

SERVICE MANUAL

US Model
Canadian Model



**VIDEO
WALKMAN**

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	EIA standard, NTSC color
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 1.43 cm/sec. LP: approx. 0.72 cm/sec.
Recording time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Playback time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Fast forward/rewinding time	Approx. 6 minutes (with Sony P6-120 cassette)

LCD section

Picture	4 inches measured diagonally 8.2 × 6.2 cm (3 1/4 × 2 1/2 inches)
On-screen display	TN LCD/TFT active matrix method Total picture-element number: 112,086 (479 × 234)

Tuner section

Channel coverage	VHF: 2 – 13 channels UHF: 14 – 69 channels Cable TV channels: A-8 – A-6, A-2 – W, W + 30 – W + 84
Antenna input	75-ohm minijack for VHF/UHF

Inputs/outputs

VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, –7.5 dBs (0 dBs = 0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, –7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speakers	16 ohms, 150 mW
Earphone	Stereo minijack, 8 ohms × 2
CONTROLS	Minijack
Camera input	12-pin

Timer section

Clock	Crystal lock
Time indication	12-hour cycle
Timer setting	Only for recording, 1 event/24 hours



General

Power requirements	Battery mounting surface input: 6.0 V (battery pack) DC jack input: 7.5 V (AC power adaptor), 6.5 V (DC pack DCP-77) 6.9 W (for continuous playback)
Power consumption	0°C to 40°C (32°F to 104°F)
Operating temperature	–20°C to 60°C (–4°F to 140°F)
Storage temperature	
Dimensions	129 × 71 × 226 mm (w/h/d) (5 1/8 × 2 7/8 × 9 inches) Approx. 1.1 kg (2 lb 7 oz) not incl. battery pack
Weight	
Accessories supplied	Stereo earphones (1) Signal splitter (1) Carrying case (1) Battery pack NP-77 (1) AC power adaptor AC-V50 (1) Lithium battery (1)

AC-V50

Power consumption	23 W
Power requirements	100 – 240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 2 A in operating mode
Battery charge terminal:	10 V, 1.3 A in charge mode
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Dimensions	Approx. 71 × 45 × 144 mm (w/h/d) (2 7/8 × 1 13/16 × 5 3/4 inches) including projecting parts and controls
Weight	Approx. 400 g (14 oz)

Design and specifications are subject to change without notice.

— Continued on next page —

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

8 VIDEO TV RECORDER
SONY®

LIST OF RECOMMENDED ACCESSORIES



	Model name	Page
Battery pack	NP-77H, NP-66H, NP-55	11
Battery charger	BC-77	
Car battery charger	DC-V30	11
DC pack	DCP-77	17
Color video camera	CCD-G1	56
Antenna connector	EAC-40	54
Signal splitter	EAC-45	54
Antenna cord	CCD-6M, CCD-2	54
Car antenna	VCA-3W, VCA-4E	54
Pan tilter	HVR-200	59
Connecting cord	VMC-910MS/920MS (1m/2m) VMC-810S/820S (1m/2m) VMC-710M/720M (1m/2m)	60
Car connecting pack	CPA-2	
Video walkman hood	VCV-GV300	
Cleaning cassette	V8-25CLH	70
RFU adaptor kit	RFU-89UCKA	63

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.

SAFETY-RELATED COMPONENT WARNING!!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!


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

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1. GENERAL					
•	Features	5			
•	Location of Parts and Controls	5			
•	Power Sources	6			
•	Setting the Clock	8			
•	Presetting TV Channels	9			
•	Watching TV Programs	10			
•	Listening to Stereo Programs	11			
•	Adjusting the Picture and Sound	12			
•	Using the SLEEP Timer	12			
•	Inserting a Cassette	12			
•	Recording TV Programs	13			
•	Recording Stereo Programs	14			
•	Using the Timer-Activated Recording Feature	14			
•	Playing Back the Recorded Tapes	15			
•	Using Indexes—to Find the Desired Scene Quickly ..	16			
•	Connecting an Outdoor Antenna and CATV cable ..	17			
•	Connecting other VCRs or Monitors	17			
•	Editing Tapes	20			
•	Precautions	21			
•	Maintenance	21			
•	Notes on Moisture Condensation	21			
•	Using Your Video TV Recorder Abroad	22			
•	List of On-Screen Displays	22			
2. DISASSEMBLY					
2-1.	Removal of Cabinet (Upper) Assy	23			
2-2.	Removal of SC Unit	23			
2-3.	Removal of Liquid Crystal Display Module	23			
2-4.	Removal of Control Switch Block	24			
2-5.	Removal of Cassette Compartment Assy	24			
2-6.	Removal of TU-123 Board	24			
2-7.	Removal of SB Block and Lithium Battery	25			
2-8.	Removal of DC-22 Board	25			
2-9.	Removal of Mechanism Deck	25			
2-10.	Internal Views	26			
3. DIAGRAMS					
3-1.	Circuit Boards Location	27			
3-2.	Overall Block Diagram	28			
3-3.	Head Amp Block Diagram	31			
3-4.	Video Block Diagram	33			
3-5.	LCD Video Block Diagram	35			
3-6.	Marker Block Diagram	37			
3-7.	Servo/System Control Block Diagram	40			
3-8.	Table of SV-38 Board IC206 (CXP-80116) Port	43			
3-9.	Test Mode	45			
3-10.	List of SIRCS Code	48			
3-11.	System Control—Video • Audio Part Interface	49			
3-12.	System Control—Servo Peripheral Circuit Interface	51			
3-13.	System Control—System Control Peripheral Circuit Interface	53			
3-14.	System Control—Mechanism Control Part Interface	55			
3-15.	Tuner Block Diagram	56			
3-16.	Audio Block Diagram	59			
3-17.	Power Block Diagram	65			
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS					
4-1.	Frame Schematic Diagram	67			
4-2.	Printed Wiring Boards and Schematic Diagrams ..	70			
•	RP-75 Board	71			
•	RG-8 Board	76			
•	CC-32, CN-6 and SV-38 (Video) Boards	83			
•	SV-38 (Servo, System Control) Board	92			
•	AU-53 Board	101			
•	SB-3 and TU-123 Boards	108			
•	SV-38 (ATF, Marker) Board	116			
•	DC-22, KB-10 and UC-6 Boards	125			
4-3.	Semiconductors	129			
5. EXPLODED VIEWS					
5-1.	Cabinet (Upper) Assembly	131			
5-2.	SC Unit Assembly	132			
5-3.	Cabinet (Lower) Assembly	133			
5-4.	Mechanism Deck Assembly (1)	134			
5-5.	Mechanism Deck Assembly (2)	135			
5-6.	Mechanism Deck Assembly (3)	136			
6. ELECTRICAL PARTS LIST					
137					
7. MECHANICAL ADJUSTMENTS					
7-1.	Setting the Track Shift Mode	158			
7-2.	Preparation for Adjustment	158			
8. ELECTRICAL ADJUSTMENTS					
8-1.	Preparation for Adjustment	159			
8-1-1.	Using Instruments	159			
8-1-2.	Connection of Instruments	159			
8-1-3.	VIDEO/AUDIO Terminal of the Unit	160			
8-1-4.	Set-up at the Adjustment	160			
8-1-5.	Alignment Tape	161			
8-1-6.	Input/Output Level and Impedance	162			
8-1-7.	Test Mode	163			
8-2.	Power Source Part Adjustment	166			
8-2-1.	UNREG Power Source Voltage Check	166			
8-2-2.	Switch 5V Adjustment	166			
8-2-3.	DD Converter Frequency Adjustment	166			
8-2-4.	-8V Adjustment	166			
8-2-5.	LCD Power Source Voltage Check	166			

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
8-2-6.	CAM UNREG Check	167	8-9-7.	Recording Matrix L+R Adjustment	182
8-3.	System Control System Adjustment	167	8-9-8.	Recording Matrix L-R Adjustment	183
8-3-1.	Clock Precision Adjustment	167	8-9-9.	Playback Matrix Adjustment	183
8-3-2.	Battery Down Adjustment	167	8-9-10.	Total Level Characteristic Separation Check ..	183
8-4.	Servo System Adjustment	167	8-9-11.	Total Distortion Rate Check	183
8-4-1.	CUE/REV Adjustment	167	8-10.	Adjusting Parts Location Diagram	184
8-4-2.	Switching Position Adjustment	168			
8-5.	Video System Adjustment	168			
8-5-1.	Playback Frequency Characteristic Adjustment	169			
8-5-2.	fsc Check	169			
8-5-3.	SYNC AGC Adjustment	169			
8-5-4.	IR Adjustment	170			
8-5-5.	Y/C Separation Adjustment	170			
8-5-6.	Emphasis Y Level Adjustment	171			
8-5-7.	De-emphasis Y Level Adjustment	171			
8-5-8.	Playback Y Level Adjustment	171			
8-5-9.	Y FM Carrier Adjustment	171			
8-5-10.	Y FM Deviation Adjustment	172			
8-5-11.	Recording Y Level Adjustment	172			
8-5-12.	Chroma Emphasis Adjustment	172			
8-5-13.	Recording Chroma Level Adjustment	173			
8-6.	LCD System Adjustment	173			
8-6-1.	Contrast Adjustment	174			
8-6-2.	R Gain Adjustment	174			
8-6-3.	B Gain Adjustment	174			
8-6-4.	Sub Bright Adjustment	174			
8-6-5.	fsc Adjustment	175			
8-6-6.	White Balance Adjustment	175			
8-6-7.	V COM DC Adjustment	175			
8-6-8.	Character Position Adjustment	176			
8-7.	Marker System Adjustment	176			
8-7-1.	Playback VCO Free Oscillation Frequency Adjustment	176			
8-8.	Tuner System Adjustment	177			
8-8-1.	FAS Adjustment	177			
8-8-2.	P.REF Adjustment	177			
8-8-3.	AFT Adjustment	177			
8-8-4.	S.REF Adjustment	177			
8-8-5.	MPX Level Adjustment	178			
8-8-6.	FILTER Adjustment	178			
8-8-7.	VCO Adjustment	178			
8-8-8.	Separation Adjustment	179			
8-8-9.	RF AGC Adjustment	179			
8-9.	Audio System Adjustment	180			
8-9-1.	1.5MHz Carrier Frequency Adjustment	181			
8-9-2.	1.7MHz Carrier Frequency Adjustment	181			
8-9-3.	E-E Output Level Check	181			
8-9-4.	1.5MHz Carrier Level Check	181			
8-9-5.	1.7MHz Carrier Level Adjustment	182			
8-9-6.	1.5MHz Deviation Adjustment	182			

SECTION 1 GENERAL

Features

This section is extracted from instruction manual.

The "Video Walkman" GV-300 is an 8mm video recorder with a LCD (Liquid Crystal Display). Its compact and lightweight design allows you to watch TV programs and video tapes anywhere and anytime you like.

- With this video TV recorder, you can:
- view the playback picture of 8 mm video tapes.
 - view TV programs.
 - record TV programs.
- In addition, by connecting it to a video camera (not supplied), you can record pictures with the camera, and play back the recorded pictures on it immediately.

Other features

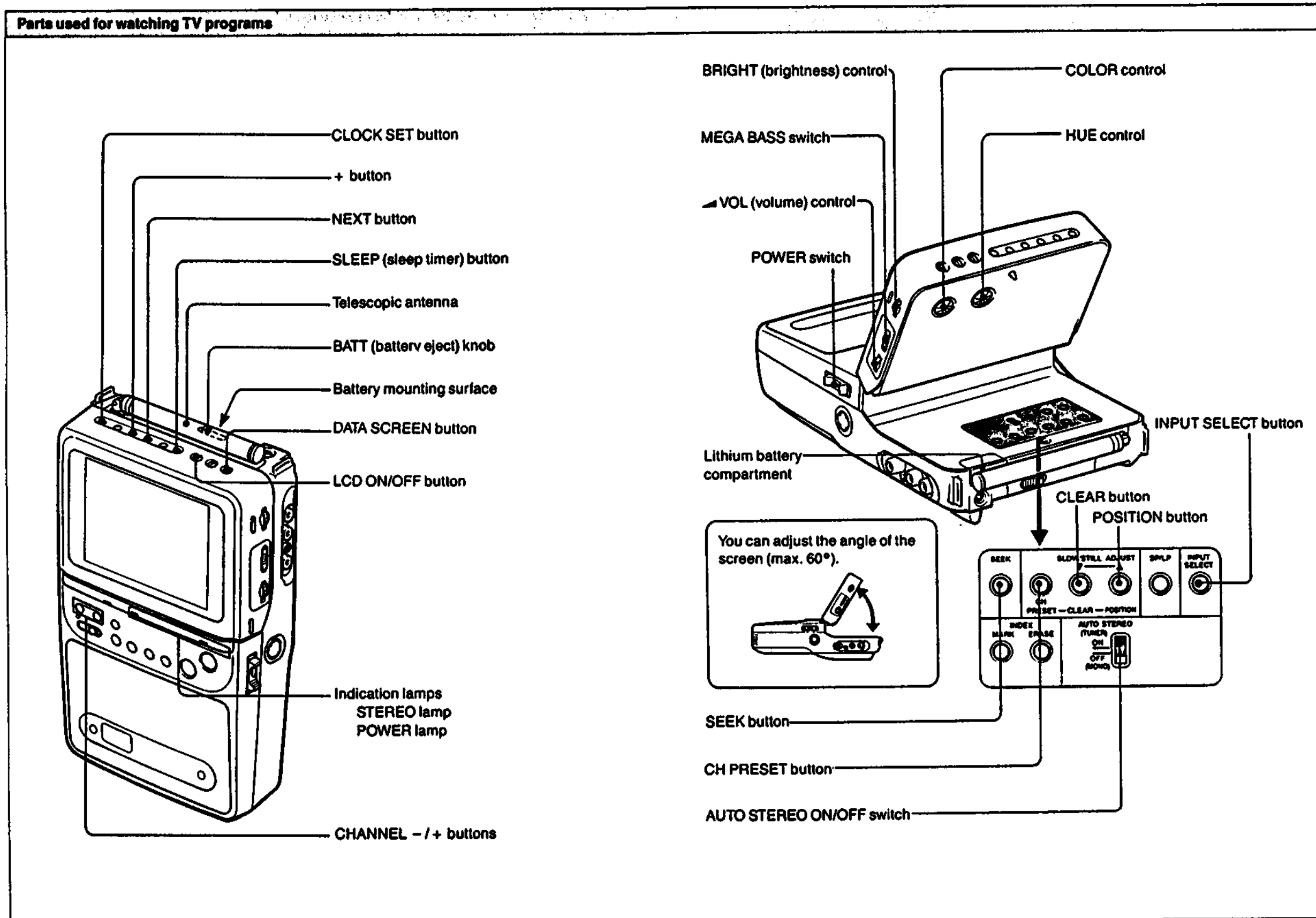
- Hi-fi stereo for high quality sound*
- Stereo TV tuner for enjoying stereo programs
- Index function for finding the desired scenes quickly
- CRYSTAL-CLEAR still/slow/picture search on LCD
- Timer-activated recording
- SLEEP timer for turning off the unit automatically
- MEGA BASS circuit for dynamic bass sound

* Hi-fi Stereo System

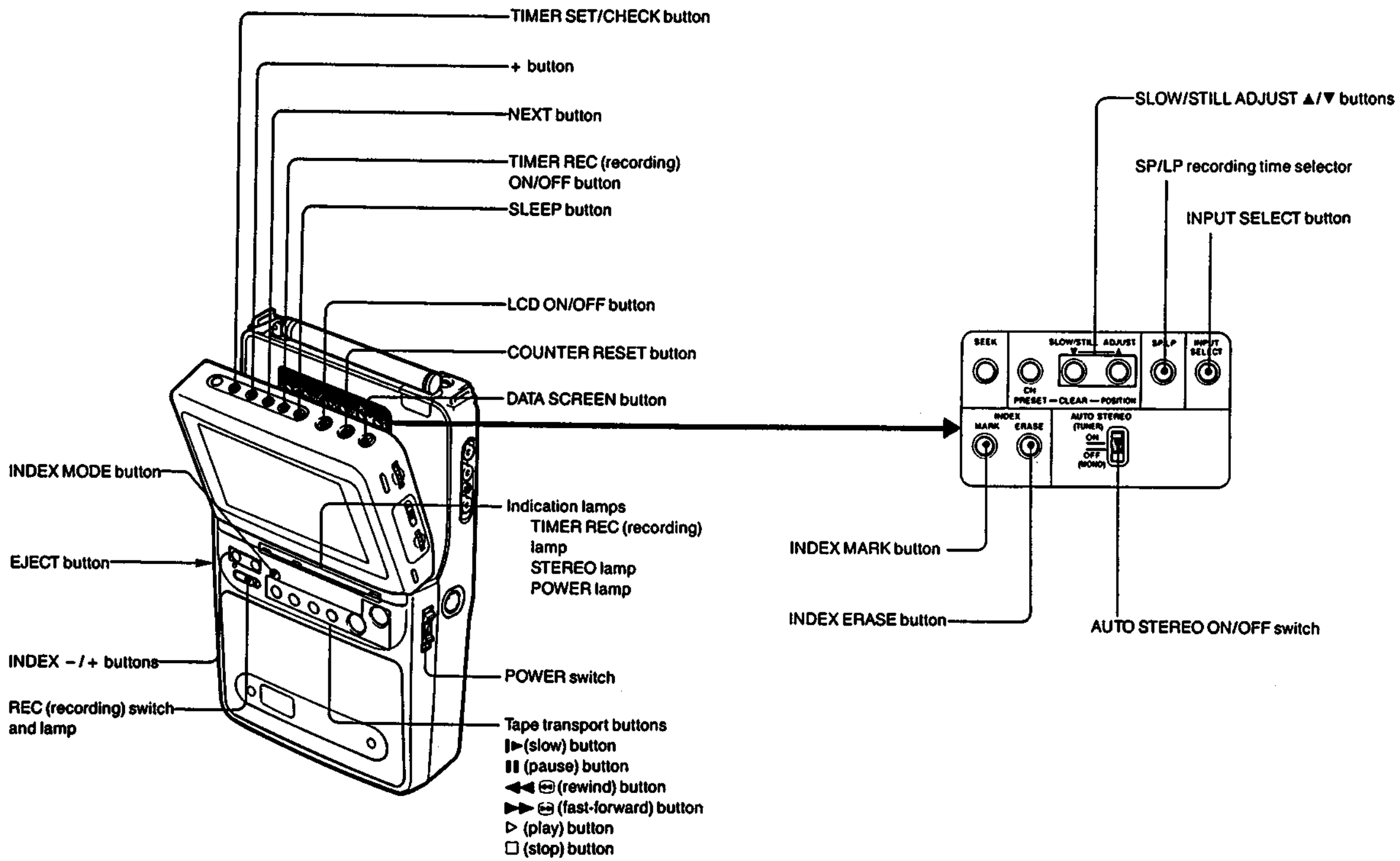
On the 8 mm video standard track, the sound is recorded/played back in Hi-fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option. With this unit, Hi-fi stereo sound can be recorded on the standard track. To maintain compatibility with the conventional Hi-fi monaural equipment, the Hi-fi stereo sound is recorded as L - R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal. To play back the tape recorded by its hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-fi monaural equipment is used to play back a tape recorded in Hi-fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier. The Hi-fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 1.43 cm/second) and the LP mode (approximately 0.72 cm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

Location of Parts and Controls



Parts used for VCR playback/recording

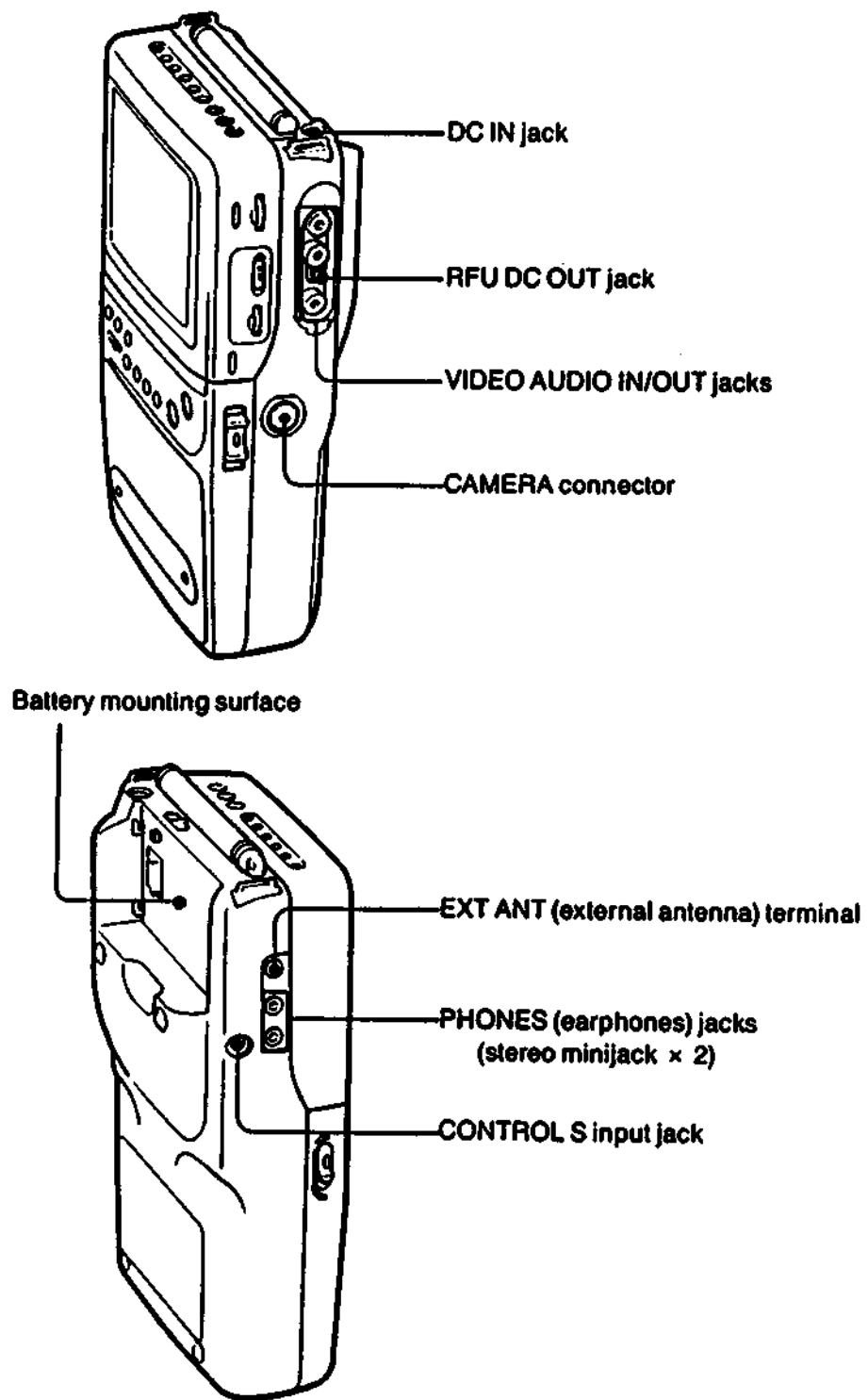


8

9

Getting Ready **Power Sources**

Parts used for connection



10

Selection of Power Sources

Place	Power sources	Page
Indoors	AC power adaptor AC-V50 (supplied)	16
Outdoors	Battery pack NP-77 (supplied), NP-66H, or NP-77H	12
In the car	DC pack DCP-77	17
	Car battery charger DC-V30	

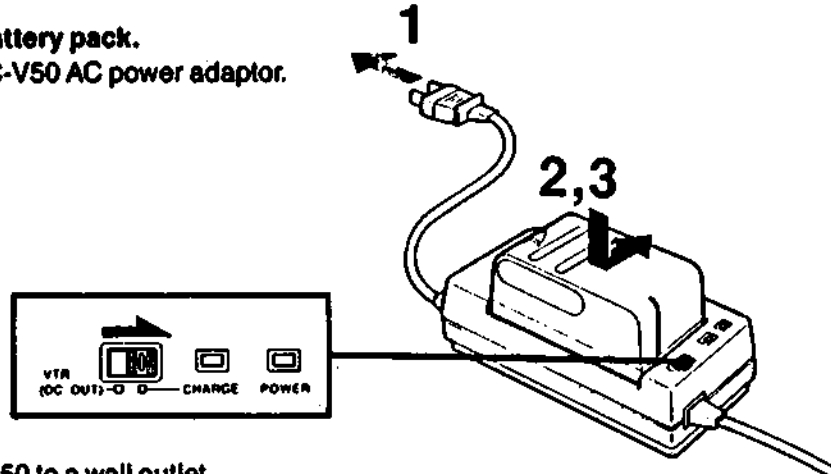
The above accessories, except for the AC-V50 and NP-77, are not supplied.

Disconnecting the power source during recording or playback operations may damage the cassette tape. If this is done accidentally, supply the power again immediately and turn the power on.

11

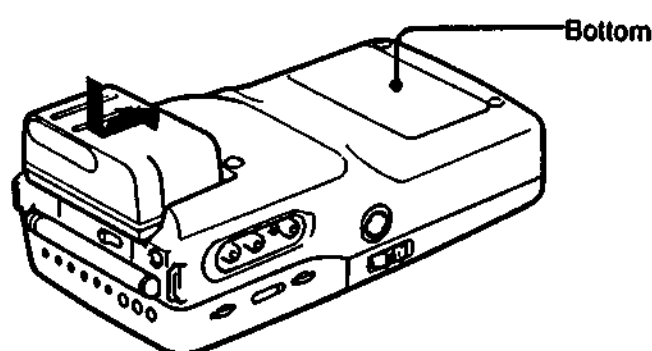
Using with Battery Pack — NP-77, NP-55, NP-66H, or NP-77H

- 1 First, charge the battery pack.**
Use the supplied AC-V50 AC power adaptor.



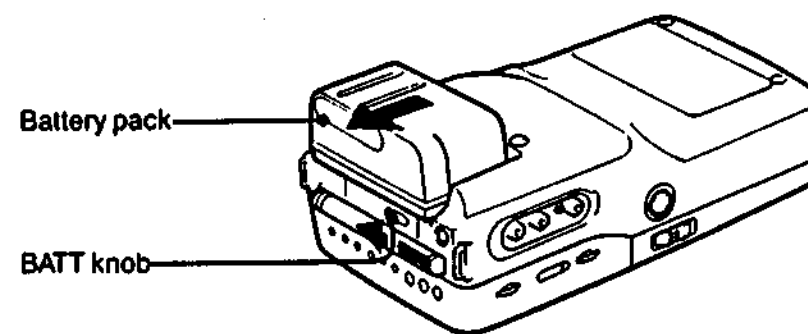
- 1 Connect the AC-V50 to a wall outlet.
2 Install the battery pack.
Align the right side of the battery pack with the line on the AC power adaptor.
3 While pressing the battery pack, slide it in the direction of the arrow.
The POWER lamp (green) and the CHARGE lamp (orange) on the AC-V50 lights up.
The charging begins.
When the charging is completed, the CHARGE lamp goes out.
Unplug the unit from the wall outlet and the POWER lamp goes out.

- 2 Attach the battery pack to the video TV recorder.**
Align the battery pack with the white line on the video TV recorder, then while pressing, slide the battery pack in the direction of the arrow.



- The charging time is about 120 minutes for an NP-77, 140 minutes for NP-77H, 100 minutes for NP-66H, and 60 minutes for an NP-55.
- The unit cannot be operated with the AC power adaptor when it is used for charging a battery pack, and the battery pack cannot be charged when the AC power adaptor is used to operate the unit.
- An NP-77, NP-55, NP-66H, or NP-77H can also be charged with the BC-55 or BC-77 battery charger.

To remove the battery pack



While sliding the BATT knob in the direction of the arrow, slide the battery pack as illustrated.

Operating time

A fully-charged battery pack can operate this unit as follows:

	LCD ON/OFF	NP-77H	NP-77	NP-66H	NP-55
Watching TV programs	ON	Approx. 125 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
VCR playing back	ON	Approx. 120 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
TV program recording	ON	Approx. 95 min.	Approx. 75 min.	Approx. 70 min.	Approx. 40 min.
TV program recording	OFF	Approx. 140 min.	Approx. 115 min.	Approx. 105 min.	Approx. 55 min.
Camera recording*	OFF	Approx. 100 min.	Approx. 80 min.	Approx. 75 min.	Approx. 40 min.

* When connecting the color video camera CCD-G1 (not supplied) and setting the LCD ON/OFF switch to OFF.

12

13

Using the Battery Pack Efficiently

How to prepare the rechargeable battery packs

Have sufficient battery pack power to perform 2 or 3 times the amount of recording that you plan to do. "Battery life" as indicated in the instruction manual or catalogue of the video TV recorder is measured by the continuous use of the video TV recorder, at room temperature, using a fully charged battery.

Fast winding or rewinding tape operations consumes much more battery power than normal tape transport operation. Consequently, battery life becomes shorter when these operations are performed frequently.

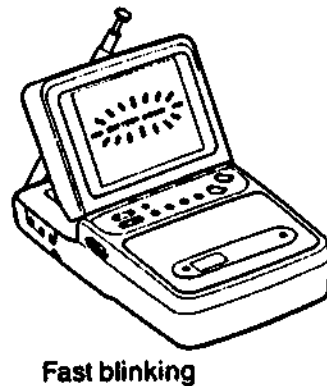
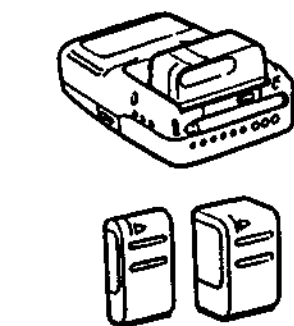
Battery life is shorter in a cold climate.

Cold climates reduce the efficiency of a battery and cause it to run out more quickly.

When to replace the rechargeable battery pack

When the battery pack is exhausted, the POWER lamp and the BATTERY DOWN indication on the screen starts blinking slowly about five minutes before the battery pack is discharged. Replace the battery when the blinking changes from slow to fast. However, during playback, the BATTERY DOWN indication starts blinking rapidly about a minute before the battery pack is discharged.

Turn off the power of the video TV recorder before replacing the battery. While replacing the battery, keep the cassette inside the cassette holder. When the battery has been replaced, recording can be resumed smoothly without any picture distortion.



Notes on battery exhaustion when a camera is connected

When the battery is exhausted, the tally lamp (red) displayed in the viewfinder of the camera starts blinking, and the power goes off automatically. Replace the battery pack with a fully charged one when the blinking starts.

Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged. Recharge the battery pack when it is fully exhausted.

- If the operation is completed before the BATTERY DOWN indication on the screen or POWER lamp starts blinking, it is recommended that you discharge the battery pack by playing back a tape until BATTERY DOWN or POWER lamp starts blinking rapidly.
- Do not recharge the battery pack before it has been discharged completely. Repeated charging while some capacity remains will reduce the battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery pack again.

Keep the terminals clean

If the terminals (metal parts on the back) are soiled, the battery life will become shorter. When the terminals are soiled, or when the battery pack has not been used for a long time, repeatedly attach and remove it several times. This will improve the contact of the battery pack and the video TV recorder. Also, wipe the + and - terminals with a soft cloth or paper.

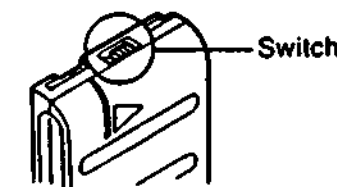
Notes on the rechargeable battery pack

Battery pack care

- Remove the battery pack from the video TV recorder after use, and keep it in a cool place. When the battery pack is installed on a video TV recorder, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and, consequently, shortens the life of the battery.
- The battery pack is always discharging - even when it is not in use. Thus, the battery should be charged before each use.

How to use the switch on the battery pack

Use this switch as a reminder of the charging condition. Set the switch to the "no mark" position when the charging is completed. Set the switch to the "red mark" position when the battery has been discharged.



How many times can the battery pack be recharged

It can be fully charged and discharged about 500 times under normal temperatures. If the BATTERY DOWN indication blinks rapidly just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a brand new one.

Charging temperature

Lower temperatures require a longer charging time. Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why the battery pack heats up

While the battery pack is being charged or used, a chemical change occurs inside the battery pack which generates electric energy. Consequently, the battery pack becomes warm, but this is not dangerous.

Carrying the battery pack

If the + and - terminals are short-circuited with a piece of metal, the battery heat up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metal object.

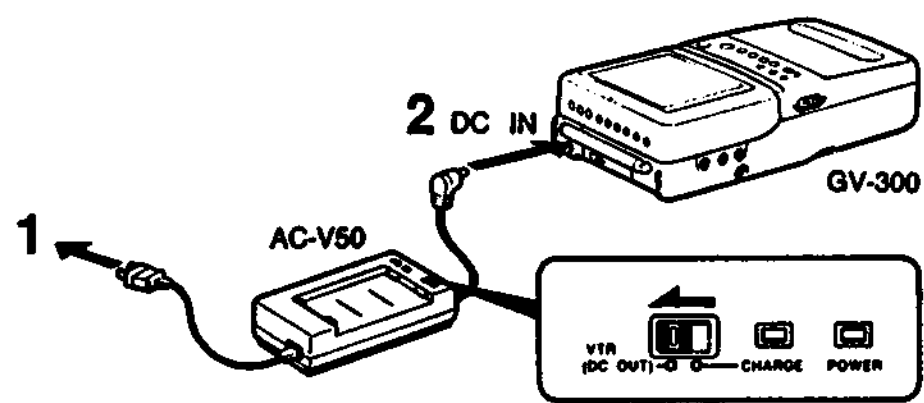
If the battery pack is not used for a long time (about 1 year)

Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

14

15

Using this unit with the AC Power Adaptor — AC-V50



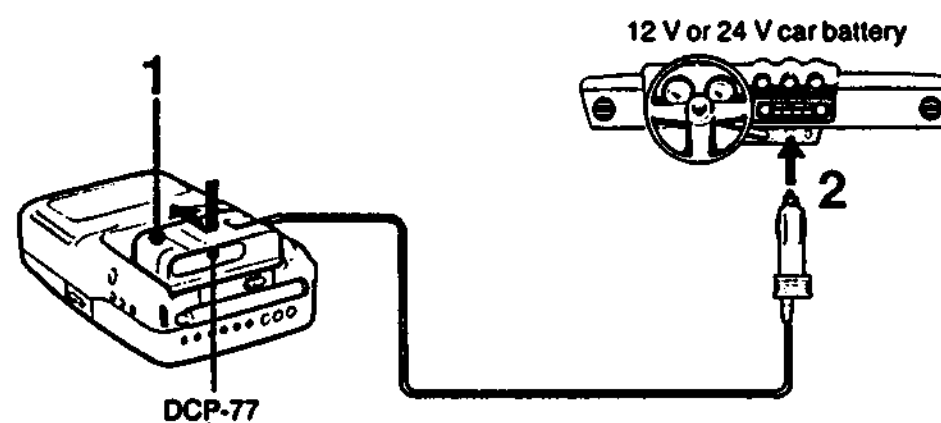
- 1** Connect the AC power adaptor to a wall outlet.
- 2** Insert the DC plug of the adaptor to the DC input jack of the video TV recorder.

Note on the AC power adaptor
Use only the supplied AC-V50 AC power adaptor.
Do not use any other AC power adaptor.



- The unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

Using This Unit with a Car Battery — DCP-77



- 1** Attach the DC pack to the video TV recorder.
- 2** Connect the plug to the cigarette lighter socket.

- Connect the DCP-77 only to a car with a negative ground car batteries of 12 V or 24 V.
- Attach or remove the DC pack in the same way as the battery pack.
- DCP-55 is not recommended for this unit because the capacity of the DCP-55 is not enough to operate it.

Notes

- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not used, keep it in its case.
- Keep the video TV recorder away from the power source. If not, noise may appear on the screen.

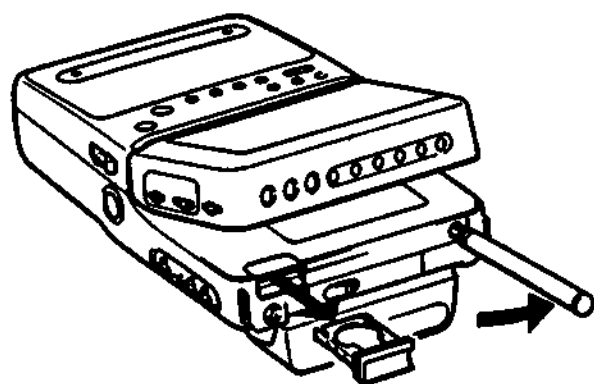
Notes on using this unit in a car

- For your safety, do not watch the TV or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while your car is not in use, the car battery will be consumed. Avoid using this unit in such condition for more than 12 hours.

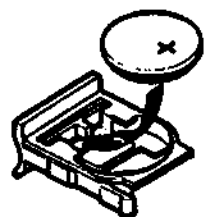
Setting the Clock

Before you set the clock, install a lithium battery. With a lithium battery installed, this unit powers the clock and keeps the last channel in memory when the power source is disconnected.

- 1** Pull out the lithium battery compartment.



- 2** Install the supplied CR2032 lithium battery with the + side facing out.



- 3** Reinsert the compartment.

To remove the lithium battery
Press the battery upward and remove it as illustrated.



Lithium battery life

Approximately 1 year in normal operation.

If the lithium battery becomes weak, the AM 12:00 indication appears on the screen when the DATA SCREEN button is pressed. In this case, replace the battery with a Sony CR2032 lithium battery. Use of a battery other than a Sony CR2032 may present a risk of fire or explosion. After replacing the battery, reset the clock.

Notes on lithium battery

- Keep the lithium battery out of the reach of children.
- Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

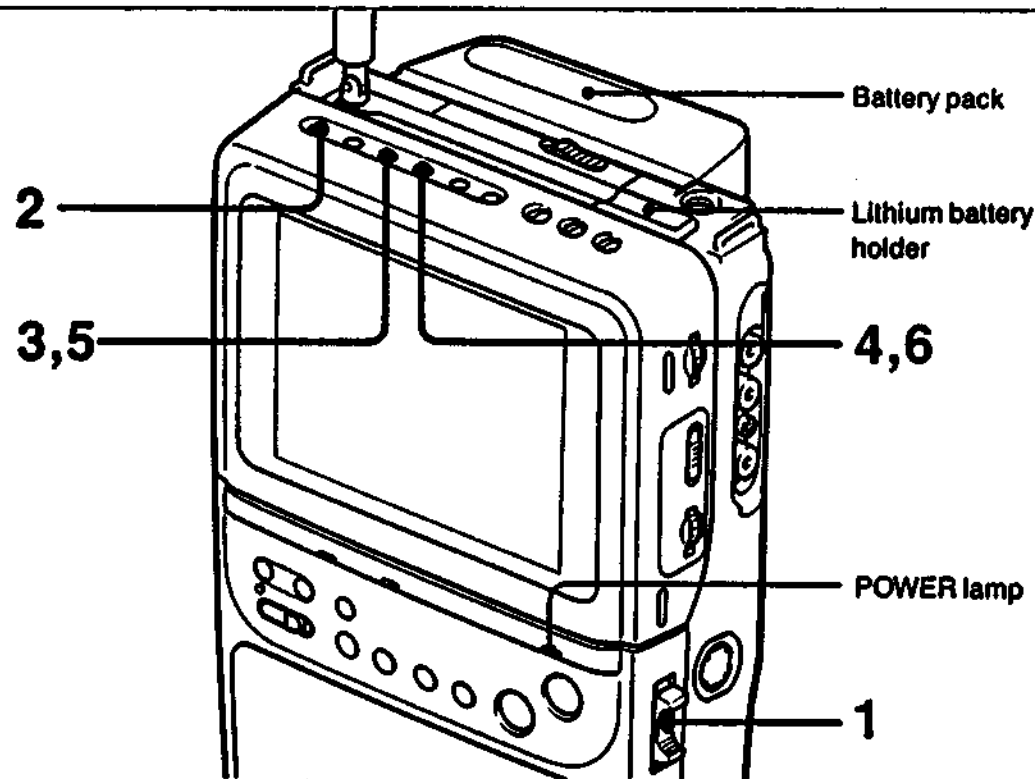
Warning

Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

Setting the Clock

Before setting

- Make sure that the power source is connected correctly.
- The time indication "PM 12:00" means noon, and "AM 12:00" means midnight.



Example: Set to PM 1:15

1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left to turn the power on.



2 Press the CLOCK SET button with a pen or similar object.
The screen will enter the time setting mode.
The screen becomes dark.
The next item to be set blinks.



3 Set the hour.
Press the + button repeatedly until you get the desired setting.
If you keep the button pressed, the indication will advance continuously.



4 Press the NEXT button.



5 Set the minute.
Press repeatedly until you get the desired setting.
If you keep the button pressed, the indication will advance continuously.



6 Press the NEXT button.
The clock starts.
The screen goes back to the normal brightness.



Note

If the lithium battery is not installed, the clock will go back to "AM 12:00" each time the power source is disconnected.

Presetting TV Channels

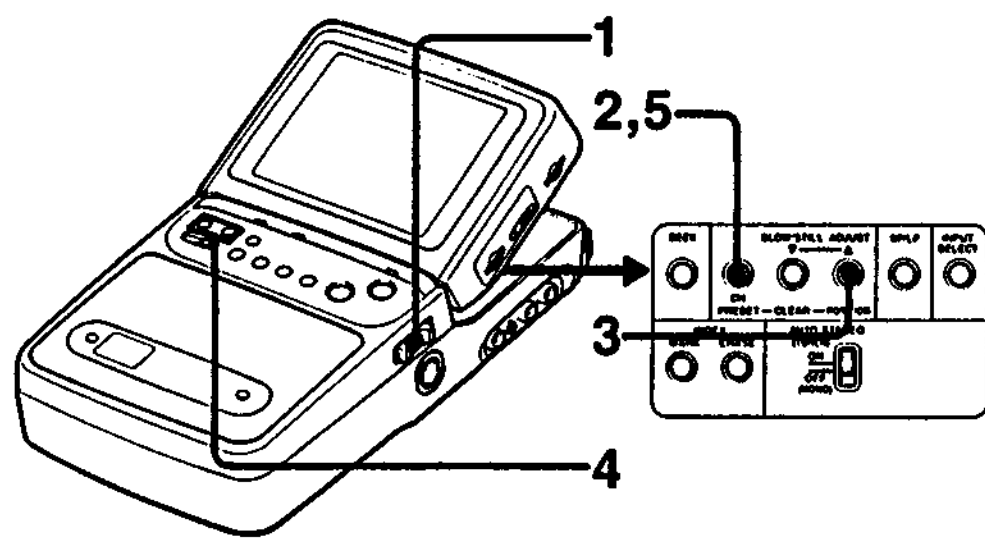
Your receiver is capable of receiving VHF channels 2-13, UHF channels 14-69 and cable TV channels 1 (A-8), 98 (A-2), 99 (A-1), 14-36 (A to W), 66-125 (W + 30 to W + 84). The channel numbers 1-99 will be displayed in the display window.
This unit is preset at the factory to receive certain channels (see the chart on page 23.) If you want to receive other channels, you need to preset them.

Preset channels

Program position	1	2-13	14-36	37-42	43	44-68	69	70-97	98	99
Corresponding channel	CATV 1	VHF 2-13	CATV 14-36	—	*	—	*	—	CATV 98	CATV 99
Number displayed	1	2-13	14-36	37-42	43	44-68	69	70-97	98	99

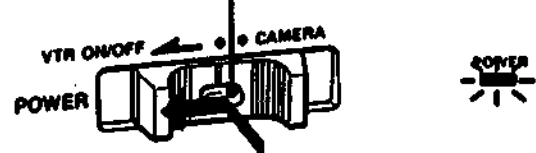
* UHF channels are preset around this number.

To Preset New Channels



1 Turn the power on.
The POWER lamp lights up.
If the TV program is not displayed, press the INPUT SELECT button

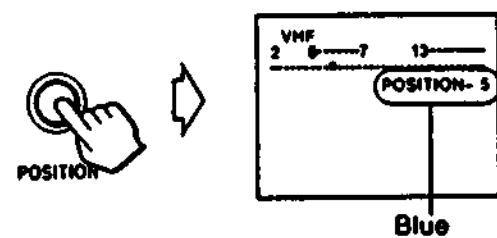
While pressing the green button, slide the POWER switch to the left.



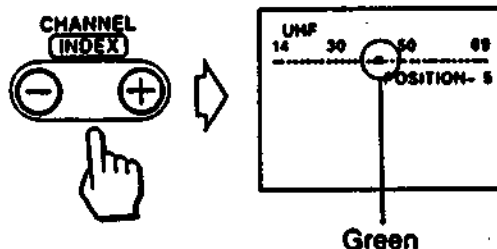
2 Press the CH PRESET button.



3 Press the POSITION button to select the desired program position where the channel is to be stored.



4 Press the CHANNEL +/- buttons repeatedly to select the channel to be stored.
The UHF channel range is displayed after the VHF range*.
Repeat steps 3 and 4 for other channels to be preset.



5 Press the CH PRESET button.
Channel presetting is completed.



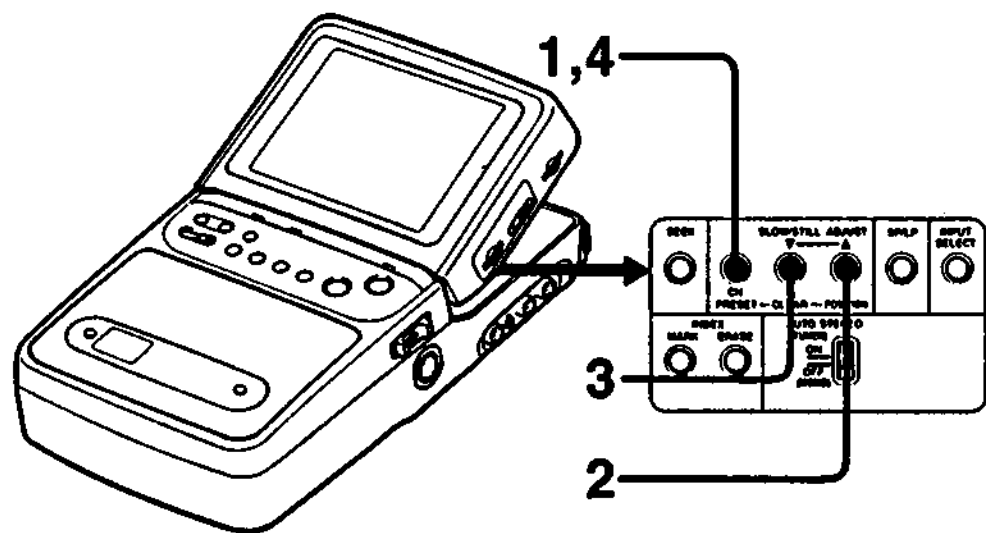
The on-screen display disappears.

* After the channel range is displayed, wait for about 2 seconds before next operation.

To change the order of the channel to be stored
Follow the above steps.

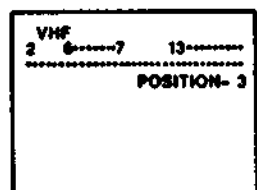
To Erase Channels

The erased program position is skipped when you press the CHANNEL +/- button.

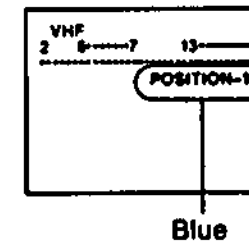


Example: To erase program position 11

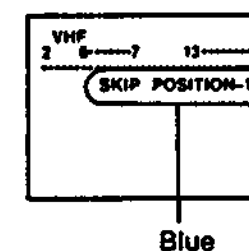
1 Press the CH PRESET button.



2 Press the POSITION button and select the program position to be erased.

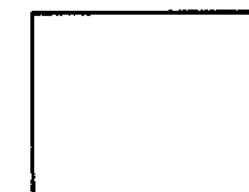


3 Press the CLEAR button. The SKIP indication appears.



Repeat steps 2 and 3 for other program position to be erased.

4 Press the CH PRESET button. The on-screen display disappears.



To add the erased channels again See "To Preset New Channels" on page 22.

Channel Allocation Chart

Frequency (MHz)	50	100	150	200	250	300	400	500	600	700	800
VHF/UHF channels	VHF 2-6			VHF 7-13				UHF 14-69			
CATV channels	A4-A5	A-2-1			J-W			W+30-W+84			
Band indicator	VHF						UHF				

When the CHANNEL + button is pressed, the above channels will be scanned from the lowest frequency to the highest in sequence. By pressing the CHANNEL - button, the channels will be scanned in reverse.

Cable TV Channel Chart *

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

Number on this TV	1	98	99	14	15	16	17	18	19	20	21	22
Corresponding CATV channel	A-8	A-2	A-1	A	B	C	D	E	F	G	H	I
	23	24	25	26	27	28	29	30	31	32	33	34
	J	K	L	M	N	O	P	Q	R	S	T	U
	V	W	W+30 W+84								

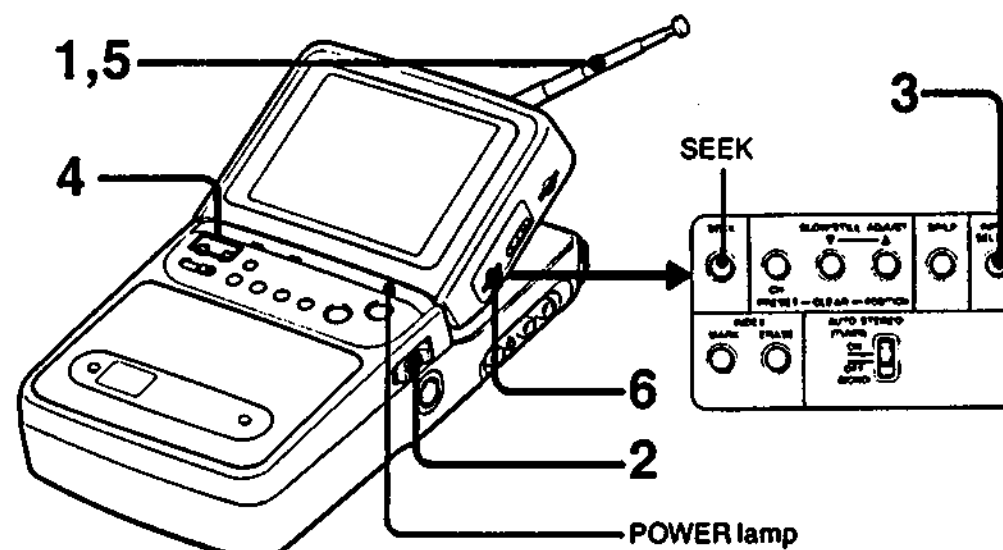
Check with your local cable TV company for more complete information on the available channels.

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

Note

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) besides the normal cable connections.

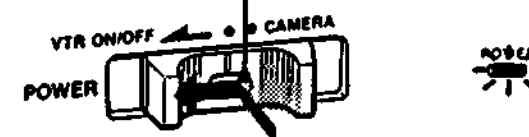
Watching TV Programs



1 Pull out the antenna fully. Be sure to pull at the base of the antenna. If you have connected an external antenna or CATV cable, be sure to fold in the telescopic antenna.

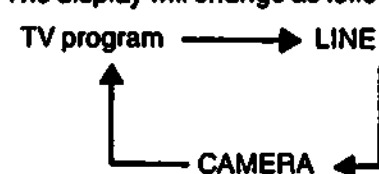
2 Turn the power on. The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.



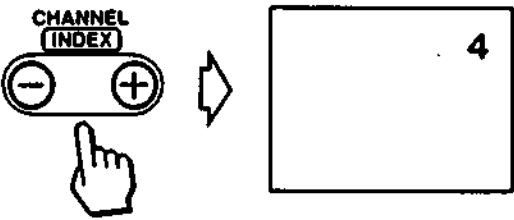
3 If a TV program is not displayed, press the INPUT SELECT button.

The display will change as follows:

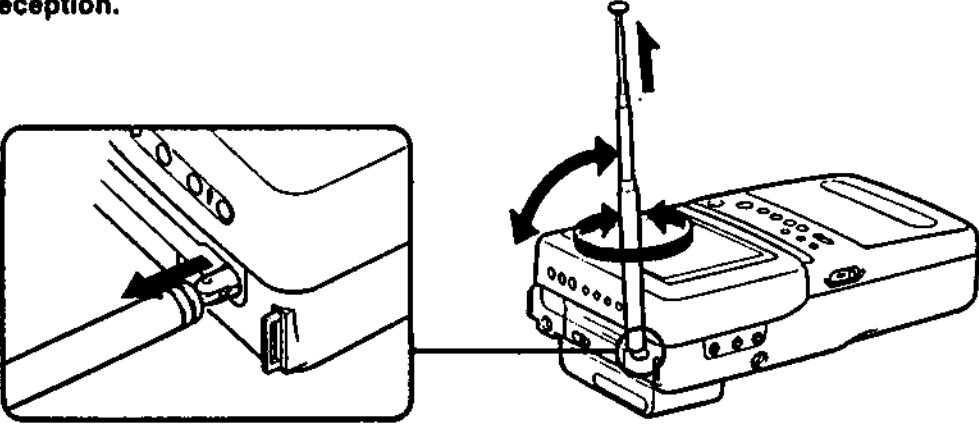


↓ To be Continued

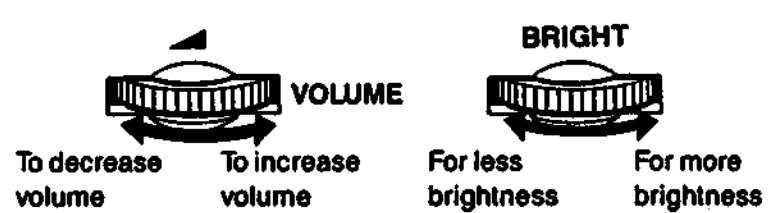
4 Select the desired channel.
Press + for higher-numbered channels and - for lower-numbered channels. The channels will appear in numerical sequence. Press CHANNEL +/- repeatedly until you get the desired channel on the screen.



5 Adjust the antenna for the best reception.




6 Adjust the volume and brightness.

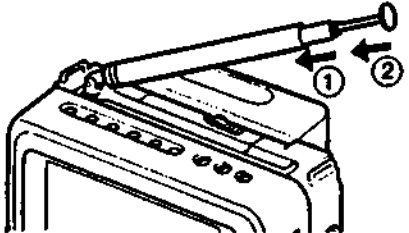


To decrease volume To increase volume For less brightness For more brightness

To turn off the TV
While pressing the green button, slide the POWER switch to the left. The POWER lamp goes out.

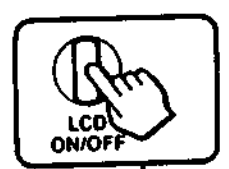


To put the antenna away
Slide in the base of the telescopic antenna first, then the center and the point.



28

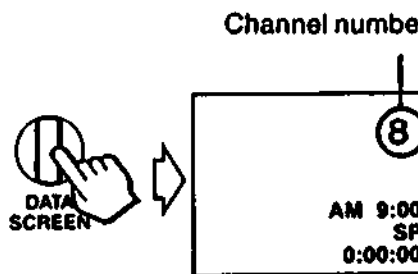
To mute (turn off) the picture
Press LCD ON/OFF button. The screen will be muted.



It is recommended to mute the picture when you view the playback picture with another TV or monitor. The picture noise of the TV or monitor is reduced. Battery life will also last longer if you use the unit with the picture turned off. To restore the picture on this unit, press LCD ON/OFF again.

Note
When no picture is displayed and the volume is low, or the earphones are connected, the unit appears to be turned off even though it is not. Be sure to turn off the unit with the POWER switch when it is not in use.

To display the channel number
Press the DATA SCREEN button.



To make the on-screen display disappear, press the DATA SCREEN button again. After the SEEK button is pressed, the VHF or UHF channel range is displayed instead of the channel number, then goes off after a few seconds.

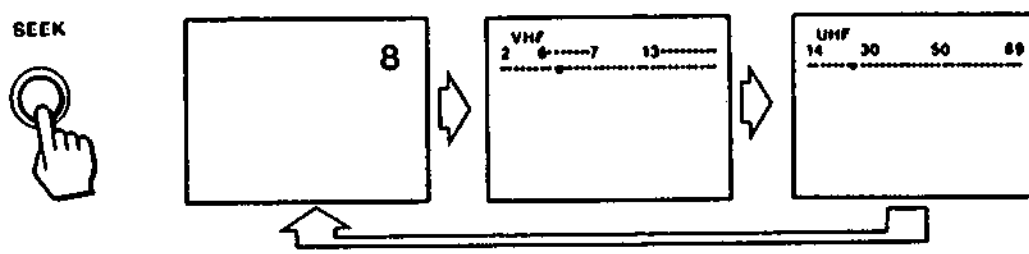
"Last channel" memory function

- While you are watching TV programs, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized. When you turn on the unit again, the last channel appears on the screen. The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

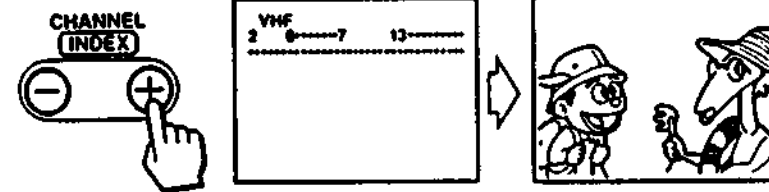
30

To View a TV Program Without Presetting Channels
When you do not know the channel number of the TV program you wish to view or if you want to use the unit in the moving car, search for the program as follows.

1 Press the SEEK button.
The channel range display appears. For VHF channels, press once. For UHF channels, press twice. To restore the normal display, press once more.



2 Press the CHANNEL +/- buttons to select the channel.

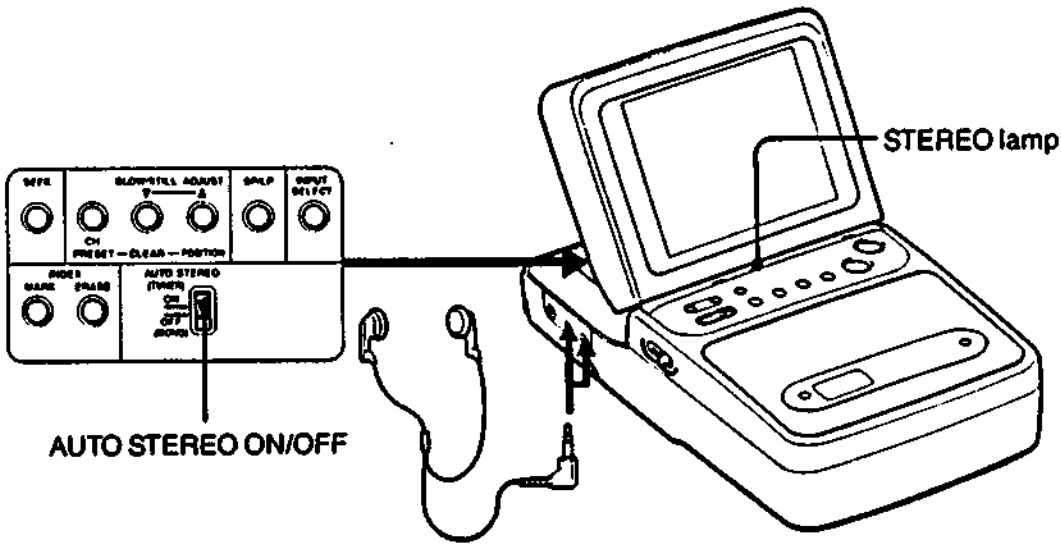


After selecting the channel, the channel range display goes out after a few seconds.

29

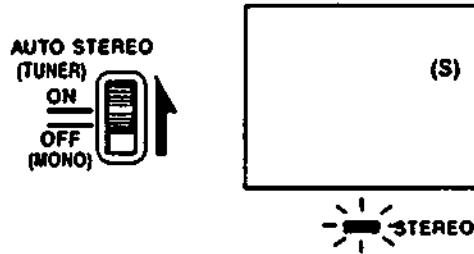
Listening to Stereo Programs

Connect the supplied stereo earphones to the PHONES jack to listen to the stereo sound. The speaker of this unit is monaural.




AUTO STEREO ON/OFF

Normally set the AUTO STEREO ON/OFF switch to ON. The STEREO lamp lights up automatically whenever a stereo program is received.



If excessive noise is heard when receiving a stereo program
Set the AUTO STEREO ON/OFF switch to OFF. The sound will be monaural, but the noise will be reduced. In this case, the STEREO lamp goes off. It is recommended to use monaural sound when using the unit in a moving car. To restore the stereo sound, set the switch to ON.

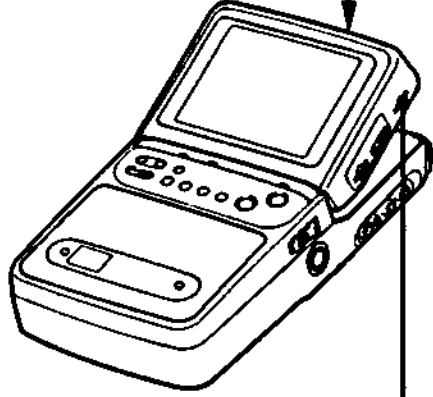


31

Adjusting the Picture and Sound

Adjust the picture and sound to your preference.

To adjust the picture



HUE Adjust the skin tone. (Set to the center for standard level.)
greenish tone purplish tone

COLOR Adjust the color intensity. (Set to the center for standard level.)
more color intensity less color intensity

BRIGHT Adjust the brightness.
for less brightness for more brightness

To listen to the dynamic bass sound

MEGA BASS function
Used for listening to the sound with the stereo headphone.

MEGA BASS
NORM MID MAX
2 2

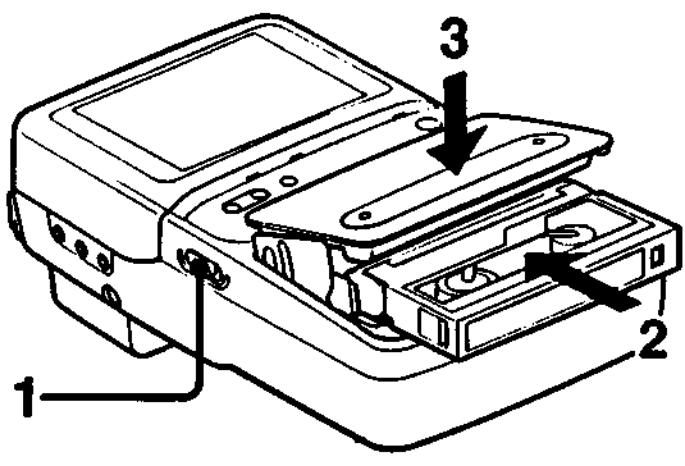
Set to NORM, MID, or MAX.

32

Using This Unit as a VCR

Inserting a Cassette

Make sure that the power source is connected to the unit.



To insert a cassette

- 1 Open the cassette holder with the EJECT button.
While pressing, slide the button to the right.
- 2 Insert the cassette with the window side facing up.
- 3 Close the cassette holder.

When you slide the EJECT button, power is supplied and the cassette holder opens even if the power is turned off. When the cassette holder opens, the power goes off automatically. Slide POWER if you want to continue operation.

34

Using the SLEEP Timer

You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV program, video playback, or while recording.

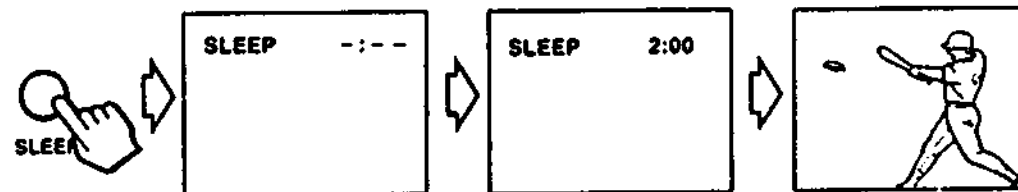
Each time you press the SLEEP button, the display will change as follows:

--- → 0:30 → 1:00 → 1:30 → 2:00 2:30
↑
5:00 ← 4:30 ← 4:00 ← 3:30 ← 3:00

Example: To turn off the TV after 2 hours

1 Make sure the clock is set correctly (page 20).
No indication will appear on the screen if the clock is not set.

2 Select the desired time interval by pressing the SLEEP button.

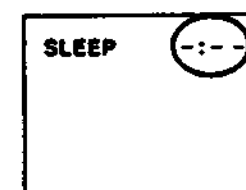


The screen becomes dark.
The normal display will be restored after a few seconds.

The TV will be turned off after 2 hours.
The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.

To cancel the SLEEP timer

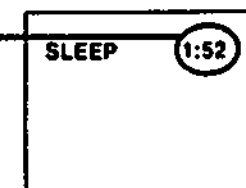
Press the SLEEP button repeatedly until the "---" display appears.
The SLEEP timer can also be canceled by turning off the unit with the POWER switch.



To check the remaining time

Press SLEEP once.
The remaining time is displayed.
The indication will go off after a few seconds.

The unit will be turned off after about 1 hour and 52 minutes.



Note

When you use the unit with rechargeable batteries, the unit may turn off before the selected time because the batteries are exhausted.

33

To eject a cassette

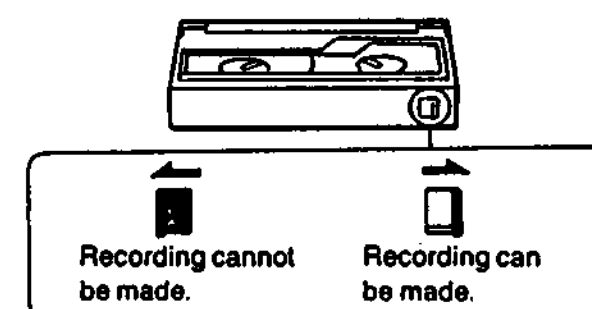
Slide the EJECT button. Make sure the tape is not running.

Note

Do not open the cassette holder while the unit is in the vertical position. If you do, the cassette may fall out of the holder and be damaged.

To Prevent Accidental Erasure

When a new recording is made on a previously recorded tape, the previous recording is automatically erased. To protect a recording, slide the red safety tab out to cover the opening.



Notes on opening and closing the cassette holder

- Do not insert your finger into the cabinet when the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

Notes on the cassette

- Store cassettes in their cases when they are not being used and keep them in an upright position to prevent intrusion of dust and uneven winding.
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Remove the cassette from the video TV recorder when not in use.

35

Recording TV Programs

You can record a TV program while viewing it. For optimal picture and sound quality, connecting an external antenna is recommended. (See page 54.)

1 Turn the power on.
The POWER lamp lights up.
While pressing the green POWER button, slide the POWER switch to the left.

2 If the TV program is not displayed, press INPUT SELECT button repeatedly until the TV program is displayed.
The display will change as follows:
TV program → LINE
CAMERA → TV program

3 Select the desired TV channel. (See page 28.)
Adjust the telescopic antenna for the best reception. (See page 28.)

4 Insert the cassette. (See page 34.)

5 Select the recording mode, SP or LP.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, set to SP.

6 Slide the REC switch to the right.
Recording starts.

For this on-screen display, see page 48.

To stop recording for a moment
Press II.

To resume recording
Press III again.
(If the PAUSE button is not pressed again for about 5 minutes, the pause mode will be released automatically and the unit will stop. This is to protect the video heads and recording will stop.)

To stop recording
Press □.

When the tape is recorded to the end
The tape stops automatically, but the unit is not turned off. Turn the power off with the POWER switch.

About the recorded sound
The VOL control setting has no effect on the recording level.

Changing the channel during recording
Set the unit in the recording pause mode and then select another channel. You cannot watch another program while recording.

When recording from the beginning of a tape
Run the video TV recorder for about 15 seconds at the beginning of a cassette before recording. This will prevent missing the starting point or having any previously recorded pictures appear when playing back on another video cassette recorder.

When recording starts
The starting point is marked on the tape automatically and "INDEX MARK" is displayed on the screen. The index mark helps you to find the point where recording begins on a tape.

Recording/playback time
Two tape speeds can be selected with the SP/LP selector.
The recording time in the LP mode is twice as long as that in the SP mode. For better picture and sound, recording in the SP mode is recommended. During playback, the mode in which the tape was recorded is selected automatically.

Cassette and their recording time
There are two formats for 8mm video recording, NTSC and PAL. Video cassette tapes are made to correspond to one of these formats. Use NTSC format cassette tapes for this unit. You will find "P6" on the package of NTSC cassettes.
In some countries, however, only PAL format cassette tapes with "P5" on the packages are available. If a PAL format cassette is used with this unit, the actual recording time may differ from the recording time indicated on the cassette.

Note
If you record with this unit on a tape that has been recorded in the PCM mode, and if you play back this tape on a VCR with PCM function, the sound may be cut off occasionally. In this case, set the audio monitor switch of the VCR to the standard position.

To stop recording automatically after a certain time — Quick timer
Press the SLEEP button during recording. You can leave the unit function when you go to bed or when you go out, etc.
The unit will be turned off automatically at the preset time. For operation, see page 33.

Are you having trouble?

Symptom	Possible cause	Correction
"CASSETTE" indication is displayed when you slide the REC switch.	The safety tab on the cassette is slid out.	Slide the tab in or use a new cassette.
	The tape is at its end.	Rewind the tape or use a new cassette.
	No cassette is inserted.	Insert a cassette.

Using the Tape Counter
During recording or playback, the digits on the counter indicate the actual recording or playback time.
By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

1 Press DATA SCREEN so that the counter is displayed.

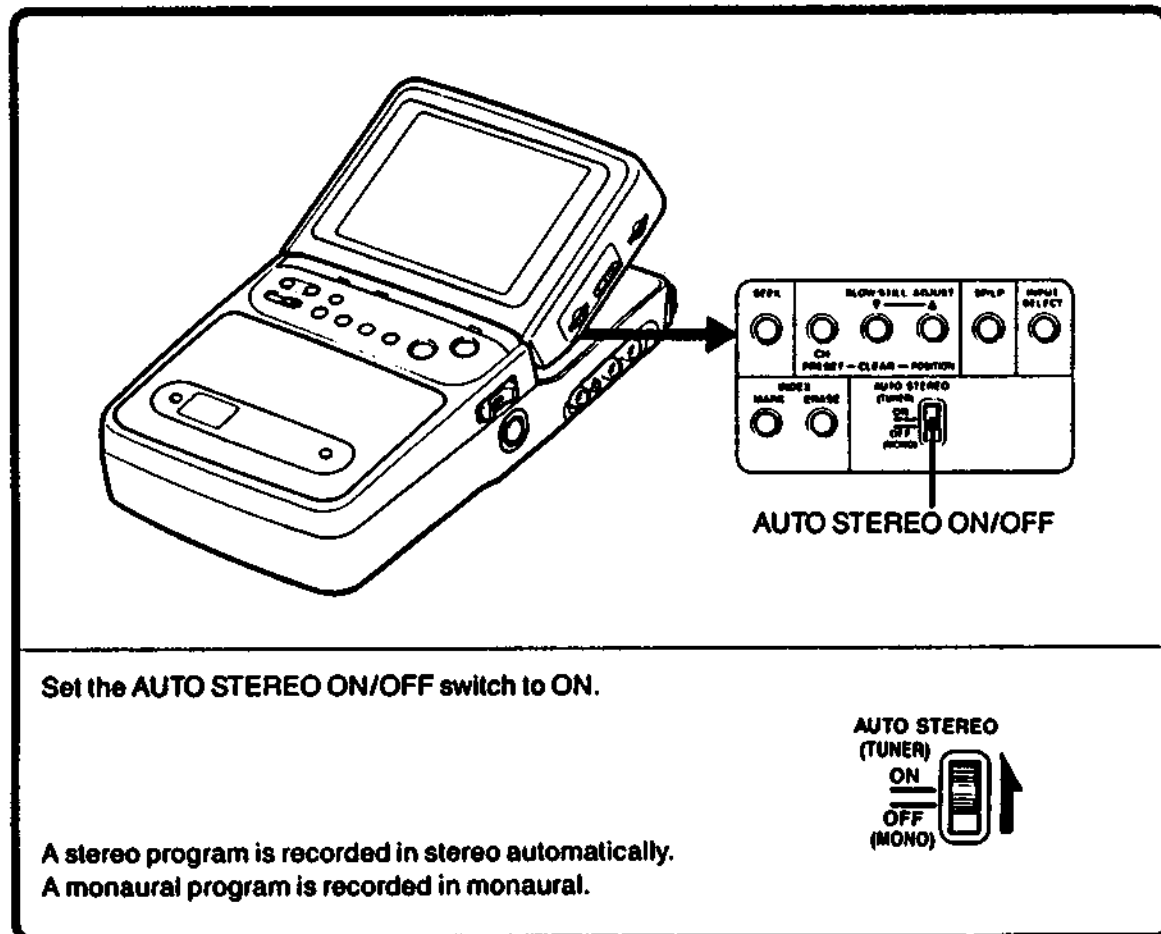
2 During recording or playback, press COUNTER RESET at the point you later want to locate.
The counter will be set to 0:00:00.

Use the counter to find this point later.
For your convenience, use both the counter and the index marks.

Notes

- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.
- There will also be a time lag of several seconds when a tape recorded in both the LP or SP modes or a tape having a blank portion between the recorded portions is played back.

