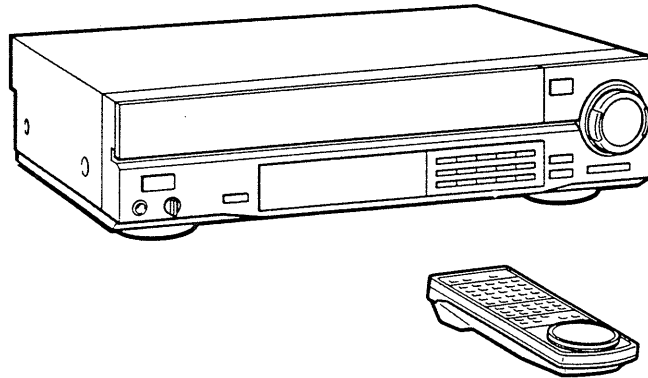


# MDP-333/355GX

## RMT-333A

# SERVICE MANUAL

*US Model*  
*Canadian Model*  
 MDP-333  
*E Model*  
 MDP-355GX



### SPECIFICATIONS

Type  
 Signal readout  
 Signal format

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

Playing time

(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 1kHz, 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

#### Input/output specifications

Video output 1.0 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

Remote commander RMT-333A is supplied as a unit for service. Don't supply individual parts except for the battery case lid.



CD VIDEO CD/CDV/CD PLAYER  
**SONY**®

## Power requirements

Power requirements	MDP-333: 120 V AC, 60 Hz MDP-355GX: 100/120/220/240 V AC adjustable, 50/60 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-333A

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-333A (1)  
Size AA (R6) batteries (2)  
RFU adaptor RFU-90 UC (1) (supplied with the MDP-333 and the PX model of MDP-355GX)  
Video connecting cord (phono plug 1 ↔ phono plug 1) (1)  
Audio connecting cord (phono plug 2 ↔ phono plug 2) (1)  
Operating Instructions  
Spacer (1)  
AC plug adaptor (MDP-355GX only) 1

Design and specifications are subject to change without notice.

## 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)

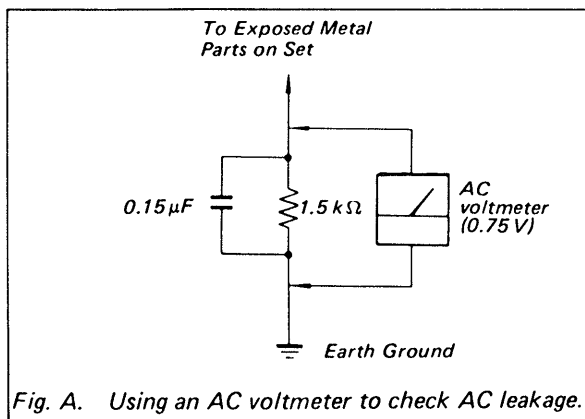
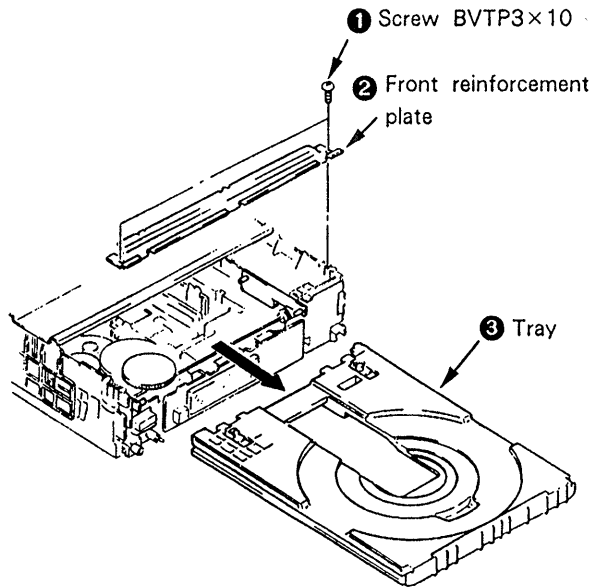


Fig. A. Using an AC voltmeter to check AC leakage.

## [SERVICING NOTES]

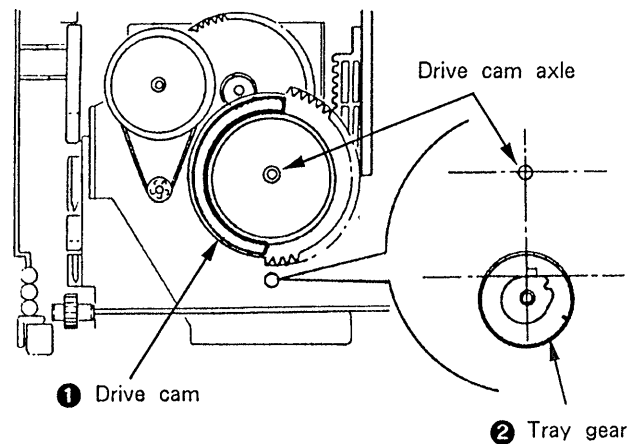
### [REMOVAL OF THE TRAY]

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



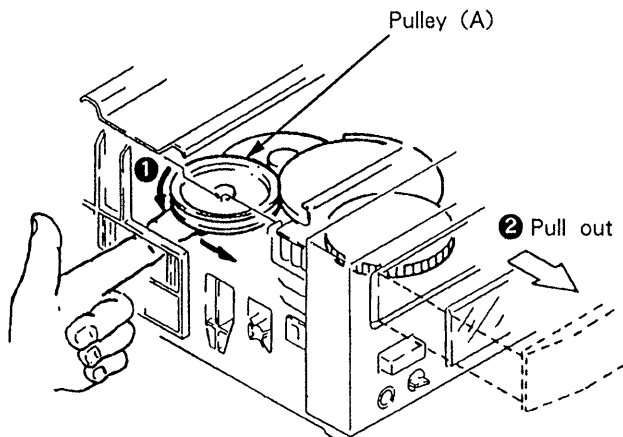
### [ALIGNMENT OF THE LOADING GEAR PHASE]

- 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.



### [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.





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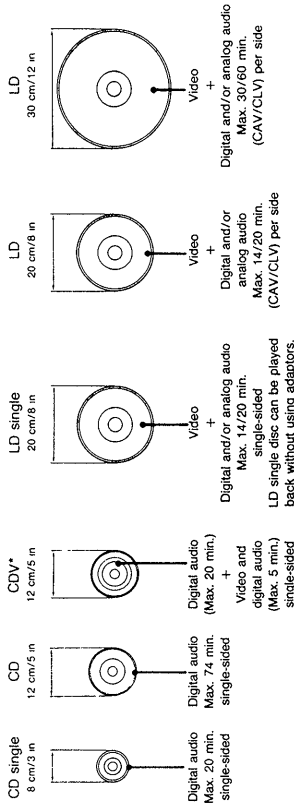
This section is extracted from instruction manual.

## SECTION 1 GENERAL

5

### 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

- **Custom index**  
Speedy up to six index marks at any point on the disc, for convenient playback start at the push of a button.
- **Program play**  
Play back chapters or tracks in any desired order.
- **Shuffle play**  
Play all selections on a disc in a random 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.
- **Auto program**  
Play back chapters or tracks within a designated time.
- **INTRO scan**  
Play only the beginning (introduction) of the chapters or tracks on a disc in order.

#### LD/CDV (Video Portion)

- **Variable speed playback (LD CAV only)**  
11 speed settings for normal and reverse playback, step (frame-by-frame) playback and high-quality freeze-frame.
- **Clear scan**  
Fast scan without picture distortion even on CLV discs.

#### CDV

- **Video portion**  
All LD (CLV) functions are available.
- **Audio portion**  
All CD functions are available.

This unit plays back discs with any of the following logos on the label.



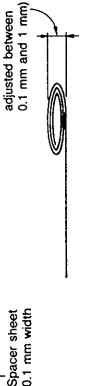
- It cannot play back CED or VHD discs or discs with PAL, SECAM, or video signals other than the NTSC standard.

### Precautions

- On moisture condensation**
- Do not operate the unit right after having transported it from a cold location to a warm location or in a room where the temperature rises suddenly, because moisture may condense in the operating section of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the disc may be damaged. Therefore remove the disc immediately when there is a possibility of moisture condensation and no picture is obtained. To evaporate the moisture rapidly, leave the player turned on without a disc loaded.
- On operation**
- Remove the disc from the tray after playing it, if the unit will not be used for any length of time. Do not transport the set with a disc in place.
  - When the disc tray is in the open position, do not press down on it strongly, or place heavy objects on it.
- On cleaning**
- Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzene, which may damage the finish.
- On repacking**
- Do not throw away the carton and the packing material. They make an ideal container to transport the unit in.
- If you have any question or problem concerning your unit, please contact your nearest Sony dealer.

For the customers in the USA  
For detailed safety precautions see the leaflet "IMPORTANT SAFEGUARDS".

- On safety**
- Should any solid object or liquid enter the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
  - Unplug the unit from the wall outlet if it is not to be used for an extended period of time.
  - To disconnect a cord, pull it out by the plug. Never pull the cord itself.
  - One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- On installation**
- Avoid placing the player in a location subject to:
    - high humidity
    - high temperature
    - excessive dust
    - mechanical vibration
    - direct sunlight
  - Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
  - The unit will be unstable, if it is not placed on a horizontal level surface. To avoid being unstable, adjust the thickness of the supplied spacer to fill the gap and insert it under the unit.



### Operating Voltage

- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply.
- MDP-333: 120 V AC, 60 Hz.  
MDP-355GX: 100, 120, 220, 240 V AC, 50/60 Hz.
- For the MDP-355GX, the voltage selector is located at the rear.
- If the selector must be reset, disconnect the AC power cord and turn the selector with a minus screwdriver so that the arrow on the selector points to the appropriate voltage.

How to use the AC power plug adaptor (supplied with the MDP-355GX)  
If the AC plug of your unit does not fit the wall outlet, attach the supplied AC plug adaptor.

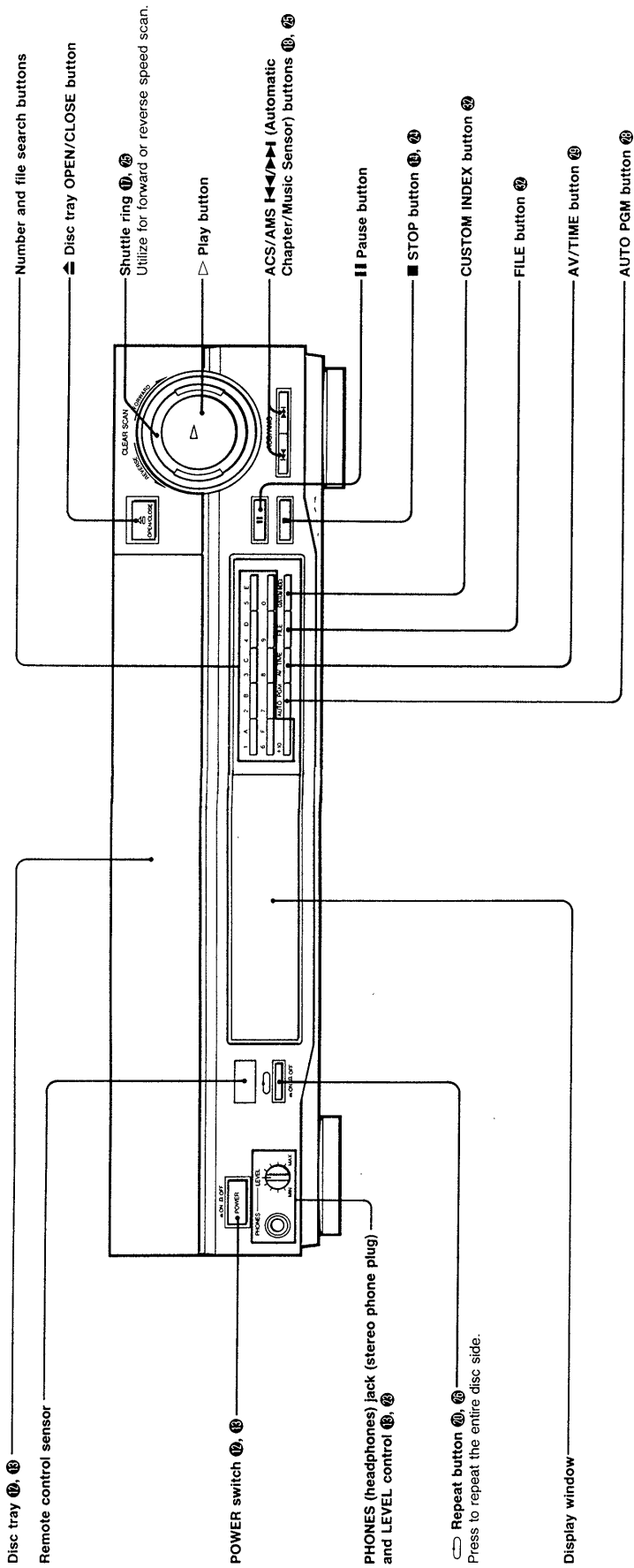


4

# Location and Function of Controls

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

## Front panel



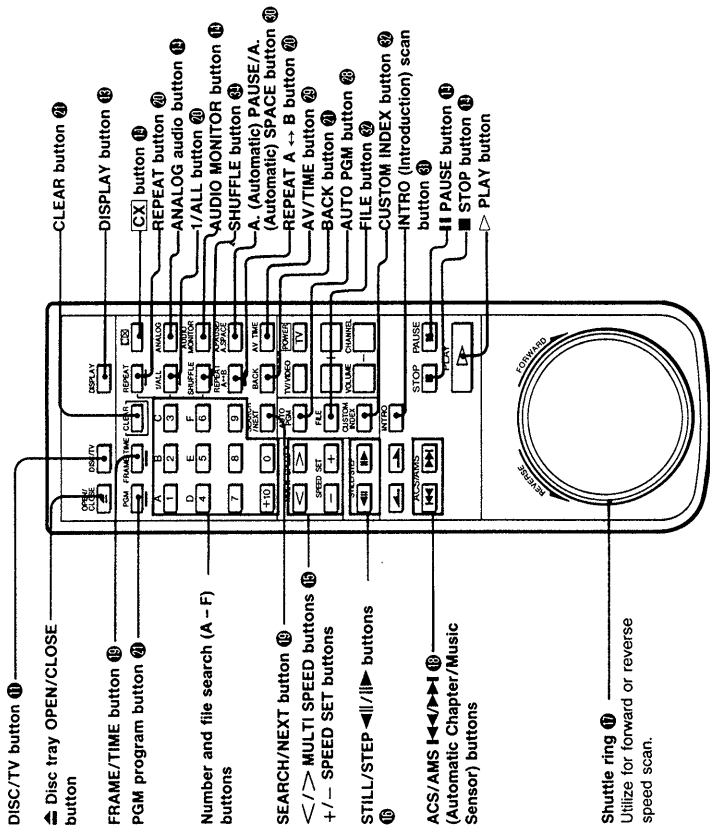
## Accessories

- The shipping box should contain the following accessories.
- RMT-333A Remote Commander 
  - Two size AA (R6) batteries 
  - Video connecting cord (phono 1 → phono 1) 
  - Audio connecting cord (phono 2 → phono 2) 
  - RFU adaptor RFU-90UC (1) (supplied with the MDP-333 and the PX model of MDP-355GX) 
  - Spacer 

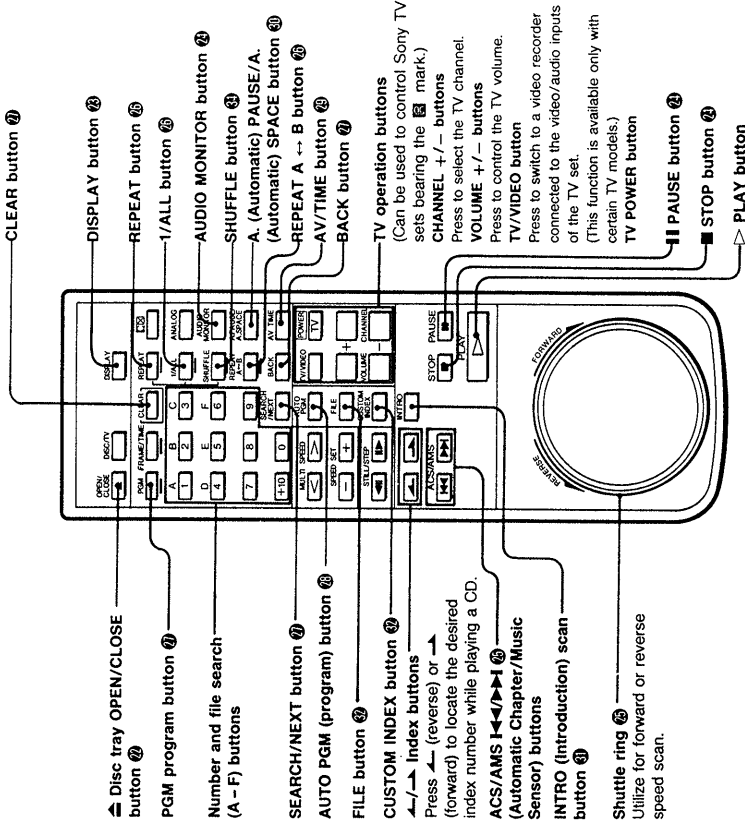
# Location and Function of Controls

## Remote Commander

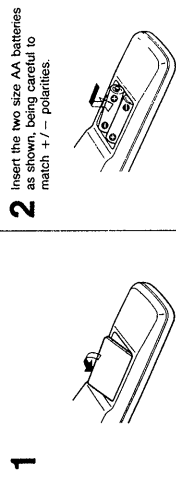
### LD Operation



### CD, CDV, Others Operation



## Battery insertion



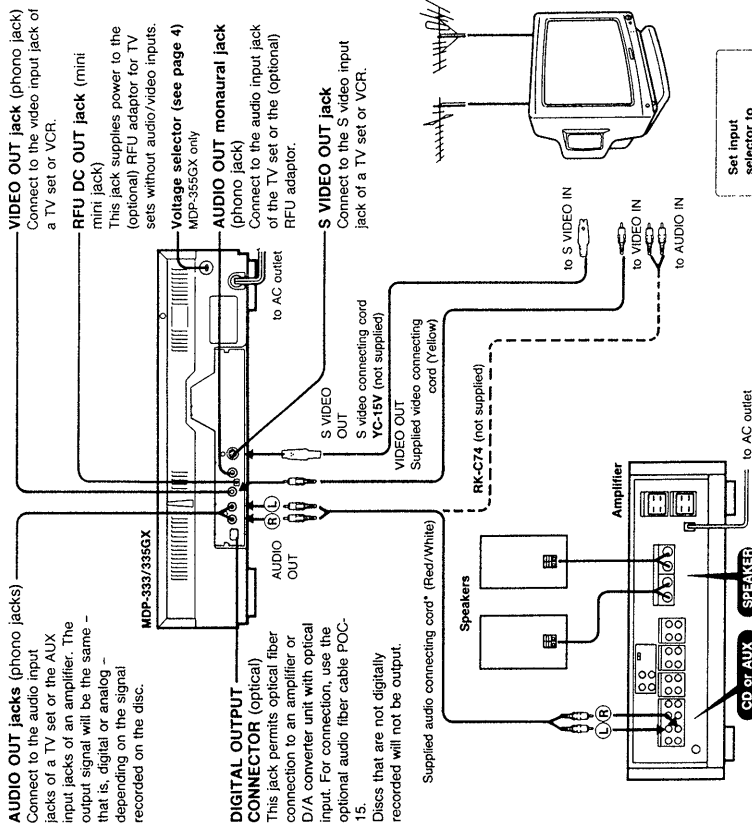
**Battery life**  
 Under normal operations, the batteries will last for approximately six months. If the operating range of the Remote Commander becomes noticeably short, replace all the batteries with new ones. If the Remote Commander is not to be used for a long period of time, remove the batteries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

**Remote Commander Precautions**  
 Do not let sunlight or light from a powerful artificial light source fall directly on the Remote Commander sensor on the front panel as it may interfere with operation or damage the sensor.

# 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



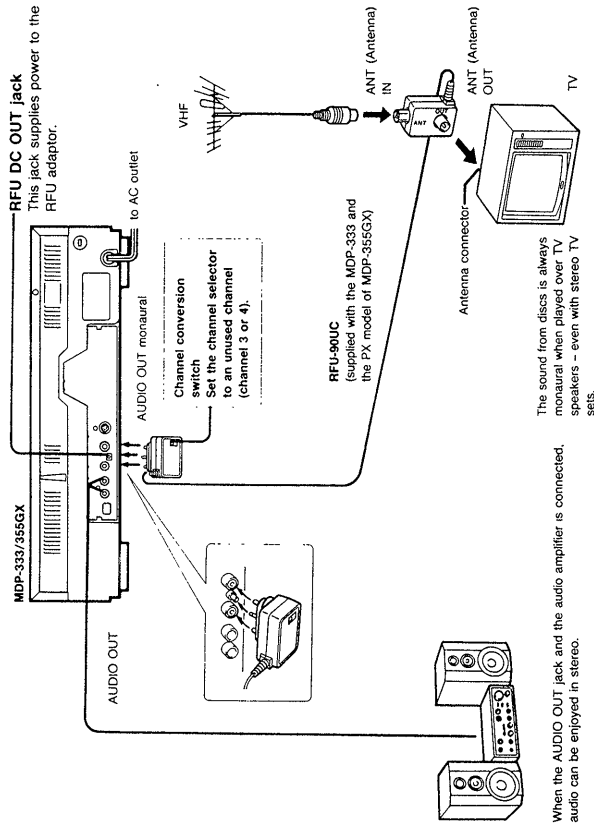
You can connect the player's audio output to the TV instead of an audio system. If the TV set has only 4 monaural phono jack for audio, use the YMC-720M/730M connecting cord (not supplied).

- Precautions on connecting**
  - Make sure that all equipment is turned off before connecting or disconnecting any cables.
  - 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.
  - If noise is emitted from the audio or video input, try 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.

## To Connect to TV without Audio/Video Inputs

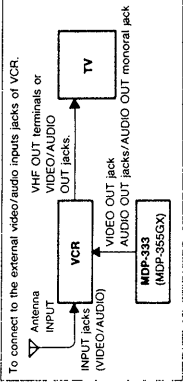
For connection, use the optional RFU adaptor RFU-90UC (supplied with the MDP-333 and the PX model of MDP-355GX).



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

### Why is it necessary to select 3 or 4?

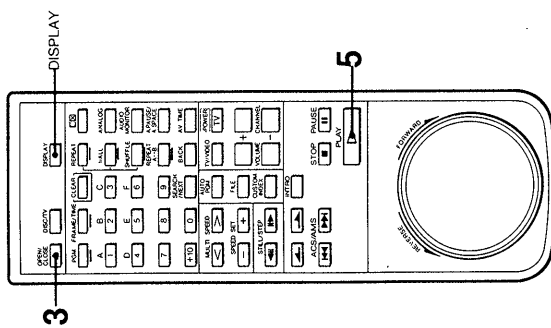
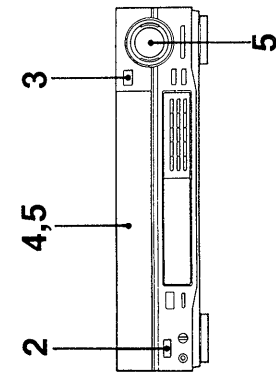
The videodisc player sends its output to the TV as a VHF broadcast signal. Selecting an unused channel avoids interfering with regular broadcasts. When watching regular TV programs, turn the player off or press the TV/DISC button on the Remote Commander so that you can obtain a better picture. If TV 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 Play an LD

Continued overleaf →

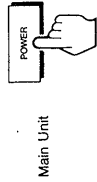


**Notes on disc tray**  
Do not insert a hand or finger in the player while it is operating. Although the player will stop automatically if an object is inserted while in play, serious injury may result. Be sure to place the unit out of the reach of your child.  
Insert only one disc at a time. Incorrect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

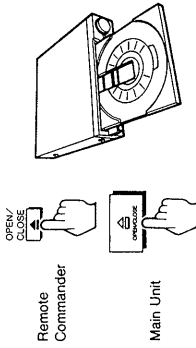
**Identical buttons on the main unit can also be used.**

**1 Turn on the TV and stereo system.**  
TV: Select the channel used for videodisc playback or the video input (channel 3 or 4). (See p. 10, 11)  
Stereo system:  
Turn on the amplifier or receiver and select the proper audio input (CD) or (AUX).

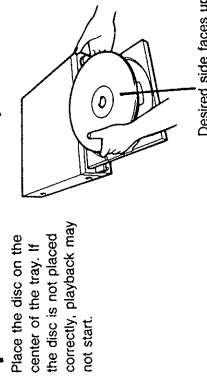
**2 Turn on the player.**



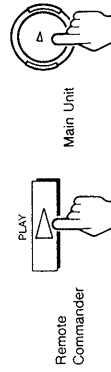
**3 Open the disc tray.**



**4 Place the disc on the tray.**



**5 Start playback.**



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

**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.

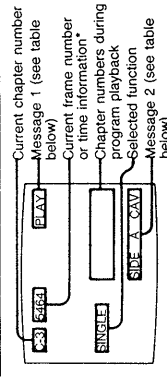
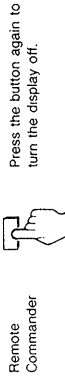
**AV calendar**  
When playing an LD containing TOC (Table of Contents) data, the AV calendar shows information on the total number of selections. A selection is played, its corresponding number on the display disappears.

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

## 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**



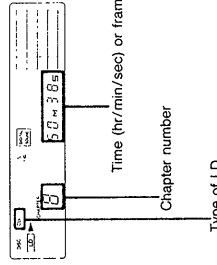
\* Discs without time data to the second will be indicated as "0:22".

Message 1	Display	Explanation	(Examples)
OPEN	Disc tray open		
CLOSE	Disc tray closed		
PLAY	Playback		
STOP	Stop		
PAUSE	Pause		
SEARCH	Manual search (Forward/reverse speed scan)		
1/2	1/2 speed display in forward direction		

Message 2	Display	Explanation	(Examples)
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.

## Displays on playback messages



## To Play an LD

Continued overleaf →

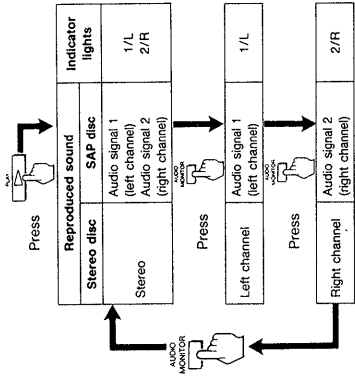
### To stop playback and remove disc

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



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

Press the playback (▶) button, then continue to press the AUDIO MONITOR button to display the following information.



### To temporarily interrupt playback

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 II or ▷ button.



### To stop playback

Press the ▷ button to restart playback from the beginning of the disc.



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

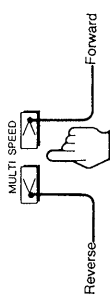
**LD**  
If the LD contains a digital stereo sound signal, the player automatically sends that to the output jacks. Pressing the ANALOG button on the Remote Commander switches to the analog audio signal and turns the DIGITAL SOUND indicator off. Press the ANALOG button again to return to digital sound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

**Discs with [LD] Label**  
Discs bearing the [LD] label are recorded with the [LD] noise reduction system, which gives lower noise levels and higher dynamic range. The [LD] indicator lights up automatically.  
Some [LD] discs do not include the code necessary to automatically activate the player's [LD] noise reduction system. If the [LD] indicator does not light, press the [LD] button on the Remote Commander to manually activate the system.

## To Change Playback Speed and Direction – Speed Play (CAV standard-play)

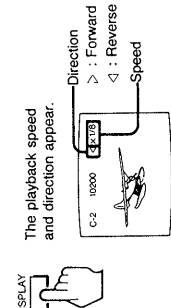
### Speed and Direction

To select the playback direction

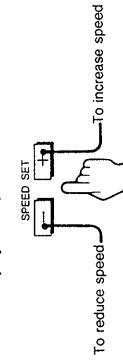


The direction can be changed regardless of playback speed.

To display the speed and direction

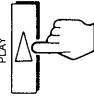


To select the playback speed



Speed Indication	Speed (approx.)	Speed Indication	Speed (approx.)
Faster	10 times normal speed	x1/2	1/2 normal speed
x5	5 times normal speed	x1/4	1/4 normal speed
x3	3 times normal speed	x1/8	1/8 normal speed
x2	2 times normal speed	x1/16	1/16 normal speed
x1	Normal speed	x1/30	1/30 normal speed
		x1/90	1/90 normal speed

### To resume normal playback



**Sound during speed play**  
Audio output occurs only during x1 (normal) speed play in the forward direction. There is no sound for other speed and direction combinations.

**Extended-play discs (CLV)** (See p. 8)  
Speed play, freeze frame and step playback are not possible with CLV discs.

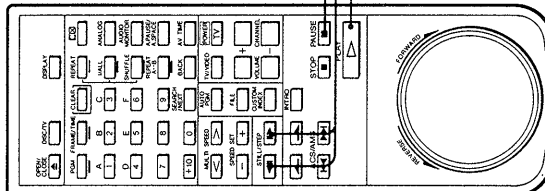
When a multi speed button is pressed, the indication "SIDE A CLV" (or "SIDE B CLV") is shown for 3 seconds. When the II button is pressed, the screen becomes blue and the indication "SIDE A CLV" (or "SIDE B CLV") is shown.

**Disc with automatic picture stop code**  
When an automatic picture stop code is encountered during speed playback (at x1, 1/2, 1/4, 1/8, 1/16, 1/30, 1/90), the unit automatically stops at that frame. To resume playback, press the ▷ button, ◀ button, or the shuttle ring.

**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.

**To view a frame one by one – STEP playback**

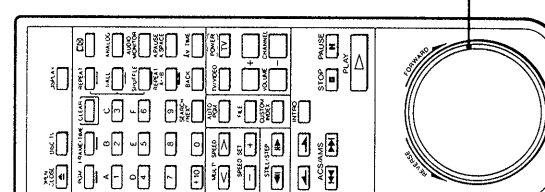
1. Press once for freeze-frame.
2. Each press shifts one frame backward. Each press shifts one frame forward.

Hold the button down for continuous step playback. It is available to press STILL/STEP buttons during playback operation.

**To resume normal playback**

- 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  button is pressed, the screen becomes blue and the indication "SIDE A CLV" (or "SIDE B CLV") is shown.

**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 forward**  
Identical speeds are available for reverse speed scan.

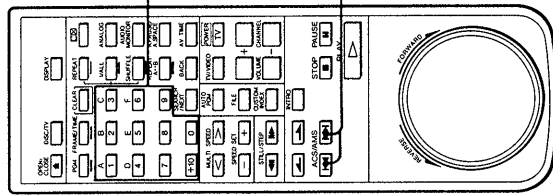
Scanning continues until the shuttle ring is released.

- 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 "8" button.

Searching for chapter 8

• 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 **ACB/AMS** button once to return to the beginning of the current chapter.  
 Press the **ACB/AMS** button twice - before the picture reappears - to return to the beginning of the previous chapter.  
 Press the **ACB/AMS** button to advance to the beginning of the next chapter.

**Example:** Current chapter = 12

**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 DISPLAY 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**

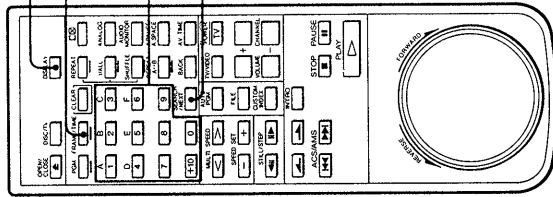
**If the +10 button is pressed by mistake**  
 Press the CLEAR button, then press +10 and other buttons for desired number.

- 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. 6), if a chapter number not included in the disc is entered, the entry will be ignored.
  - As for a disc without TOC, if 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. 6), playback will resume from the beginning of the disc.
  - If the REPEAT function is not on, press **▷** to resume playback.

### 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.**

CAV (standard-play) disc

CLV (extended-play) disc

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

- CAV (standard-play) disc  
**Example:** Locate frame number 12340.  
 Press the number buttons in the following order.  
**1** **1** **2** **3** **4** **0**
- CLV (extended-play) disc  
**Example:** Locate the 12 min 05 sec point.  
 Press the number buttons in the following order.  
**1** **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 SEARCH/NEXT button.**

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.

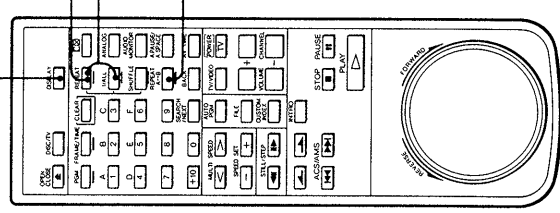
**To cancel frame/time search**  
 Before pressing the SEARCH/NEXT button, press the CLEAR button.  
 After pressing the SEARCH/NEXT button, press the **■** button.

**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 DISPLAY button on the Remote Commander.

- Notes**
- If a frame/time number 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. 6), playback will resume from the beginning of the disc.
  - If the disc does not include seconds-unit time data, enter the time in minutes only.

## To Play an LD

### To Play Repeatedly - Repeat Playback



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

Remote Commander: REPEAT

Main unit: REPEAT

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

Current chapter/track: C2 5:00 PLAY

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

**To repeat the current chapter**

Remote Commander: REPEAT

Main unit: REPEAT

Current chapter: C2 5:00 PLAY

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

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

Remote Commander: REPEAT A → B

Main unit: REPEAT A → B

At the beginning of desired section: C1 12:45 PLAY

At the end of desired section: C2 12:45 REPEAT

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 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 DISPLAY button on the Remote Commander.

**To use custom repeat**

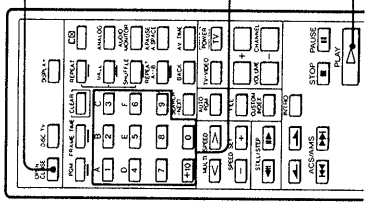
To repeat playback between two predefined points on the disc, refer to page 8.

**repeat button on the unit**

Press to repeat the entire disc side.

### To Play Only Certain Chapters - Program Playback

Example 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.

**To start over**

Press the CLEAR and PGM button and enter the correct number.

**To change a number**

Press the SEARCH/NEXT (to advance) or BACK (to back up) buttons until the incorrect number on the screen flashes. Then enter a new 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

SEARCH

C-5 2:37.9 PL-4.1 PROGRAM

Searching for the first programmed chapter

Playback starts from the beginning of chapter 5.

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 non-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

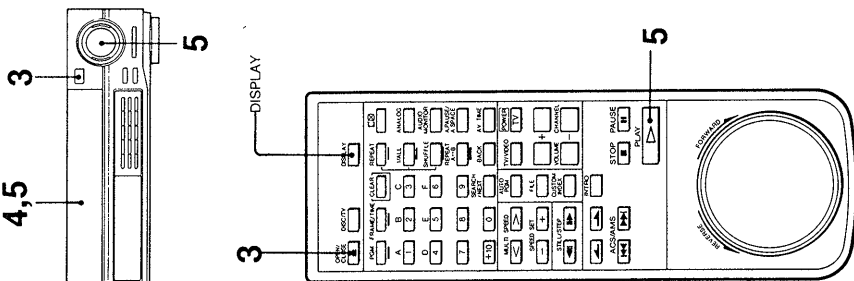
Total playback time of all programmed chapters

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 →

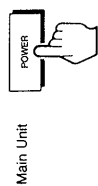


**Notes on disc tray**  
Do not insert a hand or finger in the player while it is operating. The player will stop automatically. If an object is inserted while in play, serious injury may result. Be sure to place the unit out of the reach of your child. Insert only one disc at a time. Incorrect placement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

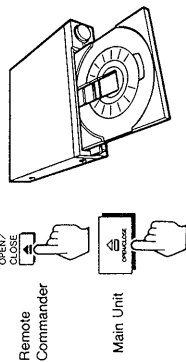
Identical buttons on the main unit can also be used.

**1 Turn on the stereo system.**  
Turn on the amplifier or receiver and select [CD] or the desired audio input.

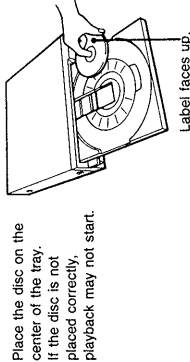
**2 Turn on the player.**



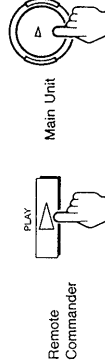
**3 Open the disc tray.**



**4 Place the disc on the tray.**



**5 Start playback.**

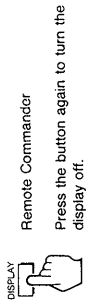


Or push the disc tray compartment, then playback will also begin.

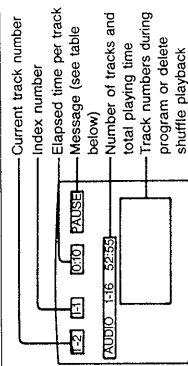
## Screen Messages

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**



Press the button again to turn the display off.



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

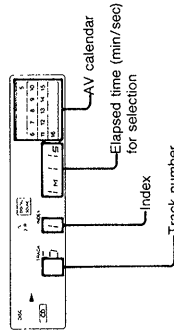
**Using an optional timer**  
To start playback with an optional timer automatically, leave the POWER switch of the disc player in the depressed position. When the timer supplies power at the preset time, the unit turns on and playback begins.

**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



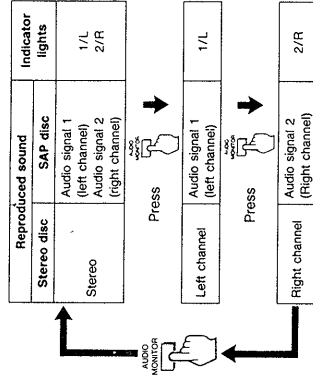
To Search for a Particular Selection – Search

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 MONITOR button is pressed, the mode changes in the following order.



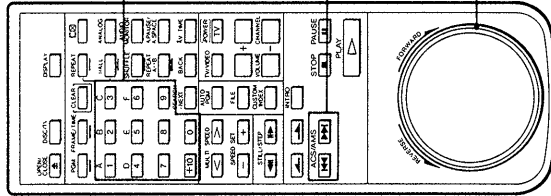
To temporarily interrupt playback

To resume play from the same point, press the II or ▷ button.

To stop playback

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

Identical buttons on the main unit can also be used.



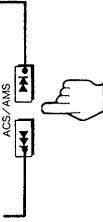
To search by track number



**To play a single track once**  
1. Press the 1/ALL button on the remote commander to display the SINGLE display.  
2. 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.

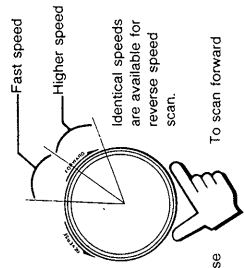
To skip selections

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



To search for a particular point – Dual Speed Scan

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



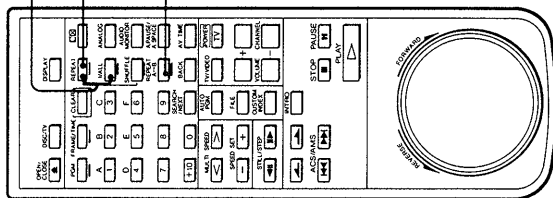
To scan in reverse  
Scanning continues until the shuttle ring is released.

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

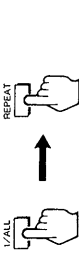
If the +10 button is pressed by mistake  
Press the CLEAR button, then press +10 and other buttons for desired number.

## To Play a CD

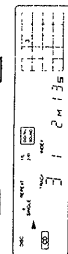
### To Play Repeatedly – Repeat Playback



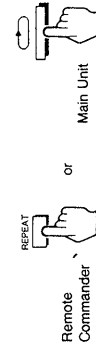
#### To repeat the current selection – SINGLE Repeat



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



#### To repeat all selections – ALL Repeat

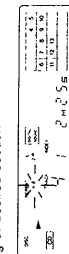


The entire disc is continuously repeated.

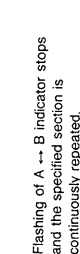


#### To repeat a specific section of a disc – A ↔ B Repeat

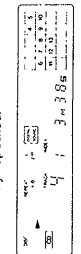
At the beginning of desired section



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.

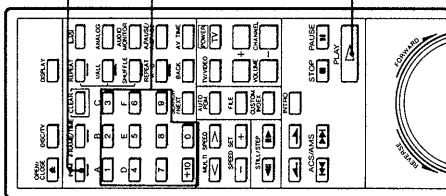
**To cancel ALL or SINGLE Repeat**  
Press the REPEAT button that was used to activate repeat either from the main unit or the remote commander—again.

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

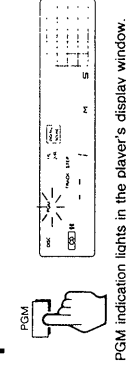
### To Play Only Certain Selections – Program Playback

You can program up to 20 tracks playback in a specified order.

**Example:** Play CD tracks 5, 4, 2, 6 – in that order.

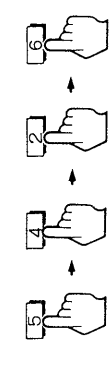


#### 1 Press the PGM button.

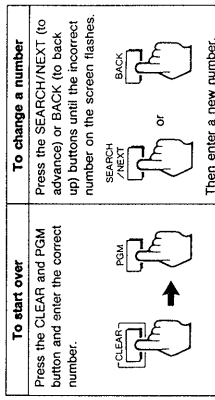


PGM indication lights in the player's display window.

#### 2 Press the Number buttons [5] [4] [2] [6].



If you make a mistake



**To start over**  
Press the CLEAR and PGM button and enter the correct number.

**To change a number**  
Press the SEARCH/NEXT (to advance) or BACK (to back up) buttons until the incorrect number on the screen flashes.

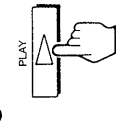
Then enter a new number.

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

Examples: To enter 10:  $\text{+10} \rightarrow 0$   
To enter 14:  $\text{+10} \rightarrow 4$   
To enter 20:  $\text{+10} \rightarrow \text{+10} \rightarrow 0$

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

#### 3 Press the $\Delta$ button.



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

#### 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.

**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  $\text{◀}$  button.

**To move to a following programmed track**  
Press the  $\text{▶}$  button.

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

# LD/CD/CDV

Continued overleaf →

## To Play Only Certain Selections Within a Designated Time - Auto Program Playback

You can designate a length of time and make 2 different programs of selections fitting within that period. When there is only minimal time left within the designated length of time, a selection with the longest playing time shorter than the left time will be entered. This section explains how to conduct Auto Program Playback on a CD, but the function can also be used for LDs with TOC, and CDVs.

