ORDER NO. VRD9601M101

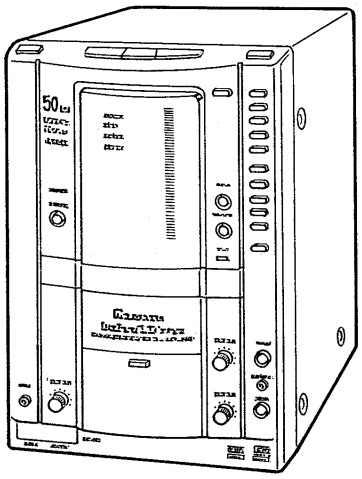
Service Manual

General Description
Adjustment Procedures
Schematic Diagrams
Exploded Views / Parts List

Panasonic

Video CD Auto Changer Karaoke

LX-V55EN



SPECIFICATIONS

ITEM	SPECIFICATION	ITEM	SPECIFICATION
Power Source	AC 110V, 127V, 220V, 230−240V, 50/60Hz	Video Signal Output Level	1.0Vp-p (at 75Ω, negative polarity sync.)
Power Consumption	20W (Power off: approx. 7W)	Audio Signal Output Level	Digital Audio Output Level 200m Vrms (1kHz, −20dB)
Television System	PAL/NTSC	Audio Signal Input Level	Standard; 200mV (1kHz) Input impedance; 10kΩ or more
Format	Video CD System	Microphone Connectors (MIC 1 and MIC 2)	−70dB omnidirectional microphone, 600Ω or more
Weight	8.2kg	Headphone Connector	32Ω (30mW), impedance; 8Ω or more
Dimensions (W×H×D)	215×310×315mm (Protruding Parts are not included)		
Operating Temperature	+5°C～+35°C		
Operating Humidity	5%～90% (Provided that not condensation forms)		
Usable Discs	(1) Video CD 5″ (12cm) Disc; 500～200rpm, 74-min. playback time (max.) on single side 3″ (8cm) Disc; 500～300rpm, 20-min. playback time (max.) on single side (2) Compact Disc (including CD-G disc) 5″ (12cm) Disc; 500～200rpm, 74-minute playback (max.) on single side 3″ (8cm) Disc; 500～300rpm, 20-minute playback (max.) on single side		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
Section 3 contains schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c...
Section 4 contains exploded views and parts list.
Please place order using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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■ PRECAUTION OF LASER DIODE

CAUTION: This unit utilizes a class 3 laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on:

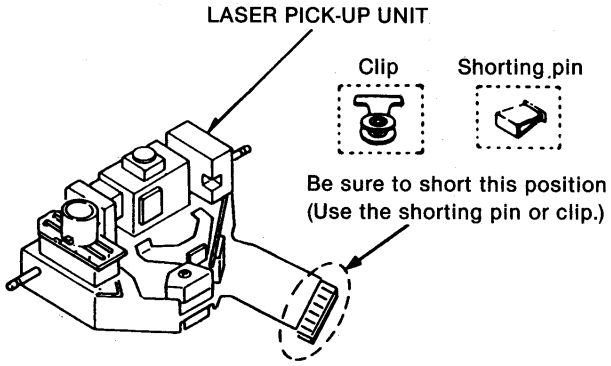
1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufactures specified replacement pickup only.
6. Use of control or adjustment or performance of procedures other than those specified herin may result in hazardous radiation exposure.

■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.
So be careful of electrostatic breakdown during repair of the optical pickup.

• Handling of optical pickup

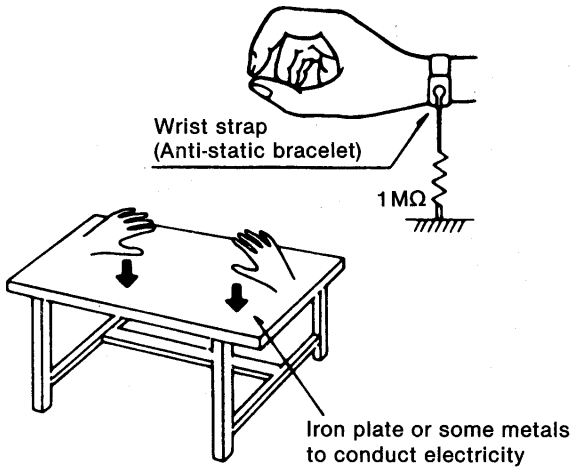
1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).
   When removing or connecting the short pin finish the job in as short time as possible.
3. Be careful not to apply excessive stress to the flexible board (FPC board).



• Grounding for electrostatic breakdown prevention

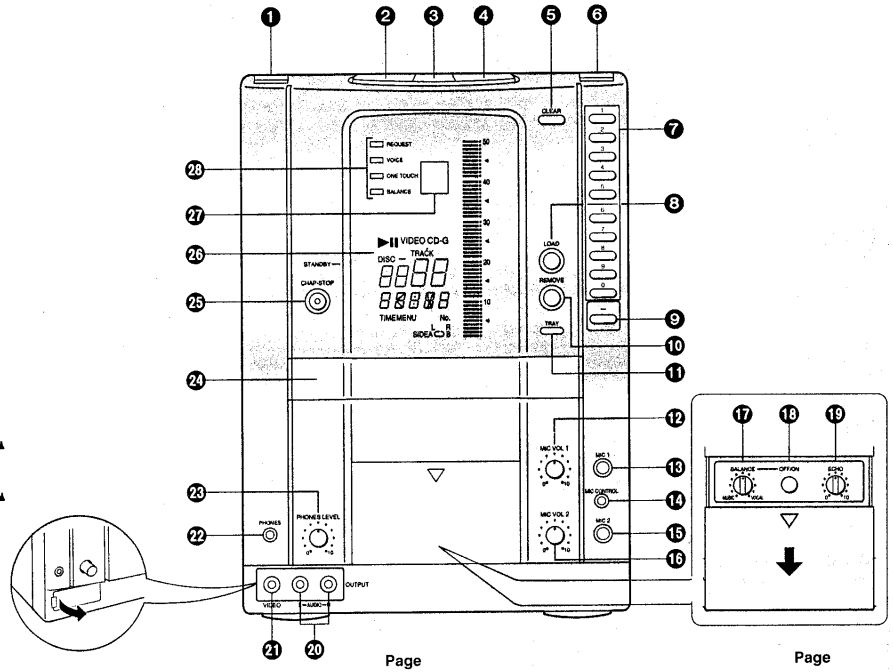
1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.



Controls and indicators

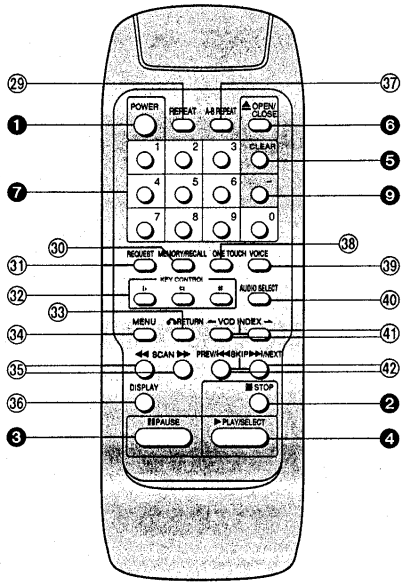
Front Panel



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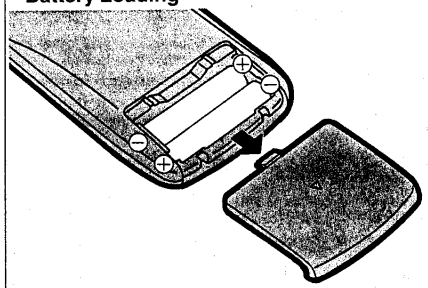
Remote Control

The buttons marked with a black circle by "●" have the same functions as the buttons on the front panel of the unit.



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Battery Loading



Load batteries with their polarities (+ and −) aligned correctly.

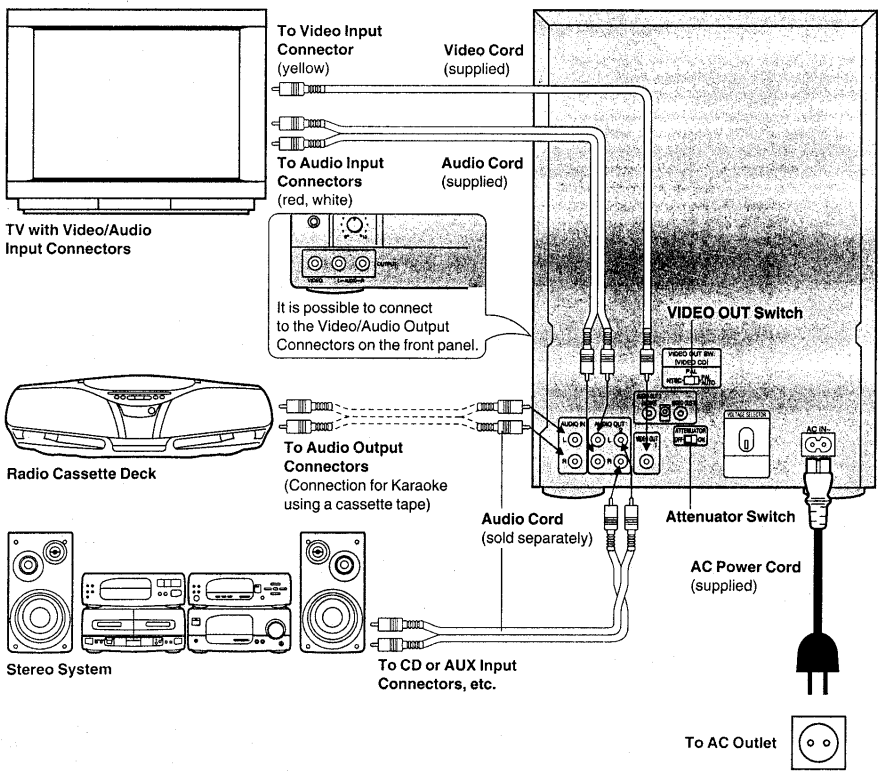
■ **Notes:**
- Do not use rechargeable batteries (i.e. NiCad batteries).
- Do not mix new and old batteries, nor different brands of batteries.
- Do not try to recharge or short-circuit the batteries.
- Do not break batteries open, heat them or incinerate them.
- Remove batteries when the Remote Control is not in use for long periods of time.
- Should the battery leak, clean and wipe the Battery Case and load in new batteries.

■ **Battery Life (When to exchange batteries)**
- Replace the batteries with new ones about every 6 months, however, battery life depends on the frequency of use or the selected mode of operation.
- Replace the batteries when the Remote Control cannot operate the unit at a close range.
- Use "R03" size batteries.

Connections

Connection to a TV with the video/audio input connectors or a stereo system

Before connecting other components to this unit, please read their corresponding manuals.



The plugs of the video/audio cord are color coded for the following connections.

Yellow plug . . . . . To Video Connector
White plug . . . . . To Audio Connector (left)
Red plug . . . . . To Audio Connector (right)

- The plugs should be connected according to the colors of their corresponding connectors.

Attenuator Switch

Set this switch to the "ON" position when using the speakers on your TV for Karaoke.

Voltage Adjustment

SETTING THE VOLTAGE SELECTOR	110V	127V	220V	230V 240V
LOCAL VOLTAGE	AC 110 V	AC 127 V	AC 220 V	AC 230–240 V

Use a regular (flat-tip) screwdriver to set the Voltage Selector on the rear panel to the voltage used in your area.

- This unit is shipped from the factory with the Voltage Selector set to 230–240 V.

■ **Note:**

The POWER Button must be off and the Power Cord disconnected from the AC outlet before any voltage setting adjustment is made.
Incorrect setting will seriously damage this unit.

■ **Precaution on the VIDEO OUT Switch**

- Be sure to turn off the unit before setting the VIDEO OUT Switch.
- When the disc recorded in NTSC system is played from the stop mode, with "PLAY AUTO" setting, the picture may be unstable for a while.
  However, this is not a malfunction.

Setting the VIDEO OUT Switch

This unit can play any Video CD recorded in either PAL or NTSC system. Before starting playback, make sure that the VIDEO OUT Switch on the rear of the unit to the "PAL AUTO", "PAL" or "NTSC" position is selected to the appropriate position according to your TV type.

■ **Setting the Multi system TV [with PAL/PAL 60 (NTSC 4.43) system] to "PAL AUTO"**

Disc	TV Screen
PAL	Played in the PAL system.
NTSC	Played in the PAL 60 system.

■ **Setting the PAL TV to "PAL"**

Disc	TV Screen
PAL	Played in the PAL system.
NTSC	Played in the PAL system after conversion. However, black bars appear at the top and bottom parts of the TV screen. (The picture is compressed horizontally.)

■ **Setting the NTSC TV to "NTSC"**

Disc	TV Screen
PAL	Played in the NTSC system after conversion. However, the top and bottom parts of the picture are cut. (When a Karaoke disc is used, a part of song lyric displayed in the bottom may be cut.)
NTSC	Played in the NTSC system.

The disc

Type of discs that can be played back

The discs bearing the following symbols can be used by the unit.

Video CD
single-sided disc
12 cm: maximum of 74 min.
8 cm: maximum of 20 min.

CD-G (CD Graphics)
single-sided disc
12 cm: maximum of 74 min.
8 cm: maximum of 20 min.

CD
single-sided disc
12 cm: maximum of 74 min.

CD SINGLE
single-sided disc
8 cm: maximum of 20 min.

■ **Notes:**
- You can only load 12 cm discs (up to 50 discs) in the Auto Changer of the unit.
- It is not possible to load any 8 cm disc in the Auto Changer. Do not attempt to load it by using a CD adaptor. The 8 cm disc should be always played on the disc tray.

About CDV (CD VIDEO)

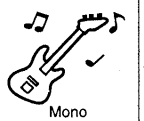
- This unit plays only the audio part of the CDV.

Type of discs that cannot be played on this unit
- LD (Laser Disc)
- CD-I, CD-ROM
- MD (Mini Disc)
- Discs with an aluminum backing
- Discs with other color TV system (SECAM) or
- Video discs with CED and VHD systems

Glossary of disc

Video CD
By applying digital processing technology for signal compression, video and audio signals are recorded for a maximum playing time of 74 minutes (on 12 cm disc).
When using a video CD with the playback control, you can see a list of song titles on the TV screen, and select the desired song.
This unit can also play a video CD with the playback control version 2.0.

Video CD with multi audio
Karaoke CD: Different audio signals are recorded on the 2 channels of this CD.

Left channel	Right channel
 Mono accompaniment	 Mono accompaniment+Master vocal

CD-G
Abbreviation for CD Graphics disc that plays still picture.
Still picture and song lyrics are recorded on this disc for use with Karaoke.
The audio system of the CD-G Karaoke is the same as that of the multi audio CD.



Only lyrics — Still picture+lyrics

CD
Abbreviation for Compact Disc. Ordinary music disc.

Multi Audio CD
Karaoke discs: Different audio signals are recorded on the 2 channels.

Left channel	Right channel
 Mono accompaniment	 Master vocal

■ **Note:**
Some discs play the master vocal together with the mono accompaniment through the right channel.

Precautions for handling disc

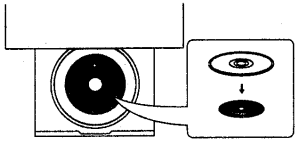
Never use cracked or deformed (warped) discs, nor attempt to repair a broken disc with adhesive tape or glue.



Cracked — Chipped — Deformed (warped)

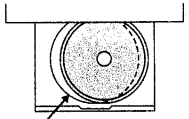
- For correct loading and playing, be sure not to use those discs. This will damage the unit.
- Should vibrations or a strange noise occur after playback starts (i.e. the disc does not rotate smoothly), immediately press the STOP button.

Do not place more than one disc in the disc tray.



- Make sure, for example, that a 12 cm disc is not put on a 8 cm disc.
  If you start to load more than one disc in the disc tray in the Auto Changer or play the discs, the unit and the discs will be damaged.

Never close the disc tray if the disc slips out of the recession guide.



Recession guide

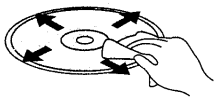
- This will damage the unit and the disc.

Never place the disc with the title label side facing down.
- Be sure to place the disc with the title/song name label side facing up. Otherwise, no audio will be played (heard).

Never move or shake the unit during playback.
- This will damage the unit and disc.

Maintenance of discs

Use a soft cloth to clean a disc soiled with dust, smudges or fingerprints.



- Be sure to move the cloth from the center hole toward the outer edge as shown. (If you wipe the discs using a circular motion, circular scratches are likely to occur. This will cause noise during playback.)
- If the surface is extremely dirty, dip a soft cloth into water and wring the cloth well before wiping the disc. Then wipe again with a soft and dry cloth.
- Do not use benzene, thinner, a record cleaner, or an antistatic agent.

Storing the discs, etc.

Avoid places exposed to direct sunlight, high temperature or high humidity.

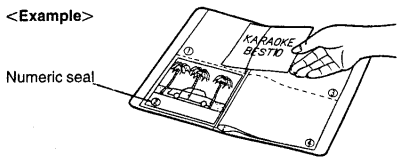
Never attempt to stick an adhesive label on a disc.

Be careful not to scratch the disc.

Always put the disc into its case after use and store it in a vertical position.
- Storing discs in a slanted or stacked position may cause them to become warped.

How to use the CD Booklet File, and numeric adhesives (supplied)
- This file can be used to file the title sheet or song lyric cards of the discs that are loaded in the Auto Changer inside the unit.

<Example>



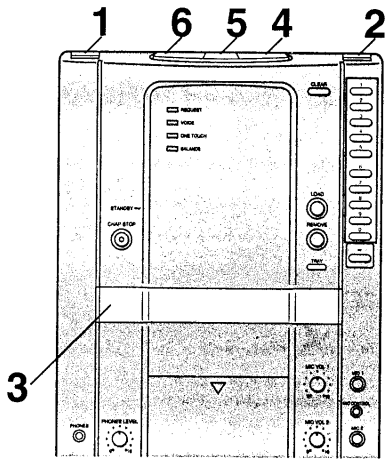
- File the jacket or lyrics of the disc in the CD Booklet File. Stick the supplied numeric adhesive (large) corresponding to the disc number that is loaded in the Auto Changer.
- Stick the small numeric seal to the disc's jacket or case.

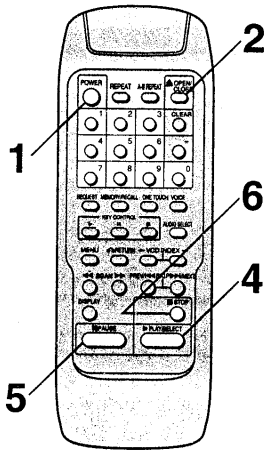
■ **Note:**
Do not stick a numeric adhesive to a disc.

Other precautions
- Do not use a CD stabilizer.
- Recording, renting, broadcasting, or showing to the public of any prerecorded discs may infringe on copyright laws.

Playing a disc placed in the Disc Tray

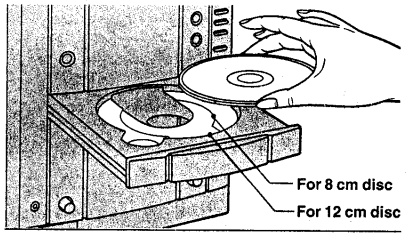
■ **Preparation**
- Turn on the TV and select the VIDEO input mode to play a Video CD or a CD-G.
- If the unit is connected to a stereo system, turn on its components.





To play a disc

Procedure	TV screen
1 Turn on the unit. POWER	
2 Open the Disc Tray. OPEN/CLOSE	OPEN
3 Place the disc on the disc tray. ●Hold the disc with its title label side facing up and place it in the proper recession guide according to its size.	
4 Start playback. ▷PLAY	CLOSE
●The TRAY indicator flashes on and off.	
5 Press to temporarily interrupt playback. ▯▯ PAUSE	
●A still picture appears when the Video CD or CD-G is used. ●Press PAUSE again to resume playback at the interrupted position.	
6 Stop playback. □ STOP	
Remove the disc OPEN/CLOSE ●Press OPEN/CLOSE again to close the disc tray.	OPEN



To play the desired song (track)

Example) To select the 3rd track

Press — (Designate). – DISC 0 TRACK _

Press **3**. 3 DISC 0 TRACK 3

Press **PLAY**. ▷PLAY SEARCH TRACK 3

How to program a two-digit track number
Example) To select the 10th track

1 0 ERROR

■ **Note:**
If a track number is selected that is not used by the disc, the message on the right will appear on the screen.

To select the audio channel

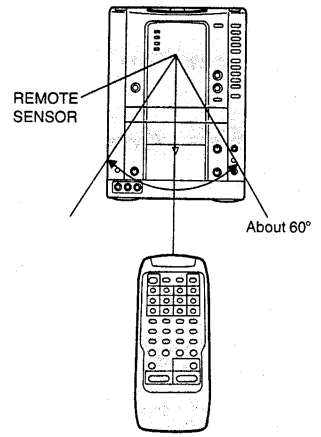
During playback,
Press **AUDIO SELECT**.

AUDIO SELECT

●Each time this button is pressed, the audio output from the speakers is changed as follows:
(See page 8 for the multi audio disc.)

Indicators on the display	Audio	
	Stereo disc	Bilingual disc
L R	Stereo	Main from the left Sub from the right
L	Left channel	Main audio
R	Right channel	Sub audio

Remote Control Operation



Point the Remote Control no more than about 7 m from the **REMOTE SENSOR** and within about 60° of the front of the unit.
- The operable distance varies with the brightness of the room.

■ **Notes for Operation:**
- Do not expose the **REMOTE SENSOR** to strong light.
- Do not place any obstacles between the Remote Control and the **REMOTE SENSOR**.
- Do not use the Remote Control simultaneously with another components infrared remote control.

Listening with headphones

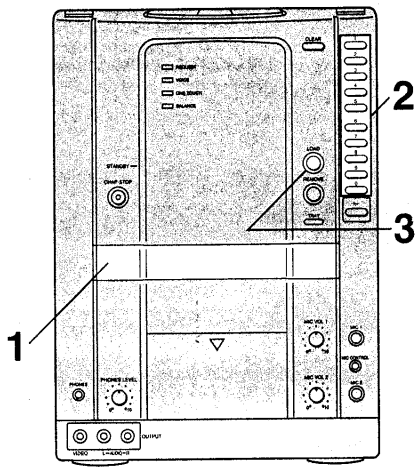
1 Connect headphones (sold separately).
- A headphone with a mini plug can be connected.

2 PHONES LEVEL — Rotate **PHONES LEVEL** Control to adjust the volume level.

■ **Note:**
Avoid listening with headphones at high volumes for an extended period of time as it may affect your hearing.

Playing a disc loaded in the Auto Changer

Loading the disc



To load discs in the Auto Changer

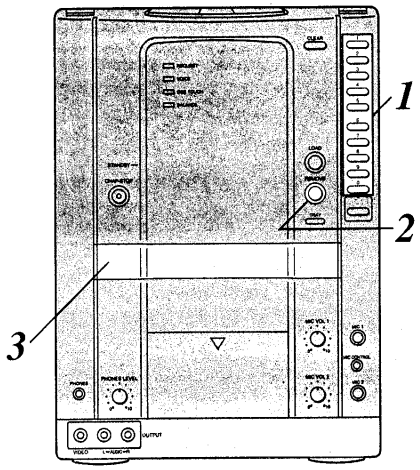
Notes for loading
- Do not place more than one disc in the tray.
- Do not place the disc with the title label side facing down. (Be sure to place the disc with the title/song name label side facing up.)
- It is not possible to load 8 cm discs into the Auto Changer of this unit.

Example) Loading a disc in the 24th disc holder of the Auto Changer

Procedure	TV screen
1 Open the disc tray and place the disc in the disc tray. ●See page 10 on how to place the disc in the tray.	
2 Press **2** and **4**. (2) (4) ●You can load up to 50 discs (1st–50th holders).	DISC 24 OPEN
3 Press **LOAD**. LOAD	LOAD DISC 24

●You cannot select an already occupied disc holder number.

Removing the disc

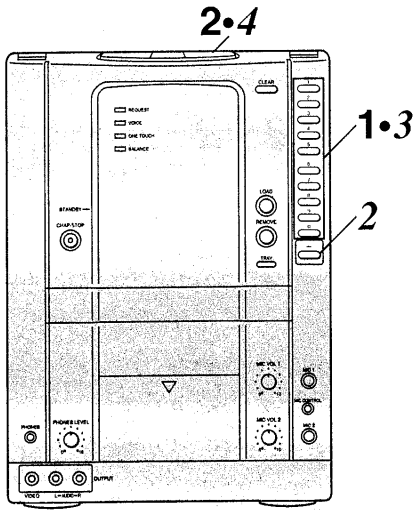


To remove the discs from the Auto Changer

Before removing discs
- Make sure that no disc is placed in the disc tray. Otherwise, it is not possible to remove a loaded disc from the Auto Changer of the unit.

Example) Removing a disc loaded in the 30th disc holder in the Auto Changer

Procedure	TV screen
1 Press **3** and **0**. (3) (0)	DISC 30
2 Press **REMOVE**. REMOVE	REMOVE DISC 30
3 Remove the disc after the disc tray is opened.	



To play the disc loaded in the Auto Changer

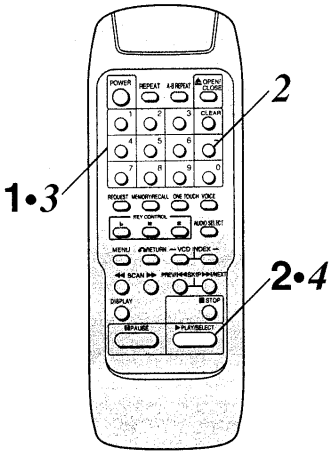
Example) To play the disc loaded in the 24th disc holder

Procedure	TV screen
1 Press **2** and **4**. (2) (4)	DISC 24
2 Press **PLAY**. ▷PLAY	SEARCH DISC 24

■ **Note:**
When an unoccupied disc holder is selected, the message as shown to the right will appear on the TV screen. ("E" flashes on and off on the unit's display.)

NO DISC

■ **Note:**
The unit cannot automatically play in sequence the discs loaded in the Auto Changer.

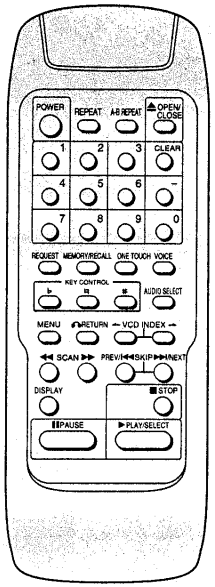


To play the desired song (track)

Example) To select the 3rd track of the disc loaded in the 24th disc holder of the Auto Changer

Procedure	TV screen
1 Press **2** and **4**. (2) (4) ●This step is unnecessary when the disc now being played is the one loaded in the 24th disc holder.	DISC 24
2 Press **— (Designate)**. (—)	DISC 24 TRACK _
3 Press **3**. (3)	DISC 24 TRACK 3
4 Press **PLAY**. ▷PLAY	SEARCH DISC 24

Searching for desired part



■ **Note:**
While playing a Video CD with the menu, when the SKIP button is pressed, the menu will appear on the TV screen according to the type of Video CD that is being played. (See page 24.)

To forward and reverse search the disc

◀◀ SCAN ▶▶

Reverse **Forward**

During playback,
Hold **SCAN** depressed.

- After the button is pressed for about 2 seconds, the picture will be shown at a lower speed. After this initial time, the picture will be shown at a higher speed.
- If you release the button, normal playback resumes.

■ **Note for CD-G:**
During the fast forward and reverse mode using a CD-G disc, some parts of the picture, or words in the song lyrics may be cut, or have changed color. However, these do not indicate a malfunction in the unit. After normal playback resumes, the picture is shown normally.

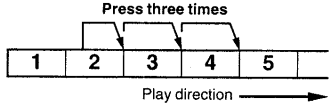
To skip to the following or previous songs (tracks) (Skip Play)

To skip to the following (forward) tracks

SKIP▶▶I/NEXT

During playback,
Press **SKIP (▶▶I)**.
- The number of tracks skipped equals the number of times that the button is pressed.

Example) To skip from the 2nd track now being played to the beginning of the 5th track

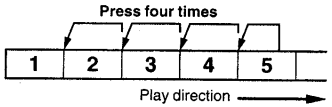


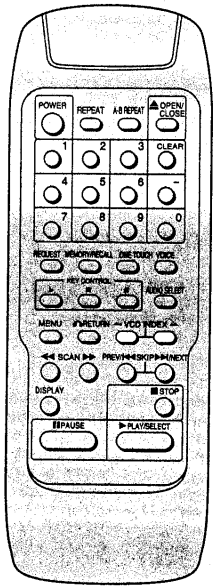
To skip to the previous (backward) tracks

PREV/I◀◀SKIP

During playback,
Press **SKIP (I◀◀)**.
- Pressing this button once skips to the beginning of the track now being played. Tracks are skipped according to the number of times that the button is pressed.

Example) To skip from the 5th track (now being played) to the beginning of the 2nd track





To skip to the following or previous index signals **Video CD**

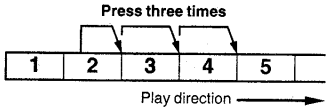
The VCD INDEX buttons allow you to quickly locate the desired scenes of a Video CD that have been marked with index signals.
See the instructions that come with the disc.

To skip to the following (forward) index signals

VCD INDEX

During playback,
Press **VCD INDEX**.
- The number of index signals skipped equals the number of times that the button is pressed.

Example) To skip from the 2nd scene now being played to the 5th index signal

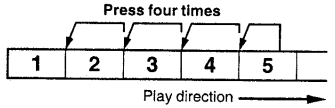


To skip to the previous (backward) index signals

VCD INDEX

During playback,
Press **VCD INDEX**.
- Pressing the button once skips to the previous index signal. Index signals are skipped according to the number of times that the button is pressed.

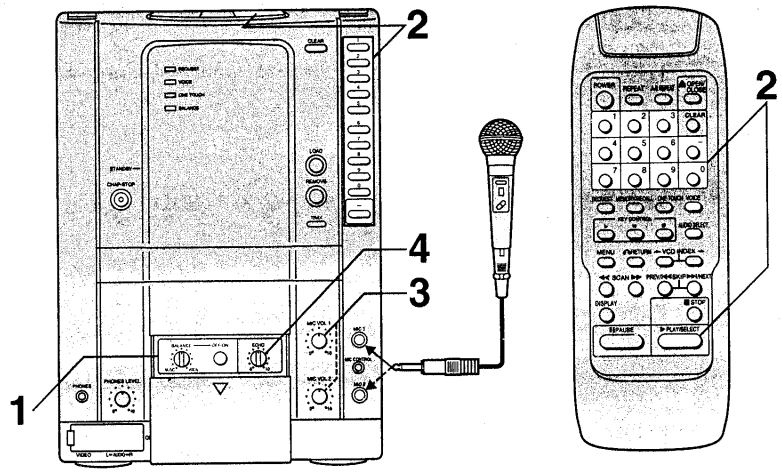
Example) To skip from the 5th scene now being played to the 2nd index signal



■ **Notes:**
- This function does not work during playback with the menu. (See page 24.)
- It is not possible to skip to index signals when a CD-G or CD is used.

Karaoke using a multi audio disc

■ **Preparation**
Connect the microphone (sold separately) to the Microphone connector. (You can connect two microphones.)

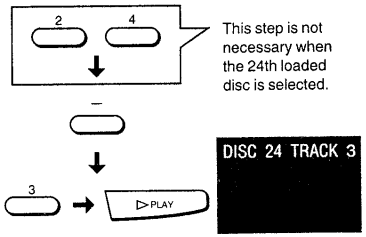


To use a multi audio disc

Procedure **TV screen**

1 BALANCE —— OFF/ON
MUSIC • • VOCAL
Press **BALANCE OFF/ON** and fully rotate **BALANCE** counterclockwise.
• The BALANCE indicator on the unit lights up.

2 Select the desired song (track).
Example) To select the 3rd track of the disc loaded in the 24th disc holder



This step is not necessary when the 24th loaded disc is selected.

3 MIC VOL.1
0 • • 10
Rotate **MIC VOL** to sing a song.

4 ECHO
0 • • 10
Rotate **ECHO** Level.
• Fully rotate the control counterclockwise when not using the echo effect.

To select a track of the disc placed in the disc tray while the disc loaded in the Auto Changer is being played

Example) 3rd track

0 → – → 3 → ▷PLAY

To select the left channel (for mono accompaniment) using the remote control

AUDIO SELECT
Instead of steps 1,
Press **AUDIO SELECT** once.
(Make sure that the "L R" changes to "L" on the display of the unit.
• The mono accompaniment is played.

If acoustic feedback (howling) occurs, put the microphone(s) farther away from the speakers. Another effective way to cut feedback is to reduce the microphone or the speaker volume.

To adjust the volume of a prerecorded singer's voice (Multi Audio Balance)

BALANCE
MUSIC • • VOCAL
Rotate **BALANCE** Control.

• Rotating the BALANCE control counterclockwise will gradually lower the volume of the prerecorded singer's voice.
• Rotating the BALANCE control clockwise will return the prerecorded singer's volume to its original level. You can practice singing a song by adjusting the volume of your microphone and the prerecorded singer's voice to the same level.

■ **Note:**
Make sure that the BALANCE indicator on the unit lights up. If it does not, press the BALANCE OFF/ON button.

To cancel the Multi Audio Balance mode

BALANCE —— OFF/ON
Press **BALANCE OFF/ON**.
(The BALANCE indicator goes out.)

To practice singing a new tune or duet (Voice Changer)

VOICE
Instead of step 1 on the previous page, Press **VOICE**.

• The VOICE indicator on the unit lights up.

• If, for some reason or other, you stop singing, the prerecorded singer's voice volume will raise to help you with the melody and words.
• This function is also convenient to practice singing a song having alternately male and female parts. For instance, if you stop singing after the male part, the prerecorded female voice volume will raise.

When a prerecorded singer's voice is heard while you are singing,

MIC VOL.1
0 • • 10
Rotate **MIC VOL** clockwise to increase your microphone volume.

To cancel the Voice Changer mode

VOICE
Press **VOICE**.
(The VOICE indicator goes out.)

To stop the disc after a song (track) is finished

CHAP-STOP
Press **CHAP-STOP**.

• The button's indicator lights up.

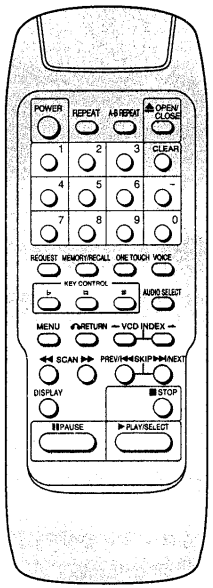
• The disc stops when a track is finished.
This is convenient to play only a single track.

To cancel the CHAP-STOP mode

CHAP-STOP
Press **CHAP-STOP**.
(The indicator goes out.)

■ **Notes:**
• This function does not work when a track has been programmed for a Request function. (See page 19.)
• When used with the menu, this function does not work when the Video CD is played. (See page 24.)

■ **Notes:**
• On some Multi Audio Video CDs, the master vocal is recorded in the left channel and the mono accompaniment in the right channel.
• When using a Video CD of the above-mentioned kind, if you want to enjoy Karaoke, rotate the BALANCE Control clockwise (toward "VOCAL") in the step "To adjust the volume of a prerecorded singer's voice (Multi Audio Balance)" on this page.
• The Voice Changer function does not work correctly when a Video CD of the above-mentioned kind is used.



To replay the same song (track) from the beginning

PREV/I◄◄SKIP

If you wish to sing again from the beginning of a song,
Press **SKIP (I◄◄)**.

- The track is played again from the beginning.

■ **Note:**
When used with the menu, and the SKIP button is pressed, the menu appears on the TV screen depending on the type of Video CD. (See page 24.)

To change the key of a song (Key Control)

Procedure	TV screen
To raise a half tone **♯ (sharp)** ♯ Press ♯.	KEY CONTROL 3 ♭----------+---♯
To lower a half tone **♭ (flat)** ♭ Press ♭.	KEY CONTROL −5 ♭----------+----------♯
To return to the original key **♮ (natural)** ♮ Press ♮.	KEY CONTROL 0 ♭----------+----------♯

- The key changes up to 6 notes (both of "♯" and "♭").

Panasonic vocal microphone RP-VK68 (sold separately) allows you to operate the "Replay" and "Key Control" functions on the microphone.



■ **Note:**
When used with the menu, the Replay will not function on the microphone while the Video CD is played.

To program desired songs (Request)

Example) To program the 3rd track of the 24th loaded disc

TV screen

1 Press **REQUEST**.

REQUEST

REQUEST
(1) ✱- ✱ (5) ✱- ✱
(2) ✱- ✱ (6) ✱- ✱
(3) ✱- ✱ (7) ✱- ✱
(4) ✱- ✱ (8) ✱- ✱

2 Select the desired song as shown below.

2 → 4 → – → 3 → MEMORY/RECALL

- The REQUEST indicator on the unit lights up.

REQUEST
(1)24- 3 (5) ✱- ✱
(2) ✱- ✱ (6) ✱- ✱
(3) ✱- ✱ (7) ✱- ✱
(4) ✱- ✱ (8) ✱- ✱

3 Press **PLAY/SELECT**.

►PLAY/SELECT

- The tracks are played in the programmed order.
- Up to 8 tracks can be programmed.
  When 8 tracks are programmed, the message shown to the right appears.

FULL

How to program a two-digit track number
Example) To select the 10th track

1 0

If you input a wrong number

CLEAR
Press **CLEAR**.

- Input the correct number again.

How to program a song of a disc placed in the disc tray
Example) To program the 5th track

0 → – → 5 → MEMORY/RECALL

■ **Notes:**
- This function does not work while the CHAP-STOP button's indicator is lit. (See page 17.)
- This function does not work while the Video CD is played with the menu. (See page 24.)

How to add programmed track

Follow steps 1 and 2 on this page.
- If the programmed song is finished, the next one's number moves up on the TV screen. You can program the next desired song's number into the empty section.

To erase a programmed song number

TV screen

MEMORY/RECALL

Press until the number to be erased flashes on and off.

REQUEST
(1)24- 3 (5) 3- 8
(2) 5- 1 (6)36- 2
(3)10- 4 (7)44- 4
(4)15-10 (8) 2- 6

Press **CLEAR**.

CLEAR

REQUEST
(1)24- 3 (5)36- 2
(2) 5- 1 (6)44- 4
(3)10- 4 (7) 2- 6
(4)15-10 (8) ✱- ✱

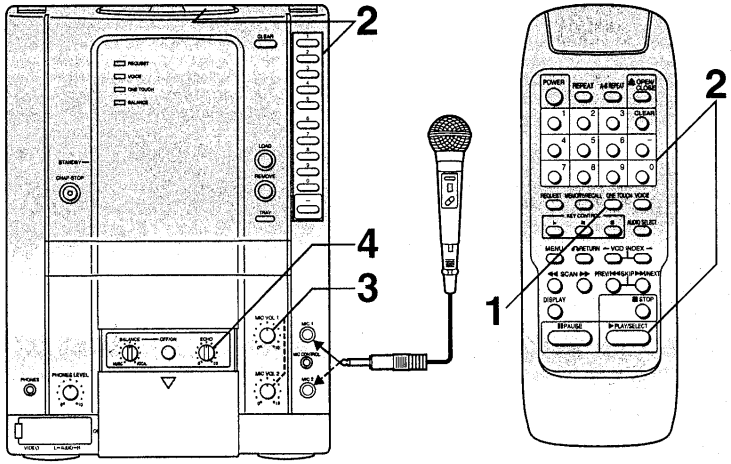
To cancel all programmed songs

In the stop mode, ■STOP Press **STOP**.

- All programmed songs are also canceled when the unit it turned off.

How to play another song while the programmed song is being played
Select the desired track during playback of the program. (See step 2 on page 16.)
- The track is interrupted and the new track starts playing. After the track is finished, the next programmed track starts playing.

Karaoke using an ordinary disc with songs



To lower the prerecorded singer's voice (One Touch Karaoke)

Procedure

1 Press **ONE TOUCH.**

ONE TOUCH

•The ONE TOUCH indicator on the unit lights up.

2 Select a desired song.

– → 3 → ▷PLAY

3 MIC VOL.1 — Rotate **MIC VOL** to sing a song.

4 ECHO — Rotate **ECHO.**
•Fully rotate the control counterclockwise when not using the echo effect.

•The prerecorded singer's voice will be lowered like a Karaoke disc. (The sound is mono.)

To resume normal playback

ONE TOUCH — Press **ONE TOUCH.**
(The indicator goes out.)

■ **Notes:**
•Some prerecorded singer's voice cannot be lowered depending on the type of prerecorded songs.
•This function does not work when a disc in mono is used.

To practice singing a new tune or duet (Voice Changer)

VOICE — After step 1 on this page, Press **VOICE.**

•The VOICE indicator on the unit lights up.

•When you are singing through the microphone, the prerecorded singer's voice is lowered. If you stop singing, the singer's voice is played at the originally recorded level (i.e. the singer's voice volume is raised to help you with the melody and words).

If the prerecorded singer's voice volume is not lowered while you are singing.
As the microphone volume is lowered,

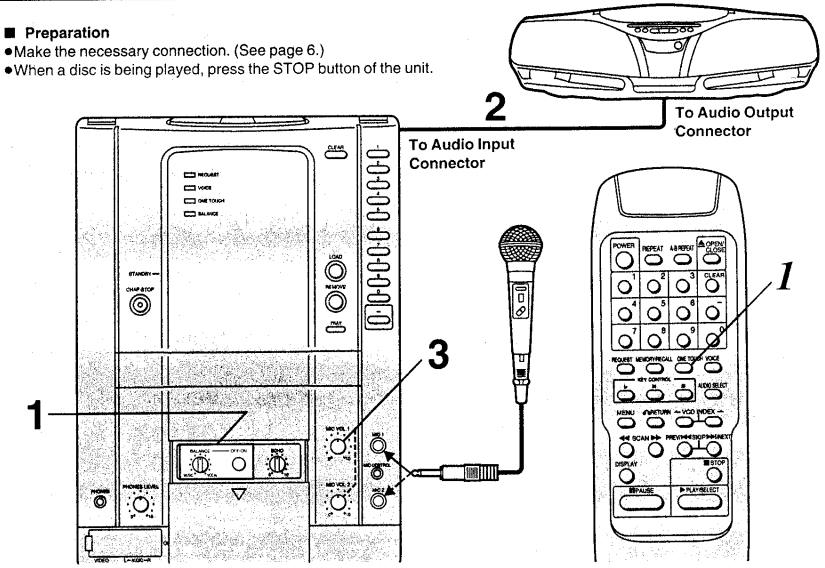
MIC VOL.1 — Rotate **MIC VOL** clockwise to raise the volume.

To stop the Voice Changer function

VOICE — Press **VOICE.**
(The indicator goes out.)

Karaoke using cassette tapes

■ **Preparation**
•Make the necessary connection. (See page 6.)
•When a disc is being played, press the STOP button of the unit.



To use a karaoke tape with a multi audio format

Procedure

1 BALANCE — OFF/ON — Press **BALANCE OFF/ON** and fully rotate **BALANCE** counterclockwise.
MUSIC VOCAL

•The BALANCE indicator on the unit lights up.

2 Start playing a cassette tape.

3 MIC VOL.1 — Rotate **MIC VOL** to sing a song.

•Adjust the echo level as desired.
•See page 17 on how to operate the "Multi Audio Balance" and "Voice Changer".

To lower the prerecorded singer's voice (One Touch Karaoke)

Procedure

1 Press **ONE TOUCH.**

ONE TOUCH

•The ONE TOUCH indicator on the unit lights up.

2 Start playing a cassette tape.

3 MIC VOL.1 — Rotate **MIC VOL** to sing a song.

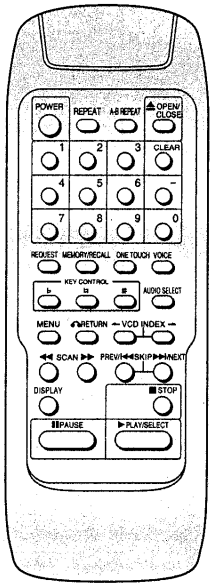
•Adjust the echo level as desired.
•See page 20 on how to operate the "Voice Changer".

■ **Note:**
Depending on the type of prerecorded songs, some prerecorded singer's voice cannot be reduced.

To resume normal playback

ONE TOUCH — Press **ONE TOUCH.**
(The indicator goes out.)