Recording Stereo Programs



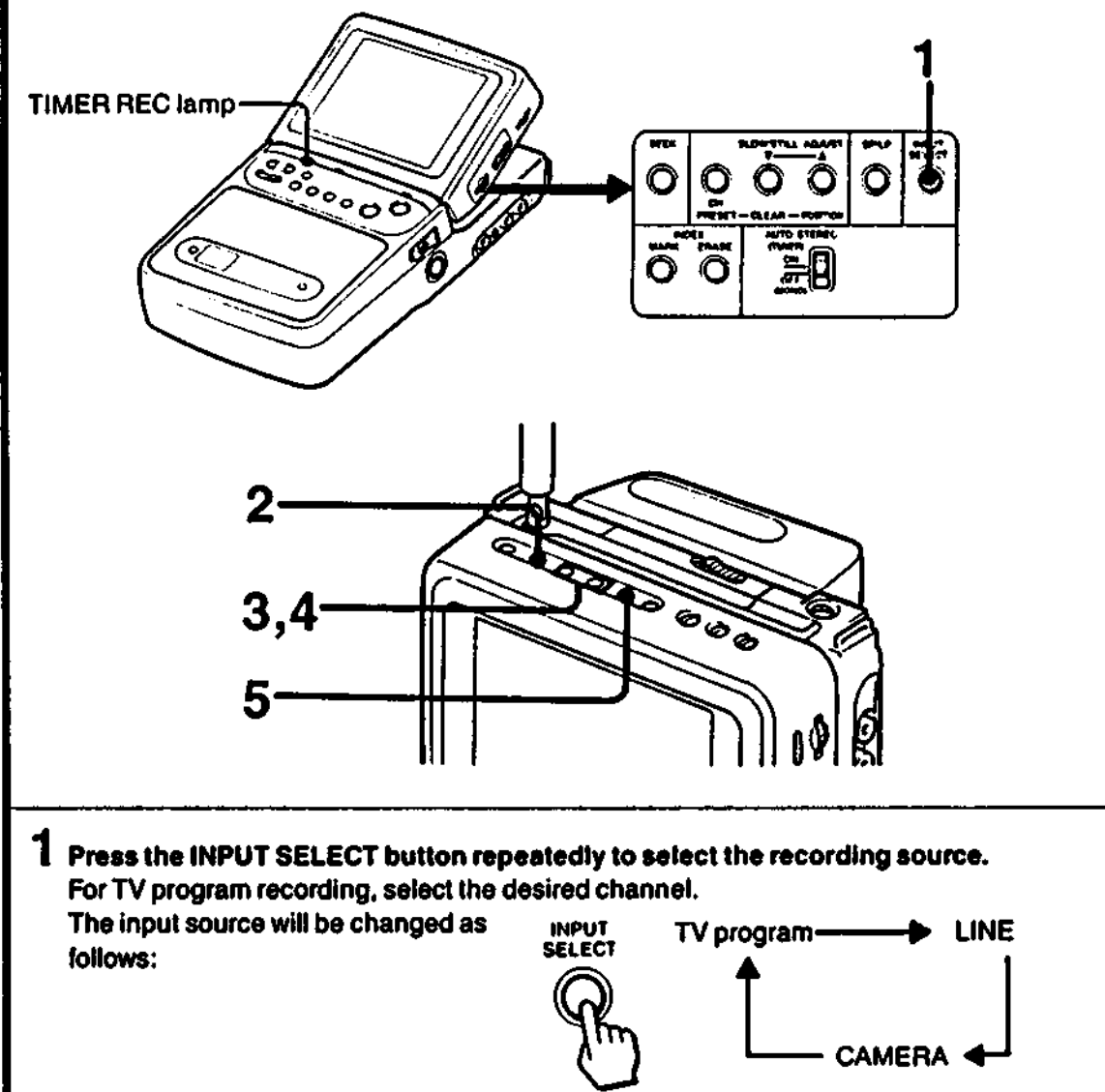
Using the Timer-Activated Recording Feature

By using the timer-activated recording feature, you can program this unit to automatically record a TV program that will be shown within 24 hours of activating the timer. For better recording of picture and sound, use of an external antenna is recommended. See page 54.

Before setting the timer

- Make sure that the power is supplied. (Is the battery pack fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock (see page 20.)
- Insert a cassette (see page 34.) Make sure that the safety tab is slid in.
- Select the recording mode, SP or LP. For better quality picture, set to SP.
- If recording a stereo program, set the AUTO STEREO ON/OFF switch to ON.

Example: To record the program from 8:30 pm to 9:45 pm.



↓ To be Continued

40

41

2 Press the TIMER SET/CHECK button.

The screen becomes dark. Channel 8

Current time: PM 5:20

Starting time: ON TIME PM 8:--

Recording mode: SP

Ending time: OFF TIME PM 9:--

3 Set the time for the recording to begin.

1) Press the + button to set the hour. Each time you press the + button, the hour indication increases by one. If you keep the button pressed, the indication will increase continuously.

2) Press the NEXT button.

3) Press the + button to set the minutes. Each time you press the + button, the minutes indication increases by one. If you keep the button pressed, the indication will increase continuously.

4) Press the NEXT button. The starting time is now set.

4 Set the time for the recording to stop.

1) Set the hour with the + button.

2) Press the NEXT button.

3) Set the minute with the + button.

4) Press the NEXT button. The ending time is now set. The on-screen display disappears.

5 Press the TIMER REC ON/OFF button. The power goes off and the TIMER REC lamp lights up (timer recording standby mode). The recording starts automatically at the preset start time and the power goes off at the preset end time.

Notes

- During timer recording, both picture and sound will be muted. To listen to the sound and watch the picture, press the LCD ON/OFF button.
- When you press the TIMER REC button, the "CASSETTE" indication will appear if the safety tab on the cassette is slid out or if no cassette is inserted.

42

43

Playing Back the Recorded Tapes

To stop the timer recording

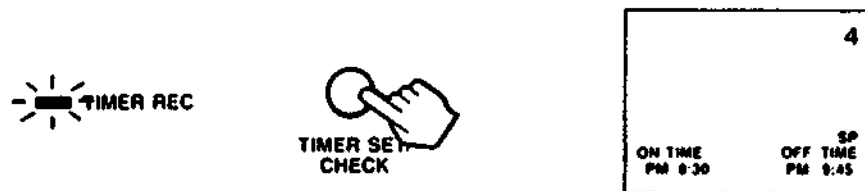
Press the TIMER REC ON/OFF button again.
The TIMER REC lamp goes out.

To correct the timer setting before completing the setting

Turn the power off, then on again.
Repeat steps from 1 to 5.

To check the setting

Press the TIMER SET/CHECK button while the TIMER REC lamp is lit.
The power is turned on and the starting and ending time is displayed for a few seconds.



To change the timer setting after completing the setting

Press the TIMER REC ON/OFF button to cancel the timer recording mode, then turn the unit on and set the timer again.

To set the timer while the tape is running

Only the starting and ending time can be set during playback or recording. After stopping the tape, set the recording mode (SP/LP) and channel, and then press the TIMER REC ON/OFF button.

If a power interruption occurs when the unit is connected to the AC power source

Recording stops. Recording starts again after the power is resupplied. When a power interruption occurs during the timer recording standby mode and the power is resupplied, the timer settings will not be affected as long as the lithium battery is installed.

To record to the end of the tape

Set the starting and ending time the same. When the tape reaches the end, recording will stop and the power goes off.

44

To rewind the tape and play it back automatically — Auto play

While pressing the ◀◀ button, press the ▶ button.
The "AUTO PLAY" indication appears.

To mute the picture

Press the LCD ON/OFF button. To restore the picture, press the LCD ON/OFF button again.

To adjust the picture

Adjust the BRIGHT, COLOR, and HUE controls (see page 32.)

To stop playback at the desired time

Use the SLEEP function.
The unit goes off at the preset time. (see page 33.)

When a tape recorded in stereo mode is played back

The "(S)" indication appears and the STEREO lamp lights up.
To listen to the stereo sound, use the stereo earphones.

- 1 Turn the power on. The POWER lamp lights up. While pressing the green button, slide the POWER switch to the left.
- 2 Insert a recorded tape (see page 34.)
- 3 Press ▶ to start playback.
- 4 Adjust the volume and the brightness.

To decrease volume To increase volume For less brightness For more brightness

To stop playback Press the □ button.
To rewind the tape Press the ◀◀ button.
To advance the tape Press the ▶▶ button.

45

Various Playback Modes — CRYSTAL-CLEAR still/slow/picture search on LCD		
To stop the tape for a moment — Still picture	During playback	STILL
To view the slow playback picture	During playback	SLOW 1/5
To locate a particular point while viewing the picture — Picture search	During playback	◀◀
	During playback	▶▶
To view the picture at high speed — FR picture search	While rewinding	◀◀
	While fast forwarding	▶▶

To resume normal playback, press ▶. These modes will be automatically released and playback will resume after the following time intervals:
Still: 5 minutes Slow*: 1 minutes.

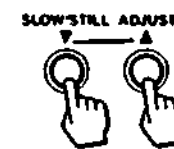
When you release the button, the unit will return to the previous mode.

* After normal playback is resumed, the ▶▶ button will not function for about 5 seconds.

If streaks appear in the still and slow playback mode

Adjust the picture as follows:

- 1 Play back the slow motion picture.
- 2 Press the SLOW/STILL ADJUST ▼, ▲ buttons to adjust the picture so that the noise does not appear.



To adjust the upper portion of the picture, press the ▲ button. To adjust the lower portion of the picture, press the ▼ button. The still picture is adjusted at the same time.

When the playback picture is viewed on another TV or monitor

The horizontal bands appear in the still, slow, picture search and FR picture search modes. Noise appears in the still and slow modes. To reduce the horizontal bands, press LCD ON/OFF button to mute the picture of this unit.

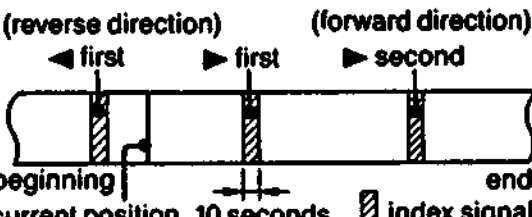
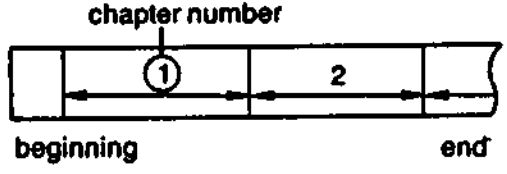
Notes on the CRYSTAL-CLEAR still/slow/picture search on LCD
Noiseless pictures can be viewed in the still, slow and picture search modes, owing to the characteristics of the liquid crystal.

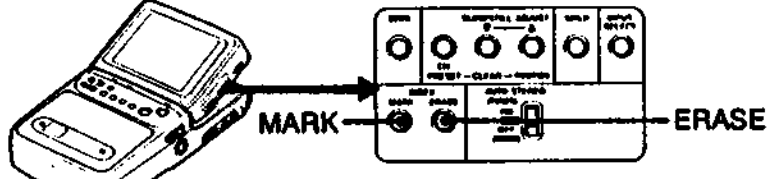
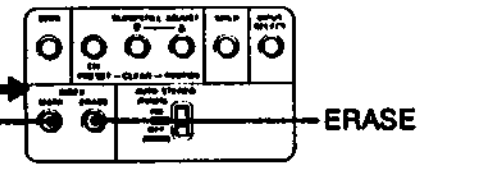

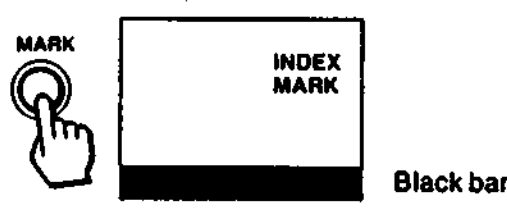
46

47

Using Indexes — to Find the Desired Scene Quickly

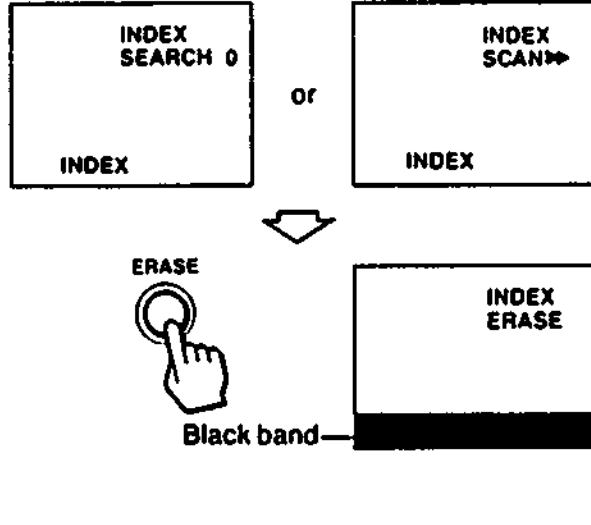
An index can be recorded on the tape. Using the index, you can find the desired scene quickly. There are two kinds of indexes as follows:

A Conventional Index	B Prerecorded index for software
<p>An index on your video tape which you can enter and erase during recording or playback operation. You can find the desired scene by designating the location of the desired index. (e.g. second index in the forward direction, etc.)</p> <p>(reverse direction) (forward direction)</p> 	<p>An index that is already recorded on the commercially available video software. The indexes are already recorded, and you cannot enter or erase them. Each index has the chapter number so you can search the desired part by designating the number.</p> 

To Enter an Index on a Tape	
	
To enter an index during recording	To enter an index during playback
<p>When you start recording with the REC switch or when timer-recording is started, the index signal is automatically recorded for a few seconds*. (Indexes are not recorded when recording with a camera.)</p>  <p>To enter an index during the recording or recording pause mode, press the MARK button. The index signal is recorded for a few seconds*. When the MARK button is pressed during the recording pause mode, the index signal is recorded after you start recording again.</p>	<p>During the playback or playback pause mode, press the MARK button.</p>  <p>The index signal is recorded for a few seconds*. A black band appears on the screen, but is not recorded. In this case, no sound is heard. When the MARK button is pressed during the playback pause mode, the index signal is recorded after you resume the playback operation.</p>

* For SP mode: about 10 seconds
For LP mode: about 18 seconds

48 **Note** Leave at least two minutes between each index. If an interval is too short, you may not be able to find or scan indexes correctly.

To Erase an Index	
<p>1 Search for the index to be erased. (See page 50, 52).</p>	
<p>2 Press the ERASE button. After playback starts, press the button while the following indications on the screen.</p>	
<p>When you press the ERASE button, the tape is rewound to the beginning of the index signal, then the index signal is erased. On the screen, the indication "INDEX ERASE" and the black band appear.</p>	

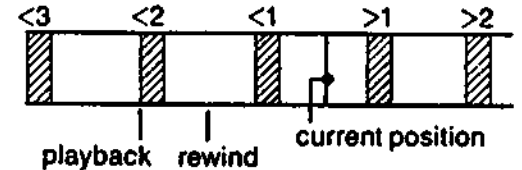
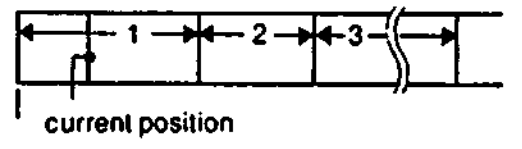


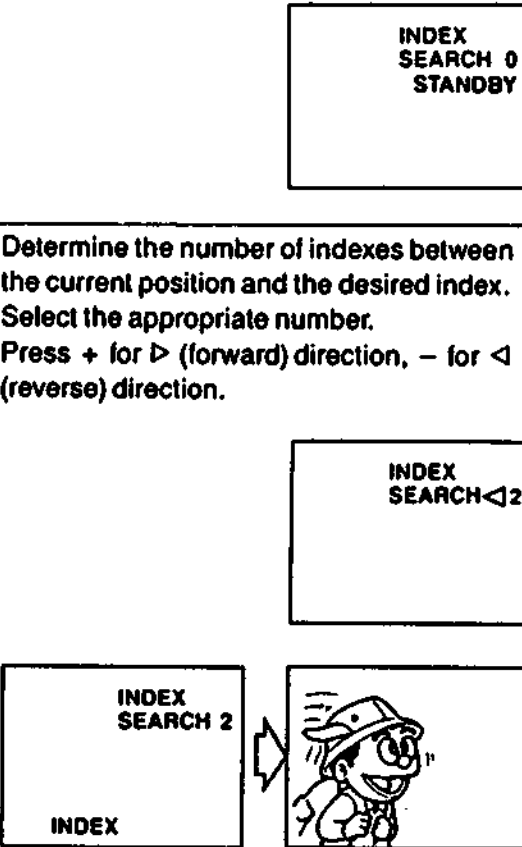
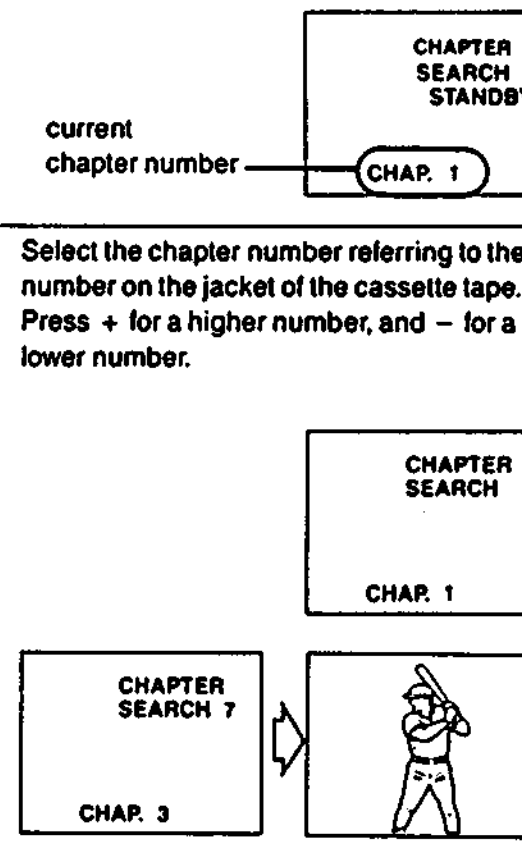
Note Do not press any of the tape transport buttons while entering/erasing an index. If it is done, entering/erasing will not be completed.

- Notes on the Index signal**
- You cannot enter an index signal on a commercially available video software or on a cassette whose safety tab is slid out.
 - You cannot erase an index signal which is prerecorded on a commercially available video software.
 - The index signal cannot be erased in the following cases:
 - When the index signal is recorded on a video camera recorder or other VCRs, and you wish to erase it on this unit.
 - When the index signal is recorded on this unit, and you wish to erase it on a video camera recorder or other VCRs.
 - To erase the index signal completely, use the equipment you used to enter the index signal.

49

To Find a Desired Index — Index Search

When you know the location or chapter number of the desired index, you can designate a number to find the desired part of the tape.

A Conventional Index	B Prerecorded index for software
<p>Example: designating the second index in the reverse direction</p> 	<p>Example: designating chapter number 7</p> 
<p>1 Press the INDEX MODE button once during playback or the playback pause mode. The unit enters the index standby mode.</p>  <p>2 Press INDEX -/+ button repeatedly until the desired index number appears on the screen. The tape is rewound or fast forwarded to the designated index number position, then playback starts.</p> 	<p>Determine the number of indexes between the current position and the desired index. Select the appropriate number. Press + for > (forward) direction, - for < (reverse) direction.</p>  <p>When playback starts, the indication will disappear after about 10 seconds.</p> <p>Select the chapter number referring to the number on the jacket of the cassette tape. Press + for a higher number, and - for a lower number.</p>  <p>When playback starts, the indication disappears after about 10 seconds.</p>

To correct the chapter or index number
When the "CHAP" or "INDEX" indications are displayed, you can correct the number with the INDEX -/+ button.

Note Even with a video software which has prerecorded indexes, the indication is "INDEX SEARCH" until the tape is played back.

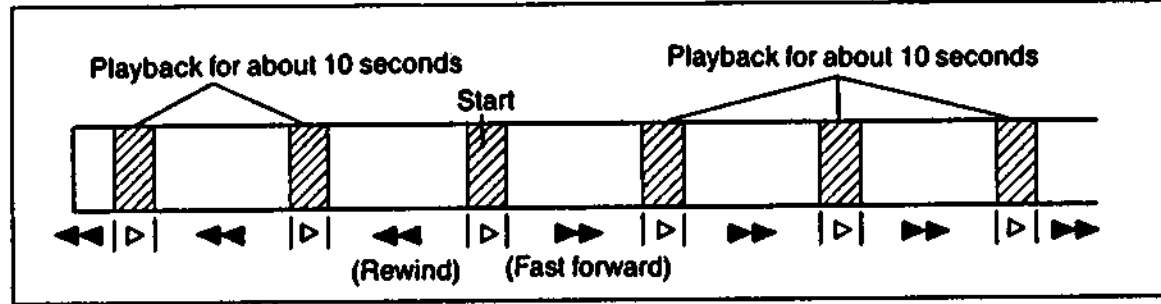
Index search does not function if an interval between indexes is less than two minutes. Leave an interval of at least two minutes between indexes.

50

51

To Scan Each Index Sequentially

The beginning of each index/chapter is played back for about 10 seconds sequentially. Start playback at the desired index/chapter.



	<p>1 During playback or the playback pause mode, press the INDEX MODE button twice. The unit goes into the index standby mode.</p>	<p>A Conventional Index</p>	<p>B Prerecorded index for software</p>
	<p>2 Press INDEX - / + button. Each chapter/index is played back for about 10 seconds sequentially. Press + for >>> direction, and press - for <<< direction.</p>		
	<p>3 Press > button at the desired point.</p>		

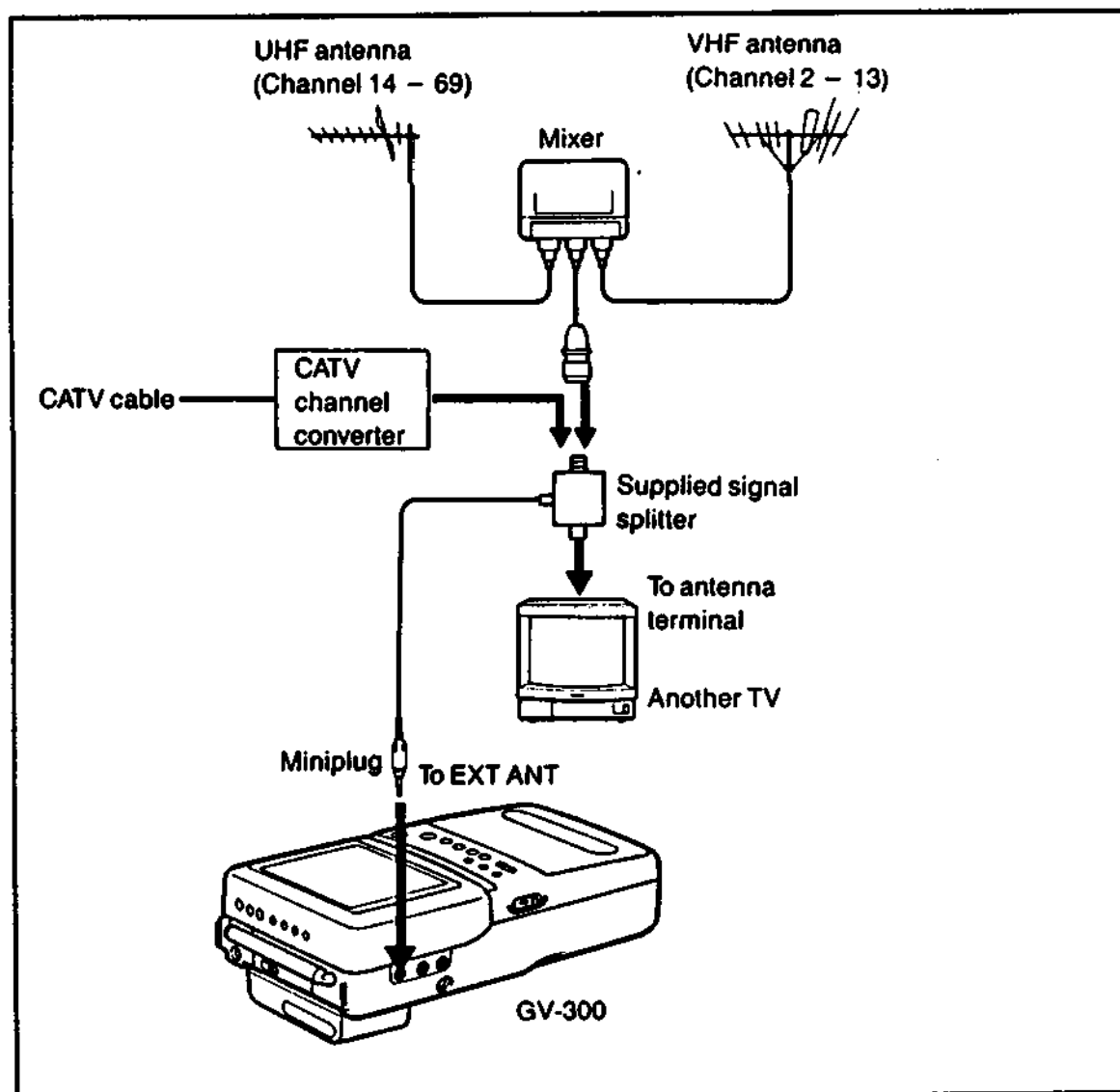
To correct the direction of index scan
Press **INDEX - / +** during index scanning.

If you do not press the > button during index scanning, the tape will be rewound or fast forwarded to the end of the tape.

Index scan does not function if an interval between indexes is less than two minutes. Leave an interval of at least two minutes between indexes.

Connecting an Outdoor Antenna and CATV cable

If you cannot obtain satisfactory reception with the telescopic antenna, or when recording TV programs, use an outdoor antenna. For viewing CATV channels, connect the CATV cable.



For connection, you can also use the antenna connector EAC-40, the signal splitter EAC-45, the antenna cord CCD-6M, and CCD-2 (not supplied.)

Notes

- Before connecting the antennas, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use the optional VCA-3W or VCA-4E car antenna, etc. For details, refer to the instruction manual of the car antenna.

Connecting other VCRs or Monitors

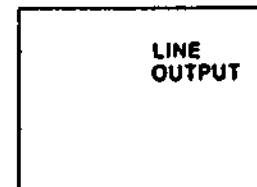
Notes on the VIDEO/AUDIO IN/OUT Jacks

The VIDEO/AUDIO IN/OUT jacks are automatically set to the input or output jacks according to the operating condition of the unit.

Refer to the following diagram:

Mode selected with INPUT SELECTION button	Stop or recording mode	Playback mode
TUNER (TV program)	output	output
LINE *	input	output
CAMERA	output	output

* When the LINE mode is selected with INPUT SELECT, the INPUT or OUTPUT indication appears with LINE.

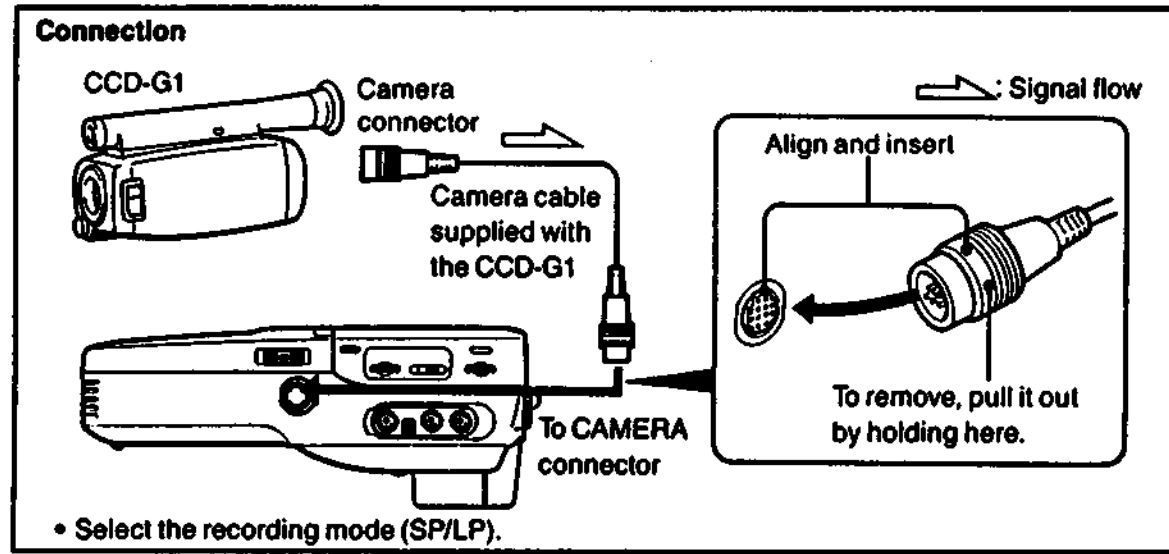


Note

When the LINE OUT jacks of other equipment are connected to the VIDEO/AUDIO IN/OUT jacks on this unit, and signals are output from the jacks of the other equipment to this unit, the picture and sound of the other equipment may be distorted. In such case, turn off the power of this unit or disconnect the other equipment.

Camera Recording — Controlling from the Camera

By connecting an optional Video Camera CCD-G1, recording controlled from the camera is possible. You can hold the camera and keep this unit in a carrying case while recording. For details, refer to the instruction manual of the video camera.



Note
The sound will be recorded in monaural.

Recording with CCD-G1

1 Insert the cassette.

2 Set the POWER switch of this unit to CAMERA. The power of this unit is turned on, and the POWER, STEREO lamp lights up. This unit automatically becomes in the recording pause mode. To have the picture on the screen of this unit, press the LCD ON/OFF button.



While pressing the green button, slide to the right.

Note
Be sure that the POWER lamp lights up. If it does not, turn off the unit once by sliding the POWER switch to the left, then reset the switch to the CAMERA position.

3 Start recording.
Press the REC START/STOP button of the camera.

To index the recording starting point or the desired point, press the MARK button of this unit (see page 48.)

To stop recording for a moment
Press the REC START/STOP button. Press it again to start recording.

To stop recording
Turn the power off of this unit by setting the POWER switch to the center position.

Playing back the newly recorded pictures

1 Turn the power on of this unit. The POWER lamp lights up. While pressing the green button, slide to the left.



2 Press << button of this unit to rewind the tape.

3 Press □ button of this unit.

4 Press >> button of this unit.

Caution
Do not operate this unit for a long time when it is in a carrying case like the one supplied. Internal heat build-up may occur which can cause this unit to malfunction.

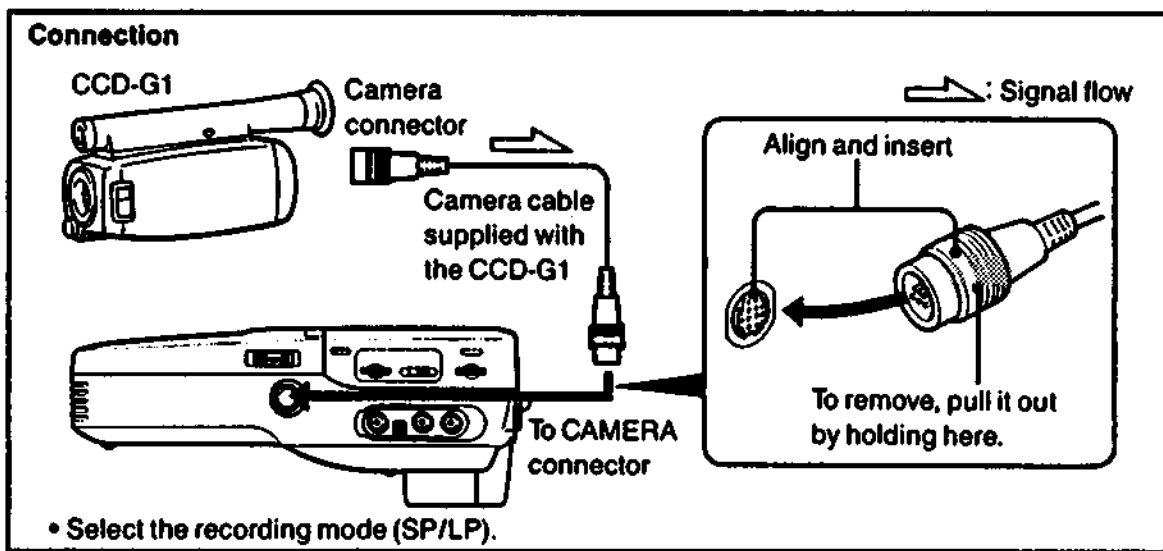
When the POWER switch is set to CAMERA, the operable buttons are: POWER switch, EJECT button, LCD ON/OFF button, DATA SCREEN button, COUNTER RESET button, INDEX mark button, and SP/LP button.

56

57

Camera Recording — Controlling from This Unit

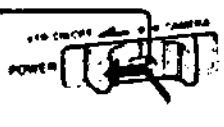
By connecting the optional video camera CCD-G1, it is possible to record with this unit while using the camera in a distant place. For details, refer to the instruction manual of the video camera.



Note
The sound will be recorded in monaural.

Recording

1 Turn the power on of this unit. The POWER lamp lights up. While pressing the green button, slide the POWER switch to the left.



2 Press the INPUT SELECT button of this unit to display "CAMERA" on the screen. The STEREO lamp lights up. The picture to be recorded appears on the screen. If the focus or color need adjustments, adjust them on the camera. To have the picture disappear, press the LCD ON/OFF button.



3 Slide the REC switch of this unit. Recording starts.



To stop recording for a moment
Press ■ button of this unit.

To stop recording
Press □ button of this unit.

Playing back the newly recorded pictures

1 Press <<< button to rewind the tape.

2 Press □ button.

3 Press >>> button.

Recording with a camera from a distant place

Use the optional pan tilter HVR-200 for camera recording from a distant place, a maximum distance of 5m.

To listen to the sound that is being recorded
While recording, no sound is heard from the speaker. Connect the supplied stereo earphones to PHONES jack to listen to the sound.

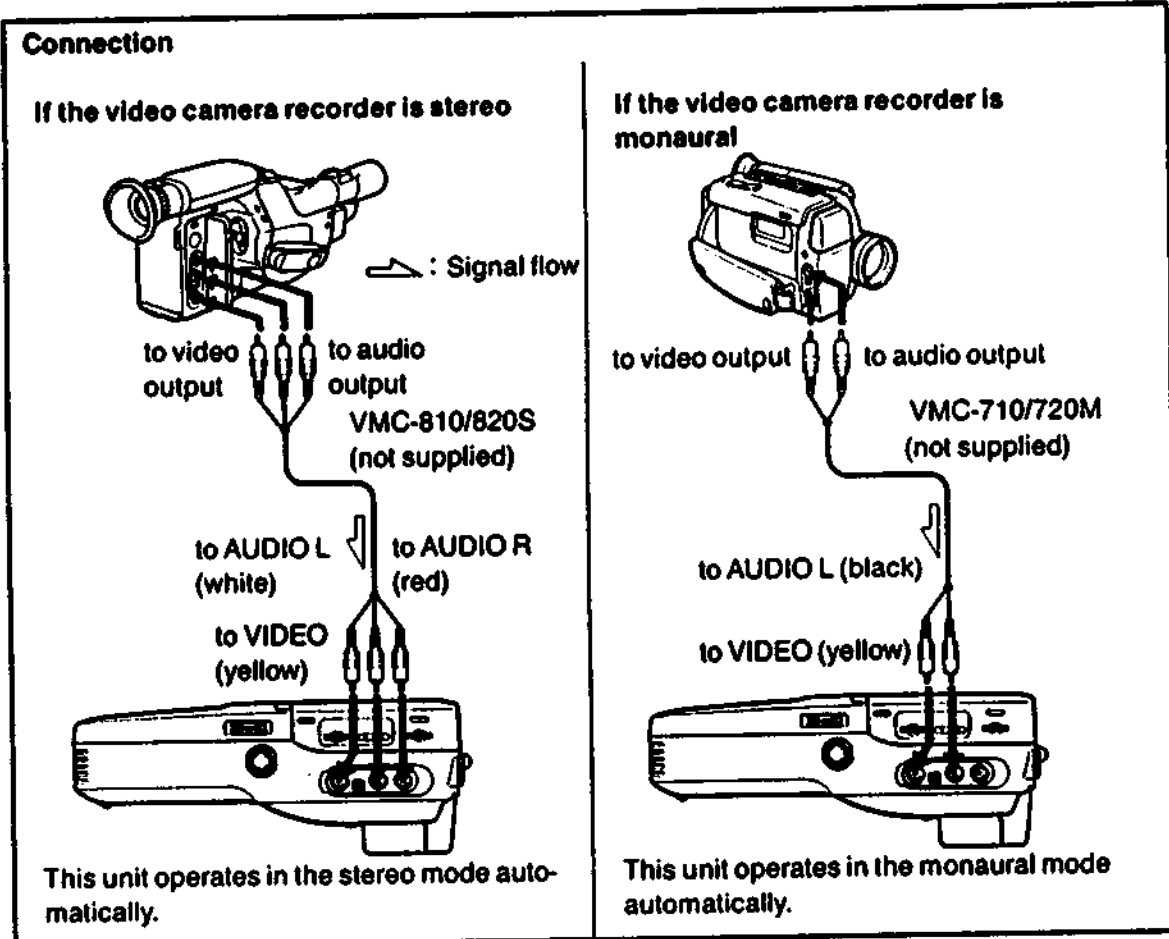
To use a camera with the timer-activated recording feature
This feature allows you to record a desired activity at a designated time, for example, a train passing by at a certain time. To set the timer, see page 41. The recording will start automatically at the time you set.

58

59

Using This Unit as a 8mm Video Camera Recorder Monitor

With the following connection, you can view pictures being recorded by the connected video camera recorder. Also you can view the playback pictures from the video camera recorder on this unit.



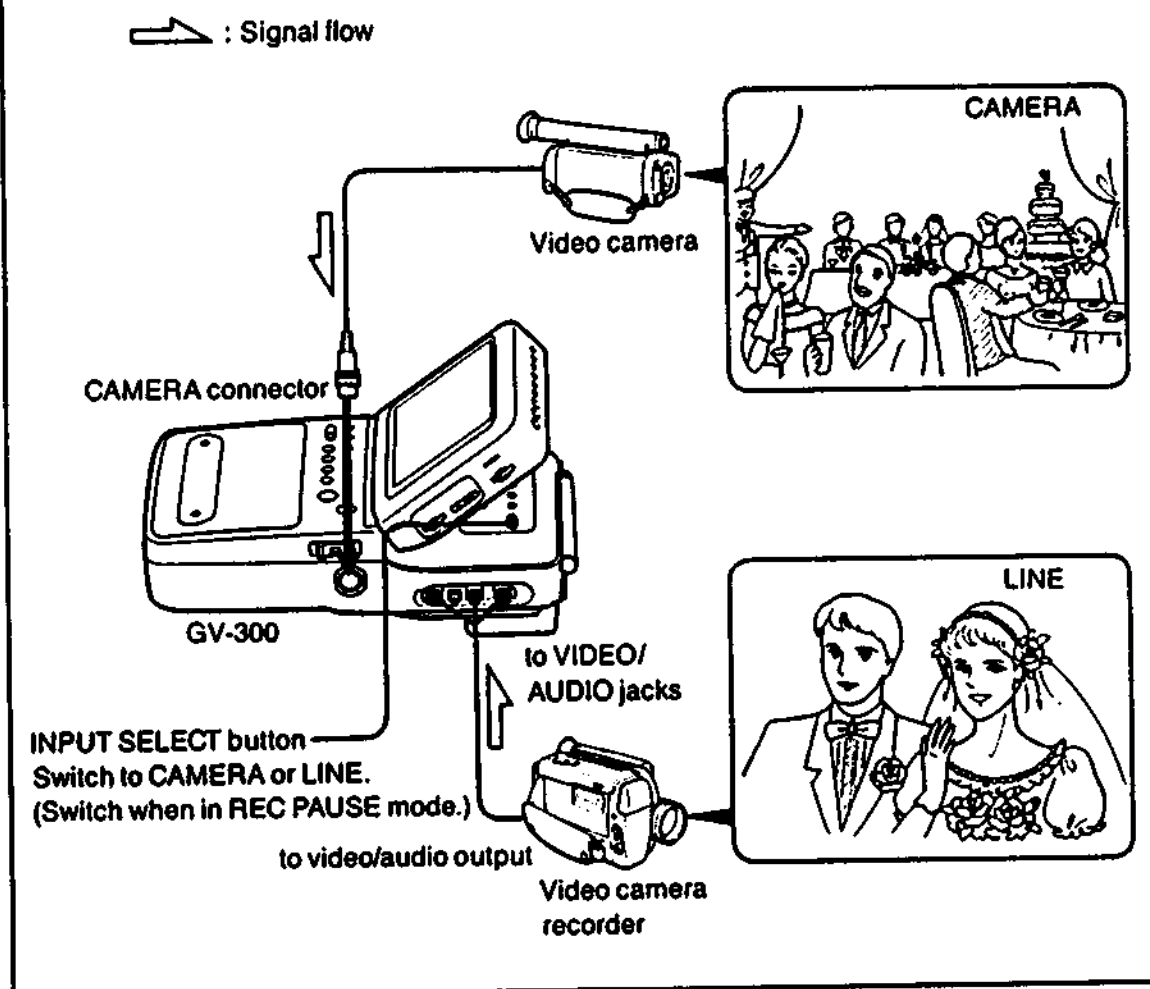
Operation

- Turn the power on. The POWER lamp lights up. While pressing the green button, slide the POWER switch to the left.
- Press the INPUT SELECT button to display "LINE" on the screen.
- Operate the video camera recorder.

60

When connecting both a video camera recorder and a video camera

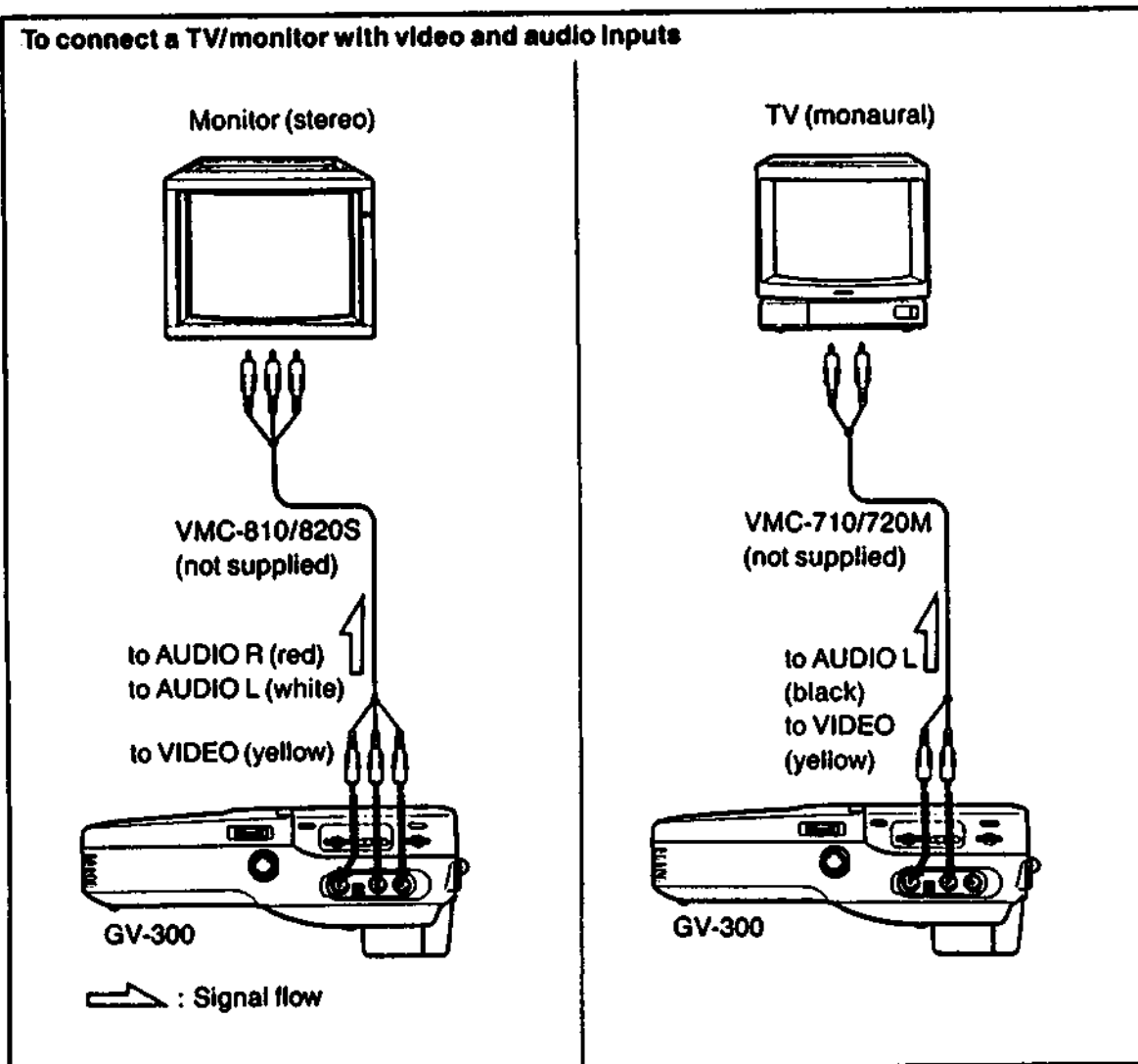
Set each unit to different angles, then, using the INPUT SELECT button, switch the picture to be recorded on this unit.



61

To Connect Another TV or Color Monitor

If you connect this unit to another TV or color monitor, you can view the playback pictures or the selected TV program on a larger screen and listen to the dynamic sound. In this case, mute the picture of GV-300 by pressing the LCD ON/OFF button to reduce horizontal bands and noise in the picture of the TV or color monitor during various playback modes.

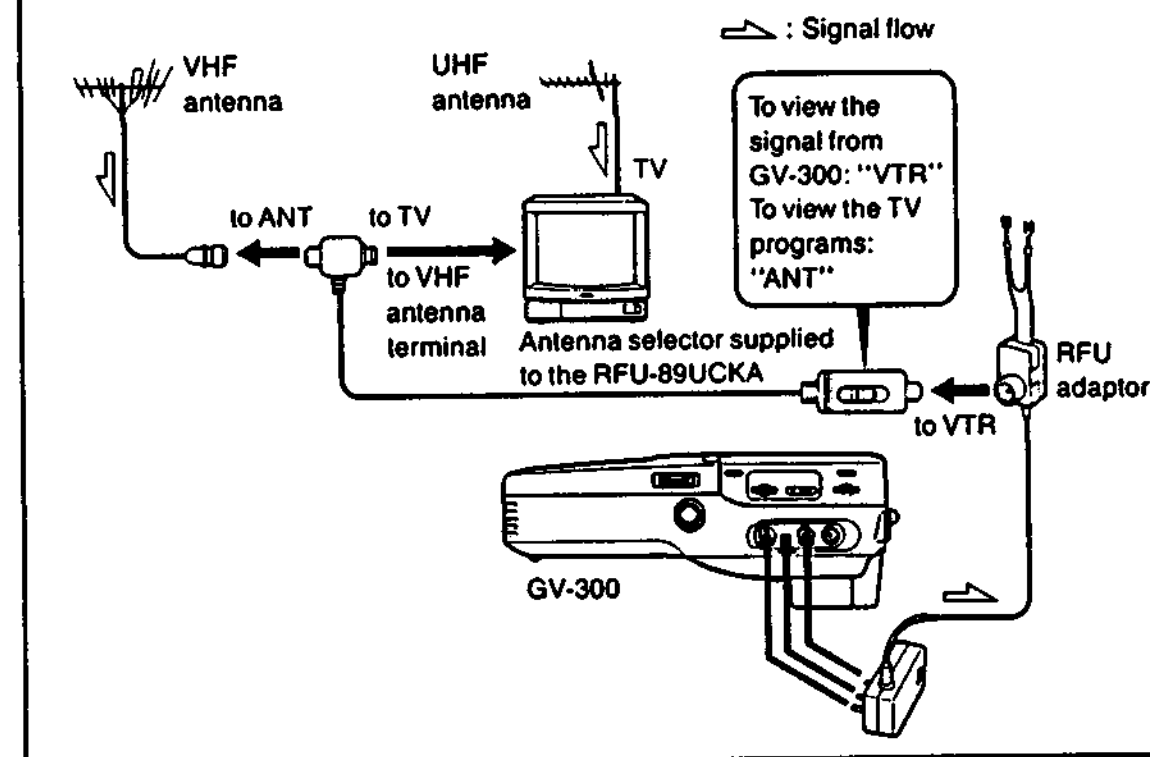


Note
When connecting only to the AUDIO L jack, the L and R sounds are automatically mixed and always output is monaural.

62

To connect a TV without video and audio inputs

Use the RFU-89UCKA RFU kit (not supplied).



Note on the RFU-89UCKA RFU kit

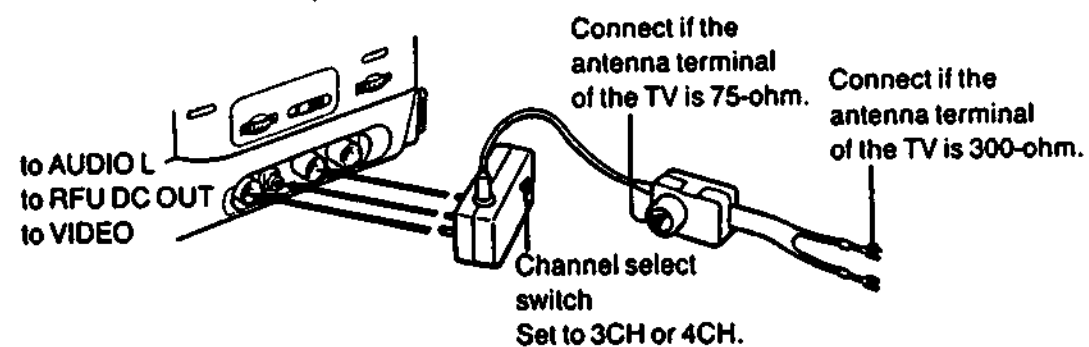
The RFU-89UCKA includes the following accessories:

- RFU adaptor (1)
- Antenna selector (1)
- Antenna selector adaptor (1)

Channel for VCR

To view the playback picture of this unit, set the antenna selector of the RFU kit to channel 3 or 4, whichever channel is not active in your area, and select the same channel on the connected TV.

To connect the RFU adaptor

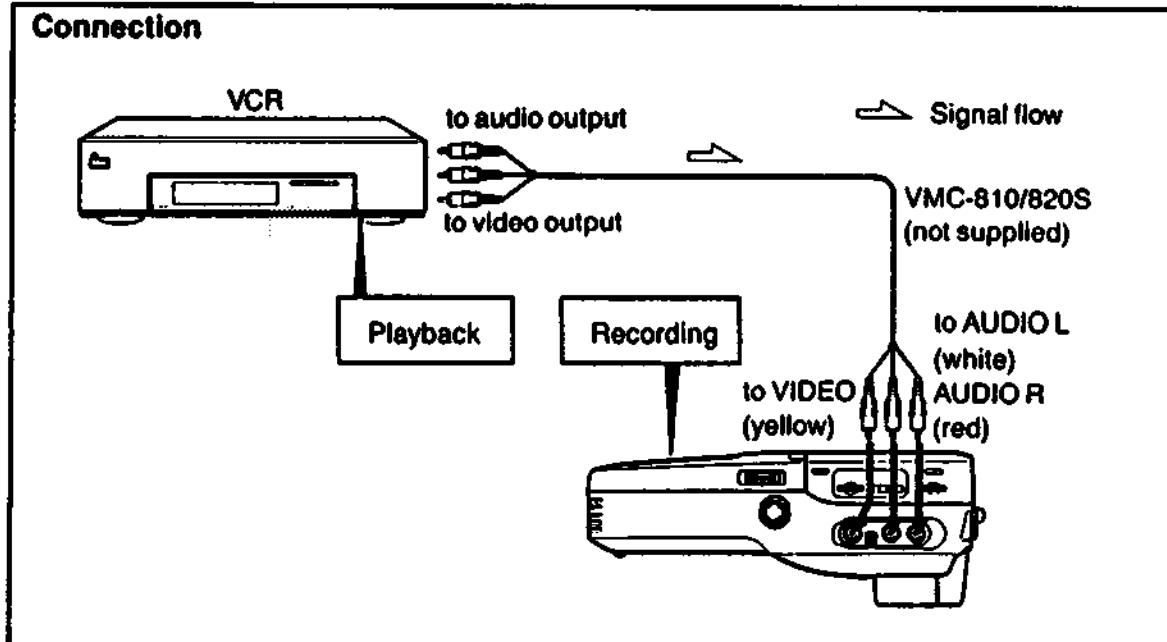


63

Editing Tapes


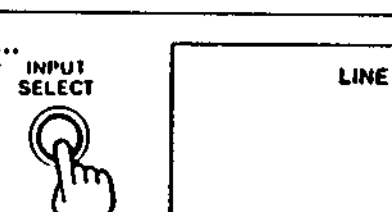

You can edit tapes by connecting when another VCR (8mm, Beta or VHS format) with video/audio input.

To Edit from Another VCR to This Unit



If the VCR to be connected has a monaural audio output only, use a commercially available connecting cord such as the VMC-910/920M. In this case, connect to the AUDIO L and VIDEO jacks.

Operation

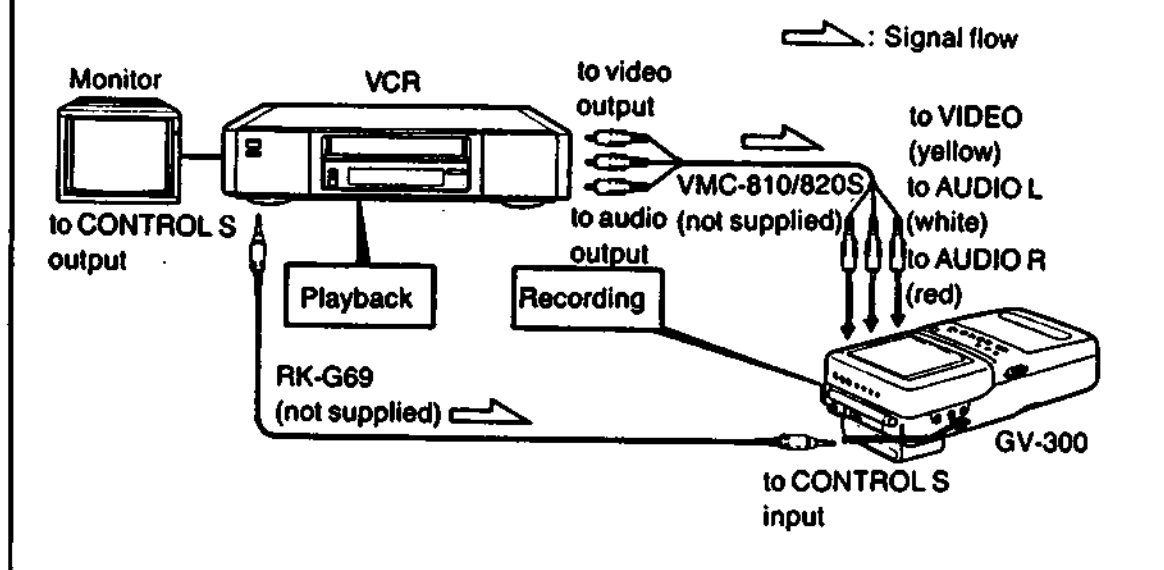
- Turn the power on. The POWER lamp illuminates. While pressing green button, slide the POWER switch to the left. 
- Insert the cassette.
- Press the INPUT SELECT button so that the "LINE" indication appears. 
- Select the recording mode (SP/LP) by pressing the SP/LP button. 
- Play back the tape on another VCR and press the II PAUSE button at the point you want to start playing back.
- Set this unit in the recording pause mode.
- Release the II PAUSE buttons on both units.
- After editing is completed, press the □ STOP buttons on both units to stop recording.

64

65

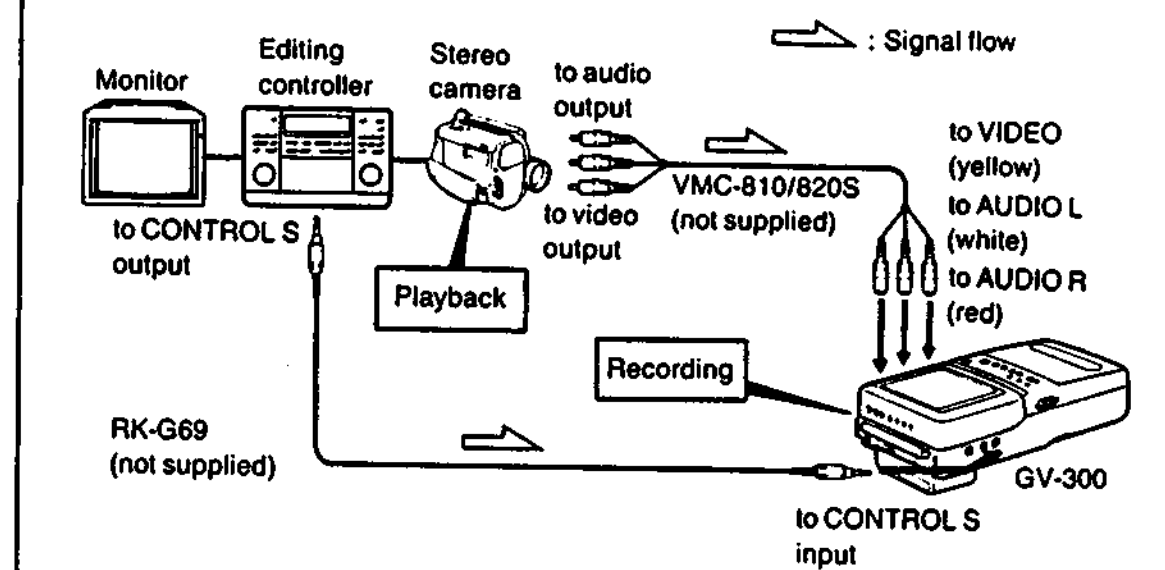
To edit from the VCR equipped with the CONTROL S output

Connect the CONTROL S input jack on this unit and the CONTROL S output jack on the other equipment. Playback/pause on the other VCR and recording/pause on this unit can be operated simultaneously.



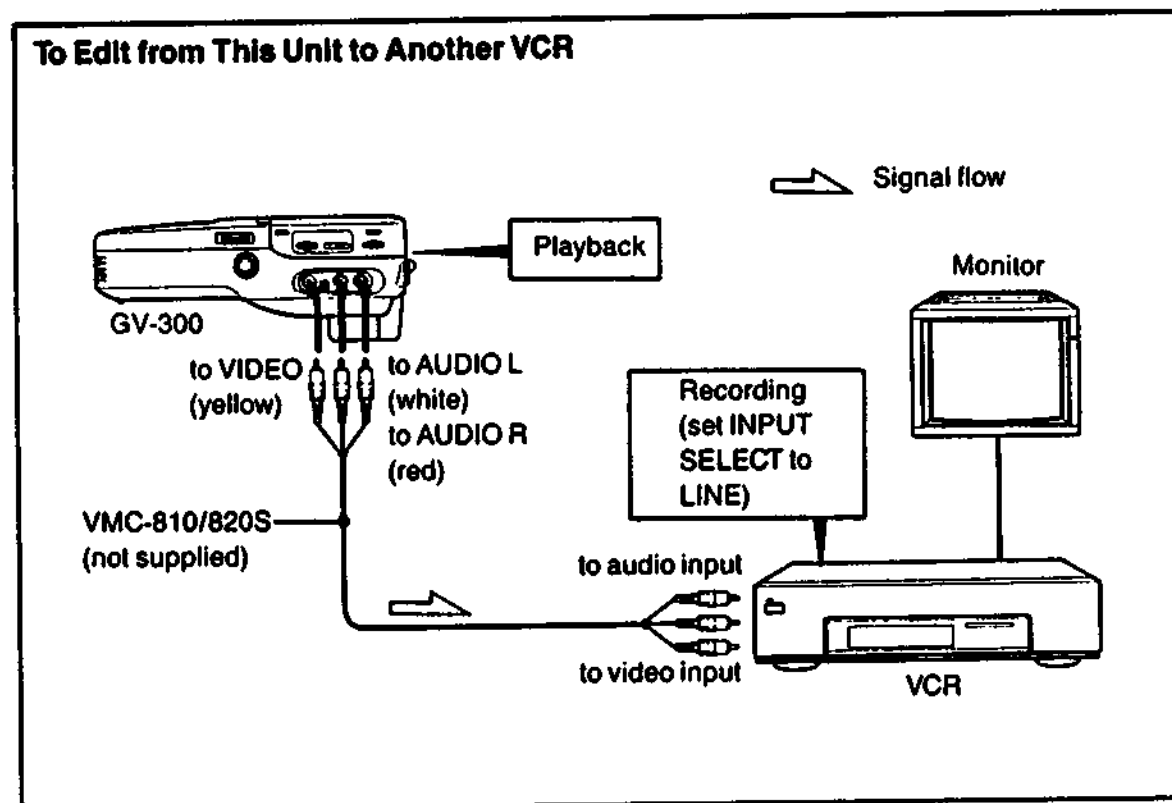
To edit with the editing controller

By connecting the editing controller, the recorder and player can be operated easily with the controller.



66

67



If the VCR to be connected has a monaural audio input only, use a commercially available connecting cord such as VMC-710/720M. In this case, connect to the AUDIO L and VIDEO jacks.

Operation

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.5 V (DC pack DCP-77).
- For DC or AC operation, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations:
 - Locations susceptible to vibration
 - Locations exposed to strong magnetic fields
 - Locations near TV or radio transmitters where strong radio waves are generated
- Do not place the unit on the sand.

Care

- When the unit is not used for a long period of time, periodically turn on the power, operate the recorder and play back a tape for about three minutes.
- Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Maintenance

Video Head Cleaning

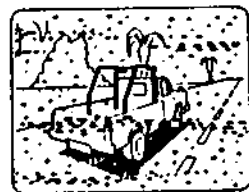
To ensure a clear picture, clean the video heads periodically. If playback pictures are noisy or hardly visible, the video heads may be contaminated. In this case, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) according to the instructions.

Caution

Do not use commercially available wet-type cleaning cassettes. They may damage the video heads.

Note

If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.



If the Video Head Is Damaged

When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. In this case, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Note on the built-in lighting system

A built-in lighting system is assembled inside the liquid crystal screen of this unit. The life of the small fluorescent tube used for this built-in lighting system runs out over a period of use. If the lamp becomes dimmer or goes off immediately after you turn it on, even with new batteries, replace the lamp with a new one. To replace the lamp, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tube is about three years if this unit is used for an hour each day. When you use this unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

Note on the LCD

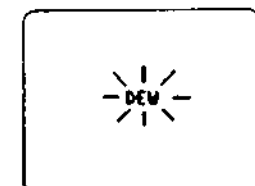
- Do not push the display forcibly.
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C (104°F).
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

Notes on Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drum, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, do not leave the tape inside the unit.

If moisture condenses inside the unit

The "DEW" indication appears on the screen. In this case, no button will function except the EJECT button. (However, if you have been watching a TV program, you can continue to do so.) Eject the cassette, turn off the unit and leave the cassette holder open at least for an hour.



The unit can be used again if the DEW indication does not appear when one of the tape transport buttons is pressed.

Using Your Video TV Recorder Abroad

If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply of 100 V-240 V), you can use your recorder in any country.



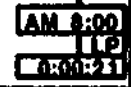
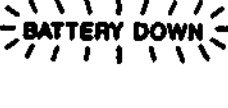







Each country has special TV color broadcast and electricity systems. This unit is designed to record and play back using the NTSC color video signals. Recording and playback of video sources based on other color systems cannot be guaranteed.

NTSC system countries

Bahama Islands, Canada, Central America, Japan, Korea, Mexico, Taiwan, the Phillipines, U.S.A., etc.

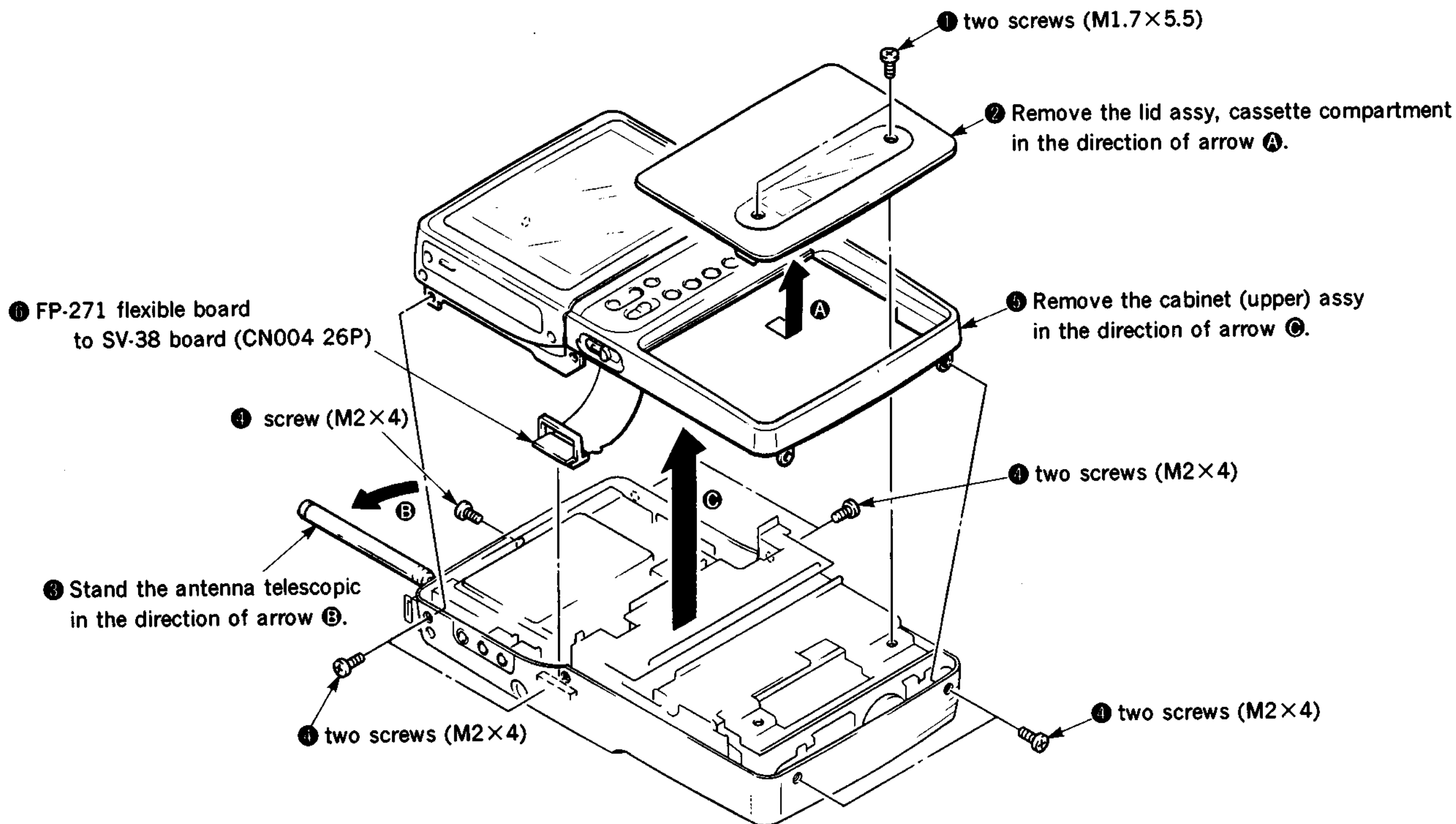
List of On-Screen Displays

The following indications appear on the screen indicating the operation condition and cautions.

