MDP-V8K
RMT-M40A

SERVICE MANUAL

E Model
Chinese Model
Tourist Model

Model Name Using Similar Mechanism	MDP-A660K/K50
Optical Pick-up Type	KHS-150A

SPECIFICATIONS

System

Type
VIDEO CD/CD/LD player

Signal readout
Optical (Laser beam reflection)

Signal format system
EIA standard, NTSC color system
CCIR standard, PAL color system (for VIDEO CDs only)

Playing time
See "Optical discs" on page **2**.

Digital audio specifications

Signal-to-noise ratio
More than 115 dB (EIAJ)*

Dynamic range
More than 99 dB (EIAJ)

Wow and flutter
Below measurement limit
(± 0.001 % W.PEAK) (EIAJ)

Video specification

Horizontal video resolution
425 lines

Signal-to-noise ratio
More than 50 dB

* Measured according to EIAJ (Electric Industries Association of Japan) standards.

Input and Output

LINE OUT 1, 2
VIDEO output, Phono jack (1)
Output signal: 1 Vp-p, 75 ohms, unbalanced
AUDIO output, Phono jacks (2)
Stereo L, R
Analog: 200 mVrms
(1 kHz, 40 % modulation)
Digital: 200 mVrms
(1 kHz, –20 dB)

LINE IN
VIDEO input, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO input, Phono jacks (2)
Stereo L, R
Max. input level: 200 mVrms
(–20 dB)
Input impedance:
more than 47 kilohoms

MIC 1/2 jacks
Standard jacks
1 mV
(Impedance below 1 kilohm)

General

Power requirements
110–127/220–240 V AC,
adjustable, 50/60 Hz (E, Tourist model)
220–240 V AC (Chinese, Hong Kong model)

Power consumption
45 W

Operating temperature
5°C to 35°C

Ambient humidity
5% to 90 %

Dimensions
Approx. 430 × 116 × 430 mm (w/h/d)
including projecting parts and controls

— Continued on next page —

VIDEO CD/CD/LD PLAYER

SONY®

Mass

Approx. 7.5 kg

Supplied accessories

Remote Commander RMT-M40A (1)
R6 (size AA) batteries (2)
Audio/Video Cable
(phono plug 3 ⟷ phono plug 3) (1)
AC plug adaptor (supplied with models other than Hong Kong model) (1)

Design and specifications are subject to change without notice.

Optical discs

The MDP-V8K can play optical discs currently available for home entertainment, laser discs (LD) and compact discs (CD, VIDEO CD and CD-G). The table below shows the discs available for this player.*

Disc class	Disc logo	Disc type	Size	Sides	Play time	
Laser Discs For movies, animation, operas, concerts, and karaoke	LASER DISC / Laser Vision	LD Single (NTSC)	8 in. (20 cm)	Single	CAV	14 min
					CLV	20 min
		8-inch LD (NTSC)	8 in. (20 cm)	Double	CAV	28 min
					CLV	40 min
		12-inch LD (NTSC)	12 in. (30 cm)	Double	CAV	1 hr
					CLV	2 hr
Compact Discs For music, movies, animation, karaoke, and photographs	COMPACT disc DIGITAL AUDIO	CD Single	3 in. (8 cm)	Single	20 min (audio only)	
		CD	5 in. (12 cm)	Single	74 min (audio only)	
	COMPACT disc DIGITAL VIDEO	VIDEO CD (NTSC and PAL)	3 in. (8 cm)	Single	20 min	
			5 in. (12 cm)	Single	74 min	
	COMPACT disc DIGITAL AUDIO GRAPHICS	CD-G (NTSC)	3 in. (8 cm)	Single	20 min	
			5 in. (12 cm)	Single	74 min	

* The MDP-V8K cannot play discs other than those shown above.

Multi audio discs

digital AUDIO MULTI AUDIO

Discs with these logos contain separate analog and digital tracks which may differ in content.

VIDEO CD standards to which the player conforms

This player conforms to both Ver. 1.1 and Ver. 2.0 of the VIDEO CD specifications. If you use a Ver. 2.0 CD, Play Back Control (PBC) functions and high-resolution still pictures (the new part of Ver. 2.0 of the VIDEO CD specifications) are available as well as normal playback of moving pictures and sound.

Operating voltage and AC plug

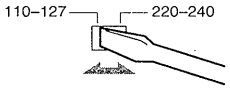
Before operating the player, make sure that the operating voltage of your unit is identical with that of your local power supply.

Models other than Hong Kong and China models

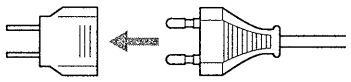
- Models other than the Hong Kong and China models have a voltage selector at the rear. If necessary, reset the voltage selector to the voltage corresponding to your local power supply. The voltage selector of this unit is set to 220–240 V AC originally.

For	Set to
110–127 volts AC	110–127 V
200–240 volts AC	220–240 V

To set the voltage selector, disconnect the AC power cord and set the selector to the appropriate position with a blade screwdriver.



- If the AC plug of your unit does not fit into the wall outlet, attach the supplied AC plug adaptor.

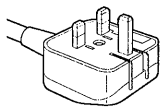


Models for Hong Kong and China

The models for Hong Kong and China do not have a voltage selector. Operate the unit between 220 and 240 V AC, 50/60 Hz.

Model for Hong Kong

The model for Hong Kong has an AC plug as shown below. The AC plug adaptor is not supplied with these units.



The MDP-V8K, an easy-to-operate laser disc player, allows you to:

- Play many types of optical discs, LDs, CDs, CD-Gs, and VIDEO CDs
- Play a double sided LD without turning it over
- Play VIDEO CDs which conform to Ver. 2.0 of VIDEO CD standards, using its Play Back Control (PBC) functions which allow you to:
  - Perform interactive playback using menu screens
  - View high-resolution still pictures
- Mark a point on a VIDEO CD where you want to resume playback—Book Mark
- Play PAL VIDEO CDs on both PAL and NTSC TVs
- Search for any point on any type of disc—Frame/Time/Scene Search
- Continue an LD from the exact point at which you stopped— Auto Resume
- Use enjoyable functions such as Program, Shuffle, or Repeat play
- Play karaoke (sing along with a disc)

  Features include:
  - 9 song reservation from two discs for non-stop karaoke entertainment—Reserve
  - Digital key controller to adjust backup key to your voice
  - Two microphone jacks for duets
  - Digital echo to create the ideal mood
  - Singing along with the original vocals—Vocal Select
  - Automatic applause—Auto Effect
  - Getting help when you forget words or melody—Vocal Support
  - Playing karaoke with non-karaoke discs—Karaoke Pon
  - Playing karaoke with video tapes—LINE IN input

Conforming to Ver. 2.0 of VIDEO CD standards

This player conforms to both Ver. 1.1 and Ver. 2.0 of the VIDEO CD standards. If you use a Ver. 2.0 VIDEO CD, Play Back Control (PBC) functions (the new part of Ver. 2.0 of the VIDEO CD standards) enable you to play the disc interactively following menus on the screen. You can also enjoy high-resolution still pictures, as well as normal playback of moving pictures and sound.

Compatible color systems

This player plays video discs recorded in the NTSC color system, and VIDEO CDs in both the NTSC and PAL color systems.

CAUTION

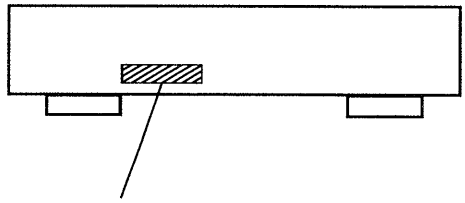
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

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

MODEL IDENTIFICATION

— BACK PANEL —



3-964-736-2□ : E, Tourist Model
3-964-736-3□ : Hong Kong, Chinese Model

SAFETY-RELATED COMPONENT WARNING !!

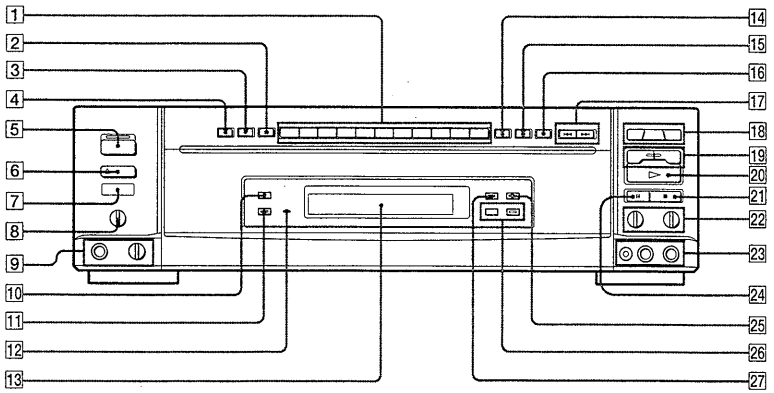
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Index to parts and controls

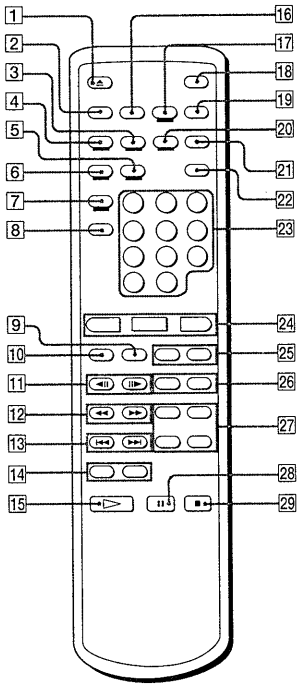
See the pages indicated in ( ) for details.

Front



1 Number buttons (11) (12) (15) (16) (24) (25) (27) (28)
2 CLEAR button (21) (22) (24) (25) (27) (28)
3 NEXT DISC RESERVE button and indicator (28)
4 RESERVE button and indicator (25) (27) (28)
5 POWER switch and indicator (8) (10) (19)
ON: Green
STANDBY: Red
6 ⏏ OPEN/CLOSE button (8) (10) (28)
7 Remote sensor (34)
8 ECHO LEVEL control (11)
9 PHONES jack and control (9)
10 LINE IN button (33)
11 AUTO PAUSE button and indicator (11)
12 AUTO RESUME indicator (19)
13 Display (9) (13) (14)
14 VIDEO CD PAL OUT button and indicator (8)
15 PBC ON/OFF button and indicator (12) (20)
16 RETURN button (12) (20)
17 ⏮ / ⏭ PREV/NEXT (ACS/AMS) buttons (9) (12) (17)
18 KEY CONTROL ♭ DOWN/NATURAL/♯ UP indicator-buttons (31)
19 SIDE A/B buttons and indicators (9) (25) (27)
20 ▷ SELECT (Play) button (8) (9) (12) (16) (19) (23) (24) (25) (27) (28)
21 ■ (Stop) button (9) (19)
22 MIC LEVEL 1 and 2 controls (10) (11)
23 MIC 1, 2 and CONTROL (MIC 1/2) jacks (10)
24 ❚❚ (Pause) button (9) (18)
25 VOCAL SUPPORT button and indicator (32)
26 VOCAL/SELECT buttons and indicator (30)
27 AUTO EFFECT button and indicator (31)

Remote commander



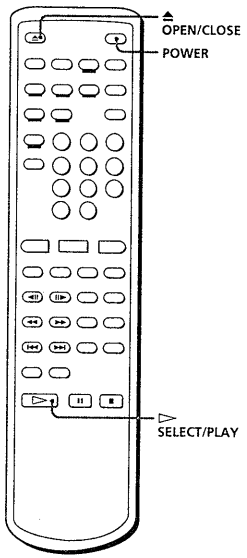
1 ⏏ OPEN/CLOSE button (8) (10) (28)
2 ANALOG/⊠ button (26)
3 1/SIDE/ALL button (21) (23) (24)
4 REPEAT button (21)
5 SHUFFLE button (23) (24)
6 PROGRAM/RESERVE button (25) (27) (28)
7 NEXT DISC RESERVE button (28)
8 AUTO PAUSE button (11)
9 VOCAL SUPPORT button (32)
10 KARAOKE PON button (32)
11 ◀❚❚/❚❚▶ STILL/STEP buttons (9) (18)
12 ◀◀/▶▶ SCAN buttons (9) (17)
13 ⏮/⏭ PREV/NEXT (ACS/AMS) buttons (9) (12) (17)
14 DISC SIDE A/B buttons (9) (25) (27)
15 ▷ SELECT/PLAY button (8) (9) (12) (16) (19) (23) (24) (25) (27) (28)
16 AUDIO MONITOR button (26)
17 FRAME/TIME/SCENE button (16)
18 POWER switch (8) (10) (19)
19 DISPLAY button (13) (14) (24)
20 REPEAT A↔B button (22)
21 AV TIME button (14)
22 CLEAR button (21) (22) (24) (25) (27) (28)
23 Number buttons (11) (12) (15) (16) (24) (25) (27) (28)
24 KEY CONTROL buttons (31)
♭ DOWN button
♮ NATURAL button
♯ UP button
25 VOCAL/SELECT buttons (30)
26 EFFECT MODE/EXECUTE buttons (31)
27 VIDEO CD buttons (12) (20)
MARK button
M.PLAY button
RETURN button
PBC button
28 ❚❚ PAUSE button (9) (18)
29 ■ STOP button (9) (19)

A function activated by pressing a button with an orange mark can be canceled by pressing the CLEAR button.

This section is extracted from instruction manual.

Basic Operations

Playing a disc



Tip

- You can also turn on the player by pressing ⏏ OPEN/CLOSE on the player.

Notes

- If you place more than one disc on the tray, or if the disc is not seated properly, the disc may not start playing, and may cause damage the disc or player.
- Do not transport the player while playing a disc as doing so may damage your disc or player.
- Do not use a CD stabilizer when playing a CD, CD-G, or VIDEO CD as doing so may damage your disc or player.
- You see no image unless the VIDEO CD PAL OUT button indicator is lit when you play a PAL VIDEO CD.

This section shows you how to play an LD, CD, CD-G, or VIDEO CD.

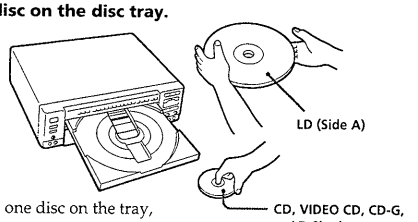
Before you start...
Connect the player to your TV and set the input selector on the TV to "Video" (see "Connecting the player" on page **6**).

Loading and playing a disc

1 **Press POWER to turn on the player.**
You can also directly turn on the player by pressing ▷ SELECT/PLAY on the remote commander or player.

2 **Press ⏏ OPEN/CLOSE to open the disc tray.**
The front cover of the player automatically slides down and the disc tray comes out.

3 **Place a disc on the disc tray.**



Place only one disc on the tray, carefully fitting it in the circle on the tray.

4 **Press ▷ SELECT/PLAY.**
The disc tray closes and the disc starts playing. You can also start playing by pressing the disc tray to close it.

When you play a double-sided LD
The upper side of the LD (side A) starts playing. When the upper side ends, the other side (side B) starts playing automatically.

To play a VIDEO CD with Play Back Control (PBC) functions (Ver. 2.0 VIDEO CD)
Ver. 2.0 VIDEO CDs have Play Back Control (PBC) functions, which allow you to play them interactively. When press ▷ SELECT/PLAY or push in the disc tray in step **4**, a menu appears on the screen and the player waits for you to play the disc using the PBC functions. To play a VIDEO CD using PBC functions, see "Playing a VIDEO CD using PBC functions" on page **12** for details.

To view a PAL VIDEO CD
Press VIDEO CD PAL OUT on the player to turn on the VIDEO CD PAL OUT button indicator. If you use an NTSC TV, the image is a little enlarged vertically, and the top and bottom part of the image is cut. To see a normal image, use a PAL TV.

Note

- When you press ❚❚ PAUSE, the picture goes blank when playing a CLV LD, and the picture freezes when playing a CAV LD or VIDEO CD (see "Viewing frame-by-frame action" on page **18**).

Tips

- When playing a double-sided LD, the player determines that the upper side of the disc is side "A" and the other side is "B," regardless of the label "A" or "B" printed on the disc.
- When playing side A of an LD, CD, CD-G, or VIDEO CD, or when the player is stopped, the SIDE A button indicator on the player lights up. When playing side B of an LD, the SIDE B button indicator lights up.
- When playback of LD side B ends, the player stops.
- When playing a CD, CD-G, LD single, or VIDEO CD, the DISC SIDE B button does not function.

Tips

- The AV calendar shows the chapters/tracks remaining on the disc. As chapters/tracks are played, the corresponding numbers on the calendar disappear.
- While playing a Ver. 2.0 VIDEO CD using PBC functions, the AV calendar shows the numbers you can use to select items from the menu.
- When there is no disc in the player, "NO dISC" appears on the front panel display.

Notes

- The AV calendar is available for LDs containing TOC (Table of Contents) data, CDs, CD-Gs, or VIDEO CDs.
- When you play a VCR or a similar machine using LINE IN, the current key level always appears on the front panel instead of a chapter/track number (see "Playing karaoke using auxiliary equipment" on page **33**).

To	Press
Stop play	■ STOP
Pause play	❚❚ PAUSE
Resume play after pause	❚❚ PAUSE or ▷ SELECT/PLAY
Scan forward or backward	◀◀/▶▶ SCAN
Skip chapters or tracks	I◀◀/▶▶I PREV/NEXT (ACS/AMS)
Play step by step	◀II/II▶ STILL/STEP (CAV LDs only)
Go to a chapter/track	Number button During PBC VIDEO CD playback, press number buttons to select items in the on-screen menu (see page **12** for details).
Remove the disc	⏏ OPEN/CLOSE

To start playing from the beginning of either LD side
Press DISC SIDE A to play the upper side of the LD from the beginning.
Press DISC SIDE B to play the other side of the LD from the beginning.

To pause playing just before starting
Press ❚❚ PAUSE instead of pressing ▷ SELECT/PLAY after you place the disc on the tray.
The disc tray closes and the player waits at the start of the disc until you press ▷ SELECT/PLAY or ❚❚ PAUSE. If you want to start from side B of an LD, press ❚❚ PAUSE, then DISC SIDE B.

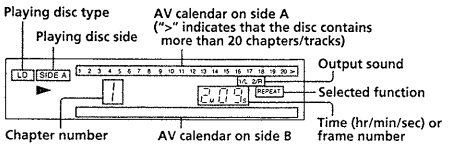
To stop playing and turn off the player
Press POWER.
You can resume playback of an LD from the point you stopped at by simply pressing ▷ SELECT/PLAY (see "Resuming LD playback" on page **19**).

To stop playing and remove the disc
Press ⏏ OPEN/CLOSE.
Remove the disc and press ⏏ OPEN/CLOSE again to close the empty tray.

To listen with headphones
Plug headphones into the PHONES jack on the front panel and adjust the volume with the level control beside the jack.

Reading the front panel display

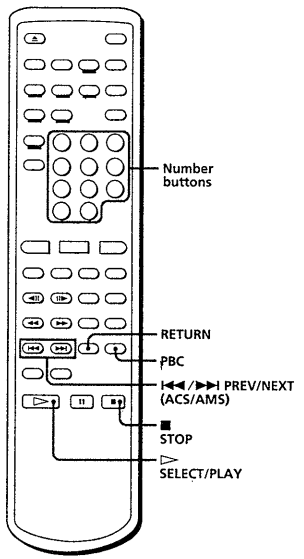
The illustration below is an example of what is displayed on the front panel of the player.



Viewing the on-screen display

Press DISPLAY twice. The on-screen display appears (see "Understanding on-screen indications" on page **13**).

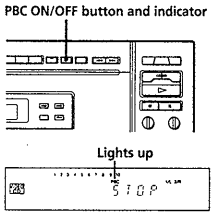
Playing a VIDEO CD using PBC functions (PBC Playback)



VIDEO CDs conforming to Ver. 2.0 of the VIDEO CD standards have Play Back Control (PBC) functions, which enable you to play the VIDEO CD interactively, following menus on the screen. Operation methods may differ depending on the disc. For details, refer to the instructions supplied with the disc. Use the number buttons, ▷ SELECT/PLAY, I◄◄ /►►I PREV/NEXT (ACS/AMS), and RETURN during PBC playback.

1 **Place a Ver. 2.0 VIDEO CD (with PBC functions) on the disc tray, then press ▷ SELECT/PLAY to close the disc tray.**

2 **Check to see that the PBC ON/OFF button indicator on the player lights up.**
A menu appears on the screen and the player waits for you to select a number on the menu. On some discs, moving pictures may play for a while before the menu appears.



3 **Enter a number to select the item in the menu.**

4 **Play the VIDEO CD interactively, following the menus.**

Playing a Ver. 2.0 VIDEO CD interactively

To	Press
Select an item in the menu	Number button
Jump to another scene when "SELECT" flashes on a moving picture	▷ SELECT/PLAY or a number button
Go back to the menu	RETURN Operation methods may differ depending on the disc. For details, refer to the instructions supplied with the disc.
Scroll the menu	I◄◄ /►►I PREV/NEXT (ACS/AMS)

If "??" appears on the screen
You have pressed an unoperable button. Use the operable buttons, following the menu.

Canceling PBC playback

Press ■ STOP to stop playing the VIDEO CD, then press PBC on the remote commander, or PBC ON/OFF on the player to turn off the PBC ON/OFF button indicator. Now you can play the VIDEO CD continuously but menus for interactive playback are not displayed.

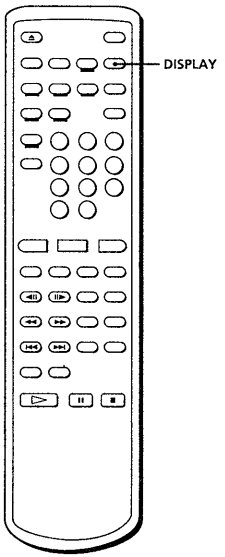
To turn on PBC playback again
The PBC ON/OFF button indicator must be lit to use PBC functions. If it is not lit, press ■ STOP to stop playing the disc, then press the PBC (ON/OFF) button to turn it on. Press ▷ SELECT/PLAY to display a menu.

Tips
- To select a song over 10, Press >10, then press two number buttons, first the tens digit, then the ones digit (see page **15**).
- You can view high-resolution still pictures on some Ver. 2.0 VIDEO CDs.

Note
- If no menus appear on the screen:
  - check that the disc is a Ver. 2.0 VIDEO CD
  - turn on the PBC ON/OFF button indicator
  - press ▷ SELECT/PLAY to display a menu

Additional Operations

Understanding on-screen indications

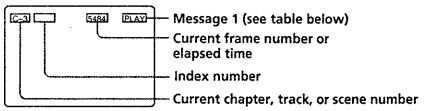


Notes
- The AV calendar for LDs (display of remaining chapter numbers) is only available for LDs with TOC data.
- When playing an LD without TOC data, total playing time of the disc does not appear.
- When playing an LD without chapters, the chapter number does not appear.
- When playing a CLV LD without time data to the second, a two-digit number such as "22:", meaning 22 minutes, appears.
- Messages concerning sound control functions such as "1/L, 2/R" or "♪ DIGITAL, ♪ ANALOG" appear only briefly when you press the AUDIO MONITOR or ANALOG/⊡⊠ button.

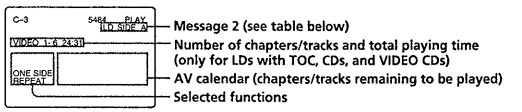
You can view the operating status of the player or disc information on the TV screen.

Displaying on-screen indications

Press DISPLAY.
The operating status of the player is displayed on the screen.



Press DISPLAY again.
Operating status and disc information are displayed on the screen.



Press DISPLAY once again to turn off the indications.

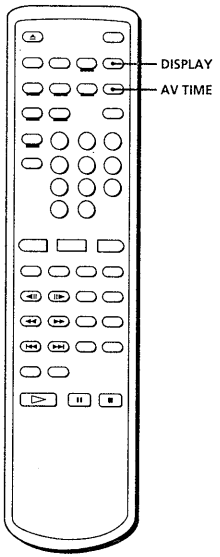
Message 1

Display	Current status of the player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing a disc
STOP	Operation stopped
PAUSE	Operation momentarily stopped
◄◄/►►	Speed scanning
SEARCH	Searching

Message 2

Display	Currently playing
LD SIDE A	Side A of LD
LD SIDE B	Side B of LD
CD	CD
VIDEO CD	VIDEO CD
1/L	First soundtrack/left channel
2/R	Second soundtrack/right channel
♪ DIGITAL	Digital sound
♪ ANALOG	Analog sound

Understanding on-screen indications (continued)



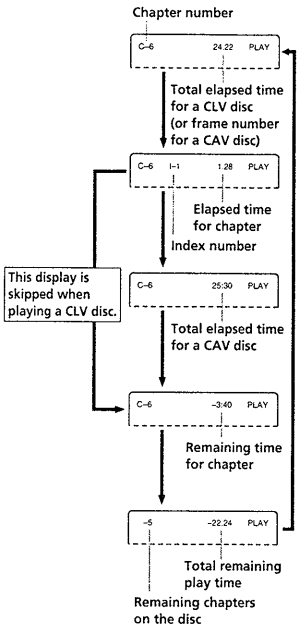
Notes

- When playing an LD without TOC data, you can only view the total elapsed time (for a CLV disc) or current frame number (for a CAV disc).
- When playing a Ver. 2.0 VIDEO CD using PBC functions:
  - the scene number (such as "S-5") is displayed instead of the track number
  - you can only view the elapsed time for the current scene
- The display does not show remaining time for chapters or tracks that are 51 or more chapters or tracks away from the beginning of the disc.

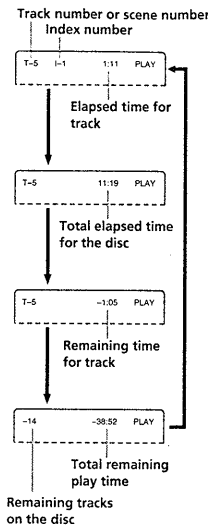
Checking the elapsed or remaining time of the disc

You can check the elapsed or remaining time on the TV screen.
Press DISPLAY, then press AV TIME repeatedly.
Each time you press AV TIME, the on-screen display changes as follows:

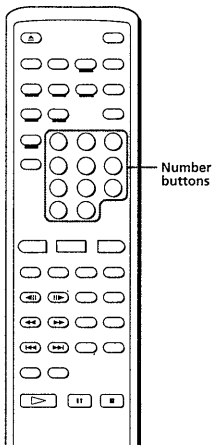
LDs with TOC



CDs/VIDEO CDs



Selecting a chapter or track directly (Chapter/Track Search)



Tips

- In addition to normal play mode, you can do Chapter/Track Search while in Freeze Frame (CAV LDs or VIDEO CDs), Repeat, or Pause mode. When the selected chapter or track is located after the search, playback continues in the same mode.
- When you do Chapter/Track search while a song is automatically paused in karaoke mode, the selected chapter or track starts playing immediately, without entering pause mode.
- You can enter 0 to select chapter 0 on LDs.
  To enter 0, press >10, then press 10/0.

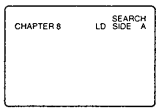
Notes

- Chapter Search does not function properly if the LD does not contain chapter numbers, or if the chapter number entered does not exist.
- You cannot use Track Search when you play a Ver. 2.0 VIDEO CD using PBC functions. Entering a number selects an item in the menu.

LDs are divided into sections called "chapters." CDs and VIDEO CDs are divided into sections called "tracks." Simply enter the desired chapter/track number to start playing it immediately.

Locating a particular chapter/track

Press one of the number buttons to enter the chapter/track number.



To play a chapter on the opposite side of the LD, press DISC SIDE B (or A), then enter the chapter number.

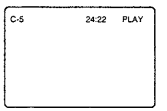
To enter a number greater than 10

Press ≥10, then press two number buttons in sequence, first the tens digit, then the ones digit. If you press ≥10 by mistake, press ≥10 again, then enter the correct one digit number.

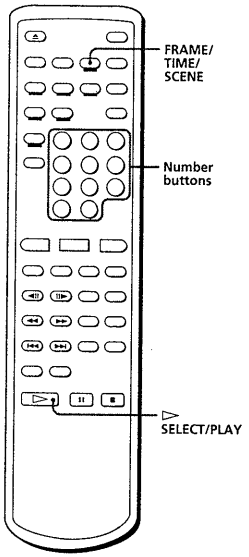
To	Press
Enter 10	10/0
Enter 14	≥10, then 1, then 4
Enter 20	≥10, then 2, then 10/0
Enter 25	≥10, then 2, then 5

To check the current chapter/track number on the screen

Press DISPLAY to display the chapter/track number.
The number appears in the upper left-hand corner of the screen. If the LD does not contain chapter numbers, no number is displayed.



Searching by frame, time, or scene number (Frame/Time/ Scene Search)



Tips

- In addition to normal play mode, you can do Frame/ Time/Scene Search while in Freeze Frame, Repeat, or Pause mode. When the specified frame, time, or scene is located after the search, playback continues in the same mode.
- In karaoke mode, you can also do Frame/Time/Scene Search if the player is stopped.

Video scenes are counted as a series of still pictures or "frames." When playing a CAV (standard-play) LD, the player keeps track of the number of frames, allowing you to locate a scene on the CAV disc by specifying the frame number.

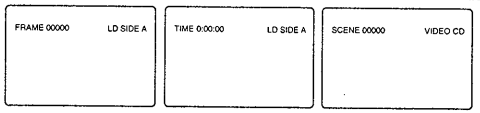
When playing a CLV (extended-play) LD or CD, the player keeps track of the elapsed playing time, allowing you to locate a particular point on the CLV LD or CD by specifying the total elapsed time.

On Ver. 2.0 VIDEO CDs (with PBC functions), "scene numbers" are assigned to some points on moving pictures and to each still picture, allowing you to locate a scene you want to view on the VIDEO CD by specifying the scene number. This is only available during PBC playback (when the PBC ON/OFF button indicator on the player is lit). You can check the scene number by pressing the DISPLAY button during PBC playback (see "Checking the elapsed or remaining time of the disc" on page **14**).

Entering the frame number, elapsed time, or scene number

1 **Press FRAME/TIME/SCENE while playing the disc.**

When playing	Indication
CAV LD	FRAME 00000
CLV LD	TIME 0:00:00
Ver. 2.0 VIDEO CD (with PBC functions)	SCENE 00000



2 **Enter the multi-digit number corresponding to the frame, time or scene you want to locate.**

To locate frame number 12340 on the CAV LD, press ①, ②, ③, ④ and ⓪.
To locate the 12 minutes, 5 second point on the CLV LD or CD, press ①, ②, ⓪ and ⑤.
To locate scene 123 on the VIDEO CD, press ①, ② and ③.

If you enter the wrong number, press FRAME/TIME/SCENE to clear the number, then enter the correct number.

3 **Press ▷ SELECT/PLAY.**

Playback starts from the frame, time, or scene you entered.

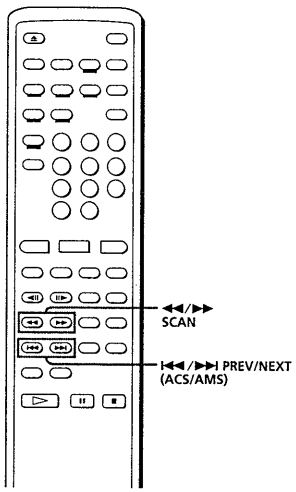
To check the frame number or time

Press DISPLAY.
The current frame number, time, or scene number is displayed.

To cancel Frame/Time Search

Press CLEAR before pressing ▷ SELECT/PLAY.

Searching for a particular point on a disc



Notes

- When scanning a CLV LD or VIDEO CD, frames are skipped.
- A certain amount of visual noise and instability is inevitable when scanning an LD.

Tips

- ACS/AMS is the abbreviation for Automatic Chapter Sensor/ Automatic Music Sensor.
- In addition to normal play mode, you can also do Speed Scan and Skip Search while in Freeze Frame (CAV LDs or VIDEO CDs), Repeat, or Pause mode. After the scan or search, playback continues in the same mode.
- If you hold down ◀◀/▶▶ SCAN after pressing II PAUSE while playing a VIDEO CD, the scanning speed increases. The picture where you pressed II PAUSE freezes and remains on the screen. Navigate by using the time display. Release ◀◀/▶▶ SCAN to display the picture at the indicated time. The new picture freezes. Press ▷ SELECT/PLAY to resume playback.

You can locate a particular point on a disc by scanning scenes or skipping chapters/tracks.

Scanning a disc quickly (Speed Scan)

Hold down ◀◀/▶▶ SCAN while playing the disc.

To	Hold down
Scan forward	▶▶ SCAN
Scan backward	◀◀ SCAN

To resume normal playback, release ◀◀/▶▶ SCAN.

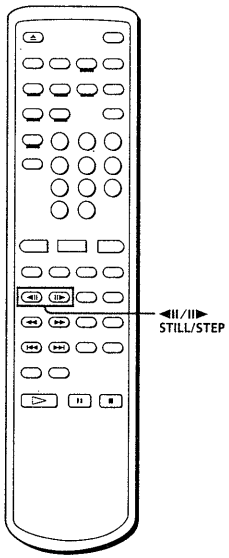
Skipping chapters or tracks (Skip Search)

Press or hold down I◀◀ /▶▶I PREV/NEXT (ACS/AMS).

To go to the beginning of	Press
Next chapter/track	▶▶I NEXT (ACS/AMS) once
Current chapter/track	I◀◀ PREV (ACS/AMS) once
Previous chapter/track	I◀◀ PREV (ACS/AMS) twice before the picture or sound resumes

Hold down ▶▶I or I◀◀ to skip chapters/tracks continuously.

Viewing frame-by-frame action



Tip

- When you play a CLV LD, Freeze Frame and Step Play are not available. When you press II PAUSE, the screen goes blank. If you press ◀II /II▶ STILL/STEP, "CLV SIDE A" appears briefly.

During any scene, you can freeze play into a still picture, and then advance or reverse the action frame-by-frame.

Freezing the action (Freeze Frame)

You can use this function for CAV LDs and VIDEO CDs.
Press II PAUSE while playing a CAV LD or VIDEO CD.
The sound mutes and the picture freezes.

To resume normal playback
Press ▷ SELECT/PLAY.

Playing frame-by-frame (Step Play)

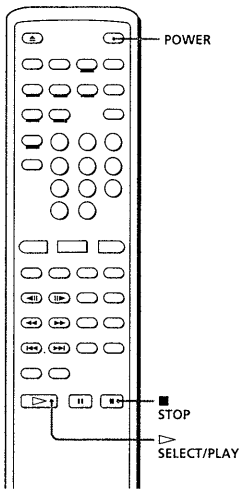
You can use this function only for CAV LDs.

1 **Press ◀II/II▶ STILL/STEP while playing a CAV LD.**
The sound mutes and the picture freezes.

2 **Press ◀II/II▶ repeatedly to advance or reverse the action frame-by-frame.**
Hold down ◀II/II▶ to view continuous frame-by-frame action.

To resume normal playback
Press ▷ SELECT/PLAY.

Resuming LD playback (Auto Resume)



Tips

- Each time you stop playing, the point at which you stopped last is memorized.
- The point at which you stopped playing is cleared when:
  - you completely open the disc tray, press DISC SIDE A/B or ⏮ / ⏭ PREV/NEXT (ACS/AMS)
  - you do a Chapter Search
  - you do a Frame/Time Search
  - you unplug the AC power cord of the player

  If you press ⏏ OPEN/CLOSE to close the disc tray while it is opening, the point at which you stopped is retained.

Notes

- The point at which you stopped is not memorized if you stop playback during a Chapter Search or Frame/Time Search.
- If you press ▷ SELECT/PLAY when the power is off, the player turns on automatically. If a disc is loaded, playback resumes where you last stopped.
- If you connect a microphone (switching the player to karaoke mode), Auto Resume is canceled. Although Auto Resume is not canceled if you switch the player's input mode to LINE IN, it is canceled if you connect a microphone.

This function operates automatically only for LDs in non-karaoke mode (without microphones connected). Once you press ■ STOP or POWER to stop playing an LD, the player memorizes the point you stopped at so that you can continue viewing from the same point.

1 **Press ■ STOP (or POWER) to stop playing an LD.**
The AUTO RESUME indicator on the player lights up and the point you stopped at is stored (if you press POWER, the indicator lights up briefly, then goes off with the power).

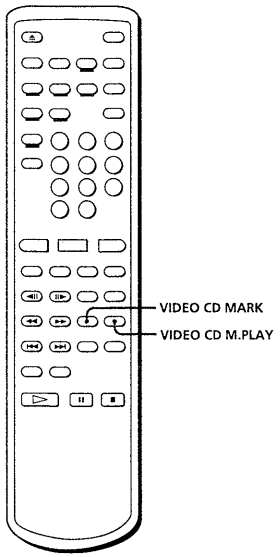
2 **Press ▷ SELECT/PLAY.**
The player searches for the scene at which you stopped playing, then playback starts.

To pause playing just before starting
If the player is turned on, press II PAUSE instead of ▷ SELECT/PLAY.
If the player is turned off, press POWER or ▷ SELECT/PLAY to turn on the player, then press II PAUSE.

To view from the beginning of the LD
Press DISC SIDE A to start playing from the beginning of side A.
Press DISC SIDE B to start playing from the beginning of side B.
The point at which you stopped is cleared.

1–6

Resuming VIDEO CD playback from a point you like (Book Mark)



Tips

- Each time you press the VIDEO CD MARK button while playing a disc, the Book Mark moves (the old Book Mark is erased and a new Book Mark is made).
- You can use Book Marks on both Ver. 1.1 and Ver. 2.0 VIDEO CDs.
- The Book Mark remains even after you unplug the AC power cord of the player.

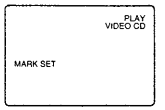
Note

- The PBC ON/OFF button indicator must be lit to use a Book Mark on a Ver. 2.0 VIDEO CD. If it is not lit, press ■ STOP to stop playing the disc, then press the PBC (ON/OFF) button to turn it on.

This is available for VIDEO CDs. You can mark any point you like on the disc with a "Book Mark" so that you can resume playback from that point. The player memorizes the point even after you remove the disc or turn off the player. You can make one Book Mark for one disc. Each time you make a new Book Mark, the old Book Mark is erased.

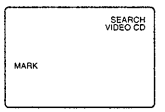
Making a Book Mark

Play the VIDEO CD on which you want to make a Book Mark, then press VIDEO CD MARK on the remote commander at a point you like.

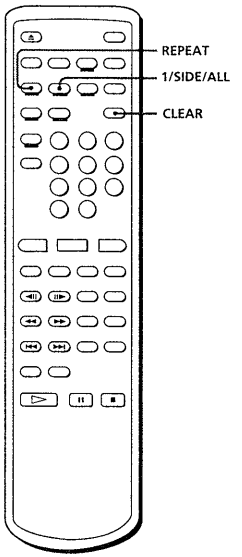


Resuming playback using the Book Mark

Press VIDEO CD M.PLAY.
The player searches for the point you marked, then starts playing.



Playing a section repeatedly (Repeat Play)



Notes

- You cannot use Repeat and Reserve at the same time.
- You cannot use Repeat while using PBC functions on a Ver. 2.0 VIDEO CD. To use Repeat on a Ver. 2.0 VIDEO CD, press ■ STOP to stop playing, then press the PBC (ON/OFF) button to turn off the PBC ON/OFF button indicator on the player.

Repeat play allows you to play the disc over and over. You can replay both sides, a single side, or one chapter of an LD; a whole disc or a single track on a CD or VIDEO CD; or a selected portion of the disc.

Repeating the whole disc (All Disc Repeat)

Press REPEAT.
"REPEAT" appears on the screen briefly. "REPEAT" lights up on the front panel display. When playing an LD, the player plays through both sides of the LD repeatedly. When playing a CD or VIDEO CD, the player plays all the tracks on the disc repeatedly.

Repeating the current side of the LD (One Side Repeat)

Press 1/SIDE/ALL twice, then press REPEAT.
"ONE SIDE" and "REPEAT" appear on the screen briefly. "REPEAT 1 SIDE" lights up on the front panel display. The player plays the selected disc side repeatedly.

Repeating the selected chapter/track (Single Repeat)

Press 1/SIDE/ALL once, then press REPEAT.
"SINGLE" and "REPEAT" appear briefly. "REPEAT 1" lights up on the front panel display. The player plays the selected chapter/track repeatedly.

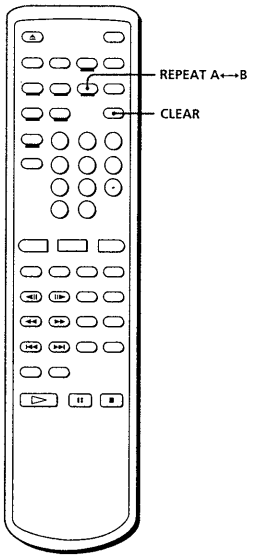
To check the repeat status
Press DISPLAY twice.

Canceling Repeat Play

Press CLEAR.

1-7

Playing a section repeatedly (continued)

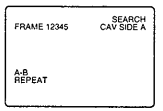


Replaying a selected portion on the disc (Repeat A↔B)

1 **Press REPEAT A↔B at the beginning of the scene or phrase you want to repeat.**
This tells the player where to start. "REPEAT" and "A-" appear, and "B" flashes.

2 **Let the player run to the end of the scene or phrase.**

3 **Press REPEAT A↔B again.**
This tells the player where to end. "REPEAT" and "A-B" appear. The player repeatedly plays the scenes or phrases between the two points you specified.



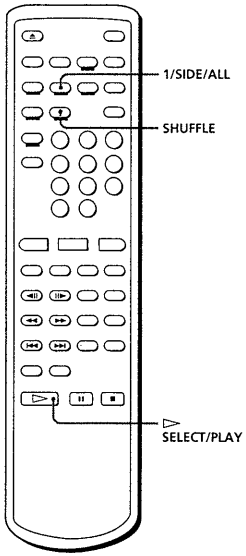
To repeat a different portion
Repeat steps **1** to **3** to reenter new start and end points.

To cancel Repeat A↔B
Press CLEAR.

Tip
- You can scan the disc between points A and B by holding down ◀◀/▶▶ SCAN.

Note
- You can do Repeat A↔B only on the current side of an LD. You cannot do it on both sides of the LD.

Playing songs in random order (Shuffle Play)

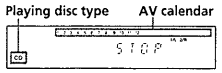


Tip
- You can skip the current song to the next song which will be randomly selected by pressing the ▶▶I NEXT (ACS/AMS) button. The I◀◀ PREV (ACS/AMS) button does not function during Shuffle or Delete Shuffle Play.

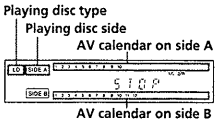
Notes
- If the LD does not contain TOC data, or if the player has not read the TOC data of the LD, "NO TOC" appears on the screen when you press SHUFFLE, and you cannot do Shuffle or Delete Shuffle Play.
- You cannot do Shuffle or Delete Shuffle Play while using PBC functions on a Ver. 2.0 VIDEO CD. To do Shuffle or Delete Shuffle Play on a Ver. 2.0 VIDEO CD, press ■ STOP to stop playing, then press the PBC (ON/OFF) button to turn off the PBC ON/OFF button indicator on the player.

You can play the songs on a disc in random order, each song once (Shuffle Play). If you select the songs you want to play in advance, the player plays only selected songs in random order (Delete Shuffle). The player needs the TOC data of the disc to do Shuffle Play and Delete Shuffle Play, so these functions are available only on LDs containing TOC data, CDs, and VIDEO CDs.

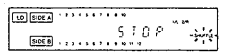
1 **Place a disc on the disc tray, then press ⏏ OPEN/CLOSE to close the tray.**
When you use a CD or VIDEO CD, the AV calandar appears on the front panel display, showing that TOC data was read.



2 **(This step is for an LD. Skip this step when playing a CD or VIDEO CD.)**
Press ▷ SELECT/PLAY and wait for the AV calendar to appear on the front panel display, then press ■ STOP to stop playing.
The player reads the TOC data of the LD. If the disc is double-sided, press DISC SIDE B, then press ■ STOP, to read the TOC data of side B.



3 **Press SHUFFLE on the remote commander.**
"SHUFFLE" flashes on the front panel display.



4 **Press ▷ SELECT/PLAY.**
Songs start playing. All songs on the disc are played once in random order. To play side A of a double-sided LD, press DISC SIDE A, then press ▷ SELECT/PLAY. To play side B, press DISC SIDE B, then press ▷ SELECT/PLAY (One Side Shuffle).

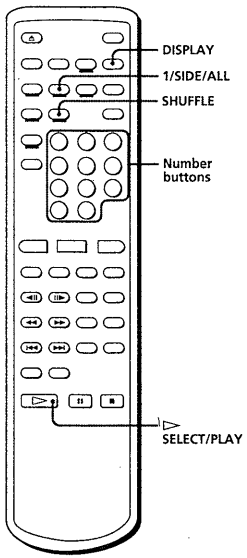
Shuffle playing on both sides of a double-sided LD (Both Sides Shuffle)

1 **Follow steps 1 to 3 above to enter SHUFFLE mode.**
Make sure that both AV calendars for side A and side B appear, and "SHUFFLE" flashes on the front panel display.

2 **Press 1/SIDE/ALL on the remote commander to turn off "1 SIDE" on the front panel display.**

3 **Press ▷ SELECT/PLAY.**
The songs on side A are played in random order, then the songs on side B are played in random order.

Playing songs in random order (continued)



Tips

- You can delete songs numbered up to 99. To delete a song over 10, press >10, then press two number buttons in sequence, first tens digit, then the ones digit (see page **15**).
- You can repeat Shuffle and Delete Shuffle Play. Press REPEAT on the remote commander. Each time repeat finishes, the order of the songs is reshuffled.

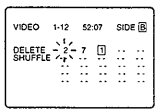
Playing only your favorite songs in random order (Delete Shuffle)

To select your favorite songs in random order, delete the songs you do not want to play from the disc. If you use an LD, make sure the AV calendars appear on the front panel display.

1 **Press SHUFFLE to enter SHUFFLE mode.**
"SHUFFLE" flashes on the front panel display.

2 **Press DISPLAY twice to use the on-screen display.**

3 **Press the number buttons to delete songs you do not want to play.**
The deleted song numbers are displayed on the screen. To delete songs on side B of a double-sided LD, press DISC SIDE B, then press the number buttons. The songs deleted from side B appear in squares.



If you enter a wrong number, press CLEAR. With each press, the last song you entered is restored (the number on the screen disappears).

4 **Press ▷ SELECT/PLAY.**
The remaining songs on the disc are played once in random order. To play the remaining songs on side A of a double-sided LD, press DISC SIDE A, then press ▷ SELECT/PLAY. To play the remaining songs on side B, press DISC SIDE B, then press ▷ SELECT/PLAY (One Side Delete Shuffle).

Delete shuffle playing on both sides of an LD (Both Sides Delete Shuffle)

1 **Follow steps 1 to 3 above to delete songs on both sides of the LD.**

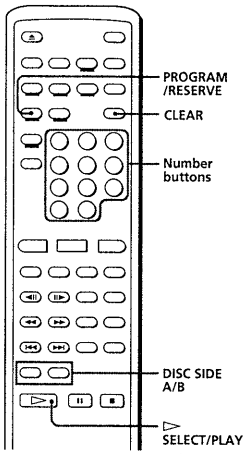
2 **Press 1/SIDE/ALL on the remote commander to turn off "1 SIDE" on the front panel display.**

3 **Press ▷ SELECT/PLAY.**
The remaining songs on side A are played in random order, then the remaining songs on side B are played in random order.

Canceling Shuffle Play or Delete Shuffle Play

Press CLEAR.
"SHUFFLE" on the front panel goes off. The player exits Shuffle mode. All the deleted songs are restored.

Playing songs in any order you like (Program Play)



Tips

- You can select songs numbered up to 99. To select a song over 10, Press >10, then press two number buttons, first the tens digit, then the ones digit (see page **15**).
- You can skip to the previous or next song in the program by pressing the ⏮ /⏭ PREV/NEXT (ACS/AMS) button.
- Even when the playback of the whole program is complete, the program is not cleared. The program is cleared when:
  - you press CLEAR (except while the PROGRAM/RESERVE button indicator on the player is flashing) to exit Program mode.
  - you open the disc tray or turn off the player
- To repeat playing the program automatically, press REPEAT on the remote commander.

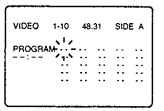
Notes

- You cannot use Program while using PBC functions on a Ver. 2.0 VIDEO CD. To use Program on a Ver. 2.0 VIDEO CD, press ■ STOP playing, then press the PBC (ON/OFF) button to turn off the PBC ON/OFF button indicator on the player.
- When you play a VIDEO CD or CD, the DISC SIDE B button does not function.
- To check the total playing time of the program on an LD:
  - Use an LD with TOC data
  - Press ▷ SELECT/PLAY (and press SIDE B) make the player read the LD's TOC data, before you press PROGRAM/RESERVE.
- If you select songs numbered over 50, or if the total playing time exceeds 100 minutes, the time display changes to "--:--."

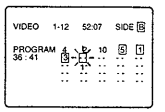
You can select up to 25 songs to be played in any order you like, regardless of disc side, even while a song is being played. The songs are played continuously in the order you specify. This is available in non-karaoke mode (without microphones connected). Use Reserve in karaoke mode (see "Selecting karaoke song order" on page **27**).

Selecting songs to make a program

1 **Press PROGRAM/RESERVE.**
"PROGRAM" appears. "PGM" flashes on the front panel display.



2 **Press the number buttons to select songs in the order you want them to play.**
When you play a double-sided LD, select the disc side by pressing DISC SIDE A (or B), then press the number buttons to select songs in the order you want them to play. The songs selected from side B appear in squares.

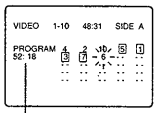


If you enter a wrong number, press CLEAR. With each press, the last song you entered is deleted.

3 **Repeat step 2 until you finish selecting songs.**

4 **Press ▷ SELECT/PLAY.**
The selected songs are programmed and the on-screen display disappears. "PGM" lights up on the front panel display. The selected songs are played in order you selected them.

To make a program while checking the total playing time
You can check the total playing time of the program while selecting songs. The time is displayed both on the screen and front panel displays. Each time you select a song, its playing time is added.



Total playing time of the program

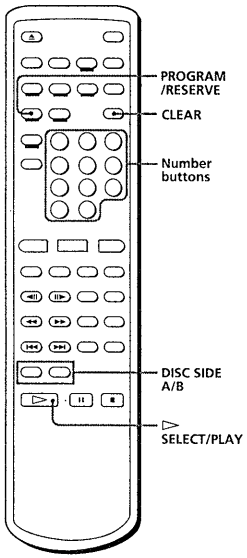
If you enter II PAUSE in the program
You can enter II PAUSEs among songs you select, to make the player automatically pause during the program. If you enter a II PAUSE, the total playing time is re-counted from --:-- (zero).

To check the contents of the program
Press DISPLAY twice.
The numbers of the selected songs appear. If playing a song, its number flashes.

Canceling Program Play

Press CLEAR.
"CLEAR" appears briefly and the player exits Program mode. The RESERVE/PROGRAM button indicator on the player goes off. All the programmed songs are cleared.

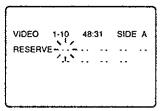
Selecting karaoke song order (Reserve)



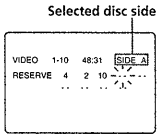
This is available in karaoke mode. You can select up to 9 songs to be played in any order you like, regardless of disc side, even while a song is being played. The songs are played continuously in the order you selected so that you can enjoy non-stop karaoke playing. You can also select songs on another disc (Next Disc Reserve).

Selecting songs on the current disc

1 **Press PROGRAM/RESERVE.**
"RESERVE" appears. The RESERVE button indicator on the player flashes.

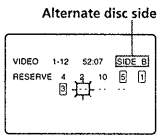


2 **Press the number buttons to select songs in the order you want them to play.**
When you play a double-sided LD, select the disc side by pressing DISC SIDE A (or B), then press the number buttons to select songs.



If you enter a wrong number, press CLEAR. With each press, the last song you entered is deleted.

3 **To enter songs from the other side of the double-sided LD, press DISC SIDE B (or A), then press the number buttons to select the songs in the order you want them to play.**



4 **Repeat steps 2 and 3 until you finish selecting songs.**

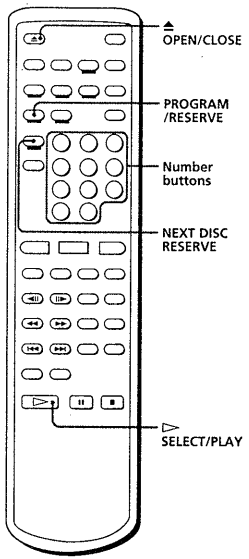
5 **Press PROGRAM/RESERVE.**
On-screen indications disappear. The RESERVE button indicator on the player lights up.

If you reserve songs while playing a song, the reserved songs start playing, without pausing, after the current song.

If you reserve songs while the player is stopped, press ▷ SELECT/PLAY. The reserved songs start playing.

Notes
- You cannot use Reserve while using PBC functions on a Ver. 2.0 VIDEO CD. To use Reserve on a Ver. 2.0 VIDEO CD, press ■ STOP playing, then press the PBC (ON/OFF) button to turn off the PBC ON/OFF button indicator on the player.
- When you play a VIDEO CD or CD, the DISC SIDE B button does not function.

Selecting karaoke song order (continued)

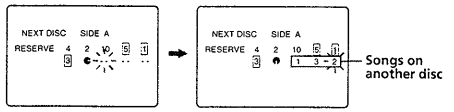


Tip
- You cannot use Next Disc Reserve in non-karaoke mode (without microphones connected). Instead, you can select up to 25 songs in non-karaoke mode (see "Playing songs in any order you like" on page **25**).

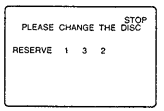
Notes
- When you play songs using Reserve (and Next Disc Reserve), the songs are played continuously, and you cannot use Auto Pause. The player enters pause mode after playing all the reserved songs.
- You cannot use Reserve and Repeat at the same time.
- You cannot select tracks over 80 on a CD or VIDEO CD using Next Disc Reserve.

Selecting songs on another disc (Next Disc Reserve)

1 **Press NEXT DISC RESERVE after steps 1 to 4 above.**
"C" appears on the screen, rotating. Now you can select songs on another disc. Follow steps **2** (and **3**) above to select the songs.



2 **Press PROGRAM/RESERVE (then press ▷ SELECT/PLAY).**
The songs on the current disc are played, then the player stops automatically and prompts you to change the disc.



3 **Press ▲ OPEN/CLOSE to open the disc tray, then change the disc.**

4 **Press ▷ SELECT/PLAY or push in the disc tray.**
The selected songs on the new disc start playing automatically.

Canceling Reserve and Next Disc Reserve

Press CLEAR.
"CLEAR" appears briefly and the player exits Reserve mode. The PROGRAM/RESERVE button indicator on the player goes off. All the reserved songs are cleared.

To enter a number greater than 10

Press >10, then press two number buttons in sequence, first the tens digit, then the ones digit.

If you press >10 by mistake, press >10 again to flash "– –" on the screen, then enter the correct one digit number.

To	Press
Enter 10	10/0
Enter 14	>10, then 1, then 4
Enter 20	>10, then 2, then 10/0
Enter 25	>10, then 2, then 5

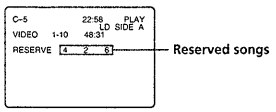
Tip

- You can enter 0 to select chapter 0 on LDs. To enter 0, press >10, then press 10/0.

To check the songs to be played

Press DISPLAY twice.

The numbers of the reserved songs appear. When a song has been played, its number disappears.



To skip the current song

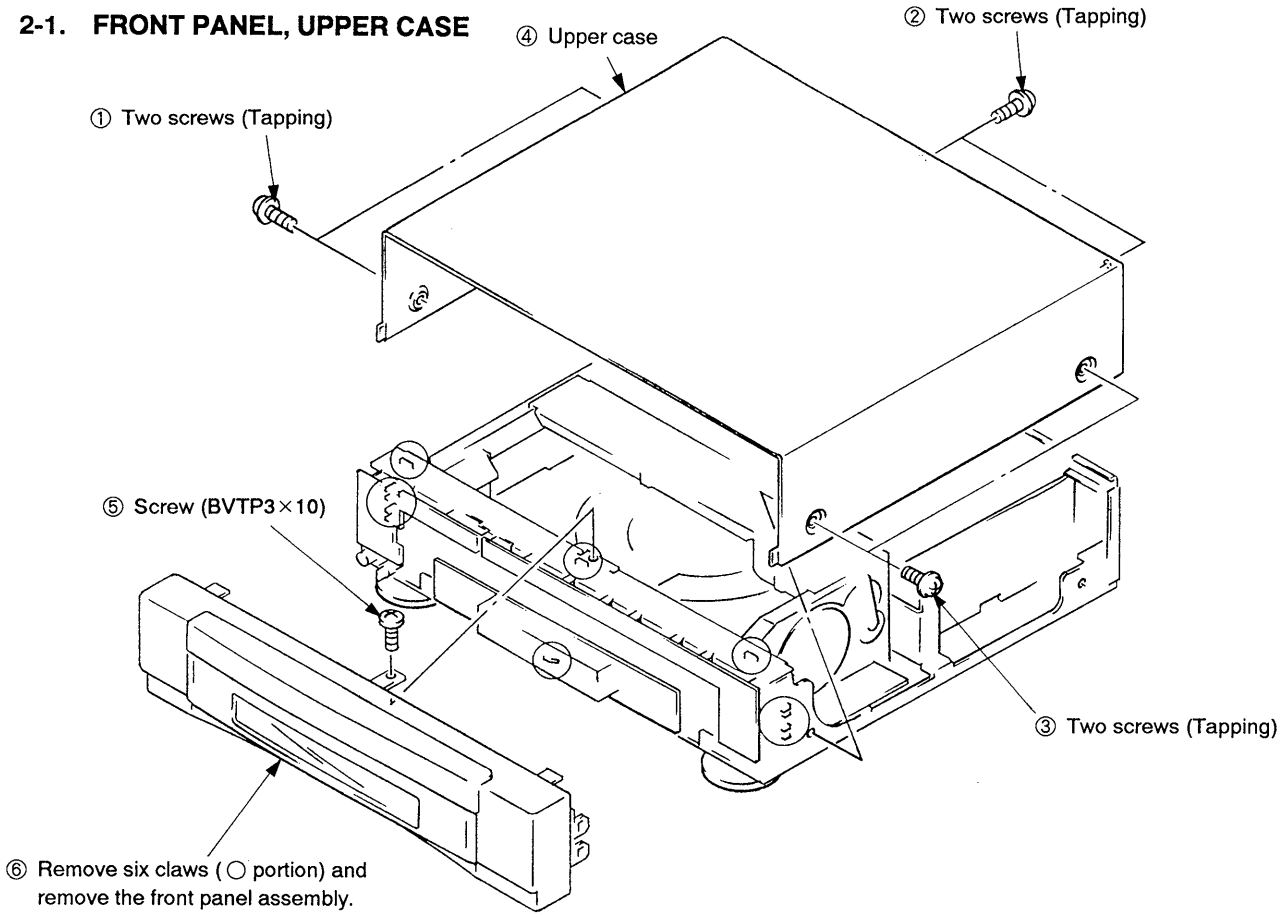
Press ▶▶I.