Repeat playback

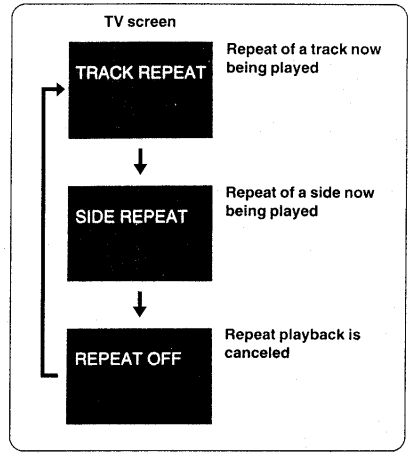


To repeat a track or a side being played

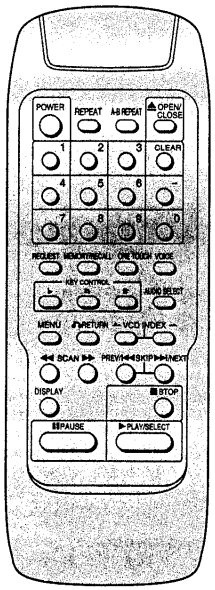
REPEAT

During playback, Press **REPEAT**.

- Each time this button is pressed, the display on the TV screen changes in the order shown by the diagram below.



■ **Notes:**
- This function works for the disc now being played.
- When used with the menu, this function does not work while the programmed track is being played (see page 19) and the Video CD is played (see page 24).



To repeat playback between two designated points (A–B Repeat)

TV screen

A-B REPEAT

During playback, at the point where you want to start Repeat playback (A), Press **A–B REPEAT**.



A-B REPEAT

At the end point for Repeat playback (B), Press **A–B REPEAT**.



- Repeat playback between A and B points starts.

To resume normal playback

A-B REPEAT

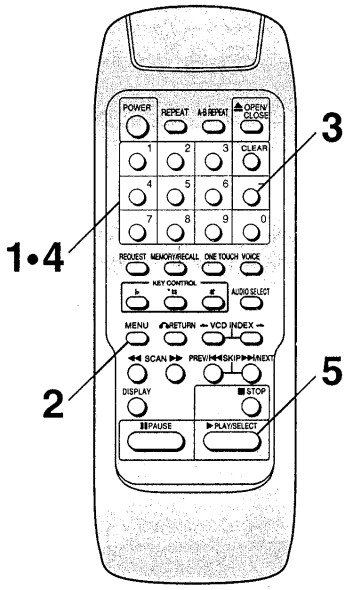
Press **A–B REPEAT**.



■ **Notes:**
- When a Video CD is used, the actual start and end points of A–B Repeat playback may not match exactly as selected by the A–B REPEAT button. However, this is not a malfunction.
- When a CD-G disc is used, the picture may be unstable, but this is not a malfunction.
- This function works for the disc now being played.
- When used with the menu, this function does not work while the programmed track is being played (see page 19) and the Video CD is played (see page 24).

Playback with the menu

This function works only when a Video CD with the playback control is used.



The Video CD bearing **"Video CD version 2.0"** on the disc or its case can display a list of prerecorded songs, called the menu, on the TV screen. You can use this menu to select the desired song.

To select songs with the menu on the TV screen

Video CD

Although the menu contents and operations are different depending on the type of discs, a typical selection method of songs is described on this page as an example. See the instructions that come with your disc.

Example) To select the 3rd song (track) of the disc loaded in the 24th disc holder in the Auto Changer

Procedure **TV screen**

1 Press **2** and **4**.

2 4

DISC 24

2 Press **MENU**.

MENU

1 SEPTEMBER LOVE
2 TODAY
3 SUPER HITS!
4 SEA OF CROWN
5 COSMO STAR

- The list of song titles is displayed.

3 Press **– (Designate)**.

–

SELECT _

- Other messages such as "Select song number", etc. appear depending on the type of discs. However, be sure to press the DESIGNATE button in this step.

4 Select the desired track number.

3

SELECT 3

5 Press **PLAY/SELECT**.

▶ PLAY/SELECT

Video CD KARAOKE
SUPER HITS !

- Depending on the type of disc, the menu is displayed after the playback of the track is finished.

How to scroll down to the following page of the menu

TV screen

After step 2,

SKIP▶▶I/NEXT — Press **SKIP (NEXT)**.

6 MY HISTORY
7 REVOLUTION
8 Mr. MINDMAN
9 TWO FACE
10 FROM EUROPE

To scroll up to the previous page

PREV/I◀◀SKIP — Press **SKIP (PREV)**.

To stop playback and return to the menu

RETURN — Press **RETURN**.

- Playback stops and the menu appears on the TV screen.

To stop playback using the menu

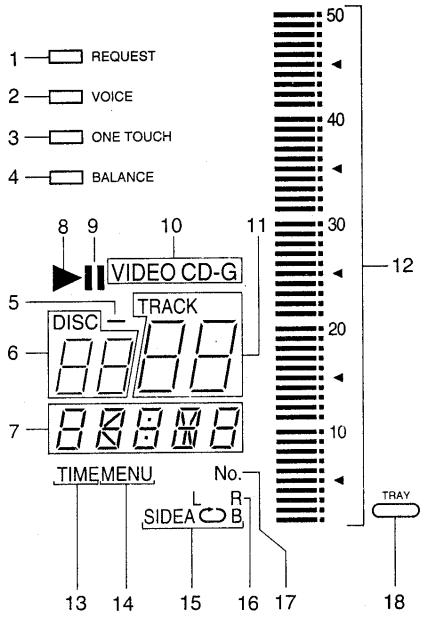
■ STOP — Press **STOP**.

■ Notes:

- If the menu remains displayed on the TV screen after the playback of the track is finished, the rotation of the disc is not stopped. If you don't want to continue playback, be sure to press the STOP button to exit the menu.
- While the menu is displayed, some discs automatically will start playback if no buttons are pressed.
- If the mark " ⛔ " appears on the TV screen when a button is pressed, this operation cannot be accepted by the disc. Press any operational button after the menu is displayed.
- Pressing the MENU button during programming songs (tracks) cancels all programmed songs (tracks).

Multi-function display

The Multi-Function Display indicators light up, or blink depending on the operation mode.
The illustration below shows all possible indicators.



■ **STANDBY Indication (6):**
When the unit is turned off, the upper parts of the indication circle round and round: i.e., "⌐" → "¬" → "⌋" → "⌊".

■ **Note:**
The "CD" indication appears in the stop mode when the CD-G disc is used.

Description of indicators on the display

1 **ON: When a song(s) is/are programmed** (Request)
2 **ON: During the Voice Changer operation**
3 **ON: During ONE TOUCH Karaoke operation**
4 **ON: During Multi Audio Balance operation**
5 **ON: When a track is designated**
6 **Disc number indication**
STANDBY indication (Power off)
7 **Elapsed time of track**
VCD index number (for Video CD)
Message (See below.)
Self-diagnostic function indication (See page 31.)
8 **ON: During playback**
9 **ON: During still playback**
10 **Indicator for type of disc**
11 **Track number**
Programmed track number (Request)
12 **Disc holder indicators**
(When the disc holder is occupied, the corresponding indicator is lit. It flashes on and off during the playback of that disc.)
ON: While a disc(s) is/are loaded in the Auto Changer inside the unit or removed from the unit
13 **ON: During reading of elapsed time of a track**
14 **ON: During playback using the menu** (for Video CD)
15 **ON: During repeat playback mode** (See below.)
16 **Audio channel selection mode**
17 **ON: During programming track**
18 **Flashes on and off during playback of a disc placed in the disc tray.**
(This indicator goes out in the stop mode.)

Messages

The shaded area of the display (see 7 of the diagram) is for the following messages.

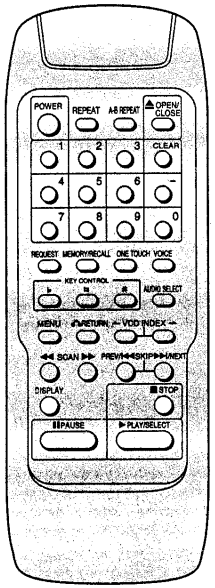
OPEN The disc tray is open.
CLOSE The disc tray is now being closed.
PLAY The playback starts.
OFF Power is turned off.
KEY Key control is now operating.

Repeat playback mode

↻	Repeat of a track is now being played
SIDE ↻	Repeat of a side (all songs) is now being played
A ↻ B	Repeat playback of the A and B points

On screen display

When an ordinary CD is played and the TV is on, the information about a track being played, elapsed time, or the operation mode of the unit is displayed on the TV screen.



■ **Note:**
If the wrong button is pressed, the message to the right appears.

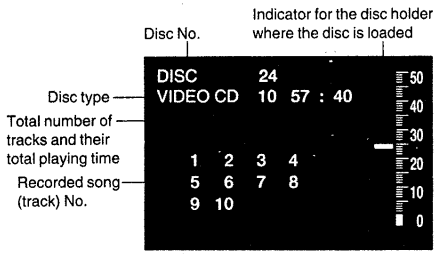


Displaying a list of disc information

- **Disc placed in the disc tray**
Place the disc in the disc tray by pressing the **OPEN/CLOSE** button.
- **Disc(s) loaded inside the Auto Changer of the unit**
1) Select the loaded disc number and press the PLAY button.
2) After the message "TOC READ" appears on the TV screen, press the **STOP** button.

TV screen





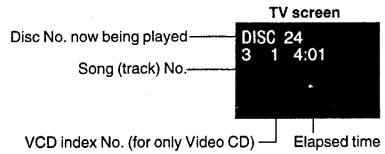
- When a disc placed in the disc tray is played, the disc No. becomes "0".
- The time information displayed may differ from that which is supplied with the disc.

What is TOC?
This is similar to a Table Of Contents of a book and includes disc information (i.e. the number of tracks and their playing times).

On screen display during playback

DISPLAY ○ Press **DISPLAY**.

TV screen



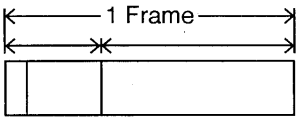
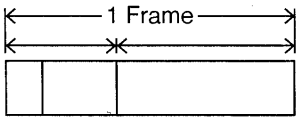
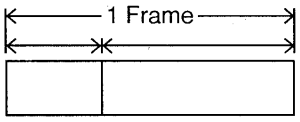
To turn off the on screen display
DISPLAY ○ Again, Press **DISPLAY**.

2. General Description for Video CD (VCD)

LX-V55EN can be played Video CD (motion picture and sound), CD (sound only), CD-G(graphic and sound) and CDV (audio part only), in both 8cm and 12 cm sizes.

2-1. Comparison of Optical Disc Media

		CD	CD-G	VIDEO CD	CD-ROM	LD	MD
LX-V55EN		○	○	○	×	×	×
CONVENTIONAL LASER DISC LX-＊＊＊＊		○	OPTION	×	×	○	×
Feature		Digital Audio Disc	Low-priced Graphic Data	Digital Motion Picture 8/12cm Small Disc	Small-sized Data Disc	Analog Motion Picture 20/30cm Large Disc	Digital Audio 6.4cm Mini-disc
Use		Music	Karaoke Education	Personal AV, Video Karaoke, Information	Electronic Issue (Electronic Book)	Theater AV Video Karaoke	Music
Recording Time		74 minutes	74 minutes	74 minutes	—	120 minutes (both sides)	74 minutes
Video	Video Mode	None	Graphic	Digital Motion Picture	Text, Graphic	Analog Motion Picture	None
	Motion	None	None	MPEG1	None	Analog	—
Music	character-istics	2 Hz~20 kHz	2 Hz~20 kHz	2 Hz~20 kHz	2 Hz~20 kHz	2 Hz~20 kHz	2 Hz~20 kHz
	Channel	2 ch	2 ch	2 ch	2 ch	4 ch	2 ch
Disc Standard		Red Book		Video CD Standard (Bridge Standard)	Yellow Book	—	—

Recording Method	Make recording in conformity to the music CD format. 	Record graphic data in the subcode area of the music CD format. 	Compress and record video data and music data in the data area of the music CD format. 
Market Logo	COMPACT disc DIGITAL AUDIO	COMPACT disc DIGITAL AUDIO GRAPHICS	COMPACT disc DIGITAL VIDEO VIDEO CD (Version 2.0 Version 1.1) ＊ Digital Vision (Version 1.0) Digital Vision Digital Vision

＊**NOTE:**

- Digital Vision Mark with frame; Playable is sound and Video.
- Digital Vision Mark without frame; No playable is sound or Video.

Fig. 1 Comparison of Optical Disc Media

2-2. Ready for Video CD "Play Back Control"

Besides motion pictures and digital sound, some new Video CD software Version 2.0 (will be explained later) comes with menu-screen data for interactive operation.
"Play Back Control" in the LX-V55EN lets you use these menus to locate desired parts of a program quickly and easily. Also, photo-like still pictures are now included in some Video CDs. With "Play Back Control", you can view these pictures at four times the resolution of ordinary moving images.

There are three type of disc in the Video CD, Version 1.0 (Digital Vision), 1.1 and 2.0.

Version 1.0 and 1.1 :
Equipped with no Playback Control Function. Playable is motion picture only.

Version 2.0 :
Equipped with Playback Control Function which permits use of menu and playback of highly precise still picture as well as motion picture.
This Playback Control is a control recorded previously on the disc, enabling users to play motion picture or still picture selected on the menu. Through selection on the menu, you can enjoy playing Video CD motion picture or high-precision still picture.

The Video CD can be classified into two, one of them is for this function while the other is not. Refer to the instruction book of the disc (cover page) or the note written on the case.

2-3. Full-Screen Picture from Both PAL & NTSC Video CDs

The LX-V55EN is equipped with a PAL AUTO / PAL / NTSC video output select switch on the Rear Panel. If you own a multi-scan TV or PAL / PAL 60 TV, switch to PAL AUTO position. Then you can always enjoy full-screen viewing of your favorite Video CDs in both the PAL and NTSC system formats - without vertical compression and black bars at the top and bottom.
(Refer to page 1-2).

2-4. MPEG (Motion Picture image coding Expert Group)

Digital picture image, which is composed of two kinds of signals (1 and 0), differs from analog picture image and compensate for deterioration and deficiency of signal. Transmission or storage can, therefore, be carried out without deteriorating the picture image.
Analog picture image, however, comes up to a vast amount of information to its disadvantage when digitized. As against 1.41 mega bit per second (1 mega = 1 million) in the case of audio signals upon digitization, the number of bits in the case of TV picture is as many as 160 mega bit.
Sending picture as it is by communication circuit or recording it on CD, etc. is inefficient. CD, which has a capacity of 6,250 mega bit, can store picture image equivalent to 39 seconds only.

Here required is a composite technique to code the information with keeping picture quality from deterioration and compress them and then return it into the original state when playback.
If this technique had been developed individually by manufacturers, neither standardization of picture quality nor compression technology could have been established. Resultant confusion would have hindered development of LSI (Large Scale Integrated Circuit). Thereupon, an international standard called MPEG1 was established at the end of 1991. This standard is used for Video CD, which compresses picture image of 160 mega bit/second to about 1/100 and records it (including sound) at the rate of 1.5 mega bit/second.

3. Service Information (Service Mode)

This unit has a self diagnosable function which detects a problem or malfunction within the unit and displays its corresponding error massage on the display of the unit as follows.

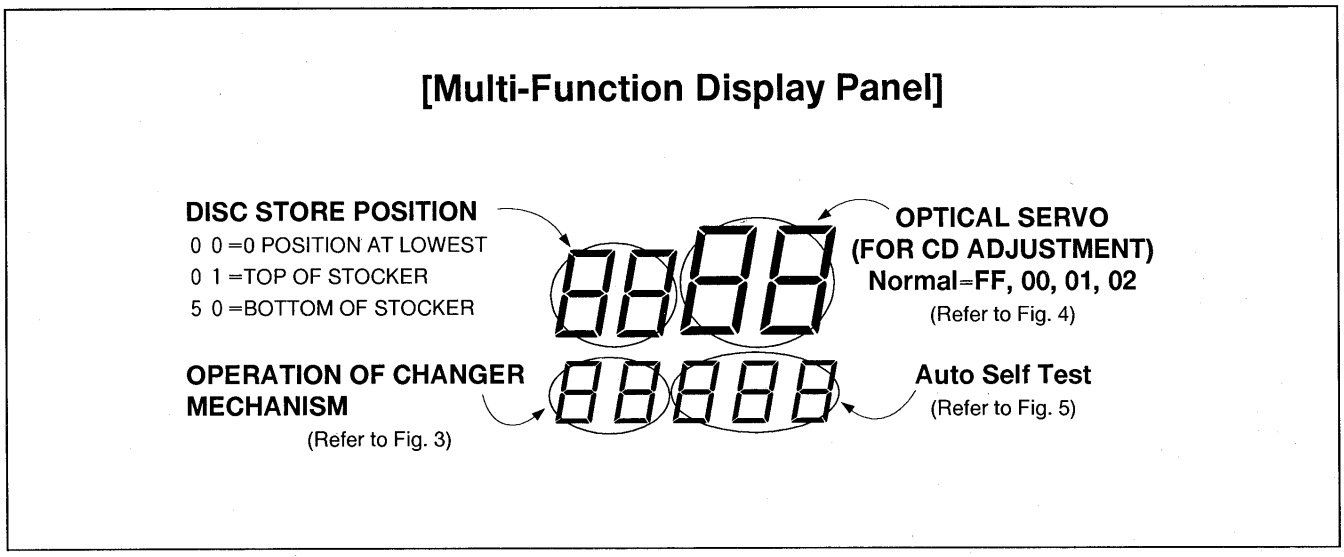


Fig. 2 Service Information Display

There are four blocks in the Service Information Display Mode, disc store position, changer mechanism operation, optical servo condition (CD adjustment) and auto self-test condition.
These modes operate independently of the detect mode number as follows and stores the fault indication in the multi function display of the unit as long as the AC power is supplied continuously.

By pressing the Stop, Play and Open/Close buttons simultaneously, the detected mode number can be displayed on the multi function display of the unit.

Changer Mechanism Operation

NUMBER	FUNCTION	NUMBER	FUNCTION
0 1	POWER OFF	1 3	DISC SCAN
0 2	POWER ON	1 4	PAUSE
0 9	TRANSITION	5 0	STOP
1 0	NORMAL PLAY	5 1	DURING STOCKER CARRY IN OPERATION
1 1	STOP PLAYING	5 2	DURING STOCKER CARRY OUT OPERATION
1 2	DISC ACCESS	5 3	DURING SEARCH PLAYBACK DISC

Fig. 3 Changer Mechanism Operation

Optical Servo Condition (CD Adjustment)

○=NORMAL ×=NG

	F F	0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	1 0	1 1	1 2	1 3	1 4	1 5
OPTICAL SERVO CONDITION	NOR	NOR	NG	NOR	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
FO AOC FOCUS OFFSET	○	○	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TR AOC TRACKING OFFSET	○	○	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○
FO PRE AGC FOCUS GAIN	○	○	×	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TR PRE AGC TRACKING GAIN	○	○	—	○	×	○	×	○	×	○	×	○	×	○	×	○	×
TR ABC TRACKING BALANCE	○	○	—	×	×	○	○	×	×	○	○	×	×	○	○	×	×
FO FINE ABC FOCUS BALANCE	○	○	—	○	○	×	×	×	×	○	○	○	○	×	×	×	×
TR/FO FINE AGC	○	○	—	○	○	○	○	○	○	×	×	×	×	×	×	×	×

EXAMPLE: F F =NORMAL (NOT ADJUSTED) 0 0 =NORMAL (DISC EXISTS) 0 2 =NORMAL
0 3 =NG OF OPTICAL PRE TRACKING GAIN AND BALANCE

Fig. 4 Optical Servo Condition (CD Adjustment)

Auto self Test (Self-Diagnostic Function for Error Message)

Error Message	Problem	Phenomenon/Condition	Remedy	Service Point
U 50	**Double Disc Error**	When removing the stored disc, the disc exists on the tray of 0 position.	Check existense of disc in the tray. Remove the disc by Open/Close button.	
U 51	**Focus Error**	Disc is detected by the changer mechanism, but the optical servo can't be detected.	Check the back side setting of disc. Cleaning of disc.	• Output of syscon • Condition of mechanism • Traverse
U 52	**Disc detection Error**	Disc det. sensor can't detect the disc by reason of abnormal disc position.	Check the disc position. Cleaning of disc.	• Output of syscon • Condition of mechanism • Traverse
H 01	**Loading Error**	Open/Close of the loading tray does not finish less than in 4 seconds.	Check the disc position.	• Output of syscon • Condition of mechanism • Drive Circuit • Motor
H 51	**Disc Store Error**	Movement to store position of the stooker tray does not less than in 8 seconds. (try three times.)	Try once more after the power has turned on/off. If the same display appears, repair is required.	• Output of syscon • Condition of mechanism • Drive Circuit • Motor
H 52	**Disc Removal Error**	Movement to removal position of the stooker tray does not less than in 8 seconds. (try three times.)	Try once more after the power has turned on/off. If the same display appears, repair is required.	• Output of syscon • Condition of mechanism • Drive Circuit • Motor
H 53	**Disc Play Position Shift Error**	The movement of stocker tray to the disc play position can't complete in 4 seconds. (try three times.)	Try once more after the power has turned on/off. If the same display appears, repair is required.	• Output of syscon • Condition of mechanism • Drive Circuit • Motor
H 54	**Elevator Operation Error**	It can't reach to the object position in 7 seconds or less from beginning of elevation operation. (try 2 times.)	Try once more after the power has turned on/off. If the same display appears, repair is required.	• Output of syscon • Drive Circuit • Motor • FG • Elevator Mechanism • Elevator Senser
H 55	**Elevation Position Detection Error (Over Run Error)**	Elevation position can't determine by reason of much mount of over run to the final position. (try three times.)	Try once more after the power has turned on/off. If the same display appears, repair is required.	• Output of syscon • Drive Circuit • Motor • FG • Elevator Mechanism • Elevator Senser

Fig.5 Auto Self-Test (Detected Number)

4. How to Remove the Disc

4-1. How to remove the disc from disc tray --- Refer to Fig. D6

4-2. How to remove the disc from stocker tray --- Refer to Fig. D7

4-3. How to remove the disc from traverse unit

Remove 2 Screws and the clamp plate. Then, carefully remove the disc.
When the stocker tray remain on the traverse unit, unlock the locking and then, put a stocker tray back on the shelf.

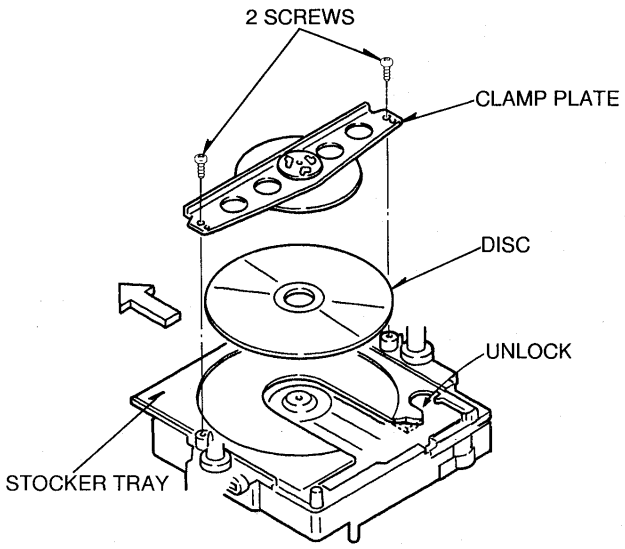


Fig. 6 Removal of the Disc from Traverse Unit

5. Self-Test Mode

(If you have any problem (stop halfway) in this mode, please check the stoped position 2 or 3 times.)

This unit has an automatic self-test function which is used to check the changer mechanism movement.

1. The Self-Test Mode operates no disc condition in the stoker tray. So, remove all discs from stoker tray.
2. Set the CD disc on the tray and press the open/close button.
3. Press the Stop button while pressing the Pause and Balance On/Off (refer to page 1-9) buttons simultaneously.
   After that, the unit itself automatically start to repeat following operation (Fig. 7).

During above operation, if the unusual mechanical movement is happened, the microprocessor places the unit in the detected condition and indicate the detected number (see Fig. 5) on the multi function display of the unit.
These number information will be stored at the microprocessor as long as the AC power is supplied continuously.

NO	TRANSIT ORDER (STORE POSITION)
1	1-2-3-4-5-6-7-8——0 POSITION
2	9-10-11-12-13-14-15-16——0 POSITION
3	17-18-19-20-21-22-23-24——0 POSITION
4	25-26-27-28-29-30-31-32——0 POSITION
5	33-34-35-36-37-38-39-40——0 POSITION
6	50-41-49-42-48-43-47-44——0 POSITION
7	46-45-RANDOM—REMOVAL

Fig. 7 Transit order of Store Position

6. EEPROM (IC6203) Initialization

6-1. When replacing the EEPROM (IC6203) on the System Control C.B.A., its IC should be initialized.

6-2. When removing the disc from stocker tray for service, its EEPROM should be initialized because of the EEPROM is memorized there is disc or not in each stocker tray (tray 1 to 50).

It should be performed before setting the disc to each stocker tray.

Method;
Connect a jumper wire between CPTEST and GND on the System Control C.B.A.. Then, press the Chapter Stop, Play and Open/Close buttons simultaneously.
After finishing the initialization, remove a jumper wire.

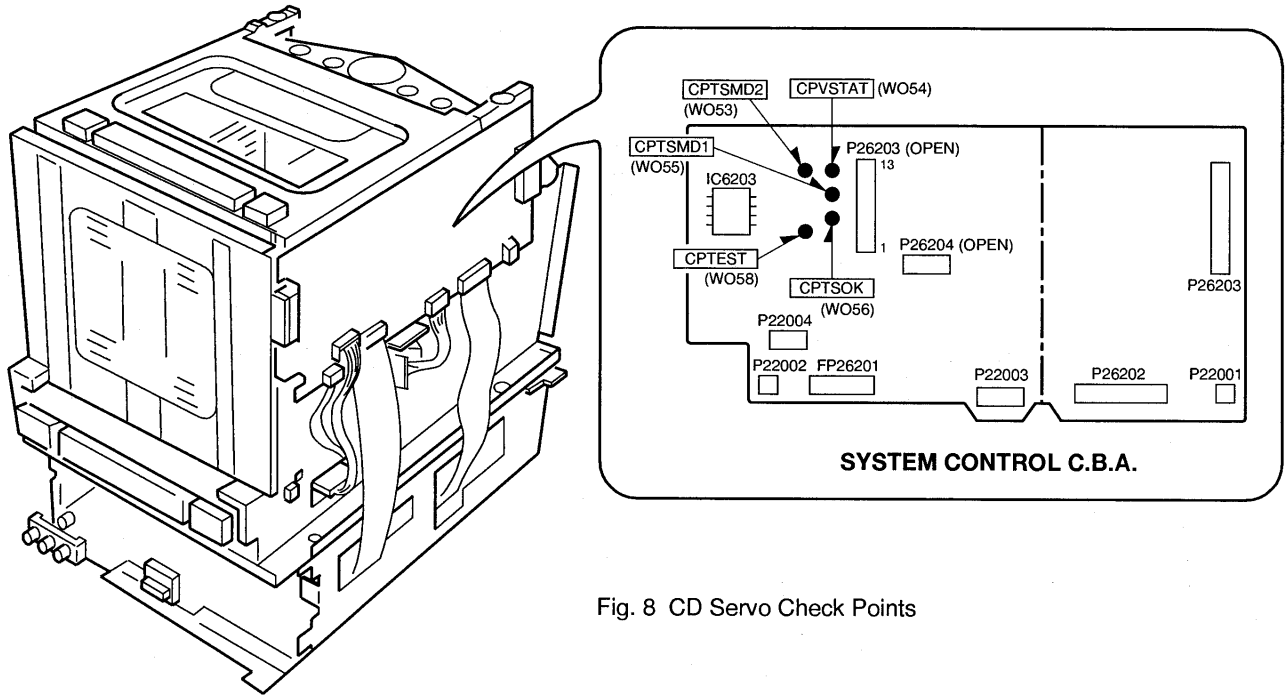


Fig. 8 CD Servo Check Points

7. How to check the CD Servo C.B.A.

1. Remove top cover and rear plate. (see Fig. D1 and D2)
2. Remove CD Servo with mechanism chassis. (see Fig. D11)
3. Connect the jumper wire between CPTEST, CPTSMD1, CPTSMD2 and D.GND on the System Control C.B.A. as shown in Fig. 8.
4. Prepare for clamper to play the CD disc by removing the clamp plate as shown in Fig. 9.
5. Set the CD disc in the tray because of there is disc detect sensor.
6. Press Play button. In this time, quickly set the other Test Disc on the Traverse Unit after finishing the initial operation.

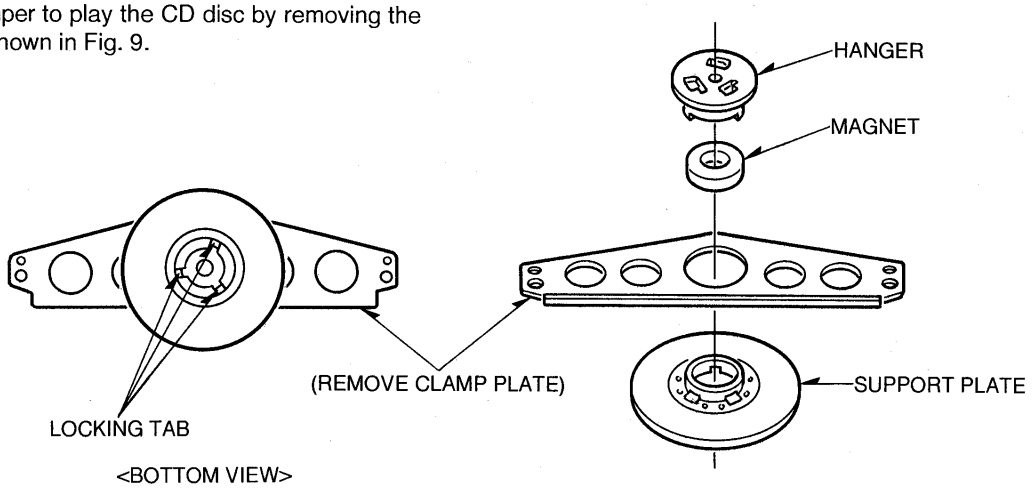
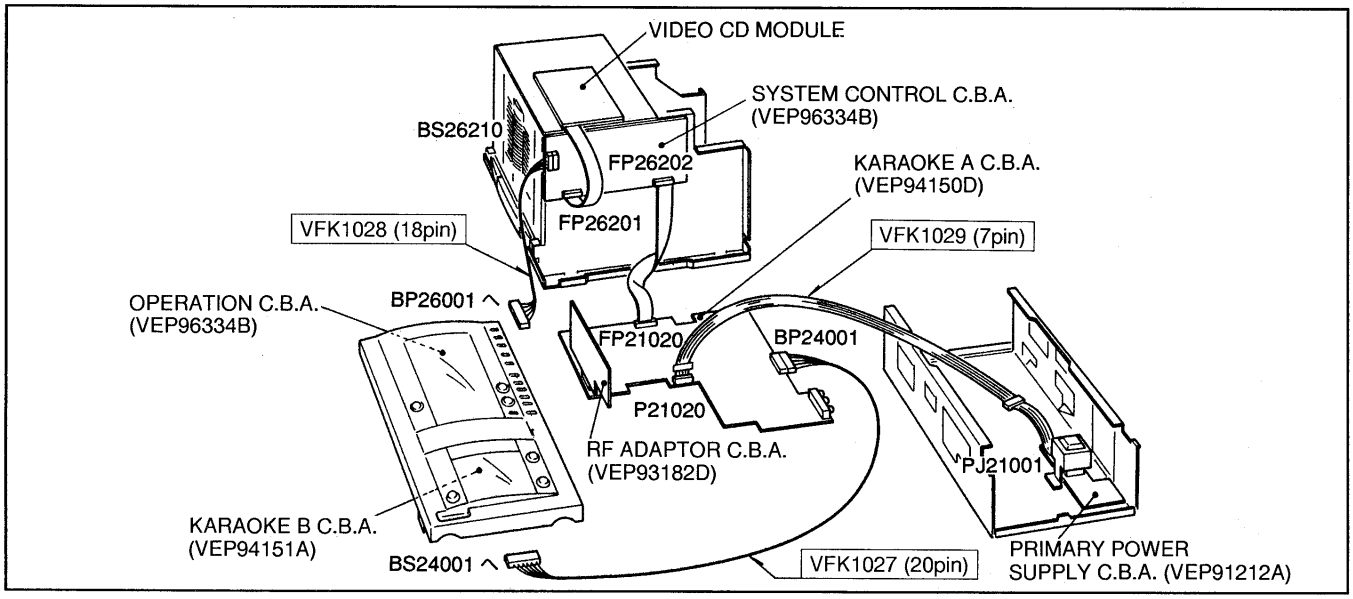


Fig. 9 Disc Clamper

8. Service Position and Video CD Test Disc

CONNECTION OF EXTENSION CABLE



VIDEO CD STANDARD TEST DISC PART NO. PVCD-K06

MENU NUMBER	SEQUENCE NUMBER	TRACK NUMBER	REC TIME (Min.:Sec.)	RECORDED VIDEO	RECORDED AUDIO
1	3	4	3 : 00	VCD COLOR BAR	VCD 1KHz 0dB
2	4	5	1 : 30	VCD 16KHz Emp ON	VCD 16KHz 0dB Emp ON
3	1	2	4 : 17	VCD NTSC	VCD
4	2	3	4 : 02	VCD NTSC	VCD
5	5	6	4 : 17	VCD PAL	VCD
6	6	7	1 : 58	VCD FILM	VCD
7	—	1	—	VCD NTSC STILL PICTURE 2 PIECES	—
8	—	1	—	VCD PAL STILL PICTURE 2 PIECES	—
9	1 4	1 5	3 : 00	CD-G COLOR BAR	CD-DA 1KHz 0dB
1 0	7	8	2 : 00	VCD NTSC 50% GRAY	VCD 100Hz 20dB
1 1	8	9	2 : 00	VCD NTSC MULTI BURST	VCD 1KHz 20dB
1 2	9	1 0	2 : 00	VCD NTSC MOD RAMP	VCD 10KHz 20dB
1 3	1 0	1 1	2 : 00	VCD NTSC H SWEEP	VCD 20KHz 20dB
1 4	1 1	1 2	2 : 00	VCD NTSC 5 STEP	VCD 1KHz 60dB
1 5	1 2	1 3	4 : 00	VCD NTSC AV SYNC TEST	TIME CODE
1 6	—	1	—	VCD NTSC COLOR BAR STILL PICTURE	—
1 7	—	1	—	VCD NTSC MONOSCOPE STILL PICTURE	—
1 8	—	1	—	VCD NTSC 50% GRAY STILL PICTURE	—
1 9	—	1	—	VCD NTSC MULTI BURST STILL PICTURE	—
2 0	—	1	—	VCD NTSC MOD RAMP STILL PICTURE	—
2 1	—	1	—	VCD NTSC H SWEEP STILL PICTURE	—
2 2	—	1	—	VCD NTSC 5 STEP STILL PICTURE	—
2 3	1 3	1 4	3 : 00	CD-G KARAOKE VIDEO	CD-DA KARAOKE AUDIO
2 4	1 5	1 6	1 : 30	—	CD-DA 16KHz 0dB Emp ON
2 5	1 6	1 7	0 : 30	—	CD-DA 100Hz 20dB
2 6	1 7	1 8	3 : 00	—	CD-DA 1KHz 20dB
2 7	1 8	1 9	3 : 00	—	CD-DA 10KHz 20dB
2 8	1 9	2 0	3 : 00	—	CD-DA 20KHz 20dB
2 9	2 0	2 1	3 : 00	—	CD-DA 1KHz 60dB
3 0	—	—	—	END LIST	END LIST

NOTE: This table listed mainly for Video CD Ver.2.0 Playback Control Function.
MENU NO. is the Selection Number when the Menu Function is used with Video CD.
SEQUENCE NO. is the Selection Number when Menu Function is not used with Video CD.

Flg 10. Connection of Extension Cable and Video CD Test Disc

9. Location of the Switch and C.B.A.

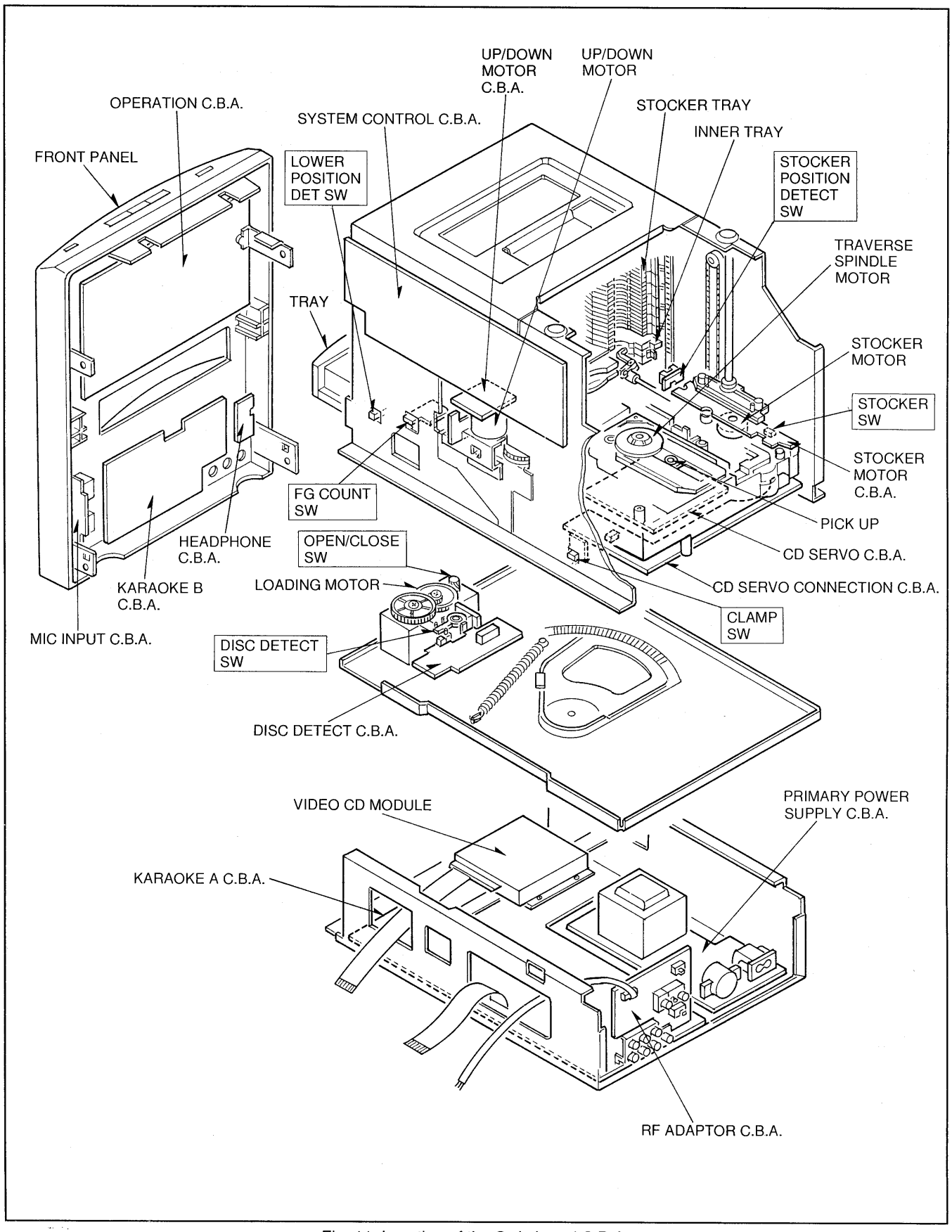


Fig. 11 Location of the Switch and C.B.A.

SECTION 2
ADJUSTMENT PROCEDURES

1. Disassembly Method

1. Removal of the Top Cover

REMOVE ----- 3 Screws (A)
REMOVE ----- 6 Screws (B)

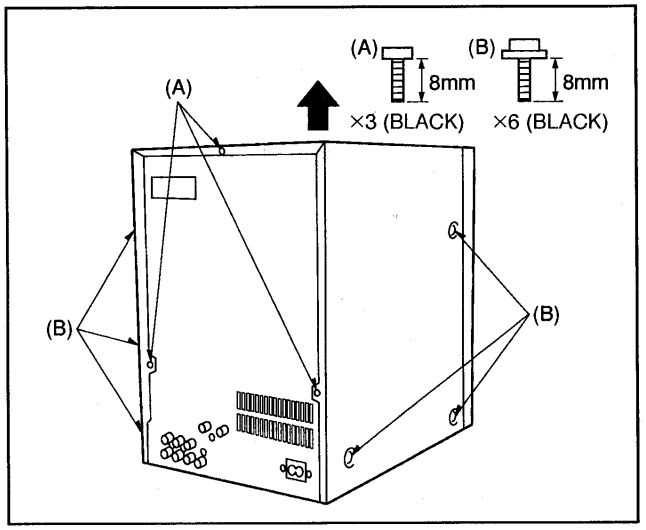


Fig. D1

2. Removal of the Rear Plate

REMOVE ----- 9 Screws (C)

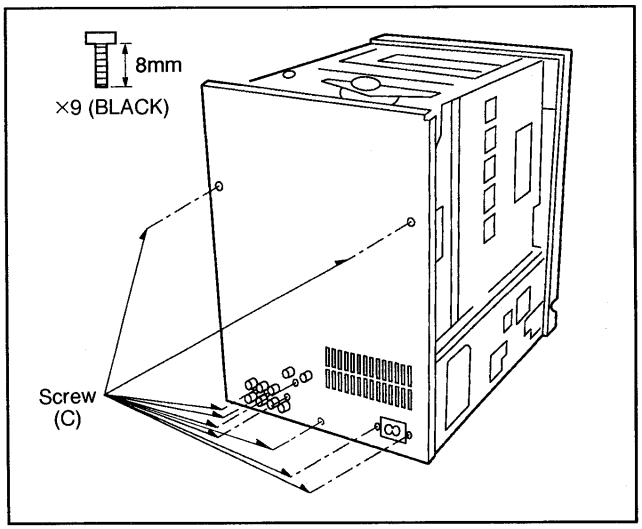


Fig. D2

3. Removal of the Front Panel

REMOVE ----- Cover for Output Terminal on the Front Panel.
UNLOCK ---- 4 Tabs (D)

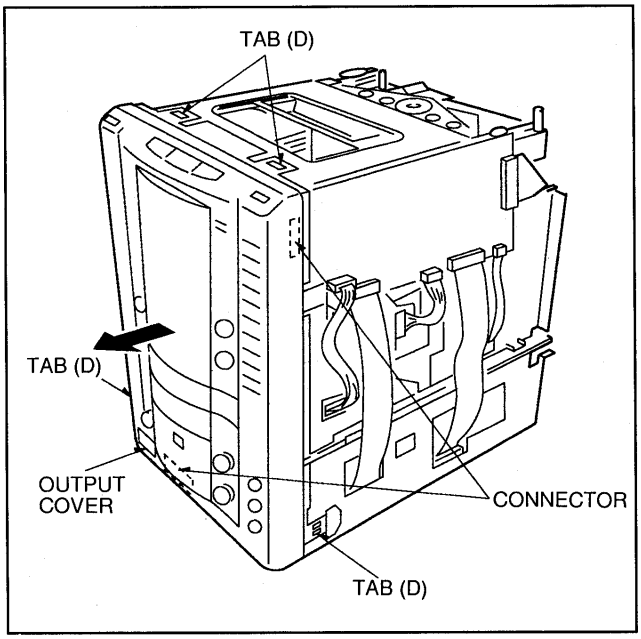


Fig. D3

Note;
Since there are 2 connectors on the Front Panel, please take care when removing the Front Panel.

2. Disassembly Procedures of Mechanism

Work with extreme care when there is the disc inside the Tray Compartments. And also, before start to remove mechanical parts, please make sure that take disc out of unit.

1. Disassembly Method for Changer Mechanism

The changer mechanism can be separated upper and lower side by removing 4 Screws (D), 3pin cable (P26211) and 2 Flat Cable.