- 1 Press the AUTO PGM button.**  
PGM blinks in the player display window.
- 2 Designate the time length for a single side of your tape.**  
Example: For 30 minutes of playback  
 Program A  
 CD 1 AU A 25 m 13 s  
 Program B  
 CD 1 AU b 17 m 53 s  
 If you press the wrong number, simply press the correct one.
- 3 Press the  $\Delta$  button.**  
The selections for Program A will be played and then the unit will pause. The number of the selection that finishes its play disappears from the AV calendar display.
- 4 Press the  $\Delta$  button to play back Program B.**  
To resume normal playback Press the CLEAR button or the 1/ALL button.

**AV calendar on the screen**  
The AV calendar shows information on the contents of two different programs: program A and program B, separated with a pause.

**Auto Program contents**  
Program contents are stored until the disc is removed or the power is turned off.

**If your disc contains more than 20 selections**  
Selection with numbers over 20 may not be programmed with the Auto Program function.

**Note**  
Auto Program will not be run if your selection is larger than the designated playing time.

## To Change Time Display - Time Counter

- 1 Press the AV TIME button.**  
Elapsed time for selection
- 2 Press the  $\Delta$  button.**  
Remaining time for selection\*
- 3 Press the  $\Delta$  button.**  
Total remaining selections on the disc\*\*

\* Do not display for track numbers above 21.  
\*\* For CDV discs, these figures refer only to the current portion (audio/video) displayed.

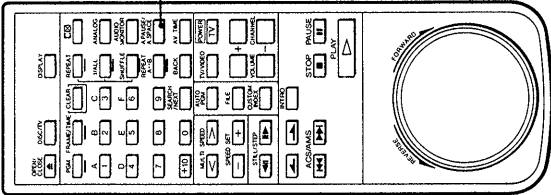
**Display on TV screen**  
If the TV set or monitor connected to the player is on and the DISPLAY button is pressed, the track number, time, and other information recorded on the CD/CDV will appear on a green background on the monitor.

**Note on LD discs**  
The time display function is available only with LDs containing TOC data. First, the elapsed time or the number of frames is displayed. Pressing the AV TIME button then changes the time display as shown above.


**AV TIME button**  
Pressing the AV TIME button during the stop mode will display the total number of tracks and total playing time for CDs and LDs with TOC data. For CDVs, the total number of tracks and total playing time for both audio portion and video portion are displayed alternately in the display window on the player.

**To Pause After a Each Selection – Auto Pause  
To Insert a Blank Space Between Selections – Auto Space**


**Auto Pause** – After a selection is played, the player enters the pause mode.  
**Auto Space** – A blank interval of 3 seconds is inserted between the playback of each selection.




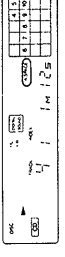
**Auto Pause**  
Press the A.PAUSE/A.SPACE button once.



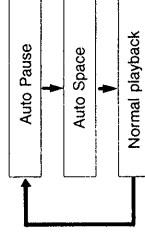
**To start playback of the next selection**  
Press the ▷ button.



**Auto Space**  
Press the A.PAUSE/A.SPACE button twice.

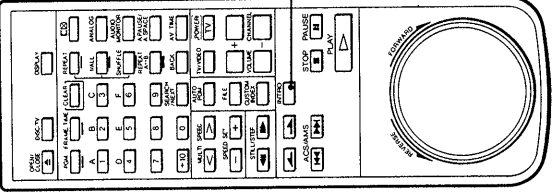
**To resume normal playback**  
Each time the A.PAUSE/A.SPACE button is pressed, the mode changes to give you in the following order.




For the button of Auto Pause and Auto Space should use the same one.  
If you playback in auto program, program, shuffle, or delete shuffle mode, auto space may insert a space more than 3 seconds.

**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

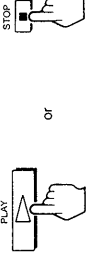


**CD/CDV**  
Track 1  
8-second playback  
Track 2  
8-second playback  
Track 3  
8-second playback

After the playback of the last chapter, the player will be paused.  
• Playback will begin from the video portion for CDV discs.

After the playback of the last track, the player will be paused.  
• Playback will begin from the video portion for CDV discs.

**To resume normal playback**



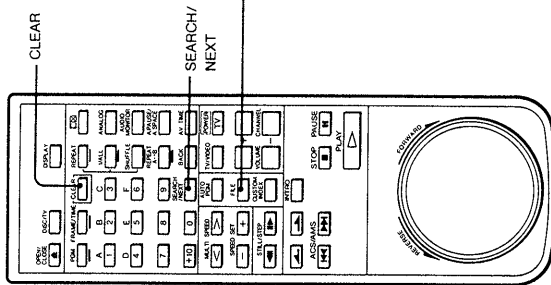
Press the ▽ button to stop.

To resume normal playback, press the ▷ button. During search functions, normal playback will resume from the selection to be searched when the ▷ button is pressed.

### To Set an Index at a Desired Point – Custom Index

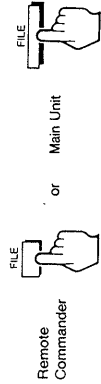
#### What is the Custom Index?

The Custom Index function lets you set up to six index marks at any point on the disc. Playback can then be started from an index point at the push of a button, and repeat playback between index points is also possible. This section explains how to set custom index marks on an LDs, and the function can also be used for CDs and CDVs.

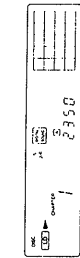


#### To set a custom index mark

Press the FILE button during playback.



Up to six locations anywhere on the disc can be marked.



Indicators A, B, C, etc. light up for each custom index mark.

#### If you make a mistake

1 Use the SEARCH/NEXT button to cause the file indicator to flash.



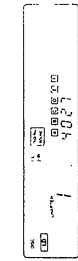
2 Press the CLEAR button and then press the FILE button at the correct location.



**Note**  
When the disc is removed or the player is turned off, the contents of the custom index are lost. While custom index search is performed, the A, B, C, ... file search indicators disappear one by one, but the indicator for the last index point remains.

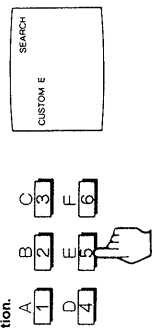
#### Custom Index Search

1 Press the CUSTOM INDEX button.



The AV calendar disappears and the number buttons 1-6 function as file search buttons A-F.

2 Press the file search button for the desired location.



Playback starts from the specified index point and continues until the end of the disc.

**To skip to another index point**  
Press the corresponding file search button.

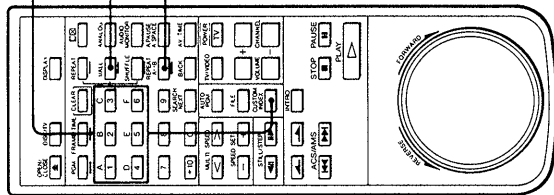
**To resume normal playback**  
Press the CUSTOM INDEX button or the CLEAR button.

#### To play a section between custom index points once

Press the 1/ALL button, so that the indication SINGLE is shown on the display window. Then perform custom index search to the desired index start point. The section between this point and the next custom index point is played once.

#### To play a section between custom index points repeatedly

Press the 1/ALL button, so that the indication SINGLE is shown on the display window and press the REPEAT button to activate the REPEAT display. Then perform custom index search to the desired index start point. The section between this point and the next custom index point is continuously repeated.



#### Index point rearrangement

The custom index points are arranged on the disc not by the order in which they were input but by their relative location from the start of the disc. If a new index mark is set before an old one, the A, B, C, ... order is rearranged.

#### Custom index with a CDV disc

Although playback begins from the video portion, files will be arranged from the audio portion in A, B, C, ... order.

#### How is the custom index stored?

The custom index data are not actually recorded on the disc but stored in the memory of the player. Therefore, the custom index points set with one player cannot be used when the disc is played on another unit.

#### To clear a custom index mark


Information on index marks is retained also when the player is switched to normal playback. To cancel a stored index mark, use the SEARCH/NEXT button to cause the corresponding file search indicator to flash, and then press the CLEAR button.




**Playing in a Random Order – Shuffle Playback**

**To play all tracks or chapters on a disc**

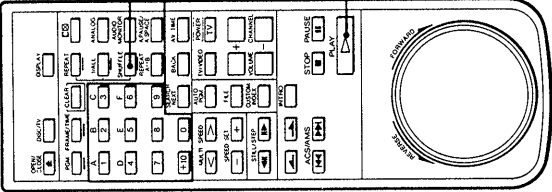
1 Press the SHUFFLE button.



2 Press the  button.


All selections on the disc are played once in a random order. After all selections have been played, the unit enters the stop mode.

**To cancel shuffle playback**  
Press the CLEAR button or the 1/ALL button. Normal playback resumes from the next selection.

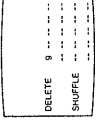


**To play only certain selections – Delete Shuffle**

1 Press the SHUFFLE button.

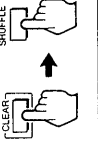


2 Enter the chapter number or track number of the selection you do not wish to play.

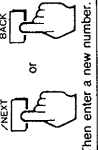



**If you make a mistake**

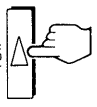
**To start over**  
Press the CLEAR button and then press the SHUFFLE button again and enter the correct number.



**To change a number**  
Press the SEARCH/NEXT (to advance) or BACK (to back up) buttons until the incorrect number on the screen flashes. Press the SEARCH/NEXT or BACK button. Then enter a new number.





3 Press the  button.




The player automatically selects a random program without the deleted selections.

**To resume normal playback**  
Press the CLEAR button or the 1/ALL button.

When a LD without TOC data, the indication "NO TOC" appears on the display window, and shuffle playback cannot be conducted.

**To skip to the next selection during shuffle playback**  
Press the  button. Returning to a previous selection with the  button is not possible.

**Shuffle playback with CDV discs**  
Selections from the audio portion and video portion are played in random order.

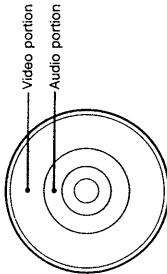
**SHUFFLE button timing**  
To ensure correct operation, do not press the SHUFFLE button immediately after the disc tray has closed. Instead, press the SHUFFLE button only after the  (play) indication in the display has stopped flashing. The selections on the disc can be played back in a random order.

**Delete shuffle**  
This function lets you exclude specific chapters or tracks from shuffle playback. When the function is used, DELETE SHUFFLE appears on the screen.

**To repeat shuffle or delete shuffle playback**  
Press the REPEAT button on the Remote Commander to activate the REPEAT indication on the display window. When the unit is turned off or the disc is removed, shuffle functions are cancelled.

## LD/CD/CDV

### 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. Please note the following when playing a CDV.

- Time search is not applicable for CDV.
- To display the remaining time, simply press the AV TIME button.
- 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.

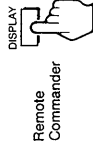
#### To play

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. 36).

### Screen Messages

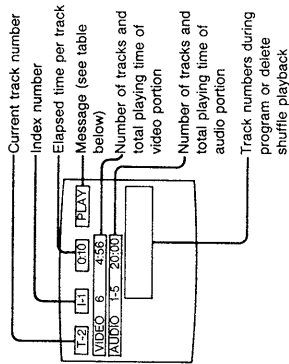
Information on the operating condition of the unit and chapter or track numbers can be superimposed on the screen. During audio portion playback, information for CDV is shown on a blue background.

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



To turn the display off, press the DISPLAY button again

### CDV



### 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)

## Notes on Handling Discs

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

### CD



### CDV

Correct

### LD



Correct

Do not stick paper or tape on the labeled surface.



Wrong

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, severe 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)

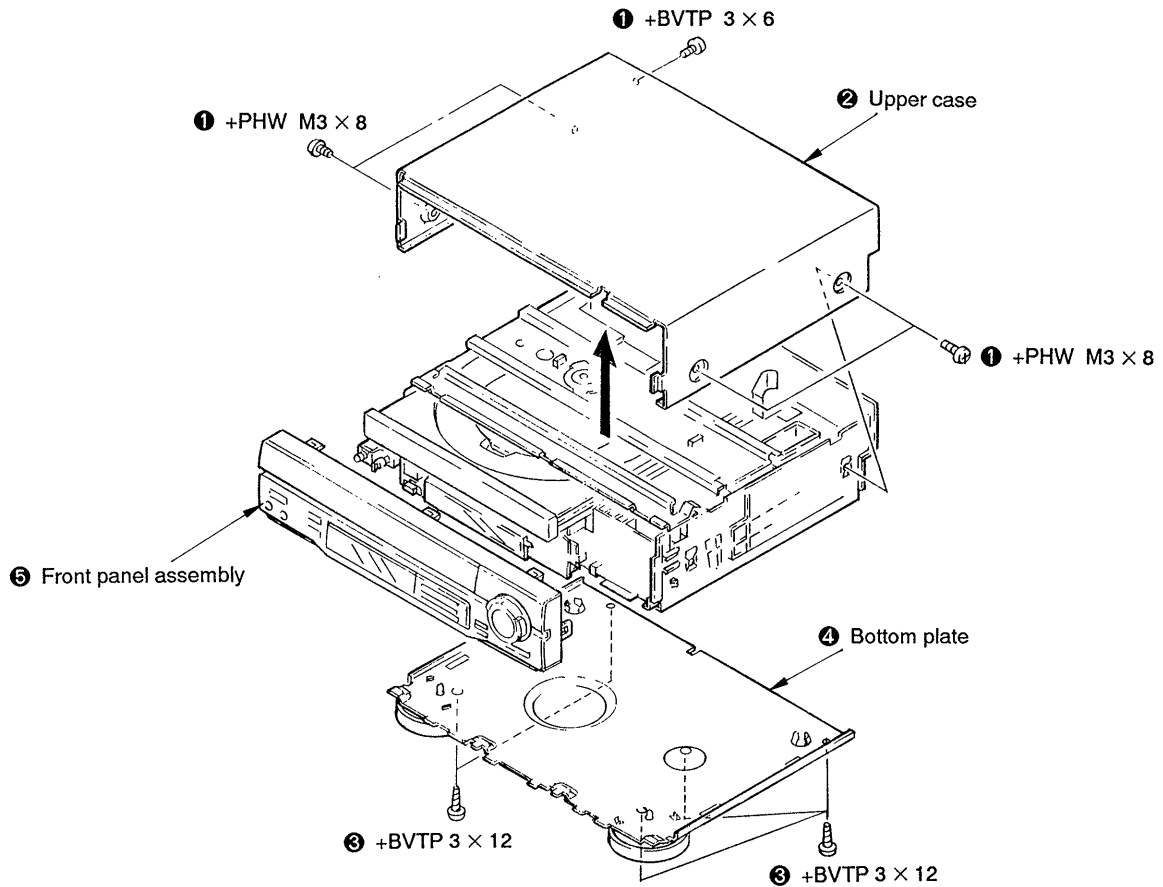
Among various LD software, there are discs with TOC (Table of Contents) signals recorded. When playing back LDs with TOC signals, the additional features given below can be enjoyed.

- Playback time display for one chapter (CAV, CLV)
- Remaining playback time (CAV, CLV)
- Time display for CAV disc
- AV calendar display
- Shuffle, delete shuffle

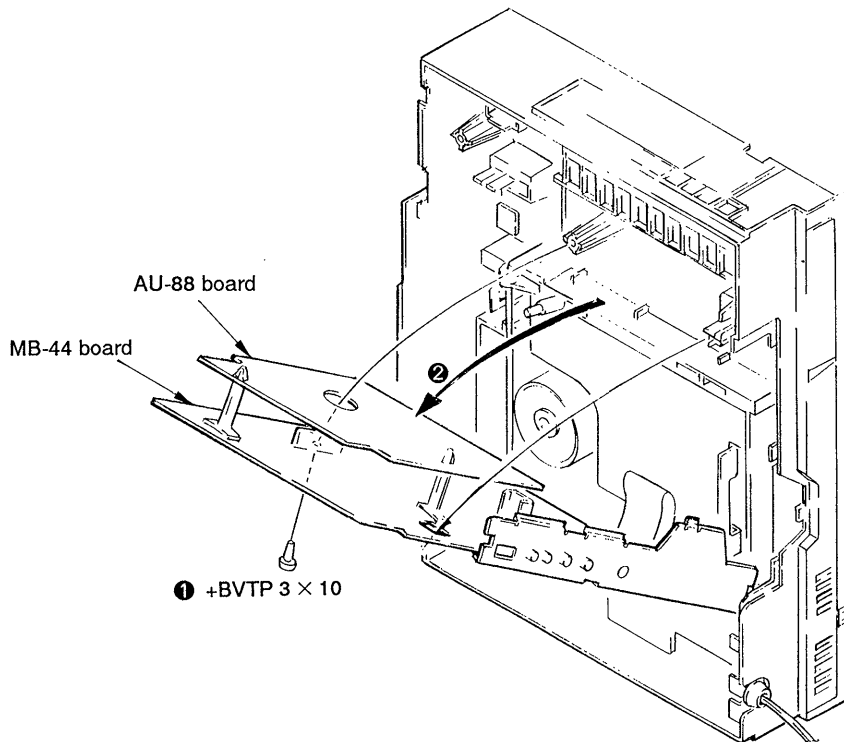
## SECTION 2 DISASSEMBLY

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

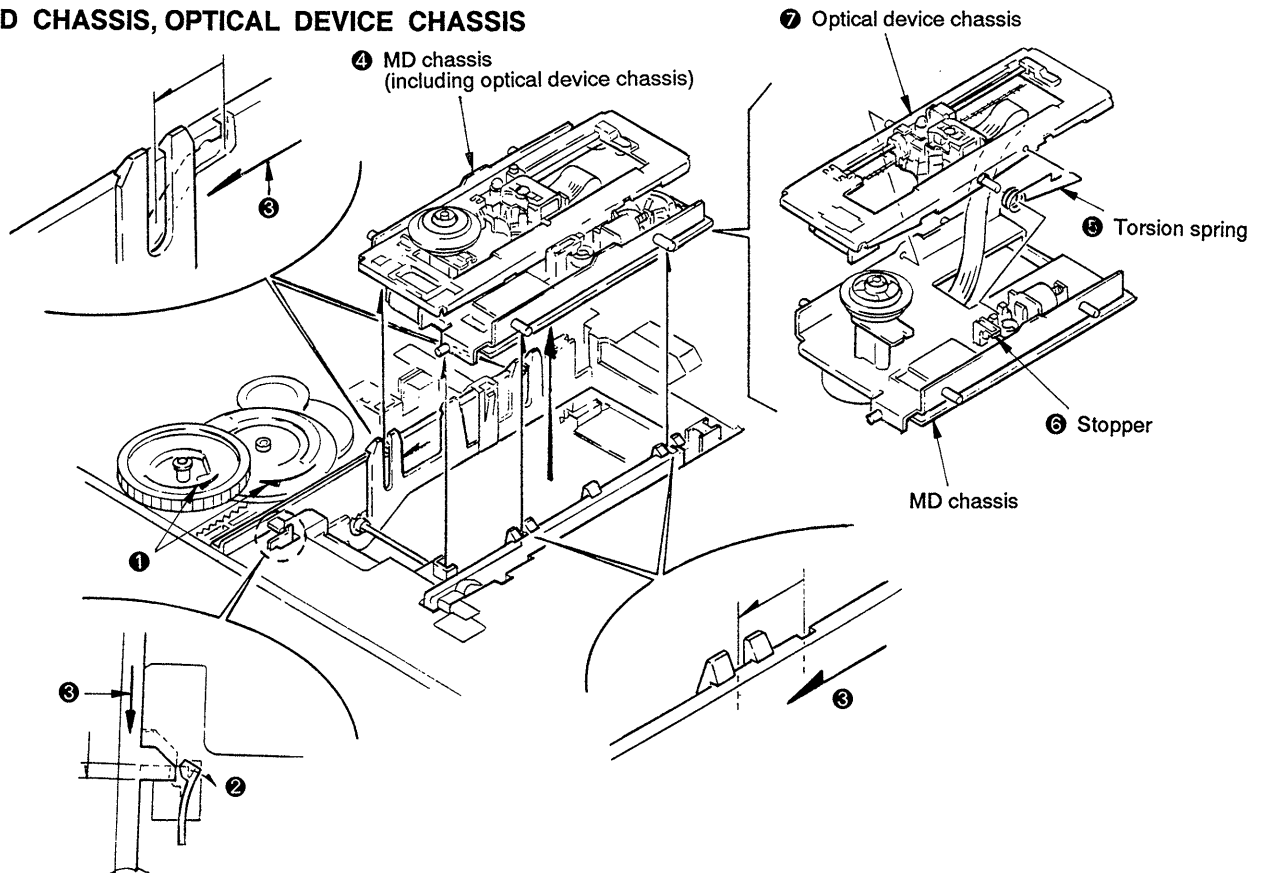
### 2-1. CASE, FRONT PANEL ASSEMBLY



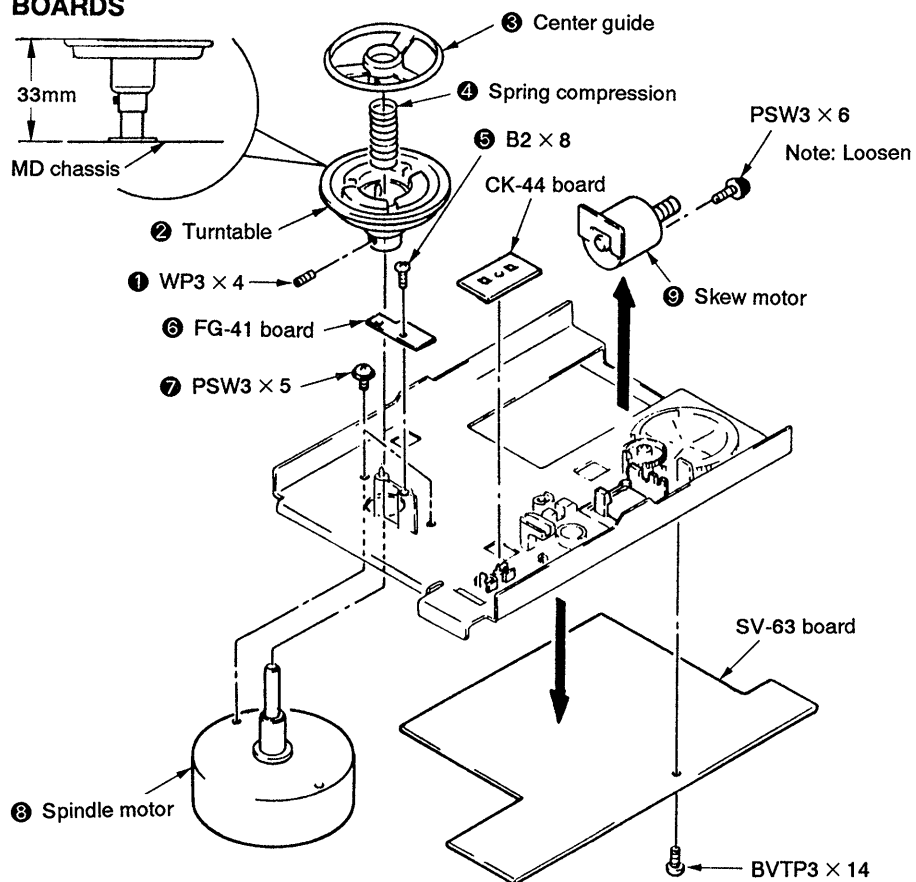
### 2-2. MB-44, AU-88 BOARDS



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



### 2-4. TURNTABLE, SPINDLE MOTOR, SKEW MOTOR, SV-63, FG-41 BOARDS



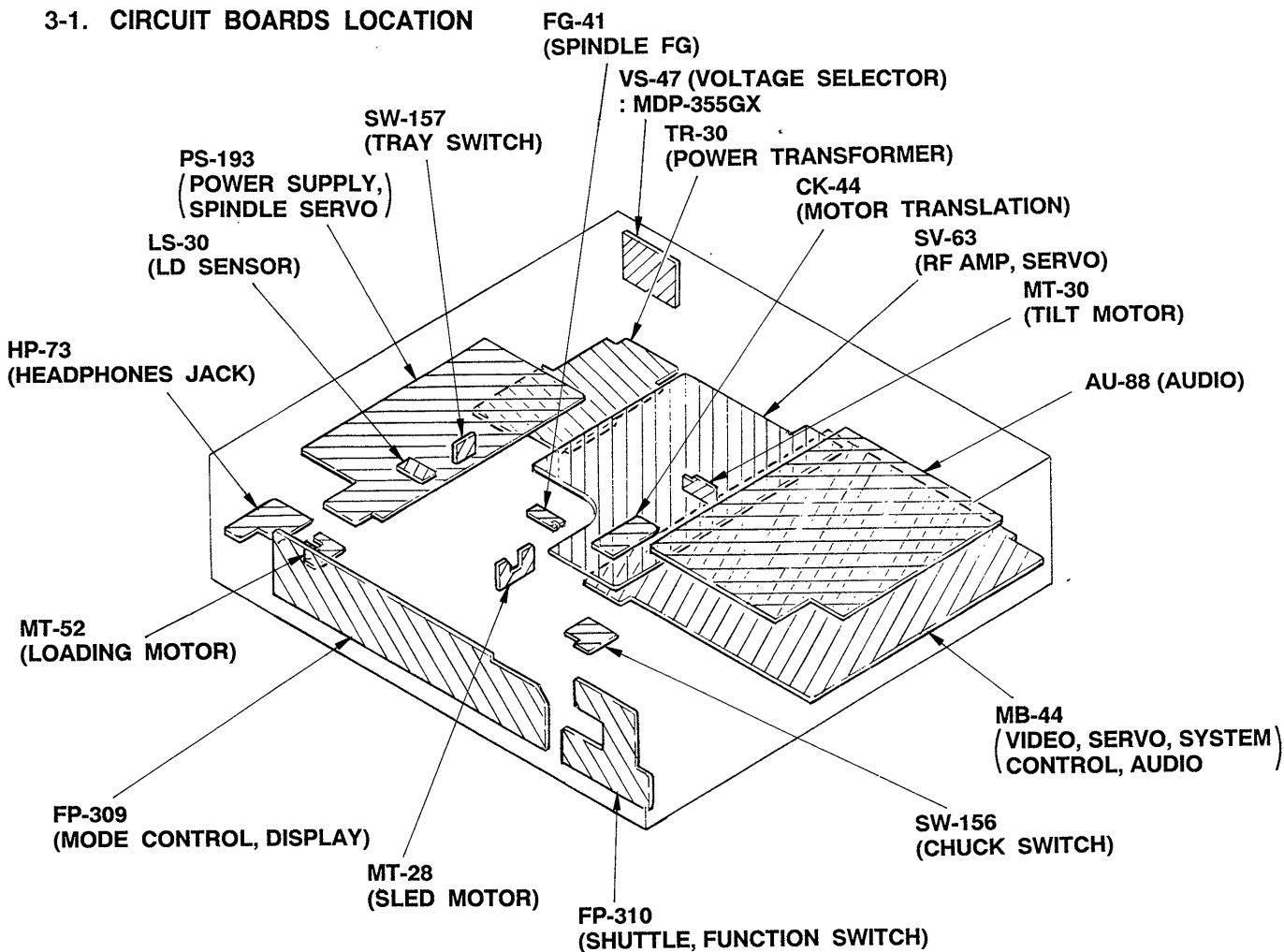
# MEMO

---

A series of horizontal dotted lines for writing.

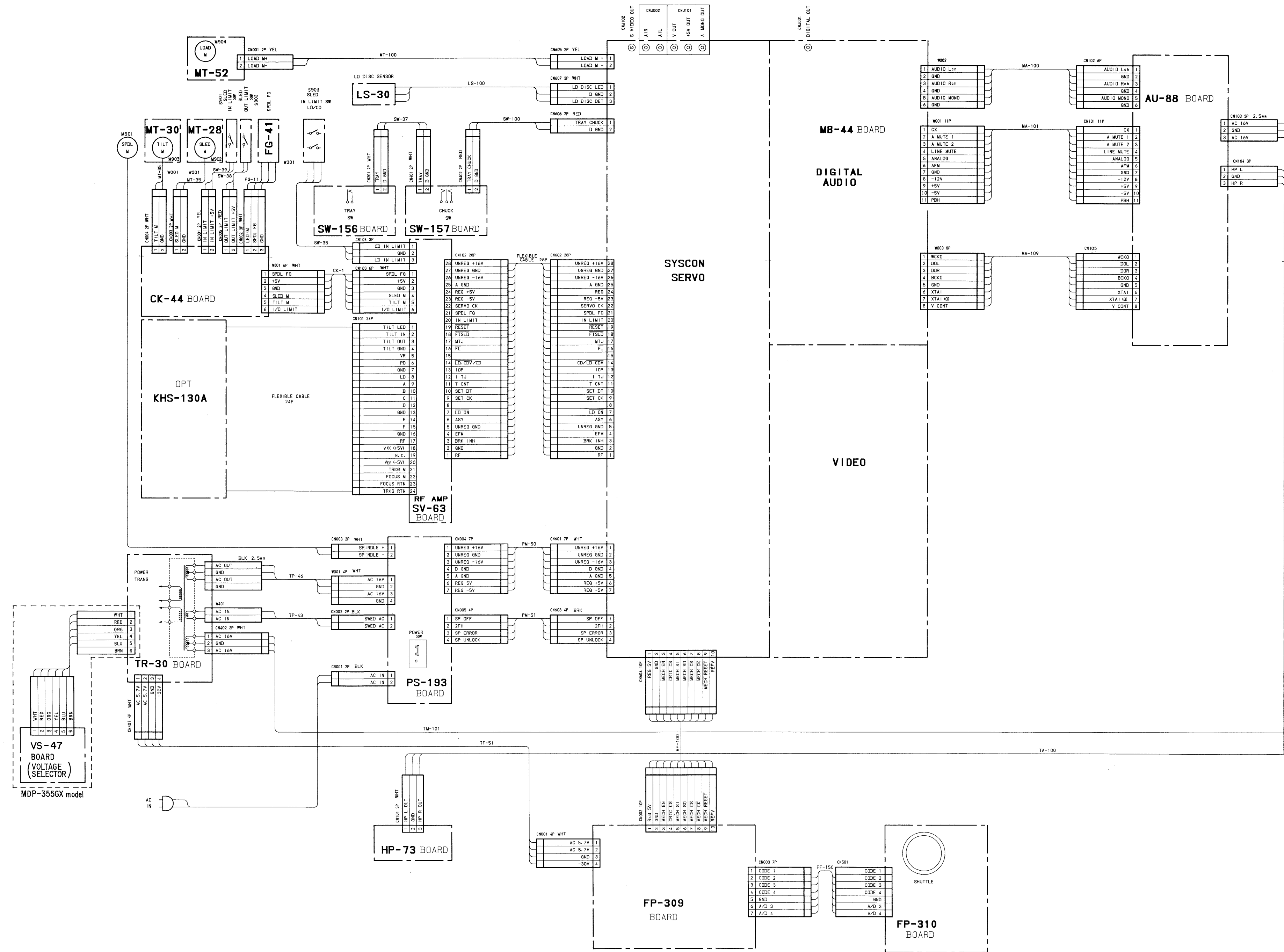
# SECTION 3 DIAGRAMS

## 3-1. CIRCUIT BOARDS LOCATION



SECTION 4  
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

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

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

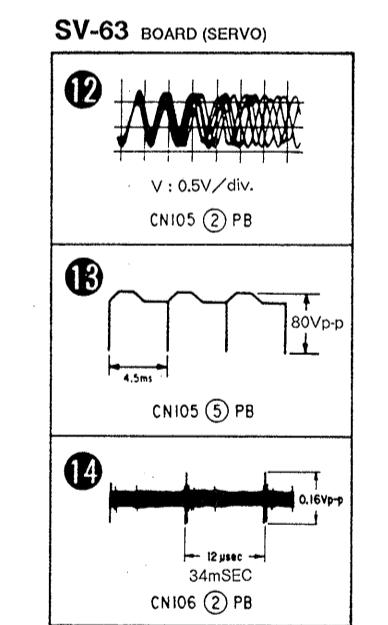
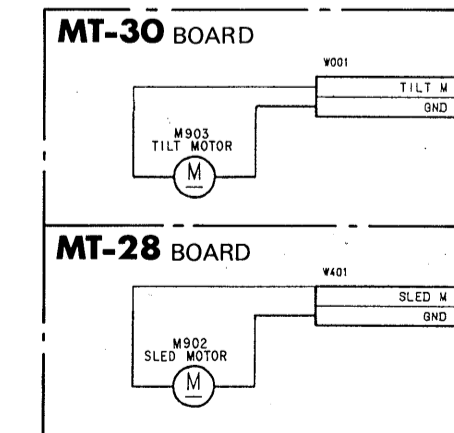
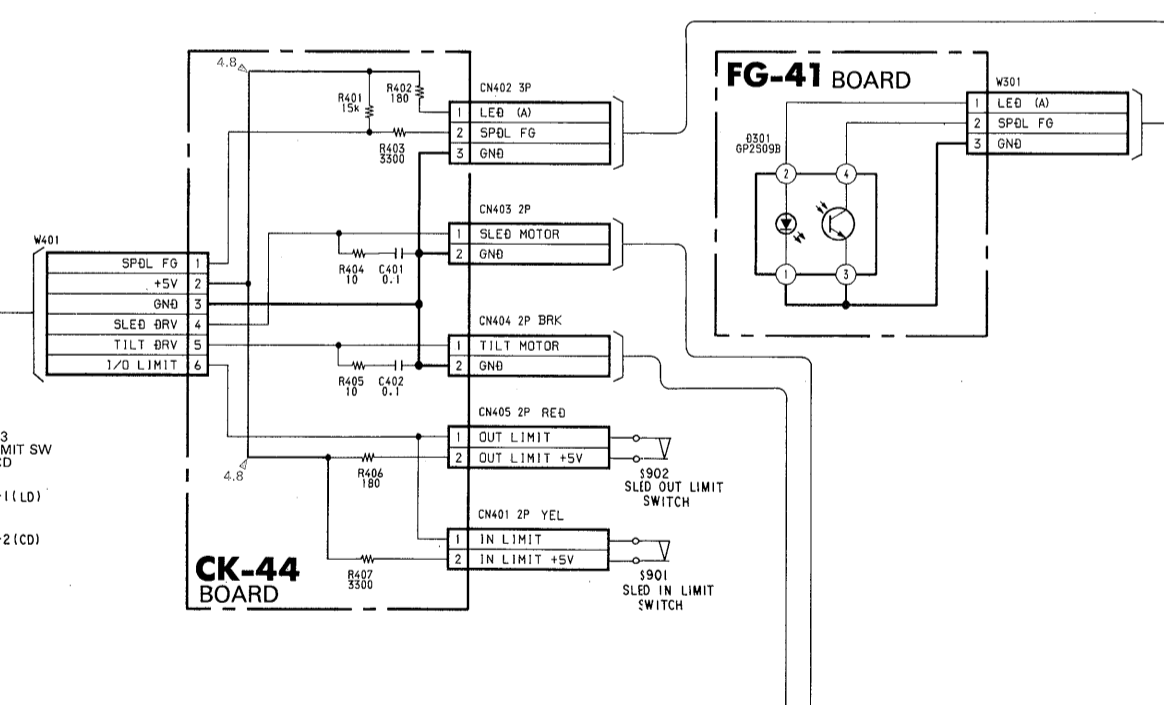
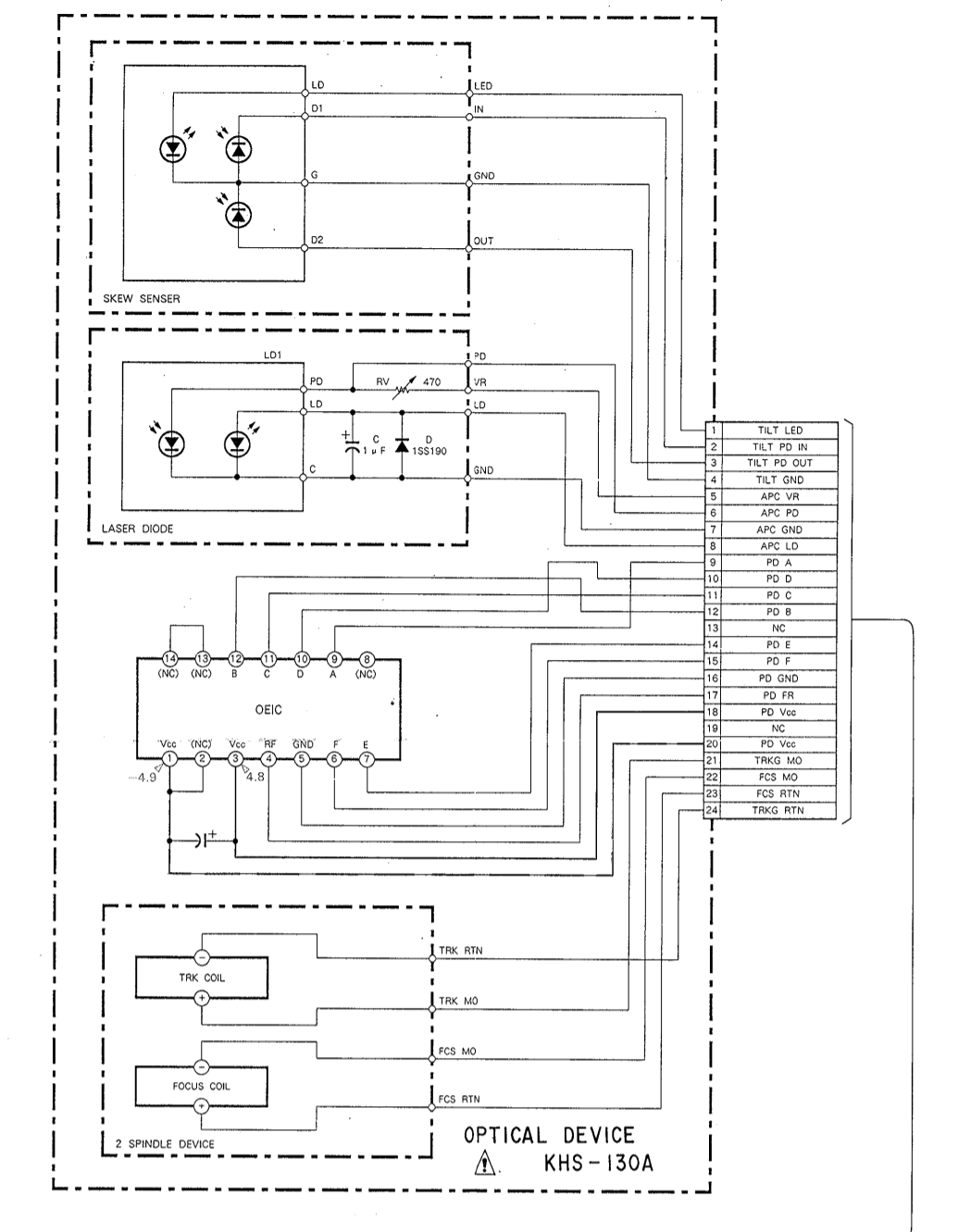
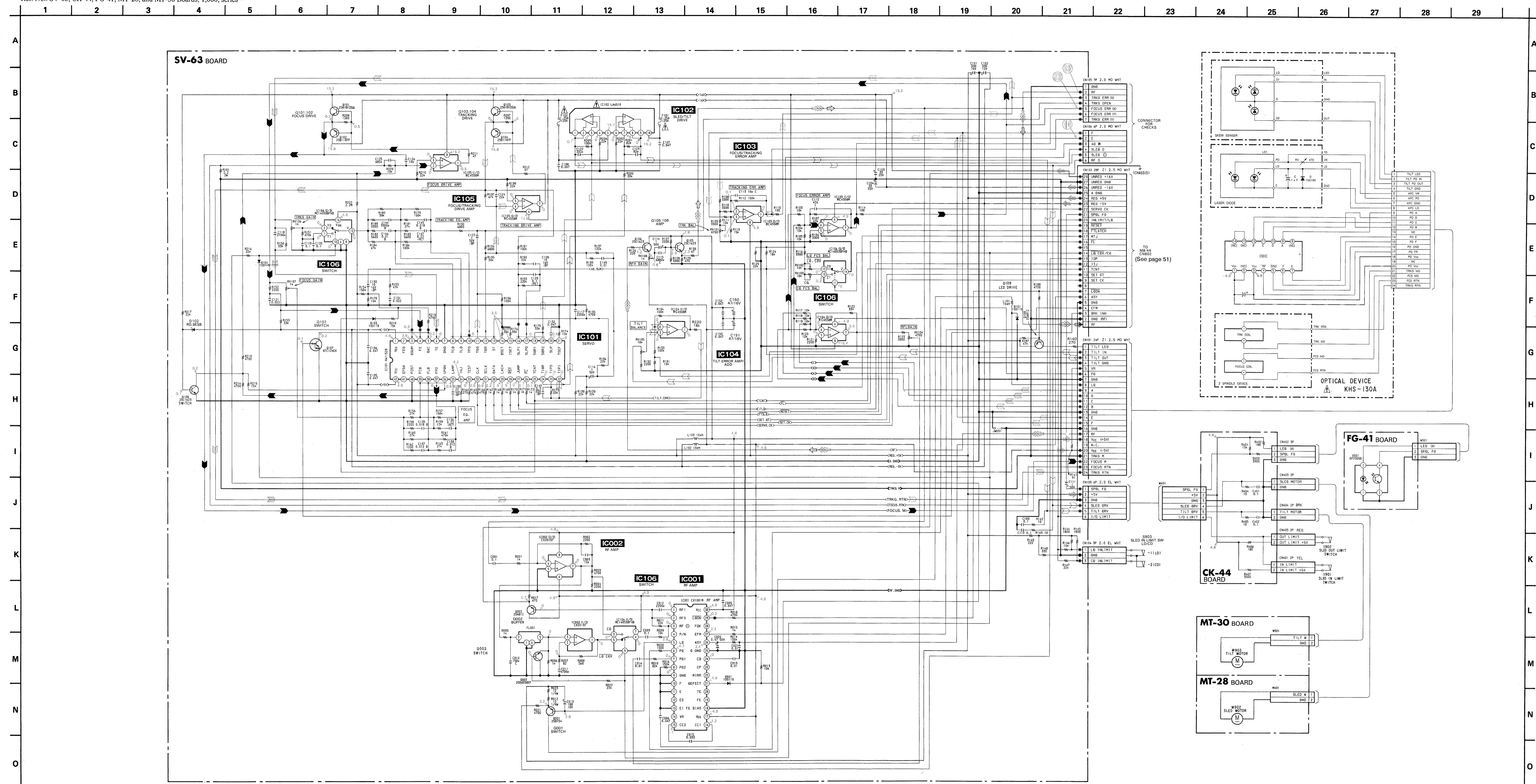
- \*For schematic diagram:
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
  - All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  - All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\mu\text{F}$ ,  $\mu\text{M}$ ,  $\mu\text{F}$ ,  $\mu\text{F}$  or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - ▨ : nonflammable resistor.
  - ▨ (with dot) : fusible resistor.
  - ▨ (with triangle) : panel designation.
  - ▨ (with circle) : internal component.
  - ▨ (with square) : adjustment for repair.\*
  - ▨ (with horizontal line) : B + Line.\*
  - ▨ (with vertical line) : B - Line.\*
  - Voltagages 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 (DC10M $\Omega$ ).\*
  - Voltage variations may be noted due to normal production tolerances.
  - ▨ (with arrow) : IN/OUT direction of B line (+, -).\*
  - ▨ (with circle) : Circled numbers refer to waveforms.\*

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

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

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

\* : indicated by the color red.

