

MDP-455SA

RMT-M12B

SERVICE MANUAL

E Model



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

Digital audio specifications

Frequency response 4 Hz to 20kHz (± 0.3 dB)
Signal-to-noise ratio More than 115 dB (EIAJ)★
Dynamic range More than 99 dB (EIAJ)
Wow and flutter Below measurement limit ($\pm 0.001\%$ W.PEAK) (EIAJ)

Video specifications

Horizontal video resolution 425 lines
Signal-to-noise ratio More than 50 dB

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 1, 2 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
CONTROL S IN Mini jack
Mic jack Standard jack
1mV (Impedance below 1 kilohm)

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

— Continued on next page —

CD VIDEO CD/CDV/LD PLAYER
SONY®

Power requirements

Power requirements	100/120/220/240 V AC adjustable, 50/60 Hz
Power consumption	40 W
Mass	8 kg
Dimensions	Approx. 430 x 115 x 410 mm (w/h/d)
Operating temperature	+5°C to +35 °C
Ambient humidity	5% to 90%

Remote Commander RMT-M12B

Principle of operation	Infrared pulse
Power requirements	3 V DC (2 size AA batteries)
Dimensions	Approx. 68 x 38 x 200 mm (w/h/d)
Mass	Approx. 175 g (including batteries)

Supplied accessories

Remote Commander RMT-M12B (1)
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)

Design and specifications are subject to change without notice.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This CD CDV LD player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

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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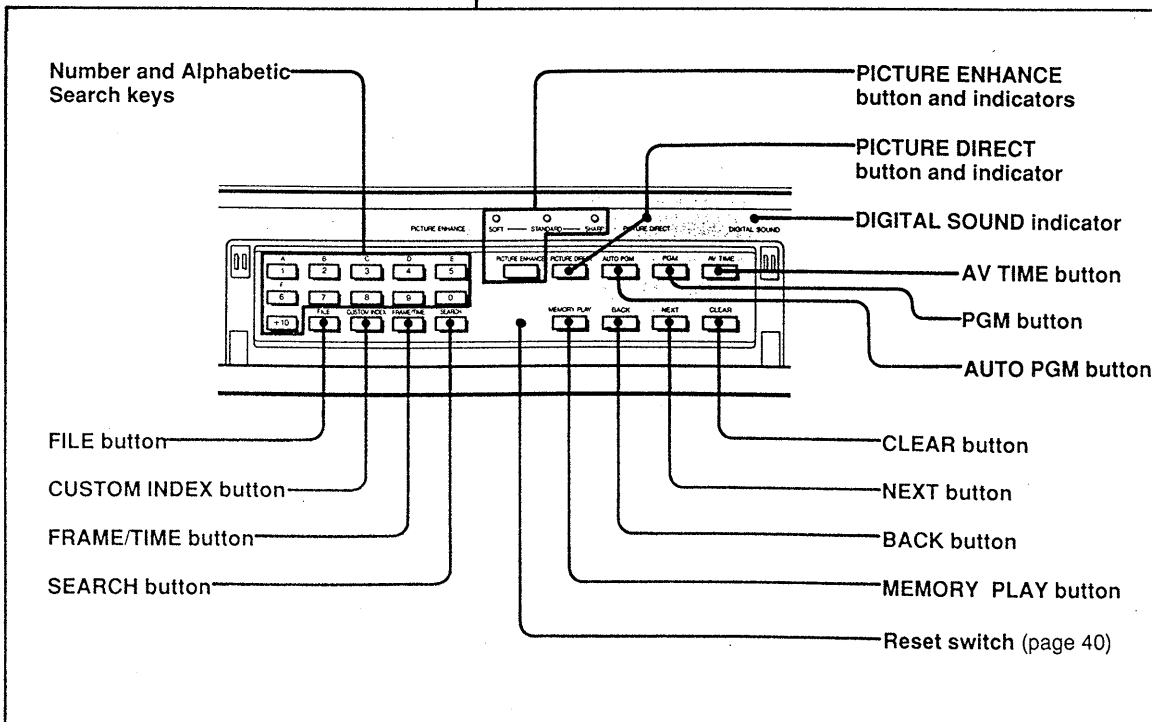
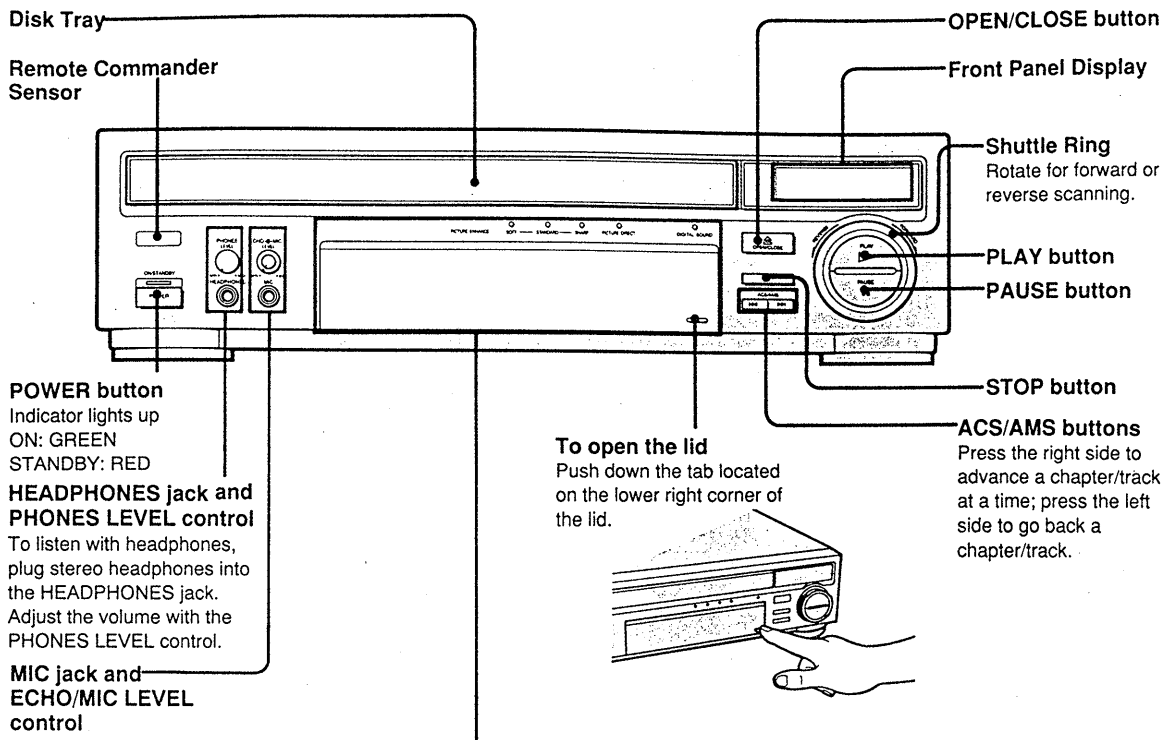
SECTION 1 GENERAL

This section is extracted from instruction manual.

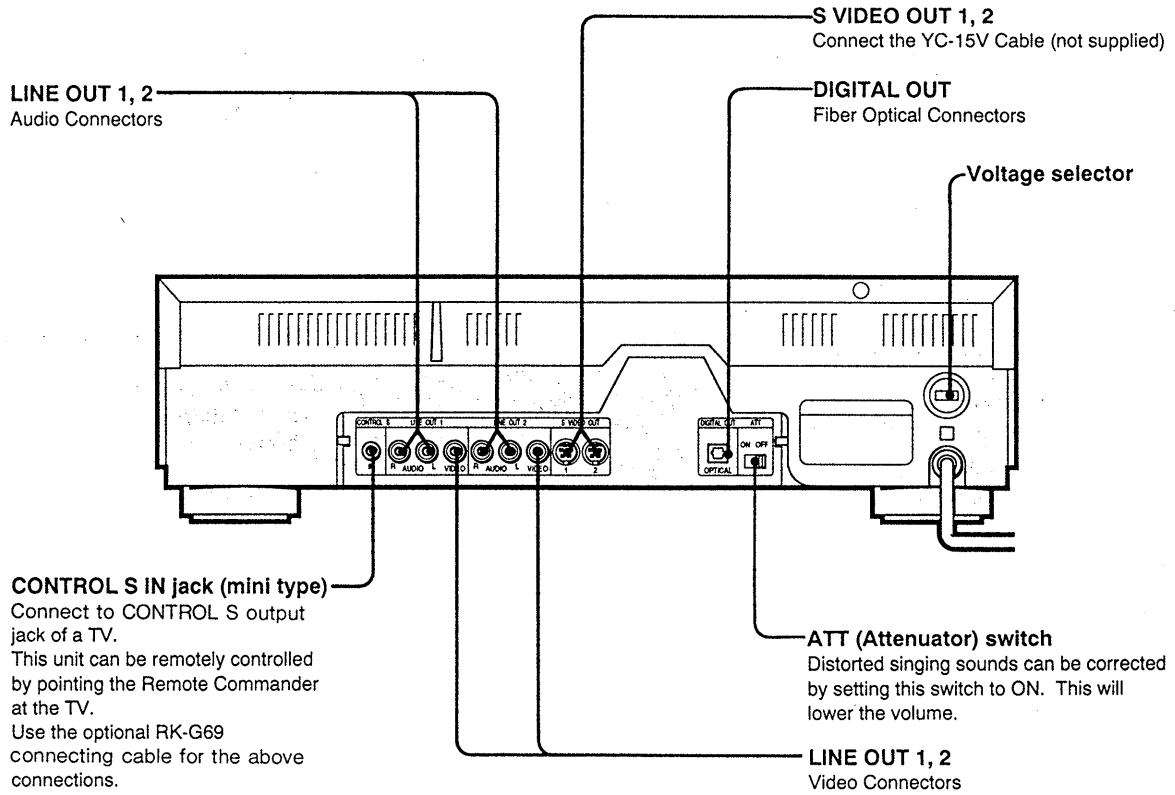
Installation and Connection

Front and Rear Panel Controls and Supplied Accessories

Front Panel



Rear Panel



Accessories

Make sure the shipping box contains the following accessories:

RMT-M12B Remote Commander

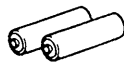
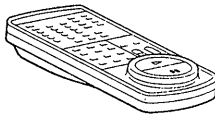
Two AA (R6) batteries

Video connecting cable

(phono 1 ↔ phono 1)

Audio connecting cable

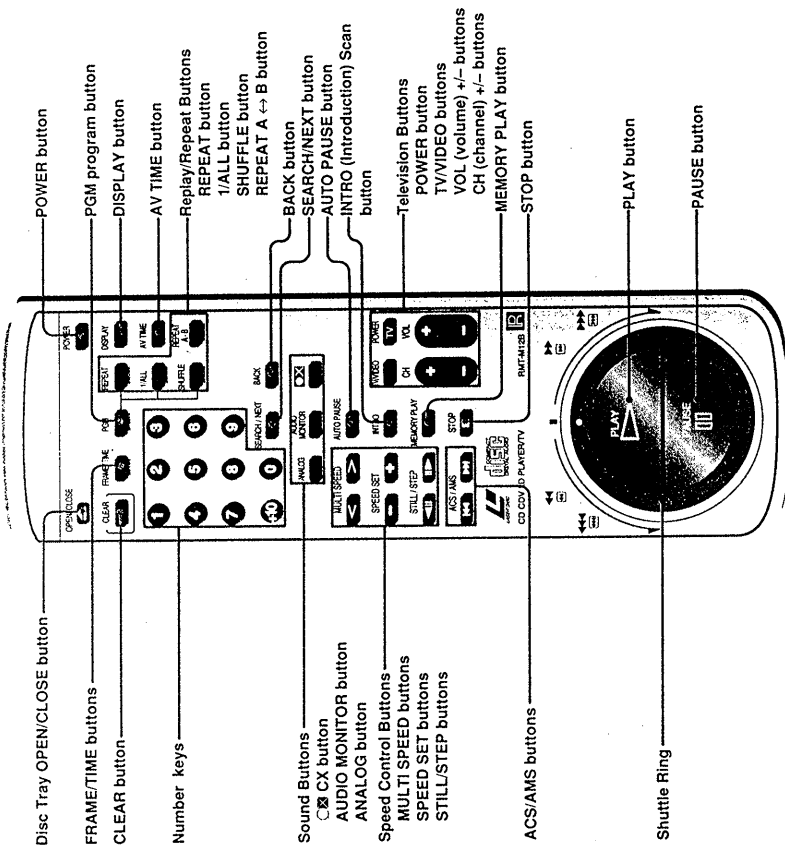
(phono 2 ↔ phono 2)



AC plug adaptor
(See page 4.)

Controls on the Remote Commander

You can use the Remote Commander (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.

Connecting Precautions:

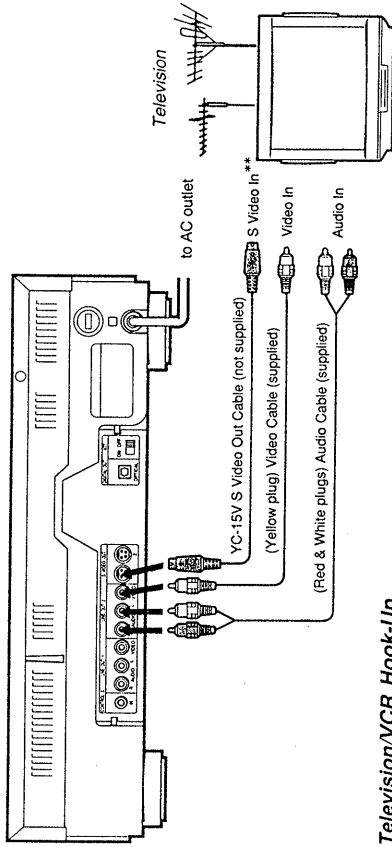
- Make sure all equipment is turned off before connecting or disconnecting any cables.
- Connection methods may differ; when in doubt about a connection consult the TV or VCR manufacturer's manual.
- If the sound or picture is disturbed by noise, try moving the equipment farther apart.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- To prevent later interference with TV broadcast reception, turn off all equipment connected but not currently in use.

- * If the TV only has a monaural phono jack for audio input, use a VMC-910MS/915MS Connecting Cable (not supplied).
- ** 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.

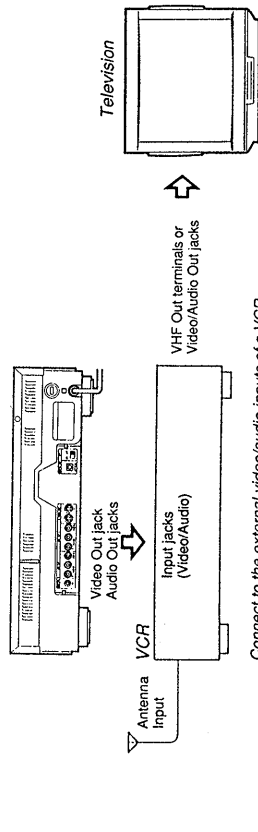
How to Connect the Television

To play LDs or CDs, hook up a television to the Multi Disc Player. Take out the supplied yellow video connecting cable and the red and white audio cables. Use these to connect the player to the television.* Once you have hooked-up the television, set the input selector on the TV to "Video". Before connecting or disconnecting any of the cables, turn off all equipment.

Television Hook-Up



Television/VCR Hook-Up



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

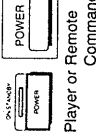
To Play a Laser Disc

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 the Remote Commander or the front panel of the player.

1 Turn on the multi disc player.



Press the **POWER** button on the player or Remote commander (Remote).

2 Turn on the TV and stereo system.

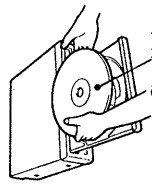
TV. Set the input selector on the TV to "Video".
Stereo System. Turn on the amplifier or receiver and select CD or AUX for audio output.

3 Open the disc tray.



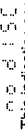
Press the **OPEN/CLOSE** button.

4 Place a 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 disc.

What is this indication?



This indication appears in the front panel display when the tray is empty.

5 Start playback.



Press **PLAY** (▶) located inside the Shuttle Ring.



Rotate the Shuttle Ring.

Press the **ACS/AMS** button.



To Advance or Reverse a Chapter at a Time

Press **PAUSE** (||).



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

Press **STOP** (■).



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

To Stop Play and Remove the Disc



Remove the disc and close the empty tray.

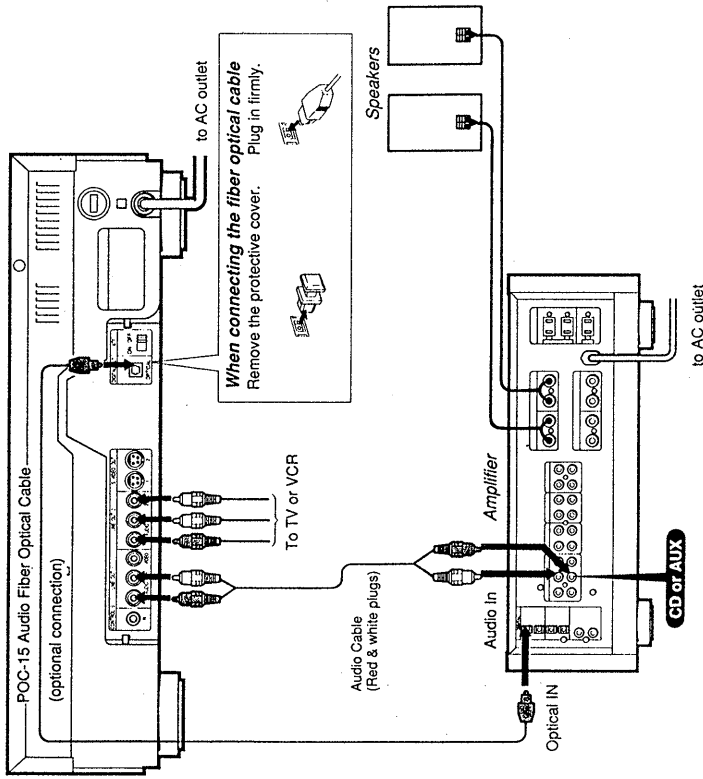
How to Connect Audio Equipment

To achieve full stereo sound from your Multi Disc Player, hook up a stereo 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. 42). 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, connect the POC-15 Audio Fiber Optical Cable (not supplied) between the DIGITAL OUT 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. Sound from a microphone cannot be output from the DIGITAL OUT connector. To output sound from a microphone, connect the player to the amplifier with an Audio Cable (Red & White plugs).

Audio Equipment Hook-Up



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 Have the Player Pause Before Starting



Press the PAUSE (II) button on the player or the Remote immediately after doing step 4 on page 13. The tray closes and the player waits at the start of the disc until you press PLAY (▶) or PAUSE (II).

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 Get Sharp/Soft Image

PICTURE ENHANCE
 (on the player)

Press PICTURE ENHANCE on the player to select the desired mode. The indicator of the selected mode lights up. Each time you press this button, the mode light changes in the order of STANDARD, SHARP and SOFT.

SOFT: Soft picture

Reduces screen noise
 STANDARD: Standard picture
 SHARP: Sharp picture
 Refines the images

Even if you turn off the power, the mode will remain stored in the player's memory. If you unplug the power cord, the mode will return to STANDARD.

To Play a Disc without using the Picture Enhancement Function

PICTURE DIRECT
 (on the player)

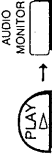
Press PICTURE DIRECT on the player. The indicator lights up. The screen noise reducing function is canceled and the player reproduces pictures faithfully in their original state. You can make the picture sharper; however, screen noise may occur on some discs.

To Cancel Picture Direct Play ...

PICTURE DIRECT
 (on the player)

Press PICTURE DIRECT again.

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



Press PLAY (▶), then press the AUDIO MONITOR button on the Remote. This function alternates the sound output on a disc that has been recorded on two sound tracks, such as bilingual discs.

The procedure below indicates how the output and the display changes with each press. Five active tracks will appear on the TV screen for three seconds and then disappear.

Procedure	Screen message	Output Sound	
		Stereo Disc	SAP Disc
1 Press PLAY (▶).	No message	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left channel	Soundtrack 1 (left channel)
3 Press AUDIO MONITOR again.	2/R	Right channel	Soundtrack 2 (right channel)
4 Press AUDIO MONITOR again to return to stereo status.	1/L 2/R	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)

To Switch from Digital to Analog Sound



Press the ANALOG button on the Remote 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, 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 CX noise reduction system, which gives lower noise levels and higher dynamic range. The player detects (CX) discs and activates the CX noise reduction system automatically. If you press the (CX) button on the Remote at this time, "CX ON" will appear on the TV screen for three seconds.

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.

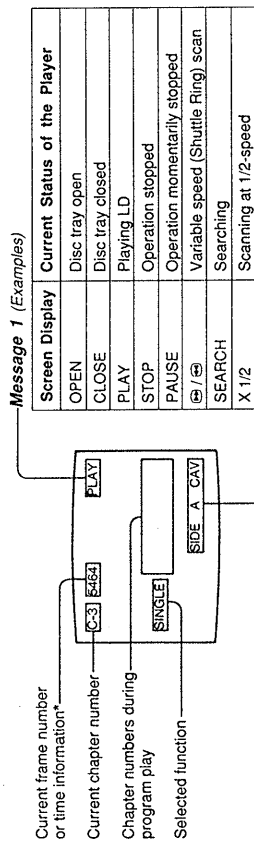
To View On-Screen Information...

Press DISPLAY on the Remote.

To turn off the display, press DISPLAY again.

Reading the On-Screen Messages

The illustration below is an example of what appears on screen while the player is operating. The table below 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	Searching
	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".

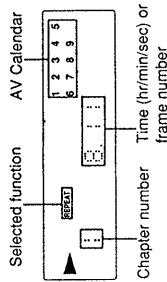
** Some discs do not contain Side A or B identification coding. In that case, disc side indications may not be accurate.

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.

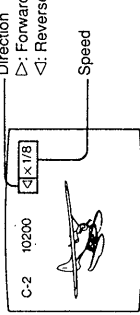
To Change Speed and Direction (Multi Speed)

- 1 Press MULTI SPEED on the Remote to select the direction.
To reverse <
To advance >
- 2 Press SPEED SET on the Remote to select the speed.
To reduce speed -
To increase speed +
(You can press SPEED SET first, or either step without the other.)



- 3 Press DISPLAY on the Remote.

The play speed and direction appear on screen.



Normal playback resumes.



- 4 Press PLAY (▶).

Discs with Automatic Picture Stop Code

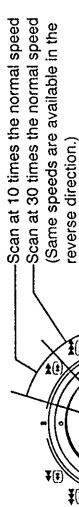
When an automatic picture stop code (found on educational discs) is encountered during variable speed play, the unit automatically stops at that frame. To resume playback, press PLAY, MULTI SPEED, or turn the Shuttle Ring.

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 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 indicates the approximate speeds.

(As you scan to the first click by using the Shuttle Ring on the front panel of the player, the speed is approximately 10 times normal speed. As you continue past the first click, the disc is scanned at 30 times the normal speed.)

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

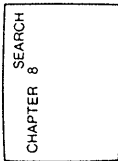
LDs are divided into sections called "chapters". Chapters are usually listed on the jacket or label of the disc. By entering the desired chapter number, you can have the player find the chapter and play it. Use ACS/AMS—Automatic Chapter Sensing/Automatic Music Sensing—to advance or reverse a chapter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

To Locate a Particular Chapter

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



The player starts searching for Chapter 8.



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

Press +10 and one of the number keys.



To Enter a Number Greater Than 10*

Do this to make a numerical sum. For example, to enter 14, press +10 and 4; to enter 30, press +10, +10, +10 and 0.

..... "14"



..... "30"



If you make a mistake while entering numbers, press +10 repeatedly until 0 is displayed, then enter the correct numbers.

To Check the Current Chapter Number



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.

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.

Press the ACS/AMS button repeatedly for continuous skip search.

To Resume Normal Play**

* Chapter Search does not function properly if the disc does not contain chapter numbers, or the chapter number entered does not exist.
 ** If the player is in the repeat mode, after the last chapter is played, playback automatically starts from the beginning of the disc again.

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 (or SEARCH) buttons, and number keys on the Remote Commander or the front panel of the player.

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

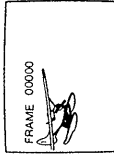
To Enter the Elapsed Frame or Time

1 Press the FRAME/TIME button.

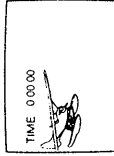


The screen displays "00000" (for CAVs) or "0:00:00" (for CLVs).

CAV (standard-play) disc



CLV (extended-play) disc



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



Enter five digits for CAVs. Enter three digits for CLVs displaying the time to the second. Enter three digits for CLVs displaying the time to the minute.

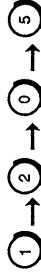
Sample Entry for CAV Discs

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



Sample Entry for CLV Discs

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



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

3 Press SEARCH/NEXT on the Remote (or SEARCH on the player).



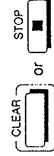
Play starts from the time or frame specified in step 2.

To Check the Frame/Time Numbers



The current frame or current time numbers appear on screen when you press DISPLAY. You can also find them on the front panel display.

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.

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 on the Remote repeatedly. Hold down the button for continuous frame-by-frame action.
 - 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 (II) once.

To Resume Normal Play

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

Extended-Play (CLV) Discs

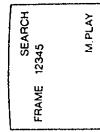
Freeze Frame and Step Play are not possible with CLV discs. When the PAUSE button is pressed, the screen goes blank and the message "SIDE A (or B) CLV" appears.

How to Continue Play from the Point You Stopped at — Memory Play

This function can only be used for LDs, and in the continuous play mode**. Even if you use the STOP (■) button to stop, you can still continue play from the point you stopped at. Locate the MEMORY PLAY button on the Remote Commander or the front panel of the player.

To Play Again from the Point You Stopped at

Press MEMORY PLAY while in the stop mode. The player starts searching for the point you stopped at.



Play starts at the point you stopped.

If you turn off the power, press MEMORY PLAY before you turn on the power. The player will turn on automatically and continue playing again from the point you stopped at. (If the power is turned on first, this function cannot be performed. The player will start playing from the very beginning of the disc.)

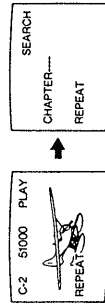
* This function can only be performed on CAV discs.
** You cannot use this function in the shuffle, program and single repeat play. If you press ▶, 144 / ▶▶ or ◀ while in the stop mode, this function is canceled.

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 on the Remote. "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

At the end of one side of the disc, Press 1/ALL then, REPEAT on the Remote. "REPEAT" and "1" light up in the front panel display. The current chapter repeats continuously.

To Cancel REPEAT

Press REPEAT.

To Cancel REPEAT-1/ALL

Press REPEAT and 1/ALL, or CLEAR.

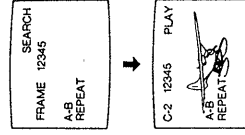
To Repeat One Section of the Disc

- 1 Go back to the start of the scene you want replayed. This marks where replay is to begin.
- 2 Press REPEAT A↔B on the Remote at the beginning of where you want replay to begin. The "REPEAT" and "A" indication lights up, and "B" indication in the front panel display flashes.
- 3 Let the player run to the end of the scene you want repeated.

- 4 Press REPEAT A↔B again. This marks where replay is to end.

To Cancel REPEAT A↔B

Press CLEAR.



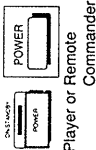
"REPEAT A B" lights up in the front panel display. The player repeatedly plays the same scene between the two points selected.

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)

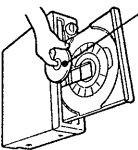
After you have connected the Multi Disc Player to the stereo system, you can begin playing a compact disc. Locate the POWER, OPEN/CLOSE and PLAY buttons on the Remote Commander or the front panel of the player.

- Turn on the multi disc player.**


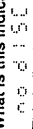
Press the **POWER** button on the player or Remote Commander.
- Turn on the stereo system.**

Turn on the **amplifier or receiver** and select CD, AUX or other desired audio input.
- Open the disc tray.**


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

- Place a 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 damage the unit.

What is this indication?

 This indication appears in the front panel display when the tray is empty.

- Start playback.**


Press **PLAY** (▶) located inside the Shuttle Ring.

- To Advance or Reverse**
- 
- Rotate the Shuttle Ring.

- To Advance or Go Back One Track at a Time**
- 
- Press the **ACS/AMS** button.


- 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.

How to Play Only Certain Chapters—Programmed Play



You can choose, in any order you like, the chapters the Multi Disc Player plays. This play list 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 or the front panel of the Player.

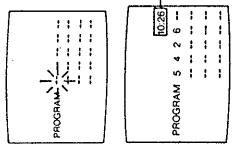
- Press PGM.**


"PGM" flashes in the front panel display.
 "PROGRAM ..." appears on screen.
- 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.

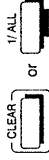

- Press PLAY (▶).**





- To Start Over**
- 
- Press **CLEAR**, and then **PGM**. Enter the new chapter numbers.


- To Change an Entry**
- 
- Press **SEARCH/NEXT** (or **NEXT** on the player) 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 the 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.

* 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 press 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 (▶).

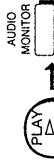


To Activate Playback with an Optional Timer

Set the timer with the AC power 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 turns off automatically.

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

Press PLAY (▶), then press the AUDIO MONITOR button on the Remote.



The procedure below indicates how the output and the display change with each press. The display only appears for three seconds on the TV screen.

Procedure	Screen message	Output Sound	
		Stereo Disc	SAP Disc
1 Press PLAY (▶).	No message	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left channel	Soundtrack 1 (left channel)
3 Press AUDIO MONITOR again.	2/R	Right channel	Soundtrack 2 (right channel)
4 Press AUDIO MONITOR again to return to stereo status.	1/L 2/R	Stereo (Both channels)	Soundtrack 1 (left channel) Soundtrack 2 (right channel)

Understanding Displays and Messages When Playing CDs

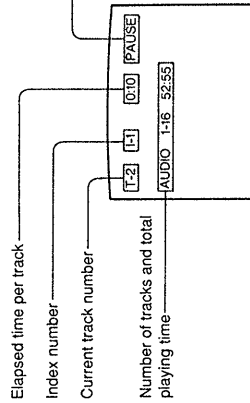
You can determine player operating status or disc information in one of two ways: (1) by displaying the information on the TV screen, or (2) by looking at the front panel display. Locate the DISPLAY button on the Remote Commander.



To View On-Screen Information Turn on the television, and press DISPLAY on the Remote. To turn off the display, press DISPLAY again.

Reading the On-Screen Messages

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

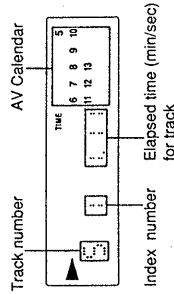


Message (Examples)

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)
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

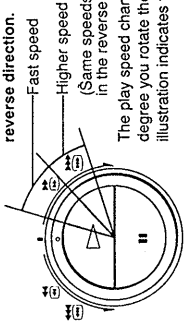
When playing a CD, the AV Calendar shows information on the total number of tracks on the disc or those programmed to play. As tracks are played, the corresponding numbers on the display disappear.

How to Locate a Certain Track

CDs are divided into sections called "tracks". To scan a disc and find a certain point regardless of tracks, 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 Remote Commander or the front panel of the player.

To Find a Certain Point on the Disc

Rotate the Shuttle Ring in the forward or reverse direction.



(Same speeds are available in the reverse direction.)
The play speed changes according to the degree you rotate the Shuttle Ring. The illustration indicates the speed levels.

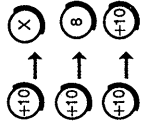
Press one of the number keys on the Remote or front panel to enter the track number you want played.



To Locate a Particular Track

To Enter a Number Greater Than 10

Do this to make a numerical sum. For example, to enter 18, press +10 and 8; to enter 20, press +10, +10 and 0.



Press +10 and one of the number keys.

..... "18"

..... "20"

If you make a mistake while entering a number, press +10 repeatedly until 0 is displayed, then enter the correct number.

See the AV Calendar on the front panel display.

To Check the Current Track Number

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 before the selection starts to return to the beginning of the previous track.

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

Press the ACS/AMS button repeatedly for continuous skip search.

To Play a Single Track Once

- 1 Press the 1/ALL button on the Remote.
- 2 Enter the track number you want played.



"1" is displayed.

When the track has been played, the player stops. To cancel the setting, press 1/ALL again.

If you press the wrong number keys, simply press the correct ones.

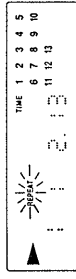
How to Replay the Same CD Selections

You can program the player to play the same scenes 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

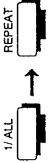


Press REPEAT on the Remote.

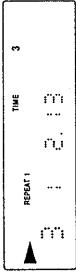


"REPEAT" lights up in the front panel display. The player plays all tracks on the CD. When the player reaches the end of the disc, it plays again.

To Repeat the Current Track



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



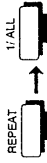
"REPEAT" and "1" light up in the front panel display. The current track repeats continuously.

To Cancel REPEAT



Press REPEAT. "REPEAT" disappears.

To Cancel 1/ALL-REPEAT



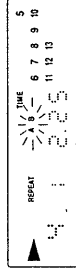
Press REPEAT and 1/ALL, or CLEAR.

To Repeat One Section of the Disc

- 1 Go back to the start of the section you want replayed.
- 2 Press REPEAT A↔B on the Remote to mark the beginning of the section.
- 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.



The "REPEAT" and "A" indication lights up, and "B" indication begins flashing in the front panel display.



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



Press CLEAR.

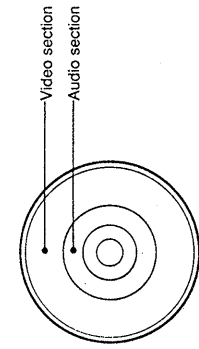
To Cancel REPEAT A↔B

To Play a Compact Disc Video

This section explains basic procedures for playing CDVs and VSDs. Since CDV and VSD 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.

OPEN/CLOSE



To Stop and Remove the Disc



To Advance or Go Back a Track at a Time



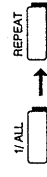
To Interrupt Play



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 Repeat a Section of the Disc

Shuttle Ring

To Variable Speed Play (Audio and Video)

How to Play Only Certain Tracks—Programmed Play

You can program, in any order you like, the tracks the Multi Disc Player 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 or front panel of the player.

1 Press PGM.



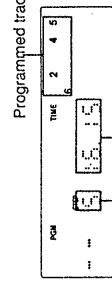
"PGM" flashes in the front panel display.

2 Press one of the number keys.



Press numbers for all the tracks you want played. For example, press 5, 4, 6 and 2 to play those tracks.

The total playing time of the programmed tracks is displayed on the front panel display.*



3 Press PLAY (▶).



To Start Over



Press CLEAR and PGM. Then, enter the correct track numbers.

To Change an Entry



Press SEARCH/NEXT (or NEXT on the player) 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 display.

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



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

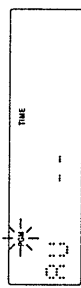
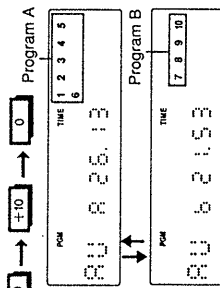
* If 0 or track numbers greater than 21 are entered, the total play time is not displayed.
** The player does not go back to previous tracks if the Shuttle Ring is rotated to the left, although, it does advance to forward tracks if rotated to the right. To go back to preceding tracks, press the ACS/AMS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

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

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

How to Have the Disc Play Within a Set 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 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 that do not contain TOC data.) Locate the AUTO PGM button and number keys on the front panel of the player.

- 1 Press **AUTO PGM** on the player. "PGM" 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 and 0.*
 

If you press the wrong number, simply press the correct one.

Program A and Program B appear alternately in the AV Calendar displays: the contents of the two different programs: Program A and B, separated by a pause.

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** (▶).

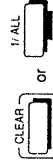


Program A selections start playing. The player pauses and waits for you to press **PLAY** again for Program B.

4 Press **PLAY** (▶) again to play Program B.



To Resume Normal Play from Auto Program



* If your disc contains more than 20 track or chapter numbers, the ones beyond 20 may not run.

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.

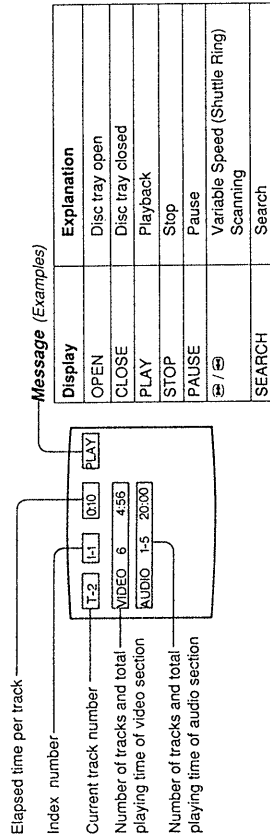
To View On-Screen Information ...



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

Reading the On-Screen Messages.

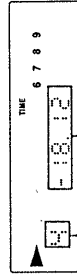
The screen below is an example of what is displayed. The table below is a key to the messages that appear on the screen.



To Display Remaining Playback Time



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



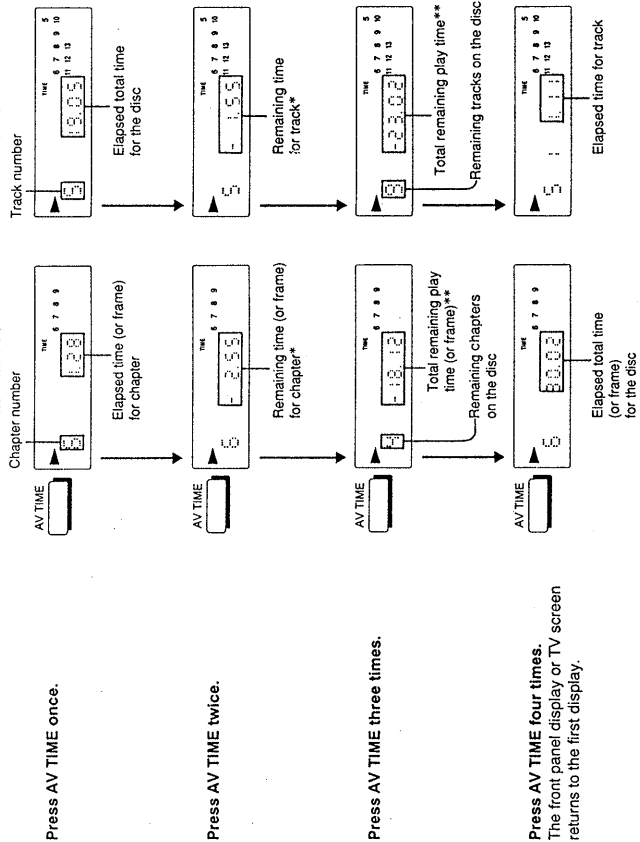
Total remaining playback time
Remaining selections on the disc

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.

How 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. Locate the AV TIME button on the Remote Commander or the front panel of the player.



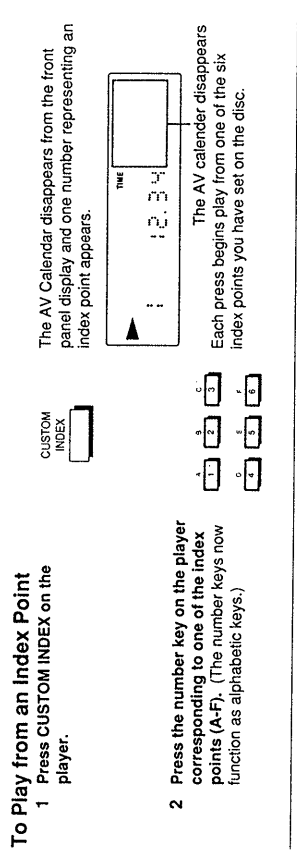
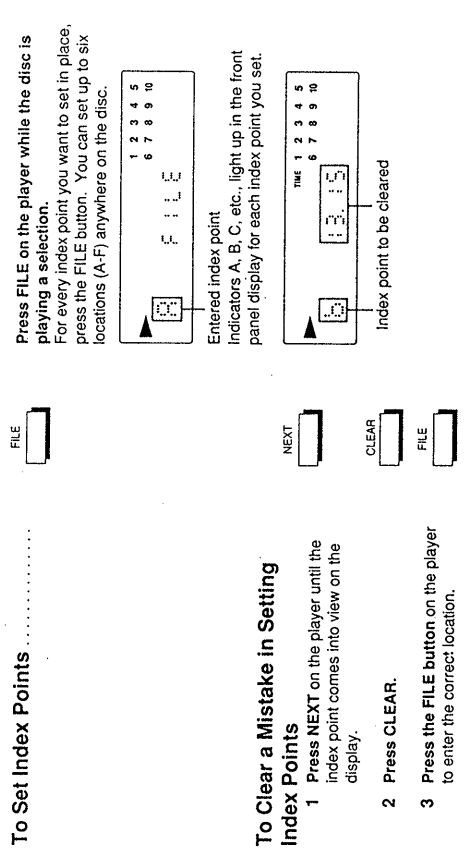
The Time Counter Display Depends on the Kind of Disc

- 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.

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

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 repeatedly play a section between index points using the 1/ALL and REPEAT buttons on the Remote Commander. Locate the FILE, NEXT, CLEAR, and CUSTOM INDEX buttons on the front panel of the player.



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.

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.

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.

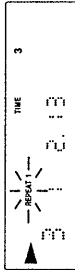
To Play a Section Between Index Points One Time

- 1 Press **CUSTOM INDEX** on the player.
The AV Calendar disappears from the front panel display and one number representing an index point appears.
- 2 Press **1/ALL** on the Remote.
The indication "1" appears in the front panel display.
- 3 Press the **number key** on the player 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** on the Remote.
The indication "1" appears in the front panel display.
- 2 Press **REPEAT** on the Remote.
"REPEAT" is displayed in the front panel display.
- 3 Follow the procedure "To Play from an Index Point" (on the preceding page).

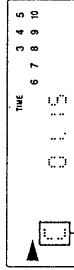


The section between this point and the next index point plays over and over.

To Cancel **REPEAT** Press **1/ALL** and **REPEAT** or **CLEAR**.

To Clear an Index Point

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



Index point to be cleared.

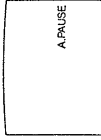
How to Program the Player to Pause or Scan Automatically

There are many functions you can program the Multi Disc Player to do automatically. Two of them are Auto Pause and Intro Scan. 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. Locate the AUTO PAUSE and INTRO buttons on the Remote Commander.

To Make the Player Stop Momentarily (Auto Pause)



Press **AUTO PAUSE** on the Remote once. To play the next selection, press **PLAY** (▶).



To Resume Normal Playback



Press **AUTO PAUSE** again.

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



Press **INTRO** on the Remote. 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 resumes 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.

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

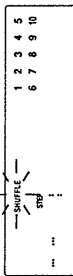
Before you press the SHUFFLE button, make sure the disc tray has closed completely, and the "▶" (Play) indication in the front panel display has stopped flashing.

To Shuffle Play all Tracks or Chapters on a Disc

- 1 Press SHUFFLE on the Remote.



"SHUFFLE" flashes in the front panel display.



- 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 both the audio and video parts of the disc.

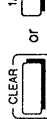
To Advance to the Next Selection

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.) Or, use the Shuttle Ring.



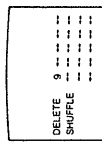
To Resume Normal Play

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 PLAY (▶).



The player automatically plays a random program of selections without the ones you deleted.

To Clear an Entry

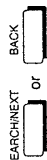
- 1 Press CLEAR.
- 2 Press SHUFFLE.
- 3 Enter the correct numbers.



To clear the entry during play, press CLEAR and SHUFFLE again before enter the correct numbers.

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 Using the number buttons, enter the correct number.

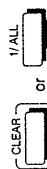


To Repeat Shuffle Play



Press the REPEAT button on the Remote. 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



Press CLEAR or 1/ALL. When you turn off the player, or you remove the disc, all shuffle functions clear from the memory of the player.

To play Karaoke

1 Connect the microphone

When connecting the microphone, turn the MIC LEVEL control (the inner knob) to MIN. Connect the microphone plug to the MIC jack.

Microphone (not supplied)

2 Turn on the player

Turns from red to green

3 Turn on the TV and stereo system

TV: Set to "Video".

Stereo system: Turn on the amplifier or receiver and select CD or AUX for audio output.

4 Open the disc tray on the tray

5 Place a disc on the tray

Carefully center a single disc on the tray. The disc will not play if it is not seated properly.

Always insert one disc at a time. Inserting more than one may damage the player.

6 Choose a selection to play

- The disc tray closes automatically and play starts.
- Press PLAY (▶) or push the disc tray to play back from the beginning of the disc.

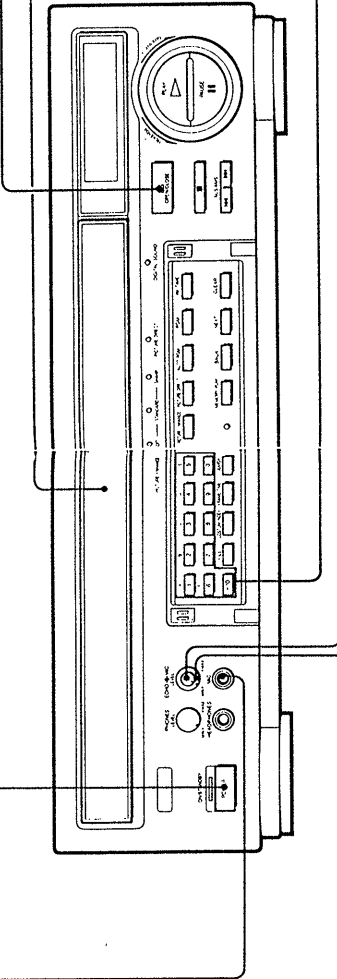
7 Adjust the microphone volume

Adjust the microphone volume with the MIC LEVEL control, (the inner knob)

Sound from a microphone cannot be output when the player is connected to the amplifier with a Fiber Optical Cable. To output sound from a microphone, use an Audio Cable (Red & White plugs) for connection.

