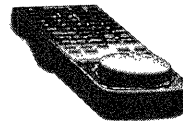
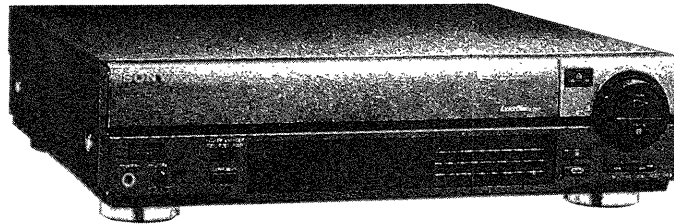


# MDP-405/405GX

## RMT-M10A/M10B

### SERVICE MANUAL

*E Model*  
MDP-405/405GX  
*PX Model*  
MDP-405GX



Remote commander RMT-M10A/M10B is available as a unit, but as individual parts the battery case lid of commander is only available.

#### SPECIFICATIONS

Type  
Signal readout  
Signal format system  
Playing time

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

(minutes)

LD	CAV	30 cm (12 in) double-sided	60
		20 cm (8 in) double-sided	28
		20 cm (6 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 ( $\pm 0.5$  dB)  
Signal-to-noise ratio More than 108 dB (EIAJ)\*  
Dynamic range More than 99 dB (EIAJ)  
Total harmonic distortion 0.003% (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 49 dB

— Continued on next page —

 CD VIDEO **CD/CDV/LD PLAYER**  
**SONY**<sup>®</sup>

### Input/output specifications

Video output 1, 2	1.0 Vp-p, 75 ohms, unbalanced
Audio output 1, 2	Stereo L, R Analog: 200 mVrms (1 kHz, 40% modulation) Digital: 200 mVrms (1 kHz, -20 dB)
S video output	Luminance: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance: 0.286 Vp-p, 75 ohms, unbalanced
Audio digital output (optical)	-18 dBm, wavelength 660 nm
Headphone output	28 mW (32 ohms) Impedance = 8 ohms
VHF/UHF IN/OUT	75 ohms, unbalanced Channel 3 or 4 (switchable) (PX Model)

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

### Power requirements

Power requirements	MDP-405 : 120V AC, 60 Hz MDP-405GX : 100/120/220/240 V AC adjustable, 50/60 Hz MDP-405GX (for Malaysia) 240 V AC, 50/60 Hz
Power consumption	43 W
Weight	8.2 kg (16 lb 12 oz)
Dimensions	Approx. 430 × 115 × 420 mm (w/h/d) (17 × 4½ × 17 in)
Operating temperature	+5°C to +35 °C
Ambient humidity	5% to 90%

### Remote Commander RMT-M10A (E Model) /M10B (PX Model)

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> in) Approx. 170 g (6 oz) (including batteries)

### Supplied accessories

Remote Commander RMT-M10A (1)  
(E Model) /M10B (1) (PX Model)  
Size AA (R6) batteries (2)  
Video cable (phono plug 1 ↔ phono plug 1) (1)  
Audio cable (phono plug 2 ↔ phono plug 2) (1)  
AC plug adaptor (1)  
F-type coaxial cable (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.

## 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 B+ voltage to see it is at the values specified.

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This section is extracted from instruction manual.

## SECTION 1 GENERAL

### Introduction

This introduction explains the organization of this manual and the principles of operation for the Multi Disc Player (MDP).

### About These Instructions

Consumer electronics manuals have been notorious for being hard to comprehend. Having recognized this fact, we have made an attempt with this manual to avoid the usual pitfalls by trying to not pretend that the equipment being described is as simple as a bread toaster. Most likely this is your first Multi Disc Player and may be the only one you will own. With this in mind, we have striven to write the instructions in straight-forward English while trying to keep the procedures simple and systematic.

Because the Multi Disc Player is capable of playing laser discs (LDs), compact discs (CDs), and compact disc videos (CDVs), the instructions are divided into the equivalent of three "manuals"—one for each type of disc—with a fourth section providing instructions common to all discs. The following summarizes what you'll find in this manual.

#### To Play a Laser Disc (LD)

This section covers all functions associated with playing LDs (page 14). Unique to LD play are STILL/STEP, MULTI-SPEED play, and FRAME/TIME Search.

#### To Play a Compact Disc (CD)

This section explains the operation of CDs and compares most closely to CDV audio operations (page 29).

#### To Play a Compact Disc Video (CDV)

This section covers procedures for CDV operation and shares many functions with CD play (page 31). There are no functions unique to CDV play in this MDP.

#### To Play Any Disc (LD, CD, CDV)

Most of the procedures in this section fall into the advanced category (see page 31) and are collected here because they are common to LD, CD and CDV play.

Auxiliary functions like surround sound are briefly described in "Front and Rear Panel Controls and Supplied Accessories" (page 9).

### What to Do Next

Once you have read through this page, read "Principles of Operation" (page 6), then go ahead and connect up the Multi Disc Player to your television and/or stereo system using the connection diagrams on pages 11, 12 and 13. After you have done this, you will be ready to play a disc. We suggest an LD or CD. Begin with the section, "How to Load and Play an LD (or a CD)".

### About Operating Voltage

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

#### How to Determine the Correct Operating Voltage

- Before operating the unit, find out the local voltage, and if necessary reset the selector at the rear of the Multi Disc Player to the voltage corresponding to your local power supply (100, 120, 220, or 240 volts AC).
- To reset the voltage selector, disconnect the power cord and turn the selector with a blade screwdriver so that the arrow on the selector points to the appropriate voltage.

#### How to Use the AC Power Plug Adaptor

- If the AC plug on your Multi Disc Player does not fit into the wall outlet, attach the supplied AC plug adaptor.



If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

## The Principles of Operation

Beyond the play of discs, the functions of the Multi Disc Player range from simple to advanced. Some functions vary depending on what type of disc (laser disc, compact disc, or compact disc video) you are playing. Nevertheless, keep in mind that the majority of the buttons have been designed to achieve a comparable effect for each type of disc you are playing. Therefore, the following paragraphs can briefly summarize what the basic Multi Disc Player functions allow you to do. (Control names that differ from the function name appear in uppercase letters.)

### Primary Functions

are so-called because they entail the traditional functions of all disc players.

### Variable Speed

group operations according to the fact that they let you vary play speed, therefore, easily locate ("search") scenes or tracks as you watch or listen.

### Repeatable Functions

are memory functions that let you play selections repeatedly, according to a play list, or randomly. Because the system finds and plays selections according to your request, some repeatable functions also serve as "search" functions.

### Auxiliary Functions

are additional functions that simply add to what you can do with the Multi Disc Player.

### Primary Functions

Power  
Open/Close  
Play  
Pause  
Stop

### Variable Speed Functions

Variable Speed Scan  
(SHUTTLE RING)  
Still/Step Scan  
Variable Speed Play  
(MULTI SPEED)

### Repeatable Functions

Pre-Programmed Play  
(AUTO PGM, PGM)  
Intro Scan (INTRO)  
Random Play  
(SHUFFLE)  
Index Play  
(CUSTOM INDEX)  
Chapter/Track Search  
(ACS/AMS)  
Frame/Time Search  
(FRAME/TIME)  
Auto Pause  
(A-PAUSE/A-SPACE)  
Repeat Play  
(1/ALL, REPEAT, REPEAT  
A↔B)

### Auxiliary Functions





Picture Enhance  
Sound Quality Functions:  
(AUDIO MONITOR,  
ANALOG, CX, SURROUND  
SOUND)  
On-Screen Display  
(DISPLAY)  
Audio/Video Time Counter  
(AV TIME)

## Introduction to Your Player

The MDP-405GX Multi Disc Player integrates the functions of three machines in one: laser disc, compact disc, and compact disc video player. The entertainment potential afforded by the combined capabilities of this multi-faceted machine amount to some 35 to 40 functions. Below follows an illustration of the kinds of discs the Multi Disc Player plays.

### The MDP-405/405GX Plays Three Classes of Optical/Digital Discs\*

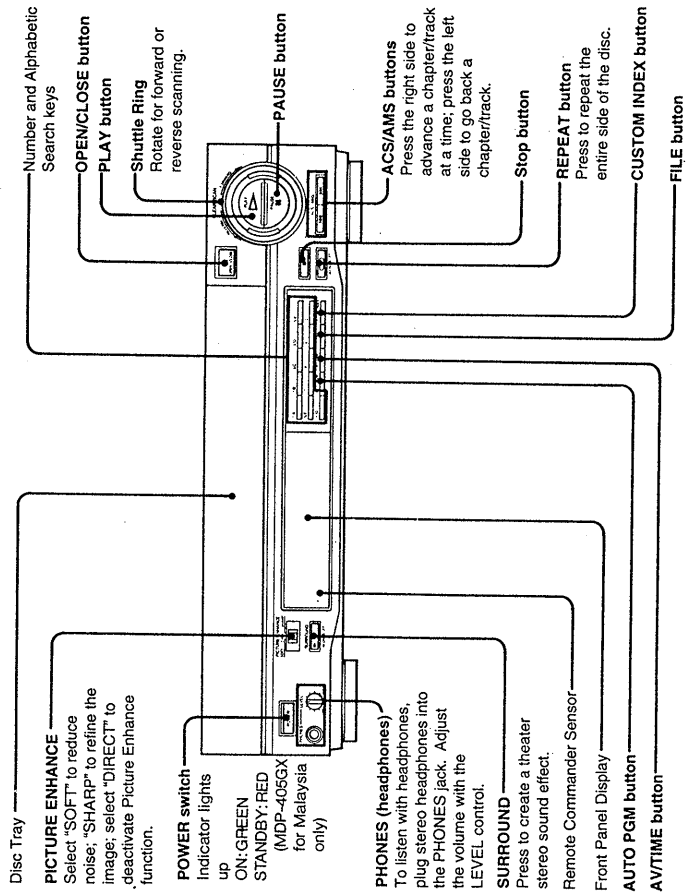
The MDP-405/405GX Multi Disc Player plays all three types of optical discs currently available for home entertainment. The following table illustrates their types and features.

Disc Class	Disc Logo	Disc Type	Size	Play Side	Play Time
Laser Discs For movies, operas, and concerts		LD Single	8 in (20 cm)	Single Side	14 min CAV 20 min CLV
		8-inch LD	8 in (20 cm)	Double Side	28 min CAV 40 min CLV
		12-inch LD	12 in (30 cm)	Double Side	1 hr CAV 2 hr CLV
Compact Discs For music		CD Single	3 in (8 cm)	Single	20 min
		CD	5 in (12 cm)	Single	74 min
Compact Disc Videos For music videos and educational material (Digital Audio)		CDV	5 in (12 cm)	Single	Video+Audio 5 min Audio 20 min
		VSD	5 in (12 cm)	Single	Video + Audio 5 min

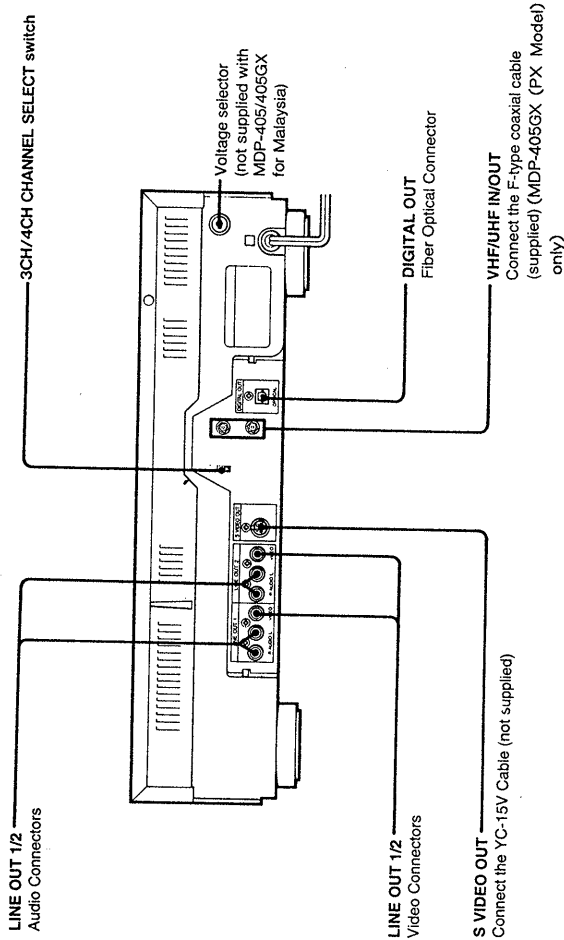
\* These apply only to those discs recorded in the NTSC standard. The MDP-405/405GX cannot play CED, VHD discs, or PAL video discs.

## Front and Rear Panel Controls and Supplied Accessories

### Front Panel




### Rear Panel



### Accessories

Make sure the shipping box contains the following accessories:


**RMT-M10A (E Model)/M10B (PX Model)**




**Two AA (R6) batteries**



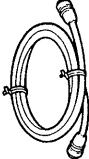
**Video connecting cord**  
(phono 1 ↔ phono 1)




**Audio connecting cord**  
(phono 2 ↔ phono 2)



**F-Type coaxial cable**



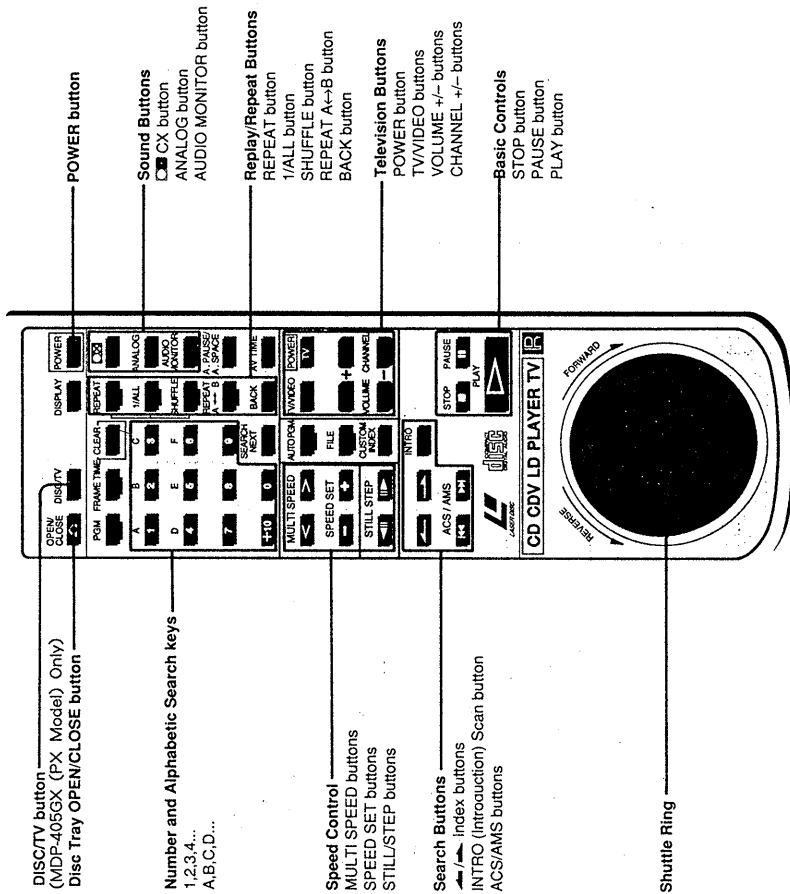
**AC plug adaptor**  
(See page 4.)



**MDP-405GX only**

## Controls on the Remote Commander

You can use the Remote Commander (the Remote) to control the player or the identical buttons on the player itself.

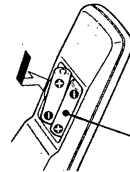


## To Activate the Remote Commander

Open the back cover, and insert two size AA (R6) batteries according to the polarity indicated in the illustration. The batteries will last for about 6 months. If the 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 time, remove the batteries to avoid damage from possible battery leakage.

## Remote Commander Precautions

Do not let sunlight or powerful artificial light fall directly on the Remote Commander Sensor on the front panel of the player as it may interfere with Remote Commander operation or damage the sensor.



Insert two size AA (R6) batteries.

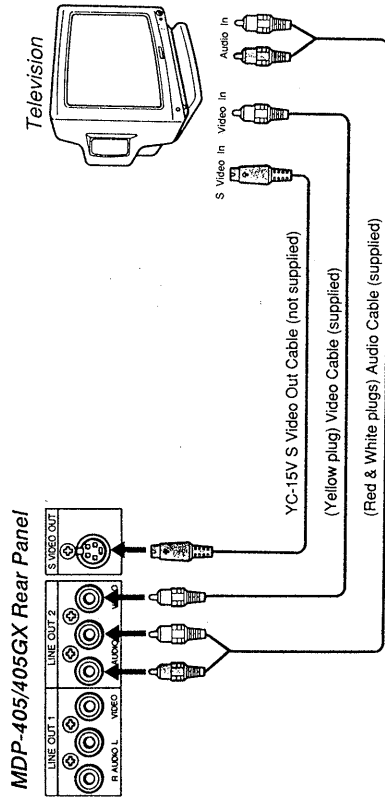
## How to Connect the Television

To play LDs or CDVs, hook up a television to the Multi Disc Player. There are two connection methods depending on your type of TV. Before connecting or disconnecting any of the below cables, turn off all equipment.

### Television Hook-Up

#### When Your TV Has Audio/Video Inputs

Take out the supplied yellow video connecting cable, and the red and white audio cable. Use these cables to connect the player to the television.\* Once you have hooked up the television, set the input selector on the TV to "Video".\*\*



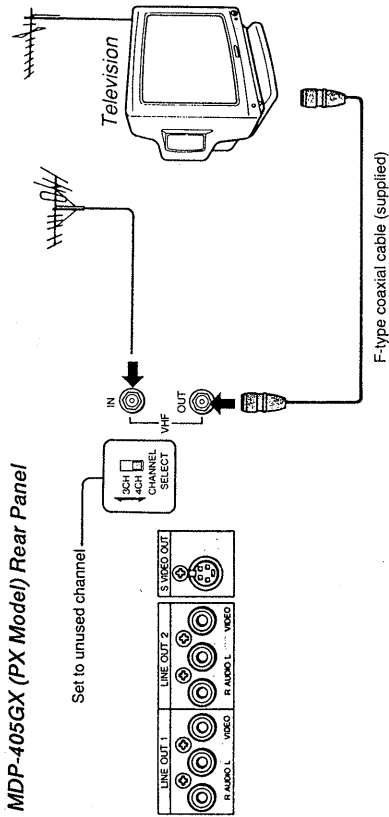
### Connecting Notes:

- Connection methods may differ; when in doubt about a connection consult the TV or VCR manufacturer's manual.
- If noise emits from the video or audio input, try moving the equipment farther apart.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- To prevent interference with TV broadcast reception, turn off all equipment connected but not currently in use.
- \* If your TV has an S Video Input Jack, obtain a YC-15V S Video Connecting Cable, and use this instead of the supplied video cable to connect your television to the S VIDEO OUT connector on the Multi Disc Player.
- \*\* If the TV only has a monaural phono jack for audio input, use a VMC-720M730M Connecting Cable (not supplied).



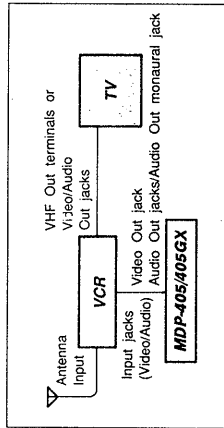
### When Your TV Does Not Have Audio/Video Inputs

Take out the F-type coaxial cable. Use this to connect the player to the television.



After connecting the cable, set the CHANNEL SELECT switch at the rear to an unused channel, 3CH or 4CH. To receive the playback picture of the video disc, you must set the switch to unused position.

### Television/VCR Hook-Up



Connect to the external video/audio inputs of a VCR.

### To enjoy stereo sound

The audio signal of the disc is reproduced in monoaural when connected to the TV via the VHF/UHF OUT connector. To enjoy the disc in stereo, connect the player to an audio system.

### Using a booster

If the TV signal is weak in your area, the connection above which inserts the video disc player between antenna and the TV set may weaken the signal further, thus significantly degrading picture quality. Under such circumstances, use a booster. Consult your dealer for the booster that matches your local signal situation.



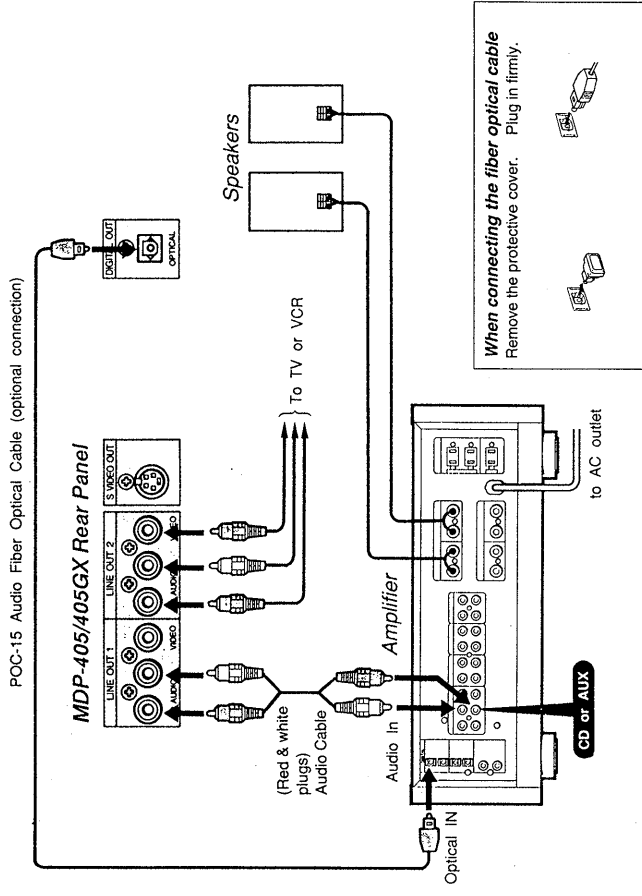
### How to Connect Audio Equipment

To achieve full stereo sound from your Multi Disc Player, hook up a stereo speaker system following the diagram below. Take out the supplied red and white audio connecting cable and use this to connect the Multi Disc Player to your amplifier or receiver. Before connecting or disconnecting any of the below cables, turn off all equipment.

### To Achieve Digital Sound

Digital sound recordings afford high quality sound reproduction. (see Glossary, p. 40). If your amplifier also has a fiber optical connector, or if you have a D/A converter unit with optical input, according to the diagram below (on the right), connect the POC-15 Audio Fiber Optical Cable (not supplied) between the DIGITAL OUTPUT connector on the Multi Disc Player and the amplifier or D/A converter. Note that digital signals are always output from the Multi Disc Player except when you play discs that are not digitally recorded. Such discs output analog sound.

### Audio Equipment Hook-Up



**When connecting the fiber optical cable**  
Remove the protective cover. Plug in firmly.

### Connection Precautions

- Make sure all equipment is turned off before making any of the above connections.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- When listening to a radio broadcast, switch off the Multi Disc Player to get better reception.

## To Play a Laser Disc

This section shows you how to conduct all the procedures associated with playing LDs.

### How to Load and Play an LD (Laser Disc)

After you have connected the Multi Disc Player to the TV and/or stereo system, you can begin playing a laser disc. Locate the POWER, OPEN/CLOSE, and PLAY buttons on either the Remote Commander or player.

#### 1 Turn on the TV and stereo system.

TV. Set the input selector on the TV to "video".  
 TV without audio/video inputs  
 Select channel 3 or 4 (selected on page 12).  
 Stereo system. Turn on the amplifier or receiver and select CD or AUX for audio output.

#### 2 Turn on the multi disc player.

Press the POWER button on the player or Remote Commander.

#### 3 Open the disc tray.

Press the OPEN/CLOSE button.

#### 4 Place the disc on the tray.

Carefully center a single disc on the tray. If you insert more than one disc, or if the disc is not seated properly, it may not play or it may damage the unit.

#### 5 Start playback.

Press PLAY (▶) on the Remote or push the arrow (▶) on the Shuttle Ring on the player.

#### To Advance or Go Back

Rotate the Shuttle Ring or press ACS/AMS (◀▶) or ▶▶).

#### To Interrupt Play

Press PAUSE (⏸). The sound mutes and the picture freezes. To resume playback, press PAUSE (⏸) or PLAY (▶).

#### To Stop Playback

Press STOP (■). To play again from the beginning, press PLAY (▶).

#### To Stop Play and Remove the Disc

Press OPEN/CLOSE. Remove the disc and close the empty tray.

**Warning:** Do not insert objects or your fingers in the player while it is operating. Serious injury may result if your hand comes in contact with the laser beam inside the player. Keep the player out of the reach of children.

### To Have the Player Pause Before Starting

Press the PAUSE (⏸) button on the player or the Remote Commander immediately after doing step 4 on page 14.

The tray closes and the player waits at the start of the disc until you press PLAY (▶).

### To Activate Play with an Optional Timer

Set the timer with the AC power cord connected to the player. When the timer supplies power at the preset time, the player starts playing the disc. If there is no disc in the player, the player goes off automatically.

### To Play a Stereo LD or a Second Audio Program (SAP) LD

Press PLAY (▶), then keep pressing the AUDIO MONITOR button.

This function alternates the sound output on a disc that has been recorded on two sound tracks, such as bilingual discs.

### To Watch Regular TV Programs on a TV without Audio/Video Inputs

If the TV picture or sound quality is not satisfactory, press the DISC/TV button on the Remote Commander. Then select the channel. DISC indication does not appear on the front panel display.

The procedure below indicates how the output and the display changes with each press.

Procedure	Display	Stereo Disc	Output Sound
1 Press PLAY (▶).	1/L 2/R	Stereo (Both speakers)	Sound track 1 (left channel) Sound track 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left speaker	Sound track 1 (left channel)
3 Press AUDIO MONITOR again. Press AUDIO MONITOR again to return to stereo status.	2/R	Right speaker	Sound track 2 (right channel)

### To Switch from Digital to Analog Sound

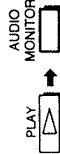
Press the ANALOG button to switch the player to analog or digital sound. Digital affords a better quality sound reproduction. If the LD contains a digital sound signal, the player automatically sends that output to the amplifier or receiver. When you press the ANALOG button on the Remote Commander, you can switch to analog sound. With certain discs there may be a difference in volume.

### Discs with a (CX) Label

Discs bearing the (CX) label are recorded with the Noise Reduction system, which gives lower noise levels and higher dynamic range. The (CX) indicator lights up when a disc is played. However, some discs do not include the coding necessary to automatically activate the player's noise reduction system. If the indicator does not light, press the button on the Remote Commander to manually activate the system.

### To Get the Surround Sound Effect

Press the SURROUND button on the player to achieve three-dimensional sound quality from your disc.



## Understanding Displays and Messages When Playing LDs

You can determine player operating status or disc information in one of two ways: (1) by displaying the information on the TV screen, or (2) by looking at the front panel display. Locate the DISPLAY button on the Remote Commander.

### To View On-Screen Information

Press DISPLAY on the Remote Commander. To turn off the display, press DISPLAY again.



### Reading the On-Screen Messages

The illustration to the right is an example of what appears on screen while the player is operating. The below table is a key to the messages that appear on the right.

#### Message 1 (Examples)

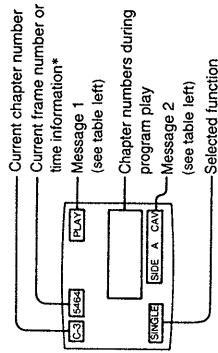
Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing LD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
SEARCH	Variable speed (Shuttle Ring) scan
X 1/2	Scanning at 1/2-speed

#### Message 2 (Examples)

Screen Display	Currently Playing
SIDE A CAV	Standard-play disc side A**
SIDE B CAV	Standard-play disc side B
SIDE A CLV	Extended-play disc side A
SIDE B CLV	Extended-play disc side B
1/L	First soundtrack/left channel
2/R	Second soundtrack/right channel
DIGITAL	Digital sound
ANALOG	Analog sound

\* Discs not indicating time data to the second indicate instead as two-digit numbers such as "0,22".

\*\* Some discs do not contain Side A or B identification coding. In that case, disc side indications may not be accurate.

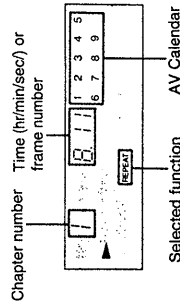


### Reading the Front Panel Display

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

### Finding Out Play Status

When playing an LD containing TOC (Table of Contents) data, the AV Calendar shows information on the total number of selections on the disc or those programmed to play. As selections are played, the corresponding numbers on the display disappear.



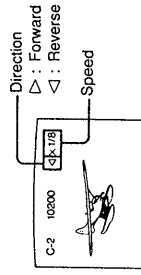
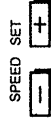
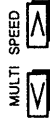
## How to Search Using Variable Speed Play (for CAV discs)

To find a scene, play the disc back or forward at varying speeds.\* Use Multi Speed and Speed Set for CAV standard-play LDs. Use the Shuttle Ring, which lets you scan gradually, for all discs. Locate the MULTI SPEED, SPEED SET, DISPLAY buttons, and the Shuttle Ring on the Remote Commander.

### To Change Speed and Direction (Multi Speed)

- Press MULTI SPEED to select the direction.
  - To reverse <
  - To advance >
- Press SPEED SET to select the speed.
  - To reduce speed -
  - To increase speed +

(You can press SPEED SET first, or do either step without the other.)
- Press DISPLAY.
  - The play speed and direction appear on screen.
- Press PLAY.
  - Normal playback resumes.



### Discs with Automatic Picture Stop Code

When an automatic picture stop code (found on educational discs) is encountered during variable speed play, the unit automatically stops at that frame. To resume playback, press PLAY, MULTI SPEED, or turn the Shuttle Ring.

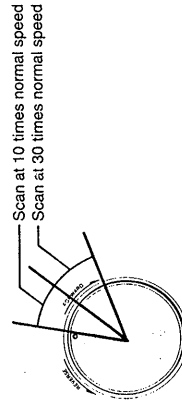
### Extended-Play (CLV) or Non-CAV Discs

Variable Speed Play, Freeze Frame, and Step Play are not possible with CLV discs. When a MULTI SPEED button is pressed, the screen goes blank and the message "SIDE A (or B) CLV" appears.

### To Change Speed and Direction Gradually (Variable Speed Scan)\*\*

Rotate the Shuttle Ring in the forward or reverse direction.

The play speed changes according to the degree you rotate the Shuttle Ring. The illustration to the right indicates the approximate speeds.



### To Resume Normal Play

Release the Shuttle Ring.

\* A certain amount of visual noise and instability is inevitable with all variable speed operations.

\*\* Scanning speed varies as the laser beam moves away from the center of a CLV disc.

## How to Search by Chapter Numbers

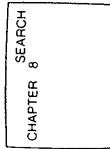
LDs are divided into sections called "chapters". Chapters are usually listed on the jacket or label of the disc. By entering the desired chapter number, you can have the player find the chapter and play it. Use ACS/AMS—Automatic Chapter Sensing/Automatic Music Sensing—to advance or reverse a chapter at a time. Locate the number keys and the ACS/AMS buttons on the Remote Commander or front panel.

### To Locate a Particular Chapter

Press one of the number keys on the Remote or front panel corresponding to the chapter you want to play.

For example, to locate chapter 8 press "8" on the Remote.

8



The player starts searching for Chapter 8.

The player finds Chapter 8 and starts playing from the beginning of Chapter 8.

### To Enter a Number Greater Than 10\*

Press +10 and one of the number keys.

Do this to make a numerical sum. For example, to enter 14, press +10 and 4; to enter 31, press +10, +10, +10 and 1.

+10 → 4 ... "14"  
+10 → +10 → +10 → 1 ... "31"

If you make a mistake while entering a number, press CLEAR then enter the correct number.

### To Check the Current Chapter Number

Press DISPLAY on the Remote to display the chapter number (upper left-hand corner) on screen. You can also look at the AV Calendar on the front panel display for the chapters on the disc left to be played.

DISPLAY

### To Advance or Go Back a Chapter at a Time (Skip Search)

Press ACS/AMS (◀▶) once to return to the beginning of the current chapter.

ACS/AMS  
◀▶

Press ACS/AMS (▶▶) to advance to the beginning of the next chapter.

Press ACS/AMS (◀◀) twice before the picture reappears to return to the beginning of the previous chapter.

Hold down the ACS/AMS button for continuous skip search.

### To Resume Normal Play\*\*

Press PLAY (▶).

PLAY  
▶

\* Chapter Search does not function properly if the disc does not contain chapter numbers or the chapter number entered does not exist.

\*\* Once the searched chapter has played, if the player is in repeat mode ("REPEAT" is displayed on the front panel or screen), playback starts from the beginning of the disc.

## How to Search by Frame Number or Time—Frame/Time Search

Video scenes are counted as a series of still pictures or "frames". The player keeps track of the number of frames that have been played from the beginning of the disc to the current position. Similarly, the player also keeps track of the elapsed playing time from the beginning of the disc. To play from a particular frame or time use the Frame/Time Search function. Locate the FRAME/TIME, SEARCH/NEXT buttons, and number keys on the Remote Commander.

On CAV (standard-play) discs, enter a frame number. On CLV (extended-play) discs, enter the time.\*

### To Enter the Elapsed Frame or Time

FRAME/TIME

1 Press the FRAME/TIME button.  
The screen displays the current frame (for CAVs) or current time (for CLVs) as "000000".

2 Enter the desired multi-digit number corresponding to the frame or time you want found.\*\*

4

Enter five digits for CAVs.

Enter four digits for CLVs displaying the time to the second.

Enter two digits for CLVs displaying the time to the minute.

If you make a mistake, press FRAME/TIME again to return the display to zero, and then enter the correct numbers.

### Sample Entry for CAV Discs

To locate frame number 12340, press the number keys in the order on the right:

1 → 2 → 3 → 4 → 0

### Sample Entry for CLV Discs

To locate the 12-minute, 5-second point, press the number keys in the order on the right:

1 → 2 → 0 → 5

3 Press SEARCH/NEXT on the Remote.

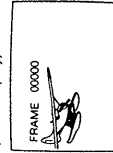
Play starts from the time or frame specified in step 2.

SEARCH/NEXT

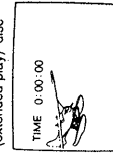
### To Check the Frame/Time Numbers

These numbers appear on screen when you press DISPLAY. You can also find them on the front panel display.

CAV (standard-play) disc



CLV (extended-play) disc



### To Cancel Frame/Time Search

Before pressing the SEARCH/NEXT button, press CLEAR. If you have already pressed the SEARCH/NEXT button, press STOP (■).

In addition to play mode, you can conduct Frame/Time Search while in Freeze-Frame, Variable Speed Play, Repeat or Pause mode. When the specified frame or time appears after the search, play continues in the same mode.

\* "CAV" or "CLV" should be noted somewhere on the disc jacket.

\*\* If you enter a frame or time number not contained on the disc, play stops.

## How to Play Frame-by-Frame (for CAV discs)

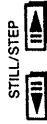
Once you have found a particular scene, you can examine the progression of that scene by advancing or reversing the action one frame at a time (Step Play), or freezing the action into a still picture (Freeze Frame).\* Locate the PAUSE, and STILL/STEP buttons on the Remote Commander.

### To Play One Frame at a Time (Step Play)

- 1 Press PAUSE (II) once.  
The frame freezes.



- 2 Press STILL/STEP repeatedly. Hold down the button for continuous frame-by-frame action. Each press shifts the image one frame backward or forward.



To reverse  
To advance

In addition to pause mode, you can achieve Step Play while the player is in play mode by pressing one of the STILL/STEP buttons while the disc is playing.

### To Freeze the Action (Freeze Frame)

Press PAUSE once.



### To Resume Normal Play.

Press PAUSE (II) again, or Press PLAY (▶).



### Extended-Play (CLV) Discs

Freeze Frame and Step Play are not possible with CLV discs. When the PAUSE button is pressed, the screen goes blank and the message "SIDE A (or B) CLV" appears.

## How to Replay the Same LD Selections

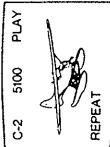
These instructions show you how to program the player to play the same scenes over and over until you signal the repetition to stop. You can replay a single side, a single chapter, or a section between one pair of points on the disc. (To program the player to replay between a series of paired points, refer to Custom Index on page 34.) Locate the REPEAT, 1/ALL, and the REPEAT A↔B buttons on the Remote Commander.

### To Repeat the Entire Side of the Disc

Press REPEAT or the arrow-loop (◁) on the player.



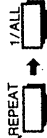
At the end of one side of the disc.



"REPEAT" lights up in the front panel display. When the player reaches the end of one side, it returns to the beginning of the disc and starts playing that side again.

### To Repeat the Current Chapter

Press REPEAT then, 1/ALL on the Remote.



"SINGLE" and "REPEAT" light up in the front panel display. The current chapter repeats continuously.

### To Cancel REPEAT

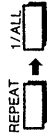
Press REPEAT.



Press the same REPEAT button you used to activate the repeat, either on the player or the Remote Commander.

### To Cancel REPEAT-1/ALL

Press REPEAT and 1/ALL.



### To Repeat One Section of the Disc

- 1 Go back to the start of the scene you want replayed. This marks where replay is to begin.

- 2 Press REPEAT A↔B at the beginning of where you want replay to begin.



- 3 Let the player run to the end of the scene you want repeated. The "A↔" indication in the front panel flashes.

- 4 Press REPEAT A↔B again.

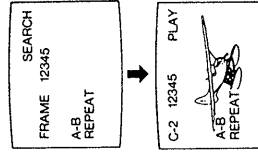


This marks where replay is to end.

"A-B REPEAT" lights up in the front panel display. The player repeatedly plays the same scene between the two points selected.

### To Cancel REPEAT A↔B

Press CLEAR.



\* This function can only be performed on CAV discs.

## How to Play Only Certain Chapters—Programmed Play

You can choose, in any order you like, the chapters the MDP plays. This playlist is stored in the player until you either remove the disc or turn off the power. After playing all the selections, the player stops and waits for your next command. Locate the number keys, PGM and PLAY buttons on the Remote Commander.

- 1 Press PGM on the Remote.  
"PROGRAM" lights up in the front panel display. "PROGRAM" appears on screen.
- 2 Press one of the number keys.  
Press numbers for all the chapters you want played. For example, press 5, 4, 2, and 6 to play those chapters in that order.  
The total playing time of the programmed chapters shows on screen for LDs containing TOC (Table of Contents) data\*.
- 3 Press PLAY (▶).

### To Start Over

Press CLEAR, and then PGM. Enter the new chapter numbers.

### To Change an Entry

Press SEARCH/NEXT or BACK to advance or go back one entry. Enter the correct number.

### To Enter a Number Greater Than 10

Press +10 and one of the number keys, following the same procedure as on page 18.

### To Cancel Programmed Play

Press CLEAR or 1/ALL.

The player resumes normal playback.

### To Replay Programmed Chapters

Press REPEAT.

"REPEAT" is displayed on the screen.

### To Advance or Go Back a Chapter\*\*

Press ACS/AMS (◀◀ or ▶▶).

### To Check the Contents of the Program

Press PGM.

The flashing number indicates the chapter now playing. The display disappears after 3 seconds.

## To Play a Compact Disc

This section explains how to perform procedures associated with playing CDs.

### How to Load and Play a CD (Compact Disc)

After you have connected the Multi Disc Player to the stereo system, you can begin playing a compact disc. Locate the POWER, OPEN/CLOSE, and PLAY buttons on either the Remote Commander or player.

#### 1 Turn on the stereo system.

Turn on the amplifier or receiver and select CD, AUX, or other desired audio input.

#### 2 Turn on the multi disc player.

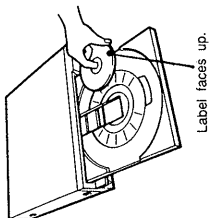
Press the POWER button on the player or Remote Commander (the Remote).

#### 3 Open the disc tray.

Press the OPEN/CLOSE button on the player or on the Remote.

#### 4 Place the disc on the tray.

Carefully center a single CD on the tray. If you insert more than one disc, or the disc is not seated properly, it may not play or it damage the unit.



#### 5 Start playback.

Press PLAY (▶) on the Remote or push the arrow (▶) on the Shuttle Ring on the player.

#### To Advance or Reverse

Rotate the Shuttle Ring or press ACS/AMS (◀◀ or ▶▶).

#### To Interrupt Play

Press PAUSE (⏸).

To resume playback, press PAUSE (⏸) or PLAY (▶).

#### To Stop Playback

Press STOP (■).

To play again from the beginning, press PLAY (▶).

#### To Stop Play and Remove the Disc

Press OPEN/CLOSE. Remove the CD and close the empty tray.



Remote Commander



Player



or



Player



PLAY



ACS/AMS

To advance



PAUSE



STOP



OPEN/CLOSE

\* If you enter 0 or chapter numbers greater than 21, or if total play time exceeds 100 minutes, the total play time is not displayed.

\*\* The player does not go back to previous chapters if the Shuttle Ring is rotated to the left, although, it does advance to forward chapters if rotated to the right. To go back to preceding chapters hold down the ACS/AMS (◀◀) button.

### To Have the Player Pause Before Starting

Press the PAUSE (II) button on the player or the Remote instead of pressing PLAY.  
The tray closes and the player waits at the start of the disc until you press PLAY (▶).

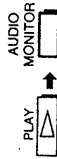


### To Activate Playback with an Optional Timer

Set the timer with the AC power cord connected to the player. When the timer supplies power at the preset time, the player starts playing the disc. If there is no disc in the player, the player goes off automatically.

### To Play a Stereo CD or a Second Audio Program (SAP) CD

Press PLAY (▶), then keep pressing the AUDIO MONITOR button.



The procedure below indicates how the output and the display changes with each press.

Procedure	Display	Stereo Disc	Output Sound
1 Press PLAY (▶).	1/L 2/R	Stereo (Both speakers)	SAP Disc Sound track 1 (left channel) Sound track 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left speaker	Sound track 1 (left channel)
3 Press AUDIO MONITOR again. Press AUDIO MONITOR again to return to stereo status.	2/R	Right speaker	Sound track 2 (right channel)



### To Get the Surround Sound Effect

Press the SURROUND button on the player to achieve three-dimensional sound quality from your disc.

## Understanding Displays and Messages When Playing CDs

You can determine player operating status or disc information in one of two ways: (1) by displaying the information on the TV screen, or (2) by looking at the front panel display. Locate the DISPLAY button on the Remote Commander.

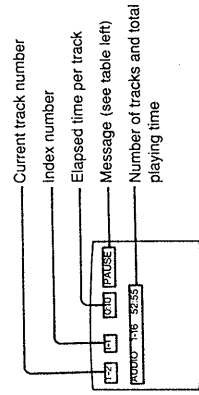


### To View On-Screen Information

Turn on the television, and press DISPLAY on the Remote Commander.  
To turn off the display, press DISPLAY again.

### Reading the On-Screen Messages

The screen to the right is an example of what is displayed. The table below is a key to the messages that appear on the right.

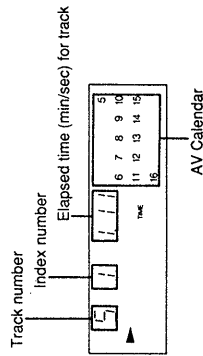


### Message (Examples)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing CD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
⊞ / ⊞	Variable Speed (Shuttle Ring) Scanning
SEARCH	Searching

### Reading the Front Panel Display

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



### Finding Out Play Status

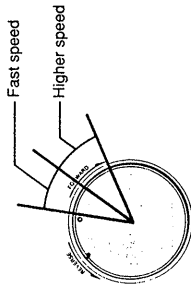
When playing a CD, the AV Calendar shows information on the total number of tracks on the disc or those programmed to play. As tracks are played, the corresponding numbers on the display disappear.

## How to Locate a Certain Track

CDs are divided into sections called "tracks". To find a point within a track, use the Shuttle Ring. To find and play from the beginning of a certain track, use the number keys. In addition, use the ACS/AMS buttons to advance or reverse one track at a time. Locate the number keys, Shuttle Ring, and ACS/AMS buttons on the front panel of the player or on the Remote Commander.

### To Find a Certain Point on the Disc

Rotate the Shuttle Ring in the forward or reverse direction.  
The play speed changes gradually according to the degree you rotate the Shuttle Ring. The illustration to the right indicates the speed levels.

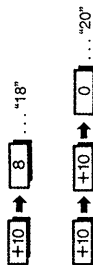


### To Locate a Particular Track

Press one of the number buttons on the Remote or front panel to enter the track number you want played.

### To Enter a Number Greater Than 10

Press +10 and one of the numbers keys.  
Do this to make a numerical sum. For example, to enter 18, press +10 and 8; to enter 20, press +10, +10 and 0.



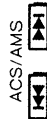
If you make a mistake while entering a numbers, press CLEAR then enter the correct number.

### To Check the Current Track Number

See the AV Calendar on the front panel display.

### To Advance or Go Back One Track at a Time

Press ACS/AMS (←) once to return to the beginning of the current track. Press it again to return to the beginning of the previous track.



Press ACS/AMS (→) to advance to the beginning of the next track.

Hold down the ACS/AMS button to advance or go back continuously.

### To Play a Single Track Once

- 1 Press the 1/ALL button on the Remote.  
"SINGLE" is displayed.
- 2 Enter the track number you want played. When the track has been played, the player stops. To cancel the setting, press 1/ALL again.  
If you press the wrong number key, simply press the correct one.



## How to Replay the Same CD Selections

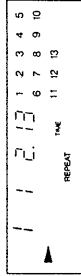
You can program the player to play the same selections over and over until you signal the repetition to stop. You can replay the entire disc, a single track, or a section between one pair of points on the disc. (To program the player to replay between a series of paired points, refer to Custom Index on page 34.) Locate the REPEAT, 1/ALL, and the REPEAT A↔B buttons on the Remote Commander.

### To Repeat the Entire the Disc

Press REPEAT on the Remote or the arrow-loop (↻) on the player.

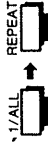


"REPEAT" lights up in front panel display. The player plays all tracks on the CD. When the player reaches the end of the disc, it plays again.

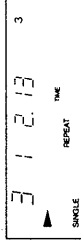


### To Repeat the Current Track

Press 1/ALL on the Remote Commander; then, press REPEAT.



"REPEAT" and "SINGLE" light up in front panel display.  
The current track repeats continuously.



### To Cancel REPEAT

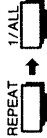
Press REPEAT. "REPEAT" disappears.



Press the same REPEAT button you used to activate the repeat, either on the player or the Remote.

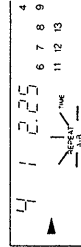
### To Cancel 1/ALL-REPEAT

Press REPEAT and 1/ALL.



### To Repeat One Section of the Disc

- 1 Go back to the start of the section you want replayed.
- 2 Press REPEAT A↔B to mark the beginning of the section.  
The "A-B" indication begins flashing in the front panel.
- 3 Let the player run to the end of the section you want repeated.
- 4 Press REPEAT A↔B again to mark the end of the section.  
"A-B REPEAT" lights up in front panel display.  
The player repeatedly plays the tracks between the two selected points.





## How to Play Only Certain Tracks—Programmed Play

You can program, in any order you like, the tracks the MDP plays. This playlist is stored in the player until you either remove the disc or turn off the power. Program up to 20 tracks. After playing all the selections, the player stops and waits for your next command. Locate the number keys, PGM, and PLAY buttons on the Remote Commander.

- 1 Press **PGM** on the Remote. "PROGRAM" lights up in the front panel display.
- 2 Press one of the number keys. Press numbers for all the tracks you want played. For example, press 5, 4, and 2 to play those tracks.  
The total playing time of the programmed tracks is displayed on the front panel display.\*
- 3 Press **PLAY** (▶).  
Programming/play order

**To Start Over**  
Press **CLEAR** and **PGM**. Then, enter the correct track numbers.

**To Change an Entry**  
Press **SEARCH/NEXT** or **BACK** to advance or go back one entry. Enter the new number.

**To Enter a Number Greater Than 10**  
Press +10 and one of the number keys following the same procedure as on page 26.

**To Cancel Programmed Play**  
Press **CLEAR** or **1/ALL**.  
The player resumes normal playback.

**To Replay the Same Programmed Tracks**  
Press **REPEAT** on the Remote. "REPEAT" is displayed in the front panel.

**To Advance or Go Back\*\***  
Press **ACS/AMS** (◀ or ▶).  
The player moves to the preceding or following programmed tracks.

**To Check the Contents of the Program**  
See the front panel display. The track numbers on the AV Calendar disappear and the "STEP" (play order) number counts down as the selections play.

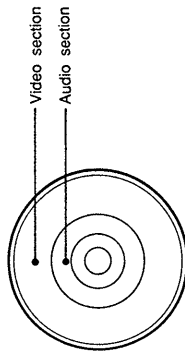
\* If 0 or track numbers greater than 21 are entered, the total play time is not displayed.  
\*\* The player does not go back to previous tracks if the Shuttle Ring is rotated to the left, although, it does advance to forward tracks if rotated to the right. To go back to preceding tracks hold down the **ACS/AMS** (◀) button.

## To Play a Compact Disc Video

This section explains basic procedures for playing CDVs. Since CDV play holds so many functions in common with CD and LD play, see other sections of this manual for details of applicable functions mentioned here.

### How to Load and Play a CDV (Compact Disc Video) or VSD (Video Single Disc)

CDVs are divided into two sections: video and audio. The video section of the disc consists of 5 minutes of video play with digital audio output. The audio section consists of 20 minutes of solely digital audio output (playable on any CD player). Thus, the CDV has the function of both an LD and CD combined in one disc. The audio and the video sections of the CDV are assigned track numbers. The track on the video section corresponds to the chapter on the LD and the same on the CD.

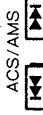


- 1 Turn on the TV, stereo system (if connected), and Multi Disc Player.
- 2 Place the disc on the tray.
- 3 Press **PLAY** (▶).  
Play begins from the video section.

To start play from the audio section, using the number keys, enter the track number that starts the audio section.



To Stop and Remove the Disc



To Advance or Reverse



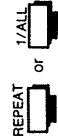
To Interrupt Play



To Find a Certain Audio or Video Track



To Play Certain Video Tracks



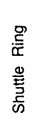
To Repeat the Current Track



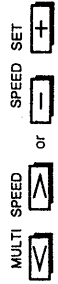
To Repeat All Selections



To Repeat a Section of the Disc



To Variable Speed Play (Audio and Video)



To Variable Speed Play (Video)

## Understanding Displays and Messages When Playing CDVs or VSDs

You can determine player operating status or CDV information in one of two ways: (1) by displaying the information on the TV screen, or (2) by looking at the front panel display. Locate the DISPLAY and AV TIME buttons on the Remote Commander.

