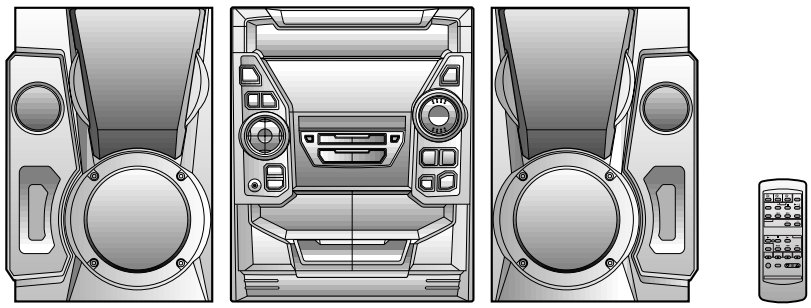
SHARP SERVICE MANUAL

No. S1003CDBA150/



CD-BA150

COMPACT disc DIGITAL AUDIO

CD-BA150 Mini Component System consisting of CD-BA150 (mini unit) and CP-BA150 (speaker system).

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

SHARP CORPORATION

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

IMPORTANT SERVICE NOTES (FOR U.S.A. ONLY)

BEFORE RETURNING THE AUDIO PRODUCT

(Fire & Shock Hazard)

Before returning the audio product to the user, perform the following safety checks.

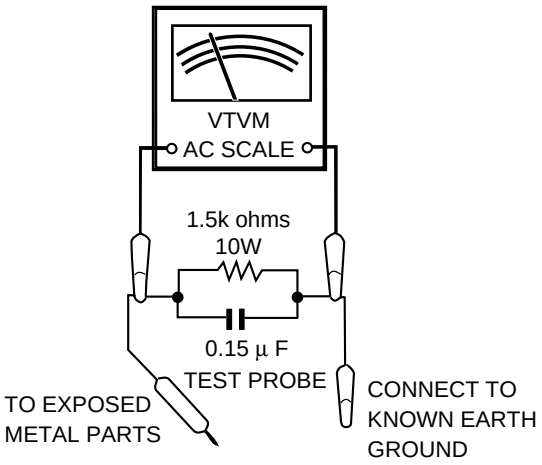
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the audio product.
2. Inspect all protective devices such as insulating materials, cabinet, terminal board, adjustment and compartment covers or shields, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

* Plug the AC line cord directly into a 120 volt AC outlet.

* Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as conduit or electrical ground connected to earth ground.

* Use a VTVM or VOM with 1000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor (See diagram).

* Connect the resistor connection to all exposed metal parts having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.



All check must be repeated with the AC line cord plug connection reversed.

Any reading of 0.3 volt RMS (this corresponds to 0.2 milliamp. AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the audio product to the owner.

SPECIFICATIONS

CD-BA150

● General

Power source:	AC 120 V, 60 Hz
Power consumption:	105 W
Dimensions:	Width; 10-5/8" (270 mm) Height; 13" (330 mm) Depth; 14-6/8" (375 mm)
Weight:	13.6 lbs. (6.2 kg)

● Amplifier section

Output power: **(Except for Canada)**	50 watts minimum RMS per channel into 6 ohms from 60 Hz to 20 kHz, 10 % total harmonic distortion
Output power: **(for Canada)**	RMS; 100 W (50 W + 50 W) (10 % T.H D)
Output terminals:	Speakers; 6 ohms Headphones; 16-50 ohms (recommended; 32 ohms)
Input terminals:	Video/Auxiliary (audio signal); 500 mV/47 kohms

● Compact disc player section

Type:	3-disc multi-play compact disc player
Signal readout:	Non-contact, 3-beam semiconductor laser pickup
D/A converter:	1-bit D/A converter
Frequency response:	20 - 20,000 Hz
Dynamic range:	90 dB (1 kHz)

● Tuner section

Frequency range:	FM; 87.5-108 MHz AM; 530-1,720 kHz

● Cassette deck section

Frequency response:	50-14,000 Hz (Normal tape)
Signal/noise ratio:	55 dB (TAPE 1, playback) 50 dB (TAPE 2, recording/playback)
Wow and flutter:	0.3 % (WRMS)

CP-BA150

● Speaker section

Type:	3-way type [3-15/16" (10 cm) woofer, 3-15/16" (10 cm) woofer and 2" (5 cm) tweeter]
Maximum input power:	100 W
Rated input power:	50 W
Impedance:	6 ohms
Dimensions:	Width; 9-1/8" (231.5 mm) Height; 13" (330 mm) Depth; 8-1/4" (210 mm)
Weight:	6.8 lbs. (3.1 kg)/each

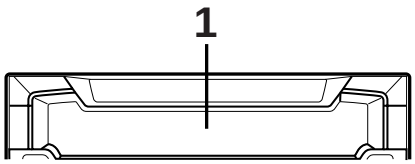
Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

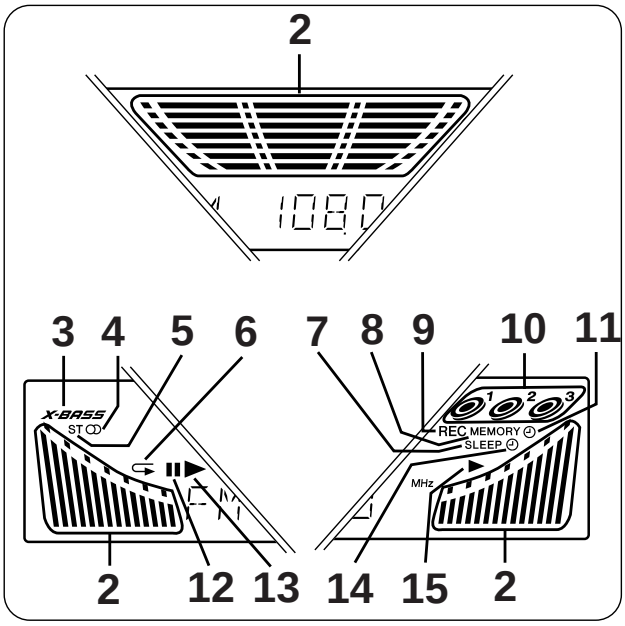
CD-BA150

■ Front panel

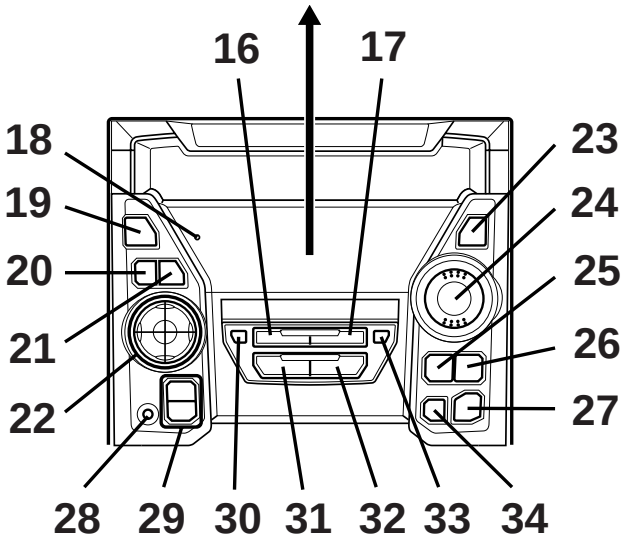
1. (CD) Disc Tray



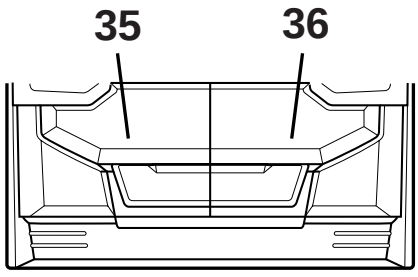
2. Spectrum Analyzer/Volume Level Indicator
3. Extra Bass Indicator
4. FM Stereo Indicator
5. FM Stereo Mode Indicator
6. (CD) Repeat Indicator
7. Sleep Indicator
8. (CD/TUNER) Memory Indicator
9. (TAPE 2) Record Indicator
10. (CD) Disc Number Indicators
11. Timer Play Indicator
12. (CD) Pause Indicator
13. (CD) Play Indicator
14. Timer Record Indicator
15. (TAPE) Play Indicator



16. (CD) Track Down/Review Button
    (TUNER) Preset Down Button
    (TAPE 2) Rewind Button
17. (CD) Track Up/Cue Button
    (TUNER) Preset Up Button
    (TAPE 2) Fast Forward Button
18. Timer Set Indicator
19. Power On/Stand-by Button
20. Clock Button
21. Timer/Sleep Button
22. Function Selector Buttons
23. Dimmer Button
24. Volume Up/Down Buttons
25. Equalizer Mode Selector Button
26. Extra Bass/Demo Mode Button
27. (CD) Open/Close Button
28. Headphone Socket
29. Tuning and Time Up/Down Buttons
30. Memory/Set Button
31. (CD/TAPE) Stop Button
32. (CD) Play/Repeat Button
    (TAPE) Play Button
33. (TAPE 2) Record Pause Button
34. (CD) Disc Skip Button



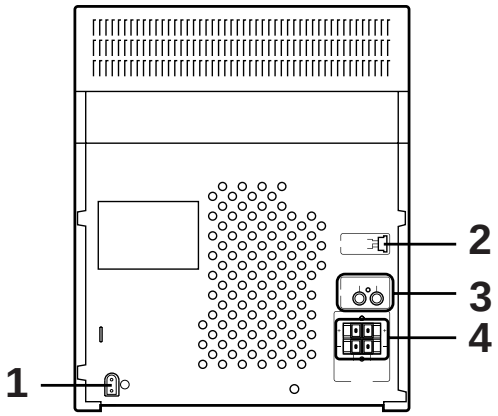
35. (TAPE 1) Cassette Compartment
36. (TAPE 2) Cassette Compartment



CD-BA150

■ Rear panel

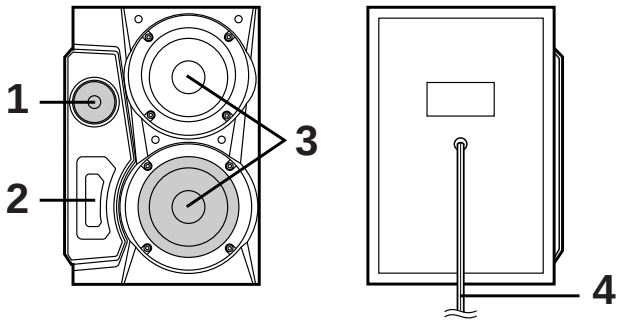
1. AC Power Input Socket
2. FM/AM Loop Aerial Socket
3. Video/Auxiliary (Audio Signal) Input Sockets
4. Speaker Terminals



CP-BA150

■ Front speaker

1. Tweeter
2. Bass Reflex Duct
3. Woofers
4. Speaker Wire



■ Remote control

1. Remote Control Transmitter LED

● CD control section

2. Disc Number Select Buttons
3. Memory Button
4. Pause Button
5. Clear Button
6. Track Down/Review Button
7. Track Up/Cue Button
8. Disc Skip Button
9. Play/Repeat Button
10. Stop Button
11. Random Button

● Tuner control section

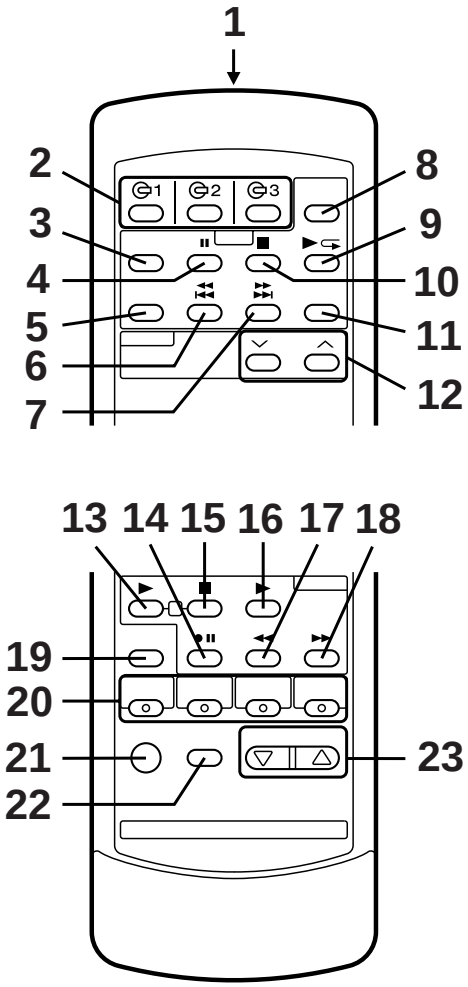
12. Preset Up/Down Buttons

● Tape control section

13. (TAPE 1) Play Button
14. (TAPE 2) Record Pause Button
15. (TAPE 1/2) Stop Button
16. (TAPE 2) Play Button
17. (TAPE 2) Rewind Button
18. (TAPE 2) Fast Forward Button

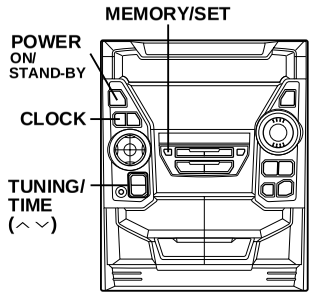
● Common section

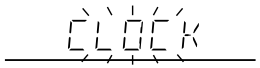
19. Equalizer Mode Selector Button
20. Function Selector Buttons
21. On/Stand-by Button
22. Extra Bass Button
23. Volume Up/Down Buttons

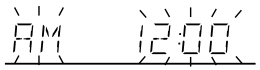


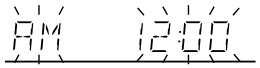
SETTING THE CLOCK

(Main unit operation)

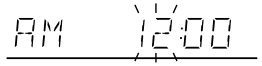


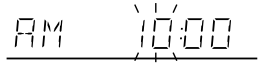
2 

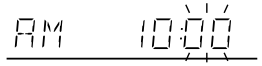
3 

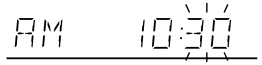
4 

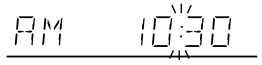
AM 12:00 ↔ AM 0:00 ↔ 0:00

5 

6 

7 

8 

9 

In this example, the clock is set for the 12-hour (AM 12:00) system.

1 Press the ON/STAND-BY button to enter the stand-by mode.

2 Press the CLOCK button.

3 Within 5 seconds, press the MEMORY/SET button.

4 Press the TUNING/TIME (∨ or ∧) button to select the time display mode.

"AM 12:00" → The 12-hour display will appear. (AM 12:00 - PM 11:59)
"AM 0:00" → The 12-hour display will appear. (AM 0:00 - PM 11:59)
"0:00" → The 24-hour display will appear. (0:00 - 23:59)

- Note that this can only be set when the unit is first installed or it has been reset.

5 Press the MEMORY/SET button.

6 Press the TUNING/TIME (∨ or ∧) button to adjust the hour.

- Press the TUNING/TIME (∨ or ∧) button once to advance the time by 1 hour. Hold it down to advance continuously.
- When the 12-hour display is selected, "AM" will change automatically to "PM".

7 Press the MEMORY/SET button.

8 Press the TUNING/TIME (∨ or ∧) button to adjust the minutes.

- Press the TUNING/TIME (∨ or ∧) button once to advance the time by 1 minute. Hold it down to change the time in 5 minute intervals.
- The hour setting will not advance even if minutes advance from "59" to "00".

9 Press the MEMORY/SET button.

- The clock starts operating from "0" second. (Seconds are not displayed.) And then the clock display will disappear after a few seconds.

To see the time display:

Press the CLOCK button.

- The time display will appear for about 5 seconds.

Note:

- The clock display will flash on and off at the push of the CLOCK button when the AC power supply is restored after a power failure occurs or after the AC power cord is disconnected. If this happens, follow the procedure below to change the clock time.

To change the clock time:

① Press the CLOCK button.

② Within 5 seconds, press the MEMORY/SET button.

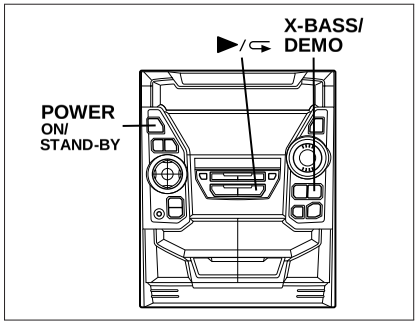
③ Perform steps 6 - 9 above.

To change the time display mode:

① Perform steps 1 - 2 in the section "RESETTING THE MICROCOMPUTER", on page 15.

② Perform steps 1 - 9 above.

RESETTING THE MICROCOMPUTER



Reset the microcomputer under the following conditions:

- To erase all of the stored memory contents (clock and timer settings, and tuner and CD presets).
- If the display is not correct.
- If the operation is not correct.

1 Press the ON/STAND-BY button to enter the stand-by mode.

2 While pressing down the ►/⊆ button and the X-BASS/DEMO button, hold down the ON/STAND-BY button for at least 1 second.

- "CLEAR AL" will appear.

Caution:

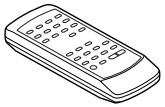
- The operation explained above will erase all data stored in memory including clock and timer settings, and tuner and CD presets.

SHARP

MINI COMPONENT SYSTEM
Quick Guide/Guía rápida CD-BA150

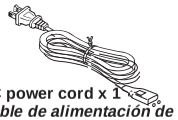
CD-BA150

1 Check the supplied accessories / *Compruebe los accesorios suministrados*



● **Remote control x 1**
● ***Controlador remoto x 1***

● **FM/AM loop antenna x 1**
● ***Antena de cuadro de FM/AM x 1***

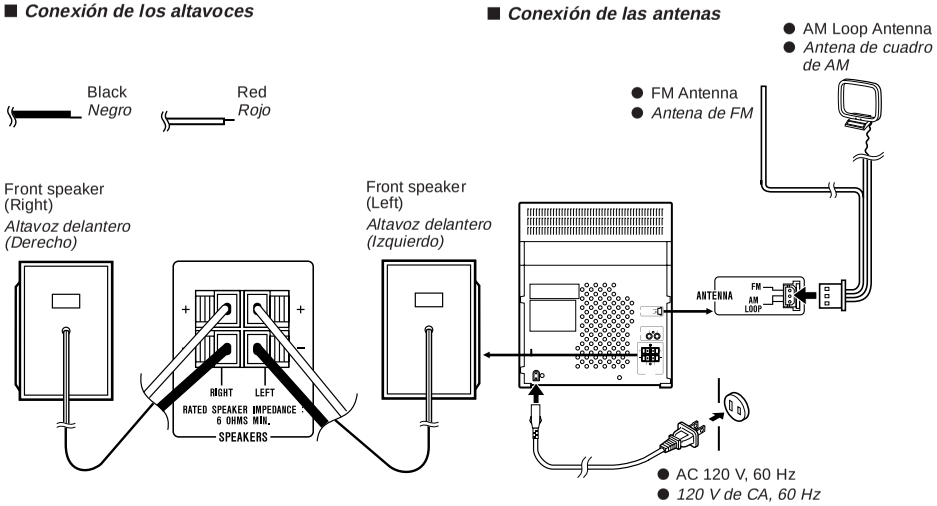


● **AC power cord x 1**
● ***Cable de alimentación de CA x 1***

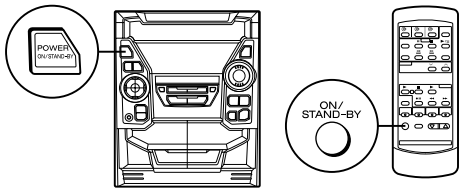
2 Preparation for use / *Preparación para su uso*

■ **Speaker connection**
■ ***Conexión de los altavoces***

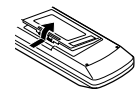
■ **Antenna connection**
■ ***Conexión de las antenas***



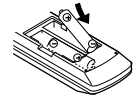
■ **Switching between power-on and stand-by mode**
■ ***Cambio entre la conexión de la alimentación y el modo de reserva***



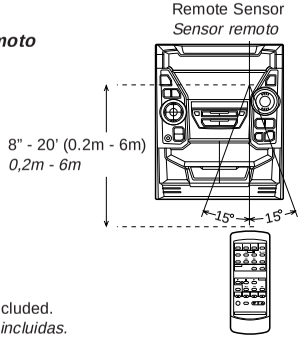
■ **Remote control**
■ ***Controlador remoto***



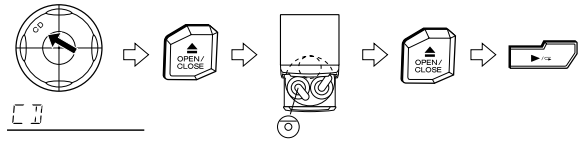
● 2 “AA” batteries
● *Dos pilas “AA”*



● Batteries are not included.
● *Las pilas no están incluidas.*



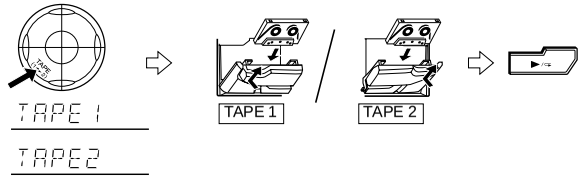
3 Listening to a CD / *Audición de discos CD*



● Label facing up
● *Etiqueta hacia arriba*

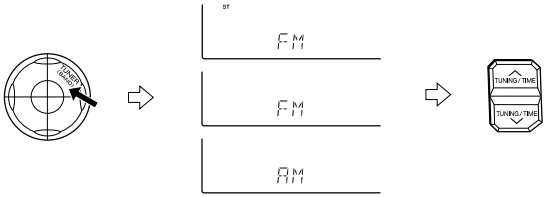
■ **To stop the playback**
■ ***Para detener la reproducción***

4 Listening to a tape / *Audición de una cinta*

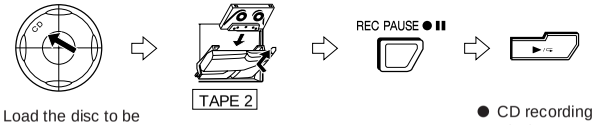


■ **To stop the playback**
■ ***Para detener la reproducción***

5 Listening to the radio / *Audición de la radio*



6 Recording from CDs / *Grabaciones de discos CD*



● Load the disc to be recorded.
● *Introduzca el disco que va a grabar.*

● CD recording starts.
● *La grabación de CD empieza.*

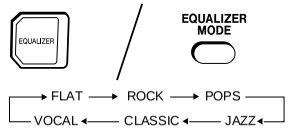
■ **To stop the recording**
■ ***Para detener la grabación***

7 Sound control / *Control del sonido*

■ **Volume**
■ ***Volumen***

■ **Extra bass (X-BASS)**
■ ***Graves extra (X-BASS)***

■ **Pre-programmed equalizer**
■ ***Ecualizador preprogramado***



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DISASSEMBLY

Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:

1. Take cassette tape and compact disc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
4. Take suffcient care on static electricity of integrated circuits and other circuits when servicing.

CD-BA150

STEP	REMOVAL	PROCEDURE	FIGURE
1	Top Cabinet	1. Screw ..... (A1) x4	7-1
2	Side Panel (Left/right)	1. Screw ..... (B1) x8	7-1
3	CD Player Unit/ CD Tray Cover	1. Turn on the power supply, open the disc tray, take out the CD cover, and close. (Note 1) 2. Screw ..... (C1) x1 3. Hook ..... (C2) x3 4. Hook ..... (C3) x2 5. Socket ..... (C4) x2	7-2
4	Main PWB/ Rear Panel	1. Screw ..... (D1) x8 2. Socket ..... (D2) x3 3. Flat Cable ..... (D3) x1 4. Lug Wire ..... (D4) x1 5. Flat Wire ..... (D5) x1	7-2,8-2 8-2
5	Front Panel	1. Screw ..... (E1) x2	8-2
6	Display PWB	1. Screw ..... (F1) x15 2. Flat Cable ..... (F2) x1	8-3
7	Tape Mechanism	1. Open the cassette holder. 2. Screw..... (G1) x6	8-3
8	Headphones PWB	1. Screw ..... (H1) x1	8-3
9	Turntable	1. Hook ..... (J1) x2 2. Cover ..... (J2) x1	8-4
10	Disc Tray	1. Turn fully the lock lever in the arrow direction. 2. While holding the lock lever,rotate the cam gear until the cam gear rib engages with the clamp lever. 3. Push the slide holder backward to engage the claw with the groove and remove it in the direction of the arrow. ..... (K1) x6	7-3 8-1 8-5
11	CD Servo PWB (Note 2)	1. Screw ..... (L1) x1 2. Hook ..... (L2) x2 3. Socket ..... (L3) x4	8-6
12	CD Mechanism	1. Hook ..... (M1) x2 2. Hook ..... (M2) x3	9-1
13	Loading Motor PWB	1. Hook ..... (N1) x5	9-1

Note 1:

How to open the changer manually. (Fig. 7-3)

1. In this state, turn fully the lock lever in the arrow direction through the hole on the loading chassis bottom.
2. While holding the lock lever, rotate the cam gear anticlockwise until the cam gear rib engages with the clamp lever. (Fig. 8-1)
3. After that, push forward the CD slide holder.

Note 2:

1. After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of the connector so as to protect the optical pickup from electrostatic damage.

CD-BA150

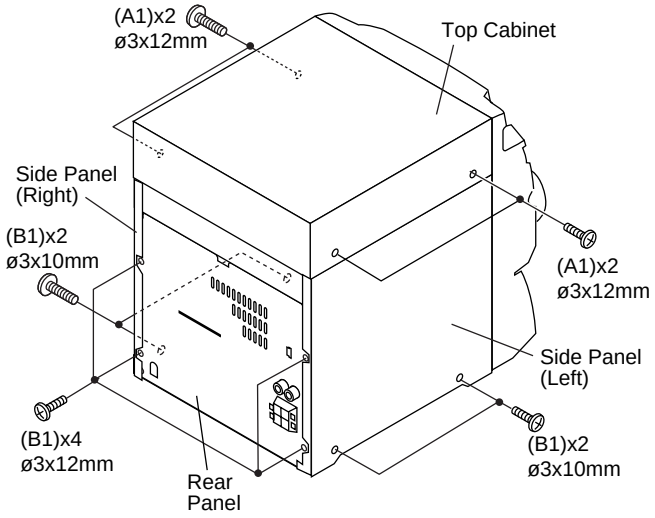


Figure 7-1

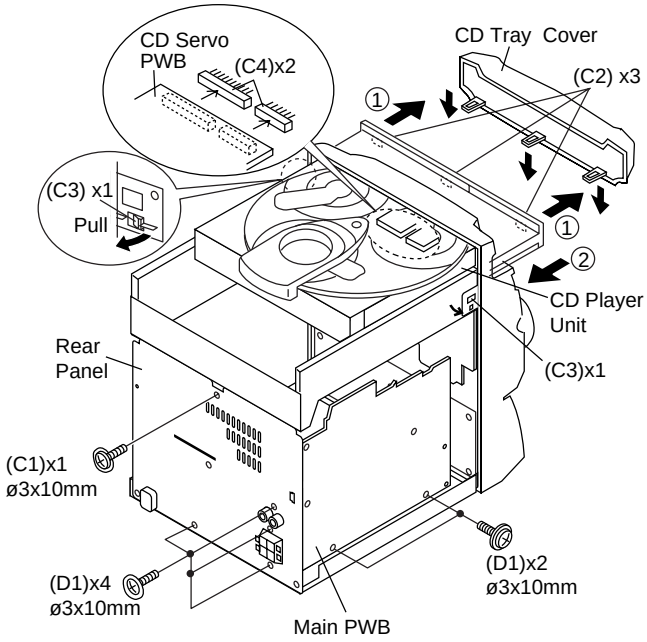


Figure 7-2

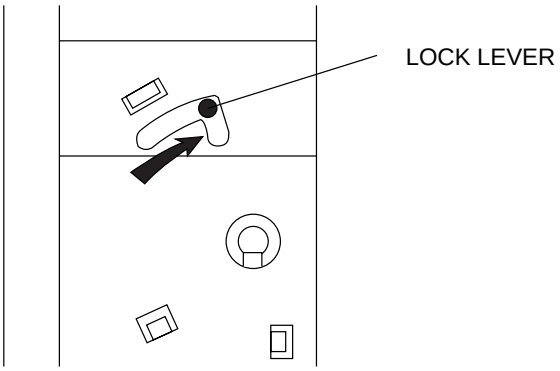


Figure 7-3

Note 3:

1. Be careful not to break the claw of the CD mechanism.
2. When fining back the cam gear assembly, let it lock by front movement.