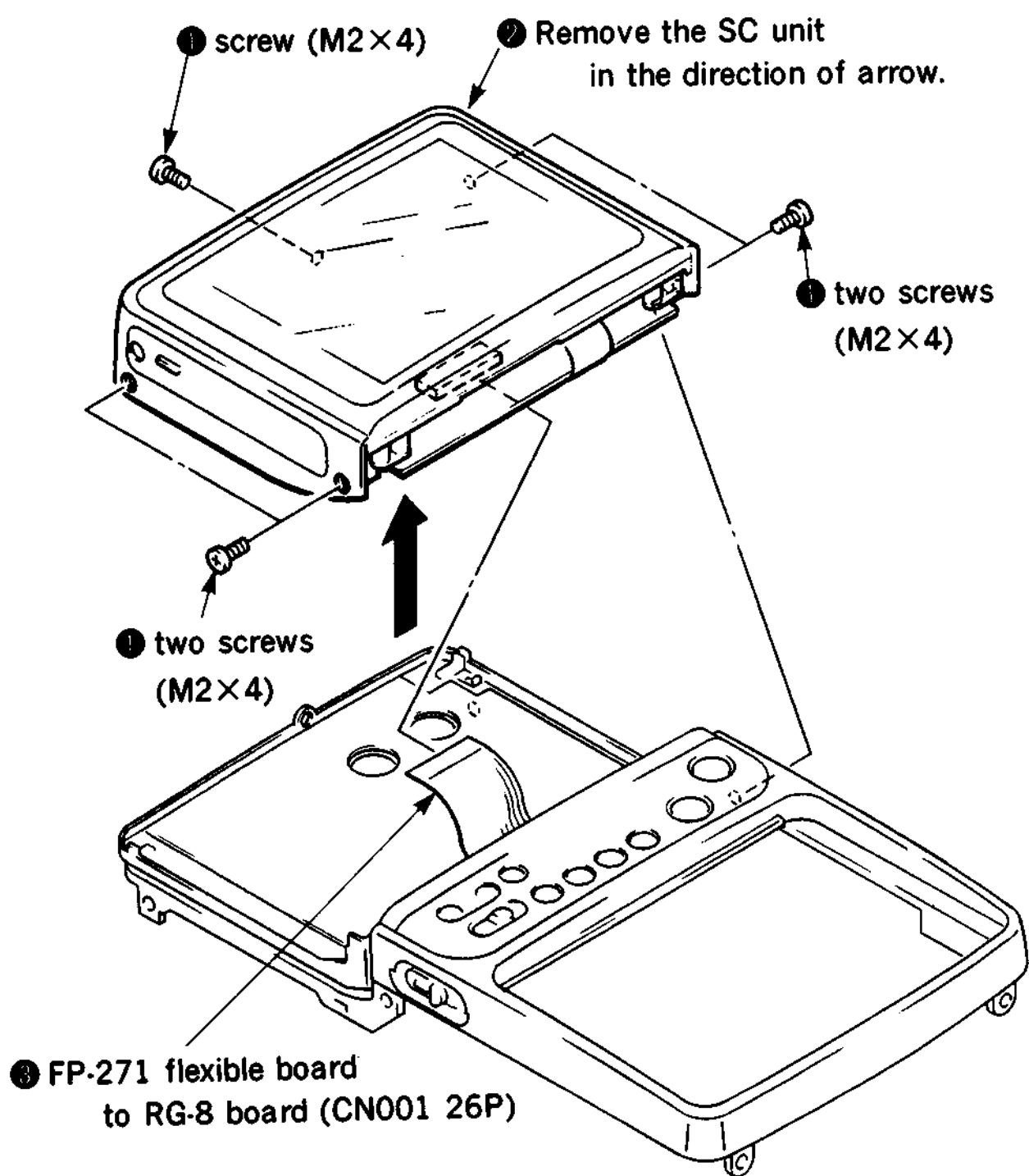
Indication	Meaning (reference page)	Indication	Meaning
	Channel (page 28)		Caution for the cassette (page 38)
	Current time Recording mode (page 37) Counter (page 39)		Battery is exhausted (page 14)
	Stereo (page 31)		Moisture condensation (page 71)
	Index (page 48)		Input from VIDEO/AUDIO jack (page 55)
	Index operation (page 48 ~ 53)		Input from CAMERA connector (page 59)
	Tape transport operation (page 47)		

SECTION 2 DISASSEMBLY

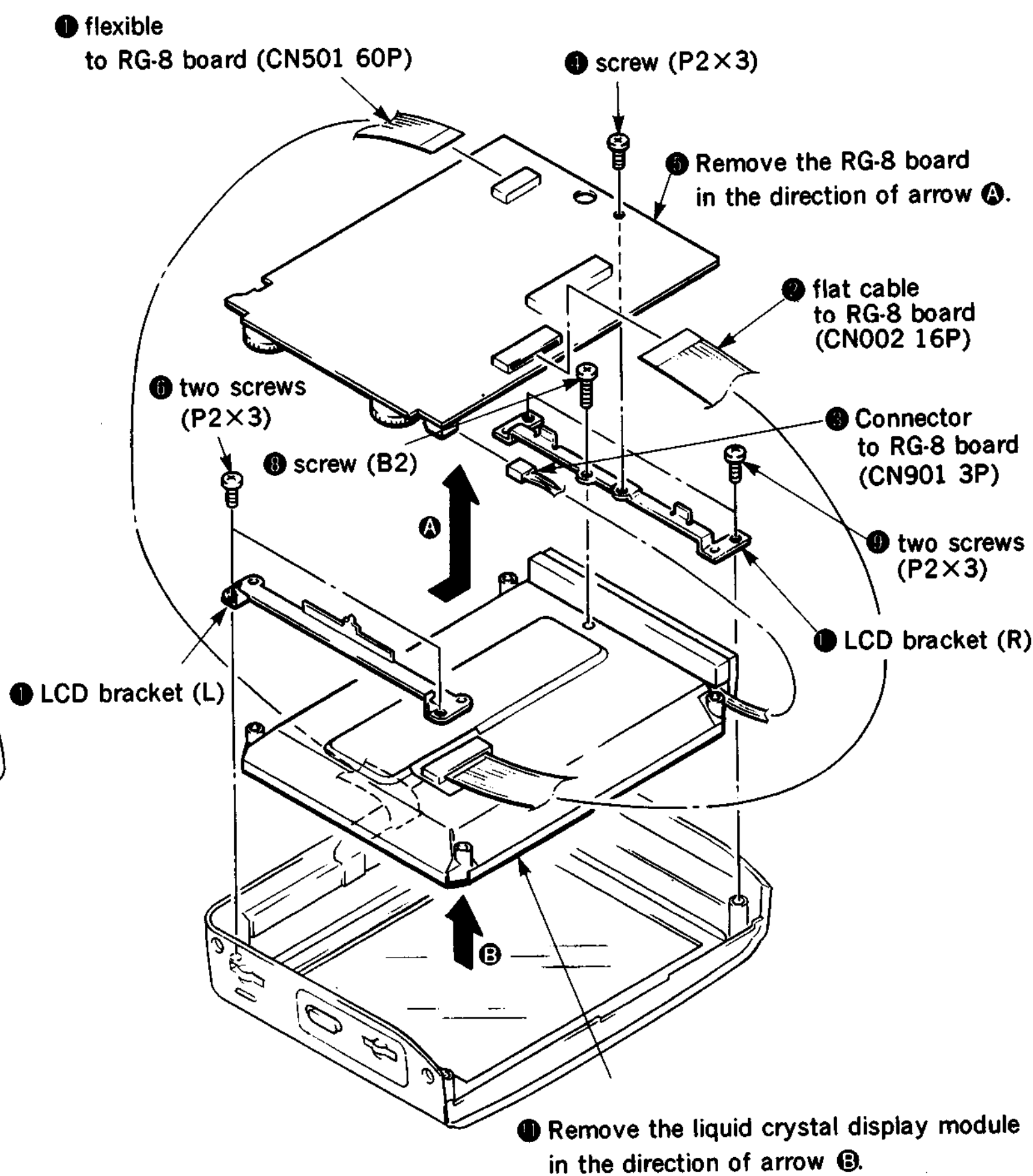
2-1. REMOVAL OF CABINET (UPPER) ASSY



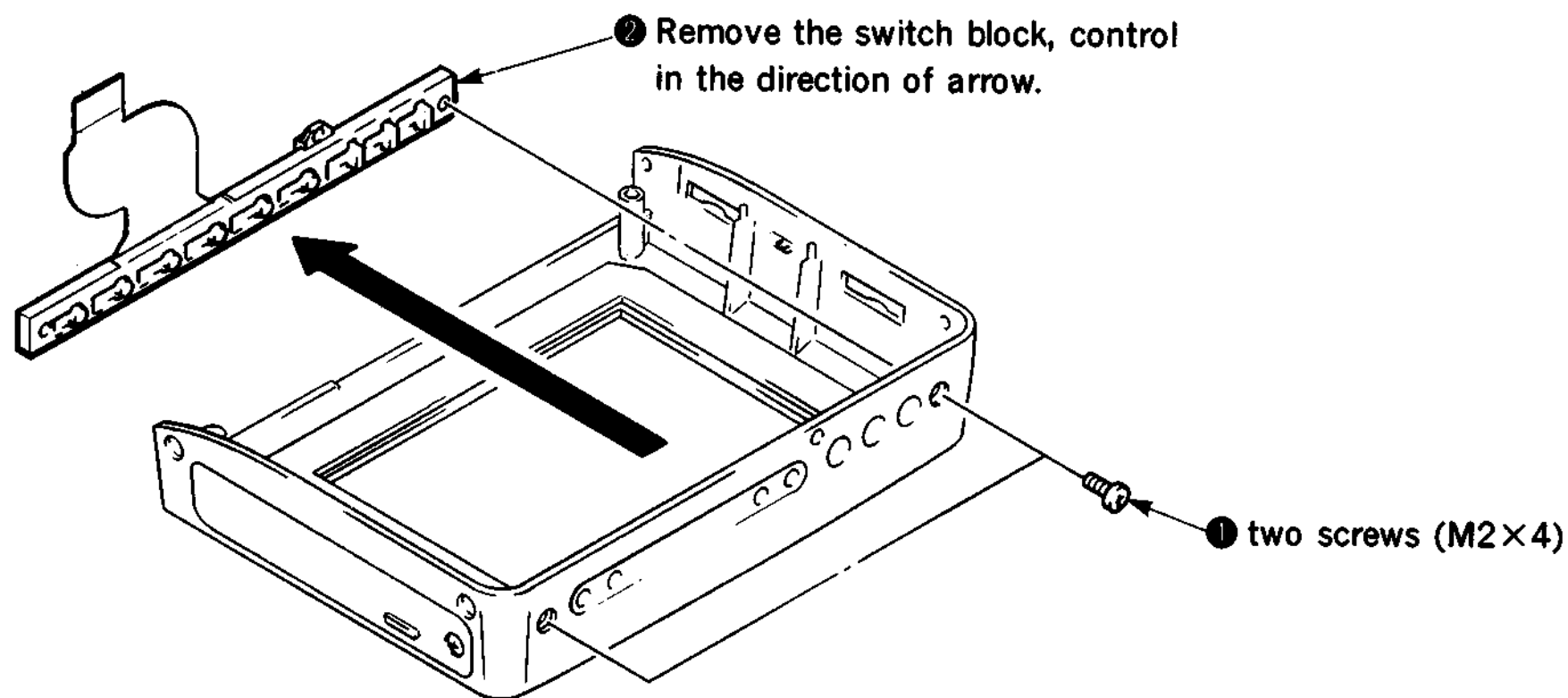
2-2. REMOVAL OF SC UNIT



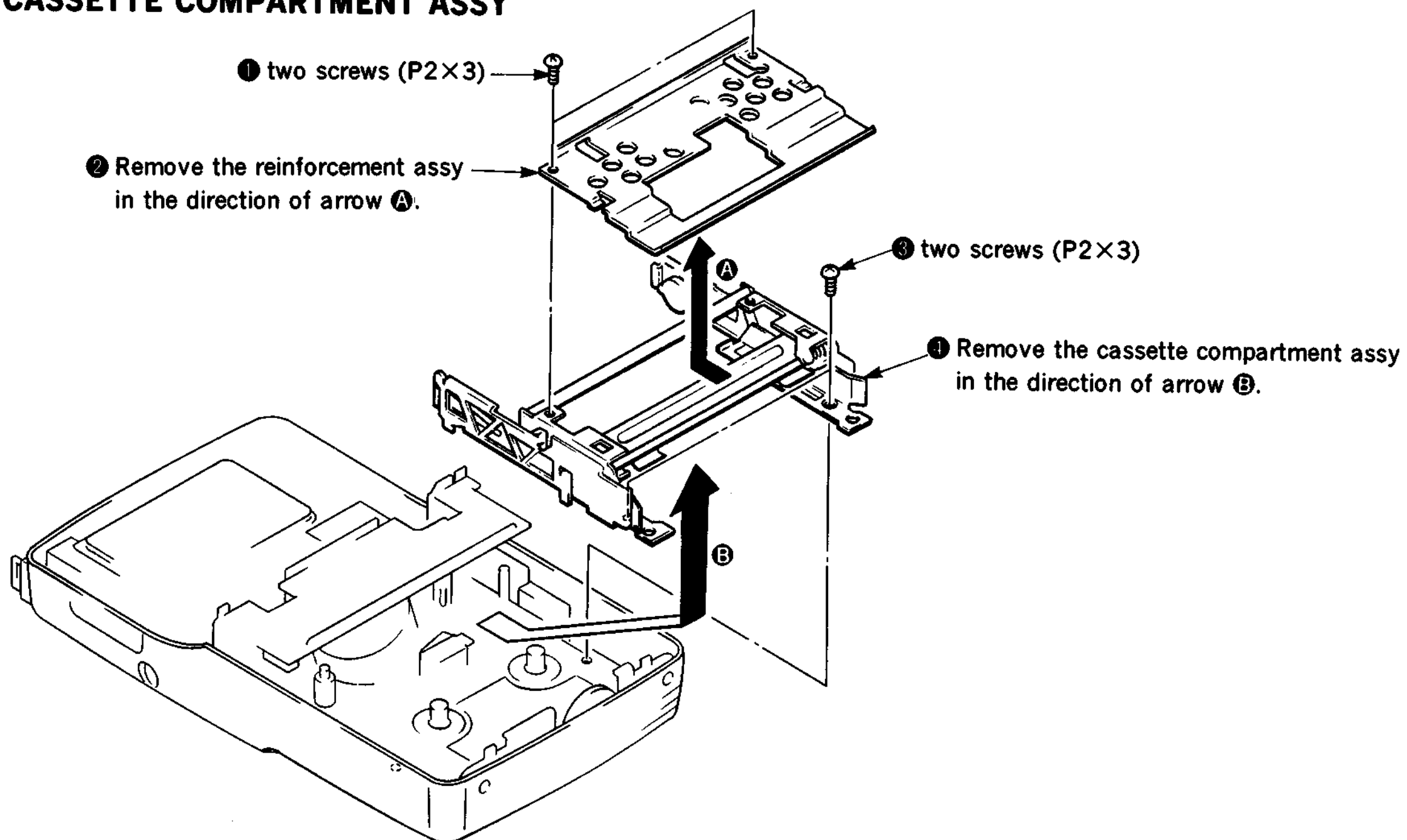
2-3. REMOVAL OF LIQUID CRYSTAL DISPLAY MODULE



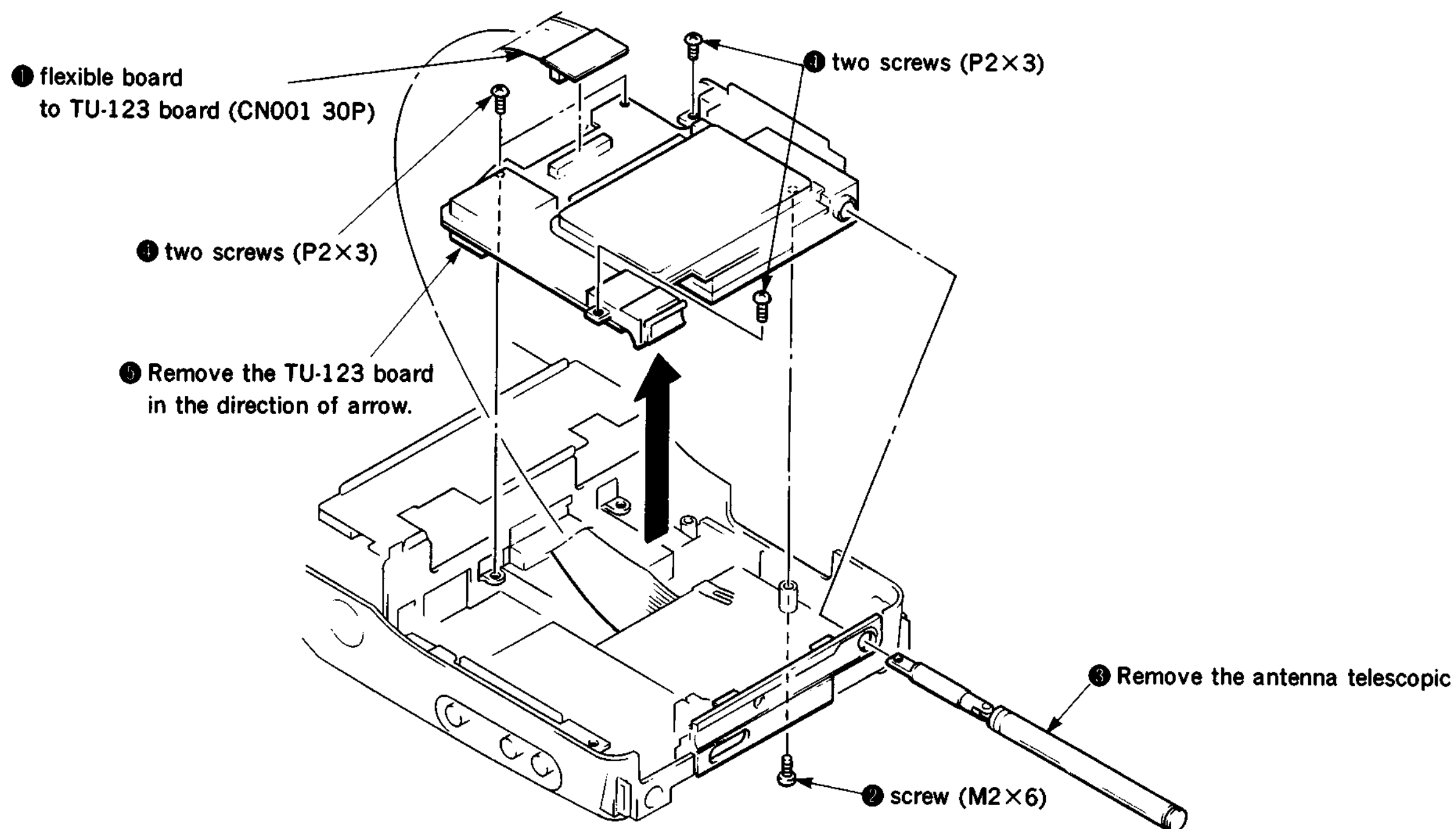
2-4. REMOVAL OF CONTROL SWITCH BLOCK



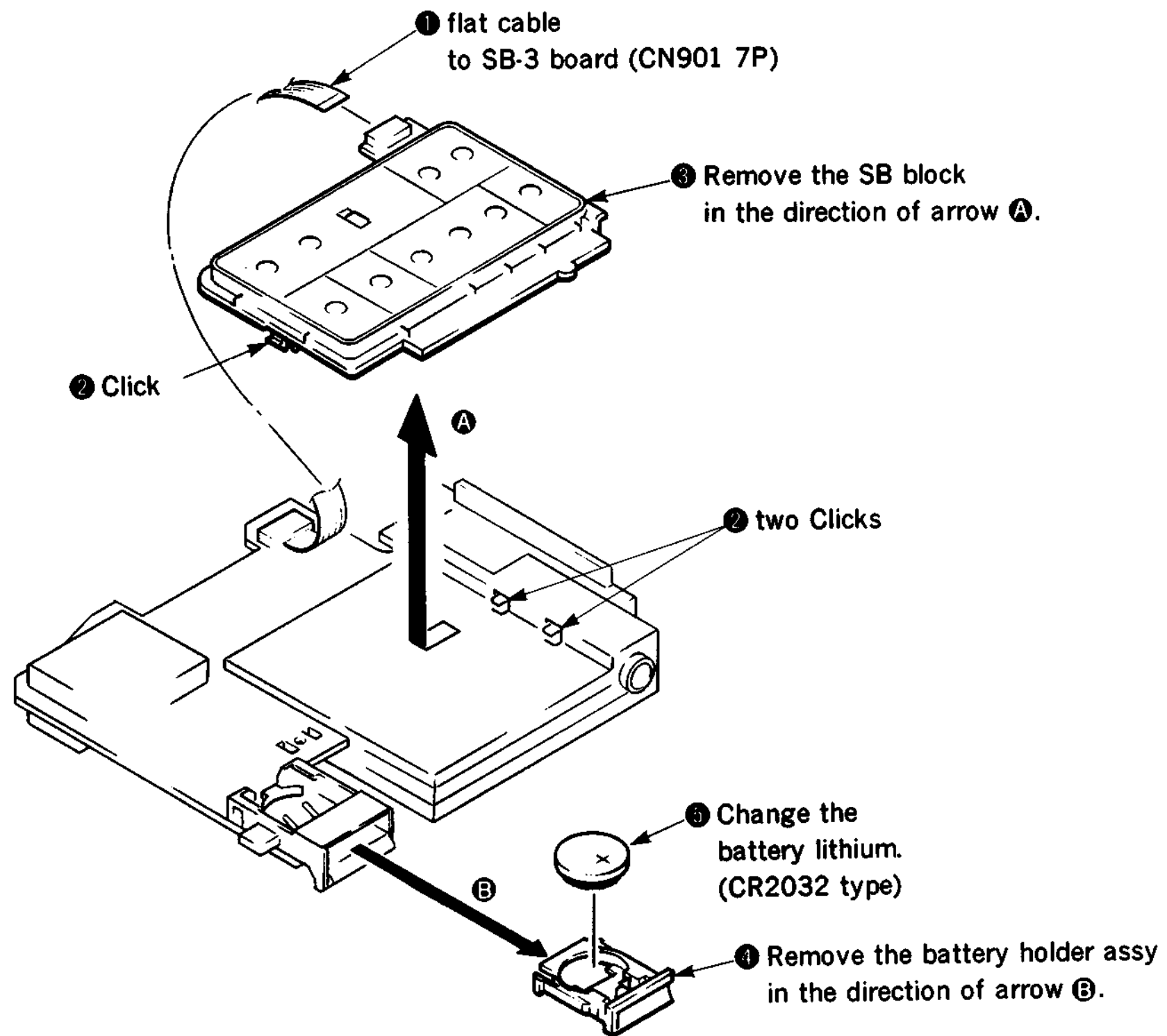
2-5. REMOVAL OF CASSETTE COMPARTMENT ASSY



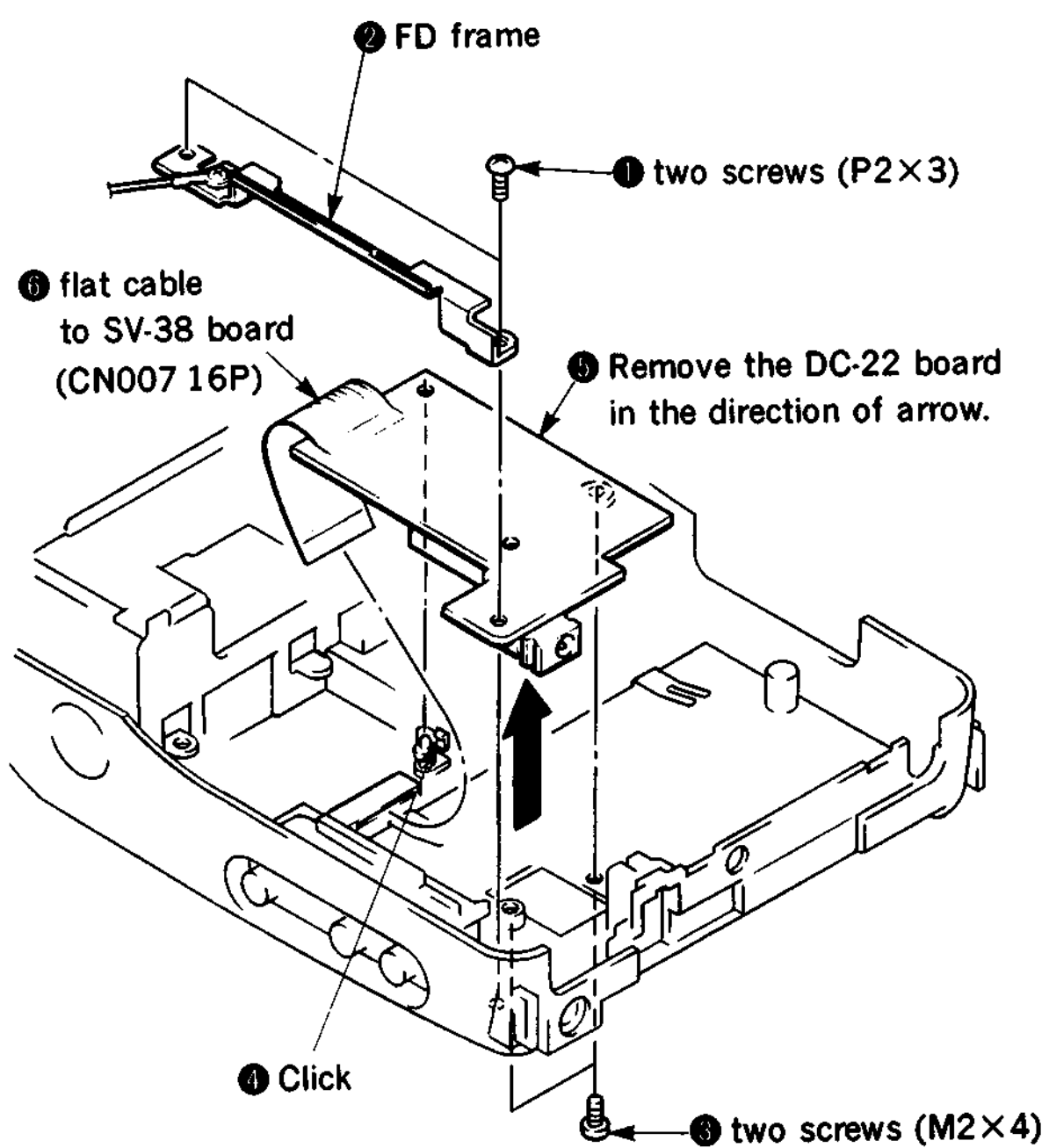
2-6. REMOVAL OF TU-123 BOARD



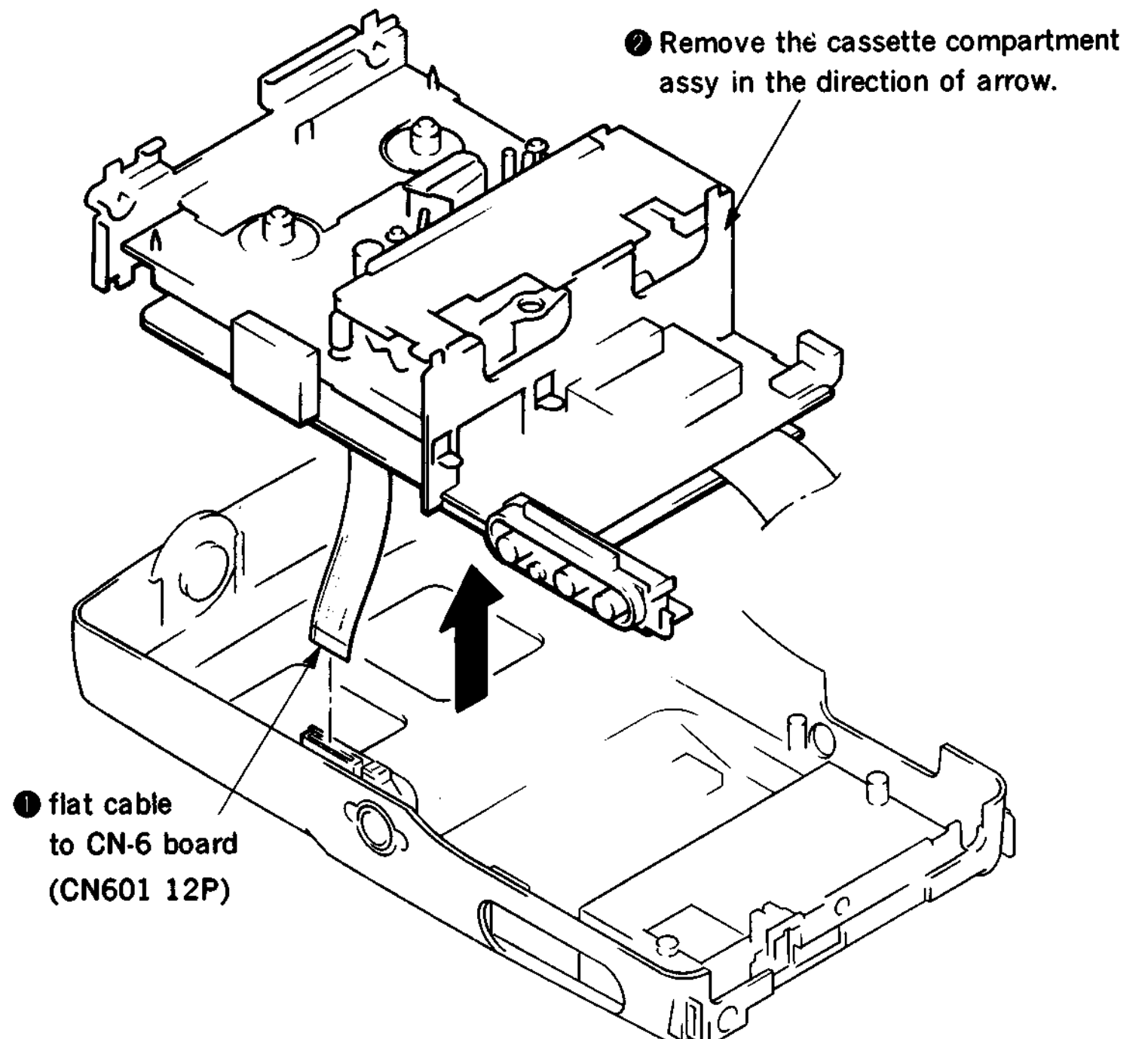
2-7. REMOVAL OF SB BLOCK AND LITHIUM BATTERY



2-8. REMOVAL OF DC-22 BOARD

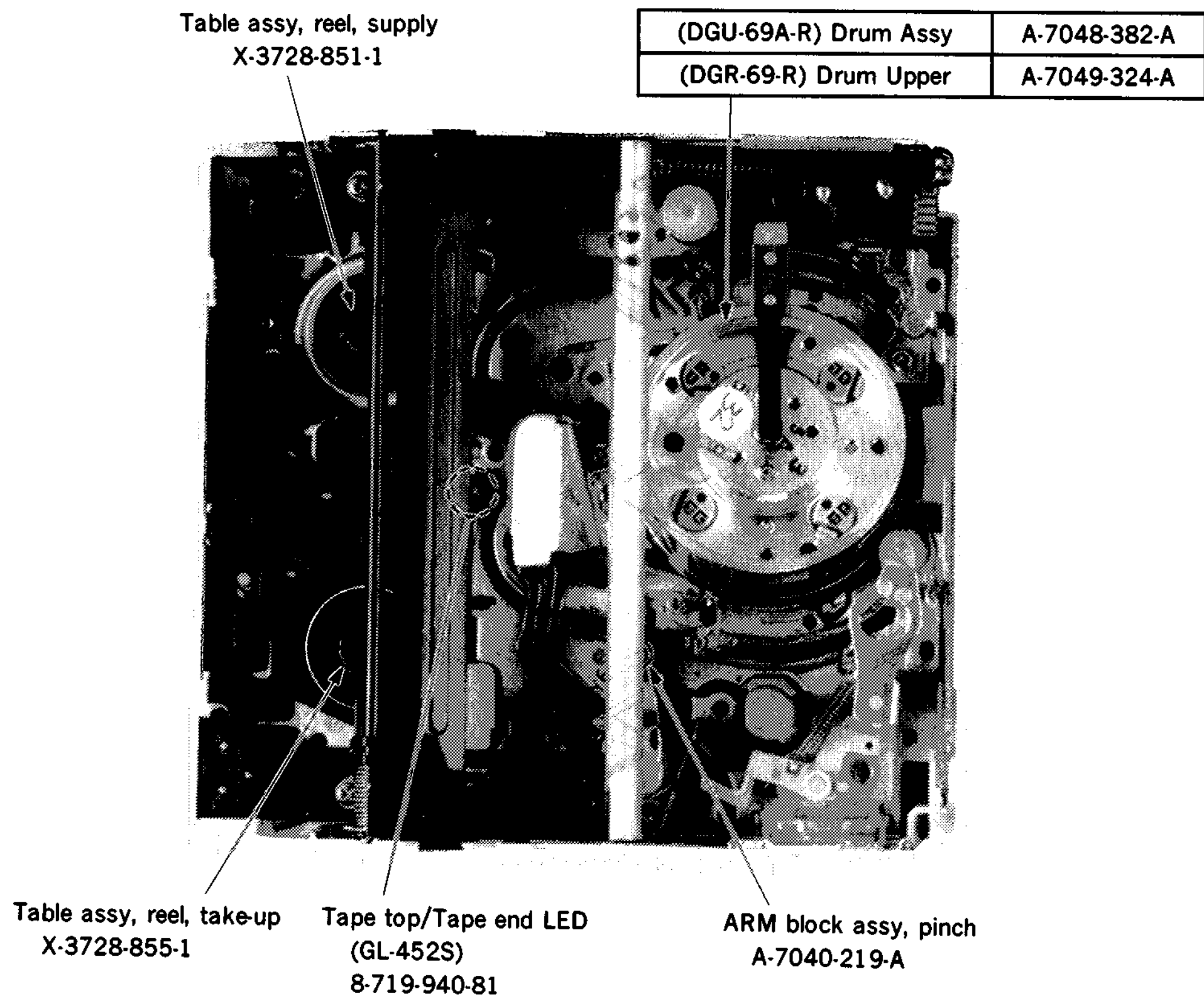


2-9. REMOVAL OF MECHANISM DECK

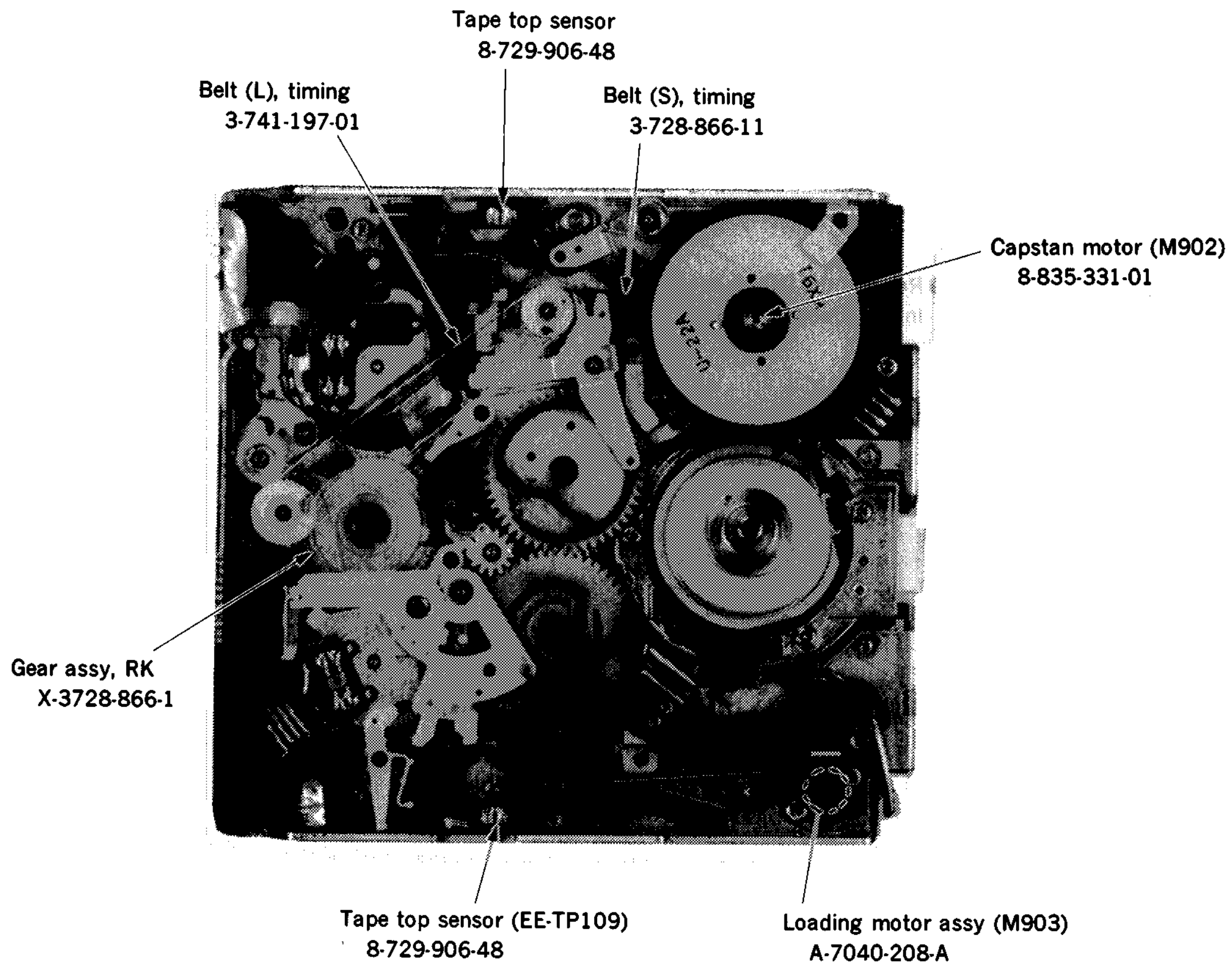


2-10. INTERNAL VIEWS

— UPPER —



— LOWER —



⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10 board Q803)

The following display is shown on the LCD.

VIDEO DATA

CFL1 1 (RESET)
 CFL2 1 (DISPLAY)
 NCL1 1 (SLEEP)
 NCL2 1 (NEXT)
 NCLP1 1 (UP)
 NCLP2 1 (CLOCK)

KB-10 BOARD (Component Side)

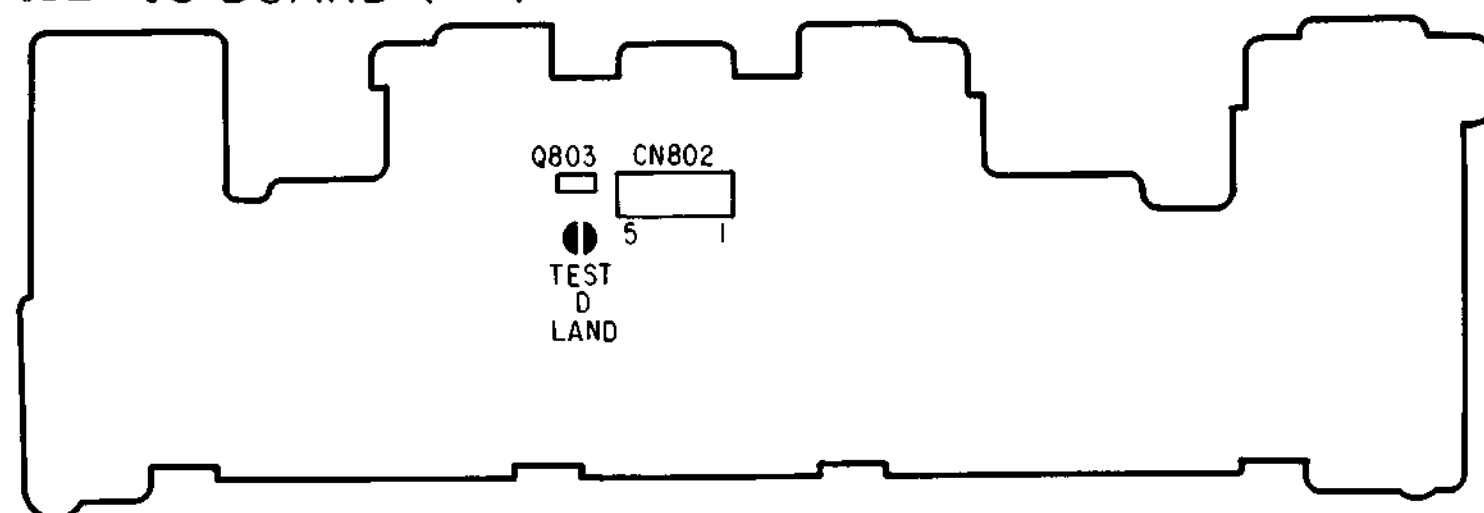


Fig3-2.

Six types of DATA are varied with the KEY on the SC part.

RESET → COUNTER RESET KEY

DISPLAY → DATA SCREEN KEY

SLEEP → SLEEP KEY

NEXT → NEXT KEY

UP → + KEY

CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)

Eight modes are adjusted by the types of TAPE (ME, MP), recording (HI BAND, LO BAND) MODE, and TAPE SPEED (SP, LP). when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 3-1. for the data writing to EEPROM.)

Table 3-1. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	H	L
1	0	0	1	9	LP•MP	L	H	L	H	L	H
1	0	1	0	A	SP•ME	H	L	H	L	H	L
1	0	1	1	B	LP•ME	L	H	L	H	L	H
1	1	0	0	C	Hi-8 SP•MP	H	L	L	H	H	L
1	1	0	1	D	Hi-8 LP•MP	L	H	L	H	L	H
1	1	1	0	E	Hi-8 SP•ME	H	L	H	L	H	L
1	1	1	1	F	Hi-8 LP•ME	L	H	L	H	L	H

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

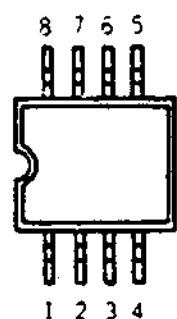
3-10. LIST OF SIRCS CODE (CATEGORY : VTR2)

CODE No.	CODE	COMMAND
01	00	CH-1/1
02	01	CH-2/2
03	02	CH-3/3
04	03	CH-4/4
05	04	CH-5/5
06	05	CH-6/6
07	06	CH-7/7
08	07	CH-8/8
09	08	CH-9/9
10	09	CH-10/0
11	0 A	CH-11/ *
12	0 B	CH-12/CH/ENTER/#
13	0 C	CH-13/1 -
14	0 D	CH-14/2 -
17	10	CH-HIGH(+)
18	11	CH-LOW(-)
22	15	POWER ON/OFF
23	16	EJECT
24	17	MPX MAIN/SUB
25	18	STOP
26	19	PAUSE

CODE No.	CODE	COMMAND
27	1 A	PB
28	1 B	REWIND
29	1 C	FF
30	1 D	REC
33	20	STILL
36	23	1/5 SLOW
47	2 E	POWER ON
48	2 F	POWER OFF
50	31	FORWARD
55	36	SLEEP
71	46	COUNTER RESET
72	47	MEM CNTR ON/OFF
73	48	INDEX WRITE
74	49	INDEX ERASE
80	4F	INPUT SELECT
85	54	INDEX ON/OFF
89	58	SPEED CHANGE
91	5A	COUNTER DISPLAY ON/OFF
97	60	TIMER SET
98	61	NEXT
102	65	TIMER REC

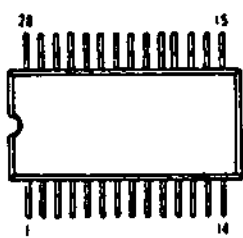
4-3. SEMICONDUCTORS

AK93C57F
FA7610N
LM311DR
LM358D
LM358PS
LM393DR
MC34182M
LM393ML
NJM2073M



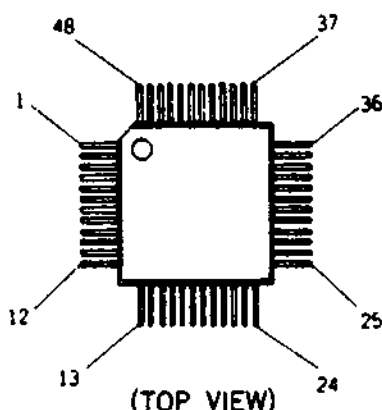
(TOP VIEW)

BA3570F
CXA1138M



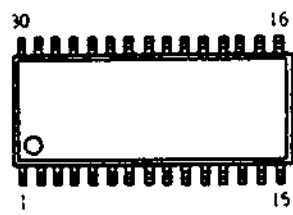
(TOP VIEW)

CXA1124AQ
CXA1208R
CXA1537R
MB606199



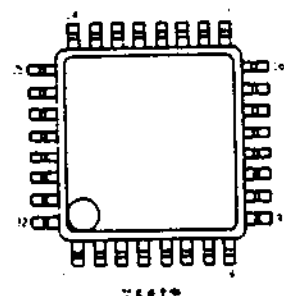
(TOP VIEW)

CXA1127M
CXA8006M



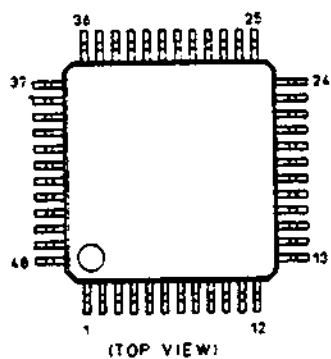
(TOP VIEW)

CXA1201Q



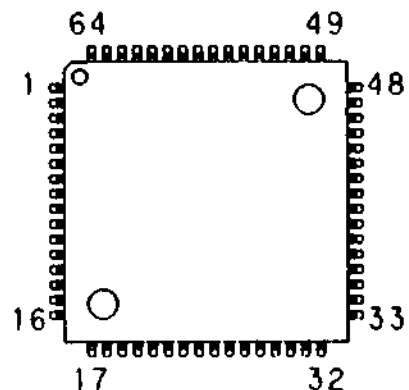
(TOP VIEW)

CXA1202R



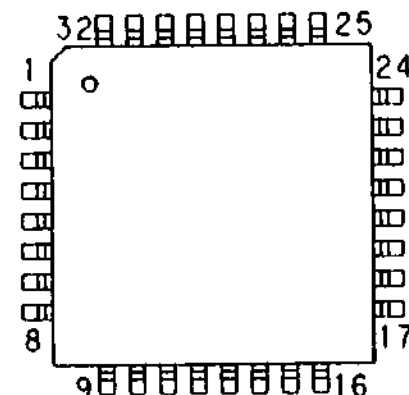
(TOP VIEW)

CXA1207R

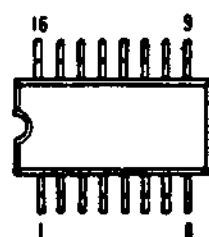


(TOP VIEW)

CXD2106Q

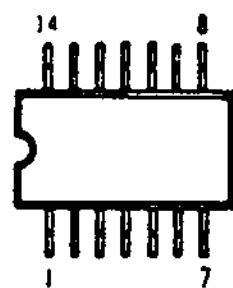


CXD2107M
CX20115A
MB3775PF
MC14053BF



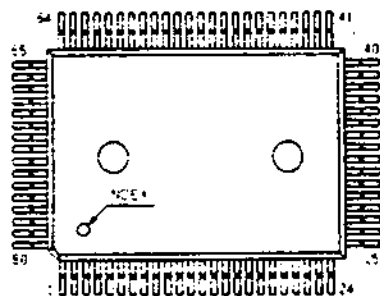
(TOP VIEW)

CXL5502M
 μ PC339G2
 μ PD6451AGT-601

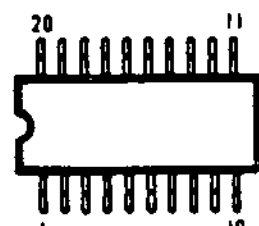


(TOP VIEW)

CXP50116
CXP80116
MC14094BF

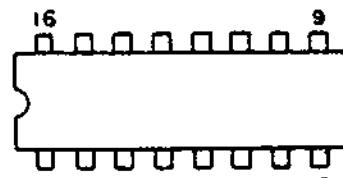


CX20102
M52018FP



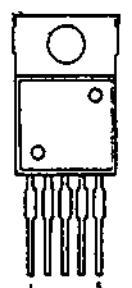
(TOP VIEW)

MC10H116M

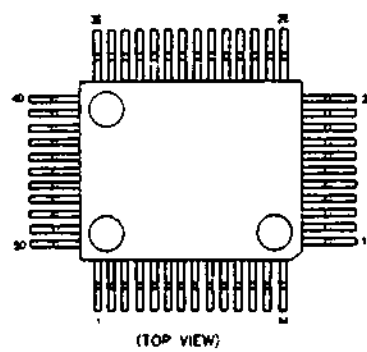


(TOP VIEW)

MC14052BF

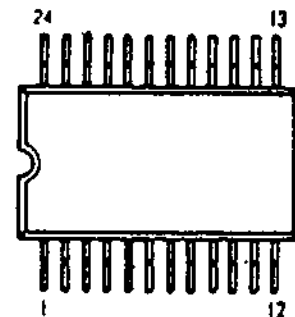


M51406FP



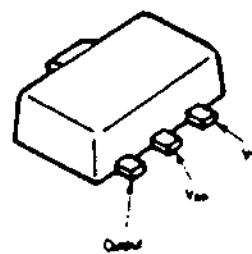
(TOP VIEW)

M52007FP



(TOP VIEW)

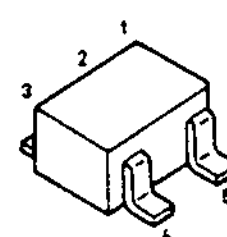
S-8052ALO-LG-S
S-8054-ALR-LN-S



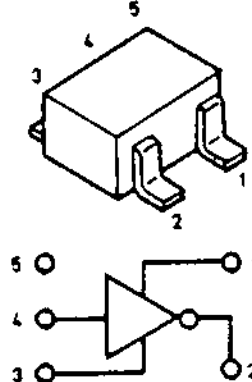
S-81350AG



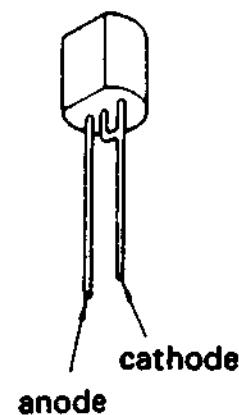
TC4SU69F
TC4S66F
TC4S81F



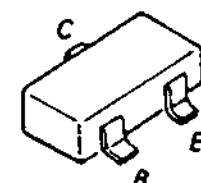
TC7S00F



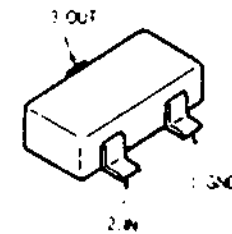
μ PC574J



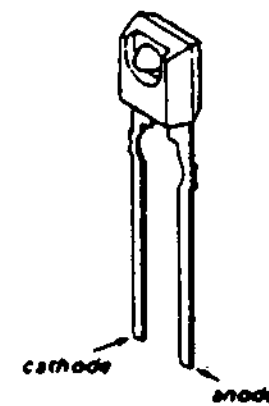
DTA114EK
DTA124EK
DTA143EK
DTA144EK
DTC114EK
DTC124EK
DTC144EK
2SA1037K
2SA1162
2SA1576
2SB624
2SC1623
2SC2412K
2SC3053
2SC3326N
2SC4081



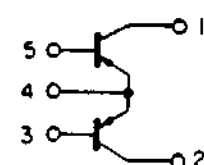
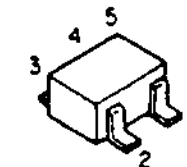
DTA114EU
DTA144EU
DTC124EU
DTC143EU
DTC144EU
DTC144TU
DTC144WU
2SD1119



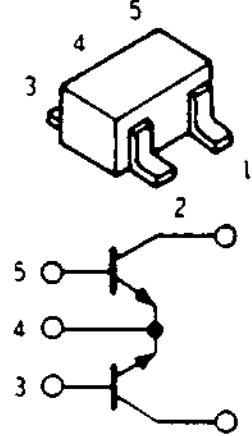
EE-TP109



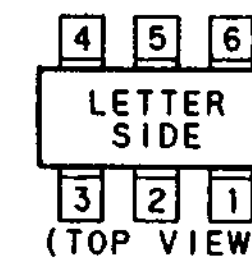
FMS1
FMY3
FMY4



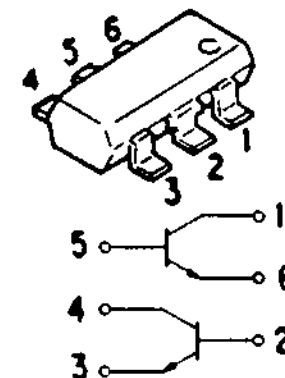
FMW1
FMW2



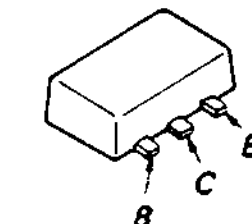
IMH2
IMX2



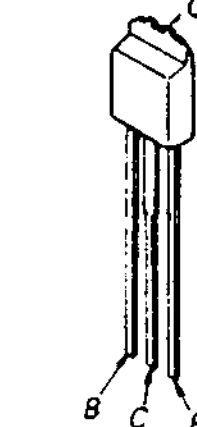
XN4210



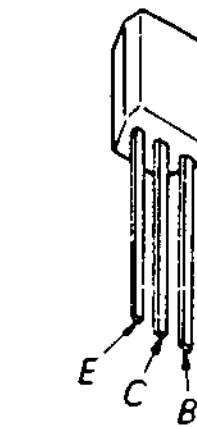
2SB1121



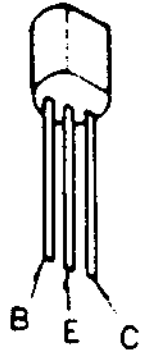
2SB1202



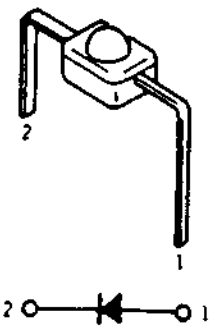
2SC2669



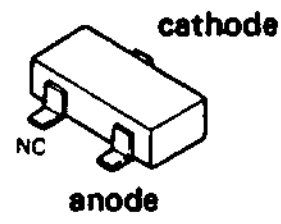
2SC3355



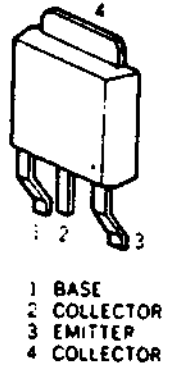
GL-1PR102



SB10-05CP



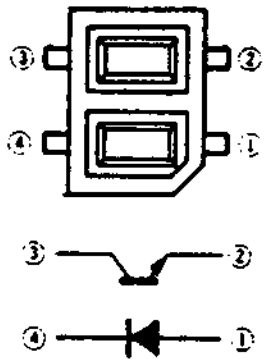
2SD1760



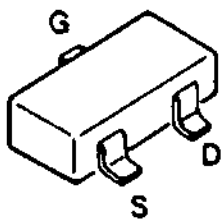
GL452S



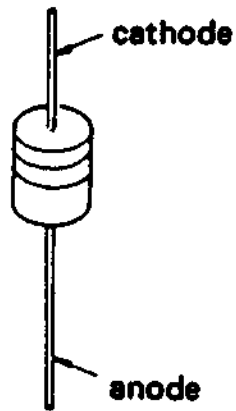
TLP-907



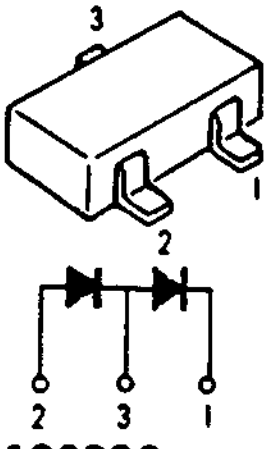
2SK209G



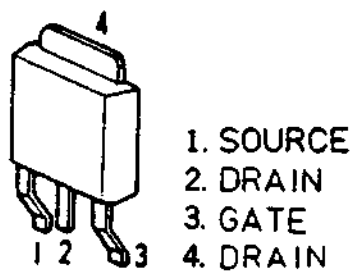
HZS12A1L
1SS119



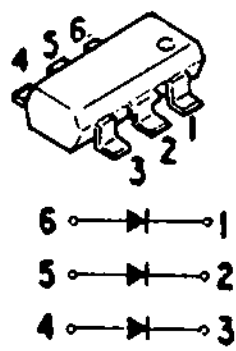
1SS226



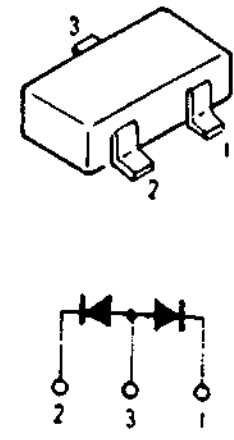
2SK1469



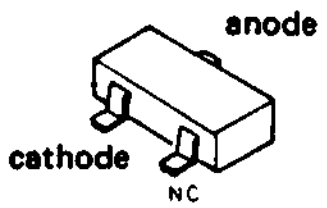
IMN10
MA121



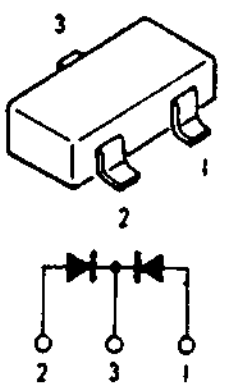
1S2836



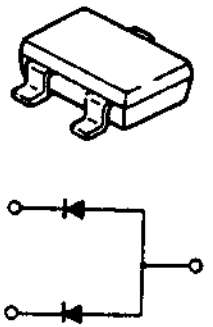
DAN202U



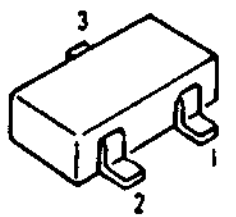
MA152WK



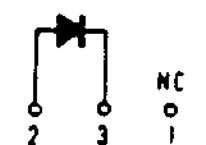
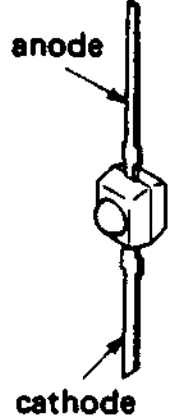
DAP202U



RD3.6M-B2
RD5.1M-B2
RD5.6M-B2
RD6.2M-B1
RD9.1M-B1
RD9.1M-B2
SB05-05CP



GL-1EG11






SECTION 5 EXPLODED VIEWS

NOTE:

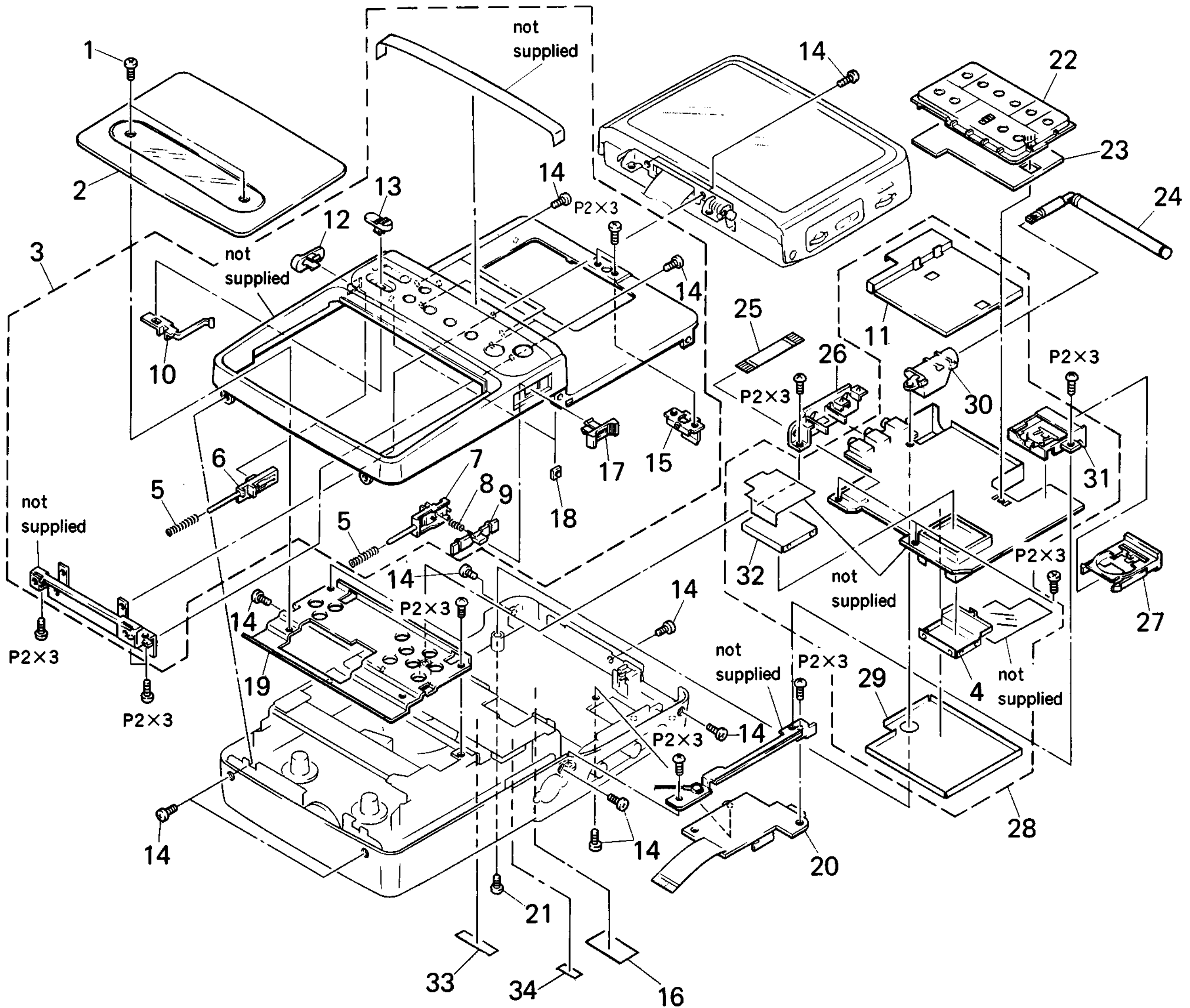
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

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

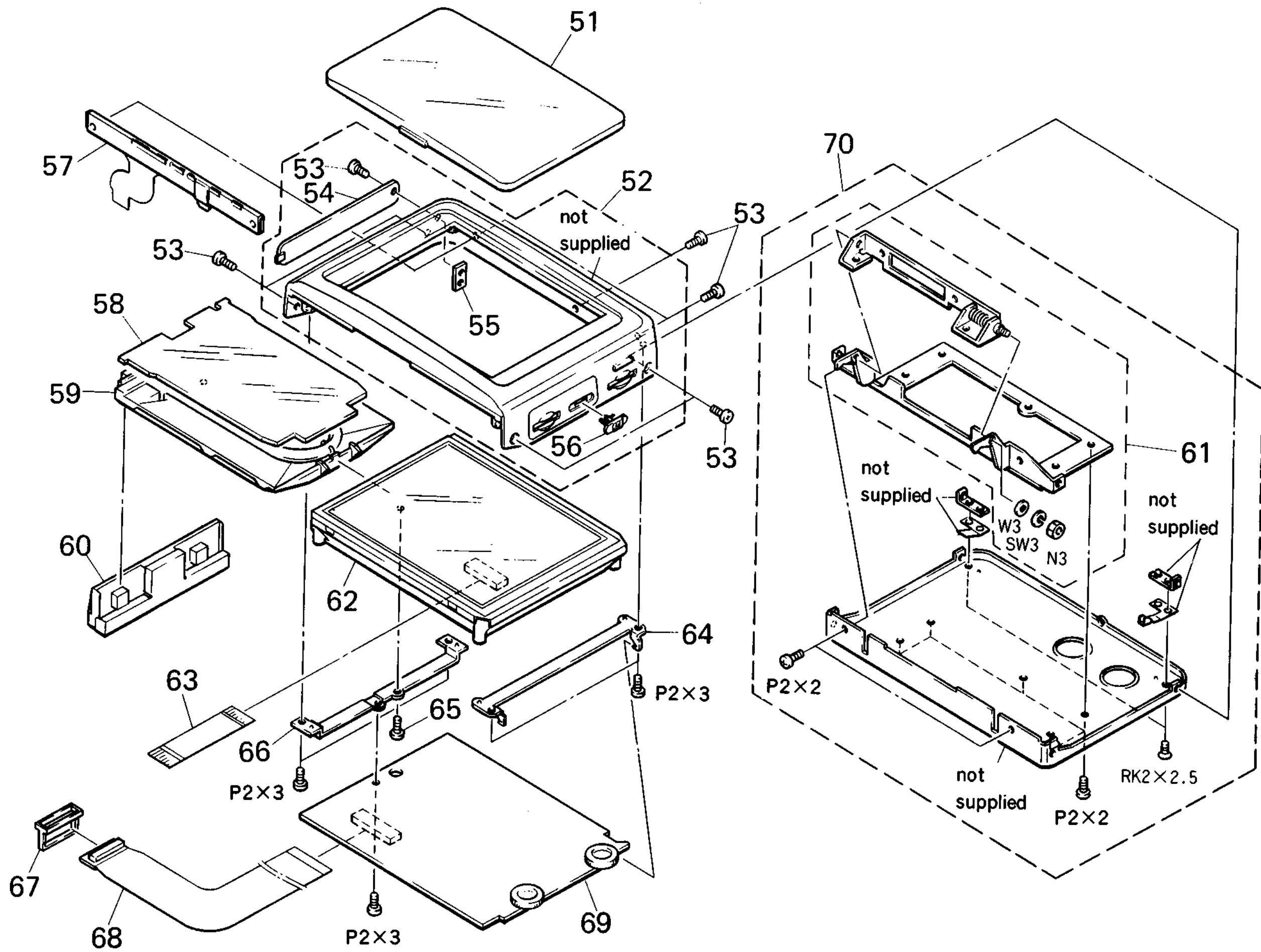
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.




5-1. CABINET (UPPER) ASSEMBLY




Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
1	3-719-555-11	SCREW (M1.7X5.5)		18	3-718-233-01	NUT, PLATE	
2	X-3728-871-1	LID ASSY, CASSETTE COMPARTMENT		19	X-3728-890-1	REINFORCEMENT ASSY	
3	X-3749-097-1	CABINET ASSY, UPPER	5-10, 12-18	20	* A-7071-210-A	DC-22 (A) BOARD, COMPLETE	
4	3-746-907-01	LID, TDD SHIELD CASE		21	3-719-381-21	SCREW (M2X6)	
5	3-741-137-01	SPRING, COMPRESSION		22	X-3749-096-1	HOLDER ASSY, SB	
6	3-740-655-01	BUTTON, EJECT LOCK		23	* 1-634-346-11	SB-3 BOARD	
7	3-744-133-01	PLATE, SLIDE, POWER		24	1-501-456-11	ANTENNA, TELESCOPIC	
8	3-303-973-00	SPRING, COMPRESSION		25	1-575-856-11	CABLE,FLAT(1.0MM PITCH) 7 CORE	
9	3-744-128-01	BUTTON, POWER LOCK		26	3-744-165-01	COVER, HP JACK	
10	3-744-132-01	PLATE, SLIDE, REC		27	X-3728-883-1	HOLDER ASSY, BATTERY	
11	X-3728-886-1	LID ASSY, TU SHIELD CASE		28	* A-7062-317-A	TU-123 BOARD, COMPLETE	4, 11, 29-32
12	3-740-647-01	BUTTON, EJECT		29	3-746-915-01	LID, REAR, TU SHIELD CASE	
13	3-740-648-11	BUTTON, POWER		30	3-744-166-01	HOLDER, ANTENNA	
14	3-719-381-01	SCREW (M2X4)		31	X-3728-887-1	GUIDE ASSY, BATTERY	
15	X-3940-043-1	PLATE, LOCK ASSY		32	3-746-908-01	LID, REAR, TDD SHIELD CASE	
16	* 3-749-513-01	LABEL, MODEL NUMBER (U/C)		33	* 3-704-386-01	LABEL, TELESONIC	
17	3-744-131-01	BUTTON, POWER		34	* 3-704-367-01	LABEL	

5-2. SC UNIT ASSEMBLY

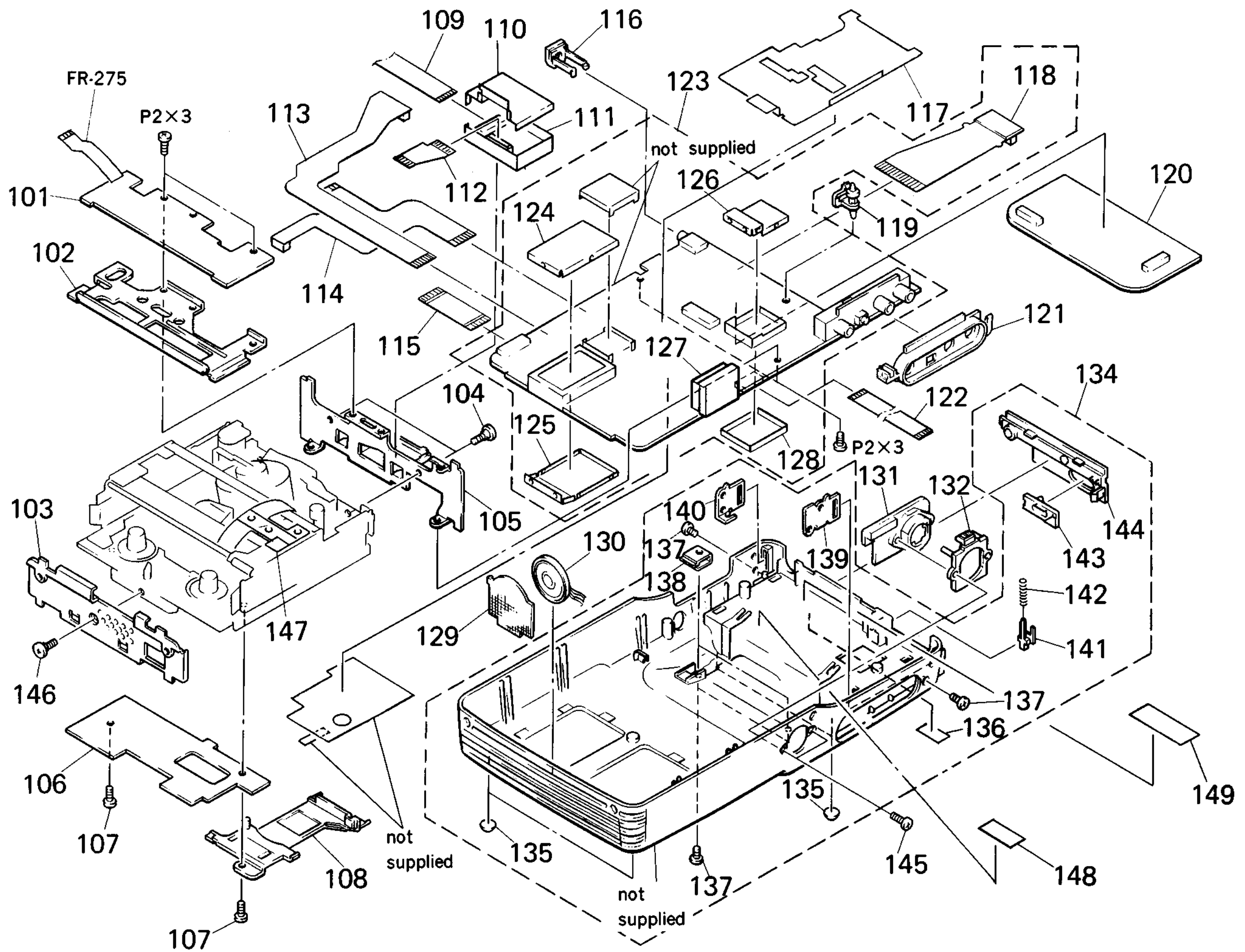


<p>Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.</p>	<p>Note: Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref.No	Part No.	Description	Remark
51	3-744-142-01	WINDOW, SC	
52	X-3728-878-1	CABINET ASSY, UPPER, SC	
53	3-719-381-01	SCREW (M2X4)	
54	3-744-174-01	COVER, SIDE	
55	3-730-103-01	NUT, PLATE	
56	3-744-162-01	KNOB, DBB	
57	1-466-334-11	SWITCH BLOCK, CONTROL	
58	3-744-127-01	CURTAIN	
59	1-518-668-11	TUBE UNIT, FLUORECENT (BL901)	
60	 1-466-333-11	INVERTER UNIT, DC-AC	
61	X-3749-223-1	ARM, HINGE ASSY	

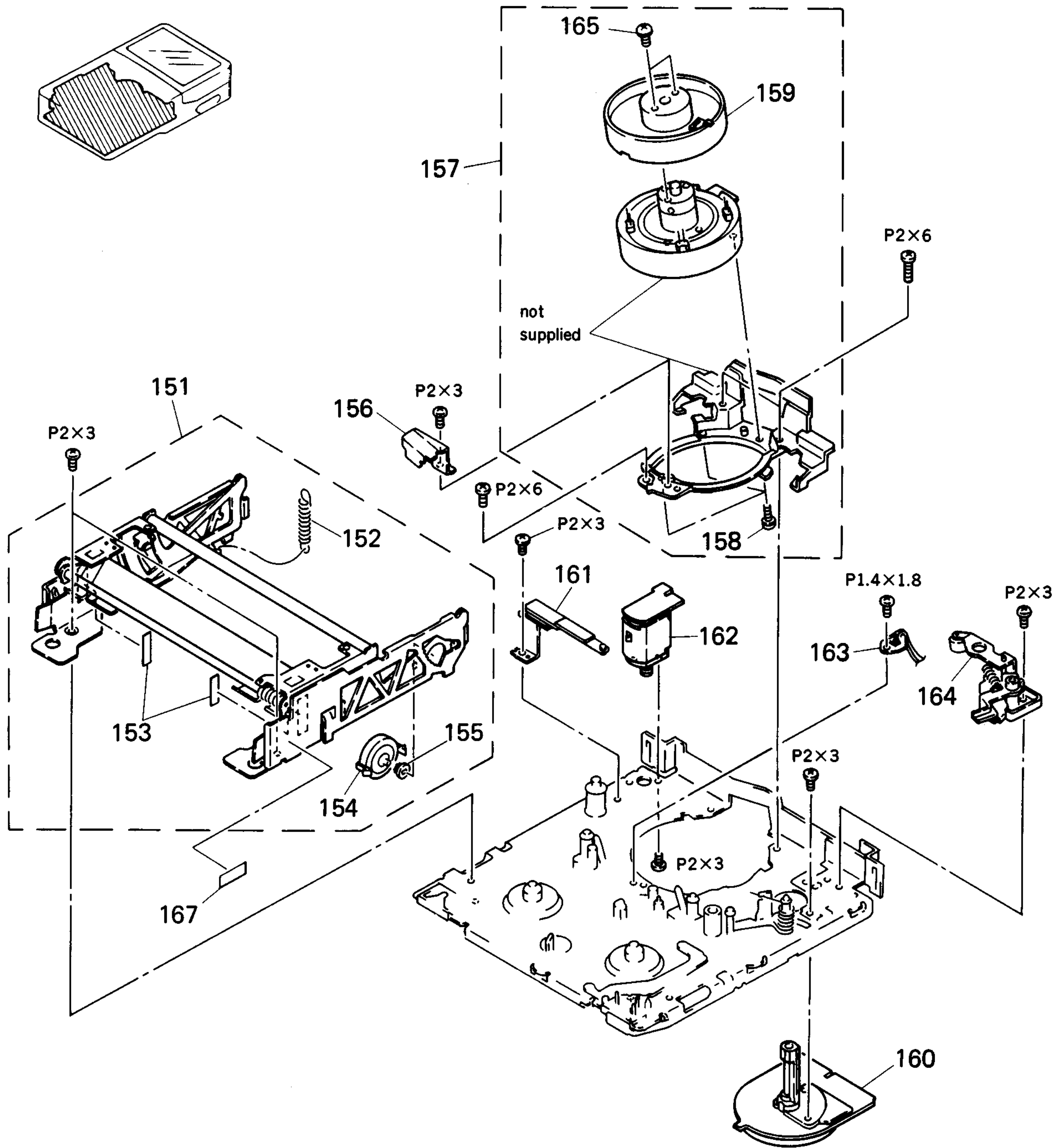
Ref.No	Part No.	Description	Remark
62	1-809-002-11	DISPLAY MODULE, LIQUID CRYSTAL (LCD 901)	
63	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE (LCD FLEXIBLE)	
64	* 3-744-198-01	BRACKET (R), LCD	
65	3-719-408-01	SCREW (B2), TAPPING, P3	
66	* 3-744-199-01	BRACKET (L), LCD	
67	3-744-152-01	HOLDER, FPC	
68	1-634-994-11	FP-271 FLEXIBLE BOARD	
69	* A-7061-937-A	RG-8 BOARD, COMPLETE	
70	X-3728-882-1	CABINET (BOTTOM) ASSY, SC	61

5-3. CABINET (LOWER) ASSEMBLY



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
101	* A-7071-211-A	KB-10 (A) BOARD, COMPLETE		125	* X-3728-888-1	LID ASSY, REAR,SDD SHIELD CASE	
102	X-3728-889-1	FRAME ASSY, KB		126	* 3-746-903-01	CASE (LID), SHIELD, INDEX	
103	X-3728-884-1	FRAME (FRONT) ASSY, MD		127	A-7061-935-A	CC-32 BOARD, COMPLETE	
104	3-732-791-11	SCREW (M2X3)		128	* X-3728-893-1	CASE (REAR LID) ASSY, SHIELD	
105	X-3728-891-1	FRAME (REAR) ASSY, MD		129	X-3728-892-1	SPACER ASSY, SP	
106	* 1-634-347-11	UC-6 BOARD		130	1-544-323-11	SPEAKER	
107	3-719-408-01	SCREW (B2), TAPPING, P3		131	* 1-634-345-11	CN-6 BOARD	
108	* 3-744-176-01	COVER, MD		132	3-744-157-01	SPACER, CN	
109	1-634-992-11	FP-269 FLEXIBLE BOARD		134	X-3749-098-1	CABINET ASSY, LOWER	135-144
110	X-3728-885-1	LID ASSY, RP SHIELD CASE		135	3-740-607-01	CUSHION	
111	A-7061-932-A	RP-75 BOARD, COMPLETE		136	* 3-747-370-01	LABEL, BATTERY FITTING	
112	1-634-996-11	FP-273 FLEXIBLE BOARD		137	3-719-381-01	SCREW (M2X4)	
113	1-634-997-11	FP-274 FLEXIBLE BOARD		138	3-736-496-01	BRACKET, STAND	
114	1-634-995-11	FP-272 FLEXIBLE BOARD		139	3-744-156-01	HOOK (R), BELT	
115	1-575-859-11	CABLE,FLAT(1.0MM PITCH)15 CORE		140	3-744-155-01	HOOK (L), BELT	
116	3-744-169-01	COVER, CS JACK		141	3-744-159-01	LEVER, RELEASE	
117	* 3-746-901-01	COVER, SV		142	3-564-951-00	SPRING, COMPRESSION	
118	1-634-993-11	FP-270 FLEXIBLE BOARD		143	3-744-161-01	KNOB, RELEASE	
119	3-742-816-01	SUPPORT (V), PC BOARD		144	3-744-168-01	COVER, ANTENNA	
120	* A-7062-315-A	AU-53 (A) BOARD, COMPLETE		145	3-719-381-21	SCREW (M2X6)	
121	3-744-175-01	COVER, IO JACK		146	3-744-603-11	SCREW	
122	1-575-857-11	CABLE,FLAT(1.0MM PITCH)12 CORE		147	3-746-960-01	RIBBON, LID RETAINER	
123	* A-7062-316-A	SV-38 (A) BOARD, COMPLETE	118, 124-128	148	* 3-719-611-41	LABEL, FUSE RATING	
124	* 3-746-902-01	CASE (LID), SHIELD, SDD		149	* 3-704-256-01	LABEL, CAUTION	

