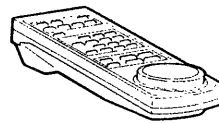
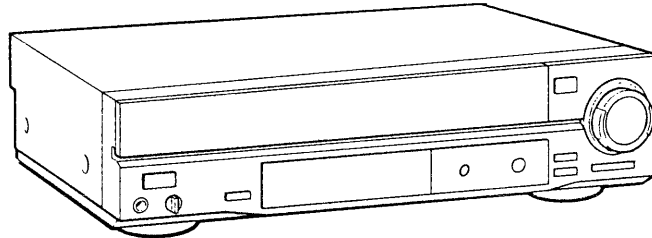


# MDP-1100

## RMT-1000

### SERVICE MANUAL

*US Model  
Canadian Model*



Remote commander RMT-1000 is available as a unit, but individual parts the battery case lid of commander is only available.

#### SPECIFICATIONS

Type  
Signal readout  
Signal format  
Playing time

CD/CDV/LD Player  
Optical (Laser beam reflection)  
EIA standard, NTSC color system  
(minutes)

LD	CAV	30 cm (12 in) double-sided	60
		20 cm (8 in) double-sided	28
		20 cm (8 in) single-sided	14
	CLV	30 cm (12 in) double-sided	120
		20 cm (8 in) double-sided	40
		20 cm (8 in) single-sided	20
CD	12 cm (5 in) single-sided	74	
	8 cm (3 in) single-sided	20	
CDV	Audio portion	20	
	Video portion	5	

#### Digital audio specifications

Frequency response 4 Hz to 20kHz ( $\pm 0.2$  dB)  
Signal-to-noise ratio More than 112 dB (EIAJ\*)  
Dynamic range More than 99 dB (EIAJ)  
Total harmonic distortion 0.002% or less (at 1 kHz, EIAJ)  
Channel separation More than 110 dB (EIAJ)  
Wow and flutter Below measurement limit ( $\pm 0.001\%$  W.PEAK) (EIAJ)

#### Video specifications

Horizontal video resolution 425 lines  
Signal-to-noise ratio More than 48 dB

- Continued on next page -

 CD VIDEO CD/CDV/CD PLAYER  
**SONY®**

### Input/output specifications

Video output	1.0 Vp-p, 75 ohms, unbalanced
S Video output	Luminance signal 1.0 Vp-p, 75 ohms, unbalanced, negative synchronization Chrominance signal 0.286 Vp-p, 75 ohms, unbalanced
Audio output	Stereo L, R Analog: 200 mVrms (1 kHz, 40% modulation) Digital: 200 mVrms (1 kHz, -20 dB) Monaural (only for RFU adaptor) MIX output: 77.5 mVrms (1 kHz, -20 dB)
Audio digital output (optical)	-18 dBm, wavelength 660 nm
Headphone output	28 mW (32 ohms) impedance = 8 ohms
RFU DC output	Mini mini jack DC 5V
BAR CODE jack	MINI-DIN connector (6 pin)

### External control interface

Interface	RS-232C (25-pin D-SUB type)
-----------	--------------------------------

### Power requirements

Power requirements	120 V AC, 60 Hz
Power consumption	40 W
Weight	8 kg (16 lb 12 oz)
Dimensions	Approx. 430 × 115 × 420 mm (w/h/d) (17 × 4 <sup>1</sup> / <sub>2</sub> × 17 inches)
Operating temperature	+5°C to +35°C
Ambient humidity	5 to 90%

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

### Remote Commander RMT-1000

Principle of operation	Infrared pulse
Power requirements	3 V DC (2 size AA batteries)
Dimensions	Approx. 62 × 44.5 × 185 mm (w/h/d) (2 <sup>7</sup> / <sub>16</sub> × 1 <sup>13</sup> / <sub>16</sub> × 7 <sup>3</sup> / <sub>8</sub> inches)
Weight	Approx. 170 g (including batteries), (6 oz)

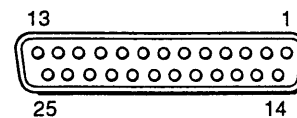
### Supplied accessories

Remote Commander RMT-1000 (1)  
Size AA (R6) batteries (2)  
RFU adaptor RFU-90 UC (1)  
Video connecting cord (phono plug 1 ↔ phono plug 1) (1)  
Audio connecting cord (phono plug 2 ↔ phono plug 2) (1)

Design and specifications are subject to change without notice.

### Signal assignment

#### RS-232C



Pin No.	Signal
1	FG (Frame ground)
2	TxD (Transmit data)
3	RxD (Receive data)
4	RTS (Request to send)
5	CTS (Clear to send)
6	DSR (Data set ready)
7	GND
20	DTR (Data terminal ready)

Each signal conforms to the RS-232C specifications.  
(Output level ON: more than +5V, OFF: less than -5V)

#### Note

Check the RS-232C pin assignment of the external computer to be connected. There is a modem mode and terminal mode for pin assignment. The RS-232C pin assignment for this player is the terminal mode.

**WARNING !!**

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



**CAUTION:**

The use of optical instrument with this product will increase eye hazard.


**CAUTION**

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

**SAFETY-RELATED COMPONENT WARNING!!**

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

**ATTENTION AU COMPOSANT AYANT RAPPORT  
À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

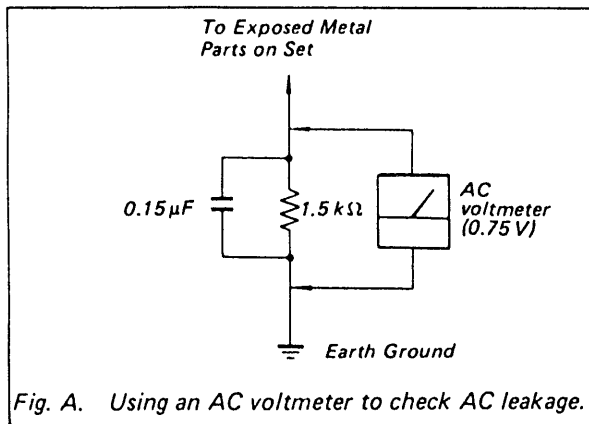


Fig. A. Using an AC voltmeter to check AC leakage.

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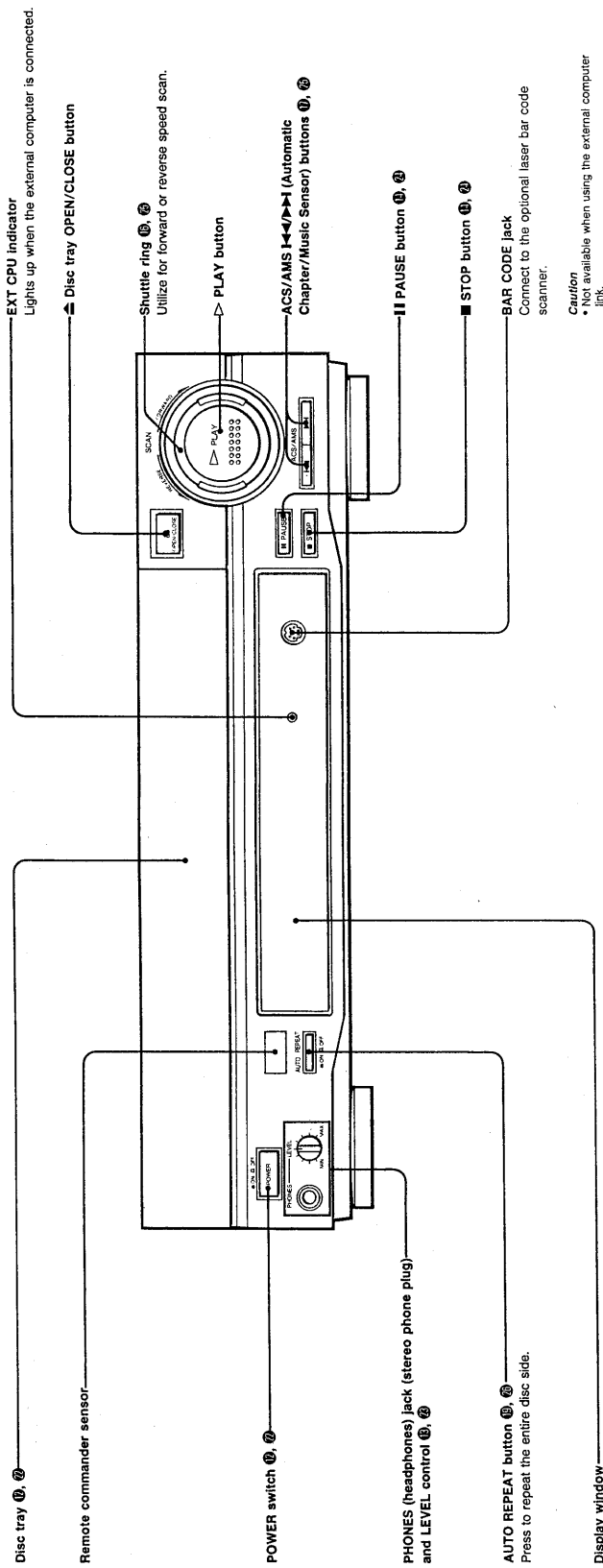
SECTION 1  
GENERAL

This section is extracted from instruction manual.

Location and Function of Controls

Refer to the page indicated in the black circle for details. Continued overleaf

Front Panel



**Caution**

- Not available when using the external computer link.
- You cannot operate the player with the supplied remote commander RMT-1000 when the bar code jack is connected.

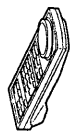
Accessories

The shipping box should contain the following accessories.

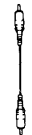
Two size AA (R6) batteries



RMT-1000 Remote Commander  
(You cannot operate the player with the remote commander when the laser bar code scanner is used.)



Video connecting cord (phono 1 ↔ phono 1)



Audio connecting cord (phono 2 ↔ phono 2)



RFU adaptor RFU-90UC (1)

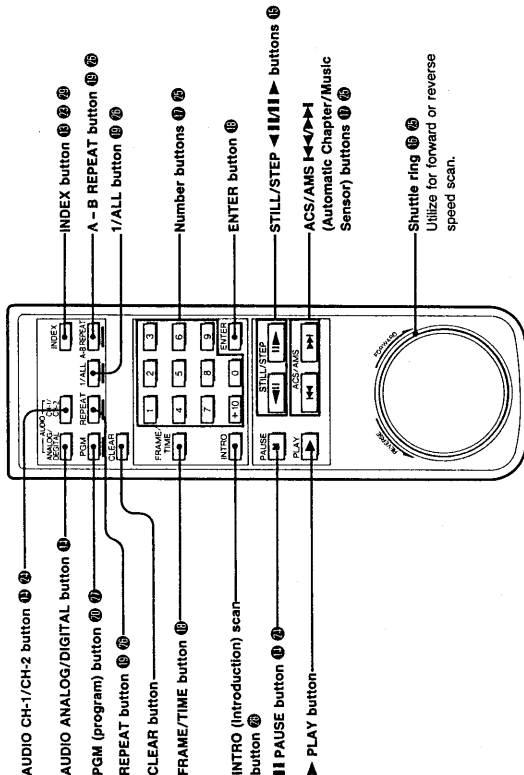


## Location and Function of Controls

Refer to the page indicated in the black circle for details.

### Remote Commander

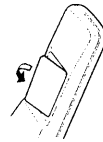
AUDIO ANALOG/DIGITAL, FRAME/TIME, and STILL/STEP buttons are not used CD and CDV disc.



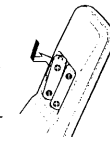
The yellow bar under a button indicates that the function of that button can be released by pressing the CLEAR button.

### Battery Insertion

1 Open the battery compartment cover.



2 Insert the two size AA batteries as shown, being careful to match +/− polarities.



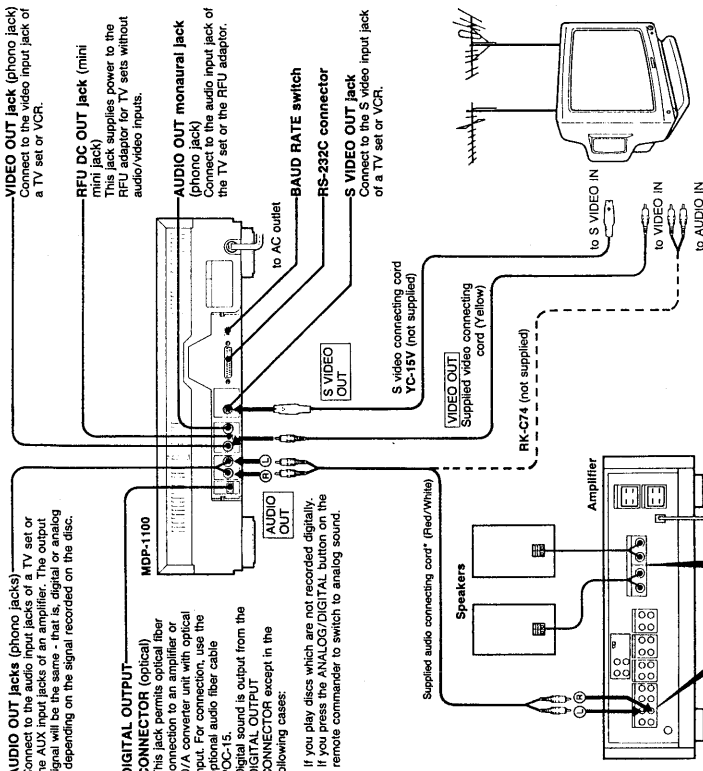
### Battery life

Under normal operations, the batteries will last for approximately six months. If the operating range of the remote commander becomes noticeably short, replace all the batteries with new ones. If the remote commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

## Connections

Video and audio connection cord plug colors are indicated as yellow, white, and red. Make sure that the jacks of the equipment are properly connected to its corresponding colors.

### To connect to Audio System and to TV with Video Inputs



You can connect the player's audio output to the TV instead of an audio system. If the TV set has only a monaural phono jack for audio, use the VMC-720M/730M connecting cord (not supplied).

### Precautions on connecting

- Make sure that all equipment is turned off before connecting or disconnecting.
- Firmly insert the plugs into the jacks. A loose connection can lead to noise.
- When unplugging a cable, grasp the plug. Never pull the cable itself.
- To prevent interference, turn off all equipment connected, but not currently in use.
- Do not touch the audio or video input by moving the equipment further apart.

Connection methods differ. When in doubt, consult the manufacturer's manual.

### Connection of optical fiber cable

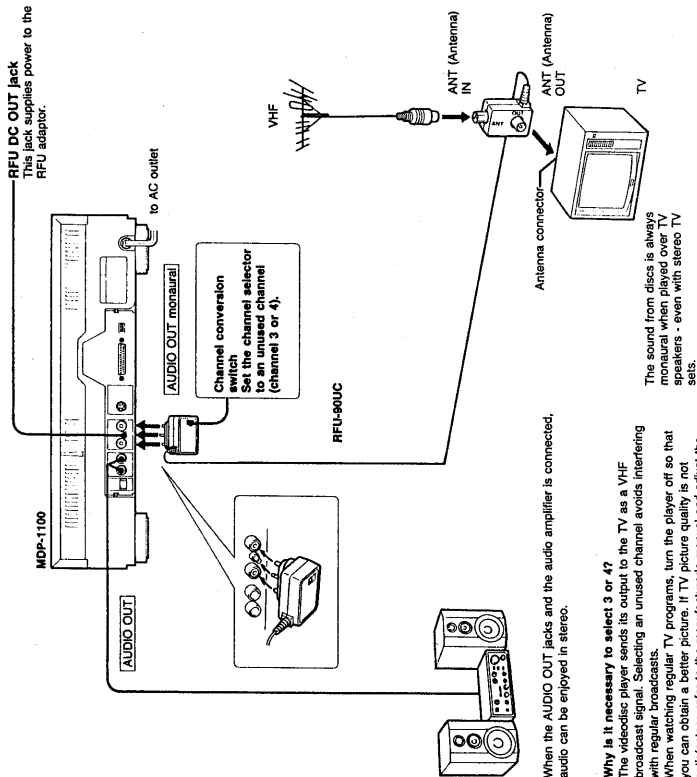
Remove protective cover. Plug in connector firmly.



# Connections

## To Connect to TV without Audio/Video Inputs

For connection, use the RFU adaptor, RFU-90UC.



When the AUDIO OUT jacks and the audio amplifier is connected, audio can be enjoyed in stereo.

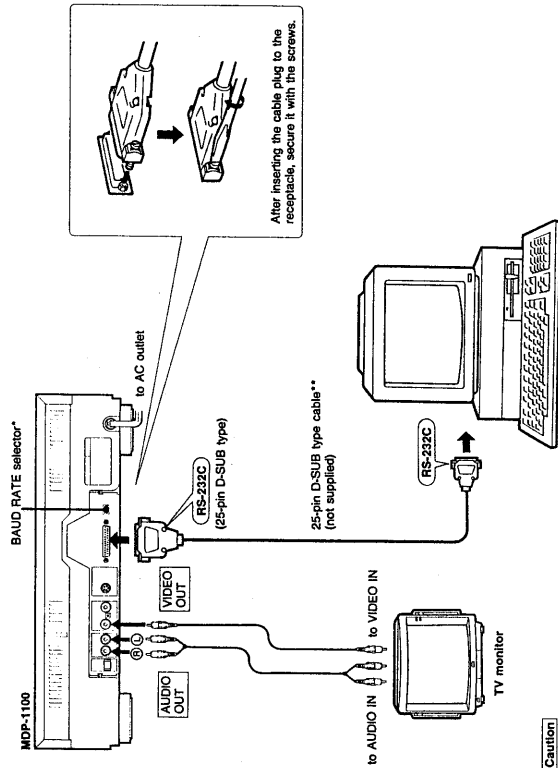
**Why is it necessary to select 3 or 4?**  
The videodisc player sends its output to the TV as a VHF broadcast signal. Selecting an unused channel avoids interfering with regular broadcasts. When watching regular TV programs, turn the player off so that you can obtain a better picture. If TV picture quality is not satisfactory, refer to the manufacturer's manual and adjust the reception.

**To obtain a better picture**  
Always switch off the player when watching a TV program.

**During FM or AM reception**  
Turn off the power of the player to prevent the possibility of noise interference.

## To Connect to External Computer

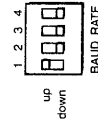
Connect the computer with a standard RS-232C interface to the videodisc player.



**Caution**  
Do not place a monitor on the videodisc player.

**\*Note on the BAUD RATE selector**  
Select the data transmission speed on the RS-232C line. The baud rate can be set to 9600, 4800, 2400, or 1200 baud. Be sure that the speed set on this player is matched to that on the connected computer. The data speed is initially set to 1200 at the factory.

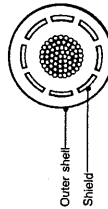
Switch setting		Baud rate			
1	2	3	4		
down	down	down	down	1200	
up	down	down	down	2400	
down	up	down	down	4800	
down	up	up	down	9600	



Set the switches to the desired positions using the tip of a ball-point pen or a similar object.

For details on connection with an external computer, refer to operating manual of the computer, and for operation, refer to the LDM-G1600 interface manual.

**\*\*RS-232C Interface Cable for an External Computer Connection**  
Interface cable to be connected to the I/O connector (RS-232C, 25-pin D SUB type) must be shielded as follows.



About pin assignment, refer page 30.



# To Play an LD

Continued overleaf

**1 Turn on the TV and stereo system.**  
TV: Select the channel used for videodisc playback or the video input (channel 3 or 4). (See p. 4).  
Stereo system:  
Turn on the amplifier or receiver and select the proper audio input (CD) or [AUX].

**2 Turn on the player.**

Main Unit

**3 Open the disc tray.**

Main Unit

**4 Place the disc on the tray.**  
Place the disc on the center of the tray. If the disc is not placed correctly, playback may not start.

Desired side faces up

**5 Start playback.**

Remote Commander

Or push the disc tray compartment, then playback will also begin.

**Notes on disc tray**  
Do not touch a hand or finger in the player while it is operating. Although the tray will stop automatically if an object is inserted while it plays, serious injury may result. Be sure to place the unit out of the reach of your child.  
Insert only one disc at a time. Incorrect placement of two or more discs may lead to malfunction.

**Identical buttons on the main unit can also be used.**

**Using an optional timer**  
To start playback with an optional timer automatically, leave the POWER switch of the disc player in the depressed position. When the timer supplies power at the preset time, the unit turns on and playback begins.

**To pause at the beginning of a disc**  
Press the II button on the player or the remote commander instead of conducting step 5. The tray closes, and the player pauses at the beginning of the disc.

**AV calendar**  
When playing an LD containing TOC (Table of Contents) data, the AV calendar shows information on the total number of selections. A selection is played, its corresponding number on the display disappears.

**To listen with headphones**  
Plug stereo headphones into the PHONES jack and adjust the listening volume with the LEVEL control.

**Displays on playback messages**  
Playback messages stand for the following:

**Screen Messages**  
Information on the operating condition of the unit and chapter numbers can be superimposed on the TV or monitor screen. While no image is displayed, such as during search, information for LD is shown on a blue background.

**To show the on-screen display**

Remote Commander

Press the button again to turn the display off.

Message 1 (see table below)  
Message 2 (see table below)  
Current chapter number  
Current frame number or time information\*  
Chapter numbers during program playback

\* Discs without time data to the second will be indicated as "022".

Message 1	Display	Explanation
	OPEN	Disc tray open
	CLOSE	Disc tray closed
	PLAY	Playback
	STOP	Stop
	PAUSE	Pause
	1/1	Manual search (Forward/reverse speed scan)
	SEARCH	Search

Message 2	Display	Explanation
	SIDE A CAV	Standard-play disc side A
	SIDE B CAV	Standard-play disc side B
	SIDE A CLV	Long-play disc side A
	SIDE B CLV	Long-play disc side B
	1/L	Main soundtrack/left channel
	2/L	Second soundtrack/right channel
	DIGITAL	Digital sound
	ANALOG	Analog sound

**Precaution on LD discs**  
Some discs do not contain the side A or B identification code. In this case, the disc side indication may not be correct.

## To Play an LD

Continued overleaf →

### To Play Frame by Frame - Freeze-frame, STEP playback (CAV standard play)

**To view a still picture - Freeze-frame**  
The screen stops at the current frame.  
PAUSE

**To view a frame one by one - STEP**  
1. Press once for freeze-frame.  
2. Each press shifts the frame backward. Each press shifts one frame forward.  
STILL/STEP  
PLAY  
PAUSE

**To resume normal playback**  
PAUSE  
PLAY

- During freeze-frame or step playback operation There is no sound.
- Extended-play (CLV) discs Speed play, freeze frame and step playback are not possible with CLV discs. When the PAUSE button is pressed, the screen becomes blue and the indication "SIDE A CLV" (or "SIDE B CLV") is shown.

### To stop playback and remove disc

main unit only  
Remove the disc and press the OPEN/CLOSE button to close the empty tray.  
OPEN/CLOSE

### To play a stereo LD or a second audio program (SAP) LD

Press the playback (▶) button, then continue to press the AUDIO CH-1/CH-2 button to display the following information.

Reproduced sound	Indicator lights
Stereo disc	1/L 2/R
SAP disc	
Audio signal channel 1 (left channel)	1/L
Audio signal channel 2 (right channel)	2/R
Stereo	
Left channel	1/L
Right channel	2/R

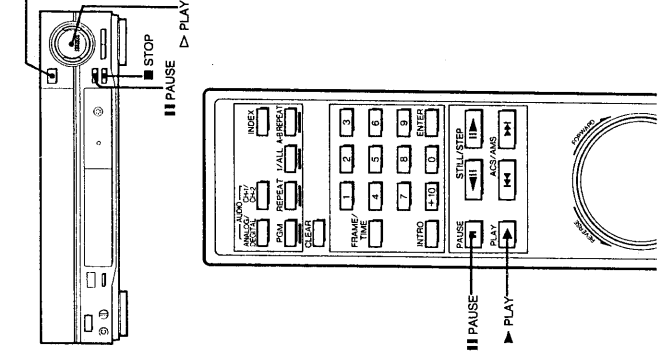
Press the AUDIO CH-1/CH-2 button to toggle between channels.

### To temporarily interrupt playback

PAUSE  
When playing CAV discs, the sound is cut off and a still picture is shown. When playing other discs, the unit enters the pause mode. To resume playback from the same point, press the PAUSE or ▶ button.

### To stop playback

main unit only  
Press the STOP button to restart playback from the beginning of the disc.  
STOP



Identical buttons on the main unit can also be used.

**To switch between digital and analog sound on an LD**  
If the LD contains a digital stereo sound signal, the player automatically sends that to the output jacks. Pressing the ANALOG/DIGITAL button on the remote commander switches to the analog audio signal and turns the DIGITAL SOUND indicator off. Press the ANALOG/DIGITAL button again to return to digital sound output. With certain discs, there may be a difference in volume between the digital and the analog sound.

**Discs with ... Label**  
Discs bearing the ... label are recorded with the ... noise reduction system, which gives lower noise levels and higher dynamic range. The ... indicator lights up automatically.

To Search for a Particular Scene - Dual Speed Clear Scan

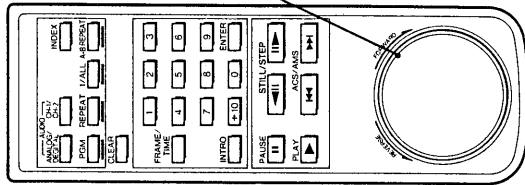
**To forward or reverse speed clear scan**  
The playback speed can be changed depending on the degree of the shuttle ring.

Scan at approx. 10 times speed of normal speed.  
Scan at approx. 30 times speed of normal speed.

To scan in reverse  
To scan forward

Identical speeds are available for reverse speed scan.

Scanning continues until the shuttle ring is released.



- While scanning in either direction**
- There is no sound.
  - Scanning speed varies as the laser beam moves away from the center of the CLV disc. In addition, the image during scanning with a CLV disc will contain some instability.
  - A certain amount of noise is inevitable with all scanning operations.

Searching by Chapter Number - Chapter Search

Chapters are contained in a disc. LDs are divided into sections called chapters. Such discs usually have a list of chapters on the jacket or label.

**Direct chapter search**  
Example: Locate the beginning of chapter 8.  
Press the "g" button.

SEARCH 8  
CHAPTER 8

Searching for chapter 8

Finds Chapter 8, and playback starts.

- If you have pressed the wrong number, simply press the correct one.
- Search can be conducted while in freeze-frame, speed play, and pause condition as well as normal playback. When the desired chapter appears after search, playback will continue in the same mode.

**Skip chapter search**

Press the <<< button once to return to the beginning of the current chapter.  
Press the <<< button twice - before the picture reappears - to return to the beginning of the previous chapter.  
Press the >>> button to advance to the beginning of the next chapter.

ACS/ANS

Example: Current chapter = 12

Press the <<< button once.

CHAPTER 12

Beginning of chapter 12

Press the >>> button once.

CHAPTER 13

Beginning of chapter 13

**To check the current chapter and frame/time numbers**  
These numbers appear in the display window on the player. Or to display them on the screen, press the INDEX button on the remote commander.

To enter a number greater than 10

Use the +10 and 0 buttons.  
Examples: 10: +10 0  
14: +10 4  
20: +10 +10 0

**If the +10 button is pressed by mistake**  
Press the CLEAR button, then press +10 and other buttons for desired number.

**Notes**

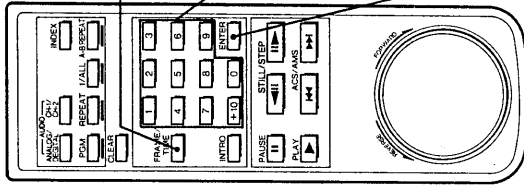
- The chapter search feature will not function if the disc does not include chapter numbers. In this case, the screen message will give only frame or time numbers.
- As for a disc with TOC (see p.10), if a chapter number not included in the disc is entered, the entry will be ignored.
- In the case of a disc without TOC, a chapter number not included in the disc is entered, the last picture will be displayed and the player will stop.
- If the REPEAT function is pressed (see p. 10), playback will resume from the beginning of the disc.
- If the REPEAT function is not on, press >>> to resume playback.

## To Play an LD

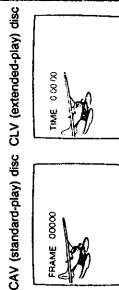
### Searching by Frame Number/Time - Frame/Time Search

For CAV (standard-play) discs only (Frame search)  
Enter the frame number to search for a particular scene.  
• Each picture on a standard-play disc is called as a frame.

For CLV (extended-play) discs only (Time search)  
Enter the time to search for a particular scene.  
• Extended-play discs keep track of positions as elapsed time from the beginning of the disc.



#### 1 Press the FRAME/TIME button.



#### 2 Enter the desired frame or time numerals.

• CAV (standard-play) disc  
Example: To locate frame number 12340.  
Press the number buttons in the following order.  
[1] → [2] → [3] → [4] → [0]  
• CLV (extended-play) disc  
Example: To locate the 12 min 05 sec point.  
Press the number buttons in the following order.  
[1] → [2] → [0] → [5]  
**If you make a mistake**  
Press the FRAME/TIME button once more to return the display indication to zero, and then enter the correct numbers as follows.  
For CAV - five digits  
For CLV with seconds - four digits  
For CLV without seconds - two digits

#### 3 Press the ENTER button.

ENTER  
Playback starts at the specified number in step 2.

Search can be conducted while in freeze-frame, speed play, and pause condition as well as normal playback. When the desired frame or time appears after search, playback will continue in the same mode.

**Notes**

- If a frame/time numbers not contained on a disc is entered, the playback stops. If the REPEAT button is pressed and REPEAT is shown in the display window (see p. 8), playback will resume from the beginning of the disc.
- Discs that include seconds-unit time data, enter the time in minutes only.

**To cancel frame/time search**  
Before pressing the ENTER button, press the CLEAR button. After pressing the ENTER button, press the INDEX button on the main unit.

**To check the current frame/time numbers**  
These numbers appear in the display window on the player. Or, to display them on the screen, press the INDEX button on the remote commander.

## Continued Overleaf

### To Play Repeatedly - Repeat Playback

**To repeat the entire side of the disc**

Remote Commander: REPEAT  
Main unit: AUTO REPEAT

Current chapter/track: C-1 000 PLAY → CHAPTER → REPEAT → C-1 000 PLAY

When the player reaches the end of the side, it automatically repeats the side.

(Shown on the screen when INDEX button is pressed) REPEAT lights up in the player's display window.

**To repeat the current chapter**

Current chapter: C-1 000 PLAY → CHAPTER → REPEAT → C-1 000 PLAY

When the player reaches the end of the current chapter, it automatically repeats that chapter.

(Shown on the screen when INDEX button is pressed) SINGLE REPEAT lights up in the player's display window.

**To repeat a specific section of a disc**

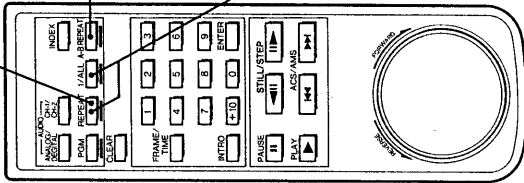
At the beginning of desired section: A-B REPEAT → C-1 000 PLAY

(Shown on the screen when INDEX button is pressed) A-B lights up in the player's display window.

At the end of desired section: A-B REPEAT → SEARCH → C-1 000 PLAY

Start of A-B repeat section: A-B REPEAT → SEARCH → C-1 000 PLAY

Unit returns to the beginning of specified section and repeats playback.



**To cancel A - B repeat**  
Press the CLEAR button.

**To cancel repeat functions other than A - B**  
Press the REPEAT button again to cancel the REPEAT indication in the display window. (The same button that was used to activate repeat AUTO REPEAT either from the main unit or the remote commander - must be pressed to cancel the repeat function.)

**To check the current status**  
Check the indicators in the display window on the player. Or to display them on the screen, press the INDEX button on the remote commander.  
**AUTO REPEAT button on the unit**  
Press to repeat the entire disc side.

# To Play an LD

## To Play Only Certain Chapters - Program Playback

Example: To play LD chapters 5, 4, 2, 6 - in that order.

**1 Press the PGM button.**

PGM indication lights in the player's display window.

**2 Press the number buttons 5 4 2 6.**

For LDs containing TOC (Table of Contents) data, the total playback time of programmed chapters is shown.

**If you make a mistake**  
Press the CLEAR and PGM button and enter the correct number.

**To enter chapter numbers over 10**  
Use the +10 and 0 buttons.  
Examples: To enter 10: [+10] 0  
To enter 14: [+10] 4  
To enter 20: [+10] [+10] 0

**If the +10 button is pressed by mistake**  
Press the CLEAR button, then press +10 and other buttons for desired number.

**3 Press the PLAY button.**

SEARCH  
CHAPTER 5  
PROGRAM

PLAY

2019 PLAY  
C-5  
PROGRAM

(Shown on the screen when the INDEX button is pressed) Playback starts from the beginning of chapter 5.

Searching for the first programmed chapter

After playing all programmed chapters 5, 4, 2, 6, in order, playback stops.

**To release or cancel program playback**  
Press the CLEAR button or the 1/ALL button. The unit resumes normal playback.

**To repeat program playback**  
Press the REPEAT button, then the REPEAT is displayed.

**To move to a preceding or following programmed chapter**  
Press the <<< or >>> button.

**To check the program contents during program playback**  
Press the PGM button. The program is displayed for about 3 seconds. The currently playing program number will flash.

**Cautions**

- When the shuttle ring is kept turned to the forward direction during program playback and the playback comes to the end of the current selection, the next programmed chapter will be played back. When the shuttle ring is kept turned to the reverse direction, the unit will not go back to previous chapters. If you want to move a preceding programmed chapter, keep <<< button pressed until the desired programmed number comes up.
- If not existing chapter numbers on a disc are entered, the program cannot be conducted.
- Programmed contents are stored until the disc is removed or the power is switched off.

**LD with TOC data**  
When you program for an LD with TOC data, the following display is shown.  
Example: 5, 4, 2, 6 are entered.

Currently playing chapter

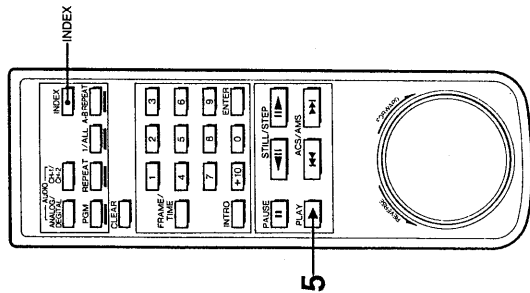
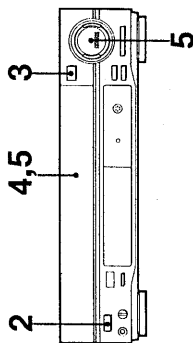
Total playback time of all programmed chapters

Order in which the currently playing chapter is programmed

If the chapter number 0 or chapter numbers higher than 21 are entered, or if the total playback time exceeds 100 minutes, the total playback time will not be shown.

# To Play a CD

Continued overleaf



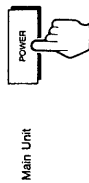
**Notes on disc tray**  
Do not insert a hand or finger in the player while it is operating. The player will stop automatically if an object is inserted while in play, serious injury may result. Be sure to place the unit out of the reach of your child.  
Insert only one disc at a time. Incorrect placement of two or more discs may lead to malfunction.

Identical buttons on the main unit can also be used.

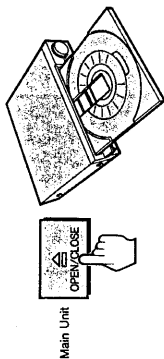
## 1 Turn on the stereo system.

Turn on the amplifier or receiver and select [CD] or the desired audio input.

## 2 Turn on the player.

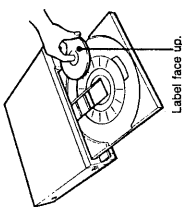


## 3 Open the disc tray.

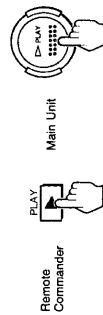


## 4 Place the disc on the tray.

Place the disc on the center of the tray. If the disc is not placed correctly, playback may not start.



## 5 Start playback.

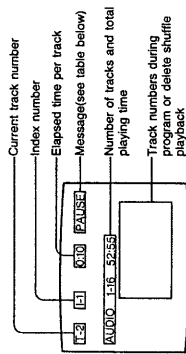
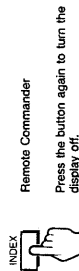


Or push the disc tray compartment, then playback will also begin.

## Screen Messages

Information on the operating condition of the unit and track numbers can be superimposed on the TV or monitor screen. Information for CD is shown on a green background.

### To call up the on-screen display



### Message (Examples)

Message	Display	Explanation
OPEN	Disc tray open	
CLOSE	Disc tray closed	
PLAY	Play	
STOP	Stop	
PAUSE	Pause	
SEARCH	Manual search (Forward/reverse speed scan)	

**Using an optional timer**  
To start playback with an optional timer automatically, leave the POWER switch of the disc player in the depressed position. When the timer supplies power at the preset time, the unit turns on and playback begins.

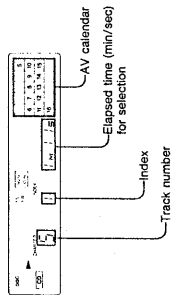
**To pause at the beginning of a disc**  
Press the II button on the player or the remote commander. The tray closes, and the player pauses at the beginning of the disc.

**AV calendar**  
When playing a CD, the AV calendar shows information on the total number of selections. As selections are played, the corresponding numbers on the display disappear.

**When listening with headphones**  
Plug stereo headphones into the PHONES jack and adjust the listening volume with the LEVEL control.

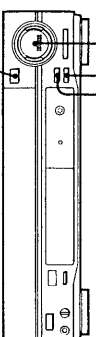
## Playback display

Playback messages stand for the following:



**To stop playback and remove disc**

Remove the disc and press the OPEN/CLOSE button again to close the tray.



**To play a stereo CD or a second audio program (SAP) CD**


After playback has started. Each time the AUDIO CH-1/CH-2 button is pressed, the mode changes in the following order.

Reproduced sound	Indicator lights
Stereo disc	1/L 2/R
Audio signal 1 (left channel)	1/L
Audio signal 2 (right channel)	2/R

Press **CH-1/CH-2** button to toggle between channels.


**To temporarily interrupt playback**

To resume play from the same point, press the **PAUSE** or **PLAY** button.

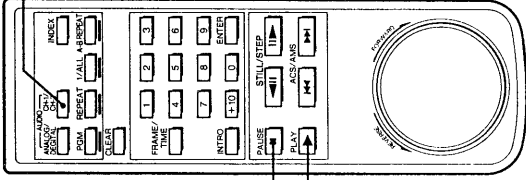


**To stop playback**

To restart playback from the beginning of the disc, press the **STOP** button.



Identical buttons on the main unit can also be used.



**To Search for a Particular Selection - Search**

**To search by track number**

Enter the track number.

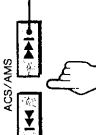
To play a single track once

- Press the 1/ALL button on the remote commander to display the SINGLE display.
- Then select the track with the number buttons. When the track has been played, the unit enters the stop mode. To release the setting, press the 1/ALL button again.

If you press the wrong numbers, simply press the correct ones.

**To skip selections**

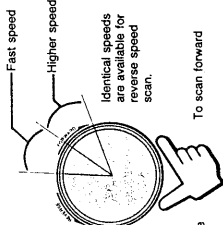
Press once to return to the beginning of the current selection. Press again to return to the previous selection.



Press to advance to the next selection.

**To search for a particular point - Dual Speed Scan**

The playback speed can be changed depending on the degree of the shuttle ring.



Identical speeds are available for reverse speed scan.

To scan in reverse

To scan forward

Scanning continues until the shuttle ring is released.

**To enter track numbers over 10**

Use the +10 and 0 buttons.

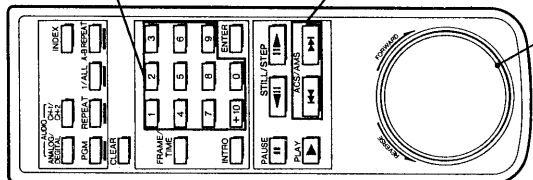
Examples: To enter 10: **+10** **0**

To enter 14: **+10** **+** **4**

To enter 20: **+10** **+** **10** **0**

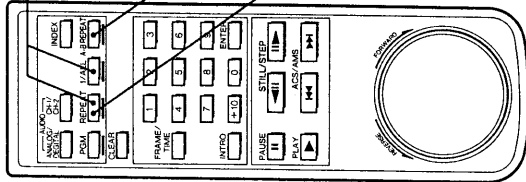
**If the +10 button is pressed by mistake**

Press the CLEAR button, then press +10 and other buttons for desired number.

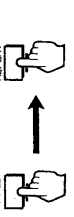


## To Play a CD

### To Play Repeatedly - Repeat Playback

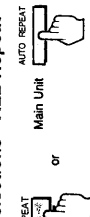


**To repeat the current selection - SINGLE Repeat**



Current selection (track) is continuously repeated. Deactivate REPEAT display to playback a selection only once.

**To repeat all selections - ALL Repeat**



The entire disc is continuously repeated.

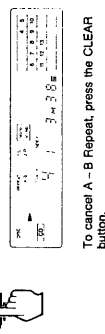
**To repeat a specific section of a disc - A - B Repeat**

At the beginning of desired section



At the end of desired section

Flashing of A - B indicator stops and the specified section is continuously repeated.

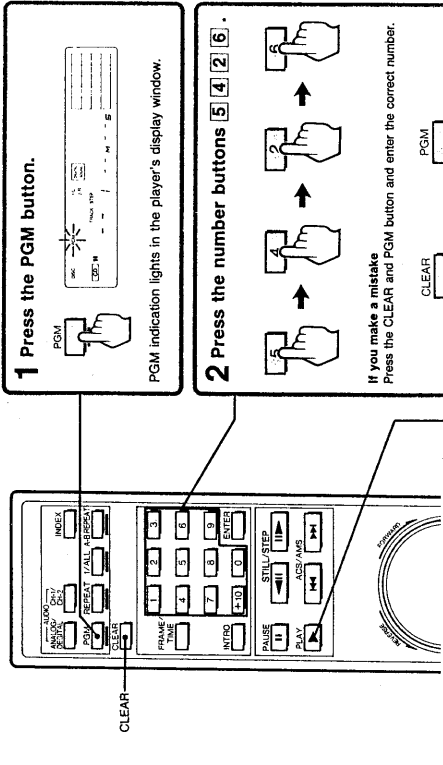


To cancel A - B Repeat, press the CLEAR button.

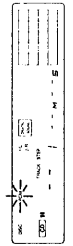
**To cancel ALL or SINGLE Repeat**  
Press the REPEAT button that was used to activate repeat either from the main unit or the remote commander - again.  
**AUTO REPEAT button on the unit**  
Press to repeat the entire disc side.

### To Play Only Certain Selections - Program Playback

Example: To play CD tracks 5, 4, 2, 6 - in that order.

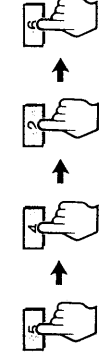


**1 Press the PGM button.**

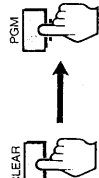


PGM indication lights in the player's display window.

**2 Press the number buttons 5 4 2 6.**



**If you make a mistake**  
Press the CLEAR and PGM button and enter the correct number.



**To enter track numbers over 10**  
Use the +10 and 0 buttons.

Examples: To enter 10: +10 0  
To enter 20: +10 +10 0

**If the +10 button is pressed by mistake**  
Press CLEAR button, then press +10 and other buttons for desired number.

**3 Press the > button.**



After searching and playing all programmed selections 5, 4, 2, 6, in order, playback stops.

**Program playing time**  
The total playing time of the program is displayed only when tracks with numbers under 20 are programmed.

**Notes**

- When the shuttle ring is kept turned to the forward direction during program playback and the playback comes to the end of the current selection the next programmed track will be played back. When the shuttle ring is kept turned to the reverse direction, the unit will not go back to previous tracks.
- If not existing track numbers on a disc are entered, the program may not be conducted.

**To release or cancel program playback**  
Press the CLEAR button or the 1/ALL button. The unit resumes normal playback.

**To check track and time information on the screen**  
Turn on the power of the TV or monitor. Time and track for the CD/CDV will be turn on the screen.

**To repeat program playback**  
Use the REPEAT button to turn the REPEAT display on.

**AUTO REPEAT repeat button on the unit**  
Press to repeat the entire disc side.

**During program playback**  
The numbers on the AV calendar display disappears as selections are played. The contents of a program are stored until the disc is removed or the player is turned off.

**To move to a preceding programmed track**  
Press the <<< button.

**To move to a following programmed track**  
Press the >>> button.



# LD/CD/CDV

## To Playback an Introduction of Each Chapter/Track - INTRO Scan

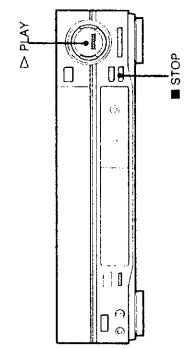
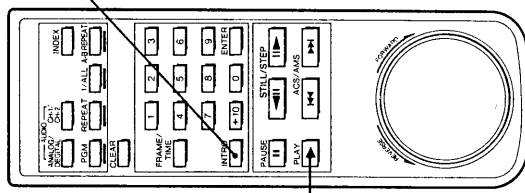
The **INTRO** scan plays back only the beginning (introduction) of each chapter/track on a disc for approximately 8 seconds. The **INTRO** scan will also play back the scenes of the video chapter for LD and CDV.

**LD** Chapter 1 → 8-second playback → Chapter 2 → 8-second playback → Chapter 3 → 8-second playback

**CD/CDV** Track 1 → 8-second playback → Track 2 → 8-second playback → Track 3 → 8-second playback

After the playback of the last chapter, the player will be paused.

After the playback of the last track, the player will be paused.



## To Play a CDV

The Compact Disc Video (CDV) format divides a CD into two sections. One section consists of 20 minutes of digital audio playable on any CD player. The other section which consists of 5 minutes of video and digital audio, requires a CDV player. Note the following when playing a CDV.

- Time search is not applicable for CDV.
- CDVs are divided into track numbers which are assigned to each selection for the audio and video portion. The track of the video portion corresponds to the chapter of the LD.

**To play**  
Press the **▶** PLAY button. Playback will begin from the video portion. After the completion of the video portion, the audio portion will be played back. To play back from the audio portion, search by entering the desired track number (see p. 6).

## Screen Messages

Information on the operating condition of the unit and chapter or track numbers can be superimposed on the screen. During audio portion playback, information for CDV is shown on a blue background.

**To call up the on-screen display**

Remote Commander  
To turn the display off, press the INDEX button again.

**Message**

Display	Explanation
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playback
STOP	Stop
PAUSE	Pause
⏪ / ⏩	Manual search (Forward/reverse speed scan)
SEARCH	Search

(Examples)

## To resume normal playback

After the playback of the last chapter, the player will be paused.

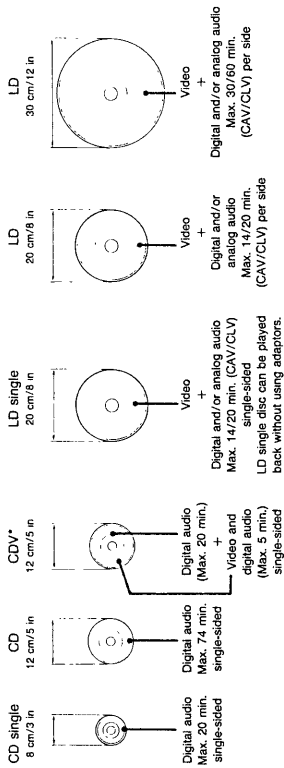
After the playback of the last track, the player will be paused.