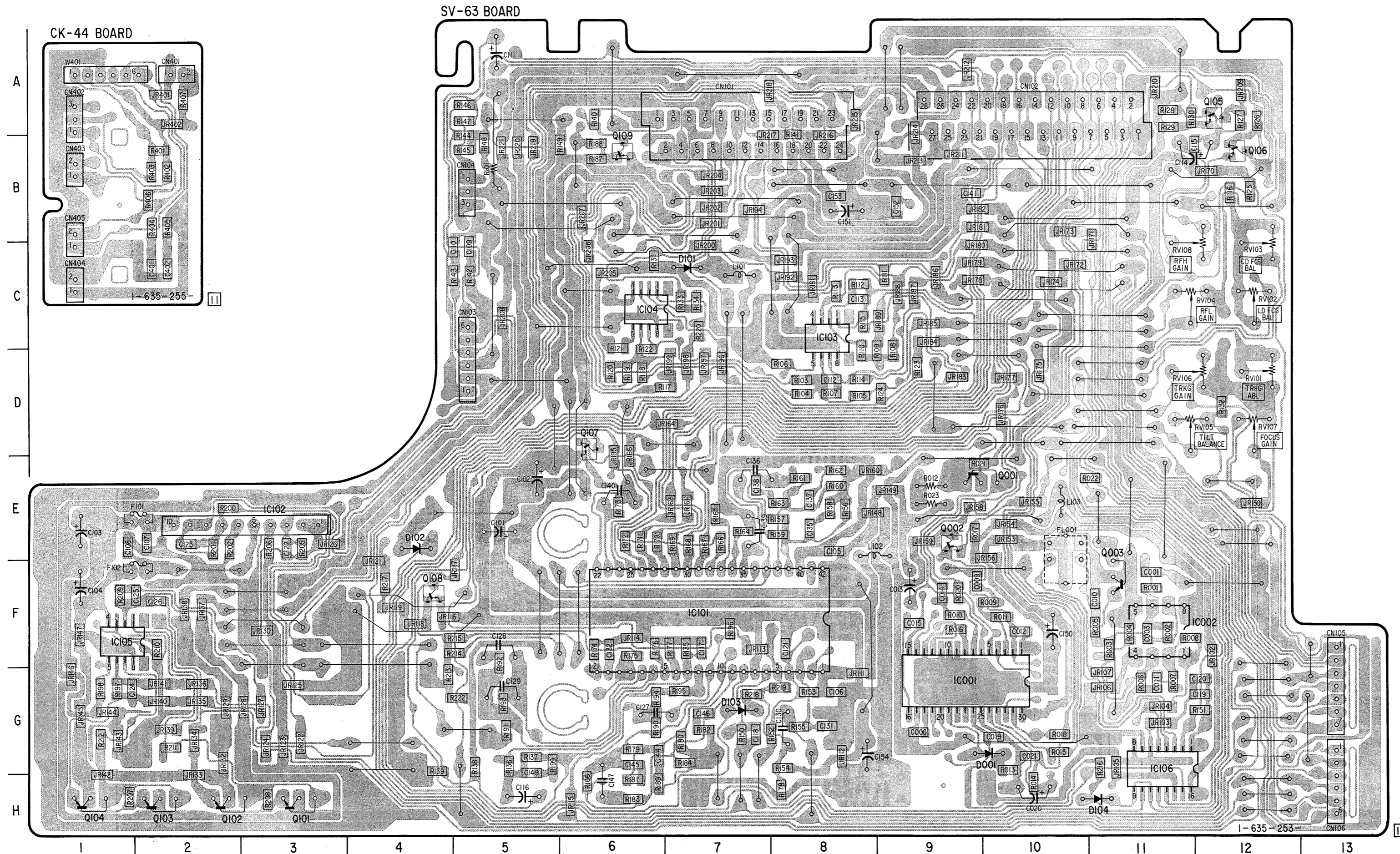


VIDEO SIGNAL		AUDIO SIGNAL	
CHROMA	Y	Y/CHROMA	AUDIO
PB	⇒	⇒⇒	⇒⇒⇒

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	⇒⇒

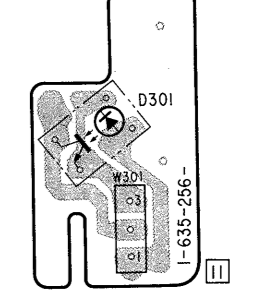




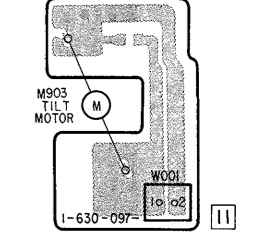
SV-63 BOARD

- |       |      |
|-------|------|
| D001  | G-10 |
| D101  | C-7  |
| D102  | E-4  |
| D103  | G-6  |
| D104  | H-11 |
| IC001 | G-9  |
| IC002 | F-11 |
| IC101 | F-7  |
| IC102 | E-3  |
| IC103 | C-8  |
| IC104 | C-6  |
| IC105 | F-1  |
| IC106 | G-11 |
| Q001  | E-10 |
| Q002  | E-9  |
| Q003  | F-11 |
| Q101  | H-3  |
| Q102  | H-2  |
| Q103  | H-2  |
| Q104  | H-1  |
| Q105  | A-12 |
| Q106  | B-12 |
| Q107  | D-6  |
| Q108  | F-4  |
| Q109  | B-6  |

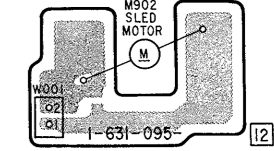
FG-41 BOARD



MT-28 BOARD



MT-30 BOARD





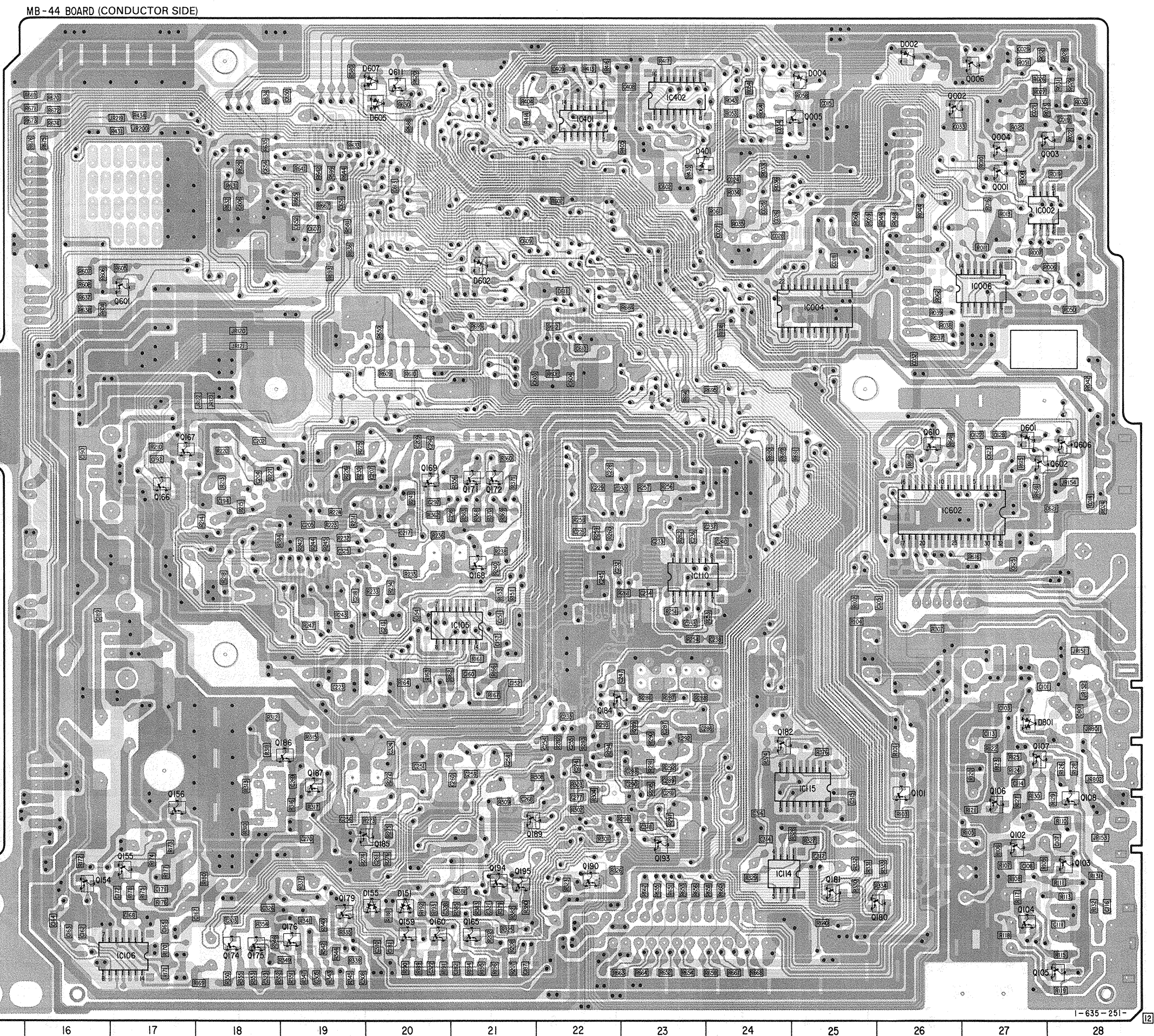
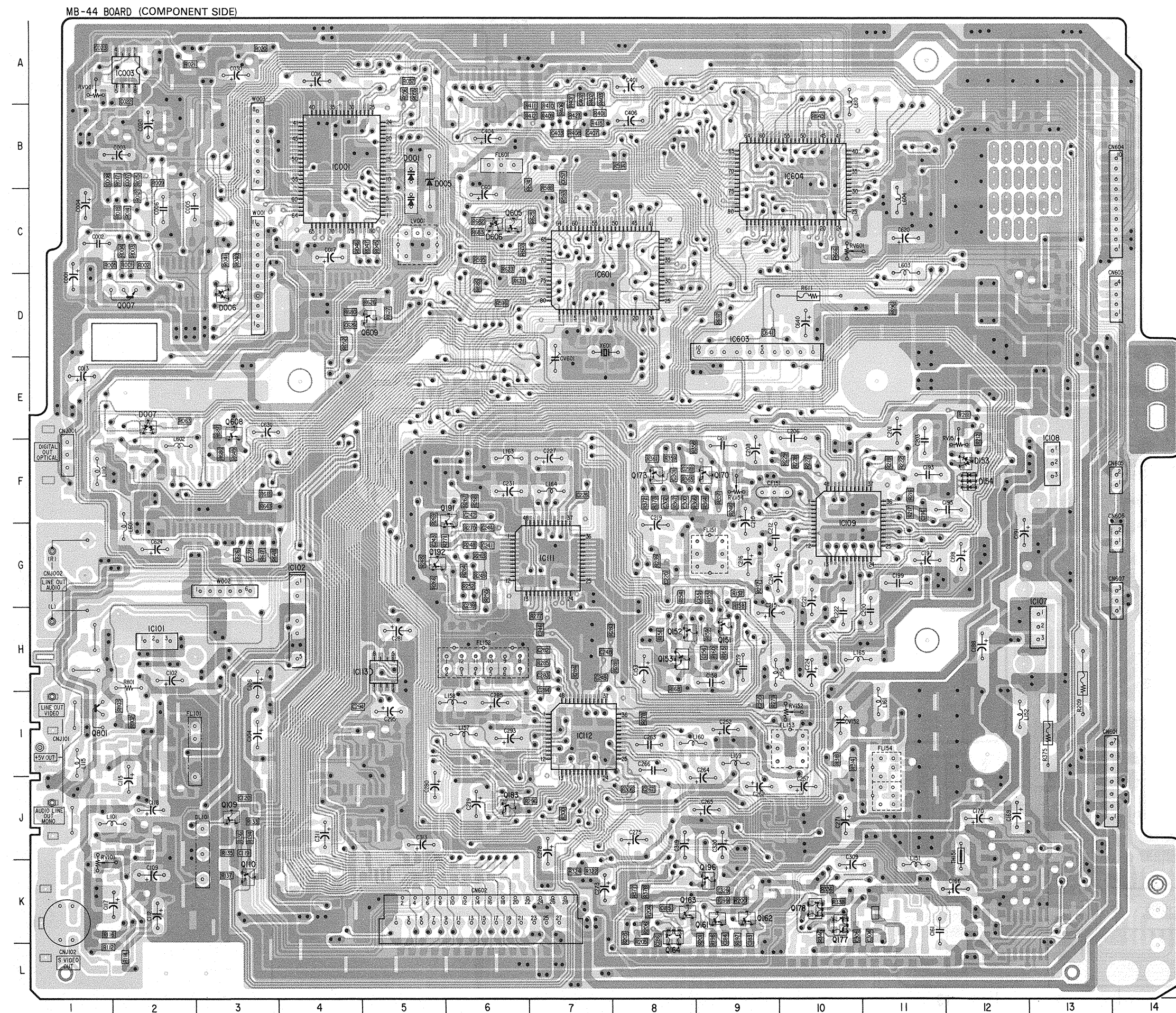


MB-44 BOARD

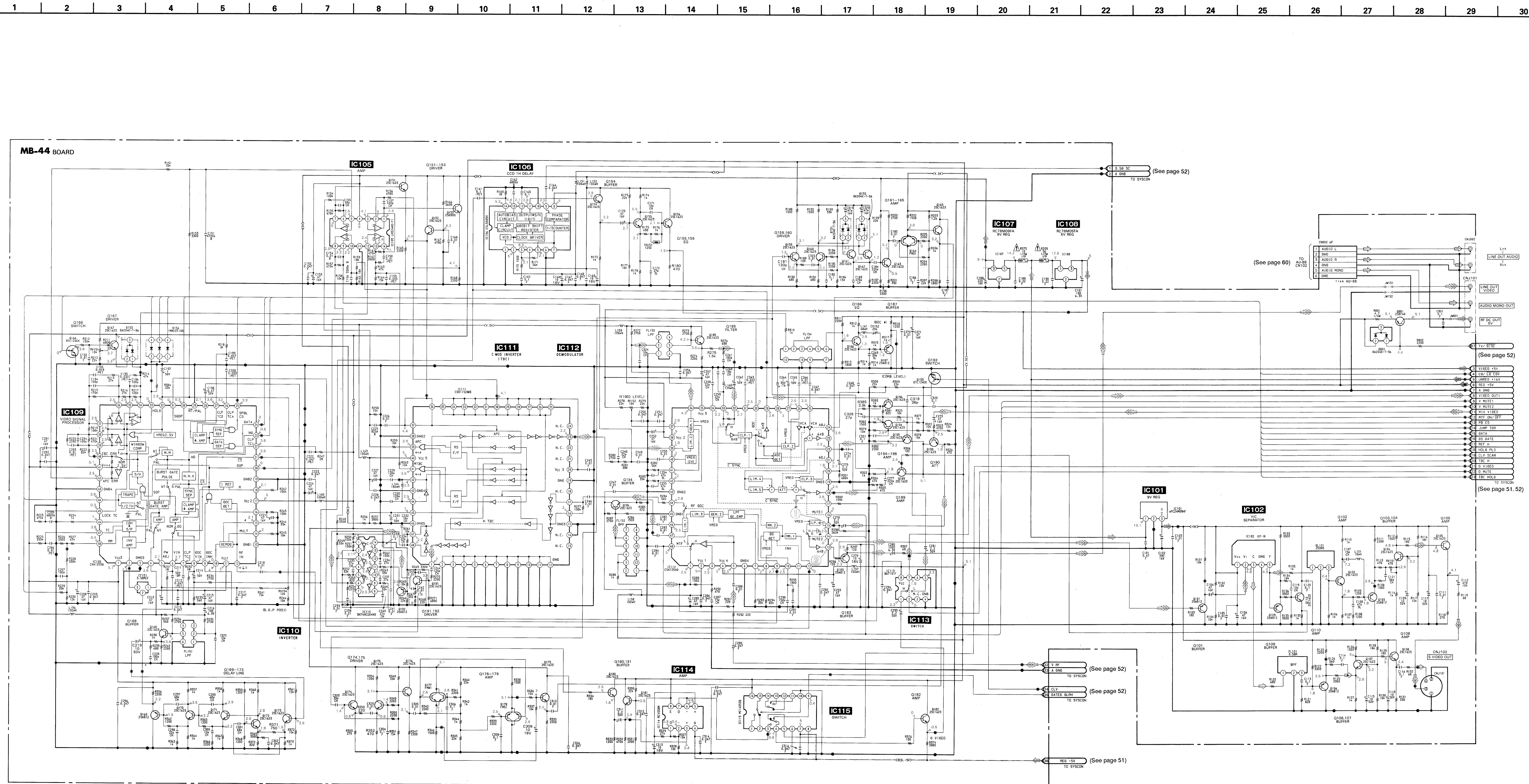
D001	B-5	O186	I-19
D002	A-26	O187	I-19
D004	A-25	O189	J-21
D005	B-5	O190	K-22
D006	D-3	O191	F-6
D007	F-2	O192	G-5
D151	K-20	O193	J-23
D153	F-12	O194	K-21
D154	F-12	O195	K-21
D155	K-20	O196	K-9
D401	B-23	O801	D-17
D601	F-27	O602	F-27
D602	C-21	O605	C-6
D605	B-20	O606	E-28
D606	C-6	O608	E-3
D607	A-20	O609	D-5
D801	I-27	O610	E-26
		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
IC008	F-13
IC009	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
IC801	C-7
IC802	F-26
IC803	D-9
IC804	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	I-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-8
Q163	K-8
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-18
Q180	K-26
Q181	K-25
Q182	I-24
Q183	J-6
Q184	H-23
Q185	J-20

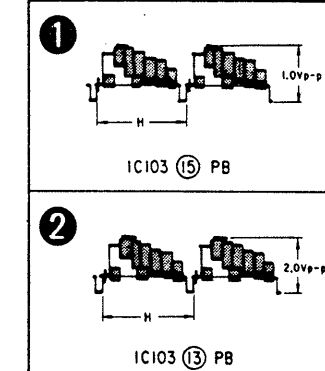






MB-44 BOARD

MB-44 BOARD (VIDEO)



	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	→	→	→	→

SPINDLE PHASE SERVO	→
SPINDLE SERVO (SPEED AND PHASE)	→
TRACKING SERVO LD/CD/CDV	→
SLIDE SERVO LD/CD	→
FOCUS SERVO LD/CD	→
SKEW SERVO LD TILT	→

(See page 52)

(See page 60)

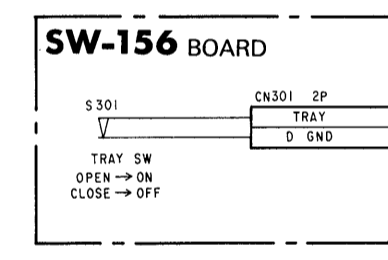
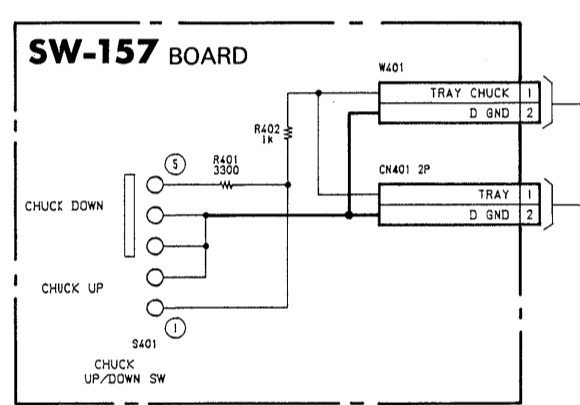
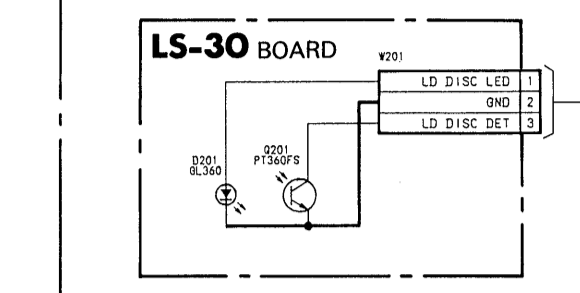
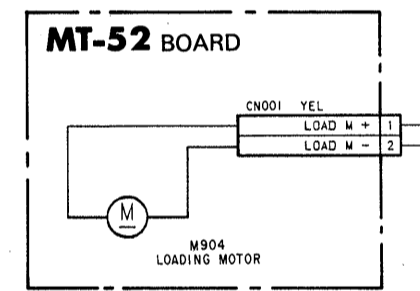
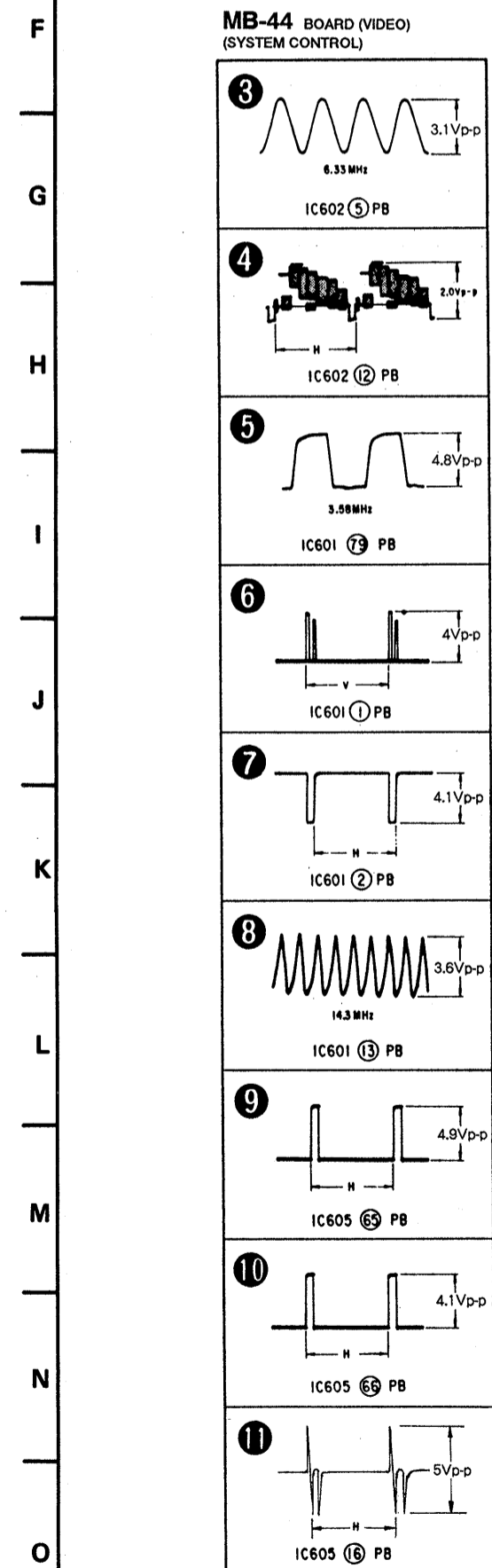
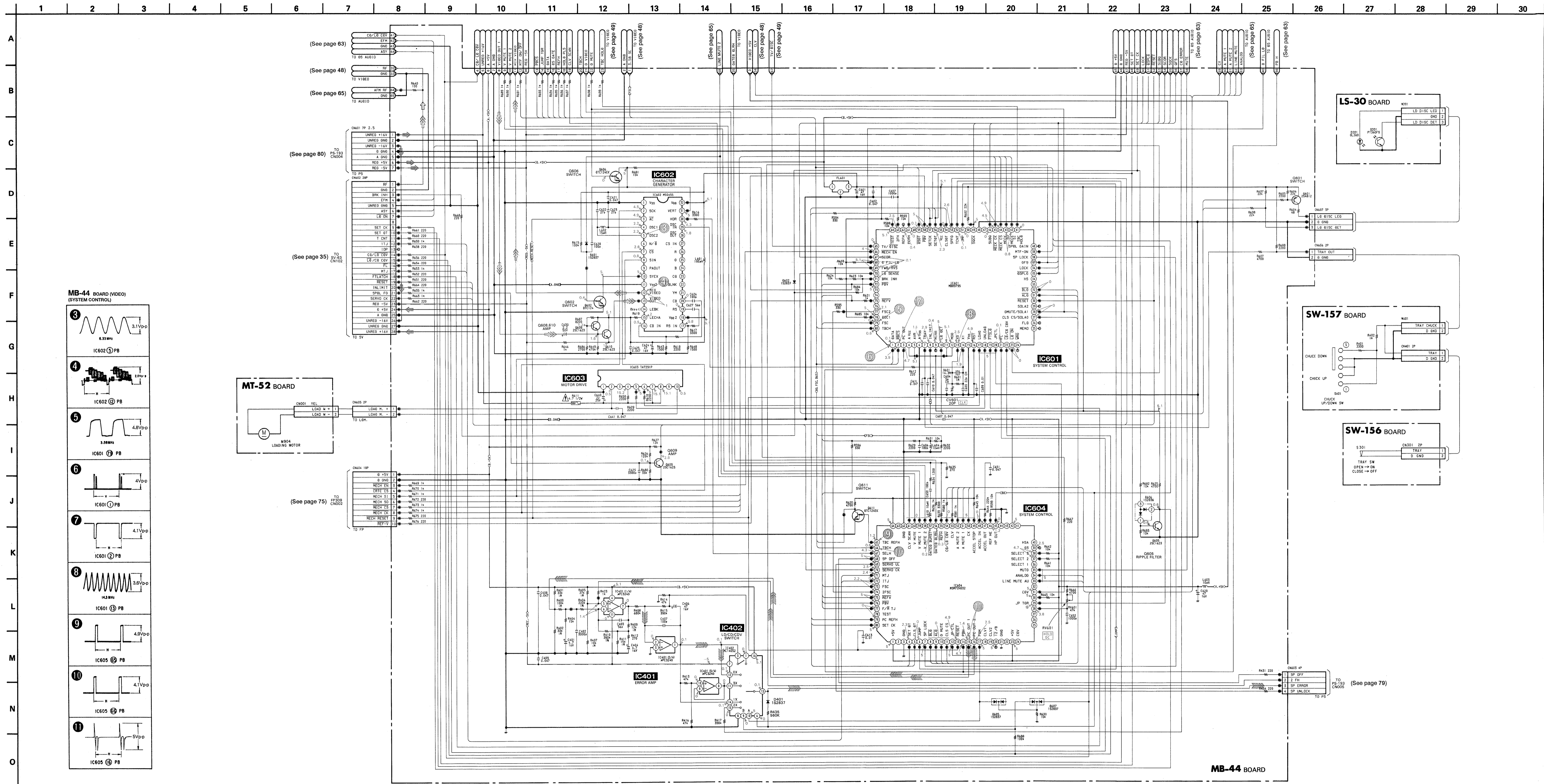
(See page 52)

(See page 51, 52)

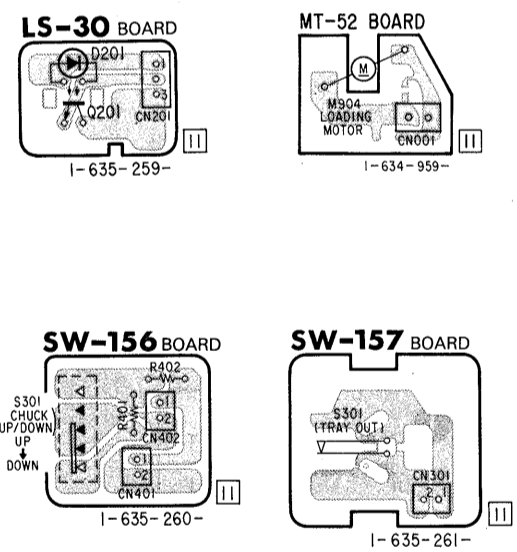
(See page 52)

(See page 52)

(See page 51)



**LS-30 (LS SENSOR), MT-52 (LOADING MOTOR), SW-156 (TRAY SWITCH), SW-157 (CHUCK SWITCH) PRINTED WIRING BOARDS**  
 - Ref. No.: LS-30, MT-52, SW-156, and SW-157 Boards; 3,000 series -



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

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	↔

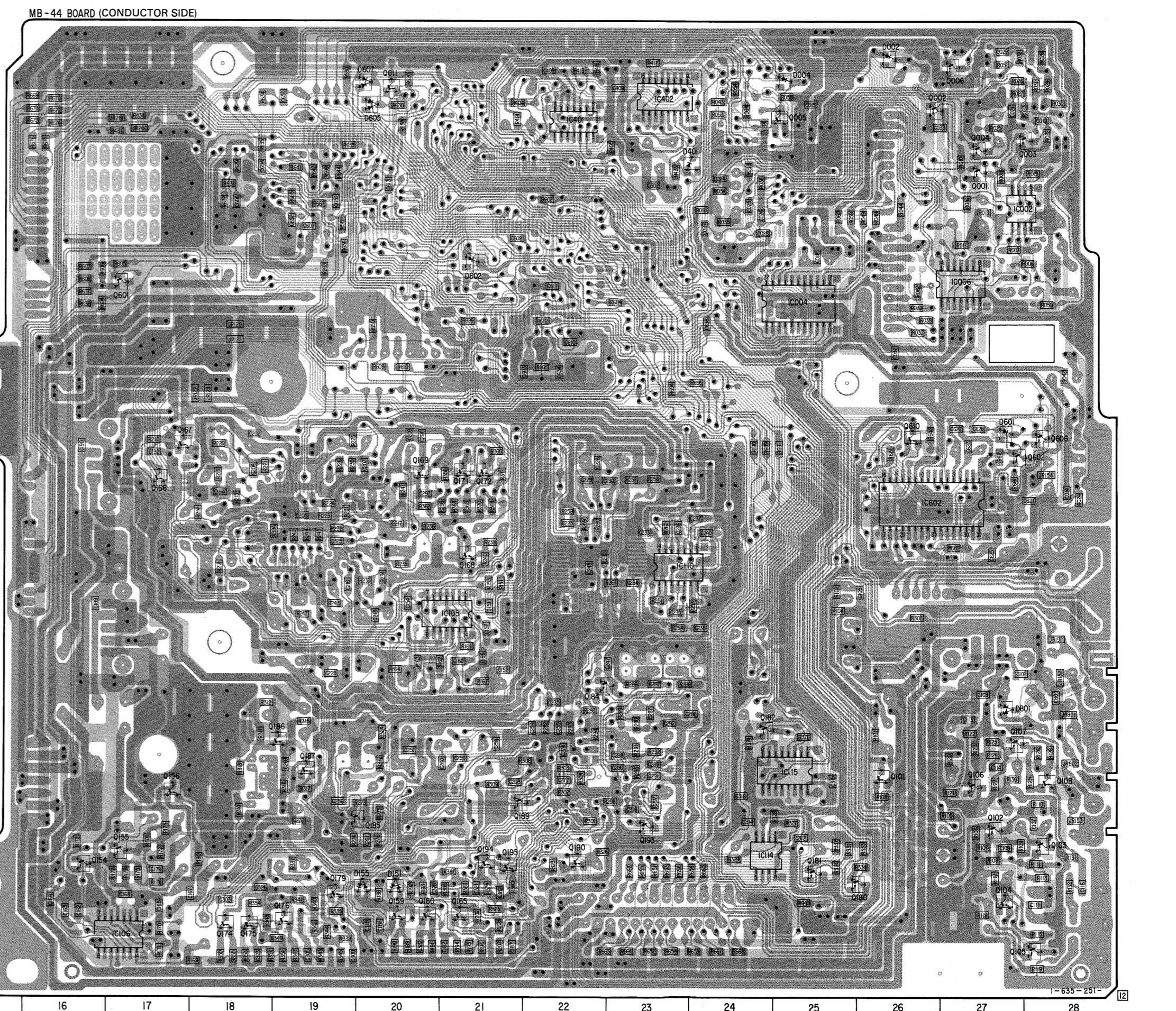
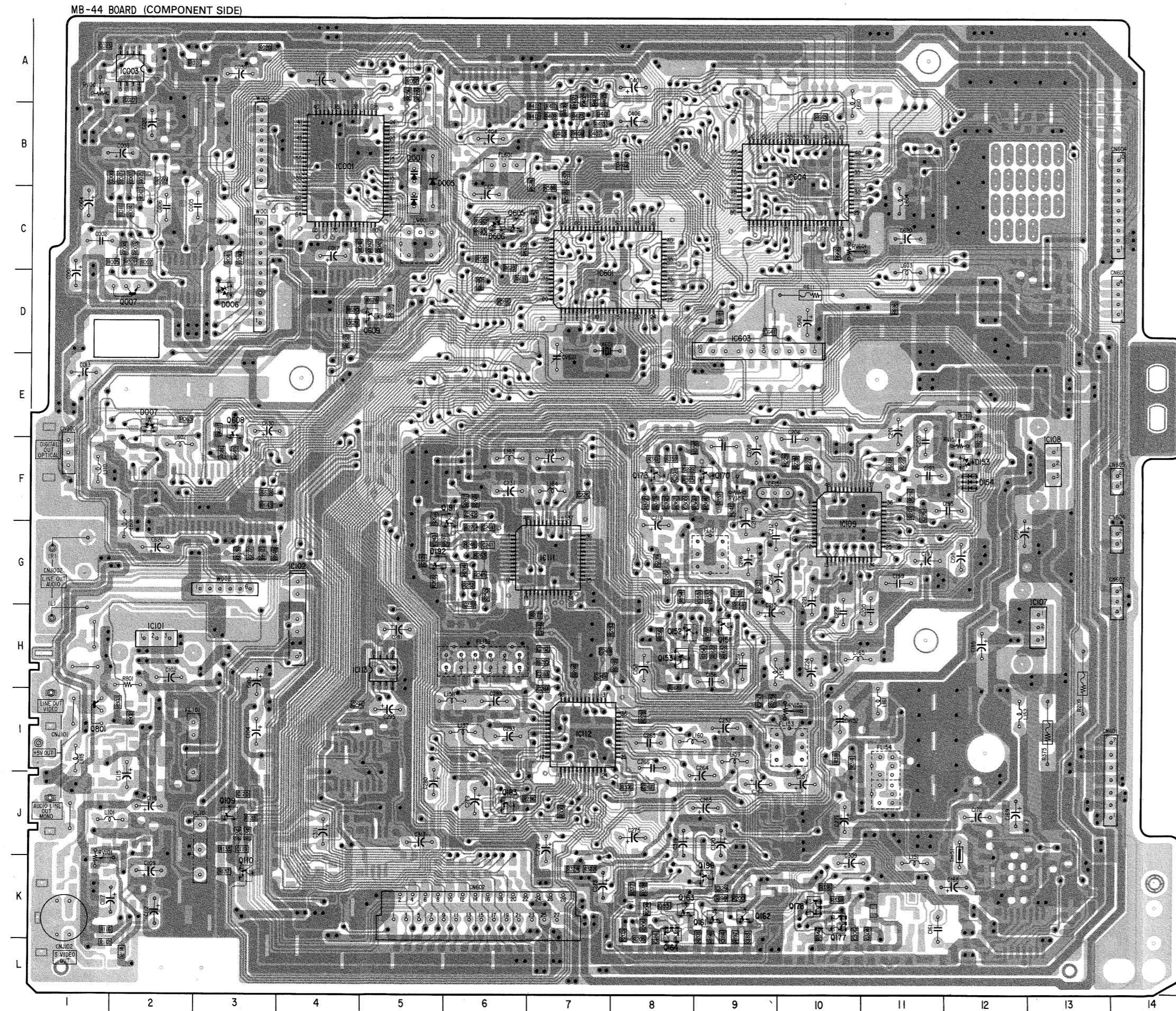


MB-44 BOARD

D001	B-5	Q186	I-19
D002	A-28	Q187	I-19
D004	A-25	Q189	J-21
D005	B-5	Q190	K-22
D006	D-3	Q191	F-6
D007	E-2	Q192	G-5
D151	K-20	Q193	J-23
D153	F-12	Q194	K-21
D154	F-12	Q195	K-21
D155	K-20	Q196	K-9
D401	B-23	Q601	D-17
D601	E-27	Q602	F-27
D602	C-21	Q605	C-6
D605	B-20	Q606	E-28
D606	C-6	Q608	E-3
D607	A-20	Q609	D-5
D801	I-27	Q610	E-26
		Q611	A-20
		Q801	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
IC008	F-13
IC009	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
IC601	C-7
IC602	F-26
IC603	D-9
IC604	B-10

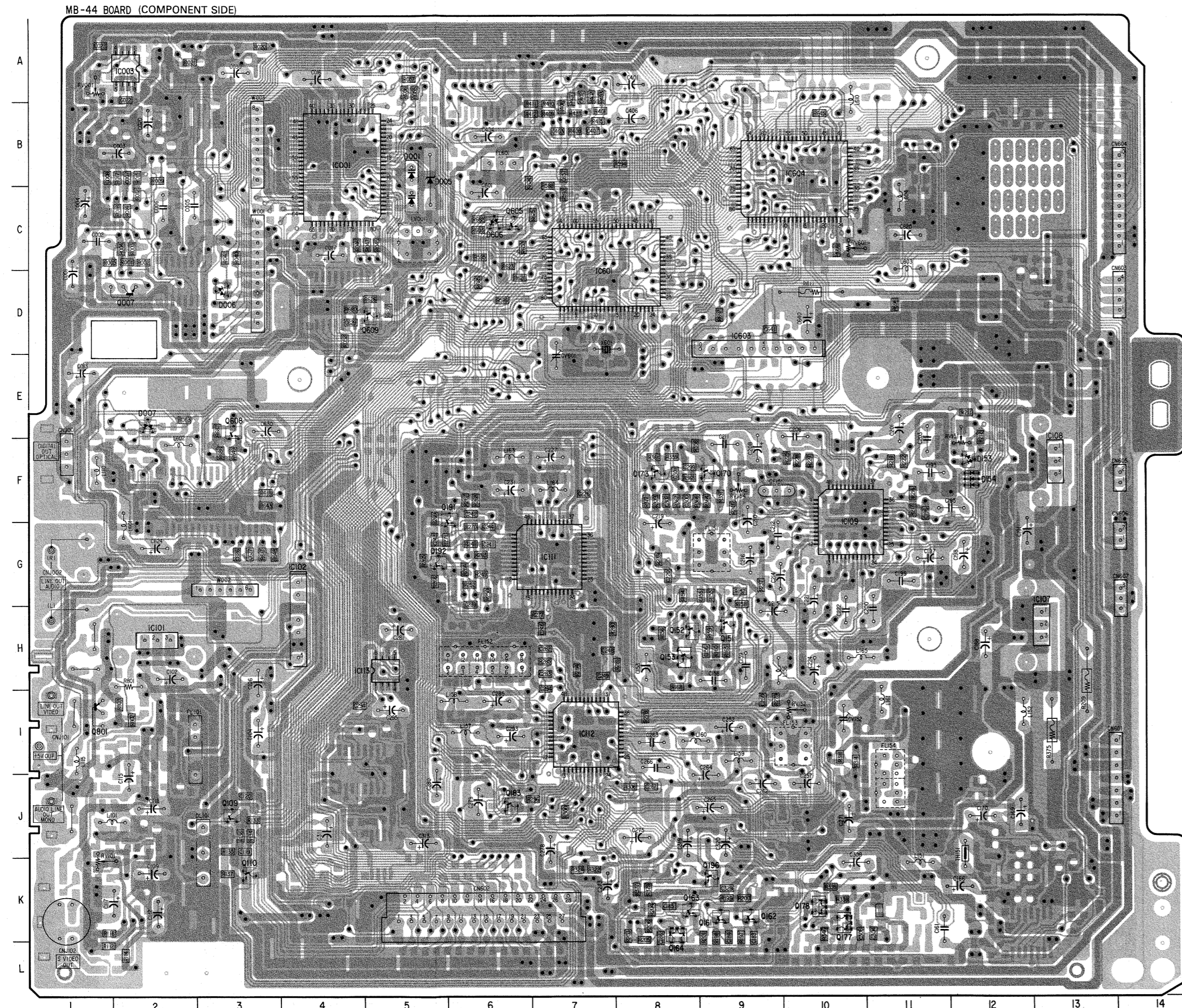
Q001	B-27
Q002	B-26
Q003	B-26
Q004	B-27
Q005	B-25
Q006	A-27
Q007	D-2
Q101	J-26
Q102	J-27
Q103	J-28
Q104	K-27
Q105	L-28
Q106	J-27
Q107	I-27
Q108	J-28
Q109	J-3
Q110	K-3
Q151	H-9
Q152	H-8
Q153	H-8
Q154	K-16
Q155	J-17
Q156	J-17
Q158	K-20
Q160	K-20
Q161	K-9
Q162	K-9
Q163	K-8
Q164	K-8
Q165	K-21
Q166	F-17
Q167	F-17
Q168	G-21
Q169	F-20
Q170	F-9
Q171	F-21
Q172	F-21
Q173	F-18
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-8
Q184	H-23
Q185	J-20