8 Adjust the microphone echo

Adjust the strength of the echo with the ECHO LEVEL control, (the outer knob)



Extra Functions for Karaoke Entertainment

Using the AUDIO MONITOR and ANALOG button (page 15)

Karaoke discs can be recorded using one of three formats: multi audio (MULTI AUDIO), multiplex and stereo. Multi audio and multiplex discs include vocals. Stereo discs do not. If the disc loaded in is a multi audio or multiplex disc, you can play Karaoke listening to the voice recorded on the disc by alternatin the sound using the AUDIO MONITOR or ANALOG button on the Remote Commander.

Auto Pause (page 35)

You can make the player pause every time a selection ends. To play the next selection, press PLAY (▶) or PAUSE (II), or choose the selection directly with the number buttons.

Programmed Play (page 22)

You can choose the selections in any order you like and play them continuously for non-stop Karaoke entertainment.

If howling occurs

Correct by doing the following:

- Move the microphone away from the speakers
- Lower the MIC or ECHO LEVEL
- Lower the volume of the speakers

When listening through headphones

Once the headphones are connected, the volume must be adjusted with the PHONES LEVEL control above the HEADPHONES jack.

If the output is distorted

The output may sound distorted when listening through your TV speakers. Correct this by setting the ATT (Attenuator) switch on the rear panel of the player to ON. (This will lower the volume which should now be adjusted with the volume control on the TV.)

If the picture on the TV flickers

The picture appearing on the TV screen may flicker when listening through your TV speakers and the MIC volume is set too high. Correct this by setting the ATT (Attenuator) switch on the rear panel to ON, or lower the MIC volume.

Additional Information

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

Troubleshooting

Check the following before requesting service.

Symptom	Point to check
No power PLAY (▶) button or Number keys do not produce playback.	<ul style="list-style-type: none"> Power cord properly plugged into AC outlet? Disc inserted? Disc properly seated? Recorded side facing upward?
▶ indicator is lit, but there is no picture or sound.	<ul style="list-style-type: none"> TV or monitor switched on? TV properly connected to player? The input selector on TV set to "Video"?
Poor picture or sound quality	<ul style="list-style-type: none"> TV properly connected? Any source of noise nearby? Disc dirty or scratched? Any condensation on player objective lens?
No sound	<ul style="list-style-type: none"> TV properly connected to player? Volume control on TV, monitor, or amplifier high enough? Playback at normal speed? (The player produces sound only during normal speed playback.)
Remote Commander does not operate.	<ul style="list-style-type: none"> Batteries correctly inserted? Batteries weak? Any obstacles between the Remote Commander and the Sensor on the player? The Remote Commander is pointed at the sensor on the player?
Picture distorted during scan. No buttons operate.	<ul style="list-style-type: none"> Some distortion in the lower part of the picture is normal – even for CAV discs. The micro-computer chips may be operating incorrectly. Press the Reset switch (page 8), located under the lid on the front panel, with a pointed object such as a ball point pen. When this switch is pressed, all of the information stored in the player's memory is cleared.
No sound from microphone	<ul style="list-style-type: none"> MIC LEVEL control is MIN? Microphone switch is ON? Connecting to amplifier with a Fiber Optical Cable?

Optical Disc Maintenance

Holding CDs or CDVs

Hold CDs and CDVs 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 in temperature.

Cracked or Damaged Discs

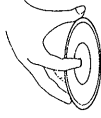
Do not play cracked or damaged discs, or try to play discs that have been repaired with adhesive glues.

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 benzine, paint thinner, commercially available cleaners, or anti-static spray intended for LP record discs.

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 surfaces, 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.

On Player Location

- Avoid placing the player where there is:
 - high humidity
 - high temperature
 - excessive dust
 - mechanical vibration
 - direct sunlight
- Allow adequate air circulation to prevent internal heat build-up. Do not place the player on surfaces such as shag rugs, blankets or near materials such as curtains, draperies 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 forcefully, 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

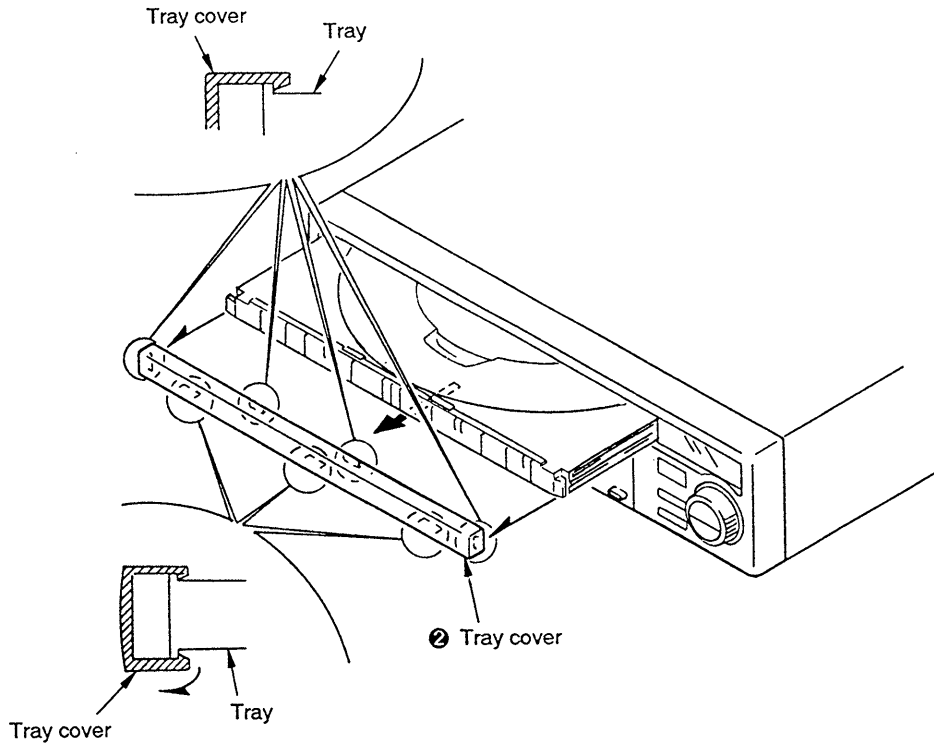
Do not throw away the carton and the packing materials. The carton makes an ideal container to transport the player in.

SECTION 2 DISASSEMBLY

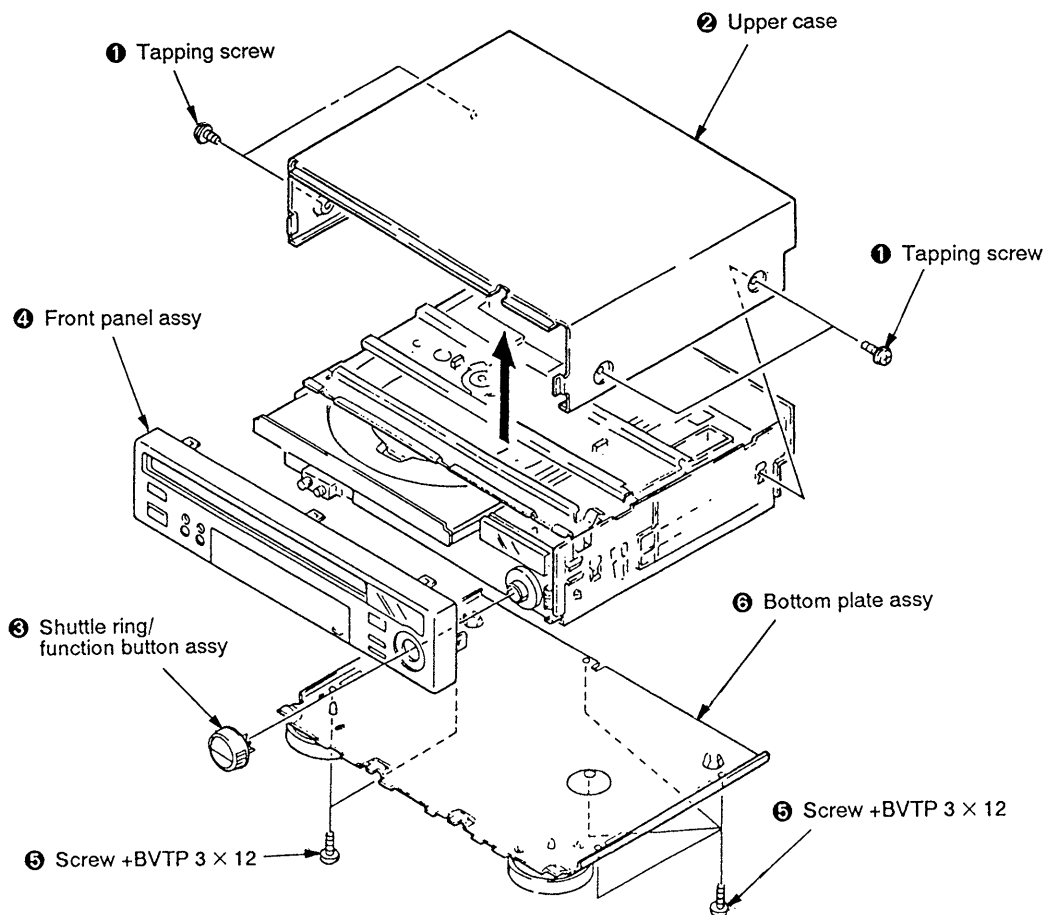
Note: Follow the disassembly procedure in the numerical order given.

2-1. TRAY COVER

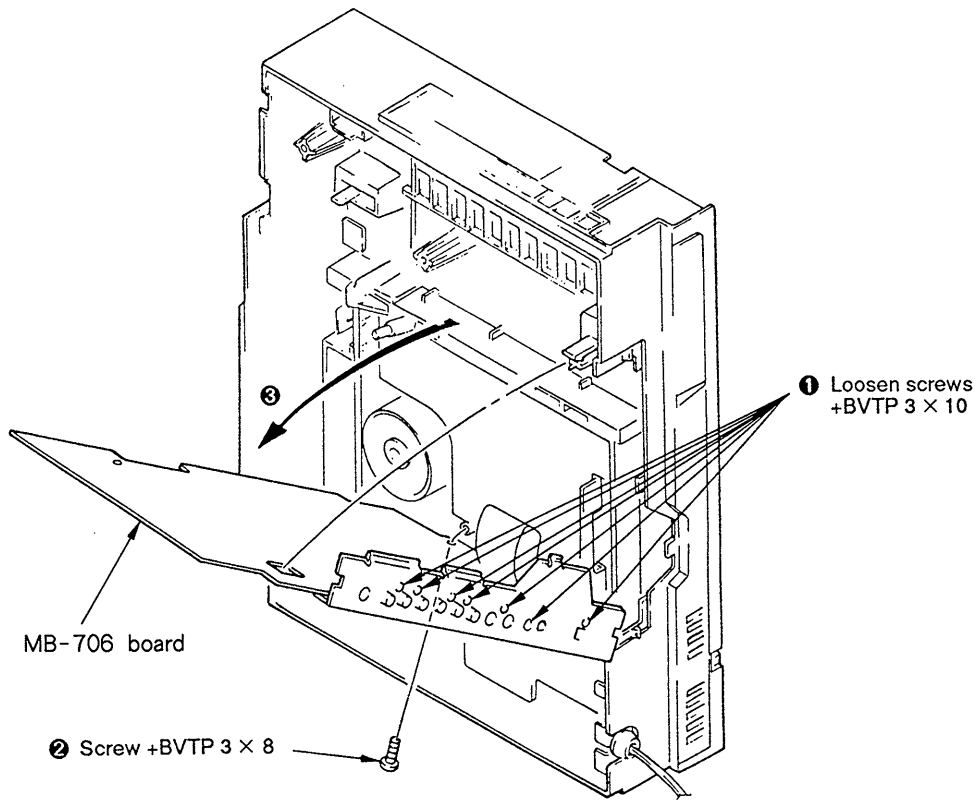
- 1 Turn power on, push  (OPEN/CLOSE) button and then the tray comes out.



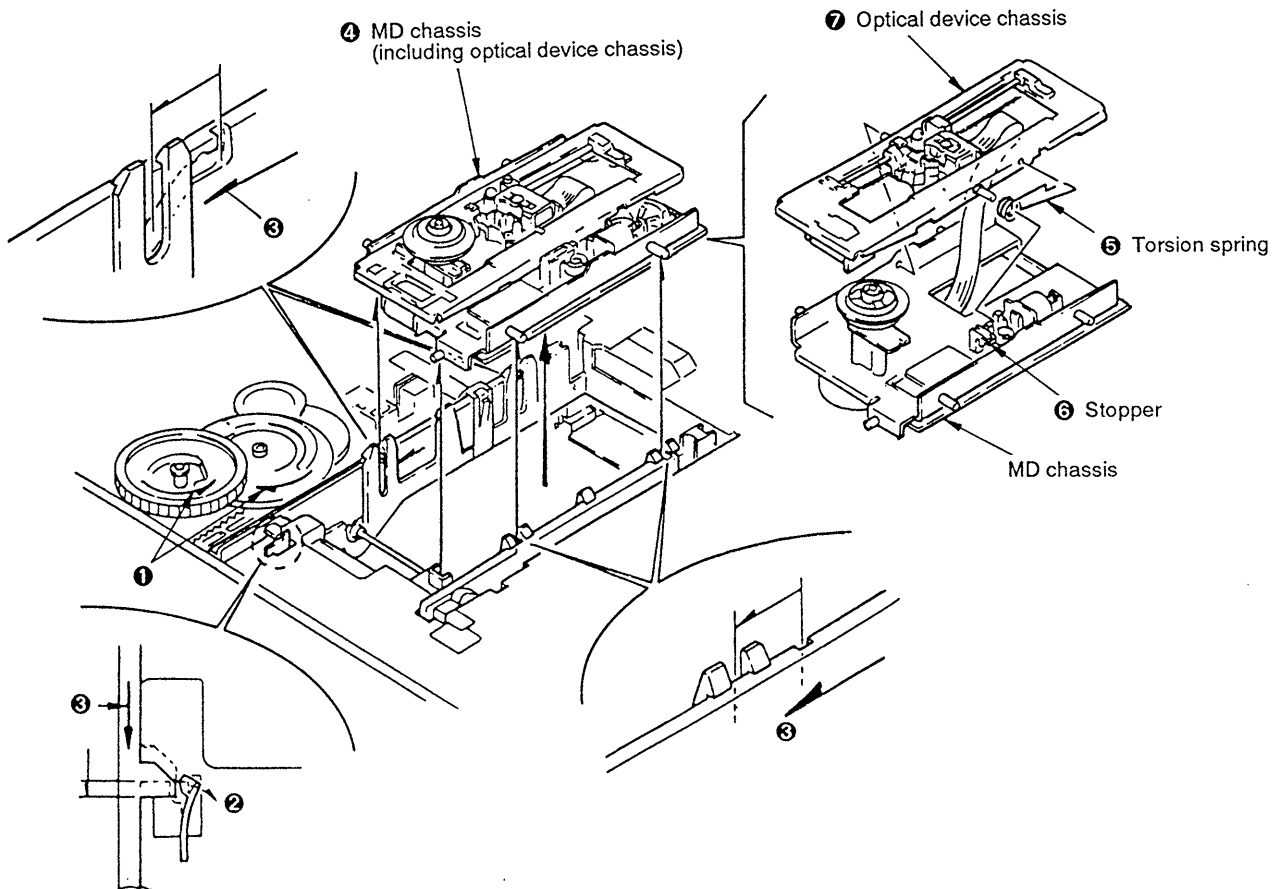
2-2. UPPER CASE, FRONT PANEL ASSY, BOTTOM PLATE ASSY



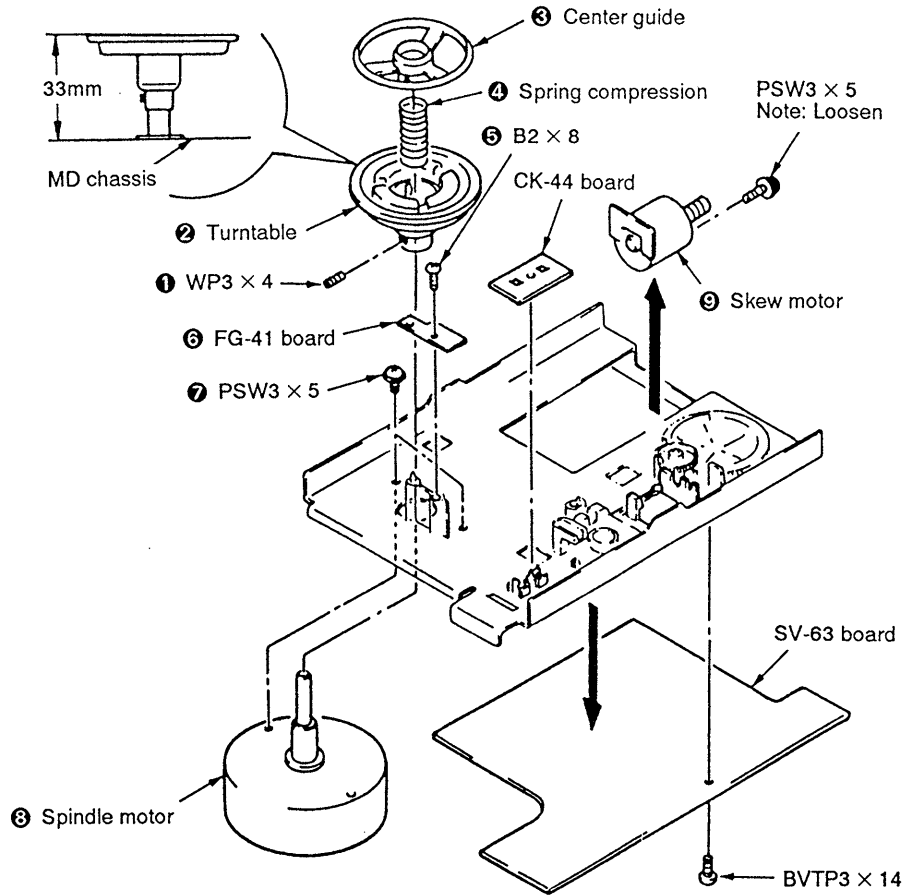
2-3. MB-706 BOARD



2-4. MD CHASSIS, OPTICAL DEVICE CHASSIS

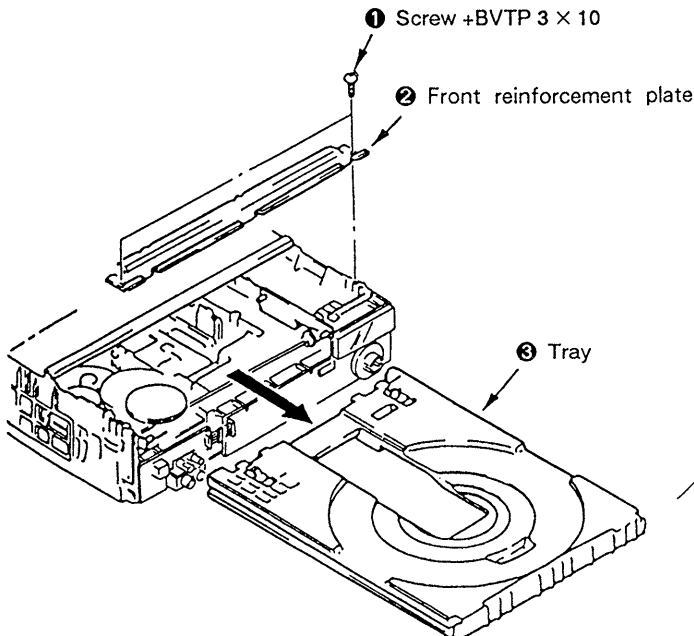


**2-5. TURNTABLE, SPINDLE MOTOR, SKEW MOTOR,
SV-63, FG-41 BOARD**



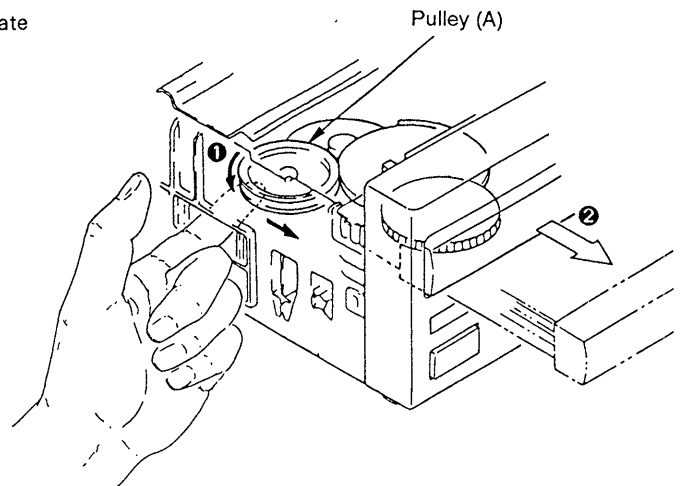
2-6. REMOVAL OF THE TRAY

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



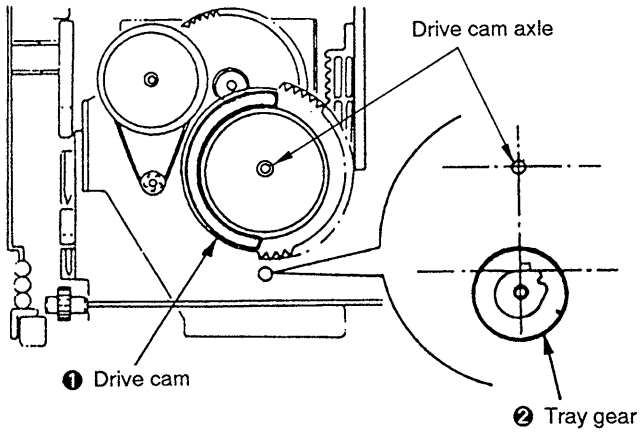
**2-7. REMOVAL OF THE DISC WHEN A PROBLEM
HAS OCCURRED WITH THE DISC LOADED**

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



2-8. ALIGNMENT OF THE LOADING GEAR PHASE

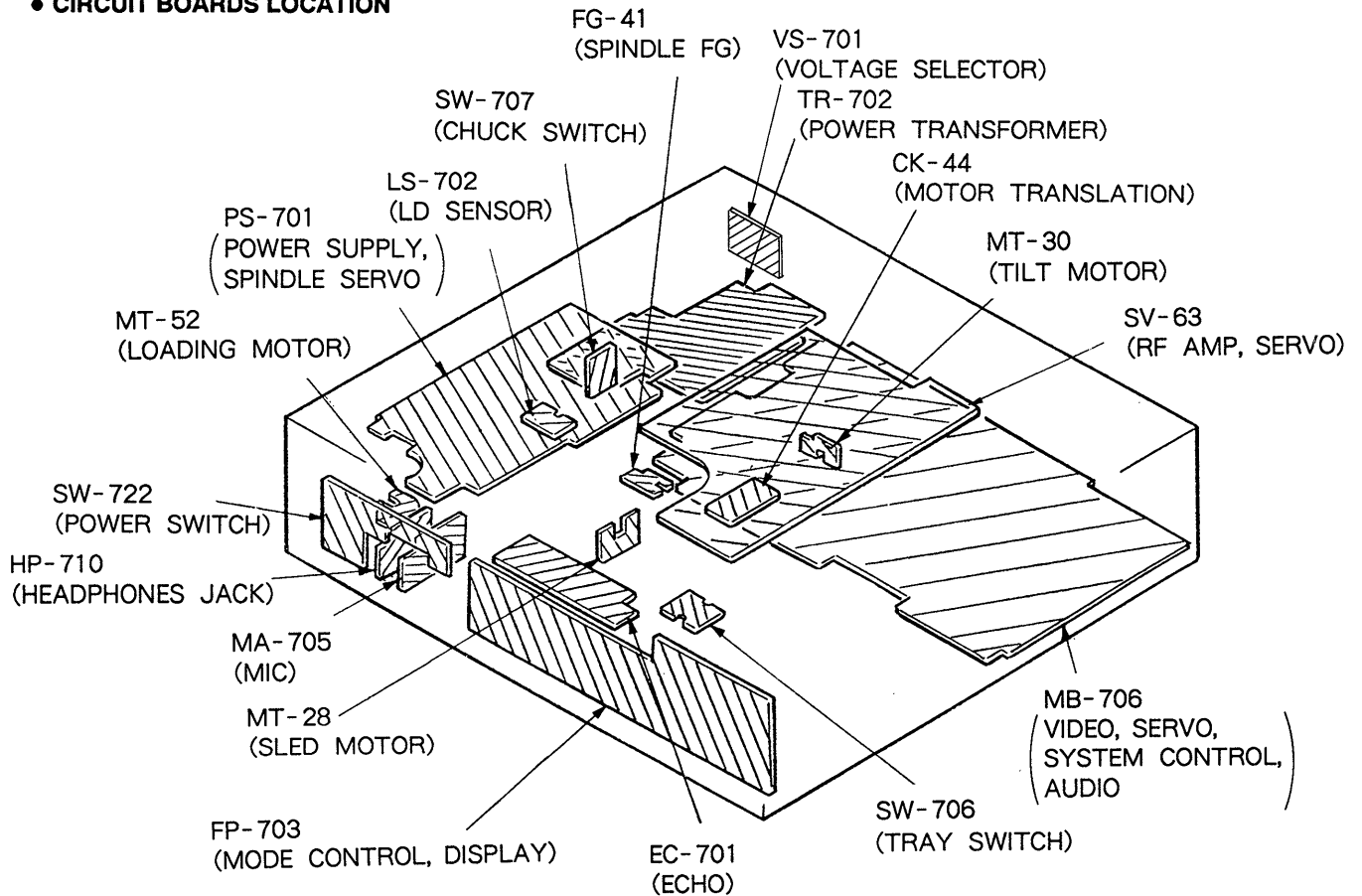
- 1) Install the drive cam as shown in the illustration:
At this time, make sure that the last tooth of gear is aligned with the line from the center of the tray gear axle and the drive gear axle.
- 2) Install the tray gear as shown in the illustration.
At this time, make sure the flat surface of the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



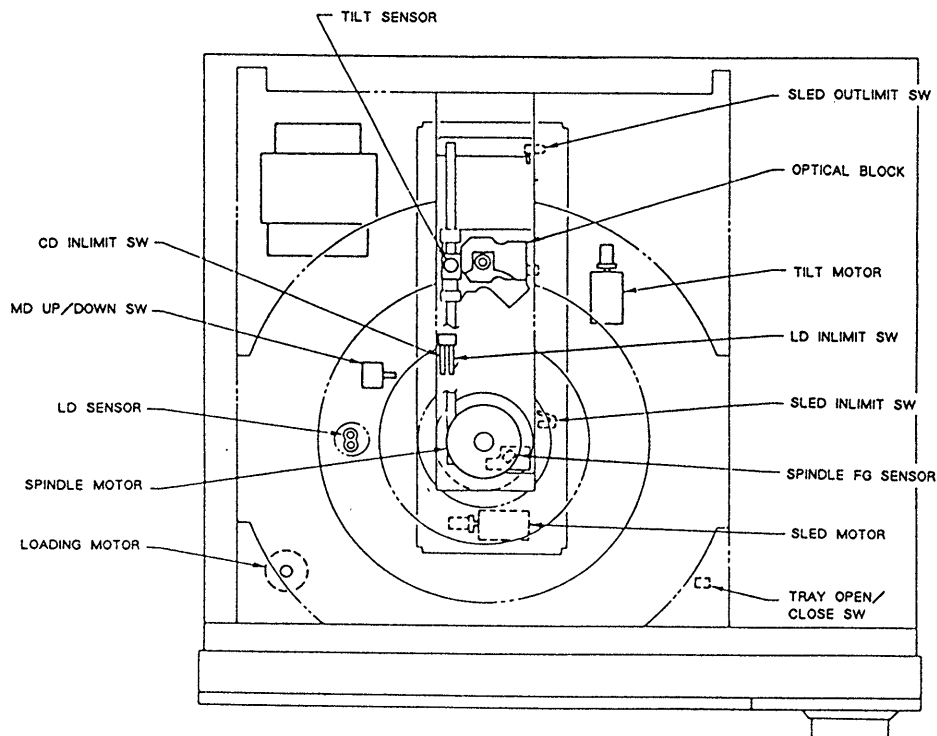
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION AND MAIN PARTS LOCATION

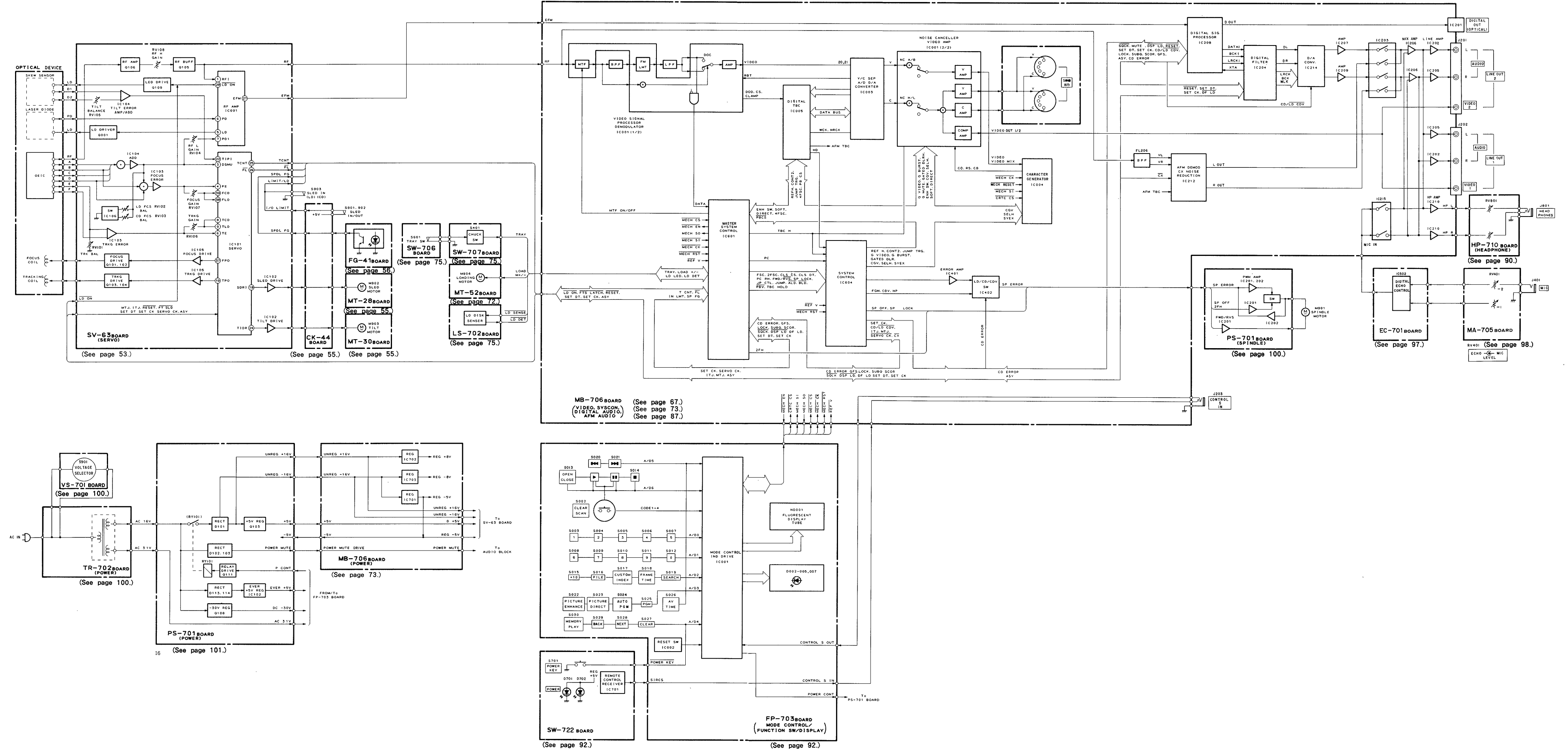
• CIRCUIT BOARDS LOCATION



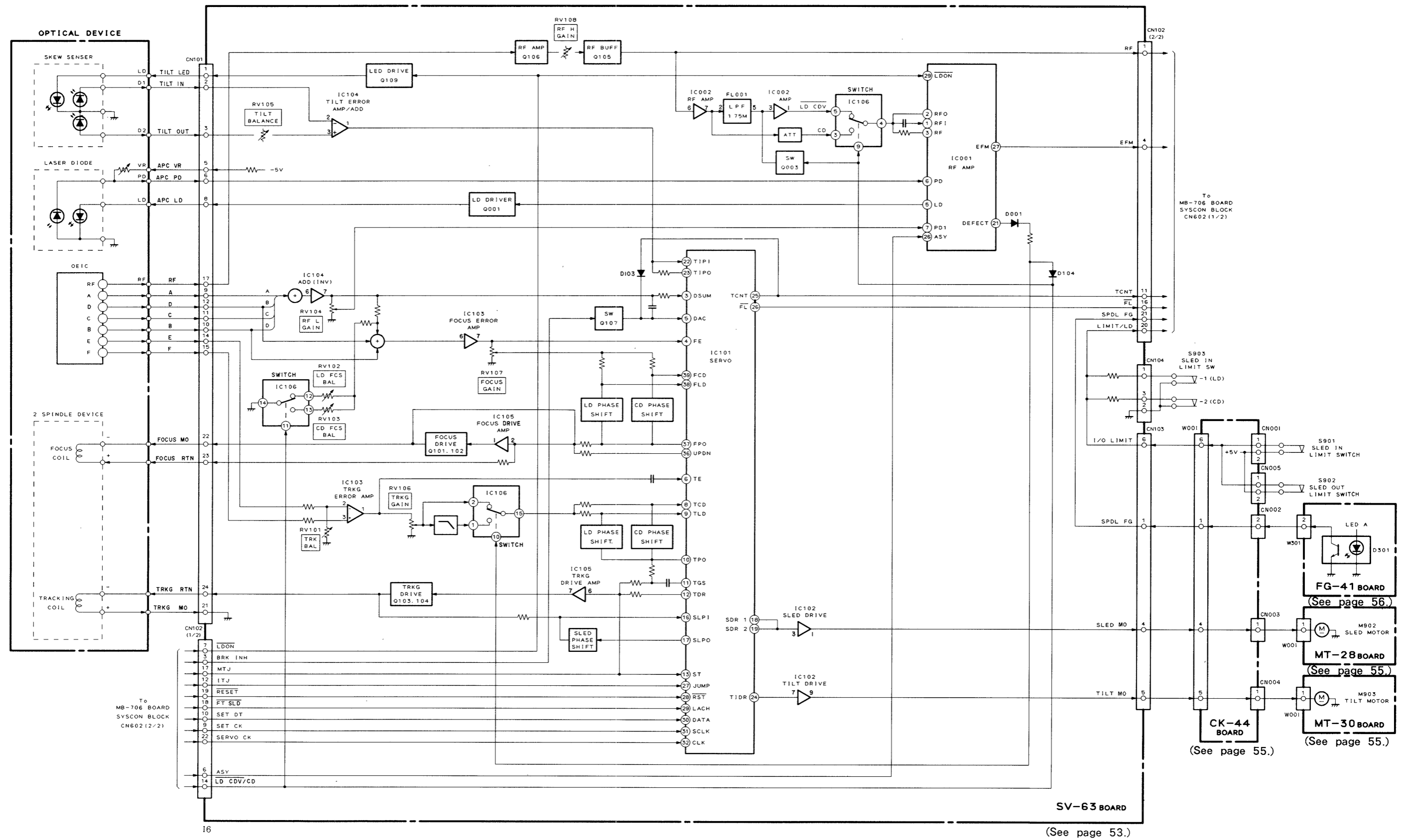
• MAIN PARTS LOCATION



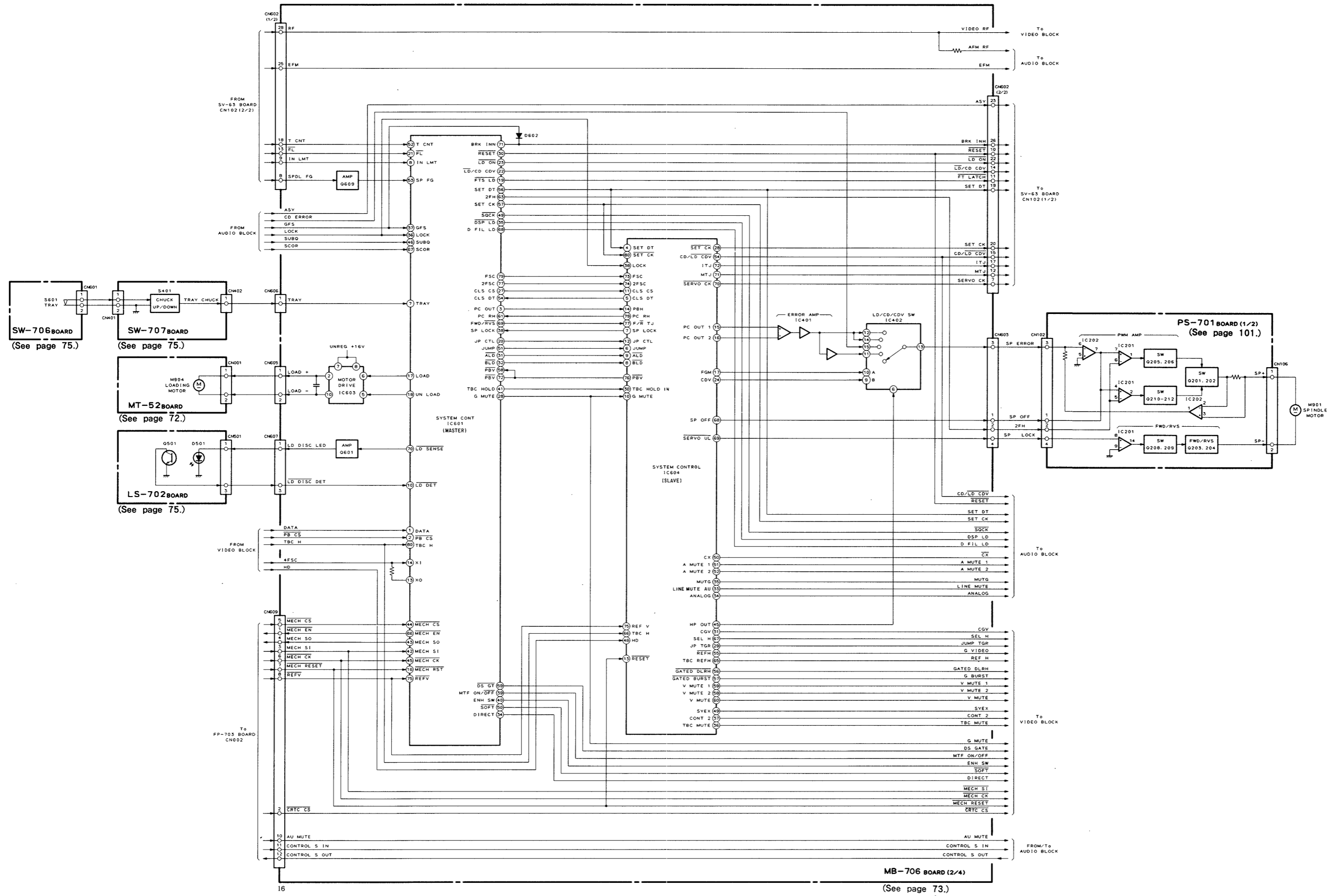
3-2. OVERALL BLOCK DIAGRAM



3-3. RF AMP, SERVO BLOCK DIAGRAM



3-4. SYSTEM CONTROL BLOCK DIAGRAM

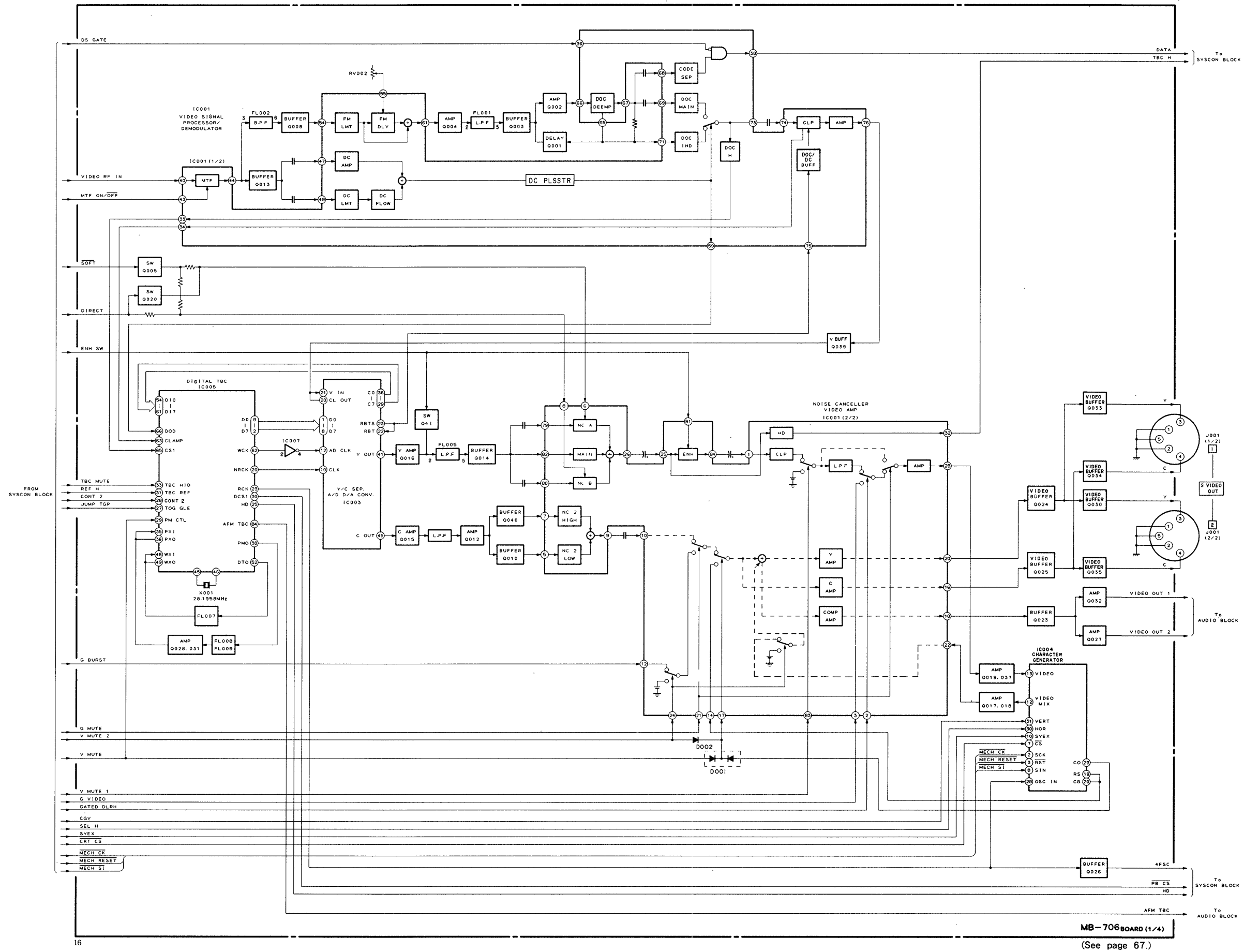


3-5. SYSTEM CONTROL MICROCOMPUTER PORT FUNCTIONS (MB-706 BOARD IC601 MB89795)

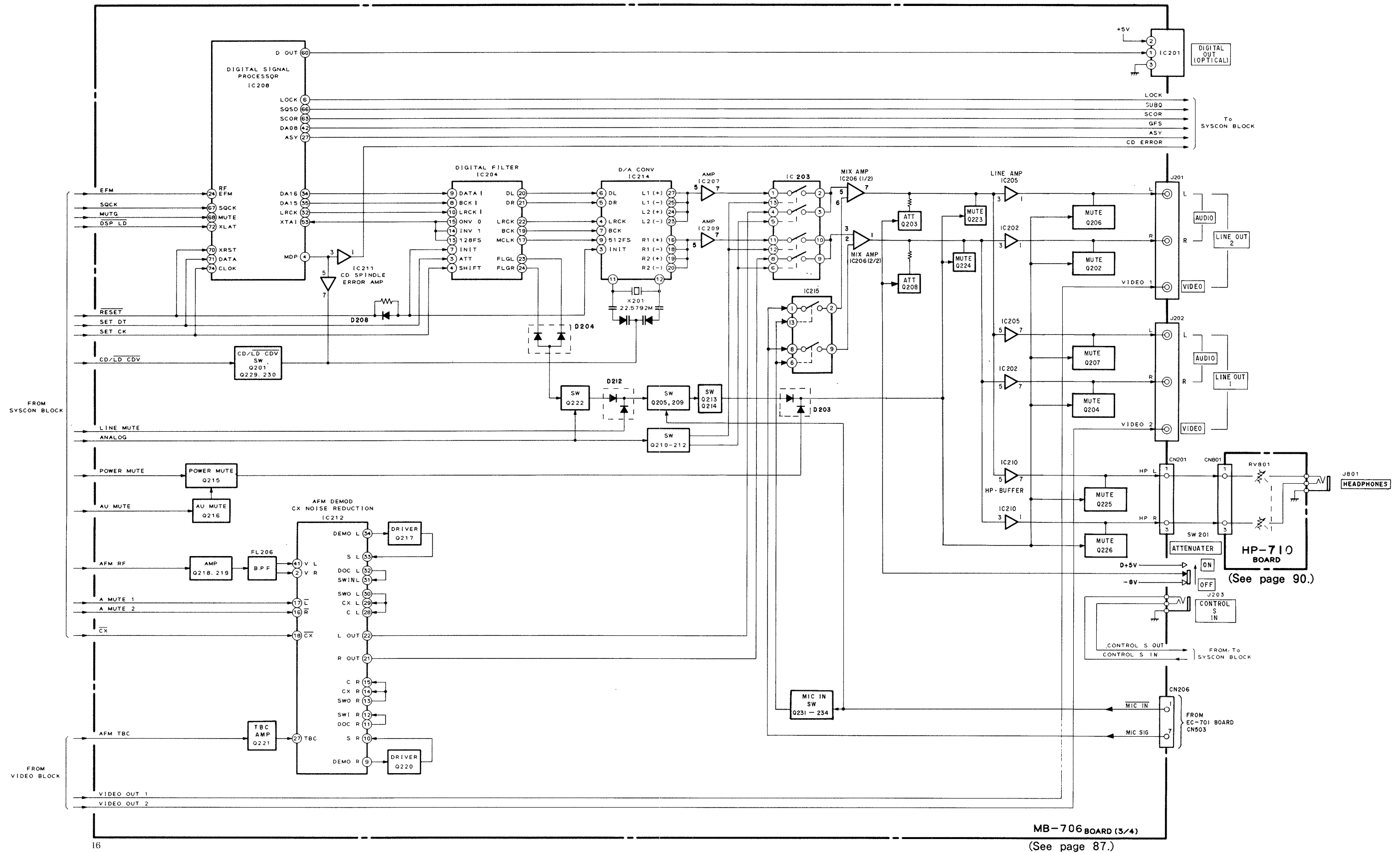
No.	Signal Name	I/O	Function	
1	DATA	I	Data (Philips code) input	
2	PBCS	I	Playback composite video sync. signal	
3	PC OUT	O	Playback H sync. signal output	
4	AVCC	—	A/D converter power supply	
5	AVR	—	A/D converter reference voltage	
6	AVSS	—	A/D converter ground	
7	TRAY	I	Tray loading switch voltage	
8	IN LIMIT	I	Sled position switch voltage	
9	MIRR	I	Not used	
10	LD DET	I	LD disc detection	
11	—	—	Not used	
12	MOD	I	Microcomputer internal/external ROM select	
13	XO	O	Clock input 14.31818 MHz	
14	XI	I	Clock output 14.31818 MHz	
15	VSS	—	Digital ground	
16	RST	I	Reset	
17	LOAD	O	Loading motor control (IC603)	
18	UNLOAD	O		
19	FTSLD	O	Servo IC (SV-63 board IC101) data load signal	
20	JPCTL	O	Track jump control (ITJ/MTJ)	
21	FL	I	Focus servo lock signal	
22	LD/CD CDV	O	Disc judgement signal	
23	LD ON	O	Optical pick-up laser diode emitting control	
24	WRQ	—	Not used	
25	MEMO			
26	FLO			
27	CLS CS	O	ENABLE signal for CLS CS (IC604 ①) signal	
28	G MUTE	O	Gray screen muting control on clear scan	
29	SOLA 2	—	Not used	
30	RESET	O	Reset control	
31	ALD	O	IC604 output port (register A, B) data load signal	
32	BLD	O		
33	—	—	Not used	
34	DIRECT	O	Enhancer control signal	
35	DSPLD	O	Data load signal to DSP	
36	LOCK	I	RF PLL lock signal	LOCK is made up of sampling GFS
37	GFS	I	RF PLL lock signal	
38	SP LOCK	I	Spindle servo lock signal	
39	MTF ON	O	MTF control signal	
40	ENH. SW	O	Enhancer control signal	