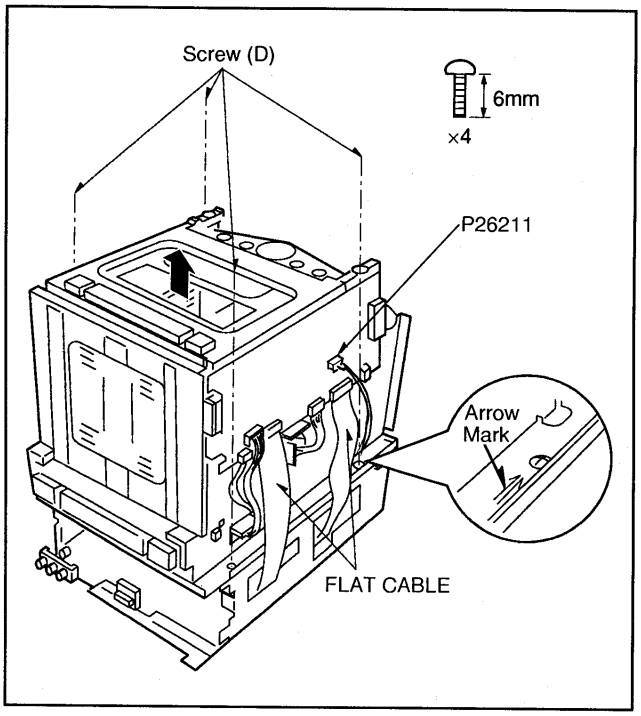


Fig. D4

1-1. Replacement of the Tray and Stocker Tray

<<Removal of the Tray>>

1. Tray

When the tray can not be ejected normally, it is possible to eject the tray manually as follows.

<Battery Eject Method of the Tray>

Connect the Battery (Manganese-Type R6 (AA) 3 pcs./+4.5V) to W24 and W25 terminals.

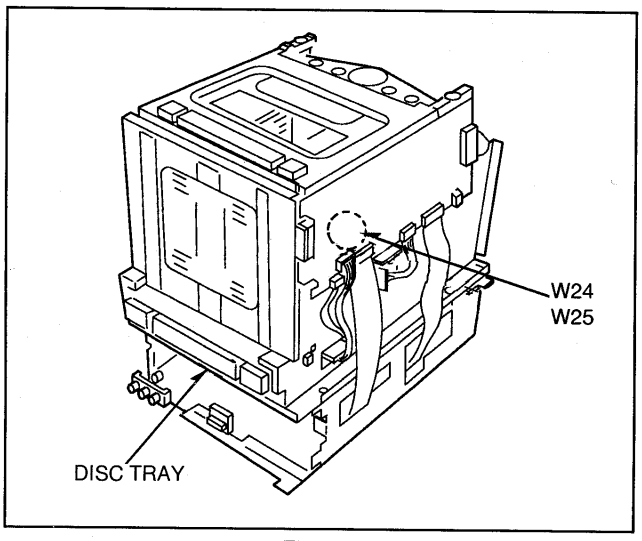


Fig. D5

<Manual Eject Method of the Tray>

1. Remove the top panel (Fig. D1) and front panel (Fig. D3).
2. Loosen the Black Screw and then slowly turn the intermittent gear counter-clockwise.
3. Carefully pull out the tray toward the front side by unlocking (pulling) the Locking Tab (E).

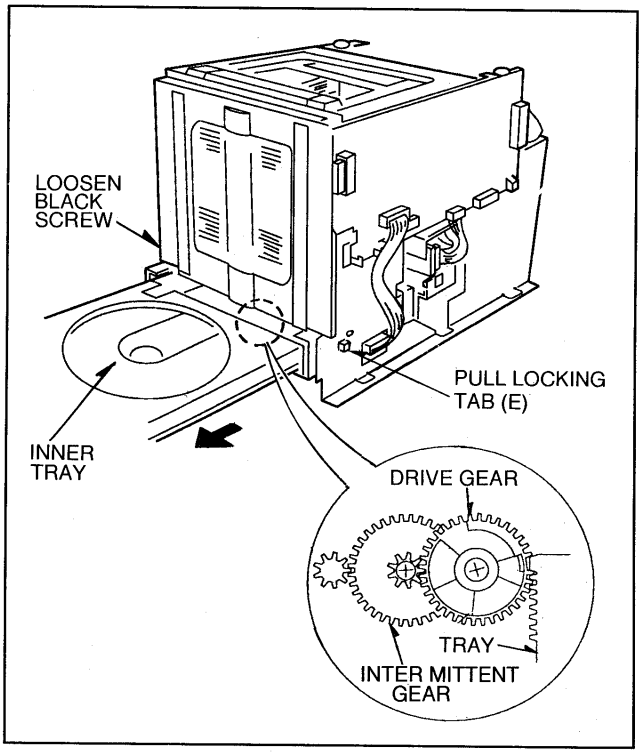


Fig. D6

2. Stocker Tray

1. Unlock the tray stopper after removing the top panel (Fig. D1) and rear panel (Fig. D2).
2. Carefully pull out the stocker tray toward the rear side.

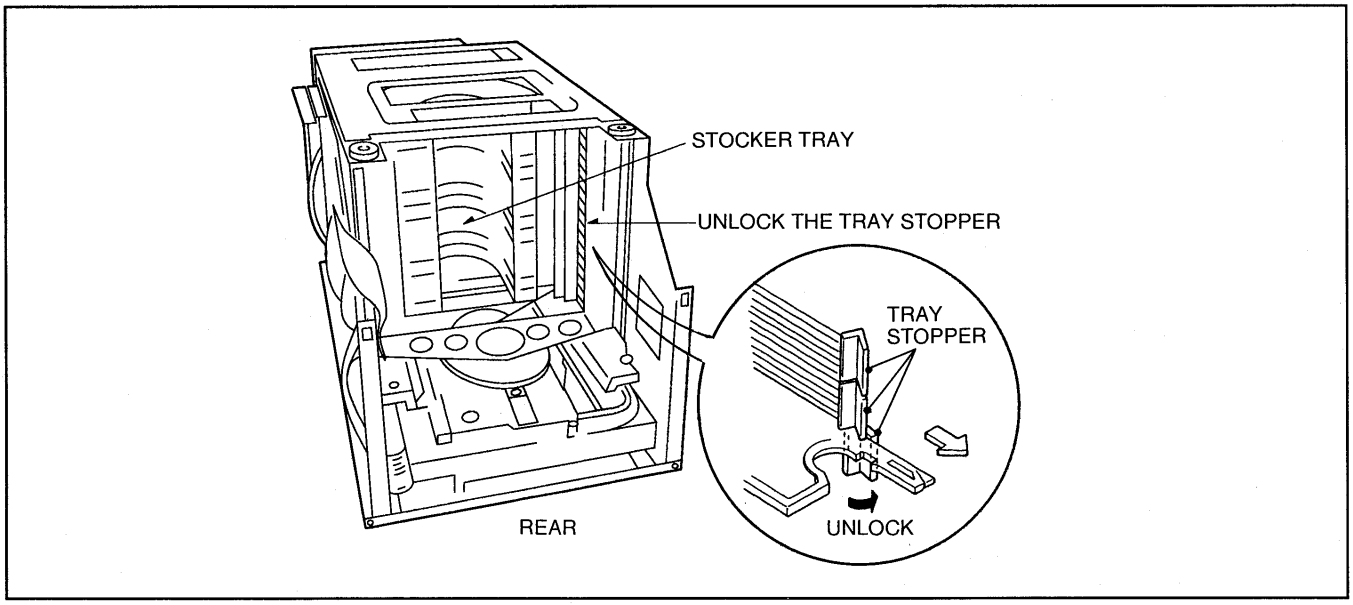


Fig. D7

<<Installation of the Tray>>

3. Tray

1. Turn the tray drive gear fully clockwise.
2. Then, install the tray so that the Mark (A) on the tray drive gear meets first gear (saw-tooth) of the tray.
3. Tighten the Black Screw (see Fig. D6). After that, please make sure that the tray is moved smoothly.

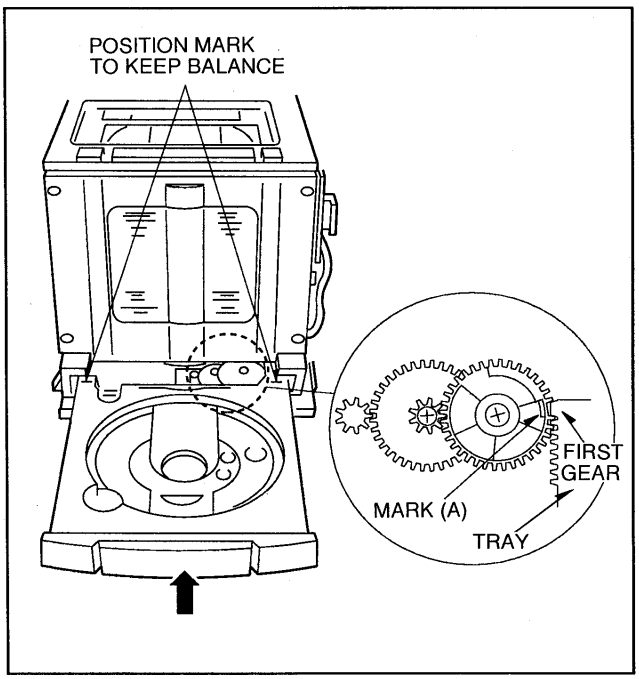


Fig. D8

4. Stocker Tray

Install the tray one by one as shown in Fig. D9.

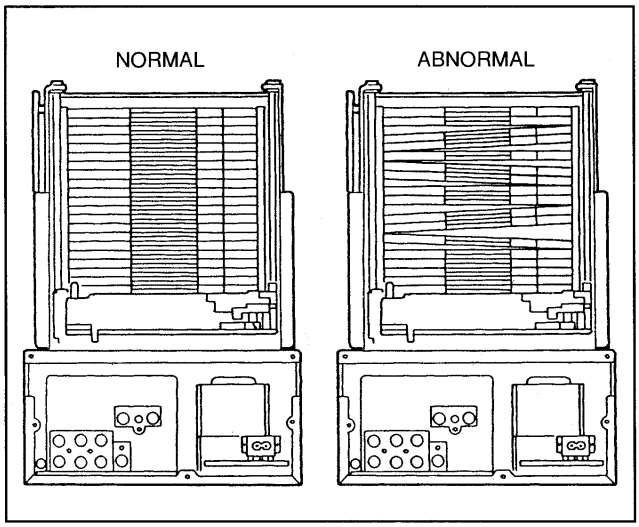


Fig. D9

2. Disassembly Method for Mechanism Chassis (Traverse)

<<Removal of the Mechanism Chassis>>

1. Set the mechanism chassis to middle position by turning the warm pulley gear.
2. Disconnect the flat cable (FP26203) and then , remove the spring for flat cable.

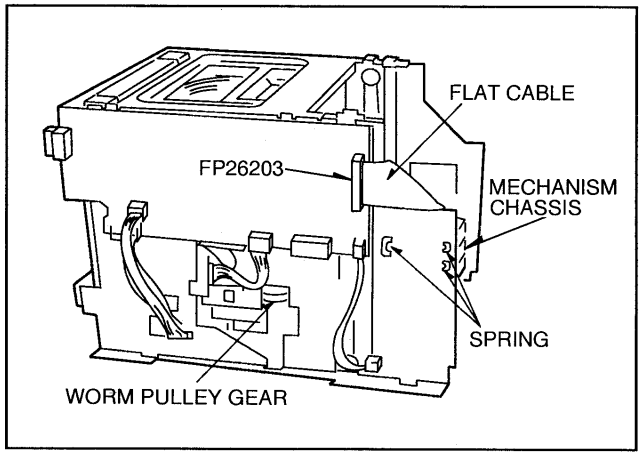


Fig. D10

3. Remove 2 Screws (F) and clamp plate.
4. Remove 2 Screws (G) to remove the mechanism chassis, while supporting the mechanism chassis with your hand to avoid fall because of the mechanism chassis is kept by 4 screws.

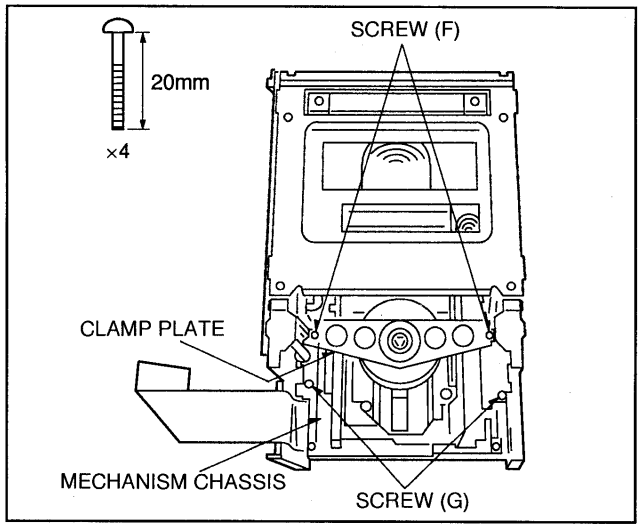


Fig. D11

<<Installation of the Mechanism Chassis>>

1. Set the guide (L) and (R) (mechanism chassis support piece) to middle position by turning the warm pulley gear.
2. Set the mechanism chassis to guide (L) and (R) from bottom side and then, install 2 Screws (G) (see Fig D11).
3. Set the clamp plate and 2 screws (F) (see Fig. D11)
4. Set the flat cable to spring and then, install the flat cable to FP26203.

3. Disassembly Method of Traverse Section

3-1. Replacement of the Traverse

1. Remove 2 Screws (H) (bottom side of the traverse section) and then, carefully take out the Connection C.B.A.. (Please be careful the connector P22102 and P22105)

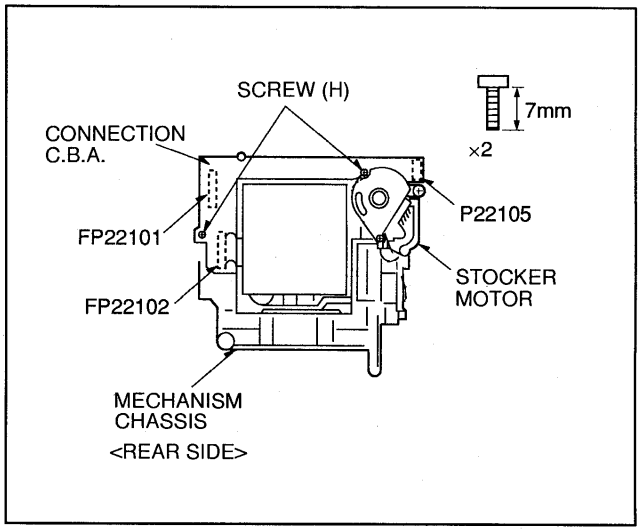


Fig. D12

2. Unlock the Locking Tab (H) on the mechanism chassis and then, shift the slider (L) and (R) so that the square position of slider (L) meets flame square position. Then, remove traverse unit.

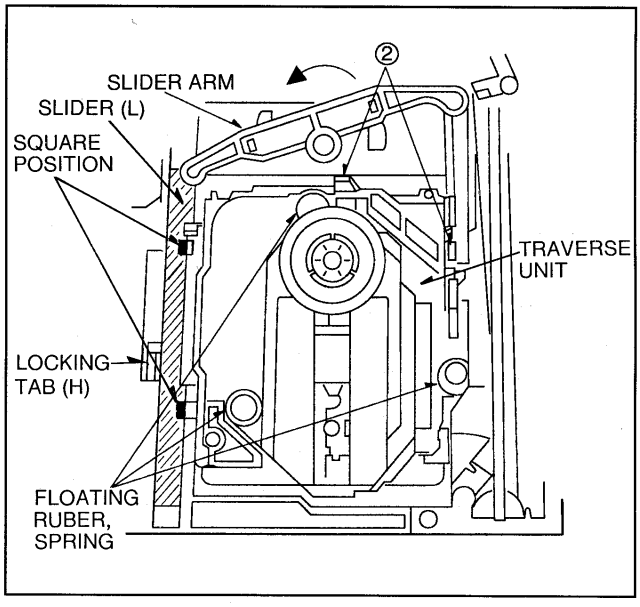


Fig. D13

3-2. Replacement of the Pick-up Unit

1. Remove 3 Screws (I) and unsolder 4 lead wires for the traverse and spindle motor.

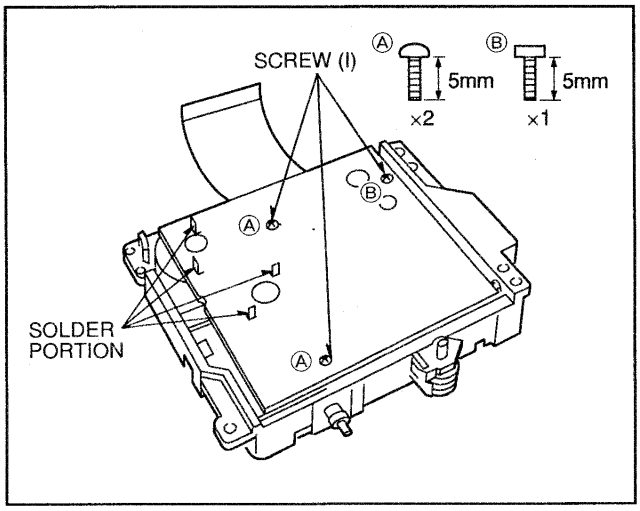


Fig. D14

2. Disconnect the flat cable CN701. (be sure to short flat cable to prevent the breakdown of the laser diode)
3. Unlock the Locking Tab (J) and remove floating pin and floating spring.
4. Unlock the Locking Tab (K) and remove the pick-up unit.

To prevent the Rest Switch S701, when changing the pick-up unit, shift the pick-up unit to outer side of the pick-up mark by turning the traverse shaft. Then, install the servo C.B.A..

When reassembling, perform the steps in reverse order.

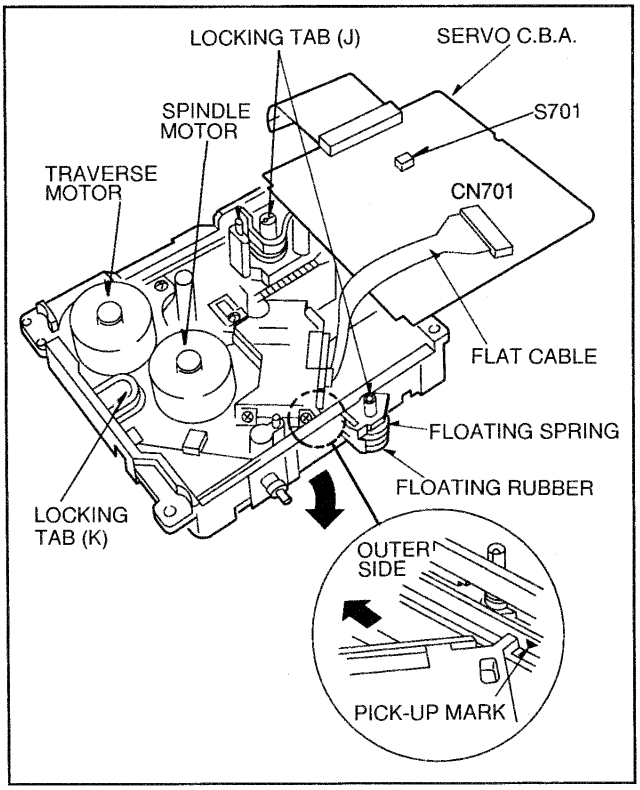


Fig. D15

3-3. Replacement of the Mechanism Chassis

<Removal of the Top Side>

1. Remove a Spring (L) and stopper arm.
2. Remove 2 Screws (M) and shaft holder.

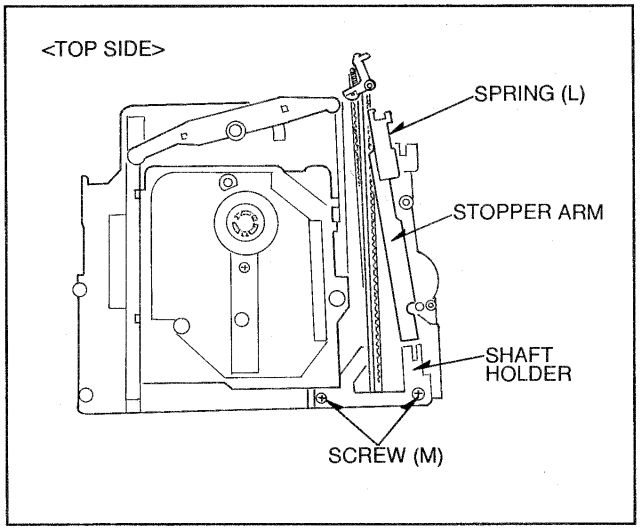


Fig. D16

<Removal of the Bottom Side>

1. Remove 2 Screws (G) and Connection C.B.A..
2. Remove 2 Screws (N) and gear cover.

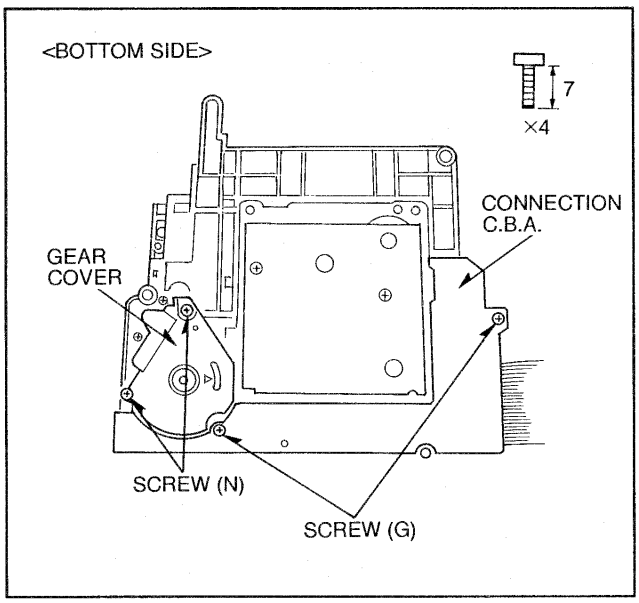


Fig. D17

3. Remove following gears.

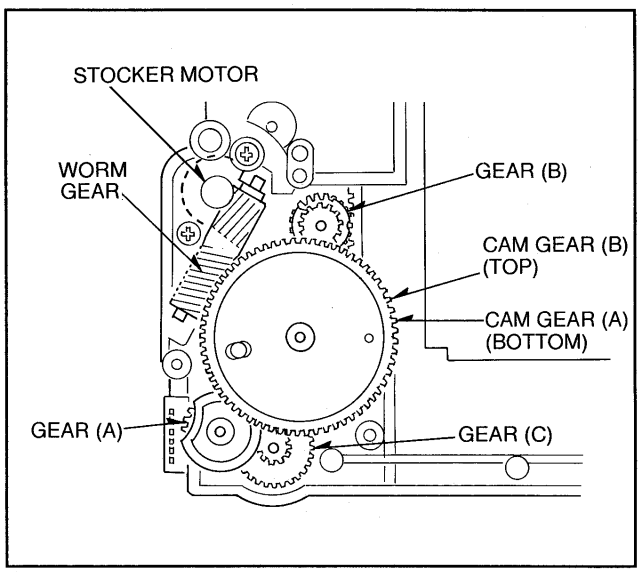


Fig. D18

<Installation of the Bottom Side>

1. Push the hook slider fully toward the top side as shown in Fig. D19 and fix it with cellophane tape or something.

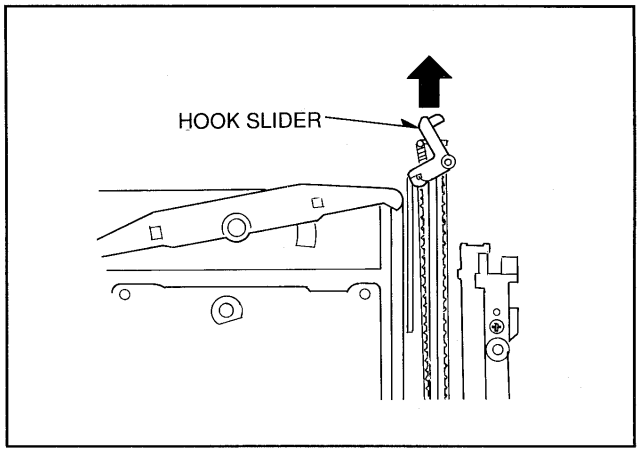


Fig. D19

2. Push the slider (L) fully toward the top side (traverse down condition). Then, install gear (B) so that the phase mark of the slide (L) meets the mark of the gear (B).
3. Install the gear (C) so that the mark of the gear (C) meets the shaft of the gear (A).

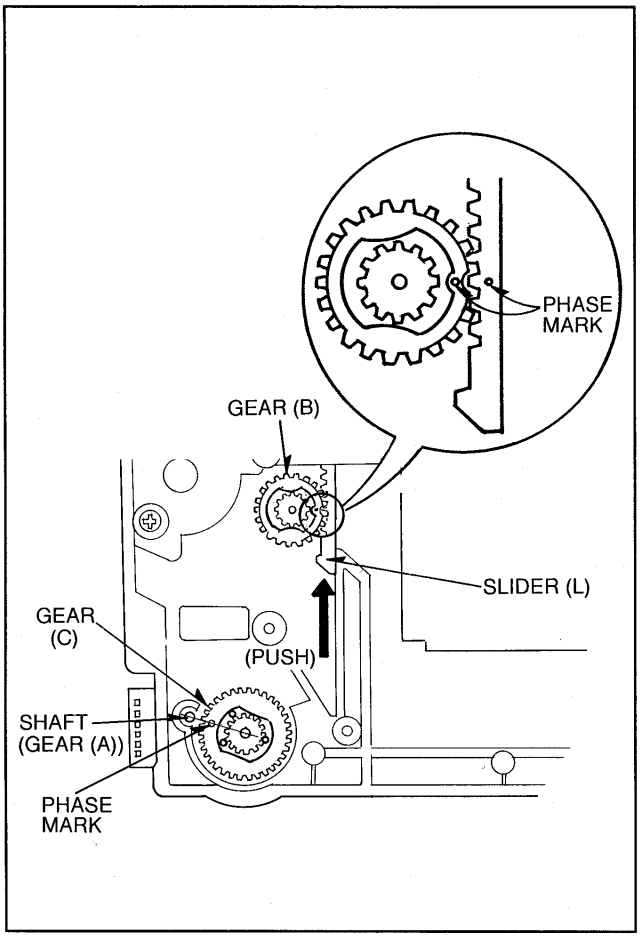


Fig. D20

4. Install the cam gear (A) so that the phase pin of the cam gear (A) meets the shaft of the gear (A).
5. Install the gear (A) so that the phase mark of the gear (A) meets the shaft of the gear (C).

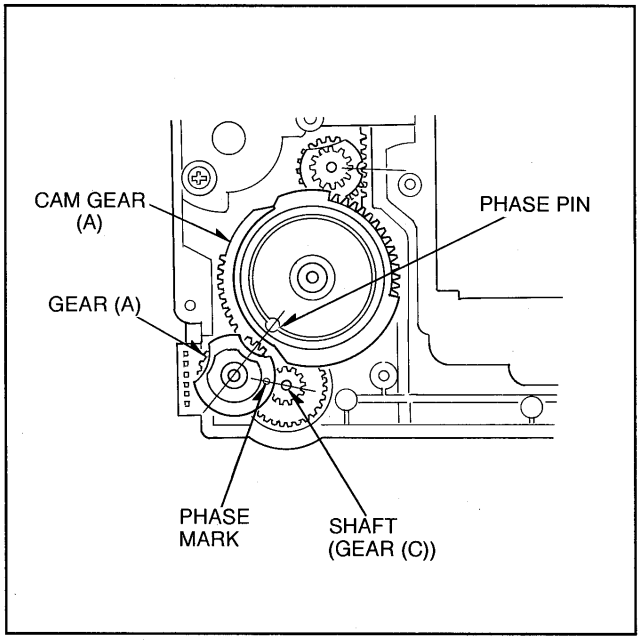


Fig. D21

6. Install the cam gear (B) so that the phase pin of the cam gear (A) meets the hole of the cam gear (B) and then, turn the cam gear (B) fully clockwise as shown in Fig. D22.
7. Install the worm gear.

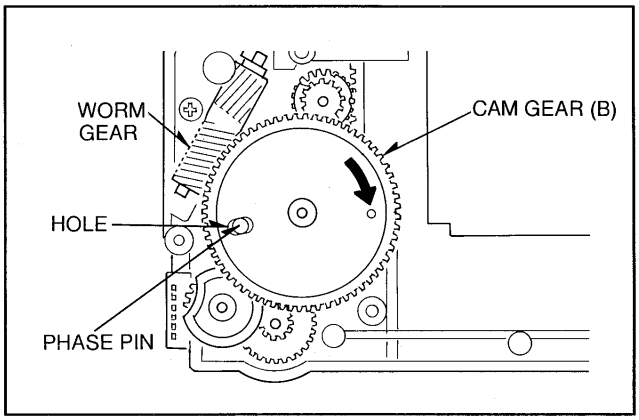


Fig. D22

8. Install the gear cover and then, confirm the position of the gear phase between delta mark of the gear cover and phase mark of the cam gear (B). Then, set the gear cover by 2 Screws (N).
   If missing the gear phase alignment, reassemble the bottom side.

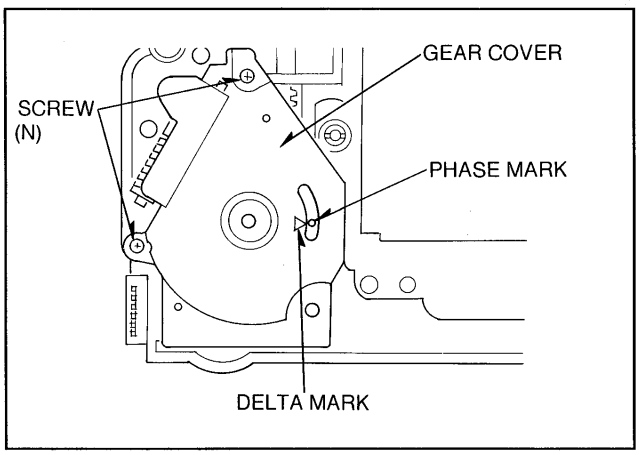


Fig. D23

9. After installation of each gear, confirm that the shaft of the stopper arm on the top side meets the slot of the Cam Gear (A).
   Then, remove a cellophane tape on the hook slider.

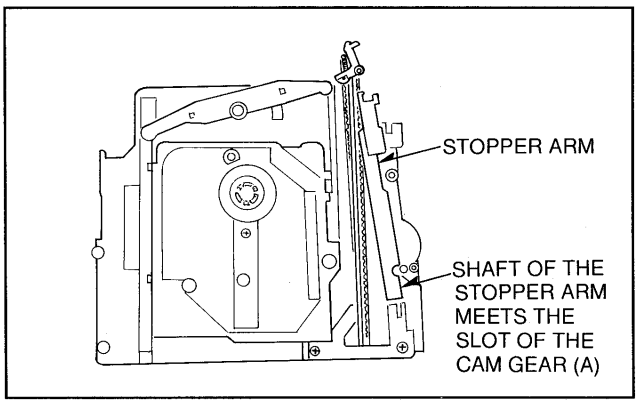


Fig. D24

4. Disassembly Method of Tray Drive Section

<Removal>

1. Set the mechanism chassis to top side by turning the worm pulley gear as shown in Fig. D10.
2. Remove 4 Screws (P), connector P22101 and stocker base.

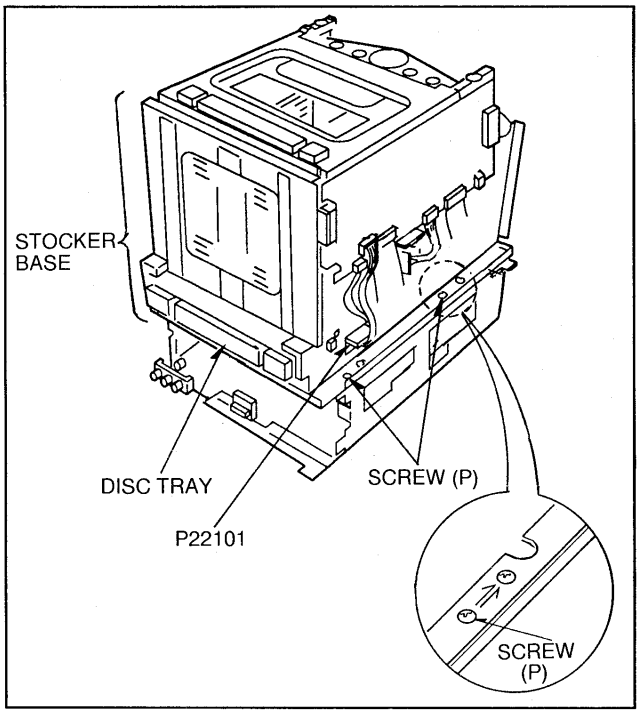


Fig. D25

<Installation>

1. Set the mechanism chassis to top side by turning the worm pulley gear as shown in Fig. D10.
2. Turn the tray drive gear fully clockwise as shown in Fig. D26. Then, install the tray as shown in Fig. D8.

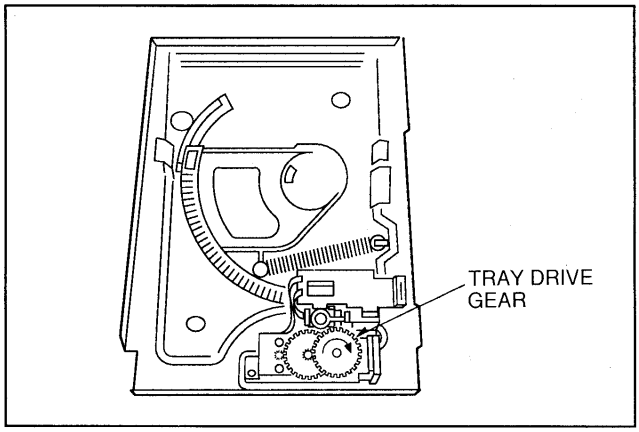


Fig. D26

NOTE;
This unit has an automatic self-test function which is used to check the changer mechanism movement as shown in Fig 7. So, after disassembly of the mechanism, confirm the changer mechanism movement by using this self-test function.

3. ELECTRICAL ADJUSTMENT PROCEDURES

3-1. Test Equipment

To perform the electrical adjustment following equipment is required.

1. Dual-Trace Oscilloscope
Voltage Range : 0.005-50V/div
Frequency Range : DC-20MHz
Proves : 10:1 or 1:1
2. Hex. Wrench (SZZP1101C: mm)
3. Test Disc
CD Test Disc (SZZP1056C / SZZP1054C ; supplied from Audio Div.)
VCD Test Disc (PVCD K06 ; supplied from Audio Div.)

3-2. Traverse (Tangential) Adjustment

When replacing the Traverse unit, this adjustment is not required.

TP : Tj701 (HOT) / Tj702 (GND)
ADJ. : Tangential Adj. Screws (A) / (B)
DISC : SZZP1056C (Track 19)
MODE : Play
M.EQ. : Oscilloscope
SPEC : RF signal is maximum

1. Remove top cover and rear panel (see Fig. D1 and D2)
2. Set the CD Test Disc (SZZP1056C) to 50th position in the stocker tray.
3. Connect the oscilloscope to Tj701 (HOT) and Tj702 (GND).
4. Play back track 19 of the CD Test Disc.
5. Adjust Tangential Adj. Screws (A) and (B) with Hex. Wrench (SZZP1101C) so that the width (W) of the RF signal is maximized as shown in Fig. E1 and E2.

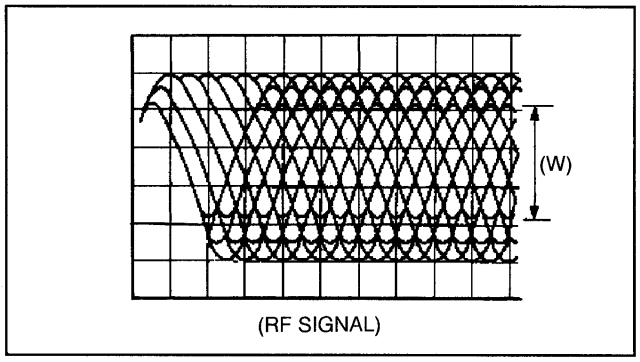


Fig. E2

6. After adjustment, confirm the following modes;
   (1) Skip Search and Manual Search
   (2) Play back tracks 0.7mm Black Dot and Interruption position of the CD Test Disc (SZZP1054C) and play back inner side of the CD Test Disc (SZZP1056C) and then, confirm that there is no skip of playbacked sound.
   (3) Play back the VCD Test Disc (PVCD K06) and confirm the picture quality.

3-3. AFC Adjustment

TP : TP23001
ADJ. : VR23001
DISC : PVCD K06
MODE : Play
M.EQ. : Oscilloscope
SPEC : 2.1 +- 0.1 usec

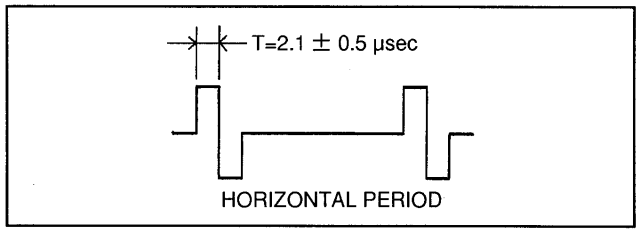


Fig. E3

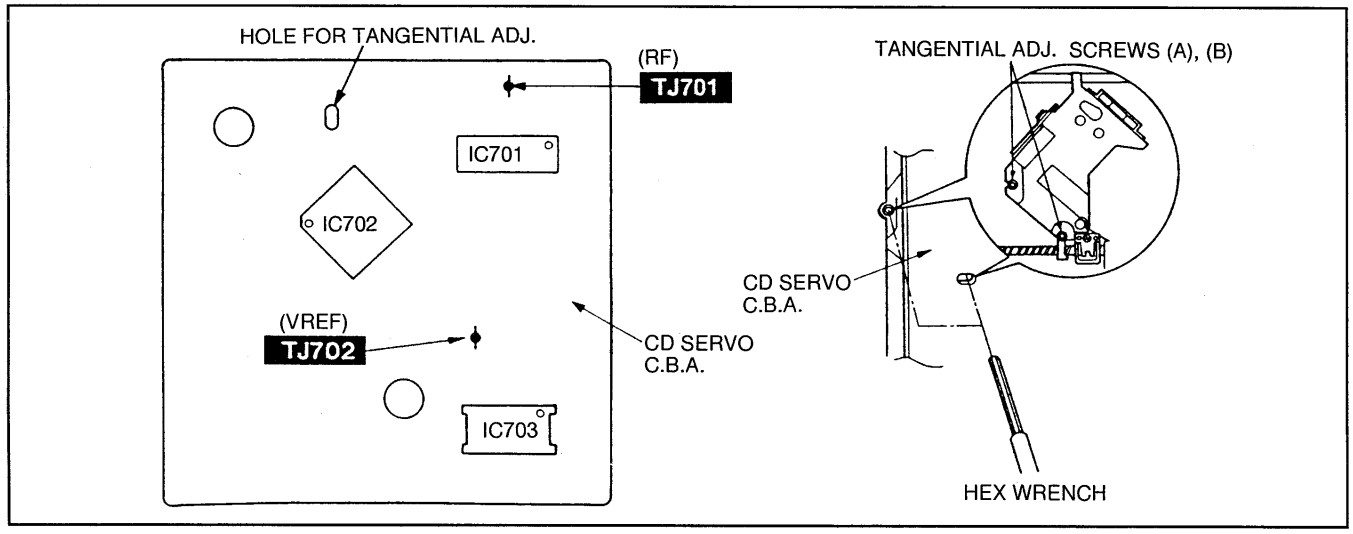
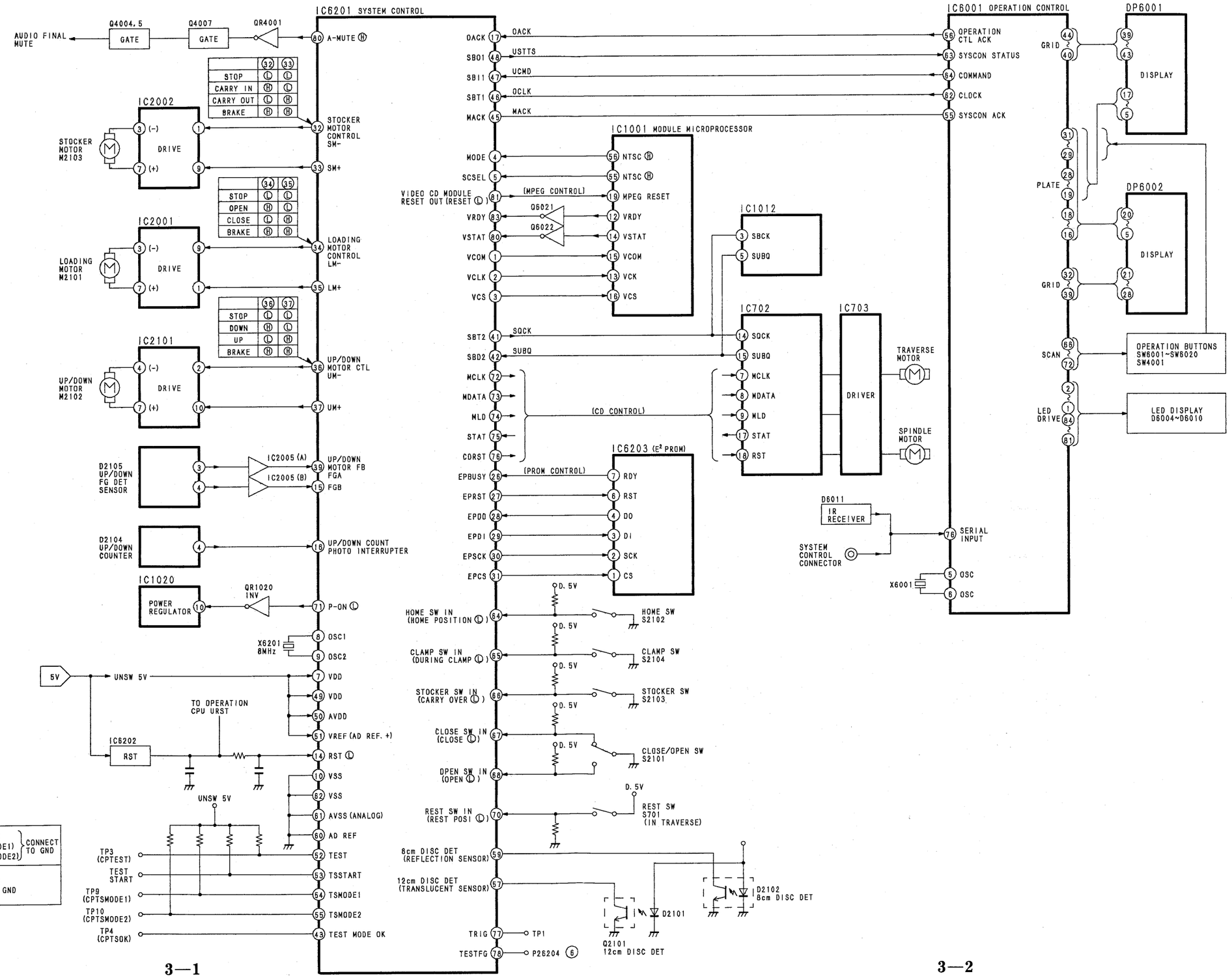


