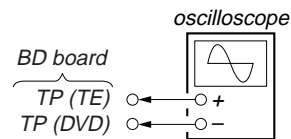
1. Connect an oscilloscope CH1 to TP (RFDC), CH2 to TP (RFAC) and TP (DVD) on the BD board.
2. Turn the power ON.
3. Load a disc (YEDS-18) and playback the number nine track.
4. Confirm that oscilloscope waveform is clear and check if RF signal level is correct or not.

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

RF signal waveform

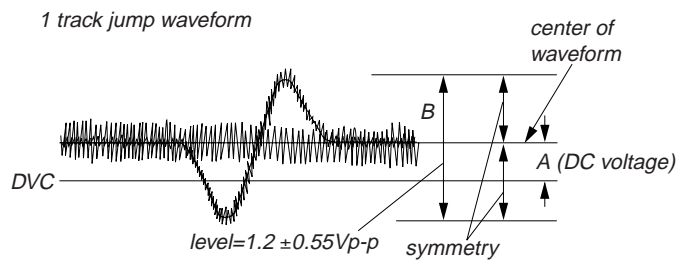


TRAVERSE LEVEL CHECK



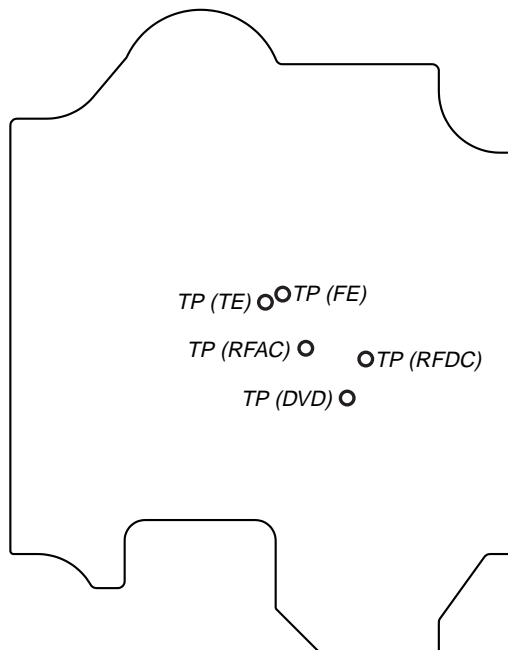
Procedure :

1. Connect an oscilloscope to TP (TE) and TP (DVD) on the BD board.
2. Turn the power ON.
3. Load a disc (YEDS-18) and playback the number nine track.
4. Press the \triangleright (RV20) or \triangleleft (RV50/RV60) button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.