No.	Signal Name	I/O	Function
41	TBC HOLD	O	TBC HOLD control signal
42	MECH SI	I	Communicating data from mode control microcomputer (FP-703 IC001)
43	MECH SO	O	Communicating data to mode control microcomputer
44	$\overline{\text{MECH CS}}$	I	Chip select signal from mode control microcomputer
45	$\overline{\text{MECH CK}}$	I	Clock from mode control microcomputer
46	SUB Q	I	SUB Q data from DSP
47	—	—	Not used
48	—	—	
49	$\overline{\text{SQCK}}$	O	Serial data clock to DSP
50	$\overline{\text{SOFT}}$	O	Enhancer control signal
51	JMP	O	Track jump trigger signal
52	TCNT	I	Pulse for traverse counting
53	SP FG	I	Spindle FG pulse
54	CLS DT	I	CLV clear scan V sync. counter data
55	VCC	—	Power supply (+5 V)
56	SET DT	O	External IC communicating data
57	SET CK	O	External IC communicating clock
58	$\overline{\text{PB V}}$	I	Playback V sync. signal
59	$\overline{\text{DS GT}}$	O	Philips code reading out control signal
60	—	—	Not used
61	PCRH	I	Reference H sync. signal for spindle servo
62	REFH	O	Not used
63	2FH	O	Spindle motor driver PWM carrier
64	$\overline{\text{TEST}}$	I	Test mode control
65	TV/DISC	O	Not used
66	$\overline{\text{MECH EN}}$	O	Communication control signal to mode control microcomputer (FP-703 IC001)
67	SCOR	I	SUB code sync. signal
68	DFIL LD	O	Digital filter data load signal
69	$\overline{\text{FWD/RVS}}$	O	Multi track jump direction control
70	$\overline{\text{LD SENSE}}$	O	LD disc sensor control pulse
71	BRK INH	O	Servo IC (SV-63 board IC101) track jump control
72	PB V	O	Playback V sync. signal
73	—	—	Not used
74	—	—	
75	REF V	O	Reference V sync. signal
76	—	—	Not used
77	FSC2	O	2fsc (7.519 MHz) output
78	DOCI	O	Not used
79	FSC	O	fsc (3.579545 MHz \pm 10 MHz) output
80	TBCH	I	TBC output H sync. signal

3-6. VIDEO BLOCK DIAGRAM



3-7. AUDIO BLOCK DIAGRAM



3-8. MODE CONTROL MICROCOMPUTER PORT FUNCTIONS (FP-703 BOARD IC001 CXP50116)

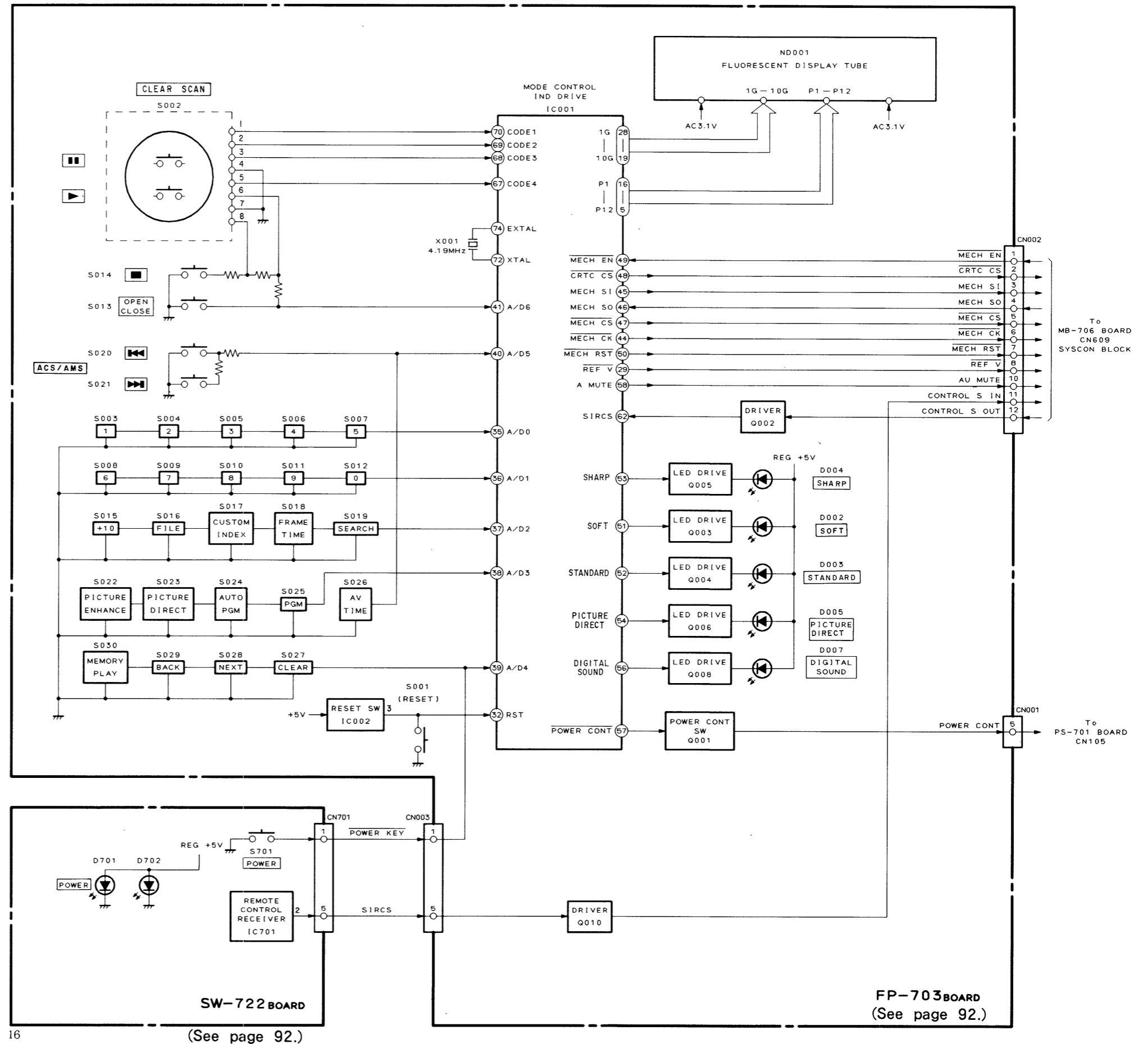
No.	Port Name	Signal	I/O	Function
1	S4/PG0		—	Not used
2	S5/PG1		—	
3	S6/PG2		—	
4	S7/PG3		—	
5	S8/PK0	P12	O	FDP segment output
6	S9/PK1	P11	O	
7	S10/PK2	P10	O	
8	S11/PK3	P9	O	
9	S12/PJ10	P8	O	
10	S13/PJ1	P7	O	
11	S14/PJ2	P6	O	
12	S15/PJ3	P5	O	
13	S16/T15	P4	O	
14	S17/T14	P3	O	
15	S18/T13	P2	O	
16	S19/T12	P1	O	
17	S20/T11		—	Not used
18	S21/T10		—	
19	S22/T9	10G	O	FDP timing output
20	S23/T8	9G	O	
21	T7	8G	O	
22	T6	7G	O	
23	T5	6G	O	
24	T4	5G	O	
25	T3	4G	O	
26	T2	3G	O	
27	T1	2G	O	
28	T0	1G	O	
29	INT	REF-V	I	Reference V sync. signal
30	TX		O	Not used
31	TEX		I	
32	RST	RST	I	Reset
33	N. C		—	Not used
34	VDD		—	VDD
35	PI0/AD0	AD0*1	I	Key input
36	PI1/AD1	AD1*1	I	
37	PI2/AD2	AD2*1	I	
38	PI3/AD3	AD3*1	I	
39	PB0/AD4	AD4*1	I	
40	PB2/AD5	AD5*1	I	
41	PB3/AD6	AD6*1	I	
42	PB3/AD7	TEST	I	"L": Test mode
43	EC		—	Not used
44	PX0/SC	MECH CK	O	Clock for communication to mechanism control, DSP control, character graphic IC.
45	PX1/SO	MECH SI	O	Communicating data to mechanism control, DSP control, character graphic ICs.
46	PX2/SI	MECH SO	I	Communicating data from mechanism control, DSP control, character graphic ICs.

No.	Port Name	Signal	I/O	Function
47	PA0	MECH CS	O	Chip select signal to mechanism control ICs.
48	PA1	CRTC CS	O	Chip select signal to character graphic IC.
49	PA2	MECH EN	I	Receiving completion signal from mechanism control IC.
50	PA3	MECH RST	O	Reset signal to mechanism control, DSP control ICs.
51	PF0	STANDARD	O	Picture enhance LED output
52	PF1	SHARP	O	
53	PF2	SOFT	O	
54	PF3	DIRECT	O	
55	PE0			Not used
56	PE1	DIGITAL SOUND	O	Digital sound LED output
57	PE2	POWER CONT	O	Power supply control output
58	PE3	A MUTE	O	Audio mute output
59	PY0		O	Not used
60	PY1/PWM		O	
61	PY2/WP	WP	I	
62	PY3/RMC	SIRCS IN	I	SIRCS input
63	PD0	J/UC	I	For destination setting
64	PD1		I	Not used
65	PD2		I	
66	PD3		I	
67	PC0	CODE 4	I	Shuttle switch input
68	PC1	CODE 3	I	
69	PC2	CODE 2	I	
70	PC3	CODE 1	I	
71	VSS	GND	—	GND
72	XTAL	XTAL	O	Clock input
73	N. C		—	Not used
74	EXTAL	EXTAL	I	Clock output
75	VREF	VDD	I	Power supply
76	VFDP	VFDP	I	Power supply for FDP (- 30 V)
77	S0/PH0		O	Not used
78	S1/PH1		O	
79	S2/PH2		O	
80	S3/PH3		O	

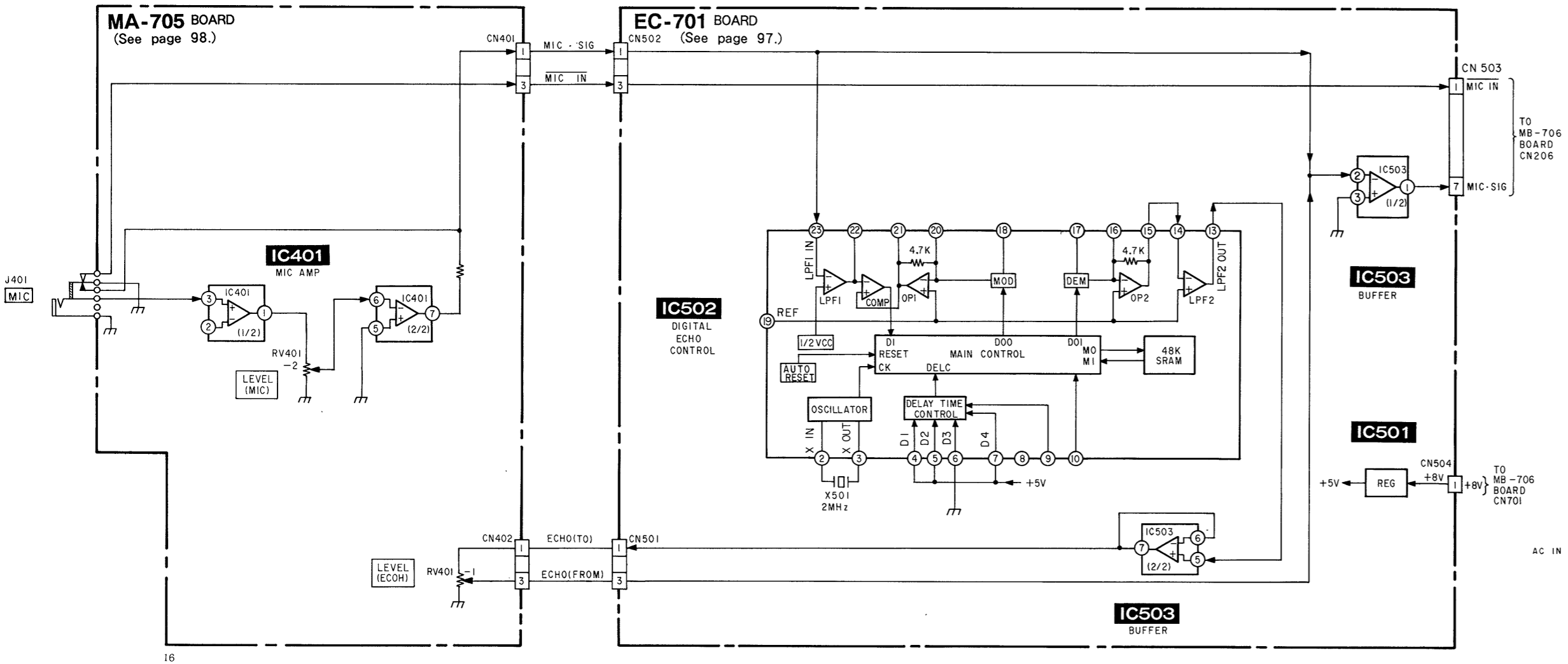
***1: Pressed keys and terminal input voltages**

Input terminal	Input voltage	0 V	1.1 V	2.0 V	2.9 V	3.8 V
	AD0 ㉔		5	4	3	2
AD1 ㉕		0	9	8	7	6
AD2 ㉖		SEARCH	FRAME/TIME	CUSTOM INDEX	FILE	+10
AD3 ㉗		—	PGM	AUTO PGM	PICTURE DIRECT	PICTURE ENHANCE
AD4 ㉘		POWER	CLEAR	NEXT	BACK	MEMORY PLAY
AD5 ㉙		AV TIME	⏪	⏩	—	—
AD6 ㉚		▲	▶	⏸	■	—

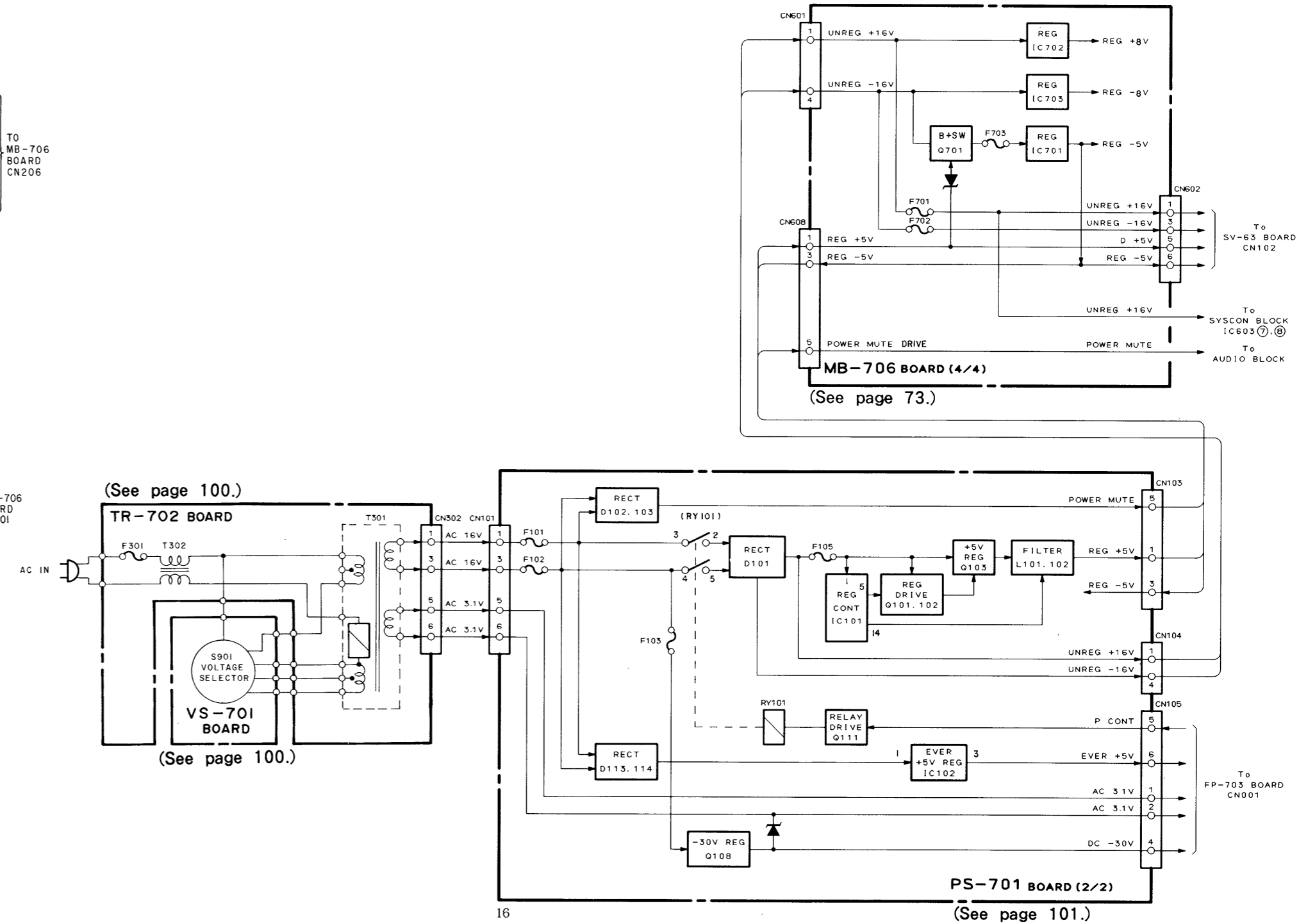
3-9. MODE CONTROL BLOCK DIAGRAM



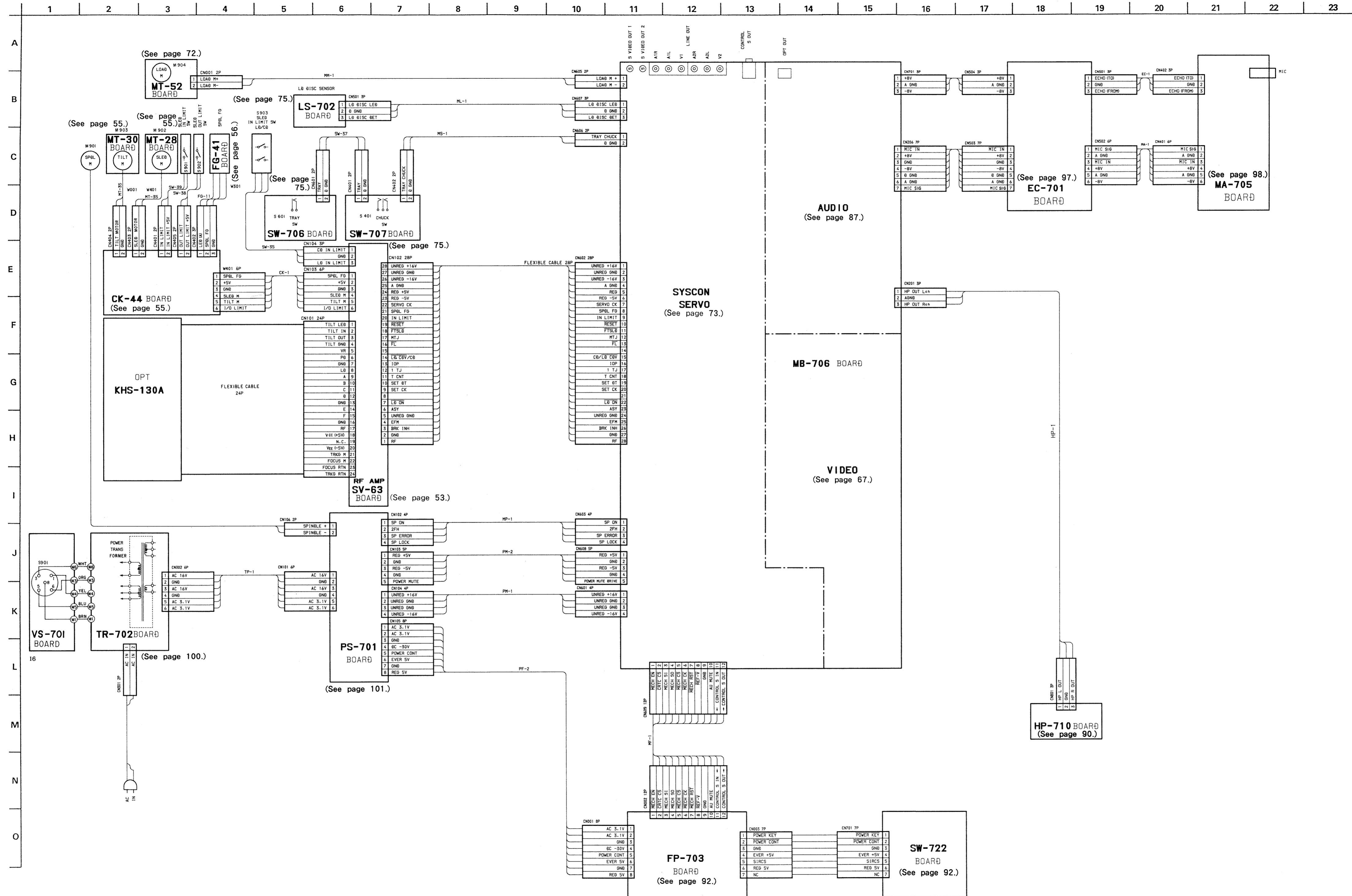
3-10. ECHO BLOCK DIAGRAM



3-11. POWER SUPPLY BLOCK DIAGRAM



SECTION 4
PRINTED WIRING
BOARDS AND
SCHEMATIC DIAGRAMS



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- For printed wiring boards:
- : Indicated a lead wire mounted on the component side.
 - : Indicated a lead wire mounted on the conductor side.
 - : Through hole.
 - ▬ : Pattern from the side which enables seeing.
- (Other pattern is not shown.)

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, 1/4 W unless otherwise noted. Chip resistors: 1/10 W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000k Ω.
 - : 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.*
 - : : IN/OUT direction of B line (+, -,)*
 - : Circled numbers refer to waveforms.*
 - : Voltage are dc between ground and measurement points.*
 - : Readings are taken with a color-bar signal input.*
 - : Readings are taken with a digital multimeter (DC10 MΩ)*.
 - : Voltage variations may be noted due to normal production tolerances.

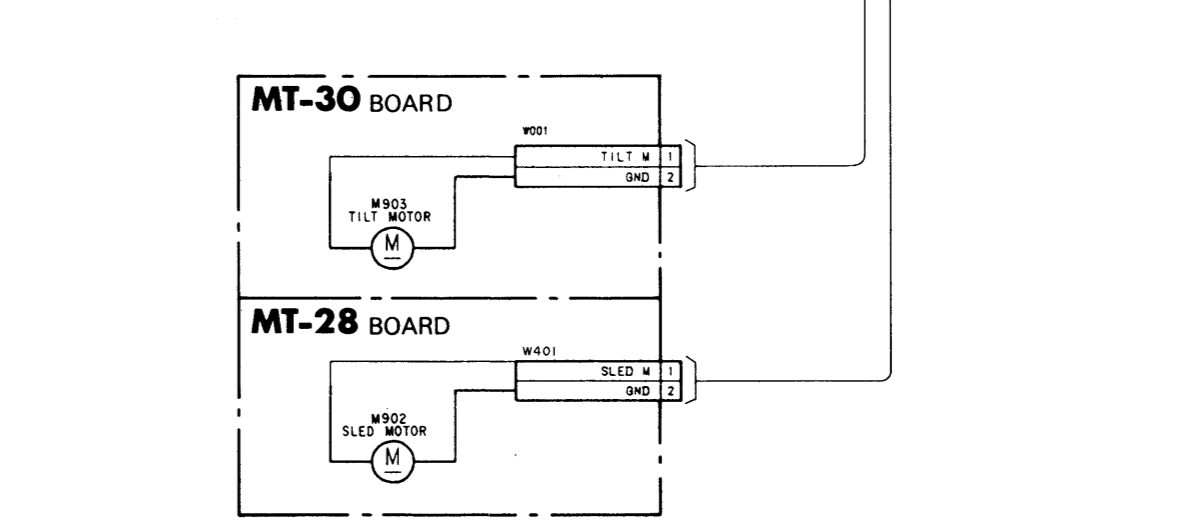
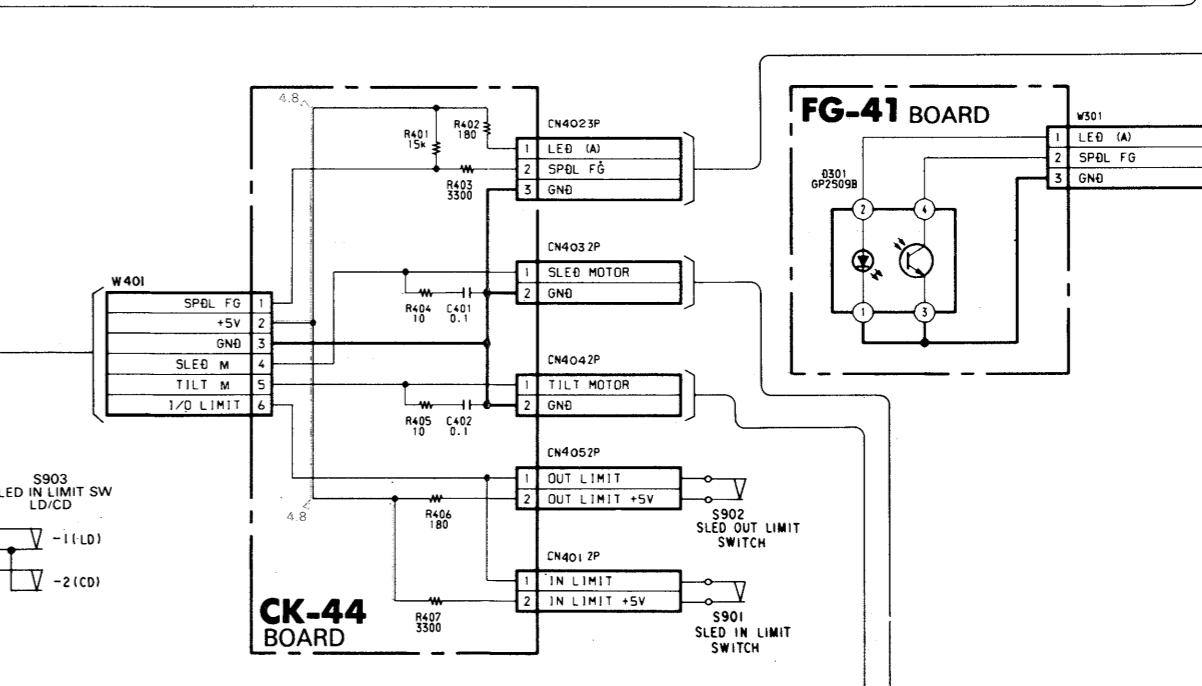
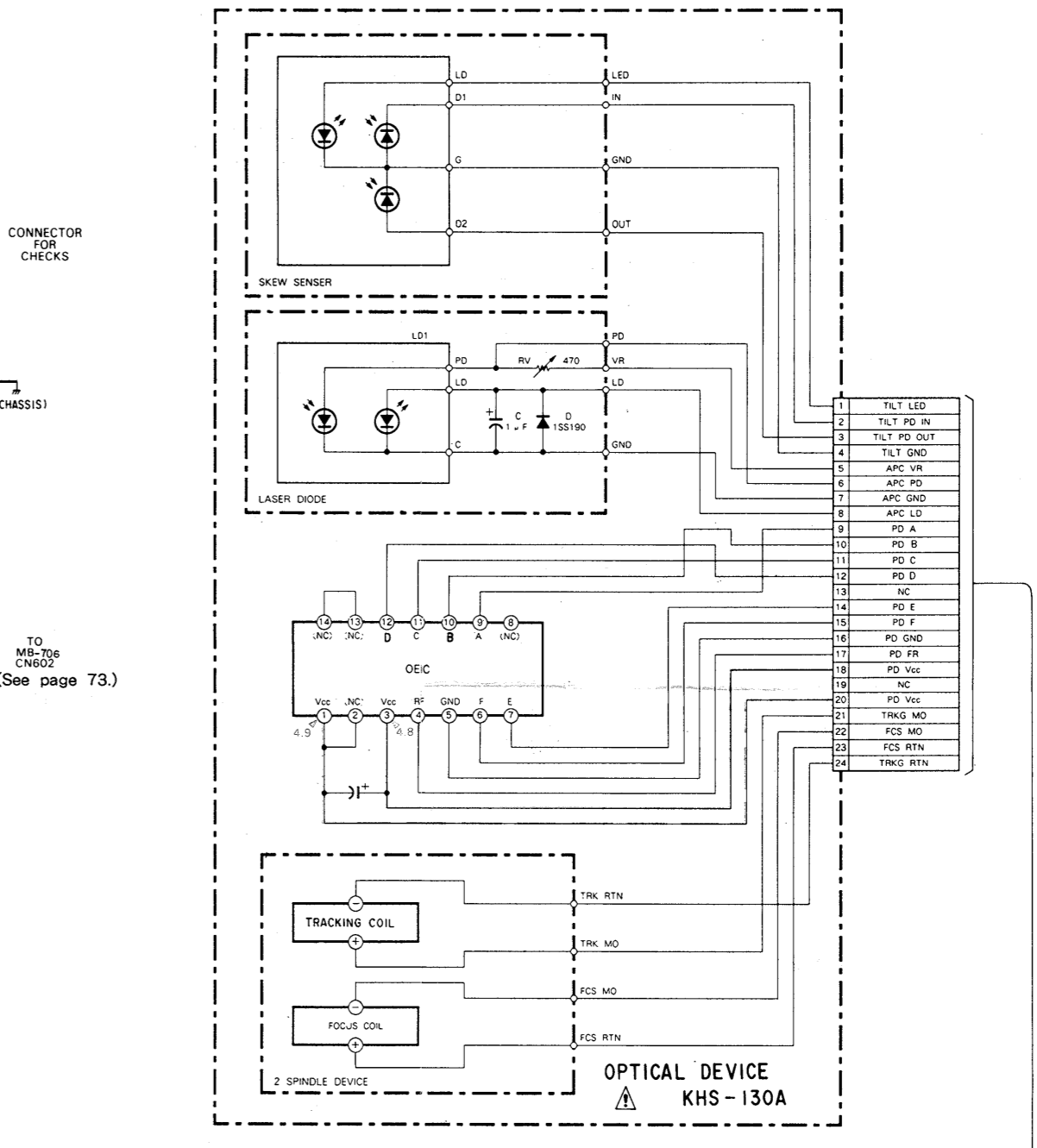
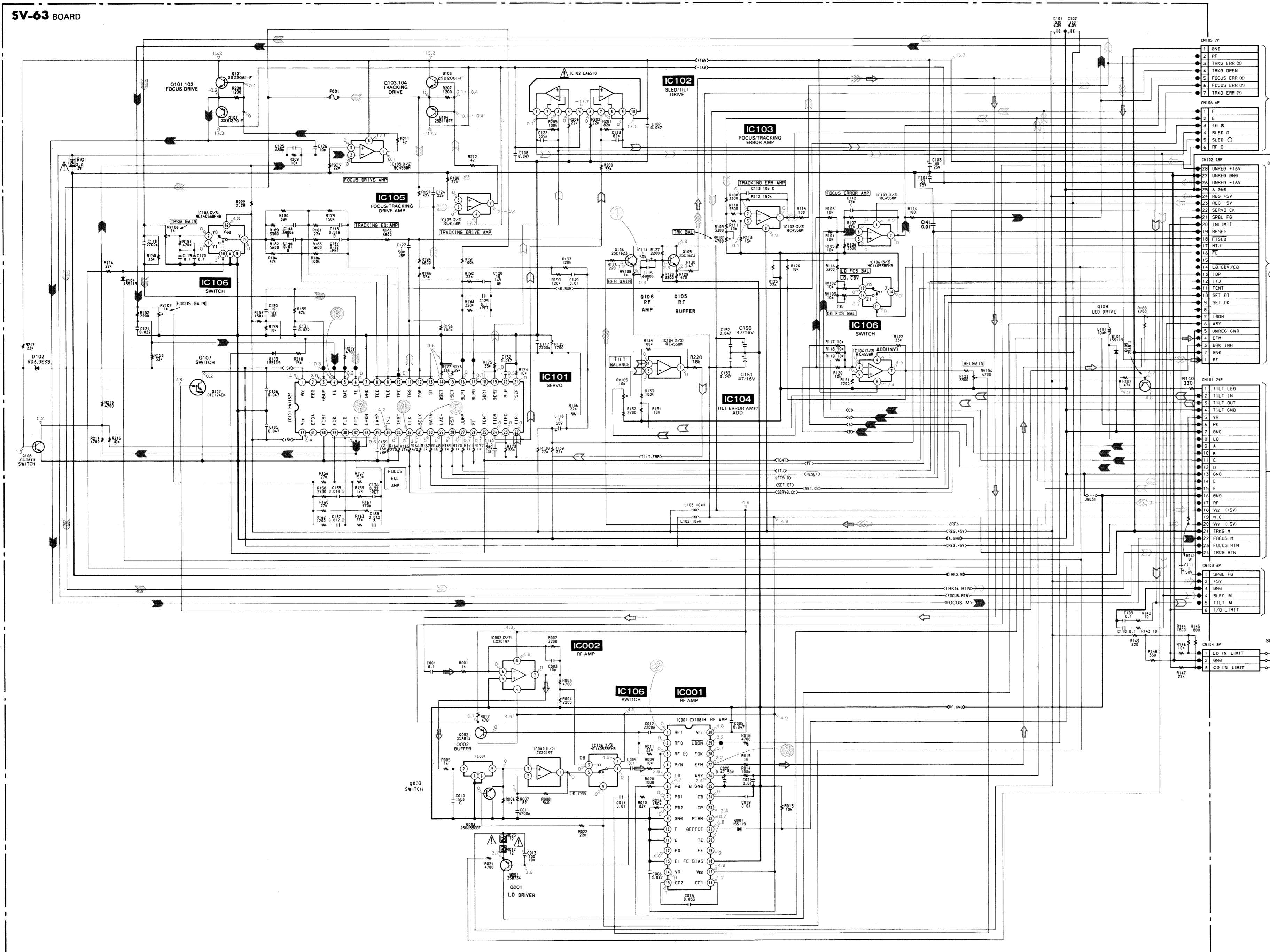
Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

● * : indicated by the color red.

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

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



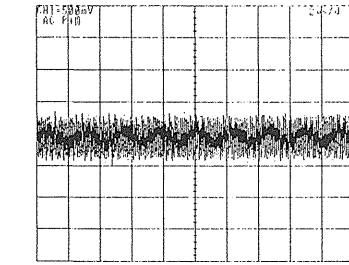
VIDEO SIGNAL				AUDIO SIGNAL
CHROMA	Y	Y/CHROMA		
PB	↔	↔	↔	↔
SPINDLE PHASE SERVO				↔
SPINDLE SERVO (SPEED AND PHASE)				↔
TRACKING SERVO LD/CD/CDV				↔
SLIDE SERVO LD/CD				↔
FORCUS SERVO LD/CD				↔
SKEW SERVO LD TILT				↔

SV-63 BOARD

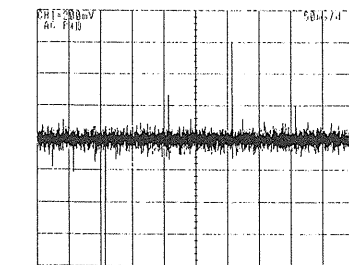
- CN101 B-7
- CN102 B-10
- CN103 D-5
- CN104 B-5
- CN105 G-13
- CN106 H-13
- D001 G-10
- D101 C-7
- D102 E-4
- D103 G-7
- D104 H-11
- IC001 G-9
- IC002 F-12
- IC101 F-7
- IC102 E-3
- IC103 C-8
- IC104 C-6
- IC105 F-1
- IC106 H-11
- Q001 E-10
- Q002 E-9
- Q003 F-11
- Q101 H-3
- Q102 H-2
- Q103 H-2
- Q104 H-1
- Q105 B-12
- Q106 B-12
- Q107 D-6
- Q108 F-4
- Q109 B-6
- RV101 D-12
- RV102 C-12
- RV103 C-12
- RV104 C-11
- RV105 D-11
- RV106 D-12
- RV107 D-12
- RV108 C-11

SV-63 BOARD

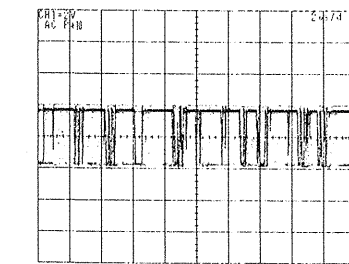
① Q106 @ 0.5V/2 μs



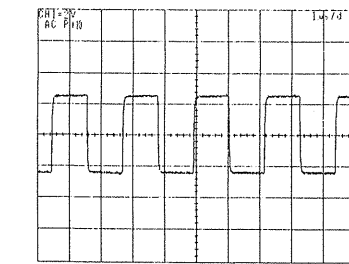
② IC001 @ 0.2V/50ms



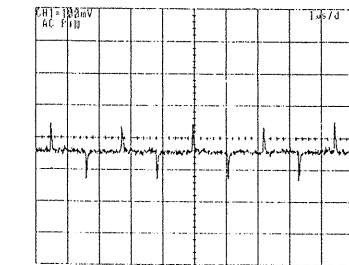
③ IC001 @ 2V/2 μs



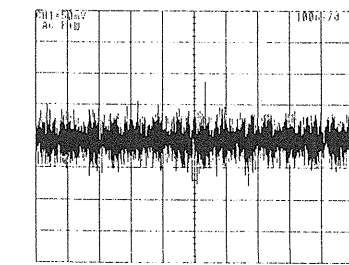
④ IC101 @ 2V/1ms



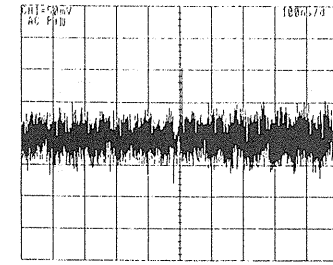
⑤ IC101 @ 0.1V/1 μs



⑥ IC101 @ 50mV/100ns



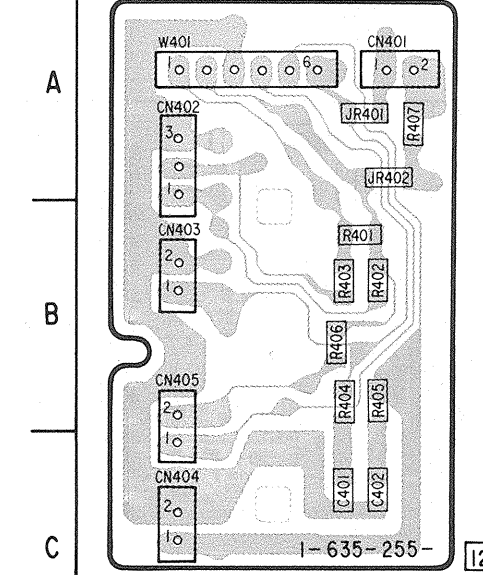
⑦ IC101 @ 50mV/100ns



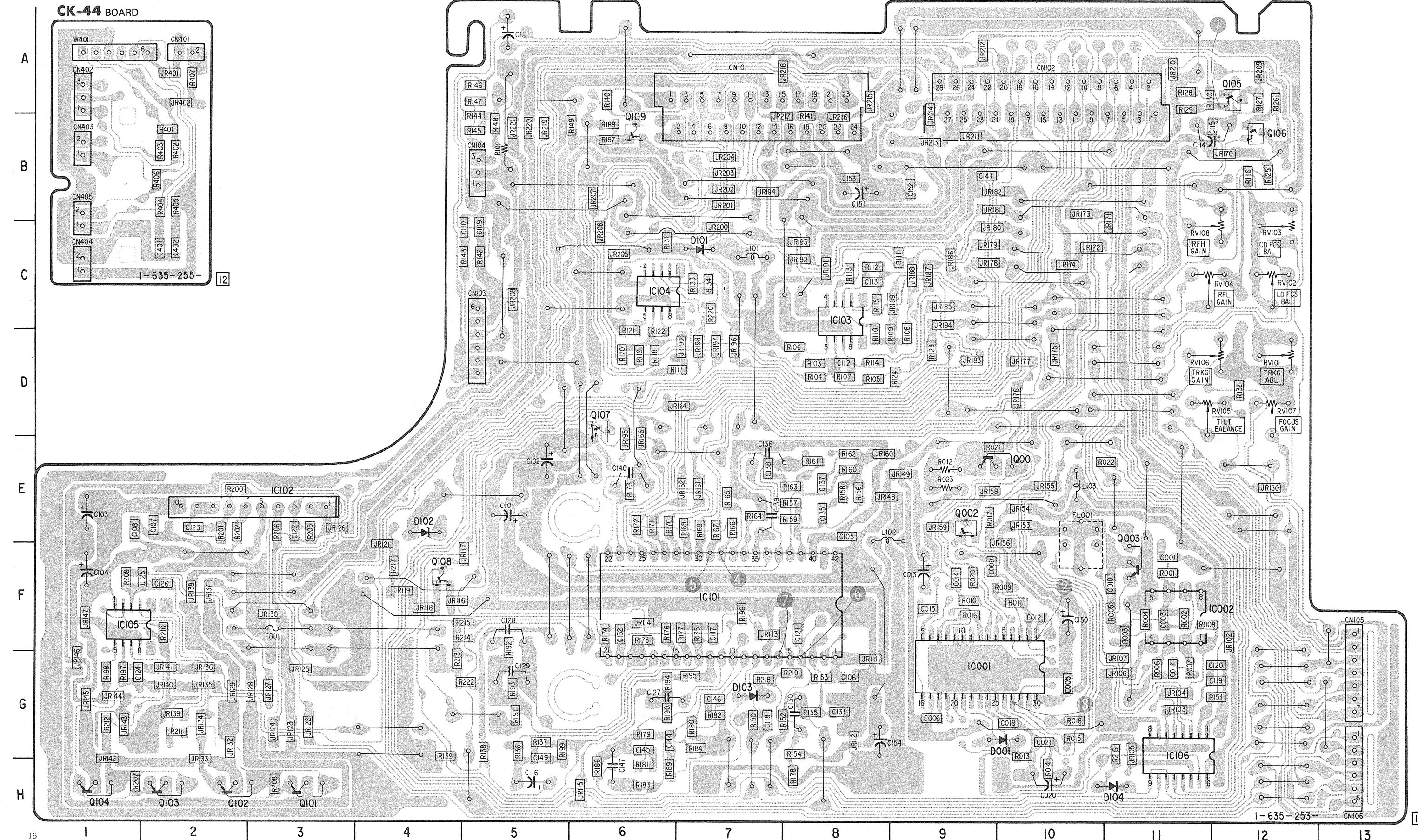
CK-44 BOARD

- CN401 A-2
- CN402 A-1
- CN403 B-1
- CN404 C-1
- CN405 B-1

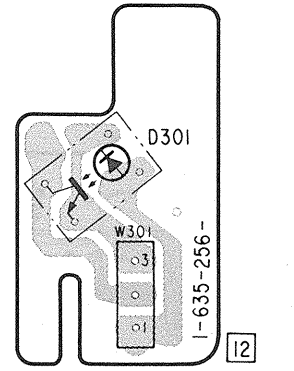
CK-44 BOARD



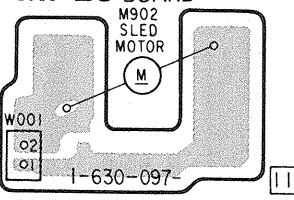
SV-63 BOARD



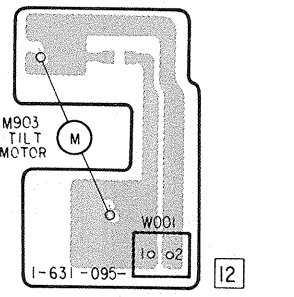
FG-41 BOARD



MT-28 BOARD

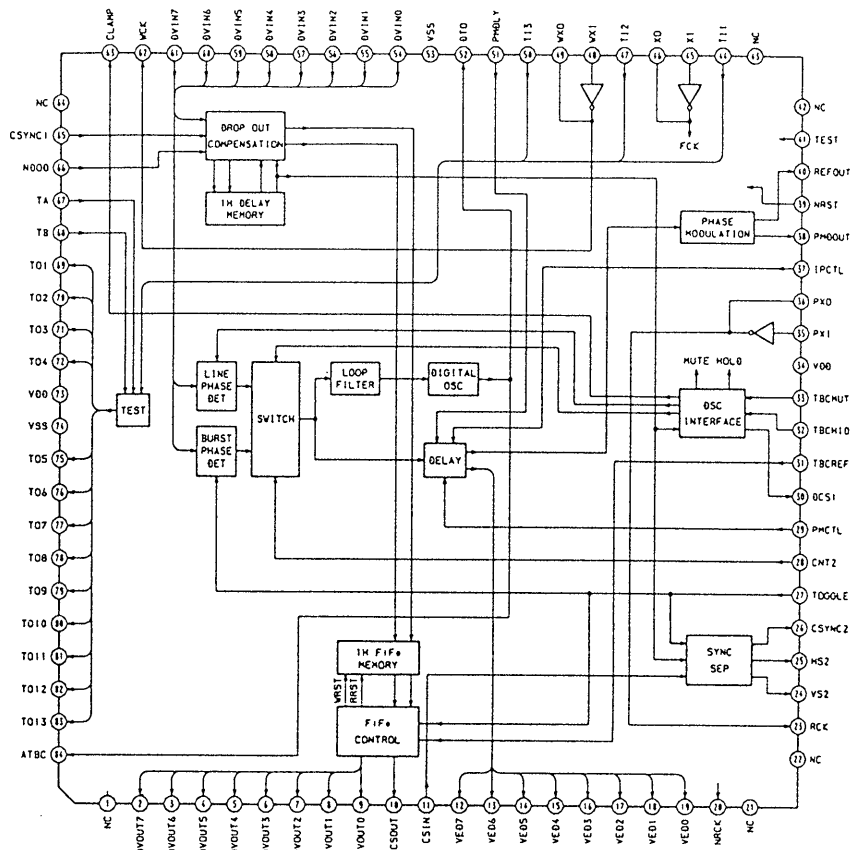


MT-30 BOARD

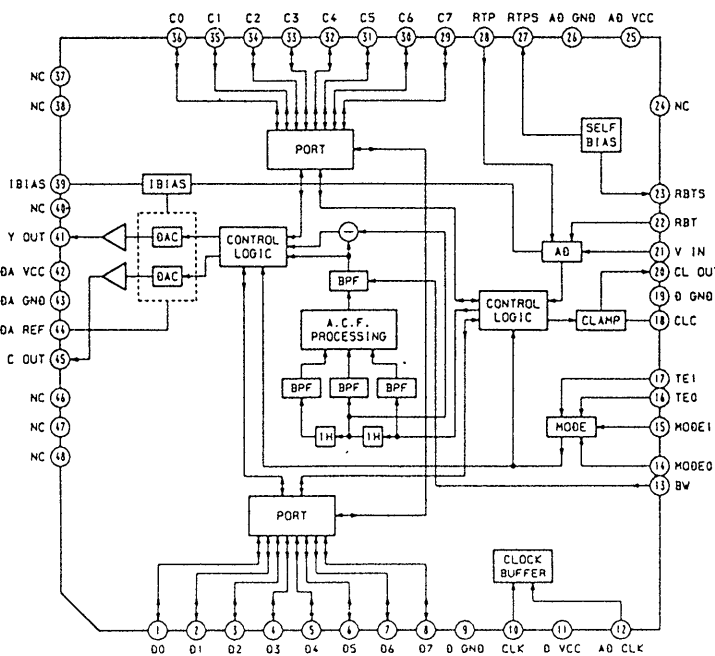


• IC BLOCK DIAGRAMS (MB-706 BOARD)