### To View On-Screen Information

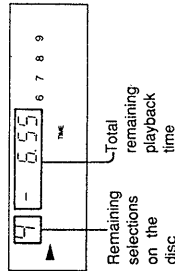
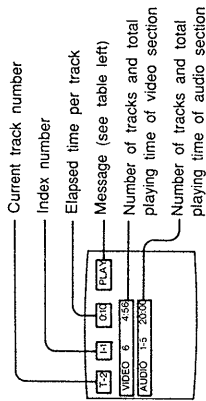
Press DISPLAY.  
To turn off the display, press DISPLAY again.

### Reading the On-Screen Messages

The screen to the right is an example of what is displayed. The table below is a key to the messages that appear on the screen.

#### Message (Examples)

Display	Explanation
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playback
STOP	Stop
PAUSE	Pause
⏮ / ⏭	Variable Speed (Shuttle Ring) Scanning
SEARCH	Search



### To Display Remaining Playback Time

Press AV TIME. See "To Display the Elapsed Playing Time - Time Counter" on page 32.

### Finding Out Play Status

When playing a CDV, the AV Calendar on the front panel display shows information on the total number of selections. As selections are played, the corresponding numbers on the display disappear.

## To Play Any Disc (Advanced Functions for LD, CD, or CDV Play)

This section explains advanced functions that apply to any one of the three types of discs.

### How to Have the Disc Play Within a Period of Time

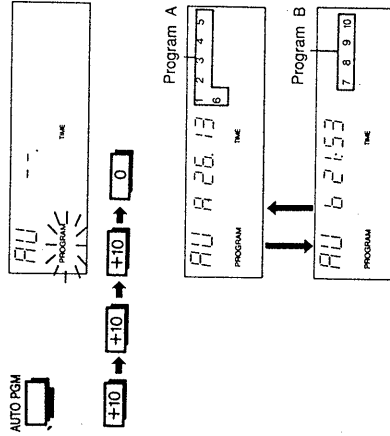
You can program the disc to play within a specified period of time. This is called "Auto Program Playback". Decide how long you want the disc to play and then enter half that amount of time. The player divides the selections you designate onto what it calls "Program A" and "Program B", playing both A and B for the amount of time entered. The player pauses between the two programs. The following procedure explains how to conduct Auto Program Playback on a CD, but you can also use the function for LDs and CDVs with TOC. (Auto Program does not function on LDs or CDVs that do not contain TOC data.) Locate the AUTO PGM button and number keys on the Remote Commander.

#### 1 Press AUTO PGM.

"PROGRAM" flashes in the front panel display.

#### 2 Enter the desired play time.

Using the number keys, enter the time. For example, to enter 30 minutes, press +10 three times.\* If you press the wrong number, simply press the correct one.



Program A and Program B appear alternately in the AV Calendar which displays the contents of the two different programs.

If you designate a play time shorter than the length of the disc, some selections on the disc may not fit into the time span given and therefore may not play. On the other hand, if you designate a play time longer than the length of the disc, the whole program of selections may run on Program A, with none running on Program B. This is because Program A always has priority over B.

### Example for a Forty-Minute Disc

Let's say your disc is 40 minutes long (see table below) and you designate playing time to run 15 minutes. Program A will run for 15 minutes (or less) and Program B will also run for 15 minutes (or less) for a total of about 30 minutes of play (see table below).

#### Auto Program Examples for a 40-Minute Disc

You enter	Program A plays	Program B plays	Total play time
15	15 min (or less)	15 min (or less)	30 min (or less)
30	30 min (or less)	10 min (about)	40 min
45	40 min (all selections)	0 min	40 min

#### 3 Press PLAY.

Program A selections start playing. The player pauses and waits for you to press PLAY again for Program B.



(continued)

\* If your disc contains more than 20 tracks or chapters, the ones beyond 20 may not run.

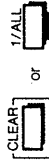
## Auto Program (continued)

- 4 Press **PLAY** again to play Program B.



## To Resume Normal Play from Auto Program

Press **CLEAR** or **1/ALL**.

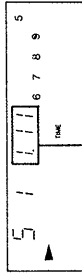


## To Display the Elapsed Playing Time — Time Counter

You can display elapsed time information on the front panel display or TV screen. How the information is displayed depends on the type of disc being played.

### Press AV/TIME once.

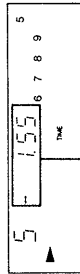
The front panel display shows the elapsed playing time for the selection.



Elapsed time for selection

### Press AV/TIME twice.

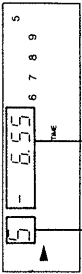
The front panel display shows the remaining play time for the selection.\*



Remaining time for selection\*

### Press AV/TIME three times.

The front panel display shows the selections on the disc left to be played and their remaining play time.\*\*



Remaining selections on the disc  
Total remaining play time\*\*

## The Time Counter Display Depends on the Kind of Disc

### CDs or CDVs

The time appears on the front panel display or TV screen.

### LDs with TOC

The display shows the number of elapsed frames or elapsed time.

### CDs and LDs with TOC

When you press the **STOP** (■) button, the display shows total tracks and total play time.

### CDVs

The display shows the total number of tracks and total play time for the audio and video sections alternately.

## How to Play from Predetermined Points—Custom Index

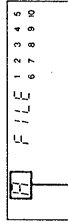
The Custom Index function lets you set up to six points from which play can begin. In other words, when you press **CUSTOM INDEX**, the laser beam goes to a point you have marked on the disc and plays from there. These play points are called "index points". You can also repeat play a section between index points using the **1/ALL** and **REPEAT** buttons. Locate the **FILE**, **SEARCH/NEXT**, **CLEAR**, and **CUSTOM INDEX** buttons on the Remote Commander or player.

### To Set Index Points

Press **FILE** while the disc is playing a selection. For every index point you want to set in place, press the **FILE** button. You can set up to six locations (A-F) anywhere on the disc.



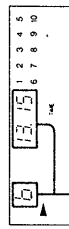
Indicators A, B, C, etc., light up in the front panel display for each index point you set.



Entered index point

### To Clear a Mistake in Setting Index Points

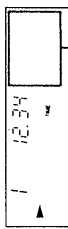
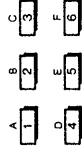
- 1 Press **SEARCH/NEXT** until the index point comes into view on the display.
- 2 Press **CLEAR**.
- 3 Press the **FILE** button to enter the correct location.



Index point to be cleared

### To Play from an Index Point

- 1 Press **CUSTOM INDEX**. The AV Calendar disappears from the front panel display and one number representing an index point appears.
- 2 Press the number key corresponding to one of the index points (A-F). (The number keys now function as alphabetic keys.) Each press begins play from one of the six index points you have set on the disc.



The AV calendar disappears.

### To Skip to Another Index Point

On the Remote Commander, press the letter corresponding to the index point you want the player to start play from.



### To Resume Normal Play

Press the **CUSTOM INDEX** button or the **CLEAR** button.



### Custom Index Points Remain in Player Memory

The index points remain in the memory of the player even when the player enters a different mode such as normal playback mode. However, when you remove the disc or turn off the player, the index points are erased.

(continued)

\* The display does not show remaining play time for selections numbered above 21.  
\*\* When playing CDVs, these figures refer only to the current section (audio or video) being played.

## Custom Index (continued)

### How the Custom Index Points are Stored

Entered index points are stored in the memory of the player, and not actually on the disc itself. Therefore, index points set using one player cannot be found on the same disc using another player.

### How Custom Index Points are Ordered

The player arranges the index points on the disc not according to the order in which you input them, but according to their relative position from the start of the disc. If a new index point is set before an old one, the alphanumeric order gets rearranged. Also, in playing a CDV, although play starts from the video section of the disc, index points are arranged starting from the audio section.

### To Play a Section Between Index Points One Time

- 1 Press **1/ALL**.  
The indication "SINGLE" appears in the front panel display.
- 2 Press **REPEAT**.  
"REPEAT" is displayed in the front panel.
- 3 Press **CUSTOM INDEX**.  
The AV Calendar disappears from the front panel display and one number representing an index point appears.

- 4 Press the number key corresponding to one of the index points (A-F). (The number keys now function as alphabetic keys.)  
Each press begins play from one of six index points you have set on the disc. The section between this point and the next index point plays once.

### To Cancel 1/ALL

Press **1/ALL**.

### To Repeatedly Play a Section Between Two Index Points

- 1 Press **1/ALL**.  
The indication "SINGLE" appears in the front panel display.
- 2 Press **REPEAT**.  
"REPEAT" is displayed in the front panel.
- 3 Follow the procedure "To Play from an Index Point" (on the preceding page).  
The section between this point and the next index point plays over and over.

### To Cancel REPEAT

Press **1/ALL** and **REPEAT**.

### To Clear an Index Point

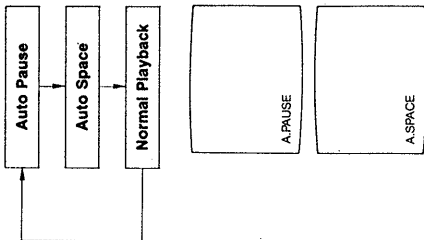
- 1 Press **SEARCH/NEXT** until the index point you want to erase appears in the front panel display.
- 2 Press **CLEAR**.  
The index point disappears.

34 To Play Any Disc

## How to Program the Player to Pause or Scan Automatically

There are many functions you can program the Multi Disc Player to do automatically. Three of them are Auto Pause, Auto Space, and Intro Scan. To make the player pause for three seconds between selections, use the Auto Space function. To make the player stop every time a selection ends, use Auto Pause. When you want to find a particular track, use the INTRO button to make the player play the first 8 seconds (approximately) of each chapter or track on the CD, LD, or CDV.

Each time you press the A.PAUSE/A.SPACE button, the modes change in the sequence shown on the right:



### To Make the Player Stop Momentarily (Auto Pause)

Press A. PAUSE/A. SPACE once.  
To play the next selection, press PLAY.



### To Insert a Three-Second Pause Between Selections (Auto Space)

Press A. PAUSE/A. SPACE twice.



### To Resume Normal Playback

Press A. PAUSE/A. SPACE a third time.

### To Scan the Beginning of Each Chapter/Track (Intro Scan)

The player plays only the first 8 seconds (introduction) of each chapter or track on the disc. After the player introduces the last chapter, the player pauses. On CDVs, intro-scanning begins again from the video section of the disc.



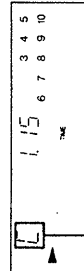
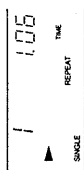
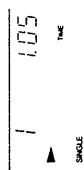
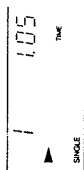
### To Resume Normal Play

Press the PLAY (▶) button.  
Play resumes from the selection just introduced.



### To Stop Play

Press the STOP (■) button.



Index point to be cleared

35

To Play Any Disc

## How to Play Selections in Random Order—Shuffle Play

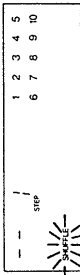
Shuffle Play is another of the Multi Disc Player's programmable functions. As the name implies, this function allows you to play all the tracks or chapters on a disc in random order once or repeatedly. From this random order you may program the player to delete tracks or chapters you don't want played. (Note that Shuffle Play can only be conducted on LDs, CDs and CDVs containing TOC data.) Locate the number keys, SHUFFLE, and PLAY buttons on the Remote Commander.

### To Ensure Correct Operation

Before you press the SHUFFLE button, make sure the disc tray has closed completely, and the "▶" (Play) indication in the front panel display has stopped flashing.

### To Shuffle Play all Tracks or Chapters on a Disc

- 1 Press SHUFFLE.
  - 2 Press PLAY (▶).
- All the selections on the disc play once in random order. After all the selections play, the player stops. CDV selections play randomly from the both audio and video parts of the disc.



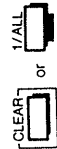
### To Advance to the Next Selection

Press the ACS/AMS (▶▶) button to skip to the next track or chapter. (The ACS/AMS (◀◀) button does not function to return to a previous track or chapter in Shuffle Play mode.) Instead, use the Shuttle Ring.



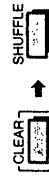
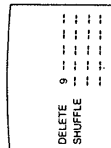
### To Resume Normal Play

Press CLEAR or 1/ALL. This clears Shuffle Play. Playback resumes from the next selection.



### To Delete Certain Selections from Shuffle Play

- 1 Press SHUFFLE.
  - 2 Enter the chapter or track number of the selection you do not want the player to play.
  - 3 Press CLEAR.
  - 4 Press SHUFFLE.
  - 5 Press PLAY (▶).
- The player automatically plays a random program of selections without the ones you deleted.



### To Clear an Entry

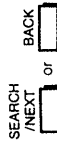
- 1 Press CLEAR.
- 2 Press SHUFFLE.
- 3 Enter the correct numbers.

(continued)

## Shuffle Play (continued)

### To Change an Entered Number

- 1 Press SEARCH/NEXT (to advance) or BACK (to go back) until the number you want to change flashes on the front panel display.



- 2 Press CLEAR.



- 3 Press SHUFFLE.



- 4 Using the number buttons, enter the correct number.



### To Repeat Shuffle Play

Press the REPEAT button on the Remote Commander. This activates the REPEAT indication in the front panel display. The player reshuffles the selections and plays them back in a different random order.



### To Clear Shuffle Play

When you turn off the player, or you remove the disc, all shuffle functions clear from the memory of the player.

## Additional Information

This section contains information that will help you if you have problems with your player. It also contains maintenance information and a glossary.

### Troubleshooting

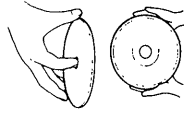
Check the following before requesting service.

Symptom	Point to check
No power Play button (▶) does not produce playback.	<ul style="list-style-type: none"> <li>Power cord properly plugged into AC outlet?</li> <li>Disc inserted?</li> <li>Disc properly seated?</li> <li>Recorded side facing upward?</li> </ul>
Play indicator (▶) lights, but there is no picture or sound.	<ul style="list-style-type: none"> <li>TV or monitor switched on?</li> <li>TV properly connected to player?</li> <li>The input selector on TV set to "Video"?</li> <li>TV without audio/video inputs</li> <li>CHANNEL SELECT switch on the rear panel and TV set to the same number?</li> <li>TV channel properly adjusted?</li> <li>Press DISC/TV button on the remote commander to enter DISC mode?</li> </ul>
Poor picture or sound quality	<ul style="list-style-type: none"> <li>TV properly connected?</li> <li>Any source of noise nearby?</li> <li>Disc dirty or scratched?</li> <li>Any condensation on player objective lens?</li> <li>TV without audio/video inputs</li> <li>CHANNEL SELECT switch on the rear panel and TV set to the same number?</li> </ul>
No sound	<ul style="list-style-type: none"> <li>TV properly connected to player?</li> <li>Volume control on TV, monitor, or amplifier high enough?</li> <li>Playback at normal speed? (The player produces sound only during normal speed playback).</li> </ul>
Remote Commander does not operate.	<ul style="list-style-type: none"> <li>Batteries correctly inserted?</li> <li>Batteries weak?</li> <li>Any obstacles between the Remote Commander and the Sensor on the player?</li> <li>The Remote Commander is pointed at the Sensor on the player?</li> </ul>
Picture distorted during scan.	<ul style="list-style-type: none"> <li>Some distortion in the lower part of the picture is normal – even for CAV discs.</li> </ul>

## Optical Disc Maintenance

### Holding CDs or DVDs

Hold CDs and DVDs by putting your index finger through the center hole and grasping the edges of the disc with the thumb and other fingers as pictured in the illustration.



### Holding LDs

Hold LDs by grasping the outside edge in both hands as illustrated.

### Light Exposure

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

### Cracked or Damaged Discs

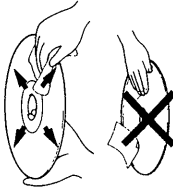
Do not play cracked or damaged discs, or try to play discs that have been repaired with adhesive glues.

### Keeping the Disc Surface Clean

Clean the surface of the disc before playing using a soft, dry cleaning cloth. Wipe the disc from the center out. Do not use solvents such as benzene, paint thinner, commercially available cleaners, or anti-static spray intended for LP records.

To prevent marring, after playing, remove the disc and put it back into its jacket.

Putting your fingers on, or adhering anything to the surface of the disc such as sticky note pad paper or adhesive tape will deteriorate the quality of the playing surface, and thus the output quality.



## Player Maintenance and Safety

### On Electrical Safety

- Should any foreign object or liquid fall into the cabinet of the player, unplug the player and have it checked by qualified personnel before operating it any further.
- Unplug the player from the wall outlet if you are not going to use it for an extended period of time. To disconnect the 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. If you are unable to insert the plug fully after aligning it with the right sockets, contact your dealer.

### On Player Location

- Avoid placing the player where there is:
  - high humidity
  - mechanical vibration
  - excessive dust
  - direct sunlight

- Allow adequate air circulation to prevent internal heat build-up. Do not place the player on surfaces (shag rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes.

### On Moisture Condensation

- Do not operate the player where the temperature has risen suddenly or in a location where the temperature is radically different from the previous location because moisture may condense in the operating section of the player. Wait about an hour before turning the power on in a different location or keep the rise in the room temperature gradual.
- If you operate the player with moisture condensation, the player and the disc may be damaged. Therefore, remove the disc immediately when there is a possibility of moisture condensation.
- To evaporate moisture rapidly, leave the player turned on without a disc inside.

### On Operation

- Remove the disc from the tray after playing it if you are not going to use the player for any length of time. Do not transport the player with a disc in place.
- When the disc tray is in the open position, do not press down on it, or place heavy objects on it.

### On Cleaning

Clean the cabinet, panel, and controls with a soft dry 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.

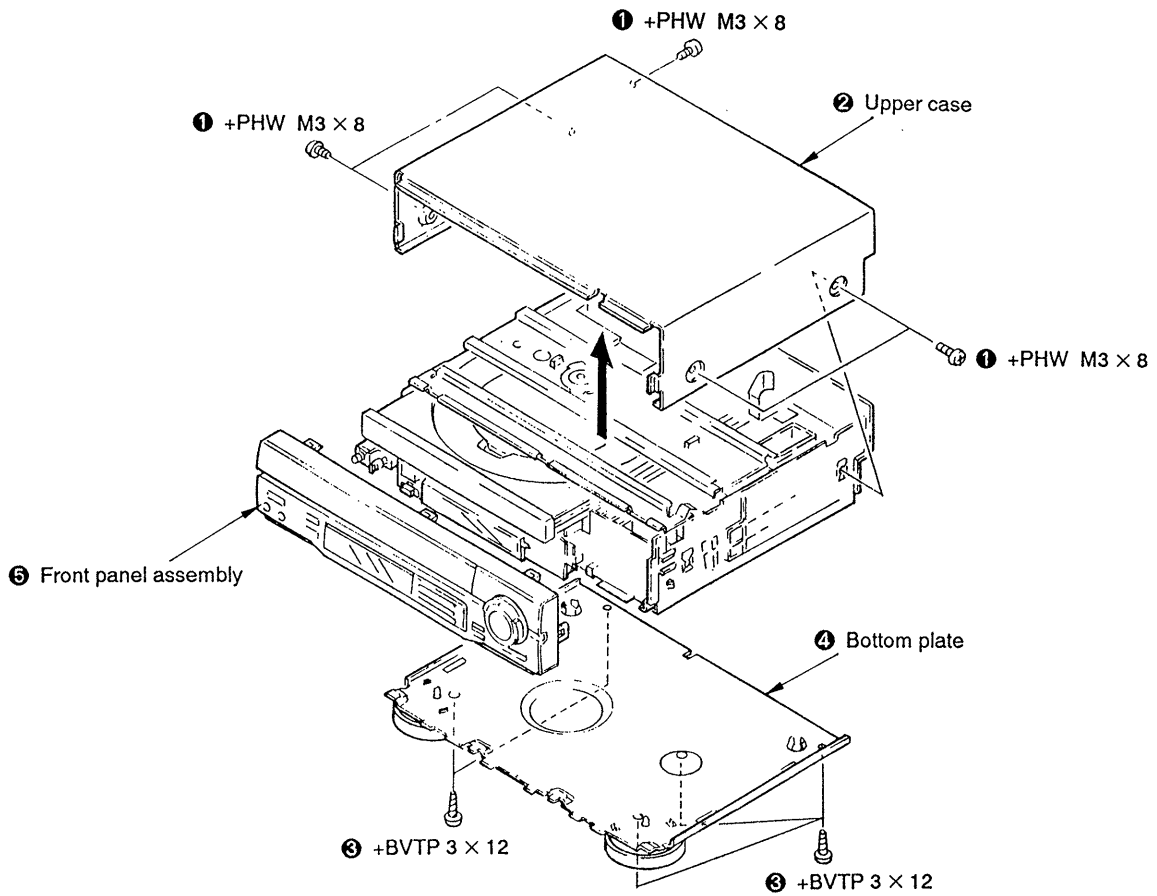
### On Repacking

Do not throw away the carton and the packing materials. The carton makes an ideal container to transport the player in.

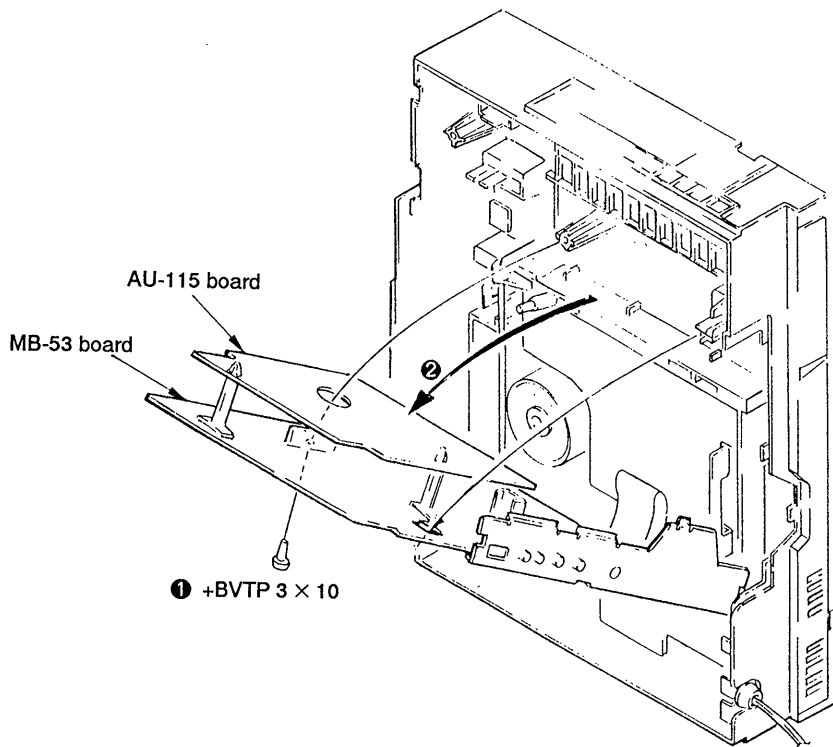
## SECTION 2 DISASSEMBLY

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

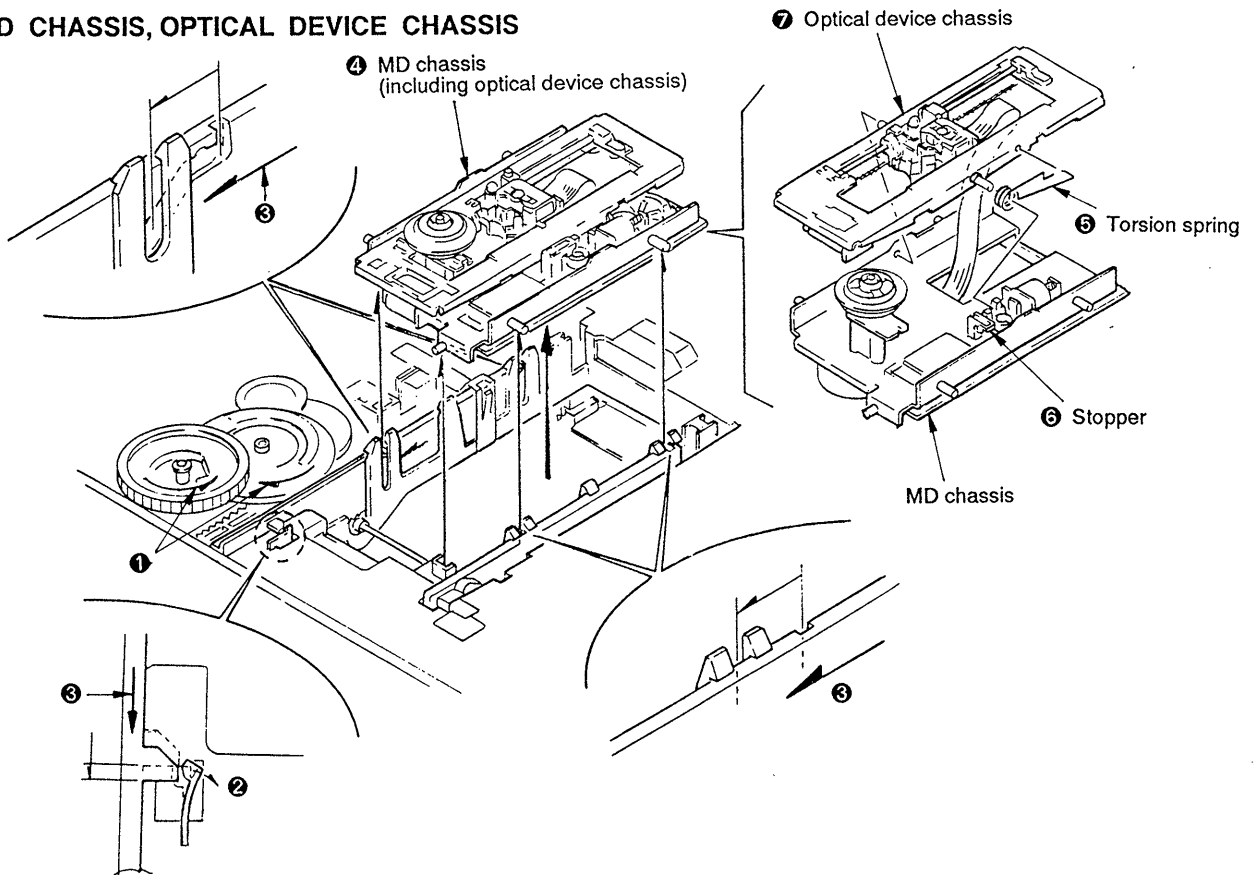
### 2-1. CASE, FRONT PANEL ASSEMBLY



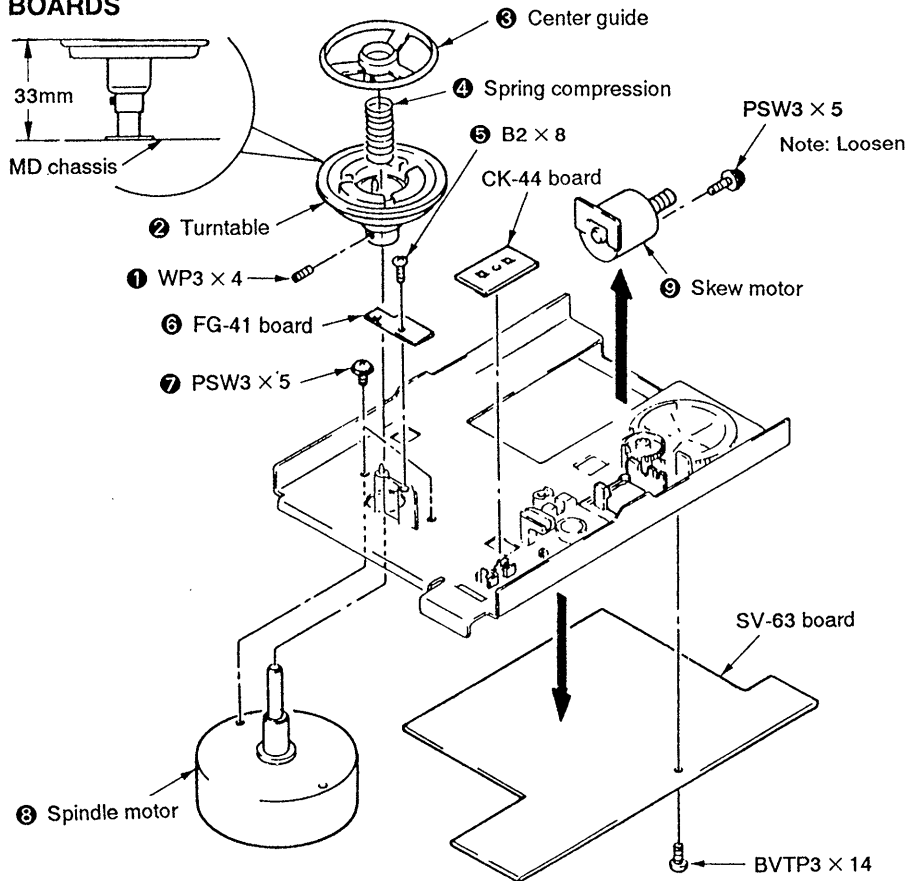
### 2-2. MB-53, AU-115 BOARDS



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



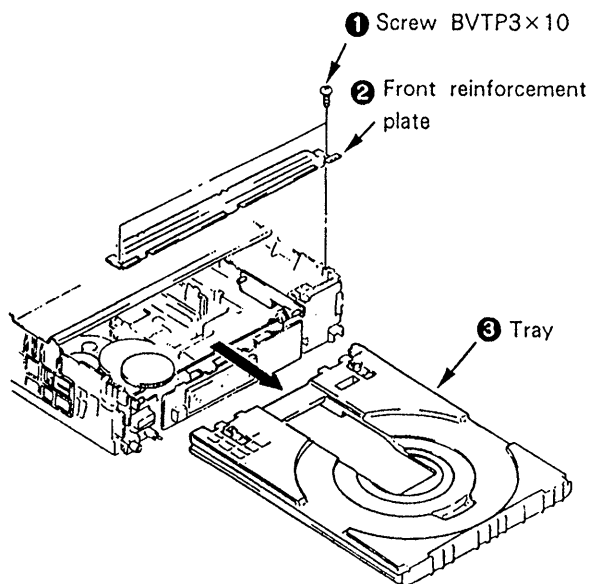
**2-4. TURNTABLE, SPINDLE MOTOR, SKEW MOTOR, SV-63, FG-41 BOARDS**





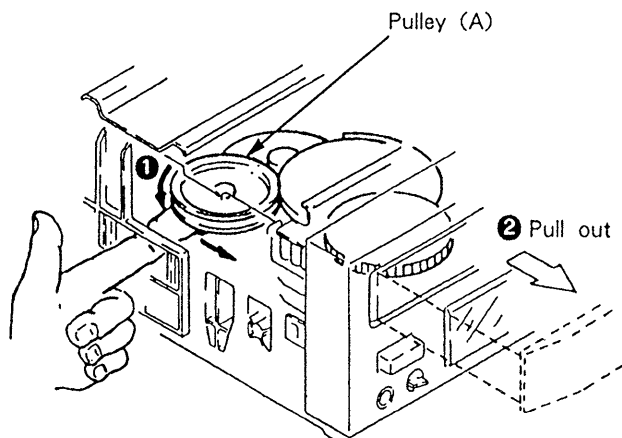
## 2-5. REMOVAL OF THE TRAY

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



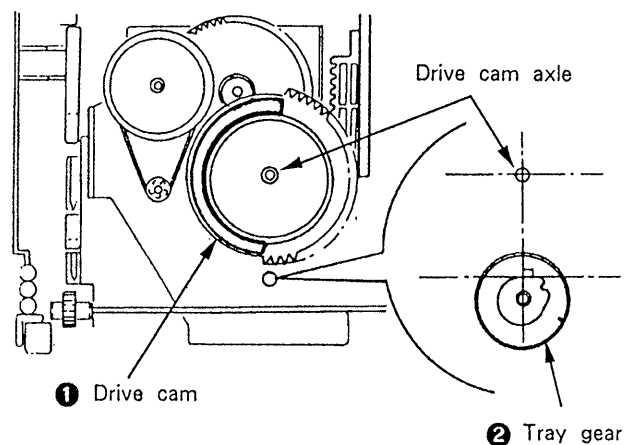
## 2-6. REMOVAL OF THE DISC WHEN A PROBLEM HAS OCCURRED WITH THE DISC LOADED.

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



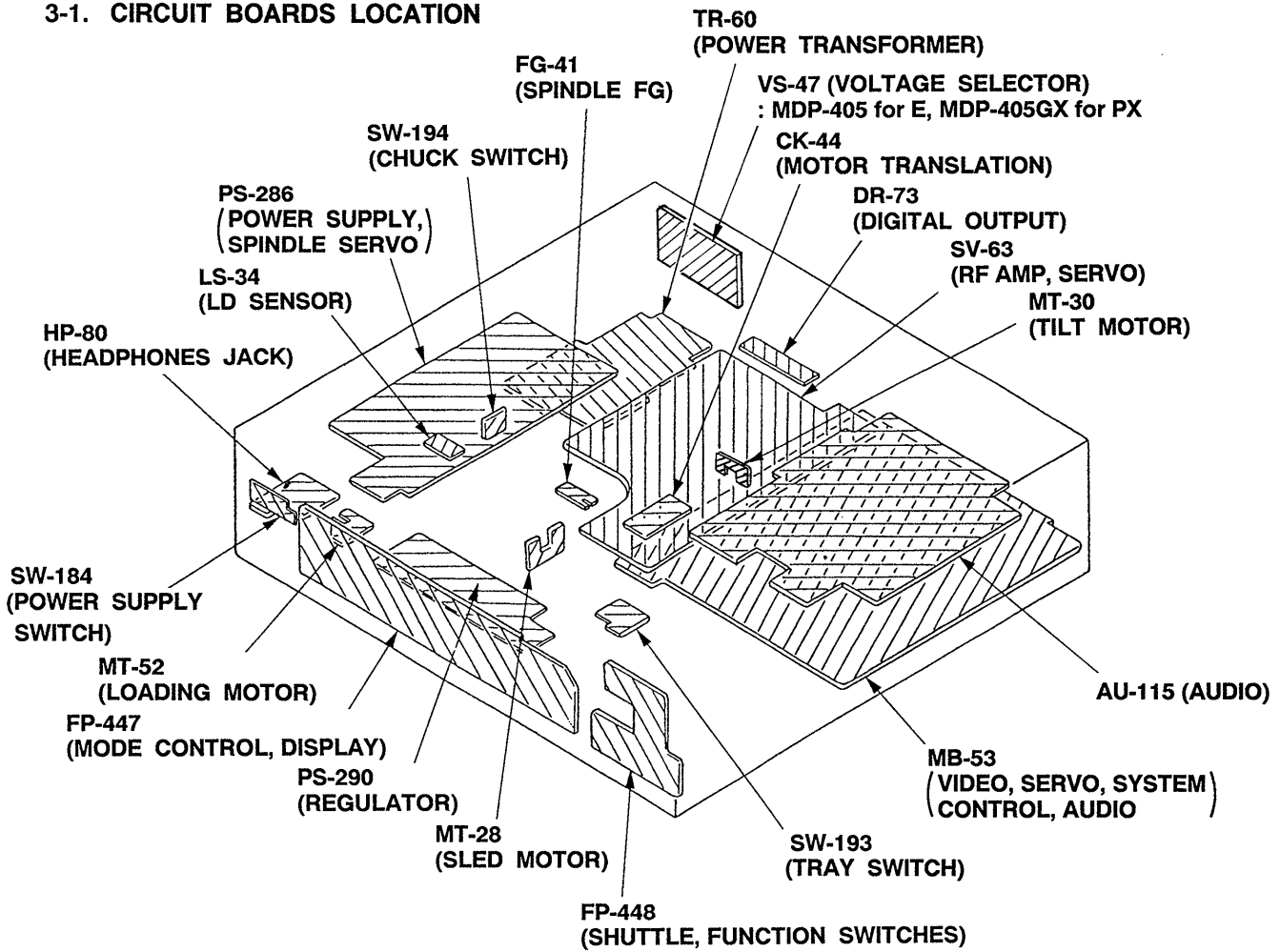
## 2-7. ALIGNMENT OF THE LOADING GEAR PHASE

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

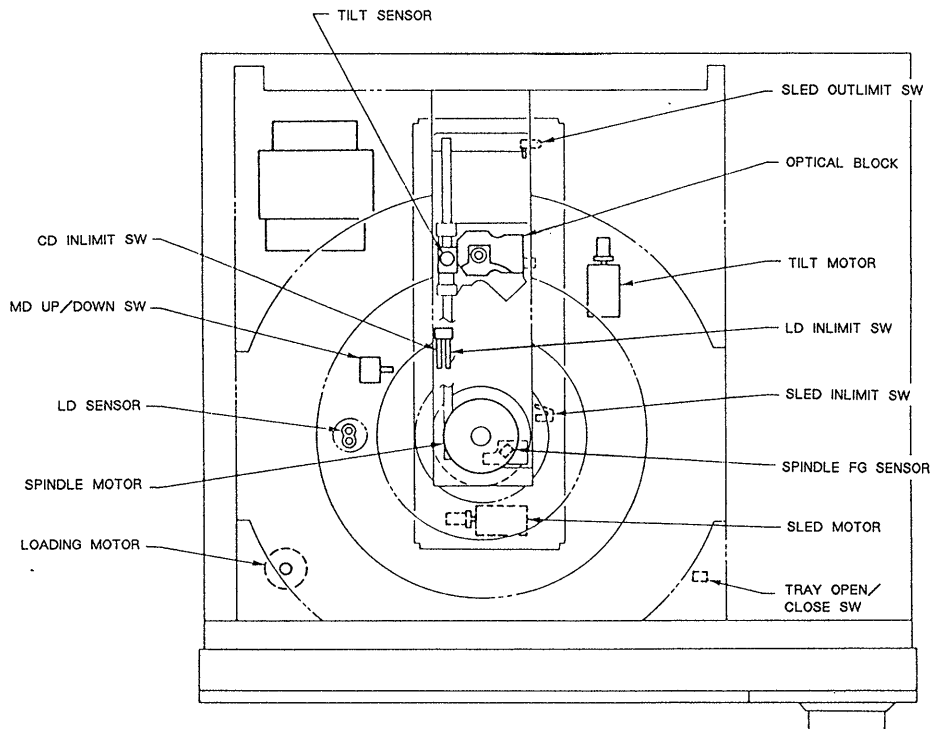


## SECTION 3 DIAGRAMS

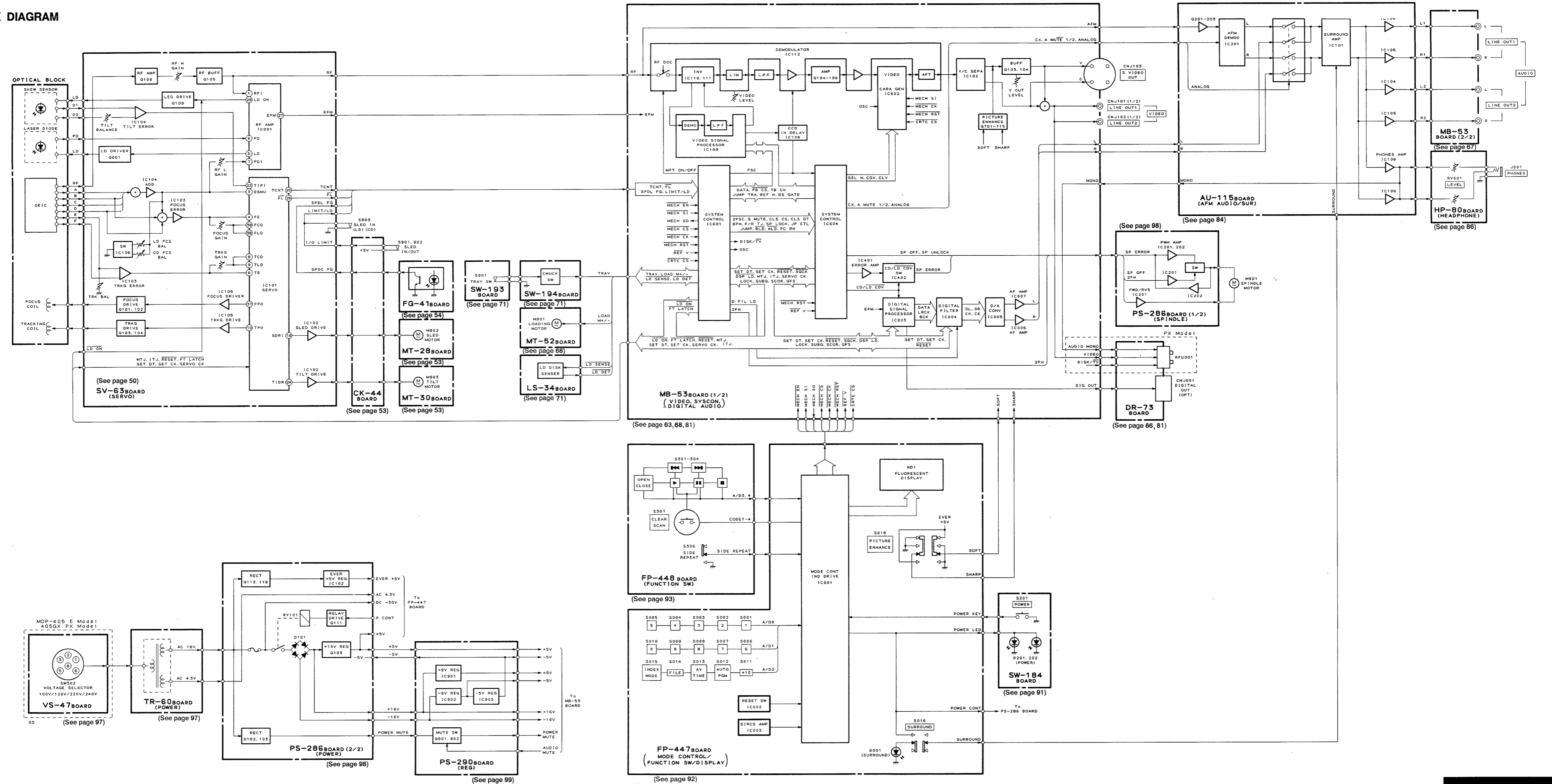
### 3-1. CIRCUIT BOARDS LOCATION



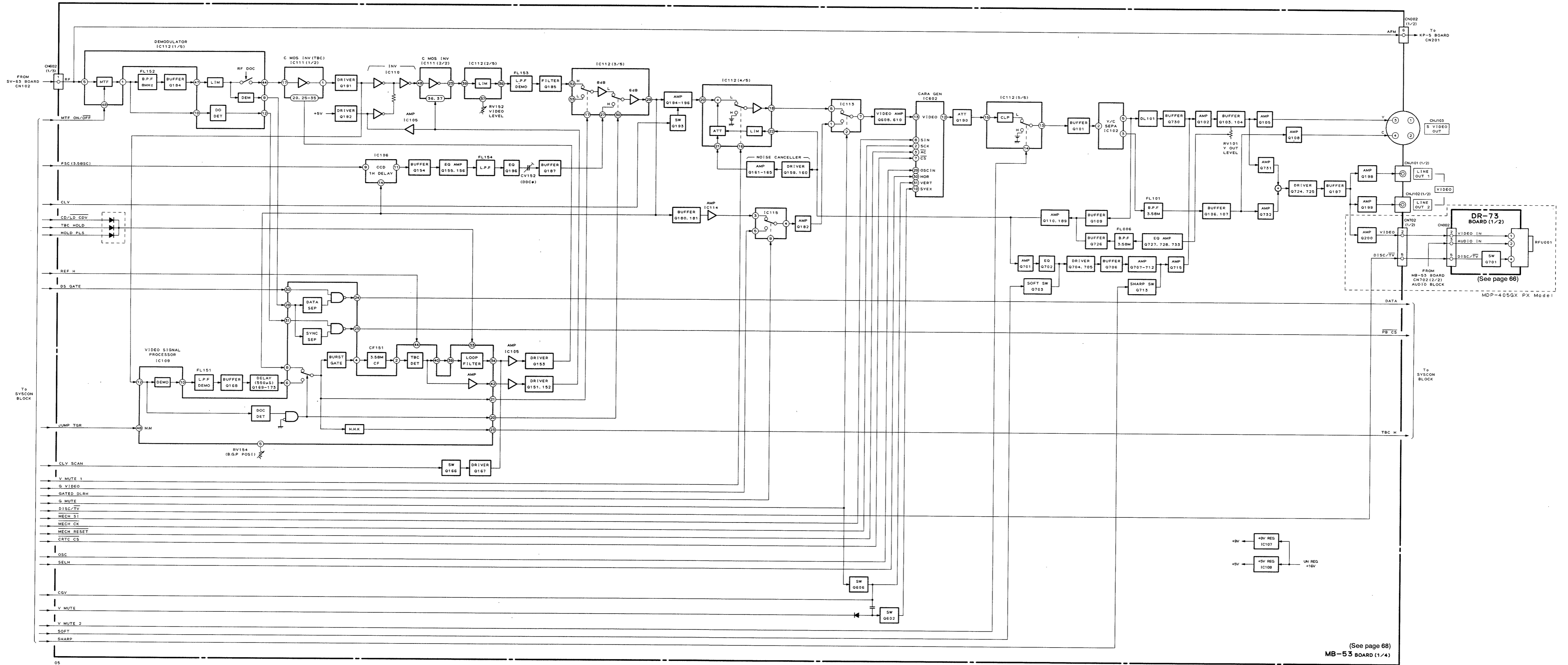
### • MAIN PARTS LOCATION



3-2. OVERALL BLOCK DIAGRAM

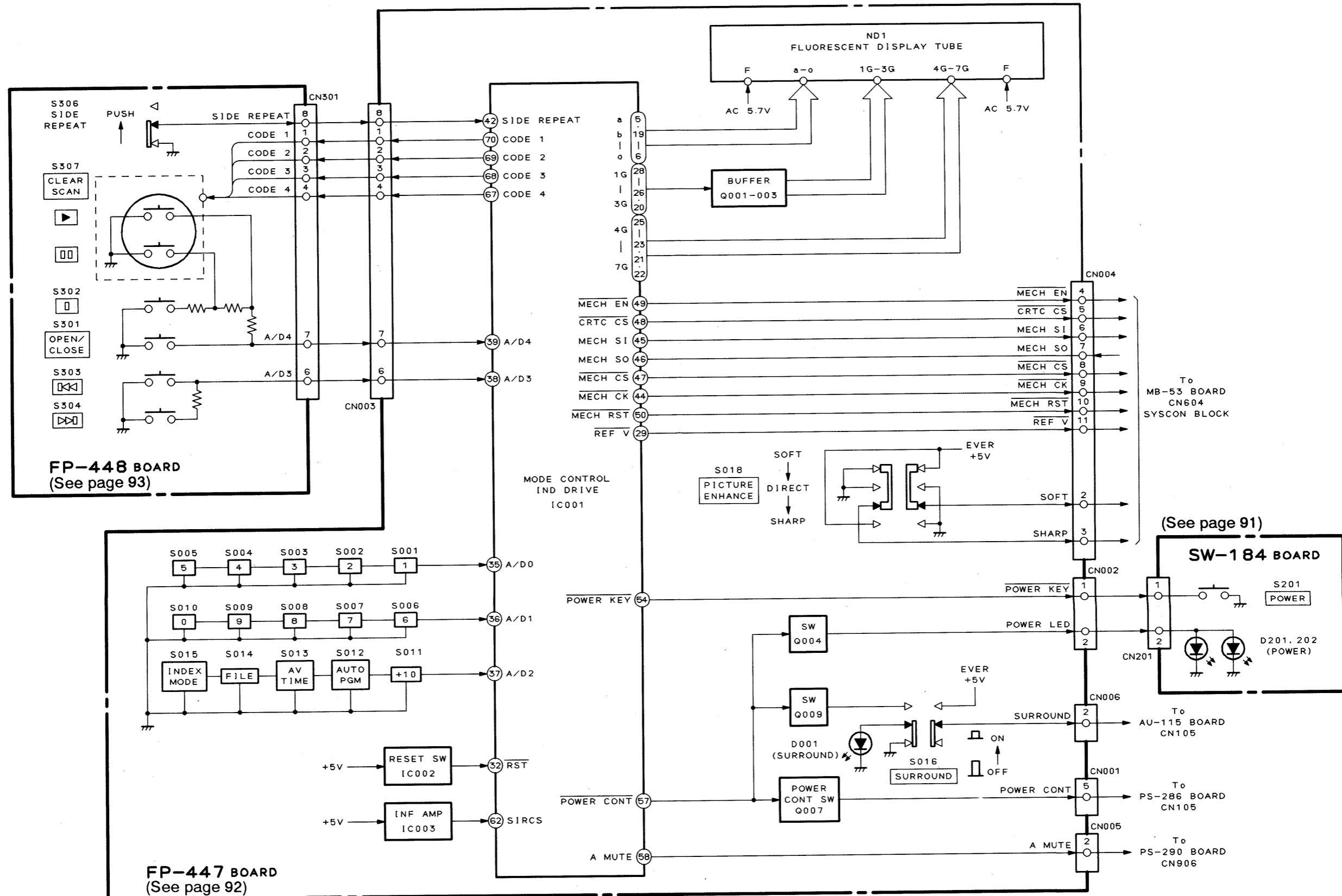


3-3. VIDEO BLOCK DIAGRAM



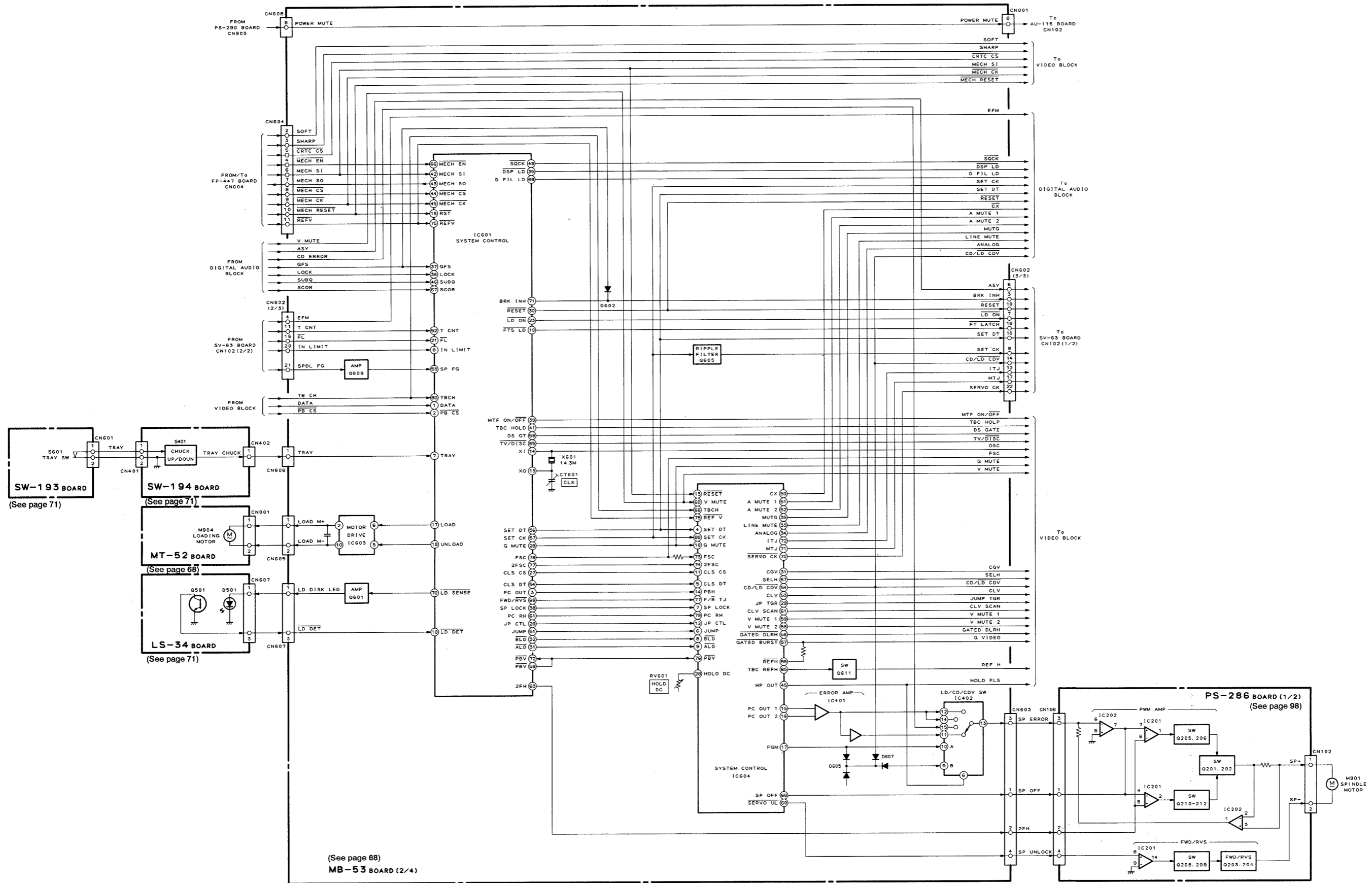
(See page 68)  
MB-53 BOARD (1/4)