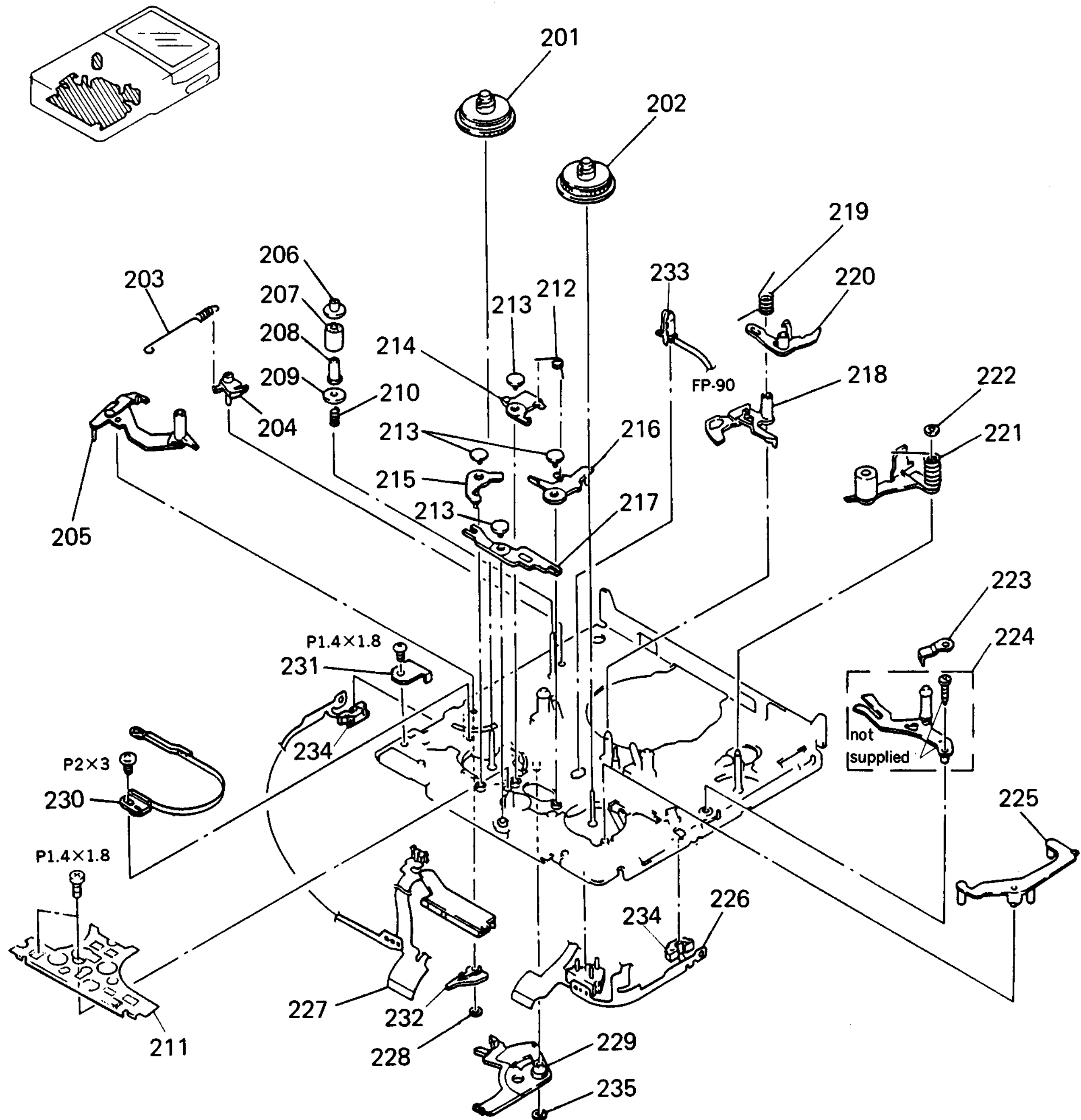
5-4. MECHANISM DECK ASSEMBLY (1)



Ref.No	Part No.	Description	Remark
151	X-3728-873-1	CASSETTE COMPARTMENT ASSY	152-155
152	3-728-825-03	SPRING, TENSION	
153	*3-728-829-01	TAPE	
154	3-728-867-02	DAMPER, OIL	
155	3-728-828-02	GEAR, DAMPER	
156	3-728-868-01	GUARD, GUIDE	
157	A-7048-382-A	DRUM ASSY, (DGR-69A-R)	158, 159, 165
158	3-686-493-01	SCREW, (M2X5), P1	

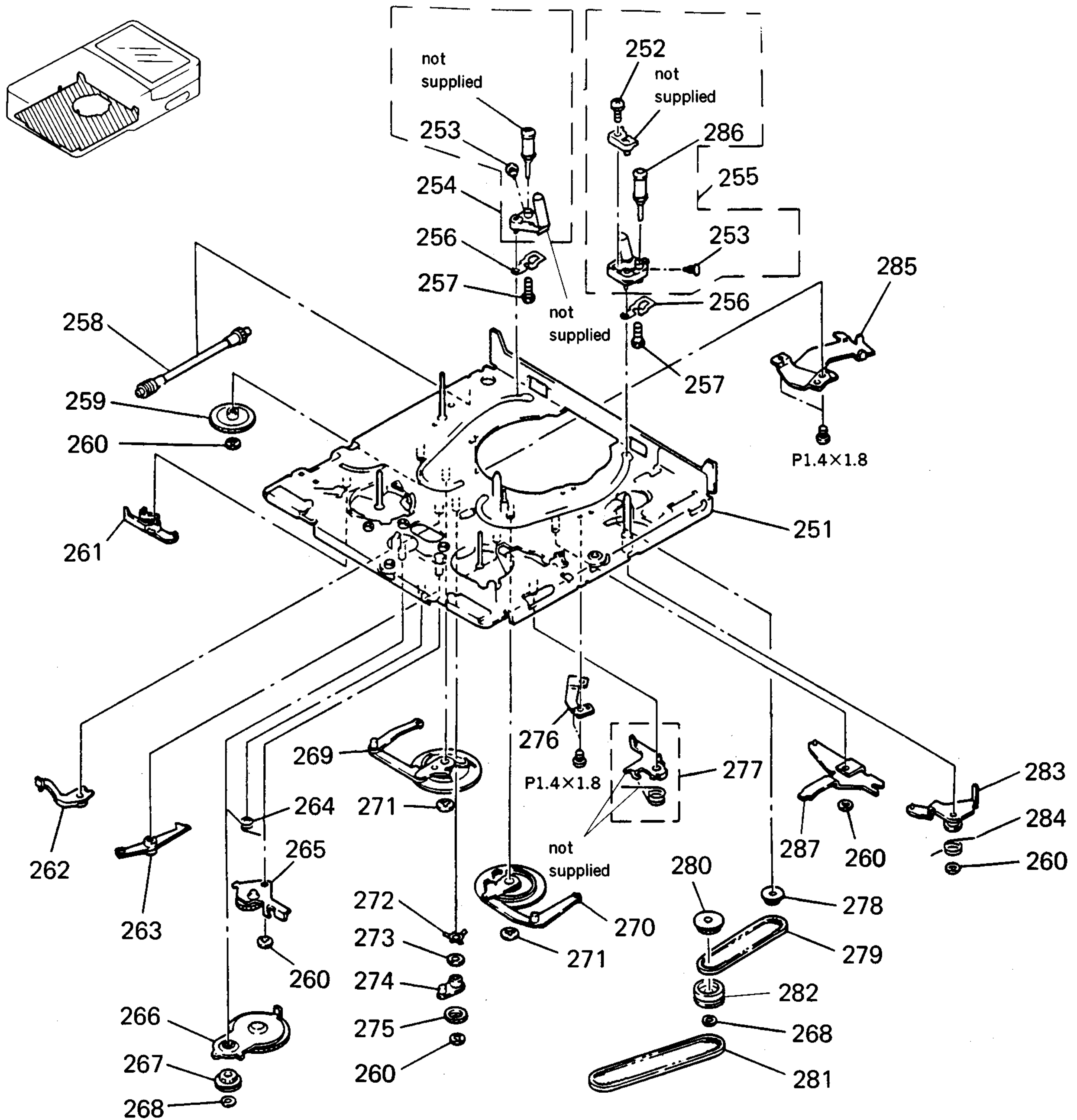
Ref.No	Part No.	Description	Remark
159	A-7049-324-A	DRUM ASSY, ROTARY (UPPER)(DGR-69-R)	
160	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)(M902)	
161	X-3728-864-1	GROUND ASSY, SHAFT	
162	A-7040-208-A	MOTOR ASSY, THREADING (LOADING) (M903)	
163	1-808-505-12	SENSOR (DEW)	
164	A-7040-207-A	ROLLER BLOCK ASSY, HC	
165	3-727-847-01	SCREW (M2X4)	
167	*3-730-176-01	SHEET, MD	

5-5. MECHANISM DECK ASSEMBLY (2)



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S		219	3-726-864-01	SPRING (RK), TORSION	
202	X-3728-855-1	TABLE ASSY, REEL, T		220	3-728-852-02	ARM, RK STOPPER	
203	3-736-414-01	SPRING, TENSION		221	A-7040-219-A	ARM BLOCK ASSY, PINCH	
204	3-728-855-03	ARM, ADJUSTMENT		222	3-669-465-00	WASHER (1.5), STOPPER	
205	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR		223	3-728-808-01	SPRING, LEAF	
206	3-726-884-01	FLANGE, UPPER, TG2		224	X-3728-869-1	ARM ASSY, TG7	
207	3-726-883-01	ROLLER, TG2		225	3-728-848-01	ARM, LB RELEASE	
208	3-726-885-01	SLEEVE, TG2		226	1-628-061-12	FP-90 FLEXIBLE BOARD	
209	3-726-882-02	FLANGE, LOWER, TG2		227	1-628-060-12	FP-89 FLEXIBLE BOARD	
210	3-726-886-01	SPRING, COMPRESSION		228	3-321-393-11	WASHER, STOPPER	
211	3-741-195-01	PLATE, BLIND, RK		229	X-3728-863-1	LEVER ASSY, SW	
212	3-726-866-01	SPRING (ST), TORSION		230	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
213	3-726-858-01	PIN, SHAFT RETAINER		231	3-730-125-01	RETAINER, SW	
214	3-728-849-01	BRAKE, S		232	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
215	3-726-852-01	BRAKE, LB		233	3-728-837-01	HOLDER, LED	
216	3-728-850-01	BRAKE, T		234	3-728-869-02	HOLDER, SENSOR	
217	3-726-853-01	LEVER, LB		235	3-726-829-01	WASHER, STOPPER	
218	3-728-875-01	STOPPER, RK					

5-6. MECHANISM DECK ASSEMBLY (3)



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
251	X-3728-862-1	CHASSIS ASSY, MECHANICAL		269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
252	3-736-473-01	SCREW (M2X0.25)(THREE LOCK)		270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD		271	3-669-465-00	WASHER (1.5), STOPPER	
254	A-7040-204-A	COASTER (LEFT) BLOCK ASSY	253	272	3-726-867-01	SPRING, LEAF	
255	A-7040-215-A	COASTER (RIGHT)BLOCK ASSY(NIS)	252, 253, 286	273	3-701-436-21	WASHER, POLYETHYLENE	
256	3-736-485-01	SPRING, LEAF, COSTER		274	3-726-857-02	ARM, UL	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)		275	3-726-856-02	GEAR, UL	
258	X-3728-868-1	WORM ASSY		276	*3-726-805-01	REINFORCEMENT (TT)	
259	3-744-109-01	GEAR, WHEEL		277	X-3726-808-2	BRAKE ASSY, TS	
260	3-726-829-01	WASHER, STOPPER		278	X-3726-805-1	GEAR ASSY, JOINT	
261	3-728-842-01	LEVER, EJECT		279	3-728-866-11	BELT (S), TIMING	
262	3-728-851-01	BRAKE, UL		280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
263	3-726-854-01	ARM, BRAKE RELEASE		281	3-741-197-01	BELT (L), TIMING	
264	3-726-865-01	SPRING (LB), TORSION		282	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
265	A-7040-225-A	GEAR BLOCK ASSY (N), LB		283	X-3726-824-1	ARM ASSY, PINCH SUB	
266	X-3728-866-1	GEAR ASSY, RK		284	3-726-895-01	SPRING	
267	X-3728-858-1	GEAR ASSY, RC		285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
268	3-321-393-11	WASHER, STOPPER		286	X-3728-808-1	ROLLER ASSY (U) (SUS), GUIDE	
				287	X-3728-846-1	LEVER ASSY, THREADING	

**SECTION 6
ELECTRICAL PARTS LIST**

RP-75

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μ F, PF: μ μ F.

RESISTORS



- All resistors are in ohms.
- F: nonflammable


COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:
 UA...: μ A..., UPA...: μ PA...,
 UPC...: μ PC, UPD...: μ PD...

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

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

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
A-7061-932-A	RP-75 BOARD, COMPLETE	(Ref. No. 1000 series)					

1-634-992-11	FP-269 FLEXIBLE BOARD						
	<u>CAPACITOR</u>				<u>COIL</u>		
C501	1-135-180-21	TANTAL CHIP	3.3MF 20% 6.3V	L501	1-412-029-11	INDUCTOR CHIP 10UH	
C502	1-164-361-11	CERAMIC CHIP	0.047MF 16V	L502	1-412-033-11	INDUCTOR CHIP 220UH	
C503	1-135-161-21	TANTAL CHIP	22MF 20% 10V	L503	1-412-033-11	INDUCTOR CHIP 220UH	
C504	1-164-361-11	CERAMIC CHIP	0.047MF 16V	L581	1-412-198-11	INDUCTOR 220UH	
C505	1-135-161-21	TANTAL CHIP	22MF 20% 10V	L582	1-412-006-31	INDUCTOR CHIP 10UH	
C506	1-164-361-11	CERAMIC CHIP	0.047MF 16V				
C507	1-162-974-11	CERAMIC CHIP	0.01MF 50V		<u>TRANSISTOR</u>		
C508	1-162-970-11	CERAMIC CHIP	0.01MF 10% 25V	Q501	8-729-905-12	TRANSISTOR DTA144EU	
C509	1-164-005-11	CERAMIC CHIP	0.47MF 25V	Q550	8-729-905-18	TRANSISTOR DTC144EU	
C510	1-164-633-11	CERAMIC CHIP	0.1MF 10% 25V	Q551	8-729-905-23	TRANSISTOR 2SA1576R	
C511	1-164-633-11	CERAMIC CHIP	0.1MF 10% 25V	Q581	8-729-905-23	TRANSISTOR 2SA1576R	
C512	1-164-633-11	CERAMIC CHIP	0.1MF 10% 25V	Q582	8-729-216-22	TRANSISTOR 2SA1162	
C513	1-164-633-11	CERAMIC CHIP	0.1MF 10% 25V	Q583	8-729-905-23	TRANSISTOR 2SA1576R	
C514	1-164-005-11	CERAMIC CHIP	0.47MF 25V				
C515	1-162-970-11	CERAMIC CHIP	0.01MF 10% 25V		<u>RESISTOR</u>		
C516	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R502	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
C517	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R503	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
C518	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R504	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
C519	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R505	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
C522	1-135-161-21	TANTAL CHIP	22MF 20% 10V	R506	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
C523	1-164-360-11	CERAMIC CHIP	0.1MF 16V	R507	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
C524	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R509	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
C525	1-164-360-11	CERAMIC CHIP	0.1MF 16V	R510	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
C529	1-164-361-11	CERAMIC CHIP	0.047MF 16V	R512	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
C531	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R514	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
C533	1-135-161-21	TANTAL CHIP	22MF 20% 10V	R515	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
C534	1-164-361-11	CERAMIC CHIP	0.047MF 16V	R516	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
C535	1-135-157-21	TANTAL CHIP	10MF 20% 6.3V	R517	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
C550	1-164-227-11	CERAMIC CHIP	0.022MF 10% 25V	R520	1-216-791-11	METAL GLAZE 3.3 5% 1/16W	
C582	1-162-974-11	CERAMIC CHIP	0.01MF 50V	R524	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
C583	1-162-964-11	CERAMIC CHIP	0.001MF 10% 50V	R525	1-216-809-11	METAL GLAZE 100 5% 1/16W	
C584	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	R526	1-216-809-11	METAL GLAZE 100 5% 1/16W	
C585	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	R551	1-216-820-11	METAL GLAZE 820 5% 1/16W	
C586	1-162-955-11	CERAMIC CHIP	150PF 5% 50V	R552	1-216-865-11	METAL GLAZE 3K 5% 1/16W	
C587	1-162-952-11	CERAMIC CHIP	82PF 5% 50V	R553	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
	<u>CONNECTOR</u>			R554	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
CN501	1-565-849-11	SOCKET, CONNECTOR 11P		R555	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
CN502	1-568-740-11	CONNECTOR, FPC (1.0MM)(ZIF)18P		R556	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
CN503	1-568-340-41	CONNECTOR, BOARD TO BOARD 5P		R557	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
	<u>DIODE</u>			R558	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
D550	8-719-941-86	DIODE DAN202U		R559	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
	<u>IC</u>			R560	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
IC501	8-752-033-38	IC CXA1202R		R581	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
				R582	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
				R583	1-216-814-11	METAL GLAZE 270 5% 1/16W	
				R584	1-216-813-11	METAL GLAZE 220 5% 1/16W	
				R585	1-216-803-11	METAL GLAZE 33 5% 1/16W	
				R586	1-216-799-11	METAL GLAZE 15 5% 1/16W	
				R587	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
				R588	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
				R589	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	

Ref.No Part No. Description Remark

VARIABLE RESISTOR

RV501 1-238-092-11 RES, ADJ CERMET 47K
RV502 1-238-092-11 RES, ADJ CERMET 47K

*A-7061-937-A RG-8 BOARD, COMPLETE (Ref. No. 2000 series)

CAPACITOR

C002 1-135-151-21 TANTAL CHIP 4.7MF 20% 4V
C003 1-163-117-00 CERAMIC CHIP 100PF 5% 50V
C004 1-164-161-11 CERAMIC CHIP 0.0022MF 10% 50V
C005 1-164-161-11 CERAMIC CHIP 0.0022MF 10% 50V
C007 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C008 1-135-217-21 TANTAL CHIP 15MF 20% 6.3V
C009 1-135-217-21 TANTAL CHIP 15MF 20% 6.3V
C009 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C010 1-126-206-11 ELECT CHIP 100MF 20% 6.3V
C012 1-135-180-21 TANTAL CHIP 3.3MF 20% 6.3V
C013 1-163-125-00 CERAMIC CHIP 220PF 5% 50V
C014 1-163-125-00 CERAMIC CHIP 220PF 5% 50V
C015 1-163-125-00 CERAMIC CHIP 220PF 5% 50V
C016 1-164-634-11 CERAMIC CHIP 1MF 16V
C018 1-163-011-11 CERAMIC CHIP 0.0015MF 10% 50V
C020 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C021 1-163-097-00 CERAMIC CHIP 15PF 5% 50V
C022 1-135-162-21 TANTAL CHIP 33MF 20% 6.3V
C023 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C024 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C025 1-163-117-00 CERAMIC CHIP 100PF 5% 50V
C026 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C027 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C028 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C029 1-164-634-11 CERAMIC CHIP 1MF 16V
C030 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C031 1-164-634-11 CERAMIC CHIP 1MF 16V
C032 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C033 1-164-634-11 CERAMIC CHIP 1MF 16V
C034 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C035 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C036 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C037 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C038 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C039 1-164-161-11 CERAMIC CHIP 0.0022MF 10% 50V
C040 1-135-181-21 TANTAL CHIP 4.7MF 20% 6.3V
C041 1-135-149-21 TANTAL CHIP 2.2MF 20% 10V
C042 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C043 1-164-182-11 CERAMIC CHIP 0.0033MF 10% 50V
C044 1-126-204-11 ELECT CHIP 47MF 20% 16V
C045 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C046 1-163-113-00 CERAMIC CHIP 68PF 5% 50V
C047 1-126-206-11 ELECT CHIP 100MF 20% 6.3V
C048 1-135-177-21 TANTAL CHIP 1MF 20% 20V
C049 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C051 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C054 1-135-156-21 TANTAL CHIP 6.8MF 20% 10V
C055 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C056 1-135-156-21 TANTAL CHIP 6.8MF 20% 10V
C057 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C058 1-126-199-11 ELECT CHIP 6.8MF 20% 35V
C059 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C060 1-126-199-11 ELECT CHIP 6.8MF 20% 35V
C061 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C070 1-163-115-00 CERAMIC CHIP 82PF 5% 50V

Ref.No Part No. Description Remark

C071 1-163-121-00 CERAMIC CHIP 150PF 5% 50V
C072 1-163-115-00 CERAMIC CHIP 82PF 5% 50V
C073 1-163-121-00 CERAMIC CHIP 150PF 5% 50V
C074 1-163-115-00 CERAMIC CHIP 82PF 5% 50V
C075 1-163-121-00 CERAMIC CHIP 150PF 5% 50V
C080 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C081 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C082 1-164-232-11 CERAMIC CHIP 0.01MF 50V
C092 1-163-125-00 CERAMIC CHIP 220PF 5% 50V
C093 1-163-125-00 CERAMIC CHIP 220PF 5% 50V
C803 1-163-038-00 CERAMIC CHIP 0.1MF 25V
C804 1-135-157-21 TANTAL CHIP 10MF 20% 6.3V
C805 1-163-105-00 CERAMIC CHIP 33PF 5% 50V
C809 1-163-038-00 CERAMIC CHIP 0.1MF 25V

CONNECTOR

CN001 1-565-212-11 CONNECTOR, FPC (ZIF) 26P
CN002 1-568-238-11 CONNECTOR, FPC (1.0MM)(ZIF)16P
CN501 1-568-235-21 CONNECTOR, FPC (1.0MM)(ZIF)10P
CN901 1-565-528-11 PIN, CONNECTOR (PC BOARD) 3P

VARIABLE CAPACITOR

CV001 1-141-370-11 CAP, CHIP TRIMMER
CV801 1-141-331-11 CAP, VAR, TRIMMER (CHIP)

DIODE

D001 8-719-400-18 DIODE MA152WK
D002 8-719-400-18 DIODE MA152WK
D003 8-719-400-18 DIODE MA152WK

FILTER

FL001 1-236-598-11 L.P.F (Y)
FL002 1-236-599-11 B.P.F

IC

IC001 8-759-633-73 IC M51406FP
IC003 8-759-009-07 IC MC14053BF
IC801 8-759-150-07 IC UPD6451AGT-601

COIL

L001 1-410-655-31 INDUCTOR CHIP 120UH
L003 1-412-029-11 INDUCTOR CHIP 10UH
L004 1-410-385-11 INDUCTOR CHIP 22UH
L005 1-410-385-11 INDUCTOR CHIP 22UH
L006 1-410-385-11 INDUCTOR CHIP 22UH
L007 1-410-377-31 INDUCTOR CHIP 4.7UH
L008 1-410-377-31 INDUCTOR CHIP 4.7UH
L009 1-410-393-11 INDUCTOR CHIP 100UH
L010 1-410-393-11 INDUCTOR CHIP 100UH
L801 1-410-658-31 INDUCTOR CHIP 220UH
L802 1-412-192-11 INDUCTOR 56UH

TRANSISTOR

Q001 8-729-100-66 TRANSISTOR 2SC1623
Q002 8-729-100-66 TRANSISTOR 2SC1623
Q003 8-729-100-66 TRANSISTOR 2SC1623
Q005 8-729-900-53 TRANSISTOR DTC114EK
Q006 8-729-904-41 TRANSISTOR FMY3
Q007 8-729-904-44 TRANSISTOR FMY4
Q008 8-729-904-41 TRANSISTOR FMY3
Q009 8-729-904-44 TRANSISTOR FMY4
Q010 8-729-904-41 TRANSISTOR FMY3
Q011 8-729-904-44 TRANSISTOR FMY4
Q014 8-729-901-01 TRANSISTOR DTC144EK
Q901 8-729-901-00 TRANSISTOR DTC124EK

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

Ref.No	Part No.	Description	Remark		
Q902	8-729-901-05	TRANSISTOR DTA124EK			
<u>RESISTOR</u>					
R001	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R002	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R003	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R004	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R005	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R006	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R007	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R008	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R009	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R010	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R011	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R012	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R013	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R014	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R015	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R016	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R017	1-216-037-00	METAL GLAZE	330	5%	1/10W
R018	1-216-037-00	METAL GLAZE	330	5%	1/10W
R019	1-216-037-00	METAL GLAZE	330	5%	1/10W
R020	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R021	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R022	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R023	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R024	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R025	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R026	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R027	1-216-027-00	METAL GLAZE	120	5%	1/10W
R028	1-216-045-00	METAL GLAZE	680	5%	1/10W
R029	1-216-295-00	METAL GLAZE	0	5%	1/10W
R031	1-216-042-00	METAL GLAZE	510	5%	1/10W
R032	1-216-003-11	METAL GLAZE	12	5%	1/10W
R033	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R034	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R035	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R036	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R037	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R038	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R041	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R042	1-216-295-00	METAL GLAZE	0	5%	1/10W
R043	1-216-033-00	METAL GLAZE	220	5%	1/10W
R045	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R046	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R049	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R050	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R052	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R053	1-216-090-00	METAL GLAZE	51K	5%	1/10W
R054	1-216-031-00	METAL GLAZE	180	5%	1/10W
R056	1-216-031-00	METAL GLAZE	180	5%	1/10W
R057	1-216-033-00	METAL GLAZE	220	5%	1/10W
R061	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R062	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R064	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R065	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R066	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R067	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R068	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R069	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R070	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R071	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R072	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R073	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R074	1-216-683-11	METAL CHIP	22K	0.50%	1/10W

Ref.No	Part No.	Description	Remark		
R075	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R076	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R080	1-216-294-00	METAL GLAZE	10M	5%	1/8W
R501	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R502	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R503	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R504	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R505	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R506	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R507	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R801	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R802	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R803	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R804	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R805	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R806	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R807	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R808	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R809	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R810	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R811	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R901	1-216-049-00	METAL GLAZE	1K	5%	1/10W
<u>VARIABLE RESISTOR</u>					
RV001	1-241-118-11	RES, VAR, CARBON 20K			
RV002	1-241-117-11	RES, VAR, CARBON 10K			
RV003	1-238-091-11	RES, ADJ CERMET 22K			
RV005	1-238-092-11	RES, ADJ CERMET 47K			
RV006	1-238-091-11	RES, ADJ CERMET 22K			
RV009	1-241-006-11	RES, VAR, CARBON 50K			
RV010	1-238-092-11	RES, ADJ CERMET 47K			
RV601	1-241-029-11	RES, VAR, CARBON 2K/2K			
<u>SWITCH</u>					
SW601	1-570-386-21	SWITCH, SLIDE (DBB)			
<u>CRYSTAL</u>					
X001	1-579-041-11	VIBRATOR, CRYSTAL			

* A-7062-315-A AU-53 BOARD, COMPLETE (Ref. No. 7000 series)					

<u>CAPACITOR</u>					
C104	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C105	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C106	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C107	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C108	1-135-145-11	TANTAL CHIP	0.47MF	20%	35V
C109	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C110	1-164-173-11	CERAMIC CHIP	0.0039MF	10%	50V
C111	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C112	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C113	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C114	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C115	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C117	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C118	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C122	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C123	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C124	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C125	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C126	1-162-963-11	CERAMIC CHIP	680PF	10%	50V

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

AU-53

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
C127	1-164-174-11	CERAMIC CHIP	0.0082MF	10%	25V	C240	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C128	1-135-177-21	TANTAL CHIP	1MF	20%	20V	C242	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C129	1-128-004-11	ELECT CHIP	10MF	20%	16V	C243	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C130	1-128-004-11	ELECT CHIP	10MF	20%	16V	C244	1-163-024-00	CERAMIC CHIP	0.018MF	10%	50V
C131	1-128-003-11	ELECT CHIP	22MF	20%	4V	C245	1-164-172-11	CERAMIC CHIP	0.0056MF	5%	25V
C134	1-126-207-11	ELECT CHIP	33MF	20%	4V	C263	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C135	1-164-634-11	CERAMIC CHIP	1MF		16V	C264	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C136	1-163-038-00	CERAMIC CHIP	0.1MF		25V	C265	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C137	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C269	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C138	1-164-634-11	CERAMIC CHIP	1MF		16V	C270	1-128-003-11	ELECT CHIP	22MF	20%	4V
C139	1-126-207-11	ELECT CHIP	33MF	20%	4V	C271	1-128-003-11	ELECT CHIP	22MF	20%	4V
C140	1-163-024-00	CERAMIC CHIP	0.018MF	10%	50V	C275	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C142	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	C276	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C143	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V	C277	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C144	1-164-172-11	CERAMIC CHIP	0.0056MF	5%	25V	C278	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C145	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V	C281	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C163	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	C309	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C164	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V	C310	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C165	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V	C315	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C166	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C316	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C167	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C317	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C168	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V	C318	1-135-170-21	TANTAL CHIP	6.8MF	20%	4V
C169	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C319	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C170	1-128-003-11	ELECT CHIP	22MF	20%	4V	C326	1-164-634-11	CERAMIC CHIP	1MF		16V
C171	1-128-003-11	ELECT CHIP	22MF	20%	4V	C401	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C172	1-164-156-11	CERAMIC CHIP	0.1MF		25V	C402	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C173	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C403	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C174	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C404	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C175	1-164-361-11	CERAMIC CHIP	0.047MF		16V	C405	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C176	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C406	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C179	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C407	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C180	1-162-928-11	CERAMIC CHIP	120PF	5%	50V	C408	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C181	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V	C411	1-128-003-11	ELECT CHIP	22MF	20%	4V
C182	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C413	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C183	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C414	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C204	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C415	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C205	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C416	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C206	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C417	1-135-162-21	TANTAL CHIP	33MF	20%	6.3V
C207	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C418	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C208	1-135-145-11	TANTAL CHIP	0.47MF	20%	35V	C420	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C209	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V	C421	1-126-207-11	ELECT CHIP	33MF	20%	4V
C210	1-164-173-11	CERAMIC CHIP	0.0039MF	10%	50V	C424	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C211	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	C425	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C212	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V	C426	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C213	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	C427	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C214	1-164-156-11	CERAMIC CHIP	0.1MF		25V	C428	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C215	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C429	1-164-634-11	CERAMIC CHIP	1MF		16V
C217	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C431	1-135-161-21	TANTAL CHIP	22MF	20%	10V
C218	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V	C432	1-135-145-11	TANTAL CHIP	0.47MF	20%	35V
C222	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V	C433	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C223	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C434	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C224	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V	C435	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C225	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	C436	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C226	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C437	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C227	1-164-174-11	CERAMIC CHIP	0.0082MF	10%	25V	C438	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C228	1-135-177-21	TANTAL CHIP	1MF	20%	20V	C440	1-164-634-11	CERAMIC CHIP	1MF		16V
C229	1-128-004-11	ELECT CHIP	10MF	20%	16V	C441	1-164-634-11	CERAMIC CHIP	1MF		16V
C230	1-128-004-11	ELECT CHIP	10MF	20%	16V	C442	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C231	1-128-003-11	ELECT CHIP	22MF	20%	4V	C443	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C234	1-126-207-11	ELECT CHIP	33MF	20%	4V	C444	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C235	1-164-634-11	CERAMIC CHIP	1MF		16V	C450	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C236	1-163-038-00	CERAMIC CHIP	0.1MF		25V	C455	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C237	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C456	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C238	1-164-634-11	CERAMIC CHIP	1MF		16V	C457	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C239	1-126-207-11	ELECT CHIP	33MF	20%	4V	C458	1-162-916-11	CERAMIC CHIP	12PF	5%	50V

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

Ref.No	Part No.	Description	Remark
C459	1-164-005-11	CERAMIC CHIP 0.47MF	25V
<u>CONNECTOR</u>			
CN101	1-569-635-41	CONNECTOR, BOARD TO BOARD 20P	
CN102	1-569-636-41	CONNECTOR, BOARD TO BOARD 22P	
<u>DIODE</u>			
D401	8-719-941-09	DIODE DAP202U	
D402	8-719-941-86	DIODE DAN202U	
<u>FILTER</u>			
FL101	1-236-831-11	FILTER, BAND PASS	
FL102	1-236-832-11	FILTER, BAND PASS	
<u>IC</u>			
IC101	8-752-053-04	IC CXA1537R	
IC103	8-759-009-07	IC MC14053BF	
IC104	8-759-030-16	IC MC34182M	
IC105	8-759-009-07	IC MC14053BF	
IC106	8-759-030-16	IC MC34182M	
IC107	8-759-009-06	IC MC14052BF	
IC108	8-759-030-16	IC MC34182M	
IC109	8-759-030-16	IC MC34182M	
IC110	8-759-234-77	IC TC4S66F	
IC111	8-759-234-77	IC TC4S66F	
IC112	8-759-991-27	IC BA3570F	
IC113	8-752-334-42	IC CXD2106Q	
IC114	8-759-209-15	IC TC4SU69F	
IC115	8-759-209-15	IC TC4SU69F	
IC116	8-759-209-15	IC TC4SU69F	
IC201	8-752-053-04	IC CXA1537R	
<u>COIL</u>			
L101	1-412-066-21	INDUCTOR CHIP 220UH	
L201	1-412-066-21	INDUCTOR CHIP 220UH	
L401	1-412-031-11	INDUCTOR CHIP 47UH	
<u>TRANSISTOR</u>			
Q101	8-729-905-35	TRANSISTOR 2SC4081R	
Q106	8-729-905-35	TRANSISTOR 2SC4081R	
Q107	8-729-905-35	TRANSISTOR 2SC4081R	
Q108	8-729-905-35	TRANSISTOR 2SC4081R	
Q109	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-35	TRANSISTOR 2SC4081R	
Q112	8-729-905-35	TRANSISTOR 2SC4081R	
Q140	8-729-905-18	TRANSISTOR DTC144EU	
Q141	8-729-905-18	TRANSISTOR DTC144EU	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q205	8-729-905-12	TRANSISTOR DTA144EU	
Q208	8-729-905-35	TRANSISTOR 2SC4081R	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q240	8-729-905-18	TRANSISTOR DTC144EU	
Q241	8-729-905-18	TRANSISTOR DTC144EU	
Q308	8-729-905-23	TRANSISTOR 2SA1576R	
Q309	8-729-905-18	TRANSISTOR DTC144EU	
Q310	8-729-905-35	TRANSISTOR 2SC4081R	
Q311	8-729-905-35	TRANSISTOR 2SC4081R	
Q313	8-729-903-10	TRANSISTOR FMW	
Q314	8-729-905-35	TRANSISTOR 2SC4081R	
Q315	8-729-905-23	TRANSISTOR 2SA1576R	
Q401	8-729-905-35	TRANSISTOR 2SC4081R	
Q402	8-729-905-35	TRANSISTOR 2SC4081R	
Q403	8-729-905-23	TRANSISTOR 2SA1576R	
Q404	8-729-905-35	TRANSISTOR 2SC4081R	

Ref.No	Part No.	Description	Remark
Q405	8-729-920-XX	TRANSISTOR DTA114EU	
Q406	8-729-920-XX	TRANSISTOR DTA114EU	
Q407	8-729-905-18	TRANSISTOR DTC144EU	
Q408	8-729-905-35	TRANSISTOR 2SC4081R	
Q409	8-729-905-35	TRANSISTOR 2SC4081R	
Q410	8-729-905-18	TRANSISTOR DTC144EU	
Q411	8-729-905-35	TRANSISTOR 2SC4081R	
Q412	8-729-905-23	TRANSISTOR 2SA1576R	
Q413	8-729-920-XX	TRANSISTOR DTA114EU	
<u>RESISTOR</u>			
R101	1-216-864-11	METAL GLAZE	0 5% 1/16W
R105	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R106	1-216-840-11	METAL GLAZE	39K 5% 1/16W
R107	1-216-864-11	METAL GLAZE	0 5% 1/16W
R108	1-216-864-11	METAL GLAZE	0 5% 1/16W
R109	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R110	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R111	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R112	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R113	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R114	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R115	1-216-850-11	METAL GLAZE	270K 5% 1/16W
R116	1-216-820-11	METAL GLAZE	820 5% 1/16W
R117	1-216-820-11	METAL GLAZE	820 5% 1/16W
R127	1-216-864-11	METAL GLAZE	0 5% 1/16W
R128	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R129	1-216-840-11	METAL GLAZE	39K 5% 1/16W
R130	1-216-851-11	METAL GLAZE	330K 5% 1/16W
R133	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R135	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R139	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R140	1-216-815-11	METAL GLAZE	330 5% 1/16W
R141	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R142	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R143	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R144	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R145	1-216-819-11	METAL GLAZE	680 5% 1/16W
R146	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R147	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R148	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R149	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R150	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R151	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R152	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R153	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R154	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R155	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R156	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R157	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R158	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R159	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R160	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R161	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R162	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R163	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R164	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R165	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R166	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R167	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R168	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R169	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R170	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R171	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R172	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R173	1-216-845-11	METAL GLAZE	100K 5% 1/16W

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

AU-53

Ref.No	Part No.	Description	Remark
R174	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R175	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R176	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R177	1-216-811-11	METAL GLAZE	150 5% 1/16W
R178	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R179	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R182	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R183	1-216-864-11	METAL GLAZE	0 5% 1/16W
R184	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R185	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R186	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R188	1-216-824-11	METAL GLAZE	1.8K 5% 1/16W
R189	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R190	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R191	1-216-820-11	METAL GLAZE	820 5% 1/16W
R192	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R193	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R199	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R201	1-216-864-11	METAL GLAZE	0 5% 1/16W
R205	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R206	1-216-840-11	METAL GLAZE	39K 5% 1/16W
R207	1-216-864-11	METAL GLAZE	0 5% 1/16W
R210	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R211	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R212	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R213	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R214	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R215	1-216-850-11	METAL GLAZE	270K 5% 1/16W
R216	1-216-819-11	METAL GLAZE	680 5% 1/16W
R217	1-216-819-11	METAL GLAZE	680 5% 1/16W
R227	1-216-864-11	METAL GLAZE	0 5% 1/16W
R228	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R229	1-216-840-11	METAL GLAZE	39K 5% 1/16W
R230	1-216-851-11	METAL GLAZE	330K 5% 1/16W
R233	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R235	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R236	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R239	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R240	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R241	1-216-815-11	METAL GLAZE	330 5% 1/16W
R242	1-216-813-11	METAL GLAZE	220 5% 1/16W
R243	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R244	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R245	1-216-819-11	METAL GLAZE	680 5% 1/16W
R246	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R247	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R248	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R249	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R250	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R251	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R252	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R253	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R254	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R254	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R255	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R257	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R258	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R259	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R260	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R261	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R262	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R269	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R270	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R271	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R272	1-216-834-11	METAL GLAZE	12K 5% 1/16W

Ref.No	Part No.	Description	Remark
R273	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R274	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R275	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R276	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R277	1-216-811-11	METAL GLAZE	150 5% 1/16W
R278	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R279	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R280	1-216-864-11	METAL GLAZE	0 5% 1/16W
R281	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R284	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R293	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R314	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R315	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R316	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R318	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R319	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R323	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R324	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R325	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R327	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R328	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R329	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R330	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R330	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R331	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R332	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R333	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R334	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R335	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R401	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R402	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R403	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R404	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R405	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R407	1-216-849-11	METAL GLAZE	220K 5% 1/16W
R408	1-216-847-11	METAL GLAZE	150K 5% 1/16W
R409	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R410	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R411	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R412	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R413	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R414	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R415	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R421	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R422	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R423	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R424	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R425	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R426	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R427	1-216-864-11	METAL GLAZE	0 5% 1/16W
R428	1-216-864-11	METAL GLAZE	0 5% 1/16W
R429	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R430	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R431	1-216-819-11	METAL GLAZE	680 5% 1/16W
R432	1-216-819-11	METAL GLAZE	680 5% 1/16W
R433	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R434	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R435	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R436	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R437	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R438	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R440	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R441	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R442	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R443	1-216-823-11	METAL GLAZE	1.5K 5% 1/16W

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

Ref.No	Part No.	Description	Remark
R444	1-216-816-11	METAL GLAZE 390 5%	1/16W
R445	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R446	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R447	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R450	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R451	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R453	1-216-857-11	METAL GLAZE 1M 5%	1/16W
R456	1-216-804-11	METAL GLAZE 39 5%	1/16W
R457	1-216-804-11	METAL GLAZE 39 5%	1/16W
R458	1-216-841-11	METAL GLAZE 47K 5%	1/16W
R459	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R460	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R461	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R462	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R463	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R464	1-216-817-11	METAL GLAZE 470 5%	1/16W
R465	1-216-842-11	METAL GLAZE 56K 5%	1/16W
R466	1-216-847-11	METAL GLAZE 150K 5%	1/16W
R467	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R468	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W

VARIABLE RESISTOR

RV101	1-238-091-11	RES, ADJ CERMET 22K
RV102	1-238-090-11	RES, ADJ CERMET 10K
RV201	1-238-092-11	RES, ADJ CERMET 47K
RV202	1-238-090-11	RES, ADJ CERMET 10K
RV203	1-238-091-11	RES, ADJ CERMET 22K
RV204	1-238-089-11	RES, ADJ CERMET 4.7K
RV401	1-238-093-11	RES, ADJ CERMET 100K
RV402	1-238-093-11	RES, ADJ CERMET 100K

CRYSTAL

X101	1-579-050-11	VIBRATOR, CRYSTAL
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A-7062-316-A SV-38 BOARD, COMPLETE (Ref. No. 5000 series)

- 1-634-993-11 FP-270 FLEXIBLE BOARD
- 3-744-169-01 COVER, CS JACK
- 3-744-175-01 COVER, IO JACK
- *3-746-902-01 CASE (LID), SHIELD, SDD
- *3-746-903-01 CASE (LID), SHIELD, INDEX

CAPACITOR

C101	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C102	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C103	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C104	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C105	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C106	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C107	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C108	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C109	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C110	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C111	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C112	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C113	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C114	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C115	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C116	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C117	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C118	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C119	1-162-945-11	CERAMIC CHIP 22PF 5%	50V

Ref.No	Part No.	Description	Remark
C120	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C121	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C122	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C123	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C124	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C125	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C126	1-135-159-21	TANTAL CHIP 10MF 20%	20V
C127	1-126-206-11	ELECT CHIP 100MF 20%	6.3V
C128	1-164-633-11	CERAMIC CHIP 0.1MF 10%	25V
C131	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C132	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C134	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C135	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C136	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C138	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C139	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C140	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C141	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C142	1-164-633-11	CERAMIC CHIP 0.1MF 10%	25V
C143	1-164-633-11	CERAMIC CHIP 0.1MF 10%	25V
C144	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C145	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C146	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C201	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C202	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C203	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C204	1-164-633-11	CERAMIC CHIP 0.1MF 10%	25V
C206	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C208	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C209	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C210	1-135-157-21	TANTAL CHIP 10MF 20%	6.3V
C211	1-162-964-11	CERAMIC CHIP 0.001MF 10%	50V
C212	1-164-633-11	CERAMIC CHIP 0.1MF 10%	25V
C213	1-162-969-11	CERAMIC CHIP 0.0068MF 10%	25V
C214	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C215	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C216	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C217	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C218	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C219	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C220	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C221	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C222	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C223	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C224	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C225	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C226	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C228	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C229	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C230	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C231	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C232	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C233	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C234	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C235	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C236	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C237	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C238	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C239	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C240	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C241	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C242	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C243	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C244	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C245	1-162-945-11	CERAMIC CHIP 22PF 5%	50V

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

SV-38

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
C246	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C427	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C247	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C428	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C248	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C429	1-135-216-11	TANTAL CHIP	10MF	20%	10V
C249	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C430	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C250	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C431	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C251	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C432	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C252	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C433	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C253	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C434	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C254	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C435	1-135-159-21	TANTAL CHIP	10MF	20%	20V
C255	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C436	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C256	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C437	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C257	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C438	1-136-718-11	TANTAL CHIP	0.1MF	5%	25V
C258	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C439	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C259	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C440	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C260	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C441	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C261	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C442	1-164-634-11	CERAMIC CHIP	1MF		16V
C262	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C443	1-135-159-21	TANTAL CHIP	10MF	20%	20V
C263	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C444	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C265	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C445	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C266	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C446	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C267	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C447	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C268	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C448	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C269	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C449	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C270	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V	C450	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C271	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C451	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C272	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C453	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C302	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V	C454	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C305	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C455	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C308	1-162-956-11	CERAMIC CHIP	180PF	5%	50V	C456	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C309	1-162-947-11	CERAMIC CHIP	33PF	5%	50V	C457	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V
C310	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C458	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C311	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C460	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C312	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C461	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C313	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V	C499	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C315	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V	C601	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C317	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V	C602	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C319	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C603	1-135-177-21	TANTAL CHIP	1MF	20%	20V
C320	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V	C604	1-124-779-00	ELECT CHIP	10MF	20%	16V
C321	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V	C605	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C401	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C606	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C402	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C607	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C403	1-127-489-11	ELECT(SOLID)	10MF	20%	10V	C608	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C404	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C609	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C405	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C610	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C406	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C611	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C407	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	C612	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C408	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C613	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C409	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V	C614	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C410	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C615	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C411	1-164-361-11	CERAMIC CHIP	0.047MF		16V	C616	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C412	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C617	1-135-177-21	TANTAL CHIP	1MF	20%	20V
C413	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V	C618	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C414	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V	C619	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C415	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	C620	1-126-607-11	ELECT CHIP	47MF	20%	4V
C416	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V	C621	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C417	1-164-361-11	CERAMIC CHIP	0.047MF		16V	C622	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C418	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	C623	1-135-201-11	TANTAL CHIP	10MF	20%	4V
C419	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C624	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C420	1-127-491-00	ELECT(SOLID)	22MF	20%	10V	C625	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C421	1-164-360-11	CERAMIC CHIP	0.1MF		16V	C626	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C422	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C627	1-135-201-11	TANTAL CHIP	10MF	20%	4V
C423	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C628	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C424	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C629	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C425	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C630	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C426	1-127-558-11	ELECT(SOLID)	10MF	20%	10V	C631	1-126-607-11	ELECT CHIP	47MF	20%	4V

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

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
C632	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C723	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C633	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C724	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C634	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C725	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C635	1-164-005-11	CERAMIC CHIP	0.47MF		25V	C726	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C636	1-162-952-11	CERAMIC CHIP	82PF	5%	50V	C727	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C637	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C728	1-135-146-21	TANTAL CHIP	0.68MF	20%	25V
C638	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C729	1-135-177-21	TANTAL CHIP	1MF	20%	20V
C639	1-162-954-11	CERAMIC CHIP	120PF	5%	50V	C731	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C640	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C732	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C641	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C733	1-162-936-11	CERAMIC CHIP	5PF	0.25PF	50V
C642	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C749	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C643	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C750	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C644	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C801	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C645	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V	C804	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C646	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C805	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C647	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C806	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C648	1-126-607-11	ELECT CHIP	47MF	20%	4V	C807	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C649	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	C809	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C650	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	C810	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C651	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C813	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C652	1-162-950-11	CERAMIC CHIP	56PF	5%	50V	C819	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C653	1-162-944-11	CERAMIC CHIP	18PF	5%	50V	C820	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C655	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	C821	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C656	1-162-950-11	CERAMIC CHIP	56PF	5%	50V	C823	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C657	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C824	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C658	1-162-944-11	CERAMIC CHIP	18PF	5%	50V	C825	1-164-145-11	CERAMIC CHIP	390PF	5%	50V
C659	1-164-005-11	CERAMIC CHIP	0.47MF		25V	C826	1-164-634-11	CERAMIC CHIP	1MF		16V
C660	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C827	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C663	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C828	1-124-779-00	ELECT CHIP	10MF	20%	16V
C664	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	C829	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C665	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C831	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C666	1-164-361-11	CERAMIC CHIP	0.047MF		16V	C832	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C667	1-164-005-11	CERAMIC CHIP	0.47MF		25V	C833	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C668	1-135-177-21	TANTAL CHIP	1MF	20%	20V	C834	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C669	1-126-246-11	ELECT CHIP	220MF	20%	4V	C836	1-163-128-00	CERAMIC CHIP	300PF	5%	50V
C670	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C837	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C671	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C838	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C672	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C839	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C673	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V	C840	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C674	1-135-146-21	TANTAL CHIP	0.68MF	20%	25V	C841	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C676	1-135-201-11	TANTAL CHIP	10MF	20%	4V	C842	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C677	1-126-607-11	ELECT CHIP	47MF	20%	4V	C843	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C679	1-164-005-11	CERAMIC CHIP	0.47MF		25V	C844	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C701	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C845	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C702	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C846	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C703	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C847	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C704	1-162-954-11	CERAMIC CHIP	120PF	5%	50V	C850	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C705	1-162-952-11	CERAMIC CHIP	82PF	5%	50V	C851	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C706	1-162-951-11	CERAMIC CHIP	68PF	5%	50V	C852	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C707	1-162-950-11	CERAMIC CHIP	56PF	5%	50V	C854	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C708	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V	C855	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C709	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	C856	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C710	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C859	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C711	1-162-955-11	CERAMIC CHIP	150PF	5%	50V	C863	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C712	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	C901	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C713	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C905	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C714	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C906	1-135-156-21	TANTAL CHIP	6.8MF	20%	10V
C715	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C907	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C716	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V	C908	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C717	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C909	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C718	1-126-607-11	ELECT CHIP	47MF	20%	4V	C911	1-164-634-11	CERAMIC CHIP	1MF		16V
C719	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	C912	1-164-634-11	CERAMIC CHIP	1MF		16V
C720	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C913	1-164-634-11	CERAMIC CHIP	1MF		16V
C721	1-162-974-11	CERAMIC CHIP	0.01MF		50V	C921	1-164-634-11	CERAMIC CHIP	1MF		16V
C722	1-135-177-21	TANTAL CHIP	1MF	20%	20V	C922	1-164-634-11	CERAMIC CHIP	1MF		16V

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

Ref.No	Part No.	Description	Remark
C923	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
C924	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
C925	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C926	1-162-968-11	CERAMIC CHIP	0.0047MF 10% 50V
C927	1-164-634-11	CERAMIC CHIP	1MF 16V
C928	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C930	1-162-926-11	CERAMIC CHIP	82PF 5% 50V
C931	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V
C932	1-162-923-11	CERAMIC CHIP	47PF 5% 50V
C933	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C934	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C935	1-135-181-21	TANTAL CHIP	4.7MF 20% 6.3V
C936	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C937	1-135-181-21	TANTAL CHIP	4.7MF 20% 6.3V
C938	1-162-974-11	CERAMIC CHIP	0.01MF 50V
C939	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C940	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C941	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C942	1-164-227-11	CERAMIC CHIP	0.022MF 10% 25V
C943	1-162-964-11	CERAMIC CHIP	0.001MF 10% 50V
C948	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C949	1-164-360-11	CERAMIC CHIP	0.1MF 16V
C950	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C952	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C953	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C954	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C955	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C956	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C958	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C959	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C960	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C962	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C971	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C972	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C973	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C974	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C977	1-162-945-11	CERAMIC CHIP	22PF 5% 50V
C978	1-164-634-11	CERAMIC CHIP	1MF 16V
C979	1-164-360-11	CERAMIC CHIP	0.1MF 16V

CERAMIC FILTER

CF701 1-567-306-11 FILTER, CERAMIC

CONNECTOR

CN001	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN002	1-569-030-11	CONNECTOR, FPC (ZIF) 21P
CN003	1-569-481-11	CONNECTOR, FPC 30P
CN004	1-569-633-61	CONNECTOR, BOARD TO BOARD 26P
CN005	1-569-631-41	CONNECTOR, BOARD TO BOARD 20P
CN006	1-569-632-41	CONNECTOR, BOARD TO BOARD 22P
CN007	1-566-532-11	CONNECTOR, FPC (ZIF) 16P
CN008	1-569-363-21	CONNECTOR, FPC 15P
CN009	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN601	*1-566-095-11	PIN, BOARD TO BOARD 6P
CN701	1-566-528-21	CONNECTOR, FPC (ZIF) 12P
CN801	1-566-534-21	CONNECTOR, FPC (ZIF) 18P

VARIABLE CAPACITOR

CV101 1-141-331-11 CAP, VAR, TRIMMER (CHIP)

DIODE

D101	8-719-938-72	DIODE SB01-05CP
D103	8-719-105-52	DIODE RD3.6M-B2
D104	8-719-105-XX	DIODE RD6.2M-B1
D107	8-719-941-09	DIODE DAP202U

Ref.No	Part No.	Description	Remark
D108	8-719-404-40	DIODE MA121	
D199	8-719-404-40	DIODE MA121	
D199	8-719-911-19	DIODE 1SS119	
D201	8-719-941-86	DIODE DAN202U	
D202	8-719-404-40	DIODE MA121	
D203	8-719-404-40	DIODE MA121	
D204	8-719-941-09	DIODE DAP202U	
D205	8-719-941-09	DIODE DAP202U	
D301	8-719-941-86	DIODE DAN202U	
D401	8-719-938-78	DIODE SB10-05PCP	
D402	8-719-941-09	DIODE DAP202U	
D403	8-719-938-75	DIODE SB05-05CP	
D404	8-719-938-75	DIODE SB05-05CP	
D601	8-719-404-40	DIODE MA121	
D602	8-719-404-40	DIODE MA121	
D802	8-719-800-76	DIODE 1SS226	
D901	8-719-106-44	DIODE RD9.1M-B2	
D902	8-719-106-44	DIODE RD9.1M-B2	
D921	8-719-941-86	DIODE DAN202U	
D922	8-719-941-09	DIODE DAP202U	
D924	8-719-941-09	DIODE DAP202U	
D925	8-719-941-09	DIODE DAP202U	

FERRITE BEAD RING

FB101	1-543-256-11	BEAD, FERRITE	
FB102	1-412-390-21	INDUCTOR CHIP 0UH	
FB201	1-543-256-11	BEAD, FERRITE	
FB202	1-543-256-11	BEAD, FERRITE	
FB203	1-412-390-21	INDUCTOR CHIP 0UH	
FB204	1-412-390-21	INDUCTOR CHIP 0UH	
FB205	1-543-256-11	BEAD, FERRITE	
FB921	1-412-390-21	INDUCTOR CHIP 0UH	
FB925	1-412-390-21	INDUCTOR CHIP 0UH	
FB926	1-412-390-21	INDUCTOR CHIP 0UH	

FILTER

FL601	1-236-757-21	FILTER, LOW PASS (C)
FL603	1-236-751-21	FILTER, LOW PASS
FL701	1-236-575-11	B.P.F (PAL-M)
FL702	1-236-146-11	FILTER, BAND PASS
FL801	1-409-475-21	FILTER, TRAP

IC

IC101	8-752-816-99	IC CXP50116-088Q
IC102	8-759-990-78	IC S-81350AG-REG
IC103	8-759-940-33	IC S-8052ALO-LG-S
IC104	8-759-946-03	IC S-8054ALR-LN-S
IC105	8-759-720-23	IC AK93C57F-E1
IC106	8-759-009-22	IC MC14094BF
IC107	8-759-209-15	IC TC4SU69F
IC108	8-759-209-97	IC TC4S81F
IC109	8-759-209-97	IC TC4S81F
IC201	8-759-234-77	IC TC4S66F
IC202	8-759-234-77	IC TC4S66F
IC204	8-759-998-98	IC LM358DR
IC206	8-752-816-17	IC CXP80116-682Q
IC301	1-808-841-11	ATF HIC
IC302	8-759-100-97	IC UPC339G2
IC401	8-759-945-17	IC MB3775PF
IC402	8-759-998-94	IC LM311DR-E1
IC403	8-759-990-55	IC CXA8006M-E1
IC404	8-759-805-06	IC CXA1127M
IC405	8-759-107-68	IC CX20115A
IC601	8-752-036-19	IC CXA1207R
IC602	8-752-033-40	IC CXA1201Q
IC701	8-752-036-20	IC CXA1208R
IC802	8-759-012-00	IC MC10H116M

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

Ref.No	Part No.	Description	Remark
IC803	8-759-998-32	IC CXD-2107M	
IC901	8-759-701-02	IC NJM2073M	
IC921	8-759-990-94	IC MB606199	
IC922	8-752-010-20	IC CX20102	
IC923	8-759-231-32	IC TC7S00F	
IC924	8-759-231-32	IC TC7S00F	
<u>JACK</u>			
J101	1-563-282-11	JACK, SMALL TYPE	
J701	1-569-639-11	JACK, PIN 3P	
<u>COIL</u>			
L102	1-410-993-11	INDUCTOR CHIP 1UH	
L103	1-410-993-11	INDUCTOR CHIP 1UH	
L104	1-410-993-11	INDUCTOR CHIP 1UH	
L105	1-410-993-11	INDUCTOR CHIP 1UH	
L106	1-410-993-11	INDUCTOR CHIP 1UH	
L107	1-410-993-11	INDUCTOR CHIP 1UH	
L201	1-408-789-21	INDUCTOR CHIP 100UH	
L203	1-410-993-11	INDUCTOR CHIP 1UH	
L204	1-410-993-11	INDUCTOR CHIP 1UH	
L205	1-410-993-11	INDUCTOR CHIP 1UH	
L206	1-410-993-11	INDUCTOR CHIP 1UH	
L207	1-410-993-11	INDUCTOR CHIP 1UH	
L208	1-410-993-11	INDUCTOR CHIP 1UH	
L209	1-410-993-11	INDUCTOR CHIP 1UH	
L210	1-410-993-11	INDUCTOR CHIP 1UH	
L211	1-410-993-11	INDUCTOR CHIP 1UH	
L212	1-410-993-11	INDUCTOR CHIP 1UH	
L401	1-424-104-11	COIL, CHOKE 10UH	
L402	1-410-337-11	INDUCTOR 1UH	
L403	1-424-104-11	COIL, CHOKE 10UH	
L404	1-424-104-11	COIL, CHOKE 10UH	
L405	1-424-106-11	COIL, CHOKE 47UH	
L406	1-424-104-11	COIL, CHOKE 10UH	
L407	1-424-106-11	COIL, CHOKE 47UH	
L408	1-424-105-11	COIL, CHOKE 22UH	
L409	1-408-789-21	INDUCTOR CHIP 100UH	
L601	1-412-032-11	INDUCTOR CHIP 100UH	
L602	1-410-388-21	INDUCTOR CHIP 39UH	
L603	1-410-390-11	INDUCTOR CHIP 56UH	
L604	1-410-393-11	INDUCTOR CHIP 100UH	
L605	1-410-379-31	INDUCTOR CHIP 6.8UH	
L606	1-410-390-11	INDUCTOR CHIP 56UH	
L607	1-410-393-11	INDUCTOR CHIP 100UH	
L608	1-412-029-11	INDUCTOR CHIP 10UH	
L609	1-412-029-11	INDUCTOR CHIP 10UH	
L610	1-412-032-11	INDUCTOR CHIP 100UH	
L611	1-412-032-11	INDUCTOR CHIP 100UH	
L701	1-410-393-11	INDUCTOR CHIP 100UH	
L702	1-410-393-11	INDUCTOR CHIP 100UH	
L703	1-410-656-11	INDUCTOR CHIP 150UH	
L704	1-410-655-31	INDUCTOR CHIP 120UH	
L705	1-410-393-11	INDUCTOR CHIP 100UH	
L706	1-410-385-11	INDUCTOR CHIP 22UH	
L707	1-410-385-11	INDUCTOR CHIP 22UH	
L708	1-410-377-31	INDUCTOR CHIP 4.7UH	
L801	1-410-167-41	INDUCTOR CHIP 820UH	
L802	1-410-657-21	INDUCTOR CHIP 180UH	
L803	1-412-032-11	INDUCTOR CHIP 100UH	
L804	1-412-032-11	INDUCTOR CHIP 100UH	
L805	1-410-379-31	INDUCTOR CHIP 6.8UH	
L806	1-410-378-11	INDUCTOR CHIP 5.6UH	
L808	1-410-386-11	INDUCTOR CHIP 27UH	
L809	1-410-380-31	INDUCTOR CHIP 8.2UH	

Ref.No	Part No.	Description	Remark
L811	1-410-380-31	INDUCTOR CHIP 8.2UH	
L813	1-410-393-11	INDUCTOR CHIP 100UH	
L814	1-410-383-31	INDUCTOR CHIP 15UH	
L817	1-410-658-31	INDUCTOR CHIP 220UH	
L818	1-410-656-11	INDUCTOR CHIP 150UH	
L819	1-412-280-31	INDUCTOR 330UH	
L820	1-412-029-11	INDUCTOR CHIP 10UH	
L821	1-410-375-11	INDUCTOR CHIP 3.3UH	
L901	1-412-032-11	INDUCTOR CHIP 100UH	
L902	1-412-031-11	INDUCTOR CHIP 47UH	
L922	1-412-058-11	INDUCTOR CHIP 10UH	
L923	1-412-058-11	INDUCTOR CHIP 10UH	
<u>IC LINK</u>			
PS201	△.1-532-605-00	LINK, IC (ICP-N10)	
<u>TRANSISTOR</u>			
Q101	8-729-905-18	TRANSISTOR DTC144EU	
Q102	8-729-905-35	TRANSISTOR 2SC4081R	
Q103	8-729-220-93	TRANSISTOR 2SK209G	
Q104	8-729-905-18	TRANSISTOR DTC144EU	
Q105	8-729-905-35	TRANSISTOR 2SC4081R	
Q106	8-729-905-23	TRANSISTOR 2SA1576R	
Q107	△.8-729-220-93	TRANSISTOR 2SK209G	
Q108	△.8-729-220-93	TRANSISTOR 2SK209G	
Q109	8-729-905-12	TRANSISTOR DTA144EU	
Q110	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-22	TRANSISTOR 2SA1576Q	
Q112	8-729-905-22	TRANSISTOR 2SA1576Q	
Q113	8-729-921-08	TRANSISTOR DTC144TU	
Q114	8-729-403-24	TRANSISTOR XN4210	
Q115	8-729-921-08	TRANSISTOR DTC144TU	
Q116	8-729-403-24	TRANSISTOR XN4210	
Q117	8-729-907-00	TRANSISTOR DTC114EU	
Q118	8-729-920-59	TRANSISTOR IMX2	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q202	8-729-905-35	TRANSISTOR 2SC4081R	
Q203	8-729-921-08	TRANSISTOR DTC144TU	
Q204	8-729-902-96	TRANSISTOR FMS1	
Q205	8-729-903-82	TRANSISTOR FMW2	
Q206	8-729-907-00	TRANSISTOR DTC114EU	
Q207	8-729-905-35	TRANSISTOR 2SC4081R	
Q208	8-729-820-46	TRANSISTOR 2SB1202FAS	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q210	8-729-403-24	TRANSISTOR XN4210	
Q212	8-729-905-12	TRANSISTOR DTA144EU	
Q213	8-729-905-18	TRANSISTOR DTC144EU	
Q214	8-729-905-18	TRANSISTOR DTC144EU	
Q215	8-729-905-18	TRANSISTOR DTC144EU	
Q216	8-729-905-35	TRANSISTOR 2SC4081R	
Q301	8-729-905-23	TRANSISTOR 2SA1576R	
Q302	8-729-905-35	TRANSISTOR 2SC4081R	
Q303	8-729-905-23	TRANSISTOR 2SA1576R	
Q304	8-729-905-35	TRANSISTOR 2SC4081R	
Q305	8-729-905-18	TRANSISTOR DTC144EU	
Q306	8-729-905-18	TRANSISTOR DTC144EU	
Q401	8-729-905-35	TRANSISTOR 2SC4081R	
Q402	8-729-901-04	TRANSISTOR DTA114EK	
Q403	8-729-905-35	TRANSISTOR 2SC4081R	
Q404	△.8-729-805-25	TRANSISTOR 2SB1121	
Q405	8-729-905-35	TRANSISTOR 2SC4081R	
Q406	8-729-905-61	TRANSISTOR DTC124EU	
Q407	8-729-905-35	TRANSISTOR 2SC4081R	
Q408	△.8-729-805-25	TRANSISTOR 2SB1121	
Q409	△.8-729-805-25	TRANSISTOR 2SB1121	

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

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

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

Ref.No	Part No.	Description	Remark
Q410	△.8-729-805-25	TRANSISTOR 2SB1121	
Q411	△.8-729-805-25	TRANSISTOR 2SB1121	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-907-00	TRANSISTOR DTC114EU	
Q415	8-729-905-18	TRANSISTOR DTC144EU	
Q416	8-729-905-12	TRANSISTOR DTA144EU	
Q418	△.8-729-162-44	TRANSISTOR 2SB624-V4	
Q419	8-729-907-00	TRANSISTOR DTC114EU	
Q420	8-729-907-00	TRANSISTOR DTC114EU	
Q601	8-729-905-23	TRANSISTOR 2SA1576R	
Q602	8-729-905-35	TRANSISTOR 2SC4081R	
Q603	8-729-905-35	TRANSISTOR 2SC4081R	
Q604	8-729-905-12	TRANSISTOR DTA144EU	
Q605	8-729-905-18	TRANSISTOR DTC144EU	
Q606	8-729-905-35	TRANSISTOR 2SC4081R	
Q607	8-729-905-12	TRANSISTOR DTA144EU	
Q608	8-729-905-18	TRANSISTOR DTC144EU	
Q609	8-729-905-23	TRANSISTOR 2SA1576R	
Q610	8-729-905-35	TRANSISTOR 2SC4081R	
Q611	8-729-905-23	TRANSISTOR 2SA1576R	
Q612	8-729-905-35	TRANSISTOR 2SC4081R	
Q613	8-729-905-35	TRANSISTOR 2SC4081R	
Q614	8-729-905-35	TRANSISTOR 2SC4081R	
Q615	8-729-905-35	TRANSISTOR 2SC4081R	
Q616	8-729-905-23	TRANSISTOR 2SA1576R	
Q617	8-729-905-35	TRANSISTOR 2SC4081R	
Q618	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q619	8-729-905-18	TRANSISTOR DTC144EU	
Q620	8-729-907-00	TRANSISTOR DTC114EU	
Q625	8-729-905-12	TRANSISTOR DTA144EU	
Q626	8-729-905-18	TRANSISTOR DTC144EU	
Q627	8-729-905-23	TRANSISTOR 2SA1576R	
Q628	8-729-920-48	TRANSISTOR IMH2	
Q629	8-729-905-35	TRANSISTOR 2SC4081R	
Q631	8-729-905-12	TRANSISTOR DTA144EU	
Q632	8-729-905-18	TRANSISTOR DTC144EU	
Q701	8-729-905-35	TRANSISTOR 2SC4081R	
Q702	8-729-905-23	TRANSISTOR 2SA1576R	
Q703	8-729-905-35	TRANSISTOR 2SC4081R	
Q704	8-729-905-18	TRANSISTOR DTC144EU	
Q705	8-729-905-18	TRANSISTOR DTC144EU	
Q706	8-729-905-35	TRANSISTOR 2SC4081R	
Q707	8-729-905-18	TRANSISTOR DTC144EU	
Q801	8-729-905-18	TRANSISTOR DTC144EU	
Q802	8-729-905-35	TRANSISTOR 2SC4081R	
Q803	8-729-905-35	TRANSISTOR 2SC4081R	
Q804	8-729-905-35	TRANSISTOR 2SC4081R	
Q806	8-729-905-35	TRANSISTOR 2SC4081R	
Q807	8-729-905-35	TRANSISTOR 2SC4081R	
Q808	8-729-905-35	TRANSISTOR 2SC4081R	
Q810	8-729-905-35	TRANSISTOR 2SC4081R	
Q811	8-729-905-35	TRANSISTOR 2SC4081R	
Q813	8-729-905-18	TRANSISTOR DTC144EU	
Q814	8-729-905-23	TRANSISTOR 2SA1576R	
Q815	8-729-905-35	TRANSISTOR 2SC4081R	
Q817	8-729-905-18	TRANSISTOR DTC144EU	
Q818	△.8-729-822-51	TRANSISTOR 2SK1469	
Q819	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q820	8-729-905-18	TRANSISTOR DTC144EU	
Q821	8-729-202-38	TRANSISTOR 2SC3326N	
Q822	8-729-905-35	TRANSISTOR 2SC4081R	
Q823	8-729-905-23	TRANSISTOR 2SA1576R	
Q824	8-729-905-35	TRANSISTOR 2SC4081R	
Q825	8-729-905-23	TRANSISTOR 2SA1576R	
Q826	8-729-905-35	TRANSISTOR 2SC4081R	

Ref.No	Part No.	Description	Remark
Q827	8-729-905-35	TRANSISTOR 2SC4081R	
Q828	8-729-202-38	TRANSISTOR 2SC3326N	
Q829	8-729-905-35	TRANSISTOR 2SC4081R	
Q830	8-729-905-35	TRANSISTOR 2SC4081R	
Q831	8-729-920-48	TRANSISTOR IMH2	
Q833	8-729-905-35	TRANSISTOR 2SC4081R	
Q834	8-729-905-18	TRANSISTOR DTC144EU	
Q835	8-729-905-18	TRANSISTOR DTC144EU	
Q901	8-729-905-35	TRANSISTOR 2SC4081R	
Q902	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q911	8-729-905-35	TRANSISTOR 2SC4081R	
Q912	8-729-905-35	TRANSISTOR 2SC4081R	
Q921	8-729-905-18	TRANSISTOR DTC144EU	
Q922	8-729-905-35	TRANSISTOR 2SC4081R	
Q923	8-729-905-35	TRANSISTOR 2SC4081R	
Q927	8-729-905-61	TRANSISTOR DTC124EU	
Q928	8-729-924-36	TRANSISTOR DTC143EU	
Q929	8-729-905-15	TRANSISTOR DTC144WU	
Q930	8-729-905-23	TRANSISTOR 2SA1576R	
Q931	8-729-905-35	TRANSISTOR 2SC4081R	
Q932	8-729-907-00	TRANSISTOR DTC114EU	
<u>RESISTOR</u>			
R101	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R102	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R103	1-216-851-11	METAL GLAZE 330K	5% 1/16W
R104	1-216-842-11	METAL GLAZE 56K	5% 1/16W
R105	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R106	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R107	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R108	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R109	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R110	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R112	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R113	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R114	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R115	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R118	1-216-842-11	METAL GLAZE 56K	5% 1/16W
R127	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R129	1-216-815-11	METAL GLAZE 330	5% 1/16W
R130	1-216-861-11	METAL GLAZE 2.2M	5% 1/16W
R131	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R132	1-216-861-11	METAL GLAZE 2.2M	5% 1/16W
R133	1-216-861-11	METAL GLAZE 2.2M	5% 1/16W
R135	1-216-839-11	METAL GLAZE 33K	5% 1/16W
R136	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R137	1-216-843-11	METAL GLAZE 68K	5% 1/16W
R138	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R139	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R140	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R141	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R144	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R145	1-216-849-11	METAL GLAZE 220K	5% 1/16W
R146	1-216-822-11	METAL GLAZE 1.2K	5% 1/16W
R147	1-216-025-00	METAL GLAZE 100	5% 1/10W
R155	1-216-849-11	METAL GLAZE 220K	5% 1/16W
R156	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R157	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R158	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R159	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R160	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R161	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R162	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R163	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R164	1-216-834-11	METAL GLAZE 12K	5% 1/16W

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

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

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

Ref.No	Part No.	Description	Remark
R165	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R166	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R167	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R168	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R169	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R170	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R171	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R172	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R173	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R174	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R175	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R179	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R181	1-216-864-11	METAL GLAZE 0	5% 1/16W
R182	1-216-864-11	METAL GLAZE 0	5% 1/16W
R184	1-216-864-11	METAL GLAZE 0	5% 1/16W
R186	1-216-864-11	METAL GLAZE 0	5% 1/16W
R188	1-216-864-11	METAL GLAZE 0	5% 1/16W
R190	1-216-864-11	METAL GLAZE 0	5% 1/16W
R191	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R194	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R195	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R201	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R202	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R203	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R204	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R205	1-216-838-11	METAL GLAZE 27K	5% 1/16W
R206	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R207	1-216-851-11	METAL GLAZE 330K	5% 1/16W
R208	1-216-832-11	METAL GLAZE 8.2K	5% 1/16W
R209	1-216-838-11	METAL GLAZE 27K	5% 1/16W
R210	1-216-843-11	METAL GLAZE 68K	5% 1/16W
R211	1-216-843-11	METAL GLAZE 68K	5% 1/16W
R212	1-216-828-11	METAL GLAZE 3.9K	5% 1/16W
R213	1-216-192-00	METAL GLAZE 560	5% 1/8W
R214	1-216-172-00	METAL GLAZE 82	5% 1/8W
R215	1-216-835-11	METAL GLAZE 15K	5% 1/16W
R216	1-216-828-11	METAL GLAZE 3.9K	5% 1/16W
R217	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R218	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R219	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R220	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R221	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R222	1-216-853-11	METAL GLAZE 470K	5% 1/16W
R223	1-216-853-11	METAL GLAZE 470K	5% 1/16W
R224	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R225	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R226	1-216-830-11	METAL GLAZE 5.6K	5% 1/16W
R227	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R228	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R229	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R230	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R231	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R232	1-216-842-11	METAL GLAZE 56K	5% 1/16W
R233	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R234	1-216-842-11	METAL GLAZE 56K	5% 1/16W
R235	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R236	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R237	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R238	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R239	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R241	1-216-336-11	METAL GLAZE 47K	1% 1/10W
R242	1-216-336-11	METAL GLAZE 47K	1% 1/10W
R250	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R251	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R252	1-216-833-11	METAL GLAZE 10K	5% 1/16W