**To resume normal playback, press the ▶ button. During search, the player will resume from the selected track when the ▶ button is pressed.**

**To resume normal playback, press the ■ button to stop.**

# Features

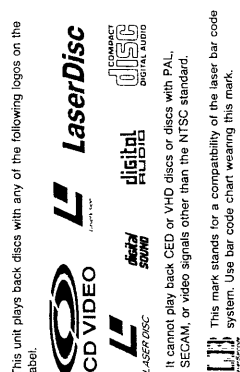
This CD/CDV/LD Player can play all six types of optical discs currently available for home entertainment use:



The following functions are available with this unit.  
For the CDV disc, CD functions can be used on the video portion.

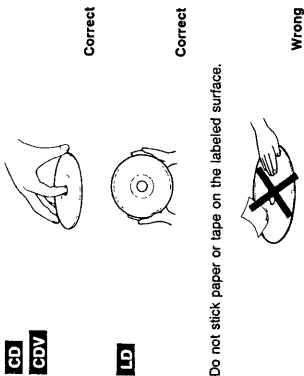
- LD/CD/CDV**
- Program play**  
Play back chapters or tracks in any desired order.
- Auto disc protection**  
Prevents damage to the disc during stop.
- AV calendar display**  
Shows the number of tracks (up to 20) on a disc and the total playing time at a glance.
- INTRO scan**  
Play only the beginning (introduction) of the chapters or tracks on a disc in order.

- CDV**
  - Video portion**  
All LD (CLV) functions are available.
  - Audio portion**  
All CD functions are available.
- CD**  
CD also can be controlled via external computer through RS-232C.
  - The Compact Disc Video (CDV) format divides a CD into two sections. One is 20 minutes of digital audio playable on any CD player. The other, 5 minutes of video and digital audio, requires a CDV player.



# Notes on Handling Discs

Handle the disc by its edges, and to keep the disc clean, do not touch the rainbow colored surface.



Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight where there can be a considerable rise in the temperature.

Before playing, clean the disc with the cleaning cloth. Wipe the disc from the center out.



Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray intended for analog record discs.

After playing, remove the disc and store it in its case.

Do not use the discs with being cracked, severely damaged on the disc repaired with adhesives.

# Glossary

**CAV disc**  
The Constant Angular Velocity (CAV) or standard-play disc rotates at a constant 1800 rpm. Each track or the path traced by the laser for a single rotation of the disc produces a single frame. Each side of the disc holds up to 54,000 frames, the equivalent of 30 minutes of playback. Each frame has a number that is stored with the data on the disc.

**CLV disc**  
The Constant Linear Velocity (CLV) or extended-play disc doubles the maximum playing time to 60 minutes by varying the rotational speed from a maximum of 1800 rpm to a minimum of 600 rpm as the laser beam moves away from the center of the disc. The disc surface therefore moves past the laser head at a constant rate, and each track is longer than its predecessor.

**Digital sound disc**  
Some LDs include a high-quality digital audio signal as well as a more conventional analog signal. This unit reproduces both signals with priority placed on the digital audio signal.

**Chapter number**  
Some discs are divided into sections, called chapters. Such discs usually have a list of chapters on the jacket or label. Each chapter is numbered for easy location with the chapter search function, or for use with the repeat and program functions.

**Frame number**  
The frames on standard-play (CAV) discs are sequentially numbered for rapid access with the frame search function.

**Time number**  
Extended-play (CLV) discs calculate position in terms of playing time from the start of the disc. The time search function provides rapid access to desired scenes.

**Track number**  
CD and CDV discs assign track numbers to each selection. Rapid access to desired tracks is possible with the track search function. Track numbers are also used with repeat and program functions.

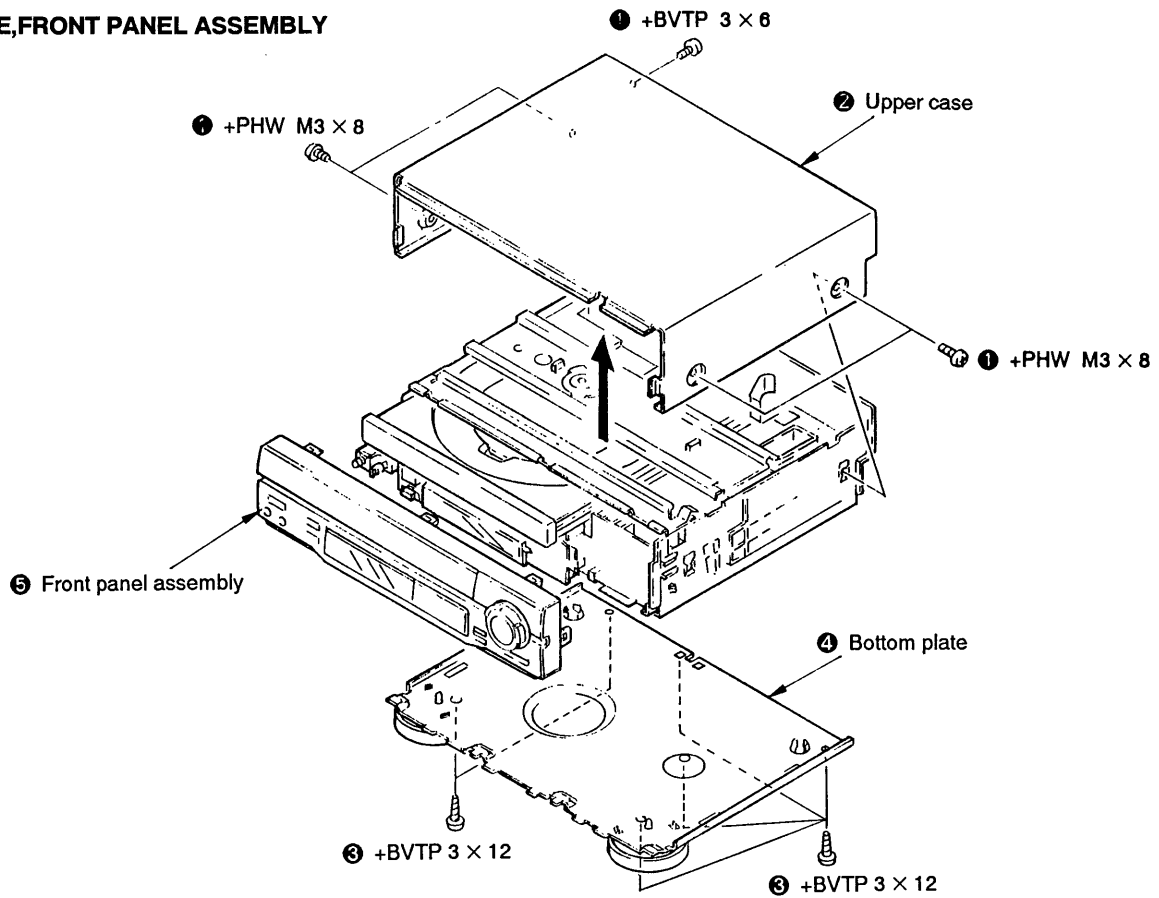
**LD with TOC (Table of Contents)**  
Among various LD software, there are discs with TOC (Table of Contents) signals recorded. When playing back LDs with TOC signals, the additional features given below can be enjoyed.

- Playback time display for one chapter (CAV, CLV)
- Time display for CAV disc
- AV calendar display

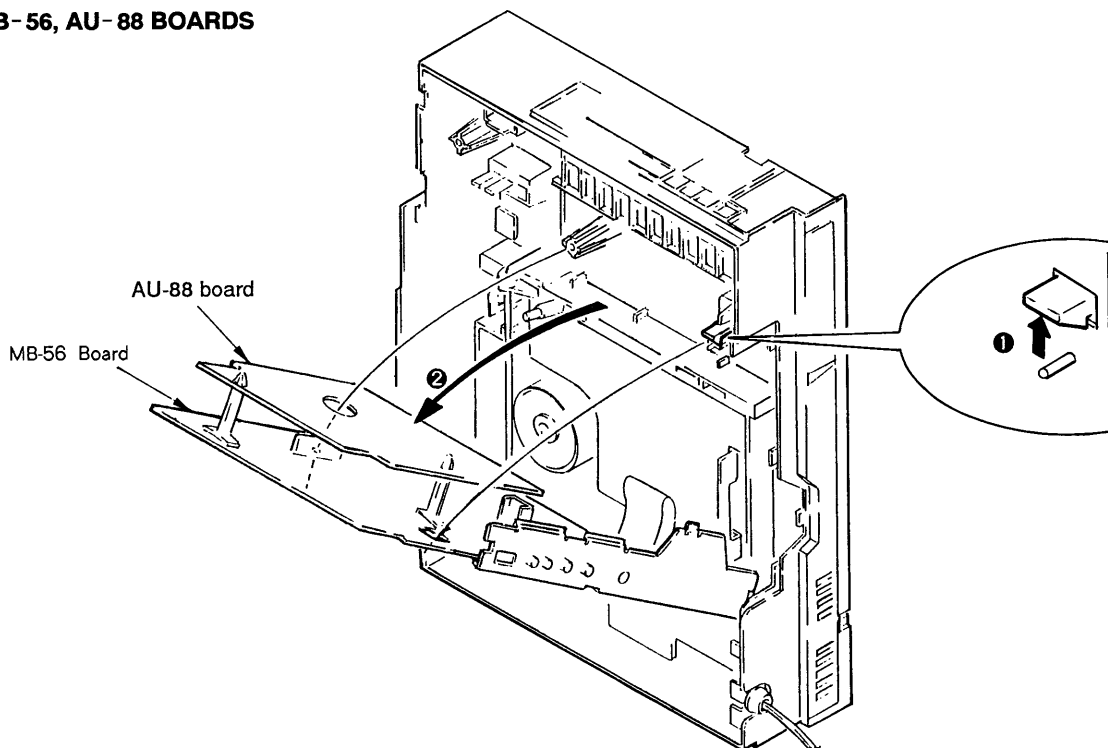
**SECTION 2  
DISASSEMBLY**

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

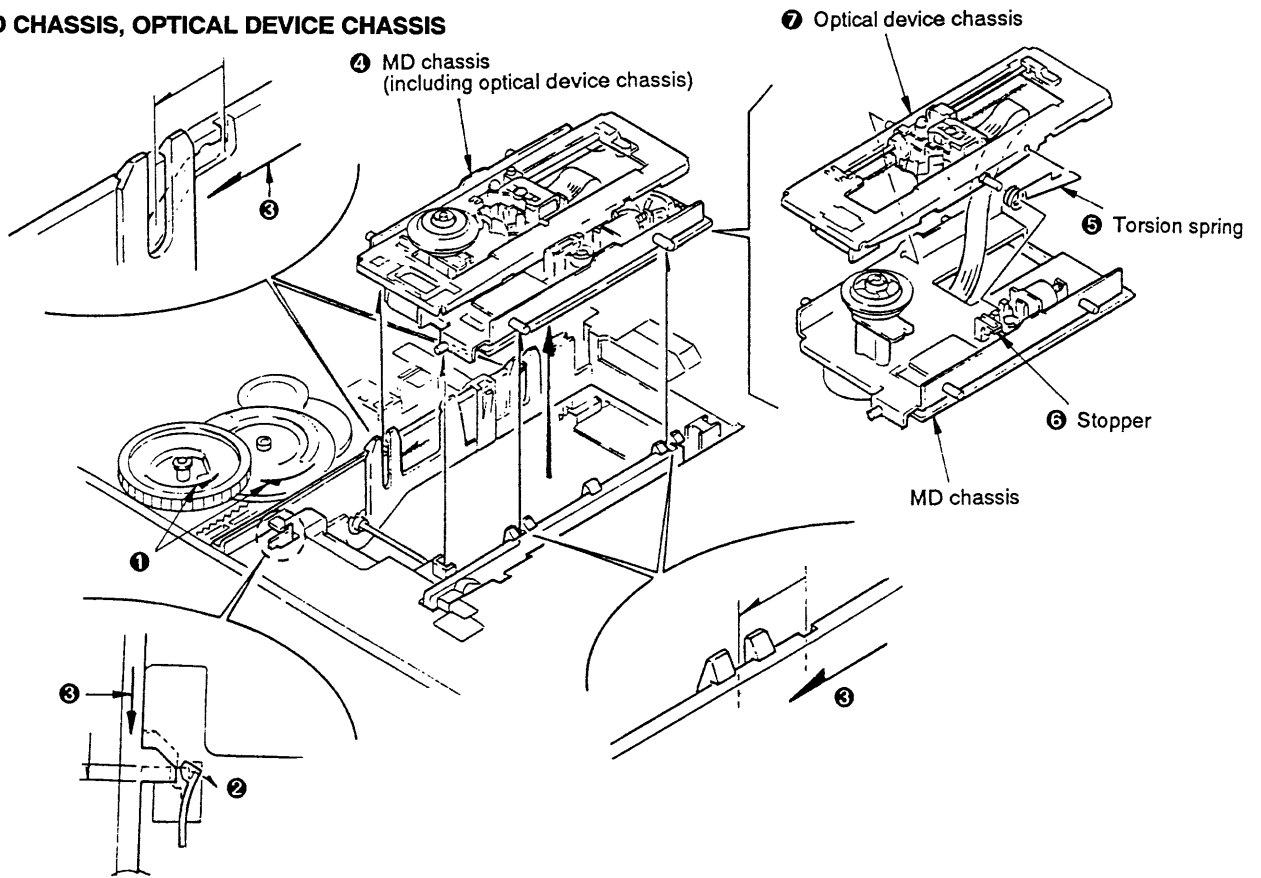
**2-1. CASE,FRONT PANEL ASSEMBLY**



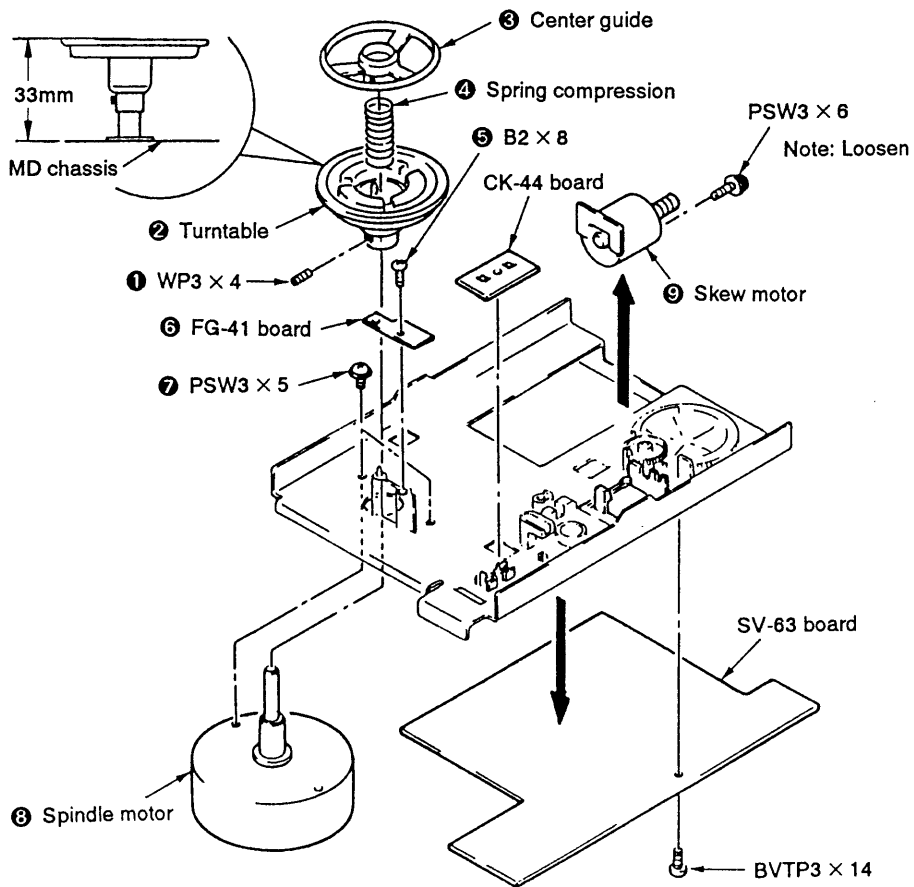
**2-2. MB-56, AU-88 BOARDS**



**2-3. MD CHASSIS, OPTICAL DEVICE CHASSIS**

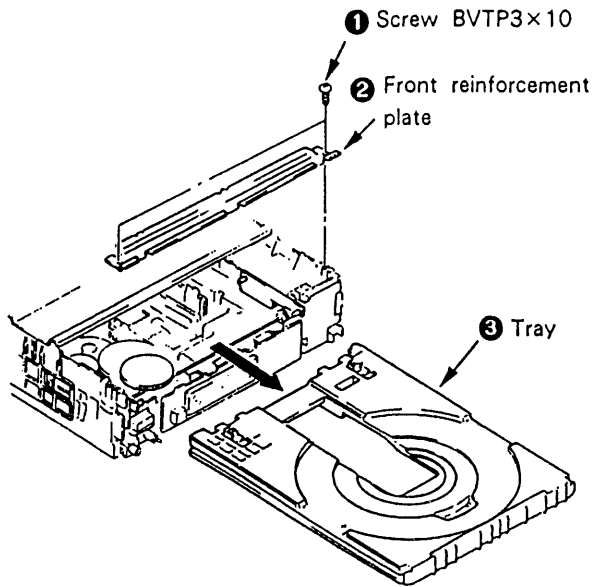


**2-4. TURNTABLE, SPINDLE MOTOR, SKEW MOTOR, CK-44, SV-63, FG-41 BOARDS**



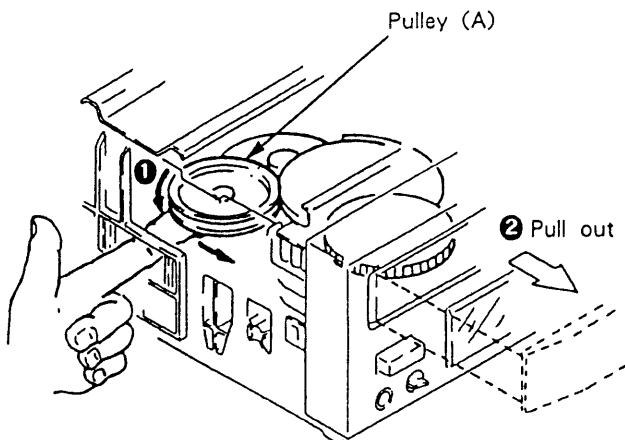
## 2-5. REMOVAL OF THE TRAY

**Note :** Make sure to remove the tray after having removed the front panel and the front reinforcement plate.



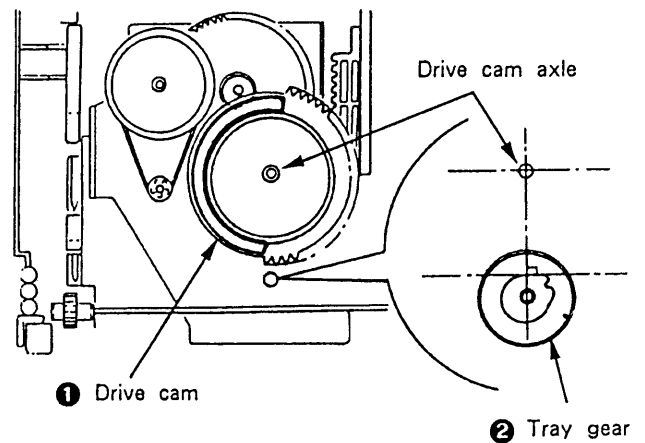
## 2-6. REMOVAL OF THE DISC WHEN A PROBLEM HAS OCCURRED WITH THE DISC LOADED

- 1) Turn the pulley (A) in counter-clockwise direction until the tray starts moving.
- 2) Pull out the tray.



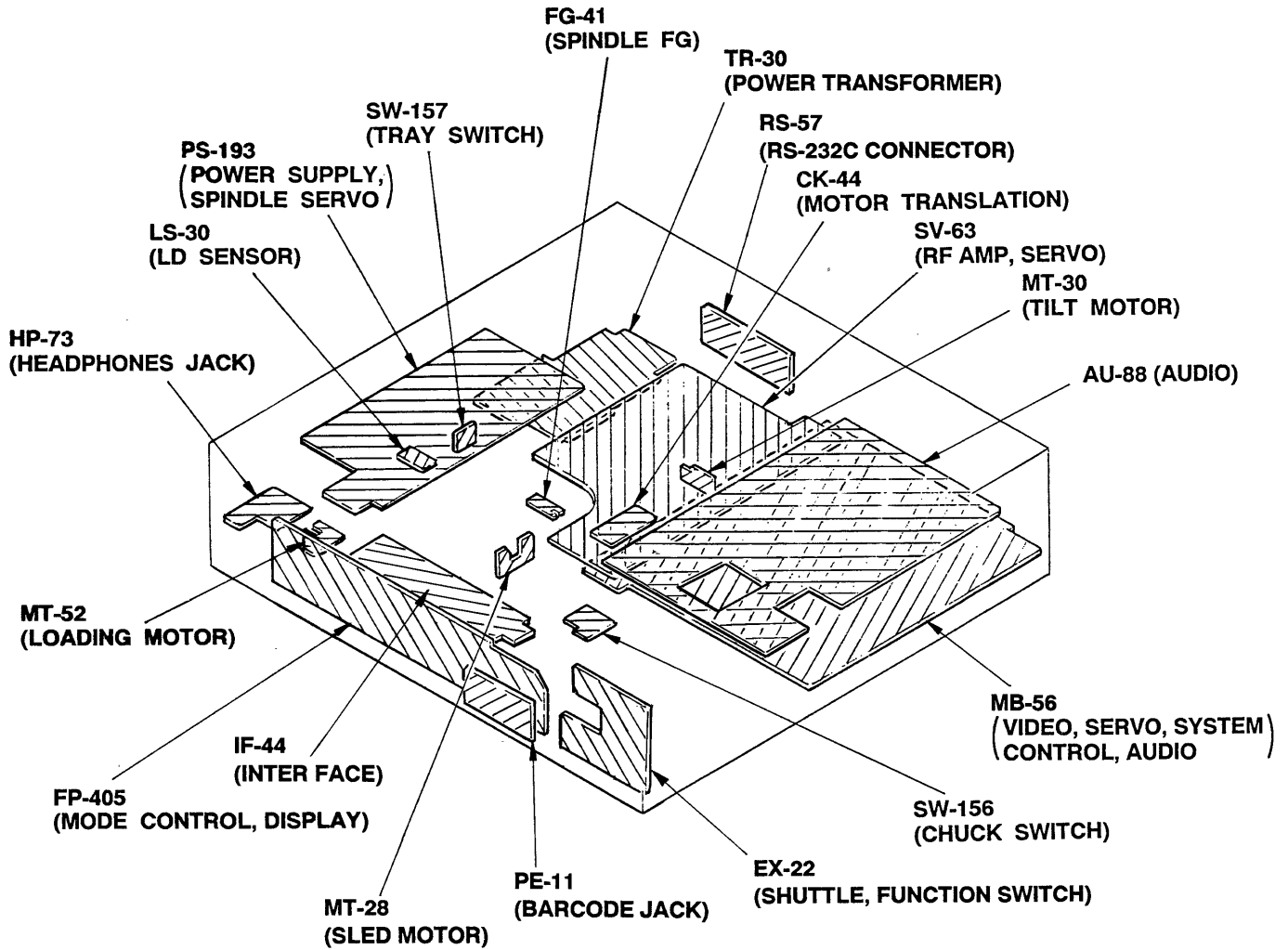
## 2-7. ALIGNMENT OF THE LOADING GEAR PHASE

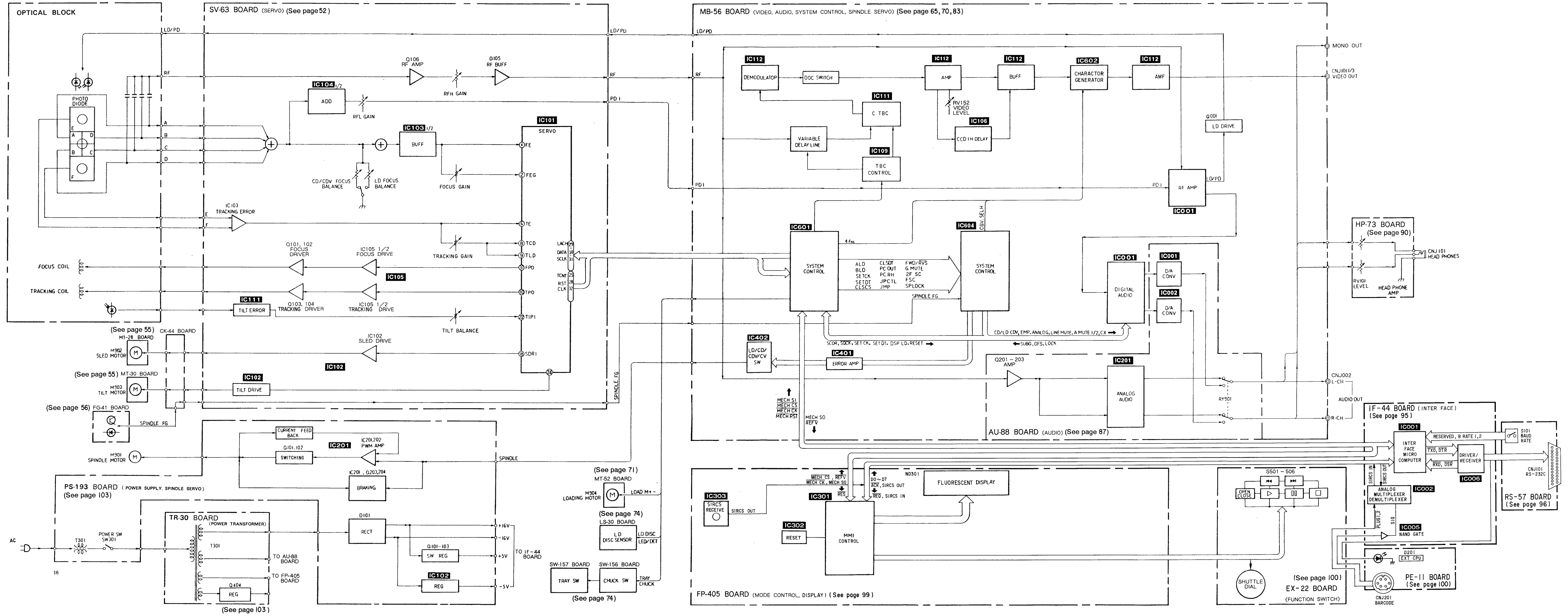
- 1) Install the drive cam as shown in the illustration. At this time, make sure that the last tooth of gear is aligned with the line from the center of the tray gear axle and the drive gear axle.
- 2) Install the tray gear as shown in the illustration. At this time, make sure the flat surface of the cam is at a right angle with the drive cam.

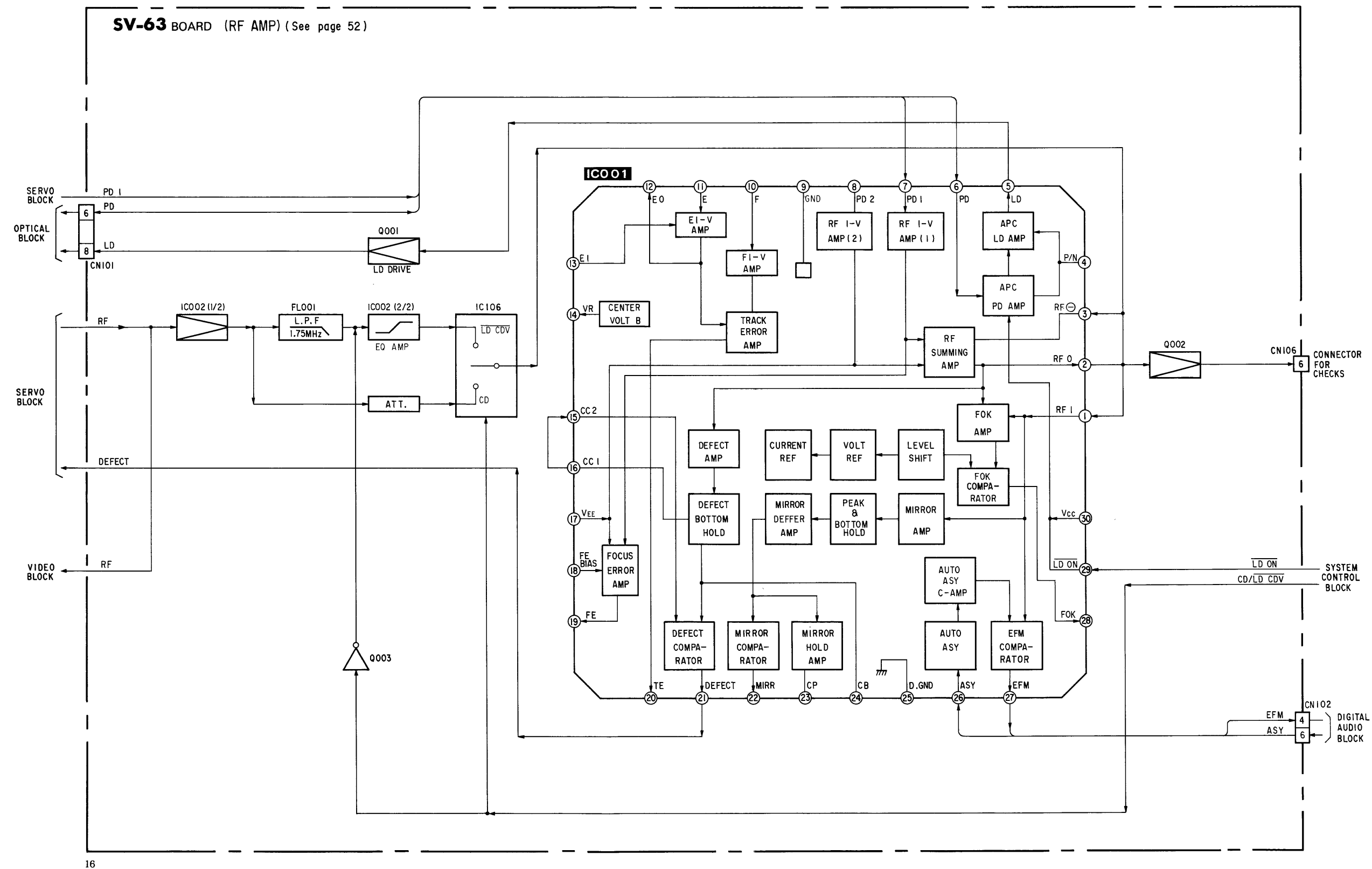
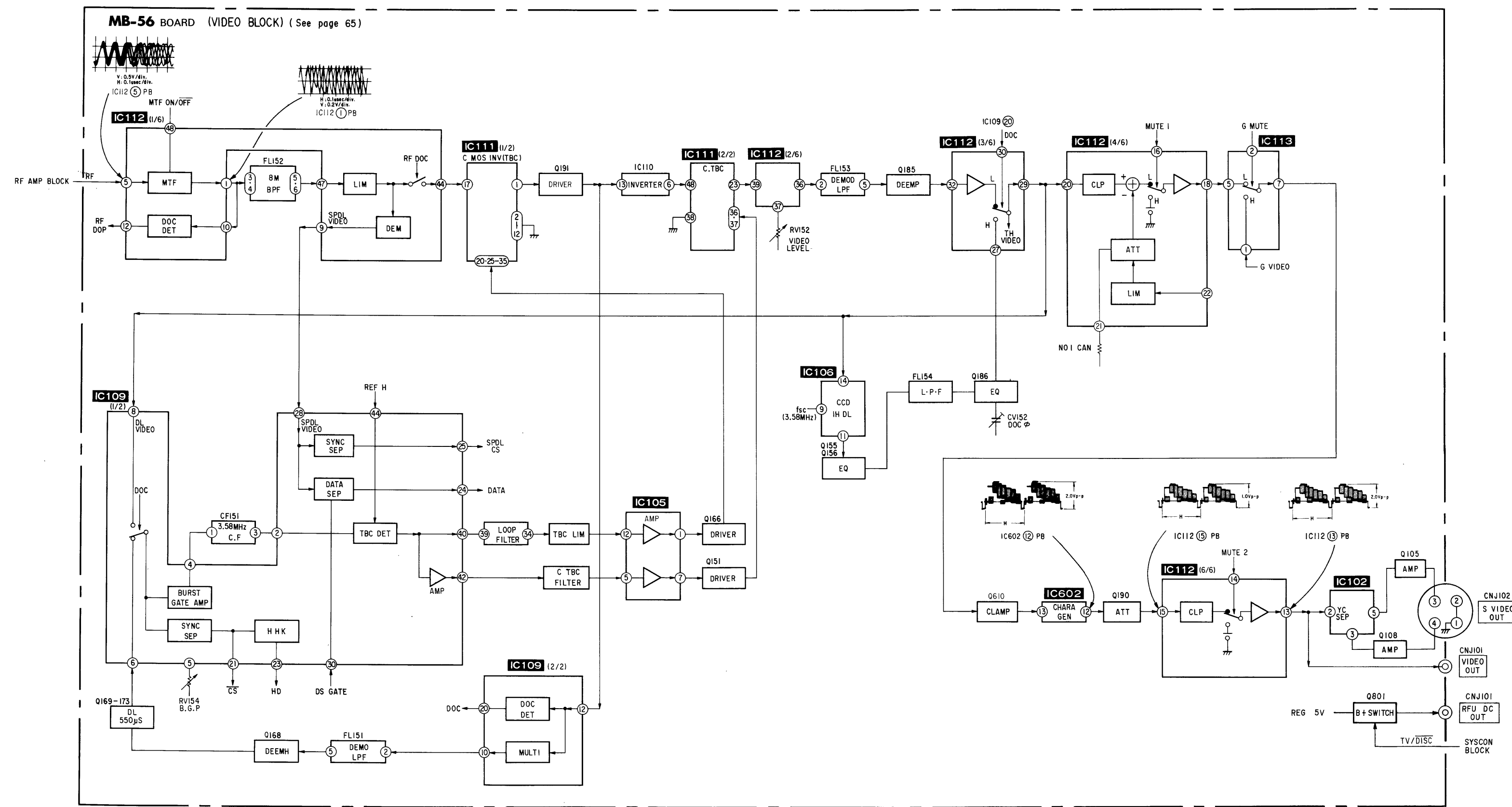