The next reserved song starts playing.

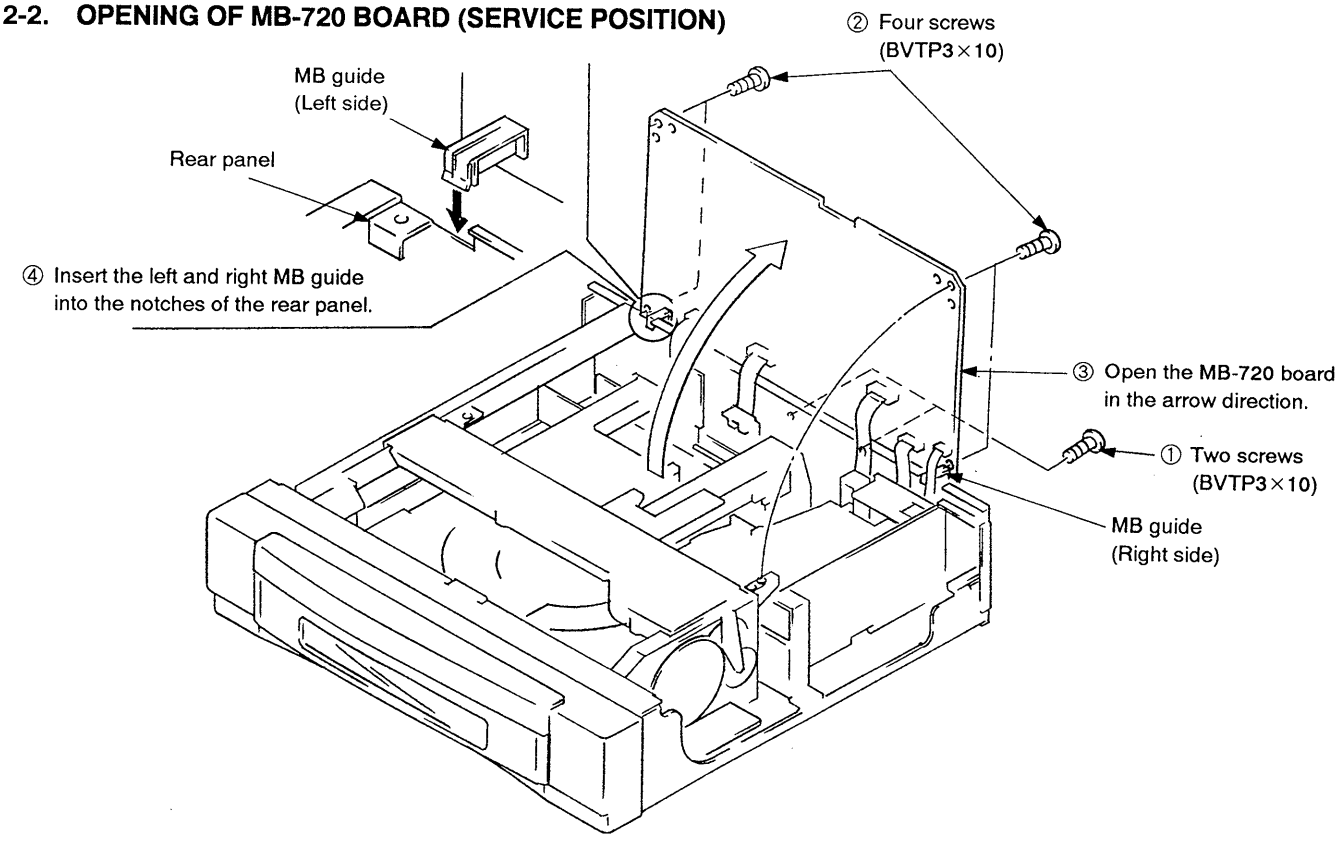
SECTION 2
DISASSEMBLY

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

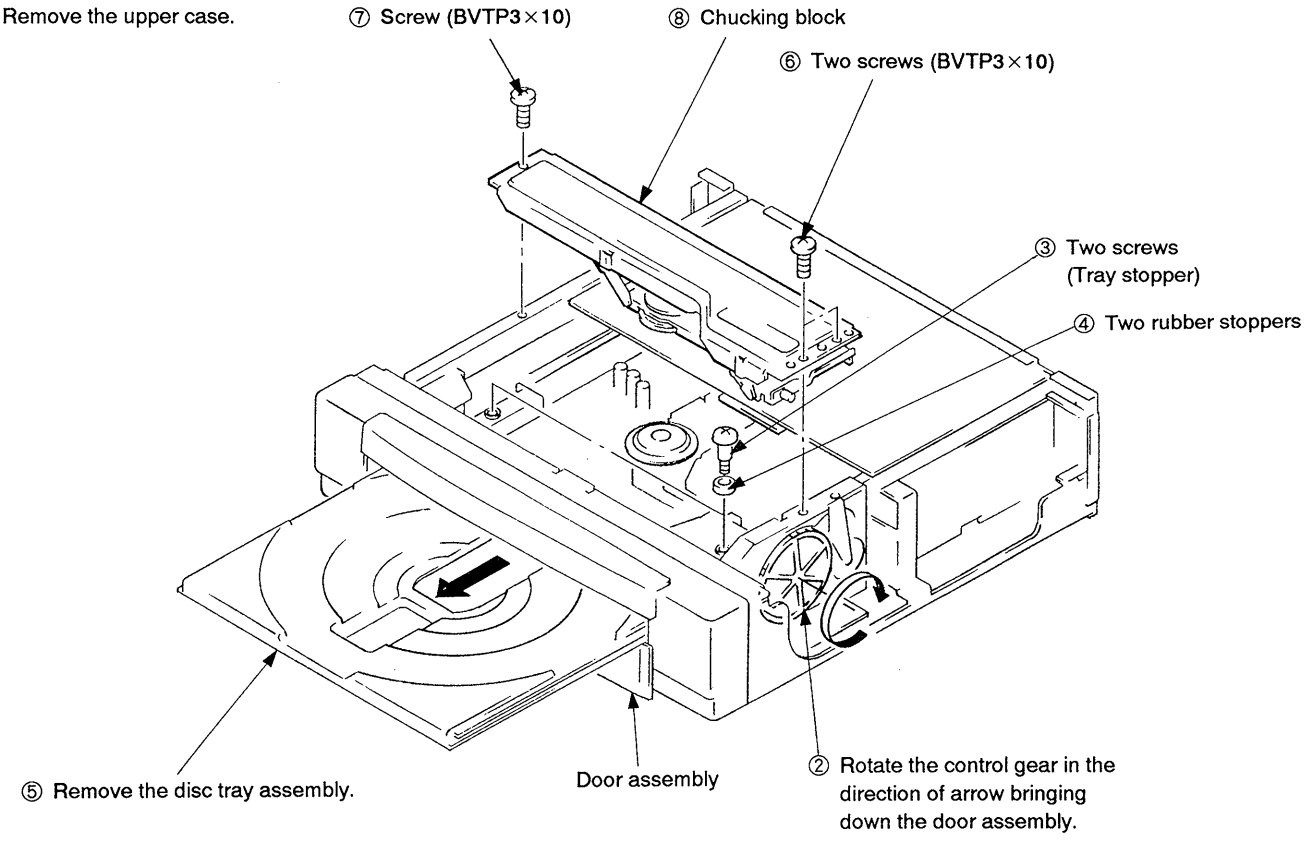
2-1. FRONT PANEL, UPPER CASE



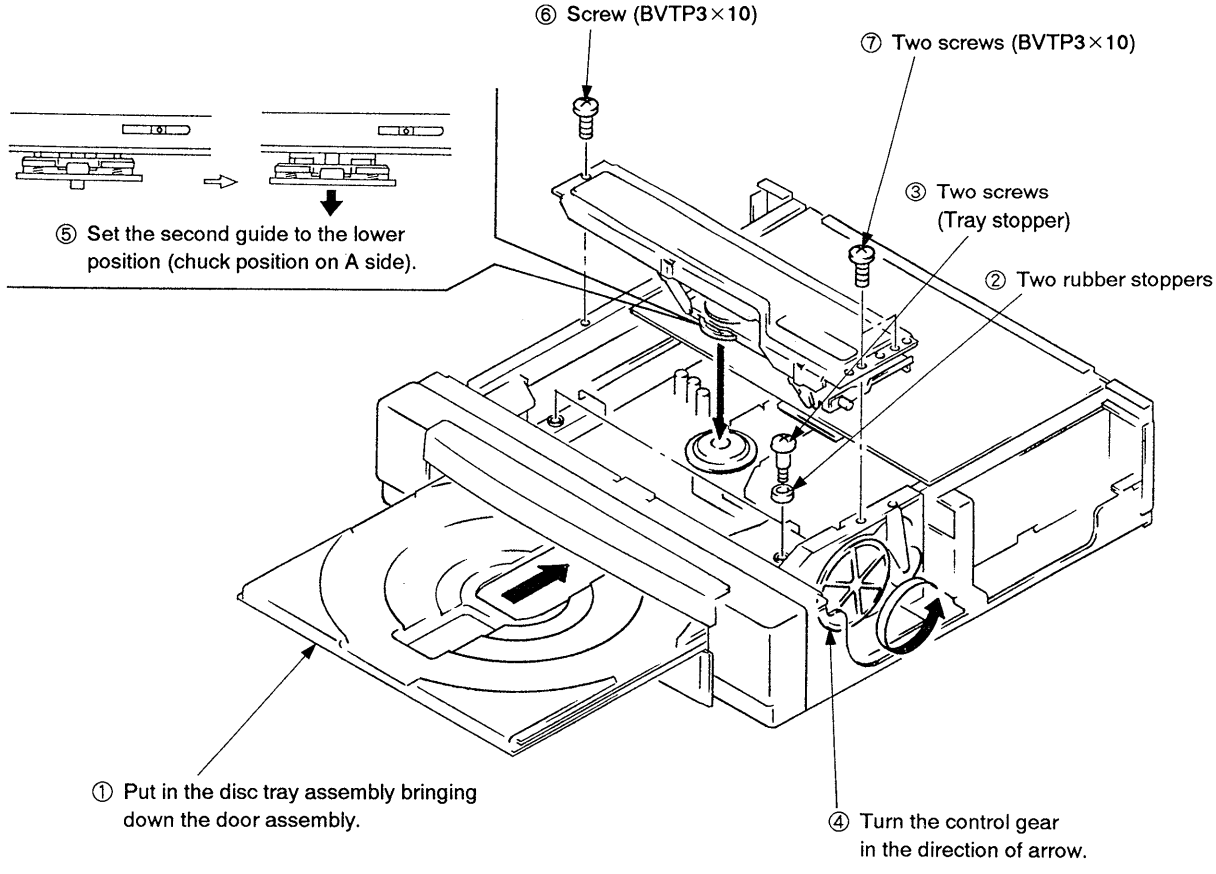
2-2. OPENING OF MB-720 BOARD (SERVICE POSITION)



2-3. CHUCKING BLOCK AND DISC TRAY ASSEMBLY

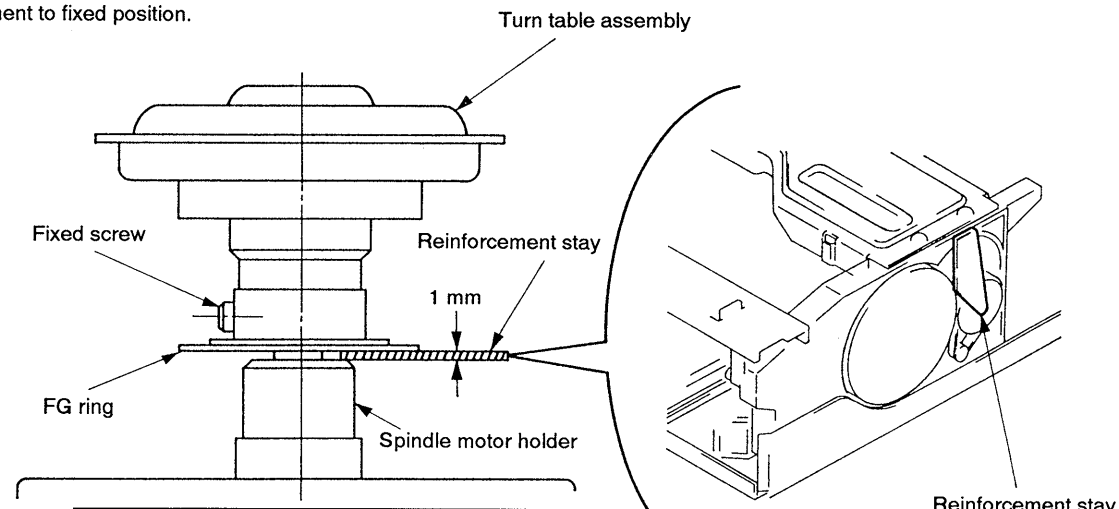


2-4. MOUNTING THE CHUCKING BLOCK AND DISC TRAY ASSEMBLY



2-5. HEIGHT ADJUSTMENT OF THE TURN TABLE ASSEMBLY

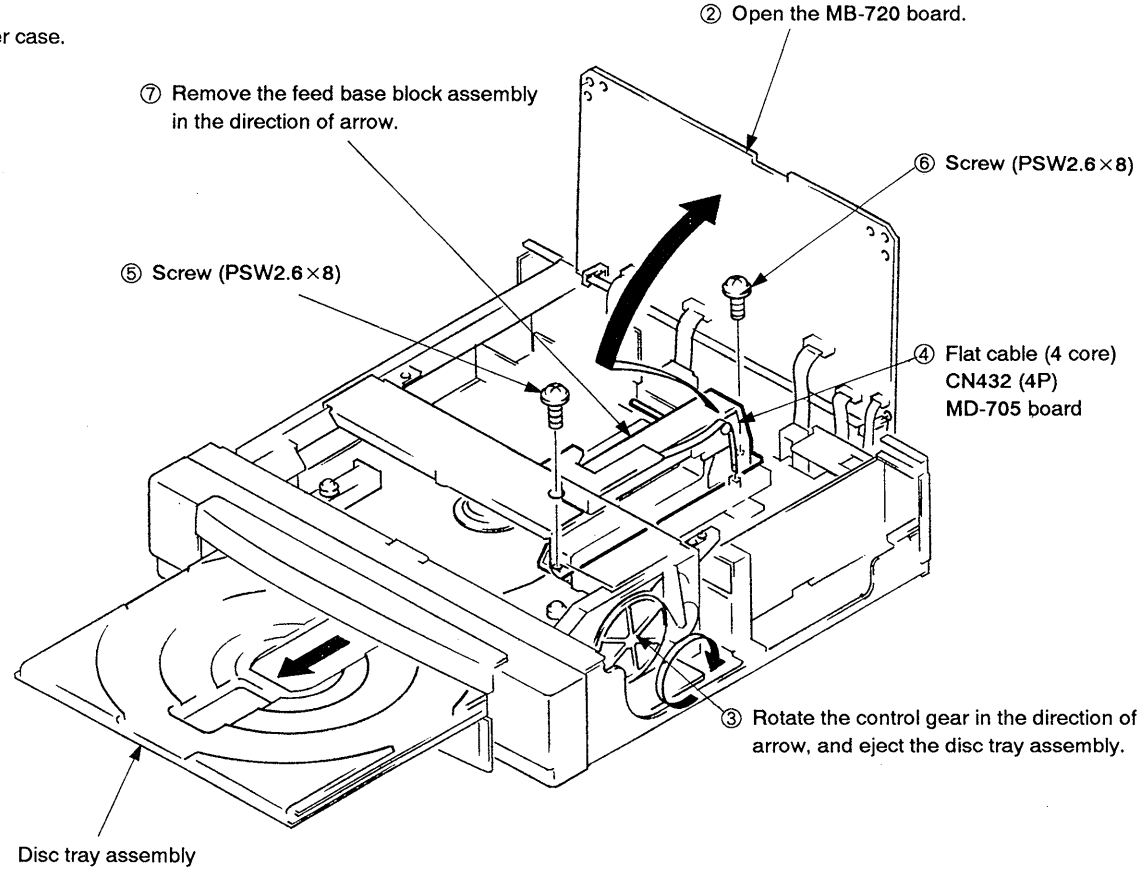
1. Rotate the control gear on the right side of the set, and open the tray.
2. Remove the chucking block assembly.
3. Remove the reinforcement stay.
4. Change the turn table assembly.
   Adjust the height and also the position putting in the reinforcement stay as below.
   The thickness of the reinforcement is 1 mm.
5. Fix the reinforcement to fixed position.



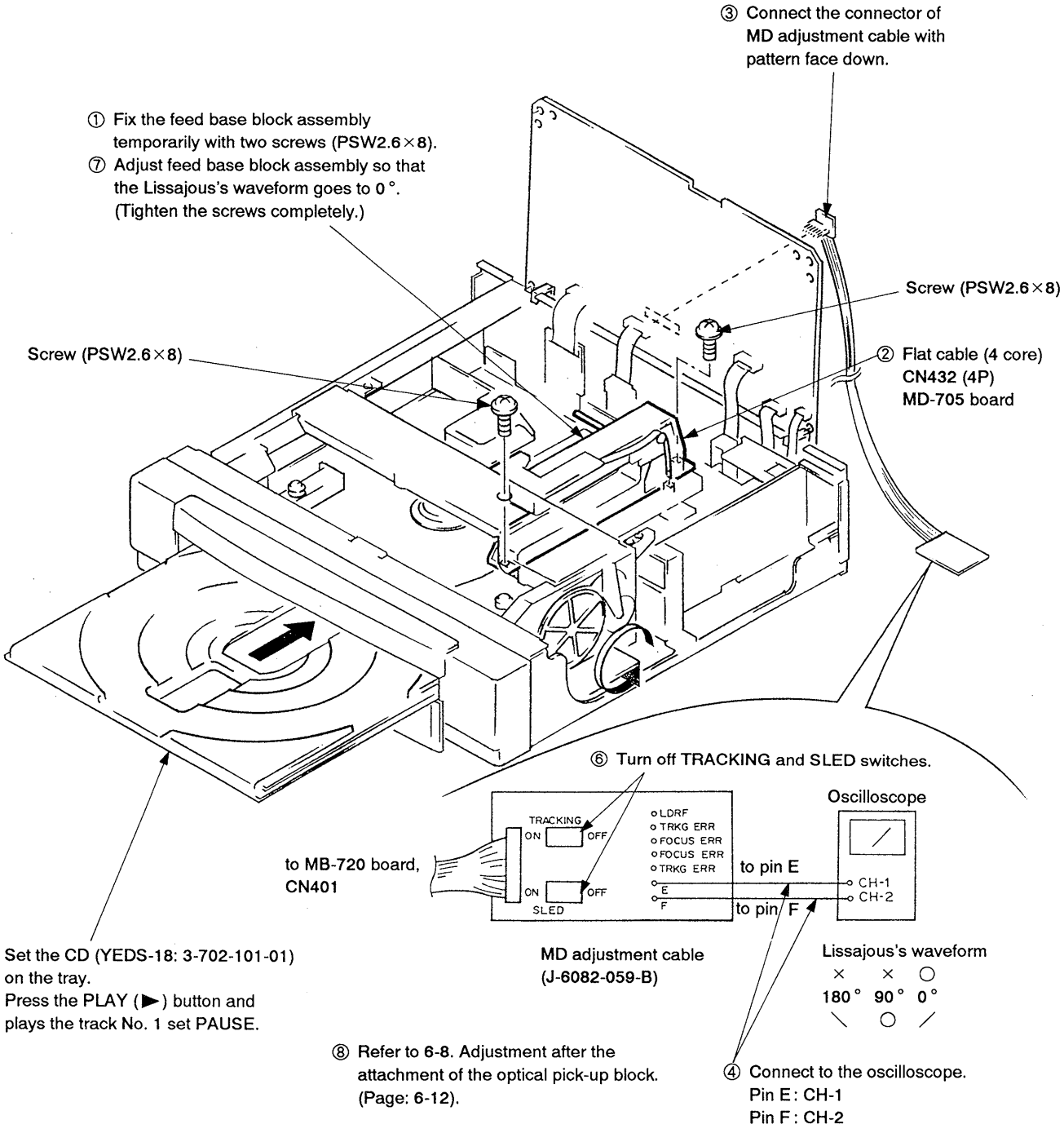
Put in the reinforcement stay between the spindle motor holder and the FG ring, tighten the fixed screw hard after the height adjustment.

2-6. FEED BASE BLOCK ASSEMBLY

① Remove the upper case.

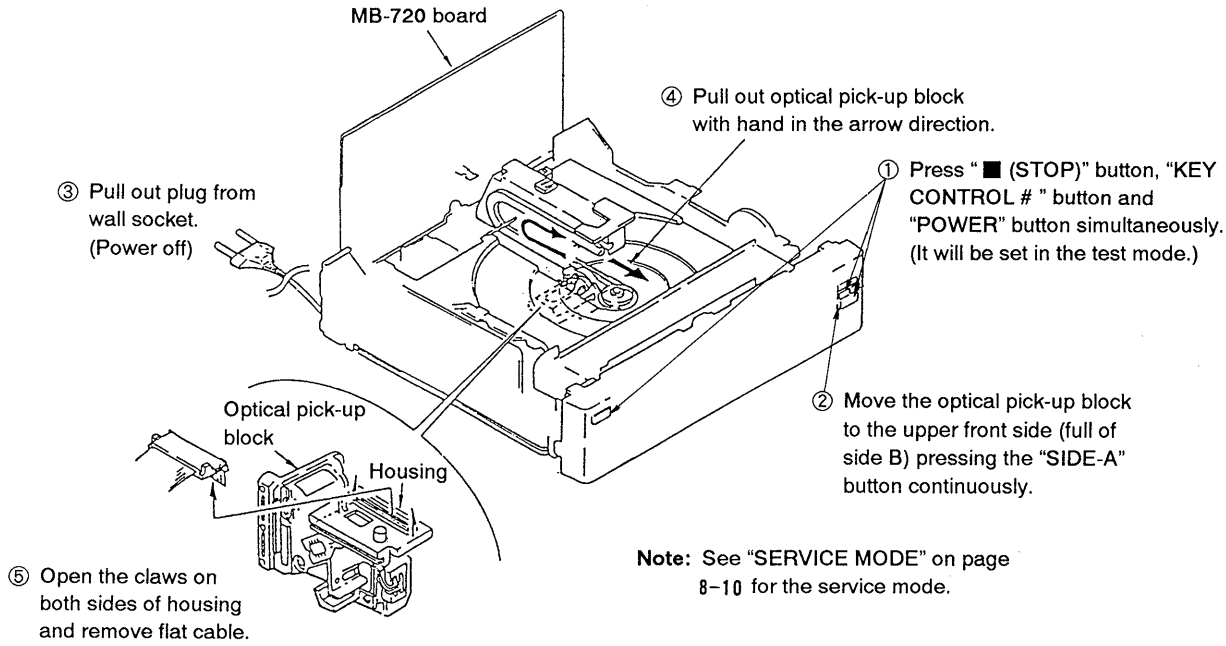


2-7. MOUNTING THE FEED BASE BLOCK ASSEMBLY



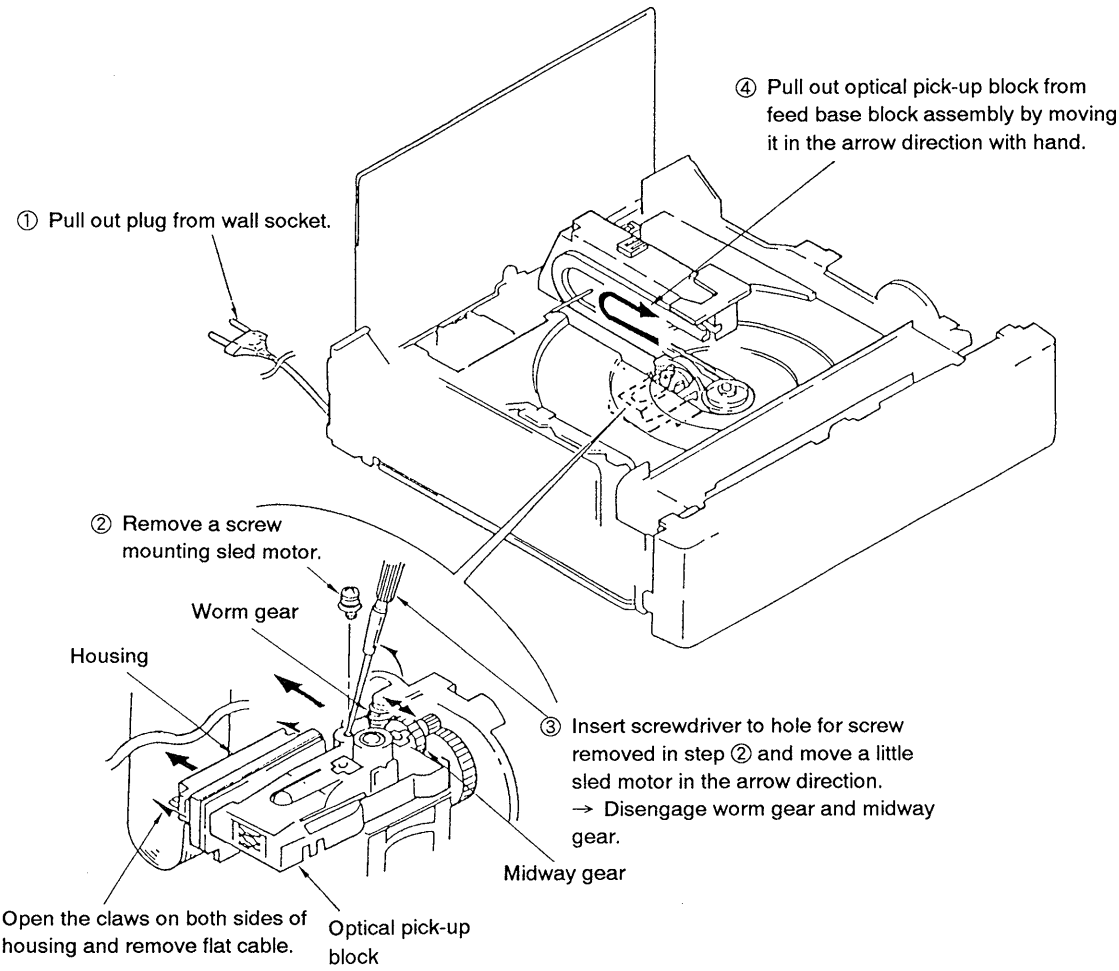
2-8. OPTICAL PICK-UP BLOCK (KHS-150A)

- **DISASSEMBLY I**
  (OPTICAL PICK-UP BLOCK MOTOR OPERATES)



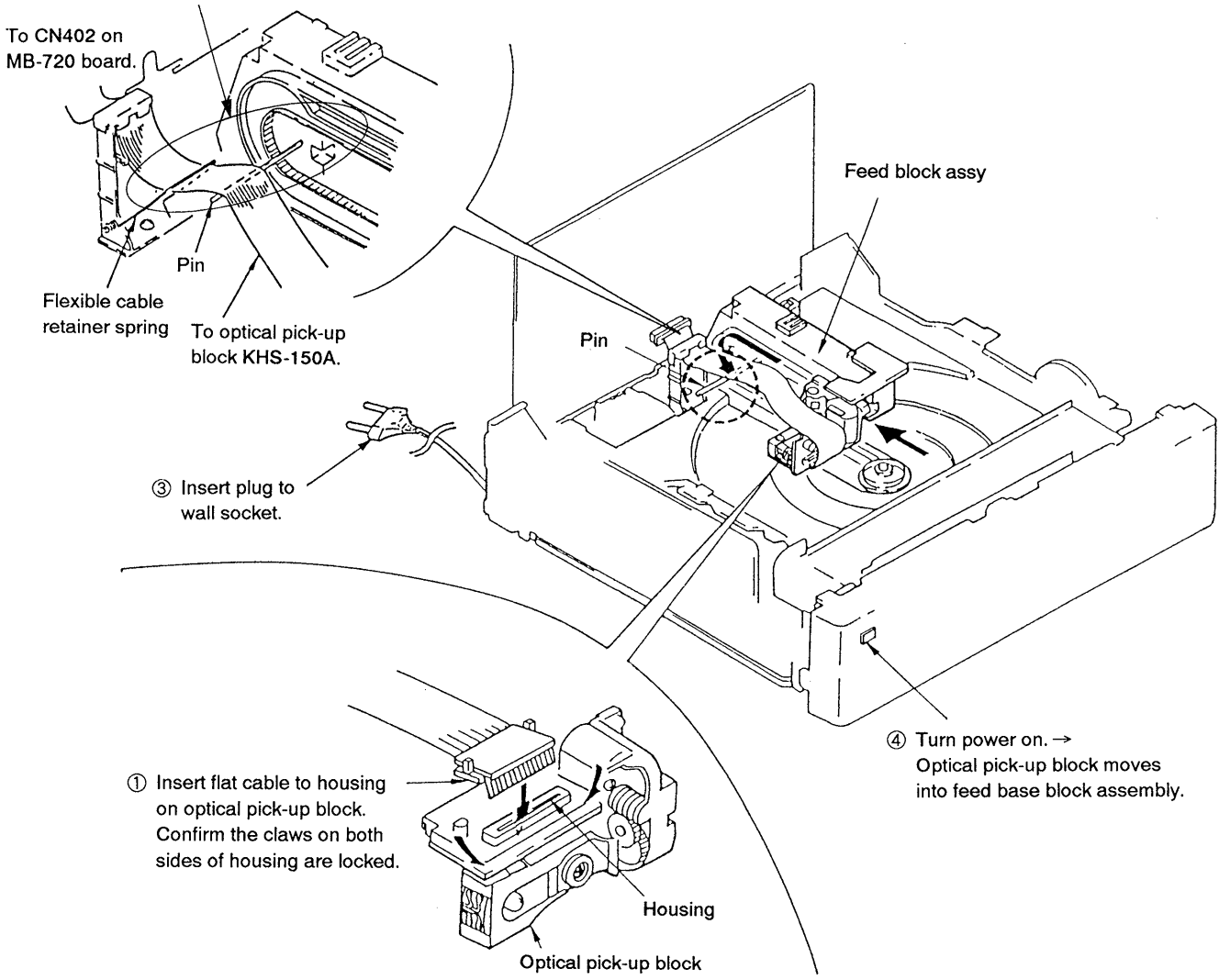
Note: See "SERVICE MODE" on page 8-10 for the service mode.

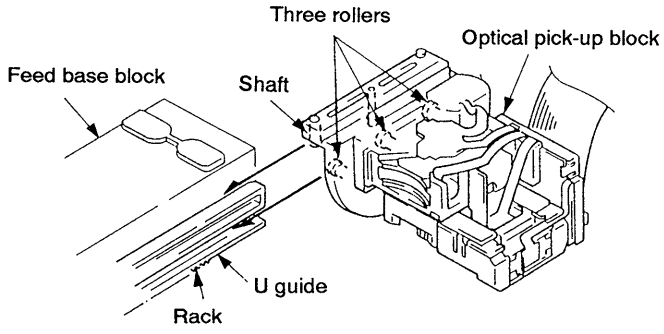
- **DISASSEMBLY II**
  (OPTICAL PICK-UP BLOCK MOTOR DOESN'T OPERATE)



- **ASSEMBLE**

② Confirm the flat cable goes through the flexible cable retainer spring and over the pin.





- Mounting

1) Insert the shaft and three rollers of the optical pick-up block into their corresponding grooves of the U guide.
2) Set so that the gear of the optical pick-up block engages with the rack of the U guide.

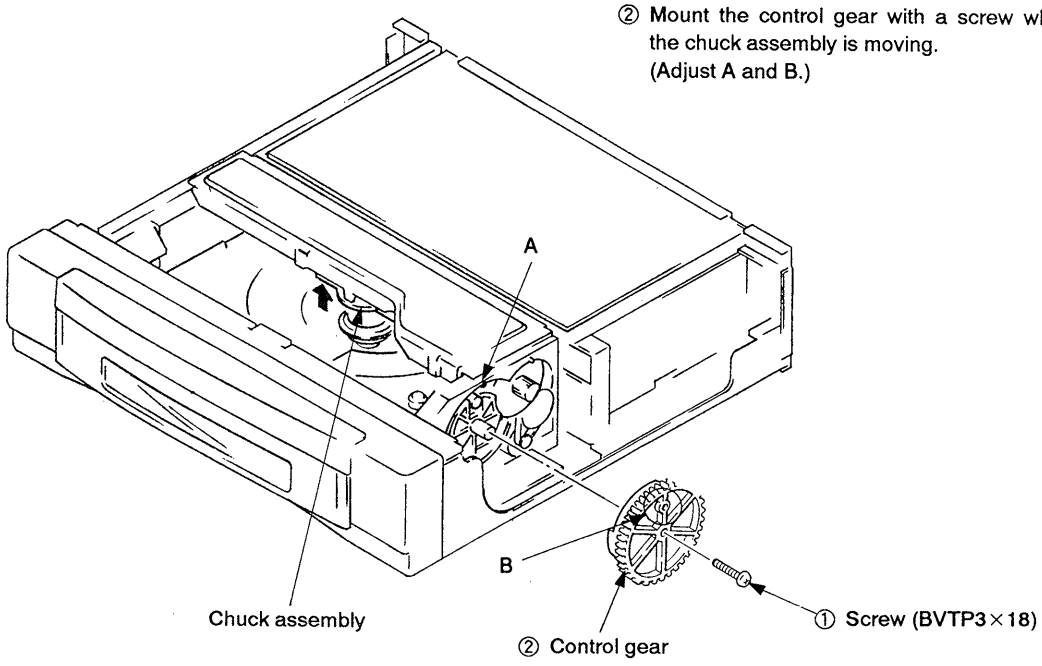
2-9. CONTROL GEAR

① Remove the upper case.

- **Mounting the control gear**

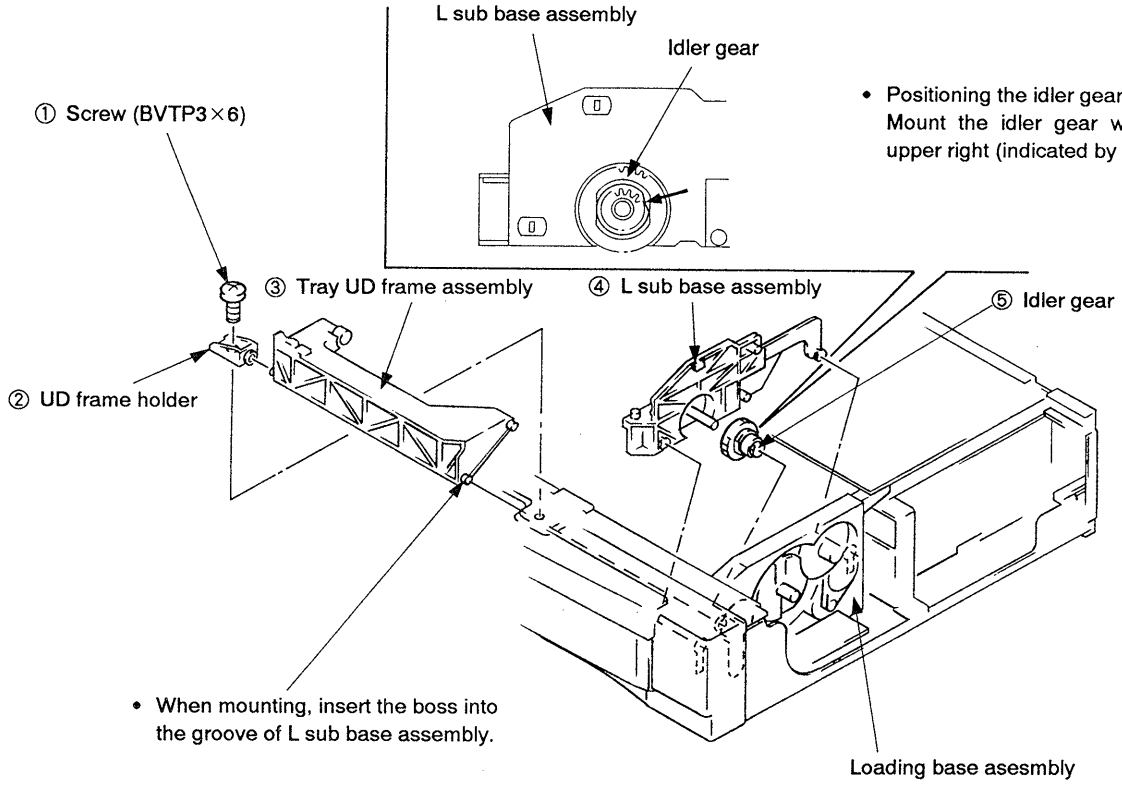
① Apply the grease on the cam groove of control gear.

② Mount the control gear with a screw while the chuck assembly is moving. (Adjust A and B.)



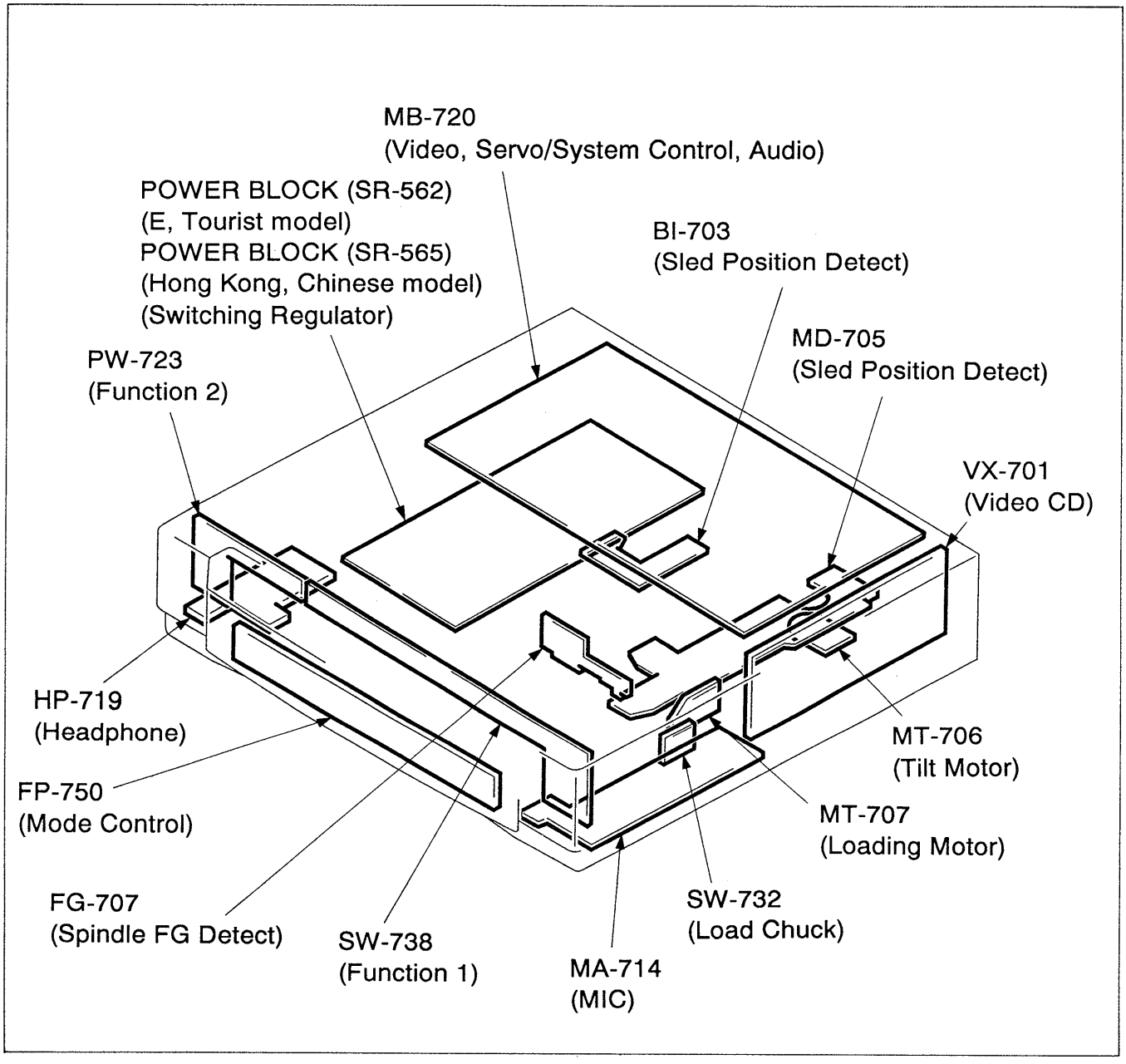
2-10. IDLER GEAR

① Remove the upper case, disctray, and control gear.



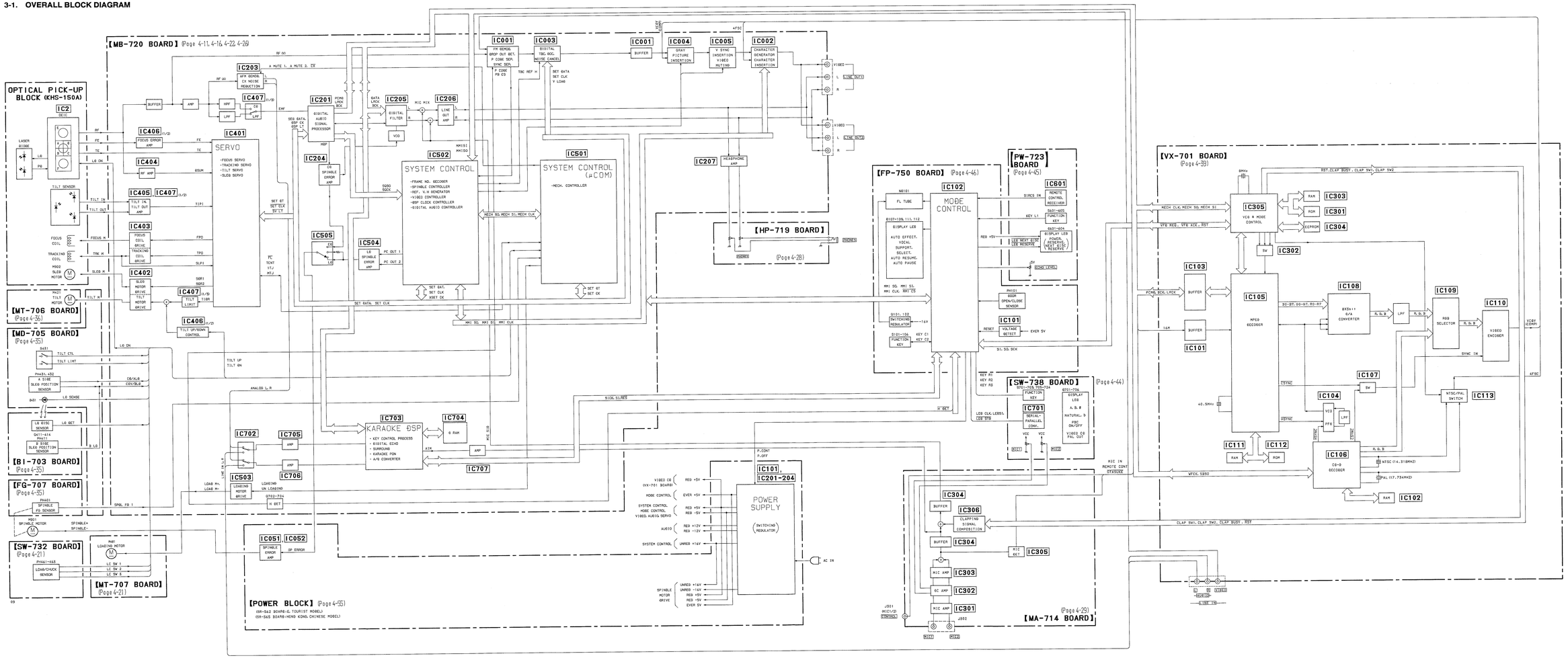
- Positioning the idler gear
  Mount the idler gear with its notch faced upper right (indicated by the arrow).