Ref.No	Part No.	Description	Remark
R253	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R262	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R264	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R265	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R267	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R268	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R269	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R270	1-216-194-00	METAL GLAZE 680	5% 1/8W
R271	1-216-194-00	METAL GLAZE 680	5% 1/8W
R272	1-216-194-00	METAL GLAZE 680	5% 1/8W
R273	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R274	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R275	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R276	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R277	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R279	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R280	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R281	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R282	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R285	1-216-864-11	METAL GLAZE 0	5% 1/16W
R299	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R301	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R302	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R303	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R304	1-216-864-11	METAL GLAZE 0	5% 1/16W
R305	1-216-854-11	METAL GLAZE 560K	5% 1/16W
R306	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R307	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R308	1-216-864-11	METAL GLAZE 0	5% 1/16W
R312	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R313	1-216-847-11	METAL GLAZE 150K	5% 1/16W
R314	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R316	1-216-839-11	METAL GLAZE 33K	5% 1/16W
R317	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R318	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R319	1-216-809-11	METAL GLAZE 100	5% 1/16W
R320	1-216-811-11	METAL GLAZE 150	5% 1/16W
R321	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R322	1-216-838-11	METAL GLAZE 27K	5% 1/16W
R323	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R325	1-216-826-11	METAL GLAZE 2.7K	5% 1/16W
R326	1-216-824-11	METAL GLAZE 1.8K	5% 1/16W
R327	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R328	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R329	1-216-826-11	METAL GLAZE 2.7K	5% 1/16W
R330	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R331	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R332	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R342	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R343	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R401	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R402	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R403	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R404	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R405	1-216-828-11	METAL GLAZE 3.9K	5% 1/16W
R407	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R408	1-216-836-11	METAL GLAZE 18K	5% 1/16W
R409	1-216-033-00	METAL GLAZE 220	5% 1/10W
R410	1-216-033-00	METAL GLAZE 220	5% 1/10W
R411	1-216-045-00	METAL GLAZE 680	5% 1/10W
R412	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R413	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R414	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R415	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R416	1-216-045-00	METAL GLAZE 680	5% 1/10W

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

SV-38

Ref.No	Part No.	Description	Remark
R417	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R418	1-216-824-11	METAL GLAZE	1.8K 5% 1/16W
R419	1-216-045-00	METAL GLAZE	680 5% 1/10W
R420	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R421	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R422	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R423	1-216-823-11	METAL GLAZE	1.5K 5% 1/16W
R424	1-216-823-11	METAL GLAZE	1.5K 5% 1/16W
R425	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R426	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R427	1-216-824-11	METAL GLAZE	1.8K 5% 1/16W
R428	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R429	1-216-843-11	METAL GLAZE	68K 5% 1/16W
R430	1-216-823-11	METAL GLAZE	1.5K 5% 1/16W
R431	1-216-789-11	METAL GLAZE	2.2 5% 1/16W
R432	1-216-789-11	METAL GLAZE	2.2 5% 1/16W
R433	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R434	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R435	1-216-789-11	METAL GLAZE	2.2 5% 1/16W
R436	1-216-815-11	METAL GLAZE	330 5% 1/16W
R437	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R438	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R439	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R440	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R441	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R443	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R444	1-216-848-11	METAL GLAZE	180K 5% 1/16W
R445	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R446	1-216-848-11	METAL GLAZE	180K 5% 1/16W
R447	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R448	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R451	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R452	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R453	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R454	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R455	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R456	1-216-801-11	METAL GLAZE	22 5% 1/16W
R460	1-217-671-11	METAL GLAZE	1 5% 1/10W
R461	1-217-671-11	METAL GLAZE	1 5% 1/10W
R462	1-217-671-11	METAL GLAZE	1 5% 1/10W
R463	1-217-671-11	METAL GLAZE	1 5% 1/10W
R464	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R466	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R467	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R468	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R469	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R470	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R471	1-216-864-11	METAL GLAZE	0 5% 1/16W
R601	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R602	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R603	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R604	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R605	1-216-859-11	METAL GLAZE	1.5M 5% 1/16W
R606	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R607	1-216-855-11	METAL GLAZE	680K 5% 1/16W
R608	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R609	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R610	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R611	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R612	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R613	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R614	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R615	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W
R616	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W
R617	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W

Ref.No	Part No.	Description	Remark
R618	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W
R619	1-216-015-00	METAL GLAZE	39 5% 1/10W
R620	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R625	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R626	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R627	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R628	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R629	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R630	1-216-817-11	METAL GLAZE	470 5% 1/16W
R631	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R632	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R633	1-216-013-00	METAL GLAZE	33 5% 1/10W
R634	1-216-304-11	METAL GLAZE	3.3 5% 1/10W
R635	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R636	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R637	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R638	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R639	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R640	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R641	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R642	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R643	1-216-699-11	METAL CHIP	100K 0.50% 1/10W
R645	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R646	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W
R647	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R648	1-216-819-11	METAL GLAZE	680 5% 1/16W
R649	1-216-819-11	METAL GLAZE	680 5% 1/16W
R650	1-216-816-11	METAL GLAZE	390 5% 1/16W
R651	1-216-817-11	METAL GLAZE	470 5% 1/16W
R652	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R653	1-216-815-11	METAL GLAZE	330 5% 1/16W
R654	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R655	1-216-817-11	METAL GLAZE	470 5% 1/16W
R656	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R657	1-216-811-11	METAL GLAZE	150 5% 1/16W
R658	1-216-813-11	METAL GLAZE	220 5% 1/16W
R659	1-216-815-11	METAL GLAZE	330 5% 1/16W
R661	1-216-801-11	METAL GLAZE	22 5% 1/16W
R662	1-216-820-11	METAL GLAZE	820 5% 1/16W
R663	1-216-819-11	METAL GLAZE	680 5% 1/16W
R664	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R665	1-216-817-11	METAL GLAZE	470 5% 1/16W
R668	1-216-809-11	METAL GLAZE	100 5% 1/16W
R669	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R670	1-216-809-11	METAL GLAZE	100 5% 1/16W
R671	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R672	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R673	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R674	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R675	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R676	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R679	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R684	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R685	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R686	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R687	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R688	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R689	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R690	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R691	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R692	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R694	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R695	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R698	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R699	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W

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

Ref.No	Part No.	Description	Remark
R701	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R702	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R704	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R705	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R707	1-216-818-11	METAL GLAZE 560	5% 1/16W
R708	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R709	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R710	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R711	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R712	1-216-822-11	METAL GLAZE 1.2K	5% 1/16W
R714	1-216-822-11	METAL GLAZE 1.2K	5% 1/16W
R715	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R717	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R718	1-216-828-11	METAL GLAZE 3.9K	5% 1/16W
R719	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R720	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R721	1-216-832-11	METAL GLAZE 8.2K	5% 1/16W
R723	1-216-830-11	METAL GLAZE 5.6K	5% 1/16W
R724	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R725	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R726	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R727	1-216-817-11	METAL GLAZE 470	5% 1/16W
R728	1-216-864-11	METAL GLAZE 0	5% 1/16W
R730	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R753	1-216-823-11	METAL GLAZE 1.5K	5% 1/16W
R754	1-216-864-11	METAL GLAZE 0	5% 1/16W
R755	1-216-809-11	METAL GLAZE 100	5% 1/16W
R801	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R804	1-216-811-11	METAL GLAZE 150	5% 1/16W
R805	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R806	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R807	1-216-816-11	METAL GLAZE 390	5% 1/16W
R808	1-216-818-11	METAL GLAZE 560	5% 1/16W
R809	1-216-823-11	METAL GLAZE 1.5K	5% 1/16W
R810	1-216-819-11	METAL GLAZE 680	5% 1/16W
R811	1-216-835-11	METAL GLAZE 15K	5% 1/16W
R812	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R813	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R814	1-216-811-11	METAL GLAZE 150	5% 1/16W
R815	1-216-813-11	METAL GLAZE 220	5% 1/16W
R816	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R817	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R818	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R819	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R820	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R821	1-216-811-11	METAL GLAZE 150	5% 1/16W
R822	1-216-823-11	METAL GLAZE 1.5K	5% 1/16W
R823	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R824	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R825	1-216-835-11	METAL GLAZE 15K	5% 1/16W
R826	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R827	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R829	1-216-813-11	METAL GLAZE 220	5% 1/16W
R830	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R831	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R832	1-216-844-11	METAL GLAZE 82K	5% 1/16W
R833	1-216-022-00	METAL GLAZE 75	5% 1/10W
R834	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R835	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R836	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R837	1-216-849-11	METAL GLAZE 220K	5% 1/16W
R838	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R839	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R840	1-216-817-11	METAL GLAZE 470	5% 1/16W
R841	1-216-817-11	METAL GLAZE 470	5% 1/16W

Ref.No	Part No.	Description	Remark
R842	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R843	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R844	1-216-820-11	METAL GLAZE 820	5% 1/16W
R845	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R846	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R847	1-216-817-11	METAL GLAZE 470	5% 1/16W
R849	1-216-839-11	METAL GLAZE 33K	5% 1/16W
R850	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R851	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R852	1-216-809-11	METAL GLAZE 100	5% 1/16W
R855	1-216-813-11	METAL GLAZE 220	5% 1/16W
R856	1-216-817-11	METAL GLAZE 470	5% 1/16W
R857	1-216-817-11	METAL GLAZE 470	5% 1/16W
R860	1-216-813-11	METAL GLAZE 220	5% 1/16W
R861	1-216-818-11	METAL GLAZE 560	5% 1/16W
R862	1-216-819-11	METAL GLAZE 680	5% 1/16W
R863	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R864	1-216-831-11	METAL GLAZE 6.8K	5% 1/16W
R865	1-216-832-11	METAL GLAZE 8.2K	5% 1/16W
R867	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R868	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R869	1-216-817-11	METAL GLAZE 470	5% 1/16W
R870	1-216-816-11	METAL GLAZE 390	5% 1/16W
R873	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R875	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R876	1-216-817-11	METAL GLAZE 470	5% 1/16W
R877	1-216-817-11	METAL GLAZE 470	5% 1/16W
R878	1-216-812-11	METAL GLAZE 180	5% 1/16W
R879	1-216-818-11	METAL GLAZE 560	5% 1/16W
R880	1-216-817-11	METAL GLAZE 470	5% 1/16W
R882	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R885	1-216-817-11	METAL GLAZE 470	5% 1/16W
R886	1-216-817-11	METAL GLAZE 470	5% 1/16W
R889	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R890	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R891	1-216-864-11	METAL GLAZE 0	5% 1/16W
R892	1-216-837-11	METAL GLAZE 22K	5% 1/16W
R893	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R894	1-216-811-11	METAL GLAZE 150	5% 1/16W
R895	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R901	1-216-789-11	METAL GLAZE 2.2	5% 1/16W
R902	1-216-789-11	METAL GLAZE 2.2	5% 1/16W
R906	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R907	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R908	1-216-815-11	METAL GLAZE 330	5% 1/16W
R909	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R911	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R912	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R913	1-216-861-11	METAL GLAZE 2.2M	5% 1/16W
R914	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R915	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R916	1-216-849-11	METAL GLAZE 220K	5% 1/16W
R921	1-216-857-11	METAL GLAZE 1M	5% 1/16W
R923	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R924	1-216-832-11	METAL GLAZE 8.2K	5% 1/16W
R925	1-218-270-11	METAL GLAZE 1.1K	5% 1/16W
R926	1-216-822-11	METAL GLAZE 1.2K	5% 1/16W
R927	1-216-645-11	METAL CHIP 560	0.50% 1/10W
R928	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R932	1-216-834-11	METAL GLAZE 12K	5% 1/16W
R933	1-216-816-11	METAL GLAZE 390	5% 1/16W
R935	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R936	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R937	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R938	1-216-821-11	METAL GLAZE 1K	5% 1/16W

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

Ref.No	Part No.	Description	Remark
R939	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R940	1-216-001-00	METAL GLAZE 10	5% 1/10W
R941	1-216-819-11	METAL GLAZE 680	5% 1/16W
R942	1-216-814-11	METAL GLAZE 270	5% 1/16W
R944	1-216-819-11	METAL GLAZE 680	5% 1/16W
R946	1-216-827-11	METAL GLAZE 3.3K	5% 1/16W
R948	1-216-825-11	METAL GLAZE 2.2K	5% 1/16W
R950	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R952	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R953	1-216-819-11	METAL GLAZE 680	5% 1/16W
R954	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R955	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R956	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R958	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R959	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R961	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R963	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R965	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R968	1-216-829-11	METAL GLAZE 4.7K	5% 1/16W
R969	1-216-833-11	METAL GLAZE 10K	5% 1/16W
R970	1-216-816-11	METAL GLAZE 390	5% 1/16W
R971	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R972	1-216-845-11	METAL GLAZE 100K	5% 1/16W
R974	1-216-841-11	METAL GLAZE 47K	5% 1/16W
R978	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R979	1-216-821-11	METAL GLAZE 1K	5% 1/16W
R986	1-216-835-11	METAL GLAZE 15K	5% 1/16W

NETWORK

RB101	1-236-412-11	NETWORK, RES 1.0K
RB102	1-236-433-11	NETWORK, RES 56K
RB103	1-236-433-11	NETWORK, RES 56K
RB104	1-236-424-11	NETWORK, RES 10K
RB105	1-236-424-11	NETWORK, RES 10K
RB106	1-236-424-11	NETWORK, RES 10K
RB107	1-236-424-11	NETWORK, RES 10K
RB108	1-236-424-11	NETWORK, RES 10K
RB109	1-236-424-11	NETWORK, RES 10K
RB110	1-236-424-11	NETWORK, RES 10K
RB111	1-236-412-11	NETWORK, RES 1.0K
RB112	1-236-424-11	NETWORK, RES 10K
RB113	1-236-424-11	NETWORK, RES 10K
RB115	1-236-412-11	NETWORK, RES 1.0K
RB116	1-236-412-11	NETWORK, RES 1.0K
RB117	1-236-412-11	NETWORK, RES 1.0K
RB118	1-236-412-11	NETWORK, RES 1.0K
RB119	1-236-412-11	NETWORK, RES 1.0K
RB120	1-236-412-11	NETWORK, RES 1.0K
RB121	1-236-412-11	NETWORK, RES 1.0K
RB122	1-236-424-11	NETWORK, RES 10K
RB123	1-236-424-11	NETWORK, RES 10K
RB130	1-236-424-11	NETWORK, RES 10K
RB131	1-236-424-11	NETWORK, RES 10K
RB132	1-236-436-11	NETWORK, RES 100K
RB201	1-236-412-11	NETWORK, RES 1.0K
RB202	1-236-412-11	NETWORK, RES 1.0K
RB203	1-236-412-11	NETWORK, RES 1.0K
RB204	1-236-412-11	NETWORK, RES 1.0K
RB205	1-236-412-11	NETWORK, RES 1.0K
RB206	1-236-412-11	NETWORK, RES 1.0K
RB207	1-236-412-11	NETWORK, RES 1.0K
RB208	1-236-412-11	NETWORK, RES 1.0K
RB209	1-236-412-11	NETWORK, RES 1.0K
RB210	1-236-412-11	NETWORK, RES 1.0K
RB211	1-236-412-11	NETWORK, RES 1.0K

Ref.No	Part No.	Description	Remark
RB212	1-236-412-11	NETWORK, RES 1.0K	
RB213	1-236-412-11	NETWORK, RES 1.0K	
RB214	1-236-424-11	NETWORK, RES 10K	
RB215	1-236-424-11	NETWORK, RES 10K	
RB216	1-236-424-11	NETWORK, RES 10K	
RB217	1-236-424-11	NETWORK, RES 10K	
RB218	1-236-424-11	NETWORK, RES 10K	
RB219	1-236-424-11	NETWORK, RES 10K	
RB220	1-236-424-11	NETWORK, RES 10K	
RB221	1-236-424-11	NETWORK, RES 10K	
RB222	1-236-424-11	NETWORK, RES 10K	
RB223	1-236-412-11	NETWORK, RES 1.0K	
RB224	1-236-424-11	NETWORK, RES 10K	
RB225	1-236-412-11	NETWORK, RES 1.0K	
RB227	1-236-412-11	NETWORK, RES 1.0K	
RB801	1-236-412-11	NETWORK, RES 1.0K	
RB802	1-236-412-11	NETWORK, RES 1.0K	
RB803	1-236-412-11	NETWORK, RES 1.0K	
RB804	1-236-412-11	NETWORK, RES 1.0K	
RB921	1-236-412-11	NETWORK, RES 1.0K	
RB922	1-236-412-11	NETWORK, RES 1.0K	
RB923	1-236-412-11	NETWORK, RES 1.0K	
RB924	1-236-424-11	NETWORK, RES 10K	
RB925	1-236-412-11	NETWORK, RES 1.0K	
RB926	1-236-412-11	NETWORK, RES 1.0K	
RB927	1-236-420-11	NETWORK, RES 4.7K	
RB929	1-236-412-11	NETWORK, RES 1.0K	
RB930	1-236-412-11	NETWORK, RES 1.0K	

VARIABLE RESISTOR

RV301	1-238-090-11	RES, ADJ CERMET 10K
RV401	1-238-087-11	RES, ADJ CERMET 1K
RV402	1-238-089-11	RES, ADJ CERMET 4.7K
RV601	1-238-092-11	RES, ADJ CERMET 47K
RV602	1-238-089-11	RES, ADJ CERMET 4.7K
RV603	1-238-088-11	RES, ADJ, CERMET 2.2K
RV604	1-238-091-11	RES, ADJ CERMET 22K
RV605	1-238-088-11	RES, ADJ, CERMET 2.2K
RV606	1-238-086-11	RES, ADJ CERMET 470
RV607	1-238-088-11	RES, ADJ, CERMET 2.2K
RV608	1-238-092-11	RES, ADJ CERMET 47K
RV609	1-238-087-11	RES, ADJ CERMET 1K
RV701	1-238-087-11	RES, ADJ CERMET 1K
RV802	1-238-087-11	RES, ADJ CERMET 1K
RV923	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K

THERMISTOR

TH301	1-800-200-00	THERMISTOR
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CRYSTAL

X101	1-527-997-21	VIBRATOR, CRYSTAL
X102	1-577-118-11	VIBRATOR, LITHIUM NIOBATE
X201	1-577-349-21	VIBRATOR, CRYSTAL
X701	1-577-080-11	VIBRATOR, CRYSTAL
X921	1-577-290-21	VIBRATOR, CRYSTAL

A-7061-935-A CC-32 BOARD, COMPLETE (Ref. No. 5000 series)

CAPACITOR

C001	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C003	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C004	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C005	1-162-946-11	CERAMIC CHIP	27PF	5%	50V

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

Ref.No	Part No.	Description	Remark		
C006	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C007	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C008	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C009	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C010	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C011	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C013	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C015	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C016	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C017	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C018	1-162-946-11	CERAMIC CHIP	27PF	5%	50V

IC

IC001	8-752-329-49	IC CXL5502M-2			
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COIL

L001	1-410-988-11	INDUCTOR CHIP	0.39UH		
L002	1-410-988-11	INDUCTOR CHIP	0.39UH		
L003	1-412-031-11	INDUCTOR CHIP	47UH		
L004	1-410-988-11	INDUCTOR CHIP	0.39UH		
L005	1-410-988-11	INDUCTOR CHIP	0.39UH		
L008	1-412-031-11	INDUCTOR CHIP	47UH		
L009	1-410-988-11	INDUCTOR CHIP	0.39UH		
L010	1-410-988-11	INDUCTOR CHIP	0.39UH		

RESISTOR

R001	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R002	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W
R003	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R004	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R005	1-216-864-11	METAL GLAZE	0	5%	1/16W
R007	1-216-864-11	METAL GLAZE	0	5%	1/16W

*A-7062-317-A TU-123 BOARD, COMPLETE (Ref. No. 6000 series) *****

- 3-744-166-01 HOLDER, ANTENNA
- 3-746-907-01 LID, TDD SHIELD CASE
- 3-746-908-01 LID, REAR, TDD SHIELD CASE
- 3-746-915-01 LID, REAR, TU SHIELD CASE
- 3-741-147-01 CAP, PS SHIELD

CAPACITOR

C001	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C002	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C004	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C005	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C006	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C007	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C008	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C009	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C010	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C011	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C012	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C015	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C019	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C020	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C022	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C023	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C024	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C025	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C026	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C027	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V

Ref.No	Part No.	Description	Remark		
C029	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C030	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C031	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C032	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C033	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C034	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C035	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C038	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C039	1-163-163-00	CERAMIC CHIP	18PF	5%	50V
C041	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C042	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C044	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C045	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C046	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C048	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C049	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C055	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C056	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C057	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C058	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C059	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C060	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C061	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C070	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C071	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C072	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C073	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C074	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C075	1-136-707-11	FILM CHIP	0.012MF	5%	25
C076	1-136-703-11	FILM CHIP	0.0056MF	5%	25V
C078	1-135-202-21	TANTAL CHIP	22MF	20%	4V
C079	1-136-699-11	FILM CHIP	0.0027MF	5%	25V
C080	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C081	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C082	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C083	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C084	1-135-177-21	TANTAL CHIP	1MF	20%	25V
C085	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C086	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C088	1-164-634-11	CERAMIC CHIP	1MF		16V
C089	1-164-634-11	CERAMIC CHIP	1MF		16V
C090	1-135-177-21	TANTAL CHIP	1MF	20%	25V
C091	1-135-177-21	TANTAL CHIP	1MF	20%	25V
C110	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C111	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C112	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C113	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C114	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C115	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C501	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C502	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C503	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C504	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C505	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C506	1-126-204-11	ELECT CHIP	47MF	20%	16V
C507	1-135-156-21	TANTAL CHIP	6.8MF	20%	10V
C508	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C509	1-124-779-00	ELECT CHIP	10MF	20%	16V
C510	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C511	1-126-200-11	ELECT CHIP	10MF	20%	35V
C512	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C513	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C514	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C515	1-135-156-21	TANTAL CHIP	6.8MF	20%	10V
C516	1-163-038-00	CERAMIC CHIP	0.1MF		25V

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

Ref.No	Part No.	Description	Remark
C517	1-135-153-21	TANTAL CHIP	2.2MF 20% 25V
C518	1-163-038-00	CERAMIC CHIP	0.1MF 25V
C520	1-126-602-11	ELECT CHIP	3.3MF 20% 50V
C521	1-163-036-00	CERAMIC CHIP	0.068MF 50V
C522	1-135-155-21	TANTAL CHIP	4.7MF 20% 16V
C524	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C525	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C526	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C527	1-163-037-11	CERAMIC CHIP	0.022MF 10% 25V

CERAMIC FILTER

CF001	1-409-332-00	CERAMIC TRAP (4.5MHZ)
CF002	1-577-610-11	DISCRIMINATOR, CERAMIC
CF003	1-577-559-11	FILTER, CERAMIC

CONNECTOR

CN001	1-569-634-11	CONNECTOR, BOARD TO BOARD 30P
CN002	1-566-523-11	CONNECTOR, FPC (ZIF) 7P
CN003	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P

DIODE

D001	8-719-400-18	DIODE MA152WK
D501	8-719-400-18	DIODE MA152WK
D502	8-719-400-18	DIODE MA152WK
D503	8-719-400-18	DIODE MA152WK
D504	8-719-400-18	DIODE MA152WK
D601	8-719-106-44	DIODE RD9.1M-B2

FERRITE BEAD RING

FB501	1-412-390-21	INDUCTOR CHIP 0UH
FB502	1-412-390-21	INDUCTOR CHIP 0UH

IC

IC001	8-759-634-94	IC M52018FP
IC002	8-759-634-94	IC M52018FP
IC003	8-752-035-70	IC CXA1124AQ
IC004	8-759-030-05	IC LM393ML
IC501	8-759-979-50	IC FA7610N
IC502	8-759-157-40	IC UPC574J

ISOLATION

IU001	1-466-330-11	AMPLIFIER, ISOLATION (RA-1)
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JACK

J001	1-507-921-00	JACK
J601	1-563-282-21	JACK, SMALL TYPE
J602	1-563-282-21	JACK, SMALL TYPE

COIL

L002	1-412-168-11	INDUCTOR	0.33UH
L003	1-410-989-11	INDUCTOR CHIP	0.47UH
L004	1-412-029-11	INDUCTOR CHIP	10UH
L006	1-412-029-11	INDUCTOR CHIP	10UH
L009	1-410-383-31	INDUCTOR CHIP	15UH
L010	1-410-382-31	INDUCTOR CHIP	12UH
L013	1-410-998-31	INDUCTOR CHIP	2.7UH
L014	1-410-994-11	INDUCTOR CHIP	1.2UH
L015	1-412-029-11	INDUCTOR CHIP	10UH
L016	1-412-029-11	INDUCTOR CHIP	10UH
L017	1-412-031-11	INDUCTOR CHIP	47UH
L501	1-412-028-11	INDUCTOR CHIP	4.7UH
L502	1-412-028-11	INDUCTOR CHIP	4.7UH
L503	1-412-028-11	INDUCTOR CHIP	4.7UH
L505	1-412-030-11	INDUCTOR CHIP	22UH

Ref.No	Part No.	Description	Remark
<u>TRANSISTOR</u>			
Q001	8-729-230-99	TRANSISTOR 2SC2669	
Q003	8-729-901-47	TRANSISTOR DTA143EK	
Q004	8-729-901-47	TRANSISTOR DTA143EK	
Q005	8-729-901-47	TRANSISTOR DTA143EK	
Q006	8-729-100-66	TRANSISTOR 2SC1623	
Q009	8-729-100-66	TRANSISTOR 2SC1623	
Q010	8-729-216-22	TRANSISTOR 2SA1162	
Q012	8-729-100-66	TRANSISTOR 2SC1623	
Q015	8-729-100-66	TRANSISTOR 2SC1623	
Q020	8-729-901-01	TRANSISTOR DTC144EK	
Q104	8-729-100-66	TRANSISTOR 2SC1623	
Q105	8-729-601-58	TRANSISTOR 2SC3053	
Q501	8-729-421-15	TRANSISTOR 2SD1119-Q	
Q502	8-729-901-06	TRANSISTOR DTA144EK	
Q503	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

R002	1-216-295-00	METAL GLAZE	0	5%	1/10W
R003	1-216-295-00	METAL GLAZE	0	5%	1/10W
R006	1-216-021-00	METAL GLAZE	68	5%	1/10W
R007	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R008	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R009	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R010	1-216-019-00	METAL GLAZE	56	5%	1/10W
R015	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R016	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R017	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R018	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R022	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R023	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R024	1-216-295-00	METAL GLAZE	0	5%	1/10W
R025	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R026	1-216-025-00	METAL GLAZE	100	5%	1/10W
R027	1-216-037-00	METAL GLAZE	330	5%	1/10W
R028	1-216-037-00	METAL GLAZE	330	5%	1/10W
R029	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R030	1-216-025-00	METAL GLAZE	100	5%	1/10W
R032	1-216-025-00	METAL GLAZE	100	5%	1/10W
R033	1-216-027-00	METAL GLAZE	120	5%	1/10W
R036	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R038	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R039	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R040	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R041	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R042	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R045	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R046	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R047	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R048	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R049	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R052	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R053	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R054	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R055	1-216-033-00	METAL GLAZE	220	5%	1/10W
R056	1-216-045-00	METAL GLAZE	680	5%	1/10W
R057	1-216-037-00	METAL GLAZE	330	5%	1/10W
R058	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R059	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R074	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R075	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R076	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R077	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R078	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R079	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W

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

Ref.No	Part No.	Description	Remark
R080	1-216-690-11	METAL CHIP 43K	0.50% 1/10W
R082	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R083	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R084	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R085	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R086	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R087	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R088	1-216-045-00	METAL GLAZE 680	5% 1/10W
R089	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R092	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R093	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R102	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R103	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R104	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R105	1-216-109-00	METAL GLAZE 330K	5% 1/10W
R106	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R107	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R108	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R109	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R110	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R501	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R502	1-216-091-00	METAL GLAZE 56K	5% 1/10W
R503	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R504	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R505	1-216-117-00	METAL GLAZE 680K	5% 1/10W
R506	1-216-748-11	METAL GLAZE 39K	5% 1/10W
R507	1-216-103-00	METAL GLAZE 180K	5% 1/10W
R508	1-216-001-00	METAL GLAZE 10	5% 1/10W
R509	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R511	1-216-009-00	METAL GLAZE 22	5% 1/10W
R512	1-216-043-00	METAL GLAZE 560	5% 1/10W
R513	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R514	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R516	1-216-043-00	METAL GLAZE 560	5% 1/10W
R517	1-216-043-00	METAL GLAZE 560	5% 1/10W
R518	1-216-043-00	METAL GLAZE 560	5% 1/10W
R520	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W
R521	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R601	1-216-025-00	METAL GLAZE 100	5% 1/10W
R602	1-216-025-00	METAL GLAZE 100	5% 1/10W
R603	1-216-025-00	METAL GLAZE 100	5% 1/10W
R604	1-216-025-00	METAL GLAZE 100	5% 1/10W
<u>VARIABLE RESISTOR</u>			
RV001	1-238-089-11	RES, ADJ CERMET 4.7K	
RV003	1-238-090-11	RES, ADJ CERMET 10K	
RV004	1-238-090-11	RES, ADJ CERMET 10K	
RV005	1-238-089-11	RES, ADJ CERMET 4.7K	
RV006	1-238-092-11	RES, ADJ CERMET 47K	
RV007	1-238-091-11	RES, ADJ CERMET 22K	
RV501	1-238-087-11	RES, ADJ CERMET 1K	
<u>FILTER</u>			
SWF001	1-579-111-11	FILTER, SAW	
<u>COIL</u>			
T001	1-460-077-11	COIL	
T002	1-460-076-11	COIL	
T003	1-460-076-11	COIL	
T004	1-460-076-11	COIL	
<u>TRANSFORMER</u>			
T501	1-450-107-11	TRANSFORMER, DC-DC CONVERTER	

Ref.No	Part No.	Description	Remark
<u>TUNER</u>			
TU001	1-465-453-11	TUNER, ET (BT-KA301)	

*1-634-347-11	UC-6 BOARD, COMPLETE	(Ref. No. 8000 series)	*****
3-746-939-01	INSULATOR, UC		
<u>CONNECTOR</u>			
CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
CN003	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	

*1-634-345-11	CN-6 BOARD, COMPLETE	(Ref. No. 3000 series)	*****
<u>CONNECTOR</u>			
CN601	1-566-544-41	CONNECTOR, FPC (NON ZIF) 12P	
CN602	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
<u>DIODE</u>			
D602	8-719-106-43	DIODE RD9.1M-B1	
D603	8-719-106-43	DIODE RD9.1M-B1	
D604	8-719-106-43	DIODE RD9.1M-B1	
D605	8-719-106-43	DIODE RD9.1M-B1	
D606	8-719-106-43	DIODE RD9.1M-B1	
D608	8-719-105-91	DIODE RD5.6M-B2	
<u>JACK</u>			
J601	1-562-952-11	CONNECTOR 12P	

A-7071-210-A	DC-22 BOARD, COMPLETE	(Ref. No. 8000 series)	*****
1-575-823-11	CABLE, FLAT (1.0MM PITCH) 16P		
*3-744-170-01	HOLDER, DC		
3-746-959-01	SPACER, DC		
<u>FUSE</u>			
F701	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F702	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F703	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F704	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F705	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F706	△.1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
<u>JACK</u>			
J701	1-568-727-11	JACK, (DC IN)	
J702	1-537-241-11	TERMINAL BOARD (BATTERY)	

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

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

Ref.No	Part No.	Description	Remark
	*A-7071-211-A	KB-10 (A) BOARD, COMPLETE *****	(Ref. No. 8000 series)

*3-744-130-01 HOLDER (PC), LED

CONNECTOR

CN802 1-566-760-11 PIN, CONNECTOR (PC BOARD) 5P

DIODE

D801 8-719-970-40 DIODE GL-1EG11
 D803 8-719-918-65 DIODE GL-1PR102
 D804 8-719-918-65 DIODE GL-1PR102
 D805 8-719-918-65 DIODE GL-1PR102
 D808 8-719-951-22 DIODE IMN10

D809 8-719-951-22 DIODE IMN10
 D810 8-719-104-34 DIODE 1S2836

TRANSISTOR

Q801 8-729-403-24 TRANSISTOR XN4210
 Q802 8-729-403-24 TRANSISTOR XN4210
 Q803 8-729-403-24 TRANSISTOR XN4210
 Q804 8-729-920-48 TRANSISTOR IMH2

RESISTOR

R801 1-216-033-00 METAL GLAZE 220 5% 1/10W
 R803 1-216-037-00 METAL GLAZE 330 5% 1/10W
 R804 1-216-037-00 METAL GLAZE 330 5% 1/10W
 R805 1-216-037-00 METAL GLAZE 330 5% 1/10W
 R807 1-216-081-00 METAL GLAZE 22K 5% 1/10W

R808 1-216-077-00 METAL GLAZE 15K 5% 1/10W

SWITCH

S801 1-572-344-11 SWITCH, SLIDE (POWER)
 S802 1-572-078-11 SWITCH, TACTILE (CHANNEL -)
 S803 1-572-078-11 SWITCH, TACTILE (CHANNEL +)
 S805 1-571-102-11 SWITCH, SLIDE (EJECT)
 S806 1-572-078-11 SWITCH, TACTILE (REW)

S807 1-572-078-11 SWITCH, TACTILE (FF)
 S808 1-572-078-11 SWITCH, TACTILE (PLAY)
 S809 1-572-078-11 SWITCH, TACTILE (STOP)
 S810 1-572-078-11 SWITCH, TACTILE (PAUSE)
 S811 1-571-102-11 SWITCH, SLIDE (REC)

S812 1-572-078-11 SWITCH, TACTILE (STEP)
 S813 1-572-078-11 SWITCH, TACTILE (INDEX MODE)

*1-634-346-11 SB-3 BOARD (Ref. No. 6000 series)

CONNECTOR

CN901 1-566-539-11 CONNECTOR, FPC (NON ZIF) 7P

RESISTOR

R903 1-216-077-00 METAL GLAZE 15K 5% 1/10W
 R904 1-216-081-00 METAL GLAZE 22K 5% 1/10W
 R905 1-216-101-00 METAL GLAZE 150K 5% 1/10W
 R906 1-216-077-00 METAL GLAZE 15K 5% 1/10W
 R907 1-216-081-00 METAL GLAZE 22K 5% 1/10W

R908 1-216-089-00 METAL GLAZE 47K 5% 1/10W

SWITCH

S903 1-572-078-11 SWITCH, TACTILE (INDEX MARK)

Ref.No	Part No.	Description	Remark
S904	1-572-078-11	SWITCH, TACTILE (INDEX ERASE)	
S905	1-572-078-11	SWITCH, TACTILE (SP/LP)	
S906	1-572-078-11	SWITCH, TACTILE (CLEAR)	
S907	1-572-078-11	SWITCH, TACTILE (POSITION)	
S908	1-572-078-11	SWITCH, TACTILE (PRESET)	

S909 1-572-078-11 SWITCH, TACTILE (SEEK)
 S910 1-572-078-11 SWITCH, TACTILE (INPUT SELECT)
 S911 1-571-275-31 SWITCH, SLIDE (AUTO STEREO)

ACCESSORIES & PACKING MATERIALS

1-417-173-11 DISTRIBUTOR, ANTENNA
 Δ 1-528-174-31 BATTERY, LITHIUM (CR2032 TYPE)
 2-366-919-00 BAG, PROTECTION
 3-701-625-00 BAG, POLYETHYLENE
 3-728-996-01 CASE, SOFT
 *3-744-184-01 CUSHION (UPPER)
 *3-744-185-01 CUSHION (LOWER)
 3-751-853-21 MANUAL, INSTRUCTION (ENGLISH)
 3-751-853-31 MANUAL, INSTRUCTION (FRENCH)(CND MODEL)

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

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

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

Ref.No	Part No.	Description	Remark

		MISCELLANEOUS	

△	1-466-333-11	INVERTER UNIT, DC-AC	
	1-466-334-11	SWITCH BLOCK, CONTROL	
	1-544-323-11	SPEAKER	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE	
	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE (LCD FLEXIBLE)	
	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-994-11	FP-271 FLEXIBLE BOARD	
	1-634-995-11	FP-272 FLEXIBLE BOARD	
	1-634-996-11	FP-273 FLEXIBLE BOARD	
	1-634-997-11	FP-274 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
AN901	1-501-456-11	ANTENNA, TELESCOPIC	
BL901	1-518-668-11	TUBE UNIT, FLUORECENT	
D301	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
LCD901	1-809-002-11	DISPLAY MODULE, LIQUID CRYSTAL	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S302	1-572-298-11	SWITCH, PUSH (ME/MP, MP HG, REC PROOF)	
S901	1-571-099-11	SWITCH (CASSETTE DOWN)	

HARDWARE

Ref.No	Part No.	Description	Remark
		SCREW	
	7-627-553-37	SCREW (M2X3), SPECIAL HEAD	
	7-627-555-88	SCREW (M1.4X1.8)	
		PRECISION SCREW	
	7-627-553-18	SCREW,PRECISION +P 2X2	
	7-627-555-88	SCREW, PRECISION +P 1.4X1.8	
	7-627-452-48	SCREW,PRECISION +RK 2X2.5	
	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3	
		NUT	
	7-684-023-04	N 3, TYPE 2	
		WASHER	
	7-623-208-22	SW 3,TYPE 2	
	7-688-003-01	W 3, SMALL	

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

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

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

SECTION 7 MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

Refer to mechanical adjustment (8 mm Video MECHANICAL ADJUSTMENT MANUAL III) manual for the adjustments and checks of mechanism section and the mechanical parts replacement. (9-972-732-11)

For setting of the track shift mode, however, refer to the following.

7-1. SETTING THE TRACK SHIFT MODE

[Setting Method]

- 1) Setting the test mode* 0011 (Jig switching position 3)

CN802

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

Jig switching
position 3

*Refer to [8-1-7. Test mode].

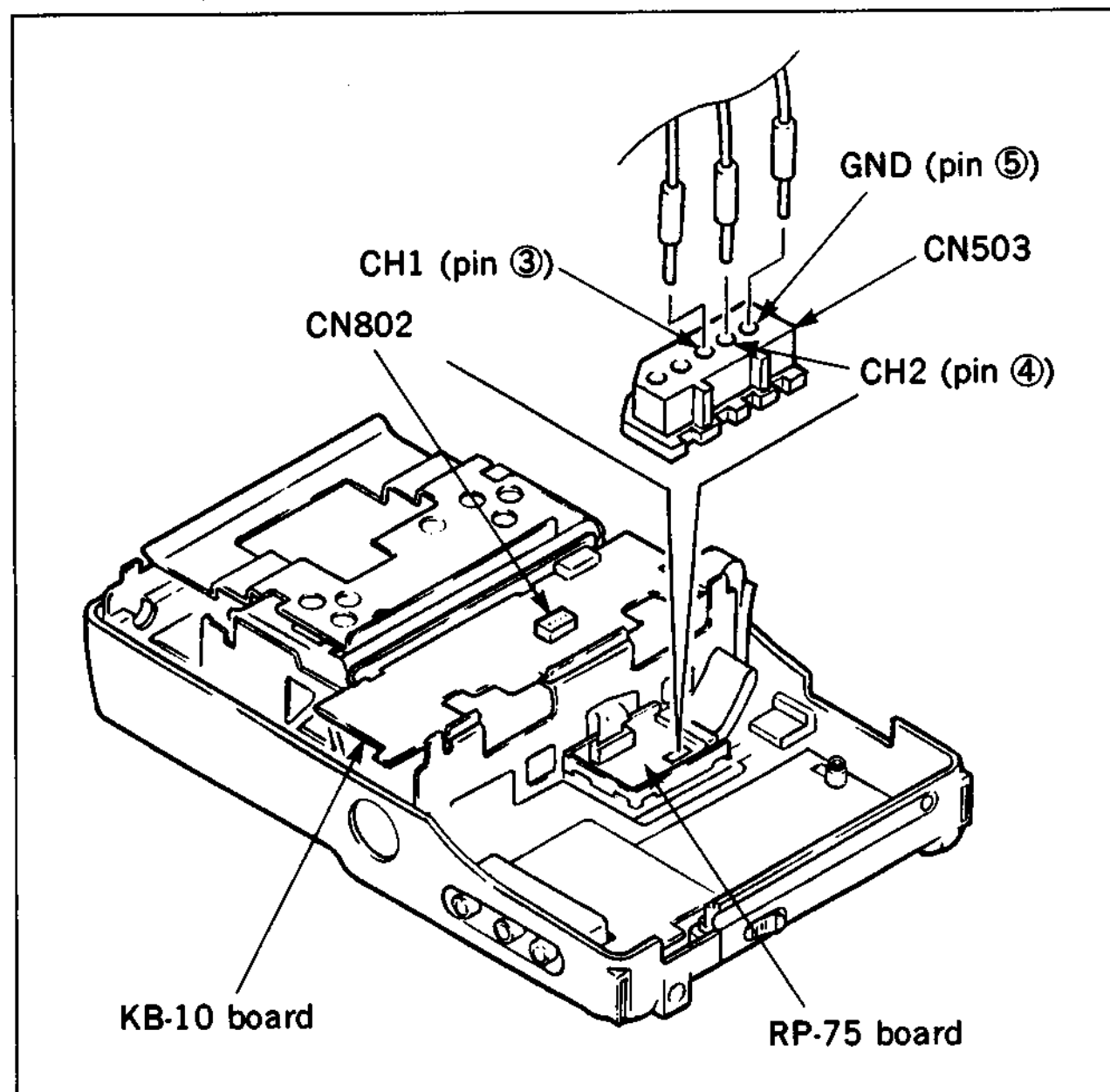


Fig. 7-1.

7-2. PREPARATION FOR ADJUSTMENT

- 1) Clean the tape running surfaces (tape guide, drum, capstan shaft, pinch roller.)
- 2) Connect to the oscilloscope.
CH1 : RP-75 board CN503 pin ③ (PB RF)
CH2 : RP-75 board CN503 pin ④ (SWP)
- 3) Play back the tracking alignment tape (WR5-1NP) (8-967-995-02).
- 4) Check that the RF waveform of the oscilloscope is flat at both inlet and outlet sides. When not flat, make adjustment as follows. (Refer to mechanical adjustment manual.)

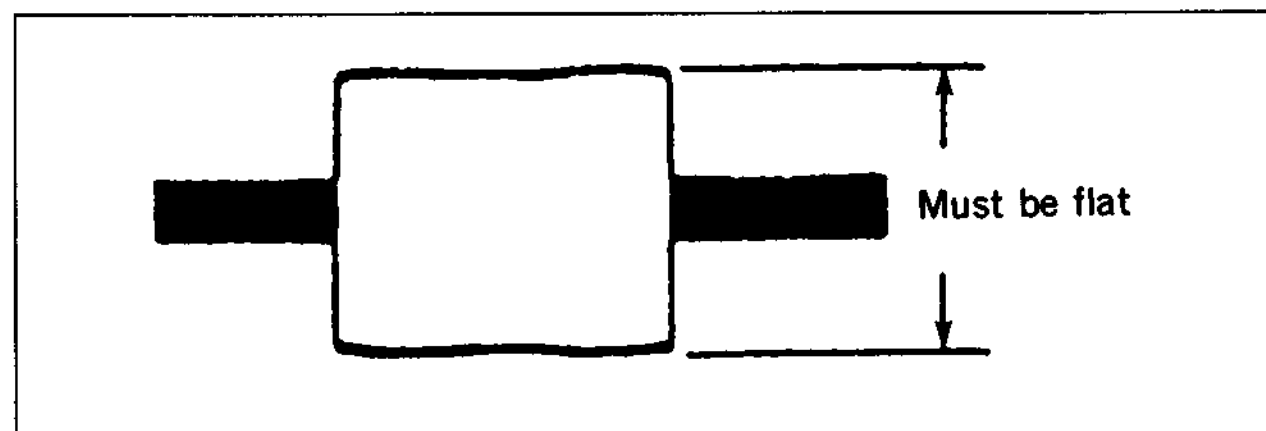


Fig. 7-2.

SECTION 8 ELECTRICAL ADJUSTMENTS

See the adjusting parts location diagram from on page 184 for the adjustment.

8-1. PREPARATION FOR ADJUSTMENT

The following measurement instruments are used for the electric adjustment.

8-1-1. Using Instruments

- 1) Monitor TV
- 2) Oscilloscope having two phenomena, band of 10MHz or more, and the delay mode.
- 3) Frequency counter
- 4) Pattern generator (having the video output terminal)
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion rate meter
- 9) Audio attenuator
- 10) Stabilized power source
- 11) Alignment tape
 - For tracking adjustment
(WR5-1NP) Part code: 8-967-995-02
 - For checking of SP mode operation
(WR5-5NSP) Part code: 8-967-995-42
(WR5-4NSP) Part code: 8-967-995-41
 - For checking of LP mode operation
(WR5-4NL) Part code: 8-967-995-51
 - For Hi 8 SP mode operation
(WR5-8NSE) Part code: 8-967-995-43
 - For checking of AFM stereo operation
(WR5-9NS) Part code: 8-967-995-23
 - For video frequency characteristic adjustment
(WR5-7NE) Part code: 8-967-995-13
- 12) Extension harness
Between AU-53 board CN101 and SV-38 board CN005
J-6082-111-A
Between AU-53 board CN102 and SV-38 board CN006
J-6082-112-A
Between RG-8 board CN001 and SV-38 board CN004
J-6082-113-A
- 13) Multiplex transmission signal generator
- 14) COMMON voltage adjustment jig (J-6082-024-A)

8-1-2. Connection of Instruments

If there is no special direction, connect the measuring instru-

ments as shown in the following figure and perform the adjustment.

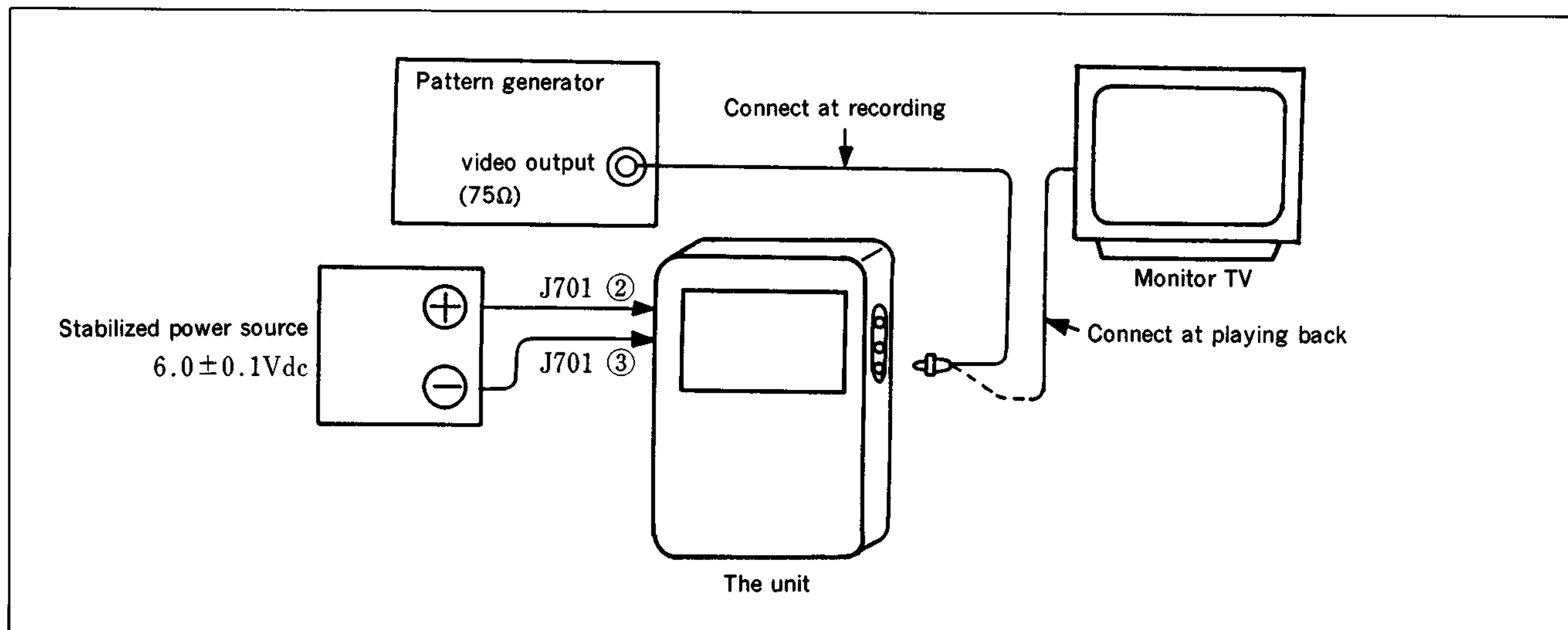


Fig. 8-1.

8-1-3. VIDEO/AUDIO Terminal of the Unit

The VIDEO/AUDIO (L/R) terminal of the unit has the function of both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operating condition of the unit.

When connecting with the other instruments, perform the connection according to the input-output of the terminal.

The operation condition of the unit and the automatic input-output election of the terminal.

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is selected.	The case that the unit is set to the playback mode.
TUNER (television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

* When the LINE is selected with the INPUT SELECT button, the display of INPUT or OUTPUT is shown according to the operation condition.

8-1-4. Set-up at the Adjustment

As the video signal obtained from the pattern generator is used as the adjustment signal for adjusting, it is required that the video output signal satisfies the specified value. Connect the pattern generator and the oscilloscope with the VIDEO input-output terminal. Check that the amplitude of the synchronous signal of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the level proportion of the burst signal and the red signal is 0.30 : 0.66.

The video signal (color bar) used for the adjustment is shown in the Fig. 8-2.

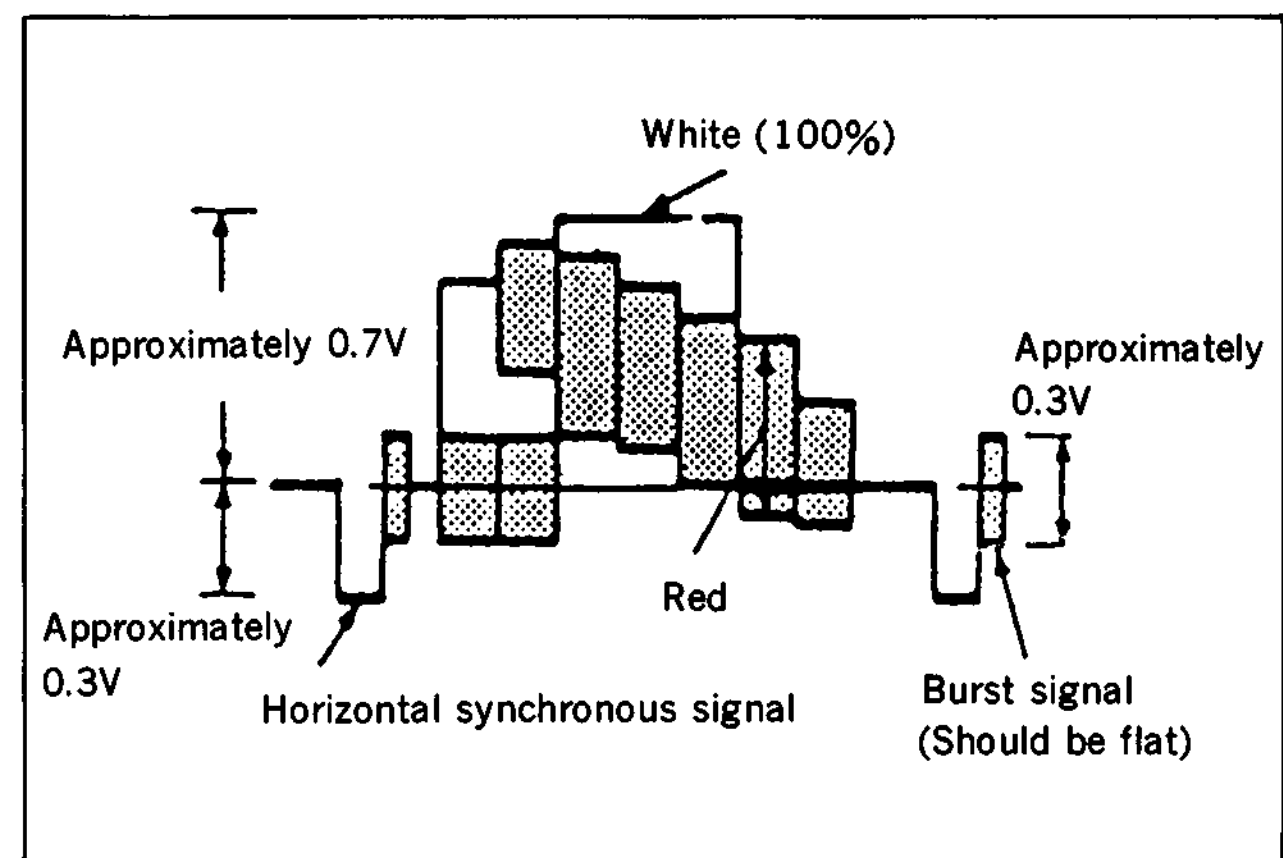


Fig. 8-2. Color bar signal of the pattern generator

8-1-5. Alignment Tape

The following tapes are prepared for the alignment tape.

Use the tape designated in the signal column of each adjustment.

Name	Recording mode	Type of tape	Speed of tape	Recording contents		Usage
				Video area	PCM area	
Tracking WR5-1NP	L	MP	SP	CH2: 1MHz Signal for tape pass adjustment Marker for switching position adjustment(CH1: 9MHz)		Tape pass adjustment Switching position adjustment
Video frequency characteristic WR5-7NE	E	ME	SP	RF sweep 0~15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Checking operation WR5-4NSP or WR5-5NSP	L	MP	SP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400Hz 60% modulation 	<ul style="list-style-type: none"> • Audio signal (PCM) monoscope part 20Hz, 20sec. } Re-peat four times 400Hz, 20sec. } 14kHz, 20sec. } Color bar part 1kHz 4 minutes 	Checking operation
					WR5-8NSE	
WR5-4NL	L	MP	LP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes monoscope 4 minutes • Audio signal (AFM) 400Hz 60% modulation 		
AFM stereo checking operation WR5-9NS	L	MP	SP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes monoscope 4 minutes • Audio signal (AFM) <ul style="list-style-type: none"> • Color bar part Lch : 400Hz L+R (1.5MHz±60kHz) Rch : 1kHz L-R (1.7MHz±30kHz) • monoscope part DEV+Bilingual (including a RF ID signal) 	<ul style="list-style-type: none"> • Audio signal (PCM) monoscope part 20Hz, 20sec. } Re-peat four times 400Hz, 20sec. } 14kHz, 20sec. } Color bar part 1kHz 4 minutes 	AFM stereo PB matrix adjustment

Note : Recording mode

L.....Normal mode

E.....hi8(Hi band) mode

Types of tape

MP.....Application type metal tape

ME.....Steam metal tape

Table 8-1.

The 75% color bar signal recorded in the alignment tape is shown in the Fig.8-3.

Note : Measure with the VIDEO INPUT-OUTPUT terminal (75Ω terminal) playback mode.

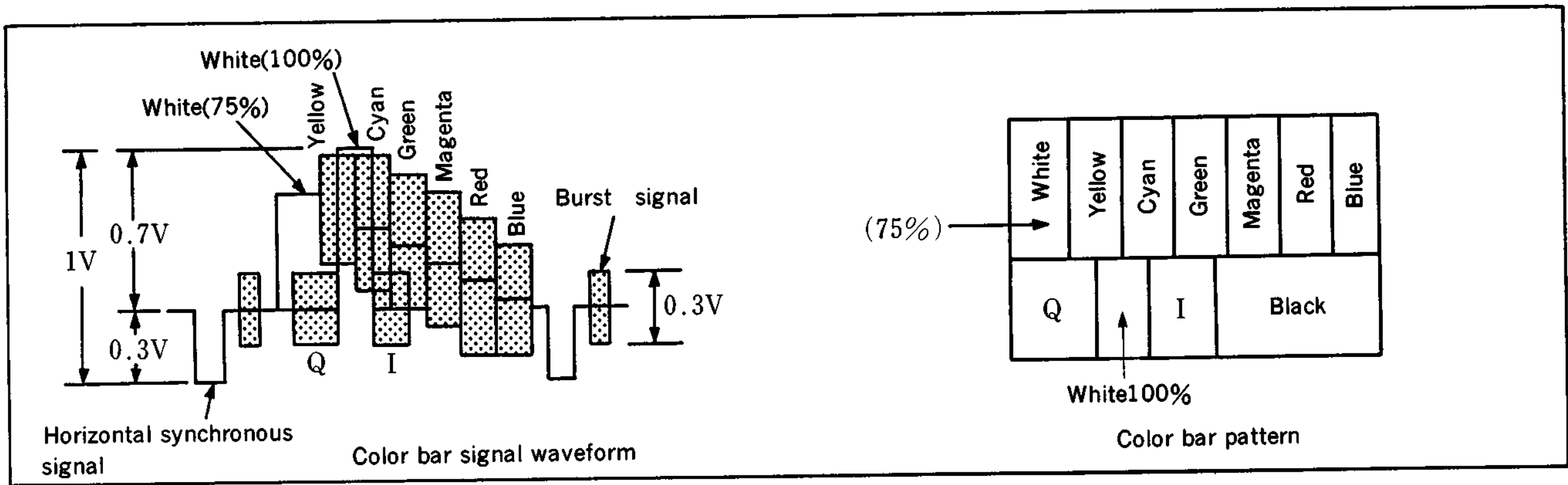


Fig.8-3. Color bar signal of the alignment tape

8-1-6. Input/Output Level and Impedance

VIDEO/AUDIO (L/R) Input-output terminal (pin jack)
 VIDEO input Input signal : 1Vp-p, 75Ω unbalance, Synchronous negative
 VIDEO output Output signal : 1Vp-p, 75Ω unbalance, Synchronous negative
 AUDIO input Input level : -7.5dBs(0dBs=0.775Vrms)
 Input impedance : 47kΩ or more

AUDIO output Specified output : -7.5dBs
 Output impedance : 10kΩ or less

8-1-7. Test Mode

Use CN802 on the KB-10 board.

CN802 pin position

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

When each terminal of the TEST A, B, C and D is shortened and opened, sixteen types of TEST MODE are selected.

When servicing, attaching the "test mode set jig" (J-6082-110-A) to CN802 allows to select sixteen types of test mode with the hexadecimal selecting switches of the jig.

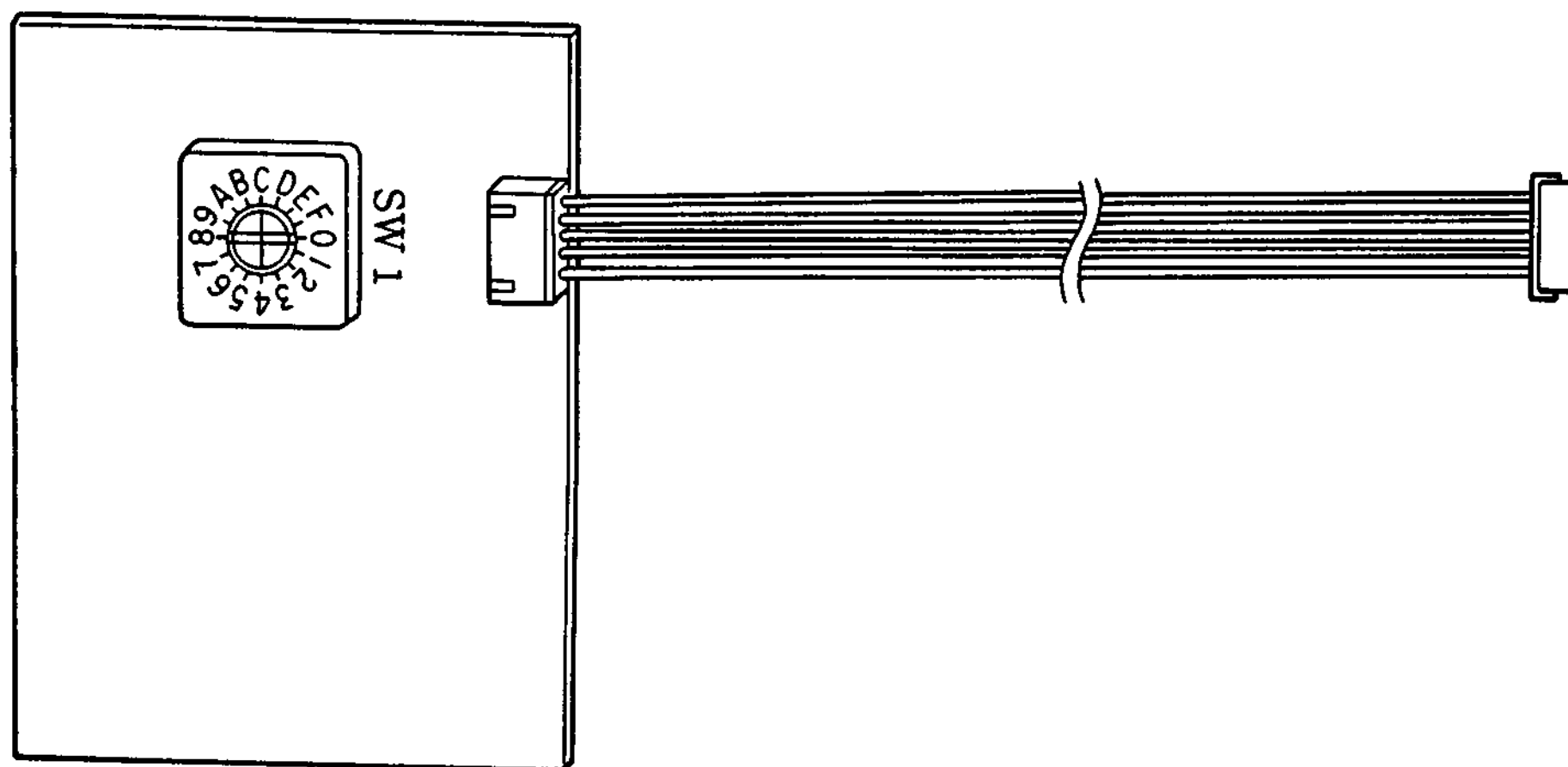


Fig8-4. Test mode set jig

TEST MODE table		Switch position of the test mode set jig.
D C B A	SELECT MODE	
0000	Normal mode	0
0001	Emergency off	1
0010	TT TEST	2
0011	Track shift	3
0100	SW POSI L	4
0101	SW POSI H	5
0110	BATT DOWN PRE	6
0111	BATT DOWN END	7
1000	VIDEO DATA, MP, SP	8
1001	VIDEO DATA, MP, LP	9
1010	VIDEO DATA, ME, SP	A
1011	VIDEO DATA, ME, LP	B
1100	VIDEO DATA, HI, MPHG, SP	C
1101	VIDEO DATA, HI, MPHG, LP	D
1110	VIDEO DATA, HI, ME, SP	E
1111	VIDEO DATA, HI, ME, LP	F

The test code is designated by four figures.

MSB LSB
 "D", TEST "C", TEST "B", TEST "A"

At short : 1, At open : 0

VIDEO DATA SELECT MODE is set at the TEST, "D" MAKE.

① Normal mode

Normal set condition

② Emergency off (Release of emergency stop)

③ TT TEST

MODE for extending the SIRCS code (For producing line)

④ Track shift

Run on the ATF track shift condition at the playback mode.

Timer microcomputer is in the clock adjustment mode.

⑤ SW POSI

Adjustment mode of switch position.

SWPOSI is stored in EEPROM as 16bit DATA. This data is adjusted dividing high 8bit and low 8bit. Use CH+/- KEY.

TEST MODE0101 : Varies at 16 μ sec per 1STEP.

TEST MODE0100 : Varies at 1 μ sec per 1STEP. When low 8 bit is incremented from FF. HEX, high 8 bit goes UP. And when it is decremented from 00.HEX, high 8 bit goes DOWN.

Preset function of the SW POSI is added. The preset function sets to high 8 bit to 07. HEX, when the DATA SCREEN KEY of SC part is pressed in the SW POSI adjustment mode. The low 8 bit is not varied.

⑥ BATTTERY DOWN ADJUSTMENT

Adjusted with TEST MODE 0111. When this mode is set, the following display is shown on LCD.

PRE	-1.76
DOWN	-1.74

Supplying voltage for adjusting is performed with applying 5.50V + 0.02V to the battery terminal in the TUNER REC SP MODE. When pressing the INDEX KEY on the KB-10 board, the color of display on the LCD turns to blue for few seconds from white, and then returns to white. The voltage of the battery PRE, DOWN is stored in EEPROM as the 8bit DATA by this operation.

⑦ VIDEO DATA ADJUSTMENT MODE

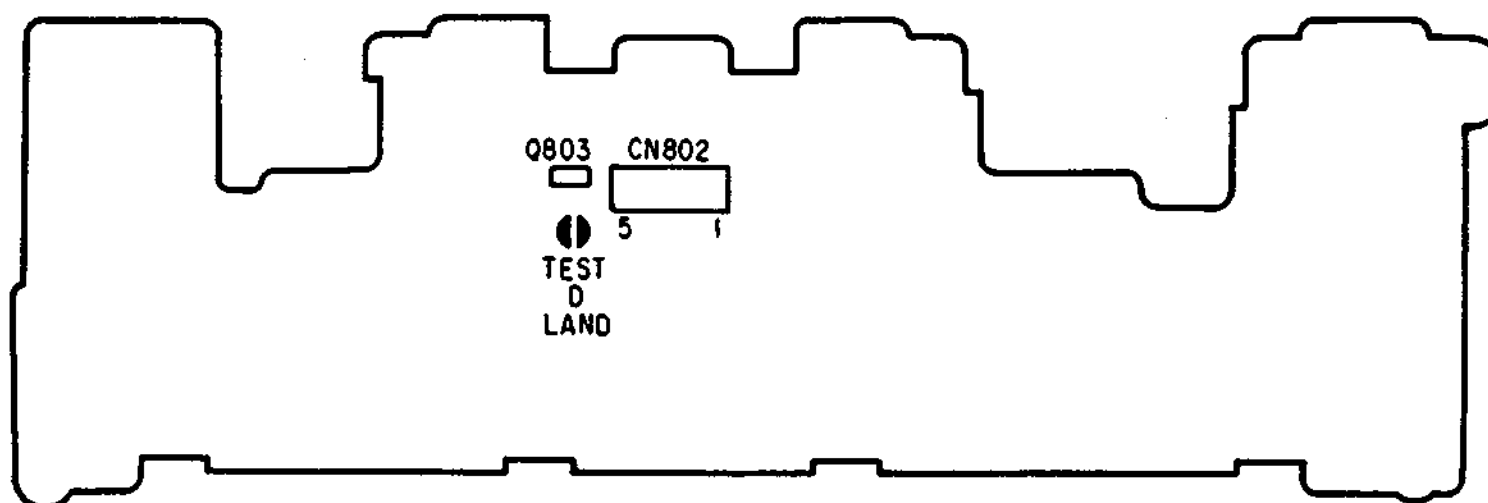
Short the TEST D (Solder the split land at the lower part of the KB-10 board Q803)

The following display is shown on the LCD.

VIDEO DATA

CFL1 1 (RESET)
 CFL2 1 (DISPLAY)
 NCL1 1 (SLEEP)
 NCL2 1 (NEXT)
 NCLP1 1 (UP)
 NCLP2 1 (CLOCK)

KB-10 BOARD (COMPONENT SIDE)



Six types of DATA are varied with the KEY on the SC part.

RESET → COUNTER RESET KEY

DISPLAY → DATA SCREEN KEY

SLEEP → SLEEP KEY

NEXT → NEXT KEY

UP → + KEY

CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)

Eight modes are adjusted by the types of TAPE (ME, MP), recording (HI BAND, LO BAND) MODE, and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 8-2. for the data writing to EEPROM.)

Table 8-2. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	H	L
1	0	0	1	9	LP•MP	L	H	L	H	L	H
1	0	1	0	A	SP•ME	H	L	H	L	H	L
1	0	1	1	B	LP•ME	L	H	L	H	L	H
1	1	0	0	C	Hi-8 SP•MP	H	L	L	H	H	L
1	1	0	1	D	Hi-8 LP•MP	L	H	L	H	L	H
1	1	1	0	E	Hi-8 SP•ME	H	L	H	L	H	L
1	1	1	1	F	Hi-8 LP•ME	L	H	L	H	L	H

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

8-2. POWER SOURCE PART ADJUSTMENT

8-2-1. UNREG Power Source Voltage Check (SV-38 board)

Mode	Stop (POWER ON)
Measuring instrument	Digital voltmeter
BL UNREG check	
Measurement point	CN007 Pin ⑫
Specified value	$5.9 \pm 0.2Vdc$
DD UNREG check	
Measurement point	CN007 Pin ⑪
Specified value	$5.9 \pm 0.2Vdc$
SS UNREG check	
Measurement point	CN007 Pin ⑥
Specified value	$5.9 \pm 0.2Vdc$
LD UNREG check	
Measurement point	CN07 Pin ③
Specified value	$5.9 \pm 0.2Vdc$
CAP UNREG check	
Measurement point	CN007 Pin ①
Specified value	$5.9 \pm 0.2Vdc$

[Checking method]

- 1) Check that the voltage of the stabilized power source is $6.0 \pm 0.1Vdc$.
- 2) Each specified value should be satisfied.

8-2-2. Switch 5V Adjustment (SV-38 board)

Mode	Tuner receiver, record (SP mode)
Signal	Optional TV broadcast
Measurement point	CN009 Pin ⑭
Measuring instrument	Digital voltmeter
Adjustment element	RV401
Specified value	$4.95 \pm 0.05Vdc$

[Adjustment Method]

- 1) Adjust with RV401 to $4.95 \pm 0.05Vdc$.

8-2-3. DD Converter Frequency Adjustment (SV-38 board)

Mode	Stop (POWER ON)
Measurement point	IC401 Pin ①
Measuring instrument	Frequency counter
Adjustment element	RV402
Specified value	$479 \pm 5kHz$

[Adjustment Method]

- 1) Adjust the oscillation frequency to $4.95 \pm 0.05Vdc$ with RV402.

8-2-4. -8V Adjustment (TU-123 board)

Mode	Stop (POWER ON)
Measurement point	CN001 Pin ⑳
Measuring instrument	Digital voltmeter
Adjustment element	RV501
Specified value	$-8.0 \pm 0.1Vdc$

[Adjustment Method]

- 1) Adjust with RV501 to $-8.0 \pm 0.1Vdc$.

8-2-5. LCD Power Source Voltage Check (RG-8 board)

Mode	Stop
Measuring instrument	Digital voltmeter
+13V check	
Measurement point	CN001 Pin ㉓
Specified value	$13.0 \pm 0.7Vdc$
-20V check	
Measurement point	CN001 Pin ㉑
Specified value	$-20.0 \pm 1.5Vdc$

[Checking Method]

- 1) Each specified value should be satisfied.

8-2-6. CAM UNREG Check (CN-6 board)

Mode	Camera standby
Measurement point	CN601 Pin ①
Measuring instrument	Digital voltmeter
Specified value	5.75±0.10Vdc

[Connection]

- 1) Connect the CAMERA connector with the camera.
If there is no camera, connect the resistance of 12Ω 5W between CN601 Pin ① and Pin ⑤.

[Checking Method]

- 1) Turn on the power, and input CAMERA with the INPUT SELECT button.
- 2) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
- 3) Check that the voltage of the CN601 Pin ① is 5.75±0.10Vdc.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

8-3-1. Clock Precision Adjustment (SV-38 board)

Mode	Stop (POWER ON)
Test mode *	0011 (Jig switch position 3)
Measurement point	CN003 Pin ②
Measuring instrument	Frequency counter
Adjustment element	CV101
Specified value	16384.0±0.2Hz

* Refer to [8-1-7. Test mode].

[Adjustment Method]

- 1) Set the test mode * 0011 (jig switch position 3).
- 2) Adjust with CV101 to 16384.0±0.2Hz.

8-3-2. Battery Down Adjustment

Refer to [8-1-7. Test Mode ⑥ Battery Down Adjustment].

8-4. SERVO SYSTEM ADJUSTMENT

8-4-1. CUE/REV Adjustment (SV-38 board)

Mode	CUE and REV
Signal	Alignment tape : for checking the SP mode operation (WR5-5NSP) : for checking the LP mode operation (WR5-4NL)
Measurement point	IC301 Pin ⑩ and Pin ⑪ and Q306 ③
Measuring instrument	Oscilloscope
Adjustment element	RV301
Specified value	WR5-5NSP at CUE/REV Q306 ③ DC voltage level is "H" WR5-4NL at CUE/REV Q306 ③ DC voltage level is "L"

[Adjustment Method]

- 1) Adjust the IC302 Pin ⑩ to 3.0±0.1Vdc with RV301.
- 2) Play back the WR5-5NSP and set the CUE and REV mode, check that the DC voltage level of Q306 ③ is "H" (4Vdc or more). And play back the WR5-4NL and set the CUE and REV mode, check that the DC voltage level of Q306 ③ is "L" (1Vdc or less).
- 3) When the item 2) is not satisfied, play back the WR5-5NSP and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑩. Set this value as V_{SP} . Play back the WR5-4NL and set the CUE and REV mode, measure the DC voltage of IC301 Pin ⑩. Set this value as V_{LP} .

$$V = \frac{V_{SP} + V_{LP}}{2}$$
Obtain the value of V , and adjust with RV301 so that the DC voltage of IC302 Pin ⑩ is the value of V .
- 4) Return to the item 2) and reconfirm.