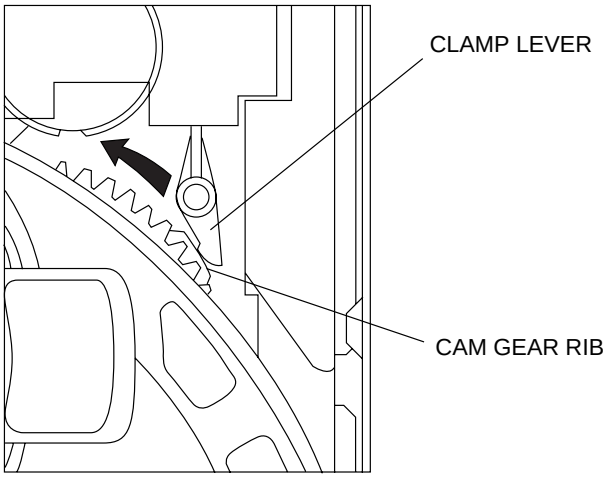


Figure 8-1

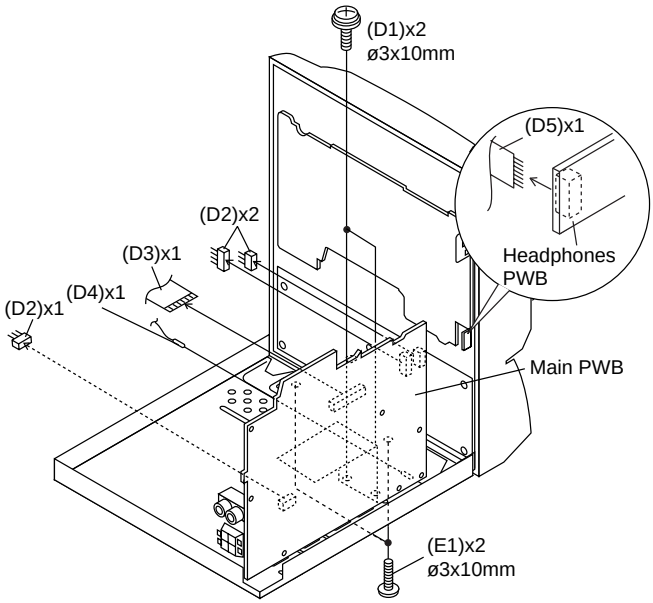


Figure 8-2

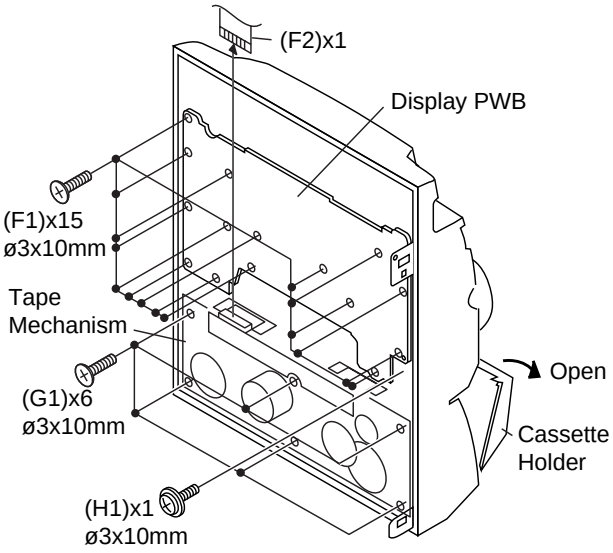


Figure 8-3

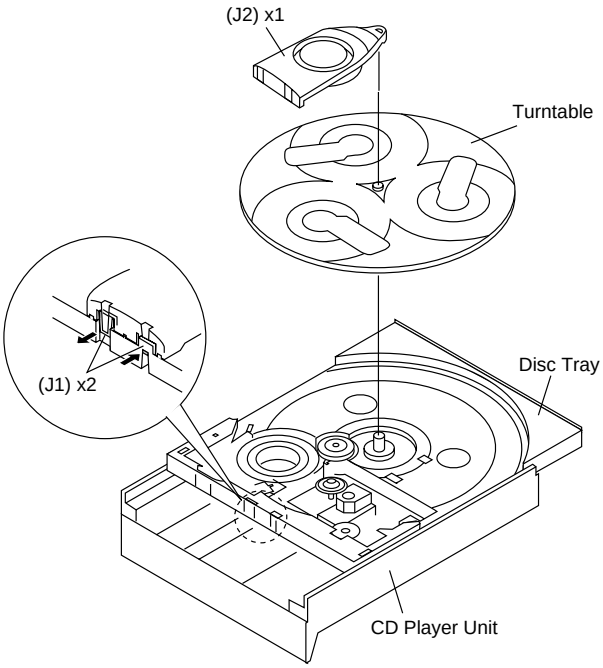


Figure 8-4

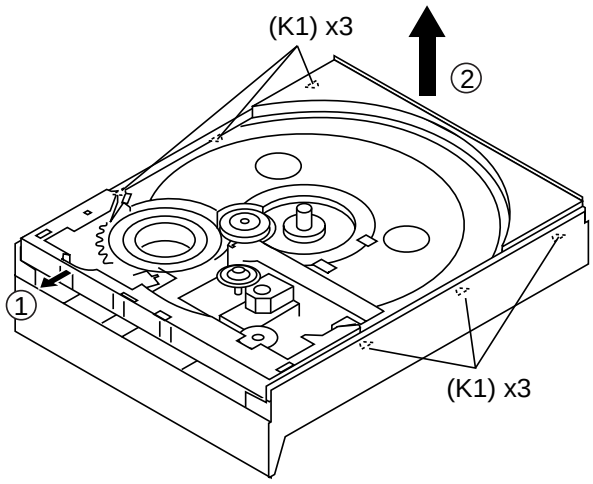


Figure 8-5

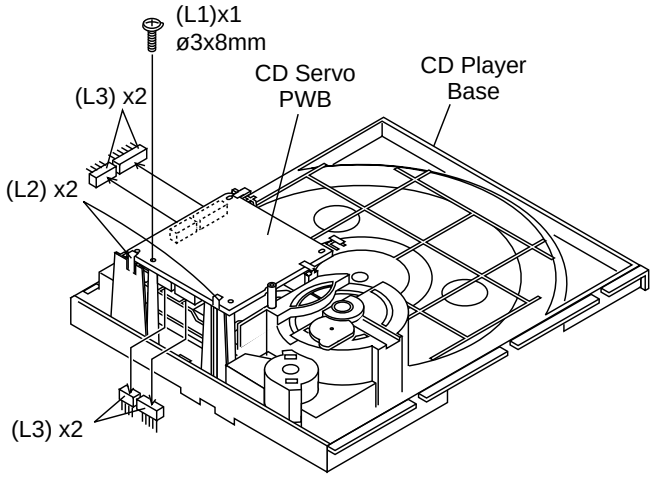


Figure 8-6

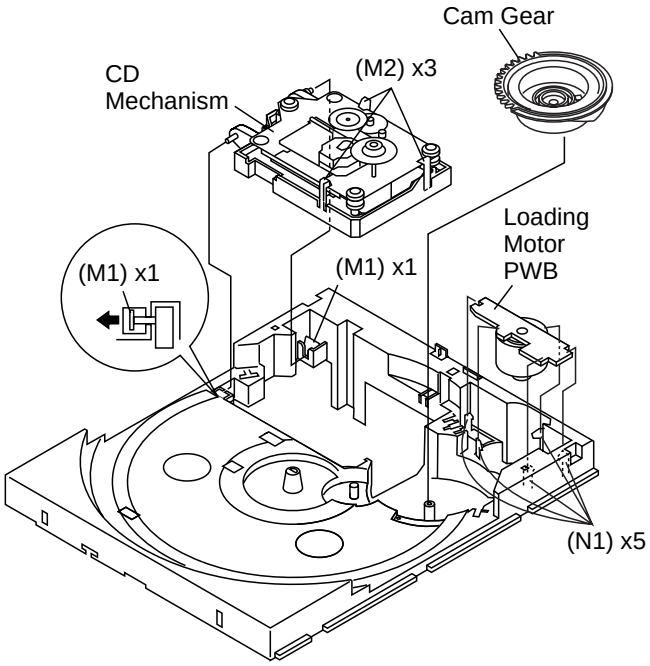


Figure 9-1

CP-BA150

STEP	REMOVAL	PROCEDURE	FIGURE
1	Woofer	1. Screw ..... (B1) x8	9-3
2	Tweeter	1. Screw ..... (D1) x2	9-3

CP-BA150

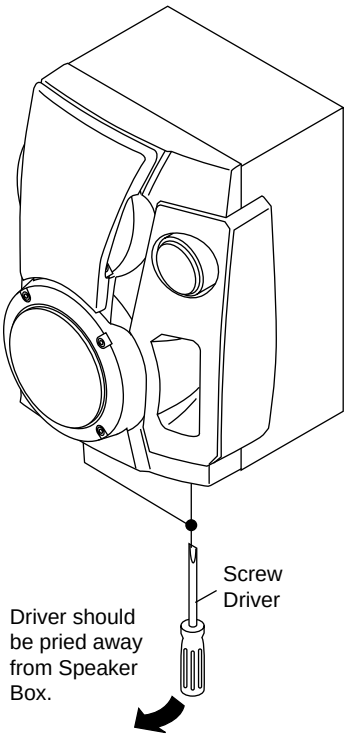


Figure 9-2

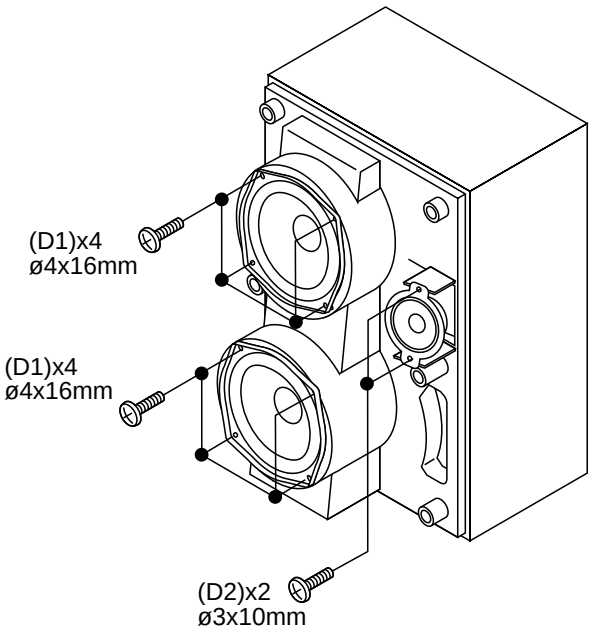


Figure 9-3

REMOVING AND REINSTALLING THE MAIN PARTS

TAPE MECHANISM SECTION

Perform steps 1 to 5 and 7 of the disassembly method to remove the tape mechanism.

How to remove the record/playback and erase heads (TAPE 2) (See Fig. 10-1)

1. Carefully remove the record/playback head and erase head screw (A1) x 2 pcs.

How to remove the playback head (TAPE 1) (See Fig. 10-2)

1. Carefully remove the playback head screw (B1) x 2 pcs.

How to remove the pinch roller (TAPE 1/2) (See Fig. 10-3)

1. Carefully bend the pinch roller pawl in the direction of the arrow **<A>**, and remove the pinch roller (C1) upwards.

Note:
When installing the pinch roller, pay attention to the spring mounting position.

How to remove the belt (TAPE 1) (See Fig. 10-4)

1. Remove the main belt (D1) x 1 pc., from the motor side.
2. Remove the FF/REW belt (D2) x 1 pc.

How to remove the belt (TAPE 2) (See Fig. 10-4)

1. Remove the main belt (E1) x 1 pc., from the motor side.
2. Remove the FF/REW belt (E2) x 1 pc.

How to remove the motor (See Fig. 10-5)

1. Remove the screws (F1) x 2 pcs., to remove the motor.

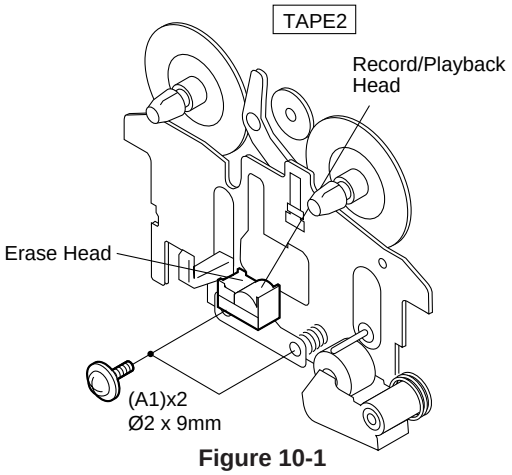


Figure 10-1

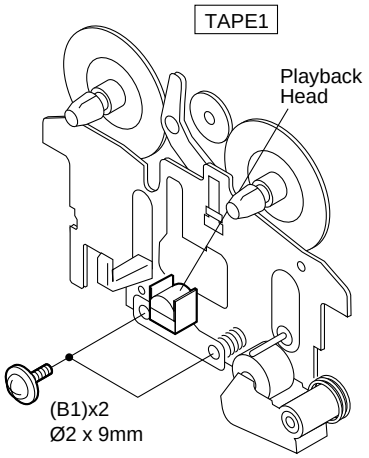


Figure 10-2

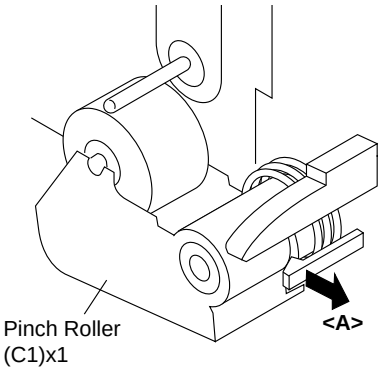


Figure 10-3

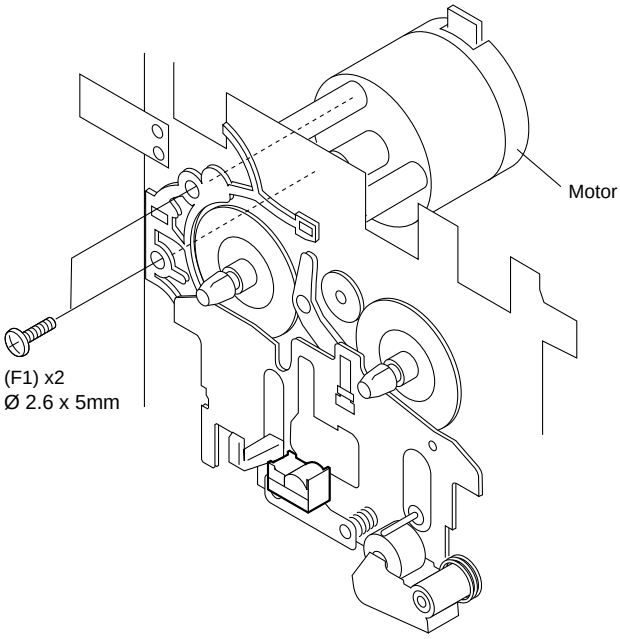


Figure 10-5

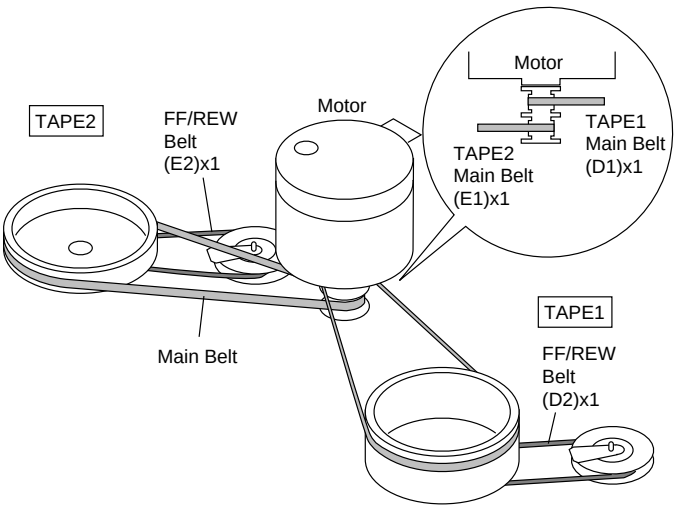


Figure 10-4

CD MECHANISM SECTION

Perform steps 1, 2, 3, 9, 12 and 13 of the disassembly method to remove the CD mechanism.

How to remove the loading motor (See Fig. 11-1)

1. Bend the hooks (A1) x 5 pcs., to remove the loading motor.

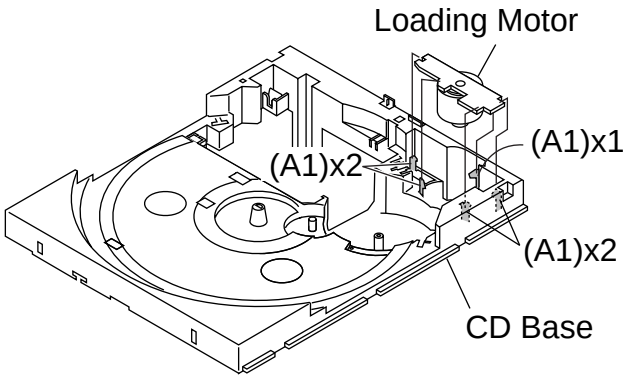


Figure 11-1

How to remove the pickup (See Fig. 11-2)

1. Remove the screws (B1) x 2 pcs., to remove the shaft (B2).
2. Remove the stop washer (B3) x 1 pc., to remove the gear (B4).
3. Remove the pickup.

Note

After removing the connector for the optical pickup from the connector wrap the conductive aluminium foil around the front end of connector so as to protect the optical pickup from electrostatic damage.

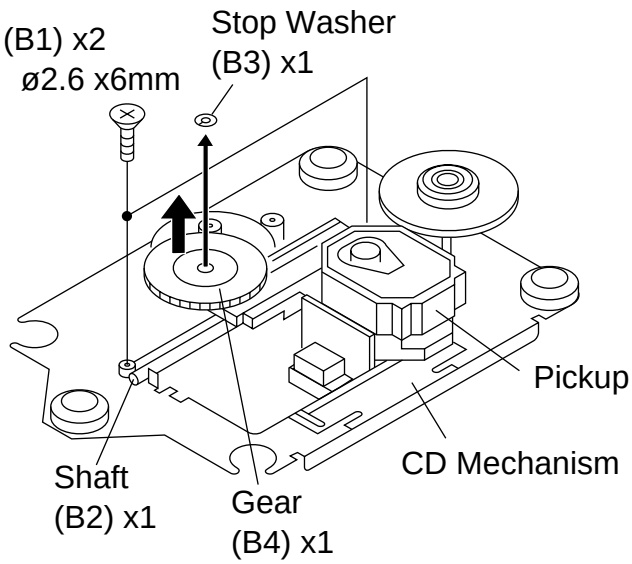


Figure 11-2

ADJUSTMENT

MECHANISM SECTION

• Driving Force Check

Torque Meter	Specified Value
Play: TW-2111	Tape 1: Over 80 g Tape 2: Over 80 g

• Torque Check

Torque Meter	Specified Value	
	Tape 1	Tape 2
Play: TW-2111	30 to 80 g. cm	30 to 80 g.cm
Fast forward: TW-2231	—	70 to 180 g.cm
Rewind: TW-2231	—	70 to 180 g.cm

• Tape Speed

	Test Tape	Adjusting Point	Specified Value	Instrument Connection
Normal speed	MTT-111	Variable Resistor in motor.	3,000 ± 30 Hz	Speaker terminal (Load resistance: 6 ohms)

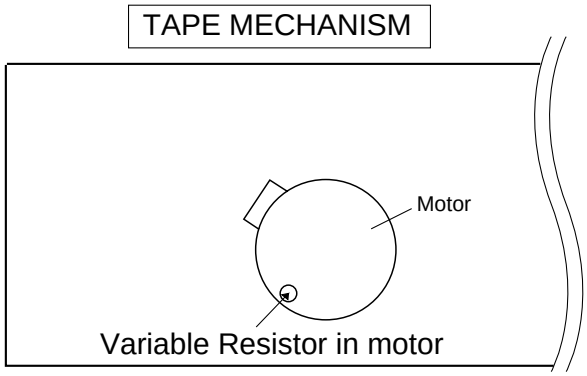


Figure 11-3

TUNER SECTION

fL: Low-range frequency
fH: High-renge frequency

- **AM IF/RF**

Signal generator: 400 Hz, 30%, AM modulated

Test Stage	Frequency	Frequency Display	Setting/ Adjusting Parts	Instrument Connection
AM IF	450 kHz	1,720 kHz	T351	*1
AM Band Coverage	—	530 kHz	(fL): T306 1.1 ± 0.1 V	*2
AM Tracking	990 kHz	990 kHz	(fL): T303	*1

*1. Input: Antenna, Output: TP302
*2. Input: Antenna, Output: TP301

- **FM RF**

Signal generator: 1 kHz, 22.5 kHz dev., FM modulated

Test Stage	Frequency	Frequency Display	Serring/ Adjusting Point	Instrument Connection
FM Band Coverage	—	87.50 MHz	T301(fL): 3.4 V ± 0.1V	*1
FM RF	98.00 MHz (10-30 dB)	98.00 MHz	L312	*2

*1. Input: Antenna, Output: TP301
*2. Input: Antenna, Output: Speaker terminal

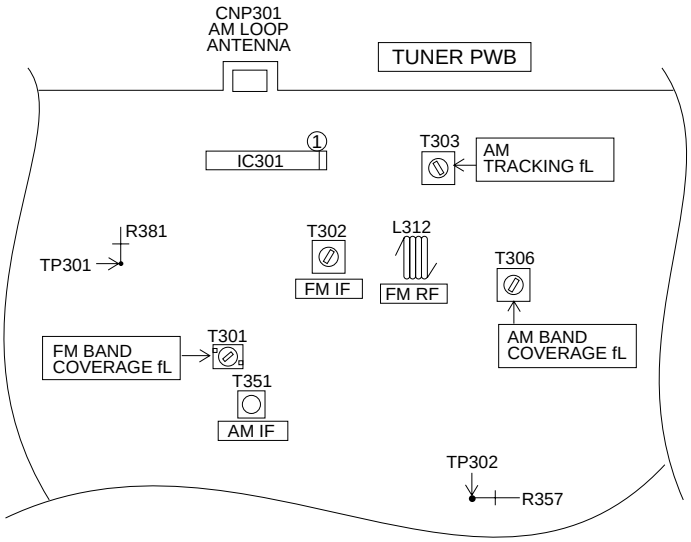


Figure 12-1 ADJUSTMENT POINT

CD SECTION

- **Adjustment**

Since this CD system incorporates the following automatic adjustment functions, readjustment is not needed when replacing the pickup. Therefore, different PWBs and pickups can be combined freely.

Each time a disc is changed, these adjustments are performed automatically. Therefore, playback of each disc can be performed under optimum conditions.

Items adjusted automatically

(1) Offset adjustment (The offset voltage between the head amplifier output and the VREF reference voltage is compensated inside the IC.)
  * Focus offset adjustment
  * Tracking offset adjustment

(2) Tracking balance adjustment (waveform drawing 12-2 EFBL)

(3) Gain adjustment (The gain is compensated inside the IC so that the loop gain at the gain crossover frequency will be 0dB.)
  * Focus gain adjustment
  * Tracking gain adjustment

CD ERROR CODE DESCRIPTION

Error	State Code
	[Servo System Error]
0001	Cannot detect Pickup-in SW
0002	DSP access error
	[Error during close operation]
0101	Open/Close SW Low → High not functioning
0103	Open/Close SW High → Low not functioning
	[Error during open operation]
0201	Open/Close SW Low → High not functioning
0203	Open/Close SW High → Low not functioning
	[Error during skip operation]
0302	Pickup-in SW is not detected
0306	During Disc 1 search, Open/Close SW or Clamp SW or Disc SW do not change to low.
0307	Clamp SW Low → High not functioning
0308	Clamp SW High → Low not functioning

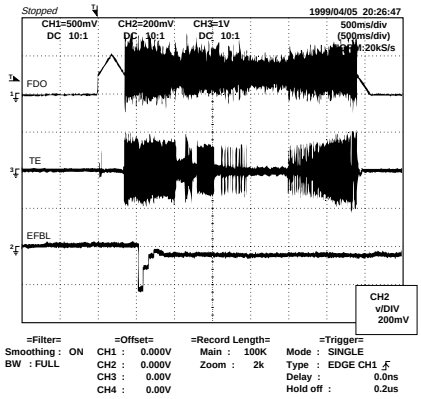


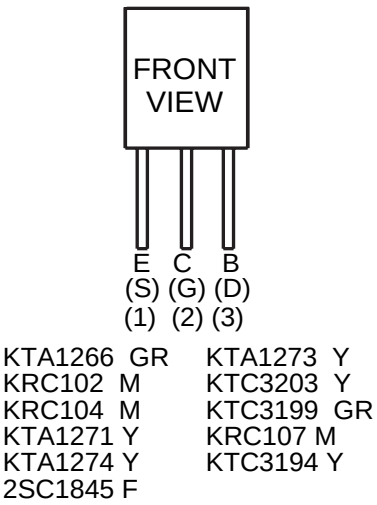
Figure 12-2

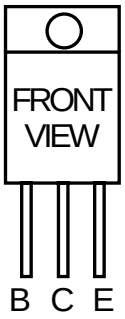
NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
  1. In the tuner section,
     ( ) indicates AM
     < > indicates FM stereo
  2. In the main section, a tape is being played back.
  3. In the deck section, a tape is being played back.
     ( ) indicates the record state.
  4. In the power section, a tape is being played back.
  5. In the CD section, the CD is stopped.
- Parts marked with “ ⚠ ” (⊏ = = = = ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW1	OPEN/CLOSE	ON—OFF
SW2	CLAMP	ON—OFF
SW3	DISC NUMBER	ON—OFF
SW4	PICKUP IN	ON—OFF
SW601	POWER	ON—OFF
SW602	CLOCK	ON—OFF
SW603	TIMER/SLEEP	ON—OFF
SW609	DISC SKIP	ON—OFF
SW610	OPEN/CLOSE	ON—OFF
SW611	DIMMER	ON—OFF
SW612	X-BASS/DEMO	ON—OFF
SW613	EQUALIZER	ON—OFF
SW614	VOLUME UP	ON—OFF
SW615	VOLUME DOWN	ON—OFF
SW616	CD	ON—OFF

REF. NO	DESCRIPTION	POSITION
SW617	TAPE	ON—OFF
SW618	TUNING /TIME DOWN	ON—OFF
SW619	MEMORY/SET	ON—OFF
SW620	REWIND	ON—OFF
SW621	FAST FORWARD	ON—OFF
SW622	PLAY/REPEAT	ON—OFF
SW623	STOP	ON—OFF
SW625	REC/PAUSE	ON—OFF
SW626	TUNING/TIME UP	ON—OFF
SW627	VIDEO/AUX	ON—OFF
SW628	TUNER (BAND)	ON—OFF
SWM3	FOOL PROOF	ON—OFF
SWM4	F.A.S	ON—OFF
SWM5	CAM	ON—OFF





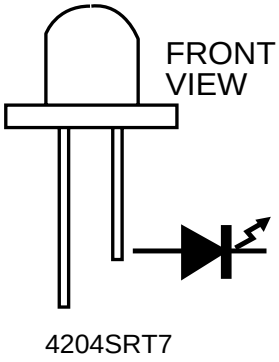
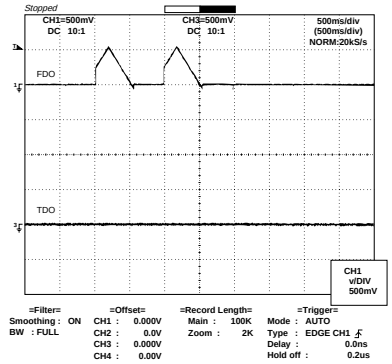


Figure 13 TYPES OF TRANSISTOR AND LED

WAVEFORMS OF CD CIRCUIT

1 IC2 (24)

2 IC2 (23)

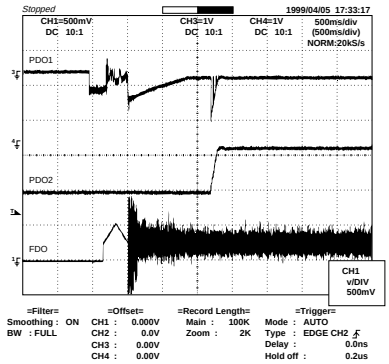


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.000V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

7 IC2 (1)

8 IC2 (2)

1 IC2 (24)

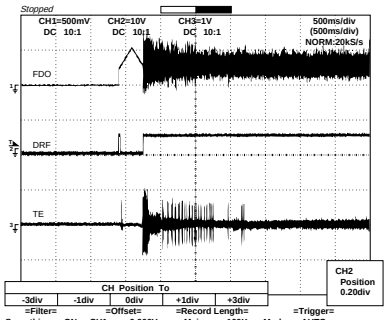


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH2
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)

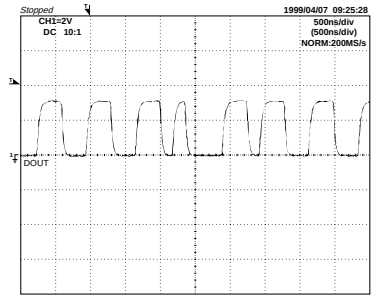
3 IC2 (72)

4 IC1 (18), IC2 (16)



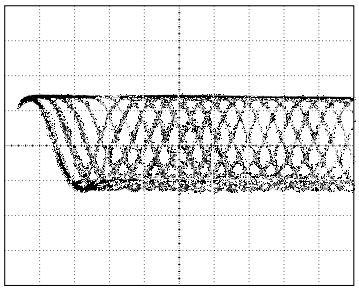
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

9 IC2 (37)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00V	Main : 1K	Mode : NORMAL
BW : FULL	CH2 : 0.00V	Zoom : 100	Type : EDGE CH1
	CH3 : 0.00V		Delay : 2.887ms
	CH4 : 0.00V		Hold off : 0.2us

5 IC1 (27)

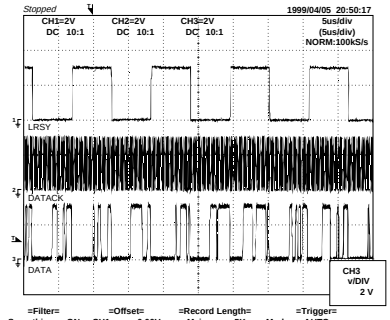


Vp-p=1.0V~1.3V
0.5mV/div,0.5µsec/div

10 IC2 (57)

11 IC2 (58)

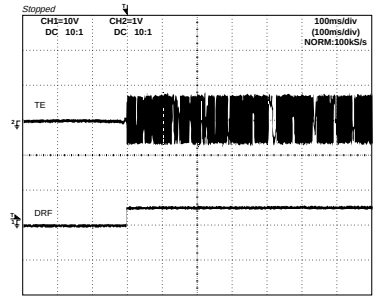
12 IC2 (59)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00V	Main : 5K	Mode : AUTO
BW : FULL	CH2 : 0.00V	Zoom : 100	Type : EDGE CH3
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