• IC005
CXD8404Q



• IC003
CXD8405Q



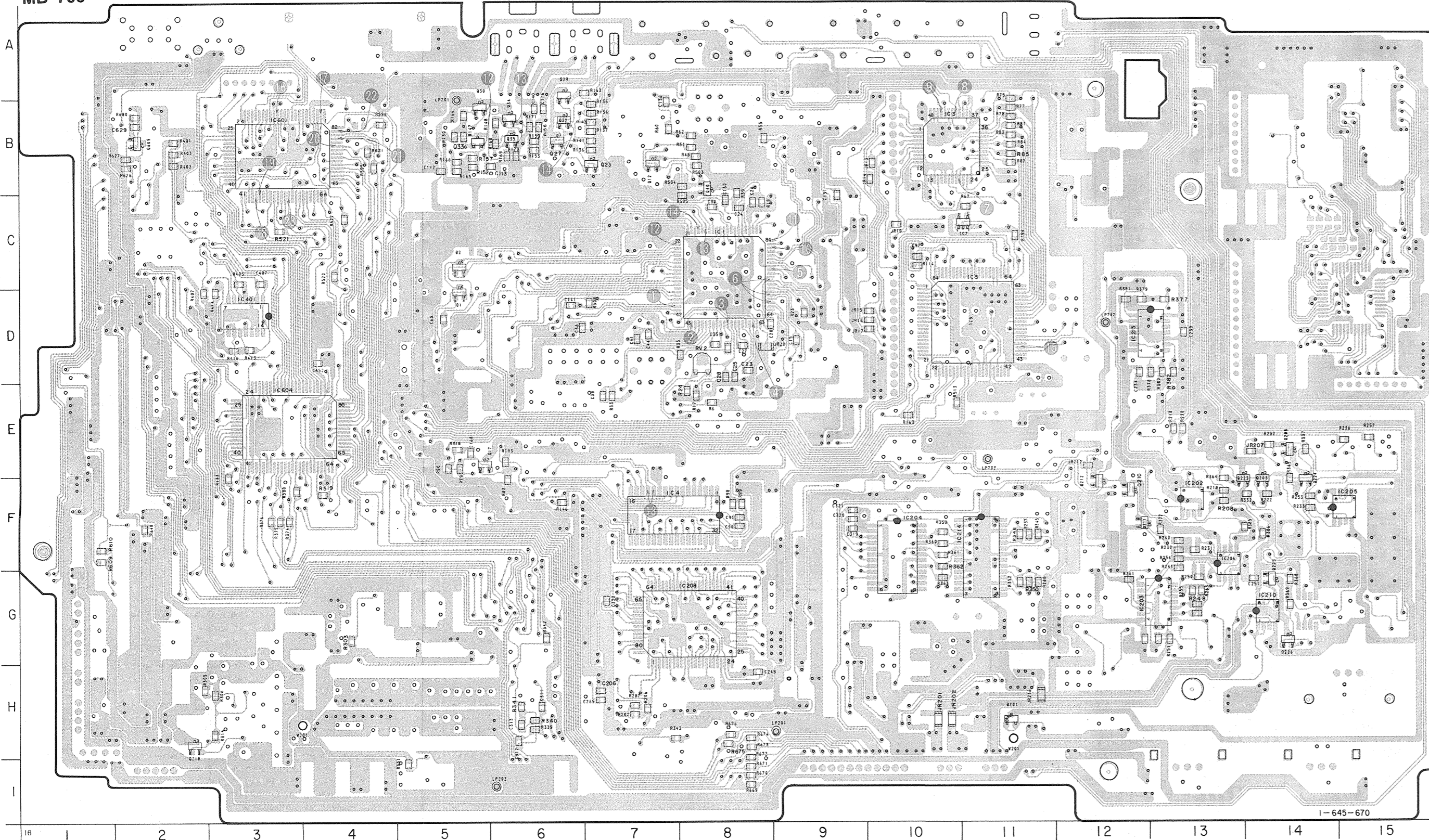
MB-706 (VIDEO) PRINTED WIRING BOARD

- Ref. No. MB-706 Board : 2,000 Series -

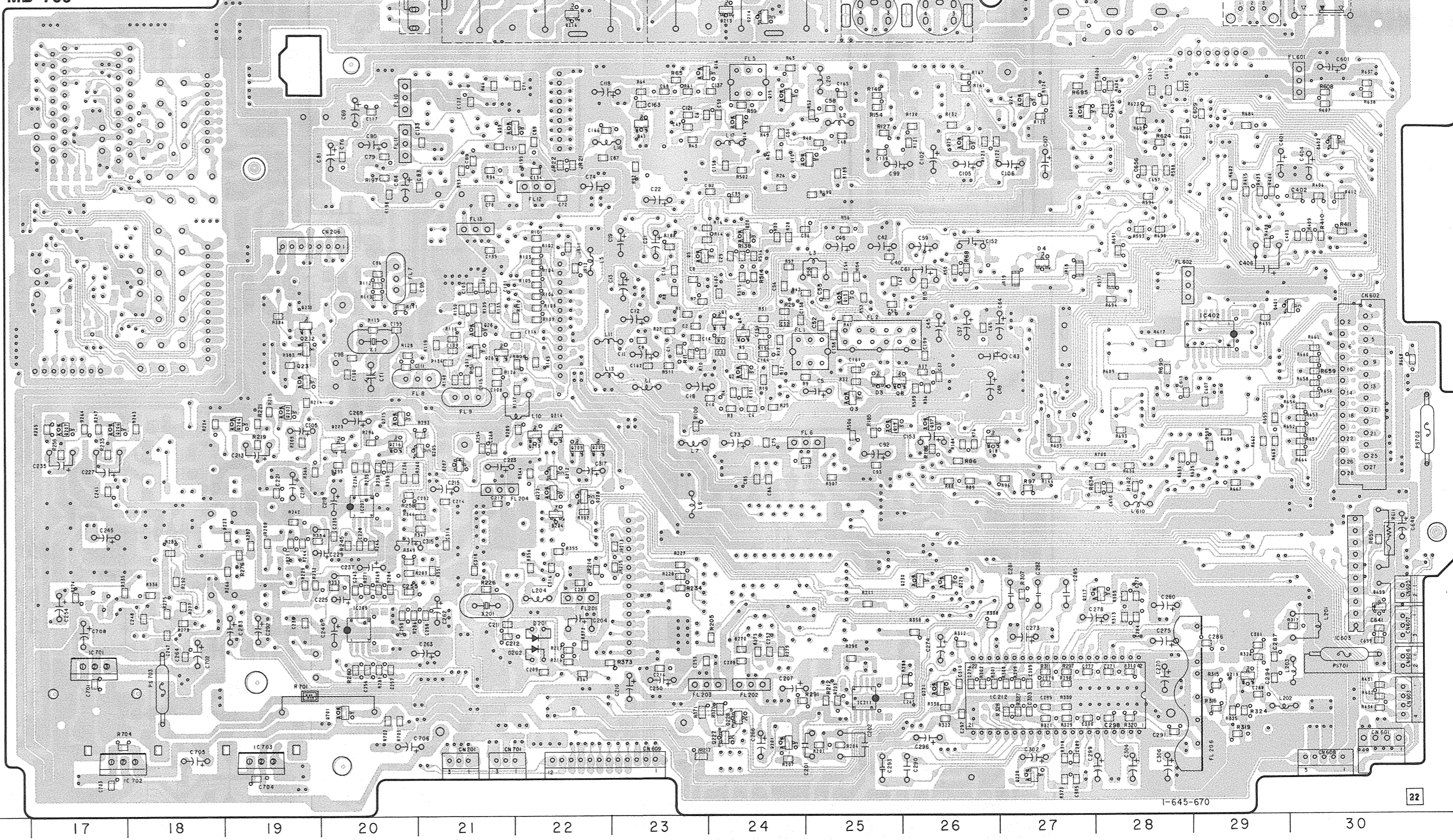
MB-706 BOARD

CN201	I-21	Q031	DE-21
CN206	C-20	Q032	B-6
CN601	H-30	Q033	B-5
CN602	E-30	Q034	B-6
CN603	H-30	Q035	B-6
CN605	G-30	Q037	E-26
CN606	H-30	Q039	B-21
CN607	G-30	Q040	B-8
CN608	I-30	Q041	B-23
CN609	I-23	Q201	I-24
CN701	I-21	Q202	E-19
		Q203	F-14
CT001	E-20	Q204	E-19
		Q205	E-22
D001	D-5	Q206	E-17
D002	C-5	Q207	E-17
D003	E-25	Q208	E-14
D004	D-27	Q209	E-22
D201	C-22	Q210	F-12
D202	H-22	Q211	F-12
D203	E-20	Q212	F-12
D204	F-22	Q213	E-22
D205	F-21	Q214	E-22
D207	F-21	Q215	E-20
D208	F-22	Q216	E-20
D212	F-22	Q217	G-28
D213	A-24	Q218	H-2
D214	A-24	Q219	H-29
D215	A-22	Q220	H-29
D216	A-22	Q221	H-26
D401	D-30	Q222	F-22
D602	B-30	Q223	F-14
D699	G-30	Q224	G-14
D701	H-11	Q225	G-14
		Q226	G-14
IC001	C-8	Q227	H-24
IC003	B-10	Q228	H-24
IC004	F-8	Q229	G-26
IC005	D-11	Q230	G-26
IC007	C-11	Q231	E-19
IC201	A-29	Q232	D-19
IC202	F-13	Q233	D-19
IC203	G-13	Q601	B-27
IC204	F-10	Q609	B-2
IC205	F-15	Q701	H-20
IC206	F-13		
IC207	F-20	RV002	D-8
IC208	G-8		
IC209	G-20		
IC210	G-14		
IC211	H-25		
IC212	H-5		
IC214	F-11		
IC215	D-12		
IC401	D-3		
IC402	D-29		
IC601	B-3		
IC603	G-30		
IC604	E-3		
IC701	H-17		
IC702	I-17		
IC703	I-19		
Q001	D-24		
Q002	E-24		
Q003	E-25		
Q004	D-24		
Q005	D-23		
Q008	E-26		
Q010	B-24		
Q012	B-7		
Q013	D-25		
Q014	B-24		
Q015	B-24		
Q016	B-24		
Q017	E-5		
Q018	E-26		
Q019	E-25		
Q020	C-24		
Q023	B-7		
Q024	B-27		
Q025	B-26		
Q026	D-21		
Q027	B-6		
Q028	D-21		
Q029	B-6		
Q030	B-5		

MB-706 BOARD (COMPONENT SIDE)

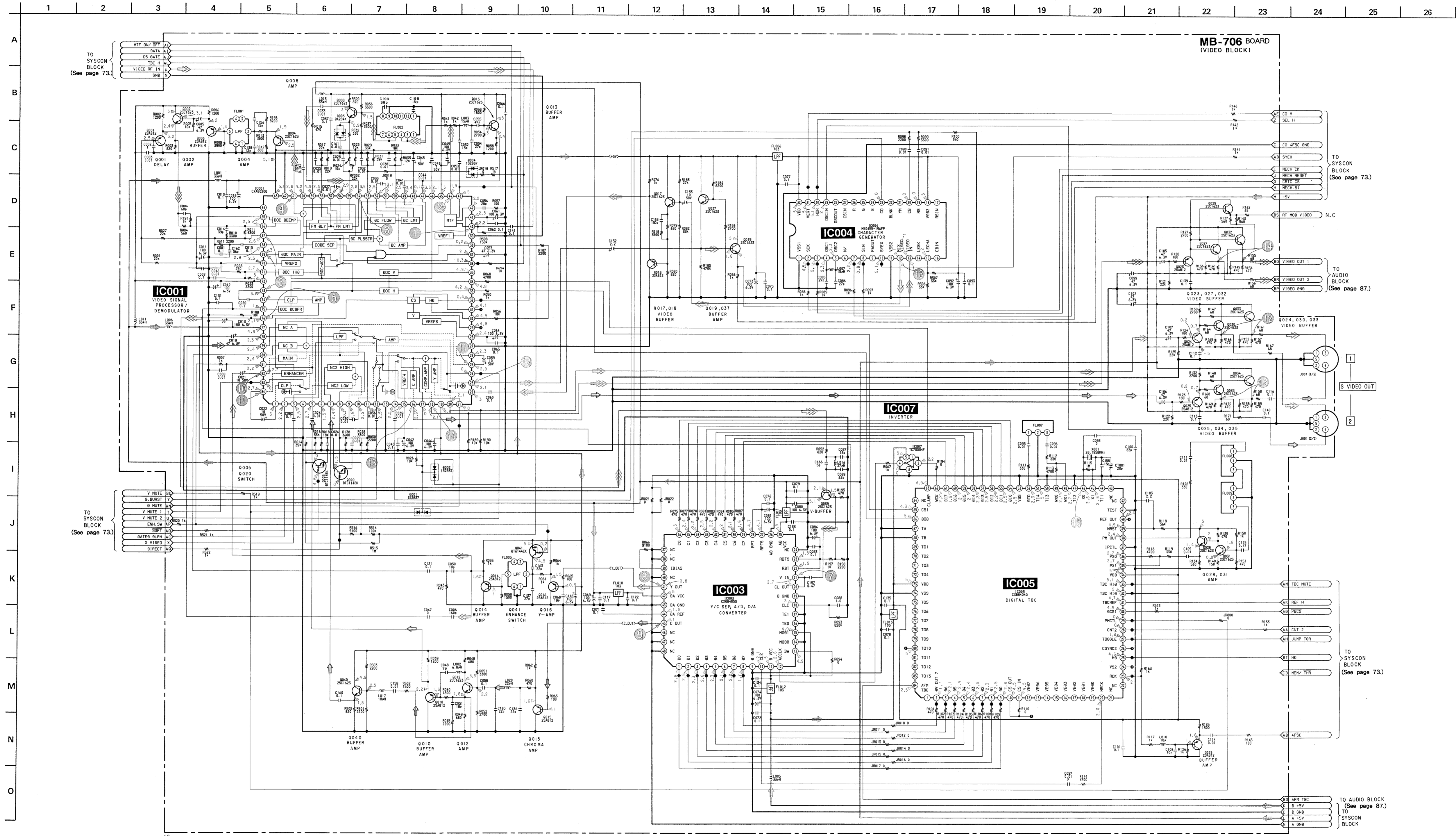


MB-706 BOARD (CONDUCTOR SIDE)



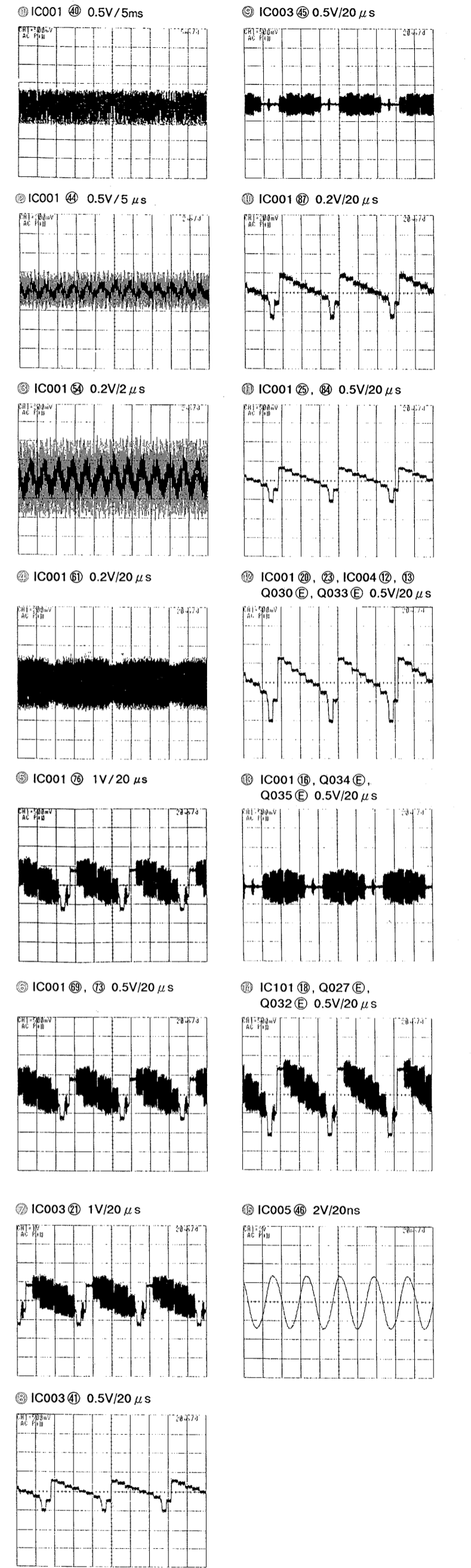
VIDEO VIDEO

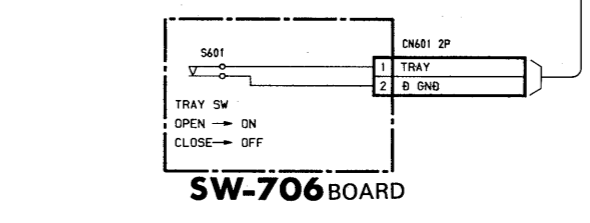
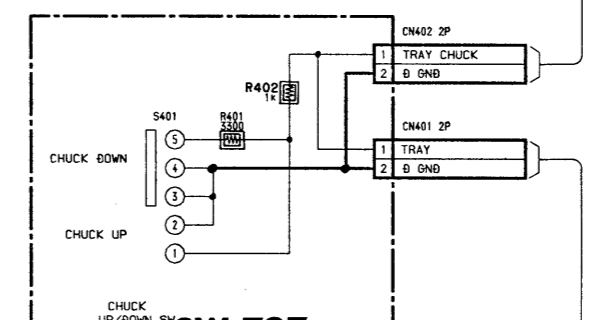
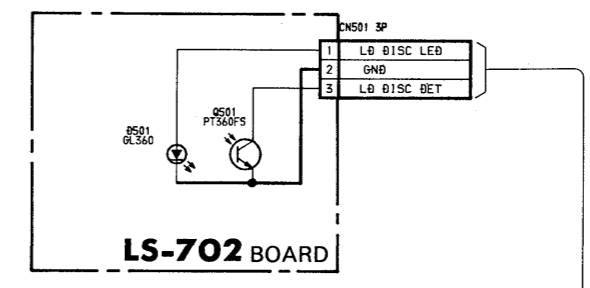
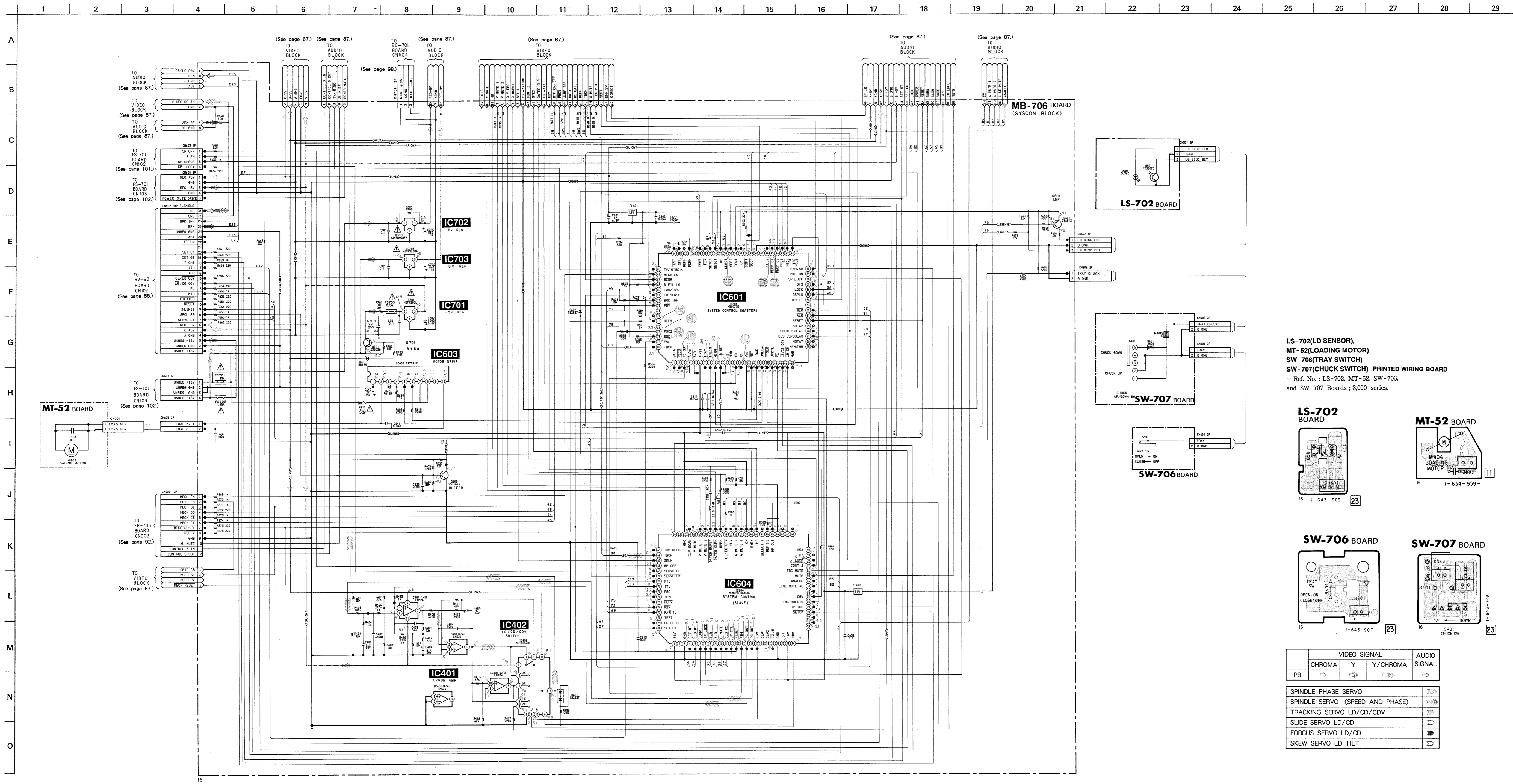
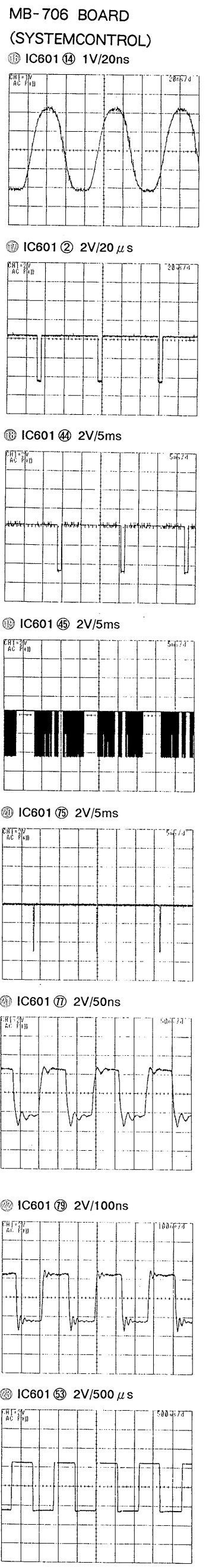
VIDEO VIDEO



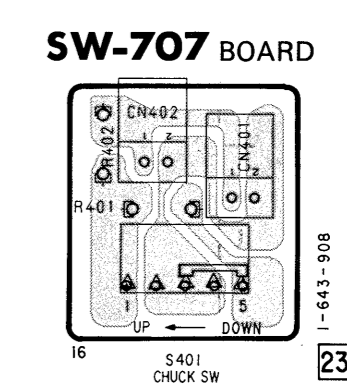
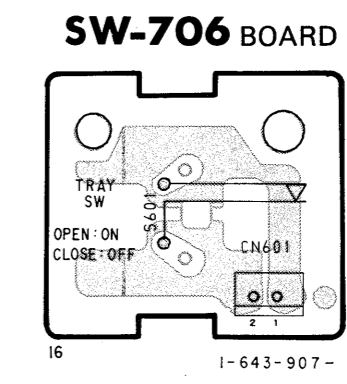
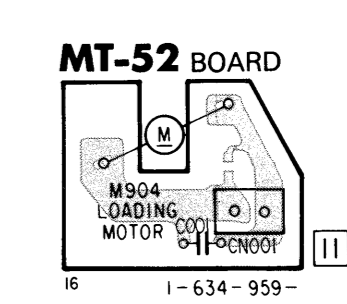
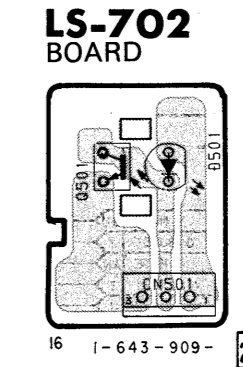
VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
PB	→	→	→
SPINDLE PHASE SERVO	→		
SPINDLE SERVO (SPEED AND PHASE)	→		
TRACKING SERVO LD/CD/CDV	→		
SLIDE SERVO LD/CD	→		
FOCUS SERVO LD/CD	→		
SKREW SERVO LD TILT	→		

MB-706 BOARD (VIDEO)



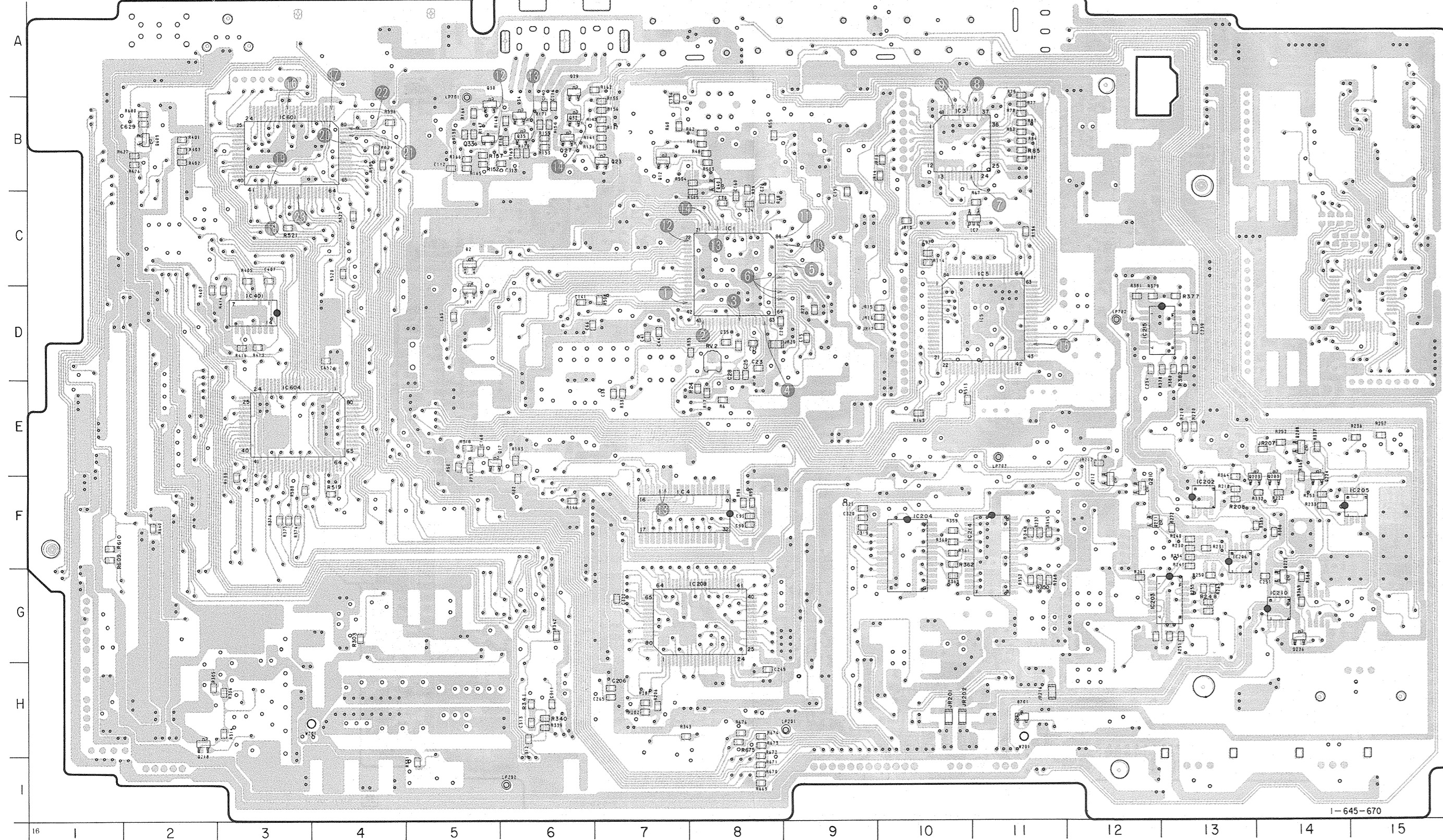


LS-702(LD SENSOR),
 MT-52(LOADING MOTOR)
 SW-706(TRAY SWITCH)
 SW-707(CHUCK SWITCH) PRINTED WIRING BOARD
 - Ref. No. : LS-702, MT-52, SW-706,
 and SW-707 Boards ; 3,000 series.

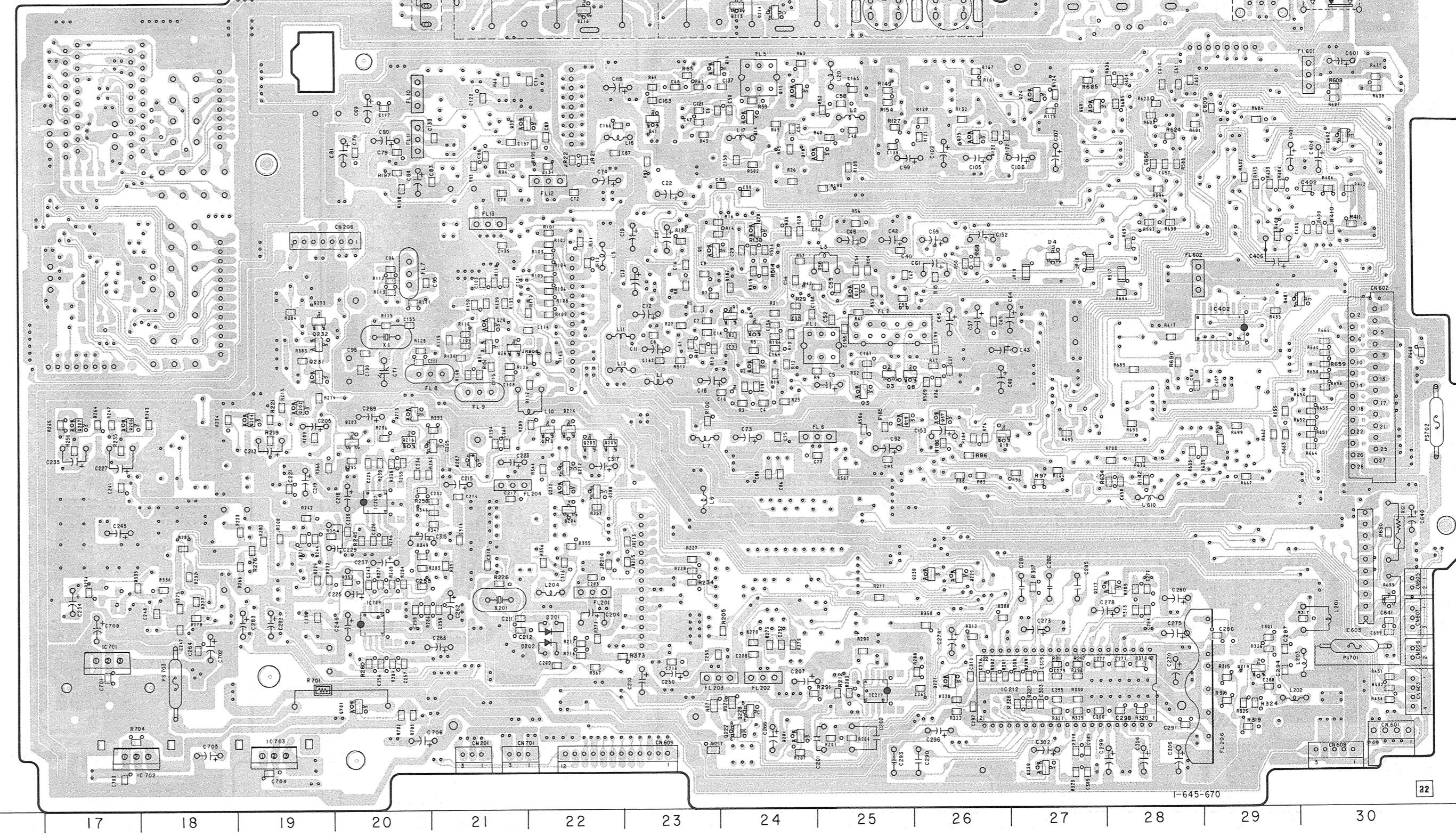


	VIDEO SIGNAL	AUDIO SIGNAL
CHROMA	Y	Y/CHROMA
PB	↔	↔
SPINDLE PHASE SERVO	↔	↔
SPINDLE SERVO (SPEED AND PHASE)	↔	↔
TRACKING SERVO LD/CD/CDV	↔	↔
SLIDE SERVO LD/CD	↔	↔
FORCUS SERVO LD/CD	↔	↔
SKREW SERVO LD TILT	↔	↔

MB-706 BOARD (COMPONENT SIDE)



MB-706 BOARD (CONDUCTOR SIDE)



MB-706 BOARD

CN201	I-21	Q031	DE-21
CN206	C-20	Q032	B-5
CN601	H-30	Q033	B-5
CN602	E-30	Q034	B-6
CN603	H-30	Q035	B-6
CN605	G-30	Q037	F-26
CN606	H-30	Q039	B-21
CN607	G-30	Q040	B-8
CN608	I-30	Q041	B-23
CN609	I-23	Q201	I-24
CN701	I-21	Q202	E-19
		Q203	F-14
CT001	E-20	Q204	E-19
		Q205	E-22
D001	D-5	Q206	E-17
D002	C-5	Q207	E-17
D003	E-25	Q208	E-14
D004	D-27	Q209	E-22
D201	G-22	Q210	F-12
D202	H-22	Q211	F-12
D203	E-22	Q212	F-12
D204	F-22	Q213	E-22
D205	F-21	Q214	E-22
D207	F-21	Q215	E-20
D209	F-22	Q216	E-20
D212	F-22	Q217	G-28
D213	A-24	Q218	H-2
D214	A-24	Q219	H-29
D215	A-22	Q220	I-27
D216	A-22	Q221	H-26
D401	D-30	Q222	F-22
D602	B-30	Q223	F-14
D699	G-30	Q224	F-14
D701	H-11	Q225	G-14
		Q226	G-14
IC001	C-8	Q227	H-24
IC003	B-10	Q228	H-24
IC004	F-8	Q229	G-26
IC005	D-11	Q230	G-26
IC007	C-11	Q231	E-19
IC201	A-29	Q232	D-19
IC202	F-13	Q233	D-19
IC203	G-13	Q601	B-27
IC204	F-10	Q609	B-2
IC205	F-15	Q701	H-20
IC206	F-13		
IC207	F-20	RV002	D-8
IC208	G-8		
IC209	G-20		
IC210	G-14		
IC211	H-25		
IC212	H-5		
IC214	F-11		
IC215	D-12		
IC401	D-3		
IC402	D-29		
IC601	B-3		
IC603	G-30		
IC604	E-3		
IC701	H-17		
IC702	I-17		
IC703	I-19		
Q001	D-24		
Q002	E-24		
Q003	E-25		
Q004	D-24		
Q005	D-23		
Q008	E-26		
Q010	B-24		
Q012	B-24		
Q014	D-25		
Q014	B-24		
Q015	B-24		
Q016	B-24		
Q017	E-5		
Q018	E-26		
Q019	E-25		
Q020	C-24		
Q023	B-7		
Q024	B-27		
Q025	B-26		
Q026	D-21		
Q027	B-6		
Q028	D-21		
Q029	B-5		
Q030	B-5		

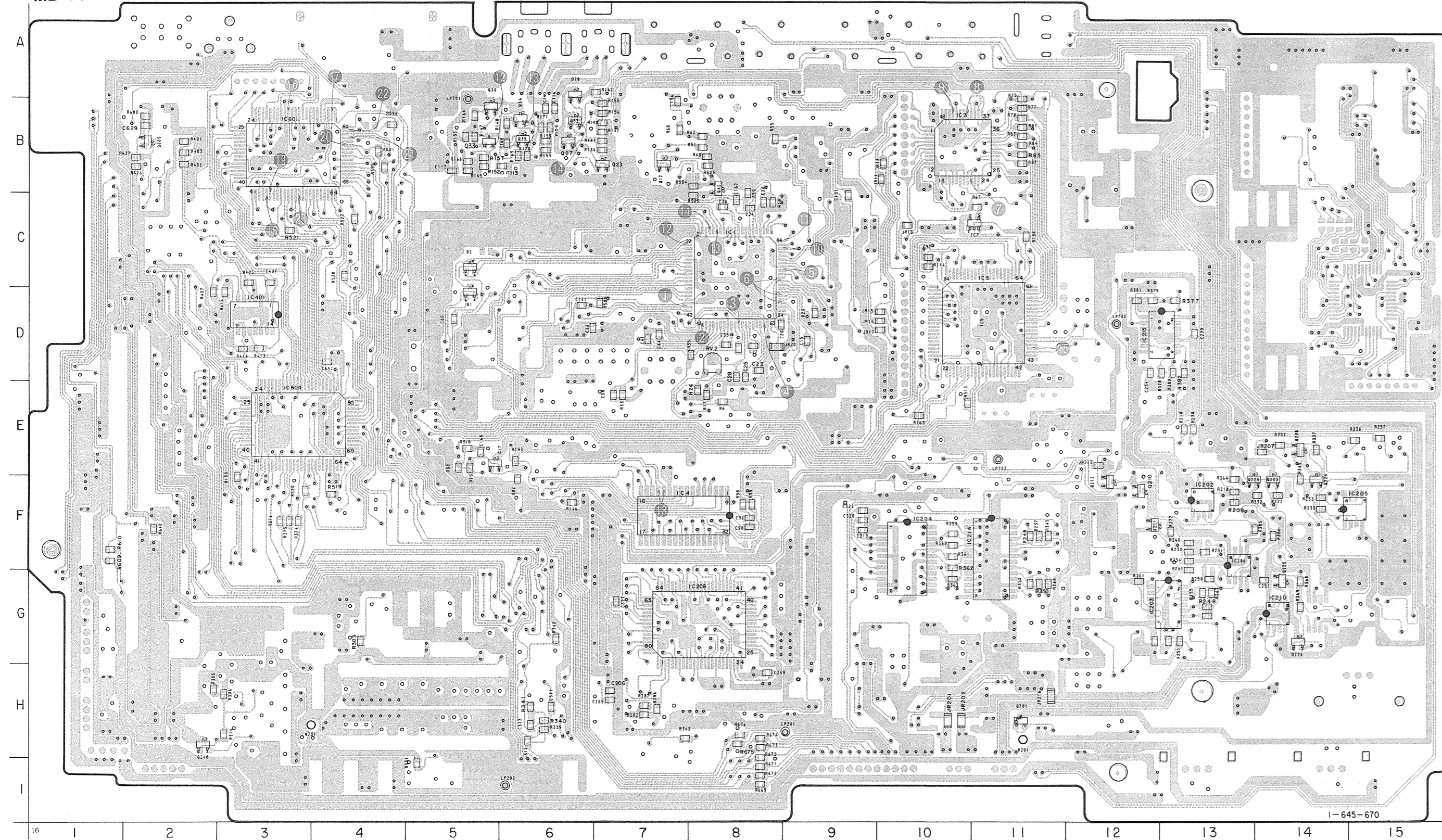
MB-706 (AUDIO), HP-710 (HEADPHONES JACK) PRINTED WIRING BOARD