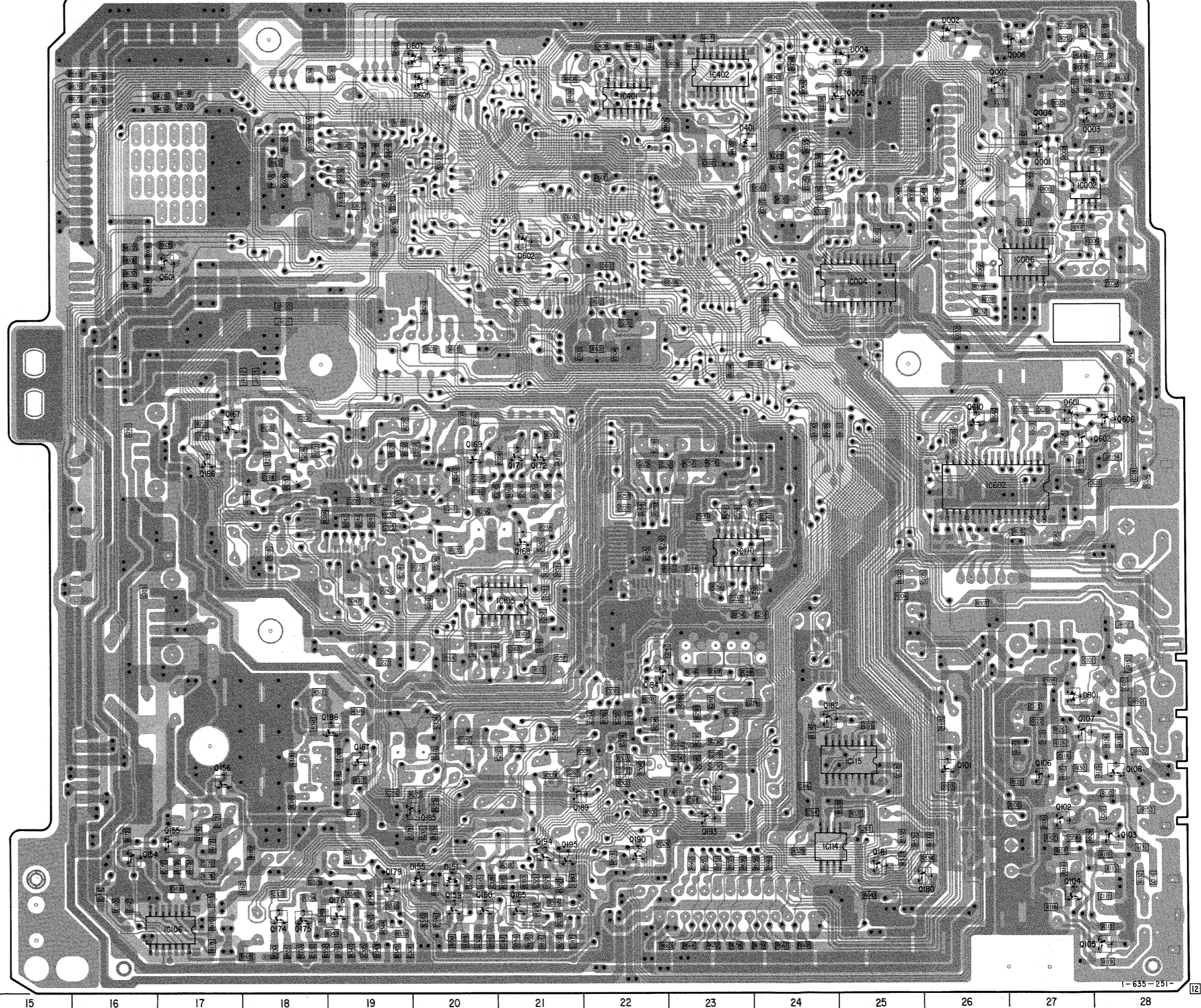


MB-44 BOARD

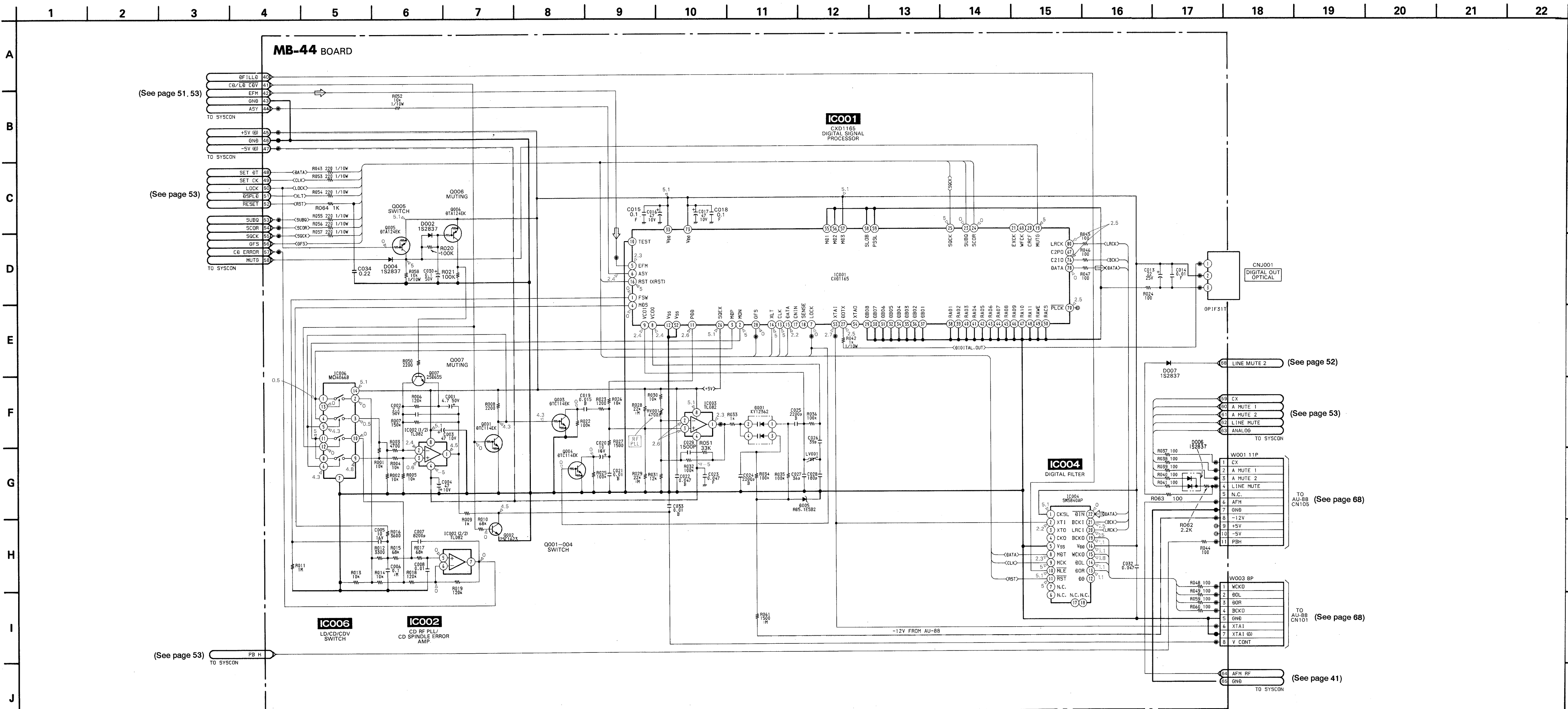
D001	B-5	Q186	I-19
D002	A-26	Q187	I-19
D004	A-26	Q189	J-21
D005	B-5	Q190	K-22
D006	D-3	Q191	F-6
D007	E-2	Q192	G-5
D151	K-20	Q193	J-23
D153	F-12	Q194	K-21
D154	F-12	Q195	K-21
D155	K-20	Q196	K-9
D401	B-23	Q601	D-17
D601	E-27	Q602	F-27
D602	C-21	Q605	C-6
D605	B-20	Q606	E-28
D606	C-6	Q608	E-3
D607	A-20	Q609	D-5
D801	I-27	Q810	E-26
		Q811	A-20
		Q801	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		
IC008	F-13		
IC009	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		
IC801	C-7		
IC802	F-26		
IC803	D-9		
IC804	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	I-27		
Q108	J-28		
Q109	J-3		
Q110	K-3		
Q151	H-9		
Q152	H-8		
Q153	H-9		
Q154	K-16		
Q155	J-17		
Q156	J-17		
Q158	K-20		
Q160	K-20		
Q161	K-9		
Q162	K-9		
Q163	K-8		
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-19		
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		
Q185	J-20		



MB-44 BOARD (CONDUCTOR SIDE)







	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇒	⇒⇒	⇒⇒⇒	⇒

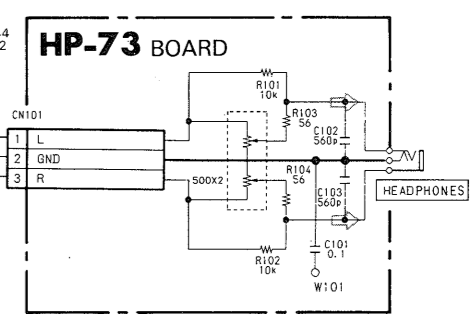
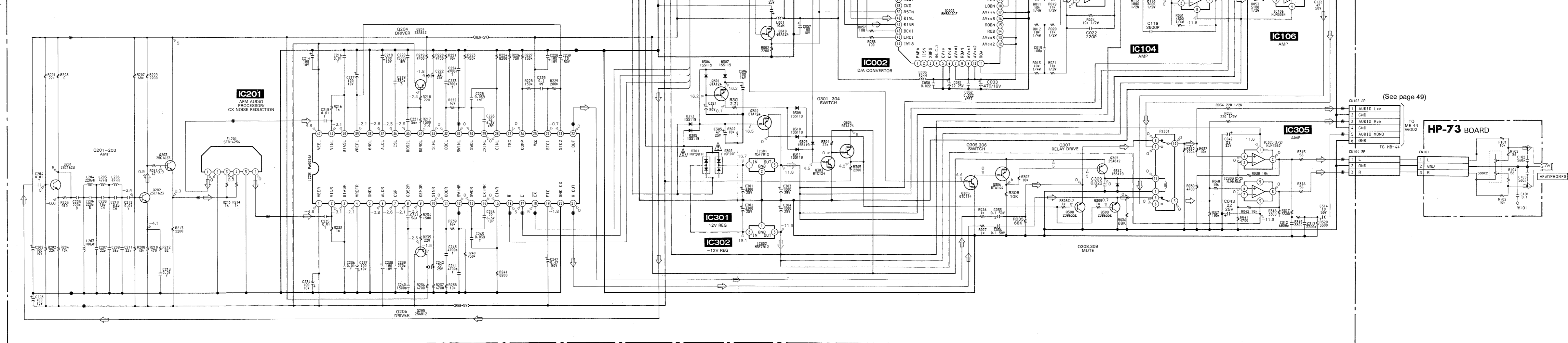


**AU-88 (AUDIO), HP-73 (HEADPHONES JACK) SCHEMATIC DIAGRAM**

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

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	→	→	→	→

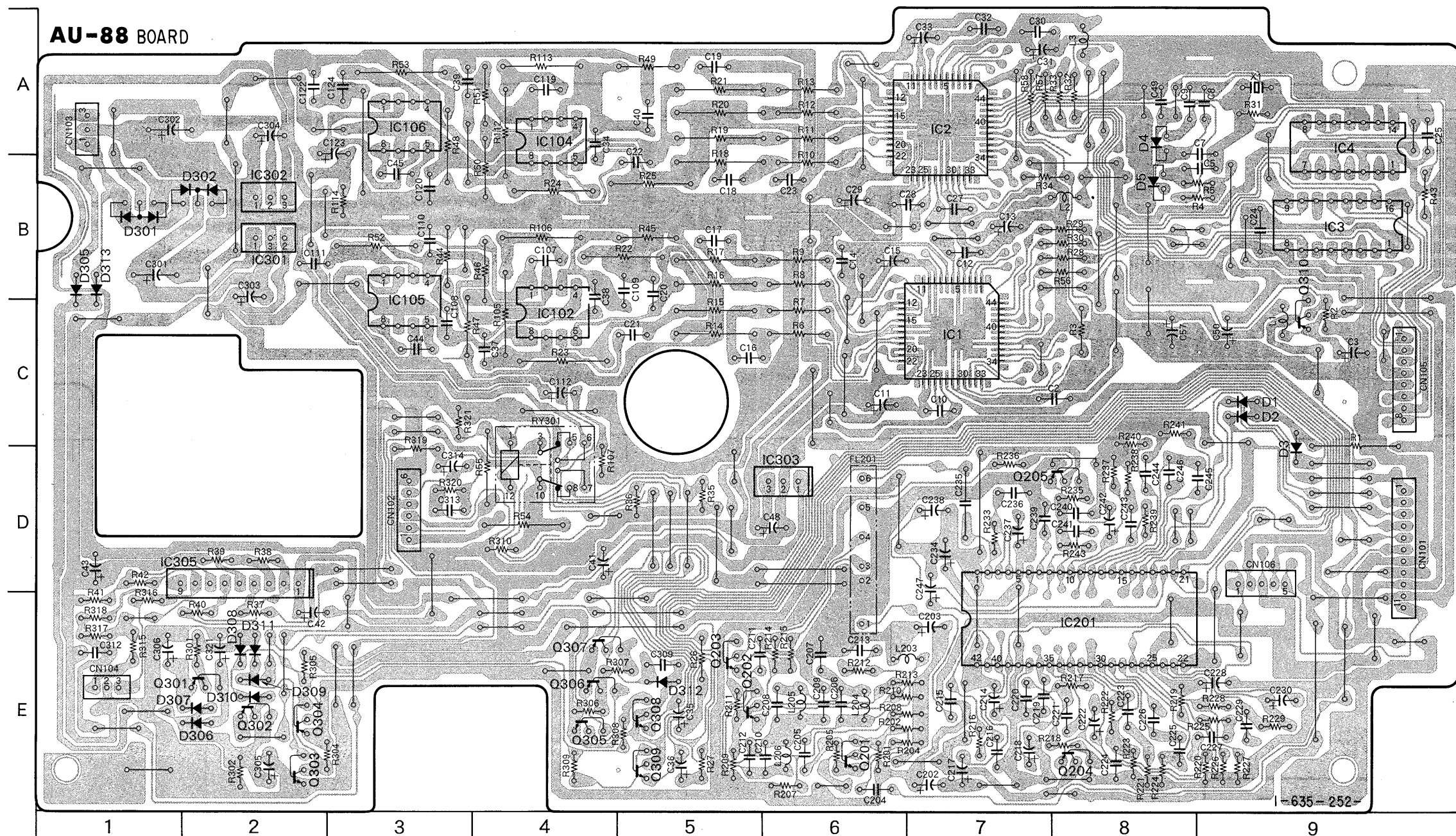
**AU-88 BOARD**



**AU-88 (AUDIO), HP-73 (HEADPHONES JACK) PRINTED WIRING BOARDS**

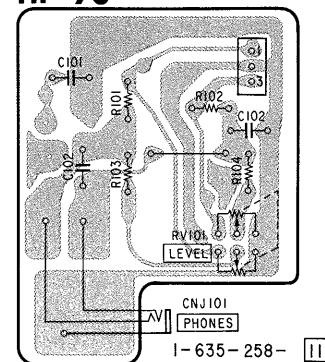
— Ref. No.: AU-88 Board; 4,000 Series, HP-73 Board; 5,000 series —

AU-88 BOARD



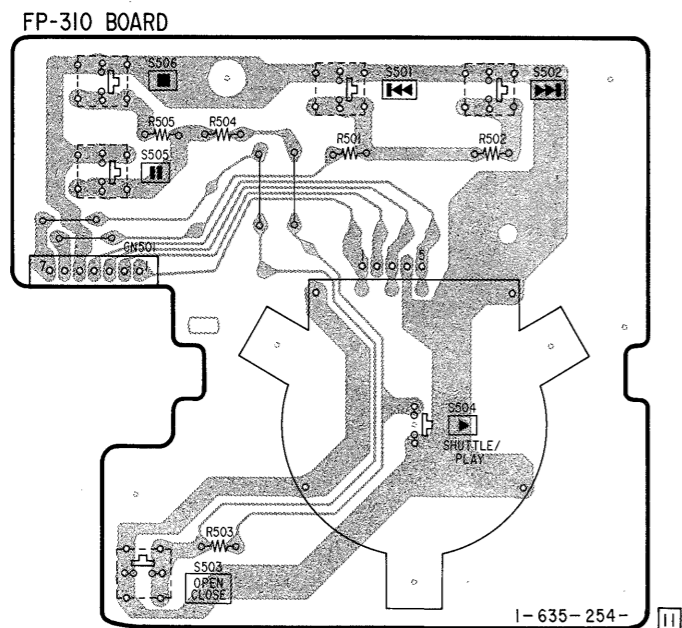
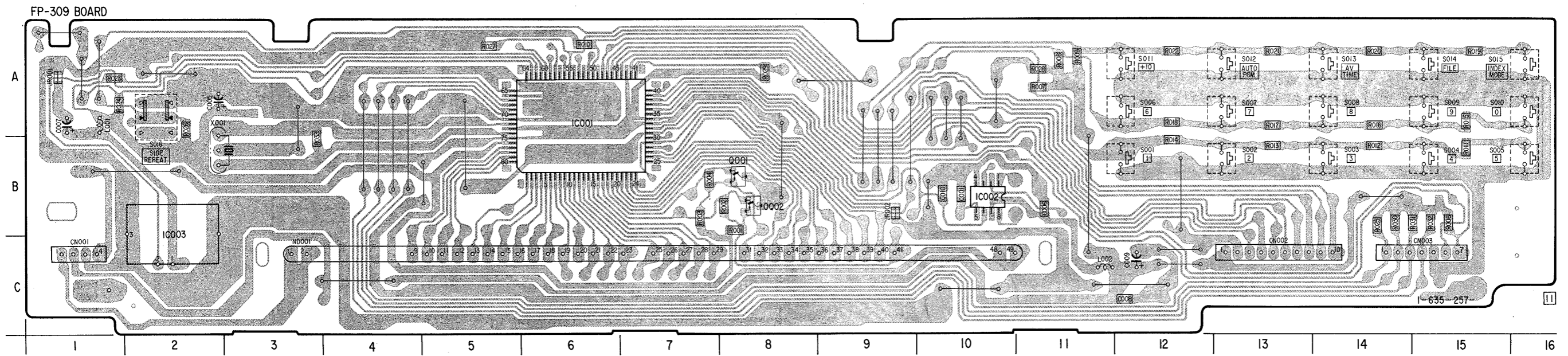
D001	C-9
D002	C-9
D003	C-9
D004	B-8
D005	B-8
D301	B-1
D302	B-2
D305	B-1
D306	E-2
D307	E-2
D308	E-2
D309	E-2
D310	E-2
D312	E-5
D313	B-1
IC001	C-7
IC002	A-7
IC003	B-9
IC004	A-10
IC102	C-4
IC104	A-4
IC105	B-3
IC106	A-3
IC201	E-8
IC301	B-2
IC302	B-2
IC303	D-6
IC305	D-2
Q201	E-6
Q202	E-5
Q203	E-5
Q204	E-8
Q205	D-8
Q301	E-2
Q302	E-2
Q303	E-2
Q304	E-2
Q305	E-4
Q306	E-4
Q307	E-4
Q308	E-5
Q309	E-5
Q310	C-9

**HP-73**



**FP-309 (MODE CONTROL), FP-310 (SHUTTLE, FUNCTION SWITCHES) PRINTED WIRING BOARDS**

- Ref. No.: FP-309 and FP-310 Boards; 6,000 series -



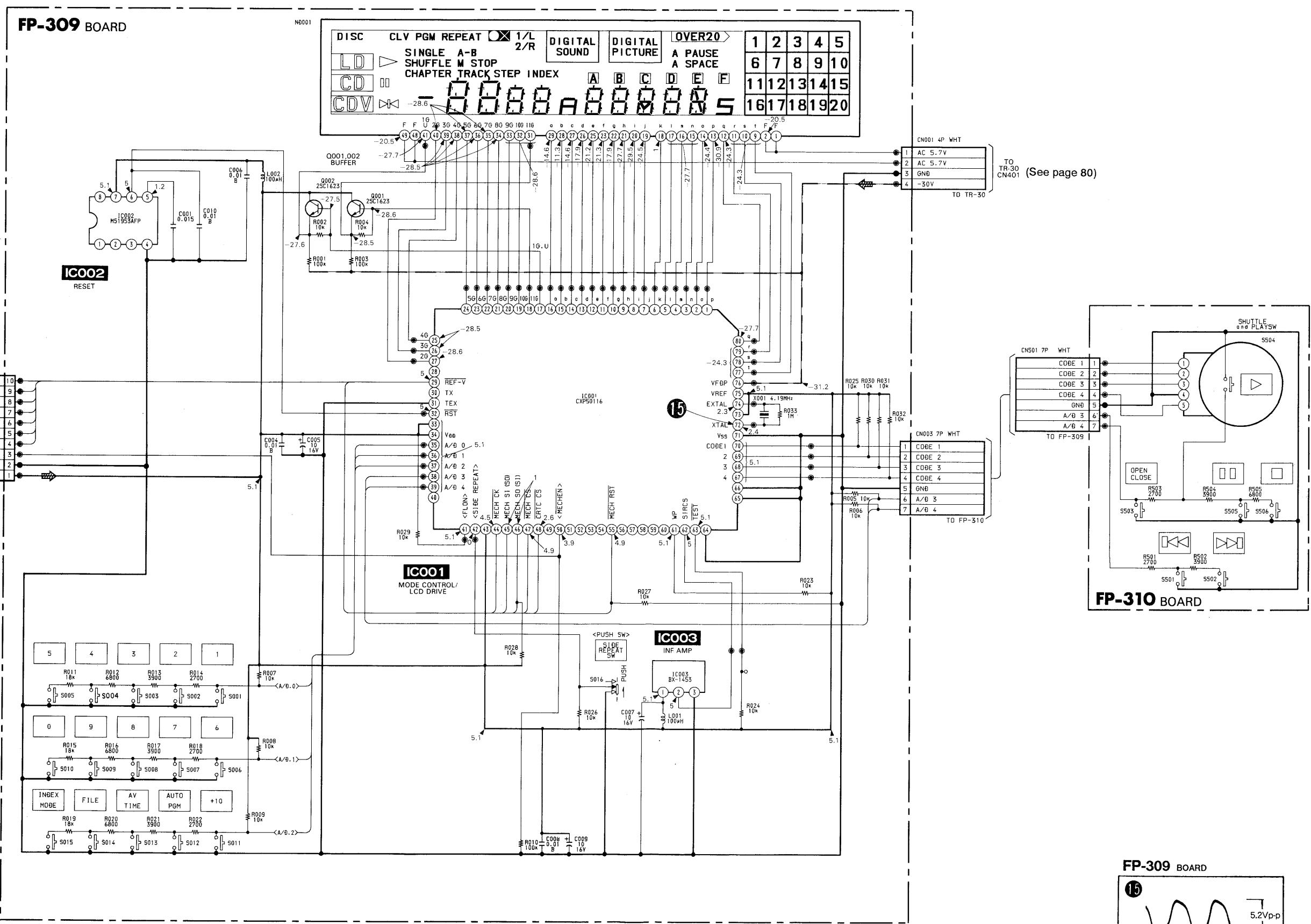


**FP-309 (MODE CONTROL), FP-310 (SHUTTLE, FUNCTION SWITCHES) SCHEMATIC DIAGRAM**

- Ref. No.: FP-309 and FP-310 Boards; 6,000 series -

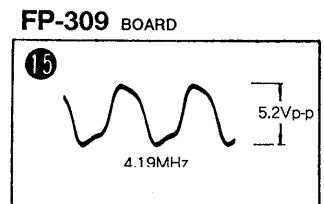
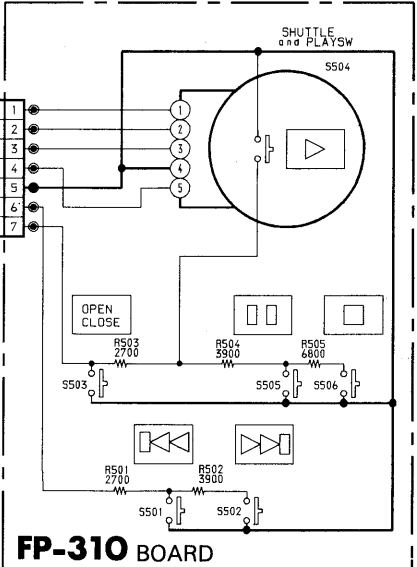
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A  
B  
C  
D  
E  
F  
G  
H  
I  
J



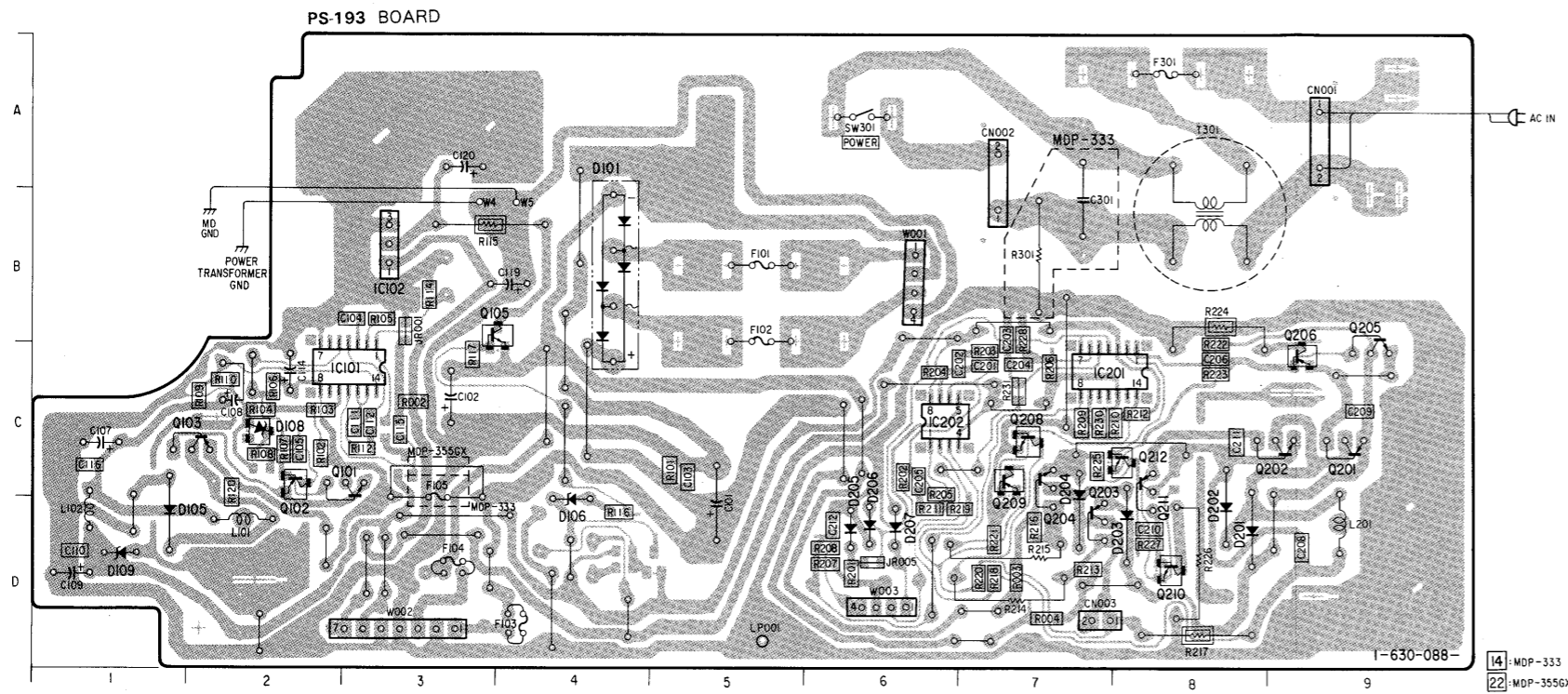
TO TR-30  
CN401 (See page 80)

TO MB-44  
CN604  
(See page 51)

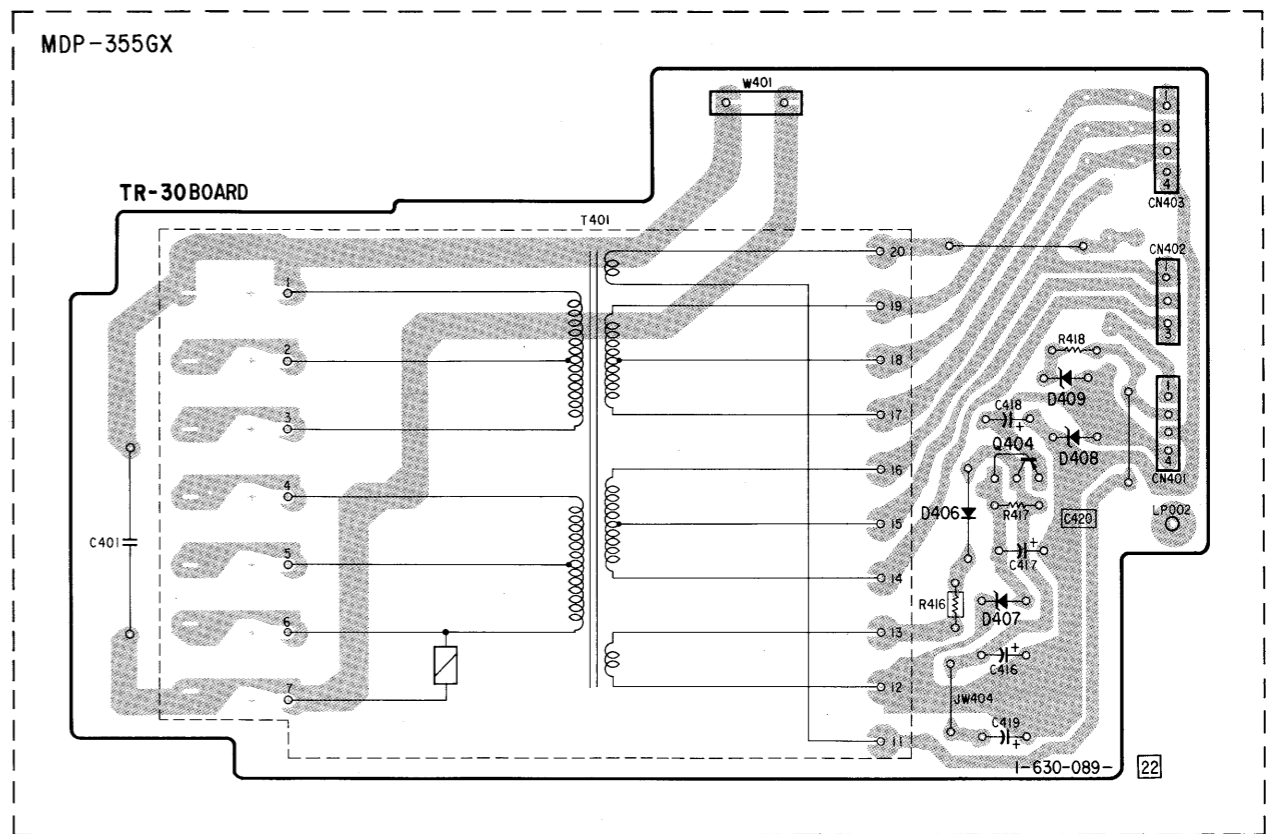
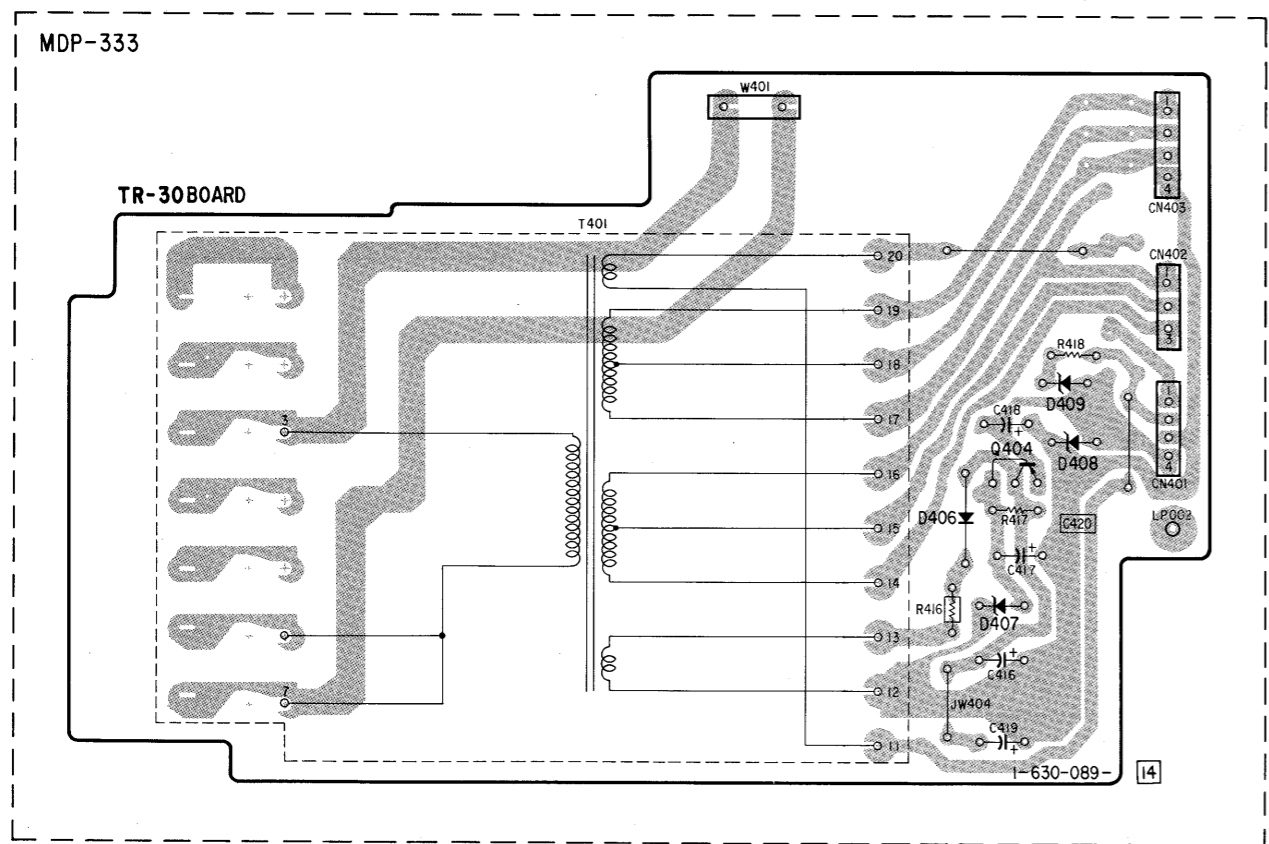
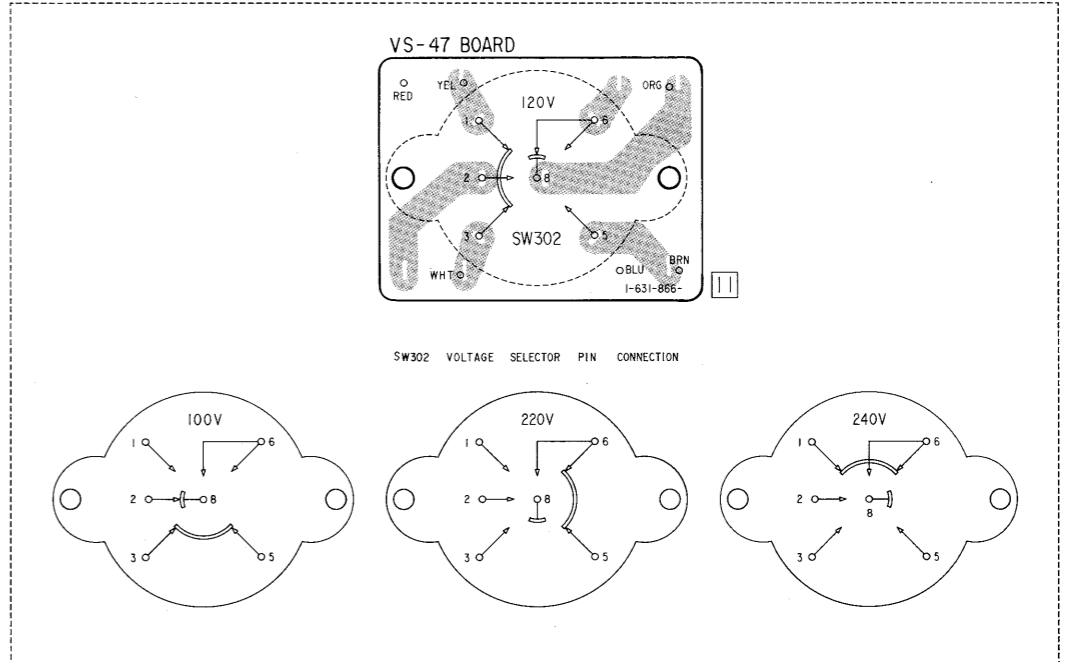


**PS-193 (POWER SUPPLY, SPINDLE SERVO), TR-30 (POWER TRANSFORMER), VS-47 (VOLTAGE SELECTOR) PRINTED WIRING BOARDS**

– Ref. No.: PS-193, TR-30, and VS-47 Boards; 7,000 series –

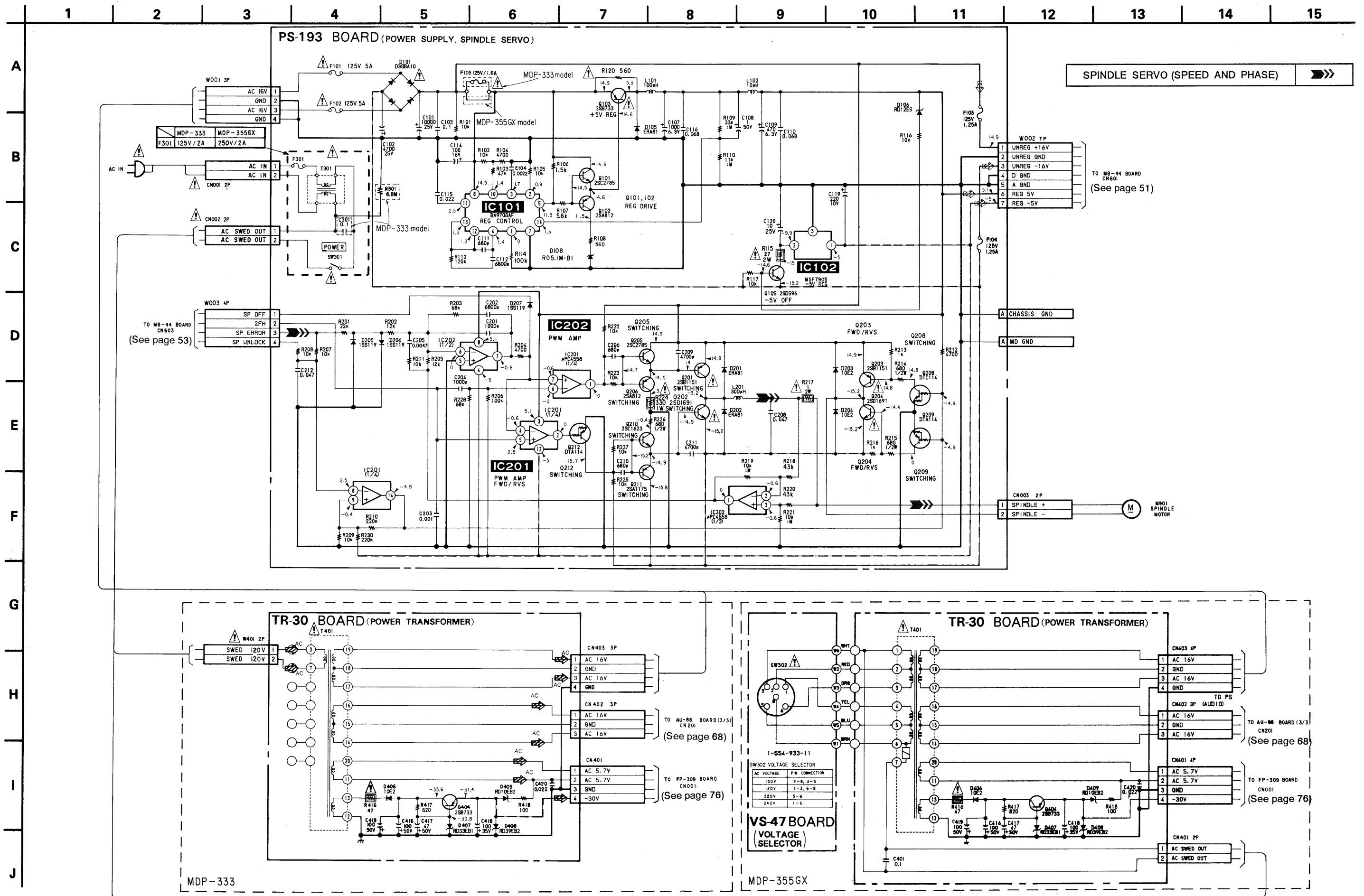


MDP-355GX model



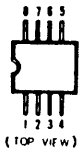
**PS-193 (POWER SUPPLY, SPINDLE SERVO), TR-30 (POWER TRANSFORMER), VS-47 (VOLTAGE SELECTOR) SCHEMATIC DIAGRAM**

— Ref. No.: PS-193, TR-30, and VS-47 Boards; 7,000 series —

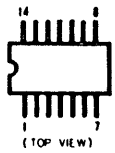


## 4-3. SEMICONDUCTORS

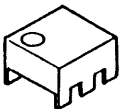
BA7131F  
LM324NS  
M51953AFP  
RC4558M  
TL082CPS  
μ PC4558G2