4 IC1 (18), IC2 (16)

3 IC2 (72)

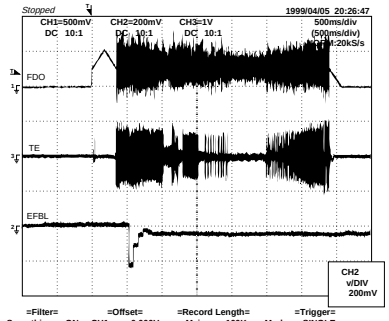


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.0V	Main : 100K	Mode : NORMAL
BW : FULL	CH2 : 0.00V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.00V		Delay : 2.924ms
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)

4 IC1 (18), IC2 (16)

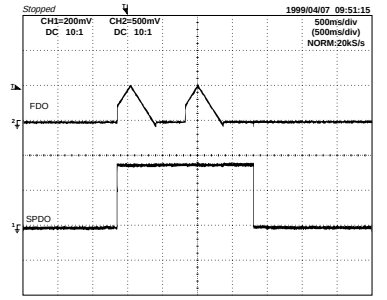
13 IC1 (13), IC2 (22)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : SINGLE
BW : FULL	CH2 : 0.000V	Zoom : 2k	Type : EDGE CH1
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)

6 IC2 (25)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : NORMAL
BW : FULL	CH2 : 0.000V	Zoom : 2K	Type : EDGE CH2
	CH3 : 0.00V		Delay : 2.924ms
	CH4 : 0.00V		Hold off : 0.2us

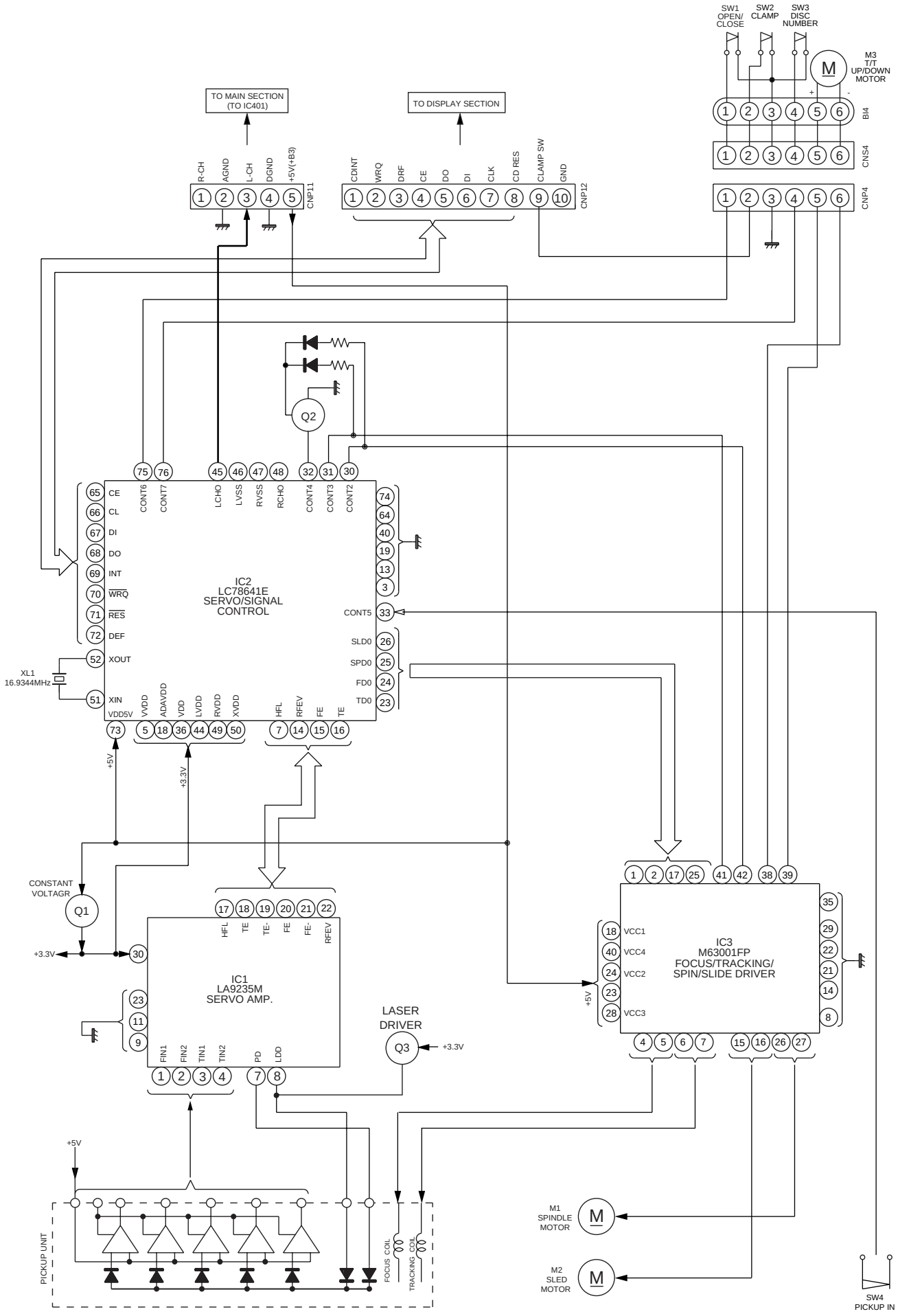


Figure 15 BLOCK DIAGRAM (1/3)

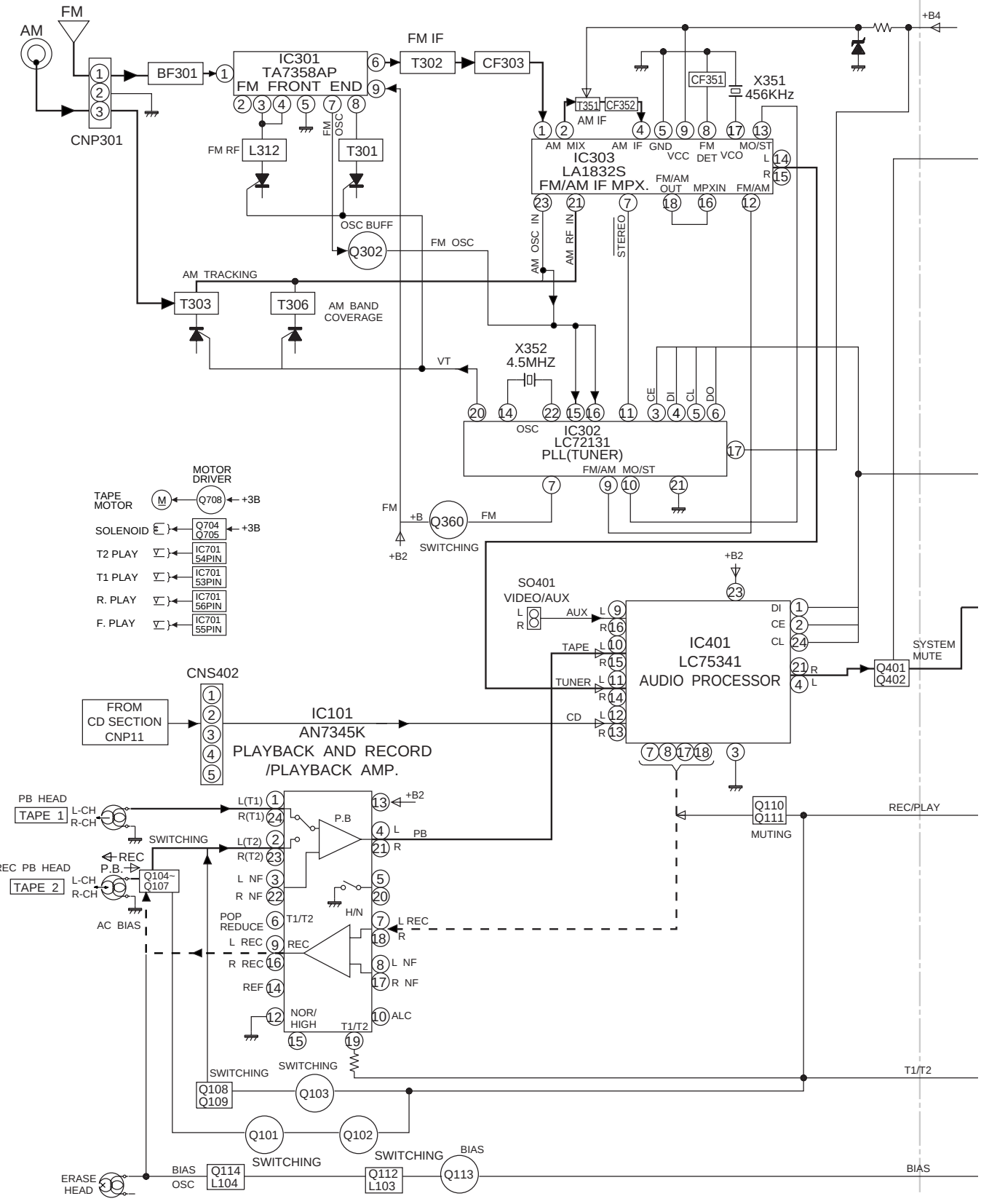


Figure 16 BLOCK DIAGRAM (2/3)

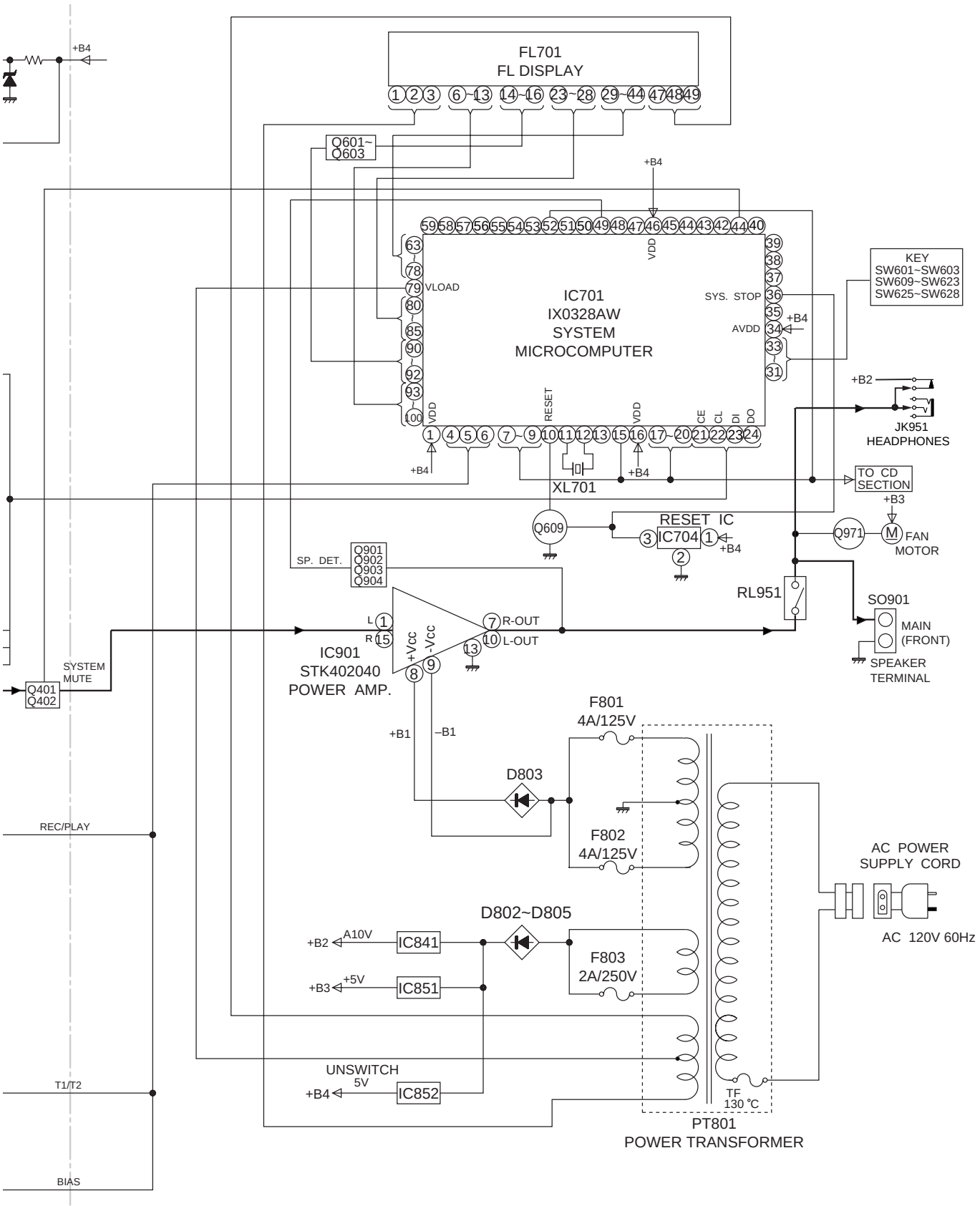


Figure 17 BLOCK DIAGRAM (3/3)

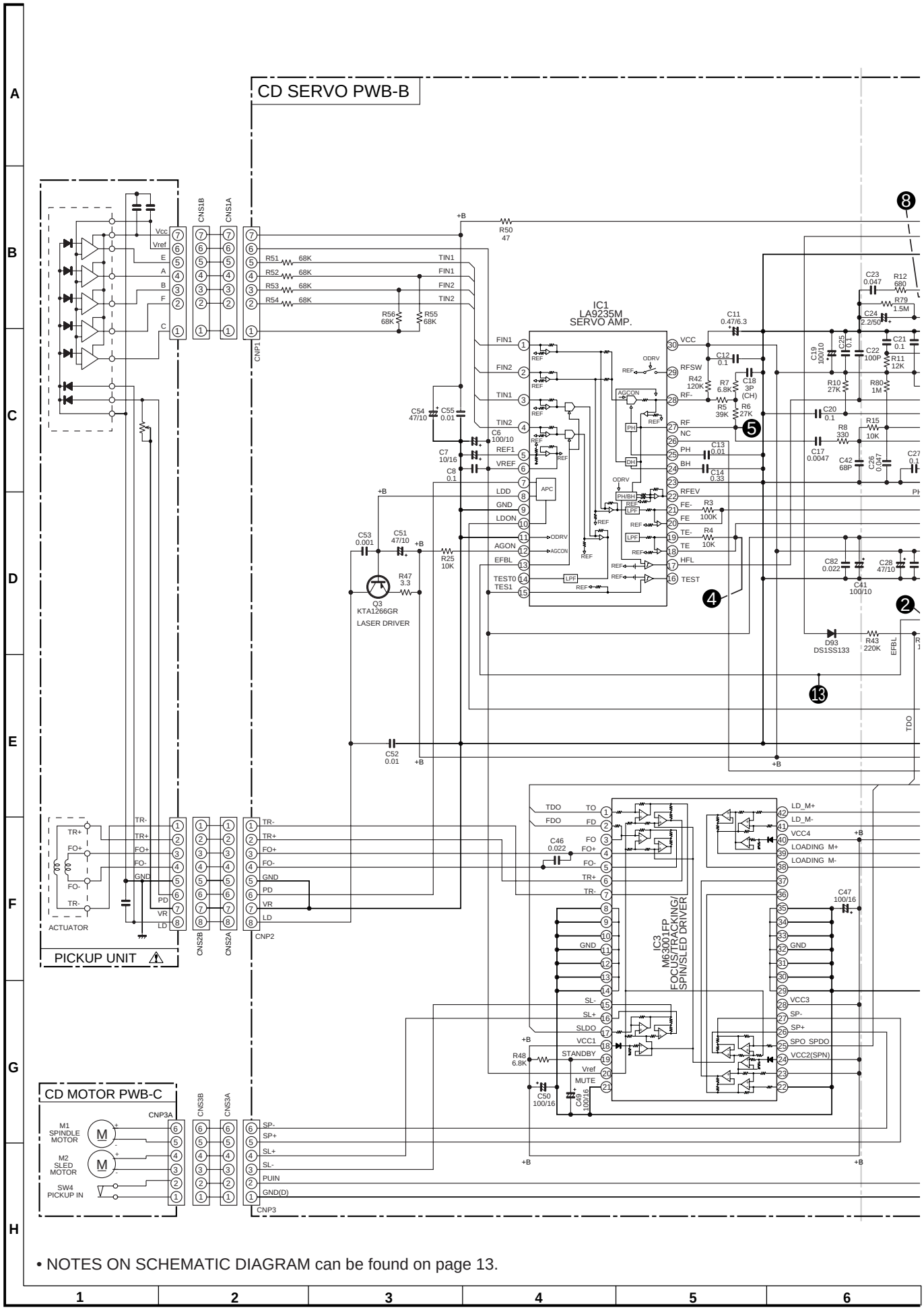
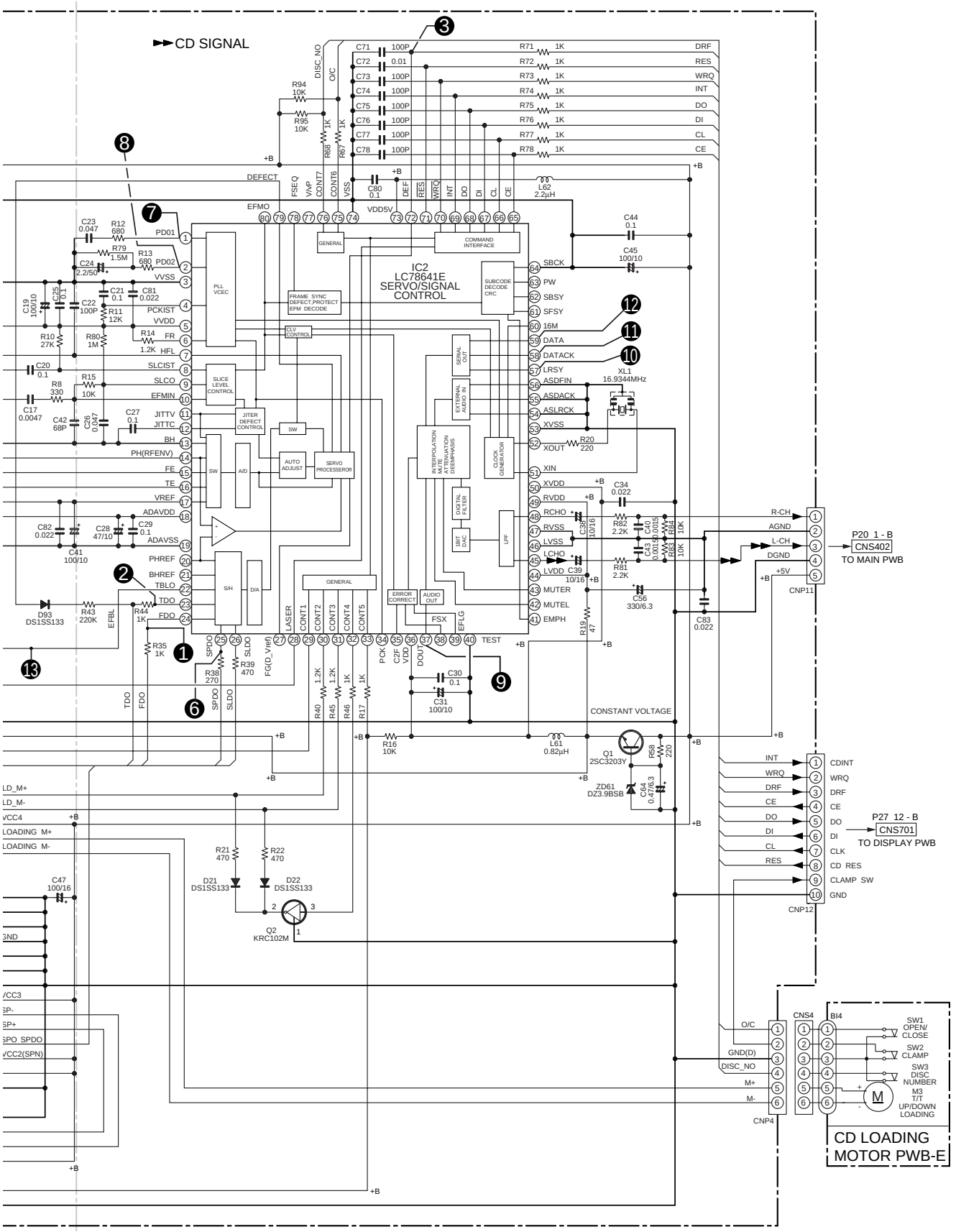


Figure 18 SCHEMATIC DIAGRAM (1/10)



• The numbers ❶ to ⓭ are waveform numbers shown in page 14.

7	8	9	10	11	12

Figure 19 SCHEMATIC DIAGRAM (2/10)

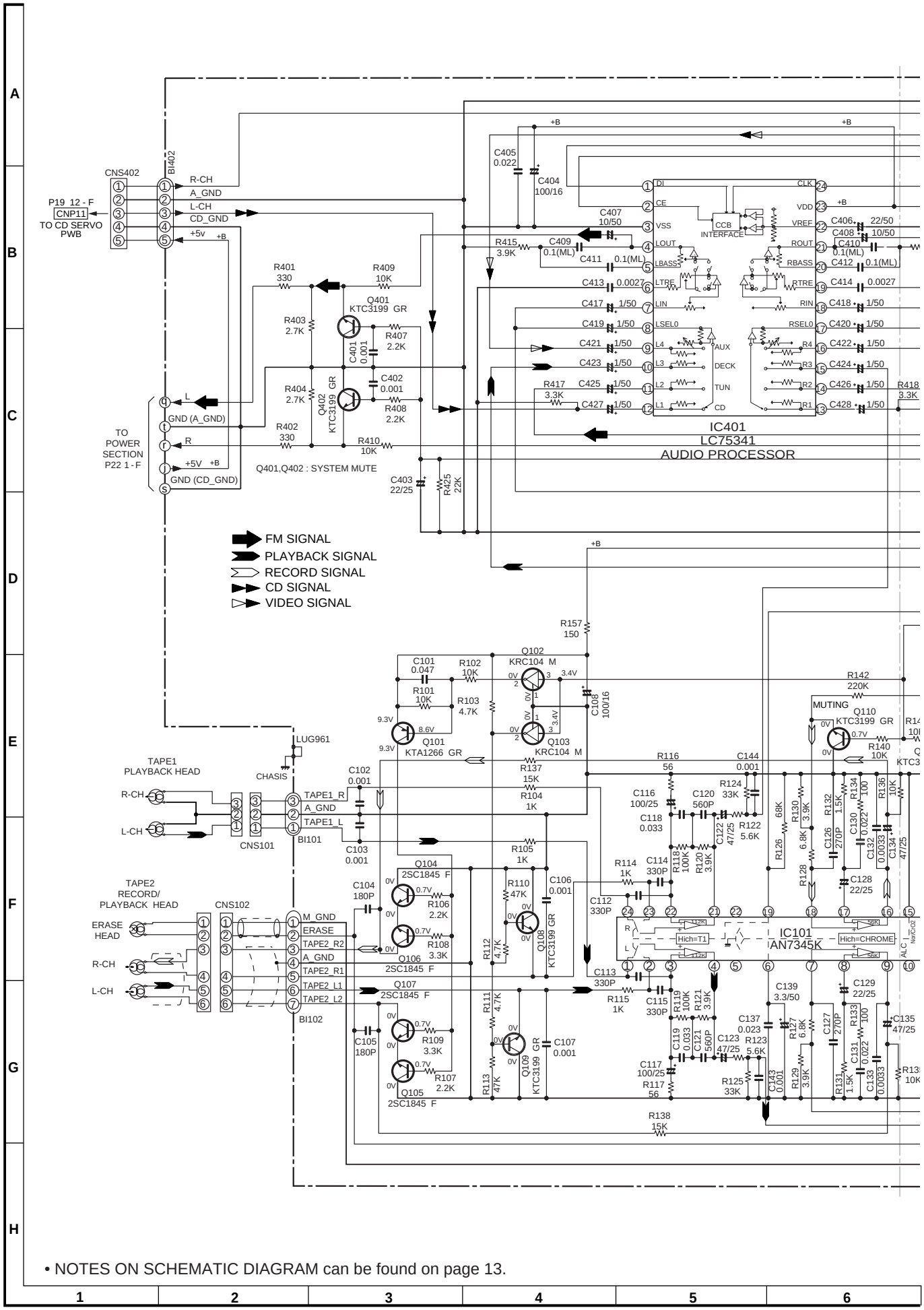
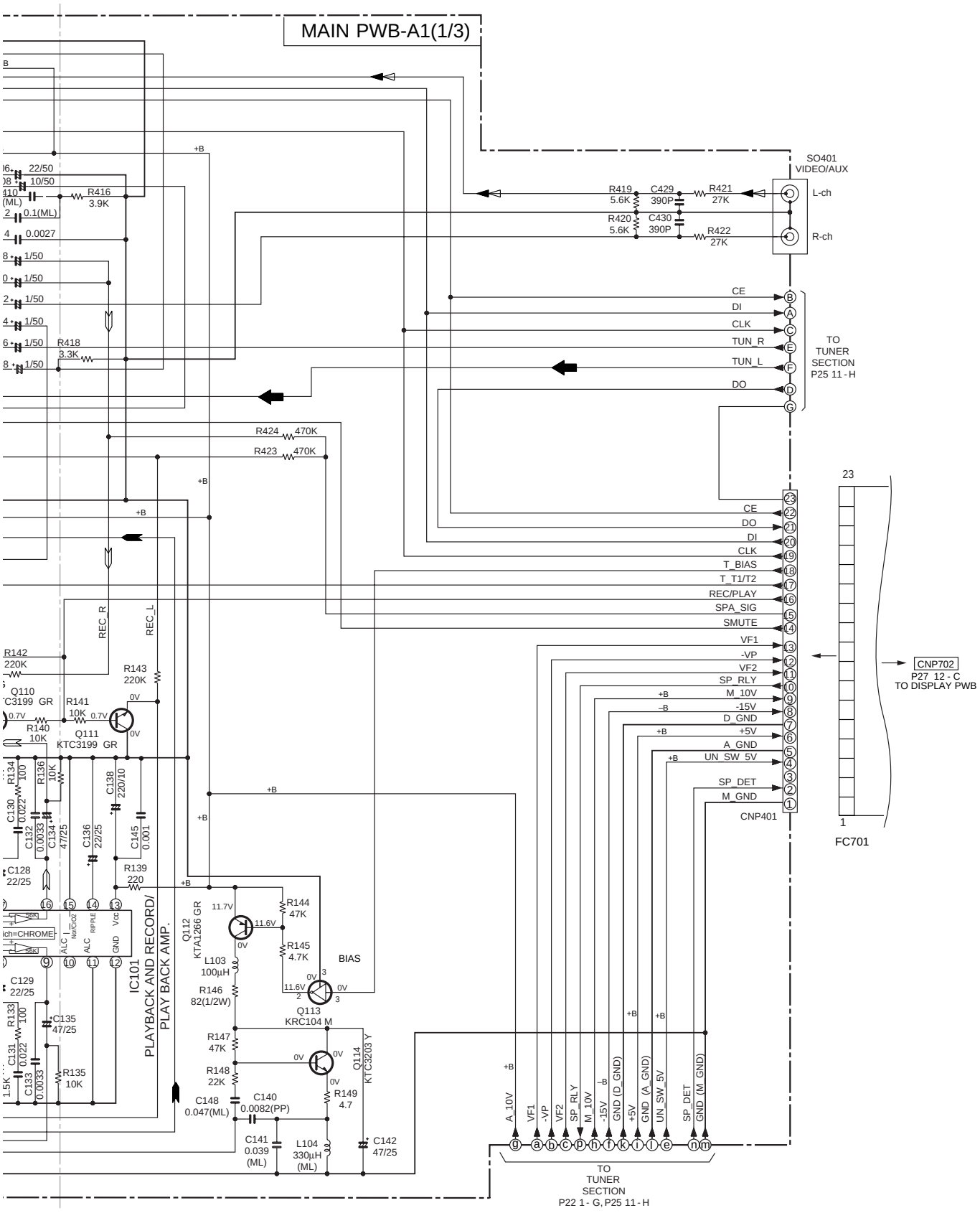
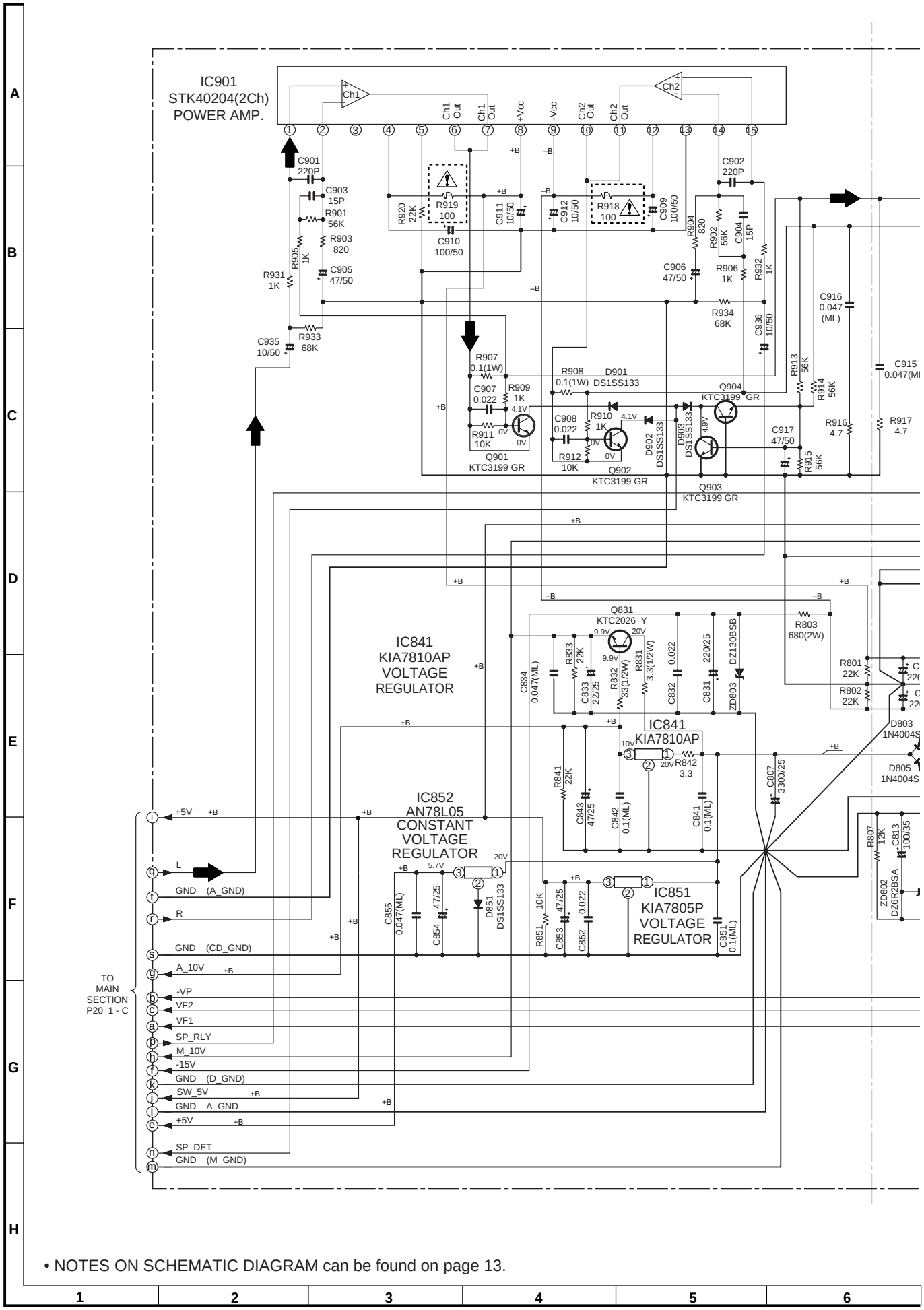