— Ref. No. MB-706, HP-710 Boards : 2,000 Series —

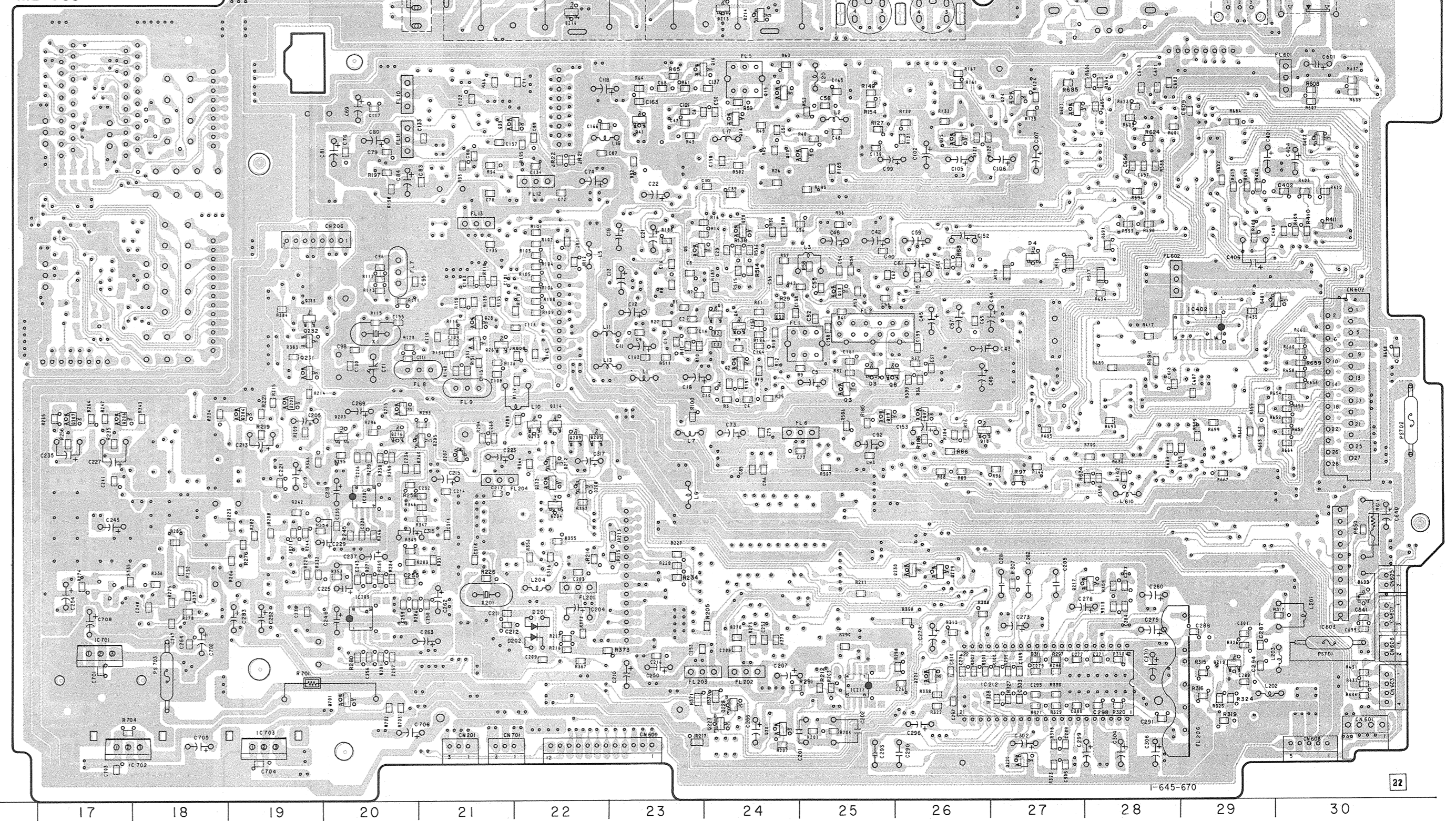
MB-706 BOARD

CN201	I-21	Q031	DE-21
CN206	C-20	Q032	B-6
CN601	H-30	Q033	B-5
CN602	E-30	Q034	B-6
CN603	H-30	Q035	B-6
CN605	G-30	Q037	E-26
CN606	H-30	Q039	B-21
CN607	G-30	Q040	B-8
CN608	I-30	Q041	B-23
CN609	I-23	Q201	I-24
CN701	I-21	Q202	E-19
		Q203	F-14
CT001	E-20	Q204	E-19
		Q205	E-22
D001	D-5	Q206	E-17
D002	C-5	Q207	E-17
D003	E-25	Q208	E-14
D004	D-27	Q209	E-22
D201	G-22	Q210	F-12
D202	H-22	Q211	F-12
D203	E-20	Q212	F-12
D204	F-22	Q213	E-22
D205	F-21	Q214	E-22
D207	F-21	Q215	E-20
D208	F-22	Q216	E-20
D212	F-22	Q217	G-28
D213	A-24	Q218	H-2
D214	A-24	Q219	H-29
D215	A-27	Q220	I-27
D216	A-22	Q221	H-26
D401	D-30	Q222	F-22
D602	B-30	Q223	F-14
D603	G-30	Q224	F-14
D701	H-11	Q225	G-14
		Q226	G-14
		Q227	H-24
		Q228	H-24
		Q229	G-26
		Q230	G-26
		Q231	E-19
		Q232	D-19
		Q233	D-19
		Q601	B-27
		Q609	B-2
		Q701	H-20
IC001	C-8		
IC003	B-10		
IC004	F-8		
IC005	D-11		
IC007	C-11		
IC201	A-29		
IC202	F-13		
IC203	I-13		
IC204	F-10		
IC205	F-15		
IC206	F-13		
IC207	F-20		
IC208	G-8		
IC209	G-20		
IC210	G-14		
IC211	H-25		
IC212	H-5		
IC214	F-11		
IC215	D-12		
IC401	D-3		
IC402	D-29		
IC601	G-30		
IC603	G-30		
IC604	E-3		
IC701	H-17		
IC702	I-17		
IC703	I-19		
Q001	D-24		
Q002	E-24		
Q003	E-25		
Q004	D-24		
Q005	D-23		
Q008	E-26		
Q010	B-24		
Q012	B-7		
Q013	D-25		
Q014	B-24		
Q015	B-24		
Q016	B-24		
Q017	E-5		
Q018	E-26		
Q019	E-25		
Q020	C-24		
Q023	B-7		
Q024	B-27		
Q025	B-26		
Q026	D-21		
Q027	D-6		
Q028	D-21		
Q029	B-6		
Q030	B-5		

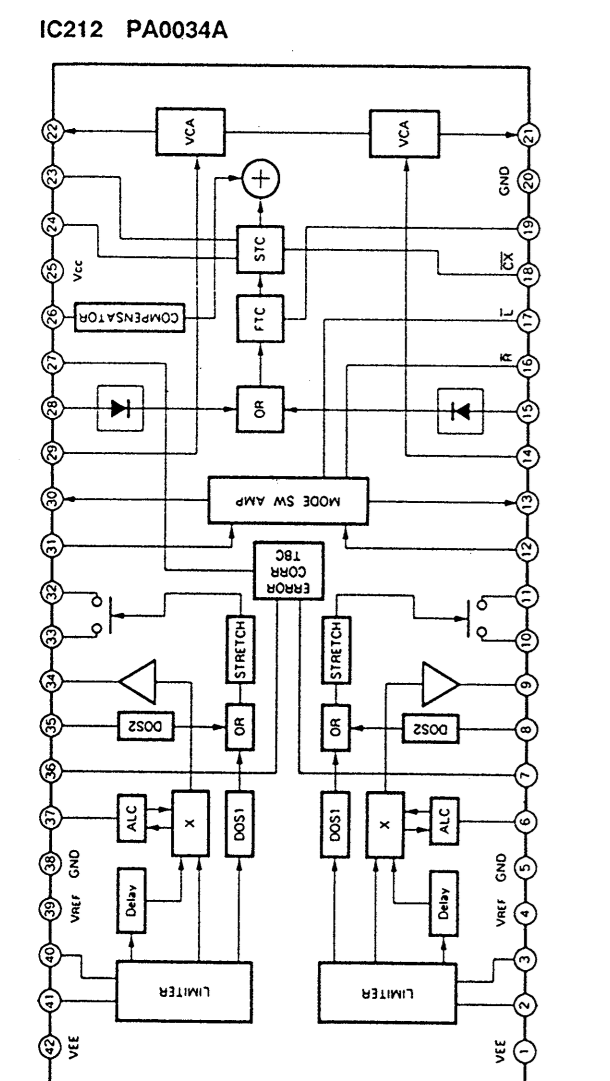
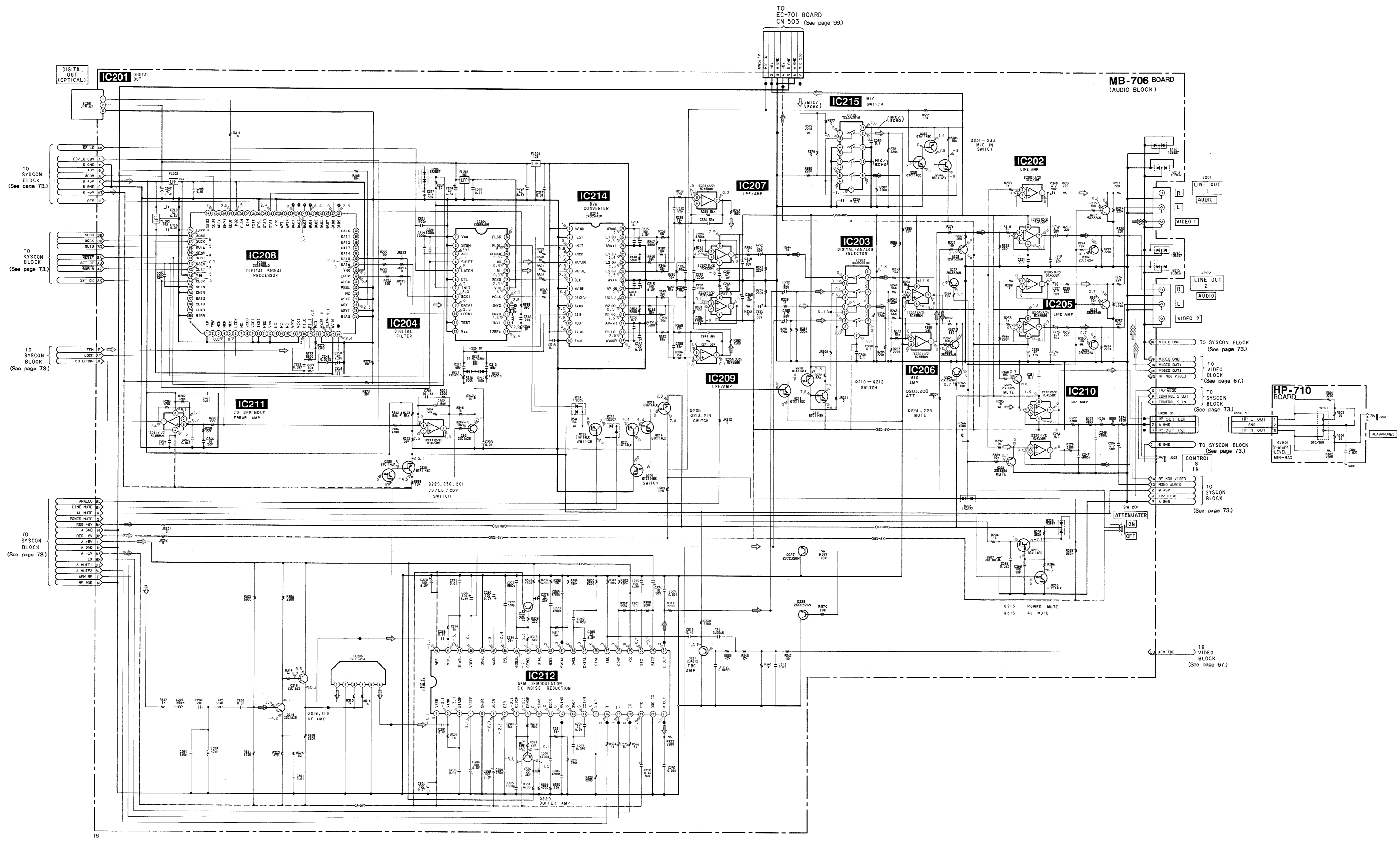
MB-706 BOARD (COMPONENT SIDE)



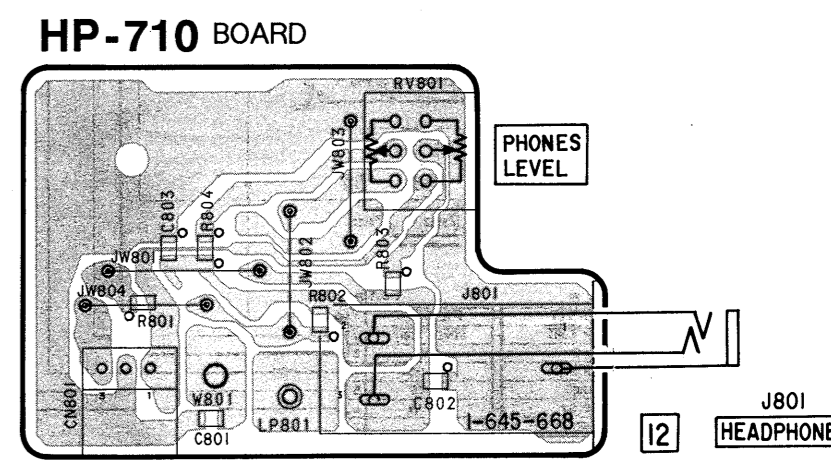
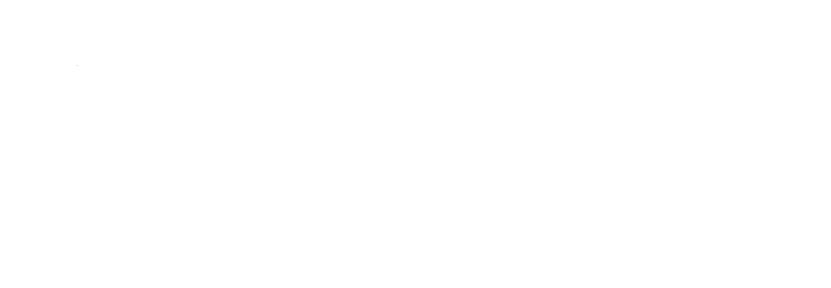
MB-706 BOARD (CONDUCTOR SIDE)



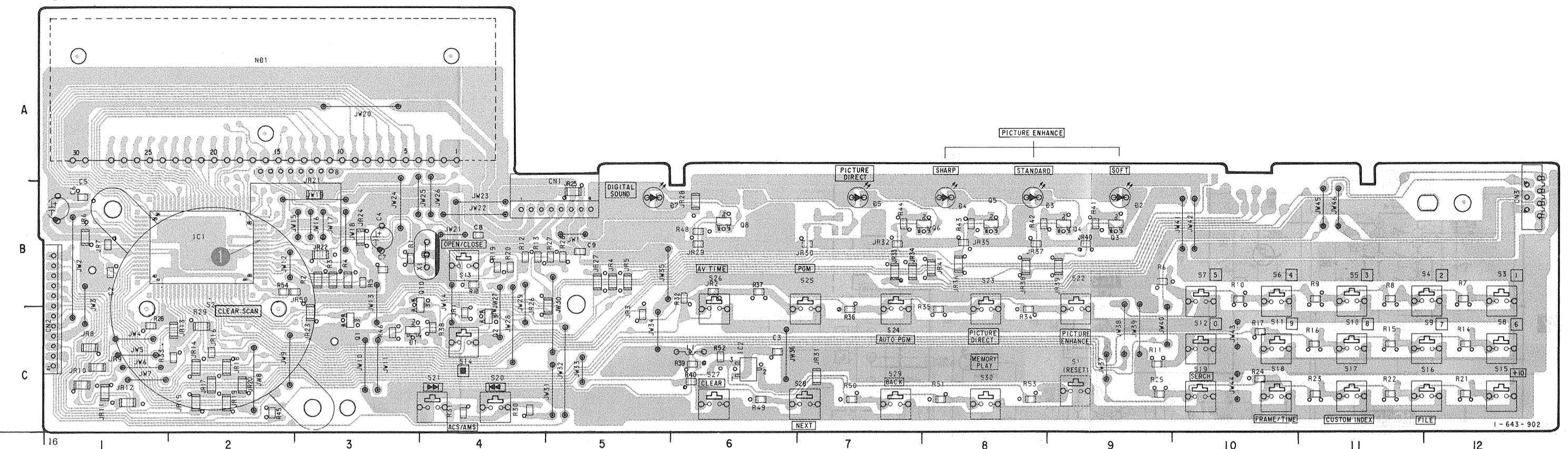
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O



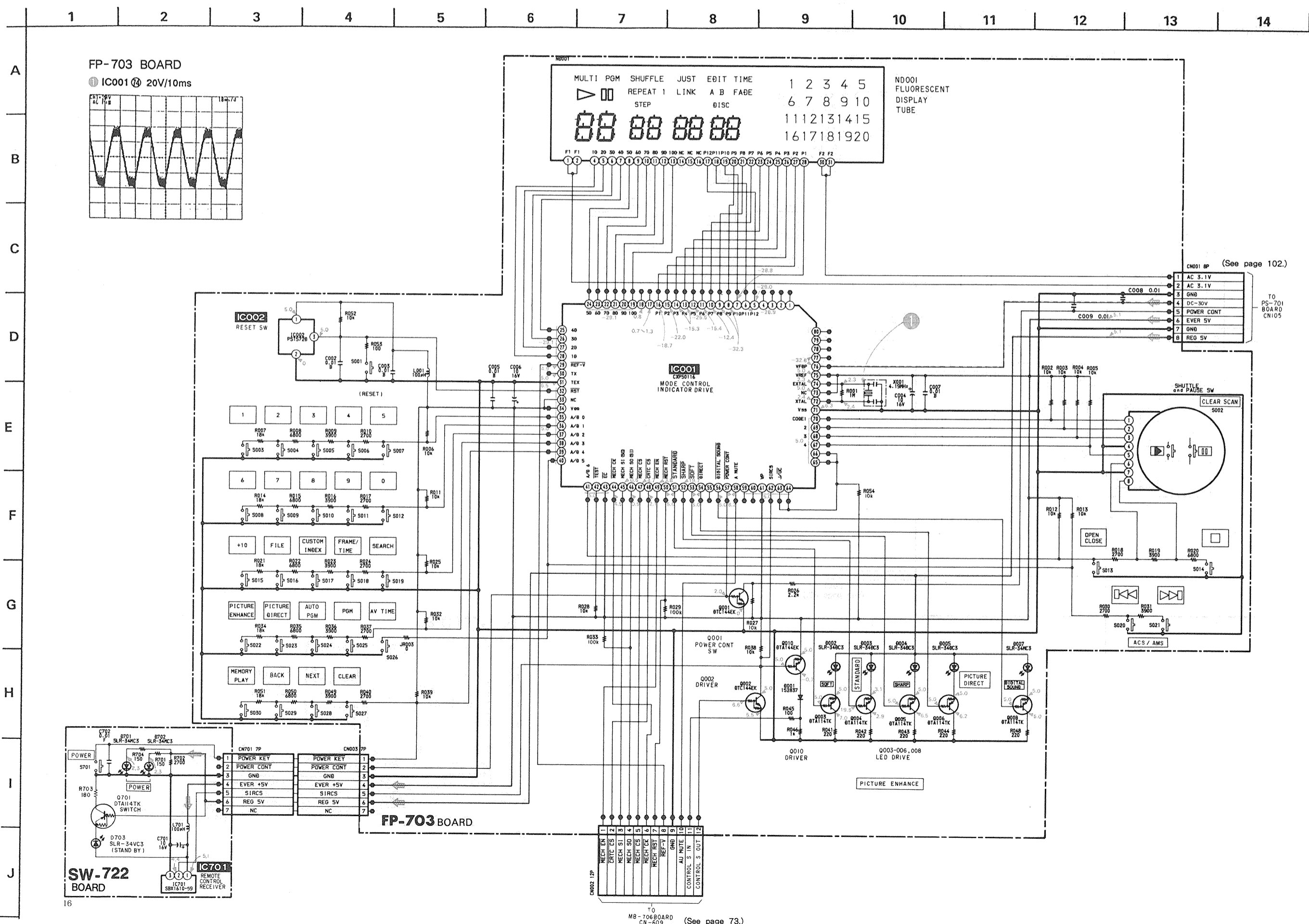
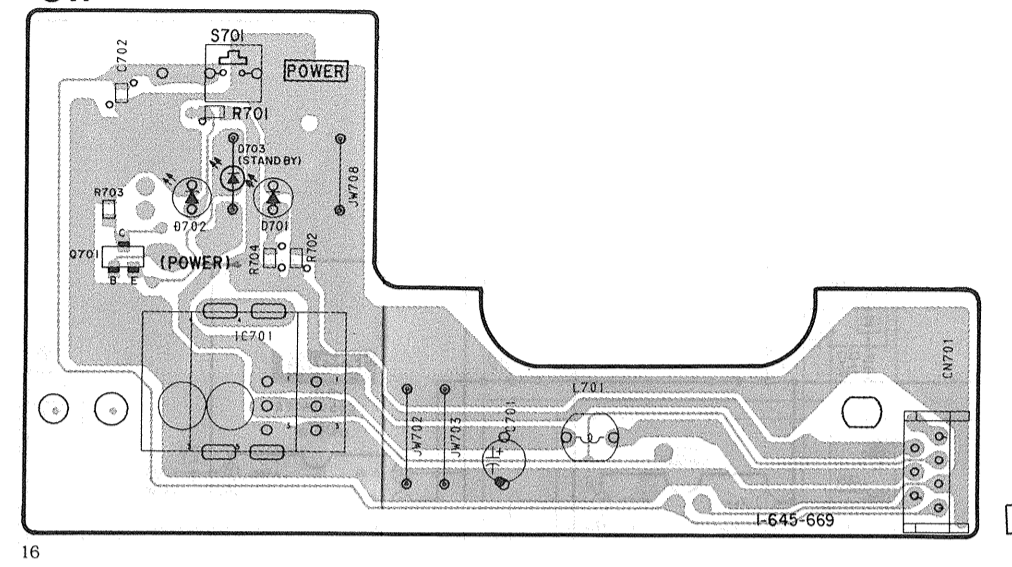
PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
□	→	→	→	→



FP-703 BOARD

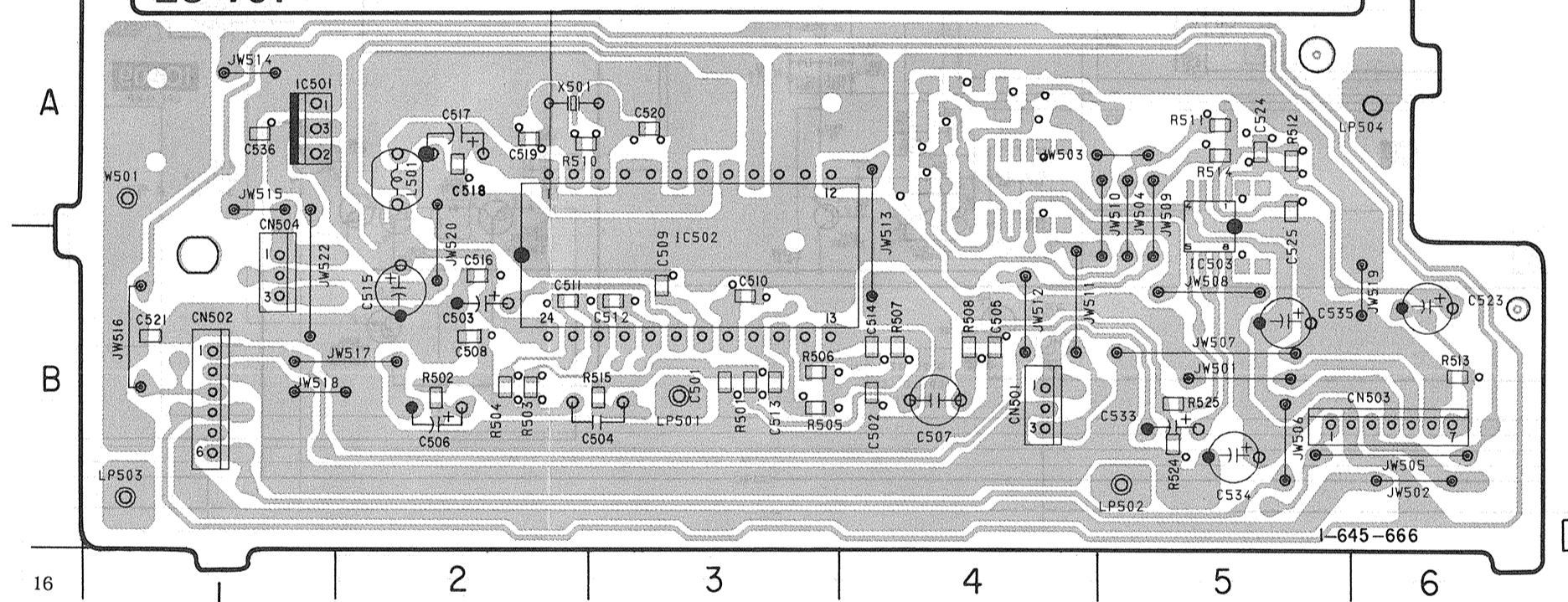


SW-722 BOARD



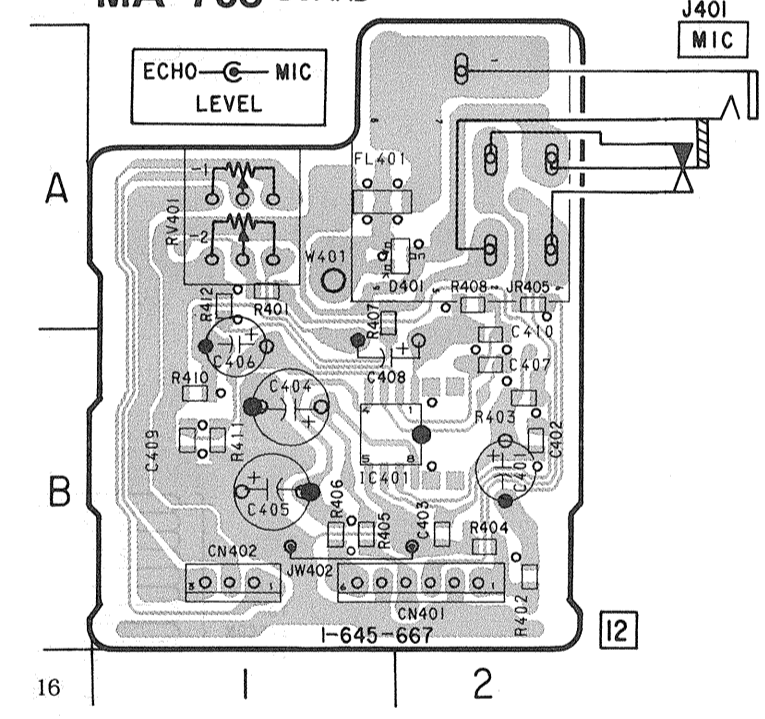
EC-701 (ECHO), MA-705 (MIC AMP) PRINTED WIRING BOARD

EC-701 BOARD



- EC-701 BOARD
- CN501 B-4
 - CN502 B-1
 - CN503 B-6
 - CN504 A-1
 - IC501 A-1
 - IC502 A-3
 - IC503 A-5

MA-705 BOARD



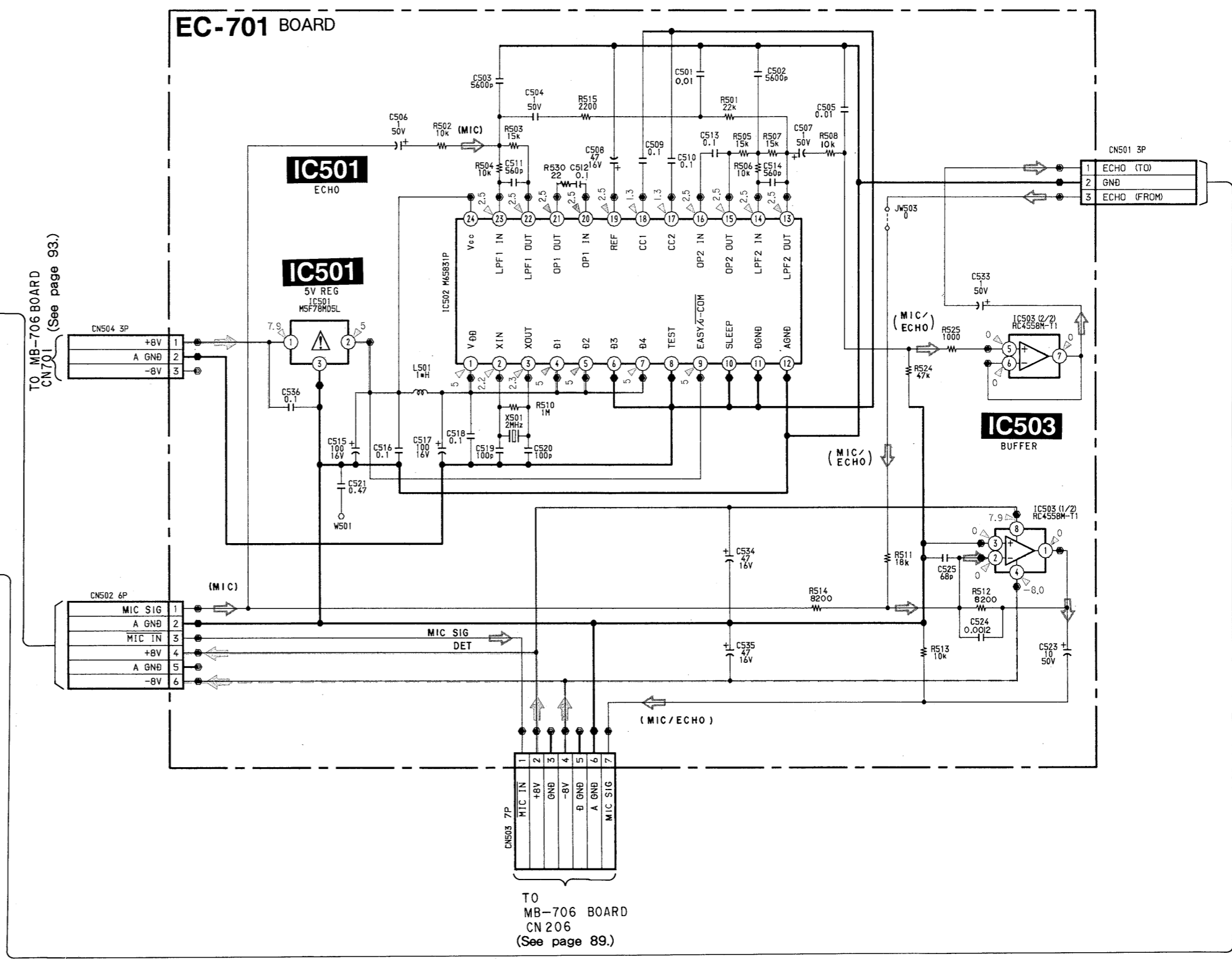
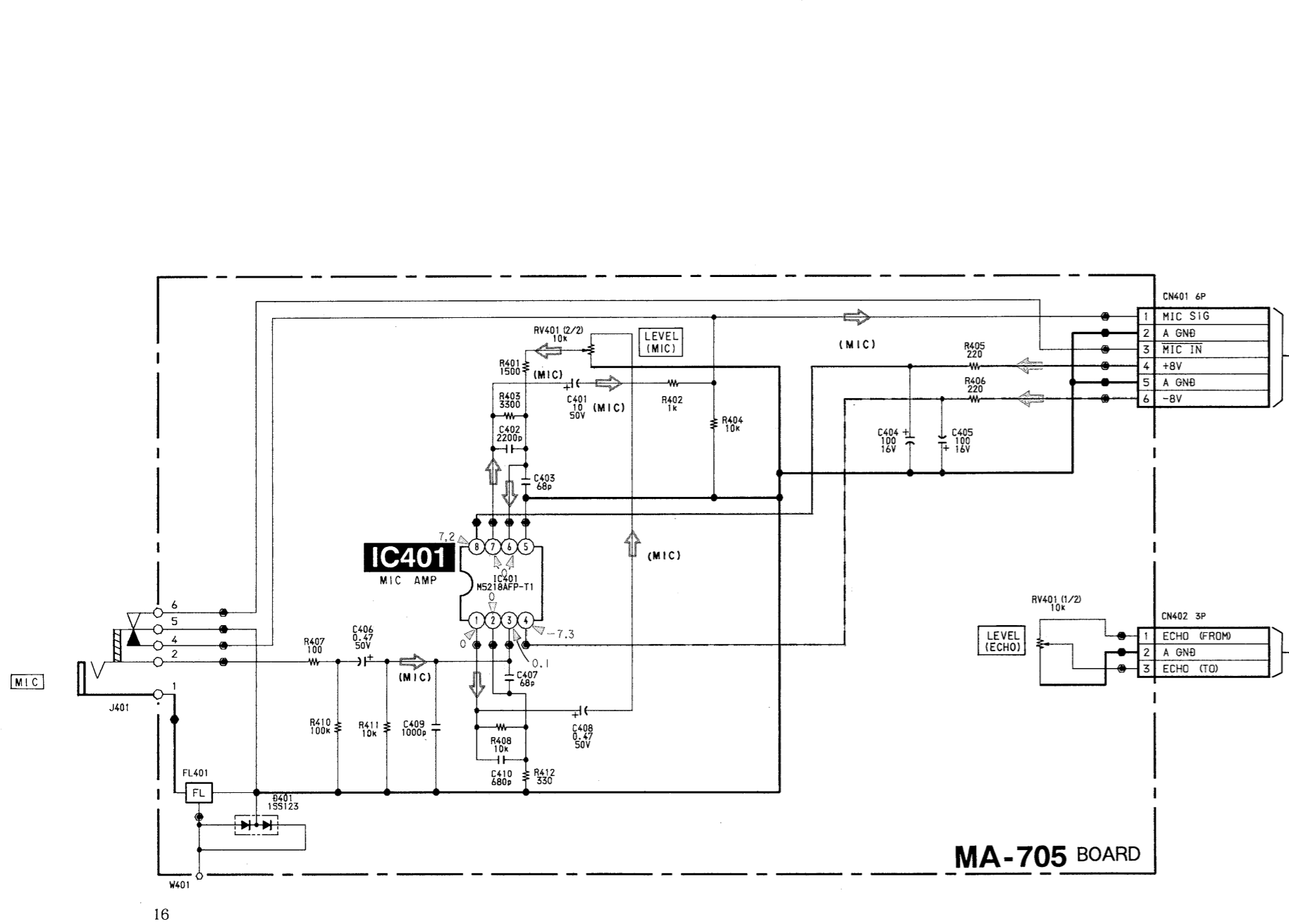
- MA-705 BOARD
- D401 A-2
 - FL401 A-1
 - IC401 B-1
 - RV401 A-1

EC-701 (ECHO), MA-705 (MIC AMP) SCHEMATIC DIAGRAMS

- Ref. No. EC-701, MA-705 Boards : 7,000 Series -

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

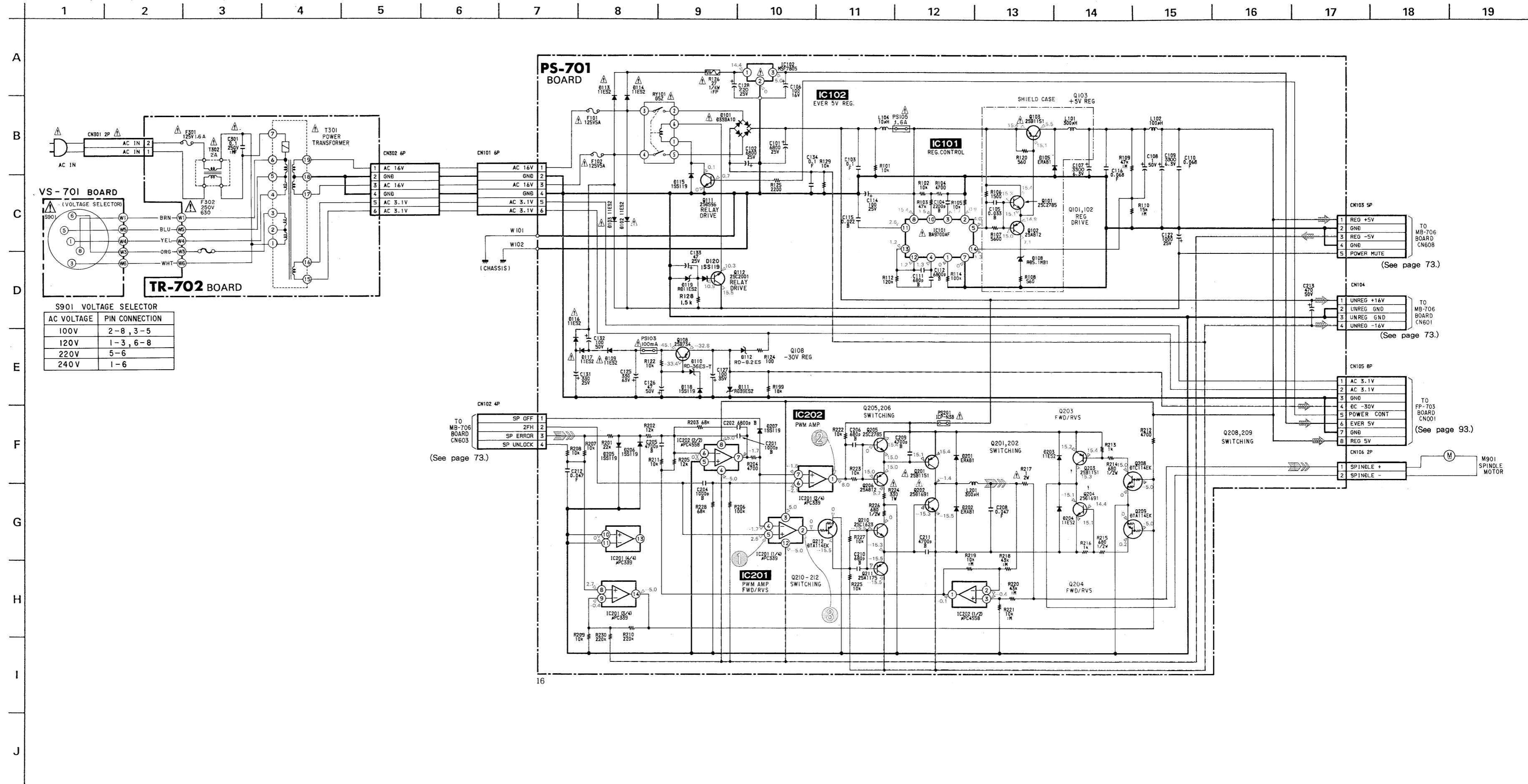
A
B
C
D
E
F
G
H
I
J



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

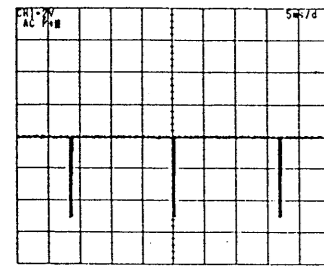
PS-701 (POWER SUPPLY, SPINDLE SERVO), TR-702 (POWER TRANSFORMER), VS-701 (VOLTAGE SELECTOR) SCHEMATIC DIAGRAMS

- Ref. No. PS-701, TR-702, VS-701 Boards : 8,000 Series -

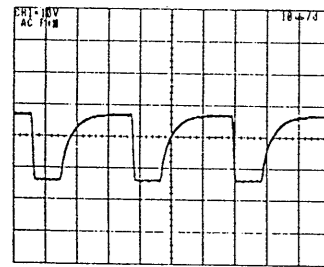


PS-701 BOARD

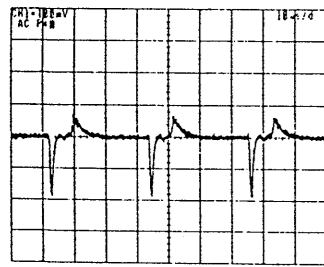
IC201 2V/5ms



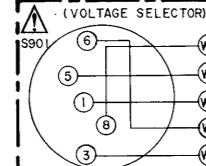
IC201 10V/10μs



IC201 0.1V/10μs



VS-701 BOARD



S901 VOLTAGE SELECTOR

AC VOLTAGE	PIN CONNECTION
100V	2-8, 3-5
120V	1-3, 6-8
220V	5-6
240V	1-6

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

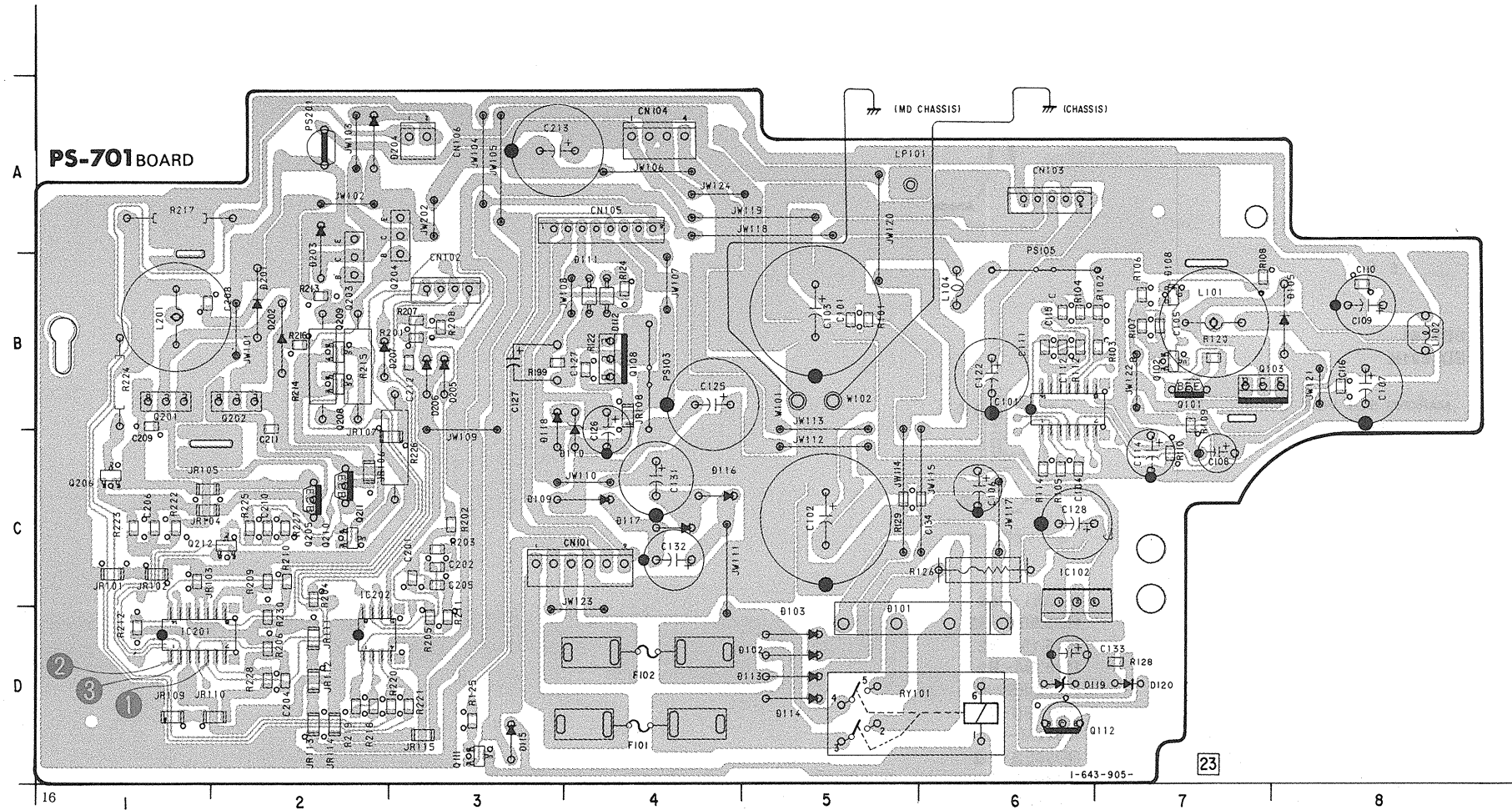
SPINDLE PHASE SERVO	⇨⇨
SPINDLE SERVO (SPEED AND PHASE)	⇨⇨⇨
TRACKING SERVO LD/CD/CDV	⇨
SLIDE SERVO LD/CD	⇨
FORCUS SERVO LD/CD	⇨
SKREW SERVO LD TILT	⇨

PS-701 (POWER SUPPLY, SPINDLE SERVO), TR-702 (POWER TRANSFORMER), VS-701 (VOLTAGE SELECTOR) PRINTED WIRING BOARD

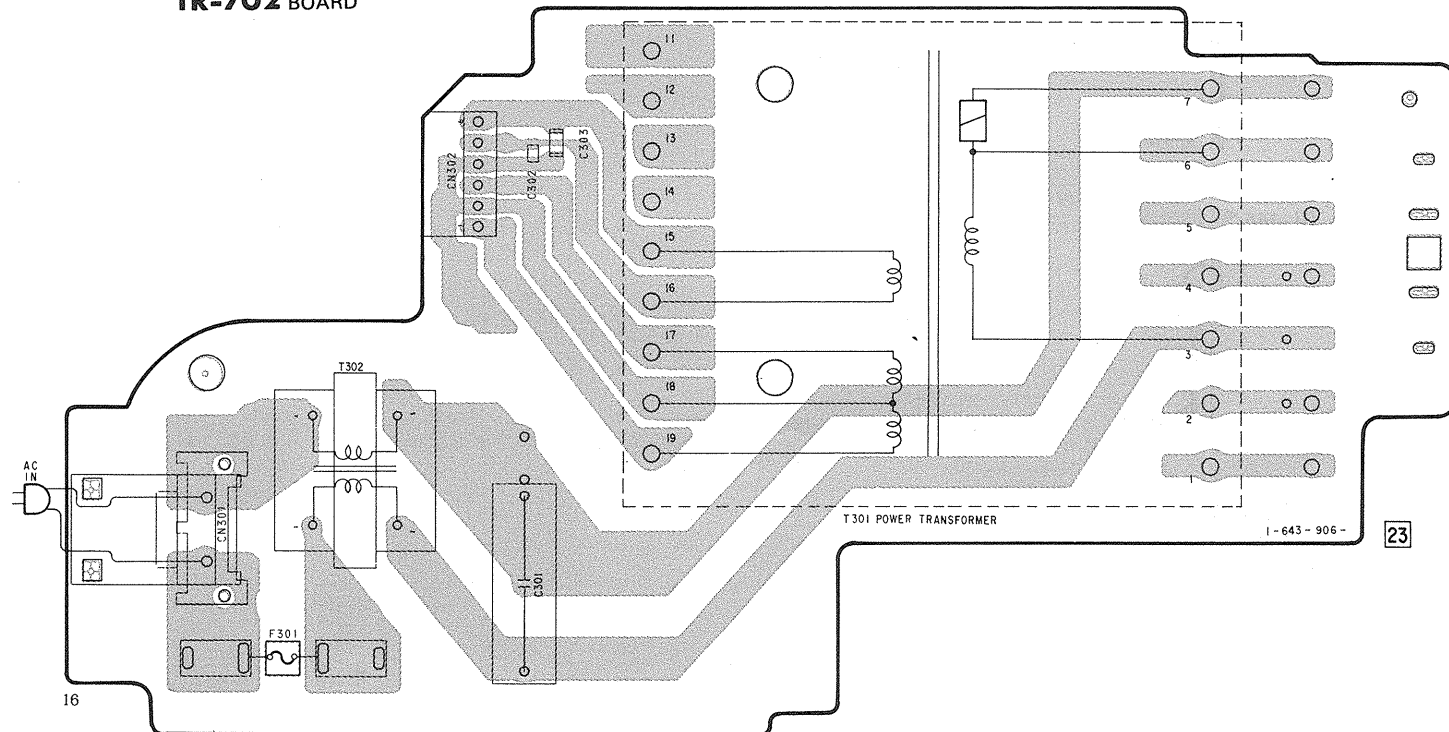
- Ref. No. PS-701, TR-702, VS-701 Boards : 8,000 Series -

