

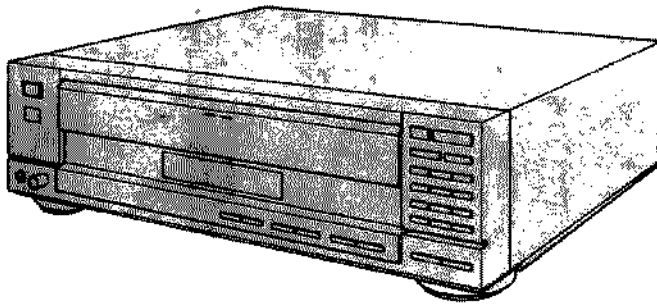
# Service Manual

*General Description*  
*Adjustment Procedures*  
*Block/Schematic Diagrams*  
*Exploded Views/Parts List*

Multi Laser Player

## Panasonic

# LX-200PX



MODEL LX-200PX



### SPECIFICATIONS

ITEM	SPECIFICATIONS	ITEM	SPECIFICATIONS
Power Source	AC 110, 120, 220, 240V, 50/60Hz	Usable Discs	(3) Compact Disc with Video Video Section: 2700 - 1800 rpm, 5-minute playback (max.) for single side Audio Section: 500 - 300 rpm, 20-minute playback (max.) for single side
Power Consumption	41 W		Video Signal Output Level
Format	Laser Vision Video Disc System, Compact Disc with Video and Compact Disc Digital Audio System	S-VIDEO Output Level (Y/C Separate Signal Output)	Y Output; 1.0Vp-p (When loading 75 ohm, synchronizing load) C Output; 0.286Vp-p (When loading 75 ohm, synchronizing load)
Weight	20.3lb (9.2kg)	Audio Signal Output Level	(1) Digital Audio Output Level 200 m Vrms (1kHz, -20dB) (2) Analog Audio Output Level 200 m Vrms (1kHz, Modulated 40%)
Dimensions (W x H x D)	16-15/16" x 4-29/32" x 16-5/16" (430 x 125 x 414 mm)	Digital Audio Signal Output Characteristic	(1) Frequency Response: 4 Hz - 20kHz (EIAJ) (2) S/N Ratio: 106dB (EIAJ) (3) Dynamic Range: 97dB (EIAJ) (4) Channel Separation: 102dB (EIAJ) 1kHz (5) Wow and Flutter: Below measurable limit (6) Total Harmonic Distortion: 0.003% (EIAJ) 1kHz
Operating Temperature	-5°C - 35°C	Headphone Output Level	12 ohm (30mW), Impedance, more than 8 ohm
Operating Humidity	5% - 90%		
Usable Discs	(1) Laser Vision Disc 12" (30cm) Long Play Disc (CLV): 1800 - 600 rpm, 2-hour playback (max.) for both sides 12" (30cm) Standard Disc (CAV): 1800 rpm, 1-hour playback (max.) for both sides 8" (20cm) Long Play Disc (CLV): 40-minute playback (max.) for both sides/ 20-minute playback (max.) for single side 8" (20cm) Standard Disc (CAV): 28-minute playback (max.) for both sides/ 14-minute playback (max.) for single side (2) Compact Disc 5" (112cm) Disc: 500 - 200 rpm, 74-minute playback (max.) for single side 3" (8cm) Disc: 500 - 300 rpm, 20-minute playback (max.) for single side		

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

# Panasonic

# 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 block diagrams which offers you information for checking and understanding each circuit. 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 orders 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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# SAFETY PRECAUTIONS

## GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

### LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M $\Omega$  and 5.2M $\Omega$ . When the exposed metal does not have a return path to the chassis, the reading must be  $\infty$ .

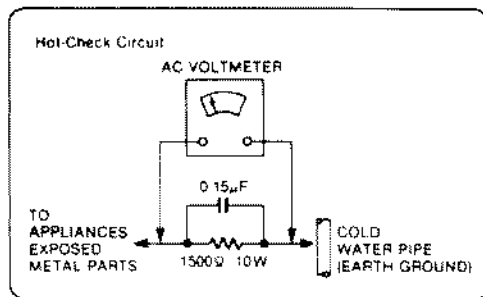


Figure 1

### LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 15k $\Omega$ , 10 watts resistor, in parallel with a 0.15 $\mu$ F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

## PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.  
CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

### IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  $\Delta$  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

## ■ PRECAUTION OF LASER DIODE

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

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

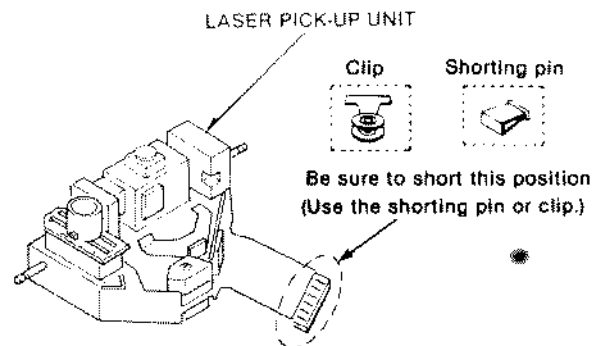
## ■ HANDLING PRECAUTIONS FOR OPTICAL PICKUP

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 anti-static 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)

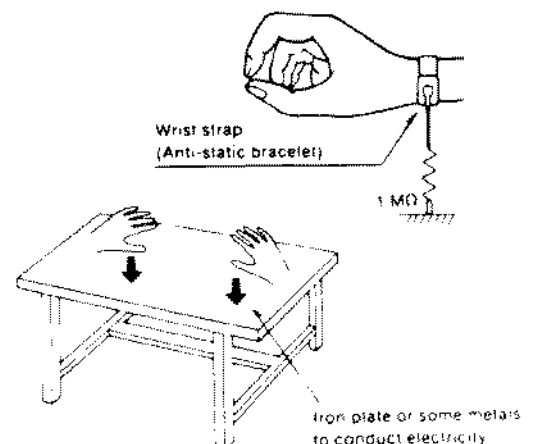


### • Grounding for electrostatic breakdown prevention

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 no to let your clothes touch the optical pickup.



# SECTION 1 GENERAL DESCRIPTION

## DISCS THAT CAN BE PLAYED BACK

This Multi Laser Disc Player makes it possible to play back the following six kinds of laser discs without any adaptor.

**CD (Compact Disc) Single**  
[Single side only]



**Digital sound**  
(20 minutes max.)

**CD**  
[Single side only]



**Digital sound**  
(74 minutes max.)

**CD-V (Compact Disc-Video)**  
[Single side only]



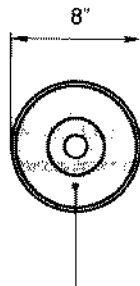
**Digital sound**  
(20 minutes max.)  
+  
**Picture**  
(5 minutes max.)

**LD (Laser Videodisc) Single**  
[Single side only]



**Digital/Analog sound**  
+  
**Picture**  
(CAV: 14 minutes max.)  
(CLV: 20 minutes max.)

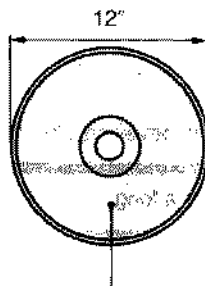
**LD**  
[Both sides]



**Digital/analog sound**  
+  
**Picture**

(CAV: 14 minutes max. for single side)  
(CLV: 20 minutes max. for single side)

**LD**  
[Both sides or single side only]



**Digital/analog sound**  
+  
**Picture**

(CAV: 30 minutes max. for single side)  
(CLV: 60 minutes max. for single side)

- Only discs bearing one of the marks shown on the right can be used with this unit.
- CED and VHD system video discs cannot be used with this unit.
- This unit uses the NTSC color TV system. Discs marked with other color TV systems (PAL, SECAM) cannot be played back.
- This unit does not correspond to the CD Graphics and CD-ROM specifications.
- Never use any discs whose back is coated with aluminum.

**Note:**

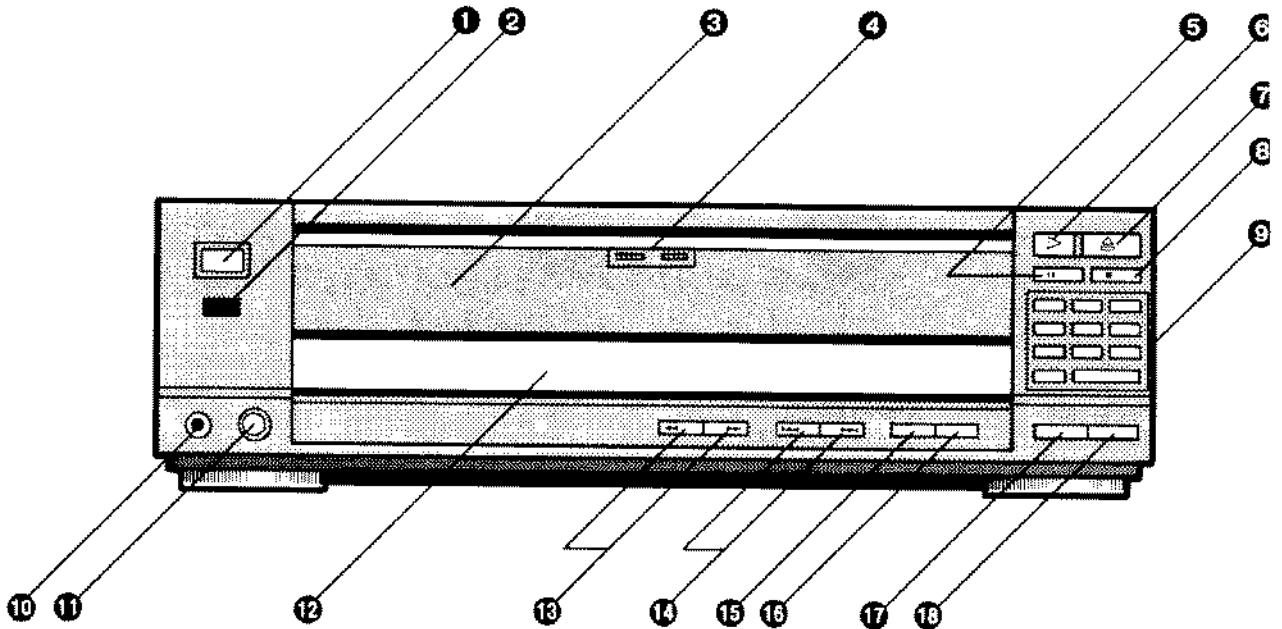
Your attention is drawn to the fact that recording, broadcasting, showing, playing to public and rental of pre-recorded discs and tapes or other published or broadcast material may infringe copyright laws.



# CONTROLS AND COMPONENTS

The explanations in this manual are mainly based on the operation with the Remote Control. Therefore, the page number indicated below refer to operations performed with the Remote Control.

## Front



### WARNING

It is not recommended to listen with headphones for a long time with the volume turned extremely high.

No.	Description
-----	-------------

**1** Power On/Off Button

**2** Remote Control Receiver

**3** Disk Tray

**4** Side Indicator

**5** Pause/Still Button

**6** Play Button

**7** Open/Close (Play) Button

**8** Stop Button

**9** Numeric Buttons

**10** Headphones Jack  
 •Connecting headphones to this jack allows bilingual and stereo sound reproduction.

No.	Description
-----	-------------

**11** Headphones Level Control  
 •For adjusting the volume level of connected headphones.

**12** Multi-Function Display

**13** Scan Buttons (Forward, Backward)

**14** Skip Buttons

**15** Program Button

**16** Clear Button

**17** Side A Button

**18** Side B Button

# INDICATIONS ON THE MULTI DISPLAY

The diagram shows a multi display with the following indicators and labels:

- Pause/Still Indicator:** A vertical bar on the left side of the display.
- Play Indicator for All Playback Modes:** A play button icon on the left side of the display.
- Playback Mode Indicator:** Labels include "A ↔ B", "ALLSIDE", "PROG", and "RANDOM".
- Disc Side Indicator (Only for LD):** Labels include "SIDE", "AB", "1/L", and "2/R".
- Audio Output Mode Indicators:** Labels include "1/L" and "2/R".
- Digital Sound Indicator (while it is being output):** Label is "DIGITAL SOUND".
- Disc Type Indicator:** Labels include "LD" and "CDV".
- Chapter/Track Number Indication:** A row of 20 numbered boxes (1-20) with a right-pointing arrow.
- Chapter/Track Number Indicator:** Label for the numbered boxes.
- Index Number Indication:** Labels include "TRACK", "CHAP", "NO", and "INDEX".
- Program Number Indication:** Label for "NO" and "INDEX".
- Frame Number/Playback Time Indication:** Labels include "FRAME", "MIN", and "SEC".
- CX System ON Indicator:** A square icon with an "X" inside.

**Note:**  
There are some LDs which include chapter number "0"; however, this number cannot be displayed.

- LD Disc:** The number of the chapter being played back is displayed.
- CDV or CD Disc:** The total number of programmes recorded on the disc is displayed and the number of tracks will go out one by one as their playback is completed.

•The ">" Mark will be displayed if there are more than 20 chapters (tracks) on the disc. During playback of the 21st or subsequent tracks, the ">" Mark will be displayed.

## Playback Mode Indications

<b>Custom Index Playback</b> A ↔	<b>Program Playback</b> PROG	<b>Chapter/Track Repeat</b> ↻	<b>Side Repeat</b> ↻ SIDE
<b>All Side Repeat [LD]</b> ↻ ALLSIDE	<b>A-B Repeat</b> A ↔ B	<b>Program Repeat</b> ↻ PROG	

Indications only for CDV and CD Discs

<b>Random Playback</b> RANDOM	<b>Random Program Playback</b> RANDOM PROG	<b>Random Repeat</b> ↻ RANDOM	<b>Random Program Repeat</b> ↻ RANDOM PROG
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## Message Indications

### "OPEN"



- The Disc Tray is being opened.

### "CLOSE"



- The Disc Tray is being closed.

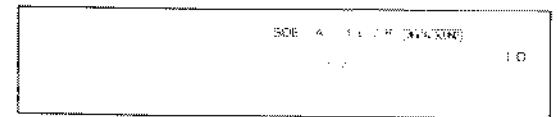
### "OFF"



- It will be displayed when the power is turned off.

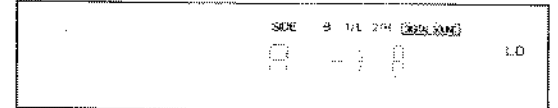
### Indication for LD Discs Only:

#### "PLAY"



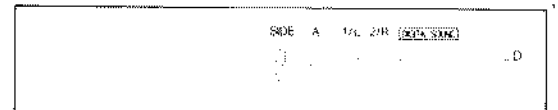
- Playback will start.

#### "A --> B"



- While the playback is changed over from side A to side B. (The arrow moves from left to right.)

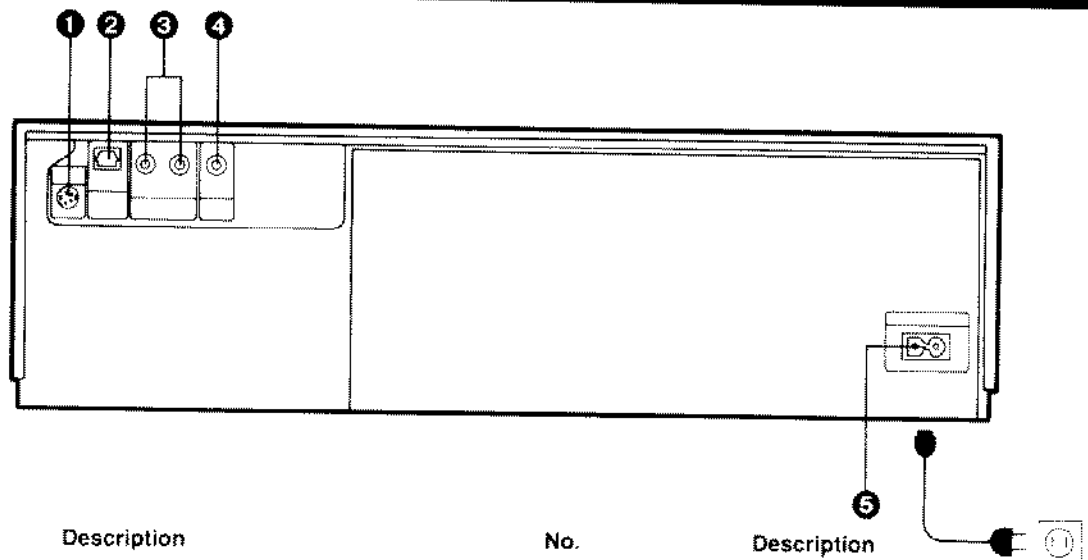
#### "B --> A"



- While the playback is changed over from side B to side A. (The arrow moves from left to right.)

## CONTROLS AND COMPONENTS (CONTINUED)

Rear

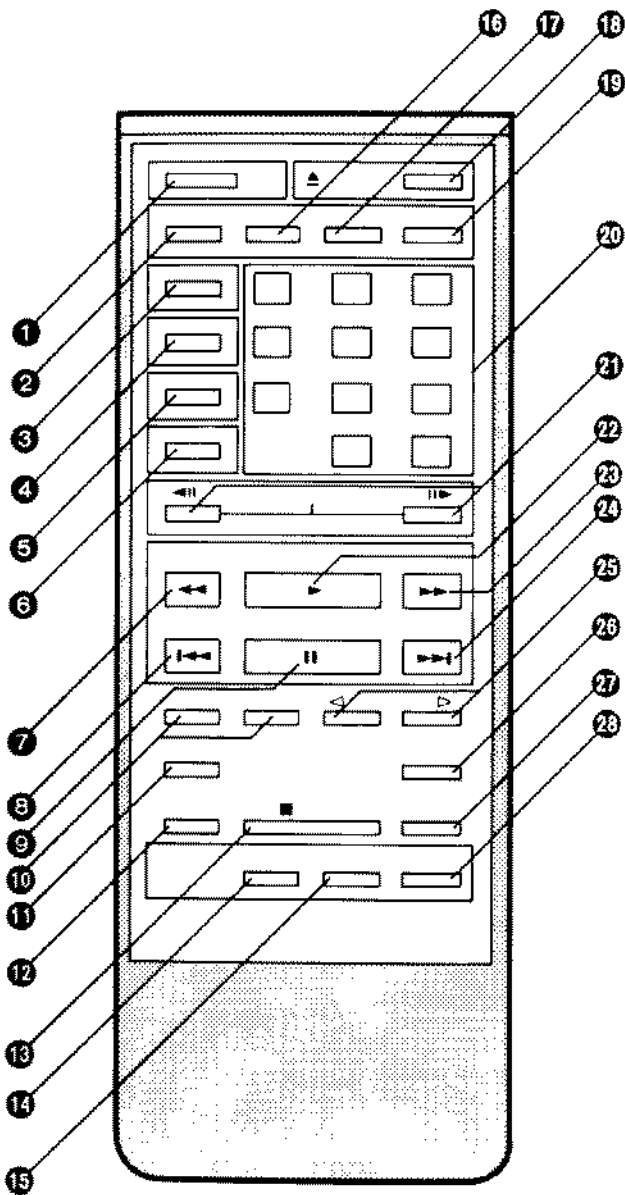


- | No. | Description                   |
|-----|-------------------------------|
| ❶   | S-Video Output Jack           |
| ❷   | Optical Link Output Connector |
| ❸   | Audio Output Jack             |

- | No. | Description       |
|-----|-------------------|
| ❹   | Video Output Jack |
| ❺   | AC Power Socket   |



# Remote Control



No.	Description
1	Power On/Off Button
2	Time Mode Button
3	Program Button
4	Recall Button
5	Clear Button
6	Mode Button
7	Backward Button
8	Skip (Backward) Button
9	Pause Button
10	Speed Selector Buttons
11	Repeat Button
12	A-B Repeat Button
13	Stop Button
14	Volume Level Indication Button
15	Sound Selector Button
16	Side A Button
17	Side B Button
18	Open/Close (Play) Button
19	On-Screen Indication Button
20	Numeric Buttons
21	Still/Still Advance (Reverse) Buttons
22	Play Button
23	Forward Button
24	Skip (Forward) Button
25	Multi Speed Buttons
26	CDV A/V Button
27	Random Button
28	D/A. CX Button

# SERVICE CAUTION

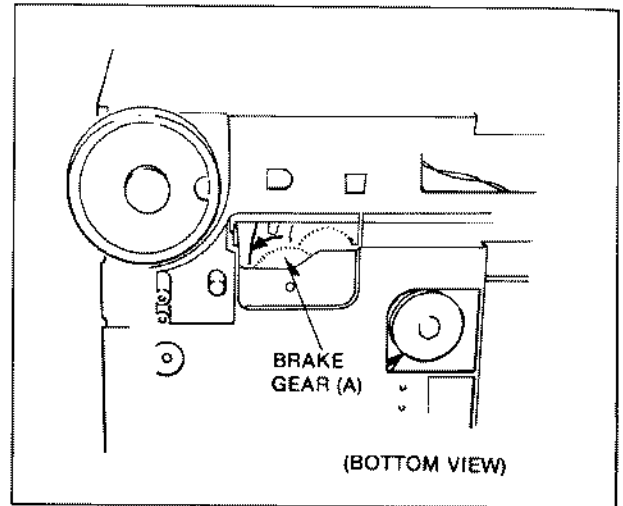
## HOW TO MANUALLY EJECT DISC TRAY

If the unit is not operating correctly and the disc tray can not be ejected properly, it's possible to eject tray manually as follows.

### NOTE:

Work with extreme care when there is a disc inside tray compartment and do not turn unit on it's side when following step 2 of this procedure.

- (1) Remove Bottom Plate (Refer to Fig. D3).
- (2) By slightly raising right side of unit and locating Brake Gear (A) turn gear counter clockwise slowly until the tray has fully ejected.



## Voltage Adjustment

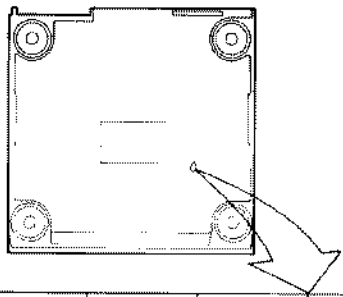
Use a minus (-) screwdriver to set the voltage selector (at the bottom of the unit) to the voltage setting for the area in which the unit will be used.





- This unit is shipped from the factory with the Voltage Selector set to 240V (EN)/220V (PX).

### Note:

Power Switch must be off and Power Cord disconnected from mains prior to changing the voltage selector.

This unit will be seriously damaged if this setting is not made correctly.

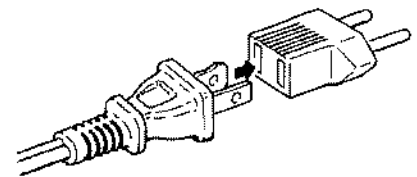


SETTING THE VOLTAGE SELECTOR				
LOCAL VOLTAGE	AC 110V	AC 127V	AC 220V	AC 240V

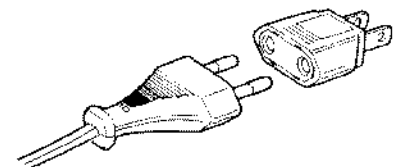
## AC Plug Adaptor

Since this unit is equipped with a Voltage Selector, it can be used in foreign countries, too. However, in countries where different shaped AC power plugs are used, an AC Plug Adaptor for the country in which you intend to use it will be necessary. (Such AC Plug Adaptors are sold in airport shops, etc.)

- When using this unit in countries with 110V or 127V AC (EN)/220V or 240V AC (PX) power supply, it can be operated with the supplied AC Plug Adaptor except in a few countries.



FOR LX-200PX



FOR LX-200EN

## Section 2 ADJUSTMENT PROCEDURES

### 2-1. DISASSEMBLY METHOD

This flowchart indicates disassembly steps of the cabinet parts and circuit boards in order to find the necessary items for servicing. When reassembling, perform the steps in the reverse order.

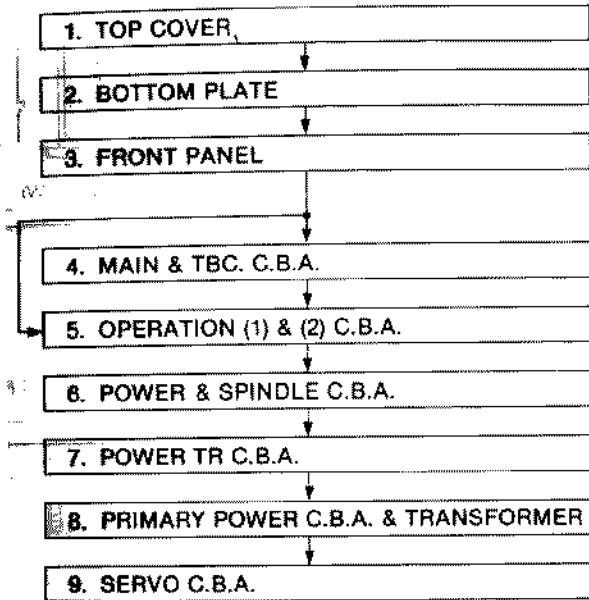


Fig. D1

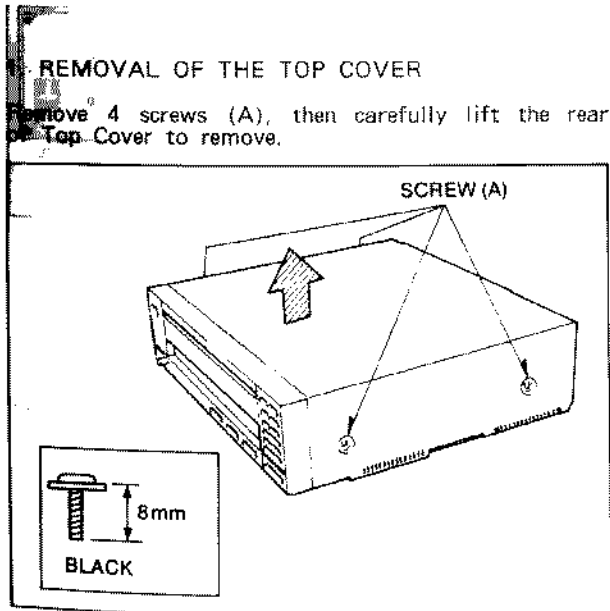


Fig. D2

### 2. REMOVAL OF THE BOTTOM PLATE

Place the unit upside down so that the bottom side faces upward. Then remove 11 screws (B).

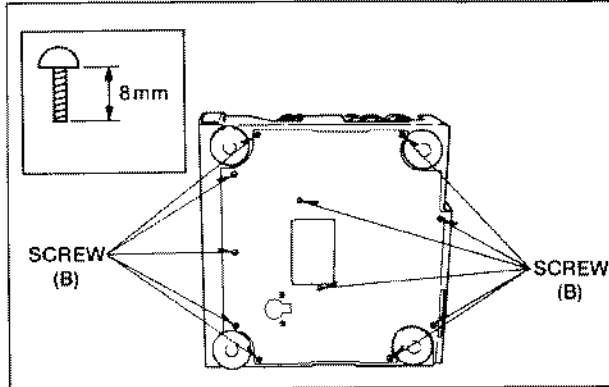


Fig. D3

### 3. REMOVAL OF THE FRONT PANEL

- 3-1. Remove 3 screws (C) and unlock 3 locking tabs (E) on the bottom side. Then unlock 3 locking tabs (D) on the top side.
- 3-2. Hold the top portion of the panel and turn it toward the front side of the unit to remove.

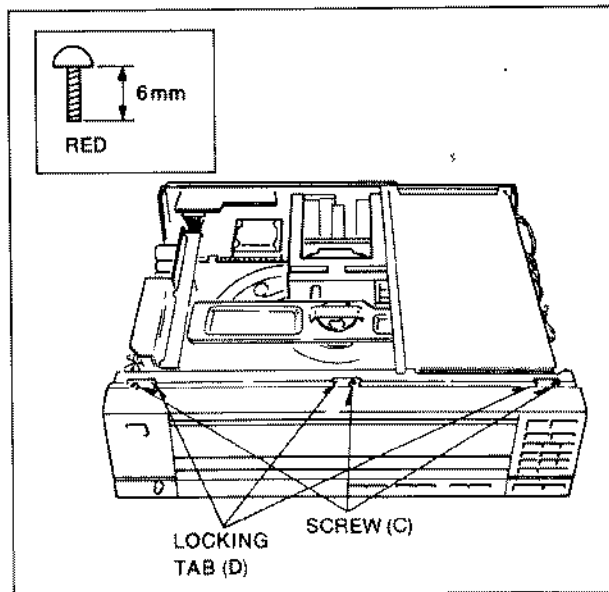


Fig. D4

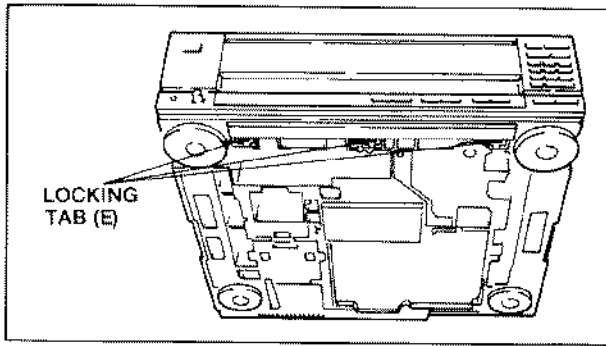


Fig. D5

#### 4. REMOVAL OF THE MAIN & T.B.C. C.B.A.

- 4-1. Remove 6 screws (E) on the C.B.A. and then remove 3 screws (F) on the Rear Panel.
- 4-2. Pull the Main & T.B.C. C.B.A. slightly forward then carefully lift up.

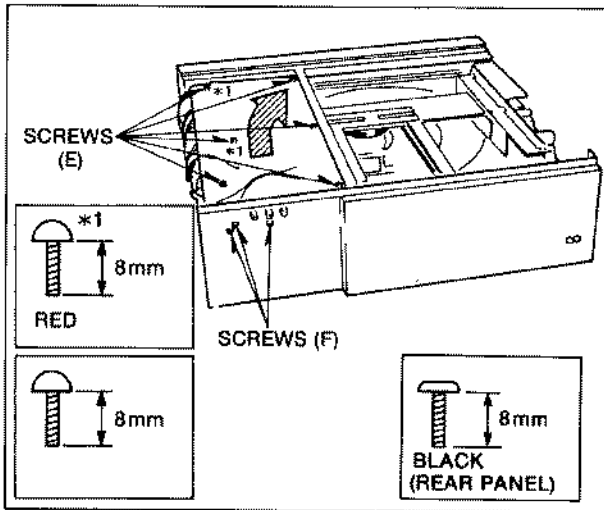


Fig. D6

#### 5. REMOVAL OF THE OPERATION (1) & (2) C.B.A.

Remove 5 screws (G) on the Operation (1) C.B.A. and 5 screws (H) on the Operation (2) C.B.A.

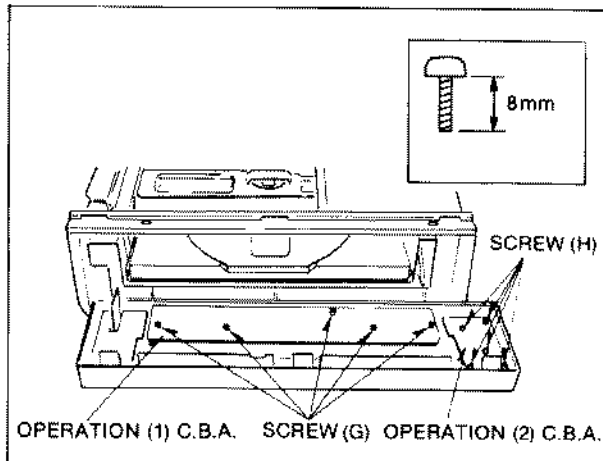


Fig. D7

#### 6. REMOVAL OF THE POWER & SPINDLE C.B.A.

Remove 3 screws (I), then carefully lift the Power & Spindle C.B.A..

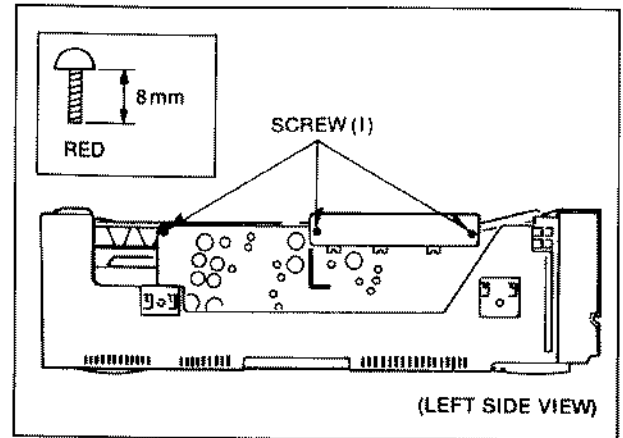


Fig. D8

#### 7. REMOVAL OF THE POWER TR. C.B.A.

Remove 5 screws (J), then take out the Power TR. C.B.A..

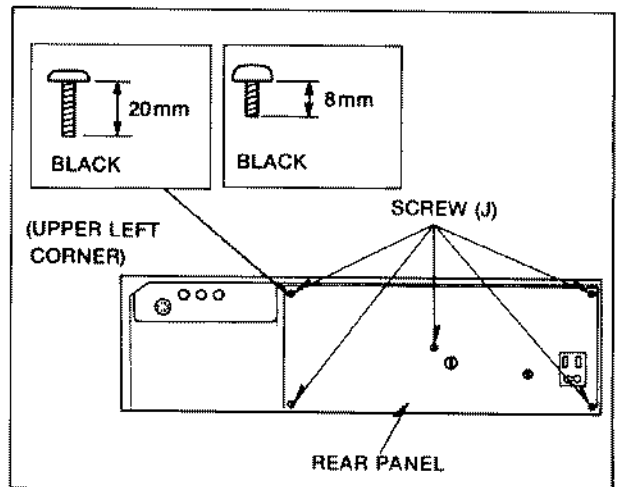


Fig. D9

#### 8. REMOVAL OF THE PRIMARY POWER C.B.A. & TRANSFORMER

- 8-1. Set the mechanism condition to Eject position. (Refer to Service Caution).
- 8-2. Remove 2 screws (K). Then, carefully lift the Power Transformer.
- 8-3. Remove 1 screw and unlock 2 locking tabs (L). Then, carefully lift the Primary Power C.B.A.

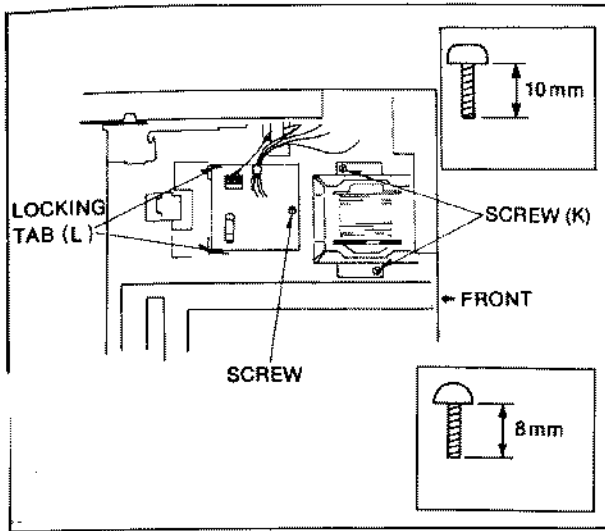


Fig. D10

### 9. REMOVAL OF THE SERVO C.B.A.

Remove 2 screws (M) and unlock 4 locking tabs (N).

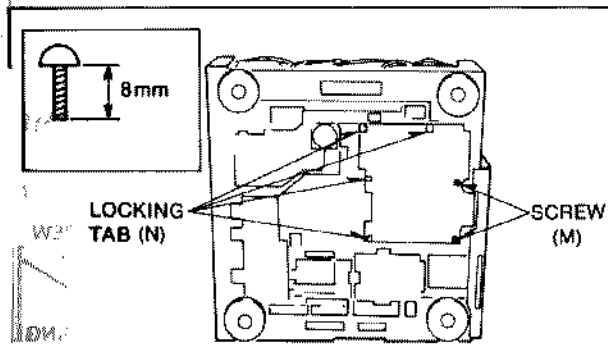


Fig. D11

## 2-2. REPLACEMENT OF MECHANICAL PARTS

### 1. REPLACEMENT OF THE TRAY UNIT UNIT

<Removal of Tray>

1. Set the mechanism condition to Eject position. (Refer to Service Caution).
2. Remove the Main C.B.A. (refer to Fig. D6).
3. Press the Tray Stopper (Hole A and B) to unlock the locking tab on the Tray Guide Plate by using Driver and then remove Tray Plate as shown in Fig. R1.

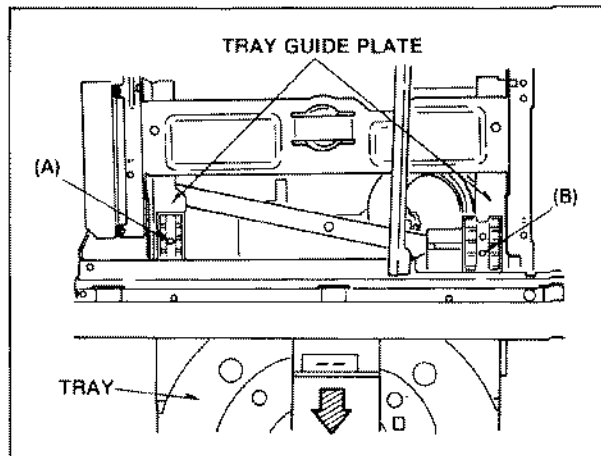


Fig. R1

<Tray Installation>

4. Turn the Tray Drive Gear fully to clockwise.
5. Turn the Tray Drive Gear counter clockwise so that the mark on Tray Drive Gear appears on the right corner as shown in Fig. R2.

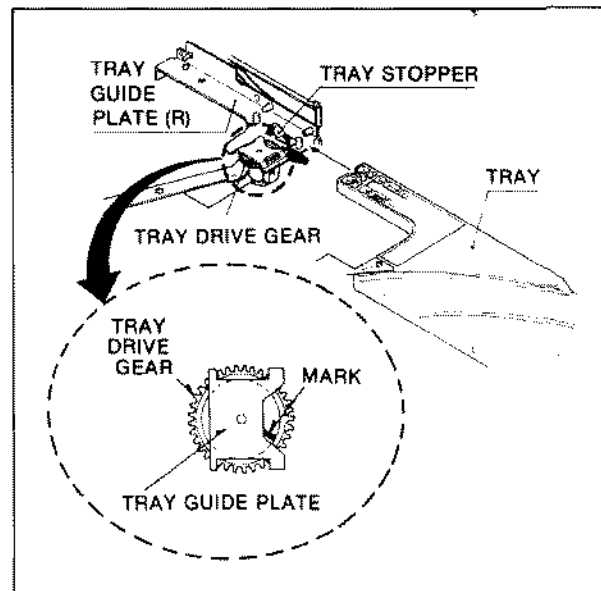


Fig. R2

6. Install the Tray so that the mark (A) of the Tray Drive Gear lines up with the notch mark (B) of Tray as shown in Fig. R3.

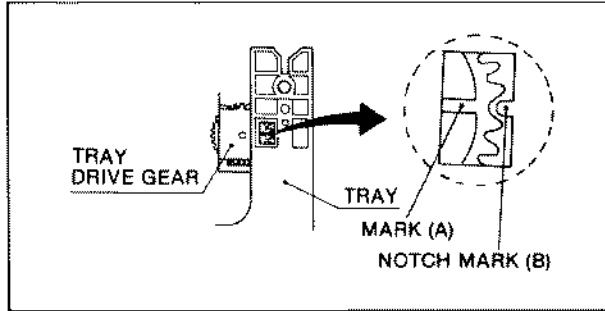


Fig. R3

7. Confirm that both Tray stopper Tabs are locked as shown in Fig R1.

## 2. REPLACEMENT OF THE TRAY DRIVE SECTION

1. Remove the Tray unit (Refer to Fig. R1)
2. Remove the Front Panel Unit (Refer to Fig. D4 and D5)
3. Remove 1 screw (A) on the Main C.B.A. Angle Support Bracket and 4 screws (B) on the Front Panel Angle Support Bracket to remove the Main C.B.A., Angle Bracket and Front Panel Angle Support Bracket.
4. Remove 2 screws (C) on the Rack Guide Plate (L), 3 screws (D) and spring on the Rack Guide Plate (R).

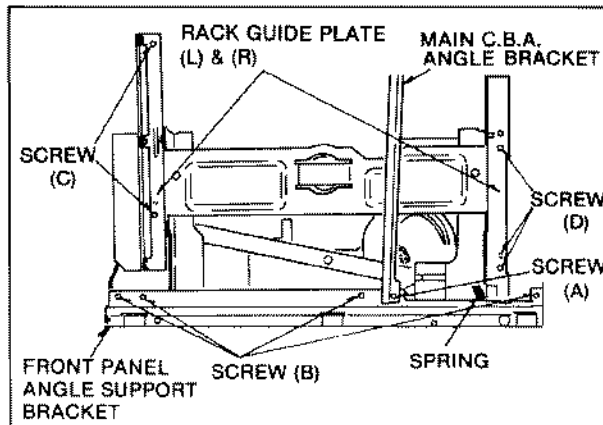


Fig. R4

5. Remove 2 springs and then take out the Clamp Plate.
6. Pull out the Rack Plate (L) and (R), as shown in Fig. R5.
7. When removing the Shutter Plate, carefully note it's disassembly, it's reinstallation is important.