Figure 20 SCHEMATIC DIAGRAM (3/10)



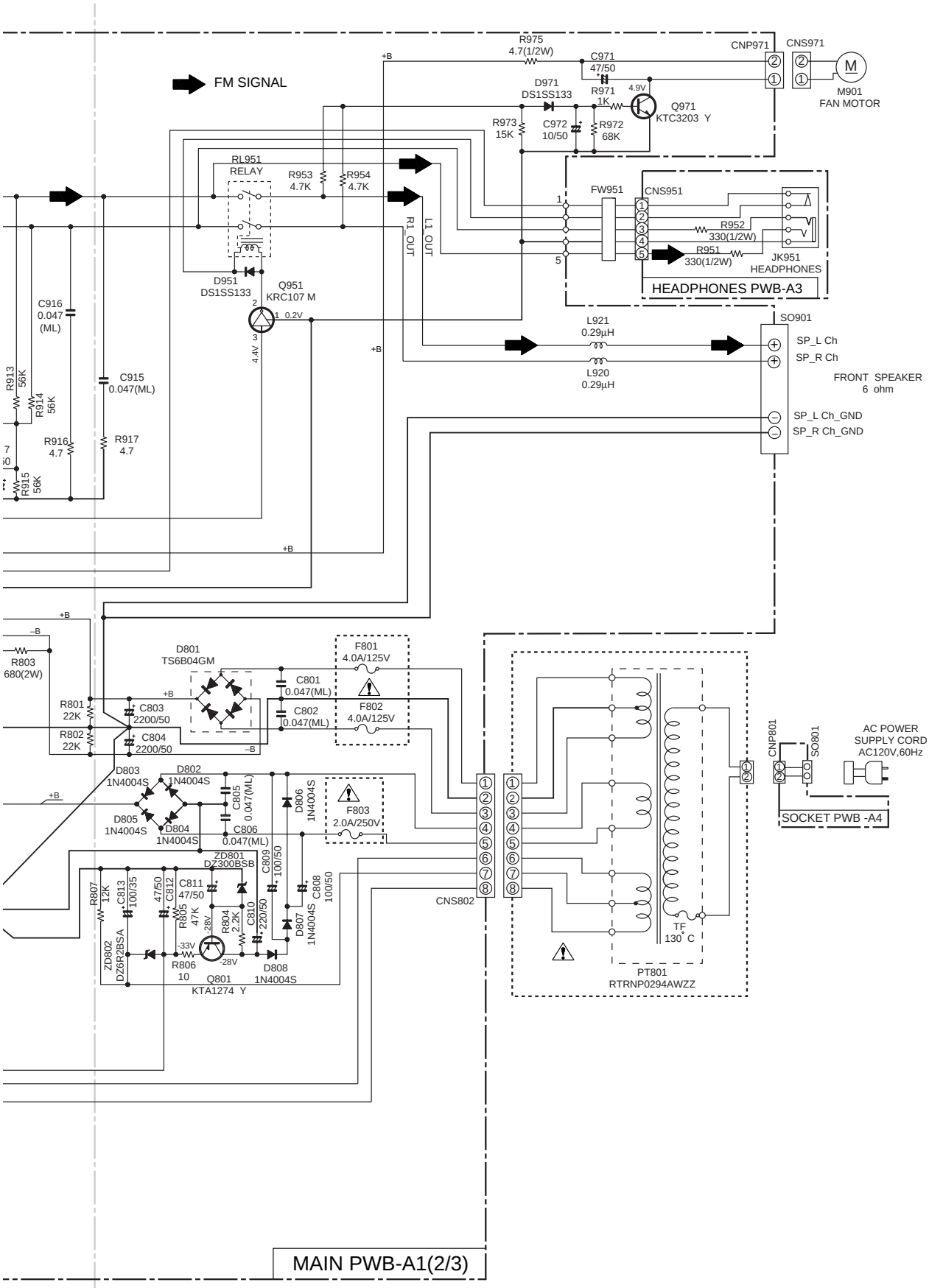
7	8	9	10	11	12

Figure 21 SCHEMATIC DIAGRAM (4/10)



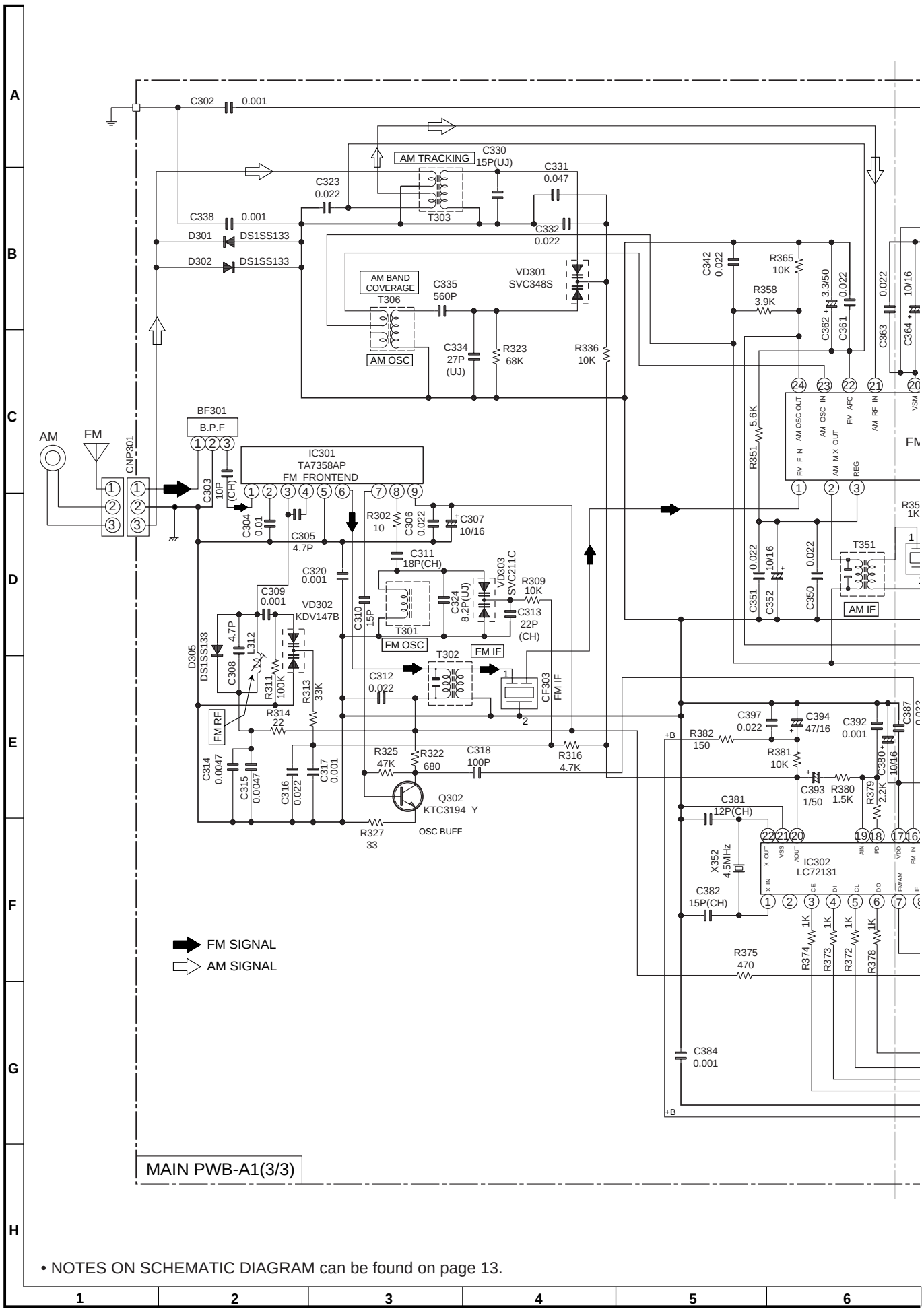
• NOTES ON SCHEMATIC DIAGRAM can be found on page 13.

Figure 22 SCHEMATIC DIAGRAM (5/10)



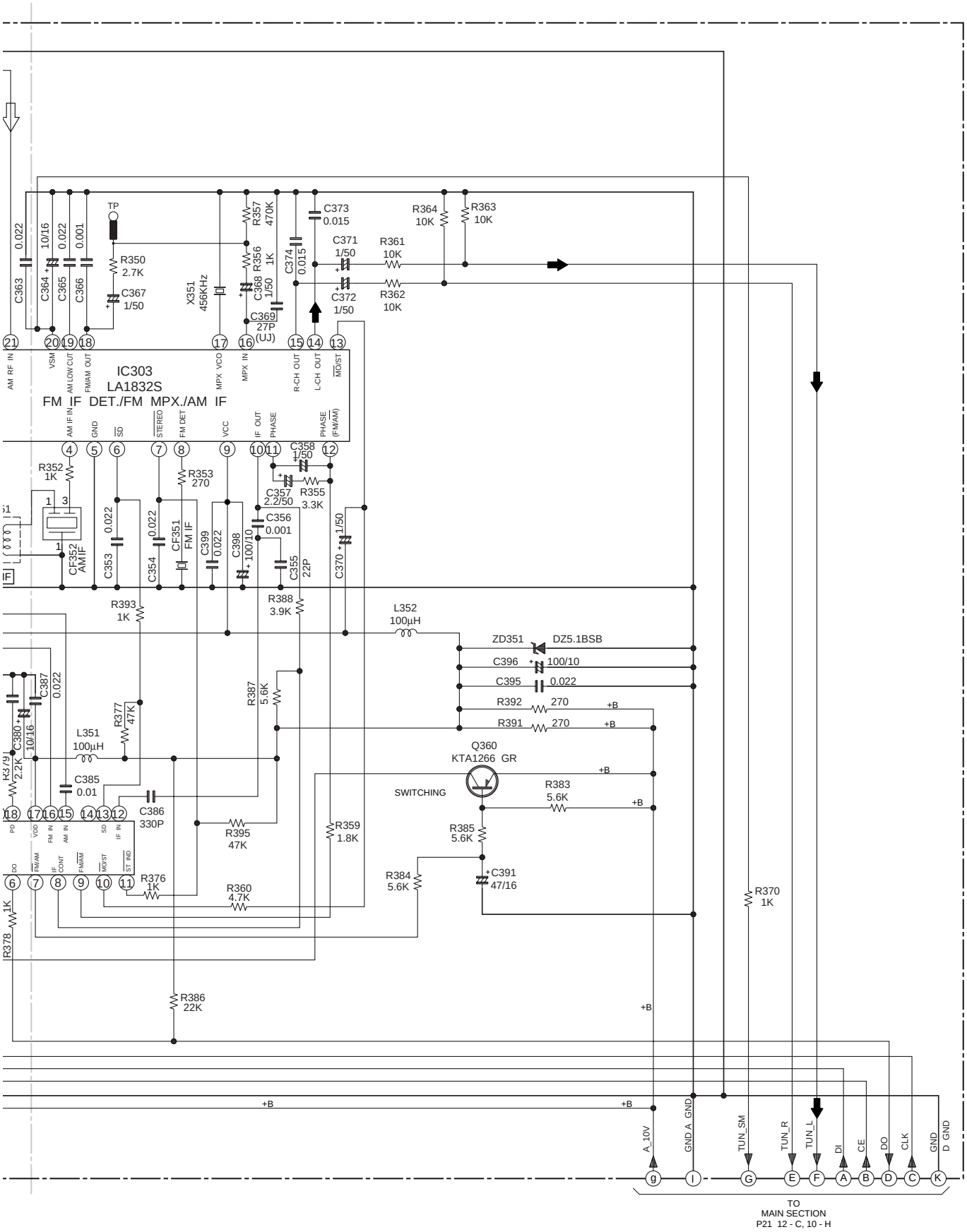
7	8	9	10	11	12

Figure 23 SCHEMATIC DIAGRAM (6/10)



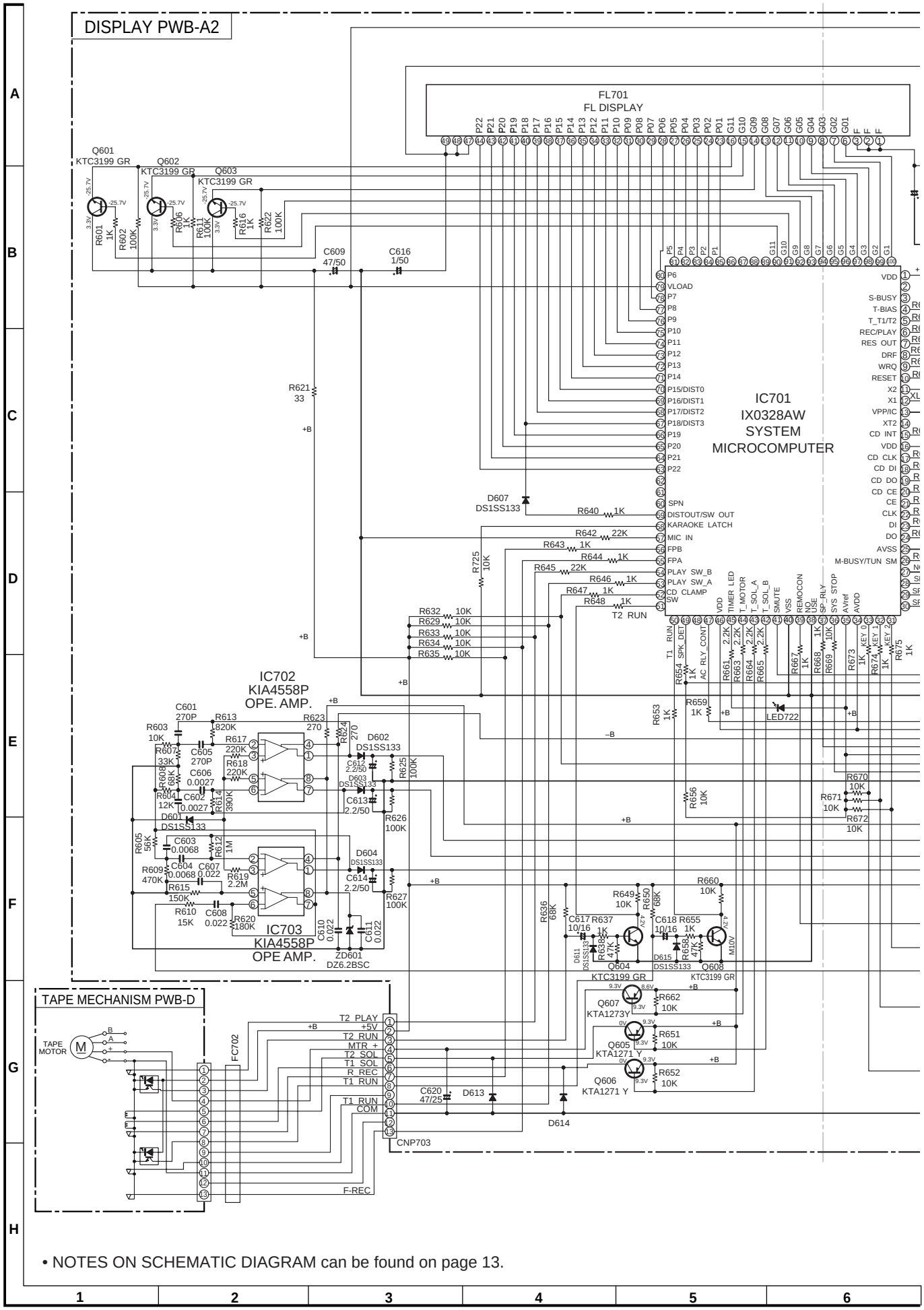
• NOTES ON SCHEMATIC DIAGRAM can be found on page 13.

Figure 24 SCHEMATIC DIAGRAM (7/10)



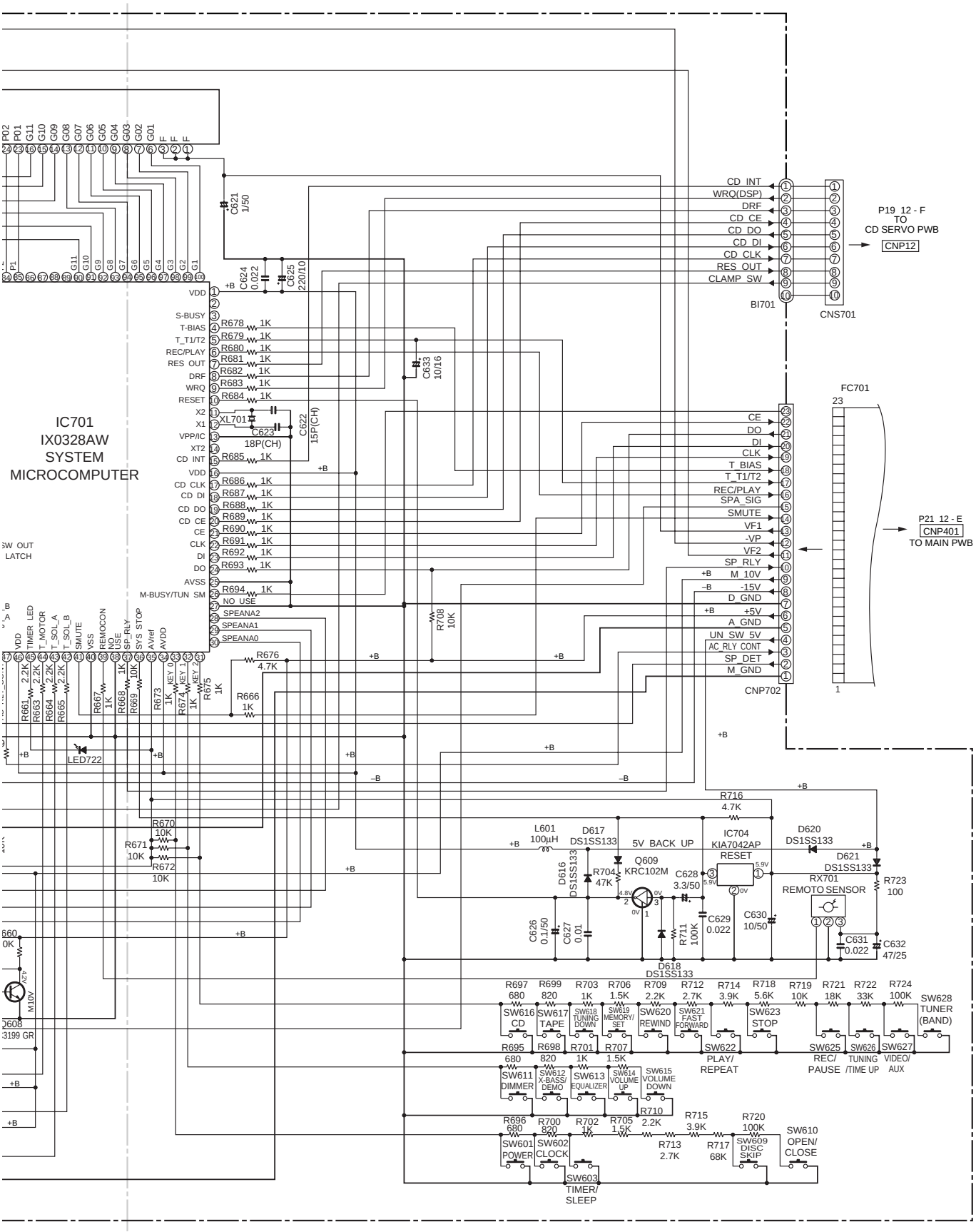
7	8	9	10	11	12

Figure 25 SCHEMATIC DIAGRAM (8/10)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 13.

Figure 26 SCHEMATIC DIAGRAM (9/10)



7	8	9	10	11	12

Figure 27 SCHEMATIC DIAGRAM (10/10)

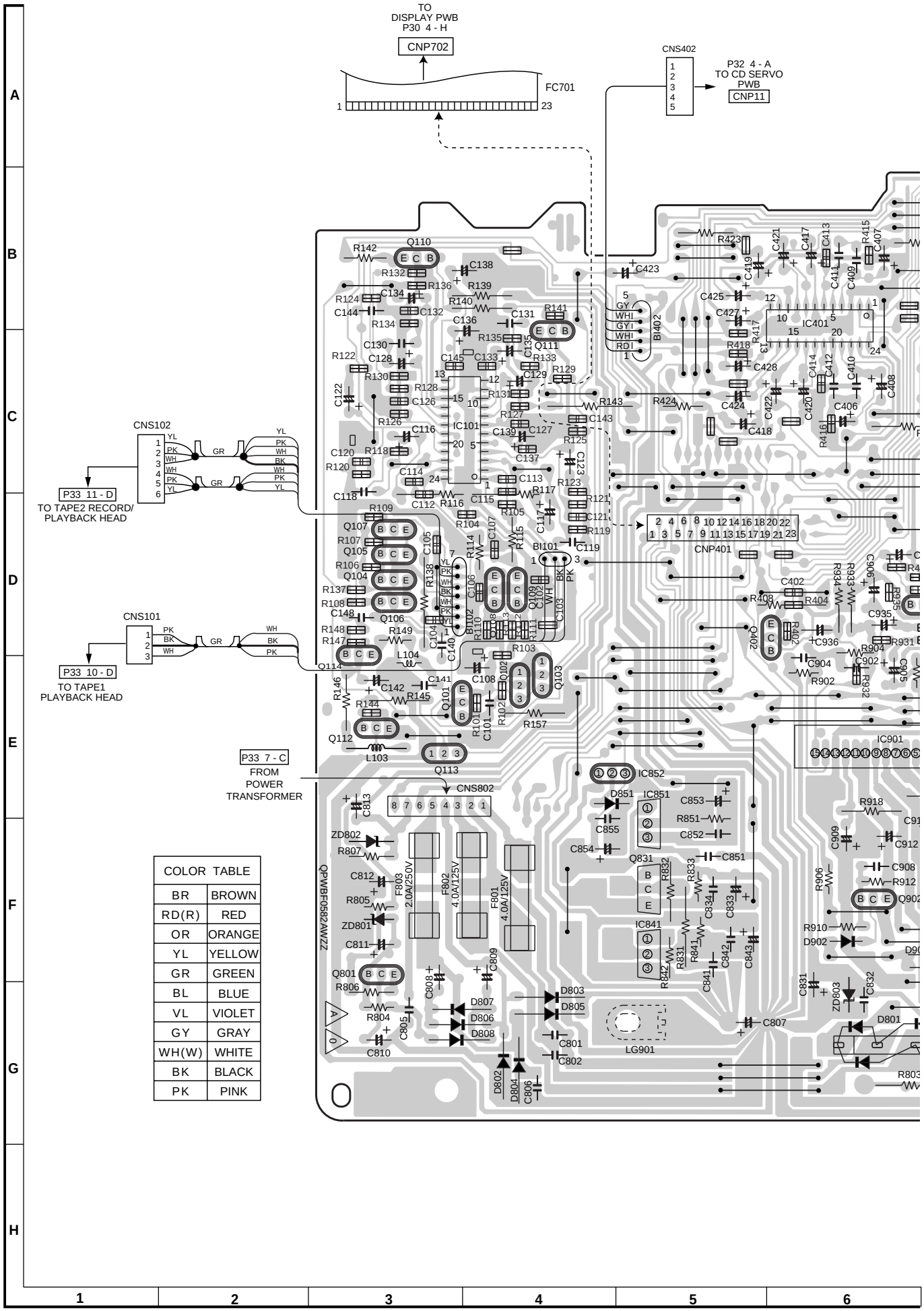
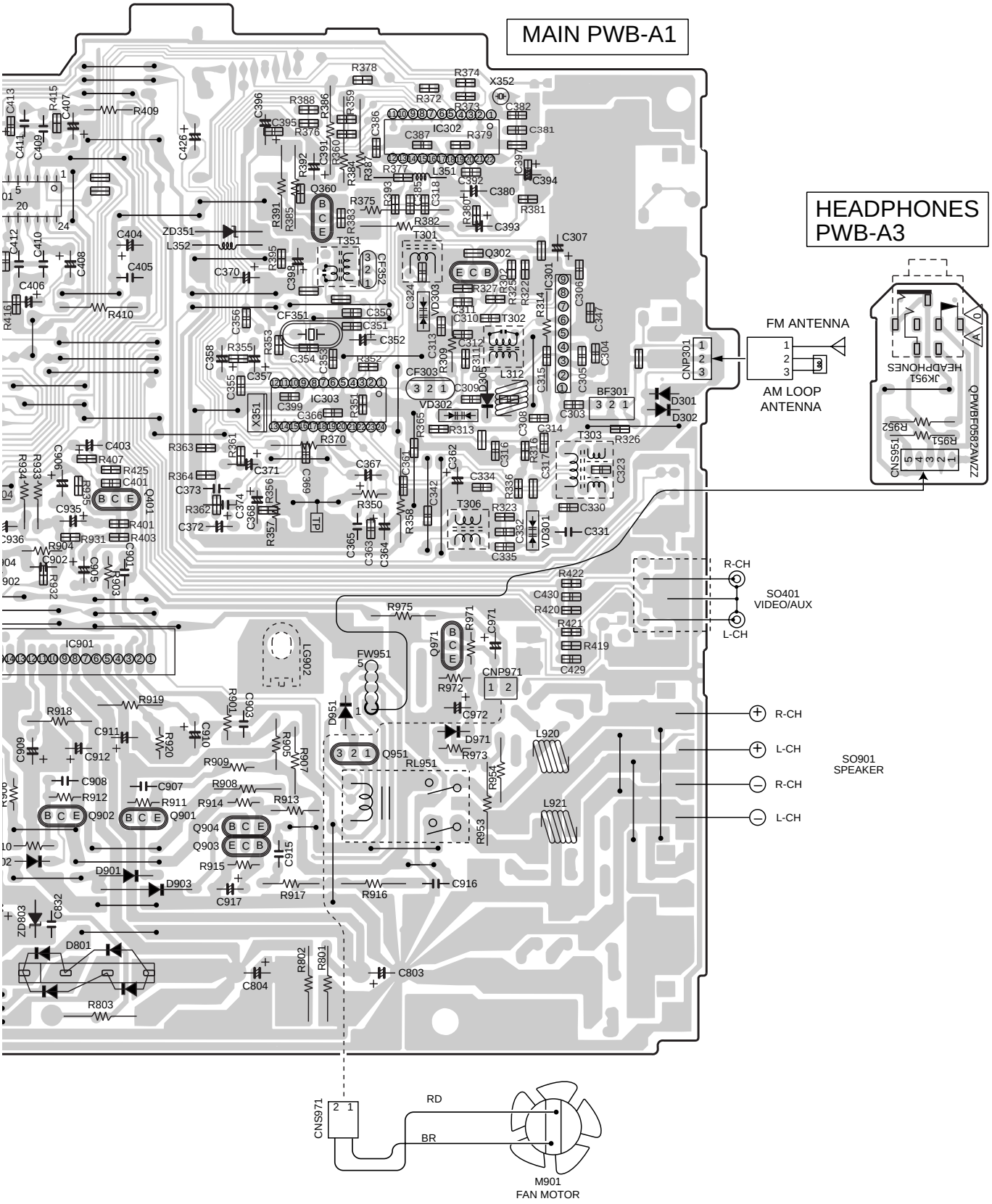
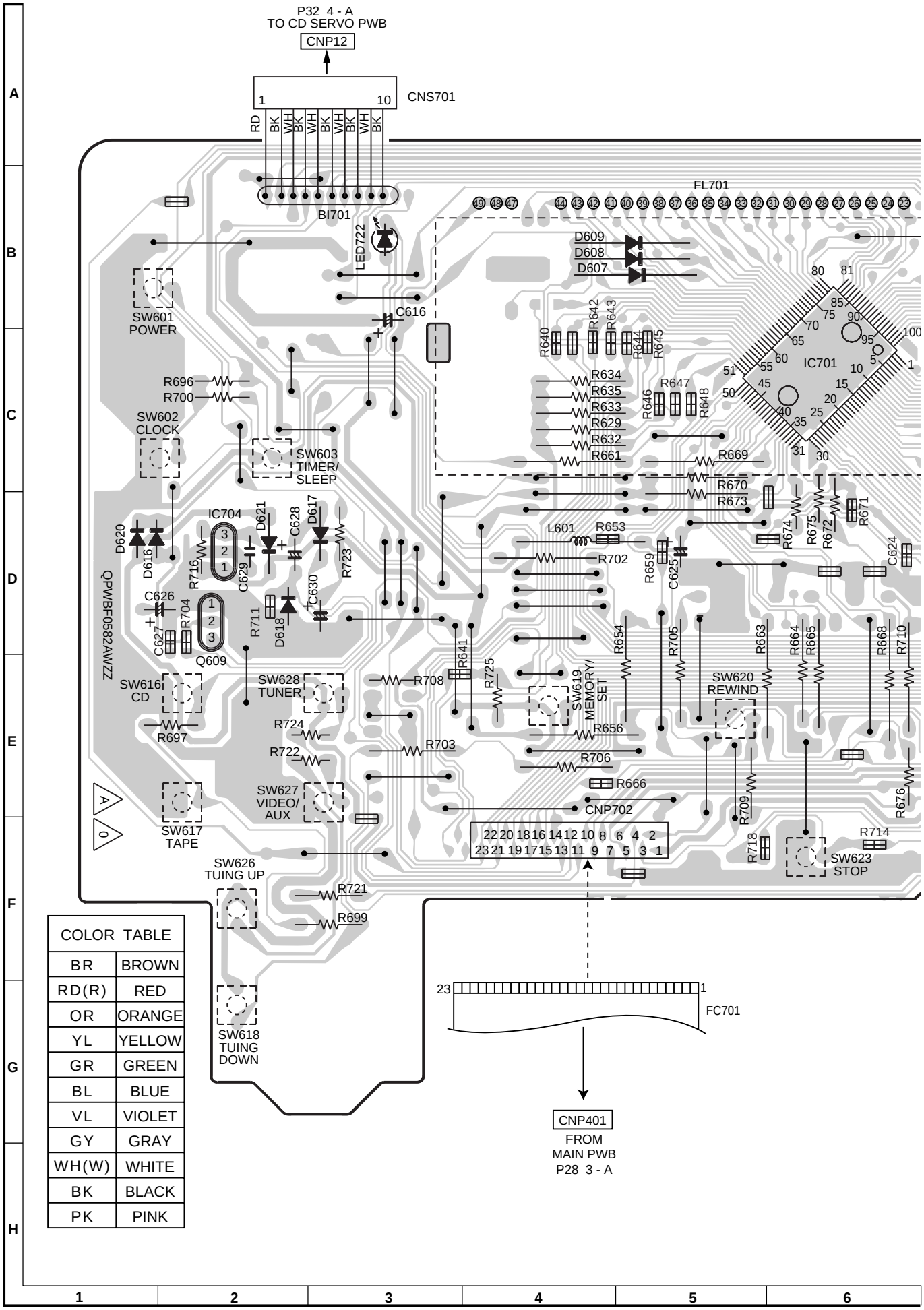