BA9700AF  
CXL5005M  
MC14066BF  
SN74HCU04NS  
TC74HC74F  
TC74HCU04AF  
μ PC324G2  
μ PC339G2



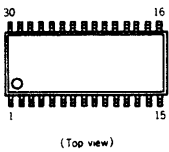
BX-1453



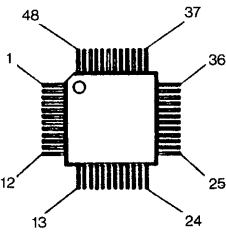
CX20197  
NJM5534D-D  
RC5532D-D



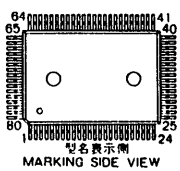
CXA1081M



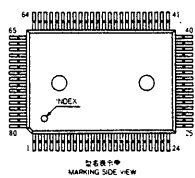
CXA1254Q  
CXA1255Q  
CXD1152Q



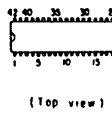
CXD1165Q



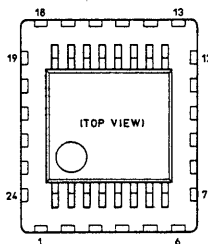
CXP50116-048Q



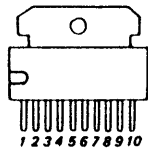
HA11529



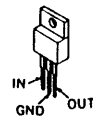
IMN10



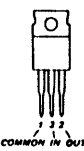
LA6510  
TA7291P



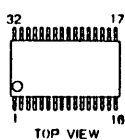
M5F7805  
M5F7812  
RC78M05FA  
RC78M09FA  
μ PC24M09HF



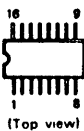
M5F7905  
M5F7912



M50455-196FP



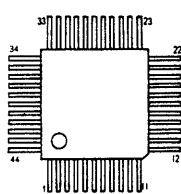
MC14052BF  
MC14053BF  
MSM72H032GS-K



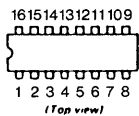
NJM4560S-D



SM5862CF



TC74HC175AP



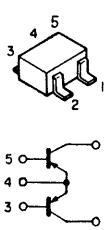
DTA114EK  
DTC114EK  
DTC124EK  
2SA1162  
2SC1623  
2SC1623-L7  
2SD596



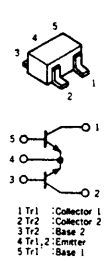
DTA124ES  
DTA144ES  
DTC114ES  
DTC124ES



FMS1



FMW1



PT-360FS



2SA1175-HFE  
2SC2785-HFE



2SB733-4  
2SB734-34



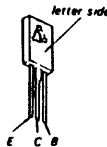
2SB740-3  
2SD655-E



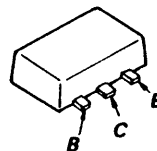
2SB1187-F  
2SD1585-K



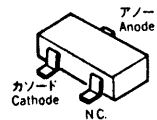
2SB1151-L  
2SD1691-K



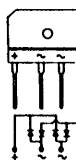
2SD999CLCK



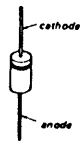
DA204U



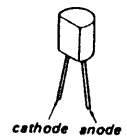
D3SBA10



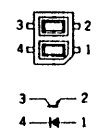
ERA81-006  
10E2



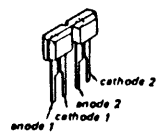
FC52M-5



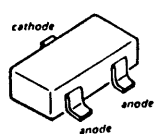
GP-2S09-B



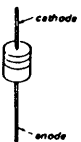
KV1236-D



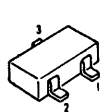
MA152WK



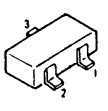
RD3.9ES-B2  
RD5.1ES-B2  
RD10ES-B2  
RD12ES-B2  
RD33ES-B2  
RD39ES-B2  
1SS119



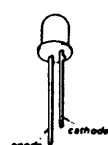
RD5.1M-B2



1S2836



GL-360







## SECTION 5 EXPLODED VIEWS

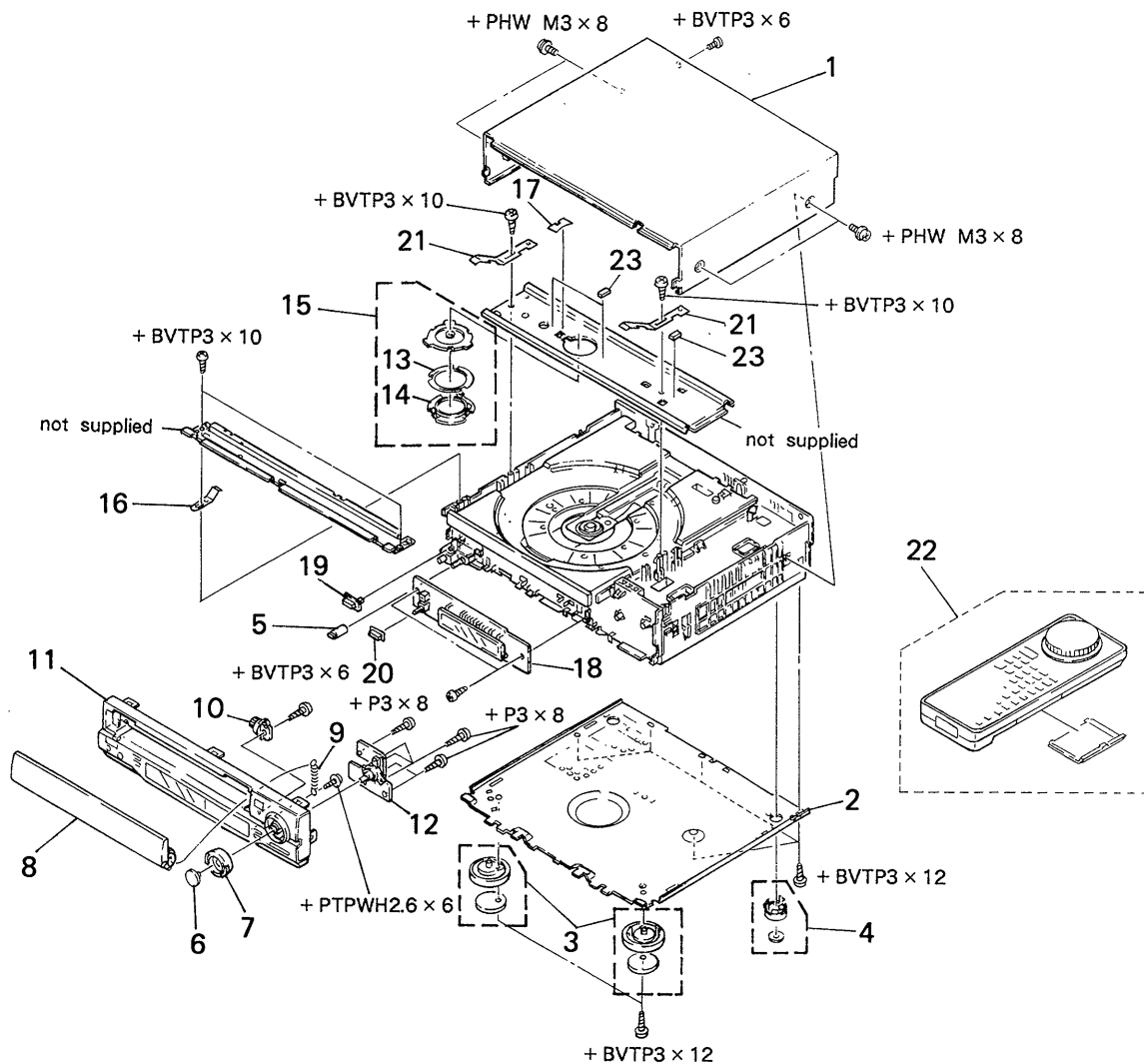
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

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

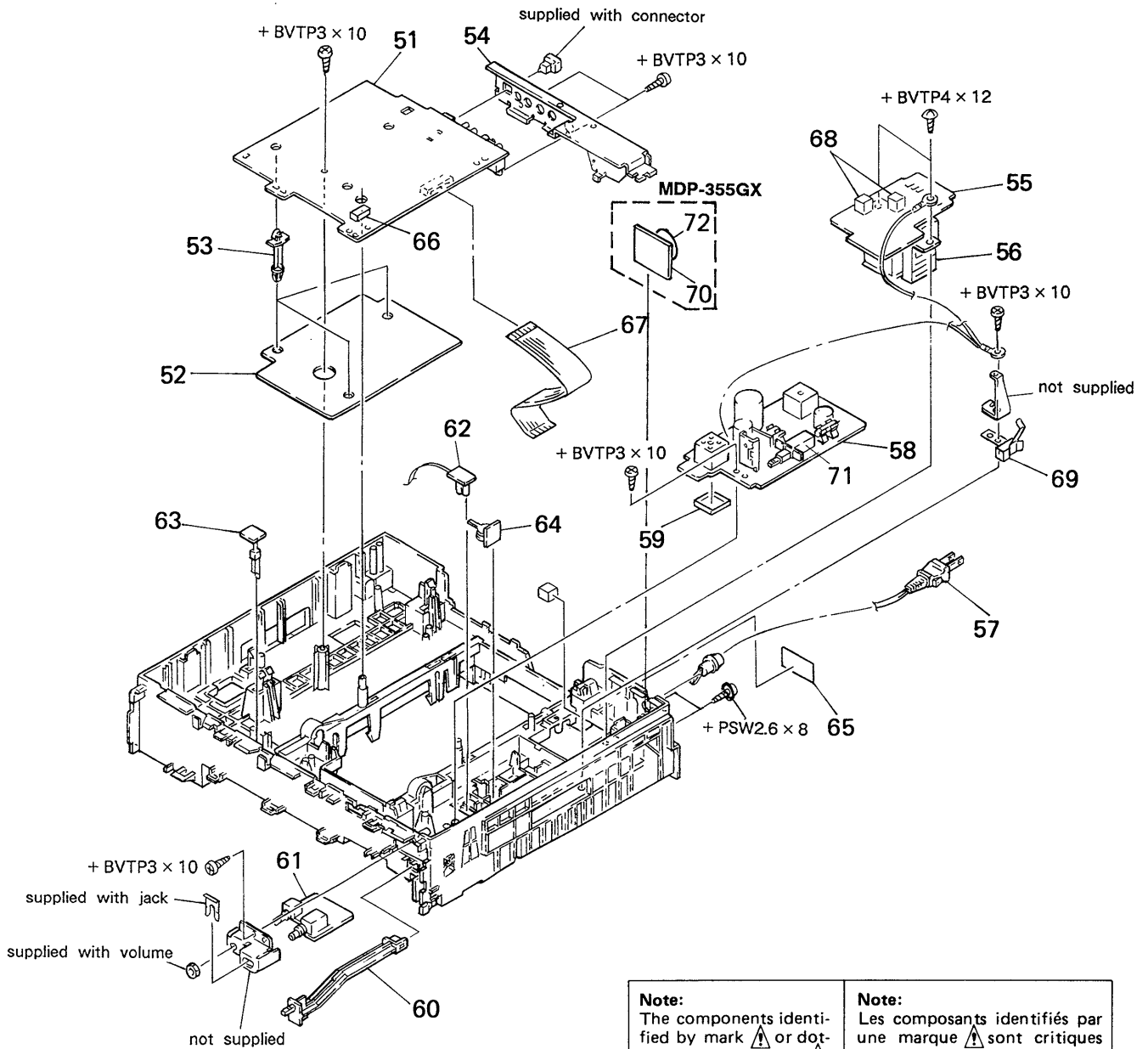
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.




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






No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*3-735-065-11	CASE, UPPER		12	*1-635-254-11	FP-310 BOARD	
2	*3-735-075-11	PLATE, BOTTOM		13	3-735-011-01	SPRING	
3	X-3735-056-1	FOOT ASSY		14	3-735-010-01	PLATE (1), PRESS	
4	X-3735-057-1	FOOT ASSY		15	X-3735-006-1	PLATE ASSY, PRESS	
5	4-922-531-61	KNOB (A TYPE), LOV		16	3-735-090-01	SPRING	
6	3-741-951-51	BUTTON, PLAY		17	*3-737-454-01	SHEET, HOLDER	
7	3-741-952-21	RING, SHUTTLE		18	*A-6421-468-A	FP-309 BOARD, COMPLETE	
8	X-3735-060-1	DOOR ASSY (MDP-355GX)		19	3-735-051-21	BUTTON, POWER	
	X-3735-064-1	DOOR ASSY (MDP-333)		20	3-741-898-01	KNOB, A/R	
9	3-720-312-11	SPRING (DOOR), TENSION		21	3-735-089-01	SPRING	
10	4-919-393-01	DAMPER		22	1-465-496-21	REMOTE COMMANDER (RMT-333)	
11	X-3735-065-2	PANEL ASSY, FRONT		23	*4-919-555-01	CUSHION	

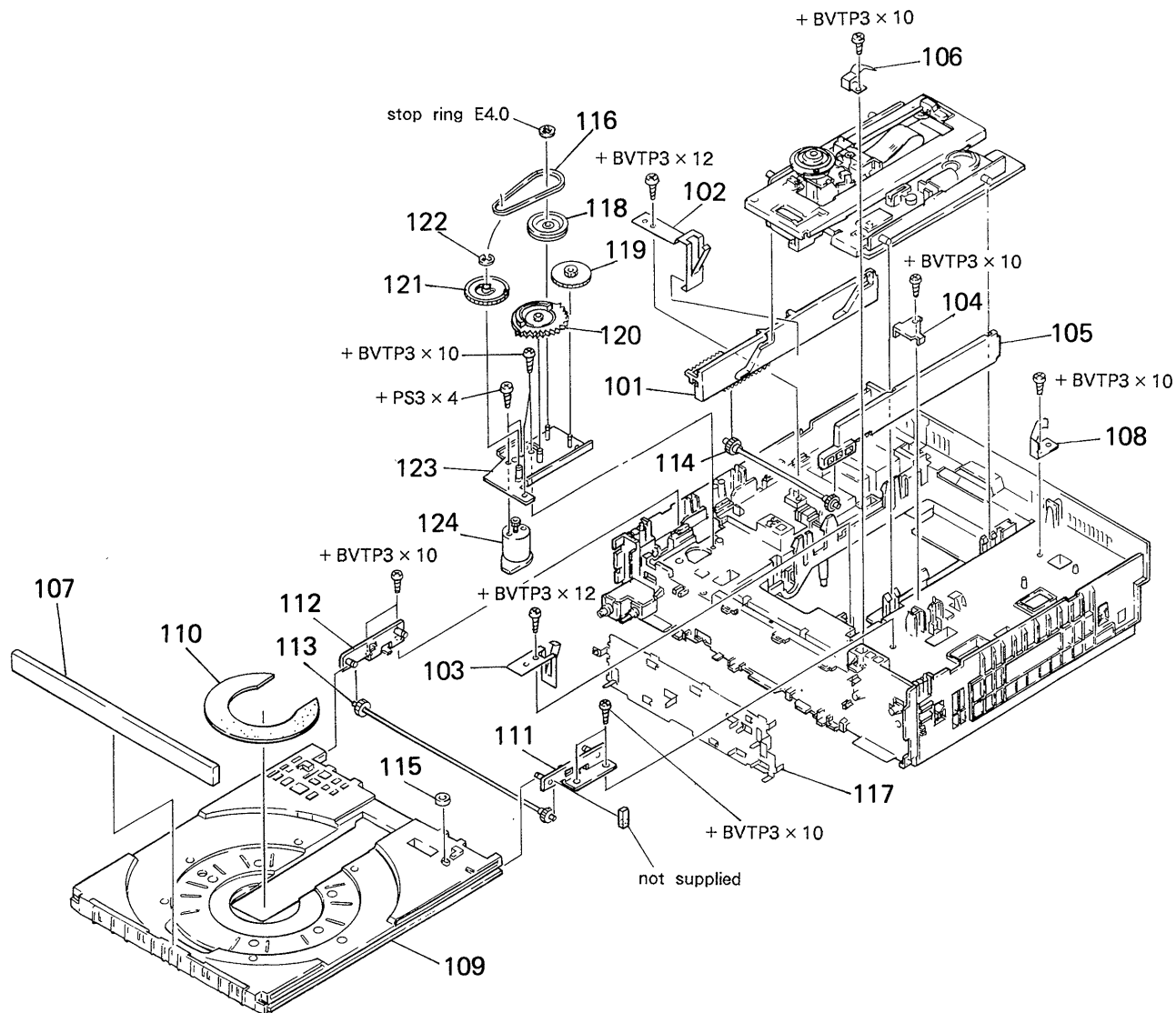
## 5-2. CHASSIS (1)



<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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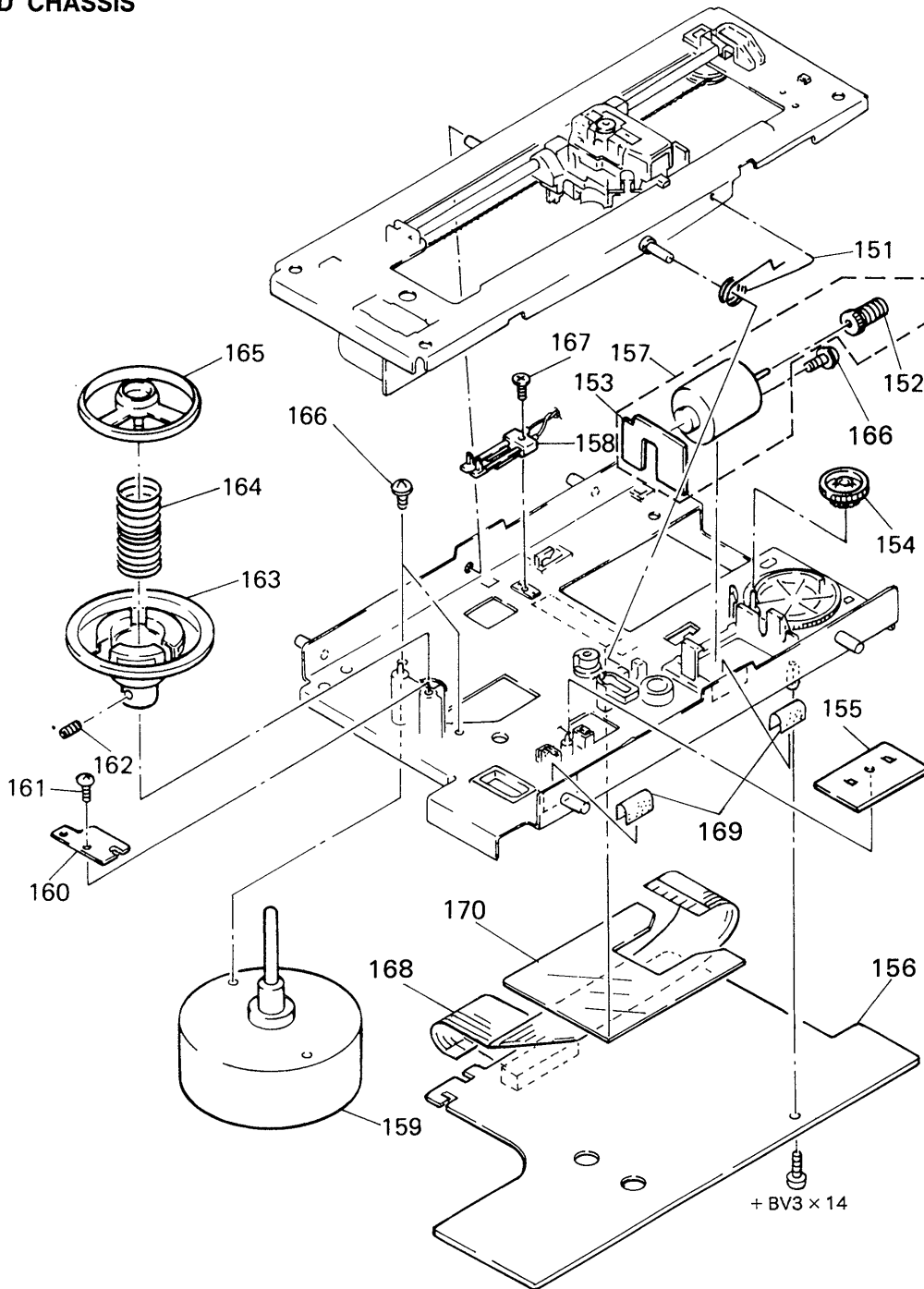
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	*A-6421-470-A	MB-44 BOARD, COMPLETE		61	*1-635-258-11	HP-73 BOARD	
52	*A-6421-466-A	AU-88 BOARD, COMPLETE		62	*1-635-259-11	LS-30 BOARD	
53	*3-703-353-12	SUPPORTER, PC BOARD		63	*1-635-260-11	SW-156 BOARD	
54	*3-746-503-11	PLATE, JACK		64	*1-635-261-11	SW-157 BOARD	
55	*1-630-089-11	TR-30 BOARD (MDP-333)		65	3-746-519-01	LABEL, MODEL NUMBER (UC)	
55	*1-630-089-22	TR-30 BOARD (MDP-355GX)		66	9-911-841-XX	CUSHION, RUBBER	
56	 1-449-804-11	TRANSFORMER, POWER		67	*1-575-813-12	CABLE, FLAT (FLEXIBLE) (28 CORE)	
57	 1-551-478-00	CORD, POWER (MDP-333)		68	9-911-843-XX	CUSHION	
	 1-559-627-41	CORD, POWER (MDP-355GX)		69	3-735-091-01	SPRING	
58	*A-6421-471-A	PS-193 (U47) BOARD, COMPLETE (MDP-333)		70	*1-631-866-11	VS-47 BOARD (MDP-355GX)	
58	*A-6421-473-A	PS-193 (E47) BOARD, COMPLETE (MDP-355GX)		71	1-570-156-11	SWITCH, PUSH (AC POWER) (MDP-355GX)	
59	X-3735-019-1	SHIELD ASSY, PS LID		72	1-554-933-11	SELECTOR, VOLTAGE (MDP-355GX)	
60	3-741-897-01	LEVER, POWER SW					

### 5-3. CHASSIS (2)



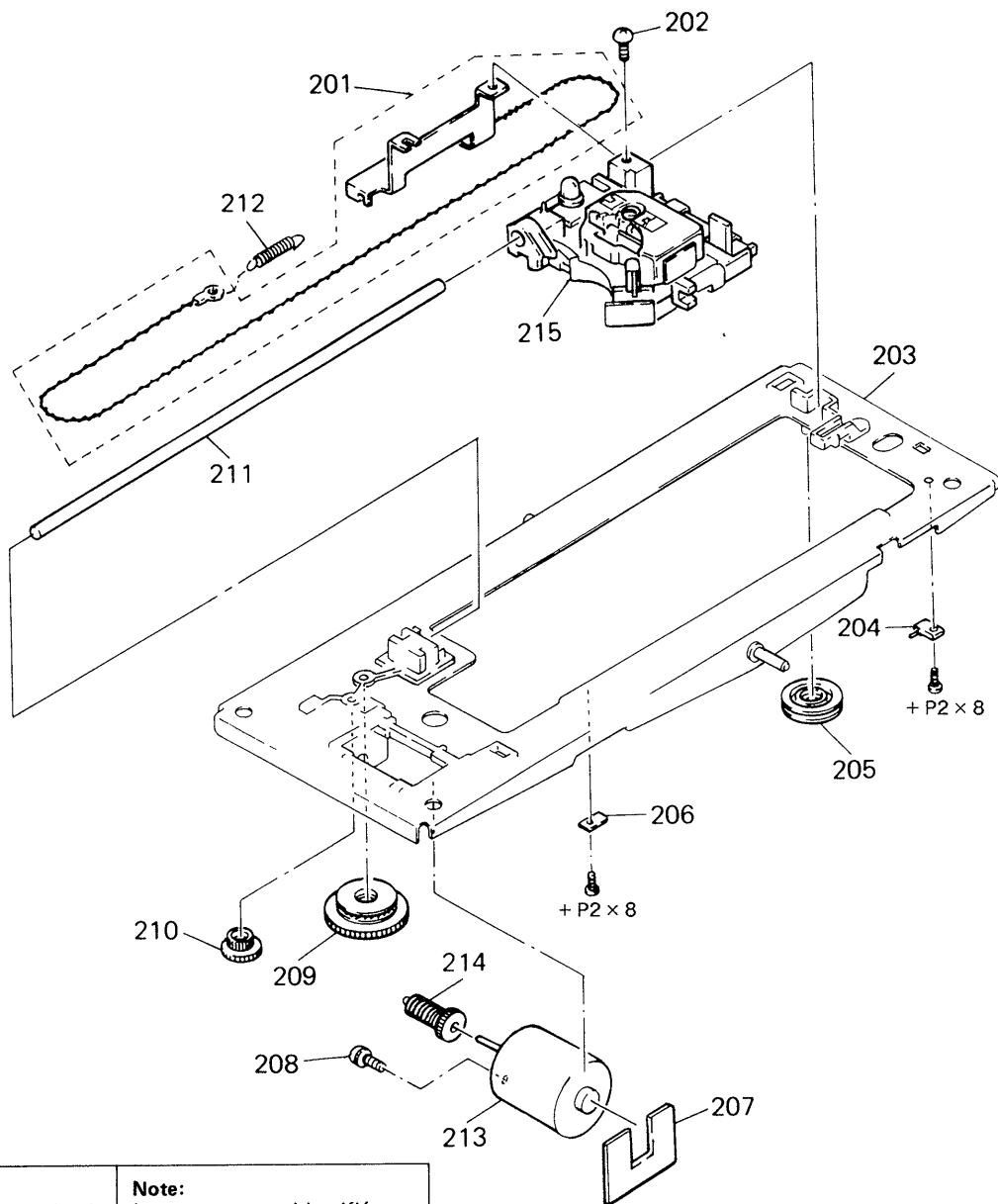
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	3-735-053-01	RACK (LEFT)		113	X-3735-069-1	GEAR ASSY, PHASE	
102	3-737-401-01	SPRING (1)		114	X-3735-008-1	GEAR ASSY, MD PHASE	
103	3-737-402-01	SPRING (2)		115	*4-914-248-01	STOPPER, RUBBER	
104	*3-737-415-01	RETAINER, RACK		116	3-545-601-XX	BELT, MIDWAY PULLEY	
105	3-735-052-01	RACK (RIGHT)		117	*A-6415-365-A	HOLDER ASSY, PC BOARD	
106	3-737-448-01	SPRING, LEAF		118	3-735-036-01	PULLEY (A)	
107	3-746-506-01	COVER, TRAY		119	3-735-037-01	GEAR, MIDWAY	
108	3-746-525-01	SPRING, TRAY		120	3-735-056-01	CAM, DRIVING	
109	X-3720-452-1	TRAY ASSY (MDP-333)		121	3-735-035-01	GEAR, TRAY	
	X-3735-032-2	TRAY ASSY (MDP-355GX)		122	3-669-595-00	WASHER (2), STOPPER	
110	3-735-039-03	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), LOADING (M904)	
112	X-3735-071-1	GUIDE ASSY (L), TRAY					




## 5-4. MD CHASSIS




No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	3-735-021-01	SPRING, TORSION		161	3-719-845-11	SCREW (B2X8), TAPPING	
152	3-735-038-01	GEAR, WORM		162	3-701-506-01	SET SCREW, DOUBLE POINT 3X4	
153	*1-631-095-11	MT-30 BOARD		163	X-3735-003-1	TURNTABLE ASSY	
154	3-735-025-01	GEAR, SKEW		164	3-735-026-01	SPRING, COMPRESSION	
155	*1-635-255-11	CK-44 BOARD		165	X-3735-004-1	GUIDE ASSY, CENTER	
156	*A-6421-465-A	SV-63 BOARD, COMPLETE		166	4-606-833-01	SCREW (3X5), + PSW	
157	A-6415-290-A	MOTOR BLOCK ASSY, SKEW (M903)	152, 153	167	3-719-845-11	SCREW (B2X8), TAPPING	
158	1-554-468-00	SWITCH, LEAF (SLED IN LIMIT LD/CD)		168	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
159	1-541-776-11	MOTOR, LD SPINDLE (M901)		169	*3-737-413-01	SHEET, TEFLON	
160	*1-635-256-11	FG-41 BOARD		170	*3-735-099-01	SHEET, FLEXIBLE RETAINER	

### 5-5. OPTICAL BLOCK



<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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No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
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	1-570-771-21	SWITCH (SLED OUT LIMIT) (S902)		212	3-672-430-00	SPRING, TENSION	
205	3-735-017-01	PULLEY, RETURN		213	1-541-659-11	MOTOR, DC (SLED) (M902)	
206	1-571-435-11	SWITCH (SLED IN LIMIT) (S901)		214	3-735-038-01	GEAR, WORM	
207	*1-630-097-11	MT-28 BOARD		215	 8-848-138-11	DEVICE, OPTICAL KHS-130A	
208	3-899-248-01	SCREW (M3X6)					

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 spécifié.

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.
- 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.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- SEMICONDUCTORS  
In each case, U:  $\mu$ , for example:  
UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,  
UPB...:  $\mu$ PB..., UPC...:  $\mu$ PC...,  
UPD...:  $\mu$ PD...
- CAPACITORS  
MF:  $\mu$ F, PF:  $\mu$ MF
- COILS  
MMH: mH, UH:  $\mu$ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*1-630-089-11	TR-30 BOARD (MDP-333)	*****		C011	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
*1-630-089-22	TR-30 BOARD (MDP-355GX)	*****		C012	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
<u>CAPACITOR</u>				C013	1-124-584-00	ELECT 100MF	20% 10V
C401	$\Delta$ 1-136-472-11	FILM 0.1MH 20% 250V (MDP-355GX)		C014	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C416	1-124-122-11	ELECT 100MF 20% 50V		C015	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V
C417	1-124-910-11	ELECT 47MF 20% 50V		C019	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C418	1-124-122-11	ELECT 100MF 20% 35V		C020	1-124-465-00	ELECT 0.47MF	20% 50V
C419	1-124-122-11	ELECT 100MF 20% 50V		C021	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C420	1-163-033-00	CERAMIC CHIP 0.022MF	50V	C101	1-124-604-00	ELECT 330MF	20% 10V
<u>CONNECTOR</u>				C102	1-124-604-00	ELECT 330MF	20% 10V
CN401	1-506-483-21	PIN, CONNECTOR 4P		C103	1-124-242-00	ELECT 33MF	20% 25V
CN402	*1-564-028-00	PIN, CONNECTOR 3P		C104	1-124-242-00	ELECT 33MF	20% 25V
CN403	*1-564-029-00	PIN, CONNECTOR 4P		C105	1-163-035-00	CERAMIC CHIP 0.047MF	50V
<u>DIODE</u>				C106	1-163-035-00	CERAMIC CHIP 0.047MF	50V
D406	8-719-200-02	DIODE 10E2		C107	1-163-035-00	CERAMIC CHIP 0.047MF	50V
D407	8-719-110-78	DIODE RD33ES-B1		C108	1-163-035-00	CERAMIC CHIP 0.047MF	50V
D408	8-719-110-88	DIODE RD39ES-B2		C109	1-163-038-00	CERAMIC CHIP 0.1MF	25V
D409	8-719-110-17	DIODE RD10ES-B2		C110	1-163-038-00	CERAMIC CHIP 0.1MF	25V
<u>LEAD PIN</u>				C111	1-126-160-11	ELECT 1MF	20% 50V
LP002	4-352-844-01	PIN, LEAD, COATING		C112	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
<u>TRANSISTOR</u>				C113	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
Q404	8-729-113-33	TRANSISTOR 2SB733-4		C114	1-126-160-11	ELECT 1MF	20% 50V
<u>RESISTOR</u>				C115	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
R416	$\Delta$ 1-249-401-11	CARBON 47 5% 1/4W F		C116	1-126-160-11	ELECT 1MF	20% 50V
R417	1-249-416-11	CARBON 820 5% 1/4W		C117	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
R418	1-249-405-11	CARBON 100 5% 1/4W		C118	1-163-014-00	CERAMIC CHIP 0.0027MF	10% 50V
<u>TRANSFORMER</u>				C119	1-163-038-00	CERAMIC CHIP 0.1MF	25V
T401	$\Delta$ 1-449-804-11	TRANSFORMER, POWER		C120	1-163-038-00	CERAMIC CHIP 0.1MF	25V
*****				C121	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
*A-6421-465-A	SV-63 BOARD, COMPLETE	*****		C122	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
3-746-545-01	PLATE (1.6), GROUND, MOUNT			C123	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
<u>CAPACITOR</u>				C124	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C001	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C125	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C003	1-163-093-00	CERAMIC CHIP 10PF	5%	C126	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C005	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C127	1-124-499-11	ELECT 1MF	20% 50V
C006	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C128	1-126-320-11	ELECT 10MF	20% 16V
C009	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C129	1-136-742-11	FILM 0.1MF	5% 50V
C010	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C130	1-126-320-11	ELECT 10MF	20% 16V
*****				C131	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C011	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C132	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C012	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C135	1-163-024-00	CERAMIC CHIP 0.018MF	10% 50V
C013	1-124-584-00	ELECT 100MF	20% 10V	C136	1-136-744-11	FILM 0.22MF	5% 50V
C014	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C137	1-163-022-00	CERAMIC CHIP 0.012MF	10% 50V
C015	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V	C138	1-163-022-00	CERAMIC CHIP 0.012MF	10% 50V
C019	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C139	1-124-285-91	ELECT 22MF	20% 16V
C020	1-124-465-00	ELECT 0.47MF	20% 50V	C140	1-124-279-11	ELECT 3.3MF	20% 25V
C021	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C141	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C101	1-124-604-00	ELECT 330MF	20% 10V	C144	1-163-016-00	CERAMIC CHIP 0.0039MF	10% 50V
C102	1-124-604-00	ELECT 330MF	20% 10V	C145	1-163-024-00	CERAMIC CHIP 0.018MF	10% 50V
C103	1-124-242-00	ELECT 33MF	20% 25V	C146	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C104	1-124-242-00	ELECT 33MF	20% 25V	C147	1-136-744-11	FILM 0.22MF	5% 50V
C105	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C149	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C106	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C150	1-124-589-11	ELECT 47MF	20% 16V
C107	1-163-035-00	CERAMIC CHIP 0.047MF	50V				

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C151	1-124-477-11	ELECT 47MF	20% 16V	JR121	1-216-296-00	METAL GLAZE 0 5%	1/8W
C152	1-163-035-00	CERAMIC CHIP 0.047MF	50V	JR122	1-216-296-00	METAL GLAZE 0 5%	1/8W
C153	1-163-035-00	CERAMIC CHIP 0.047MF	50V	JR123	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>CONNECTOR</u>				JR124	1-216-296-00	METAL GLAZE 0 5%	1/8W
CN101	1-566-939-11	CONNECTOR, F.P.C 24P		JR125	1-216-296-00	METAL GLAZE 0 5%	1/8W
CN102	1-563-493-11	CONNECTOR, F.P.C 28P		JR126	1-216-296-00	METAL GLAZE 0 5%	1/8W
CN103	1-506-471-11	PIN, CONNECTOR 6P		JR127	1-216-295-00	METAL GLAZE 0 5%	1/10W
CN104	1-506-468-11	PIN, CONNECTOR 3P		JR128	1-216-296-00	METAL GLAZE 0 5%	1/8W
CN105	*1-566-969-11	HOUSING, CONNECTOR(PC BOARD)7P		JR129	1-216-296-00	METAL GLAZE 0 5%	1/8W
CN106	*1-566-968-11	HOUSING, CONNECTOR(PC BOARD)6P		JR130	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>DIODE</u>				JR132	1-216-296-00	METAL GLAZE 0 5%	1/8W
D001	8-719-911-19	DIODE 1SS119		JR133	1-216-296-00	METAL GLAZE 0 5%	1/8W
D101	8-719-911-19	DIODE 1SS119		JR134	1-216-296-00	METAL GLAZE 0 5%	1/8W
D102	8-719-109-72	DIODE RD3.9ESB2		JR135	1-216-296-00	METAL GLAZE 0 5%	1/8W
D103	8-719-911-19	DIODE 1SS119		JR136	1-216-296-00	METAL GLAZE 0 5%	1/8W
D104	8-719-911-19	DIODE 1SS119		JR137	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>FUSE</u>				JR138	1-216-296-00	METAL GLAZE 0 5%	1/8W
F101	<u>A</u> .1-532-960-11	MICRO FUSE 1.25A 125V		JR139	1-216-296-00	METAL GLAZE 0 5%	1/8W
F102	<u>A</u> .1-532-960-11	MICRO FUSE 1.25A 125V		JR140	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>FILTER</u>				JR141	1-216-296-00	METAL GLAZE 0 5%	1/8W
FLO01	1-235-922-11	FILTER, LOW PASS (1.7MHz)		JR142	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>IC</u>				JR143	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC001	8-752-030-93	IC CXA1081M		JR144	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC002	8-759-603-24	IC CX20197		JR145	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC101	8-759-321-40	IC HA11529		JR146	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC102	<u>A</u> .8-759-822-38	IC LA6510		JR147	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC103	8-759-981-92	IC RC4558M		JR148	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC104	8-759-981-92	IC RC4558M		JR149	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC105	8-759-981-92	IC RC4558M		JR150	1-216-296-00	METAL GLAZE 0 5%	1/8W
IC106	8-759-009-07	IC MC140538F		JR153	1-216-296-00	METAL GLAZE 0 5%	1/8W
<u>JUMPER RESISTOR</u>				JR154	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR102	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR155	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR103	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR156	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR104	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR158	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR105	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR159	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR106	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR160	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR107	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR161	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR111	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR162	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR112	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR164	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR113	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR166	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR114	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR170	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR115	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR171	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR116	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR172	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR117	1-216-295-00	METAL GLAZE 0 5%	1/10W	JR173	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR118	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR174	1-216-296-00	METAL GLAZE 0 5%	1/8W
JR119	1-216-296-00	METAL GLAZE 0 5%	1/8W	JR175	1-216-295-00	METAL GLAZE 0 5%	1/10W
				JR176	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR177	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR178	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR179	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR180	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR181	1-216-296-00	METAL GLAZE 0 5%	1/8W
				JR182	1-216-296-00	METAL GLAZE 0 5%	1/8W



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


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

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
JR183	1-216-295-00	METAL GLAZE 0 5%	1/10W	Q106	8-729-100-66	TRANSISTOR 2SC1623	
JR184	1-216-296-00	METAL GLAZE 0 5%	1/8W	Q107	8-729-901-00	TRANSISTOR DTC124EK	
JR185	1-216-296-00	METAL GLAZE 0 5%	1/8W	Q108	8-729-100-66	TRANSISTOR 2SC1623	
JR186	1-216-296-00	METAL GLAZE 0 5%	1/8W	Q109	8-729-216-22	TRANSISTOR 2SA1162	
JR187	1-216-296-00	METAL GLAZE 0 5%	1/8W				
				<u>RESISTOR</u>			
JR188	1-216-296-00	METAL GLAZE 0 5%	1/8W	R001	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR189	1-216-295-00	METAL GLAZE 0 5%	1/10W	R002	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
JR191	1-216-296-00	METAL GLAZE 0 5%	1/8W	R003	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
JR192	1-216-296-00	METAL GLAZE 0 5%	1/8W	R004	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
JR193	1-216-296-00	METAL GLAZE 0 5%	1/8W	R005	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR194	1-216-296-00	METAL GLAZE 0 5%	1/8W	R006	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR195	1-216-295-00	METAL GLAZE 0 5%	1/10W	R007	1-216-023-00	METAL GLAZE 82 5%	1/10W
JR196	1-216-296-00	METAL GLAZE 0 5%	1/8W	R008	1-216-043-00	METAL GLAZE 560 5%	1/10W
JR197	1-216-296-00	METAL GLAZE 0 5%	1/8W	R009	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR198	1-216-296-00	METAL GLAZE 0 5%	1/8W	R010	1-216-095-00	METAL GLAZE 82K 5%	1/10W
JR199	1-216-296-00	METAL GLAZE 0 5%	1/8W	R011	1-216-081-00	METAL GLAZE 22K 5%	1/10W
JR200	1-216-296-00	METAL GLAZE 0 5%	1/8W	R012	1-249-394-11	CARBON 12 5%	1/4W
JR201	1-216-296-00	METAL GLAZE 0 5%	1/8W	R013	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR202	1-216-296-00	METAL GLAZE 0 5%	1/8W	R014	1-216-097-00	METAL GLAZE 100K 5%	1/10W
JR203	1-216-296-00	METAL GLAZE 0 5%	1/8W	R015	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR204	1-216-296-00	METAL GLAZE 0 5%	1/8W	R016	1-216-101-00	METAL GLAZE 150K 5%	1/10W
JR205	1-216-295-00	METAL GLAZE 0 5%	1/10W	R017	1-216-041-00	METAL GLAZE 470 5%	1/10W
JR206	1-216-295-00	METAL GLAZE 0 5%	1/10W	R018	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
JR207	1-216-296-00	METAL GLAZE 0 5%	1/8W	R020	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR208	1-216-296-00	METAL GLAZE 0 5%	1/8W	R021	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
JR209	1-216-295-00	METAL GLAZE 0 5%	1/10W	R022	1-216-081-00	METAL GLAZE 22K 5%	1/10W
JR210	1-216-295-00	METAL GLAZE 0 5%	1/10W	R023	1-249-394-11	CARBON 12 5%	1/4W
JR211	1-216-296-00	METAL GLAZE 0 5%	1/8W	R101	△ 1-216-373-11	METAL OXIDE 2.2 5%	2W F
JR212	1-216-296-00	METAL GLAZE 0 5%	1/8W	R103	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR213	1-216-296-00	METAL GLAZE 0 5%	1/8W	R104	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR214	1-216-296-00	METAL GLAZE 0 5%	1/8W	R105	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR215	1-216-295-00	METAL GLAZE 0 5%	1/10W	R106	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
JR216	1-216-295-00	METAL GLAZE 0 5%	1/10W	R107	1-216-089-00	METAL GLAZE 47K 5%	1/10W
JR217	1-216-295-00	METAL GLAZE 0 5%	1/10W	R108	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
JR218	1-216-296-00	METAL GLAZE 0 5%	1/8W	R109	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
JR219	1-216-295-00	METAL GLAZE 0 5%	1/10W	R110	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
JR220	1-216-296-00	METAL GLAZE 0 5%	1/8W	R111	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR221	1-216-296-00	METAL GLAZE 0 5%	1/8W	R112	1-216-101-00	METAL GLAZE 150K 5%	1/10W
<u>COIL</u>				R113	1-216-077-00	METAL GLAZE 15K 5%	1/10W
L101	1-410-509-11	INDUCTOR 10UH		R114	1-216-025-00	METAL GLAZE 100 5%	1/10W
L102	1-410-509-11	INDUCTOR 10UH		R115	1-216-025-00	METAL GLAZE 100 5%	1/10W
L103	1-410-509-11	INDUCTOR 10UH		R116	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
<u>TRANSISTOR</u>				R117	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q001	8-729-140-97	TRANSISTOR 2SB734-34		R118	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q002	8-729-216-22	TRANSISTOR 2SA1162		R119	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q003	8-729-303-37	TRANSISTOR 2SD655E		R120	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q101	8-729-107-26	TRANSISTOR 2SD1585-K		R121	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q102	8-729-920-91	TRANSISTOR 2SB1187-F		R122	1-216-085-00	METAL GLAZE 33K 5%	1/10W
Q103	8-729-107-26	TRANSISTOR 2SD1585-K		R123	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
Q104	8-729-920-91	TRANSISTOR 2SB1187-F		R124	1-216-079-00	METAL GLAZE 18K 5%	1/10W
Q105	8-729-100-66	TRANSISTOR 2SC1623		R125	1-216-081-00	METAL GLAZE 22K 5%	1/10W
				R126	1-216-033-00	METAL GLAZE 220 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.