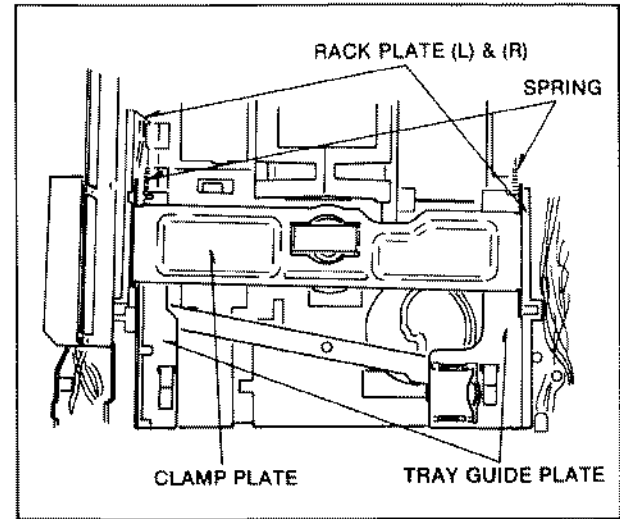


Fig. R5

## 2-1. REPLACEMENT OF THE LOADING MOTOR

1. Remove 2 screws (H) and then take out the Loading Motor from bottom side.

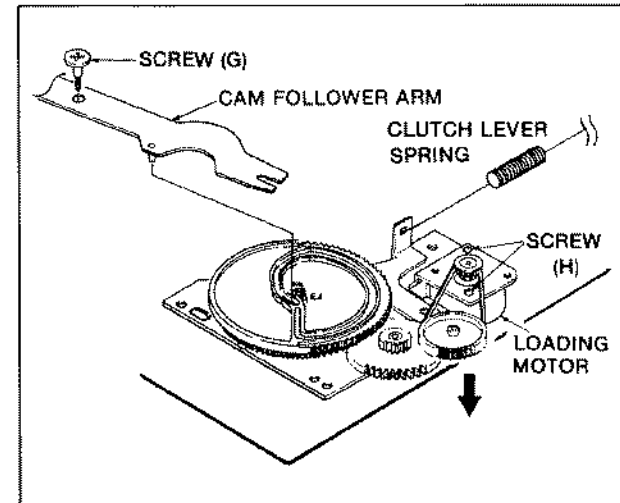


Fig. R6

## 2-2. REPLACEMENT/ADJUSTMENT OF MODE SELECT SW AND CAM GEAR

Due to the intricate working relationship between both the mechanical mechanisms and electrical circuits of this unit, therefore the relationship between the mode select switch and the cam Gear, determines all further mechanical movement of parts such as levers, gears and other components. For this reason if alignments on adjustments are improperly performed, the deck may possibly unloaded or automatically stop. It will also result in damage to mechanical and electrical parts.

2-2-1. REPLACEMENT OF MODE SELECT SW AND CAM GEAR

1. Remove the Screw (G) and then take out the Cam Follower Arm.
2. Remove the C-Ring (A) and then take out the Cam Gear.
3. Remove the screw (B) and then disconnect the connector P26201 on the Main C.B.A.. Then remove the Mode Select SW.

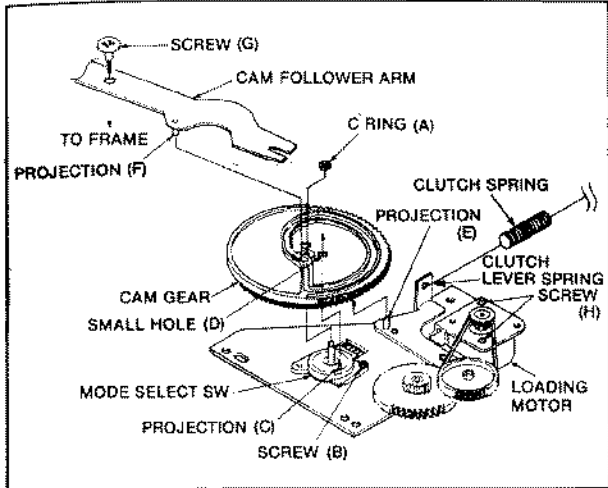


Fig. R7

2-2-2 ALIGNMENT OF THE MODE SELECT SW AND CAM GEAR

1. Turn the inside of Mode Select SW so that alignment tab marks meet together (A) and (B).

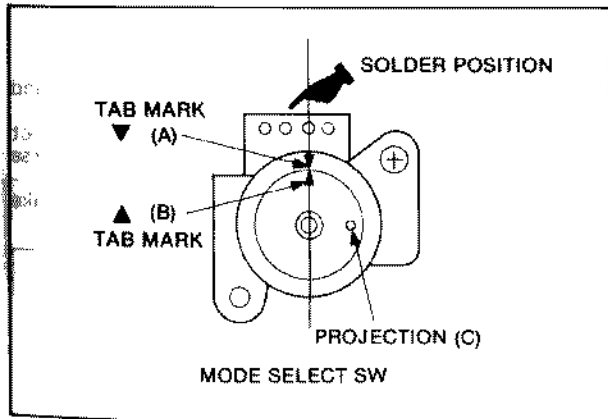


Fig. R8

2. Install the Cam Gear with the half slot side showing so that Small Hole (D) on the Cam Gear meets Projection (C) on the Mode Select SW as shown in Fig. R7. Then install the C-Ring (A) to mount Cam Gear.

3. Turn the Cam Gear fully to clockwise. Then install the Cam Follower Arm so that the projection (F) meets the inner slot of Cam. Also install Screw (G) so as to mount the Frame.

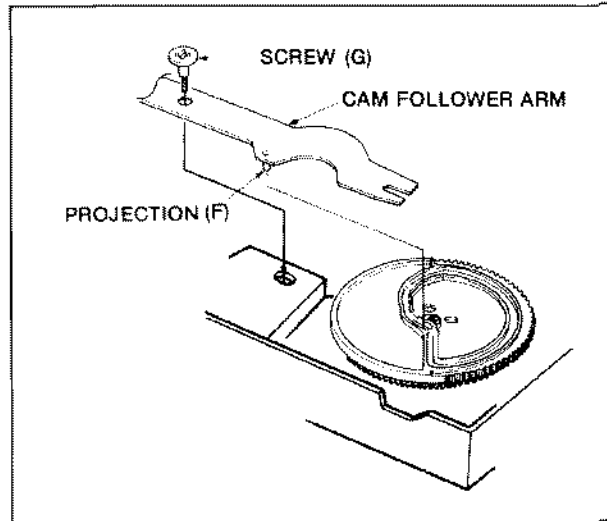


Fig. R9

4. This should be installed first, set the Tray Guide Plate (L) to Rack Plate (L) so that the Projection (G) and (H) of Tray Guide Plate (L) meets (A) and (B) of the Rack Plate (L). Then install the Tray Guide Plate (L) and Rack Plate (L) so that the projection (I) and (J) of Tray Guide Plate (L) meets Hole (C) and (D), and also Projection (E) meets (F) of the Cam Follower Arm, slowly slide the Rack Plate (L) to confirm that projection (E) engages with (F) of the Cam Follower Arm.

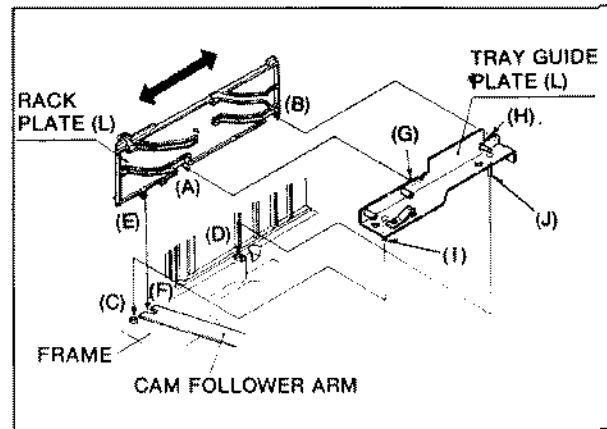


Fig. R10

- This should be installed first, set the Tray Guide Plate (R) to Rack Plate (R) so that the Projection (Q) and (R) of Tray Guide Plate (R) meets (K) and (H) of Rack Plate (R). Turn the Tray Drive Gear clockwise so that the projection of Tray Drive Gear set to center as shown in Fig. R12.

Install the hole of the Shutter to projection (A) of the Tray Guide Plate (L).

Then install the Tray Guide Plate (R) and Rack Plate (R) so that the projection (O) and (P) of Tray Guide Plate (R) meets Hole (M) and (N) of the Frame.

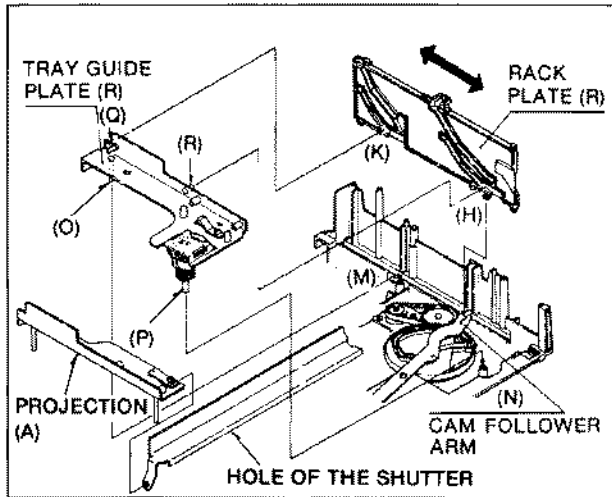


Fig. R11

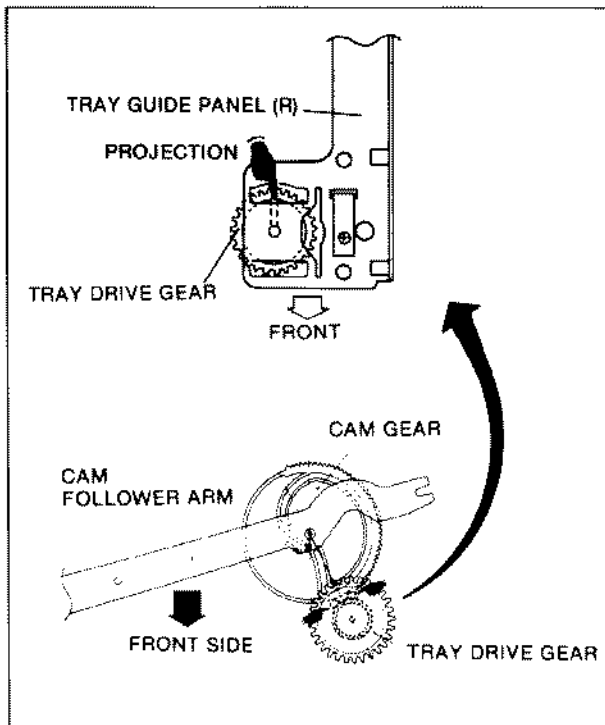


Fig. R12

- Slowly turn the Cam Gear counter clockwise so that the square position of Rack Plate (L) and (R) meets Flame square position. Then install the Clamp Plate.
- Slowly turn the Cam Gear clockwise until reach the Tray Down condition. Install the Spring (Q) and (R) so as to mount Clamp Plate (S) and (T).

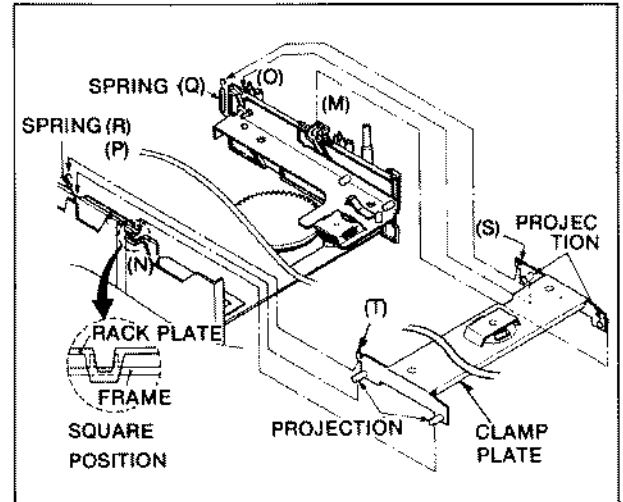


Fig. R13

Then install the Rack Guide Plate (L) and (R) as shown in Fig.R4.

- Install the Tray as shown in Fig. R2.

### 3. REPLACEMENT OF THE TRAVERSE SECTION

- Remove the Servo C.B.A. (Refer to Fig. D11)
- Remove the Clamp Plate (Refer to Fig. R4 and R5)
- Remove the Spring (A) and then disconnect connector between Servo C.B.A. and Traverse Section.
- Remove 4 screws (A) and then carefully take out the Traverse Section.

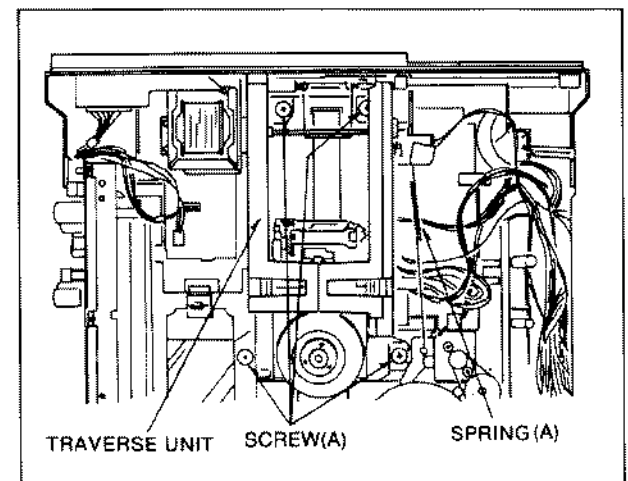


Fig. R14



### 3-1 REPLACEMENT OF THE SPINDLE MOTOR

1. Remove 3 screws (B) and then remove the Spindle Motor by lifting it.

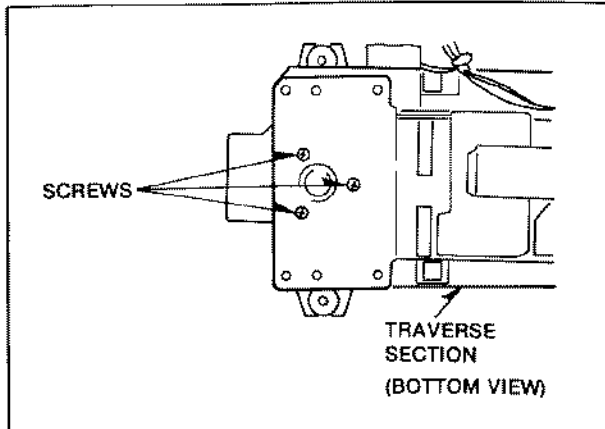


Fig. R15

### 3-2 REPLACEMENT OF THE OPTICAL PICK UP BASE UNIT

Work with extreme care when replacement of the Optical Pick-Up Base Unit. Then do not touch Focus Lens, Tilt Sensor and Photo Detector during servicing.

After replacement of the Optical Pick Up Base Unit, readjust the Electrical Adjustment that is Optical Pick Up and Servo Circuits.

Reassemble the Optical Pick Up Base Unit to Traverse Unit by following Item 3 through 1 in reverse order.

1. Move a Transmission Gear (A) to center position of frame hole to move the Optical Pick Up Base Unit free. Move a optical Pick up Base Unit until screw of the Belt Clamper is seen through Fram and then remove the screw of Belt Clamper.

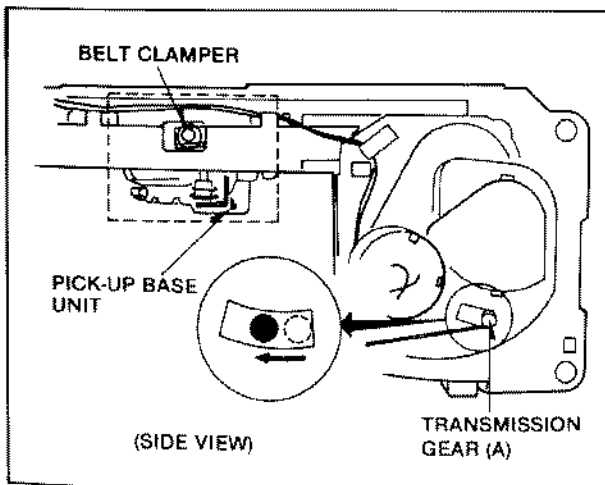


Fig. R16

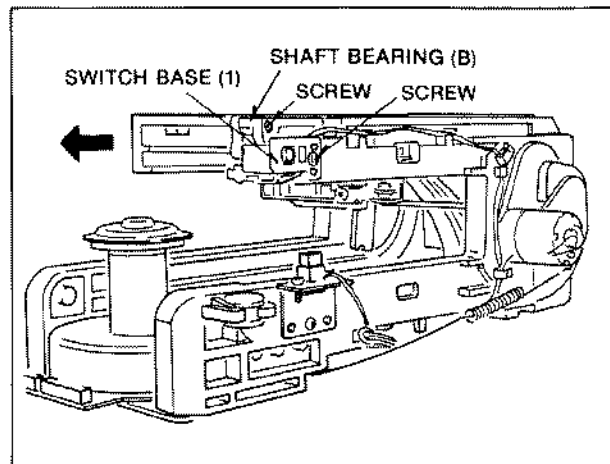


Fig. R17

2. Remove 1 screw of Switch Base (1) and then remove the Switch Base (1).
3. Loosen the screw of Shaft Bearing (B). Then carefully pull the Optical Pick Up Base Unit to left. Optical Pick Up Base Unit can be separated from the Traverse Unit.

### <REASSEMBLE>

1. Move a Forward Belt Pulley as shown in Fig. R18.

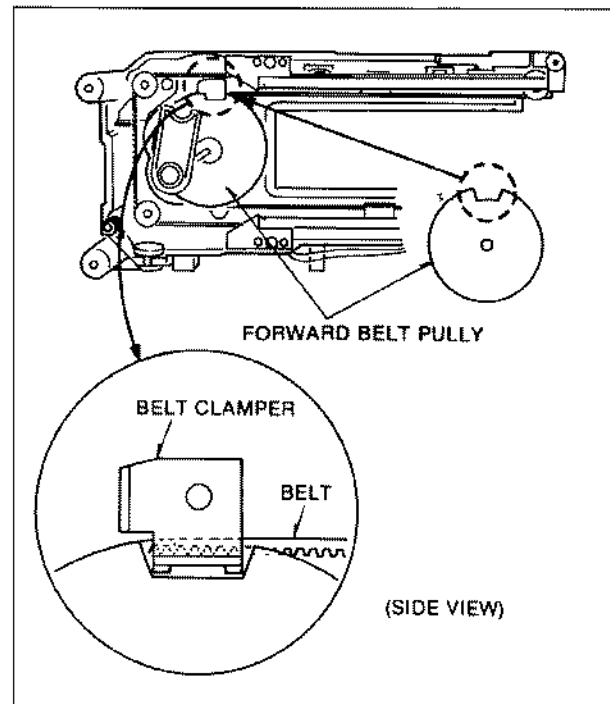


Fig. R18

To move a Forward Belt Pully, move a Transmission Gear (A) to center position of Frame hole as shown in Fig. R16. Then install the Belt Clamper.

2. Install the Optical Pick Up Base Unit to Traverse Unit and then move a Optical Pick Up Base Unit and Belt Clamper by rotating the Belt Pully so that hole of Optical Pick Up Base aligns with hole of Belt Clamper as shown in Fig. R16. Screw on a Optical Pick Up Base Unit.

### 3-3. REPLACEMENT OF THE OPTICAL PICK UP

Reassemble the Optical Pick Up Base (1) by following Item 4 through 1 in reverse order.

1. Remove 3 screws (A) and disconnect connector P25001.
2. Unsolder 2 leads from Height Motor as shown in Fig. R19. If replace the Pick Up Base Interface C.B.A., unsolder 2 leads from Tilt Motor and remove the Switch Base (1).

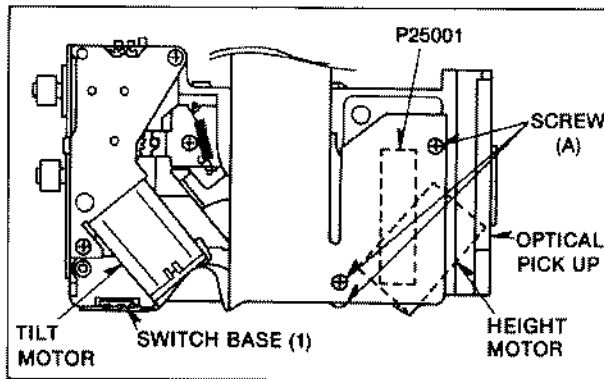


Fig. R19

3. Remove 2 screws (B) and lift the Optical Pick Up a little. Then remove the Height Motor Base by lifting and pulling to the right.
4. Remove the Height Spring (A), (B), Tilt Tension Spring and Height Joint Plate and then carefully take out the Optical Pick Up.

### <REASSEMBLE>

1. Set the Optical Pick Up to Optical Pick Up Base so that the Pin (B) of Optical Pick Up meets the Hole (A) of Tilt Lever and then install the Tilt Tension Spring.
2. Lift the Optical Pick Up a little by finger. Then install the Height Joint Plate so that the Shaft (E) and (F) fit around (C) and (D).

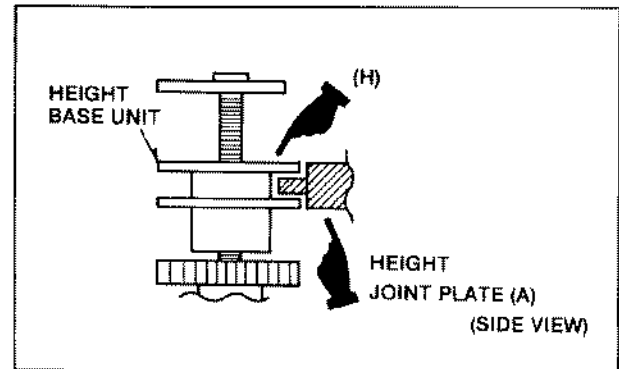


Fig. R21

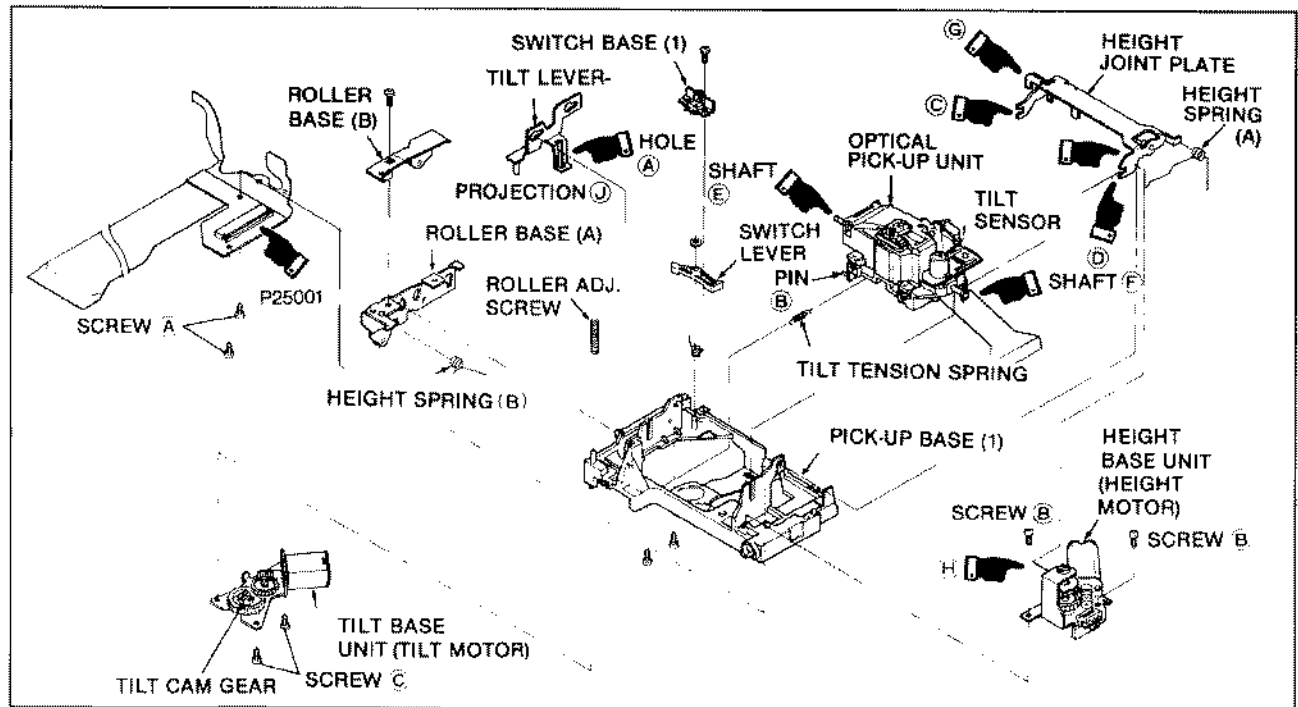


Fig. R20

3. Lift the Optical Pick Up a little and then install the Height Base Unit so that pin (A) of Height Joint Plate fits the (H) position of Height Base Unit as shown in Fig. R21. Then install the Height Spring (A) and (B).

### 3-4 REPLACEMENT OF THE TILT SENSOR

1. Unsolder 4 leads from Sensor Base then remove the Tilt Sensor.
2. Place the new Tilt sensor on the sensor Base so that position (A) of Tilt Sensor match the upper right corner of sensor Base as shown in Fig. R22.  
After replacement of the Tilt Sensor, readjust the Electrical Adjustment that is item 1-1 to 2-13.

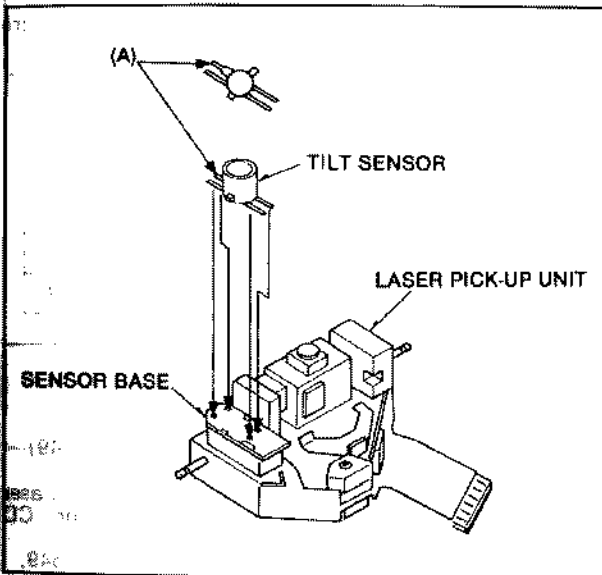


Fig. R22

### 3-5 REPLACEMENT OF THE TILT MOTOR UNIT

1. To replace the Tilt Motor Unit, perform item 1 and 2 of Replacement of the Optical Pick Up.
2. Remove 2 screws (C) and take out the Tilt Motor Unit as shown in Fig. R20.

#### <Alignment Procedures of Tilt Cam Gear.>

Install the Tilt Cam Gear so that the Hole (A) on the Tilt Cam Gear aligns with Hole(B) on the Tilt Base. To facilitate aligning the hole use a small Hex wrench or a metal pin. Install the Tilt Gear and then install the cut washer so as to mount Tilt Cam Gear and Tilt Gear.  
Then install the Tilt BASE Unit so that the Pin (J) on the Tilt Lever meets the inner slot of Tilt Cam Gear.

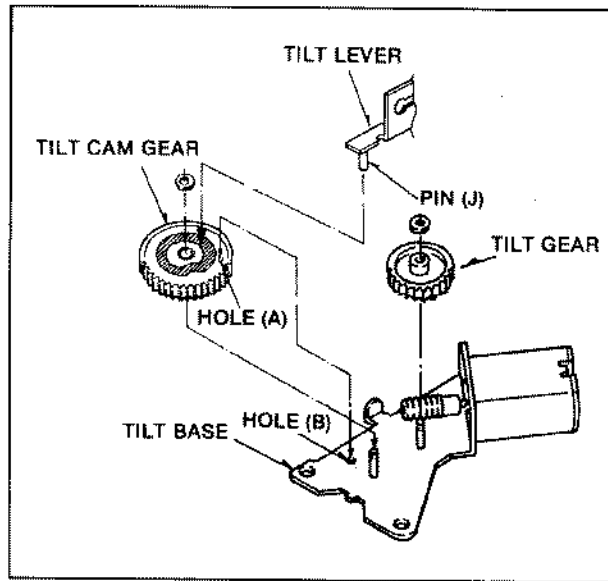


Fig. R23

### 3-6. REPLACEMENT OF THE TRAVERSE MOTOR

1. To replace the Traverse Motor, perform item 1 to 3 of Replacement of the Optical Pick Up Base Unit.
2. Remove 5 screws and Retaining Ring for Flex. Cable Hold Spring then remove the Guide Base (L).

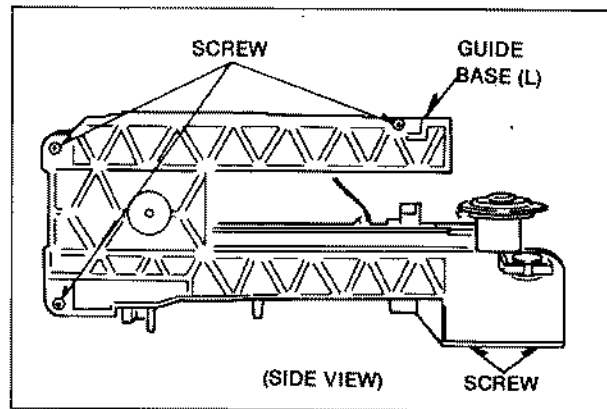


Fig. R24

3. Remove the Forward Belt Pulley and then remove 2 screws.

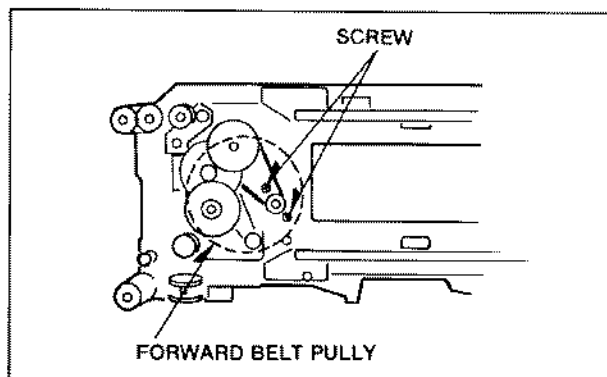


Fig. R25

## 2-3. ELECTRICAL ADJUSTMENT PROCEDURES

### 1. TEST & SERVICE EQUIPMENT

To perform the electrical adjustment completely, following equipments are required.

1. VTVM (Vacuum Tube Volt Meter) or DVM (Digital Volt Meter)  
Voltage Range: 0.001-50V
2. Dual-Trace Oscilloscope  
Voltage Range: 0.005-50V/div  
Frequency Range: DC-20MHz  
Probes: 10:1 or 1:1
3. Frequency Counter  
Frequency Range: 0-10MHz
4. Color Monitor TV
5. Plastic Tip Driver
6. Grating Driver (VFK0651)
7. LD Test Disc (VFK0652)
8. CD Test Disc (SZZP1054C)
9. HEX. Wrench



Fig. E1 VFK0651

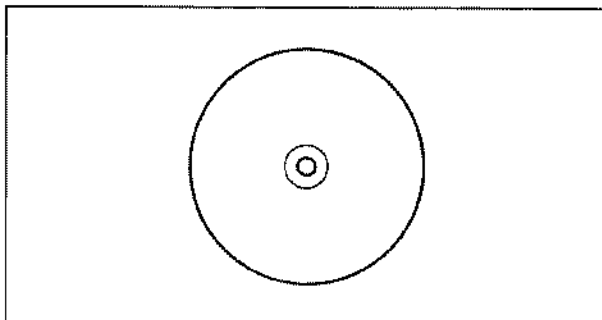


Fig. E2 VFK0652

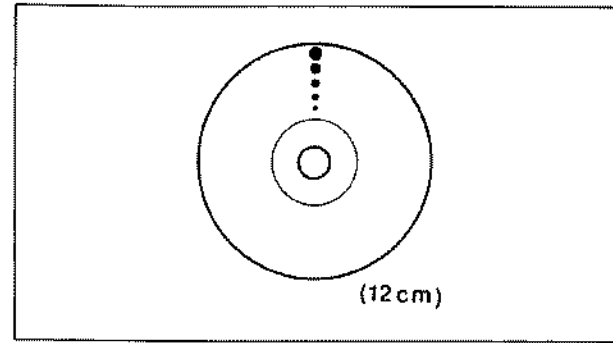


Fig. E3 SZZP1054C

### 10. Servo Gain Fixture (SZZP1017F or SZZP1094C)

When adjust the Servo Section, Servo Gain Fixture for CD Player is used.

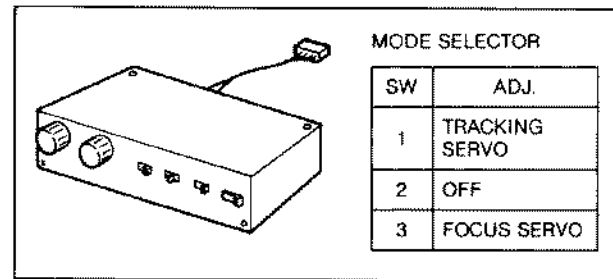


Fig. E5 SZZP1094C

### 11. Connector for Servo Gain Fixture (VFK0649)

This connector is used to connect the Multi Laser Player, as Servo Gain Fixture is made for CD Player.

So, if use SZZP1017F, attach a connector VFK0649 for Multi Laser Player.

#### NOTE:

Remove jumper found on connector P22003 make sure this jumper is reinstall after adjustment procedures are completed.

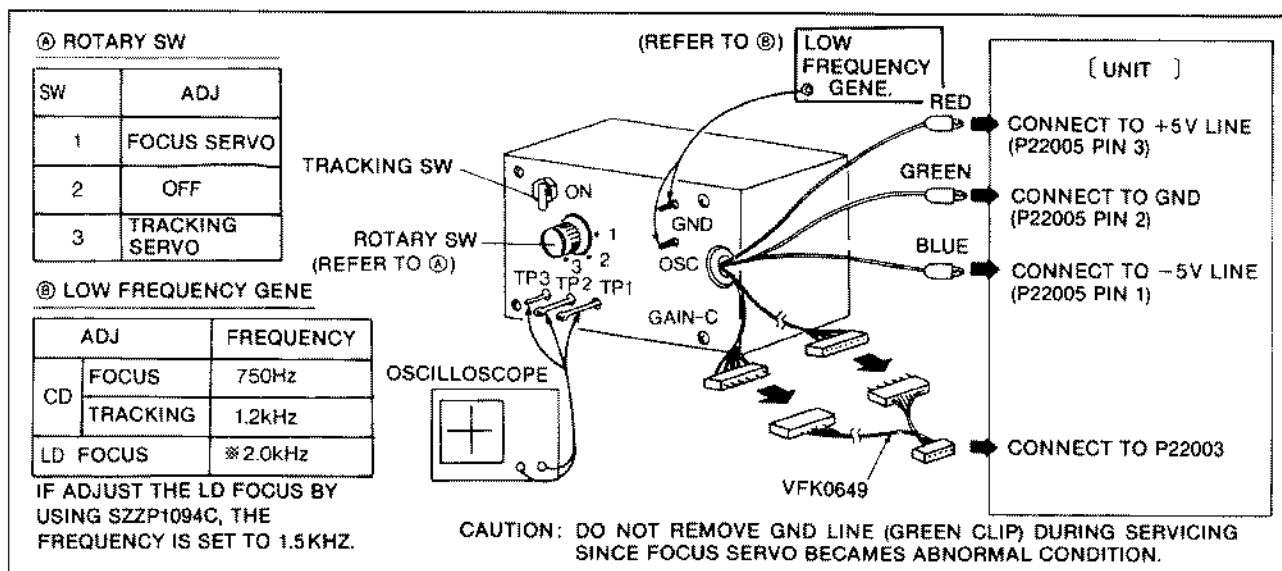


Fig. E4 CONNECTION OF SZZP1017F

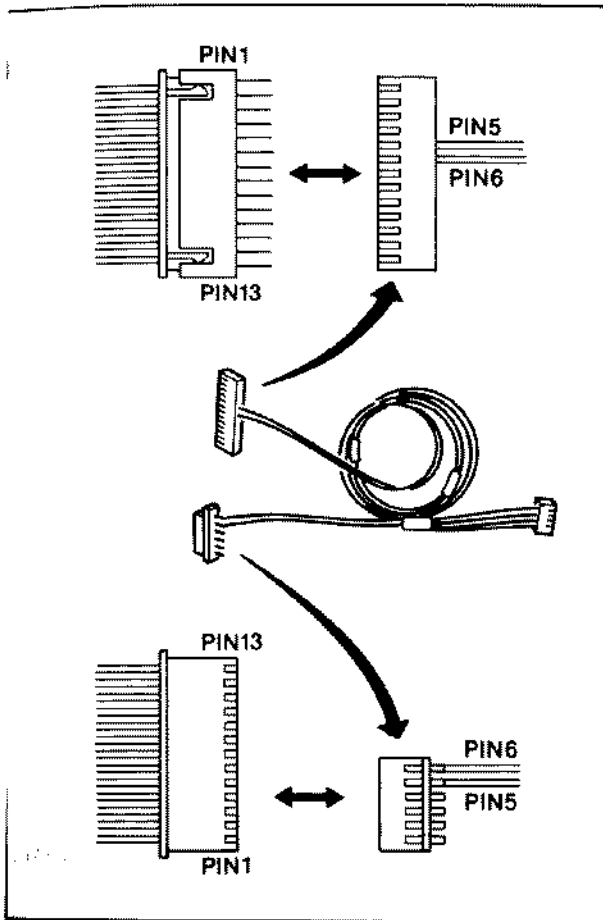


Fig. E6 VFK0649

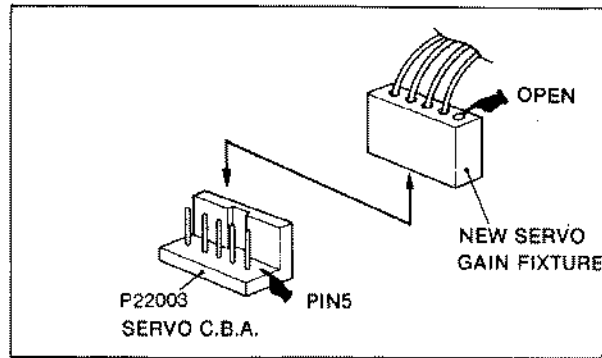


Fig. E7 NEW SERVO GAIN FIXTURE

### 12. Adjustment Table

When adjust the 1-1 Tilt Sensor Adj and 1-2 Grating (Side A) Adj, this adjustment table is used for keeping unit horizontally and adjusting from bottom side.

If place the unit left or right side down (not horizontal), can not correct adjustment. Since we will not supply this Adjustment Table, make it yourself by using metal frame or something which has been sold in local market.

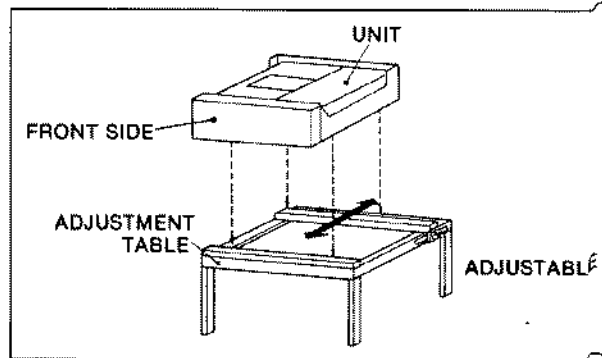


Fig. E8

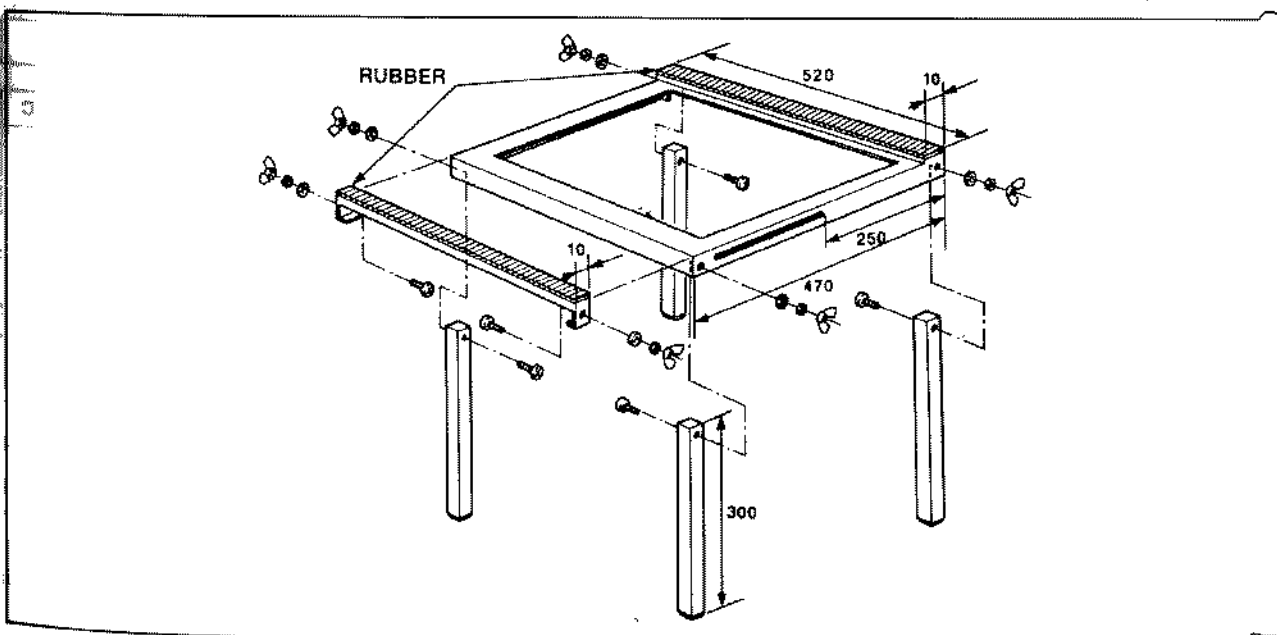


Fig. E9

## 2. HOW TO READ THE ADJUSTMENT PROCEDURES

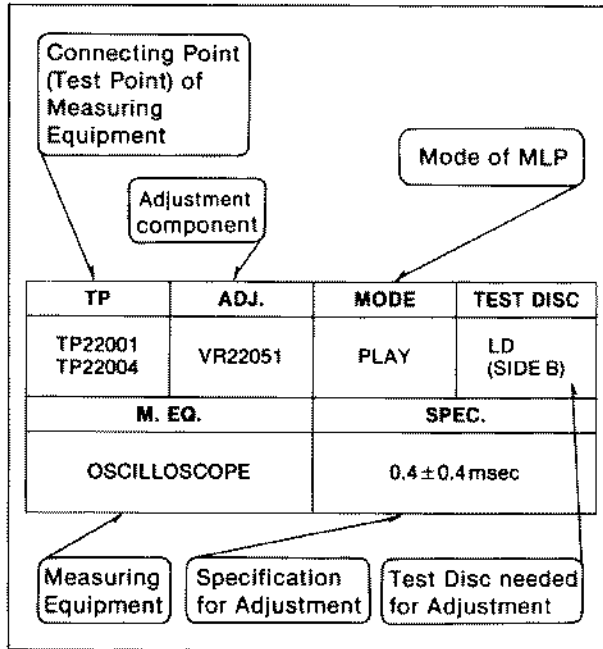


Fig. E10

## 3. ADJUSTMENT PROCEDURES

These adjustment procedures consist of the following sections.