**SECTION 3  
DIAGRAMS**

**3-1. CIRCUIT BOARDS LOCATIONS**

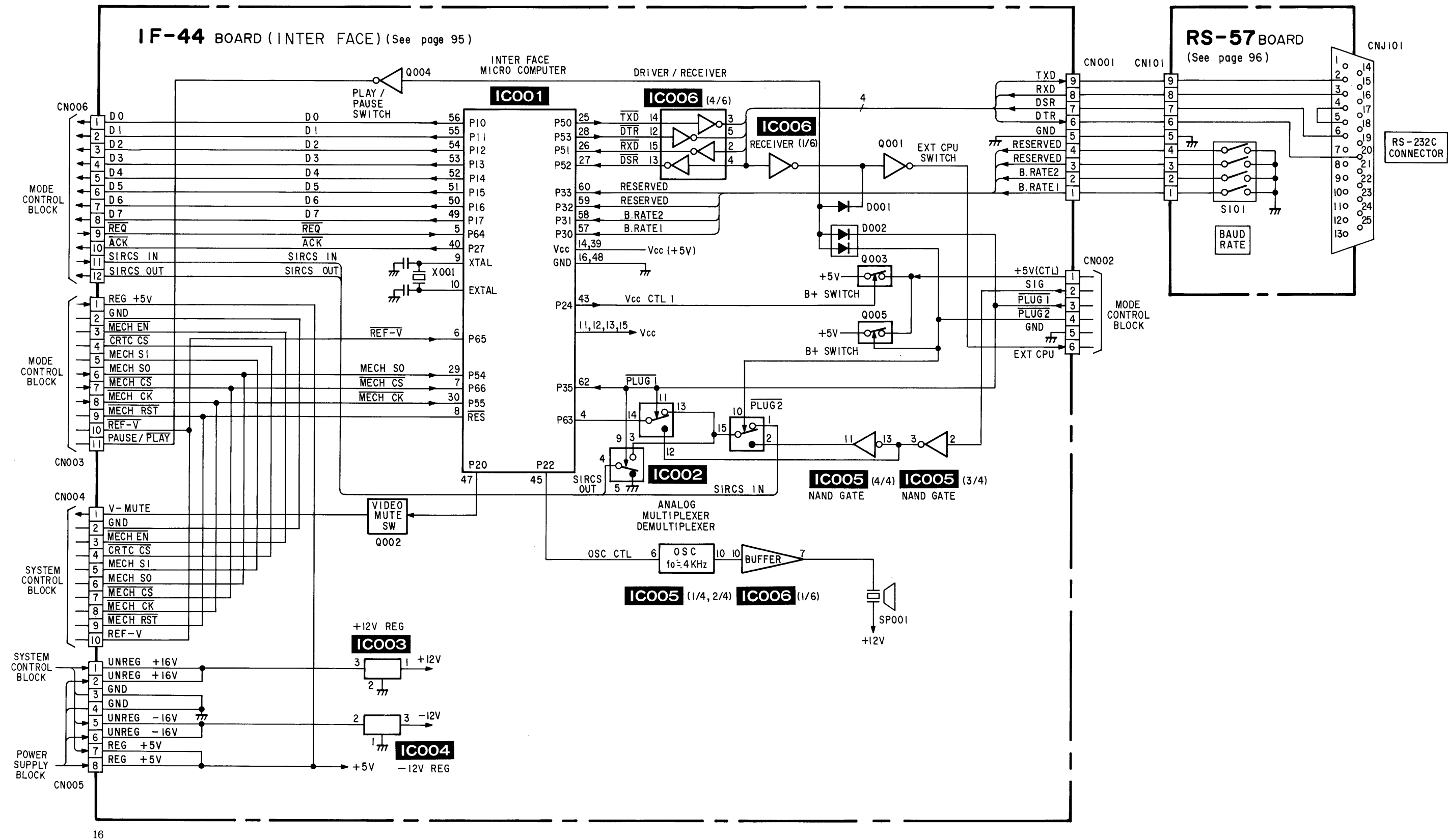




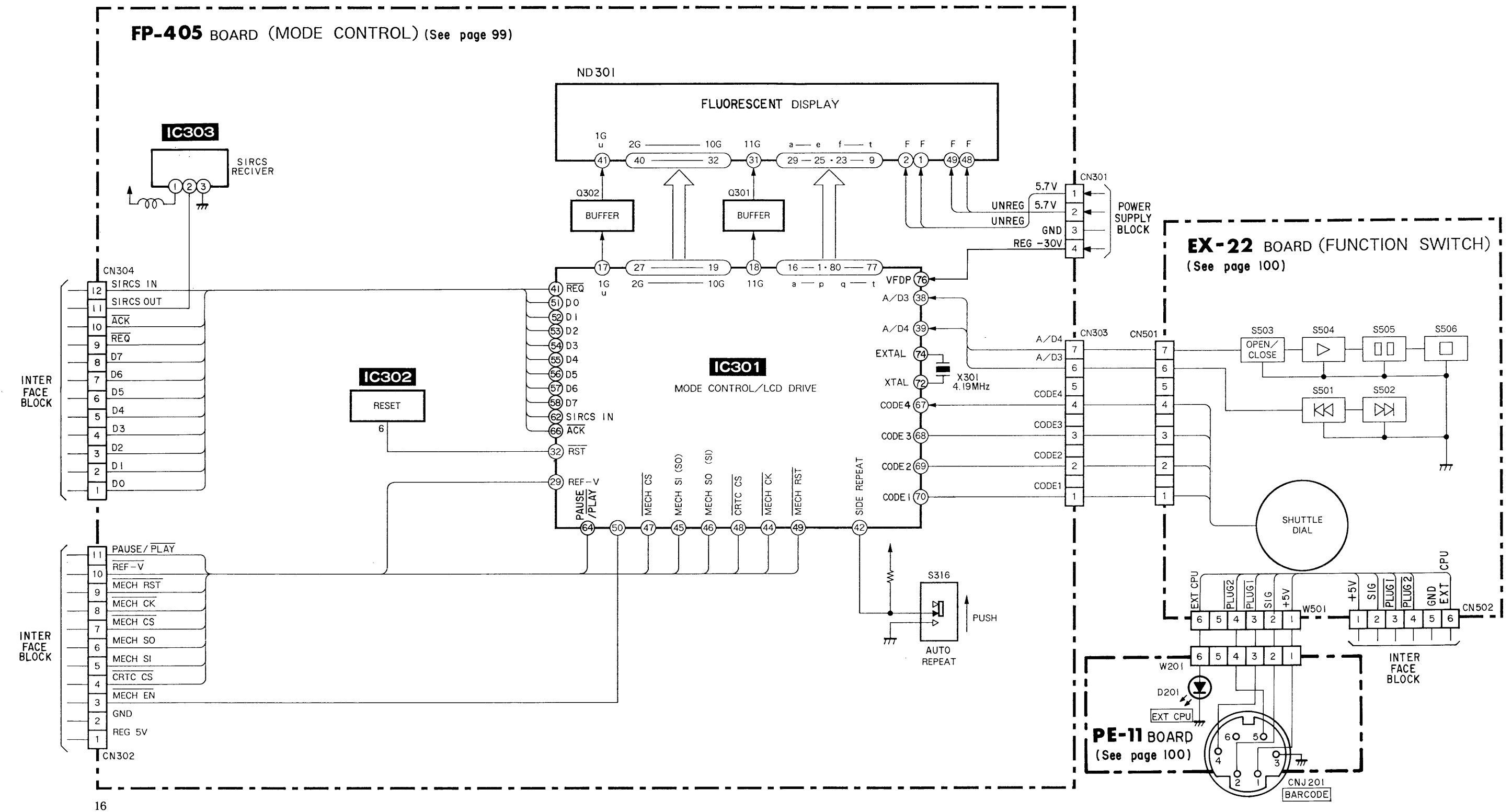


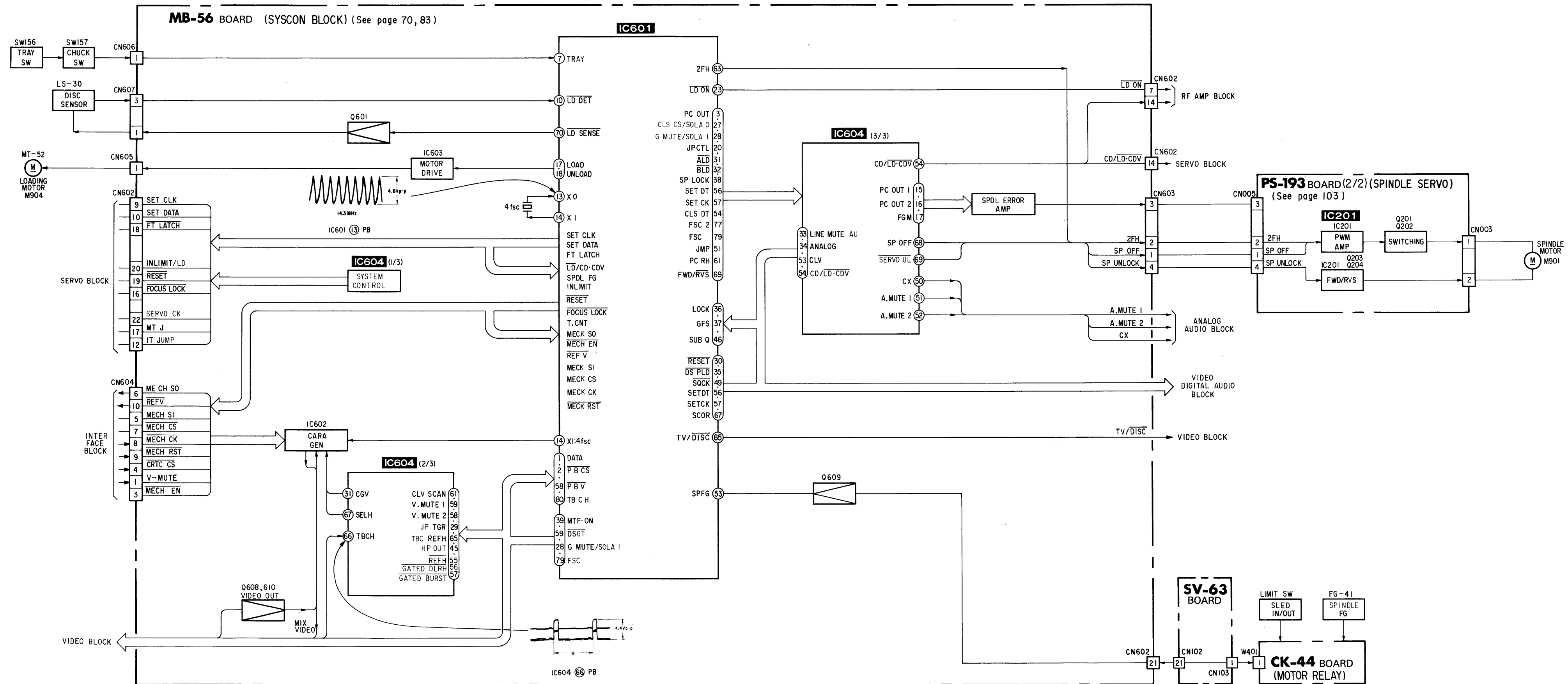


3-5. INTER FACE BLOCK DIAGRAM

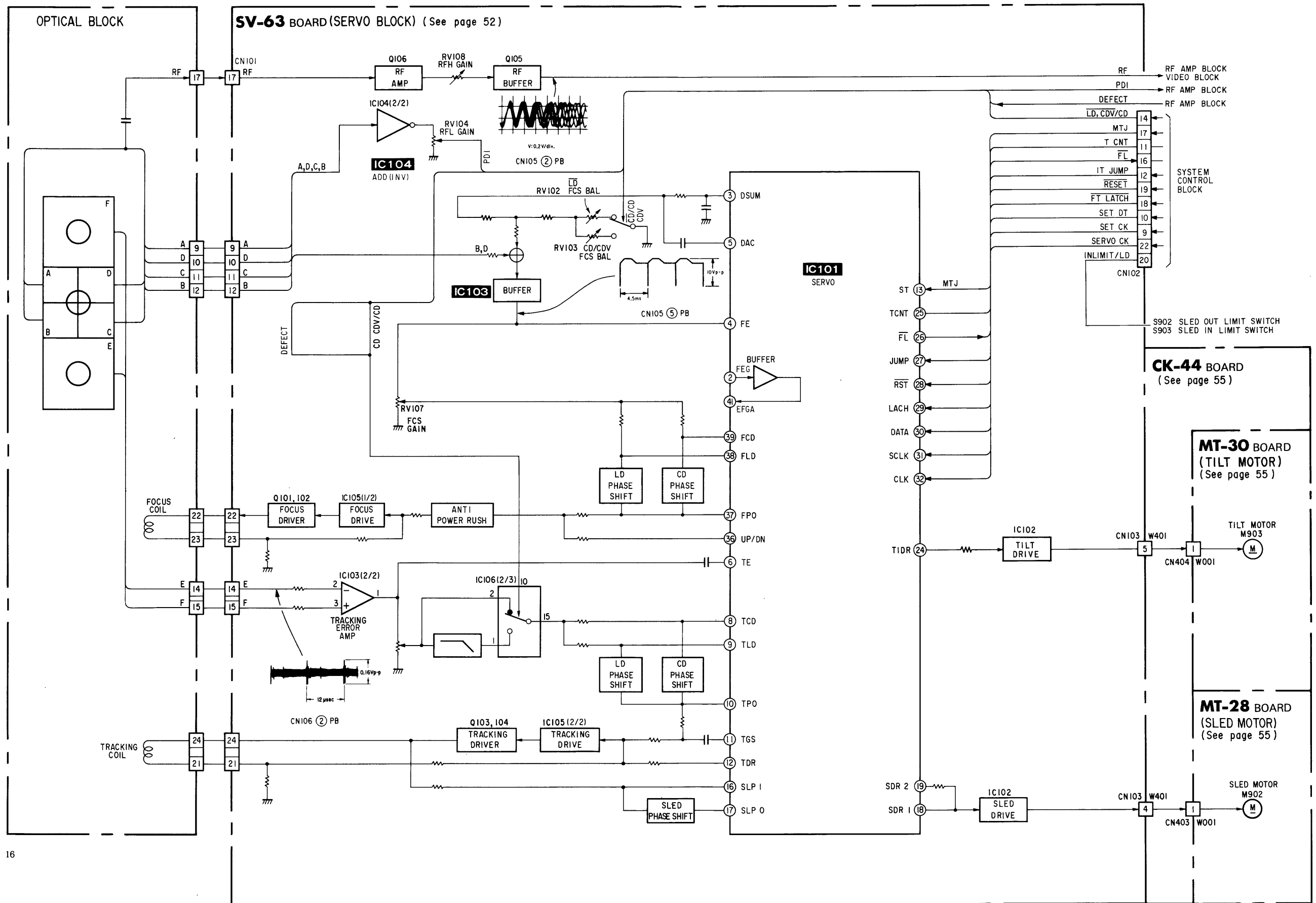


3-6. MODE CONTROL BLOCK DIAGRAM

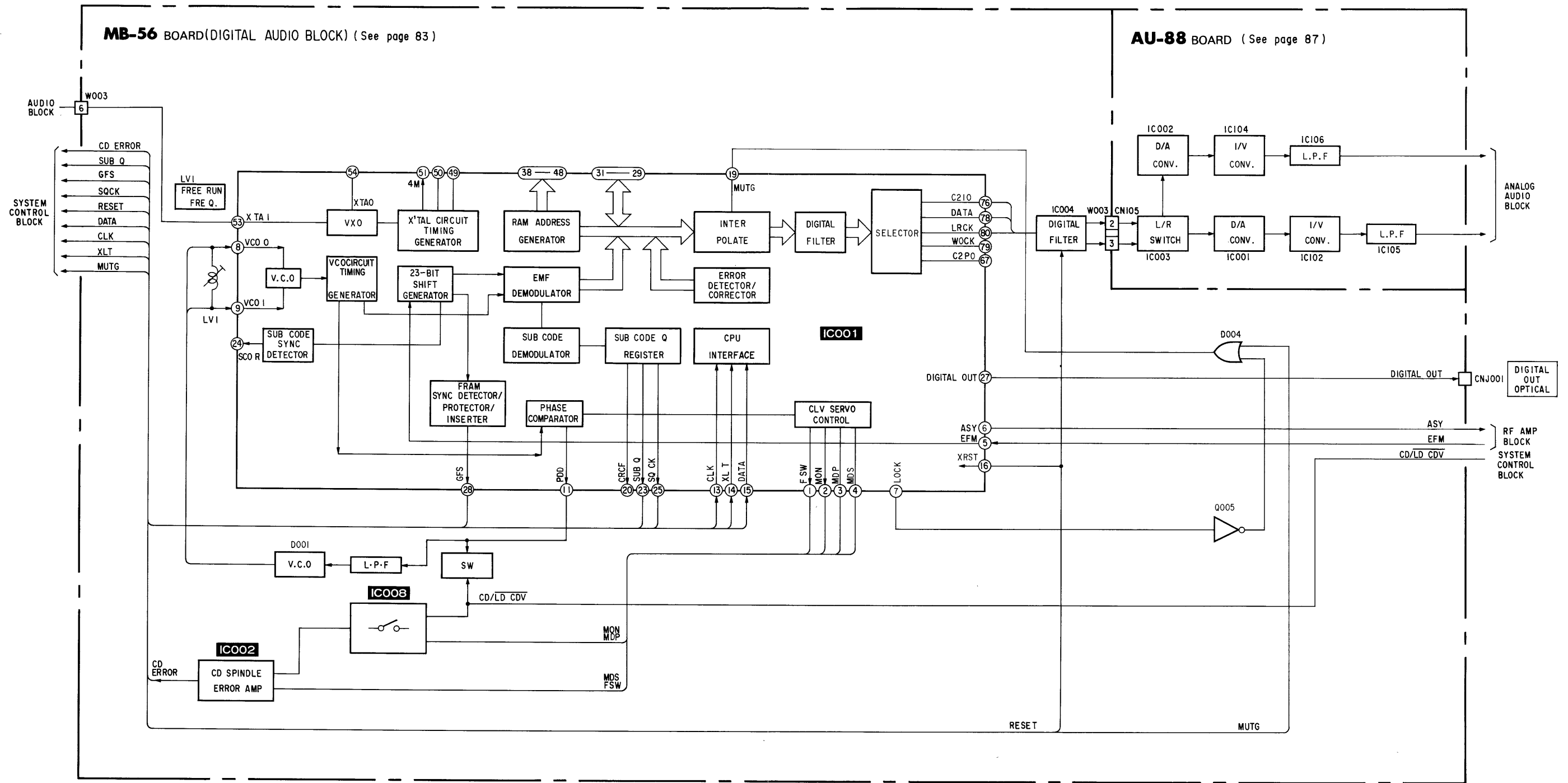




3-8. SERVO BLOCK DIAGRAM

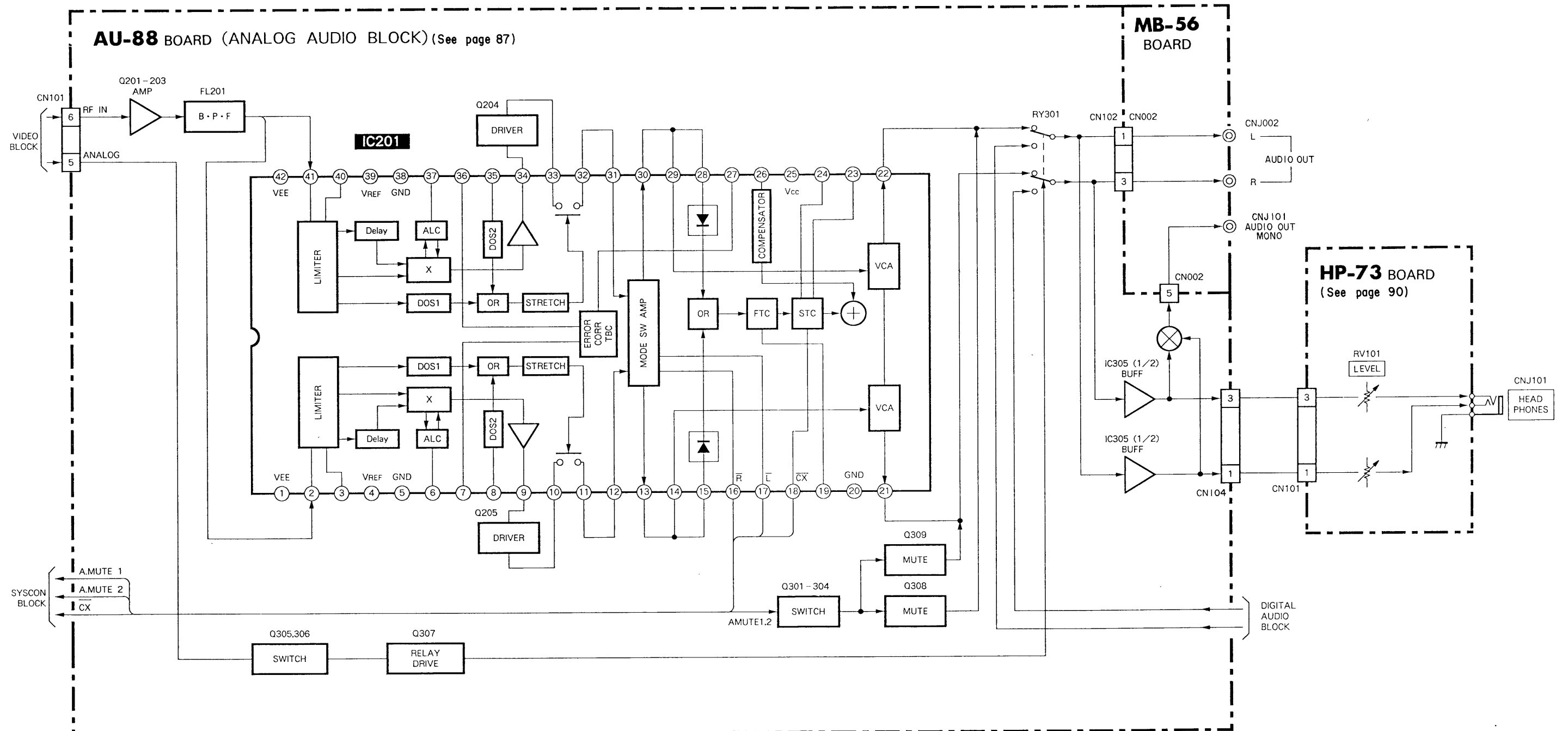


3-9. DIGITAL AUDIO BLOCK DIAGRAM

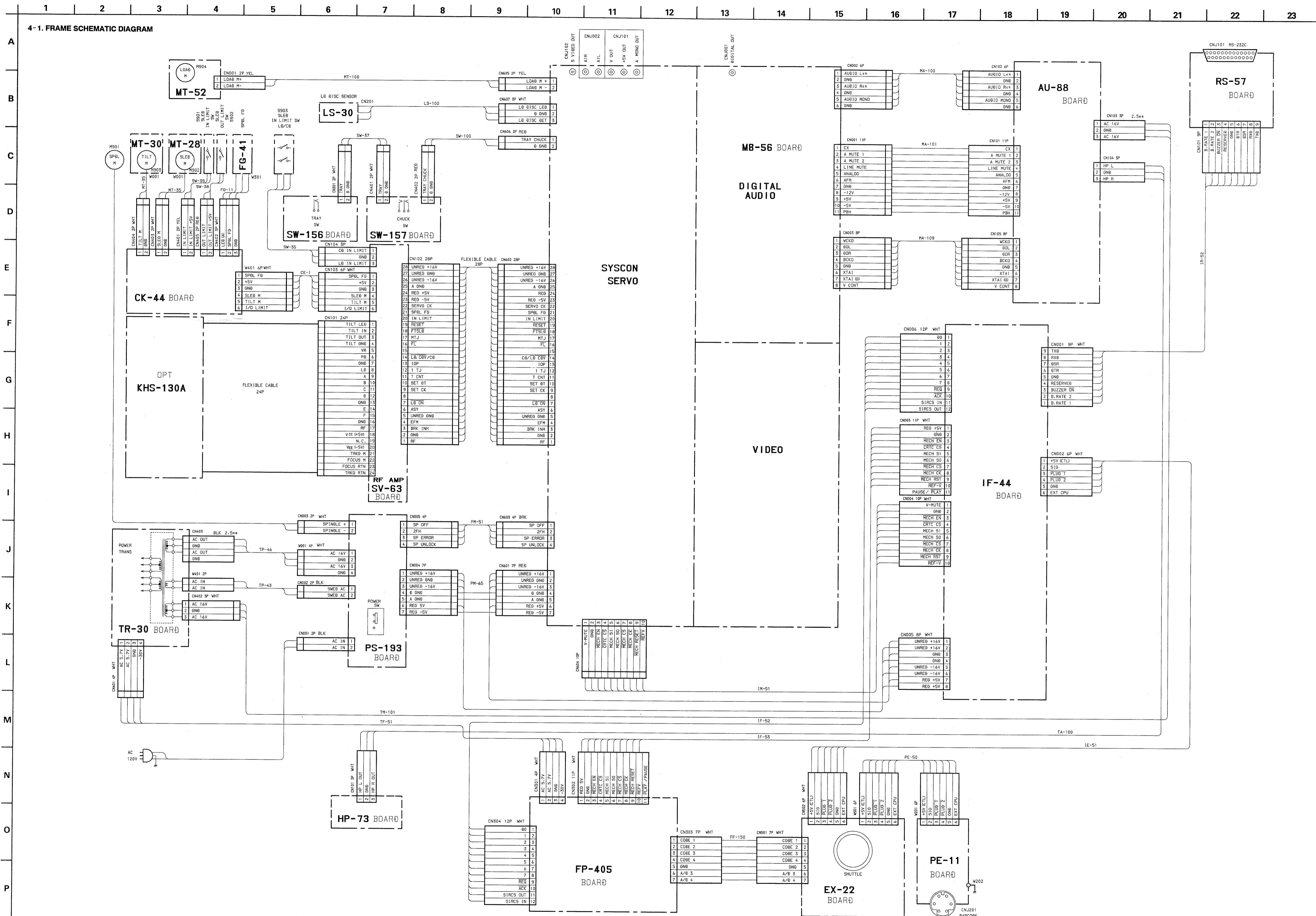


16

3-10. ANALOG AUDIO BLOCK DIAGRAM







SECTION 4  
PRINTED WIRING BOARDS  
AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- For printed wiring boards:
- : indicates a lead wire mounted on the component side.
  - : indicates a lead wire mounted on the printed side.
  - (with dot) : Through hole.
  - (with dot) : Pattern from the side which enables seeing.
  - (with diagonal lines) : Pattern of the rear side.

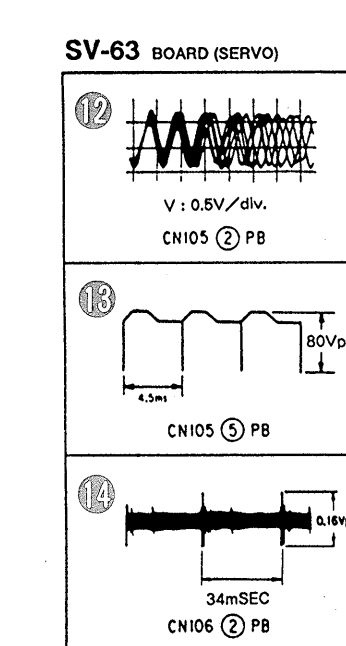
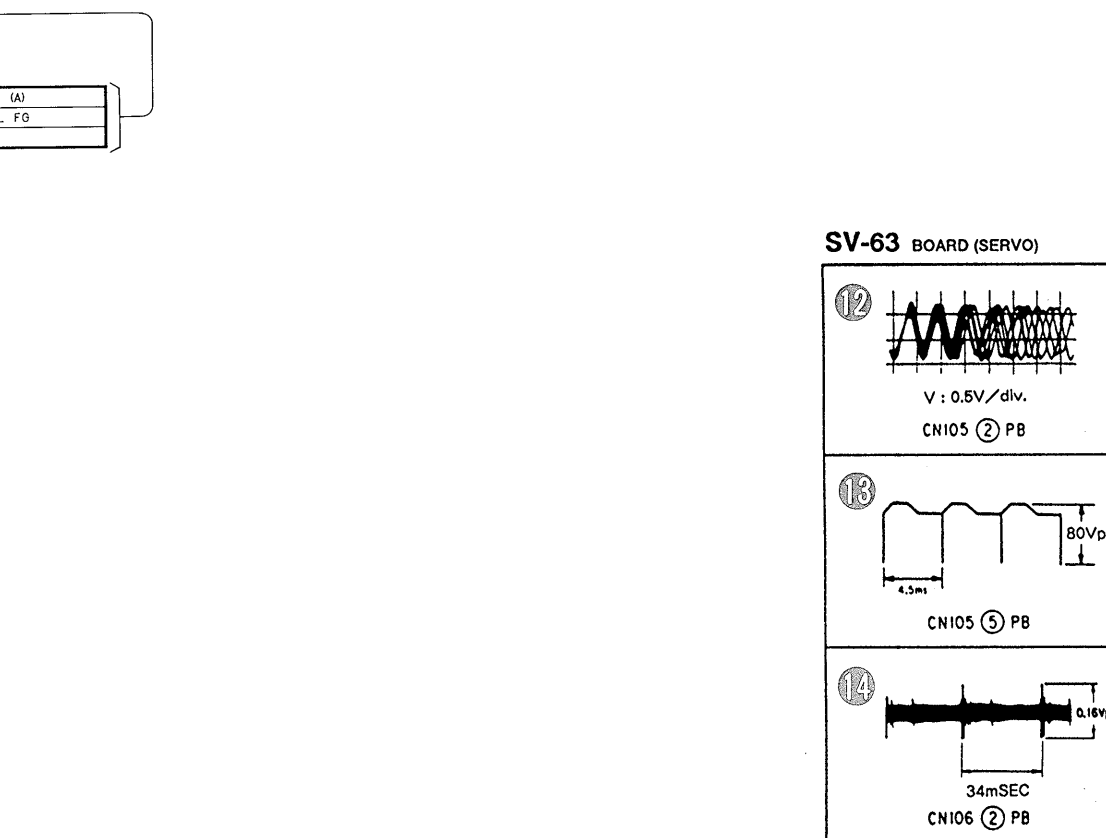
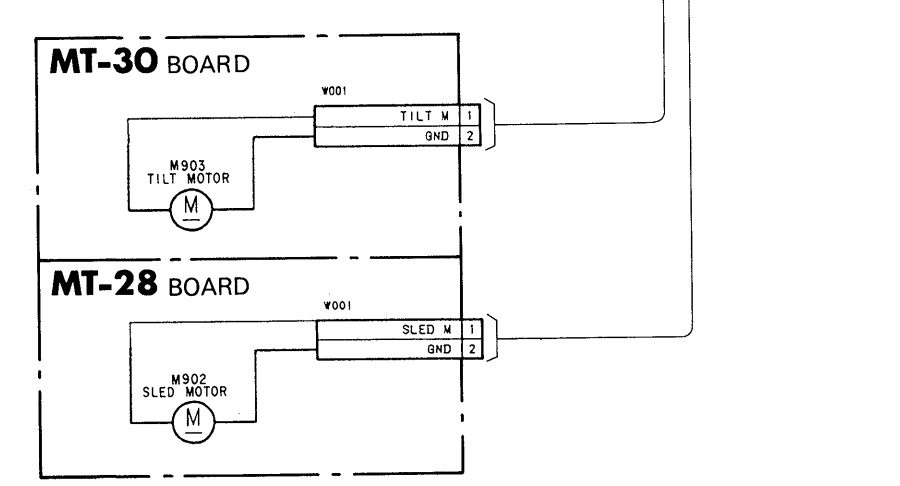
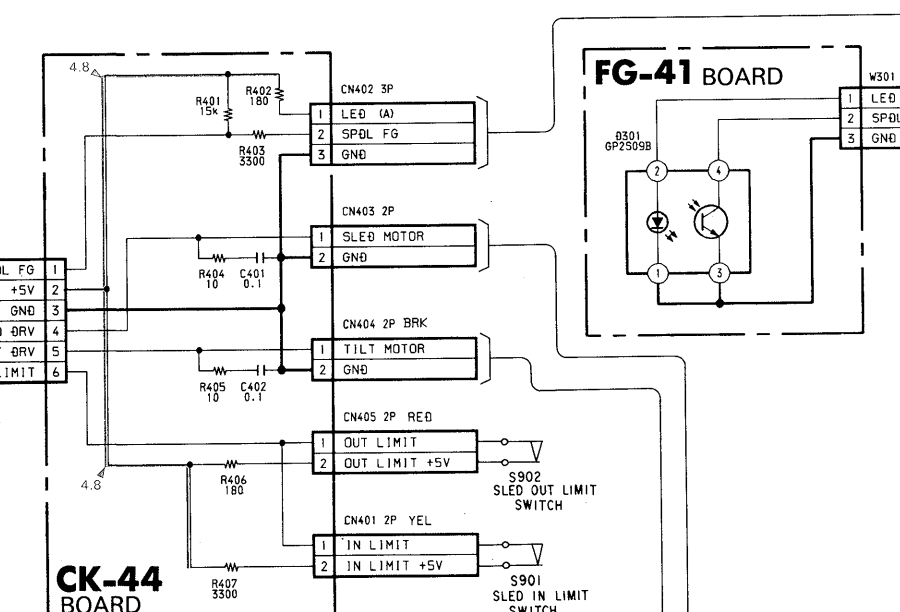
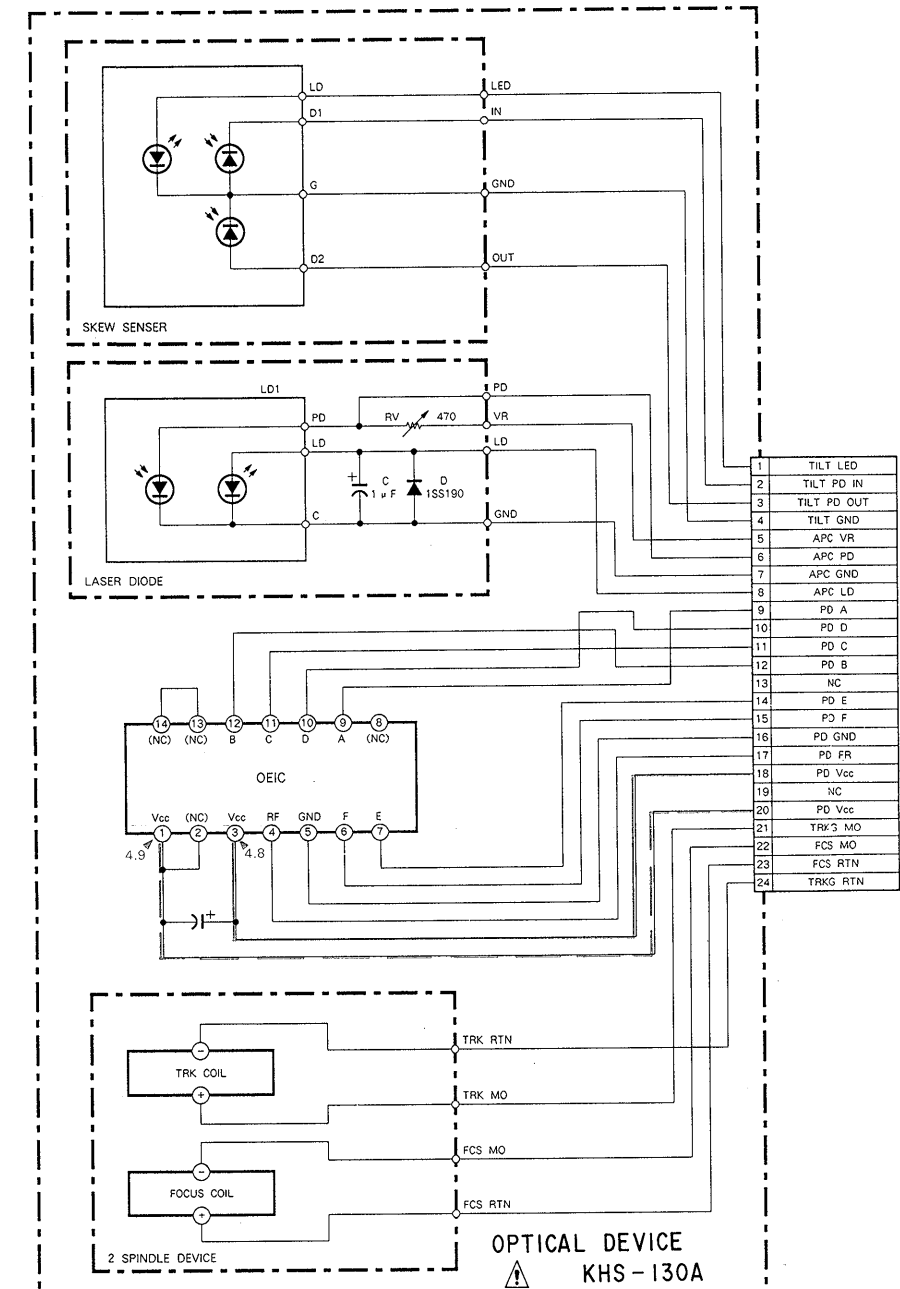
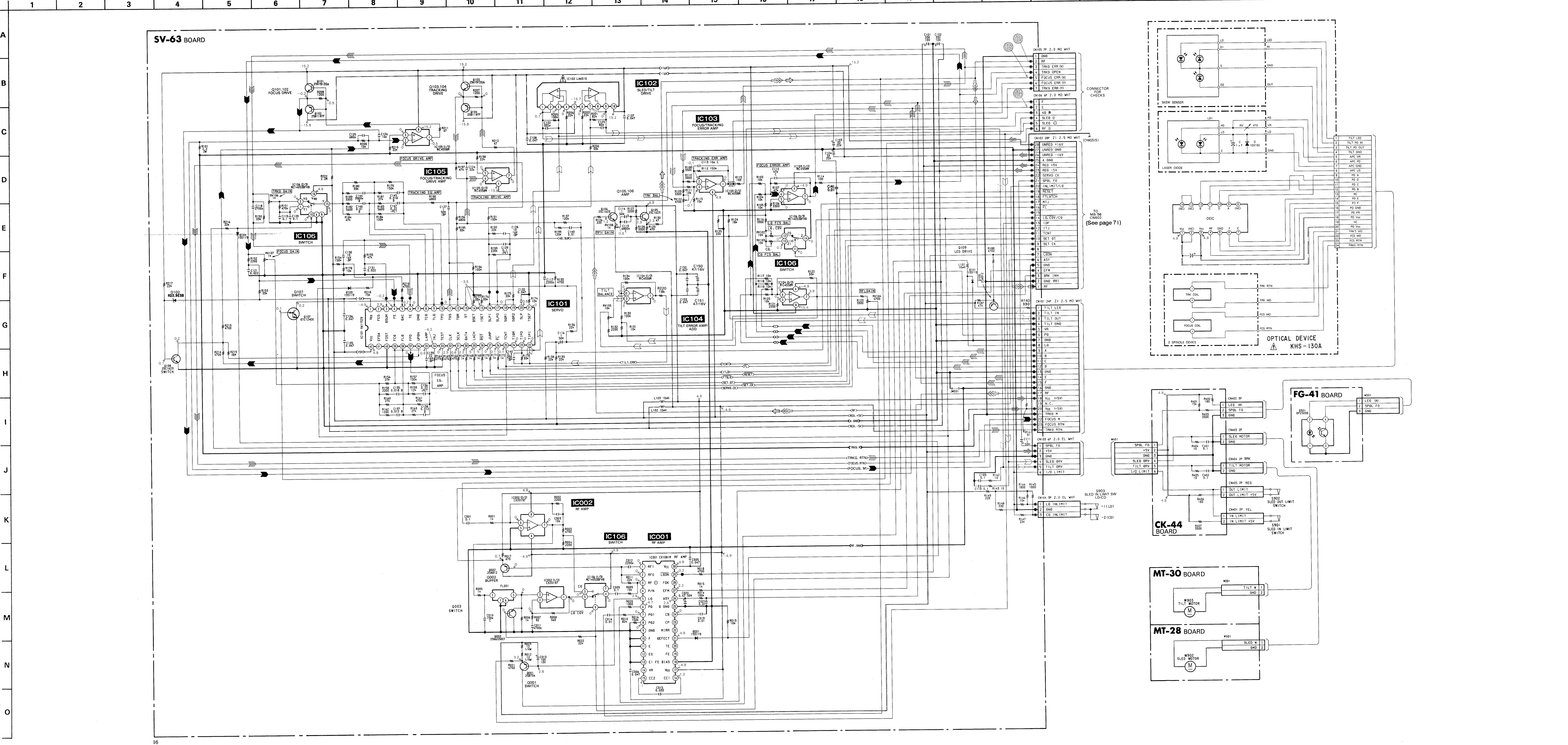
Caution:  
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.  
Parts face side: Parts on the parts face side seen from the (Component Side) parts face are indicated.

- \*For schematic diagram:
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
  - All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  - KΩ: 1000Ω, MΩ: 10000Ω.
  - All capacitors are in μF unless otherwise noted. pF: μF/50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - : nonflammable resistor.
  - : fusible resistor.
  - : panel designation.
  - : internal component.
  - : adjustment for repair.\*
  - : B + Line.\*
  - : B - Line.\*
  - Voltages are dc between measurement points and ground unless otherwise noted.\*
  - Readings are taken with a color-bar signal playback.\*
  - Readings are taken with a digital multimeter (DC10MΩ).\*
  - Voltage variations may be noted due to normal production tolerances.
  - : IN/OUT direction of B line (+, -,).\*
  - Circled numbers refer to waveforms.\*

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

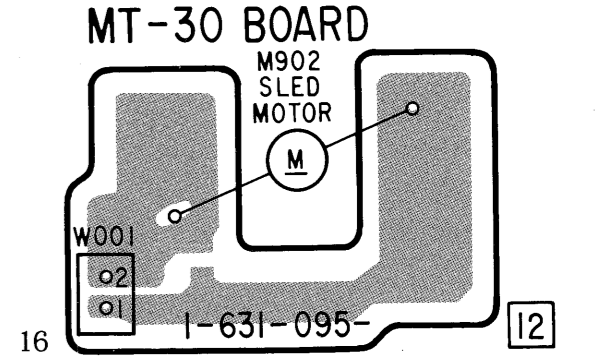
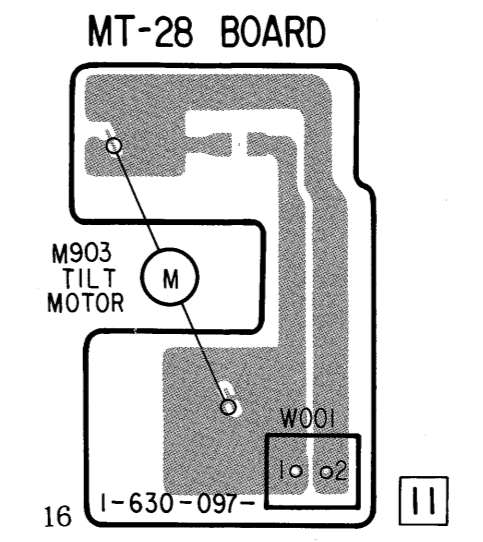
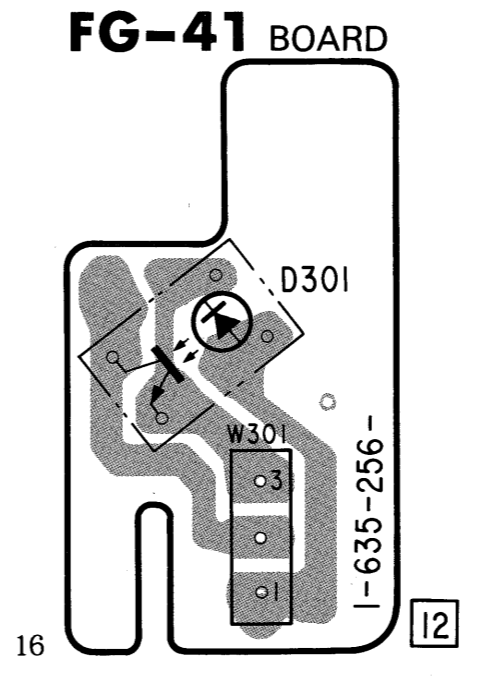
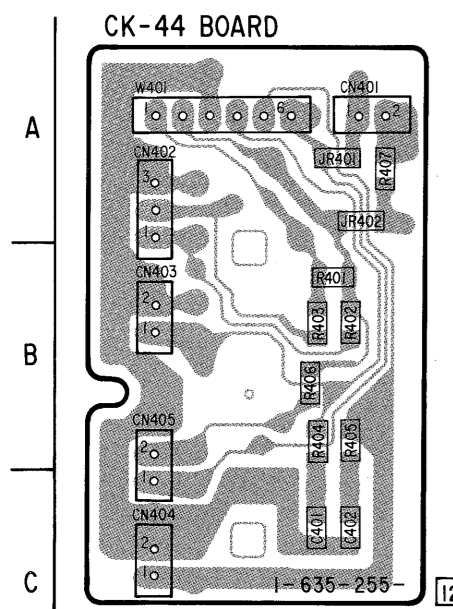
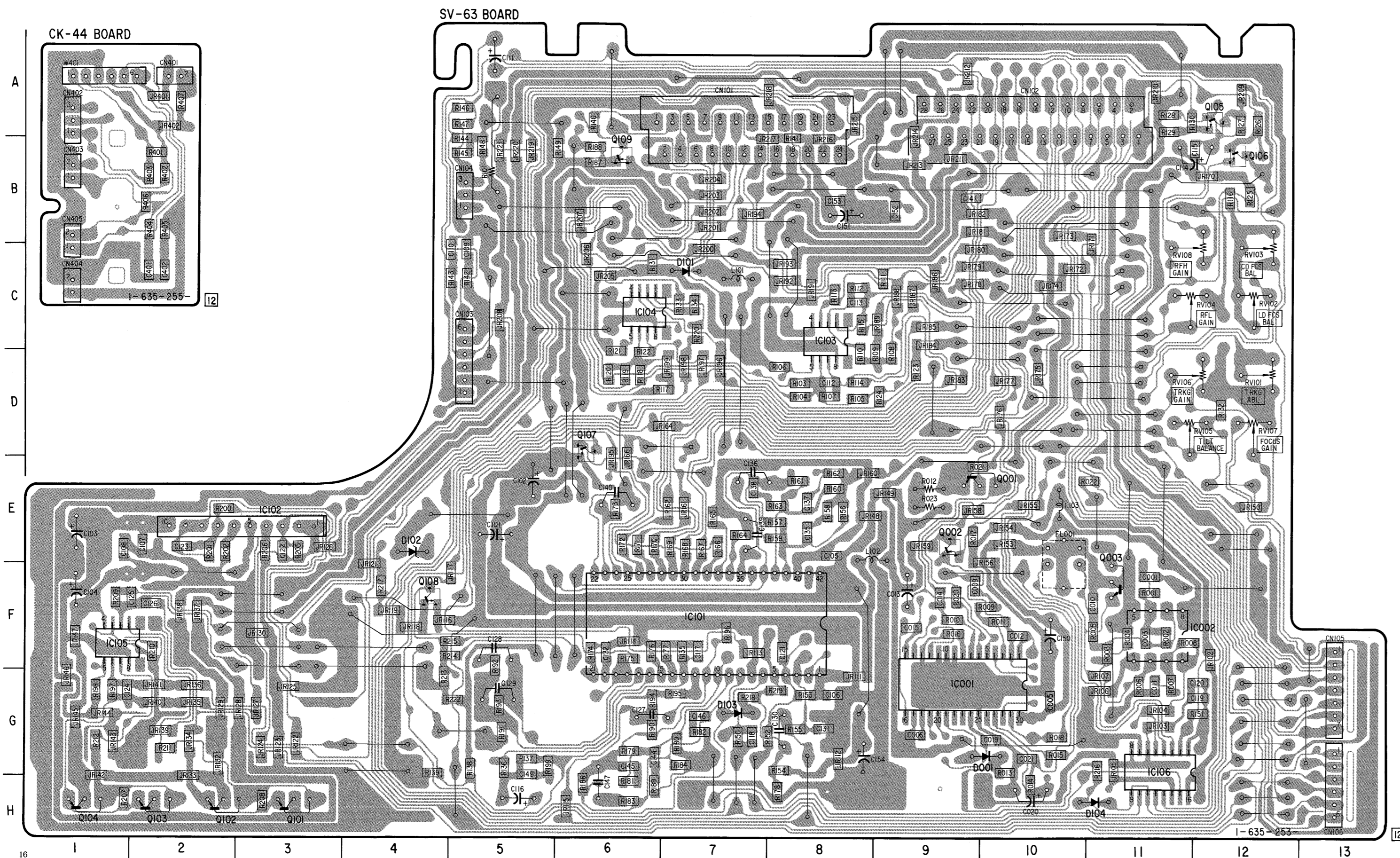
Note:  
The components identified by mark or dotted line with mark are critical for safety. Ne les remplacer que par une pièce portant le numéro spécifié.

\* : indicated by the color red.



PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	YICHROMA	
SPINDLE PHASE SERVO	↔	↔	↔	↔
SPINDLE SERVO (SPEED AND PHASE)	↔	↔	↔	↔
TRACKING SERVO LD/CD/CDV	↔	↔	↔	↔
SLIDE SERVO LD/CD	↔	↔	↔	↔
FOCUS SERVO LD/CD	↔	↔	↔	↔
SKREW SERVO LD TILT	↔	↔	↔	↔





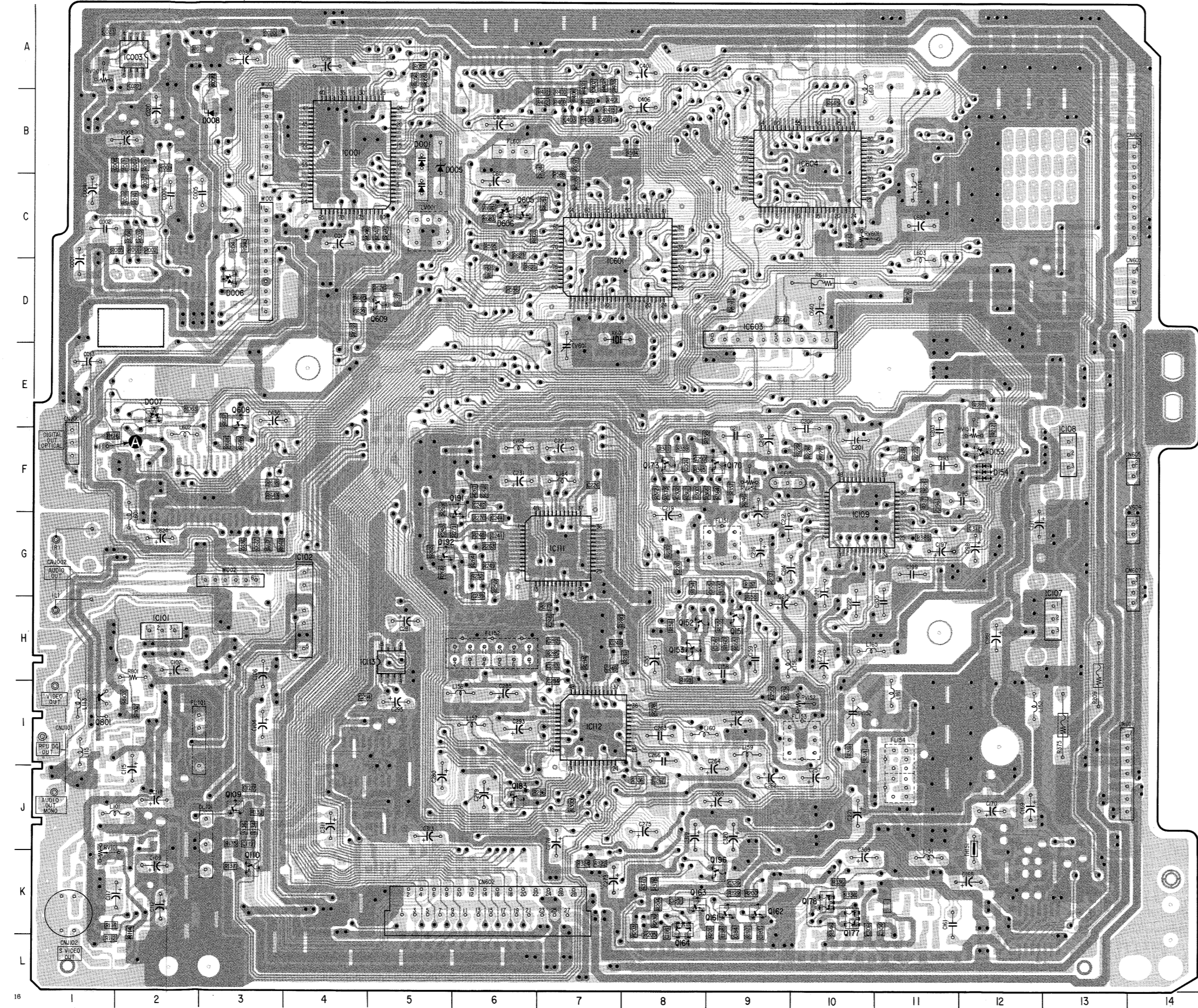
**MB-56(VIDEO, SYSTEM CONTROL, AUDIO) PRINTED WIRING BOARDS**

— Ref. No. : MB-56 Board ; 2,000 series —

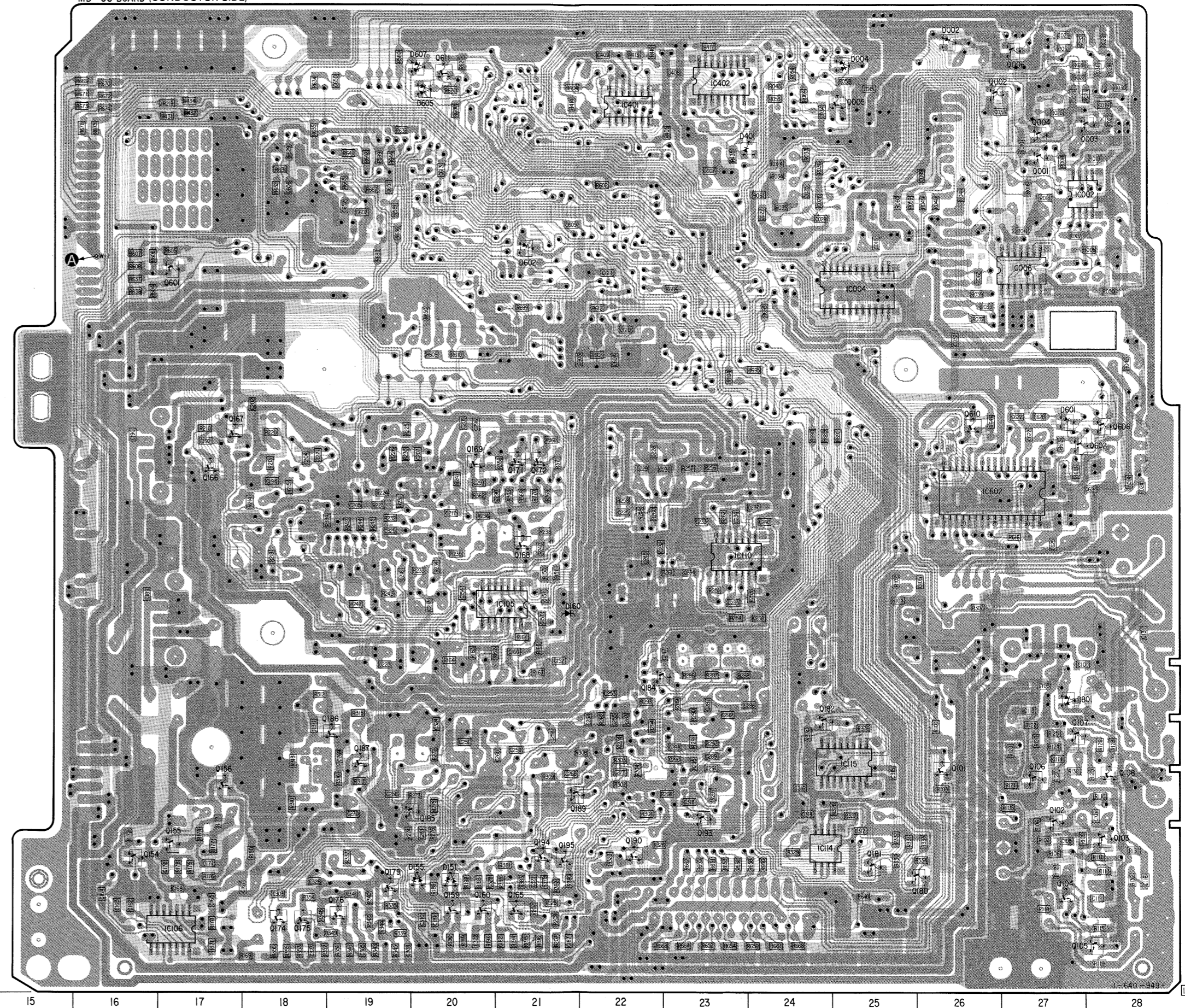
**MB-56 BOARD**

D001	B-5	O185	J-20
D002	A-26	O186	I-19
D004	A-25	O187	I-19
D005	B-5	O189	J-21
D006	D-3	O190	K-22
D007	E-2	O191	F-6
D008	B-3	O192	G-5
D151	K-20	O193	J-23
D153	F-12	O194	K-21
D154	F-12	O195	K-21
D155	K-20	O196	K-9
D180	H-21	O601	D-17
D401	B-23	O602	F-27
D601	E-27	O605	C-6
D602	C-21	O606	E-28
D605	B-20	O608	E-3
D606	C-8	O609	D-5
D607	A-20	O610	F-26
D801	I-27	O611	A-20
		O801	I-1
IC001	B-4		
IC002	C-27		
IC003	A-2		
IC004	D-25		
IC006	D-27		
IC101	H-2		
IC102	H-4		
IC105	H-21		
IC106	K-17		
IC107	H-13		
IC109	F-13		
IC109	G-10		
IC110	G-23		
IC111	G-7		
IC112	I-7		
IC113	H-5		
IC114	J-24		
IC115	I-25		
IC401	B-22		
IC402	A-23		
IC501	C-7		
IC802	F-26		
IC803	D-9		
IC804	B-10		
O001	B-27		
O002	B-26		
O003	B-28		
O004	B-27		
O005	B-25		
O006	A-27		
O007	D-2		
O101	J-26		
O102	J-27		
O103	J-28		
O104	K-27		
O105	L-28		
O106	J-27		
O107	I-27		
O108	J-28		
O109	J-3		
O110	K-3		
O151	H-9		
O152	H-8		
O153	H-8		
O154	K-16		
O155	J-17		
O156	J-17		
O159	K-20		
O180	K-20		
O181	K-9		
O182	K-9		
O183	K-8		
O184	K-8		
O185	K-21		
O186	F-17		
O187	F-17		
O188	G-21		
O189	F-20		
O170	F-9		
O171	F-21		
O172	F-21		
O173	F-9		
O174	K-18		
O175	K-18		
O176	K-19		
O177	K-10		
O178	K-10		
O179	K-19		
O180	K-26		
O181	K-25		
O182	I-24		
O183	J-6		
O184	H-23		