Figure 28 WIRING SIDE OF P.W.BOARD (1/6)



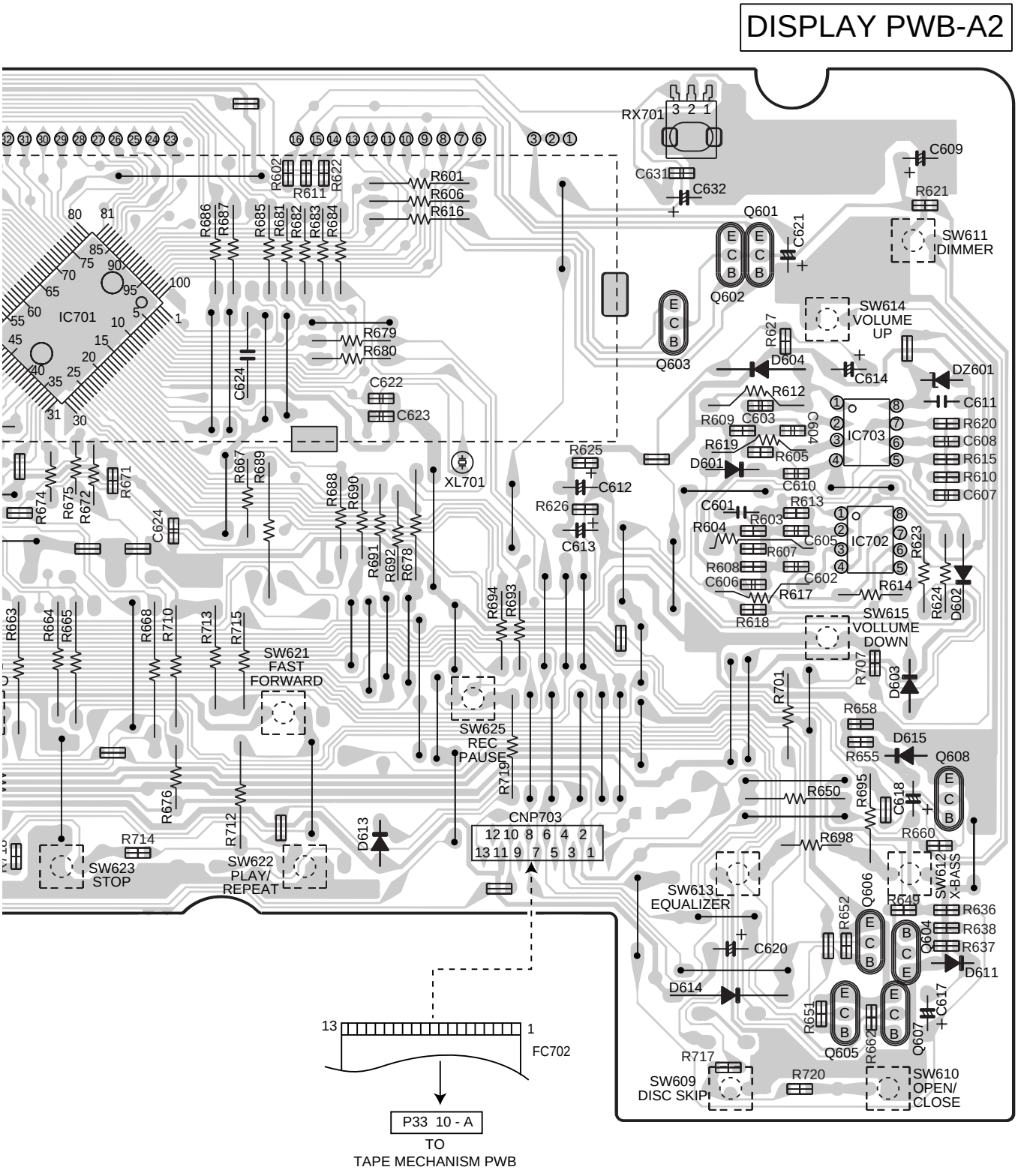
7	8	9	10	11	12

Figure 29 WIRING SIDE OF P.W.BOARD (2/6)



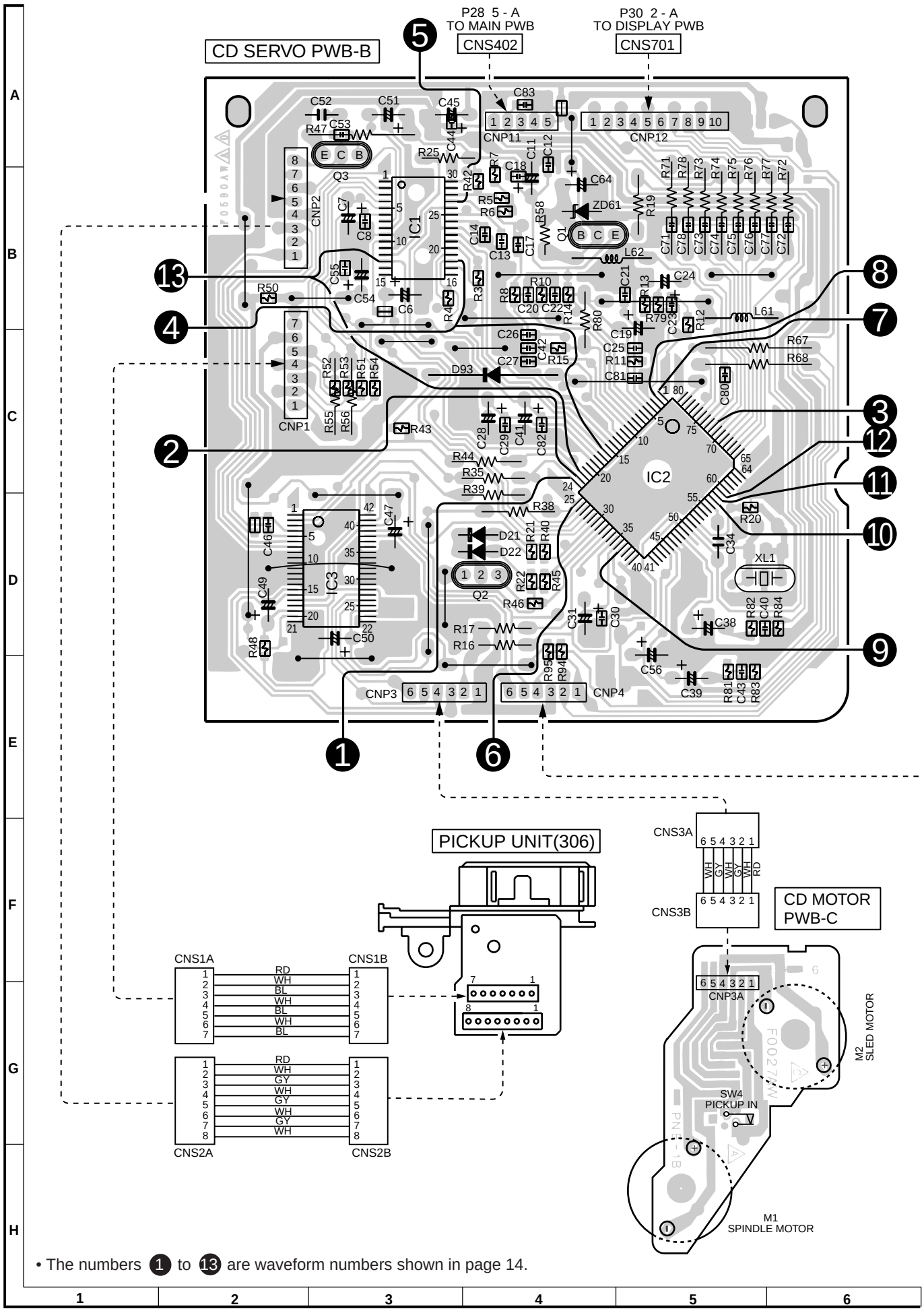
COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

Figure 30 WIRING SIDE OF P.W.BOARD (3/6)



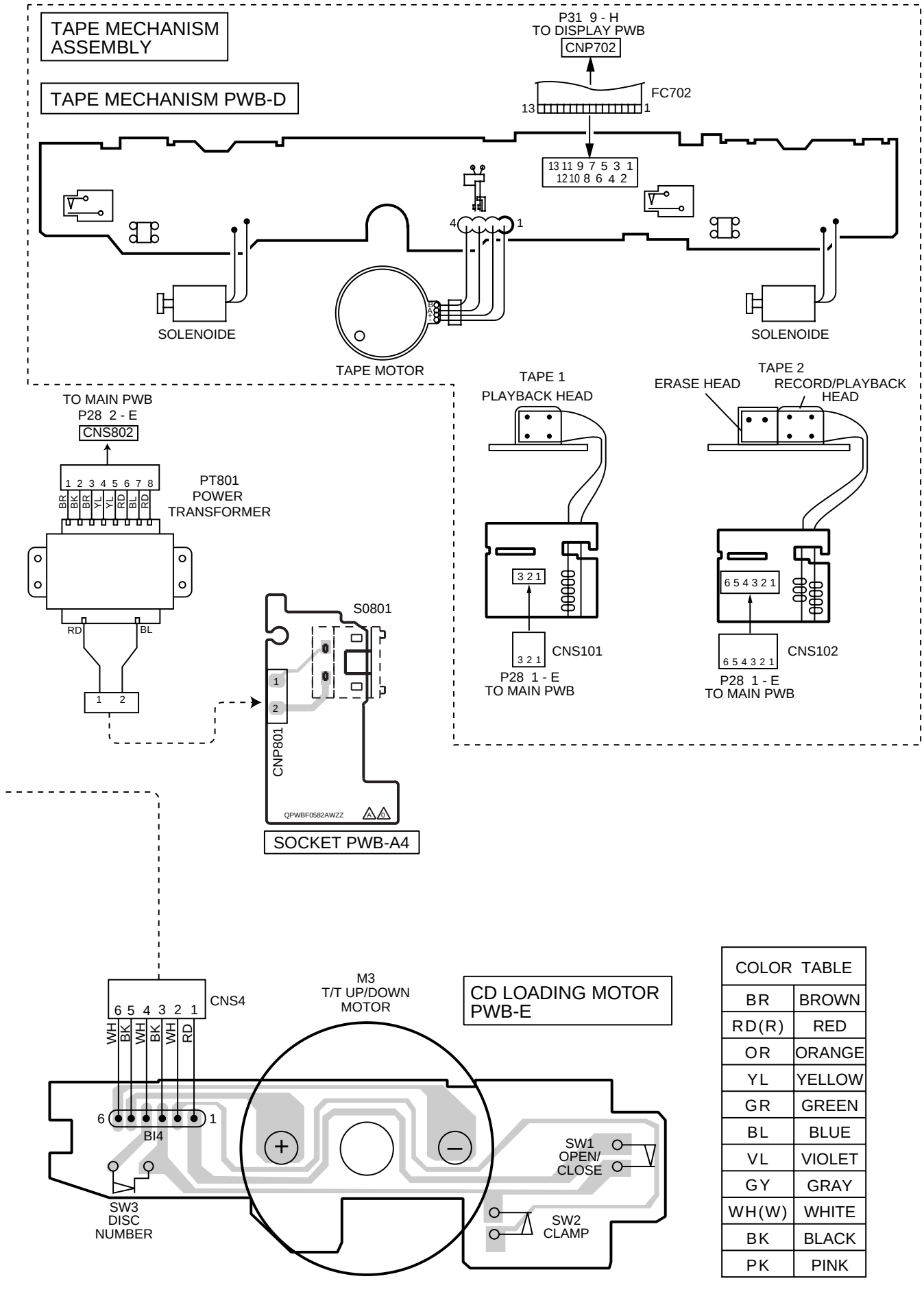
7	8	9	10	11	12

Figure 31 WIRING SIDE OF P.W.BOARD (4/6)



• The numbers ❶ to ⓭ are waveform numbers shown in page 14.

Figure 32 WIRING SIDE OF P.W.BOARD (5/6)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

7	8	9	10	11	12

Figure 33 WIRING SIDE OF P.W.BOARD (6/6)

VOLTAGE

IC1	
PIN NO.	VOLTAGE
1	1.6V
2	1.6V
3	1.6V
4	1.6V
5	1.6V
6	1.6V
7	0V
8	2.6V
9	0V
10	0V
11	0V
12	3.3V
13	1.6V
14	1.6V
15	1.6V
16	0V
17	0V
18	1.6V
19	1.6V
20	1.6V
21	1.6V
22	1.6V
23	0V
24	1.6V
25	0V
26	0V
27	0V
28	1.6V
29	1.6V
30	3.3V

IC3	
PIN NO.	VOLTAGE
1	1.6V
2	1.6V
3	1.8V
4	2.1V
5	2.1V
6	2.1V
7	2.1V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	2.1V
16	2.1V
17	1.6V
18	4.9V
19	3.5V
20	1.6V
21	0V
22	0V
23	4.9V
24	4.9V
25	1.6V
26	2.1V
27	2.1V
28	1.9V
29	0V
30	0V
31	0V
32	0V
33	0V
34	0V
35	0V
36	4.2V
37	0V
38	2.1V
39	2.1V
40	4.9V
41	2.1V
42	2.1V

IC2	
PIN NO.	VOLTAGE
1	0.7V
2	0V
3	0V
4	0V
5	3.3V
6	2.4V
7	0V
8	0V
9	1.6V
10	0V
11	4.7V
12	1.7V
13	0V
14	1.6V
15	1.6V
16	1.6V
17	1.6V
18	3.3V
19	0V
20	1.6V
21	1.6V
22	1.6V
23	1.6V
24	1.6V
25	1.6V
26	1.6V
27	1.6V
28	0V
29	0V
30	2.1V
31	2.1V
32	0V
33	3.3V
34	3.5V
35	3.3V
36	3.3V
37	3.3V
38	1.6V
39	1.6V
40	0V
41	0V
42	3.3V
43	3.3V
44	3.0V
45	1.5V
46	0V
47	0V
48	1.5V
49	3.0V
50	3.3V
51	1.8V
52	3.0V
53	0V
54	0V
55	0V
56	0V
57	1.7V
58	3.3V
59	0V
60	3.0V
61	1.6V
62	0V
63	2.4V
64	0V
65	0V
66	0V
67	0V
68	4.8V
69	4.9V
70	4.9V
71	4.6V
72	0V
73	4.9V
74	0V
75	0V
76	0V
77	3.2V
78	0V
79	0V
80	3.4V

IC101	
PIN NO.	VOLTAGE
1	0V (0V)
2	0V (0V)
3	0.5V (0.5V)
4	1.9V (1.9V)
5	0V (0V)
6	0V (0V)
7	0V (0V)
8	0.6V (0.6V)
9	3.3V (3.3V)
10	3.3V (3.3V)
11	0V (0V)
12	0V (0V)
13	6.7V (6.7V)
14	4.0V (4.0V)
15	0V (0V)
16	3.3V (3.3V)
17	0.6V (0.6V)
18	0V (0V)
19	0V (0V)
20	0V (0V)
21	1.9V (1.9V)
22	0.5V (0.5V)
23	0V (0V)
24	0V (0V)

IC301	
PIN NO.	VOLTAGE
1	0.8V (0V)
2	1.5V (0V)
3	3.6V (0.4V)
4	1.5V (0V)
5	0V (0V)
6	3.6V (0.4V)
7	2.8V (0.2V)
8	3.5V (0.3V)
9	3.6V (0.3V)

IC302	
PIN NO.	VOLTAGE
1	2.4V (2.4V)
2	0V (0V)
3	0V (0V)
4	0V (0V)
5	4.6V (4.7V)
6	4.8V (4.9V)
7	0.1V (9.9V)
8	4.2V (0V)
9	3.3V (0V)
10	3.4V (0V)
11	4.6V (4.9V)
12	2.2V (0V)
13	4.6V (4.9V)
14	0V (0V)
15	0V (2.4V)
16	2.3V (0V)
17	4.6V (4.9V)
18	0.8V (4.9V)
19	0.8V (4.9V)
20	1.1V (0V)
21	0V (0V)
22	2.5V (3.0V)

IC901	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	34.4V
5	–32.9V
6	0V
7	0V
8	35.4V
9	–35.1V
10	0V
11	0V
12	–34.0V
13	0V
14	0V
15	0V

IC852	
PIN NO.	VOLTAGE
1	19.4V
2	0V
3	5.76V

IC851	
PIN NO.	VOLTAGE
1	19.4V
2	0V
3	5V

IC841	
PIN NO.	VOLTAGE
1	19.41V
2	0V
3	10V

Q831	
PIN NO.	VOLTAGE
1	10.0V
2	19.41V
3	10.0V

IC704	
PIN NO.	VOLTAGE
1	5.0V
2	0V
3	5.0V

IC702	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	–11.0V
5	0V
6	0V
7	0V
8	5.58V

IC703	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	–11.0V
5	0V
6	0V
7	0V
8	5.58V

IC701			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	5.0V	51	4.29V
2	0V	52	4.29V
3	5.0V	53	4.29V
4	0V	54	4.29V
5	5.0V	55	4.29V
6	5.0V	56	4.29V
7	5.0V	57	0V
8	1.2V	58	0V
9	0.87V	59	–27.8V
10	4.84V	60	–27.8V
11	2.38V	61	0V
12	2.06V	62	0V
13	0V	63	–27.7V
14	0V	64	–27.7V
15	1.4V	65	–27.7V
16	4.89V	66	–27.7V
17	4.8V	67	–27.7V
18	0V	68	–27.7V
19	2.3V	69	–20.4V
20	0V	70	–22.1V
21	0V	71	–25.9V
22	0V	72	–27.7V
23	0V	73	–24.1V
24	4.44V	74	–24.4V
25	0.3V	75	–25.9V
26	0V	76	–22.2V
27	0V	77	–22.2V
28	0V	78	–22.3V
29	0V	79	–27.8V
30	0V	80	–27.7V
31	5.1V	81	–27.7V
32	5.1V	82	27.7V
33	5.1V	83	–20.3V
34	4.9V	84	–24.0V
35	5.0V	85	–20.3V
36	4.9V	86	2.38V
37	4.9V	87	2.58V
38	0V	88	–25.8V
39	5.0V	89	–25.8V
40	0V	90	–25.7V
41	1.7V	91	–25.7V
42	8.0V	92	–25.7V
43	7.9V	93	–25.7V
44	8.0V	94	–25.7V
45	3.8V	95	–25.7V
46	4.89V	96	–25.7V
47	4.89V	97	–25.7V
48	4.89V	98	–25.7V
49	4.29V	99	–25.7V
50	4.29V	100	–25.7V

IC401	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	5.0V
5	5.0V
6	5.0V
7	5.0V
8	5.0V
9	5.0V
10	5.0V
11	5.0V
12	5.0V
13	5.0V
14	5.0V
15	5.0V
16	5.0V
17	5.0V
18	5.0V
19	5.0V
20	5.0V
21	5.0V
22	5.0V
23	10.0V
24	0V

IC303	
PIN NO.	VOLTAGE
1	2.1V (2.4V)
2	4.5V (4.8V)
3	2.1V (2.1V)
4	2.1V (2.1V)
5	0V (0V)
6	4.6V (4.6V)
7	4.6V (4.6V)
8	2.4V (3.2V)
9	4.5V (4.8V)
10	3.9V (0V)
11	3.3V (1.8V)
12	3.3V (1.1V)
13	3.5V (2.0V)
14	1.2V (1.2V)
15	1.2V (1.2V)
16	2.0V (2.0V)
17	2.7V (0V)
18	2.1V (0.9V)
19	0V (1.9V)
20	0.3V (0.9V)
21	2.6V (2.0V)
22	3.5V (3.0V)

TROUBLE SHOOTING

When the CD does not function

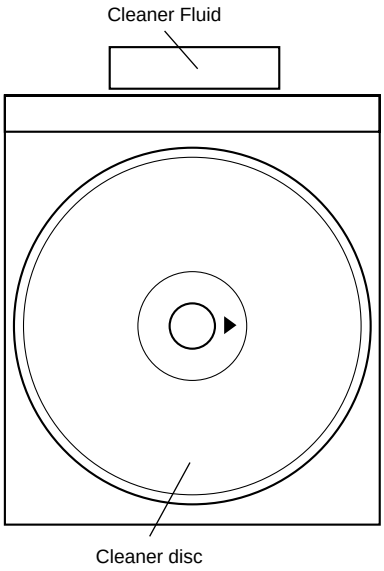
When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.
Remove the cabinet and follow the trouble shooting instructions.
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

Turn the power off.
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.
Do not touch the lens with the bare hand.

		Parts code
1.	CD optical pickup Lens cleaner disc	UDSKA0004AFZZ

HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has the mark next to it.
2. Place the CD cleaner disc onto the CD disc tray with the brush side down,then press the play button.
3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continuous to tum, press the stop button.



CAUTION

- The CD lens cleaner should be effective for 30-50 operations, however if the brushes become worn out earlier then please the cleaner disc.
- If the CD cleaner brushes become very wet then wipe off any excess fluid with a soft cloth.
- Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rines with clean water and seek medical advice.
- The CD cleaner disk must not be used on car CD players or on computer CD ROM drives.
-

When a CD cannot be played

1. "E-CD01" is displayed.

(1) Check the power to IC2 (LC78641E), the presence of the clock signal (16.93 MHz) and the status of the RESET terminal (pin 71 on IC2).
(2) Did the pickup move to the PICKUP-IN Switch (SW4) position?

If (1) and (2) are OK, check the system microcomputer (especially the communication line with the DSP).

2. Pressing the CD operation key is accepted, but playback does not occur.

(1) Focus-HF system check
(2) Tracking system check
(3) Spin system check
(4) PLL system check
(5) Others

(1) Focus-HF system check

Although a CD is inserted and the cover is closed, "NO DISC" is displayed.

Press the OPEN/CLOSE switch (SW1) without inserting a disc, and try starting the playback operation.

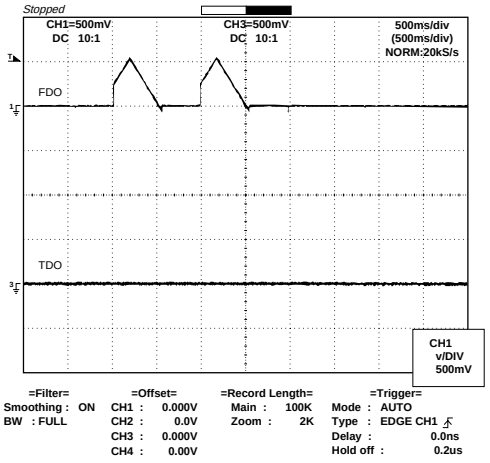


Figure 36-1

1. Did the pickup move to the PICKUP-IN Switch (SW4) position?
   - No → Sled motor (M2)
   - Yes ↓
2. Does the focus (lens) move up and down? (Waveform drawing 36-1).
   - No → Check the focus peripheral circuit.
   - Yes ↓
3. Is the laser lit?
   - No → Check the laser diode driver Q3 peripheral circuit.
   - Yes ↓
4. Is the turntable rotating?
   - No → Spindle motor (M1).

When a disc is loaded, start playback operation.

1. Is focus servo activated? (Waveform drawing 36-2)
   - No → Pins 1~11 on IC1
     Check the laser diode driver Q3 peripheral circuit.
     Focus error circuit (pins 20 and 21 on IC1)
   - Yes ↓
2. Does DRF change from "L" to "H"?
   - No → Is the disc rotating?
     - No → Check the spin system.
       If the disc is spinning and a HF waveform is generated, DRF will go H.
     - Yes
   - Yes ↓
3. Is the HF waveform normal? (Waveform drawing 36-3)
   - No → If the level is not normal, check around pins 27~29 on IC1.

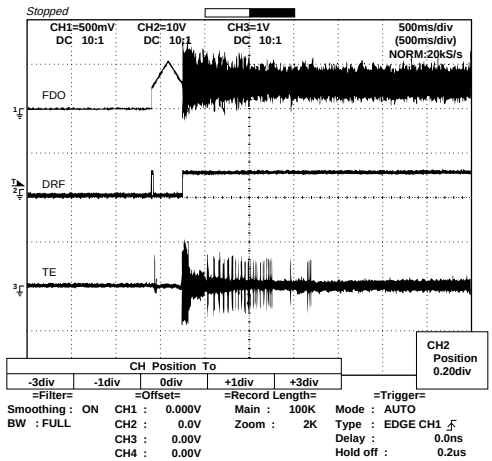


Figure 36-2

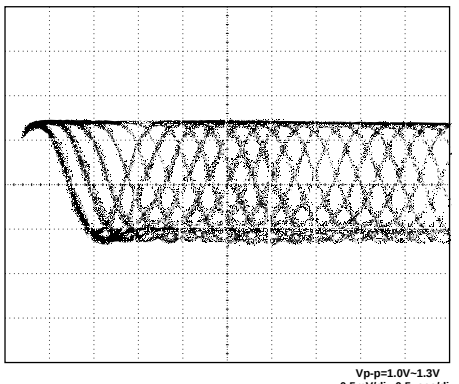


Figure 36-3

(2) Tracking system check

Check the TE waveform at pin 18 on IC1.

If the waveform shown in Figure 37-1 appears and soon after NO DISC appears.

Yes → The tracking servo is not activated.
Check the peripheral circuits at pins 18 and 19 on IC1, pin 23 on IC2, and CNS1A/B.

No ↓

"Initialization" is possible, but play is not possible.

Yes → A normal jump operation cannot be completed or the beginning of the track cannot be found.
Check the around pin 23 on IC2.

No ↓

"Initialization" is not possible. → Data cannot be read. Check the VCO-PLL system.

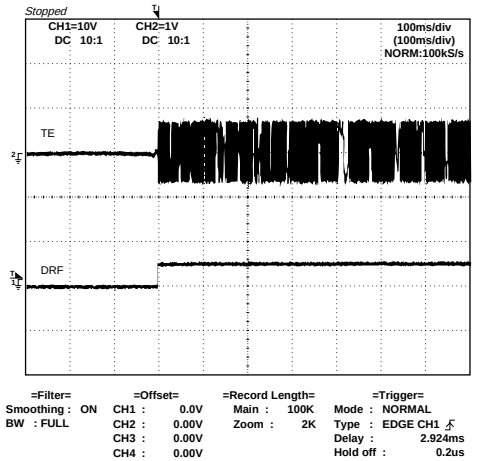


Figure 37-1

(3) Spin system check

Press the OPEN/CLOSE switch without inserting a disc, and then try starting the play operation.

1. The turntable rotates a little. (Waveform drawing 37-2)

Yes → The spin driver circuit is OK.

No ↓

2. The turntable doesn't rotate. → Check around pin 25 on IC2, pins 15 and 16 on IC3, and CNS3A/B.

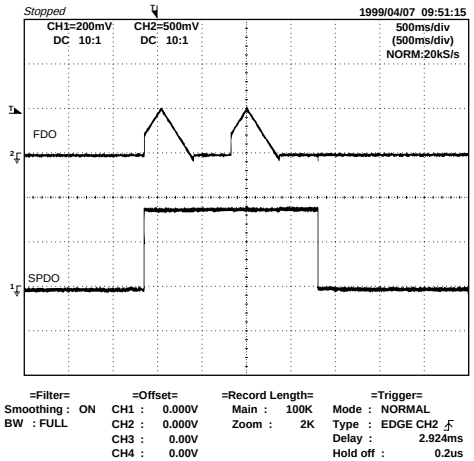


Figure 37-2

(4) PLL system check

When a disc is loaded, start play operation.