1. Optical Pick Up Section
2. Servo Section
3. Video Section
4. S-Video Section
5. Digital Audio Section
6. Location of Test Points and Adjustment Points.

### CAUTION:

The adjustment procedures are using Servo Gain Fixture SZZP1017F. When use New Servo Gain Fixture SZZP1094C, change rotary sw or slide sw as follows.

<SZZP1017F>

<SZZP1094C>

SW	ADJ.	SW	ADJ.
1	FOCUS SERVO	1	TRACKING SERVO
2	OFF	2	OFF
3	TRACKING SERVO	3	FOCUS SERVO

## 1. OPTICAL PICK UP SECTION

### 1-1. TILT SENSOR ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
	TILT SENSOR ADJ. SCREW	PLAY (SIDE A)	LD SIDE 2 (FRAME 9005)
<b>M. EQ.</b>		<b>SPEC.</b>	
OSCILLOSCOPE		BEAT is MINIMIZED	

### NOTE:

As the spare parts for Optical Pick Up (VEK4894) has been already adjusted, it is not necessary to do it again.

1. Set the LD Test Disc to Tray.  
Then play back the side A.
2. Place the unit in Still mode with white pattern (FRAME 9005) of the LD Test Disc.
3. Adjust Tilt Sensor Adjustment Screw so that the beat on TV screen is minimized.

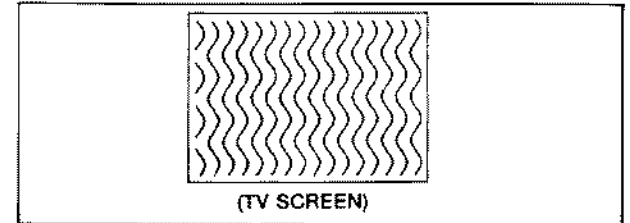


Fig. E11

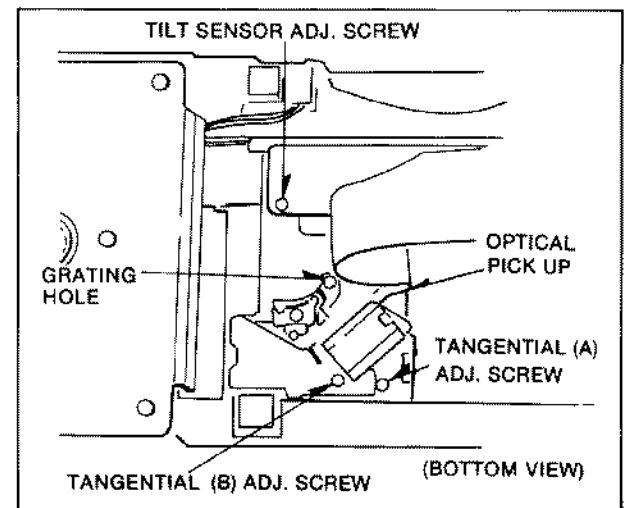


Fig. E12

## 1-2. GRATING (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22301 TANGENTIAL (A) ADJ. SCREW GRATING HOLE	PLAY	CD (TRACK 11)
<b>M. EQ.</b>		<b>SPEC.</b>	
OSCILLOSCOPE		TE SIGNAL is MAXIMIZE	

### NOTE:

If optical pick up unit is replaced, the following adjustment is necessary.  
The original factory optical pick up unit does not need any adjustment, the adjustment hole is sealed with glue.

1. Connect the oscilloscope to TP22001 (CH1) and TP22003 (CH2) on the Servo C.B.A..
2. Play back the Track 11 of CD Test Disc.
3. Confirm that Tangential (A) Adjustment Screw is seen through Adjustment hole on the Servo C.B.A..

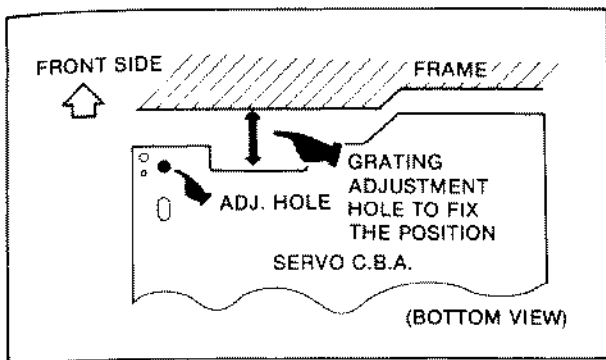


Fig. E13

- Adjust VR22301 (N-ADJ) on the Servo C.B.A. and Tangential (A) Adjustment Screw alternately so that the width (A) of the RF signal is maximize.

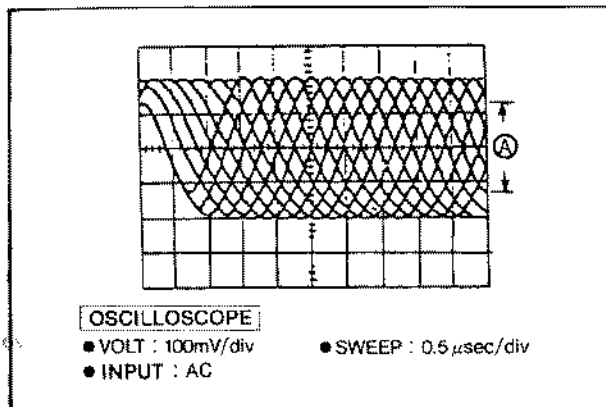


Fig. E14

- Disconnect the connector P22003 on the Servo C.B.A. and then connect the Servo Gain Fixture as shown in Fig. E4.

- Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

- Play back the CD Test Disc. At this time, Grating Hole can be seen through space which is between Servo C.B.A. and Frame as shown in Fig. E13.

- Confirm that Waveform (A) becomes as shown in Fig. E15.

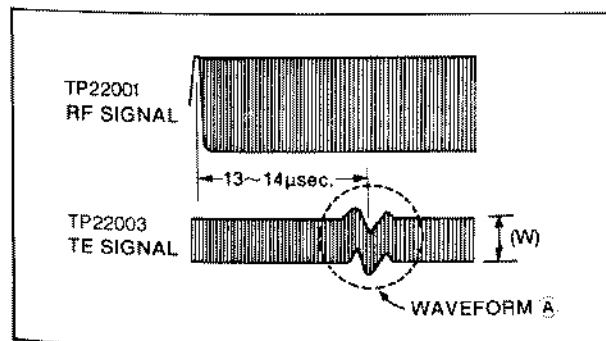


Fig. E15

- Set the Tracking ON/OFF switch of Servo Gain Fixture to "OFF" from "ON". Then adjust the Grating Hole so that the width (W) is maximize as shown in Fig. E15.

**CAUTION:**

During adjustment, do not rotate Grating Adjust Pin too much (maximum  $\pm 2$  degree to 3 degree). If you turn it too much, RF Signal can not be detected, eventually, rest of adjustment could not be performed. Please be careful.

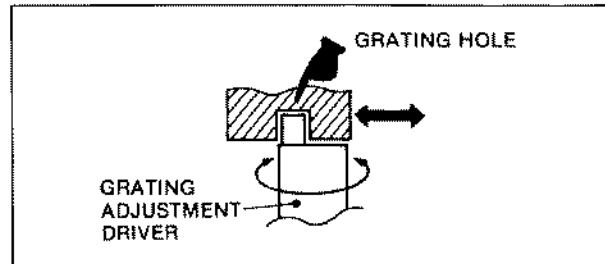


Fig. E16

- Set the Tracking ON/OFF switch of Servo Gain Fixture to "ON" again. Then confirm that waveform (A) becomes as shown in Fig. E15.

### 1-3. GRATING (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22302 TANGENTIAL (B) ADJ. SCREW Shaft Bearing (B) ADJ. SCREW	PLAY (SIDE B)	LD
M. EQ.		SPEC.	
OSCILLOSCOPE		RF SIGNAL is MAXIMIZE	

- Connect the oscilloscope to TP22001 (CH1) and TP22003 (CH2) on the Servo C.B.A..
- Play back the side B of LD Test Disc. At this time, Tangential (B) Adjustment Screw can be seen through the Traverse Unit.

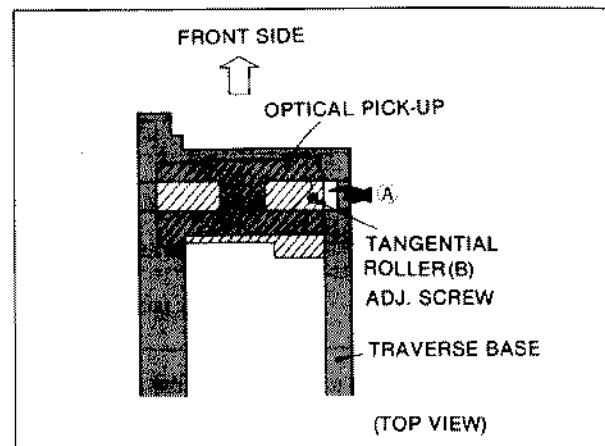


Fig. E17

- Adjust VR22302 (R—ADJ) on the Servo C.B.A. and Tangential (B) Adjustment Screw alternately so that the width (A) of RF Signal is maximize.
- Set the Tracking ON/OFF switch of Servo Gain Fixture to "OFF".  
Then adjust the Shaft Bearing (B) Adjustment Screw so that the TE signal of TP22003 becomes maximum as shown in Fig. E15.

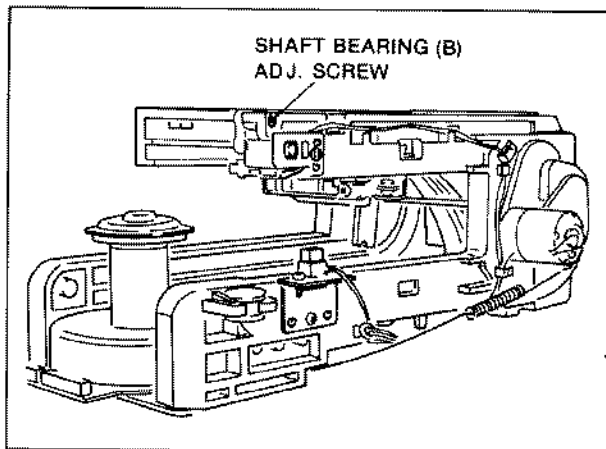


Fig. E18

#### 1-4. AZIMUTH (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
	VR22301	STILL (SIDE A)	LD SIDE 2 (FRAME 1503)
M. EQ.		SPEC.	
		BEAT is MINIMIZED	

- Set the LD Test Disc to Tray so that the Side 2 (CAV) face downward. Then play back the Side A.
- Place the unit in Still mode with white pattern. (FRAME 1503)
- Adjust VR22301 (N—ADJ) on the Servo C.B.A. so that the beat on TV screen is minimized as shown in Fig. E11.

#### 1-5. AZIMUTH (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
	VR22302	STILL (SIDE B)	LD SIDE 2 (FRAME 9005)
M. EQ.		SPEC.	
		BEAT is MINIMIZED	

- Set the LD Test Disc to Tray so that the Side 2 (CAV) face downward. Then play back the Side B.
- Place the unit in Still mode with white pattern. (FRAME 9005).

- Adjust VR22302 (R—ADJ) on the Servo C.B.A. so that the beat on TV screen is minimized as shown in Fig. E11.

## 2. SERVO SECTION

### 2-1. CD FOCUS BALANCE ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001	VR22055	PLAY	CD
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E19	

- Connect 5 pins connector and 3 clips of Servo Gain Fixture to Unit as shown in Fig. E4.
- Set the frequency and output level of the Signal Generator as follows and connect to OSC and GND on the front panel of Servo Gain Fixture.

Frequency : 750Hz  
Output Level : 560mVp-p

#### CAUTION:

If can not set the above level when use New Servo Gain Fixture SZP1094C, adjust output level to a maximum.

- Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

- Connect the oscilloscope to OSC (CH1) of Servo Gain Fixture and TP22001 (CH2) on the Servo C.B.A.
- Play back the CD Test Disc.
- Change the Rotary SW of Servo Gain Fixture to "1" from "2".
- Adjust VR22055 (F—CD BAL) on the Servo C.B.A. so that the amplitude (A) of the RF signal is at a minimum or the amplitude (B) and (C) of RF signal is at the same level as follows.

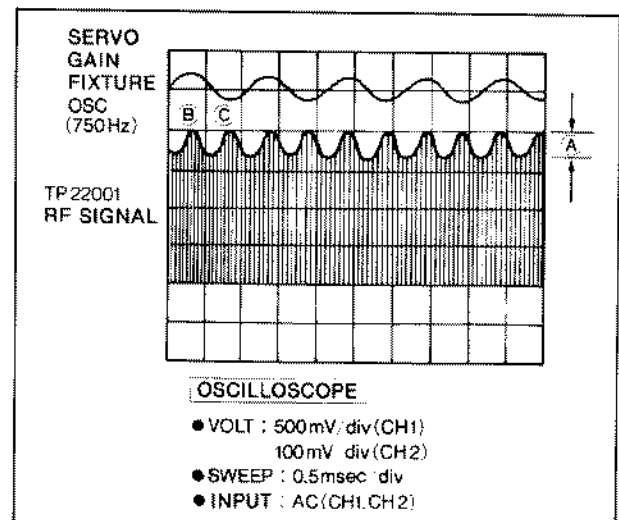


Fig. E19



- Change the Rotary SW of Servo Gain Fixture to "2" from "1" and then adjust the next adjustment that is Focus Gain.

## 2-2. FOCUS GAIN ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP 1 and 2 OF SERVO GAIN FIXTURE	VR22056	PLAY	CD
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E20	

- Connect the oscilloscope to TP1 (CH1), TP2 (CH2) and TP3 (GND) on the front panel of Servo Gain Fixture.
- Set the frequency and output level of the Signal Generator as follows and connect to OSC and GND on the front panel of Servo Gain Fixture.

Frequency : 750Hz  
Output Level : 100mVp-p

- Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

- Play back the CD Test disc.
- Change the Rotary SW of Servo Gain Fixture to "1" from "2".
- Adjust VR22056 (F-Gain) on the Servo C.B.A. so that the waveform (A) and (B) is at the same level as follows.

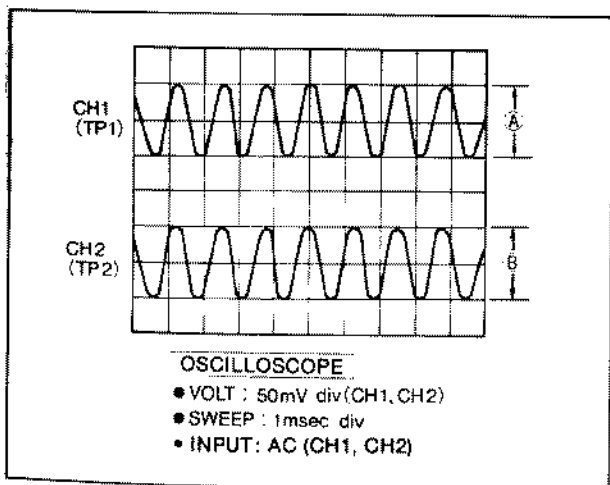


Fig. E20

## 2-3. TRACKING GAIN ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP 1 and 2 OF SERVO GAIN FIXTURE	VR22057	PLAY	CD
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E20	

- Connect the oscilloscope to TP1 (CH1), TP2 (CH2) and TP3 (GND) on the front panel of Servo Gain Fixture.
- Set the frequency and output level of the Signal Generator as follows and connect to OSC and GND on the front panel of Servo Gain Fixture.

Frequency : 1.2kHz  
Output Level : 100mVp-p

- Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

- Play back the CD Test Disc.
- Change the Rotary SW of Servo Gain Fixture to "3" from "2".
- Adjust VR22057 (T. Gain) on Servo C.B.A. so that the waveform (A) and (B) is at the same level as shown in Fig. E20.
- Change the Rotary SW of Servo Gain Fixture to "2" from "3".

## 2-4. FOCUS OFFSET (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22004 (FE)	VR22052	PLAY	CD (TRACK 13)
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

- Connect the oscilloscope to TP22001 (CH1) and TP22004 (CH2) on the Servo C.B.A..
- Play back the Track 13 (BS 0.7mm) of CD Test Disc.
- Adjust VR22052 (F-N OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is minimized.

- Change the Rotary SW of Servo Gain Fixture to "2" from "1" and then adjust the next adjustment that is Tracking Gain.

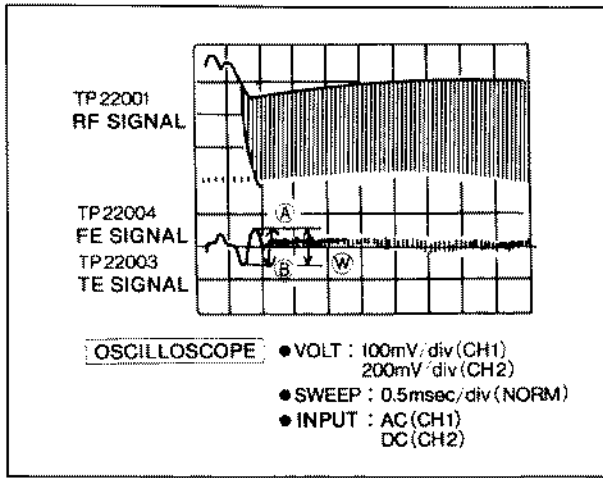


Fig. E21

### 2-5. CD TRACKING OFFSET ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22062	PLAY	CD (TRACK 13)
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

1. Connect the oscilloscope to TP22001 (CH1), and TP22003 (CH2).
2. Play back the Track 13 (BS 0.7mm) of CD Test Disc.
3. Adjust VR22062 (T-CD OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is minimized as shown in Fig. E21.

### 2-6. TRACKING BALANCE (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22059	PLAY	CD (TRACK 7)
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E22	

1. Connect the oscilloscope to TP22001 (CH1) and TP22003 (CH2).
2. Play back the Track 7 (BS 0.8mm) of CD Test Disc
3. Adjust VR22059 (T-N BAL) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible as follows.

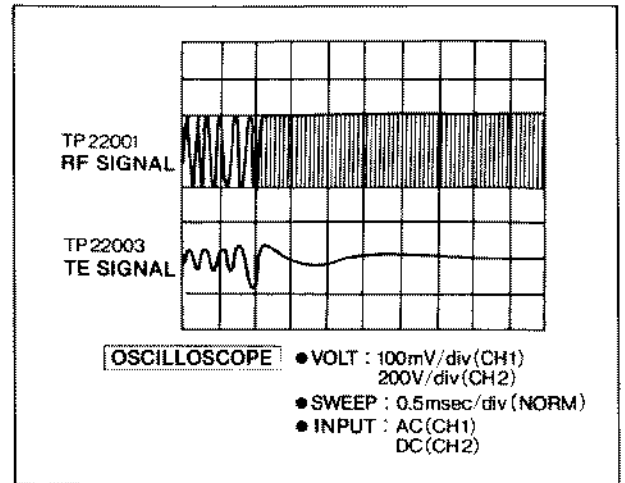


Fig. E22

### 2-7. LD FOCUS BALANCE (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF)	VR22054	PLAY (SIDE A)	LD
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E19	

1. Set the frequency and output level of the Signal Generator as follows and connect to OSC and GND on the front panel of Servo Gain Fixture.

Frequency : 2.0kHz  
Output Level : 560mVp-p

2. Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

3. Connect the oscilloscope to OSC (CH1) of Servo Gain Fixture and TP22001 (CH2).
4. Play back the side A of the LD Test Disc.
5. Change the Rotary SW of Servo Gain Fixture to "1" from "2".
6. Adjust VR22054 (F-N BAL) on the Servo C.B.A. so that the amplitude (A) of RF signal is at a minimum or the amplitude (B) and (C) of RF signal is at the same level as shown in Fig. E19.
7. Change the Rotary SW of Servo Gain Fixture to "2" from "1".

## 2-8. LD FOCUS OFFSET (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22004 (FE)	VR22063	PLAY (SIDE A)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

1. Connect the oscilloscope to TP22001 (CH1) and TP22004 (CH2).
2. Stick a Black Tape on the LD Test Disc as follows to make the dropout condition. Then set it to the Tray so that the dropout side face downward. Then play back the side A. After doing this adjustment, clean a Test Disc.

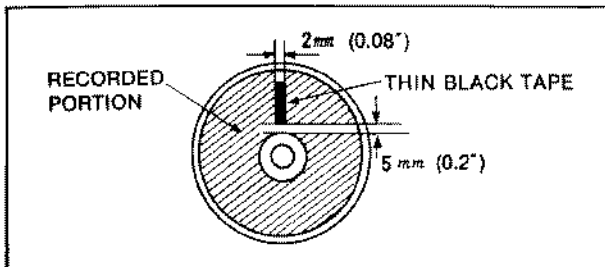


Fig. E23

3. Adjust VR22063 (F-V OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is at a minimum as shown in Fig. E21.

### NOTE:

When VR22063 for LD Focus Offset is changed (repair), must be readjust the following items.

Item 2-4	Focus Offset (Side (A)) Adjustment
Item 2-8	LD Focus Offset (Side (A)) Adjustment
Item 2-11	LD Focus Offset (Side (B)) Adjustment

## 2-9. LD TRACKING OFFSET (SIDE A) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22061	PLAY (SIDE A)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

1. Connect the oscilloscope to TP22001 (CH1) and TP22003 (CH2).
2. Stick a Black Tape on the LD Test Disc as shown in Fig. E23. Then set it to the Tray so that the dropout side face downward. Then play back the side A.
3. Adjust VR22061 (T-LDN OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is at a minimum as shown in Fig. E21.

## 2-10. LD FOCUS BALANCE (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF)	VR22053	PLAY (SIDE B)	LD
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E19	

1. Set the frequency and output level of the Signal Generator as follows and connect to OSC and GND on the front panel of Servo Gain Fixture.

Frequency : 2.0kHz  
Output Level : 560mVp-p

2. Set the switches on the front panel of Servo Gain Fixture to the following position.

Tracking SW : ON  
Rotary SW : 2

3. Connect the oscilloscope to OSC (CH1) of Servo Gain Fixture and TP22001 (CH2) on the Servo C.B.A..
4. Play back the side B of LD Test Disc.
5. Change the Rotary SW of Servo Gain Fixture to "1" from "2".
6. Adjust VR22053 (F-R BAL) on the Servo C.B.A. so that the amplitude (A) of RF signal is at a minimum or amplitude (B) and (C) of RF signal is at the same level as shown in Fig. E19.
7. Change the Rotary SW of Servo Gain Fixture to "2" from "1".

### 2-11. LD FOCUS OFFSET (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22004 (FE)	VR22051	PLAY (SIDE B)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

1. Connect the oscilloscope to TP22001 (CH1) and TP22004 (CH2).
2. Stick a Black Tape on the LD Test Disc as shown in Fig. E23. Then set it to the Tray so that the dropout side face upward. Then play back the side B.
3. Adjust VR22051 (F-R OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is minimized as shown in Fig. E21.

### 2-12. LD TRACKING BALANCE (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22003 (TE)	VR22058	PLAY (SIDE B)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E24	

1. Set the switches on the front panel of Servo Gain Fixture to the following position.  
Tracking SW : ON  
Rotary SW : 2
2. Connect the oscilloscope to TP22003.
3. Stick a Black Tape on the LD Test Disc as shown in Fig. E23. Then set it to the Tray so that the dropout side face upward. Then play back the side B.
4. Change the Tracking ON/OFF SW of Servo Gain Fixture to "OFF".
5. Adjust VR22058 (T-R BAL) on the Servo C.B.A. so that the waveform has equal Upper and Lower levels as compared to the center GND.

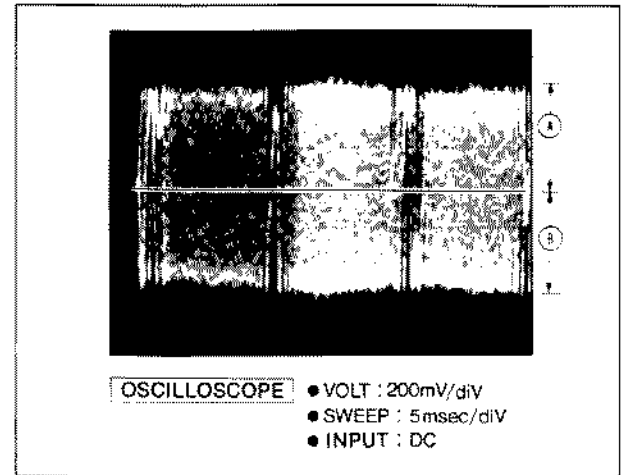


Fig. E24

### 2-13. LD TRACKING OFFSET (SIDE B) ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP22001 (RF) TP22003 (TE)	VR22060	PLAY (SIDE B)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E21	

1. Connect the oscilloscope to TP22001 (CH1) and TP22003 (CH2).
2. Stick a Black Tape on the LD Test Disc as shown in Fig. E23. Then set it to the Tray so that the dropout side face upward. Then play back the side B.
3. Adjust VR22060 (T-LDR OS) on the Servo C.B.A. so that the RF envelope (CH1) becomes as flat as possible and the waveform (A) and (B) is at the same level or waveform (W) is at a minimum as shown in Fig. E21.

## 3. VIDEO SECTION

### 3-1. DSC OSCILLATOR ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP23208	CT23203	STOP	
M. EQ.		SPEC.	
FREQUENCY COUNTER		3.579545 MHz ± 10Hz	

### 3-2. VCO OSCILLATOR ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP23205	VR23206	STOP	
M. EQ.		SPEC.	
FREQUENCY COUNTER		12.6MHz ± 0.1MHz	

1. Connect a jumper wire between TP23206 on the T.B.C. C.B.A. and GND.

1. Adjust CT23202 (CHROMA TRAP) on the Main C.B.A. so that the width (W) of the cyan portion or burst portion is at a minimum.

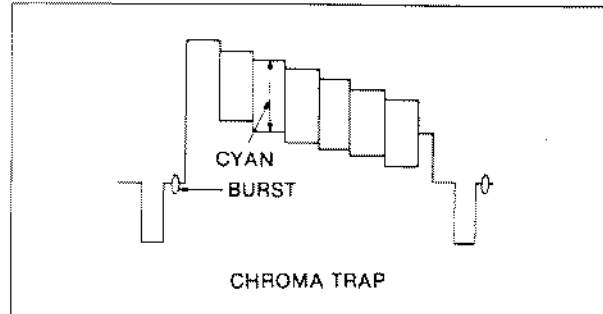


Fig. E26

### 3-3. VIDEO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
OUTPUT TERMINAL	VR23209	PLAY	LD (COLOR BAR) (CHAPTER 19)
M. EQ.		SPEC.	
OSCILLOSCOPE		A = 1.0 ± 0.05Vp-p	

1. Adjust VR23209 (Video P.B Level) on the T.B.C. C.B.A. so that the level of the Luminance signal becomes 1.0 ± 0.05Vp-p

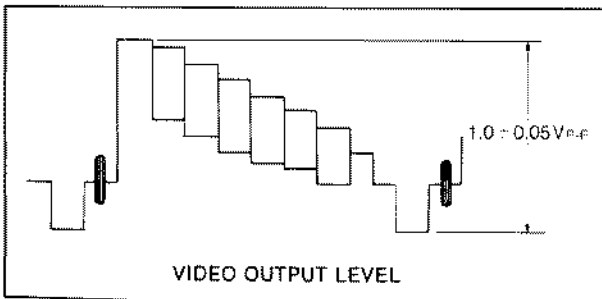


Fig. E25

### 3-4. CHROMA TRAP ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
TP23203	CT23202	PLAY	LD (COLOR BAR)
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E26	

### 3-5. D.O.C. LEVEL ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
OUTPUT TERMINAL	VR23202	PLAY (SIDE B)	LD WITH BLACK TAPE
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E27	

1. Connect the oscilloscope to output terminal and trigger with TP23214 on the Main C.B.A.
2. Stick a Black Tape on the LD Test Disc as shown in Fig. E23. Then set it to the Tray so that the dropout side face downward. Then play back the side A.
3. Adjust VR23202 so that the level in the dropout period becomes as follows.

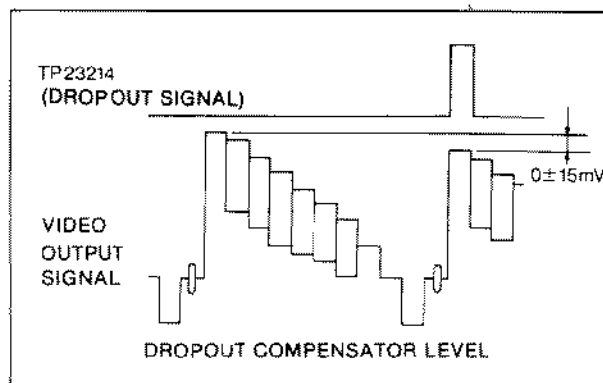


Fig. E27

## 4. S-VIDEO SECTION

### 4-1. CHROMA SEPARATION ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
J23604 PIN 4	VR23631 VR23634	PLAY	LD (COLOR BAR) (CHAPTER 19)
M. EQ.		SPEC.	
OSCILLOSCOPE		REFER TO FIG. E28	

1. Connect a S-Video connecting cable between S-Video output terminal and TV.
2. Connect the oscilloscope to pin 4 of J23601
3. Adjust VR23631 (CHROMA SEPA (1)) and VR23634 (CHROMA SEPA (2)) alternately on the T.B.C. C.B.A. so that the width (W) of the chroma portion is minimized.

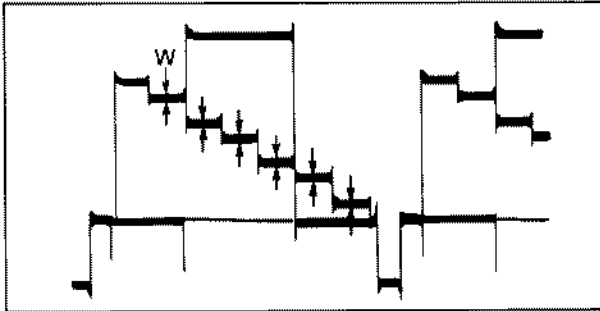


Fig. E28

### 4-2. PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	TEST DISC
J23601 PIN 4	VR23633	PLAY	LD (COLOR BAR) (CHAPTER 19)
M. EQ.		SPEC.	
OSCILLOSCOPE		A=1.0±0.05Vp-p	

1. Connect a S-Video connecting cable between S-Video output terminal and TV.
2. Connect the oscilloscope to pin 4 of J23601
3. Adjust VR23633 (P.B LEVEL) on the T.B.C. C.B.A. so that the level of the Luminance signal becomes 1.0±0.05Vp-p.

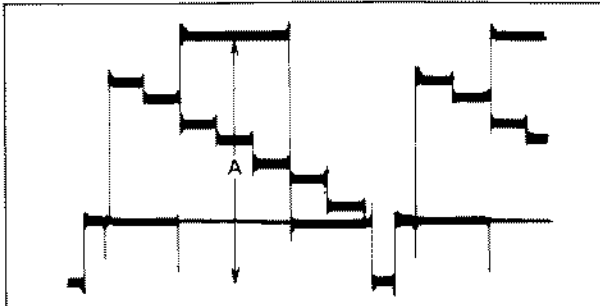


Fig. E29

## 5. DIGITAL AUDIO SECTION

### 5-1. VCXO (1)

TP	ADJ.	MODE	TEST DISC
TP24007	VR24001	STOP	CD
M. EQ.		SPEC.	
FREQUENCY COUNTER		16.9344 MHz ± 300 Hz	

### 5-2. VCXO (2)

TP	ADJ.	MODE	TEST DISC
TP24008	VR24002	PLAY	LD
M. EQ.		SPEC.	
OSCILLOSCOPE		W=LESS THAN 4µsec.	

1. Connect the oscilloscope to TP24008 on the Main C.B.A..
2. Adjust VR24002 on the Main C.B.A. so that the width (W) of the EC pulse is less than 4 usec.

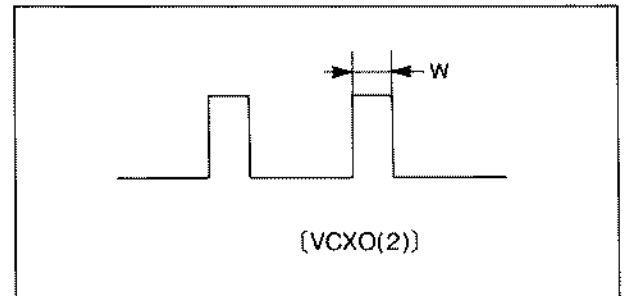
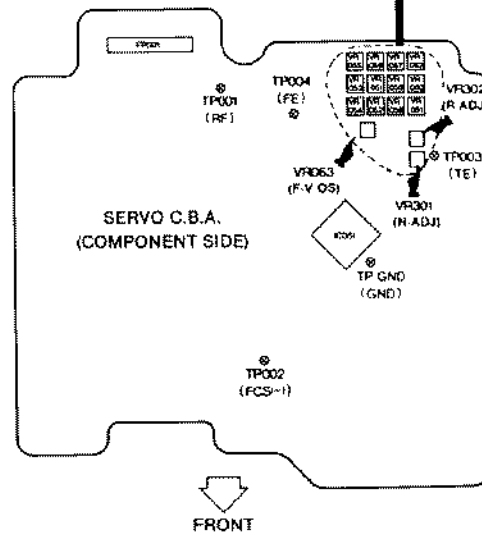
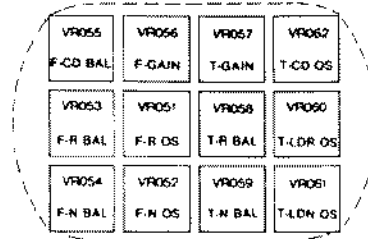
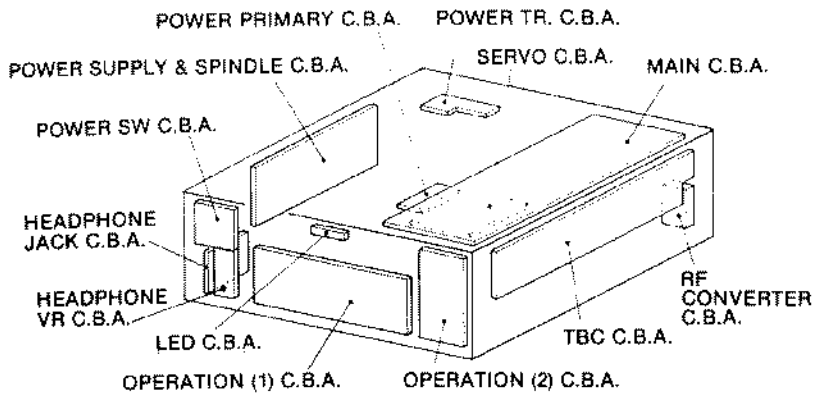


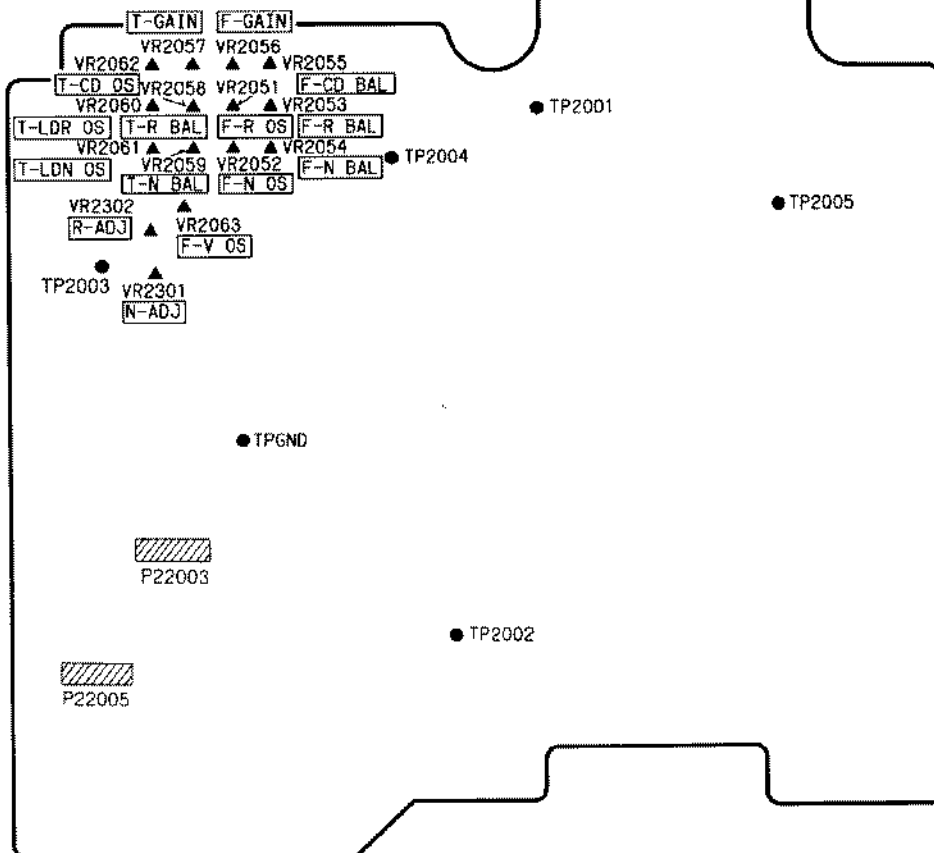
Fig. E30

# 6. LOCATION OF TEST POINTS & CONTROLS

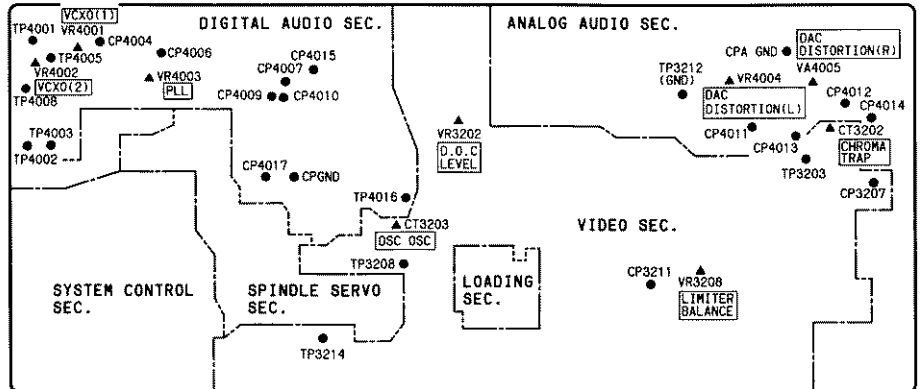
(TOP VIEW)



SERVO C.B.A. (Ref No. 20000 Series)  
 (BOTTOM VIEW)

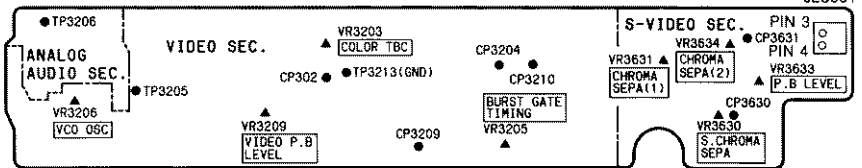


MAIN C.B.A. (Ref No. 20000 Series)