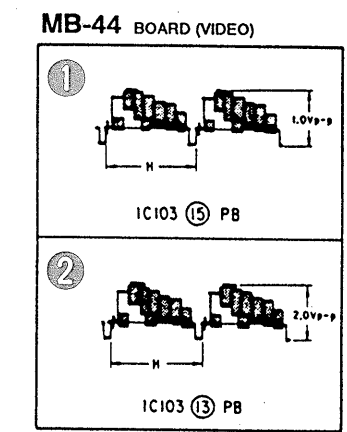
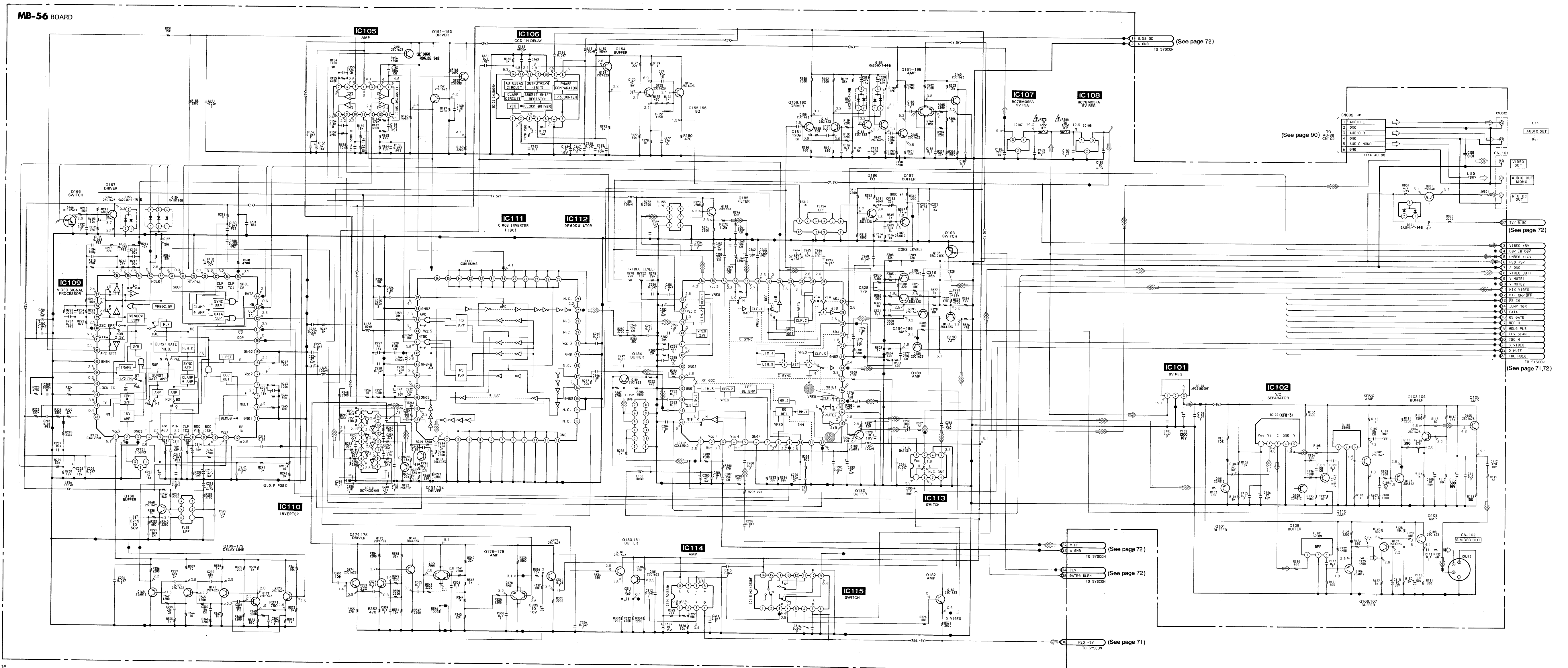
MB-56 BOARD (COMPONENT SIDE)



MB-56 BOARD (CONDUCTOR SIDE)

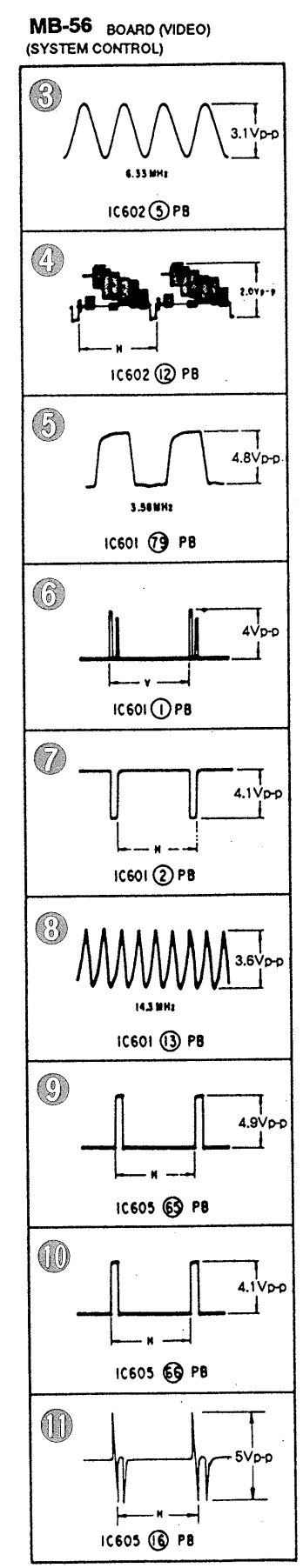
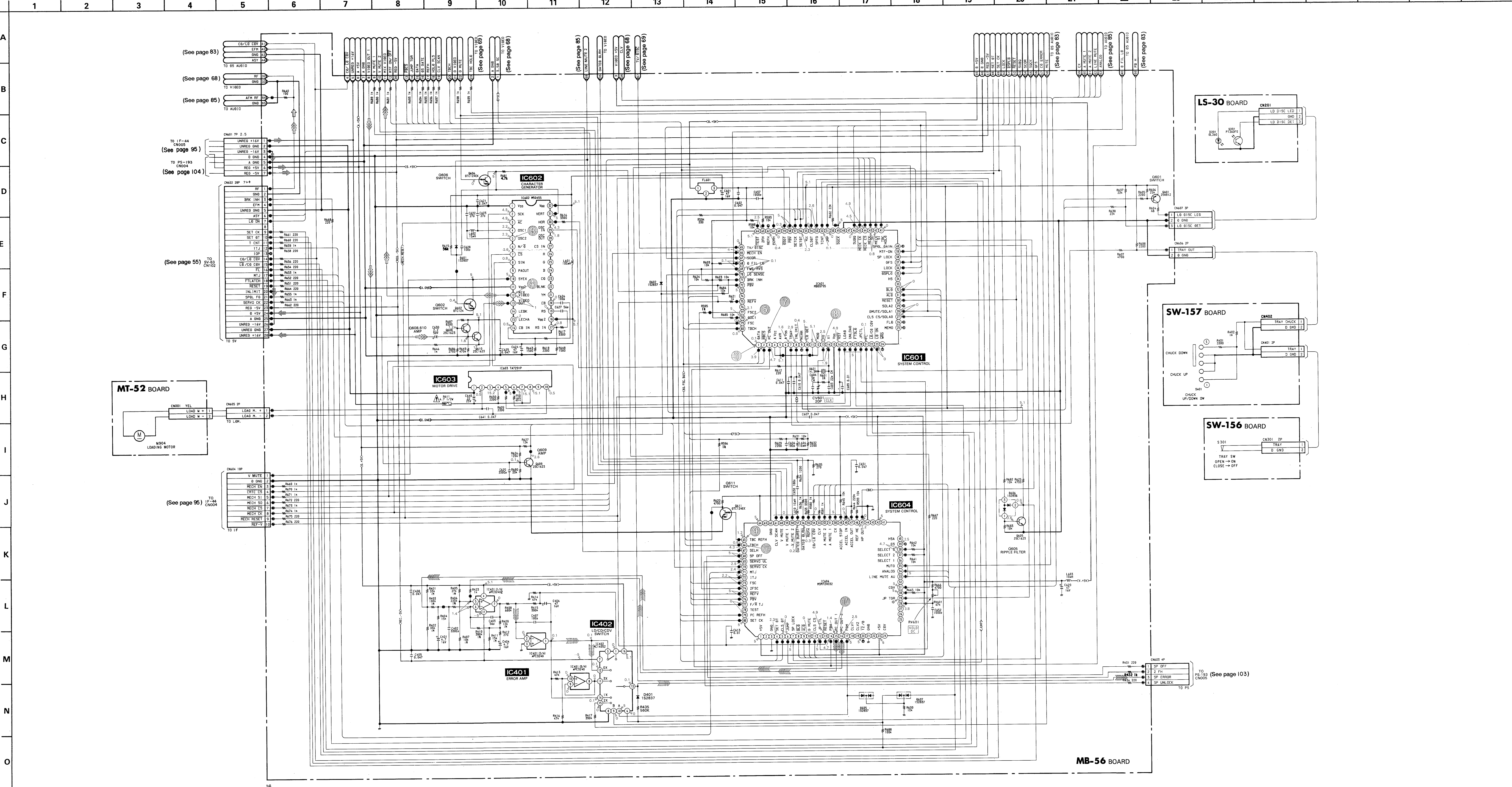


A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O

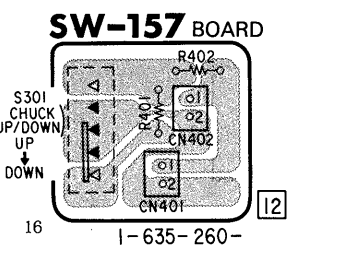
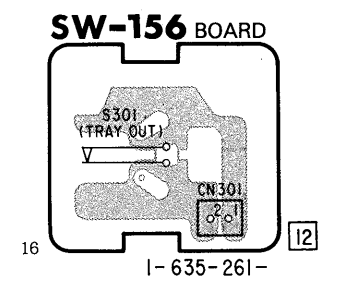
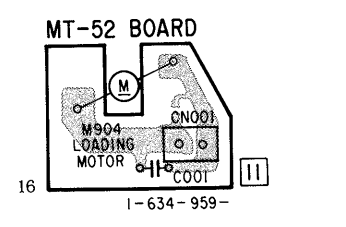
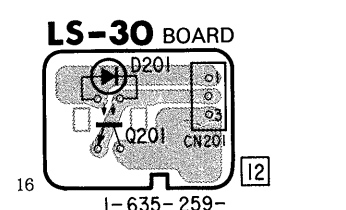


	VIDEO SIGNAL			AUDIO SIGNAL
PB	CHROMA	Y	Y/CHROMA	
	↔	↔	↔	↔

SPINDLE PHASE SERVO	↔
SPINDLE SERVO (SPEED AND PHASE)	↔
TRACKING SERVO LD/CD/COV	↔
SLIDE SERVO LD/CD	↔
FOCUS SERVO LD/CD	↔
SKREW SERVO LD TILT	↔



**MB-56(SYSTEM CONTROL), LS-30(LS SENSOR), MT-52(LOADING MOTOR), SW-156(TRAY SWITCH), SW-157(CHUCK SWITCH) PRINTED WIRING BOARDS**  
 -Ref. No. : MB-56 Board ; 2,000 Series, LS-30, MT-52, SW-156, and SW-157 Boards ; 3,000 Series-



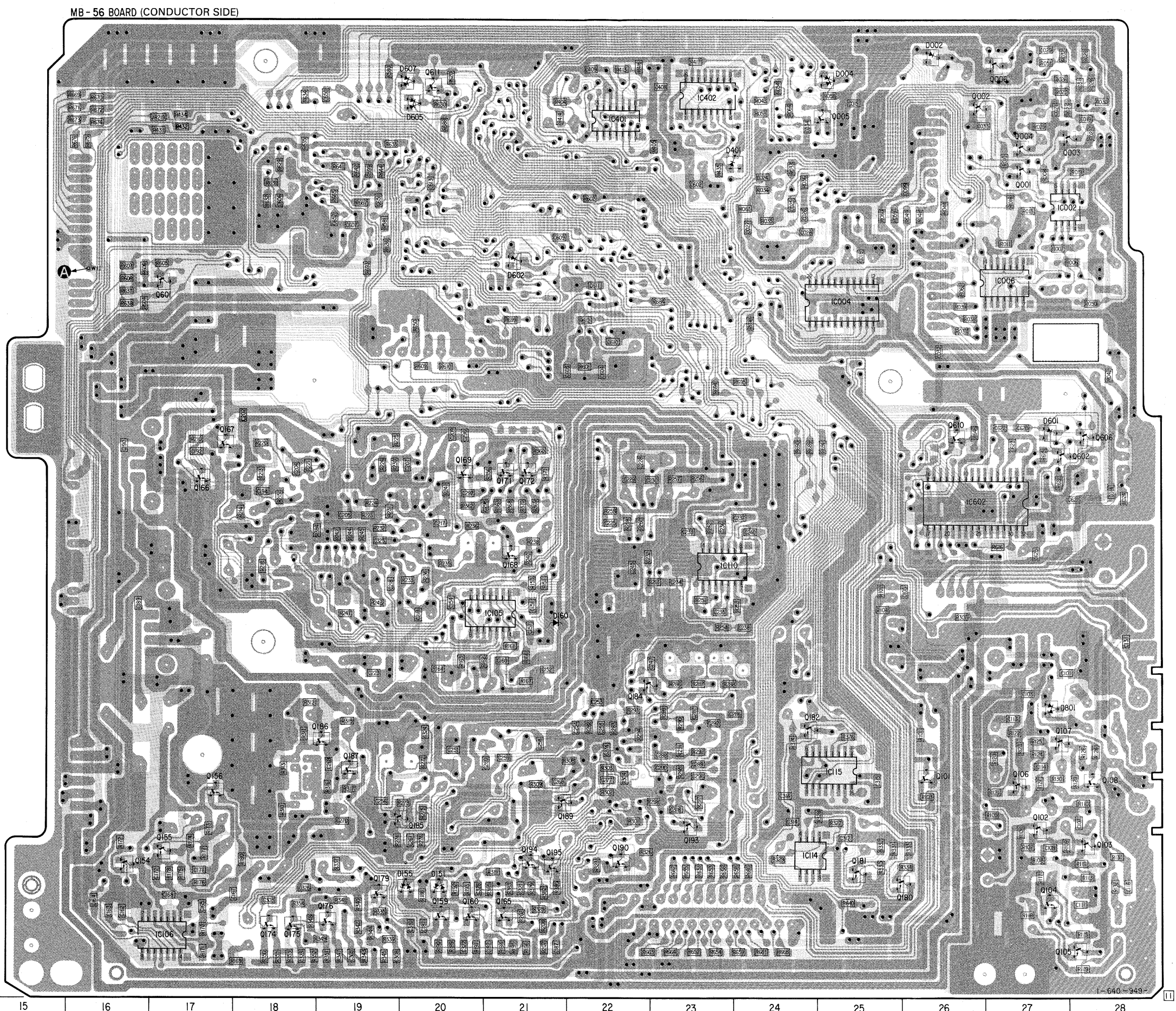
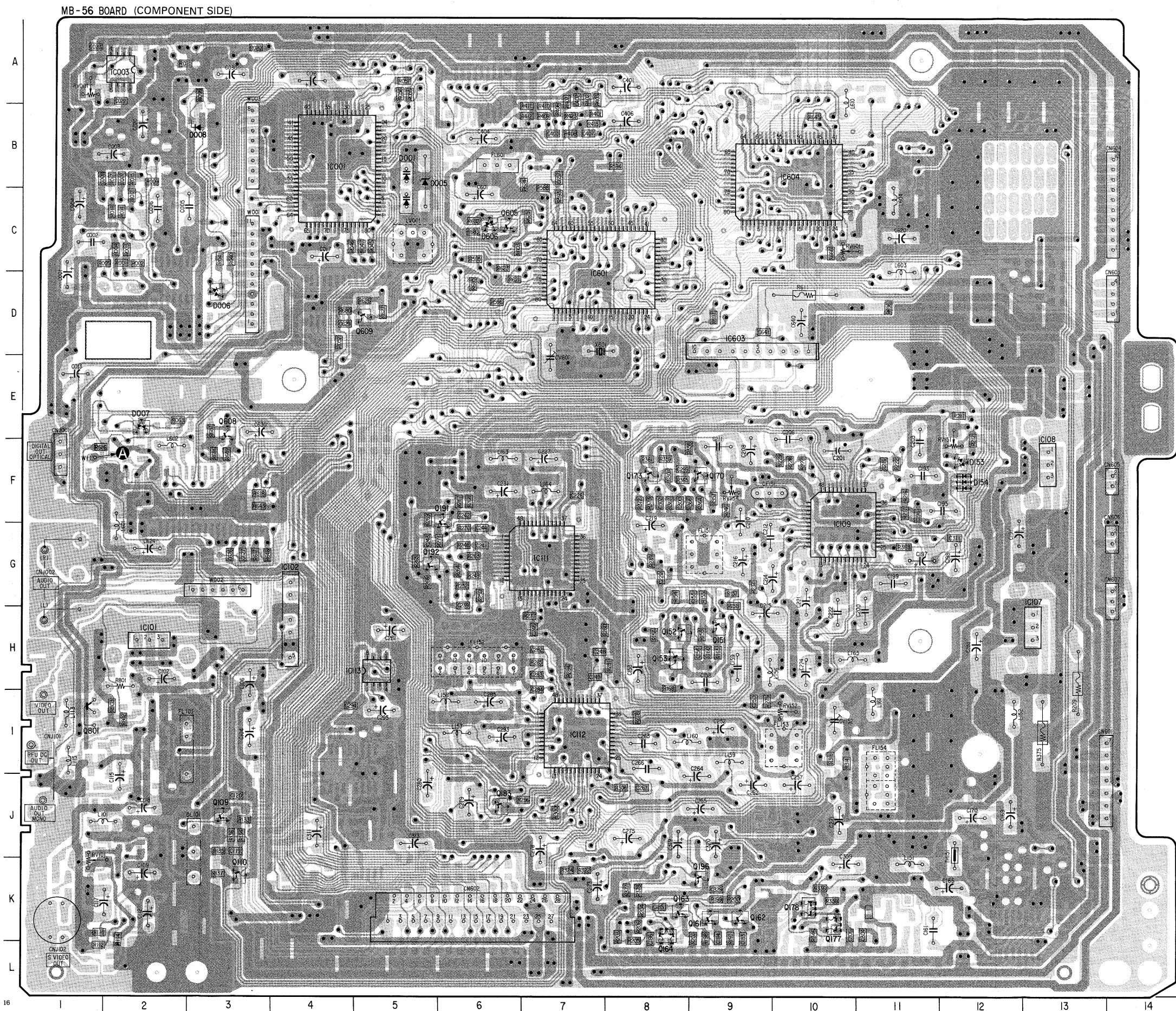
PB	VIDEO SIGNAL		AUDIO SIGNAL
	CHROMA	Y	
1	←	→	↔

SPINDLE PHASE SERVO	↔
SPINDLE SERVO (SPEED AND PHASE)	↔↔
TRACKING SERVO LD/CD/CDV	↔
SLIDE SERVO LD/CD	↔
FOCUS SERVO LD/CD	↔
SKREW SERVO LD TILT	↔

**MB-56(SYSTEM CONTROL) PRINTED WIRING BOARD**  
 - Ref. No. : MB-56 Board ; 2,000 Series -

MB-56 BOARD

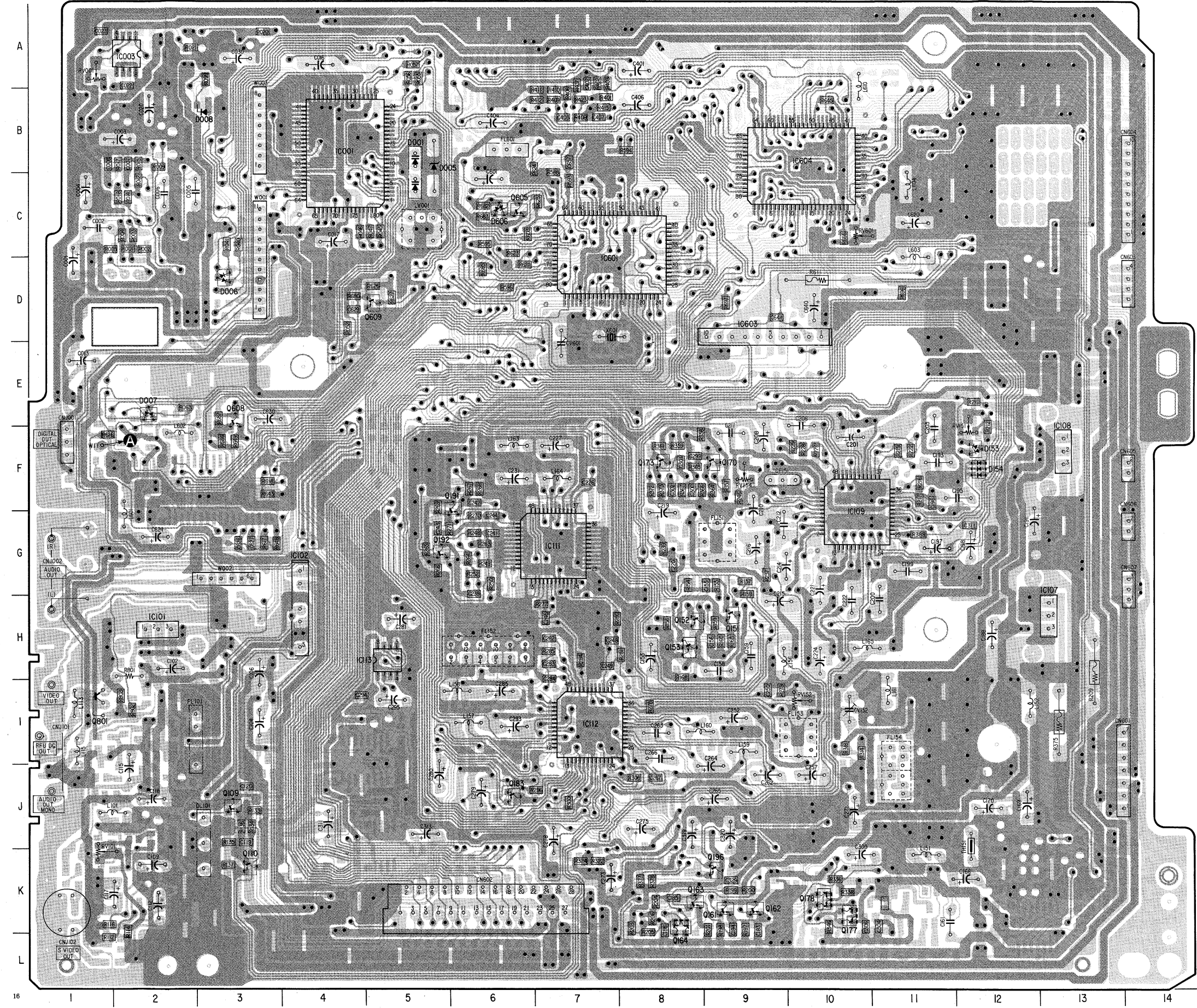
D001	B-5	O185	J-20
D002	A-26	O186	I-19
D004	A-25	O187	I-19
D005	B-5	O189	J-21
D006	D-5	O190	K-22
D007	E-2	O191	F-6
D008	B-3	O192	G-5
D151	K-20	O193	J-23
D153	F-12	O194	K-21
D154	F-12	O195	K-21
D155	K-20	O196	K-9
D160	H-21	O601	D-17
D401	B-23	O602	F-27
D601	E-27	O605	C-6
D602	C-21	O606	E-28
D605	P-20	O608	E-3
D606	C-6	O609	D-5
D607	A-20	O610	E-26
D801	I-27	O611	A-20
		O801	I-1
IC001	B-4		
IC002	C-27		
IC003	A-2		
IC004	D-25		
IC005	D-27		
IC101	H-2		
IC102	H-4		
IC105	H-21		
IC106	K-17		
IC107	H-13		
IC108	F-13		
IC109	G-10		
IC110	G-23		
IC111	G-7		
IC112	I-7		
IC113	H-5		
IC114	J-24		
IC115	I-25		
IC401	B-22		
IC402	A-23		
IC501	C-7		
IC602	F-26		
IC603	D-9		
IC604	B-10		
Q001	B-27		
Q002	B-26		
Q003	B-28		
Q004	B-27		
Q005	B-25		
Q006	A-27		
Q007	D-2		
O101	J-26		
O102	J-27		
O103	J-28		
O104	K-27		
O105	L-28		
O106	J-27		
O107	I-27		
O108	J-28		
O109	J-3		
O110	K-3		
O151	H-9		
O152	H-8		
O153	H-8		
O154	K-16		
O155	J-17		
O156	J-17		
O159	K-20		
O180	K-20		
O181	K-9		
O182	K-9		
O183	K-8		
O184	K-8		
O185	K-21		
O186	F-17		
O187	F-17		
O188	G-21		
O189	F-20		
O170	F-9		
O171	F-21		
O172	F-21		
O173	F-8		
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O177	K-10		
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O183	J-6		
O184	H-23		



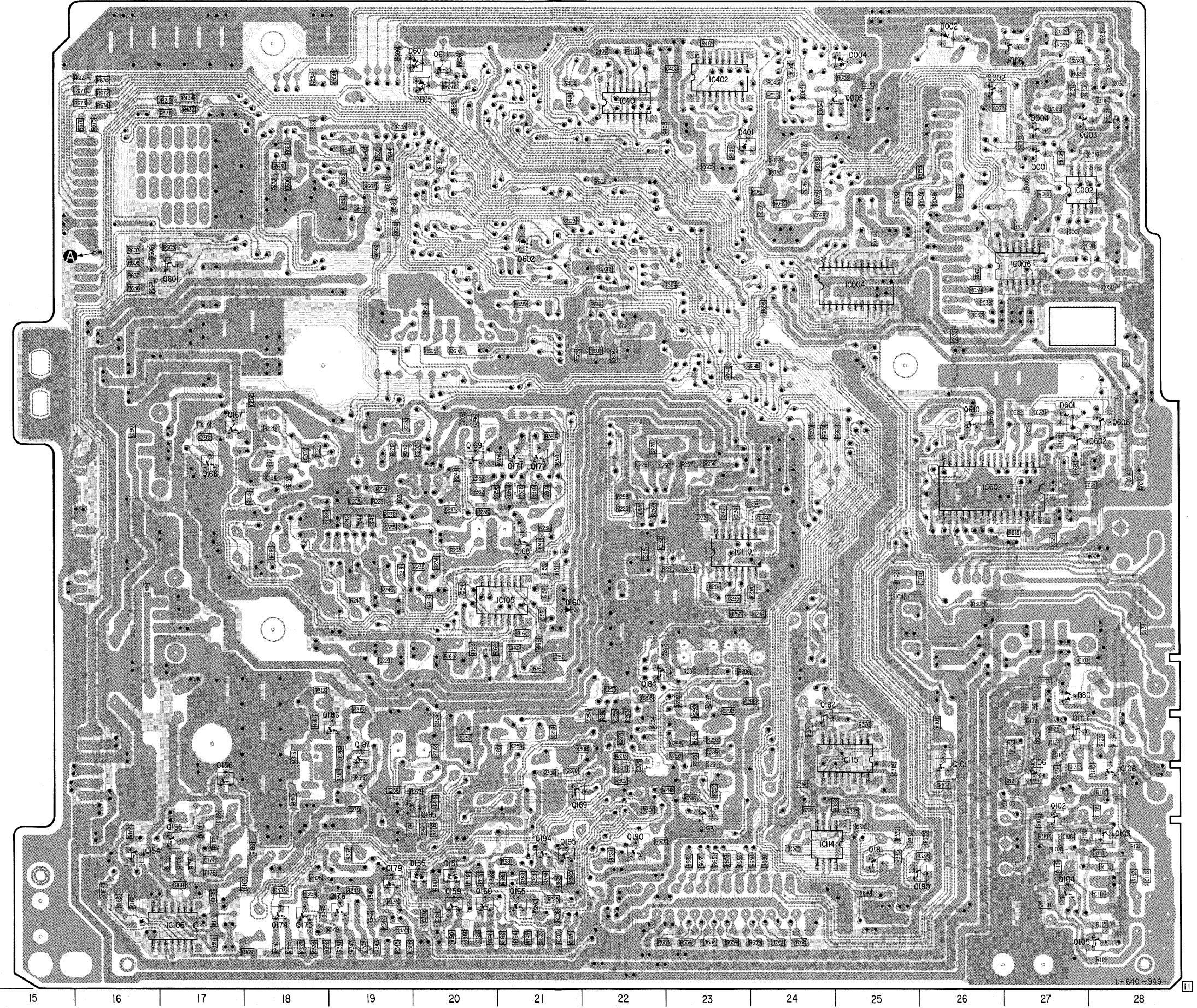
MB-56 BOARD

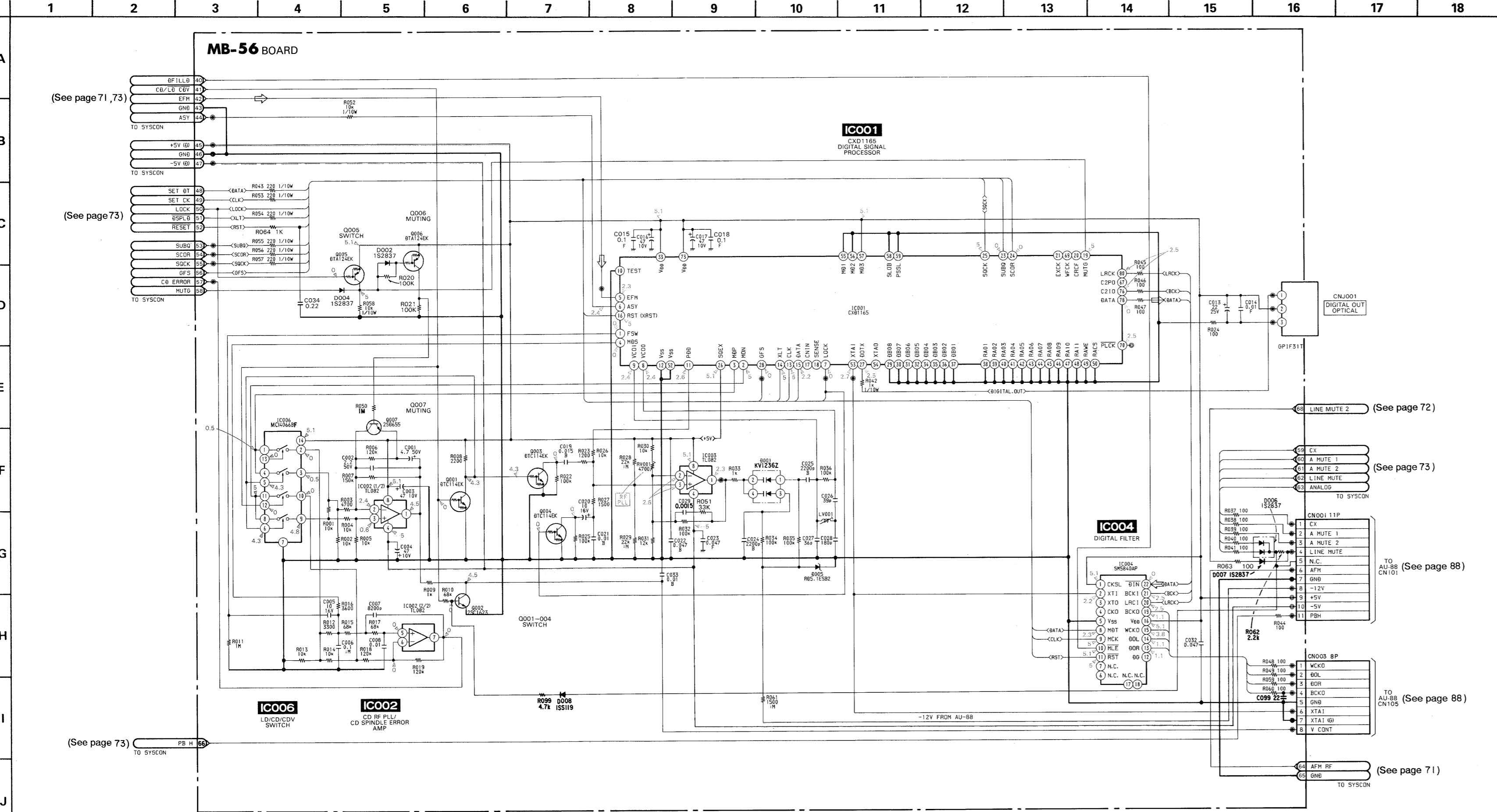
D001	B-5	O185	J-20
D002	A-26	O186	I-19
D004	A-25	O187	I-19
D005	B-5	O189	J-21
D006	D-3	O190	K-22
D007	E-2	O191	F-8
D008	B-3	O192	O-5
D151	K-20	O193	J-23
D153	F-12	O194	K-21
D154	F-12	O195	K-21
D155	K-20	O196	K-9
D160	H-21	O201	D-17
D401	B-23	O602	F-27
D601	E-27	O605	C-6
D602	C-21	O606	E-28
D605	B-20	O608	E-3
D606	C-6	O609	E-5
D607	A-20	O610	E-26
D801	I-27	O611	A-20
		O801	I-1
IC001	B-4		
IC002	C-27		
IC003	A-2		
IC004	D-25		
IC006	D-27		
IC101	H-2		
IC102	H-4		
IC105	H-21		
IC106	K-17		
IC107	H-13		
IC108	F-13		
IC109	G-10		
IC110	G-23		
IC111	O-7		
IC112	I-7		
IC113	H-5		
IC114	J-24		
IC115	I-25		
IC401	B-22		
IC402	A-23		
IC601	C-7		
IC602	F-26		
IC603	D-9		
IC604	B-10		
Q001	B-27		
Q002	B-26		
Q003	B-28		
Q004	B-27		
Q005	B-25		
Q006	A-27		
Q007	D-2		
Q101	J-26		
Q102	J-27		
Q103	J-28		
Q104	K-27		
Q105	L-28		
Q106	J-27		
Q107	J-27		
Q108	J-28		
Q109	J-3		
Q110	K-3		
Q151	H-9		
Q152	H-8		
Q153	H-8		
Q154	K-16		
Q155	J-17		
Q156	J-17		
Q159	K-20		
Q160	K-20		
Q161	K-9		
Q162	K-9		
Q163	K-9		
Q164	K-8		
Q165	K-21		
Q166	F-17		
Q167	F-17		
Q168	G-21		
Q169	F-20		
Q170	F-9		
Q171	F-21		
Q172	F-21		
Q173	F-8		
Q174	K-18		
Q175	K-18		
Q176	K-19		
Q177	K-10		
Q178	K-10		
Q179	K-19		
Q180	K-26		
Q181	K-25		
Q182	I-24		
Q183	J-6		
Q184	H-23		

MB-56 BOARD (COMPONENT SIDE)



MB-56 BOARD (CONDUCTOR SIDE)





PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
64	↔	↔	↔	↔
65				

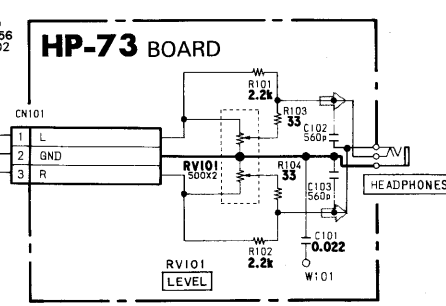
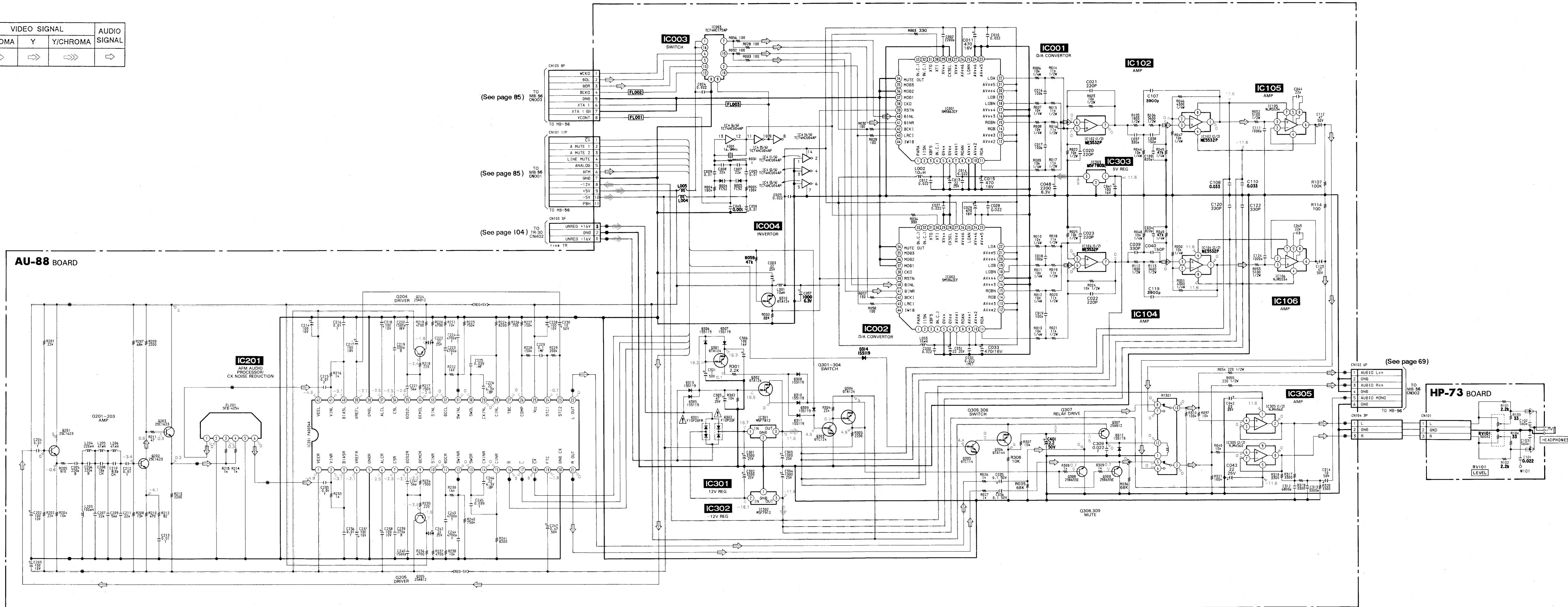
**AU88(AUDIO), HP-73(HEAD PHONES JACK) SCHEMATIC DIAGRAMS**

- Ref. No. : AU-88 Board ; 4,000 Series, HP-73 Board ; 5,000 Series -

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

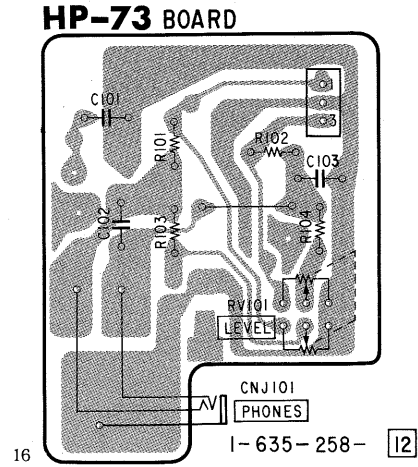
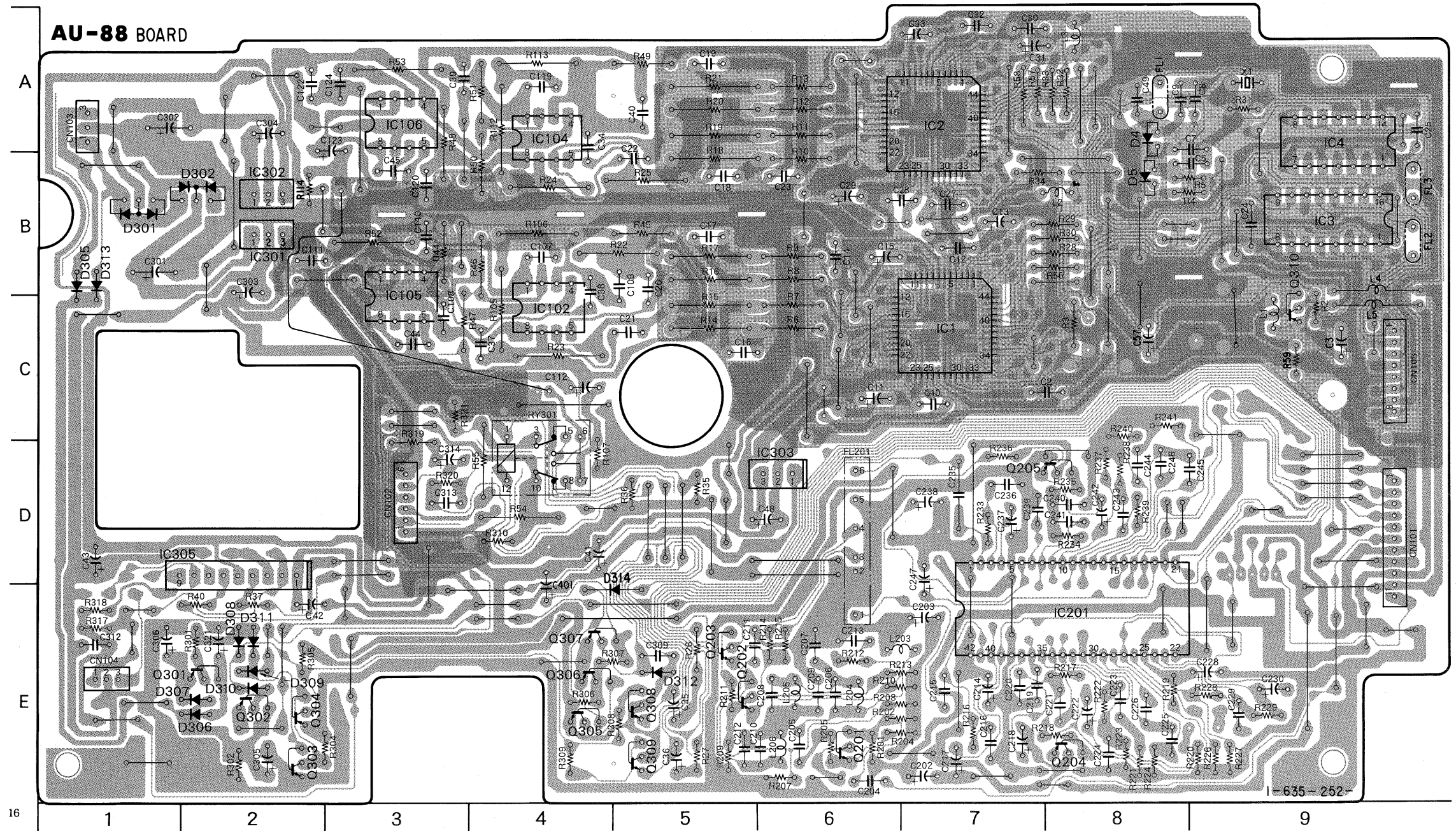
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇐	⇐⇐	⇐⇐⇐	⇐





**AU88(AUDIO), HP-73(HEAD PHONES JACK) PRINTED WIRING BOARDS**

- Ref. No. : AU-88 Board ; 4,000 Series, HP-73 Board ; 5,000 Series -



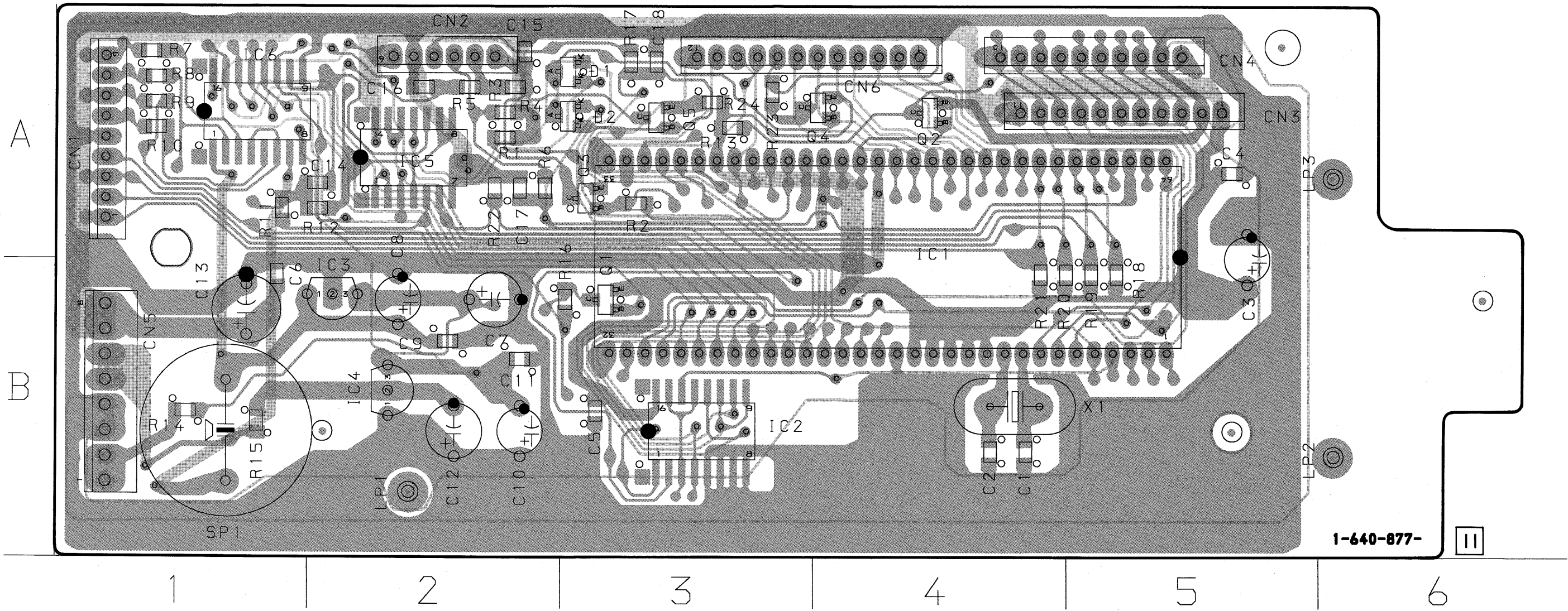
**AU-88 BOARD**

D004	B-8	IC001	C-7	Q201	E-6
D005	B-8	IC002	A-7	Q202	E-5
D301	B-1	IC003	B-9	Q203	E-5
D302	B-2	IC004	A-10	Q204	E-8
D305	B-1	IC102	C-4	Q205	D-8
D306	E-2	IC104	A-4	Q301	E-2
D307	E-2	IC105	B-3	Q302	E-2
D308	E-2	IC106	A-3	Q303	E-2
D309	E-2	IC201	E-8	Q304	E-2
D310	E-2	IC301	B-2	Q305	E-4
D312	E-5	IC302	B-2	Q306	E-4
D313	B-1	IC303	D-6	Q307	E-4
D314	E-5	IC305	D-2	Q308	E-5
				Q309	E-5
				Q310	C-9