↓

The HF waveform is normal, but the TOC data cannot be read.

↓

Check the PDO waveform. (Figure 38-1)

↓

Check around pins 1~6 on IC2.

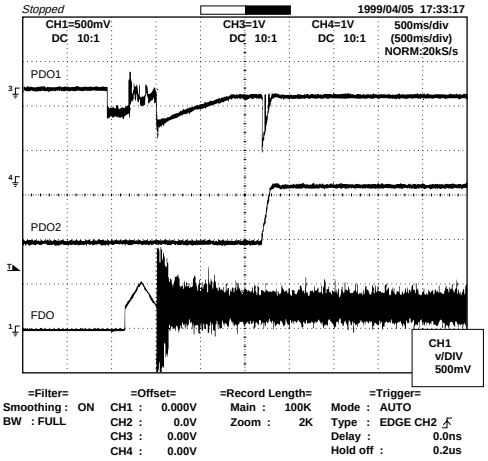


Figure 38-1

(5) Others

The HF waveform is normal and the time is displayed normally, but no sound is produced. Or the sound has dropouts.

Is pin 35 (C2F) on IC2 "L"?

No → There are too many error flags on a damaged disc which makes error correction impossible.

↓

Check again using a known good disc.

Yes

↓

1. When playing at normal speed
   Check the peripheral circuit at pin 37 (DOUT) on IC2 and the waveform (Figure 38-2).

↓

If both 1. and 2. are OK.

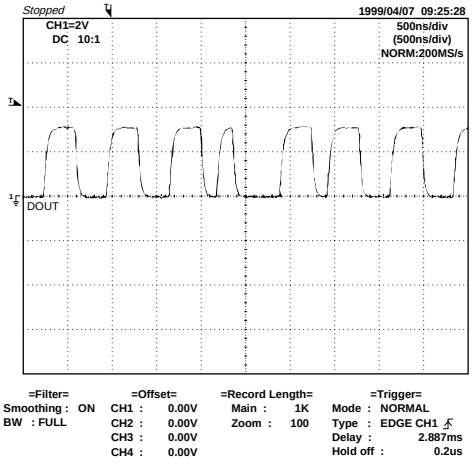
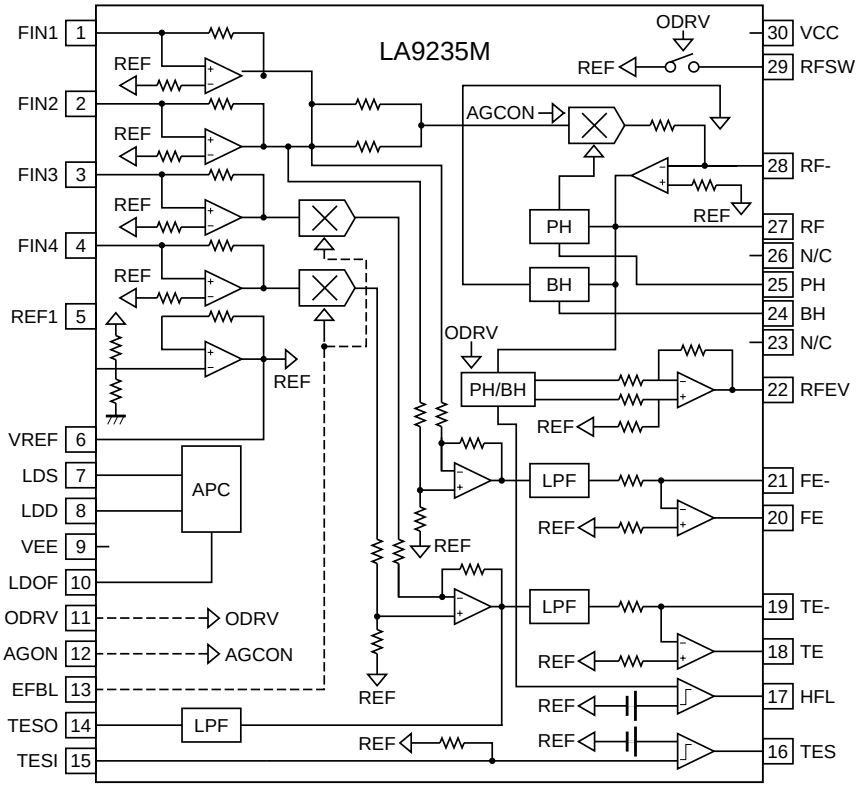


Figure 38-2

FUNCTION TABLE OF IC

IC1 VHiLA9235M/-1: Servo Amp. (LA9235M)



IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E)

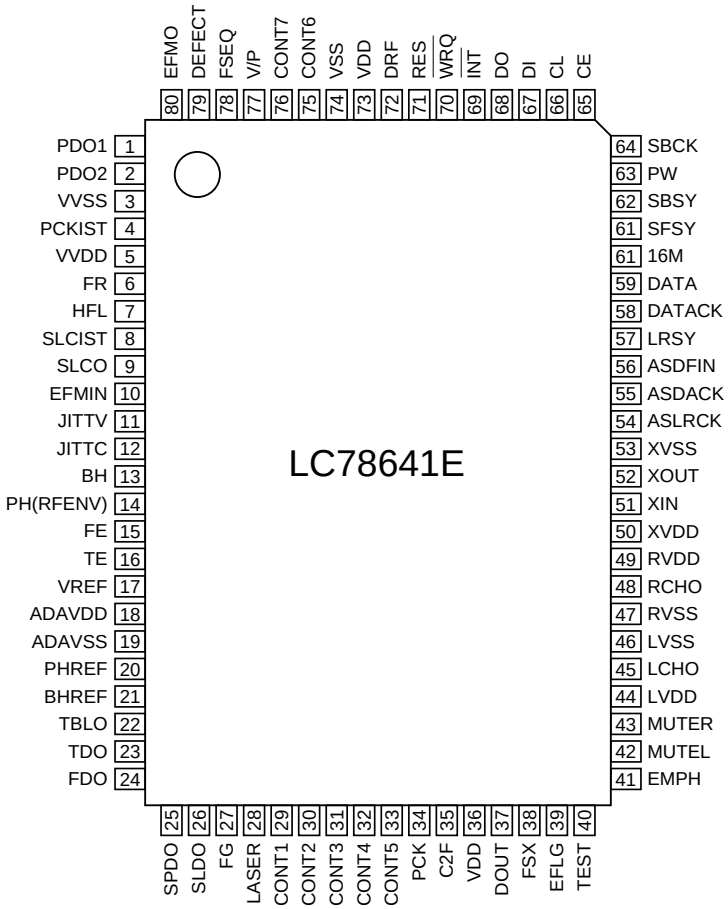


Figure 39 BLOCK DIAGRAM OF IC

IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E) (1/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function		
1	PDO1	Output	–	For PULL	Phase-comparison output terminal for built-in VOC control.	
2	PDO2	Output	–		Phase-comparison output terminal for built-in VOC control. Rough servo : OFF, phase servo : ON.	
3	VVSS	–	–		Ground terminal for built-in VCO.	
4	PCKIST	AI	–		Resistor terminal for setting the PDO output current.	
5	VVDD	–	–		Power terminal for built-in VCO.	
6	FR	AI	–		Resistor terminal for setting the VCO frequency range.	
7	HFL	Input	–	Mirror detection signal input terminal.		
8	SLCIST	AI	–	For slice level control	Resistance connection terminal for current adjustment of SLCO output.	
9	SLCO	Output	–		Control output.	
10	EFMIN	Input	–		EFM signal input terminal.	
11*	JITTV	Output	Unfixed	Jitter detection/monitor terminal.		
12	JITTC	Output	–	Jitter detection/adjustment terminal.		
13	BH	Input	–	BH signal input terminal. A/D input.		
14	PH(RFENV)	Input	–	PH signal or RFENV signal input terminal. A/D input.		
15	FE	Input	–	FE signal input terminal. A/D input.		
16	TE	Input	–	TE signal input terminal. A/D input.		
17	VREF	Input	–	VREF signal input terminal. A/D input.		
18	ADAVDD	–	–	AD for servo, D/A power terminal.		
19	ADAVSS	–	–	AD for servo, D/A ground terminal.		
20*	PHREF	Output	(1/2VDD)	PH reference output terminal. D/A output.		
21*	BHREF	Output	(1/2VDD)	BH reference output terminal. D/A output.		
22	TBLO	Output	(1/2VDD)	Output terminal for tracking balance. D/A output.		
23	TDO	Output	(1/2VDD)	Output terminal for tracking control. D/A output.		
24	FDO	Output	(1/2VDD)	Output terminal for focus control. D/A output.		
25	SPDO	Output	(1/2VDD)	Output terminal for spindle control. D/A output.		
26	SLDO	Output	(1/2VDD)	Output terminal for sled control. D/A output.		
27*	FG	Input	–	FG signal input terminal. (When not used,connect to 0V)		
28	LASER	Output	L	LASER ON/OFF control terminal.		
29	CONT1	In/Output	Input mode	General purpose input/output terminal 1.		Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.
30	CONT2	In/Output	Input mode	General purpose input/output terminal 2.		
31	CONT3	In/Output	Input mode	General purpose input/output terminal 3.		
32	CONT4	In/Output	Input mode	General purpose input/output terminal 4.		
33	CONT5	In/Output	Input mode	General purpose input/output terminal 5.		
34*	PCK	Output	H	Clock monitor terminal for EFM data replay. 4.3218MHz as phase clock.		
35*	C2F	Output	H	C2 flag output terminal.		
36	VDD	–	–	Power terminal of digital system.		
37*	DOUT	Output	L	Output terminal of digital OUT. (EIAJ format)		
38*	FSX	Output	L	Output terminal of synchronous signal of 7.35kHz divided from quartz oscillation.		
39*	EFLG	Output	L	C1,C2 correct monitor terminal.		
40	TEST	Input	–	Input terminal for test. Surely connected to 0V.		
41*	EMPH	In/Output	Input mode	Emphasis terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It is also becomes a emphasis monitor terminal under command control.		
42*	MUTEL	Output	H	Mute output terminal for L channel.		
43*	MUTER	Output	H	Mute output terminal for R channel.		

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC2 VHiLC78641E-1: Servo/Signal Control (LC78641E) (2/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function	
44	LVDD	–	–	L channel	Power terminal for L channel.
45	LCHO	Output	1/2VDD	D/A converter	L channel output terminal.
46	LVSS	–	–		Ground terminal for L channel. Surely connected to 0V.
47	RVSS	–	–	R channel	Ground terminal for R channel. Surely connected to 0V.
48	RCHO	OUTPUT	1/2VDD	D/A converter	R channel output terminal.
49	RVDD	–	–		Power terminal for R channel.
50	XVDD	–	–	For quartz	Power terminal for quartz oscillation.
51	XIN	Input	Oscillation	oscillation	Ground terminal of 16.9344MHz quartz oscillation.
52	XOUT	Output	Oscillation		
53	XVSS	–	–		Ground terminal for quartz oscillation. Surely connected to 0V.
54	ASLRCK	Input	–	For anti	L/R clock input terminal. (When not used,connect to 0V)
55	ASDACK	Input	–	shock mode	Bit clock input terminal. (When not used,connect to 0V)
56	ASDFIN	Input	–		L/R channel data input terminal. (When not used,connect to 0V)
57*	LRSY	Output	L	For digital	L/R clock output terminal.
58*	DATACK	Output	L	data output	Bit clock output terminal.
59*	DATA	Output	L		L/R channel data output terminal.
60*	16M	Output	Clock output	16.9344MHz output terminal.	
61*	SFSY	Output	L	Output terminal of synchronous signal of subcode frame. It drops when subcode stand by.	
62*	SBSY	Output	L	Output terminal of synchronous signal of subcode block.	
63*	PW	Output	L	Output terminal of subcodes P,A,R,S,T,U and W.	
64	SBCK	Input	–	Clock input terminal to read subcode. (When not used,connect to 0V)	
65	CE	Input	–	For	Chip enable signal input terminal.
66	CL	Input	–	microcomputer	Data transmission clock input terminal.
67	DI	Input	–	interface	Data input terminal.
68	DO	Output	L		Data output terminal.
69	INT	Output	H		Interruption signal output terminal.
70	WRQ	Output	H		Interruption signal output terminal.
71	RES	Input	–	Reset input terminal of LC78640. When turning on power, set it at "L".	
72	DRF	Output	L	Focus ON detection terminal.	
73	VDD5V	–	–	Power terminal for microcomputer interface.	
74	VSS	–	–	Ground terminal of digital system. Surely connected to 0V.	
75	CONT6	In/Output	Input mode	General purpose input/output terminal 6.	Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.
76	CONT7	In/Output	Input mode	General purpose input/output terminal 7.	
77*	V/ *P	Output	H	Monitor output terminal for automatic switch of rough servo/phase control. "H" for rough servo, and "L" for phase servo.	
78*	FSEQ	Output	L	Output terminal synchronous signal detection. "H" is output when synchronous signal detected by EFM signal matches synchronous signal internally generated.	
79	DEFECT	In/Output	Input mode	Defect terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It also becomes a defect monitor terminal under command control	
80*	EFMO	Output	Unfixed	EFM signal output terminal.	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Be sure to supply the same potential to each power terminal. (VVDD,ADAVDD,VDD,LVDD,RVDD,XVDD)
Terminal witch is controlled by the power terminal (VDD5V) for a microcomputer interface :
CE (65pin), CL (66pin), DI (67pin), DO (68pin), INT (69pin), WRQ (70pin), RES (71pin), DRF (72pin), CONT6 (75pin), CONT7 (76pin)

IC701 RH-iX0328AWZZ: System Microcomputer (IX0328AW) (1/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
1	VDD	VDD	—	(+) POWER SUPPLY
2*	P37	—	—	GND
3*	P36	S-BUSY	Output	COMMIJNTCATE TO MPEG U–COM
4	P35	T–BTAS	Output	TAPE RECORD BIAS
5	P34	T–T1/T2	Output	TAPE T1/T2 CHANGE
6	P33	REC/PLAY	Output	TAPE REC/PLAY CHANGE
7	P32	RES OUT	Output	CD DSP RESET & MPEG UCOM RESET
8	P31	DRF	Input	CD RF LEVEL DETECTION
9	P30	WRQ	Input	CD DSP WRITE REQUSET
10	RESET	RESET	Input	RESET
11	X2	X2	Output	MAIN CLOCK
12	X1	X1	Input	MAIN CLOCK
13	Vpp/IC	Vpp/IC	—	GND
14*	XT2	XT2	—	OPEN
15	P04	CD TNT	Input	CD DSP INTERRUPT
16	VDD	VDD	—	(+) POWER SUPPLY
17	P27	CD CLK/MCLK	Output	CD DSP CLOCK/MPEG UCOM CLOCK
18	P26	CD ID/MDI	Outout	CD DSP COMMAND/MPEG UCOM COMMA
19	P25	CD DO/MDO	Input	CD DSP CODE Q OUT/MPEG UCOM DATA INPUT
20	P24	CD CE	Output	CD DSP CE OUTPUT
21	P23	CE	Output	CE OUTPUT
22	P22	CLK	Output	CLOCK OUTPUT
23	P21	DT	Output	DATA OUTPUT
24	P20	DO	Output	DATA INPUT
25	AVss	AVSS	—	ANALOG GROUND
26	ANI7 P17	TUN SM M–BUSY	Input Input	TUNER SIGNAL METER INPUT COMMUNJCATE TO MPEGU COM M_BUSY
27	ANI6	NO USE	Input	GND
28	ANI5	SPEANA 2	Input	SPEANA DATA INPUT 16 KHz
29	ANI4	SPEANA 1	Input	SPEANA DATA INPUT 1 KHz
30	ANI3	SPEANA 0	Input	SPEANA DATA INPUT 63 KHz
31-33	ANI2-ANI0	KEY2-KEY0	Input	KEY INPUT
34	AVDD	AVDD	—	ANALOG VDD
35	AVREF	AVREF	—	ANALOG REF VOLTAGE
36	INTP3	SYS STOP	Input	SYSTEM STOP INPUT
37	P02	SPRLY	Output	SPEAKER OUTPUT RELAY CONTROL
38	INTP1	NO USED	Input	GND
39	INTP0	REMOCON	Input	REMOCON INPUT
40	Vss	VSS	—	GROUND VOLTAGE
41	P74	SMUTE	Output	SYSTEM MUTE CONTROL
42	P73	T_SOL_B	Output	TAPE2 SOLENOID CONTROL
43	P72	T_SOL_A	Output	TAPE1 SOLENOID CONTROL
44	P71	T_MOTOR	Output	TAPE MOTOR CONTROL
45	P70	TIMER LED	Output	TIMER LED CONTROL
46	VDD	VDD	—	(+) POWER SUPPLY
47	P127	AC RLY_CONT	Output	AC RELAY CONTROL
48*	P126	SPRLY	Output	SPEAKER OUTPUT RELY CONTROL
49	P125	SP DET	Input	SPEAKER OUTPUT DETDCTION
50	P124	T1 RUN	Input	TAPE1 RUN PULSE INPUT
51	P123	T2 RUN	Input	TAPE2 RUN PULSE INPUT
52	P122	CD CLAMP SW	Intput	CD CHANGER CLAMP SWITCH
53	P121	PLAY SW_A	Input	PLAY SWITCH FOR T1

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC701 RH-iX0328AWZZ: System Microcomputer (IX0328AW) (2/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
54	P120	PLAY SW_B	Input	PLAY SWITCH FOR T2
55	P119	PPA	Input	TAPE2 A–SIDE FULL PROOF
56	P118	FPB	Input	TAPE2 B_SIDE FULL PROOF
57	P117	MIC SW	Input	MIC SWITCH
58	P116	KARAOKE LATCH	Output	KARAOKE LATCH
59	P115	DISTOUT	Output	DISTINATION OUTPUT
60*	FIP39	SPN	Input	TUNER SPAN CHANGE
6*-62*	FIP38-FIP37	NO USE	Input	OPEN
63-66	FIP36-FIP33	P22-P19	Output	FL DISPLAY DRIVER
67-70	FIP32-FIP29 P103-P100	P18-P15 DIST3-DIST0	Output Input	FL DISPLAY DRIVER DISTINATION INPUT
71-78	FIP28-FIP21	P14-P7	Output	FL DISPLAY DRIVER
79	VLOAD	VLOAD	—	FL DRIVER (–) POWER SUPPLY.–30V
80-85	FIP20-FIP15	P6-P1	Output	FL DISPLAY SEGMENT
86*-89*	FIP14-FIP11	—	Input	OPEN
90-100	FIP30-FIP0	G11-G1	IOutput	FL DISPLAY SEGMENT DRIVER

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC3 VHiM63001FP-1: Focus/Tracking/Spin/Slide Driver (M63001FP)

Pin No.	Terminal Name	Function
1	IN2-	CH2 inverted input.
2	IN1A-	CH1 inverted input.
3	IN1B-	CH1 output offset control.
4	OUT1-	CH1 inverted output.
5	OUT1+	CH1 non-inverted output.
6	OUT2-	CH2 inverted output.
7	OUT2+	CH2 non-inverted output.
8-14	GND	GND
15	OUT3+	CH3 non-inverted output.
16	OUT3-	CH3 inverted output.
17	IN3-	CH3 inverted input.
18	VCC1	Power supply 1 (CH1, CH2, CH3)
19	STANDBY	STANDBY signal input.
20	VRFE	CH1-CH4 Reference voltage input.
21	MUTE	Mute signal input (CH6).
22	IN5-	CH5 inverted input.
23	IN5+	CH5 non-inverted input.
24	VCC2	Power supply 2 (CH4).
25	IN4-	CH4 inverted input.
26	OUT4-	CH4 inverted output.
27	OUT4+	CH4 non-inverted output.
28	VCC3	Power supply 3 (CH5).
29-35	GND	GND
36	OUT5+	CH5 non-inverted output.
37	OUT5-	CH5 inverted output.
38	OUT6+	CH6 non-inverted output.
39	OUT6-	CH6 inverted output.
40	VCC4	Power supply 4 (CH6).
41	IN6-	CH6 inverted input.
42	IN6+	CH6 non-inverted input.

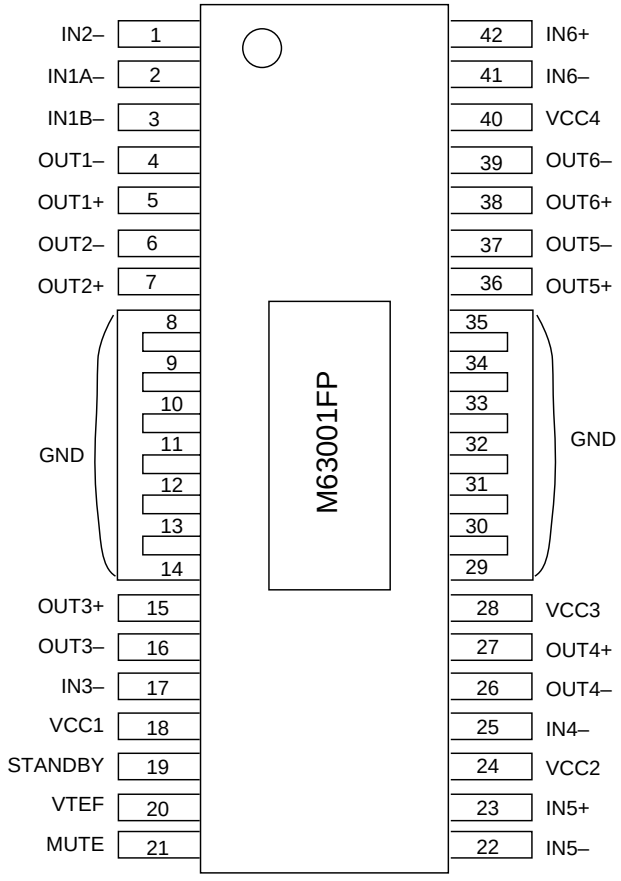


Figure 43 BLOCK DIAGRAM OF IC

IC401 VHiLC75341/-1: Audio Processor (LC75341)

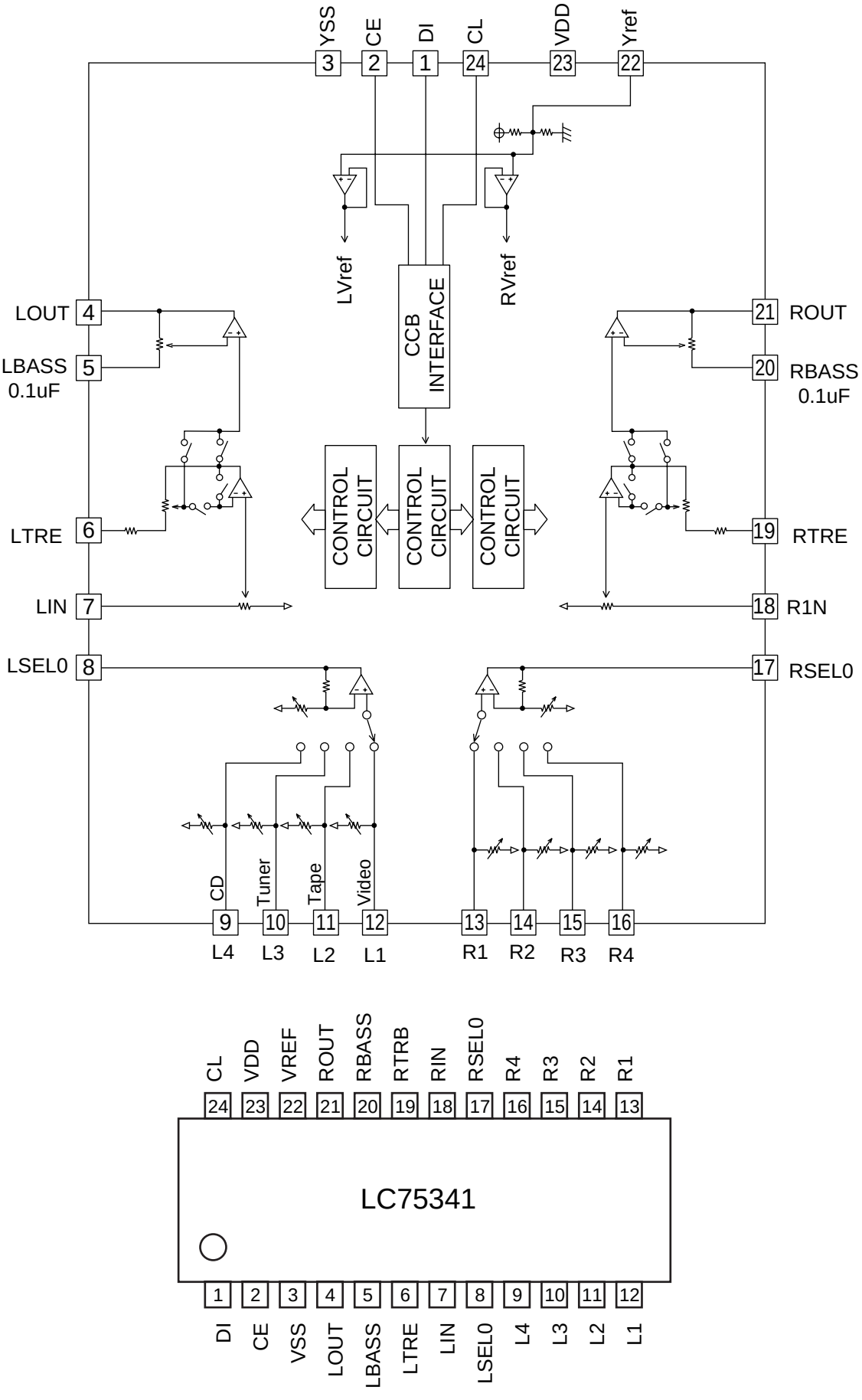
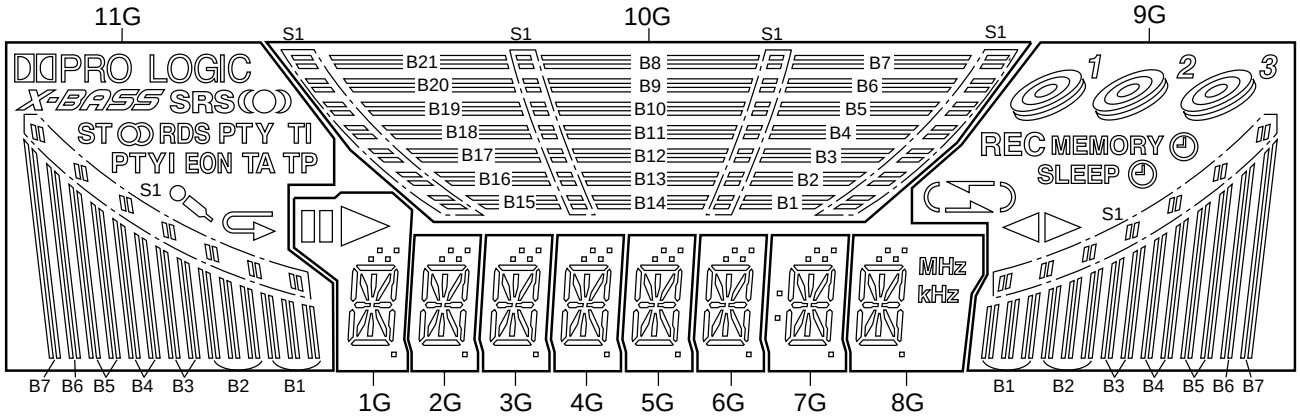
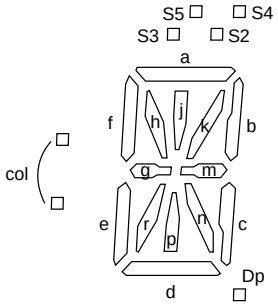


Figure 44 BLOCK DIAGRAM OF IC

FL701 VVKBJ749GNK-1: FL Display





	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	S1	S1	S1	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp
P2	B1	B1	B1	d	d	d	d	d	d	d	d
P3	B2	B2	B2	c	c	c	c	c	c	c	c
P4	B3	B3	B3	n	n	n	n	n	n	n	n
P5	B4	B4	B4	p	p	p	p	p	p	p	p
P6	B5	B5	B5	r	r	r	r	r	r	r	r
P7	B6	B6	B6	e	e	e	e	e	e	e	e
P8	B7	B7	B7	m	m	m	m	m	m	m	m
P9	PRO LOGIC	B8	1	g	g	g	g	g	g	g	g
P10	X-BASS	B9	2		col						
P11	SRS	B10	3	b	b	b	b	b	b	b	b
P12	ST	B11	REC	k	k	k	k	k	k	k	k
P13		B12	MEMORY	j	j	j	j	j	j	j	j
P14	RDS	B13		h	h	h	h	h	h	h	h
P15	PTY	B14		f	f	f	f	f	f	f	f
P16	TI	B15	SLEEP	a	a	a	a	a	a	a	a
P17	TP	B16		S2	S2	S2	S2	S2	S2	S2	S2
P18	TA	B17		S3	S3	S3	S3	S3	S3	S3	S3
P19	PTYI	B18		S4	S4	S4	S4	S4	S4	S4	S4
P20	EON	B19		S5	S5	S5	S5	S5	S5	S5	S5
P21		B20		MHz							
P22		B21		kHz							

Figure 45 FL DISPLAY

— M E M O —

SHARP PARTS GUIDE

MODEL CD-BA150

CD-BA150 Mini Component System consisting of CD-BA150 (mini unit) and CP-BA150 (speaker system).

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

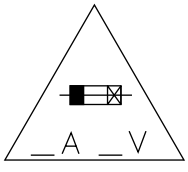
VCC ..... Ceramic type
VCK..... Ceramic type
VCT..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.