PS-701 BOARD

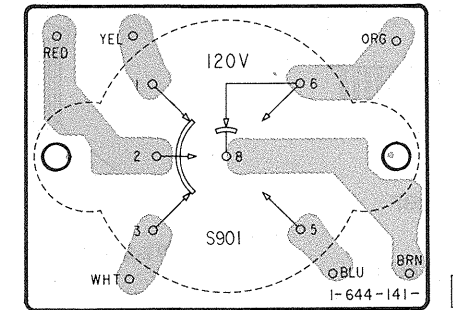
CN101	C-4	IC101	B-6
CN105	A-4	IC102	C-6
CN106	A-3	IC201	D-1
		IC202	D-2
D101	D-6	Q101	B-7
D102	D-5	Q102	B-7
D103	D-5	Q103	B-7
D105	B-8	Q108	B-4
D108	B-7	Q111	D-3
D109	C-4	Q112	D-6
D110	C-4	Q201	B-1
D111	B-4	Q202	B-2
D112	B-4	Q203	B-2
D113	D-5	Q204	A-3
D114	D-5	Q205	C-2
D115	D-3	Q206	C-1
D116	C-4	Q208	B-2
D117	C-4	Q209	B-2
D118	C-3	Q210	C-2
D119	D-6	Q211	C-2
D120	D-7	Q212	C-2
D201	B-2		
D202	B-2		
D203	A-2		
D204	A-3		
D205	B-3		
D206	B-3		
D207	B-3		



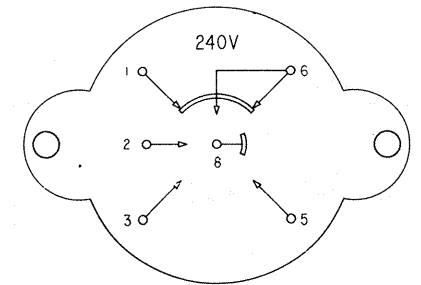
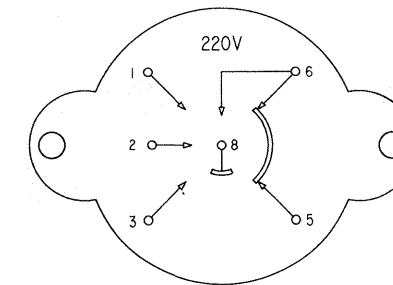
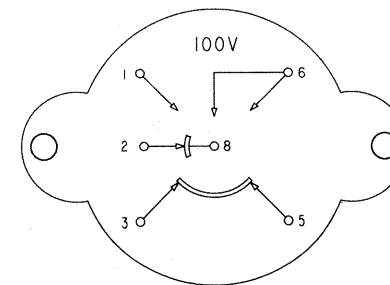
TR-702 BOARD



VS-701 BOARD

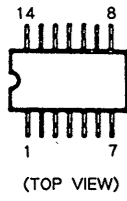


S901 VOLTAGE SELECTOR PIN CONNECTION

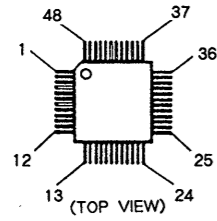


4-3. SEMICONDUCTORS

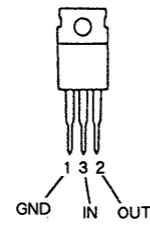
BA9700AF
LM324NS
MC14066BF



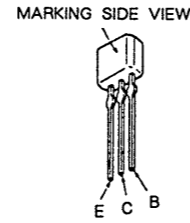
CXD8405Q



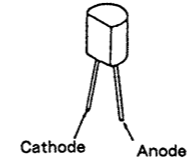
M5F7905



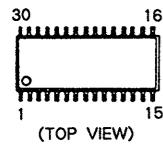
2SA1175-HFE
2SC2785-HFE



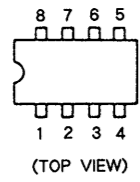
FC52M-5



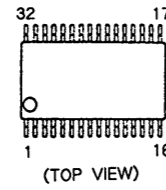
CXA1081M



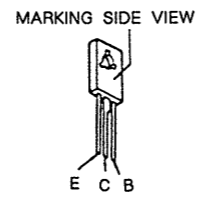
CX20197



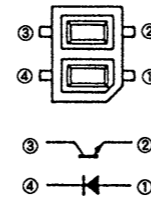
M50455-080FP



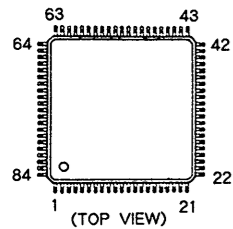
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2SD1691K



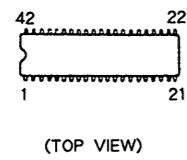
GP-2S09-B



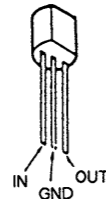
CXA8020Q
CXD8404Q



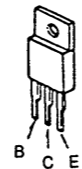
HA11529
PA0034A



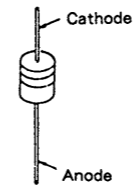
NJM78M08FA



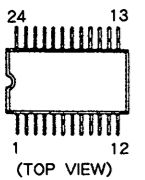
2SB1370-EF
2SD2012



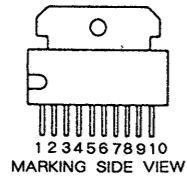
ERA81-006
RD3.9ES-B2
RD5.1M-B2
RD6.8M-B2
RD8.2ES-B1
RD11ES-B2
RD12M-B2
RD36ES-B2
RD39ES-B2
1SS119
11ES2



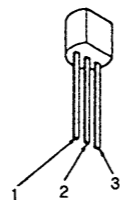
CXD2560M



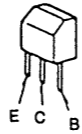
LA6510
TA7291P



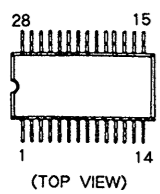
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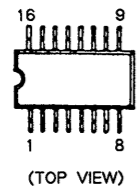
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2SB-734-34



CXD2561BM



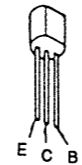
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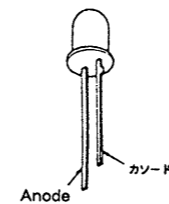
PT-360FS



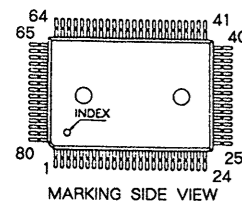
2SC2001-LK
2SD655-E



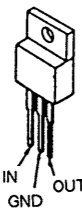
GL-360



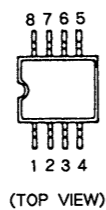
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CXP50116-414Q
MB89795-137



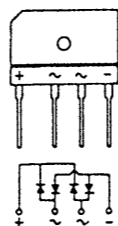
M5F7805
M5F78M05



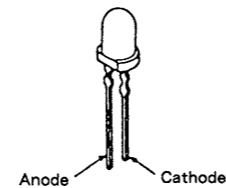
RC4558M
μPC4558G2



D3SBA10



SLR34DC3
SLR34MC3
SLR34VC3



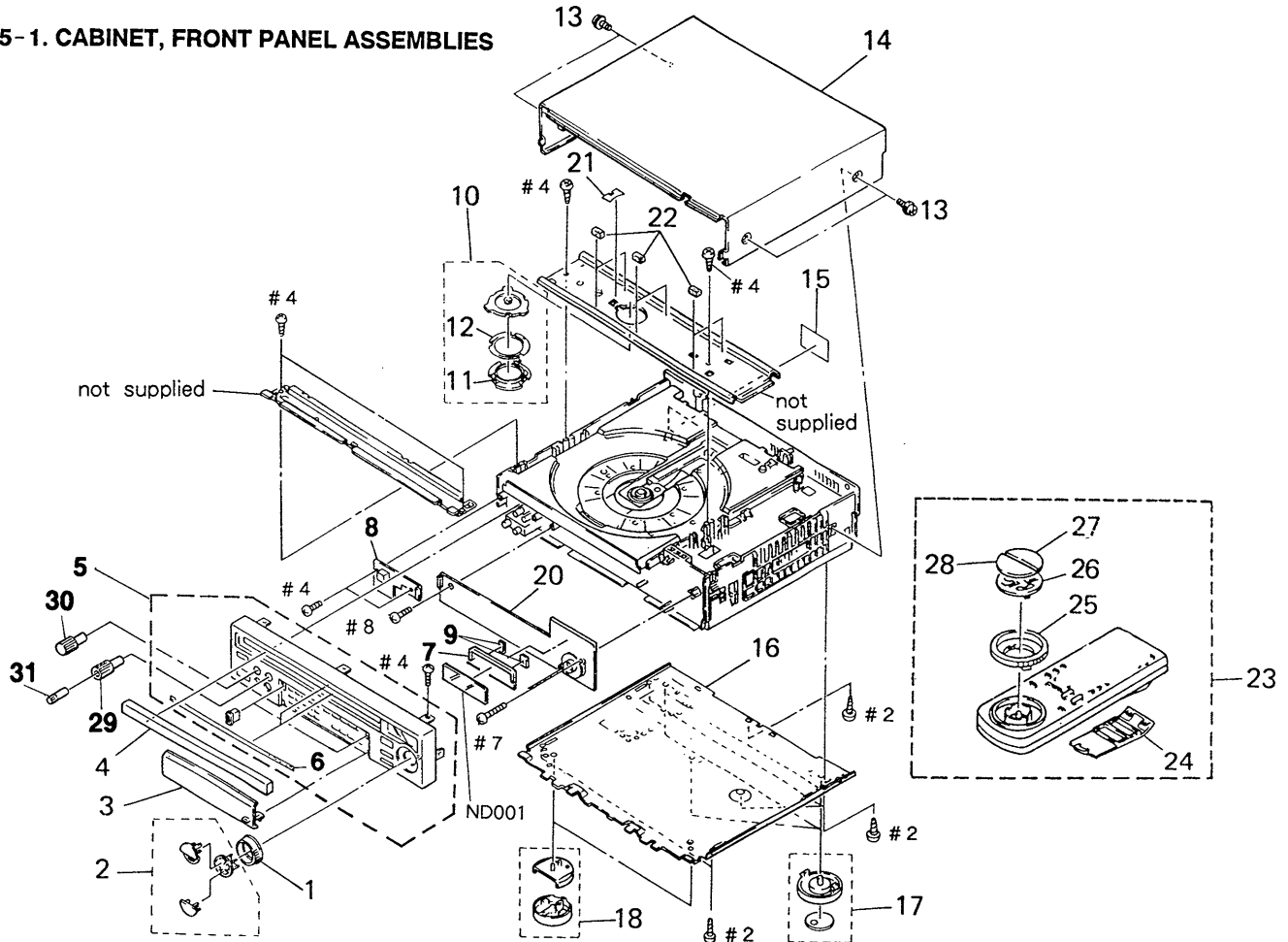
SECTION 5 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)...(RED)
 ↑ ↑
 Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

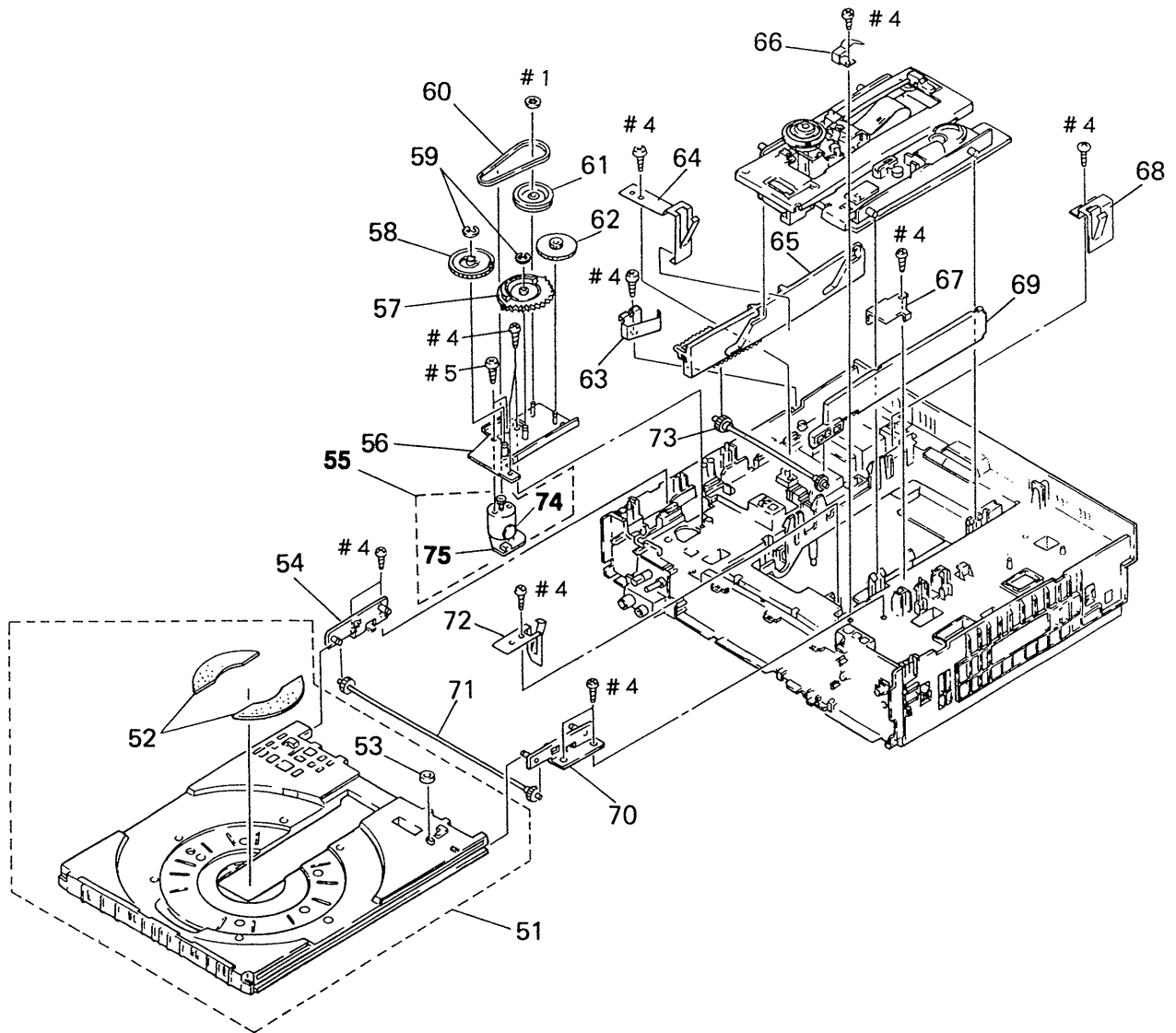
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

5-1. CABINET, FRONT PANEL ASSEMBLIES



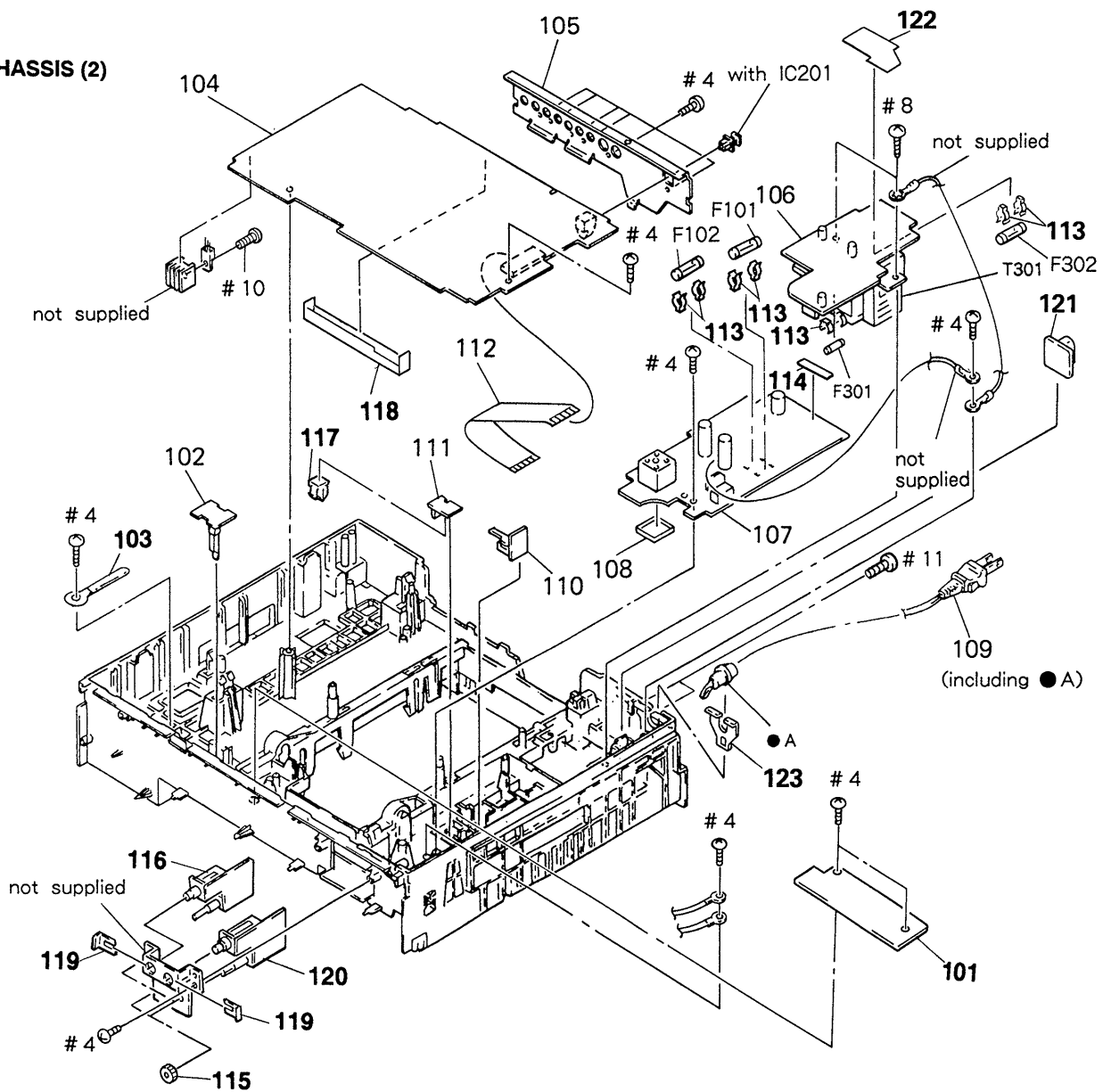
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-948-288-02	RING, SHUTTLE		17	X-3941-457-1	FOOT ASSY	
2	X-3941-573-2	BUTTON ASSY, FUNCTION		18	X-3941-456-2	FOOT ASSY, FRONT	
3	X-3942-137-1	DOOR ASSY		* 20	A-6421-792-A	FP-703 (E58) BOARD, COMPLETE	
4	3-947-258-51	COVER, TRAY		* 21	3-737-454-03	SHEET, HOLDER	
5	X-3942-136-2	PANEL ASSY, FRONT		22	9-911-842-XX	CUSHION	
6	3-947-248-02	SHEET (2), ACOUSTIC ISOLATION		23	1-693-095-31	REMOTE COMMANDER (RMT-M12B)	
* 7	3-947-249-02	HOLDER, FL		24	3-943-535-01	COVER, BATTERY	
* 8	A-6426-578-A	SW-722 (E583) BOARD, COMPLETE		25	3-941-616-01	RING, SHUTTLE	
* 9	3-949-760-01	SPACER (2), LCD		26	3-941-619-01	HOLDER, DIAL	
10	X-3735-006-8	PLATE ASSY, PRESS		27	3-941-617-31	BUTTON, PLAYBACK	
11	3-735-010-03	PLATE (1), PRESS		28	3-941-618-31	BUTTON, STOP	
12	3-735-011-03	SPRING		29	A-6415-622-A	KNOB BLOCK ASSY (ECHO)	
13	3-710-901-41	SCREW, TAPPING		30	A-6415-621-A	KNOB BLOCK ASSY (HP)	
* 14	3-735-065-15	CASE, UPPER		31	A-6415-623-A	KNOB BLOCK ASSY (MIC)	
* 15	3-950-116-01	LABEL, MODEL NUMBER		ND001	1-519-652-11	INDICATOR TUBE, FLUORESCENT	
16	X-3942-383-2	PLATE ASSY, BOTTOM					

5-2. CHASSIS (1)



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
51	X-3735-032-2	TRAY ASSY		64	3-737-401-01	SPRING (1)	
52	3-735-039-05	SHEET, CD		65	3-735-053-09	RACK (LEFT)	
* 53	4-914-248-01	STOPPER, RUBBER		66	3-737-448-04	SPRING, LEAF	
54	X-3735-071-4	GUIDE ASSY (L), TRAY		* 67	3-749-912-01	RETAINER (B), RACK	
55	A-6415-359-C	MOTOR BLOCK ASSY (X), THREADING		68	3-947-254-01	SPRING (3), MD RETAINER	
56	X-3941-458-1	THREADING (BASE) ASSY (N)		69	3-735-052-03	RACK (RIGHT)	
57	3-947-264-02	CAM (N), DRIVING		70	X-3735-070-4	GUIDE ASSY (R), TRAY	
58	3-735-035-04	GEAR, TRAY		71	X-3735-069-1	GEAR ASSY, PHASE	
59	3-669-595-01	WASHER (2), STOPPER		72	3-737-402-03	SPRING (2)	
60	3-949-030-01	BELT, DRIVING		73	X-3735-008-3	GEAR ASSY, MD PHASE	
61	3-735-036-03	PULLEY (A)		74	1-161-063-51	CAP, CERAMIC 0.1uF X	
62	3-947-262-01	GEAR (N), MIDWAY		75	1-506-481-11	PIN, CONNECTOR 2P	
63	3-948-289-01	SPRING (2), TRAY					

5-3. CHASSIS (2)

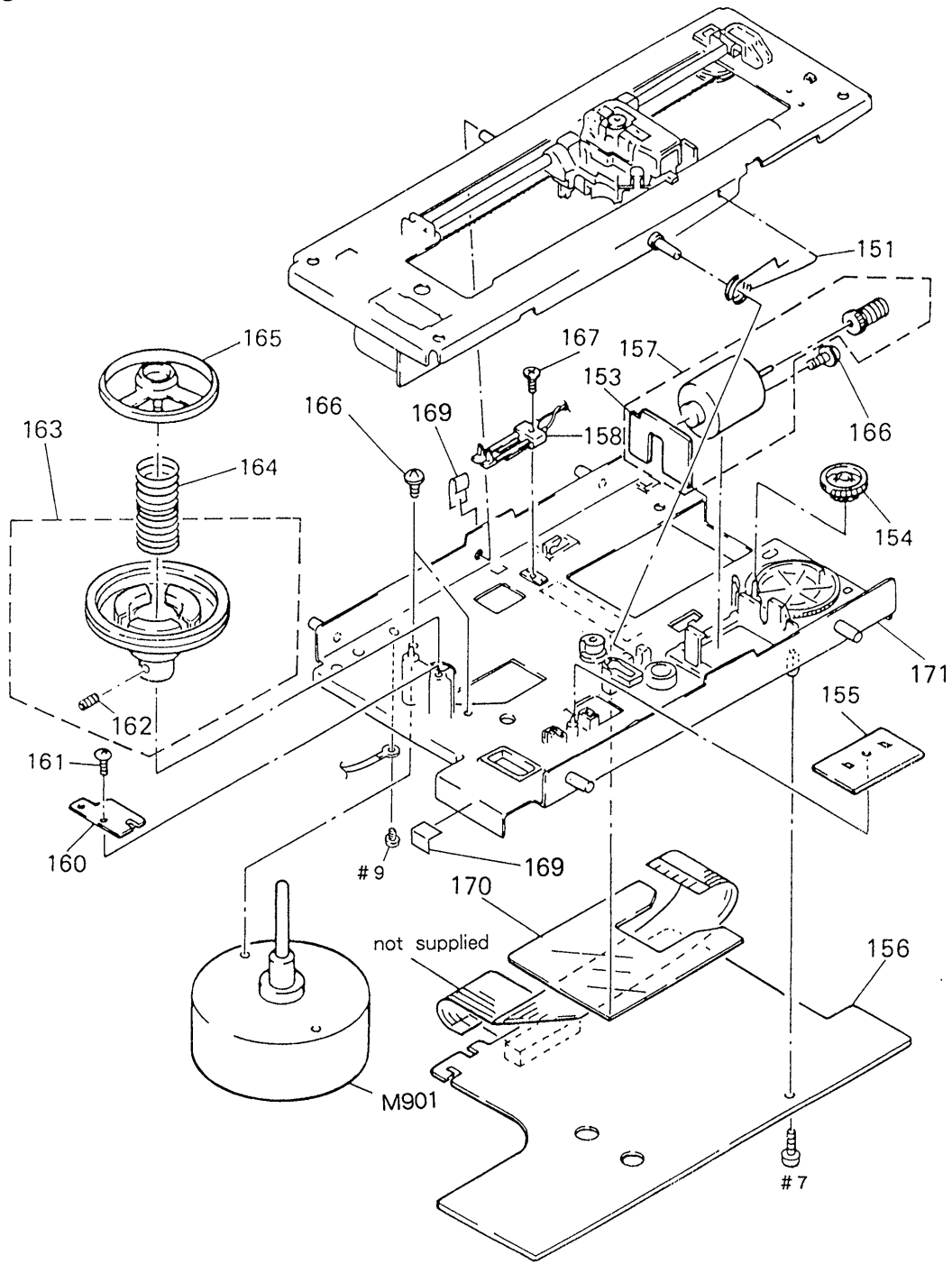


Ref. No.	Part No.	Description	Remarks
* 101	A-6421-899-A	EC-701 (J583) BOARD, COMPLETE	
* 102	1-643-907-23	SW-706 BOARD	
103	3-703-150-11	STOPPER, WIRING	
* 104	A-6421-884-A	MB-706 (E583) BOARD, COMPLETE	
105	3-947-255-61	PLATE, JACK, MZ	
* 106	1-643-906-23	TR-702 BOARD	
* 107	A-6421-794-A	PS-701 (E58) BOARD, COMPLETE	
* 108	X-3940-915-2	SHIELD ASSY (2), PS LID	
△109	1-575-912-23	CORD, POWER	
* 110	1-643-908-23	SW-707 BOARD	
* 111	1-643-909-23	LS-702 BOARD	
112	1-696-664-11	CABLE, FLEXIBLE FLAT	
△113	1-533-189-11	HOLDER, FUSE	
114	9-910-999-33	SHEET (F), ADHESIVE	

Ref. No.	Part No.	Description	Remarks
115	3-950-989-01	NUT (M7), HEXAGON	
* 116	A-6421-900-A	MA-705 (J583) BOARD, COMPLETE	
117	3-947-260-02	HOLDER, SENSOR	
* 118	3-947-805-01	PLATE, GROUND, JACK	
* 119	3-684-436-01	PLATE, MOUNT	
* 120	A-6426-547-A	HP-710 (J583) BOARD, COMPLETE	
△121	A-6426-533-A	VS-701 (E58) BOARD, COMPLETE	
122	3-746-543-02	COVER, TRANSFORMER	
* 123	3-737-438-02	BRACKET, AC CORD	
△F101	1-532-299-11	FUSE, TIME-LAG (5A 250V)	
△F102	1-532-299-11	FUSE, TIME-LAG (5A 250V)	
△F301	1-532-285-11	FUSE, TIME-LAG (1.25A 250V)	
△F302	1-532-284-11	FUSE, TIME-LAG (0.63A 250V)	
△T301	1-450-972-11	TRANSFORMER, POWER	

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

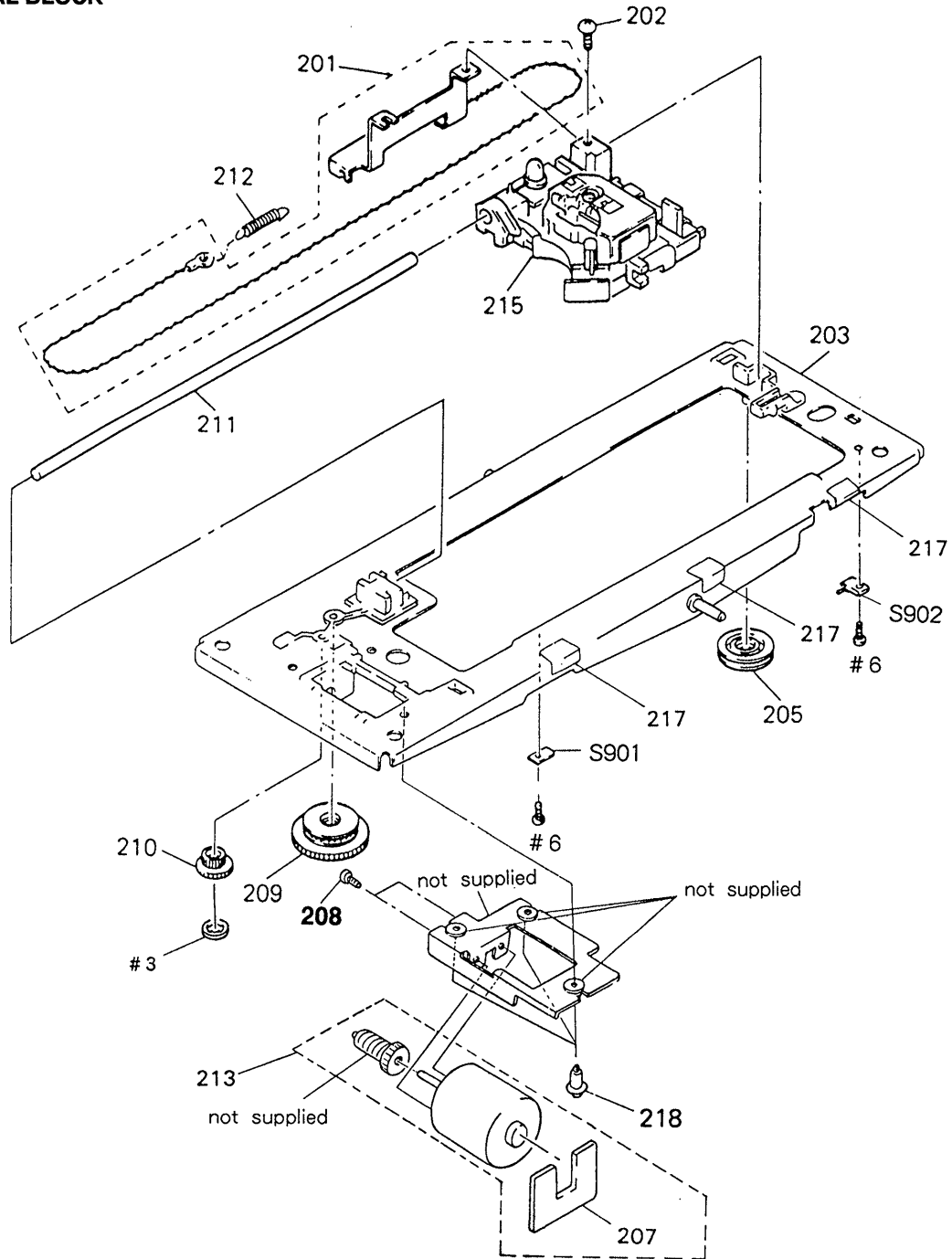
5-4. MD CHASSIS



Ref. No.	Part No.	Description	Remarks
	151	3-735-021-03 SPRING, TORSION	
*	153	1-631-095-12 PC BOARD, MT-30	
	154	3-735-025-01 GEAR, SKEW	
*	155	1-635-255-12 CK-44 BOARD	
*	156	A-6421-465-A SV-63 BOARD, COMPLETE	
	157	A-6415-290-A MOTOR BLOCK ASSY, SKEW (M903)	
	158	1-554-468-11 SWITCH, LEAF (S903)	
*	160	1-635-256-12 FG-41 BOARD	
	161	3-719-845-11 SCREW (B2X8), TAPPING	
	162	3-701-506-01 SET SCREW, DOUBLE POINT 3X4	

Ref. No.	Part No.	Description	Remarks
	163	X-3735-003-2 TURNTABLE ASSY	
*	164	3-735-026-01 SPRING, COMPRESSION	
	165	X-2625-077-1 GUIDE ASSY, CENTER	
	166	4-606-833-01 SCREW (3X5), + PSW	
	167	3-899-248-01 SCREW (M3X6)	
*	169	3-737-413-01 SHEET, TEFLON	
*	170	3-735-099-03 SHEET, FLEXIBLE RETAINER	
*	171	3-735-068-17 CHASSIS, MD	
	M901	1-541-776-21 MOTOR, LD SPINDLE	

5-5. OPTICAL BLOCK



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	X-3735-001-2	WIRE ASSY		* 211	3-735-020-01	SHAFT, CARRIAGE	
202	3-899-248-01	SCREW (M3X6)		212	3-672-430-01	SPRING, TENSION	
* 203	X-3940-657-6	CHASSIS ASSY		213	A-6415-434-D	MOTOR BLOCK ASSY, SLED (M902)	
205	3-735-017-01	PULLEY, RETURN		△215	8-848-138-02	DEVICE, OPTICAL KHS-130A	
* 207	1-630-097-11	PC BOARD, MT-28		217	3-846-312-01	SPACER	
208	3-949-324-01	SCREW (3X4), +PSW		218	3-570-027-00	SCREW, MOTOR	
209	3-735-016-11	PULLEY, DRIVING		S901	1-571-435-11	SWITCH (SLED IN LIMIT)	
210	3-735-015-01	GEAR, CARRIAGE		S902	1-570-771-21	SWITCH (SLED OUT LIMIT)	

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

CK-44

EC-701

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

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

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

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

Ref. No.	Part No.	Description	Remarks
*	1-635-255-12	CK-44 BOARD *****	
< CAPACITOR >			
C401	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C402	1-163-038-91	CERAMIC CHIP 0.1uF	25V
< CONNECTOR >			
CN401	1-506-467-11	PIN, CONNECTOR 2P	
CN402	1-506-468-11	PIN, CONNECTOR 3P	
CN403	1-506-467-11	PIN, CONNECTOR 2P	
CN404	1-506-467-11	PIN, CONNECTOR 2P	
CN405	1-506-467-11	PIN, CONNECTOR 2P	
< JUMPER RESISTOR >			
JR401	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR402	1-216-296-91	METAL GLAZE 0 5% 1/8W	
< RESISTOR >			
R401	1-216-077-91	METAL GLAZE 15K 5% 1/10W	
R402	1-216-031-91	METAL GLAZE 180 5% 1/10W	
R403	1-216-061-91	METAL GLAZE 3.3K 5% 1/10W	
R404	1-216-001-91	METAL GLAZE 10 5% 1/10W	
R405	1-216-001-91	METAL GLAZE 10 5% 1/10W	
R406	1-216-031-91	METAL GLAZE 180 5% 1/10W	
R407	1-216-061-91	METAL GLAZE 3.3K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
*	A-6421-899-A	EC-701 (J583) BOARD, COMPLETE *****	
< CAPACITOR >			
C501	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C502	1-163-018-91	CERAMIC CHIP 0.0056uF	10% 50V
C503	1-163-018-91	CERAMIC CHIP 0.0056uF	10% 50V
C504	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V
C505	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C506	1-124-903-91	ELECT 1uF	20% 50V
C507	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V
C508	1-124-477-11	ELECT 47uF	20% 25V
C509	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C510	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C511	1-163-135-91	CERAMIC CHIP 560PF	5% 50V
C512	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C513	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C514	1-163-135-91	CERAMIC CHIP 560PF	5% 50V
C515	1-124-443-91	ELECT 100uF	20% 10V
C516	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C517	1-124-443-91	ELECT 100uF	20% 10V
C518	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V
C519	1-163-117-91	CERAMIC CHIP 100PF	5% 50V
C520	1-163-117-91	CERAMIC CHIP 100PF	5% 50V
C521	1-164-005-91	CERAMIC CHIP 0.47uF	25V
C523	1-124-907-91	ELECT 10uF	20% 50V
C524	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C525	1-163-113-91	CERAMIC CHIP 68PF	5% 50V
C533	1-124-903-91	ELECT 1uF	20% 50V
C534	1-124-477-11	ELECT 47uF	20% 25V
C535	1-124-477-11	ELECT 47uF	20% 25V
C536	1-164-004-91	CERAMIC CHIP 0.1uF	10% 25V

Ref. No.	Part No.	Description	Remarks
< CONNECTOR >			
CN501	1-506-468-11	PIN, CONNECTOR 3P	
* CN502	1-568-783-11	PIN, CONNECTOR 6P	
CN503	1-506-472-11	PIN, CONNECTOR 7P	
CN504	1-506-468-11	PIN, CONNECTOR 3P	
< IC >			
IC501	8-759-604-35	IC M5F78M05	
IC502	8-759-053-12	IC M65831P	
IC503	8-759-700-43	IC RC4558M	
< COIL >			
L501	1-410-119-41	INDUCTOR 1mH	
< RESISTOR >			
R501	1-216-081-91	METAL GLAZE 22K 5% 1/10W	
R502	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R503	1-216-077-91	METAL GLAZE 15K 5% 1/10W	
R504	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R505	1-216-077-91	METAL GLAZE 15K 5% 1/10W	
R506	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R507	1-216-077-91	METAL GLAZE 15K 5% 1/10W	
R508	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R510	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R511	1-216-079-91	METAL GLAZE 18K 5% 1/10W	
R512	1-216-071-91	METAL GLAZE 8.2K 5% 1/10W	
R513	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R514	1-216-071-91	METAL GLAZE 8.2K 5% 1/10W	
R515	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	
R524	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R525	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R530	1-216-009-91	METAL GLAZE 22 5% 1/10W	
< VIBRATOR >			
X501	1-577-260-11	VIBRATOR, CERAMIC 2MHz	

* 1-635-256-12	FG-41 BOARD	*****	
< DIODE >			
D301	8-719-939-11	DIODE GP-2S09-B	

Ref. No.	Part No.	Description	Remarks
* A-6421-792-A	FP-703 (E58) BOARD, COMPLETE	*****	
* 3-947-249-02	HOLDER, FL		
* 3-949-760-01	SPACER (2), LCD		
< CAPACITOR >			
C002	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C003	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	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C009	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
< CONNECTOR >			
CN001	1-506-487-11	PIN, CONNECTOR 8P	
CN002	1-506-477-11	PIN, CONNECTOR 12P	
CN003	1-569-336-11	CONNECTOR, BOARD TO BOARD 7P	
< DIODE >			
D001	8-719-400-18	DIODE MA152WK	
D002	8-719-946-30	LED SLR34DC3	
D003	8-719-946-30	LED SLR34DC3	
D004	8-719-946-30	LED SLR34DC3	
D005	8-719-946-30	LED SLR34DC3	
D007	8-719-940-82	LED SLR34MC3	
< IC >			
IC001	8-752-839-92	IC CXP50116-414Q	
IC002	8-759-074-40	IC PST572DMT	
< JUMPER RESISTOR >			
JR003	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR004	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR005	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR006	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR007	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR008	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR009	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR010	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR011	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR012	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR013	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR014	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR015	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR016	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR017	1-216-296-91	METAL GLAZE 0 5% 1/8W	

Ref. No.	Part No.	Description	Remarks		
JR018	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR019	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR020	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR021	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR022	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR023	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR024	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR025	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR026	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR027	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR028	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR029	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR030	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR031	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR032	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR033	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR034	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR035	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR036	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR037	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR038	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR039	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR040	1-216-295-91	METAL GLAZE	0	5%	1/10W
< COIL >					
L001	1-410-521-11	INDUCTOR	100uH		
< FLUORECENT INDICATOR >					
ND001	1-519-652-11	INDICATOR TUBE, FLUORESCENT			
< TRANSISTOR >					
Q001	8-729-901-01	TRANSISTOR	DTA144EK		
Q002	8-729-901-01	TRANSISTOR	DTA144EK		
Q003	8-729-900-51	TRANSISTOR	DTA114TK		
Q004	8-729-900-51	TRANSISTOR	DTA114TK		
Q005	8-729-900-51	TRANSISTOR	DTA114TK		
Q006	8-729-900-51	TRANSISTOR	DTA114TK		
Q008	8-729-900-51	TRANSISTOR	DTA114TK		
Q010	8-729-901-06	TRANSISTOR	DTA144EK		
< RESISTOR >					
R001	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R002	1-216-222-91	METAL GLAZE	10K	5%	1/8W
R003	1-216-222-91	METAL GLAZE	10K	5%	1/8W
R004	1-216-222-91	METAL GLAZE	10K	5%	1/8W
R005	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R006	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R007	1-216-079-91	METAL GLAZE	18K	5%	1/10W
R008	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R009	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R010	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W

Ref. No.	Part No.	Description	Remarks		
R011	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R012	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R013	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R014	1-216-079-91	METAL GLAZE	18K	5%	1/10W
R015	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R016	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R017	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R018	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R019	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R020	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R021	1-216-079-91	METAL GLAZE	18K	5%	1/10W
R022	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R023	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R024	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R025	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R026	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R027	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R028	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R029	1-216-246-91	METAL GLAZE	100K	5%	1/8W
R030	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R031	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R032	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R033	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R034	1-216-079-91	METAL GLAZE	18K	5%	1/10W
R035	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R036	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R037	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R038	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R039	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R040	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R041	1-216-033-91	METAL GLAZE	220	5%	1/10W
R042	1-216-033-91	METAL GLAZE	220	5%	1/10W
R043	1-216-033-91	METAL GLAZE	220	5%	1/10W
R044	1-216-033-91	METAL GLAZE	220	5%	1/10W
R045	1-216-025-91	METAL GLAZE	100	5%	1/10W
R046	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R048	1-216-033-91	METAL GLAZE	220	5%	1/10W
R049	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R050	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R051	1-216-079-91	METAL GLAZE	18K	5%	1/10W
R052	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R053	1-216-025-91	METAL GLAZE	100	5%	1/10W
R054	1-216-073-91	METAL GLAZE	10K	5%	1/10W
< SWITCH >					
S001	1-572-946-21	SWITCH, TACTIL (PRESET)			
S002	1-572-662-41	SWITCH, ROTARY (PLAY/PAUSE/CLEAR/SCAN)			
S003	1-572-946-21	SWITCH, TACTIL (1)			
S004	1-572-946-21	SWITCH, TACTIL (2)			
S005	1-572-946-21	SWITCH, TACTIL (3)			
S006	1-572-946-21	SWITCH, TACTIL (4)			

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>		<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	
S007	1-572-946-21	SWITCH, TACTIL (5)					< VARIABLE RESISTOR >		
S008	1-572-946-21	SWITCH, TACTIL (6)							
S009	1-572-946-21	SWITCH, TACTIL (7)							
S010	1-572-946-21	SWITCH, TACTIL (8)			RV801	1-223-191-11	RES, VAR, CARBON 500/500 (LEVEL)		
S011	1-572-946-21	SWITCH, TACTIL (9)			*****				
S012	1-572-946-21	SWITCH, TACTIL (0)			*	1-643-909-23	LS-702 BOARD		
S013	1-572-946-21	SWITCH, TACTIL (OPEN/CLOSE)					*****		
S014	1-572-946-21	SWITCH, TACTIL (STOP)				3-947-260-02	HOLDER, SENSOR		
S015	1-572-946-21	SWITCH, TACTIL (+10)					< CONNECTOR >		
S016	1-572-946-21	SWITCH, TACTIL (FILE)							
S017	1-572-946-21	SWITCH, TACTIL (CUSTOM INDEX)			CN501	1-506-468-11	PIN, CONNECTOR 3P		
S018	1-572-946-21	SWITCH, TACTIL (FRAME/TIME)					< DIODE >		
S019	1-572-946-21	SWITCH, TACTIL (SEARCH)							
S020	1-572-946-21	SWITCH, TACTIL (ACS/AMS:◀◀)			D501	8-719-941-81	DIODE GL360		
S021	1-572-946-21	SWITCH, TACTIL (ACS/AMS:▶▶)					< TRANSISTOR >		
S022	1-572-946-21	SWITCH, TACTIL (PICTURE ENHANCE)			Q501	8-729-904-10	TRANSISTOR PT-360FS		
S023	1-572-946-21	SWITCH, TACTIL (PICTURE DIRECT)			*****				
S024	1-572-946-21	SWITCH, TACTIL (AUTO PGM)			*	A-6421-900-A	MA-705 (J583) BOARD, COMPLETE		
S025	1-572-946-21	SWITCH, TACTIL (PGM)					*****		
S026	1-572-946-21	SWITCH, TACTIL (AV TIME)					< CAPACITOR >		
S027	1-572-946-21	SWITCH, TACTIL (CLEAR)							
S028	1-572-946-21	SWITCH, TACTIL (NEXT)							
S030	1-572-946-21	SWITCH, TACTIL (MEMORY PLAY)							
		< VIBRATOR >							
X001	1-577-359-21	VIBRATOR, CERAMIC 4.19MHz							

*	A-6426-547-A	HP-710 (J583) BOARD, COMPLETE							

		< CAPACITOR >							
C801	1-163-033-91	CERAMIC CHIP 0.022uF	50V		C401	1-124-907-91	ELECT 10uF 20% 50V		
		< CONNECTOR >			C402	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V		
CN801	1-506-482-11	PIN, CONNECTOR 3P			C403	1-163-113-91	CERAMIC CHIP 68PF 5% 50V		
		< JACK >			C404	1-124-443-91	ELECT 100uF 20% 10V		
J801	1-507-796-51	JACK (HEAD PHONES)			C405	1-124-443-91	ELECT 100uF 20% 10V		
		< RESISTOR >			C406	1-126-300-11	ELECT 0.47uF 20% 50V		
R801	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W			C407	1-163-113-91	CERAMIC CHIP 68PF 5% 50V		
R802	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W			C408	1-126-300-11	ELECT 0.47uF 20% 50V		
R803	1-216-013-91	METAL GLAZE 33 5% 1/10W			C409	1-163-009-91	CERAMIC CHIP 0.001uF 10% 50V		
R804	1-216-013-91	METAL GLAZE 33 5% 1/10W			C410	1-163-007-91	CERAMIC CHIP 680PF 10% 50V		
							< DIODE >		
					D401	8-719-800-76	DIODE 1SS226		
							< FILTER >		
					FL401	1-236-744-21	FILTER, EMI		
							< IC >		
					IC401	8-759-636-55	IC M5218AFP		
							< JACK >		
					J401	1-695-533-11	JACK (LARGE TYPE) 1P		