8-4-2. Switching Position Adjustment (RP-75 board)

Mode	Playback
Test mode *	0101 (Jig switching position 5) and 0100 (Jig switching position 4)
Signal	Alignment tape: for tracking adjustment (WR5-1NP)
Measurement point	CH1: CN503 Pin ④ (RF SW P) CH2: CN503 Pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment KEY	KB-10 board S802 (CH-) and S803 (CH+)
Specified value	$t=0\pm 5\mu\text{sec}$

[Adjustment Method]

- 1) Set the test mode * 0101 (Jig switching position 5).
- 2) Press the DATA SCREEN button on the upper part of the LCD.
- 3) Press the S802(CH-) and S803(CH+) switches on the KB-10 board so that "t" is nearly 0. (rough adjustment)
- 4) Set the test mode * 0100 (Jig switching position 4).
- 5) Press S802(CH-) and S803 (CH+) switches on the KB-10 board so that $t=0\pm 5\mu\text{sec}$. (fine adjustment)
- 6) Disconnect the test mode jig.

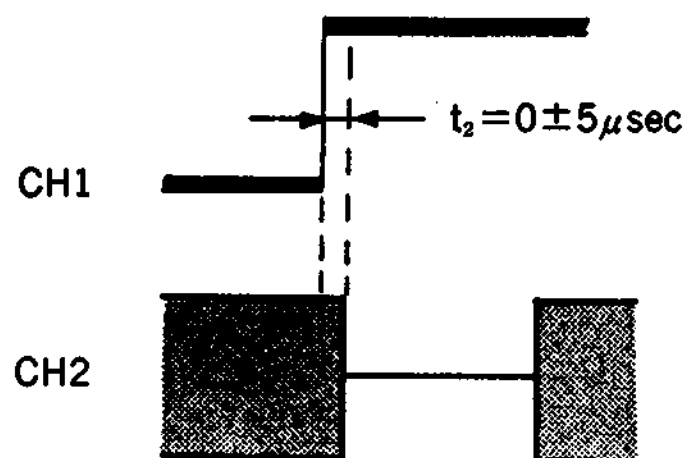


Fig. 8-6.

8-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following procedures in principle. The color bar signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the synchronous signal and the color burst signal are satisfied with the specified value designated to the adjusting setup as shown in the figure 8-2.

[Adjustment Procedures]

- 1) Playback frequency characteristic adjustment
- 2) fsc check
- 3) SYNC AGC adjustment
- 4) IR adjustment
- 5) Y/C separation adjustment
- 6) Emphasis Y level adjustment
- 7) De-emphasis Y level adjustment
- 8) Playback Y level adjustment
- 9) Y FM carrier adjustment
- 10) Y FM deviation adjustment
- 11) Recording Y level adjustment
- 12) Chroma emphasis adjustment
- 13) Recording chroma level adjustment

8-5-1. Playback Frequency Characteristic Adjustment (RP-75 board)

Mode	Playback
Signal	Alignment tape : for frequency characteristic adjustment(WR5-7NE)
Measurement point	CH1 : CN503 Pin ④(RF SWP) CH2 : CN503 Pin ③(PB RF)
Measuring instrument	Oscilloscope
Adjustment element	PB1-CH : RV501 PB2-CH : RV502
Specified value	2.0MHz level : 8.5MHz level = 50 : 23±2

[Adjustment Method]

- 1) Adjust with each RV so that the PB1-CH, PB2-CH and PB RF OUT satisfy the specified value.

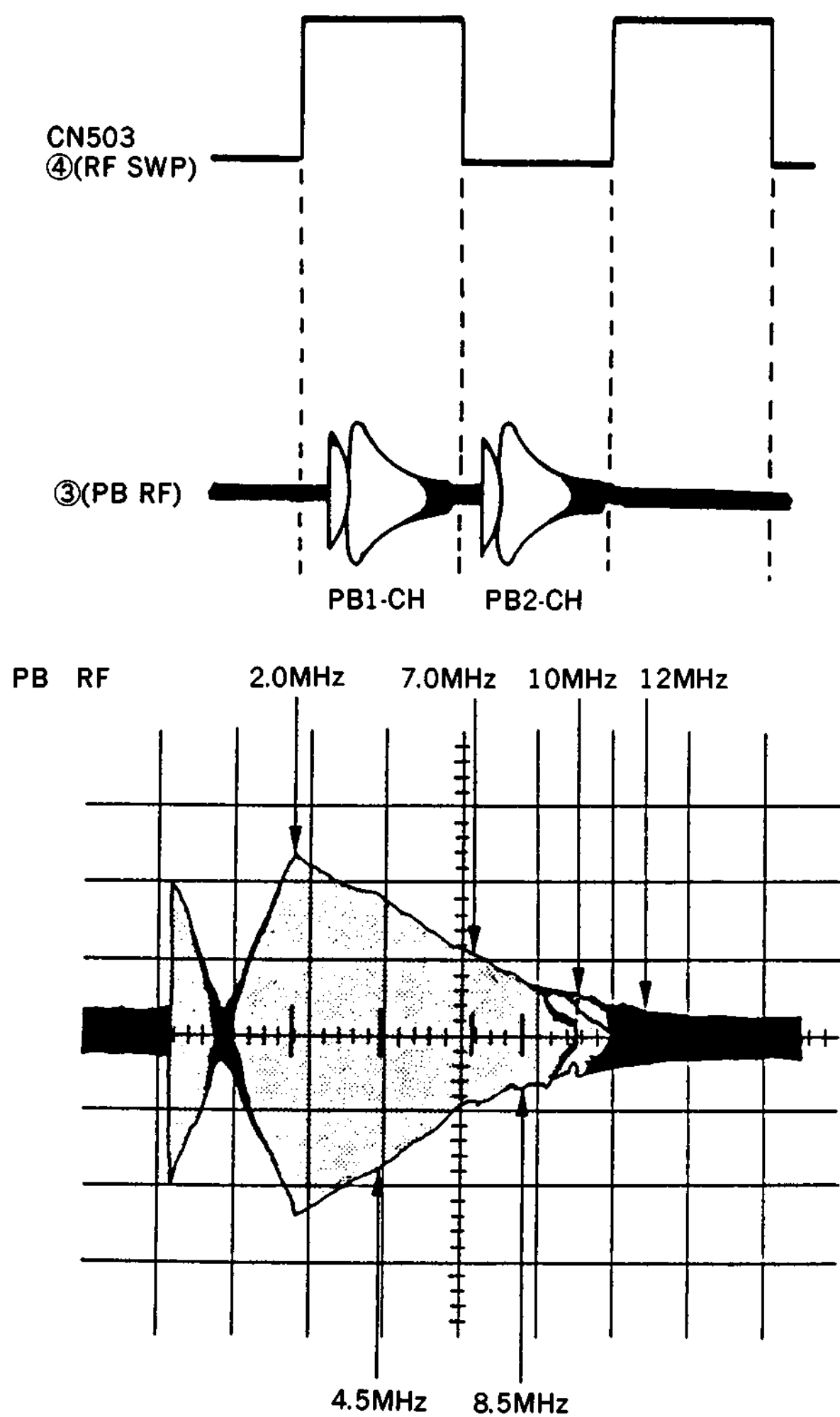


Fig. 8-7

8-5-2. fsc Check (SV-38 board)

Mode	Playback
Signal	Alignment tape : for operation check(WR5-5NSP) Color bar part
Measurement point	IC701 Pin ⑫
Measuring instrument	Oscilloscope Frequency counter
Specified value	Oscillation frequency : $3579545 \pm 150\text{Hz}$ Output level : $450 \pm 50\text{mVp-p}$

[Checking Method]

- 1) Check that the oscillation frequency of the IC701 Pin ⑫ is $3579545 \pm 150\text{Hz}$ and the output level is $450 \pm 50\text{mVp-p}$.



Fig.8-8.

8-5-3. SYNC AGC Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑳
Measuring instrument	Oscilloscope
Adjustment element	RV608
Specified value	$0.50 \pm 0.02\text{Vp-p}$

[Adjustment Method]

- 1) Adjust with RV608 to $0.50 \pm 0.02\text{Vp-p}$.

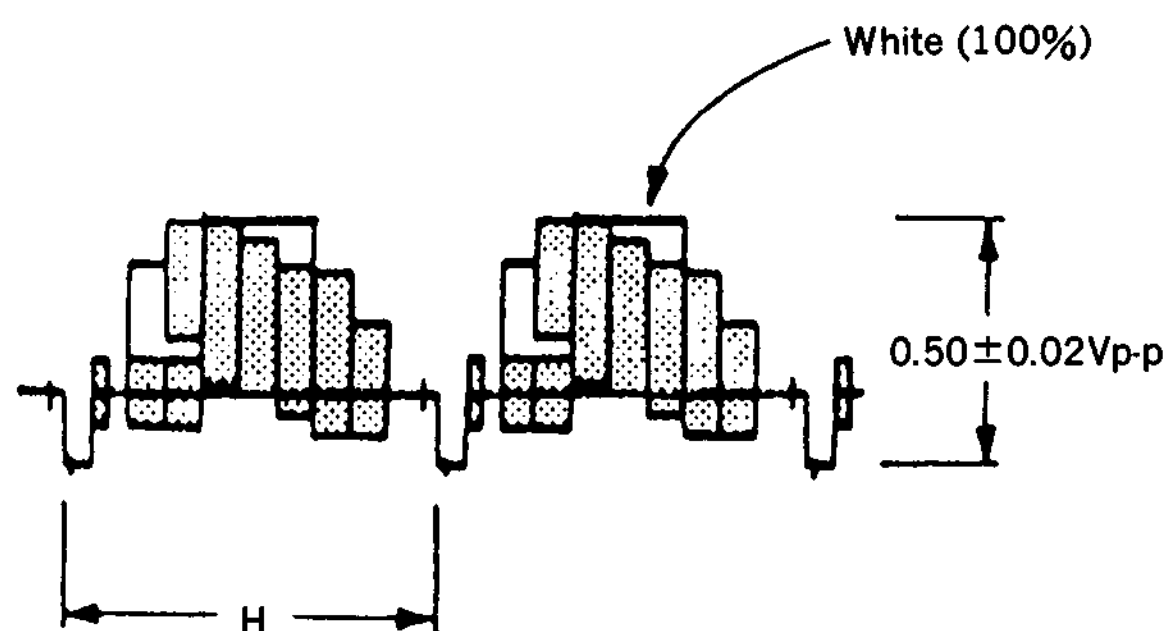


Fig. 8-9.

8-5-4. IR Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV604
Specified value	Minimize the red remaining chroma element (60mVp-p or less)

[Preparation]

- 1) Short with the jumper wire between the Pin ⑭ and Pin ⑮ of IC601.

[Adjustment Method]

- 1) Minimize the red remaining chroma element with RV604. (60mVp-p)
- 2) After the adjustment, disconnect the jumper wire.

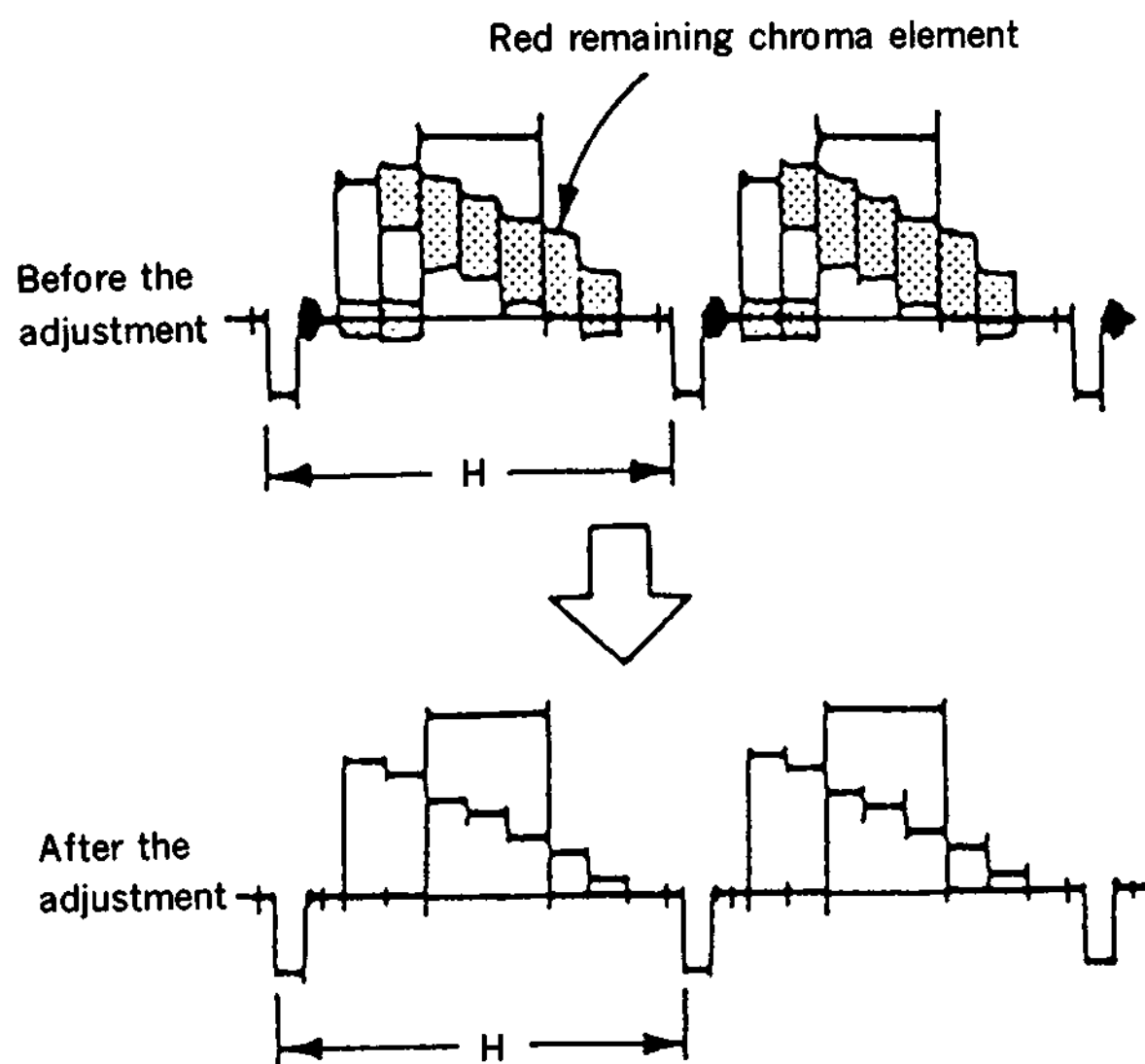


Fig.8-10.

8-5-5. Y/C Separation Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV601, RV606 (alternate adjustment)
Specified value	Minimize the red remaining chroma element (30mVp-p or less)

[Adjustment Method]

- 1) Adjust RV601 and RV606 alternately, and minimize the red remaining chroma element.

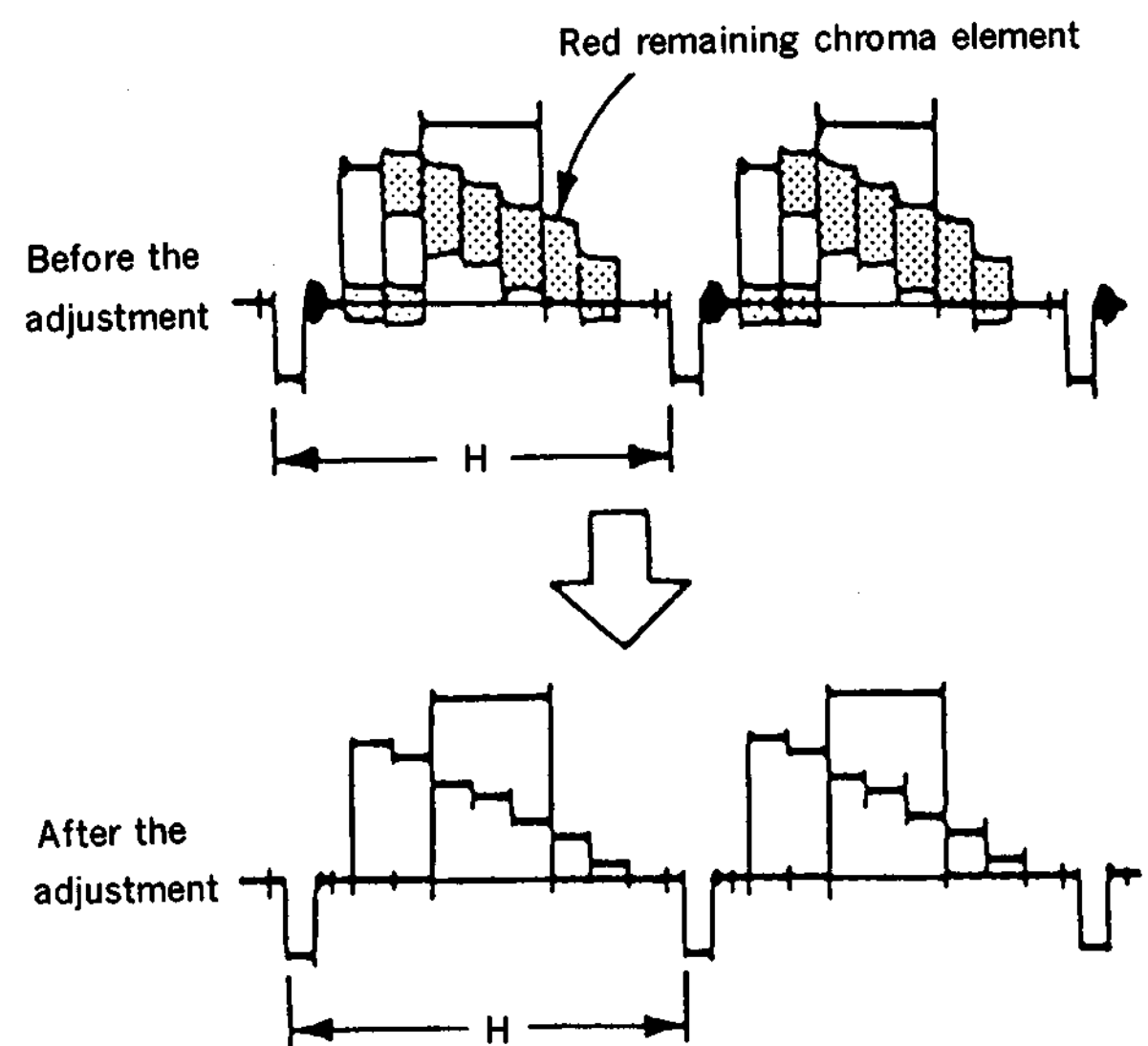


Fig.8-11.

8-5-6. Emphasis Y Level Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV607
Specified value	$0.50 \pm 0.02V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV607 to $0.50 \pm 0.02V_{p-p}$.

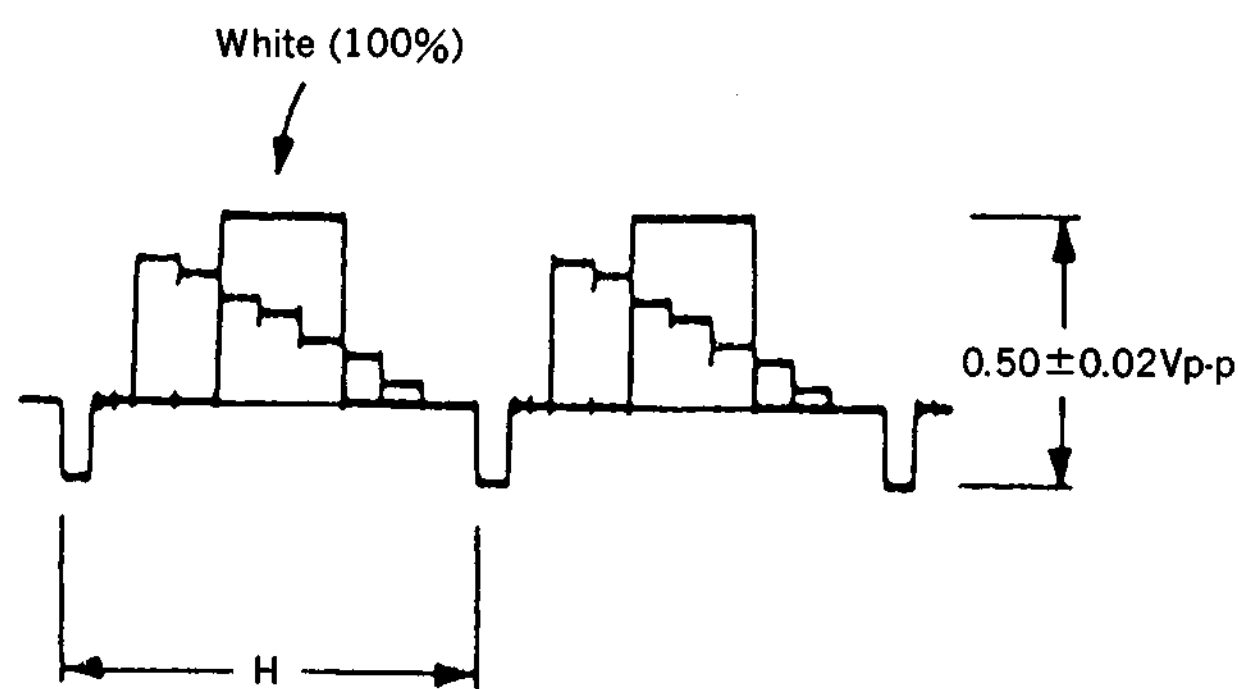


Fig.8-12.

8-5-7. De-emphasis Y Level Adjustment (SV-38 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5NSP)
Measurement point	IC601 Pin ②
Measuring instrument	Oscilloscope
Adjustment element	RV605
Specified value	$0.50 \pm 0.02V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV605 to $0.50 \pm 0.02V_{p-p}$.

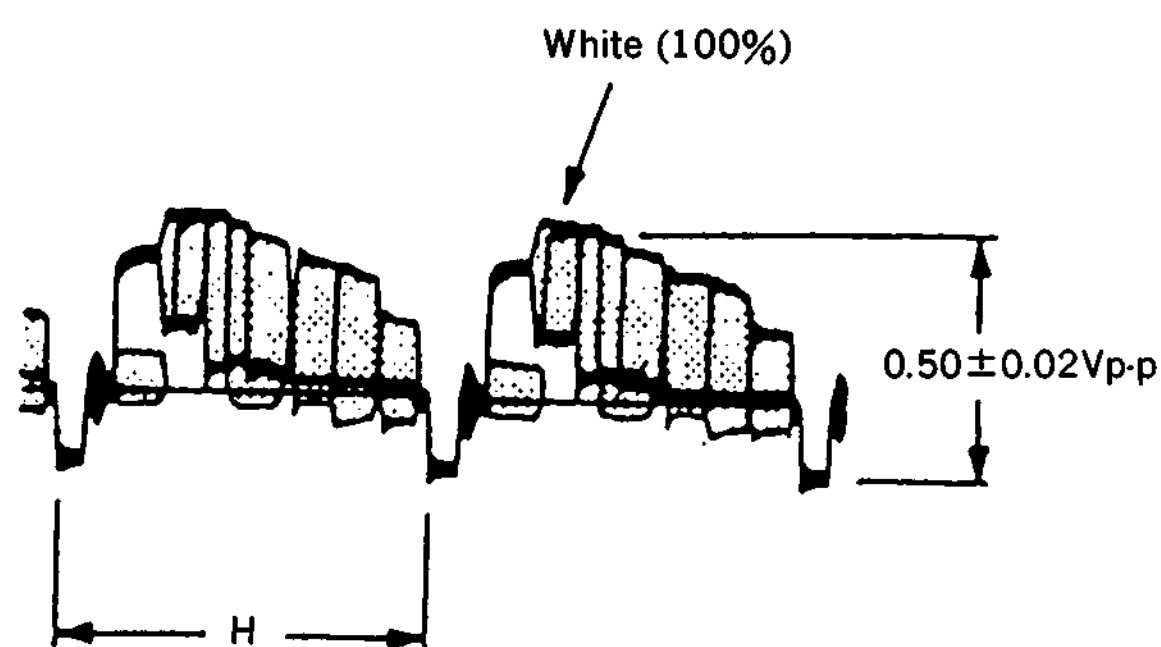


Fig.8-13.

8-5-8. Playback Y Level Adjustment (SV-38 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5NSP) and (WR5-8NSE) color bar part
Measurement point	CN004 Pin ④
Measuring instrument	Oscilloscope
Adjustment element	RV609
Specified value	$1.00 \pm 0.05V_{p-p}$

[Adjustment Method]

- 1) Play back WR5-5NSP and adjust with RV609 to $1.00 \pm 0.05V_{p-p}$.

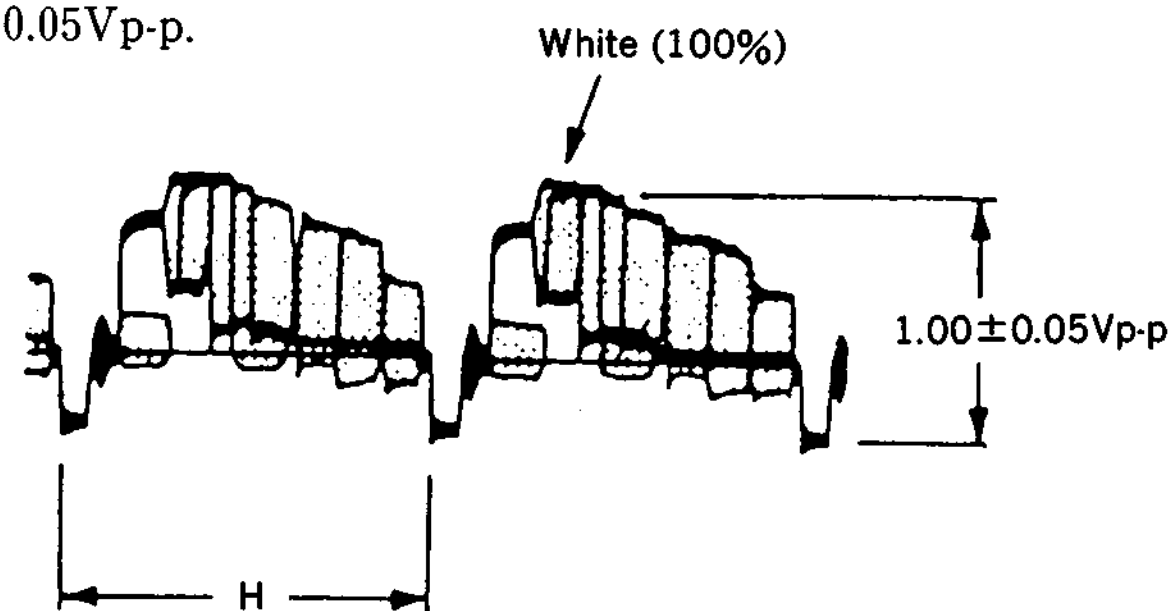


Fig.8-14.

- 2) Play back WR5-8NSE and check that it is $1.00 \pm 0.1V_{p-p}$.

8-5-9. Y FM Carrier Adjustment (SV-38 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Frequency counter
Adjustment element	RV602
Specified value	$4.37 \pm 0.02MHz$

[Adjustment Method]

- 1) Adjust with RV602 to $4.37 \pm 0.02MHz$.
- 2) After the adjustment, be sure to perform 「Y FM deviation adjustment」.

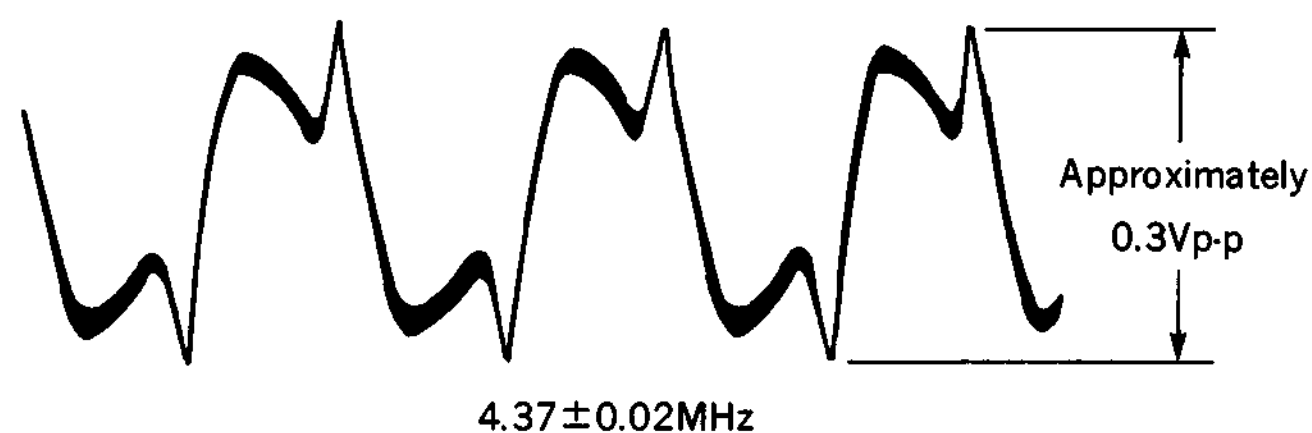


Fig.8-15.

8-5-10. Y FM Deviation Adjustment (SV-38 board)

Mode	Recording and playback
Signal	Color bar
Measurement point	VIDEO input-output terminal (75Ω terminal)
Measuring instrument	Oscilloscope
Adjustment element	RV603
Specified value	Playback level is $1.00 \pm 0.05V_{p-p}$

Note) 「De-emphasis Y level adjustment」, 「Playback Y level adjustment」 and 「Y FM carrier adjustment」 should be completed.

[Adjustment Method]

- Record the color bar signal.
- Play back the recorded signal.
- Check the playback output.
Specified value : $1.00 \pm 0.05V_{p-p}$
- When the specified value is not satisfied, rotate RV603 as shown in the following table and return to the item 1), and then perform the reconfirmation.

	Rotating direction of RV603
Over the specified value	Clockwise (↻)
Under the specified value	Counterclockwise (↻)

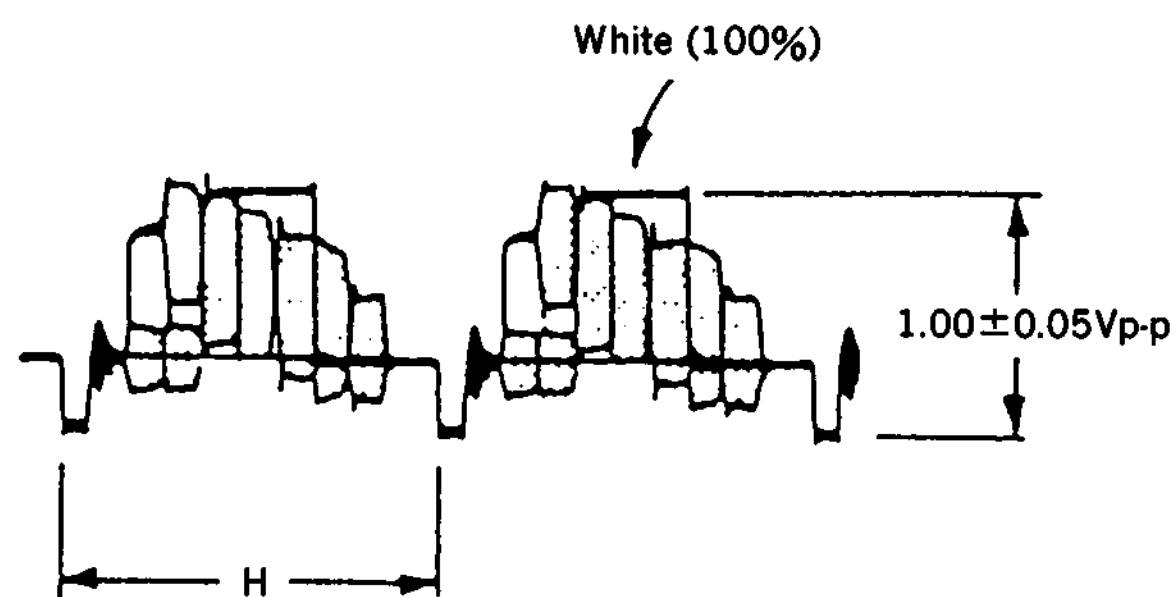


Fig.8-16

8-5-11. Recording Y Level Adjustment (SV-38 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Oscilloscope (20MHz band limit ON)
Adjustment element	RV802
Specified value	$260 \pm 5mV$

[Adjustment Method]

- Adjust with RV802 to $260 \pm 5mV$.

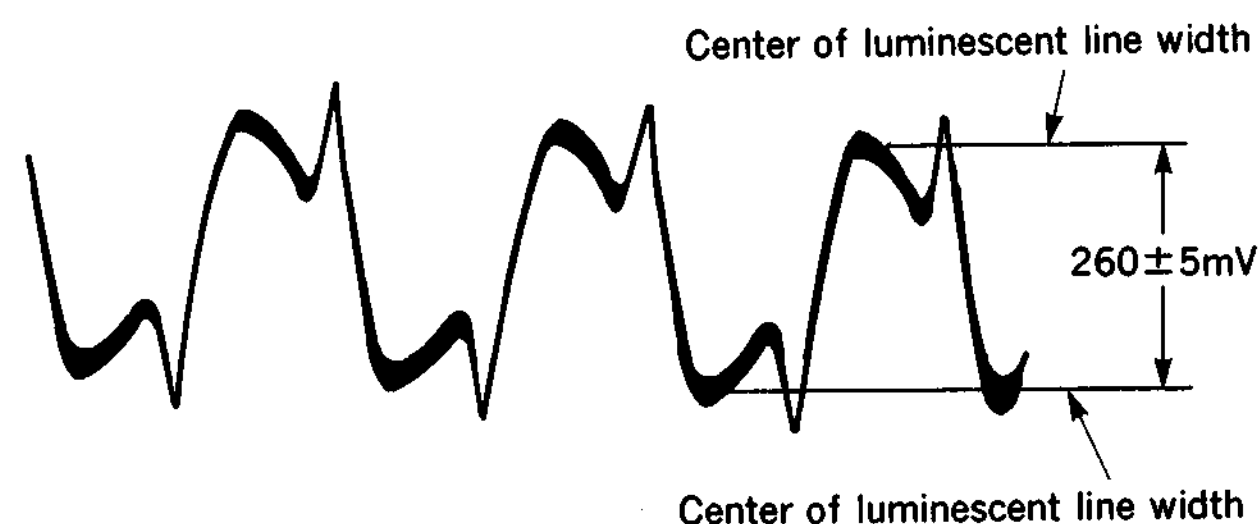


Fig.8-17.

8-5-12. Chroma Emphasis Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC701 Pin ⑭
Measuring instrument	Oscilloscope
Adjustment element	FL702
Specified value	Minimize the red level

[Preparation]

- Connect the resistance of $3.3k\Omega$ between the IC701 Pin ⑭ and GND.

[Adjustment Method]

- Minimize the red level with FL702.
- After the adjustment, disconnect the resistance connected in the preparation.

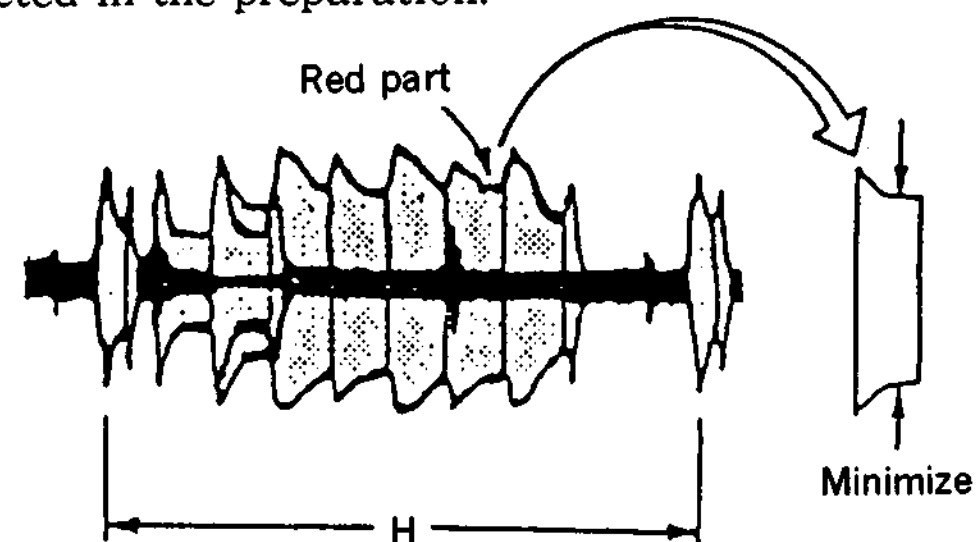


Fig.8-18.

8-5-13. Recording Chroma Level Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	CN801 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV701
Specified value	Red level : $140 \pm 10 \text{mVp-p}$

[Adjustment Method]

- 1) Adjust the red level to $140 \pm 10 \text{mVp-p}$ with RV701.

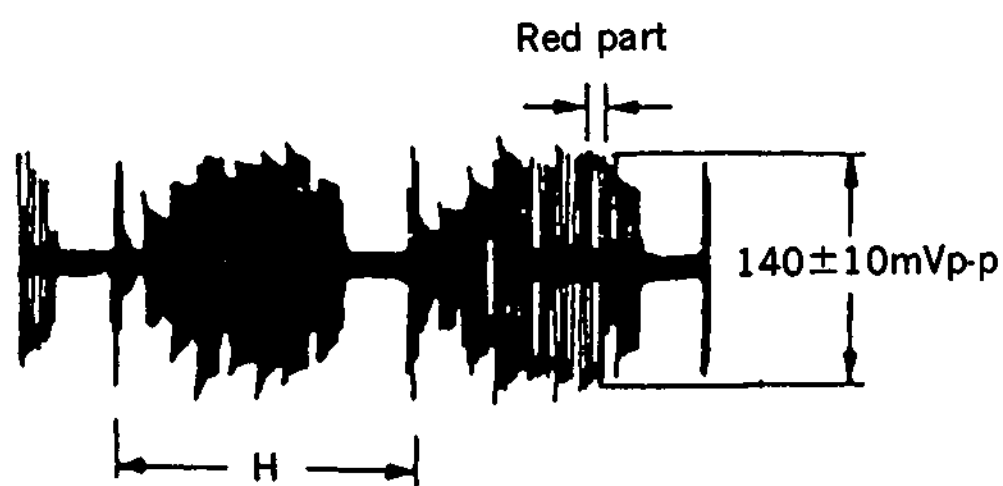


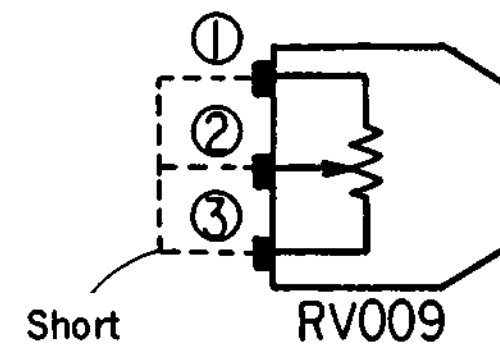
Fig.8-19.

8-6. LCD SYSTEM ADJUSTMENT

Caution: If you touch the back light holder, you may receive an electric shock. Be careful to perform the adjustment.

[Preparation]

- 1) The adjustment except for [white balance adjustment] and [V COM DC adjustment], the back light unit is not required. Remove it and perform the adjustment.
- 3) Set the VR as follows if there is no special direction.
 - BRIGHT (RV009)
 -Set the mechanical center position and short among pin ①, ② and ③.



- COLOR (RV001)
 -The position where the voltage of IC001 46 of the RG-8 board is $1.5 \pm 0.1 \text{Vdc}$.
- HUE (RV002)
 -The position where the voltage of IC001 ③ of the RG-8 board is $1.79 \pm 0.05 \text{Vdc}$.

[Video input signal for adjustment]

Input the color bar signal, which the chroma signal and the burst signal are turned off, to the video input terminal as a video input signal for adjustment. Check with the CN001 pin ④ of the RG-8 board.

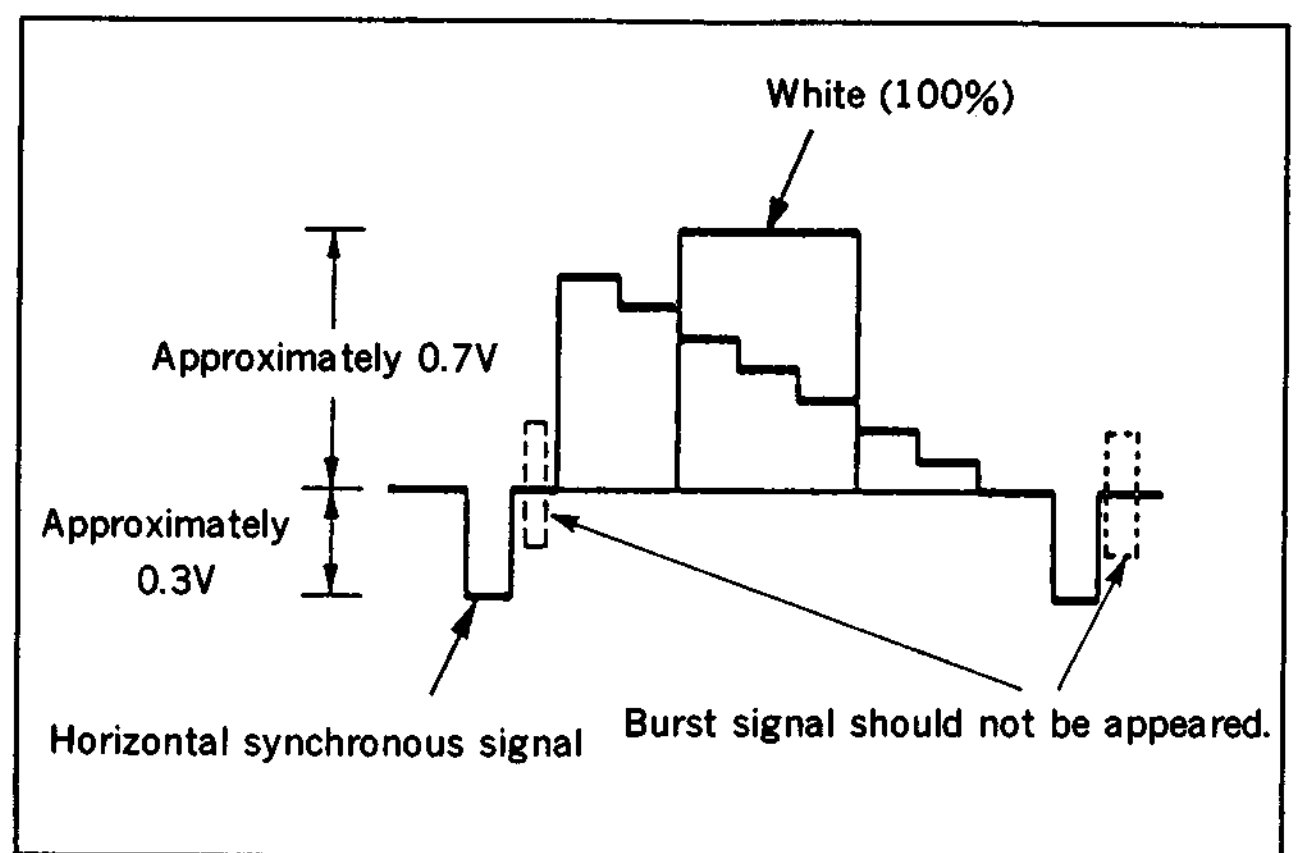


Fig.8-20. Color bar signal which the chroma signal and the burst signal are turned off

8-6-1. Contrast Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	CN002 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV005
Specified value	$3.5 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV005 so that the voltage between white (100%) and the pedestal is $3.5 \pm 0.1V$.



Fig.8-21.

8-6-2. R Gain Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV006
Specified value	$3.5 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV006 so that the voltage between white (100%) and the pedestal is $3.5 \pm 0.1V$.

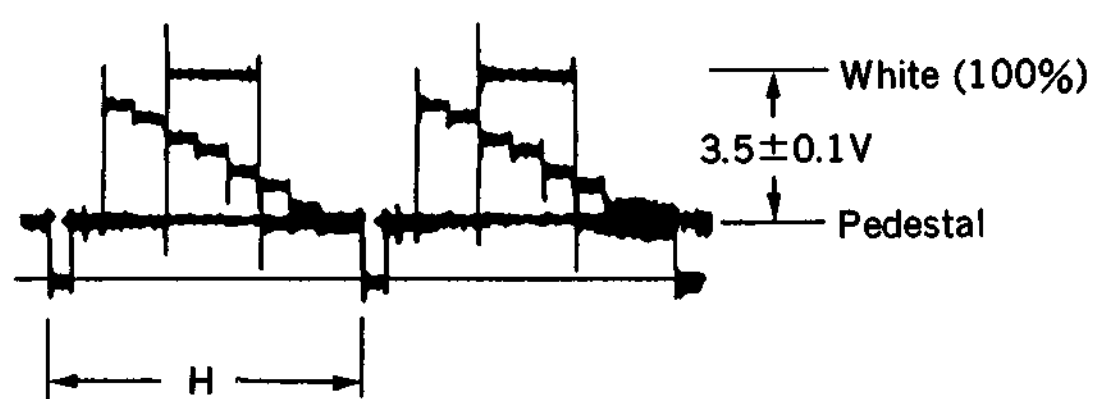


Fig. 8-22.

8-6-3. B Gain Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	$3.1 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV003 so that the voltage between white (100%) and the pedestal is $3.1 \pm 0.1V$.



Fig. 8-23.

8-6-4. Sub Bright Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑨
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV010
Specified value	$-3.7 \pm 0.1V$

[Connection]

- 1) Install the LCD unit and perform the adjustment.

[Adjustment Method]

- 1) Adjust with RV010 so that the DC level of the pedestal part of the positive polarity G signal is $-3.7 \pm 0.1Vdc$.



Fig.8-24.

8-6-5. fsc Adjustment (RG-8 board)

Mode	POWER ON
Signal	Video signal which the chroma signal, the burst signal and the Y signal are turned off.(Video signal with only synchronous signal)
Measurement point	IC001 Pin ②
Measuring instrument	Frequency counter
Adjustment element	CV001
Specified value	3549545±300Hz

Note: Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high impedance (1MΩ or more) and low capacity.

[Adjustment Method]

- 1) Adjust with CV001 so that the fsc frequency is 3579545±300Hz.

8-6-6. White Balance Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	Check on the LCD screen
Measuring instrument	
Adjustment element	RV003 (B gain) RV006 (R gain)
Specified value	Screen should not be colored.

[Connection]

- 1) Perform the adjustment connecting the LCD unit and the back light.

[Adjustment Method]

- 1) Check that the LCD screen is not colored. If the screen is colored, adjust with RV003 (B gain) and RV006 (R gain).

8-6-7. V COM DC Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	LCD screen
Measuring instrument	Oscilloscope
Adjustment element	V COM DC VR on the LCD unit
Specified value	The amplitude of the flicker waveform is the minimum.

Note: Perform the [V COM DC adjustment] with assembling the LCD block.

Take care that the external light should not enter into the light receiving part of the COMMON voltage adjustment jig.

[Adjustment Method]

- 1) Expose the light receiving part of the COMMON voltage adjustment jig to the LCD screen. (Point down the LCD screen not to receive the external light.)
- 2) Connect the oscilloscope with the COMMON voltage adjustment jig.
- 3) Turn V COM DC VR and check that the flicker waveform as shown in the fig.8-26 is output.

(When the flicker waveform is not output, check the exposing method of the light receiving part and the external light condition, and check with turning the BRIGHT control.)

- 4) Minimize the flicker waveform amplitude with V COM DC VR.

Note: Turn V COM DC VR slowly because it takes long time to respond to LCD.

The minimum point of the flicker waveform amplitude is nearly coincided with the maximum point of the contrast.

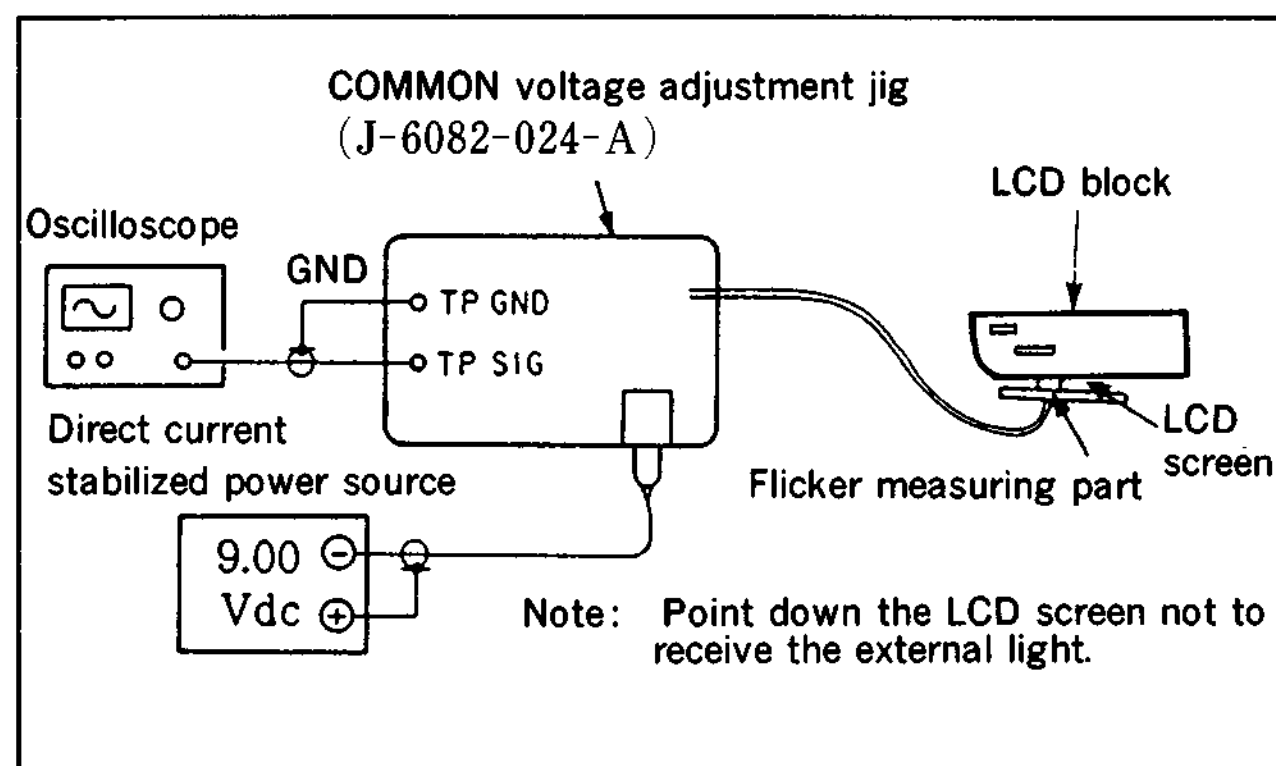


Fig.8-25

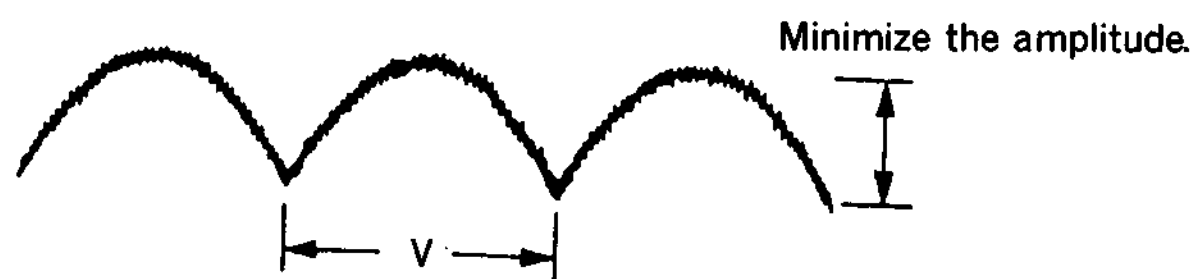


Fig.8-26.

8-6-8. Character Position Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar
Measurement point	LCD screen
Measuring instrument	
Adjustment element	CV801
Specified value	A = B

[Adjustment Method]

- 1) Press the CLOCK SET button of the LCD block and check that black frame and "AM0:00" display on the LCD screen.
- 2) Make black frame on the right end of the LCD screen with CV801 and adjust so that it disappears.
- 3) Press twice the NEXT button of the LCD block and turn off the black frame on the LCD screen. (It takes approximately five seconds to turn off the frame.)

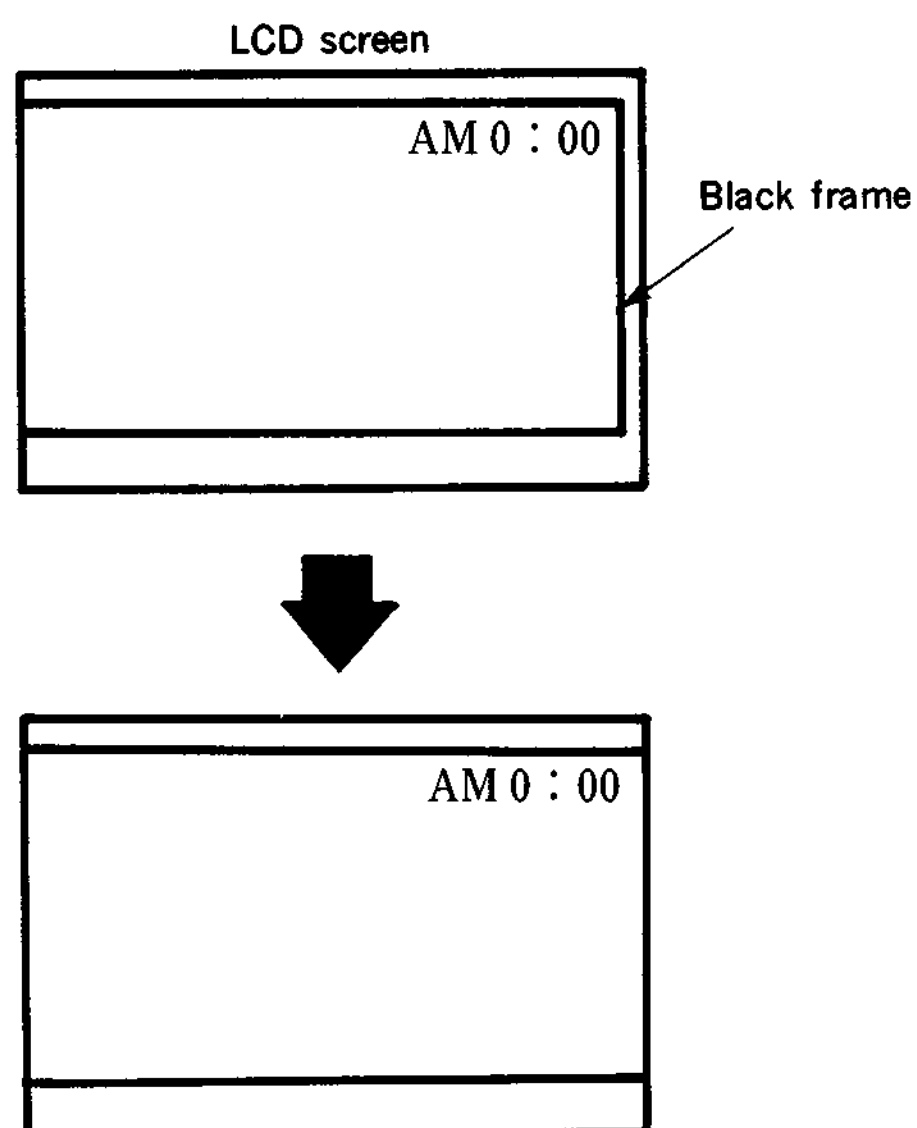


Fig.8-27.

8-7. MARKER SYSTEM ADJUSTMENT

8-7-1. Playback VCO Free Oscillation Frequency Adjustment (SV-38 board)

Mode	Playback
Signal	Optional tape
Measurement point	CL921 (Open side of R928)
Measuring instrument	Frequency counter
Adjustment element	RV923
Specified value	$11.58 \pm 0.05 \text{MHz}$

Note: Connect the frequency counter through the high impedance and low capacity buffer amplifier (oscilloscope, etc).

[Connection]

- 1) Short with the jumper wire between the IC922 Pin ① and Pin ⑩ (SW5V).
- 2) Short with the jumper wire between Q922 ⑧ and GND.

[Adjustment Method]

- 1) Adjust with RV923 to $11.58 \pm 0.05 \text{MHz}$.
- 2) After the adjustment, disconnect the jumper wire connected in the preparation.

8-8. TUNER SYSTEM ADJUSTMENT (TU-123 BOARD)

[Notes]

- 1) The IFT for adjustment (T001 to 004) is such an adjusted coil and is almost properly set that it is not required to turn so much. For adjustment, use an adjustment screwdriver with 0.8mm width (pink TORAY, etc.). Be careful to adjust because it is easy to break.
- 2) For VR for adjustment (RV001, 003 to 007, 501), use an adjustment screwdriver with 2mm width (yellow TORAY, etc.).
- 3) When adjusting, basically follow the following adjustment procedures.
When the replacing parts are designated, however, omit some adjustment procedures if they are required.

[Adjustment Procedures]

Note) When performing the adjustment in 1) to 4), remove the cutland soldering between the TU001 IF terminal and R006, and input the designated signal through the R006 side.

- 1) FAS adjustment (When replacing T001, C019, 020)
- 2) P.REF adjustment (When replacing IC001)
- 3) AFT adjustment (When replacing IC001)
- 4) S.REF adjustment (When replacing IC001)

Note) After the adjustment of 1) to 4), reinstall the cutland soldering.

- 5) MPX LEVEL adjustment (When replacing IC002, CF002)
- 6) FILTER adjustment (When replacing IC003)
- 7) VCO adjustment
- 8) Separation adjustment
- 9) RF AGC adjustment

8-8-1. FAS Adjustment (TU-123 board)

Adjust when replacing T001, C019, 020.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side of the cutland.
Signal	47.25MHz, -20dBm carrier signal
Measurement point	Q001 collector
Measuring instrument	Oscilloscope
Adjustment element	T001
Specified value	The minimum of the output level

[Adjustment Method]

- 1) Adjust with T001 so that the output level is the minimum.

8-8-2. P.REF Adjustment (TU-123 board)

Adjust when replacing IC001.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, -20dBm Carrier signal
Measurement point	IC001 Pin ①
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T002
Specified value	The minimum of the DC level

[Adjustment Method]

- 1) Adjustment with T002 so that the DC level is the minimum.

8-8-3. AFT Adjustment (TU-123 board)

Adjust when replacing IC001.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, -20dBm Carrier signal
Measurement point	IC001 Pin ⑭
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T003
Specified value	$2.3 \pm 0.1Vdc$

[Adjustment Method]

- 1) Adjust with T003 to be $2.3 \pm 0.1Vdc$.

8-8-4. S.REF Adjustment (TU-123 board)

Adjust when replacing IC002.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, -20dBm Carrier signal
Measurement point	IC002 Pin ①
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T004
Specified value	The minimum of the DC level

[Adjustment Method]

- 1) Adjust with T004 so that the DC level is the minimum.

8-8-5. MPX LEVEL Adjustment (TU-123 board)

Adjust when replacing IC002 and CF 002.

Signal	400Hz, 100%MOD (± 25 kHz dev.) See Fig. 8-28
Measurement point	IC003 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	0.70 ± 0.03 Vp-p

[Connection]

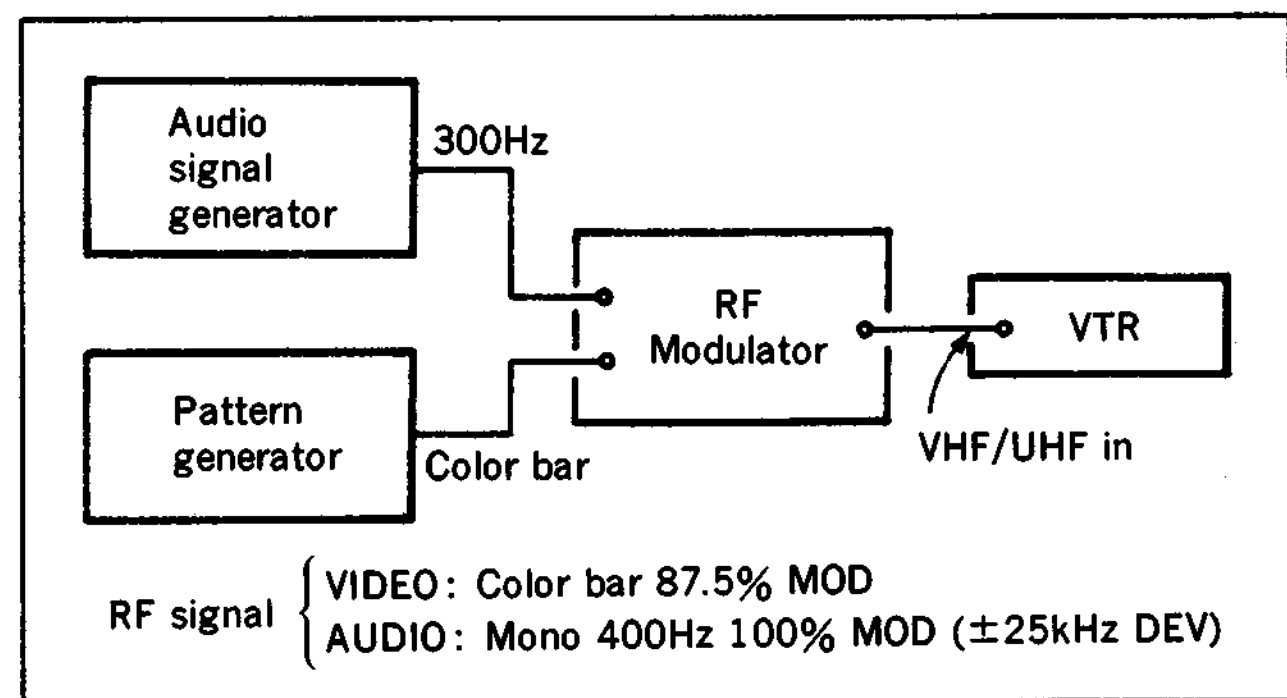


Fig. 8-28.

[Adjustment Method]

- 1) Adjust with RV003 to 0.70 ± 0.03 Vp-p.

8-8-6. FILTER Adjustment (TU-123 board)

Adjust when replacing IC003.

Signal input	Short the negative side of C073 with GND, and input signal to IC003 Pin ③ through the capacitor of 1μ F.
Signal	23.6kHz, 0dBm Carrier signal
Measurement point	IC003 Pin ④
Measuring instrument	Oscilloscope
Adjustment element	RV007
Specified value	The minimum of the amplitude

[Adjustment Method]

- 1) Adjust with RV007 so that the amplitude is the minimum.

8-8-7. VCO Adjustment (TU-123 board)

Signal input	Short the negative side of C073 with GND, and input signal to IC003 Pin ③ through the capacitor of 1μ F.
Signal	No signal and 15.734kHz, 0dBm Carrier signal
Measurement point	IC003 Pin ③
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV006
Specified value	The DC level at no-signal, at 15.734kHz and at input of the 0dBm carrier signal is the same.

[Adjustment Method]

- 1) Adjust with RV006 so that the DC level at no-signal, at 15,734kHz, and at input of the 0dBm carrier signal is the same.
- Note) Too much turning RV006 will cause that the DC level is not allowed to change. The point to adjust is where the DC level changes and the DC level is the same position as that of no-signal.

8-8-8. Separation Adjustment (TU-123 board)

Signal	<ul style="list-style-type: none"> • MPX signal : See table • Connection : See Fig. 8-29
Measurement point	CN001 Pin ⑬(Rch out) CN001 Pin ⑮ (Lch out)
Measuring instrument	Oscilloscope
Adjustment element	RV004, RV005
Specified value	The minimum of the Crosstalk

[Signal]

Signal	Modulation
Stereo Pilot Signal	ON
Main Channel Signal	Lch : 400Hz, 30% Rch : 2kHz, 30%
Sub Channel Signal	NOISE REDUCTION : ON PRE EMPHASIS : ON

[Connection]

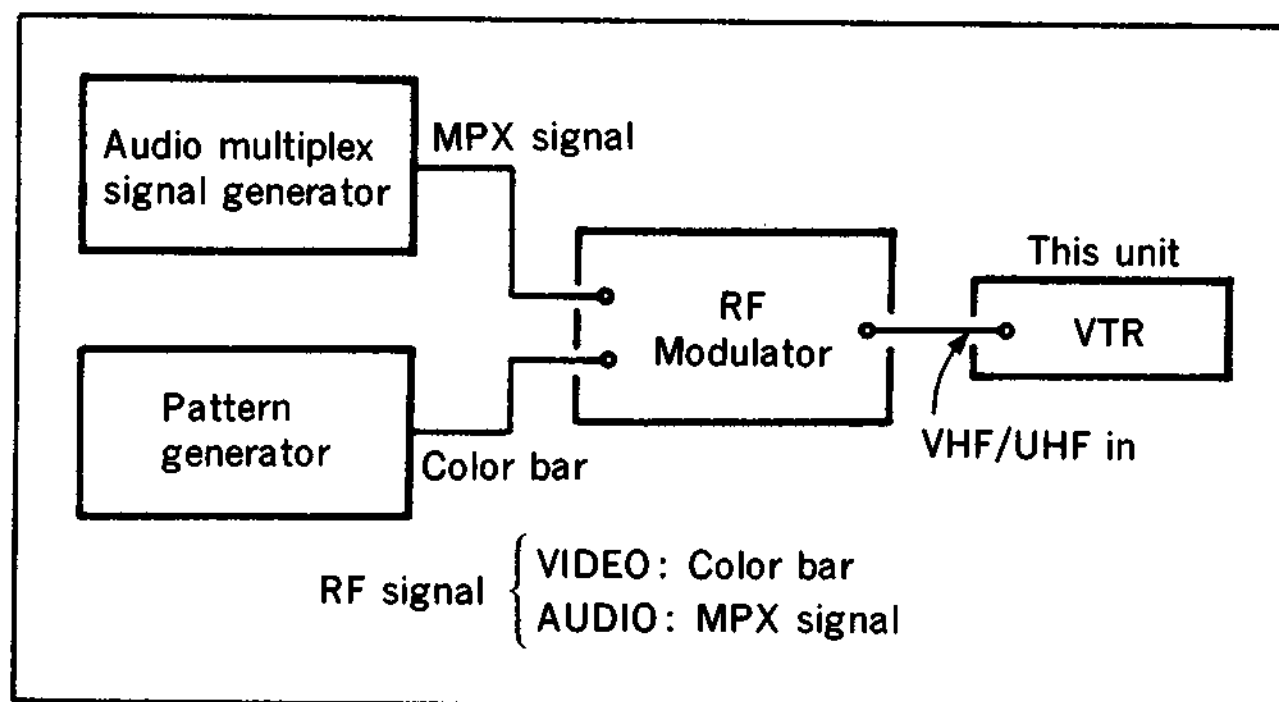


Fig.8-29

[Adjustment Method]

- 1) Adjust with RV004 and 005 so that the crosstalk is the minimum.

8-8-9. RF AGC Adjustment (TU-123 board)

Mode	E-E
Signal	Broadcast TV signal
Adjustment element	RV001

[Adjustment Method]

- 1) Connect the monitor TV.
- 2) Adjust the monitor TV to the most proper contrast and receive the broadcast TV signal.
- 3) Turn RV001 to show the snow noise.
- 4) Turn RV001 in the reverse direction, and set to the point that the snow noise disappears.
- 5) Receive each channel and check that there is no beat by the cross modulation, picture distortion and snow noise.

8-9. AUDIO SYSTEM ADJUSTMENT

- Adjust using the color bar signal as the video signal input.

[Connection of the measuring instruments for audio]

Connect the audio system measuring instruments as shown in the following figure as well as the video system measuring instruments. Set the power switch to the [VTR] side if there is no special direction.

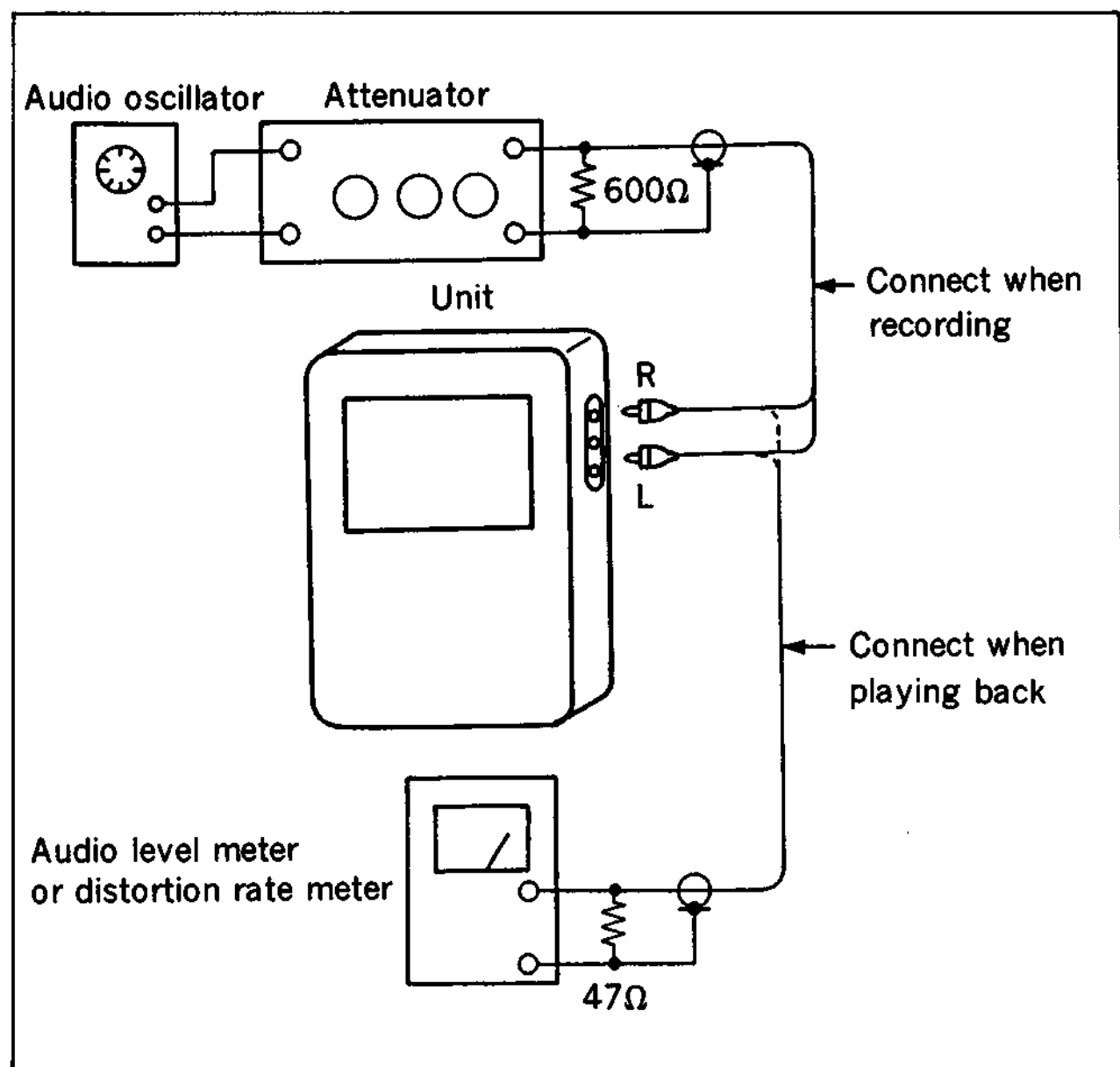


Fig.8-30.

[VIDEO/AUDIO terminal of the unit]

The VIDEO and AUDIO (L/R) terminal has a function both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operation mode of the unit.

When connecting with other instruments, perform according to input-output of the terminal.

Operation mode of the unit and the input-output automatic selection of the terminal

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is set	The case that the unit is set to the playback mode
TUNER (Television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

*When the LINE is selected with the INPUT SELECT button, the display of INPUT and OUTPUT is shown.

[Setting of the switches]

Set the following mode if there is no special direction.

- SP/LP buttonSP
- INPUT SELECT buttonLINE
- AUTO STEREO switchON
- LINE AUDIO button.....ST
- AUDIO MONITOR button.....(S) and MAIN

[Notes]

- When the sound signal is input, input the same signal to both L and R channel if there is no special direction.
- Be sure to insert a plug (shorting plug or dummy plug) to the AUDIO R input-output terminal if there is no special direction. When a plug is not inserted, the monaural mode is set and the proper adjustment is not performed.
(Monaural mode)
At recording.....REC AFM RF 1.7MHz carrier is not output.
At playing backL+R signal is output from the AUDIO L input-output terminal.

[Adjustment Procedures]

- 1.5MHz carrier frequency adjustment
- 1.7MHz carrier frequency adjustment
- E-E output level check
- 1.5MHz carrier level check
- 1.7MHz carrier level adjustment
- 1.5MHz deviation adjustment
- 1.7MHz deviation adjustment note)
- Recording matrix L+R adjustment
- Recording matrix L-R adjustment
- Playback matrix adjustment
- Total level characteristic separation check
- Total distortion rate check

Note) The adjustment method of the 1.7 MHz deviation adjustment is shown later.

8-9-1. 1.5MHz Carrier Frequency Adjustment (AU-53 board)

Mode	Recording
Signal	No signal
Measurement point	IC101 Pin ⑬
Measuring instrument	Frequency counter
Adjustment element	RV102
Specified value	$1.50 \pm 0.02\text{MHz}$

Note : Use the 10: 1 probe for connecting the frequency counter.