3-4. MODE CONTROL BLOCK DIAGRAM

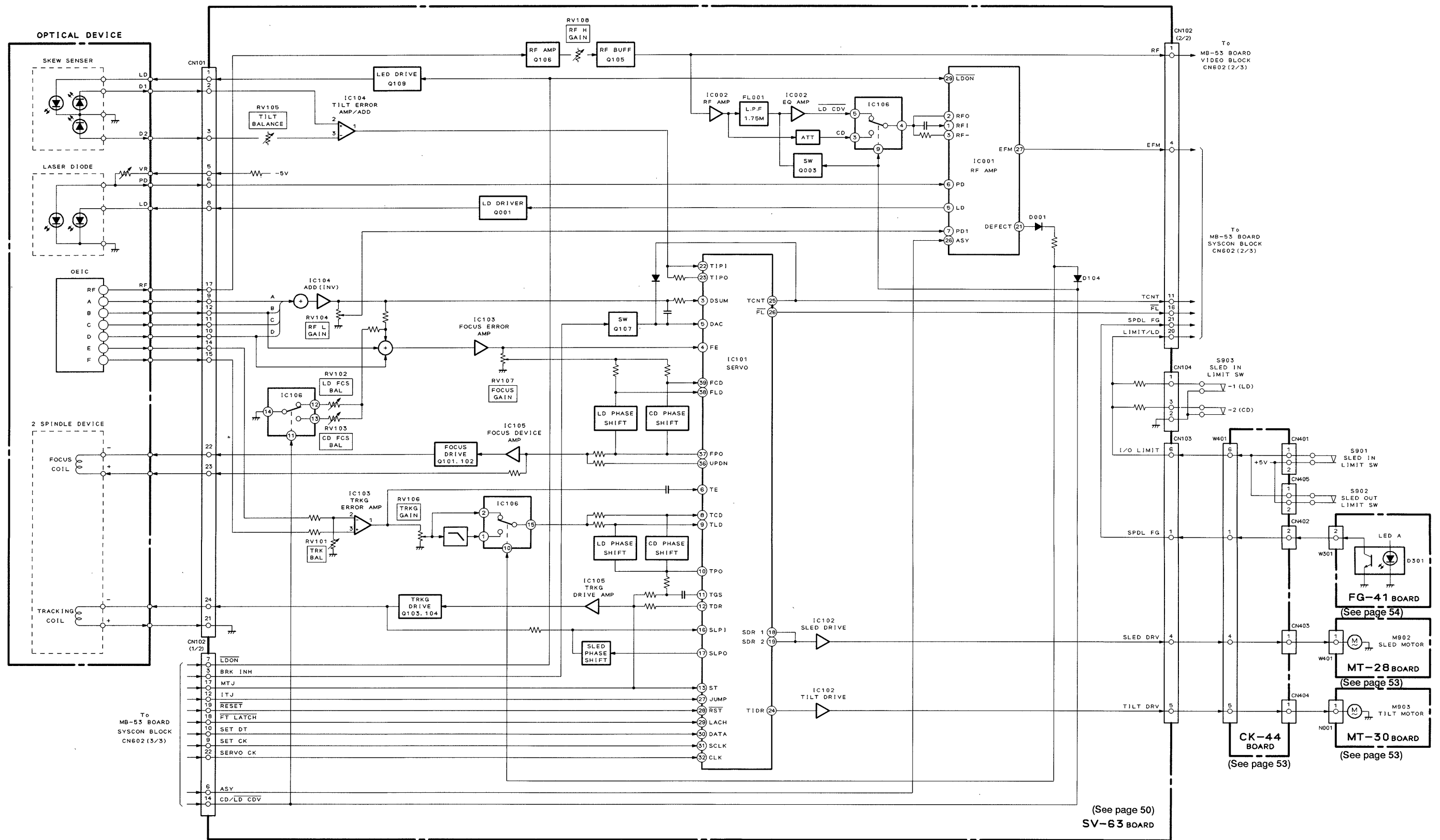


05

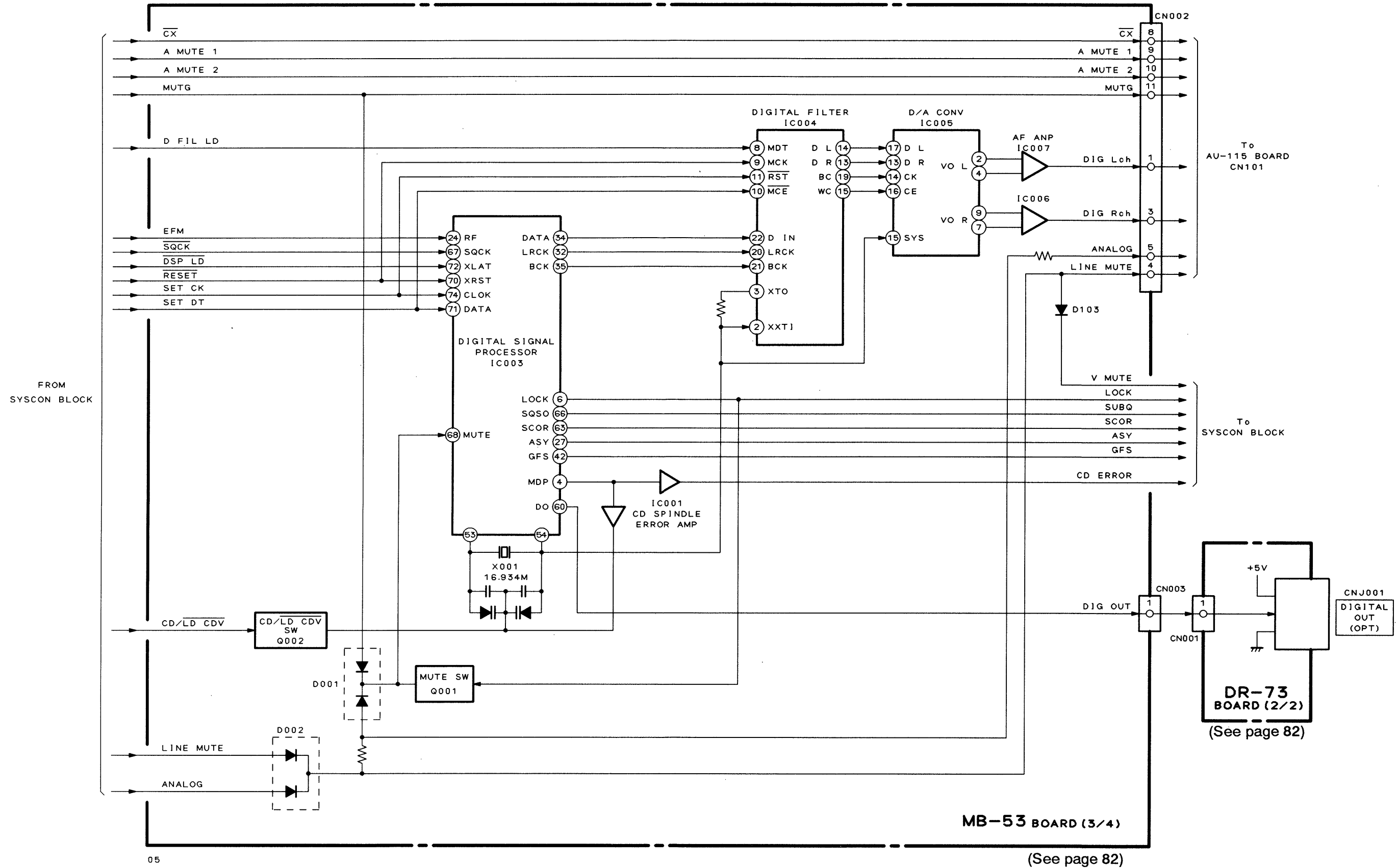
3-5. SYSTEM CONTROL BLOCK DIAGRAM



3-6. RF AMP, SERVO BLOCK DIAGRAM

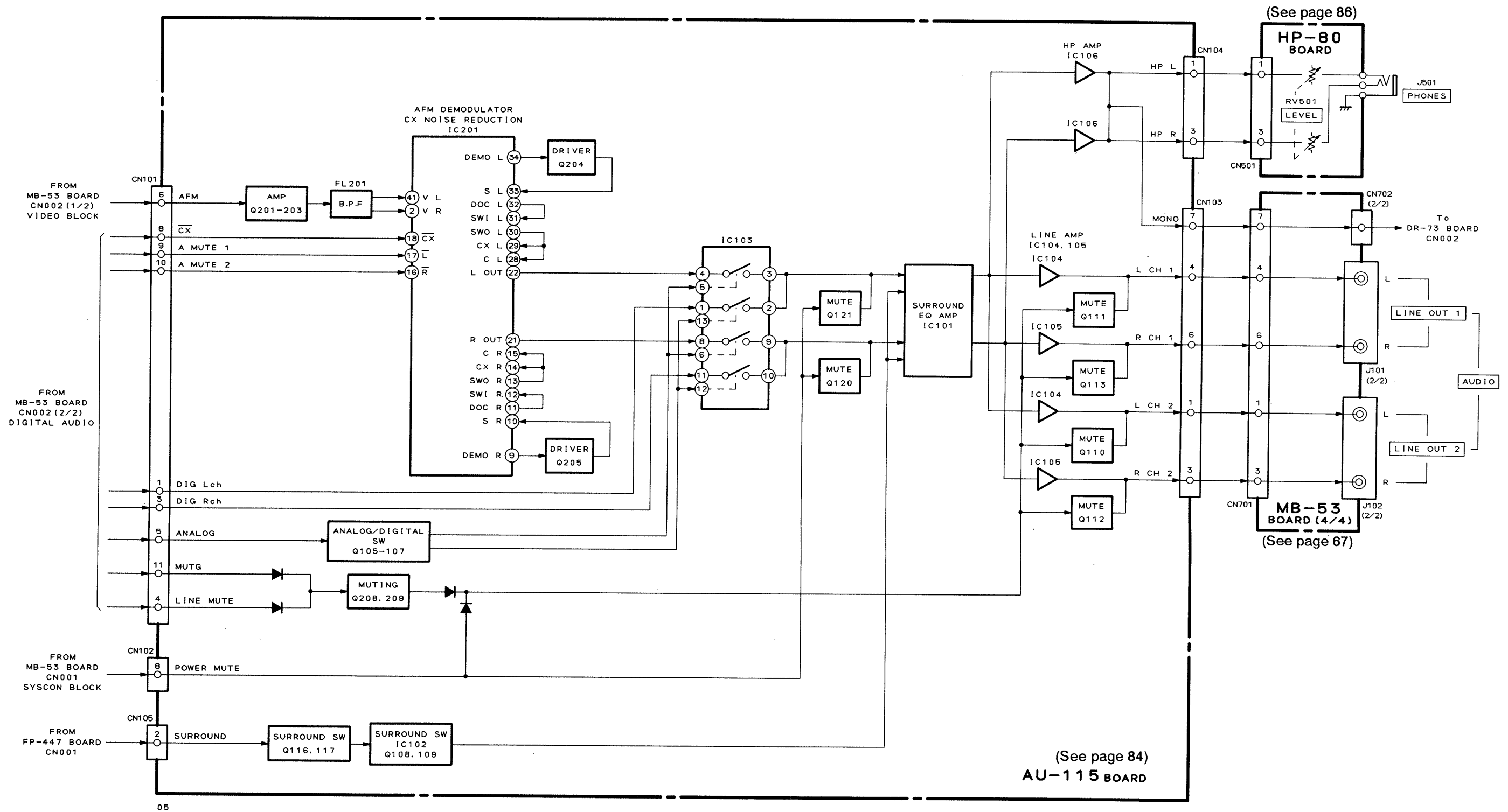


3-7. DIGITAL AUDIO BLOCK DIAGRAM



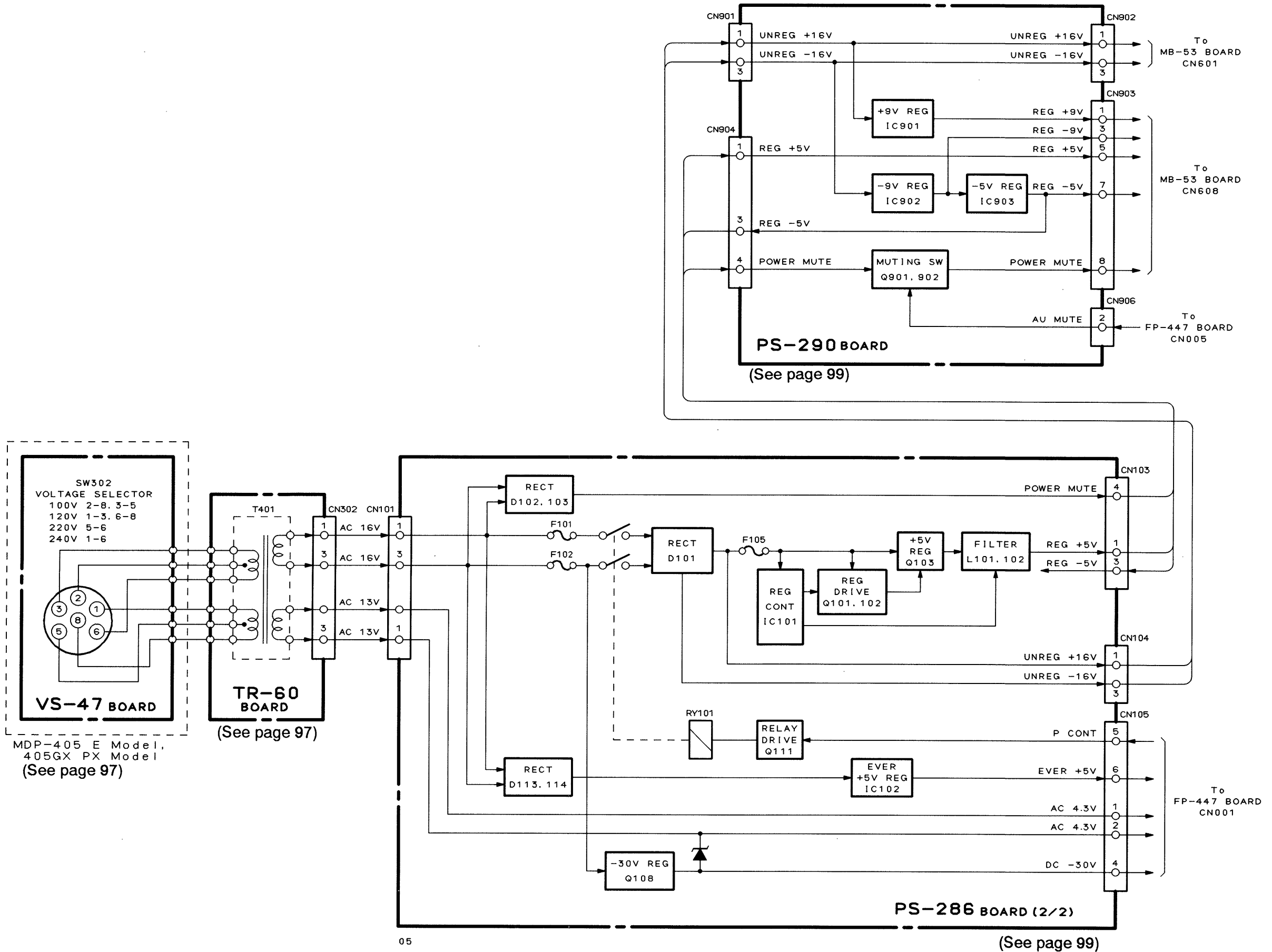


3-8. ANALOG AUDIO BLOCK DIAGRAM



05

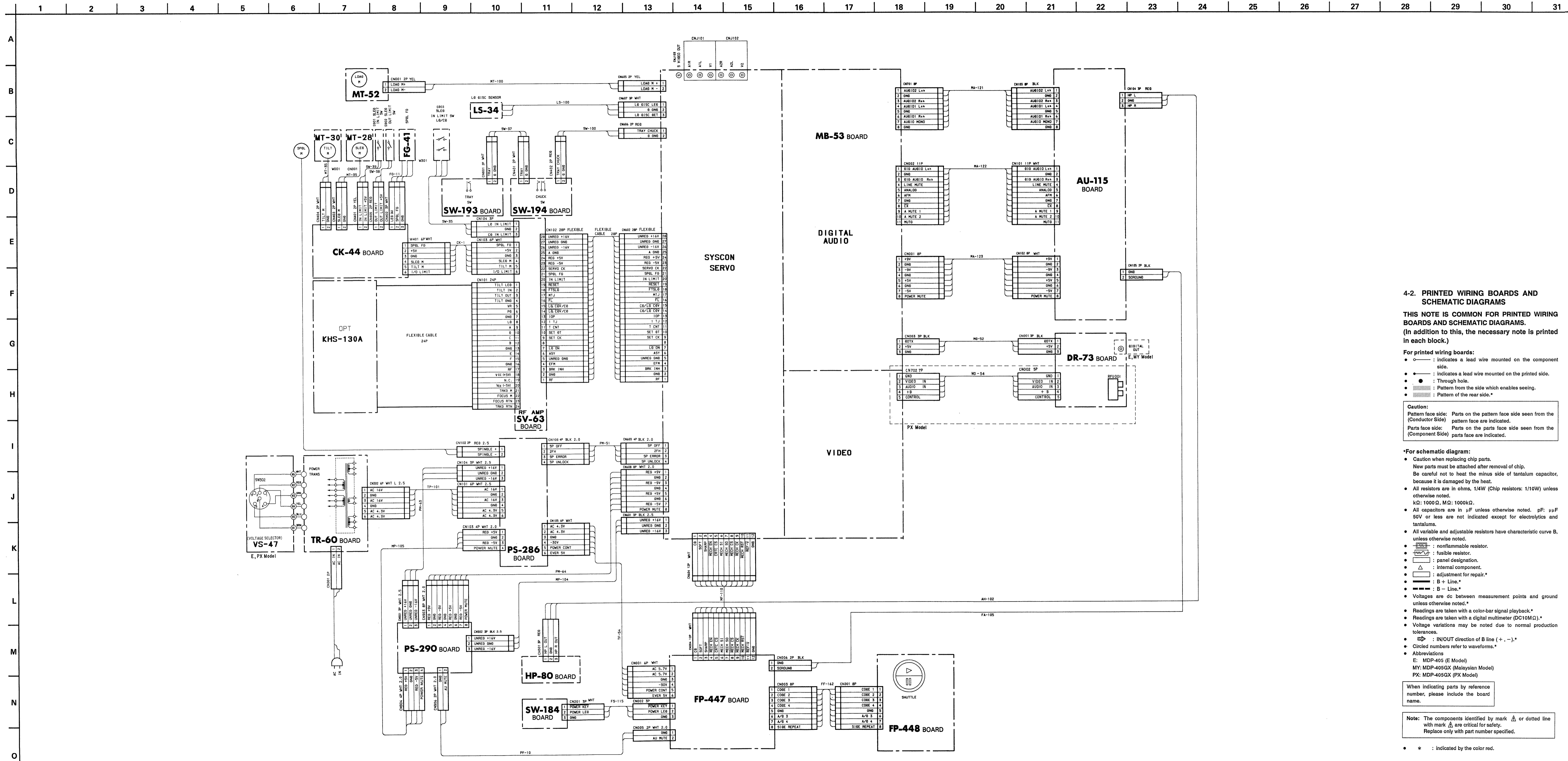
3-9. POWER BLOCK DIAGRAM



05

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.  
 ○ — Through hole.  
 ● — Pattern from the side which enables seeing.  
 ○ — Pattern of the rear side.\*

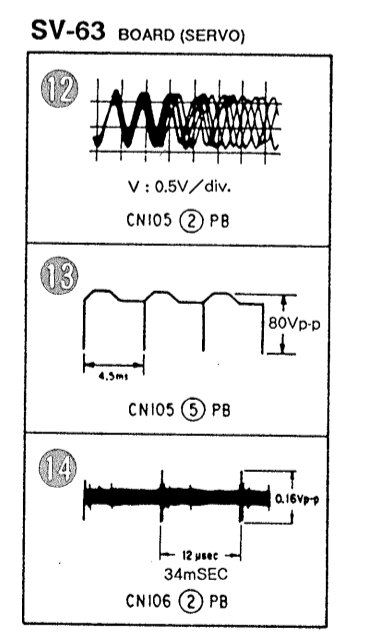
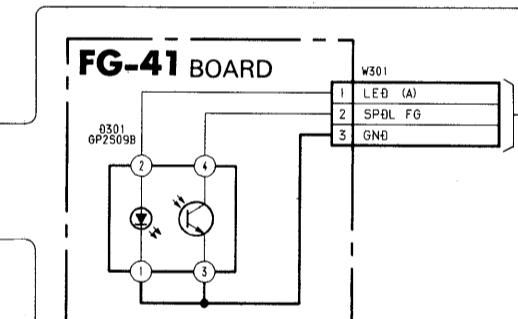
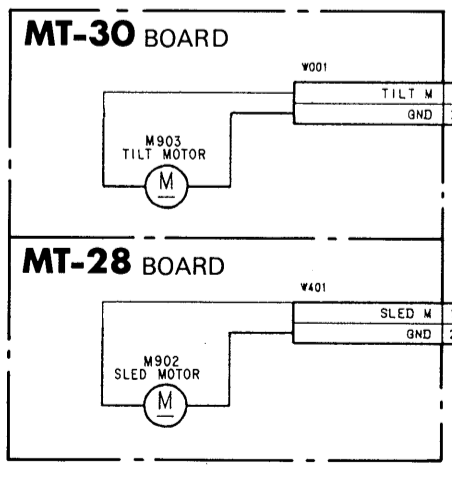
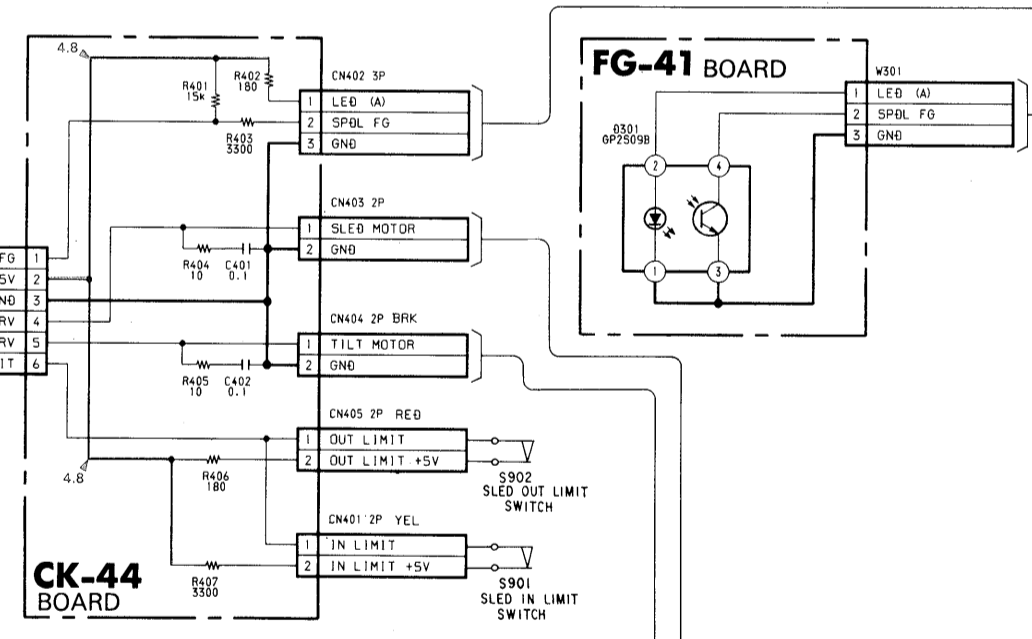
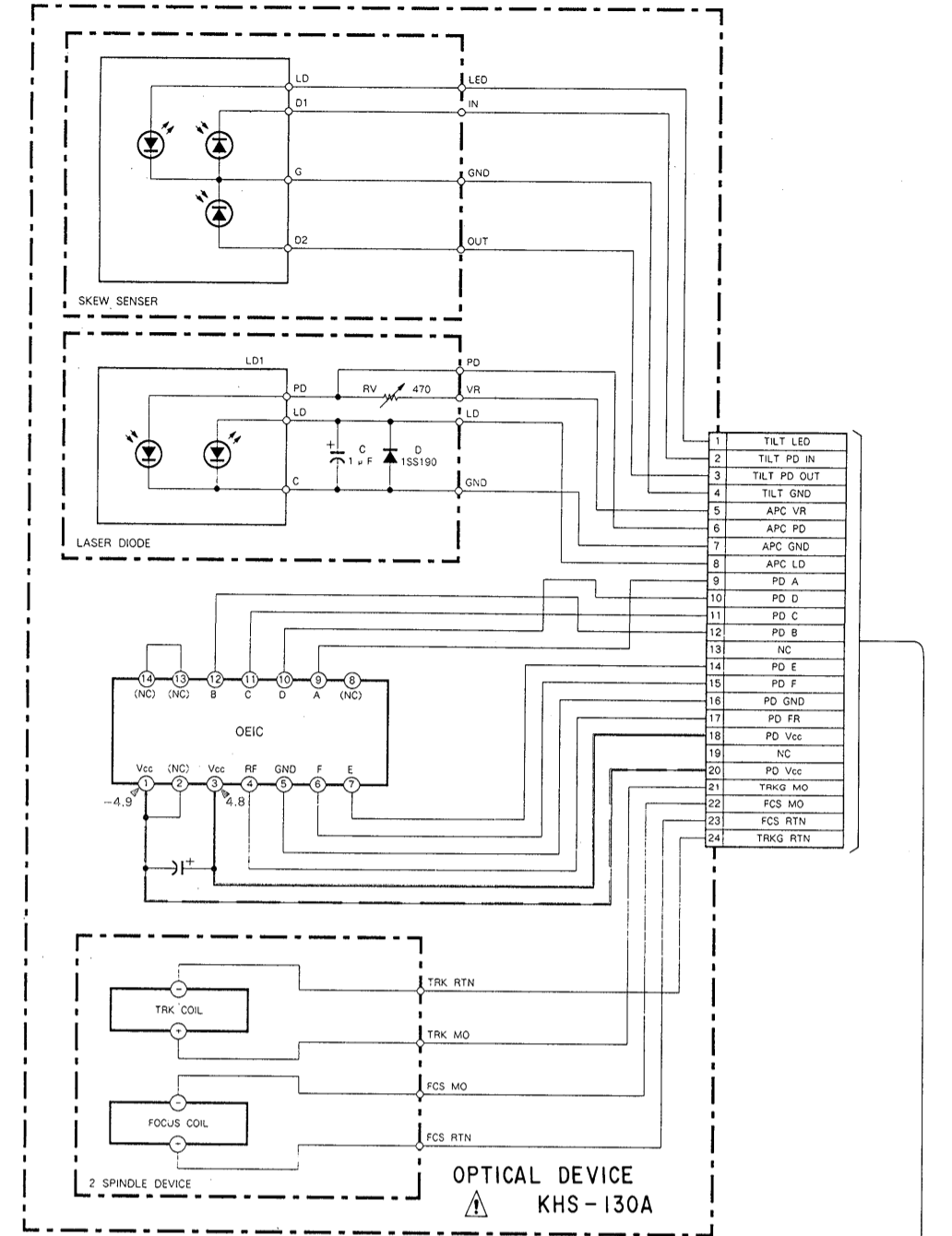
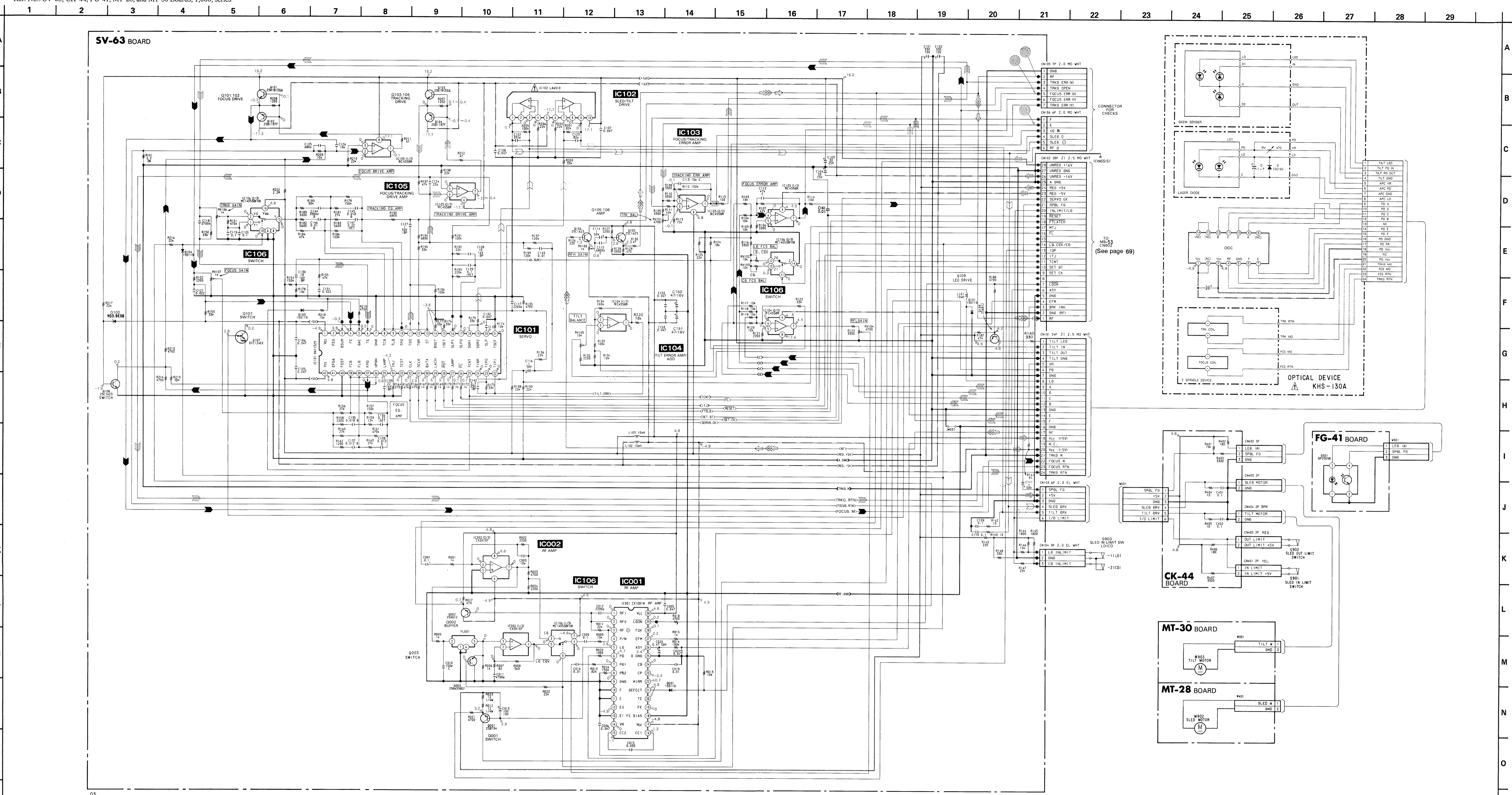
Caution:  
 Pattern face side: Parts on the pattern face side seen from the (Conductor Side) pattern face are indicated.  
 Parts face side: Parts on the parts face side seen from the (Component Side) parts face are indicated.

\*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. kΩ: 1000Ω, MΩ: 1000kΩ.  
 • All capacitors are in μF unless otherwise noted. pF: μF/50V or less are not indicated except for electrolytics and tantalums.  
 • All variable and adjustable resistors have characteristic curve B, unless otherwise noted.  
 • □: nonflammable resistor.  
 • □: fusible resistor.  
 • □: panel designation.  
 • □: internal component.  
 • □: adjustment for repair.\*  
 • □: B + Line.\*  
 • □: B - Line.\*  
 • Voltages are dc between measurement points and ground unless otherwise noted.\*  
 • Readings are taken with a color-bar signal playback.\*  
 • Readings are taken with a digital multimeter (DC10MΩ).  
 • Voltage variations may be noted due to normal production tolerances.  
 • IN/OUT direction of B line (+, -).  
 • Circled numbers refer to waveforms.\*  
 • Abbreviations  
 E: MDP-405 (E Model)  
 MY: MDP-405GX (Malaysian Model)  
 PX: MDP-405GX (PX Model)

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.

\* : Indicated by the color red.

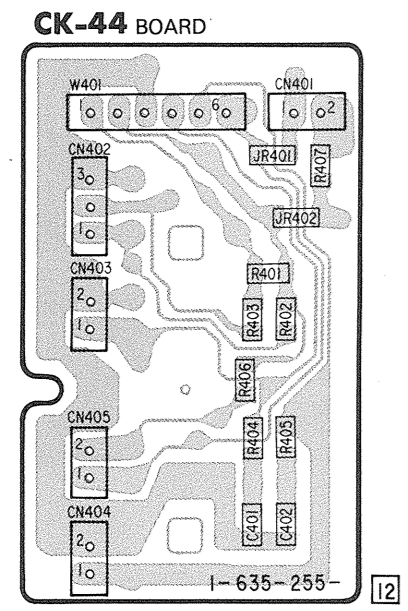
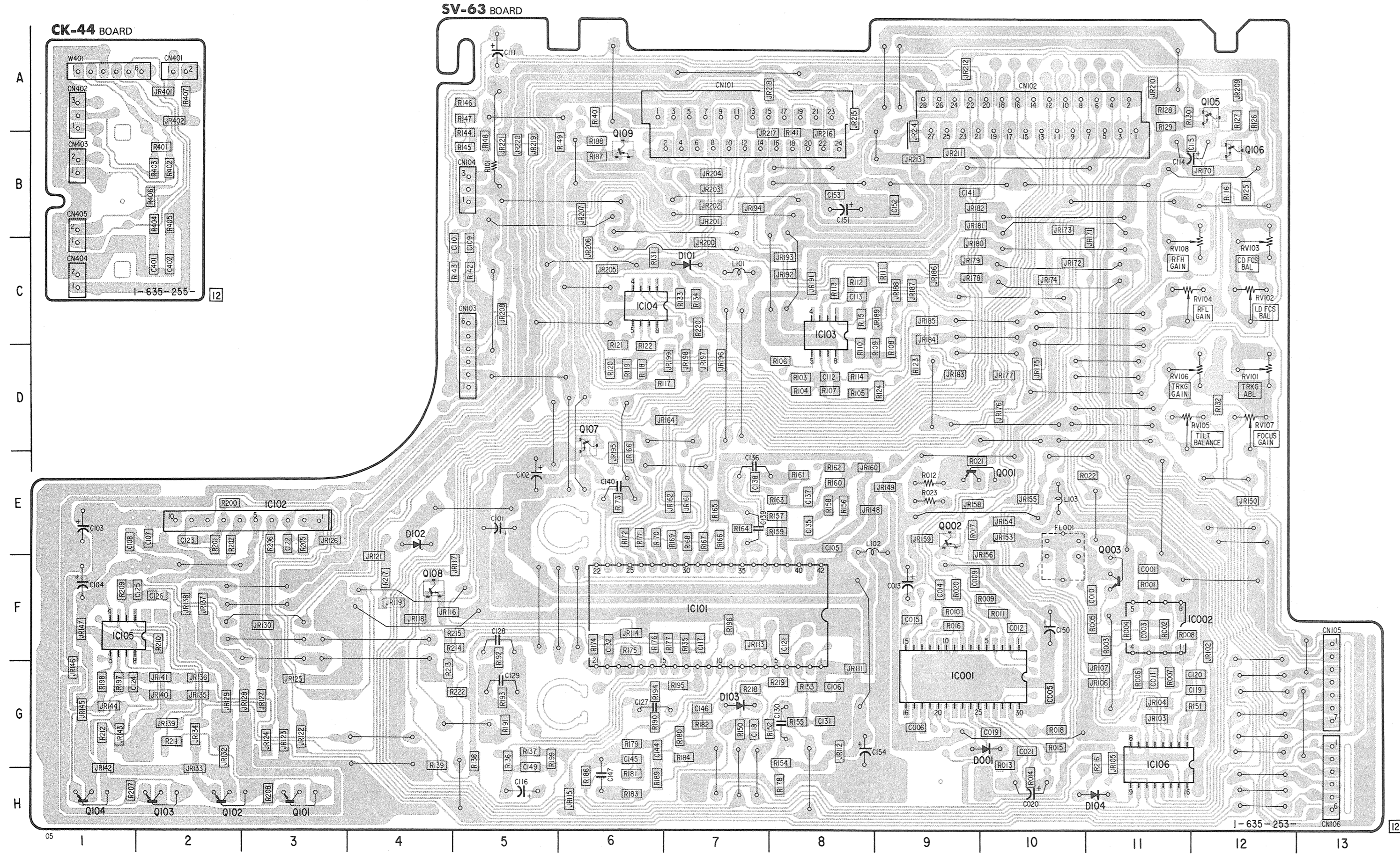


PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
▶	▶	▶	▶	▶

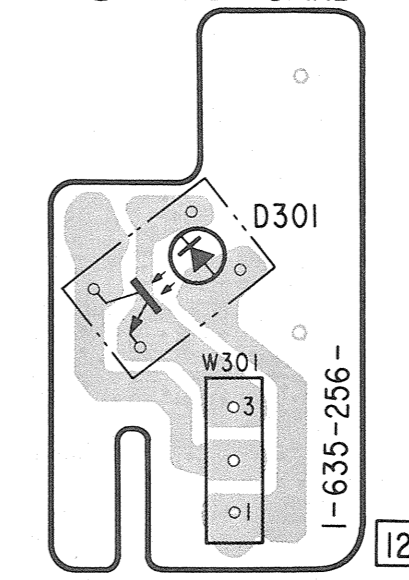
▶▶▶	SPINDLE PHASE SERVO	▶▶▶▶▶
▶▶▶▶▶	SPINDLE SERVO (SPEED AND PHASE)	▶▶▶▶▶
▶▶▶▶▶	TRACKING SERVO LD/CDV	▶▶▶▶▶
▶▶▶▶▶	SLIDE SERVO LD/CD	▶▶▶▶▶
▶▶▶▶▶	FOCUS SERVO LD/CD	▶▶▶▶▶
▶▶▶▶▶	SKREW SERVO LD TILT	▶▶▶▶▶

SV-63 BOARD

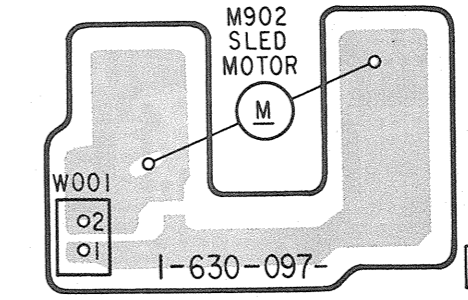
- |       |      |
|-------|------|
| D001  | G-10 |
| D101  | C-7  |
| D102  | E-4  |
| D103  | G-6  |
| D104  | H-11 |
|       |      |
| IC001 | G-9  |
| IC002 | F-11 |
| IC101 | F-7  |
| IC102 | E-3  |
| IC103 | C-8  |
| IC104 | C-6  |
| IC105 | F-1  |
| IC106 | G-11 |
|       |      |
| Q001  | 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-8  |
| Q108  | F-4  |
| Q109  | B-6  |



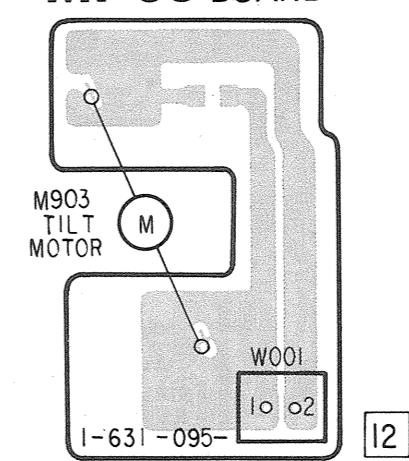
FG-41 BOARD



MT-28 BOARD



MT-30 BOARD

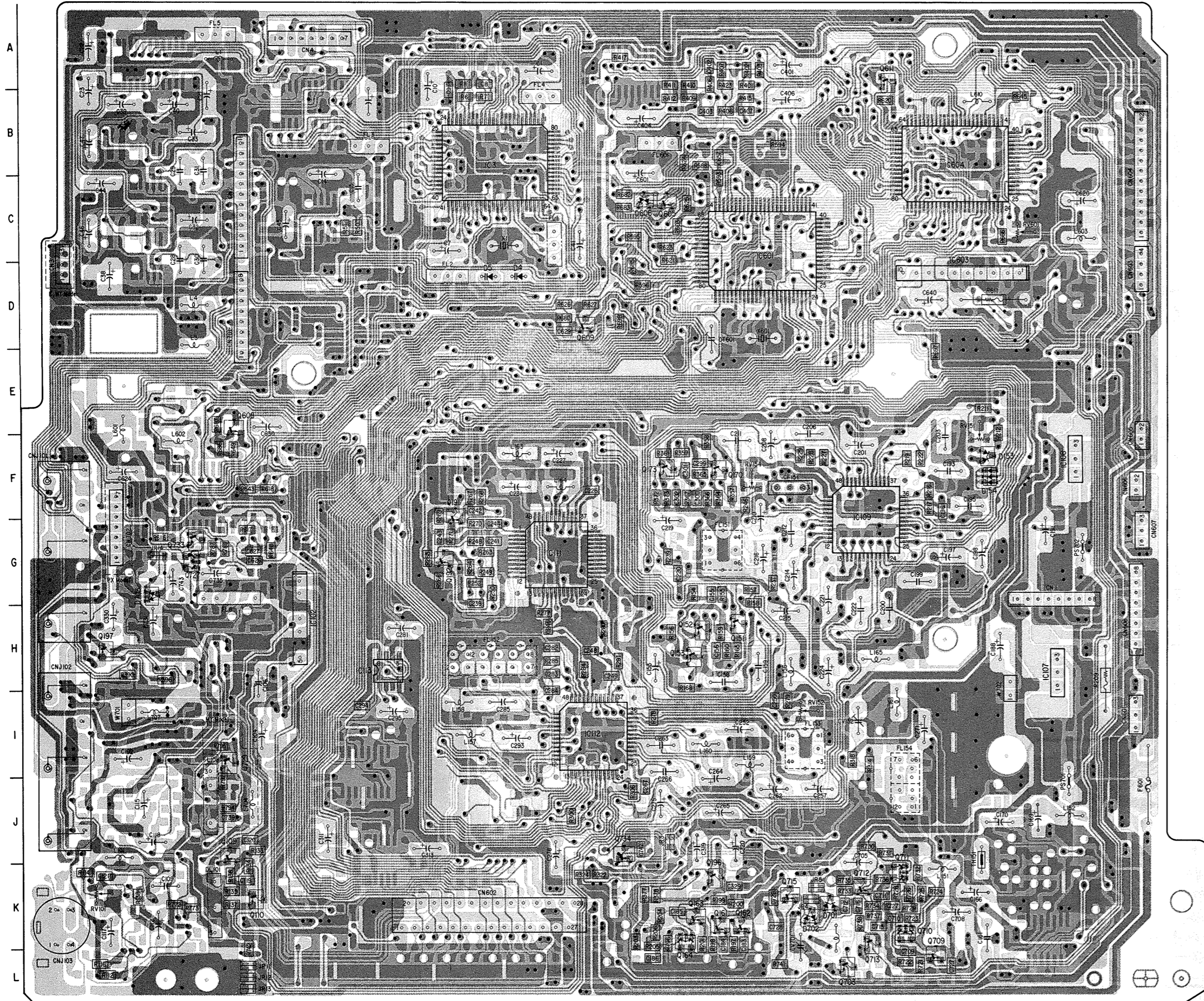


MB-53 BOARD

D001	B-23	Q197	H-1
D002	B-24	Q198	H-27
D003	A-23	Q199	H-28
D004	D-6	Q200	H-27
D005	D-6	Q601	D-17
D151	K-20	Q602	E-27
D153	F-12	Q605	C-8
D154	F-12	Q606	E-27
D155	K-20	Q608	E-3
D160	H-21	Q609	D-7
D401	B-22	Q610	E-26
D601	E-27	Q611	A-11
D602	C-19	Q701	K-19
D605	A-19	Q702	K-19
D606	C-8	Q703	L-11
D607	A-19	Q704	L-11
D701	K-10	Q705	K-19
D702	K-10	Q706	K-19
D703	G-2	Q707	K-18
		Q708	L-18
		Q709	K-11
IC001	C-25	Q710	K-11
IC003	B-5	Q711	K-11
IC004	B-26	Q712	K-10
IC005	A-27	Q713	K-10
IC006	C-27	Q715	K-9
IC007	B-27	Q715	K-9
IC102	H-4	Q723	K-22
IC105	G-21	Q724	H-27
IC106	K-17	Q725	H-27
IC107	H-13	Q726	G-26
IC108	F-13	Q727	G-2
IC109	F-10	Q728	G-27
IC110	G-24	Q729	I-3
IC111	G-7	Q730	K-27
IC112	I-7	Q731	K-27
IC113	H-5	Q732	L-28
IC114	J-25	Q733	G-2
IC115	I-25	Q734	J-7
IC401	A-20		
IC402	A-22		
IC502	F-27		
IC603	D-11		
IC604	B-11		

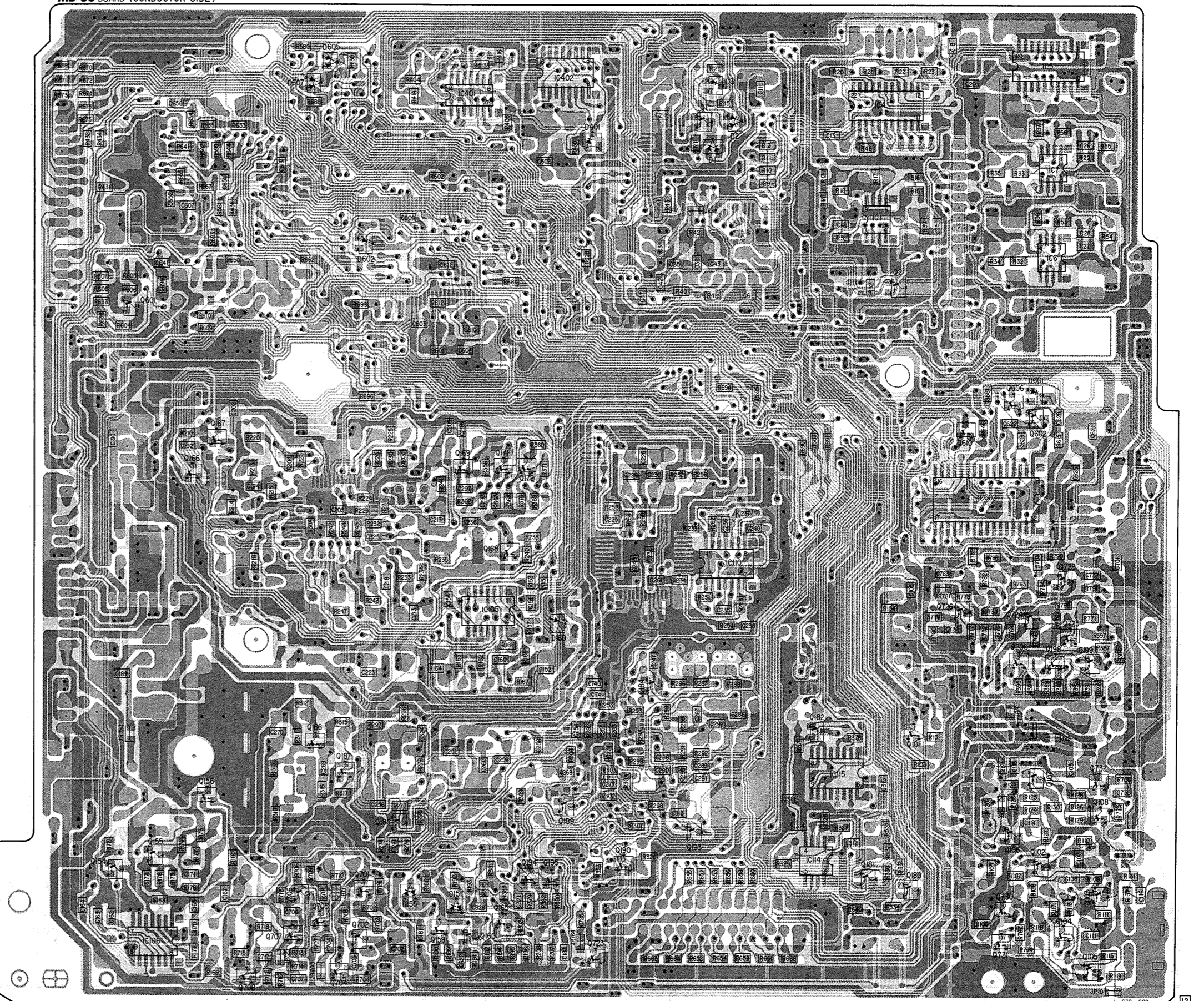
Q001	B-23		
Q002	D-25		
Q101	I-26		
Q102	J-27		
Q103	K-28		
Q104	K-27		
Q105	L-28		
Q106	J-27		
Q107	I-27		
Q108	J-28		
Q109	J-3		
Q110	K-3		
Q151	H-8		
Q152	H-8		
Q153	H-8		
Q154	J-16		
Q155	J-17		
Q156	J-17		
Q159	K-20		
Q160	K-21		
Q161	K-9		
Q162	K-9		
Q163	K-8		
Q164	K-8		
Q165	K-21		
Q166	F-17		
Q167	E-18		
Q168	G-21		
Q169	F-20		
Q170	F-9		
Q171	F-21		
Q172	F-21		
Q173	F-9		
Q180	K-26		
Q181	K-25		
Q182	I-25		
Q184	F-23		
Q185	J-20		
Q186	I-19		
Q187	I-19		
Q189	J-22		
Q190	J-22		
Q191	F-6		
Q192	G-6		
Q193	J-23		
Q194	K-21		
Q195	K-21		
Q196	K-9		