# AU-88

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-6421-466-A AU-88 BOARD, COMPLETE *****				C109	1-130-017-00	FILM 820PF	5% 50V
CAPACITOR				C110	1-136-740-11	FILM 0.033MF	5% 50V
C002	1-161-494-00	CERAMIC 0.022MF	25V	C111	1-136-250-11	FILM 0.001MF	3% 100V
C003	1-126-049-11	ELECT 22MF	20% 25V	C112	1-124-910-11	ELECT 47MF	20% 50V
C004	1-161-494-00	CERAMIC 0.022MF	25V	C119	1-130-286-91	FILM 0.0036MF	5% 100V
C005	1-162-306-11	CERAMIC 0.01MF	20% 16V	C120	1-136-740-11	FILM 0.033MF	5% 50V
C007	1-162-207-31	CERAMIC 22PF	5% 50V	C122	1-136-740-11	FILM 0.033MF	5% 50V
C008	1-162-207-31	CERAMIC 22PF	5% 50V	C123	1-124-910-11	ELECT 47MF	20% 50V
C009	1-162-207-31	CERAMIC 22PF	5% 50V	C124	1-136-250-11	FILM 0.001MF	3% 100V
C009	1-162-306-11	CERAMIC 0.01MF	20% 16V	C202	1-124-994-11	ELECT 100MF	20% 10V
C010	1-136-831-91	FILM 0.022MF	5% 50V	C203	1-124-994-11	ELECT 100MF	20% 10V
C011	1-126-012-11	ELECT 47OMF	20% 16V	C204	1-161-379-00	CERAMIC 0.01MF	30% 16V
C012	1-161-494-00	CERAMIC 0.022MF	25V	C205	1-162-286-31	CERAMIC 220PF	10% 50V
C013	1-126-049-11	ELECT 22MF	20% 25V	C206	1-162-286-31	CERAMIC 220PF	10% 50V
C014	1-136-831-91	FILM 0.022MF	5% 50V	C207	1-162-207-31	CERAMIC 22PF	5% 50V
C015	1-126-012-11	ELECT 47OMF	20% 16V	C208	1-162-205-31	CERAMIC 18PF	5% 50V
C016	1-136-433-11	FILM 100PF	5% 630V	C209	1-162-217-31	CERAMIC 56PF	5% 50V
C017	1-136-433-11	FILM 100PF	5% 630V	C210	1-162-198-31	CERAMIC 8.2PF	10% 50V
C018	1-136-433-11	FILM 100PF	5% 630V	C211	1-162-207-31	CERAMIC 22PF	5% 50V
C019	1-136-433-11	FILM 100PF	5% 630V	C212	1-161-379-00	CERAMIC 0.01MF	30% 16V
C020	1-136-437-11	FILM 220PF	5% 630V	C213	1-161-379-00	CERAMIC 0.01MF	30% 16V
C021	1-136-437-11	FILM 220PF	5% 630V	C214	1-124-994-11	ELECT 100MF	20% 10V
C022	1-136-437-11	FILM 220PF	5% 630V	C215	1-161-379-00	CERAMIC 0.01MF	30% 16V
C023	1-136-437-11	FILM 220PF	5% 630V	C216	1-161-379-00	CERAMIC 0.01MF	30% 16V
C024	1-161-494-00	CERAMIC 0.022MF	25V	C217	1-124-994-11	ELECT 100MF	20% 10V
C025	1-161-494-00	CERAMIC 0.022MF	25V	C218	1-124-994-11	ELECT 100MF	20% 10V
C027	1-161-494-00	CERAMIC 0.022MF	25V	C219	1-162-288-31	CERAMIC 330PF	10% 50V
C028	1-136-831-91	FILM 0.022MF	5% 50V	C220	1-161-374-11	CERAMIC 0.0015MF	30% 16V
C029	1-126-012-11	ELECT 47OMF	20% 16V	C221	1-162-217-31	CERAMIC 56PF	5% 50V
C030	1-161-494-00	CERAMIC 0.022MF	25V	C222	1-126-049-11	ELECT 22MF	20% 25V
C031	1-126-049-11	ELECT 22MF	20% 25V	C223	1-161-377-00	CERAMIC 0.0047MF	30% 16V
C032	1-136-831-91	FILM 0.022MF	5% 50V	C224	1-161-377-00	CERAMIC 0.0047MF	30% 16V
C033	1-126-012-11	ELECT 47OMF	20% 16V	C225	1-136-160-00	FILM 0.039MF	5% 50V
C034	1-130-017-00	FILM 820PF	5% 50V	C226	1-124-291-91	ELECT 22MF	20% 6.3V
C035	1-124-463-00	ELECT 0.1MF	20% 50V	C228	1-124-994-11	ELECT 100MF	20% 10V
C036	1-124-463-00	ELECT 0.1MF	20% 50V	C229	1-136-165-00	FILM 0.1MF	5% 50V
C037	1-136-439-11	FILM 330PF	5% 630V	C230	1-123-875-11	ELECT 10MF	20% 50V
C038	1-136-435-11	FILM 150PF	5% 630V	C234	1-124-994-11	ELECT 100MF	20% 10V
C039	1-136-439-11	FILM 330PF	5% 630V	C235	1-161-379-00	CERAMIC 0.01MF	30% 16V
C040	1-136-435-11	FILM 150PF	5% 630V	C236	1-161-379-00	CERAMIC 0.01MF	30% 16V
C041	1-126-023-11	ELECT 100MF	20% 16V	C237	1-124-994-11	ELECT 100MF	20% 10V
C042	1-126-049-11	ELECT 22MF	20% 25V	C238	1-124-994-11	ELECT 100MF	20% 10V
C043	1-126-049-11	ELECT 22MF	20% 25V	C239	1-162-287-31	CERAMIC 270PF	10% 50V
C044	1-162-207-31	CERAMIC 22PF	5% 50V	C240	1-161-374-11	CERAMIC 0.0015MF	30% 16V
C045	1-162-207-31	CERAMIC 22PF	5% 50V	C241	1-162-217-31	CERAMIC 56PF	5% 50V
C048	1-126-821-71	ELECT 2200MF	20% 6.3V	C242	1-126-049-11	ELECT 22MF	20% 25V
C049	1-161-379-00	CERAMIC 0.01MF	30% 16V	C243	1-161-377-00	CERAMIC 0.0047MF	30% 16V
C050	1-161-379-00	CERAMIC 0.01MF	30% 16V	C244	1-161-377-00	CERAMIC 0.0047MF	30% 16V
C057	1-124-994-11	ELECT 100MF	20% 10V	C245	1-136-160-00	FILM 0.039MF	5% 50V
C107	1-130-286-91	FILM 0.0036MF	5% 100V	C246	1-124-291-91	ELECT 22MF	20% 6.3V
C108	1-136-740-11	FILM 0.033MF	5% 50V	C247	1-124-902-00	ELECT 0.47MF	20% 50V
				C301	1-126-649-11	ELECT 3300MF	20% 25V
				C302	1-126-649-11	ELECT 3300MF	20% 25V

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C303	1-126-648-11	ELECT 1000MF	20% 25V	IC106	8-759-702-12	IC NJM5534D-D	
C304	1-126-648-11	ELECT 1000MF	20% 25V	IC201	8-759-502-42	IC PA0034A	
C305	1-124-477-11	ELECT 47MF	20% 25V	IC301	8-759-604-33	IC M5F7812L	
C306	1-126-023-11	ELECT 100MF	20% 16V	IC302	8-759-604-51	IC M5F7912L	
C309	1-161-494-00	CERAMIC 0.022MF	25V	IC303	8-759-604-29	IC M5F7805L	
C310	1-124-477-11	ELECT 47MF	20% 16V	IC305	8-759-701-45	IC NJM4560S-D	
C311	1-124-477-11	ELECT 47MF	20% 16V			<u>COIL</u>	
C312	1-130-481-00	MYLAR 0.0068MF	5% 50V	L001	1-408-409-00	INDUCTOR 10UH	
C313	1-130-477-00	MYLAR 0.0033MF	5% 50V	L002	1-408-409-00	INDUCTOR 10UH	
C314	1-123-875-11	ELECT 10MF	20% 50V	L003	1-408-409-00	INDUCTOR 10UH	
C321	1-124-791-11	ELECT 1MF	20% 50V	L004	1-410-521-11	INDUCTOR 100UH	
C401	1-124-257-00	ELECT 2.2MF	20% 50V	L005	1-410-521-11	INDUCTOR 100UH	
		<u>CONNECTOR</u>		L115	1-236-071-11	ENCAPSULATED COMPONENT	
CN101	1-506-476-11	PIN, CONNECTOR 11P		L203	1-408-421-00	INDUCTOR 100UH	
CN102	1-506-471-11	PIN, CONNECTOR 6P		L204	1-408-425-00	INDUCTOR 220UH	
CN103	*1-560-891-00	PIN, CONNECTOR 3P		L205	1-408-417-00	INDUCTOR 47UH	
CN104	1-506-468-11	PIN, CONNECTOR 3P		L206	1-408-417-00	INDUCTOR 47UH	
CN105	1-506-487-11	PIN, CONNECTOR 8P				<u>LEAD PIN</u>	
		<u>DIODE</u>		LP001	4-352-844-01	PIN, LEAD, COATING	
D001	8-719-911-19	DIODE 1SS119		LP002	4-352-844-01	PIN, LEAD, COATING	
D002	8-719-911-19	DIODE 1SS119				<u>TRANSISTOR</u>	
D003	8-719-911-19	DIODE 1SS119		Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D004	8-719-907-19	DIODE FC52M-5		Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D005	8-719-907-19	DIODE FC52M-5		Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D301	▲ 8-719-210-38	DIODE F10P20FR		Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D302	▲ 8-719-210-30	DIODE F10P20F(R)		Q205	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D305	8-719-911-19	DIODE 1SS119		Q301	8-729-900-63	TRANSISTOR DTA124ES	
D306	8-719-911-19	DIODE 1SS119		Q302	8-729-900-63	TRANSISTOR DTA124ES	
D307	8-719-911-19	DIODE 1SS119		Q303	8-729-900-36	TRANSISTOR DTC124ES	
D308	8-719-911-19	DIODE 1SS119		Q304	8-729-900-63	TRANSISTOR DTA124ES	
D309	8-719-911-19	DIODE 1SS119		Q305	8-729-900-80	TRANSISTOR DTC114ES	
D310	8-719-911-19	DIODE 1SS119		Q306	8-729-900-65	TRANSISTOR DTA144ES	
D311	8-719-911-19	DIODE 1SS119		Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D312	8-719-911-19	DIODE 1SS119		Q308	8-729-303-37	TRANSISTOR 2SD655E	
D313	8-719-911-19	DIODE 1SS119		Q309	8-729-303-37	TRANSISTOR 2SD655E	
D314	8-719-911-19	DIODE 1SS119		Q310	8-729-900-63	TRANSISTOR DTA124ES	
		<u>FILTER</u>				<u>RESISTOR</u>	
FL001	1-424-033-21	FILTER, NOISE		R001	1-249-421-11	CARBON 2.2K 5% 1/4W	
FL002	1-424-033-21	FILTER, NOISE		R002	1-249-417-11	CARBON 1K 5% 1/4W	
FL003	1-424-033-21	FILTER, NOISE		R002	1-249-433-11	CARBON 22K 5% 1/4W	
FL201	1-236-840-11	FILTER, BAND PASS		R003	1-249-411-11	CARBON 330 5% 1/4W	
		<u>IC</u>		R004	1-249-441-11	CARBON 100K 5% 1/4W	
IC001	8-759-502-43	IC SM5862CF		R005	1-249-441-11	CARBON 100K 5% 1/4W	
IC002	8-759-502-43	IC SM5862CF		R006	1-247-725-11	CARBON 10K 5% 1/4W	
IC003	8-759-232-83	IC TC74HC175AP		R007	1-247-725-11	CARBON 10K 5% 1/4W	
IC004	8-759-233-64	IC TC74HC04AF		R008	1-247-725-11	CARBON 10K 5% 1/4W	
IC102	8-759-982-03	IC RC5532D-D		R009	1-247-725-11	CARBON 10K 5% 1/4W	
IC104	8-759-982-03	IC RC5532D-D		R010	1-247-725-11	CARBON 10K 5% 1/4W	
IC105	8-759-702-12	IC NJM5534D-D		R011	1-247-725-11	CARBON 10K 5% 1/4W	

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.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R012	1-247-725-11	CARBON	10K 5% 1/4W	R202	1-249-433-11	CARBON	22K 5% 1/4W
R013	1-247-725-11	CARBON	10K 5% 1/4W	R204	1-249-429-11	CARBON	10K 5% 1/4W
R014	1-249-698-91	CARBON	11K 5% 1/2W	R205	1-247-830-11	CARBON	910 5% 1/4W
R015	1-249-698-91	CARBON	11K 5% 1/2W	R207	1-249-439-11	CARBON	68K 5% 1/4W
R016	1-249-698-91	CARBON	11K 5% 1/2W	R208	1-247-858-11	CARBON	13K 5% 1/4W
R017	1-249-698-91	CARBON	11K 5% 1/2W	R209	1-249-421-11	CARBON	2.2K 5% 1/4W
R018	1-249-698-91	CARBON	11K 5% 1/2W	R210	1-249-413-11	CARBON	470 5% 1/4W
R019	1-249-698-91	CARBON	11K 5% 1/2W	R211	1-249-401-11	CARBON	47 5% 1/4W
R020	1-249-698-91	CARBON	11K 5% 1/2W	R212	1-249-404-00	CARBON	82 5% 1/4W
R021	1-249-698-91	CARBON	11K 5% 1/2W	R213	1-249-421-11	CARBON	2.2K 5% 1/4W
R022	1-247-764-11	CARBON	10K 5% 1/2W	R214	1-249-417-11	CARBON	1K 5% 1/4W
R023	1-247-764-11	CARBON	10K 5% 1/2W	R215	1-249-417-11	CARBON	1K 5% 1/4W
R024	1-247-764-11	CARBON	10K 5% 1/2W	R216	1-249-417-11	CARBON	1K 5% 1/4W
R025	1-247-764-11	CARBON	10K 5% 1/2W	R217	1-249-419-11	CARBON	1.5K 5% 1/4W
R026	1-249-417-11	CARBON	1K 5% 1/4W	R218	1-249-409-11	CARBON	220 5% 1/4W
R026	1-249-417-11	CARBON	1K 5% 1/4W	R219	1-249-425-11	CARBON	4.7K 5% 1/4W
R027	1-249-417-11	CARBON	1K 5% 1/4W	R220	1-249-425-11	CARBON	4.7K 5% 1/4W
R028	1-249-405-11	CARBON	100 5% 1/4W	R221	1-249-429-11	CARBON	10K 5% 1/4W
R029	1-249-405-11	CARBON	100 5% 1/4W	R222	1-247-860-11	CARBON	16K 5% 1/4W
R030	1-249-405-11	CARBON	100 5% 1/4W	R223	1-247-900-11	CARBON	750K 5% 1/4W
R031	1-247-903-00	CARBON	1M 5% 1/4W	R224	1-249-428-11	CARBON	8.2K 5% 1/4W
R032	1-249-405-11	CARBON	100 5% 1/4W	R226	1-247-828-11	CARBON	750 5% 1/4W
R033	1-249-405-11	CARBON	100 5% 1/4W	R227	1-247-883-00	CARBON	150K 5% 1/4W
R034	1-249-411-11	CARBON	330 5% 1/4W	R228	1-247-883-00	CARBON	150K 5% 1/4W
R035	1-249-439-11	CARBON	68K 5% 1/4W	R229	1-247-886-11	CARBON	200K 5% 1/4W
R036	1-249-439-11	CARBON	68K 5% 1/4W	R233	1-249-417-11	CARBON	1K 5% 1/4W
R037	1-249-429-11	CARBON	10K 5% 1/4W	R234	1-249-419-11	CARBON	1.5K 5% 1/4W
R039	1-247-721-11	CARBON	4.7K 5% 1/4W	R235	1-249-409-11	CARBON	220 5% 1/4W
R040	1-249-429-11	CARBON	10K 5% 1/4W	R236	1-249-425-11	CARBON	4.7K 5% 1/4W
R041	1-247-721-11	CARBON	4.7K 5% 1/4W	R237	1-249-425-11	CARBON	4.7K 5% 1/4W
R042	1-247-725-11	CARBON	10K 5% 1/4W	R238	1-249-429-11	CARBON	10K 5% 1/4W
R043	1-249-411-11	CARBON	330 5% 1/4W	R239	1-247-860-11	CARBON	16K 5% 1/4W
R044	1-247-725-11	CARBON	10K 5% 1/4W	R240	1-247-900-11	CARBON	750K 5% 1/4W
R045	1-247-721-11	CARBON	4.7K 5% 1/4W	R241	1-249-428-11	CARBON	8.2K 5% 1/4W
R046	1-247-146-00	CARBON	4.3K 5% 1/4W	R301	1-249-421-11	CARBON	2.2K 5% 1/4W
R047	1-247-725-11	CARBON	10K 5% 1/4W	R302	1-249-429-11	CARBON	10K 5% 1/4W
R048	1-247-725-11	CARBON	10K 5% 1/4W	R304	1-249-433-11	CARBON	22K 5% 1/4W
R049	1-247-721-11	CARBON	4.7K 5% 1/4W	R305	1-249-421-11	CARBON	2.2K 5% 1/4W
R050	1-247-725-11	CARBON	10K 5% 1/4W	R306	1-249-429-11	CARBON	10K 5% 1/4W
R051	1-247-146-00	CARBON	4.3K 5% 1/4W	R307	1-249-429-11	CARBON	10K 5% 1/4W
R052	1-249-690-91	CARBON	5.1K 5% 1/2W	R308	1-249-417-11	CARBON	1K 5% 1/4W
R053	1-249-690-91	CARBON	5.1K 5% 1/2W	R309	1-249-417-11	CARBON	1K 5% 1/4W
R056	1-249-405-11	CARBON	100 5% 1/4W	R310	1-249-441-11	CARBON	100K 5% 1/4W
R057	1-249-405-11	CARBON	100 5% 1/4W	R312	1-249-657-11	CARBON	220 5% 1/2W
R058	1-249-405-11	CARBON	100 5% 1/4W	R313	1-249-657-11	CARBON	220 5% 1/2W
R059	1-249-437-11	CARBON	47K 5% 1/4W	R315	1-249-402-11	CARBON	56 5% 1/4W
R105	1-249-679-11	CARBON	1.8K 5% 1/2W	R316	1-249-402-11	CARBON	56 5% 1/4W
R106	1-249-686-91	CARBON	3.6K 5% 1/2W	R317	1-249-423-11	CARBON	3.3K 5% 1/4W
R107	1-249-441-11	CARBON	100K 5% 1/4W	R318	1-249-423-11	CARBON	3.3K 5% 1/4W
R112	1-249-679-11	CARBON	1.8K 5% 1/2W	R319	1-249-423-11	CARBON	3.3K 5% 1/4W
R113	1-249-686-91	CARBON	3.6K 5% 1/2W	R320	1-249-423-11	CARBON	3.3K 5% 1/4W
R114	1-249-441-11	CARBON	100K 5% 1/4W	R321	1-249-441-11	CARBON	100K 5% 1/4W
R201	1-249-433-11	CARBON	22K 5% 1/4W				

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
		<u>RELAY</u>					
RY301	1-515-622-11	RELAY		R003	1-216-097-00	METAL GLAZE 100K 5%	1/10W
		<u>CRYSTAL</u>		R004	1-216-073-00	METAL GLAZE 10K 5%	1/10W
X001	1-567-515-11	VIBRATOR, VARIABLE CRYSTAL (16.9MHz)		R005	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		*****		R006	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		*A-6421-468-A FP-309 BOARD, COMPLETE		R007	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		*****		R008	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		2-355-254-01 SPACER (A), LCD		R009	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		*3-746-508-01 HOLDER, FLD		R010	1-216-097-00	METAL GLAZE 100K 5%	1/10W
		<u>CAPACITOR</u>		R011	1-216-079-00	METAL GLAZE 18K 5%	1/10W
C001	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	R012	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
C004	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	R013	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
C005	1-126-157-11	ELECT 10MF	20% 16V	R014	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
C006	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	R015	1-216-079-00	METAL GLAZE 18K 5%	1/10W
C007	1-126-157-11	ELECT 10MF	20% 16V	R016	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
C008	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	R017	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
C009	1-126-157-11	ELECT 10MF	20% 16V	R018	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
C010	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	R019	1-216-079-00	METAL GLAZE 18K 5%	1/10W
		<u>CONNECTOR</u>		R020	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
CN001	1-506-469-11	PIN, CONNECTOR 4P		R021	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
CN002	1-506-475-11	PIN, CONNECTOR 10P		R022	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
CN003	1-506-472-11	PIN, CONNECTOR 7P		R023	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		<u>IC</u>		R024	1-216-073-00	METAL GLAZE 10K 5%	1/10W
IC001	8-752-814-38	IC CXP50116-048Q		R025	1-216-073-00	METAL GLAZE 10K 5%	1/10W
IC002	8-759-632-49	IC M51953AFP		R026	1-216-073-00	METAL GLAZE 10K 5%	1/10W
IC003	8-741-138-78	IC BX-1453		R027	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		<u>JUMPER RESISTOR</u>		R028	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR001	1-216-295-00	METAL GLAZE 0 5%	1/10W	R029	1-216-073-00	METAL GLAZE 10K 5%	1/10W
JR002	1-216-295-00	METAL GLAZE 0 5%	1/10W	R030	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		<u>COIL</u>		R031	1-216-073-00	METAL GLAZE 10K 5%	1/10W
L001	1-407-169-XX	INDUCTOR 100UH		R032	1-216-073-00	METAL GLAZE 10K 5%	1/10W
L002	1-407-169-XX	INDUCTOR 100UH		R033	1-216-121-00	METAL GLAZE 1M 5%	1/10W
		<u>INDICATOR TUBE</u>				<u>SWITCH</u>	
ND001	1-519-511-11	INDICATOR TUBE, FLUORESCENT		S001	1-571-977-11	SWITCH, TACTIL (1)	
		<u>TRANSISTOR</u>		S002	1-571-977-11	SWITCH, TACTIL (2)	
Q001	8-729-100-67	TRANSISTOR 2SC1623		S003	1-571-977-11	SWITCH, TACTIL (3)	
Q002	8-729-100-67	TRANSISTOR 2SC1623		S004	1-571-977-11	SWITCH, TACTIL (4)	
		<u>RESISTOR</u>		S005	1-571-977-11	SWITCH, TACTIL (5)	
R001	1-216-097-00	METAL GLAZE 100K 5%	1/10W	S006	1-571-977-11	SWITCH, TACTIL (6)	
R002	1-216-073-00	METAL GLAZE 10K 5%	1/10W	S007	1-571-977-11	SWITCH, TACTIL (7)	
				S008	1-571-977-11	SWITCH, TACTIL (8)	
				S009	1-571-977-11	SWITCH, TACTIL (9)	
				S010	1-571-977-11	SWITCH, TACTIL (0)	
				S011	1-571-977-11	SWITCH, TACTIL (+ 10)	
				S012	1-571-977-11	SWITCH, TACTIL (AUTO PGM)	
				S013	1-571-977-11	SWITCH, TACTIL (AV TIME)	
				S014	1-571-977-11	SWITCH, TACTIL (FILM)	
				S015	1-571-977-11	SWITCH, TACTIL (CUSTOM INDEX)	
				S016	1-571-758-11	SWITCH, PUSH (1 KEY) (SIDE REPEAT)	
						<u>CRYSTAL</u>	
				X001	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*1-635-258-11	HP-73 BOARD *****					
		<u>CAPACITOR</u>					
C101	1-161-494-00	CERAMIC 0.022MF	25V	C026	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
		<u>CONNECTOR</u>		C027	1-163-106-00	CERAMIC CHIP 36PF	5% 50V
CNI01	1-506-468-11	PIN, CONNECTOR 3P		C028	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
		<u>JACK</u>		C029	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
CNJ101	1-507-796-71	JACK (PHONES)		C030	1-124-766-00	ELECT 0.1MF	20% 50V
		<u>RESISTOR</u>		C032	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R101	1-249-421-11	CARBON 2.2K 5% 1/4W		C033	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R102	1-249-421-11	CARBON 2.2K 5% 1/4W		C034	1-164-222-11	CERAMIC CHIP 0.22MF	25V
R103	1-249-399-11	CARBON 33 5% 1/4W		C101	1-164-005-11	CERAMIC CHIP 0.47MF	25V
R104	1-249-399-11	CARBON 33 5% 1/4W		C102	1-128-102-11	ELECT 1200MF	20% 16V
		<u>VARIABLE RESISTOR</u>		C103	1-164-232-11	CERAMIC CHIP 0.01MF	50V
RV101	1-241-139-11	RES, VAR, CARBON 500/500 (LEVEL)		C104	1-124-477-11	ELECT 47MF	20% 16V
*****				C105	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	*A-6421-470-A	MB-44 BOARD, COMPLETE *****		C106	1-124-477-11	ELECT 47MF	20% 16V
	*3-309-144-21	HEAT SINK		C107	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
	*3-746-524-01	PLATE, GROUND		C108	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
	*3-746-535-01	HEAT SINK		C109	1-123-875-11	ELECT 10MF	20% 50V
	7-682-547-04	SCREW +BVTT 3X6 (S)		C111	1-164-232-11	CERAMIC CHIP 0.01MF	50V
		<u>CAPACITOR</u>		C112	1-124-472-11	ELECT 470MF	20% 10V
C001	1-124-768-11	ELECT 4.7MF	20% 50V	C113	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C002	1-124-767-00	ELECT 2.2MF	20% 50V	C114	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C003	1-124-446-11	ELECT 47MF	20% 10V	C115	1-123-875-11	ELECT 10MF	20% 50V
C004	1-124-446-11	ELECT 47MF	20% 10V	C116	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C005	1-126-320-11	ELECT 10MF	20% 16V	C117	1-126-385-11	ELECT 390MF	20% 16V
C006	1-136-165-00	FILM 0.1MF	5% 50V	C118	1-123-875-11	ELECT 10MF	20% 50V
C007	1-163-058-00	CERAMIC CHIP 0.0082MF	10% 50V	C119	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C008	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C120	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C013	1-124-248-00	ELECT 22MF	20% 25V	C151	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C014	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C152	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C015	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C153	1-124-477-11	ELECT 47MF	20% 16V
C016	1-124-446-11	ELECT 47MF	20% 10V	C154	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C017	1-124-446-11	ELECT 47MF	20% 10V	C155	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C018	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C156	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C019	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	C157	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C020	1-126-157-11	ELECT 10MF	20% 16V	C158	1-136-153-00	MYLAR 0.01MF	10% 50V
C021	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C159	1-136-159-00	MYLAR 0.033MF	10% 50V
C022	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C160	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C023	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C161	1-136-742-11	FILM 0.1MF	5% 50V
C024	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C162	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C025	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C163	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C164	1-163-035-00	CERAMIC CHIP 0.047MF	50V
				C165	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C166	1-126-157-11	ELECT 10MF	20% 16V
				C167	1-163-035-00	CERAMIC CHIP 0.047MF	50V
				C168	1-163-035-00	CERAMIC CHIP 0.047MF	50V
				C169	1-126-157-11	ELECT 10MF	20% 16V
				C170	1-124-589-11	ELECT 47MF	20% 16V
				C171	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
				C172	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
				C181	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
				C182	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C183	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
				C184	1-163-125-00	CERAMIC CHIP 220PF	5% 50V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C185	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C238	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C186	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C239	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C187	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C240	1-163-103-00	CERAMIC CHIP 27PF	5%
C188	1-126-176-11	ELECT 220MF	20% 10V	C241	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C189	1-164-222-11	CERAMIC CHIP 0.22MF	25V	C242	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C190	1-164-222-11	CERAMIC CHIP 0.22MF	25V	C243	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C191	1-124-443-00	ELECT 100MF	20% 6.3V	C244	1-163-119-00	CERAMIC CHIP 120PF	5%
C192	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C245	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C193	1-130-486-00	MYLAR 0.018MF	10% 50V	C246	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C194	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C247	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C195	1-136-159-00	MYLAR 0.033MF	10% 50V	C248	1-163-101-00	CERAMIC CHIP 22PF	5%
C196	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C249	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C197	1-124-791-11	ELECT 1MF	20% 50V	C250	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C198	1-124-902-00	ELECT 0.47MF	20% 50V	C251	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C199	1-136-161-00	MYLAR 0.047MF	10% 50V	C252	1-124-477-11	ELECT 47MF	20% 16V
C200	1-136-159-00	MYLAR 0.033MF	10% 50V	C253	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C201	1-124-477-11	ELECT 47MF	20% 16V	C254	1-163-109-00	CERAMIC CHIP 47PF	5%
C202	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C255	1-163-109-00	CERAMIC CHIP 47PF	5%
C203	1-136-153-00	MYLAR 0.01MF	10% 50V	C256	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C204	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C257	1-124-477-11	ELECT 47MF	20% 16V
C205	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	C258	1-163-101-00	CERAMIC CHIP 22PF	5%
C206	1-136-153-00	MYLAR 0.01MF	10% 50V	C259	1-163-101-00	CERAMIC CHIP 22PF	5%
C207	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C260	1-163-099-00	CERAMIC CHIP 18PF	5%
C208	1-124-477-11	ELECT 47MF	20% 16V	C261	1-163-123-00	CERAMIC CHIP 180PF	5%
C209	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C262	1-126-160-11	ELECT 1MF	20% 50V
C210	1-124-477-11	ELECT 47MF	20% 16V	C263	1-136-157-00	MYLAR 0.022MF	10% 50V
C211	1-124-499-11	ELECT 1MF	20% 50V	C264	1-131-347-00	TANTALUM 1MF	10% 35V
C212	1-136-161-00	MYLAR 0.047MF	10% 50V	C265	1-126-160-11	ELECT 1MF	20% 50V
C213	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C266	1-136-153-00	MYLAR 0.01MF	10% 50V
C214	1-124-791-11	ELECT 1MF	20% 50V	C267	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C215	1-124-477-11	ELECT 47MF	20% 16V	C268	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C216	1-124-443-00	ELECT 100MF	20% 6.3V	C269	1-163-107-00	CERAMIC CHIP 39PF	5%
C217	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C270	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C218	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C271	1-124-589-11	ELECT 47MF	20% 16V
C219	1-123-875-11	ELECT 10MF	20% 50V	C273	1-124-589-11	ELECT 47MF	20% 16V
C220	1-163-123-00	CERAMIC CHIP 180PF	5% 50V	C274	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C221	1-124-477-11	ELECT 47MF	20% 16V	C275	1-124-257-00	ELECT 2.2MF	20% 50V
C222	1-136-161-00	MYLAR 0.047MF	10% 50V	C276	1-163-101-00	CERAMIC CHIP 22PF	5%
C223	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C277	1-163-125-00	CERAMIC CHIP 220PF	5%
C224	1-124-477-11	ELECT 47MF	20% 16V	C278	1-124-257-00	ELECT 2.2MF	20% 50V
C225	1-163-139-00	CERAMIC CHIP 820PF	10% 50V	C279	1-126-157-11	ELECT 10MF	20% 16V
C226	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C280	1-124-471-00	ELECT 1000MF	20% 6.3V
C227	1-124-477-11	ELECT 47MF	20% 16V	C281	1-124-257-00	ELECT 2.2MF	20% 50V
C228	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C282	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C229	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	C283	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C230	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	C284	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C231	1-124-791-11	ELECT 1MF	20% 50V	C285	1-124-477-11	ELECT 47MF	20% 16V
C232	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	C286	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C233	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C287	1-163-097-00	CERAMIC CHIP 15PF	5%
C234	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	C288	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C235	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C289	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C236	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C290	1-163-121-00	CERAMIC CHIP 150PF	5%
C237	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C291	1-164-232-11	CERAMIC CHIP 0.01MF	50V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C292	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C620	1-124-589-11	ELECT 47MF	20% 16V
C293	1-124-477-11	ELECT 47MF	20% 16V	C621	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C294	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C622	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C295	1-124-257-00	ELECT 2.2MF	20% 50V	C623	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C296	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C624	1-124-589-11	ELECT 47MF	20% 16V
C297	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C625	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C298	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	C626	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C299	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C627	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C300	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	C628	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C301	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C629	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C302	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C630	1-124-257-00	ELECT 2.2MF	20% 50V
C303	1-163-097-00	CERAMIC CHIP 15PF	5% 50V	C640	1-124-248-00	ELECT 22MF	20% 25V
C304	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C641	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C305	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C650	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C306	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C651	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C308	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C652	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C309	1-126-157-11	ELECT 10MF	20% 16V	C657	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C310	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C801	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C311	1-124-257-00	ELECT 2.2MF	20% 50V	<u>FILTER</u>			
C312	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CF151	1-527-831-00	FILTER, CERAMIC	
C313	1-126-157-11	ELECT 10MF	20% 16V	<u>CONNECTOR</u>			
C314	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CN601	*1-564-032-00	PIN, CONNECTOR 7P	
C315	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CN602	1-563-493-11	CONNECTOR, F.P.C 28P	
C316	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CN603	1-506-483-21	PIN, CONNECTOR 4P	
C318	1-163-106-00	CERAMIC CHIP 36PF	5% 50V	CN604	1-506-489-11	PIN, CONNECTOR 10P	
C319	1-124-589-11	ELECT 47MF	20% 16V	CN605	1-506-481-11	PIN, CONNECTOR 2P	
C320	1-124-589-11	ELECT 47MF	20% 16V	CN606	1-506-481-11	PIN, CONNECTOR 2P	
C321	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN607	1-506-482-11	PIN, CONNECTOR 3P	
C322	1-164-232-11	CERAMIC CHIP 0.01MF	50V	<u>JACK</u>			
C323	1-164-232-11	CERAMIC CHIP 0.01MF	50V	CNJ001	8-759-977-71	JACK, GP1F31T (OPTICAL DIGITAL OUT)	
C324	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	CNJ002	1-565-319-31	JACK, PIN 2P (AUDIO LINE OUT)	
C325	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	CNJ101	1-537-005-21	JACK BOARD (LINE OUT VIDEO/AUDIO MONO/RFU DC)	
C326	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CNJ102	1-566-847-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO OUT)	
C328	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	<u>TRIMMER</u>			
C329	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CV152	1-141-227-00	CAP, CERAMIC TRIMMER	
C401	1-126-094-11	ELECT 4.7MF	20% 16V	CV601	1-141-227-00	CAP, CERAMIC TRIMMER	
C402	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V	<u>DIODE</u>			
C403	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	D001	8-719-923-64	DIODE KV1236D	
C404	1-126-094-11	ELECT 4.7MF	20% 16V	D002	8-719-400-18	DIODE MA152WK	
C406	1-124-589-11	ELECT 47MF	20% 16V	D004	8-719-400-18	DIODE MA152WK	
C407	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	D005	8-719-109-85	DIODE RD5.1ES-B2	
C408	1-163-035-00	CERAMIC CHIP 0.047MF	50V	D006	8-719-400-18	DIODE MA152WK	
C409	1-163-035-00	CERAMIC CHIP 0.047MF	50V	D007	8-719-400-18	DIODE MA152WK	
C601	1-124-589-11	ELECT 47MF	20% 16V	D151	8-719-941-23	DIODE DA204U	
C602	1-163-035-00	CERAMIC CHIP 0.047MF	50V	D153	8-719-941-23	DIODE DA204U	
C603	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	D154	8-719-951-22	DIODE IMN10	
C604	1-163-088-00	CERAMIC CHIP 5PF	0.25PF 50V	D155	8-719-941-23	DIODE DA204U	
C606	1-163-123-00	CERAMIC CHIP 180PF	5% 50V				
C607	1-163-035-00	CERAMIC CHIP 0.047MF	50V				
C609	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C610	1-163-035-00	CERAMIC CHIP 0.047MF	50V				
C611	1-163-035-00	CERAMIC CHIP 0.047MF	50V				
C613	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				

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Ref.No	Part No.	Description	Remark
D401	8-719-400-18	DIODE MA152WK	
D601	8-719-400-18	DIODE MA152WK	
D602	8-719-400-18	DIODE MA152WK	
D605	8-719-400-18	DIODE MA152WK	
D606	8-719-104-34	DIODE 1S2836	
D607	8-719-400-18	DIODE MA152WK	
D801	8-719-941-23	DIODE DA204U	
<u>DELAY LINE</u>			
DL101	1-415-694-11	DELAY LINE, LC	
<u>FILTER</u>			
FL101	1-235-896-11	FILTER, BAND PASS	
FL151	1-236-478-11	FILTER, LOW PASS	
FL152	1-236-843-11	FILTER, BAND PASS	
FL153	1-236-478-11	FILTER, LOW PASS	
FL154	1-235-901-11	FILTER, LOW PASS	
FL601	1-424-031-11	FILTER, NOISE	
<u>IC</u>			
IC001	8-752-325-59	IC CXD1165Q	
IC002	8-759-908-17	IC TL082CPS	
IC003	8-759-908-17	IC TL082CPS	
IC004	8-759-502-48	IC SM5840AS	
IC006	8-759-008-67	IC MC14066BF	
IC101	8-759-144-83	IC UPC24M09HF	
IC102	1-464-932-21	FILTER BLOCK, COM (CFB-3)	
IC105	8-759-983-74	IC LM324NS	
IC106	8-752-322-35	IC CXL5005M	
IC107	8-759-982-34	IC RC78M09FA	
IC108	8-759-982-31	IC RC78M05FA	
IC109	8-752-036-24	IC CXA1255Q	
IC110	8-759-927-29	IC SN74HCU04NS	
IC111	8-759-983-48	IC CXD1152Q	
IC112	8-752-036-23	IC CXA1254Q	
IC113	8-759-941-68	IC BA7131F	
IC114	8-759-981-92	IC RC4558M	
IC115	8-759-009-07	IC MC14053BF	
IC401	8-759-100-95	IC UPC324G2	
IC402	8-759-009-06	IC MC14052BF	
IC601	8-759-504-82	IC MB89795-126	
IC602	8-759-634-74	IC M50455-196FP	
IC603	8-759-231-92	IC TA7291P	
IC604	8-759-987-71	IC MSM72H032GS-K	
<u>JUMPER RESISTOR</u>			
JR151	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR152	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR200	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR219	1-216-295-00	METAL GLAZE 0	5% 1/10W

Ref.No	Part No.	Description	Remark
<u>COIL</u>			
L101	1-408-412-00	INDUCTOR 18UH	
L113	1-410-397-21	FERRITE BEAD INDUCTOR	
L114	1-410-397-21	FERRITE BEAD INDUCTOR	
L115	1-236-071-11	ENCAPSULATED COMPONENT	
L151	1-408-421-00	INDUCTOR 100UH	
L152	1-408-421-00	INDUCTOR 100UH	
L156	1-408-421-00	INDUCTOR 100UH	
L157	1-408-421-00	INDUCTOR 100UH	
L158	1-408-421-00	INDUCTOR 100UH	
L159	1-408-421-00	INDUCTOR 100UH	
L160	1-408-616-41	INDUCTOR 120UH	
L161	1-408-419-00	INDUCTOR 68UH	
L162	1-408-421-00	INDUCTOR 100UH	
L163	1-408-421-00	INDUCTOR 100UH	
L164	1-408-424-00	INDUCTOR 180UH	
L165	1-408-421-00	INDUCTOR 100UH	
L601	1-408-421-00	INDUCTOR 100UH	
L602	1-408-411-00	INDUCTOR 15UH	
L603	1-408-409-00	INDUCTOR 10UH	
L604	1-408-409-00	INDUCTOR 10UH	
L610	1-408-409-00	INDUCTOR 10UH	
<u>VARIABLE COIL</u>			
LV001	1-426-212-11	COIL (RF)	
<u>TRANSISTOR</u>			
Q001	8-729-900-53	TRANSISTOR DTC114EK	
Q002	8-729-120-12	TRANSISTOR 2SC1623	
Q003	8-729-900-53	TRANSISTOR DTC114EK	
Q004	8-729-900-53	TRANSISTOR DTC114EK	
Q005	8-729-901-05	TRANSISTOR DTA124EK	
Q006	8-729-901-05	TRANSISTOR DTA124EK	
Q007	8-729-303-37	TRANSISTOR 2SD655E	
Q101	8-729-216-22	TRANSISTOR 2SA1162	
Q102	8-729-100-66	TRANSISTOR 2SC1623	
Q103	8-729-216-22	TRANSISTOR 2SA1162	
Q104	8-729-100-66	TRANSISTOR 2SC1623	
Q105	8-729-100-66	TRANSISTOR 2SC1623	
Q106	8-729-216-22	TRANSISTOR 2SA1162	
Q107	8-729-100-66	TRANSISTOR 2SC1623	
Q108	8-729-100-66	TRANSISTOR 2SC1623	
Q109	8-729-216-22	TRANSISTOR 2SA1162	
Q110	8-729-100-66	TRANSISTOR 2SC1623	
Q151	8-729-100-66	TRANSISTOR 2SC1623	
Q152	8-729-100-66	TRANSISTOR 2SC1623	
Q153	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q154	8-729-100-66	TRANSISTOR 2SC1623	
Q155	8-729-100-66	TRANSISTOR 2SC1623	
Q156	8-729-100-66	TRANSISTOR 2SC1623	
Q159	8-729-100-66	TRANSISTOR 2SC1623	
Q160	8-729-100-66	TRANSISTOR 2SC1623	