2-11. CIRCUIT BOARDS LOCATION

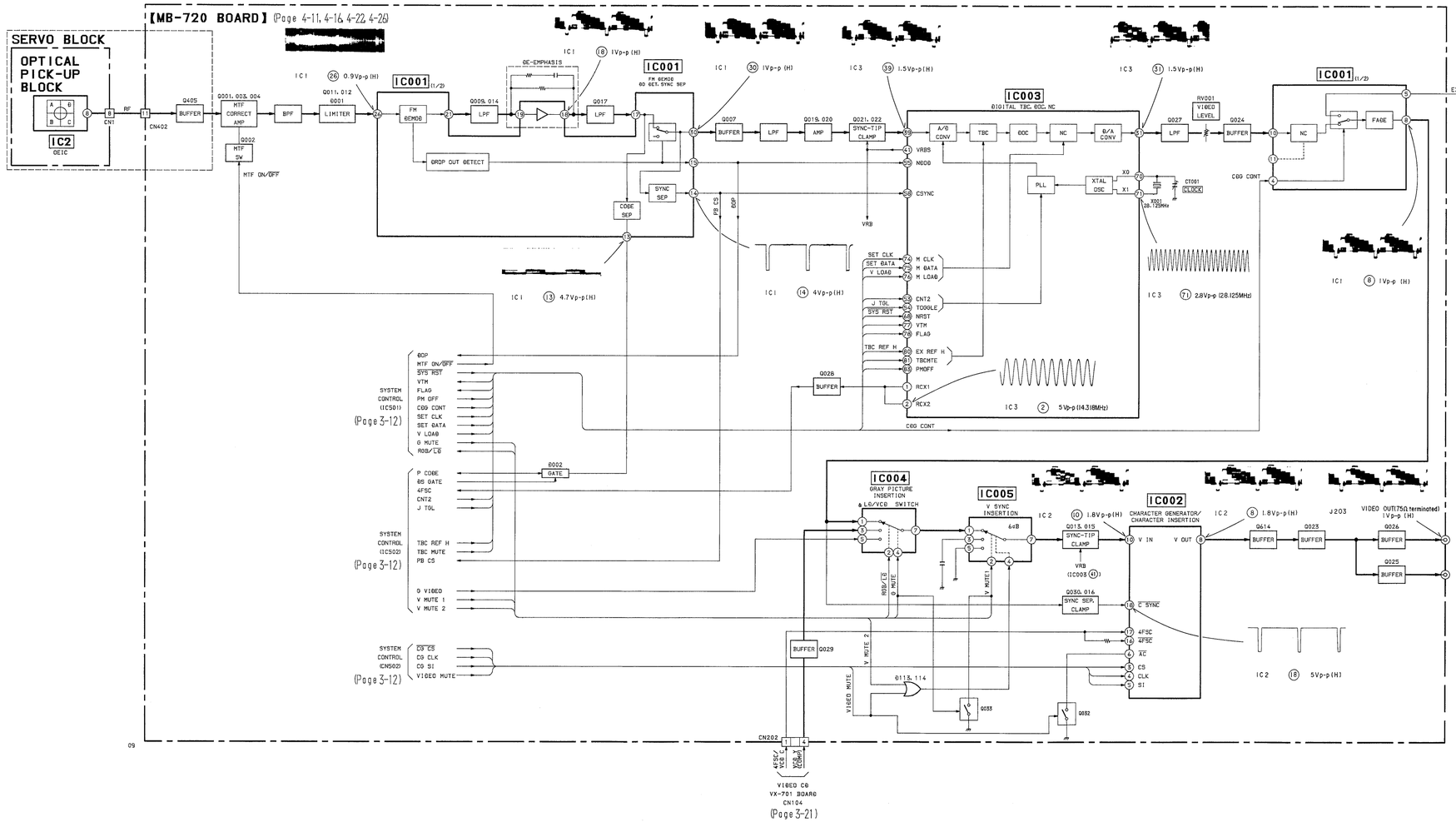


SECTION 3
BLOCK DIAGRAMS

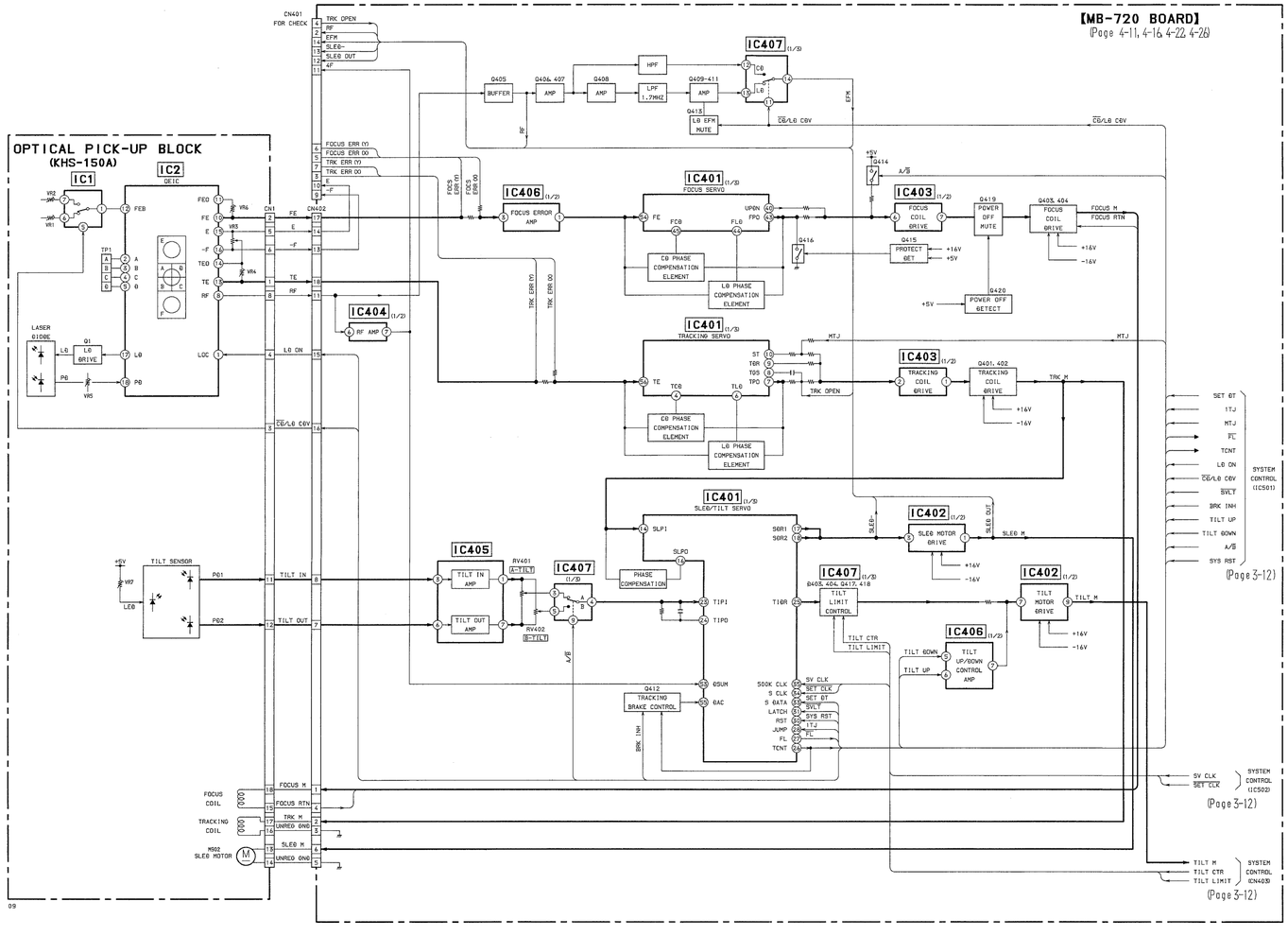
3-1. OVERALL BLOCK DIAGRAM



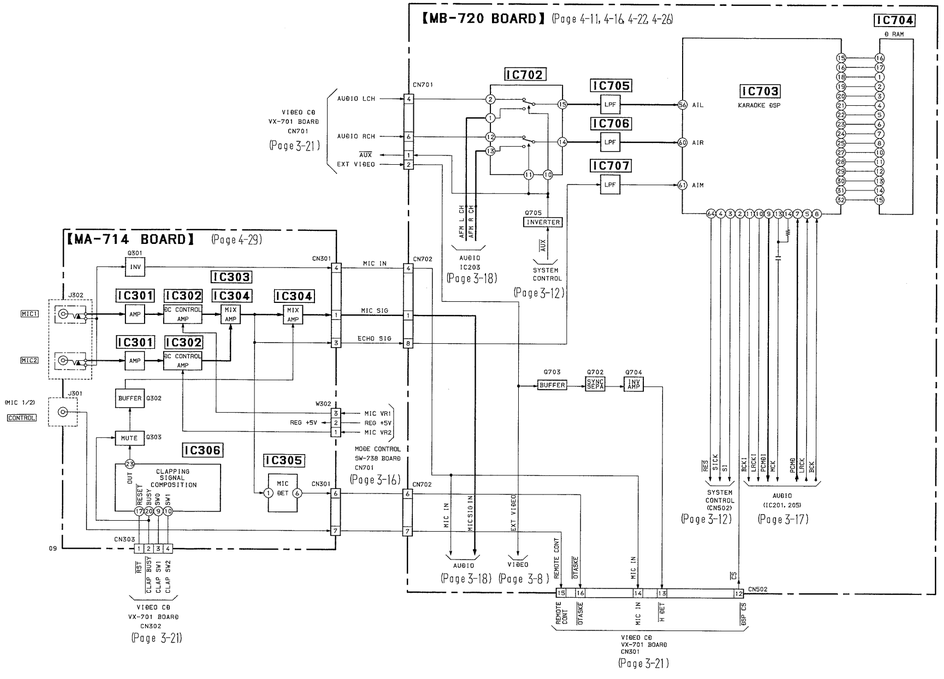
3-2. VIDEO BLOCK DIAGRAM



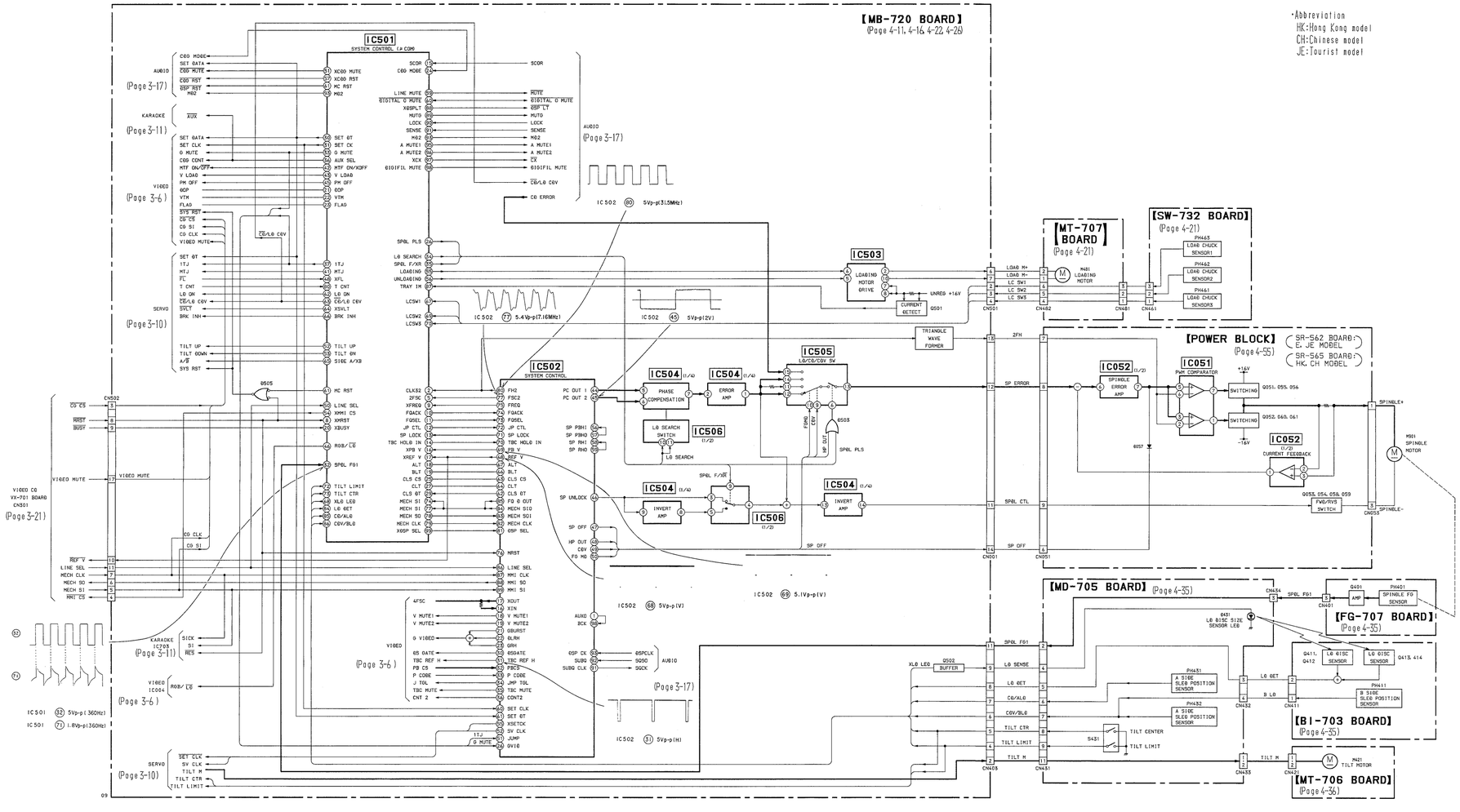
3-3. SERVO BLOCK DIAGRAM



3-4. KARAOKE BLOCK DIAGRAM

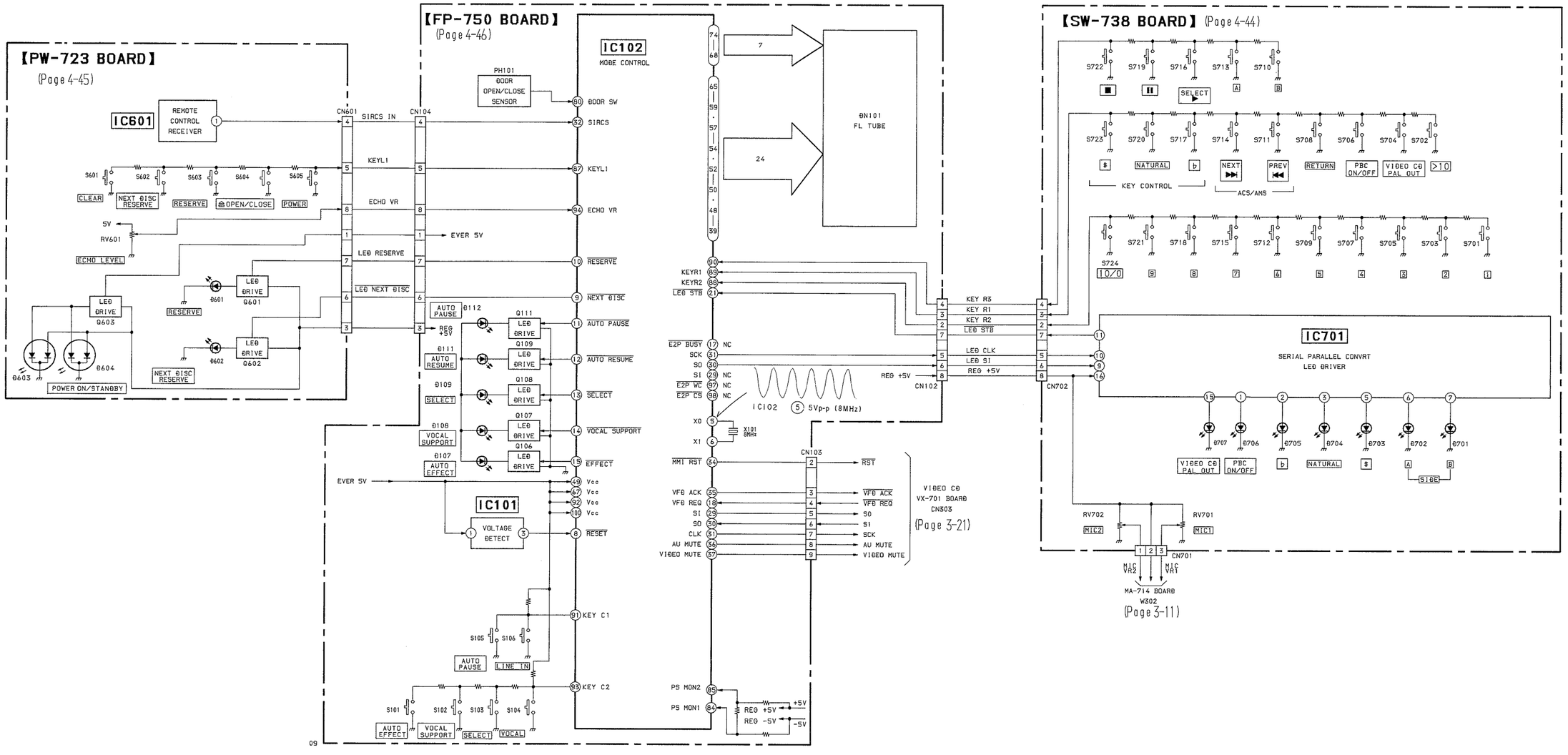


3-5. SYSTEM CONTROL BLOCK DIAGRAM

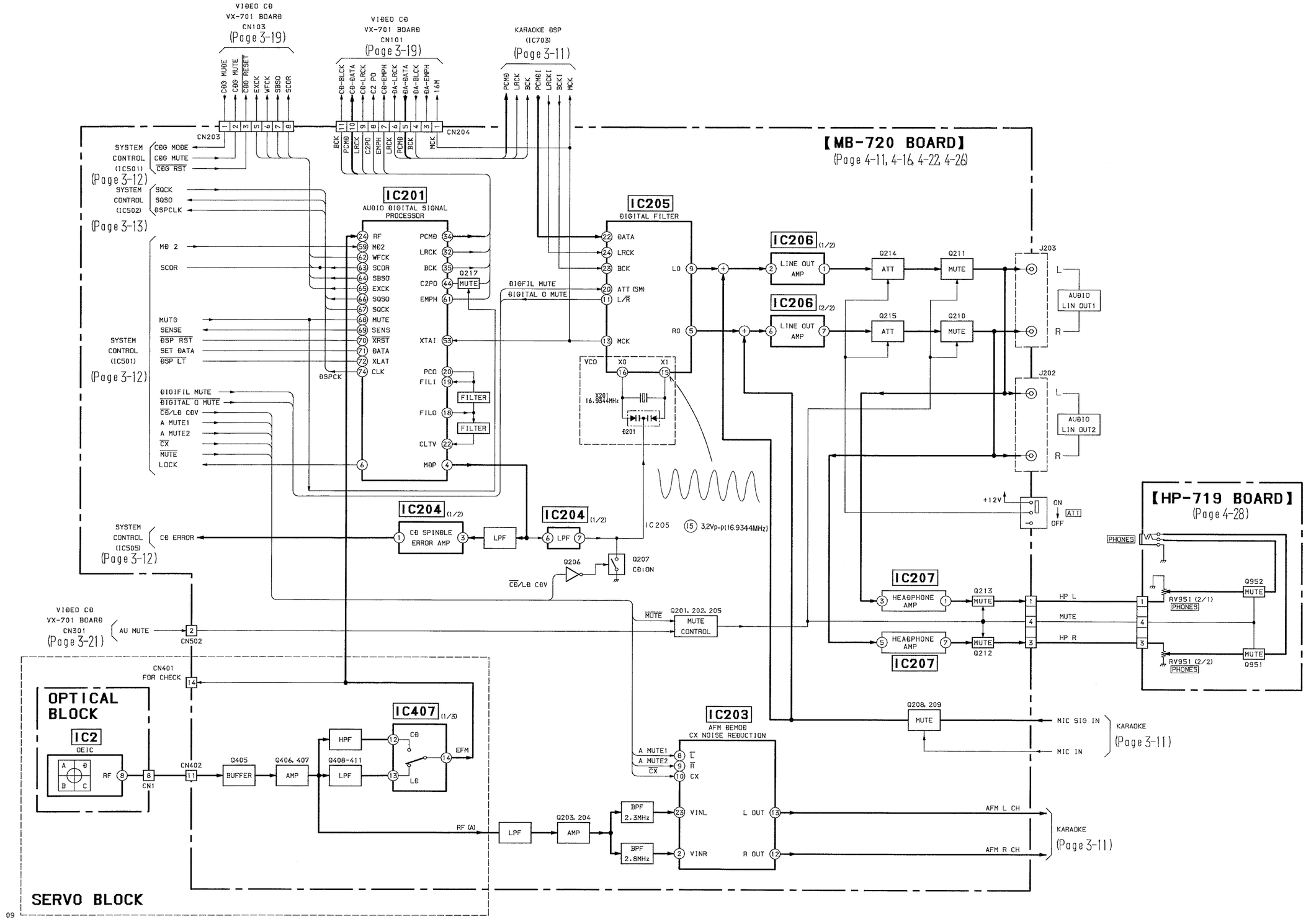


·Abbreviation
HK:Hong Kong model
CH:Chinese model
JE:Tourist model

3-6. MODE CONTROL BLOCK DIAGRAM

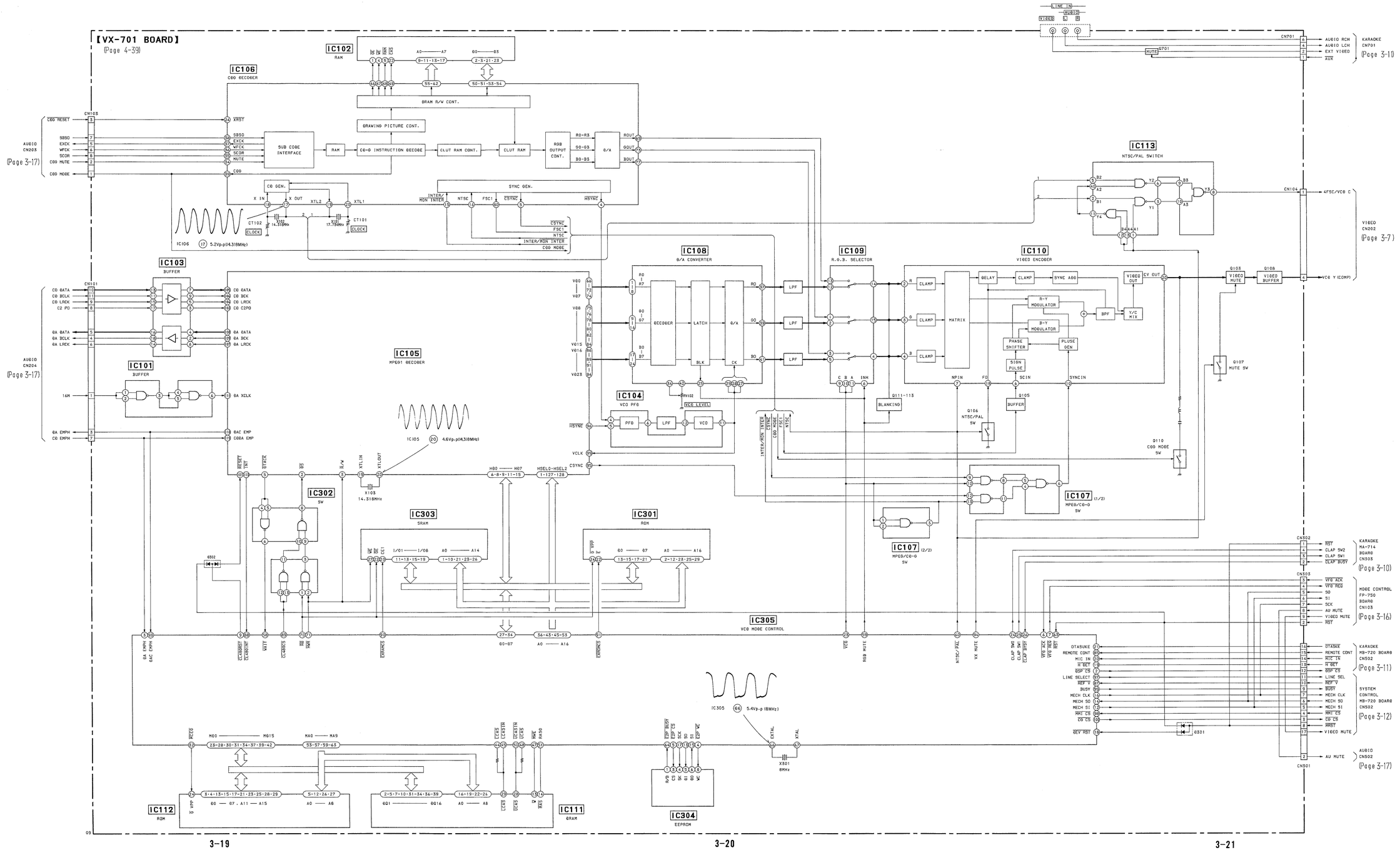


3-7. AUDIO BLOCK DIAGRAM

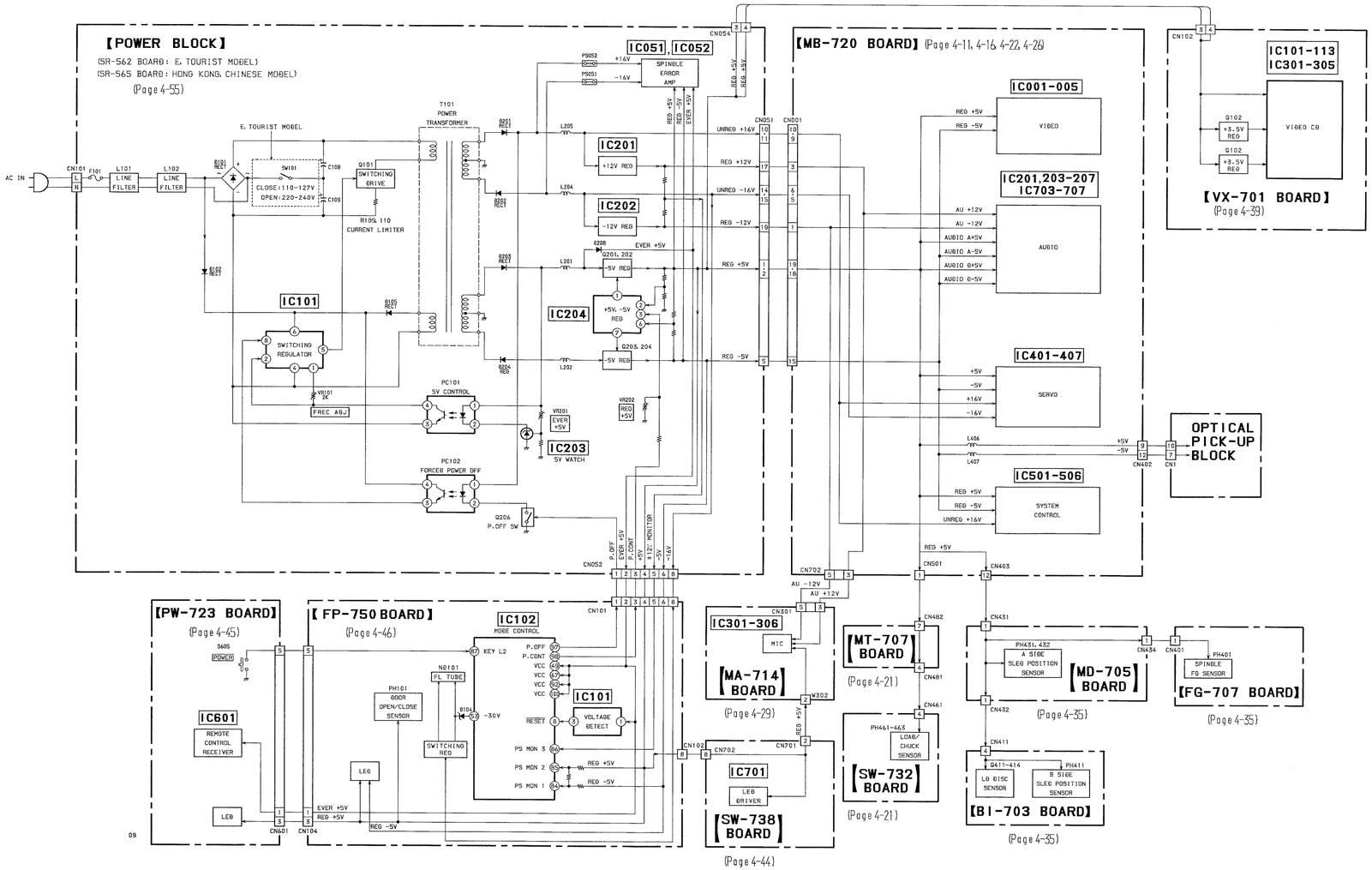


09

3-8. VIDEO CD BLOCK DIAGRAM

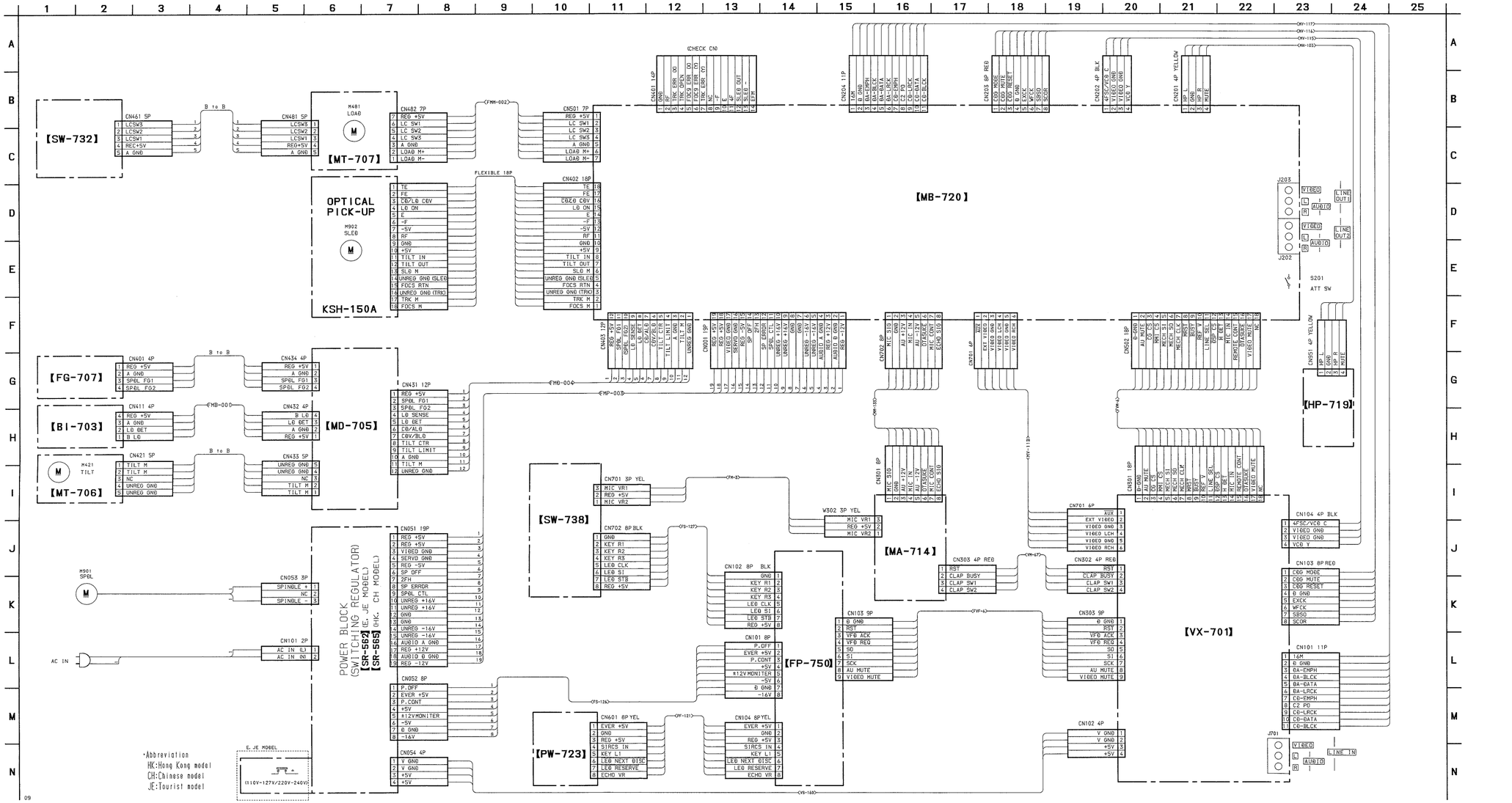


3-9. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- **For printed wiring boards.**
- O— : indicated a lead wire mounted on the component side.
- ○ : Through hole.
- ■ : Parts mounted on the conductor side.
- ▭ : Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

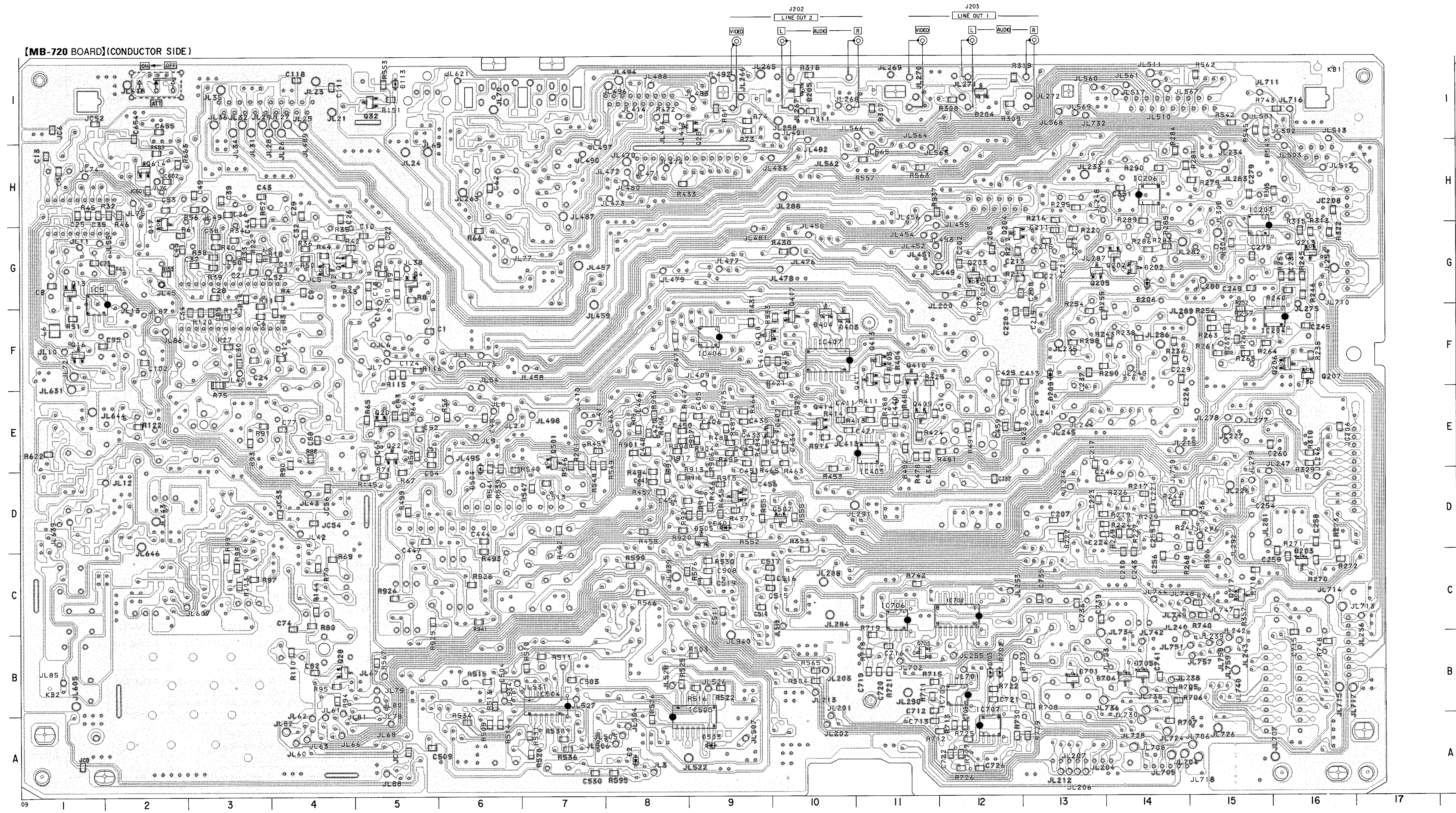
- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣W~⊢ : fusible resistor.
- ⊣W⊢ : nonflammable resistor.
- ▭ : panel designation.
- ▭ : adjustment for repeair.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken under pause mode.
  (NTSC REF DISC HLV-8 SIDE 1 FRAME No. 4100)
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

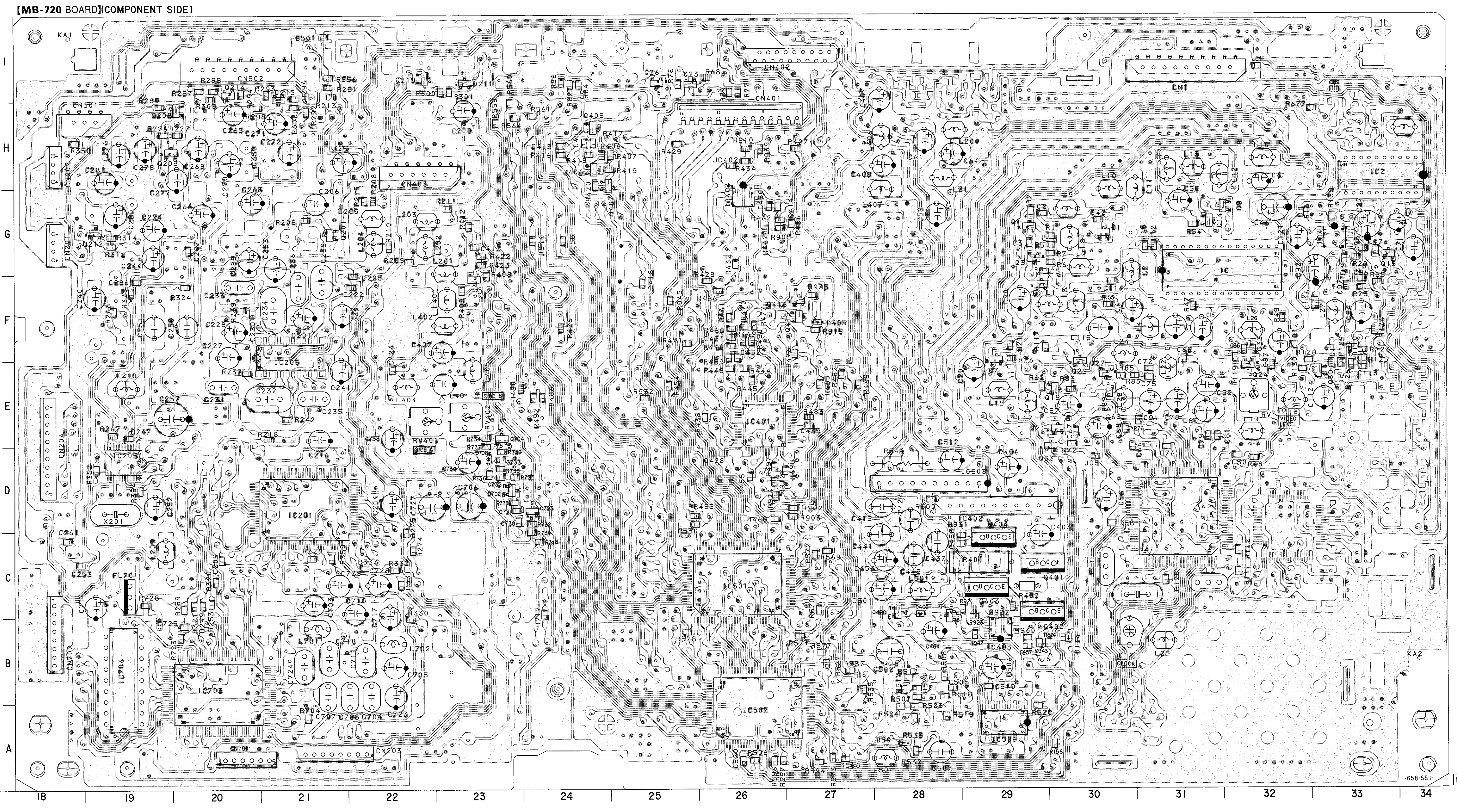
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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

MB-720 (VIDEO, SERVO, SYSTEM CONTROL, AUDIO) PRINTED WIRING BOARD

— Ref. No. MB-720 BOARD: 1000 series —



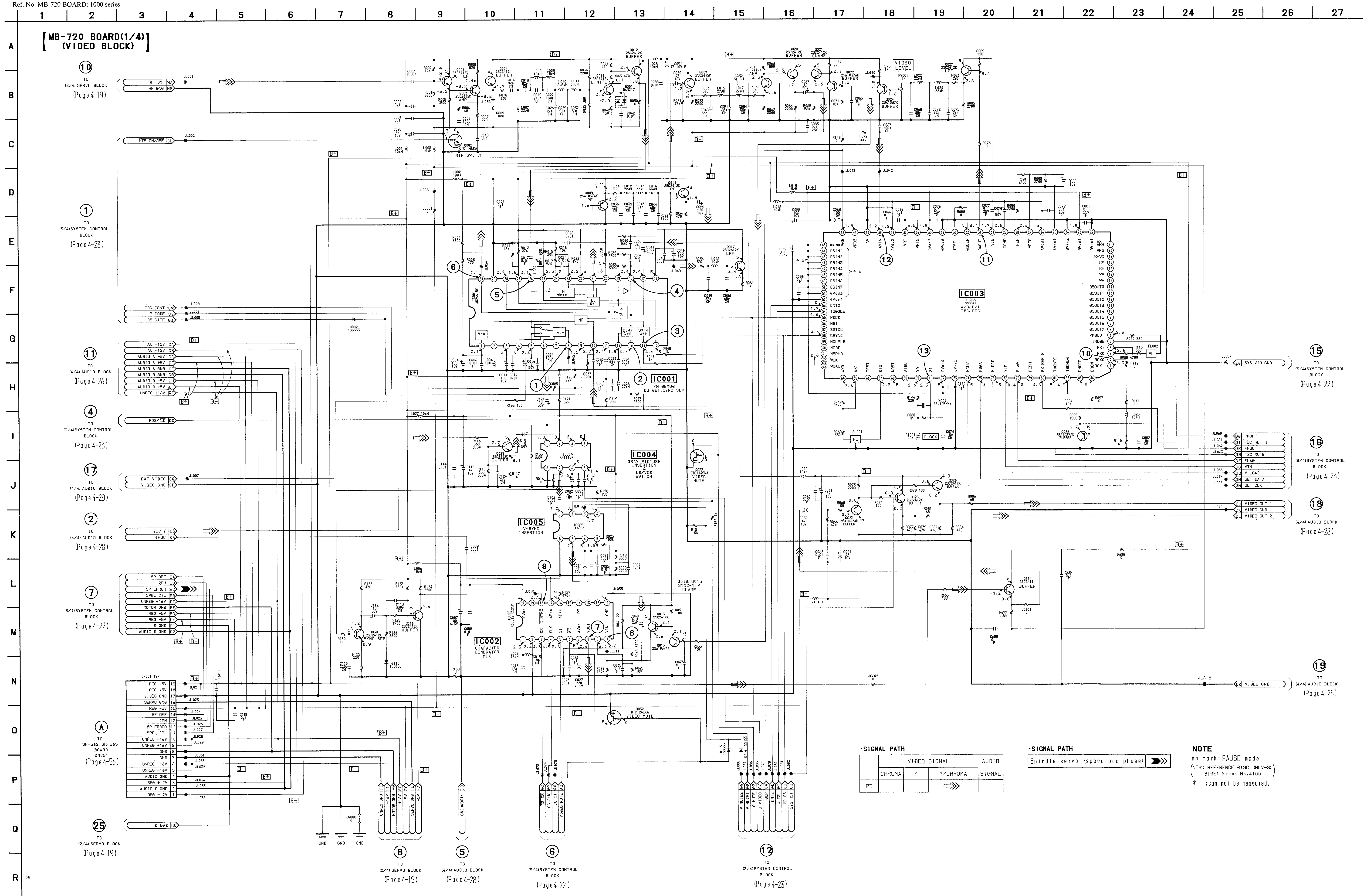


MB-720 BOARD

CN001	J-31
CN201	G-18
CN202	H-18
CN203	A-21
CN204	D-18
CN401	H-26
CN402	I-27
CN403	H-22
CN501	H-19
CN502	I-20
CN701	A-20
CN702	B-18
CT001	B-30
D001	G-30
D002	A-8
D110	F-33
D113	I-5
D114	B-30
D202	G-14
D203	C-16
D204	I-12
D205	I-10
D206	G-14
D209	F-13
D401	D-9
D402	E-10
D403	F-10
D404	F-10
D405	F-27
D406	C-28
D501	A-28
D503	A-9
D504	E-6
D505	D-9
D701	B-13
D702	B-12
D703	B-12
D704	B-14
D705	B-14
D706	D-23
IC001	F-32
IC002	H-33
IC003	D-31
IC004	G-33
IC005	G-1
IC201	D-21
IC203	F-21
IC207	G-15
IC401	E-26
IC402	D-29
IC403	B-29
IC404	G-26
IC405	E-11
IC406	F-9
IC407	F-10
IC501	C-26
IC502	A-26
IC503	D-28
IC504	B-7
IC505	A-9
IC506	A-29
IC702	C-12
IC703	B-20
IC704	B-19
IC705	B-12
IC706	C-11
IC707	A-12
Q001	G-29
Q002	F-29
Q003	G-29
Q004	G-5
Q007	E-29
Q009	G-32
Q011	G-4
Q012	G-4
Q013	G-1
Q014	G-31
Q015	G-33
Q016	F-1
Q017	G-2
Q019	E-30
Q020	E-5
Q021	E-30
Q022	E-5
Q023	I-25
Q024	E-32
Q025	I-9
Q026	I-25
Q027	E-33
Q028	B-4
Q029	E-30
Q030	E-33
Q032	I-5
Q033	D-30
Q201	G-21
Q202	G-14
Q203	G-12
Q204	G-12
Q205	G-13
Q206	F-16
Q207	F-16
Q208	H-20
Q209	H-19
Q210	I-22
Q211	I-23
Q212	G-19
Q213	G-16
Q214	I-20
Q215	H-21
Q217	C-15
Q401	C-29
Q402	C-29
Q403	C-29
Q404	C-29
Q405	H-24
Q406	H-24
Q407	H-24
Q408	F-23
Q409	E-11
Q410	F-11
Q411	E-11
Q412	D-9
Q413	F-11
Q414	E-10
Q415	F-27
Q416	F-27
Q417	F-10
Q418	F-10
Q419	B-28
Q420	C-28
Q501	E-7
Q502	D-10
Q614	H-2
Q702	D-23
Q703	D-24
Q704	E-23
Q705	B-11
RV001	E-32
RV401	E-22
RV402	E-23

MB-720 (VIDEO) SCHEMATIC DIAGRAM

— Ref. No. MB-720 BOARD: 1000 series —



·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB			⇨»»	

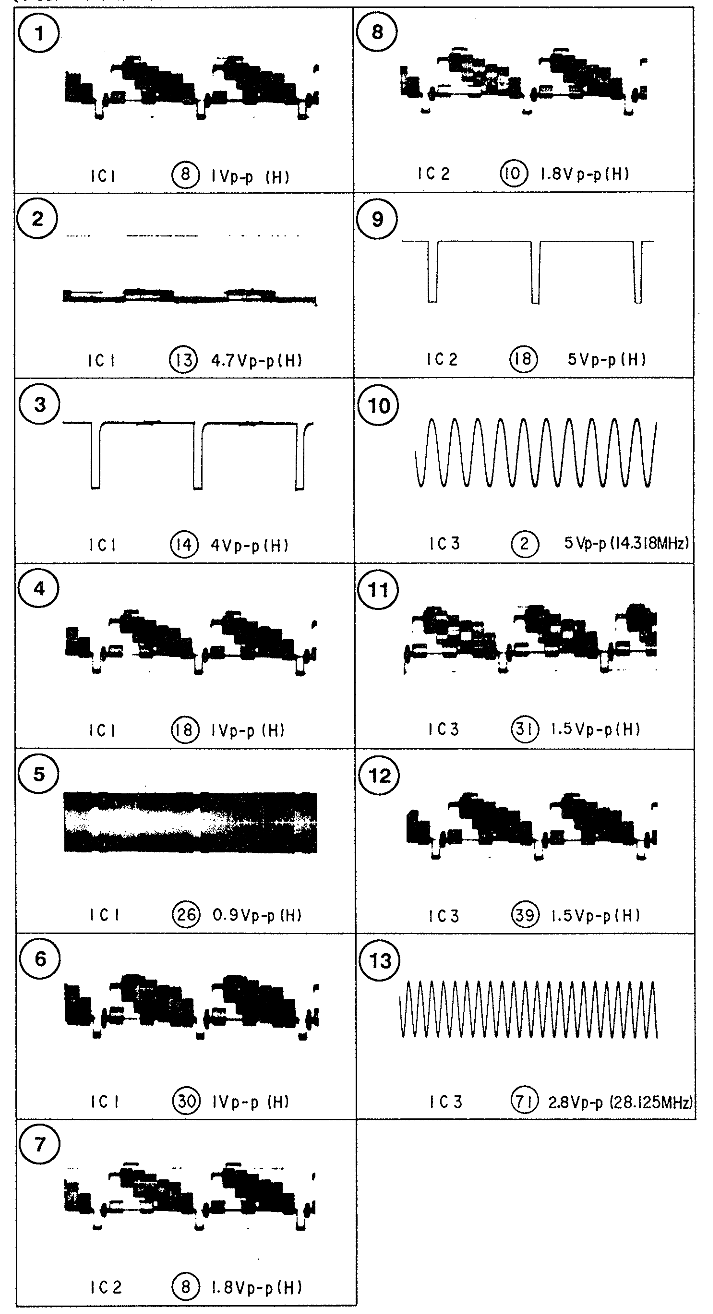
·SIGNAL PATH

Spindle servo (speed and phase)	➤»»

NOTE

no mark: PAUSE mode
(NTSC REFERENCE DISC (HLV-8) SIDE1 Frame No.4100)
* :can not be measured.

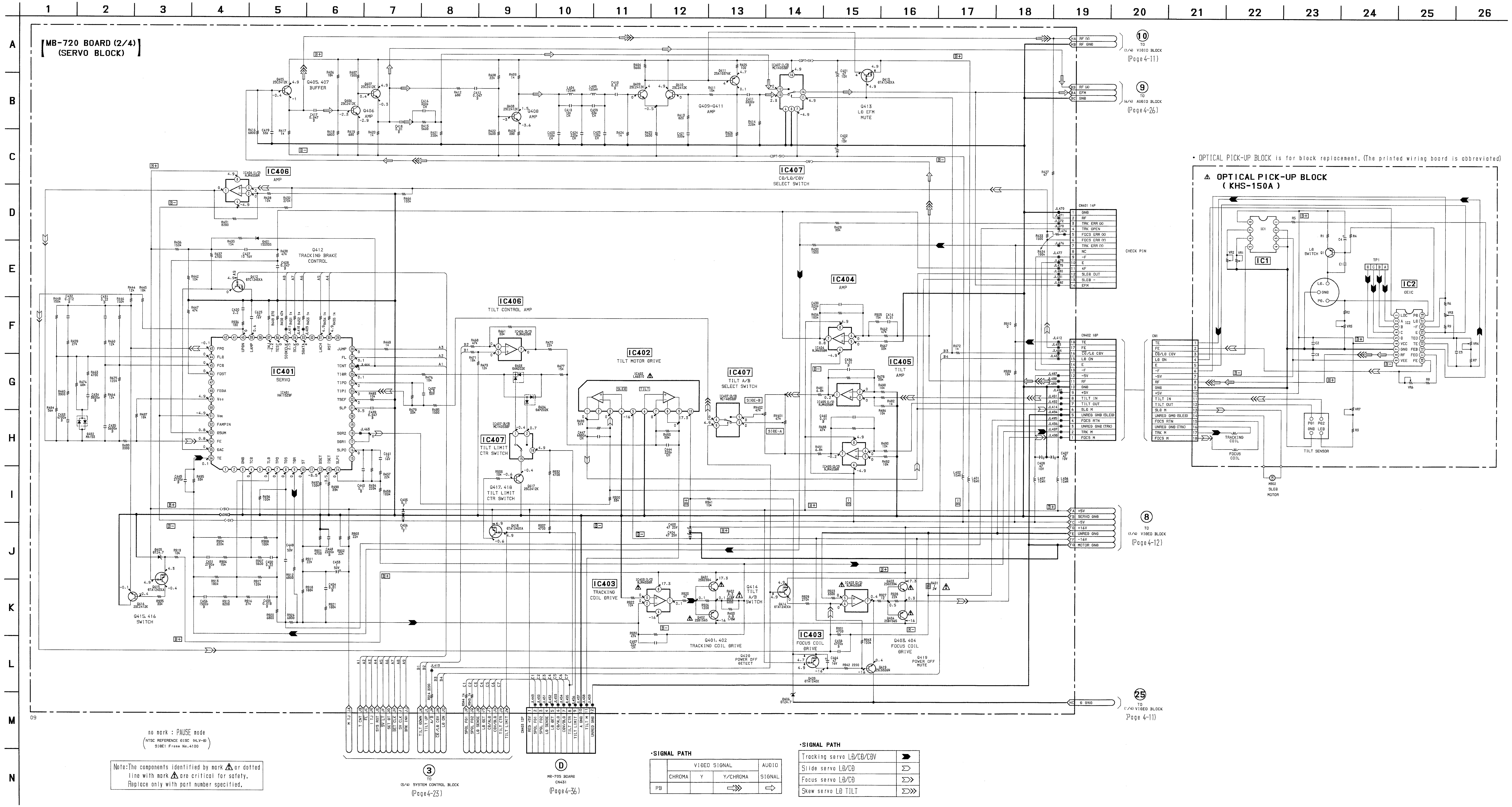
MB-720BOARD(1/4)
no mark : PAUSE mode.
(NTSC REFERENCE DISC (HLV-8) SIDE1 Frame No.4100)



MB-720 (SERVO) SCHEMATIC DIAGRAM

— Ref. No. MB-720 BOARD: 1000 series —

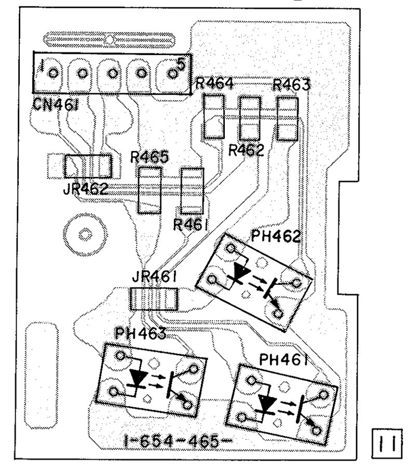
• Refer to page 4-6 for printed wiring board of MB-720 BOARD.


MB-720 BOARD (2/4)
(SERVO BLOCK)
IC401
SERVO
IC402
TILT MOTOR DRIVE
IC403
TRACKING COIL DRIVE
IC404
AMP
IC405
TILT AMP
IC406
TILT CONTROL AMP
IC407
CD/LD/CDV SELECT SWITCH
TILT LIMIT CTR SWITCH
TILT A/B SELECT SWITCH
Q405, 407 BUFFER
Q409-Q411 AMP
Q413 LD EFM MUTE
Q412 TRACKING BRAKE CONTROL
Q415, 416 SWITCH
Q417, 418 TILT LIMIT CTR SWITCH
Q401, 402 TRACKING COIL DRIVE
Q403, 404 FOCUS COIL DRIVE
Q414 TILT A/B SWITCH
Q420 POWER OFF DETECT
Q419 POWER OFF MUTE
CHECK PIN
TO (3/4) VIDEO BLOCK (Page 4-11)
TO (4/4) AUDIO BLOCK (Page 4-26)
TO (3/4) VIDEO BLOCK (Page 4-12)
TO (3/4) SYSTEM CONTROL BLOCK (Page 4-23)
MB-705 BOARD CN481 (Page 4-36)
• OPTICAL PICK-UP BLOCK is for block replacement. (The printed wiring board is abbreviated)
⚠ OPTICAL PICK-UP BLOCK
(KHS-150A)
TILT SENSOR
TRACKING COIL
FOCUS COIL
SLED MOTOR
no mark : PAUSE mode
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.
•SIGNAL PATH
VIDEO SIGNAL
AUDIO
CHROMA
Y
Y/CHROMA
SIGNAL
PB
•SIGNAL PATH
Tracking servo LD/CD/CDV
Slide servo LD/CD
Focus servo LD/CD
Skew servo LD TILT

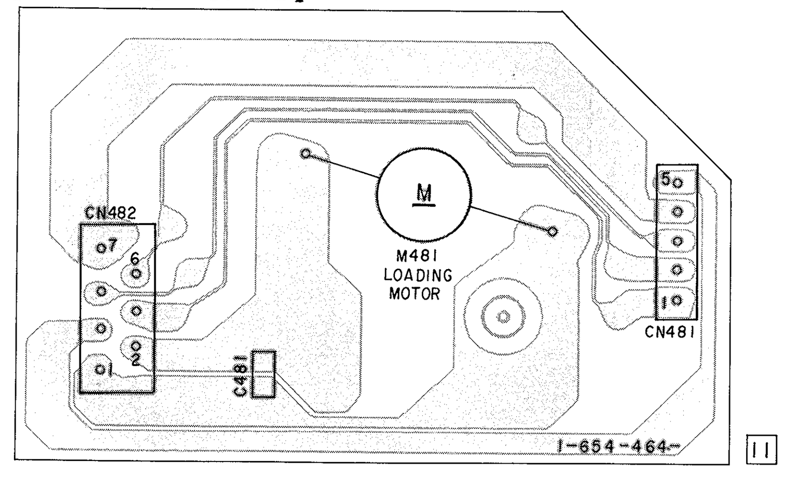
MT-707 (LOADING MOTOR), SW-732 (LOAD CHUCK) PRINTED WIRING BOARDS

— Ref. No. MT-707 and SW-732 BOARDS: 4000 series —

【SW-732 BOARD】



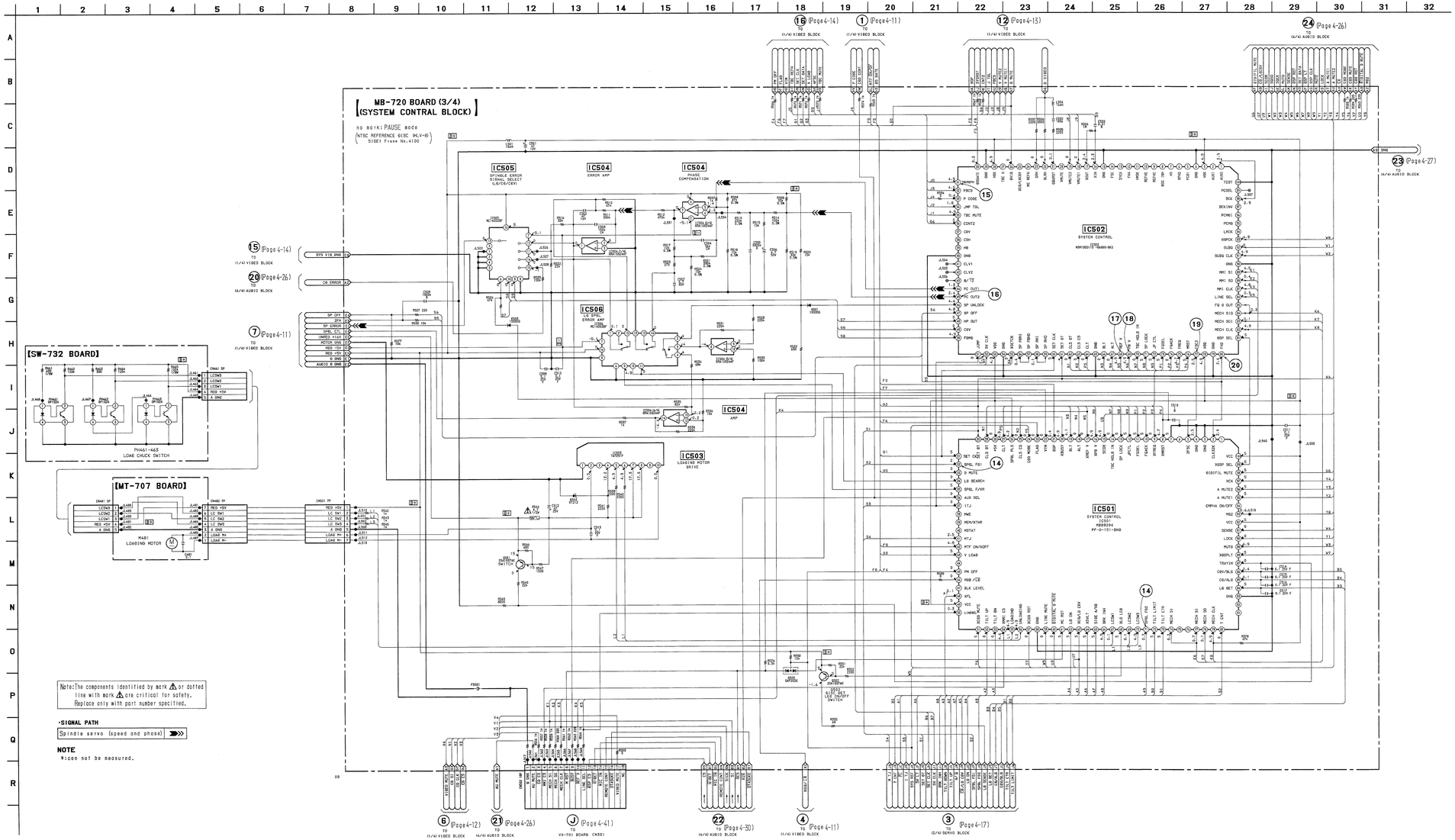
【MT-707 BOARD】

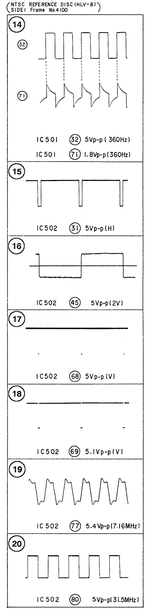


MB-720 (SYSTEM CONTROL), MT-707 (LOADING MOTOR), SW-732 (LOAD CHUCK) SCHEMATIC DIAGRAMS

— Ref. No. MB-720 BOARD: 1000 series, MT-707 and SW-732 BOARDS: 4000 series —

• Refer to page 4–6 for printed wiring board of MB-720 BOARD.

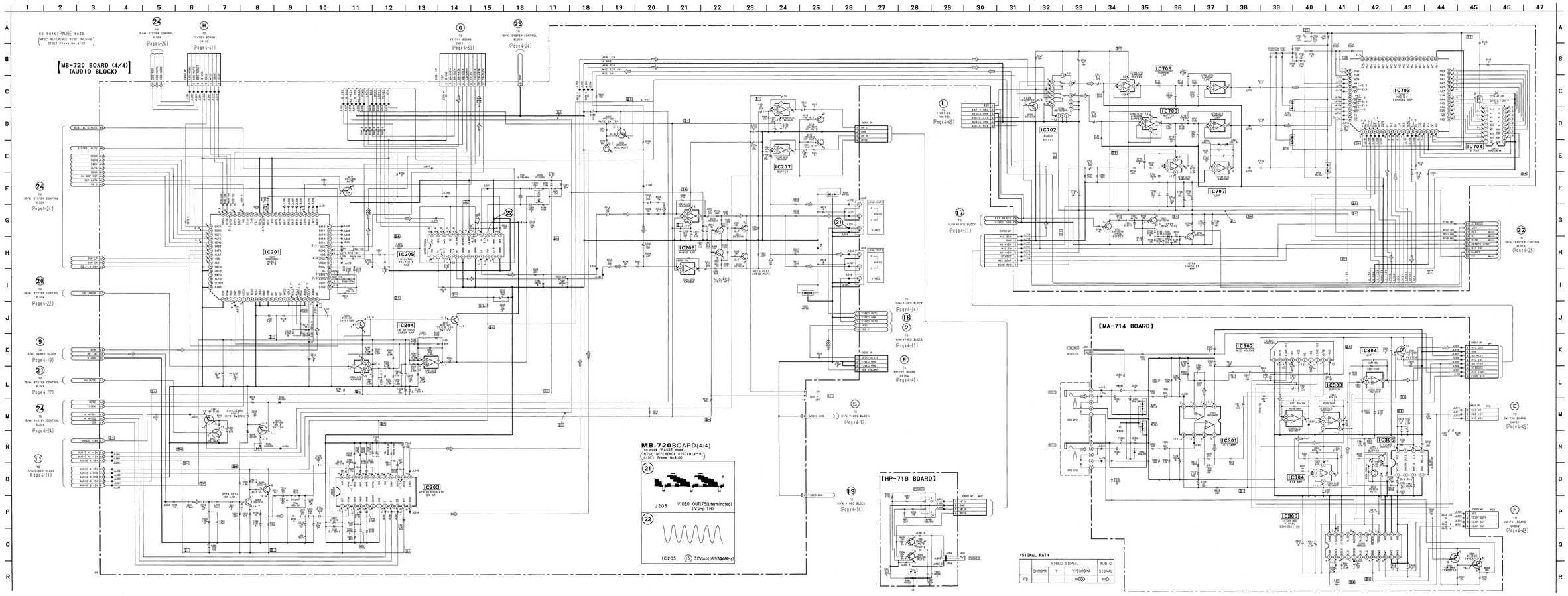




MB-720 (AUDIO) SCHEMATIC DIAGRAM

— Ref. No. MB-720 BOARD: 1000 series, MA-714 and HP-719 BOARDS: 3000 series —

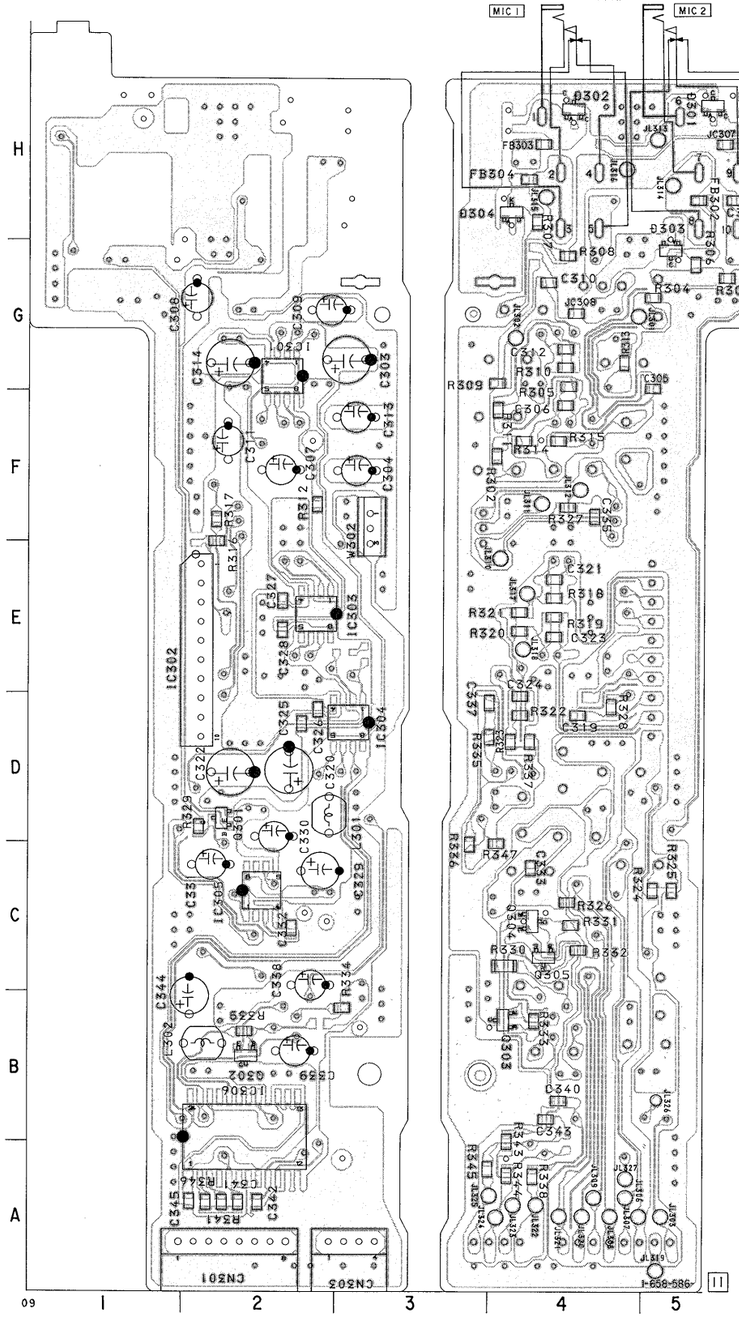
• Refer to page 4-6 for printed wiring board.