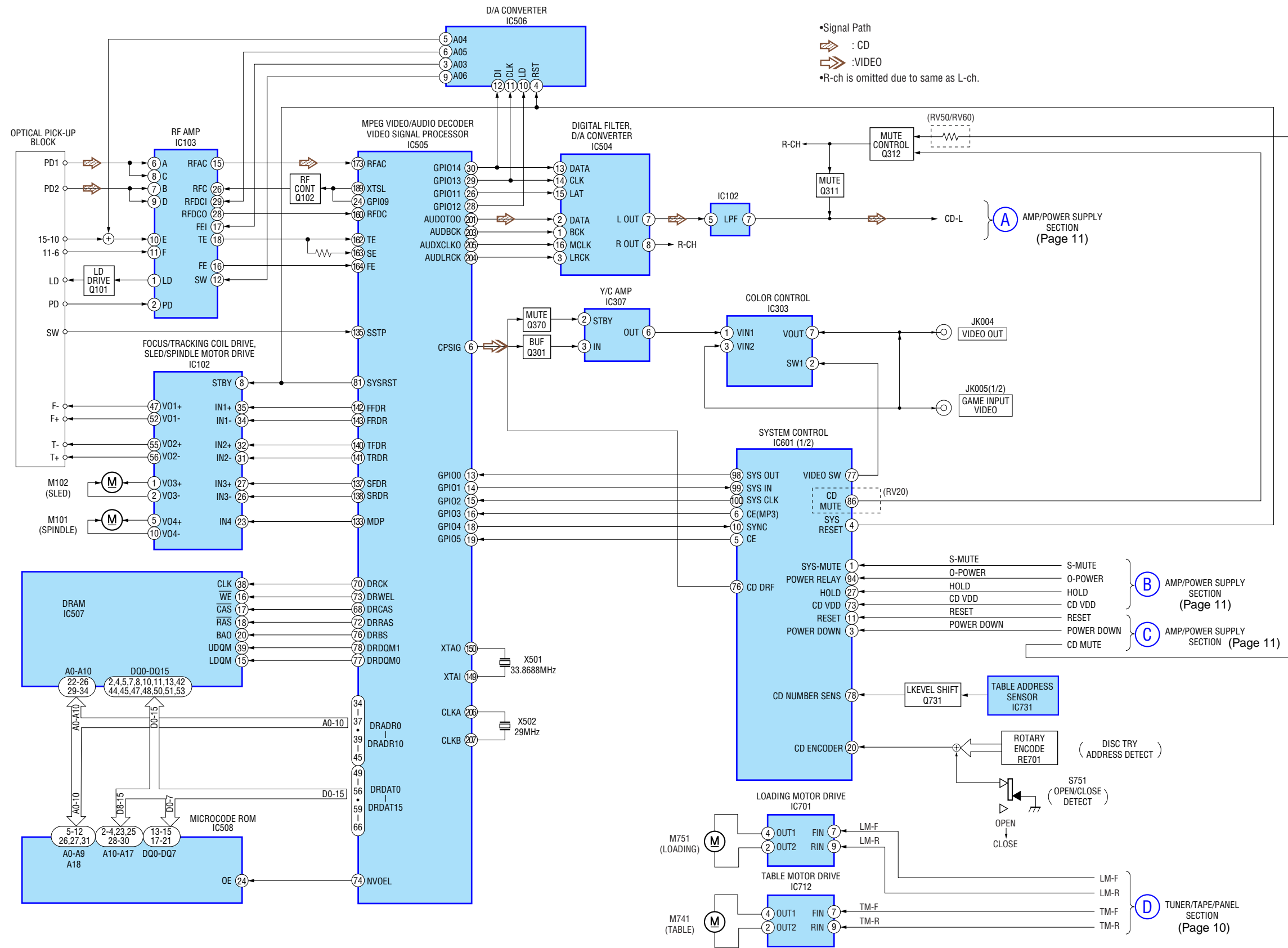


Connecting Location:

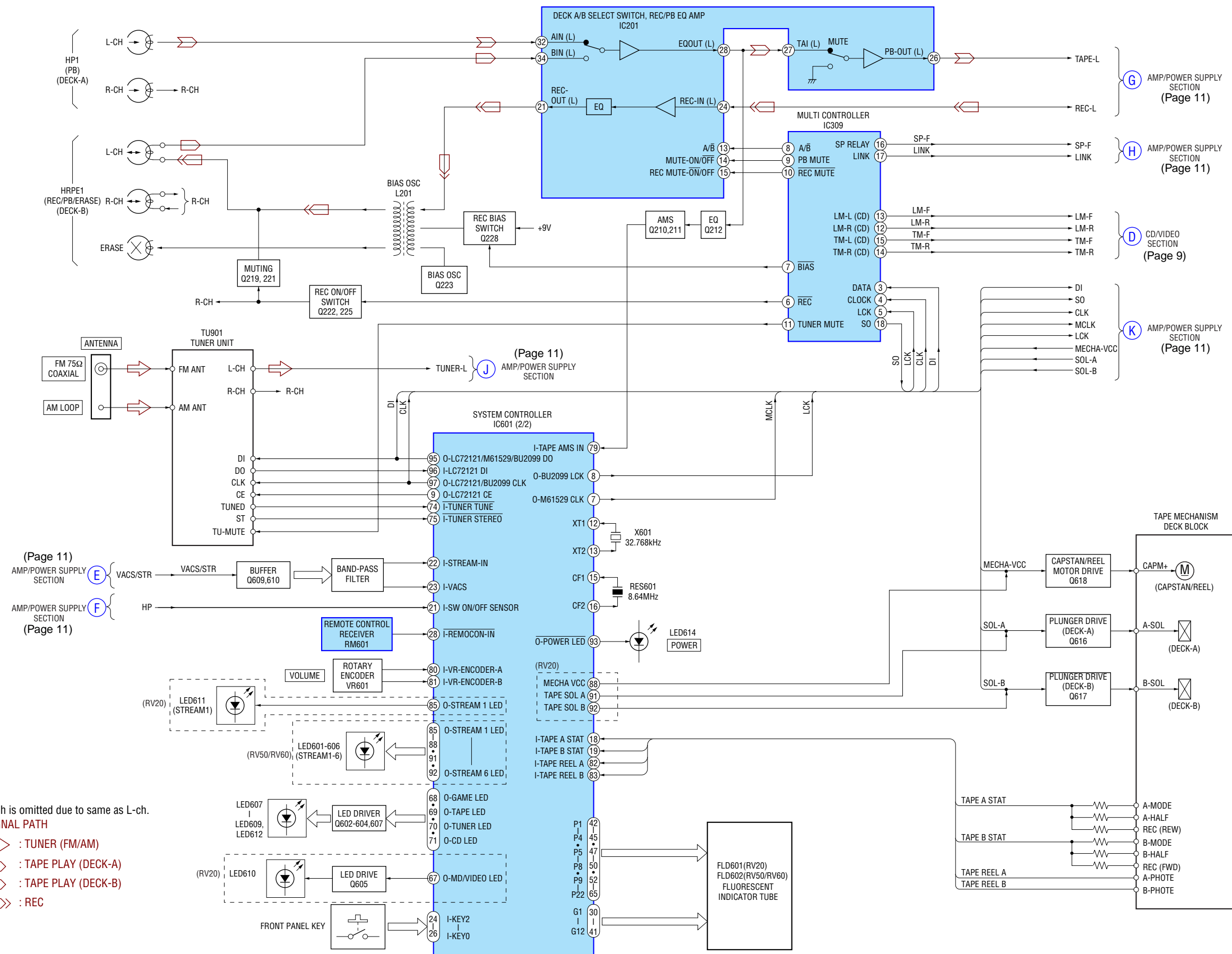
– BD BOARD (Conductor Side) –



4. BLOCK DIAGRAM — CD/VIDEO SECTION —

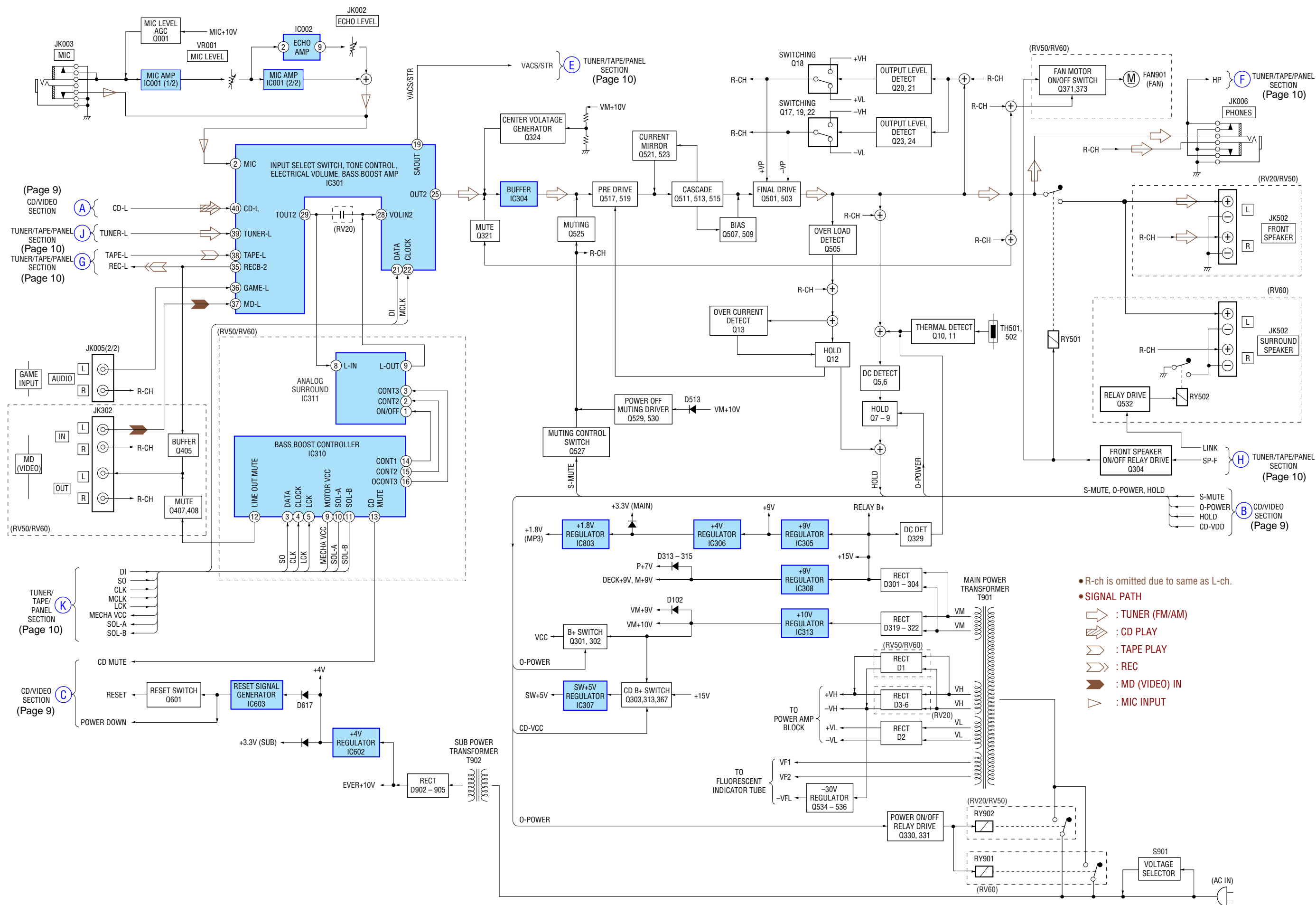


5. BLOCK DIAGRAM — TUNER/TAPE/PANEL SECTION —



- R-ch is omitted due to same as L-ch.
- SIGNAL PATH
- ➡ : TUNER (FM/AM)
- ➡ : TAPE PLAY (DECK-A)
- ➡ : TAPE PLAY (DECK-B)
- ➡ : REC

6. BLOCK DIAGRAM — AMP/POWER SUPPLY SECTION —



MEMO

MEMO