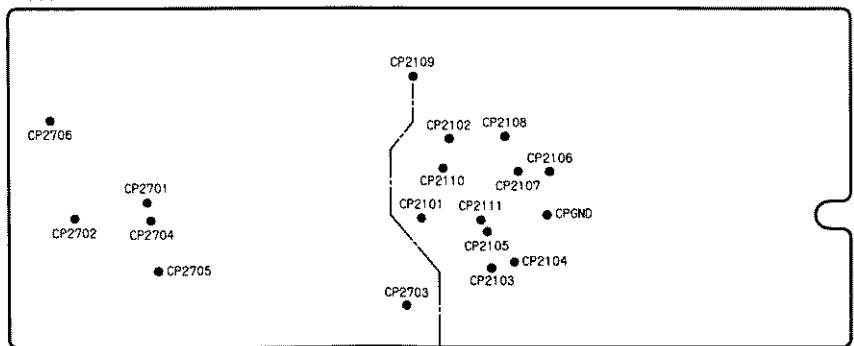


TBC C.B.A. (Ref No. 20000 Series)

J23601



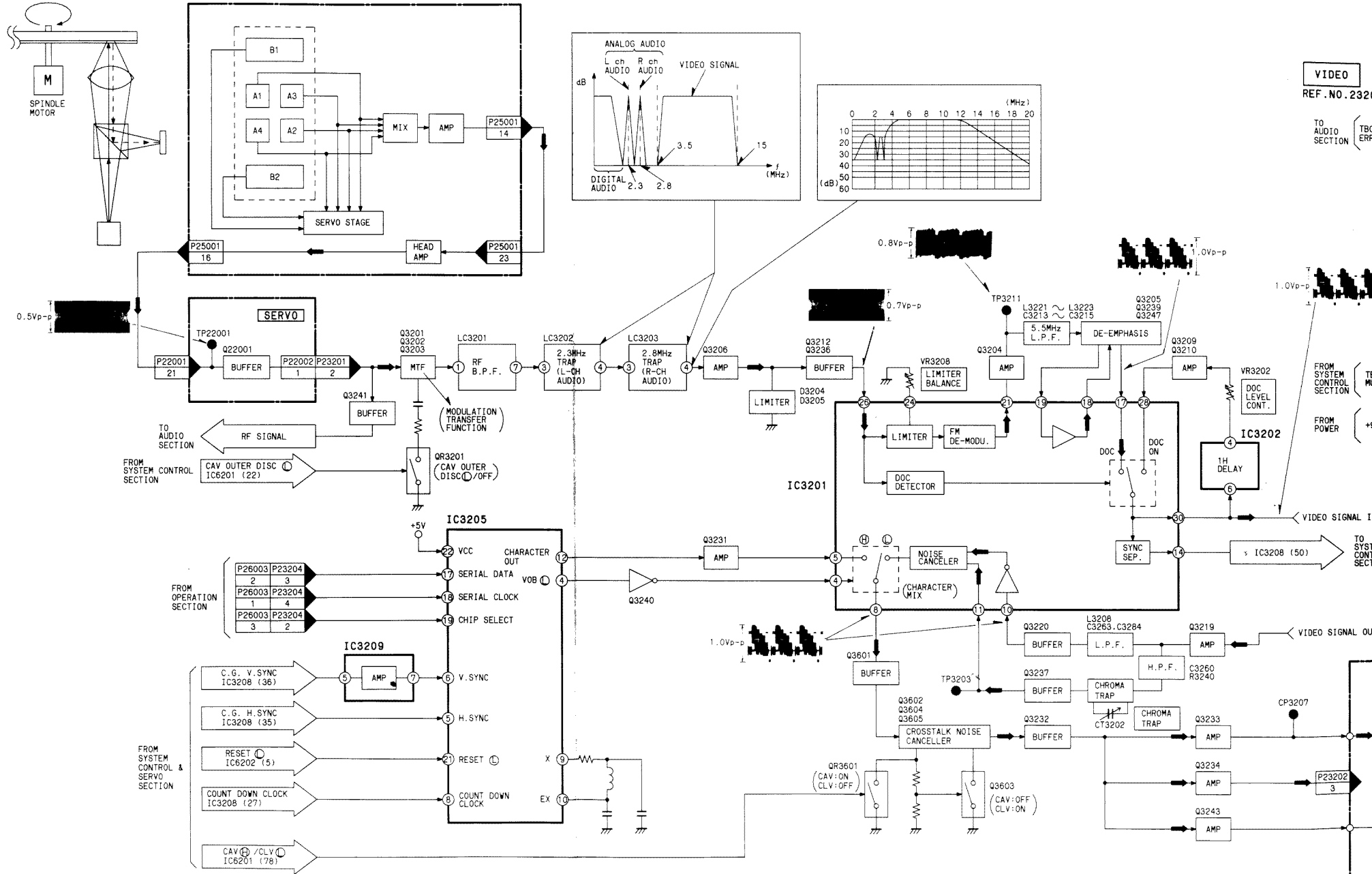
POWER SUPPLY & SPINDLE C.B.A. (Ref No. 20000 Series)



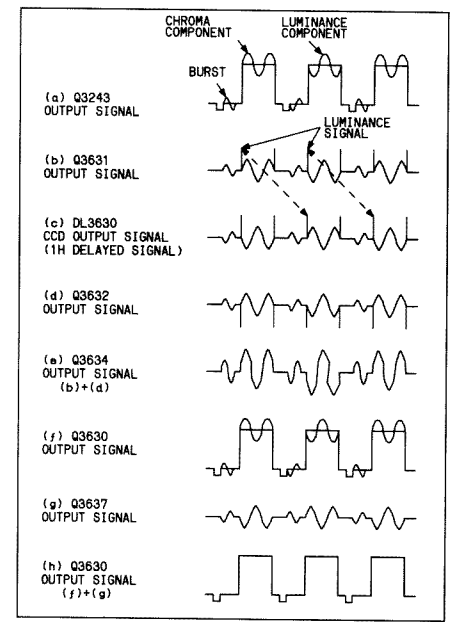
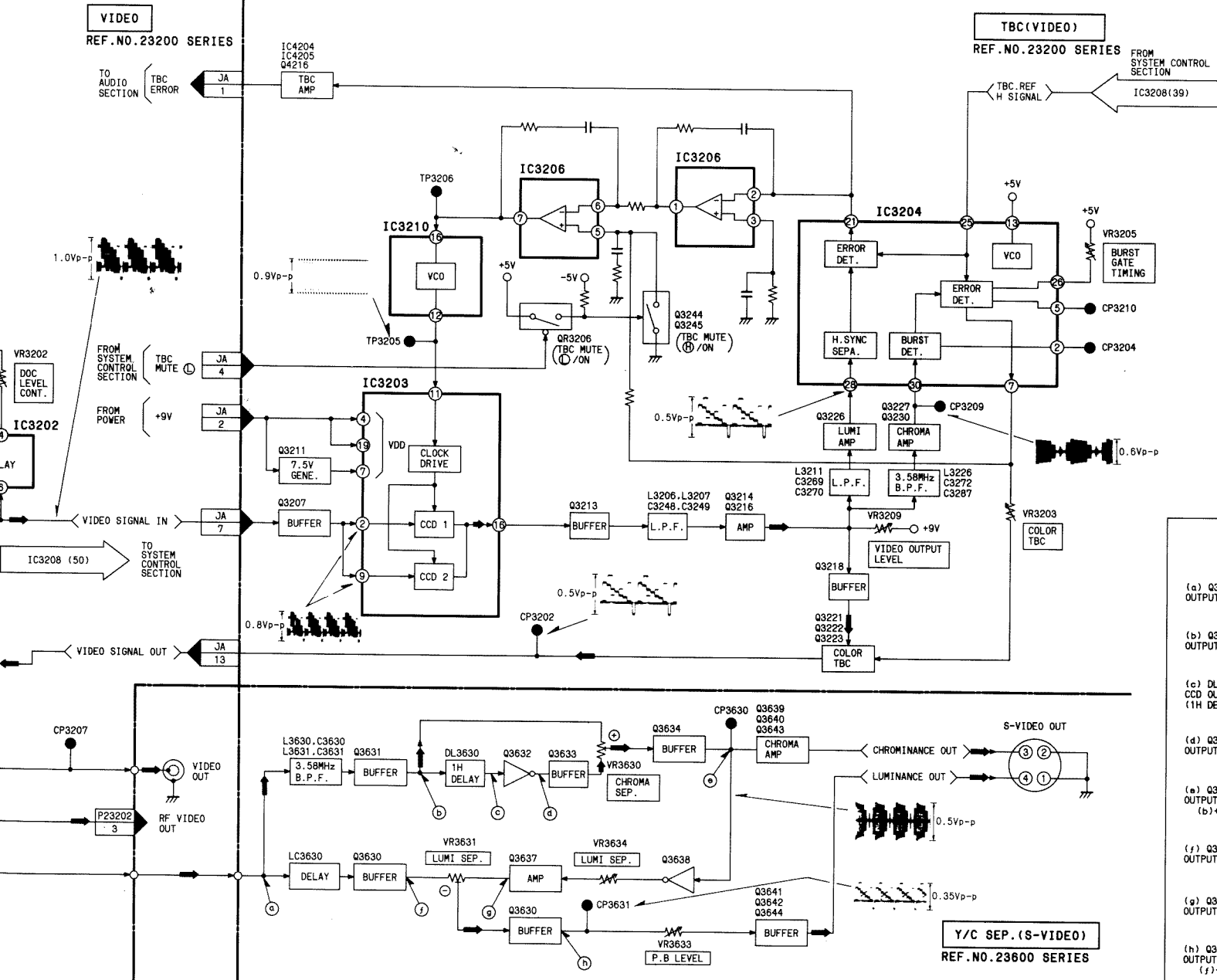


# Section 3 BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

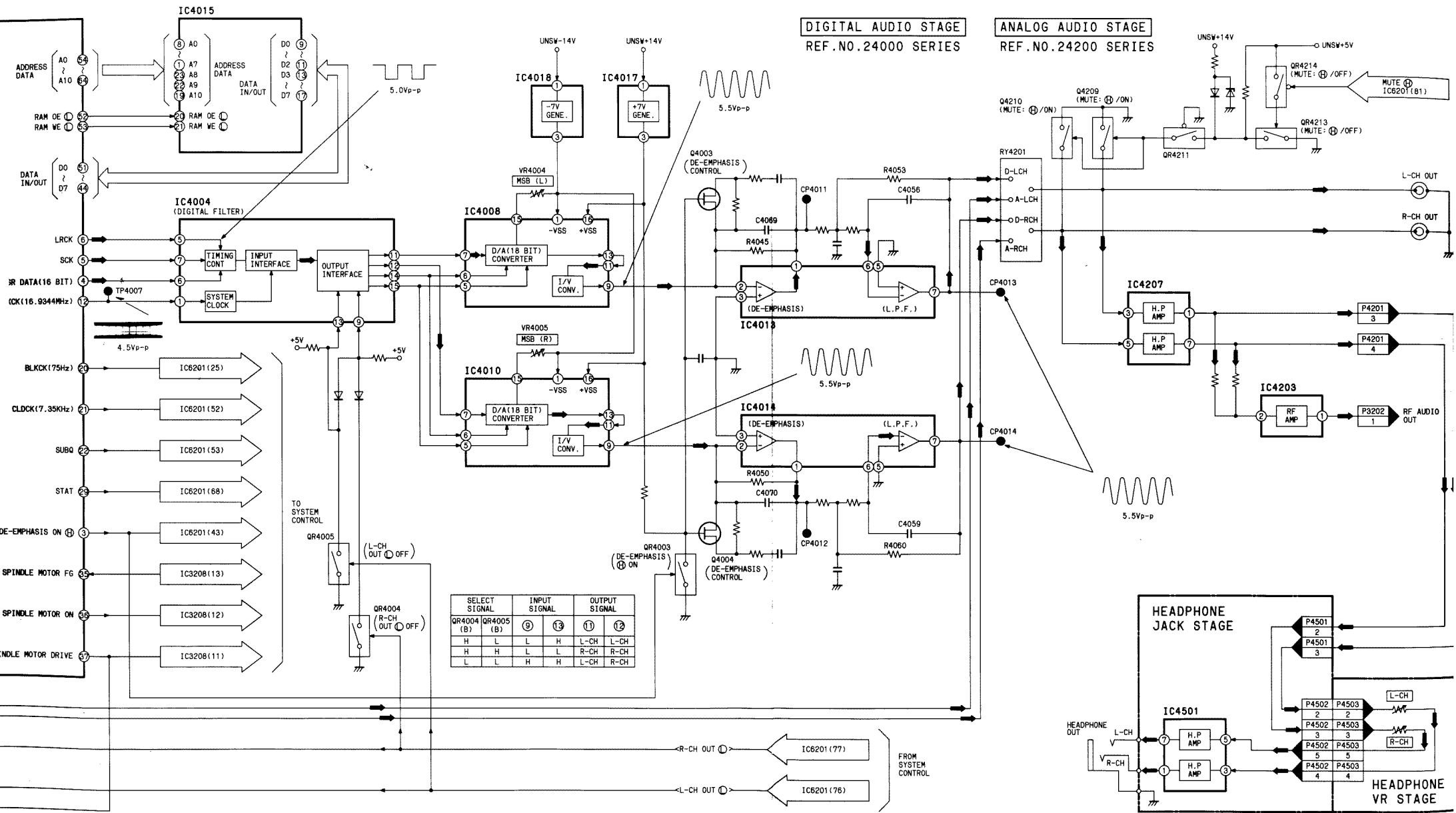
## 3-1. VIDEO BLOCK DIAGRAM



← MAIN SIGNAL PATH IN REC MODE

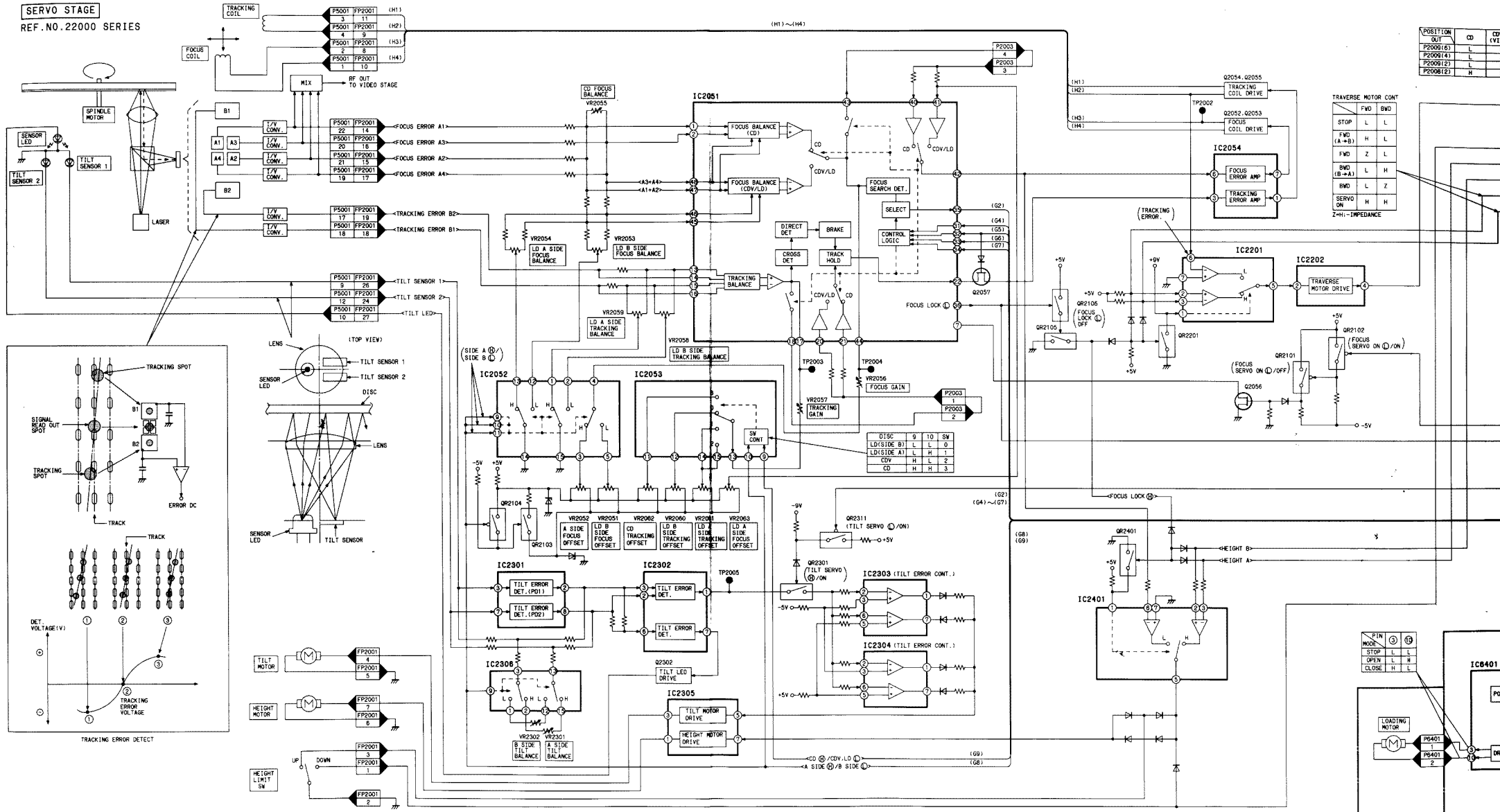






### 3-3. SERVO & SYSTEM CONTROL BLOCK DIAGRAM

SERVO STAGE  
REF. NO. 22000 SERIES



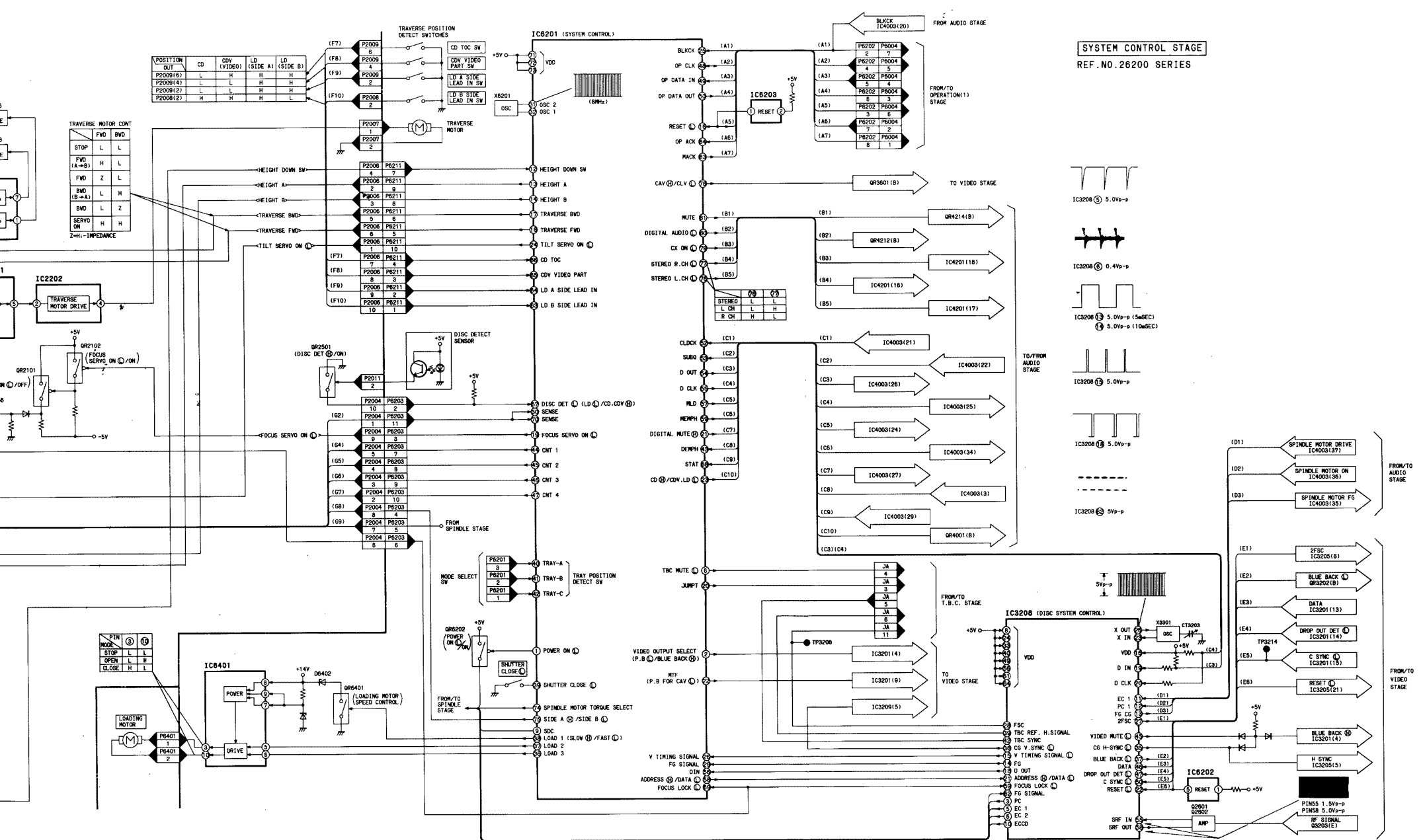
POSITION OUT	CD	CDV	CDV (VID)
P2003(1)	L	L	H
P2003(4)	L	L	L
P2003(2)	L	L	L
P2003(3)	H	H	L

TRAVERSE MOTOR CONT		FWD	BWD
STOP	L	L	L
FWD (A+B)	H	L	L
FWD Z	L	L	L
BWD (B+A)	L	H	L
BWD L Z	L	L	L
SERVO ON	H	H	L

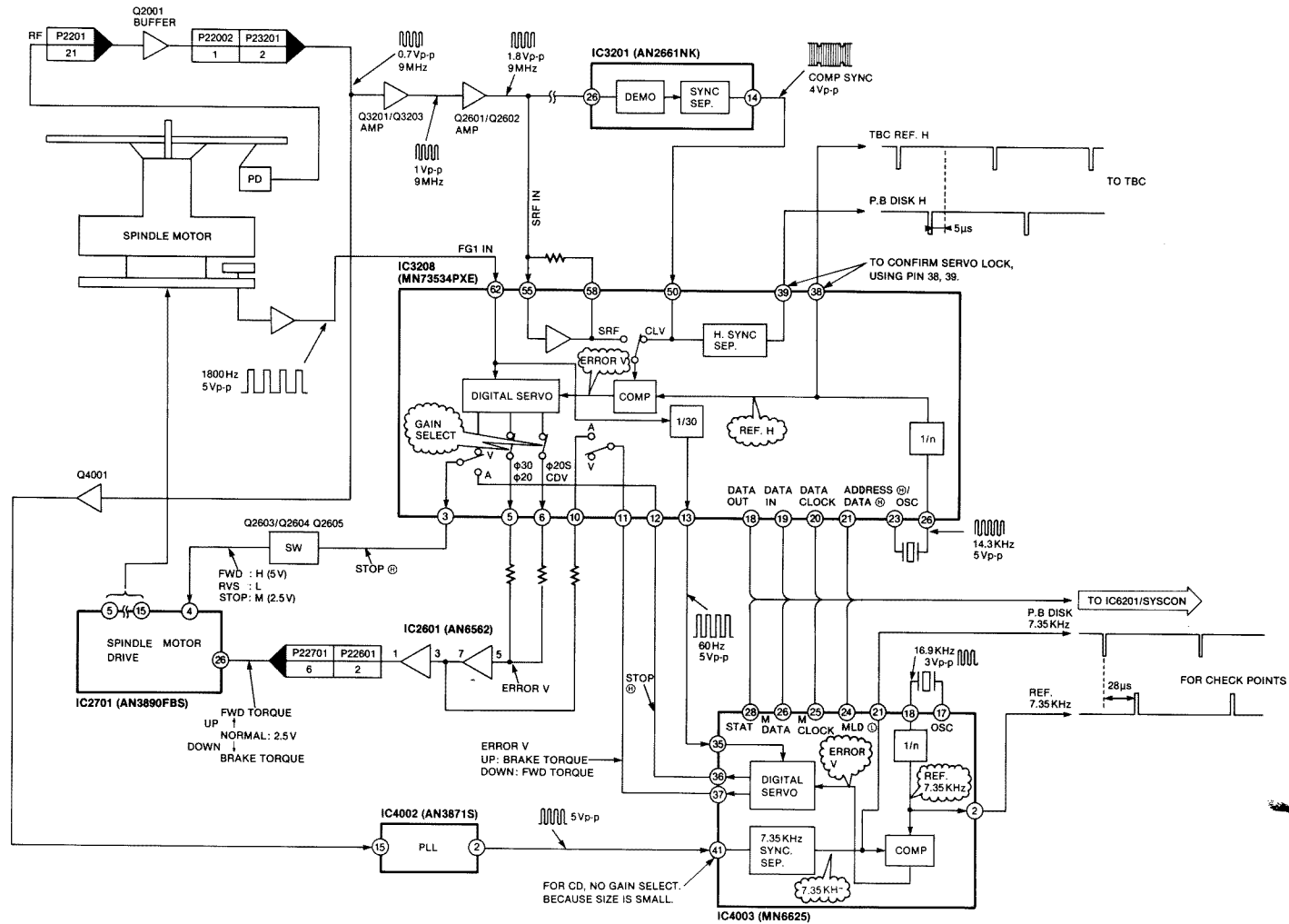
Z-H: IMPEDANCE

DISC	9	10	SW
LD(SIDE B)	L	L	0
LD(SIDE A)	L	H	0
CDV	H	L	2
CD	H	H	3

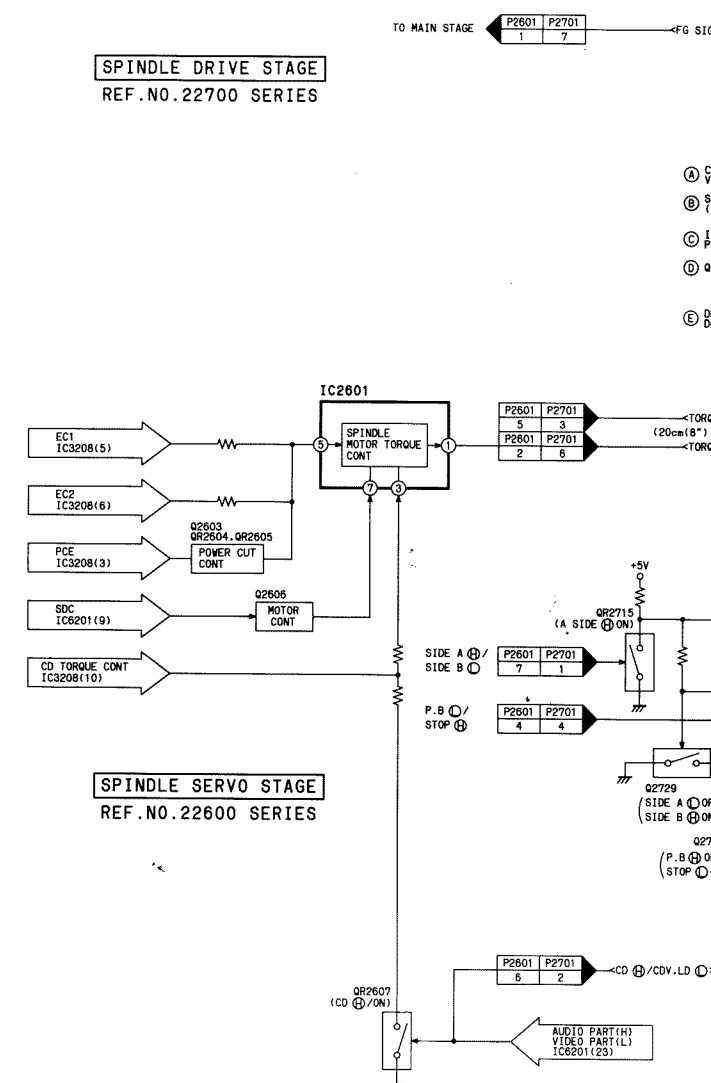
FIN MODE	Ⓢ	Ⓣ	Ⓝ
STOP	L	L	L
OPEN	L	H	L
CLOSE	H	L	L



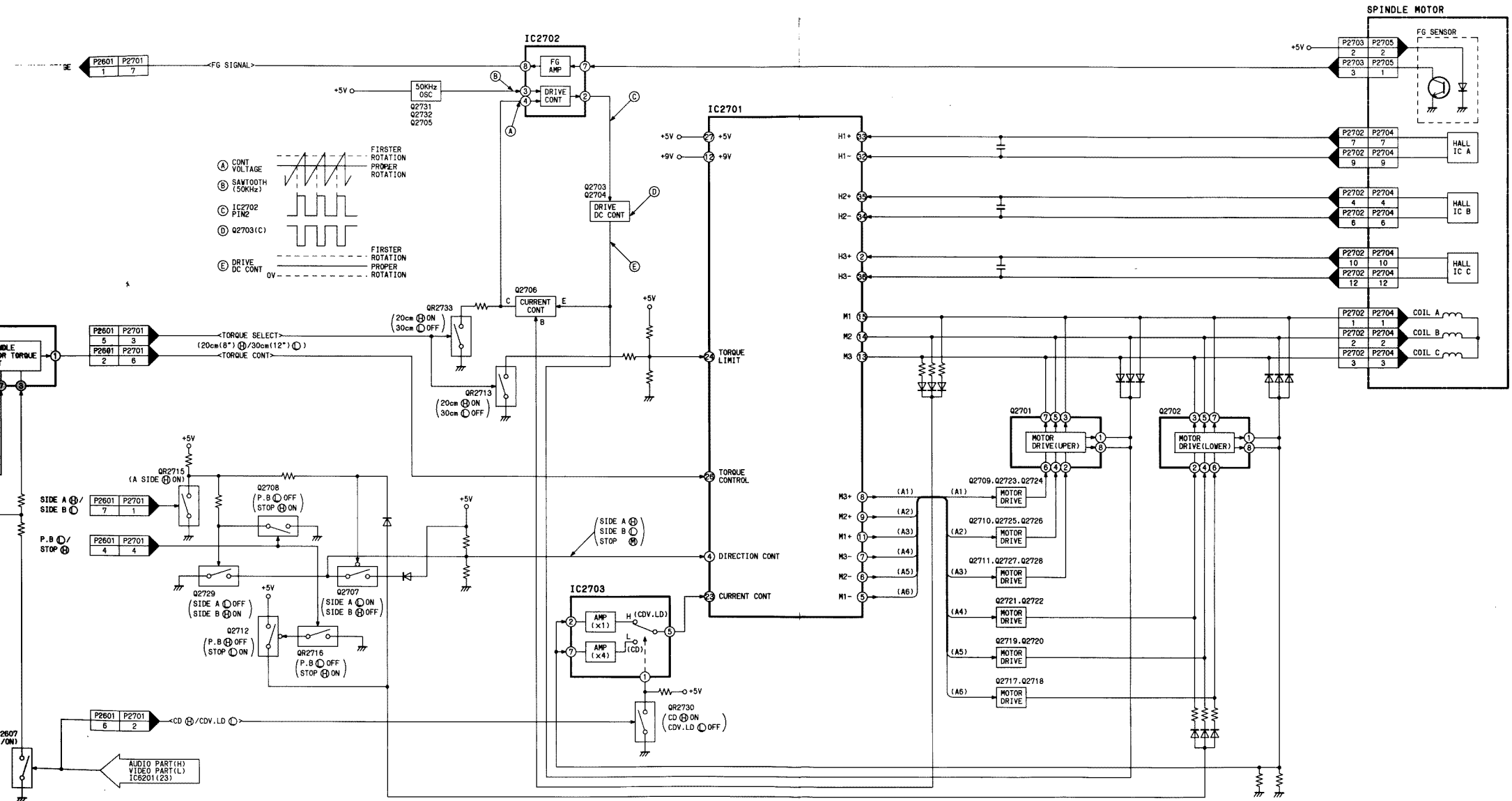
### 3-4. SPINDLE SERVO BLOCK DIAGRAM



### 3-5. SPINDLE DRIVE BLOCK DIAGRAM



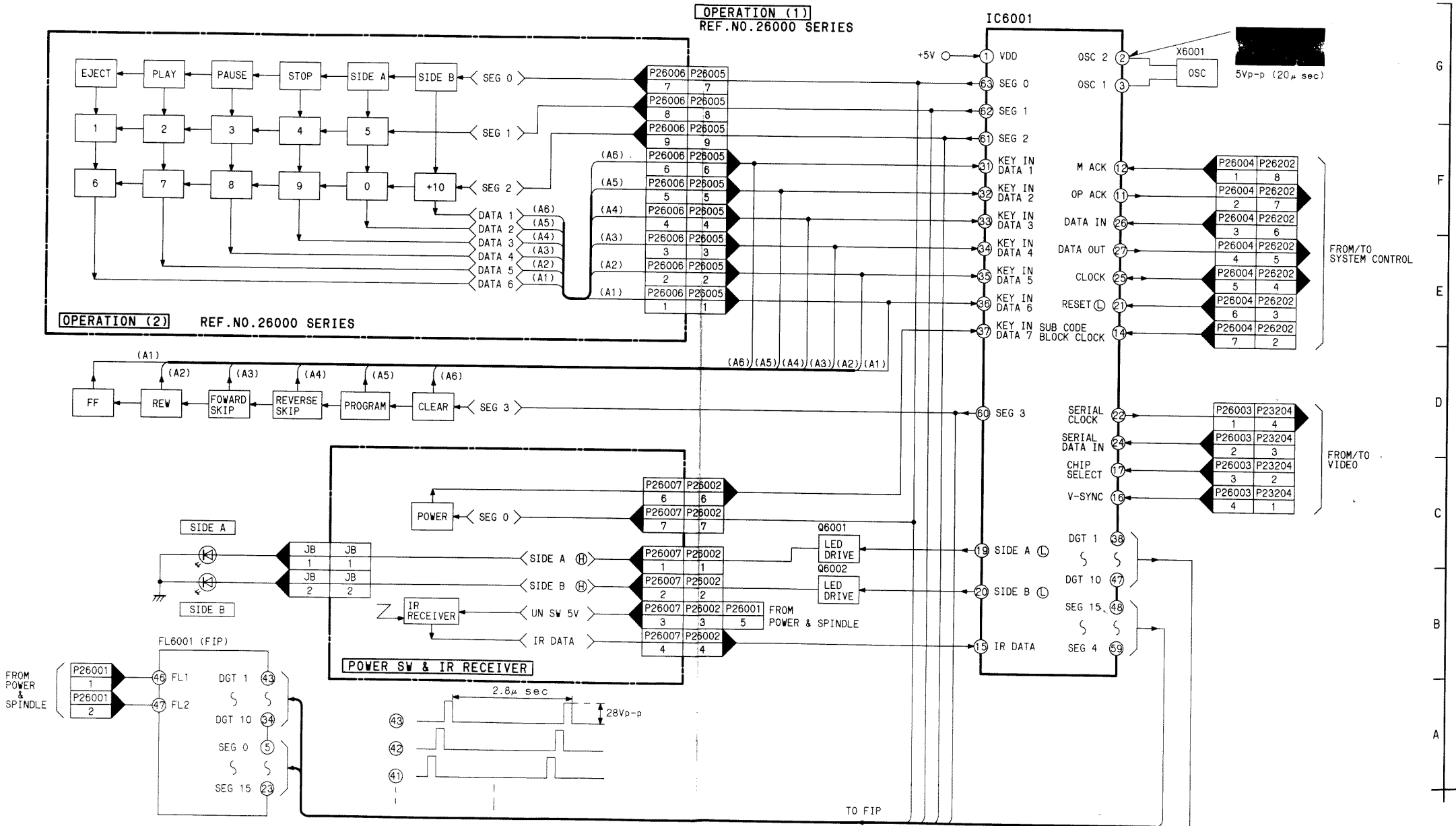
# BLOCK DIAGRAM





### 3-6. OPERATION (1) & (2) BLOCK DIAGRAM

3-7. I



# 3-7. INTERCONNECTION SCHEMATIC DIAGRAM

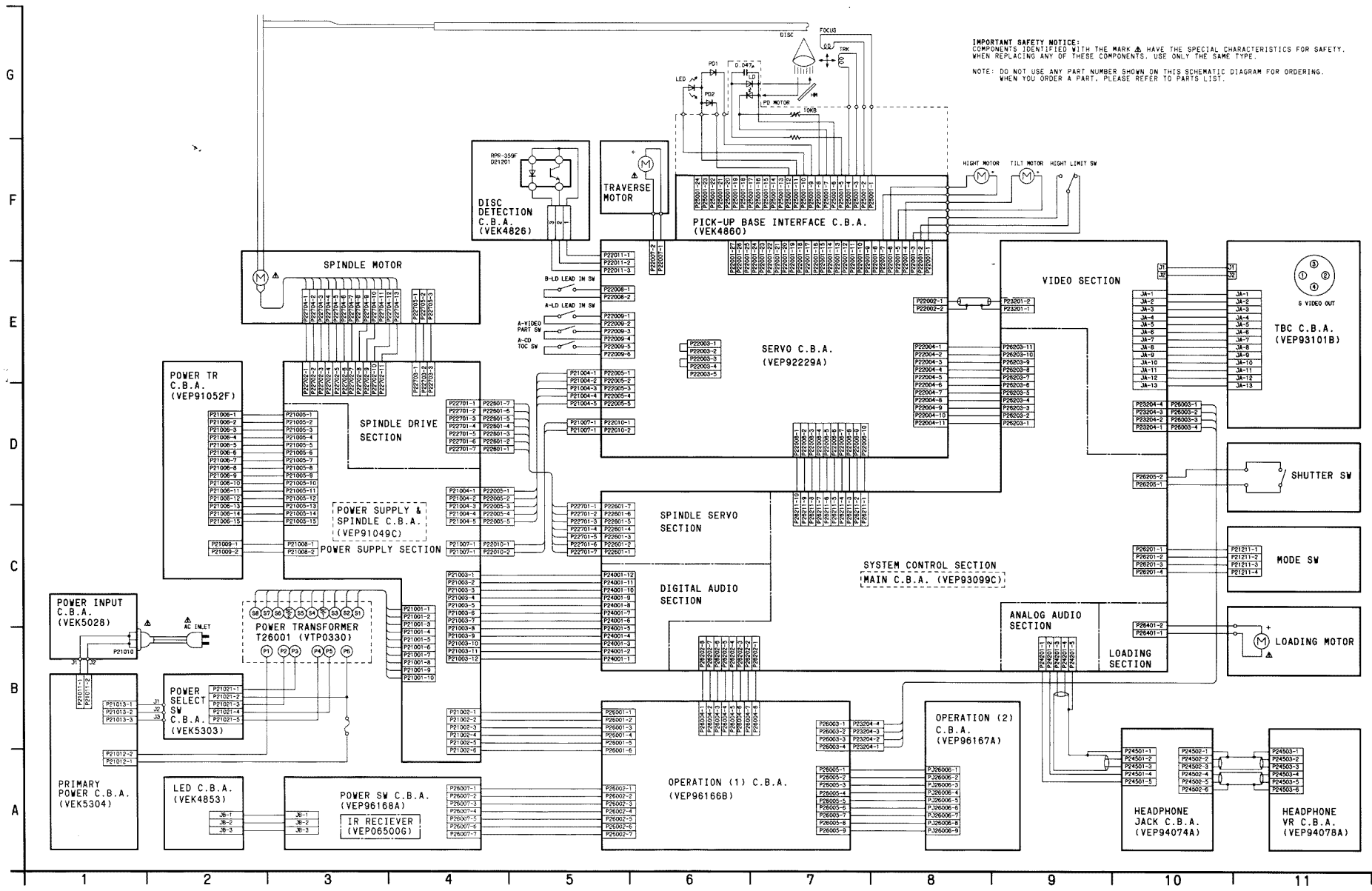
5Vp-p (20μ sec)

004	P26202
1	8
004	P26202
2	7
004	P26202
3	6
004	P26202
4	5
004	P26202
5	4
004	P26202
6	3
004	P26202
7	2

FROM/TO SYSTEM CONTROL

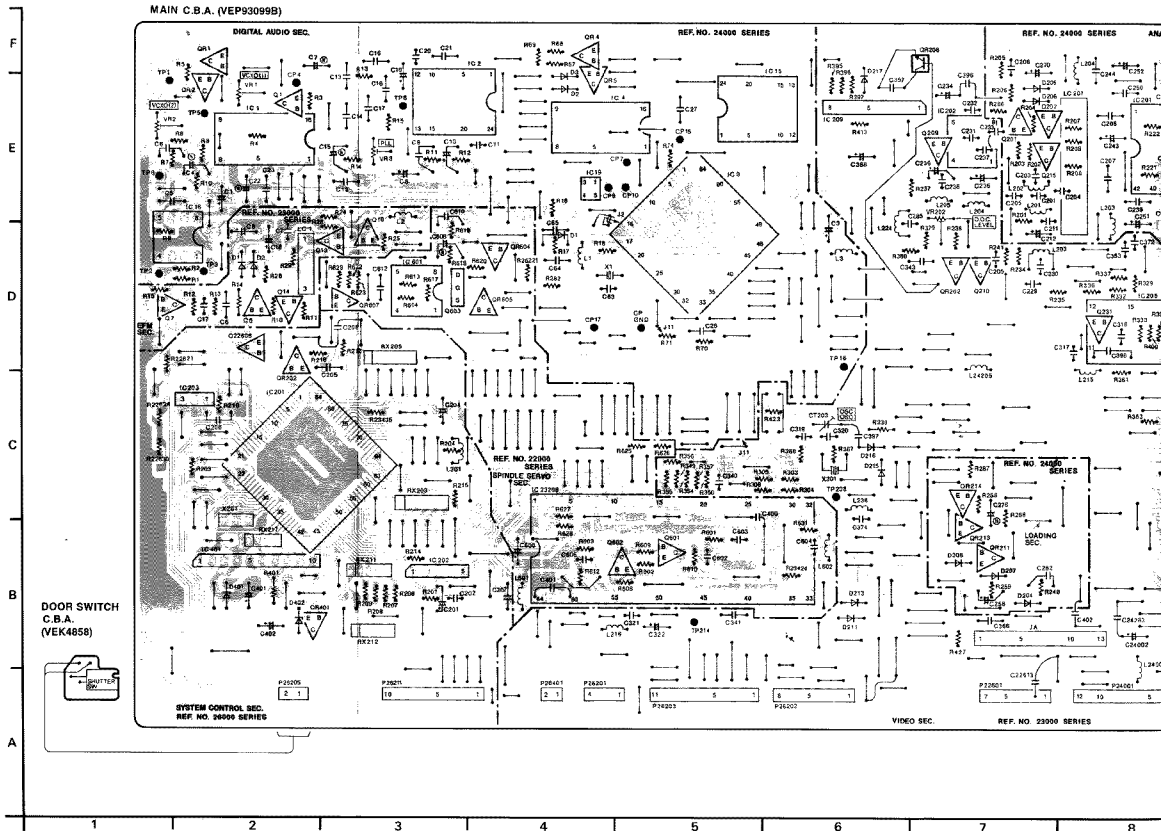
5003	P23204
1	4
5003	P23204
2	3
5003	P23204
3	2
5003	P23204
4	1