Fig. E1

MEMO

SECTION 3 BLOCK DIAGRAMS, SCHEMATIC DIAGRAMS AND CIRCUIT BOARD DIAGRAMS

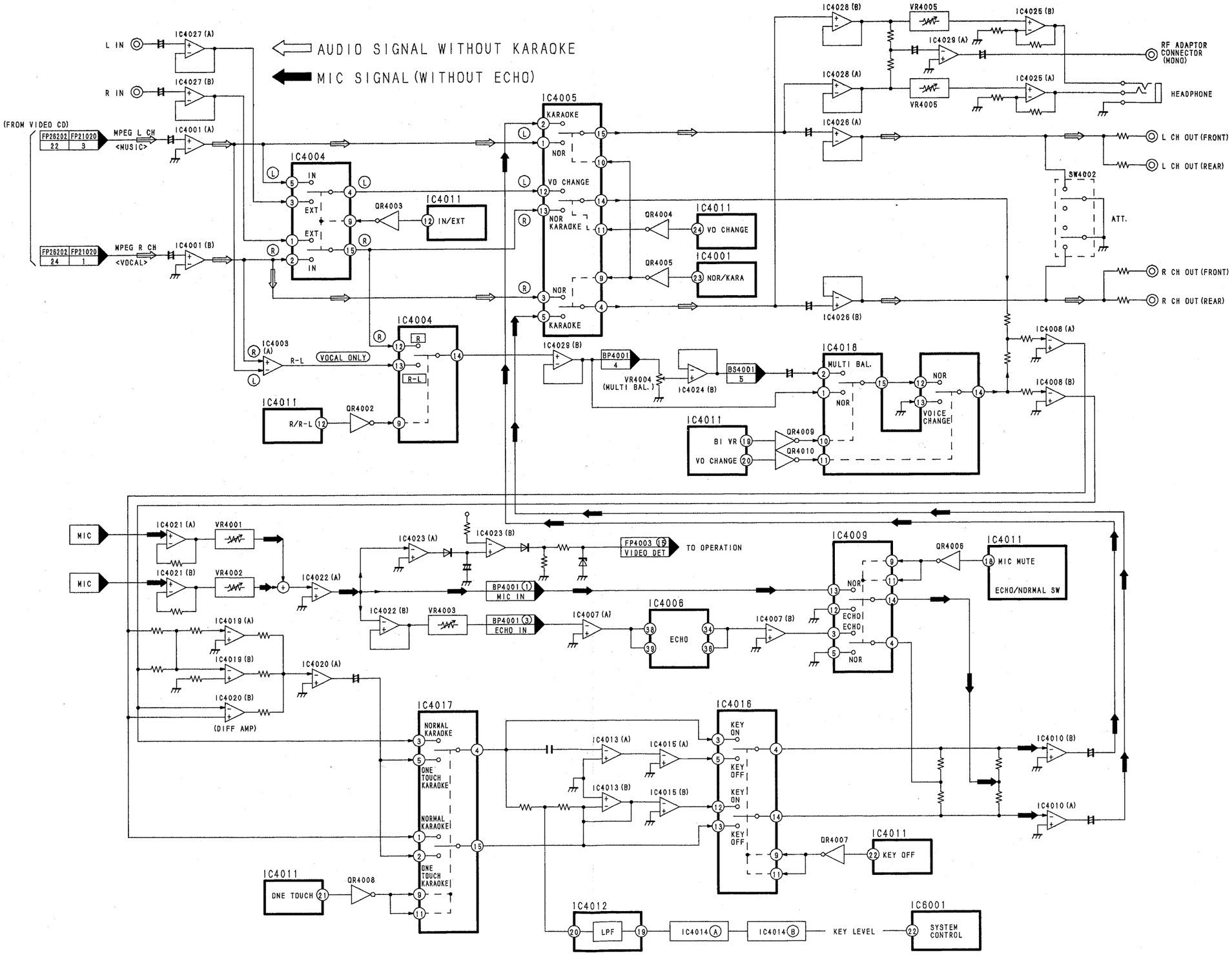
3-1. SYSTEM CONTROL BLOCK DIAGRAM



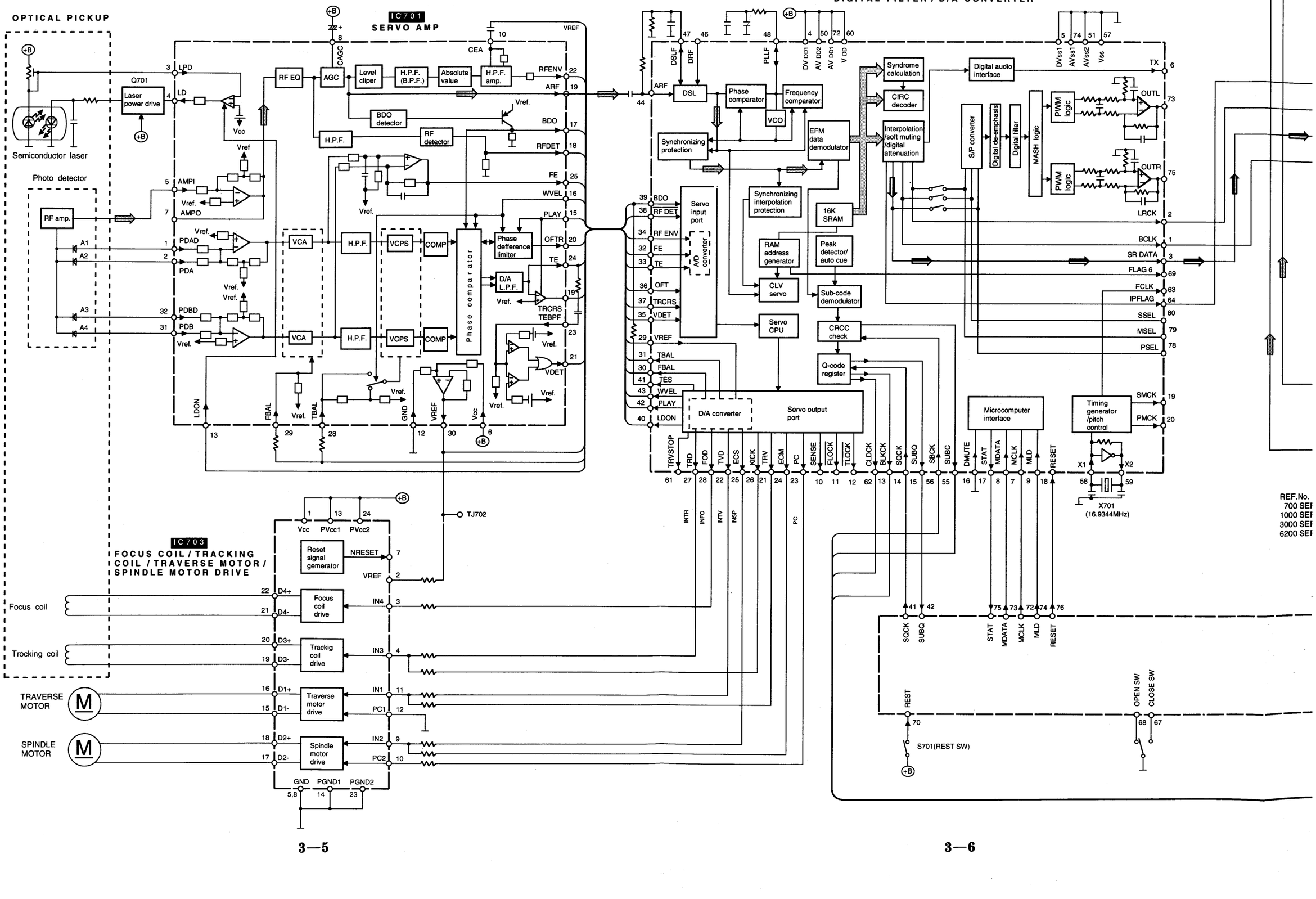
SERVICE MODE BY TEST POINTS

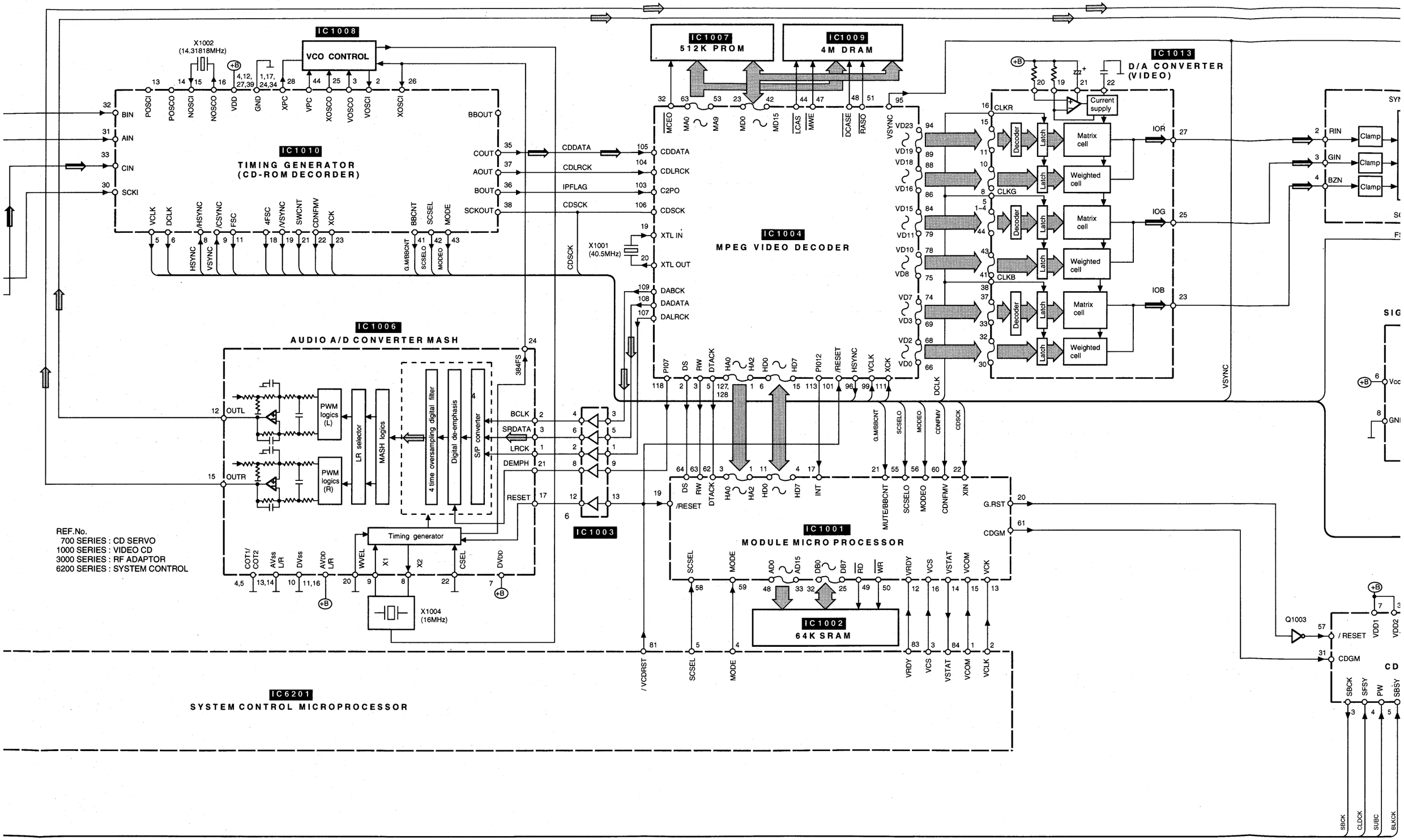
TRAVERSE OPERATION IN SERVICE MODE	TP3 (CPTEST) TP9 (CPTSMODE1) TP10 (CPTSMODE2)	CONNECT TO GND
SERVICE MODE CLEARANCE OF E² PROM	TP3 (CPTEST) CONNECT TO GND	

3-2. KARAOKE BLOCK DIAGRAM



3-3. VIDEO CD BLOCK DIAGRAM




IC1008
VCO CONTROL
X1002
(14.31818MHz)
IC1010
TIMING GENERATOR
(CD-ROM DECORDER)
BIN
AIN
CIN
SCKI
BBOUT
COUT
AOUT
BOUT
SCKOUT
CDDATA
CDLRCK
IPFLAG
CDSCK
IC1007
512K PROM
IC1009
4M DRAM
IC1004
MPEG VIDEO DECODER
X1001
(40.5MHz)
XTL IN
XTL OUT
DABCK
DADATA
DALRCK
IC1013
D/A CONVERTER
(VIDEO)
Current supply
Decoder
Latch
Matrix cell
Weighted cell
CLKR
CLKG
CLKB
IOR
IOG
IOB
RIN
GIN
BZN
Clamp
IC1006
AUDIO A/D CONVERTER MASH
384FS
PWM logics (L)
PWM logics (R)
OUTL
OUTR
LR selector
MASH logics
4 time oversampling digital filter
Digital de-emphasis
S/P converter
BCLK
SRDATA
LRCK
DEMPH
RESET
IC1003
Timing generator
X1004
(16MHz)
IC1001
MODULE MICRO PROCESSOR
/RESET
G.RST
CDGM
MUTE/BBCNT
IC1002
64K SRAM
IC6201
SYSTEM CONTROL MICROPROCESSOR
/ VCDRST
Q1003
/ RESET
CD
SBCK
SFSY
PW
SBSY
SUBC
BLKCK
REF.No.
700 SERIES : CD SERVO
1000 SERIES : VIDEO CD
3000 SERIES : RF ADAPTOR
6200 SERIES : SYSTEM CONTROL

(TO KARAOKE)

R OUT	FP26202	FP21020
	24	1
L OUT	FP26202	FP21020
	22	3

VIDEO SIGNAL

AUDIO SIGNAL

IC1007 512K PROM

IC1009 4M DRAM

IC1004 MPEG VIDEO DECODER

IC1013 D/A CONVERTER (VIDEO)

IC1014 RGB ENCODER

IC1015 SIGNAL SELECTOR

IC1003

IC1001 MODULE MICRO PROCESSOR

IC1002 64K SRAM

IC1012 CD GRAPHICS DECODER

IC1011 256K DRAM (400 FRAME MEMORY)

IC3001 ON SCREEN DISPLAY PROCESSOR

Q1003

Q3001 Q3002 Q3003 Buffer

Q3007 Buffer — RF ADAPTOR VIDEO OUT

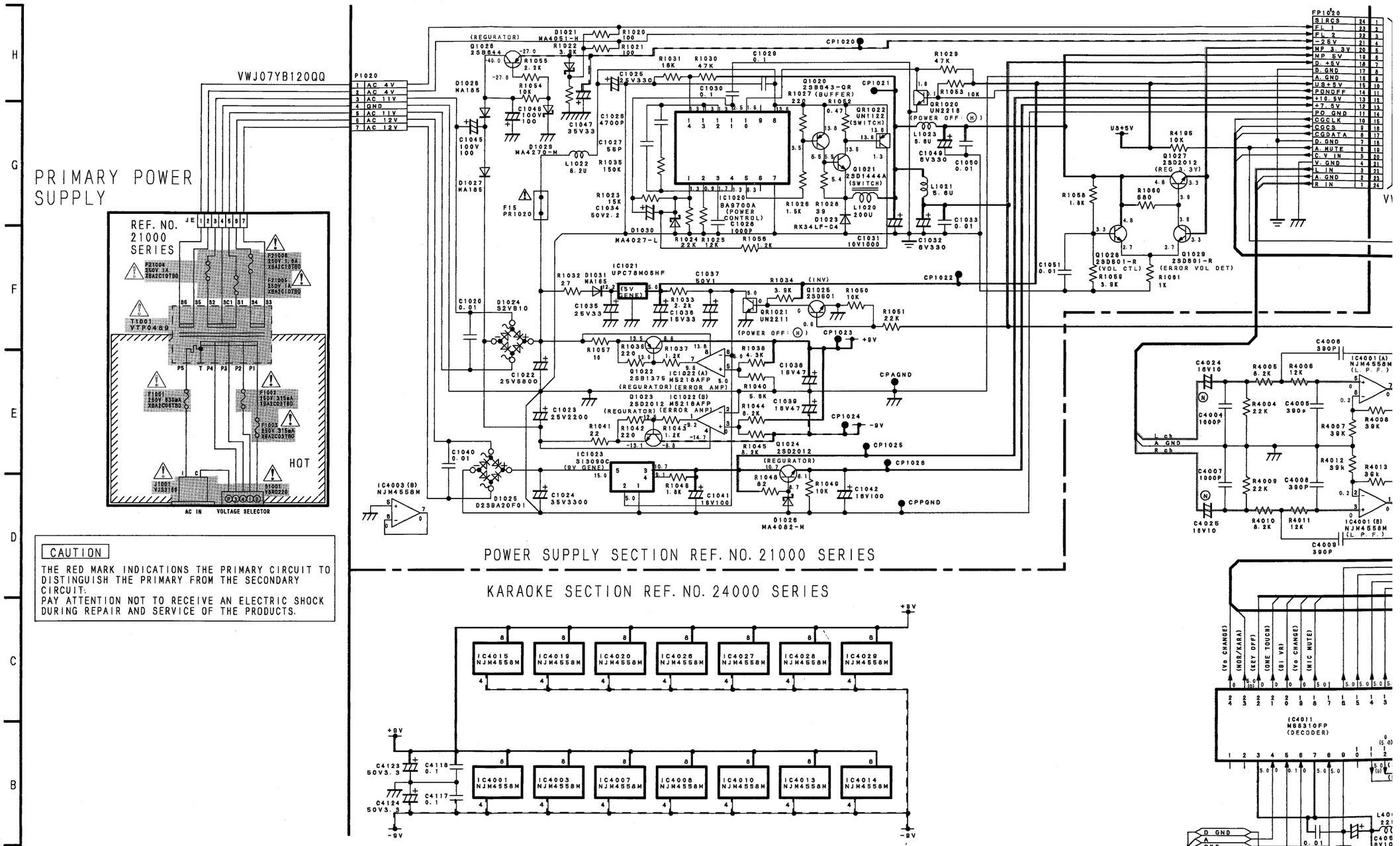
Q3006 Buffer — VIDEO OUT (REAR)

Q3005 Buffer — VIDEO OUT (FRONT)

X1001 (40.5MHz)

3-4. PRIMARY POWER SUPPLY AND KARAOKE A SCHEMATIC DIAGRAM

KARAOKE A



VIDEO SIGNAL　　AUDIO SIGNAL(WITHOUT KARAOKE)

TO SYSTEM CONTROL FP26202- (page:3-21/ B-1)

VWJ24HW200MM

FP1020

SIRCS	24	1	
FL 1	23	2	
FL 2	22	3	
−25V	21	4	
MP 3.3V	20	5	
MP 5V	19	6	
D. +5V	18	7	
D GND	17	8	
A. GND	16	9	
US+5V	15	10	
PONOFF	14	11	
+10.5V	13	12	
+7.5V	12	13	
PO GND	11	14	
CGCLK	10	15	
CGCS	9	16	
CGDATA	8	17	
D. GND	7	18	
A. MUTE	6	19	
C. V IN	5	20	
V. GND	4	21	
L IN	3	22	
A GND	2	23	
R IN	1	24	

R4195 10K
Q1027 2SD2012 (REG 3.3V)
Q1029 2SD601-R (ERROR VOL DET)
R1061 1K

C4119 6V47
C4120 0.01
C4001 6V47
R4001 2.2K
R4002 100K
Q4008 2SD601 (MUTE:OFF)
Q4001 2SD601 (MUTE:ON)
R4003 220
R4050 4.7K
R4051 39K
Q4007 2SB708 (BUFFER)
QR4001 UN2216 (MUTE: H)

IC4004 UPD4053BG (SIGNAL SELECTER)
IC4005 UPD4053BG (SIGNAL SELECTER)
R4056 10K
R4057 10K
R4058 10K
R4059 10K
(INT/EXT)
(R/R−L)
(VoCHANGE)
QR4002 UN2211
QR4003 UN2211
QR4004 UN2211
QR4005 UN2211
(NOR/KARA)
C4010 16V10
C4011 16V10

IC4028(A) NJM4558M (BUFFER)
R4014 22K
R4015 2.2K
R4016 47K
D4001 MA4047-HTA
R4017 620
R4018 22K
R4019 2.2K
IC4028(B) NJM4558M (BUFFER)
R4020 820
C4012 1000P
R4022 47K
R4021(MUTE) 820
Q4004 2SD1328
R4023 820
Q4005 2SD1326
(MUTE)
R4024 820
C4013 1000P
R4025 47K

IC4027(A) NJM4558M (BUFFER)
R4028 10K
R4029 10K
C4014 16V10
C4015 16V10
IC4027(B) NJM4558M (BUFFER)
R4030 10K
R4031 10K
C4016 1000P
C4017 1000P
C4018 16V10
C4019 16V10
IC4029(A) NJM4558M (MIX)
C4020 16V10
R4040 39K
R4032 1K
Q4002 2SD1328
R4033 10K
R4039 47K
R4037 820
R4038 820
Q4003 2SD1328
R4034 1K
R4035 10K
R4036 47K
C4023 25V4.7
IC4028(A) NJM4558M (BUFFER)
IC4028(B) NJM4558M (BUFFER)
IC4029(B) NJM4558M (BUFFER)
R4061 100K

IC4008(A) NJM4558M (MIX)
R4086 47K
R4087 47K
R4088 47K
R4089 47K
R4090 47K
R4091 47K
LEX
REX
LK
RK

IC4008 M65641SP (ECHO CONTROL)
D. +5V
L4001 22U
C4028 6V47
C4029 0.1
C4030 6V47
C4031 6V47
C4032 0.1
X4001 VSX0339
R4082 1M
R4083 1K
R4084 47K
R4085 47K
R4086 47K
C4033 3300P
R4086 5.6K
R4087 2.7K
C4040 0.01
R4078 5.6K
C4041 50V1
R4077 3.3K
C4042 50V1
C4043 0.01
C4044 50V1
C4045 220P
R4079 5.6K
R4089 4.7K
C4034 0.047
R4070 4.7K
C4035 0.047
R4071 80
R4072 8.8K
R4074 8.8K
R4073 8.8K
C4038 0.33
C4037 0.1
C4036 0.33
R4075 68K
C4039 0.1
C4050 0.01
R4084 33K
R4085 5.6K

IC4007(A) NJM4558M (MIX)
IC4007(B) NJM4558M (BUFFER)
R4081 2.7K
C4047 5600P
C4048 0.027
R4082 12K
C4049 16V10
R4083 220K

C4052 18V33
C4051 22P
R4093 10K
R4094 18K
R4098 47K
C4054 16V33
IC4010(A) NJM4558M (MIX)
R4085 47K
R4096 18K
R4099 47K
C4053 22P
IC4010(B) NJM4558M (MIX)
R4097 10K

IC4009 UPD4053BG (SIGNAL SELECTER)
QR4008 UN2211
(MIC MUTE)
+9V
−9V

IC4001(A) NJM4558M (L.P.F.)
C4024 16V10
R4005 8.2K
R4006 12K
C4004 1000P
R4004 22K
C4005 390P
R4007 39K
R4008 39K
C4006 390P
L ch
A GND
R ch
C4007 1000P
R4009 22K
C4008 390P
R4012 39K
R4013 39K
C4025 16V10
R4010 8.2K
R4011 12K
IC4001(B) NJM4558M (L.P.F.)
C4008 390P
L
L'
R
R'
IC4003(A) NJM4558M (DIFF AMP)
R4052 27K
R4053 27K
R4055 27K
R4054 27K
L−R

IC4012 M65640SP (KEY CONTROL)
ADCON
DA1CONT
DA2CONT
TEST
X IN
X OUT
DATA
CLOCK
STROBE
TEST2
TEST3
REF
GND
VCC
DA2INT OUT
DA2INT IN
DAINT OUT
DAINT IN
ADINT OUT
ADINT IN
LPF1 IN
LPF1 OUT
HPF IN
HPF OUT
LPF2 IN
LPF2 OUT
MIX IN
MIX OUT
R4101 1M
R4102 1M
R4103 1M
C4057 0.068
C4058 0.068
C4059 0.068
C4060 10P
C4061 10P
X4002 VSX0380
R4104 2.2
C4067
C4065 0.047
R4105 10K
C4066 0.047
C4068 4700P
R4107 10K
C4069 8.8K
R4108 470K
C4070 470K
R4109 10K
C4071 16V10
R4110 10K
C4072 16V10
R4106 10K
R4128 10K
R4129 15K
R4135 10K
C4082 10V47
C4083 10V47
C4084 0.1
L4003 22U
R4136 4.7K
R4139 100K
R4138 15K
R4137 10K
Q4009 2SD601 (BUFFER)
Q4008 2SD601 (BUFFER)

IC4011 M65310FP (DECODER)
(Vo CHANGE)
(NOR/KARA)
(KEY OFF)
(ONE TOUCH)
(BI VR)
(Vo CHANGE)
(MIC MUTE)
(INT/EXT)
(R/R−L)
US+5V
L4002 22U
C4058 6V100
C4055 0.01
R4198 10K
QR4013 UN2211 (POWER ON:ON)
R4197 10K
D GND
A
CK3
CE
DATA
CLOCK
STROBE
KEYLEVEL

IC4013(A) NJM4558M (H.P.F.)
IC4013(B) NJM4558M (H.P.F.)
C4073 0.01
C4074 0.01
C4075 0.01
C4076 470P
R4112 22K
R4113 10K
R4114 10K
R4115 10K
C4077 0.01
R4116 22K
R4117 10K
R4118 10K
R4119 10K
C4078 680P
C4079 0.22
C4080 0.01
C4081 0.01
C4082 0.01
C4083 470P
C4084 0.01
IC4015(A) NJM4558M (MIX)
IC4015(B) NJM4558M (MIX)
R4120 8.2K
R4121 4.7K
R4122 8.2K
R4123 4.7K
R4124 10K
R4125 10K
C4085 680P
C4086 0.22
R4126 220K
R4127 220K
IC4014(A) NJM4558M (AMP)
IC4014(B) NJM4558M (AMP)
C4087 25V4.7
R4130 680K
C4088 33P
C4089 50V1
C4090 33P
R4131 2.2K
R4132 220K
R4133 2.7K
D4004 MA185
C4091 50V2.2
R4134 100K

IC4016 UPD4053BG (SIGNAL SELECTER)
IC4017 UPD4053BG (SIGNAL SELECTER)
R4100 47K
R4140 10K
QR4007 UN2211
(KEY OFF)
R4141 10K
QR4006 UN2211
(DNETOUCH)

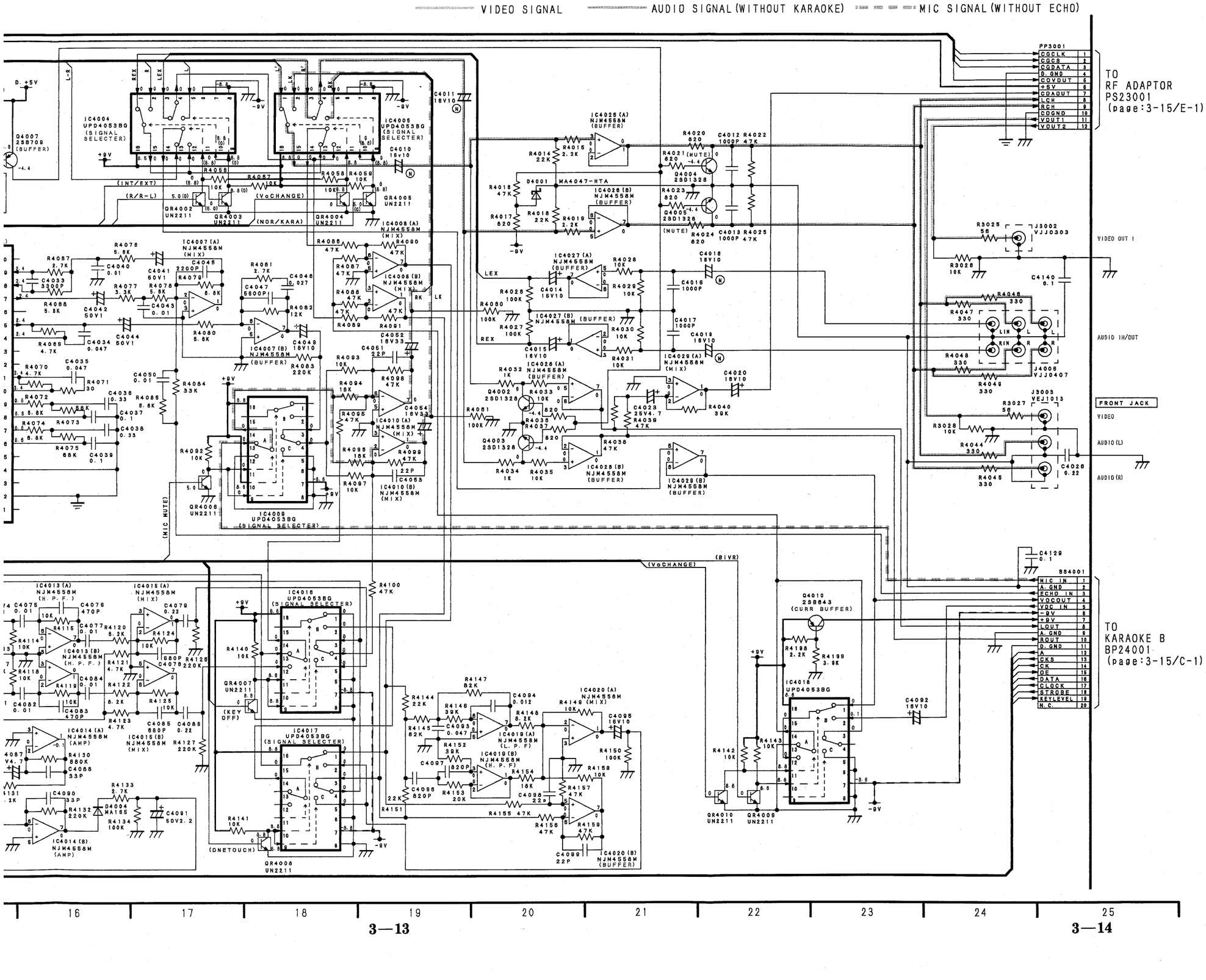
IC4020(A) NJM4558M (MIX)
IC4020(B) NJM4558M (BUFFER)
R4147 82K
R4144 22K
R4145 82K
C4093 0.047
R4146 39K
R4148 8.2K
IC4019(A) NJM4558M (L.P.F.)
C4094 0.012
R4149 10K
C4095 16V10
R4150 100K
R4151 22K
C4096 820P
R4152 39K
R4153 20K
IC4019(B) NJM4558M (H.P.F.)
C4097 820P
R4154 16K
R4155 47K
C4098 22P
R4156 47K
R4157 47K
R4158 10K
R4159 47K
C4099 22P

(BiVR)
Q4010 2SB643 (CURR BUFFER)
R4198 2.2K
R4199 3.8K
IC4018 UPD4053BG
R4142 10K
R4143 10K
QR4010 UN2211
QR4009 UN2211

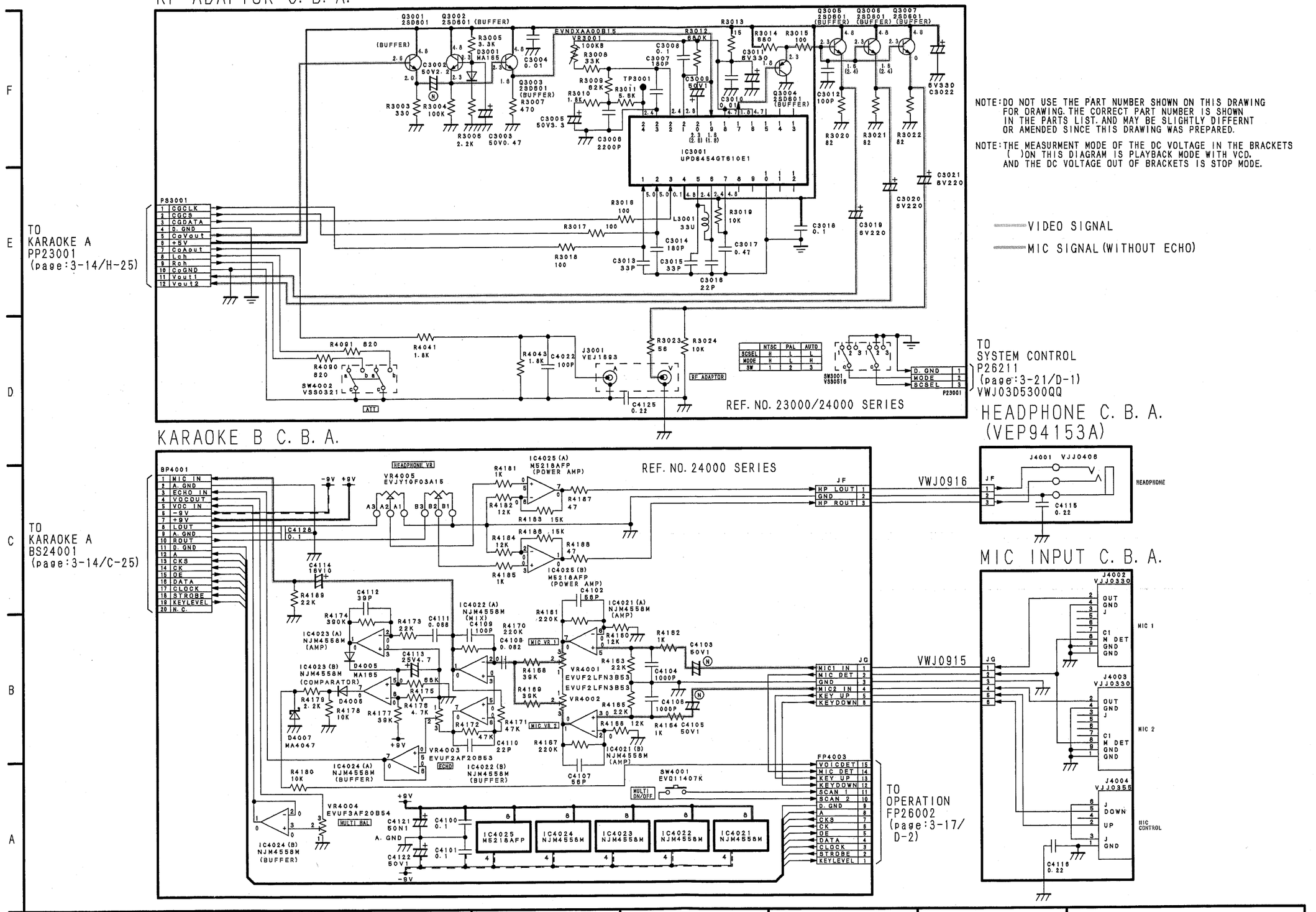
10 11 12 13 14 15 16 17 18 19 20 21 22 2

3—12　　3—13

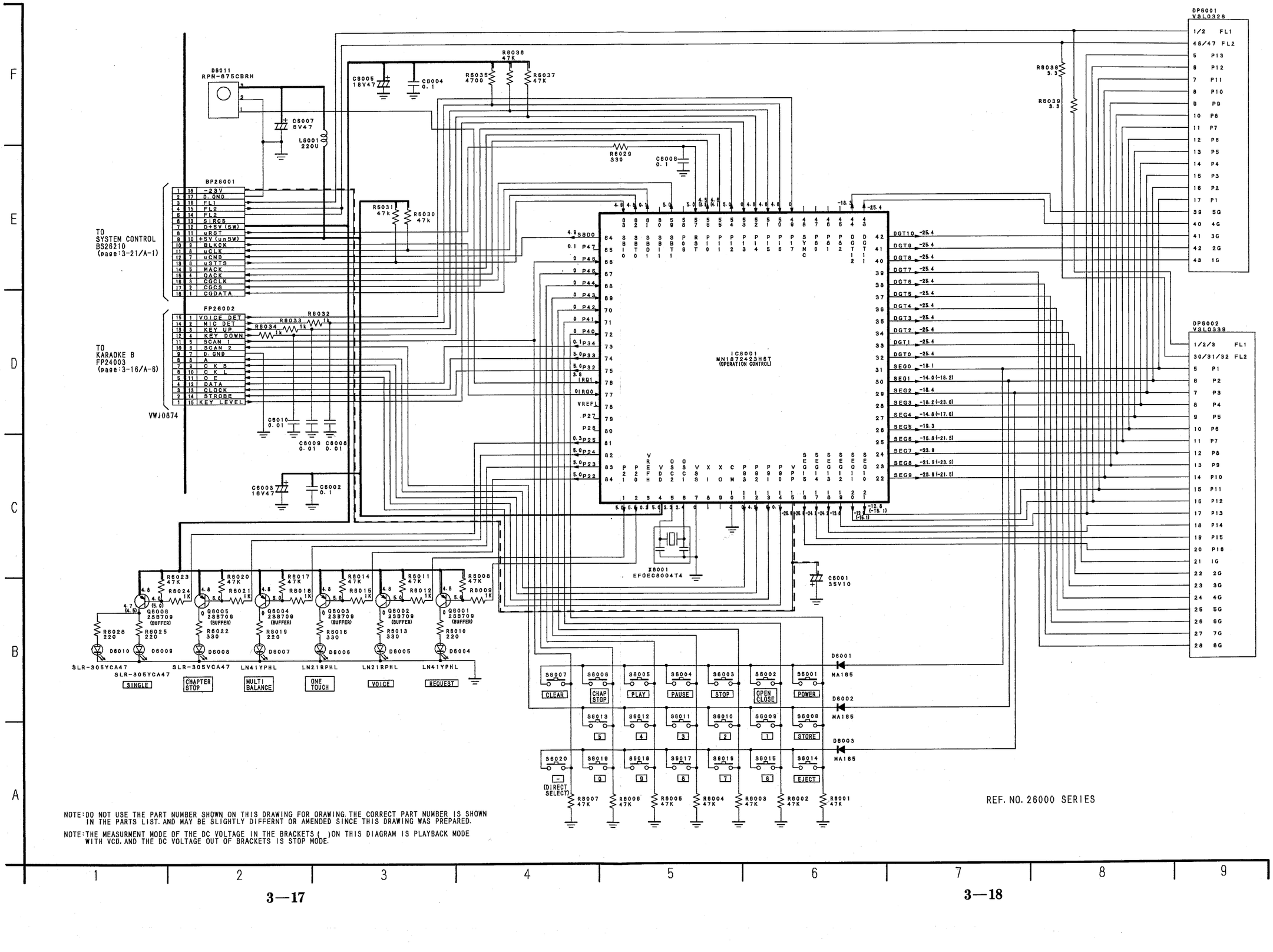
VIDEO SIGNAL　AUDIO SIGNAL(WITHOUT KARAOKE)　MIC SIGNAL(WITHOUT ECHO)



3-5. RF ADAPTOR, KARAOKE B, HEADPHONE AND MIC INPUT SCHEMATIC DIAGRAM



3-6. OPERATION SCHEMATIC DIAGRAM



NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORAWING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASURMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( )ON THIS DIAGRAM IS PLAYBACK MODE WITH VCD. AND THE DC VOLTAGE OUT OF BRACKETS IS STOP MODE.