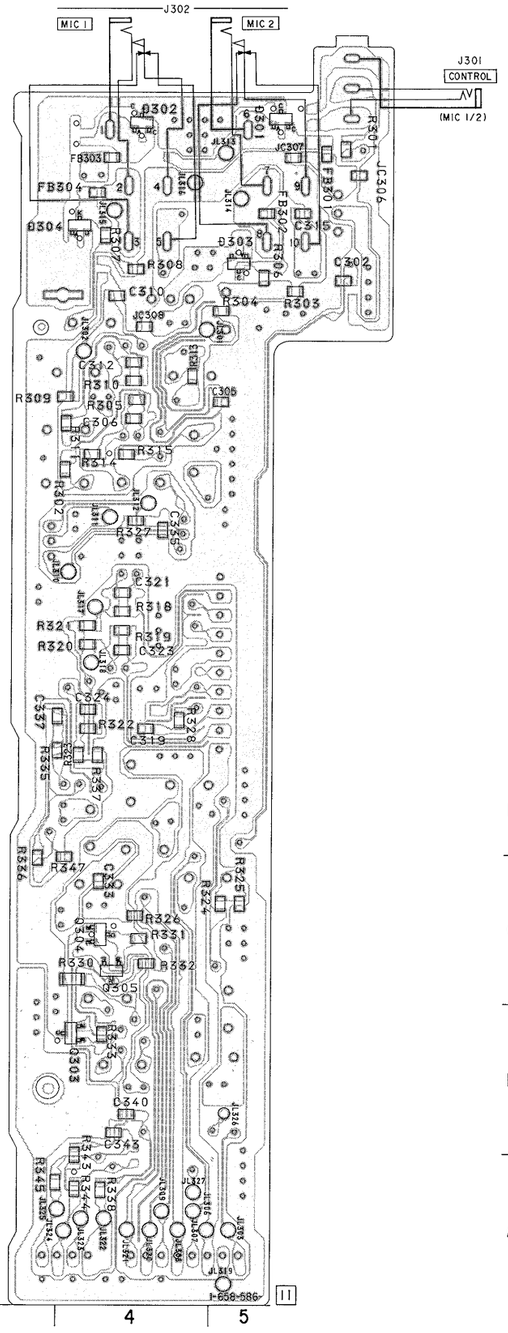
MA-714 (MIC), HP-719 (HEADPHONE) PRINTED WIRING BOARDS

— Ref. No. MA-714 and HP-719 BOARDS: 3000 series —

【MA-714 BOARD】(COMPONENT SIDE)



【MA-714 BOARD】(CONDUCTOR SIDE)



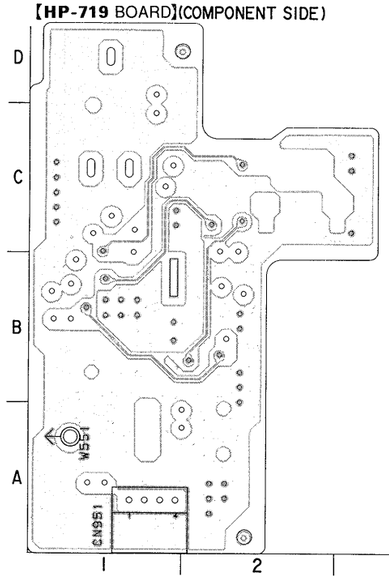
MA-714 BOARD

CN301	A-2
CN303	A-3
D301	H-5
D302	H-4
D303	G-5
D304	H-4
IC301	G-2
IC302	E-2
IC303	E-2
IC304	D-3
IC305	C-2
IC306	B-2
Q301	D-2
Q302	B-2
Q303	B-4
Q304	C-4
Q305	C-4

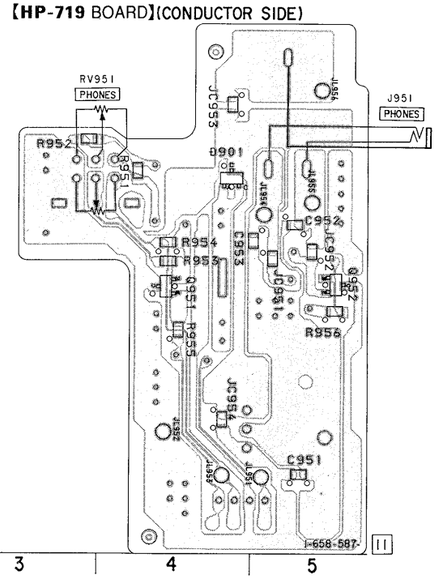
HP-719 BOARD

CN951	A-1
D901	C-4
Q951	B-4
Q952	B-5

【HP-719 BOARD】(COMPONENT SIDE)



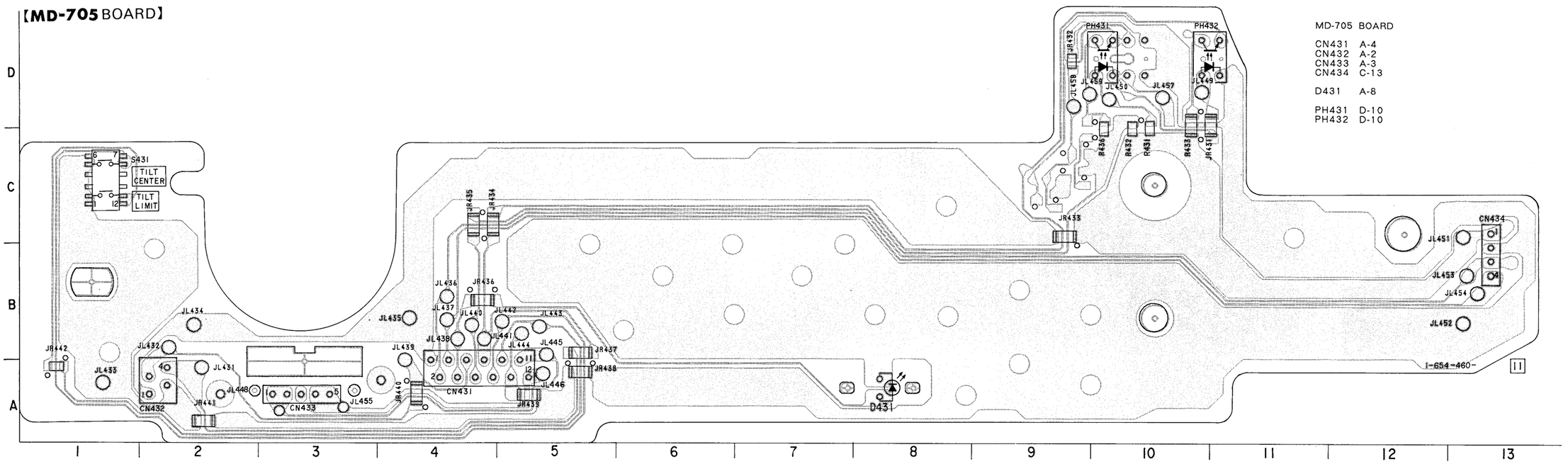
【HP-719 BOARD】(CONDUCTOR SIDE)



BI-703 (SLED POSITION DETECT), MD-705 (SLED POSITION DETECT), FG-707 (SPINDLE FG DETECT), MT-706 (TILT MOTOR) PRINTED WIRING BOARDS

— Ref. No. BI-703, MD-705, FG-707 and MT-706 BOARDS: 2000 series —

【MD-705 BOARD】



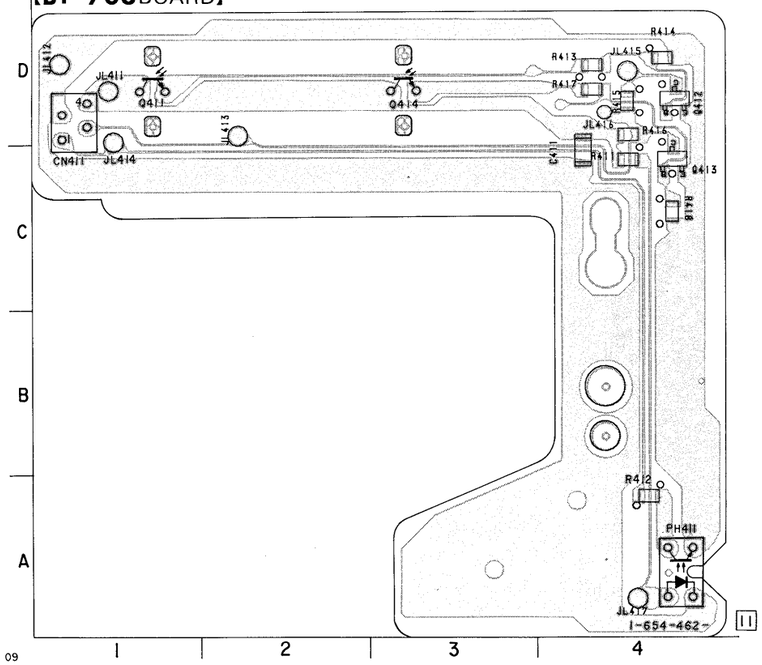
MD-705 BOARD

CN431 A-4
CN432 A-2
CN433 A-3
CN434 C-13

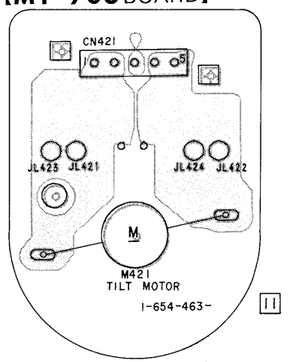
D431 A-8

PH431 D-10
PH432 D-10

【BI-703 BOARD】



【MT-706 BOARD】



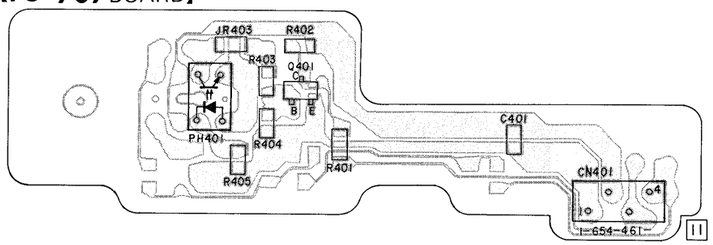
BI-703 BOARD

CN411 D-1

PH411 A-4

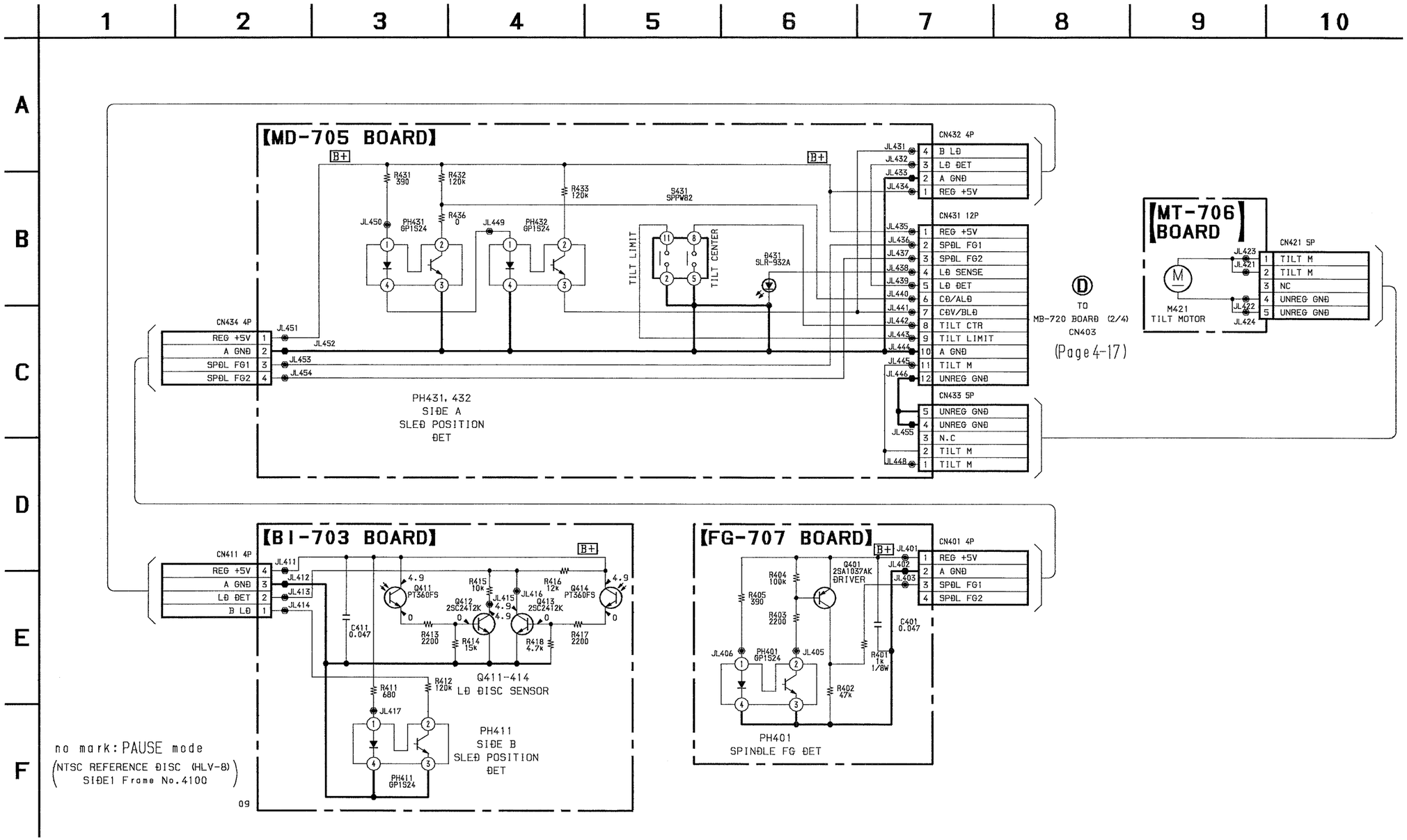
Q411 D-1
Q412 D-4
Q413 C-4
Q414 D-3

【FG-707 BOARD】



BI-703 (SLED POSITION DETECT), MD-705 (SLED POSITION DETECT), FG-707 (SPINDLE FG DETECT), MT-706 (TILT MOTOR) SCHEMATIC DIAGRAMS

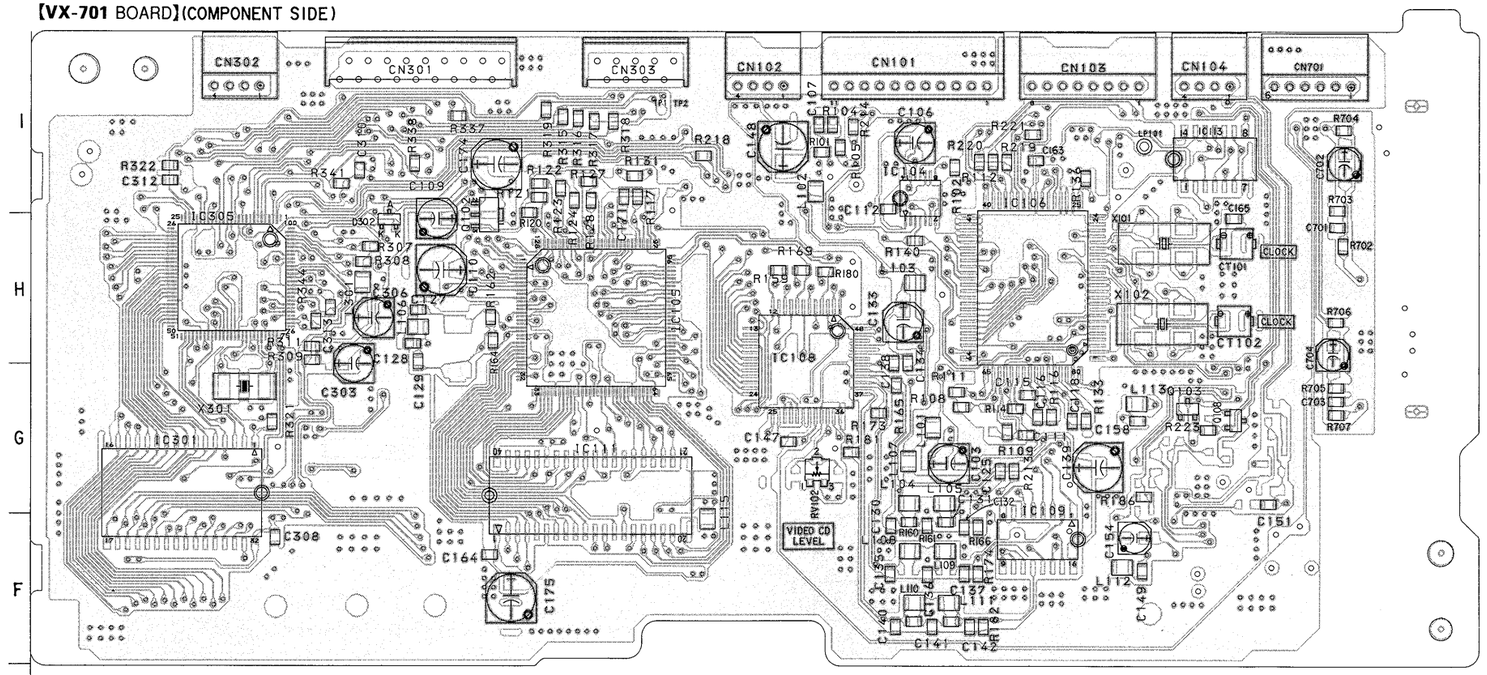
— Ref. No. BI-703, MD-705, FG-707 and MT-706 BOARDS: 2000 series —



VX-701 (VIDEO CD) PRINTED WIRING BOARD

— Ref. No. VX-701 BOARD: 6000 series —

【VX-701 BOARD】(COMPONENT SIDE)



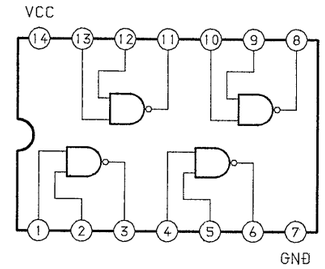
【VX-701 BOARD】(CONDUCTOR SIDE)

VX-701 BOARD

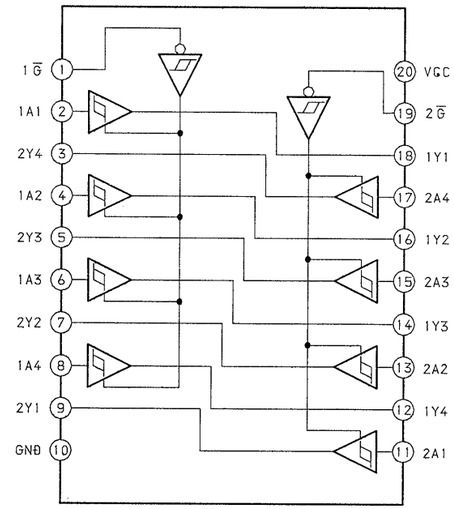
CN101	I-6
CN102	I-5
CN103	I-7
CN104	I-8
CN301	I-3
CN302	I-2
CN303	I-4
CN701	I-9
CT101	H-8
CT102	H-8
D101	B-1
D301	B-2
D302	H-3
D701	C-9
D702	C-9
D704	D-9
D705	D-9
IC101	A-4
IC102	B-7
IC103	B-5
IC105	H-4
IC106	H-7
IC107	B-6
IC108	H-6
IC109	F-7
IC110	D-8
IC111	G-4
IC112	D-4
IC113	I-8
IC301	G-2
IC302	C-2
IC303	D-1
IC304	B-3
IC305	H-2
Q101	B-6
Q102	H-4
Q103	G-8
Q105	C-7
Q106	D-8
Q107	B-7
Q108	G-8
Q111	D-7
Q112	D-7
Q113	D-7
Q701	A-9
RV102	G-6

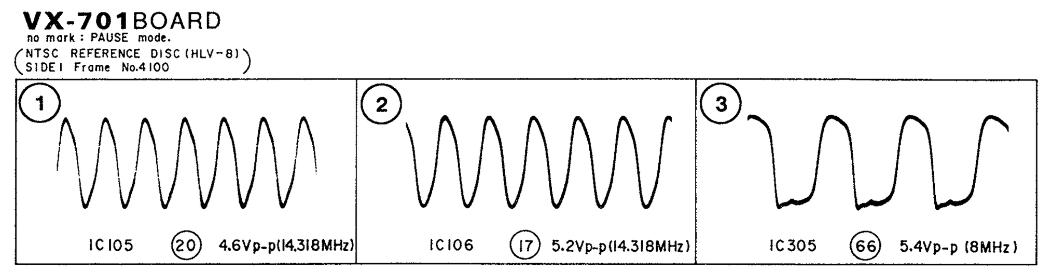
• IC BLOCK DIAGRAMS

IC101, IC107 MC74HC00AF



IC103, MC74HC244AF



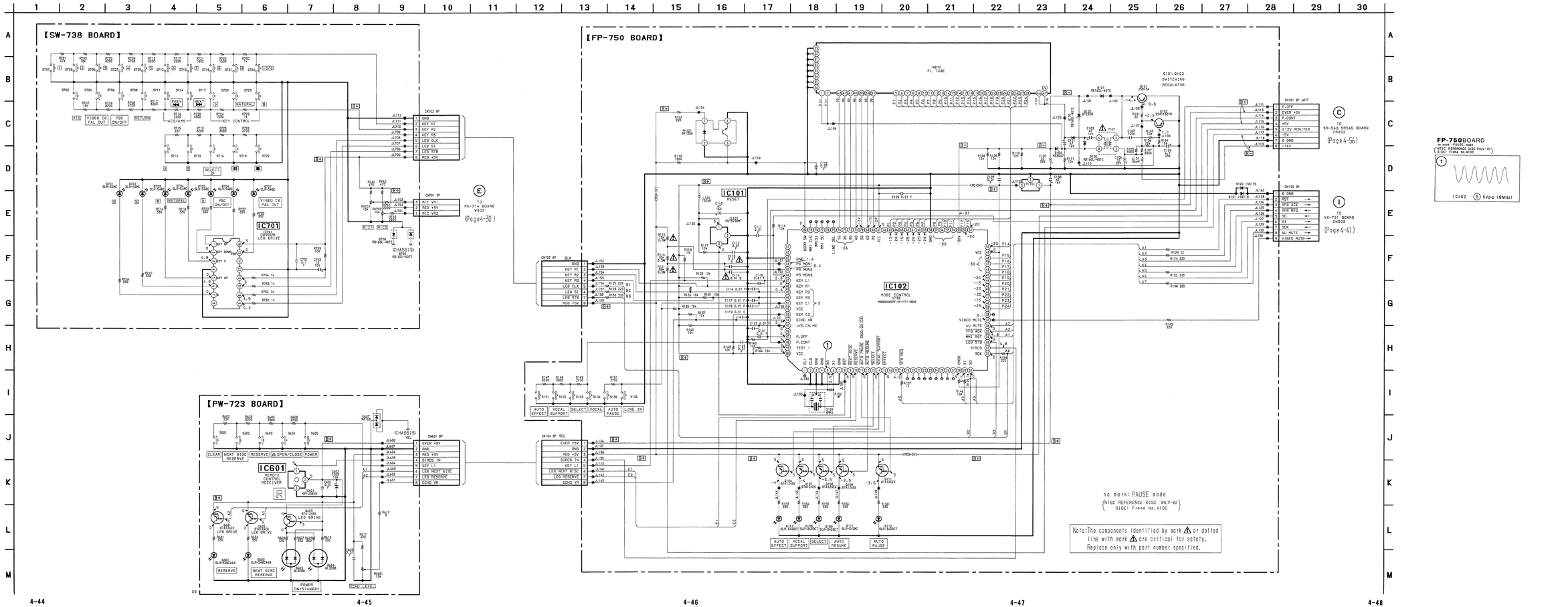


VX-701 (VIDEO CD) SCHEMATIC DIAGRAM

— Ref. No. VX-701 BOARD: 6000 series —

FP-750 (MODE CONTROL), SW-738 (FUNCTION 1), PW-723 (FUNCTION 2) SCHEMATIC DIAGRAMS

— Ref. No. FP-750, SW-738 and PW-723 BOARDS: 7000 series —



FP-750 (MODE CONTROL), SW-738 (FUNCTION 1), PW-723 (FUNCTION 2) PRINTED WIRING BOARDS

— Ref. No. FP-750, SW-738 and PW-723 BOARDS: 7000 series —

FP-750 BOARD

CN101 A-3
CN102 B-13
CN103 A-13
CN104 A-1

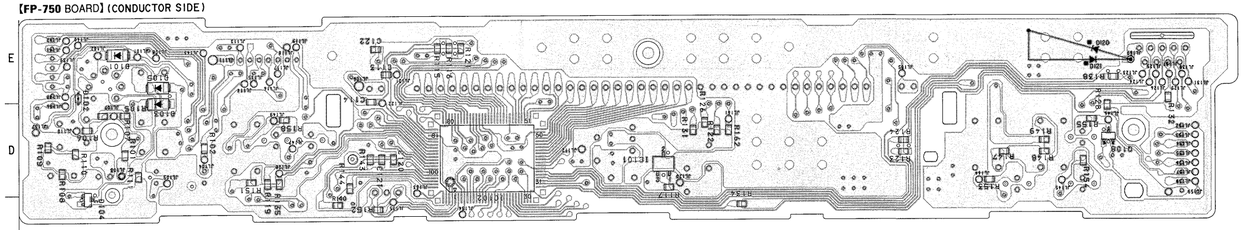
D101 E-2
D102 D-1
D103 D-2
D104 C-1
D105 E-2
D107 B-11
D108 B-12
D111 B-4
D112 B-3
D120 E-12
D121 E-12

IC101 D-7
IC102 D-6

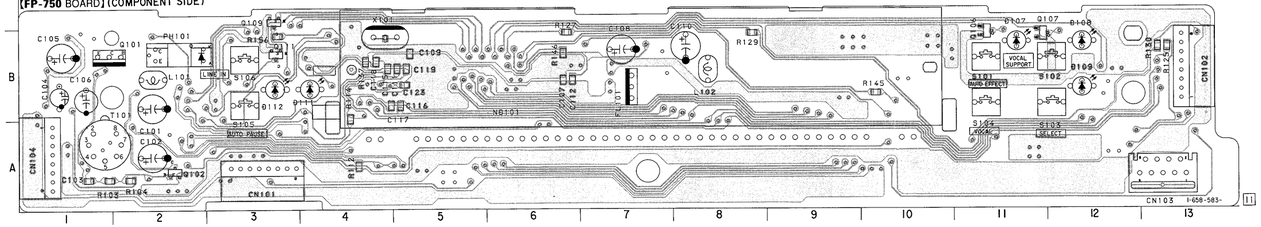
PH101 B-2

Q101 B-1
Q102 A-2
Q106 B-11
Q107 B-11
Q108 D-12
Q109 C-3
Q111 B-3

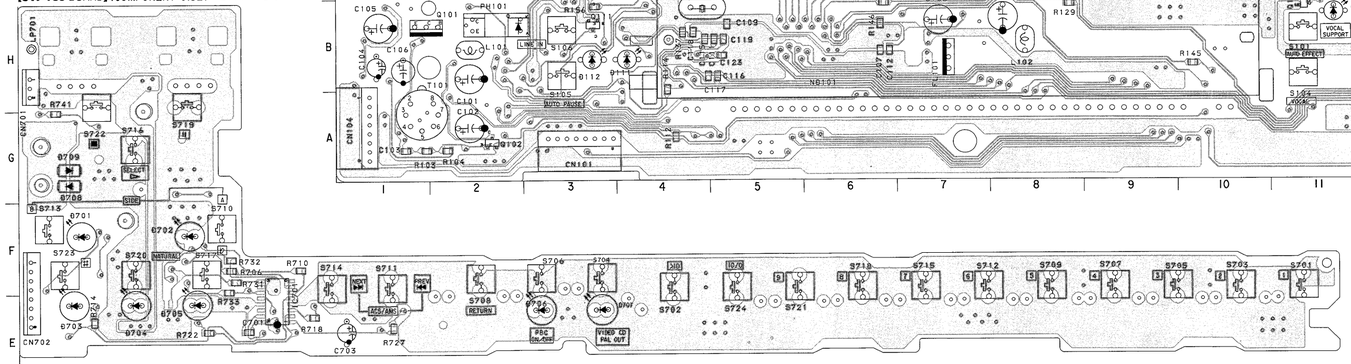
【FP-750 BOARD】(CONDUCTOR SIDE)



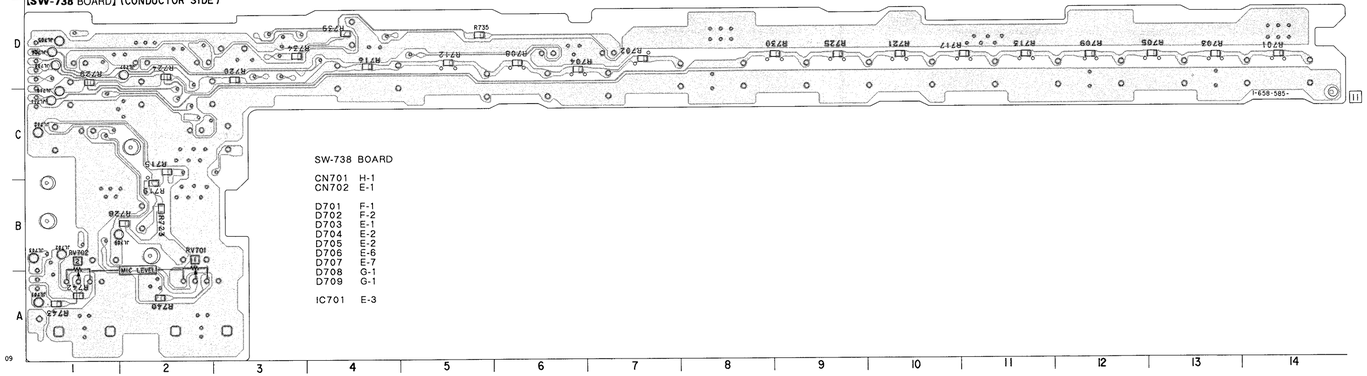
【FP-750 BOARD】(COMPONENT SIDE)



【SW-738 BOARD】(COMPONENT SIDE)



【SW-738 BOARD】(CONDUCTOR SIDE)



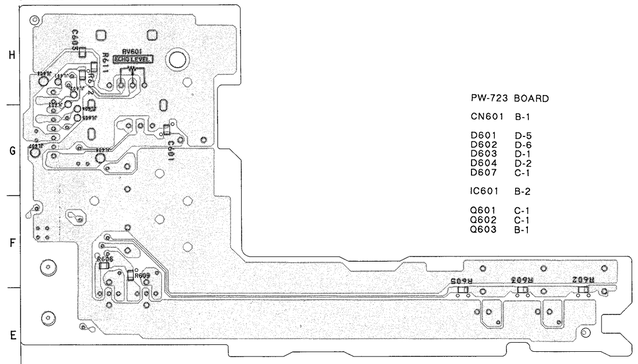
SW-738 BOARD

CN701 H-1
CN702 E-1

D701 F-1
D702 F-2
D703 E-1
D704 E-2
D705 E-2
D706 E-6
D707 E-7
D708 G-1
D709 G-1

IC701 E-3

【PW-723 BOARD】(CONDUCTOR SIDE)



PW-723 BOARD

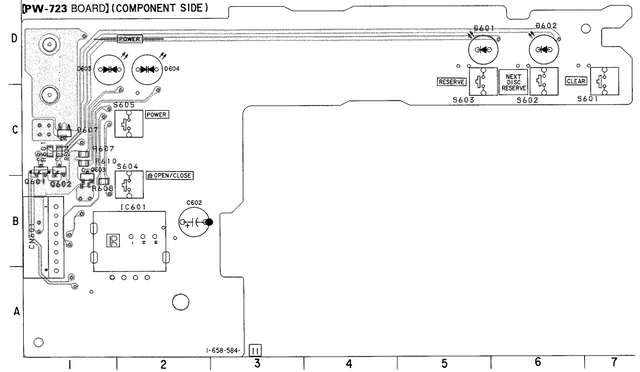
CN601 B-1

D601 D-5
D602 D-6
D603 D-1
D604 D-2
D607 C-1

IC601 B-2

Q601 C-1
Q602 C-1
Q603 B-1

【PW-723 BOARD】(COMPONENT SIDE)



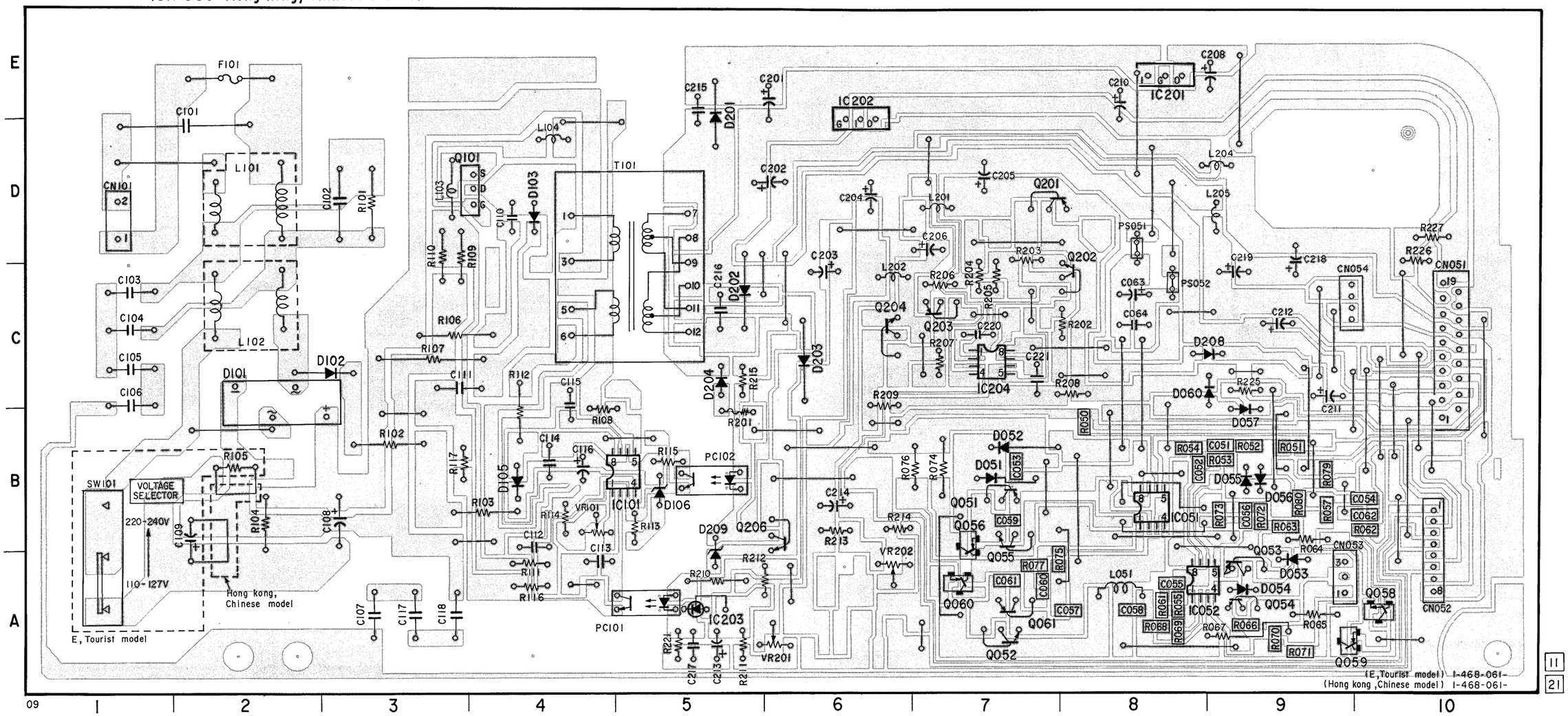
POWER BLOCK (POWER SUPPLY, MOTOR DRIVE) PRINTED WIRING BOARD

— Ref. No. POWER BLOCK: 5000 series —

【POWER BLOCK】(SR-562 : E, Tourist model)
(SR-565 : Hong kong, Chinese model)

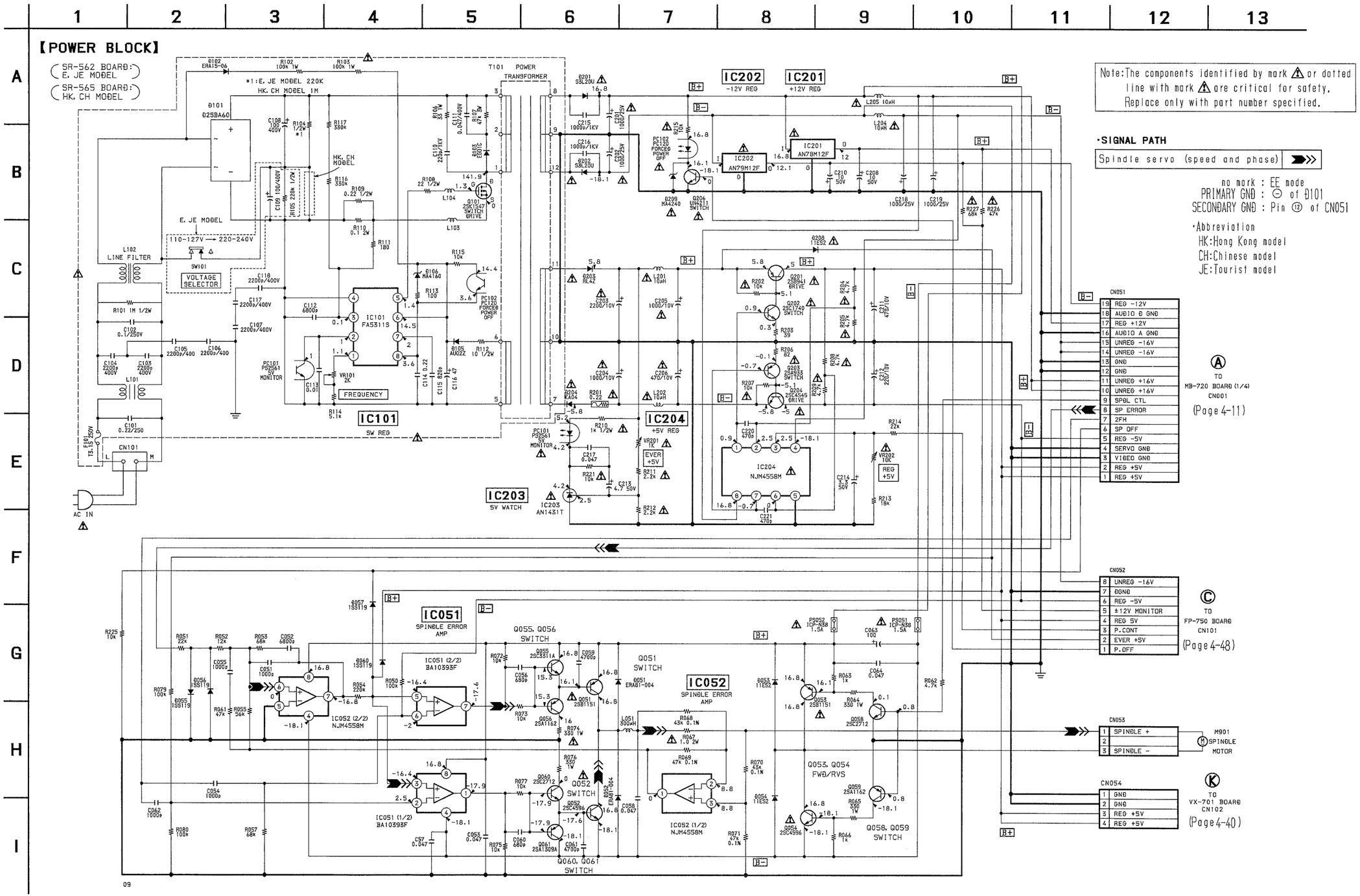
POWER BLOCK

D051	B-7
D052	B-7
D053	A-9
D054	A-9
D055	B-9
D056	B-9
D057	B-9
D060	C-8
D101	C-2
D102	C-3
D103	D-4
D105	B-4
D106	B-5
D201	E-5
D202	C-5
D203	C-6
D204	C-5
D208	C-8
D209	B-5
CN051	C-10
CN052	A-9
CN053	A-9
CN054	C-9
CN101	D-1
IC051	B-8
IC052	A-8
IC101	B-5
IC201	E-8
IC202	D-6
IC203	A-5
IC204	C-7
PC051	D-8
PC052	C-8
PC101	A-5
PC102	B-5
Q051	B-7
Q052	A-7
Q053	A-9
Q054	A-9
Q055	B-7
Q056	B-7
Q058	A-10
Q059	A-9
Q060	A-7
Q061	A-7
Q101	D-4
Q201	D-7
Q202	C-8
Q203	C-7
Q204	C-6
Q206	B-6
RV101	B-4
RV201	A-6
RV202	A-6



POWER BLOCK (POWER SUPPLY, MOTOR DRIVE) SCHEMATIC DIAGRAM

— Ref. No. POWER BLOCK: 5000 series —



SECTION 5
REPAIR PARTS LIST

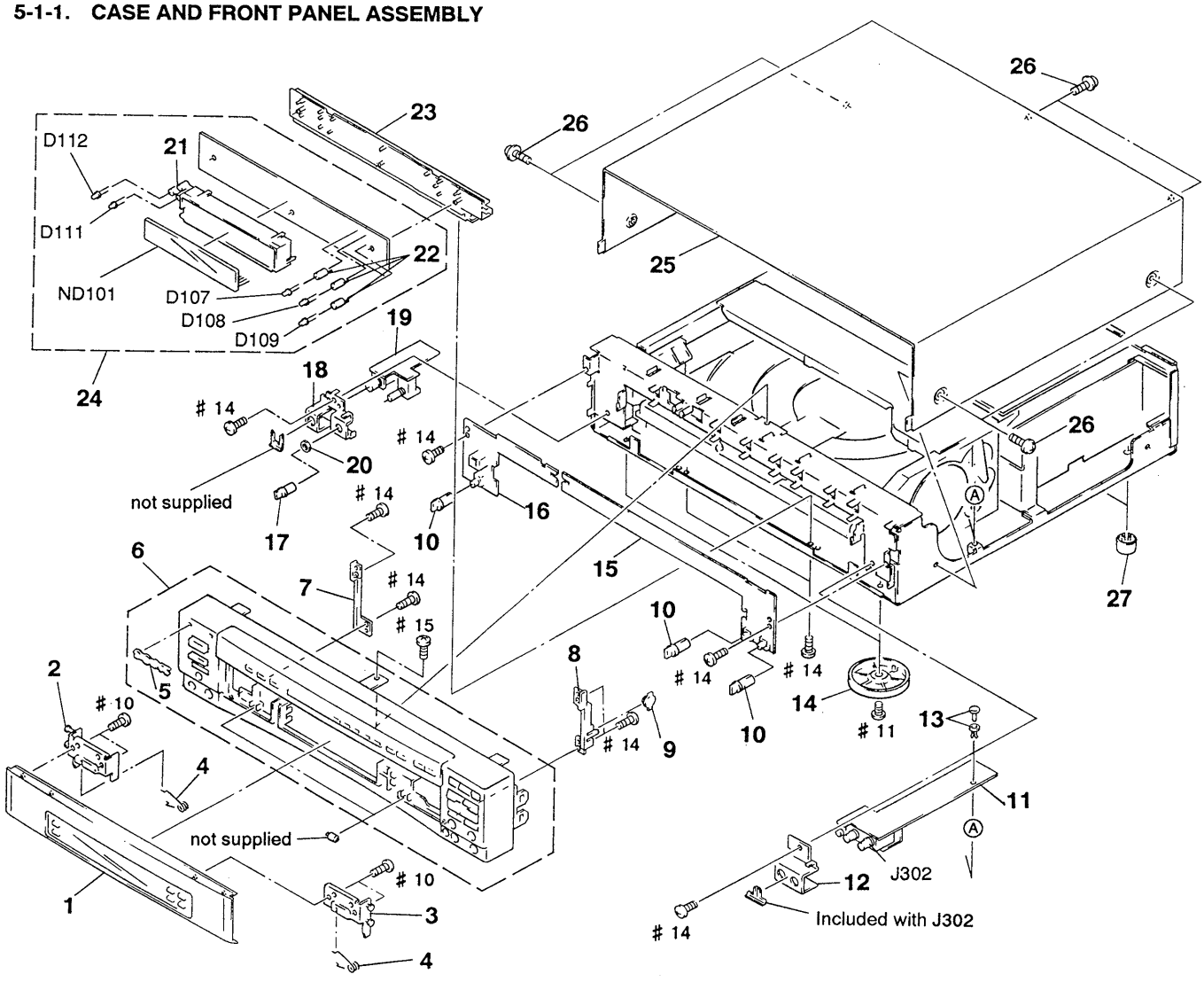
5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  HK : Hong Kong model
  CH : Chinese model
  JE : Tourist model

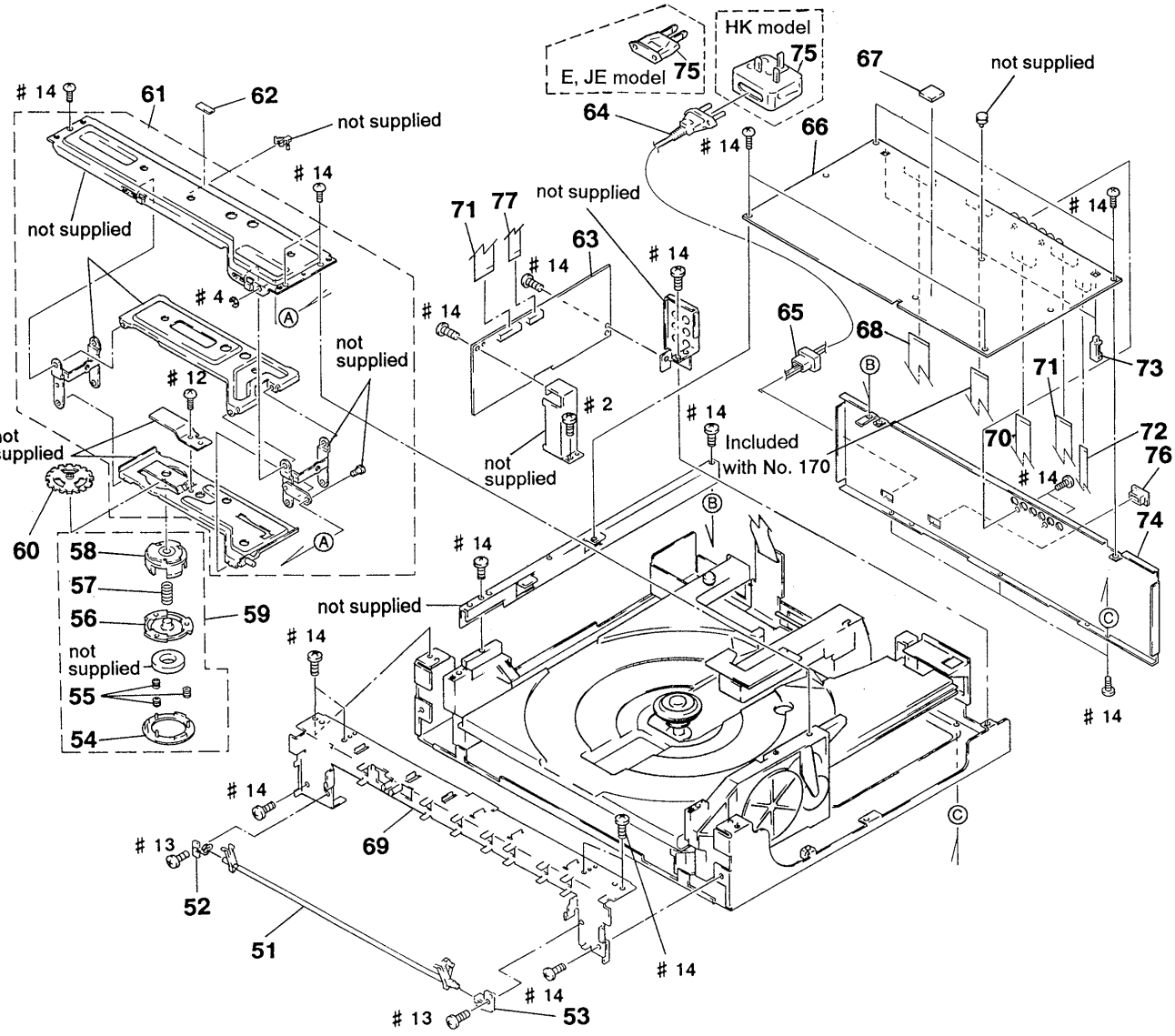
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-1. CASE AND FRONT PANEL ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3945-593-1	DOOR ASSY	
* 2	X-3945-596-1	DISK (L) ASSY, DOOR	
* 3	X-3945-597-1	DISK (R) ASSY, DOOR	
4	3-966-720-01	SPRING, TORSION	
5	3-942-768-02	EMBLEM (NO.5), SONY	
6	X-3945-587-1	PANEL ASSY, FRONT	
* 7	3-966-721-01	HOLDER (L), SLIDE	
* 8	3-966-722-01	HOLDER (R), SLIDE	
9	3-712-786-01	DAMPER, OIL	
10	3-962-010-21	KNOB, VOL	
* 11	A-6423-365-A	MA-714 (951E) BOARD, COMPLETE	
12	3-955-377-01	PLATE (2GANG), MOUNT	
13	3-531-576-11	RIVET	
14	X-3942-810-1	FOOT ASSY	
* 15	A-6423-367-A	SW-738 (951E) BOARD, COMPLETE	
* 16	A-6423-369-A	PW-723 (951E) BOARD, COMPLETE	
17	3-962-745-11	KNOB (A2.TYPE), VOL	
* 18	3-684-436-01	PLATE, MOUNT	
* 19	A-6423-370-A	HP-719 (951E) BOARD, COMPLETE	
20	3-950-989-01	NUT (M7), HEXAGON	
* 21	3-966-725-01	HOLDER, FL	
* 22	3-966-777-01	HOLDER, LED	
* 23	3-966-724-01	BRACKET, FP	
* 24	A-6423-368-A	FP-750 (951E) BOARD, COMPLETE	
* 25	3-961-785-21	CASE, UPPER	
26	3-710-901-41	SCREW, TAPPING	
27	3-961-156-11	FOOT	

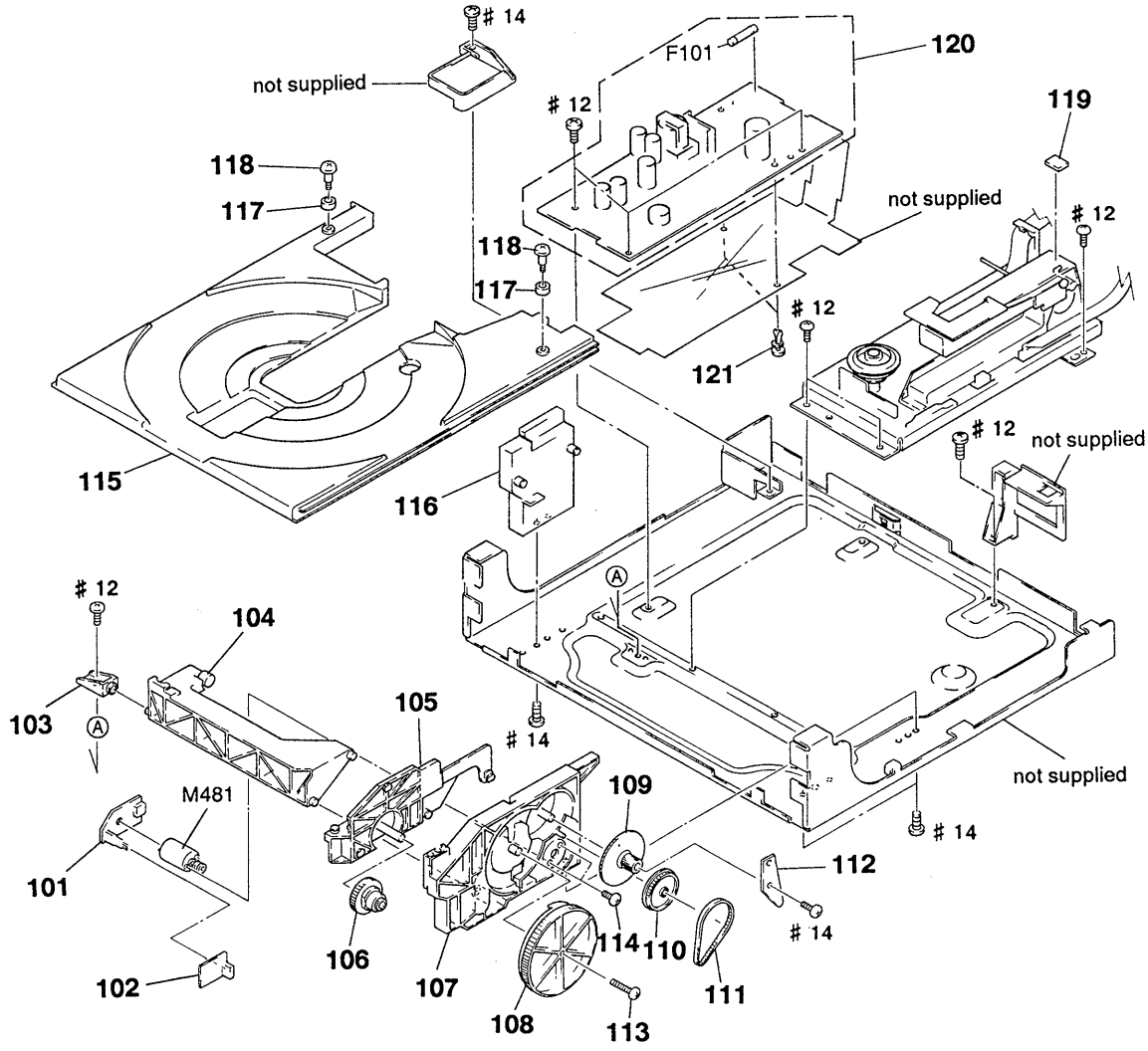
5-1-2. CHUCKING BLOCK ASSEMBLY



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

Ref. No.	Part No.	Description	Remark
51	X-3944-955-1	LINK ASSY	
52	3-961-800-01	GUIDE, LINK	
* 53	3-963-178-01	HOLDER, LINK	
54	X-3943-043-1	GUIDE (B) ASSY, CENTER	
55	3-953-290-01	SPRING (2), COMPRESSION	
56	3-965-592-01	PLATE, CHUCKING	
57	3-953-291-01	SPRING (1), COMPRESSION	
58	X-3942-776-1	HOLDER ASSY, MAGNET	
59	A-6415-644-G	CHUCK BLOCK ASSY	
60	3-953-279-02	PLATE, TOP	
61	A-6415-896-A	CHUCKING SUB BLOCK ASSY	
62	9-911-840-XX	CUSHION (U)	
* 63	A-6423-366-A	VX-701 (951E) BOARD, COMPLETE	
⚠64	1-575-912-21	CORD, POWER	
⚠*65	3-703-244-00	BUSHING (2104), CORD	
* 66	A-6423-364-A	MB-720 (951E) BOARD, COMPLETE	
67	3-728-465-01	CUSHION, OPT	
68	1-769-652-11	CABLE, FLAT (FMP-3) 19 ARBOR	
* 69	3-966-731-01	STAY, FRONT	
70	1-769-654-11	CABLE, FLAT (FMD-4) 12 ARBOR	
71	1-775-931-11	CABLE, FLAT (FMV-6) 18 ARBOR	
72	1-769-653-11	CABLE, FLAT (FMM-2) 7 ARBOR	
* 73	3-962-283-01	GUIDE, MB	
* 74	3-964-736-21	PANEL, REAR (E, JE)	
* 74	3-964-736-31	PANEL, REAR (CH, HK)	
⚠75	1-569-008-11	ADAPTER, CONVERSION 2P (E, JE)	
⚠75	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 76	3-961-821-01	SELECOVER, VOL	
77	1-775-930-11	CABLE, FLAT (FVF-6) 9 ARBOR	

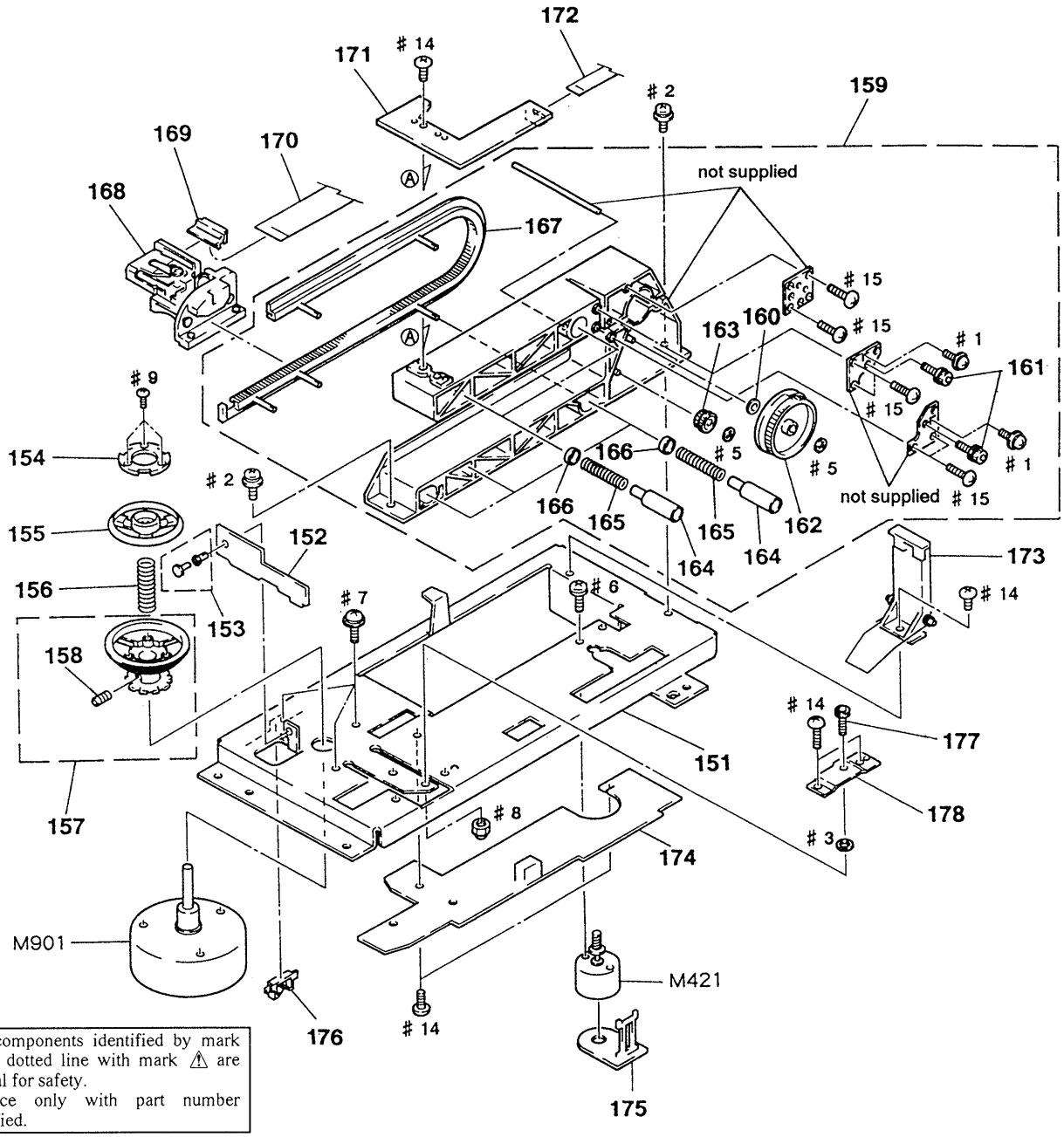
5-1-3. MAIN CHASSIS ASSEMBLY



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

Ref. No.	Part No.	Description	Remark
* 101	1-654-464-11	MT-707 BOARD	
* 102	A-6423-303-A	SW-732 (910J) BOARD, COMPLETE	
* 103	3-961-101-11	HOLDER, UD FRAME	
* 104	X-3944-729-1	FRAME ASSY, TRAY UD	
105	X-3944-514-1	BASE ASSY, L SUB	
106	3-961-085-01	GEAR, IDLER	
107	X-3944-513-1	BASE ASSY, LOADING	
108	3-961-083-01	GEAR, CONTROL	
109	3-961-081-02	GEAR, MIDDLE	
110	3-961-084-01	PULLEY (A)	
111	3-961-082-01	BELT, TIMING	
* 112	3-962-050-01	STAY, REINFORCEMENT	
113	3-962-812-01	SCREW (+BV 3X18)	
114	3-962-049-01	SCREW, MOTOR STOPPER	
115	A-6415-894-A	TRAY (91J) ASSY	
* 116	X-3944-730-1	STAY (L) ASSY, F	
* 117	4-914-248-01	STOPPER, RUBBER	
118	3-963-090-01	SCREW, TRAY STOPPER	
119	3-531-576-11	RIVET	
⚠*120	1-468-061-11	(SR-562 BOARD) POWER BLOCK (E, JE)	
⚠*120	1-468-061-21	(SR-565 BOARD) POWER BLOCK (CH, HK)	
121	9-911-840-XX	CUSHION (U)	
⚠F101	1-532-237-00	FUSE, TIME LAG (T3.15AL, 250V)	
M481	X-3944-685-1	MOTOR ASSY, LOADING (RF-370C)	