[Connection]

- 1) Short with the jumper wire between IC113 pin ⑫ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

- 1) Adjust with RV102 to $1.5 \pm 0.02\text{MHz}$.
- 2) Keep the jumper wire for connecting and perform the 1.7MHz carrier frequency adjustment.

8-9-2. 1.7MHz Carrier Frequency Adjustment (AU-53 board)

Mode	Recording
Signal	No signal
Measurement point	IC201 Pin ⑬
Measuring instrument	Frequency counter
Adjustment element	RV202
Specified value	$1.70 \pm 0.01\text{MHz}$

Note : Use the 10: 1 probe for connecting the frequency counter.

[Connection]

- 1) Short with the jumper wire between IC113 pin ⑫ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

- 1) Adjust with RV202 to $1.70 \pm 0.01\text{MHz}$.
- 2) After the adjustment, disconnect the jumper wire.

8-9-3. E-E Output Level Check

Mode	Camera recording
Signal	CN-6 board J601 Pin ⑤ [Pin ⑨] 400Hz, -15dBs
Measurement point	AUDIO L [R] Input-output terminal
Measuring instrument	Audio level meter
Specified value	$-7.5 \pm 2\text{dBs}$

[Checking Method]

- 1) Check that the 400Hz signal is $-7.5 \pm 2\text{dBs}$.

8-9-4. 1.5MHz Carrier Level Check (AU-53 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Specified value	$128 \pm 10\text{mVp-p}$

[Preparation]

- 1) Terminate both L and R AUDIO terminals at 600Ω. The pin plug should not be inserted to the R terminal. (For setting to the monaural mode)

[Checking Method]

- 1) Check that the 1.5MHz REC AFM RF signal level is $128 \pm 10\text{mVp-p}$. (Read the center level of the luminescent width.)

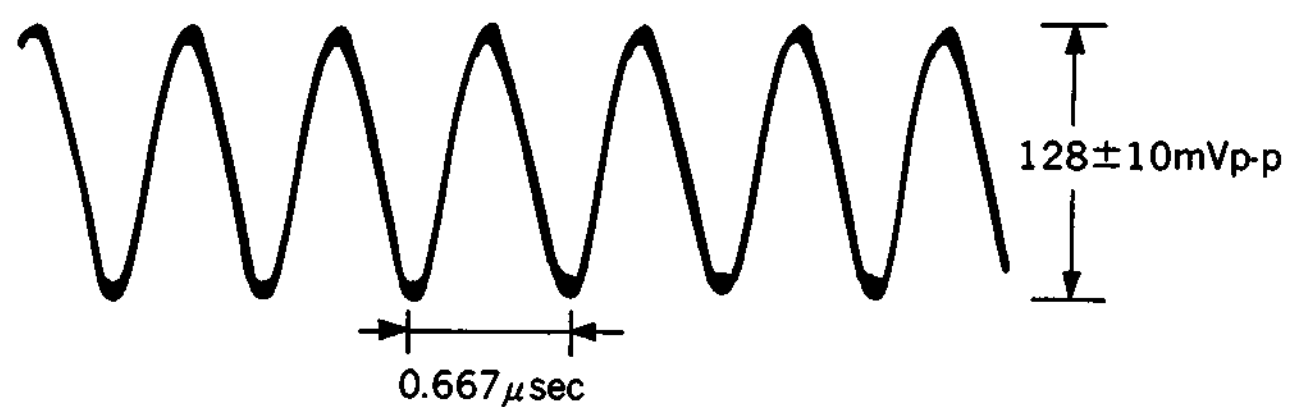


Fig.8-31.

8-9-5. 1.7MHz Carrier Level Adjustment (AU-53 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV203
Specified value	(1.5MHz carrier level) - (1.7MHz carrier level) = $27 \pm 10\text{mV}$

[Preparation]

- 1) Terminate both L and R AUDIO terminals at 600Ω. Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode)

[Adjustment Method]

- 1) Connect the capacitor of 0.01μF between IC201 pin ⑭ and GND.
- 2) Measure the 1.5MHz carrier level by the oscilloscope and write it down.
- 3) Disconnect the capacitor connected in the procedure 1).
- 4) Connect the capacitor of 0.01μF between IC101 Pin ⑭ and GND.
- 5) Measure the 1.7MHz carrier level by the oscilloscope and adjust with RV 203 to (1.5MHz carrier level) - (1.7MHz carrier level) = $27 \pm 10\text{mV}$.
- 6) Disconnect the capacitor connected in the procedure 4).

8-9-6. 1.5MHz Deviation Adjustment (AU-53 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-4NSP)
Measurement point	CN101 Pin ⑤
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	$925 \pm 21\text{mVp-p}$ ($-7.5 \pm 0.2\text{dBs}$)

[Adjustment Method]

- 1) Adjust with RV101 so that the 400Hz signal level is $925 \pm 21\text{mVp-p}$.

8-9-7. Recording Matrix L+R Adjustment (AU-53 board)

Mode	Recording
Signal	1. 400Hz, -7.5dBs AUDIO L input-output terminal Input 2. 400Hz, -7.5dBs AUDIO R input-output terminal Input
Measurement point	IC104 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV401
Specified value	The level difference at the L terminal input and the R terminal input is $0 \pm 5\text{mVp-p}$.

Note: Measure the signal level after passing one minute or more from the signal input.

[Adjustment Method]

- 1) Input 400Hz and -7.5dBs signal to the AUDIO L input-output terminal. (Insert the shorting plug to the R terminal.)
- 2) Read the signal level of IC104 Pin ① and write it down.
- 3) Input 400Hz and -7.5dBs signal to the AUDIO R input-output terminal. (Insert the shorting plug to the L terminal.)
- 4) Adjust with RV401 so that the signal level of IC104 Pin ① is $\pm 5\text{mVp-p}$ measured in the procedure 2).

8-9-8. Recording Matrix L-R Adjustment

Mode	Recording
Signal	400Hz, -7.5dBs Input to the both L and R terminal of AUDIO input-output terminal.
Measurement point	IC105 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV402
Specified value	$0 \pm 10\text{mVp-p}$

Note : Use the 1:1 probe.

[Adjustment Method]

- 1) Adjust with RV402 so that the signal level of IC106 Pin ① is $0 \pm 10\text{mVp-p}$.

8-9-9. Playback Matrix Adjustment (AU-53 board)

Mode	Playback
Signal	Alignment tape: for AFM stereo operation check (WR5-9NS)
Measurement point	CN101 Pin ⑤ and Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV204
Specified value	The distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

[Adjustment Method]

- 1) Adjust with RV204 so that the distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

8-9-10. Total Level Characteristic Separation Check

Mode	Self playback
Signal	400Hz, -7.5dBs: AUDIO L [R] input-output terminal No signal (Insert a shorting plug.): AUDIO R [L] input-output terminal
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Audio level meter
Specified value	Signal level: $-7.5 \pm 2\text{dBs}$ Cross talk level: -25.0dBs or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback output level.

[Checking Method]

- 1) Record the signal.
- 2) Connect the audio level meter to the AUDIO L [R] input-output terminal.
- 3) Play back the recorded part and check that the L [R] output signal level is $-7.5 \pm 2\text{dBs}$.
- 4) Check that the R [L] output cross talk level is -25.0dBs or less.

8-9-11. Total Distortion Rate Check

Mode	Self playback
Signal	400Hz, -7.5dBs Input both L and R AUDIO input-output terminals
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Distortion Rate Meter
Specified value	1.2% or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback distortion rate.

[Checking Method]

- 1) Record the signal.
- 2) Connect the distortion rate meter to the AUDIO L [R] input-output terminal.
- 3) Play back the recorded part and check that the distortion rate of the L [R] output is 1.2% or less.

8-4-4. Record on Page 1 - R Adjustment

Field	Description
Form	APRIS - 1040a Input to the book 1 and 8 (SEARCH/ALTD) and 4 (APRIS/1040a)
Measurement unit	Kilo Bytes
Measuring interval	Quarterly
Accounting period	Q1-Q4
Operational cycle	Q1-Q4/10

Note - Use the 1:1 ratio.

(Adjustment Method)

1. Adjust APRIS to match data (end of Q1, Q2, Q3, Q4)
APRIS/1040

8-4-5. Physical Input Adjustment (APRIS based)

Field	Description
Form	APRIS - 1040a Input to the book 1 and 8 (SEARCH/ALTD) and 4 (APRIS/1040a)
Measurement unit	Q1-Q4 Per Grand Per Q
Measuring interval	Quarterly
Accounting period	Q1-Q4
Operational cycle	The duration of the data subject operation of APRIS/1040 and the full cycle operation of APRIS/1040

(Adjustment Method)

1. Adjust with APRIS and the duration of the APRIS
operation of APRIS/1040 and the full cycle
operation of APRIS/1040

8-4-6. Total Load Characteristic Description Check

Field	Description
Form	APRIS - 1040a Input to the book 1 and 8 (SEARCH/ALTD) and 4 (APRIS/1040a)
Measurement unit	No. of Grand per number of APRIS/1040
Measuring interval	Quarterly
Accounting period	Q1-Q4
Operational cycle	Q1-Q4/10

Note - Use the 1:1 ratio. Adjust data to the 1:1 ratio
with measuring interval (physical input and
(Checking Method)

1. Adjust the data.
2. Check the data for error to the APRIS/1040
operation.
3. The data for APRIS/1040 and check the APRIS/1040
operation.
4. Check the data for error to the APRIS/1040
operation.

8-4-7. Total Duration Data Check

Field	Description
Form	APRIS - 1040a Input to the book 1 and 8 (SEARCH/ALTD) and 4 (APRIS/1040a)
Measurement unit	No. of Grand per number of APRIS/1040
Measuring interval	Quarterly
Accounting period	Q1-Q4

Note - Use the 1:1 ratio. Adjust data to the 1:1 ratio
with measuring interval (physical input and
(Checking Method)

1. Adjust the data.
2. Check the data for error to the APRIS/1040
operation.
3. The data for APRIS/1040 and check the APRIS/1040
operation.

GV-S50

SERVICE MANUAL

US Model
Canadian Model



VIDEO
WALKMAN

A MECHANISM

SPECIFICATIONS

GV-S50

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM stereo system
Video signal	EIA standard, NTSC color
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 1.43 cm/sec. LP: approx. 0.72 cm/sec.
Recording time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Playback time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Fast forward/rewinding time	Approx. 8 minutes (with Sony P6-120 cassette)

LCD section

Picture	4 inches measured diagonally 8.2 x 6.2 cm (3 1/4 x 2 1/4 inches)
On-screen display	TN LCD/TFT active matrix method Total dot number: 89,856 (384 x 234)

Inputs/outputs

VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, -7.5 dBs (0 dBs=0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, -7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speaker	7.2 ohms, 200 mW
Phones	Minijack, 8 ohms
Ⓜ REMOTE (LANC)	Stereo mini-minijack

General

Power requirements	Battery mounting surface input: 6.0 V (battery pack), 7.5 V (AC power adaptor), 6.5 V (DC pack DCP-77)
Power consumption	6.7 W (for continuous playback)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	148.5 x 83 x 127 mm (w/h/d) (5 1/8 x 3 1/8 x 5 inches)
Weight	Approx. 980 g (2 lb 3 oz) not including battery pack
Accessories supplied	Tuner timer unit TGV-3 (1) Battery pack NP-55H (1) AC power adaptor AC-S10 (1) Stereo earphones (1) Signal splitter (1) Lithium battery CR2032 (1)

AC-S10

Power consumption	20 W
Power requirements	100-240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 1.6 A in operating mode
Battery charge terminal	10 V, 1.3 A in charge mode
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to 140°F)
Dimensions	Approx. 72 x 39 x 141 mm (w/h/d) (2 7/8 x 1 9/16 x 5 1/2 inches) including projecting parts and controls
Weight	Approx. 330 g (12 oz.)

Design and specifications are subject to change without notice.

— Continued on next page —



8 VIDEO RECORDER/MONITOR
SONY®

List of Recommended Accessories

	Model Name	Page
Battery pack	NP-77HD, NP-77H, or NP-66H	13
Battery charger	BC-S10 or BC-77	13
Car battery charger	DC-S10	17
DC pack	DCP-77	17
Connecting cord	VMC-910S/920S (1 m/2 m)	30, 32, 34, 35, 36, 37
Cleaning cassette	V8-25CLH	38

TGV-3**Tuner section**

Channel coverage

VHF: 2-13 channels

UHF: 14-69 channels

Cable TV channels: (A-8-A-6), (A-2-W), (W+30-W+84)

75-ohm minijack for VHF/UHF

Antenna input

Timer section

Clock

Crystal lock

Time indication

12-hour cycle

Timer setting

Only for recording, 6 events/month

General

Power requirements

Power is supplied from the GV-S50 video recorder/monitor.

Power consumption

1.3 W

Operating temperature

0°C to 40°C (32°F to 104°F)

Storage temperature

-20°C to 60°C (-4°F to 140°F)

Dimensions

34.5 × 64.5 × 121.5 mm (w/h/d)

(1 ³/₈ × 2 ⁵/₈ × 4 ⁷/₈ inches)

Mass

Approx. 170 g (6 oz)



Design and specifications are subject to change without notice.

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.

SAFETY-RELATED COMPONENT WARNING!!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!


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

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	GENERAL		3-6.	Servo Block Diagram	43
1-1.	GV-S50		3-7.	System Control Block Diagram	47
	Precautions	5	3-8.	Mechanism Control Micro Processor (IC101 on MA-137 Board: CXP80624A) Pin Functions	51
	Overview of the GV-S50	5	3-9.	Mode Control Micro Processor (IC201 on MA-137 Board: MB89092) Pin Functions	54
	Location of Parts and Controls	5	3-10.	Interface	57
	Power Sources	6	3-10-1.	System Control – Video and Audio Block Interfaces (MA-137 Board)	57
	Playing Back Tapes	8	3-10-2.	Mechanism Control – Servo Block Interface (MA-137 Board)	59
	Setting on the Menu Screen	10	3-11.	Audio Block Diagram	61
	Recording a TV Program	10	3-12.	Power Block Diagram	65
	Editing Tapes	11	3-13.	Tuner/Timer Block Diagram	67
	Connecting Other Video Equipment	13			
	Maintenance	13	4.	PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	
1-2.	TGV-3		4-1.	Frame Schematic Diagram	69
	Precautions	14	4-2.	Printed Wiring Boards and Schematic Diagrams	72
	Overview of the TGV-3	14		• RP-144 Board	73
	Location of Parts and Controls	14		• MA-137 (Video, Servo/System Control, Relay/Power) Board	79
	Power Sources	14		• MA-137 (Video) Board	83
	Connecting the GV-S50 Video Recorder/Monitor	15		• MA-137 (Servo/System Control), FU-109, PE-13 Boards	90
	Connecting an Outdoor Antenna and CATV Cable	15		• MA-137 (Relay/Power), FP-621, HP-84, JK-86 Boards	97
	Setting the Clock	15		• RG-25, VR-39, LA-22, LA-23 Boards	103
	Presetting TV Channels	16		• AU-136 Board	109
	Watching TV Programs	17		• SL-26, FP-442, LM-40, LS-33 Boards	118
	Using the Sleep Timer	18		• TU-142 Board	123
	Recording TV Programs	19		• TM-118 Board	128
	Timer-Activated Recording	19	4-3.	Semiconductor	133
2.	DISASSEMBLY		5.	EXPLODED VIEWS	
2-1.	Removal of Cassette Compartment Lid Assembly and LS Lid Assembly	21	5-1.	Cabinet Assembly	134
2-2.	Removal of Side Cabinets (L, R) and JK Block Assemblies (JK-86 Board)	21	5-2.	Upper Cabinet and SC Block Assemblies	135
2-3.	Removal of Lower Cabinet Assembly	22	5-3.	Main Boards Assembly	136
2-4.	Removal of SC Block Section	22	5-4.	Cassette Compartment Assembly	137
2-5.	Removal of SC Block Assembly	23	5-5.	LS Chassis Assembly	138
2-6.	Removal of VR-39 Board	23	5-6.	Mechanism Chassis Assembly (1)	139
2-7.	Removal of Color Liquid Crystal Display Module	24	5-7.	Mechanism Chassis Assembly (2)	140
2-8.	Removal of PE-13, RG-25, RP-144, HP-84 Boards	24	5-8.	Tuner/Timer Unit Assembly	141
2-9.	Removal of AU-136 and MA-137 Boards	25			
2-10.	Removal of SL-26 Board	25	6.	ELECTRICAL PARTS LIST	142
2-11.	Removal of Telescopic Antenna and Cabinet (L, R) Assemblies	26		HARDWARE LIST	165
2-12.	Internal Views	27			
3.	DIAGRAMS				
3-1.	Circuit Boards Location	28			
3-2.	Overall Block Diagram	29			
3-3.	Video (1) Block Diagram	33			
3-4.	Video (2) Block Diagram	37			
3-5.	LCD Block Diagram	40			

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
7.	MECHANISM SECTION ADJUSTMENTS		6.	Y/C Separation Adjustment (MA-137 Board).....	187
7-1.	Setting of Track Shift Mode.....	166	7.	EMPH Y Level Adjustment (MA-137 Board).....	188
7-2.	Preparations for Adjustments.....	166	8.	DE EMPH Y Level Adjustment (MA-137 Board).....	188
7-3.	Processing After Operations.....	166	9.	PB Y Level Adjustment (MA-137 Board).....	189
8.	ELECTRICAL ADJUSTMENTS		10.	Y FM Carrier Frequency Adjustment (MA-137 Board).....	189
8-1.	Preparations Before Adjustments.....	167	11.	Y FM Deviation Adjustment (MA-137 Board).....	190
8-1-1.	Equipments Used.....	167	12.	Chroma Emphasis fo Adjustment (MA-137 Board).....	190
8-1-2.	Connecting the Equipments.....	167	13.	REC Y Level Adjustment (MA-137 Board).....	191
8-1-3.	Precautions upon Adjustments.....	167	14.	REC C Level Adjustment (MA-137 Board).....	191
8-1-4.	Setup during Adjustments.....	167	15.	REC ATF Level Check (MA-137 Board).....	191
8-1-5.	Alignment Tape.....	168	8-6.	LCD System Adjustments.....	192
8-1-6.	Input/Output Level and Impedance.....	169	1.	fsc Adjustment (RG-25 Board).....	192
8-1-7.	Service Mode.....	169	2.	EVR Initial Data Input.....	192
1.	Service mode Setting.....	169	3.	G Sub-Bright Adjustment (RG-25 Board).....	193
2.	Page D Write Protect.....	172	4.	R Sub-Bright Adjustment (RG-25 Board).....	193
3.	Test Mode Setting.....	172	5.	B Sub-Bright Adjustment (RG-25 Board).....	194
4.	Emergency code.....	172	6.	Contrast Adjustment (RG-25 Board).....	194
5.	Emergency mode.....	173	7.	R Contrast Adjustment (RG-25 Board).....	195
6.	Bit Value Discrimination.....	173	8.	B Contrast (RG-25 Board).....	195
7.	Key Input Check.....	174	9.	Color Adjustment (RG-25 Board).....	196
8.	Key Input Check (A/D Port).....	175	10.	HUE Adjustment (RG-25 Board).....	196
9.	Battery Voltage Check.....	175	11.	R Sub-Bias Adjustment (RG-25 Board).....	197
10.	Mechanism Section Switch, etc. Check.....	176	12.	B Sub-Bias Adjustment (RG-25 Board).....	197
11.	Mechanism Controller Input/Output Check.....	177	13.	RGB Bias Adjustment.....	198
12.	Mechanism Controller A/D Port Input Voltage Check.....	177	14.	White Balance Adjustment (RG-25 Board).....	198
13.	Tape Top/End Sensor Check.....	178	15.	Character Position Adjustment (RG-25 Board).....	198
14.	Individual Operations of Drum, Capstan, and Loading Motor.....	178	8-7.	Audio System Adjustments.....	199
15.	Page D Address List.....	179	1.	E-E Output Level Check (AU-136 Board).....	200
8-2.	Electrical System Adjustments.....	182	2.	REC Matrix L-R Check (AU-136 Board).....	200
1.	Oscillation frequency Check (MA-137 Board).....	182	3.	REC Matrix L+R Check (AU-136 Board).....	200
2.	Power Supply Voltage Check (MA-137 Board).....	182	4.	1.5 MHz Carrier Frequency Adjustment (AU-136 Board).....	200
8-3.	System Control System Adjustment.....	182	5.	1.7 MHz Carrier Frequency Adjustment (AU-136 Board).....	200
1.	EEPROM Date Input.....	182	6.	1.5 MHz Carrier Level Check (AU-136 Board).....	201
2.	Battery End Adjustment.....	183	7.	1.7 MHz Carrier Level Check (AU-136 Board).....	201
3.	Battery Down Check.....	183	8.	1.5 MHz Playback Level Adjustment.....	201
8-4.	Servo System Adjustments.....	184	9.	1.7 MHz Playback Level Adjustment.....	202
1.	Switching Position Adjustment (RP-144 Board).....	184	10.	1.5 MHz Deviation Adjustment.....	202
2.	CAP FG Duty Adjustment (RP-144 Board).....	184	11.	1.7 MHz Deviation Adjustment.....	202
8-5.	Video Adjustments.....	185	12.	Overall Level Characteristics Distortion Rate Check.....	203
1.	Playback Frequency Characteristics Adjustment (RP-144 Board).....	185	13.	Separation Check.....	203
2.	Flying Erase Check (RP-144 Board).....	186	14.	Overall Noise Level Check.....	203
3.	VXO Oscillation Frequency Check (MA-137 Board).....	186	8-8.	TGV-3 Electrical Adjustment.....	204
4.	SYNC AGC Level Adjustment (MA-137 Board).....	186	1.	Clock Adjustment (TM-118 Board).....	204
5.	IR Adjustment (MA-137 Board).....	187	2.	RF AGC Adjustment (TU-142 Board).....	204
			3.	Separation Adjustment (TU-142 Board).....	204
			8-9.	Arrangement Diagrams for Adjustment Parts.....	205

SECTION 1 GENERAL

This section is extracted from
GV-S50 instruction manual.

1-1. GV-S50

Precautions

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.6 V (DC pack DCP-77).
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C (104°F).
- For DC or AC power supply, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD (Liquid Crystal Display).
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the unit in the following locations:
 - susceptible to vibration
 - exposed to strong magnetic fields
 - near TV or radio transmitters where strong radio waves are generated
 - on the sand

Preliminary

Overview of the GV-S50

The Video Walkman GV-S50 is an 8 mm video recorder/monitor with a 4-inch LCD (Liquid Crystal Display). Its compact and lightweight design allows you to play back video tapes anywhere and any time you like.

Only with this video recorder/monitor, you can watch playback pictures of 8 mm video tapes, but, with the supplied TGV-3 tuner/timer unit installed, you can watch and record TV programs anywhere and anytime you like.

A variety of optional accessories or equipment allows you to make the best use of the GV-S50.

- By connecting another VCR, you can edit video tapes.
- By connecting a video camera recorder (not supplied), you can use this unit as a monitor, and play back the recorded pictures immediately.

Features

- Easy-to-use Menu screen
 - AFM Hi-Fi stereo for high quality sound*
 - CRYSTAL-CLEAR still/slow picture on LCD
 - MEGABASS circuit for dynamic bass sound
 - Playback of tapes recorded in Hi8 video system**
 - Remaining battery capacity indication
 - Shows you the remaining capacity of the battery.
 - REMOTE terminal
- Allows remote control of this unit by other Sony video equipment.

The GV-S50 uses 8 mm video format cassettes. It records in SP mode (approximately 1.43 cm/second) and LP mode (Approximately 0.72 cm/second) and can play back in SP and LP modes. The quality of the playback picture in LP mode, however, will not be as good as that in SP mode.

PCM (Pulse Code Modulation) recording/playback, that is, digital recording/playback, is not possible with this unit. The PCM sound recorded with another recorder cannot be played back with this unit.

For using this unit abroad, see page 39.

3

5

Overview of the GV-S50

* AFM Hi-Fi Stereo System

On the 8 mm video standard track, the sound is recorded/played back in AFM Hi-Fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option. With this unit, AFM Hi-Fi stereo sound can be recorded on the standard track.

To maintain compatibility with the conventional AFM Hi-Fi monaural equipment, the AFM Hi-Fi stereo sound is recorded as L + R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal.

To playback the tape recorded by its AFM Hi-Fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-Fi monaural equipment is used to play back a tape recorded in AFM Hi-Fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier.

The AFM Hi-Fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

** Hi8 playback

Playback of tapes recorded in SP mode of Hi8 video system is possible on this unit.

- Recording in Hi8 video system is impossible.
- Playback of tapes recorded in LP mode of Hi8 system is impossible.
- High resolution which a conventional Hi8 VCR give the picture cannot be obtained.
- Noise may appear on the screen during playback.

Menu Screen

You can perform certain operations by selecting them from the menu screen. The menu appears on the screen when you press MENU. Select the desired item on the menu screen. For more details, see reference pages in the tables below.

Menu screen

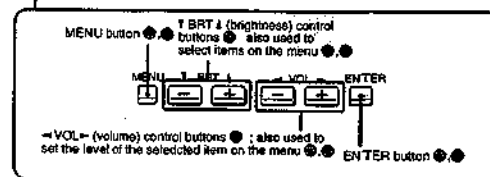
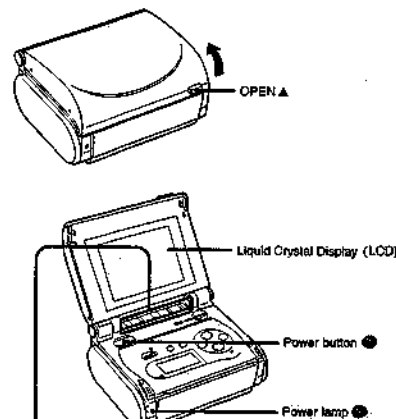
Menu Item	Setting purpose	Reference page
SOUND	To obtain dynamic bass sound	21, 25-26, 28, 30, 32
REC MODE	To select the tape speed (SP or LP)	25-26, 28, 30, 32
HUE	To adjust tint	23, 25-26
COLOR	To adjust the depth of colors	23, 25-26
SLOW TRACKING	To adjust the tracking for still picture or slow picture search	22, 25-26

Location of Parts and Controls

For details, refer to the pages indicated in circles.

Parts and Controls for Adjusting the LCD and for Using the Menu Screen

Push OPEN A and pull up the display first.



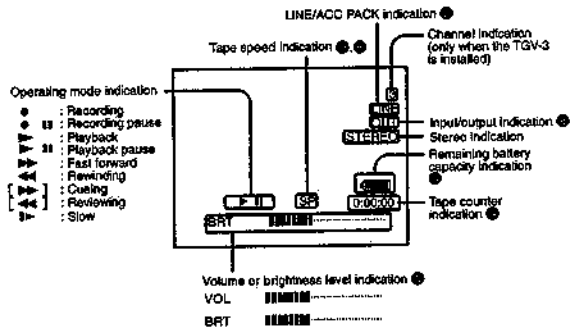
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— 5 —

7

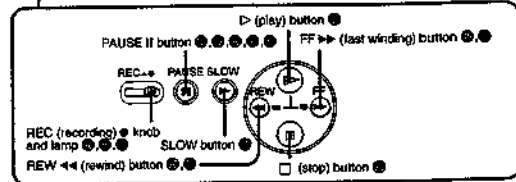
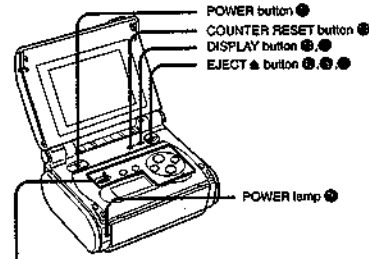
Location of Parts and Controls

On-Screen Displays



Note
All indications are illustrated as if they were actually displayed at the same time; however some of them are not displayed at the same time.

Parts and Controls for Playback and Recording

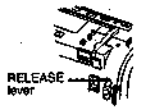


8

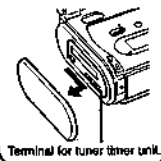
Location of Parts and Controls

Parts for Connections

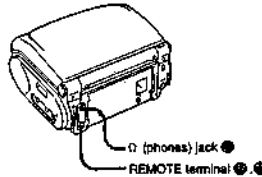
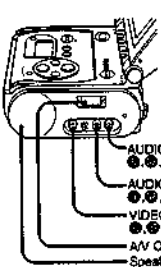
1 Slide the RELEASE lever in the direction of the arrow.



2 Remove the slide cover.



Remove the terminal protection cover.



10

Getting Started

Power Sources

You can select the best power source for your own needs.

Place	Power source	Page
Indoors	AC power adaptor AC-S10 (supplied)	12
Outdoors	Battery pack NP-55H (supplied) NP-66H, NP-77HD or NP-77H	13
In a car	DC pack DCP-77 or Car battery charger/adaptor DC-S10	17

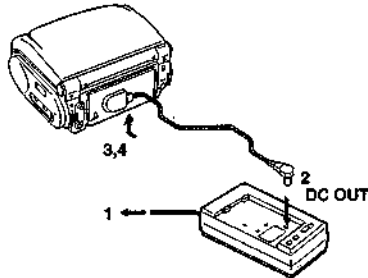
Only the AC-S10 and the NP-55H are supplied; the other accessories for your special needs are available from your Sony dealer.

Disconnecting the power source during recording or playback operations may damage the inserted cassette tape. If this should happen, supply power again immediately and turn on the power.

11

Using a Wall Outlet for Indoor Use

Use the supplied AC-S10 AC power adaptor.



- 1 Plug in the AC power adaptor to a wall outlet. The POWER lamp (green) on the AC-S10 lights up and the power turns on.
- 2 Insert one end of the connecting cord (supplied with the AC-S10) into the DC OUT jack of the AC-S10.
- 3 Align the upper side edge of the connecting plate with the white line printed on the video recorder/monitor so that the slots of the connecting plate (the other end of the connecting cord) are positioned over the tabs of the battery mounting surface.
- 4 Press the connecting plate and slide it in the direction of the ► mark.

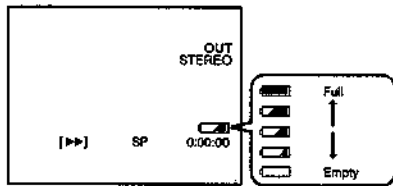
To remove the connecting plate
Slide out the connecting plate while sliding the BATT release knob.

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

- The unit is not disconnected from the AC power source as long as it is connected to a wall outlet.
- One blade of the plug is wider than the other for the purpose of safety and will fit into a wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

To check the remaining battery capacity

When a battery pack is installed, press DISPLAY to show on the screen the remaining battery capacity as well as other indications (see page 9 for other indications). To cancel this display, press DISPLAY again.

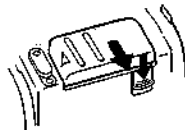


A fully-charged battery pack lasts for:

	NP-65H	NP-66H	NP-77H	NP-77HD
Playback (with TGV-3 connected)	Approx. 60 min.	Approx. 75 min.	Approx. 100 min.	Approx. 100 min.
Recording (without TGV-3 connected)	Approx. 60 min.	Approx. 90 min.	Approx. 120 min.	Approx. 120 min.
Watching TV programs	Approx. 60 min.	Approx. 80 min.	Approx. 120 min.	Approx. 120 min.
Recording TV programs	Approx. 60 min.	Approx. 75 min.	Approx. 100 min.	Approx. 100 min.

To remove the battery pack

While sliding the BATT release knob in the direction of the arrow, slide out the battery pack as illustrated.



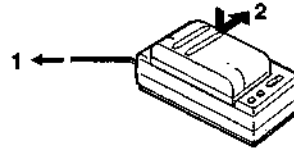
Note
If you use the NP-77HD battery pack which has the battery life indicator, the remaining battery capacity indicated on the LCD may be different from that indicated by the NP-77HD battery pack. The indicator on the NP-77HD battery pack is more accurate.

Using a Battery Pack for Outdoor Use

To charge a battery pack

Before using a battery pack, make sure to charge it first even if it is newly purchased. Beside the supplied NP-55H battery pack, optional NP-66H, NP-77HD and NP-77H battery packs, as described on page 11, are available.

Use the supplied AC-S10 AC power adaptor to charge a battery pack.



- 1 Plug in the AC power adaptor to a wall outlet. The POWER lamp (green) on the AC-S10 lights up and the power turns on.
- 2 Install the battery pack in the AC-S10. Align the flat side of the battery pack with the line on the AC-S10. Then push down and slide the battery pack in the direction of the arrow. The REFRESH lamp (red) lights up first and then it goes out. When the CHARGE lamp (orange) lights up, battery charging begins. When the battery is charged, the CHARGE lamp goes out. Unplug the AC power adaptor and the POWER lamp goes out. (Refer to the instructions provided for the AC-S10 as well.)

Required charging time:

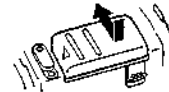
NP-65H (supplied)	NP-66H	NP-77H	NP-77HD
70 min.	100 min.	140 min.	140 min.

(Approx. minutes using AC-S10)

- The battery pack cannot be charged when using the AC power adaptor is used to operate the unit.
- An NP-55H, NP-66H, NP-77HD and NP-77H battery pack can also be charged with the BC-S10 or BC-77 battery charger.

To attach a battery pack to this unit

Align the flat side edge of the battery with the white line printed on the video recorder/monitor so that the slots of the battery are positioned over the tabs of the battery mounting surface, and slide the battery pack while pressing it.



Using the Battery Pack Efficiently

Preparing battery packs

Prepare 2 or 3 times more battery power than you plan to use. The published battery capacity is measured in a continuously playing VCR at room temperature starting with a fully charged battery. Fast winding or rewinding uses much power than normal playing. Consequently, battery consumption becomes faster when these operations are performed frequently.

Battery consumption is faster in a cold climate
Cold climates reduce the efficiency of a battery and cause it to run out more quickly.

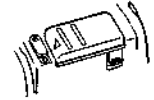
When to replace battery packs

When a battery pack is fully discharged, the POWER lamp starts blinking slowly. During recording, "BATTERY" also starts lighting on the screen. Replace the battery when the POWER lamp starts blinking rapidly. Turn off the video recorder/monitor power before replacing the battery. Especially during recording, keep the cassette inside the cassette holder while replacing the battery. When a fresh battery is attached, recording can be resumed smoothly without any picture distortion.

Notes on charging

Before using a battery pack, charge it fully. A newly purchased battery pack also needs to be charged before its first use.

Recharge a battery pack only when it is fully used out
Avoid recharging only partly used battery packs. Repeated charging of partly discharged battery packs reduces their capacity and shortens their overall life span. The original capacity can sometimes be recovered by fully discharging and then fully recharging the battery pack.



Power Source

Rechargeable battery packs

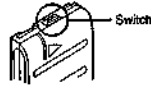
Battery pack care

- Remove the battery pack from the video recorder/monitor after use, and keep it in a cool place. When the battery pack is installed on a video recorder/monitor, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and so shortens battery life.
- The battery pack is always discharging a little even when not in use. Thus, the battery should be charged before each use.
- If the terminals (metal parts on the back) are dirty, the battery capacity will be reduced. When the terminals are dirty, or when the battery pack has not been used for a long time, attach and remove it several times. This will improve the contact between the battery pack and the video recorder/monitor. Also, wipe the + and - terminals with a soft cloth or paper.
- If the battery pack is not used for a long time (about 1 year) and you charge it again, the battery capacity will be reduced. After several charging and discharging cycles, the battery will recover its original capacity.

How to use the switch on the battery pack

Use this switch as a reminder of charging.

Set the switch to the no-marked position when the charging is completed. Set the switch to the red-marked position when the battery is discharged.



Battery life

A battery can be fully charged and discharged about 500 times under normal temperatures. If "BATTERY" appears just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a new one.

Best temperature for charging

A lower temperature requires a longer charging time. Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why a battery pack heats up

While a battery pack is being charged or used, the chemical change occurring inside the battery pack release heat. The battery pack becomes warm, but this is normal and not dangerous.

Warning

If the + and - terminals are short-circuited with a piece of metal, the battery heats up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metals.

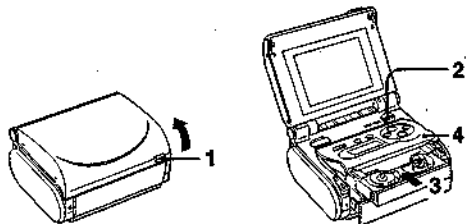
16

Basic Operations

Playing Back Tapes

Make sure that the power source is attached to this unit.

Inserting a Cassette




1 Push OPEN  and open the display.

2 Press EJECT . The cassette holder opens automatically. Do not open the cassette holder forcibly.

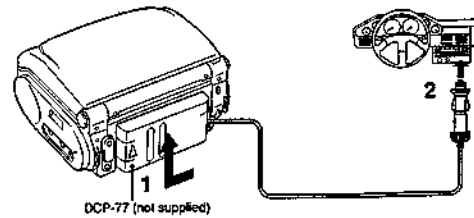
3 Insert a cassette with the window side facing up.


4 Press the PUSH mark. The cassette holder closes automatically.

When you press EJECT , power is supplied and the cassette holder opens even if the power is turned off. After the cassette holder opens, the power goes off automatically. Press POWER if you want to continue the operation.

18

Using a Car Battery



1 Attach the DC pack to the video recorder/monitor by aligning the upper side edge of the DC pack with the white line on the video recorder/monitor and slide the DC pack in the direction of the  mark while pressing it.

2 Plug the power cord into the cigarette lighter socket.

- Only connect the DCP-77 to a car with a negative ground 12 V or 24 V battery.
- The DCP-55 is not recommended for this unit because its power is not enough to operate this unit.

Notes

- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not in use, keep it in its case.
- Keep the video recorder/monitor away from any power source. Such sources may cause noise to appear on the screen.

Caution on using this unit in a car

- For your safety, do not watch video tapes or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while the car engine is stopped, the car battery will be discharged. Avoid running this unit from the car battery more than 12 hours without recharging it.
- Remove the car battery cord from the cigarette lighter socket if you do not use the unit for a long time.

17

Ejecting a Cassette



1 Press EJECT . Make sure the tape is not running.

2 Remove the cassette.

3 Press the PUSH mark. The cassette holder closes automatically.

Notes on opening and closing the cassette holder

- Do not insert your finger into the cabinet while the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

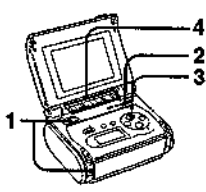
Cassette case

- Store cassettes in their cases when they are not in use and keep them in an upright position to keep out dust and prevent uneven winding.
- Never insert a cassette upside down into the cassette holder.
- Never cover the small holes on the rear of a cassette or insert anything into the holes.
- Remove a cassette from the video recorder/monitor when it is not in use.

19

Playing Back Tapes

Watching Video Tapes



- 1 Press POWER.**
The POWER lamp lights.
- 2 Insert a recorded tape as explained on page 16.**
- 3 Press ▷ (play).**
Playback starts.
- 4 Press BRT - or + and VOL - or + to adjust the brightness and the volume respectively.**
The volume and brightness level indication bars appear on the screen.

To stop playback
Press □ (stop).

To rewind the tape
Press REW ◀.

To advance the tape
Press FF ▶.

If power supply is interrupted
The levels of volume and brightness are automatically set to the center point on the level indication bars on the screen.

20

To turn off the power to this unit

Press POWER again so that the POWER lamp goes off.

To rewind the tape and play it back automatically — Auto play

Press ▷ (play) while pressing REW ◀.

To mute the picture and sound

Close the LCD so that the LCD turns off and that sounds are not heard from the speaker.
To restore the picture and sound, push OPEN ▲ and pull the LCD up.

For private listening in stereo

Connect the supplied stereo earphones to the φ (phones) jack. No sound will be heard from the speaker.

Listening to Stereo and Dynamic Bass (MEGABASS) Sound

You can listen to dynamic bass sound in stereo by using the supplied stereo earphones; however, you cannot listen to this sound through the speaker.

Relation between outputs and sound effects

	Stereo effect	MEGABASS effect
Earphones	Active	Active
Speaker	Inactive	Inactive
Line output	Active	Inactive

To activate MEGABASS Sound

Select "MEGABASS" from "SOUND" on the menu screen. For details on the procedure, see pages 25 and 26.

To inactivate MEGABASS, select "NORMAL" from "SOUND" on the menu screen.

21

Playing Back Tapes

Various Playback Modes

To stop the tape for a moment — Still picture	During playback: PAUSE (II) ▶ II	To resume normal playback, press ▷ or PAUSE II. This mode will be automatically released and the unit will stop after five minutes.
To view the slow playback picture	During playback: SLOW (▶) ▶	To resume normal playback, press ▷. (for normal playback resumes automatically after one minute.)
To locate a particular point while viewing the picture — Picture search	During playback: REW (◀) (←) or FF (▶) (→)	When you release the button, the unit will return to the previous mode.
To view the picture at high speed — FR picture search	During rewinding: REW (◀) (←) or FF (▶) (→)	

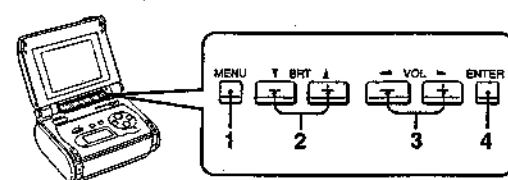
If streaks appear in slow playback pictures on LCD
Adjust the pictures during slow playback by using the menu screen, so that streaks disappear from the pictures. For details on the procedure to adjust "SLOW TRACKING" on the menu screen, see pages 25 and 26.

When the playback picture is viewed on another TV or monitor
The pictures may possibly become black and white or shakes vertically in picture search and FR picture search modes. Moreover, noise appears in the still and slow pictures.

22

Adjusting the Picture

You can adjust tints and the depth of colors on the menu screen.



- 1 Press MENU.**
The menu screen appears.
- 2 Press ▼ or ▲ to select the item to adjust.**
- 3 Press ◀ or ▶ to make adjustments.**
Each time you press ◀ or ▶, the selected item is adjusted as shown below.
- 4 Press ENTER.**

To adjust tints

green ◀ red ▶

To adjust the depth of colors

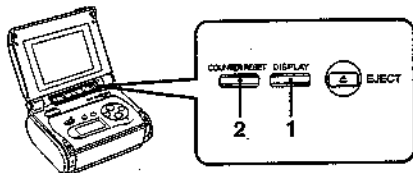
less depth ◀ more depth ▶

23

Playing Back Tapes

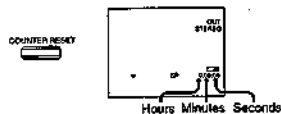
Using the Tape Counter

The counter indicates the tape transport in hours, minutes and seconds. During playback or recording, it shows you the playback or recording time.



- 1 Press **DISPLAY**.
The tape counter appears on the screen.

- 2 Press **COUNTER RESET** during playback or recording at the point you want to locate later.
The counter is reset to 0:00:00.



Notes

- When you play back a blank tape, the tape counter does not function.
- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- The difference between the counter reading and the point on the tape may increase by several seconds in the following cases:
 - after repeated fast-forward and rewinding
 - when playing back a tape recorded both in SP and LP modes
 - when playing back a tape having a blank portion between recorded portions

24

Settings on the Menu Screen

Menu Screen List

Items	Settings	Setting purpose	When to use
SOUND	● NORMAL	To inactivate the MEGABASS effect.	
	MEGABASS	To emphasize bass sound	When emphasizing bass sound
REC MODE	● SP	To record at normal speed	When recording
	LP	To record at double normal speed	
HUE	Level indication bar	To adjust tints	When the colors of picture are strange
COLOR	Level indication bar	To adjust the depth of color	
SLOW TRACKING	Level indication bar	To adjust the tracking for slow motion playback picture	When watching slow motion pictures

●: factory setting

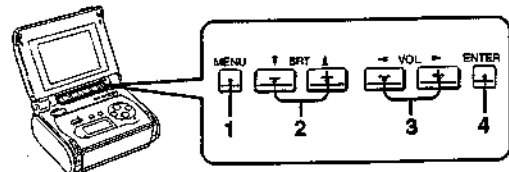
* Levels are set at the middle of the bar at the factory.

26

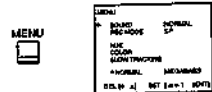
Settings on the Menu Screen

You can set five items on the menu screen. You can use this unit with the settings preset at the factory (indicated by ● in the list on page 26). If you want to change the settings, follow the procedure described below.

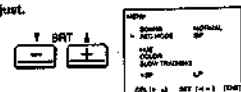
Operation



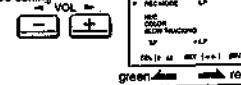
- 1 Press **MENU**.
The menu screen appears.



- 2 Press **▼** or **▲** to select the item to adjust.



- 3 Press **◀** or **▶** to select the setting you want.
Each time you press **◀** or **▶**, the selected setting changes and is indicated by ●.



- 4 Press **ENTER**.



Note

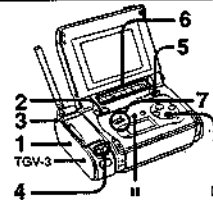
You cannot cancel the setting procedure once you start changing the setting.

25

Recording a TV program

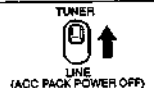
You cannot watch or record a TV program on this unit since this unit does not have a built-in tuner. However, if you install the supplied TGV-3 tuner timer unit to this unit, you can watch and record a TV program. Here's only explanation of how to record a TV program after connecting the tuner to this unit. For installation, channel preset, channel selection, etc., refer to the instruction manuals supplied with the TGV-3.

Operation



- 1 Install the TGV-3 tuner timer unit to this unit, and carry out the necessary setting, such as channel preset, on the TGV-3. (For more details, refer to the instruction manual supplied with the TGV-3.)

- 2 Set the **TUNER/LINE** selector on the rear of the TGV-3 to **TUNER**.



- 3 Turn on the power of this unit.
"ACC. PACK" appears on the screen for several seconds.

- 4 Press **CH →** on the TGV-3 to select the TV program to be recorded.





- 5 Insert a cassette as explained on page 18.



27

Recording a TV Program

<p>6 Select the tape speed ("SP" or "LP" from "REC MODE") on the menu screen of this unit. See "Settings on the Menu Screen" on pages 25 and 26.</p>	
<p>7 Slide REC on this unit in the direction of the arrow. Recording starts.</p> 	
<p>To pause recording Press PAUSE II.</p> <p>To resume recording Press PAUSE II again. If you do not press PAUSE II again within five minutes, the pause mode will be released automatically and the unit will stop.</p>	<p>To stop recording Press  (stop).</p>

When changing the channel while recording

Set this unit in recording pause mode and then select another channel. You cannot watch another program while recording.

When recording from the beginning of the tape

Advance the tape for about 15 seconds before recording. This will prevent missing the starting point when playing back on another VCR.

When the tape is recorded to the end

The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn off the power by pressing POWER.

About recorded sound

Recording level is always fixed automatically.
The VOL - and + have no effect on the recorded sound level.

If power supply is interrupted while recording

Recording stops.

Recording/playback time

Two tape speeds (SP/LP) can be selected on the menu screen (see pages 25 and 26). The recording time in LP mode is twice as long as that in SP mode. For better picture and sound, recording in SP mode is recommended. During playback, the mode in which the tape has been recorded is selected automatically.

Difference in color systems

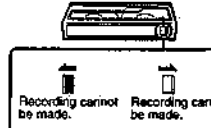
There are different formats of the TV color broadcast and electricity system: NTSC, PAL and SECAM. Video cassette tapes are made to correspond to one of these formats. Use NTSC format cassette tapes for this unit. You will find "P6" on the package of NTSC cassettes.

To prevent accidental erasure

Slide out the tab on the back of the cassette so that red color is visible.

To re-record on the cassette, slide the tab back.

Rear side of a cassette



Note

If you record, using this unit, on a tape that has been recorded with PCM sound, and then if you play back this tape on a VCR with PCM function, the sound may be cut off occasionally. If this happens, set the audio monitor switch of the VCR to the standard position.

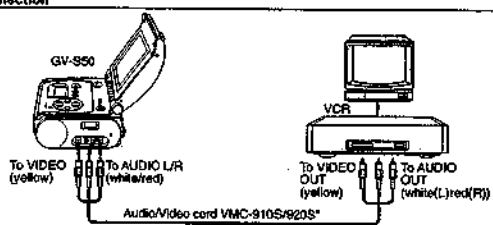
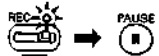
28

29


Editing Tapes

You can not record a TV program since this unit does not have a built-in tuner. However, you can edit a tape with the another VCR (8 mm, Beta, or VHS format) connected through the VIDEO/AUDIO input/output jacks of this unit.

Editing from Another VCR

<p>Connection</p>  <p>* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).</p>
<p>Operation</p> <p>1 Turn on the power of both units.</p> <p>2 Insert a source tape into the other unit (playback) and a tape for recording into this unit (recording). If the supplied TVG-3 tuner timer unit is installed, set the TUNER/LINE selector to LINE.</p> <p>3 Select the tape speed ("SP" or "LP" from "REC MODE") on menu screen of this unit. See "Settings on the Menu Screen" on pages 25 and 26.</p> <p>4 Activate the EDIT function* if it is provided with the other unit.</p> <p>5 Locate the playback start point and press the pause button on the other unit.</p> <p>6 Slide REC in the direction of the arrow and press PAUSE II on this unit. This unit is now put in recording pause mode.</p> 

30

<p>7 Press the pause buttons (PAUSE II on this unit) on both units to release the pauses.</p>
<p>8 Press the pause buttons on both units to pause the units again.</p>
<p>9 Repeat steps 7 and 8 to edit more scenes.</p>
<p>10 After editing is completed, press the stop buttons  on this unit) on both units to stop playback and recording.</p>

* Although this unit does not have an EDIT function, using this function on a VCR connected to this unit for editing will avoid deterioration of the picture on the duplicated tape.

Notes on connection

Note that cord plugs and jacks are color coded. Red plugs and jacks are for the right audio channel, white ones are for the left audio channel and yellow ones are for video signals.

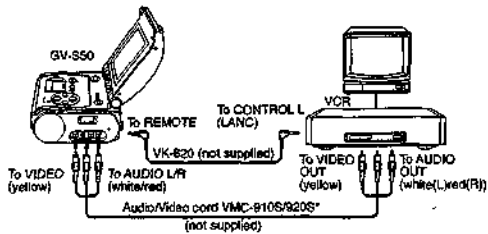
31

Editing Tapes

Editing from the VCR Equipped with the CONTROL L (LANC Ⓞ) Terminal

Connect the REMOTE terminal on this unit and the CONTROL L terminal on the other unit, and then set the other unit's LANC mode to "M". Playback/pause on the other unit and recording/pause on this unit can be operated simultaneously from the other unit by pressing only one button.

Connection



* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Operation

- 1 Turn on the power of both units.
- 2 Insert a source tape into the other VCR (playback) and a tape for recording into this unit (recording).
- 3 Select the tape speed ("SP" or "LP" from "REC MODE") on the menu screen of this unit. See "Settings on the Menu Screen" on pages 25 and 26.
- 4 Activate the EDIT function if it is provided with the other VCR.
- 5 Locate the playback start point and press the pause button on the other VCR.
- 6 Slide REC in the direction of the arrow and press PAUSE on this unit. This unit is now in recording pause mode.



32

7 Press SYNCHRO EDIT on the other equipment to release the pause.

8 Press SYNCHRO EDIT on the other equipment to pause both units again.

9 Repeat steps 7 and 8 to edit other scenes.

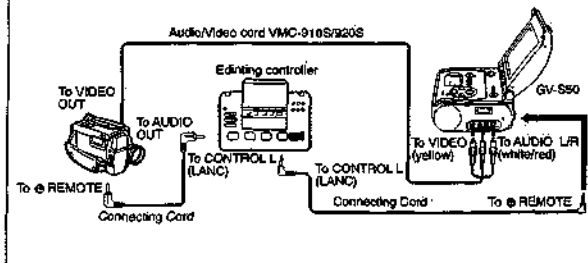
10 After editing is completed, press the stop buttons (□ on this unit) on both units to stop playback and recording.

About Ⓞ(LANC)

LANC stands for Local Application Control Bus System. The LANC terminal is used for controlling the tape transport of video equipment and peripherals connected to it. This terminal has the same function as those indicated as CONTROL L or REMOTE.

Editing with an Editing Controller

By adding an editing controller to the video equipment connected through the LANC terminals, the various piece of equipment can be operated with the controller.

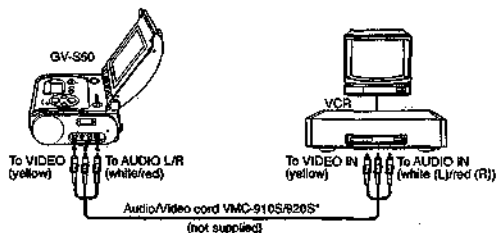


33

Editing Tapes

Editing from This Unit to Another VCR

Connection



* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

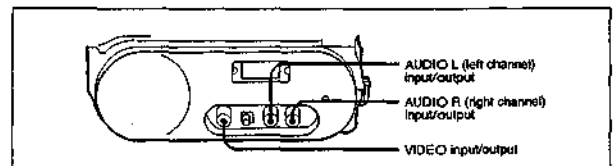
Operation

- 1 Turn on the power of both units.
- 2 Insert a source tape into this unit (playback) and a tape for recording into the other VCR (recording).
- 3 Select the tape speed (SP/LP) on the other VCR.
- 4 Activate the EDIT function if it is provided with the other VCR.
- 5 Locate the playback start point and press PAUSE on this unit.
- 6 Put the other VCR into recording pause mode
- 7 Press the pause buttons (PAUSE on this unit) on both units to release the pause.
- 8 Press the pause buttons on both units to pause the units again.
- 9 Repeat steps 7 and 8 to edit more scenes.
- 10 After editing is completed, press the stop buttons (□ on this unit) on both units to stop playback and recording.

34

VIDEO/AUDIO Input/Output Jacks

The VIDEO/AUDIO input/output jacks automatically become either input or output jacks according to the operating modes of this unit.



Relation between the operating mode and the input/output status

① When the LINE/TUNER selector on the TGV-3 is set to LINE or the TGV-3 is not installed.

Operating Mode	Input/Output Status
Stop	Input
Playback	Output
Recording	Input

② When the LINE/TUNER selector on the TGV-3 is set to TUNER (power is supplied).

Operating Mode	Input/Output Status
Stop	Output
Playback	Output
Recording	Output

The current status will appear on the screen for five seconds in the following cases:

- when the status has changed
- when you press DISPLAY

35

Connecting Other Video Equipment

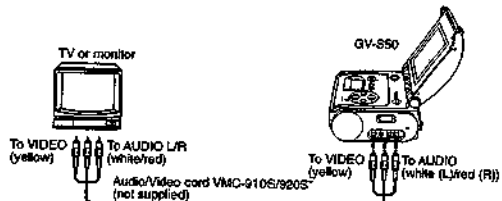
You can connect other video equipment such as a TV, monitor, video camera recorder, VCR, etc. through the VIDEO/AUDIO input/output jacks.

For additional information, refer to the operating manuals of the equipment you want to connect.

Connecting a TV or Monitor

This allows you to view playback pictures on larger screen.

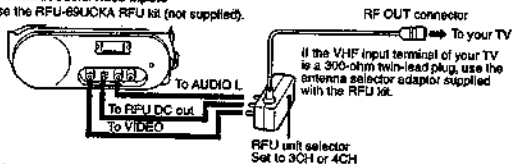
① TV or monitor with audio/video inputs



* If your TV or monitor is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

② TV without audio/video inputs

Use the RFU-89UCCA RFU kit (not supplied).



Note
The RFU 89UCCA includes the following accessories:

- RFU adaptor (1)
- Antenna selector (1)
- Antenna selector adaptor

To set the channel for this unit

To view the playback picture of this unit, set the selector of the RFU adaptor to channel 3 or 4, whichever channel is not active in your area, and select the same channel on the connected TV.

36

Other Information

Maintenance

Main Unit

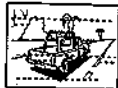
- When the unit is not used for a long period of time, periodically turn on the power and play back a tape for about three minutes.
- Clean the cabinet with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Video Head Cleaning

To ensure a clear picture, clean the video heads periodically. If playback pictures are noisy or hardly visible, the video heads may be contaminated. If this happens, clean the video heads with the Sony VB-26CLH cleaning cassette (not supplied) referring to the instructions supplied with it.

Caution

Do not use commercially available wet-type cleaning cassettes. They may damage the video heads.



Note

If the VB-26CLH cleaning cassette is not available in your area, consult your Sony service facility.

Video Head Replacement

When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. If this happens, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Built-In Lighting System

A built-in lighting system is installed inside the liquid crystal screen of this unit. Eventually the small fluorescent tube used for this built-in lighting system wears out. If the tube becomes dim or goes off immediately after you turn on the unit, even with new batteries, replace the tube with a new one. To replace the tube, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tube is about three years if this unit is used for an hour each day. When you use the unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

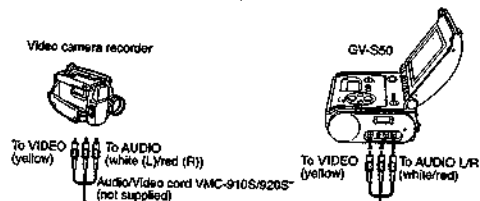
LCD

- Do not push the display forcibly.
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

38

Connecting a Video Camera Recorder

This allows you to monitor the pictures actually being taken.



* If your camera recorder is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Connecting a VCR

This allows you to dub or edit tapes as explained before. See pages 30-35.

37

Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drum, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, it cannot prevent damage if a tape is left inside the unit. It is best to remove the tape if you are not using the unit.

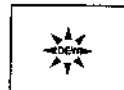
If moisture condenses inside the unit

"DEW" appears on the screen.

No button will function except EJECT \square .

Eject the cassette, turn off the unit and leave the cassette holder open for at least an hour.

The unit can be used again if "DEW" does not appear when one of the tape transport buttons (P, \square , PAUSE II, FF \blacktriangleright or REW \blacktriangleleft) is pressed.



Using Your Video Recorder/Monitor Abroad

If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply ranging from 100 V - 240 V), you can use your video recorder/monitor in any country. However, since the shape of the outlet differs widely in the world, you may need an AC plug adaptor.

Each country has special TV color broadcast and electricity systems. This unit is designed to play back and record using the NTSC color video signals. Playback and recording of video sources of other color signals (PAL and SECAM) cannot be guaranteed.

Countries using NTSC color signal

Bahama Islands, Canada, Central America, Japan, Korea, Mexico, Taiwan, the Philippines, U.S.A., etc.

39

1-2. TGV-3

This section is extracted from TGV-3 instruction manual.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

Precautions

Operation

- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the unit in the following locations:
 - susceptible to vibration
 - exposed to strong magnetic fields
 - near TV or radio transmitters where strong radio waves are generated
 - on the sand

Care

- Clean the unit body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Preliminary

Overview of the TGV-3

The TGV-3 is a tuner timer unit designed to be used with the GV-S50 8mm video recorder/monitor.

- By connecting the GV-S50 8mm video recorder/monitor
- You can watch TV programs. (page 18)
 - You can record TV programs. (page 24)

Features

- Easy-to-use menu screen function
- Timer-activated recording
- SLEEP TIMER for turning off the unit automatically

Menu Screen

The TGV-3 is equipped with a menu screen function. You can perform certain operations on the menu screen. The TUNER MENU appears on the screen of the GV-S50 8mm video recorder/monitor when you press MENU. Select the desired item on the TUNER MENU screen. For more details, see reference pages in the table below.

Menu item	Setting purpose	Reference page
TIMER SET	To preset timer-activated recordings	26 - 28
SLEEP TIMER	To turn off the unit automatically after a certain time	22
CHANNEL	To determine how to get a channel (DIRECT or SEEK)	20 - 21
CLOCK SET	To set the date and the time	11 - 12
TUNER PRESET	To preset TV channels	13 - 15

Note

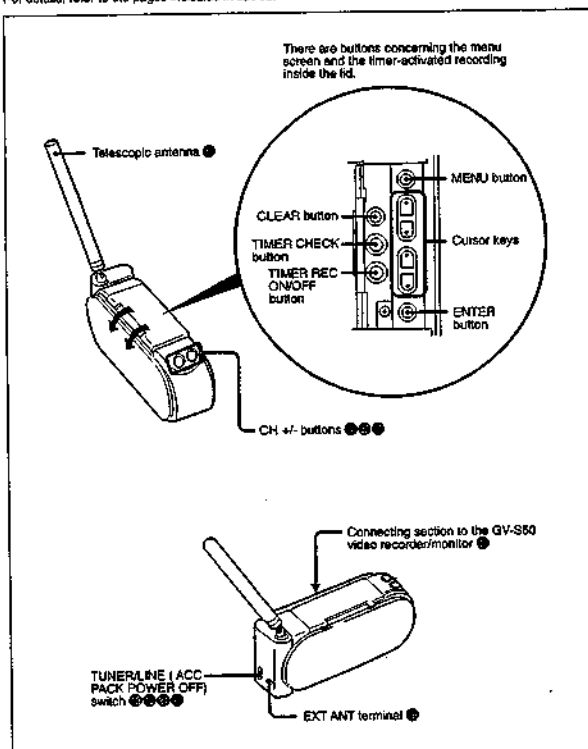
The TUNER MENU does not appear while recording or playing back a tape on the GV-S50 video recorder/monitor.

3

5

Location of Parts and Controls

For details, refer to the pages indicated in circles.



6

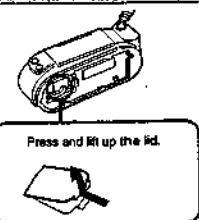
Getting Started

Power Sources

The TGV-3 automatically turns on and off when the GV-S50 video recorder/monitor turns on and off. The power for this unit is supplied from the GV-S50 video recorder/monitor. You do not have to connect any power source to the TGV-3 itself except a lithium battery which powers the clock and keeps the last channel in memory when the GV-S50 video recorder/monitor turns off.

Installing a Lithium Battery

- 1 Open the lid of the lithium battery compartment.



- 2 Install the supplied CR2032 lithium battery with the + side facing out.



- 3 Close the lid.

To remove the lithium battery
Push the battery forward and remove it as illustrated.



7

Power Sources

Lithium battery life

Approximately one year in normal operation.

If the lithium battery becomes weak, the message "CLOCK SET" appears when you select the TIMER SET menu. But even though you select the CLOCK SET menu, the "12:00AM" indication appears and the clock does not operate. In this case, replace the battery with a Sony CR2032 lithium battery. Use of another battery may present a risk of fire or explosion. After replacing the battery, readjust the clock.

Caution

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, as that may cause short-circuit.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

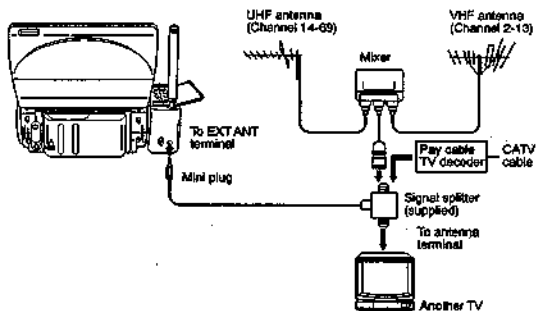
Warning

Battery may explode if misreated. Do not recharge, disassemble or dispose of in fire.

8

Connecting an Outdoor Antenna and CATV cable

If you cannot obtain satisfactory reception with the telescopic antenna, or when recording TV programs, use an outdoor antenna. For viewing CATV channels, connect the CATV cable.



Note

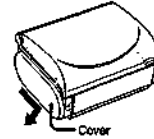
- Before connecting the antennas, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use the optional VCA-3W or VCA-4E car antenna, etc. For details, refer to the operating instructions of the car antenna.

10

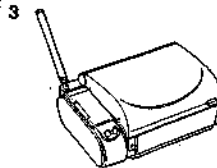
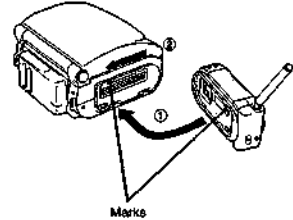
Connecting the GV-S50 Video Recorder/Monitor

Attaching the GV-S50 Video Recorder/Monitor

1 Remove the cover while sliding the RELEASE lever in the direction of the arrow (→).



2 Align the marks of the connecting sections of this unit and the GV-S50 as illustrated (①), then slide this unit backward until it clicks (②).

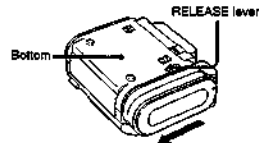


Note

When this unit is not connected to the GV-S50, be sure to attach the cover to the connecting section of the GV-S50 to prevent damage.

To remove the GV-S50 video recorder/monitor

Pull this unit forward while sliding the RELEASE lever in the direction of the arrow (←).



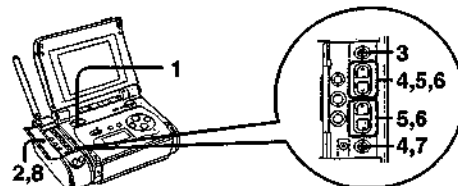
9

Setting the Clock

Before setting

Check the following points:

- Is the lithium battery installed correctly? (page 7)
 - Is this unit connected to the GV-S50 video recorder/monitor? (page 9)
 - Is the TUNER/LINE switch set to TUNER?
- The built-in clock of this unit uses the 12-hour system. 0:00AM stands for midnight and 0:00PM for noon.

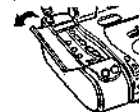


Example: Set to 1:15PM, July 4, 1992

1 Press POWER of the GV-S50 video recorder/monitor. This unit turns on simultaneously. The POWER lamp on the front panel of the GV-S50 lights up.



2 Open the lid.



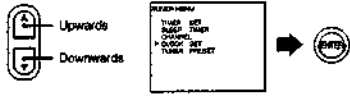
3 Press MENU. The TUNER MENU display appears on the screen of the GV-S50.



11

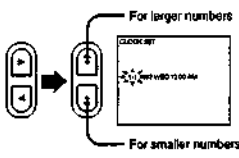
Setting the Clock

4 Press **▲** or **▼** of the cursor keys to move the cursor (▸) down to **CLOCK SET**, and press **ENTER**.



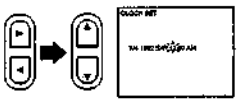
5 Set the month, day, and year in this order.* Press **◀** or **▶** to make the item to be set flash, and press **▲** or **▼** until the desired number appears.

- The day of the week is automatically displayed.
- This unit incorporates the calendar until the year 2007.




6 Set the hour and minute. Press **◀** or **▶** to make the item to be set flash, and press **▲** or **▼** until the desired number appears.

- Be sure to set AM and PM correctly.



7 Press **ENTER**. The clock starts and the normal screen resumes.



8 Close the lid.

To reset the clock
Repeat steps 3 to 7.

Note
If the lithium battery is not installed, the clock will be reset each time you disconnect the GV-S50 from this unit.

12

Watching TV Programs

Presetting TV Channels

Presetting Channels

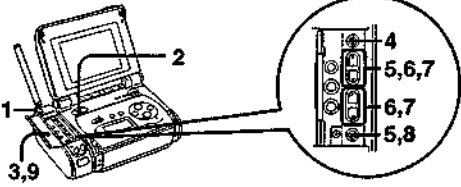
Receivable channels of this unit are:

VHF: 2-13


UHF: 14-69

CATV: 1 (A-8), 88 (A-2), 99 (A-1), 14-36 (A to W), 66-125 (W-30 to W-84).

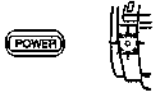
This unit is preset at the factory to receive certain channels (see chart on page 15). If you want to receive other channels, you need to preset them. Up to 99 channels can be allocated to any desired program position.



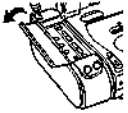
1 Set the **TUNER/LINE** switch on the rear of this unit to **TUNER**.



2 Press **POWER** of the GV-S50 video recorder/monitor. This unit turns on simultaneously. The **POWER** lamp on the front panel of the GV-S50 lights up.




3 Open the lid.




13

Presetting TV Channels

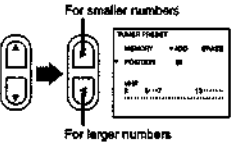
4 Press **MENU**. The **TUNER MENU** display appears on the screen of the GV-S50.



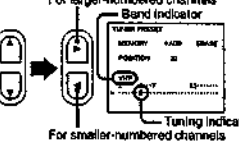
5 Press **▲** or **▼** of the cursor keys to move the cursor (▸) down to **TUNER PRESET**, and press **ENTER**.



6 Press **▲** or **▼** of the cursor keys to move the cursor (▸) down to **POSITION**, and press **◀** or **▶** to select the desired program position where the channel is to be stored.




7 Press **▲** or **▼** of the cursor keys to move the cursor (▸) down to the channel range display, and press **◀** or **▶** repeatedly until you get the desired channel. The UHF channel range is displayed after the VHF range.* Repeat steps 6 and 7 for other channels to be preset.



* After the channel range is displayed, wait for about two seconds before next operation.

14

8 Press **ENTER**. Channel presetting is completed. The on-screen display disappears.



9 Close the lid.

To change the order of the channels to be stored
Follow the above steps.

Preset channels

Program position	1	2-13	14-36	37	38-60	61	62-97	98	99
Corresponding channel	CATV 1	VHF 2-13	CATV 14-36	-	-	-	-	CATV 98	CATV 99
Number displayed	1	2-13	14-36	37	-	61	-	98	99

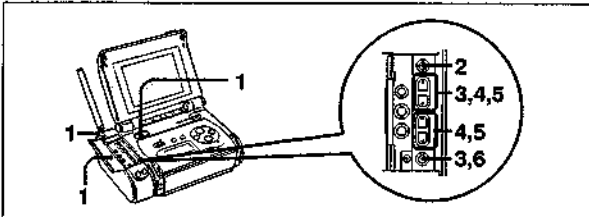
* UHF channels are preset around this number.
- Channels are not preset.

15

Presetting TV Channels

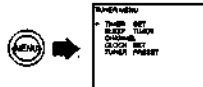
Erasing Program Positions

The erased program position is skipped when you press CH +/-.

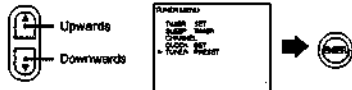


1 Proceed steps 1 to 3 of "Presetting Channels" on page 13.

2 Press MENU. The TUNER MENU display appears on the screen of the GV-SS0.



3 Press ▲ or ▼ of the cursor keys to move the cursor (►) down to TUNER PRESET, and press ENTER.

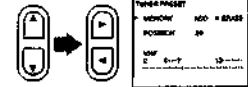


4 Press ▲ or ▼ of the cursor keys to move the cursor (►) down to POSITION, and press ◀ or ▶ to select the program position to be skipped.



16

5 Press ▲ or ▼ of the cursor keys to move the cursor (►) down to MEMORY, and press ◀ or ▶ to select ERASE. Repeat steps 4 and 5 for other program positions to be skipped.



6 Press ENTER. The on-screen display disappears.



To add the erased channels again
See "Presetting Channels" on page 13.

Channel Allocation Chart

Frequency (MHz)	50	100	150	200	250	300	400	500	600	700	800
VHF/UHF channels	VHF 2-8		VHF 7-13							UHF 14-69	
CATV channels	A-1	A-2	A-1	A	B	C	D	E	F	G	H
Band indicator	VHF						UHF				

When you press CH +/-, the above channel will be scanned from the lowest frequency to the highest in sequence. By pressing CH +/-, the channels will be scanned in reverse.

Cable TV Channel Chart

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart. Check with your local cable TV company for more complete information on the available channels.

Number on this unit	1	98	99	14	15	16	17	18	19	20	21	22
Corresponding CATV channel	A-6	A-2	A-1	A	B	C	D	E	F	G	H	I
	23	24	25	26	27	29	29	30	31	32	33	34
	J	K	L	M	N	O	P	Q	R	S	T	U
	V	W	W-30	W-30	W-30	W-30	W-30	W-30	W-30	W-30	W-30	W-30

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

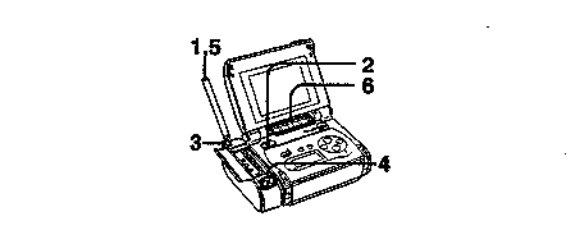
Note

Play cable TV systems use scrambled or encoded signals and require special converters (decoders) besides the normal cable connections.

17

Watching TV Programs

Viewing a Preset TV Program



1 Pull out the telescopic antenna fully.

Be sure to pull out the base of the telescopic antenna. If you have connected an external antenna or CATV cables, be sure to fold in the telescopic antenna.

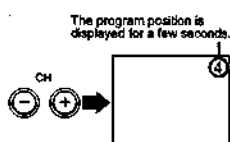
2 Press POWER of the GV-SS0 video recorder/monitor. This unit turns on simultaneously. The POWER lamp on the front panel of the GV-SS0 lights up.



3 Set the TUNER/LINE switch to TUNER, if a TV program is not displayed.

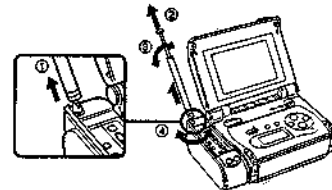


4 Select the desired program. Press CH +/- for higher-numbered programs and CH -/+ for lower-numbered programs. The programs appear in numerical sequence. Press CH +/- repeatedly until you get the desired program on the screen.



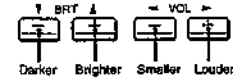
18

5 Adjust the telescopic antenna for the best reception.



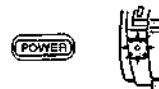
6 Adjust the volume and brightness.