REF. NO. 26000 SERIES

• IC6201 (MN1882414H6S): SERVO SYSTEM CONTROL I/O CHART

PIN No.	PORT NAME	FUNCTION & DESCRIPTION
81	P61/VRST	MPEG MODULE RESET OUT L...RESET INPUT (Himp)...RESET RELEASE
83	P57/VRDY	MPEG SERIAL CONTROL I/F
84	P56/VSTAT	
1	P55/VCOM	
2	P54/VCLK	
3	P53/VCS	
4	P52/MODE	525.60Hz (NTSC)
5	P51/SCSEL	3.58MHz (NTSC)
6	P50/NC	NO CONNECTION
7	VDD/UNSW5V	POWER (5V)
8	OSC1	OSC IN (8MHz)
9	OSC2	OSC OUT
10	VSS	GND (POWER)
11	XI	NOT USED
12	XO	
13	EXI	OPERATION MODE SELECTION (L)
14	/RST/uRST	RESET L...RESET H...RESET RELEASE
15	IRQ2/FG B	ELEVATOR MOTOR FG B IN (ONE OF TWO PHASES)
16	IRQ1/UP/DOWN	PHOTO INTERRUPTER IN FOR CHANGER MECHANISM UP/DOWN COUNT
17	IRQ0/OACK	MICROCOMPUTER COMMUNICATION
18 ∫ 25	P77 ∫ P70	NOT USED
26	P47/EPBUSY	EEPROM WRITE CONTROL
27	P46/EPRST	
28	P45/EPDO	
29	P44/EPDI	
30	P97/EPSCK	
31	P96/EPCS	
32	P95/SM−	STOCKER MOTOR CONTROL
33	P94/SM+	
34	P43/LM−	LOADING MOTOR CONTROL
35	P42/LM+	

SM+	SM−	
L	L	STOP
L	H	CARRY IN
H	L	CARRY OUT
H	H	BRAKE

LM+	LM−	
L	L	STOP
L	H	OPEN
H	L	CLOSE
H	H	BRAKE

PIN No.	PORT NAME	FUNCTION & DESCRIPTION
36	P41 (PWM−)/UM−	UP/DOWN MOTOR CONTROL
37	P40 (PWM+)/UM+	
38	P22 TCI04	NOT USED
39	P21 TCI02/FG A	UP/DOWN MOTOR 1 ROUND 60 PULSE
40	P20 TCI01	NOT USED
41	SBT2/SQCK	CLOCK OUT FOR SUB CODE DATA IN
42	SBD2/SUBQ	SUB CODE DATA IN
43	P15/TSOK	TEST MODE OK OUT
44	P14/TSNG	TEST MODE NG OUT
45	P13/MACK	SYSTEM CONTROL ACK SIGNAL
46	SBT1/OCLK	CLOCK IN
47	SBI1/uCMD	COMMAND IN
48	SBO1/uSTTS	SYSTEM CONTROL STATUS OUT
(17)	IRQ0/OACK	OPERATION CONTROL ACK SIGNAL
49	VDD/UNSW5V	POWER (5V)
50	AVDD	ANALOG POWER
51	VREF+	AD/DA REF. VOLTAGE IN
52	P87 (AD7)/TEST	TEST IN
53	P86 (AD6)/TSSTART	TEST MODE START TRIGGER
54	P85 (AD5)/TSMODE1	SERVICE USE FOR CD TRAVERSE
55	P84 (AD4)/TSMODE2	
56	P83 (AD3)	PULL UP TO D5V
57	P82/DISC12	12cm DISC DET IN
58	P81	NOT USED
59	P80/DISC8IN	DISC DET IN (8/12cm)
60	VREF−	AD/DA REF. VOLTAGE IN...GND
61	AVSS	GND (ANALOG LINE)
62	VSS	GND
63	P37	PULL UP ("H" IN) (NOT USED)
64	P36/HOME	HOME SW IN SW ON=L...HOME POSITION
65	P35/CLAMP	CLAMP SW IN SW ON=L...DURING CLAMP
66	P34/STOCKER	STOCKER SW IN SW ON=L...TRAY STORED
67	P33/CLOSE	CLOSE SW IN SW ON=L...CLOSE

UM+	UM−	
L	L	STOP
L	H	DOWN
H	L	UP
H	H	BRAKE

PIN No.	PORT NAME	FUNCTION & DESCRIPTION
68	P32/OPEN	OPEN SW IN SW ON=L...OPEN
69	P31	GND
70	P30/REST SW	CD TRAVERSE REST SW SW ON=L...REST POSITION
71	P67/POWER	2nd POWER ON/OFF SELECTION H...OFF L...ON
72	P93/MCLK	CD SUPER 1 CHIP SERIAL CONTROL
73	P92/MDATA	
74	P91/MLD	
75	P90/STAT	CD SUPER E CHIP STATUS IN

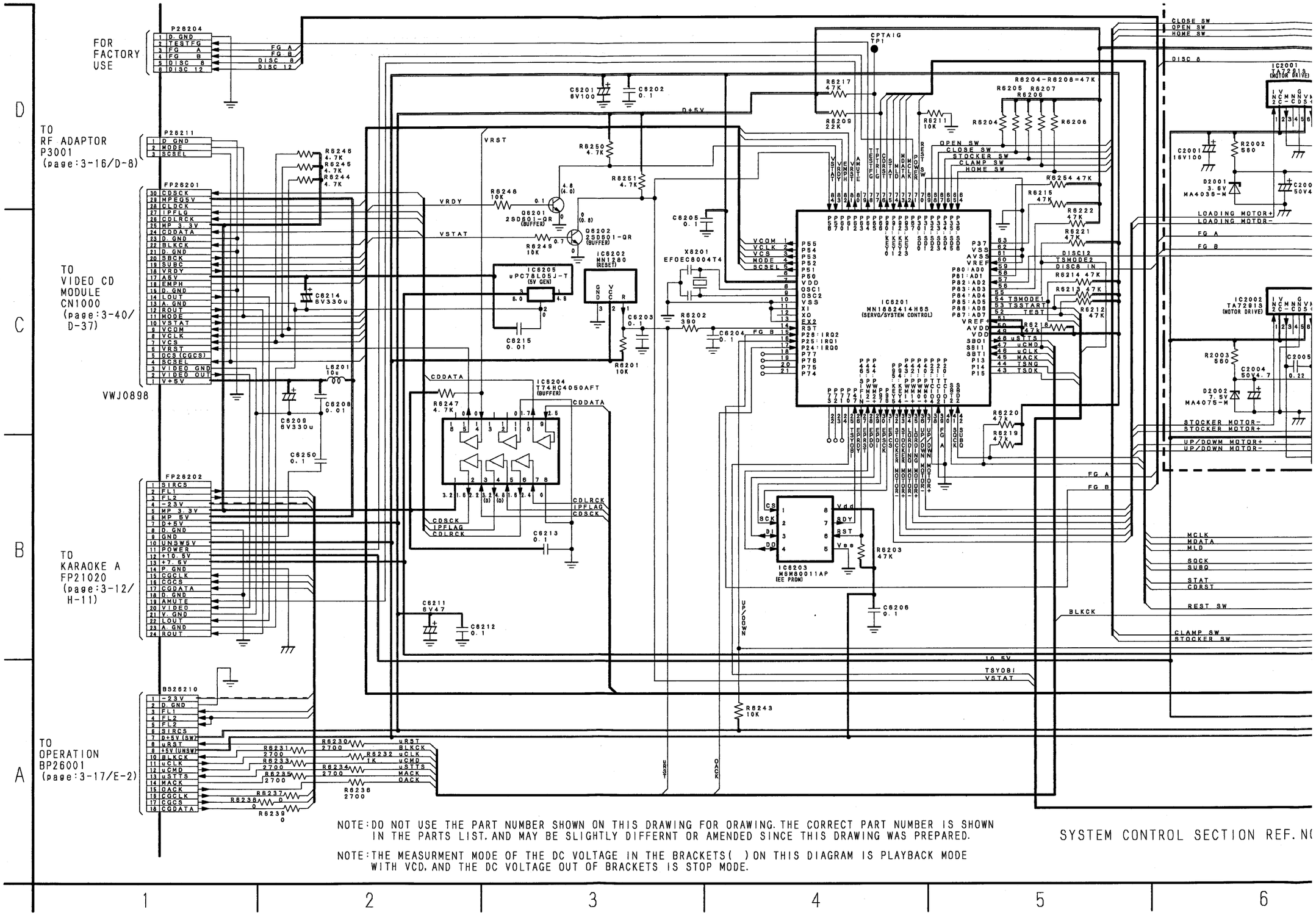
PIN No.	PORT NAME	FUNCTION & DESCRIPTION
76	P66/CDRST	CD TRAVERSE UNIT RESET OUT L...RESET H...RESET RELEASE
77	P65/TRIG	"H" AT SLOW SPEED (TRIGGER)
78	P64/TESTFG	3000rpm UP...H, 3000rpm DOW...L, 3000rpm EXCEPT U/DOWN...Himp (INPUT SET)
79	P63	NOT USED
80	P62/AMUTE	AUTO MUTE OUT L...RESET MUTE H...MUTE
82	P60/EMPH	CD-DA AUDIO OUT EMPHASIS, L: EMPHASIS OFF, H: EMPHASIS ON, L: MPEG AUIDO

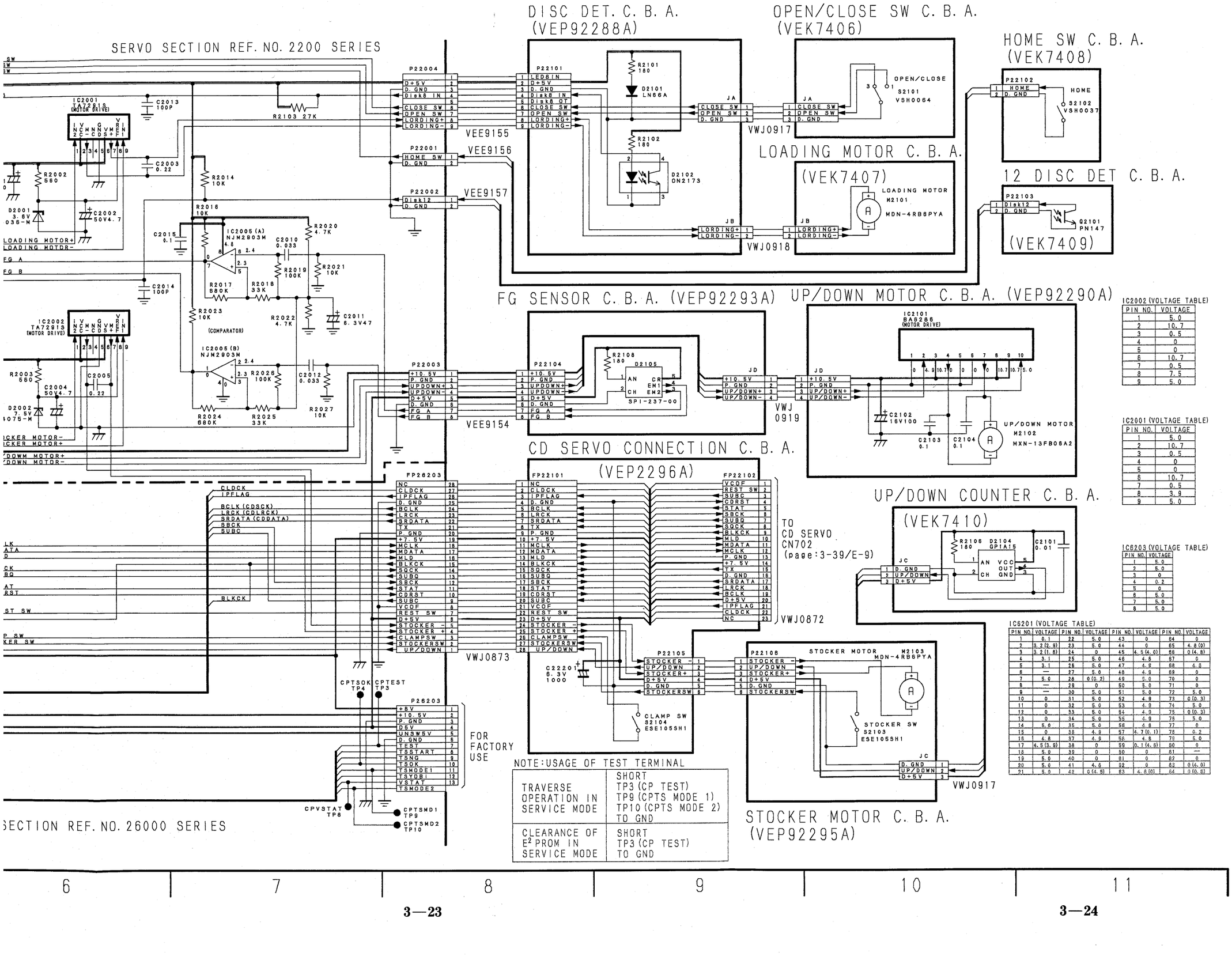
• FP26201 SYSTEM CONTROL CONNECTOR I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	V+5V	—	ANALOG VIDEO 5V POWER 5V±0.25V
2	VIDEO OUT	O	VIDEO OUT
3	VIDEO. G	—	ANALOGE GND
4	SCSEL	I	MODE SELECTION H: SC 3.58MHz 3.3V
5	NC	—	NOT USED
6	VRST	I	RESET (LOW ACTIV) 3.3V
7	VCS	I	MICROCOMPUTER CHIP SELECTION (LOW ACTIVE) 3.3V
8	VCK	I	MICROCOMPUTER SERIAL I/FCLK 3.3V
9	VCOM	I	MICROCOMPUTER SERIAL I/F DATA IN 3.3V
10	VSTAT	O	MICROCOMPUTER I/F DATA OUT 3.3V
11	MODE	I	MODE SELECTION H: NTSC (PAL 60) 3.3V
12	ROUT	O	Rch AUDIO OUT
13	A. GND	—	AUDIO GND
14	LOUT	O	Lch AUDIO OUT

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
15	FSSEL	I	EVEN TIMES OF CDSCK (L: 1/6 H: 1/8)
16	NC	—	NOT USED
17	A+5V	I	ANALOG AUDIO 5V 5±0.25V
18	VRDY	O	MICROCOMPUTER SERIAL I/F BUSY OUT 3.3V
19	SUBC	I	SUB CODE DATA IN 5V
20	SBCK	O	SUB CODE READ CLK 5V
21	D. GND	—	DIGITAL GND
22	BLKCK	I	SUB CODE I/F BLOCK CLK 5V
23	D. GND	—	DIGITAL GND
24	CDDATA	I	CD I/F DATA IN 3.3V
25	D. +3.3V	—	DIGITAL 3.3V 3.4V±0.2V
26	CDLRCK	I	CD I/F LRCLK IN 3.3V
27	IPFLG	I	CD I/F IPFLG IN 3.3V
28	CLDCK	I	SUB CODE I/F SYNC SIG 5V
29	D. +5V	—	DIGITAL 5V 5±0.25V
30	CDSCK	I	CD I/F SERIAL CLK 3.3V

3-7. SYSTEM CONTROL SCHEMATIC DIAGRAM




SERVO SECTION REF. NO. 2200 SERIES
DISC DET. C. B. A. (VEP92288A)
OPEN/CLOSE SW C. B. A. (VEK7406)
HOME SW C. B. A. (VEK7408)
LOADING MOTOR C. B. A. (VEK7407)
12 DISC DET C. B. A. (VEK7409)
FG SENSOR C. B. A. (VEP92293A)
UP/DOWN MOTOR C. B. A. (VEP92290A)
CD SERVO CONNECTION C. B. A. (VEP2296A)
UP/DOWN COUNTER C. B. A. (VEK7410)
STOCKER MOTOR C. B. A. (VEP92295A)
SECTION REF. NO. 26000 SERIES
TO CD SERVO CN702 (page:3-39/E-9)
FOR FACTORY USE
VEE9155
VEE9156
VEE9157
VEE9154
VWJ0917
VWJ0918
VWJ0919
VWJ0872
VWJ0873
NOTE:USAGE OF TEST TERMINAL
TRAVERSE OPERATION IN SERVICE MODE
SHORT TP3 (CP TEST) TP9 (CPTS MODE 1) TP10 (CPTS MODE 2) TO GND
CLEARANCE OF E2 PROM IN SERVICE MODE
SHORT TP3 (CP TEST) TO GND
IC2002 (VOLTAGE TABLE)
IC2001 (VOLTAGE TABLE)
IC6203 (VOLTAGE TABLE)
IC6201 (VOLTAGE TABLE)

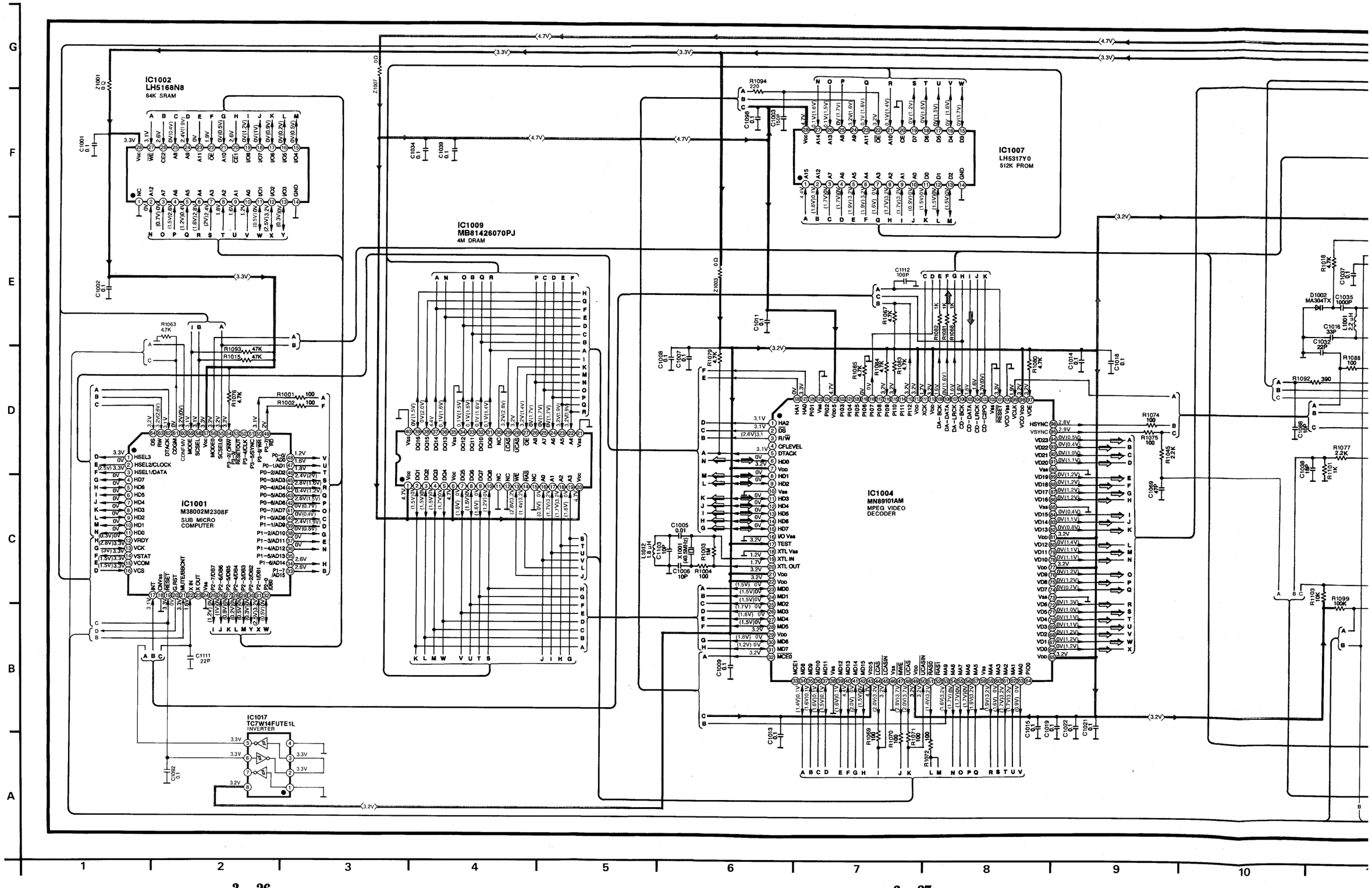
6	7	8	9	10	11

• IC1001 (M38002M2138F): SUB MICRO COMPUTER I/O CHART

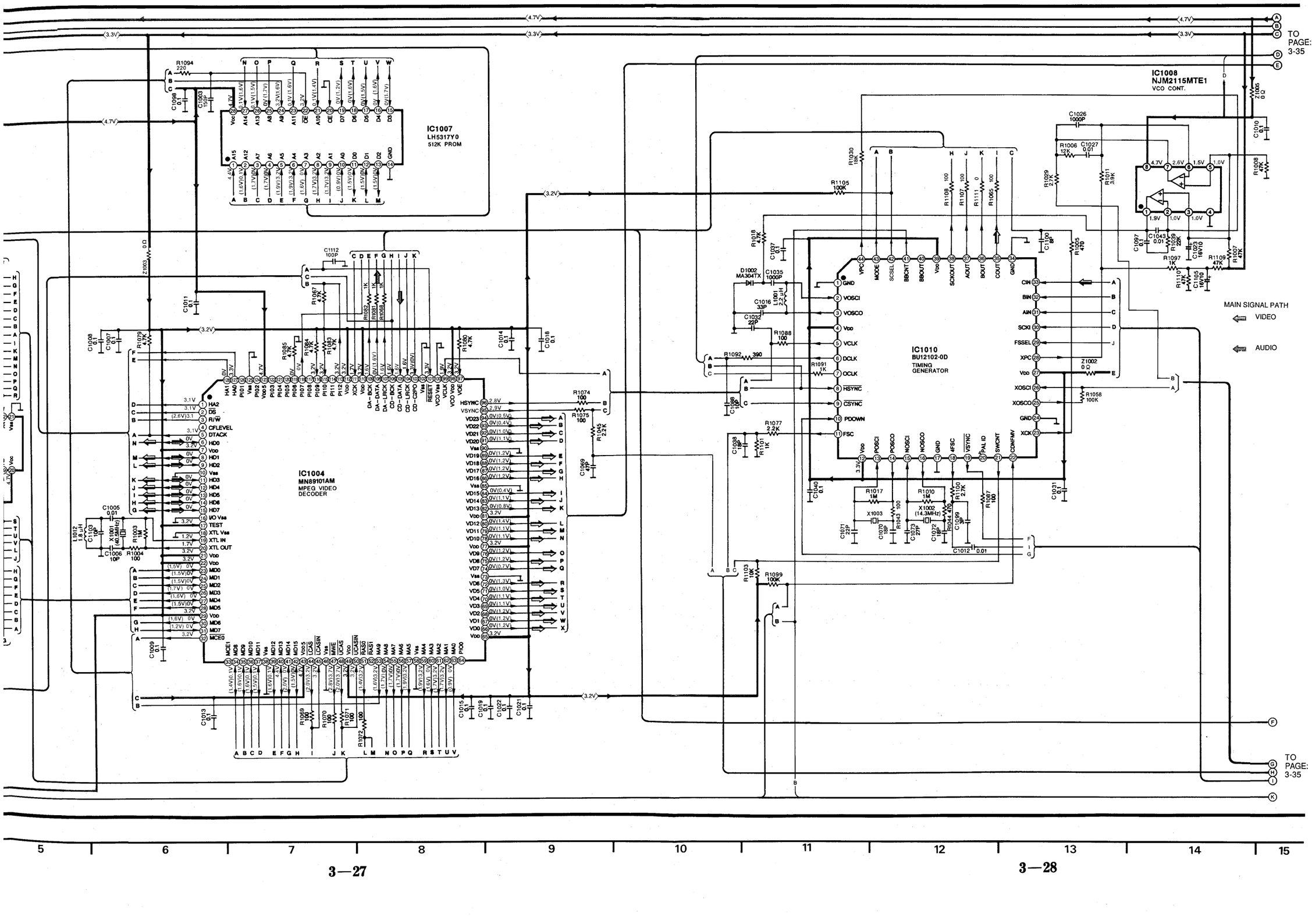
PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	HSEL3	O	MODE SELECTION OF DATA ADDRESS (HD0~HD7)
2	HSEL2/CLOCK	O	MODE SELECTION OF DATA ADDRESS (HD0~HD7)
3	HSEL1/DATA	O	MODE SELECTION OF DATA ADDRESS
4 ⟆ 11	HD7 ⟆ HD0	I/O	ADDRESS/DATA IN/OUT BETWEEN MPEG AND AV DECODER (IC1001~IC1004)
12	VRDY	I	READ SIGNAL (L)
13	VCK	I	VIDEO LOCK (L) FOR V COM/VSTAT
14	VSTAT	O	STATUS DATA OUT (TO IC301)
15	VCOM	I	COMMAND DATA IN (FROM IC301)
16	VCS	I	CHIP SELECT IN (FORM IC301)
17	INT	I	SOFT INTERRUPT SIGNAL (FROM MEG A/V DECODER (IC1004))
18	CNV_{SS}	—	GND
19	$\overline{RESET}$	I	RESET SIGNAL (L) (FROM IC301)
20	G. RST	O	CD-G RESET SIGNAL (OPEN/NOT USED)
21	MUTE/BBCNT	O	BLUE BACK CONTROL SIGNAL (H) TO TIMING GENERATOR (IC1010)
22	XIN	I	CD BIT CLOCK IN (FROM IC1010)
23	XOUT	O	OPEN/NOT USED
24	VSS	—	GND
25 ⟆ 32	P2_7/DB7 ⟆ P2_0/DB0	I/O	8 BIT PARALLEL DATA IN/OUT (FROM/TO 64K SRAM (IC1002))
33 34	P1_7/AD15 P1_6/AD14	O	ADDRESS OUT (TO 64K SRAM (IC1002))
35	P1_5/AD13	O	OPEN/NOT USED

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
36 ⟆ 48	P1_4/AD12 ⟆ P0_0/AD0	O	ADDRESS OUT TO 64K SRAM (IC1002)
49	P3_7/$\overline{RD}$	O	READ CONTROL OUT (L) FOR 64K SRAM (IC1002)
50	P3_6/$\overline{WR}$	O	WRITE CONTROL OUT (L) FOR 64K SRAM (IC1002)
51	P3_5/SYNC	—	OPEN/NOT USED
52	P3_4/CLK	—	OPEN/NOT USED
53	P3_3/$\overline{RESEOUT}$	—	OPEN/NOT USED
54	P3_2/$\overline{ONW}$	I	ON-WAIT (FOR CPU)
55	SCSELO	O	NTSC/PAL SELECT SIGNAL OUT MODEO / SCSELO PAL 60: H / L PAL: L / L NTSC: — / H *IN CASE OF NTSC SCSELO: "H" MODEO: FREE
56	MODEO	O	
57	VCC	—	POWER (3.3V)
58	SCSEL	I	NTSC/PAL SELECT SIGNAL IN MODE / SCSEL PAL 60: H / L PAL: L / L NTSC: — / H *IN CASE OF NTSC SCSEL: "H" MODE: FREE
59	MODE	I	
60	CDNFMV	O	CD-AD AUDIO LINE (H)/VIDEO CD LINE (L) SELECT SIGNAL OUT
61	CDGM	I	NOT USED
62	DTACK	I	DATA ACKNOWLEDGE SIGNAL (FROM MPEG (IC1004))
63	R/W	O	READ/WRITE CONTROL SIGNAL OUT
64	DS	O	DATA STROBE SIGNAL OUT (L) (FOR HD0~HD7)

3-8. VIDEO CD (MPEG) MODULE (1/2) SCHEMATIC DIAGRAM



AM


IC1007
LH5317Y0
512K PROM
IC1004
MN89101AM
MPEG VIDEO
DECODER
IC1008
NJM2115MTE1
VCO CONT.
IC1010
BU12102-0D
TIMING
GENERATOR
MAIN SIGNAL PATH
VIDEO
AUDIO
TO
PAGE:
3-35
TO
PAGE:
3-35

• IC1004 (MN89101AM): MPEG VIDEO/AUDIO DECODER I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	HA2	I	DATA/ADDRESS MODE SELECT IN (FOR HD0~HD7)
2	$\overline{DS}$	I	DATA STROBE SIGNAL IN (L)
3	$\overline{R}$/W	I	READ/WRITE SIGNAL IN (L: READ/H: WRITE)
4	CFLEVEL	—	OPEN/NOT USED
5	$\overline{DTACK}$	O	DATA ACKNOWLEDGE SIGNAL OUT (FOR HD0~HD7)
6	HD0	I/O	ADDRESS/DATA IN/OUT (IC1001~IC10004)
7	VDD	—	POWER (3.3V)
8	HD1	I/O	ADDRESS/DATA IN/OUT ADDRESS: IC1001 → IC1004 DATA: IC1001 ↔ IC1004
9	HD2	I/O	
10	V_{SS}	—	GND
11 ⟆ 15	HD3 ⟆ HD7	I/O	ADDRESS/DATA IN/OUT ADDRESS: IC1001 → IC1004 DATA: IC1001 ↔ IC1004
16	I/O V_{SS}	—	GND
17	TEST	I	CONNECTED TO POWER
18	XTL V_{SS}	—	GND
19	XTL IN	I	CRYSTAL OSCILLATION F=40.5MHz (T=0.0247μsec)
20	XTL OUT	O	
21, 22	VDD	—	OSC POWER (3.3V)
23 ⟆ 28	MD0 ⟆ MD5	I/O	DRAM/ROM DATA IN/OUT
29	VDD	—	POWER (3.3V)
30	MD6	I/O	DRAM/FROM DATA IN/OUT
31	MD7		
32	$\overline{MCE0}$	O	CHIP ENABLE SIGNAL OUT FOR ROM (L)
33	MCE1	—	OPEN/NOT USED
34 ⟆ 37	MD8 ⟆ MD11	I/O	DRAM DATA/ROM ADDRESS IN/OUT
38	V_{SS}	—	GND

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
39 ⟆ 42	MD12 ⟆ MD15	I/O	DRAM DATA/ROM ADDRESS IN/OUT
43	$V_{DD}5$	—	POWER (4.7V)
44	$\overline{LCAS}$	O	DRAM LCAS/ROM ADDRESS OUT
45	$\overline{LCAS\ IN}$	I	DRAM LCAS INPUT
46	V_{SS}	—	GND
47	$\overline{MWE}$	O	DRAM WRITE ENABLE SIGNAL OUT "L": WRITE TO IC1009 "H": READ FROM IC1009
48	$\overline{UCAS}$	O	DRAM UCAS/ROM ADDRESS OUT LOWER ADDRESS AND UPPER DATA COMMAND OF IC1009
49	V_{DD}	—	POWER (3.3V)
50	$\overline{UCAS\ IN}$	I	DRAM UCAS IN
51	$\overline{RAS0}$	O	DRAM RAS0 OUT (UPPER ADDRESS OF DRAM)
52	$\overline{RAS1}$	O	DRAM RAS1 OUT (OPEN/NOT USED)
53 ⟆ 57	MA9 ⟆ MA5	O	DRAM/ROM ADDRESS OUT
58	V_{SS}	—	GND
59 ⟆ 63	MA4 ⟆ MA0	O	DRAM/ROM ADDRESS OUT
64	PIO O	—	OPEN/NOT USED
65	VDD	—	POWER (3.3V)
66 ⟆ 72	VD0 ⟆ VD6	O	VIDEO DATA OUT (R) (TA VDAC)
73	V_{SS}	—	GND
74 ⟆ 76	VD7 ⟆ VD9	O	VIDEO DATA OUT 74 PIN: (R) 75~76 PIN: (G)
77	VDD	—	POWER (3.3V)
78 ⟆ 84	VD10 ⟆ VD15	O	VIDEO DATA OUT (G) FOR VDAC
85	V_{SS}	—	GND
86 ⟆ 89	VD16 ⟆ VD19	O	VIDEO DATA OUT (B)

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
90	V_{SS}	—	GND
91 ∫ 94	VD20 ∫ VD23	O	VIDEO DATA OUT (B) FOR VDAC
95	CSYNC	O	COMPOSITE SYNC SIGNAL OUT FOR TIMING GENE AND RGB ENCODER (F=15.7kHz)
96	HSYNC	O	H. SYNC SIGNAL OUT FOR TIMING GENE AND OSD (F=15.7kHz)
98	VCO V_{DD}	—	POWER (3.3V)
99	VCLK	I	VIDEO READ CLOCK IN F=27MHz, T=0.037µsec.
100	VCO V_{SS}	—	GND
101	$\overline{\text{RESET}}$	I	RESET SIGNAL IN (L) FROM IC301
102	V_{SS}	—	GND
103	CD-C2PO	I	DATA ERROR FLAG SIGNAL IN
104	CD-LRCK	I	CD LR CLOCK IN F=87kHz, T=11.5µsec.
105	CD-DATA	I	CD SERIAL DATA IN F=2.822MHz, T=0.354µsec.
106	CDBCK	I	CD BIT CLOCK IN F=2.822MHz, T=0.354µsec.
107	DALRCK	O	AUDIO LR CLOCK OUT F=87kHz, T=11.5µsec.
108	DADATA	O	AUDIO SERIAL DATA OUT F=2,822NGzm T=0.354µsec.
109	DABCK	O	AUDIO BIT CLOCK OUT F=2MHz, T=0.5µsec.

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
110	VDD	—	POWER (3.3V)
111	XCK	I	AUDIO RED CLOCK IN F=16.9344MHz, T=0.059µsec.
112	VDD	—	POWER (3.3V)
113	PI12	O	SOFT INTERRUPT SIGNAL OUT FOR SUB MICROCOMPUTER
114	PI11	—	OPEN/NOT USED
115	PI10	I	HOST ENABLE SIGNAL IN (CONNECTED TO POWER (H))
116	PI09	I	ROM ENABLE SIGNAL IN (CONNECTED TO POWER (H))
117	PI08	—	OPEN/NUT USED
118	PI07	O	DAC EMPHASSIS OUT
119 ∫ 122	PI06 ∫ PI03	—	OPEN/NOT USED
123	VDD5	—	POWER (4.7V)
124	PI02	—	OPEN/NOT USED
125	Vss	—	GND
126	PI01	—	OPEN/NOT USED
127	HA0	I	DATA/ADDRESS MODE SELECT FOR HD0~HD7
128	HA1	I	DATA/ADDRESS MODE SELECT FOR HD0~HD7

• IC1010 (BU12102-OD): TIMING GENERATOR I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	GND	—	GND
2	VOSCI	I	VIDEO CLOCK OSC IN F=27MHz (T=0.037μs)
3	VOSCO	O	
4	VDD	—	POWER (3.3V)
5	VCLK	O	VIDEO CLOCK OUT F=27MHz (T=0.037μs)
6	DCLK	O	PICEL CLOCK OUT F=13.5MHz (T=0.074μs)
7	OCLK	O	TV PICTURE CHARACTER DISPLAY CLOCK OUT F=6.75MHz (T=0.148μs)
8	$\overline{\text{HSYNC}}$	I	H. SYNC SIGNAL IN F=15.7kHz (T=63.5μs)
9	$\overline{\text{CSYNC}}$	I	COMPOSITE SYNC SIGNAL IN F=15.7kHz (T=63.5μs)
10	PDOWN	I	POWER DOWN SIGNAL IN (L)
11	FSC	O	SUB CARRIER SIGNAL OUT FOR OSC IC (F=3.58MHz)
12	VDD	—	POWER (3.3V)
13	POSCI	I	CRYSTAL OSC IN/OUT
14	POSCO	O	
15	NOSCI	I	CRYSTAL OSC IN/OUT F=14.31818MHz (NTSC) (T=0.07μs)
16	NOSCO	O	
17	GND	—	GND
18	4FSC	O	4 TIMES FREQUENCY OUT OF SUB CARRIER F=14.31818MHz (T=0.07μs)
19	$\overline{\text{VSYNC}}$	O	V. SYNC SIGNAL OUT FOR OSC
20	PALID	O	OPEN/NOT USED
21	SWCNT	O	SWITCH CONTROL SIGNAL OUT
22	CDNFMV	I	CD-DA AUDIO LINE AND VIDEO CD LINE SELECT SIGNAL IN
23	XCK	O	REF. SIGNAL OUT

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
24	GND	—	GND
25	XOSCO	O	REF. SIGNAL OSC OUT
26	XOSCI	I	REF. SIGNAL OSC IN
27	VDD	—	POWER (3.3V)
28	XPC	O	PHASE COMPARISON SIGNAL OF REF. SIGNAL (COMPARE 1/6 OF XCK AND SCK)
29	FSSEL	I	GND
30	SCKI	I	BIT CLOCK FOR SERIAL DATA F=2.822MHz (T=0.354μs)
31	AIN	I	L/R DISCRIMINATION SIGNAL IN F=87kHz (T=11.5μs)
32	BIN	I	DATA ERROR FLAG SIGNAL IN
33	CIN	I	SERIAL DATA SIGNAL IN (FROM SERVO)
34	GND	—	GND
35	COUT	O	CD SERIAL DATA SIGNAL OUT FOR MPEG VIDEO DECODER
36	BOUT	O	DATA ERROR FLAG SIGNAL OUT
37	AOUT	O	CD LR CLOCK OUT F=87kHz (T=11.5μs)
38	SCKOUT	O	CD BIT CLOCK F=2.822MHz (T=0.354μs)
39	VDD	—	POWER (3.3V)
40	BBOUT	O	BLUE BACK OUT
41	BBCNT	I	BLUE BACK CONTROL SIGNAL IN "H": BLUE BACK SCREEN
42	SESEL	I	NTSC/PAL SELECT SIGNAL IN
43	MODE	I	∗INCASE OF NTSC SCSEL: "H" MODE: FREE
44	VPC	O	VIDEO LOCK PHASE COMPARISON SIGNAL (COMPARE 4FSC WITH H SYNC)

	MODE	SCSEL
PAL 60	H	L
PAL	L	L
NTSC	—	H

• IC1012 (LC7872E): CD GARPHICS DECODER I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	S1	I	DSP SELECTION FOR CD S2 / S1 / CD DSP 0 / 0 / LC7861N/67 1 / 0 / LC7860K/63 1 / 1 / LC7868/69/681
2	S2	I	
3	SBCK	O	READ CLOCK OUT FOR SUB CODE R~W
4	SFSY	I	SUB CODE FRAME SYNC SIGNAL
5	PW	I	SUB CODE R~W DATA IN
6	SBSY	I	SUB CODE BLOCK SYNC SIGNAL
7	$V_{DD}1$	I	POWER FOR DIGITAL LINE (5V)
8	CE	I	SERIAL IN/OUT CONTROL (NOT USED/CONNECTED TO GND)
9	DO	O	SERIAL DATA OUT (NOT USED/CONNECTED TO GND)
10	DI	I	SERIAL DATA IN (NOT USED/CONNECTED TO GND)
11	CL	I	CLOCK IN FOR SERIAL DATA (NOT USED/CONNECTED TO GND)
12	MUTE	I	MUTING IN FOR SUB CODE
13	$V_{SS}1$	—	GND FOR DIGITAL LINE
14	$\overline{WE}$	O	WRITE STROBE OUT (DRAM CONTROL)
15	$\overline{RAS}$	O	LOW ADDRESS STROBE OUT (DRAM CONTROL)
16 ∫ 23	A0 ∫ A7	O	ADDRESS SUB OUT (BIT 0~7) FOR DRAM
24	DB0	I/O	DATA IN/OUT FOR DRAM
25	$\overline{CAS}$	O	COLUMN ADDRESS STROBE OUT (DRAM CONTROL)
26	DB1	I/O	DATA FOR DRAM
27	$\overline{OE}$	O	OUTPUT ENABLE (DRAM CONTROL)
28 • 29	DB2 • DB3	I/O	DATA IN/OUT FOR DRAM

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
30	CB	I	COLOR BAR IN "L": NORMAL, "H": COLOR BAR IN
31	CDGM	O	CD-G DISC DET (H)
32 ∫ 37	TRANS0 ∫ TRANS5	O	TRANSLUCENT DIGITAL OUT (OPEN/NOT USED)
38	$V_{SS}2$	—	GND FOR CONPOSITE VIDEO DAC
39	$V_{DD}2$	I	POWER (5V) FOR COMPOSITE VIDEO DAC
40	BIAS	O	BIAS OUT (CAPACITOR CONNECTION TO ELIMINATE RIPPLE)
41	VIDEO	O	COMPOSITE VIDEO OUT (8 BIT DAC, CD GARPHICS)
42	TEST	I	TEST (L)
43	LINE	I	SCANNING FREQUENCY SELECTION N/P2 / LINE / SCAN LIN H (NTSC) / H / 263H H (NTSC) / L / 262H L (PAL) / H / 312H L (PAL) / L / 314H
44	FSCIN	I	SUB CARRIER CLOCK IN (NOT USED/CONNECTED TO GND)
45	VSYNC	O	V. SYNC SIGNAL OUT (OPEN/NOT USED)
46	TEST1	I	TEST (L)
47	YS	O	SUPERIMPOSE CONTROL OUT (OPEN/NOT USED)
48	$\overline{CSYNC}$	O	COMPOSITE SYNC SIGNAL OUT (OPEN/NOT USED)
49	4FSC2	I	EXT. CLOCK IN FOR SUPERIMPOSE (NOT USED/CONNECTED TO GND)
50	EFLG	O	ERROR CONDITION MONITOR (OPEN/NOT USDE)
51	FSX	O	ERROR CONDITION TRIGGER OUT (OPEN/NOT USED)
52	DEN	I	DISC INFORMATION ENABLE H: BGC, L: ENABLE
53	PALID	I	EXT. CONTROL FOR SUPERIMPOSE (PAL) (OPEN/NOT USED)

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
54	$\overline{\text{HRESET}}$	I	H. TIMING EXT. CONTROL (NOT USED/CONNECTED TO POWER)
55	FSC	O	SUB CARRIER CLOCK OUT NTSC: 3.579545MHz, PAL: 4.433619MHz (OPEN/NOT USED)
56	$\overline{\text{VRESET}}$	I	V. TIMING EXTERNAL CONTROL (NOT USED/CONNECTED TO POWER)
57	$\overline{\text{RESET}}$	I	RESET IN (L: ON)
58	N/P1	I	NTSC/PAL SELECT (RGG ENCODER) "H": NTSC, "L": PAL

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
59	N/P2	I	NTSC/PAL SELECT (CD-G DECODER) "H": NTSC, "L": PAL
60	SON	I	SUPERIMPOSE ON/OFF (NOT USED/CONNECTED TO GND)
61	XIN2	I	CRYSTAL OSC F=17.734476MHz (PAL)
62	XOUT2	O	
63	XIN1	I	CRYSTAL OSC F=14.31818MHz (NTSC)
64	XOUT1	O	

• IC1013 (MN6570TF): VIDEO DAC I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1 ~ 4	DG4 ~ DG1	I	PICEL (GREEN) OUT (BIT 1~4) FROM MPEG VIDEO DECODER
5	CLKG	I	PICEL (GREEN) CLOCK IN FROM TINING GENE. (F=13.5MHz)
6	DV_{SS}	—	GND
7	DV_{DD}	I	DIGITAL POWER (4.7V)
8 ~ 15	DB8 ~ DB1	I	PICEL (BLUE/CHROMINANCE) IN (BIT 1~8) FROM MPEG VIDEO DECODER
16	CLKR	I	PICEL (RED CLOCK IN FROM TIMING GENE (F=13.5MHz)
17 • 18	AV_{DD}	I	ANALOG POWER (4.7V)
19	IREF	I	INTERNAL REF. CURRENT
20	VREF	I	INTERNAL REF. VOLTAGE
21	COMP	I	TIME CONSTANT SETTING
22	VIB	I	

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
23	IOB	O	ANALOG RGB (BLUE) OUT FOR RGB ENCODER
24	NC	—	NOT USED
25	IOG	O	ANALOG REG (GREEN) OUT FOR RGB ENCODER
26	NC	—	NOT USED
27	IOR	O	ANALOG RGB (RED) OUT FOR RGB ENCODER
28 • 29	AV_{SS}	—	GND
30 ~ 37	DR8 ~ DR1	I	PICEL (RED/LUMINANCE) OUT (BIT 1~8) FROM MPEG VIDEO DECODER
38	CLKB	I	PICEL (BLUE) CLOCK IN FROM TIMING GENERATOR
39	DV_{SS}	—	GND
40	DV_{DD}	I	POWER (4.7V)
41 ~ 44	DG8 ~ DG5	I	PICEL (GREEN) IN (BIT 5~8) FROM MPEG VIDEO DECODER

• IC1006 (MN6475A-T1): DIGITAL FILTER & D/A CONVERTER I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	LRCK	I	L/R DISTINGUISH "H"=LCH, "L"=RCH
2	BCLK	I	BIT CLOCK IN FOR SERIAL DATA (FROM IC702)
3	SRDATA	I	SERIAL DATA IN (FROM IC702)
4	COT1	O	SIGNAL SELECTION
5	COT2	O	
6	TEST	—	TEST (L) (CONNECTED TO GND)
7	DV_{DD}	I	POWER FOR DIGITAL LINE (5V)
8	X2	O	EXTERNAL CLOCK IN/OUT F=16MHz
9	X1	I	
10	DV_{SS}	—	GND FOR DIGITAL LINE
11	$AV_{DD}L$	I	POWER FOR LCH ANALOG LINE (5V)
12	OUTL	O	LCH ANALOG OUT (AUDIO)

COT1	COT2	SELECT SIGNAL
L	L	NORMAL/STEREO
L	H	Lch
H	L	Rch
H	H	Lch, Rch REVERSE

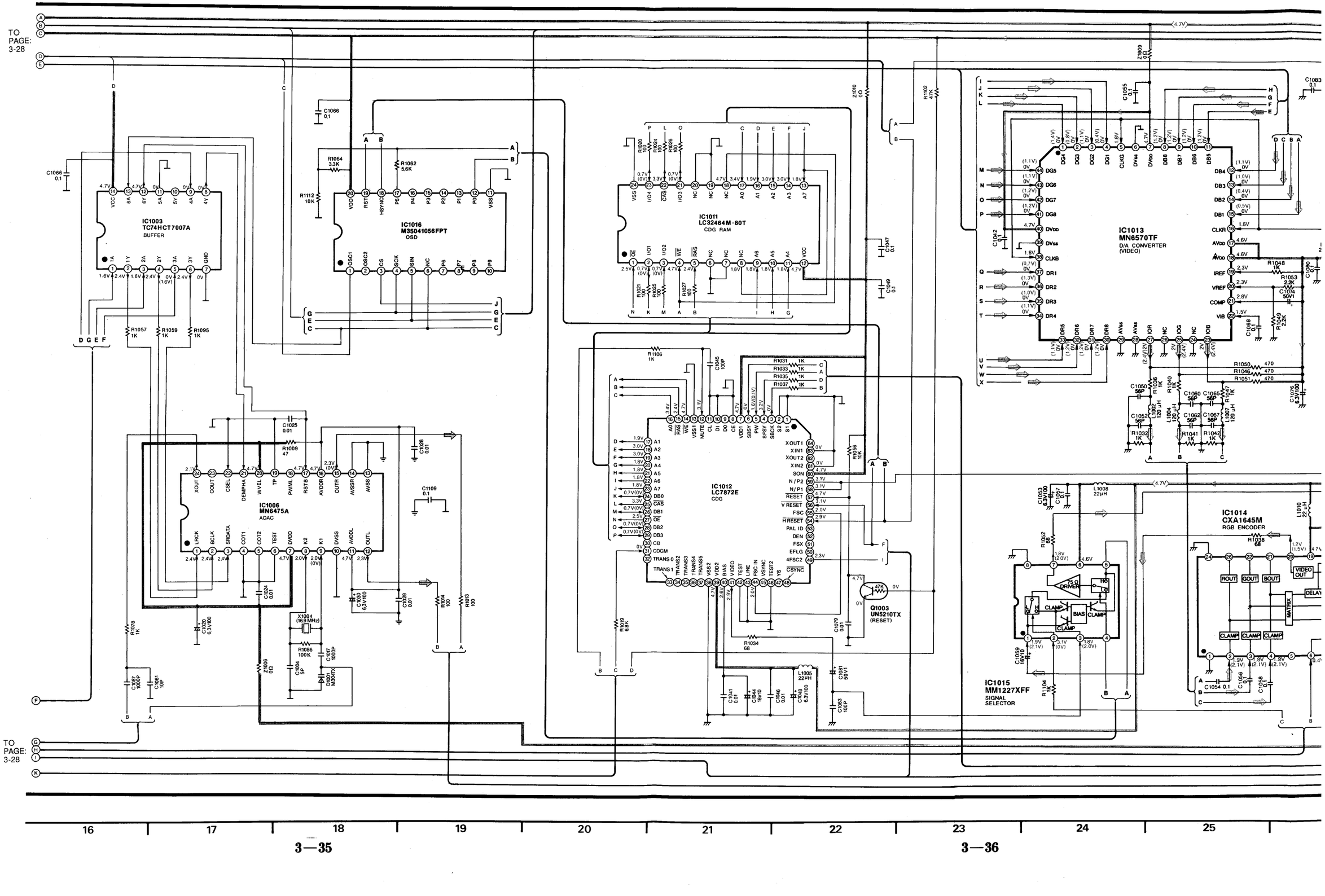
PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
13	$AV_{SS}L$	—	GND FOR LCH ANALOG LINE
14	$AV_{SS}R$	—	GND FOR RCH ANALOG LINE
15	OUTR	O	RCH ANALOG OUT (AUDIO)
16	$AV_{DD}R$	I	POWER FOR RCH ANALOG LINE (5V)
17	RSTB	I	RESET IN (L)
18	PWM	O	TEST OUT OF LSI (OPEN/NOT USED)
19	TP	—	TEST OUT OF LSI (CONNELTED TO GND)
20	WVEL	I	INTERNAL OPERATION MODE SELECTION (CONNECTED TO POWER)
21	DEMPH	I	DIGITAL DE-EMPHASIS ON/OFF, "H": DE-EMPHASIS ON
22	CSEL	I	CLOCK OUT FREQUENCY SELECT, "L": 1/4 COUNT DOWN, "H": 1/2
23	COUT	O	CLOCK OUT (192Fs) FOR DIVIDER (OPEN/NOT USED)
24	XOUT	O	EXT. CLOCK OUT FOR GATE ARRAY (384Fs=16.9344MHz)