5-1-4. MECHANISM DECK ASSEMBLY



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

Ref.No.	Part No.	Description	Remark
* 151	3-961-112-01	PLATE, BASE	
* 152	A-6423-231-A	FG-707 (ET90) BOARD, COMPLETE	
* 153	3-954-681-01	RIVET, NYLON	
154	3-953-293-01	PLATE (C), YOKE	
155	3-965-602-01	GUIDE, CENTER	
156	3-953-289-01	SPRING (3), COMPRESSION	
157	X-3942-779-1	TURNTABLE ASSY	
158	3-701-507-00	SET SCREW, DOUBLE POINT, (M3X5)	
* 159	A-6404-121-A	BASE BLOCK ASSY, FEED	
160	3-701-439-21	WASHER	
161	3-899-249-01	BOLT, HEXAGON SOCKET	
162	3-953-254-01	CAM, TILT DRIVING	
163	3-953-259-01	GEAR, TILT MIDWAY	
164	3-953-255-03	HOLDER, U	
165	3-953-267-01	SPRING, COMPRESSION	
166	3-953-830-01	WASHER, U	
167	3-961-126-01	GUIDE (900), U	
⚠168	8-848-286-11	OPTICAL PICK-UP BLOCK KHS-150A	
169	3-953-268-01	HOLDER (18P), FLEXIBLE	
170	1-751-083-11	CABLE, FLEXIBLE FLAT (18 CORE)	
* 171	A-6423-232-A	BI-703 (ET90) BOARD, COMPLETE	
172	1-769-151-11	FLAT CABLE (FMB-001) (4 CORE)	
* 173	A-6404-111-A	STAND ASSY, FLEXIBLE RETAINER	
* 174	A-6423-230-A	MD-705 (ET90) BOARD, COMPLETE	
* 175	A-6423-229-A	MT-706 (ET90) BOARD, COMPLETE	
* 176	3-961-199-01	SADDLE, EDGE	
177	3-953-829-01	BOLT	
* 178	3-953-258-11	PLATE, ADJUSTMENT, AT	
M421	X-3944-693-1	MOTOR ASSY, DC (TILT)	
M901	1-698-109-11	MOTOR, DD (SPINDLE)	

5-2. ELECTRICAL PARTS LIST

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Abbreviation
  HK : Hong Kong model
  CH : Chinese model
  JE : Tourist model

Ref. No.	Part No.	Description			Remark
*	A-6423-232-A	BI-703 (ET90) BOARD, COMPLETE			
		********** (Ref. No. 2,000 Series)			
	3-953-261-01	HOLDER, PD			
		< CAPACITOR >			
C411	1-163-075-00	CERAMIC CHIP	0.047uF		50V
		< CONNECTOR >			
CN411	1-691-063-21	HOUSING, CONNECTOR 4P			
		< PHOTO INTERUPTER >			
PH411	8-729-020-74	PHOTO INTERUPTER GP1S24			
		< TRANSISTOR >			
Q411	8-729-904-10	PHOTO TRANSISTOR PT-360FS			
Q412	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q413	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q414	8-729-904-10	PHOTO TRANSISTOR PT-360FS			
		< RESISTOR >			
R411	1-216-045-00	METAL CHIP	680	5%	1/10W
R412	1-216-099-00	METAL CHIP	120K	5%	1/10W
R413	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R414	1-216-077-00	METAL CHIP	15K	5%	1/10W
R415	1-216-073-00	METAL CHIP	10K	5%	1/10W
R416	1-216-075-00	METAL CHIP	12K	5%	1/10W
R417	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R418	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
**********					
*	A-6423-231-A	FG-707 (ET90) BOARD, COMPLETE			
		********** (Ref. No. 2,000 Series)			
		< CAPACITOR >			
C401	1-163-035-00	CERAMIC CHIP	0.047uF		50V
		< CONNECTOR >			
CN401	1-691-863-11	CONNECTOR, BOARD TO BOARD			
		< JUMPER RESISTOR >			
JR403	1-216-296-91	CONDUCTOR, CHIP	(3216)		
		< PHOTO INTERUPTER >			
PH401	8-729-020-74	PHOTO INTERUPTER GP1S24			
		< TRANSISTOR >			
Q401	8-729-026-49	TRANSISTOR 2SA1037AK-R			
		< RESISTOR >			
R401	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R402	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R404	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R405	1-216-039-00	METAL CHIP	390	5%	1/10W
**********					
*	A-6423-368-A	FP-750 (951E) BOARD, COMPLETE			
		********** (Ref. No. 7,000 Series)			
*	3-966-725-01	HOLDER, FL			
*	3-966-777-01	HOLDER, LED			
		< CAPACITOR >			
C101	1-124-589-11	ELECT	47uF	20%	16V
C102	1-124-589-11	ELECT	47uF	20%	16V
C103	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C104	1-126-163-11	ELECT	4.7uF	20%	50V
C105	1-124-248-00	ELECT	22uF	20%	35V
C106	1-126-096-11	ELECT	10uF	20%	35V
C107	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C108	1-124-589-11	ELECT	47uF	20%	16V
C109	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C110	1-124-589-11	ELECT	47uF	20%	16V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C112	1-163-031-11	CERAMIC CHIP	0.01uF		50V
⚠C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
⚠C114	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C115	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C116	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C117	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref.No.	Part No.	Description	Remark
C118	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C119	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C120	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C121	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C122	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C123	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
CN101	1-506-487-11	PIN, CONNECTOR 8P	
CN102	1-506-487-11	PIN, CONNECTOR 8P	
CN103	1-691-645-11	SOCKET, CONNECTOR 9P	
CN104	1-506-487-11	PIN, CONNECTOR 8P	
		< DIODE >	
D101	8-719-048-98	DIODE RB160L-40TE25	
D102	8-719-978-93	DIODE DTZ30B-TT11	
D103	8-719-048-98	DIODE RB160L-40TE25	
D104	8-719-105-73	DIODE RD4.7M-B2	
D105	8-719-048-98	DIODE RB160L-40TE25	
D107	8-719-056-06	LED SLR-342DC3F (AUTO EFFECT)	
D108	8-719-056-06	LED SLR-342DC3F (VOCAL SUPPORT)	
D109	8-719-056-06	LED SLR-342DC3F (SELECT)	
D111	8-719-056-07	LED SLR-342MC3F (AUTO RESUME)	
D112	8-719-056-06	LED SLR-342DC3F (AUTO PAUSE)	
D120	8-719-921-19	DIODE 1SS119-25	
D121	8-719-921-19	DIODE 1SS119-25	
		< FILTER >	
FL101	1-421-927-21	FILTER, NOISE	
		< IC >	
IC101	8-759-074-40	IC PST572DMT-T1	
IC102	8-759-361-41	IC MB89095PF-G-171-BND	
		< COIL >	
L101	1-408-979-21	INDUCTOR 56uH	
L102	1-414-189-31	INDUCTOR 100uH	
		< FLUORECENT INDICATOR >	
ND101	1-517-471-11	INDICATOR TUBE, FLUORESCENT	
		< PHOTO INTERUPTER >	
PH101	8-749-010-69	PHOTO INTERUPTER GP1S58V	
		< TRANSISTOR >	
Q101	8-729-140-97	TRANSISTOR 2SB734-34	
Q102	8-729-216-22	TRANSISTOR 2SA1162-G	
Q106	8-729-901-05	TRANSISTOR DTA124EK	
Q107	8-729-901-05	TRANSISTOR DTA124EK	
Q108	8-729-901-05	TRANSISTOR DTA124EK	
Q109	8-729-901-05	TRANSISTOR DTA124EK	
Q111	8-729-901-05	TRANSISTOR DTA124EK	
		< RESISTOR >	
R101	1-216-009-00	METAL CHIP 22 5%	1/10W
R102	1-216-033-00	METAL CHIP 220 5%	1/10W
R103	1-216-073-00	METAL CHIP 10K 5%	1/10W
R104	1-216-073-00	METAL CHIP 10K 5%	1/10W
R105	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R106	1-216-081-00	METAL CHIP 22K 5%	1/10W
R107	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R108	1-216-075-00	METAL CHIP 12K 5%	1/10W
R109	1-216-075-00	METAL CHIP 12K 5%	1/10W
R110	1-216-075-00	METAL CHIP 12K 5%	1/10W
R111	1-216-073-00	METAL CHIP 10K 5%	1/10W
R112	1-216-099-00	METAL CHIP 120K 5%	1/10W
R114	1-216-073-00	METAL CHIP 10K 5%	1/10W
⚠R115	1-208-806-11	METAL CHIP 10K 0.50%	1/10W
⚠R116	1-208-806-11	METAL CHIP 10K 0.50%	1/10W
R117	1-216-073-00	METAL CHIP 10K 5%	1/10W
R119	1-216-073-00	METAL CHIP 10K 5%	1/10W
⚠R121	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R122	1-216-073-00	METAL CHIP 10K 5%	1/10W
R123	1-216-009-00	METAL CHIP 22 5%	1/10W
R124	1-216-033-00	METAL CHIP 220 5%	1/10W
R125	1-216-033-00	METAL CHIP 220 5%	1/10W
R126	1-216-073-00	METAL CHIP 10K 5%	1/10W
R127	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R128	1-216-033-00	METAL CHIP 220 5%	1/10W
R129	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R130	1-216-033-00	METAL CHIP 220 5%	1/10W
R131	1-216-073-00	METAL CHIP 10K 5%	1/10W
R132	1-216-033-00	METAL CHIP 220 5%	1/10W
R134	1-216-033-00	METAL CHIP 220 5%	1/10W
R135	1-216-073-00	METAL CHIP 10K 5%	1/10W
R137	1-216-073-00	METAL CHIP 10K 5%	1/10W
R138	1-216-033-00	METAL CHIP 220 5%	1/10W
R140	1-216-073-00	METAL CHIP 10K 5%	1/10W
R143	1-216-073-00	METAL CHIP 10K 5%	1/10W
R144	1-216-073-00	METAL CHIP 10K 5%	1/10W
R145	1-216-033-00	METAL CHIP 220 5%	1/10W
R146	1-216-073-00	METAL CHIP 10K 5%	1/10W
R147	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R148	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R149	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R151	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R152	1-216-121-91	METAL GLAZE 1M 5%	1/10W
R153	1-216-037-00	METAL CHIP 330 5%	1/10W
R154	1-216-037-00	METAL CHIP 330 5%	1/10W

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

Ref.No.	Part No.	Description			Remark
R155	1-216-037-00	METAL CHIP	330	5% 1/10W	
R156	1-216-037-00	METAL CHIP	330	5% 1/10W	
R158	1-216-037-00	METAL CHIP	330	5% 1/10W	
R162	1-216-073-00	METAL CHIP	10K	5% 1/10W	
		< SWITCH >			
S101	1-762-365-21	SWITCH, TACTILE (AUTO EFFECT)			
S102	1-762-365-21	SWITCH, TACTILE (VOCAL SUPPORT)			
S103	1-762-365-21	SWITCH, TACTILE (SELECT)			
S104	1-762-365-21	SWITCH, TACTILE (VOCAL)			
S105	1-762-365-21	SWITCH, TACTILE (AUTO PAUSE)			
S106	1-762-365-21	SWITCH, TACTILE (LINE IN)			
		< TRANSFORMER >			
⚠T101	1-448-740-21	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X101	1-579-125-11	VIBRATOR, CERAMIC (8MHz)			
**********					
*	A-6423-370-A	HP-719 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 3,000 Series)			
		< CAPACITOR >			
C951	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C952	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C953	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
		< CONNECTOR >			
CN951	1-506-483-21	PIN, CONNECTOR 4P			
		< DIODE >			
D901	8-719-800-76	DIODE 1SS226			
		< JACK >			
J951	1-507-796-71	JACK (PHONES)			
		< JUMPER RESISTOR >			
JC951	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
JC952	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
JC953	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
JC954	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
		< TRANSISTOR >			
Q951	8-729-023-22	TRANSISTOR 2SD2114K			
Q952	8-729-023-22	TRANSISTOR 2SD2114K			

Ref.No.	Part No.	Description			Remark
		< RESISTOR >			
R951	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R952	1-216-013-00	METAL CHIP	33	5% 1/10W	
R953	1-216-013-00	METAL CHIP	33	5% 1/10W	
R954	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R955	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R956	1-216-073-00	METAL CHIP	10K	5% 1/10W	
		< VARIABLE RESISTOR >			
RV951	1-223-894-11	RES, VAR, CARBON 500/500(PHONES MIN.MAX)			
**********					
*	A-6423-365-A	MA-714 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 3,000 Series)			
		< CAPACITOR >			
C302	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C303	1-124-589-11	ELECT	47uF	20% 16V	
C304	1-124-465-00	ELECT	0.47uF	20% 50V	
C305	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C306	1-163-135-00	CERAMIC CHIP	560PF	5% 50V	
C307	1-126-157-11	ELECT	10uF	20% 16V	
C308	1-126-301-11	ELECT	1uF	20% 50V	
C309	1-126-301-11	ELECT	1uF	20% 50V	
C310	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C311	1-126-157-11	ELECT	10uF	20% 16V	
C312	1-163-135-00	CERAMIC CHIP	560PF	5% 50V	
C313	1-124-465-00	ELECT	0.47uF	20% 50V	
C314	1-124-589-11	ELECT	47uF	20% 16V	
C315	1-163-989-11	CERAMIC CHIP	0.033uF	10% 25V	
C319	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C320	1-124-589-11	ELECT	47uF	20% 16V	
C321	1-163-249-11	CERAMIC CHIP	82PF	5% 50V	
C322	1-124-589-11	ELECT	47uF	20% 16V	
C323	1-163-249-11	CERAMIC CHIP	82PF	5% 50V	
C324	1-163-139-00	CERAMIC CHIP	820PF	5% 50V	
C325	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C326	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C327	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C328	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C329	1-126-154-11	ELECT	47uF	20% 6.3V	
C330	1-126-163-11	ELECT	4.7uF	20% 50V	
C331	1-126-163-11	ELECT	4.7uF	20% 50V	
C332	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C333	1-165-319-11	CERAMIC CHIP	0.1uF	50V	
C335	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C337	1-163-249-11	CERAMIC CHIP	82PF	5% 50V	
C338	1-126-157-11	ELECT	10uF	20% 16V	

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

MA-714

Ref.No.	Part No.	Description			Remark
C339	1-126-157-11	ELECT	10uF	20%	16V
C340	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C341	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C342	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C343	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C344	1-126-154-11	ELECT	47uF	20%	6.3V
C345	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
CN301	1-506-487-11	PIN, CONNECTOR	8P		
CN303	1-506-483-21	PIN, CONNECTOR	4P		
		< DIODE >			
D301	8-719-800-76	DIODE	1SS226		
D302	8-719-800-76	DIODE	1SS226		
D303	8-719-157-33	DIODE	RD6.2M-B		
D304	8-719-157-33	DIODE	RD6.2M-B		
		< FERRITE BEAD >			
FB301	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
FB302	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
FB303	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
FB304	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
		< IC >			
IC301	8-759-099-06	IC	M5218AFP		
IC302	8-759-634-96	IC	M5207L05		
IC303	8-759-099-06	IC	M5218AFP		
IC304	8-759-099-06	IC	M5218AFP		
IC305	8-759-701-51	IC	NJM2072M		
IC306	8-759-363-77	IC	MSM6654		
		< JACK >			
J301	1-507-678-00	JACK (MIC 1/2 CONTROL)			
J302	1-750-990-11	JACK (LARGE TYPE) 2P (MIC1, MIC2)			
		< JUMPER RESISTOR >			
JC306	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
JC307	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
JC308	1-216-295-91	CONDUCTOR, CHIP 0		5%	1/10W
		< COIL >			
L301	1-408-976-21	INDUCTOR	33uH		
L302	1-408-976-21	INDUCTOR	33uH		
		< TRANSISTOR >			
Q301	8-729-027-31	TRANSISTOR	DTA124EKA		
Q302	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q303	8-729-202-38	TRANSISTOR	2SC3326N-A		
Q304	8-729-027-31	TRANSISTOR	DTA124EKA		

Ref.No.	Part No.	Description			Remark
Q305	8-729-027-31	TRANSISTOR	DTA124EKA		
		< RESISTOR >			
R301	1-216-025-91	METAL GLAZE	100	5%	1/10W
R302	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R303	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-081-00	METAL CHIP	22K	5%	1/10W
R306	1-216-025-91	METAL GLAZE	100	5%	1/10W
R307	1-216-025-91	METAL GLAZE	100	5%	1/10W
R308	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-081-00	METAL CHIP	22K	5%	1/10W
R311	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R312	1-216-033-00	METAL CHIP	220	5%	1/10W
R313	1-216-033-00	METAL CHIP	220	5%	1/10W
R314	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R315	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R316	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R317	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R318	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R319	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R320	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R321	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R322	1-216-081-00	METAL CHIP	22K	5%	1/10W
R323	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R324	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R325	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W
R327	1-216-025-91	METAL GLAZE	100	5%	1/10W
R328	1-216-025-91	METAL GLAZE	100	5%	1/10W
R329	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R330	1-216-190-00	METAL GLAZE	470	5%	1/8W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-073-00	METAL CHIP	10K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R334	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R335	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R336	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R337	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R338	1-216-033-00	METAL CHIP	220	5%	1/10W
R339	1-216-047-91	METAL GLAZE	820	5%	1/10W
R341	1-208-816-11	METAL GLAZE	27K	0.50%	1/10W
R343	1-216-033-00	METAL CHIP	220	5%	1/10W
R344	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R345	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R346	1-208-830-11	METAL GLAZE	100K	0.50%	1/10W
R347	1-216-097-91	METAL GLAZE	100K	5%	1/10W

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Ref.No.	Part No.	Description			Remark
*	A-6423-364-A	MB-720 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 1,000 Series)			
		< CAPACITOR >			
C001	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C002	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C003	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C004	1-126-933-11	ELECT	100uF	20%	10V
C005	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C006	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C007	1-124-584-00	ELECT	100uF	20%	10V
C008	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C009	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C010	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C011	1-126-933-11	ELECT	100uF	20%	10V
C012	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C013	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C014	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C015	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C016	1-124-903-11	ELECT	1uF	20%	50V
C017	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C018	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C019	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C020	1-126-967-11	ELECT	47uF	20%	10V
C021	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C023	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C025	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C026	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C027	1-124-635-00	ELECT	220uF	20%	6.3V
C028	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C029	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C030	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C032	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C033	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C035	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C036	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C037	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C038	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C039	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C040	1-124-239-00	ELECT	6.9uF	20%	10V
C041	1-124-257-00	ELECT	2.2uF	20%	50V
C042	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C043	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C044	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C045	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C046	1-124-584-00	ELECT	100uF	20%	10V
C047	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C048	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C049	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C050	1-126-923-11	ELECT	220uF	20%	10V
C051	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C052	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C053	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C054	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C055	1-126-933-11	ELECT	100uF	20%	10V
C056	1-124-584-00	ELECT	100uF	20%	10V
C057	1-126-964-11	ELECT	10uF	20%	50V
C058	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C059	1-126-967-11	ELECT	47uF	20%	10V
C060	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C061	1-126-967-11	ELECT	47uF	20%	10V
C062	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C063	1-126-933-11	ELECT	100uF	20%	10V
C064	1-126-967-11	ELECT	47uF	20%	10V
C065	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C066	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C067	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C068	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C069	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C072	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C074	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C075	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C076	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C077	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C078	1-124-903-11	ELECT	1uF	20%	50V
C079	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C080	1-126-933-11	ELECT	100uF	20%	10V
C081	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C082	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C083	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C085	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C086	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C088	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C089	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C090	1-126-967-11	ELECT	47uF	20%	10V
C091	1-126-967-11	ELECT	47uF	20%	10V
C092	1-124-589-11	ELECT	47uF	20%	16V
C093	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C094	1-126-967-11	ELECT	47uF	20%	10V
C095	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C096	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C097	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C101	1-126-964-11	ELECT	10uF	20%	50V
C102	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V

Ref.No.	Part No.	Description			Remark
C112	1-126-964-11	ELECT	10uF	20%	50V
C113	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C114	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C115	1-126-967-11	ELECT	47uF	20%	10V
C116	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C118	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C120	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C121	1-124-261-00	ELECT	10uF	20%	50V
C124	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C200	1-126-933-11	ELECT	100uF	20%	10V
C201	1-126-967-11	ELECT	47uF	20%	10V
C202	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C203	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C204	1-126-967-11	ELECT	47uF	20%	10V
C205	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C206	1-126-964-11	ELECT	10uF	20%	50V
C207	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C208	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C209	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C210	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C211	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C212	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C213	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C214	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C215	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C216	1-126-967-11	ELECT	47uF	20%	10V
C217	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C218	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C219	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C220	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C221	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C222	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C223	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C224	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C225	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C226	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C227	1-126-967-11	ELECT	47uF	20%	10V
C228	1-126-933-11	ELECT	100uF	20%	10V
C229	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C230	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C231	1-137-368-11	FILM	0.0047uF	5%	50V
C232	1-137-378-11	FILM	0.22uF	5%	50V
C233	1-137-368-11	FILM	0.0047uF	5%	50V
C234	1-137-378-11	FILM	0.22uF	5%	50V
C235	1-137-442-11	FILM	0.039uF	5%	50V
C236	1-137-442-11	FILM	0.039uF	5%	50V
C237	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C238	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C239	1-137-399-11	FILM	0.1uF	5%	50V
C240	1-126-967-11	ELECT	47uF	20%	10V

Ref.No.	Part No.	Description			Remark
C241	1-124-902-00	ELECT	0.47uF	20%	50V
C242	1-126-964-11	ELECT	10uF	20%	50V
C243	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C244	1-126-967-11	ELECT	47uF	20%	10V
C245	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C246	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C247	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C249	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C250	1-107-714-11	ELECT	10uF	20%	16V
C251	1-109-889-11	ELECT	1uF	20%	50V
C252	1-126-967-11	ELECT	47uF	20%	10V
C253	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C254	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C255	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C256	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C257	1-126-926-11	ELECT	1000uF	20%	10V
C258	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C259	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C260	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C261	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C263	1-124-927-11	ELECT	4.7uF	20%	100V
C265	1-124-927-11	ELECT	4.7uF	20%	100V
C266	1-126-163-11	ELECT	4.7uF	20%	50V
C268	1-124-927-11	ELECT	4.7uF	20%	100V
C270	1-126-967-11	ELECT	47uF	20%	16V
C271	1-124-927-11	ELECT	4.7uF	20%	100V
C272	1-126-967-11	ELECT	47uF	20%	16V
C273	1-124-927-11	ELECT	4.7uF	20%	100V
C274	1-104-664-11	ELECT	47uF	20%	25V
C275	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C276	1-104-664-11	ELECT	47uF	20%	25V
C277	1-104-664-11	ELECT	47uF	20%	25V
C278	1-104-664-11	ELECT	47uF	20%	25V
C279	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C280	1-104-664-11	ELECT	47uF	20%	25V
C281	1-104-664-11	ELECT	47uF	20%	25V
C286	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C287	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C288	1-126-967-11	ELECT	47uF	20%	16V
C293	1-126-923-11	ELECT	220uF	20%	10V
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C401	1-126-785-11	ELECT	47uF	20%	10V
C402	1-126-785-11	ELECT	47uF	20%	10V
C403	1-104-664-11	ELECT	47uF	20%	25V
C404	1-104-664-11	ELECT	47uF	20%	25V
C405	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C406	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C407	1-126-967-11	ELECT	47uF	20%	10V
C408	1-126-967-11	ELECT	47uF	20%	10V

Ref. No.	Part No.	Description			Remark
C410	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C411	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C412	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C413	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C414	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C415	1-107-715-11	ELECT	22uF	20%	16V
C416	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C417	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C418	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C419	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C420	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C421	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C423	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C424	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C425	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C427	1-107-714-11	ELECT	10uF	20%	16V
C428	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C430	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C431	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C432	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C433	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C434	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C435	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C436	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C437	1-107-712-11	ELECT	3.3uF	20%	50V
C439	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C440	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C441	1-107-714-11	ELECT	10uF	20%	16V
C443	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C444	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C445	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C447	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C448	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C449	1-109-889-11	ELECT	1uF	20%	50V
C450	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C451	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C453	1-124-903-11	ELECT	1uF	20%	50V
C454	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C455	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C456	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C457	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C458	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C459	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C464	1-126-967-11	ELECT	47uF	20%	16V
C501	1-126-967-11	ELECT	47uF	20%	10V
C502	1-107-701-11	ELECT	47uF	20%	16V
C503	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C504	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C505	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-124-927-11	ELECT	4.7uF	20%	100V
C507	1-124-768-11	ELECT	4.7uF	20%	35V
C508	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C509	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C510	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C511	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C512	1-104-664-11	ELECT	47uF	20%	25V
C513	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C514	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C515	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C516	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C517	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C519	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C520	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C530	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C654	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C655	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C703	1-126-967-11	ELECT	47uF	20%	10V
C704	1-130-477-00	MYLAR	0.0033uF	5%	50V
C705	1-126-967-11	ELECT	47uF	20%	10V
C706	1-124-589-11	ELECT	47uF	20%	16V
C707	1-130-477-00	MYLAR	0.0033uF	5%	50V
C708	1-130-477-00	MYLAR	0.0033uF	5%	50V
C709	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C710	1-124-927-11	ELECT	4.7uF	20%	100V
C711	1-137-399-11	FILM	0.1uF	5%	50V
C712	1-163-012-00	CERAMIC CHIP	0.0018uF	5%	50V
C713	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C714	1-126-967-11	ELECT	47uF	20%	10V
C715	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C716	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C717	1-124-927-11	ELECT	4.7uF	20%	100V
C718	1-137-399-11	FILM	0.1uF	5%	50V
C719	1-163-012-00	CERAMIC CHIP	0.0018uF	5%	50V
C720	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C721	1-163-986-00	CERAMIC CHIP	0.027uF	5%	25V
C722	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C723	1-124-927-11	ELECT	4.7uF	20%	100V
C724	1-137-399-11	FILM	0.1uF	5%	50V
C725	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C726	1-163-012-00	CERAMIC CHIP	0.0018uF	10%	50V
C727	1-124-589-11	ELECT	47uF	20%	16V
C728	1-107-701-11	ELECT	47uF	20%	16V
C729	1-107-701-11	ELECT	47uF	20%	16V
C730	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C731	1-163-087-00	CERAMIC CHIP	4PF		50V
C732	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C733	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C734	1-126-163-11	ELECT	4.7uF	20%	50V
C735	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C736	1-163-038-91	CERAMIC CHIP	0.1uF		25V

Ref.No.	Part No.	Description	Remark
C737	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C738	1-126-967-11	ELECT 47uF 20%	10V
C739	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C741	1-163-038-91	CERAMIC CHIP 0.1uF	25V
		< CONNECTOR >	
CN001	1-766-992-11	CONNECTOR, FFC/FPC 19P	
CN201	1-506-469-11	PIN, CONNECTOR 4P	
CN202	1-506-469-11	PIN, CONNECTOR 4P	
CN203	1-506-473-11	PIN, CONNECTOR 8P	
CN204	1-506-476-11	PIN, CONNECTOR 11P	
CN401	1-750-687-11	HOUSING, CONNECTOR (PC BOARD)	
* CN402	1-764-594-21	CONNECTOR, FPC 18P	
CN403	1-691-044-11	HOUSING, CONNECTOR 12P	
CN501	1-766-980-71	CONNECTOR, FFC/FPC 7P	
* CN502	1-695-341-41	PIN, CONNECTOR (PC BOARD) 18P	
* CN701	1-564-005-11	PIN, CONNECTOR 6P	
CN702	1-506-473-11	PIN, CONNECTOR 8P	
		< TRIMMER >	
CT001	1-141-318-11	CAP, VAR, TRIMMER (CLOCK)	
		< DIODE >	
D001	8-719-987-69	DIODE DAN217	
D002	8-719-988-62	DIODE 1SS355	
D110	8-719-988-62	DIODE 1SS355	
D113	8-719-988-62	DIODE 1SS355	
D114	8-719-988-62	DIODE 1SS355	
D202	8-719-914-43	DIODE DAN202K	
D203	8-719-032-80	DIODE KV1430-TL	
D204	8-719-800-76	DIODE 1SS226	
D205	8-719-800-76	DIODE 1SS226	
D206	8-719-988-62	DIODE 1SS355	
D209	8-719-988-62	DIODE 1SS355	
D401	8-719-988-62	DIODE 1SS355	
D402	8-719-800-76	DIODE 1SS226	
D403	8-719-914-43	DIODE DAN202K	
D404	8-719-914-44	DIODE DAP202K	
D405	8-719-976-94	DIODE DTZ4.7A	
D406	8-719-976-94	DIODE DTZ4.7A	
D501	8-719-988-62	DIODE 1SS355	
D503	8-719-988-62	DIODE 1SS355	
D504	8-719-977-34	DIODE DTZ12	
D505	8-719-914-44	DIODE DAP202K	
D701	8-719-800-76	DIODE 1SS226	
D702	8-719-976-91	DIODE DTZ4.3B	
D703	8-719-976-91	DIODE DTZ4.3B	
D704	8-719-800-76	DIODE 1SS226	
D705	8-719-800-76	DIODE 1SS226	
D706	8-719-988-62	DIODE 1SS355	

Ref.No.	Part No.	Description	Remark
		< FERRITE BEAD >	
FB501	1-414-135-11	INDUCTOR CHIP 0UH	
		< FILTER >	
FL001	1-577-543-11	FILTER, CERAMIC	
FL002	1-577-543-11	FILTER, CERAMIC	
FL701	1-424-031-11	FILTER, NOISE	
		< IC >	
IC001	8-759-299-92	IC AN2661NK	
IC002	8-759-299-91	IC M35012-092SP	
IC003	8-759-290-65	IC MN8811	
IC004	8-759-324-99	IC MM1118XFBE	
IC005	8-759-295-66	IC BA7653AF-E2	
IC201	8-752-351-78	IC CXD2500BQ	
IC203	8-759-253-26	IC CA0002AM-TP	
IC204	8-759-100-96	IC UPC4558G2	
IC205	8-759-327-78	IC TC9404FN-EL	
IC206	8-759-100-96	IC UPC4558G2	
IC207	8-759-924-46	IC BA4560F	
IC401	8-759-280-89	IC HA11529F	
⚠IC402	8-759-822-38	IC LA6510	
⚠IC403	8-759-100-96	IC UPC4558G2	
IC404	8-759-100-96	IC UPC4558G2	
IC405	8-759-100-96	IC UPC4558G2	
IC406	8-759-100-96	IC UPC4558G2	
IC407	8-759-300-71	IC HD14053BFP	
IC501	8-759-361-40	IC MB89094PF-G-151-BND	
IC502	8-759-372-15	IC MSM10S0110-069GS-BK2	
IC503	8-759-231-92	IC TA7291P	
IC504	8-759-058-50	IC XRA10324AF	
IC505	8-759-009-06	IC MC14052BF	
IC506	8-759-300-71	IC HD14053BFP	
IC702	8-759-300-71	IC HD14053BFP	
IC703	8-759-258-80	IC YSS216B-F	
IC704	8-759-177-12	IC MSM51C464A-80RS	
IC705	8-759-100-96	IC UPC4558G2	
IC706	8-759-100-96	IC UPC4558G2	
IC707	8-759-100-96	IC UPC4558G2	
		< JACK >	
J202	1-764-592-11	JACK 3P (LINE OUT 2)	
J203	1-764-592-11	JACK 3P (LINE OUT 1)	
		< JUMPER RESISTOR >	
JC001	1-216-295-91	CONDUCTOR, CHIP 0 5%	1/10W
JC006	1-216-295-91	CONDUCTOR, CHIP 0 5%	1/10W
JC007	1-216-295-91	CONDUCTOR, CHIP 0 5%	1/10W
JC008	1-216-295-91	CONDUCTOR, CHIP 0 5%	1/10W

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

Ref. No.	Part No.	Description	Remark
JC050	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC051	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC052	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC053	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC054	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC056	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC206	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC208	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC402	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC601	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC602	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
		< COIL >	
L001	1-408-970-21	INDUCTOR 10uH	
L002	1-408-970-21	INDUCTOR 10uH	
L003	1-408-970-21	INDUCTOR 10uH	
L004	1-408-970-21	INDUCTOR 10uH	
L005	1-408-973-21	INDUCTOR 18uH	
L006	1-410-381-11	INDUCTOR CHIP 10uH	
L007	1-408-974-21	INDUCTOR 22uH	
L008	1-408-973-21	INDUCTOR 18uH	
L009	1-408-973-21	INDUCTOR 18uH	
L010	1-408-968-21	INDUCTOR 6.8uH	
L011	1-408-968-21	INDUCTOR 6.8uH	
L012	1-412-470-21	INDUCTOR 22uH	
L013	1-412-753-21	INDUCTOR 33uH	
L014	1-412-753-21	INDUCTOR 33uH	
L015	1-408-975-21	INDUCTOR 27uH	
L016	1-412-749-21	INDUCTOR 10uH	
L017	1-408-975-21	INDUCTOR 27uH	
L018	1-408-970-21	INDUCTOR 10uH	
L019	1-408-970-21	INDUCTOR 10uH	
L020	1-408-970-21	INDUCTOR 10uH	
L021	1-408-970-21	INDUCTOR 10uH	
L022	1-408-974-21	INDUCTOR 22uH	
L024	1-408-974-21	INDUCTOR 22uH	
L025	1-408-970-21	INDUCTOR 10uH	
L026	1-408-975-21	INDUCTOR 27uH	
L027	1-408-970-21	INDUCTOR 10uH	
L028	1-408-970-21	INDUCTOR 10uH	
L201	1-408-982-11	INDUCTOR 100uH	
L202	1-408-979-21	INDUCTOR 56uH	
L203	1-408-978-21	INDUCTOR 47uH	
L204	1-408-973-21	INDUCTOR 18uH	
L205	1-408-985-21	INDUCTOR 180uH	
L209	1-414-161-21	INDUCTOR 1mH	
L210	1-414-161-21	INDUCTOR 1mH	
L401	1-408-970-21	INDUCTOR 10uH	
L402	1-408-970-21	INDUCTOR 10uH	
L404	1-408-983-21	INDUCTOR 120uH	
L405	1-408-983-21	INDUCTOR 120uH	
L406	1-408-970-21	INDUCTOR 10uH	
L407	1-408-970-21	INDUCTOR 10uH	
L501	1-408-970-21	INDUCTOR 10uH	
L504	1-408-970-21	INDUCTOR 10uH	
L701	1-408-958-21	INDUCTOR 1uH	
L702	1-408-958-21	INDUCTOR 1uH	
		< TRANSISTOR >	
Q001	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q002	8-729-900-53	TRANSISTOR DTC114EK	
Q003	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q004	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q007	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q009	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q011	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q012	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q013	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q014	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q015	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q016	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q017	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q019	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q020	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q021	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q022	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q023	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q024	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q025	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q026	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q027	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q028	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q029	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q030	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q032	8-729-027-52	TRANSISTOR DTC124EKA	
Q033	8-729-900-53	TRANSISTOR DTC114EK	
Q201	8-729-900-53	TRANSISTOR DTC114EK	
Q202	8-729-027-23	TRANSISTOR DTA114EKA	
Q203	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q204	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q205	8-729-027-23	TRANSISTOR DTA114EKA	
Q206	8-729-027-23	TRANSISTOR DTA114EKA	
Q207	8-729-027-44	TRANSISTOR DTC114TKA	
Q208	8-729-202-38	TRANSISTOR 2SC3326N	
Q209	8-729-027-23	TRANSISTOR DTA114EKA	
Q210	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q211	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q212	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q213	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q214	8-729-202-38	TRANSISTOR 2SC3326N-A	

Ref. No.	Part No.	Description	Remark
Q215	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q217	8-729-900-53	TRANSISTOR DTC114EK	
⚠Q401	8-729-019-01	TRANSISTOR 2SD2394-EF	
⚠Q402	8-729-024-95	TRANSISTOR 2SB1565EF	
⚠Q403	8-729-019-01	TRANSISTOR 2SD2394-EF	
⚠Q404	8-729-024-95	TRANSISTOR 2SB1565EF	
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q406	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q407	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q408	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q409	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q410	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q411	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q412	8-729-027-52	TRANSISTOR DTC124EKA	
Q413	8-729-027-31	TRANSISTOR DTA124EKA	
Q414	8-729-027-31	TRANSISTOR DTA124EKA	
Q415	8-729-027-31	TRANSISTOR DTA124EKA	
Q416	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q417	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q418	8-729-027-31	TRANSISTOR DTA124EKA	
Q419	8-729-202-38	TRANSISTOR 2SC3326N	
Q420	8-729-027-31	TRANSISTOR DTA124EKA	
Q501	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q502	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q614	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q702	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q703	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q704	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q705	8-729-027-52	TRANSISTOR DTC124EKA	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R001	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R002	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R003	1-216-041-00	METAL CHIP	470	5% 1/10W	
R004	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R005	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R006	1-216-021-00	METAL CHIP	68	5% 1/10W	
R007	1-216-035-00	METAL CHIP	270	5% 1/10W	
R008	1-216-047-91	METAL GLAZE	820	5% 1/10W	
R009	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R010	1-216-037-00	METAL CHIP	330	5% 1/10W	
R011	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R012	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R014	1-216-097-91	METAL GLAZE	100K	5% 1/10W	
R015	1-216-099-00	METAL CHIP	120K	5% 1/10W	
R016	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R017	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R018	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R019	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R020	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R021	1-216-089-91	METAL GLAZE	47K	5% 1/10W	
R022	1-216-041-00	METAL CHIP	470	5% 1/10W	
R023	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R025	1-216-097-91	METAL GLAZE	100K	5% 1/10W	
R027	1-216-119-00	METAL CHIP	820K	5% 1/10W	
R032	1-216-105-91	METAL GLAZE	220K	5% 1/10W	
R033	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R034	1-216-045-00	METAL CHIP	680	5% 1/10W	
R035	1-216-039-00	METAL CHIP	390	5% 1/10W	
R036	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R038	1-216-063-91	METAL GLAZE	3.9K	5% 1/10W	
R039	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R040	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R041	1-216-009-00	METAL CHIP	22	5% 1/10W	
R042	1-216-029-00	METAL CHIP	150	5% 1/10W	
R043	1-216-041-00	METAL CHIP	470	5% 1/10W	
R044	1-216-041-00	METAL CHIP	470	5% 1/10W	
R045	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R046	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R047	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R048	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R049	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R050	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R051	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R052	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R053	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R054	1-216-041-00	METAL CHIP	470	5% 1/10W	
R055	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R056	1-216-039-00	METAL CHIP	390	5% 1/10W	
R059	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R061	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R062	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R063	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R064	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R065	1-216-091-00	METAL CHIP	56K	5% 1/10W	
R066	1-216-089-91	METAL GLAZE	47K	5% 1/10W	
R067	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R068	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R069	1-216-037-00	METAL CHIP	330	5% 1/10W	
R070	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R071	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R072	1-216-033-00	METAL CHIP	220	5% 1/10W	
R073	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R074	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R075	1-216-198-91	METAL GLAZE	1K	5% 1/8W	
R076	1-216-295-91	CONDUCTOR, CHIP	0	5% 1/10W	
R077	1-216-041-00	METAL CHIP	470	5% 1/10W	
R078	1-216-025-91	METAL GLAZE	100	5% 1/10W	
R079	1-216-041-00	METAL CHIP	470	5% 1/10W	
R080	1-216-121-91	METAL GLAZE	1M	5% 1/10W	
R081	1-216-021-00	METAL CHIP	68	5% 1/10W	

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

Ref. No.	Part No.	Description				Remark
R082	1-216-041-00	METAL CHIP	470	5%	1/10W	
R083	1-216-039-00	METAL CHIP	390	5%	1/10W	
R084	1-216-041-00	METAL CHIP	470	5%	1/10W	
R085	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R086	1-216-021-00	METAL CHIP	68	5%	1/10W	
R088	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R089	1-216-033-00	METAL CHIP	220	5%	1/10W	
R090	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R091	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W	
R093	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R094	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R095	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R097	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R098	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R099	1-216-037-00	METAL CHIP	330	5%	1/10W	
R110	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R111	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R112	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R113	1-216-037-00	METAL CHIP	330	5%	1/10W	
R115	1-208-778-11	METAL GLAZE	680	0.50%	1/10W	
R116	1-208-776-11	METAL GLAZE	560	0.50%	1/10W	
R117	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R119	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R120	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R121	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R122	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R123	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R124	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R125	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R126	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R128	1-216-029-00	METAL CHIP	150	5%	1/10W	
R129	1-216-033-00	METAL CHIP	220	5%	1/10W	
R130	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R139	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R144	1-216-033-00	METAL CHIP	220	5%	1/10W	
R145	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R155	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R156	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R201	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R203	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R206	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R208	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R209	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R210	1-216-041-00	METAL CHIP	470	5%	1/10W	
R211	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R212	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R213	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R214	1-216-023-00	METAL CHIP	82	5%	1/10W	
R215	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R216	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R217	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R218	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R219	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R220	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R222	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R224	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R226	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R227	1-216-074-00	METAL CHIP	11K	5%	1/10W	
R228	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R229	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R235	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R236	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R237	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R238	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R239	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R240	1-208-829-11	METAL GLAZE	91K	0.50%	1/10W	
R241	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R242	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R243	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R244	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R245	1-208-837-11	METAL GLAZE	200K	0.50%	1/10W	
R246	1-208-838-11	METAL GLAZE	220K	0.50%	1/10W	
R249	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R250	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R251	1-208-830-11	METAL GLAZE	100K	0.50%	1/10W	
R252	1-208-830-11	METAL GLAZE	100K	0.50%	1/10W	
R253	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R254	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R255	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R256	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W	
R257	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W	
R258	1-216-104-00	METAL CHIP	200K	5%	1/10W	
R259	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R260	1-208-824-11	METAL GLAZE	56K	0.50%	1/10W	
R261	1-208-824-11	METAL GLAZE	56K	0.50%	1/10W	
R262	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R263	1-208-824-11	METAL GLAZE	56K	0.50%	1/10W	
R264	1-208-824-11	METAL GLAZE	56K	0.50%	1/10W	
R265	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R266	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R267	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R268	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R269	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R270	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R271	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R272	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R273	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R274	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R275	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R276	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R277	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R279	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R280	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R281	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R283	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R284	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R285	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R286	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R289	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R290	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R291	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R292	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R294	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R295	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R296	1-216-035-00	METAL CHIP	270	5%	1/10W	
R297	1-216-035-00	METAL CHIP	270	5%	1/10W	
R298	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R299	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R300	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R303	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R304	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R305	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R306	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R307	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R308	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R309	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R310	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R311	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R314	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R315	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R318	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R319	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R320	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R321	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R322	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R323	1-216-033-00	METAL CHIP	220	5%	1/10W	
R324	1-216-033-00	METAL CHIP	220	5%	1/10W	
R329	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R330	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R331	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R332	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R333	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R350	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R352	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R354	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R357	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R359	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R401	1-216-369-00	METAL OXIDE	1	5%	2W	F
⚠R402	1-249-387-11	CARBON	3.3	5%	1/4W	F
R404	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R405	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R406	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R407	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R408	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R409	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R411	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R412	1-216-045-00	METAL CHIP	680	5%	1/10W	
R413	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R414	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R415	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R416	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R417	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R418	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R419	1-216-045-00	METAL CHIP	680	5%	1/10W	
R420	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R421	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R422	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R423	1-216-039-00	METAL CHIP	390	5%	1/10W	
R424	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R425	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R426	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R427	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R428	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R429	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R430	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R431	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R432	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R433	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R434	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R435	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R436	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R437	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R438	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R442	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R444	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R445	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R446	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R447	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R448	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R449	1-216-035-00	METAL CHIP	270	5%	1/10W	
R450	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R451	1-216-049-91	METAL GLAZE	1K	5%	1/10W	

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

Ref.No.	Part No.	Description				Remark
R452	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R453	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R454	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R455	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R456	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R457	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R458	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R459	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R460	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R461	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R462	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R463	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R464	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R465	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R466	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R467	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R468	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R469	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R470	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R471	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R472	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R473	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R474	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R475	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R476	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R477	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R478	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R479	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R480	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R481	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R482	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R483	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R484	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R485	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R486	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R487	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R488	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R489	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R490	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R491	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R492	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R493	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R494	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R495	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R496	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R497	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R498	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R499	1-216-090-00	METAL CHIP	51K	5%	1/10W	
R503	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R504	1-216-033-00	METAL CHIP	220	5%	1/10W	
R506	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R507	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R508	1-208-816-11	METAL GLAZE	27K	0.50%	1/10W	
R509	1-208-818-11	METAL GLAZE	33K	0.50%	1/10W	
R510	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R511	1-216-111-91	METAL GLAZE	390K	5%	1/10W	
R512	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R513	1-208-838-11	METAL GLAZE	220K	0.50%	1/10W	
R514	1-208-830-11	METAL GLAZE	100K	0.50%	1/10W	
R515	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R516	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R517	1-208-808-11	METAL GLAZE	12K	0.50%	1/10W	
R518	1-208-806-11	METAL GLAZE	10K	0.50%	1/10W	
R519	1-208-818-11	METAL GLAZE	33K	0.50%	1/10W	
R520	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R521	1-208-844-11	METAL GLAZE	390K	0.50%	1/10W	
R522	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R523	1-216-035-00	METAL CHIP	270	5%	1/10W	
R524	1-208-810-11	METAL GLAZE	15K	0.50%	1/10W	
R525	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R526	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R527	1-216-033-00	METAL CHIP	220	5%	1/10W	
R528	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R530	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R531	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R532	1-216-045-00	METAL CHIP	680	5%	1/10W	
R533	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R534	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R535	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R536	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R537	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R538	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R539	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R540	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R541	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R542	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R543	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
⚠R544	1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R545	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R546	1-216-045-00	METAL CHIP	680	5%	1/10W	
R547	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R548	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R549	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R550	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R551	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R552	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R553	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R555	1-216-021-00	METAL CHIP	68	5%	1/10W	
R556	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R557	1-216-049-91	METAL GLAZE	1K	5%	1/10W	

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

Ref.No.	Part No.	Description				Remark
R558	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R559	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R560	1-216-033-00	METAL CHIP	220	5%	1/10W	
R561	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R562	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R563	1-216-033-00	METAL CHIP	220	5%	1/10W	
R564	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R565	1-216-033-00	METAL CHIP	220	5%	1/10W	
R566	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R567	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R568	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R569	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R570	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R571	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R572	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R573	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R574	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R576	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R577	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R578	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R594	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R595	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R596	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R597	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R599	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R663	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R677	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R689	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R703	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R704	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R705	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R706	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R707	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R710	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R711	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R712	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R713	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R715	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R717	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R718	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R719	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R721	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R722	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R723	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R725	1-208-787-11	CONDUCTOR, CHIP	1.6K	5%	1/10W	
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R727	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R728	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R729	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R730	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R731	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R732	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R733	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R734	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R735	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R736	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R737	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R738	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R739	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R740	1-216-045-00	METAL CHIP	680	5%	1/10W	
R741	1-216-045-00	METAL CHIP	680	5%	1/10W	
R742	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R743	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R744	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R747	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R748	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R900	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R901	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R902	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R903	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R904	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R905	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R906	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R907	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R908	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R910	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R911	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R912	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R913	1-216-103-91	METAL GLAZE	180K	5%	1/10W	
R914	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R915	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R916	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R917	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R918	1-216-103-91	METAL GLAZE	180K	5%	1/10W	
R919	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R920	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R921	1-216-103-91	METAL GLAZE	180K	5%	1/10W	
R922	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R923	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R924	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R925	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R926	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R927	1-216-003-11	METAL GLAZE	12	5%	1/10W	
R928	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R929	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R930	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R931	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R932	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R933	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref.No.	Part No.	Description			Remark
R935	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R936	1-216-031-00	METAL CHIP	180	5% 1/10W	
R937	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R939	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R941	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R942	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R943	1-216-097-91	METAL GLAZE	100K	5% 1/10W	
R944	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R945	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
		< VARIABLE RESISTOR >			
RV001	1-238-597-11	RES, ADJ, CARBON 1K (VIDEO LEVEL)			
RV401	1-238-602-11	RES, ADJ, CARBON 47K (A-TILT)			
RV402	1-238-602-11	RES, ADJ, CARBON 47K (B-TILT)			
		< SWITCH >			
S201	1-553-725-21	SWITCH, SLIDE (ATT)			
		< VIBRATOR >			
X001	1-760-693-21	VIBRATOR, CRYSTAL (28.125MHz)			
X201	1-567-515-11	VIBRATOR, VARIABLE CRYSTAL (16.9344MHz)			
**********					
*	A-6423-230-A	MD-705 (ET90) BOARD, COMPLETE			
		********** (Ref.No. 2,000 Series)			
	3-953-262-01	HOLDER, LED			
		< CONNECTOR >			
CN431	1-691-044-11	HOUSING, CONNECTOR 12P			
CN432	1-691-036-21	HOUSING, CONNECTOR 4P			
CN433	1-766-938-11	CONNECTOR, BOARD TO BOARD 5P			
CN434	1-506-483-21	PIN, CONNECTOR 4P			
		< DIODE >			
D431	8-719-912-39	DIODE SLR932A			
		< JUMPER RESISTOR >			
JR431	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR432	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
JR433	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR434	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR435	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR436	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR437	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR438	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR439	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR440	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR441	1-216-296-91	CONDUCTOR, CHIP 0		5% 1/8W	
JR442	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
		< PHOTO INTERUPTER >			
PH431	8-729-020-74	PHOTO INTERUPTER GP1S24			
PH432	8-729-020-74	PHOTO INTERUPTER GP1S24			
		< RESISTOR >			
R431	1-216-039-00	METAL CHIP	390	5% 1/10W	
R432	1-216-099-00	METAL CHIP	120K	5% 1/10W	
R433	1-216-248-00	METAL GLAZE	120K	5% 1/8W	
R436	1-216-295-91	CONDUCTOR, CHIP 0		5% 1/10W	
		< SWITCH >			
S431	1-692-440-11	SWITCH, PUSH (TILT, LIMIT/TILT CENTER)			
**********					
*	A-6423-229-A	MT-706 (ET90) BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN421	1-766-937-11	CONNECTOR, BOARD TO BOARD 5P			
		< MOTOR >			
M421	X-3944-693-1	MOTOR ASSY, DC (TILT)			
**********					
*	1-654-464-11	MT-707 BOARD (Ref.No. 4,000 Series)			
		**********			
		< CAPACITOR >			
C481	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
		< CONNECTOR >			
* CN481	1-569-666-11	PIN, CONNECTOR (PC BOARD) 5P			
CN482	1-695-368-31	PIN, CONNECTOR (PC BOARD) 7P			
		< MOTOR >			
M481	X-3944-685-1	MOTOR ASSY, LOADING (RF-370C)			
**********					

POWER BLOCK

Ref.No.	Part No.	Description			Remark
⚠*	1-468-061-11	POWER BLOCK (SR-562 BOARD) (E, JE)			
		**********			
⚠*	1-468-061-21	POWER BLOCK (SR-565 BOARD) (CH, HK)			
		**********			
		(Ref.No. 5,000 Series)			
⚠	1-533-223-11	HOLDER, FUSE			
		< CAPACITOR >			
C051	1-163-009-11	MULTILAYER CERAMIC	1000PF	10% 50V	
C052	1-163-019-00	MULTILAYER CERAMIC	6800PF	10% 50V	
C053	1-163-035-00	MULTILAYER CERAMIC	0.047uF	50V	
C054	1-163-009-11	MULTILAYER CERAMIC	1000PF	10% 50V	
C055	1-163-009-11	MULTILAYER CERAMIC	1000PF	10% 50V	
C056	1-163-007-11	MULTILAYER CERAMIC	680PF	10% 50V	
C057	1-163-035-00	MULTILAYER CERAMIC	0.047uF	50V	
C058	1-163-035-00	MULTILAYER CERAMIC	0.047uF	50V	
C059	1-163-017-00	MULTILAYER CERAMIC	4700PF	10% 50V	
C060	1-163-007-11	MULTILAYER CERAMIC	680PF	10% 50V	
C061	1-163-017-00	MULTILAYER CERAMIC	4700PF	10% 50V	
C062	1-163-009-11	MULTILAYER CERAMIC	1000PF	10% 50V	
C063	1-124-122-11	ALUMINUM ELECTRIC	100uF	20% 50V	
C064	1-130-491-00	FILM	0.047uF	5% 50V	
⚠C101	9-902-038-01	METALLIZED	0.22uF	250V	
⚠C102	9-900-521-01	METALLIZED	0.1uF	250V	
⚠C103	9-900-522-01	CERAMIC	2200PF	400V	
⚠C104	9-900-522-01	CERAMIC	2200PF	400V	
⚠C105	9-900-522-01	CERAMIC	2200PF	400V	
⚠C106	9-900-522-01	CERAMIC	2200PF	400V	
⚠C107	9-900-522-01	CERAMIC	2200PF	400V	
⚠C108	9-933-773-01	ALUMINUM ELECTRIC	100uF	400V	
⚠C109	9-933-773-01	ALUMINUM ELECTRIC	100uF	400V (E, JE)	
⚠C110	9-909-673-01	CERAMIC	220PF	1000V	
⚠C111	9-900-525-01	METALLIZED	0.047uF	400V	
⚠C112	1-106-363-00	FILM	0.0068uF	5% 200V	
⚠C113	1-130-483-00	METALLIZED	0.01uF	5% 50V	
⚠C114	1-107-355-51	METALLIZED	0.22uF	5% 50V	
⚠C115	1-130-470-00	FILM	820PF	5% 50V	
⚠C116	1-126-967-11	ALUMINUM ELECTRIC	47uF	20% 50V	
⚠C117	9-900-522-01	CERAMIC	2200PF	400V	
⚠C118	9-900-522-01	CERAMIC	2200PF	400V	
⚠C201	1-126-942-61	ALUMINUM ELECTRIC	1000uF	20% 25V	
⚠C202	1-126-942-61	ALUMINUM ELECTRIC	1000uF	20% 25V	
⚠C203	1-124-760-11	ALUMINUM ELECTRIC	2200uF	20% 10V	
⚠C204	1-126-926-11	ALUMINUM ELECTRIC	1000uF	20% 10V	
⚠C205	1-126-926-11	ALUMINUM ELECTRIC	1000uF	20% 10V	
⚠C206	1-126-925-11	ALUMINUM ELECTRIC	470uF	20% 10V	
C208	1-126-964-51	ALUMINUM ELECTRIC	10uF	20% 50V	
C210	1-126-964-51	ALUMINUM ELECTRIC	10uF	20% 50V	
C211	1-126-925-11	ALUMINUM ELECTRIC	470uF	20% 10V	
C212	1-126-923-11	ALUMINUM ELECTRIC	220uF	20% 10V	
C213	1-216-963-11	ALUMINUM ELECTRIC	4.7uF	20% 50V	
C214	1-126-962-11	ALUMINUM ELECTRIC	3.3uF	20% 50V	
C215	9-909-680-01	CERAMIC	1000PF	1000V	
C216	9-909-680-01	CERAMIC	1000PF	1000V	
C217	1-130-491-00	FILM	0.047uF	5% 50V	
C218	1-126-942-61	ALUMINUM ELECTRIC	1000uF	20% 25V	
C219	1-126-942-61	ALUMINUM ELECTRIC	1000uF	20% 25V	
C220	1-130-467-00	FILM	470PF	5% 50V	
C221	1-130-467-00	FILM	470PF	5% 50V	
		< CONNECTOR >			
CN051	1-695-342-31	CONNECTOR 19P			
* CN052	1-506-473-11	CONNECTOR 8P			
CN053	1-564-506-11	CONNECTOR 3P			
CN054	1-506-469-11	CONNECTOR 4P			
* CN101	1-564-419-11	HEADER, SPRING (POWER) 2P			
		< DIODE >			
D051	9-902-064-01	DIODE	ERA81-004		
D052	9-902-064-01	DIODE	ERA81-004		
D053	8-719-200-82	DIODE	S3VC40R		
D054	8-719-200-82	DIODE	S3VC40R		
D055	8-719-911-19	DIODE	1SS119		
D056	8-719-911-19	DIODE	1SS119		
D057	8-719-911-19	DIODE	1SS119		
D060	8-719-911-19	DIODE	1SS119		
⚠D101	8-719-510-19	BRIDGE DIODE	D2SBA60		
⚠D102	9-902-050-01	DIODE	ERA15-06		
⚠D103	8-719-030-25	DIODE	EG01CO		
⚠D105	9-900-535-01	DIODE	AU02Z		
⚠D106	8-719-036-18	DIODE	MA4160-M		
⚠D201	8-719-510-72	DIODE	S3L20UF1		
⚠D202	8-719-510-72	DIODE	S3L20UF1		
⚠D203	8-719-501-34	DIODE	RL4Z		
⚠D204	8-719-043-76	DIODE	AK04		
⚠D208	8-719-200-82	DIODE	S3VC40R		
⚠D209	8-719-035-07	ZENNER DIODE	MA4240		
		< FUSE >			
⚠F101	1-532-237-00	FUSE TIME LUG (T3.15AL 250V)			
		< IC >			
IC051	8-759-982-73	IC	BA10393F		
IC052	8-759-100-96	IC	uPC4558G2		
⚠IC101	8-759-062-58	IC	FA5311S		
⚠IC201	8-759-231-56	IC	TA7812S		
⚠IC202	8-759-929-65	IC	LM7912CT		