FROM/TO VIDEO



**IMPORTANT SAFETY NOTICE:**  
COMPONENTS IDENTIFIED WITH THE MARK  $\Delta$  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.  
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

### 3-8. MAIN (VIDEO, ANALOG AUDIO, DIGITAL AUDIO, EFM, SYSTEM CONTROL, LOADING, SPINDLE SERVO SECTION)



Back Page:  
OPERATION (1) & (2) BLOCK/  
INTERCONNECTION



MAIN C.B.A. DIGITAL AUDIO SECTION	
<b>Test Point</b>	
TP24001	F-1
TP24002	D-1
TP24003	D-2
TP24006	E-2
TP24006	E-3
TP24008	E-1
CP24004	E-2
CP24007	E-5
CP24009	E-4
CP24010	E-5
CP24015	E-5
CP24018	D-6
CP24017	D-4
CP GND	D-5
<b>Integrated Circuit</b>	
IC24001	E-2
IC24002	F-4
IC24003	E-5
IC24004	E-5
IC24015	F-6
IC24016	E-2
IC24019	E-4
<b>Adjustment</b>	
VR24001	E-2
VR24002	E-1
VR24003	E-3
<b>Transistor &amp; Resistor</b>	
QR24001	F-2
QR24002	E-2
QR24004	F-4
QR24005	E-4
<b>Transistor</b>	
Q24001	E-2

ADDRESS INFORMATION

MAIN C.B.A. VIDEO SECTION	
<b>Integrated Circuit</b>	
IC23201	C-10
IC23202	E-7
IC23205	D-8
IC23209	E-6
<b>Transistor</b>	
Q23006	D-2
Q23007	D-1
Q23010	E-3
Q23013	D-3
Q23014	D-2
Q23201	B-10
Q23202	B-10
Q23203	A-10
Q23204	C-10
Q23205	C-9
Q23206	B-10
Q23209	E-7
Q23210	D-7
Q23212	B-10
Q23219	D-11
Q23220	D-11
Q23231	D-8
Q23232	C-11
Q23233	B-11
Q23234	B-11
Q23236	B-10
Q23237	D-11
Q23239	C-9
Q23240	C-8
Q23241	A-10
Q23243	B-11
Q23246	C-12
Q23247	C-11
Q23601	D-10
Q23602	C-11
Q23603	C-11
Q23604	C-11
Q23605	B-11
<b>Transistor &amp; Resistor</b>	
QR23201	B-10
QR23202	D-7
QR23204	A-9
QR23205	B-9
QR23207	B-9
QR23208	F-7
QR23601	D-11
<b>Adjustment</b>	
CT23202	D-11
CT23203	C-6
VR23202	E-7
VR23208	C-10
<b>Test Point</b>	
TP23203	D-11
TP23208	C-6
TP23211	B-9
TP23214	B-5
CP23207	D-12
<b>Connector</b>	
JA	B-7
P22601	A-7
P23201	A-11
P23202	A-11
P23204	A-9
P24001	A-8
P26201	A-4
P26202	A-6
P26203	A-5
P26401	A-4

ADDRESS INFORMATION

MAIN C.B.A. SYSTEM CONTROL SECTION	
<b>Integrated Circuit</b>	
IC26201	C-2
IC26202	B-3
IC26203	C-2
IC26401	B-2
<b>Transistor</b>	
Q22606	D-2
<b>Transistor &amp; Resistor</b>	
QR26202	C-2
QR26401	B-2
<b>Connector</b>	
P26205	A-2
P26211	A-3

ADDRESS INFORMATION

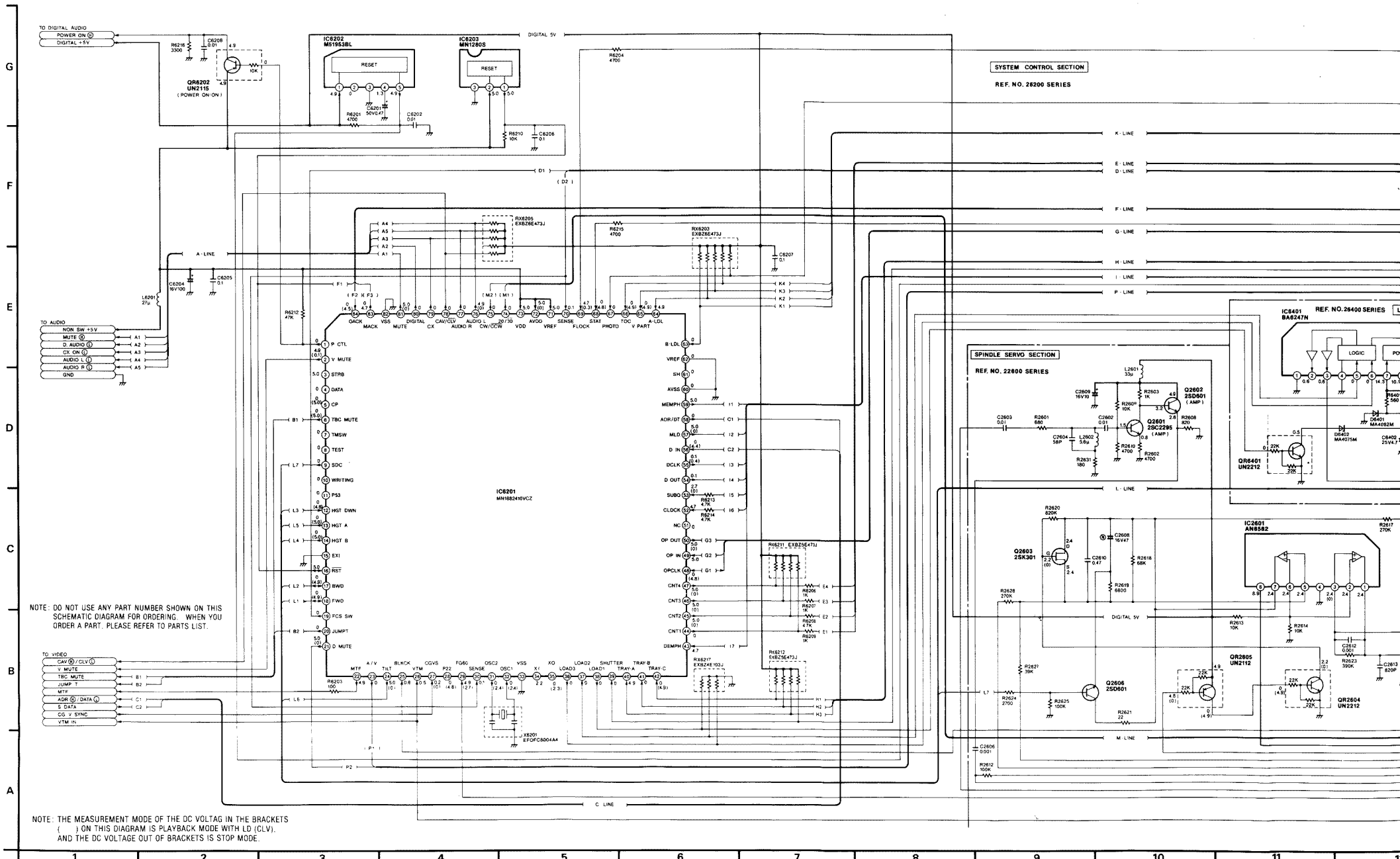
MAIN C.B.A. SPINDLE SERVO SECTION	
<b>Integrated Circuit</b>	
IC22601	D-3
IC23208	C-4
<b>Transistor</b>	
Q22601	B-5
Q22602	B-5
Q22603	D-3
<b>Transistor &amp; Resistor</b>	
QR22604	D-4
QR22605	D-4
QR22607	D-3

ADDRESS INFORMATION

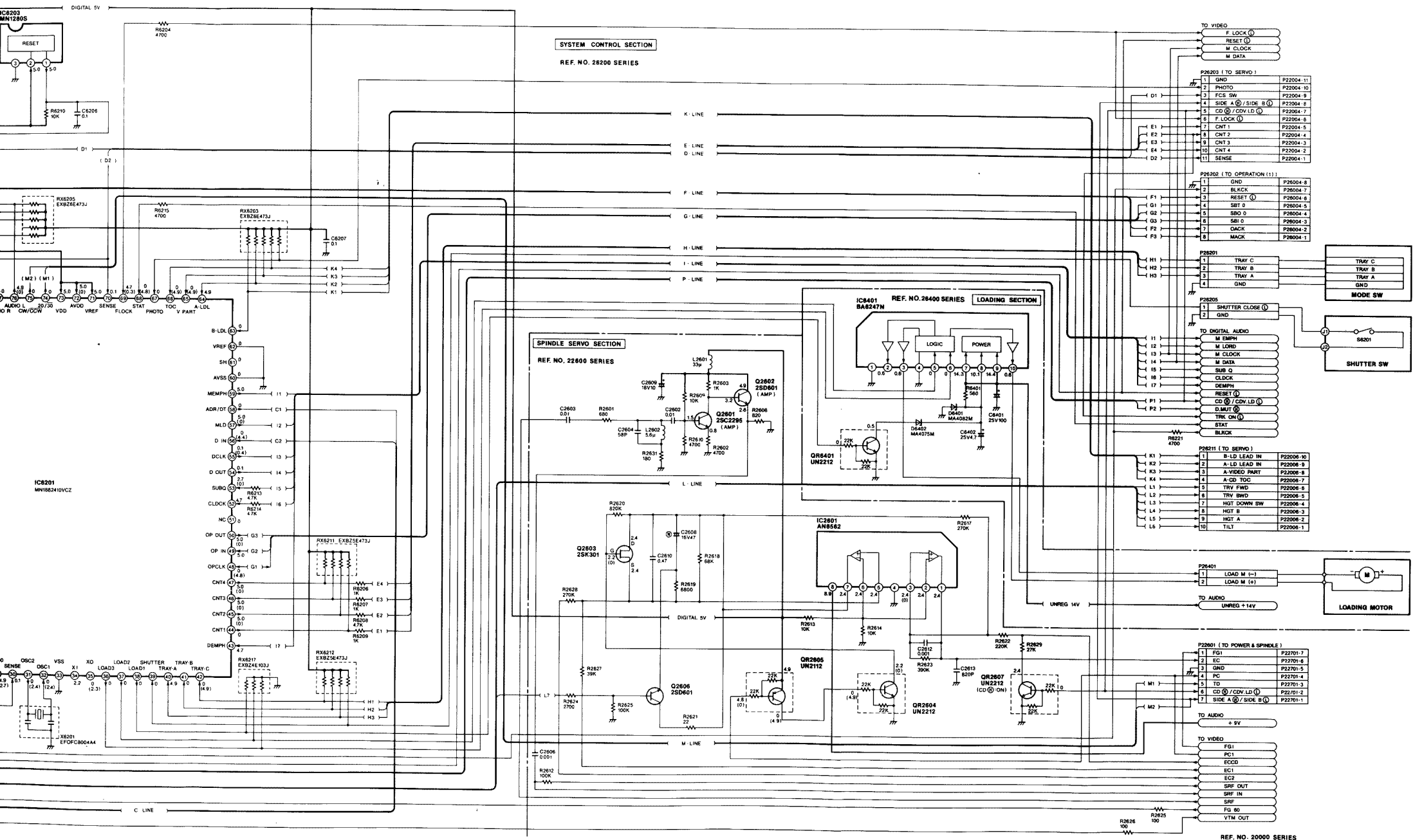
MAIN C.B.A. ANALOG AUDIO SECTION	
<b>Transistor</b>	
Q24003	E-10
Q24004	E-11
Q24201	E-7
Q24202	E-7
Q24209	C-12
Q24210	C-12
Q24215	E-7
<b>Integrated Circuit</b>	
IC24008	E-10
IC24010	E-11
IC24013	E-10
IC24014	E-12
IC24017	D-10
IC24018	D-9
IC24201	E-8
IC24203	A-12
IC24206	B-12
IC24207	C-12
<b>Test Point</b>	
TP23212	E-10
CP AGNG	E-11
CP24011	D-10
CP24012	E-11
CP24013	D-11
CP24014	D-12
<b>Adjustment</b>	
VR24004	E-10
VR24005	E-11
<b>Transistor &amp; Resistor</b>	
QR24003	D-11
QR24211	B-7
QR24212	D-12
QR24213	B-7
QR24214	C-7
<b>Connector</b>	
P24201	A-11

ADDRESS INFORMATION

# 3-9. SYSTEM CONTROL/LOADING/SPINDLE SERVO SCHEMATIC DIAGRAM (MAIN 1/3)



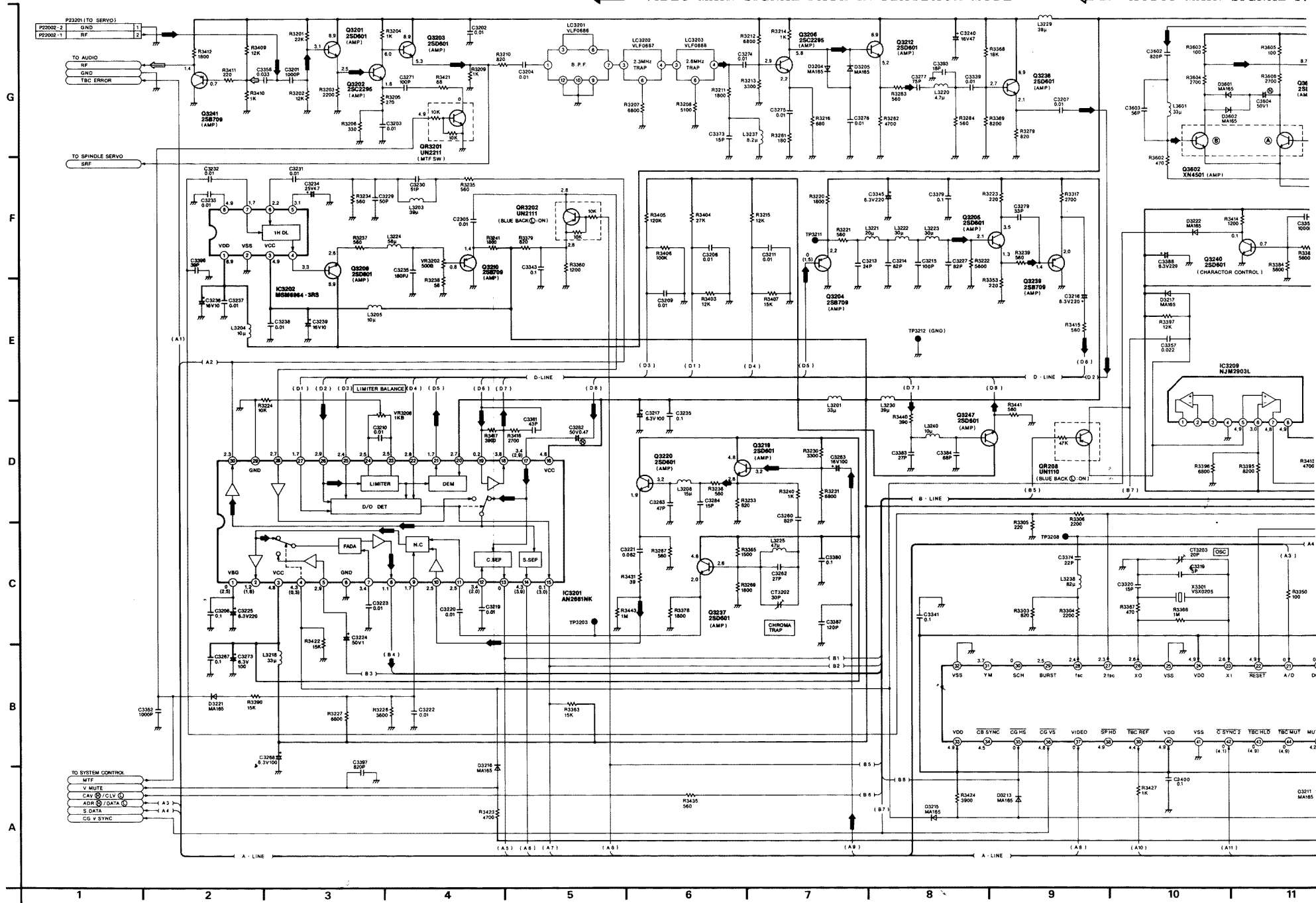
# SERVO SCHEMATIC DIAGRAM (MAIN 1/3)



# 3-10. VIDEO SCHEMATIC DIAGRAM (MAIN 2/3)

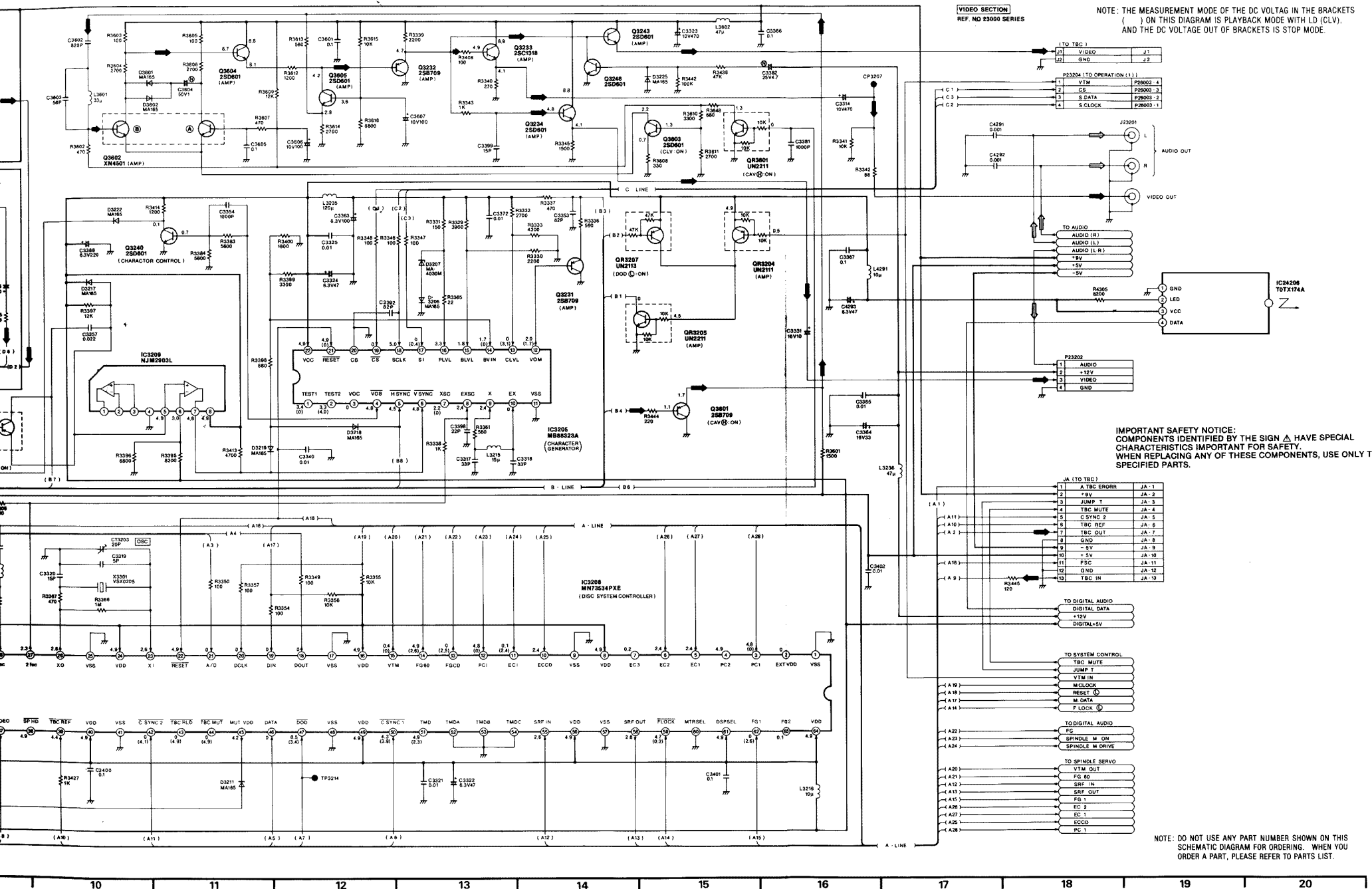
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL P.





# AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



VIDEO SECTION  
REF. NO 23000 SERIES

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS PLAYBACK MODE WITH LD (CLV), AND THE DC VOLTAGE OUT OF BRACKETS IS STOP MODE.

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  $\Delta$  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

1	VIDEO	J1
2	GND	J2

P23204 (TO OPERATION (L1))			
1	VFM	P29003	4
2	CS	P29003	3
3	S DATA	P29003	2
4	S CLOCK	P29003	1

1	AUDIO	J3
2	+12V	J4
3	VIDEO	J5
4	GND	J6

1	AUDIO (R)	J7
2	AUDIO (L)	J8
3	+5V	J9
4	-5V	J10

1	AUDIO	J11
2	+12V	J12
3	VIDEO	J13
4	GND	J14

1	AUDIO	J15
2	+12V	J16
3	VIDEO	J17
4	GND	J18

1	AUDIO	J19
2	+12V	J20
3	VIDEO	J21
4	GND	J22

1	AUDIO	J23
2	+12V	J24
3	VIDEO	J25
4	GND	J26

1	AUDIO	J27
2	+12V	J28
3	VIDEO	J29
4	GND	J30

1	AUDIO	J31
2	+12V	J32
3	VIDEO	J33
4	GND	J34

1	AUDIO	J35
2	+12V	J36
3	VIDEO	J37
4	GND	J38

1	AUDIO	J39
2	+12V	J40
3	VIDEO	J41
4	GND	J42

1	AUDIO	J43
2	+12V	J44
3	VIDEO	J45
4	GND	J46

1	AUDIO	J47
2	+12V	J48
3	VIDEO	J49
4	GND	J50

1	AUDIO	J51
2	+12V	J52
3	VIDEO	J53
4	GND	J54

1	AUDIO	J55
2	+12V	J56
3	VIDEO	J57
4	GND	J58

1	AUDIO	J59
2	+12V	J60
3	VIDEO	J61
4	GND	J62

1	AUDIO	J63
2	+12V	J64
3	VIDEO	J65
4	GND	J66

1	AUDIO	J67
2	+12V	J68
3	VIDEO	J69
4	GND	J70

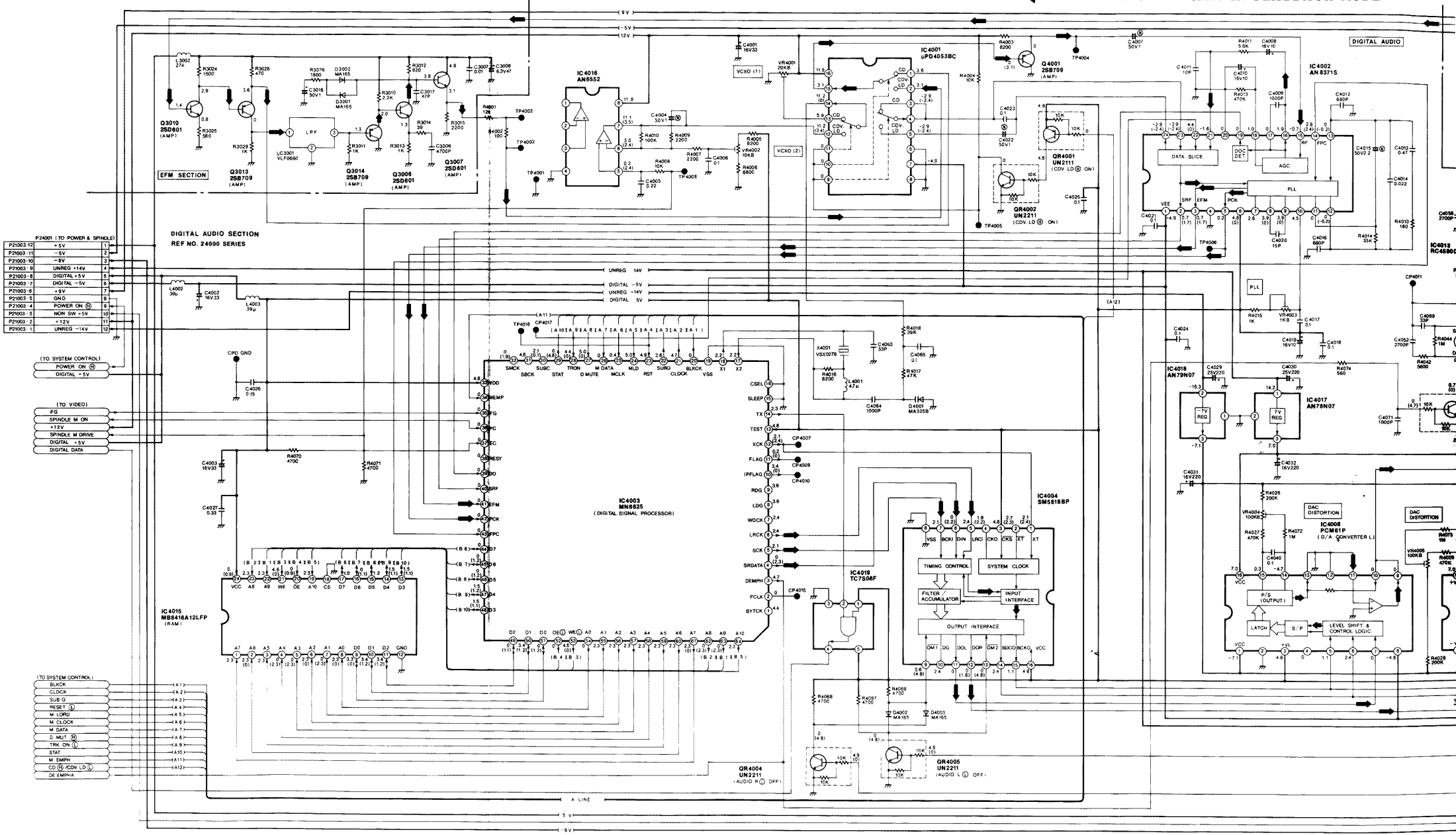
1	AUDIO	J71
2	+12V	J72
3	VIDEO	J73
4	GND	J74

1	AUDIO	J75
2	+12V	J76
3	VIDEO	J77
4	GND	J78

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

# 11. ANALOG AUDIO/DIGITAL AUDIO SCHEMATIC DIAGRAM (MAIN 3/3)

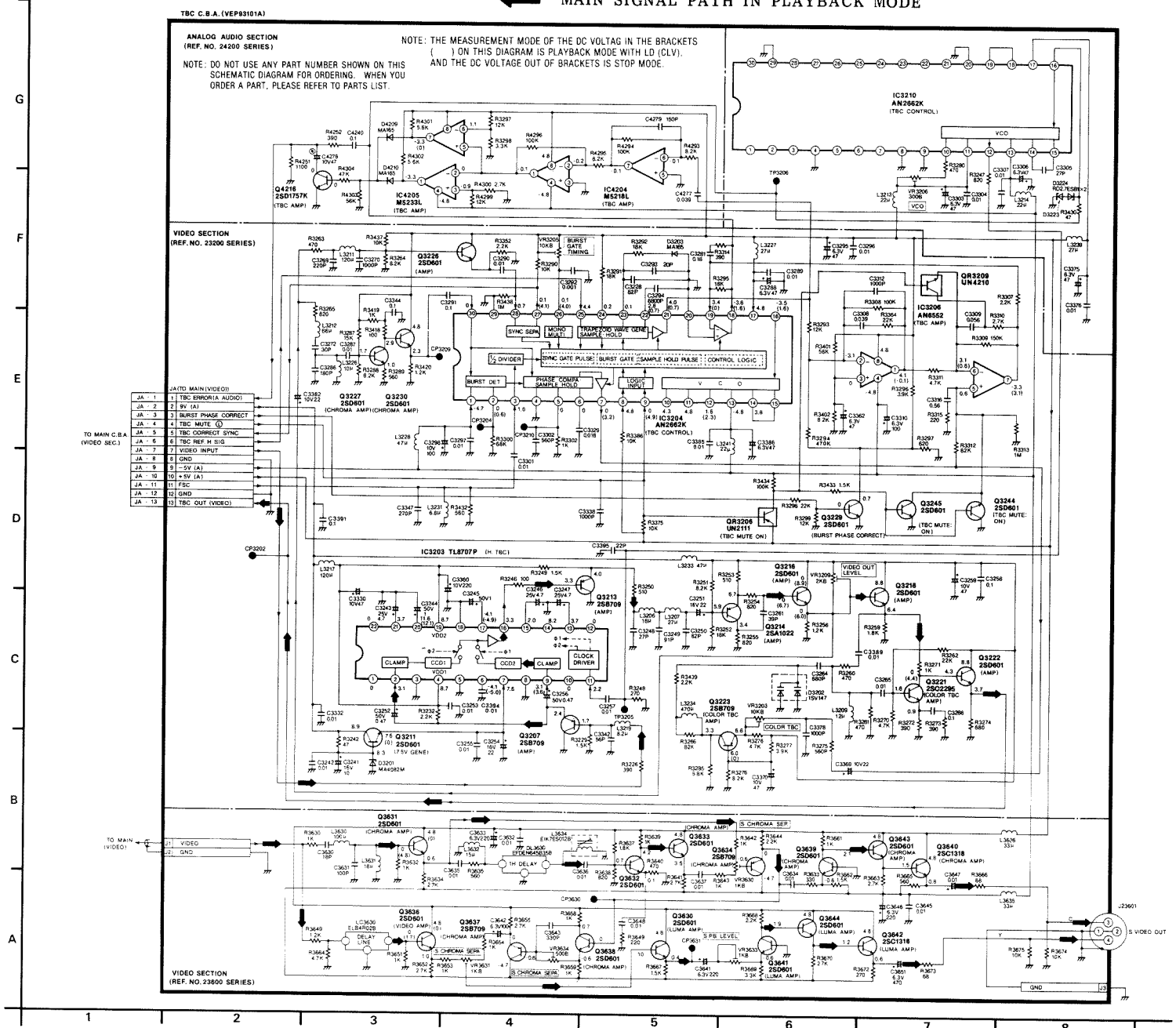
← MAIN SIGNAL PATH IN PLAYBACK MODE





### 3-12. TBC SCHEMATIC DIAGRAM

← MAIN SIGNAL PATH IN PLAYBACK MODE



### 3-13. TBC C.B.A. (VEP93101A)

**TBC C.B.A. ANALOG AUDIO SECTION**

Transistor	
Q23216	B-2
Integrated Circuit	
IC23204	B-1
IC23205	B-2
Test Point	
TP23206	C-1

ADDRESS INFORMATION

**TBC C.B.A. VIDEO SECTION**

Transistor	
Q23209	B-3
Q23211	B-3
Q23213	C-4
Q23214	B-3
Q23216	B-4
Q23218	B-4
Q23221	A-4
Q23222	A-5
Q23223	B-4
Q23226	B-5
Q23227	A-5
Q23229	A-6
Q23230	A-6
Q23244	B-6
Q23245	B-6

**Transistor & Resistor**

QR23206	B-7
QR23209	B-6

**Integrated Circuit**

IC23203	B-3
IC23204	B-7
IC23206	B-6
IC23210	A-1

**Test Point**

TP23205	B-2
TP23213	B-5
CP23202	B-5
CP23204	B-7
CP23209	A-6
CP23210	B-7

**Adjustment**

VR23203	C-5
VR23205	A-7
VR23206	B-2
VR23209	B-4

**Connector**

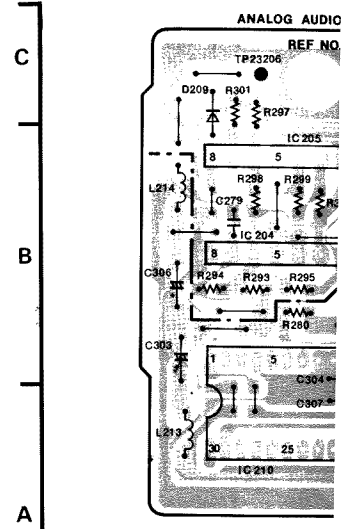
JA	C-6
----	-----

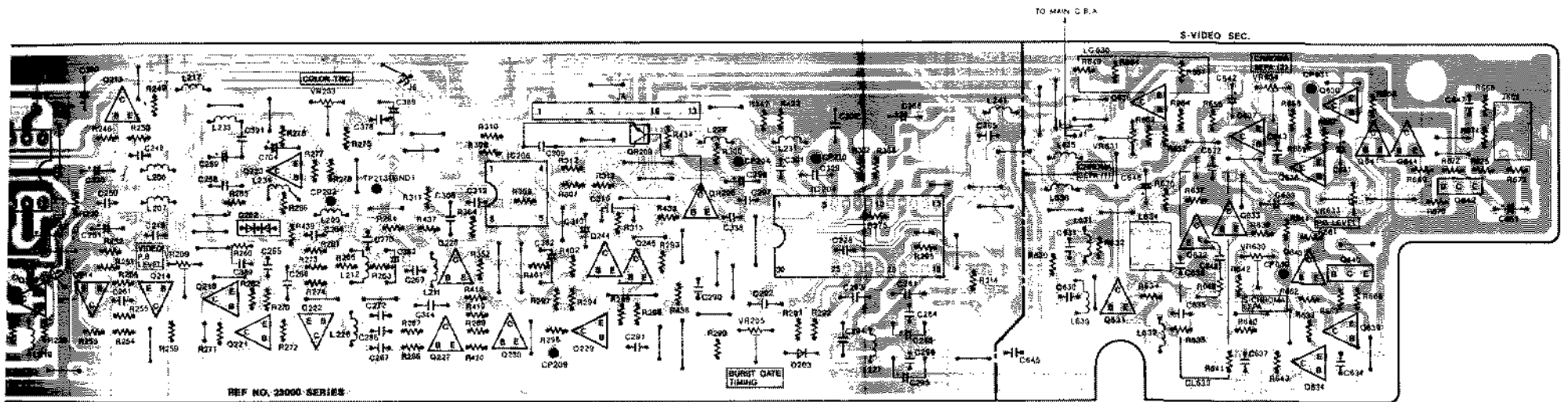
ADDRESS INFORMATION

**TBC C.B.A. S. VIDEO SECTION**

Transistor	
Q23630	C-10
Q23631	A-9
Q23632	B-9
Q23633	B-10
Q23634	A-10
Q23636	C-9
Q23637	B-10
Q23638	B-10
Q23639	A-10
Q23640	B-10
Q23641	B-10
Q23642	B-11
Q23643	B-10
Q23644	B-10
Adjustment	
VR23630	B-9
VR23631	B-9
VR23633	B-10
VR23634	C-10
Test Point	
CP23630	C-10
CP23631	B-10

ADDRESS INFORMATION





3 4 5 6 7 8 9 10 11

### 3-13. TBC C.B.A. (VEP93101B)

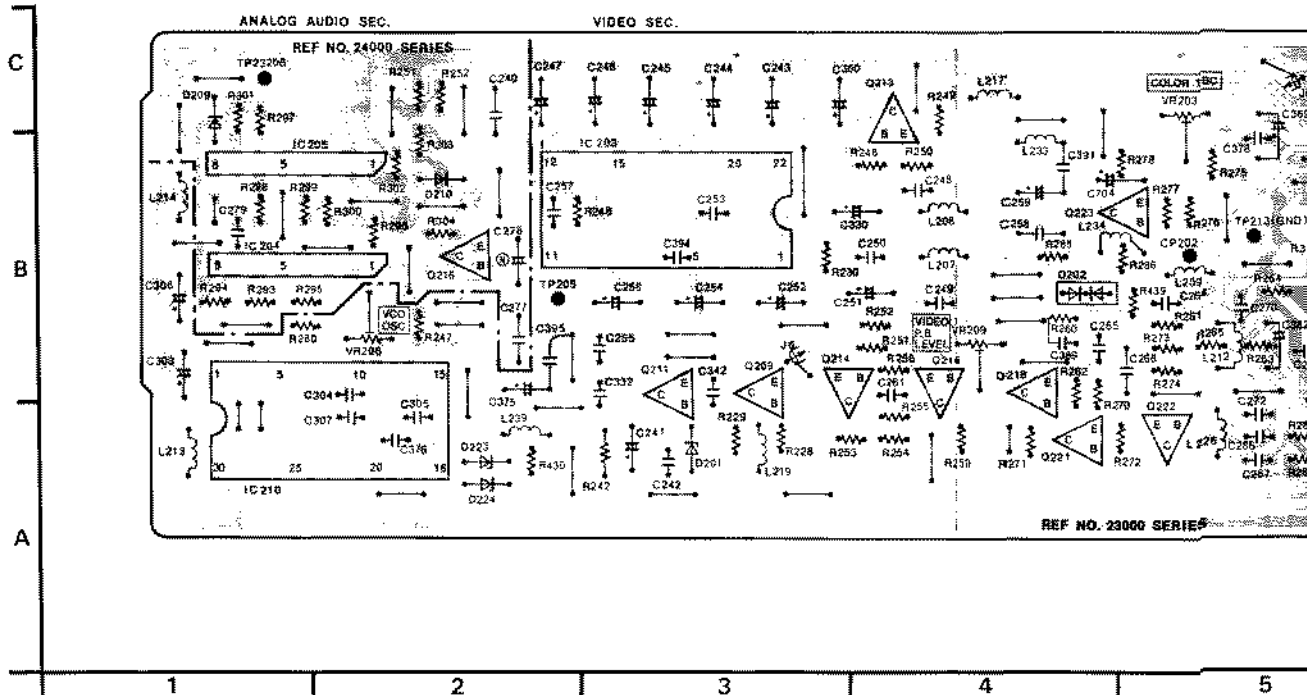
TBC C.B.A. ANALOG AUDIO SECTION	
Transistor	
Q23216	B-2
Integrated Circuit	
IC23204	B-1
IC23206	B-2
Test Point	
TP23206	C-1

#### ADDRESS INFORMATION

TBC C.B.A. VIDEO SECTION	
Transistor	
Q23209	B-3
Q23211	B-3
Q23213	C-4
Q23214	B-3
Q23215	B-4
Q23218	B-4
Q23221	A-4
Q23222	A-5
Q23223	B-4
Q23228	B-5
Q23227	A-5
Q23229	A-6
Q23230	A-6
Q23244	B-6
Q23245	B-6
Transistor & Resistor	
QR23206	B-7
QR23209	B-6
Integrated Circuit	
IC23203	B-3
IC23204	B-7
IC23206	B-6
IC23210	A-1
Test Point	
TP23205	B-2
TP23213	B-5
CP23202	B-5
CP23204	B-7
CP23209	A-6
CP23216	B-7
Adjustment	
VR23203	C-5
VR23205	A-7
VR23206	B-2
VR23209	B-4
Connector	
JA	C-6

#### ADDRESS INFORMATION

TBC C.B.A. S. VIDEO SECTION	
Transistor	
Q23630	C-10
Q23631	A-9
Q23632	B-9
Q23633	B-10
Q23634	A-10
Q23635	C-9
Q23637	B-10
Q23638	B-10
Q23639	A-10
Q23640	B-10
Q23641	B-10
Q23642	B-11
Q23643	B-10
Q23644	B-10
Adjustment	
VR23630	B-10
VR23631	B-9
VR23633	B-10
VR23634	C-10
Test Point	
CP23630	C-10



### 3-14. OPERATION C.B.A.

Operation (1), (2), C.B.A.	
<b>Transistor</b>	
Q26001	C-8
Q26002	C-8
<b>Integrated Circuit</b>	
IC26001	D-7
<b>Connector</b>	
BP26006	B-1
JB	B-6
JB	B-7
P26001	C-7
P26002	C-7
P26003	C-6
P26004	C-6
P26005	C-2
P26007	B-8