• IC1014 (CXA1645M): RGB ENCODER

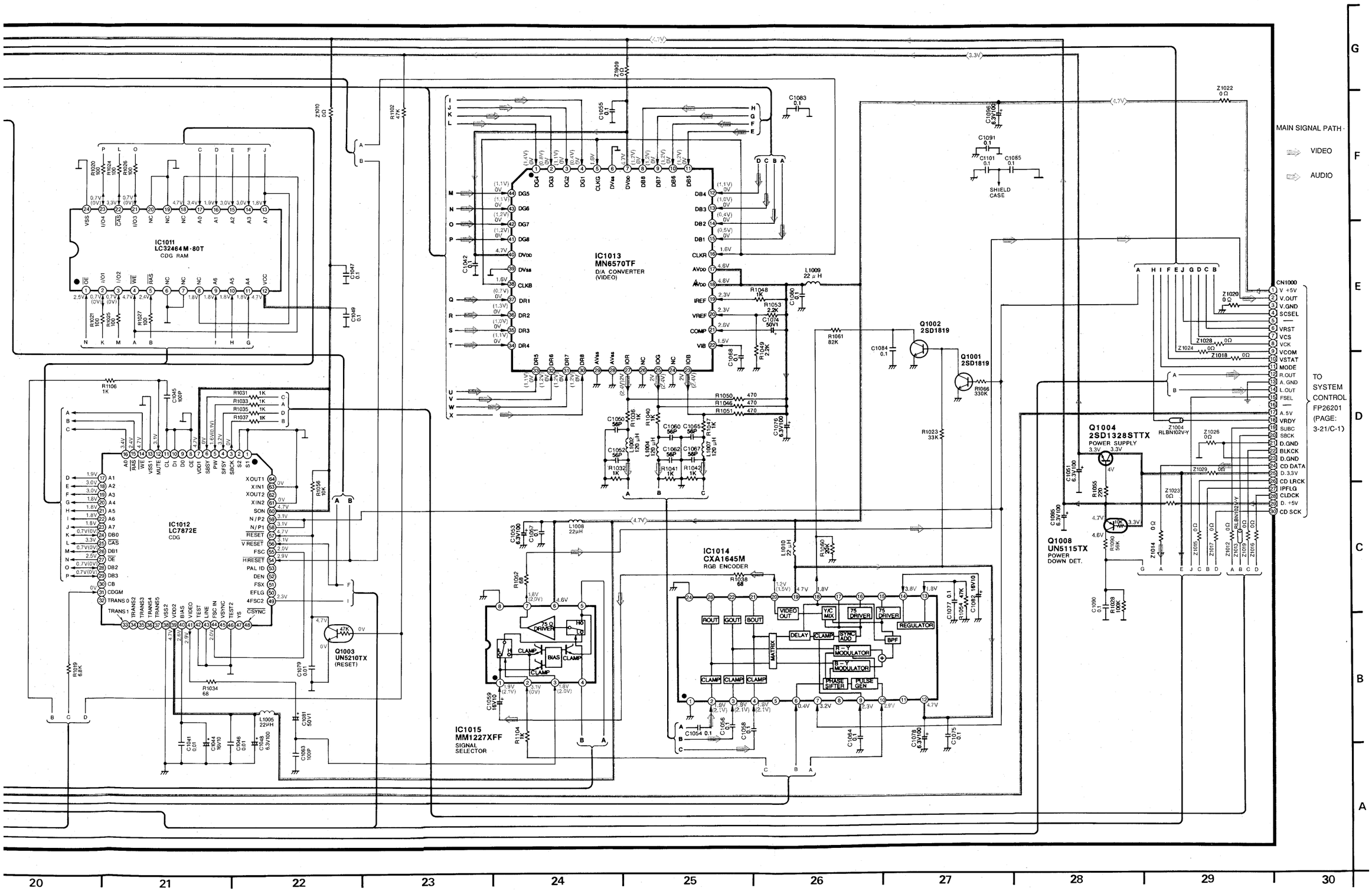
PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	GND1	—	GND
2	RIN	I	ANALOG RGB (RED) IN FROM VIDEO DAC
3	GIN	I	ANALOG RGB (GREEN) IN FROM VIDEO DAC
4	BIN	I	ANALOG RGB (BLUE) IN FROM VIDEO DAC
5	NC	—	OPEN/NOT USED
6	SCIN	I	SUB CARRIER IN FROM TIMING GENERATOR (F=3.58MHz)
7	NPIN	I	NTSC/PAL MODE SELECTION NTSC: "H" PAL: "L"
8	BFOUT	O	MONITOR OUT FOR BF PULSE (OPEN/NOT USED)
9	YCLPC	I	Y SIGNAL CLAMP TIME CONSTANT
10	SYNC IN	I	COMPOSITE SYNC SIGNAL IN FROM TIMING GENERATOR

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
11	NC	—	OPEN/NOT USED
12	$V_{CC}1$	I	POWER (5V)
13	IREF	I	INTERNAL REF. CURRENT
14	VREF	I	INTERNAL REF. VOLTAGE
15 ∫ 17	COUT YOUT YTRAP	O O I	OPEN/NOT USED
18	FO	O	ADJUSTMENT FOR INTERNAL FILTER FREQUENCY (fo)
19	$V_{CC}2$	I	POWER (4.6V)
20	CVOUT	O	COMPOSITE VIDEO SIGNAL OUT (VIDEO CD VIDEO SIGNAL)
21 ∫ 23	BOUT GOUT ROUT	O	OPEN/NOT USED
24	GND 2	—	GND

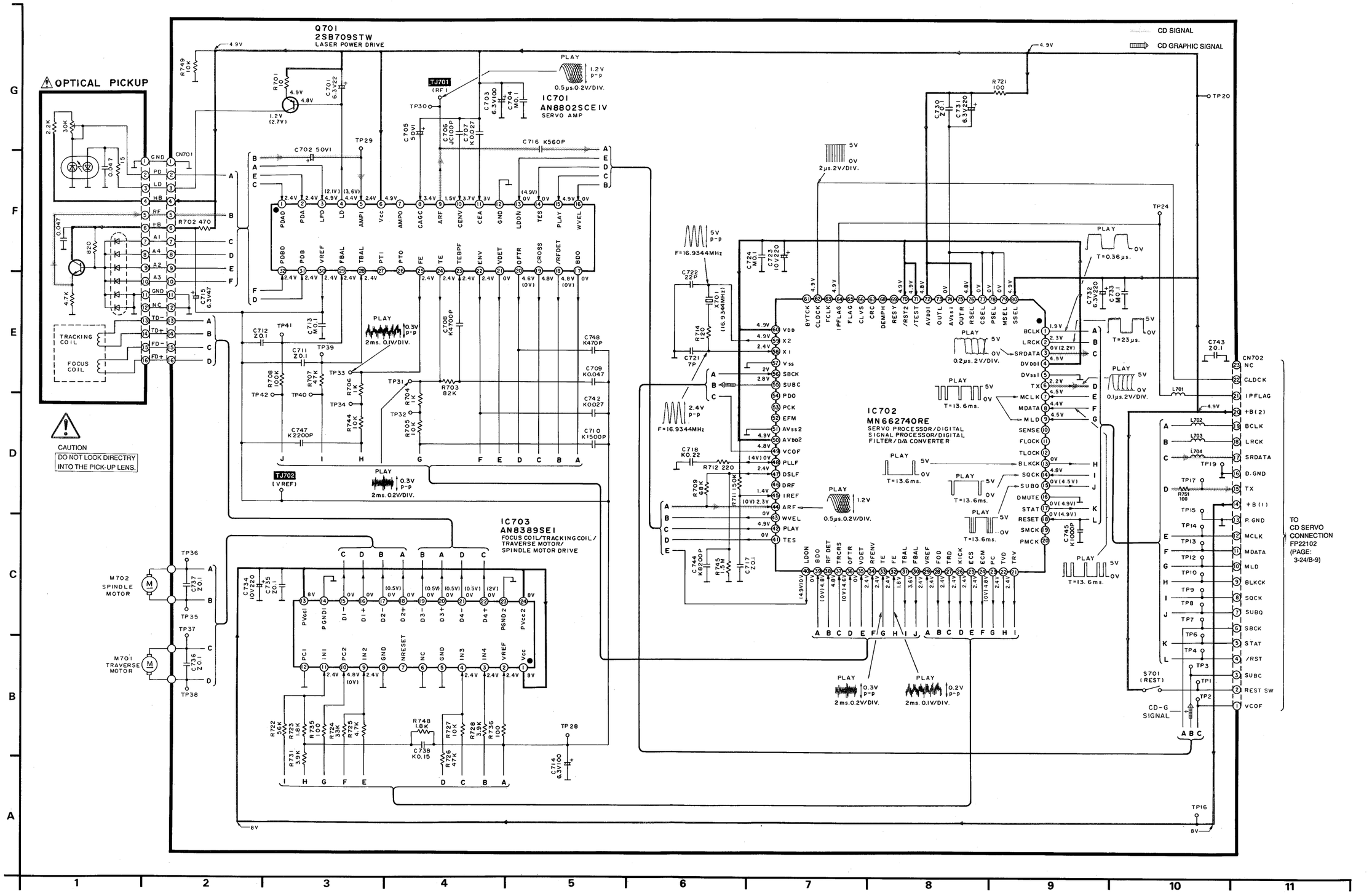
3-9. VIDEO CD (MPEG) MODULE (2/2) SCHEMATIC DIAGRAM



.GRAM


IC1011
LC32464M-80T
CDG RAM
IC1012
LC7872E
CDG
IC1013
MN6570TF
D/A CONVERTER
(VIDEO)
IC1014
CXA1645M
RGB ENCODER
IC1015
MM1227XFF
SIGNAL
SELECTOR
Q1001
2SD1819
Q1002
2SD1819
Q1003
UN5210TX
(RESET)
Q1004
2SD1328STTX
POWER SUPPLY
Q1008
UN5115TX
POWER
DOWN DET.
MAIN SIGNAL PATH
VIDEO
AUDIO
TO
SYSTEM
CONTROL
FP26201
(PAGE:
3-21/C-1)
CN1000
V +5V
V.OUT
V.GND
SCSEL
VRST
VCS
VCK
VCOM
VSTAT
MODE
R.OUT
A. GND
L.OUT
FSEL
A.5V
VRDY
SUBC
SBCK
D.GND
BLKCK
D.GND
CD DATA
D. 3.3V
CD LRCK
IPFLG
CLDCK
D. +5V
CD SCK
SHIELD
CASE
4.7V
3.3V
VIDEO OUT
Y/C MIX
75Ω DRIVER
REGULATOR
DELAY
CLAMP
SYNC ADD
BPF
MATRIX
R-Y MODULATOR
B-Y MODULATOR
PHASE SIFTER
PULSE GEN
ROUT
GOUT
BOUT

3-10. CD SERVO SCHEMATIC DIAGRAM



• IC701 (AN8802SCE1V): SERVO AMP I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	PDAD	I	ACH PD SIGNAL DELAYED INPUT
2	PDA	I	ACH PD SIGNAL NORMAL INPUT
3	LPD	I	LASER PD CONNECTION
4	LD	O	LD DRIVE POWER
5	AMPI	I	RF AMP IN
6	VCC	I	POWER
7	AMPO	—	RF AMP OUT (OPEN/NOT USED)
8	C AGC	I	AGC LOOP FILTER
9	ARF	O	RF-AGC OUT
10	CENV	I	RF DET. CAPACITOR
11	CEA	I	HPF-AMP CAPACITOR
12	GND	—	GND
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	TES	I	TRACKING ERROR SHUT SIGNAL ("H": SHUT)
15	PLAY	I	PLAY SIGNAL IN ("H": PLAY)
16	WVEL	I	WVEL CONTROL
17	BDO	O	BDO OUT
18	/RFDET	O	NRFDET OUT
19	CROSS	O	CROSS OUT
20	OFTR	O	OFTR OUT
21	VDET	O	VDET OUT
22	ENV	O	ENV OUT
23	TEBPF	I	VIBRATION DET SIGNAL IN
24	TE	O	TRACKING ERROR OUT
25	FE	O	FOCUS ERROR OUT
26	PTO	—	POTENTIO AMP OUT (OPEN/NOT USED)
27	PTI	—	POTENTIO AMP REVERSE IN (OPEN/NOT USED)
28	TBAL	I	TRACKING BALANCE IN
29	FBAL	I	FOCUS BALANCE IN
30	VREF	O	VREF OUT
31	PDB	I	BCH PD SIGNAL NORMAL IN
32	PDBD	I	BCH PD SIGNAL DELAYED IN

• IC702 (MN662740RE): SERVO PROCESSOR I/O CHART

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
1	BCLK	O	BIT CLOCK OUT FOR SERIAL DATA
2	LRCK	O	L/R DISCRIMINATION SIGNAL OUT
3	SR DATA	O	SERIAL DATA OUT
4	$DV_{DD}1$	I	POWER (DIGITAL LINE)
5	$DV_{SS}1$	—	GND (DIGITAL LINE)
6	TX	—	DIGITAL AUDIO I/F SIGNAL OUT (OPEN/NOT USED)
7	MCLK	I	MICRO COMPUTER COMMAND CLOCK SIGNAL IN (LATCH DATA AT RISING EDGE)
8	MDATA	I	MICRO COMPUTER COMMAND DATA IN
9	MLD	I	MICRO COMPUTER COMMAND LOAD IN
10	SENSE	—	SENSE OUT (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (OPEN/NOT USED)
11	FLOCK	—	FOCUS SERVO LEAD IN SIGNAL OUT ("L": LEAD IN) (OPEN/NOT USED)
12	TLOCK	—	TRACKING SERVO LEAD IN SIGNAL OUT ("L": LEAD IN) (OPEN/NOT USED)
13	BLKCK	O	SUB CODE BLOCK CLOCK OUT (f BLKCK=75Hz, AT NORMAL PLAY)
14	SQCK	I	EXTERNAL CLOCK IN FOR SUB CODE Q REGISTER
15	SUBQ	O	SUB CODE Q CODE OUT
16	DMUTE	—	NOT USED (GND)
17	STAT	O	STATUS SIGNAL OUT (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
18	RESET	I	RESET IN
19	SMCK	O	MSEL="H": 1/2 DIVIDE CLOCK OF X'TAL OSC (f SMCK=8.4672MHz) MSEL="L": 1/4 DIVIDED CLOCK OF X'TAL OSC (f SMCK=4.2336MHz)
20	PMCK	O	1/192 DIVIDED CLOCK OF X'TAL OSC (f PMCK=88.2kHz)
21	TRV	O	TRAVERSE FORCED CARRY OUT
22	TVD	O	TRAVERSE DRIVE OUT
23	PC	O	SPINDLE MOTOR ON SIGNAL OUT ("L": ON)
24	ECM	O	SPINDLE MOTOR DRIVE SIGNAL OUT (FOR CED MODE OUT)
25	ECS	O	SPILDLE MOTOR DRIVE SIGNAL OUT (SERVO ERROR OUT)

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
26	KICK	O	KICK PULSE OUT
27	TRD	O	TRACKING DRIVE OUT
28	FOD	O	FOCUS DRIVE OUT
29	VREF	I	D/A (DRIVE) OUTPUT (TVD, ECS, TRD, FOD, FBAL, TBAL) REF. VOLTAGE IN
30	FBAL	O	FOCUS BALANCE ADJUSTMENT OUT
31	TBAL	O	TRACKING BALANCE ADJUSTMENT OUT
32	FE	I	FOCUS ERROR IN (ANALOG)
33	TE	I	TRACKING ERROR (ANALOG)
34	RFENV	I	RF ENVELOPE IN
35	VDET	I	VIBRATION DET SIGNAL IN ("H": DETECT)
36	OFTR	I	OFF TRACK SIGNAL IN ("H": OFF TRACK)
37	TRCRS	I	TRACK CROSS SIGNAL IN
38	RFDET	I	RF DET SIGNAL IN ("L": DETECT)
39	BDO	I	DROP OUT SIGNAL IN ("H": DROP OUT)
40	LDON	O	LASER ON SIGNAL OUT ("H": ON)
41	TES	O	TRACKING ERROR SHUT SIGNAL OUT ("H": SHUT)
42	PLAY	O	PLAY SIGNAL OUT ("H": PLAY)
43	WVEL	O	×2 SPEED STATUS SIGNAL OUT ("H": ×2)
44	ARF	I	RF SIGNAL INPUT
45	IREF	I	REF CURRENT IN
46	DRF	—	DSL BIAS FOR DSL (CONNECTED TO GND)
47	DSLF	I/O	LOOP FILTER FOR DSL
48	PLLF	I/O	LOOP FILTER FOR PLL
49	VCOF	I	LOOP FILTER FOR VCO
50	AVDD2	I	POWER (ANALOG LINE)
51	AVSS2	—	GND (ALALOG LINE)
52	FS384	O	CLOCK OUT (FS384=16.9344MHz) (OPEN/NOT USED)
53	PCK	—	PLL CLOCK OUT (f PCK=4.3218MHz, AT NORMAL PLAY) (OPEN/NOT USED)
54	TROF	—	TRACK OFF SIGNAL OUT (OPEN/NOT USED)

PIN No.	PORT NAME	I/O	FUNCTION & DESCRIPTION
55	SUBC	—	SUB CODE SERIAL DATA OUT (OPEN/NOT USED)
56	SBCK	—	CLOCK IN FOR SUB CODE SERIAL DATA OUT (OPEN/NOT USED)
57	VSS	—	GND
58	X1	I	X'TAL OSC (f=16.9344MHz)
59	X2	O	
60	VDD	I	POWER (OSC)
61	TRVSTOP	O	TRAVERSE MOTOR STOP CONTROL
62	CLDCK	—	SUB CODE FRAME CLOCK OUT (f CLDCK=7.35kHz, AT NORMAL PLAY)
63	FCLK	O	X'TAL FRAME CLOCK OUT (f FCLK=7.35kHz, ×2 14.7kHz)
64	IPFLAG	—	INTERLEAF FLAG OUT ("H": INTERLEAF)
65	FLAGO	—	FLAG OUT (OPEN/NOT USED)
66	CLVS	—	SPINDLE SERVO PHASE SYNC STATUS OUT ("H": CLV, "L": RUFF SERVO) (OPEN/NOT USED)
67	CRC	—	SUB CODE CRC CHECK RESULT OUT ("H": OK, "L": NG) (OPEN/NOT USED)
68	DEMPHA	—	DE-EMPHASIS ON SIGNAL OUT ("H": ON) (OPEN/NOT USED)
69	FLAG6	O	RE-SYNC SIGNAL OUT OF FRAME SYNC (OPEN/NOT USED)
70	SEL	—	GND
71	TEST	I	TEST
72	AVDD1	I	POWER (ANALOG LINE)
73	OUTL	O	LCH AUDIO OUT
74	AVSS1	—	GND
75	OUTR	O	RCH AUDIO OUT
76	RSEL	I	RF SIGNAL POLARITY SELECTION (AT POSITIVE "H", RSEL="H" / AT NEGATIVE "L", RSEL="L") (CONNECTED TO POWER)
77	CSEL	I	X'TAL OSC FREQUENCY SELECTION ("L": 16.934MHz, "H": 33.8688MHz) (CONNECTED TO POWER)
78	ISRDATA	I	SERIAL DATA IN
79	IKRCK	I	L/R SELECTION SIGNAL IN
80	IBCLK	I	SERIAL BIT CLOCK IN

3-11. KARAOKE A C.B.A. (VEP94150D)

KARAOKE A C.B.A.

KARAOKE A C.B.A.

Transistor	
Q21020	B-4
Q21021	C-5
Q21022	C-2
Q21023	A-3
Q21024	C-2
Q21026	B-2
Q21027	A-5
Q21028	A-5
Q21029	A-5
Q24001	A-6
Q24002	G-10
Q24003	G-10
Q24004	H-10
Q24005	G-10
Q24006	A-6
Q24007	B-7
Q24008	D-7
Q24009	C-7
Q24010	C-10

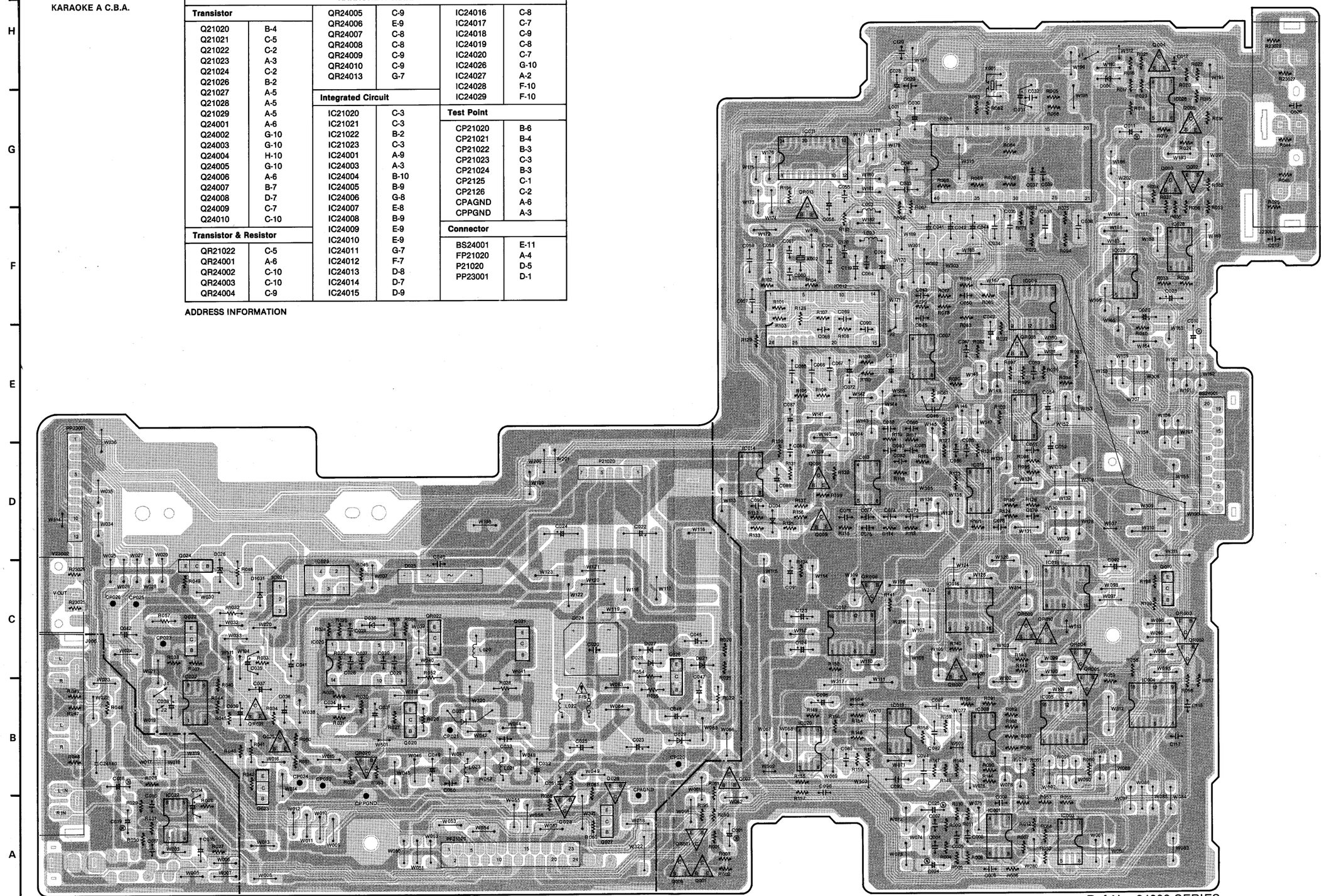
Transistor & Resistor	
QR21022	C-5
QR24001	A-6
QR24002	C-10
QR24003	C-10
QR24004	C-9
QR24005	C-9
QR24006	E-9
QR24007	C-8
QR24008	C-8
QR24009	C-9
QR24010	C-9
QR24013	G-7

Integrated Circuit	
IC21020	C-3
IC21021	C-3
IC21022	B-2
IC21023	C-3
IC24001	A-9
IC24003	A-3
IC24004	B-10
IC24005	B-9
IC24006	G-8
IC24007	E-8
IC24008	B-9
IC24009	E-9
IC24010	E-9
IC24011	G-7
IC24012	F-7
IC24013	D-8
IC24014	D-7
IC24015	D-9
IC24016	C-8
IC24017	C-7
IC24018	C-9
IC24019	C-8
IC24020	C-7
IC24026	G-10
IC24027	A-2
IC24028	F-10
IC24029	F-10

Test Point	
CP21020	B-6
CP21021	B-4
CP21022	B-3
CP21023	C-3
CP21024	B-3
CP2125	C-1
CP2126	C-2
CPAGND	A-6
CPPGND	A-3

Connector	
BS24001	E-11
FP21020	A-4
P21020	D-5
PP23001	D-1

ADDRESS INFORMATION

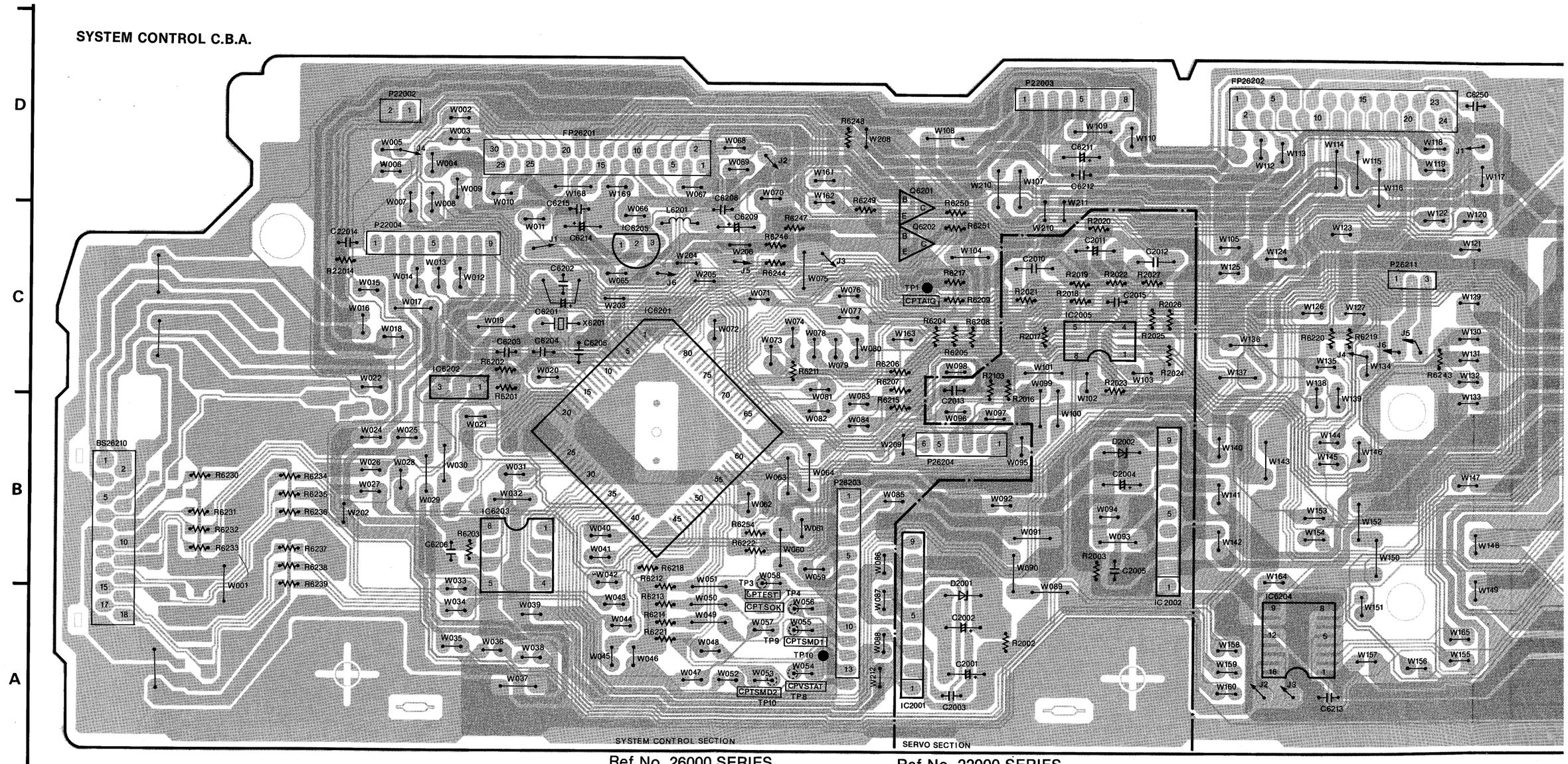


3-12. SYSTEM CONTROL C.B.A. (VEP96344B) AND PRIMARY POWER SUPPLY C.B.A. (VEP91212A)

Transist
Q6201
Q6202
Integrate
IC2001
IC2002
IC2005
IC6201

ADDRESS

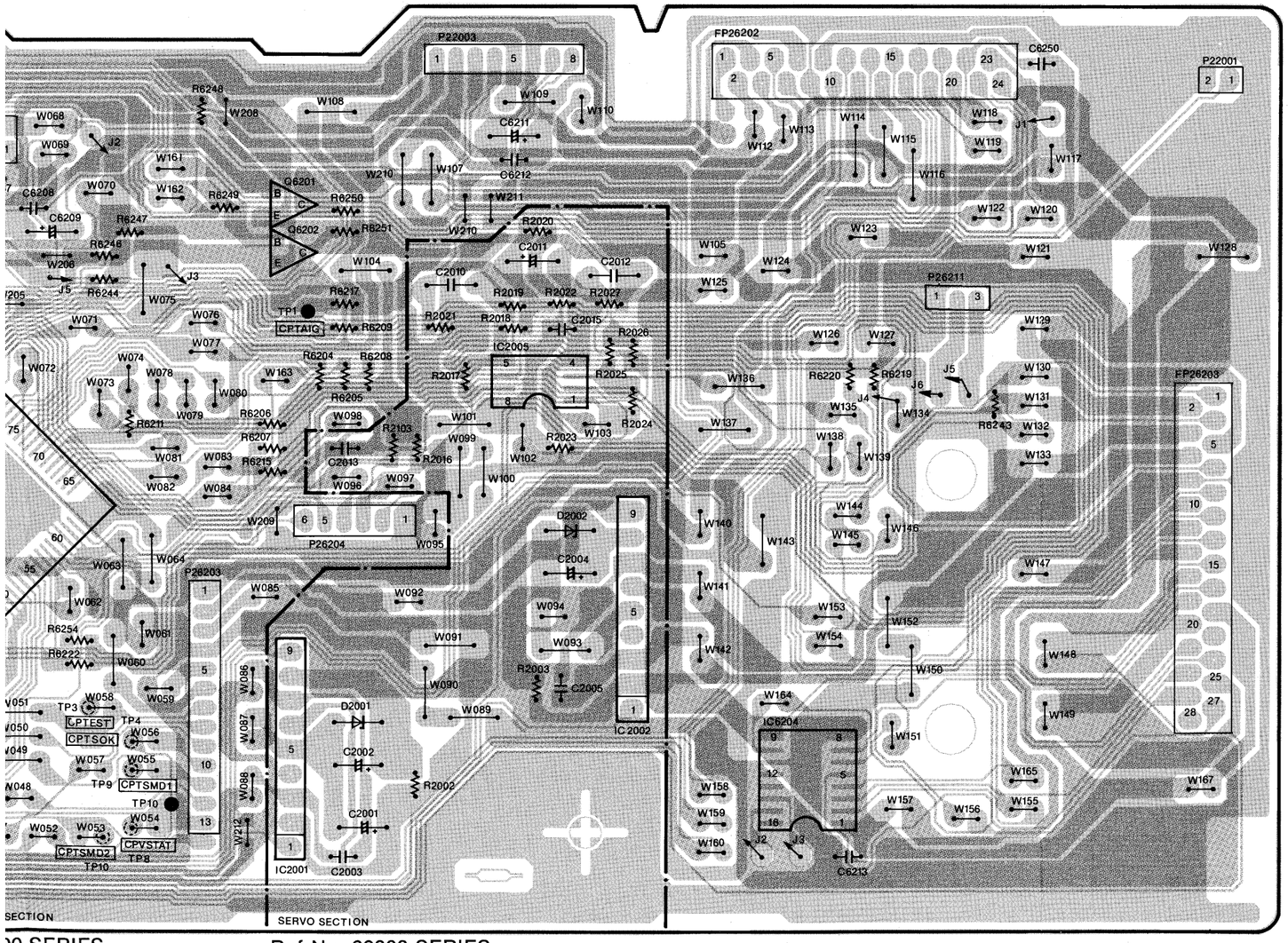
SYSTEM CONTROL C.B.A.



POWER SUPPLY C.B.A. (VEP91212A)

SYSTEM CONTROL C.B.A.							
Transistor		IC6202	C-3	CPTSOK (TP4)	A-5	FP26201	D-3
Q6201	D-5	IC6203	B-3			FP26202	D-7
Q6202	C-5	IC6204	A-7	CPVSTAT (TP8)	A-5	FP26203	C-9
		IC6205	C-4			P22001	D-9
Integrated Circuit		**Test Point**		CPTSMD1 (TP9)	A-5	P22002	D-3
						P22003	D-6
IC2001	A-5	CPTAIG (TP1)	C-5	CPTSMD2	A-4	P22004	C-2
IC2002	B-6	CPTEST (TP3)	A-4	**Connector**		P26203	B-5
IC2005	C-5					P26204	B-5
IC6201	C-4			BS26210	B-1		

ADDRESS INFORMATION

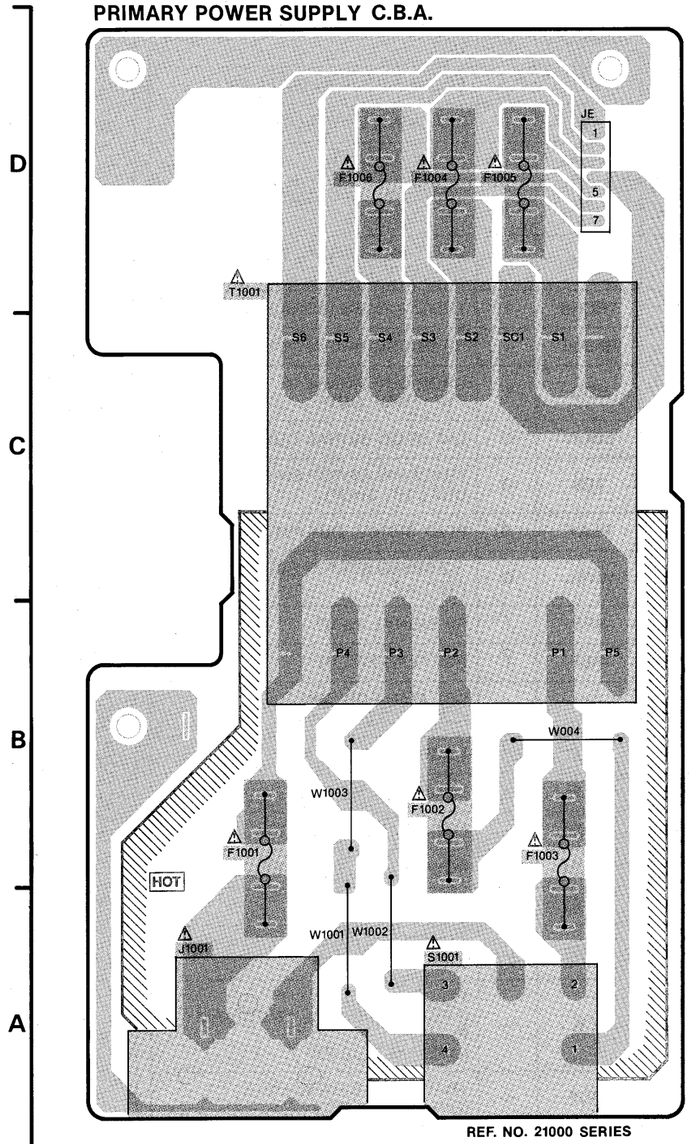


)0 SERIES Ref No. 22000 SERIES

5 6 7 8 9

3—45

PRIMARY POWER SUPPLY C.B.A.



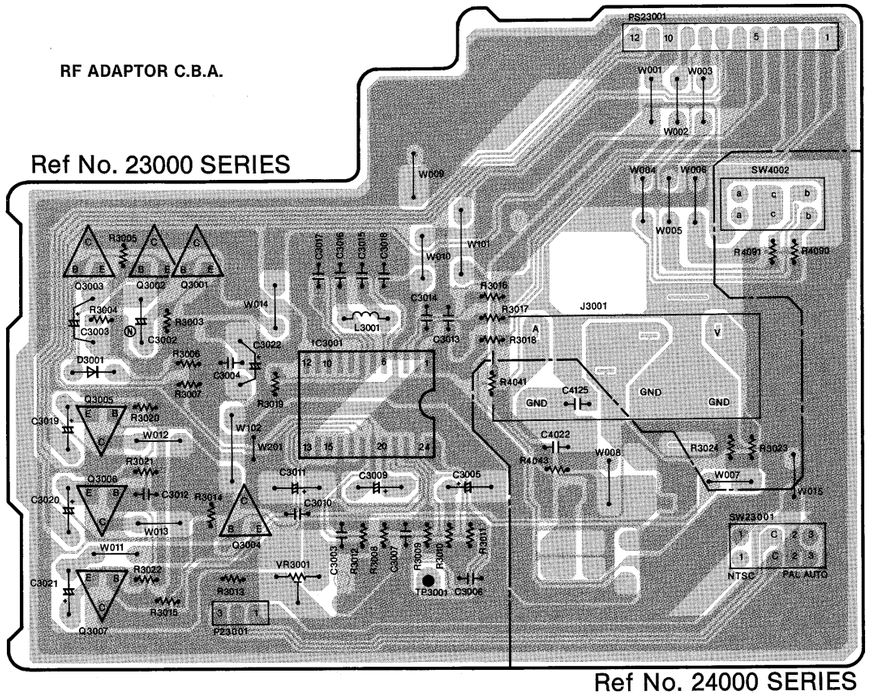
REF. NO. 21000 SERIES

1 2

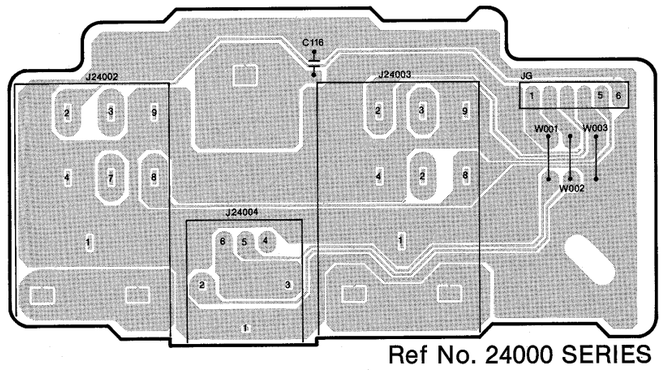
3—46

3-13. KARAOKE B C.B.A. (VEP94151A), RF ADAPTOR C.B.A. (VEP93182D), MIC INPUT C.B.A. (VEP94152A) AND HEADPHONE C.B.A. (VEP94153A)

RF ADAPTOR C.B.A.



MIC INPUT C.B.A.



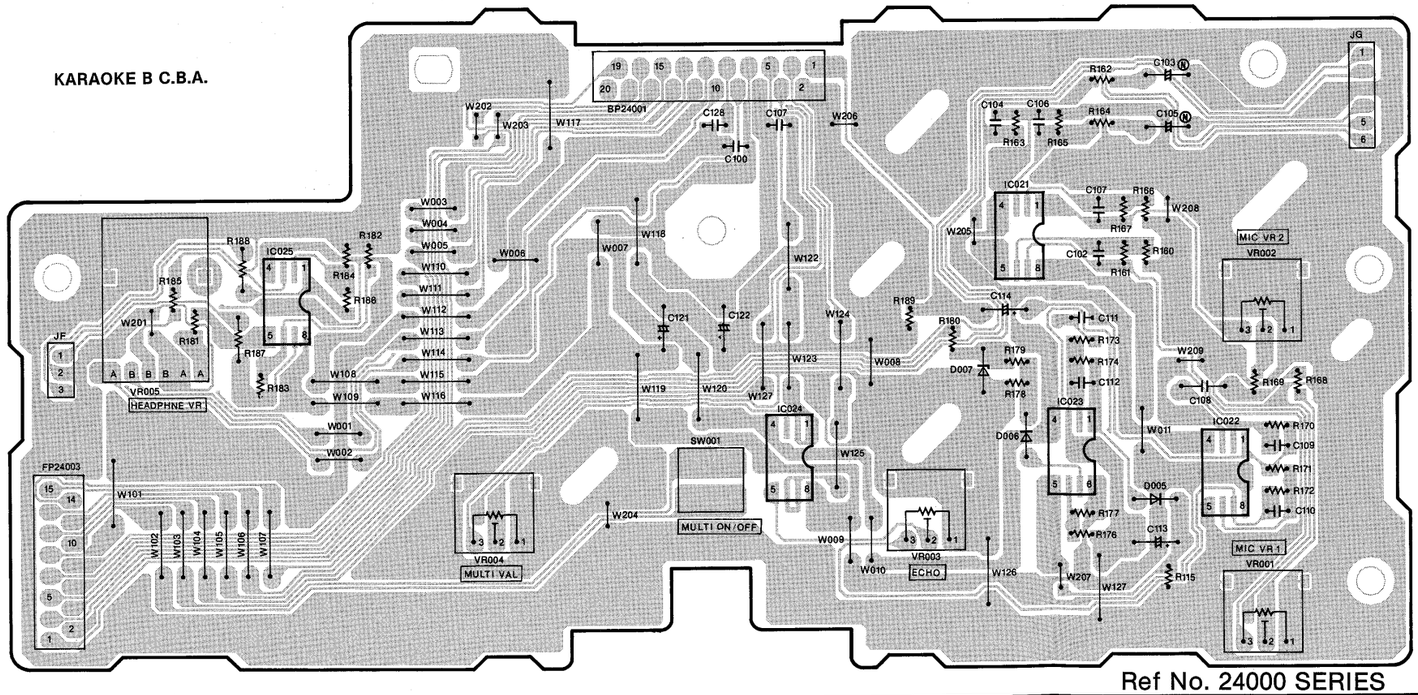
KARAOKE B C.B.A.	
Integrated Circuit	
IC021	C-5
IC022	A-6
IC023	A-5
IC024	A-4
IC025	B-2
Adjustment	
VR001	A-6
VR002	B-6
VR003	A-5
VR004	A-3
VR005	B-1
Connector	
BP24004	C-3
FP24003	A-1
JF	B-1
JG	C-6

ADDRESS INFORMATION

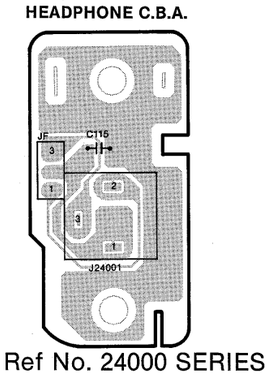
RF ADAPTOR C.B.A.	
Transistor	
Q3001	E-1
Q3002	E-1
Q3003	E-1
Q3004	D-2
Q3005	E-1
Q3006	D-1
Q3007	D-1
Integrated Circuit	
IC3001	E-2
Test Point	
TP3001	D-3
Adjustment	
VR3001	D-2
Connector	
P23001 PS23001	D-2 F-3

ADDRESS INFORMATION

KARAOKE B C.B.A.