CAUTION: FOR CONTINUED PROTECTION AGAINST FIER HAZARD,
REPLACE ONLY WITH SAME TYPE F801,F802 4.0A,
125V / F803 2.0A, 250V FUSES

ATTENTION: POUR ASSURER UNE LONGUE PROTECTION CONTRE
UN INCENDIE, REMPLACER SEULEMENT PAR UN FUSIBLE
DE TYPE F801,F802 4.0A, 125V / F803 2.0A, 250V

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

CD-BA150

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

CD-BA150

INTEGRATED CIRCUITS

IC1	VHILA9235M/-1	J	AQ	Servo Amp.,LA9235M
IC2	VHILC78641E-1	J	AV	Servo/Signal Control,LC78641E
IC3	VHIM63001FP-1	J	AX	Focus/Tracking/Spin/Sled Driver, M63001FP
IC101	VHIAN7345K/-1	J	AM	Playback and Record/Playback Amp.,AN7345K
IC301	VHITA7358AP-1	J	AG	FM Front End,TA7358AP
IC302	VHILC72131/-1	J	AP	PLL (Tuner),LC72131
IC303	VHILA1832S/-1	J	AN	FM IF Det./FM Mpx./AM IF, LA1832S
IC401	VHILC75341/-1	J	AM	Audio Processor,LC75341
IC701	RH-IX0328AWZZ	J	AX	System Microcomputer, IX0328AW
IC702,703	VHIKIA4558P-1	J	AC	Ope Amp.,KIA4558P
IC704	VHIKIA7042AP1	J	AC	Reset,KIA7042AP
IC841	VHIKIA7810AP1	J	AF	Voltage Regulator,KIA7810AP
IC851	VHIKIA7805P-1	J	AF	Voltage Regulator,KIA7805P
IC852	VHIAN78L05/-1	J	AE	Constant Voltage Regulator, AN78L05
IC901	VHISTK40204-1	J	AX	Power AMP.,STK40204

TRANSISTORS

Q1	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q2	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q3	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q101	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q102,103	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
Q104~107	VS2SC1845F/-1	J	AC	Silicon,NPN,2SC1845 F
Q108~111	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q112	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q113	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
Q114	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q302	VSKTC3194Y/-1	J	AD	Silicon,NPN,KTC3194 Y
Q360	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q401,402	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q601~604	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q605,606	VSKTA1271Y/-1	J	AC	Silicon,PNP,KTA1271 Y
Q607	VSKTA1273Y/-1	J	AE	Silicon,PNP,KTA1273 Y
Q608	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q609	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q801	VSKTA1274Y/-1	J	AE	Silicon,PNP,KTA1274 Y
Q831	VSKTC2026//-1	J	AF	Silicon,NPN,KTC2026
Q901~904	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q951	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
Q971	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y

DIODES

D21,22	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D93	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D301,302	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D305	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D601~604	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D607	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D611	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D613~618	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D620,621	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D801	VHDTS6B04GM-1	J	AP	Silicon,TS6B04GM
D802~808	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D851	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D901~903	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D951	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D971	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
LED722	VHP4204SRT7-1	J	AD	LED,Red,4204SRT7
VD301	VHCSVC348S/-1	J	AK	Variable Capacitance,SVC348S
VD302,303	VHCKDV147B/-1	J	AH	Variable Capacitance, KDV147B
ZD61	VHEDZ3R9BSB-1	J	AC	Zener,3.9V,DZ3.9BSB
ZD351	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD601	VHEDZ6R2BSC-1	J	AB	Zener,DZ6.2BSC
ZD801	VHEDZ300BSB-1	J	AB	Zener,30V,DZ300BSB
ZD802	VHEDZ6R2BSA-1	J	AB	Zener,6.2V,DZ6.2BSA
ZD803	VHEDZ130BSB-1	J	AB	Zener,DZ130BSB

FILTERS

BF301	RFILR0008AWZZ	J	AE	Band Pass Filter
CF303	RFILF0124AFZZ	J	AD	FM IF,10.7 MHz
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF

TRANSFORMERS

⚠	PT801	RTRNP0294AWZZ	J	BC	Power
	T301	RCILB0065AWZZ	J		OSC,FM
	T302	RCILI0017AWZZ	J	AB	FM IF
	T303	RCILA0052AWZZ	J	AE	AM Tracking
	T306	RCILB0058AWZZ	J	AC	AM OSC
	T351	RCILI0019AWZZ	J		AM IF

COILS

L61	VP-XHR82K0000	J	AC	0.82 µH
L62	VP-XH2R2K0000	J	AB	2.2 µH,Choke
L103	VP-DH101K0000	J	AB	100 µH,Choke
L104	VP-MK331K0000	J	AB	330 µH,Choke
L312	RCILR0056AWZZ	J		FM RF
L351,352	VP-DH101K0000	J	AB	100 µH,Choke
L601	VP-DH101K0000	J	AB	100 µH,Choke
L920,921	RCILZ0137AFZZ	J	AA	0.29 µH

VIBRATORS

X351	92LCRSTL1425A	J	AF	Crystal,456 kHz
X352	RCRSP0002AWZZ	J	AH	Crystal,4.5 MHz
XL1	92LCRSTL1746AT	J	AH	Crystal,16.9344 MHz
XL701	RCRSP0003AWZZ	J	AH	Crystal,

CAPACITORS

C6	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C7	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C8	VCKYTV1HB104K	J	AB	0.1 µF,50V
C11	RC-EZY474AF0J	J		0.47 µF,6.3V,Electrolytic
C12	VCKYTV1HB104K	J	AB	0.1 µF,50V
C13	VCKYTV1HB103K	J	AA	0.01 µF,50V
C14	VCKYTV1EF334Z	J	AB	0.33 µF,25V
C16	VCCSPA1HL6R0J	J	AA	6 pF,50V
C17	VCKYTV1HB472K	J	AA	0.0047 µF,50V
C18	VCCCTV1HH3R0C	J	AA	3 pF (CH),50V
C19	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C20,21	VCKYTV1HB104K	J	AB	0.1 µF,50V
C22	VCKYTV1HB101K	J	AA	100 pF,50V
C23	VCKYTV1HB473K	J	AA	0.047 µF,50V
C24	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C25	VCKYTV1HB104K	J	AB	0.1 µF,50V
C26	VCKYTV1HB473K	J	AA	0.047 µF,50V
C27	VCKYTV1HB104K	J	AB	0.1 µF,50V
C28	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C29,30	VCKYTV1HB104K	J	AB	0.1 µF,50V
C31	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C34	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C38,39	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C40	VCKYTV1HB152K	J	AA	0.0015 µF,50V
C41	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C42	VCCSTV1HL680J	J	AA	68 pF,50V
C43	VCKYTV1HB152K	J	AA	0.0015 µF,50V
C44	VCKYTV1HB104K	J	AB	0.1 µF,50V
C45	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C46	VCKYTV1EF223Z	J	AA	0.022 µF,25V
C47	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C49,50	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C51	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C52	VCTYPA1CX103K	J	AA	0.01 µF,16V
C53	VCKYTV1HB102K	J	AA	0.001 µF,50V
C54	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C55	VCKYTV1HB103K	J	AA	0.01 µF,50V
C56	VCEAZA0JW337M	J	AC	330 µF,6.3V,Electrolytic
C64	RC-EZY474AF0J	J		0.47 µF,6.3V,Electrolytic
C71	VCKYTV1HB101K	J	AA	100 pF,50V
C72	VCKYTV1HB103K	J	AA	0.01 µF,50V
C73~78	VCKYTV1HB101K	J	AA	100 pF,50V
C80	VCKYTV1HB104K	J	AB	0.1 µF,50V
C81~83	VCKYTV1EF223Z	J	AA	0.022 µF,25V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C101	VCKZPA1HF473Z	J	AA	0.047 µF,50V
C102,103	VCKYMN1HB102K	J	AA	0.001 µF,50V
C104,105	VCKYMN1HB181K	J	AA	180 pF,50V
C106,107	VCKYMN1HB102K	J	AA	0.001 µF,50V
C108	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C112~115	VCKYMN1HB331K	J	AA	330 pF,50V
C116,117	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C118,119	VCTYPA1EX333K	J	AA	0.033 µF,25V
C120,121	VCKYMN1HB561K	J	AA	560 pF,50V
C122,123	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C126,127	VCKYMN1HB271K	J	AA	270 pF,50V
C128,129	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C130,131	VCTYPA1CX223K	J	AA	0.022 µF,16V
C132,133	VCTYMN1CX332K	J	AA	0.0033 µF,16V
C134,135	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C136	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C137	VCTYMN1EF233Z	J		0.023 µF,25V
C138	VCEAZA1AW227M	J	AC	220 µF,10V,Electrolytic
C139	VCEAEA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C140	VCQPKA2AA822J	J	AA	0.0082 µF,100V,Polypropylene
C141	VCQYKA1HM393K	J	AB	0.039 µF,50V,Mylar
C142	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C143	VCKYMN1HB102K	J	AA	0.001 µF,50V
C144	VCKYPA1HB102K	J	AA	0.001 µF,50V
C145	VCKYMN1HB102K	J	AA	0.001 µF,50V
C148	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C301	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C302	VCKYMN1HB102K	J	AA	0.001 µF,50V
C303	VCCCMN1HH100J	J	AA	10 pF (CH),50V
C304	VCTYMN1CY103N	J	AA	0.01 µF,16V
C305	VCCCMN1HH4R7C	J	AA	4.7 pF (CH),50V
C306	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C307	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C308	VCCSMN1HL4R7C	J	AA	4.7 pF,50V
C309	VCKYMN1HB102K	J	AA	0.001 µF,50V
C310	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C311	VCCCMN1HH180J	J	AA	18 pF (CH),50V
C312	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C313	VCCCMN1HH220J	J	AA	22 pF (CH),50V
C314,315	VCTYMN1CX472K	J	AA	0.0047 µF,16V
C316	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C317	VCKYMN1HB102K	J	AA	0.001 µF,50V
C318	VCKYMN1HB101K	J	AA	100 pF,50V
C320	VCKYMN1HB102K	J	AA	0.001 µF,50V
C323	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C324	VCCUMN1HJ8R2D	J	AA	8.2 pF (UJ),50V
C330	VCCUMN1HJ150J	J	AA	15 pF (UJ),50V
C331	VCKZPA1HF473Z	J	AA	0.047 µF,50V
C332	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C334	VCCUMN1HJ270J	J	AA	27 pF (UJ),50V
C335	VCKYMN1HB561K	J	AA	560 pF,50V
C338	VCKYMN1HB102K	J	AA	0.001 µF,50V
C342	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C350,351	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C352	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C353,354	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C355	VCCSMN1HL220J	J	AA	22 pF,50V
C356	VCKYMN1HB102K	J	AA	0.001 µF,50V
C357	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C358	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C361	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C362	VCEAZA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C363	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C364	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C365	VCKZPA1HF223K	J		0.022 µF,50V
C366	VCKYMN1HB102K	J	AA	0.001 µF,50V
C367,368	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C369	VCCUMN1HJ270J	J	AA	27 pF (UJ),50V
C370~372	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C373,374	VCTYPA1CX153K	J	AA	0.015 µF,16V
C380	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C381	VCCCMN1HH120J	J	AA	12 pF (CH),50V
C382	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C384	VCKYMN1HB102K	J	AA	0.001 µF,50V
C385	VCTYMN1CY103N	J	AA	0.01 µF,16V
C386	VCKYMN1HB331K	J	AA	330 pF,50V
C387	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C391	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C392	VCKYMN1HB102K	J	AA	0.001 µF,50V
C393	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C394	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C395	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C396	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C397	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C398	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C399	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C401,402	VCKYMN1HB102K	J	AA	0.001 µF,50V
C403	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C404	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C405	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C406	VCEAZA1HW226M	J	AB	22 µF,50V,Electrolytic
C407,408	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C409~412	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C413,414	VCTYMN1CX272K	J	AA	0.0027 µF,16V
C417~428	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C429,430	VCKYMN1HB391K	J	AA	390 pF,50V
C601	VCCSPA1HL271J	J	AA	270 pF,50V
C602	VCTYMN1CX272K	J	AA	0.0027 µF,16V
C603,604	VCTYMN1CX682K	J	AA	0.0068 µF,16V
C605	VCKYMN1HB271K	J	AA	270 pF,50V
C606	VCTYMN1CX272K	J	AA	0.0027 µF,16V
C607,608	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C609	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C610	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C611	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C612~614	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C616	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C617,618	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C620	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C621	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C622	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C623	VCCCMN1HH180J	J	AA	18 pF (CH),50V
C624	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C625	VCEAZA1AW227M	J	AC	220 µF,10V,Electrolytic
C626	VCEAEA1HW104M	J	AB	0.1 µF,50V,Electrolytic
C627	VCTYMN1CY103N	J	AA	0.01 µF,16V
C628	VCEAEA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C629	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C630	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C631	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C632	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C633	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C801,802	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C803,804	VCEAZW1HW228M	J	AH	2200 µF,50V,Electrolytic
C805,806	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C807	VCEAZA1EW338M	J		3300 µF,25V,Electrolytic
C808,809	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic
C810	VCEAZV1HW227M	J	AD	220 µF,50V,Electrolytic
C811,812	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C813	VCEAZA1VW107M	J	AC	100 µF,35V,Electrolytic
C831	VCEAZA1EW227M	J	AC	220 µF,25V,Electrolytic
C832	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C833	VCEAZA1EW226M	J	AB	22 µF,25V,Electrolytic
C834	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C841,842	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C843	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C851	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C852	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C853,854	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C855	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C901,902	VCCSPA1HL221J	J	AA	220 pF,50V
C903,904	VCCSPA1HL150J	J	AA	15 pF,50V
C905,906	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C907,908	VCKZPA1HF223Z	J	AA	0.022 µF,50V
C909,910	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic
C911	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C915,916	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C917	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C935,936	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C971	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C972	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic

RESISTORS

	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory
	VRS-TV2AB000J	J	AA	0 ohm,Jumper,1.25×2mm,Green
R3	VRS-TV2AB104J	J	AA	100 kohm,1/10W
R4	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R5	VRS-TV2AB393J	J	AA	39 kohms,1/10W
R6	VRS-TV2AB273J	J	AA	27 kohms,1/10W
R7	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W
R8	VRS-TV2AB331J	J	AA	330 ohms,1/10W
R10	VRS-TV2AB273J	J	AA	27 kohms,1/10W
R11	VRS-TV2AB123J	J	AA	12 kohms,1/10W

CD-BA150

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R12,13	VRS-TV2AB681J	J	AA	680 ohms,1/10W
R14	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R15	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R16	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R17	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R19	VRD-ST2CD470J	J	AA	47 ohms,1/6W
R20	VRS-TV2AB221J	J	AA	220 ohms,1/10W
R21,22	VRS-TV2AB471J	J	AA	470 ohms,1/10W
R25	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R35	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R38	VRD-ST2CD271J	J	AA	270 ohms,1/6W
R39	VRD-ST2CD471J	J	AA	470 ohms,1/6W
R40	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R42	VRS-TV2AB124J	J	AA	120 kohms,1/10W
R43	VRS-TV2AB224J	J	AA	220 kohms,1/10W
R44	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R45	VRS-TV2AB122J	J	AA	1.2 kohms,1/10W
R46	VRS-TV2AB102J	J	AA	1 kohm,1/10W
R47	VRD-ST2EE3R3J	J	AA	3.3 ohms,1/4W
R48	VRS-TV2AB682J	J	AA	6.8 kohms,1/10W
R50	VRS-TV2AB470J	J	AA	47 ohms,1/10W
R51~54	VRS-TV2AB683J	J	AA	68 kohms,1/10W
R55,56	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R58	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R71~78	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R79	VRS-TV2AB155J	J	AA	1.5 Mohms,1/10W
R80	VRD-ST2CD105J	J	AA	1 Mohm,1/6W
R81,82	VRS-TV2AB222J	J	AA	2.2 kohms,1/10W
R83,84	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R94,95	VRS-TV2AB103J	J	AA	10 kohm,1/10W
R101,102	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R103	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R104,105	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R106,107	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R108,109	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R110	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R111,112	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R113	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R114,115	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R116,117	VRD-ST2CD560J	J	AA	56 ohms,1/6W
R118,119	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R120,121	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R122,123	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R124,125	VRD-MN2BD333J	J	AA	33 kohms,1/8W
R126	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R127~128	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R129,130	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R131,132	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R133,134	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R135,136	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R137	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R138	VRD-ST2CD153J	J	AA	15 kohms,1/6W
R139	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R140	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R141	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R142,143	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R144	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R145	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R146	VRD-RT2HD820J	J	AA	82 ohms,1/2W
R147	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R148	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R149	VRD-ST2CD4R7J	J	AA	4.7 ohms,1/6W
R157	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R302	VRD-MN2BD100J	J	AA	10 ohm,1/8W
R309	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R311	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R313	VRD-MN2BD333J	J	AA	33 kohms,1/8W
R314	VRD-ST2CD220J	J	AA	22 ohms,1/6W
R315	VRD-MN2BD154J	J	AA	150 kohms,1/8W
R316	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R319	VRD-ST2CD225J	J	AA	2.2 Mohms,1/6W
R322	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R323	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R325	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R327	VRD-MN2BD330J	J	AA	33 ohms,1/8W
R336	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R350	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
R351	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R352	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R353	VRD-MN2BD271J	J	AA	270 ohms,1/8W
R355	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R356	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R357	VRD-ST2CD474J	J	AA	470 kohms,1/6W
R358	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R359	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R360	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R361~365	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R370	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R372~374	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R375	VRD-ST2CD471J	J	AA	470 ohms,1/6W
R376	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R377	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R378	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R379	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R380	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R381	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R383	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R384	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R385	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R386	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R387	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R388	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R391,392	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R393	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R395	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R401,402	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R403,404	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R407	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R408	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R409,410	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R415,416	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R417,418	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R419,420	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R421,422	VRD-MN2BD273J	J	AA	27 kohms,1/8W
R423,424	VRD-ST2CD474J	J	AA	470 kohms,1/6W
R425	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R601	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R602	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R603	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R604	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R605	VRD-MN2BD563J	J	AA	56 kohms,1/8W
R606	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R607	VRD-MN2BD333J	J	AA	33 kohms,1/8W
R608	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R609	VRD-MN2BD474J	J	AA	470 kohms,1/8W
R610	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R611	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R612	VRD-ST2CD105J	J	AA	1 Mohm,1/6W
R613	VRD-MN2BD824J	J	AA	820 kohms,1/8W
R614	VRD-ST2CD394J	J	AA	390 kohms,1/6W
R615	VRD-MN2BD154J	J	AA	150 kohms,1/8W
R616	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R617	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R618	VRD-MN2BD224J	J	AA	220 kohms,1/8W
R619	VRD-ST2CD225J	J	AA	2.2 Mohms,1/6W
R620	VRD-MN2BD184J	J	AA	180 kohms,1/8W
R621	VRD-MN2BD330J	J	AA	33 ohms,1/8W
R622	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R623,624	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R625~627	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R628	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R629	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R632~635	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R636	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R637	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R638	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R640	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R642	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R643,644	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R645	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R646~648	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R649	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R650	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R651,652	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R653	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R654	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R655	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R656	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R657	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R658	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R659	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R660	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R661	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R662	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R663~665	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R666	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R667,668	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R669,670	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R671	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R672	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R673~675	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R676	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R678~694	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R695~697	VRD-ST2CD681J	J	AA	680 ohms,1/6W
R698~700	VRD-ST2CD821J	J	AA	820 ohms,1/6W
R701~703	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R704	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R705,706	VRD-ST2CD152J	J	AA	1.5 kohms,1/6W
R707	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R708	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R709,710	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R711	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R712,713	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
R714	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R715	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R716	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R717	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R718	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R719	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R720	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R721	VRD-ST2CD183J	J	AA	18 kohms,1/6W
R722	VRD-ST2CD333J	J	AA	33 kohms,1/6W
R723	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R724	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R725	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R801,802	VRD-ST2EE223J	J	AA	22 kohms,1/4W
R803	VRS-VV3DA681J	J	AC	680 ohms,2W
R804	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R805	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R806	VRD-ST2CD100J	J	AA	10 ohm,1/6W
R807	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R831	VRD-RT2HD3R3J	J	AA	3.3 ohms,1/2W
R832	VRD-RT2HD330J	J	AA	33 ohms,1/2W
R833	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R841	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R842	VRD-RT2HD3R3J	J	AA	3.3 ohms,1/2W
R851	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R901,902	VRD-ST2CD563J	J	AA	56 kohms,1/6W
R903,904	VRD-ST2CD821J	J	AA	820 ohms,1/6W
R905,906	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R907,908	VRN-VV3AAR10J	J		0.1 ohm,1W
R909,910	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R911,912	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R913~915	VRD-ST2CD563J	J	AA	56 kohms,1/6W
R916,917	VRD-ST2EE4R7J	J	AA	4.7 ohms,1/4W
⚠ R918,919	VRG-ST2EC101J	J	AB	100 ohm,1/4W,Fusible
R920	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R931,932	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R933,934	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R951,952	VRD-RT2HD331J	J	AA	330 ohms,1/2W
R953,954	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R971	VRD-RT2HD102J	J	AA	1 kohm,1/2W
R972	VRD-ST2CD683J	J	AA	68 kohms,1/6W
R973	VRD-ST2CD153J	J	AA	15 kohms,1/6W
R975	VRD-RT2HD4R7J	J	AA	4.7 ohms,1/2W

OTHER CIRCUITRY PARTS

BI101/CNS101	QCNWN1547AWZZ	J		Connector Ass'y,3/3Pin
BI102/CNS102	QCNWN1548AWZZ	J		Connector Ass'y,7/6Pin
BI402/CNS402	QCNWN1561AWZZ	J	AF	Connector Ass'y,5Pin
BI701/CNS701	QCNWN1562AWZZ	J	AH	Connector Ass'y,10/10Pin
CNP1	QCNCM704GAWZZ	J	AC	Plug,7Pin
CNP2	QCNCM704HAFZZ	J	AC	Plug,8Pin
CNP3	92LCONE6P53253	J	AC	Plug,6Pin
CNP3A	92LCONE6P53254	J	AC	Plug,6Pin
CNP4	QCNCM705FAFZZ	J	AB	Plug,6Pin
CNP11	92LCONE5P53254	J	AB	Plug,5Pin
CNP12	92LCONEAP53254	J	AD	Plug,10Pin
CNP301	92LCONE3P5268	J	AC	Plug,3Pin
CNP401	QCNCWZG23AWZZ	J	AK	Plug,23Pin
CNP702	QCNCWZF23AWZZ	J	AK	Plug,23Pin
CNP703	QCNCWZF13AWZZ	J		Plug,13Pin
CNP801	QCNCM049BAWZZ	J	AC	Plug,2Pin
CNP971	92LCONE2P53253	J	AB	Plug,2Pin
CNS1A/B	QCNWN1537AWZZ	J	AG	Connector Ass'y,7/7Pin
CNS2A/B	QCNWN1538AWZZ	J	AG	Connector Ass'y,8/8Pin
CNS3A/B	QCNWN1539AWZZ	J	AE	Connector Ass'y,6/6Pin
CNS802	QCNCM035HAWZZ	J	AB	Plug,8Pin
CNS951	QCNCW012EAWZZ	J	AC	Plug,5Pin
CNS971	QCNWN1389AWZZ	J	AC	Connector Ass'y 2Pin
⚠ F801,802	92LFUSET402D	J		Fuse,4A/125V
⚠ F803	92LFUSET202D	J	AD	Fuse,2A/250V
FC701	QCNWN1564AWZZ	J	AG	Flat Cable,23Pin
FC702	QCNWN1544AWZZ	J	AE	Flat Cable,13Pin
FL701	VVKBJ749GNK-1	J	BD	FL Display
FW951	QCNWN1563AWZZ	J		Connector Ass'y,5Pin
JK951	QJAKM0004AWZZ	J	AK	Jack,Headphones
LG901,902	QLUGP0001AWZZ	J	AC	Lug
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
M3	92LTWMEN7E6Y	J		Motor with Worm Pulley [T/T Up/Down Loading]
M901	RMOTV0027AWZZ	J	AM	Motor,Air Cooling Fan
RL951	RRLYD0014AWZZ	J	AK	Relay
RX701	VHLN63H380A-1	J	AK	Remote Sensor,N63H380A
SO401	QSOCJ0219AWZZ	J	AD	Jack,Video/AUX
SO801	QSOCA0209AWZZ	J	AH	Socket,AC Input
SO901	QTANA0417AWZZ	J	AE	Terminal,Speaker
SW1	SWMPU10780MLB	J		Switch,Push Type [Open/Close]
SW2	SWMPU11470MLB	J		Switch,Push Type [Clamp]
SW3	SWMPU11470MLB	J		Switch,Push Type [Disc Number]
SW4	QSW-F9001AW01	J	AD	Switch,Leaf Type [Pickup In]
SW601	QSW-K0009AWZZ	J		Switch,Key Type [POWER]
SW602	QSW-K0009AWZZ	J		Switch,Key Type [CLOCK]
SW603	QSW-K0009AWZZ	J		Switch,Key Type [TIMER/SLEEP]
SW609	QSW-K0009AWZZ	J		Switch,Key Type [DISC SKIP]
SW610	QSW-K0009AWZZ	J		Switch,Key Type [OPEN/CLOSE]
SW611	QSW-K0009AWZZ	J		Switch,Key Type [DIMMER]
SW612	QSW-K0009AWZZ	J		Switch,Key Type [X-BASS/DEMO]
SW613	QSW-K0009AWZZ	J		Switch,Key Type [EQUALIZER]
SW614	QSW-K0009AWZZ	J		Switch,Key Type [VOLUME UP]
SW615	QSW-K0009AWZZ	J		Switch,Key Type [VOLUME DOWN]
SW616	QSW-K0009AWZZ	J		Switch,Key Type [CD]
SW617	QSW-K0009AWZZ	J		Switch,Key Type [TAPE]
SW618	QSW-K0009AWZZ	J		Switch,Key Type [TUNING/TIME DOWN]
SW619	QSW-K0009AWZZ	J		Switch,Key Type [MEMORY/SET]
SW620	QSW-K0009AWZZ	J		Switch,Key Type [Rewind]
SW621	QSW-K0009AWZZ	J		Switch,Key Type [Fast Forward]
SW622	QSW-K0009AWZZ	J		Switch,Key Type [PLAY/REPEAT]
SW623	QSW-K0009AWZZ	J		Switch,Key Type [STOP]
SW625	QSW-K0009AWZZ	J		Switch,Key Type [REC/PAUSE]
SW626	QSW-K0009AWZZ	J		Switch,Key Type [TUNING/TIME UP]
SW627	QSW-K0009AWZZ	J		Switch,Key Type [VIDEO/AUX]
SW628	QSW-K0009AWZZ	J		Switch,Key Type [TUNER (BAND)]
WT601	QCNCW012EAWZZ	J	AC	Plug,5Pin

CD MECHANISM PARTS

301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0080AWZZ	J	AC	Rail,Guide
304	NSFTM0020AWFW	J	AD	Shaft,Guide
305	92LM-CUSN1524A	J	AC	Cushion
306	92LHPC1LXASY	J	BD	Pickup Unit Ass'y
306- 1	————		—	Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	XBSSD26P06000	J	AA	Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	LX-WZ1070AFZZ	J	AA	Washer,ø1.5×ø3.8×0.25mm
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
SW4	QSW-F9001AW01	J	AD	Switch,Leaf Type [Pickup In]