**IF-44(INTER FACE), RS-57(RS-232C CONNECTOR) PRINTED WIRING BOARDS**

- Ref. No. : IF-44 Board ; 6,000 Series, RS-57 Boards ; 7,000 Series -

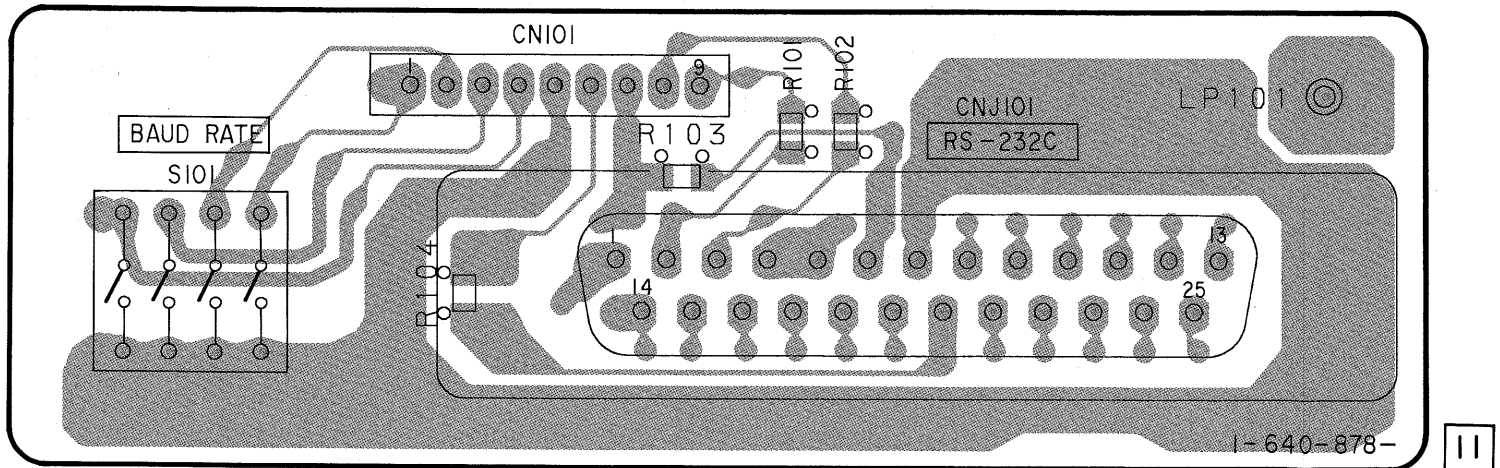
**IF-44 BOARD**



IF-44 BOARD

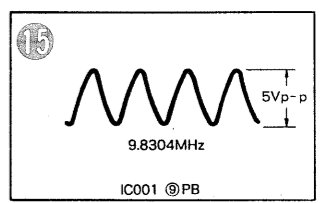
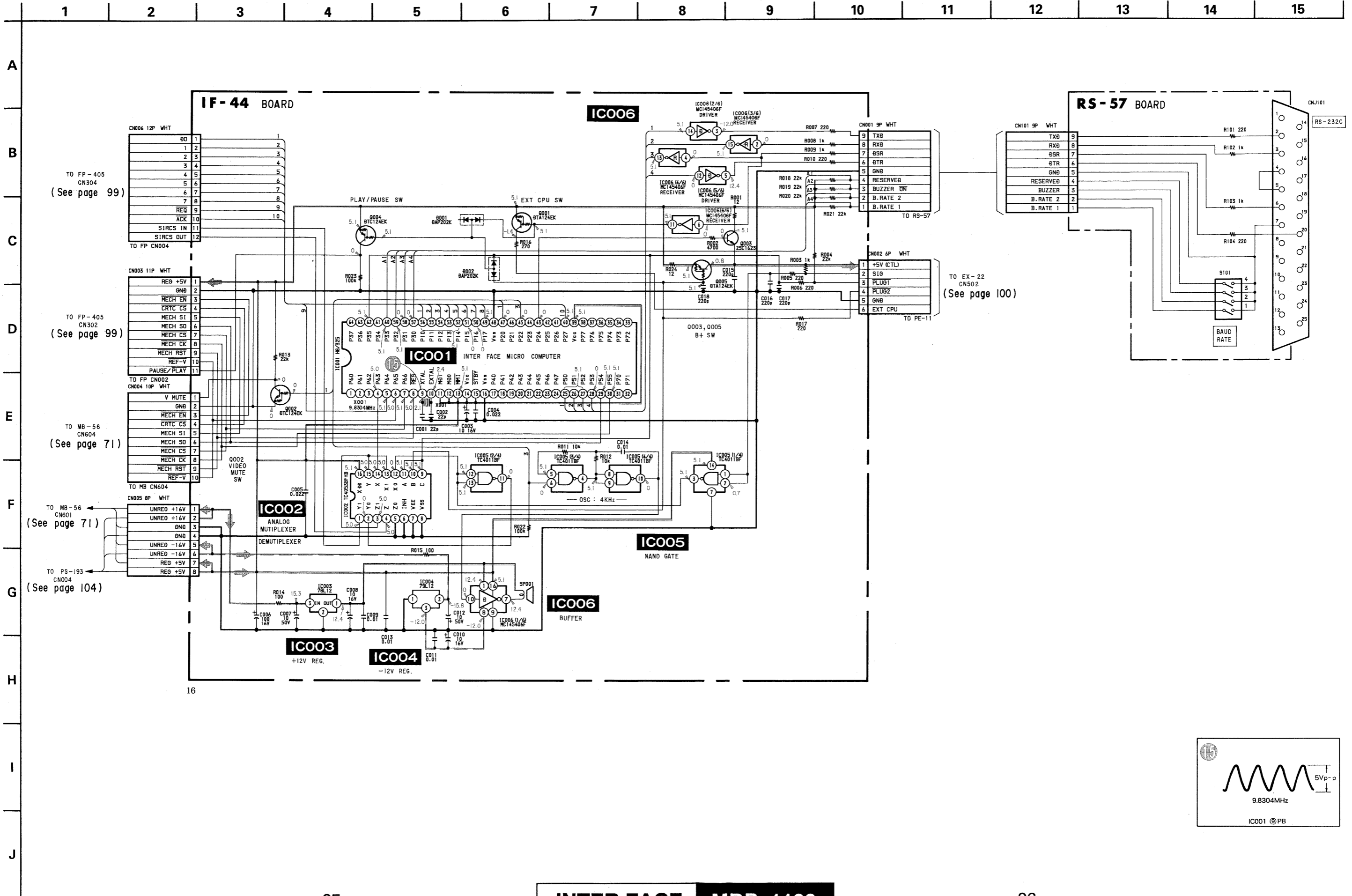
IC1	B-4
IC2	B-3
IC3	B-2
IC4	B-2
IC5	A-2
IC6	A-1
Q1	B-3
Q2	A-4
Q3	A-3
Q4	A-3
Q5	A-3
D1	A-2
D2	A-2

**RS-57 BOARD**



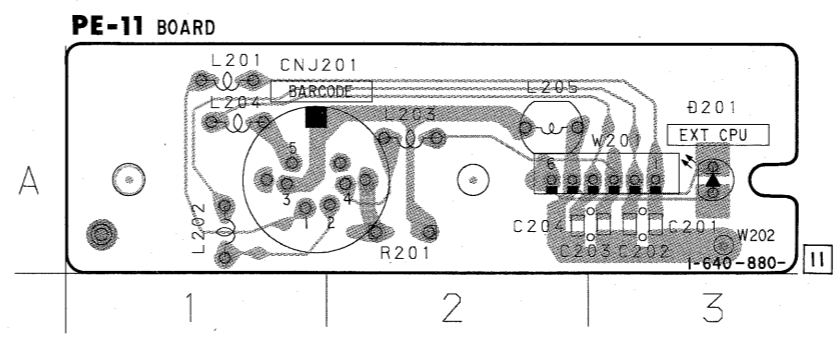
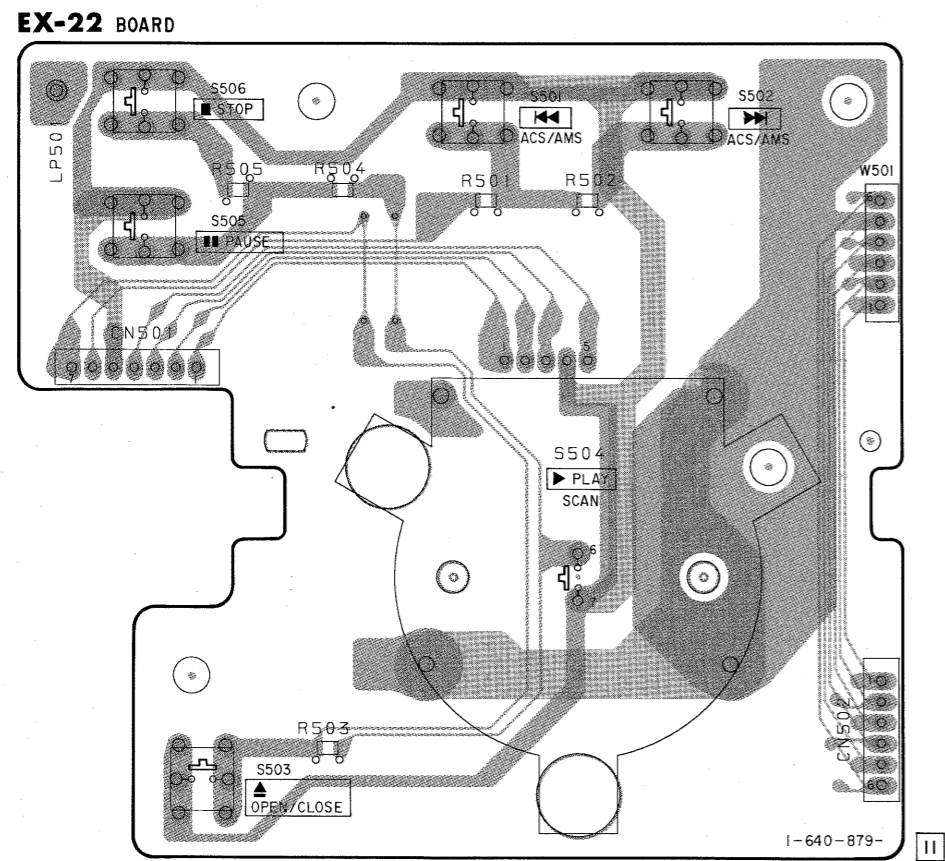
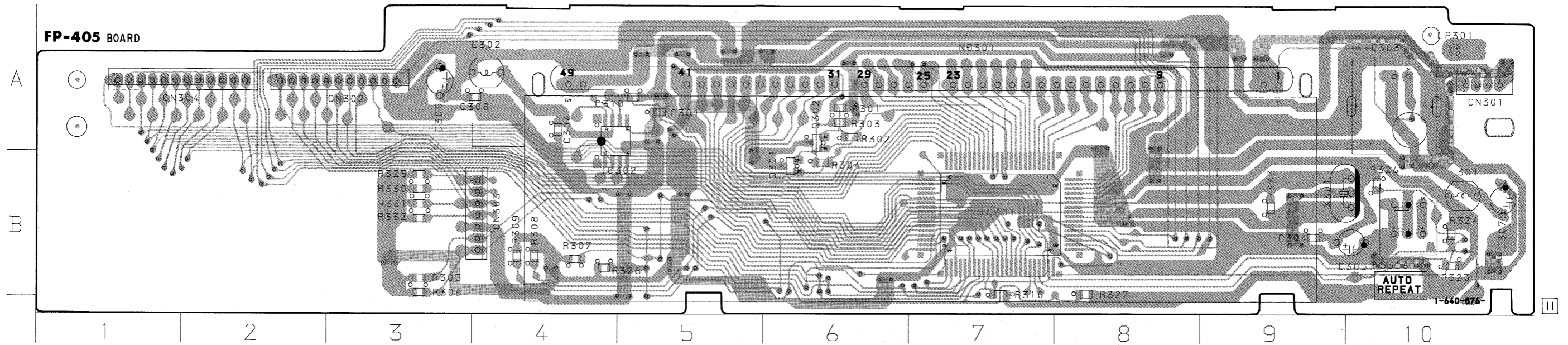
**IF-44(INTER FACE), RS-57(RS-232C CONNECTOR) SCHEMATIC DIAGRAMS**

- Ref. No. : IF-44 Board ; 6,000 Series, RS-57 Boards ; 7,000 Series -



**FP-405(MODE CONTROL), EX-22(SHUTTLE, FUNCTION SWITCHES), PE-11(BARCODE JACK) PRINTED WIRING BOARDS**

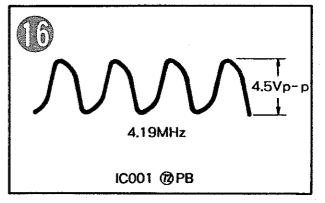
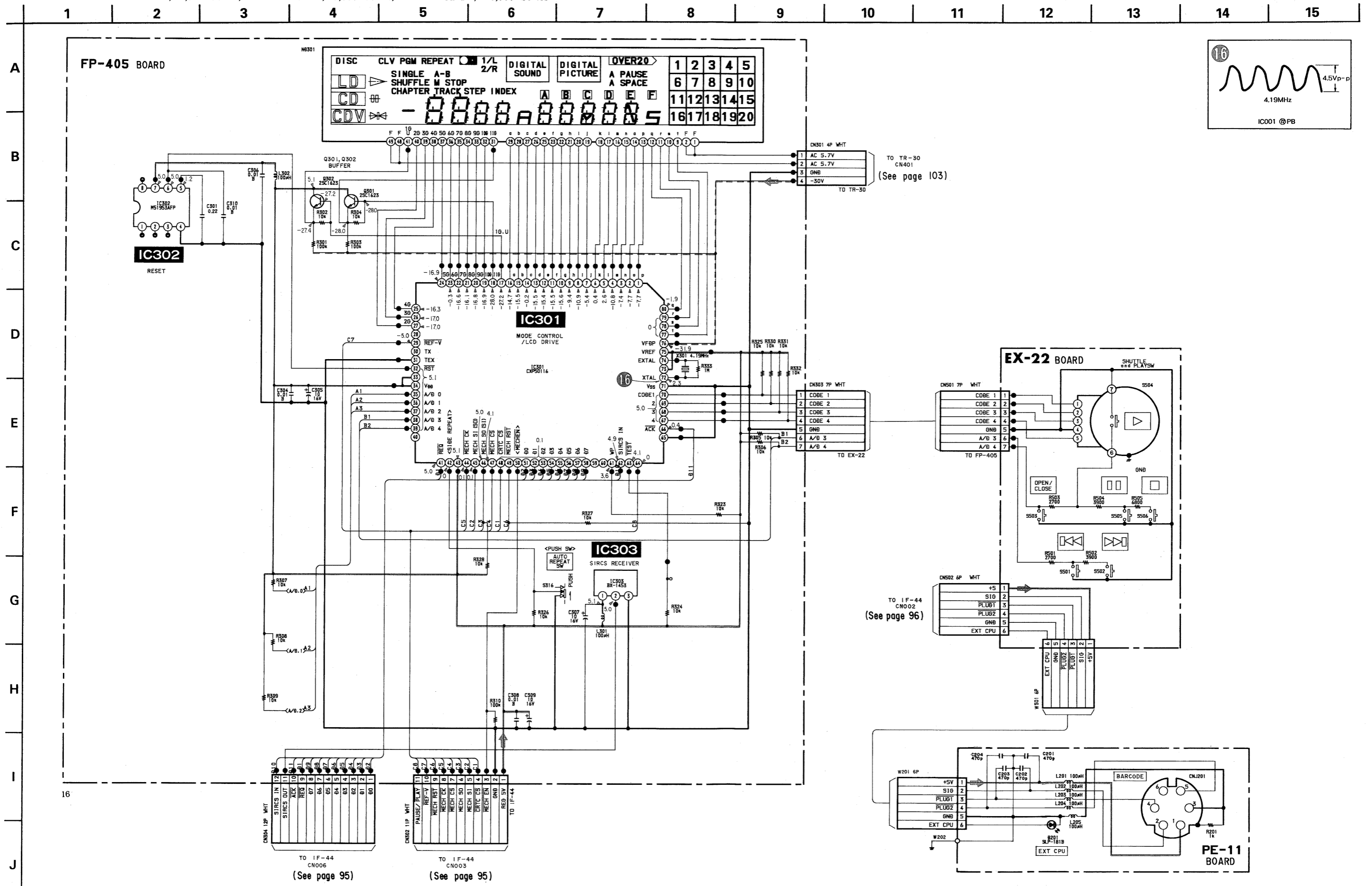
- Ref. No. : FP-405 Board ; 8,000 Series, EX-22 Board ; 9,000 Series, PE-11 Board ; 10,000 Series -



16

**FP-405(MODE CONTROL), EX-22(SHUTTLE, FUNCTION SWITCHES), PE-11(BARCODE JACK) SCHEMATIC DIAGRAMS**

- Ref. No. : FP-405 Board ; 8,000 Series, EX-22 Board ; 9,000 Series, PE-11 Board ; 10,000 Series -



TO IF-44  
CN006  
(See page 95)

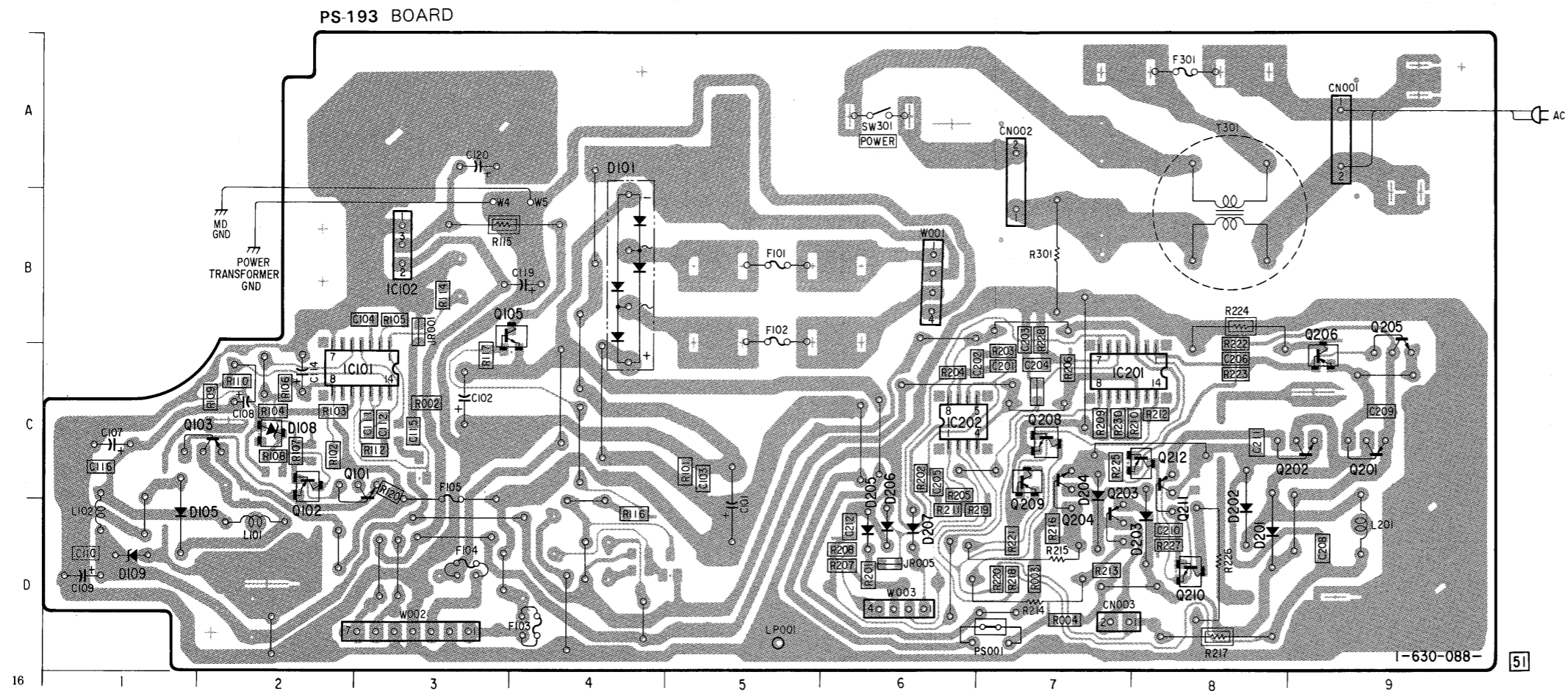
TO IF-44  
CN003  
(See page 95)

TO IF-44  
CN002  
(See page 96)

PE-11  
BOARD

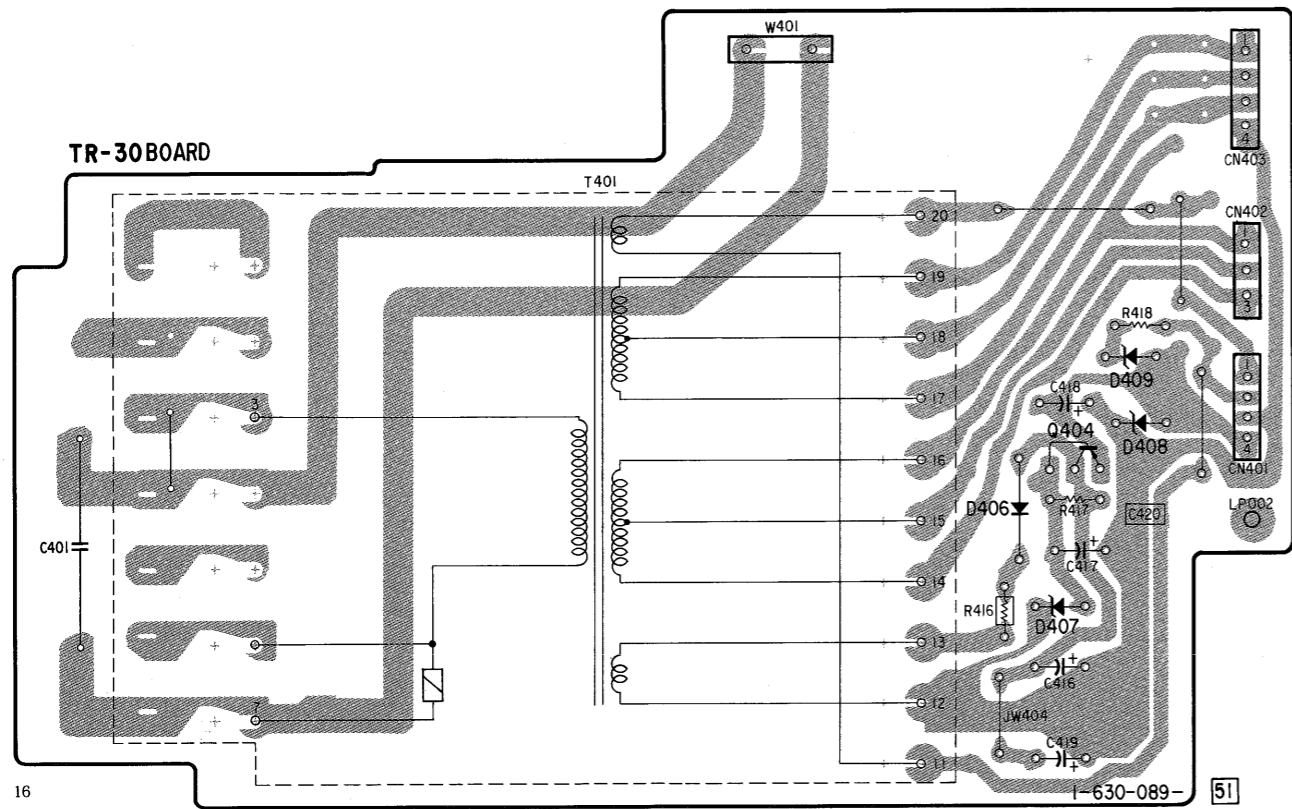
**PS-193(POWER SUPPLY, SPINDLE SERVO), TR-30(POWER TRANSFORMER) PRINTED WIRING BOARDS**

- Ref. No. : PS-193 Board ; 11,000 Series, TR-30 Board ; 12,000 Series -



**PS-193 BOARD**

D101	B-4
D105	D-1
D108	C-2
D109	D-1
D201	D-8
D202	D-8
D203	D-8
D204	D-7
D205	D-6
D206	D-6
D207	D-6
IC101	C-3
IC102	B-3
IC201	C-8
IC202	C-6
Q101	C-3
Q102	C-2
Q103	C-2
Q105	B-4
Q201	C-9
Q202	C-9
Q203	D-8
Q204	D-7
Q205	C-9
Q206	C-9
Q208	C-7
Q209	C-7
Q210	D-8
Q211	C-8
Q212	C-8

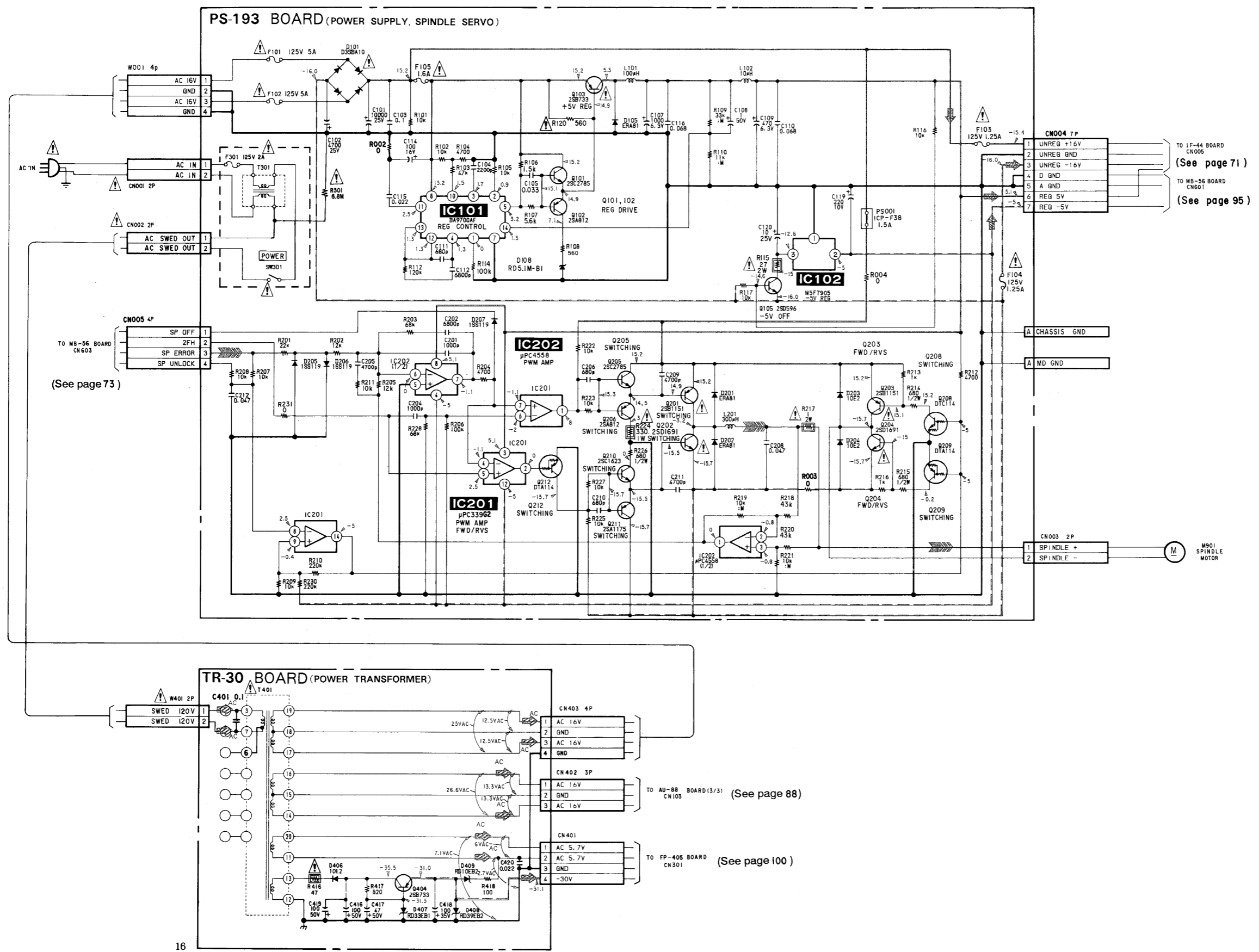


**PS-193(POWER SUPPLY, SPINDLE SERVO), TR-30(POWER TRANSFORMER) SCHEMATIC DIAGRAMS**

- Ref. No. : PS-193 Board ; 11,000 Series, TR-30 Board ; 12,000 Series -

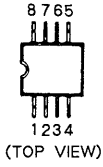
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

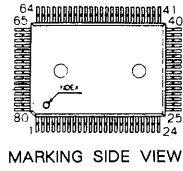


4-3. SEMICONDUCTOR LEAD LAYOUTS

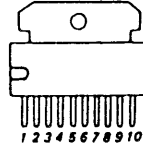
BA7131F  
M51953AFP  
RC4558M  
TL082CPS  
μPC4558G2



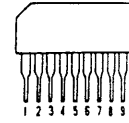
CXD1165Q  
MB89795-133



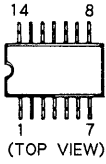
LA6510  
TA7291P



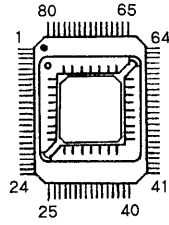
NJM4560S-D



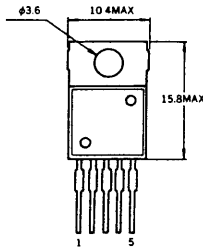
BA9700AF  
CXL5005M  
LM324NS  
MC14011BF  
MC14066BF  
μPC324G2  
μPC339G2



CXP50116-240Q



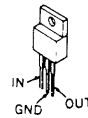
MC14052BF



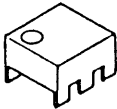
RC78L12A



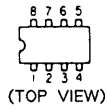
RC78M05FA  
RC78M09F  
TA780SS  
TA7812L  
μPC24M09HF



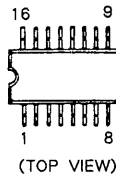
BX1453



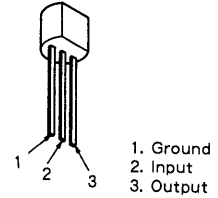
CX20197  
NE5532P  
NJM5534D-D



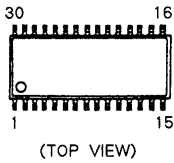
MC145406F



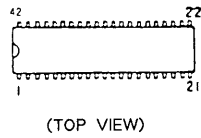
RC79L12A



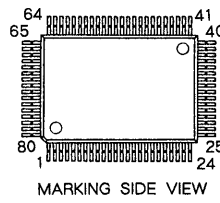
CXA1081M



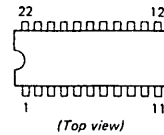
HA11529  
PA0034A



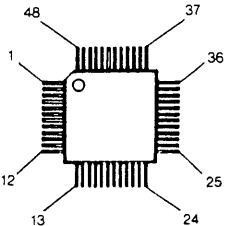
MSM72H032GS-K



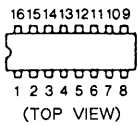
SM5840AS



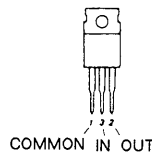
CXA1254Q  
CXA1255Q  
CXD1152-MS



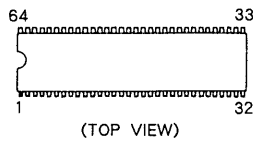
HD14053BFP  
TC74HC175AP



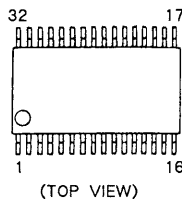
M5F7912L  
TA7905S



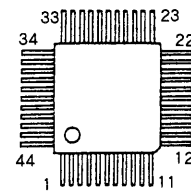
HD-6433258



M50455-196FP

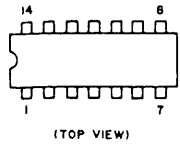


SM5862CF

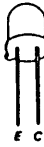




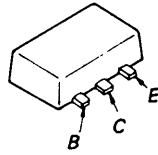
SN74HCU04ANS  
SN74HCU04N



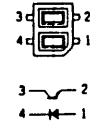
PT-360FS



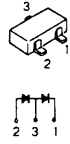
2SD1164-QR



GP-2S09-B



1SS226



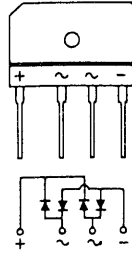
DTA114EK  
DTA124EK  
DTC114EK  
DTC124EK  
2SA1162-G  
2SC1623-L6  
2SC1623-L7  
2SC2412K-S  
2SD956-DV4



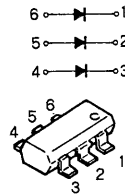
2SA933S-QR  
2SB740-3  
2SD655-E



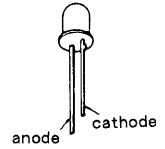
D3SBA10



1MN10



DL360



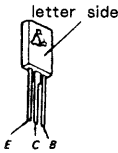
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2SB733-34  
2SB734-34



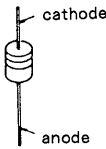
DTA124ES  
DTA144ES  
DTC114ES  
DTC124ES



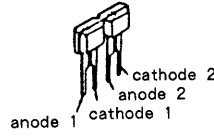
2SB1151-L  
2SD1691K



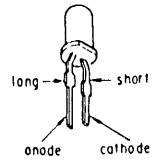
ERA83-006  
RD3.9ES-B2  
RD33ES-B2  
RD39ES-B2  
RD5.1ES-B2  
1SS119



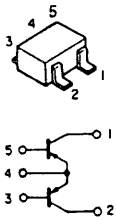
KV1236Z



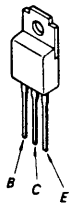
TLR124



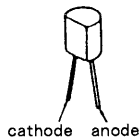
FMS1



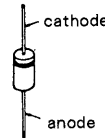
2SB1370-EF  
2SD2012



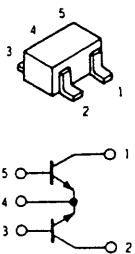
FC52M-5



RD10ES-B2  
10E2



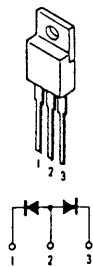
FMW1



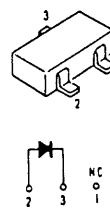
2SC2785-HFE



F10P20F(R)  
F10P20FR



RD5.1M-B2  
RD6.2M-B2



## SECTION 5 EXPLODED VIEWS

**NOTE:**

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE)...(RED)  

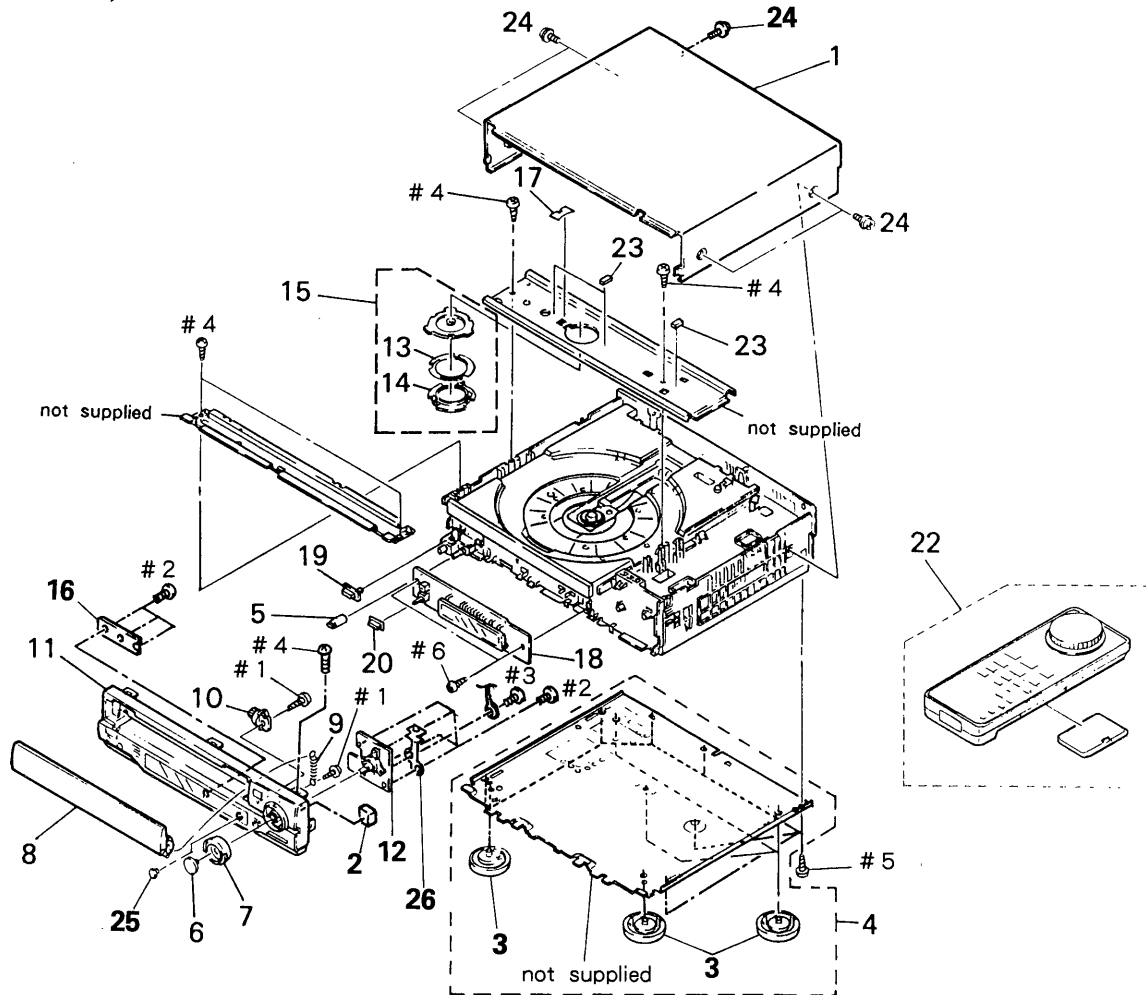
↑  
Parts color

↑  
Cabinet's color
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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

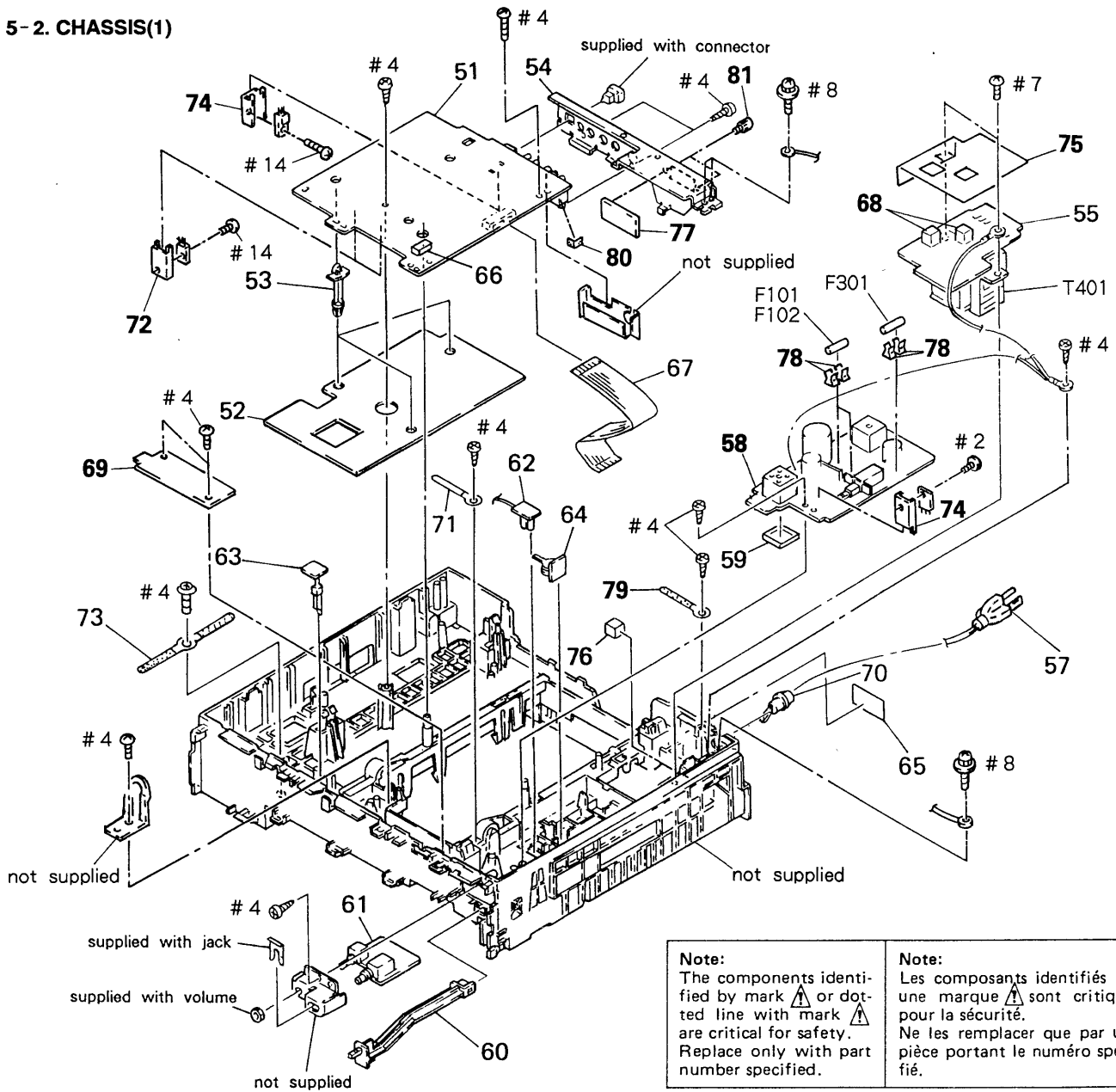
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spéci-fie.