MB-53 BOARD (COMPONENT SIDE)

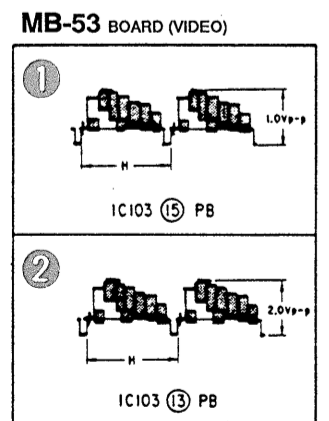
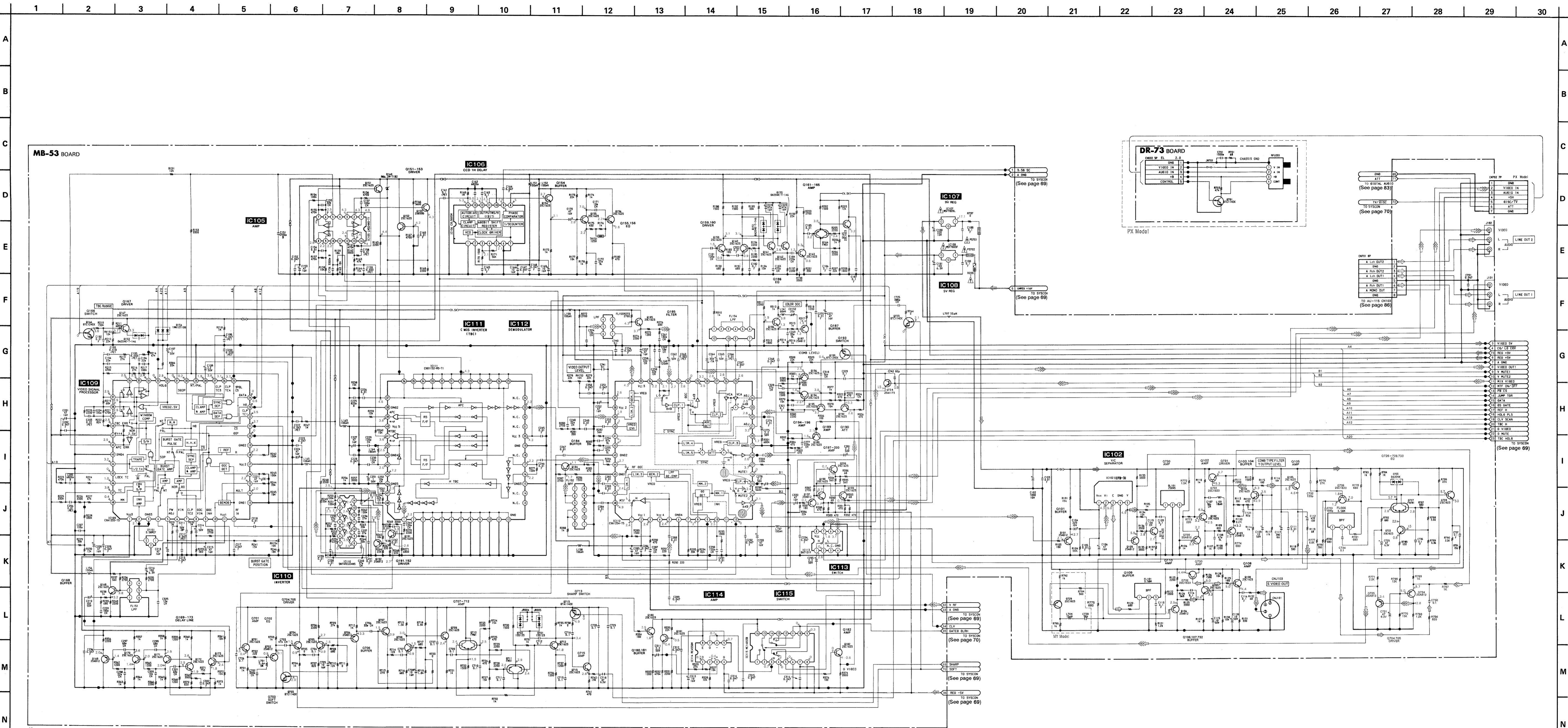


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

MB-53 BOARD (CONDUCTOR SIDE)

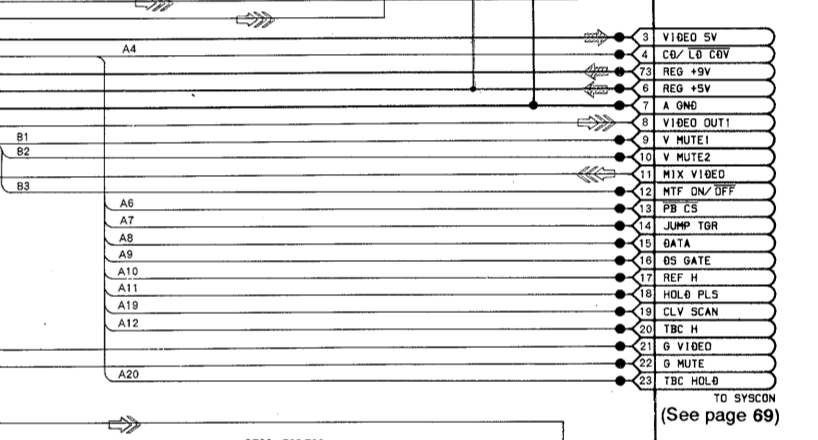
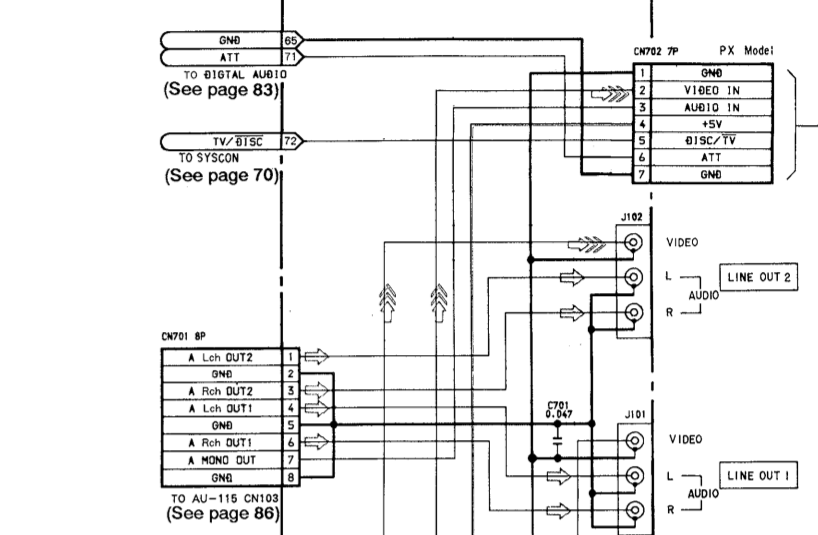
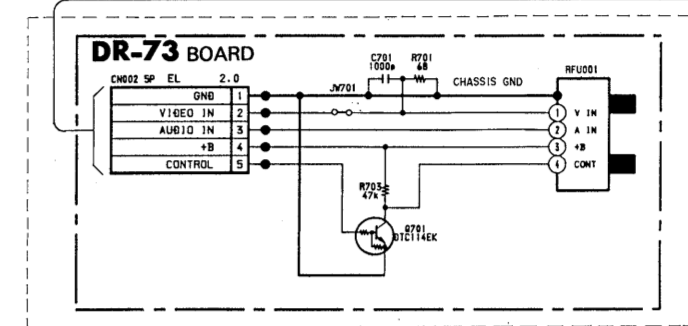


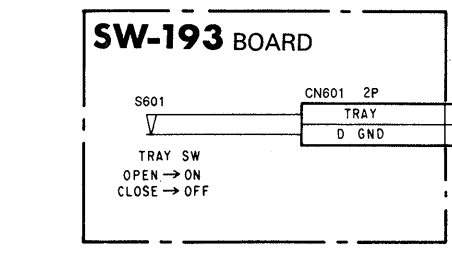
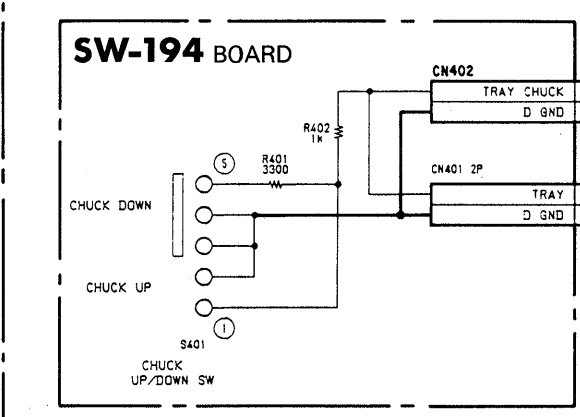
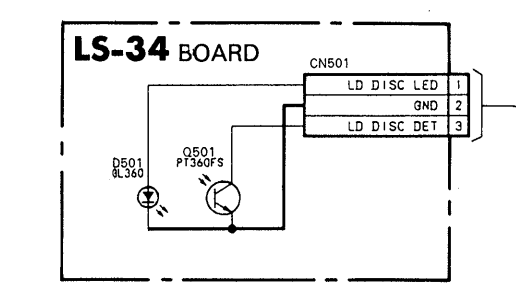
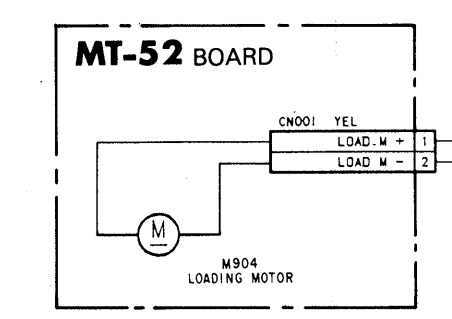
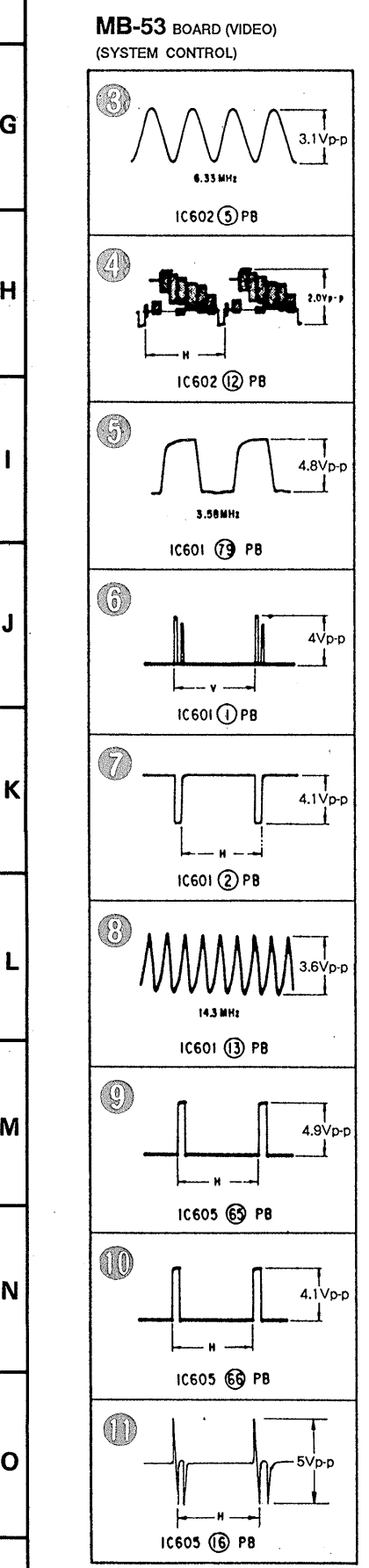
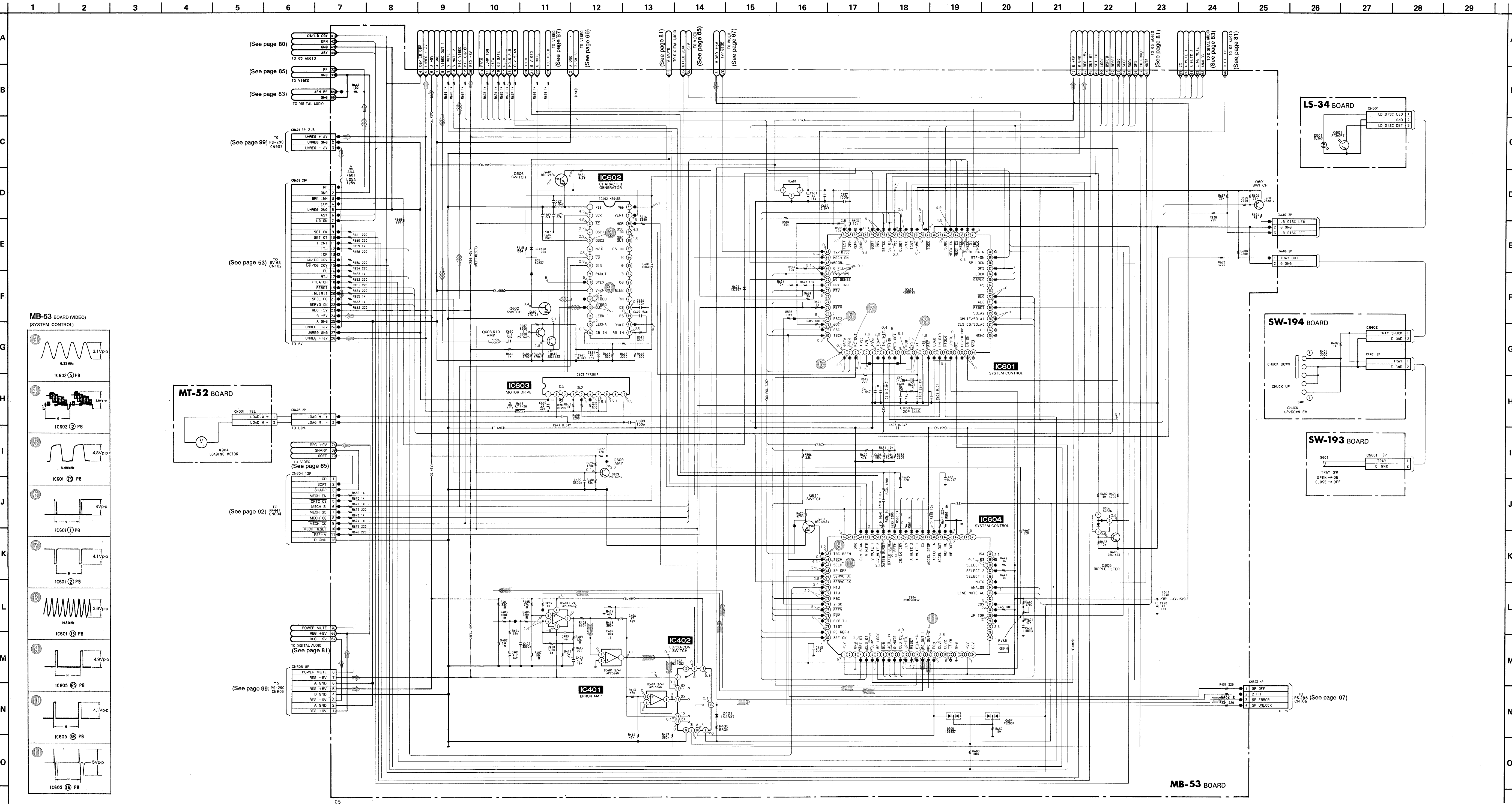
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28



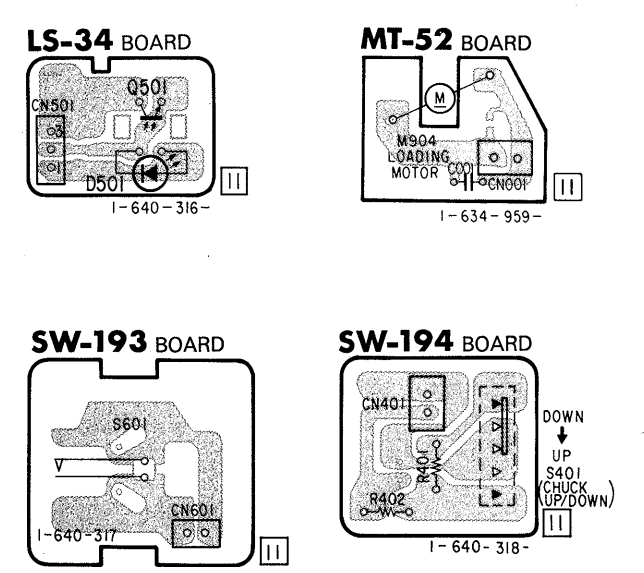
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	↔	↔	↔	↔

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	➡➡➡





**LS-34 (LD SENSOR), MT-52 (LOADING MOTOR), SW-193 (TRAY SWITCH), SW-194 (CHUCK SWITCH) PRINTED WIRING BOARDS**  
 - Ref. No.: LS-34, MT-52, SW-193, and SW-194 Boards; 3,000 series -



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

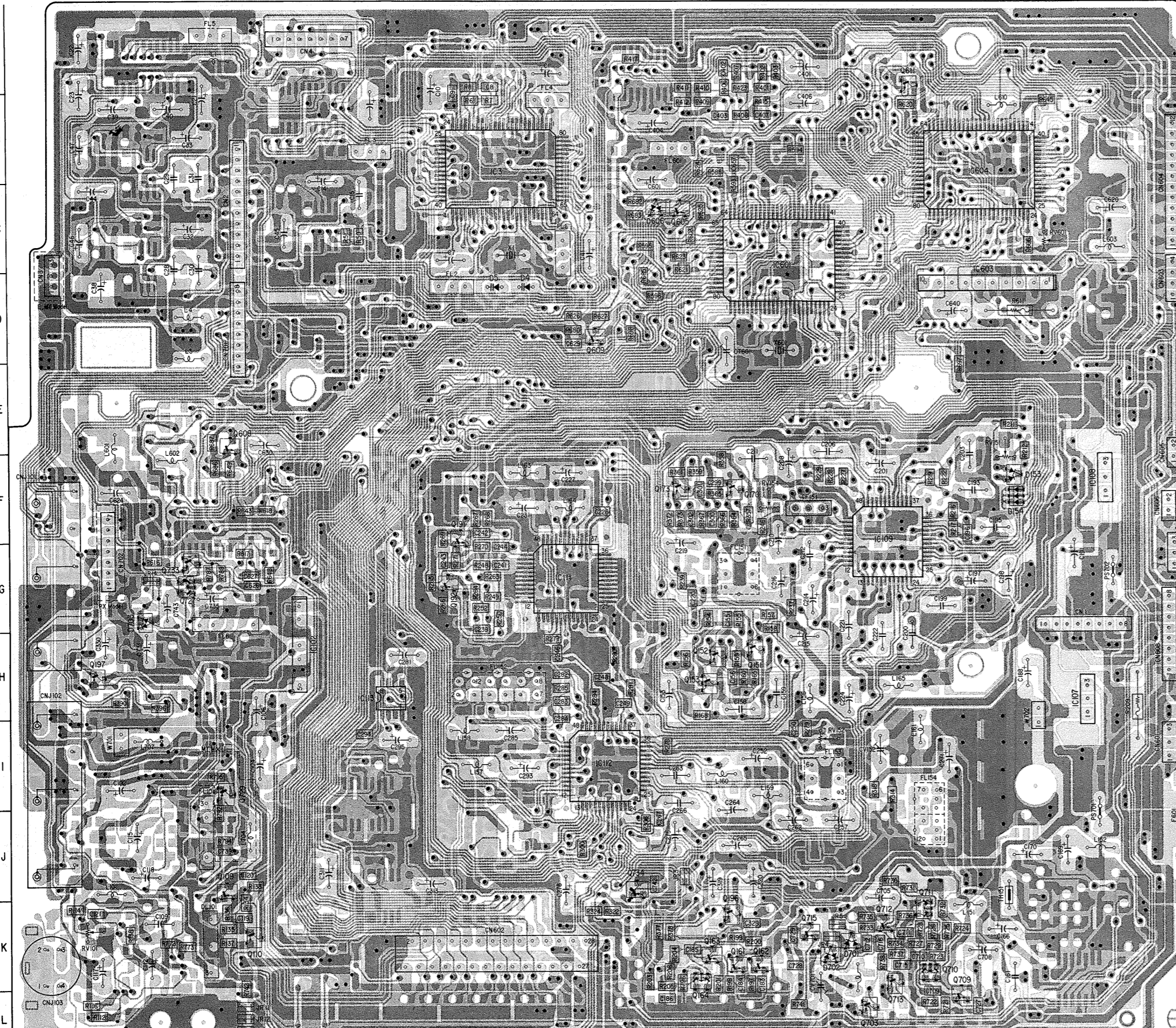
SPINDLE PHASE SERVO  
 SPINDLE SERVO (SPEED AND PHASE)  
 TRACKING SERVO LD/CD/CDV  
 SLIDE SERVO LD/CD  
 FOCUS SERVO LD/CD  
 SKEW SERVO LD TILT



MB-53 BOARD

D001	B-23	Q197	H-1
D002	B-24	Q198	H-28
D003	A-23	Q199	H-27
D004	D-8	Q200	H-27
D005	D-8	Q601	D-17
D151	K-20	Q602	E-27
D153	F-12	Q605	C-8
D154	F-12	Q606	E-27
D155	K-20	Q608	E-3
D160	H-21	Q609	D-7
D401	B-22	Q610	E-26
D601	E-27	Q611	A-11
D602	C-19	Q701	K-19
D605	A-19	Q702	K-19
D606	C-8	Q703	L-11
D607	A-19	Q704	L-11
D701	K-10	Q705	K-19
D702	K-10	Q706	K-19
D703	G-2	Q707	K-18
		Q708	L-18
		Q709	K-11
		Q710	K-11
		Q711	K-11
		Q712	K-10
		Q713	K-10
		Q715	K-9
		Q723	K-22
		Q724	H-27
		Q725	H-27
		Q726	G-26
		Q727	G-2
		Q728	G-27
		Q729	I-3
		Q730	K-27
		Q731	K-27
		Q732	I-28
		Q733	G-2
		Q734	J-7
IC001	C-25		
IC003	B-8		
IC004	B-25		
IC005	A-27		
IC006	C-27		
IC007	B-27		
IC102	H-4		
IC105	G-21		
IC106	K-17		
IC107	H-13		
IC108	F-13		
IC109	F-10		
IC110	G-24		
IC111	G-7		
IC112	I-7		
IC113	H-5		
IC114	J-25		
IC115	I-25		
IC401	A-20		
IC402	A-22		
IC602	F-27		
IC603	D-11		
IC604	B-11		
Q001	B-23		
Q002	D-25		
Q101	I-26		
Q102	J-27		
Q103	K-28		
Q104	K-27		
Q105	L-28		
Q106	J-27		
Q107	I-27		
Q108	J-28		
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Q151	H-9		
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Q153	H-8		
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Q159	K-20		
Q160	K-21		
Q161	K-9		
Q162	K-9		
Q163	K-8		
Q164	K-8		
Q165	K-21		
Q166	F-17		
Q167	E-18		
Q168	G-21		
Q169	F-20		
Q170	F-9		
Q171	F-21		
Q172	F-21		
Q173	F-8		
Q180	K-26		
Q181	K-25		
Q182	I-25		
Q184	F-23		
Q185	J-20		
Q186	I-19		
Q187	I-19		
Q189	J-22		
Q190	J-22		
Q191	F-9		
Q192	G-5		
Q193	J-23		
Q194	K-21		
Q195	K-21		
Q196	K-9		

MB-53 BOARD (COMPONENT SIDE)

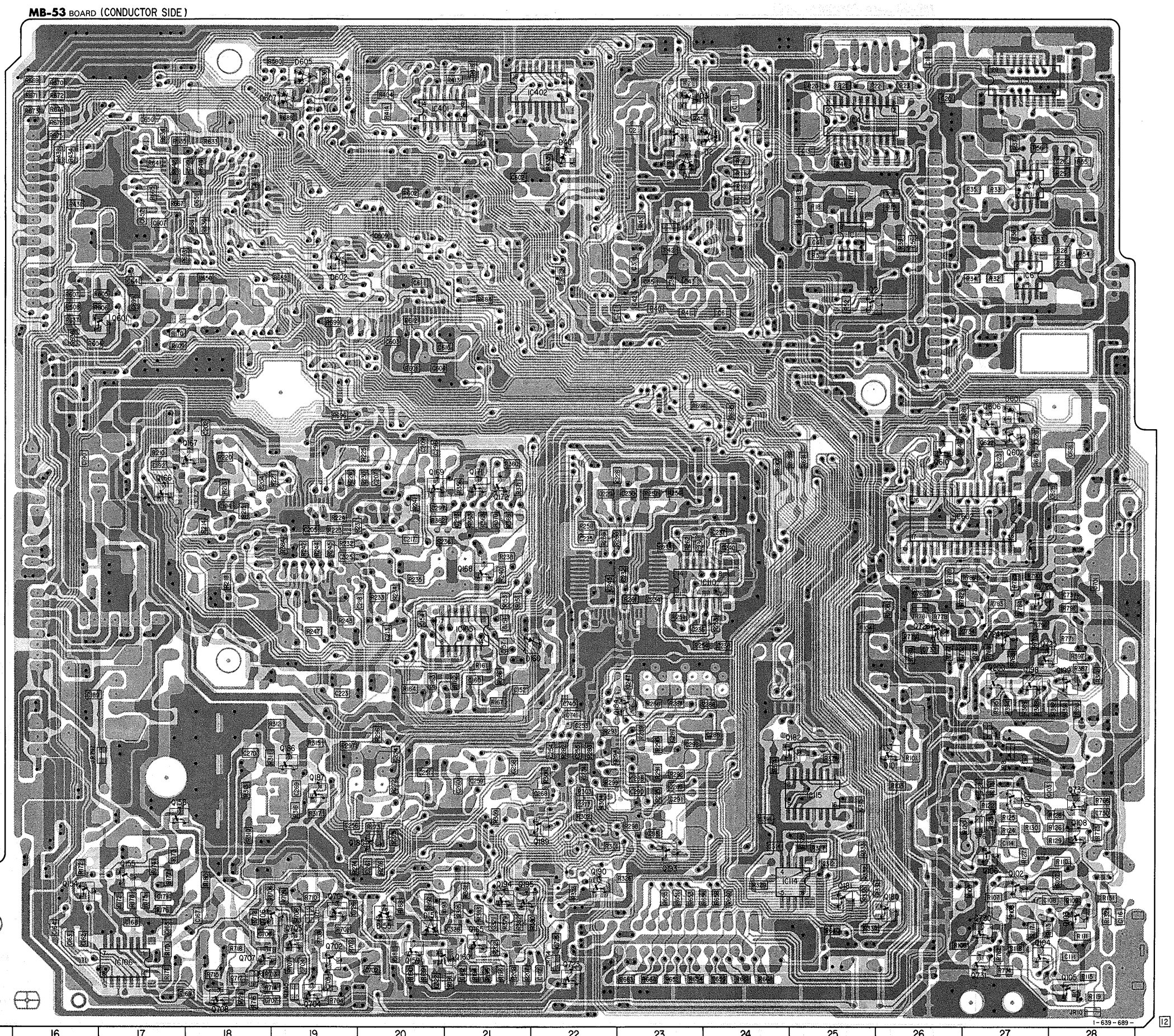
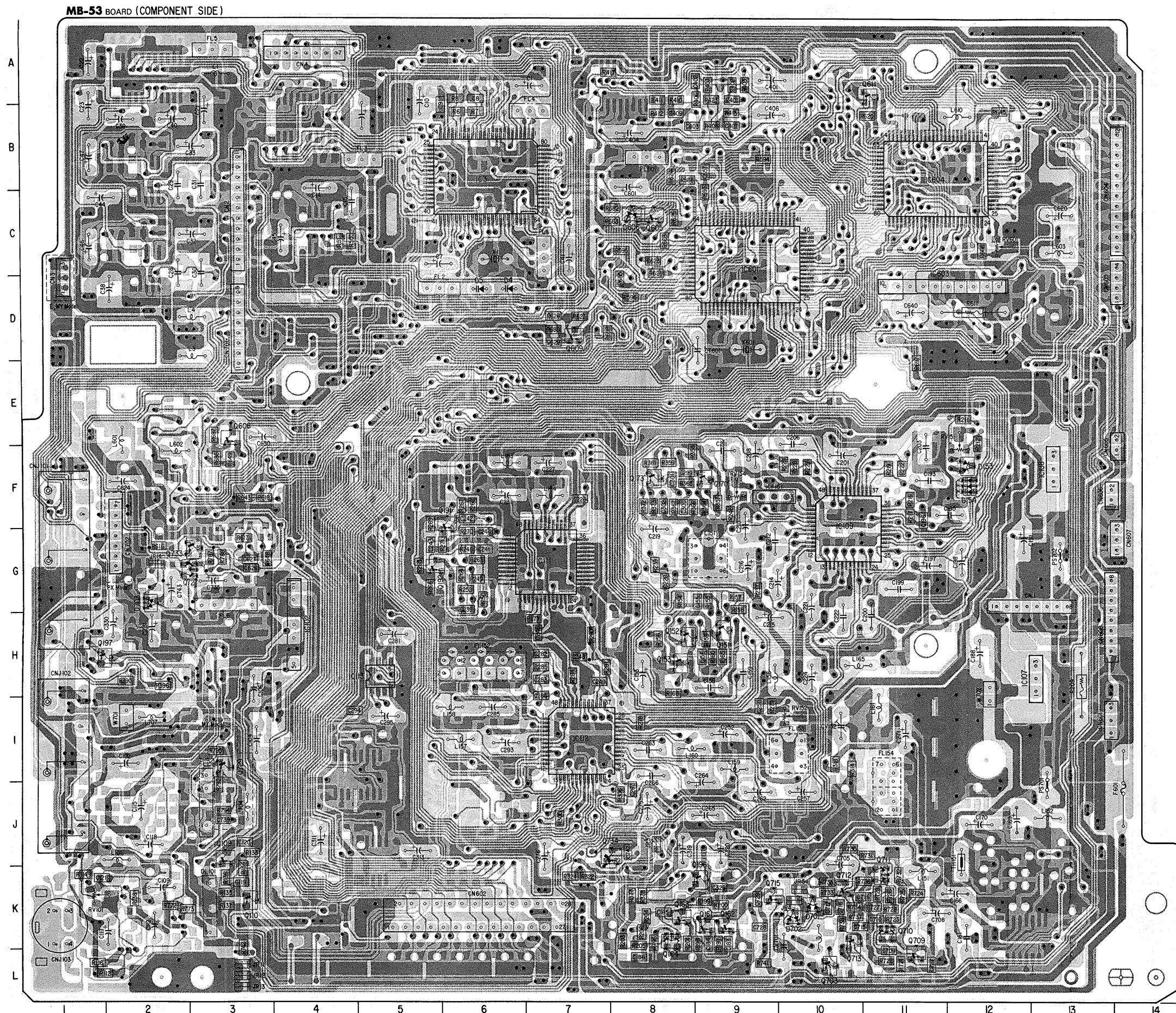


MB-53 BOARD (CONDUCTOR SIDE)

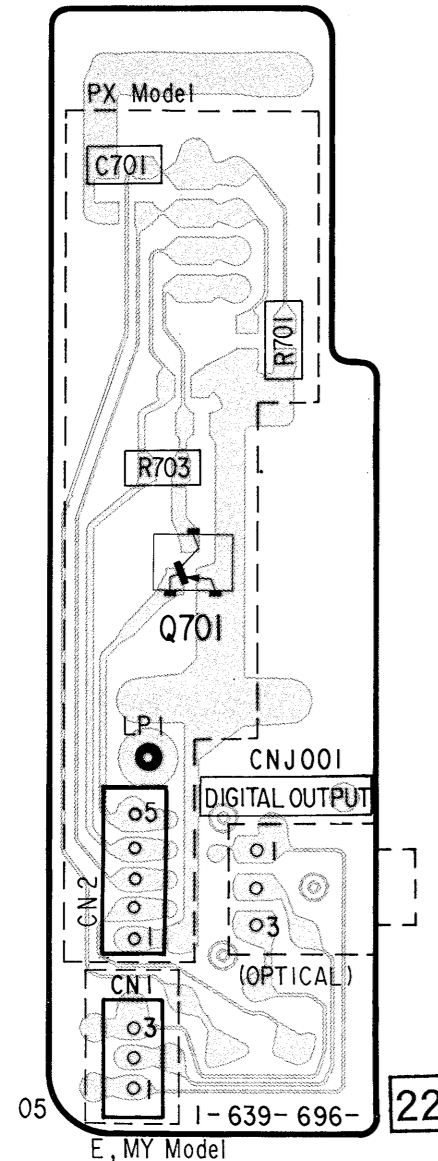


MB-53 BOARD

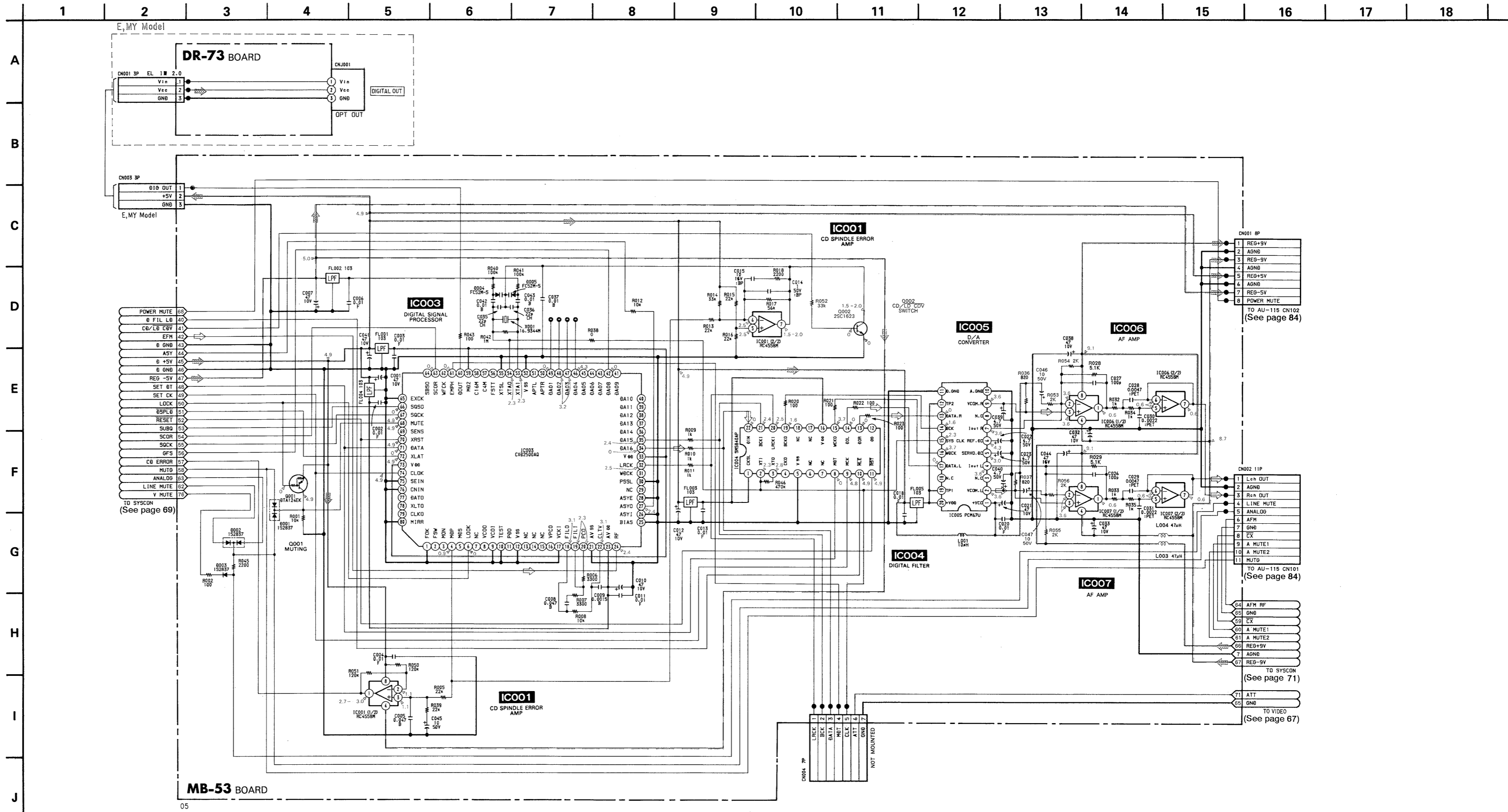
D001	B-23	Q197	H-1
D002	B-24	Q198	H-27
D003	A-23	Q199	H-28
D004	D-6	Q200	H-27
D005	D-6	Q601	D-17
D151	K-20	Q602	E-27
D153	F-12	Q605	C-8
D154	F-12	Q606	E-27
D155	K-20	Q608	E-3
D160	H-21	Q609	D-7
D401	B-22	Q610	E-26
D601	E-27	Q611	A-11
D602	C-19	Q701	K-19
D605	A-19	Q702	K-19
D606	C-8	Q703	L-11
D607	A-19	Q704	L-11
D701	K-10	Q705	K-19
D702	K-10	Q706	K-19
D703	G-2	Q707	K-18
		Q708	L-18
IC001	C-25	Q709	K-11
IC003	B-5	Q710	K-11
IC004	B-25	Q711	K-11
IC005	A-27	Q712	K-10
IC006	C-27	Q713	K-10
IC007	B-27	Q715	K-9
IC102	H-4	Q723	K-22
IC105	G-21	Q724	H-27
IC106	K-17	Q725	H-27
IC107	H-13	Q726	G-26
IC108	F-13	Q727	G-2
IC109	F-10	Q728	G-27
IC110	G-24	Q729	I-3
IC111	G-7	Q730	K-27
IC112	I-7	Q731	K-27
IC113	H-5	Q732	L-28
IC114	J-25	Q733	G-2
IC115	I-25	Q734	J-7
IC401	A-20		
IC402	A-22		
IC602	F-27		
IC603	D-11		
IC604	B-11		
O001	B-23		
O002	D-25		
O101	I-26		
O102	J-27		
O103	K-28		
O104	K-27		
O105	L-28		
O106	J-27		
O107	I-27		
O108	J-28		
O109	J-3		
O110	K-3		
O151	H-8		
O152	H-8		
O153	H-8		
O154	J-16		
O155	J-17		
O156	J-17		
O159	K-20		
O160	K-21		
O161	K-9		
O162	K-9		
O163	K-8		
O164	K-8		
O165	K-21		
O166	F-17		
O167	E-18		
O168	G-21		
O169	F-20		
O170	F-9		
O171	F-21		
O172	F-21		
O173	F-8		
O180	K-26		
O181	K-25		
O182	I-25		
O184	F-23		
O185	J-20		
O186	I-19		
O187	I-19		
O189	J-22		
O190	J-22		
O191	F-6		
O192	G-5		
O193	J-23		
O194	K-21		
O195	K-21		
O196	K-9		



**DR-73 BOARD**

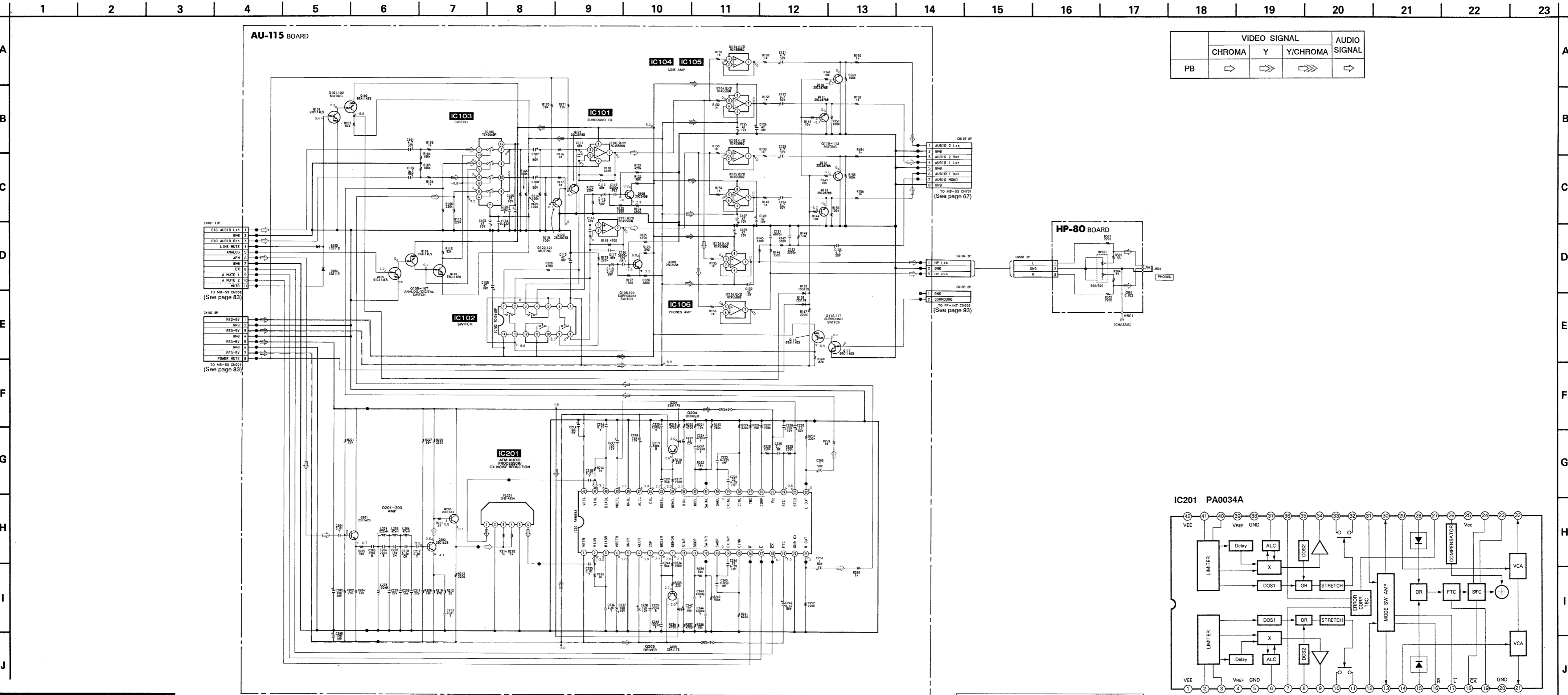


	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇒	⇒⇒	⇒⇒⇒	⇒

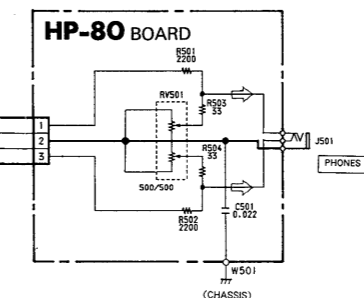


**AU-115 (AUDIO), HP-80 (HEADPHONES JACK) SCHEMATIC DIAGRAM**

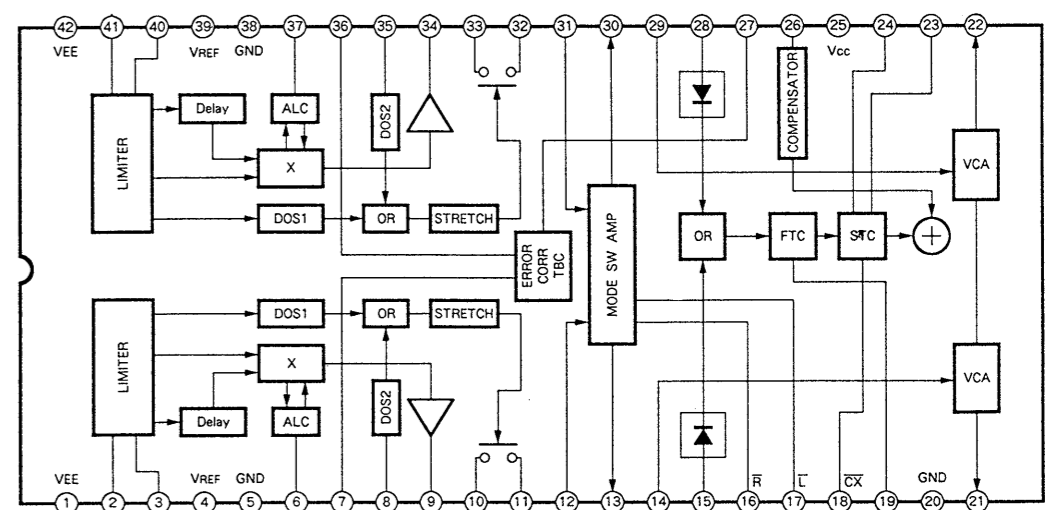
— Ref. No.: AU-115 Board; 4,000 Series, HP-80 Board; 5,000 series —



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



**IC201 PA0034A**



**AU-115 (AUDIO), HP-80 (HEADPHONES JACK) PRINTED WIRING BOARDS**

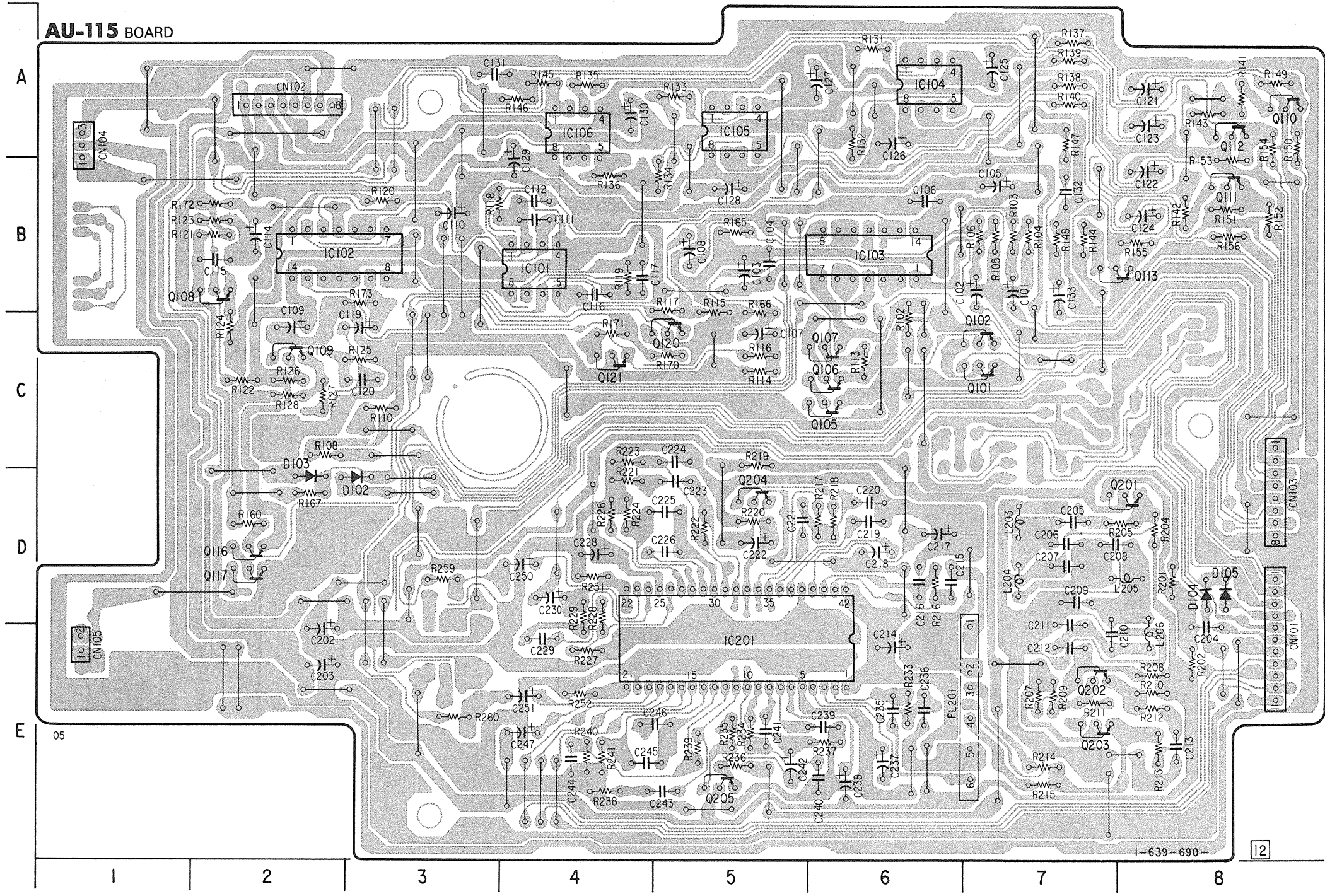
– Ref. No.: AU-115 Board; 4,000 Series, HP-80 Board; 5,000 series –