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q161	8-729-100-66	TRANSISTOR 2SC1623		R008	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q162	8-729-100-66	TRANSISTOR 2SC1623		R009	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q163	8-729-100-66	TRANSISTOR 2SC1623		R010	1-216-093-00	METAL GLAZE 68K 5%	1/10W
Q164	8-729-902-96	TRANSISTOR FMS1		R011	1-216-121-00	METAL GLAZE 1M 5%	1/10W
Q165	8-729-100-66	TRANSISTOR 2SC1623		R012	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
Q166	8-729-901-00	TRANSISTOR DTC124EK		R013	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q167	8-729-100-66	TRANSISTOR 2SC1623		R014	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q168	8-729-100-66	TRANSISTOR 2SC1623		R015	1-216-093-00	METAL GLAZE 68K 5%	1/10W
Q169	8-729-216-22	TRANSISTOR 2SA1162		R016	1-216-062-00	METAL GLAZE 3.6K 5%	1/10W
Q170	8-729-100-66	TRANSISTOR 2SC1623		R017	1-216-093-00	METAL GLAZE 68K 5%	1/10W
Q171	8-729-100-66	TRANSISTOR 2SC1623		R018	1-216-099-00	METAL GLAZE 120K 5%	1/10W
Q172	8-729-100-66	TRANSISTOR 2SC1623		R019	1-216-099-00	METAL GLAZE 120K 5%	1/10W
Q173	8-729-100-66	TRANSISTOR 2SC1623		R020	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q174	8-729-100-66	TRANSISTOR 2SC1623		R021	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q175	8-729-100-66	TRANSISTOR 2SC1623		R022	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q176	8-729-100-66	TRANSISTOR 2SC1623		R023	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
Q177	8-729-903-10	TRANSISTOR FMW1		R024	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q178	8-729-902-96	TRANSISTOR FMS1		R025	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q179	8-729-100-66	TRANSISTOR 2SC1623		R026	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q180	8-729-100-66	TRANSISTOR 2SC1623		R027	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
Q181	8-729-100-66	TRANSISTOR 2SC1623		R028	1-216-334-11	METAL GLAZE 22K 1%	1/10W
Q182	8-729-100-66	TRANSISTOR 2SC1623		R029	1-216-334-11	METAL GLAZE 22K 1%	1/10W
Q183	8-729-216-22	TRANSISTOR 2SA1162		R030	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q184	8-729-100-66	TRANSISTOR 2SC1623		R031	1-216-075-00	METAL GLAZE 12K 5%	1/10W
Q185	8-729-100-66	TRANSISTOR 2SC1623		R032	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q186	8-729-100-66	TRANSISTOR 2SC1623		R033	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q187	8-729-216-22	TRANSISTOR 2SA1162		R034	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q189	8-729-100-66	TRANSISTOR 2SC1623		R035	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q190	8-729-100-66	TRANSISTOR 2SC1623		R036	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q191	8-729-100-66	TRANSISTOR 2SC1623		R037	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q192	8-729-216-22	TRANSISTOR 2SA1162		R038	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q193	8-729-901-00	TRANSISTOR DTC124EK		R039	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q194	8-729-100-66	TRANSISTOR 2SC1623		R040	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q195	8-729-100-66	TRANSISTOR 2SC1623		R041	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q196	8-729-100-66	TRANSISTOR 2SC1623		R042	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q601	8-729-216-22	TRANSISTOR 2SA1162		R043	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q602	8-729-901-00	TRANSISTOR DTC124EK		R044	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q605	8-729-100-66	TRANSISTOR 2SC1623		R045	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q606	8-729-901-00	TRANSISTOR DTC124EK		R046	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q608	8-729-100-66	TRANSISTOR 2SC1623		R047	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q609	8-729-100-66	TRANSISTOR 2SC1623		R048	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q610	8-729-100-66	TRANSISTOR 2SC1623		R049	1-216-025-00	METAL GLAZE 100 5%	1/10W
Q611	8-729-901-00	TRANSISTOR DTC124EK		R050	1-216-121-00	METAL GLAZE 1M 5%	1/10W
Q801	8-729-374-02	TRANSISTOR 2SB740-3		R051	1-216-085-00	METAL GLAZE 33K 5%	1/10W
				R052	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R053	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R054	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R055	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R056	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R057	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R058	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R059	1-216-025-00	METAL GLAZE 100 5%	1/10W
				R060	1-216-025-00	METAL GLAZE 100 5%	1/10W
R001	1-216-073-00	METAL GLAZE 10K 5%	1/10W				
R002	1-216-073-00	METAL GLAZE 10K 5%	1/10W				
R003	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W				
R004	1-216-073-00	METAL GLAZE 10K 5%	1/10W				
R005	1-216-073-00	METAL GLAZE 10K 5%	1/10W				
R006	1-216-099-00	METAL GLAZE 120K 5%	1/10W				
R007	1-216-101-00	METAL GLAZE 150K 5%	1/10W				

### RESISTOR

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R061	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R164	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R062	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R165	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R063	1-216-025-00	METAL GLAZE	100 5% 1/10W	R166	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R064	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R167	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R101	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R168	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R102	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R169	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R103	1-216-031-00	METAL GLAZE	180 5% 1/10W	R170	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R104	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R171	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R105	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R172	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R106	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R173	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R107	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R174	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R108	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R175	1-216-040-00	METAL GLAZE	430 5% 1/10W
R109	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R176	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R110	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R177	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R111	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R178	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R112	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R180	1-216-041-00	METAL GLAZE	470 5% 1/10W
R113	1-216-039-00	METAL GLAZE	390 5% 1/10W	R184	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R114	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R186	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R115	1-216-031-00	METAL GLAZE	180 5% 1/10W	R188	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R116	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R189	1-216-025-00	METAL GLAZE	100 5% 1/10W
R117	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R190	1-216-045-00	METAL GLAZE	680 5% 1/10W
R118	1-216-029-00	METAL GLAZE	150 5% 1/10W	R191	1-216-045-00	METAL GLAZE	680 5% 1/10W
R119	1-216-021-00	METAL GLAZE	68 5% 1/10W	R192	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R120	1-216-045-00	METAL GLAZE	680 5% 1/10W	R193	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R121	1-216-047-00	METAL GLAZE	820 5% 1/10W	R194	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R122	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R195	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R123	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R196	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R124	1-216-043-00	METAL GLAZE	560 5% 1/10W	R197	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R125	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R198	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R126	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R199	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R127	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R200	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R128	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R201	1-216-039-00	METAL GLAZE	390 5% 1/10W
R129	1-216-031-00	METAL GLAZE	180 5% 1/10W	R202	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R130	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R203	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R131	1-216-037-00	METAL GLAZE	330 5% 1/10W	R204	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R132	1-216-021-00	METAL GLAZE	68 5% 1/10W	R205	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R133	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R206	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R134	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R207	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R135	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R208	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R136	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R209	1-212-976-00	FUSIBLE	56 5% 1/2W F
R137	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R210	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R151	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R211	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R153	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R212	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R154	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R213	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R155	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R214	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R156	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R215	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R157	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R216	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R158	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R217	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R159	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R218	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R160	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R219	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R161	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R220	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R162	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R221	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R163	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R222	1-216-095-00	METAL GLAZE	82K 5% 1/10W

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R223	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R277	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R224	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R278	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R225	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R279	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R226	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R280	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R227	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R281	1-216-039-00	METAL GLAZE	390 5% 1/10W
R228	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R282	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R229	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R283	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R230	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R284	1-216-043-00	METAL GLAZE	560 5% 1/10W
R231	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R285	1-216-041-00	METAL GLAZE	470 5% 1/10W
R232	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R286	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R233	1-216-043-00	METAL GLAZE	560 5% 1/10W	R287	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R234	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R288	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R235	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R289	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R236	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R290	1-216-041-00	METAL GLAZE	470 5% 1/10W
R237	1-216-043-00	METAL GLAZE	560 5% 1/10W	R291	1-216-033-00	METAL GLAZE	220 5% 1/10W
R238	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R292	1-216-033-00	METAL GLAZE	220 5% 1/10W
R239	1-216-045-00	METAL GLAZE	680 5% 1/10W	R293	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R240	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R294	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R241	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R295	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R242	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R296	1-216-025-00	METAL GLAZE	100 5% 1/10W
R243	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R297	1-216-027-00	METAL GLAZE	120 5% 1/10W
R244	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R298	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R245	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R300	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R246	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R301	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R247	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R302	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R248	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R303	1-216-041-00	METAL GLAZE	470 5% 1/10W
R249	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R304	1-216-041-00	METAL GLAZE	470 5% 1/10W
R250	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R306	1-216-025-00	METAL GLAZE	100 5% 1/10W
R251	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R307	1-216-021-00	METAL GLAZE	68 5% 1/10W
R252	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R308	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R253	1-216-047-00	METAL GLAZE	820 5% 1/10W	R309	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R254	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R310	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R256	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R311	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R257	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R312	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R258	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R313	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R259	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R314	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R260	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R315	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R261	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R316	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R262	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R317	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R263	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R318	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R264	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R322	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R265	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R323	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R266	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R324	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R267	1-216-037-00	METAL GLAZE	330 5% 1/10W	R325	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R268	1-216-033-00	METAL GLAZE	220 5% 1/10W	R326	1-216-041-00	METAL GLAZE	470 5% 1/10W
R269	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R327	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R270	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R328	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R271	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R329	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R272	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R330	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R273	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R331	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R274	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R332	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R275	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R333	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R276	1-216-045-00	METAL GLAZE	680 5% 1/10W	R334	1-216-031-00	METAL GLAZE	180 5% 1/10W

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R335	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R403	1-216-699-11	METAL CHIP	100K 0.50% 1/10W
R336	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R404	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R337	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R405	1-216-685-11	METAL CHIP	27K 0.50% 1/10W
R338	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R406	1-218-165-11	METAL GLAZE	220K 1% 1/10W
R339	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R407	1-216-675-11	METAL CHIP	10K 0.50% 1/10W
R340	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R408	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R341	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R409	1-216-677-11	METAL CHIP	12K 0.50% 1/10W
R342	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R410	1-216-530-00	METAL GLAZE	390K 1% 1/10W
R343	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R411	1-216-679-11	METAL CHIP	15K 0.50% 1/10W
R344	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R412	1-216-035-00	METAL GLAZE	270 5% 1/10W
R345	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R413	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R346	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R414	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R347	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R415	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R348	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R416	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R349	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R417	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R350	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R423	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R351	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R431	1-216-033-00	METAL GLAZE	220 5% 1/10W
R352	1-216-041-00	METAL GLAZE	470 5% 1/10W	R434	1-216-033-00	METAL GLAZE	220 5% 1/10W
R353	1-216-033-00	METAL GLAZE	220 5% 1/10W	R435	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R354	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R580	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R355	1-216-035-00	METAL GLAZE	270 5% 1/10W	R581	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R356	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R588	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R357	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R593	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R358	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R594	1-216-037-00	METAL GLAZE	330 5% 1/10W
R359	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R595	1-216-037-00	METAL GLAZE	330 5% 1/10W
R360	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R596	1-216-037-00	METAL GLAZE	330 5% 1/10W
R361	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R599	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R362	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R601	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R363	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R602	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R364	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R603	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R365	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R604	1-216-021-00	METAL GLAZE	68 5% 1/10W
R366	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R605	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R367	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R606	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R368	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R607	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R369	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R608	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R370	1-216-047-00	METAL GLAZE	820 5% 1/10W	R609	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R371	1-216-046-00	METAL GLAZE	750 5% 1/10W	R610	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R372	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R611	1-212-950-00	FUSIBLE	4.7 5% 1/2W F
R373	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R612	1-216-033-00	METAL GLAZE	220 5% 1/10W
R374	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R615	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R375	1-212-958-00	FUSIBLE	10 5% 1/2W F	R616	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R376	1-216-025-00	METAL GLAZE	100 5% 1/10W	R617	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R377	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R618	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R378	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R620	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R379	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R621	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R380	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R623	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R381	1-216-047-00	METAL GLAZE	820 5% 1/10W	R624	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R382	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R625	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R383	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R626	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R384	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R627	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R385	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R629	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R401	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R630	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R402	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R631	1-216-073-00	METAL GLAZE	10K 5% 1/10W

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Ref.No	Part No.	Description	Remark
R632	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R633	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R634	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R635	1-216-035-00	METAL GLAZE 270 5%	1/10W
R636	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R637	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R638	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R640	1-216-025-00	METAL GLAZE 100 5%	1/10W
R641	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R642	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R643	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R644	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R645	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R646	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R648	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R649	1-216-113-00	METAL GLAZE 470K 5%	1/10W
R650	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R651	1-216-033-00	METAL GLAZE 220 5%	1/10W
R652	1-216-033-00	METAL GLAZE 220 5%	1/10W
R653	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R654	1-216-033-00	METAL GLAZE 220 5%	1/10W
R655	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R656	1-216-033-00	METAL GLAZE 220 5%	1/10W
R658	1-216-033-00	METAL GLAZE 220 5%	1/10W
R659	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R660	1-216-033-00	METAL GLAZE 220 5%	1/10W
R661	1-216-033-00	METAL GLAZE 220 5%	1/10W
R662	1-216-033-00	METAL GLAZE 220 5%	1/10W
R663	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R664	1-216-033-00	METAL GLAZE 220 5%	1/10W
R665	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R666	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R667	1-216-033-00	METAL GLAZE 220 5%	1/10W
R668	1-216-033-00	METAL GLAZE 220 5%	1/10W
R669	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R670	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R671	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R672	1-216-033-00	METAL GLAZE 220 5%	1/10W
R673	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R674	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R675	1-216-033-00	METAL GLAZE 220 5%	1/10W
R676	1-216-033-00	METAL GLAZE 220 5%	1/10W
R680	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R681	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R682	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R683	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R684	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R685	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R686	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R687	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R688	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R689	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R690	1-216-049-00	METAL GLAZE 1K 5%	1/10W

Ref.No	Part No.	Description	Remark
R691	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R693	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R694	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R695	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R696	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R697	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R698	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R699	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R801	1-249-389-11	CARBON 4.7 5%	1/4W
R802	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
<u>VARIABLE RESISTOR</u>			
RV001	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV101	1-237-433-21	RES, ADJ, METAL GLAZE 470	
RV151	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
RV152	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
RV154	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
RV601	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
<u>THERMISTOR</u>			
TH151	1-800-625-11	THERMISTOR	
<u>CRYSTAL</u>			
X601	1-567-900-11	VIBRATOR, CRYSTAL	
*****			
*A-6421-471-A	PS-193 BOARD, COMPLETE (MDP-333)	*****	
*A-6421-473-A	PS-193 BOARD, COMPLETE (MDP-355GX)	*****	
△1-533-189-11	HOLDER, FUSE		
1-535-443-00	PIN, TERMINAL (AC CORD)		
*3-309-144-21	HEAT SINK		
7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3		
<u>CAPACITOR</u>			
C101	1-125-298-00	ELECT(BLOCK) 10000MF	20% 25V
C102	1-124-314-00	ELECT 4700MF	20% 25V
C103	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C104	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C107	1-124-471-00	ELECT 1000MF	20% 6.3V
C108	1-124-791-11	ELECT 1MF	20% 50V
C109	1-124-472-11	ELECT 470MF	20% 6.3V
C110	1-163-833-00	CERAMIC CHIP 0.068MF	25V
C111	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C112	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C114	1-126-101-11	ELECT 100MF	20% 16V
C115	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C116	1-163-833-00	CERAMIC CHIP 0.068MF	25V
C119	1-126-176-11	ELECT 220MF	20% 10V
C120	1-126-096-11	ELECT 10MF	20% 25V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C201	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	JR231	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C202	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V			<u>COIL</u>	
C203	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L101	1-412-012-11	INDUCTOR 100UH	
C204	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L102	1-410-339-11	COIL, CHOKE 10UH	
C205	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	L201	1-424-219-11	COIL, CHOKE 300UH	
C206	1-163-007-11	CERAMIC CHIP 680PF	10% 50V			<u>LEAD PIN</u>	
C207	1-124-910-11	ELECT 47MF	20% 35V	LP001	4-352-844-01	PIN, LEAD, COATING	
C208	1-163-035-00	CERAMIC CHIP 0.047MF	50V			<u>IC LINK</u>	
C209	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	PS001	1-532-675-00	LINK, IC	
C210	1-163-007-11	CERAMIC CHIP 680PF	10% 50V			<u>TRANSISTOR</u>	
C211	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
C212	1-163-035-00	CERAMIC CHIP 0.047MF	50V	Q102	8-729-216-22	TRANSISTOR 2SA1162	
C301	△.1-136-345-21	FILM 0.1MF 20% 125V (MDP-333)		Q103	△.8-729-113-31	TRANSISTOR 2SB733-2	
		<u>CONNECTOR</u>		Q105	8-729-159-64	TRANSISTOR 2SD596	
CN001	△.1-564-419-11	HEADER, SPRING (POWER) 2P		Q201	△.8-729-117-11	TRANSISTOR 2SB1151	
CN002	△.1-564-419-11	HEADER, SPRING (POWER) 2P		Q202	△.8-729-143-30	TRANSISTOR 2SD1691-K	
CN003	*1-560-890-00	PIN, CONNECTOR 2P		Q203	△.8-729-117-11	TRANSISTOR 2SB1151	
CN004	*1-560-895-00	PIN, CONNECTOR 7P		Q204	△.8-729-143-30	TRANSISTOR 2SD1691-K	
CN005	1-506-469-11	PIN, CONNECTOR 4P		Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		<u>DIODE</u>		Q206	8-729-216-22	TRANSISTOR 2SA1162	
D101	△.8-719-500-55	DIODE D3SBA10		Q208	8-729-900-53	TRANSISTOR DTC114EK	
D105	8-719-980-78	DIODE ERA81-006		Q209	8-729-901-04	TRANSISTOR DTA114EK	
D106	8-719-110-31	DIODE RD12ES-B2		Q210	8-729-100-67	TRANSISTOR 2SC1623	
D108	8-719-105-82	DIODE RD5.1M-B1		Q211	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D201	8-719-980-78	DIODE ERA81-006		Q212	8-729-901-04	TRANSISTOR DTA114EK	
D202	8-719-980-78	DIODE ERA81-006				<u>RESISTOR</u>	
D203	8-719-200-02	DIODE 10E2		R002	1-216-296-00	METAL GLAZE 0 5% 1/8W	
D204	8-719-200-02	DIODE 10E2		R003	1-216-296-00	METAL GLAZE 0 5% 1/8W	
D205	8-719-911-19	DIODE 1SS119		R004	1-216-296-00	METAL GLAZE 0 5% 1/8W	
D206	8-719-911-19	DIODE 1SS119		R101	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
D207	8-719-911-19	DIODE 1SS119		R102	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
		<u>FUSE</u>		R103	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
F101	△.1-532-747-11	FUSE, GLASS TUBE (5A 125V)		R104	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
F102	△.1-532-747-11	FUSE, GLASS TUBE (5A 125V)		R105	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
F103	△.1-532-960-11	FUSE, MICRO (1.25A 125V)		R106	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
F104	△.1-532-960-11	FUSE, MICRO (1.25A 125V)		R107	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
F105	△.1-532-778-21	FUSE, MICRO (SECONDARY) (1.6A 125V) (MDP-333)		R108	1-216-043-00	METAL GLAZE 560 5% 1/10W	
F301	△.1-532-743-11	FUSE, GLASS TUBE (2A 125V) (MDP-333)		R109	1-216-687-11	METAL CHIP 33K 0.50% 1/10W	
F301	△.1-532-960-11	FUSE, GLASS TUBE (2A 250V) (MDP-355GX)		R110	1-216-676-11	METAL CHIP 11K 0.50% 1/10W	
		<u>IC</u>		R112	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
IC101	8-759-971-39	IC BA9700AF		R114	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
IC102	8-759-604-47	IC M5F7905L		R115	△.1-216-447-00	METAL OXIDE 27 5% 2W F	
IC201	8-759-100-97	IC UPC339G2		R116	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
IC202	8-759-100-96	IC UPC4558G2		R117	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
		<u>JUMPER RESISTOR</u>		R120	1-216-192-00	METAL GLAZE 560 5% 1/8W	
JR001	1-216-295-00	METAL GLAZE 0 5% 1/10W		R201	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
JR005	1-216-295-00	METAL GLAZE 0 5% 1/10W		R202	1-216-075-00	METAL GLAZE 12K 5% 1/10W	

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PS-193

FP-310

CK-44

LS-30

Ref.No	Part No.	Description	Remark
R203	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R204	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R205	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R206	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R207	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R208	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R209	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R210	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R211	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R212	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R213	1-216-049-00	METAL GLAZE 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 GLAZE 1K 5% 1/10W	
R217	△.1-216-369-00	METAL OXIDE 1 5% 2W F	
R218	1-216-690-11	METAL CHIP 43K 0.50% 1/10W	
R219	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R220	1-216-690-11	METAL CHIP 43K 0.50% 1/10W	
R221	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R222	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R223	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R224	△.1-215-866-11	METAL OXIDE 330 5% 1W F	
R225	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R226	1-247-750-11	CARBON 680 5% 1/2W	
R227	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R228	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R230	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R231	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R301	△.1-202-729-00	SOLID 6.8M 10% 1/2W (MDP-333)	
<u>SWITCH</u>			
SW301	△.1-553-318-61	SWITCH, PUSH (AC POWER)(1 KEY)	
<u>FILTER</u>			
T301	△.1-421-771-11	FILTER, LINE	
*****			
*1-635-254-11	FP-310 BOARD	*****	
<u>CAPACITOR</u>			
C501	1-135-155-21	TANTAL. CHIP 4.7MF 20% 10V	
<u>CONNECTOR</u>			
CN501	*1-569-749-11	PIN, CONNECTOR (PC BOARD) 7P	
<u>RESISTOR</u>			
R501	1-249-422-11	CARBON 2.7K 5% 1/4W	
R502	1-249-424-11	CARBON 3.9K 5% 1/4W	
R503	1-249-422-11	CARBON 2.7K 5% 1/4W	
R504	1-249-424-11	CARBON 3.9K 5% 1/4W	
R505	1-249-427-11	CARBON 6.8K 5% 1/4W	

Ref.No	Part No.	Description	Remark
<u>SWITCH</u>			
S501	1-553-856-00	SWITCH, KEY BOARD (ACS/AMS: FWD)	
S502	1-553-856-00	SWITCH, KEY BOARD (ACS/AMS: RVS)	
S503	1-553-856-00	SWITCH, KEY BOARD (OPEN/CLOSE)	
S504	1-466-302-11	SWITCH, ROTARY (PLAY/SHUTTLE)	
S505	1-553-856-00	SWITCH, KEY BOARD (PAUSE)	
S506	1-553-856-00	SWITCH, KEY BOARD (STOP)	
*****			
*1-635-255-11	CK-44 BOARD	*****	
<u>CAPACITOR</u>			
C401	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C402	1-163-038-00	CERAMIC CHIP 0.1MF	25V
<u>CONNECTOR</u>			
CN401	1-506-467-11	PIN, CONNECTOR 2P	
CN402	1-506-468-11	PIN, CONNECTOR 3P	
CN403	1-506-467-11	PIN, CONNECTOR 2P	
CN404	1-506-467-11	PIN, CONNECTOR 2P	
CN405	1-506-467-11	PIN, CONNECTOR 2P	
<u>JUMPER RESISTOR</u>			
JR401	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR402	1-216-296-00	METAL GLAZE 0 5% 1/8W	
<u>RESISTOR</u>			
R401	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R402	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R403	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R404	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R405	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R406	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R407	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
*****			
*1-635-259-11	LS-30 BOARD	*****	
3-735-054-01	HOLDER, SENSOR		
<u>CONNECTOR</u>			
CN201	1-506-468-11	PIN, CONNECTOR 3P	
<u>DIODE</u>			
D201	8-719-941-81	DIODE GL360	
<u>TRANSISTOR</u>			
Q201	8-729-904-10	PHOTO TRANSISTOR PT360FS	

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.



SW-156

SW-157

FG-41

VS-47

Ref.No	Part No.	Description	Remark
	*1-635-260-11	SW-156 BOARD *****	
		<u>CONNECTOR</u>	
CN301	1-506-467-11	PIN, CONNECTOR 2P	
		<u>SWITCH</u>	
S301	1-554-655-00	SWITCH, LEAF	
*****			
	*1-635-261-11	SW-157 BOARD *****	
		<u>CONNECTOR</u>	
CN401	1-506-481-11	PIN, CONNECTOR 2P	
CN402	1-506-481-11	PIN, CONNECTOR 2P	
		<u>RESISTOR</u>	
R401	1-249-423-11	CARBON 3.3K 5% 1/4W	
R402	1-249-417-11	CARBON 1K 5% 1/4W	
		<u>SWITCH</u>	
S401	1-571-300-11	SWITCH, ROTARY	
*****			
	*1-635-256-11	FG-41 BOARD *****	
		<u>DIODE</u>	
D301	8-719-939-11	PHOTO DIODE GP2S09-B	
*****			
	*1-631-866-11	VS-47 BOARD (MDP-355GX) *****	
		<u>SWITCH</u>	
SW302	1-554-933-11	SELECTOR, VOLTAGE	
*****			
		<u>MISCELLANEOUS</u> *****	
	1-559-129-51	CORD, POWER	
	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
	*1-575-813-12	CABLE, FLAT (FLEXIBLE) (28 CORE)	
	8-848-138-11	DEVICE, OPTICAL KHS-130A	
M901	1-541-776-11	MOTOR, LD SPINDLE	
M902	1-541-659-11	MOTOR, DC (SLED)	
M903	A-6415-290-A	MOTOR BLOCK ASSY, SKEW	
M904	A-6415-359-A	MOTOR BLOCK ASSY (X), LOADING	
S901	1-571-435-11	SWITCH (SLED IN LIMIT)	

Ref.No	Part No.	Description	Remark
S902	1-570-771-21	SWITCH (SLED OUT LIMIT)	
S903	1-554-468-00	SWITCH, LEAF (SLED IN LIMIT LD/CD)	
T401	1-449-804-11	TRANSFORMER, POWER	
*****			
		<u>ACCESSORIES AND PACKING MATERIALS</u> *****	
		<u>Part No.</u>	<u>Description</u>
			<u>Remark</u>
	A-6768-253-A	RFU 90UC (RF UNIT) (MDP-333)	
	1-465-496-21	REMOTE COMMANDER (RMT-333A)	
	1-551-086-31	CORD, CONNECTION	
	1-559-533-11	CORD, CONNECTION	
	*3-701-628-00	BAG, POLYETHYLENE	
	*3-710-964-01	SHEET, PROTECTION	
	*3-746-513-02	CUSHION (UPPER)	
	*3-746-514-01	CUSHION (LOWER)	
	*3-746-517-01	INDIVIDUAL CARTON	
	3-751-824-21	MANUAL, INSTRUCTION (ENGLISH) (MDP-333/355GX)	
	3-751-824-31	MANUAL, INSTRUCTION (FRENCH) (MDP-333)	
	*3-795-581-21	SAFEGUARD, IMPORTANT	
*****			
		<u>HARDWARE LIST</u> *****	
		<u>SCREW</u>	
	7-621-255-55	SCREW +P 2X8	
	7-682-545-04	SCREW +PSW 3X5	
	7-682-645-01	SCREW +PS 3X4	
	7-685-646-79	SCREW, TAPPING	
	7-685-646-79	SCREW +P 3X8 TYPE2 NON-SLIT	
	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
	7-685-661-79	SCREW +BVTP 4X12 TYPE2 SLIT	
	7-687-233-11	SCREW +PTPWH 2.6X6	
		<u>STOP RING</u>	
	7-624-108-04	STOP RING 4.0, TYPE -E	
*****			

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

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

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



# MDP-333/355GX

RMT-333A

## SONY<sup>®</sup> SERVICE MANUAL

*US Model*  
*Canadian Model*  
*MDP-333*  
*E Model*  
*MDP-355GX*

### SUPPLEMENT-1

Subject:

1. Block Diagram
2. Electrical Adjustments

File this supplement with the service manual.

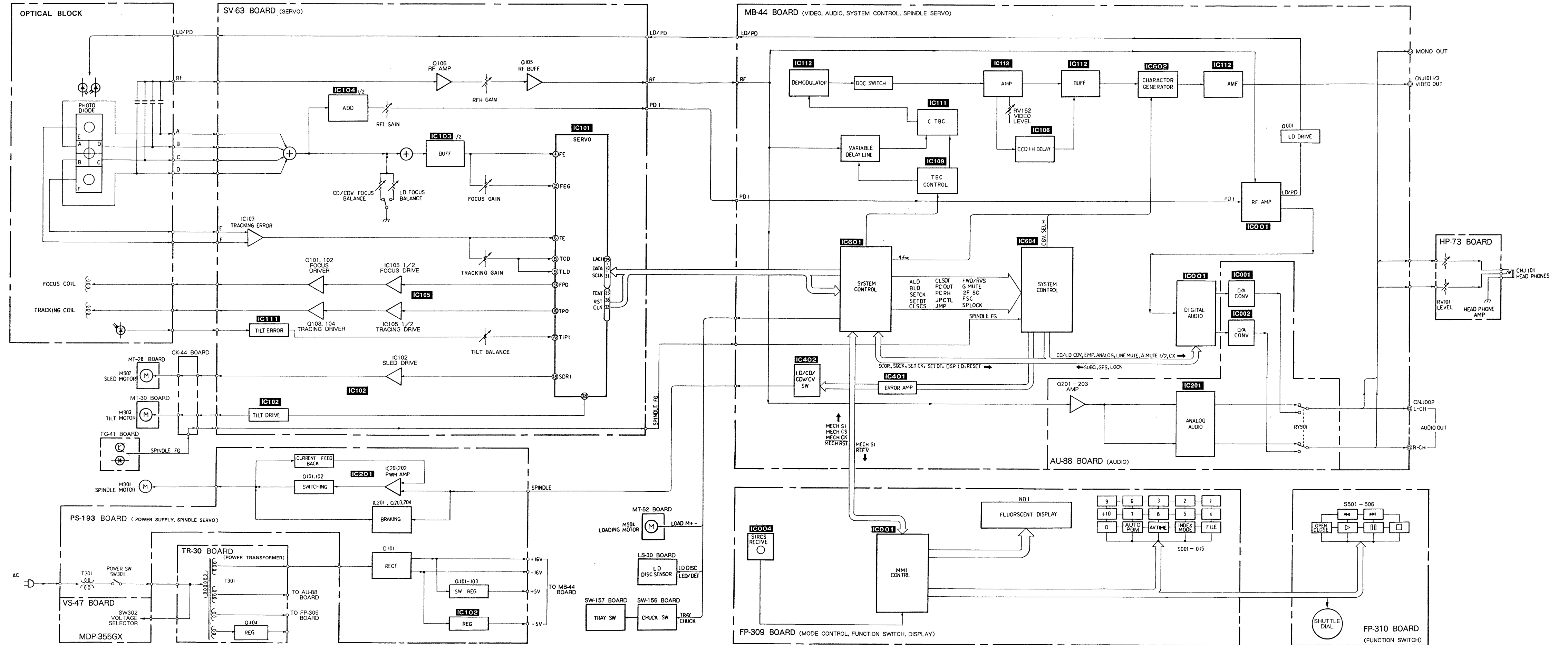
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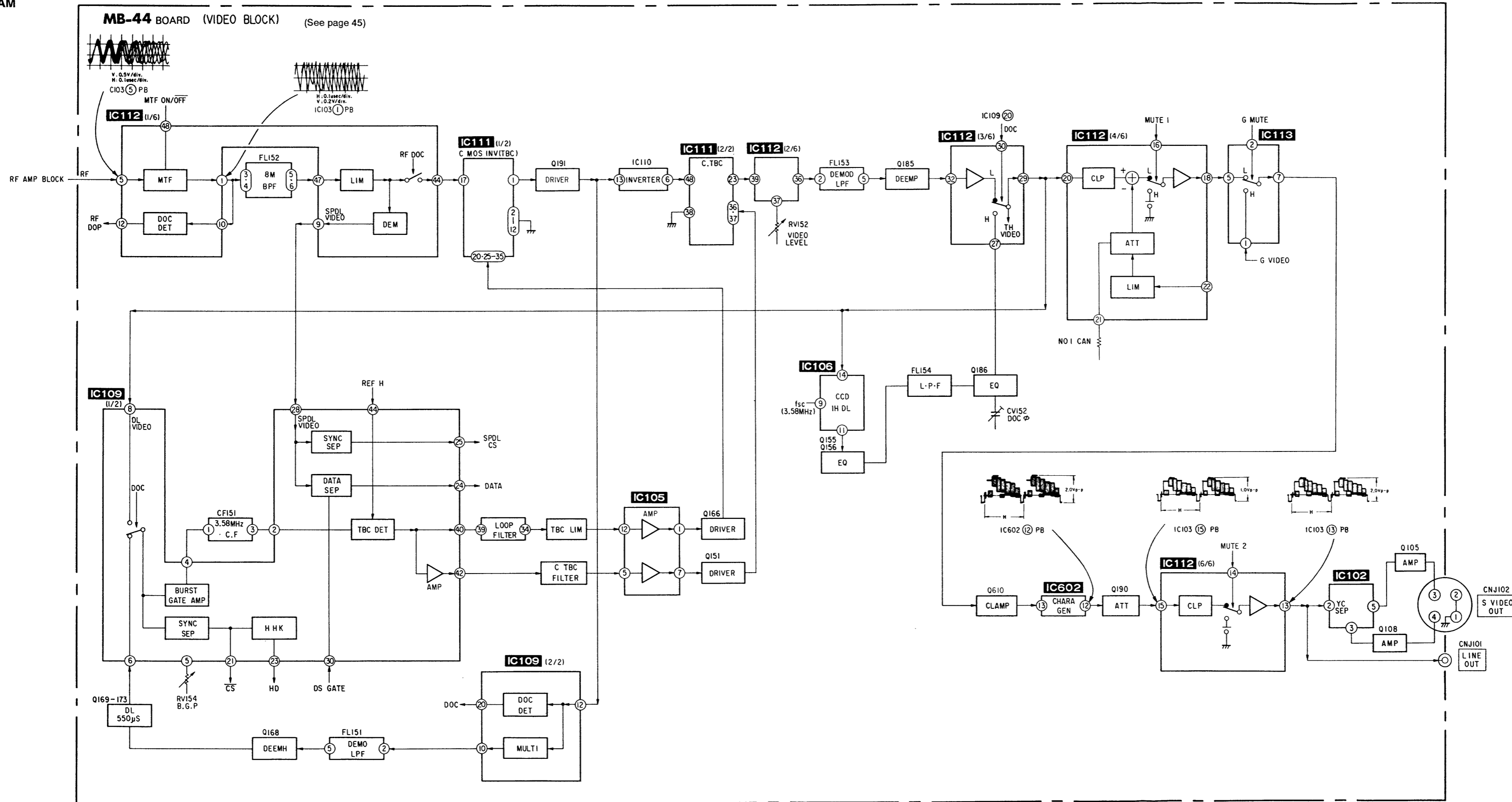
**Note:** In block diagrams, page number in brackets near the board name shows its schematic diagram page on the service manual previously issued (9-972-930-11).