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

POWER BLOCK

Ref. No.	Part No.	Description			Remark
⚠IC203	9-900-532-01	IC AN1431T			
⚠IC204	8-759-100-96	IC uPC4558G2			
		< COIL >			
L051	1-424-219-11	CHORKE COIL 300uH			
⚠L101	9-909-675-01	LINE FILTER			
⚠L102	9-909-675-01	LINE FILTER			
⚠L103	9-904-796-01	BEAD CORE			
⚠L104	9-936-427-01	BEAD CORE			
⚠L201	9-909-681-01	CHORKE COIL 10uH			
⚠L202	9-909-681-01	CHORKE COIL 10uH			
⚠L204	9-909-681-01	CHORKE COIL 10uH			
⚠L205	9-909-681-01	CHORKE COIL 10uH			
		< PHOTO COUPLER >			
⚠PC101	9-909-676-01	PHOTO COUPLER			
⚠PC102	9-909-676-01	PHOTO COUPLER			
		< IC LINK >			
⚠PS051	1-532-675-21	IC LINK (ICP-N38 1.5A)			
⚠PS052	1-532-675-21	IC LINK (ICP-N38 1.5A)			
		< TRANSISTOR >			
⚠Q051	8-729-117-11	TRANSISTOR 2SB1151			
⚠Q052	8-729-019-31	TRANSISTOR 2SC4596E			
⚠Q053	8-729-117-11	TRANSISTOR 2SB1151			
⚠Q054	8-729-019-31	TRANSISTOR 2SC4596E			
Q055	8-729-119-78	TRANSISTOR 2SC2785			
Q056	8-729-230-46	TRANSISTOR 2SA1162-YG			
Q058	8-729-230-49	TRANSISTOR 2SC2712-G			
Q059	8-729-230-46	TRANSISTOR 2SA1162-YG			
Q060	8-729-230-49	TRANSISTOR 2SC2712-G			
Q061	8-729-119-78	TRANSISTOR 2SA1175			
⚠Q101	9-909-669-01	TRANSISTOR 2SK1547			
⚠Q201	8-729-141-83	TRANSISTOR 2SB1094			
⚠Q202	8-729-119-78	TRANSISTOR 2SC2785			
⚠Q203	8-729-119-76	TRANSISTOR 2SA1175			
⚠Q204	9-909-678-01	TRANSISTOR 2SC4545			
⚠Q206	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R050	1-216-097-00	THICK FILM	100K	5%	1/10W
R051	1-216-081-00	THICK FILM	22K	5%	1/10W
R052	1-216-075-00	THICK FILM	12K	5%	1/10W
R053	1-216-093-11	THICK FILM	68K	5%	1/10W
R054	1-216-105-00	THICK FILM	220K	5%	1/10W
R055	1-216-091-00	THICK FILM	56K	5%	1/10W
R057	1-216-093-11	THICK FILM	68K	5%	1/10W
R061	1-216-089-00	THICK FILM	47K	5%	1/10W
R062	1-216-065-00	THICK FILM	4.7K	5%	1/10W
R063	1-216-049-11	THICK FILM	1K	5%	1/10W
R064	1-215-866-51	CARBON	330	5%	1W
R065	1-215-866-51	CARBON	330	5%	1W
R066	1-216-049-11	THICK FILM	1K	5%	1/10W
⚠R067	1-216-369-00	CARBON	1	5%	2W
R068	1-219-387-11	THICK FILM	43K	0.1%	1/10W
R069	1-219-391-11	THICK FILM	47K	0.1%	1/10W
R070	1-219-387-11	THICK FILM	43K	0.1%	1/10W
R071	1-219-391-11	THICK FILM	47K	0.1%	1/10W
R072	1-216-073-00	THICK FILM	10K	5%	1/10W
R073	1-216-073-00	THICK FILM	10K	5%	1/10W
⚠R074	1-215-866-51	CARBON	330	5%	1W
R075	1-216-073-00	THICK FILM	10K	5%	1/10W
R076	1-247-750-51	CARBON	330	5%	1W
R077	1-216-073-00	THICK FILM	10K	5%	1/10W
R079	1-216-097-00	THICK FILM	100K	5%	1/10W
R080	1-216-097-00	THICK FILM	100K	5%	1/10W
⚠R101	9-900-394-01	CARBON	1M		1/2W F
⚠R102	1-215-863-11	METAL OXIDE FILM	100K	5%	1W
⚠R103	1-215-863-11	METAL OXIDE FILM	100K	5%	1W
⚠R104	1-214-921-00	CARBON	220K	1%	1/2W (E, JE)
⚠R104	1-260-135-11	CARBON	1M	5%	1/2W (HK, CH)
⚠R105	1-214-921-00	CARBON	220K	1%	1/2W (E, JE)
⚠R106	1-215-860-11	METAL OXIDE FILM	33	5%	1W
⚠R107	1-215-927-00	METAL OXIDE FILM	47K	5%	3W
⚠R108	1-212-966-00	CARBON	22	5%	1/2W F
⚠R109	9-909-670-01	METAL FILM	0.22		1/2W
⚠R110	9-909-671-01	CEMENT	0.1		2W
⚠R111	1-249-408-11	CARBON	180	5%	1/4W
⚠R112	1-212-958-00	CARBON	10	5%	1/2W F
⚠R113	1-247-807-31	CARBON	100	5%	1/4W
⚠R114	1-247-848-11	CARBON	5.1K	5%	1/4W
⚠R115	1-247-855-31	CARBON	10K	5%	1/4W
⚠R116	1-247-891-00	CARBON	330K	5%	1/4W
⚠R117	1-247-891-00	CARBON	330K	5%	1/4W
⚠R201	9-909-679-01	FUSIBLE	0.22		1/4W
⚠R202	1-247-855-31	CARBON	10K	5%	1/4W
R203	1-249-400-11	CARBON	39	5%	1/4W
⚠R204	1-247-847-11	CARBON	4.7K	5%	1/4W
⚠R205	1-247-847-11	CARBON	4.7K	5%	1/4W
R206	1-249-404-00	CARBON	82	5%	1/4W
⚠R207	1-247-855-31	CARBON	10K	5%	1/4W
⚠R208	1-247-847-11	CARBON	4.7K	5%	1/4W
⚠R209	1-247-847-11	CARBON	4.7K	5%	1/4W
⚠R210	1-260-099-11	CARBON	1K	5%	1/2W
⚠R211	1-247-839-31	CARBON	2.2K	5%	1/4W
⚠R212	1-247-839-31	CARBON	2.2K	5%	1/4W

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

POWER BLOCK | PW-723 | SW-732

Ref.No.	Part No.	Description			Remark
R213	1-249-432-11	CARBON	18K	5%	1/4W
R214	1-249-433-11	CARBON	22K	5%	1/4W
⚠R215	1-247-855-31	CARBON	10K	5%	1/4W
⚠R221	1-247-855-31	CARBON	10K	5%	1/4W
R225	1-247-855-31	CARBON	10K	5%	1/4W
⚠R226	1-247-871-11	CARBON	47K	5%	1/4W
⚠R227	1-249-439-11	CARBON	68K	5%	1/4W
		< SWITCH >			
⚠SW101	1-572-675-11	POWER VOLTAGE CHANGE SWITCH (VOLTAGE SELECTOR)			(E, JE)
		< TRANSFORMER >			
⚠T101	9-936-430-01	SWITCHING TRANSFORMER			
		< TRIMMER >			
VR101	1-223-237-11	CARBON TRIMMER POTENTIOMETER 2K (FREQUENCY)			
⚠VR201	1-223-236-11	CARBON TRIMMER POTENTIOMETER 1K (EVER +5V)			
⚠VR202	1-223-239-11	CARBON TRIMMER POTENTIOMETER 10K (REG +5V)			
**********					
*	A-6423-369-A	PW-723 (951E) BOARD, COMPLETE ********** (Ref.No. 7,000 Series)			
		< CAPACITOR >			
C601	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C602	1-126-926-11	ELECT	1000uF	20%	10V
C603	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN601	1-506-487-11	PIN, CONNECTOR 8P			
		< DIODE >			
D601	8-719-302-07	LED SEL1810A			
D602	8-719-302-07	LED SEL1810A			
D603	8-719-981-49	LED GL3ED8			
D604	8-719-981-49	LED GL3ED8			
D607	8-719-800-76	LED 1SS226			
		< IC >			
IC601	8-749-923-11	IC GP1U58XB			
		< TRANSISTOR >			
Q601	8-729-901-05	TRANSISTOR DTA124EK			
Q602	8-729-901-05	TRANSISTOR DTA124EK			
Q603	8-729-901-05	TRANSISTOR DTA124EK			

Ref.No.	Part No.	Description			Remark
		< RESISTOR >			
R601	1-216-037-00	METAL CHIP	330	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R604	1-216-037-00	METAL CHIP	330	5%	1/10W
R605	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R606	1-216-037-00	METAL CHIP	330	5%	1/10W
R607	1-216-037-00	METAL CHIP	330	5%	1/10W
R608	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R609	1-216-037-00	METAL CHIP	330	5%	1/10W
R610	1-216-037-00	METAL CHIP	330	5%	1/10W
R611	1-216-041-00	METAL CHIP	470	5%	1/10W
R612	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
		< VARIABLE RESISTOR >			
RV601	1-241-646-11	RES, VAR, CARBON 10K (ECHO LEVEL)			
		< SWITCH >			
S601	1-762-365-21	SWITCH, TACTILE (CLEAR)			
S602	1-762-365-21	SWITCH, TACTILE (NEXT DISC RESERVE)			
S603	1-762-365-21	SWITCH, TACTILE (RESERVE)			
S604	1-762-365-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S605	1-762-365-21	SWITCH, TACTILE (POWER)			
**********					
*	A-6423-303-A	SW-732 (910J) BOARD, COMPLETE ********** (Ref.No. 4,000 Series)			
		< CONNECTOR >			
* CN461	1-565-042-11	HOUSING, CONNECTOR (PC BOARD) 5P			
		< JUMPER RESISTOR >			
JR461	1-216-296-91	CONDUCTOR, CHIP	0	5%	1/8W
JR462	1-216-296-91	CONDUCTOR, CHIP	0	5%	1/8W
		< PHOTO INTERUPTER >			
PH461	8-729-020-74	PHOTO INTERUPER GP1S24			
PH462	8-729-020-74	PHOTO INTERUPER GP1S24			
PH463	8-729-020-74	PHOTO INTERUPER GP1S24			
		< RESISTOR >			
R461	1-216-194-00	METAL CHIP	680	5%	1/8W
R462	1-216-099-00	METAL CHIP	120K	5%	1/10W
R463	1-216-039-00	METAL CHIP	390	5%	1/10W
R464	1-216-099-00	METAL CHIP	120K	5%	1/10W
R465	1-216-248-00	METAL GLAZE	120K	5%	1/8W
**********					

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

Ref.No.	Part No.	Description			Remark
*	A-6423-367-A	SW-738 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 7,000 Series)			
		< CAPACITOR >			
C701	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C703	1-126-157-11	ELECT	10uF	20%	16V
		< CONNECTOR >			
CN701	1-506-468-11	PIN, CONNECTOR 3P			
CN702	1-506-473-11	PIN, CONNECTOR 8P			
		< DIODE >			
D701	8-719-955-04	LED	PY5504S-1 (SIDE B)		
D702	8-719-955-04	LED	PY5504S-1 (SIDE A)		
D703	8-719-302-07	LED	SEL1810A (#)		
D704	8-719-955-04	LED	PY5504S-1 (NATURAL)		
D705	8-719-302-07	LED	SEL1810A (♭)		
D706	8-719-302-07	LED	SEL1810A (PBC ON/OFF)		
D707	8-719-302-07	LED	SEL1810A (VIDEO CD PAL OUT)		
D708	8-719-048-98	DIODE	RB160L-40TE25		
D709	8-719-048-98	DIODE	RB160L-40TE25		
		< IC >			
IC701	8-752-842-94	IC	CXP2007M		
		< RESISTOR >			
R701	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R702	1-216-079-00	METAL CHIP	18K	5%	1/10W
R703	1-216-079-00	METAL CHIP	18K	5%	1/10W
R704	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R705	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R706	1-216-037-00	METAL CHIP	330	5%	1/10W
R708	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R709	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R710	1-216-037-00	METAL CHIP	330	5%	1/10W
R712	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R713	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R714	1-216-037-00	METAL CHIP	330	5%	1/10W
R715	1-216-081-00	METAL CHIP	22K	5%	1/10W
R716	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R717	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R718	1-216-037-00	METAL CHIP	330	5%	1/10W
R719	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R720	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R721	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R722	1-216-037-00	METAL CHIP	330	5%	1/10W
R723	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R724	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R725	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R727	1-216-037-00	METAL CHIP	330	5%	1/10W
R728	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R729	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R730	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R731	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R732	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R733	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R734	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R735	1-216-037-00	METAL CHIP	330	5%	1/10W
R739	1-216-073-00	METAL CHIP	10K	5%	1/10W
R740	1-216-041-00	METAL CHIP	470	5%	1/10W
R741	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R742	1-216-041-00	METAL CHIP	470	5%	1/10W
R743	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< VARIABLE RESISTOR >			
RV701	1-241-646-11	RES, VAR, CARBON 10K (MIC 1 LEVEL)			
RV702	1-241-646-11	RES, VAR, CARBON 10K (MIC 2 LEVEL)			
		< SWITCH >			
S701	1-762-365-21	SWITCH, TACTILE (1)			
S702	1-762-365-21	SWITCH, TACTILE (>10)			
S703	1-762-365-21	SWITCH, TACTILE (2)			
S704	1-762-365-21	SWITCH, TACTILE (VIDEO CD PAL OUT)			
S705	1-762-365-21	SWITCH, TACTILE (3)			
S706	1-762-365-21	SWITCH, TACTILE (PBC ON/OFF)			
S707	1-762-365-21	SWITCH, TACTILE (4)			
S708	1-762-365-21	SWITCH, TACTILE (RETURN)			
S709	1-762-365-21	SWITCH, TACTILE (5)			
S710	1-762-365-21	SWITCH, TACTILE (A)			
S711	1-762-365-21	SWITCH, TACTILE (PREV ⏮)			
S712	1-762-365-21	SWITCH, TACTILE (6)			
S713	1-762-365-21	SWITCH, TACTILE (B)			
S714	1-762-365-21	SWITCH, TACTILE (NEXT ⏭)			
S715	1-762-365-21	SWITCH, TACTILE (7)			
S716	1-762-365-21	SWITCH, TACTILE (SELECT ▷)			
S717	1-762-365-21	SWITCH, TACTILE (♭)			
S718	1-762-365-21	SWITCH, TACTILE (8)			
S719	1-762-365-21	SWITCH, TACTILE (⏸)			
S720	1-762-365-21	SWITCH, TACTILE (NATURAL)			
S721	1-762-365-21	SWITCH, TACTILE (9)			
S722	1-762-365-21	SWITCH, TACTILE (■)			
S723	1-762-365-21	SWITCH, TACTILE (#)			
S724	1-762-365-21	SWITCH, TACTILE (10/0)			

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VX-701

Ref.No.	Part No.	Description			Remark
*	A-6423-366-A	VX-701 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 6,000 Series)			
		< CAPACITOR >			
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C102	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C103	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C104	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C105	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C106	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C107	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C108	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C109	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C110	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C112	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C114	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C115	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C116	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C117	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C118	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C119	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C120	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C121	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C122	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C123	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C124	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C125	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C127	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C128	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C129	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C130	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C131	1-163-110-00	CERAMIC CHIP	51PF	5%	50V
C132	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C133	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C134	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C135	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C136	1-163-110-00	CERAMIC CHIP	51PF	5%	50V
C137	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C138	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C139	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C140	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C141	1-163-110-00	CERAMIC CHIP	51PF	5%	50V
C142	1-163-120-00	CERAMIC CHIP	130PF	5%	50V
C143	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C144	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C145	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C146	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C147	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C148	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C149	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C150	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C152	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C153	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C154	1-124-779-11	ELECT CHIP	10uF	20%	16V
C156	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C157	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C158	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C159	1-163-247-91	CERAMIC CHIP	68PF	5%	50V
C160	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C161	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C162	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C163	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C164	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C165	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C166	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C167	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C168	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C169	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C170	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C171	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C172	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C174	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C175	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C303	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C304	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C305	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C306	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C307	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C308	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C309	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C310	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C311	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C313	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C701	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C702	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C703	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C704	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C706	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
		< CONNECTOR >			
CN101	1-506-490-21	PIN, CONNECTOR 11P			
CN102	1-564-014-11	PIN, CONNECTOR 4P			
CN103	1-506-487-11	PIN, CONNECTOR 8P			
CN104	1-506-483-21	PIN, CONNECTOR 4P			
CN301	1-691-077-21	HOUSING, CONNECTOR 18P			

Ref.No.	Part No.	Description	Remark
CN302	1-506-483-21	PIN, CONNECTOR 4P	
CN303	1-568-852-11	CONNECTOR, FFC/FPC 9P	
CN701	1-506-485-11	PIN, CONNECTOR 6P	
		< TRIMMER >	
CT101	1-141-423-61	CAP, ADJ (CLOCK)	
CT102	1-141-423-61	CAP, ADJ (CLOCK)	
		< DIODE >	
D101	8-719-800-76	DIODE 1SS226	
D301	8-719-914-44	DIODE DAP202K	
D302	8-719-914-44	DIODE DAP202K	
D701	8-719-800-76	DIODE 1SS226	
D702	8-719-800-76	DIODE 1SS226	
D704	8-719-048-98	DIODE RB160L-40TE25	
D705	8-719-048-98	DIODE RB160L-40TE25	
		< IC >	
IC101	8-759-032-01	IC MC74HC00AF	
IC102	8-759-279-51	IC LC32464M-80-TLM	
IC103	8-759-032-53	IC MC74HC244AF	
IC104	8-759-295-09	IC TLC2932IPW	
IC105	8-759-363-78	IC CL480VCD-R21	
IC106	8-752-371-07	IC CXD1807Q	
IC107	8-759-032-01	IC MC74HC00AF	
IC108	8-752-338-46	IC CXD1178Q	
IC109	8-759-011-65	IC MC74HC4053F	
IC110	8-752-068-43	IC CXA1645M	
IC111	8-759-351-75	IC KM416C256BLJ-7	
IC112	8-759-375-63	IC LC371100SM-C78	
IC113	8-759-032-01	IC MC74HC00AF	
IC301	8-759-375-62	IC LC371100SM-C77	
IC302	8-759-032-01	IC MC74HC00AF	
IC303	8-759-349-93	IC KM62256CLG-7	
IC304	8-759-276-29	IC XL9020F-S-E2	
IC305	8-759-283-49	IC HD6413002F10	
		< JACK >	
J701	1-764-592-31	JACK 3P (LINE IN)	
		< JUMPER RESISTOR >	
JC701	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
		< COIL >	
L101	1-412-962-11	INDUCTOR 82uH	
L102	1-412-951-11	INDUCTOR 10uH	
L103	1-412-962-11	INDUCTOR 82uH	
L104	1-412-946-11	INDUCTOR 3.9uH	
L105	1-412-951-11	INDUCTOR 10uH	
L106	1-412-941-11	INDUCTOR 1.5uH	
L107	1-408-975-21	INDUCTOR 27uH	
L108	1-412-946-11	INDUCTOR 3.9uH	
L109	1-412-951-11	INDUCTOR 10uH	
L110	1-412-946-11	INDUCTOR 3.9uH	
L111	1-412-951-11	INDUCTOR 10uH	
L112	1-412-961-11	INDUCTOR 68uH	
L113	1-412-959-11	INDUCTOR 47uH	
L115	1-412-962-11	INDUCTOR 82uH	
L301	1-412-961-11	INDUCTOR 68uH	
		< BASE POST >	
LP101	4-352-844-01	PIN, LEAD, COATING	
		< TRANSISTOR >	
Q101	8-729-200-71	TRANSISTOR 2SC2712G-TE85L	
Q102	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q103	8-729-027-24	TRANSISTOR DTA114TKA	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q107	8-729-900-53	TRANSISTOR DTC114EK	
Q108	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q111	8-729-027-44	TRANSISTOR DTC114TKA	
Q112	8-729-027-44	TRANSISTOR DTC114TKA	
Q113	8-729-027-44	TRANSISTOR DTC114TKA	
Q701	8-729-202-38	TRANSISTOR 2SC3326N-A	
		< RESISTOR >	
R101	1-216-023-00	METAL CHIP 82 5% 1/10W	
R102	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
R103	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R104	1-216-042-00	METAL CHIP 510 5% 1/10W	
R105	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R106	1-216-042-00	METAL CHIP 510 5% 1/10W	
R107	1-216-023-00	METAL CHIP 82 5% 1/10W	
R108	1-208-782-11	METAL GLAZE 1K 0.50% 1/10W	
R109	1-208-796-11	METAL GLAZE 3.9K 0.50% 1/10W	
R110	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R111	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R112	1-216-041-00	METAL CHIP 470 5% 1/10W	
R113	1-216-042-00	METAL CHIP 510 5% 1/10W	
R114	1-216-032-00	METAL CHIP 200 5% 1/10W	
R115	1-216-038-00	METAL CHIP 360 5% 1/10W	
R116	1-216-032-00	METAL CHIP 200 5% 1/10W	
R117	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R119	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R120	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R121	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R122	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref.No.	Part No.	Description				Remark
R124	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R128	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R129	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R130	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R133	1-216-032-00	METAL CHIP	200	5%	1/10W	
R134	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R135	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R137	1-216-041-00	METAL CHIP	470	5%	1/10W	
R138	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R139	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R140	1-216-041-00	METAL CHIP	470	5%	1/10W	
R141	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R142	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R143	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R144	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R145	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R146	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R147	1-216-041-00	METAL CHIP	470	5%	1/10W	
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R149	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R150	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R151	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R152	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R153	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R154	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R155	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R156	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R157	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R158	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R159	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R162	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R163	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R164	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R165	1-216-037-00	METAL CHIP	330	5%	1/10W	
R166	1-216-041-00	METAL CHIP	470	5%	1/10W	
R167	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R168	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R169	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R172	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R173	1-216-037-00	METAL CHIP	330	5%	1/10W	
R174	1-216-041-00	METAL CHIP	470	5%	1/10W	
R175	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R176	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R179	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R180	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R181	1-216-037-00	METAL CHIP	330	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R182	1-216-041-00	METAL CHIP	470	5%	1/10W	
R183	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R184	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R185	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R186	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R187	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R188	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R189	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R193	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R195	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R196	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R199	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R200	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R202	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R203	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R204	1-216-037-00	METAL CHIP	330	5%	1/10W	
R205	1-216-013-00	METAL CHIP	33	5%	1/10W	
R206	1-216-013-00	METAL CHIP	33	5%	1/10W	
R207	1-216-013-00	METAL CHIP	33	5%	1/10W	
R208	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R209	1-216-035-00	METAL CHIP	270	5%	1/10W	
R210	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R211	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R212	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R214	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R215	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R216	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R217	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R218	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R219	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R220	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R221	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R222	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R223	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R302	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R303	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R304	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R308	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R309	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R310	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R311	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R312	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R313	1-216-033-00	METAL CHIP	220	5%	1/10W	
R314	1-216-033-00	METAL CHIP	220	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R315	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R316	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R317	1-216-033-00	METAL CHIP	220	5%	1/10W	
R318	1-216-033-00	METAL CHIP	220	5%	1/10W	
R319	1-216-033-00	METAL CHIP	220	5%	1/10W	
R320	1-216-033-00	METAL CHIP	220	5%	1/10W	
R321	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R322	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R323	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R324	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R325	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R328	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R329	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R330	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R331	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R332	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R333	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R334	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R335	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R336	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R337	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R338	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R339	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R340	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R341	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R343	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R344	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R702	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R703	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R704	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R705	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R706	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R707	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R709	1-216-022-00	METAL CHIP	75	5%	1/10W	
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV102	1-241-394-11	RES, ADJ, CARBON 4.7K (VCD LEVEL)				
		< VIBRATOR >				
X101	1-579-780-21	VIBRATOR, CRYSTAL (17.734MHz)				
X102	1-579-738-21	VIBRATOR, CRYSTAL (14.318MHz)				
X301	1-578-689-21	VIBRATOR (8MHz)				

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Ref.No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
⚠64	1-575-912-21	CORD, POWER	
68	1-769-652-11	CABLE, FLAT (FMP-3) 19 ARBOR	
70	1-769-654-11	CABLE, FLAT (FMD-4) 12 ARBOR	
72	1-769-653-11	CABLE, FLAT (FMM-2) 7 ARBOR	
⚠75	1-569-008-11	ADAPTER, CONVERSION 2P (E, JE)	
⚠75	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
77	1-775-931-11	CABLE, FLAT (FMV-6) 18 ARBOR	
78	1-775-930-11	CABLE, FLAT (FVF-6) 9 ARBOR	
⚠*120	1-468-061-11	POWER BLOCK (E, JE)	
⚠*120	1-468-061-21	POWER BLOCK (CH, HK)	
⚠168	8-848-286-11	OPTICAL PICK-UP BLOCK KHS-150A	
170	1-751-083-11	CABLE, FLEXIBLE FLAT (18 CORE)	
172	1-769-151-11	FLAT CABLE (FMB-001) (4 CORE)	
⚠F101	1-532-237-00	FUSE, TIME LAG (T3.15AL, 250V)	
M421	X-3944-693-1	MOTOR ASSY, DC (TILT)	
M481	X-3944-685-1	MOTOR ASSY, LOADING (RF-370C)	
M901	1-698-109-11	MOTOR, DD (SPINDLE)	

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ACCESSORIES & PACKING MATERIALS
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	1-473-425-21	REMOTE COMMANDER (RMT-M40A)
	1-575-334-11	CORD, CONNECTION (AV) (A/V connecting cable (Stereo) 1.5M)
	3-708-885-01	COVER, BATTERY (for RMT-M40A)
	3-800-709-11	MANUAL, INSTRUCTION (ENGLISH, CHINESE)
	3-800-709-21	MANUAL, INSTRUCTION (SPANISH) (E, JE)
*	3-966-305-01	INDIVIDUAL CARTON (CH)
*	3-966-728-01	INDIVIDUAL CARTON (E, JE, HK)
*	3-966-729-01	CUSHION (UPPER)
*	3-966-730-01	CUSHION (LOWER)

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****
HARDWARE LIST
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#1	7-621-759-35	+PSW, 2.6X5
#2	7-621-759-65	+PSW, 2.6X8
#3	7-623-212-22	SW 5, TYPE 2
#4	7-624-105-04	STOP RING 2.3, TYPE -E
#5	7-624-190-81	STOP RING 2, TYPE-CS
#6	7-628-253-00	SCREW +PS 2X4
#7	7-682-946-09	SCREW +PSW 3X5
#8	7-684-220-02	NUT 3, HEXAGON CAP
#9	7-685-103-19	SCREW +P 2X5 TYPE2 SLIT
#10	7-685-133-19	SCREW +P 2.6X6 TYPE2
#11	7-685-659-79	SCREW +P 4X8 TYPE2 NON-SLIT

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

Ref. No.	Part No.	Description	Remark
#12	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
#13	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#14	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#15	7-685-648-79	SCREW +BVTP 3X12 TYPE2	

6-1. MODE CONTROL IC PIN DESCRIPTION (FP-750 BOARD IC102 MB89095PF-G-171-BND)

Pin No.	Pin Name	I/O	Function
1	CLI	O	Clock 32 kHz (Open)
2	CL0	I	Clock 32 kHz (Connected to GND)
3	GND	I	(Connected to GND)
4	GND	I	(Connected to GND)
5	X0	I	Clock 8 MHz
6	X1	O	Clock 8 MHz
7	GND	I	GND
8	$\overline{\text{RST}}$	I	VFD controller reset ("L": Reset)
9	$\overline{\text{NEXT DISC}}$	O	LED output ("L": Lights on) NEXT DISC
10	$\overline{\text{RESERVE}}$	O	LED output ("L": Lights on) RESERVE
11	$\overline{\text{AUTO PAUSE}}$	O	LED output ("L": Lights on) AUTO PAUSE
12	$\overline{\text{AUTO RESUME}}$	O	LED output ("L": Lights on) AUTO RESUME
13	$\overline{\text{SELECT}}$	O	LED output ("L": Lights on) SELECT
14	$\overline{\text{VOCAL SUPPORT}}$	O	LED output ("L": Lights on) VOCAL SUPPORT
15	$\overline{\text{EFECT}}$	O	LED output ("L": Lights on) EFECT
16	——	–	N.C.
17	——	–	N.C.
18	$\overline{\text{VFD REQ}}$	I	Chip select for VFD controller from the mode VCD controller
19	——	–	N.C.
20	——	–	N.C.
21	——	–	N.C. (Open-drain port)
22	——	–	N.C. (Open-drain port)
23	——	–	N.C. (Open-drain port)
24	——	–	N.C. (Open-drain port)
25	——	–	N.C.
26	——	–	N.C.
27	——	–	N.C.
28	CMOD	I	Input of the start mode selection after reset release (+5V PULL UP)
29	SI	I	Data reception from the mode VCD controller
30	SO	O	Data transfer to the mode VCD controller/LED serial/parallel IC
31	SCK	O	Communication clock to the mode VCD controller/LED serial/parallel IC
32	SIRCS	I	SIRCS input
33	$\overline{\text{LED STB}}$	O	Strobe signal output to SW-738 LED
34	$\overline{\text{MMI RST}}$	O	Mode VCD controller reset ("L": Reset)
35	$\overline{\text{VFD ACK}}$	O	Transfer enable signal to the mode VCD controller from the VFD controller ("L": Communication enable)
36	AU MUTE	O	"H" when audio mute
37	VIDEO MUTE	O	"H" when video mute
38	——	–	N.C.
39	P24	O	FL segment output
40	P23	O	FL segment output

Pin No.	Pin Name	I/O	Function
41	P22	O	FL segment output
42	P21	O	FL segment output
43	P20	O	FL segment output
44	P19	O	FL segment output
45	P18	O	FL segment output
46	P17	O	FL segment output
47	P16	O	FL segment output
48	P15	O	FL segment output
49	Vcc	I	Power supply, EVER +5V
50	P14	O	FL segment output
51	P13	O	FL segment output
52	P12	O	FL segment output
53	–30V	I	High-voltage proof pull-down power supply –30V
54	P11	O	FL segment output
55	P10	O	FL segment output
56	P9	O	FL segment output
57	P8	O	FL segment output
58	GND	I	GND
59	P7	O	FL segment output
60	P6	O	FL segment output
61	P5	O	FL segment output
62	P4	O	FL segment output
63	P3	O	FL segment output
64	P2	O	FL segment output
65	P1	O	FL segment output
66	——	–	Not used (Open).
67	Vcc	I	Power supply, EVER +5V
68	7G	O	FL digit output
69	6G	O	FL digit output
70	5G	O	FL digit output
71	4G	O	FL digit output
72	3G	O	FL digit output
73	2G	O	FL digit output
74	1G	O	FL digit output
75	LINE SEL	–	N.C.
76	——	–	N.C.
77	MMI SO	–	N.C.
78	MMI SI	–	N.C.
79	MMI CLK	–	N.C.
80	DOOR SW	O	DOOR SW ("H": CLOSE, "L": OPEN)

Pin No.	Pin Name	I/O	Function
81	——	–	N.C.
82	——	–	N.C.
83	GND	I	GND
84	PS MON1	I	AD input -5V REG MONITOR
85	PS MON2	I	AD input +5V REG MONITOR
86	PS MON3	I	AD input ± 12V MONITOR
87	KEY L1	I	AD input PW-723 key input
88	KEY R1	I	AD input SW-738 key input
89	KEY R2	I	AD input SW-738 key input
90	KEY R3	I	AD input SW-738 key input
91	KEY C1	I	AD input FP-750 key input
92	Vcc	I	Power supply, EVER +5V
93	KEY C2	I	AD input FP-750 key input
94	ECHO VR	I	AD input, echo volume input
95	J/E, CH, HK	I	AD input, destination specification ("H": Fixed E/CH/HK/JE)
96	——	–	Not used (Open).
97	P. OFF	O	Forcibly turns off the switching power supply ("H": Forcibly off)
98	P. CONT	O	Unit power ON/OFF control ("H": Power on)
99	TEST1	I	Test pin (When reset;"L": All LED/FL displays light on.)
100	Vcc	I	Power supply, EVER +5V

• Abbreviation
HK : Hong Kong model
CH : Chinese model
JE : Tourist model

6-2. VCD MODE CONTROL IC PIN DESCRIPTION (VX-701 BOARD IC305 HD6413002F10)

Pin No.	Pin Name	I/O	Function
1	Vcc	–	Power supply, REG +5V
2	$\overline{\text{DSP CS}}$	O	Chip select for KARAOKE DSP ("L": Being communicated)
3	DA_EMPH	I	CDDA de-emphasis control input ("H": ON). Only when video CD is used, this pin is used due to CL480 bug.
4	$\overline{\text{E2P WC}}$	O	EEPROM line control output
5	$\overline{\text{E2P CS}}$	O	EEPROM chip select output
6	$\overline{\text{VFD ACK}}$	I	Transfer enable signal to the mode controller from the VFD controller ("L": Communication enable)
7	$\overline{\text{VFD REQ}}$	O	Transfer request signal to the VFD controller from the mode controller ("L": Communication request)
8	——	–	N.C. (Open)
9	$\overline{\text{CL480 RST}}$	O	CL480 reset ("L": Reset)
10	$\overline{\text{RESO}}$	O	Not used (Open).
11	Vss	–	GND
12	MECH SI	O	Data output to the mechanism controller/CG
13	SO	O	Transfer data to the VFD controller/EEPROM/KARAOKE DSP
14	MECH SO	I	Data input from the mechanism controller
15	SI	I	Reception data from the VFD controller/EEPROM
16	MECH CLK	O	Communication clock output to the mechanism controller/CG
17	SCK	O	Communication clock to the VFD controller/EEPROM/KARAOKE DSP
18	$\overline{\text{DEV RST}}$	O	Device reset ("L": Reset)
19	$\overline{\text{H DET}}$	I	"L": Video input present
20	MIC IN	I	"L": MIC IN
21	OTASUKE	I	"H": Microphone sound absent, "L": Microphone sound present
22	Vss	–	GND
23	$\overline{\text{VCD}}$	O	"L": Video CD playback
24	CLAP SW0	O	"H": Hand clapping 0 START
25	CLAP SW1	O	"H": Hand clapping 1 START
26	$\overline{\text{CLAP BUSY}}$	I	"L": Hand clapping
27	D0	I/O	Data bus I/O
28	D1	I/O	Data bus I/O
29	D2	I/O	Data bus I/O
30	D3	I/O	Data bus I/O
31	D4	I/O	Data bus I/O
32	D5	I/O	Data bus I/O
33	D6	I/O	Data bus I/O
34	D7	I/O	Data bus I/O
35	Vcc	–	Power supply, REG +5V
36	A0	O	Address bus output
37	A1	O	Address bus output
38	A2	O	Address bus output
39	A3	O	Address bus output
40	A4	O	Address bus output

Pin No.	Pin Name	I/O	Function
41	A5	O	Address bus output
42	A6	O	Address bus output
43	A7	O	Address bus output
44	Vss	–	GND
45	A8	O	Address bus output
46	A9	O	Address bus output
47	A10	O	Address bus output
48	A11	O	Address bus output
49	A12	O	Address bus output
50	A13	O	Address bus output
51	A14	O	Address bus output
52	A15	O	Address bus output
53	A16	O	Address bus output
54	A17	O	Not used (Open).
55	A18	O	Not used (Open).
56	A19	O	Not used (Open).
57	Vss	–	GND
58	$\overline{WAIT}$	I	Wait pin. Requests the insertion of wait state when accessing the external address space.
59	RGB MUTE	O	RGB encoder output mute control ("H": Mute. Sync is not muted.)
60	NTSC/$\overline{PAL}$	O	RGB encoder mode selection ("H": NTSC output, "L": PAL output)
61	SYSCLK	O	System clock output (Not used: Open)
62	$\overline{STBY}$	I	Standby pin. When "L", the hardware standby mode is set. (Not used: Fixed at "H".)
63	$\overline{RST}$	I	Mode controller reset ("L": Reset)
64	$\overline{E2P\ BUSY}$	I	EEPROM write. "H": READY, L: BUSY.
65	Vss	–	GND
66	EXTAL	I	Connected to the crystal oscillator. Clock 8 MHz.
67	XTAL	I	Connected to the crystal oscillator. Clock 8 MHz.
68	Vcc	–	Power supply REG +5V
69	$\overline{AS}$	O	Address strobe. When "L", an address on the address bus is valid. (Not used: Open)
70	$\overline{RD}$	O	Read pin. When "L", the external address space is in a read condition.
71	$\overline{HWR}$	O	High write pin. When "L", the external address space is in a write condition, and the data bus is valid (bus width: 8-bit).
72	$\overline{LWR}$	O	Not used (Open).
73	MD0	I	Mode pin (Fixed at "H") — Sets the microcontroller operation mode to mode 1 (Address space: 1M bytes, 8-bit data bus).
74	MD1	I	Mode pin (Fixed at "L")
75	MD2	I	Mode pin (Fixed at "L")
76	AVcc	–	AD conversion power supply, REG +5V
77	VREF	–	AD conversion reference voltage input, REG +5V
78	——	I	AD input (Not used: open)
79	——	I	AD input (Not used: open)
80	——	I	AD input (Not used: open)

Pin No.	Pin Name	I/O	Function
81	——	I	AD input (Not used: open)
82	——	I	AD input (Not used: open)
83	——	I	AD input (Not used: open)
84	J/E/UC	I	AD input, destination specification
85	REMOTE CONT	I	AD input, microphone remote input
86	AVss	–	AD conversion GND
87	$\overline{REF\ V}$	I	Reference V sync signal input (Non-maskable interrupt. Requests a non-maskable interrupt.)
88	$\overline{CL480INT}$	I	CL480 interrupt request signal input
89	$\overline{CL480CS}$	O	CL480 chip select
90	$\overline{EXRAMCS}$	O	External RAM chip select
91	$\overline{EXROMCS}$	O	External ROM chip select
92	$\overline{Vss}$	–	GND
93	——	I	De-emphasis control input of MPEG audio ("H": ON)
94	VX MUTE	O	Complete mute control of RGB encoder ("H": Mute. Sync is also muted.)
95	——	–	N.C. (Reserved for input capture.)
96	——	–	N.C. (Reserved for input capture.)
97	LINE SELECT	O	"H": Communication with the mechanism controller, "L": Communication with CG
98	$\overline{MMI\ CS}$	I	Chip select for the mode controller from the mechanism controller
99	BUSY	O	Transfer enable signal to the mechanism controller from the mode controller ("L": Communication enable)
100	$\overline{CG\ CS}$	O	CG chip select ("L": Being communicated)

6-3. SYSTEM CONTROL IC PIN DESCRIPTION (MB-720 BOARD IC501 MB89094PF-G-151-BND)

Pin No.	Pin Name	I/O	Function
1	——	O	Clock 32 kHz (Open)
2	CLK32K	I	Clock 32 kHz
3	GND	I	(Connected to GND)
4	GND	I	(Connected to GND)
5	2FSC	I	Clock 2 fsc (7.159 MHz)
6	——	O	Clock 2 fsc (Open)
7	——	I	GND
8	XMRST	I	Mechanism controller reset ("L": Reset)
9	XFREQ	I	Phillips code (Frame No.) read enable
10	FQACK	O	Phillips code/SubQ (Subcode) data output control ("H": Data output)
11	FQSEL	O	Phillips code/SubQ data selection ("L": SubQ)
12	JPCTL	O	One track jump (1TJ)/Multi track jump (MTJ) selection signal ("H": 1TJ)
13	SP LOCK	I	Spindle servo lock signal ("H": Spindle servo locked)
14	TBC HOLD IN	O	Chroma TBC control signal
15	SCOR	I	"H" when subcode sync is detected.
16	XPB V	I	Playback V sync signal input
17	XREF V	I	Reference V sync signal input
18	ALT	O	Latches internal register A of extension output port IC (MB-720 board IC502)
19	BLT	O	Latches internal register B of extension output port IC (MB-720 board IC502)
20	XBUSY	I	Communication enable signal from the mode controller ("L": Communication enable)
21	DOP	I	VIDEO dropout detection input
22	VTM	I	Servo processor V timing signal
23	FLAG	I	Reference line operation flag
24	CDG MODE	I	"H" when CDG. (Decode IC disc discrimination)
25	CLS CS	O	Chip select of CLS DT (pin 29) signal
26	SPDL PLS	O	Spindle pulse drive signal ("H": Spindle free running)
27	CLT	O	CLD register latch
28	+5V	I	Input of the start mode selection after reset release (+5V PULL UP)
29	CLS DT	I	CLV scanning V sync phase difference data input from IC502 (Data input when CLS CS is "H".)
30	SET DT	O	Serial data output to DSP/Extension output port IC
31	SET CK	O	Serial data transfer clock to DSP, IC502
32	SPDL FG1	I	Spindle FG input 1 (12 waves per one rotation)
33	G MUTE	O	Gray image mute control output when CLV scanning ("L": Playback image, "H": Gray image)
34	LD SEARCH	O	Spindle servo control output ("H": During LD search)
35	SPDL F/XR	O	Spindle rotation direction signal ("H": FWD)
36	AUX SEL	O	"H": External input, "L": Others
37	1TJ	O	Track jump trigger pulse output
38	MWE	O	Memory image fetch request (Not used)
39	MEM/XTHR	O	Memory/through image selection (Not used: open)
40	MSTAT	I	Memory image being fetched. (Not used: open)

Pin No.	Pin Name	I/O	Function
41	MTJ	I	MTJ tracking pulse output. Normally, input. Output when TJ is executed ("L": FWD).
42	MTF ON/$\overline{\text{OFF}}$	O	MTF compensation ON/OFF signal ("H": MTF ON)
43	V LOAD	O	VIDEO IC (MN8811) latch signal
44	——	O	Not used (Open).
45	PM OFF	O	Read clock phase modulation. "H": OFF.
46	RGB/$\overline{\text{LD}}$	O	"H": RGB output, "L": LD/AUX output
47	BLK LEVEL	O	Theater mode ("H": ON) (Not used.)
48	XFL	I	Focus lock signal ("L": Focus lock)
49	Vcc	I	Power supply REG +5V
50	LINE SEL	I	"H": MMI is connected to FSIO.
51	XCDG MUTE	O	Graphic data mute ("L": PB, "H": Others)
52	TILT UP	O	Forcibly moves to TILT UP.
53	TILT DN	O	Forcibly moves to TILT DOWN.
54	XMMI CS	O	Serial communication chip select signal to the mode controller
55	LOADING	O	Tray loading drive
56	UN LOADING	O	Tray eject drive
57	XCDG RST	O	CDG IC reset
58	GND	I	GND
59	LINE MUTE	O	Audio output mute signal ("L": Mute)
60	$\overline{\text{DIGITAL O MUTE}}$	I	Digital 0 mute information
61	MC RST	O	Servo DSP/DF reset signal ("L": Reset)
62	LD ON	O	Laser diode ON/OFF signal ("H": ON (emission))
63	XCD/LD CDV	O	"L": CD or CDV audio part is played back, "H": Others
64	XSVLT	O	SERVO IC (HA11529) latch signal
65	SIDE A/XB	O	Tilt servo image selection ("H": A, "L": B)
66	BRK INH	O	SERVO brake mode control ("H": Prohibited)
67	LCSW1	I	Loading/chucking position sensor input 1
68	XLD LED	O	DISC discrimination LED emission signal ("L": Emission)
69	LCSW2	I	Loading/chucking position sensor input 2
70	LCSW3	I	Loading/chucking position sensor input 3
71	SPDL FG2	I	Spindle FG input 2 (Not used)
72	TILT LIMIT	I	TILT UP/DOWN limit SW input
73	TILT CTR	I	TILT center position SW input
74	MECH SI	I	32-byte serial transfer data input (For SCOR check)
75	——	–	N.C. (Open)
76	——	–	N.C. (Open)
77	MECH SI	I	32-byte serial transfer data input (Input from the mode controller, IC502)
78	MECH SO	O	32-byte serial transfer data output (Output to the mode controller)
79	MECH CLK	O	32-byte serial transfer clock
80	T CNT	I	Track jump number count signal input

Pin No.	Pin Name	I/O	Function
81	——	–	N.C.
82	——	–	N.C.
83	GND	I	GND
84	LD DET	I	A/D input (Disc present/absent, 8/12 inch detection)
85	CD/ALD	I	A/D input SLED position information (CDV)
86	CDV/BLD	I	A/D input SLED position information (CD, ALD, BLD)
87	TRAY IM	I	A/D input TRAY drive motor failure detection
88	XDSPLT	O	DSP IC latch signal
89	MUTG	O	DSP mute signal ("H": Mute)
90	LOCK	I	Frame sync (EFM) lock signal ("H": Lock)
91	SENSE	I	Various SENSE signals input from DSP
92	Vcc	I	Power supply REG +5V
93	MD2	O	Optical output mute ("L": Mute)
94	EMPHA ON/OFF	O	De-emphasis control ("H": ON)
95	A MUTE 1	O	Audio L output mode selection ("H": Analog audio R mute)
96	A MUTE 2	O	Audio R output mode selection ("H": Analog audio L mute)
97	XCX	O	CX ON/OFF control output ("L": CX ON)
98	DIGIFIL MUTE	O	Digital filter soft mute
99	XDPS SEL	O	Selection of communication with DSP ("L": Connection, "H": Disconnection)
100	Vcc	I	Power supply REG +5V

6-4. SYSTEM CONTROL IC PIN DESCRIPTION (MB-720 BOARD IC502 MSM10S0110-069GS-BK2)

Pin No.	Pin Name	I/O	Function
1	AUXO	O	Audio BCK output
2	AUXI	I	Audio BCK input
3	VDD	–	+ 5V
4	GND	–	GND
5	PCDI	–	Not used (Open).
6	XPHS	–	Not used (Open).
7	HS	–	Not used (Open).
8	DOC INH	–	Not used (Open).
9	REF HC	–	Not used (Open).
10	REF HE	–	Not used (Open).
11	HMSK	–	Not used (Open).
12	FH4	–	Not used (Open).
13	SYEX	–	Not used (Open).
14	FSC	–	Not used (Open).
15	GND	–	GND
16	XIN	I	4 fsc 14.3 MHz input (Clock)
17	XOUT	O	4 fsc 14.3 MHz output
18	VMUTE1	O	When CLV scanning: V sync delete signal
19	VMUTE2	O	When CLV scanning: REF V sync add signal
20	VMUTE	–	Not used (Open).
21	GBURST	O	Gray image output
22	DLRH	O	Gray image output
23	GRH	O	Gray image output
24	ME REFH	–	Not used.
25	XCD/LDCDV	–	Not used.
26	GVID	I	When CLV scanning: Gray image output control signal
27	TBC H	–	Not used (Open).
28	VDD	–	+5V
29	GND	–	GND
30	DSGATE	O	Phillips code gate signal output
31	TBCREFH	O	TBC fetch reference signal output
32	PBCS	I	Composite sync signal input
33	P CODE	I	Phillips code data input
34	JMP TGL	O	CAV disc track traverse signal
35	TBC MUTE	O	TBC MUTE signal
36	CONT2	O	TBC operation selection. "H": Line mode, "L": Burst mode.
37	CGV	–	Not used (Open).
38	CGH	–	Not used (Open).
39	HD	–	Not used (Open).
40	GND	–	GND

Pin No.	Pin Name	I/O	Function
41	CLV1	–	Not used (Open).
42	CLV2	–	Not used (Open).
43	8/$\overline{12}$	–	Not used (Open).
44	PC OUT1	O	Forcibly accelerates/decelerates the spindle servo.
45	PC OUT2	O	Spindle servo H servo error output
46	SP UNLOCK	O	When the spindle is not locked: Signal output set by the mechanism controller.
47	SP OFF	O	Output for spindle motor STOP.
48	HP OUT	O	Spindle error signal hold pulse output (Outputs when track jump)
49	CDV	O	Spindle mode setting. CDV-V part "H".
50	FGMD	O	Spindle mode setting. FG mode "H".
51	JUMP	I	Track jump control signal (HP OUT gate)
52	SV CLK	O	Servo IC clock output 1/8 FSC
53	VDD	–	+5V
54	GND	–	GND
55	XSETCK	O	Serial data transfer clock output to the servo IC
56	SP PBHI	I	Spindle PBH input
57	SP PBHO	O	Spindle PBH output
58	SP RHI	I	Spindle PEFH input
59	SP RHO	O	Spindle PEFH output
60	SET CLK	I	Internal registers A and B clock input
61	SET DT	I	Internal registers A and B data input
62	CLS DT	O	CLV scanning V sync counter data output
63	CLS CS	I	CLV scanning V sync counter data read clock control input
64	CLT	I	CLD register latch
65	GND	–	GND
66	BLT	I	Internal register A latch
67	ALT	I	Internal register B latch
68	REF V	O	REF V sync output
69	PB V	O	PB V sync output
70	TBC HOLD	I	TBC MUTE control
71	SP LOCK	O	Spindle lock detection signal
72	JP CTL	I	Track jump selection signal "H": ITJ, "L": MTJ.
73	FQSEL	I	Frame No./$\overline{SUBQ}$ data selection signal
74	FQACK	I	Frame No./SUBQ data output control. "H": Data output.
75	FREQ	O	Frame No. read OK
76	MRST	I	Reset signal input
77	2FSC	O	Clock to the mechanism controller
78	VDD	–	+5V
79	GND	–	GND
80	2FH	O	Clock to the mechanism controller

Pin No.	Pin Name	I/O	Function
81	DSP SEL	I	Selection of communication with DSP
82	MECH CLK	I	Serial transfer clock
83	MECH SOI	I	Serial transfer data input
84	MECH SIO	O	Serial transfer data output
85	FQ D OUT	O	Frame No. SUBQ data output
86	LINE SEL	I	When "H": Communication between the mode controller and the mechanism controller
87	MMI CLK	I	Communication clock from the mode controller
88	MMI SO	O	Transfer data to the mode controller
89	MMI SI	I	Reception data from the mode controller
90	GND	–	GND
91	SUBQ CLK	O	Sub Q read out clock output
92	SUBQ	I	Sub Q input
93	DSPCK	O	Serial data transfer clock output to DSP
94	LRCK	I	Audio LRCK input
95	PCMD	I	Audio data input
96	PCMDI	O	Audio data output
97	BCKINV	–	Not used.
98	BCK	I	Audio BCK input
99	PCSEL	–	Not used (Open).
100	TEST	–	TEST pin. Normally "L".

SECTION 7
ADJUSTMENT

During the adjustment, see the arrangement diagram for adjustments on page from 7-8.

7-1. LIST OF SERVICING JIGS

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Frequency counter
- LD alignment disc HLV-8 (8-797-008-00) NTSC Ref. Disc 8
- Video CD test disc HLV-401 (J-6095-031-A)

7-2. CAUTIONS ON ADJUSTMENT

- Disc load/unload operation must not be performed when servicing with the unit laying down sideways. (Never press the OPEN and CLOSE buttons (⏏)).
- When laying the unit down sideways, perform adjustment with the left side down and turn the power ON.
- When adjusting the servo system, be sure to set up the unit horizontally.

7-3. POWER BLOCK ADJUSTMENT (SR-562: E, Tourist model) (SR-565: Chinese, Hong Kong model)

7-3-1. EVER 5V Adjustment (Power Block)

Mode	Stop
Measurement point	Pin ② of CN052 (Pin ⑦, GND)
Measuring equipment	Digital voltmeter
Adjusting element	VR201
Specified value	5.0 ± 0.3 Vdc

Adjustment method:
1) Adjust VR201 to 5.0 ± 0.3 Vdc.

7-3-2. REG +5V Adjustment (Power Block)

Mode	Stop
Measurement point	Pin ④ of CN052 (Pin ⑦, GND)
Measuring equipment	Digital voltmeter
Adjusting element	VR202
Specified value	5.0 ± 0.3 Vdc

Adjustment method:
1) Adjust VR202 to 5.0 ± 0.3 Vdc.

7-3-3. FREC. Adjustment (Power Block)

The VR101 on SR-562 (E, Tourist model) board or SR-565 (Chinese, Hong Kong model) board has already controlled for shipment. Do not touch this adjusting element VR101 (FREC.).

7-3-4. Power Supply Check (Power Block)

Mode	Stop
Measuring equipment	Digital voltmeter
UNREG +16V check	
Measurement point	Pin ⑪ of CN051 (Pin ⑫, GND)
Specified value	16.4 ± 1.5V
UNREG –16V check	
Measurement point	Pin ⑭ of CN051 (Pin ⑬, GND)
Specified value	–15.3 ± 1.5V
REG +12V check	
Measurement point	Pin ⑰ of CN051 (Pin ⑱, GND)
Specified value	12 ± 0.8V
REG –12 check	
Measurement point	Pin ⑱ of CN051 (Pin ⑱, GND)
Specified value	–12 ± 0.8V
REG –5V check	
Measurement point	Pin ⑥ of CN052 (Pin ⑦, GND)
Specified value	–5 ± 0.3V

- Confirm that the power supply voltages satisfy the respective specified values.

7-4. SYSTEM CONTROL SYSTEM ADJUSTMENT

7-4-1. Microprocessor Clock Adjustment (MB-720 board)

Mode	Stop
Measurement point	Emitter of Q028 (Pin ⑰ of IC002)
Measuring equipment	Frequency counter
Adjusting element	CT001
Specified value	14,318,180 Hz ± 40 Hz

Adjustment method:
1) Adjust CT001 to 14,318,180 Hz ± 40 Hz.

7-5. ADJUSTMENT AFTER THE ATTACHMENT OF THE OPTICAL PICK-UP BLOCK

7-5-1. Jigs and Tools

- Hexagonal wrench (Tangential screwdriver: 7-700-766-04)
- Oscilloscope
- MD adjustment cable (J-6082-059-B)
- Alignment disc Ref. 8 (HVL8: 8-797-008-00)/LD YEDS-18 (3-702-101-01) or an equivalent/CD
- Eccentric screwdriver 4 ϕ (J-6095-029-A)

※ Insert the terminal of MD adjusting cable to CN401 on the MB-720 board.

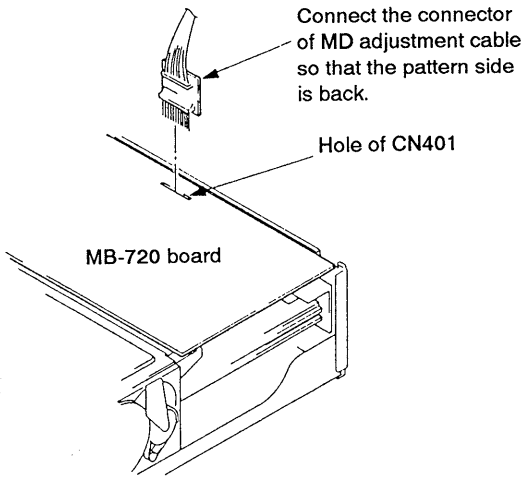


Fig. 7-1.

7-5-2. CD Adjustment

① Loosen the screws of feed base block assembly.

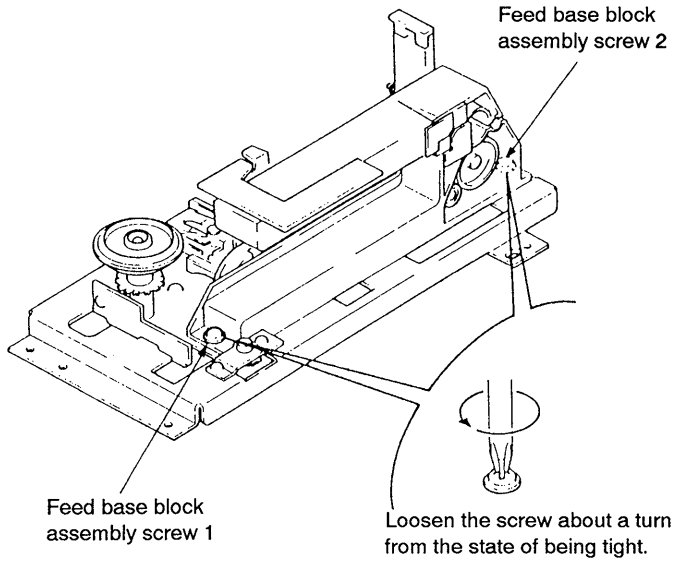


Fig. 7-2.

② Playback the CD alignment disc (YEDS-18) and press the Pause button about three seconds later.

③ Connect the oscilloscope to LD RF of the MD adjustment cable to seen if the waveform shown below again.

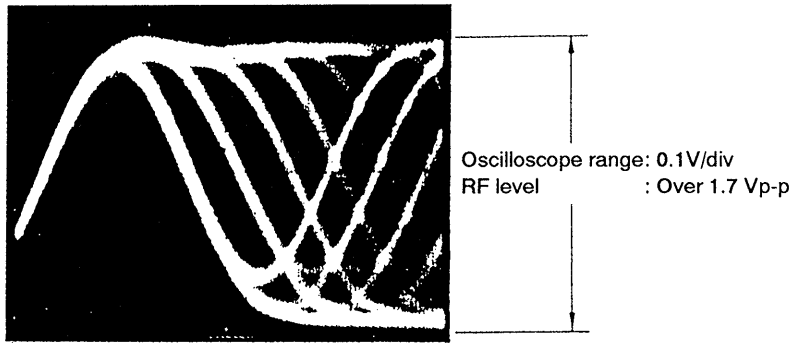


Fig. 7-3.

④ Insert the A TAN screw with a hexagonal wrench 2.6 from the hole of top surface of chucking assembly while loading a DISC, and adjust so that RF level will be the maximum (Over 1.7 Vp-p)

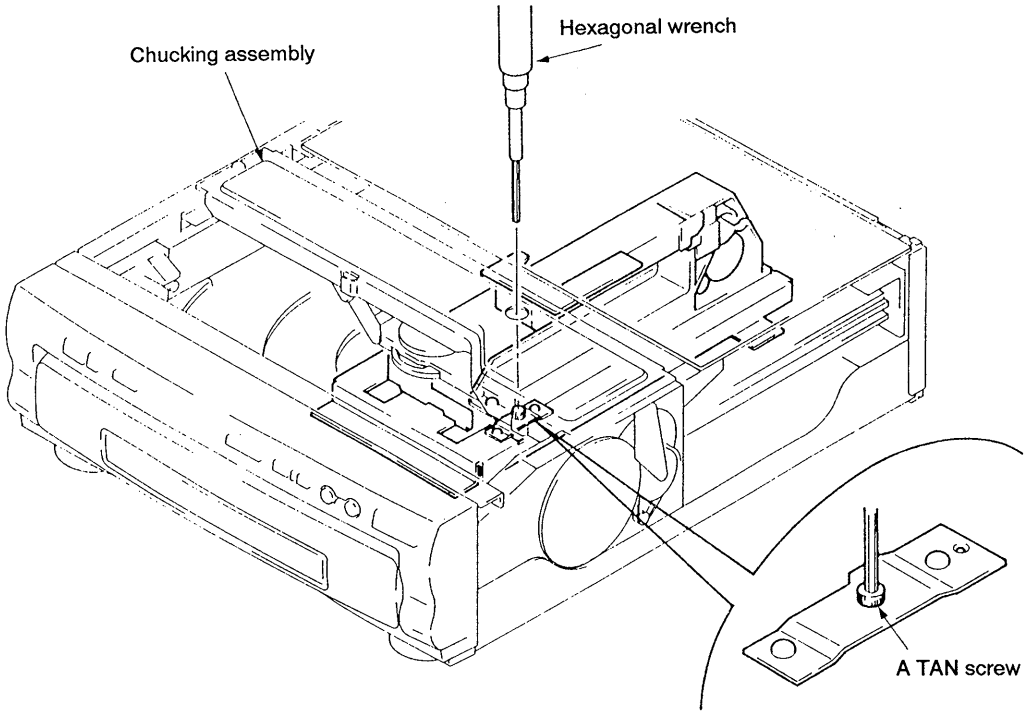


Fig. 7-4.