**AU-115 BOARD**

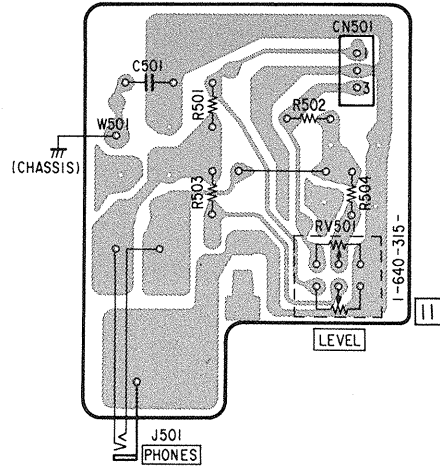
- D102 D-3
- D103 D-2
- D104 D-8
- D105 D-8

- IC101 B-4
- IC102 B-2
- IC103 B-6
- IC104 A-6
- IC105 A-5
- IC106 A-4
- IC201 E-5

- Q101 C-7
- Q102 C-7
- Q105 C-6
- Q106 C-6
- Q107 C-6
- Q108 B-2
- Q109 C-2
- Q110 A-8
- Q111 B-8
- Q112 A-8
- Q113 B-8
- Q116 D-2
- Q117 D-2
- Q120 C-5
- Q121 C-4
- Q201 D-8
- Q202 E-7
- Q203 E-7
- Q204 D-5
- Q205 E-5

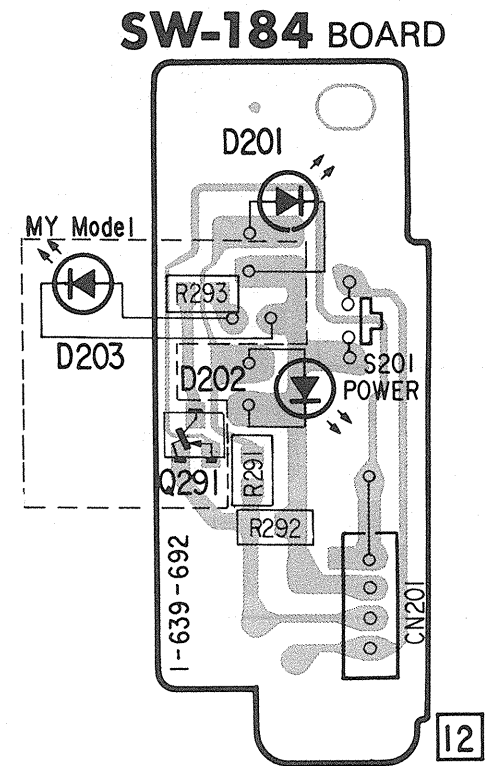
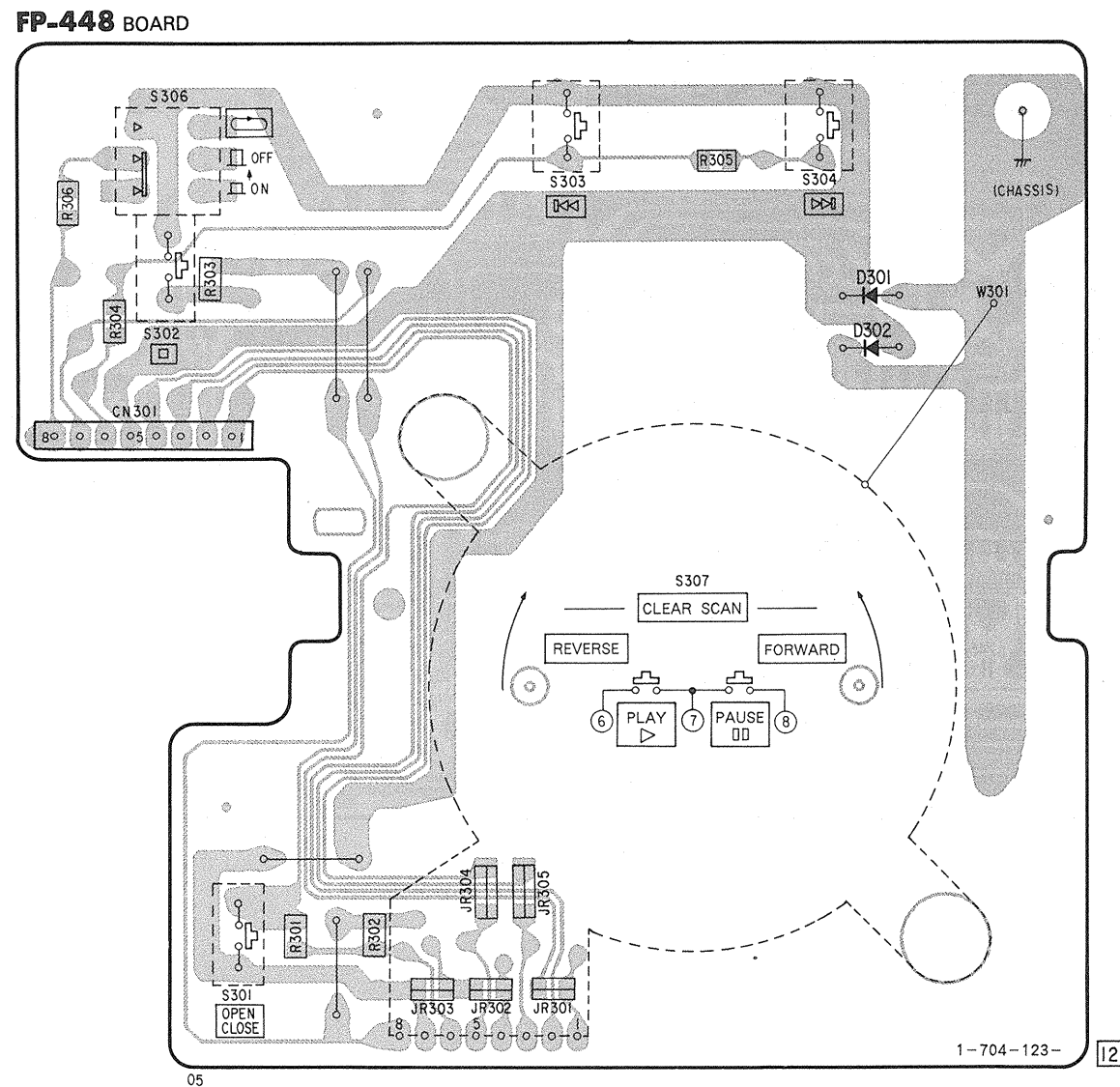
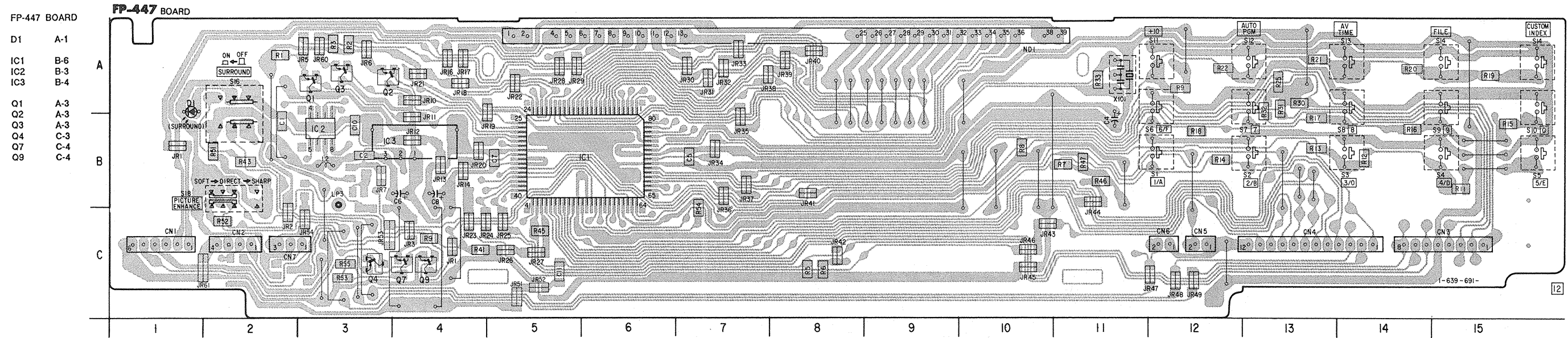


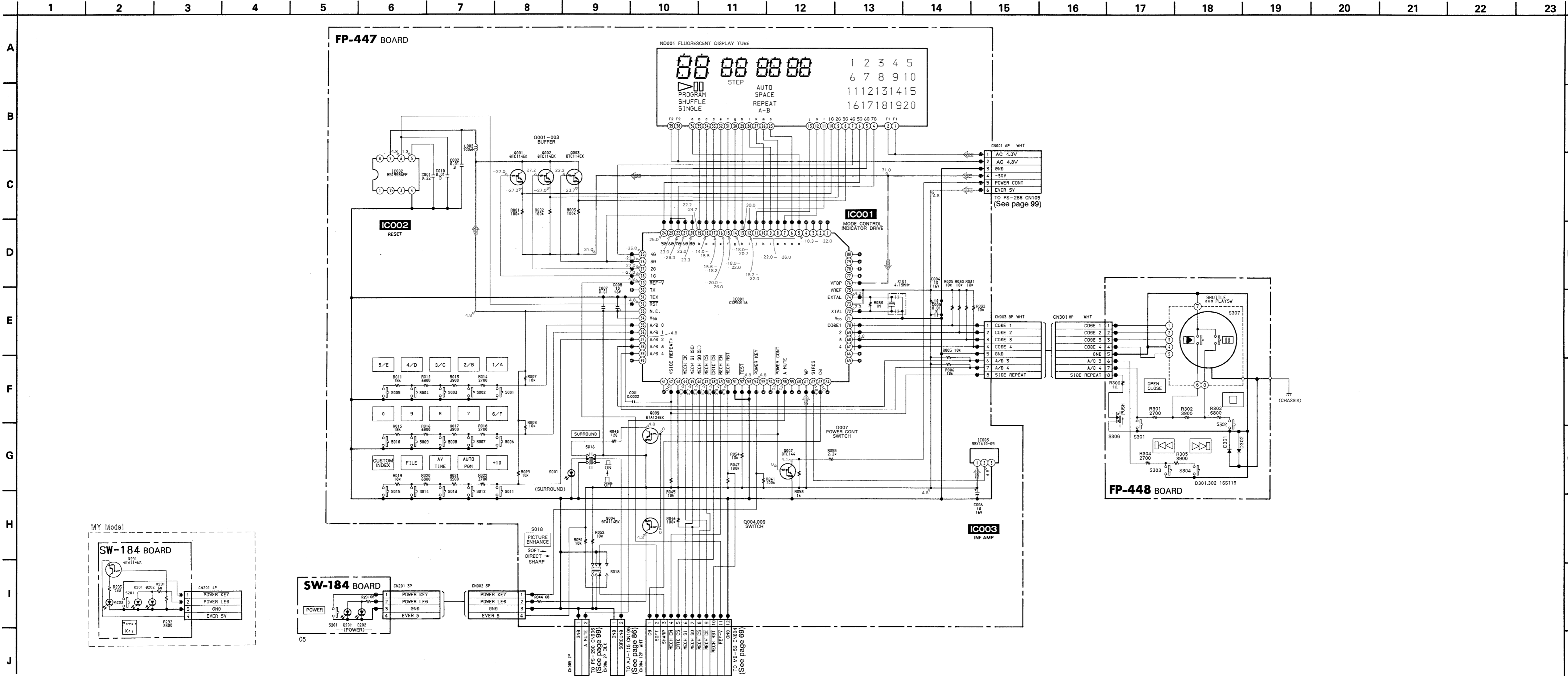
**HP-80 BOARD**



**FP-447 (MODE CONTROL, DISPLAY), FP-448 (SHUTTLE, FUNCTION SWITCHES), SW-184 (POWER SWITCH) PRINTED WIRING BOARDS**

– Ref. No.: FP-447, FP-448, and SW-184 Boards; 6,000 series –



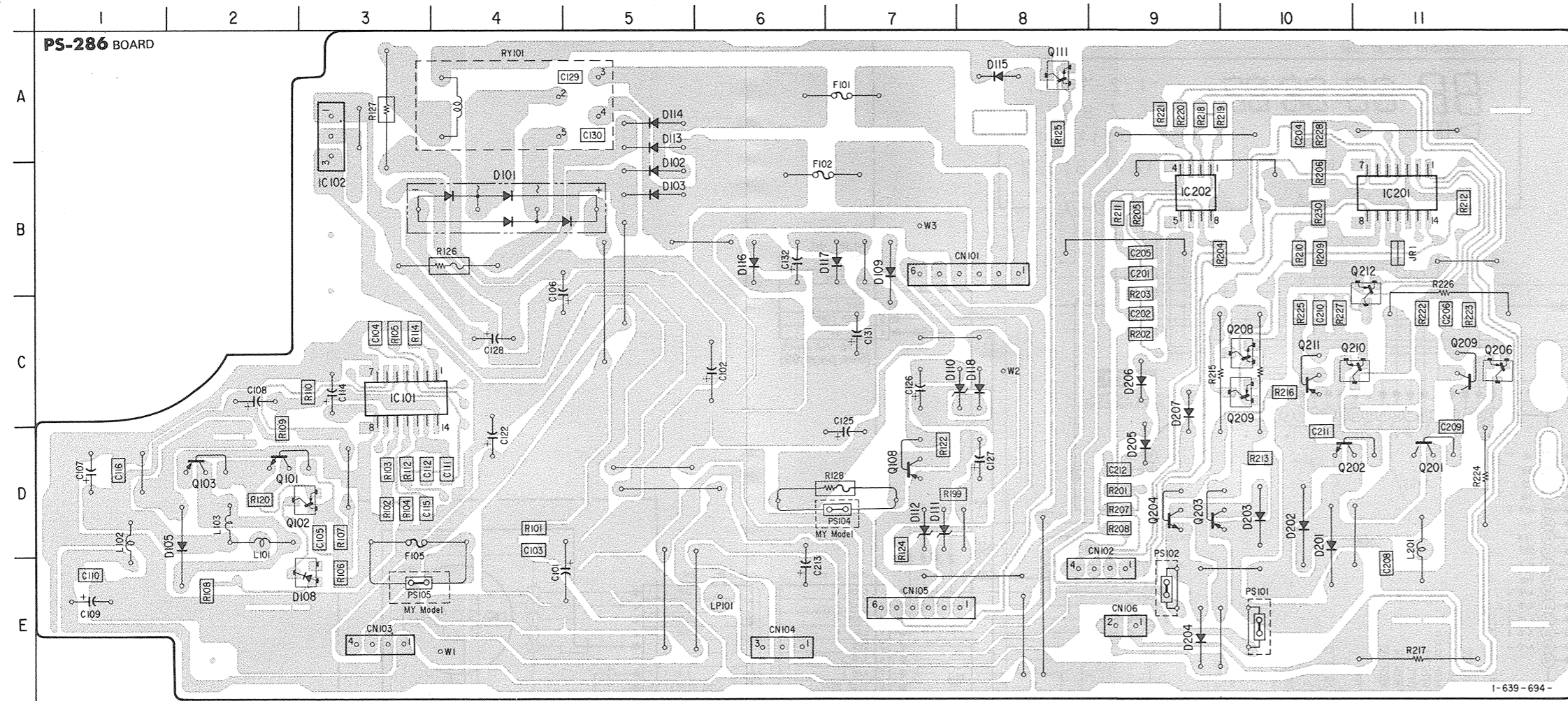


**PS-286 (POWER SUPPLY, SPINDLE SERVO), TR-60 (POWER TRANSFORMER), PS-290 (REGULATOR), VS-47 (VOLTAGE SELECTOR) PRINTED WIRING BOARDS**

— Ref. No.: PS-286, TR-60, PS-290, and VS-47 Boards; 7,000 series —

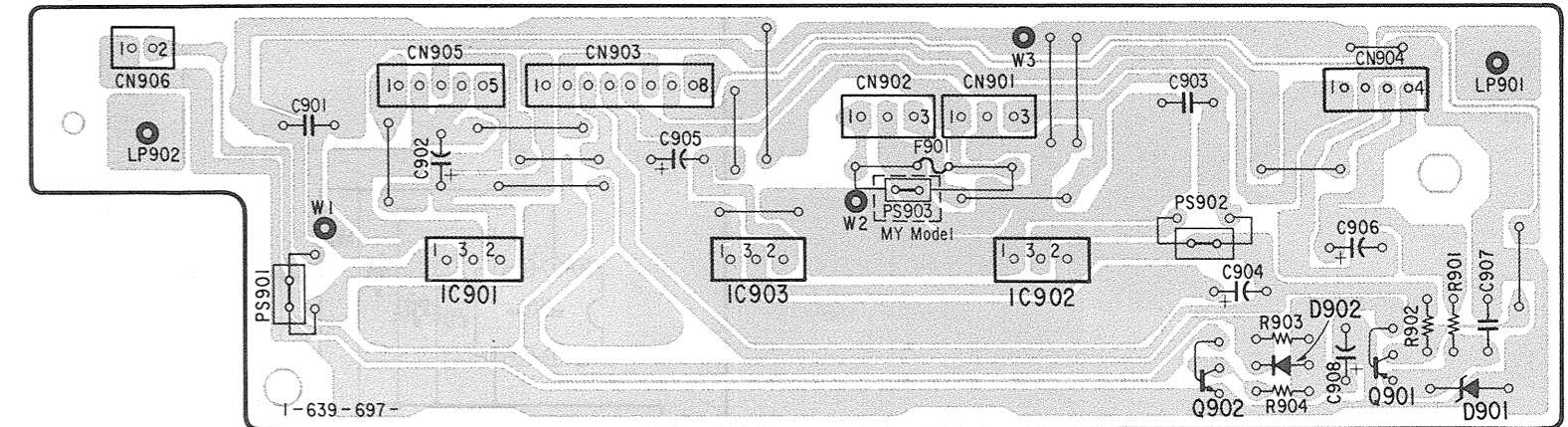
PS-286 BOARD

- |       |      |
|-------|------|
| D101  | B-4  |
| D102  | B-5  |
| D103  | D-2  |
| D105  | D-2  |
| D108  | E-3  |
| D109  | E-7  |
| D110  | C-8  |
| D111  | D-7  |
| D112  | D-7  |
| D113  | A-5  |
| D114  | A-5  |
| D115  | A-8  |
| D116  | B-6  |
| D117  | B-7  |
| D118  | C-8  |
| D201  | D-10 |
| D202  | D-10 |
| D203  | D-10 |
| D204  | E-9  |
| D205  | D-9  |
| D206  | C-9  |
| D207  | C-9  |
|       |      |
| IC101 | C-3  |
| IC102 | B-3  |
| IC201 | B-11 |
| IC202 | B-11 |
|       |      |
| Q101  | D-2  |
| Q102  | D-3  |
| Q103  | D-2  |
| Q108  | D-7  |
| Q111  | A-8  |
| Q201  | D-11 |
| Q202  | D-11 |
| Q203  | D-9  |
| Q204  | D-9  |
| Q206  | C-11 |
| Q208  | C-10 |
| Q209  | C-11 |
| Q210  | C-11 |
| Q211  | C-10 |
| Q212  | B-11 |



22

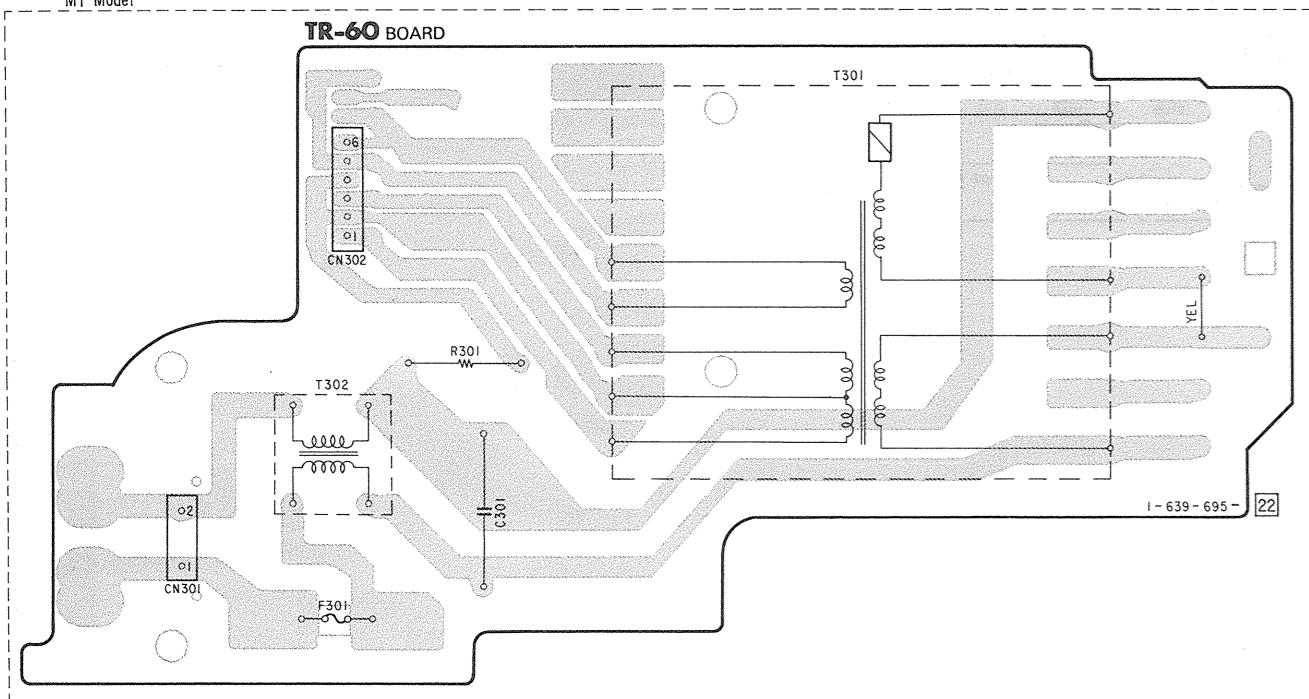
PS-290 BOARD



22

MY Model

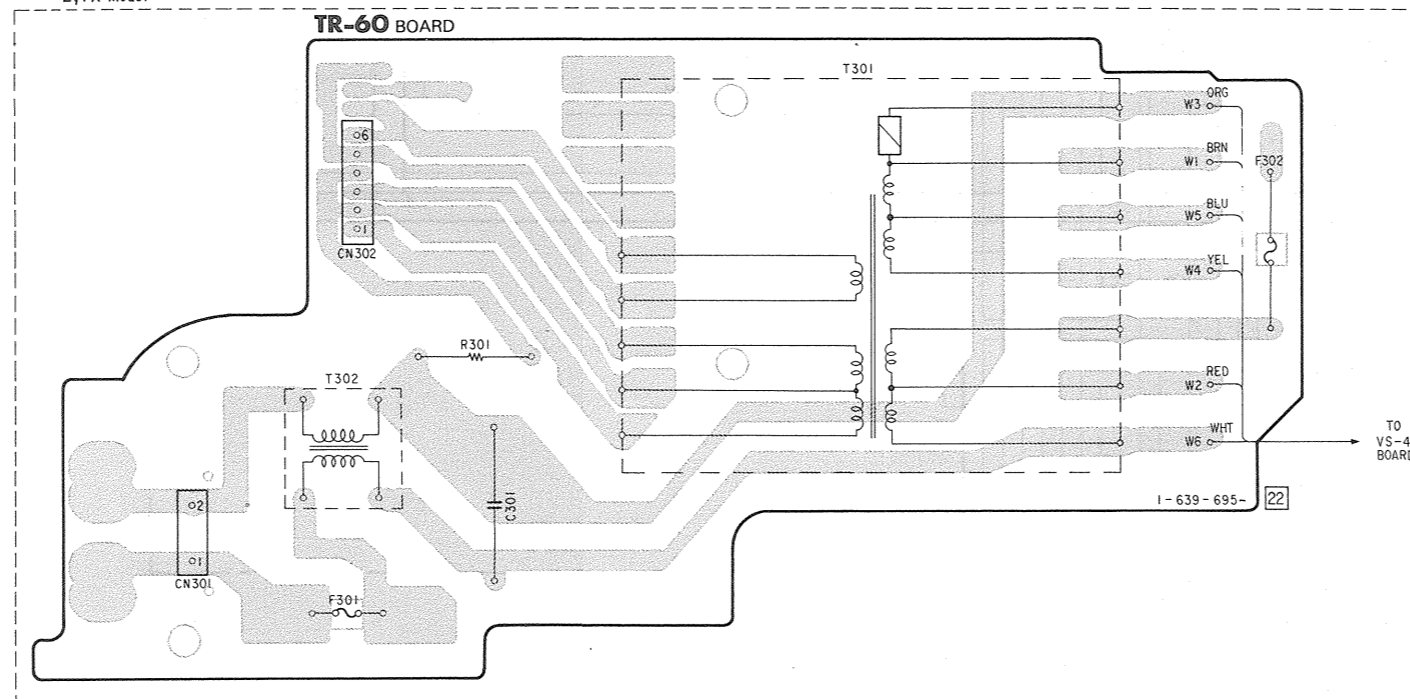
TR-60 BOARD



22

E, PX Model

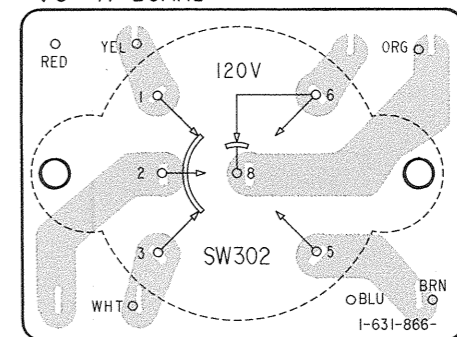
TR-60 BOARD



22

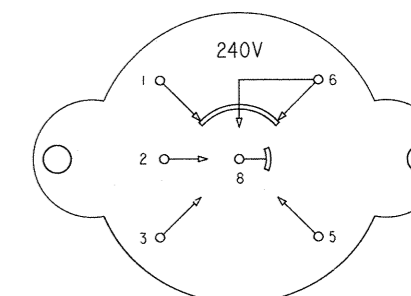
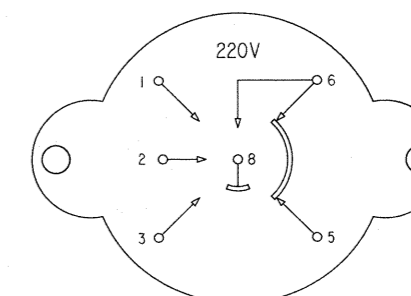
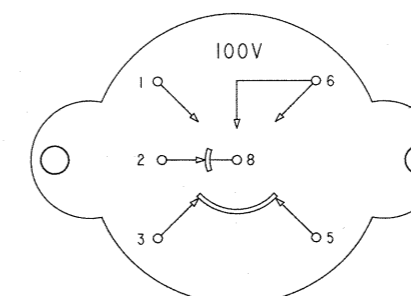
MDP-405GX Model

VS-47 BOARD



11

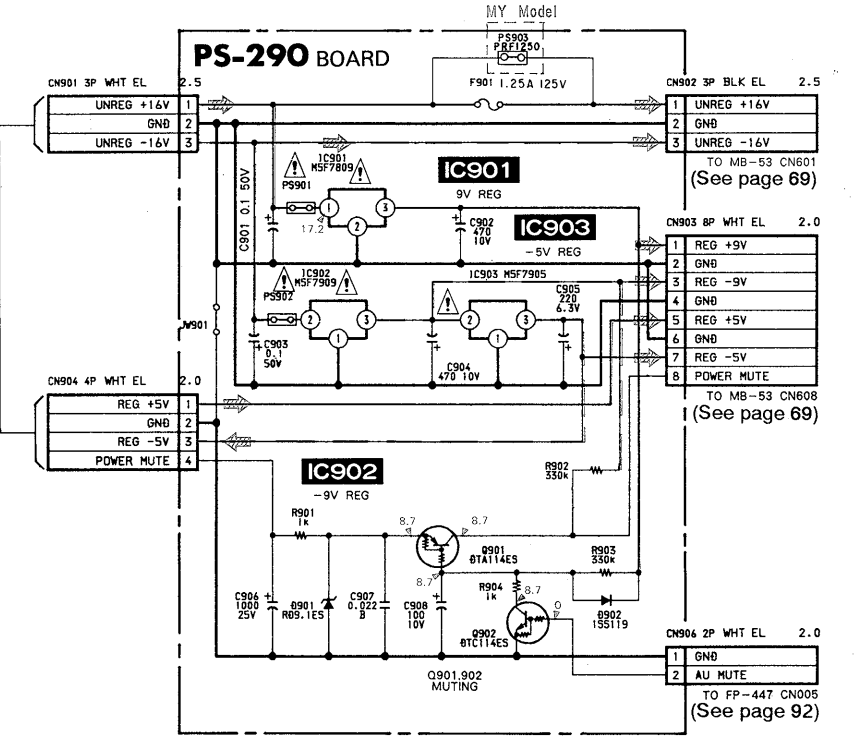
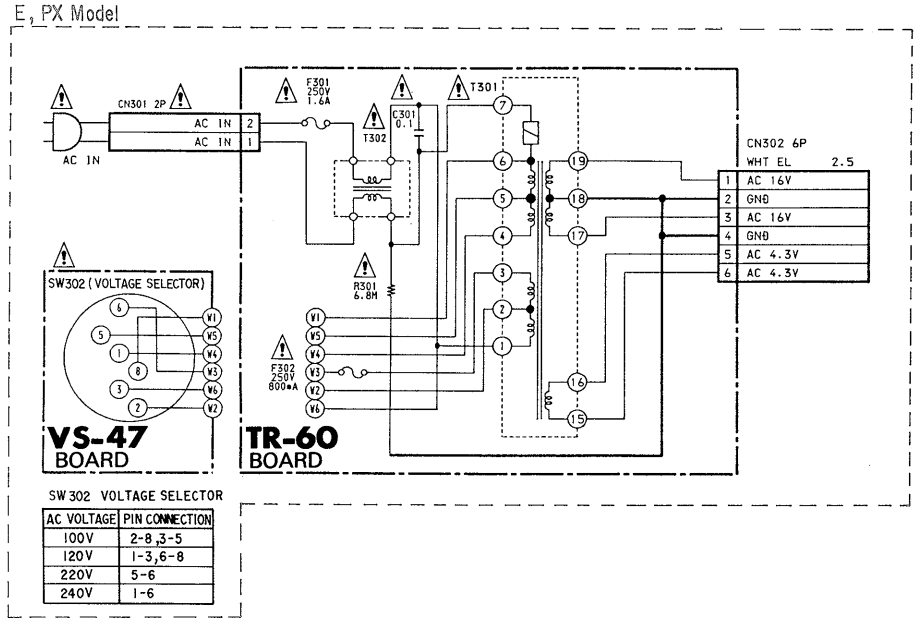
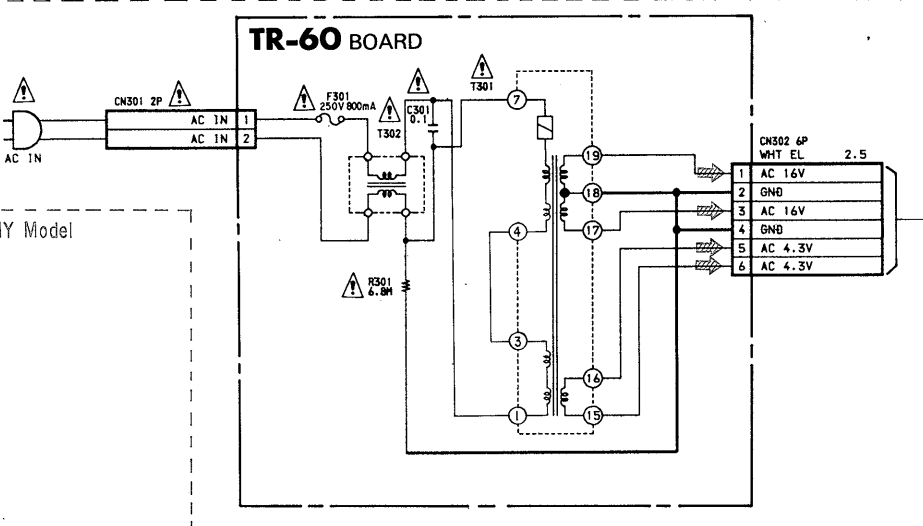
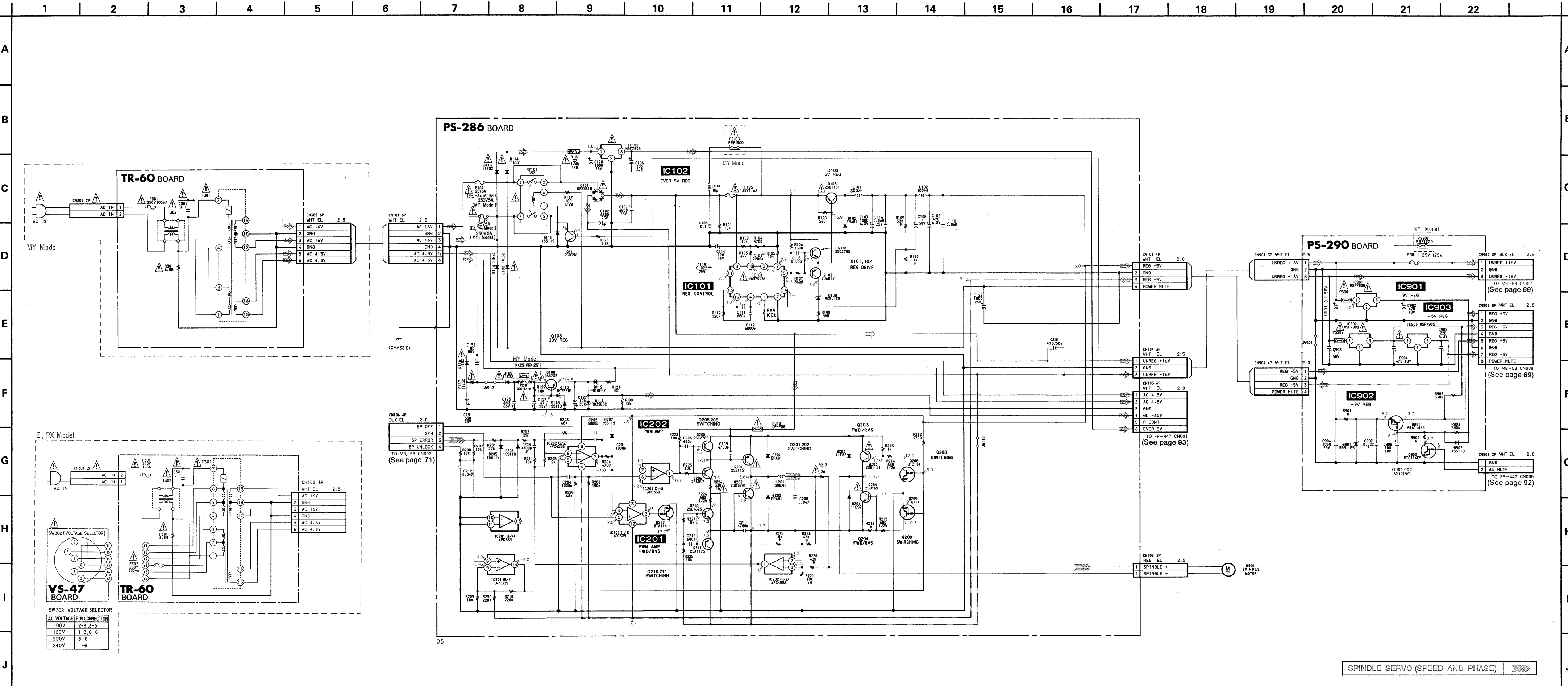
SW302 VOLTAGE SELECTOR PIN CONNECTION





PS-286 (POWER SUPPLY, SPINDLE SERVO), TR-60 (POWER TRANSFORMER), PS-290 (REGULATOR), VS-47 (VOLTAGE SELECTOR) SCHEMATIC DIAGRAM

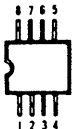
- Ref. No.: PS-286, TR-60, PS-290, and VS-47 Boards; 7,000 series -



SPINDLE SERVO (SPEED AND PHASE) →

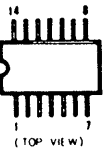
### 4-3. SEMICONDUCTORS

BA7131F  
LM324NS  
M51953AFP  
RC4558M  
μ PC4558G2



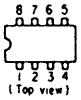
(Top view)

BA9700AF  
CXL5005M  
SN74HCU04NS  
μ PC324G2  
μ PC339G2



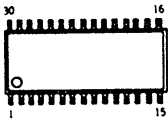
(TOP VIEW)

CX20197  
RC4558P  
SBX1610-09



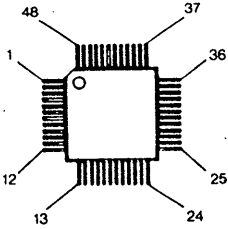
(Top view)

CXA1081M

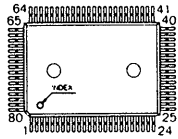


(Top view)

CXA1254Q  
CXA1255Q  
CXD1152-MS

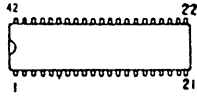


CXD2500AQ  
CXP50116-048Q



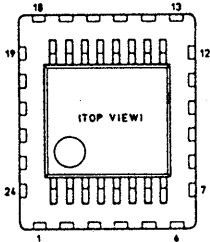
MARKING SIDE VIEW

HA11529



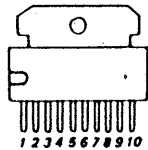
(Top view)

IMN10



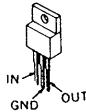
(TOP VIEW)

LA6510  
TA7291P



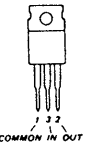
1 2 3 4 5 6 7 8 9 10

M5F7905L  
RC7809FA



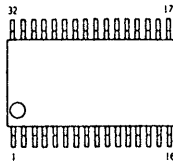
IN OUT GND

M5F7905L  
M5F7909L



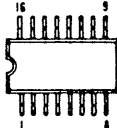
COMMON IN OUT

M50455-196FP



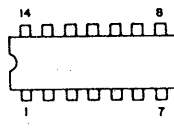
TOP VIEW

MC14052BF  
MC14053BF  
MSM72H032GS-K



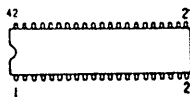
(TOP VIEW)

MC14066BCP



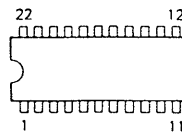
(TOP VIEW)

PA0034A



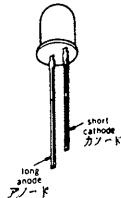
(Top view)

SM5840AS



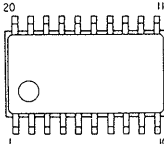
(Top view)

CXP50116-229Q



long anode short cathode

2J617U



1 10 20

DTA114EK  
DTA124EK  
DTC114EK  
DTC124EK  
DTC144EK  
2SA1162  
2SC1623  
2SC1623-L7  
2SC2412K-QR



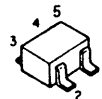
C B E

DTA114ES  
DTC114ES  
2SC2458-YGR

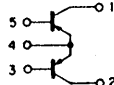


E C B

FMS1

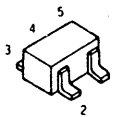


1 2 3 4 5

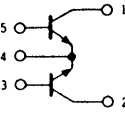


1 2 3 4 5

FMW1



1 2 3 4 5



1 2 3 4 5

PT360FS



E C

2SA1175-HFE  
2SC2785-HFE



E C B

2SB734-34



E C B

2SC2878-B  
2SD655-E



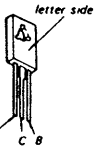
E C B

2SB1187-F  
2SD1408



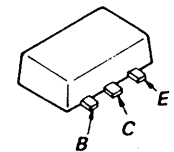
B C E

2SB1151-L  
2SD1691-K



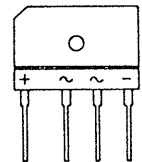
letter side E C B

2SD999CLCK

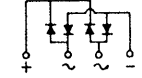


E C B

D3SBA10



+ ~ -

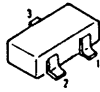


+ ~ -

FC52M-5



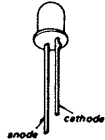
1S2836



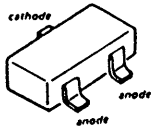
GP-2S09-B



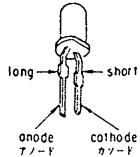
GL-360



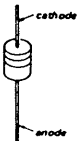
MA152WK



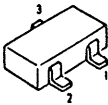
SLP381S  
SLP-681C



ERA81-066  
RD3.9ES-B2  
RD5.1ES-B2  
RD10ES-B2  
RD33ES-B2  
RD39ES-B2  
RD9.1ES-B1  
1SS119  
11ES2



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



1SS226



## SECTION 5 EXPLODED VIEWS

### NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) ... (RED)

↑                      ↑  
Parts Color      Cabinet's Color

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

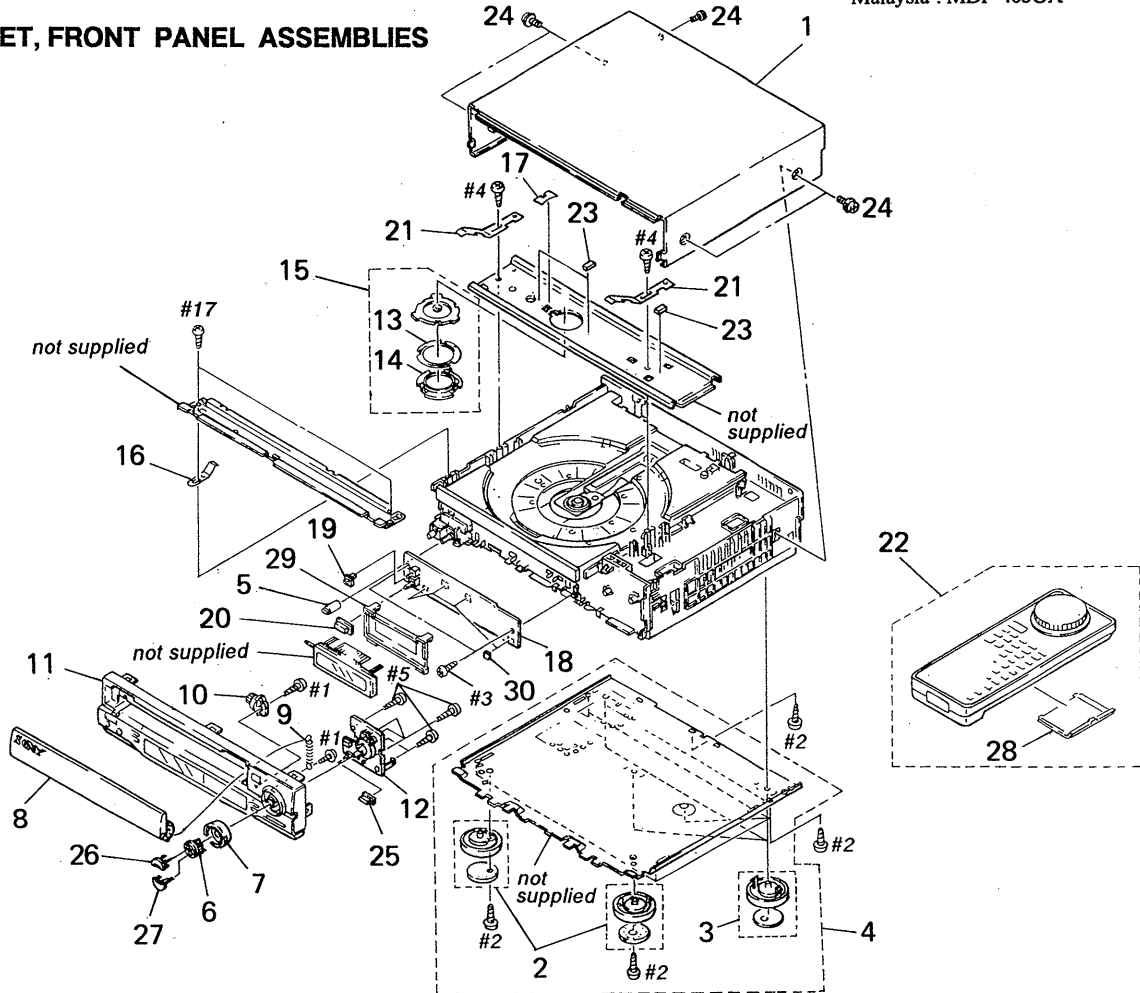
- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list is given in the last of this parts list.