CD-BA150

CABINET PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
201	92LCAB3283AASY	J		Front Cabinet Ass'y
201- 1	————		—	Front Panel (Not Replacement Item)
201- 2	GDORF0074AWSA	J	AE	Holder,Cassette,Tape 1
201- 3	GDORF0075AWSA	J	AE	Holder,Cassette,Tape 2
201- 4	GCOVA1251AWSA	J	AH	Cover,Cassette,Tape 1
201- 5	GCOVA1252AWSA	J	AH	Cover,Cassette,Tape 2
201- 6	HDECQ0521AWSA	J	AD	Panel,Cassette,Tape 1
201- 7	HDECQ0522AWSA	J	AD	Panel,Cassette,Tape 2
201- 8	HDECQ0520AWSA	J	AK	Panel,Amp.
201-10	JKNBZ0649AWSA	J	AF	Button,Volume
201-11	JKNBZ0648AWSA	J	AG	Button,Center Operation
201-12	JKNBZ0657AWSA	J	AF	Button,Power/Clock
201-13	JKNBZ0658AWSA	J	AF	Button,Function,A
201-14	JKNBZ0659AWSA	J	AF	Button,Function,B
201-15	JKNBZ0660AWSA	J	AF	Button,Tuning
201-16	JKNBZ0661AWSA	J	AE	Button,Dimmer
201-20	GCOVA1258AWSA	J	AB	Cover,LED,C
201-21	MLIFP0008AWZZ	J	AD	Damper
201-22	MSPRD0092AWFJ	J	AB	Spring,Cassette,Tape 1
201-23	MSPRD0093AWFJ	J	AB	Spring,Cassette,Tape 2
201-24	92LBADGE1671A	J	AC	Badge,SHARP
201-25	JKNBZ0650AWSA	J	AF	Button,Disc/X-BASS
202	92LCAB3283BASY	J		Side Panel Ass'y,Left
202- 1	————		—	Side Panel,Left (Not Replacement Item)
202- 2	PCUSG0022AWZZ	J	AB	Cushion,Leg
203	92LCAB3283CASY	J		Side Panel Ass'y,Right
203- 1	————		—	Side Panel,Right (Not Replacement Item)
203- 2	PCUSG0022AWZZ	J	AB	Cushion,Leg
204	92LCOV3303AASY	J		CD Tray Cover Ass'y
204- 1	————		—	Cover,CD Tray (Not Replacement Item)
204- 2	GCOVA1254AWSA	J	AE	Cover,CD Tray Panel,Left
204- 3	GCOVA1255AWSA	J	AE	Cover,CD Tray Panel,Right
205	GCAB-1184AWSA	J	AP	Top Cabinet
206	GITAR0539AWSA	J	AH	Rear Panel [For U.S.A.]
206	GITAR0540AWSA	J		Rear Panel [For Canada]
206	GITAR0541AWSA	J		Rear Panel [For Central America/Mexico]
208	LANGK0110AWFW1	J	AD	Support,Cassette Lock,Tape 1
209	LANGK0111AWFW1	J	AD	Support,Cassette Lock,Tape 2
210	LANGK0192AWFW	J	AD	Bracket,Fan Support
213	LCHSM0094AWFW	J	AP	Main Chassis
214	LHLDZ1241AWZZ	J	AE	Holder,FL Display
219	MLOKC0003AWZZ	J	AD	Lock Lever,Cassette,Tape 1
220	MLOKC0004AWZZ	J	AD	Lock Lever,Cassette,Tape 2
221	MSPRD0109AWFJ	J	AB	Spring,Cassette Lock,Tape 1
222	MSPRD0110AWFJ	J	AB	Spring,Cassette Lock,Tape 2
223	NFANP0001AWZZ	J	AD	Rotary Fan
224	92LPT0331105	J	AM	Table Loading
225	PCUSG0022AWZZ	J	AB	Cushion,Leg
226	PRDAR0148AWFW	J	AR	Heat Sink,Main
230	QCNWN1615AWZZ	J	AC	Lug Wire
⚠231	QFSHD0001AWZZ	J	AB	Holder,Fuse
232	92LBE241414	J	AD	Belt
233	92LCSPR1431C	J	AA	Spring,Ring
234	92LEVA0330702	J		Velvet Carpet,Chassis
235	92LMAG0104302	J		Magnet
236	92LMT0304302	J		Plate,Metal
237	92LNBAND1318A	J	AA	Nylon Band,80mm
238	92LNM0305401	J		Velvet Carpet
239	92LPT0303002	J	AB	Roller
240	92LPT0304303	J	AB	Lever,Stop
241	92LPT0304304	J		Stopper
242	92LPT0304305	J	AE	Lever,Lock
243	92LPT0304306	J		Stabilizer
244	92LPT0304307	J	AC	Support,Cam
245	92LPT0304308	J		Lock Gear Pin
246	92LPT0304309	J		Cap,Pulley Stopper
247	92LPT0305413	J		Cam Gear Lower
248	92LPT0309506	J	AD	Gear,Turntable Drive
249	92LPT0309507	J	AD	Gear,Open/Close Drive
250	92LPT0309508	J	AD	Gear,Planet
251	92LPT0309509	J	AD	Gear,Drive
252	92LPT0309510	J	AE	Gear,Pulley
253	92LPT0309511	J	AD	Gear,Middle
254	92LPT0311101	J	AB	Lever,Clamp
255	92LPT0311102	J	AC	Lever,Disc
256	92LPT0312005	J		Gear,Cam
257	92LPT0320201	J	AE	Support,Stabilizer
258	92LPT0330301	J	AU	Chassis,Loading
259	92LPT0330803	J	AK	CD,Chassis
260	92LPT0331003	J	AT	Chassis,Slide
262	92LSP0304303	J		Spring,Stopper
263	92LSP0304305	J	AB	Spring,Lock
264	92LSP0304306	J		Spring,Lock Gear
267	LANGK0184AWFW	J	AG	Bracket,Tuner PWB
268	KMECB0011AWZZ	J	BH	Tape Mechanism Ass'y
269	PSHEZ0069AWZZ	J		Bracket,PWB Sheet
270(SW1)	SWMPU10780MLB	J		Switch,Push Type [Open/Close]
271(SW2)	SWMPU11470MLB	J		Switch,Push Type [Clamp]
272(SW3)	SWMPU11470MLB	J		Switch,Push Type [Disc Number]
273(M3)	92LTWMEN7E6Y	J		Motor with Worm Pulley [T/T Up/Down Loading]
601	XBBSD20P04000	J	AA	Screw,ø2×4mm
604	XEBSF30P12000	J	AA	Screw,ø3×12mm
605	XESSD30P10000	J	AA	Screw,ø3×10mm
606	XHBSD26P04000	J	AA	Screw,ø2.6×4mm
607	XJBSD30P12000	J	AA	Screw,ø3×12mm
608	XJBSD30P10000	J	AA	Screw,ø3×10mm
609	XJBSD30P14000	J	AA	Screw,ø3×14mm
610	XJBSF30P10000	J	AA	Screw,ø3×10mm
611	XJSSD30P10000	J	AA	Screw,ø3×10mm
612	LX-HZ0009AWFD	J	AC	Screw,Special
613	LX-HZ0169AFFD	J	AA	Screw,Special
614	LX-JZ0010AFFD	J	AA	Screw,Special
615	XEBSD30P10000	J	AA	Screw,ø3×10mm
616	LX-BZ2222AXZZ	J		Screw,Special
617	LX-JZ0004AWFD	J	AA	Screw,ø3×12mm
618	92LSC0308MBZI	J	AB	Screw,ø3×8mm
619	92LSC0308RBZI	J		Screw,ø3×8mm

PACKING PARTS (Except for U.S.A.)

SPAKA0235AWZZ	J		Packing Add.,Left/Right
SPAKC0920AWZZ	J		Packing Case [For U.S.A.]
SPAKC0921AWZZ	J		Packing Case [For Canada]
SPAKC0922AWZZ	J		Packing Case [For Central America/Mexico]
SPAKP0013AWZZ1	J	AC	Polyethylene Bag,Unit
92LBAG1460C1	J	AB	Polyethylene Bag,Accessories
92L411-0075	J		Polyethylene Bag,Speaker
92L412-0133	J		Packing Add.,Speaker
92L416-0068	J		Layer Pad

ACCESSORIES (Except for U.S.A.)

QACCD0015AWOO	J		AC Power Supply Cord [For Canada]
QACCD0020AWZZ	J	AN	AC Power Supply Cord [Except for Canada]
QANTL0007AWZZ	J	AK	AM/FM Loop Antenna
TINSE0279AWZZ	J	AD	Operation Manual [For U.S.A.]
TINSK0097AWZZ	J	AF	Operation Manual [For Canada]
TINSZ0501AWZZ	J		Operation Manual [For Central America/Mexico]
TINSZ0502AWZZ	J	AD	Quick Guide [U.S.A.Only]
TLABR1088AWZZ	J	AB	Label,Bar Code
TLABZ0669AWZZ	J		Label,Feature,Tape 1
TLABZ0670AWZZ	J		Label,Feature,Tape 2
RRMCG0219AWSA	J	AR	Remote Control
GFTAB1022AWSB	J	AK	Battery Lid,Remote Control

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1~4	92LPWB3283MANS	J	—	Main/Display/Headphones/ Socket (Combined Ass'y)
PWB-B	92LPWB3303CDUS	J	—	CD Servo
PWB-C	QPWBF0027AWZZ	J	AD	CD Motor (PWB Only)
PWB-D	————		—	Tape Mechanism
PWB-E	92LPC99C017	J		CD Loading Motor (PWB Only)

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

OTHER SERVICE PARTS

	UDSKA0004AFZZ	J	AZ	CD Pickup Lens Cleaner

CP-BA150

SPEAKER BOX PARTS

901	92L126-0009	J	BA	Front Panel Ass'y,Left
902	92L126-0010	J	BA	Front Panel Ass'y,Right
903	92L121-0178	J	AP	Net Frame Ass'y
904	92L051-0079	J		Speaker Box Ass'y,Left
905	92L051-0085	J		Speaker Box Ass'y,Right
907	92L394-0056	J	AC	Foot Cushion
908	92L394-0055	J	AC	Port Cushion
909	92L351-0349	J		Label,Specifications
910	VSP0051TBN46A	J	AQ	Tweeter
911	VSPA010WB13CA	J		Woofer
912	92L319-0027	J	AE	Catching Holder
913	92L372-0109	J		Screw,ø3×10mm
914	92L372-0110	J		Screw,ø4×16mm
915	92L122-0048	J		Speaker Cord Ass'y (With Capacitor)

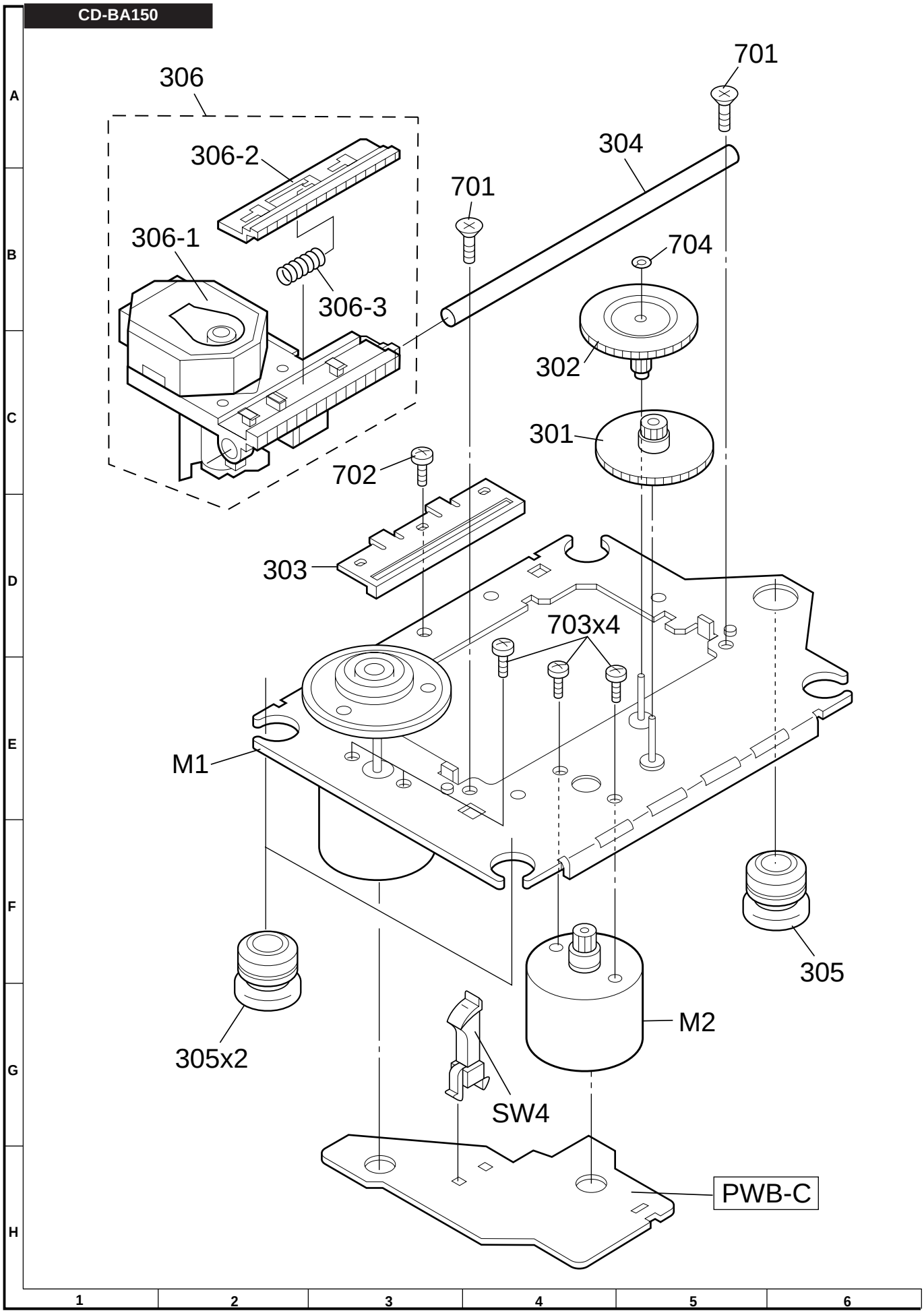
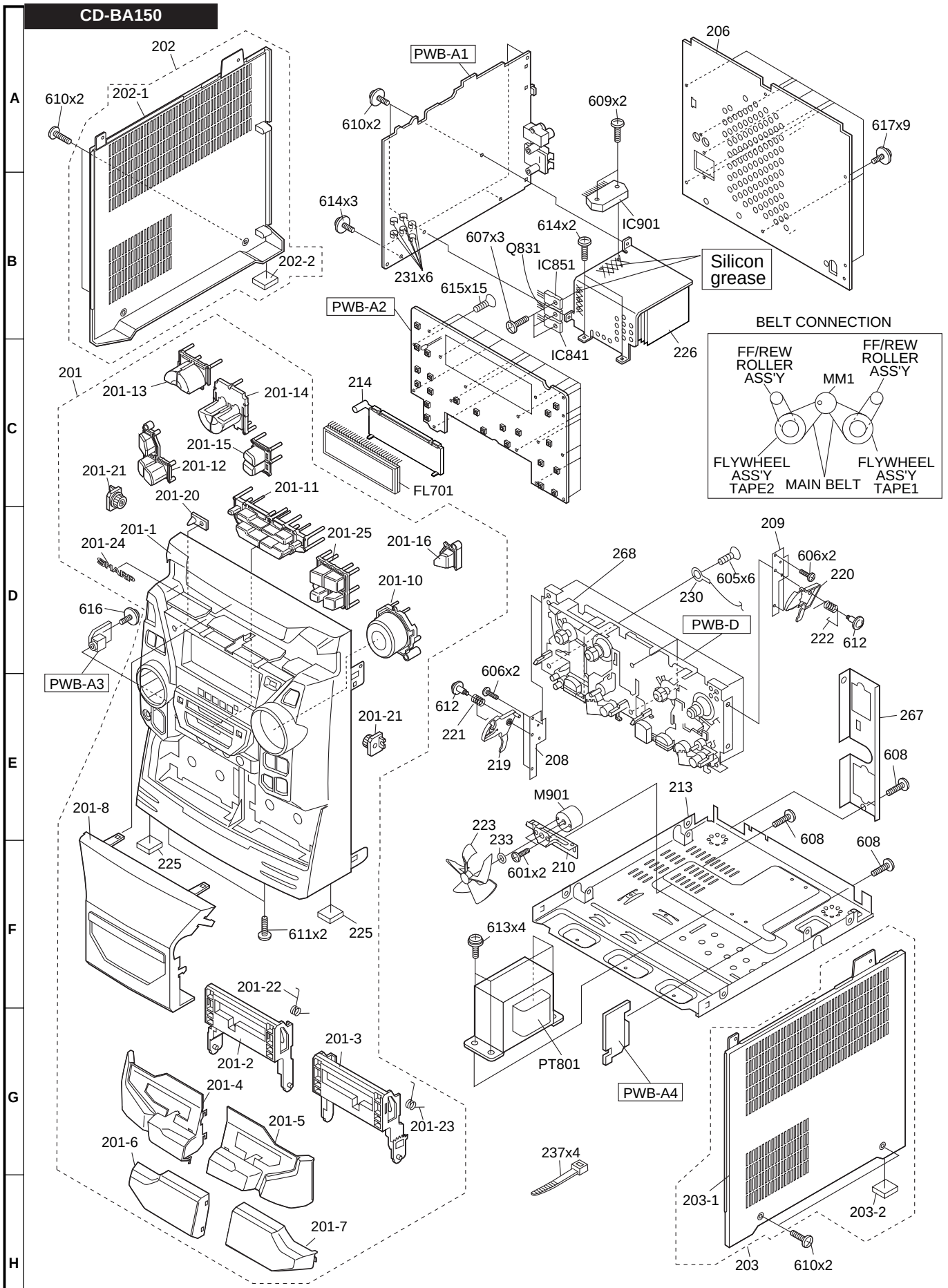


Figure 7 CD MECHANISM EXPLODED VIEW



Note: Only tape mechanism assembly and consumable parts are supplied for replacement purposes.

Figure 8 CABINET EXPLODED VIEW (1/2)

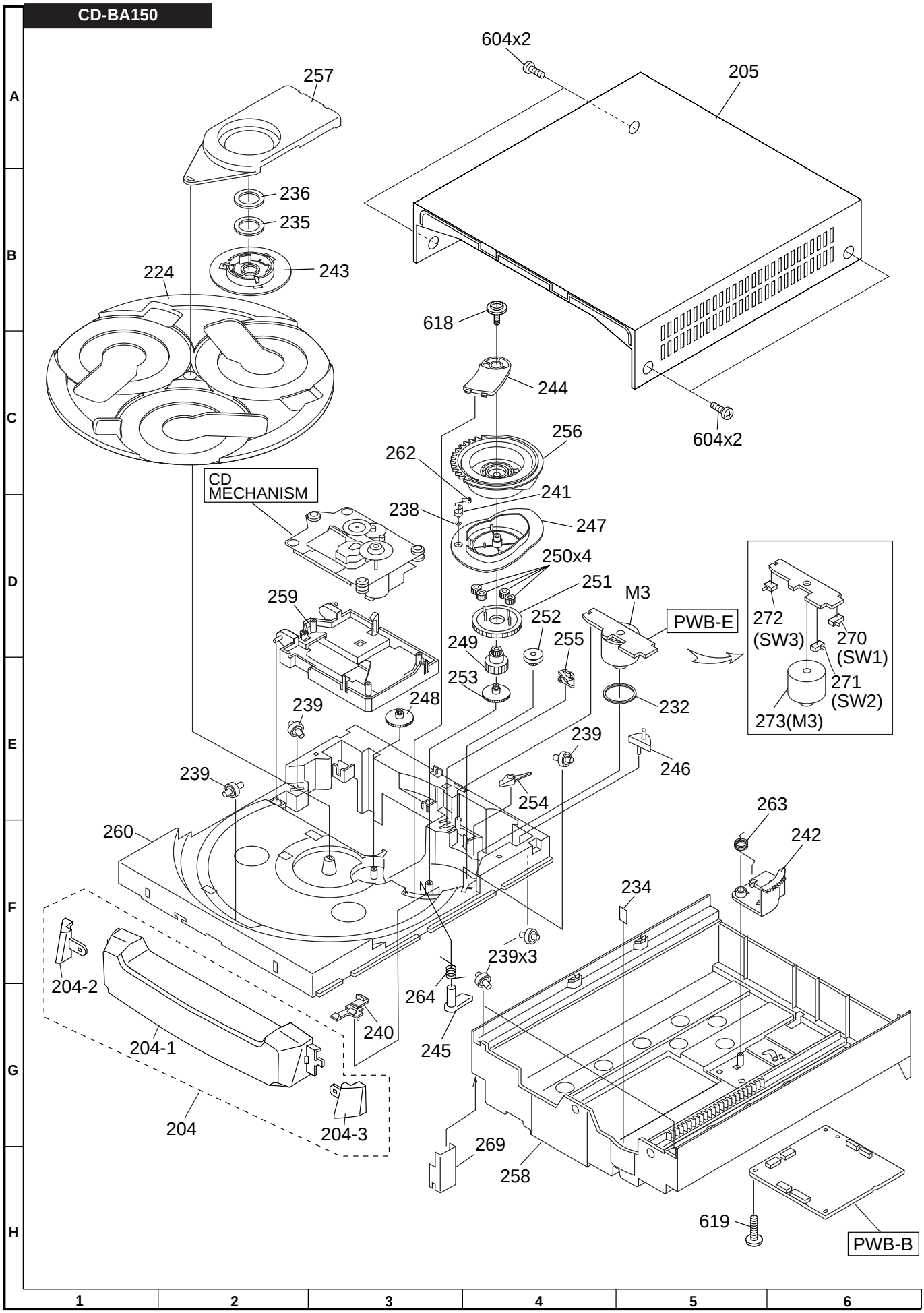


Figure 9 CABINET EXPLODED VIEW (2/2)

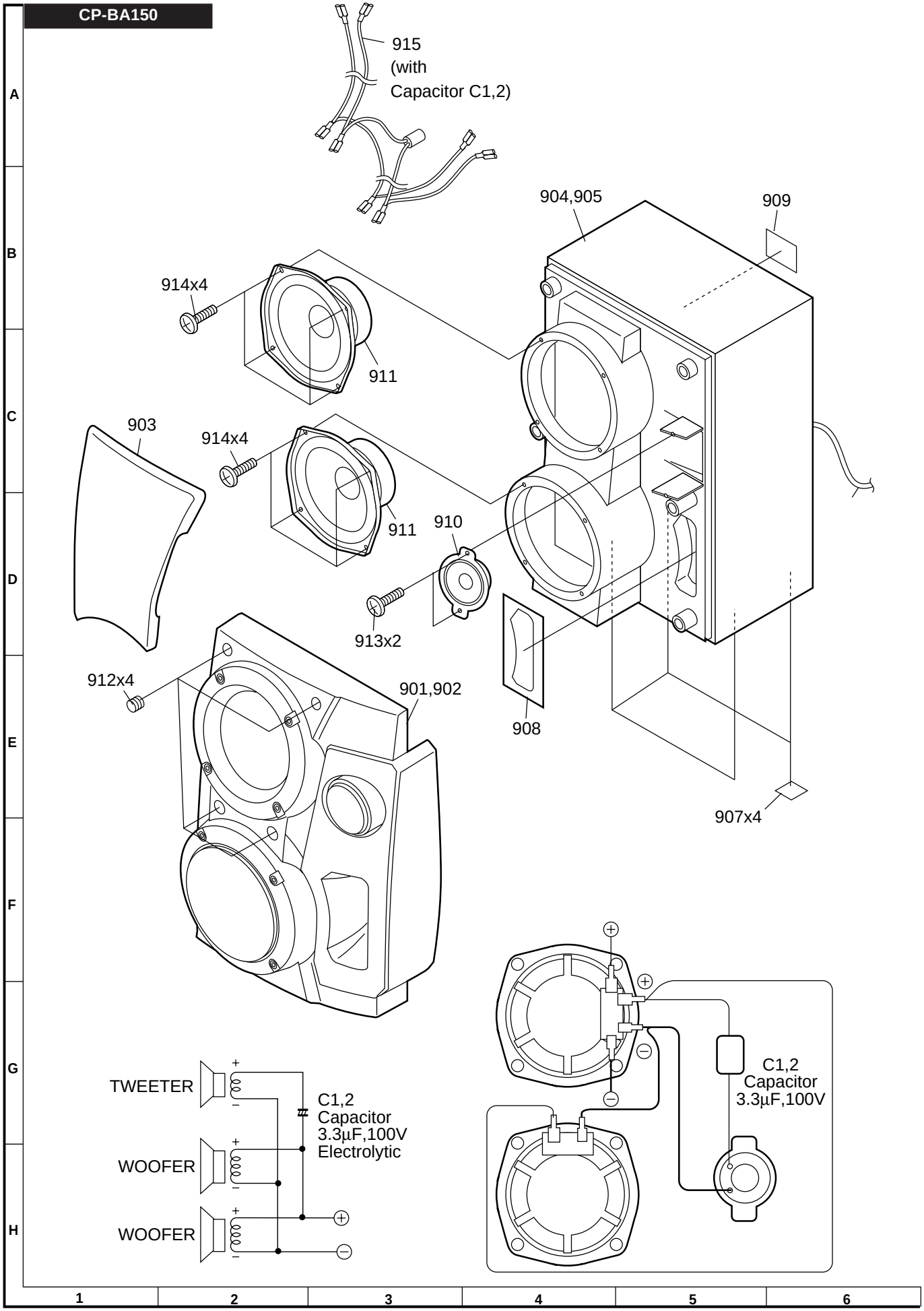
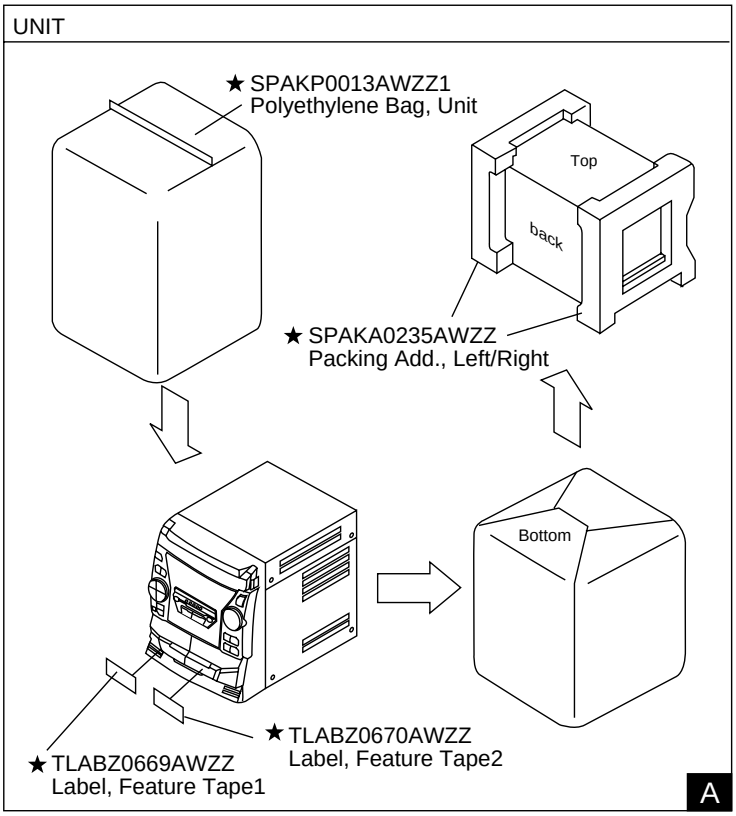


Figure 10 SPEAKER EXPLODED VIEW

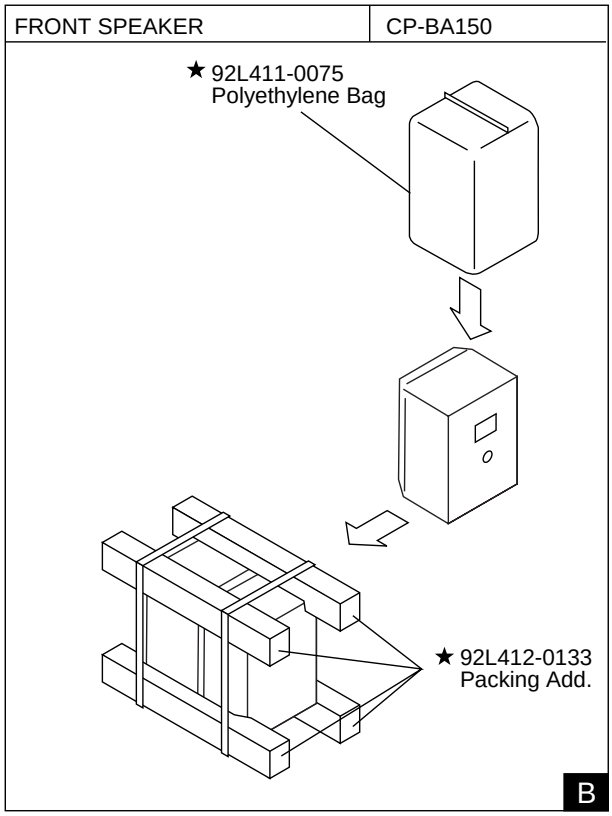
PACKING OF THE SET (FOR U.S.A. ONLY)

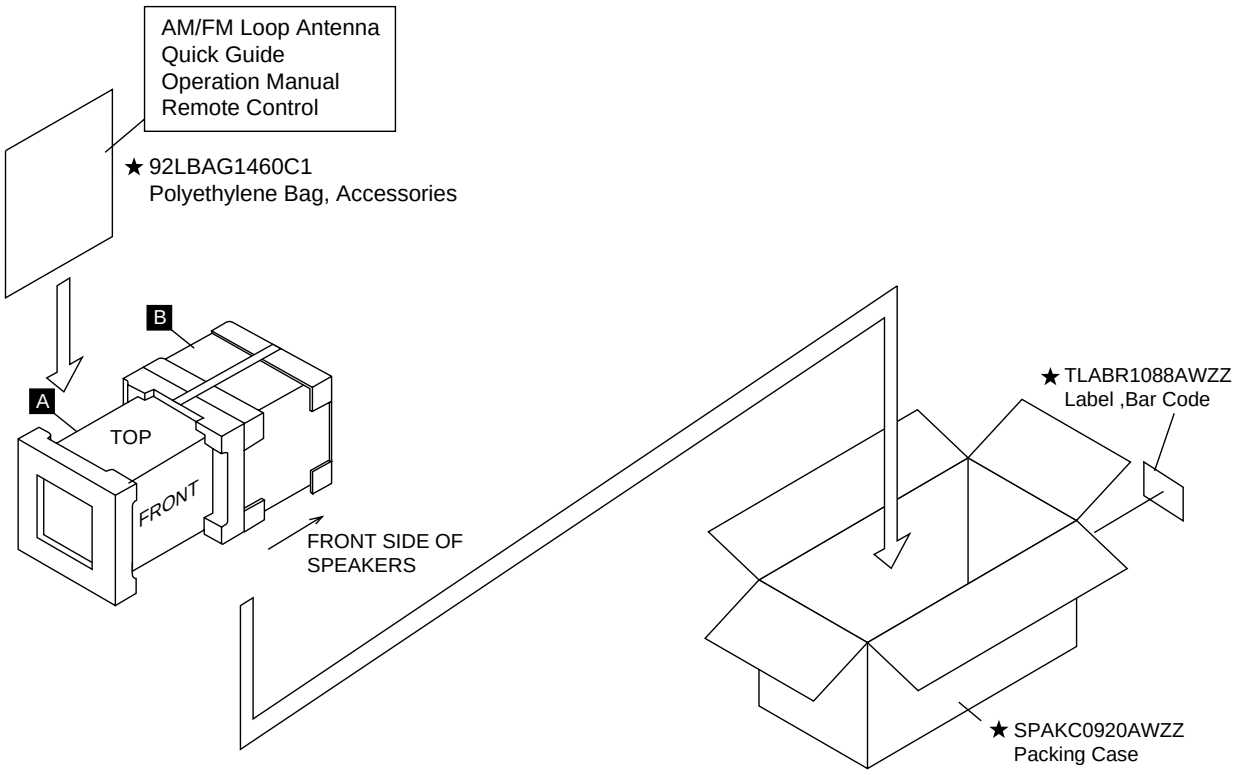
Setting position of switches and knobs	
Tape Mechanism	STOP

UNIT



FRONT SPEAKER | CP-BA150





★Not Replacement Item

— MEMO —

CD-BA150

SHARP

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