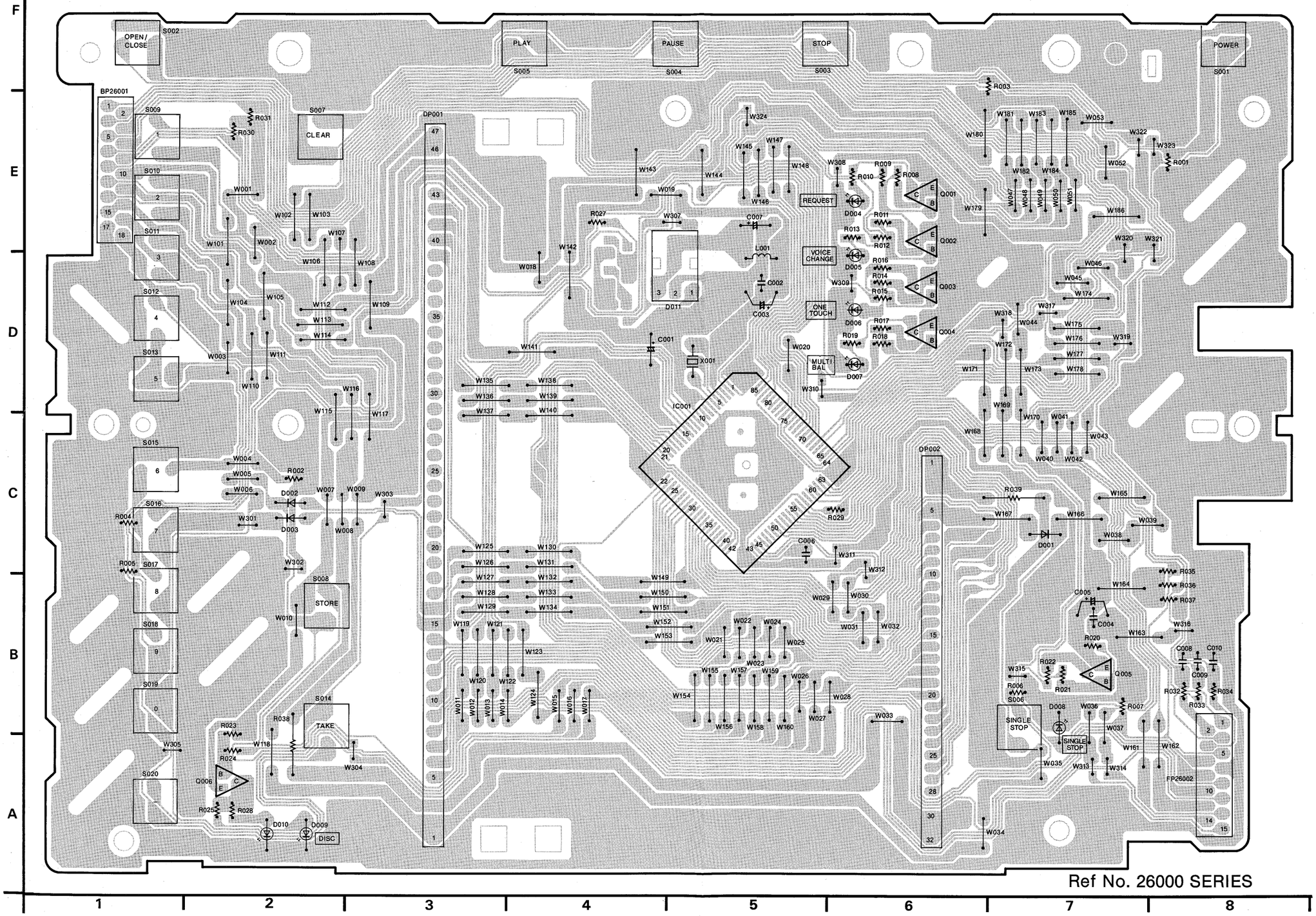
HEADPHONE C.B.A.



ADDRESS INFORMATION

3-14. OPERATION C.B.A. (VEP96345C)

OPERATION C.B.A.



Ref No. 26000 SERIES

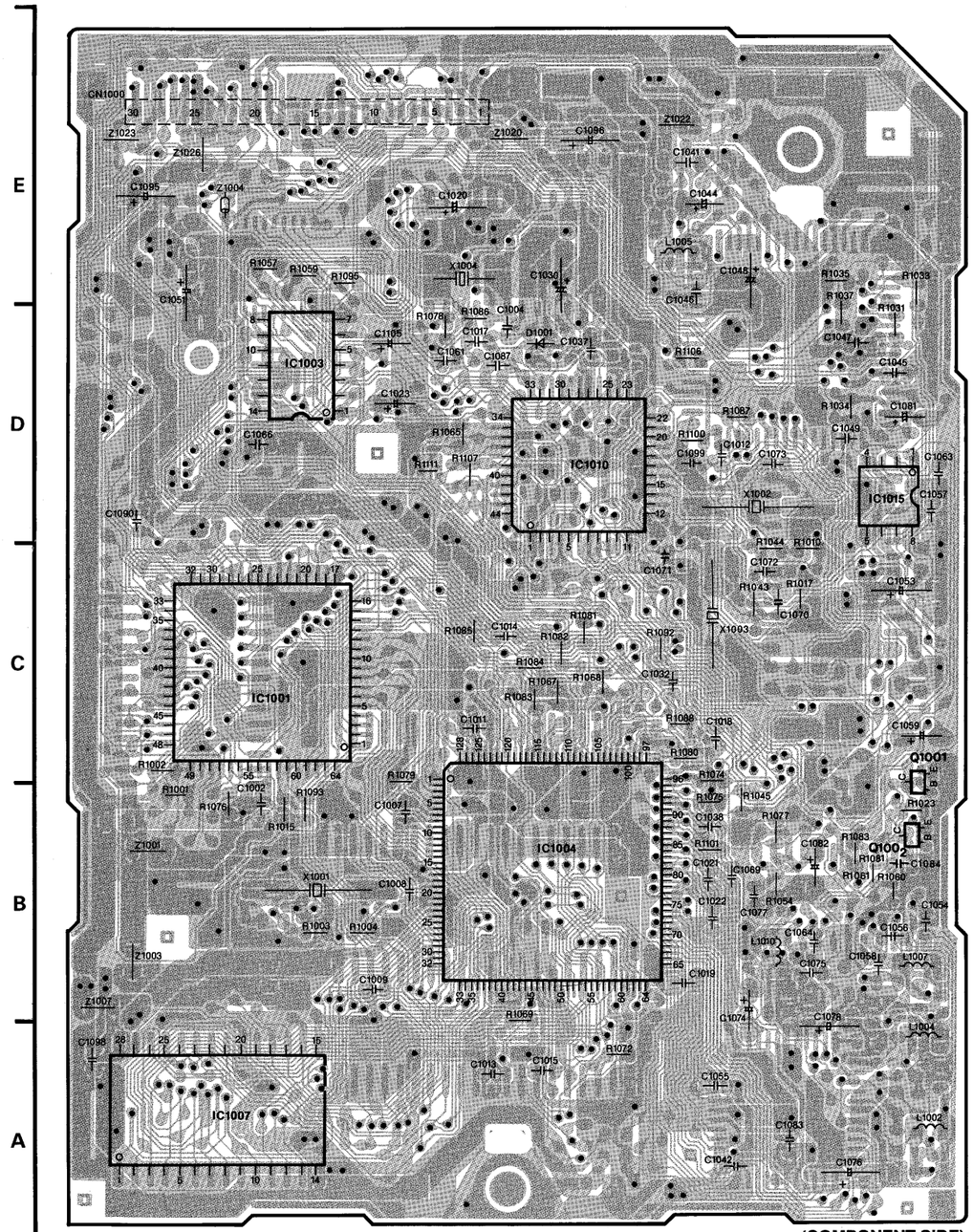
OPERATION C.B.A.	
Transistor	
Q001	E-6
Q002	E-6
Q003	D-6
Q004	D-6
Q005	B-7
Q006	A-1
Q007	D-4
Q008	D-4
Integrated Circuit	
IC001	C-5
Connector	
BP26001	E-1
FP26002	A-8

ADDRESS INFORMATION

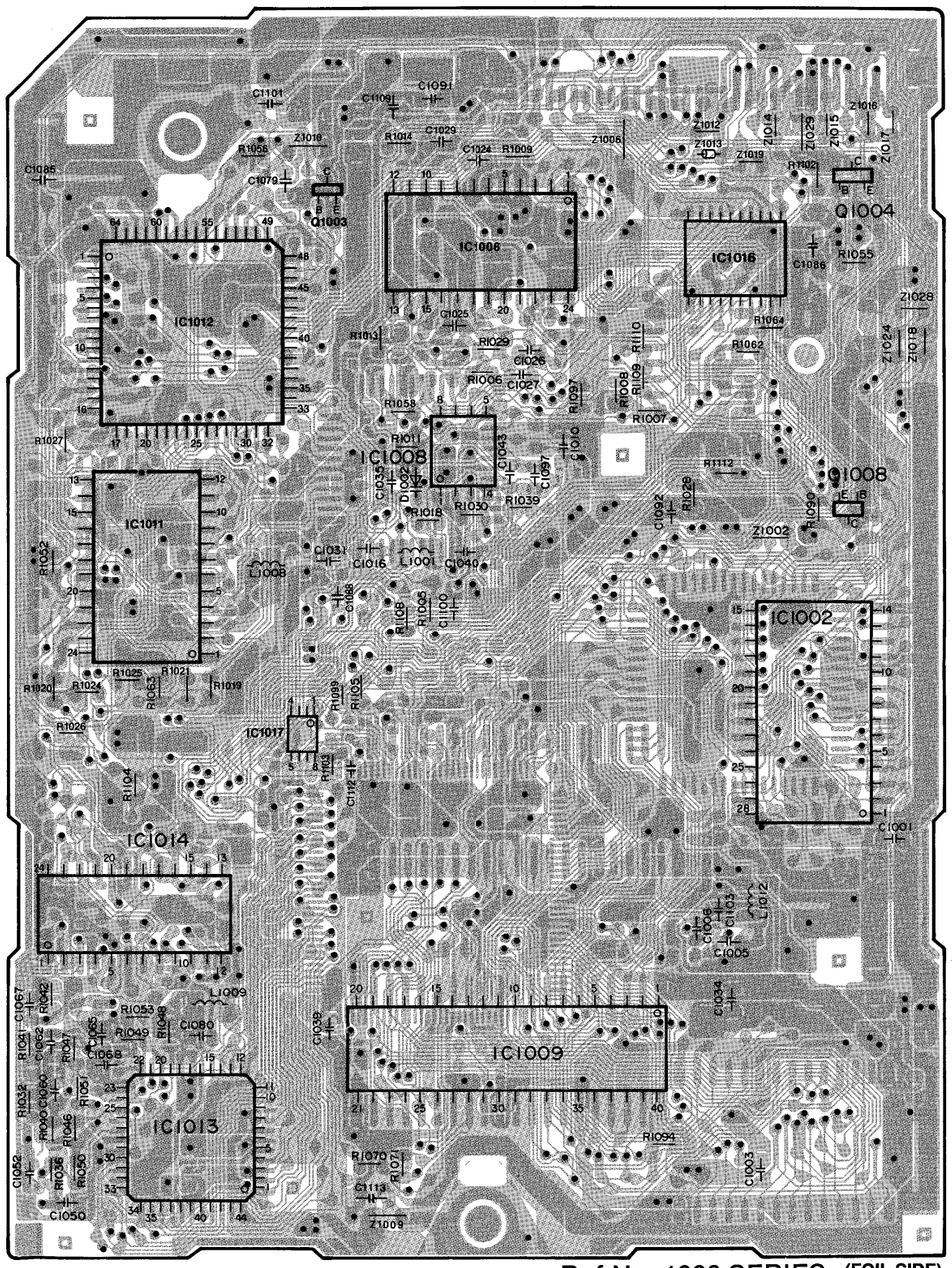
3-15. VIDEO CD MODULE C.B.A.

VIDEO CD MODULE C.B.A.					
Transistor		IC1003	D-2	IC1015	D-4
Q1001	B-4	IC1004	B-3	IC1016	E-7
Q1002	B-4	IC1006	E-6	**Connector**	
Q1003	E-6	IC1007	A-1	CN1000	E-1
Q1004	E-8	IC1008	D-6		
Q1008	D-8	IC1009	B-7		
Integrated Circuit		IC1010	D-3		
IC1001	C-1	IC1011	D-5		
IC1002	C-8	IC1012	D-5		
		IC1013	A-5		
		IC1014	B-5		

ADDRESS INFORMATION



(COMPONENT SIDE)



Ref No. 1000 SERIES (FOIL SIDE)

E D C B A

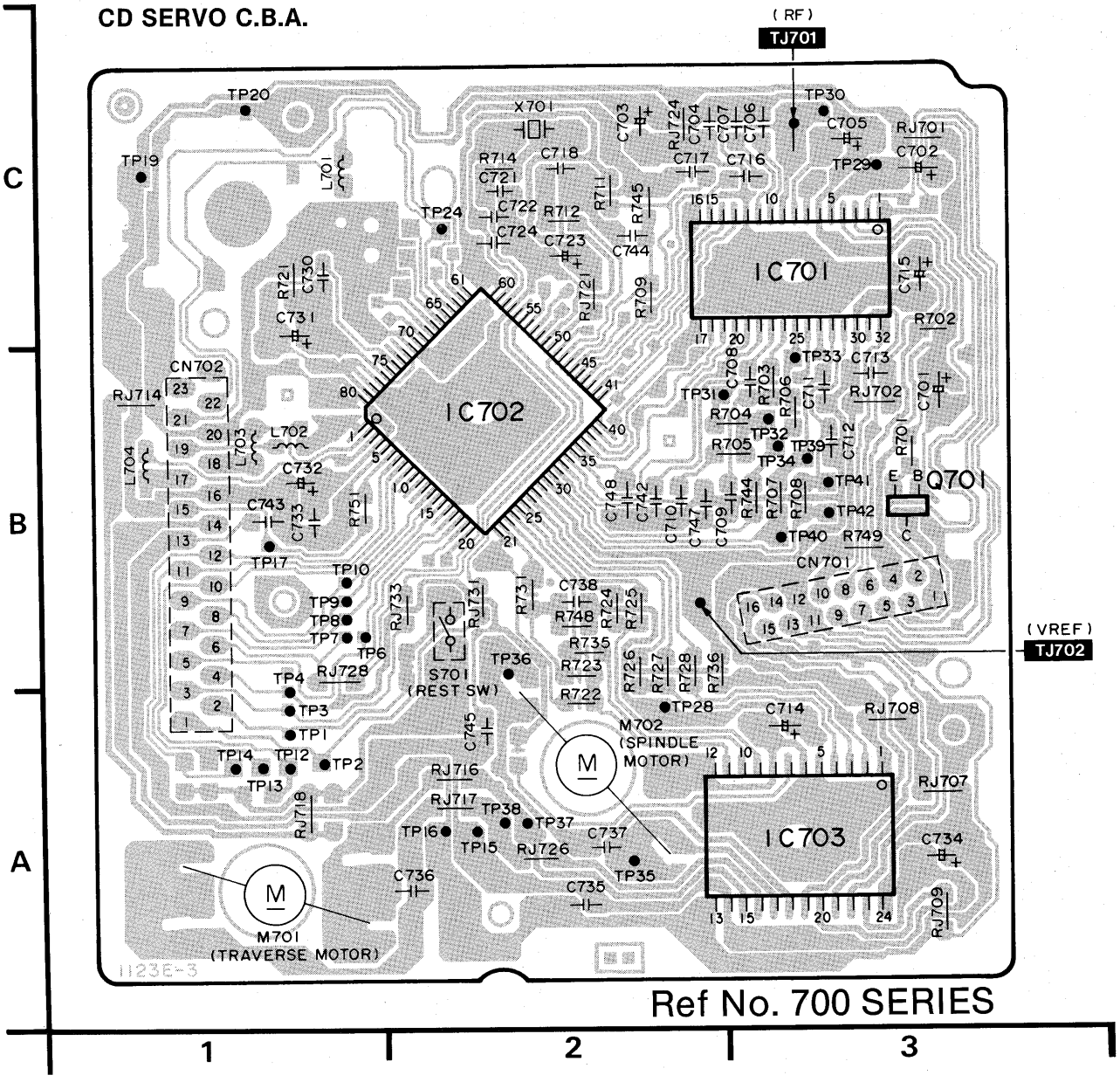
1 2 3 4 5 6 7 8

3-16. CD SERVO C.B.A.

CD SERVO C.B.A.	
Transistor	
Q701	B-3
Integrated Circuit	
IC701	C-3
IC702	B-2
IC703	A-3
Test Point	
TJ701	C-3
TJ702	B-2
TP1	A-1
TP2	A-1
TP3	A-1
TP4	B-1
TP6	B-1
TP7	B-1
TP8	B-1
TP9	B-1
TP10	B-1
TP12	A-1
TP13	A-1
TP14	A-1
TP15	A-2
TP16	A-2
TP17	B-1
TP19	C-1
TP20	C-1
TP24	C-2
TP28	A-2
TP29	C-3
TP30	C-3
TP31	B-3
TP32	B-3
TP33	B-3
TP34	B-3
TP35	A-2
TP36	A-2
TP37	A-2
TP38	A-2
TP39	B-3
TP40	B-3
TP41	B-3
TP42	B-3
Connector	
CN701	B-3
CN702	B-1

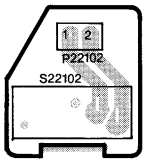
ADDRESS INFORMATION

CD SERVO C.B.A.

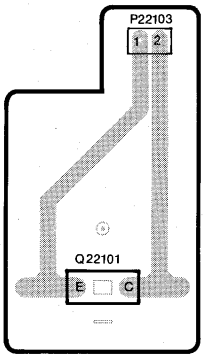


3-17. MECHANISM CONNECTION C.B.A.s

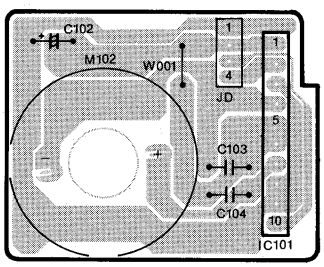
HOME SW C.B.A. (VEK7408)



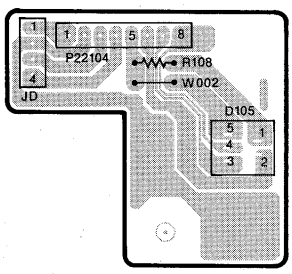
12 DISC DET C.B.A. (VEK7409)



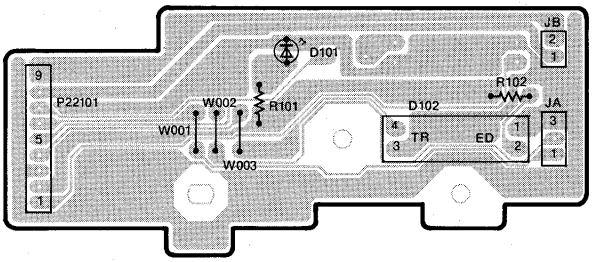
UP/DOWN MOTOR C.B.A. (VEP92290A)



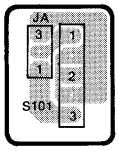
FG SENSOR C.B.A. (VEP92293A)



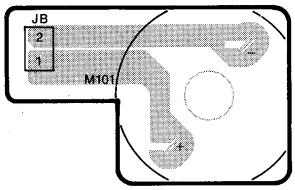
DISC DET C.B.A. (VEP92288A)



OPEN/CLOSE SW C.B.A. (VEK7406)

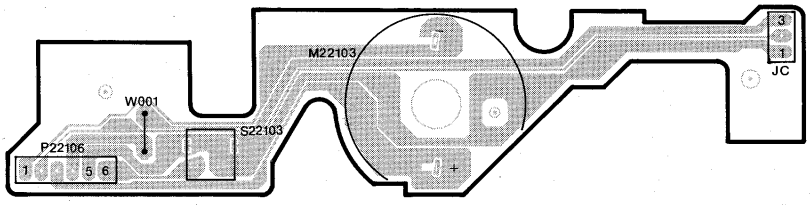


LOADiNG MOTOR C.B.A. (VEK7407)

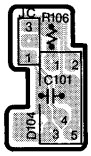


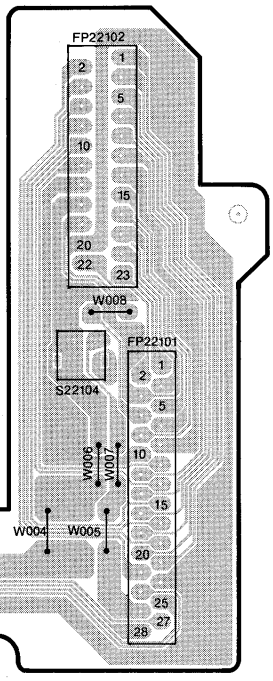
Ref No. 22000 SERIES

STOCKER MOTOR C.B.A. (VEP92295A)

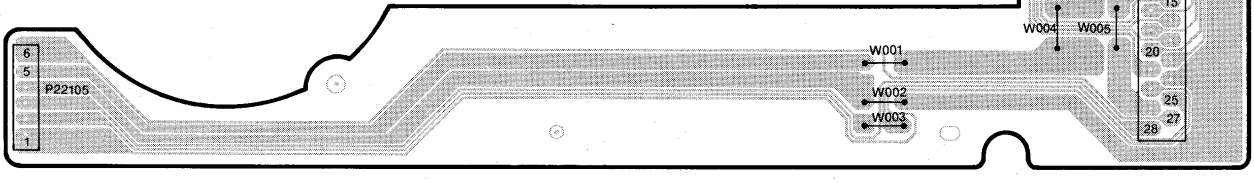


UP/DOWN COUNTER C.B.A. (VEK7410)



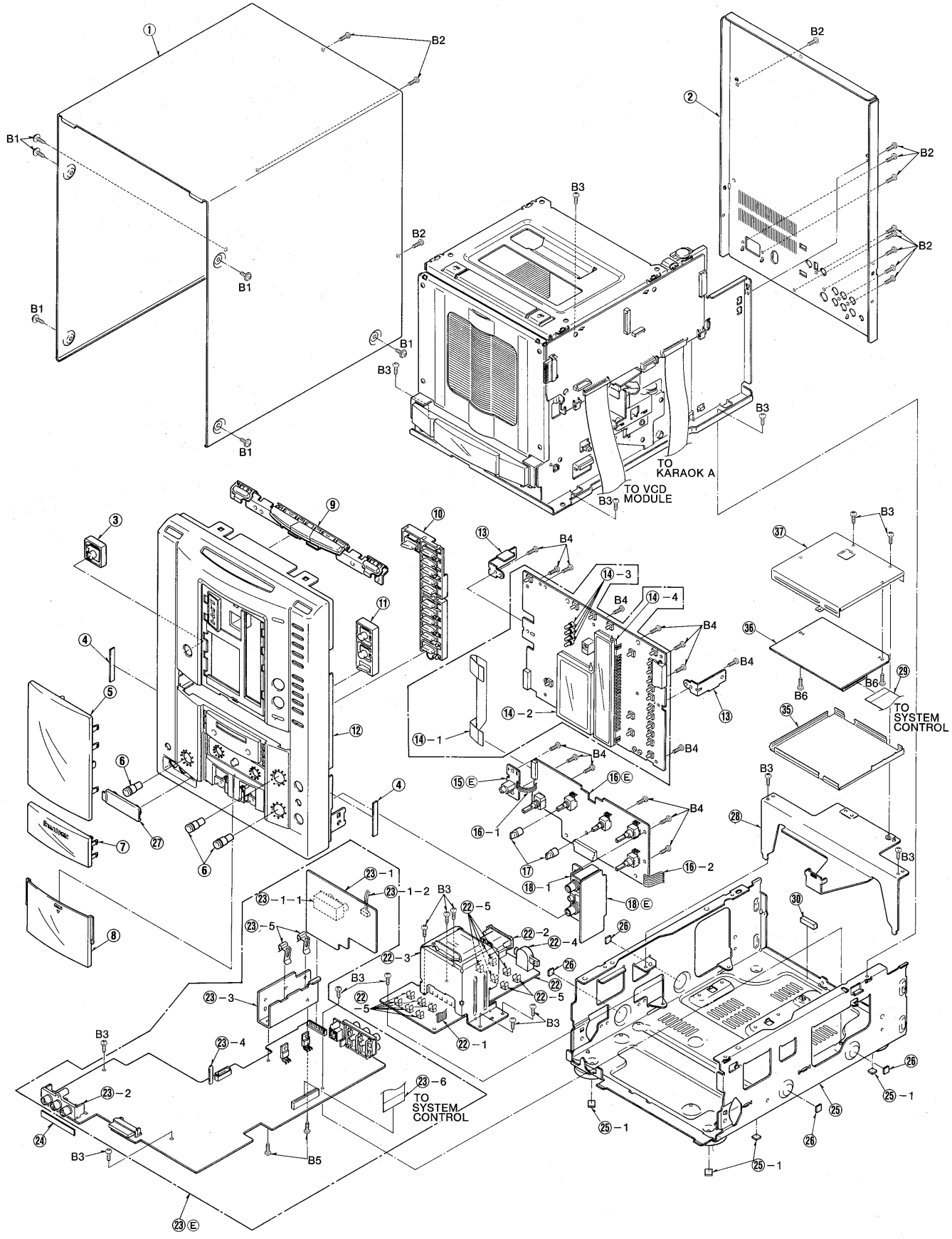


CD SERVO CONNECTION C.B.A. (VEP92296A)



SECTION 4
EXPLODED VIEWS AND REPLACEMENT PARTS LIST

4-1-1. CHASSIS FRAME & CASING PARTS SECTION EXPLODED VIEW



4-1-2. CHASSIS FRAME & CASING PARTS SECTION PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

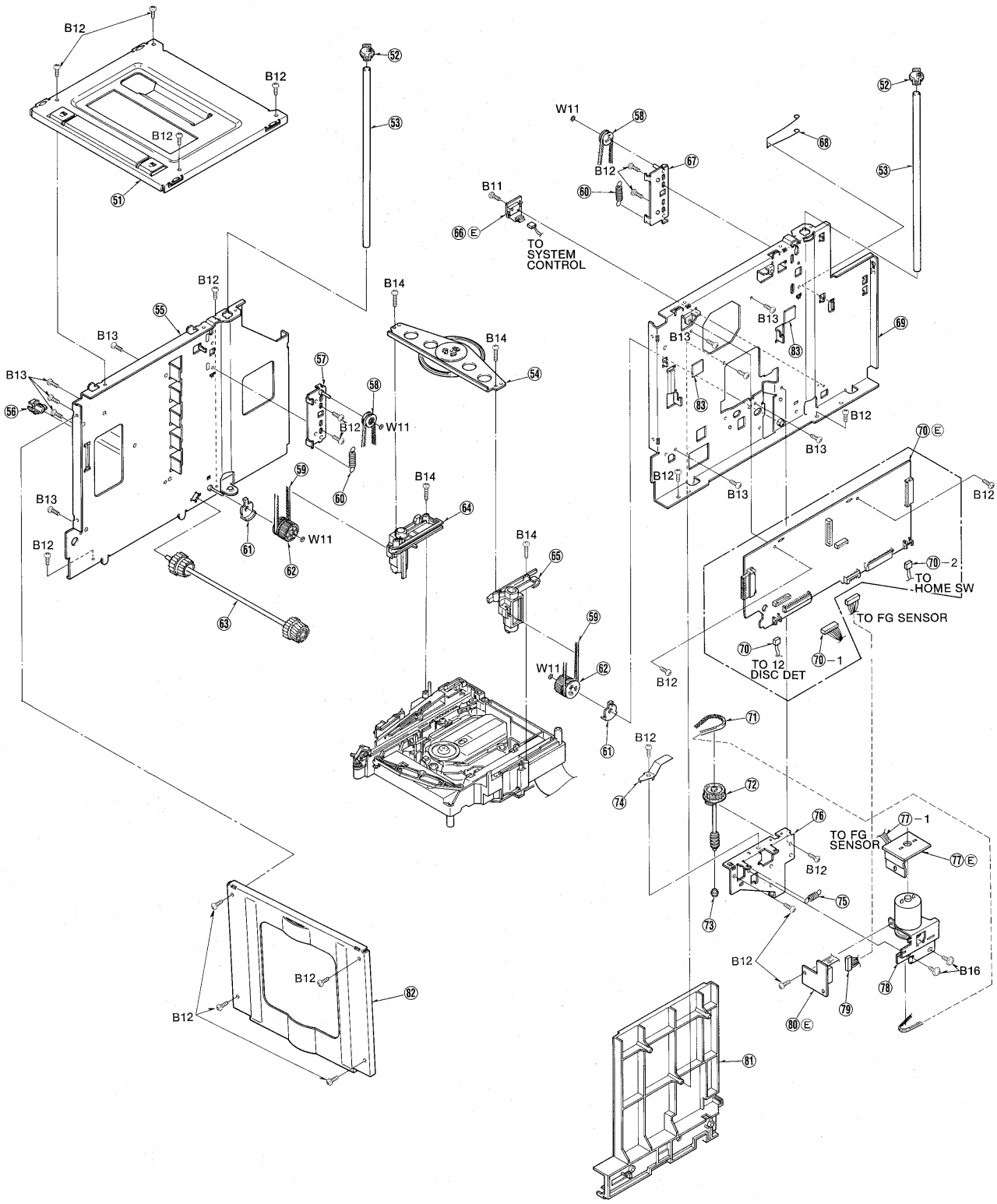
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1 (1)		VGM1103	TOP COVER	1	
2 (1)		VMA9489	REAR PANEL	1	
3 (1)		VGU6753	CHAPTER STOP BUTTON	1	
4 (1)		VMX2399	SPACER D	2	
5 (1)		VKW2226	FRONT PANEL COVER A	1	
6 (1)		VGU6297	ECHO VR KNOB	3	
7 (1)		VKW2227	FRONT PANEL COVER B	1	
8 (1)		VKF2261	SLIDE DOOR	1	
9 (1)		VXU1432	OPERATION ANGLE UNIT	1	
10 (1)		VGU6752	10-KEY BUTTON	1	
11 (1)		VGU6754	EJECT BUTTON	1	
12 (1)		VYP6201	FRONT PANEL UNIT	1	
13 (1)		VMA9131	FRONT COVER ANGLE	2	
14 (1)		VEP96345C	OPERATION C.B.A.	1	(RTL)
14-1 (1)		VWJ0874	15P FLAT CABLE	1	(FP26002-FP24003)
14-2 (1)		VSL0339	MODE DISPLAY TUBE	1	(DP6002)
14-3 (1)		VGQ0457	LED SPACER	4	
14-4 (1)		VSL0328	DISC DISPLAY TUBE	1	(DP6001)
14-* (1)		VMX2357	FL SPACER A	2	
14-* (1)		VMX2358	FL SPACER B	2	
15 (1)		VEP94153A	HEADPHONE C.B.A.	1	(RTL)
16 (1)		VEP94151A	KARAOKE (B) C.B.A.	1	(RTL)
16-1 (1)		VWJ0916	3P FLAT WIRE	1	(JF-JF)
16-2 (1)		VWJ0915	6P FLAT WIRE	1	(JG-JG)
17 (1)		VGU5643	HEADPHONE KNOB	3	
18 (1)		VEP94152A	MIC C.B.A.	1	(RTL)
18-1 (1)		VMA9130	MIC C.B.A. ANGLE	1	
19-* (1)		VMC1051	EARTH PLATE A	1	
20-* (1)		VMC1052	EARTH PLATE B	1	
21-* (1)		VMC0986	EARTH LEAF SPRING	1	
22 (1)		VEP91212A	PRIMARY POWER C.B.A.	1	(RTL)<!>
22-1 (1)		VWJ07YB120QQ	7P FLAT CARD CABLE	1	
22-2 (1)		VJS3166	AC INLET	1	<!>
22-3 (1)		VTP0489	POWER TRANSFORMER	1	<!>
22-4 (1)		VSR0220	VOLTAGE SELECTOR	1	<!>
22-5 (1)		VJF1147	FUSE HOLDER	12	<!>
22-* (1)		SNE83-1	EARTH PLATE	1	
23 (1)		VEP94150D	KARAOKE (A) C.B.A.	1	(RTL)
23-1 (1)		VEP93182D	RF ADAPTOR C.B.A.	1	(RTL)
23-1-1(1)		VEJ1693	RF JACK	1	
23-1-2(1)		VWJ03D5300QQ	3P FLAT CABLE	1	(P23001-P26211)
23-2 (1)		VEJ1013	OUTPUT JACK	1	
23-3 (1)		VSC4045	HEAT SINK	1	
23-4 (1)		VJF0304	WIRE CLAMPER	1	
23-5 (1)		VMC1010	TR. HOLDER SPRING	1	
23-6 (1)		VWJ24HW200MM	24P FLAT CABLE	1	(FP21020-PF26202)
23-* (1)		VSC3941	HEAT SINK	1	
24 (1)		VMX2379	SPACER B	1	
25 (1)		VXK1146	BOTTOM CHASSIS	1	
25-1 (1)		VKA0198	RUBBER FOOT	4	
26 (1)		VMX2398	SPACER C	4	
27 (1)		VGQ3668	CONNECTOR COVER	1	
28 (1)		VMA9133	ANGLE	1	
29 (1)		VWJ0898	30P FLAT CABLE	1	(FP26201-CN1000)
30 (1)		VMT0764	POWER C.B.A. SPACER	1	
35 (1)		RSC0410	SHIELD CASE B	1	
36 (1)		----------	VCD MODULE C.B.A.	1	
37 (1)		RSC0409	SHIELD CASE A	1	
38 (1)		RMZ0302-1	INSULATION SHEET	1	
39 (1)		RMZ0310-1	INSULATION SHEET	1	
B1 (1)		VHD0165	SCREW	6	
B2 (1)		VHD0690	SCREW	12	
B3 (1)		XTV3+6J	SCREW	33	
B4 (1)		XTV3+8GR	SCREW	15	
B5 (1)		XTV3+8J	SCREW	2	
B6 (1)		XYC26+JF6	SCREW	2	

4-2-1. CHASSIS FRAME & MECHANISM 1 SECTION PARTS LIST

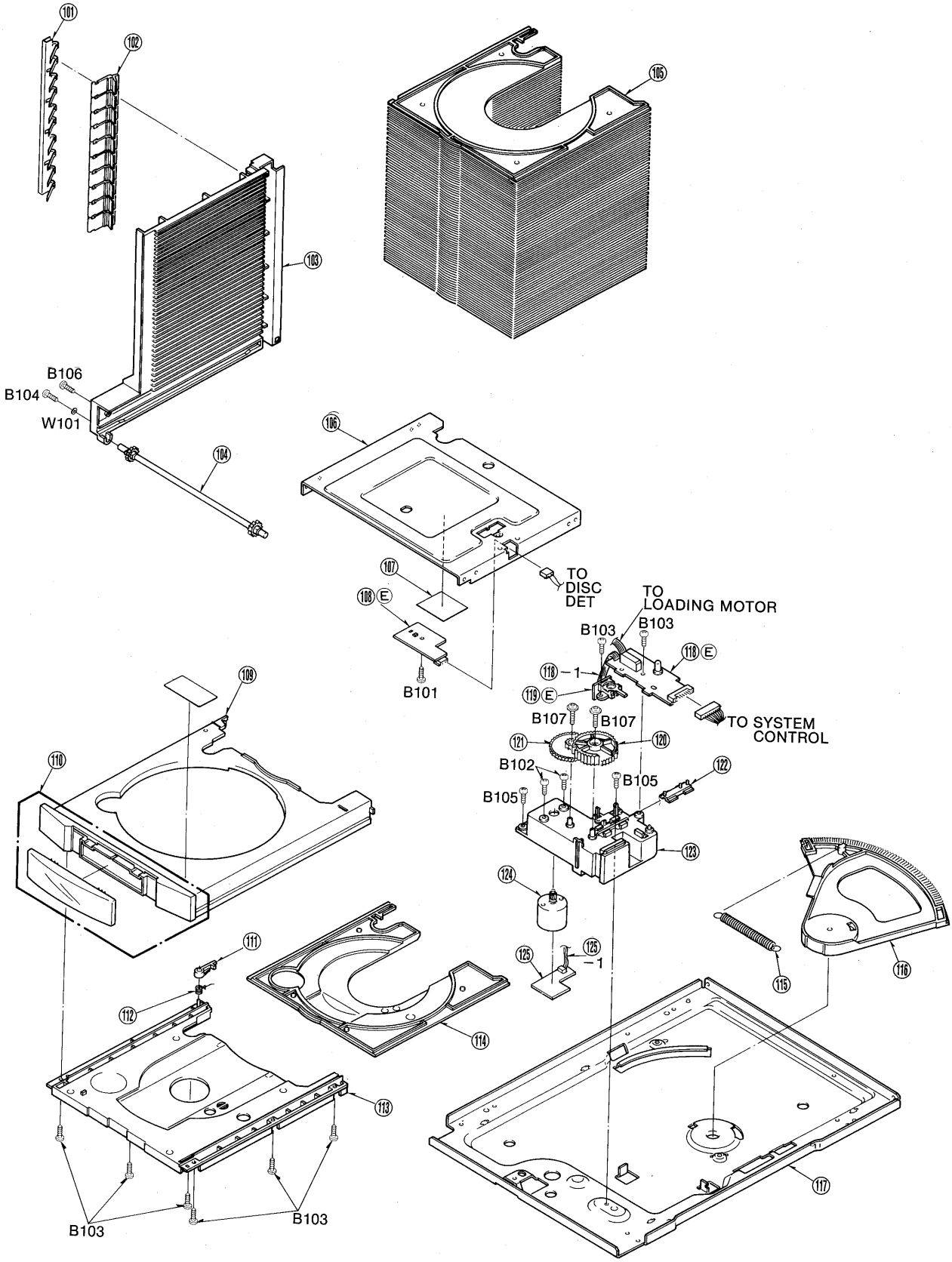
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
51 (2)		VMA9096	CONNECTION PLATE A	1	
52 (2)		VMD2255	SHAFT HOLDER PIECE	2	
53 (2)		VMS5553	GUIDE SHAFT	2	
54 (2)		VXA5330	CLAMPER PLATE UNIT	1	
55 (2)		VXA5319	FRAME L UNIT	1	
56 (2)		VDB1255	CONNECTION SHAFT HOLDER	1	
57 (2)		VXA5323	TENSION BRACKET L UNIT	1	
58 (2)		VXP1514	PULLEY B UNIT	2	
59 (2)		VDV0263	TIMING BELT C	2	
60 (2)		VMB2712	SPRING A	2	
61 (2)		VMD2259	BELT STOPPER	2	
62 (2)		VXP1513	PULLEY GEAR	2	
63 (2)		VXJ0107	CONNECTION SHAFT B UNIT	1	
64 (2)		VMD2264	GUIDE L	1	
65 (2)		VMD2263	GUIDE R	1	
66 (2)		VEK7408	HOME SW C.B.A.	1	(RTL)
67 (2)		VXA5321	TENSION BRACKET UNIT	1	
68 (2)		VMB2751	FFC HOLDER SPRING	1	
69 (2)		VXA5317	FRAME R UNIT	1	
70 (2)		VEP96344B	MECHANISM CONTROL C.B.A.	1	(RTL)
70-1 (2)		VEE9155	DISC DET. CABLE	1	(P22004-P22101)
70-2 (2)		VEE9156	HOME SW CABLE	1	(P22001-P22102)
70-3 (2)		VEE9157	12cm DISC DET CABLE	1	(P22002-P22103)
71 (2)		VDV0262	TIMING BELT B	1	
72 (2)		VXJ0108	WORM SHAFT UNIT	1	
73 (2)		VDB1246	WORM SHAFT HOLDER	1	
74 (2)		VMC1038	THRUST SPRING	1	
75 (2)		VMB2713	SPRING B	1	
76 (2)		VMA9100	GEAR BRACKET	1	
77 (2)		VEP92290A	UP/DOWN MOTOR C.B.A.	1	(RTL)
77-1 (2)		VWJ0919	4P FLAT CABLE	1	(JD-JD)
78 (2)		VXA5333	MOTOR BRACKET UNIT	1	
79 (2)		VEE9154	F.G CABLE	1	(P22104-P22003)
80 (2)		VEP92293A	F.G SENSOR C.B.A.	1	(RTL)
81 (2)		VMD2257	TRAY GUIDE R	1	
82 (2)		VMA9098	FRONT PLATE	1	
83 (2)		VMX2378	SPACER A	1	
B11 (2)		XQN16+CF8	SCREW	1	
B12 (2)		XTV3+6J	SCREW	22	
B13 (2)		XTV3+10J	SCREW	11	
B14 (2)		XTV3+20G	SCREW	2	
B15 (2)		XYN3+C4	SCREW	2	
B16 (2)		XYN3+F6	SCREW	2	
W11 (2)		VMX0653	WASHER	4	

4-2-2. CHASSIS FRAME & MECHANISM 1 SECTION EXPLODED VIEW



4-3-1. CHASSIS FRAME & MECHANISM 2 SECTION EXPLODED VIEW



4-3-2. CHASSIS FRAME & MECHANISM 2 SECTION PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

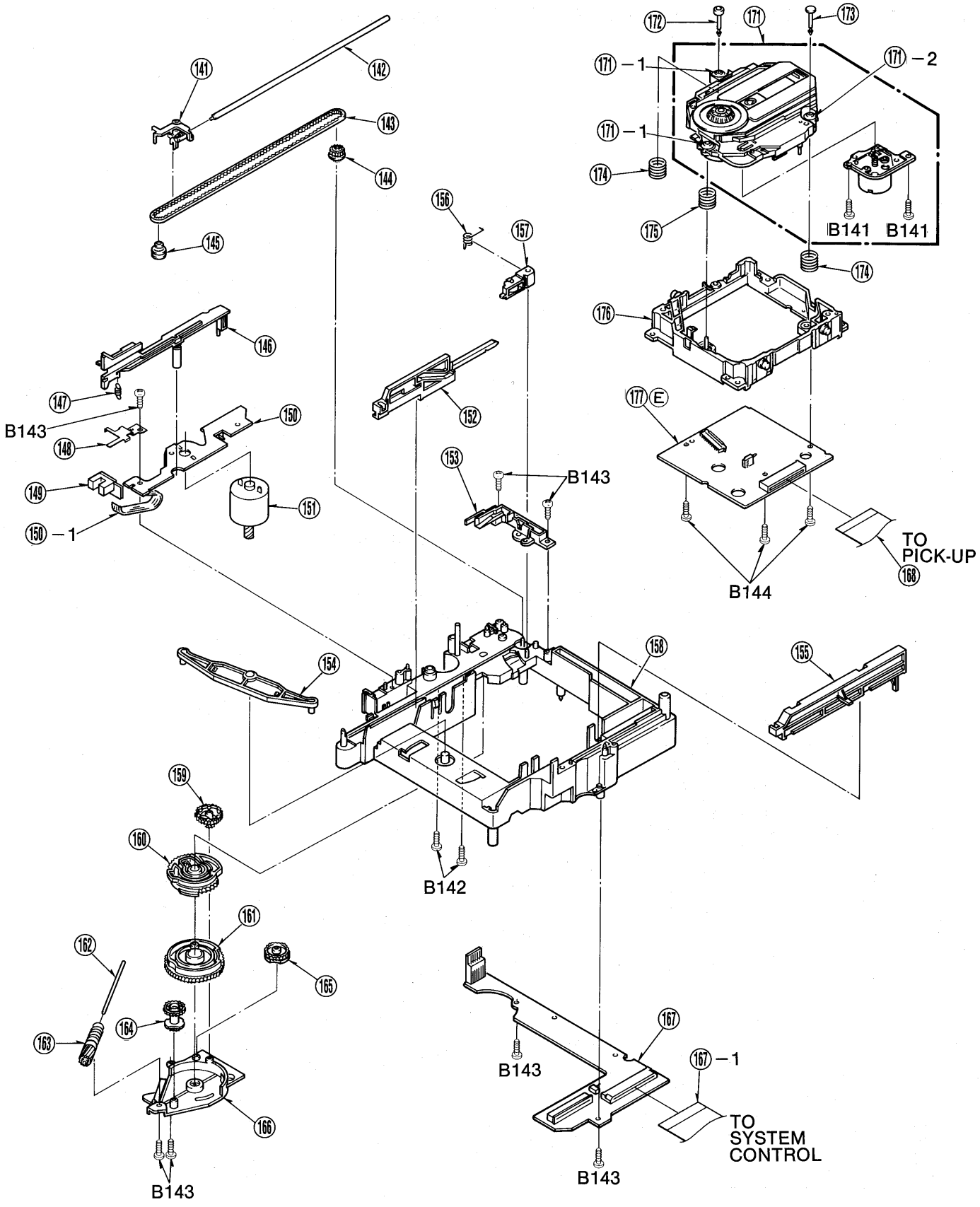
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
101 (3)		VMC1025	STOPPER SPRING A	1	
102 (3)		VML2876	STOPPER SPRING C	10	
103 (3)		VMD2258	TRAY GUIDE	1	
104 (3)		VXJ0106	CONNECTION SHAFT A	1	
105 (3)		VMD2256	STOCKER TRAY	51	
106 (3)		VMA9097	CONNECTION PLATE B	1	
107 (3)		VMT0624	REFRECTION PREVENSION SHEET	1	
108 (3)		VEK7409	12cm DISC DET C.B.A.	1	(RTL)
109 (3)		VGQ4132	TRAY BASE	1	
110 (3)		VYF2335	TRAY TOP	1	
111 (3)		VML2875	TRAY STOPPER A	1	
112 (3)		VMB2711	STOPPER SPRING B	1	
113 (3)		VGQ4133	OUTER TRAY	1	
114 (3)		VGQ3614	INNER TRAY	1	
115 (3)		VMB2714	BALANCER SPRING	1	
116 (3)		VDG0996	BALANCER GEAR	1	
117 (3)		VMA9093	MAIN CHASSIS	1	
118 (3)		VEP92288A	DISC DETECT C.B.A.	1	(RTL)
118-1(3)		VWJ0917	3P FLAT CABLE	1	(JA-JA)
119 (3)		VEK7406	OPEN/CLOSE SW C.B.A.	1	
120 (3)		VDG0988	TRAY DRIVE GEAR	1	
121 (3)		VDG0989	INTERMEDIATE GEAR	1	
122 (3)		VMD2268	SW SLIDER	1	
123 (3)		VMD2254	TRAY DRIVE BASE	1	
124 (3)		VXA5326	LOADING MOTOR UNIT	1	
125 (3)		VEK7407	LOADING MOTOR C.B.A.	1	(RTL)
125-1(3)		VWJ0918	2P FLAT CABLE	1	(JB-JB)
B101 (3)		XQN2+A3	SCREW	1	
B102 (3)		XSB2+5	SCREW	2	
B103 (3)		XTB26+8G	SCREW	9	
B104 (3)		XTV3+8G	SCREW	1	
B105 (3)		XTV3+8J	SCREW	2	
B106 (3)		XTV3+10GFZ	SCREW	1	
B107 (3)		XTW26+12P	SCREW	2	
W101 (3)		XWG3F10	WASHER	1	