Jig terminal : E, F
Mode : TRACKING, SLED OFF
Oscilloscope : X/Y Lissagious range (Each 20 mV/div.)
Phase difference: Within 35 °

⑤ Insert a eccentric screwdriver into the feed base block assembly for RD adjustment.

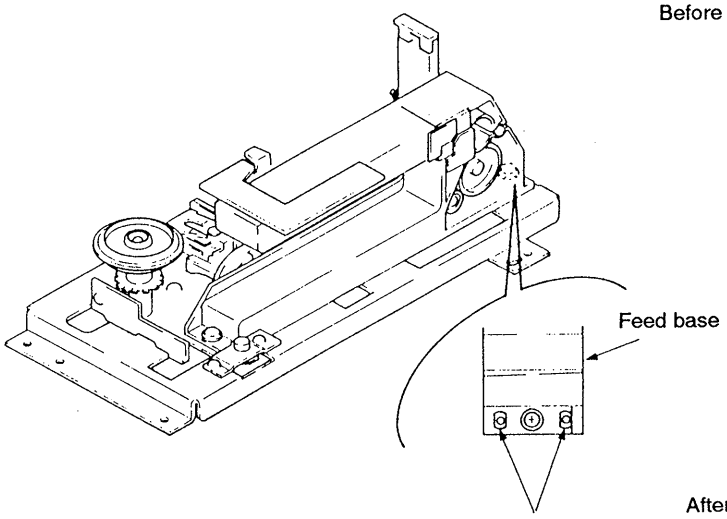
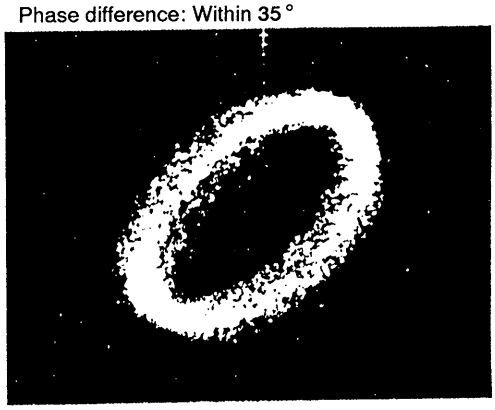


Fig. 7-5.

Before adjustment



Make the figure straight.

After adjustment

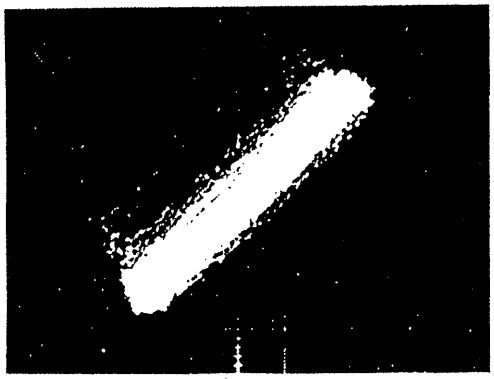


Fig. 7-6.

⑥ Take the DISC out to tighten two screws of the feed base.
⑦ Apply the suitable locking compound to A TAN screw.

7-6. SERVO SYSTEM ADJUSTMENT

7-6-1. LD Side A Adjustment

① Put the LD alignment disc HLV-8 in with the CAV side to the side A, play it and pause at the chapter 3 (#2201).

② Connect an oscilloscope to LD RF terminal on the MD adjustment cable and adjust RV401 so that the RF waveform goes maximum in the state the TRACKING and SLED are ON.

Fig. 7-7.

③ Play #770 and pause.

④ Check that the vertical bar appears on TV monitor and right and left crosstalks (moire) are the same level and minimum.

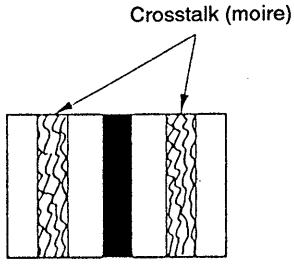
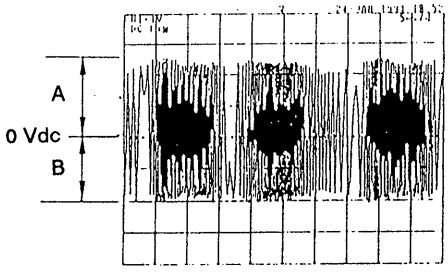


Fig. 7-8.

⑤ Tracking gain and focus gain adjustment are not necessary.
— Already adjusted at the optical pick-up block side —

⑥ Check the tracking bal
Measure the resistance at the Y terminal of TRACKING ERR on jig with oscilloscope.



Check that it meets

$$-5 \leqq \frac{A-B}{2\,(A+B)} \times 100\ (\%) \leqq 8$$

Fig. 7-9.

⑦ Then turn on the TRACKING and SLED to check the waveform of 1 track jump in STILL.
Chapter 3 (#2201)

Check that it meets

$$B \leqq \frac{1}{2} A$$

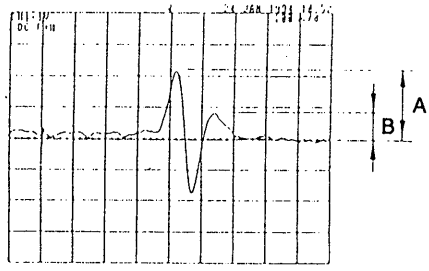


Fig. 7-10.

TRACKING BAL check

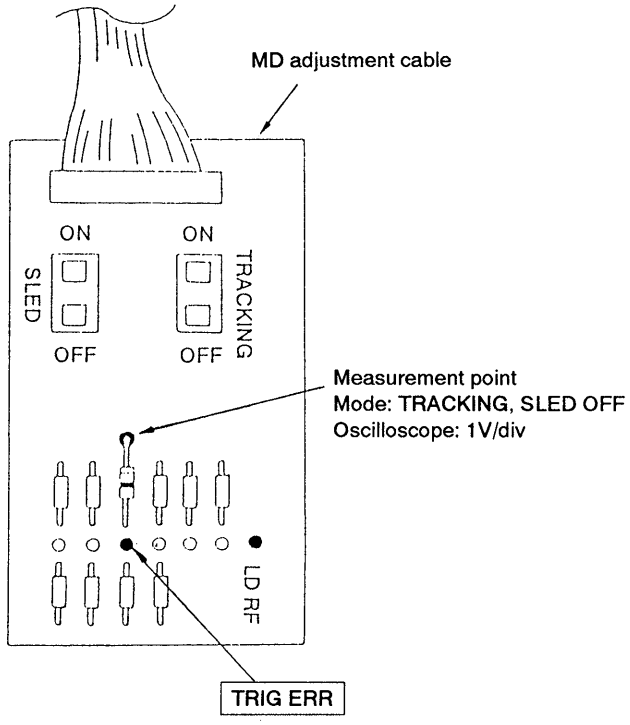
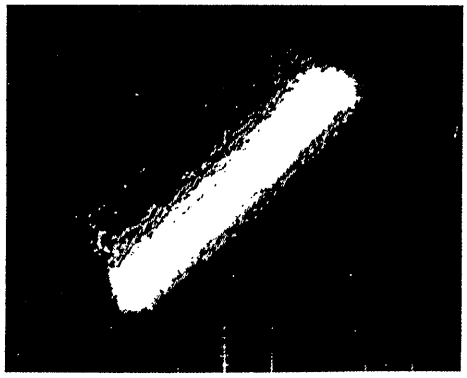


Fig. 7-11.

7-6-2. LD Side B Adjustment

① Loosen the side B RD screw and TAN screw (hexagonal screw 2.6) on the feed base.
② Put the LD board disc (HLV-8) in with the CAV side to the side B, playback it and pause at the chapter 3 (#2201).
③ Turn off the SLED and TRACKING, and adjust inserting an eccentric screwdriver to B RD adjustment hole so that the Lissagious waveform meets standard.



Jig terminal : E, F
Oscilloscope : X/Y lissagious
(Each 20 mV/div.)
Phase difference: Within 35 °

Fig. 7-12.

④ Connect an oscilloscope to LD RF terminal on the MD adjustment cable and adjust RV402 so that the RF waveform goes maximum in the state the TRACKING and SLED are on.

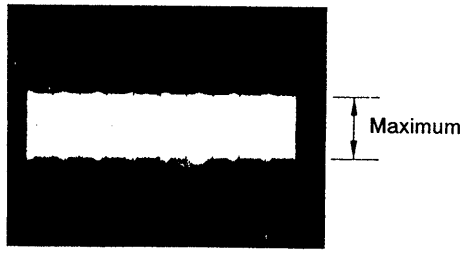


Fig. 7-13.

⑤ Insert an eccentric screwdriver to B TAN adjustment hole and adjust the RF waveform goes maximum similarly to the step 4).
⑥ Play #770 and pause.
At this time in the same manner as the side A, check that the vertical bar appears on TV monitor and right and left crosstalks (moire) are the same level and maximum.
⑦ Take out the disc to tighten B TAN and RD screw.

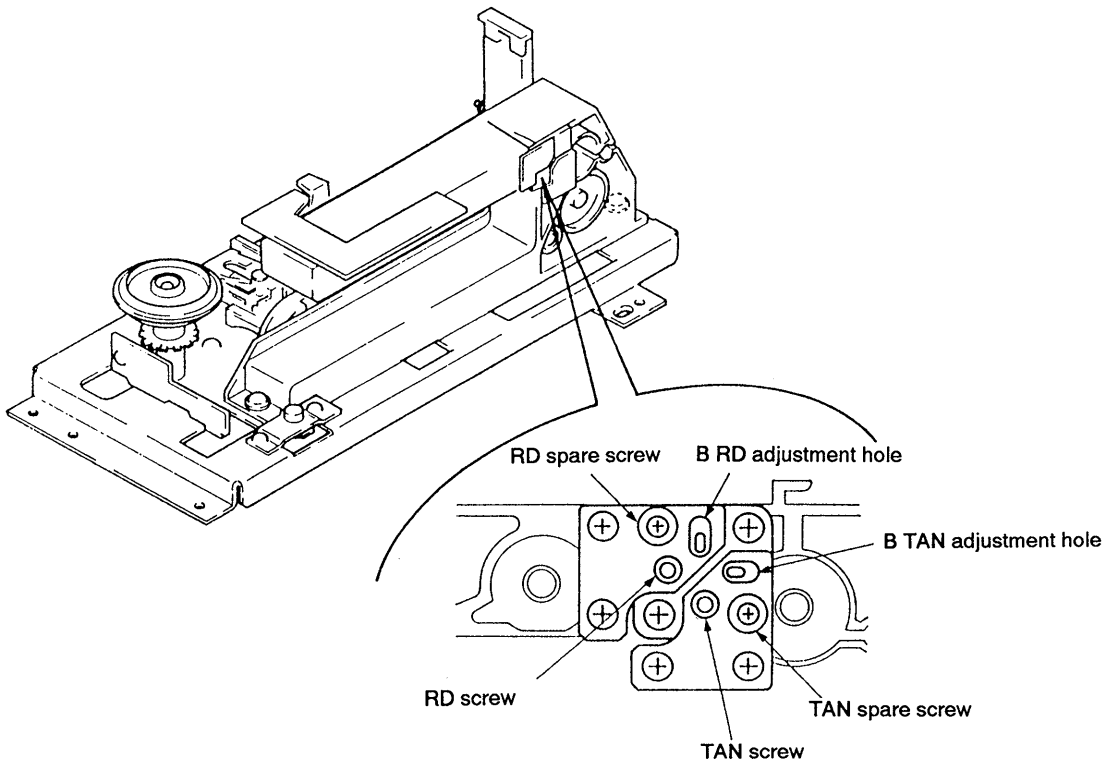


Fig. 7-14.

7-7. VIDEO SYSTEM ADJUSTMENT

7-7-1. LD Output Level Adjustment (MB-720 board)

Mode	Still
Signal	LD standard disc HLV-8 Frame 4100 (Color bar)
Measurement point	J203 (VIDEO OUT 1 terminal) (Be sure to terminate at 75 Ω)
Measuring equipment	Oscilloscope
Adjusting element	RV001
Specified value	1.00 ± 0.02 Vp-p

Adjusting method:

1) Press the still (STILL: ▶|◀) button.
2) Search the frame 4100 and apply a color bar signal.
3) Adjust RV001 to 1.00 ± 0.02 Vp-p.

Fig. 7-15.

7-7-2. Video Clock Adjustment (VX-701 board)

Mode	Stop (State of the equipped video CD disc)
Measurement point	Pin ⑧⓪ of IC106
Measuring equipment	Frequency counter
Adjusting element	CT102 (NTSC) CT101 (PAL)
Specified value	NTSC : 4,433,618 Hz ± 10 Hz PAL : 3,579,545 Hz ± 10 Hz

Adjusting method:

1) Put a video CD test disc (HLV-401) or a video CD disc on the market.
2) Set the VIDEO CD PAL OUT to OFF.
3) Adjust CT102 to be 3,579,545 Hz ± 10 Hz.
4) Set the VIDEO CD PAL OUT to ON.
5) Adjust CT101 to be 4,433,618 Hz ± 10 Hz.

7-7-3. Video CD Level Adjustment (VX-701 board)

Mode	Still
Signal	Video CD test disc (HLV-401) Track 41 (White 100%)
Measurement point	J203 (VIDEO OUT 1 terminal) (Be sure to terminate at 75 Ω)
Measuring equipment	Oscilloscope
Adjusting element	RV102
Specified value	1.00 ± 0.02 Vp-p

Adjusting method:

1) Press the still (STILL: ▶|◀) button
2) Search the track 41 and apply a white 100% picture signal.
3) Adjust RV102 to be 1.00 ± 0.02 Vp-p.

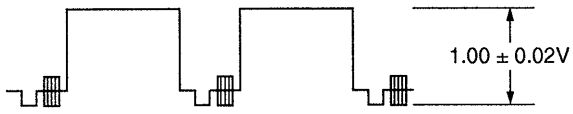
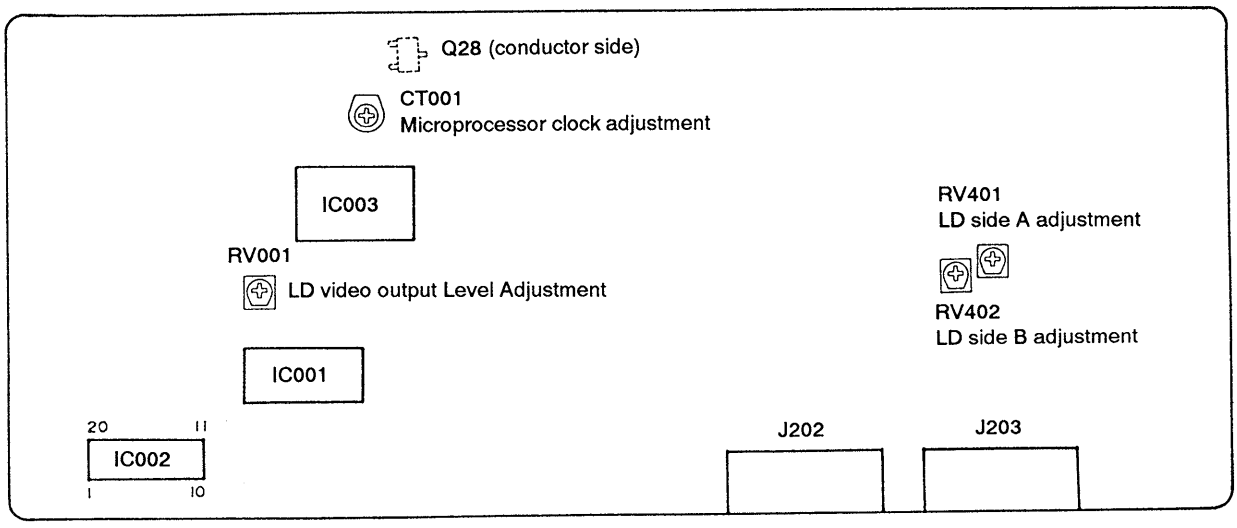


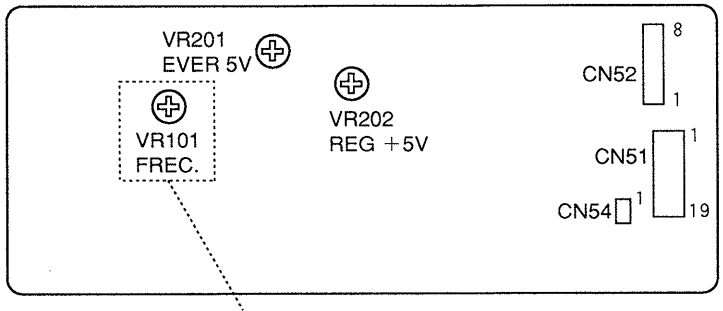
Fig. 7-16.

7-8. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

MB-720 BOARD (COMPONENT SIDE)

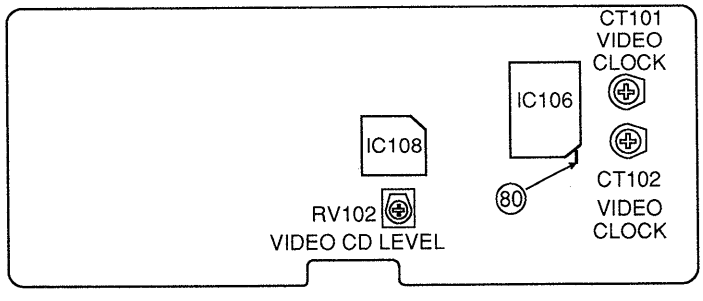


POWER BLOCK (COMPONENT SIDE)
(SR-562: E, Tourist model)
(SR-565: Chinese, Hong Kong model)



Do not change the position of this adjusting element.

VX-701 BOARD (COMPONENT SIDE)



SECTION 8
INSTRUCTION MANUAL FOR SPECIAL FUNCTIONS

Introduction

The MDP-V8K is provided with special functions, in addition to its normal functions, for convenience in maintenance and repair work.
In this manual, these functions are classified into three sections-"Debug Mode", "Service Mode", and "Expansion Key Mode" and explained.
The specifications given in this manual are subject to change without prior notice for upgrading, etc.

CONTENTS

1. OUTLINE

1-1. Debug Mode

The "Debug Mode" is a state in which the function (debug function) which displays microprocessor RAM information on the screen can be used.

This mode differs from the normal mode as follows.

1) The FL tube goes off when the commands of this mode are effective.
2) When the key of the remote control is pressed in the state of 1), debug information such as emergency history, etc., can be displayed. During this time, only some keys will be effective.

1-2. Service Mode

The "Service Mode" is a state in which the function (service function) which facilitates repairs and inspections can be used.

This mode differs from the normal mode as follows.

1) Special operations such as focus search, sled forwarding, etc. can be performed.
2) The power will not go off automatically even when emergencies which turn off the power occur.
3) When this mode is set, the debug mode will also be set automatically.

1-3. Expansion Key Function

The "Expansion Key Function" is the function which operates when several keys of the unit or remote control are pressed simultaneously for tests, etc. according to a set of procedures.

This function can be used in the service mode, debug mode, and in normal operations.

This function consists of the "Unit Key Simultaneous Pressing Function" used by pressing several keys of the unit simultaneously and the "Unit Key+Remote Control Key Simultaneous Pressing Function" used by pressing the unit key together with a key of the remote control twice.

2. DEBUG MODE

2-1. Setting the Debug Mode

To set the debug mode from the normal mode (normal state), press the [0] key and then the [STOP] key of the remote control while pressing the [NEXT DISC RESERVE] key of the unit with the power on.

The following screen should be displayed.

This screen shows the microprocessor version. For details, refer to "2-4-1. Microprocessor Version".

While in the debug mode, the [NEXT DISC RESERVE] key will operate as the debug mode ON/OFF key. The FL tube will be off while debug commands are effective. Debug commands will also be effective when the background color is green (during STOP, PAUSE, etc.)(During the service mode, it will be purple.)

The [NATURAL] key can be used instead of the [NEXT DISC RESERVE] key.

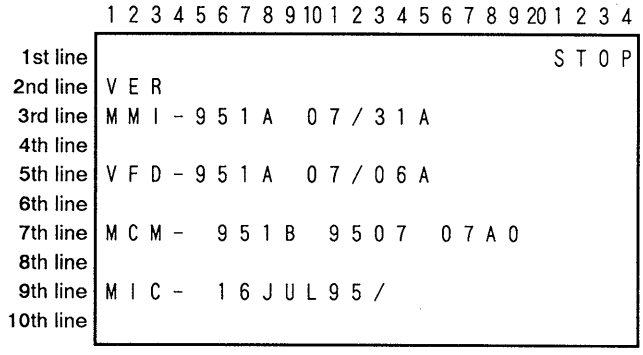


Fig. 8-1. Debug Mode Initial Screen

2-2. Exiting the Debug Mode

To return to the normal mode from the debug mode, press the [CLEAR] key of the remote control at the screen shown in Fig. 8-1. (Microprocessor Version Screen).

Pressing this key as described in step 2-1 will also return the normal mode.

In the normal mode, the [NEXT DISC RESERVE] key will perform only its usual functions.

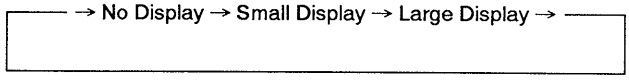
2-3. Switching the Screen Display

When the debug mode is set, the screen will display the "Debug Screen".

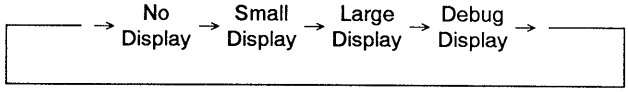
Press the [DISPLAY] key will switch it to the display format as in the normal mode.

In the debug mode, the display format can be selected from "No-Display" (normally nothing is displayed), "Small Display" (only the first line displayed)", "Large Display" (the whole screen is displayed constantly), and "Debug-Display".

When the [DISPLAY] key is pressed in the normal mode, the display will be switched as follows.



In the debug mode, it will be switched as follows



2-4. Reading the Debug Display

"Debug Display" shows information of the mode controller on the screen in dump list format.

The title is displayed at the left side of the screen at the second line, while the data is displayed from the third to the ninth lines.

The display format of the data is basically 4 hexadecimal characters (2 bytes) equals one set, and one line is composed of up to four sets (8 bytes).

When a certain key is pressed while the FL tube is off during "Debug Display", the information to be displayed can be selected.

The information currently defined is as follows.

Table 8-1. Debug Display Key/Information Table

Key	Displayed Information
[FRAME/TIME]	Microprocessor version
[1]	Function mode history
[2]	Emergency history
[3]	Normal service mode information
[4]	Trap flag
[5]	Key/remote control data
[7]	Information on communication with mechanism controller
[REPEAT]	Operation information

2-4-1. [FRAME/TIME] Microprocessor Version

Displays the microprocessor version.

At the same time, displays the c-cube microprocessor cord version.

The third line displays the mode controller version, the fifth line displays the VFD controller version, and the seventh line displays the mechanism controller version.

The microprocessor cord version is displayed at the ninth line.

According to the example in Fig. 8-2, the mode controller version is "MMI-951A 07/31A), the VFD controller version is "VFD-951A 07/06A), the mechanism controller version is "MCM-951B 95/07/07A0), and the microprocessor cord version is "16JUL95".

```
          1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 20 1 2 3 4
1st line                                              S T O P
2nd line  V E R
3rd line  M M I - 9 5 1 A   0 7 / 3 1 A
4th line
5th line  V F D - 9 5 1 A   0 7 / 0 6 A
6th line
7th line  M C M -   9 5 1 B   9 5 0 7   0 7 A 0
8th line
9th line  M I C -   1 6 J U L 9 5 /
10th line
```

Fig. 8-2. Microprocessor Version

2-4-2. [1] Function Mode History

Displays the history of the function mode.

The function mode is the basic operation commands, such as STOP and PLAY, which are transmitted from the mode controller to the mechanism controller.

The function mode data is one byte each (hexadecimal 2 digits). 8 latest histories of the function mode can be stored at the one line, and up to 24 histories in three lines.

The data is stored byte by byte from left to right. The data [FF] is stored next to the last data stored. When the data reaches the right edge of the first line, it is stored from the left edge of the second line continuously. When it reaches the right edge of the third line, it returns to the left edge of the first line again.

The current (stored last) function mode is the data at the left side of the data [FF]. When this data [FF] is at the left edge of the first (second, third) line, the function mode will be the data at the right edge of the third (first, second) line.

The data [FE] indicates that an emergency has occurred there. To find out the type of emergency, refer to "2-4-3. Emergency History".

```
          1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 20 1 2 3 4
1st line                                              S T O P
2nd line  F M   H I S T
3rd line            0 1 2 0   3 0 F E   5 0 6 0   7 0 6 0
4th line            2 0 F F   0 0 0 0   0 0 0 0   0 0 0 0
5th line            0 0 0 0   0 0 0 0   0 0 0 0   0 0 0 0
6th line
7th line
8th line
9th line
10th line
```

Fig. 8-3. Function Mode History

In the case of Fig. 8-3,

01 (Power ON start-up)
→ 20 (Stop)
→ 30 (Side A start-up)
→ FE (Emergency occurred)
→ 50 (Chapter search)
→ 60 (Playback)
→ 70 (Normal direction low speed scan)
→ 60 (playback)
→ 20 (Stop) (Current function mode)

The function mode changed in the above order.

The following page shows the function mode list.

Table 8-2. Function Mode List

No.	State	Description	
00	Power OFF		
01	Power ON start-up	During initialization when power is turned on	
10	Open	Opens the door and ejects the tray	
20	Stop	Draws in the tray and stops the spindle	
30	Side A playback standby	From stop, etc. to immediately before side A search	
40	Side B playback standby	From stop, etc. to immediately before side B search	
50	Chapter search	Chapter search including disc top search	
51	Frame/time search	CAV frame search/other time search	
60	Playback	PLAY	
61	Instantaneous stop	PAUSE	
70	Normal direction low speed scan	> >	
71	Normal direction high speed scan	> > >	
72	Reverse direction low speed scan	< <	
73	Reverse direction high speed scan	< < <	
80	Normal direction still	STILL	Only CAV is effective from 80 (Normal direction still) to 9C (Reverse direction ×10 speed playback)
81	Normal direction step	Forwards one frame	
82	Normal direction 1/90 speed playback		
83	Normal direction 1/30 speed playback		
84	Normal direction 1/16 speed playback		
85	Normal direction 1/8 speed playback		
86	Normal direction 1/4 speed playback		
87	Normal direction 1/2 speed playback		
88	Normal direction × 1 speed playback		
89	Normal direction × 2 speed playback		
8A	Normal direction × 3 speed playback		
8B	Normal direction × 5 speed playback		
8C	Normal direction ×10 speed playback		
90	Reverse direction still	STILL	
91	Reverse direction step	Returns one frame	
92	Reverse direction 1/90 speed playback		
93	Reverse direction 1/30 speed playback		
94	Reverse direction 1/16 speed playback		
95	Reverse direction 1/8 speed playback		
96	Reverse direction 1/4 speed playback		
97	Reverse direction 1/2 speed playback		
98	Reverse direction × 1 speed playback		
99	Reverse direction × 2 speed playback		
9A	Reverse direction × 3 speed playback		
9B	Reverse direction × 5 speed playback		
9C	Reverse direction ×10 speed playback		
FE	Emergency occurred	Some kind of emergency occurred	
FF	Next to last data	Last history data	

2-4-3. [2] Emergency History

Displays the history of emergency codes occurred.
The emergency code is 1 byte data transmitted to the mode controller when problems occur in the mechanism controller.
Like [64 (Minimum chapter detection)], some codes only indicate the state code level. Codes above [HO] are generated in the mode controller itself and are not transmitted from the mechanism controller.
If emergency has not occurred once since the power cord was inserted in the outlet, all the data will be [00].
The display format is the same as the function mode history. 16 sets are stored in 2 lines. The emergency code immediately before the data [FF] corresponds to the data [FE], which is closest to the data [FF] in the function mode history.

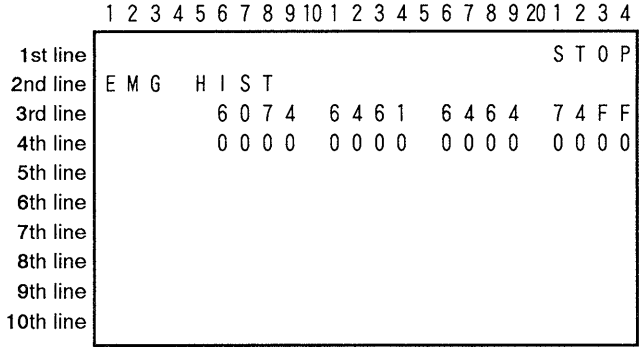


Fig. 8-4. Emergency History

According to the above example, as next to [FF] is the left edge 60, it can be seen that the emergency occurred in the following order.

60 (Read-in detection)
→ 74 (Focus drop)
→ 64 (Minimum chapter detection)
→ 61 (Read-out detection)
→ 64 (Minimum chapter detection)
→ 64 (Minimum chapter detection)
→ 74 (Focus drop) (Emergency immediately before).

The following page shows the emergency code list.

Table 8-3. Emergency Code List

No.	State	Operation After Occurring
01	Forced power OFF request	POWER OFF
02	Forced tray ejection request	EJECT
03	STOP request	STOP
04	STOP request during forced door open	STOP
05	PLAY request	PLAY
06	Power OFF shift finalization request	POWER OFF display fixed
07	Power OFF request after communication stop	POWER OFF
08	Front door does not move	POWER OFF
09	Door open when in tray open	POWER OFF
10	Tray push detection	PLAY
11	Tray does not move	POWER OFF
20	Sleder does not move	POWER OFF
30	TILT does not move	POWER OFF
31	TILT does not move and counter measure is executed	None
40	Spindle FG detection erasure	POWER OFF
41	Not transmitted from FG to H servo	STOP
42	When upper limit speed is exceeded	STOP
43	When lower limit speed is exceeded	STOP
44	Spindle STOP operation does not end	POWER OFF
45	Spindle control time-out	POWER OFF
50	Focus is not imposed	STOP
51	Focus is not imposed (Disc present)	STOP
52	Determined as not LD	None
53	8 inch LD focus not imposed	STOP
54	CD/CDC TOC not read	STOP
60	Read-in detection	PLAY, etc.
61	Read-out detection	STOP/PAUSE, etc.
62	CDV A part read-out detection	STOP/PAUSE, etc.
63	Picture stop detection	STILL
64	Minimum chapter detection	None
65	CD/CDV subcode not read	STOP
66	LD phillips code not read	STOP
67	Locked groove countermeasure is executed	None
70	Over-search detected	PLAY
71	Under search detected	PLAY
72	Search time-over	PLAY
74	Search focus drop	STOP
76	Retry executed after focus drop	None
	(The following emergencies occurred inside the mode controller.)	
80	Emergency time-out	POWER OFF
81	Search time-out	PLAY
82	Mechanism controller communication time-out	POWER OFF
86	12V power supply error	Unplug the AC power cord

2-4-4. [3] Mechanism Controller Service Information

Displays the service information transmitted from he mechanism controller.

Currently, the information in Table 8-4 is defined.
The data number in the table correspond to the number of the third to fifth lines in Fig. 8-5.

Table 8-4. Mechanism Controller Service Information

Data No.	Data
(02)	Mechanism mode (Mechanism controller internal mode) For details, refer to the next page.

```
          1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 20 1 2 3 4
1st line                                                S T 0 P
2nd line  S E R V I C E
3rd line            (00) (01)  (02) (03)  (04) (05)  (06) (07)
4th line            (08) (09)  (10) (11)  (12) (13)  (14) (15)
5th line            (16) (17)  (18) (19)  (20) (21)  (22) (23)
6th line
7th line
8th line
9th line
10th line
```

Fig. 8-5. Mechanism Controller Service Information

Mechanism Mode

The mechanism mode is the basic operation mode in the mechanism controller. The codes are more or less the same as the function mode, but divided more in detail than the function mode.

The following is the mechanism mode list.

Table 8-5. Mechanism Mode List

No.	Function
00	POWER OFF
01	Mechanism controller initialization (No mechanism operations)
03	Processing from POWER ON to OFF
04	Processing from POWER OFF to ON
05	Mechanism and peripheral IC initialization
10	Tray, EJECT state
11	Ejecting tray
12	Loading tray
20	STOP state in chucked up state
21	Setting chuck up from side A chucking
22	Setting side A chuck up from chuck up
23	Side A chuck state
30	To side A focus lock
31	0 search and start up from focus lock
32	Moving from Side A/B to STOP
33	Reversing from side A to B
40	To side B focus lock
50	Chapter search
51	Frame/time search
60	Playback
61	Instantaneous stop
70	Normal direction low speed scan
71	Normal direction high speed scan
72	Reverse direction low speed scan
73	Reverse direction high speed scan
74	Scan completion process
80 to FF	(Same as function mode)

2-4-5. [4] Trap Flag

Displays the contents of the trap flag.
The trap flag is data containing the reason why the power turned off abnormally other than when the POWER key was pressed.
Trap flag is output from the VFD controller and mode controller. That flag from the VFD controller is the fourth digit from the left and that from the mode controller is the fourth digit from the right.
The first byte of each from the right side (hexadecimal 2 digits) have meanings for each bit, and bit 1 corresponds to the reason why the power turned off abnormally the last time.
The first byte from the left side is the same flag, and is the logic OR of the reasons why the power turned off abnormally in the past.

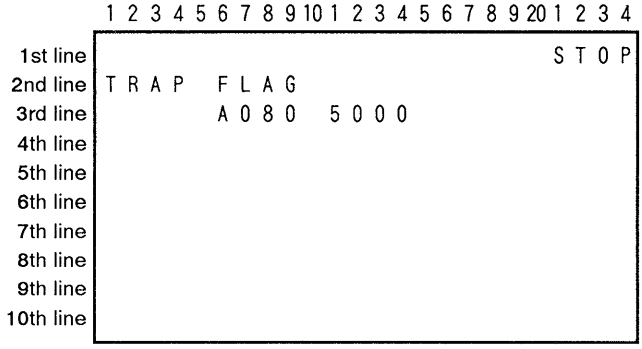


Fig. 8-6. Trap Flag

According to the above figure, it can be seen that in the past, 80 (power off due to abnormal voltage level) and 20 (power off due to mode controller communication error) occurred in the VFD controller, and 10 (power off due to mechanism controller communication error) and 40 (power off due to VFD controller communication error) occurred in the mode controller.
The reason why the power turned off abnormally the last time is because 80 (power off due to abnormal voltage level) occurred in the VFD controller.

The bits of the flag have the following meanings.

Table 8-6. Trap Flag Bit/Reason Table

Bit No. (Pattern)	Reason
7 (80)	Power OFF due to abnormal voltage level
6 (40)	Power OFF due to VFD controller communication error
5 (20)	Power OFF due to mode controller communication error
4 (10)	Power OFF due to mechanism controller communication error
3 (08)	Power OFF due to emergency
2 (04)	Forced power OFF due to key operations
1 (02)	Reset due to mode controller self-diagnosis
0 (01)	Forced reset due to key operations

Note:

- The resetting of bits 0 and 1 means that the mode controller is initialized in the same state as when the power was turned on, except when the trap flag is stored.
  In this case, the function mode and emergency histories will be erased.
- Hexadecimal A is 2+8. In the same way, B=1+2+8, C=4+8. D=1+4+8, C=2+4+8, F=-1+2+4+8.

2-4-6. [5] Key/remote Control Data

Displays the data input using the keys of the unit and remote control as CIRCS codes.
Only the remote control for MDP is effective.
The first byte on the left side of the third line (hexadecimal 2 digits) in Fig. 8-7 is the CIRCS code in the key inputs, and the first byte from the right side is the CIRCS code in the remote control input.
FF is set when nothing is pressed. When two keys are pressed together, the code of the one pressed faster will be shown.
In current models, only the keys of the unit can be used and some keys have no CIRCS code.
These are defined as internal codes for data above 80.

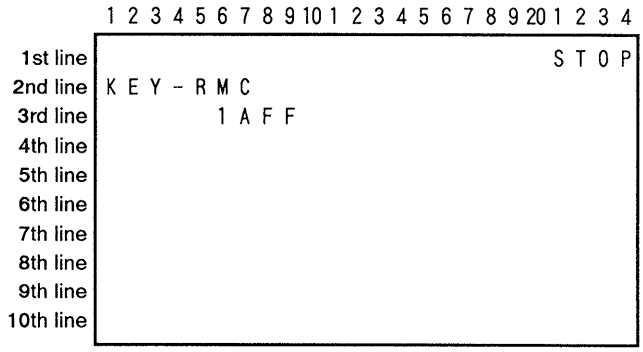


Fig. 8-7. Key/Remote Control Data

According to the above figure, it can be seen that the [1A (PLAY key)] of the unit is pressed, and the remote control is FF (nothing is pressed).
Take note for some remote controls, the code is generated instantaneously when the key is pressed.

The following next page shows a list of the CIRCS code used by MDP-V8K.

Table 8-7. List of MDP CIRCS Codes

No	Function
00	1
01	2
02	3
03	4
04	5
05	6
06	7
07	8
08	9
09	0
0C	Frame/time
0F	Clear
15	Power ON/OFF
16	Tray open
17	Audio monitor
18	Stop
19	Instantaneous stop
1A	Playback
1E	Reverse direction low speed scan
1F	Normal direction low speed scan
28	Time display
29	Repeat
2B	Normal still/Frame forwarding
2C	Reverse still/Frame forwarding
30	Program
34	Normal direction ACS
35	Reverse direction ACS
38	Repeat AB
39	Number+10
3A	Screen display
40	Analog/CX
41	Shuffle
46	Auto pause
47	1/one side/both sides
5D	Side A
5E	Side B
5F	Karaoke
60	Key control up
61	Key control standard
62	Key control down
7B	Next disc reservation
	(The following are expansion codes)
87	PAL output switching
90	Vocal
92	Help vocal
94	Vocal select
95	External input
A7	Special effects mode selection
A8	Special effects mode execution
A9	Marker setting
AA	Marker call
AB	PBC return
AC	PBC selection
FF	Not pressed

2-4-7. [7] Information on Communication with Mechanism Controller

Displays the communication data of normal text with the mechanism controller.

The third to the fifth line is the text transmitted from the mode controller to the mechanism controller.

The seventh to the ninth line is the text received from the mechanism controller by the mode controller.

The [!] symbol at the head of the eighth and ninth line indicates that the text has been communicated normally.

If the text was cut off halfway, the [?] is displayed. [■] is displayed when the communication was cut off after the communication for service, etc.

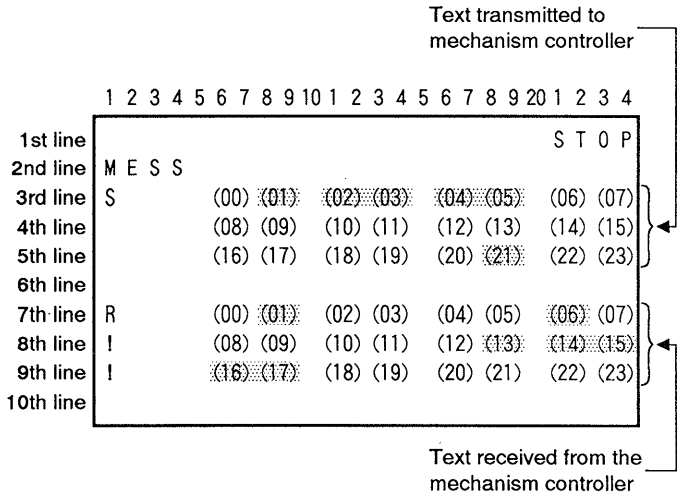


Fig. 8-8. Information Communicated with Mechanism Controller

The following is a part of the communicated text.

Table 8-8. Text Transmitted from Mode Controller to Mechanism Controller (Fig. 8-8. Top)

No.	Explanation
(01)	Current (Next) function mode
(02)	Last goal function mode
(03 to 05)	Search destination address (Time/frame)

Table 8-9. Text Received by Mode Controller from Mechanism Controller (Fig. 8-8. (Bottom))

No.	Explanation
(01)	Current (Next) function mode
(06)	Completion flag of function mode shift (lowermost bit)
(13)	Current chapter/track number
(14)	Current index number
(15 to 17)	Current address (Time/frame)

2-4-8. [REPEAT] Operation Information

Displays the operation information
Displays the optical system operation time at the third line. The fourth to ninth lines show the number of CIRCS received in hexadecimal digits.

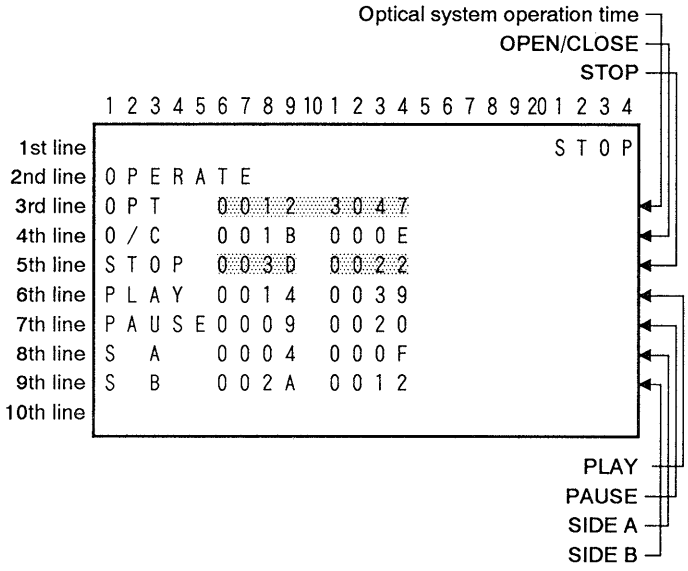


Fig. 8-9. Operation Information

According to the above example, the optical system operation time is 12 hours, 30 minutes, and 47 seconds.
The received CIRCS is counted separately for [key] and [remote control]. For example, STOP, the number of times received for [key] is 3Dh=61 times and that of [remote control] is 22h=34 times.

- Hexadecimal/Decimal Conversion Table

Hexadecimal	Decimal
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15

Conversion Example
3Dh: 3 × 16 + 13 = 61 ···· Decimal
3 D ···· Hexadecimal
ACh: 10 × 16 + 12 = 72 ···· Decimal
A C ···· Hexadecimal

3. SERVICE MODE

3-1. Setting the Service Mode

To set the service mode, perform the following process.
With the power off, press the following three keys of the unit simultaneously and start up the power.
[STOP]+[KEY CONTROL #] + [POWER]

If the microprocessor version is displayed on the screen, it indicates that the service mode is set.
If it is not displayed, it indicates that the mode is not set.
When the service mode is set, the debug mode will also be set at the same time from the beginning.

3-2. Exiting the Service Mode

To exit, press POWER and turn off the power.
If it cannot be turned off (when the mechanism has not been completed, etc.), press the [1] key and [POWER] key of the unit simultaneously and turn off the power forcibly.

3-3. Using Special Operations

For safety, the special operations in the service mode can only be performed in the [NO DISC] and [STOP] state. Check that the above message is not blinking but displayed on the screen. If the [NEXT DISC RESERVE] key is pressed in this state, and after the FL tube goes off, keys of the unit such as [PLAY] and [PAUSE] are pressed, the special functions in Table 8-10 can be performed.

The sled forwarding operations using [SIDE A] and [SIDE B] keys are performed only when the keys are being pressed. Operations by other keys are continuously performed once the keys are pressed until the [STOP] key is pressed. The SIDE B LED of the unit is lit while special operations are being performed.
Several special operations cannot be performed at the same time even by pressing more than two keys together.

As some keys will not function while the FL tube is off, to stop special operations from being performed, press the [NEXT DISC RESERVE] key and light up the FL tube.

Table 8-10. List of Special Operations

Keys	Special Operations
[SIDE A]	Sled reverse direction (downwards) forwarding
[SIDE B]	Sled normal direction (upwards) forwarding
[PLAY]	Focus search start
[PAUSE]	Tilt servo ON start
[Normal direction frame forwarding]	Tray aging start
[Reverse direction frame forwarding]	Sled aging start
[Repeat AB]	Tilt aging start
[STOP]	Special operations are stopped

The following describe the special operations.

3-3-1. [SIDE A] Key····Sled Reverse Direction Forwarding

When the [SIDE A] key is pressed continuously, after the tilt initialization operations (the tilt is moved to the center position) are performed, the sled moves in the reverse direction (Side B inner circumference → Side B outer circumference → Side A outer circumference → Side A inner circumference).
It stops when the key is released.

3-3-2. [SIDE B] Key····Sled Normal Direction Forwarding

Opposite to 3-3-1. Sled Reverse Direction Forwarding, the sled moves in the normal direction (Side A inner circumference → Side A outer circumference → Side B outer circumference → Side B inner circumference).
Useful for replacing the optical parts.
The sled stops when the key is released.

3-3-3. [PLAY] Key····Focus Search

When the [PLAY] key is pressed continuously, focus search operations are repeated.
The pickup lens should move up and down.
Execute focus search after confirming that the sled is at the correct position (center of side A).
It stops when the [STOP] key is released.

3-3-4. [PAUSE] Key····Tilt Servo ON

When the [PAUSE] key is pressed, the tilt servo turns on.
When the [PAUSE] key is pressed after moving the sled to the center of side A by [SIDE A]/[SIDE B] key and placing the CD, etc. on the tray so that it touches the skew sensor, the tilt should move.
If the sled is moved using the [SIDE A]/[SIDE B] key, the tilt will return to the center.
It will stop when the [STOP] key is pressed.

3-3-5. [STILL/STEP ▮▮▶] Key····Tray Aging Start

When the [Still/STEP ▮▮▶] key is pressed, tray aging will start.
As the tray will move in and out automatically, be careful of the surrounding area.
It will stop when the [STOP] key is pressed.

3-3-6. [STILL/STEP ◀▮▮] Key····Sled Aging Start

When the [Still/STEP ◀▮▮] key is pressed, sled aging will start.
The sled will move to and fro between sides A and B inner circumferences automatically.
It will stop when the [STOP] key is pressed.

3-3-7. [REPEAT A ⟷ B] Key····Tilt Aging Start

When the [REPEAT A ⟷ B] key is pressed, tilt aging will start.
The tilt will move up and down automatically.
It will stop when the [STOP] key is pressed.

4. EXPANSION KEY FUNCTION

4-1. Using the Unit Simultaneous Key Pressing Function

The simultaneous key pressing function of the unit is effective when several keys of the unit are pressed simultaneously.

Used for functions to be executed promptly such as Forced Power OFF.
Currently defined simultaneous key pressing functions of the unit are as follows.

Table 8-11. Simultaneous Key Pressing Function of Unit

Function	Unit Key
① Forced power off Turns off the power forcible. To turn off the power immediately when the mechanism overruns, etc. or when the power cannot be turned off by pressing the [POWER] key. As the power will be turned off without regard of the conditions of the mechanism, do not use it frequently.	[1]+[POWER]
② Forced reset In addition to the forced power off function, initializes the mode controller. When the mode controller is operating abnormally such as strange items are displayed on the screen, use this function to reset the mode controller. When this function is executed, take note that emergency histories, and all information will be deleted other than the trap flag information of the debug mode.	[STOP]+[POWER]
③ MDP-V8 FL tube/all LEDs lighting up When the power turns on automatically, all the segments of the FL tube and LEDs will light up. Normal operations will be performed until the power is turned off. In such cases, the FL tube and LED displays will remain lit.	[STOP]+[KEY CONTROL ♭]+[POWER] (Only when the power is off.)

4-2. Using the Unit + Remote Control Simultaneous Key Pressing Function

The simultaneous key pressing function of the unit+remote control is effective while the unit key is pressed and a key of the remote control is pressed twice.

For users to execute it accidentally, it is necessary to press two remote commandeer keys within about 1 second.
To prevent the mechanism operations from being influenced, use the [NEXT DISC RESERVE] of the unit.
The special key operations currently set are as follows.

Table 8-12. Simultaneous Key Pressing Function of Unit Key Remote Control

Function	Procedure	Unit key + Remote control key
① Debug mode ON/OFF selection The debug mode is set if it has not been set, and is exited when it is set.	1 2	[NEXT DISC RESERVE]+[0] [NEXT DISC RESERVE]+[STOP]
④ Mechanism controller time-out invalidation Invalidates the function which cuts off the power supply when communication with the mechanism controller cannot be performed. Used when the mechanism controller may not be operating and the mode controller is to be moved.	1 2	[NEXT DISC RESERVE]+[0] [NEXT DISC RESERVE]+[+10]
⑤ Mechanism controller time-out validation Validates the function which cuts off the power supply when communication with the mechanism controller cannot be performed. Used for exiting the ④ function.	1 2	[NEXT DISC RESERVE]+[0] [NEXT DISC RESERVE]+[0]
⑧ EEPROM clear All clears the data of the EEPROM debug mode. Valid only when the power is on.	1 2	[NEXT DISC RESERVE]+[0] [NEXT DISC RESERVE]+[REPEAT]

MDP-V8K
RMT-M40A

SONY
SERVICE MANUAL

E Model
Chinese Model
Tourist Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : 1. CORRECTION
2. CIRCUIT CHANGED
3. PARTS CHANGED

(ECN-LD500578)

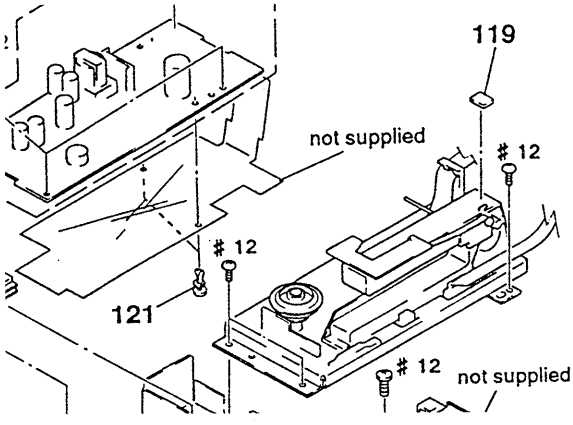
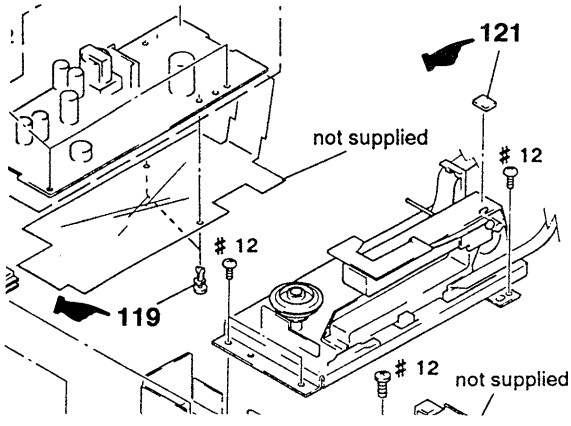
- As for HP-719 board and MA-714 board, the suffix number is changed from Suffix-[11] to Suffix-[13] but no mainly changes, so printed diagrams and circuit diagrams are not mentioned in this manual.
- BI-703 board, MA-714 board, MB-720 board and MT-707 board are not changed that printed diagrams and circuit diagrams are not mentioned in this manual. As for the contents of circuit changes, refer to the "Differences Table List" in the "ELECTRICAL PARTS LIST".

1. CORRECTION

As there are some mistakes in the previous issued service manual, please correct the followings.

Page	INCORRECT	CORRECT
8–5	**2-4-3. [2] Emergency History** Displays the history of emergency codes occurred. The emergency code is 1 byte data transmitted to the mode controller when problems occur in the mechanism controller. Like [64 (Minimum chapter detection)], some codes only indicate the state code level. Codes above [HO] are generated in the mode controller itself and are not transmitted from the mechanism controller.	**2-4-3. [2] Emergency History** Displays the history of emergency codes occurred. The emergency code is 1 byte data transmitted to the mode controller when problems occur in the mechanism controller. Like [64 (Minimum chapter detection)], some codes only indicate the state code level. Codes above [80] are generated in the mode controller itself and are not transmitted from the mechanism controller.
8–8	• Hexadecimal A is 2+8. In the same way, B=1+2+8, C=4+8. D=1+4+8, C=2+4+8, F=-1+2+4+8.	• Hexadecimal A is 2+8. In the same way, B=1+2+8, C=4+8. D=1+4+8, E=2+4+8, F=-1+2+4+8.
8–8 8–9 8–10	CIRCS	SIRCS

☛ : Indicates corrected portion.

Page	INCORRECT	CORRECT
	Ref.No Part No Description Remark	Ref.No Part No Description Remark
5-3	*** EXPLODED VIEWS *** 	*** EXPLODED VIEWS *** 
5-27	*** MISCELLANEOUS *** 77 1-775-931-11 CABLE, FLAT (FMV-6) 18 ARBOR 78 1-775-930-11 CABLE, FLAT (FVF-6) 9 ARBOR *** ACCESSORIES & PACKING MATERIALS *** * 3-966-305-01 INDIVIDUAL CARTON (CH)	*** MISCELLANEOUS *** 71 1-775-931-11 CABLE, FLAT (FMV-6) 18 ARBOR 77 1-775-930-11 CABLE, FLAT (FVF-6) 9 ARBOR *** ACCESSORIES & PACKING MATERIALS *** * 3-966-728-01 INDIVIDUAL CARTON (CH)

2. CIRCUIT CHANGED

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- ○ : Through hole.
- ■ : Parts mounted on the conductor side.
- ▭ : Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.

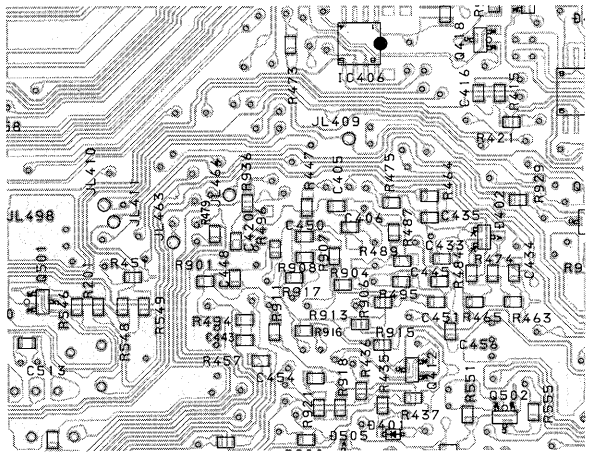
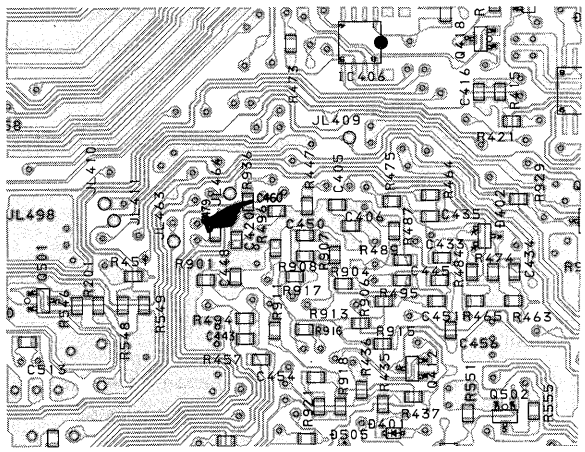
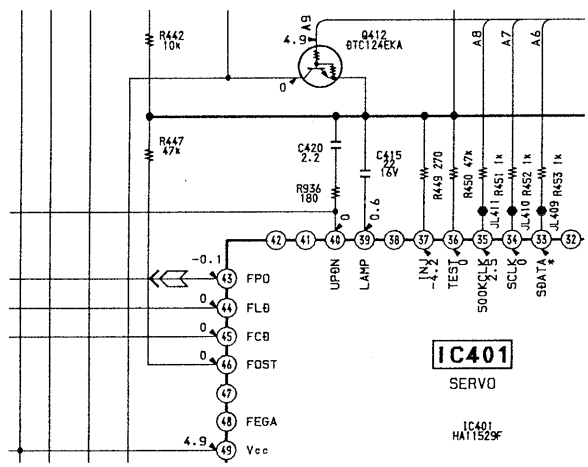
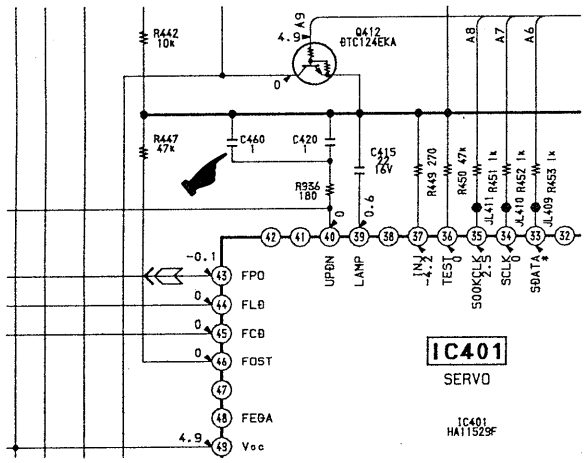
* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistor are in orms, 1/4W unless otherwise noted.
- Chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : fusible resistor.
-  : nonflammable resistor.
- ▭ : panel designation.
- ▭ : adjustment for repeair.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken under pause mode.
  (NTSC REF DISC HLV-8 SIDE 1 FRAME No. 4100)
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

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

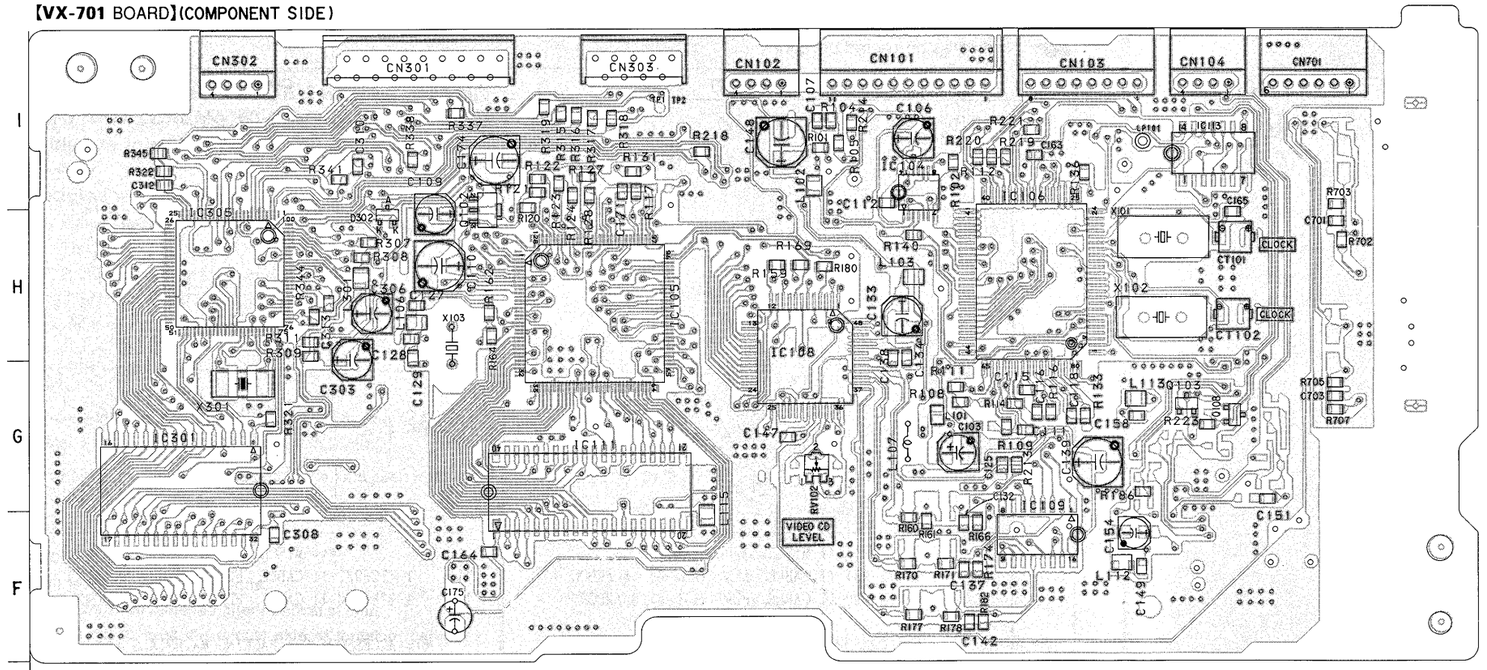
☛ : Indicates added portion.