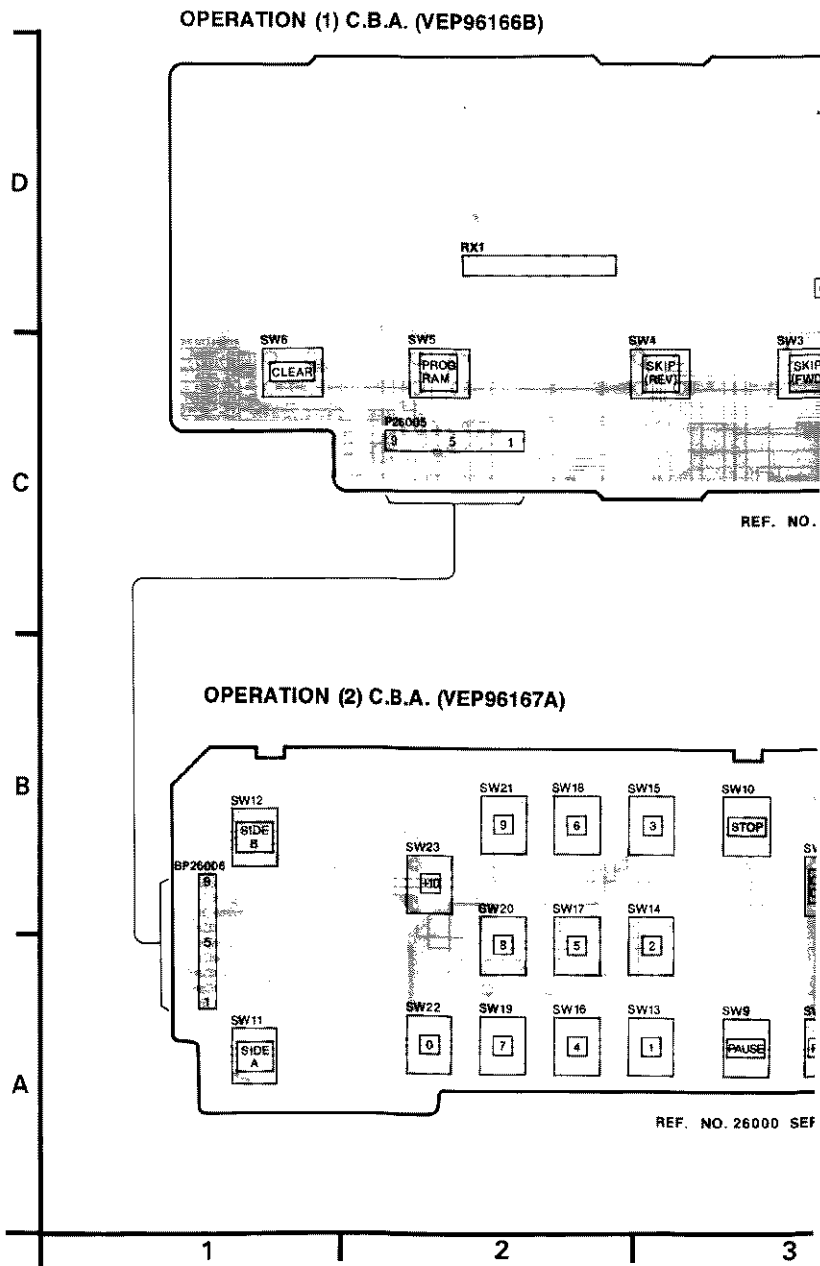
ADDRESS INFORMATION

H. P. VR C.B.A.	
<b>Adjustment</b>	
VR2450	F-14
<b>Connector</b>	
P24503	F-13

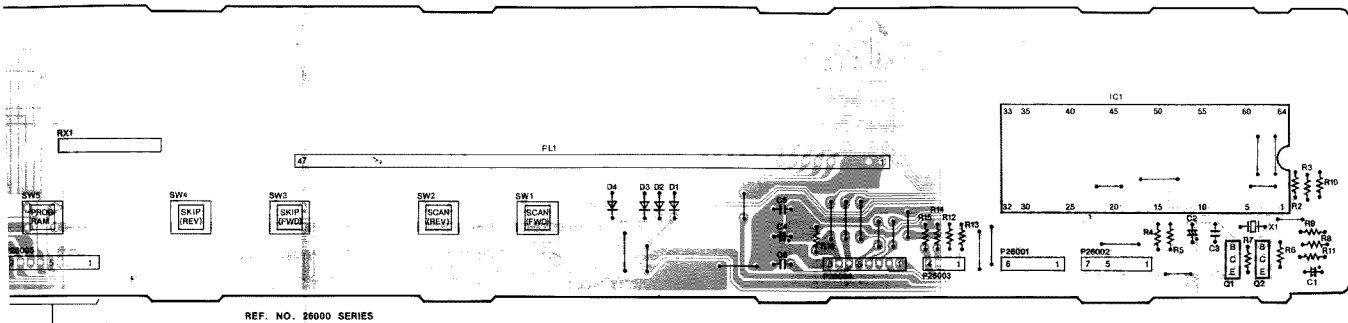
ADDRESS INFORMATION

H. P. C.B.A.	
<b>Integrated Circuit</b>	
IC24501	D-14
<b>Connector</b>	
P24501	E-14
P24502	D-13

ADDRESS INFORMATION

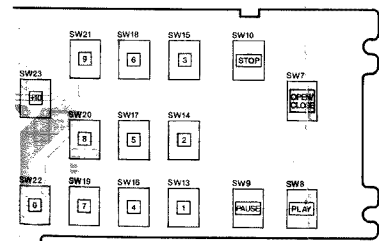


2.A. (VEP96166B)



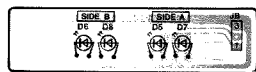
REF. NO. 26000 SERIES

3.A. (VEP96167A)



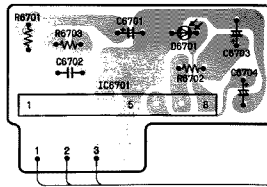
REF. NO. 26000 SERIES

LED C.B.A. (VEK4853)

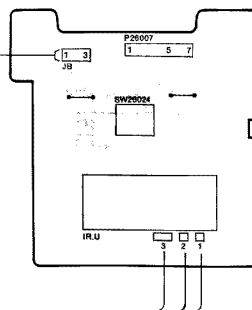


REF. NO. 26000 SERIES

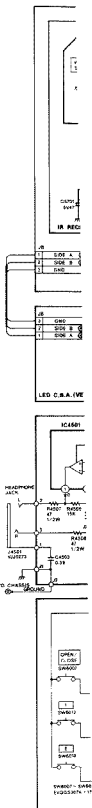
IR RECEIVER C.B.A. (VEP06500G)



POWER SW C.B.A. (VEP96168A)



G  
F  
E  
D  
C  
B  
A



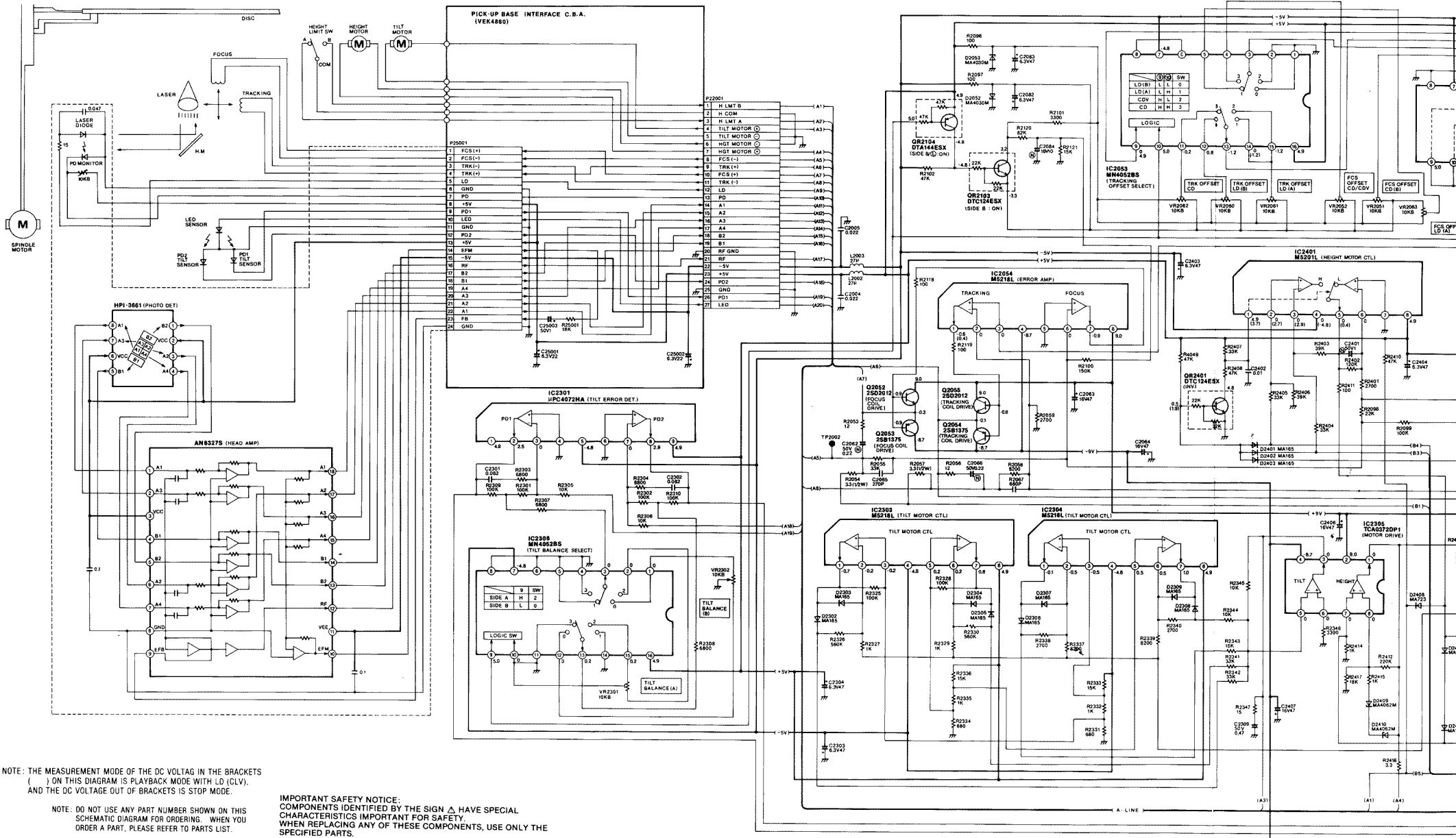
2 | 3 | 4 | 5 | 6 | 7 | 8





# 3-16. SERVO SCHEMATIC DIAGRAM

G  
F  
E  
D  
C  
B  
A

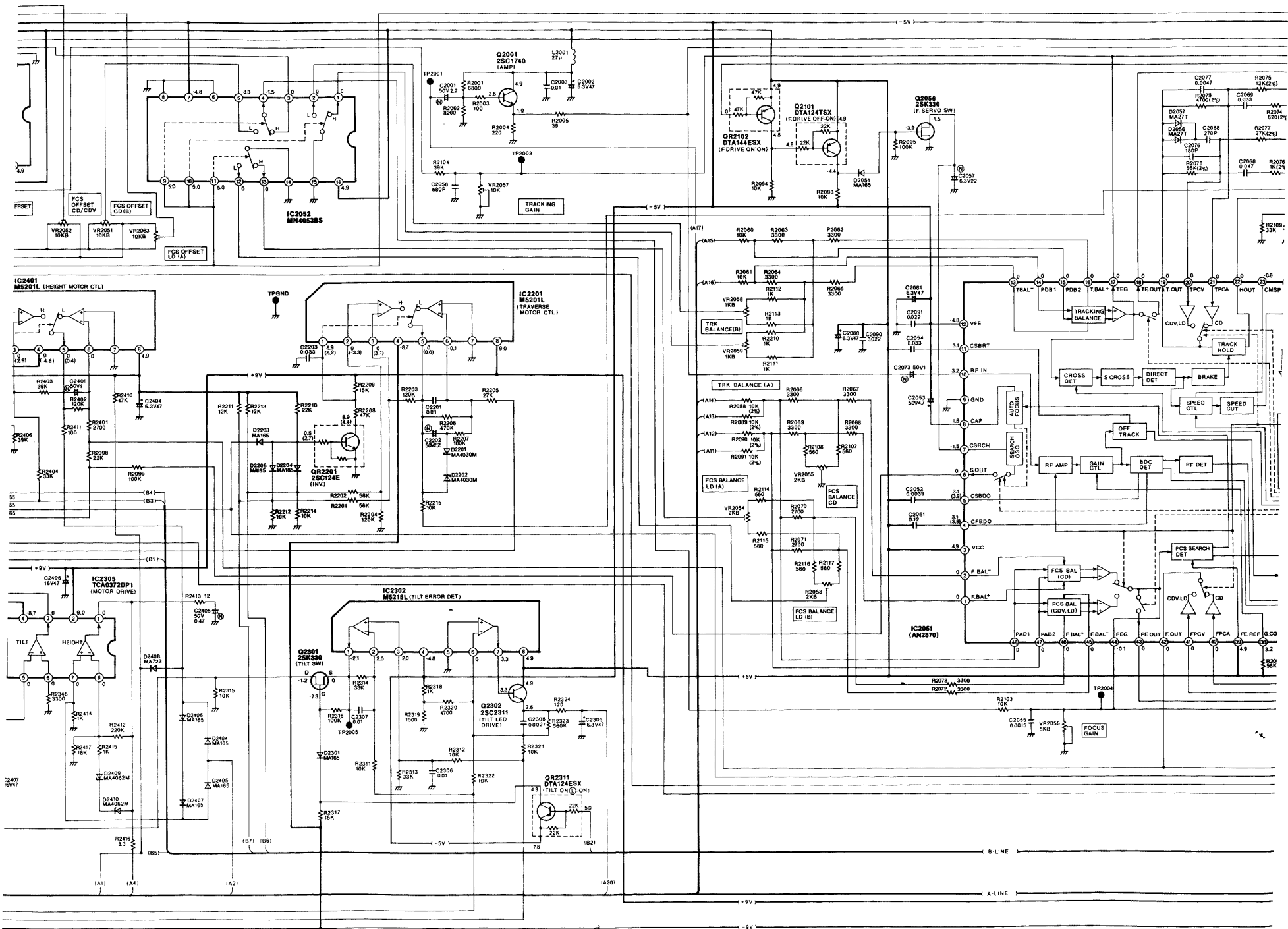


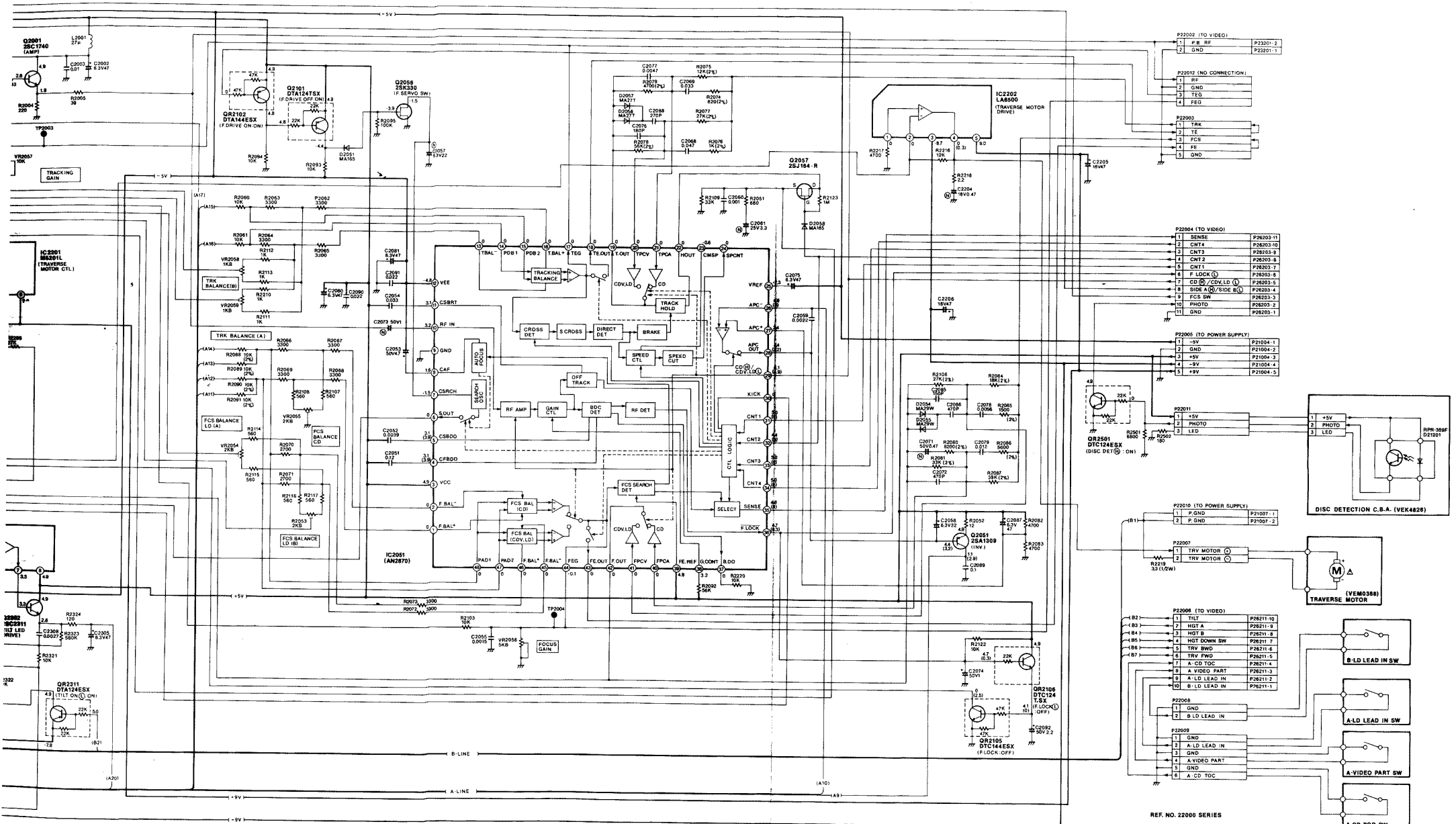
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS PLAYBACK MODE WITH LD (CLV). AND THE DC VOLTAGE OUT OF BRACKETS IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IMPORTANT SAFETY NOTICE: COMPONENTS IDENTIFIED BY THE SIGN Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

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

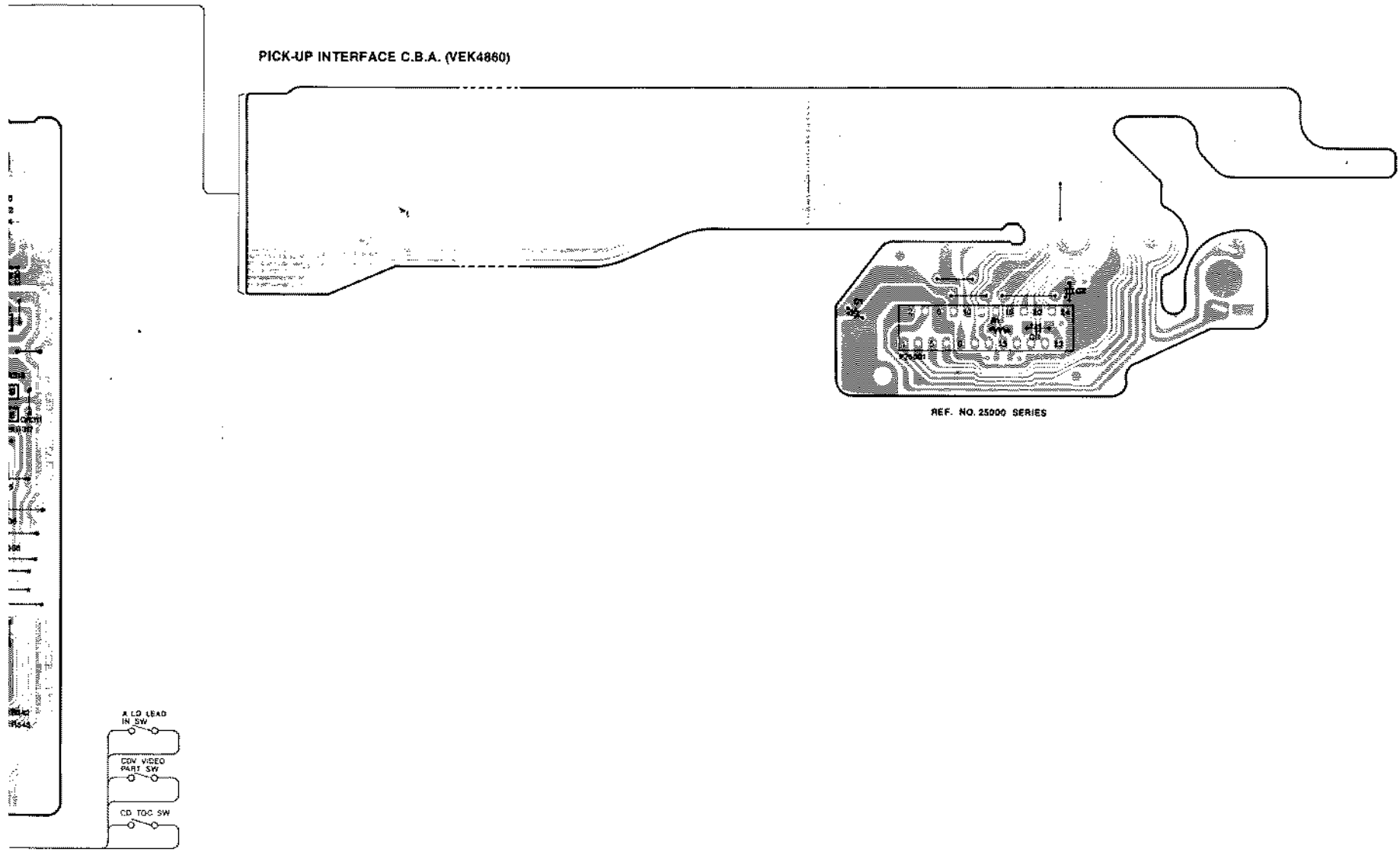




REF. NO. 22000 SERIES

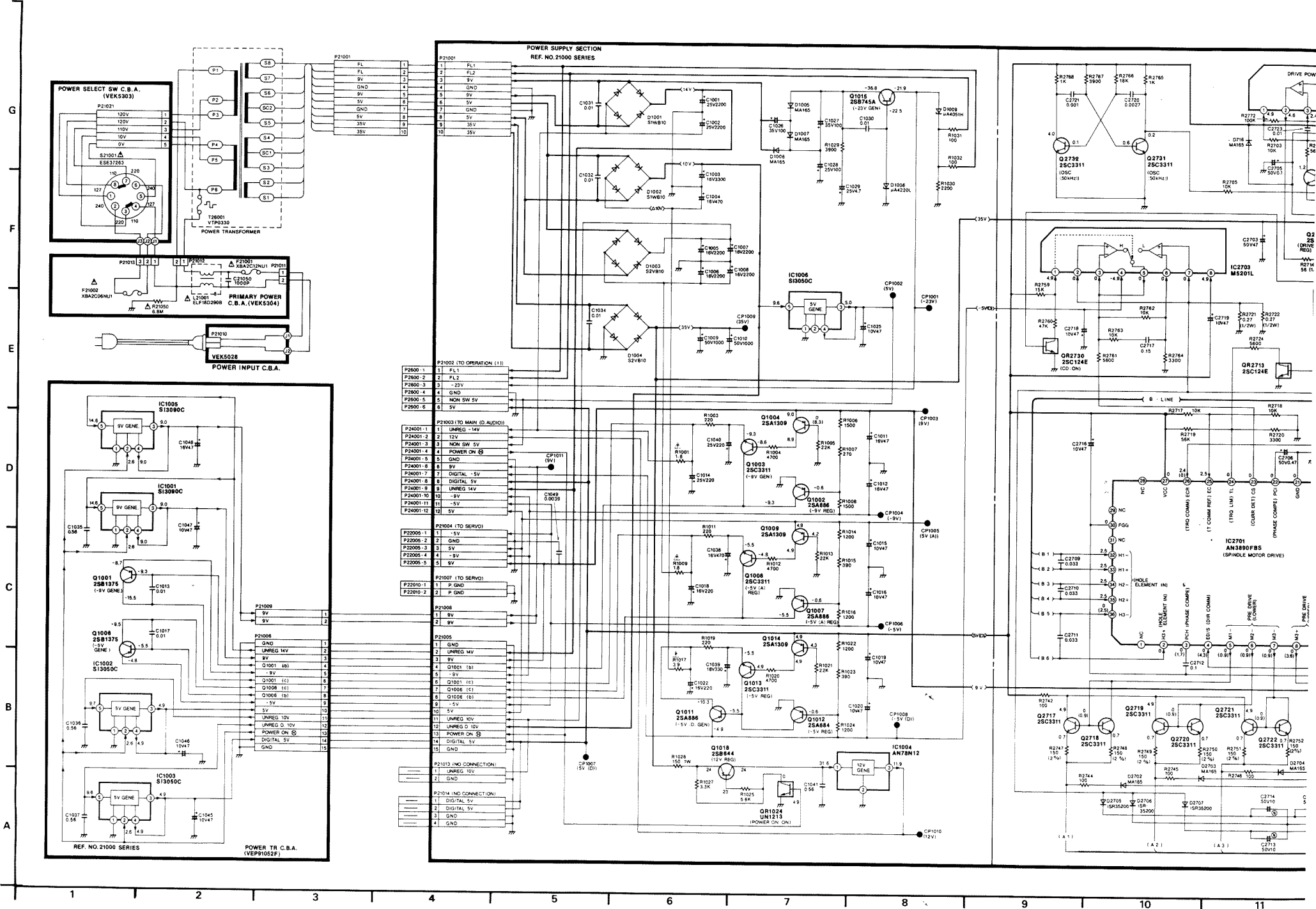
15 16 17 18 19 20 21 22 23 24 25 26

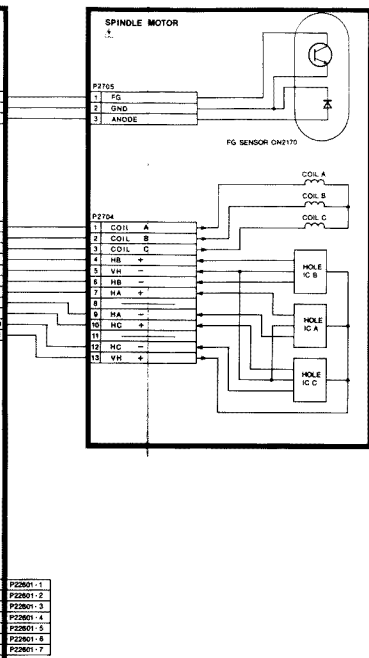
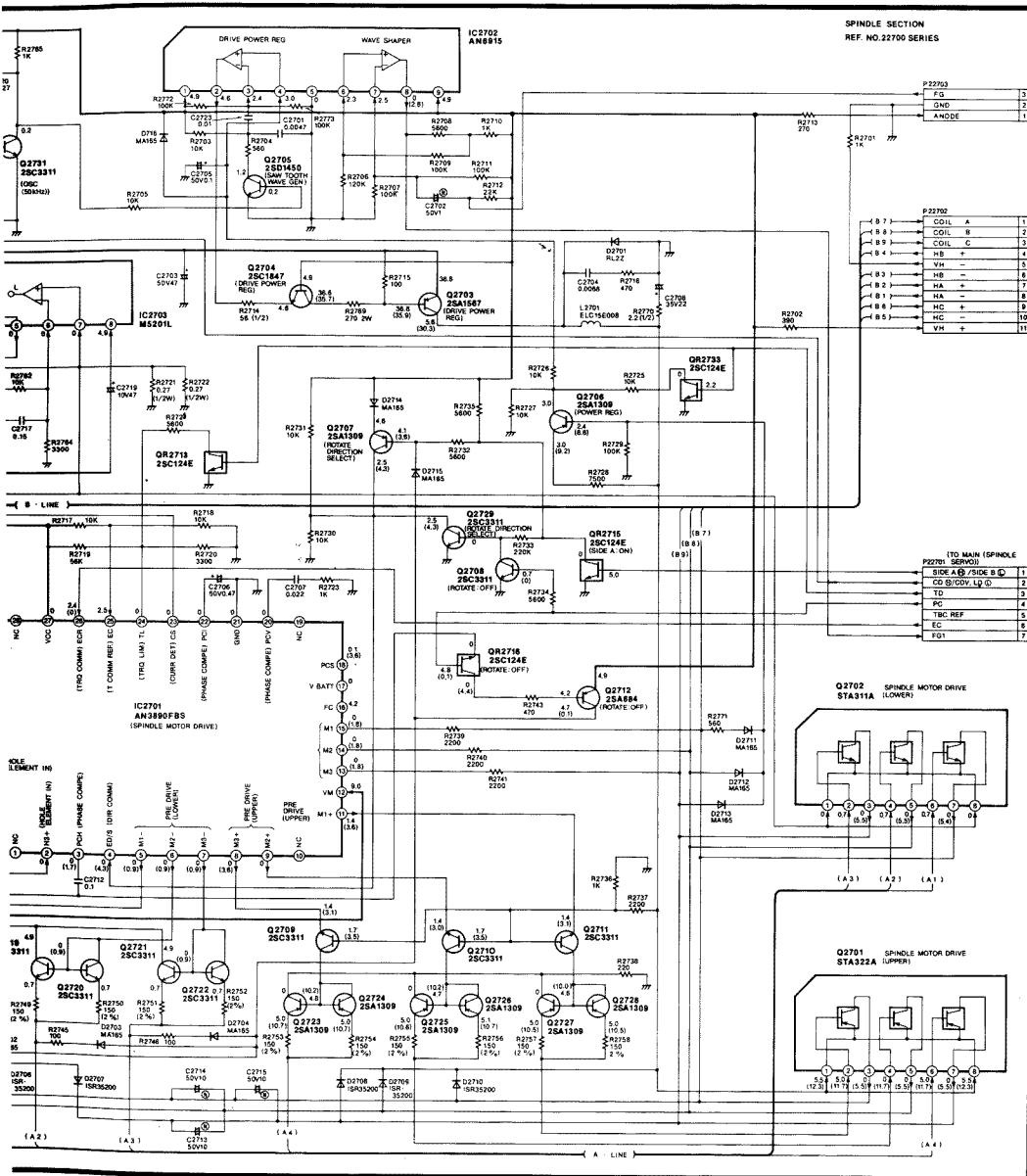
PICK-UP INTERFACE C.B.A. (VEK4860)



REF. NO. 25000 SERIES

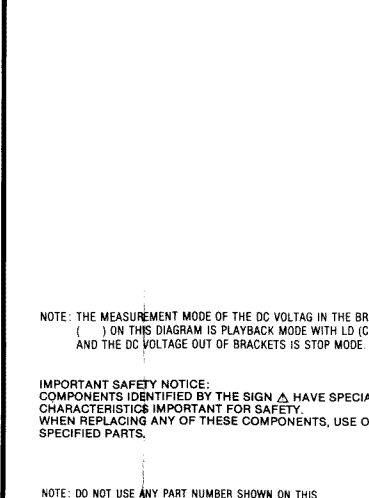
# 3-18. POWER SUPPLY & SPINDLE/PRIMARY POWER/POWER TR SCHEMATIC DIAGRAM





(TO MAIN SPINDLE MOTOR SENSOR)

1	PC	P22801-1
2	CD (SIDE A ON)	P22801-2
3	CD (SIDE B ON)	P22801-3
4	PC	P22801-4
5	TBC REF	P22801-5
6	EC	P22801-6
7	FS1	P22801-7



NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS PLAYBACK MODE WITH LD (CLV), AND THE DC VOLTAGE OUT OF BRACKETS IS STOP MODE.

IMPORTANT SAFETY NOTICE: COMPONENTS IDENTIFIED BY THE SIGN  $\Delta$  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

**POWER & SPINDLE C.B.A. SPINDLE SECTION**

Transistor	
Q22701	E-3
Q22702	E-2
Q22703	E-4
Q22704	E-4
Q22705	D-3
Q22706	D-3
Q22707	D-1
Q22708	D-2
Q22709	E-3
Q22710	E-3
Q22711	E-2
Q22712	D-1
Q22717	E-2
Q22718	E-2
Q22719	E-2
Q22720	E-2
Q22721	E-1
Q22722	E-1
Q22723	E-2
Q22724	E-3
Q22725	E-2
Q22726	E-2
Q22727	E-2
Q22728	E-2
Q22729	D-2
Q22731	D-3
Q22732	D-3

Transistor & Resistor	
QR21024	E-4

Integrated Circuit	
IC21004	E-4
IC21006	F-5

Test Point	
CP21001	D-4
CP21002	E-4
CP21003	D-4
CP21004	D-5
CP21005	D-5
CP21006	E-5
CP21007	E-5
CP21008	E-4
CP21009	E-4
CP21010	E-4
CP21011	D-4
CP21012	D-5

Transistor & Resistor	
QR22713	D-2
QR22715	D-2
QR22716	D-2
QR22730	D-2
QR22733	D-2

Test Point	
CP22701	D-2
CP22702	D-1
CP22703	D-4
CP22704	D-2
CP22705	D-2
CP22706	E-1

Integrated Circuit	
IC22701	D-2
IC22702	D-4
IC22703	D-1

Connector	
P21701	E-1
P21702	D-2
P21703	D-3
P21703	D-4

ADDRESS INFORMATION

**POWER & SPINDLE C.B.A. POWER SECTION**

Transistor	
Q21002	E-5
Q21003	E-5
Q21004	E-5
Q21007	E-6
Q21008	E-5
Q21009	E-6
Q21011	E-5
Q21012	E-5
Q21013	E-6
Q21014	E-5
Q21015	D-7
Q21018	E-4

Transistor & Resistor	
QR21024	E-4

Integrated Circuit	
IC21004	E-4
IC21006	F-5

Test Point	
CP21001	D-4
CP21002	E-4
CP21003	D-4
CP21004	D-5
CP21005	D-5
CP21006	E-5
CP21007	E-5
CP21008	E-4
CP21009	E-4
CP21010	E-4
CP21011	D-4
CP21012	D-5

Connector	
P21001	E-7
P21002	D-4
P21003	D-4
P21004	D-4
P21005	E-5
P21008	D-4

ADDRESS INFORMATION

**PRIMARY POWER C.B.A.**

Connector	
P21011	B-5
P21012	B-6

ADDRESS INFORMATION

**POWER TR. C.B.A.**

Transistor	
Q21001	C-3
Q21006	C-2

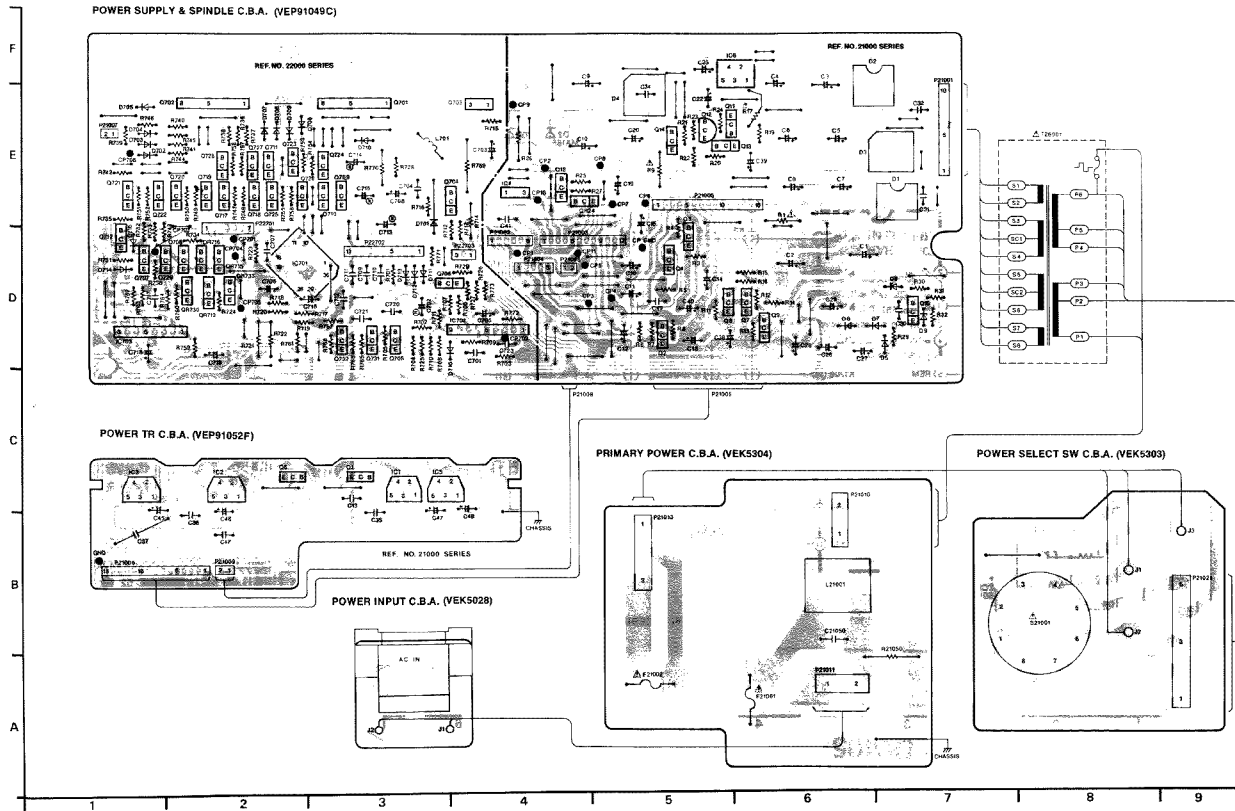
Integrated Circuit	
IC21001	C-3
IC21002	C-2
IC21003	C-1
IC21005	C-3