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

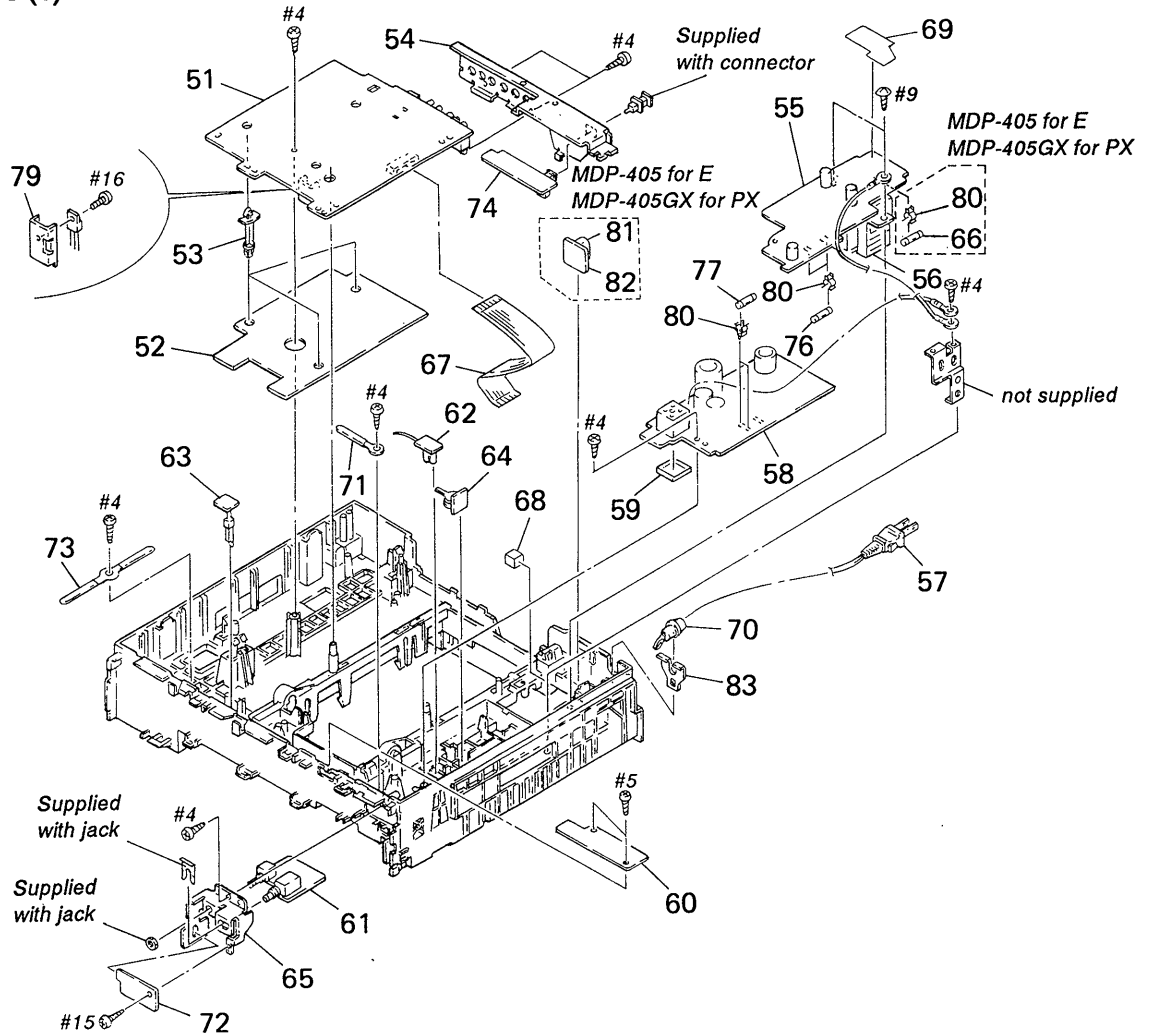
- Abbreviations  
E : MDP-405  
PX : MDP-405GX  
Malaysia : MDP-405GX

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 1	3-735-065-11	CASE, UPPER		* 17	3-737-454-01	SHEET, HOLDER	
2	X-3735-057-1	FOOT ASSY		* 18	A-6421-732-A	FP-447 (E53) BOARD, COMPLETE	
3	X-3735-056-1	FOOT ASSY		19	3-942-821-01	KNOB, SELECTION	
4	X-3940-505-2	PLATE ASSY, BOTTOM		20	X-3940-655-1	SURROUND ASSY	
5	3-941-122-61	KNOB (A2. TYPE), LOV		21	3-735-089-01	SPRING	
6	3-941-515-01	HOLDER, BUTTON		22	1-465-843-21	REMOTE CONTROLLER (RMT-M10A) (E, Malaysia)	
7	3-941-512-01	RING, SHUTTLE		22	1-465-843-41	REMOTE CONTROLLER (RMT-M10B) (PX)	
8	X-3940-731-1	DOOR ASSY		23	9-911-842-XX	CUSHION	
9	3-940-250-01	SPRING (DOOR), TENSION		24	3-710-901-11	SCREW, TAPPING	
10	4-919-393-01	DAMPER		25	3-942-820-01	BUTTON, REPEAT	
11	X-3940-732-1	PANEL ASSY, FRONT		26	3-941-510-11	BUTTON, PLAYBACK	
* 12	A-6421-632-A	FP-448 BOARD, COMPLETE		27	3-941-511-31	BUTTON, STOP	
13	3-735-011-01	SPRING		28	3-942-754-01	LID, BATTERY CASE	
14	3-735-010-01	PLATE (1), PRESS		* 29	3-942-824-01	HOLDER (A), FLD	
15	X-3735-006-1	PLATE ASSY, PRESS		30	2-355-254-01	SPACER (A), LCD	
16	3-735-090-01	SPRING					

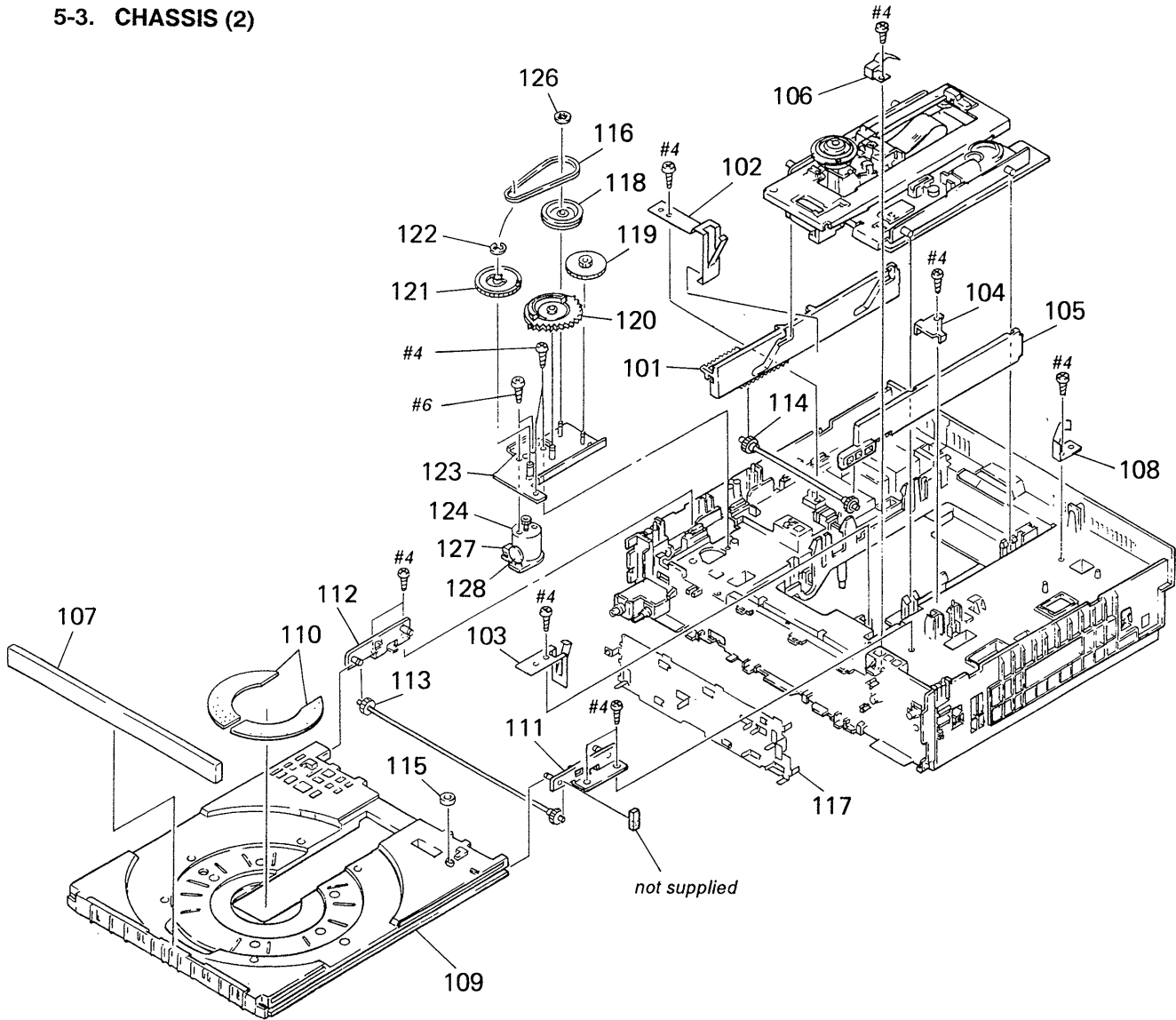
## 5-2. CHASSIS (1)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	A-6421-634-A	MB-53 (J53) BOARD, COMPLETE (E)		△66	1-532-871-11	FUSE 800mA 250V (E, PX)	
* 51	A-6421-691-A	MB-53 (PX53) BOARD, COMPLETE (PX)		* 67	1-575-813-11	CABLE, FLAT (FLEXIBLE) (28 CORE)	
* 51	A-6421-736-A	MB-53 (MY53) BOARD, COMPLETE (Malaysia)		68	4-926-115-01	CUSHION (P)	
* 52	A-6421-633-A	AU-115 (J53) BOARD, COMPLETE		△69	3-746-543-01	COVER, TRANSFORMER (Malaysia)	
* 53	3-703-353-12	SUPPORTER, PC BOARD		70	3-943-099-01	RUBBER, CORD CLAMP	
* 54	3-942-823-11	PLATE (B), JACK		71	3-703-150-11	STOPPER, WIRING	
* 55	A-6421-659-A	TR-60 (E53) BOARD, COMPLETE (E, PX)		* 72	A-6420-639-A	SW-184 (E53) BOARD, COMPLETE (E, PX)	
* 55	A-6421-739-A	TR-60 (MY53) BOARD, COMPLETE (Malaysia)		* 72	A-6420-737-A	SW-184 (MY53) BOARD, COMPLETE (Malaysia)	
△56	1-450-617-11	TRANSFORMER, POWER (T301)		* 73	2-367-032-01	CLAMP	
△57	1-559-627-41	CORD, POWER (E, PX)		* 74	A-6420-661-A	DR-73 (E53) BOARD, COMPLETE (E)	
△57	1-575-912-23	CORD, POWER (Malaysia)		* 74	A-6420-692-A	DR-73 (PX53) BOARD, COMPLETE (PX)	
* 58	A-6421-658-A	PS-286 (E53) BOARD, COMPLETE (E, PX)		* 74	A-6420-753-A	DR-73 (MY53) BOARD, COMPLETE (Malaysia)	
* 58	A-6421-738-A	PS-286 (MY53) BOARD, COMPLETE (Malaysia)		△76	1-532-215-00	FUSE, TIME-LAG 800mA 250V (F301) (Malaysia)	
* 59	X-3940-915-1	SHIELD ASSY (2), PS LID		△76	1-532-824-11	FUSE, TIME-LAG 1.6A 250V (F301) (E, PX)	
* 60	A-6421-660-A	PS-290 (E53) BOARD, COMPLETE (E, PX)		△77	1-532-299-11	FUSE, TIME-LAG 5A 250V (F101, 102) (Malaysia)	
* 60	A-6421-740-A	PS-290 (MY53) BOARD, COMPLETE (Malaysia)		△77	1-532-747-11	FUSE, TIME-LAG 5A 125V (F101, 102) (E, PX)	
* 61	A-6421-667-A	HP-80 (J53) BOARD, COMPLETE		* 79	3-746-535-01	HEAT SINK	
* 62	A-6421-681-A	LS-34 (E53) BOARD, COMPLETE (E, PX)		△80	*1-533-189-11	HOLDER, FUSE	
* 62	A-6421-750-A	LS-34 (MY53) BOARD, COMPLETE (Malaysia)		81	1-554-933-11	SELECTOR, VOLTAGE (SW302) (E, PX)	
* 63	A-6421-682-A	SW-193 (E53) BOARD, COMPLETE (E, PX)		* 82	1-631-866-11	VS-47 BOARD (E, PX)	
* 63	A-6421-751-A	SW-193 (MY53) BOARD, COMPLETE (Malaysia)		* 83	3-737-438-01	BRACKET, AC CORD	
* 64	A-6421-683-A	SW-194 (E53) BOARD, COMPLETE (E, PX)					
* 64	A-6421-752-A	SW-194 (MY53) BOARD, COMPLETE (Malaysia)					
* 65	3-942-816-01	HOLDER (2), HP					

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

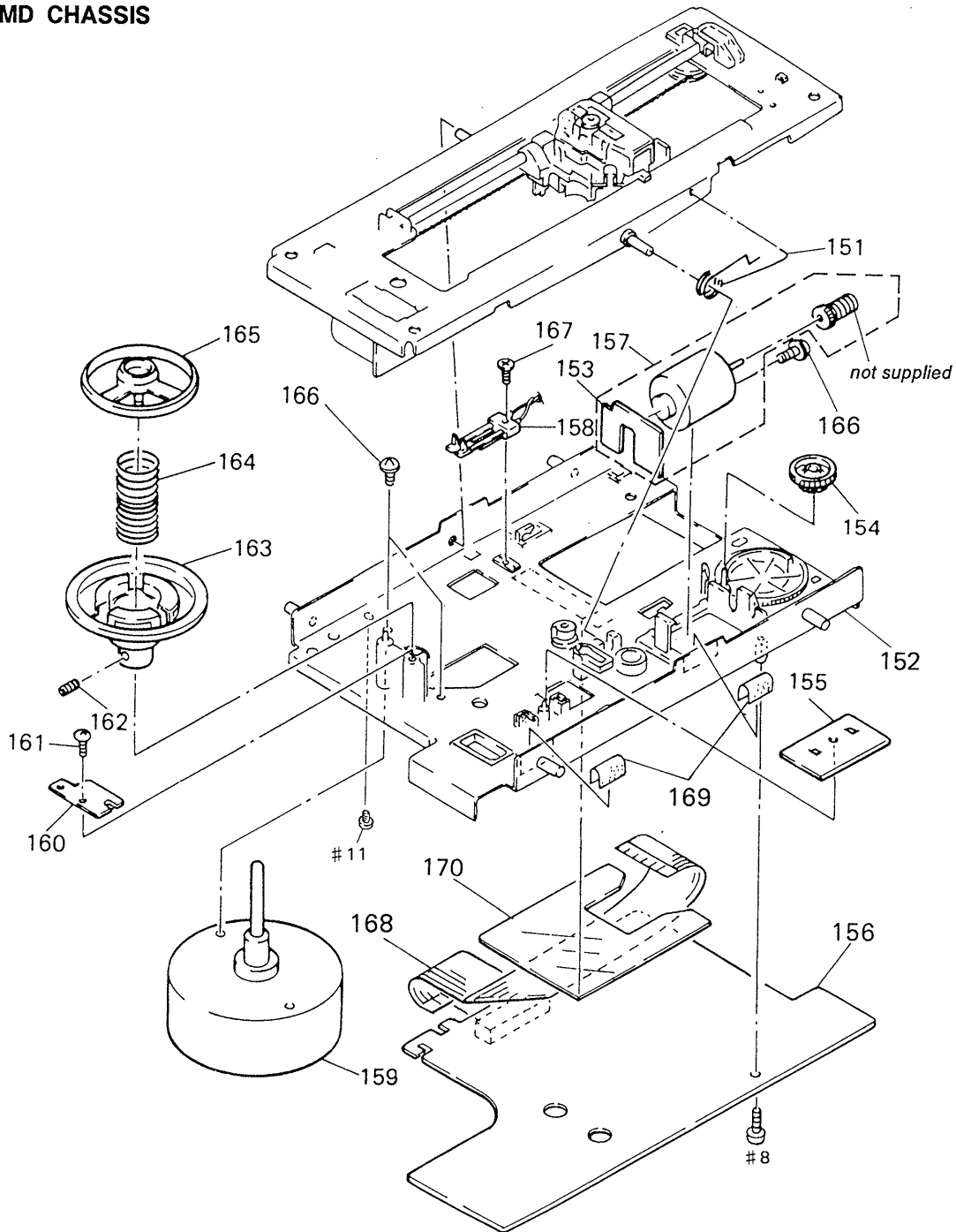
5-3. CHASSIS (2)



Ref. No.	Part No.	Description	Remark
101	3-735-053-01	RACK (LEFT)	
102	3-737-401-01	SPRING (1)	
103	3-737-402-01	SPRING (2)	
* 104	3-749-912-01	RETAINER (B), RACK	
105	3-735-052-01	RACK (RIGHT)	
106	3-737-448-01	SPRING, LEAF	
107	3-746-506-11	COVER, TRAY	
108	3-746-525-01	SPRING, TRAY	
109	X-3735-032-1	TRAY ASSY	
110	3-735-039-03	SHEET, CD	
111	X-3735-070-1	GUIDE ASSY (R), TRAY	
112	X-3735-071-1	GUIDE ASSY (L), TRAY	
113	X-3735-069-1	GEAR ASSY, PHASE	
114	X-3735-008-1	GEAR ASSY, MD PHASE	

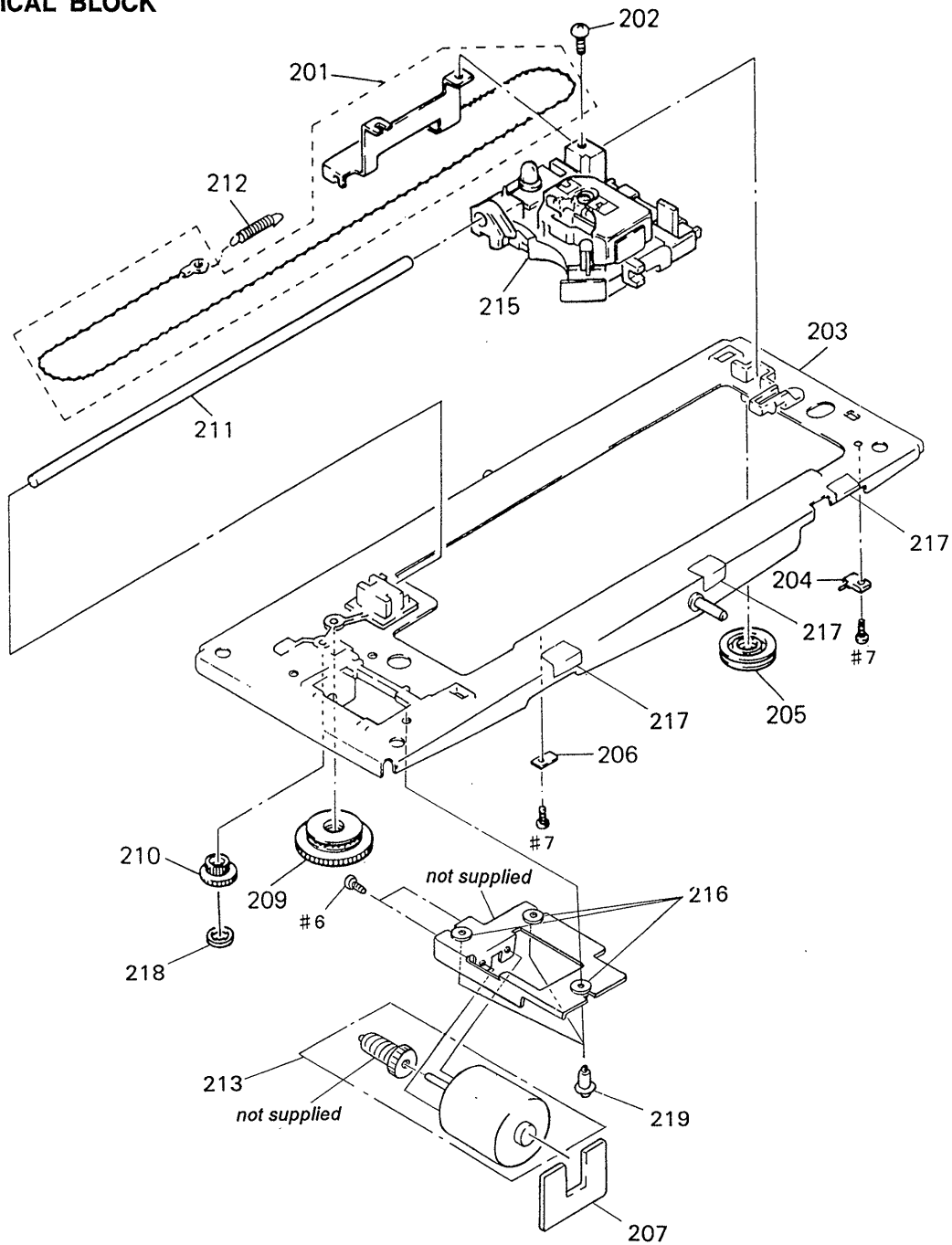
Ref. No.	Part No.	Description	Remark
* 115	4-914-248-01	STOPPER, RUBBER	
116	3-534-779-00	BELT, DRIVE	
* 117	A-6415-365-A	HOLDER ASSY, PC BOARD	
118	3-735-036-01	PULLEY (A)	
119	3-735-037-01	GEAR, MIDWAY	
120	3-735-056-01	CAM, DRIVING	
121	3-735-035-01	GEAR, TRAY	
122	3-669-595-00	WASHER (2), STOPPER	
* 123	X-3735-002-1	BASE ASSY, THREADING	
124	A-6415-359-A	MOTOR BLOCK ASSY (X), THREADING (M904)	
126	7-624-108-04	STOP RING 4.0, TYPE -E	
127	1-506-481-11	CONNECTOR 2P, MALE (CN001)	
128	1-161-063-00	CERAMIC 0.1uF 10% 50V (C1)	

## 5-4. MD CHASSIS



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
151	3-735-021-01	SPRING, TORSION		161	3-719-845-11	SCREW (B2X8), TAPPING	
* 152	3-735-068-15	CHASSIS, MD		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-2625-077-1	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		167	3-899-248-01	SCREW (M3X6)	
158	1-554-468-00	SWITCH, LEAF (SLED IN LIMIT LD/CD) (S903)		168	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
159	1-541-776-21	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



Ref. No.	Part No.	Description	Remark
201	X-3735-001-1	WIRE ASSY	
202	3-899-248-01	SCREW (M3X6)	
* 203	X-3940-657-1	CHASSIS ASSY	
204	1-570-771-21	SWITCH (SLED OUT LIMIT) (S902)	
205	3-735-017-01	PULLEY, RETURN	
206	1-571-435-11	SWITCH (SLED IN LIMIT) (S901)	
* 207	1-630-097-11	MT-28 BOARD	
209	3-735-016-01	PULLEY, DRIVING	
210	3-735-015-01	GEAR, CARRIAGE	

Ref. No.	Part No.	Description	Remark
* 211	3-735-020-01	SHAFT, CARRIAGE	
212	3-672-430-00	SPRING, TENSION	
213	A-6415-434-A	MOTOR BLOCK ASSY, SLED	
△215	8-848-138-11	DEVICE, OPTICAL KHS-130A	
216	3-570-027-00	SCREW, MOTOR	
217	3-846-312-00	SPACER	
218	7-624-190-81	STOP RING 2, TYPE-CS	
219	3-570-027-00	SCREW, MOTOR	

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



# SECTION 6 ELECTRICAL PARTS LIST

AU-115

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA ..:  $\mu$ A. uPA..:  $\mu$ PA.  
uPB..:  $\mu$ PB. uPC..:  $\mu$ PC. uPD..:  $\mu$ PD.
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H
- Abbreviations  
E : MDP-405  
PX : MDP-405GX  
Malaysia : MDP-405GX

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-6421-633-A	AU-115 (J5) BOARD, COMPLETE *****		C207	1-162-207-31	CERAMIC	22PF 5% 50V
		< CAPACITOR >		C208	1-162-205-31	CERAMIC	18PF 5% 50V
C101	1-124-927-11	ELECT	4.7uF 20% 100V	C209	1-162-217-31	CERAMIC	56PF 5% 50V
C102	1-124-927-11	ELECT	4.7uF 20% 100V	C210	1-162-198-31	CERAMIC	8.2PF 10% 50V
C103	1-124-126-00	ELECT	47uF 20% 10V	C211	1-162-207-31	CERAMIC	22PF 5% 50V
C104	1-161-494-00	CERAMIC	0.022uF 25V	C212	1-161-379-00	CERAMIC	0.01uF 20% 25V
C105	1-124-126-00	ELECT	47uF 20% 10V	C213	1-161-379-00	CERAMIC	0.01uF 20% 25V
C106	1-161-494-00	CERAMIC	0.022uF 25V	C214	1-124-443-00	ELECT	100uF 20% 10V
C107	1-124-903-11	ELECT	1uF 20% 50V	C215	1-161-379-00	CERAMIC	0.01uF 20% 25V
C108	1-124-903-11	ELECT	1uF 20% 50V	C216	1-161-379-00	CERAMIC	0.01uF 20% 25V
C109	1-124-126-00	ELECT	47uF 20% 10V	C217	1-124-443-00	ELECT	100uF 20% 10V
C110	1-124-126-00	ELECT	47uF 20% 10V	C218	1-124-443-00	ELECT	100uF 20% 10V
C111	1-162-219-31	CERAMIC	68PF 5% 50V	C219	1-162-288-31	CERAMIC	330PF 10% 50V
C112	1-162-219-31	CERAMIC	68PF 5% 50V	C220	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C114	1-124-902-00	ELECT	0.47uF 20% 50V	C221	1-162-217-31	CERAMIC	56PF 5% 50V
C115	1-130-480-00	MYLAR	0.0056uF 5% 50V	C222	1-126-233-11	ELECT	22uF 20% 50V
C116	1-162-219-31	CERAMIC	68PF 5% 50V	C223	1-161-377-00	CERAMIC	0.0047uF 30% 16V
C117	1-162-219-31	CERAMIC	68PF 5% 50V	C224	1-161-377-00	CERAMIC	0.0047uF 30% 16V
C119	1-124-902-00	ELECT	0.47uF 20% 50V	C225	1-136-160-00	FILM	0.039uF 5% 50V
C120	1-130-480-00	MYLAR	0.0056uF 5% 50V	C226	1-124-288-00	ELECT	22uF 20% 6.3V
C121	1-124-927-11	ELECT	4.7uF 20% 100V	C228	1-124-443-00	ELECT	100uF 20% 10V
C122	1-124-927-11	ELECT	4.7uF 20% 100V	C229	1-136-165-00	FILM	0.1uF 5% 50V
C123	1-124-927-11	ELECT	4.7uF 20% 100V	C230	1-124-907-11	ELECT	10uF 20% 50V
C124	1-124-927-11	ELECT	4.7uF 20% 100V	C235	1-161-379-00	CERAMIC	0.01uF 20% 25V
C125	1-124-126-00	ELECT	47uF 20% 10V	C236	1-161-379-00	CERAMIC	0.01uF 20% 25V
C126	1-124-126-00	ELECT	47uF 20% 10V	C237	1-124-443-00	ELECT	100uF 20% 10V
C127	1-124-126-00	ELECT	47uF 20% 10V	C238	1-124-443-00	ELECT	100uF 20% 10V
C128	1-124-126-00	ELECT	47uF 20% 10V	C239	1-162-287-31	CERAMIC	270PF 10% 50V
C129	1-124-126-00	ELECT	47uF 20% 10V	C240	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C130	1-124-126-00	ELECT	47uF 20% 10V	C241	1-162-217-31	CERAMIC	56PF 5% 50V
C131	1-161-329-00	CERAMIC	0.0068uF 20% 16V	C242	1-126-233-11	ELECT	22uF 20% 50V
C133	1-124-927-11	ELECT	4.7uF 20% 100V	C243	1-161-377-00	CERAMIC	0.0047uF 30% 16V
C202	1-124-443-00	ELECT	100uF 20% 10V	C244	1-161-377-00	CERAMIC	0.0047uF 30% 16V
C203	1-124-443-00	ELECT	100uF 20% 10V	C245	1-136-160-00	FILM	0.039uF 5% 50V
C204	1-161-379-00	CERAMIC	0.01uF 20% 25V	C246	1-124-288-00	ELECT	22uF 20% 6.3V
C205	1-162-286-31	CERAMIC	220PF 10% 50V	C247	1-124-902-00	ELECT	0.47uF 20% 50V
C206	1-162-286-31	CERAMIC	220PF 10% 50V	C250	1-124-903-11	ELECT	1uF 20% 50V
				C251	1-124-903-11	ELECT	1uF 20% 50V

# AU-115

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CN101	1-568-788-21	PIN, CONNECTOR 11P	
CN103	1-506-473-11	CONNECTOR 8P, MALE	
CN104	1-506-468-11	CONNECTOR 3P, MALE	
* CN105	1-568-779-11	PIN, CONNECTOR 2P	
< DIODE >			
D102	8-719-911-19	DIODE 1SS119	
D103	8-719-911-19	DIODE 1SS119	
D104	8-719-911-19	DIODE 1SS119	
D105	8-719-911-19	DIODE 1SS119	
< FILTER >			
FL201	1-236-840-11	FILTER, BAND PASS	
< IC >			
IC101	8-759-945-58	IC RC4558P	
IC102	8-759-000-49	IC MC14066BCP	
IC103	8-759-000-49	IC MC14066BCP	
IC104	8-759-945-58	IC RC4558P	
IC105	8-759-945-58	IC RC4558P	
IC106	8-759-945-58	IC RC4558P	
IC201	8-759-502-42	IC PA0034A	
< COIL >			
L203	1-408-421-00	INDUCTOR 100uH	
L204	1-408-425-00	INDUCTOR 220uH	
L205	1-408-417-00	INDUCTOR 47uH	
L206	1-408-417-00	INDUCTOR 47uH	
< TRANSISTOR >			
Q101	8-729-900-80	TRANSISTOR DTC114ES	
Q102	8-729-900-61	TRANSISTOR DTA114ES	
Q105	8-729-900-80	TRANSISTOR DTC114ES	
Q106	8-729-900-61	TRANSISTOR DTA114ES	
Q107	8-729-900-80	TRANSISTOR DTC114ES	
Q108	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q109	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q110	8-729-201-05	TRANSISTOR 2SC1637-2	
Q111	8-729-201-05	TRANSISTOR 2SC1637-2	
Q112	8-729-201-05	TRANSISTOR 2SC1637-2	
Q113	8-729-201-05	TRANSISTOR 2SC1637-2	
Q116	8-729-900-61	TRANSISTOR DTA114ES	
Q117	8-729-900-80	TRANSISTOR DTC114ES	
Q120	8-729-201-05	TRANSISTOR 2SC1637-2	
Q121	8-729-201-05	TRANSISTOR 2SC1637-2	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	

Ref. No.	Part No.	Description	Remark
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q205	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R102	1-249-440-11	CARBON 82K 5% 1/4W	
R103	1-249-417-11	CARBON 1K 5% 1/4W	
R104	1-249-441-11	CARBON 100K 5% 1/4W	
R105	1-249-441-11	CARBON 100K 5% 1/4W	
R106	1-249-417-11	CARBON 1K 5% 1/4W	
R108	1-247-887-00	CARBON 220K 5% 1/4W	
R110	1-247-887-00	CARBON 220K 5% 1/4W	
R113	1-249-440-11	CARBON 82K 5% 1/4W	
R114	1-249-441-11	CARBON 100K 5% 1/4W	
R115	1-249-441-11	CARBON 100K 5% 1/4W	
R116	1-249-417-11	CARBON 1K 5% 1/4W	
R117	1-249-417-11	CARBON 1K 5% 1/4W	
R118	1-249-425-11	CARBON 4.7K 5% 1/4W	
R119	1-249-425-11	CARBON 4.7K 5% 1/4W	
R120	1-249-425-11	CARBON 4.7K 5% 1/4W	
R121	1-247-895-00	CARBON 470K 5% 1/4W	
R122	1-249-412-11	CARBON 390 5% 1/4W	
R123	1-249-420-11	CARBON 1.8K 5% 1/4W	
R124	1-249-427-11	CARBON 6.8K 5% 1/4W	
R125	1-247-895-00	CARBON 470K 5% 1/4W	
R126	1-249-412-11	CARBON 390 5% 1/4W	
R127	1-249-420-11	CARBON 1.8K 5% 1/4W	
R128	1-249-427-11	CARBON 6.8K 5% 1/4W	
R131	1-249-417-11	CARBON 1K 5% 1/4W	
R132	1-249-417-11	CARBON 1K 5% 1/4W	
R133	1-249-417-11	CARBON 1K 5% 1/4W	
R134	1-249-417-11	CARBON 1K 5% 1/4W	
R135	1-249-417-11	CARBON 1K 5% 1/4W	
R136	1-249-417-11	CARBON 1K 5% 1/4W	
R137	1-249-417-11	CARBON 1K 5% 1/4W	
R138	1-249-417-11	CARBON 1K 5% 1/4W	
R139	1-249-417-11	CARBON 1K 5% 1/4W	
R140	1-249-417-11	CARBON 1K 5% 1/4W	
R141	1-249-429-11	CARBON 10K 5% 1/4W	
R142	1-249-429-11	CARBON 10K 5% 1/4W	
R143	1-249-429-11	CARBON 10K 5% 1/4W	
R144	1-249-429-11	CARBON 10K 5% 1/4W	
R145	1-249-423-11	CARBON 3.3K 5% 1/4W	
R146	1-249-423-11	CARBON 3.3K 5% 1/4W	
R147	1-249-423-11	CARBON 3.3K 5% 1/4W	
R148	1-249-424-11	CARBON 3.9K 5% 1/4W	
R149	1-249-441-11	CARBON 100K 5% 1/4W	
R150	1-249-417-11	CARBON 1K 5% 1/4W	
R151	1-249-441-11	CARBON 100K 5% 1/4W	

**AU-115****CK-44****DR-73**

Ref. No.	Part No.	Description	Remark
R152	1-249-417-11	CARBON	1K 5% 1/4W
R153	1-249-441-11	CARBON	100K 5% 1/4W
R154	1-249-417-11	CARBON	1K 5% 1/4W
R155	1-249-441-11	CARBON	100K 5% 1/4W
R156	1-249-417-11	CARBON	1K 5% 1/4W
R160	1-249-440-11	CARBON	82K 5% 1/4W
R165	1-249-441-11	CARBON	100K 5% 1/4W
R166	1-249-441-11	CARBON	100K 5% 1/4W
R167	1-247-887-00	CARBON	220K 5% 1/4W
R170	1-249-429-11	CARBON	10K 5% 1/4W
R171	1-249-429-11	CARBON	10K 5% 1/4W
R172	1-247-887-00	CARBON	220K 5% 1/4W
R173	1-247-887-00	CARBON	220K 5% 1/4W
R201	1-249-433-11	CARBON	22K 5% 1/4W
R202	1-249-433-11	CARBON	22K 5% 1/4W
R204	1-249-429-11	CARBON	10K 5% 1/4W
R205	1-247-830-11	CARBON	910 5% 1/4W
R207	1-249-439-11	CARBON	68K 5% 1/4W
R208	1-247-858-11	CARBON	13K 5% 1/4W
R209	1-249-421-11	CARBON	2.2K 5% 1/4W
R210	1-249-413-11	CARBON	470 5% 1/4W
R211	1-249-401-11	CARBON	47 5% 1/4W
R212	1-249-404-00	CARBON	82 5% 1/4W
R213	1-249-421-11	CARBON	2.2K 5% 1/4W
R214	1-249-417-11	CARBON	1K 5% 1/4W
R215	1-249-417-11	CARBON	1K 5% 1/4W
R216	1-249-417-11	CARBON	1K 5% 1/4W
R217	1-249-419-11	CARBON	1.5K 5% 1/4W
R218	1-249-409-11	CARBON	220 5% 1/4W
R219	1-249-425-11	CARBON	4.7K 5% 1/4W
R220	1-249-425-11	CARBON	4.7K 5% 1/4W
R221	1-249-429-11	CARBON	10K 5% 1/4W
R222	1-247-860-11	CARBON	16K 5% 1/4W
R223	1-247-900-11	CARBON	750K 5% 1/4W
R224	1-249-428-11	CARBON	8.2K 5% 1/4W
R226	1-247-828-11	CARBON	750 5% 1/4W
R227	1-247-883-00	CARBON	150K 5% 1/4W
R228	1-247-883-00	CARBON	150K 5% 1/4W
R229	1-247-886-11	CARBON	200K 5% 1/4W
R233	1-249-417-11	CARBON	1K 5% 1/4W
R234	1-249-419-11	CARBON	1.5K 5% 1/4W
R235	1-249-409-11	CARBON	220 5% 1/4W
R236	1-249-425-11	CARBON	4.7K 5% 1/4W
R237	1-249-425-11	CARBON	4.7K 5% 1/4W
R238	1-249-429-11	CARBON	10K 5% 1/4W
R239	1-247-860-11	CARBON	16K 5% 1/4W
R240	1-247-900-11	CARBON	750K 5% 1/4W
R241	1-249-428-11	CARBON	8.2K 5% 1/4W
R251	1-247-887-00	CARBON	220K 5% 1/4W

Ref. No.	Part No.	Description	Remark
R252	1-247-887-00	CARBON	220K 5% 1/4W
R259	1-249-417-11	CARBON	1K 5% 1/4W
R260	1-249-417-11	CARBON	1K 5% 1/4W
*****			
*	1-635-255-11	CK-44 BOARD	
*****			
< CAPACITOR >			
C401	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C402	1-163-038-00	CERAMIC CHIP	0.1uF 25V
< CONNECTOR >			
CN401	1-506-467-11	CONNECTOR 2P, MALE	
CN402	1-506-468-11	CONNECTOR 3P, MALE	
CN403	1-506-467-11	CONNECTOR 2P, MALE	
CN404	1-506-467-11	CONNECTOR 2P, MALE	
CN405	1-506-467-11	CONNECTOR 2P, MALE	
< RESISTOR >			
R401	1-216-077-00	METAL CHIP	15K 5% 1/10W
R402	1-216-031-00	METAL CHIP	180 5% 1/10W
R403	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R404	1-216-001-00	METAL CHIP	10 5% 1/10W
R405	1-216-001-00	METAL CHIP	10 5% 1/10W
R406	1-216-031-00	METAL CHIP	180 5% 1/10W
R407	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
*****			
*	A-6420-661-A	DR-73 (E53) BOARD, COMPLETE (E)	
*****			
*	A-6420-692-A	DR-73 (PX53) BOARD, COMPLETE (PX)	
*****			
*	A-6420-753-A	DR-73 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
< CAPACITOR >			
C701	1-163-009-11	CERAMIC CHIP	1000PF 10% 50V
< CONNECTOR >			
CN001	1-506-468-11	CONNECTOR 3P, MALE	
CN002	1-506-470-11	PIN, CONNECTOR 5P	
< JACK >			
CNJ001	8-749-921-12	IC GP1F32T (DIGITAL OUT PUT)	
< TRANSISTOR >			
Q701	8-729-900-53	TRANSISTOR	DTC114EK-T146

DR-73

FG-41

FP-447

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R701	1-216-021-00	RES, CHIP 68 5%	1/10W
R703	1-216-089-00	RES, CHIP 47K 5%	1/10W
< MODULATOR >			
RFU001	1-466-174-11	MODULATOR RFU-1017	
*****			
*	1-635-256-11	FG-41 BOARD	
*****			
< DIODE >			
D301	8-719-939-11	DIODE GP-2S09-B	
*****			
*	A-6421-732-A	FP-447 (E53) BOARD, COMPLETE	
*****			
	2-355-254-01	SPACER (A), LCD	
*	3-942-824-01	HOLDER (A), FLD	
< CAPACITOR >			
C001	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C002	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C004	1-126-157-11	ELECT 10uF	20% 16V
C005	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C006	1-126-157-11	ELECT 10uF	20% 16V
C007	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C008	1-126-157-11	ELECT 10uF	20% 16V
C010	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C011	1-163-213-00	CERAMIC CHIP 0.0022uF	5% 50V
< CONNECTOR >			
* CN001	1-568-783-11	PIN, CONNECTOR 6P	
	CN002	1-506-469-11	CONNECTOR 4P, MALE
* CN004	1-568-789-11	PIN, CONNECTOR 12P	
* CN005	1-568-779-11	PIN, CONNECTOR 2P	
* CN006	1-568-779-11	PIN, CONNECTOR 2P	
< DIODE >			
D001	8-719-980-46	DIODE SLP681C	
< IC >			
IC001	8-752-830-38	IC CXP50116-229Q	
IC002	8-759-605-21	IC M51953AFP	
IC003	8-741-100-47	IC SBX1610-09	

Ref. No.	Part No.	Description	Remark
< JUMPER RESISTOR >			
JR001	1-216-296-00	METAL CHIP 0 5%	1/8W
JR002	1-216-296-00	METAL CHIP 0 5%	1/8W
JR003	1-216-296-00	METAL CHIP 0 5%	1/8W
JR004	1-216-295-00	METAL CHIP 0 5%	1/10W
JR005	1-216-296-00	METAL CHIP 0 5%	1/8W
JR006	1-216-296-00	METAL CHIP 0 5%	1/8W
JR007	1-216-296-00	METAL CHIP 0 5%	1/8W
JR010	1-216-296-00	METAL CHIP 0 5%	1/8W
JR011	1-216-296-00	METAL CHIP 0 5%	1/8W
JR012	1-216-296-00	METAL CHIP 0 5%	1/8W
JR013	1-216-296-00	METAL CHIP 0 5%	1/8W
JR014	1-216-296-00	METAL CHIP 0 5%	1/8W
JR015	1-216-295-00	METAL CHIP 0 5%	1/10W
JR016	1-216-296-00	METAL CHIP 0 5%	1/8W
JR017	1-216-296-00	METAL CHIP 0 5%	1/8W
JR018	1-216-296-00	METAL CHIP 0 5%	1/8W
JR019	1-216-296-00	METAL CHIP 0 5%	1/8W
JR020	1-216-296-00	METAL CHIP 0 5%	1/8W
JR021	1-216-296-00	METAL CHIP 0 5%	1/8W
JR022	1-216-296-00	METAL CHIP 0 5%	1/8W
JR023	1-216-296-00	METAL CHIP 0 5%	1/8W
JR024	1-216-296-00	METAL CHIP 0 5%	1/8W
JR025	1-216-296-00	METAL CHIP 0 5%	1/8W
JR026	1-216-295-00	METAL CHIP 0 5%	1/10W
JR027	1-216-296-00	METAL CHIP 0 5%	1/8W
JR028	1-216-296-00	METAL CHIP 0 5%	1/8W
JR029	1-216-296-00	METAL CHIP 0 5%	1/8W
JR030	1-216-296-00	METAL CHIP 0 5%	1/8W
JR031	1-216-295-00	METAL CHIP 0 5%	1/10W
JR032	1-216-296-00	METAL CHIP 0 5%	1/8W
JR033	1-216-296-00	METAL CHIP 0 5%	1/8W
JR034	1-216-296-00	METAL CHIP 0 5%	1/8W
JR035	1-216-296-00	METAL CHIP 0 5%	1/8W
JR036	1-216-296-00	METAL CHIP 0 5%	1/8W
JR037	1-216-296-00	METAL CHIP 0 5%	1/8W
JR038	1-216-295-00	METAL CHIP 0 5%	1/10W
JR039	1-216-296-00	METAL CHIP 0 5%	1/8W
JR040	1-216-296-00	METAL CHIP 0 5%	1/8W
JR041	1-216-295-00	METAL CHIP 0 5%	1/10W
JR042	1-216-295-00	METAL CHIP 0 5%	1/10W
JR043	1-216-296-00	METAL CHIP 0 5%	1/8W
JR044	1-216-295-00	METAL CHIP 0 5%	1/10W
JR044	1-216-296-00	METAL CHIP 0 5%	1/8W
JR045	1-216-296-00	METAL CHIP 0 5%	1/8W
JR046	1-216-296-00	METAL CHIP 0 5%	1/8W
JR047	1-216-296-00	METAL CHIP 0 5%	1/8W
JR048	1-216-296-00	METAL CHIP 0 5%	1/8W

Ref. No.	Part No.	Description	Remark		
JR049	1-216-296-00	METAL CHIP	0	5%	1/8W
JR051	1-216-296-00	METAL CHIP	0	5%	1/8W
JR052	1-216-295-00	METAL CHIP	0	5%	1/10W
JR053	1-216-295-00	METAL CHIP	0	5%	1/10W
JR054	1-216-296-00	METAL CHIP	0	5%	1/8W
JR060	1-216-296-00	METAL CHIP	0	5%	1/8W
JR061	1-216-296-00	METAL CHIP	0	5%	1/8W
< COIL >					
L002	1-407-169-XX	INDUCTOR 100uH			
< INDICATOR TUBE >					
ND001	1-519-475-11	INDICATOR TUBE, FLUORESCENT			
< TRANSISTOR >					
Q001	8-729-900-53	TRANSISTOR DTC114EK			
Q002	8-729-900-53	TRANSISTOR DTC114EK			
Q003	8-729-900-53	TRANSISTOR DTC114EK			
Q004	8-729-901-04	TRANSISTOR DTA114EK			
Q007	8-729-901-01	TRANSISTOR DTC144EK			
Q009	8-729-901-04	TRANSISTOR DTA114EK			
< RESISTOR >					
R001	1-216-097-00	METAL CHIP	100K	5%	1/10W
R002	1-216-097-00	METAL CHIP	100K	5%	1/10W
R003	1-216-097-00	METAL CHIP	100K	5%	1/10W
R005	1-216-073-00	METAL CHIP	10K	5%	1/10W
R006	1-216-073-00	METAL CHIP	10K	5%	1/10W
R007	1-216-073-00	METAL CHIP	10K	5%	1/10W
R008	1-216-073-00	METAL CHIP	10K	5%	1/10W
R009	1-216-073-00	METAL CHIP	10K	5%	1/10W
R011	1-216-079-00	METAL CHIP	18K	5%	1/10W
R012	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R013	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R014	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R015	1-216-079-00	METAL CHIP	18K	5%	1/10W
R016	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R017	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R018	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R019	1-216-079-00	METAL CHIP	18K	5%	1/10W
R020	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R021	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R022	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R025	1-216-073-00	METAL CHIP	10K	5%	1/10W
R030	1-216-073-00	METAL CHIP	10K	5%	1/10W
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W
R032	1-216-073-00	METAL CHIP	10K	5%	1/10W
R033	1-216-121-00	METAL CHIP	1M	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R041	1-216-097-00	METAL CHIP	100K	5%	1/10W
R043	1-216-027-00	METAL CHIP	120	5%	1/10W
R045	1-216-073-00	METAL CHIP	10K	5%	1/10W
R046	1-216-097-00	METAL CHIP	100K	5%	1/10W
R047	1-216-097-00	METAL CHIP	100K	5%	1/10W
R051	1-216-073-00	METAL CHIP	10K	5%	1/10W
R052	1-216-073-00	METAL CHIP	10K	5%	1/10W
R053	1-216-049-00	METAL CHIP	1K	5%	1/10W
R054	1-216-073-00	METAL CHIP	10K	5%	1/10W
R055	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
< SWITCH >					
S001	1-571-977-11	SWITCH, TACTIL (1/A)			
S002	1-571-977-11	SWITCH, TACTIL (2/B)			
S003	1-571-977-11	SWITCH, TACTIL (3/C)			
S004	1-571-977-11	SWITCH, TACTIL (4/D)			
S005	1-571-977-11	SWITCH, TACTIL (5/E)			
S006	1-571-977-11	SWITCH, TACTIL (6/F)			
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 (FILE)			
S015	1-571-977-11	SWITCH, TACTIL (CUSTOM INDEX)			
S016	1-571-758-11	SWITCH, PUSH (1 KEY) (SURROUND)			
S018	1-570-338-31	SWITCH, SLIDE (PICTURE ENHANCE)			
< VIBRATOR >					
X101	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)			
*****					
* A-6421-632-A FP-448 BOARD, COMPLETE					
*****					
< CONNECTOR >					
* CN301 1-569-750-11 PIN, CONNECTOR (PC BOARD) 8P					
< DIODE >					
D301	8-719-911-19	DIODE 1SS119			
D302	8-719-911-19	DIODE 1SS119			
< JUMPER RESISTOR >					
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W
JR302	1-216-295-00	METAL CHIP	0	5%	1/10W
JR303	1-216-295-00	METAL CHIP	0	5%	1/10W

FP-448

HP-80

LS-34

MB-53

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R301	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R302	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R303	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R304	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R305	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R306	1-216-049-00	METAL CHIP 1K 5%	1/10W
< SWITCH >			
S301	1-571-977-11	SWITCH, TACTIL (OPEN/CLOSE)	
S302	1-571-977-11	SWITCH, TACTIL (STOP)	
S303	1-571-977-11	SWITCH, TACTIL (◀◀)	
S304	1-571-977-11	SWITCH, TACTIL (▶▶)	
S306	1-571-758-11	SWITCH, PUSH (1 KEY) (REPEAT)	
S307	1-572-662-41	SWITCH, ROTARY (SHUTTLE)	
*****			
*	A-6421-667-A	HP-80 (J53) BOARD, COMPLETE	
*****			
< CAPACITOR >			
C501	1-161-494-00	CERAMIC 0.022uF	25V
< CONNECTOR >			
CN501	1-506-468-11	CONNECTOR 3P, MALE	
< JACK >			
J501	1-507-796-71	JACK (PHONES)	
< RESISTOR >			
R501	1-249-421-11	CARBON 2.2K 5%	1/4W
R502	1-249-421-11	CARBON 2.2K 5%	1/4W
R503	1-249-399-11	CARBON 33 5%	1/4W
R504	1-249-399-11	CARBON 33 5%	1/4W
< VARIABLE RESISTOR >			
RV501	1-241-139-11	RES, VAR, CARBON 500/500 (PHONES LEVEL)	
*****			
*	A-6421-681-A	LS-34 (E53) BOARD, COMPLETE (E, PX)	
*****			
*	A-6421-750-A	LS-34 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
	3-735-054-01	HOLDER, SENSOR	
< CONNECTOR >			
CN501	1-506-468-11	CONNECTOR 3P, MALE	

Ref. No.	Part No.	Description	Remark
< DIODE >			
D501	8-719-941-81	DIODE GL360	
< TRANSISTOR >			
Q501	8-729-904-10	TRANSISTOR PT-360FS	
*****			
*	A-6421-634-A	MB-53 (J53) BOARD, COMPLETE (E)	
*****			
*	A-6421-691-A	MB-53 (PX53) BOARD, COMPLETE (PX)	
*****			
*	A-6421-736-A	MB-53 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
*	3-746-535-01	HEAT SINK	
	3-831-441-XX	CUSHION (5)	
	7-682-547-04	SCREW +BVTT 3X6 (S)	
< CAPACITOR >			
C001	1-124-126-00	ELECT 47uF	20% 10V
C002	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C003	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C004	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C005	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C006	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C007	1-124-126-00	ELECT 47uF	20% 10V
C008	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C009	1-163-011-11	CERAMIC CHIP 0.0015uF	10% 50V
C010	1-124-126-00	ELECT 47uF	20% 10V
C011	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C012	1-124-126-00	ELECT 47uF	20% 10V
C013	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C014	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V
C015	1-126-320-11	ELECT, NONPOLAR 10uF	20% 16V
C018	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C020	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C021	1-124-126-00	ELECT 47uF	20% 10V
C022	1-124-927-11	ELECT 4.7uF	20% 100V
C023	1-124-927-11	ELECT 4.7uF	20% 100V
C026	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C027	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C028	1-130-479-00	MYLAR 0.0047uF	5% 50V
C029	1-130-479-00	MYLAR 0.0047uF	5% 50V
C030	1-130-475-00	MYLAR 0.0022uF	5% 50V
C031	1-130-475-00	MYLAR 0.0022uF	5% 50V
C032	1-124-126-00	ELECT 47uF	20% 10V
C033	1-124-126-00	ELECT 47uF	20% 10V
C035	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C036	1-163-235-11	CERAMIC CHIP 22PF	5% 50V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C037	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C170	1-124-589-11	ELECT	47uF	20%	16V
C038	1-124-126-00	ELECT	47uF	20%	10V	C171	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C039	1-124-927-11	ELECT	4.7uF	20%	100V	C172	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C040	1-124-927-11	ELECT	4.7uF	20%	100V	C181	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C041	1-124-126-00	ELECT	47uF	20%	10V	C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C042	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C183	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C043	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C184	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C044	1-124-631-11	ELECT	47uF	20%	16V	C185	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C045	1-124-907-11	ELECT	10uF	20%	50V	C186	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C046	1-124-907-11	ELECT	10uF	20%	50V	C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C047	1-124-907-11	ELECT	10uF	20%	50V	C188	1-126-176-11	ELECT	220uF	20%	10V
C102	1-124-473-11	ELECT	1000uF	20%	10V	C189	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C103	1-163-031-11	CERAMIC CHIP	0.01uF		50V	C190	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C104	1-126-176-11	ELECT	220uF	20%	10V	C191	1-124-443-00	ELECT	100uF	20%	10V
C105	1-163-031-11	CERAMIC CHIP	0.01uF		50V	C192	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C106	1-124-477-11	ELECT	47uF	20%	25V	C193	1-130-486-00	MYLAR	0.018uF	10%	50V
C107	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	C194	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C108	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C195	1-130-489-00	MYLAR	0.033uF	5%	50V
C109	1-124-907-11	ELECT	10uF	20%	50V	C196	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V	C197	1-124-903-11	ELECT	1uF	20%	50V
C112	1-124-472-11	ELECT	470uF	20%	10V	C198	1-124-925-11	ELECT	2.2uF	20%	100V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C199	1-136-161-00	MYLAR	0.047uF	10%	50V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C200	1-130-489-00	MYLAR	0.033uF	5%	50V
C115	1-124-907-11	ELECT	10uF	20%	50V	C201	1-124-589-11	ELECT	47uF	20%	16V
C116	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C202	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C117	1-126-385-11	ELECT	390uF	20%	16V	C203	1-136-153-00	FILM	0.01uF	5%	50V
C118	1-124-907-11	ELECT	10uF	20%	50V	C204	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C119	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	C205	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C120	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C206	1-136-153-00	FILM	0.01uF	5%	50V
C121	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	C207	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C151	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C208	1-124-477-11	ELECT	47uF	20%	25V
C152	1-163-035-00	CERAMIC CHIP	0.047uF		50V	C209	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C153	1-124-477-11	ELECT	47uF	20%	25V	C210	1-124-477-11	ELECT	47uF	20%	25V
C154	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C211	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C155	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	C212	1-136-161-00	MYLAR	0.047uF	10%	50V
C156	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	C213	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C157	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C214	1-124-903-11	ELECT	1uF	20%	50V
C158	1-136-153-00	FILM	0.01uF	5%	50V	C215	1-124-477-11	ELECT	47uF	20%	25V
C159	1-130-489-00	MYLAR	0.033uF	5%	50V	C216	1-124-443-00	ELECT	100uF	20%	10V
C160	1-163-031-11	CERAMIC CHIP	0.01uF		50V	C217	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C161	1-136-165-00	FILM	0.1uF	5%	50V	C218	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C162	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	C219	1-124-443-00	ELECT	100uF	20%	10V
C163	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C220	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C164	1-163-035-00	CERAMIC CHIP	0.047uF		50V	C221	1-124-477-11	ELECT	47uF	20%	25V
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V	C222	1-136-161-00	MYLAR	0.047uF	10%	50V
C166	1-126-157-11	ELECT	10uF	20%	16V	C223	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C167	1-163-035-00	CERAMIC CHIP	0.047uF		50V	C224	1-124-477-11	ELECT	47uF	20%	25V
C168	1-163-035-00	CERAMIC CHIP	0.047uF		50V	C225	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C169	1-126-157-11	ELECT	10uF	20%	16V	C226	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C227	1-124-477-11	ELECT	47uF	20%	25V	C278	1-124-257-00	ELECT	2. 2uF	20%	50V
C228	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C281	1-124-257-00	ELECT	2. 2uF	20%	50V
C229	1-163-253-11	CERAMIC CHIP	120PF	5%	50V	C282	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C230	1-163-253-11	CERAMIC CHIP	120PF	5%	50V	C283	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C231	1-124-903-11	ELECT	1uF	20%	50V	C284	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C232	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	C285	1-124-477-11	ELECT	47uF	20%	25V
C233	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	C286	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C234	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C287	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C235	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	C288	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C236	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	C289	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C237	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	C290	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C238	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C291	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C239	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C292	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C240	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	C293	1-124-477-11	ELECT	47uF	20%	25V
C241	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C294	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C242	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C295	1-124-257-00	ELECT	2. 2uF	20%	50V
C243	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C296	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C244	1-163-253-11	CERAMIC CHIP	120PF	5%	50V	C297	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C245	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C298	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C246	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C299	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C247	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C300	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C248	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C301	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C249	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C302	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C250	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C311	1-124-257-00	ELECT	2. 2uF	20%	50V
C251	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C312	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C252	1-124-477-11	ELECT	47uF	20%	25V	C313	1-126-157-11	ELECT	10uF	20%	16V
C253	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C314	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C254	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C315	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C255	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C316	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C256	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C318	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C257	1-124-477-11	ELECT	47uF	20%	25V	C319	1-124-589-11	ELECT	47uF	20%	16V
C258	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C320	1-124-589-11	ELECT	47uF	20%	16V
C259	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C322	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C260	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	C324	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C261	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	C325	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C262	1-126-160-11	ELECT	1uF	20%	50V	C329	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
C263	1-136-157-00	MYLAR	0. 022uF	10%	50V	C330	1-126-176-11	ELECT	220uF	20%	10V
C264	1-131-347-00	TANTALUM	1uF	10%	35V	C401	1-126-163-11	ELECT	4. 7uF	20%	50V
C265	1-126-160-11	ELECT	1uF	20%	50V	C402	1-164-182-11	CERAMIC CHIP	0. 0033uF	10%	50V
C266	1-136-153-00	FILM	0. 01uF	5%	50V	C403	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C267	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C404	1-126-163-11	ELECT	4. 7uF	20%	50V
C268	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	C406	1-124-589-11	ELECT	47uF	20%	16V
C269	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	C407	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C270	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C601	1-124-589-11	ELECT	47uF	20%	16V
C271	1-124-589-11	ELECT	47uF	20%	16V	C602	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
C274	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C603	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C275	1-124-257-00	ELECT	2. 2uF	20%	50V	C604	1-163-222-11	CERAMIC CHIP	5PF	0. 25PF	50V
C277	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	C607	1-163-035-00	CERAMIC CHIP	0. 047uF		50V
						C609	1-164-232-11	CERAMIC CHIP	0. 01uF		50V