Page	FORMER	NEW
4-7	**【MB-720 BOARD】** (CONDUCTOR SIDE) Location: A-8 	
4-16	**【MB-720 BOARD (2/4) (SERVO BLOCK)】** Location: F-4 	

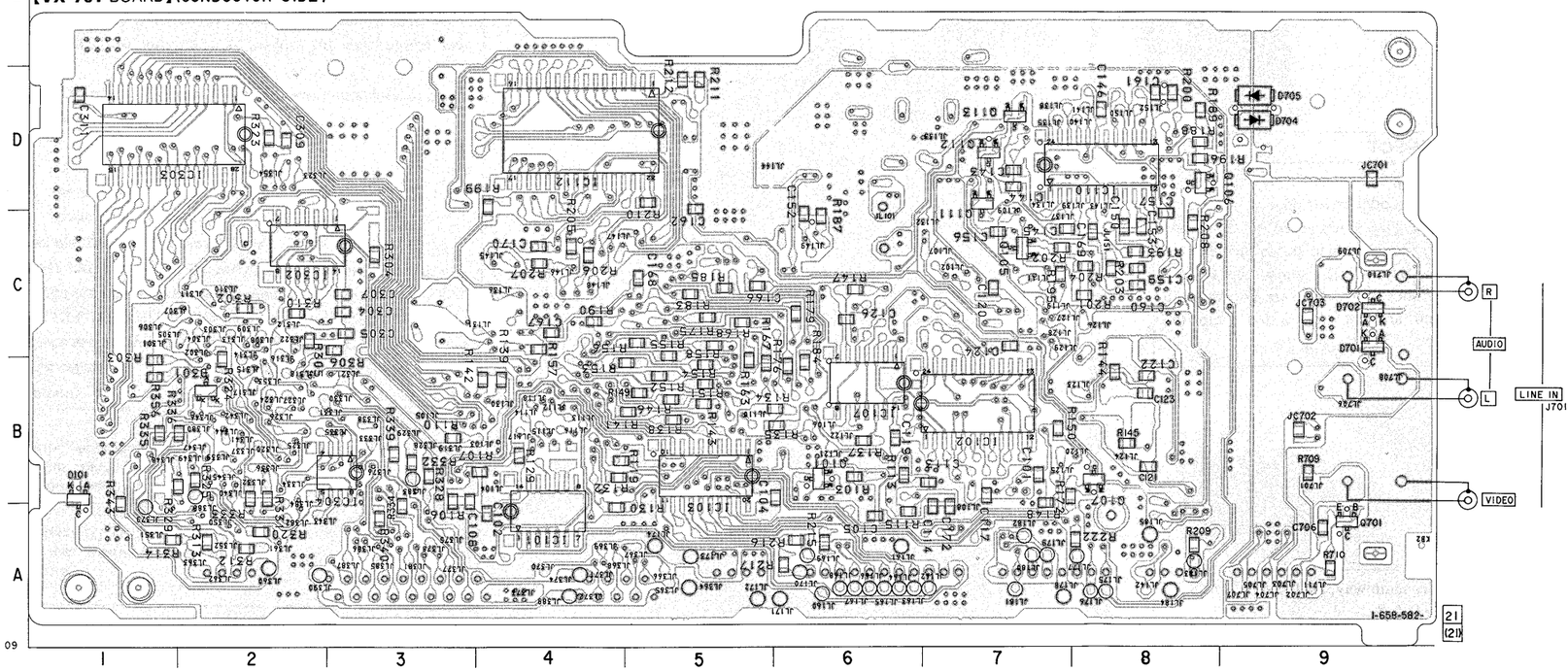
VX-701 (VIDEO CD) PRINTED WIRING BOARD

— Ref. No. VX-701 BOARD: 6000 series —

【VX-701 BOARD】(COMPONENT SIDE)



【VX-701 BOARD】(CONDUCTOR SIDE)

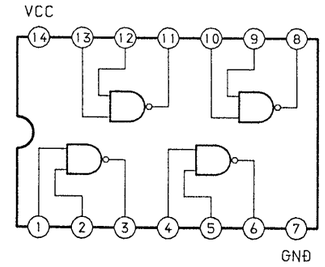


VX-701 BOARD

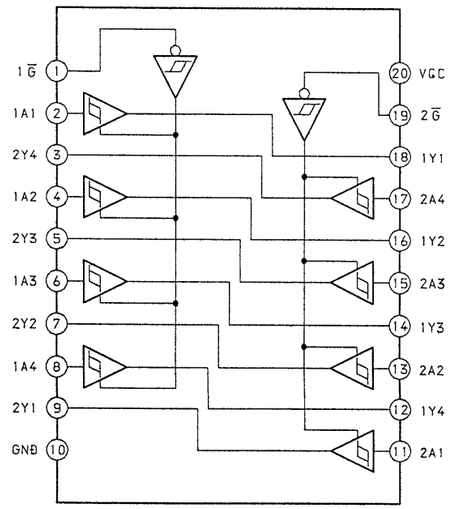
CN101	I-6
CN102	I-5
CN103	I-7
CN104	I-8
CN301	I-3
CN302	I-2
CN303	I-4
CN701	I-9
CT101	H-8
CT102	H-8
D101	B-1
D301	B-2
D302	H-3
D701	C-9
D702	C-9
D704	D-9
D705	D-9
IC101	A-4
IC102	B-7
IC103	B-5
IC105	H-4
IC106	H-7
IC107	B-6
IC108	H-6
IC109	F-7
IC110	D-8
IC111	G-4
IC112	D-4
IC113	I-8
IC301	G-2
IC302	C-2
IC303	D-1
IC304	B-3
IC305	H-2
Q101	B-6
Q102	H-4
Q103	G-8
Q105	C-7
Q106	D-8
Q107	B-7
Q108	G-8
Q111	D-7
Q112	D-7
Q113	D-7
Q701	A-9
RV102	G-6

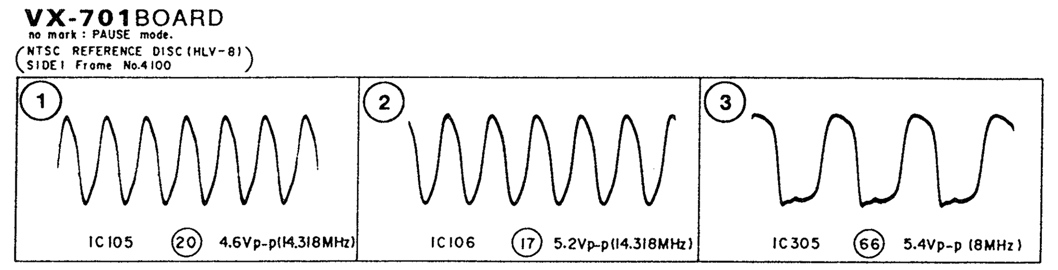
• IC BLOCK DIAGRAMS

IC101, IC107 MC74HC00AF



IC103, MC74HC244AF

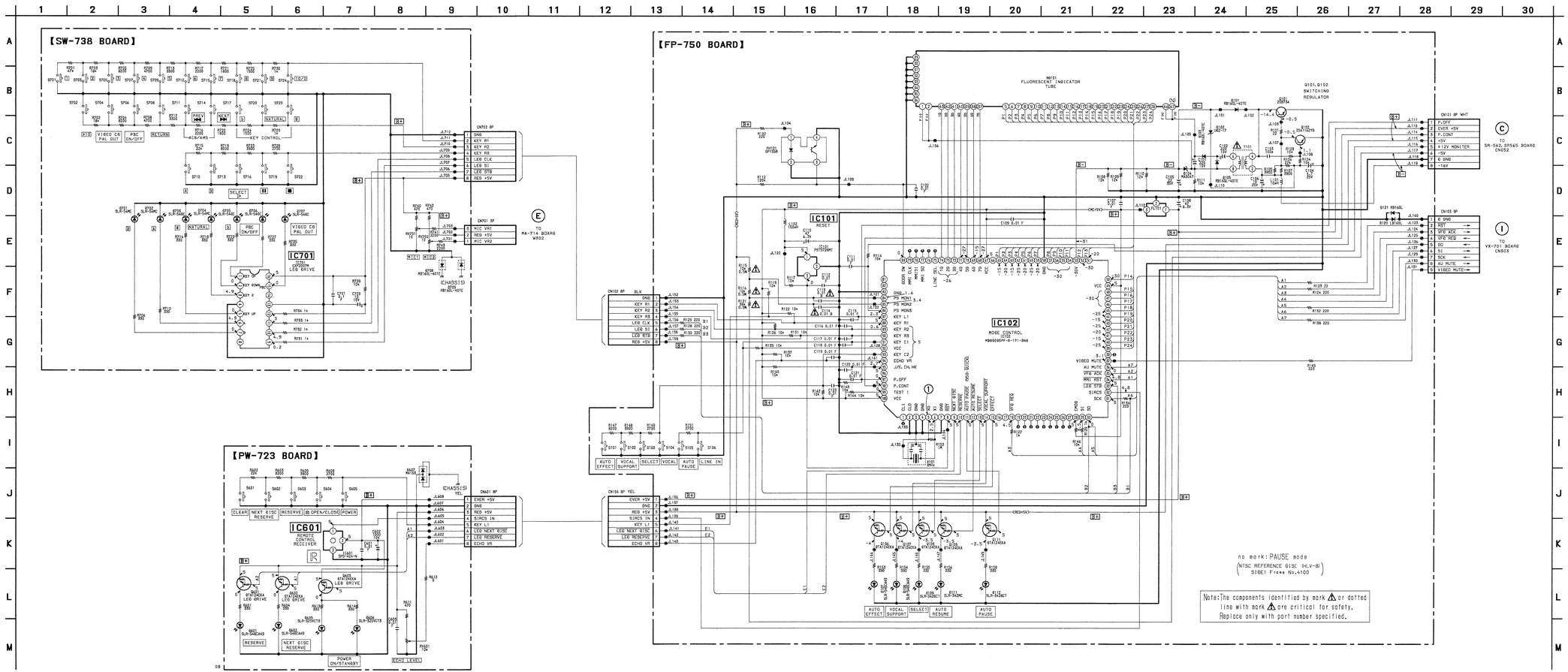




VX-701 (VIDEO CD) SCHEMATIC DIAGRAM

— Ref. No. VX-701 BOARD: 6000 series —

FP-750 (MODE CONTROL), SW-738 (FUNCTION 1), PW-723 (FUNCTION 2) SCHEMATIC DIAGRAMS



FP-750 (MODE CONTROL), SW-738 (FUNCTION 1), PW-723 (FUNCTION 2) PRINTED WIRING BOARDS

— Ref. No. FP-750, SW-738 and PW-723 BOARDS: 7000 series —

FP-750 BOARD

CN101 A-3
CN102 B-13
CN103 A-13
CN104 A-1

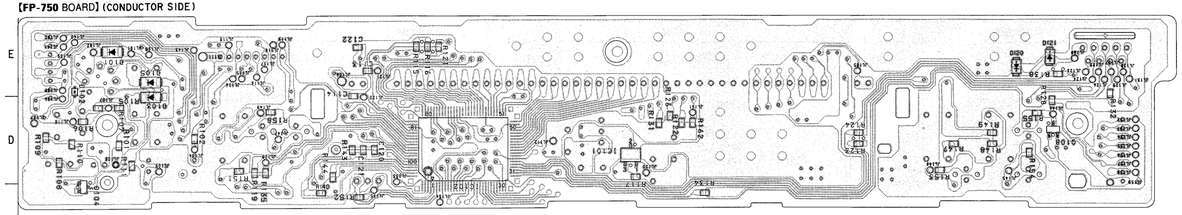
D101 E-2
D102 D-1
D103 D-2
D104 C-1
D105 E-2
D107 B-11
D108 B-12
D111 B-4
D112 B-3
D120 E-12
D121 E-12

IC101 D-7
IC102 D-6

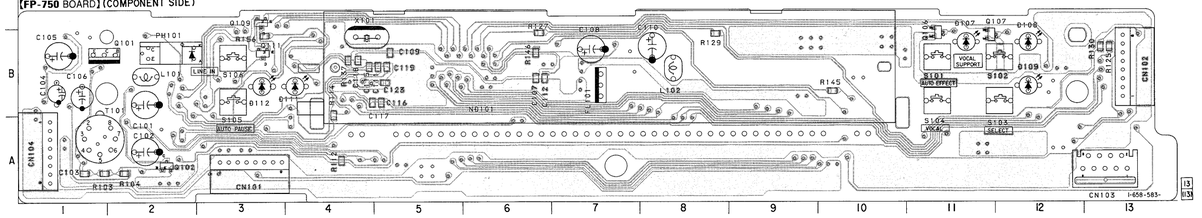
PH101 B-2

Q101 B-1
Q102 A-2
Q106 B-11
Q107 B-11
Q108 D-12
Q109 C-3
Q111 B-3

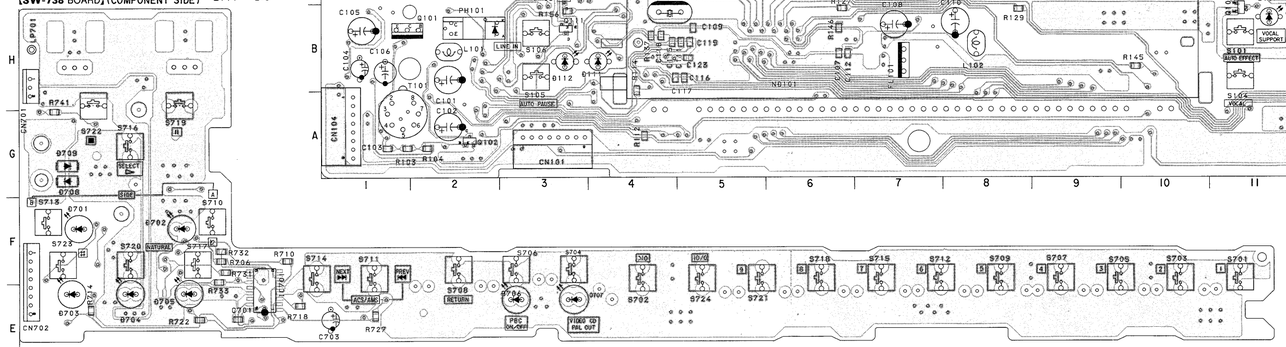
【FP-750 BOARD】(CONDUCTOR SIDE)



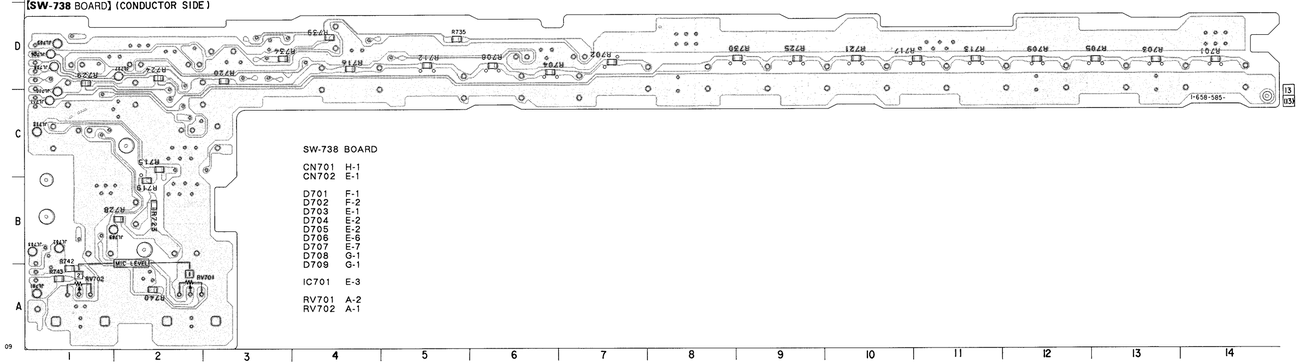
【FP-750 BOARD】(COMPONENT SIDE)



【SW-738 BOARD】(COMPONENT SIDE)



【SW-738 BOARD】(CONDUCTOR SIDE)



SW-738 BOARD

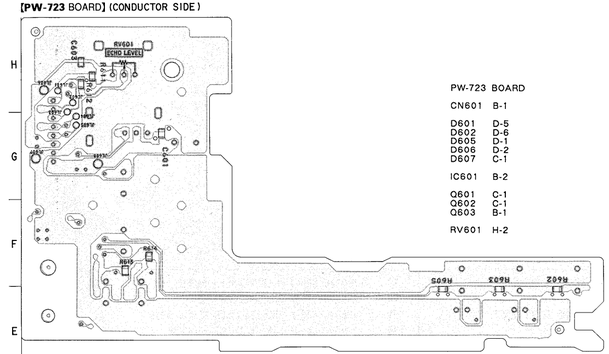
CN701 H-1
CN702 E-1

D701 F-1
D702 F-2
D703 E-1
D704 E-2
D705 E-2
D706 E-6
D707 E-7
D708 G-1
D709 G-1

IC701 E-3

RV701 A-2
RV702 A-1

【PW-723 BOARD】(CONDUCTOR SIDE)



PW-723 BOARD

CN601 B-1

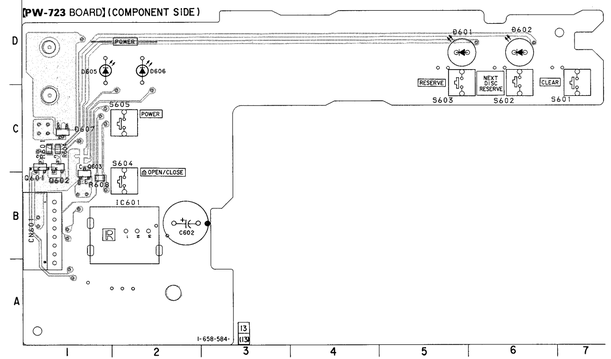
D601 D-5
D602 D-6
D605 D-1
D606 D-2
D607 C-1

IC601 B-2

Q601 C-1
Q602 C-1
Q603 B-1

RV601 H-2

【PW-723 BOARD】(COMPONENT SIDE)

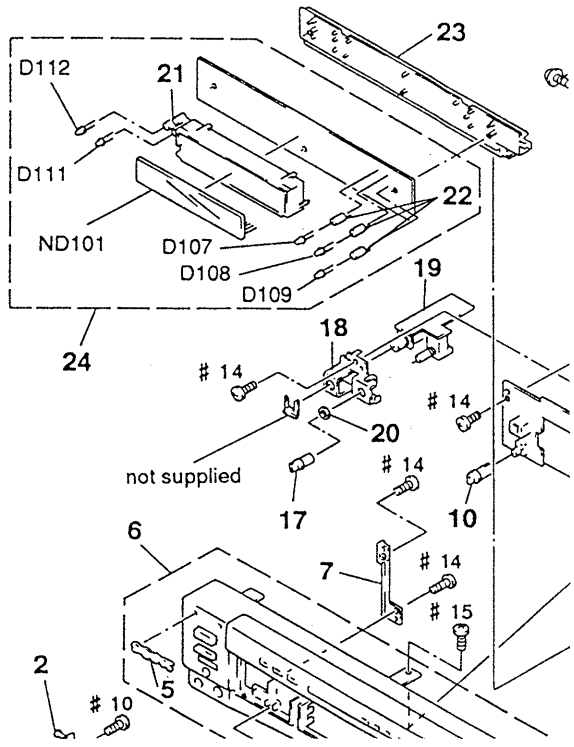
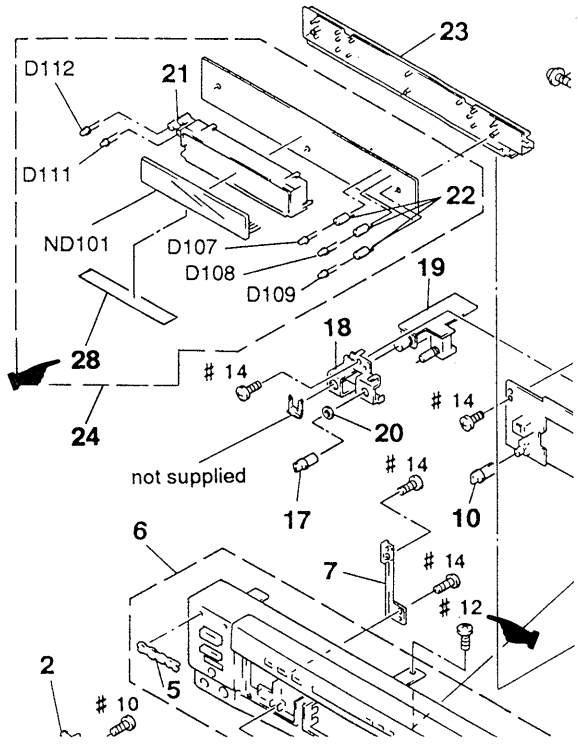
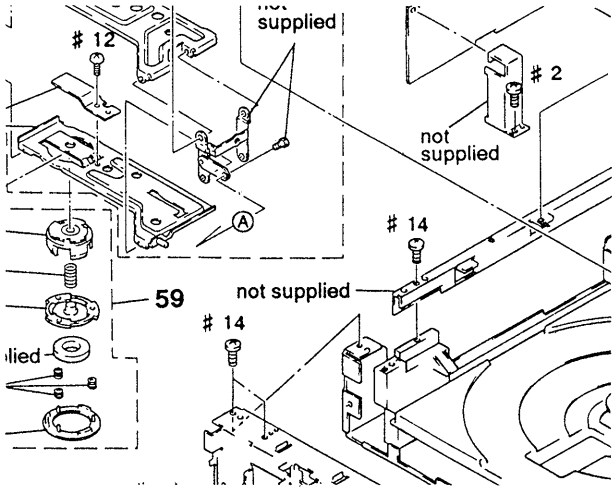
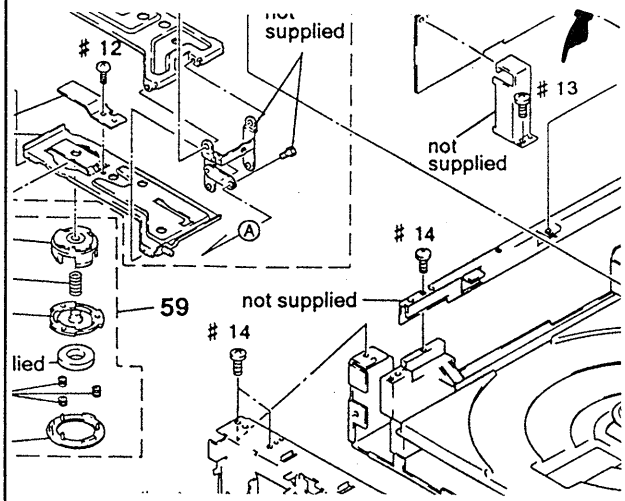


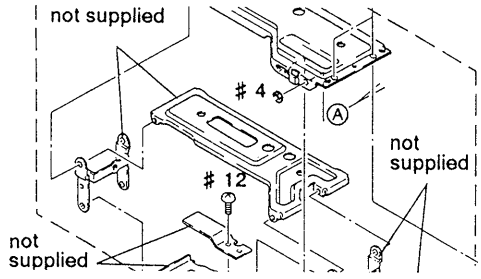
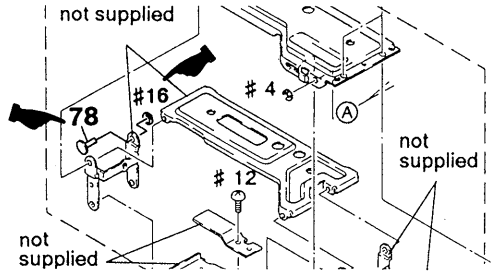
FRONT
FP-750, SW-738, PW-723

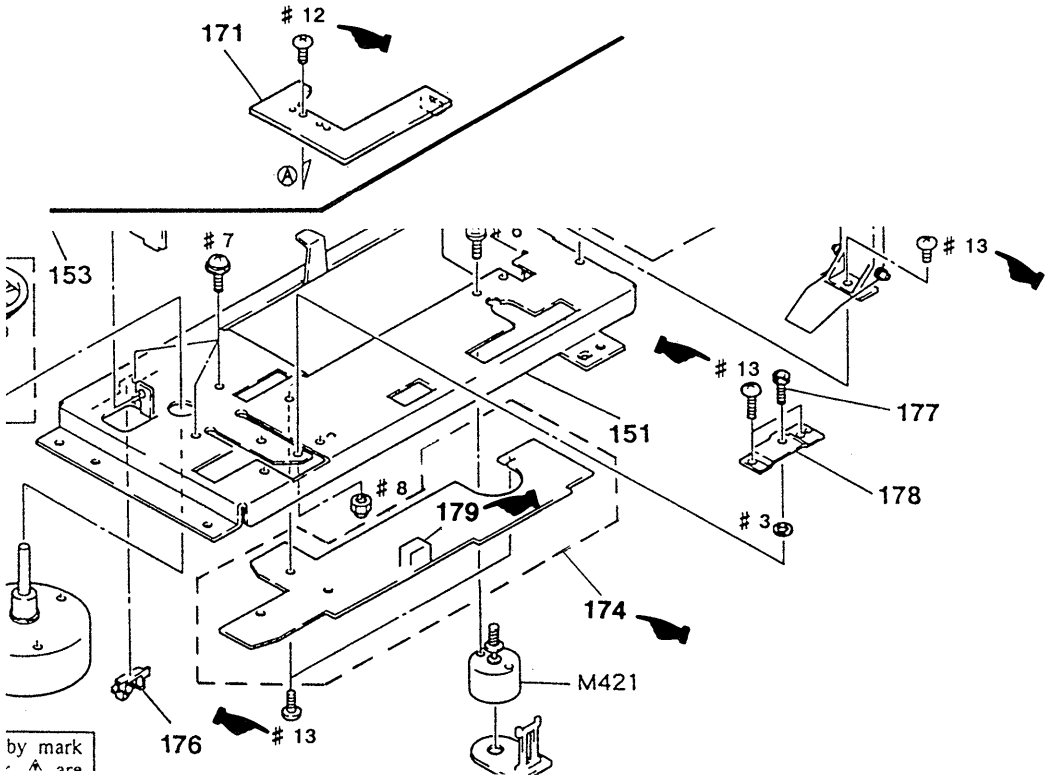
3. PARTS CHANGED

- The following parts have been changed as shown below.

: Changed portion.

Page	FORMER	NEW
	Ref.No Part No Description Remark	Ref.No Part No Description Remark
5-1	*** EXPLODED VIEWS ***	*** EXPLODED VIEWS *** * 28 3-968-101-01 SHEET, INSULATING
		
5-2	58 X-3942-776-1 HOLDER ASSY, MAGNET 59 A-6415-644-G CHUCK BLOCK ASSY 61 A-6415-896-A CHUCKING SUB BLOCK ASSY	58 X-3945-858-1 HOLDER ASSY, MAGNET 59 A-6415-976-A CHUCK BLOCK ASSY 61 A-6415-896-F CHUCKING SUB BLOCK ASSY 78 3-969-038-01 PIN, EXTRACT STOPPER
		

Page	FORMER	NEW
5-2	Ref.No Part No Description Remark 	Ref.No Part No Description Remark 
5-4	* 153 3-954-681-01 RIVET, NYLON 167 3-961-126-01 GUIDE (900), U	* 153 4-812-134-21 RIVET, NYLON 167 3-964-874-01 GUIDE (900), U 179 3-953-262-01 HOLDER, LED



ELECTRICAL PARTS LIST

Differences Table List

Page	FORMER					NEW				
	Ref.No	Part No	Description		Remark	Ref.No	Part No	Description		Remark
5-5		*** BI-703 (ET90) BOARD, COMPLETE ***					*** BI-703 (ET90) BOARD, COMPLETE ***			
	R414	1-216-077-00	METAL CHIP	15K 5%	1/10W	R414	1-216-065-00	METAL CHIP	4.7K 5%	1/10W
5-7		*** MA-714 (951E) BOARD, COMPLETE ***					*** MA-714 (951E) BOARD, COMPLETE ***			
	C319	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C319	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C325	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C325	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C326	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C326	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C327	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C327	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C328	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C328	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C335	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C335	1-164-232-11	CERAMIC CHIP	0.01uF	50V
5-8	C340	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C340	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C342	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C342	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C343	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C343	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	IC301	8-759-099-06	IC	M5218AFP		IC301	8-759-100-96	IC	uPC4558G2	
	IC303	8-759-099-06	IC	M5218AFP		IC303	8-759-100-96	IC	uPC4558G2	
	IC304	8-759-099-06	IC	M5218AFP		IC304	8-759-100-96	IC	uPC4558G2	
	Q302	8-729-120-28	TRANSISTOR	2SC1623-L5L6		Q302	8-729-422-27	TRANSISTOR	2SD601A-Q	
5-9		*** MB-720 (951E) BOARD, COMPLETE ***					*** MB-720 (951E) BOARD, COMPLETE ***			
	C006	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C006	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C008	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C008	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C012	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C012	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C013	1-163-097-00	CERAMIC CHIP	15PF 5%	50V	C013	1-163-099-00	CERAMIC CHIP	18PF 5%	50V
	C015	1-163-097-00	CERAMIC CHIP	15PF 5%	50V	C015	1-163-099-00	CERAMIC CHIP	18PF 5%	50V
	C017	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C017	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C021	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C021	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C023	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C023	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C028	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C028	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C034	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C034	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C042	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C042	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C045	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C045	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C060	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C060	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C062	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C062	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C085	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C085	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C088	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C088	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C089	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C089	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C092	1-124-589-11	ELECT	47uF 20%	16V	C092	1-126-967-11	ELECT	47uF 20%	6.3V
	C093	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C093	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C095	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C095	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C096	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C096	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C097	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C097	1-164-232-11	CERAMIC CHIP	0.01uF	50V
	C102	1-163-031-11	CERAMIC CHIP	0.01uF	50V	C102	1-164-232-11	CERAMIC CHIP	0.01uF	50V

Page	FORMER					NEW				
	Ref.No	Part No	Description		Remark	Ref.No	Part No	Description		Remark
5-10	C114	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C114	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C121	1-124-261-00	ELECT 10uF	20%	50V	C121	1-126-157-11	ELECT 10uF	20%	16V
	C209	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C209	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C246	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C246	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C247	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C247	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C254	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C254	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C255	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C255	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C256	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C256	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C261	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C261	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C263	1-124-927-11	ELECT 4.7uF	20%	100V	C263	1-126-963-11	ELECT 4.7uF	20%	50V
	C265	1-124-927-11	ELECT 4.7uF	20%	100V	C265	1-126-963-11	ELECT 4.7uF	20%	50V
	C268	1-124-927-11	ELECT 4.7uF	20%	100V	C268	1-126-963-11	ELECT 4.7uF	20%	50V
	C271	1-124-927-11	ELECT 4.7uF	20%	100V	C271	1-126-963-11	ELECT 4.7uF	20%	50V
	C273	1-124-927-11	ELECT 4.7uF	20%	100V	C273	1-126-963-11	ELECT 4.7uF	20%	50V
	C274	1-104-664-11	ELECT 47uF	20%	25V	C274	1-126-967-11	ELECT 47uF	20%	16V
	C275	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C275	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C276	1-104-664-11	ELECT 47uF	20%	25V	C276	1-126-967-11	ELECT 47uF	20%	10V
	C277	1-104-664-11	ELECT 47uF	20%	25V	C277	1-126-967-11	ELECT 47uF	20%	10V
	C278	1-104-664-11	ELECT 47uF	20%	25V	C278	1-126-967-11	ELECT 47uF	20%	10V
	C279	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C279	1-164-232-11	CERAMIC CHIP 0.01uF		50V
	C280	1-104-664-11	ELECT 47uF	20%	25V	C280	1-126-967-11	ELECT 47uF	20%	10V
	C281	1-104-664-11	ELECT 47uF	20%	25V	C281	1-126-967-11	ELECT 47uF	20%	10V
	C401	1-126-785-11	ELECT 47uF	20%	10V	C401	1-126-513-11	ELECT 47uF	20%	6.3V
	C402	1-126-785-11	ELECT 47uF	20%	10V	C402	1-126-513-11	ELECT 47uF	20%	6.3V
5-11	C420	1-164-505-11	CERAMIC CHIP 2.2uF		16V	C420	1-164-346-11	CERAMIC CHIP 1uF		16V
	C427	1-107-714-11	ELECT 10uF	20%	16V	C427	1-126-320-11	ELECT 10uF	20%	16V
	C441	1-107-714-11	ELECT 10uF	20%	16V	C441	1-126-320-11	ELECT 10uF	20%	16V
	C460	———				C460	1-164-346-11	CERAMIC CHIP 1uF		16V
	C464	1-126-967-11	ELECT 47uF	20%	16V	C464	1-104-664-11	ELECT 47uF	20%	25V
	C506	1-124-927-11	ELECT 4.7uF	20%	100V	C506	1-126-963-11	ELECT 4.7uF	20%	50V
	C710	1-124-927-11	ELECT 4.7uF	20%	100V	C710	1-126-963-11	ELECT 4.7uF	20%	50V
	C717	1-124-927-11	ELECT 4.7uF	20%	100V	C717	1-126-963-11	ELECT 4.7uF	20%	50V
	C723	1-124-927-11	ELECT 4.7uF	20%	100V	C723	1-126-963-11	ELECT 4.7uF	20%	50V
	C728	1-107-701-11	ELECT 47uF	20%	16V	C728	1-126-967-11	ELECT 47uF	20%	16V
	C729	1-107-701-11	ELECT 47uF	20%	16V	C729	———			
	C730	1-163-031-11	CERAMIC CHIP 0.01uF		50V	C730	———			
	C731	1-163-087-00	CERAMIC CHIP 4PF		50V	C731	———			
	C732	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	C732	———			
	C733	1-163-009-11	CERAMIC CHIP 0.001uF	10%	50V	C733	———			
	C734	1-126-163-11	ELECT 4.7uF	20%	50V	C734	———			
5-12	C737	1-163-038-91	CERAMIC CHIP 0.1uF		25V	C737	———			
	C738	1-126-967-11	ELECT 47uF	20%	10V	C738	———			
	CN401	1-750-687-11	HOUSING, CONNECTOR (PC BOARD)			CN401	1-766-231-11	HOUSING, CONNECTOR (PC BOARD) 14P		
	* CN402	1-764-594-21	CONNECTOR, FPC 18P			* CN402	1-770-647-11	CONNECTOR, FFC/FPC 18P		
	D405	8-719-976-94	DIODE DTZ4.7A			D405	8-719-976-96	DIODE DTZ4.7C		

FP-750

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Abbreviation
  HK : Hong Kong model
  CH : Chinese model
  JE : Tourist model

Ref. No.	Part No.	Description			Remark
*	A-6423-368-A	FP-750 (951E) BOARD, COMPLETE			
		**********			
		(Ref. No. 7,000 Series)			
*	3-966-725-01	HOLDER, FL			
*	3-966-777-01	HOLDER, LED			
	3-968-101-01	SHEET, INSULATING			
		< CAPACITOR >			
C101	1-126-923-11	ELECT	220uF	20%	16V
C102	1-126-923-11	ELECT	220uF	20%	16V
C103	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C104	1-126-163-11	ELECT	4.7uF	20%	50V
C105	1-124-248-00	ELECT	22uF	20%	35V
C106	1-126-096-11	ELECT	10uF	20%	35V
C107	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C108	1-126-154-11	ELECT	47uF	20%	6.3V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-126-154-11	ELECT	47uF	20%	6.3V
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
⚠C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
⚠C114	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C115	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C116	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C117	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C118	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C119	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C120	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C121	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN101	1-506-487-11	PIN, CONNECTOR 8P			
CN102	1-506-487-11	PIN, CONNECTOR 8P			
CN103	1-691-645-11	SOCKET, CONNECTOR 9P			
CN104	1-506-487-11	PIN, CONNECTOR 8P			
		< DIODE >			
D101	8-719-048-98	DIODE RB160L-40TE25			
D102	8-719-056-98	DIODE UDZ-TE-17			
D103	8-719-048-98	DIODE RB160L-40TE25			
D104	8-719-105-73	DIODE RD4.7M-B2			
D105	8-719-048-98	DIODE RB160L-40TE25			
D107	8-719-302-07	LED SEL1810A (AUTO EFFECT)			
D108	8-719-302-07	LED SEL1810A (VOCAL SUPPORT)			
D109	8-719-056-06	LED SLR-342DC3F (SELECT)			
D111	8-719-056-07	LED SLR-342MC3F (AUTO RESUME)			
D112	8-719-056-06	LED SLR-342DC3F (AUTO PAUSE)			
D120	8-719-048-98	DIODE RB160L-40TE25			
D121	8-719-048-98	DIODE RB160L-40TE25			
		< FILTER >			
FL101	1-421-927-21	FILTER, NOISE			
		< IC >			
IC101	8-759-074-40	IC PST572DMT-T1			
IC102	8-759-361-41	IC MB89095PF-G-171-BND			
		< COIL >			
L101	1-408-970-21	INDUCTOR 10uH			
L102	1-414-189-31	INDUCTOR 100uH			
		< FLUORECENT INDICATOR >			
ND101	1-517-471-11	INDICATOR TUBE, FLUORESCENT			
		< PHOTO INTERUPTER >			
PH101	8-749-010-69	PHOTO INTERUPTER GP1S58V			
		< TRANSISTOR >			
Q101	8-729-140-97	TRANSISTOR 2SB734-34			
Q102	8-729-216-22	TRANSISTOR 2SA1162-G			
Q106	8-729-027-31	TRANSISTOR DTA124EKA			
Q107	8-729-027-31	TRANSISTOR DTA124EKA			
Q108	8-729-027-31	TRANSISTOR DTA124EKA			
Q109	8-729-027-31	TRANSISTOR DTA124EKA			
Q111	8-729-027-31	TRANSISTOR DTA124EKA			
		< RESISTOR >			
R101	1-216-009-00	METAL CHIP	22	5%	1/10W

Ref.No.	Part No.	Description				Remark
R102	1-216-033-00	METAL CHIP	220	5%	1/10W	
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R105	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R106	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R107	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R108	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R109	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R110	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R112	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W	
⚠R115	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
⚠R116	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R119	1-216-073-00	METAL CHIP	10K	5%	1/10W	
⚠R121	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R123	1-216-009-00	METAL CHIP	22	5%	1/10W	
R124	1-216-033-00	METAL CHIP	220	5%	1/10W	
R125	1-216-033-00	METAL CHIP	220	5%	1/10W	
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R128	1-216-033-00	METAL CHIP	220	5%	1/10W	
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R130	1-216-033-00	METAL CHIP	220	5%	1/10W	
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R132	1-216-033-00	METAL CHIP	220	5%	1/10W	
R134	1-216-033-00	METAL CHIP	220	5%	1/10W	
R135	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R137	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R138	1-216-033-00	METAL CHIP	220	5%	1/10W	
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R145	1-216-033-00	METAL CHIP	220	5%	1/10W	
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R147	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R148	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R149	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R151	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R152	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R153	1-216-039-00	METAL CHIP	390	5%	1/10W	
R154	1-216-039-00	METAL CHIP	390	5%	1/10W	
R155	1-216-037-00	METAL CHIP	330	5%	1/10W	
R156	1-216-037-00	METAL CHIP	330	5%	1/10W	
R158	1-216-037-00	METAL CHIP	330	5%	1/10W	
R162	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref.No.	Part No.	Description				Remark
		< SWITCH >				
S101	1-762-365-21	SWITCH, TACTILE (AUTO EFFECT)				
S102	1-762-365-21	SWITCH, TACTILE (VOCAL SUPPORT)				
S103	1-762-365-21	SWITCH, TACTILE (SELECT)				
S104	1-762-365-21	SWITCH, TACTILE (VOCAL)				
S105	1-762-365-21	SWITCH, TACTILE (AUTO PAUSE)				
S106	1-762-365-21	SWITCH, TACTILE (LINE IN)				
		< TRANSFORMER >				
⚠T101	1-448-740-21	TRANSFORMER, DC-DC CONVERTER				
		< VIBRATOR >				
X101	1-579-125-11	VIBRATOR, CERAMIC (8MHz)				
**********						
*	A-6423-369-A	PW-723 (951E) BOARD, COMPLETE				
		**********				
		(Ref.No. 7,000 Series)				
		< CAPACITOR >				
C601	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C602	1-126-926-11	ELECT	1000uF	20%	10V	
C603	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
		< CONNECTOR >				
CN601	1-506-487-11	PIN, CONNECTOR 8P				
		< DIODE >				
D601	8-719-302-07	LED	SEL1810A (RESERVE)			
D602	8-719-302-07	LED	SEL1810A (NEXT DISC RESERVE)			
D605	8-719-053-43	LED	SLR-325VCT31 (POWER)			
D606	8-719-053-43	LED	SLR-325VCT31 (POWER)			
D607	8-719-800-76	DIODE	1SS226			
		< IC >				
IC601	8-759-284-50	IC	SPS-424-N			
		< TRANSISTOR >				
Q601	8-729-027-31	TRANSISTOR	DTA124EKA			
Q602	8-729-027-31	TRANSISTOR	DTA124EKA			
Q603	8-729-027-31	TRANSISTOR	DTA124EKA			
		< RESISTOR >				
R601	1-216-037-00	METAL CHIP	330	5%	1/10W	
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R603	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R604	1-216-037-00	METAL CHIP	330	5%	1/10W	
R605	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	

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

PW-723 SW-738

Ref.No.	Part No.	Description				Remark
R608	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R611	1-216-041-00	METAL CHIP	470	5%	1/10W	
R612	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R613	1-216-037-00	METAL CHIP	330	5%	1/10W	
R614	1-216-037-00	METAL CHIP	330	5%	1/10W	
		< VARIABLE RESISTOR >				
RV601	1-223-986-11	RES, VAR, CARBON 10 (ECHO LEVEL)				
		< SWITCH >				
S601	1-762-365-21	SWITCH, TACTILE (CLEAR)				
S602	1-762-365-21	SWITCH, TACTILE (NEXT DISC RESERVE)				
S603	1-762-365-21	SWITCH, TACTILE (RESERVE)				
S604	1-762-365-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)				
S605	1-762-365-21	SWITCH, TACTILE (POWER)				
**********						
*	A-6423-367-A	SW-738 (951E) BOARD, COMPLETE				
		**********				
		(Ref.No. 7,000 Series)				
		< CAPACITOR >				
C701	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C703	1-126-157-11	ELECT	10uF	20%	16V	
		< CONNECTOR >				
CN701	1-506-468-11	PIN, CONNECTOR	3P			
CN702	1-506-473-11	PIN, CONNECTOR	8P			
		< DIODE >				
D701	8-719-955-04	LED	PY5504S-1 (SIDE B)			
D702	8-719-955-04	LED	PY5504S-1 (SIDE A)			
D703	8-719-302-07	LED	SEL1810A (#)			
D704	8-719-955-04	LED	PY5504S-1 (NATURAL)			
D705	8-719-302-07	LED	SEL1810A (♭)			
D706	8-719-302-07	LED	SEL1810A (PBC ON/OFF)			
D707	8-719-302-07	LED	SEL1810A (VIDEO CD PAL OUT)			
D708	8-719-048-98	DIODE	RB160L-40TE25			
D709	8-719-048-98	DIODE	RB160L-40TE25			
		< IC >				
IC701	8-752-842-94	IC	CXP2007M			
		< RESISTOR >				
R701	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R702	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R703	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R704	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R705	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R706	1-216-037-00	METAL CHIP	330	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R708	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R709	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R710	1-216-037-00	METAL CHIP	330	5%	1/10W	
R712	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R713	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R714	1-216-037-00	METAL CHIP	330	5%	1/10W	
R715	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R716	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R717	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R718	1-216-037-00	METAL CHIP	330	5%	1/10W	
R719	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R720	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R721	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R722	1-216-037-00	METAL CHIP	330	5%	1/10W	
R723	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R724	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R725	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R727	1-216-037-00	METAL CHIP	330	5%	1/10W	
R728	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R729	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R730	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R731	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R732	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R733	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R734	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R735	1-216-037-00	METAL CHIP	330	5%	1/10W	
R739	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R740	1-216-041-00	METAL CHIP	470	5%	1/10W	
R741	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R742	1-216-041-00	METAL CHIP	470	5%	1/10W	
R743	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV701	1-223-986-11	RES, VAR, CARBON 10 (MIC 1 LEVEL)				
RV702	1-223-986-11	RES, VAR, CARBON 10 (MIC 2 LEVEL)				
		< SWITCH >				
S701	1-762-365-21	SWITCH, TACTILE (1)				
S702	1-762-365-21	SWITCH, TACTILE (>10)				
S703	1-762-365-21	SWITCH, TACTILE (2)				
S704	1-762-365-21	SWITCH, TACTILE (VIDEO CD PAL OUT)				
S705	1-762-365-21	SWITCH, TACTILE (3)				
S706	1-762-365-21	SWITCH, TACTILE (PBC ON/OFF)				
S707	1-762-365-21	SWITCH, TACTILE (4)				
S708	1-762-365-21	SWITCH, TACTILE (RETURN)				
S709	1-762-365-21	SWITCH, TACTILE (5)				
S710	1-762-365-21	SWITCH, TACTILE (A)				
S711	1-762-365-21	SWITCH, TACTILE (PREV ⏮)				
S712	1-762-365-21	SWITCH, TACTILE (6)				
S713	1-762-365-21	SWITCH, TACTILE (B)				

Ref.No.	Part No.	Description			Remark
S714	1-762-365-21	SWITCH, TACTILE (NEXT ▷▷|)			
S715	1-762-365-21	SWITCH, TACTILE (7)			
S716	1-762-365-21	SWITCH, TACTILE (SELECT ▷)			
S717	1-762-365-21	SWITCH, TACTILE (♭)			
S718	1-762-365-21	SWITCH, TACTILE (8)			
S719	1-762-365-21	SWITCH, TACTILE (▮▮)			
S720	1-762-365-21	SWITCH, TACTILE (NATURAL)			
S721	1-762-365-21	SWITCH, TACTILE (9)			
S722	1-762-365-21	SWITCH, TACTILE (■)			
S723	1-762-365-21	SWITCH, TACTILE (#)			
S724	1-762-365-21	SWITCH, TACTILE (10/0)			
**********					
*	A-6423-366-A	VX-701 (951E) BOARD, COMPLETE			
		**********			
		(Ref.No. 6,000 Series)			
		< CAPACITOR >			
C101	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-126-607-11	ELECT CHIP	47uF	20%	6.3V
C104	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C106	1-126-607-11	ELECT CHIP	47uF	20%	4V
C107	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C110	1-126-209-11	ELECT CHIP	100uF	20%	4V
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C114	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C115	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C116	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C117	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C118	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C119	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C120	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C121	1-163-091-00	CERAMIC CHIP	8PF		50V
C122	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C123	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C124	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C127	1-163-237-91	CERAMIC CHIP	27PF	5%	50V
C128	1-163-237-91	CERAMIC CHIP	27PF	5%	50V
C129	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C132	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C133	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C134	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C137	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C138	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C139	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C142	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C143	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C144	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C145	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C146	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C147	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C148	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C149	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C150	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C152	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C153	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C154	1-124-779-11	ELECT CHIP	10uF	20%	16V
C156	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C157	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C158	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C159	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C160	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C161	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C162	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C163	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C164	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C165	1-163-091-00	CERAMIC CHIP	8PF		50V
C166	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C167	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C168	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C169	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C170	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C171	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C172	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C174	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C175	1-126-933-11	ELECT CHIP	100uF	20%	10V
C303	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C304	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C305	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C306	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C307	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C308	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C309	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C310	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C311	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C312	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C313	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C701	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C703	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C706	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V

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Ref.No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-506-490-21	PIN, CONNECTOR 11P	
CN102	1-564-014-11	PIN, CONNECTOR 4P	
CN103	1-506-487-11	PIN, CONNECTOR 8P	
CN104	1-506-483-21	PIN, CONNECTOR 4P	
CN301	1-691-077-21	HOUSING, CONNECTOR 18P	
CN302	1-506-483-21	PIN, CONNECTOR 4P	
CN303	1-568-852-11	CONNECTOR, FFC/FPC 9P	
CN701	1-506-485-11	PIN, CONNECTOR 6P	
		< TRIMMER >	
CT101	1-141-423-61	CAP, ADJ (CLOCK)	
CT102	1-141-423-61	CAP, ADJ (CLOCK)	
		< DIODE >	
D101	8-719-800-76	DIODE 1SS226	
D301	8-719-914-44	DIODE DAP202K	
D302	8-719-914-44	DIODE DAP202K	
D701	8-719-800-76	DIODE 1SS226	
D702	8-719-800-76	DIODE 1SS226	
D704	8-719-048-98	DIODE RB160L-40TE25	
D705	8-719-048-98	DIODE RB160L-40TE25	
		< IC >	
IC101	8-759-032-01	IC MC74HC00AF	
IC102	8-759-279-51	IC LC32464M-80-TLM	
IC103	8-759-236-79	IC TC74HC244AF (EL)	
IC104	8-759-295-09	IC TLC2932IPW	
IC105	8-759-363-78	IC CL480VCD-B1	
IC106	8-752-371-07	IC CXD1807Q	
IC107	8-759-032-01	IC MC74HC00AF	
IC108	8-752-338-46	IC CXD1178Q	
IC109	8-759-230-99	IC TC74HC4053AF	
IC110	8-752-068-43	IC CXA1645M	
IC111	8-759-351-75	IC KM416C256BLJ-7	
IC112	8-759-375-63	IC LC371100SM-C78	
IC113	8-759-032-01	IC MC74HC00AF	
IC301	8-759-375-62	IC LC371100SM-C77	
IC302	8-759-032-01	IC MC74HC00AF	
IC303	8-759-349-93	IC KM62256CLG-7	
IC304	8-759-276-29	IC XL9020F-S-E2	
IC305	8-759-283-49	IC HD6413002F10	
		< JACK >	
J701	1-764-592-31	JACK 3P (LINE IN)	
		< JUMPER RESISTOR >	
JC701	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC702	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JC703	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
		< COIL >	
L101	1-412-962-11	INDUCTOR 82uH	
L102	1-412-951-11	INDUCTOR 10uH	
L103	1-412-962-11	INDUCTOR 82uH	
L106	1-412-941-11	INDUCTOR 1.5uH	
L107	1-408-975-21	INDUCTOR 27uH	
L112	1-412-961-11	INDUCTOR 68uH	
L113	1-412-959-11	INDUCTOR 47uH	
L115	1-412-962-11	INDUCTOR 82uH	
L301	1-412-961-11	INDUCTOR 68uH	
		< TRANSISTOR >	
Q101	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q102	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q103	8-729-027-24	TRANSISTOR DTA114TKA	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q107	8-729-900-53	TRANSISTOR DTC114EK	
Q108	8-729-026-49	TRANSISTOR 2SA1037AK-R	
Q111	8-729-027-60	TRANSISTOR DTC144TKA	
Q112	8-729-027-60	TRANSISTOR DTC144TKA	
Q113	8-729-027-60	TRANSISTOR DTC144TKA	
Q701	8-729-202-38	TRANSISTOR 2SC3326N-A	
		< RESISTOR >	
R101	1-216-023-00	METAL CHIP 82 5% 1/10W	
R102	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
R103	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R104	1-216-042-00	METAL CHIP 510 5% 1/10W	
R105	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R106	1-216-042-00	METAL CHIP 510 5% 1/10W	
R107	1-216-023-00	METAL CHIP 82 5% 1/10W	
R108	1-208-782-11	METAL GLAZE 1K 0.50% 1/10W	
R109	1-208-796-11	METAL GLAZE 3.9K 0.50% 1/10W	
R110	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R111	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R112	1-216-041-00	METAL CHIP 470 5% 1/10W	
R113	1-216-042-00	METAL CHIP 510 5% 1/10W	
R114	1-216-032-00	METAL CHIP 200 5% 1/10W	
R115	1-216-038-00	METAL CHIP 360 5% 1/10W	
R116	1-216-032-00	METAL CHIP 200 5% 1/10W	
R117	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R119	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R120	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R121	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R122	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R124	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref.No.	Part No.	Description				Remark
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R128	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R129	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R130	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R131	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R132	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R133	1-216-032-00	METAL CHIP	200	5%	1/10W	
R134	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R135	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R137	1-216-041-00	METAL CHIP	470	5%	1/10W	
R138	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R139	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R140	1-216-041-00	METAL CHIP	470	5%	1/10W	
R141	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R142	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R143	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R144	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R145	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R146	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R147	1-216-041-00	METAL CHIP	470	5%	1/10W	
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R149	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R150	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R151	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R152	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R153	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R154	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R155	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R156	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R157	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R158	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R159	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R160	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R161	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R162	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R163	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R164	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R166	1-216-032-00	METAL CHIP	200	5%	1/10W	
R167	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R168	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R169	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R170	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R171	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R172	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R174	1-216-032-00	METAL CHIP	200	5%	1/10W	
R175	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R176	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R177	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R178	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R179	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R180	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R182	1-216-032-00	METAL CHIP	200	5%	1/10W	
R183	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R184	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R185	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R186	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R187	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R188	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R189	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R193	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R195	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R196	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R199	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R200	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R202	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R203	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R204	1-216-037-00	METAL CHIP	330	5%	1/10W	
R205	1-216-013-00	METAL CHIP	33	5%	1/10W	
R206	1-216-013-00	METAL CHIP	33	5%	1/10W	
R207	1-216-013-00	METAL CHIP	33	5%	1/10W	
R208	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R209	1-216-035-00	METAL CHIP	270	5%	1/10W	
R210	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R211	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R212	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R214	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R215	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R216	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R217	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R218	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R219	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R220	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R221	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R222	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R223	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R302	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R303	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R304	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R308	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R309	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R310	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R311	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R312	1-216-049-91	METAL GLAZE	1K	5%	1/10W	

VX-701

Ref. No.	Part No.	Description				Remark
R313	1-216-033-00	METAL CHIP	220	5%	1/10W	
R314	1-216-033-00	METAL CHIP	220	5%	1/10W	
R315	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R316	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R317	1-216-033-00	METAL CHIP	220	5%	1/10W	
R318	1-216-033-00	METAL CHIP	220	5%	1/10W	
R319	1-216-033-00	METAL CHIP	220	5%	1/10W	
R320	1-216-033-00	METAL CHIP	220	5%	1/10W	
R321	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R322	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R323	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R324	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R325	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R328	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R329	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R331	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R332	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R333	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R334	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R335	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R336	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R337	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R338	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R339	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R340	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R341	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R343	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W	
R344	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R345	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R702	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R703	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R705	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R707	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R709	1-216-022-00	METAL CHIP	75	5%	1/10W	
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV102	1-241-394-11	RES, ADJ, CARBON 4.7K (VCD LEVEL)				
		< VIBRATOR >				
X101	1-577-289-11	VIBRATOR, CRYSTAL (17.734MHz)				
X102	1-577-381-11	VIBRATOR, CRYSTAL (14.318MHz)				
X103	1-760-683-11	VIBRATOR, CRYSTAL (14.318MHz)				
X301	1-578-689-21	VIBRATOR (8MHz)				

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Ref. No.	Part No.	Description	Remark

9-960-371-81

Sony Corporation
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English
96E097023-1
Printed in Singapore

Published by Quality Engineering Dept.
(Shibaura)

9-960-371-12
(with
9-960-371-81)

Sony Corporation
Home A&V Products Company

English
96F09005-1(2)
Printed in Japan

Published by Quality Engineering Dept.
(Shibaura)