Connector	
P21006	B-1
P21009	B-2

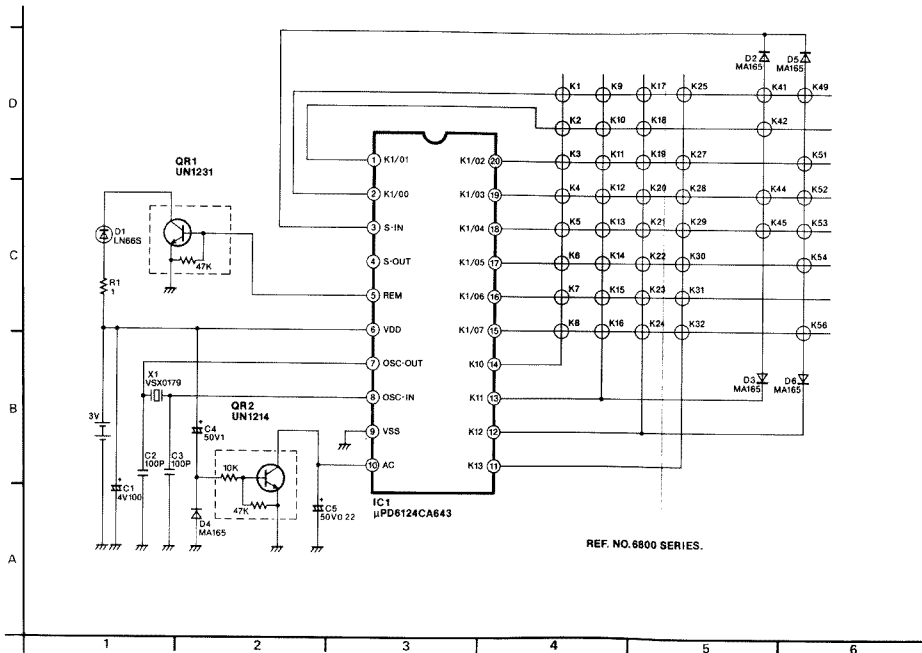
ADDRESS INFORMATION

### 3-19. POWER SUPPLY & SPINDLE C.B.A. (VEP91049C)/PRIMARY POWER C.B.A. (VEK5304)

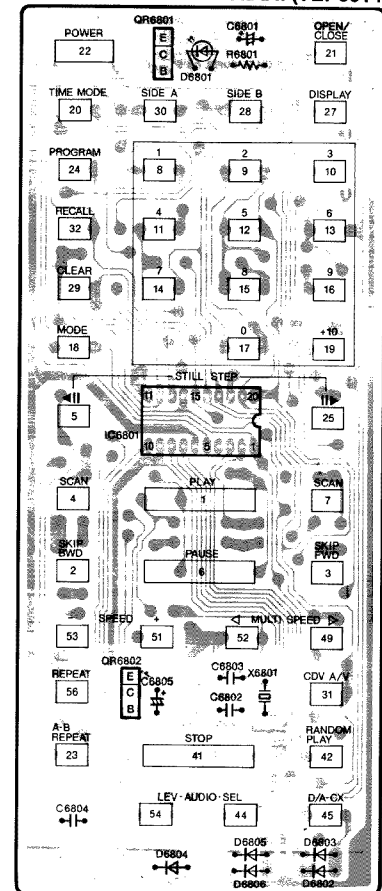




### 3-20. REMOTE CONTROLLER SCHEMATIC DIAGRAM

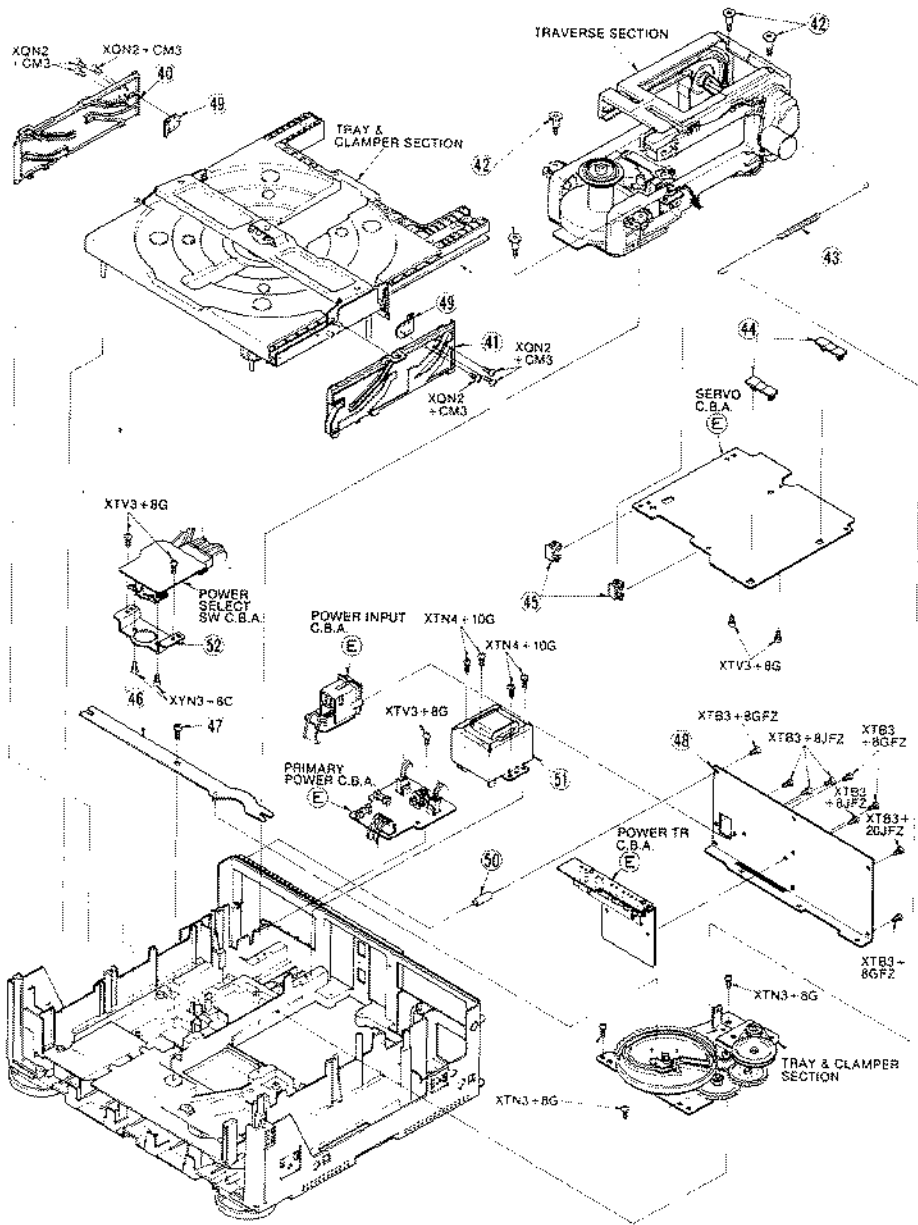


### 3-21. REMOTE CONTROLLER C.B.A. (VEP66143A)



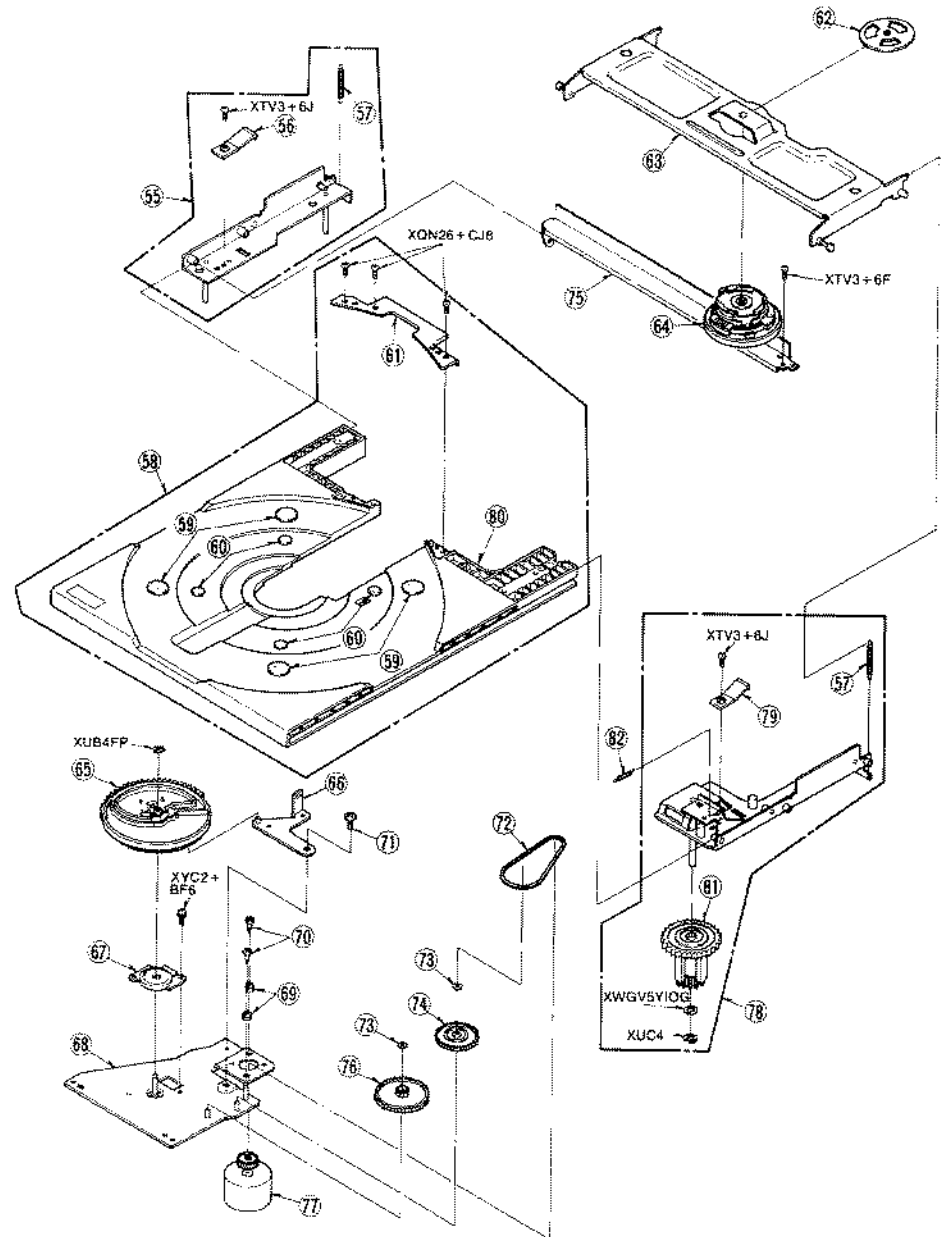


## 2 Mechanism Section



4-2

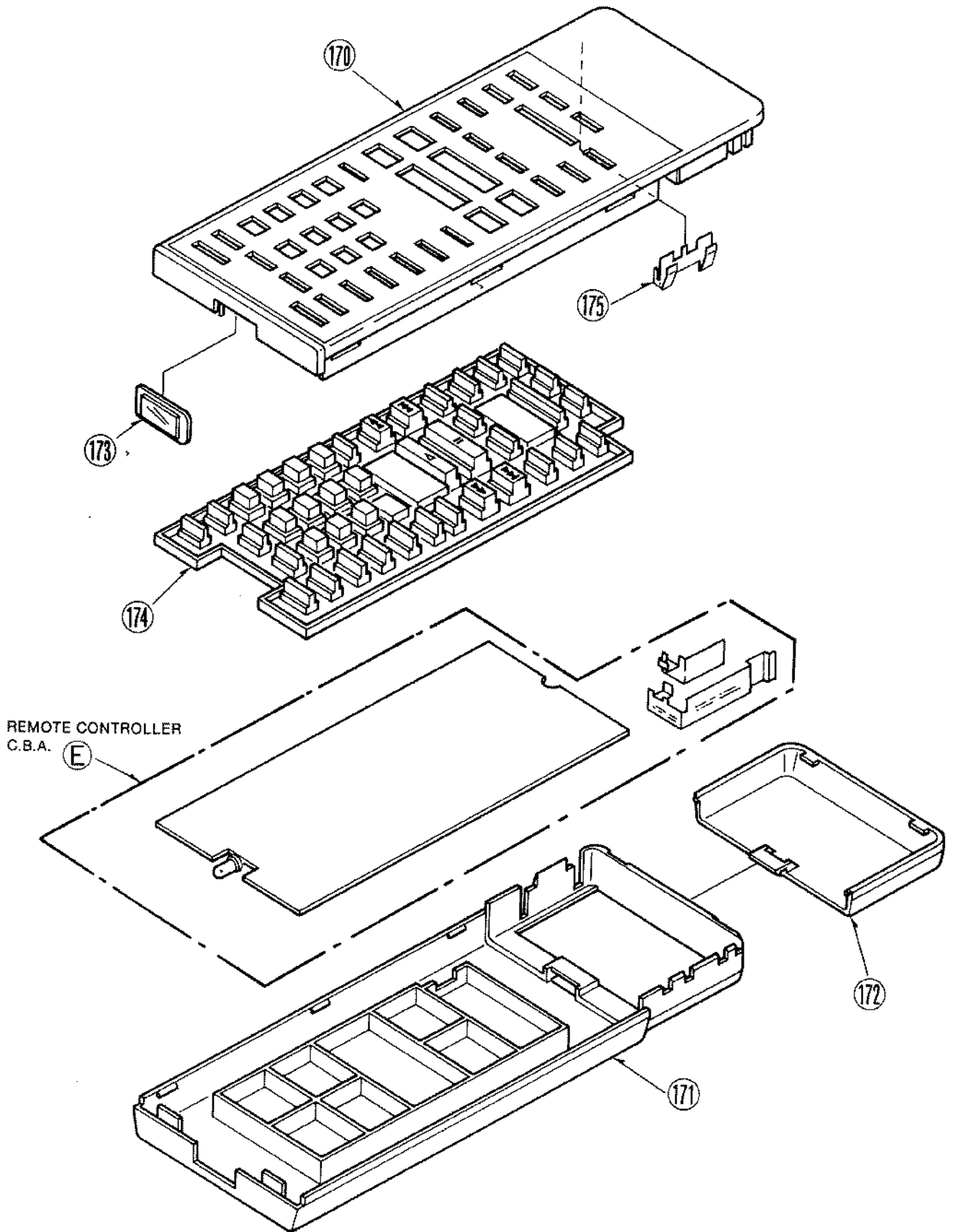
## 3 Tray & Clamper Section



4-3



7 IR Remote Control Unit.



# 4-2. MECHANICAL 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 (C) 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)	VGN0705	TOP COVER	1	
2(1)	VHD0165	SCREW	4	
3(1)	VMP2627	PAIN C.B.A. ANGLE	1	
4(1)	VGN0755	REAR PANEL (R)	1	
5(1)	VMC0587	TRANSISTOR HOLD SPRING	2	
6(1)	VMA8156	RACK GUIDE PLATE (L)	1	
7(1)	VMA8154	TOP COVER ANGLE (C)	2	
8(1)	VMA8152	TOP COVER ANGLE (A)	1	
9(1)	VMA8155	FRONT ANGLE	1	
10(1)	VCK1939	DECORATION RING	2	
11(1)	VMT0340	RUBBER FOOT	4	
12(1)	VKD0668	HOLDER SPRING	1	
13(1)	VMA8310	FRAME SUPPORT PLATE	1	
14(1)	VML2381	DOOR LEVER	1	
15(1)	VMB2122	DOOR LEVER SPRING	1	
16(1)	VXA4056	RACK GUIDE PLATE (R)	1	
17(1)	VDC0678	DAMPER	1	
18(1)	VEK4858	DOOR SWITCH	1	
19(1)	VMA8153	TOP COVER ANGLE (B)	1	
20(1)	VMK1438	SPACER	1	
21(1)	VMD0382	SNAP PLATE	1	
22(1)	VMP2628	HEADPHONE PLATE	1	
23(1)	RGM0020	BALANCE KNOB	1	
24(1)	VFP3266	FRONT PANEL UNIT	1	
25(1)	VVF1573	DOOR (I) UNIT	1	
26(1)	VMS4146	DOOR HINGE	1	
27(1)	VKD0352	BOTTOM PLATE	1	
30(1)	VMA8284	RACK GUIDE ANGLE	1	
31(1)	VMC0653	EARTH PLATE	1	
32(1)	VMD0668	EARTH PLATE	2	
33(1)	VER6549	EARTH CABLE	1	
34(1)	VMD0667	ANGLE (A)	2	
35(1)	VMD0663	ANGLE (B)	2	
36(1)	VML2746	SHIELD PLATE	1	
40(2)	VMD1548	RACK PLATE (L)	1	
41(2)	VMD1547	RACK PLATE (R)	1	
42(2)	VHD0583	SCREW	4	
43(2)	VMB2121	CLUTCH SPRING	1	
44(2)	VKCO118	HINGE	5	
45(2)	VJFD844	PIERCING HOLDER	2	
46(2)	VXA4051	JOINT PLATE	1	
47(2)	VHD0590	SCREW	1	
48(2)	VGN0756	REAR PANEL (L)	1	
49(2)	VMA8296	RACK PLATE ANGLE	2	
50(2)	VMA1936	EARTH COLLAR	1	
51(2)	VTP0330	POWER TRANSFORMER	1 (C)	
52(2)	VMA8372	POWER SELECT SW BRACKET	1	
55(3)	VXA4269	TRAY GUIDE PLATE (L)	1	
56(3)	VMD1541	TRAY STOPPER	1	
57(3)	VMB2118	CHARGE SPRING	2	
58(3)	VXQ0243	TRAY UNIT	1	
59(3)	VMT0318	DISK PROTECTION SHEET (A)	1	
60(3)	VMT0319	DISK PROTECTION SHEET (B)	1	
61(3)	VMA8144	TRAY SUPPORT PLATE	1	
62(3)	VXQ0226	HANGER (I)	1	
63(3)	VXA4054	CLAMP PLATE (2)	1	
64(3)	VXQ0272	CLAMPER	1	
65(3)	VDR0026	LOADING CAM	1	
66(3)	VXA4048	CLUTCH LEVER	1	
67(3)	VSR0078	MODE SW	1	
68(3)	VXA4047	TRAY DRIVE BASE (I)	1	
69(3)	SRG001N01	MOTOR CUSHION RUBBER	1	
70(3)	VHD0408	SCREW	2	
71(3)	VHD0407	SCREW	1	
72(3)	VJVD0222	BELT (B)	1	
73(3)	VMA1438	SPACER	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
74(3)	VDC0660	PULLEY GEAR (B)	1	
75(3)	VMA8309	SHUTTER	1	
76(3)	VDC0661	BRAKE GEAR (A)	1	
77(3)	VEM0369	LOADING MOTOR	1 (C)	
78(3)	VXA4268	TRAY GUIDE PLATE (R)	1	
79(3)	VMD1541	TRAY STOPPER	1	
80(3)	VQ02041	TRAY	1	
81(3)	VDC0659	TRAY DRIVE GEAR	1	
82(3)	VMB2254	SHUTTER SPRING	1	
85(4)	VMD1537	GUIDE BASE (L)	1	
86(4)	VMD0539	FLOATING RUBBER (A)	3	
87(4)	VJFD844	PIERCING HOLDER	3	
88(4)	VMB2117	FLEX. CABLE HOLD SPRING	1	
89(4)	VMA8305	GUIDE SHAFT (B)	1	
90(4)	VMA8305	GUIDE SHAFT (A)	1	
91(4)	VMD1534	SHAFT BEARING (A)	2	
92(4)	VDP1310	LINK PULLEY	1	
93(4)	VMA8308	LINK SHAFT	1	
94(4)	VXP1185	FORWARD BELT PULLEY	1	
95(4)	VXQ0221	FORWARD BELT UNIT	1	
96(4)	VXA4043	TENSION ARM (I)	1	
97(4)	VDP1307	BELT ROLLER	1	
98(4)	VMK1454	SNAP WASHER (C)	9	
99(4)	VJVD0214	MOTOR BELT (A)	1	
100(4)	VDC0656	PULLEY GEAR (A)	1	
101(4)	VXP1185	BRAKE GEAR	1	
102(4)	VXQ0219	TRANSMISSION GEAR BASE	1	
103(4)	VDC0658	TRANSMISSION GEAR	1	
104(4)	VMB2116	SPRING	1	
106(4)	VMB2115	PRESSURE SPRING	1	
107(4)	VKRO983	GUIDE BASE 1 (R)	1	
108(4)	VJFD610	CLAMPER	2	
109(4)	VMA8265	HOLDER PLATE	1	
110(4)	VEM0368	FORWARD MOTOR	1 (C)	
111(4)	VMA8141	SENSOR BASE	1	
112(4)	VSR0045	LIMIT LEAF SWITCH	1	
113(4)	VMD0580	SWITCH ANGLE	1	
114(4)	VSR0037	LEAF SWITCH	3	
115(4)	VEM0362	SPINDLE MOTOR	1 (C)	
116(4)	VMA8143	MAGNET PLATE	1	
117(4)	VXPL173	CENTRE RING (A)	1	
118(4)	VMD1538	TURN TABLE	1	
119(4)	VMB2015	SENSOR RING SPRING	1	
120(4)	VMA8142	MOTOR BASE	1	
121(4)	VEK4826	DISC DETECTOR	1	
122(4)	VMB2127	ROLLER SPRING	1	
123(4)	VDP1307	BELT ROLLER	1	
130(5)	VXA4040	ROLLER BASE (B)	1	
131(5)	VXA4039	ROLLER BASE (A)	1	
132(5)	VMB2111	HEIGHT COIL SPRING (B)	1	
133(5)	VXA4037	TILT LEVER	1	
134(5)	VMB2109	ROLLER ADJUST SPRING	1	
135(5)	VXA4033	SWITCH BASE (I)	1	
136(5)	VDC0652	TILT GEAR	1	
137(5)	VML2379	SWITCH LEVER	1	
138(5)	VMB2112	SWITCH LEVER SPRING	1	
139(5)	VMB2113	TILT TENSION SPRING	1	
140(5)	VER4894	OPTICAL PICK-UP	1 (C)	
141(5)	GP7TDD1N	TILT SENSOR	1	
142(5)	VKL2028	HEIGHT JOINT PLATE	1	
143(5)	VMB2110	HEIGHT COIL SPRING (A)	1	
144(5)	VMA1793	PU SPACER	1	
145(5)	VXA4041	HEIGHT BASE	1 (C)	
146(5)	VXA4036	TILT BASE (I)	1	
147(5)	VKRO981	PICK BASE (I)	1	
148(5)	VDC0600	ADJUSTING SCREW	2	
149(5)	VEM0366	TILT MOTOR	1 (C)	
150(5)	VMD0025	TILT CAM	1	
160(6)	VPG5742	PACKING CASE	1	LX-2008N
160(6)	VPG5741	PACKING CASE	1	LX-200FX
161(6)	VPR2707	CUSHION (FRONT)	1	
162(6)	VPR2880	CUSHION (REAR)	1	



# 4-3. 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. R=1,000 OHMS. All capacitors are in MICRO-FARADS(uf), P=PPF.  
 4. The P.C. Board units marked with † show below the main assembled parts.  
 5. Printed circuit board assembly with mark (N/A) is no longer available after discontinuation of the product.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	VEP93099C	MAIN C.B.A.	1	(N/A)
	VEP92229A	SERVO C.B.A.	1	(N/A)
	VEP93101B	TBC C.B.A.	1	(N/A)
	VEP96166B	OPERATION (1) C.B.A.	1	(N/A)
	VEP96167A	OPERATION (2) C.B.A.	1	(N/A)
	VEP91049C	POWER & SPINDLE C.B.A.	1	(N/A)
	VEP91052P	POWER TR. C.B.A.	1	(N/A)
	VEP96168A	IR REMOTE CONTROL C.B.A.	1	(N/A) INCLUDING THE IR RECEIVER C.B.A.
	VEP06500G	IR RECEIVER C.B.A.	1	(N/A) INCLUDED IN IR REMOTE CONTROL C.B.A.
	VEP94074A	HEADPHONE JACK C.B.A.	1	(N/A)
	VEP94076A	HEADPHONE VOLUME C.B.A.	1	(N/A)
	VEK5304	PRIMARY POWER C.B.A.	1	(N/A) (†)
	VEK502B	POWER IN/OUT C.B.A.	1	(N/A)
	VEK4895	LEAF SWITCH C.B.A.	1	(N/A)
	VEK4826	DISC DETECT C.B.A.	1	(N/A)
	VEK4853	LED C.B.A.	1	(N/A)
	VEK4860	PICK UP BASE INTERFACE C.B.A.	1	(N/A)
	VEK5303	POWER SELECT SW C.B.A.	1	(N/A)
	VEP66143A	REMOTE CONTROLLER	1	(N/A)
	VEP93099C	MAIN C.B.A.	1	(N/A)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
		CAPACITORS		
C22602, 03	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C22604	ECUM1H560JCN	C. CAPACITOR CH 50V 56P	1	
C22606	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C22608	ECEA1CN470S	E. CAPACITOR 16V 47U	1	
C22609	ECEA1CK100	E. CAPACITOR 16V 10U	1	
C22610	EQV1H474JZ	P. CAPACITOR 50V 0.47U	1	
C22612	EQB1H102JZ	P. CAPACITOR 50V 1000P	1	
C22613	ECKT1H821KB	C. CAPACITOR 50V 820P	1	
C23006	EQB1H472JZ	P. CAPACITOR 50V 4700P	1	
C23007	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23008	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C23017	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C23018	ECEA1HK010	E. CAPACITOR 50V 1U	1	
C23201	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C23202-05	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	4	
C23206	EQV1H104JZ	P. CAPACITOR 50V 0.1U	1	
C23207-11	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	5	
C23213	ECUM1H240JCN	C. CAPACITOR CH 50V 24P	1	
C23214	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23215	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C23216	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C23217	ECEA0JK01	E. CAPACITOR 6.3V 100U	1	
C23219, 20	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C23221	EQV1H823JZ	P. CAPACITOR 50V 0.082U	1	
C23222, 23	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C23224	ECEA1HK010	E. CAPACITOR 50V 1U	1	
C23225	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C23227	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23229	ECUM1H151JCN	C. CAPACITOR CH 50V 150P	1	
C23230	ECUM1H510JCV	C. CAPACITOR CH 50V 51P	1	
C23231-33	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	3	
C23234	ECEA1EK4R7	E. CAPACITOR 25V 4.7U	1	
C23235	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	1	
C23236	ECEA1CK100	E. CAPACITOR 16V 10U	1	
C23237, 38	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C23239	ECEA1CK100	E. CAPACITOR 16V 10U	1	
C23240	ECEA1CK470	E. CAPACITOR 16V 47U	1	
C23260	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23262	ECUM1H270JCN	C. CAPACITOR CH 50V 27P	1	
C23263	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C23267	ECUM1H1042FN	C. CAPACITOR CH 50V 0.1U	1	
C23268	ECEA0JK101	E. CAPACITOR 6.3V 100U	1	
C23271	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C23273	ECEA0JK01	E. CAPACITOR 6.3V 100U	1	
C23274-76	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	3	
C23277	ECUM1H750JCN	C. CAPACITOR CH 50V 75P	1	
C23279	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C23282	ECEA1HNR47	E. CAPACITOR 50V 0.47U	1	
C23283	ECEA1CK010	E. CAPACITOR 16V 10U	1	
C23284	ECUM1H150JCN	C. CAPACITOR CH 50V 15P	1	
C23285	ECUM1H181JCN	C. CAPACITOR CH 50V 180P	1	
C23314	ECEA1AD471	E. CAPACITOR 10V 470U	1	
C23317, 18	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	2	
C23319	ECUM1H050DCN	C. CAPACITOR CH 50V 50P	1	
C23320	ECUM1H150JCN	C. CAPACITOR CH 50V 15P	1	
C23321	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23322	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C23323	ECEA1AV471	E. CAPACITOR 10V 470U	1	
C23324	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C23325	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23331	ECEA1CK100	E. CAPACITOR 16V 10U	1	
C23339, 40	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C23341	VCYD1C104MRJ	S. CAPACITOR 16V 0.1U	1	
C23343	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C23345	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C23352	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C23353	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23354	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C23357	EQB1H223JZ	P. CAPACITOR 50V 0.022U	1	
C23358	ECEA1HRND10	E. CAPACITOR 50V 1U	1	
C23361	ECUM1H430JCN	C. CAPACITOR CH 50V 43P	1	
C23363	ECEA0JU101	E. CAPACITOR 6.3V 100U	1	
C23364	ECEA1CK330	E. CAPACITOR 16V 33U	1	



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C23385	ECUMH1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23366,67	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C23372	ECUMH1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23373	ECUMH1150JCN	C. CAPACITOR CH 50V 15P	1	
C23374	ECUMH220JCN	C. CAPACITOR CH 50V 22P	1	
C23379,80	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C23381	ECUMH102KBN	C. CAPACITOR CH 50V 1000P	1	
C23382	ECEAL1EK4R7	E. CAPACITOR 25V 4.7U	1	
C23383	ECUMH270JCN	C. CAPACITOR CH 50V 27P	1	
C23384	ECUMH680JCN	C. CAPACITOR CH 50V 68P	1	
C23387	ECUMH1121JCN	C. CAPACITOR CH 50V 120P	1	
C23388	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C23392	ECDF1H820JC	C. CAPACITOR 50V 82P	1	
C23393	ECUMH1180JCN	C. CAPACITOR CH 50V 18P	1	
C23396	ECDF1H390JC	C. CAPACITOR 50V 39P	1	
C23397	ECDF1H821KB	C. CAPACITOR 50V 820P	1	
C23398	ECDF1H220JC	C. CAPACITOR 50V 22P	1	
C23399	ECDF1H150JC	C. CAPACITOR 50V 15P	1	
C23400,01	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C23402	ECDF1H1032F	C. CAPACITOR 50V 0.01U	1	
C23601	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C23602	ECUMH821KBN	C. CAPACITOR CH 50V 820P	1	
C23603	ECUMH560JCN	C. CAPACITOR CH 50V 56P	1	
C23604	ECEAL1BN010	E. CAPACITOR 50V 1U	1	
C23605	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C23606,07	ECEAL1K101	E. CAPACITOR 10V 100U	2	
C24001-03	ECEAL1CK330	E. CAPACITOR 16V 33U	3	
C24004	ECEAL1BN010	E. CAPACITOR 50V 1U	1	
C24005	ECQV1H224JZ	P. CAPACITOR 50V 0.22U	1	
C24006	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24007	ECEAL1BN010	E. CAPACITOR 50V 1U	1	
C24008	ECEAL1CK100	E. CAPACITOR 16V 10U	1	
C24009	ECQB1H102KZ	P. CAPACITOR 50V 1000P	1	
C24010	ECEAL1CK100	E. CAPACITOR 16V 10U	1	
C24011	ECUMH1000CN	C. CAPACITOR CH 50V 10P	1	
C24012	ECQF1H681JZ	P. CAPACITOR 50V 680P	1	
C24013	ECQV1H474JZ	P. CAPACITOR 50V 0.47U	1	
C24014	ECQB1H223JZ	P. CAPACITOR 50V 0.022U	1	
C24015	ECEAL1BN2R2	E. CAPACITOR 50V 2.2U	1	
C24016	ECQF1H681JZ	P. CAPACITOR 50V 680P	1	
C24017,18	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C24019	ECEAL1CK100	E. CAPACITOR 16V 10U	1	
C24020	ECUMH1150JCN	C. CAPACITOR CH 50V 15P	1	
C24021	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24022	ECEAL1BN010	E. CAPACITOR 50V 1U	1	
C24023	ECQV1H104JZ	P. CAPACITOR 50V 0.1U	1	
C24024,25	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C24026	ECQV1H1541Z	P. CAPACITOR 50V 0.15U	1	
C24027	ECQV1H3341Z	P. CAPACITOR 50V 0.33U	1	
C24029,30	ECEAL1PK5Z21	E. CAPACITOR 25V 220U	2	
C24031,32	VCCEAL1CN221	E. CAPACITOR 16V 220U	2	
C24040	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24046	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24048-51	VCCEAL1CN221	E. CAPACITOR 16V 220U	4	
C24052	ECQF1H272JZ	P. CAPACITOR 50V 2700P	1	
C24054	ECQF1H272JZ	P. CAPACITOR 50V 2700P	1	
C24056	ECQF1H681JZ	P. CAPACITOR 50V 680P	1	
C24057	VCCEAL1CN470	E. CAPACITOR 16V 47U	1	
C24058	ECQF1H272JZ	P. CAPACITOR 50V 2700P	1	
C24059	ECQF1H681JZ	P. CAPACITOR 50V 680P	1	
C24060	VCCEAL1CN470	E. CAPACITOR 16V 47U	1	
C24061	ECQF1H272JZ	P. CAPACITOR 50V 2700P	1	
C24063	ECUMH330JCN	C. CAPACITOR CH 50V 33P	1	
C24064	ECQB1H102KZ	P. CAPACITOR 50V 1000P	1	
C24065	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24066	ECUMH222KBN	C. CAPACITOR CH 50V 2200P	1	
C24069,70	ECUMH330JCN	C. CAPACITOR CH 50V 33P	2	
C24071	ECUMH1102KBN	C. CAPACITOR CH 50V 1000P	1	
C24201	ECUMH1121JCN	C. CAPACITOR CH 50V 120P	1	
C24203,04	ECUMH1032FN	C. CAPACITOR CH 50V 0.01U	2	
C24205	ECUMH1151JCN	C. CAPACITOR CH 50V 150P	1	
C24206	ECUMH1032FN	C. CAPACITOR CH 50V 0.01U	1	
C24207,08	ECQB1H223JZ	P. CAPACITOR 50V 0.022U	2	
C24211	ECUMH1032FN	C. CAPACITOR CH 50V 0.01U	1	
C24212	ECEAL1CK470	E. CAPACITOR 16V 47U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C24213,14	ECEA0JK101	E. CAPACITOR 6.3V 100U	2	
C24215	ECUMH1331JN	C. CAPACITOR CH 50V 330P	1	
C24216	ECUMH271JN	C. CAPACITOR CH 50V 270P	1	
C24219,20	ECUMH822KBN	C. CAPACITOR CH 50V 8200P	2	
C24221,22	ECEA0JK220	E. CAPACITOR 6.3V 22U	2	
C24223,24	ECUMH472KBN	C. CAPACITOR CH 50V 4700P	2	
C24225,26	ECQF1H472JV	P. CAPACITOR 50V 4700P	2	
C24229,30	ECQV1H393JZ	P. CAPACITOR 50V 0.039U	2	
C24231	ECEAL1CK100	E. CAPACITOR 16V 10U	1	
C24232	ECEAL1HR47	E. CAPACITOR 50V 0.47U	1	
C24233	ECQV1H104JZ	P. CAPACITOR 50V 0.1U	1	
C24235,36	ECEAL1CN100	E. CAPACITOR 16V 10U	2	
C24239	ECQB1H223JZ	P. CAPACITOR 50V 0.022U	1	
C24241	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C24242	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24243	ECEA0JK221	E. CAPACITOR 6.3V 220U	1	
C24244	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C24247,48	ECUMH1560JCN	C. CAPACITOR CH 50V 56P	2	
C24250	ECQB1H223JZ	P. CAPACITOR 50V 0.022U	1	
C24251,52	ECEA0JK221	E. CAPACITOR 6.3V 220U	2	
C24258	ECEA0JK101	E. CAPACITOR 6.3V 100U	1	
C24259	ECEAL1EK4R7	E. CAPACITOR 25V 4.7U	1	
C24260	ECEAL1CK100	E. CAPACITOR 16V 10U	1	
C24261	ECQV1H823JZ	P. CAPACITOR 50V 0.082U	1	
C24262	ECDF1H101JC	C. CAPACITOR 50V 100P	1	
C24270	ECEAL1HK010	E. CAPACITOR 50V 1U	1	
C24274,75	ECEAL1GN220	E. CAPACITOR 16V 22U	2	
C24276	ECEAL1BN100	E. CAPACITOR 25V 10U	1	
C24281	ECEAL1CU221	E. CAPACITOR 16V 220U	1	
C24282	ECQB1H223JZ	P. CAPACITOR 50V 0.022U	1	
C24283,84	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	2	
C24281,92	ECQV1H102JZ	P. CAPACITOR 50V 1000P	2	
C24293	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C26201	ECEAL1HR47	E. CAPACITOR 50V 0.47U	1	
C26202	ECUMH11032FN	C. CAPACITOR CH 50V 0.01U	1	
C26204	ECEAL1CK101	E. CAPACITOR 16V 100U	1	
C26205-07	VCYD1C104MR1	S. CAPACITOR 16V 0.1U	3	
C26208	ECDF1H1032F	C. CAPACITOR 50V 0.01U	1	
C26401	ECEAL1EU101	E. CAPACITOR 25V 100U	1	
C26402	ECEAL1EK4R7	E. CAPACITOR 25V 4.7U	1	
CT23202	ECV12W30K65	V. CAPACITOR 30P	1	
CT23203	ECV12W20K65	V. CAPACITOR 20P	1	
		DIODES		
D23001,02	MA165	DIODE	2	
D23204,05	MA165	DIODE	2	
D23207	MA4030M	DIODE	1	
D23208	MA165	DIODE	1	
D23211	MA165	DIODE	1	
D23213	MA165	DIODE	1	
D23215-19	MA165	DIODE	5	
D23221,22	MA165	DIODE	2	
D23225	MA165	DIODE	1	
D23601,02	MA165	DIODE	2	
D24001	MA325B	DIODE	1	
D24002-04	MA165	DIODE	3	
D24201-09	MA165	DIODE	9	
D26401	MA4082M	DIODE	1	
D26402	MA4075M	DIODE	1	
		INTEGRATED CIRCUITS		
IC22601	AN6562	IC	1	
IC23201	AN2661NK	IC	1	
IC23202	MS9646-3RS	IC	1	
IC23205	M88323A	IC	1	
IC23208	NY73534PK	IC	1	
IC23209	NJE903L	IC	1	
IC24001	UPD4053BC	IC	1	
IC24002	AN83715	IC	1	
IC24003	NN6625	IC	1	