SECTION 1  
BLOCK DIAGRAMS

1-1. OVERALL BLOCK DIAGRAM

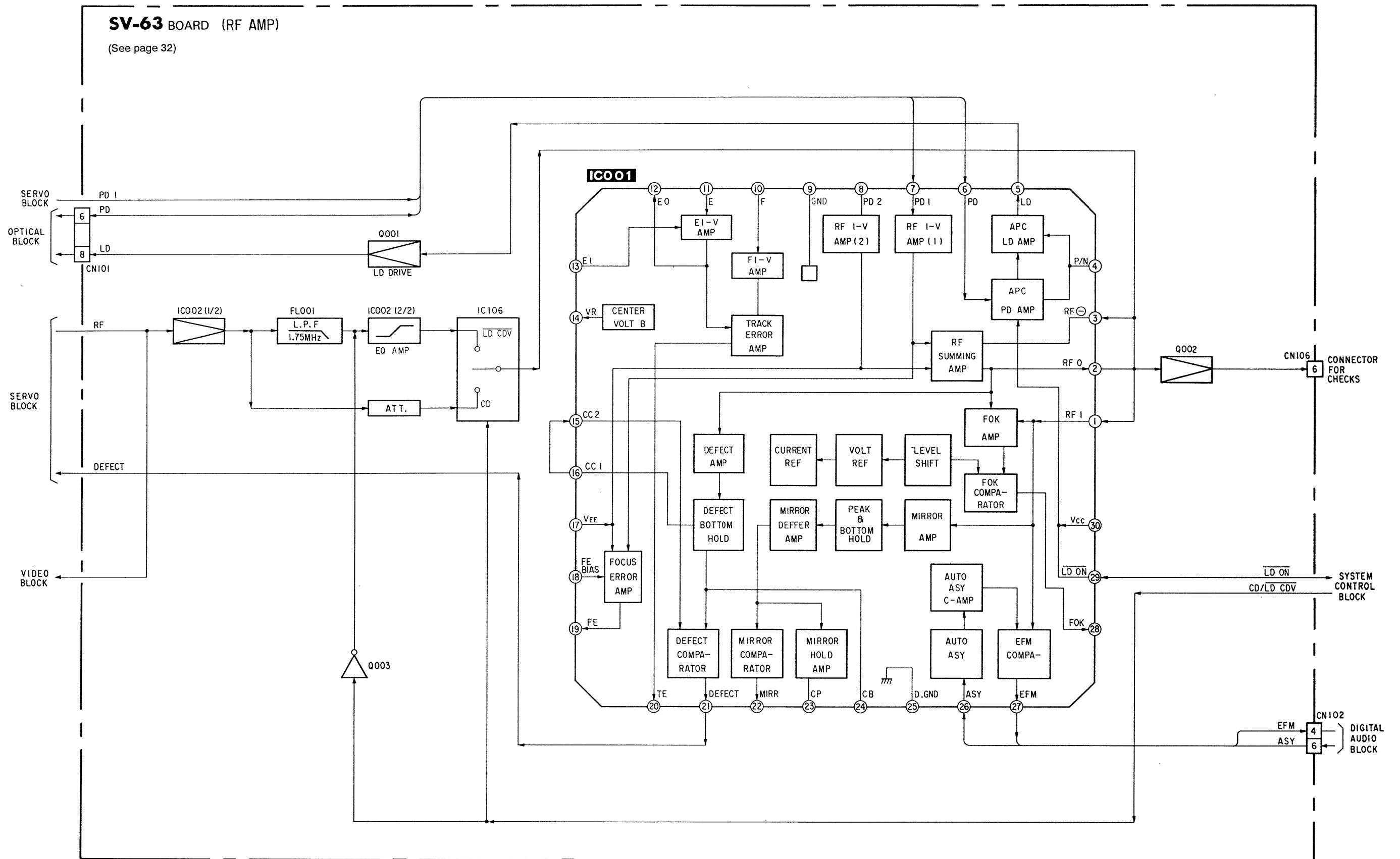


1-2. VIDEO BLOCK DIAGRAM



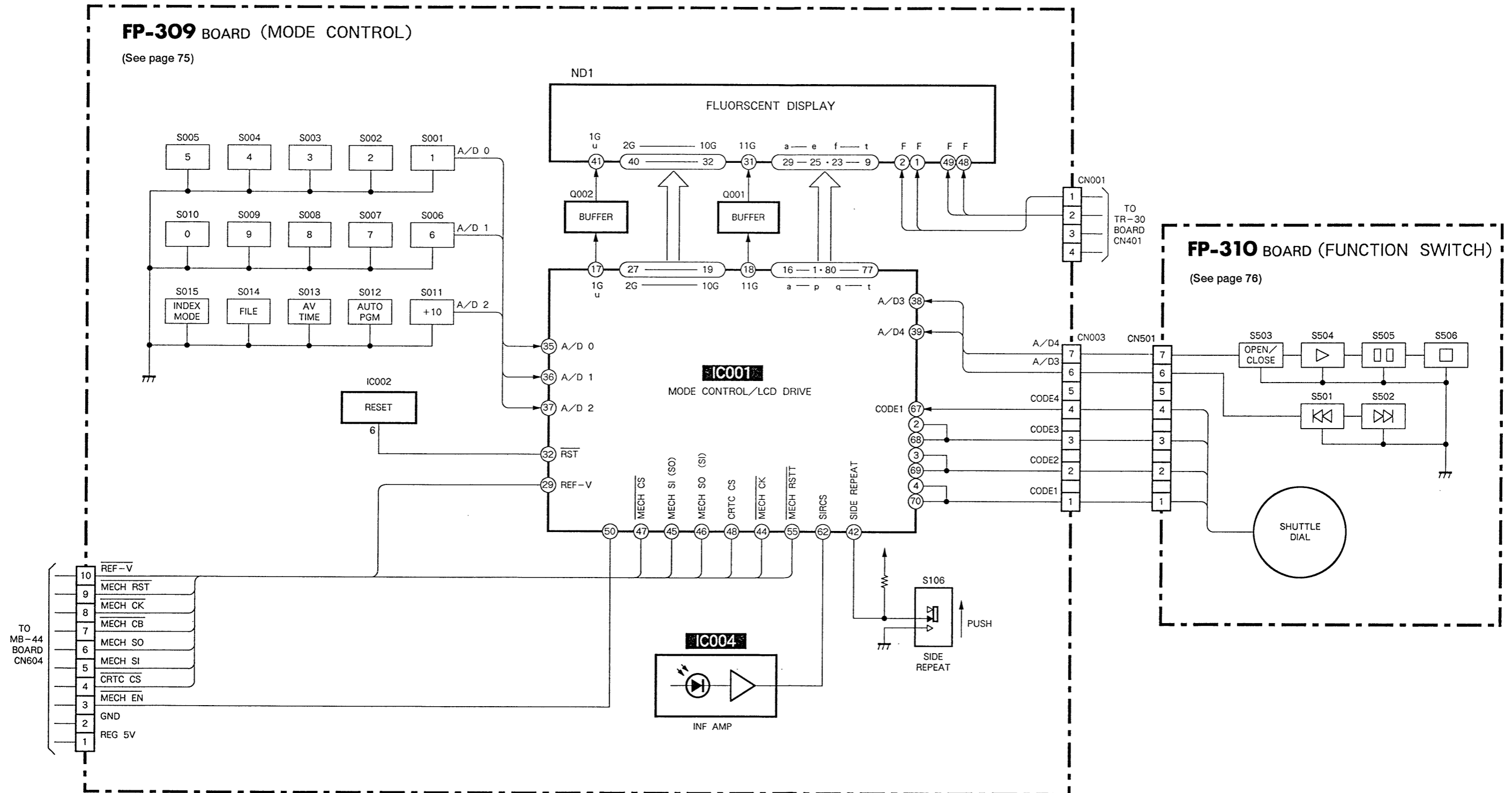


1-3. RF AMP BLOCK DIAGRAM

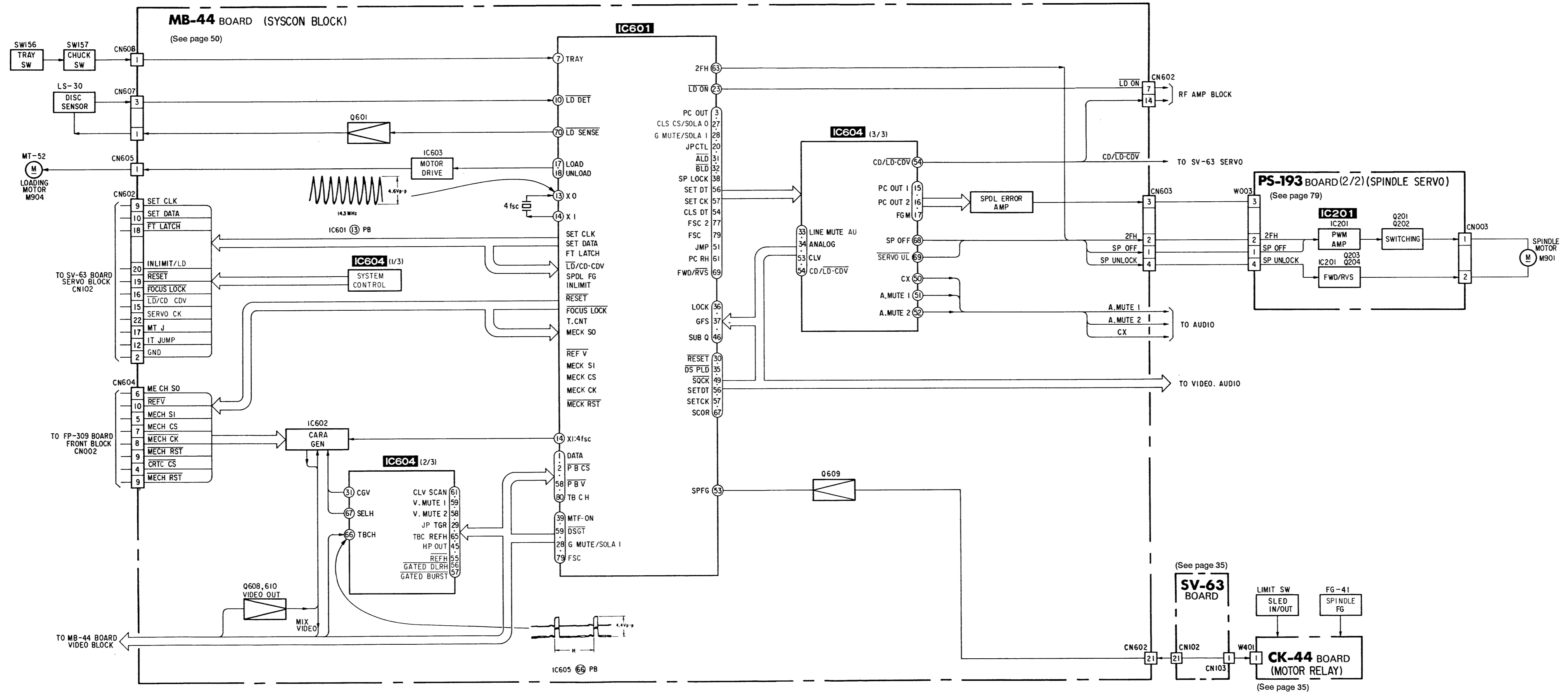




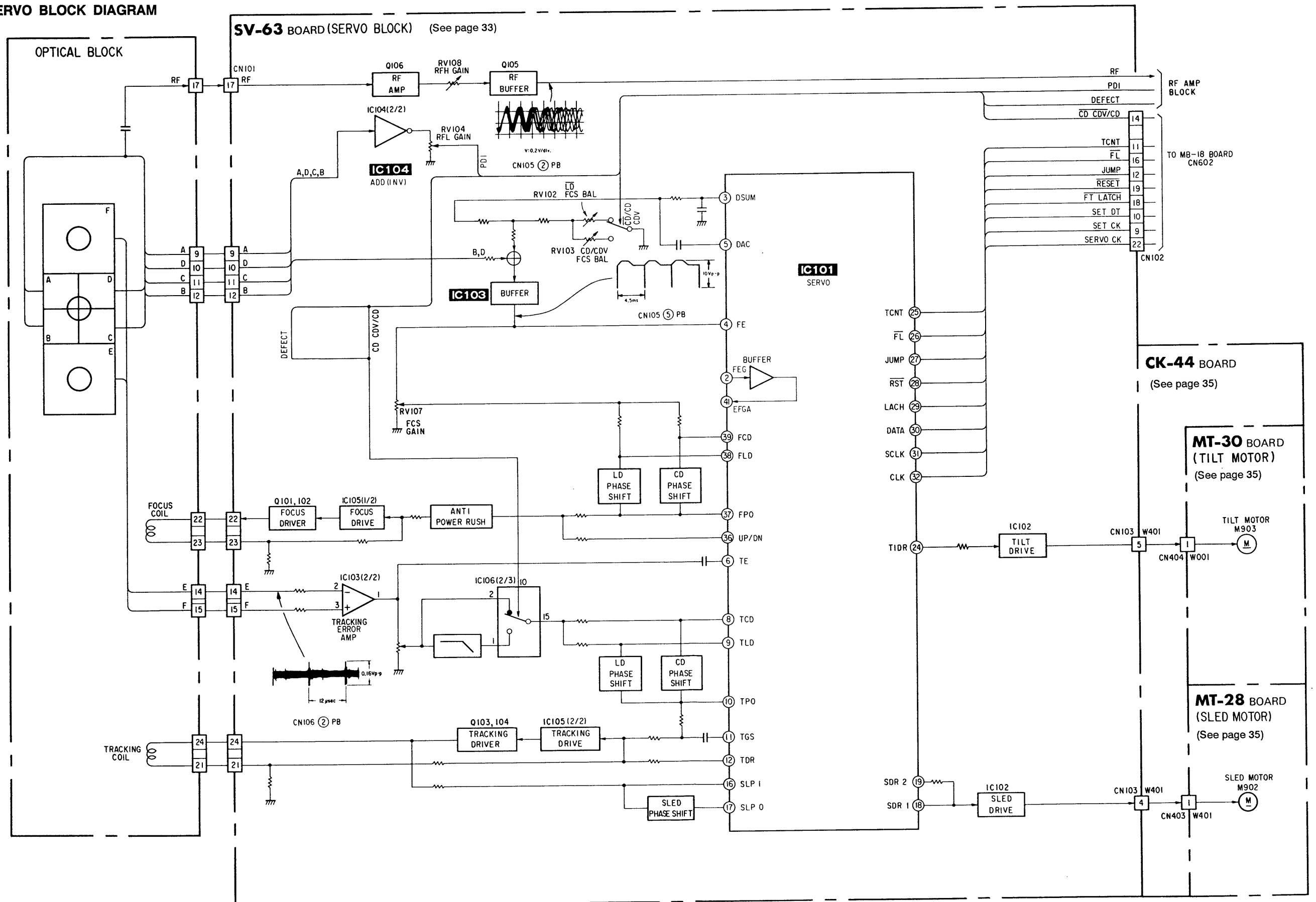
1-4. MODE CONTROL BLOCK DIAGRAM



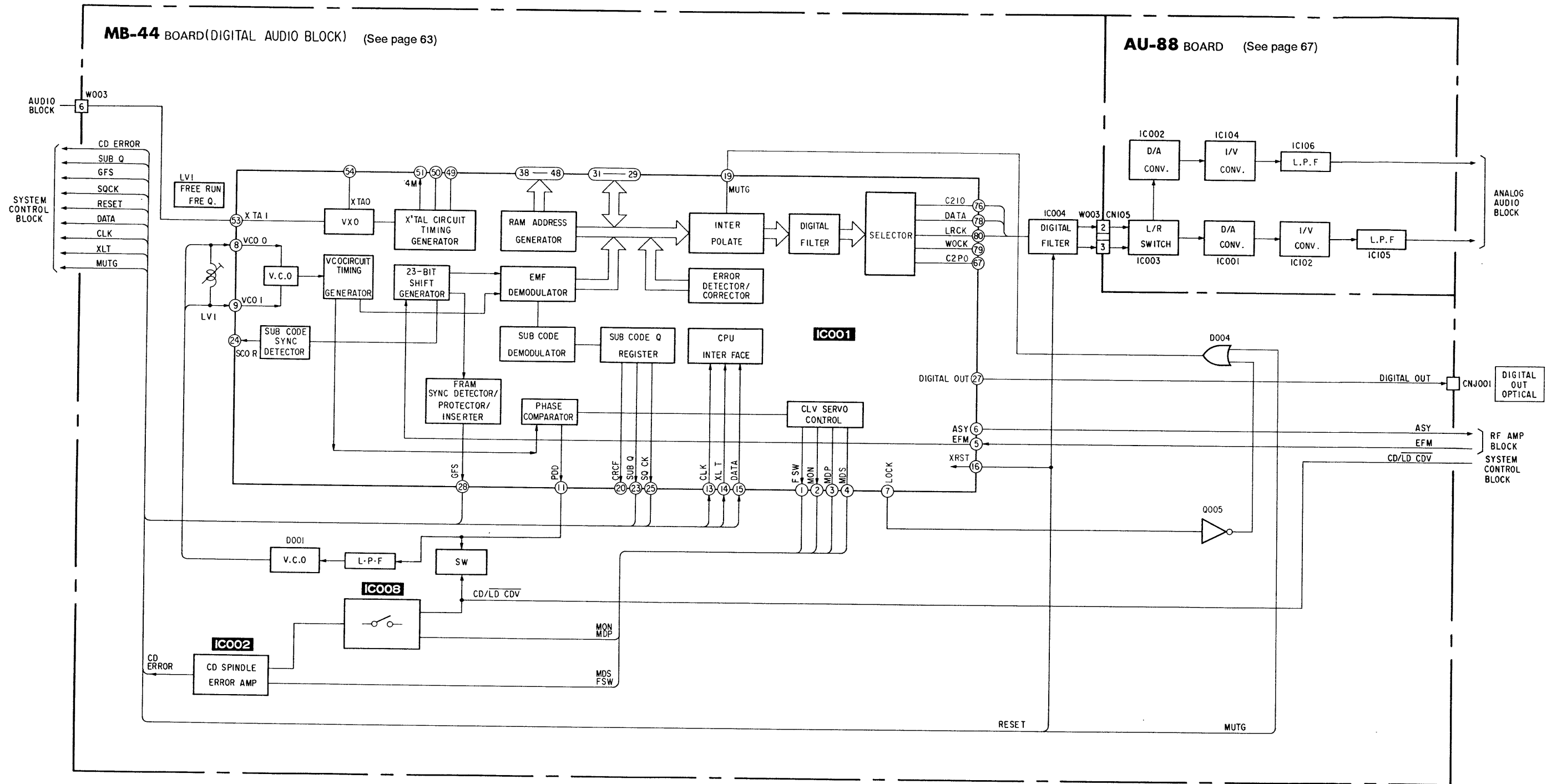
1-5. SYSTEM CONTROL BLOCK DIAGRAM



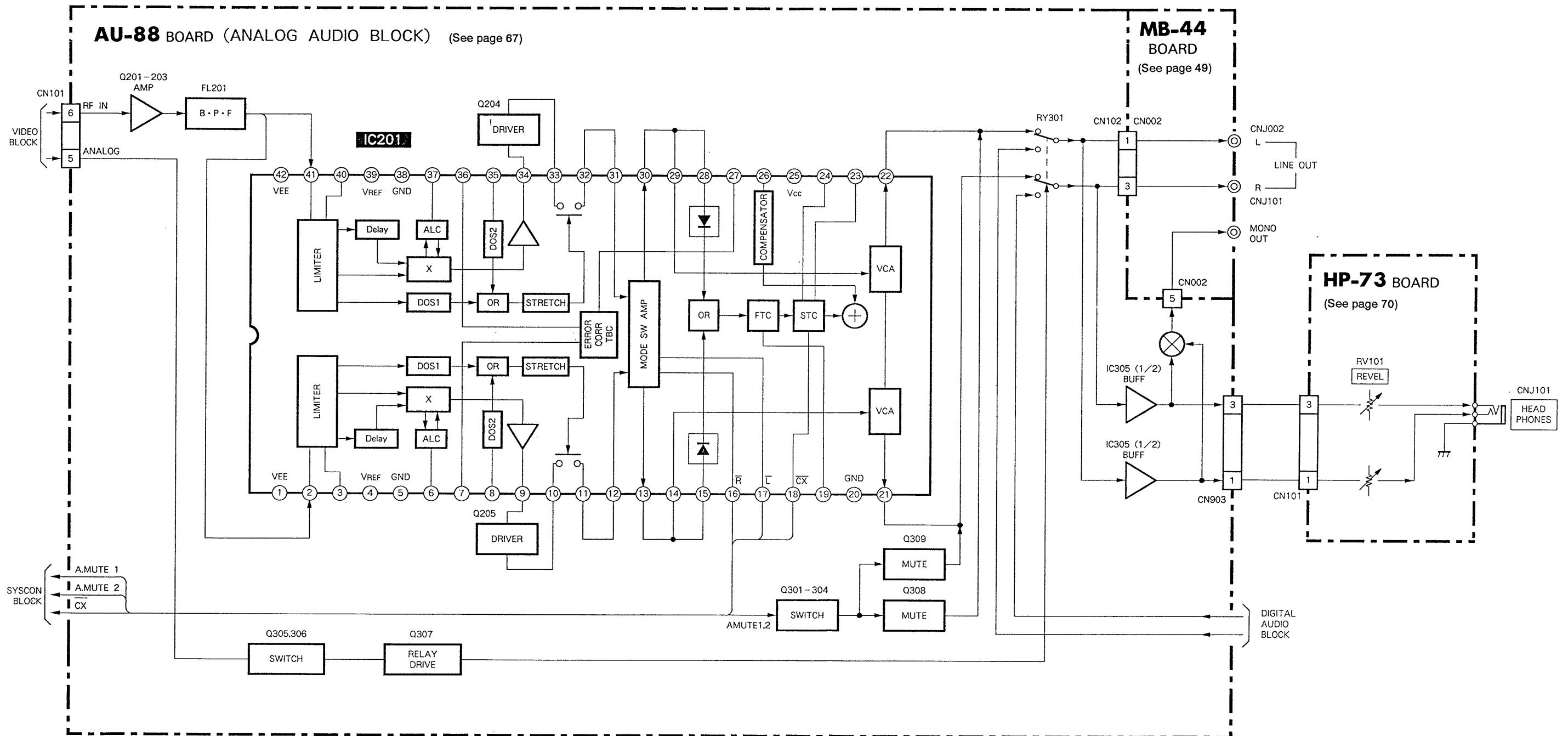
1-6. SERVO BLOCK DIAGRAM



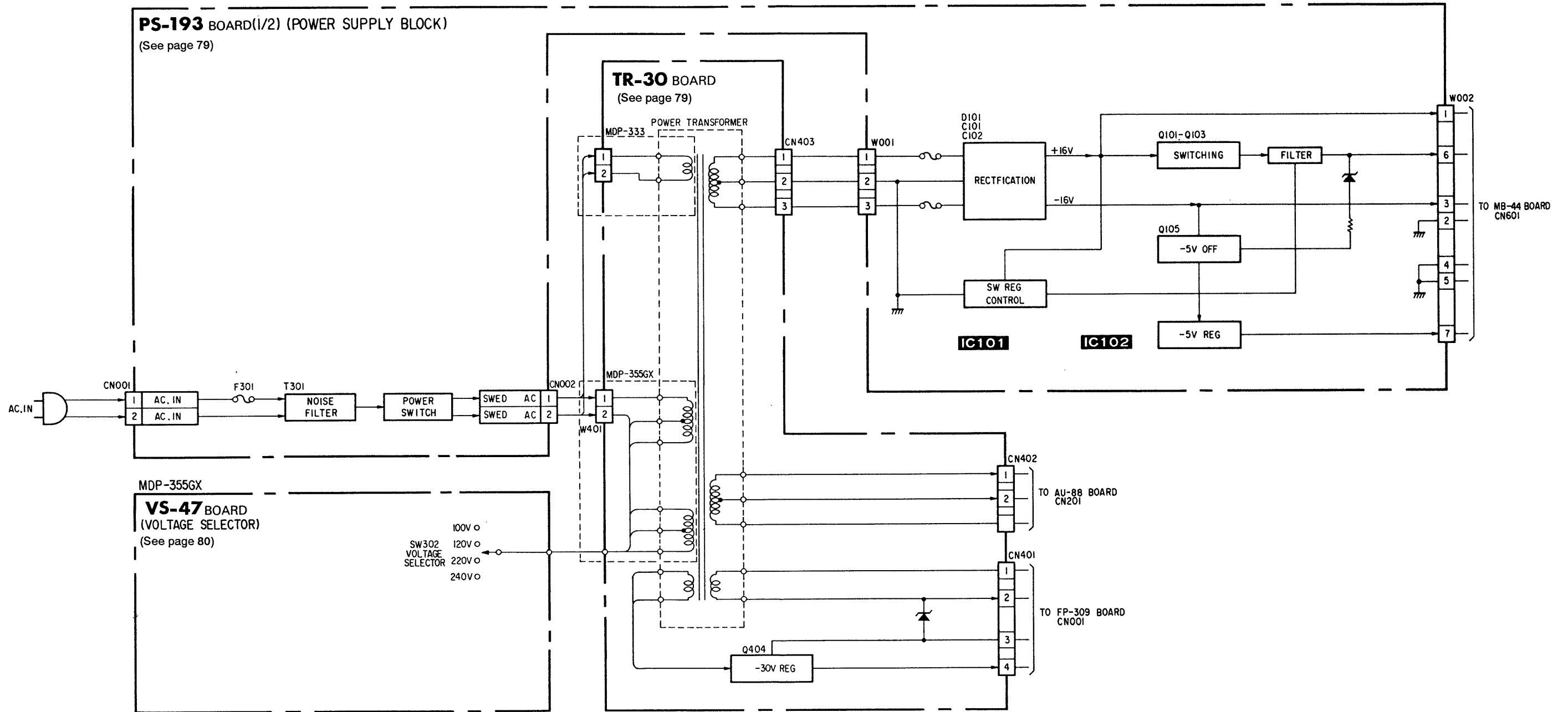
1-7. DIGITAL AUDIO BLOCK DIAGRAM



1-8. ANALOG AUDIO BLOCK DIAGRAM



1-9. POWER SUPPLY BLOCK DIAGRAM



## SECTION 2 ELECTRICAL ADJUSTMENTS

During these adjustment, see the parts arrangement diagram for adjustments on page from 38.

### 2-1. LIST OF SERVICING JIGS

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote commander (RMT-333A)
- LD alignment disc REF7C-8AL (8-597-901-03)
- CD alignment disc YEDS-18 (3-702-101-01)
- MD adjustment cable (J-6082-059-B)
- Audio oscillator

### 2-2. 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.

### 2-3. 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.

## 2-4. 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.

## 2-5. SYSTEM CONTROL SYSTEM ADJUSTMENT

### 2-5-1. Microprocessor Clock Adjustment (MB-44 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.

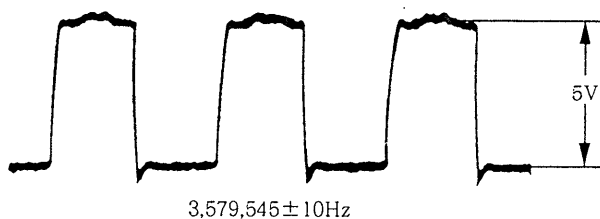


Fig. 2-1.

## 2-6. 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



## 2-6-1. 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.

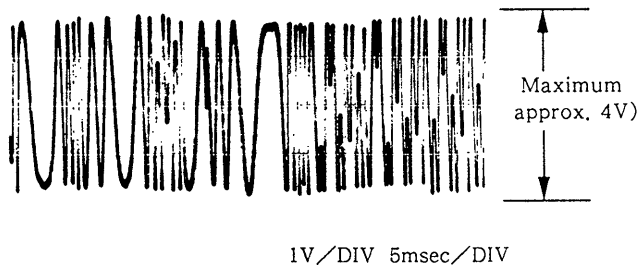


Fig. 2-2.

#### 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.

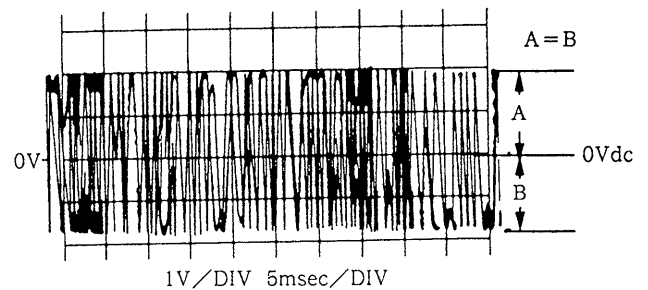
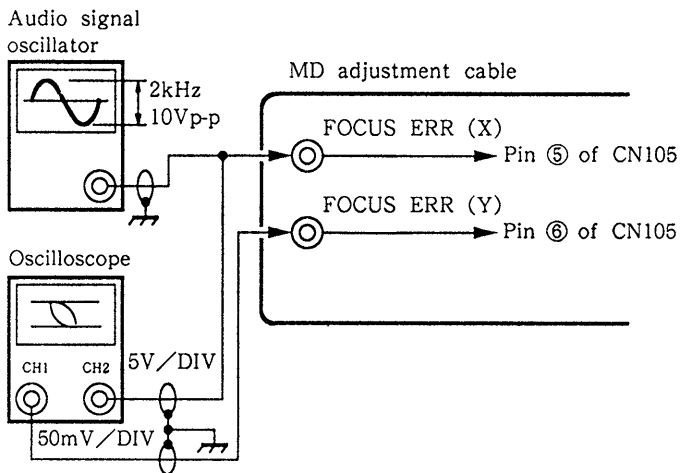


Fig. 2-3.

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

Mode	Playback
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable CH1 : [FOCUS ERR (X)] (Pin ⑥ of CN105) CH2 : [FOCUS ERR (Y)] (Pin ⑤ 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.

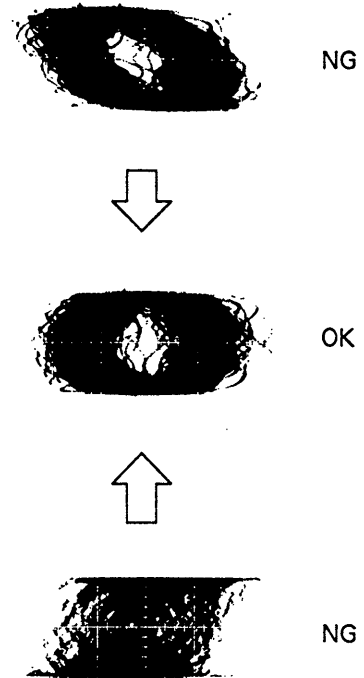


Fig. 2-4.

### 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. 2-10.) with a hexagonal wrench.

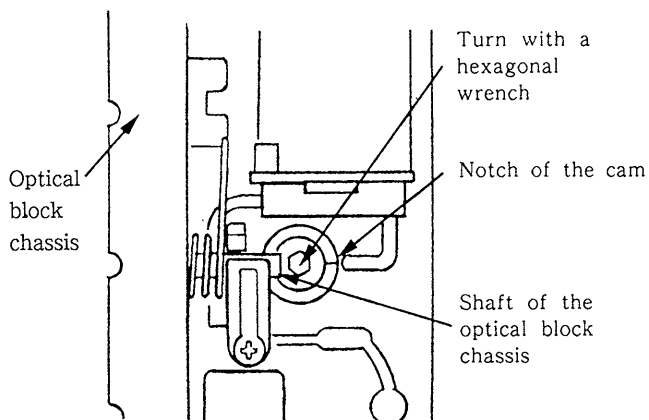


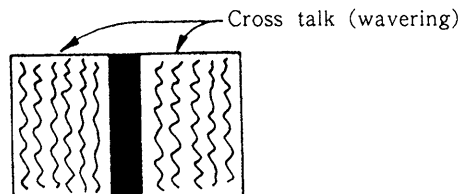
Fig. 2-5.

#### 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. 2-6.

#### 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 talks (wavering) level.

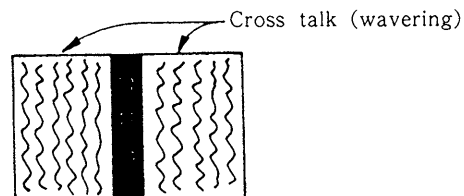


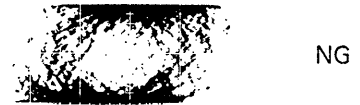
Fig. 2-7.

**4. LD Tracing 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

**Adjustment method :**

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



**Connections :**

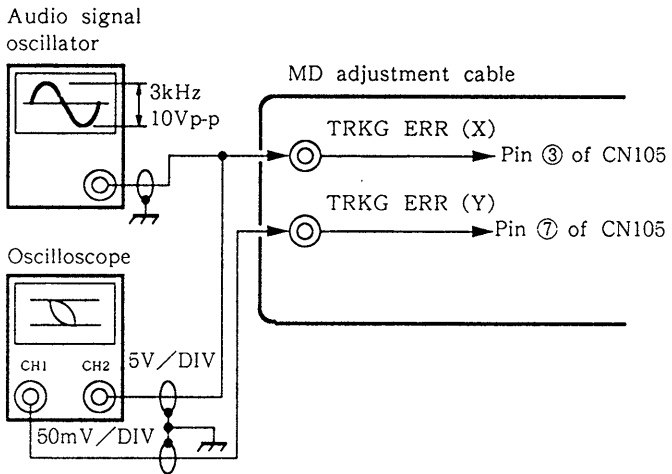


Fig. 2-8.

## 2-6-2. 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.

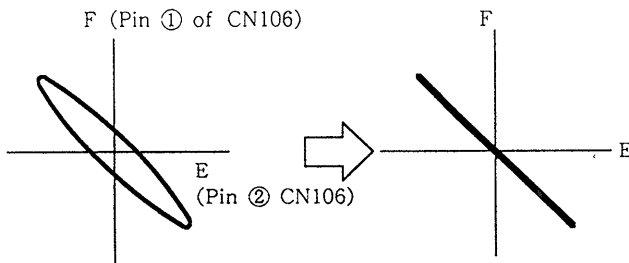


Fig. 2-9.

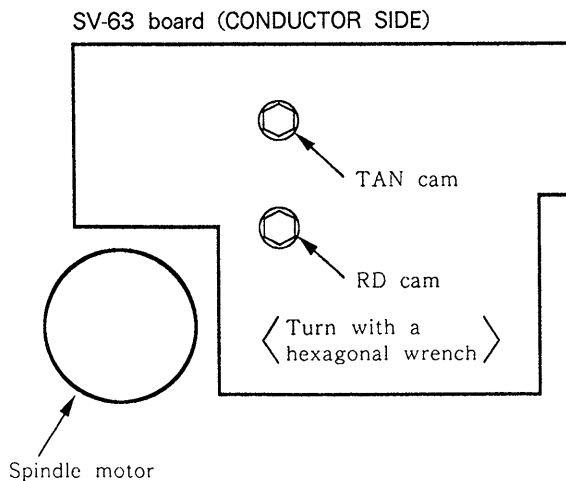


Fig. 2-10.

### 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) Play back the track No. 1.
- 2) Adjust RV103 for maximum level.

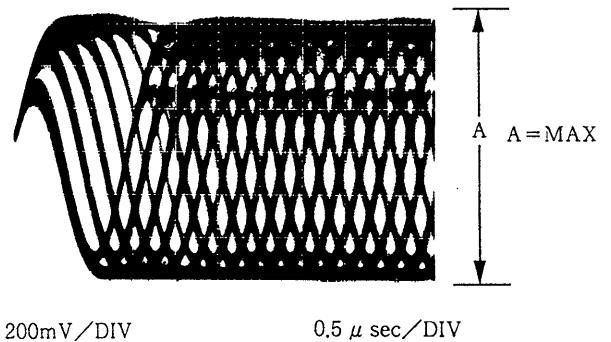


Fig. 2-11.

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

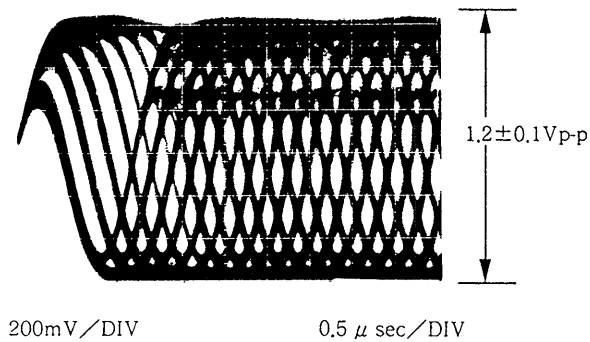


Fig. 2-12.

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

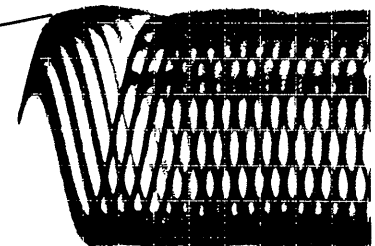
Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV104
Specified Value	Clear-cut waveform

#### Adjustment method :

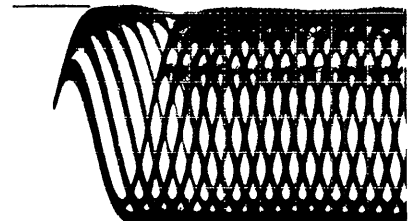
- 1) Play back the track No. 1.
- 2) Adjust RV104 so that the waveform of lozenge-shaped portions becomes clear-cut and the waveform slant disappears from the rising edge portion.

- Waveform slant at the rising edge.
- Waveform of lozenge-shaped portions are not clear.

(RV104 : Excessively rotated in clockwise direction (○) .



OK  
200mV/DIV  
0.5 μ sec/DIV



- Waveform slant at the rising edge.
- Waveform of lozenge-shaped portions are not clear.

(RV104 : Excessively rotated in counterclockwise direction (○) .

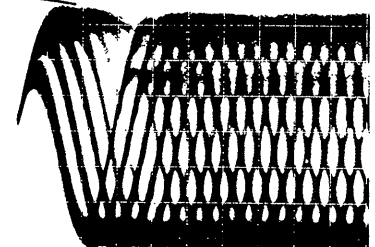


Fig. 2-13.

## 2-7. VIDEO SYSTEM ADJUSTMENT

### 2-7-1. Video Output Level Adjustment (MB-44 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	CNJ101 (VIDEO OUT terminal) (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV152
Specified Value	1.00 ± 0.03 Vp-p

**Adjustment method :**

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100 and apply a color bar signal.
- 3) Adjust RV152 for 1.00 ± 0.03 Vp-p.



Fig. 2-14.

### 2-7-2. 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 ± 0.03 Vp-p

**Adjustment method :**

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100.
- 3) Adjust RV101 for 1.00 ± 0.03 Vp-p.

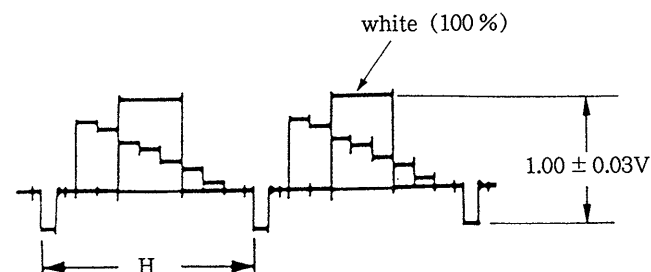


Fig. 2-15.

### 2-7-3. Burst Gate Position Adjustment (MB-44 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	Pin ② of IC107
Adjusting Element	RV154
Specified Value	8.6 ± 0.3 μsec

**Adjustment method :**

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100.
- 3) Adjust RV154 so that tw becomes 8.6 ± 0.3 μsec.

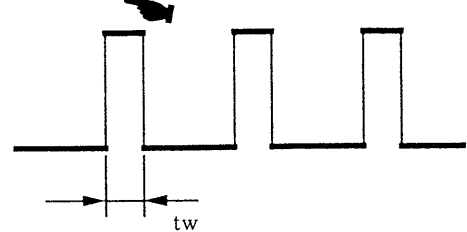


Fig. 2-16.

### 2-7-4. REF H Adjustment (1) (MB-44 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	Pin ②⑤-③ of IC111.
Specified Value	4.2 ± 0.1 V

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

**Adjustment method :**

- 1) Adjust with RV001 so that the voltage values at Pin ②⑤-③ become 4.2 ± 0.1 V.

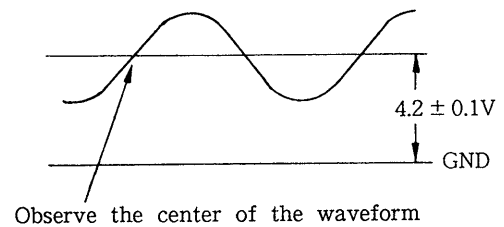


Fig. 2-17.

**2-7-5. REF H Adjustment (2) (MB-44 Board)**

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	CH1 : PIN ③ of IC604 CH2 : PIN ④ 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 ④ of IC604 and the falling edge of Pin ③ of IC604.

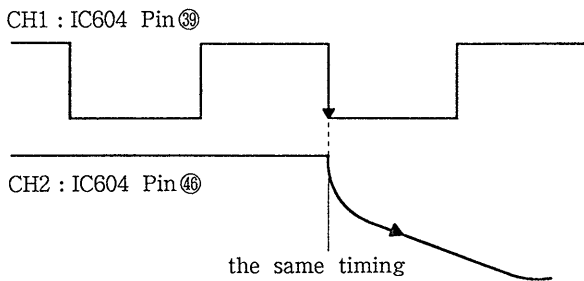


Fig. 2-18.

**2-7-6. TBC Range Adjustment (MB-44 Board)**

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV151
Measurement Point	CH1 : PIN ② of IC109 External trigger : PIN ⑤ of IC109
Specified Value	$22 \pm 1 \mu\text{sec}$

**Connection :**

- Apply 5.0Vdc to Pin ④ of IC109.

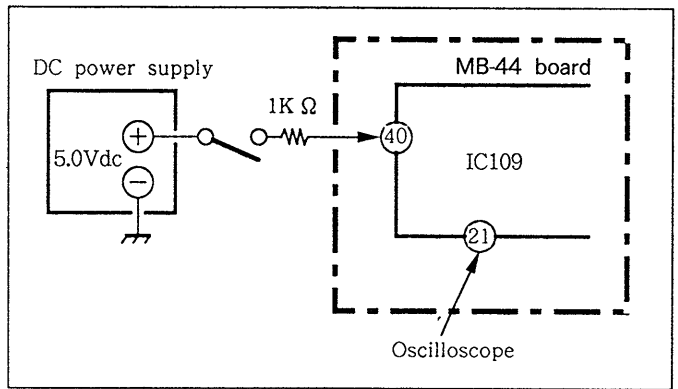


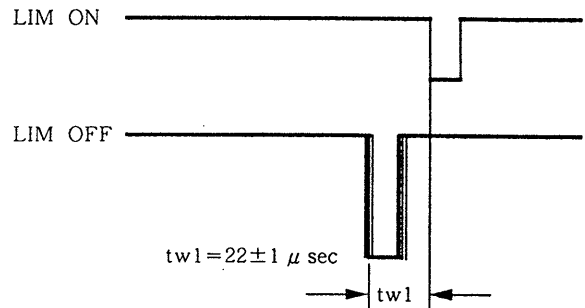
Fig. 2-19.

**Adjustment method :**

- 1) Select STILL (M) mode.
- 2) Search the frame 4100.
- 3) Connect the DC power supply (5.0Vdc) to Pin ④ 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 ② of IC109 (CH1)



- Pin ⑤ of IC109 (Trigger pulse)



Fig. 2-20.

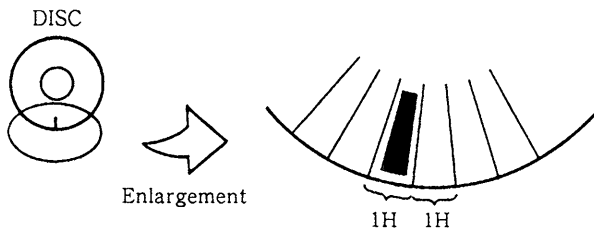


**2-7-7. Color DOC Adjustment (MB-44 Board)**

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 disc (REF7C-8AL).



**Adjustment method :**

- 1) Select STILL (⏸) 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.

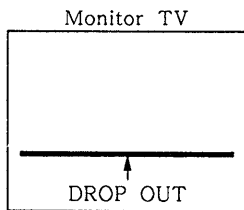


Fig. 2-21.

**2-8. AUDIO SYSTEM ADJUSTMENT**

**2-8-1. Digital Audio System Adjustment**

**1. RF PLL Offset Adjustment (MB-44 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  $0 \pm 0.2V_{dc}$ .

**2-8-2. RF PLL Free-Run Adjustment (MB-44 Board)**

Mode	Stop
Measurement Point	Pin ⑩ of IC001
Measuring Equipment	Frequency counter
Adjusting Element	LV001
Specified Value	$4.42 \pm 0.005 \text{ MHz}$

**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  $4.42 \pm 0.005 \text{ MHz}$ .

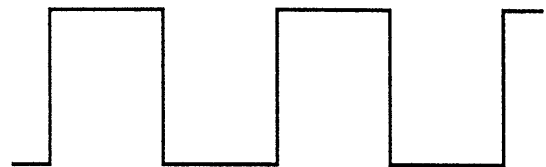
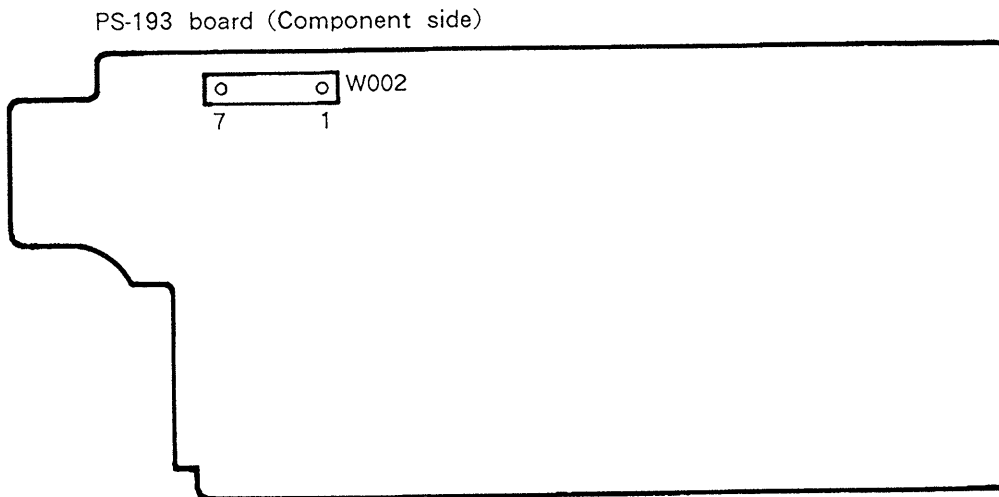
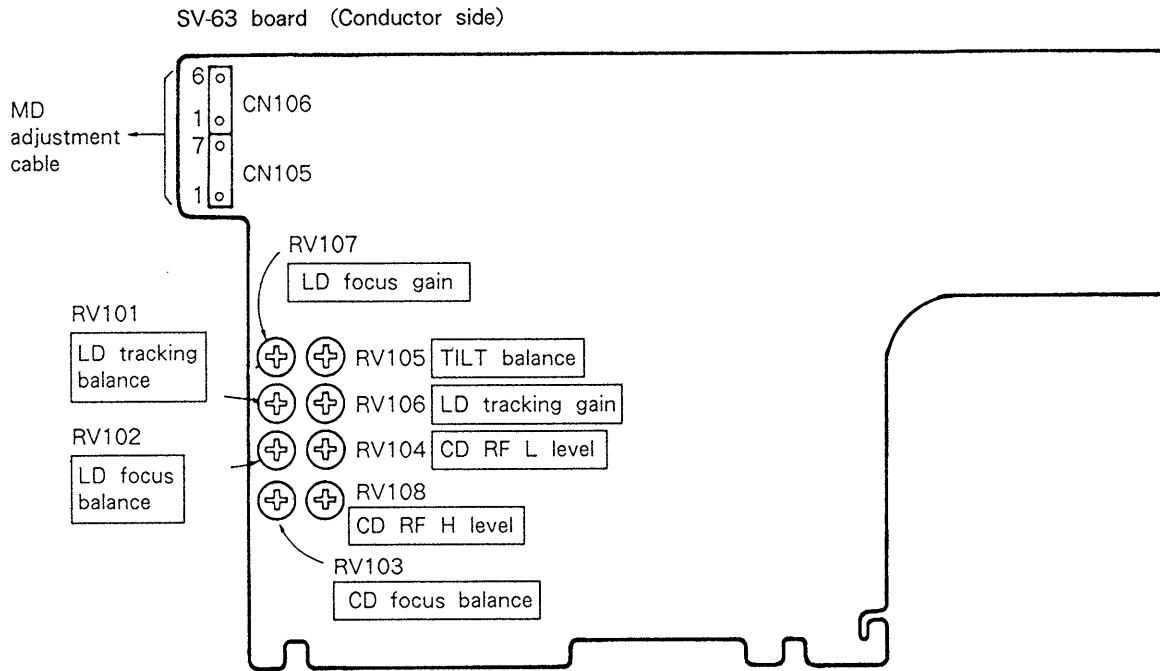


Fig. 2-22.

**Note 1 :** Turn LV001 after shifting AU-88 board by removing from MB-44 board.

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

## 2-9. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS



MB-44 board (Component Side)