4-4-1. CD MECHANISM SECTION PARTS LIST

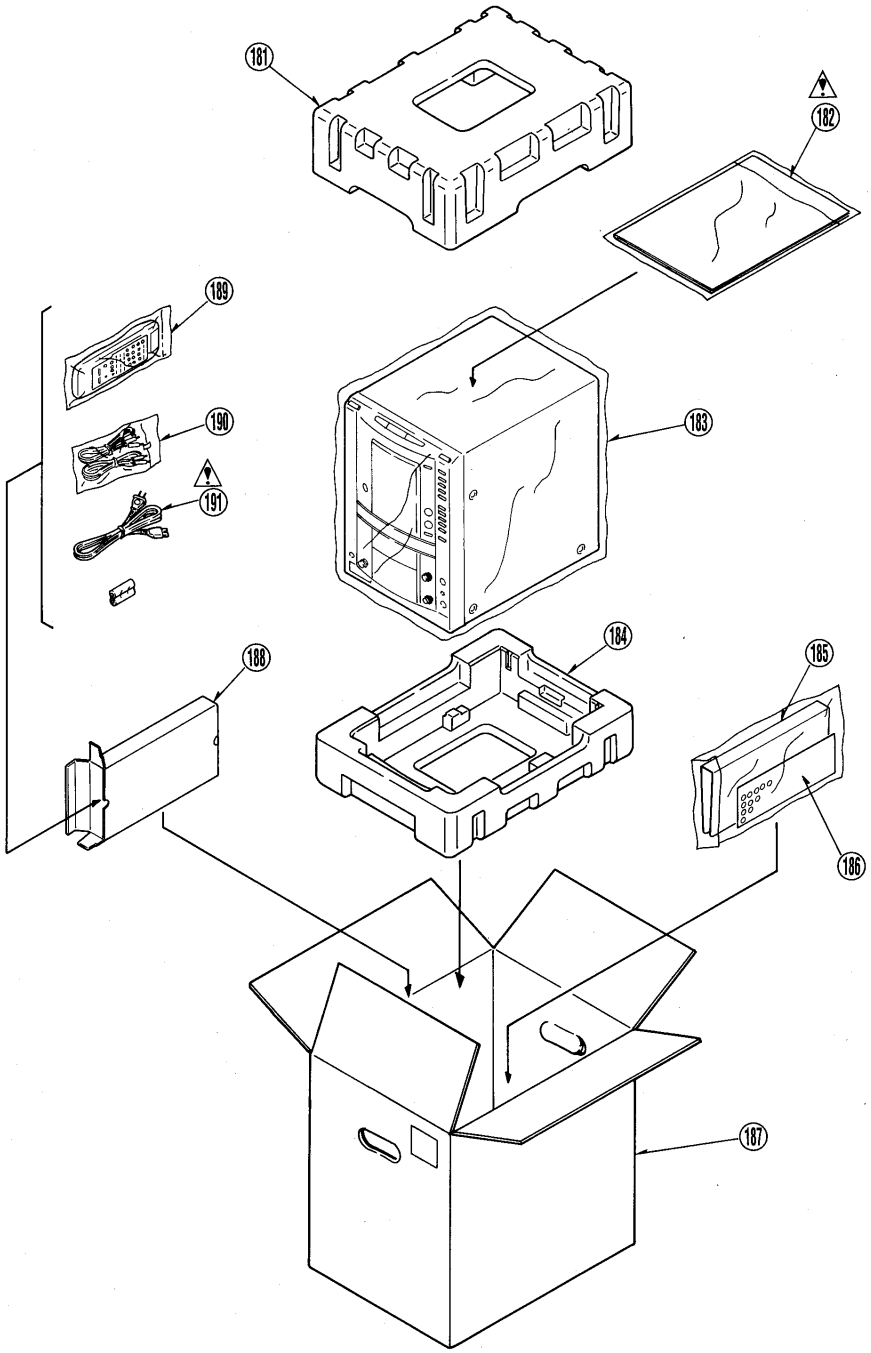
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
141 (4)		VXL2425	HOOK SLIDER UNIT	1	
142 (4)		VMS5558	SLIDER SHAFT	1	
143 (4)		VDV0261	TIMING BELT A	1	
144 (4)		VDP1506	PULLEY (A)	1	
145 (4)		VDP1507	PULLEY (B)	1	
146 (4)		VML2878	STOPPER ARM	1	
147 (4)		VMB2737	ARM SPRING	1	
148 (4)		VMC1026	SENSOR HOLDER	1	
149 (4)		VEK7410	UP/DOWN COUNTER C.B.A.	1	(RTL)
150 (4)		VEP92295A	STOCKER MOTOR C.B.A.	1	(RTL)
150-1(4)		VWJ0917	3P FLAT CABLE	1	(JC-JC)
151 (4)		VXA5329	STOCKER MOTOR UNIT	1	
152 (4)		VMD2265	SLIDER L	1	
153 (4)		VMD2267	SHAFT HOLDER	1	
154 (4)		VML2877	ARM UD	1	
155 (4)		VMD2261	SLIDER R	1	
156 (4)		VMB2716	ROLLER SPRING	1	
157 (4)		VXL2427	TENSION ARM UNIT	1	
158 (4)		VXA5335	VCD CHASSIS	1	
159 (4)		VDG1001	GEAR (C)	1	
160 (4)		VDG0999	CAM GEAR (A)	1	
161 (4)		VDG1000	CAM GEAR (B)	1	
162 (4)		VMS5560	SHAFT	1	
163 (4)		VDG0997	WORM GEAR	1	
164 (4)		VDG1003	GEAR (B)	1	
165 (4)		VDG1002	GEAR (A)	1	
166 (4)		VMD2262	GEAR COVER	1	
167 (4)		VEP92296A	CONNECTION C.B.A.	1	(RTL)
167-1(4)		VWJ0873	28P FLAT CABLE	1	(FP26203-FP22101)
168 (4)		VWJ0872	23P FLAT CABLE	1	(FP22102-PICK-UP)
171 (4)		VURAE0113Z	TRAVERSE UNIT	1	
171-1(4)		SHGD113-1	FLOATING RUBBER 2	2	
171-2(4)		SHGD112	FLOATING RUBBER 1	1	
172 (4)		RMS0350	FIXING PIN 2	1	
173 (4)		RMS0123-1	FIXING PIN 1	1	
174 (4)		RME0109	FLOATING SPRING 1	2	
175 (4)		RME0142	FLOATING SPRING 2	1	
176 (4)		RMR0698-K	TRAVERSE CHASSIS	1	
177 (4)		----------	CD SERVO C.B.A.	1	
B141 (4)		XQS17+A35FZ	SCREW	2	
B142 (4)		XSB2+5	SCREW	2	
B143 (4)		XTB26+8G	SCREW	7	
B144 (4)		XTV2+6G	SCREW	3	

4-4-2. CD MECHANISM SECTION EXPLODED VIEW



4-5-1. PACKING PARTS & ACCESSORIES SECTION EXPLODED VIEW



4-5-2. PACKING PARTS & ACCESSORIES SECTION PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
181 (5)		VPN4076	CUSHION	1	
182 (5)		VQT6542	OPERATING INSTRUCTIONS	1	<!>
183 (5)		VPF0445	POLYETHYLENE BAG	1	
184 (5)		VPN4077	CUSHION L	1	
185 (5)		VPF0160	TITLE FILE	1	
187 (5)		VPG8496	PACKING CASE	1	
188 (5)		VPK1874	ACCESSORIES BOX	1	
189 (5)		RAK-LX197WH	REMOTE CONTROLLER	1	
189-*(5)		RKK0057	BATTERY COVER	1	
190 (5)		VFA0156	AV CORD	1	
191 (5)		VJA0713	AC CODE	1	<!>

4-6. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE : Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP91212A	PRIMARY POWER C.B.A.	1	(RTL)<!>
			(PAGE: 4-8)		
		VEP94150D	KARAOKE (A) C.B.A.	1	(RTL)
			(PAGE: 4-8)		INCLUDING THE
					RF ADAPTOR C.B.A.
					(VEP93182D).
		VEP93182D	RF ADAPTOR C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP94150D).
		VEP94151A	KARAOKE (B) C.B.A.	1	(RTL)
			(PAGE: 4-11)		
		VEP96345C	OPERATION C.B.A.	1	(RTL)
			(PAGE: 4-11)		
		VEP94153A	HEADPHONE C.B.A.	1	(RTL)
			(PAGE: 4-12)		
		VEP94152A	MIC C.B.A.	1	(RTL)
			(PAGE: 4-12)		
		VEP96344B	MECHANISM CONTROL C.B.A.	1	(RTL)
			(PAGE: 4-12)		
		VEP92296A	CONNECTION C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEP92295A	STOCKER MOTOR C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEP92293A	F.G SENSOR C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEP92288A	DISC DETECT C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEP92290A	UP/DOWN MOTOR C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEK7410	UP/DOWN COUNTER C.B.A.	1	(RTL)
			(PAGE: 4-13)		
		VEK7406	OPEN/CLOSE SW C.B.A.	1	(RTL)
			(PAGE: 4-14)		
		VEK7407	LOADING MOTOR C.B.A.	1	(RTL)
			(PAGE: 4-14)		
		VEK7408	HOME SW C.B.A.	1	(RTL)
			(PAGE: 4-14)		
		VEK7409	12cm DISC DET C.B.A.	1	(RTL)
			(PAGE: 4-14)		
		----------	VCD MODULE C.B.A.	1	
			(PAGE: 4-14)		
		----------	CD SERVO C.B.A.	1	
			(PAGE: 4-15)		
		----------	MOTOR C.B.A.	1	
			(PAGE: 4-16)		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP91212A	PRIMARY POWER C.B.A.		(RTL)<!>
F21001		XBA2C06TB0	FUSE	1	<!>
F21002,03		XBA2C03TB0	FUSE	2	<!>
F21004,05		XBA2C10TB0	FUSE	2	<!>
F21006		XBA2C16TB0	FUSE	1	<!>
J21001		VJS3166	AC INLET	1	<!>
S21001		VSR0220	VOLTAGE SELECTOR	1	<!>
T21001		VTP0489	TRANSFORMER	1	<!>
			MISCELLANEOUS		
		SNE83-1	EARTH ANGLE	1	
		VWJ07YB120QQ	7P FLAT CARD CABLE	1	
		VJF1147	FUSE HOLDER	12	<!>
	■	VEP94150D	KARAOKE (A) C.B.A.		(RTL)
BS24001		VJS3600B020K	CONNECTOR (FEMALE) 20P	1	
C21020		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C21022		ECA1EM682	E.CAPACITOR 25V 6800U	1	
C21023		ECA1EM222	E.CAPACITOR 25V 2200U	1	
C21024		ECA1VM332	E.CAPACITOR 35V 3300U	1	
C21025		ECA1EM331	E.CAPACITOR 25V 330U	1	
C21026		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C21027		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C21028		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C21029,30		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C21031		ECEA1AGE102Z	E.CAPACITOR 10V 1000U	1	
C21032		ECEAOJU331	E.CAPACITOR 6.3V 330U	1	
C21033		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C21034		ECEA1HU2R2	E.CAPACITOR 50V 2.2U	1	
C21035		ECEA1EU330	E.CAPACITOR 25V 33U	1	
C21036		ECEA1CU330	E.CAPACITOR 16V 33U	1	
C21037		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C21038,39		ECEA1CU470	E.CAPACITOR 16V 47U	2	
C21040		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C21041,42		ECEA1CU101	E.CAPACITOR 16V 100U	2	
C21045,46		ECA2AM101B	E.CAPACITOR 100V 100U	2	SUPPLIED FROM AUDIO DIV.
C21047		ECA1VM330	E.CAPACITOR 35V 33U	1	
C21049		ECEAOJU331	E.CAPACITOR 6.3V 330U	1	
C21050,51		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C23002		ECEA1HKN2R2	E.CAPACITOR 50V 2.2U	1	
C23003		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C23004		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C23005		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C23006		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C23007		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C23008		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C23009		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C23010		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C23011		ECEAOJKS331	E.CAPACITOR 6.3V 330U	1	
C23012		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C23013		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C23014		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C23015		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C23016		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C23017		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C23018		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C23019-21		ECEAOJK221	E.CAPACITOR 6.3V 220U	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C23022		ECEA0JKS331	E.CAPACITOR 6.3V 330U	1	
C24001		ECEA0JKN470	E.CAPACITOR 6.3V 47U	1	
C24004		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C24005,06		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	2	
C24007		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C24008,09		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	2	
C24010,11		ECEA1CKN100	E.CAPACITOR 16V 10U	2	
C24012,13		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C24014,15		ECEA1CK100	E.CAPACITOR 16V 10U	2	
C24016,17		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C24018,19		ECEA1CKN100	E.CAPACITOR 16V 10U	2	
C24020		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C24022		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C24023		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	1	
C24024,25		ECEA1CKN100	E.CAPACITOR 16V 10U	2	
C24026		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C24028		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C24029		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24030,31		ECEA0JK470	E.CAPACITOR 6.3V 47U	2	
C24032		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24033		ECQB1H332JZ	P.CAPACITOR 50V 3300P	1	
C24034,35		ECQV1H473JM	P.CAPACITOR 50V 0.047U	2	
C24036		ECQV1H334JM	P.CAPACITOR 50V 0.33U	1	
C24037		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24038		ECQV1H334JM	P.CAPACITOR 50V 0.33U	1	
C24039		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24040		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C24041,42		ECEA1HK010	E.CAPACITOR 50V 1U	2	
C24043		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24044		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C24045		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C24046		ECQB1H273JZ	P.CAPACITOR 50V 0.027U	1	
C24047		ECUM1H562KBN	C.CAPACITOR CH 50V 5600P	1	
C24049		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C24050		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24051		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C24052		ECEA1CK330	E.CAPACITOR 16V 33U	1	
C24053		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C24054		ECEA1CK330	E.CAPACITOR 16V 33U	1	
C24055		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24056		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C24057-59		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	3	
C24060,61		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	2	
C24062,63		ECEA1AK470	E.CAPACITOR 10V 47U	2	
C24064		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24065-67		ECQV1H473JM	P.CAPACITOR 50V 0.047U	3	
C24068		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C24069,70		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C24071,72		ECEA1CK100	E.CAPACITOR 16V 10U	2	
C24073-75		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C24076		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C24077		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24078		ECUM1H681KBN	C.CAPACITOR CH 50V 680P	1	
C24079		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C24080-82		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C24083		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C24084		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24085		ECUM1H681KBN	C.CAPACITOR CH 50V 680P	1	
C24086		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C24087		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	1	
C24088		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C24089		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C24090		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C24091		ECEA1HK2R2	E.CAPACITOR 50V 2.2U	1	
C24092		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C24093		ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C24094		ECQB1H123JZ	P.CAPACITOR 50V 0.012U	1	
C24095		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C24096,97		ECQB1H821JF	P.CAPACITOR 50V 820P	2	
C24098,99		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C24117,18		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C24119		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C24120		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C24123		ECEA1HK2R2	E.CAPACITOR 50V 2.2U	1	
C24124		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C24125		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C24129		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C24140		VCYD1C104MR1	S.CAPACITOR 16V 0.1U	1	
D21021		MA4051H	DIODE	1	
D21023		RK34	DIODE	1	
D21024		S2VB20F01L15	DIODE	1	
D21025		D2SBA20F01	DIODE	1	
D21026		MA4082M	DIODE	1	
D21027,28		MA185	DIODE	2	
D21029		MA4270-M	DIODE	1	
D21030		MA4027L	DIODE	1	
D21031		MA165	DIODE	1	
D23001		MA165	DIODE	1	
D24001		MA4047H	DIODE	1	
D24004		MA165	DIODE	1	
FP21020		VJS1672	CONNECTOR (FEMALE) 24P	1	
IC21020		BA9700A	IC	1	
IC21021		UPC78M05AHF	IC	1	
IC21022		M5218AFP	IC	1	
IC21023		SI3090C	IC	1	
IC23001		D6454GT610	IC	1	
IC24001		NJM4558M	IC	1	
IC24003		NJM4558M	IC	1	
IC24004,05		UPD4053BG	IC	2	
IC24006		M65841SP	IC	1	
IC24007,08		NJM4558M	IC	2	
IC24009		UPD4053BG	IC	1	
IC24010		NJM4558M	IC	1	
IC24011		M66310FP	IC	1	
IC24012		M65840SP	IC	1	
IC24013-15		NJM4558M	IC	3	
IC24016-18		UPD4053BG	IC	3	
IC24019,20		NJM4558M	IC	2	
IC24026-29		NJM4558M	IC	4	
J23001		VEJ1693	RF JACK	1	
J23002		VJJ0303	V.OUT JACK	1	
J23003		VEJ1013	FRONT A/V OUTPUT JACK	1	
J24006		VJJ0407	A.IN/OUT JACK	1	
L21020		ELC12E007	COIL	1	
L21021-23		ELELN100KA	COIL	3	
L23001		VLQ0188J330	COIL 33UH	1	
L24001-03		VLQ0188J220	COIL 22UH	3	
P1020		VJS2650A007Z	CONNECTOR (FEMALE) 7P	1	
P23001		VJS2650A003Z	CONNECTOR (FEMALE) 3P	1	
PP23001		VJP3042A012W	CONNECTOR (MALE) 12P	1	
PR21020		VSF0014A06	IC PROTECTOR	1	<!>
PS23001		VJS3042B012W	CONNECTOR (FEMALE) 12P	1	
Q21020		2SB643	TRANSISTOR	1	
Q21021		2SD1444A	TRANSISTOR	1	
Q21022		2SB1375	TRANSISTOR	1	
Q21023,24		2SD2012	TRANSISTOR	2	
Q21025		2SD601	TRANSISTOR	1	
Q21026		2SB644-R	TRANSISTOR	1	
Q21027		2SD2012	TRANSISTOR	1	
Q21028,29		2SD601-R	TRANSISTOR	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q23001-03		2SD601	TRANSISTOR	3	
Q23004		2SB709	TRANSISTOR	1	
Q23005-07		2SD601	TRANSISTOR	3	
Q24001		2SD601	TRANSISTOR	1	
Q24002-05		2SD1328-R	TRANSISTOR	4	
Q24006		2SD601	TRANSISTOR	1	
Q24007		2SB709	TRANSISTOR	1	
Q24008,09		2SD601	TRANSISTOR	2	
Q24010		2SB643	TRANSISTOR	1	
QR21020		UN2216	TRANSISTOR-RESISTOR	1	
QR21021		UN2211	TRANSISTOR-RESISTOR	1	
QR21022		UN1122	TRANSISTOR-RESISTOR	1	
QR24001		UN2216	TRANSISTOR-RESISTOR	1	
QR24002-10		UN2211	TRANSISTOR-RESISTOR	9	
QR24013		UN2211	TRANSISTOR-RESISTOR	1	
R21020,21		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R21022		ERDS2TJ392	C.RESISTOR 1/4W 3.9K	1	
R21023		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	1	
R21024		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R21025		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R21026		ERDS2TJ152	C.RESISTOR 1/4W 1.5K	1	
R21027		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R21028		ERDS2TJ390	C.RESISTOR 1/4W 39	1	
R21029		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R21030		ERJ6GEYG473	M.RESISTOR CH 1/10W 47K	1	
R21031		ERJ6GEYG163	M.RESISTOR CH 1/10W 16K	1	
R21032		ERDS2FJ270	C.RESISTOR 1/4W 27	1	
R21033		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R21034		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R21035		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
R21036		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R21037		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R21038		ERJ6GEYJ432	M.RESISTOR CH 1/10W 4.3K	1	
R21040		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R21041		ERDS2FJ220	C.RESISTOR 1/4W 22	1	
R21042		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R21043		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R21044,45		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R21046		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R21048		ERDS2FJ820	C.RESISTOR 1/4W 82	1	
R21049,50		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R21051		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R21052		ERX1SJR47	M.RESISTOR 1W 0.47	1	
R21053		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R21054		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R21055		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R21056		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R21057		ERDS2FJ100	C.RESISTOR 1/4W 10	1	
R21058		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R21059		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R21060		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R21061		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R23003		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R23004		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R23005		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R23006		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R23007		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R23008		ERJ6GEYG333	M.RESISTOR CH 1/10W 33K	1	
R23009		ERJ6GEYJ623	M.RESISTOR CH 1/10W 62K	1	
R23010		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R23011		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R23012		ERJ6GEYJ684	M.RESISTOR CH 1/10W 680K	1	
R23013		ERJ6GEYJ150	M.RESISTOR CH 1/10W 15	1	
R23014		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R23015-18		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	4	
R23019		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R23020-22		ERJ6GEYJ820	M.RESISTOR CH 1/10W 82	3	
R23023		ERJ6GEYJ560	M.RESISTOR CH 1/10W 56	1	
R23024		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R23025		ERJ6GEYJ560	M.RESISTOR CH 1/10W 56	1	
R23026		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R23027		ERJ6GEYJ560	M.RESISTOR CH 1/10W 56	1	
R23028		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24001		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24002		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R24003		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R24004		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24005		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24006		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24007,08		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R24009		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24010		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24011		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24012,13		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R24014		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24015		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24016		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24017		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R24018		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24019		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24020,21		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	2	
R24022		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24023,24		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	2	
R24025		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24026,27		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R24028-31		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	4	
R24032		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24033		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24034		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24035		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24036,37		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	2	
R24038,39		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R24040		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R24041		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R24043		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R24044-49		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	6	
R24050		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R24051		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R24052-55		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	4	
R24056-61		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	6	
R24062		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R24063		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24064-66		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	3	
R24067		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R24068		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24069,70		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	2	
R24071		ERJ6GEYJ300	M.RESISTOR CH 1/10W 30	1	
R24072		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24073		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R24074		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24075		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R24076		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24077		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R24078		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24079		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24080		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24081		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R24082		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24083		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R24084		ERJ6GEYG333	M.RESISTOR CH 1/10W 33K	1	
R24085		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24086-90		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	5	
R24090		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R24091		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24091		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R24092,93		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R24094		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R24095		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24096		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R24097		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24098-00		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	3	
R24101-04		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	4	
R24105-07		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R24108		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24109,10		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R24112		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R24113-15		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R24116		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24117-19		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R24120		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24121		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R24122		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24123		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R24124,25		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R24126,27		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	2	
R24128		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24129		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	1	
R24130		ERJ6GEYJ684	M.RESISTOR CH 1/10W 680K	1	
R24131		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24132		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R24133		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R24134		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R24135		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24136		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	1	
R24137		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24138		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R24139		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R24140-43		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	4	
R24144		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24145		ERJ6GEYJ823	M.RESISTOR CH 1/10W 82K	1	
R24146		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R24147		ERJ6GEYJ823	M.RESISTOR CH 1/10W 82K	1	
R24148		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24149		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24150		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R24151		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24152		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R24153		ERJ6GEYJ203	M.RESISTOR CH 1/10W 20K	1	
R24154		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R24155-57		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	3	
R24158		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24159		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R24195-97		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R24198		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24199		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
SW23001		VSS0516	SWITCH	1	
SW24002		VSS0321	SWITCH	1	
VR23001		EVNCYAA03B15	V.RESISTOR 100K	1	
X24001		VSX0339	CRYSTAL OSCILLATOR	1	
X24002		VSX0380	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VMC1010	TR. HOLDER SPRING	2	
		VSC4045	HEAT SINK	1	
		VWJ24HW200MM	FLAT CARD CABLE 24P	1	(FP21020-PF26202)
		VSC3941	HEAT SINK	1	
		VJF0304	WIRE CLAMPER	1	
		XTV3+8J	SCREW	2	
		VSC4204	EARTH PLATE	1	FOR RF ADAPTOR C.B.A
		VWJ03D5300QQ	FLAT CARD CABLE 3P	1	FOR RF ADAPTOR C.B.A
					(P23001-P26211)
	■	VEP94151A	KARAOKE (B) C.B.A.		(RTL)
BP24001		VJP3600F020K	CONNECTOR (MALE) 20P	1	
C24100,01		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C24102		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C24103		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C24104		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C24105		ECEA1HKN010	E.CAPACITOR 50V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C24106		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C24107		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C24108		ECQV1H823JM	P.CAPACITOR 50V 0.082U	1	
C24109		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C24110		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C24111		ECUM1H683ZFN	C.CAPACITOR CH 50V 0.068U	1	
C24112		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C24113		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	1	
C24114		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C24121,22		ECEA1HK010	E.CAPACITOR 50V 1U	2	
C24128		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
D24005,06		MA165	DIODE	2	
D24007		MA4047	DIODE	1	
FP24003		VJS3537B015G	CONNECTOR (FEMALE) 15P	1	
IC24021-24		NJM4558M	IC	4	
IC24025		M5218AFP	IC	1	
R24160		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24161		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R24162		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24163		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24164		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24165		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24166		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24167		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R24168,69		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R24170		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R24171,72		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R24173		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24174		ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R24175		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R24176		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R24177		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R24178		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24179		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24180		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R24181		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24182		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24183		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	1	
R24184		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R24185		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R24186		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	1	
R24187,88		ERDS2TJ470	C.RESISTOR 1/4W 47	2	
R24189		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
SW24001		EVQ11407K	BAL. ON/OFF SWITCH	1	
VR24001,02		EVUF2LFN3B53	V.RESISTOR 5K	2	
VR24003		EVUF2AF20B53	V.RESISTOR 5K	1	
VR24004		EVUF3AF20B54	V.RESISTOR 50K	1	
VR24005		EVJY10F03A15	V.RESISTOR 100K	1	
			MISCELLANEOUS		
		VWJ0916	FLAT CARD CABLE 3P	1	(JF-JF)
		VWJ0915	FLAT CARD CABLE 6P	1	(JG-JG)
	■	VEP96345C	OPERATION C.B.A.		(RTL)
BP26001		VJP3600F018K	CONNECTOR (MALE) 18P	1	
C26001		ECEA1VKS100	E.CAPACITOR 35V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C26002		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C26003		ECEA1CKS470	E.CAPACITOR 16V 47U	1	
C26004		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C26005		ECEA1CKS470	E.CAPACITOR 16V 47U	1	
C26006		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C26007		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C26008-10		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
D26001-03		MA165	DIODE	3	
D26004		LN41YPHL	LED	1	
D26005,06		LN21RPHL	LED	2	
D26007		LN41YPHL	LED	1	
D26008		SLR-305VCA47	DIODE	1	
D26009,10		SLR-305YCA47	DIODE	2	
D26011		RPM-675CBRH	IR RECEIVER UNIT	1	
DP26001		VSL0328	DISC DISPLAY TUBE	1	
DP26002		VSL0339	MODE DISPLAY TUBE	1	
FP26002		VJS3537B015G	CONNECTOR (FEMALE) 15P	1	
IC26001		MN1872423H6T	IC	1	
L26001		VLQ0188J221	COIL 220UH	1	
Q26001-06		2SB709	TRANSISTOR	6	
R26001-08		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	8	
R26009		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26010		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R26011		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26012		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26013		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R26014		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26015		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26016		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R26017		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26018		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26019		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R26020		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26021		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26022		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R26023		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26024		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26025		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R26028		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R26029		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R26030,31		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R26032-34		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	3	
R26035		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R26036,37		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R26038,39		ERDS1TJ3R3	C.RESISTOR 1/2W 3.3	2	
S26001-20		EVQ11407K	SWITCH	20	
X26001		EFOEC8004A4	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VGQ0457	LED SPACER	4	
		VMX2357	FL SPACER A	2	
		VMX2358	FL SPACER B	2	
		VWJ0874	FLAT CARD CABLE 15P	1	(FP26002-FP24003)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP94153A	HEADPHONE C.B.A.		(RTL)
C24115		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
J24001		VJJ0406	HEADPHONE JACK	1	
	■	VEP94152A	MIC C.B.A.		(RTL)
C24116		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
J24002,03		VJJ0330	MIC TERMINAL	2	
J24004		VJJ0355	MIC CONTROL TERMINAL	1	
			MISCELLANEOUS		
		VMA9130	MIC C.B.A. ANGLE	1	
	■	VEP96344B	MECHANISM CONTROL C.B.A.		(RTL)
BS26210		VJS3600B018K	CONNECTOR (FEMALE) 18P	1	
C22001		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C22002		ECEA1HK4R7	E.CAPACITOR 50V 4.7U	1	
C22003		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C22004		ECEA1HK4R7	E.CAPACITOR 50V 4.7U	1	
C22005		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C22010		ECQV1H333JM	P.CAPACITOR 50V 0.033U	1	
C22011		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C22012		ECQV1H333JM	P.CAPACITOR 50V 0.033U	1	
C22013,14		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C22015		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C26201		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C26202-06		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	5	
C26208		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C26209		ECEA0JKS331	E.CAPACITOR 6.3V 330U	1	
C26211		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C26212,13		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C26214		ECEA0JKS331	E.CAPACITOR 6.3V 330U	1	
C26215		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C26250		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
D22001		MA4036M	DIODE	1	
D22002		MA4075M	DIODE	1	
FP26201		VJS3611B030W	CONNECTOR (FEMALE) 30P	1	
FP26202		VJS1694	CONNECTOR (FEMALE) 24P	1	
FP26203		VJS1698	CONNECTOR (FEMALE) 28P	1	
IC22001,02		TA7291S	IC	2	
IC22005		NJM2903M	IC	1	
IC26201		MN1882414H6S	IC	1	
IC26202		MN1280S	IC	1	
IC26203		M6M80011AP	IC	1	
IC26204		T74HC4050AFT	IC	1	
IC26205		UPC78L05J	IC	1	
L26201		VLQ0188J100	COIL 10UH	1	
P22001		VJP3588B002W	CONNECTOR (MALE) 2P	1	
P22002		VJP3588B002W	CONNECTOR (MALE) 2P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
P22003		VJP1248T	CONNECTOR (MALE) 8P	1	
P22004		VJP1236T	CONNECTOR (MALE) 9P	1	
P22004		VJS1236T	CONNECTOR (FEMALE)	1	
P22101		VJS1236T	CONNECTOR (FEMALE)	1	
P22102,03		VJS3532	CONNECTOR (FEMALE) 6P	2	
P26203		VJP1393T	CONNECTOR (MALE) 13P	1	
P26204		VJP1233T	CONNECTOR (MALE) 6P	1	
P26211		VJS2650A003Z	CONNECTOR (FEMALE) 3P	1	
Q26201,02		2SD601-R	TRANSISTOR	2	
R22002,03		ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	2	
R22014		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R22016		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R22017		ERJ6GEYJ684	M.RESISTOR CH 1/10W 680K	1	
R22018		ERJ6GEYG333	M.RESISTOR CH 1/10W 33K	1	
R22019		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R22020		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R22021		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R22022		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R22023		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R22024		ERJ6GEYJ684	M.RESISTOR CH 1/10W 680K	1	
R22025		ERJ6GEYG333	M.RESISTOR CH 1/10W 33K	1	
R22026		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R22027		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R22103		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R26201		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R26202		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R26203-08		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	6	
R26209		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R26211		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R26212-15		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	4	
R26217-22		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	6	
R26230,31		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R26232		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R26233-36		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	4	
R26237-39		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	3	
R26243		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R26244-47		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	4	
R26248,49		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R26250,51		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	2	
R26254		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
X26201		EFOEC8004A4	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VEE9155	WIRE CABLE	1	(P22004-P22101)
		VEE9156	WIRE CABLE	1	(P22001-P22102)
		VEE9157	WIRE CABLE	1	(P22002-P22103)
	■	VEP92296A	CONNECTION C.B.A.		(RTL)
C22201		ECEA0JU102	E.CAPACITOR 6.3V 1000U	1	
FP22101		VJS1698	CONNECTOR (FEMALE) 28P	1	
FP22102		VJS3612B023W	CONNECTOR (FEMALE) 23P	1	
P22105		VJP3132A006	CONNECTOR (MALE) 6P	1	
S22104		ESE105SH1	SWITCH	1	
			MISCELLANEOUS		
		VWJ0873	FLAT CARD CABLE 28P	1	(FP26203-FP22101)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP92295A	STOCKER MOTOR C.B.A.		(RTL)
P22106		VJS3132A006	CONNECTOR (FEMALE) 6P	1	
S22103		ESE105SH1	SWITCH	1	
			MISCELLANEOUS		
		VWJ0917	FLAT CARD CABLE 3P	1	(JC-JC)
	■	VEP92293A	F.G SENSOR C.B.A.		(RTL)
D22105		SPI-237-00	DIODE	1	
P22104		VJP1235T	CONNECTOR (MALE) 8P	1	
R22108		ERDS2TJ181	C.RESISTOR 1/4W 180	1	
	■	VEP92288A	DISC DETECT C.B.A.		(RTL)
D22101		LN66A	LED	1	
D22102		ON2173	IC	1	
P22101		VJP1249T	CONNECTOR (MALE) 9P	1	
R22101,02		ERDS2TJ181	C.RESISTOR 1/4W 180	2	
			MISCELLANEOUS		
		VWJ0917	FLAT CARD CABLE 3P	1	(JA-JA)
	■	VEP92290A	UP/DOWN MOTOR C.B.A.		(RTL)
C22102		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C22103,04		ECFF1H1042F	S.CAPACITOR 50V 0.1U	2	
IC22101		BA6286	IC	1	
			MISCELLANEOUS		
		VWJ0919	FLAT CARD CABLE 4P	1	(JD-JD)
	■	VEK7410	UP/DOWN COUNTER C.B.A.		(RTL)
C22101		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
D22104		GP1A15	DIODE	1	
R22106		ERJ6GEYJ181	M.RESISTOR CH 1/10W 180	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEK7406	OPEN/CLOSE SW C.B.A.		(RTL)
S22101		VSH0064	OPEN CLOSE SWITCH	1	
	■	VEK7407	LOADING MOTOR C.B.A.		(RTL)
			MISCELLANEOUS		
		VWJ0918	FLAT CARD CABLE 2P	1	(JB-JB)
	■	VEK7408	HOME SW C.B.A.		(RTL)
P22102		VJP3532	CONNECTOR (MALE) 2P	1	
S22102		VSH0037	HOME SWITCH	1	
	■	VEK7409	12cm DISC DET C.B.A.		(RTL)
P22103		VJP3588B002W	CONNECTOR (MALE) 2P	1	
Q22101		PN147-RSVT	PHOTO TRANSISTOR	1	
	■	----------	VCD MODULE C.B.A.		
C1001,02		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1003		ECUM1H151KCN	C.CAPACITOR CH 50V 15P	1	
C1004		ECUM1H050DCN	C.CAPACITOR CH 50V 5P	1	
C1005		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1006		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C1007-10		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	4	
C1012		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1013-15		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C1016		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C1017		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C1018,19		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1020		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1021,22		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1023		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C1024,25		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C1026		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C1027-29		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01P	3	
C1030		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1031		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1032		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C1034		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1035		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C1037		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1038		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C1039,40		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1041		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1042		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1043		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1044		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C1045		ECUM1H101KCN	C.CAPACITOR CH 50V 100P	1	
C1046		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1047		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1048		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1049		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1050		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.
C1051		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1052		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1053		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1054-58		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	5	
C1059		ECEV1CA100	E.CAPACITOR 6.3V 10U	1	
C1060		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.
C1061		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C1062		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.
C1063		ECUM1H101KCN	C.CAPACITOR CH 50V 100P	1	
C1064		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1065		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.
C1066		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1067		ECUV1H560KCN	C.CAPACITOR CH 50V 56P	1	SUPPLIED FROM AUDIO DIV.
C1068		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1069		ECUM1H470KCN	C.CAPACITOR CH 50V 47P	1	
C1072		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C1073		ECUM1H270KCN	C.CAPACITOR CH 50V 27P	1	
C1074		ECEV1HA010	E.CAPACITOR 50V 1U	1	
C1075		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1076		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1077		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1078		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C1079		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1080		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1082		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C1083		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1085,86		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1087		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C1088		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C1090		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1091,92		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1095,96		ECEV0JA101	E.CAPACITOR 6.3V 100U	2	
C1097		ECUVNE104KBN	C.CAPACITOR CH 0.1U	1	SUPPLIED FROM AUDIO DIV.
C1098		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1099		ECUV1H030DN	C.CAPACITOR CH 50V 3P	1	SUPPLIED FROM AUDIO DIV.
C1100		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C1101		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C1103		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C1105		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C1109		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C1112		ECUX1H101KCV	C.CAPACITOR CH 50V 100P	1	
C1113		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
CN1000		RJS2A0630T	CONNECTOR	1	
D1001		MA304TX	DIODE	1	
D1002		MA304TX	DIODE	1	
IC1001		M38002M2308F	IC	1	
IC1002		LH5168N8	IC	1	
IC1003		TC74HCT7007A	IC	1	
IC1004		MN89101AM	IC	1	
IC1006		MN6475A	IC	1	
IC1007		LH5317YD	IC	1	SUPPLIED FROM AUDIO DIV.
IC1008		NJM2115MT1	IC	1	SUPPLIED FROM AUDIO DIV.
IC1009		MB81426070PJ	IC	1	SUPPLIED FROM AUDIO DIV.
IC1010		BU12102-0D	IC	1	
IC1011		LC32464M-80T	IC	1	
IC1012		LC7872E	IC	1	
IC1013		MN6570TF	IC	1	
IC1014		CXA1645M	IC	1	
IC1015		MM1227XFF	IC	1	
IC1016		M35040056FPT	IC	1	SUPPLIED FROM AUDIO DIV.
IC1017		TC7W14FUTE1L	IC	1	SUPPLIED FROM AUDIO DIV.
L1001		RLQM2R2KT2-W	COIL	1	
L1002		RLQM121JT2-W	COIL	1	
L1004		RLQM121JT2-W	COIL	1	
L1005		RLQU220KT-W	COIL	1	
L1007		RLQM121JT2-W	COIL	1	
L1008-10		RLQU220KT-W	COIL	3	
L1012		RLQM1R8KT2-W	COIL	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q1001,02		2SD1819R	TRANSISTOR	2	
Q1003		UN5210	TRANSISTOR	1	
Q1004		2SD1328S	TRANSISTOR	1	
Q1008		UN5115	TRANSISTOR	1	
R1001,02		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R1003		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R1004		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R1005		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R1006		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R1007,08		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R1009		ERJ6GEYJ470	M.RESISTOR CH 1/10W 47	1	
R1010		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R1011		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R1013,14		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R1015		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1017		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R1018		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1019		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R1020,21		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R1024-27		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	4	
R1028		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1029		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R1030		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R1031,32		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R1034		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
R1035,36		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R1038		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
R1039		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R1040-42		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	3	
R1044		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R1045		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1046		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R1047,48		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R1049		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1050,51		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R1052		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68K	1	
R1053		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1054		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1055		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R1056		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1057		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1058		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1059		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1060		ERJ3GEYD203V	M.RESISTOR CH 1/16W 360	1	SUPPLIED FROM AUDIO DIV.
R1062		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R1063		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1064		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1065		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R1066		ERJ6GEYJ334	M.RESISTOR CH 1/10W 330K	1	
R1067		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1068		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1069-71		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	3	
R1074,75		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R1076		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1077		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1078		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1079,80		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R1081,82		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R1083-85		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	3	
R1086		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1087		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R1090		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R1091		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1092		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R1093		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1094		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R1095		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1097		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1099		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R1100		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R1101		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1102		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1103		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1104		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1105		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1106		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1107,08		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R1109,10		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R1111		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R1112		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
J1005		ERJ3GEYJ000V	M.RESISTOR CH 1/16W 0	1	SUPPLIED FROM AUDIO DIV.
X1001		RSXZ40M5S01T	CRYSTAL OSCILLATOR	1	
X1002		RSXC14M3S03M	CRYSTAL OSCILLATOR	1	
X1003		RSXC17M7S02M	CRYSTAL OSCILLATOR	1	SUPPLIED FROM AUDIO DIV.
X1004		RSXZ16M9H01T	CRYSTAL OSCILLATOR	1	
Z1001,02		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	2	
Z1003		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1004		RLBN102V-Y	COIL	1	
Z1006		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
Z1007		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1009		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1010		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
Z1012		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1013		RLBN102V-Y	COIL	1	
Z1014-19		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	6	
Z1020		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
Z1022,23		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	2	
Z1024		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1026		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
Z1028		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
Z1029		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
			MISCELLANEOUS		
		RMZ0302-1	INSULATION SHEET A	1	
		RMZ0310-1	INSULATION SHEET B	1	
		RSC0409	SHIELD PLATE B	1	
		RSC0410	SHIELD PLATE A	1	
		XYC26+JF6	SCREW	1	
	■	----------	CD SERVO C.B.A.		
C701		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C702		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C703		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C704		ECUV1E104MBN	C.CAPACITOR CH 25V 0.1U	1	SUPPLIED FROM AUDIO DIV.
C705		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C706		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C707		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	
C708		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C709		ECUM1C473KBN	C.CAPACITOR CH 16V 0.047U	1	
C710		ECUM1H152KBN	C.CAPACITOR CH 50V 1500P	1	
C711,12		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C713		ECUV1C104KBN	C.CAPACITOR CH 16V 0.1U	1	SUPPLIED FROM AUDIO DIV.
C714		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C715		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C716		ECUM1H561KBN	C.CAPACITOR CH 50V 560P	1	
C717		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C718		ECUM1C224KBM	C.CAPACITOR CH 16V 0.22U	1	
C721		ECUM1H070DCN	C.CAPACITOR CH 50V 7U	1	
C722		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C723		ECEA1AKA221	E.CAPACITOR 10V 220U	1	
C724		ECUV1C104KBN	C.CAPACITOR CH 16V 0.1U	1	SUPPLIED FROM AUDIO DIV.
C730		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C731,32		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C733		ECUV1E104MBN	C.CAPACITOR CH 25V 0.1U	1	SUPPLIED FROM AUDIO DIV.
C734		ECEA1AKA221	E.CAPACITOR 10V 220U	1	
C735-37		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C738		ECUM1C154KBN	C.CAPACITOR CH 16V 0.15U	1	
C742		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C743		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C744		ECUV1E822KBN	C.CAPACITOR CH 25V 8200P	1	SUPPLIED FROM AUDIO DIV.
C745		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C747		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C748		ECUM1H471KBM	C.CAPACITOR CH 50V 470P	1	
CN701		RJU035T016-1	CONNECTOR 16P	1	
CN702		RJS1A6723-1Q	CONNECTOR 23P	1	
IC701		AN8802SCE1V	IC	1	
IC702		MN662740RE	IC	1	
IC703		AN8389SE1	IC	1	
J701,02		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	2	
J707-09		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	3	
J714		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
J716-19		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	4	
J721		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
J724		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
J726		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
J728		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
J731		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
J733		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
L701-04		RLBN102V-Y	FERRITE BEAD	1	
Q701		2SB709S	TRANSISTOR	1	
R701		ERJ6GEYJ100	M.RESISTOR CH 1/10W 10	1	
R702		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R703		ERJ6GEYJ823	M.RESISTOR CH 1/10W 82K	1	
R704		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R705		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R706		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R707		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R708		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R709		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R711		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
R712		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R714		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
R721		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R722		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R723		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R724		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R725		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R726		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R727		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R728		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R731		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R735,36		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R744		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R745		ERJ6GEYJ155	M.RESISTOR CH 1/10W 1.5M	1	
R748		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R749		ERJ8GEYJ103	M.RESISTOR CH 1/8W 10K	1	
R751		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
S701		RSM0006-P	SWITCH	1	
TJ701,02		EYF8CU		1	
X701		RSXB16M9J01T	CRYSTAL OSCILLATOR	1	
	■	----------	MOTOR C.B.A.		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C790		ECA1AKF820E	E.CAPACITOR 82U	1	
IC790		TA7291S	IC	1	
SW790,91		RSH1A005	SWITCH	2	
CP790		PJP6G17ZA	CONNECTOR	1	

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