Ref. No.	Part No.	Description	Remark
C610	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C611	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C613	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C620	1-124-589-11	ELECT	47uF 20% 16V
C621	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C622	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
C623	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
C624	1-124-589-11	ELECT	47uF 20% 16V
C625	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C626	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C627	1-163-111-00	CERAMIC CHIP	56PF 5% 50V
C628	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C629	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V
C630	1-124-257-00	ELECT	2.2uF 20% 50V
C640	1-124-248-00	ELECT	22uF 20% 35V
C641	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C650	1-163-257-11	CERAMIC CHIP	180PF 5% 50V
C651	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C652	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V
C657	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C699	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C701	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C702	1-163-263-11	CERAMIC CHIP	330PF 5% 50V
C703	1-163-243-11	CERAMIC CHIP	47PF 5% 50V
C704	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C705	1-126-157-11	ELECT	10uF 20% 16V
C706	1-163-239-11	CERAMIC CHIP	33PF 5% 50V
C707	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C708	1-126-157-11	ELECT	10uF 20% 16V
C709	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C710	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C711	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C712	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C715	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C716	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C718	1-126-154-11	ELECT	47uF 20% 6.3V
C725	1-163-131-00	CERAMIC CHIP	390PF 5% 50V
C726	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C727	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C728	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C729	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C730	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C731	1-126-154-11	ELECT	47uF 20% 6.3V
C732	1-163-253-11	CERAMIC CHIP	120PF 5% 50V
C733	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C734	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C735	1-126-154-11	ELECT	47uF 20% 6.3V
C736	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C737	1-163-038-00	CERAMIC CHIP	0.1uF 25V

Ref. No.	Part No.	Description	Remark
C739	1-163-245-11	CERAMIC CHIP	56PF 5% 50V
C740	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C741	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C742	1-163-115-00	CERAMIC CHIP	82PF 5% 50V
< FILTER >			
CF151	1-527-831-00	FILTER, CERAMIC	
< CONNECTOR >			
CN003	1-506-468-11	CONNECTOR 3P, MALE	
CN101	1-565-351-51	JACK, PIN 3P (LINE OUT 1)	
CN102	1-565-351-51	JACK, PIN 3P (LINE OUT 2)	
* CN601	1-564-028-00	PIN, CONNECTOR 3P	
CN602	1-563-493-11	CONNECTOR, F. P. C 28P	
CN603	1-506-483-21	CONNECTOR 4P, MALE	
CN604	1-506-491-11	CONNECTOR 12P, MALE	
CN605	1-506-481-11	CONNECTOR 2P, MALE	
CN606	1-506-481-11	CONNECTOR 2P, MALE	
CN607	1-506-482-11	CONNECTOR 3P, MALE	
CN608	1-506-487-11	CONNECTOR 8P, MALE	
< JACK >			
CNJ103	1-566-847-31	CONNECTOR, (S) TERMINAL 4P(S VIDEO OUT)	
< TRIMMER >			
CV152	1-141-227-00	CAP, TRIMMER 20PF	
CV601	1-141-227-00	CAP, TRIMMER 20PF	
< DIODE >			
D001	8-719-400-18	DIODE MA152WK	
D002	8-719-400-18	DIODE MA152WK	
D003	8-719-400-18	DIODE MA152WK	
D004	8-719-907-19	DIODE FC52M-5	
D005	8-719-907-19	DIODE FC52M-5	
D151	8-719-800-76	DIODE 1SS226	
D153	8-719-800-76	DIODE 1SS226	
D154	8-719-951-22	IC IMN10	
D155	8-719-800-76	DIODE 1SS226	
D160	8-719-106-08	DIODE RD6.2M-T1B2	
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	
D699	8-719-106-71	DIODE RD12M-B2	
D701	8-719-800-76	DIODE 1SS226	
D702	8-719-800-76	DIODE 1SS226	
D703	8-719-800-76	DIODE 1SS226	

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Ref. No.	Part No.	Description	Remark
		< DELAY LINE >	
DL101	1-415-694-11	DELAY LINE, LC	
		< FUSE >	
△F601	1-532-777-21	FUSE, MICRO (SECONDARY) 1.250A	
		< FILTER >	
FL001	1-424-031-11	FILTER, NOISE	
FL002	1-424-031-11	FILTER, NOISE	
FL003	1-424-031-11	FILTER, NOISE	
FL004	1-424-031-11	FILTER, NOISE	
FL005	1-424-031-11	FILTER, NOISE	
FL006	1-235-896-11	FILTER, BAND PASS	
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	
		< IC >	
IC001	8-759-981-92	IC RC4558M	
IC003	8-752-337-26	IC CXD2500AQ	
IC004	8-759-502-48	IC SM5840AS	
IC005	8-759-518-47	IC 2J617U-K	
IC006	8-759-981-92	IC RC4558M	
IC007	8-759-981-92	IC RC4558M	
IC102	1-809-157-11	IC FILTER BLOCK, COM	
IC105	8-759-983-74	IC LM324NS	
IC106	8-752-322-35	IC CXL5005M	
△IC107	8-759-982-10	IC RC7809FA	
△IC108	8-759-231-53	IC M5F7805S	
IC109	8-752-036-24	IC CXA1255Q	
IC110	8-759-927-29	IC SN74HCU04ANS	
IC111	8-759-502-69	IC CXD1152-MS	
IC112	8-752-036-23	IC CXA1254Q	
IC113	8-759-941-68	IC BA7131F	
IC114	8-759-981-92	IC RC4558M	
IC115	8-759-300-71	IC HD14053BFP	
IC401	8-759-100-95	IC uPC324G2	
IC402	8-759-009-06	IC MC14052BF	
IC601	8-759-520-69	IC MB89795-132	
IC602	8-759-634-74	IC M50455-196FP	
IC603	8-759-231-92	IC TA7291P	
IC604	8-759-987-71	IC MSM72H032GS-K	

Ref. No.	Part No.	Description	Remark
		< JUMPER RESISTOR >	
JR003	1-216-295-00	METAL CHIP	0 5% 1/10W
JR004	1-216-295-00	METAL CHIP	0 5% 1/10W
JR005	1-216-295-00	METAL CHIP	0 5% 1/10W
JR008	1-216-295-00	METAL CHIP	0 5% 1/10W
JR014	1-216-295-00	METAL CHIP	0 5% 1/10W
JR038	1-216-295-00	METAL CHIP	0 5% 1/10W
JR705	1-216-295-00	METAL CHIP	0 5% 1/10W
JR711	1-216-295-00	METAL CHIP	0 5% 1/10W
JR720	1-216-295-00	METAL CHIP	0 5% 1/10W
JR738	1-216-295-00	METAL CHIP	0 5% 1/10W
JR764	1-216-295-00	METAL CHIP	0 5% 1/10W
JR781	1-216-295-00	METAL CHIP	0 5% 1/10W
JR797	1-216-295-00	METAL CHIP	0 5% 1/10W
		< COIL >	
L003	1-408-417-00	INDUCTOR 47uH	
L004	1-408-417-00	INDUCTOR 47uH	
L101	1-408-411-00	INDUCTOR 15uH	
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	1-408-422-00	INDUCTOR 120uH	
L161	1-408-419-00	INDUCTOR 68uH	
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	
L610	1-408-409-00	INDUCTOR 10uH	
L701	1-408-406-00	INDUCTOR 5.6uH	
L704	1-408-411-00	INDUCTOR 15uH	
L707	1-408-609-41	INDUCTOR 33uH	
		< IC LINK >	
△PS701	1-532-637-00	LINK, IC 1.0A	
△PS702	1-532-685-00	LINK, IC	
		< TRANSISTOR >	
Q001	8-729-901-05	TRANSISTOR DTA124EK	
Q002	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q101	8-729-216-22	TRANSISTOR 2SA1162-G	
Q102	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q103	8-729-216-22	TRANSISTOR 2SA1162-G	

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

Ref. No.	Part No.	Description	Remark
Q104	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q105	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q106	8-729-216-22	TRANSISTOR 2SA1162-G	
Q107	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q108	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q151	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q152	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q153	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q154	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q155	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q156	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q159	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q160	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q161	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q162	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q163	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q164	8-729-902-96	TRANSISTOR FMS1	
Q165	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q166	8-729-901-00	TRANSISTOR DTC124EK	
Q167	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q168	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q169	8-729-216-22	TRANSISTOR 2SA1162-G	
Q170	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q171	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q172	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q173	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q180	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q181	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q182	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q184	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q185	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q186	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q187	8-729-216-22	TRANSISTOR 2SA1162-G	
Q189	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q190	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q191	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q192	8-729-216-22	TRANSISTOR 2SA1162-G	
Q193	8-729-901-00	TRANSISTOR DTC124EK	
Q197	8-729-216-22	TRANSISTOR 2SA1162-G	
Q198	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q199	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q200	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q601	8-729-216-22	TRANSISTOR 2SA1162-G	
Q602	8-729-901-00	TRANSISTOR DTC124EK	
Q605	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q606	8-729-901-00	TRANSISTOR DTC124EK	
Q608	8-729-100-66	TRANSISTOR 2SC1623-L6	

Ref. No.	Part No.	Description	Remark
Q609	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q610	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q611	8-729-901-00	TRANSISTOR DTC124EK	
Q701	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q702	8-729-216-22	TRANSISTOR 2SA1162-G	
Q703	8-729-900-53	TRANSISTOR DTC114EK	
Q704	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q705	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q706	8-729-216-22	TRANSISTOR 2SA1162-G	
Q707	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q708	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q709	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q710	8-729-903-10	TRANSISTOR FMW1	
Q711	8-729-902-96	TRANSISTOR FMS1	
Q712	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q713	8-729-901-04	TRANSISTOR DTA114EK	
Q715	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q723	8-729-900-53	TRANSISTOR DTC114EK	
Q724	8-729-216-22	TRANSISTOR 2SA1162-G	
Q725	8-729-216-22	TRANSISTOR 2SA1162-G	
Q726	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q727	8-729-903-10	TRANSISTOR FMW1	
Q728	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q729	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q730	8-729-216-22	TRANSISTOR 2SA1162-G	
Q731	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q732	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q733	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q734	8-729-216-22	TRANSISTOR 2SA1162-G	
< RESISTOR >			
R001	1-216-073-00	METAL CHIP 10K 5%	1/10W
R002	1-216-025-00	METAL CHIP 100 5%	1/10W
R005	1-216-081-00	METAL CHIP 22K 5%	1/10W
R006	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R007	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R008	1-216-073-00	METAL CHIP 10K 5%	1/10W
R009	1-216-049-00	METAL CHIP 1K 5%	1/10W
R010	1-216-049-00	METAL CHIP 1K 5%	1/10W
R011	1-216-049-00	METAL CHIP 1K 5%	1/10W
R012	1-216-073-00	METAL CHIP 10K 5%	1/10W
R013	1-216-081-00	METAL CHIP 22K 5%	1/10W
R014	1-216-085-00	METAL CHIP 33K 5%	1/10W
R015	1-216-081-00	METAL CHIP 22K 5%	1/10W
R016	1-216-081-00	METAL CHIP 22K 5%	1/10W
R017	1-216-091-00	METAL CHIP 56K 5%	1/10W
R018	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R020	1-216-025-00	METAL CHIP 100 5%	1/10W
R021	1-216-025-00	METAL CHIP 100 5%	1/10W

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Ref. No.	Part No.	Description	Remark		
R022	1-216-025-00	METAL CHIP	100	5%	1/10W
R023	1-216-025-00	METAL CHIP	100	5%	1/10W
R028	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W
R029	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W
R032	1-216-049-00	METAL CHIP	1K	5%	1/10W
R033	1-216-049-00	METAL CHIP	1K	5%	1/10W
R034	1-216-049-00	METAL CHIP	1K	5%	1/10W
R035	1-216-049-00	METAL CHIP	1K	5%	1/10W
R036	1-216-047-00	METAL CHIP	820	5%	1/10W
R037	1-216-047-00	METAL CHIP	820	5%	1/10W
R039	1-216-081-00	METAL CHIP	22K	5%	1/10W
R040	1-216-097-00	METAL CHIP	100K	5%	1/10W
R041	1-216-097-00	METAL CHIP	100K	5%	1/10W
R042	1-216-121-00	METAL CHIP	1M	5%	1/10W
R043	1-216-025-00	METAL CHIP	100	5%	1/10W
R045	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R046	1-216-113-00	METAL CHIP	470K	5%	1/10W
R050	1-216-099-00	METAL CHIP	120K	5%	1/10W
R051	1-216-099-00	METAL CHIP	120K	5%	1/10W
R052	1-216-085-00	METAL CHIP	33K	5%	1/10W
R053	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R054	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R055	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R056	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R103	1-216-031-00	METAL CHIP	180	5%	1/10W
R104	1-216-091-00	METAL CHIP	56K	5%	1/10W
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W
R106	1-216-049-00	METAL CHIP	1K	5%	1/10W
R107	1-216-049-00	METAL CHIP	1K	5%	1/10W
R108	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R109	1-216-047-00	METAL CHIP	820	5%	1/10W
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R112	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R113	1-216-039-00	METAL CHIP	390	5%	1/10W
R114	1-216-049-00	METAL CHIP	1K	5%	1/10W
R115	1-216-031-00	METAL CHIP	180	5%	1/10W
R116	1-216-079-00	METAL CHIP	18K	5%	1/10W
R117	1-216-074-00	METAL CHIP	11K	5%	1/10W
R118	1-216-039-00	METAL CHIP	390	5%	1/10W
R119	1-216-021-00	METAL CHIP	68	5%	1/10W
R120	1-216-045-00	METAL CHIP	680	5%	1/10W
R121	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R122	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R123	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R124	1-216-043-00	METAL CHIP	560	5%	1/10W
R125	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R126	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R127	1-216-049-00	METAL CHIP	1K	5%	1/10W
R128	1-216-079-00	METAL CHIP	18K	5%	1/10W
R129	1-216-031-00	METAL CHIP	180	5%	1/10W
R130	1-216-073-00	METAL CHIP	10K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R132	1-216-021-00	METAL CHIP	68	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-073-00	METAL CHIP	10K	5%	1/10W
R135	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R136	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R137	1-216-049-00	METAL CHIP	1K	5%	1/10W
R138	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R151	1-216-075-00	METAL CHIP	12K	5%	1/10W
R153	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R154	1-216-097-00	METAL CHIP	100K	5%	1/10W
R155	1-216-113-00	METAL CHIP	470K	5%	1/10W
R156	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R157	1-216-113-00	METAL CHIP	470K	5%	1/10W
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W
R160	1-216-079-00	METAL CHIP	18K	5%	1/10W
R161	1-216-113-00	METAL CHIP	470K	5%	1/10W
R162	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R163	1-216-089-00	METAL CHIP	47K	5%	1/10W
R164	1-216-077-00	METAL CHIP	15K	5%	1/10W
R165	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R166	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R167	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R168	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R169	1-216-121-00	METAL CHIP	1M	5%	1/10W
R170	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R171	1-216-091-00	METAL CHIP	56K	5%	1/10W
R172	1-216-049-00	METAL CHIP	1K	5%	1/10W
R173	1-216-081-00	METAL CHIP	22K	5%	1/10W
R174	1-216-049-00	METAL CHIP	1K	5%	1/10W
R175	1-216-040-00	METAL GLAZE	430	5%	1/10W
R176	1-216-049-00	METAL CHIP	1K	5%	1/10W
R177	1-216-073-00	METAL CHIP	10K	5%	1/10W
R178	1-216-049-00	METAL CHIP	1K	5%	1/10W
R180	1-216-041-00	METAL CHIP	470	5%	1/10W
R188	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R189	1-216-025-00	METAL CHIP	100	5%	1/10W
R190	1-216-045-00	METAL CHIP	680	5%	1/10W
R191	1-216-045-00	METAL CHIP	680	5%	1/10W
R192	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R193	1-216-085-00	METAL CHIP	33K	5%	1/10W
R194	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R195	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R196	1-216-077-00	METAL CHIP	15K	5%	1/10W
R197	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R198	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R199	1-216-081-00	METAL CHIP	22K	5%	1/10W
R200	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R201	1-216-039-00	METAL CHIP	390	5%	1/10W
R202	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R203	1-216-075-00	METAL CHIP	12K	5%	1/10W
R204	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R205	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R206	1-216-049-00	METAL CHIP	1K	5%	1/10W
R207	1-216-081-00	METAL CHIP	22K	5%	1/10W
R208	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
△R209	1-212-934-00	FUSIBLE	1	5%	1/2W F
R210	1-216-101-00	METAL CHIP	150K	5%	1/10W
R211	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R212	1-216-081-00	METAL CHIP	22K	5%	1/10W
R213	1-216-083-00	METAL CHIP	27K	5%	1/10W
R214	1-216-089-00	METAL CHIP	47K	5%	1/10W
R215	1-216-113-00	METAL CHIP	470K	5%	1/10W
R216	1-216-083-00	METAL CHIP	27K	5%	1/10W
R217	1-216-097-00	METAL CHIP	100K	5%	1/10W
R218	1-216-121-00	METAL CHIP	1M	5%	1/10W
R219	1-216-093-00	METAL CHIP	68K	5%	1/10W
R220	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R221	1-216-113-00	METAL CHIP	470K	5%	1/10W
R222	1-216-095-00	METAL CHIP	82K	5%	1/10W
R223	1-216-113-00	METAL CHIP	470K	5%	1/10W
R224	1-216-049-00	METAL CHIP	1K	5%	1/10W
R225	1-216-109-00	METAL CHIP	330K	5%	1/10W
R226	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R227	1-216-089-00	METAL CHIP	47K	5%	1/10W
R228	1-216-109-00	METAL CHIP	330K	5%	1/10W
R229	1-216-748-11	METAL CHIP	39K	1%	1/10W
R230	1-216-075-00	METAL CHIP	12K	5%	1/10W
R231	1-216-121-00	METAL CHIP	1M	5%	1/10W
R232	1-216-121-00	METAL CHIP	1M	5%	1/10W
R233	1-216-043-00	METAL CHIP	560	5%	1/10W
R234	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R235	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R236	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R237	1-216-043-00	METAL CHIP	560	5%	1/10W
R238	1-216-049-00	METAL CHIP	1K	5%	1/10W
R239	1-216-045-00	METAL CHIP	680	5%	1/10W
R240	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R241	1-216-077-00	METAL CHIP	15K	5%	1/10W
R242	1-216-097-00	METAL CHIP	100K	5%	1/10W
R243	1-216-097-00	METAL CHIP	100K	5%	1/10W
R244	1-216-748-11	METAL CHIP	39K	1%	1/10W

Ref. No.	Part No.	Description	Remark		
R245	1-216-079-00	METAL CHIP	18K	5%	1/10W
R246	1-216-079-00	METAL CHIP	18K	5%	1/10W
R247	1-216-121-00	METAL CHIP	1M	5%	1/10W
R248	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R249	1-216-085-00	METAL CHIP	33K	5%	1/10W
R250	1-216-097-00	METAL CHIP	100K	5%	1/10W
R251	1-216-097-00	METAL CHIP	100K	5%	1/10W
R252	1-216-085-00	METAL CHIP	33K	5%	1/10W
R253	1-216-047-00	METAL CHIP	820	5%	1/10W
R254	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R256	1-216-049-00	METAL CHIP	1K	5%	1/10W
R257	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R258	1-216-073-00	METAL CHIP	10K	5%	1/10W
R259	1-216-073-00	METAL CHIP	10K	5%	1/10W
R260	1-216-073-00	METAL CHIP	10K	5%	1/10W
R261	1-216-073-00	METAL CHIP	10K	5%	1/10W
R262	1-216-097-00	METAL CHIP	100K	5%	1/10W
R263	1-216-085-00	METAL CHIP	33K	5%	1/10W
R264	1-216-085-00	METAL CHIP	33K	5%	1/10W
R265	1-216-079-00	METAL CHIP	18K	5%	1/10W
R266	1-216-081-00	METAL CHIP	22K	5%	1/10W
R267	1-216-037-00	METAL CHIP	330	5%	1/10W
R268	1-216-033-00	METAL CHIP	220	5%	1/10W
R269	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R270	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R271	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R272	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R273	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R274	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R275	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R276	1-216-045-00	METAL CHIP	680	5%	1/10W
R277	1-216-097-00	METAL CHIP	100K	5%	1/10W
R278	1-216-081-00	METAL CHIP	22K	5%	1/10W
R279	1-216-081-00	METAL CHIP	22K	5%	1/10W
R280	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R281	1-216-039-00	METAL CHIP	390	5%	1/10W
R282	1-216-091-00	METAL CHIP	56K	5%	1/10W
R283	1-216-748-11	METAL CHIP	39K	1%	1/10W
R284	1-216-043-00	METAL CHIP	560	5%	1/10W
R285	1-216-041-00	METAL CHIP	470	5%	1/10W
R286	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R287	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R288	1-216-049-00	METAL CHIP	1K	5%	1/10W
R289	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R290	1-216-041-00	METAL CHIP	470	5%	1/10W
R291	1-216-033-00	METAL CHIP	220	5%	1/10W
R292	1-216-033-00	METAL CHIP	220	5%	1/10W
R293	1-216-748-11	METAL CHIP	39K	1%	1/10W
R294	1-216-095-00	METAL CHIP	82K	5%	1/10W

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

**MB-53**

Ref. No.	Part No.	Description	Remark		
R295	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R298	1-216-115-00	METAL CHIP	560K	5%	1/10W
R300	1-216-097-00	METAL CHIP	100K	5%	1/10W
R301	1-216-117-00	METAL CHIP	680K	5%	1/10W
R302	1-216-049-00	METAL CHIP	1K	5%	1/10W
R303	1-216-041-00	METAL CHIP	470	5%	1/10W
R304	1-216-041-00	METAL CHIP	470	5%	1/10W
R306	1-216-025-00	METAL CHIP	100	5%	1/10W
R308	1-216-081-00	METAL CHIP	22K	5%	1/10W
R309	1-216-081-00	METAL CHIP	22K	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R312	1-216-049-00	METAL CHIP	1K	5%	1/10W
R313	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R314	1-216-049-00	METAL CHIP	1K	5%	1/10W
R315	1-216-049-00	METAL CHIP	1K	5%	1/10W
R316	1-216-049-00	METAL CHIP	1K	5%	1/10W
R317	1-216-049-00	METAL CHIP	1K	5%	1/10W
R318	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R322	1-216-041-00	METAL CHIP	470	5%	1/10W
R323	1-216-041-00	METAL CHIP	470	5%	1/10W
R326	1-216-041-00	METAL CHIP	470	5%	1/10W
R327	1-216-073-00	METAL CHIP	10K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-083-00	METAL CHIP	27K	5%	1/10W
R330	1-216-081-00	METAL CHIP	22K	5%	1/10W
R331	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R332	1-216-113-00	METAL CHIP	470K	5%	1/10W
R333	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R334	1-216-031-00	METAL CHIP	180	5%	1/10W
R356	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R357	1-216-049-00	METAL CHIP	1K	5%	1/10W
R358	1-216-049-00	METAL CHIP	1K	5%	1/10W
R359	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R360	1-216-049-00	METAL CHIP	1K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R362	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W
R364	1-216-049-00	METAL CHIP	1K	5%	1/10W
R365	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R366	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R367	1-216-049-00	METAL CHIP	1K	5%	1/10W
R368	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R369	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R370	1-216-047-00	METAL CHIP	820	5%	1/10W
R371	1-216-046-00	METAL CHIP	750	5%	1/10W
R372	1-216-073-00	METAL CHIP	10K	5%	1/10W
R373	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R374	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R376	1-216-025-00	METAL CHIP	100	5%	1/10W
R384	1-216-085-00	METAL CHIP	33K	5%	1/10W
R386	1-216-081-00	METAL CHIP	22K	5%	1/10W
R387	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R388	1-216-041-00	METAL CHIP	470	5%	1/10W
R389	1-216-041-00	METAL CHIP	470	5%	1/10W
R390	1-216-021-00	METAL CHIP	68	5%	1/10W
R391	1-216-041-00	METAL CHIP	470	5%	1/10W
R392	1-216-041-00	METAL CHIP	470	5%	1/10W
R393	1-216-021-00	METAL CHIP	68	5%	1/10W
R394	1-216-043-00	METAL CHIP	560	5%	1/10W
R395	1-216-043-00	METAL CHIP	560	5%	1/10W
R396	1-216-021-00	METAL CHIP	68	5%	1/10W
R397	1-216-031-00	METAL CHIP	180	5%	1/10W
R401	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R402	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R403	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R404	1-216-077-00	METAL CHIP	15K	5%	1/10W
R405	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R406	1-218-165-11	METAL GLAZE	220K	1%	1/10W
R407	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R408	1-216-117-00	METAL CHIP	680K	5%	1/10W
R409	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R410	1-216-530-00	METAL GLAZE	390K	1%	1/10W
R411	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R412	1-216-035-00	METAL CHIP	270	5%	1/10W
R413	1-216-089-00	METAL CHIP	47K	5%	1/10W
R414	1-216-089-00	METAL CHIP	47K	5%	1/10W
R415	1-216-111-00	METAL CHIP	390K	5%	1/10W
R416	1-216-089-00	METAL CHIP	47K	5%	1/10W
R417	1-216-111-00	METAL CHIP	390K	5%	1/10W
R423	1-216-049-00	METAL CHIP	1K	5%	1/10W
R431	1-216-033-00	METAL CHIP	220	5%	1/10W
R432	1-216-049-00	METAL CHIP	1K	5%	1/10W
R434	1-216-033-00	METAL CHIP	220	5%	1/10W
R435	1-216-115-00	METAL CHIP	560K	5%	1/10W
R580	1-216-049-00	METAL CHIP	1K	5%	1/10W
R581	1-216-049-00	METAL CHIP	1K	5%	1/10W
R588	1-216-073-00	METAL CHIP	10K	5%	1/10W
R593	1-216-073-00	METAL CHIP	10K	5%	1/10W
R594	1-216-037-00	METAL CHIP	330	5%	1/10W
R595	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R596	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R599	1-216-073-00	METAL CHIP	10K	5%	1/10W
R601	1-216-121-00	METAL CHIP	1M	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W
R604	1-216-021-00	METAL CHIP	68	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R605	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R608	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R609	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R610	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
△R611	1-212-950-00	FUSIBLE	4.7	5%	1/2W F
R612	1-216-033-00	METAL CHIP	220	5%	1/10W
R615	1-216-091-00	METAL CHIP	56K	5%	1/10W
R616	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R617	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R618	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R620	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R621	1-216-049-00	METAL CHIP	1K	5%	1/10W
R623	1-216-073-00	METAL CHIP	10K	5%	1/10W
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R625	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R626	1-216-099-00	METAL CHIP	120K	5%	1/10W
R627	1-216-075-00	METAL CHIP	12K	5%	1/10W
R629	1-216-089-00	METAL CHIP	47K	5%	1/10W
R630	1-216-073-00	METAL CHIP	10K	5%	1/10W
R633	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R634	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R635	1-216-035-00	METAL CHIP	270	5%	1/10W
R636	1-216-049-00	METAL CHIP	1K	5%	1/10W
R637	1-216-081-00	METAL CHIP	22K	5%	1/10W
R638	1-216-081-00	METAL CHIP	22K	5%	1/10W
R640	1-216-025-00	METAL CHIP	100	5%	1/10W
R641	1-216-073-00	METAL CHIP	10K	5%	1/10W
R642	1-216-073-00	METAL CHIP	10K	5%	1/10W
R643	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R644	1-216-105-00	METAL CHIP	220K	5%	1/10W
R645	1-216-073-00	METAL CHIP	10K	5%	1/10W
R646	1-216-049-00	METAL CHIP	1K	5%	1/10W
R648	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R649	1-216-113-00	METAL CHIP	470K	5%	1/10W
R650	1-216-049-00	METAL CHIP	1K	5%	1/10W
R651	1-216-033-00	METAL CHIP	220	5%	1/10W
R652	1-216-033-00	METAL CHIP	220	5%	1/10W
R653	1-216-049-00	METAL CHIP	1K	5%	1/10W
R654	1-216-033-00	METAL CHIP	220	5%	1/10W
R655	1-216-049-00	METAL CHIP	1K	5%	1/10W
R656	1-216-033-00	METAL CHIP	220	5%	1/10W
R658	1-216-033-00	METAL CHIP	220	5%	1/10W
R659	1-216-049-00	METAL CHIP	1K	5%	1/10W
R660	1-216-033-00	METAL CHIP	220	5%	1/10W
R661	1-216-033-00	METAL CHIP	220	5%	1/10W
R662	1-216-033-00	METAL CHIP	220	5%	1/10W
R663	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R664	1-216-033-00	METAL CHIP	220	5%	1/10W
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W
R666	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R667	1-216-033-00	METAL CHIP	220	5%	1/10W
R668	1-216-033-00	METAL CHIP	220	5%	1/10W
R669	1-216-049-00	METAL CHIP	1K	5%	1/10W
R670	1-216-049-00	METAL CHIP	1K	5%	1/10W
R671	1-216-049-00	METAL CHIP	1K	5%	1/10W
R672	1-216-033-00	METAL CHIP	220	5%	1/10W
R673	1-216-049-00	METAL CHIP	1K	5%	1/10W
R674	1-216-049-00	METAL CHIP	1K	5%	1/10W
R675	1-216-033-00	METAL CHIP	220	5%	1/10W
R676	1-216-033-00	METAL CHIP	220	5%	1/10W
R680	1-216-085-00	METAL CHIP	33K	5%	1/10W
R681	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R682	1-216-073-00	METAL CHIP	10K	5%	1/10W
R683	1-216-073-00	METAL CHIP	10K	5%	1/10W
R684	1-216-073-00	METAL CHIP	10K	5%	1/10W
R685	1-216-073-00	METAL CHIP	10K	5%	1/10W
R686	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R687	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R688	1-216-097-00	METAL CHIP	100K	5%	1/10W
R689	1-216-049-00	METAL CHIP	1K	5%	1/10W
R690	1-216-049-00	METAL CHIP	1K	5%	1/10W
R691	1-216-049-00	METAL CHIP	1K	5%	1/10W
R693	1-216-049-00	METAL CHIP	1K	5%	1/10W
R694	1-216-049-00	METAL CHIP	1K	5%	1/10W
R695	1-216-049-00	METAL CHIP	1K	5%	1/10W
R696	1-216-049-00	METAL CHIP	1K	5%	1/10W
R697	1-216-049-00	METAL CHIP	1K	5%	1/10W
R698	1-216-049-00	METAL CHIP	1K	5%	1/10W
R699	1-216-049-00	METAL CHIP	1K	5%	1/10W
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W
R702	1-216-033-00	METAL CHIP	220	5%	1/10W
R703	1-216-049-00	METAL CHIP	1K	5%	1/10W
R704	1-216-049-00	METAL CHIP	1K	5%	1/10W
R706	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R707	1-216-047-00	METAL CHIP	820	5%	1/10W
R708	1-216-045-00	METAL CHIP	680	5%	1/10W
R709	1-216-083-00	METAL CHIP	27K	5%	1/10W
R710	1-216-075-00	METAL CHIP	12K	5%	1/10W
R712	1-216-049-00	METAL CHIP	1K	5%	1/10W
R713	1-216-035-00	METAL CHIP	270	5%	1/10W
R714	1-216-027-00	METAL CHIP	120	5%	1/10W
R715	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R716	1-216-045-00	METAL CHIP	680	5%	1/10W
R717	1-216-045-00	METAL CHIP	680	5%	1/10W
R718	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R719	1-216-055-00	METAL CHIP	1.8K	5%	1/10W

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

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PS-286

Ref. No.	Part No.	Description	Remark
R721	1-216-049-00	METAL CHIP	1K 5% 1/10W
R722	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R723	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R724	1-216-077-00	METAL CHIP	15K 5% 1/10W
R725	1-216-041-00	METAL CHIP	470 5% 1/10W
R726	1-216-041-00	METAL CHIP	470 5% 1/10W
R727	1-216-077-00	METAL CHIP	15K 5% 1/10W
R728	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R729	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R730	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R731	1-216-049-00	METAL CHIP	1K 5% 1/10W
R732	1-216-049-00	METAL CHIP	1K 5% 1/10W
R735	1-216-049-00	METAL CHIP	1K 5% 1/10W
R736	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R737	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R741	1-216-041-00	METAL CHIP	470 5% 1/10W
R742	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R766	1-216-049-00	METAL CHIP	1K 5% 1/10W
R767	1-216-652-11	METAL CHIP	1.1K 0.5% 1/10W
R768	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R769	1-216-049-00	METAL CHIP	1K 5% 1/10W
R770	1-216-077-00	METAL CHIP	15K 5% 1/10W
R771	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R772	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R773	1-216-033-00	METAL CHIP	220 5% 1/10W
R774	1-216-045-00	METAL CHIP	680 5% 1/10W
R775	1-216-045-00	METAL CHIP	680 5% 1/10W
R776	1-216-083-00	METAL CHIP	27K 5% 1/10W
R777	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R778	1-216-045-00	METAL CHIP	680 5% 1/10W
R779	1-216-039-00	METAL CHIP	390 5% 1/10W
R780	1-216-045-00	METAL CHIP	680 5% 1/10W
R782	1-216-045-00	METAL CHIP	680 5% 1/10W
R783	1-216-049-00	METAL CHIP	1K 5% 1/10W
R784	1-216-049-00	METAL CHIP	1K 5% 1/10W
R785	1-216-027-00	METAL CHIP	120 5% 1/10W
R786	1-216-081-00	METAL CHIP	22K 5% 1/10W
R787	1-216-045-00	METAL CHIP	680 5% 1/10W
R788	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R789	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R790	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R791	1-216-077-00	METAL CHIP	15K 5% 1/10W
R792	1-216-049-00	METAL CHIP	1K 5% 1/10W
R794	1-216-043-00	METAL CHIP	560 5% 1/10W
R795	1-216-049-00	METAL CHIP	1K 5% 1/10W
R798	1-216-075-00	METAL CHIP	12K 5% 1/10W

Ref. No.	Part No.	Description	Remark
< VARIABLE RESISTOR >			
RV101	1-230-866-11	RES. ADJ. METAL	470
RV151	1-230-870-11	RES. ADJ. METAL	10K
RV152	1-230-870-11	RES. ADJ. METAL	10K
RV154	1-230-870-11	RES. ADJ. METAL	10K
RV601	1-230-873-11	RES. ADJ. METAL	47K
< THERMISTOR >			
TH151	1-800-199-00	THERMISTOR	
< VIBRATOR >			
X001	1-567-515-11	VIBRATOR, VARIABLE CRYSTAL	
X601	1-567-900-11	OSCILLATOR, CRYSTAL (14.31818MHz)	
*****			
*	1-630-097-11	MT-28 BOARD	*****
*****			
*	1-631-095-12	MT-30 BOARD	*****
*****			
*	A-6421-658-A	PS-286 (E53) BOARD, COMPLETE (E, PX)	*****
*	A-6421-738-A	PS-286 (MY53) BOARD, COMPLETE (Malaysia)	*****
*****			
△	1-533-189-11	HOLDER, FUSE	
< CAPACITOR >			
C101	1-126-946-11	ELECT	6800uF 20% 25V
C102	1-126-946-11	ELECT	6800uF 20% 25V
C103	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C104	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C105	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V
C106	1-126-101-11	ELECT	100uF 20% 16V
C107	1-124-471-00	ELECT	1000uF 20% 6.3V
C108	1-124-903-11	ELECT	1uF 20% 50V
C109	1-124-472-11	ELECT	470uF 20% 10V
C110	1-163-833-00	CERAMIC CHIP	0.068uF 25V
C111	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C112	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C114	1-124-478-11	ELECT	100uF 20% 25V
C115	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C116	1-163-833-00	CERAMIC CHIP	0.068uF 25V
C122	1-124-557-11	ELECT	1000uF 20% 25V
C125	1-124-920-11	ELECT	330uF 20% 63V
C126	1-124-910-11	ELECT	47uF 20% 50V

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Ref. No.	Part No.	Description	Remark
C127	1-124-122-11	ELECT	100uF 20% 50V
C128	1-124-557-11	ELECT	1000uF 20% 25V
C131	1-124-479-11	ELECT	330uF 20% 25V
C132	1-124-122-11	ELECT	100uF 20% 50V
C201	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C202	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C204	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C205	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C206	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C208	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C209	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C210	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C211	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C212	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C213	1-124-913-11	ELECT	470uF 20% 50V
< CONNECTOR >			
* CN101	1-560-894-00	PIN, CONNECTOR 6P	
* CN102	1-560-890-00	PIN, CONNECTOR 2P	
CN103	1-506-469-11	CONNECTOR 4P, MALE	
* CN104	1-560-891-00	PIN, CONNECTOR 3P	
CN105	1-506-471-11	CONNECTOR 6P, MALE	
CN106	1-506-469-11	CONNECTOR 4P, MALE	
< DIODE >			
△D101	8-719-500-55	DIODE D3SBA10	
D102	8-719-200-82	DIODE 11ES2	
D103	8-719-200-82	DIODE 11ES2	
D105	8-719-980-78	DIODE ERA81-006	
D108	8-719-105-82	DIODE RD5.1M-B2	
△D109	8-719-200-82	DIODE 11ES2	
D110	8-719-110-78	DIODE RD33ES-B2	
D111	8-719-110-88	DIODE RD39ES-B2	
D112	8-719-110-17	DIODE RD10ES-B2	
D113	8-719-200-82	DIODE 11ES2	
D114	8-719-200-82	DIODE 11ES2	
D115	8-719-911-19	DIODE 1SS119	
△D116	8-719-200-82	DIODE 11ES2	
△D117	8-719-200-82	DIODE 11ES2	
D118	8-719-911-19	DIODE 1SS119	
D201	8-719-980-78	DIODE ERA81-006	
D202	8-719-980-78	DIODE ERA81-006	
D203	8-719-200-82	DIODE 11ES2	
D204	8-719-200-82	DIODE 11ES2	
D205	8-719-911-19	DIODE 1SS119	
D206	8-719-911-19	DIODE 1SS119	
D207	8-719-911-19	DIODE 1SS119	

Ref. No.	Part No.	Description	Remark
< FUSE >			
F101	1-532-747-11	FUSE TIME-LAG 5A 125V (E, PX)	
F101	1-532-299-11	FUSE TIME-LAG 5A 250V (Malaysia)	
F102	1-532-747-11	FUSE TIME-LAG 5A 125V (E, PX)	
F102	1-532-299-11	FUSE TIME-LAG 5A 250V (Malaysia)	
< IC >			
△IC101	8-759-971-39	IC BA9700AF	
IC102	8-759-231-53	IC M5F7805S	
IC201	8-759-100-97	IC uPC339G2	
IC202	8-759-100-96	IC uPC4558G2	
< JUMPER RESISTOR >			
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
< COIL >			
L101	1-424-219-11	COIL, CHOKE 300uH	
L102	1-412-012-11	INDUCTOR 100uH	
L104	1-410-339-11	COIL, CHOKE 10uH	
L201	1-424-219-11	COIL, CHOKE 300uH	
< IC LINK >			
△PS101	1-532-675-00	LINK, IC 1.5A	
△PS103	1-532-841-41	LINK, IC (Malaysia)	
△PS104	1-532-829-21	LINK, IC (Malaysia)	
< TRANSISTOR >			
△Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
△Q102	8-729-216-22	TRANSISTOR 2SA1162-G	
Q103	8-729-117-11	TRANSISTOR 2SB1151	
Q108	8-729-140-97	TRANSISTOR 2SB734-34	
Q111	8-729-141-75	TRANSISTOR 2SD596DV345	
△Q201	8-729-117-11	TRANSISTOR 2SB1151	
△Q202	8-729-143-30	TRANSISTOR 2SD1691K	
△Q203	8-729-117-11	TRANSISTOR 2SB1151	
△Q204	8-729-143-30	TRANSISTOR 2SD1691K	
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q208	8-729-900-53	TRANSISTOR DTC114EK	
Q209	8-729-901-04	TRANSISTOR DTA114EK	
Q210	8-729-100-67	TRANSISTOR 2SC1623-L6-L7	
Q211	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q212	8-729-901-04	TRANSISTOR DTA114EK	
< RESISTOR >			
R101	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R103	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R104	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

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Ref. No.	Part No.	Description	Remark
R105	1-216-073-00	METAL CHIP	10K 5% 1/10W
R106	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R107	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R108	1-216-043-00	METAL CHIP	560 5% 1/10W
R109	1-216-687-11	METAL CHIP	33K 0.5% 1/10W
R110	1-216-676-11	METAL CHIP	11K 0.5% 1/10W
R112	1-216-099-00	METAL CHIP	120K 5% 1/10W
R114	1-216-097-00	METAL CHIP	100K 5% 1/10W
R120	1-216-043-00	METAL CHIP	560 5% 1/10W
R122	1-216-073-00	METAL CHIP	10K 5% 1/10W
R124	1-216-025-00	METAL CHIP	100 5% 1/10W
R125	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
△R126	1-212-867-00	FUSIBLE	27 5% 1/4W F
R127	1-247-742-11	CARBON	180 5% 1/2W
△R128	1-212-881-00	FUSIBLE	100 5% 1/4W
R199	1-216-079-00	METAL CHIP	18K 5% 1/10W
R201	1-216-081-00	METAL CHIP	22K 5% 1/10W
R202	1-216-075-00	METAL CHIP	12K 5% 1/10W
R203	1-216-093-00	METAL CHIP	68K 5% 1/10W
R204	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R205	1-216-075-00	METAL CHIP	12K 5% 1/10W
R206	1-216-097-00	METAL CHIP	100K 5% 1/10W
R207	1-216-073-00	METAL CHIP	10K 5% 1/10W
R208	1-216-073-00	METAL CHIP	10K 5% 1/10W
R209	1-216-073-00	METAL CHIP	10K 5% 1/10W
R210	1-216-105-00	METAL CHIP	220K 5% 1/10W
R211	1-216-073-00	METAL CHIP	10K 5% 1/10W
R212	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R213	1-216-049-00	METAL CHIP	1K 5% 1/10W
R214	1-247-750-11	CARBON	680 5% 1/2W
R215	1-247-750-11	CARBON	680 5% 1/2W
R216	1-216-049-00	METAL CHIP	1K 5% 1/10W
△R217	1-216-369-00	METAL OXIDE	1 5% 2W F
R218	1-216-690-11	METAL CHIP	43K 0.5% 1/10W
R219	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R220	1-216-690-11	METAL CHIP	43K 0.5% 1/10W
R221	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R222	1-216-073-00	METAL CHIP	10K 5% 1/10W
R223	1-216-073-00	METAL CHIP	10K 5% 1/10W
△R224	1-215-866-11	METAL OXIDE	330 5% 1W F
R225	1-216-073-00	METAL CHIP	10K 5% 1/10W
R226	1-247-750-11	CARBON	680 5% 1/2W
R227	1-216-073-00	METAL CHIP	10K 5% 1/10W
R228	1-216-093-00	METAL CHIP	68K 5% 1/10W
R230	1-216-105-00	METAL CHIP	220K 5% 1/10W

< RELAY >

△RY101	1-515-833-11	RELAY	
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Ref. No.	Part No.	Description	Remark
*	A-6421-660-A	PS-290 (E53) BOARD, COMPLETE (E, PX)	*****
*	A-6421-740-A	PS-290 (MY53) BOARD, COMPLETE (Malaysia)	*****
*	4-391-741-61	HEAT SINK, V. OUT	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
		< CAPACITOR >	
C901	1-136-165-00	MYLAR	0.1uF 10% 50V
C902	1-124-472-11	ELECT	470uF 20% 10V
C903	1-136-165-00	MYLAR	0.1uF 10% 50V
C904	1-124-472-11	ELECT	470uF 20% 10V
C905	1-126-176-11	ELECT	220uF 20% 10V
C906	1-124-557-11	ELECT	1000uF 20% 25V
C907	1-161-055-00	CERAMIC	0.022uF 10% 50V
C908	1-124-443-00	ELECT	100uF 20% 10V
		< CONNECTOR >	
* CN901	1-560-891-00	PIN, CONNECTOR 3P	
* CN902	1-560-891-00	PIN, CONNECTOR 3P	
CN903	1-506-473-11	CONNECTOR 8P, MALE	
CN904	1-506-469-11	CONNECTOR 4P, MALE	
CN906	1-506-467-11	CONNECTOR 2P, MALE	
		< DIODE >	
D901	8-719-110-12	DIODE RD9.1ES-B1	
D902	8-719-911-19	DIODE 1SS119	
		< FUSE >	
△F901	1-532-777-21	FUSE, MICRO (SECONDARY)	1.250A 125V
		< IC >	
△IC901	8-759-982-10	IC RC7809FA	
△IC902	8-759-604-49	IC MSF7909L	
△IC903	8-759-245-79	IC TA7905S	
		< IC LINK >	
△PS901	1-532-637-00	LINK, IC 1.0A	
△PS902	1-532-685-00	LINK, IC	
△PS903	1-532-840-21	LINK, IC (Malaysia)	
		< TRANSISTOR >	
Q901	8-729-900-61	TRANSISTOR DTA114ES	
Q902	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R901	1-249-417-11	CARBON	1K 5% 1/4W
R902	1-247-891-00	CARBON	330K 5% 1/4W

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Ref. No.	Part No.	Description	Remark		
R903	1-247-891-00	CARBON	330K	5%	1/4W
R904	1-249-417-11	CARBON	1K	5%	1/4W
*****					
*	A-6421-465-A SV-63 BOARD, COMPLETE				
	*****				
	< CAPACITOR >				
C001	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C003	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C005	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C006	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C010	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C011	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C012	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C013	1-124-584-00	ELECT	100uF	20%	10V
C014	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C015	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C019	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C020	1-124-465-00	ELECT	0.47uF	20%	50V
C021	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C101	1-124-604-00	ELECT	330uF	20%	10V
C102	1-124-604-00	ELECT	330uF	20%	10V
C103	1-124-242-00	ELECT	33uF	20%	25V
C104	1-124-242-00	ELECT	33uF	20%	25V
C105	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C106	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C107	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-126-160-11	ELECT	1uF	20%	50V
C112	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C113	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C114	1-126-160-11	ELECT	1uF	20%	50V
C115	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C116	1-126-160-11	ELECT	1uF	20%	50V
C117	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C118	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C119	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C120	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C121	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C122	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C123	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C124	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C125	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C126	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C127	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