Ref. No.	Part No.	Description	Remarks		
< JUMPER RESISTOR >					
JR405	1-216-295-91	METAL GLAZE 0 5%	1/10W		
< RESISTOR >					
R401	1-216-053-91	METAL GLAZE 1.5K 5%	1/10W		
R402	1-216-049-91	METAL GLAZE 1K 5%	1/10W		
R403	1-216-061-91	METAL GLAZE 3.3K 5%	1/10W		
R404	1-216-073-91	METAL GLAZE 10K 5%	1/10W		
R405	1-216-033-91	METAL GLAZE 220 5%	1/10W		
R406	1-216-033-91	METAL GLAZE 220 5%	1/10W		
R407	1-216-025-91	METAL GLAZE 100 5%	1/10W		
R408	1-216-073-91	METAL GLAZE 10K 5%	1/10W		
R410	1-216-097-91	METAL GLAZE 100K 5%	1/10W		
R411	1-216-073-91	METAL GLAZE 10K 5%	1/10W		
R412	1-216-037-91	METAL GLAZE 330 5%	1/10W		
< VARIABLE RESISTOR >					
RV401	1-223-190-11	RES, VAR, CARBON 10K/10K (ECHO/MIC/LEVEL			

*	A-6421-884-A	MB-706 (E583) BOARD, COMPLETE			

*	3-947-805-01	PLATE, GROUND, JACK			
	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3			
< CAPACITOR >					
C001	1-163-038-91	CERAMIC CHIP 0.1uF	25V		
C002	1-164-346-91	CERAMIC CHIP 1uF	16V		
C003	1-163-031-91	CERAMIC CHIP 0.01uF	50V		
C004	1-163-113-91	CERAMIC CHIP 68PF 5%	50V		
C005	1-126-154-11	ELECT 47uF 20%	6.3V		
C006	1-163-122-91	CERAMIC CHIP 160PF 5%	50V		
C008	1-163-031-91	CERAMIC CHIP 0.01uF	50V		
C009	1-163-038-91	CERAMIC CHIP 0.1uF	25V		
C010	1-163-038-91	CERAMIC CHIP 0.1uF	25V		
C011	1-124-584-00	ELECT 100uF 20%	10V		
C012	1-124-584-00	ELECT 100uF 20%	10V		
C013	1-124-584-00	ELECT 100uF 20%	10V		
C014	1-163-107-91	CERAMIC CHIP 39PF 5%	50V		
C015	1-163-038-91	CERAMIC CHIP 0.1uF	25V		
C016	1-163-031-91	CERAMIC CHIP 0.01uF	50V		
C018	1-124-584-00	ELECT 100uF 20%	10V		
C019	1-126-154-11	ELECT 47uF 20%	6.3V		
C020	1-163-038-91	CERAMIC CHIP 0.1uF	25V		
C021	1-124-261-91	ELECT 10uF 20%	50V		
C022	1-124-261-91	ELECT 10uF 20%	50V		

Ref. No.	Part No.	Description	Remarks		
C023	1-163-809-91	CERAMIC CHIP 0.047uF	10%	25V	
C024	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C025	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C026	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C027	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C028	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C029	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C030	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C032	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C033	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C035	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C036	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C037	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C038	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C039	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C040	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C041	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C042	1-124-584-00	ELECT 100uF 20%	10V		
C043	1-126-160-11	ELECT 1uF 20%	50V		
C044	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C045	1-126-160-11	ELECT 1uF 20%	50V		
C046	1-124-584-00	ELECT 100uF 20%	10V		
C047	1-216-295-91	METAL GLAZE 0 5%	1/10W		
C048	1-163-090-91	CERAMIC CHIP 7PF	0.25PF	50V	
C049	1-124-584-00	ELECT 100uF 20%	10V		
C050	1-163-093-91	CERAMIC CHIP 10PF	5%	50V	
C051	1-163-099-91	CERAMIC CHIP 18PF	5%	50V	
C052	1-163-097-91	CERAMIC CHIP 15PF	5%	50V	
C053	1-163-031-91	CERAMIC CHIP 0.01uF		50V	
C054	1-163-103-91	CERAMIC CHIP 27PF	5%	50V	
C055	1-163-109-91	CERAMIC CHIP 47PF	5%	50V	
C056	1-163-108-00	CERAMIC CHIP 43PF	5%	50V	
C057	1-126-154-11	ELECT 47uF 20%	6.3V		
C058	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C059	1-124-261-91	ELECT 10uF 20%	50V		
C060	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C061	1-124-584-00	ELECT 100uF 20%	10V		
C062	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C064	1-124-584-00	ELECT 100uF 20%	10V		
C065	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C066	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C068	1-163-099-91	CERAMIC CHIP 18PF	5%	50V	
C069	1-124-584-00	ELECT 100uF 20%	10V		
C071	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C072	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C073	1-124-584-00	ELECT 100uF 20%	10V		
C074	1-124-584-00	ELECT 100uF 20%	10V		
C075	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C076	1-163-038-91	CERAMIC CHIP 0.1uF		25V	
C077	1-163-038-91	CERAMIC CHIP 0.1uF		25V	

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
C078	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C152	1-124-257-91	ELECT	2.2uF	20%	50V
C079	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C153	1-124-261-91	ELECT	10uF	20%	50V
C080	1-124-584-00	ELECT	100uF	20%	10V	C155	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C081	1-124-584-00	ELECT	100uF	20%	10V	C156	1-163-097-91	CERAMIC CHIP	15PF	5%	50V
C082	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C157	1-164-005-91	CERAMIC CHIP	0.47uF		25V
C083	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C158	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C084	1-124-584-00	ELECT	100uF	20%	10V	C160	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C085	1-163-103-91	CERAMIC CHIP	27PF	5%	50V	C161	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C086	1-163-103-91	CERAMIC CHIP	27PF	5%	50V	C162	1-163-111-91	CERAMIC CHIP	56PF	5%	50V
C087	1-163-099-91	CERAMIC CHIP	18PF	5%	50V	C163	1-163-101-91	CERAMIC CHIP	22PF	5%	50V
C088	1-164-346-91	CERAMIC CHIP	1uF		16V	C165	1-163-101-91	CERAMIC CHIP	22PF	5%	50V
C089	1-163-112-91	CERAMIC CHIP	62PF	5%	50V	C166	1-163-088-91	CERAMIC CHIP	5PF	0.25PF	50V
C090	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C168	1-163-121-91	CERAMIC CHIP	150PF	5%	50V
C091	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C198	1-163-097-91	CERAMIC CHIP	15PF	5%	50V
C092	1-124-584-00	ELECT	100uF	20%	10V	C199	1-163-106-91	CERAMIC CHIP	36PF	5%	50V
C093	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C201	1-126-320-11	ELECT, NONPOLAR	10uF	20%	16V
C095	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C202	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C096	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C203	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C097	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C204	1-126-154-11	ELECT	47uF	20%	6.3V
C098	1-216-295-91	METAL GLAZE	0	5%	1/10W	C205	1-126-163-11	ELECT	4.7uF	20%	50V
C099	1-126-154-11	ELECT	47uF	20%	6.3V	C206	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C100	1-163-235-91	CERAMIC CHIP	22PF	5%	50V	C207	1-126-154-11	ELECT	47uF	20%	6.3V
C101	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C208	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C102	1-126-154-11	ELECT	47uF	20%	6.3V	C209	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-164-505-91	CERAMIC CHIP	2.2uF		16V	C210	1-126-154-11	ELECT	47uF	20%	6.3V
C105	1-126-154-11	ELECT	47uF	20%	6.3V	C211	1-163-113-91	CERAMIC CHIP	68PF	5%	50V
C106	1-126-154-11	ELECT	47uF	20%	6.3V	C212	1-163-113-91	CERAMIC CHIP	68PF	5%	50V
C107	1-126-154-11	ELECT	47uF	20%	6.3V	C213	1-126-163-11	ELECT	4.7uF	20%	50V
C108	1-163-227-91	CERAMIC CHIP	10PF	0.5PF	50V	C214	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C215	1-124-584-00	ELECT	100uF	20%	10V
C111	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C216	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C217	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C218	1-124-126-00	ELECT	47uF	20%	10V
C114	1-163-031-91	CERAMIC CHIP	0.01uF		50V	C219	1-124-126-00	ELECT	47uF	20%	10V
C115	1-164-005-91	CERAMIC CHIP	0.47uF		25V	C221	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C116	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C223	1-126-154-11	ELECT	47uF	20%	6.3V
C117	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C225	1-126-163-11	ELECT	4.7uF	20%	50V
C118	1-124-584-00	ELECT	100uF	20%	10V	C226	1-163-107-91	CERAMIC CHIP	39PF	5%	50V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C227	1-126-163-11	ELECT	4.7uF	20%	50V
C122	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C228	1-163-017-91	CERAMIC CHIP	0.0047uF	10%	50V
C133	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C229	1-126-163-11	ELECT	4.7uF	20%	50V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C230	1-163-143-91	CERAMIC CHIP	0.0012uF	5%	50V
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C232	1-163-115-91	CERAMIC CHIP	82PF	5%	50V
C136	1-163-101-91	CERAMIC CHIP	22PF	5%	50V	C234	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C137	1-163-103-91	CERAMIC CHIP	27PF	5%	50V	C235	1-126-163-11	ELECT	4.7uF	20%	50V
C138	1-163-095-91	CERAMIC CHIP	12PF	5%	50V	C236	1-163-107-91	CERAMIC CHIP	39PF	5%	50V
C139	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C237	1-124-126-00	ELECT	47uF	20%	10V
C140	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C238	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C239	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C240	1-163-038-91	CERAMIC CHIP	0.1uF		25V

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Ref. No.	Part No.	Description	Remarks		Ref. No.	Part No.	Description	Remarks	
C241	1-163-038-91	CERAMIC CHIP	0.1uF	25V	C298	1-163-031-91	CERAMIC CHIP	0.01uF	50V
C243	1-163-107-91	CERAMIC CHIP	39PF	5% 50V	C299	1-124-584-00	ELECT	100uF	20% 10V
C245	1-124-126-00	ELECT	47uF	20% 10V	C300	1-163-127-91	CERAMIC CHIP	270PF	5% 50V
C246	1-124-126-00	ELECT	47uF	20% 10V	C301	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C249	1-163-011-91	CERAMIC CHIP	0.0015uF	10% 50V	C302	1-124-248-00	ELECT	22uF	20% 35V
C250	1-126-154-11	ELECT	47uF	20% 6.3V	C303	1-163-017-91	CERAMIC CHIP	0.0047uF	10% 50V
C251	1-163-038-91	CERAMIC CHIP	0.1uF	25V	C304	1-124-584-00	ELECT	100uF	20% 10V
C252	1-163-809-91	CERAMIC CHIP	0.047uF	10% 25V	C305	1-163-011-91	CERAMIC CHIP	0.0015uF	10% 50V
C253	1-163-031-91	CERAMIC CHIP	0.01uF	50V	C306	1-124-584-00	ELECT	100uF	20% 10V
C255	1-163-115-91	CERAMIC CHIP	82PF	5% 50V	C309	1-163-017-91	CERAMIC CHIP	0.0047uF	10% 50V
C256	1-163-017-91	CERAMIC CHIP	0.0047uF	10% 50V	C310	1-164-005-91	CERAMIC CHIP	0.47uF	25V
C257	1-163-143-91	CERAMIC CHIP	0.0012uF	5% 50V	C311	1-163-019-91	CERAMIC CHIP	0.0068uF	10% 50V
C258	1-163-038-91	CERAMIC CHIP	0.1uF	25V	C312	1-163-016-91	CERAMIC CHIP	0.0039uF	10% 50V
C259	1-163-107-91	CERAMIC CHIP	39PF	5% 50V	C313	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C261	1-163-031-91	CERAMIC CHIP	0.01uF	50V	C314	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C262	1-124-584-00	ELECT	100uF	20% 10V	C315	1-124-584-00	ELECT	100uF	20% 10V
C263	1-124-126-00	ELECT	47uF	20% 10V	C316	1-163-102-91	CERAMIC CHIP	24PF	5% 50V
C264	1-163-038-91	CERAMIC CHIP	0.1uF	25V	C317	1-126-163-11	ELECT	4.7uF	20% 50V
C265	1-163-809-91	CERAMIC CHIP	0.047uF	10% 25V	C318	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C266	1-124-261-91	ELECT	10uF	20% 50V	C319	1-163-141-91	CERAMIC CHIP	0.001uF	5% 50V
C268	1-163-033-91	CERAMIC CHIP	0.022uF	50V	C320	1-163-141-91	CERAMIC CHIP	0.001uF	5% 50V
C269	1-124-443-91	ELECT	100uF	20% 10V	C321	1-163-141-91	CERAMIC CHIP	0.001uF	5% 50V
C270	1-124-584-00	ELECT	100uF	20% 10V	C322	1-163-141-91	CERAMIC CHIP	0.001uF	5% 50V
C271	1-163-031-91	CERAMIC CHIP	0.01uF	50V	C401	1-126-163-11	ELECT	4.7uF	20% 50V
C272	1-163-011-91	CERAMIC CHIP	0.0015uF	10% 50V	C402	1-164-699-91	CERAMIC CHIP	0.0033uF	5% 50V
C273	1-124-584-00	ELECT	100uF	20% 10V	C403	1-163-111-91	CERAMIC CHIP	56PF	5% 50V
C274	1-124-261-91	ELECT	10uF	20% 50V	C404	1-126-163-11	ELECT	4.7uF	20% 50V
C275	1-124-584-00	ELECT	100uF	20% 10V	C406	1-124-589-11	ELECT	47uF	20% 16V
C276	1-163-009-91	CERAMIC CHIP	0.001uF	10% 50V	C407	1-163-117-91	CERAMIC CHIP	100PF	5% 50V
C277	1-163-003-91	CERAMIC CHIP	330PF	10% 50V	C601	1-126-154-11	ELECT	47uF	20% 6.3V
C278	1-124-248-00	ELECT	22uF	20% 35V	C602	1-163-035-91	CERAMIC CHIP	0.047uF	50V
C279	1-163-017-91	CERAMIC CHIP	0.0047uF	10% 50V	C607	1-163-035-91	CERAMIC CHIP	0.047uF	50V
C280	1-124-584-00	ELECT	100uF	20% 10V	C609	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C281	1-136-165-00	FILM	0.1uF	5% 50V	C610	1-163-035-91	CERAMIC CHIP	0.047uF	50V
C282	1-136-160-00	FILM	0.039uF	5% 50V	C611	1-163-035-91	CERAMIC CHIP	0.047uF	50V
C283	1-126-163-11	ELECT	4.7uF	20% 50V	C612	1-163-009-91	CERAMIC CHIP	0.001uF	10% 50V
C284	1-163-111-91	CERAMIC CHIP	56PF	5% 50V	C613	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C285	1-124-288-00	ELECT	22uF	20% 6.3V	C629	1-164-699-91	CERAMIC CHIP	0.0033uF	5% 50V
C286	1-163-031-91	CERAMIC CHIP	0.01uF	50V	C640	1-124-248-00	ELECT	22uF	20% 35V
C287	1-163-241-91	CERAMIC CHIP	39PF	5% 50V	C641	1-163-035-91	CERAMIC CHIP	0.047uF	50V
C288	1-164-232-11	CERAMIC CHIP	0.01uF	50V	C650	1-163-123-91	CERAMIC CHIP	180PF	5% 50V
C289	1-163-111-91	CERAMIC CHIP	56PF	5% 50V	C652	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C290	1-124-288-00	ELECT	22uF	20% 6.3V	C657	1-163-141-91	CERAMIC CHIP	0.001uF	5% 50V
C291	1-163-031-91	CERAMIC CHIP	0.01uF	50V	C699	1-163-117-91	CERAMIC CHIP	100PF	5% 50V
C292	1-126-163-11	ELECT	4.7uF	20% 50V	C701	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C293	1-136-160-00	FILM	0.039uF	5% 50V	C702	1-124-471-91	ELECT	1000uF	20% 6.3V
C294	1-163-253-91	CERAMIC CHIP	120PF	5% 50V	C703	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C295	1-163-017-91	CERAMIC CHIP	0.0047uF	10% 50V	C704	1-163-038-91	CERAMIC CHIP	0.1uF	25V
C296	1-124-465-00	ELECT	0.47uF	20% 50V	C705	1-124-604-00	ELECT	330uF	20% 10V
C297	1-163-009-91	CERAMIC CHIP	0.001uF	10% 50V	C706	1-124-604-00	ELECT	330uF	20% 10V
					C708	1-124-583-91	ELECT	22uF	20% 25V

Ref. No.	Part No.	Description	Remarks		Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >						
CN201	1-506-482-11	PIN, CONNECTOR 3P			FL013	1-236-071-21	ENCAPSULATED COMPONENT	
CN206	1-506-472-11	PIN, CONNECTOR 7P			FL201	1-236-071-21	ENCAPSULATED COMPONENT	
* CN601	1-564-029-11	PIN, CONNECTOR 4P			FL202	1-236-071-21	ENCAPSULATED COMPONENT	
CN602	1-563-493-11	CONNECTOR, F.P.C 28P			FL203	1-236-071-21	ENCAPSULATED COMPONENT	
CN603	1-506-483-21	PIN, CONNECTOR 4P			FL204	1-236-071-21	ENCAPSULATED COMPONENT	
CN605	1-506-481-11	PIN, CONNECTOR 2P			FL206	1-236-840-21	FILTER, BAND PASS	
CN606	1-506-481-11	PIN, CONNECTOR 2P			FL601	1-236-071-21	ENCAPSULATED COMPONENT	
CN607	1-506-482-11	PIN, CONNECTOR 3P			FL602	1-236-071-21	ENCAPSULATED COMPONENT	
CN608	1-506-484-11	PIN, CONNECTOR 5P					< IC >	
CN609	1-506-491-11	PIN, CONNECTOR 12P			IC001	8-759-063-25	IC CXA8020Q	
CN701	1-506-482-11	PIN, CONNECTOR 3P			IC003	8-759-063-26	IC CXD8405Q	
		< TRIMMER >			IC004	8-759-634-74	IC M50455-080FP	
CT001	1-141-227-11	CAP, CERAMIC TRIMMER			IC005	8-759-063-27	IC CXD8404Q	
		< DIODE >			IC007	8-759-243-19	IC TC7SU04F	
D001	8-719-400-18	DIODE MA152WK			IC201	8-749-921-12	IC GP1F32T (DIGITAL OUT)	
D002	8-719-400-18	DIODE MA152WK			IC202	8-759-700-91	IC RC4558M	
D003	8-719-800-76	DIODE 1SS226			IC203	8-759-008-67	IC MC14066BF	
D004	8-719-400-18	DIODE MA152WK			IC204	8-752-342-65	IC CXD2560M	
D201	8-719-907-19	DIODE FC52M-5			IC205	8-759-700-91	IC RC4558M	
D202	8-719-907-19	DIODE FC52M-5			IC206	8-759-700-91	IC RC4558M	
D203	8-719-400-18	DIODE MA152WK			IC207	8-759-700-91	IC RC4558M	
D204	8-719-104-34	DIODE 1S2836			IC208	8-752-352-93	IC CXD2500AQ	
D205	8-719-400-18	DIODE MA152WK			IC209	8-759-700-91	IC RC4558M	
D207	8-719-106-17	DIODE RD6. 8M-B2			IC210	8-759-700-91	IC RC4558M	
D208	8-719-400-18	DIODE MA152WK			IC211	8-759-700-91	IC RC4558M	
D212	8-719-400-18	DIODE MA152WK			IC212	8-759-502-42	IC PA0034A	
D213	8-719-400-18	DIODE MA152WK			IC214	8-752-351-19	IC CXD2561BM	
D214	8-719-400-18	DIODE MA152WK			IC215	8-759-008-67	IC MC14066BF	
D215	8-719-400-18	DIODE MA152WK			IC401	8-759-983-74	IC LM324NS	
D216	8-719-400-18	DIODE MA152WK			IC402	8-759-009-06	IC MC14052BF	
D401	8-719-400-18	DIODE MA152WK			IC601	8-759-063-88	IC MB89795-137	
D602	8-719-400-18	DIODE MA152WK			IC603	8-759-231-92	IC TA7291P	
D699	8-719-106-71	DIODE RD12M-B2			IC604	8-759-063-89	IC MSM72H051GS-V1K	
D701	8-719-106-71	DIODE RD12M-B2			△IC701	8-759-245-79	IC MSF7905	
		< FILTER >			△IC702	8-759-701-58	IC NJM78M08FA	
FL001	1-239-319-11	FILTER, LOW PASS			△IC703	8-759-700-67	IC NJM79L08A	
FL002	1-239-513-11	FILTER, BAND PASS					< JACK >	
FL005	1-239-317-11	FILTER, LOW PASS			J001	1-691-964-12	CONNECTOR (ROUND TYPE) (S VIDEO OUT 1/2)	
FL006	1-236-071-21	ENCAPSULATED COMPONENT			J201	1-565-351-51	JACK, PIN 3P (LINE OUT 2)	
FL007	1-577-543-41	FILTER, CERAMIC			J202	1-565-351-51	JACK, PIN 3P (LINE OUT 1)	
FL008	1-577-543-31	FILTER, CERAMIC			J203	1-507-678-21	JACK (CONTROL S IN)	
FL009	1-577-543-31	FILTER, CERAMIC					< JUMPER RESISTOR >	
FL010	1-236-071-21	ENCAPSULATED COMPONENT			JR010	1-216-295-91	METAL GLAZE 0 5% 1/10W	
FL011	1-236-071-21	ENCAPSULATED COMPONENT			JR011	1-216-295-91	METAL GLAZE 0 5% 1/10W	
FL012	1-236-071-21	ENCAPSULATED COMPONENT			JR012	1-216-295-91	METAL GLAZE 0 5% 1/10W	
					JR013	1-216-295-91	METAL GLAZE 0 5% 1/10W	
					JR014	1-216-295-91	METAL GLAZE 0 5% 1/10W	

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

MB-706

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
JR015	1-216-295-91	METAL GLAZE	0 5% 1/10W			< TRANSISTOR >	
JR016	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR017	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR018	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR019	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR020	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR021	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR022	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR201	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR202	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR207	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR208	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR211	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR212	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR213	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR214	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR215	1-216-295-91	METAL GLAZE	0 5% 1/10W				
JR216	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR217	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR800	1-216-295-91	METAL GLAZE	0 5% 1/10W				
< COIL >							
L001	1-408-609-41	INDUCTOR	33uH				
L002	1-408-407-00	INDUCTOR	6. 8uH				
L003	1-408-411-00	INDUCTOR	15uH				
L005	1-408-609-41	INDUCTOR	33uH				
L006	1-408-609-41	INDUCTOR	33uH				
L007	1-408-411-00	INDUCTOR	15uH				
L010	1-408-409-00	INDUCTOR	10uH				
L011	1-408-609-41	INDUCTOR	33uH				
L013	1-408-609-41	INDUCTOR	33uH				
L016	1-408-414-00	INDUCTOR	27uH				
L017	1-408-412-00	INDUCTOR	18uH				
L020	1-408-413-00	INDUCTOR	22uH				
L201	1-408-421-00	INDUCTOR	100uH				
L202	1-408-418-00	INDUCTOR	56uH				
L203	1-408-417-00	INDUCTOR	47uH				
L204	1-408-403-00	INDUCTOR	3. 3uH				
L610	1-408-409-00	INDUCTOR	10uH				
< IC LINK >							
△PS701	1-532-840-21	LINK, IC 1. 25A					
△PS702	1-532-840-21	LINK, IC 1. 25A					
△PS703	1-532-836-21	LINK, IC 0. 5A					
Q001	8-729-216-22	TRANSISTOR	2SA1162				
Q002	8-729-100-66	TRANSISTOR	2SC1623				
Q003	8-729-216-22	TRANSISTOR	2SA1162				
Q004	8-729-100-66	TRANSISTOR	2SC1623				
Q005	8-729-900-53	TRANSISTOR	DTC114EK				
Q008	8-729-162-13	TRANSISTOR	2SC1621				
Q010	8-729-216-22	TRANSISTOR	2SA1162				
Q012	8-729-100-66	TRANSISTOR	2SC1623				
Q013	8-729-100-66	TRANSISTOR	2SC1623				
Q014	8-729-216-22	TRANSISTOR	2SA1162				
Q015	8-729-216-22	TRANSISTOR	2SA1162				
Q016	8-729-216-22	TRANSISTOR	2SA1162				
Q017	8-729-100-66	TRANSISTOR	2SC1623				
Q018	8-729-216-22	TRANSISTOR	2SA1162				
Q019	8-729-100-66	TRANSISTOR	2SC1623				
Q020	8-729-900-53	TRANSISTOR	DTC114EK				
Q023	8-729-216-22	TRANSISTOR	2SA1162				
Q024	8-729-216-22	TRANSISTOR	2SA1162				
Q025	8-729-216-22	TRANSISTOR	2SA1162				
Q026	8-729-216-22	TRANSISTOR	2SA1162				
Q027	8-729-100-66	TRANSISTOR	2SC1623				
Q028	8-729-100-66	TRANSISTOR	2SC1623				
Q029	8-729-100-66	TRANSISTOR	2SC1623				
Q030	8-729-100-66	TRANSISTOR	2SC1623				
Q031	8-729-100-66	TRANSISTOR	2SC1623				
Q032	8-729-100-66	TRANSISTOR	2SC1623				
Q033	8-729-100-66	TRANSISTOR	2SC1623				
Q034	8-729-100-66	TRANSISTOR	2SC1623				
Q035	8-729-100-66	TRANSISTOR	2SC1623				
Q037	8-729-100-66	TRANSISTOR	2SC1623				
Q039	8-729-100-66	TRANSISTOR	2SC1623				
Q040	8-729-100-66	TRANSISTOR	2SC1623				
Q041	8-729-901-06	TRANSISTOR	DTA114EK				
Q201	8-729-100-66	TRANSISTOR	2SC1623				
Q202	8-729-202-38	TRANSISTOR	2SC3326N				
Q203	8-729-202-38	TRANSISTOR	2SC3326N				
Q204	8-729-202-38	TRANSISTOR	2SC3326N				
Q205	8-729-901-04	TRANSISTOR	DTA114EK				
Q206	8-729-202-38	TRANSISTOR	2SC3326N				
Q207	8-729-202-38	TRANSISTOR	2SC3326N				
Q208	8-729-202-38	TRANSISTOR	2SC3326N				
Q209	8-729-900-53	TRANSISTOR	DTC114EK				
Q210	8-729-901-04	TRANSISTOR	DTA114EK				
Q211	8-729-900-53	TRANSISTOR	DTC114EK				
Q212	8-729-900-53	TRANSISTOR	DTC114EK				
Q213	8-729-901-04	TRANSISTOR	DTA114EK				
Q214	8-729-900-53	TRANSISTOR	DTC114EK				
Q215	8-729-901-04	TRANSISTOR	DTA114EK				
Q216	8-729-900-53	TRANSISTOR	DTC114EK				
Q217	8-729-216-22	TRANSISTOR	2SA1162				

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

Ref. No.	Part No.	Description	Remarks
Q218	8-729-100-66	TRANSISTOR 2SC1623	
Q219	8-729-100-66	TRANSISTOR 2SC1623	
Q220	8-729-216-22	TRANSISTOR 2SA1162	
Q221	8-729-216-22	TRANSISTOR 2SA1162	
Q222	8-729-901-04	TRANSISTOR DTA114EK	
Q223	8-729-202-38	TRANSISTOR 2SC3326N	
Q224	8-729-202-38	TRANSISTOR 2SC3326N	
Q225	8-729-202-38	TRANSISTOR 2SC3326N	
Q226	8-729-202-38	TRANSISTOR 2SC3326N	
Q227	8-729-202-38	TRANSISTOR 2SC3326N	
Q228	8-729-202-38	TRANSISTOR 2SC3326N	
Q229	8-729-901-04	TRANSISTOR DTA114EK	
Q230	8-729-900-53	TRANSISTOR DTC114EK	
Q231	8-729-900-53	TRANSISTOR DTC114EK	
Q232	8-729-901-04	TRANSISTOR DTA114EK	
Q233	8-729-900-53	TRANSISTOR DTC114EK	
Q601	8-729-216-22	TRANSISTOR 2SA1162	
Q609	8-729-100-66	TRANSISTOR 2SC1623	
Q701	8-729-159-65	TRANSISTOR 2SD596-T1DV5	
< RESISTOR >			
R001	1-216-081-91	METAL GLAZE 22K 5%	1/10W
R002	1-216-051-91	METAL GLAZE 1.2K 5%	1/10W
R003	1-216-047-91	METAL GLAZE 820 5%	1/10W
R004	1-216-043-91	METAL GLAZE 560 5%	1/10W
R005	1-216-073-91	METAL GLAZE 10K 5%	1/10W
R006	1-216-051-91	METAL GLAZE 1.2K 5%	1/10W
R007	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R008	1-216-035-91	METAL GLAZE 270 5%	1/10W
R009	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R010	1-216-061-91	METAL GLAZE 3.3K 5%	1/10W
R011	1-216-064-91	METAL GLAZE 4.3K 5%	1/10W
R012	1-216-045-91	METAL GLAZE 680 5%	1/10W
R013	1-216-053-91	METAL GLAZE 1.5K 5%	1/10W
R014	1-216-090-91	METAL GLAZE 51K 5%	1/10W
R015	1-216-041-91	METAL GLAZE 470 5%	1/10W
R016	1-216-085-91	METAL GLAZE 33K 5%	1/10W
R017	1-216-081-91	METAL GLAZE 22K 5%	1/10W
R018	1-216-079-91	METAL GLAZE 18K 5%	1/10W
R019	1-216-081-91	METAL GLAZE 22K 5%	1/10W
R023	1-216-057-91	METAL GLAZE 2.2K 5%	1/10W
R024	1-216-073-91	METAL GLAZE 10K 5%	1/10W
R025	1-216-073-91	METAL GLAZE 10K 5%	1/10W
R026	1-216-073-91	METAL GLAZE 10K 5%	1/10W
R027	1-216-081-91	METAL GLAZE 22K 5%	1/10W
R028	1-216-061-91	METAL GLAZE 3.3K 5%	1/10W

Ref. No.	Part No.	Description	Remarks
R029	1-216-085-91	METAL GLAZE 33K 5%	1/10W
R030	1-216-057-91	METAL GLAZE 2.2K 5%	1/10W
R031	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R032	1-216-037-91	METAL GLAZE 330 5%	1/10W
R033	1-216-079-91	METAL GLAZE 18K 5%	1/10W
R035	1-216-075-91	METAL GLAZE 12K 5%	1/10W
R036	1-216-061-91	METAL GLAZE 3.3K 5%	1/10W
R037	1-216-053-91	METAL GLAZE 1.5K 5%	1/10W
R039	1-216-051-91	METAL GLAZE 1.2K 5%	1/10W
R040	1-216-055-91	METAL GLAZE 1.8K 5%	1/10W
R041	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R042	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R043	1-216-041-91	METAL GLAZE 470 5%	1/10W
R045	1-216-057-91	METAL GLAZE 2.2K 5%	1/10W
R048	1-216-045-91	METAL GLAZE 680 5%	1/10W
R049	1-216-045-91	METAL GLAZE 680 5%	1/10W
R050	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R051	1-216-061-91	METAL GLAZE 3.3K 5%	1/10W
R052	1-216-059-91	METAL GLAZE 2.7K 5%	1/10W
R053	1-216-055-91	METAL GLAZE 1.8K 5%	1/10W
R054	1-216-059-91	METAL GLAZE 2.7K 5%	1/10W
R055	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R056	1-216-073-91	METAL GLAZE 10K 5%	1/10W
R057	1-216-025-91	METAL GLAZE 100 5%	1/10W
R058	1-216-051-91	METAL GLAZE 1.2K 5%	1/10W
R059	1-216-053-91	METAL GLAZE 1.5K 5%	1/10W
R060	1-216-037-91	METAL GLAZE 330 5%	1/10W
R061	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R062	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R063	1-216-031-91	METAL GLAZE 180 5%	1/10W
R064	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R065	1-216-031-91	METAL GLAZE 180 5%	1/10W
R066	1-216-072-91	METAL GLAZE 9.1K 5%	1/10W
R067	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R068	1-216-065-91	METAL GLAZE 4.7K 5%	1/10W
R075	1-216-041-91	METAL GLAZE 470 5%	1/10W
R076	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R077	1-216-041-91	METAL GLAZE 470 5%	1/10W
R078	1-216-041-91	METAL GLAZE 470 5%	1/10W
R079	1-216-045-91	METAL GLAZE 680 5%	1/10W
R080	1-216-047-91	METAL GLAZE 820 5%	1/10W
R081	1-216-041-91	METAL GLAZE 470 5%	1/10W
R082	1-216-085-91	METAL GLAZE 33K 5%	1/10W
R083	1-216-041-91	METAL GLAZE 470 5%	1/10W
R084	1-216-041-91	METAL GLAZE 470 5%	1/10W
R085	1-216-041-91	METAL GLAZE 470 5%	1/10W
R086	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R087	1-216-041-91	METAL GLAZE 470 5%	1/10W
R088	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R089	1-216-049-91	METAL GLAZE 1K 5%	1/10W

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R092	1-216-047-91	METAL GLAZE	820	5%	1/10W	R146	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R093	1-216-119-91	METAL GLAZE	820K	5%	1/10W	R147	1-216-021-91	METAL GLAZE	68	5%	1/10W
R094	1-216-295-91	METAL GLAZE	0	5%	1/10W	R148	1-216-021-91	METAL GLAZE	68	5%	1/10W
R096	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R149	1-216-041-91	METAL GLAZE	470	5%	1/10W
R097	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R150	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R098	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R151	1-216-041-91	METAL GLAZE	470	5%	1/10W
R099	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R152	1-216-041-91	METAL GLAZE	470	5%	1/10W
R100	1-216-029-91	METAL GLAZE	150	5%	1/10W	R153	1-216-041-91	METAL GLAZE	470	5%	1/10W
R101	1-216-041-91	METAL GLAZE	470	5%	1/10W	R154	1-216-041-91	METAL GLAZE	470	5%	1/10W
R102	1-216-041-91	METAL GLAZE	470	5%	1/10W	R155	1-216-021-91	METAL GLAZE	68	5%	1/10W
R103	1-216-041-91	METAL GLAZE	470	5%	1/10W	R156	1-216-021-91	METAL GLAZE	68	5%	1/10W
R104	1-216-041-91	METAL GLAZE	470	5%	1/10W	R157	1-216-041-91	METAL GLAZE	470	5%	1/10W
R105	1-216-041-91	METAL GLAZE	470	5%	1/10W	R158	1-216-021-91	METAL GLAZE	68	5%	1/10W
R106	1-216-041-91	METAL GLAZE	470	5%	1/10W	R159	1-216-041-91	METAL GLAZE	470	5%	1/10W
R108	1-216-041-91	METAL GLAZE	470	5%	1/10W	R161	1-216-021-91	METAL GLAZE	68	5%	1/10W
R109	1-216-041-91	METAL GLAZE	470	5%	1/10W	R162	1-216-021-91	METAL GLAZE	68	5%	1/10W
R110	1-216-295-91	METAL GLAZE	0	5%	1/10W	R163	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R111	1-216-295-91	METAL GLAZE	0	5%	1/10W	R164	1-216-021-91	METAL GLAZE	68	5%	1/10W
R112	1-216-037-91	METAL GLAZE	330	5%	1/10W	R165	1-216-041-91	METAL GLAZE	470	5%	1/10W
R113	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R166	1-216-041-91	METAL GLAZE	470	5%	1/10W
R114	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R167	1-216-021-91	METAL GLAZE	68	5%	1/10W
R115	1-216-121-91	METAL GLAZE	1M	5%	1/10W	R168	1-216-021-91	METAL GLAZE	68	5%	1/10W
R116	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R169	1-216-041-91	METAL GLAZE	470	5%	1/10W
R117	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R170	1-216-041-91	METAL GLAZE	470	5%	1/10W
R118	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R171	1-216-021-91	METAL GLAZE	68	5%	1/10W
R119	1-216-037-91	METAL GLAZE	330	5%	1/10W	R183	1-216-083-91	METAL GLAZE	27K	5%	1/10W
R120	1-216-031-91	METAL GLAZE	180	5%	1/10W	R184	1-216-071-91	METAL GLAZE	8.2K	5%	1/10W
R121	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R185	1-216-113-91	METAL GLAZE	470K	5%	1/10W
R122	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R186	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W
R123	1-216-031-91	METAL GLAZE	180	5%	1/10W	R187	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R124	1-216-031-91	METAL GLAZE	180	5%	1/10W	R188	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R125	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R189	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R190	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R127	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W	R191	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R128	1-216-037-91	METAL GLAZE	330	5%	1/10W	R194	1-216-295-91	METAL GLAZE	0	5%	1/10W
R130	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W	R195	1-216-041-91	METAL GLAZE	470	5%	1/10W
R132	1-216-059-91	METAL GLAZE	2.7K	5%	1/10W	R196	1-216-071-91	METAL GLAZE	8.2K	5%	1/10W
R133	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R197	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R134	1-216-043-91	METAL GLAZE	560	5%	1/10W	R198	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R135	1-216-053-91	METAL GLAZE	1.5K	5%	1/10W	R201	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R136	1-216-041-91	METAL GLAZE	470	5%	1/10W	R202	1-216-693-91	METAL CHIP	56K	0.50%	1/10W
R137	1-216-043-91	METAL GLAZE	560	5%	1/10W	R203	1-216-693-91	METAL CHIP	56K	0.50%	1/10W
R138	1-216-062-91	METAL GLAZE	3.6K	5%	1/10W	R204	1-216-693-91	METAL CHIP	56K	0.50%	1/10W
R139	1-216-041-91	METAL GLAZE	470	5%	1/10W	R205	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R140	1-216-029-91	METAL GLAZE	150	5%	1/10W	R206	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W
R141	1-216-041-91	METAL GLAZE	470	5%	1/10W	R207	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R142	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R208	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R143	1-216-043-91	METAL GLAZE	560	5%	1/10W	R209	1-216-033-91	METAL GLAZE	220	5%	1/10W
R144	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R210	1-216-033-91	METAL GLAZE	220	5%	1/10W
R145	1-216-025-91	METAL GLAZE	100	5%	1/10W	R211	1-216-037-91	METAL GLAZE	330	5%	1/10W

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R212	1-216-693-91	METAL CHIP	56K	0.50%	1/10W	R265	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R214	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R266	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R215	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R268	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R216	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R269	1-216-077-91	METAL GLAZE	15K	5%	1/10W
R217	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R270	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W
R218	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R271	1-216-693-91	METAL CHIP	56K	0.50%	1/10W
R219	1-216-033-91	METAL GLAZE	220	5%	1/10W	R272	1-216-095-91	METAL GLAZE	82K	5%	1/10W
R220	1-216-033-91	METAL GLAZE	220	5%	1/10W	R273	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W
R221	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R276	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R222	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R279	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R223	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R280	1-216-655-91	METAL CHIP	1.5K	0.50%	1/10W
R224	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R281	1-216-655-91	METAL CHIP	1.5K	0.50%	1/10W
R226	1-216-121-91	METAL GLAZE	1M	5%	1/10W	R282	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R227	1-216-025-91	METAL GLAZE	100	5%	1/10W	R283	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R228	1-216-025-91	METAL GLAZE	100	5%	1/10W	R284	1-216-077-91	METAL GLAZE	15K	5%	1/10W
R229	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R285	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R230	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R286	1-216-693-91	METAL CHIP	56K	0.50%	1/10W
R231	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R287	1-216-099-91	METAL GLAZE	120K	5%	1/10W
R232	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R288	1-216-099-91	METAL GLAZE	120K	5%	1/10W
R233	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R289	1-216-095-91	METAL GLAZE	82K	5%	1/10W
R234	1-216-025-91	METAL GLAZE	100	5%	1/10W	R290	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R235	1-216-033-91	METAL GLAZE	220	5%	1/10W	R291	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R236	1-216-033-91	METAL GLAZE	220	5%	1/10W	R292	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R237	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R293	1-216-109-91	METAL GLAZE	330K	5%	1/10W
R238	1-216-077-91	METAL GLAZE	15K	5%	1/10W	R294	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R239	1-216-693-91	METAL CHIP	56K	0.50%	1/10W	R295	1-216-109-91	METAL GLAZE	330K	5%	1/10W
R240	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R296	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R241	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R297	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W
R242	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R298	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R243	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R299	1-216-118-91	METAL GLAZE	750K	5%	1/10W
R244	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R300	1-216-071-91	METAL GLAZE	8.2K	5%	1/10W
R245	1-216-655-91	METAL CHIP	1.5K	0.50%	1/10W	R301	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R246	1-216-655-91	METAL CHIP	1.5K	0.50%	1/10W	R302	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R247	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R303	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W
R248	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R305	1-216-069-91	METAL GLAZE	6.8K	5%	1/10W
R250	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R306	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R251	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R307	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R252	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R308	1-216-104-91	METAL GLAZE	200K	5%	1/10W
R253	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R309	1-216-033-91	METAL GLAZE	220	5%	1/10W
R254	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R310	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R255	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R311	1-216-078-91	METAL GLAZE	16K	5%	1/10W
R256	1-216-033-91	METAL GLAZE	220	5%	1/10W	R312	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R257	1-216-033-91	METAL GLAZE	220	5%	1/10W	R313	1-216-053-91	METAL GLAZE	1.5K	5%	1/10W
R258	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R314	1-216-017-91	METAL GLAZE	47	5%	1/10W
R259	1-216-077-91	METAL GLAZE	15K	5%	1/10W	R315	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R260	1-216-693-91	METAL CHIP	56K	0.50%	1/10W	R316	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R261	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R317	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R262	1-216-091-91	METAL GLAZE	56K	5%	1/10W	R318	1-216-053-91	METAL GLAZE	1.5K	5%	1/10W
R263	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R319	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R264	1-216-105-91	METAL GLAZE	220K	5%	1/10W	R320	1-216-049-91	METAL GLAZE	1K	5%	1/10W

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R321	1-216-078-91	METAL GLAZE	16K	5%	1/10W	R374	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R322	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R375	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R323	1-216-033-91	METAL GLAZE	220	5%	1/10W	R376	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R324	1-216-051-91	METAL GLAZE	1.2K	5%	1/10W	R377	1-216-295-91	METAL GLAZE	0	5%	1/10W
R325	1-216-041-91	METAL GLAZE	470	5%	1/10W	R378	1-216-295-91	METAL GLAZE	0	5%	1/10W
R326	1-216-023-91	METAL GLAZE	82	5%	1/10W	R379	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R327	1-216-118-91	METAL GLAZE	750K	5%	1/10W	R380	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R328	1-216-071-91	METAL GLAZE	8.2K	5%	1/10W	R381	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R329	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R382	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R330	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R383	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R331	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R384	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R332	1-216-045-91	METAL GLAZE	680	5%	1/10W	R385	1-216-075-91	METAL GLAZE	12K	5%	1/10W
R335	1-216-295-91	METAL GLAZE	0	5%	1/10W	R386	1-216-075-91	METAL GLAZE	12K	5%	1/10W
R337	1-216-045-91	METAL GLAZE	680	5%	1/10W	R401	1-216-687-91	METAL CHIP	33K	0.50%	1/10W
R338	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R402	1-216-687-91	METAL CHIP	33K	0.50%	1/10W
R339	1-216-089-91	METAL GLAZE	47K	5%	1/10W	R403	1-216-699-91	METAL CHIP	100K	0.50%	1/10W
R340	1-216-089-91	METAL GLAZE	47K	5%	1/10W	R404	1-216-077-91	METAL GLAZE	15K	5%	1/10W
R341	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R405	1-216-685-91	METAL CHIP	27K	0.50%	1/10W
R342	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R406	1-218-165-91	METAL GLAZE	220K	1%	1/10W
R343	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R407	1-216-675-91	METAL CHIP	10K	0.50%	1/10W
R344	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R408	1-216-113-91	METAL GLAZE	470K	5%	1/10W
R345	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R409	1-216-677-91	METAL CHIP	12K	0.50%	1/10W
R346	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R410	1-216-530-91	METAL GLAZE	390K	1%	1/10W
R347	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W	R411	1-216-679-91	METAL CHIP	15K	0.50%	1/10W
R348	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W	R412	1-216-035-91	METAL GLAZE	270	5%	1/10W
R349	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R413	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R350	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R414	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R351	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W	R415	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R352	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W	R416	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R353	1-216-295-91	METAL GLAZE	0	5%	1/10W	R417	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R354	1-216-295-91	METAL GLAZE	0	5%	1/10W	R423	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R355	1-216-039-91	METAL GLAZE	390	5%	1/10W	R431	1-216-033-91	METAL GLAZE	220	5%	1/10W
R356	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R432	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R357	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R434	1-216-033-91	METAL GLAZE	220	5%	1/10W
R358	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R435	1-216-115-91	METAL GLAZE	560K	5%	1/10W
R359	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R502	1-216-053-91	METAL GLAZE	1.5K	5%	1/10W
R360	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R503	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R361	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R504	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R362	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R505	1-216-047-91	METAL GLAZE	820	5%	1/10W
R363	1-216-025-91	METAL GLAZE	100	5%	1/10W	R506	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R364	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R507	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R365	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R508	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R366	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R509	1-216-035-91	METAL GLAZE	270	5%	1/10W
R367	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R511	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R368	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R513	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R369	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R514	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R370	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R515	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R371	1-216-222-91	METAL GLAZE	10K	5%	1/8W	R516	1-216-072-91	METAL GLAZE	9.1K	5%	1/10W
R372	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	R517	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R373	1-216-073-91	METAL GLAZE	10K	5%	1/10W						