### 5-1. CABINET, FRONT PANEL ASSEMBLY










Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	* 3-735-065-21	CASE, UPPER		14	3-735-010-01	PLATE (1), PRESS	
2	9-911-840-XX	RUBBER (B)		15	X-3735-006-1	PLATE ASSY, PRESS	
3	X-3735-056-1	FOOT ASSY		16	* A-6426-490-A	PE-11 BOARD, COMPLETE	
4	* X-3749-037-1	PLATE ASSY, BOTTOM		17	* 3-737-454-01	SHEET, HOLDER	
5	3-941-122-01	KNOB (A2. TYPE), LOV		18	* A-6421-630-A	FP-405 BOARD, COMPLETE	
6	3-741-951-81	BUTTON, PLAY		19	3-735-051-31	BUTTON, POWER	
7	3-741-952-11	RING, SHUTTLE		20	3-741-898-21	KNOB, A/R	
8	X-3940-914-1	DOOR ASSY		22	1-465-879-11	REMOTE CONTROL (RMT-1000)	
9	3-940-250-01	SPRING (DOOR), TENSION		23	9-911-842-XX	CUSHION	
10	4-919-393-01	DAMPER		24	3-693-912-11	SCREW (3X8), TAPPING	
11	X-3940-737-1	PANEL ASSY, FRONT		25	3-945-492-01	CAP	
12	* A-6420-629-A	EX-22 BOARD, COMPLETE		26	3-944-731-01	PLATE, GROUND	
13	3-735-011-01	SPRING					

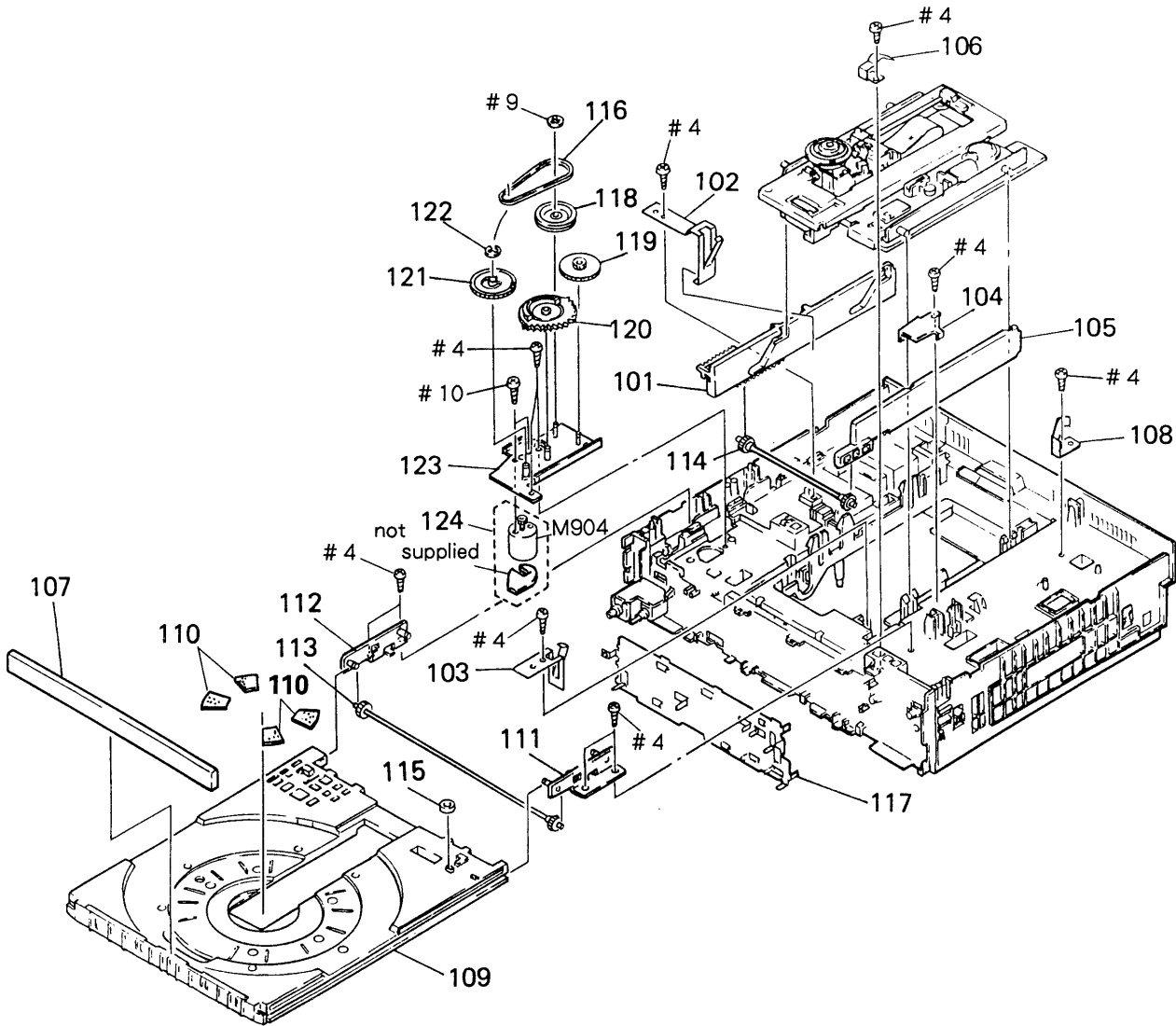
5-2. CHASSIS(1)



<p><b>Note:</b> The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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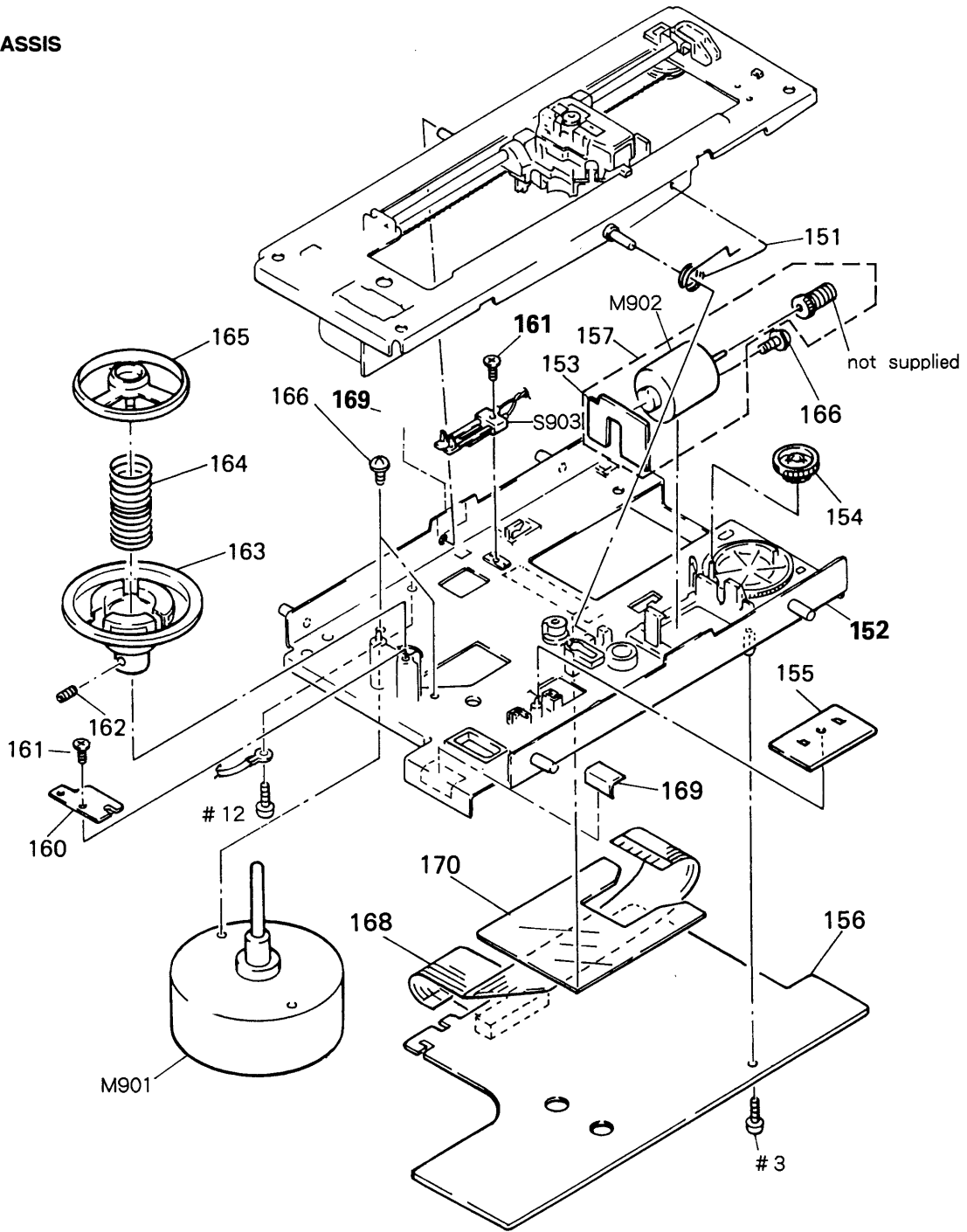
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	* A-6421-631-A	MB-56 BOARD, COMPLETE		70	 2-045-063-00	STOPPER, CORD	
52	* A-6421-466-A	AU-88 BOARD, COMPLETE		71	3-703-150-11	STOPPER, WIRING	
53	* 3-703-353-12	SUPPORTER, PC BOARD		72	3-746-535-01	HEAT SINK	
54	* 3-746-503-91	PLATE, JACK		73	* 2-367-032-01	CLAMP	
55	1-630-089-51	TR-30 BOARD		74	3-309-144-21	HEAT SINK	
57	 1-590-043-11	CORD, POWER		75	* 3-944-904-01	COVER, TRANSFORMER	
58	* A-6421-504-A	PS-193 (1) BOARD, COMPLETE		76	3-943-099-01	RUBBER, CORD CLAMP	
59	X-3735-019-1	SHIELD ASSY, PS LID		77	* A-6426-492-A	RS-57 BOARD, COMPLETE	
60	3-741-897-01	LEVER, POWER SW		78	 1-533-189-11	HOLDER, FUSE	
61	* A-6421-530-A	HP-73 (U47) BOARD, COMPLETE		79	* 3-701-822-00	HOLDER, WIRE	
62	1-635-259-11	LS-30 BOARD		80	3-831-441-11	CUSHION (B)	
63	1-635-260-11	SW-156 BOARD		81	* 3-694-981-01	SCREW (1/4 INCH), D SUB	
64	1-635-261-11	SW-157 BOARD		F101	 1-532-747-11	FUSE, GLASS TUBE (5A)	
65	* 3-943-204-01	LABEL, MODEL NUMBER		F102	 1-532-747-11	FUSE, GLASS TUBE (5A)	
66	* 3-354-631-01	CUSHION (RF)		F301	 1-532-743-11	FUSE, GLASS TUBE (2A)	
67	* 1-575-813-11	CABLE, FLAT(FLEXIBLE) (28 CORE)		T401	 1-449-804-1	1 TRANSFORMER, POWER	
68	9-911-843-XX	CUSHION					
69	* A-6426-491-A	IF-44 BOARD, COMPLETE					

5-3. CHASSIS(2)



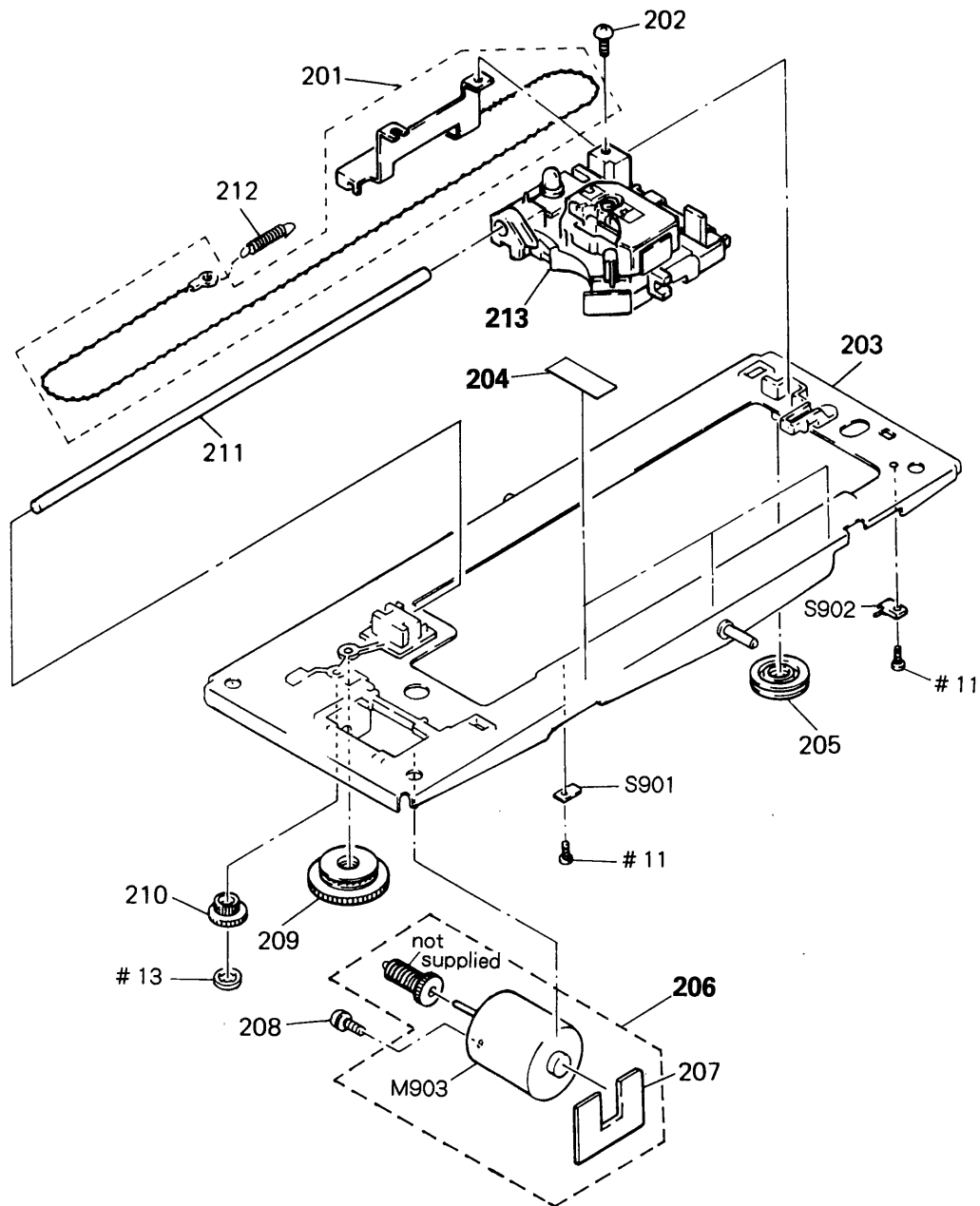
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	3-735-053-01	RACK (LEFT)		114	X-3735-008-1	GEAR ASSY, MD PHASE	
102	3-737-401-01	SPRING (1)		115	4-914-248-01	STOPPER, RUBBER	
103	3-737-402-01	SPRING (2)		116	3-534-779-00	BELT, DRIVE	
104	* 3-749-912-01	RETAINER (B), RACK		117	* A-6415-365-A	HOLDER ASSY, PC BOARD	
105	3-735-052-01	RACK (RIGHT)		118	3-735-036-01	PULLEY (A)	
106	3-737-448-01	SPRING, LEAF		119	3-735-037-01	GEAR, MIDWAY	
107	3-746-506-11	COVER, TRAY		120	3-735-056-01	CAM, DRIVING	
108	3-746-525-01	SPRING, TRAY		121	3-735-035-01	GEAR, TRAY	
109	X-3749-040-2	TRAY ASSY		122	3-669-595-00	WASHER (2), STOPPER	
110	3-749-626-01	SHEET, CD		123	* X-3735-002-1	BASE ASSY, THREADING	
111	X-3735-070-1	GUIDE ASSY (R), TRAY		124	A-6415-359-A	MOTOR BLOCK ASSY (X), THREADING	
112	X-3735-071-1	GUIDE ASSY (L), TRAY		M904	1-541-309-11	MOTOR, L (RF-370C) (LOADING)	
113	X-3735-069-1	GEAR ASSY, PHASE					

5-4. MD CHASSIS



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	3-735-021-01	SPRING, TORSION		163	X-3735-003-1	TURNTABLE ASSY	
152	* 3-735-068-15	CHASSIS, MD		164	* 3-735-026-01	SPRING, COMPRESSION	
153	* 1-631-095-11	PC BOARD, MT-30		165	X-3735-004-1	GUIDE ASSY, CENTER	
154	3-735-025-01	GEAR, SKEW		166	4-606-833-01	SCREW (3X5), + PSW	
155	1-635-255-11	CK-44 BOARD		168	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
156	* A-6421-465-A	SV-63 BOARD, COMPLETE		169	* 3-737-413-01	SHEET, TEFLON	
157	A-6415-290-A	MOTOR BLOCK ASSY, SKEW		170	* 3-735-099-01	SHEET, FLEXIBLE RETAINER	
160	1-635-256-11	FG-41 BOARD		M901	1-541-776-21	MOTOR, LD SPINDLE (SPINDLE)	
161	3-719-845-11	SCREW (B2X8), TAPPING		M902	1-541-659-11	MOTOR, DC (SLED)	
162	3-701-506-01	SET SCREW, DOUBLE POINT 3X4		S903	1-554-468-00	SWITCH, LEAF (SLED IN LIMIT LD/CD)	

### 5-5. OPTICAL BLOCK



<p><b>Note:</b> The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	X-3735-001-1	WIRE ASSY		209	3-735-016-01	PULLEY, DRIVING	
202	3-899-248-01	SCREW (M3X6)		210	3-735-015-01	GEAR, CARRIAGE	
203	* X-3735-014-1	CHASSIS ASSY		211	* 3-735-020-01	SHAFT, CARRIAGE	
204	3-846-312-00	SPACER		212	3-672-430-00	SPRING, TENSION	
205	3-735-017-01	PULLEY, RETURN		213	$\triangle$ 8-848-138-11	DEVICE, OPTICAL KHS-130A	
206	A-6415-293-A	MOTOR BLOCK ASSY, SLED		M903	1-541-659-11	MOTOR, DC (TILT)	
207	* 1-630-097-11	PC BOARD, MT-28		S901	1-571-435-11	SWITCH (SLED IN LIMIT)	
208	4-606-833-01	SCREW (3X5), + PSW		S902	1-570-771-21	SWITCH (SLED OUT LIMIT)	

## AU-88

### SECTION 6 ELECTRICAL PARTS LIST

**NOTE:**

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

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spéci-fie.

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...,  $\mu$ PA...,  
uPB...,  $\mu$ PB..., uPC...,  $\mu$ PC...,  
uPD...,  $\mu$ PD...
- CAPACITORS:  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* A-6421-466-A	AU-88 BOARD, COMPLETE (Ref. No 4, 000)			C035	1-124-463-00	ELECT	0.1uF 20% 50V
	*****	Series)		C036	1-124-463-00	ELECT	0.1uF 20% 50V
	< CAPACITOR >			C037	1-136-439-11	FILM	330PF 5% 630V
C002	1-161-494-00	CERAMIC	0.022uF 25V	C038	1-136-435-11	FILM	150PF 5% 630V
C003	1-126-049-11	ELECT	22uF 20% 25V	C039	1-136-439-11	FILM	330PF 5% 630V
C005	1-162-306-11	CERAMIC	0.01uF 20% 16V	C040	1-136-435-11	FILM	150PF 5% 630V
C007	1-162-207-31	CERAMIC	22PF 5% 50V	C041	1-126-023-11	ELECT	100uF 20% 16V
C008	1-162-207-31	CERAMIC	22PF 5% 50V	C042	1-126-049-11	ELECT	22uF 20% 25V
C009	1-162-306-11	CERAMIC	0.01uF 20% 16V	C043	1-126-049-11	ELECT	22uF 20% 25V
C010	1-136-157-00	FILM	0.022uF 5% 50V	C044	1-162-207-31	CERAMIC	22PF 5% 50V
C011	1-126-012-11	ELECT	470uF 20% 16V	C045	1-162-207-31	CERAMIC	22PF 5% 50V
C012	1-161-494-00	CERAMIC	0.022uF 25V	C048	1-124-893-11	ELECT	2200uF 20% 10V
C013	1-126-049-11	ELECT	22uF 20% 25V	C049	1-162-294-31	CERAMIC	0.001uF 10% 50V
C014	1-136-157-00	FILM	0.022uF 5% 50V	C057	1-124-471-00	ELECT	1000uF 20% 6.3V
C015	1-126-012-11	ELECT	470uF 20% 16V	C107	1-136-257-00	FILM	0.0039uF 5% 100V
C016	1-136-433-11	FILM	100PF 5% 630V	C108	1-136-159-00	FILM	0.033uF 5% 50V
C017	1-136-433-11	FILM	100PF 5% 630V	C109	1-130-017-00	FILM	820PF 5% 50V
C018	1-136-433-11	FILM	100PF 5% 630V	C110	1-136-159-00	FILM	0.033uF 5% 50V
C019	1-136-433-11	FILM	100PF 5% 630V	C111	1-136-250-11	FILM	0.001uF 3% 100V
C020	1-136-437-11	FILM	220PF 5% 630V	C112	1-124-910-11	ELECT	47uF 20% 50V
C021	1-136-437-11	FILM	220PF 5% 630V	C119	1-136-257-00	FILM	0.0039uF 5% 100V
C022	1-136-437-11	FILM	220PF 5% 630V	C120	1-136-159-00	FILM	0.033uF 5% 50V
C023	1-136-437-11	FILM	220PF 5% 630V	C122	1-136-159-00	FILM	0.033uF 5% 50V
C024	1-161-494-00	CERAMIC	0.022uF 25V	C123	1-124-910-11	ELECT	47uF 20% 50V
C025	1-161-494-00	CERAMIC	0.022uF 25V	C124	1-136-250-11	FILM	0.001uF 3% 100V
C027	1-161-494-00	CERAMIC	0.022uF 25V	C202	1-124-994-11	ELECT	100uF 20% 10V
C028	1-136-157-00	FILM	0.022uF 5% 50V	C203	1-124-994-11	ELECT	100uF 20% 10V
C029	1-126-012-11	ELECT	470uF 20% 16V	C204	1-161-379-00	CERAMIC	0.01uF 20% 25V
C030	1-161-494-00	CERAMIC	0.022uF 25V	C205	1-162-286-31	CERAMIC	220PF 10% 50V
C031	1-126-049-11	ELECT	22uF 20% 25V	C206	1-162-286-31	CERAMIC	220PF 10% 50V
C032	1-136-157-00	FILM	0.022uF 5% 50V	C207	1-162-207-31	CERAMIC	22PF 5% 50V
C033	1-126-012-11	ELECT	470uF 20% 16V	C208	1-162-205-31	CERAMIC	18PF 5% 50V
C034	1-130-017-00	FILM	820PF 5% 50V	C209	1-162-217-31	CERAMIC	56PF 5% 50V
				C210	1-162-198-31	CERAMIC	8.2PF 10% 50V
				C211	1-162-207-31	CERAMIC	22PF 5% 50V

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C212	1-161-379-00	CERAMIC	0.01uF 20% 25V			< CONNECTOR >	
C213	1-161-379-00	CERAMIC	0.01uF 20% 25V				
C214	1-124-994-11	ELECT	100uF 20% 10V	CN101	* 1-568-788-21	PIN, CONNECTOR 11P	
C215	1-161-379-00	CERAMIC	0.01uF 20% 25V	CN102	* 1-568-783-11	PIN, CONNECTOR 6P	
C216	1-161-379-00	CERAMIC	0.01uF 20% 25V	CN103	* 1-560-891-00	PIN, CONNECTOR 3P	
C217	1-124-994-11	ELECT	100uF 20% 10V	CN104	1-506-468-11	CONNECTOR 3P, MALE	
C218	1-124-994-11	ELECT	100uF 20% 10V	CN105	1-506-487-11	CONNECTOR 8P, MALE	
C219	1-162-288-31	CERAMIC	330PF 10% 50V			< DIODE >	
C220	1-161-374-11	CERAMIC	0.0015uF 20% 50V	D004	8-719-907-19	DIODE FC52M-5	
C221	1-162-217-31	CERAMIC	56PF 5% 50V	D005	8-719-907-19	DIODE FC52M-5	
C222	1-126-049-11	ELECT	22uF 20% 25V	D301	8-719-210-38	DIODE F10P20FR	
C223	1-161-377-00	CERAMIC	0.0047uF 30% 16V	D302	8-719-210-30	DIODE F10P20F(R)	
C224	1-161-377-00	CERAMIC	0.0047uF 30% 16V	D305	8-719-911-19	DIODE 1SS119	
C225	1-136-160-00	FILM	0.039uF 5% 50V	D306	8-719-911-19	DIODE 1SS119	
C226	1-124-288-00	ELECT	22uF 20% 6.3V	D307	8-719-911-19	DIODE 1SS119	
C228	1-124-994-11	ELECT	100uF 20% 10V	D308	8-719-911-19	DIODE 1SS119	
C229	1-136-165-00	FILM	0.1uF 5% 50V	D309	8-719-911-19	DIODE 1SS119	
C230	1-124-907-11	ELECT	10uF 20% 50V	D310	8-719-911-19	DIODE 1SS119	
C235	1-161-379-00	CERAMIC	0.01uF 20% 25V	D311	8-719-911-19	DIODE 1SS119	
C236	1-161-379-00	CERAMIC	0.01uF 20% 25V	D312	8-719-911-19	DIODE 1SS119	
C237	1-124-994-11	ELECT	100uF 20% 10V	D313	8-719-911-19	DIODE 1SS119	
C238	1-124-994-11	ELECT	100uF 20% 10V	D314	8-719-911-19	DIODE 1SS119	
C239	1-162-287-31	CERAMIC	270PF 10% 50V			< FILTER >	
C240	1-161-374-11	CERAMIC	0.0015uF 20% 50V	FL001	1-424-033-21	FILTER, NOISE	
C241	1-162-217-31	CERAMIC	56PF 5% 50V	FL002	1-424-033-21	FILTER, NOISE	
C242	1-126-049-11	ELECT	22uF 20% 25V	FL003	1-424-033-21	FILTER, NOISE	
C243	1-161-377-00	CERAMIC	0.0047uF 30% 16V	FL201	1-236-840-11	FILTER, BAND PASS	
C244	1-161-377-00	CERAMIC	0.0047uF 30% 16V			< IC >	
C245	1-136-160-00	FILM	0.039uF 5% 50V	IC001	8-759-502-43	IC SM5862CF	
C246	1-124-288-00	ELECT	22uF 20% 6.3V	IC002	8-759-502-43	IC SM5862CF	
C247	1-124-902-00	ELECT	0.47uF 20% 50V	IC003	8-759-232-83	IC TC74HC175AP	
C301	1-126-029-11	ELECT	3300uF 20% 25V	IC004	8-759-917-18	IC SN74HCU04N	
C302	1-126-029-11	ELECT	3300uF 20% 25V	IC102	8-759-900-72	IC NE5532P	
C303	1-126-027-11	ELECT	1000uF 20% 25V	IC104	8-759-900-72	IC NE5532P	
C304	1-126-027-11	ELECT	1000uF 20% 25V	IC105	8-759-702-12	IC NJM5534D-D	
C305	1-124-477-11	ELECT	47uF 20% 25V	IC106	8-759-702-12	IC NJM5534D-D	
C306	1-126-023-11	ELECT	100uF 20% 16V	IC201	8-759-502-42	IC PA0034A	
C309	1-161-494-00	CERAMIC	0.022uF 25V	IC301	8-759-231-58	IC TA7812L	
C312	1-130-481-00	MYLAR	0.0068uF 5% 50V	IC302	8-759-604-51	IC M5F7912L	
C313	1-130-477-00	MYLAR	0.0033uF 5% 50V	IC303	8-759-231-53	IC TA7805S	
C314	1-124-907-11	ELECT	10uF 20% 50V	IC305	8-759-701-45	IC NJM4560S-D	
C321	1-124-903-11	ELECT	1uF 20% 50V				
C401	1-124-257-00	ELECT	2.2uF 20% 50V				

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



# AU-88

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< COIL >							
L001	1-408-409-00	INDUCTOR 10uH		R016	1-259-580-11	CARBON 11K 5% 1/2W	
L002	1-408-409-00	INDUCTOR 10uH		R017	1-259-580-11	CARBON 11K 5% 1/2W	
L003	1-408-409-00	INDUCTOR 10uH		R018	1-259-580-11	CARBON 11K 5% 1/2W	
L004	1-410-521-11	INDUCTOR 100uH		R019	1-259-580-11	CARBON 11K 5% 1/2W	
L005	1-410-521-11	INDUCTOR 100uH		R020	1-259-580-11	CARBON 11K 5% 1/2W	
L203	1-408-421-00	INDUCTOR 100uH		R021	1-259-580-11	CARBON 11K 5% 1/2W	
L204	1-408-425-00	INDUCTOR 220uH		R022	1-247-764-11	CARBON 10K 5% 1/2W	
L205	1-408-417-00	INDUCTOR 47uH		R023	1-247-764-11	CARBON 10K 5% 1/2W	
L206	1-408-417-00	INDUCTOR 47uH		R024	1-247-764-11	CARBON 10K 5% 1/2W	
				R025	1-247-764-11	CARBON 10K 5% 1/2W	
< TRANSISTOR >							
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE		R026	1-249-417-11	CARBON 1K 5% 1/4W	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE		R027	1-249-417-11	CARBON 1K 5% 1/4W	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE		R028	1-249-405-11	CARBON 100 5% 1/4W	
Q204	8-729-920-68	TRANSISTOR 2SA933S-QR		R029	1-249-405-11	CARBON 100 5% 1/4W	
Q205	8-729-920-68	TRANSISTOR 2SA933S-QR		R030	1-249-405-11	CARBON 100 5% 1/4W	
Q301	8-729-900-63	TRANSISTOR DTA124ES		R031	1-247-903-00	CARBON 1M 5% 1/4W	
Q302	8-729-900-63	TRANSISTOR DTA124ES		R032	1-249-405-11	CARBON 100 5% 1/4W	
Q303	8-729-900-36	TRANSISTOR DTC124ES		R033	1-249-405-11	CARBON 100 5% 1/4W	
Q304	8-729-900-63	TRANSISTOR DTA124ES		R034	1-249-411-11	CARBON 330 5% 1/4W	
Q305	8-729-900-80	TRANSISTOR DTC114ES		R035	1-249-439-11	CARBON 68K 5% 1/4W	
Q306	8-729-900-65	TRANSISTOR DTA144ES		R036	1-249-439-11	CARBON 68K 5% 1/4W	
Q307	8-729-920-68	TRANSISTOR 2SA933S-QR		R037	1-249-429-11	CARBON 10K 5% 1/4W	
Q308	8-729-303-37	TRANSISTOR 2SD655-E		R040	1-249-429-11	CARBON 10K 5% 1/4W	
Q309	8-729-303-37	TRANSISTOR 2SD655-E		R044	1-247-725-11	CARBON 10K 5% 1/4W	
Q310	8-729-900-63	TRANSISTOR DTA124ES		R045	1-249-465-11	CARBON 47K 5% 1/4W	
< RESISTOR >							
R002	1-249-417-11	CARBON 1K 5% 1/4W		R046	1-247-146-00	CARBON 4.3K 5% 1/4W	
R002	1-249-433-11	CARBON 22K 5% 1/4W		R047	1-247-725-11	CARBON 10K 5% 1/4W	
R003	1-249-411-11	CARBON 330 5% 1/4W		R048	1-247-725-11	CARBON 10K 5% 1/4W	
R004	1-249-441-11	CARBON 100K 5% 1/4W		R049	1-249-465-11	CARBON 47K 5% 1/4W	
R005	1-249-441-11	CARBON 100K 5% 1/4W		R050	1-247-725-11	CARBON 10K 5% 1/4W	
R006	1-247-725-11	CARBON 10K 5% 1/4W		R051	1-247-146-00	CARBON 4.3K 5% 1/4W	
R007	1-247-725-11	CARBON 10K 5% 1/4W		R052	1-214-881-00	METAL 5.1K 1% 1/2W	
R008	1-247-725-11	CARBON 10K 5% 1/4W		R053	1-214-881-00	METAL 5.1K 1% 1/2W	
R009	1-247-725-11	CARBON 10K 5% 1/4W		R054	1-249-657-11	CARBON 220 5% 1/2W	
R010	1-247-725-11	CARBON 10K 5% 1/4W		R055	1-249-657-11	CARBON 220 5% 1/2W	
R011	1-247-725-11	CARBON 10K 5% 1/4W		R056	1-249-405-11	CARBON 100 5% 1/4W	
R012	1-247-725-11	CARBON 10K 5% 1/4W		R057	1-249-405-11	CARBON 100 5% 1/4W	
R013	1-247-725-11	CARBON 10K 5% 1/4W		R058	1-249-405-11	CARBON 100 5% 1/4W	
R014	1-259-580-11	CARBON 11K 5% 1/2W		R059	1-249-437-11	CARBON 47K 5% 1/4W	
R015	1-259-580-11	CARBON 11K 5% 1/2W		R105	1-249-679-11	CARBON 1.8K 5% 1/2W	
				R106	1-247-253-00	CARBON 3.6K 5% 1/2W	
				R107	1-249-441-11	CARBON 100K 5% 1/4W	
				R112	1-249-679-11	CARBON 1.8K 5% 1/2W	
				R113	1-247-253-00	CARBON 3.6K 5% 1/2W	
				R114	1-249-441-11	CARBON 100K 5% 1/4W	

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

Ref. No.	Part No.	Description	Remarks
R201	1-249-433-11	CARBON 22K 5% 1/4W	
R202	1-249-433-11	CARBON 22K 5% 1/4W	
R204	1-249-429-11	CARBON 10K 5% 1/4W	
R205	1-247-830-11	CARBON 910 5% 1/4W	
R207	1-249-439-11	CARBON 68K 5% 1/4W	
R208	1-247-858-11	CARBON 13K 5% 1/4W	
R209	1-249-421-11	CARBON 2.2K 5% 1/4W	
R210	1-249-413-11	CARBON 470 5% 1/4W	
R211	1-249-401-11	CARBON 47 5% 1/4W	
R212	1-249-404-00	CARBON 82 5% 1/4W	
R213	1-249-421-11	CARBON 2.2K 5% 1/4W	
R214	1-249-417-11	CARBON 1K 5% 1/4W	
R215	1-249-417-11	CARBON 1K 5% 1/4W	
R216	1-249-417-11	CARBON 1K 5% 1/4W	
R217	1-249-419-11	CARBON 1.5K 5% 1/4W	
R218	1-249-409-11	CARBON 220 5% 1/4W	
R219	1-249-425-11	CARBON 4.7K 5% 1/4W	
R220	1-249-425-11	CARBON 4.7K 5% 1/4W	
R221	1-249-429-11	CARBON 10K 5% 1/4W	
R222	1-247-860-11	CARBON 16K 5% 1/4W	
R223	1-247-900-11	CARBON 750K 5% 1/4W	
R224	1-249-428-11	CARBON 8.2K 5% 1/4W	
R226	1-247-828-11	CARBON 750 5% 1/4W	
R227	1-247-883-00	CARBON 150K 5% 1/4W	
R228	1-247-883-00	CARBON 150K 5% 1/4W	
R229	1-247-886-11	CARBON 200K 5% 1/4W	
R233	1-249-417-11	CARBON 1K 5% 1/4W	
R234	1-249-419-11	CARBON 1.5K 5% 1/4W	
R235	1-249-409-11	CARBON 220 5% 1/4W	
R236	1-249-425-11	CARBON 4.7K 5% 1/4W	
R237	1-249-425-11	CARBON 4.7K 5% 1/4W	
R238	1-249-429-11	CARBON 10K 5% 1/4W	
R239	1-247-860-11	CARBON 16K 5% 1/4W	
R240	1-247-900-11	CARBON 750K 5% 1/4W	
R241	1-249-428-11	CARBON 8.2K 5% 1/4W	
R301	1-249-421-11	CARBON 2.2K 5% 1/4W	
R302	1-249-429-11	CARBON 10K 5% 1/4W	
R304	1-249-433-11	CARBON 22K 5% 1/4W	
R305	1-249-421-11	CARBON 2.2K 5% 1/4W	
R306	1-249-429-11	CARBON 10K 5% 1/4W	
R307	1-249-429-11	CARBON 10K 5% 1/4W	
R308	1-249-417-11	CARBON 1K 5% 1/4W	
R309	1-249-417-11	CARBON 1K 5% 1/4W	
R310	1-249-441-11	CARBON 100K 5% 1/4W	
R317	1-249-423-11	CARBON 3.3K 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R318	1-249-423-11	CARBON 3.3K 5% 1/4W	
R319	1-249-423-11	CARBON 3.3K 5% 1/4W	
R320	1-249-423-11	CARBON 3.3K 5% 1/4W	
R321	1-249-441-11	CARBON 100K 5% 1/4W	
R997	1-247-749-11	CARBON 560 5% 1/2W	
R998	1-247-749-11	CARBON 560 5% 1/2W	
R999	1-247-749-11	CARBON 560 5% 1/2W	
		< RELAY >	
RY301	1-515-622-11	RELAY	
		< CRYSTAL >	
X001	1-567-515-11	VIBRATOR, VARIABLE CRYSTAL (16.9MHz)	
*****			
	* 1-635-255-11	CK-44 BOARD (Ref. No 1,000 Series)	
		*****	
		< CAPACITOR >	
C401	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C402	1-163-038-00	CERAMIC CHIP 0.1uF	25V
		< CONNECTOR >	
CN401	1-506-467-11	CONNECTOR 2P, MALE	
CN402	1-506-468-11	CONNECTOR 3P, MALE	
CN403	1-506-467-11	CONNECTOR 2P, MALE	
CN404	1-506-467-11	CONNECTOR 2P, MALE	
CN405	1-506-467-11	CONNECTOR 2P, MALE	
		< JUMPER RESISTOR >	
JR401	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< RESISTOR >	
R401	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R402	1-216-031-00	METAL CHIP 180 5% 1/10W	
R403	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R404	1-216-001-00	METAL CHIP 10 5% 1/10W	
R405	1-216-001-00	METAL CHIP 10 5% 1/10W	
R406	1-216-031-00	METAL CHIP 180 5% 1/10W	
R407	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
*****			

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

**EX-22**    **FG-41**    **FP-405**

Ref. No.	Part No.	Description	Remarks
* A-6420-629-A	EX-22 BOARD, COMPLETE (Ref. No 9,000 Series)	*****	
* 1-640-879-11	EX-22 BOARD		
	< CONNECTOR >		
CN501	* 1-569-749-11	PIN, CONNECTOR (PC BOARD) 7P	
CN502	* 1-565-302-11	PIN, CONNECTOR (PC BOARD) 6P	
	< LEAD PIN >		
LP501	4-352-844-01	PIN, LEAD, COATING	
	< RESISTOR >		
R501	1-216-059-00	METAL CHIP    2.7K 5%    1/10W	
R502	1-216-063-00	METAL CHIP    3.9K 5%    1/10W	
R503	1-216-059-00	METAL CHIP    2.7K 5%    1/10W	
R504	1-216-063-00	METAL CHIP    3.9K 5%    1/10W	
R505	1-216-069-00	METAL CHIP    6.8K 5%    1/10W	
	< SWITCH >		
S501	1-571-977-11	SWITCH, TACTIL ( ◀▶ )	
S502	1-571-977-11	SWITCH, TACTIL ( ▶▶ )	
S503	1-571-977-11	SWITCH, TACTIL ( OPEN/CLOSE )	
S504	1-466-302-11	SWITCH, ROTARY ( ▶ )	
S505	1-571-977-11	SWITCH, TACTIL ( ◻ )	
S506	1-571-977-11	SWITCH, TACTIL ( ◼ )	
*****			
* 1-635-256-11	FG-41 BOARD (Ref. No 1,000 Series)	*****	
	< DIODE >		
D301	8-719-939-11	PHOTO DIODE    GP-2S09-B	
*****			
* A-6421-630-A	FP-405 BOARD, COMPLETE (Ref. No 8,000 Series)	*****	
	2-355-254-01	SPACER (A), LCD	
* 3-746-508-11	HOLDER, FLD		

Ref. No.	Part No.	Description	Remarks
		< CAPACITOR >	
C301	1-164-222-11	CERAMIC CHIP    0.22uF	25V
C304	1-163-021-91	CERAMIC CHIP    0.01uF	10% 50V
C305	1-126-157-11	ELECT    10uF	20% 16V
C306	1-163-021-91	CERAMIC CHIP    0.01uF	10% 50V
C307	1-126-157-11	ELECT    10uF	20% 16V
C308	1-163-021-91	CERAMIC CHIP    0.01uF	10% 50V
C309	1-126-157-11	ELECT    10uF	20% 16V
C310	1-163-021-91	CERAMIC CHIP    0.01uF	10% 50V
		< CONNECTOR >	
CN301	1-506-469-11	CONNECTOR    4P, MALE	
CN302	1-506-476-11	CONNECTOR    11P, MALE	
CN303	1-506-472-11	CONNECTOR    7P, MALE	
CN304	1-506-477-11	CONNECTOR    12P, MALE	
		< IC >	
IC301	8-752-832-06	IC    CXP50116-240Q	
IC302	8-759-605-21	IC    M51953AFP	
IC303	8-741-138-78	IC    BX1453	
		< COIL >	
L301	1-408-421-00	INDUCTOR    100uH	
L302	1-408-421-00	INDUCTOR    100uH	
		< INDICATOR TUBE >	
ND301	1-519-511-11	INDICATOR TUBE, FLUORESCENT	
		< TRANSISTOR >	
Q301	8-729-100-67	TRANSISTOR    2SC1623-L7	
Q302	8-729-100-67	TRANSISTOR    2SC1623-L7	
		< RESISTOR >	
R301	1-216-097-00	METAL CHIP    100K 5%    1/10W	
R302	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R303	1-216-097-00	METAL CHIP    100K 5%    1/10W	
R304	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R305	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R306	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R307	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R308	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R309	1-216-073-00	METAL CHIP    10K 5%    1/10W	
R310	1-216-097-00	METAL CHIP    100K 5%    1/10W	

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



**IF-44**   **LS-30**   **MB-56**

Ref. No.	Part No.	Description	Remarks
< TRANSISTOR >			
Q001	8-729-901-05	TRANSISTOR DTA124EK	
Q002	8-729-901-00	TRANSISTOR DTC124EK	
Q003	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q004	8-729-901-05	TRANSISTOR DTA124EK	
Q005	8-729-901-05	TRANSISTOR DTA124EK	
< RESISTOR >			
R001	1-216-003-11	METAL GLAZE 12 5% 1/10W	
R002	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R003	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R004	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R005	1-216-033-00	METAL CHIP 220 5% 1/10W	
R006	1-216-033-00	METAL CHIP 220 5% 1/10W	
R007	1-216-033-00	METAL CHIP 220 5% 1/10W	
R008	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R009	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R010	1-216-033-00	METAL CHIP 220 5% 1/10W	
R011	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R012	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R013	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R014	1-216-025-00	METAL CHIP 100 5% 1/10W	
R015	1-216-025-00	METAL CHIP 100 5% 1/10W	
R016	1-216-035-00	METAL CHIP 270 5% 1/10W	
R017	1-216-033-00	METAL CHIP 220 5% 1/10W	
R018	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R019	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R020	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R021	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R022	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R023	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R024	1-216-003-11	METAL GLAZE 12 5% 1/10W	
< BUZZER >			
SP001	1-529-080-11	BUZZER, PIEZOELECTRIC	
< CRYSTAL >			
X001	1-577-510-11	VIBRATOR, CRYSTAL (9.8304 MHz)	

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Ref. No.	Part No.	Description	Remarks
* 1-635-259-11 LS-30 BOARD (Ref. No 3,000 Series) *****			
	3-735-054-01	HOLDER, SENSOR	
< CONNECTOR >			
CN201	1-506-468-11	CONNECTOR 3P, MALE	
< DIODE >			
D201	8-719-941-81	DIODE GL360	
< TRANSISTOR >			
Q201	8-729-904-10	PHOTO TRANSISTOR PT-360FS	
*****			
* A-6421-631-A MB-56 BOARD, COMPLETE (Ref. No 2,000 Series) *****			
	* 3-309-144-21	HEAT SINK	
	* 3-746-524-01	PLATE, GROUND	
	* 3-746-535-01	HEAT SINK	
	3-831-441-XX	CUSHION (5)	
	7-682-547-04	SCREW +BVTT 3X6 (S)	
< CAPACITOR >			
C001	1-124-768-11	ELECT 4.7uF 20% 50V	
C002	1-124-767-00	ELECT 2.2uF 20% 50V	
C003	1-124-126-00	ELECT 47uF 20% 10V	
C004	1-124-126-00	ELECT 47uF 20% 10V	
C005	1-126-320-11	ELECT, NONPOLAR 10uF 20% 16V	
C006	1-136-165-00	FILM 0.1uF 5% 50V	
C007	1-163-020-00	CERAMIC CHIP 0.0082uF 10% 50V	
C008	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C013	1-124-248-00	ELECT 22uF 20% 35V	
C014	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C015	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C016	1-124-126-00	ELECT 47uF 20% 10V	
C017	1-124-126-00	ELECT 47uF 20% 10V	
C018	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C019	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
C020	1-126-157-11	ELECT 10uF 20% 16V	
C021	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C022	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C023	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C024	1-163-013-91	CERAMIC CHIP 0.0022uF 10% 50V	

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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C025	1-163-013-91	CERAMIC CHIP	0.0022uF 10% 50V	C166	1-126-157-11	ELECT	10uF 20% 16V
C026	1-163-241-11	CERAMIC CHIP	39PF 5% 50V	C167	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C027	1-163-106-00	CERAMIC CHIP	36PF 5% 50V	C168	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C028	1-163-257-91	CERAMIC CHIP	180PF 5% 50V	C169	1-126-157-11	ELECT	10uF 20% 16V
C029	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50V	C170	1-124-589-11	ELECT	47uF 20% 16V
C032	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C171	1-163-227-11	CERAMIC CHIP	10PF 5% 50V
C033	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V	C172	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
C034	1-164-222-11	CERAMIC CHIP	0.22uF 25V	C181	1-163-253-91	CERAMIC CHIP	120PF 5% 50V
C099	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C182	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C101	1-164-005-11	CERAMIC CHIP	0.47uF 25V	C183	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C102	1-128-102-11	ELECT	1200uF 20% 16V	C184	1-163-125-00	CERAMIC CHIP	220PF 5% 50V
C103	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C185	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C104	1-124-477-11	ELECT	47uF 20% 25V	C186	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C105	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C187	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C106	1-124-477-11	ELECT	47uF 20% 25V	C188	1-126-176-11	ELECT	220uF 20% 10V
C107	1-163-097-00	CERAMIC CHIP	15PF 5% 50V	C189	1-164-222-11	CERAMIC CHIP	0.22uF 25V
C108	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	C190	1-164-222-11	CERAMIC CHIP	0.22uF 25V
C109	1-124-907-11	ELECT	10uF 20% 50V	C191	1-124-443-00	ELECT	100uF 20% 10V
C111	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C192	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C112	1-124-472-11	ELECT	470uF 20% 10V	C193	1-130-486-00	MYLAR	0.018uF 10% 50V
C113	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C194	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C114	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C195	1-136-159-00	MYLAR	0.033uF 10% 50V
C115	1-124-907-11	ELECT	10uF 20% 50V	C196	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C116	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C197	1-124-903-11	ELECT	1uF 20% 50V
C117	1-126-385-11	ELECT	390uF 20% 16V	C198	1-124-902-00	ELECT	0.47uF 20% 50V
C118	1-124-907-11	ELECT	10uF 20% 50V	C199	1-136-161-00	MYLAR	0.047uF 10% 50V
C119	1-163-227-11	CERAMIC CHIP	10PF 5% 50V	C200	1-136-159-00	MYLAR	0.033uF 10% 50V
C120	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C201	1-124-589-11	ELECT	47uF 20% 16V
C131	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C202	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C132	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C203	1-136-153-00	FILM	0.01uF 5% 50V
C151	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C204	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C152	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C205	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C153	1-124-477-11	ELECT	47uF 20% 25V	C206	1-136-153-00	FILM	0.01uF 5% 50V
C154	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V	C207	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C155	1-163-239-91	CERAMIC CHIP	33PF 5% 50V	C208	1-124-477-11	ELECT	47uF 20% 25V
C156	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V	C209	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C157	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	C210	1-124-477-11	ELECT	47uF 20% 25V
C158	1-136-153-00	FILM	0.01uF 5% 50V	C211	1-124-499-11	ELECT, NONPOLAR	1uF 20% 50V
C159	1-136-159-00	MYLAR	0.033uF 10% 50V	C212	1-136-161-00	MYLAR	0.047uF 10% 50V
C160	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C213	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C161	1-136-165-00	FILM	0.1uF 5% 50V	C214	1-124-903-11	ELECT	1uF 20% 50V
C162	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	C215	1-124-477-11	ELECT	47uF 20% 25V
C163	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C216	1-124-443-00	ELECT	100uF 20% 10V
C164	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C217	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C165	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C218	1-163-031-91	CERAMIC CHIP	0.01uF 50V

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

# MB-56

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C219	1-124-907-11	ELECT	10uF 20% 50V	C264	1-131-347-00	TANTALUM	1uF 10% 35V
C220	1-163-257-91	CERAMIC CHIP	180PF 5% 50V	C265	1-126-160-11	ELECT	1uF 20% 50V
C221	1-124-477-11	ELECT	47uF 20% 25V	C266	1-136-153-00	FILM	0.01uF 5% 50V
C222	1-136-161-00	MYLAR	0.047uF 10% 50V	C267	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C223	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C268	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C224	1-124-477-11	ELECT	47uF 20% 25V	C269	1-163-107-00	CERAMIC CHIP	39PF 5% 50V
C225	1-163-139-00	CERAMIC CHIP	820PF 5% 50V	C270	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C226	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C271	1-124-589-11	ELECT	47uF 20% 16V
C227	1-124-477-11	ELECT	47uF 20% 25V	C273	1-124-589-11	ELECT	47uF 20% 16V
C228	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C274	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C229	1-163-253-91	CERAMIC CHIP	120PF 5% 50V	C275	1-124-257-00	ELECT	2.2uF 20% 50V
C230	1-163-253-91	CERAMIC CHIP	120PF 5% 50V	C277	1-163-125-00	CERAMIC CHIP	220PF 5% 50V
C231	1-124-903-11	ELECT	1uF 20% 50V	C278	1-124-257-00	ELECT	2.2uF 20% 50V
C232	1-163-227-11	CERAMIC CHIP	10PF 5% 50V	C279	1-126-157-11	ELECT	10uF 20% 16V
C233	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C280	1-124-471-00	ELECT	1000uF 20% 6.3V
C234	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C281	1-124-257-00	ELECT	2.2uF 20% 50V
C235	1-163-237-91	CERAMIC CHIP	27PF 5% 50V	C282	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C236	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	C283	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C237	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	C284	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C238	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C285	1-124-477-11	ELECT	47uF 20% 25V
C239	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C286	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C240	1-163-237-91	CERAMIC CHIP	27PF 5% 50V	C287	1-163-097-00	CERAMIC CHIP	15PF 5% 50V
C241	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C288	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C242	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C289	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C243	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C290	1-163-121-00	CERAMIC CHIP	150PF 5% 50V
C244	1-163-253-91	CERAMIC CHIP	120PF 5% 50V	C291	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C245	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C292	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C246	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C293	1-124-477-11	ELECT	47uF 20% 25V
C247	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C294	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C248	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C295	1-124-257-00	ELECT	2.2uF 20% 50V
C249	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C296	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C250	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C297	1-163-113-00	CERAMIC CHIP	68PF 5% 50V
C251	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C298	1-163-235-11	CERAMIC CHIP	22PF 5% 50V
C252	1-124-477-11	ELECT	47uF 20% 25V	C299	1-163-113-00	CERAMIC CHIP	68PF 5% 50V
C253	1-163-031-91	CERAMIC CHIP	0.01uF 50V	C300	1-163-227-11	CERAMIC CHIP	10PF 5% 50V
C254	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	C301	1-163-113-00	CERAMIC CHIP	68PF 5% 50V
C255	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	C302	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C256	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C303	1-163-097-00	CERAMIC CHIP	15PF 5% 50V
C257	1-124-477-11	ELECT	47uF 20% 25V	C304	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C258	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C305	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C259	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	C306	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C260	1-163-099-00	CERAMIC CHIP	18PF 5% 50V	C308	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C261	1-163-257-91	CERAMIC CHIP	180PF 5% 50V	C309	1-126-157-11	ELECT	10uF 20% 16V
C262	1-126-160-11	ELECT	1uF 20% 50V	C310	1-163-031-91	CERAMIC CHIP	0.01uF 50V
C263	1-136-157-00	MYLAR	0.022uF 10% 50V	C311	1-124-257-00	ELECT	2.2uF 20% 50V