Ref. No.	Part No.	Description	Remark	
C128	1-126-320-11	ELECT, NONPOLAR	10uF	20% 16V
C129	1-136-165-00	FILM	0.1uF	5% 50V
C130	1-126-320-11	ELECT, NONPOLAR	10uF	20% 16V
C131	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V
C132	1-163-035-00	CERAMIC CHIP	0.047uF	50V
C135	1-163-024-00	CERAMIC CHIP	0.018uF	10% 50V
C136	1-136-169-00	FILM	0.22uF	5% 50V
C137	1-163-022-00	CERAMIC CHIP	0.012uF	10% 50V
C138	1-163-022-00	CERAMIC CHIP	0.012uF	10% 50V
C139	1-124-282-00	ELECT	22uF	20% 16V
C140	1-124-279-11	ELECT	3.3uF	20% 25V
C141	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C144	1-163-016-00	CERAMIC CHIP	0.0039uF	10% 50V
C145	1-163-024-00	CERAMIC CHIP	0.018uF	10% 50V
C146	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C147	1-136-169-00	FILM	0.22uF	5% 50V
C149	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C150	1-124-589-11	ELECT	47uF	20% 16V
C151	1-124-477-11	ELECT	47uF	20% 25V
C152	1-163-035-00	CERAMIC CHIP	0.047uF	50V
C153	1-163-035-00	CERAMIC CHIP	0.047uF	50V
< CONNECTOR >				
CN101	1-566-939-11	CONNECTOR, F. P. C	24P	
CN102	1-563-493-11	CONNECTOR, F. P. C	28P	
CN103	1-506-485-11	CONNECTOR 6P, MALE		
CN104	1-506-482-11	CONNECTOR 3P, MALE		
* CN105	1-566-969-11	HOUSING, CONNECTOR (PC BOARD)	7P	
* CN106	1-566-968-11	HOUSING, CONNECTOR (PC BOARD)	6P	
< DIODE >				
D001	8-719-911-19	DIODE	1SS119	
D101	8-719-911-19	DIODE	1SS119	
D102	8-719-109-72	DIODE	RD3.9ES-B2	
D103	8-719-911-19	DIODE	1SS119	
D104	8-719-911-19	DIODE	1SS119	
< FUSE >				
F001	1-532-775-11	FUSE, MICRO (SECONDARY)		
< FILTER >				
FL001	1-235-922-11	FILTER, LOW PASS (1.7MHZ)		
< IC >				
IC001	8-752-050-19	IC	CXA1081M	
IC002	8-759-603-24	IC	CX20197	
IC101	8-759-321-40	IC	HA11529	
IC102	8-759-822-38	IC	LA6510	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC103	8-759-981-92	IC RC4558M		JR150	1-216-296-00	METAL CHIP	0 5% 1/8W
IC104	8-759-981-92	IC RC4558M		JR153	1-216-296-00	METAL CHIP	0 5% 1/8W
IC105	8-759-981-92	IC RC4558M					
IC106	8-759-300-71	IC HD14053BFP		JR154	1-216-296-00	METAL CHIP	0 5% 1/8W
< JUMPER RESISTOR >				JR155	1-216-296-00	METAL CHIP	0 5% 1/8W
JR102	1-216-295-00	METAL CHIP	0 5% 1/10W	JR156	1-216-296-00	METAL CHIP	0 5% 1/8W
JR103	1-216-296-00	METAL CHIP	0 5% 1/8W	JR158	1-216-295-00	METAL CHIP	0 5% 1/10W
JR104	1-216-296-00	METAL CHIP	0 5% 1/8W	JR159	1-216-296-00	METAL CHIP	0 5% 1/8W
JR105	1-216-295-00	METAL CHIP	0 5% 1/10W				
JR106	1-216-296-00	METAL CHIP	0 5% 1/8W	JR160	1-216-296-00	METAL CHIP	0 5% 1/8W
JR107	1-216-295-00	METAL CHIP	0 5% 1/10W	JR161	1-216-296-00	METAL CHIP	0 5% 1/8W
JR111	1-216-296-00	METAL CHIP	0 5% 1/8W	JR162	1-216-296-00	METAL CHIP	0 5% 1/8W
JR112	1-216-296-00	METAL CHIP	0 5% 1/8W	JR164	1-216-296-00	METAL CHIP	0 5% 1/8W
JR113	1-216-296-00	METAL CHIP	0 5% 1/8W	JR166	1-216-295-00	METAL CHIP	0 5% 1/10W
JR114	1-216-295-00	METAL CHIP	0 5% 1/10W				
JR115	1-216-296-00	METAL CHIP	0 5% 1/8W	JR170	1-216-296-00	METAL CHIP	0 5% 1/8W
JR116	1-216-295-00	METAL CHIP	0 5% 1/10W	JR171	1-216-295-00	METAL CHIP	0 5% 1/10W
JR117	1-216-295-00	METAL CHIP	0 5% 1/10W	JR172	1-216-296-00	METAL CHIP	0 5% 1/8W
JR118	1-216-296-00	METAL CHIP	0 5% 1/8W	JR173	1-216-296-00	METAL CHIP	0 5% 1/8W
JR119	1-216-296-00	METAL CHIP	0 5% 1/8W	JR174	1-216-296-00	METAL CHIP	0 5% 1/8W
JR121	1-216-296-00	METAL CHIP	0 5% 1/8W	JR175	1-216-295-00	METAL CHIP	0 5% 1/10W
JR122	1-216-296-00	METAL CHIP	0 5% 1/8W	JR176	1-216-296-00	METAL CHIP	0 5% 1/8W
JR123	1-216-296-00	METAL CHIP	0 5% 1/8W	JR177	1-216-296-00	METAL CHIP	0 5% 1/8W
JR124	1-216-296-00	METAL CHIP	0 5% 1/8W	JR178	1-216-296-00	METAL CHIP	0 5% 1/8W
JR125	1-216-296-00	METAL CHIP	0 5% 1/8W	JR179	1-216-296-00	METAL CHIP	0 5% 1/8W
JR126	1-216-296-00	METAL CHIP	0 5% 1/8W	JR180	1-216-296-00	METAL CHIP	0 5% 1/8W
JR127	1-216-295-00	METAL CHIP	0 5% 1/10W	JR181	1-216-296-00	METAL CHIP	0 5% 1/8W
JR128	1-216-296-00	METAL CHIP	0 5% 1/8W	JR182	1-216-296-00	METAL CHIP	0 5% 1/8W
JR129	1-216-296-00	METAL CHIP	0 5% 1/8W	JR183	1-216-295-00	METAL CHIP	0 5% 1/10W
JR130	1-216-296-00	METAL CHIP	0 5% 1/8W	JR184	1-216-296-00	METAL CHIP	0 5% 1/8W
JR132	1-216-296-00	METAL CHIP	0 5% 1/8W	JR185	1-216-296-00	METAL CHIP	0 5% 1/8W
JR133	1-216-296-00	METAL CHIP	0 5% 1/8W	JR186	1-216-296-00	METAL CHIP	0 5% 1/8W
JR134	1-216-296-00	METAL CHIP	0 5% 1/8W	JR187	1-216-296-00	METAL CHIP	0 5% 1/8W
JR135	1-216-296-00	METAL CHIP	0 5% 1/8W	JR188	1-216-296-00	METAL CHIP	0 5% 1/8W
JR136	1-216-296-00	METAL CHIP	0 5% 1/8W	JR189	1-216-295-00	METAL CHIP	0 5% 1/10W
JR137	1-216-296-00	METAL CHIP	0 5% 1/8W	JR191	1-216-296-00	METAL CHIP	0 5% 1/8W
JR138	1-216-296-00	METAL CHIP	0 5% 1/8W	JR192	1-216-296-00	METAL CHIP	0 5% 1/8W
JR139	1-216-296-00	METAL CHIP	0 5% 1/8W	JR193	1-216-296-00	METAL CHIP	0 5% 1/8W
JR140	1-216-296-00	METAL CHIP	0 5% 1/8W	JR194	1-216-296-00	METAL CHIP	0 5% 1/8W
JR141	1-216-296-00	METAL CHIP	0 5% 1/8W	JR195	1-216-295-00	METAL CHIP	0 5% 1/10W
JR142	1-216-296-00	METAL CHIP	0 5% 1/8W	JR196	1-216-296-00	METAL CHIP	0 5% 1/8W
JR143	1-216-296-00	METAL CHIP	0 5% 1/8W	JR197	1-216-296-00	METAL CHIP	0 5% 1/8W
JR144	1-216-296-00	METAL CHIP	0 5% 1/8W	JR198	1-216-296-00	METAL CHIP	0 5% 1/8W
JR145	1-216-296-00	METAL CHIP	0 5% 1/8W	JR199	1-216-296-00	METAL CHIP	0 5% 1/8W
JR146	1-216-296-00	METAL CHIP	0 5% 1/8W	JR200	1-216-296-00	METAL CHIP	0 5% 1/8W
JR147	1-216-296-00	METAL CHIP	0 5% 1/8W	JR201	1-216-296-00	METAL CHIP	0 5% 1/8W
JR148	1-216-296-00	METAL CHIP	0 5% 1/8W	JR202	1-216-296-00	METAL CHIP	0 5% 1/8W
JR149	1-216-296-00	METAL CHIP	0 5% 1/8W	JR203	1-216-296-00	METAL CHIP	0 5% 1/8W
				JR204	1-216-296-00	METAL CHIP	0 5% 1/8W
				JR205	1-216-295-00	METAL CHIP	0 5% 1/10W
				JR206	1-216-295-00	METAL CHIP	0 5% 1/10W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
JR207	1-216-296-00	METAL CHIP	0	5%	1/8W	R014	1-216-097-00	METAL CHIP	100K	5%	1/10W
JR208	1-216-296-00	METAL CHIP	0	5%	1/8W	R015	1-216-049-00	METAL CHIP	1K	5%	1/10W
JR209	1-216-295-00	METAL CHIP	0	5%	1/10W	R016	1-216-101-00	METAL CHIP	150K	5%	1/10W
JR210	1-216-295-00	METAL CHIP	0	5%	1/10W	R017	1-216-041-00	METAL CHIP	470	5%	1/10W
JR211	1-216-296-00	METAL CHIP	0	5%	1/8W	R018	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
JR212	1-216-296-00	METAL CHIP	0	5%	1/8W	R020	1-216-049-00	METAL CHIP	1K	5%	1/10W
JR213	1-216-296-00	METAL CHIP	0	5%	1/8W	R021	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
JR214	1-216-296-00	METAL CHIP	0	5%	1/8W	R022	1-216-081-00	METAL CHIP	22K	5%	1/10W
JR215	1-216-295-00	METAL CHIP	0	5%	1/10W	R023	1-249-394-11	CARBON	12	5%	1/6W
JR216	1-216-295-00	METAL CHIP	0	5%	1/10W	△R101	1-216-373-11	METAL OXIDE	2.2	5%	2W F
JR217	1-216-295-00	METAL CHIP	0	5%	1/10W	R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
JR218	1-216-296-00	METAL CHIP	0	5%	1/8W	R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
JR219	1-216-295-00	METAL CHIP	0	5%	1/10W	R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
JR220	1-216-296-00	METAL CHIP	0	5%	1/8W	R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
JR221	1-216-296-00	METAL CHIP	0	5%	1/8W	R107	1-216-089-00	METAL CHIP	47K	5%	1/10W
< COIL >						R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
L101	1-410-509-11	INDUCTOR 10uH				R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
L102	1-410-509-11	INDUCTOR 10uH				R110	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
L103	1-410-509-11	INDUCTOR 10uH				R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
< TRANSISTOR >						R112	1-216-101-00	METAL CHIP	150K	5%	1/10W
Q001	8-729-140-97	TRANSISTOR	2SB734-34			R113	1-216-077-00	METAL CHIP	15K	5%	1/10W
Q002	8-729-216-22	TRANSISTOR	2SA1162-G			R114	1-216-025-00	METAL CHIP	100	5%	1/10W
Q003	8-729-303-37	TRANSISTOR	2SD655-E			R115	1-216-025-00	METAL CHIP	100	5%	1/10W
Q101	8-729-209-15	TRANSISTOR	2SD2012			R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q102	8-729-924-90	TRANSISTOR	2SB1370-EF			R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q103	8-729-209-15	TRANSISTOR	2SD2012			R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q104	8-729-924-90	TRANSISTOR	2SB1370-EF			R119	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q105	8-729-100-66	TRANSISTOR	2SC1623-L6			R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q106	8-729-100-66	TRANSISTOR	2SC1623-L6			R121	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
Q107	8-729-901-00	TRANSISTOR	DTC124EK			R122	1-216-085-00	METAL CHIP	33K	5%	1/10W
Q108	8-729-100-66	TRANSISTOR	2SC1623-L6			R123	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q109	8-729-216-22	TRANSISTOR	2SA1162-G			R124	1-216-079-00	METAL CHIP	18K	5%	1/10W
< RESISTOR >						R125	1-216-081-00	METAL CHIP	22K	5%	1/10W
R001	1-216-049-00	METAL CHIP	1K	5%	1/10W	R126	1-216-033-00	METAL CHIP	220	5%	1/10W
R002	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R127	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R003	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R128	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R004	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R129	1-216-041-00	METAL CHIP	470	5%	1/10W
R005	1-216-049-00	METAL CHIP	1K	5%	1/10W	R130	1-216-017-00	METAL CHIP	47	5%	1/10W
R006	1-216-049-00	METAL CHIP	1K	5%	1/10W	R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R007	1-216-023-00	METAL CHIP	82	5%	1/10W	R132	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R008	1-216-043-00	METAL CHIP	560	5%	1/10W	R133	1-216-097-00	METAL CHIP	100K	5%	1/10W
R009	1-216-073-00	METAL CHIP	10K	5%	1/10W	R134	1-216-097-00	METAL CHIP	100K	5%	1/10W
R010	1-216-095-00	METAL CHIP	82K	5%	1/10W	R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R011	1-216-081-00	METAL CHIP	22K	5%	1/10W	R136	1-216-081-00	METAL CHIP	22K	5%	1/10W
R012	1-249-394-11	CARBON	12	5%	1/6W	R137	1-216-099-00	METAL CHIP	120K	5%	1/10W
R013	1-216-073-00	METAL CHIP	10K	5%	1/10W	R138	1-216-081-00	METAL CHIP	22K	5%	1/10W
						R139	1-216-081-00	METAL CHIP	22K	5%	1/10W
						R140	1-216-037-00	METAL CHIP	330	5%	1/10W

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

Ref. No.	Part No.	Description	Remark		
R141	1-216-024-00	METAL GLAZE	91	5%	1/10W
R142	1-216-001-00	METAL CHIP	10	5%	1/10W
R143	1-216-001-00	METAL CHIP	10	5%	1/10W
R144	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R145	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-037-00	METAL CHIP	330	5%	1/10W
R149	1-216-033-00	METAL CHIP	220	5%	1/10W
R150	1-216-085-00	METAL CHIP	33K	5%	1/10W
R151	1-216-113-00	METAL CHIP	470K	5%	1/10W
R152	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W
R154	1-216-101-00	METAL CHIP	150K	5%	1/10W
R155	1-216-089-00	METAL CHIP	47K	5%	1/10W
R156	1-216-083-00	METAL CHIP	27K	5%	1/10W
R157	1-216-101-00	METAL CHIP	150K	5%	1/10W
R158	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R159	1-216-075-00	METAL CHIP	12K	5%	1/10W
R160	1-216-083-00	METAL CHIP	27K	5%	1/10W
R161	1-216-113-00	METAL CHIP	470K	5%	1/10W
R162	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R163	1-216-083-00	METAL CHIP	27K	5%	1/10W
R164	1-216-035-00	METAL CHIP	270	5%	1/10W
R165	1-216-089-00	METAL CHIP	47K	5%	1/10W
R166	1-216-041-00	METAL CHIP	470	5%	1/10W
R167	1-216-049-00	METAL CHIP	1K	5%	1/10W
R168	1-216-049-00	METAL CHIP	1K	5%	1/10W
R169	1-216-049-00	METAL CHIP	1K	5%	1/10W
R170	1-216-049-00	METAL CHIP	1K	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-049-00	METAL CHIP	1K	5%	1/10W
R173	1-216-085-00	METAL CHIP	33K	5%	1/10W
R174	1-216-073-00	METAL CHIP	10K	5%	1/10W
R175	1-216-085-00	METAL CHIP	33K	5%	1/10W
R176	1-216-748-11	METAL CHIP	39K	1%	1/10W
R177	1-216-085-00	METAL CHIP	33K	5%	1/10W
R178	1-216-073-00	METAL CHIP	10K	5%	1/10W
R179	1-216-101-00	METAL CHIP	150K	5%	1/10W
R180	1-216-748-11	METAL CHIP	39K	1%	1/10W
R181	1-216-083-00	METAL CHIP	27K	5%	1/10W
R182	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R183	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R184	1-216-089-00	METAL CHIP	47K	5%	1/10W
R186	1-216-097-00	METAL CHIP	100K	5%	1/10W
R187	1-216-089-00	METAL CHIP	47K	5%	1/10W
R188	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R189	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R190	1-216-069-00	METAL CHIP	6.8K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R191	1-216-097-00	METAL CHIP	100K	5%	1/10W
R192	1-216-081-00	METAL CHIP	22K	5%	1/10W
R193	1-216-105-00	METAL CHIP	220K	5%	1/10W
R194	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R195	1-216-085-00	METAL CHIP	33K	5%	1/10W
R196	1-216-097-00	METAL CHIP	100K	5%	1/10W
R197	1-216-089-00	METAL CHIP	47K	5%	1/10W
R198	1-216-081-00	METAL CHIP	22K	5%	1/10W
R199	1-216-099-00	METAL CHIP	120K	5%	1/10W
R200	1-216-085-00	METAL CHIP	33K	5%	1/10W
R201	1-216-095-00	METAL CHIP	82K	5%	1/10W
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W
R205	1-216-097-00	METAL CHIP	100K	5%	1/10W
R206	1-216-081-00	METAL CHIP	22K	5%	1/10W
R207	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R208	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-081-00	METAL CHIP	22K	5%	1/10W
R211	1-216-017-00	METAL CHIP	47	5%	1/10W
R212	1-216-017-00	METAL CHIP	47	5%	1/10W
R213	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R214	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W
R216	1-216-081-00	METAL CHIP	22K	5%	1/10W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-077-00	METAL CHIP	15K	5%	1/10W
R219	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R220	1-216-079-00	METAL CHIP	18K	5%	1/10W
R222	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
< VARIABLE RESISTOR >					
RV101	1-228-993-00	RES, ADJ, METAL	4.7K		
RV102	1-228-994-00	RES, ADJ, METAL	10K		
RV103	1-228-994-00	RES, ADJ, METAL	10K		
RV104	1-228-993-00	RES, ADJ, METAL	4.7K		
RV105	1-228-994-00	RES, ADJ, METAL	10K		
RV106	1-228-990-00	RES, ADJ, METAL	1K		
RV107	1-228-990-00	RES, ADJ, METAL	1K		
RV108	1-228-990-00	RES, ADJ, METAL	1K		
*****					
*	A-6420-639-A	SW-184 (E53) BOARD, COMPLETE (E, PX)			
*****					
*	A-6420-737-A	SW-184 (MY53) BOARD, COMPLETE (Malaysia)			
*****					
< CONNECTOR >					
CN201	1-506-482-11	CONNECTOR 3P, MALE			

SW-184

SW-193

SW-194

TR-60

VS-47

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D201	8-719-991-09	DIODE IC SLP-381F-51-A	
D202	8-719-991-09	DIODE IC SLP-381F-51-A	
D203	8-719-940-99	LED SLR34VC3 (Malaysia)	
		< TRANSISTOR >	
Q291	8-729-901-04	TRANSISTOR DTA114EK (Malaysia)	
		< RESISTOR >	
R291	1-216-021-00	METAL CHIP 68 5% 1/10W (Malaysia)	
R292	1-216-061-00	METAL CHIP 3.3K 5% 1/10W (Malaysia)	
R293	1-216-031-00	METAL CHIP 180 5% 1/10W (Malaysia)	
		< SWITCH >	
S201	1-571-977-11	SWITCH, TACTIL (POWER)	
*****			
*	A-6421-682-A	SW-193 (E53) BOARD, COMPLETE (E, PX)	
*****			
*	A-6421-751-A	SW-193 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
		< CONNECTOR >	
CN601	1-506-467-11	CONNECTOR 2P, MALE	
		< SWITCH >	
S601	1-554-655-00	SWITCH, LEAF (TRAY)	
*****			
*	A-6421-683-A	SW-194 (E53) BOARD, COMPLETE (E, PX)	
*****			
*	A-6421-752-A	SW-194 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
		< CONNECTOR >	
CN401	1-506-481-11	CONNECTOR 2P, MALE	
CN402	1-506-481-11	CONNECTOR 2P, MALE	
		< RESISTOR >	
R401	1-249-423-11	CARBON 3.3K 5% 1/4W	
R402	1-249-417-11	CARBON 1K 5% 1/4W	
		< SWITCH >	
S401	1-571-300-21	SWITCH, ROTARY (CHUCK UP/DOWN)	
*****			

Ref. No.	Part No.	Description	Remark
*	A-6421-659-A	TR-60 (E53) BOARD, COMPLETE (E, PX)	
*****			
*	A-6421-739-A	TR-60 (MY53) BOARD, COMPLETE (Malaysia)	
*****			
△	1-533-189-11	HOLDER, FUSE	
		< CAPACITOR >	
△C301	1-136-472-11	FILM 0.1MF 20% 250V	
		< CONNECTOR >	
△CN301	1-564-419-11	HEADER, SPRING (POWER) 2P	
* CN302	1-564-031-00	PIN, CONNECTOR 6P	
		< FUSE >	
△F301	1-532-215-11	FUSE TIME-LAG 800mA 250V (Malaysia)	
△F301	1-532-824-11	FUSE TIME-LAG 1.6A 250V (E, PX)	
△F302	1-532-871-11	FUSE TIME-LAG 800mA 250V (E, PX)	
		< RESISTOR >	
△R301	1-202-729-00	SOLID 6.8M 10% 1/2W	
		< TRANSFORMER >	
△T301	1-450-617-11	TRANSFORMER, POWER	
△T302	1-421-771-11	FILTER, LINE (E, PX)	
△T302	1-424-535-11	FILTER, LINE (Malaysia)	
*****			
*	1-631-866-11	VS-47 BOARD (E, PX)	
*****			
△SW302	1-554-933-11	SELECTOR, VOLTAGE (E, PX)	
*****			
MISCELLANEOUS			
*****			
△57	1-559-627-41	CORD, POWER (E, PX)	
△57	1-575-912-23	CORD, POWER (Malaysia)	
* 67	1-575-813-11	CABLE, FLAT (FLEXIBLE) (28 CORE)	
△76	1-532-215-00	FUSE, TIME-LAG 800mA 250V (F301)	
128	1-161-063-00	CERAMIC 0.1uF 10% 50V (C1)	
158	1-554-468-00	SWITCH, LEAF (SLED IN LIMIT LD/CD) (S903)	
159	1-541-776-21	MOTOR, LD SPINDLE (M901)	
168	1-574-648-11	CABLE, FLEXIBLE FLAT (24 CORE)	
204	1-570-771-21	SWITCH (SLED OUT LIMIT) (S902)	
206	1-571-435-11	SWITCH (SLED IN LIMIT) (S901)	
△215	8-848-138-11	DEVICE, OPTICAL KHS-130A	
*****			

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

Ref. No.	Part No.	Description	Remark
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ACCESSORIES & PACKING MATERIALS  
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- 1-465-843-21 REMOTE CONTROLLER (RMT-M10A) (E, Malaysia)
- 1-465-843-41 REMOTE CONTROLLER (RMT-M10B) (PX)
- 1-526-565-00 AC PLUG ADAPTOR (PX)
- 1-551-086-31 VIDEO CONNECTION CORD (PHONO. 1 ↔ PHONO. 1)
- 1-558-076-41 F-TYPE COAXIAL CABLE (PX)
- 1-559-533-11 AUDIO CONNECTION CORD (PHONO. 2 ↔ PHONO. 2)
- \* 3-746-513-01 CUSHION (UPPER)
- \* 3-746-514-01 CUSHION (LOWER)
- \* 3-746-517-41 INDIVIDUAL CARTON
- 3-753-416-11 MANUAL, INSTRUCTION (ENGLISH)  
(E, Malaysia)
- 3-753-416-42 MANUAL, INSTRUCTION (ENGLISH) (PX)

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**HARDWARE LIST**

- #1 7-687-233-11 SCREW (+ PTPWH) (2. 6X6)
- #2 7-685-648-79 SCREW +BVTP 3X12 TYPE2 IT-3
- #3 7-685-645-79 SCREW +BVTP 3X6 TYPE2 IT-3
- #4 7-685-647-79 SCREW +BTP 3X10 TYPE2 N-S
- #5 7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3
- #6 7-682-645-01 SCREW +PS 3X4
- #7 7-621-255-55 SCREW +P 2X8
- #8 7-685-649-79 SCREW +BVTP 3X14 TYPE2 IT-3
- #9 7-685-661-79 SCREW +BVTP 4X12 TYPE2 SLIT
- #11 7-682-545-04 SCREW (3X4) (G), TAPPING, (+) P
- #15 7-621-770-XX SCREW (+ BV 2. 6X8)
- #16 7-682-547-04 SCREW +BVTT 3X6 (S)
- #17 7-685-647-79 SCREW +BVTP 3 × 10 TYPE2 IT-3

\*\*\*\*\*



## SECTION 7

### ELECTRICAL ADJUSTMENTS

During these adjustment, see the parts arrangement diagram for adjustments on page from 142.

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

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote commander (RMT-M10A (E Model), RMT-M10B (PX Model))
- 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

#### 7-2. CAUTIONS ON ADJUSTMENT

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

#### 7-3. MD ADJUSTMENT CABLE (J-6087-059-B)

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

## 7-4. POWER SUPPLY CHECK (PS-286, 290 BOARDS)

PS-286 Board

Mode	Stop
Measuring Equipment	Digital Voltmeter
AC 4.3 V check	
Measurement Point	Pin ①, ② of CN105
Specified Value	AC 4.3 V
DC -30 V check	
Measurement Point	Pin ④ of CN105 (Pin ③, GND)
Specified Value	-32 ± 2 V

PS-290 Board

Mode	Stop
Measuring Equipment	Digital Voltmeter
UNREG +16 V check	
Measurement Point	Pin ① of CN902 (Pin ②, GND)
Specified Value	16 ± 0.1 V
UNREG -16 V check	
Measurement Point	Pin ③ of CN902 (Pin ②, GND)
Specified Value	-16 ± 0.1 V
REG +9 V check	
Measurement Point	Pin ① of CN903 (Pin ②, GND)
Specified Value	9 ± 0.3V
REG -9 V check	
Measurement Point	Pin ③ of CN903 (Pin ②, GND)
Specified Value	-9 ± 0.3 V
REG +5 V check	
Measurement Point	Pin ⑤ of CN903 (Pin ⑥, GND)
Specified Value	5 ± 0.3 V
REG -5 V check	
Measurement Point	Pin ⑦ of CN903 (Pin ⑥, GND)
Specified Value	-5 ± 0.3 V

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

## 7-5. SYSTEM CONTROL SYSTEM ADJUSTMENT

### 7-5-1. Microprocessor Clock Adjustment (MB-53 Board)

Mode	Stop
Measurement Point	Pin ⑦ 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.

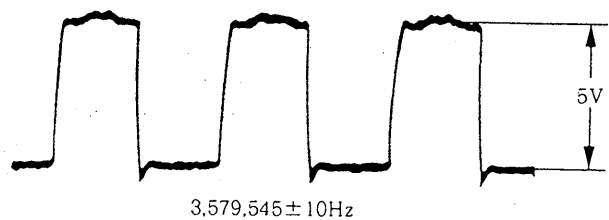


Fig. 7-1.

### 7-6. SERVO SYSTEM ADJUSTMENT

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

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

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

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

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

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

#### 1) Focus balance adjustment

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

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

#### Adjustment method :

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

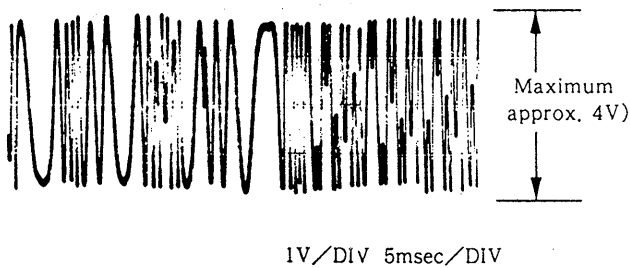


Fig. 7-2.

#### 2) Tracking balance adjustment

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

#### Adjustment method :

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

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

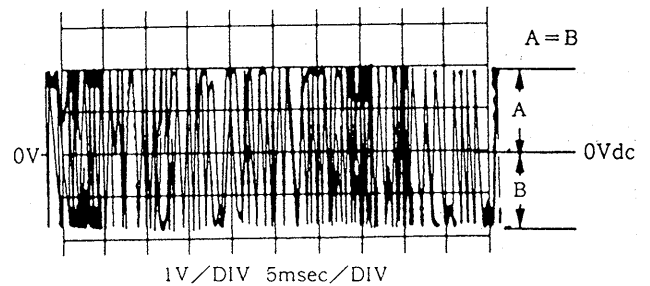
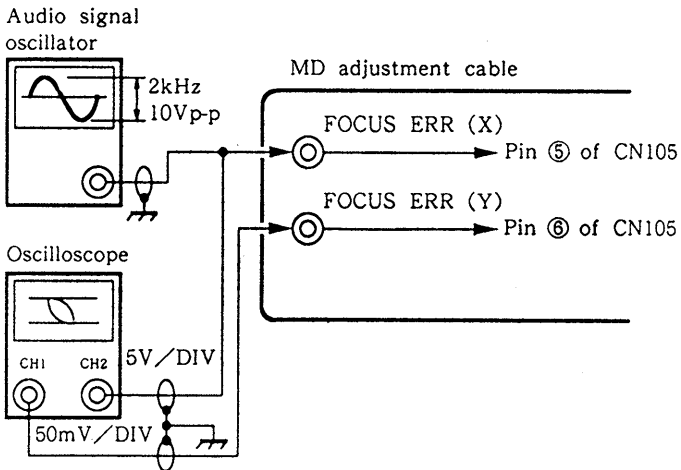


Fig. 7-3.

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

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

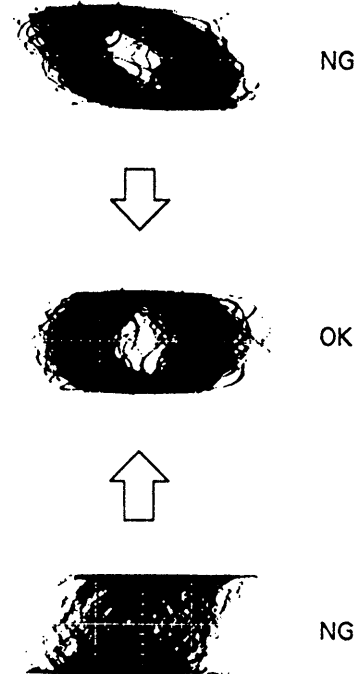


Fig. 7-4.

### 3. LD Cross Talk Balance Adjustment

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

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

\*Mechanical center :

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

#### Adjustment method :

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

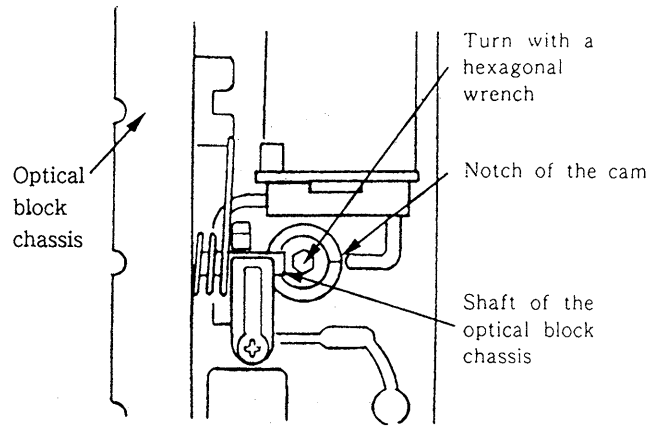


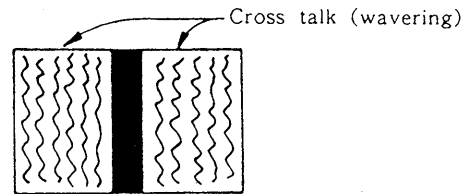
Fig. 7-5.

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

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

#### Adjustment method :

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



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

Fig. 7-6.

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

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

#### Adjustment method :

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

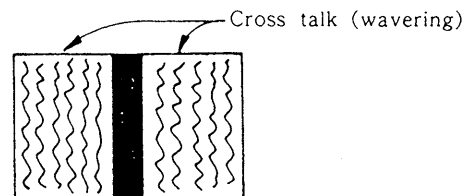
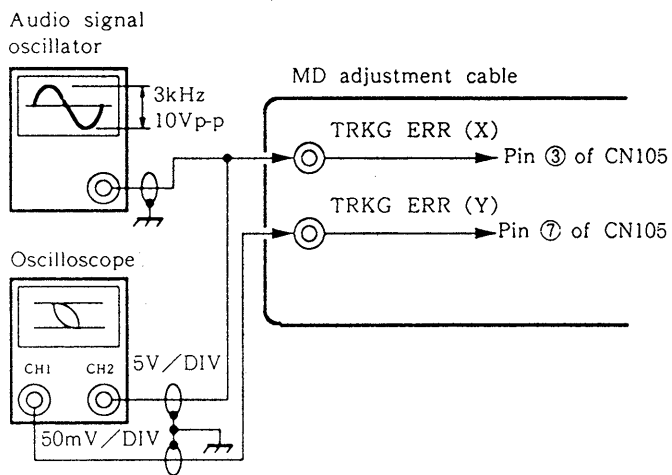


Fig. 7-7.

#### 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

#### Connections :



#### Adjustment method :

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

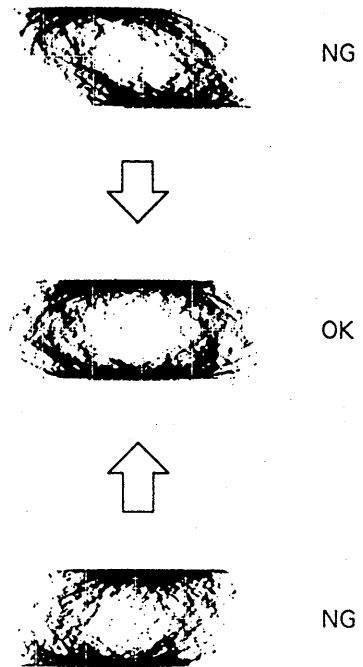


Fig. 7-8.

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

### 1. RD Adjustment

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

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

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

#### Adjustment method :

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

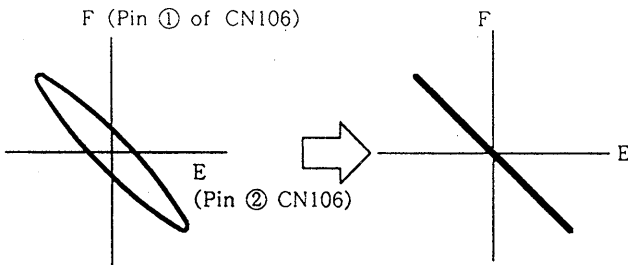


Fig. 7-9.

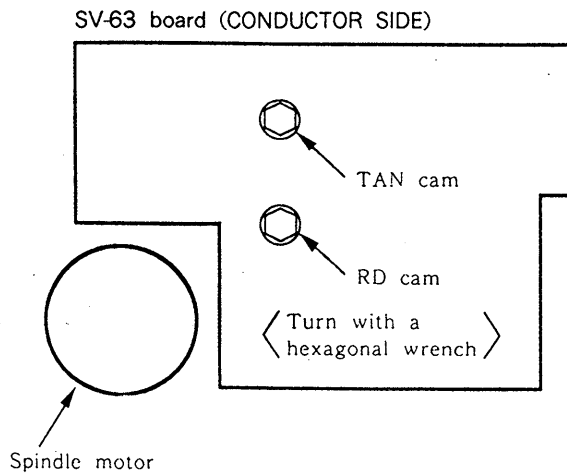


Fig. 7-10.

### 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.

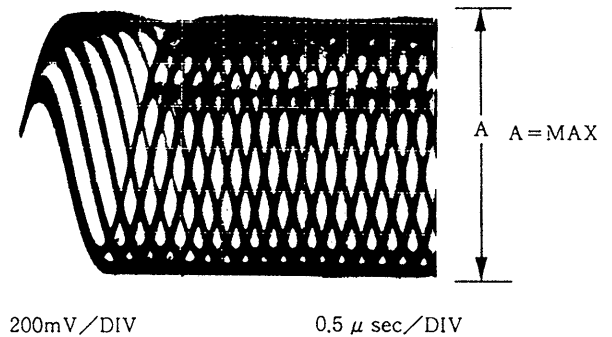


Fig. 7-11.

### 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  $1.2 \pm 0.1V_{p-p}$ .

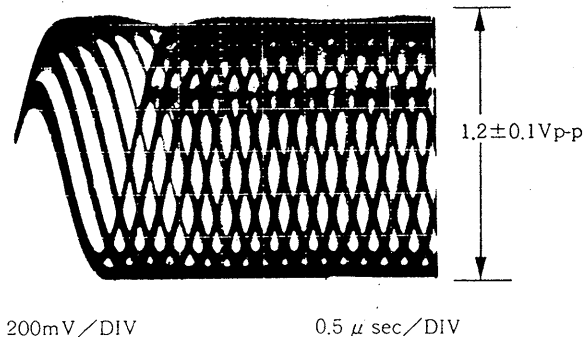


Fig. 7-12.

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

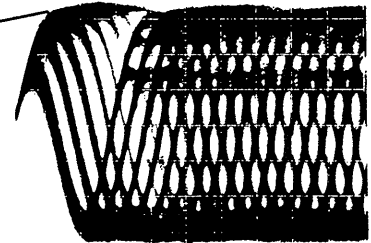
Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV104
Specified Value	Clear-cut waveform

#### Adjustment method :

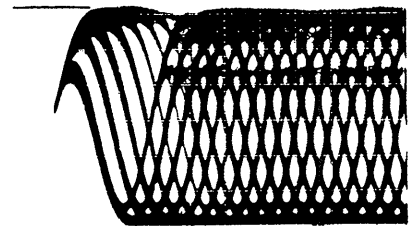
- 1) Play back the track No. 1.
- 2) Adjust RV104 so that the waveform of lozenge-shaped portions becomes clear-cut and the waveform slant disappear from the rising edge portion.

- 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 (⊙) .)

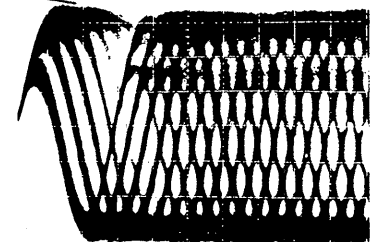


Fig. 7-13.



## 7-7. VIDEO SYSTEM ADJUSTMENT

### 7-7-1. Video Output Level Adjustment (MB-53 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	$1.00 \pm 0.03$ Vp-p

#### Adjustment method :

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

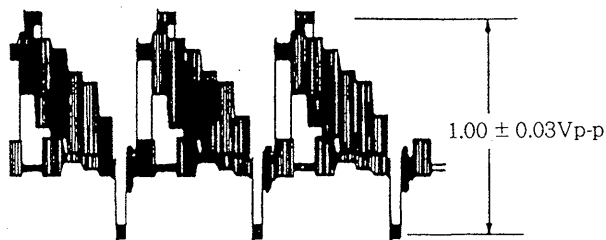


Fig. 7-14.

### 7-7-2. Comb Type Filter Y Output Level Adjustment (MB-53 Board)

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

#### Adjustment method :

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

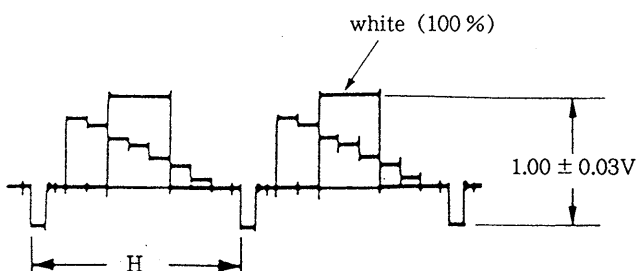


Fig. 7-15.

### 7-7-3. Burst Gate Position Adjustment (MB-53 Board)

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

#### Adjustment method :

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

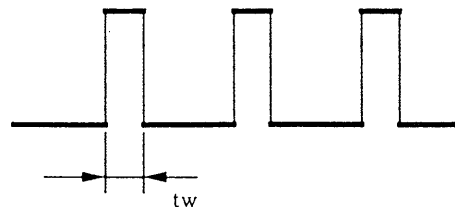


Fig. 7-16.

### 7-7-4. REF H Adjustment (1) (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	Pin ②⑤-②⑥ of IC111.
Specified Value	$4.2 \pm 0.1$ V

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

#### Adjustment method :

- 1) Adjust with RV601 so that the voltage values at Pin ②⑤-②⑥ become  $4.2 \pm 0.1$  V.

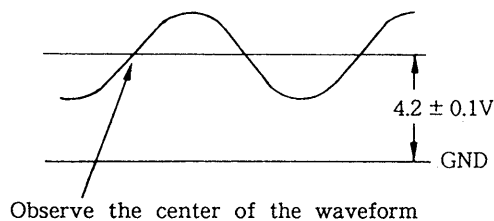


Fig. 7-17.

### 7-7-5. REF H Adjustment (2) (MB-53 Board)

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

#### Adjustment method :

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

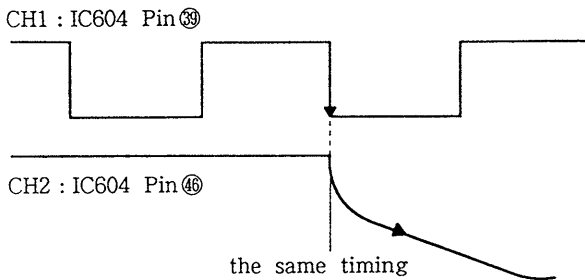


Fig. 7-18.

### 7-7-6. TBC Range Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV151
Measurement Point	CH1 : PIN ②① of IC109 External trigger : PIN ②⑤ of IC109
Specified Value	$22 \pm 1 \mu \text{sec}$

#### Connection :

- Apply 5.0Vdc to Pin ④⑩ of IC109.

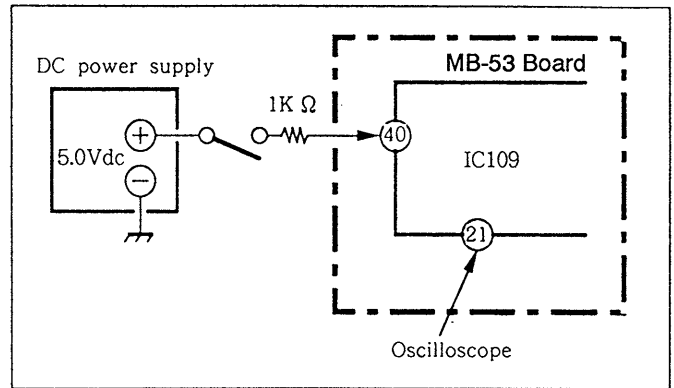


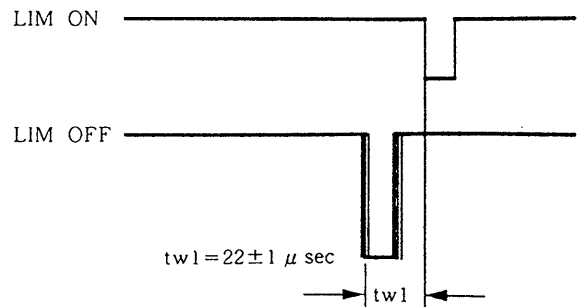
Fig. 7-19.

#### Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 4100.
- 3) Connect the DC power supply (5.0Vdc) to Pin ④⑩ of IC109.
- 4) Adjust so that rising time difference between when the power (5.0Vdc) is on (LIM ON) and when the power off (LIM OFF) is  $22 \pm 1 \mu \text{sec}$ .

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

- Pin ②① of IC109 (CH1)



- Pin ②⑤ of IC109 (Trigger pulse)



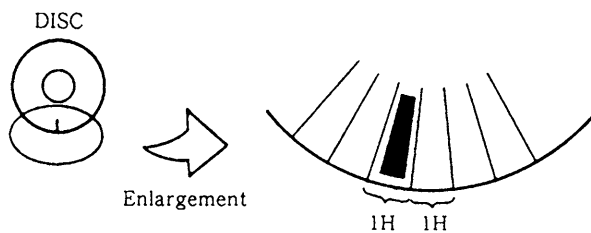
Fig. 7-20.

### 7-7-7. Color DOC Adjustment (MB-53 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.

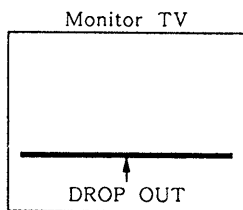
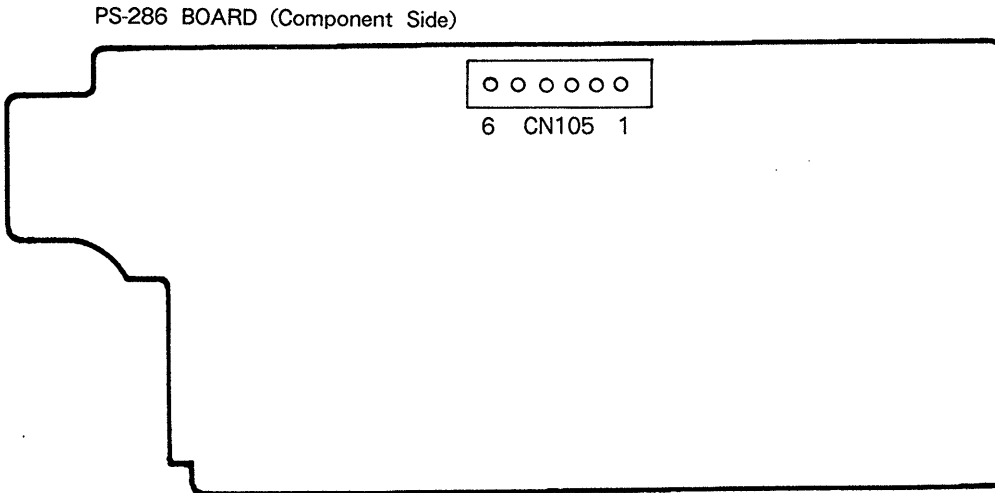
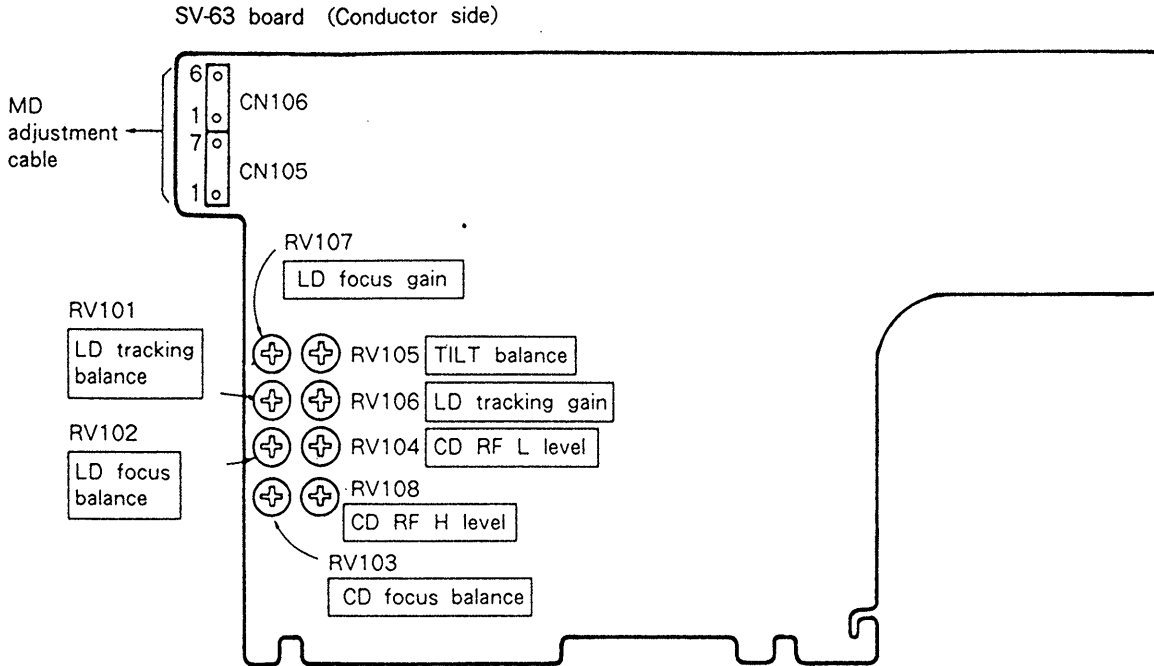
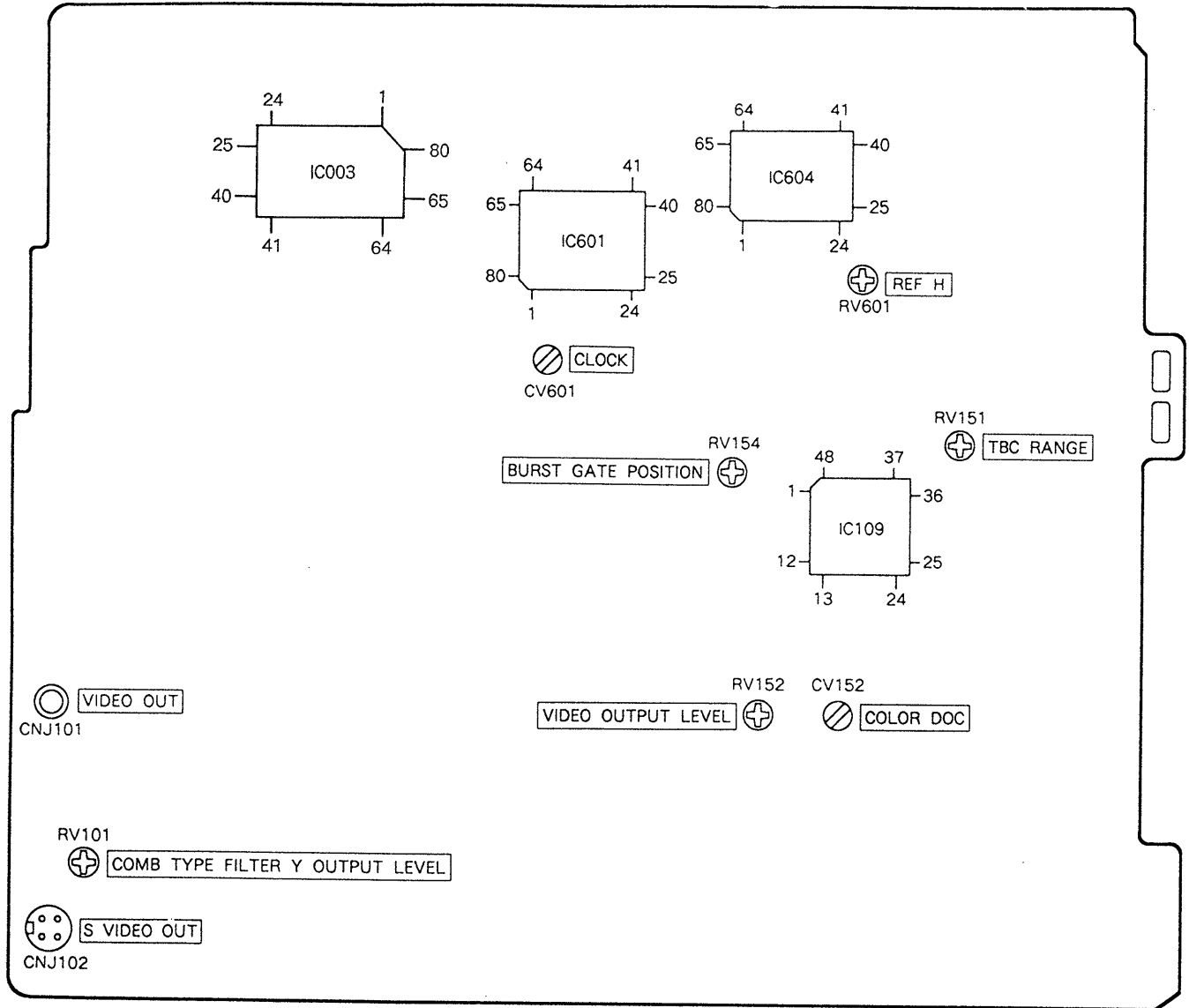


Fig. 7-21.

7-8. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS



MB-53 BOARD (Component Side)



PS-290 BOARD (Component Side)