Ref. No.	Part No.	Description				Remarks
R518	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	
R519	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R520	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R521	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R522	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R580	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R588	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R593	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R594	1-216-037-91	METAL GLAZE	330	5%	1/10W	
R595	1-216-053-91	METAL GLAZE	1.5K	5%	1/10W	
R596	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R599	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R601	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R602	1-216-081-91	METAL GLAZE	22K	5%	1/10W	
R603	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R604	1-216-021-91	METAL GLAZE	68	5%	1/10W	
R605	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R606	1-216-081-91	METAL GLAZE	22K	5%	1/10W	
R607	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	
R608	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R609	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R610	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
△R611	1-212-950-51	FUSIBLE	4.7	5%	1/2W	F
R621	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R623	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R624	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R626	1-216-099-91	METAL GLAZE	120K	5%	1/10W	
R627	1-216-075-91	METAL GLAZE	12K	5%	1/10W	
R633	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	
R634	1-216-051-91	METAL GLAZE	1.2K	5%	1/10W	
R635	1-216-035-91	METAL GLAZE	270	5%	1/10W	
R636	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R637	1-216-081-91	METAL GLAZE	22K	5%	1/10W	
R638	1-216-081-91	METAL GLAZE	22K	5%	1/10W	
R640	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R650	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R651	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R652	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R653	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R654	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R655	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R656	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R658	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R659	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R660	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R661	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R662	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R663	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R664	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R667	1-216-033-91	METAL GLAZE	220	5%	1/10W	

Ref. No.	Part No.	Description				Remarks
R668	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R669	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R670	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R671	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R672	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R673	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R674	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R675	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R676	1-216-033-91	METAL GLAZE	220	5%	1/10W	
R680	1-216-085-91	METAL GLAZE	33K	5%	1/10W	
R684	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R685	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R689	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R690	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R691	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R693	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R694	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R695	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R698	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R699	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R700	1-216-013-91	METAL GLAZE	33	5%	1/10W	
△R701	1-215-905-51	METAL OXIDE	10	5%	3W	F
R702	1-216-073-91	METAL GLAZE	10K	5%	1/10W	
R703	1-216-041-91	METAL GLAZE	470	5%	1/10W	
R704	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	
< VARIABLE RESISTOR >						
RV002	1-230-871-11	RES, ADJ, METAL 22K				
< SWITCH >						
SW201	1-553-725-21	SWITCH, SLIDE (ATTENUATER)				
< VIBRATOR >						
X001	1-579-617-11	VIBRATOR, CRYSTAL 28.1958MHZ				
X201	1-579-618-11	VIBRATOR, CRYSTAL 22.5792MHZ				

*	A-6421-794-A	PS-701 (E58) BOARD, COMPLETE				

△	1-533-189-11	HOLDER, FUSE				
	9-910-999-33	SHEET (F), ADHESIVE				
< CAPACITOR >						
C101	1-126-946-51	ELECT	6800uF	20%	25V	
C102	1-126-946-51	ELECT	6800uF	20%	25V	
C103	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C104	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C105	1-163-989-91	CERAMIC CHIP	0.033uF	10%	25V	

Note: 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	Remarks
C106	1-126-101-11	ELECT	100uF 20% 16V
C107	1-126-917-91	ELECT	3300uF 20% 6.3V
C108	1-124-903-91	ELECT	1uF 20% 50V
C109	1-126-917-91	ELECT	3300uF 20% 6.3V
C110	1-163-833-91	CERAMIC CHIP	0.068uF 25V
C111	1-163-007-91	CERAMIC CHIP	680PF 10% 50V
C112	1-163-019-91	CERAMIC CHIP	0.0068uF 10% 50V
C114	1-124-478-91	ELECT	100uF 20% 25V
C115	1-163-037-91	CERAMIC CHIP	0.022uF 10% 25V
C116	1-163-833-91	CERAMIC CHIP	0.068uF 25V
C122	1-124-557-11	ELECT	1000uF 20% 25V
C125	1-124-920-91	ELECT	330uF 20% 63V
C126	1-124-910-91	ELECT	47uF 20% 50V
C127	1-124-122-11	ELECT	100uF 20% 50V
C128	1-124-120-91	ELECT	220uF 20% 25V
C131	1-124-479-91	ELECT	330uF 20% 25V
C132	1-124-122-91	ELECT	100uF 20% 50V
C133	1-124-477-91	ELECT	47uF 20% 25V
C134	1-163-038-91	CERAMIC CHIP	0.1uF 25V
C201	1-163-009-91	CERAMIC CHIP	0.001uF 10% 50V
C202	1-163-019-91	CERAMIC CHIP	0.0068uF 10% 50V
C204	1-163-009-91	CERAMIC CHIP	0.001uF 10% 50V
C205	1-163-017-91	CERAMIC CHIP	0.0047uF 10% 50V
C206	1-163-007-91	CERAMIC CHIP	680PF 10% 50V
C208	1-163-035-91	CERAMIC CHIP	0.047uF 50V
C209	1-163-017-91	CERAMIC CHIP	0.0047uF 10% 50V
C210	1-163-007-91	CERAMIC CHIP	680PF 10% 50V
C211	1-163-017-91	CERAMIC CHIP	0.0047uF 10% 50V
C212	1-163-035-91	CERAMIC CHIP	0.047uF 50V
C213	1-124-913-91	ELECT	470uF 20% 50V
< CONNECTOR >			
* CN101	1-560-894-11	PIN, CONNECTOR 6P	
CN105	1-506-473-11	PIN, CONNECTOR 8P	
* CN106	1-560-890-31	PIN, CONNECTOR 2P	
< 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	8-719-110-83	DIODE RD36ES-B2	
D111	8-719-110-88	DIODE RD39ES-B2	
D112	8-719-110-06	DIODE RD8.2ES-B1	
△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	

Ref. No.	Part No.	Description	Remarks
D119	8-719-110-22	DIODE RD11ES-B2	
D120	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	
< IC >			
△IC101	8-759-971-39	IC BA9700AF	
△IC102	8-759-231-53	IC M5F7805	
IC201	8-759-085-67	IC LM339NS-T1	
IC202	8-759-100-96	IC uPC4558G2	
< JUMPER RESISTOR >			
JR101	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR102	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR103	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR104	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR105	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR106	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR107	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR108	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR109	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR110	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR111	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR112	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR113	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR114	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR115	1-216-296-91	METAL GLAZE	0 5% 1/8W
< 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 >			
△PS103	1-532-829-21	LINK, IC 0.1A	
△PS105	1-532-841-21	LINK, IC 1.6A	
△PS201	1-532-675-91	LINK, IC 1.5A	
< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q102	8-729-216-22	TRANSISTOR	2SA1162
△Q103	8-729-117-11	TRANSISTOR	2SB1151
Q108	8-729-140-97	TRANSISTOR	KSA708
Q108	8-729-140-93	TRANSISTOR	2SB733-34

Note: 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	Remarks
Q108	8-729-140-97	TRANSISTOR KSA708	
Q111	8-729-141-75	TRANSISTOR 2SD596DV345	
Q112	8-729-142-46	TRANSISTOR 2SC2001-LK	
△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	
Q208	8-729-900-53	TRANSISTOR DTC114EK	
Q209	8-729-901-04	TRANSISTOR DTA114EK	
Q210	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q211	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q212	8-729-901-04	TRANSISTOR DTA114EK	
< RESISTOR >			
R101	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R102	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R103	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R104	1-216-065-91	METAL GLAZE 4.7K 5% 1/10W	
R105	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R106	1-216-053-91	METAL GLAZE 1.5K 5% 1/10W	
R107	1-216-067-91	METAL GLAZE 5.6K 5% 1/10W	
R108	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R109	1-216-691-91	METAL CHIP 47K 0.50% 1/10W	
R110	1-216-679-91	METAL CHIP 15K 0.50% 1/10W	
R112	1-216-099-91	METAL GLAZE 120K 5% 1/10W	
R114	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R120	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R122	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R124	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R125	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	
△R126	1-212-867-51	FUSIBLE 27 5% 1/4W F	
R128	1-216-053-91	METAL GLAZE 1.5K 5% 1/10W	
R129	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R199	1-216-079-91	METAL GLAZE 18K 5% 1/10W	
R201	1-216-081-91	METAL GLAZE 22K 5% 1/10W	
R202	1-216-075-91	METAL GLAZE 12K 5% 1/10W	
R203	1-216-093-91	METAL GLAZE 68K 5% 1/10W	
R204	1-216-065-91	METAL GLAZE 4.7K 5% 1/10W	
R205	1-216-075-91	METAL GLAZE 12K 5% 1/10W	
R206	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R207	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R208	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R209	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R210	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R211	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R212	1-216-065-91	METAL GLAZE 4.7K 5% 1/10W	
R213	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R214	1-247-750-11	CARBON 680 5% 1/2W	
R215	1-247-750-11	CARBON 680 5% 1/2W	

Ref. No.	Part No.	Description	Remarks
R216	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
△R217	1-216-369-51	METAL OXIDE 1 5% 2W F	
R218	1-216-690-91	METAL CHIP 43K 0.50% 1/10W	
R219	1-216-675-91	METAL CHIP 10K 0.50% 1/10W	
R220	1-216-690-91	METAL CHIP 43K 0.50% 1/10W	
R221	1-216-675-91	METAL CHIP 10K 0.50% 1/10W	
R222	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R223	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
△R224	1-215-866-51	METAL OXIDE 330 5% 1W F	
R225	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R226	1-247-750-11	CARBON 680 5% 1/2W	
R227	1-216-073-91	METAL GLAZE 10K 5% 1/10W	
R228	1-216-093-91	METAL GLAZE 68K 5% 1/10W	
R230	1-216-105-91	METAL GLAZE 220K 5% 1/10W	

< RELAY >

△RY101 1-515-833-11 RELAY

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< CAPACITOR >

C001	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C003	1-163-093-91	CERAMIC CHIP 10PF 5% 50V	
C005	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C006	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C009	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C010	1-163-121-91	CERAMIC CHIP 150PF 5% 50V	
C011	1-163-017-91	CERAMIC CHIP 0.0047uF 10% 50V	
C012	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C013	1-124-584-91	ELECT 100uF 20% 10V	
C014	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C015	1-163-989-91	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	1-128-057-91	ELECT 330uF 20% 6.3V	
C102	1-128-057-91	ELECT 330uF 20% 6.3V	
C103	1-124-242-91	ELECT 33uF 20% 25V	
C104	1-124-242-91	ELECT 33uF 20% 25V	
C105	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C106	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C107	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C108	1-163-035-91	CERAMIC CHIP 0.047uF 50V	
C109	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C110	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C111	1-126-160-11	ELECT 1uF 20% 50V	

Note: 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	Remarks
C112	1-163-109-91	CERAMIC CHIP 47PF	5% 50V
C113	1-163-093-91	CERAMIC CHIP 10PF	5% 50V
C114	1-126-160-11	ELECT 1uF	20% 50V
C115	1-163-019-91	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	1-163-014-91	CERAMIC CHIP 0.0027uF	10% 50V
C119	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C120	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C121	1-163-037-91	CERAMIC CHIP 0.022uF	10% 25V
C122	1-163-129-91	CERAMIC CHIP 330PF	5% 50V
C123	1-163-115-91	CERAMIC CHIP 82PF	5% 50V
C124	1-163-101-91	CERAMIC CHIP 22PF	5% 50V
C125	1-163-137-91	CERAMIC CHIP 680PF	5% 50V
C126	1-163-093-91	CERAMIC CHIP 10PF	5% 50V
C127	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V
C128	1-126-320-11	ELECT, NONPOLAR 10uF	20% 16V
C129	1-136-165-00	FILM 0.1uF	5% 50V
C130	1-126-320-11	ELECT, NONPOLAR 10uF	20% 16V
C131	1-163-037-91	CERAMIC CHIP 0.022uF	10% 25V
C132	1-163-035-91	CERAMIC CHIP 0.047uF	50V
C135	1-163-024-91	CERAMIC CHIP 0.018uF	10% 50V
C136	1-136-169-00	FILM 0.22uF	5% 50V
C137	1-163-022-91	CERAMIC CHIP 0.012uF	10% 50V
C138	1-163-022-91	CERAMIC CHIP 0.012uF	10% 50V
C139	1-124-282-00	ELECT 22uF	20% 16V
C140	1-104-485-91	ELECT 3.3uF	20% 25V
C141	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C144	1-163-016-91	CERAMIC CHIP 0.0039uF	10% 50V
C145	1-163-024-91	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	1-124-589-11	ELECT 47uF	20% 16V
C152	1-163-035-91	CERAMIC CHIP 0.047uF	50V
C153	1-163-035-91	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	PIN, CONNECTOR 6P	
CN104	1-506-482-11	PIN, CONNECTOR 3P	
* CN105	1-566-969-11	HOUSING, CONNECTOR(PC BOARD)7P	
* CN106	1-566-968-11	HOUSING, CONNECTOR(PC BOARD)6P	

Ref. No.	Part No.	Description	Remarks
< 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	8-752-055-54	IC CXA1081M-T6	
IC002	8-759-603-24	IC CX20197	
IC101	8-759-321-40	IC HA11529	
△IC102	8-759-822-38	IC LA6510	
IC103	8-759-700-43	IC NJM4558M	
IC104	8-759-700-43	IC NJM4558M	
IC105	8-759-700-43	IC NJM4558M	
IC106	8-759-300-71	IC HD14053BFP	
< JUMPER RESISTOR >			
JR102	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR103	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR104	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR105	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR106	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR107	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR111	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR112	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR113	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR114	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR115	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR116	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR117	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR118	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR119	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR121	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR122	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR123	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR124	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR125	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR126	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR127	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR128	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR129	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR130	1-216-296-91	METAL GLAZE 0 5% 1/8W	

Note: 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	Remarks	Ref. No.	Part No.	Description	Remarks
JR132	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR191	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR133	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR192	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR134	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR193	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR135	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR194	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR136	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR195	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR137	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR196	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR138	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR197	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR139	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR198	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR140	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR199	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR141	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR200	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR142	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR201	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR143	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR202	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR144	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR203	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR145	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR204	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR146	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR205	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR147	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR206	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR148	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR207	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR149	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR208	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR150	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR209	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR153	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR210	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR154	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR211	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR155	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR212	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR156	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR213	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR158	1-216-295-91	METAL GLAZE	0 5% 1/10W	JR214	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR159	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR215	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR160	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR216	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR161	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR217	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR162	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR218	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR164	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR219	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR166	1-216-295-91	METAL GLAZE	0 5% 1/10W	JR220	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR170	1-216-296-91	METAL GLAZE	0 5% 1/8W	JR221	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR171	1-216-295-91	METAL GLAZE	0 5% 1/10W			< COIL >	
JR172	1-216-296-91	METAL GLAZE	0 5% 1/8W	L101	1-410-509-11	INDUCTOR	10uH
JR173	1-216-296-91	METAL GLAZE	0 5% 1/8W	L102	1-410-509-11	INDUCTOR	10uH
JR174	1-216-296-91	METAL GLAZE	0 5% 1/8W	L103	1-410-509-11	INDUCTOR	10uH
JR175	1-216-295-91	METAL GLAZE	0 5% 1/10W			< TRANSISTOR >	
JR176	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q001	8-729-140-97	TRANSISTOR	2SB734-34
JR177	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q002	8-729-216-22	TRANSISTOR	2SA1162
JR178	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q003	8-729-303-37	TRANSISTOR	2SD655-E
JR179	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q101	8-729-209-15	TRANSISTOR	2SD2012
JR180	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q102	8-729-924-90	TRANSISTOR	2SB1370-EF
JR181	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q103	8-729-209-15	TRANSISTOR	2SD2012
JR182	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q104	8-729-924-90	TRANSISTOR	2SB1370-EF
JR183	1-216-295-91	METAL GLAZE	0 5% 1/10W	Q105	8-729-100-66	TRANSISTOR	2SC1623
JR184	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q106	8-729-100-66	TRANSISTOR	2SC1623
JR185	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q107	8-729-901-00	TRANSISTOR	DTC124EK
JR186	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q108	8-729-100-66	TRANSISTOR	2SC1623
JR187	1-216-296-91	METAL GLAZE	0 5% 1/8W	Q109	8-729-216-22	TRANSISTOR	2SA1162
JR188	1-216-296-91	METAL GLAZE	0 5% 1/8W				
JR189	1-216-295-91	METAL GLAZE	0 5% 1/10W				

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
< RESISTOR >						R130	1-216-017-91	METAL GLAZE	47	5%	1/10W
R001	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R131	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R002	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R132	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R003	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R133	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R004	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R134	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R005	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R135	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W
R006	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R136	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R007	1-216-023-91	METAL GLAZE	82	5%	1/10W	R137	1-216-099-91	METAL GLAZE	120K	5%	1/10W
R008	1-216-043-91	METAL GLAZE	560	5%	1/10W	R138	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R009	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R139	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R010	1-216-095-91	METAL GLAZE	82K	5%	1/10W	R140	1-216-037-91	METAL GLAZE	330	5%	1/10W
R011	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R141	1-216-024-91	METAL GLAZE	91	5%	1/10W
△R012	1-249-394-11	CARBON	12	5%	1/6W F	R142	1-216-001-91	METAL GLAZE	10	5%	1/10W
R013	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R143	1-216-001-91	METAL GLAZE	10	5%	1/10W
R014	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R144	1-216-055-91	METAL GLAZE	1.8K	5%	1/10W
R015	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R145	1-216-055-91	METAL GLAZE	1.8K	5%	1/10W
R016	1-216-101-91	METAL GLAZE	150K	5%	1/10W	R146	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R017	1-216-041-91	METAL GLAZE	470	5%	1/10W	R147	1-216-081-91	METAL GLAZE	22K	5%	1/10W
R018	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R148	1-216-037-91	METAL GLAZE	330	5%	1/10W
R020	1-216-049-91	METAL GLAZE	1K	5%	1/10W	R149	1-216-033-91	METAL GLAZE	220	5%	1/10W
R021	1-216-065-91	METAL GLAZE	4.7K	5%	1/10W	R150	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R022	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R151	1-216-113-91	METAL GLAZE	470K	5%	1/10W
△R023	1-249-394-11	CARBON	12	5%	1/6W F	R152	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
△R101	1-216-373-51	METAL OXIDE	2.2	5%	2W F	R153	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R103	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R154	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R104	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R155	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R105	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R156	1-216-083-91	METAL GLAZE	27K	5%	1/10W
R106	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R157	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R107	1-216-089-91	METAL GLAZE	47K	5%	1/10W	R158	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R108	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R159	1-216-075-91	METAL GLAZE	12K	5%	1/10W
R109	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R160	1-216-083-91	METAL GLAZE	27K	5%	1/10W
R110	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R161	1-216-113-91	METAL GLAZE	470K	5%	1/10W
R111	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R162	1-216-051-91	METAL GLAZE	1.2K	5%	1/10W
R112	1-216-101-91	METAL GLAZE	150K	5%	1/10W	R163	1-216-083-91	METAL GLAZE	27K	5%	1/10W
R113	1-216-077-91	METAL GLAZE	15K	5%	1/10W	R164	1-216-035-91	METAL GLAZE	270	5%	1/10W
R114	1-216-025-91	METAL GLAZE	100	5%	1/10W	R165	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R115	1-216-025-91	METAL GLAZE	100	5%	1/10W	R166	1-216-041-91	METAL GLAZE	470	5%	1/10W
R116	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R167	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R117	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R168	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R118	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R169	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R119	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R170	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R120	1-216-073-91	METAL GLAZE	10K	5%	1/10W	R171	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R121	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R172	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R122	1-216-085-91	METAL GLAZE	33K	5%	1/10W	R173	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R123	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R174	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R124	1-216-079-91	METAL GLAZE	18K	5%	1/10W	R175	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R125	1-216-081-91	METAL GLAZE	22K	5%	1/10W	R176	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R126	1-216-033-91	METAL GLAZE	220	5%	1/10W	R177	1-216-085-91	METAL GLAZE	33K	5%	1/10W
R127	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	R178	1-216-073-91	METAL GLAZE	10K	5%	1/10W
R128	1-216-061-91	METAL GLAZE	3.3K	5%	1/10W	R179	1-216-101-91	METAL GLAZE	150K	5%	1/10W
R129	1-216-041-91	METAL GLAZE	470	5%	1/10W						

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R180	1-216-689-11	METAL CHIP	39K 0.5% 1/10W	*	1-643-907-23	SW-706 BOARD	
R181	1-216-083-91	METAL GLAZE	27K 5% 1/10W			*****	
R182	1-216-067-91	METAL GLAZE	5.6K 5% 1/10W			< CONNECTOR >	
R183	1-216-067-91	METAL GLAZE	5.6K 5% 1/10W				
R184	1-216-089-91	METAL GLAZE	47K 5% 1/10W				
R186	1-216-097-91	METAL GLAZE	100K 5% 1/10W		CN601	1-506-467-11 PIN, CONNECTOR 2P	
R187	1-216-089-91	METAL GLAZE	47K 5% 1/10W			< SWITCH >	
R188	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W				
R189	1-216-061-91	METAL GLAZE	3.3K 5% 1/10W		S601	1-554-655-11 SWITCH, LEAF (TRAY SW)	
R190	1-216-069-91	METAL GLAZE	6.8K 5% 1/10W				
R191	1-216-097-91	METAL GLAZE	100K 5% 1/10W				
R192	1-216-081-91	METAL GLAZE	22K 5% 1/10W				
R193	1-216-105-91	METAL GLAZE	220K 5% 1/10W				
R194	1-216-069-91	METAL GLAZE	6.8K 5% 1/10W				
R195	1-216-085-91	METAL GLAZE	33K 5% 1/10W				
R196	1-216-097-91	METAL GLAZE	100K 5% 1/10W				
R197	1-216-089-91	METAL GLAZE	47K 5% 1/10W				
R198	1-216-081-91	METAL GLAZE	22K 5% 1/10W		CN401	1-506-481-11 PIN, CONNECTOR 2P	
R199	1-216-099-91	METAL GLAZE	120K 5% 1/10W		CN402	1-506-481-11 PIN, CONNECTOR 2P	
R200	1-216-085-91	METAL GLAZE	33K 5% 1/10W			< RESISTOR >	
R201	1-216-095-91	METAL GLAZE	82K 5% 1/10W		R401	1-249-423-11 CARBON 3.3K 5% 1/4W F	
R202	1-216-081-91	METAL GLAZE	22K 5% 1/10W		R402	1-249-417-11 CARBON 1K 5% 1/4W F	
R205	1-216-097-91	METAL GLAZE	100K 5% 1/10W			< SWITCH >	
R206	1-216-081-91	METAL GLAZE	22K 5% 1/10W				
R207	1-216-051-91	METAL GLAZE	1.2K 5% 1/10W		S401	1-571-300-11 SWITCH, ROTARY (CHUCK UP/DOWN SW)	
R208	1-216-051-91	METAL GLAZE	1.2K 5% 1/10W				
R209	1-216-073-91	METAL GLAZE	10K 5% 1/10W				
R210	1-216-081-91	METAL GLAZE	22K 5% 1/10W				
R211	1-216-017-91	METAL GLAZE	47 5% 1/10W				
R212	1-216-017-91	METAL GLAZE	47 5% 1/10W				
R213	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W				
R214	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W			< CAPACITOR >	
R215	1-216-073-91	METAL GLAZE	10K 5% 1/10W				
R216	1-216-081-91	METAL GLAZE	22K 5% 1/10W		C701	1-126-157-11 ELECT 10uF 20% 16V	
R217	1-216-081-91	METAL GLAZE	22K 5% 1/10W		C702	1-163-031-91 CERAMIC CHIP 0.01uF 50V	
R218	1-216-077-91	METAL GLAZE	15K 5% 1/10W			< CONNECTOR >	
R219	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W				
R220	1-216-079-91	METAL GLAZE	18K 5% 1/10W		CN701	1-569-339-11 CONNECTOR, BOARD TO BOARD 7P (PLUG)	
R222	1-216-129-91	METAL GLAZE	2.2M 5% 1/10W			< DIODE >	
		< VARIABLE RESISTOR >					
RV101	1-228-993-00	RES, ADJ, METAL	4.7K		D701	8-719-940-82 LED SLR34MC3	
RV102	1-228-994-00	RES, ADJ, METAL	10K		D702	8-719-940-82 LED SLR34MC3	
RV103	1-228-994-00	RES, ADJ, METAL	10K		D703	8-719-940-99 LED SLR34VC3	
RV104	1-228-993-00	RES, ADJ, METAL	4.7K			< IC >	
RV105	1-228-994-00	RES, ADJ, METAL	10K		IC701	8-741-100-48 IC SBX1610-59	
RV106	1-228-990-00	RES, ADJ, METAL	1K			< COIL >	
RV107	1-228-990-00	RES, ADJ, METAL	1K				
RV108	1-228-990-00	RES, ADJ, METAL	1K		L701	1-408-421-00 INDUCTOR 100uH	

Ref. No.	Part No.	Description	Remarks
< TRANSISTOR >			
Q701	8-729-901-46	TRANSISTOR DTA114YK	
< RESISTOR >			
R701	1-216-029-91	METAL GLAZE 150 5% 1/10W	
R702	1-216-059-91	METAL GLAZE 2.7K 5% 1/10W	
R703	1-216-031-91	METAL GLAZE 180 5% 1/10W	
R704	1-216-029-91	METAL GLAZE 150 5% 1/10W	
< SWITCH >			
S701	1-571-977-21	SWITCH, TACTIL (POWER)	

*	1-643-906-23	TR-702 BOARD	

*	1-644-141-23	VS-701 BOARD	

△	1-533-189-11	HOLDER, FUSE	
*	3-354-631-01	CUSHION (RF)	
< CAPACITOR >			
△C301	1-136-212-12	FILM 0.1uF 20% 250V	
C302	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C303	1-163-077-91	CERAMIC CHIP 0.1uF 50V	
< CONNECTOR >			
△CN301	1-564-419-11	HEADER, SPRING (POWER) 2P	
* CN302	1-564-031-11	PIN, CONNECTOR 6P	
< SWITCH >			
S901	1-554-933-11	SELECTOR, VOLTAGE	
< TRANSFORMER >			
△T302	1-424-656-11	FILTER, LINE	

Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS			

23	1-693-095-31	REMOTE COMMANDER (RMT-M12B)	
74	1-161-063-51	CAP, CERAMIC 0.1uF X	
△109	1-575-912-23	CORD, POWER	
112	1-696-664-11	CABLE, FLEXIBLE FLAT	
* 153	1-631-095-12	PC BOARD, MT-30	
158	1-554-468-11	SWITCH, LEAF (S903)	
* 207	1-630-097-11	PC BOARD, MT-28	
△215	8-848-138-02	DEVICE, OPTICAL KHS-130A	
△F101	1-532-299-11	FUSE, TIME-LAG (5A 250V)	
△F301	1-532-285-11	FUSE, TIME-LAG (1.25A 250V)	
△F302	1-532-284-11	FUSE, TIME-LAG (0.63A 250V)	
M901	1-541-776-21	MOTOR, LD SPINDLE	
S901	1-571-435-11	SWITCH (SLED IN LIMIT)	
S902	1-570-771-21	SWITCH (SLED OUT LIMIT)	
△T301	1-450-972-11	TRANSFORMER, POWER	

ACCESSORIES & PACKING MATERIALS			

*	3-948-404-01	CUSHION (LOWER)	
*	3-948-405-02	CUSHION (UPPER)	
*	3-949-708-41	INDIVIDUAL CARTON	
△	1-569-008-11	ADAPTER, CONVERSION 2P	
	3-755-750-11	MANUAL, INSTRUCTION (CHINESE/ENGLISH)	
	1-575-334-11	CORD (WITH CONNECTOR)	

HARDWARE LIST			

#1	7-624-108-04	STOP RING 4.0, TYPE -E	
#2	7-685-648-71	SCREW +BVTP 3X12 TYPE2 IT-3	
#3	7-624-190-81	STOP RING 2, TYPE-CS	
#4	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
#5	7-682-645-01	SCREW +PS 3X4	
#6	7-621-255-55	SCREW +P 2X8	
#7	7-685-649-71	SCREW +BVTP 3X14 TYPE2 IT-3	
#8	7-685-661-21	SCREW +BVTP 4X12 TYPE2 SLIT	
#9	7-682-545-04	SCREW (3X4) (G), TAPPING, (+) P	
#10	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#11	7-628-254-20	+PSW, 2.6X8	

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

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-M12B)
- 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

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-701 BOARD)

Mode	Stop
Measuring Equipment	Digital Voltmeter
UNREG +16 V check	
Measurement Point	Pin ① of CN104 (Pin ②, GND)
Specified Value	16.2 ± 1.0 V
UNREG -16 V check	
Measurement Point	Pin ④ of CN104 (Pin ③, GND)
Specified Value	-16.2 ± 1.0 V
REG +5 V check	
Measurement Point	Pin ① of CN103 (Pin ②, GND)
Specified Value	5.1 ± 0.3 V
REG -5 V check	
Measurement Point	Pin ③ of CN103 (Pin ②, GND)
Specified Value	-5.0 ± 0.2 V
AC 3.1 V check	
Measurement Point	Pin ①, ② of CN105
Specified Value	3.2 ± 1.0 V AC
DC -30 V check	
Measurement Point	Pin ④ of CN105 (Pin ③, GND)
Specified Value	-33.0 ± 2.0 V
EVER 5V Check	
Measurement Point	Pin ⑥ of CN105 (Pin ⑦, GND)
Specified Value	5.0 ± 0.2 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-706 Board)

Mode	Stop
Measurement Point	Pin ⑬ of IC107
Measuring Equipment	Frequency counter
Adjusting Element	CT001
Specified Value	14,318,180 ± 40 Hz

Adjustment method :

- 1) Adjust CT001 to 14,318,180 ± 40 Hz.

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.

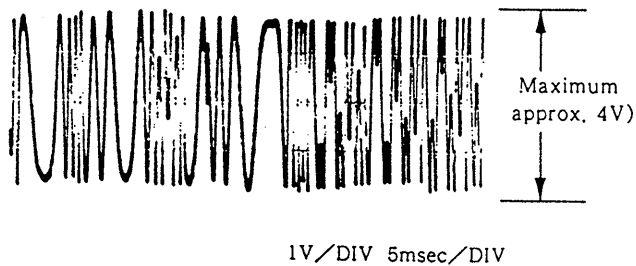


Fig. 7-1.

2) Tracking balance adjustment

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

Adjustment method :

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

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

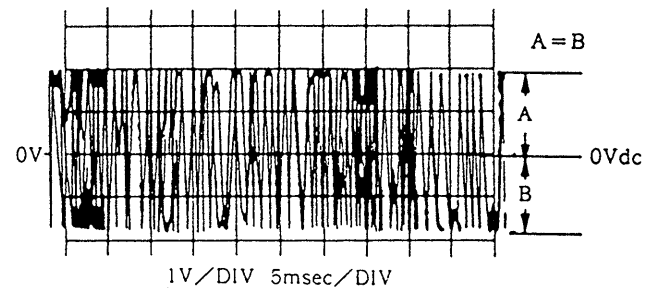


Fig. 7-2.

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

Adjustment method :

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



Connections :

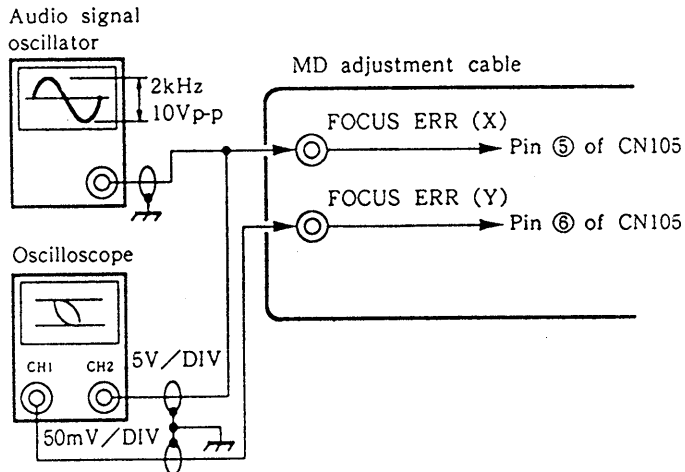


Fig. 7-3.

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. 7-9.) with a hexagonal wrench.

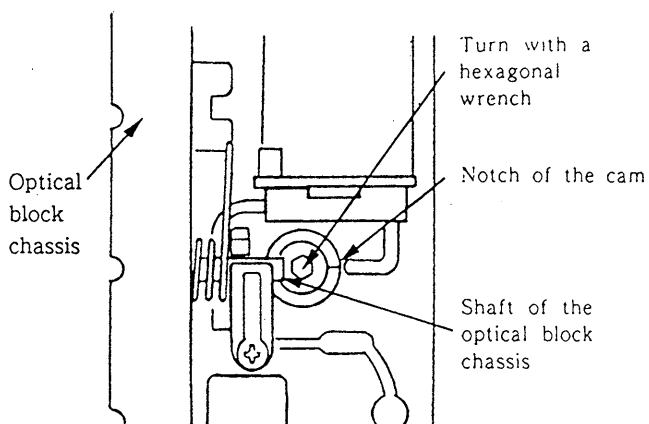


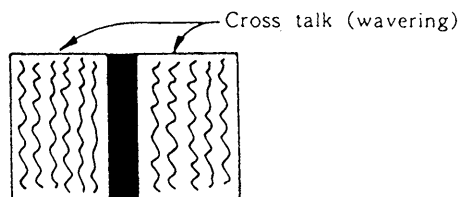
Fig. 7-4.

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. 7-5.

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.

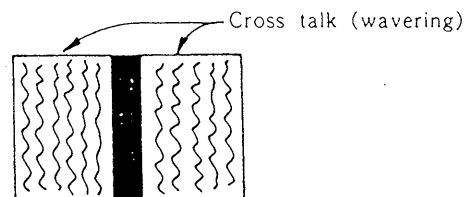
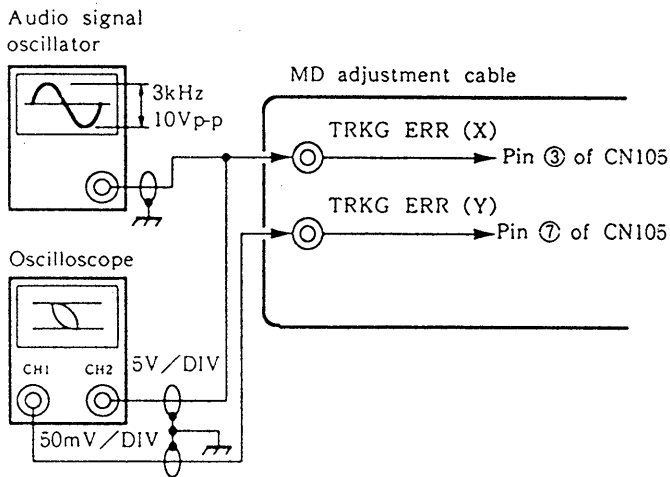


Fig. 7-6.

4. LD Tracking Gain Adjustment (SV-63 Board)

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

Connections :



Adjustment method :

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

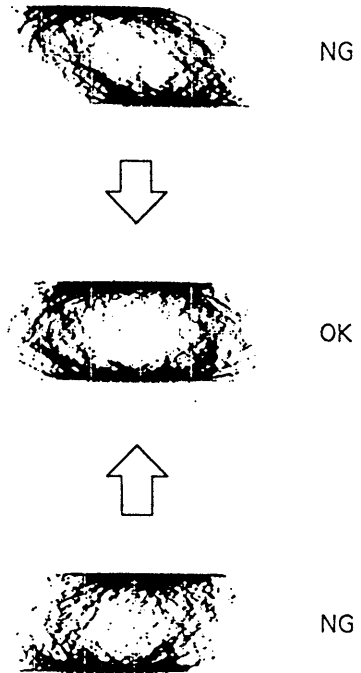


Fig. 7-7.

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.

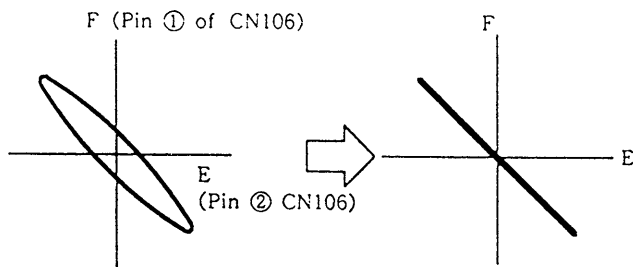


Fig. 7-8.

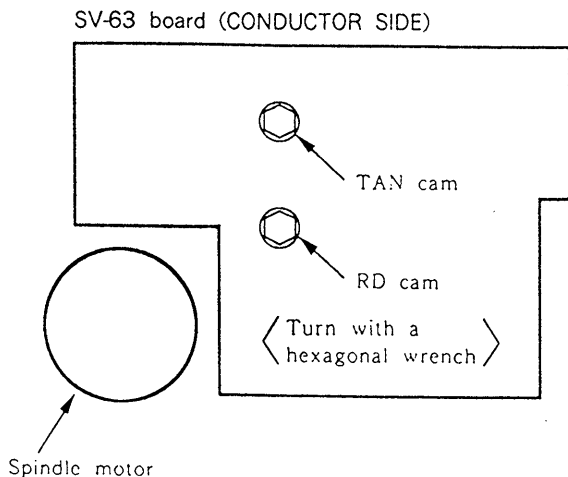


Fig. 7-9.

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

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

Adjustment method :

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

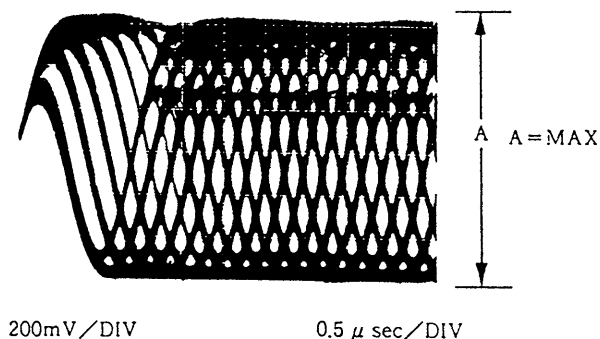


Fig. 7-10.

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

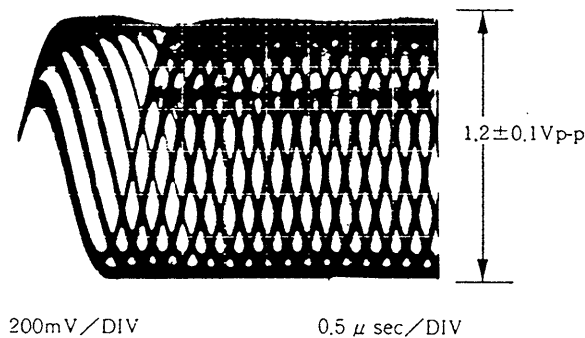


Fig. 7-11.

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.

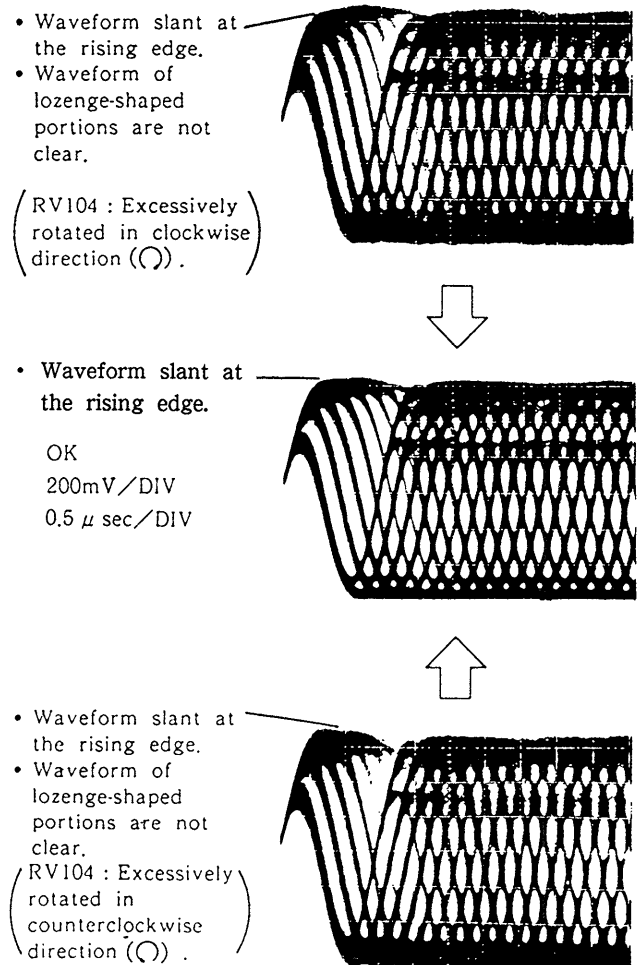


Fig. 7-12.

7-7. VIDEO SYSTEM ADJUSTMENT

7-7-1. Video Output Level Adjustment (MB-706 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measurement Point	J201 (VIDEO OUT terminal) (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV002
Specified Value	1.00 ± 0.03 Vp-p

Adjustment method :

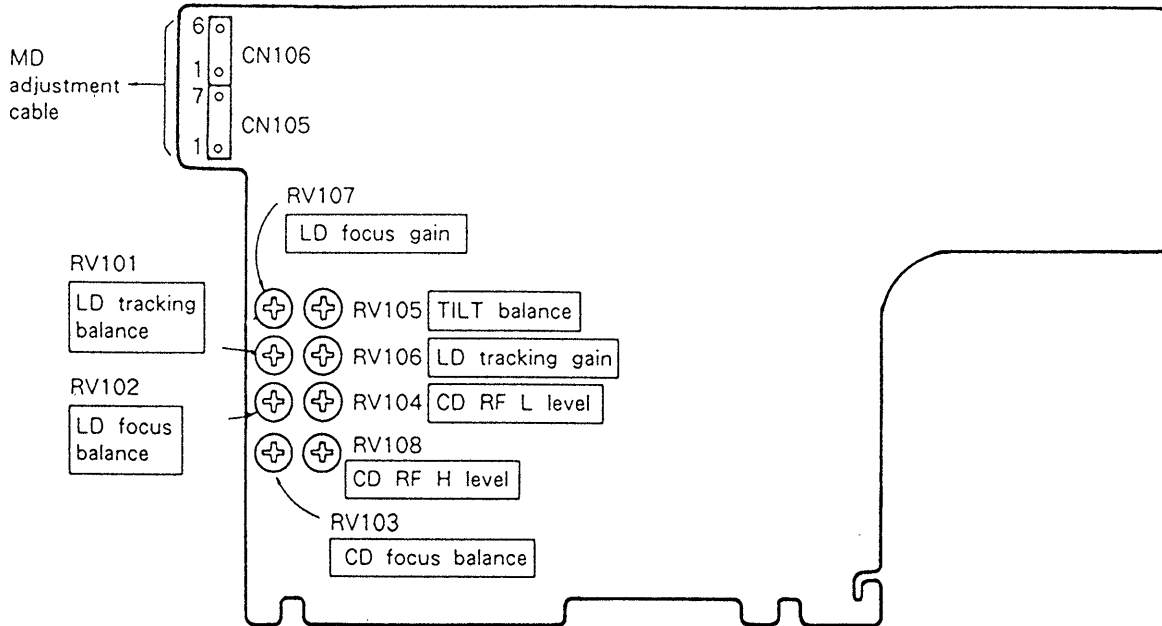
- 1) Select STILL (◀▶) mode.
- 2) Search the frame 4100 and apply a color bar signal.
- 3) Adjust RV002 for 1.00 ± 0.03 Vp-p.



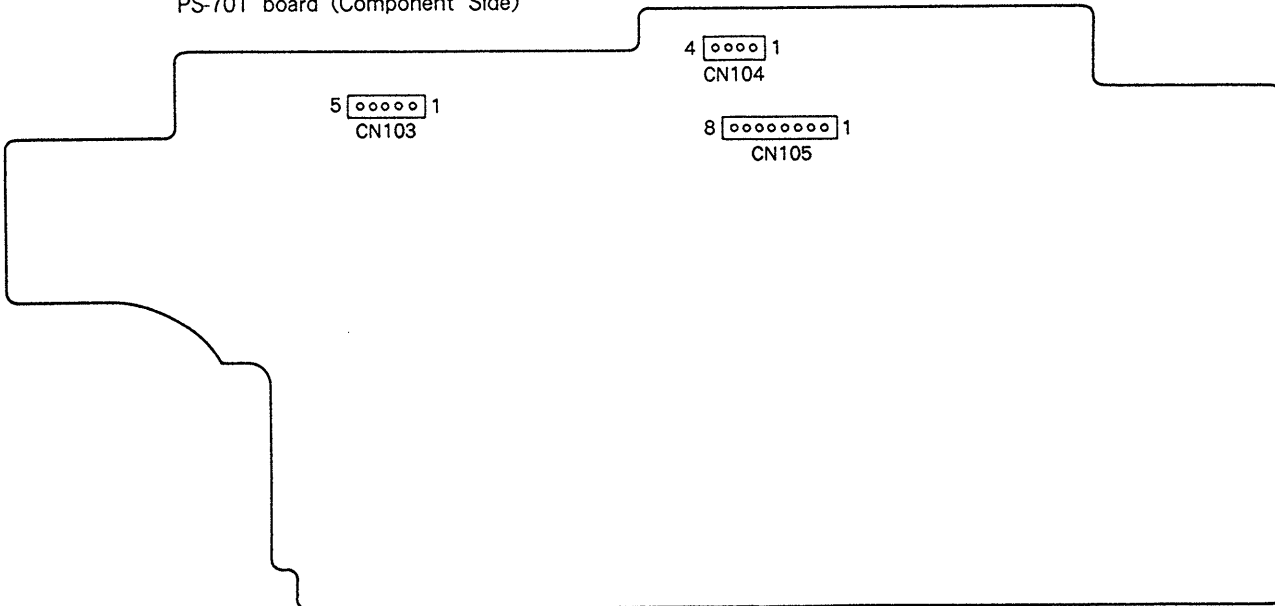
Fig. 7-13.

7-8. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

SV-63 board (Conductor side)



PS-701 board (Component Side)



MB-706 board (Component Side)