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C312	1-163-035-00	CERAMIC CHIP	0.047uF	50V	C630	1-124-257-00	ELECT 2.2uF 20% 50V
C313	1-126-157-11	ELECT	10uF	20% 16V	C640	1-124-248-00	ELECT 22uF 20% 35V
C314	1-163-035-00	CERAMIC CHIP	0.047uF	50V	C641	1-163-035-00	CERAMIC CHIP 0.047uF 50V
C315	1-163-035-00	CERAMIC CHIP	0.047uF	50V	C650	1-163-257-91	CERAMIC CHIP 180PF 5% 50V
C316	1-163-035-00	CERAMIC CHIP	0.047uF	50V	C651	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V
C318	1-163-106-00	CERAMIC CHIP	36PF	5% 50V	C652	1-163-275-91	CERAMIC CHIP 0.001uF 5% 50V
C319	1-124-589-11	ELECT	47uF	20% 16V	C657	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V
C320	1-124-589-11	ELECT	47uF	20% 16V	C699	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
C321	1-163-038-00	CERAMIC CHIP	0.1uF	25V			< FILTER >
C322	1-163-031-91	CERAMIC CHIP	0.01uF	50V			
C323	1-163-031-91	CERAMIC CHIP	0.01uF	50V	CF151	1-527-831-00	FILTER, CERAMIC
C324	1-163-227-11	CERAMIC CHIP	10PF	5% 50V			< CONNECTOR >
C325	1-163-227-11	CERAMIC CHIP	10PF	5% 50V			
C326	1-163-035-00	CERAMIC CHIP	0.047uF	50V	CN601	* 1-564-032-00	PIN, CONNECTOR 7P
C328	1-163-237-91	CERAMIC CHIP	27PF	5% 50V	CN602	1-563-493-11	CONNECTOR, F.P.C 28P
C329	1-163-038-00	CERAMIC CHIP	0.1uF	25V	CN603	1-506-483-21	CONNECTOR 4P, MALE
C331	1-163-111-00	CERAMIC CHIP	56PF	5% 50V	CN604	1-506-489-11	CONNECTOR 10P, MALE
C401	1-126-163-11	ELECT	4.7uF	20% 50V	CN605	1-506-481-11	CONNECTOR 2P, MALE
C402	1-164-182-11	CERAMIC CHIP	0.0033uF	10% 50V	CN606	1-506-481-11	CONNECTOR 2P, MALE
C403	1-163-111-00	CERAMIC CHIP	56PF	5% 50V	CN607	1-506-482-11	CONNECTOR 3P, MALE
C404	1-126-163-11	ELECT	4.7uF	20% 50V			< JACK >
C406	1-124-589-11	ELECT	47uF	20% 16V	CNJ001	8-759-977-71	IC GP-1F31T (OPTICAL DIGITAL OUT)
C407	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	CNJ002	1-565-319-31	JACK, PIN 2P (AUDIO OUT)
C408	1-163-035-00	CERAMIC CHIP	0.047uF	50V	CNJ101	1-537-005-21	JACK BOARD (VIDEO/RFU DC/AUDIO MONO OUT)
C409	1-163-035-00	CERAMIC CHIP	0.047uF	50V	CNJ102	1-566-847-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO OUT)
C601	1-124-589-11	ELECT	47uF	20% 16V			< TRIMMER >
C602	1-163-035-00	CERAMIC CHIP	0.047uF	50V	CV152	1-141-227-00	CAP, TRIMMER 20PF
C603	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	CV601	1-141-227-00	CAP, TRIMMER 20PF
C604	1-163-222-91	CERAMIC CHIP	5PF	0.25PF 50V			< DIODE >
C606	1-163-257-91	CERAMIC CHIP	180PF	5% 50V	D001	8-719-902-79	DIODE KV1236Z
C607	1-163-035-00	CERAMIC CHIP	0.047uF	50V	D002	8-719-400-18	DIODE MA152WK
C609	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	D004	8-719-400-18	DIODE MA152WK
C610	1-163-035-00	CERAMIC CHIP	0.047uF	50V	D005	8-719-109-85	DIODE RD5.1ES-B2
C611	1-163-035-00	CERAMIC CHIP	0.047uF	50V	D006	8-719-400-18	DIODE MA152WK
C613	1-163-021-91	CERAMIC CHIP	0.01uF	10% 50V	D007	8-719-400-18	DIODE MA152WK
C620	1-124-589-11	ELECT	47uF	20% 16V	D008	8-719-400-18	DIODE MA152WK
C621	1-163-035-00	CERAMIC CHIP	0.047uF	50V	D151	8-719-800-76	DIODE 1SS226
C622	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	D153	8-719-800-76	DIODE 1SS226
C623	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	D154	8-719-951-22	DIODE 1MN10
C624	1-124-589-11	ELECT	47uF	20% 16V			
C625	1-163-035-00	CERAMIC CHIP	0.047uF	50V			
C626	1-163-117-00	CERAMIC CHIP	100PF	5% 50V			
C627	1-163-111-00	CERAMIC CHIP	56PF	5% 50V			
C628	1-163-117-00	CERAMIC CHIP	100PF	5% 50V			
C629	1-164-182-11	CERAMIC CHIP	0.0033uF	10% 50V			

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D155	8-719-800-76	DIODE 1SS226		IC402	8-759-009-06	IC MC14052BF	
D160	8-719-106-08	DIODE RD6. 2M-B2		IC601	8-759-042-05	IC MB89795-133	
D401	8-719-400-18	DIODE MA152WK		IC602	8-759-634-74	IC M50455-196FP	
D601	8-719-400-18	DIODE MA152WK		IC603	8-759-231-92	IC TA7291P	
D602	8-719-400-18	DIODE MA152WK		IC604	8-759-987-71	IC MSM72H032GS-K	
D605	8-719-400-18	DIODE MA152WK				< JUMPER RESISTOR >	
D606	8-719-104-34	DIODE 1S2836		JR219	1-216-295-00	METAL CHIP 0 5% 1/10W	
D607	8-719-400-18	DIODE MA152WK				< COIL >	
D801	8-719-800-76	DIODE 1SS226		L101	1-408-412-00	INDUCTOR 18uH	
		< DELAY LINE >		L113	1-410-521-11	INDUCTOR 100uH	
DL101	1-415-694-11	DELAY LINE, LC		L115	1-424-033-21	FILTER, NOISE	
		< FILTER >		L151	1-408-421-00	INDUCTOR 100uH	
FL101	1-235-896-11	FILTER, BAND PASS		L152	1-408-421-00	INDUCTOR 100uH	
FL151	1-236-478-11	FILTER, LOW PASS		L156	1-408-421-00	INDUCTOR 100uH	
FL152	1-236-843-11	FILTER, BAND PASS		L157	1-408-421-00	INDUCTOR 100uH	
FL153	1-236-478-11	FILTER, LOW PASS		L158	1-408-421-00	INDUCTOR 100uH	
FL154	1-235-901-11	FILTER, LOW PASS		L159	1-408-421-00	INDUCTOR 100uH	
FL601	1-424-031-11	FILTER, NOISE		L160	1-408-422-00	INDUCTOR 120uH	
		< IC >		L161	1-408-419-00	INDUCTOR 68uH	
IC001	8-752-325-59	IC CXD1165Q		L163	1-408-421-00	INDUCTOR 100uH	
IC002	8-759-908-17	IC TL082CPS		L164	1-408-424-00	INDUCTOR 180uH	
IC003	8-759-908-17	IC TL082CPS		L165	1-408-421-00	INDUCTOR 100uH	
IC004	8-759-502-48	IC SM5840AS		L601	1-408-421-00	INDUCTOR 100uH	
IC006	8-759-008-67	IC MC14066BF		L602	1-408-411-00	INDUCTOR 15uH	
IC101	8-759-144-83	IC uPC24M09HF		L603	1-408-409-00	INDUCTOR 10uH	
IC102	1-464-932-21	IC FILTER BLOCK, COM (CFB-3)		L604	1-408-409-00	INDUCTOR 10uH	
IC105	8-759-983-74	IC LM324NS		L610	1-408-409-00	INDUCTOR 10uH	
IC106	8-752-322-35	IC CXL5005M				< VARIABLE COIL >	
IC107	8-759-982-34	IC RC78M09FA		LV001	1-426-212-11	COIL (RF)	
IC108	8-759-982-31	IC RC78M05FA				< TRANSISTOR >	
IC109	8-752-036-24	IC CXA1255Q		Q001	8-729-900-53	TRANSISTOR DTC114EK	
IC110	8-759-927-29	IC SN74HCU04ANS		Q002	8-729-100-66	TRANSISTOR 2SC1623-L6	
IC111	8-759-502-69	IC CXD1152-MS		Q003	8-729-900-53	TRANSISTOR DTC114EK	
IC112	8-752-036-23	IC CXA1254Q		Q004	8-729-900-53	TRANSISTOR DTC114EK	
IC113	8-759-941-68	IC BA7131F		Q005	8-729-901-05	TRANSISTOR DTA124EK	
IC114	8-759-981-92	IC RC4558M		Q006	8-729-901-05	TRANSISTOR DTA124EK	
IC115	8-759-300-71	IC HD14053BFP		Q101	8-729-216-22	TRANSISTOR 2SA1162-G	
IC401	8-759-100-95	IC uPC324G2		Q102	8-729-100-66	TRANSISTOR 2SC1623-L6	
IC401	8-759-509-89	IC XRA10324F		Q103	8-729-216-22	TRANSISTOR 2SA1162-G	

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q104	8-729-100-66	TRANSISTOR	2SC1623-L6	Q191	8-729-100-66	TRANSISTOR	2SC1623-L6
Q105	8-729-100-66	TRANSISTOR	2SC1623-L6	Q192	8-729-216-22	TRANSISTOR	2SA1162-G
Q106	8-729-216-22	TRANSISTOR	2SA1162-G	Q193	8-729-901-00	TRANSISTOR	DTC124EK
Q107	8-729-100-66	TRANSISTOR	2SC1623-L6	Q194	8-729-100-66	TRANSISTOR	2SC1623-L6
Q108	8-729-100-66	TRANSISTOR	2SC1623-L6	Q195	8-729-100-66	TRANSISTOR	2SC1623-L6
Q109	8-729-216-22	TRANSISTOR	2SA1162-G	Q196	8-729-100-66	TRANSISTOR	2SC1623-L6
Q110	8-729-100-66	TRANSISTOR	2SC1623-L6	Q601	8-729-216-22	TRANSISTOR	2SA1162-G
Q151	8-729-100-66	TRANSISTOR	2SC1623-L6	Q602	8-729-901-00	TRANSISTOR	DTC124EK
Q152	8-729-100-66	TRANSISTOR	2SC1623-L6	Q605	8-729-100-66	TRANSISTOR	2SC1623-L6
Q153	8-729-920-85	TRANSISTOR	2SD1664-QR	Q606	8-729-901-00	TRANSISTOR	DTC124EK
Q154	8-729-100-66	TRANSISTOR	2SC1623-L6	Q608	8-729-100-66	TRANSISTOR	2SC1623-L6
Q155	8-729-100-66	TRANSISTOR	2SC1623-L6	Q609	8-729-100-66	TRANSISTOR	2SC1623-L6
Q156	8-729-100-66	TRANSISTOR	2SC1623-L6	Q610	8-729-100-66	TRANSISTOR	2SC1623-L6
Q159	8-729-100-66	TRANSISTOR	2SC1623-L6	Q611	8-729-901-00	TRANSISTOR	DTC124EK
Q160	8-729-100-66	TRANSISTOR	2SC1623-L6	Q801	8-729-374-02	TRANSISTOR	2SB740-3
Q161	8-729-100-66	TRANSISTOR	2SC1623-L6			< RESISTOR >	
Q162	8-729-100-66	TRANSISTOR	2SC1623-L6	R001	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q163	8-729-100-66	TRANSISTOR	2SC1623-L6	R002	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q164	8-729-902-96	TRANSISTOR	FMS1	R003	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
Q165	8-729-100-66	TRANSISTOR	2SC1623-L6	R004	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q166	8-729-901-00	TRANSISTOR	DTC124EK	R005	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q167	8-729-100-66	TRANSISTOR	2SC1623-L6	R006	1-216-099-00	METAL CHIP	120K 5% 1/10W
Q168	8-729-100-66	TRANSISTOR	2SC1623-L6	R007	1-216-101-00	METAL CHIP	150K 5% 1/10W
Q169	8-729-216-22	TRANSISTOR	2SA1162-G	R008	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q170	8-729-100-66	TRANSISTOR	2SC1623-L6	R009	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q171	8-729-100-66	TRANSISTOR	2SC1623-L6	R010	1-216-093-00	METAL CHIP	68K 5% 1/10W
Q172	8-729-100-66	TRANSISTOR	2SC1623-L6	R011	1-216-121-00	METAL CHIP	1M 5% 1/10W
Q173	8-729-100-66	TRANSISTOR	2SC1623-L6	R012	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
Q174	8-729-100-66	TRANSISTOR	2SC1623-L6	R013	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q175	8-729-100-66	TRANSISTOR	2SC1623-L6	R014	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q176	8-729-100-66	TRANSISTOR	2SC1623-L6	R015	1-216-093-00	METAL CHIP	68K 5% 1/10W
Q177	8-729-903-10	TRANSISTOR	FMM1	R016	1-216-062-00	METAL CHIP	3.6K 5% 1/10W
Q178	8-729-902-96	TRANSISTOR	FMS1	R017	1-216-093-00	METAL CHIP	68K 5% 1/10W
Q179	8-729-100-66	TRANSISTOR	2SC1623-L6	R018	1-216-099-00	METAL CHIP	120K 5% 1/10W
Q180	8-729-100-66	TRANSISTOR	2SC1623-L6	R019	1-216-099-00	METAL CHIP	120K 5% 1/10W
Q181	8-729-100-66	TRANSISTOR	2SC1623-L6	R020	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q182	8-729-100-66	TRANSISTOR	2SC1623-L6	R021	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q183	8-729-216-22	TRANSISTOR	2SA1162-G	R022	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q184	8-729-100-66	TRANSISTOR	2SC1623-L6	R023	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
Q185	8-729-100-66	TRANSISTOR	2SC1623-L6	R024	1-216-025-00	METAL CHIP	100 5% 1/10W
Q186	8-729-100-66	TRANSISTOR	2SC1623-L6	R025	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q187	8-729-216-22	TRANSISTOR	2SA1162-G				
Q189	8-729-100-66	TRANSISTOR	2SC1623-L6				
Q190	8-729-100-66	TRANSISTOR	2SC1623-L6				

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R026	1-216-073-00	METAL CHIP	10K 5% 1/10W	R106	1-216-049-00	METAL CHIP	1K 5% 1/10W
R027	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	R107	1-216-049-00	METAL CHIP	1K 5% 1/10W
R028	1-216-334-11	METAL GLAZE	22K 1% 1/10W	R108	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R029	1-216-334-11	METAL GLAZE	22K 1% 1/10W	R109	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R030	1-216-675-11	METAL CHIP	10K 0.5% 1/10W	R110	1-216-049-00	METAL CHIP	1K 5% 1/10W
R031	1-216-677-11	METAL CHIP	12K 0.5% 1/10W	R111	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R032	1-216-097-00	METAL CHIP	100K 5% 1/10W	R112	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R033	1-216-049-00	METAL CHIP	1K 5% 1/10W	R113	1-216-039-00	METAL CHIP	390 5% 1/10W
R034	1-216-097-00	METAL CHIP	100K 5% 1/10W	R114	1-216-049-00	METAL CHIP	1K 5% 1/10W
R035	1-216-097-00	METAL CHIP	100K 5% 1/10W	R115	1-216-031-00	METAL CHIP	180 5% 1/10W
R036	1-216-097-00	METAL CHIP	100K 5% 1/10W	R116	1-216-079-00	METAL CHIP	18K 5% 1/10W
R037	1-216-025-00	METAL CHIP	100 5% 1/10W	R117	1-216-073-00	METAL CHIP	10K 5% 1/10W
R038	1-216-025-00	METAL CHIP	100 5% 1/10W	R118	1-216-029-00	METAL CHIP	150 5% 1/10W
R039	1-216-025-00	METAL CHIP	100 5% 1/10W	R119	1-216-021-00	METAL CHIP	68 5% 1/10W
R040	1-216-025-00	METAL CHIP	100 5% 1/10W	R120	1-216-045-00	METAL CHIP	680 5% 1/10W
R041	1-216-025-00	METAL CHIP	100 5% 1/10W	R121	1-216-047-00	METAL CHIP	820 5% 1/10W
R042	1-216-049-00	METAL CHIP	1K 5% 1/10W	R122	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R043	1-216-033-00	METAL CHIP	220 5% 1/10W	R123	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R044	1-216-025-00	METAL CHIP	100 5% 1/10W	R124	1-216-043-00	METAL CHIP	560 5% 1/10W
R045	1-216-025-00	METAL CHIP	100 5% 1/10W	R125	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R046	1-216-025-00	METAL CHIP	100 5% 1/10W	R126	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R047	1-216-025-00	METAL CHIP	100 5% 1/10W	R127	1-216-049-00	METAL CHIP	1K 5% 1/10W
R048	1-216-025-00	METAL CHIP	100 5% 1/10W	R128	1-216-079-00	METAL CHIP	18K 5% 1/10W
R049	1-216-025-00	METAL CHIP	100 5% 1/10W	R129	1-216-031-00	METAL CHIP	180 5% 1/10W
R050	1-216-121-00	METAL CHIP	1M 5% 1/10W	R130	1-216-073-00	METAL CHIP	10K 5% 1/10W
R051	1-216-085-00	METAL CHIP	33K 5% 1/10W	R131	1-216-037-00	METAL CHIP	330 5% 1/10W
R052	1-216-073-00	METAL CHIP	10K 5% 1/10W	R132	1-216-021-00	METAL CHIP	68 5% 1/10W
R053	1-216-033-00	METAL CHIP	220 5% 1/10W	R133	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R054	1-216-033-00	METAL CHIP	220 5% 1/10W	R134	1-216-073-00	METAL CHIP	10K 5% 1/10W
R055	1-216-033-00	METAL CHIP	220 5% 1/10W	R135	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R056	1-216-033-00	METAL CHIP	220 5% 1/10W	R136	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R057	1-216-033-00	METAL CHIP	220 5% 1/10W	R137	1-216-049-00	METAL CHIP	1K 5% 1/10W
R058	1-216-073-00	METAL CHIP	10K 5% 1/10W	R151	1-216-077-00	METAL CHIP	15K 5% 1/10W
R059	1-216-025-00	METAL CHIP	100 5% 1/10W	R153	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R060	1-216-025-00	METAL CHIP	100 5% 1/10W	R154	1-216-097-00	METAL CHIP	100K 5% 1/10W
R061	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	R155	1-216-113-00	METAL CHIP	470K 5% 1/10W
R062	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R156	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R063	1-216-025-00	METAL CHIP	100 5% 1/10W	R157	1-216-113-00	METAL CHIP	470K 5% 1/10W
R064	1-216-049-00	METAL CHIP	1K 5% 1/10W	R158	1-216-073-00	METAL CHIP	10K 5% 1/10W
R099	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	R159	1-216-079-00	METAL CHIP	18K 5% 1/10W
R101	1-216-077-00	METAL CHIP	15K 5% 1/10W	R160	1-216-079-00	METAL CHIP	18K 5% 1/10W
R102	1-216-073-00	METAL CHIP	10K 5% 1/10W	R161	1-216-113-00	METAL CHIP	470K 5% 1/10W
R103	1-216-031-00	METAL CHIP	180 5% 1/10W	R162	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R104	1-216-073-00	METAL CHIP	10K 5% 1/10W	R163	1-216-089-00	METAL CHIP	47K 5% 1/10W
R105	1-216-049-00	METAL CHIP	1K 5% 1/10W	R164	1-216-077-00	METAL CHIP	15K 5% 1/10W

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

Ref. No.	Part No.	Description	Remarks
R165	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R166	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R167	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R168	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R169	1-216-121-00	METAL CHIP 1M 5%	1/10W
R170	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R171	1-216-091-00	METAL CHIP 56K 5%	1/10W
R172	1-216-049-00	METAL CHIP 1K 5%	1/10W
R173	1-216-081-00	METAL CHIP 22K 5%	1/10W
R174	1-216-049-00	METAL CHIP 1K 5%	1/10W
R175	1-216-040-00	METAL GLAZE 430 5%	1/10W
R176	1-216-049-00	METAL CHIP 1K 5%	1/10W
R177	1-216-073-00	METAL CHIP 10K 5%	1/10W
R178	1-216-049-00	METAL CHIP 1K 5%	1/10W
R180	1-216-041-00	METAL CHIP 470 5%	1/10W
R188	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R189	1-216-025-00	METAL CHIP 100 5%	1/10W
R190	1-216-045-00	METAL CHIP 680 5%	1/10W
R191	1-216-045-00	METAL CHIP 680 5%	1/10W
R192	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R193	1-216-085-00	METAL CHIP 33K 5%	1/10W
R194	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R195	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R196	1-216-077-00	METAL CHIP 15K 5%	1/10W
R197	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R198	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R199	1-216-081-00	METAL CHIP 22K 5%	1/10W
R200	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R201	1-216-039-00	METAL CHIP 390 5%	1/10W
R202	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R203	1-216-075-00	METAL CHIP 12K 5%	1/10W
R204	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R205	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R206	1-216-049-00	METAL CHIP 1K 5%	1/10W
R207	1-216-081-00	METAL CHIP 22K 5%	1/10W
R208	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R209	△1-212-976-00	FUSIBLE 56 5%	1/2W F
R210	1-216-101-00	METAL CHIP 150K 5%	1/10W
R211	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R212	1-216-081-00	METAL CHIP 22K 5%	1/10W
R213	1-216-083-00	METAL CHIP 27K 5%	1/10W
R214	1-216-089-00	METAL CHIP 47K 5%	1/10W
R215	1-216-113-00	METAL CHIP 470K 5%	1/10W
R216	1-216-083-00	METAL CHIP 27K 5%	1/10W
R217	1-216-097-00	METAL CHIP 100K 5%	1/10W

Ref. No.	Part No.	Description	Remarks
R218	1-216-121-00	METAL CHIP 1M 5%	1/10W
R219	1-216-097-00	METAL CHIP 100K 5%	1/10W
R220	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R221	1-216-113-00	METAL CHIP 470K 5%	1/10W
R222	1-216-095-00	METAL CHIP 82K 5%	1/10W
R223	1-216-113-00	METAL CHIP 470K 5%	1/10W
R224	1-216-049-00	METAL CHIP 1K 5%	1/10W
R225	1-216-109-00	METAL CHIP 330K 5%	1/10W
R226	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R227	1-216-089-00	METAL CHIP 47K 5%	1/10W
R228	1-216-109-00	METAL CHIP 330K 5%	1/10W
R229	1-216-748-11	METAL CHIP 39K 1%	1/10W
R230	1-216-075-00	METAL CHIP 12K 5%	1/10W
R231	1-216-121-00	METAL CHIP 1M 5%	1/10W
R232	1-216-121-00	METAL CHIP 1M 5%	1/10W
R233	1-216-043-00	METAL CHIP 560 5%	1/10W
R234	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R235	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R236	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R237	1-216-043-00	METAL CHIP 560 5%	1/10W
R238	1-216-049-00	METAL CHIP 1K 5%	1/10W
R239	1-216-045-00	METAL CHIP 680 5%	1/10W
R240	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R241	1-216-077-00	METAL CHIP 15K 5%	1/10W
R242	1-216-097-00	METAL CHIP 100K 5%	1/10W
R243	1-216-097-00	METAL CHIP 100K 5%	1/10W
R244	1-216-748-11	METAL CHIP 39K 1%	1/10W
R245	1-216-079-00	METAL CHIP 18K 5%	1/10W
R246	1-216-079-00	METAL CHIP 18K 5%	1/10W
R247	1-216-121-00	METAL CHIP 1M 5%	1/10W
R248	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R249	1-216-085-00	METAL CHIP 33K 5%	1/10W
R250	1-216-097-00	METAL CHIP 100K 5%	1/10W
R251	1-216-097-00	METAL CHIP 100K 5%	1/10W
R252	1-216-085-00	METAL CHIP 33K 5%	1/10W
R253	1-216-047-00	METAL CHIP 820 5%	1/10W
R254	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R256	1-216-049-00	METAL CHIP 1K 5%	1/10W
R257	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R258	1-216-073-00	METAL CHIP 10K 5%	1/10W
R259	1-216-073-00	METAL CHIP 10K 5%	1/10W
R260	1-216-073-00	METAL CHIP 10K 5%	1/10W
R261	1-216-073-00	METAL CHIP 10K 5%	1/10W
R262	1-216-097-00	METAL CHIP 100K 5%	1/10W
R263	1-216-085-00	METAL CHIP 33K 5%	1/10W

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

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Ref. No.	Part No.	Description	Remarks
R264	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R265	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R266	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R267	1-216-037-00	METAL CHIP 330 5% 1/10W	
R268	1-216-033-00	METAL CHIP 220 5% 1/10W	
R269	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R270	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R271	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R272	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R273	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R274	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R275	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R276	1-216-045-00	METAL CHIP 680 5% 1/10W	
R277	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R278	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R279	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R280	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R281	1-216-039-00	METAL CHIP 390 5% 1/10W	
R282	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R283	1-216-748-11	METAL CHIP 39K 1% 1/10W	
R284	1-216-043-00	METAL CHIP 560 5% 1/10W	
R285	1-216-041-00	METAL CHIP 470 5% 1/10W	
R286	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R287	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R288	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R289	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R290	1-216-041-00	METAL CHIP 470 5% 1/10W	
R291	1-216-033-00	METAL CHIP 220 5% 1/10W	
R292	1-216-033-00	METAL CHIP 220 5% 1/10W	
R293	1-216-748-11	METAL CHIP 39K 1% 1/10W	
R294	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R295	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R296	1-216-025-00	METAL CHIP 100 5% 1/10W	
R297	1-216-027-00	METAL CHIP 120 5% 1/10W	
R298	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R300	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R301	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R302	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R303	1-216-041-00	METAL CHIP 470 5% 1/10W	
R304	1-216-041-00	METAL CHIP 470 5% 1/10W	
R306	1-216-025-00	METAL CHIP 100 5% 1/10W	
R307	1-216-021-00	METAL CHIP 68 5% 1/10W	
R308	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R309	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R310	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R311	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R312	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R313	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R314	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R315	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R316	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R317	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R318	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R322	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R323	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R324	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R325	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R326	1-216-041-00	METAL CHIP 470 5% 1/10W	
R327	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R328	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R329	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R330	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R331	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R332	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R333	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R334	1-216-031-00	METAL CHIP 180 5% 1/10W	
R335	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R336	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R337	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R338	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R339	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R340	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R341	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R342	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R343	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R344	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R345	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R346	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R347	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R348	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R349	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R350	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R351	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R352	1-216-041-00	METAL CHIP 470 5% 1/10W	
R353	1-216-033-00	METAL CHIP 220 5% 1/10W	
R354	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R355	1-216-035-00	METAL CHIP 270 5% 1/10W	
R356	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R357	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R358	1-216-049-00	METAL CHIP 1K 5% 1/10W	

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

Ref. No.	Part No.	Description	Remarks
R359	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R360	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R361	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R362	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R363	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R364	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R365	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R366	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R367	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R368	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R369	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R370	1-216-047-00	METAL CHIP 820 5% 1/10W	
R371	1-216-046-00	METAL CHIP 750 5% 1/10W	
R372	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R373	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R374	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R375	△1-212-958-00	FUSIBLE 10 5% 1/2W F	
R376	1-216-025-00	METAL CHIP 100 5% 1/10W	
R377	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R378	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R379	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R380	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R381	1-216-047-00	METAL CHIP 820 5% 1/10W	
R382	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R383	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R384	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R385	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R388	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R401	1-216-687-11	METAL CHIP 33K 0.5% 1/10W	
R402	1-216-687-11	METAL CHIP 33K 0.5% 1/10W	
R403	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R404	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R405	1-216-685-11	METAL CHIP 27K 0.5% 1/10W	
R406	1-218-165-11	METAL GLAZE 220K 1% 1/10W	
R407	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R408	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R409	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R410	1-216-530-00	METAL GLAZE 390K 1% 1/10W	
R411	1-216-679-11	METAL CHIP 15K 0.5% 1/10W	
R412	1-216-035-00	METAL CHIP 270 5% 1/10W	
R413	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R414	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R415	1-216-111-00	METAL CHIP 390K 5% 1/10W	
R416	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R417	1-216-111-00	METAL CHIP 390K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R423	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R431	1-216-033-00	METAL CHIP 220 5% 1/10W	
R432	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R434	1-216-033-00	METAL CHIP 220 5% 1/10W	
R435	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R580	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R581	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R588	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R593	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R594	1-216-037-00	METAL CHIP 330 5% 1/10W	
R595	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R596	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R599	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R601	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R602	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R603	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R604	1-216-021-00	METAL CHIP 68 5% 1/10W	
R605	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R606	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R607	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R608	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R609	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R610	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R611	△1-212-950-00	FUSIBLE 4.7 5% 1/2W F	
R612	1-216-033-00	METAL CHIP 220 5% 1/10W	
R615	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R616	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R617	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R618	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R620	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R621	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R623	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R624	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R625	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R626	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R627	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R629	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R630	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R631	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R632	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R633	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R634	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R635	1-216-035-00	METAL CHIP 270 5% 1/10W	
R636	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R637	1-216-081-00	METAL CHIP 22K 5% 1/10W	

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

**Note:**  
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**Note:**  
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**MB-56**

**MT-28**

**MT-30**

Ref. No.	Part No.	Description	Remarks
R638	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R640	1-216-025-00	METAL CHIP 100 5% 1/10W	
R641	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R642	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R643	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R644	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R645	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R646	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R648	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R649	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R650	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R651	1-216-033-00	METAL CHIP 220 5% 1/10W	
R652	1-216-033-00	METAL CHIP 220 5% 1/10W	
R653	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R654	1-216-033-00	METAL CHIP 220 5% 1/10W	
R655	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R656	1-216-033-00	METAL CHIP 220 5% 1/10W	
R658	1-216-033-00	METAL CHIP 220 5% 1/10W	
R659	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R660	1-216-033-00	METAL CHIP 220 5% 1/10W	
R661	1-216-033-00	METAL CHIP 220 5% 1/10W	
R662	1-216-033-00	METAL CHIP 220 5% 1/10W	
R663	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R664	1-216-033-00	METAL CHIP 220 5% 1/10W	
R665	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R666	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R667	1-216-033-00	METAL CHIP 220 5% 1/10W	
R668	1-216-033-00	METAL CHIP 220 5% 1/10W	
R669	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R670	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R671	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R672	1-216-033-00	METAL CHIP 220 5% 1/10W	
R673	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R674	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R675	1-216-033-00	METAL CHIP 220 5% 1/10W	
R676	1-216-033-00	METAL CHIP 220 5% 1/10W	
R680	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R681	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R682	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R683	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R684	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R685	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R686	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R687	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R688	1-216-097-00	METAL CHIP 100K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R689	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R690	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R691	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R693	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R694	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R695	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R696	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R697	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R698	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R699	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R801	1-249-389-11	CARBON 4.7 5% 1/4W	
R802	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
< VARIABLE RESISTOR >			
RV001	1-230-869-11	RES, ADJ, METAL4.7K	
RV101	1-230-866-11	RES, ADJ, METAL470	
RV151	1-230-870-11	RES, ADJ, METAL10K	
RV152	1-230-870-11	RES, ADJ, METAL10K	
RV154	1-230-870-11	RES, ADJ, METAL10K	
RV601	1-230-873-11	RES, ADJ, METAL47K	
< THERMISTOR >			
TH151	1-800-199-00	THERMISTOR	
< CRYSTAL >			
X601	1-567-900-11	OSCILLATOR, CRYSTAL (14.31818 MHz)	
*****			
* 1-630-097-11 MT-28 BOARD (Ref. No 1,000 Series)			
*****			
< MOTOR >			
M903	1-541-659-11	MOTOR, DC (TILT)	
*****			
* 1-631-095-11 MT-30 BOARD (Ref. No 1,000 Series)			
*****			
< MOTOR >			
M902	1-541-659-11	MOTOR, DC (SLED)	
*****			

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

MT-52

PE-11

PS-193 (I)

Ref. No.	Part No.	Description	Remarks
		MT-52 BOARD (Ref. No 3,000 Series)	
		*****	
		< CAPACITOR >	
C001	1-161-063-00	CERAMIC 0.1uF 10% 50V	
		< CONNECTOR >	
CN001	1-506-481-11	PIN, CONNECTOR 2P	
		< MOTOR >	
M904	1-541-309-11	MOTOR, L(RF-370C) (LOADING)	
*****			
		* A-6426-490-A PE-11 BOARD, COMPLETE (Ref. No 10,000 Series)	
		*****	
		< CAPACITOR >	
C201	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C202	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C203	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C204	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
		< CONNECTOR >	
CNJ201	1-573-695-11	CONNECTOR (ROUND TYPE) 6P (BARCODE)	
		< DIODE >	
D201	8-719-812-41	LED TLR124 (EXT CPU)	
		< COIL >	
L201	1-410-521-11	INDUCTOR 100uH	
L202	1-410-521-11	INDUCTOR 100uH	
L203	1-410-521-11	INDUCTOR 100uH	
L204	1-410-521-11	INDUCTOR 100uH	
L205	1-408-421-00	INDUCTOR 100uH	
		< RESISTOR >	
R201	1-249-417-11	CARBON 1K 5% 1/4W	
*****			

Ref. No.	Part No.	Description	Remarks
		* A-6421-504-A PS-193 (I) BOARD, COMPLETE (Ref. No 11,000 Series)	
		*****	
		△1-533-189-11 HOLDER, FUSE	
		* 3-309-144-21 HEAT SINK	
		7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3	
		< CAPACITOR >	
C101	1-125-298-00	ELECT (BLOCK) 10000uF 20% 25V	
C102	1-124-314-00	ELECT 4700uF 20% 25V	
C103	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C104	1-163-013-91	CERAMIC CHIP 0.0022uF 10% 50V	
C107	1-124-471-00	ELECT 1000uF 20% 6.3V	
C108	1-124-903-11	ELECT 1uF 20% 50V	
C109	1-124-472-11	ELECT 470uF 20% 10V	
C110	1-163-833-00	CERAMIC CHIP 0.068uF 25V	
C111	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C112	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C114	1-126-101-11	ELECT 100uF 20% 16V	
C115	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C116	1-163-833-00	CERAMIC CHIP 0.068uF 25V	
C119	1-126-176-11	ELECT 220uF 20% 10V	
C120	1-126-096-11	ELECT 10uF 20% 35V	
C201	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C202	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C203	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C204	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C205	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C206	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C207	1-124-910-11	ELECT 47uF 20% 50V	
C208	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C209	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C210	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C211	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C212	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
		< CONNECTOR >	
CN001	△1-564-419-11	HEADER, SPRING (POWER) 2P	
CN002	△1-564-419-11	HEADER, SPRING (POWER) 2P	
CN003	* 1-560-890-00	PIN, CONNECTOR 2P	
CN004	* 1-560-895-00	PIN, CONNECTOR 7P	
CN005	1-506-469-11	CONNECTOR 4P, MALE	

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

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# PS-193 (I)

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< DIODE >							
D101	8-719-500-55	DIODE D3SBA10		Q202	8-729-143-30	TRANSISTOR 2SD1691K	
D105	8-719-980-78	DIODE ERA83-006		Q203	8-729-117-11	TRANSISTOR 2SB1151-L	
D108	8-719-105-82	DIODE RD5.1M-B2		Q204	8-729-143-30	TRANSISTOR 2SD1691K	
D201	8-719-980-78	DIODE ERA83-006		Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D202	8-719-980-78	DIODE ERA83-006		Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
D203	8-719-200-02	DIODE 10E2		Q208	8-729-900-53	TRANSISTOR DTC114EK	
D204	8-719-200-02	DIODE 10E2		Q209	8-729-901-04	TRANSISTOR DTA114EK	
D205	8-719-911-19	DIODE 1SS119		Q210	8-729-901-79	TRANSISTOR 2SC2412K-S	
D206	8-719-911-19	DIODE 1SS119		Q211	8-729-920-68	TRANSISTOR 2SA933S-QR	
D207	8-719-911-19	DIODE 1SS119		Q212	8-729-901-04	TRANSISTOR DTA114EK	
< FUSE >				< RESISTOR >			
F101	△1-532-747-11	FUSE, GLASS TUBE (5A)		R002	1-216-296-00	METAL CHIP 0 5% 1/8W	
F102	△1-532-747-11	FUSE, GLASS TUBE (5A)		R003	1-216-296-00	METAL CHIP 0 5% 1/8W	
F103	△1-532-960-11	FUSE, MICRO 1.25A 125V		R004	1-216-296-00	METAL CHIP 0 5% 1/8W	
F104	△1-532-960-11	FUSE, MICRO 1.25A 125V		R101	1-216-073-00	METAL CHIP 10K 5% 1/10W	
F105	△1-532-778-21	FUSE, MICRO 1.6A 125V		R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
F301	△1-532-743-11	FUSE, GLASS TUBE (2A)		R103	1-216-089-00	METAL CHIP 47K 5% 1/10W	
< IC >				R104	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
IC101	8-759-971-39	IC BA9700AF		R105	1-216-073-00	METAL CHIP 10K 5% 1/10W	
IC102	8-759-245-79	IC TA7905S		R106	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
IC201	8-759-100-97	IC uPC339G2		R107	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
IC202	8-759-100-96	IC uPC4558G2		R108	1-216-043-00	METAL CHIP 560 5% 1/10W	
< JUMPER RESISTOR >				R109	1-216-687-11	METAL CHIP 33K 0.5% 1/10W	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W		R110	1-216-676-11	METAL CHIP 11K 0.5% 1/10W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W		R112	1-216-099-00	METAL CHIP 120K 5% 1/10W	
JR231	1-216-295-00	METAL CHIP 0 5% 1/10W		R114	1-216-097-00	METAL CHIP 100K 5% 1/10W	
< COIL >				R115	△1-216-447-00	METAL OXIDE 27 5% 2W F	
L101	1-412-012-11	INDUCTOR 100uH		R116	1-216-073-00	METAL CHIP 10K 5% 1/10W	
L102	1-410-339-11	COIL, CHOKE 10uH		R117	1-216-073-00	METAL CHIP 10K 5% 1/10W	
L201	1-424-219-11	COIL, CHOKE 300uH		R120	1-216-192-00	METAL CHIP 560 5% 1/8W	
< IC LINK >				R201	1-216-081-00	METAL CHIP 22K 5% 1/10W	
PS001	1-532-675-00	LINK, IC 1.5A		R202	1-216-075-00	METAL CHIP 12K 5% 1/10W	
< TRANSISTOR >				R203	1-216-093-00	METAL CHIP 68K 5% 1/10W	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE		R204	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
Q102	8-729-216-22	TRANSISTOR 2SA1162-G		R205	1-216-075-00	METAL CHIP 12K 5% 1/10W	
Q103	8-729-113-31	TRANSISTOR 2SB733-2		R206	1-216-097-00	METAL CHIP 100K 5% 1/10W	
Q105	8-729-159-64	TRANSISTOR 2SD596-DV4		R207	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q201	8-729-117-11	TRANSISTOR 2SB1151-L		R208	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R209	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R210	1-216-105-00	METAL CHIP 220K 5% 1/10W	
				R211	1-216-073-00	METAL CHIP 10K 5% 1/10W	

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**Note:**  
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**Note:**  
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Ref. No.	Part No.	Description	Remarks
R212	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R213	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R214	1-247-750-11	CARBON 680 5% 1/2W	
R215	1-247-750-11	CARBON 680 5% 1/2W	
R216	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R217	△1-216-369-00	METAL OXIDE 1 5% 2W F	
R218	1-216-690-11	METAL CHIP 43K 0.5% 1/10W	
R219	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R220	1-216-690-11	METAL CHIP 43K 0.5% 1/10W	
R221	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R222	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R223	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R224	△1-215-866-11	METAL OXIDE 330 5% 1W F	
R225	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R226	1-247-750-11	CARBON 680 5% 1/2W	
R227	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R228	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R230	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R301	△1-202-729-00	SOLID 6.8M 10% 1/2W	
< SWITCH >			
SW301	1-570-156-11	SWITCH, PUSH (AC POWER) (1 KEY)	
< FILTER >			
T301	△1-424-535-11	FILTER, LINE	
*****			
* A-6426-492-A RS-57 BOARD, COMPLETE (Ref. No 7,000 Series)			
*****			
< CONNECTOR >			
CN101	1-506-488-11	PIN, CONNECTOR 9P	
CNJ101	1-563-228-11	CONNECTOR, D-SUB 25P (RS-232C)	
< LEAD PIN >			
LP101	4-352-844-01	PIN, LEAD, COATING	
< RESISTOR >			
R101	1-216-033-00	METAL CHIP 220 5% 1/10W	
R102	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R103	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R104	1-216-033-00	METAL CHIP 220 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
< SWITCH >			
S101	1-570-727-11	SWITCH, DIP (BAUD RATE)	
*****			
* A-6421-465-A SV-63 BOARD, COMPLETE (Ref. No 1,000 Series)			
*****			
< CAPACITOR >			
C001	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C003	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	
C005	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C006	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C009	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C010	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C011	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C012	1-163-013-91	CERAMIC CHIP 0.0022uF 10% 50V	
C013	1-124-584-00	ELECT 100uF 20% 10V	
C014	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C015	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C019	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C020	1-124-465-00	ELECT 0.47uF 20% 50V	
C021	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C101	1-124-604-00	ELECT 330uF 20% 10V	
C102	1-124-604-00	ELECT 330uF 20% 10V	
C103	1-124-242-00	ELECT 33uF 20% 25V	
C104	1-124-242-00	ELECT 33uF 20% 25V	
C105	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C106	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C107	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C108	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C109	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C110	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C111	1-126-160-11	ELECT 1uF 20% 50V	
C112	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C113	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	
C114	1-126-160-11	ELECT 1uF 20% 50V	
C115	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C116	1-126-160-11	ELECT 1uF 20% 50V	
C117	1-163-013-91	CERAMIC CHIP 0.0022uF 10% 50V	
C118	1-163-014-00	CERAMIC CHIP 0.0027uF 10% 50V	
C119	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C120	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C121	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	

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

<p><b>Note:</b> The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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**SV-63**

Ref. No.	Part No.	Description	Remarks
C122	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C123	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C124	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C125	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C126	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C127	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V
C128	1-126-320-11	ELECT, NONPOLAR 10uF	20% 16V
C129	1-136-165-00	FILM 0.1uF	5% 50V
C130	1-126-320-11	ELECT, NONPOLAR 10uF	20% 16V
C131	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C132	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C135	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V
C136	1-136-169-00	FILM 0.22uF	5% 50V
C137	1-163-022-00	CERAMIC CHIP 0.012uF	10% 50V
C138	1-163-022-00	CERAMIC CHIP 0.012uF	10% 50V
C139	1-124-282-00	ELECT 22uF	20% 16V
C140	1-124-279-11	ELECT 3.3uF	20% 25V
C141	1-163-021-91	CERAMIC CHIP 0.01uF	10% 50V
C144	1-163-016-00	CERAMIC CHIP 0.0039uF	10% 50V
C145	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V
C146	1-163-021-91	CERAMIC CHIP 0.01uF	10% 50V
C147	1-136-169-00	FILM 0.22uF	5% 50V
C149	1-163-021-91	CERAMIC CHIP 0.01uF	10% 50V
C150	1-124-589-11	ELECT 47uF	20% 16V
C151	1-124-477-11	ELECT 47uF	20% 25V
C152	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C153	1-163-035-00	CERAMIC CHIP 0.047uF	50V
< CONNECTOR >			
CN101	1-566-939-11	CONNECTOR, F. P. C 24P	
CN102	1-563-493-11	CONNECTOR, F. P. C 28P	
CN103	1-506-485-11	CONNECTOR 6P, MALE	
CN104	1-506-482-11	CONNECTOR 3P, MALE	
CN105	* 1-566-969-11	HOUSING, CONNECTOR(PC BOARD) 7P	
CN106	* 1-566-968-11	HOUSING, CONNECTOR(PC BOARD) 6P	
< DIODE >			
D001	8-719-911-19	DIODE 1SS119	
D101	8-719-911-19	DIODE 1SS119	
D102	8-719-109-72	DIODE RD3.9ES-B2	
D103	8-719-911-19	DIODE 1SS119	
D104	8-719-911-19	DIODE 1SS119	
< FILTER >			
FL001	1-235-922-11	FILTER, LOW PASS (1.7MHZ)	

Ref. No.	Part No.	Description	Remarks
< IC >			
IC001	8-752-050-19	IC CXA1081M	
IC002	8-759-603-24	IC CX20197	
IC101	8-759-321-40	IC HA11529	
IC102	8-759-822-38	IC LA6510	
IC103	8-759-981-92	IC RC4558M	
IC104	8-759-981-92	IC RC4558M	
IC105	8-759-981-92	IC RC4558M	
IC106	8-759-300-71	IC HD14053BFP	
< JUMPER RESISTOR >			
JR102	1-216-295-00	METAL CHIP 0	5% 1/10W
JR103	1-216-296-00	METAL CHIP 0	5% 1/8W
JR104	1-216-296-00	METAL CHIP 0	5% 1/8W
JR105	1-216-295-00	METAL CHIP 0	5% 1/10W
JR106	1-216-296-00	METAL CHIP 0	5% 1/8W
JR107	1-216-295-00	METAL CHIP 0	5% 1/10W
JR111	1-216-296-00	METAL CHIP 0	5% 1/8W
JR112	1-216-296-00	METAL CHIP 0	5% 1/8W
JR113	1-216-296-00	METAL CHIP 0	5% 1/8W
JR114	1-216-295-00	METAL CHIP 0	5% 1/10W
JR115	1-216-296-00	METAL CHIP 0	5% 1/8W
JR116	1-216-295-00	METAL CHIP 0	5% 1/10W
JR117	1-216-295-00	METAL CHIP 0	5% 1/10W
JR118	1-216-296-00	METAL CHIP 0	5% 1/8W
JR119	1-216-296-00	METAL CHIP 0	5% 1/8W
JR121	1-216-296-00	METAL CHIP 0	5% 1/8W
JR122	1-216-296-00	METAL CHIP 0	5% 1/8W
JR123	1-216-296-00	METAL CHIP 0	5% 1/8W
JR124	1-216-296-00	METAL CHIP 0	5% 1/8W
JR125	1-216-296-00	METAL CHIP 0	5% 1/8W
JR126	1-216-296-00	METAL CHIP 0	5% 1/8W
JR127	1-216-295-00	METAL CHIP 0	5% 1/10W
JR128	1-216-296-00	METAL CHIP 0	5% 1/8W
JR129	1-216-296-00	METAL CHIP 0	5% 1/8W
JR130	1-216-296-00	METAL CHIP 0	5% 1/8W
JR132	1-216-296-00	METAL CHIP 0	5% 1/8W
JR133	1-216-296-00	METAL CHIP 0	5% 1/8W
JR134	1-216-296-00	METAL CHIP 0	5% 1/8W
JR135	1-216-296-00	METAL CHIP 0	5% 1/8W
JR136	1-216-296-00	METAL CHIP 0	5% 1/8W