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks	Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R22517	ERJ6GMJ274	M.RESISTOR CH 1/10W 270K	1		R23339	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1	
R22518	ERJ6GMJ268	M.RESISTOR CH 1/10W 68K	1		R23340	ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R22519	ERJ6GMJ268	M.RESISTOR CH 1/10W 6.8K	1		R23341	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R22520	ERJ6GMJ264	M.RESISTOR CH 1/10W 820K	1		R23342	ERDS2TJ268	C.RESISTOR 1/4W 68	1	
R22621	ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	1		R23343	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R22622	ERJ6GMJ224	M.RESISTOR CH 1/10W 220K	1		R23345	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R22623	ERJ6GMJ394	M.RESISTOR CH 1/10W 390K	1		R23346-50	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	5	
R22624	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1		R23353	ERJ6GMJ221	M.RESISTOR CH 1/10W 220	1	
R22625, 26	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	2		R23354	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R22627	ERJ6GMJ393	M.RESISTOR CH 1/10W 39K	1		R23355, 56	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	2	
R22628	ERJ6GMJ274	M.RESISTOR CH 1/10W 270K	1		R23357	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R22629	ERJ6GMJ273	M.RESISTOR CH 1/10W 27K	1		R23361	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1	
R22630	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1		R23363	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R22631	ERJ6GMJ181	M.RESISTOR CH 1/10W 180	1		R23365	ERDS2TJ220	C.RESISTOR 1/4W 22	1	
R23010	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1		R23366	ERJ6GMJ105	M.RESISTOR CH 1/10W 10K	1	
R23011	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23367	ERJ6GMJ471	M.RESISTOR CH 1/10W 470	1	
R23012	ERJ6GMJ821	M.RESISTOR CH 1/10W 820	1		R23368	ERJ6GMJ183	M.RESISTOR CH 1/10W 18K	1	
R23013	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23369	ERJ6GMJ872	M.RESISTOR CH 1/10W 8.2K	1	
R23014	ERDS2TJ390	C.RESISTOR 1/4W 39	1		R23378	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R23015	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1		R23379	ERJ6GMJ821	M.RESISTOR CH 1/10W 820	1	
R23024	ERJ6GMJ152	M.RESISTOR CH 1/10W 1.5K	1		R23380	ERJ6GMJ122	M.RESISTOR CH 1/10W 1.2K	1	
R23025	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1		R23383, 84	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	2	
R23026	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1		R23385	ERJ6GMJ152	M.RESISTOR CH 1/10W 1.5K	1	
R23028	ERJ6GMJ471	M.RESISTOR CH 1/10W 470	1		R23390	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R23029	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23395	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R23201	ERJ6GMJ223	M.RESISTOR CH 1/10W 22K	1		R23396	ERJ6GMJ682	M.RESISTOR CH 1/10W 6.8K	1	
R23202	ERJ6GMJ123	M.RESISTOR CH 1/10W 12K	1		R23397	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R23203	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1		R23398	ERJ6GMJ681	M.RESISTOR CH 1/10W 680	1	
R23204	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23399	ERJ6GMJ332	M.RESISTOR CH 1/10W 3.3K	1	
R23205	ERJ6GMJ271	M.RESISTOR CH 1/10W 270	1		R23400	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R23206	ERJ6GMJ331	M.RESISTOR CH 1/10W 330	1		R23403	ERJ6GMJ123	M.RESISTOR CH 1/10W 12K	1	
R23207	ERJ6GMJ582	M.RESISTOR CH 1/10W 6.8K	1		R23404	ERJ6GMJ273	M.RESISTOR CH 1/10W 27K	1	
R23208	ERJ6GMJ512	M.RESISTOR CH 1/10W 5.1K	1		R23405	ERJ6GEYJ124	M.RESISTOR CH 1/10W 120K	1	
R23209	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23406	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R23210	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1		R23407	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R23211	ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1		R23408	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R23212	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1		R23409	ERJ6GMJ123	M.RESISTOR CH 1/10W 12K	1	
R23213	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1		R23410	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R23214	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23411	ERJ6GMJ221	M.RESISTOR CH 1/10W 220	1	
R23215	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1		R23412	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R23216	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1		R23413	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	1	
R23220	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1		R23414	ERJ6GMJ122	M.RESISTOR CH 1/10W 1.2K	1	
R23221	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1		R23415	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R23222	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	1		R23416	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R23223	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1		R23417	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R23224	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1		R23421	ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
R23225	ERJ6GEYJ362	M.RESISTOR CH 1/10W 3.6K	1		R23422	ERJ6GMJ3153	M.RESISTOR CH 1/10W 15K	1	
R23227	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1		R23423	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	1	
R23230	ERJ6GMJ332	M.RESISTOR CH 1/10W 3.3K	1		R23424	ERJ6GMJ392	M.RESISTOR CH 1/10W 3.9K	1	
R23231	ERJ6GMJ682	M.RESISTOR CH 1/10W 6.8K	1		R23427	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R23233	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1		R23431	ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	1	
R23234-37	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	4		R23435	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R23238	ERJ6GMJ560	M.RESISTOR CH 1/10W 56	1		R23436	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R23239	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1		R23440	ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R23240	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1		R23441	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R23241	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1		R23442	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R23267	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1		R23443	ERJ6GEYJ105	M.RESISTOR CH 1/10W 10K	1	
R23269	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1		R23444	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R23279	ERJ6GMJ821	M.RESISTOR CH 1/10W 820	1		R23445	ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
R23281	ERJ6GEYJ181	M.RESISTOR CH 1/10W 180	1		R23601	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R23282	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	1		R23602	ERJ6GMJ471	M.RESISTOR CH 1/10W 470	1	
R23283, 84	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	2		R23603	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R23303	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1		R23604	ERJ6GMJ272	M.RESISTOR CH 1/10W 2.7K	1	
R23304	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1		R23605	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R23305	ERJ6GMJ221	M.RESISTOR CH 1/10W 220	1		R23606	ERJ6GMJ272	M.RESISTOR CH 1/10W 2.7K	1	
R23306	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1		R23607	ERJ6GMJ471	M.RESISTOR CH 1/10W 470	1	
R23317	ERJ6GMJ272	M.RESISTOR CH 1/10W 2.7K	1		R23608	ERJ6GMJ331	M.RESISTOR CH 1/10W 330	1	
R23329	ERJ6GMJ392	M.RESISTOR CH 1/10W 3.9K	1		R23609	ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R23330	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1		R23610	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R23331	ERDS2TJ151	C.RESISTOR 1/4W 150	1		R23611	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R23332	ERJ6GMJ272	M.RESISTOR CH 1/10W 2.7K	1		R23612	ERJ6GMJ122	M.RESISTOR CH 1/10W 1.2K	1	
R23333	ERJ6GEYJ432	M.RESISTOR CH 1/10W 4.3K	1		R23613	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1	
R23336	ERJ6GMJ561	M.RESISTOR CH 1/10W 560	1		R23614	ERJ6GMJ272	M.RESISTOR CH 1/10W 2.7K	1	
R23337	ERJ6GMJ471	M.RESISTOR CH 1/10W 470	1		R23615	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R23338	ERDS2TJ102	C.RESISTOR 1/4W 1K	1		R23616	ERJ6GMJ682	M.RESISTOR CH 1/10W 6.8K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R23648	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R24001	ERJ6GMJ121	M.RESISTOR CH 1/10W 120	1	
R24002	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R24003	ERJ6GMJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24004	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R24005	ERJ6GMJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24006	ERJ6GMJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24007	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24008	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R24009	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24010	ERJ6GMJ104	M.RESISTOR CH 1/10W 100K	1	
R24011	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24012	ERJ6GMJ474	M.RESISTOR CH 1/10W 470K	1	
R24013	ERJ6GMJ181	M.RESISTOR CH 1/10W 180	1	
R24014	ERJ6GMJ333	M.RESISTOR CH 1/10W 33K	1	
R24015	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R24016	ERJ6GMJ822	M.RESISTOR CH 1/10W 8.2K	1	
R24017	ERJ6GMJ473	M.RESISTOR CH 1/10W 47K	1	
R24018	ERJ6GMJ393	M.RESISTOR CH 1/10W 39K	1	
R24026	ERJ6GMJ204	M.RESISTOR CH 1/10W 200K	1	
R24027	ERJ6GMJ474	M.RESISTOR CH 1/10W 470K	1	
R24028	ERJ6GMJ204	M.RESISTOR CH 1/10W 200K	1	
R24029	ERJ6GMJ474	M.RESISTOR CH 1/10W 470K	1	
R24031	ERJ6GMJ682	M.RESISTOR CH 1/10W 6.8K	1	
R24041	EROS2CKG1302	M.RESISTOR 1/4W 13K	1	
R24042	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24044	ERJ6GMJ105	M.RESISTOR CH 1/10W 1M	1	
R24045_46	EROS2CKG1302	M.RESISTOR 1/4W 13K	2	
R24047	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24049	ERJ6GMJ105	M.RESISTOR CH 1/10W 1M	1	
R24050	EROS2CKG1302	M.RESISTOR 1/4W 13K	1	
R24051	ERJ6GMJ362	M.RESISTOR CH 1/10W 3.6K	1	
R24052	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R24053	ERJ6GMJ362	M.RESISTOR CH 1/10W 3.6K	1	
R24058	ERJ6GMJ362	M.RESISTOR CH 1/10W 3.6K	1	
R24059	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R24060	ERJ6GMJ362	M.RESISTOR CH 1/10W 3.6K	1	
R24065_66	ERJ6GMJ104	M.RESISTOR CH 1/10W 100K	2	
R24067-71	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	5	
R24072_73	ERJ6GMJ105	M.RESISTOR CH 1/10W 1M	2	
R24074	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R24075	EROS2TJ102	C.RESISTOR 1/4W 1K	1	
R24201	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R24202	ERJ6GMJ273	M.RESISTOR CH 1/10W 27K	1	
R24203	ERJ6GMJ153	M.RESISTOR CH 1/10W 15K	1	
R24204	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24205	ERJ6GMJ821	M.RESISTOR CH 1/10W 820	1	
R24206	ERJ6GEYJ560	M.RESISTOR CH 1/10W 56	1	
R24207	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	1	
R24208_09	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	2	
R24221_22	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	2	
R24223	ERJ6GMJ472	M.RESISTOR CH 1/10W 4.7K	1	
R24224	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R24225_26	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	2	
R24227_28	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	2	
R24229_30	ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	2	
R24231_32	ERJ6GMJ754	M.RESISTOR CH 1/10W 750K	2	
R24233_34	ERJ6GMJ822	M.RESISTOR CH 1/10W 8.2K	2	
R24235_36	ERJ6GMJ154	M.RESISTOR CH 1/10W 150K	2	
R24237	ERJ6GMJ204	M.RESISTOR CH 1/10W 200K	1	
R24240_41	EROS2TJ331	C.RESISTOR 1/4W 330	2	
R24244_45	ERJ6GMJ473	M.RESISTOR CH 1/10W 47K	2	
R24246_47	ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	2	
R24248	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24258	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R24259	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R24260	ERJ6GMJ393	M.RESISTOR CH 1/10W 39K	1	
R24261_62	ERJ6GMJ473	M.RESISTOR CH 1/10W 47K	2	
R24263	ERJ6GMJ182	M.RESISTOR CH 1/10W 1.8K	1	
R24264	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R24265	ERJ6GMJ562	M.RESISTOR CH 1/10W 5.6K	1	
R24286	ERJ6GMJ222	M.RESISTOR CH 1/10W 2.2K	1	
R24287	ERJ6GMJ333	M.RESISTOR CH 1/10W 33K	1	
R24288	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R24291_92	EROS2TJ271	C.RESISTOR 1/4W 270	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R24305	ERJ6GMJ822	M.RESISTOR CH 1/10W 8.2K	1	
R26201	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R26203	ERJ6GMJ101	M.RESISTOR CH 1/10W 100	1	
R26204	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R26206_07	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	2	
R26208	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R26209	ERJ6GMJ102	M.RESISTOR CH 1/10W 1K	1	
R26210	ERJ6GMJ103	M.RESISTOR CH 1/10W 10K	1	
R26212	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R26213-15	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	3	
R26216	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R26221	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R26401	EROS2TJ561	C.RESISTOR 1/4W 560	1	
RX26203	EXB26E473J	RESISTOR-RESISTOR 47K	1	
RX26205	EXB26E473J	RESISTOR-RESISTOR 47K	1	
RX26211_12	EXB25E473J	RESISTOR-RESISTOR 47K	2	
RX26217	EXB24E103J	RESISTOR-RESISTOR 10K	1	
		RELAY		
RY24201	VSY2036	RELAY	1	
		VARIABLE RESISTORS		
VR23202	EVND4A400852	V.RESISTOR 500	1	
VR23206	EVND4A400813	V.RESISTOR 1K	1	
VR24001	EVND4A400824	V.RESISTOR 20K	1	
VR24002	EVND4A400814	V.RESISTOR 10K	1	
VR24003	EVND4A400813	V.RESISTOR 1K	1	
VR24004_05	EVND4A400815	V.RESISTOR 100K	2	
		CRYSTAL OSCILLATORS		
X23301	VSK0205	CRYSTAL OSCILLATOR	1	
X24001	VSK0278	CRYSTAL OSCILLATOR	1	
X26201	EFQGC00044	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VR00068	HINGE CLIP	1	
	VNR2627	C.B.A. ANGLE	1	
	VSC3275	SHIELD SHEET	1	
		SERVO C.B.A.		
	VSP92229A	SERVO C.B.A.		
		CAPACITORS		
C22001	ECEA18R02R2	E.CAPACITOR 50V 2.2U	1	
C22002	ECEA1K470	E.CAPACITOR 6.3V 47U	1	
C22003	ECQF1H1032F	C.CAPACITOR 50V 0.01U	1	
C22004_05	VC0Y1C223MR1	S.CAPACITOR 16V 0.022U	2	
C22051	ECQV1H124JZ	P.CAPACITOR 50V 0.12U	1	
C22052	ECQB1H392JH	P.CAPACITOR 50V 3900P	1	
C22053	ECEA1HK487	E.CAPACITOR 50V 4.7U	1	
C22054	ECQB1H333JH	P.CAPACITOR 50V 0.033U	1	
C22055	ECQB1H152JH	P.CAPACITOR 50V 1500P	1	
C22056	ECQB1H681JZ	P.CAPACITOR 50V 680P	1	
C22057	ECEA0JN220	E.CAPACITOR 6.3V 22U	1	
C22058	ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C22059	ECQB1H222KH	P.CAPACITOR 50V 2200P	1	
C22060	ECQB1H102JH	P.CAPACITOR 50V 1000P	1	
C22061	ECEA1EN3R3	E.CAPACITOR 25V 3.3U	1	
C22062	ECEA18R0K22	E.CAPACITOR 50V 0.22U	1	
C22063_64	ECEA1CR470	E.CAPACITOR 16V 470	2	
C22065	ECCF1H271J	C.CAPACITOR 50V 270P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks	Ref. No.	Part No.	Part Name & Description	Pcs	Remarks	
C22066	ECEA1HGR22	E. CAPACITOR	50V 0.22U	1		P22002	VJF1229T	CONNECTOR (MALE)	2P	1
C22067	ECQB1H681JH	P. CAPACITOR	50V 680P	1		P22003	VJF1143	CONNECTOR (MALE)	5P	1
C22068	ECQB1H472JH	P. CAPACITOR	50V 4700P	1		P22004	VJF1511T	CONNECTOR (MALE)	11P	1
C22069	ECQB1H333JH	P. CAPACITOR	50V 0.033U	1		P22005	VJF1232T	CONNECTOR (MALE)	5P	1
C22071	ECEA1HGR47	E. CAPACITOR	50V 0.47U	1		P22006	VJF1237T	CONNECTOR (MALE)	10P	1
C22072	ECQB1H471JH	P. CAPACITOR	50V 470P	1		P22007	VJF1229T	CONNECTOR (MALE)	2P	1
C22073	ECEA1HGR10	E. CAPACITOR	50V 1U	1		P22008	VJF1229R	CONNECTOR (MALE)	2P	1
C22074	ECEA1HGR10	E. CAPACITOR	50V 1U	1		P22009	VJF1233T	CONNECTOR (MALE)	6P	1
C22075	ECEA1HGR47	E. CAPACITOR	6.3V 47U	1		P22010	VJF1229T	CONNECTOR (MALE)	2P	1
C22076	ECCF1H181J	C. CAPACITOR	50V 180P	1		P22011	VJF1230T	CONNECTOR (MALE)	3P	1
C22077.78	ECQB1H472JH	P. CAPACITOR	50V 4700P	2		P22012	VJF1231T	CONNECTOR (MALE)	4P	1
C22079	ECQB1H123JH	P. CAPACITOR	50V 0.012U	1						
C22080-83	ECEA1HGR47	E. CAPACITOR	6.3V 47U	4		PF22001	VJS2689AD27	CONNECTOR (FEMALE)	27P	1
C22084	ECEA1HGR10	E. CAPACITOR	16V 10U	1				TRANSISTORS		
C22085	ECCF1H151J	C. CAPACITOR	50V 150P	1		Q22001	2SC1740SK	TRANSISTOR		1
C22086	ECQB1H471JH	P. CAPACITOR	50V 470P	1		Q22051	2SA1309	TRANSISTOR		1
C22087	ECEA1HGR47	E. CAPACITOR	6.3V 47U	1		Q22052	2SD2012	TRANSISTOR		1
C22088	ECCF1H271J	C. CAPACITOR	50V 270P	1		Q22053,54	2SB1375	TRANSISTOR		2
C22089	ECQV1H041J	P. CAPACITOR	50V 0.1U	1		Q22055	2SD2012	TRANSISTOR		1
C22090.91	VCVD1C223MR1	S. CAPACITOR	16V 0.022U	2		Q22056	2SK330	TRANSISTOR		1
C22092	ECEA1HGR22	E. CAPACITOR	50V 2.2U	1		Q22057	2SJ164R	TRANSISTOR		1
C22201	ECQB1H103JH	P. CAPACITOR	50V 0.01U	1		Q22301	2SK330	TRANSISTOR		1
C22202	ECEA1HGR22	E. CAPACITOR	50V 2.2U	1		Q22302	2SC3311	TRANSISTOR		1
C22203	ECQB1H333JH	P. CAPACITOR	50V 0.033U	1						
C22204	ECEA1HGR47	E. CAPACITOR	50V 0.47U	1		QR22101	DTA124TSX	TRANSISTOR-RESISTOR		1
C22205.06	ECEA1HGR47	E. CAPACITOR	16V 47U	2		QR22102	DTA144ESX	TRANSISTOR-RESISTOR		1
C22301.02	ECQV1H233J2	P. CAPACITOR	50V 0.082U	2		QR22103	DTC124TSX	TRANSISTOR-RESISTOR		1
C22303-05	ECEA1HGR47	E. CAPACITOR	6.3V 47U	3		QR22104	DTA144ESX	TRANSISTOR-RESISTOR		1
C22306.07	ECQB1H103JH	P. CAPACITOR	50V 0.01U	2		QR22105	DTC144ESX	TRANSISTOR-RESISTOR		1
C22308	ECQB1H272JH	P. CAPACITOR	50V 2700P	1		QR22106	DTC124TSX	TRANSISTOR-RESISTOR		1
C22309	ECEA1HGR47	E. CAPACITOR	50V 0.47U	1		QR22201	DTA124ESX	TRANSISTOR-RESISTOR		1
C22401	ECEA1HGR10	E. CAPACITOR	50V 1U	1		QR22311	DTA124ESX	TRANSISTOR-RESISTOR		1
C22402	ECCF1H1032P	C. CAPACITOR	50V 0.01U	1		QR22401	DTA124ESX	TRANSISTOR-RESISTOR		1
C22403.04	ECEA1HGR47	E. CAPACITOR	6.3V 47U	2		QR22501	DTA124ESX	TRANSISTOR-RESISTOR		1
C22405	ECEA1HGR47	E. CAPACITOR	50V 0.47U	1						
C22406.07	ECEA1HGR47	E. CAPACITOR	16V 47U	2						
		DIODES						RESISTORS		
D22051	MA165	DIODE		1		R22001	ERDS2TJ682	C. RESISTOR	1/4W 6.8K	1
D22052.53	MA4030M	DIODE		2		R22002	ERDS2TJ822	C. RESISTOR	1/4W 8.2K	1
D22054.55	MA29W	DIODE		2		R22003	ERDS2TJ101	C. RESISTOR	1/4W 100	1
D22056.57	MA27	DIODE		2		R22004	ERDS2TJ221	C. RESISTOR	1/4W 220	1
D22058	MA165	DIODE		1		R22005	ERDS2TJ390	C. RESISTOR	1/4W 39	1
D22201.02	MA4030M	DIODE		2		R22051	ERDS2TJ681	C. RESISTOR	1/4W 680	1
D22203-05	MA165	DIODE		3		R22052.53	ERDS2TJ120	C. RESISTOR	1/4W 12	2
D22301-09	MA165	DIODE		9		R22054	ERDS1FJ3R3	C. RESISTOR	1/2W 3.3	1
D22401-07	MA165	DIODE		7		R22055	ERDS2TJ333	C. RESISTOR	1/4W 33K	1
D22408	MA723	DIODE		1		R22056	ERDS2TJ120	C. RESISTOR	1/4W 12	1
D22409.10	MA4062H	DIODE		2		R22057	ERDS1FJ3R3	C. RESISTOR	1/2W 3.3	1
		INTEGRATED CIRCUITS				R22058	ERDS2TJ822	C. RESISTOR	1/4W 8.2K	1
IC22051	AN2870	IC		1		R22059	ERDS2TJ103	C. RESISTOR	1/4W 2.7K	1
IC22052	MN405385	IC		1		R22060.61	ERDS2TJ103	C. RESISTOR	1/4W 10K	2
IC22053	MN405285	IC		1		R22062-69	ERDS2TJ332	C. RESISTOR	1/4W 3.3K	8
IC22054	MS218L	IC		1		R22070.71	ERDS2TJ272	C. RESISTOR	1/4W 2.7K	2
IC22201	MS201L	IC		1		R22072.73	ERDS2TJ332	C. RESISTOR	1/4W 3.3K	2
IC22202	1A8500	IC		1		R22074	EROS2CKG200	M. RESISTOR	1/4W 820	1
IC22301	UFC4072HA	IC		1		R22075	EROS2CKG1202	M. RESISTOR	1/4W 12K	1
IC22302-04	MS218L	IC		3		R22076	EROS2CKG1001	M. RESISTOR	1/4W 1K	1
IC22305	7CAD372DP1	IC		1		R22077	EROS2CKG2702	M. RESISTOR	1/4W 27K	1
IC22306	MN405285	IC		1		R22078	EROS2CKG5602	M. RESISTOR	1/4W 56K	1
IC22401	MS201L	IC		1		R22079	EROS2CKG4701	M. RESISTOR	1/4W 4.7K	1
		COILS				R22080	EROS2CKG8201	M. RESISTOR	1/4W 8.2K	1
L22001-03	VLQEL05F270K	COIL	27UH	3		R22081	EROS2CKG3302	M. RESISTOR	1/4W 33K	1
		CONNECTORS				R22082.83	ERDS2TJ472	C. RESISTOR	1/4W 4.7K	2
						R22084	EROS2CKG2702	M. RESISTOR	1/4W 27K	1
						R22085	EROS2CKG2201	M. RESISTOR	1/4W 2.2K	1
						R22086	EROS2CKG5601	M. RESISTOR	1/4W 5.6K	1
						R22087	EROS2CKG3902	M. RESISTOR	1/4W 39K	1
						R22088-91	EROS2CKG1002	M. RESISTOR	1/4W 10K	4
						R22092	ERDS2TJ563	C. RESISTOR	1/4W 56K	1
						R22093.94	ERDS2TJ103	C. RESISTOR	1/4W 10K	2
						R22095	ERDS2TJ104	C. RESISTOR	1/4W 100K	1

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R22096, 97	ERDS2TJ101	C. RESISTOR 1/4W 10K	2	
R22098	ERDS2TJ223	C. RESISTOR 1/4W 22K	1	
R22099	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R22100	ERDS2TJ154	C. RESISTOR 1/4W 150K	1	
R22101	ERDS2TJ332	C. RESISTOR 1/4W 3.3K	1	
R22102	ERDS2TJ473	C. RESISTOR 1/4W 47K	1	
R22103	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R22104	ERDS2TJ393	C. RESISTOR 1/4W 39K	1	
R22106	ERDS2TJ2702	M. RESISTOR 1/4W 27K	1	
R22107, 08	ERDS2TJ561	C. RESISTOR 1/4W 560	2	
R22109	ERDS2TJ333	C. RESISTOR 1/4W 33K	1	
R22110-13	ERDS2TJ102	C. RESISTOR 1/4W 1K	4	
R22114-17	ERDS2TJ561	C. RESISTOR 1/4W 560	4	
R22118, 19	ERDS2TJ101	C. RESISTOR 1/4W 100	2	
R22120	ERDS2TJ823	C. RESISTOR 1/4W 82K	1	
R22121	ERDS2TJ153	C. RESISTOR 1/4W 15K	1	
R22122	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R22123	ERDS2TJ105	C. RESISTOR 1/4W 1M	1	
R22201, 02	ERDS2TJ563	C. RESISTOR 1/4W 56K	2	
R22203, 04	ERDS2TJ124	C. RESISTOR 1/4W 120K	2	
R22205	ERDS2TJ273	C. RESISTOR 1/4W 27K	1	
R22206	ERDS2TJ474	C. RESISTOR 1/4W 470K	1	
R22207	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R22208	ERDS2TJ473	C. RESISTOR 1/4W 47K	1	
R22209	ERDS2TJ153	C. RESISTOR 1/4W 15K	1	
R22210	ERDS2TJ223	C. RESISTOR 1/4W 22K	1	
R22211	ERDS2TJ123	C. RESISTOR 1/4W 12K	1	
R22212	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R22213	ERDS2TJ123	C. RESISTOR 1/4W 12K	1	
R22214, 15	ERDS2TJ103	C. RESISTOR 1/4W 10K	2	
R22216	ERDS2TJ123	C. RESISTOR 1/4W 12K	1	
R22217	ERDS2TJ472	C. RESISTOR 1/4W 4.7K	1	
R22218	ERDS2TJ2R2	C. RESISTOR 1/4W 2.2	1	
R22219	ERDS1FJ3R3	C. RESISTOR 1/2W 3.3	1	
R22220	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R22301, 02	ERDS2TJ104	C. RESISTOR 1/4W 100K	2	
R22303, 04	ERDS2TJ682	C. RESISTOR 1/4W 6.8K	2	
R22305, 06	ERDS2TJ103	C. RESISTOR 1/4W 10K	2	
R22307, 08	ERDS2TJ682	C. RESISTOR 1/4W 6.8K	2	
R22309, 10	ERDS2TJ104	C. RESISTOR 1/4W 100K	2	
R22311, 12	ERDS2TJ103	C. RESISTOR 1/4W 10K	2	
R22313, 14	ERDS2TJ333	C. RESISTOR 1/4W 33K	2	
R22315	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R22316	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R22317	ERDS2TJ153	C. RESISTOR 1/4W 15K	1	
R22318	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R22319	ERDS2TJ152	C. RESISTOR 1/4W 1.5K	1	
R22320	ERDS2TJ472	C. RESISTOR 1/4W 4.7K	1	
R22321, 22	ERDS2TJ103	C. RESISTOR 1/4W 10K	2	
R22323	ERDS2TJ564	C. RESISTOR 1/4W 560K	1	
R22324	ERDS2TJ121	C. RESISTOR 1/4W 120	1	
R22325	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R22326	ERDS2TJ564	C. RESISTOR 1/4W 560K	1	
R22327	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R22328	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R22329	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R22330	ERDS2TJ564	C. RESISTOR 1/4W 560K	1	
R22331	ERDS2TJ681	C. RESISTOR 1/4W 680	1	
R22332	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R22333	ERDS2TJ153	C. RESISTOR 1/4W 15K	1	
R22334	ERDS2TJ681	C. RESISTOR 1/4W 680	1	
R22335	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R22336	ERDS2TJ153	C. RESISTOR 1/4W 15K	1	
R22337	ERDS2TJ822	C. RESISTOR 1/4W 8.2K	1	
R22338	ERDS2TJ272	C. RESISTOR 1/4W 2.7K	1	
R22339	ERDS2TJ822	C. RESISTOR 1/4W 8.2K	1	
R22340	ERDS2TJ272	C. RESISTOR 1/4W 2.7K	1	
R22341, 42	ERDS2TJ333	C. RESISTOR 1/4W 33K	2	
R22343, 44	ERDS2TJ103	C. RESISTOR 1/4W 10K	2	
R22345	ERDS2TJ183	C. RESISTOR 1/4W 18K	1	
R22346	ERDS2TJ332	C. RESISTOR 1/4W 3.3K	1	
R22347	ERDS2TJ150	C. RESISTOR 1/4W 15	1	
R22401	ERDS2TJ272	C. RESISTOR 1/4W 2.7K	1	
R22402	ERDS2TJ124	C. RESISTOR 1/4W 120K	1	
R22403	ERDS2TJ393	C. RESISTOR 1/4W 39K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R22404, 05	ERDS2TJ333	C. RESISTOR 1/4W 33K	2	
R22406	ERDS2TJ393	C. RESISTOR 1/4W 39K	1	
R22407	ERDS2TJ333	C. RESISTOR 1/4W 33K	1	
R22408-10	ERDS2TJ473	C. RESISTOR 1/4W 47K	3	
R22411	ERDS2TJ101	C. RESISTOR 1/4W 100	1	
R22412	ERDS2TJ224	C. RESISTOR 1/4W 220K	1	
R22413	ERDS2TJ120	C. RESISTOR 1/4W 12	1	
R22414, 15	ERDS2TJ102	C. RESISTOR 1/4W 1K	2	
R22416	ERDS1FJ3R3	C. RESISTOR 1/2W 3.3	1	
R22417	ERDS2TJ183	C. RESISTOR 1/4W 18K	1	
R22501	ERDS2TJ682	C. RESISTOR 1/4W 6.8K	1	
R22502	ERDS2TJ181	C. RESISTOR 1/4W 180	1	
		VARIABLE RESISTORS		
VR22051, 52	EVND4AA00B14	V. RESISTOR	10K	2
VR22053-55	EVND4AA00B23	VARIABLE	2K	3
VR22056	EVND4AA00B53	V. RESISTOR	5K	1
VR22057	EVND4AA00B14	V. RESISTOR	10K	1
VR22058, 59	EVND4AA00B13	V. RESISTOR	1K	2
VR22060-63	EVND4AA00B14	V. RESISTOR	10K	4
VR22301, 02	EVMPAGAO1B14	V. RESISTOR	10K	2
		MISCELLANEOUS		
	VK00116	HINGE		1
	VK01980	WASHER		1
	VEP93101B	TBC C. B. A.		
		CAPACITORS		
C23228	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23241	ECEA1CK100	E. CAPACITOR 16V 10U	1	
C23242	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23243	ECEA1EK47	E. CAPACITOR 25V 4.7U	1	
C23244, 45	ECEA1HR010	E. CAPACITOR 50V 1U	2	
C23246, 47	ECEA1EK47	E. CAPACITOR 25V 4.7U	2	
C23248	ECUM1H270JCN	C. CAPACITOR CH 50V 27P	1	
C23249	ECUM1H910JCV	C. CAPACITOR CH 50V 91P	1	
C23250	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C23251	ECEA1CK220	E. CAPACITOR 16V 22U	1	
C23252	ECEA1HR47	E. CAPACITOR 50V 0.47U	1	
C23253	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23254	ECEA1CK220	E. CAPACITOR 16V 22U	1	
C23255	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23256	ECEA1HR47	E. CAPACITOR 50V 0.47U	1	
C23257	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23258	VCTD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C23259	ECEA1AK470	E. CAPACITOR 10V 47U	1	
C23261	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C23264	ECUM1H681KBN	C. CAPACITOR CH 50V 680P	1	
C23265	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23266	VCTD1C104MR1	S. CAPACITOR 16V 0.1U	1	
C23269	ECUM1H221JN	C. CAPACITOR CH 50V 220P	1	
C23270	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C23272	ECUM1H300KN	C. CAPACITOR CH 50V 30P	1	
C23281	EQQ1H184JZ	P. CAPACITOR 50V 0.18U	1	
C23286	ECUM1H181JCN	C. CAPACITOR CH 50V 180P	1	
C23287	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	1	
C23288	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C23289-91	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	3	
C23292	EQQ1H102JZ	P. CAPACITOR 50V 0.100U	1	
C23293	EQQ1H021JZ	P. CAPACITOR 50V 820P	1	
C23294	EQQ1H1602KZ	P. CAPACITOR 50V 5800P	1	
C23295	ECEA0JK470	E. CAPACITOR 6.3V 47U	1	
C23296, 97	ECUM1H1032FN	C. CAPACITOR CH 50V 0.01U	2	
C23298	ECEA1AK101	E. CAPACITOR 10V 100U	1	



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R23251	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R23252	ERJ6GEYJ183	M. RESISTOR CH 1/10W 18K	1	
R23253	ERJ6GEYJ511	M. RESISTOR CH 1/10W 510	1	
R23254, 95	ERJ6GMYJ821	M. RESISTOR CH 1/10W 820	2	
R23256	ERJ6GEYJ122	M. RESISTOR CH 1/10W 1.2K	1	
R23259	ERJ6GMYJ182	M. RESISTOR CH 1/10W 1.8K	1	
R23260	ERDS2TJ471	C. RESISTOR 1/W 470	1	
R23261	ERJ6GMYJ471	M. RESISTOR CH 1/10W 470	1	
R23262	ERJ6GMYJ223	M. RESISTOR CH 1/10W 22K	1	
R23263	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R23264	ERJ6GEYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R23265	ERJ6GMYJ821	M. RESISTOR CH 1/10W 820	1	
R23270	ERJ6GMYJ472	M. RESISTOR CH 1/10W 4.7K	1	
R23271	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23272, 73	ERJ6GMYJ391	M. RESISTOR CH 1/10W 390	2	
R23274	ERJ6GEYJ681	M. RESISTOR CH 1/10W 680	1	
R23275	ERJ6GEYJ561	M. RESISTOR CH 1/10W 560	1	
R23276	ERJ6GEYJ472	M. RESISTOR CH 1/10W 4.7K	1	
R23277	ERJ6GMYJ392	M. RESISTOR CH 1/10W 3.9K	1	
R23278	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R23280	ERJ6GMYJ471	M. RESISTOR CH 1/10W 470	1	
R23285	ERJ6GMYJ682	M. RESISTOR CH 1/10W 6.8K	1	
R23286	ERJ6GMYJ823	M. RESISTOR CH 1/10W 82K	1	
R23287	ERJ6GMYJ153	M. RESISTOR CH 1/10W 15K	1	
R23288	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R23289	ERJ6GMYJ561	M. RESISTOR CH 1/10W 560	1	
R23290	ERJ6GMYJ103	M. RESISTOR CH 1/10W 10K	1	
R23291, 92	ERJ6GMYJ183	M. RESISTOR CH 1/10W 18K	2	
R23293	ERJ6GMYJ123	M. RESISTOR CH 1/10W 12K	1	
R23294	ERJ6GMYJ474	M. RESISTOR CH 1/10W 470K	1	
R23295	ERJ6GMYJ183	M. RESISTOR CH 1/10W 18K	1	
R23296	ERJ6GMYJ392	M. RESISTOR CH 1/10W 3.9K	1	
R23297	ERJ6GMYJ621	M. RESISTOR CH 1/10W 620	1	
R23298	ERJ6GMYJ223	M. RESISTOR CH 1/10W 22K	1	
R23299	ERJ6GMYJ123	M. RESISTOR CH 1/10W 12K	1	
R23300	ERJ6GMYJ683	M. RESISTOR CH 1/10W 68K	1	
R23302	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23307	ERJ6GEYJ222	M. RESISTOR CH 1/10W 2.2K	1	
R23308	ERJ6GMYJ104	M. RESISTOR CH 1/10W 100K	1	
R23309	ERJ6GMYJ154	M. RESISTOR CH 1/10W 150K	1	
R23310	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23311	ERJ6GMYJ472	M. RESISTOR CH 1/10W 4.7K	1	
R23312	ERJ6GMYJ823	M. RESISTOR CH 1/10W 82K	1	
R23313	ERJ6GMYJ105	M. RESISTOR CH 1/10W 1M	1	
R23314	ERJ6GMYJ391	M. RESISTOR CH 1/10W 390	1	
R23315	ERJ6GMYJ221	M. RESISTOR CH 1/10W 220	1	
R23352	ERJ6GMYJ222	M. RESISTOR CH 1/10W 2.2K	1	
R23364	ERJ6GMYJ223	M. RESISTOR CH 1/10W 22K	1	
R23375	ERJ6GMYJ103	M. RESISTOR CH 1/10W 10K	1	
R23386	ERJ6GMYJ103	M. RESISTOR CH 1/10W 10K	1	
R23401	ERJ6GMYJ563	M. RESISTOR CH 1/10W 56K	1	
R23402	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R23418	ERJ6GEYJ101	M. RESISTOR CH 1/10W 100	1	
R23419	ERJ6GEYJ102	M. RESISTOR CH 1/10W 1K	1	
R23420	ERJ6GEYJ122	M. RESISTOR CH 1/10W 1.2K	1	
R23430	ERJ6GEYJ470	M. RESISTOR CH 1/10W 470	1	
R23432	ERJ6GEYJ561	M. RESISTOR CH 1/10W 560	1	
R23433	ERJ6GEYJ152	M. RESISTOR CH 1/10W 1.5K	1	
R23434	ERJ6GEYJ104	M. RESISTOR CH 1/10W 100K	1	
R23437	ERJ6GEYJ103	M. RESISTOR CH 1/10W 10K	1	
R23438	ERJ6GEYJ105	M. RESISTOR CH 1/10W 1M	1	
R23439	ERJ6GEYJ222	M. RESISTOR CH 1/10W 2.2K	1	
R23630	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23632	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23633	ERJ6GEYJ331	M. RESISTOR CH 1/10W 330	1	
R23634	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23635	ERJ6GMYJ561	M. RESISTOR CH 1/10W 560	1	
R23637	ERJ6GEYJ182	M. RESISTOR CH 1/10W 1.8K	1	
R23638	ERJ6GEYJ821	M. RESISTOR CH 1/10W 820	1	
R23639	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23640	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R23641	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23642, 43	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	2	
R23644	ERJ6GMYJ222	M. RESISTOR CH 1/10W 2.2K	1	
R23649	ERDS2TJ221	C. RESISTOR 1/W 220	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R23649	ERJ6GMYJ122	M. RESISTOR CH 1/10W 1.2K	1	
R23651	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23652	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23653, 54	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	2	
R23655	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23658, 59	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	2	
R23661	ERJ6GMYJ102	M. RESISTOR CH 1/10W 1K	1	
R23662	ERJ6GMYJ152	M. RESISTOR CH 1/10W 1.5K	1	
R23663	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23664	ERJ6GMYJ472	M. RESISTOR CH 1/10W 4.7K	1	
R23665	ERJ6GMYJ561	M. RESISTOR CH 1/10W 560	1	
R23666	ERJ6GMYJ680	M. RESISTOR CH 1/10W 68	1	
R23667	ERJ6GMYJ152	M. RESISTOR CH 1/10W 1.5K	1	
R23668	ERJ6GMYJ222	M. RESISTOR CH 1/10W 2.2K	1	
R23669	ERJ6GMYJ332	M. RESISTOR CH 1/10W 3.3K	1	
R23670	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R23672	ERJ6GMYJ271	M. RESISTOR CH 1/10W 270	1	
R23673	ERJ6GMYJ680	M. RESISTOR CH 1/10W 68	1	
R23674, 75	ERJ6GMYJ103	M. RESISTOR CH 1/10W 10K	2	
R24251	ERJ6GEYJ112	M. RESISTOR CH 1/10W 1.1K	1	
R24252	ERJ6GEYJ391	M. RESISTOR CH 1/10W 390	1	
R24293	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R24294	ERJ6GMYJ104	M. RESISTOR CH 1/10W 100K	1	
R24295	ERJ6GMYJ822	M. RESISTOR CH 1/10W 8.2K	1	
R24296	ERJ6GMYJ104	M. RESISTOR CH 1/10W 100K	1	
R24297	ERJ6GMYJ123	M. RESISTOR CH 1/10W 12K	1	
R24298	ERJ6GMYJ332	M. RESISTOR CH 1/10W 3.3K	1	
R24299	ERJ6GMYJ123	M. RESISTOR CH 1/10W 12K	1	
R24300	ERJ6GMYJ272	M. RESISTOR CH 1/10W 2.7K	1	
R24301, 02	ERJ6GMYJ562	M. RESISTOR CH 1/10W 5.6K	2	
R24303	ERJ6GMYJ563	M. RESISTOR CH 1/10W 56K	1	
R24304	ERJ6GMYJ473	M. RESISTOR CH 1/10W 47K	1	
		VARIABLE RESISTORS		
VR23203	EVND4AA00B14	V. RESISTOR 10K	1	
VR23205	EVND4AA00B14	V. RESISTOR 10K	1	
VR23206	EVND4AA00B32	V. RESISTOR 300	1	
VR23209	EVND4AA00B23	VARIABLE	2K	1
VR23630, 31	EVND4AA00B13	V. RESISTOR 1K	2	
VR23633	EVND4AA00B13	V. RESISTOR 1K	1	
VR23634	EVND4AA00B52	V. RESISTOR 500	1	
		VEP961568	OPERATION (1) C.B.A.	
			CAPACITORS	
C26001	EC6A1KRS100	E. CAPACITOR 50V 10U	1	
C26002	EC6A1CKS470	E. CAPACITOR 16V 47U	1	
C26003	VCYB1C104MR1	S. CAPACITOR 16V 0.1U	1	
C26004	EC6A1CKS470	E. CAPACITOR 16V 47U	1	
C26005	EC6F1H1032F	C. CAPACITOR 50V 0.01U	1	
C26006	VCYB1C104MR1	S. CAPACITOR 16V 0.1U	1	
			DIODES	
D26001-04	MA165	DIODE	4	
			FILTER	
FL26001	VSL0215	FILTER	1	
			INTEGRATED CIRCUIT	



Ref. No.	Part No.	Part Name & Description	PCS	Remarks
IC26001	MN187204V8W5	IC	1	
		CONNECTORS		
P26001	VJP1233T	CONNECTOR (MALE) 6P	1	
P26002	VJP1234T	CONNECTOR (MALE) 7P	1	
P26003	VJP1231T	CONNECTOR (MALE) 4P	1	
P26004	VJP1235T	CONNECTOR (MALE) 8P	1	
P26005	VJP1236T	CONNECTOR (MALE) 9P	1	
		TRANSISTORS		
Q26001-02	2SA9335K	TRANSISTOR	2	
		RESISTORS		
R26002-03	FRDS2TJ102	C. RESISTOR 1/4W 1K	2	
R26004-05	FRDS2TJ151	C. RESISTOR 1/4W 150	2	
R26006-16	FRDS2TJ473	C. RESISTOR 1/4W 47K	11	
RX26001	EXBPBE473J	RESISTOR-RESISTOR 47K	1	
		SWITCHES		
SW26001-06	EVQ05307K	SWITCH	6	
		CRYSTAL OSCILLATOR		
X26001	EF0FC419A4		1	
		MISCELLANEOUS		
	VWX1851	PL SPACER	1	
	VEP96167A	OPERATION (2) C.B.A.		
		CONNECTORS		
P26005	VJS1236T	CONNECTOR (FEMALE)	1	
PJ26005	VJS1260W	CONNECTOR (FEMALE)	1	
		SWITCHES		
SW26007-23	EVQ05307K	SWITCH	17	
		VEP91049C		POWER & SPINDLE C.B.A.
		CAPACITORS		
C21001-02	ECEA1EK470	E. CAPACITOR 25V 2200U	2	
C21003	ECEA1CU332	E. CAPACITOR 18V 3300U	1	
C21004	ECEA1CU471	E. CAPACITOR 15V 470U	1	
C21005-08	ECEA1CU222	E. CAPACITOR 16V 2200U	4	
C21009-10	ECEA1HU102	E. CAPACITOR 50V 1000U	2	
C21011-12	ECEA1EK470	E. CAPACITOR 16V 47U	2	
C21014	ECEA1EK5221	E. CAPACITOR 25V 220U	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C21015-16	ECEA1EK470	E. CAPACITOR 10V 47U	2	
C21018	ECEA1CU221	E. CAPACITOR 16V 220U	1	
C21019-20	ECEA1EK470	E. CAPACITOR 10V 47U	2	
C21022	ECEA1CU221	E. CAPACITOR 16V 220U	1	
C21025	ECEA1EK470	E. CAPACITOR 10V 47U	1	
C21026-27	ECEA1VU101	E. CAPACITOR 35V 1000U	2	
C21028	ECEA1EU101	E. CAPACITOR 25V 1000U	1	
C21029	ECEA1EK470	E. CAPACITOR 25V 4.7U	1	
C21030-32	ECKFH1032F	C. CAPACITOR 50V 0.01U	3	
C21034	ECKFH1032F	C. CAPACITOR 50V 0.01U	1	
C21038	ECEA1CU471	E. CAPACITOR 16V 470U	1	
C21039	ECEA1CU331	E. CAPACITOR 16V 330U	1	
C21040	ECEA1EU221	E. CAPACITOR 25V 220U	1	
C21041	ECQV1H564J2	P. CAPACITOR 50V 0.56U	1	
C21049	ECQMH392JV	P. CAPACITOR 50V 3900P	1	
C22701	ECQB1H472J2	P. CAPACITOR 50V 4700P	1	
C22702	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C22703	ECEA1HU470	E. CAPACITOR 50V 470U	1	
C22704	ECQV1H682K2	P. CAPACITOR 50V 6800P	1	
C22705	ECEA1HU010	E. CAPACITOR 50V 0.1U	1	
C22706	ECEA1HU470	E. CAPACITOR 50V 0.47U	1	
C22707	ECQB1H239K2	P. CAPACITOR 50V 0.022U	1	
C22708	ECQV1F2220	E. CAPACITOR 35V 22U	1	
C22709-11	ECQB1H333K2	P. CAPACITOR 50V 0.033U	3	
C22712	ECQV1H104J2	P. CAPACITOR 50V 0.1U	1	
C22713-15	ECEA1HU1005	E. CAPACITOR 50V 10U	3	
C22716	ECEA1AU470	E. CAPACITOR 10V 47U	1	
C22717	ECQV1H154J2	P. CAPACITOR 50V 0.15U	1	
C22718-19	ECEA1AU470	E. CAPACITOR 10V 47U	2	
C22720	ECQB1H272J2	P. CAPACITOR 50V 2700P	1	
C22721	ECQB1H102J2	P. CAPACITOR 50V 1000P	1	
C22723	ECQB1H103J2	P. CAPACITOR 50V 0.01U	1	
		DIODES		
B21001-02	51WB10	DIODE	2	
B21003-04	52VB10	DIODE	2	
B21005-07	MA165	DIODE	3	
B21008	MA4220L	DIODE	1	
B21009	MA4051H	DIODE	1	
B22701	RU2Z	DIODE	1	
B22702-04	MA165	DIODE	3	
B22705-10	1SR35200A	DIODE	6	
B22711-16	MA165	DIODE	6	
B22716	MA165	DIODE	1	
		INTEGRATED CIRCUITS		
IC21004	AN78M12	IC	1	
IC21006	S13050C	IC	1	
IC22701	AN3890FBS	IC	1	
IC22702	AN6915	IC	1	
IC22703	MS201L	IC	1	
		COIL		
L22701	ELC15E008	COIL	1	
		CONNECTORS		
P21001	VJP1146	CONNECTOR (MALE) 10P	1	
P21002	VJP1233T	CONNECTOR (MALE) 6P	1	
P21003	VJP1239T	CONNECTOR (MALE) 12P	1	
P21003	VJS1239T	CONNECTOR (FEMALE) 12P	1	
P21004	VJP1232T	CONNECTOR (MALE) 5P	1	
P21004	VJS1232T	CONNECTOR (FEMALE) 5P	1	
P21005	VJP1332T	CONNECTOR (MALE) 15P	1	
P21005-06	VJS1932T	CONNECTOR (FEMALE) 15P	2	
P21007	VJP1229T	CONNECTOR (MALE) 2P	1	
P21007	VJS1229T	CONNECTOR (FEMALE) 2P	1	
P21008	VJP1229T	CONNECTOR (MALE) 2P	1	
P21008	VJS1229T	CONNECTOR (FEMALE) 2P	1	







Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	VEP65143A	REMOTE CONTROLLER		
		CAPACITORS		
C1	ECEA0GK5101	E. CAPACITOR 4V 100U	1	
C2, C3	ECKP1H101KB	C. CAPACITOR 50V 100P	2	
C4	ECEALHKS010	E. CAPACITOR 50V 1U	1	
C5	ECEALHKSQ22	E. CAPACITOR 50V 0.22U	1	
		DIODES		
D1	LN66S	LED	1	
D2-D6	PA165	DIODE	5	
		INTEGRATED CIRCUIT		
IC1	LPD6124CA643	IC	1	
		TRANSISTOR-RESISTORS		
QR1	UNB231	TRANSISTOR-RESISTOR	1	
QR2	DTCL14YA	TRANSISTOR RESISTOR	1	
		RESISTORS		
R1	ERPS21J1R0	C. RESISTOR 1/4W 1.0	1	
		CRYSTAL OSCILLATOR		
X1	V5X0179	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VJRO253	ELECTRODE (+)	1	
	VJRO254	ELECTRODE (-)	1	