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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
JR137	1-216-296-00	METAL CHIP	0 5% 1/8W	JR191	1-216-296-00	METAL CHIP	0 5% 1/8W
JR138	1-216-296-00	METAL CHIP	0 5% 1/8W	JR192	1-216-296-00	METAL CHIP	0 5% 1/8W
JR139	1-216-296-00	METAL CHIP	0 5% 1/8W	JR193	1-216-296-00	METAL CHIP	0 5% 1/8W
JR140	1-216-296-00	METAL CHIP	0 5% 1/8W	JR194	1-216-296-00	METAL CHIP	0 5% 1/8W
JR141	1-216-296-00	METAL CHIP	0 5% 1/8W	JR195	1-216-295-00	METAL CHIP	0 5% 1/10W
JR142	1-216-296-00	METAL CHIP	0 5% 1/8W	JR196	1-216-296-00	METAL CHIP	0 5% 1/8W
JR143	1-216-296-00	METAL CHIP	0 5% 1/8W	JR197	1-216-296-00	METAL CHIP	0 5% 1/8W
JR144	1-216-296-00	METAL CHIP	0 5% 1/8W	JR198	1-216-296-00	METAL CHIP	0 5% 1/8W
JR145	1-216-296-00	METAL CHIP	0 5% 1/8W	JR199	1-216-296-00	METAL CHIP	0 5% 1/8W
JR146	1-216-296-00	METAL CHIP	0 5% 1/8W	JR200	1-216-296-00	METAL CHIP	0 5% 1/8W
JR147	1-216-296-00	METAL CHIP	0 5% 1/8W	JR201	1-216-296-00	METAL CHIP	0 5% 1/8W
JR148	1-216-296-00	METAL CHIP	0 5% 1/8W	JR202	1-216-296-00	METAL CHIP	0 5% 1/8W
JR149	1-216-296-00	METAL CHIP	0 5% 1/8W	JR203	1-216-296-00	METAL CHIP	0 5% 1/8W
JR150	1-216-296-00	METAL CHIP	0 5% 1/8W	JR204	1-216-296-00	METAL CHIP	0 5% 1/8W
JR153	1-216-296-00	METAL CHIP	0 5% 1/8W	JR205	1-216-295-00	METAL CHIP	0 5% 1/10W
JR154	1-216-296-00	METAL CHIP	0 5% 1/8W	JR206	1-216-295-00	METAL CHIP	0 5% 1/10W
JR155	1-216-296-00	METAL CHIP	0 5% 1/8W	JR207	1-216-296-00	METAL CHIP	0 5% 1/8W
JR156	1-216-296-00	METAL CHIP	0 5% 1/8W	JR208	1-216-296-00	METAL CHIP	0 5% 1/8W
JR158	1-216-295-00	METAL CHIP	0 5% 1/10W	JR209	1-216-295-00	METAL CHIP	0 5% 1/10W
JR159	1-216-296-00	METAL CHIP	0 5% 1/8W	JR210	1-216-295-00	METAL CHIP	0 5% 1/10W
JR160	1-216-296-00	METAL CHIP	0 5% 1/8W	JR211	1-216-296-00	METAL CHIP	0 5% 1/8W
JR161	1-216-296-00	METAL CHIP	0 5% 1/8W	JR212	1-216-296-00	METAL CHIP	0 5% 1/8W
JR162	1-216-296-00	METAL CHIP	0 5% 1/8W	JR213	1-216-296-00	METAL CHIP	0 5% 1/8W
JR164	1-216-296-00	METAL CHIP	0 5% 1/8W	JR214	1-216-296-00	METAL CHIP	0 5% 1/8W
JR166	1-216-295-00	METAL CHIP	0 5% 1/10W	JR215	1-216-295-00	METAL CHIP	0 5% 1/10W
JR170	1-216-296-00	METAL CHIP	0 5% 1/8W	JR216	1-216-295-00	METAL CHIP	0 5% 1/10W
JR171	1-216-295-00	METAL CHIP	0 5% 1/10W	JR217	1-216-295-00	METAL CHIP	0 5% 1/10W
JR172	1-216-296-00	METAL CHIP	0 5% 1/8W	JR218	1-216-296-00	METAL CHIP	0 5% 1/8W
JR173	1-216-296-00	METAL CHIP	0 5% 1/8W	JR219	1-216-295-00	METAL CHIP	0 5% 1/10W
JR174	1-216-296-00	METAL CHIP	0 5% 1/8W	JR220	1-216-296-00	METAL CHIP	0 5% 1/8W
JR175	1-216-295-00	METAL CHIP	0 5% 1/10W	JR221	1-216-296-00	METAL CHIP	0 5% 1/8W
JR176	1-216-296-00	METAL CHIP	0 5% 1/8W			< COIL >	
JR177	1-216-296-00	METAL CHIP	0 5% 1/8W	L101	1-410-509-11	INDUCTOR	10uH
JR178	1-216-296-00	METAL CHIP	0 5% 1/8W	L102	1-410-509-11	INDUCTOR	10uH
JR179	1-216-296-00	METAL CHIP	0 5% 1/8W	L103	1-410-509-11	INDUCTOR	10uH
JR180	1-216-296-00	METAL CHIP	0 5% 1/8W			< TRANSISTOR >	
JR181	1-216-296-00	METAL CHIP	0 5% 1/8W	Q001	8-729-140-97	TRANSISTOR	2SB734-34
JR182	1-216-296-00	METAL CHIP	0 5% 1/8W	Q002	8-729-216-22	TRANSISTOR	2SA1162-G
JR183	1-216-295-00	METAL CHIP	0 5% 1/10W	Q003	8-729-303-37	TRANSISTOR	2SD655-E
JR184	1-216-296-00	METAL CHIP	0 5% 1/8W	Q101	8-729-209-15	TRANSISTOR	2SD2012
JR185	1-216-296-00	METAL CHIP	0 5% 1/8W	Q102	8-729-924-90	TRANSISTOR	2SB1370-EF
JR186	1-216-296-00	METAL CHIP	0 5% 1/8W				
JR187	1-216-296-00	METAL CHIP	0 5% 1/8W				
JR188	1-216-296-00	METAL CHIP	0 5% 1/8W				
JR189	1-216-295-00	METAL CHIP	0 5% 1/10W				



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


# SV-63

Ref. No.	Part No.	Description	Remarks
Q103	8-729-209-15	TRANSISTOR 2SD2012	
Q104	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q105	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q106	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q107	8-729-901-00	TRANSISTOR DTC124EK	
Q108	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
< RESISTOR >			
R001	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R002	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R003	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R004	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R005	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R006	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R007	1-216-023-00	METAL CHIP 82 5% 1/10W	
R008	1-216-043-00	METAL CHIP 560 5% 1/10W	
R009	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R010	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R011	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R012	1-249-394-11	CARBON 12 5% 1/6W	
R013	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R014	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R015	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R016	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R017	1-216-041-00	METAL CHIP 470 5% 1/10W	
R018	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R020	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R021	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R022	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R023	1-249-394-11	CARBON 12 5% 1/6W	
R101	△1-216-373-11	METAL OXIDE 2.2 5% 2W F	
R103	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R104	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R105	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R108	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R111	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R112	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R113	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R114	1-216-025-00	METAL CHIP 100 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R115	1-216-025-00	METAL CHIP 100 5% 1/10W	
R116	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R117	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R118	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R119	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R120	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R121	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R122	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R123	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R124	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R125	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R126	1-216-033-00	METAL CHIP 220 5% 1/10W	
R127	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R128	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R129	1-216-041-00	METAL CHIP 470 5% 1/10W	
R130	1-216-017-00	METAL CHIP 47 5% 1/10W	
R131	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R132	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R133	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R134	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R135	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R136	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R137	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R138	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R139	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R140	1-216-037-00	METAL CHIP 330 5% 1/10W	
R141	1-216-024-00	METAL GLAZE 91 5% 1/10W	
R142	1-216-001-00	METAL CHIP 10 5% 1/10W	
R143	1-216-001-00	METAL CHIP 10 5% 1/10W	
R144	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R145	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R146	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R147	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R148	1-216-037-00	METAL CHIP 330 5% 1/10W	
R149	1-216-033-00	METAL CHIP 220 5% 1/10W	
R150	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R151	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R152	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R155	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R156	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R157	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R158	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R159	1-216-075-00	METAL CHIP 12K 5% 1/10W	

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

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

**Note:**  
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**SV- 63      SW- 156      SW- 157**

Ref. No.	Part No.	Description	Remarks
R160	1-216-083-00	METAL CHIP 27K 5%	1/10W
R161	1-216-113-00	METAL CHIP 470K 5%	1/10W
R162	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R163	1-216-083-00	METAL CHIP 27K 5%	1/10W
R164	1-216-035-00	METAL CHIP 270 5%	1/10W
R165	1-216-089-00	METAL CHIP 47K 5%	1/10W
R166	1-216-041-00	METAL CHIP 470 5%	1/10W
R167	1-216-049-00	METAL CHIP 1K 5%	1/10W
R168	1-216-049-00	METAL CHIP 1K 5%	1/10W
R169	1-216-049-00	METAL CHIP 1K 5%	1/10W
R170	1-216-049-00	METAL CHIP 1K 5%	1/10W
R171	1-216-049-00	METAL CHIP 1K 5%	1/10W
R172	1-216-049-00	METAL CHIP 1K 5%	1/10W
R173	1-216-085-00	METAL CHIP 33K 5%	1/10W
R174	1-216-073-00	METAL CHIP 10K 5%	1/10W
R175	1-216-085-00	METAL CHIP 33K 5%	1/10W
R176	1-216-748-11	METAL CHIP 39K 1%	1/10W
R177	1-216-085-00	METAL CHIP 33K 5%	1/10W
R178	1-216-073-00	METAL CHIP 10K 5%	1/10W
R179	1-216-101-00	METAL CHIP 150K 5%	1/10W
R180	1-216-748-11	METAL CHIP 39K 1%	1/10W
R181	1-216-083-00	METAL CHIP 27K 5%	1/10W
R182	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R183	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R184	1-216-089-00	METAL CHIP 47K 5%	1/10W
R186	1-216-097-00	METAL CHIP 100K 5%	1/10W
R187	1-216-089-00	METAL CHIP 47K 5%	1/10W
R188	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R189	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R190	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R191	1-216-097-00	METAL CHIP 100K 5%	1/10W
R192	1-216-081-00	METAL CHIP 22K 5%	1/10W
R193	1-216-105-00	METAL CHIP 220K 5%	1/10W
R194	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R195	1-216-085-00	METAL CHIP 33K 5%	1/10W
R196	1-216-097-00	METAL CHIP 100K 5%	1/10W
R197	1-216-089-00	METAL CHIP 47K 5%	1/10W
R198	1-216-081-00	METAL CHIP 22K 5%	1/10W
R199	1-216-099-00	METAL CHIP 120K 5%	1/10W
R200	1-216-085-00	METAL CHIP 33K 5%	1/10W
R201	1-216-095-00	METAL CHIP 82K 5%	1/10W
R202	1-216-081-00	METAL CHIP 22K 5%	1/10W
R205	1-216-097-00	METAL CHIP 100K 5%	1/10W
R206	1-216-081-00	METAL CHIP 22K 5%	1/10W
R207	1-216-051-00	METAL CHIP 1.2K 5%	1/10W

Ref. No.	Part No.	Description	Remarks
R208	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R209	1-216-073-00	METAL CHIP 10K 5%	1/10W
R210	1-216-081-00	METAL CHIP 22K 5%	1/10W
R211	1-216-017-00	METAL CHIP 47 5%	1/10W
R212	1-216-017-00	METAL CHIP 47 5%	1/10W
R213	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R214	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R215	1-216-073-00	METAL CHIP 10K 5%	1/10W
R216	1-216-081-00	METAL CHIP 22K 5%	1/10W
R217	1-216-081-00	METAL CHIP 22K 5%	1/10W
R218	1-216-077-00	METAL CHIP 15K 5%	1/10W
R219	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R220	1-216-079-00	METAL CHIP 18K 5%	1/10W
R222	1-216-129-00	METAL CHIP 2.2M 5%	1/10W
< VARIABLE RESISTOR >			
RV101	1-228-993-00	RES, ADJ, METAL4.7K	
RV102	1-228-994-00	RES, ADJ, METAL10K	
RV103	1-228-994-00	RES, ADJ, METAL10K	
RV104	1-228-993-00	RES, ADJ, METAL4.7K	
RV105	1-228-994-00	RES, ADJ, METAL10K	
RV106	1-228-990-00	RES, ADJ, METAL1K	
RV107	1-228-990-00	RES, ADJ, METAL1K	
RV108	1-228-990-00	RES, ADJ, METAL1K	
*****			
* 1-635-260-11 SW-156 BOARD (Ref. No 3,000 Series)			
*****			
< CONNECTOR >			
CN301	1-506-467-11	CONNECTOR 2P, MALE	
< SWITCH >			
S301	1-554-655-00	SWITCH, LEAF (TRAY SW)	
*****			
* 1-635-261-11 SW-157 BOARD (Ref. No 3,000 Series)			
*****			
< CONNECTOR >			
CN401	1-506-481-11	CONNECTOR 2P, MALE	
CN402	1-506-481-11	CONNECTOR 2P, MALE	

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

**SW-157****TR-30**

Ref. No.	Part No.	Description	Remarks
< RESISTOR >			
R401	1-249-423-11	CARBON 3.3K 5% 1/4W	
R402	1-249-417-11	CARBON 1K 5% 1/4W	
< SWITCH >			
S401	1-571-300-21	SWITCH, ROTARY (CHUCK SW)	
*****			
* 1-630-089-51 TR-30 BOARD (Ref. No 12,000 Series)			
*****			
< CAPACITOR >			
C401	△1-136-345-21	FILM 0.1uF 20% 125V	
C416	1-124-122-11	ELECT 100uF 20% 50V	
C417	1-124-910-11	ELECT 47uF 20% 50V	
C418	1-124-122-11	ELECT 100uF 20% 50V	
C419	1-124-122-11	ELECT 100uF 20% 50V	
C420	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
< CONNECTOR >			
CN401	1-506-483-21	CONNECTOR 4P, MALE	
CN402	* 1-564-028-00	PIN, CONNECTOR 3P	
CN403	* 1-564-029-00	PIN, CONNECTOR 4P	
< DIODE >			
D406	8-719-200-02	DIODE 10E2	
D407	8-719-110-78	DIODE RD33ES-B2	
D408	8-719-110-88	DIODE RD39ES-B2	
D409	8-719-110-17	DIODE RD10ES-B2	
< TRANSISTOR >			
Q404	8-729-140-93	TRANSISTOR 2SB733-34	
< RESISTOR >			
R416	△1-249-401-11	CARBON 47 5% 1/4W	
R417	1-249-416-11	CARBON 820 5% 1/4W	
R418	1-249-405-11	CARBON 100 5% 1/4W	
< POWER TRANSFORMER >			
T401	△1-449-804-11	TRANSFORMER, POWER	

\*\*\*\*\*

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

Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS			
*****			
168	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
213	△8-848-138-11	DEVICE, OPTICAL KHS-130A	
57	△1-590-043-11	CORD, POWER	
67	* 1-575-813-11	CABLE, FLAT(FLEXIBLE) (28 CORE)	
M901	1-541-776-21	MOTOR, LD SPINDLE (SPINDLE)	
S901	1-571-435-11	SWITCH (SLED IN LIMIT)	
S902	1-570-771-21	SWITCH (SLED OUT LIMIT)	
S903	1-554-468-00	SWITCH, LEAF (SLED IN LD/CD)	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
22	1-465-879-11	REMOTE CONTROL (RMT-1000)	
	1-551-086-31	CORD, CONNECTION	
	1-559-533-11	CORD, CONNECTION	
	3-753-758-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	
	3-795-581-21	SAFEGUARD (SONY), IMPORTANT	
	A-6768-253-A	SOX-1530 (UC)	
*****			
<b>HARDWARE LIST</b>			
*****			
#1	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
#2	7-685-646-79	SCREW, TAPPING	
#3	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S	
#4	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
#5	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#6	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
#7	7-685-661-79	SCREW +BVTP 4X12 TYPE2 SLIT	
#8	7-682-661-09	SCREW +PSW 4X8	
#9	7-624-108-04	STOP RING 4.0, TYPE -E	
#10	7-682-645-01	SCREW +PS 3X4	
#11	7-621-255-55	SCREW +P 2X8	
#12	7-682-545-04	SCREW (3X4) (G), TAPPING, (+) P	
#13	7-624-190-81	STOP RING 2, TYPE-CS	
#14	7-682-547-04	SCREW +BVTT 3X6 (S)	

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

**Note:**  
Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## SECTION 7

### ELECTRICAL ADJUSTMENTS

During these adjustment, see the parts arrangement diagram for adjustments on page from 148.

#### 7-1. LIST OF SERVICING JIGS

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote commander (RMT-1000)
- LD alignment disc REF7C-8AL (8-597-901-03)
- MD adjustment cable (J-6082-059-B)
- Audio oscillator

#### 7-2. CAUTIONS ON ADJUSTMENT

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

#### 7-3. MD ADJUSTMENT CABLE (J-6082-059-B)

MD adjustment cable is used to adjust the servo system with connecting to the SV-63 board. Remove it except when adjusting the servo system.



#### 7-4. POWER SUPPLY CHECK (PS-193 BOARD)

Mode	Stop
Measuring Equipment	Digital voltmeter
UN REG + 16V check	
Measurement Point	Pin ① of W002 (Pin ②, GND)
Specified Value	14.5 ± 1V
UN REG - 16V check	
Measurement Point	Pin ③ of W002 (Pin ②, GND)
Specified Value	- 14.5 ± 1V
REG + 5V check	
Measurement Point	Pin ⑥ of W002 (Pin ⑤, GND)
Specified Value	5.1 ± 0.2V
REG - 5V check	
Measurement Point	Pin ⑦ of W002 (Pin ⑤, GND)
Specified Value	- 5 ± 0.5V

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

#### 7-5. SYSTEM CONTROL SYSTEM ADJUSTMENT

##### 7-5-1. Microprocessor Clock Adjustment (MB-56 Board)

Mode	Stop
Measurement Point	Pin ⑨ of IC601
Measuring Equipment	Frequency counter
Adjusting Element	CV601
Specified Value	3, 579, 545 ± 10Hz

##### Adjustment method :

- 1) Adjust CV601 to 3, 579, 545 ± 10Hz.



3, 579, 545 ± 10Hz

Fig. 7-1.

#### 7-6. SERVO SYSTEM ADJUSTMENT

When adjusting the servo system, look out for the following items :

- Use the MD adjustment cable (J-6082-059-B)
- Adjust the CD servo system after the digital audio system adjustment is completed.
- When setting the tracking servo to the open state, set to the STOP state once and proceed to the next step.
- When the optical block is replaced, perform the adjustment in the following order.

**Note :** Start adjustment at maximum CD RF H level (RV108 fully counterclockwise direction.)

1. LD Tracking Balance Adjustment
  - 1) Focus balance adjustment
  - 2) Tracking balance adjustment
2. LD Focus Gain Adjustment
3. LD Cross Talk Balance Adjustment
  - 1) TAN cam adjustment
  - 2) RAD-TILT adjustment
  - 3) Focus balance adjustment
4. LD Tracking Gain Adjustment
5. RD Adjustment
6. CD Focus Balance Adjustment
7. CD RF H Level Adjustment
8. CD RF L Level Adjustment

## 7-6-1. LD Servo System Adjustment

### 1. LD Tracking Balance Adjustment (SV-63 Board)

#### 1) Focus balance adjustment

**Note :** Perform successively 1) and 2) adjustment in this order.

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable {TRKG ERR (X)} (Pin ③ of CN105)
Measuring Equipment	Oscilloscope
Adjusting Element	RV102
Specified Value	Maximum amplitude

#### Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 2201 (GRAY).
- 3) Turn the thread servo off. (MD adjustment cable SLED SW OFF)
- 4) Turn the tracking servo off. (MD adjustment cable TRKG SW OFF)
- 5) Adjust RV102 so as to maximize the signal level.



Fig. 7-2.

#### 2) Tracking balance adjustment

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable {TRKG ERR (X)} (Pin ③ of CN105)
Measuring Equipment	Oscilloscope
Adjusting Element	RV101
Specified Value	$A - B = 0 \pm 0.1V$

#### Adjustment method :

**Note :** Perform successively this adjustment after "1) Focus balance adjustment" is completed.

- 6) Adjust RV101 so that the center voltage of the tracking error signal becomes  $0 \pm 0.1Vdc$ .
- 7) Select STOP mode.
- 8) Turn the tracking servo on.
- 9) Turn the thread servo on.

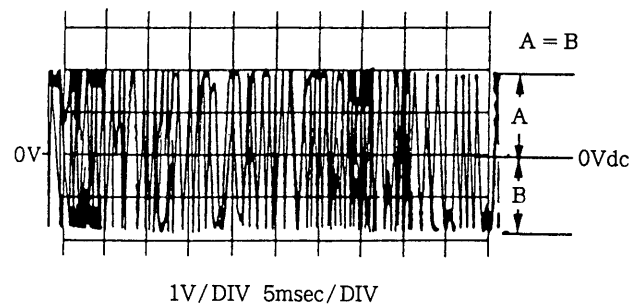
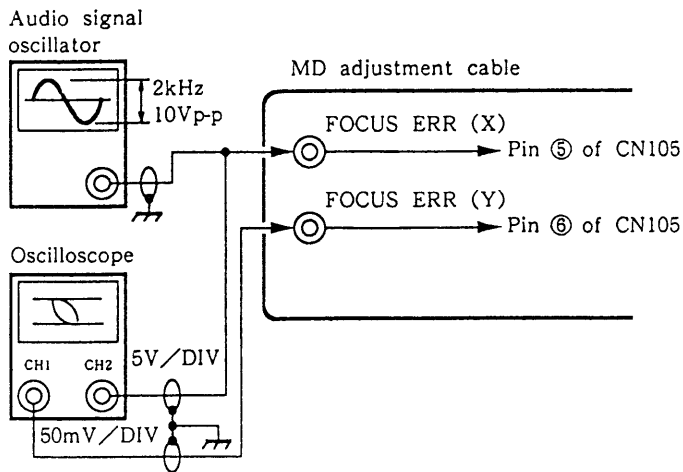


Fig. 7-3.

## 2. LD Focus Gain Adjustment (SV-63 Board)

Mode	Playback
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable CH1 : [FOCUS ERR (X)] (Pin ⑤ of CN105) CH2 : [FOCUS ERR (Y)] (Pin ⑥ of CN105)
Measuring Equipment	Oscilloscope (X-Y mode)
Adjusting Element	RV107
Specified Value	See figure below

### Connections :



### Adjustment method :

- 1) Search the frame 2201.
- 2) Adjust the waveform as shown in the figure below with RV107.

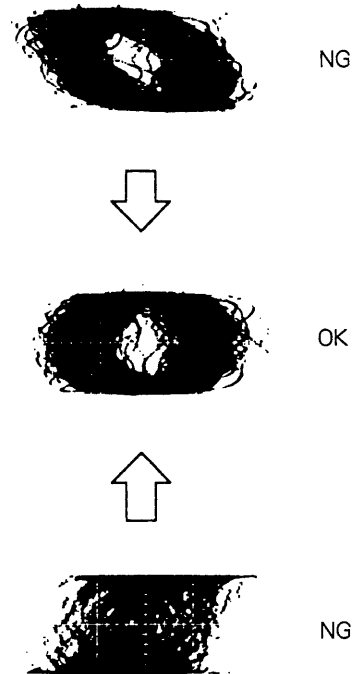


Fig. 7-4.

### 3. LD Cross Talk Balance Adjustment

#### 1) TAN cam adjustment (MD)

The cam is always set to the initial position. When replacing the optical block and so on, set the cam to the mechanical center.\*

\* Mechanical center :

Marked with the notch of the cam located at the opposite side of the optical block chassis shaft.

#### Adjustment method :

- 1) Turn the TAN cam on the bottom (See Fig. 7-10.) with a hexagonal wrench.

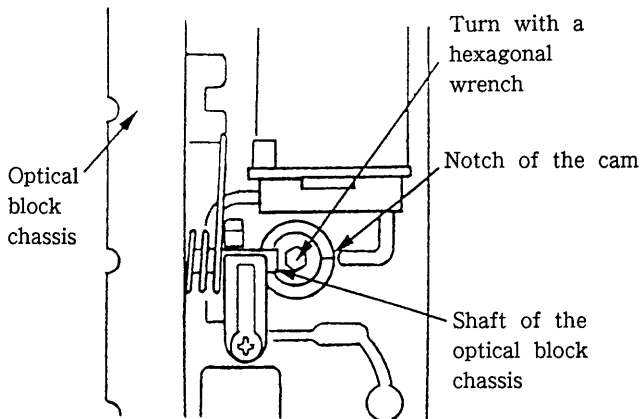


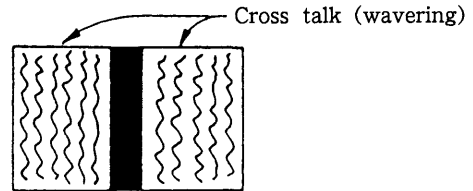
Fig. 7-5.

#### 2) RAD TILT adjustment (SV-63 board)

Mode	Still
Signal	Frame 770 (V BAR)
Measurement Point	Monitor TV
Measuring Equipment	Monitor TV
Adjusting Element	RV105
Specified Value	Cross talk (wavering) with minimum as well as the same level.

#### Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 770 and apply a vertical bar signal.
- 3) Adjust RV105 so that the right and left cross talks (wavering) become minimum as well as the same level.



Adjust so that cross talks appeared on the both sides on the monitor display become minimum as well as the same level.

Fig. 7-6.

#### 3) Focus balance adjustment (SV-63 board)

Mode	Still
Signal	Frame 770 (V BAR)
Measurement Point	Monitor TV
Measuring Equipment	Monitor TV
Adjusting Element	RV102
Specified Value	Cross talk (wavering) with minimum as well as the same level.

#### Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 770 and apply a vertical bar signal.
- 3) Adjust RV102 to minimize the right and left cross talk (wavering) level.

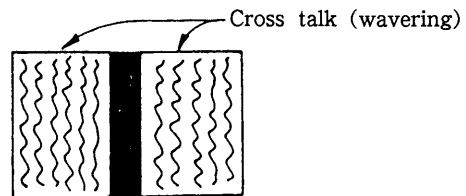
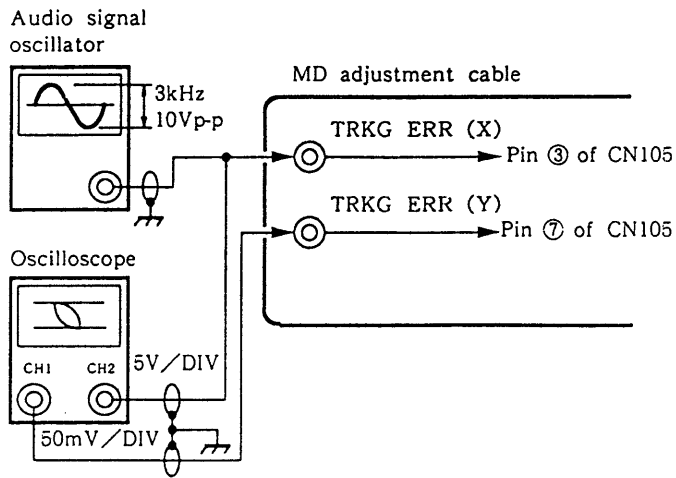


Fig. 7-7.

**4. LD Tracking Gain Adjustment (SV-63 board)**

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable CH1 : [TRKG (Y)] (Pin ⑦ of CN105) CH2 : [TRKG (X)] (Pin ③ of CN105)
Measuring Equipment	Oscilloscope (X-Y mode)
Adjusting Element	RV106 (TR GAIN)
Specified Value	See figure below

**Connections :**



**Adjustment method :**

- 1) Search the frame 2201.
- 2) Adjust the waveform as shown in the figure below with RV106.

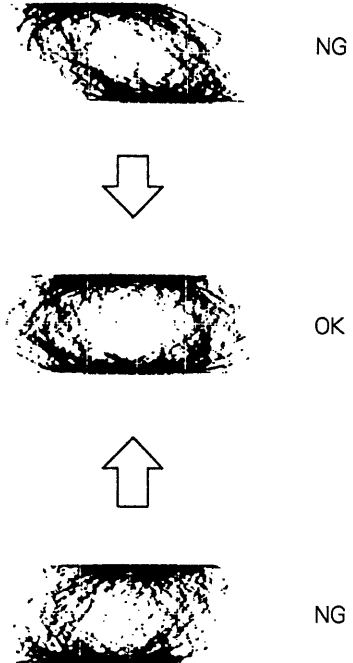


Fig. 7-8.

## 7-6-2. CD Servo System Adjustment

### 1. RD Adjustment

Mode	Pause
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable CH1 : [E terminal] CH2 : [F terminal]
Measuring Equipment	Oscilloscope
Adjusting Element	RD Cam (MD)
Specified Value	A : B ≤ 10 : 1

**Note :** 1) Turn off the monitor TV switch to prevent a noise.

**Note :** 2) Long continuation of the TRKG servo off state causes the spindle motor to stop.

#### Adjustment method:

- 1) Play back the track No. 1 and select PAUSE mode.
- 2) Turn the thread servo off. (MD adjustment cable SLED SW OFF)
- 3) Turn the tracking servo off. (MD adjustment cable TRKG SW OFF)
- 4) Turn RD cam on the MD and adjust so that it becomes as a straight line as possible.

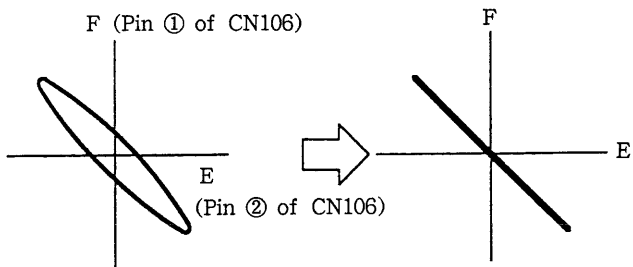


Fig. 7-9.

### 2. CD Focus Balance Adjustment (SV-63 Board)

Mode	Playback
Signal	Track No. 1 YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV103
Specified Value	Maximum amplitude

#### Adjustment method :

- 1) Playback the track No. 1.
- 2) Adjust RV103 for maximum level.

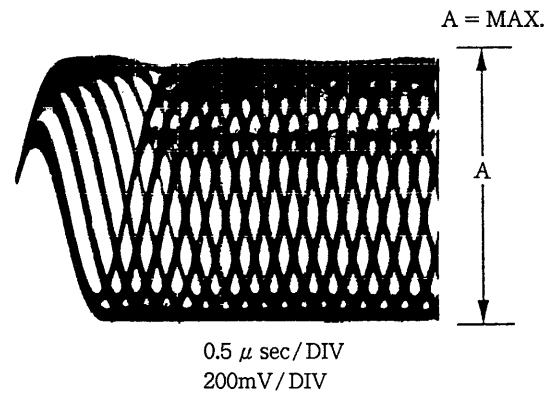
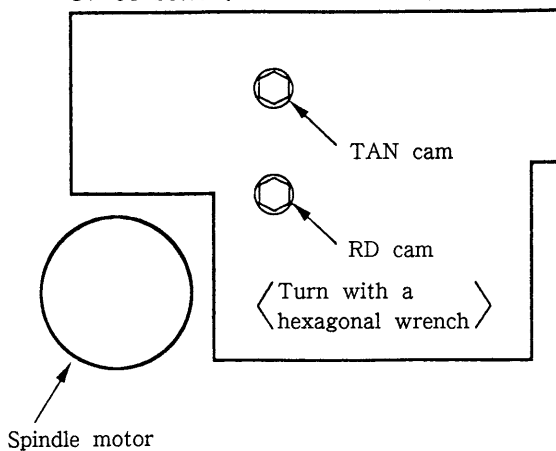


Fig. 7-11.

#### SV-63 board (CONDUCTOR SIDE)



### 3. CD RF H Level Adjustment (SV-63 Board)

Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable (RF (CD) OUT) (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV108
Specified Value	$1.2 \pm 0.1V_{p-p}$

#### Adjustment method :

- 1) Playback the track No. 1.
- 2) Adjust RV108 for  $1.2 \pm 0.1 V_{p-p}$ .

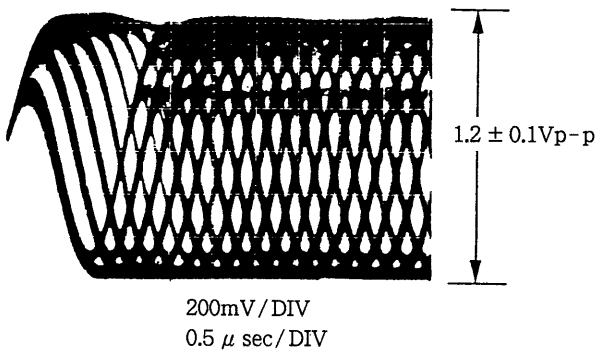


Fig. 7-12.

### 4. CD RF L Level Adjustment (SV-63 Board)

Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable (RF (CD) OUT) (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV104
Specified Value	Clear-cut waveform

#### Adjustment method :

- 1) Playback the track No. 1.
- 2) Adjust RV104 so that the waveform of lozenge-shaped portions becomes clear-cut and the waveform slant disappear from the rising edge portion.

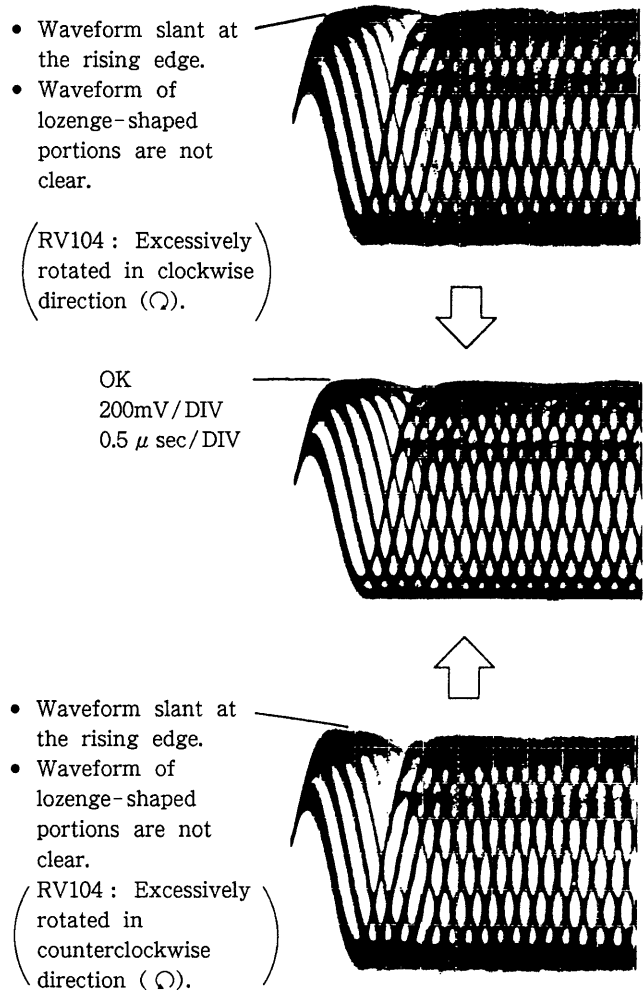


Fig. 7-13.

## 7-7. VIDEO SYSTEM ADJUSTMENT

### 7-7-1. Video Output Level Adjustment (MB-56 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	CNJ101 (VIDEO OUT terminal) (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV103
Specified Value	$1.00 \pm 0.03$ Vp-p

#### Adjustment method :

- 1) Select STILL (⏸) mode.
- 2) Search the frame 4100 and apply a color bar signal.
- 3) Adjust RV103 for  $1.00 \pm 0.03$  Vp-p.



Fig. 7-14.

### 7-7-2. Comb Type Filter Y Output Level Adjustment

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	CNJ102 pin ③ (Y OUT) 75 Ω terminated
Measuring Equipment	Oscilloscope
Adjusting Element	RV101
Specified Value	$1.00 \pm 0.03$ Vp-p

#### Adjustment method :

- 1) Select STILL (⏸) mode.
- 2) Search the frame 4100.
- 3) Adjust RV101 for  $1.00 \pm 0.03$  Vp-p.

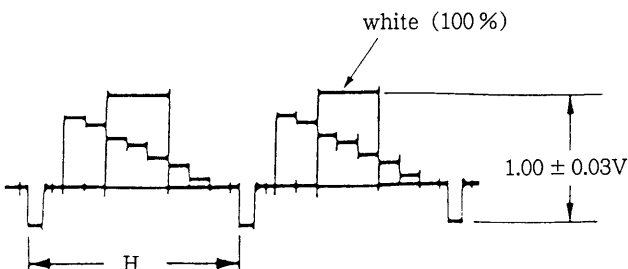


Fig. 7-15.

### 7-7-3. Burst Gate Position Adjustment (MB-56 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	Pin ② of IC107
Adjusting Element	RV104
Specified Value	$8.6 \pm 0.3$ μ sec

#### Adjustment method :

- 1) Select STILL (⏸) mode.
- 2) Search the frame 4100.
- 3) Adjust RV104 so that  $t_w$  becomes  $8.6 \pm 0.3$  μ sec.

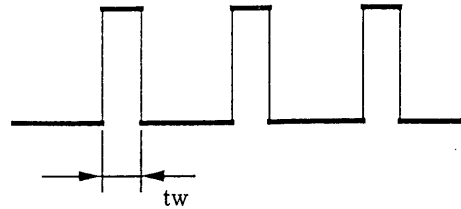


Fig. 7-16.

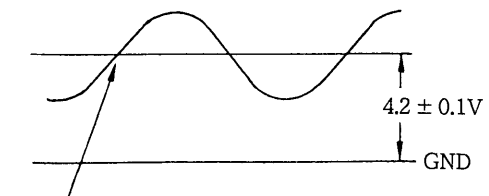
### 7-7-4. REF H Adjustment (1) (MB-56 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	Pin ②-⑤ of IC111.
Specified Value	$4.2 \pm 0.1$ V

**Note :** Perform 7-7-5 REF H Adjustment (2) Adjustment continuously.

#### Adjustment method :

- 1) Adjust with RV601 so that the voltage values at Pin ②-⑤ become  $4.2 \pm 0.1$  V.



Observe the center of the waveform



### 7-7-5. REF H Adjustment (2) (MB-56 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	CH1 : PIN ③⑨ of IC604 CH2 : PIN ④⑥ of IC604
Specified Value	Adjust the timing of the falling edges of waveforms.

#### Adjustment method :

- 1) Adjust timing in the nearest portion between the falling edge of Pin ④⑥ of IC604 and the falling edge of Pin ③⑨ of IC604.

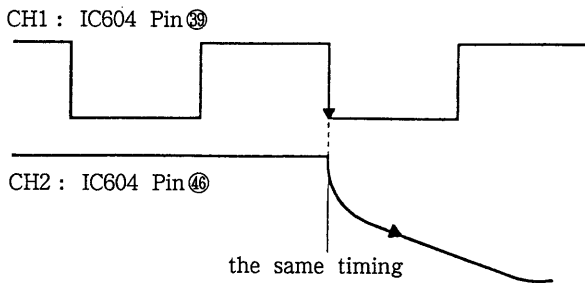


Fig. 7-18.

### 7-7-6. TBC Range Adjustment (MB-56 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV151
Measurement Point	CH1 : PIN ②① of IC109 External trigger : PIN ⑤ of IC109
Specified Value	$22 \pm 1 \mu \text{sec}$

#### Connection :

- Apply 5.0Vdc to Pin ④① of IC109.

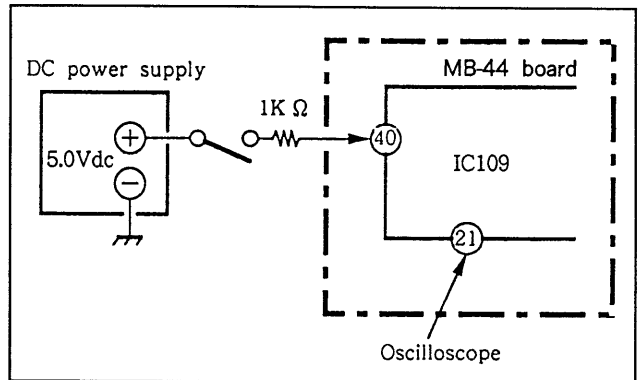


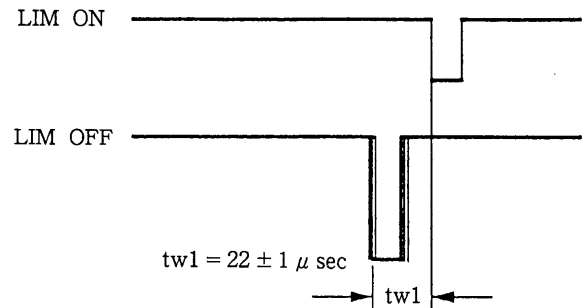
Fig. 7-19.

#### Adjustment method :

- 1) Select STILL (⏸) mode.
- 2) Search the frame 4100.
- 3) Connect the DC power supply (5.0Vdc) to Pin ④① of IC109.
- 4) Adjust so that rising time difference between when the power (5.0Vdc) is on (LIM ON) and when the power off (LIM OFF) is  $22 \pm 1 \mu \text{sec}$ .

**Note :** Since the waveform of LIM OFF is wavering, adjust at fits center position.

- Pin ②① of IC109 (CH1)



- Pin ⑤ of IC109 (Trigger pulse)

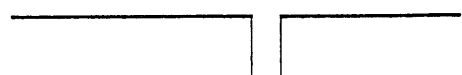


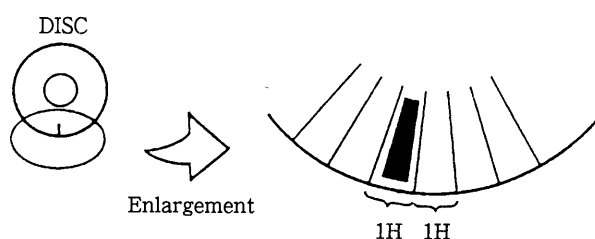
Fig. 7-20.

### 7-7-7. Color DOC Adjustment (MB-56 Board)

Mode	Still
Signal	Frame 23500 (Yellow Green)
Measuring Equipment	Monitor display
Adjusting Element	CV152
Specified Value	Drop out portion and its peripherals are the same color

#### Preparations :

Stick a black adhesive tape (approx. 10mm length) on the outer track 1H period of the alignment disk (REF7C-8AL).



#### Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 23500.
- 3) Adjust CV152 so that the drop out portion and its peripherals on the monitor picture are the same color.

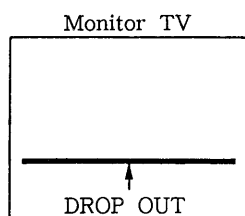


Fig. 7-21.

### 7-8. AUDIO SYSTEM ADJUSTMENT

#### 7-8-1. Digital Audio System Adjustment

##### 1. RF PLL Offset Adjustment (MB-56 board)

Mode	Stop
Measurement Point	Pin ① of IC003
Measuring Equipment	Digital voltmeter
Adjusting Element	RV001
Specified Value	$0 \pm 0.2V_{dc}$

#### Connections :

Connect the chemical capacitor ( $1 \mu F$  or more) in between Pin ⑤ of IC001 (EFM) and GND.

#### Adjustment method :

- 1) Adjust RV001 so that the voltage at Pin ① of IC003 becomes  $0 \pm 0.2V_{dc}$ .

##### 7-8-2. RF PLL Free-Run Adjustment (MB-56 Board)

Mode	Stop
Measurement Point	Pin ⑩ of IC001
Measuring Equipment	Frequency counter
Adjusting Element	LV001
Specified Value	$4.58 \pm 0.005MHz$

#### Connections :

Connect the chemical capacitor ( $1 \mu F$  or more) in between Pin ⑤ (EFM) of IC001 and GND.

#### Adjustment method :

- 1) Adjust LV001 for the  $4.58 \pm 0.005MHz$ .

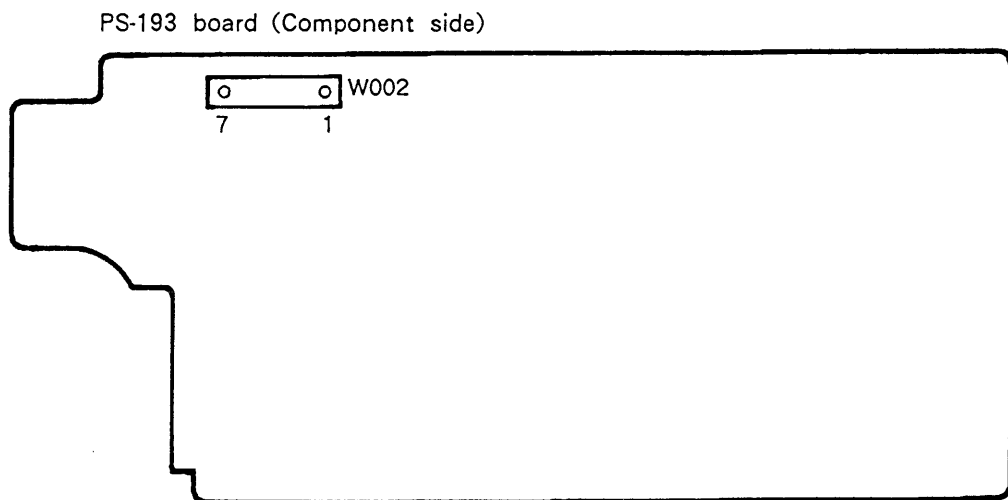
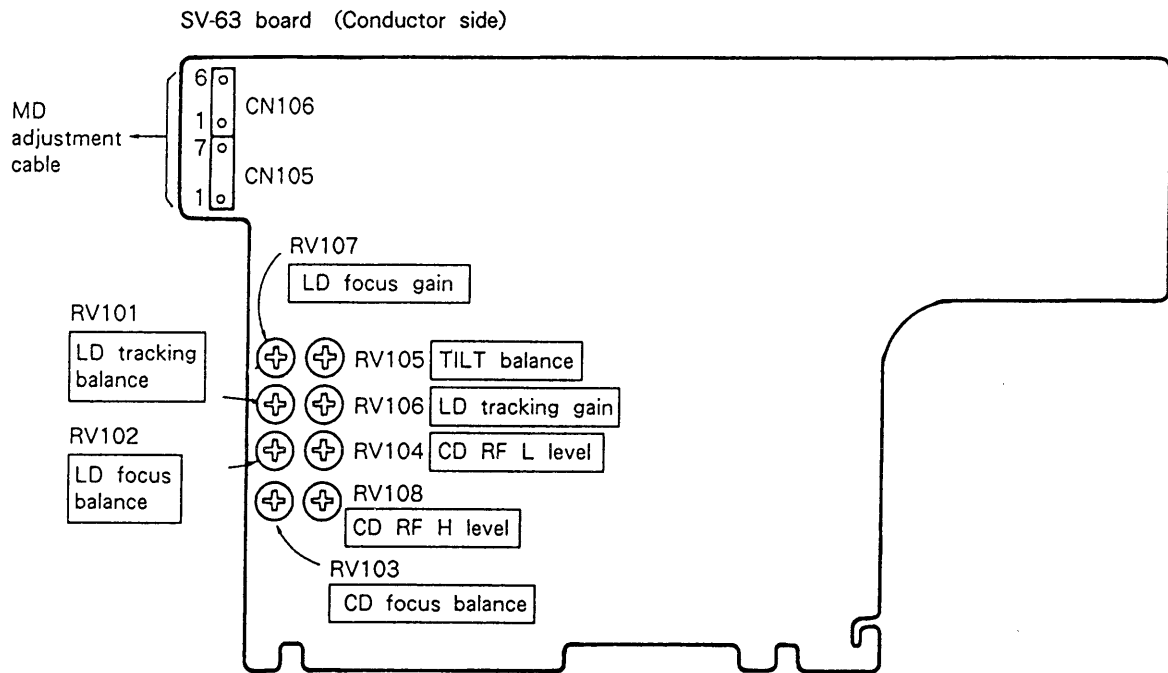


Fig. 7-22.

**Note 1 :** Turn LV001 after shifting AU-88 board by removing from MB-56 board.

**2 :** If adjusting with a metallic screwdriver, a reading value may be altered. So use a ceramic screwdriver.

## 7-9. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS



MB-56 board (Component Side)