Press BRT +/- and VOL +/- on the GV-SS0 video recorder/monitor.



To turn off the TV

Press POWER of the GV-SS0 video recorder/monitor. The POWER lamp on the front panel of the GV-SS0 goes out.



To pull the telescopic antenna away

Slide in the base of the telescopic antenna first, then the center and the point.

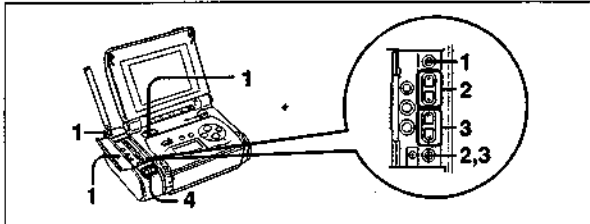


19

Watching TV Programs

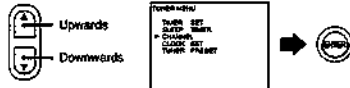
Viewing a TV Program Without Presetting Channels

When you do not know the channel number of the TV program you wish to view or if you want to use this unit in a moving car, search for the program as follows.

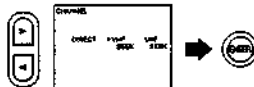


1 Proceed steps 1 to 4 of "Presetting Channels" on page 13.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to CHANNEL, and press ENTER.

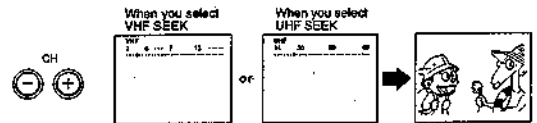


3 Press ◀ or ▶ of the cursor keys to select VHF SEEK or UHF SEEK, and press ENTER.



4 Press CH +/- buttons to select the channel.

Press the buttons repeatedly until you get the desired program on the screen.



After selecting the channel, the channel range display goes out after a few seconds.

"Last channel" memory function

- While you are watching TV programs, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized. When you turn on the unit again, the last channel appears on the screen. The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

20

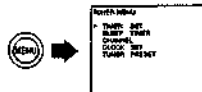
Using the SLEEP TIMER

You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV program, tape playback, or while recording.

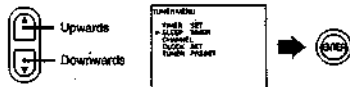
Example: To turn off the TV after 2 hours

1 Press MENU.

The TUNER MENU display appears on the screen of the GV-S50.



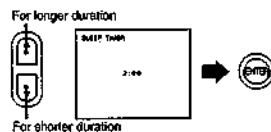
2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to SLEEP TIMER, and press ENTER.



3 Press ▲ or ▼ of the cursor keys to select the desired time interval, and press ENTER. The TV will be turned off automatically after 2 hours.

The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.

The interval changes up to 5 hours in steps of 30 minutes.



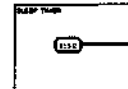
To cancel the SLEEP TIMER

Press POWER of the GV-S50 to turn off the power of the video recorder/monitor. (Even while playing back or recording a tape, you can cancel the SLEEP TIMER by turning off the power of the video recorder/monitor.)



To check the remaining time

Select SLEEP TIMER in the TUNER MENU display, and press ENTER. The remaining time is displayed. (You cannot check the remaining time while playing back or recording a tape).



Note

When you use the unit with rechargeable batteries on the GV-S50, the unit may turn off before the selected time because the batteries are exhausted.

22

21

23

Recording TV Programs

You can record a TV program while viewing it. For better picture and sound quality, connecting an external antenna is recommended.

- 1 Set the TUNER/LINE switch on the rear of this unit to TUNER.
- 2 Press POWER of the GV-S50 video recorder/monitor. This unit turns on simultaneously. The POWER lamp on the front panel of the GV-S50 lights up.
- 3 Select the desired TV channel.
- 4 Insert a cassette.
- 5 Select the recording mode, SP or LP. Refer to the operating instructions supplied with the GV-S50 video recorder/monitor. The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, select the SP mode.
- 6 Slide REC to the right. The REC lamp lights and the recording starts.

Timer-Activated Recording

By using the timer-activated recording feature, you can preset the GV-S50 to record up to six TV programs within a one-month period. For better picture and sound quality, connecting an external antenna is recommended.

Before setting the timer

- Is the GV-S50 correctly connected to this unit? (See page 9.)
- Make sure that the power is supplied. (Is the battery pack on the GV-S50 fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock correctly. (See page 11.) If the clock is not set, the message "CLOCK SET" appears on the screen.
- Insert a tape correctly. Make sure that the safety tab is slid in. (Refer to the operating instructions of the GV-S50.)
- Note that you cannot set the timer while playing back or recording a tape on the GV-S50.

Example: To record a broadcast on program position 6, from 8:00PM to 8:45PM on Saturday, July 4, 1992, in SP mode

- 1 Set the TUNER/LINE switch on the rear of this unit to TUNER.

- 6 Slide REC to the right. The REC lamp lights and the recording starts.



To stop recording for a moment
Press II.

To resume recording
Press II again. (If II is not pressed again for about 5 minutes, the pause mode will be released automatically and the GV-S50 will stop. This is to protect the video heads.)

To stop recording
Press III.

When the tape is recorded to the end

The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn off the power of the GV-S50.

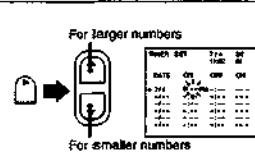
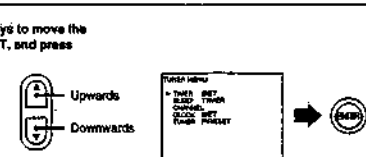
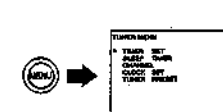
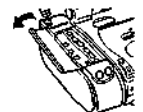
About the recorded sound

The VOL control setting has no effect on the recording level.

To change the channel during recording

Set the unit in the recording pause mode and then select another channel. You cannot watch another program while recording.

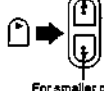
- 2 Press POWER of the GV-S50 video recorder/monitor. This unit turns on simultaneously. The POWER lamp on the front panel of the GV-S50 lights up.
- 3 Open the lid.
- 4 Press MENU. The TUNER MENU display appears on the screen of the GV-S50.
- 5 Press ▲ or ▼ of the cursor keys to move the cursor (P) down to TIMER SET, and press ENTER.
- 6 Set the date, starting time, and ending time. Press ▶ or ◀ of the cursor keys to make the item to be changed flash, and press ▲ or ▼ until the desired date or time appears. (Be sure to set AM and PM correctly.)



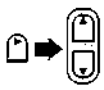
Timer-Activated Recording

7 Select the program to be recorded.
Press Δ or ∇ until the dashed program position appears.


For larger program positions




For smaller program positions




8 Select the tape speed.
Press Δ or ∇ to select SP or LP.




9 Press \rightarrow to store the setting.
If you want preset another program, press ∇ to move the cursor (\Rightarrow) to the next line and repeat steps 6 to 9.



10 Press ENTER, or make sure that the cursor (\Rightarrow) is at the beginning of a line.



11 Press TIMER REC ON/OFF.
The TIMER REC lamp lights up and the GV-S50 turns off.



12 Close the lid of this unit and the LCD of the GV-S50.
The recording starts automatically at the preset starting time and the power goes off at the preset ending time.

To stop the timer recording
Press the TIMER REC ON/OFF again.
The TIMER REC lamp goes out and the tape stops.

28

Timer-Activated Recording

- If the starting time of one program comes before the recording of the other program is finished. The recording of program 2 begins before program 1 is finished.
- If the starting time of two programs are the same. The program which is preset on the upper line in the TIMER SET display will be recorded and the other program will be cancelled.

Note

If the starting time of the second program is the same as the ending time of the first program, the last 20 seconds of the first program will not be recorded.

While playing back or recording a tape

You cannot set the timer. Set the timer after stopping the tape.

During timer recording standby mode

No buttons other than TIMER REC ON/OFF and TIMER CHECK are operable.

During timer recording

If you want to watch the picture, open the LCD.

To record to the end of the tape

Set the starting and ending time the same. When the tape reaches the end, recording will stop and the power goes off.

If you detach this unit from the video recorder/monitor during timer recording or timer recording standby mode

The timer settings will be canceled even if you attach this unit to the video recorder/monitor again.

If a power interruption occurs or the power is disconnected when using the video recorder/monitor with the AC power source

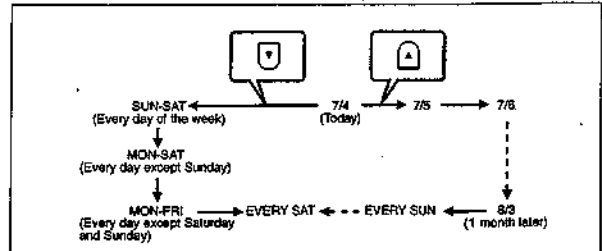
- During timer recording
Timer recording stops. Even if the power is re-supplied, recording does not resume.
- During timer recording standby mode
Even if the power is re-supplied, the timer function does not work.
Press TIMER REC ON/OFF again to resume the timer function.

30

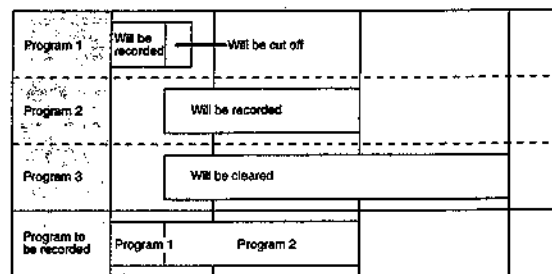
Every Week Recording and Every Day Recording

You can preset to record the same program every day or the same program on a specific day of every week.

When you set the date, press Δ or ∇ , and the indication will change as follows:
For every week recording or every day recording, press ∇ to set the date quickly.



When the presettings of timer recordings overlap
Example



- Program 1: The recording will stop before the program finishes.
Program 2: The program will be recorded completely.
Program 3: The presetting will be canceled.

29

Checking the Contents of Preset Timer Setting

When the unit is in timer recording standby mode or in stop mode

Press TIMER CHECK. The TIMER CHECK display showing the preset timer settings will appear on the screen. If the unit is turned off, turn on the unit, then press TIMER CHECK. The TIMER CHECK display will appear.

To turn off the TIMER CHECK display, press TIMER CHECK again.

TIMER CHECK

TIMER CHECK	DATE	ON	OFF	SP	LP
DATE	ON	OFF	SP	LP	
---	---	---	---	---	
---	---	---	---	---	
---	---	---	---	---	
---	---	---	---	---	

Note

You cannot check the contents of timer settings while the timer recording is being executed.

Changing the Timer Settings

When the unit is in timer recording standby mode

- 1 Release the timer recording standby mode by pressing TIMER REC ON/OFF.
- 2 Turn on the GV-S50.
- 3 Preset timer again. (See the procedures on pages 28 to 28.)

Note

You cannot change the timer settings while the timer recording is being executed.

Cancelling the Timer Settings

Release the timer recording standby mode by pressing TIMER REC ON/OFF.

Turn on the GV-S50 and select TIMER SET in the TUNER MENU display. In the TIMER SET display, press Δ or ∇ of the cursor keys to move the cursor (\Rightarrow) to the setting to be cleared and press CLEAR. The setting will be cleared and ---/---/--- indication resumes.

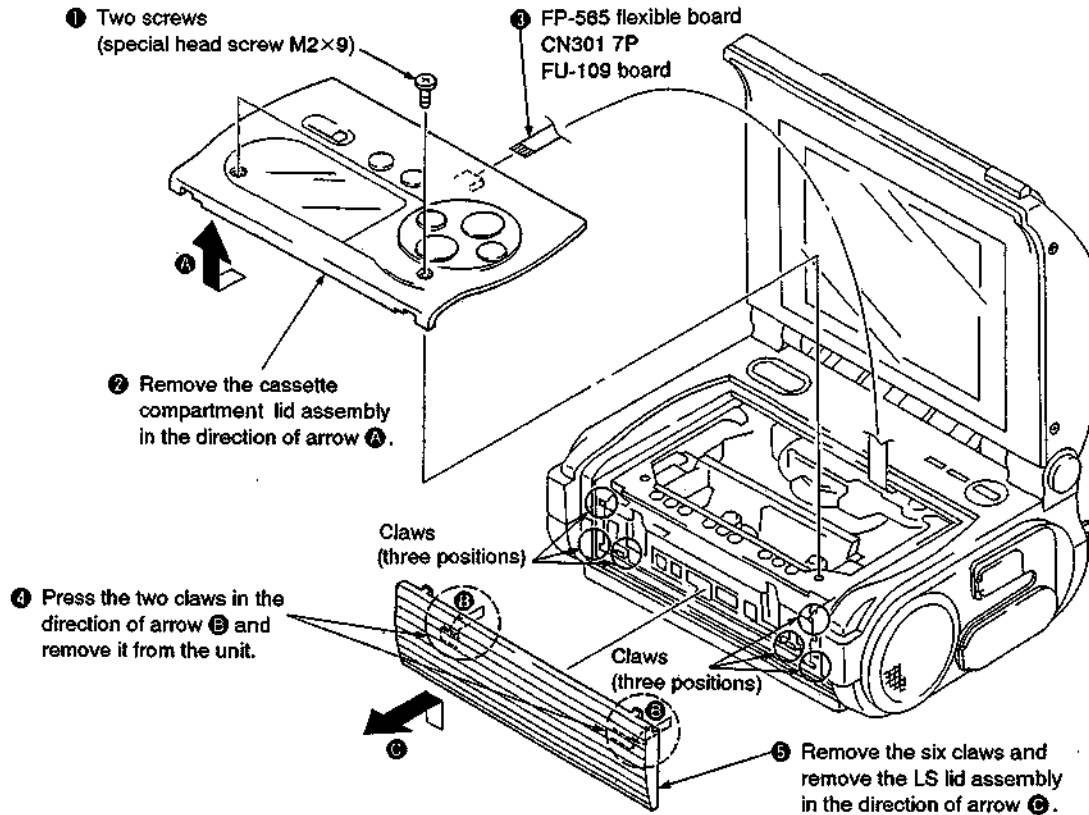
Operating the Unit After Setting the Timer

- 1 Press TIMER REC ON/OFF.
The TIMER REC lamp goes off.
- 2 Operate the unit.
- 3 After using it, press TIMER REC ON/OFF to turn on the TIMER REC lamp. The unit turns off and enters timer recording standby mode.

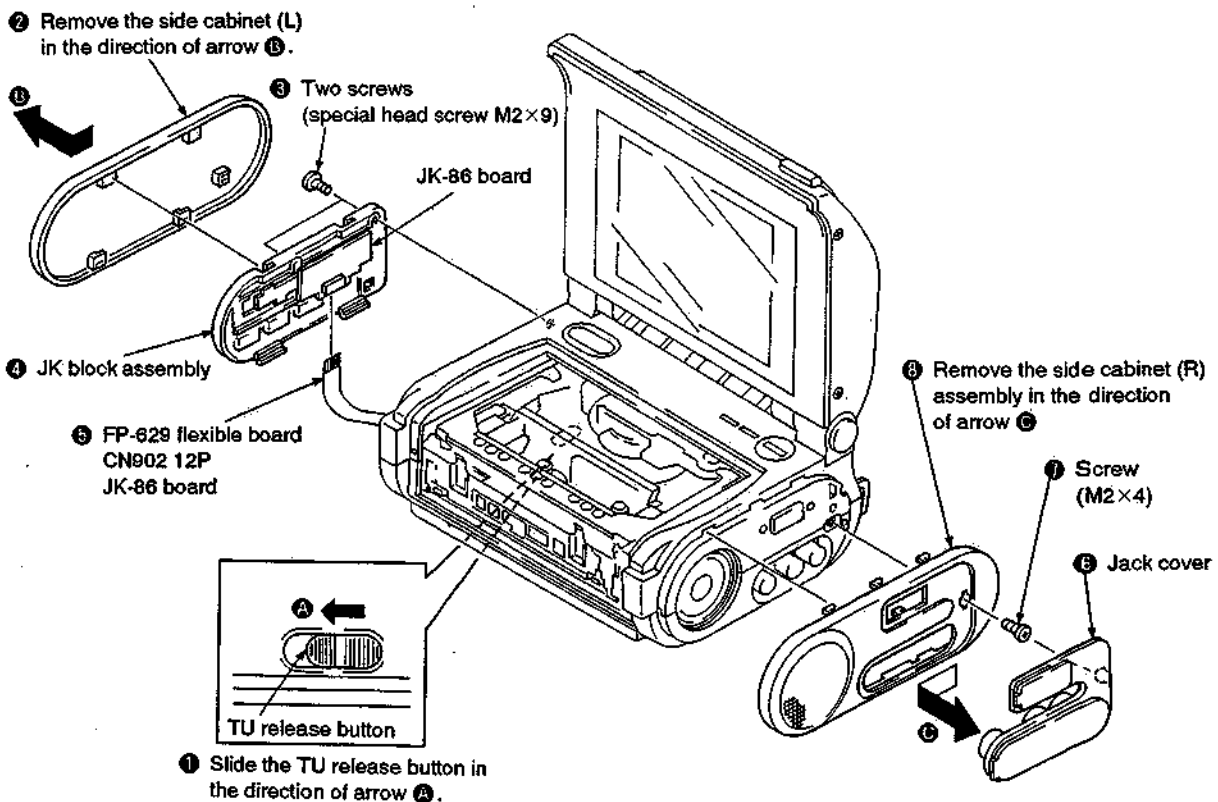
31

SECTION 2 DISASSEMBLY

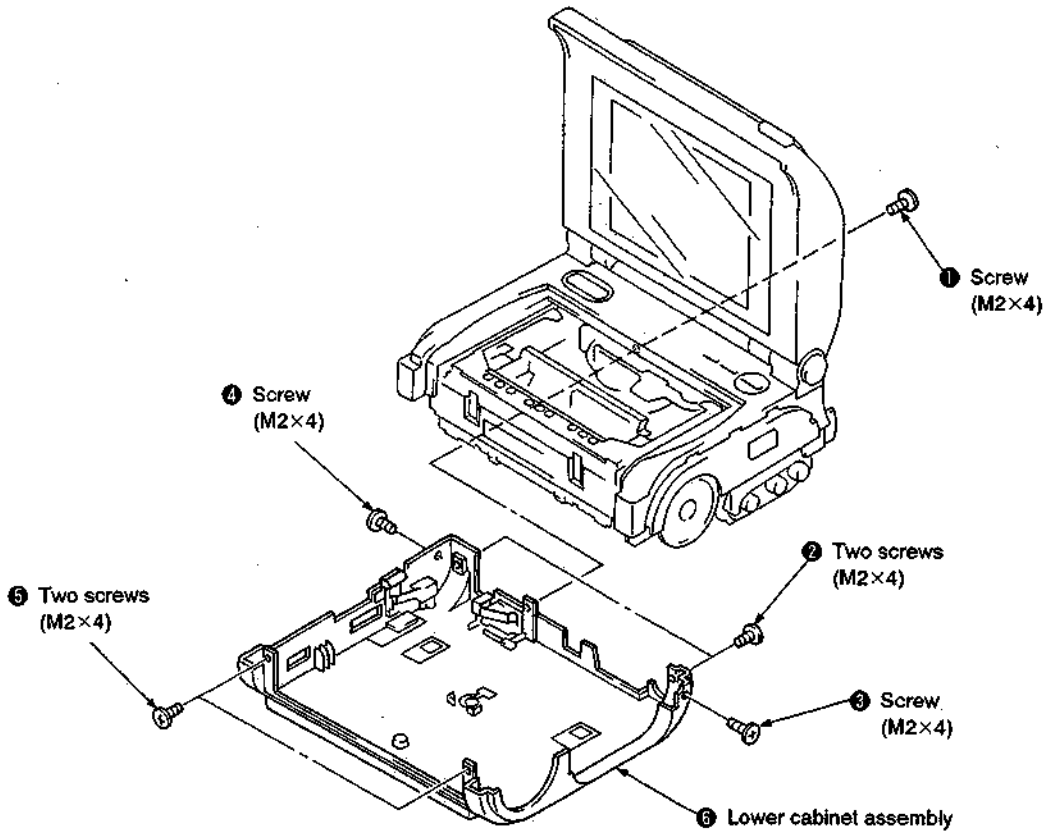
2-1. REMOVAL OF CASSETTE COMPARTMENT LID ASSEMBLY AND LS LID ASSEMBLY



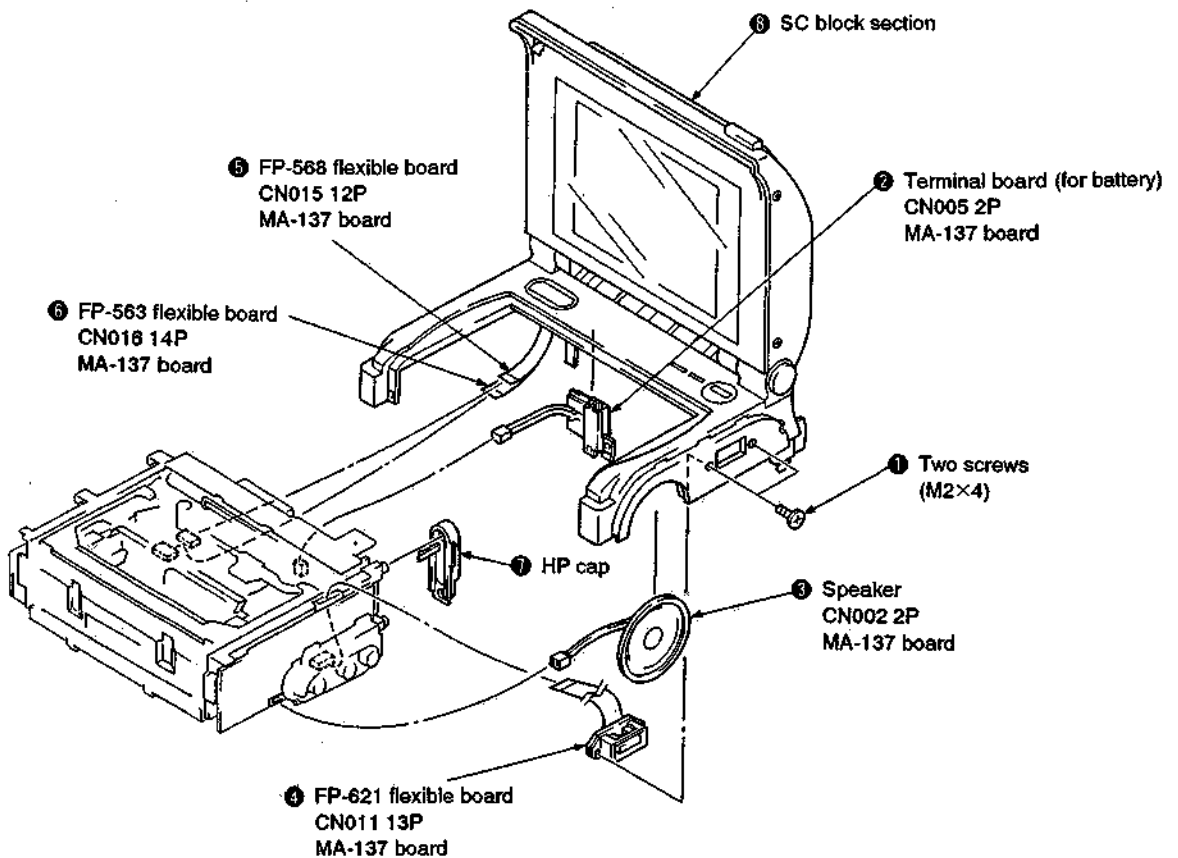
2-2. REMOVAL OF SIDE CABINETS (L, R) AND JK BLOCK ASSEMBLIES (JK-86 BOARD)



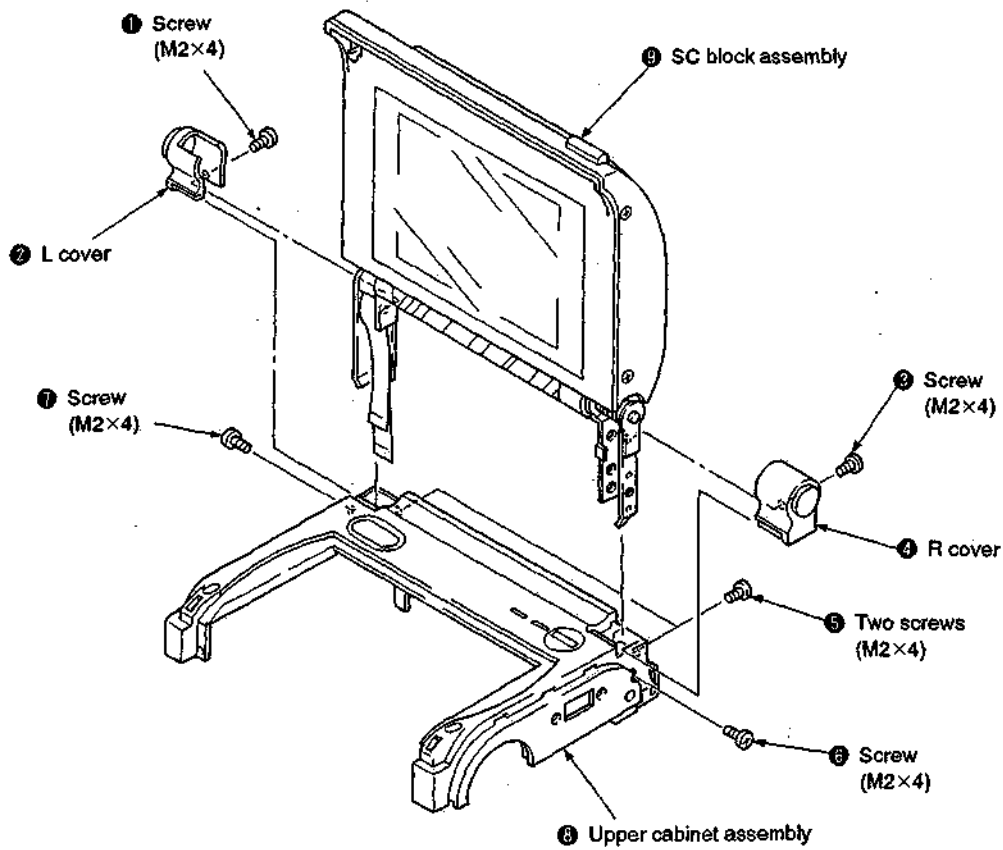
2-3. REMOVAL OF LOWER CABINET ASSEMBLY



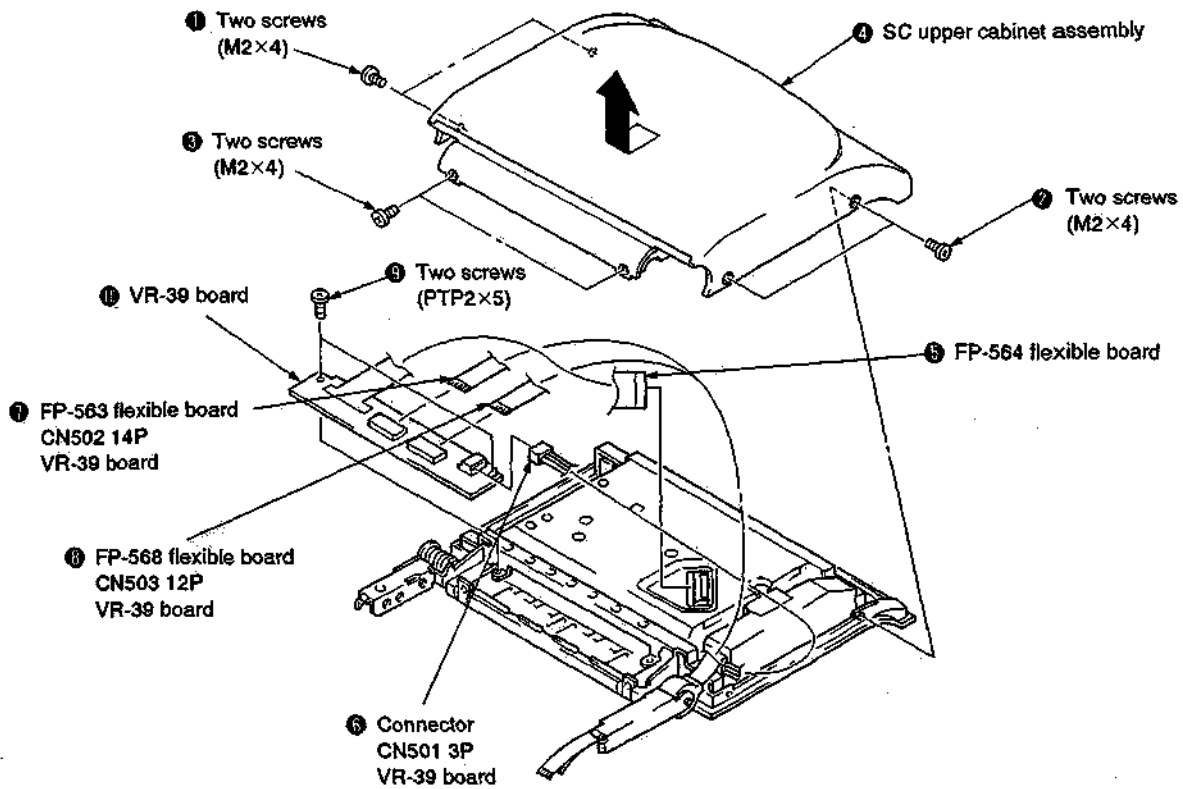
2-4. REMOVAL OF SC BLOCK SECTION



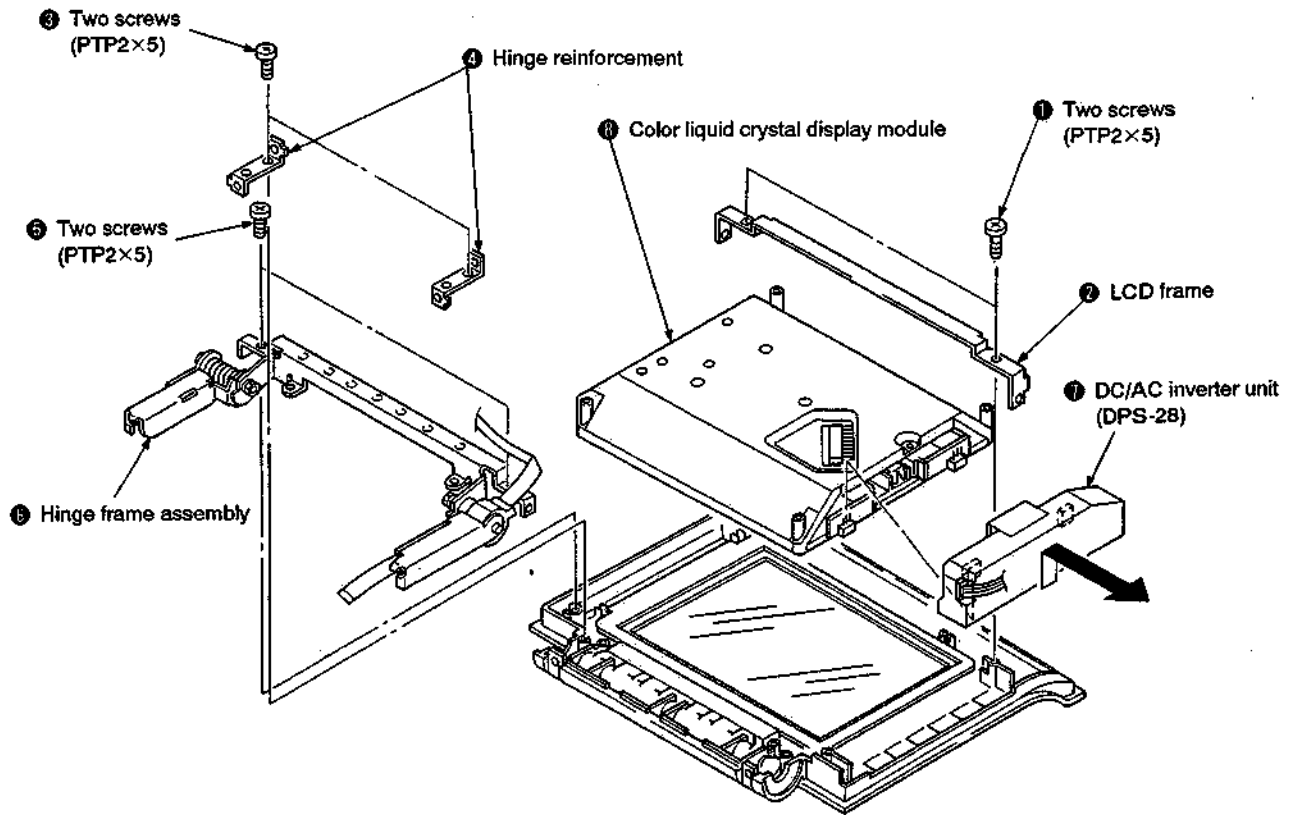
2-5. REMOVAL OF SC BLOCK ASSEMBLY



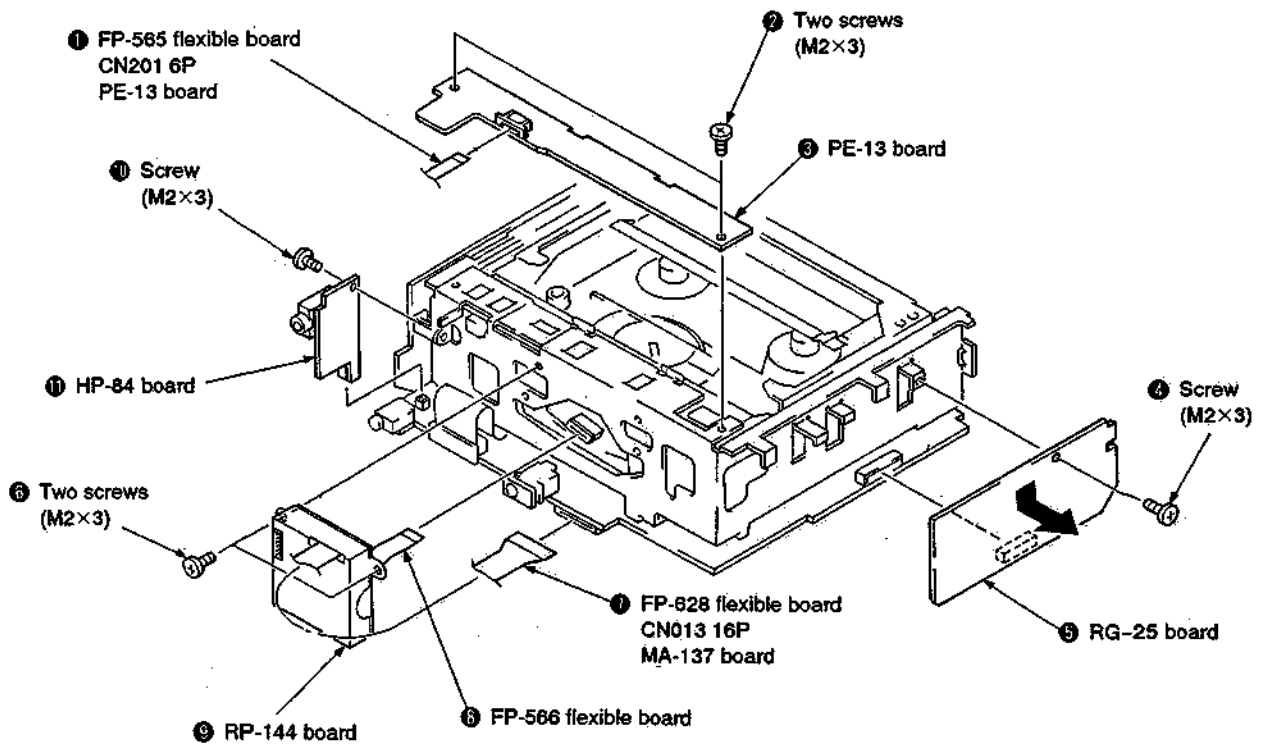
2-6. REMOVAL OF VR-39 BOARD



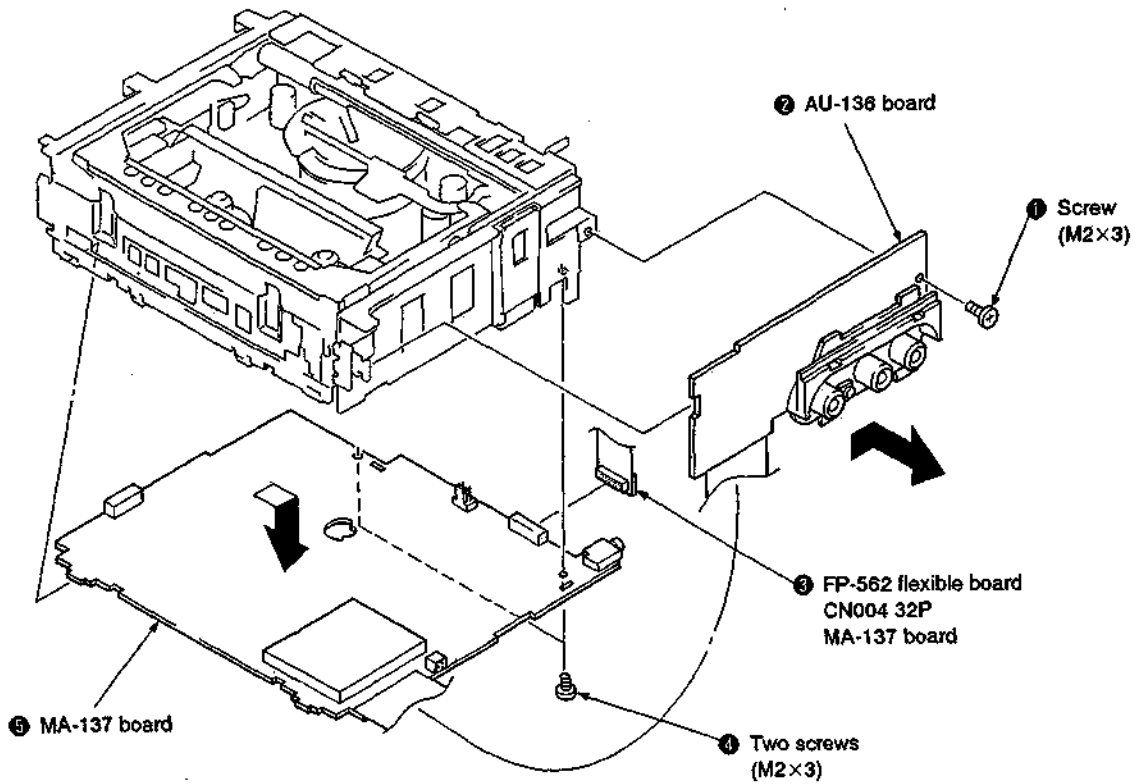
2-7. REMOVAL OF COLOR LIQUID CRYSTAL DISPLAY MODULE



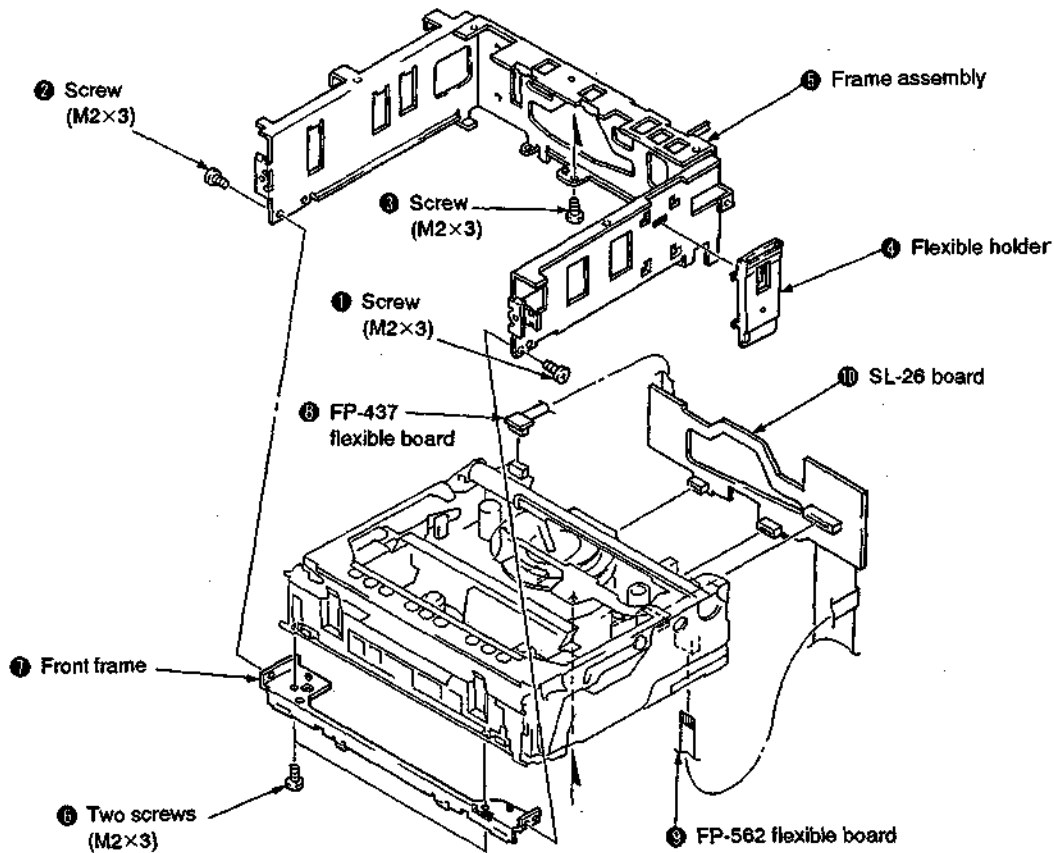
2-8. REMOVAL OF PE-13, RG-25, RP-144, HP-84 BOARDS



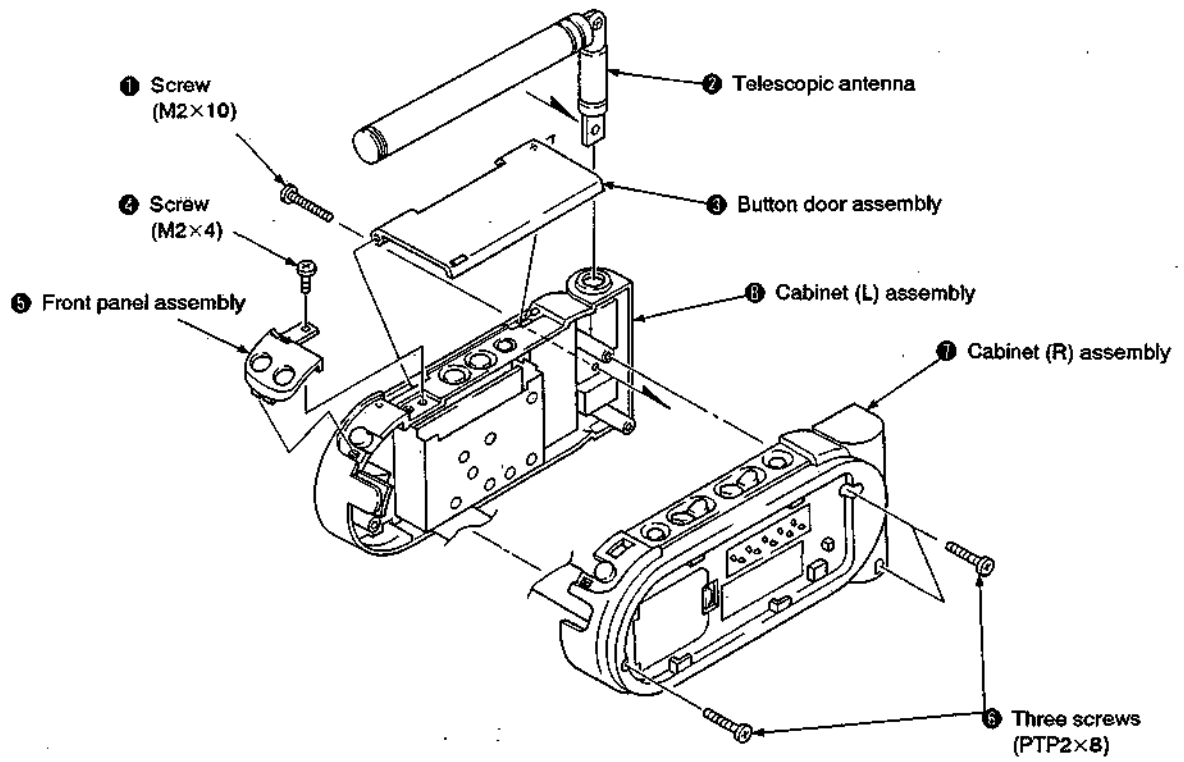
2-9. REMOVAL OF AU-136 AND MA-137 BOARDS



2-10. REMOVAL OF SL-26 BOARD

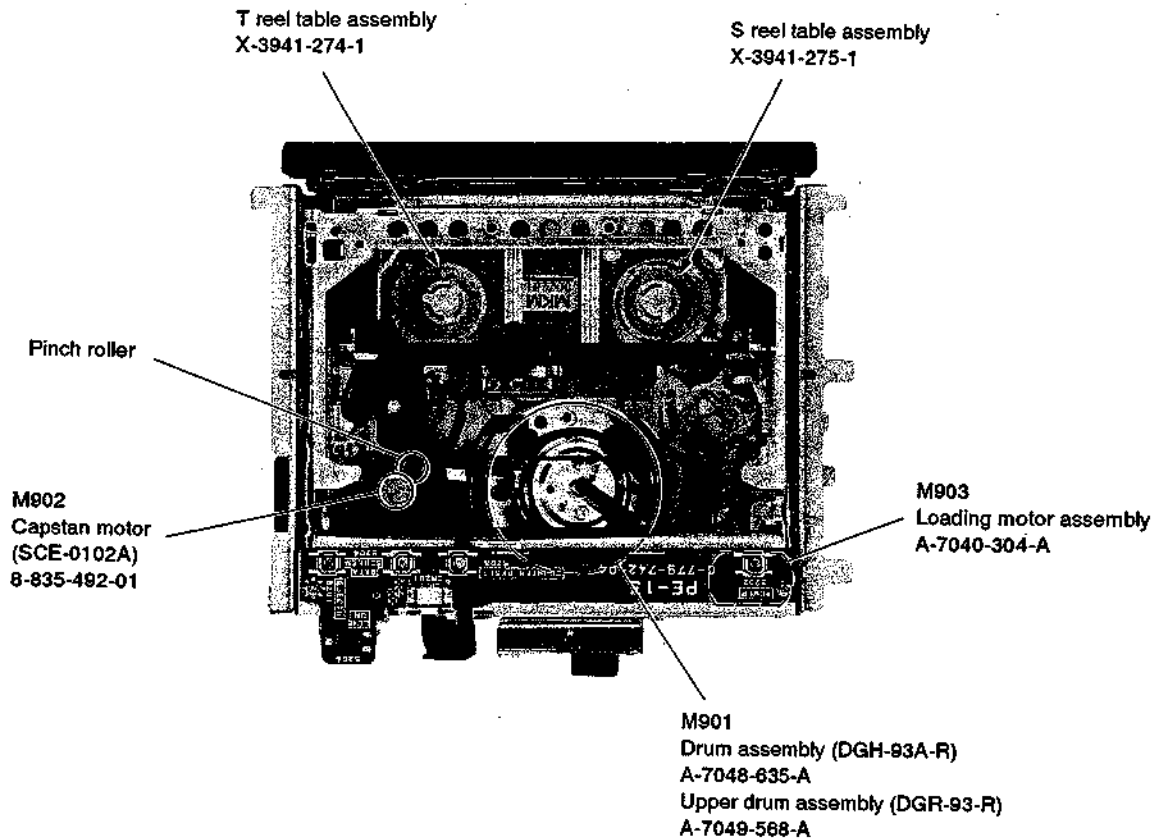


2-11. REMOVAL OF TELESCOPIC ANTENNA AND CABINET (L, R) ASSEMBLIES

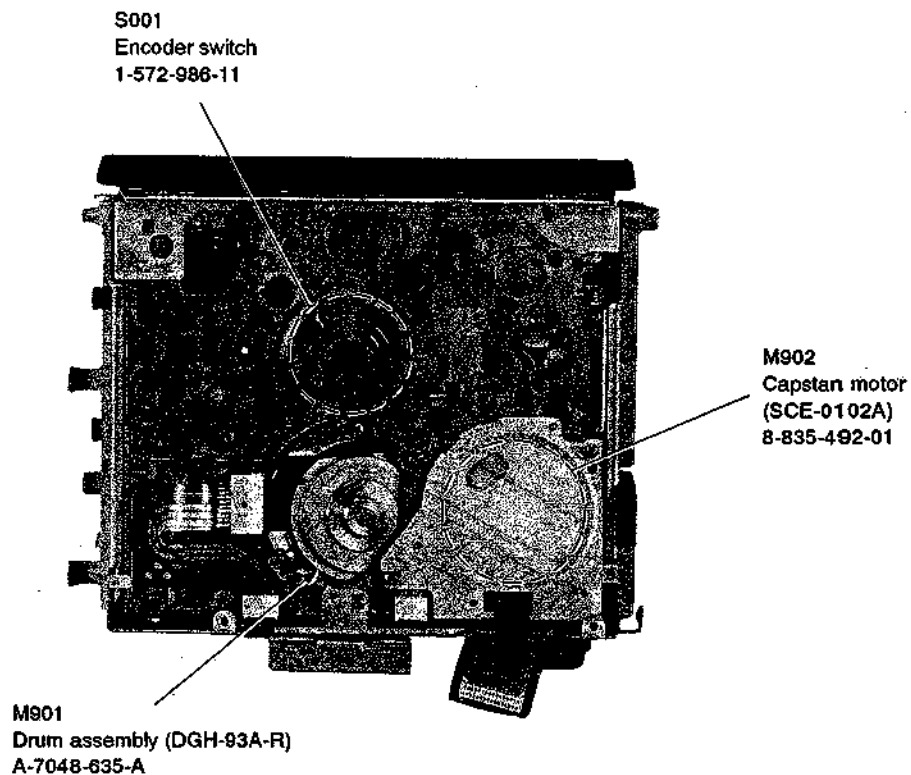


2-12. INTERNAL VIEWS

- Top Side -

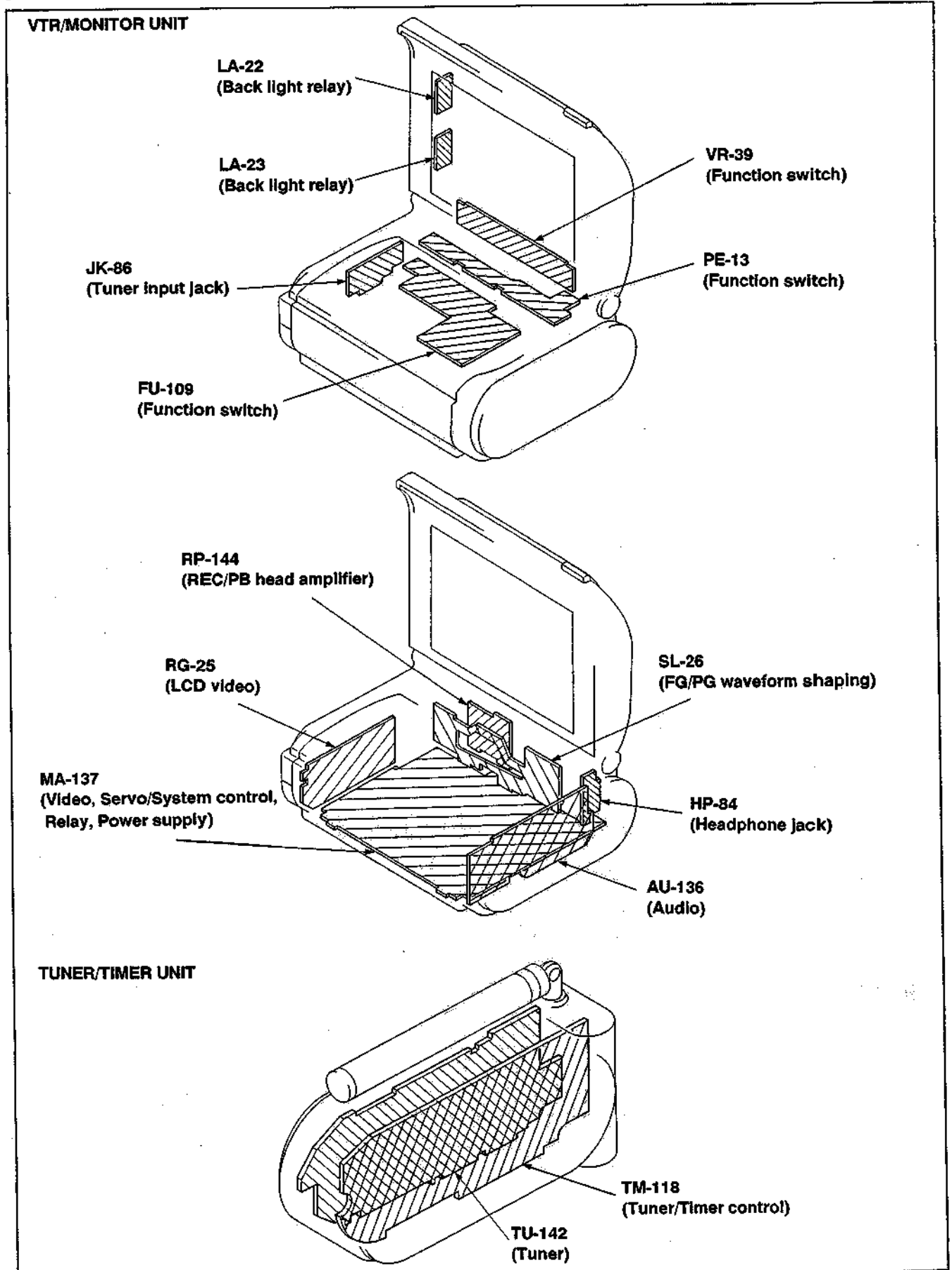


- Bottom side -

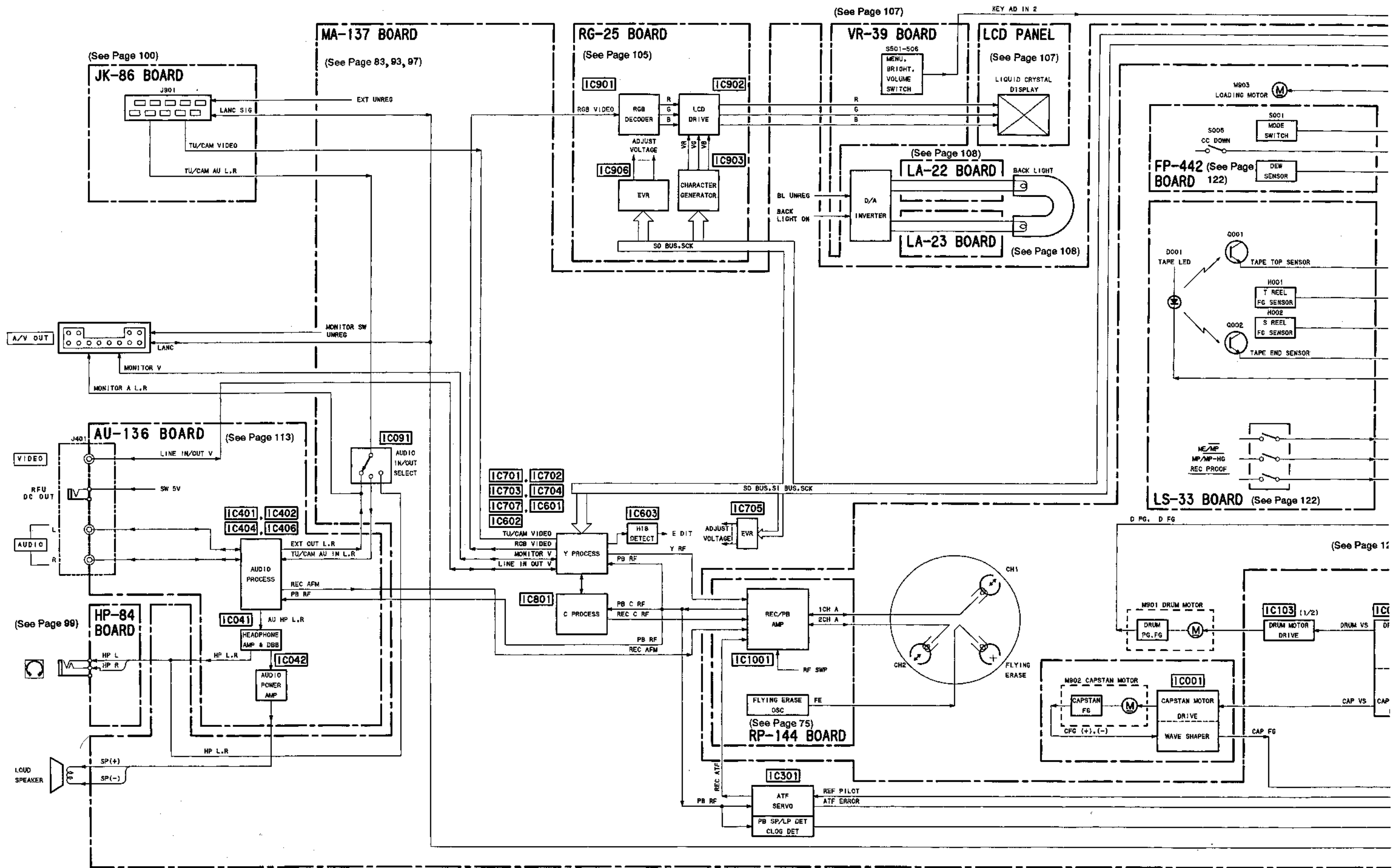


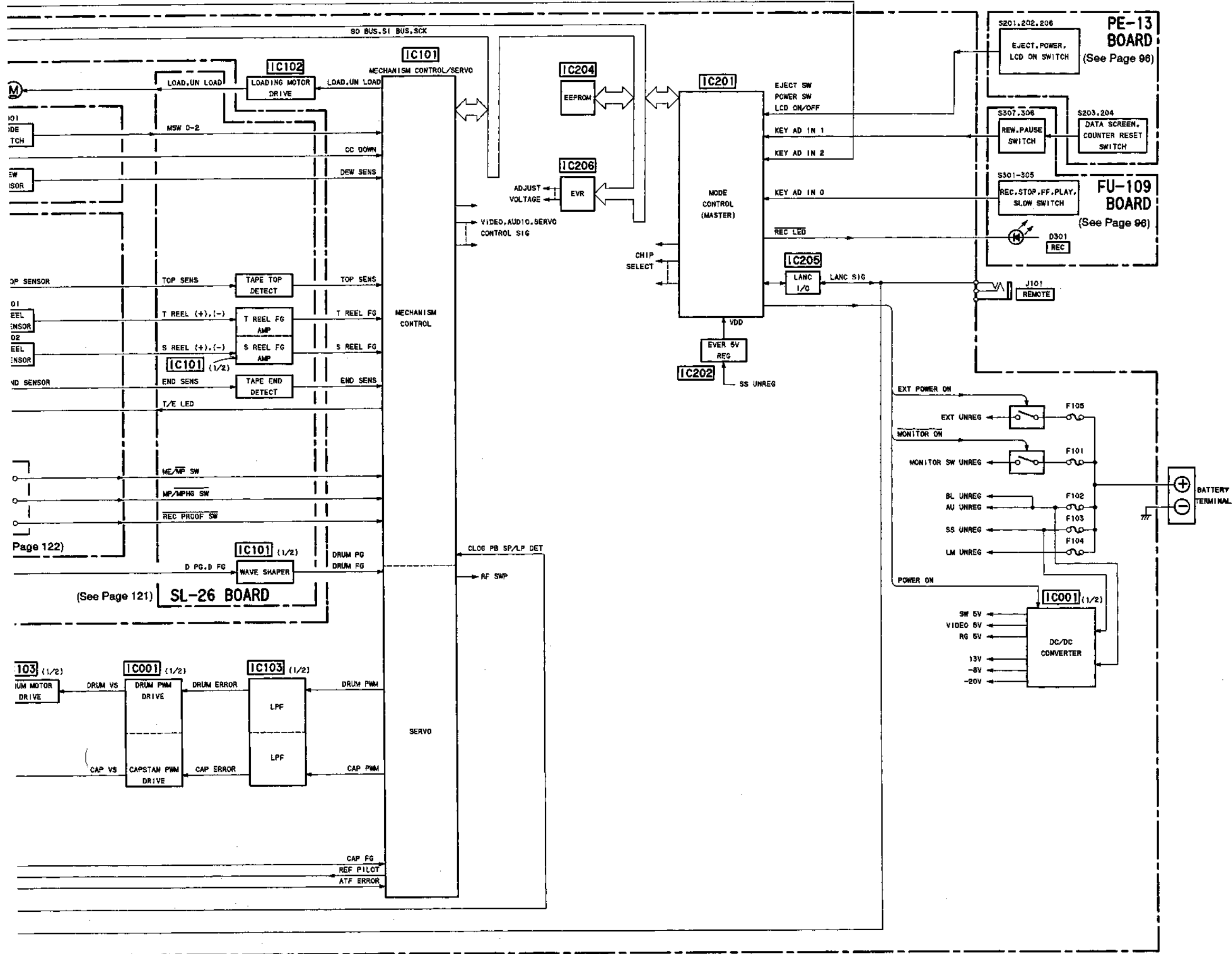
**SECTION 3
DIAGRAMS**

3-1. CIRCUIT BOARDS LOCATION



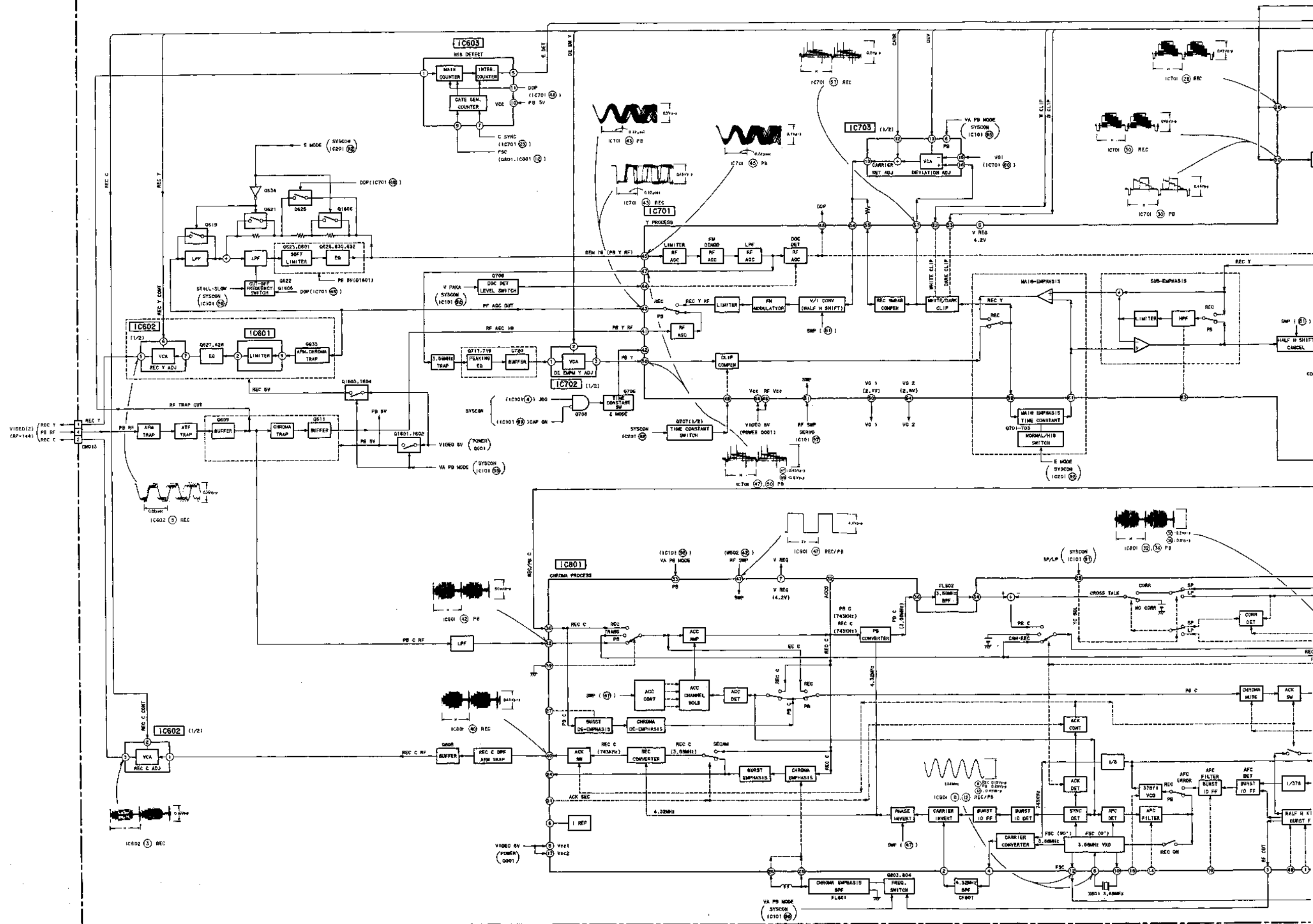
3-2. OVERALL BLOCK DIAGRAM

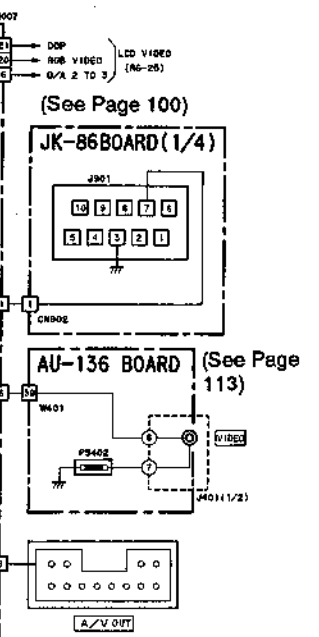
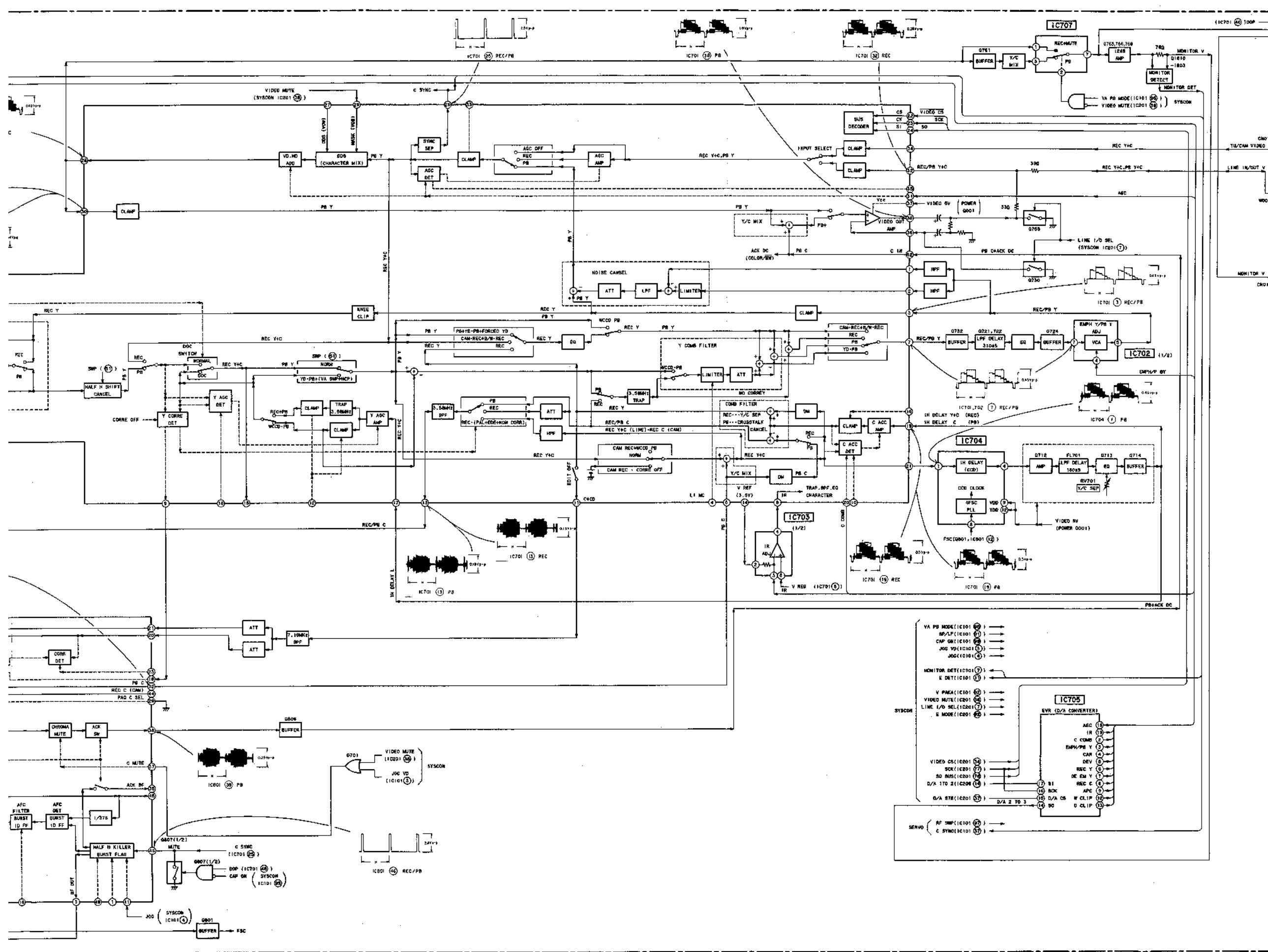




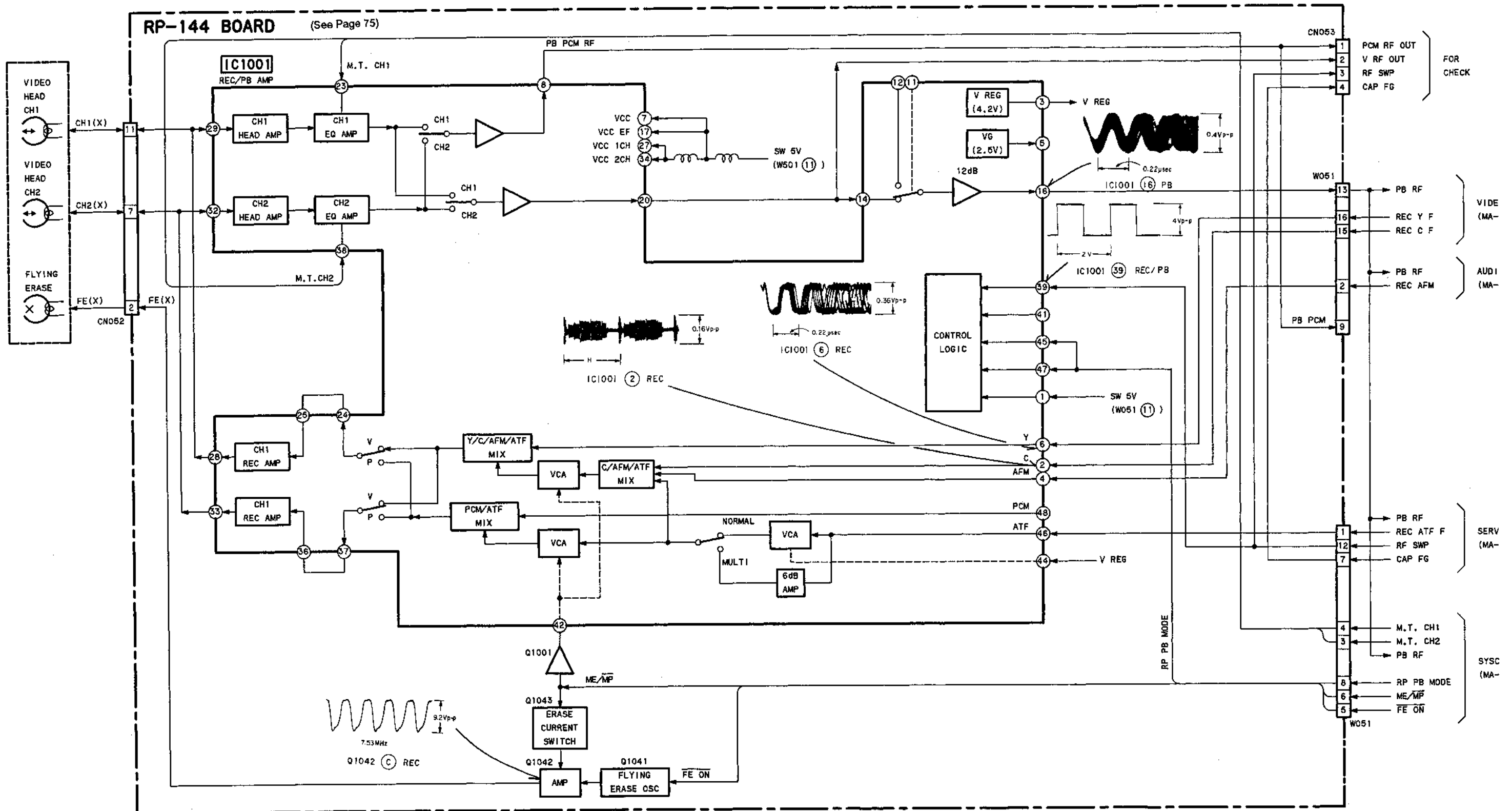
3-3. VIDEO (1) BLOCK DIAGRAM

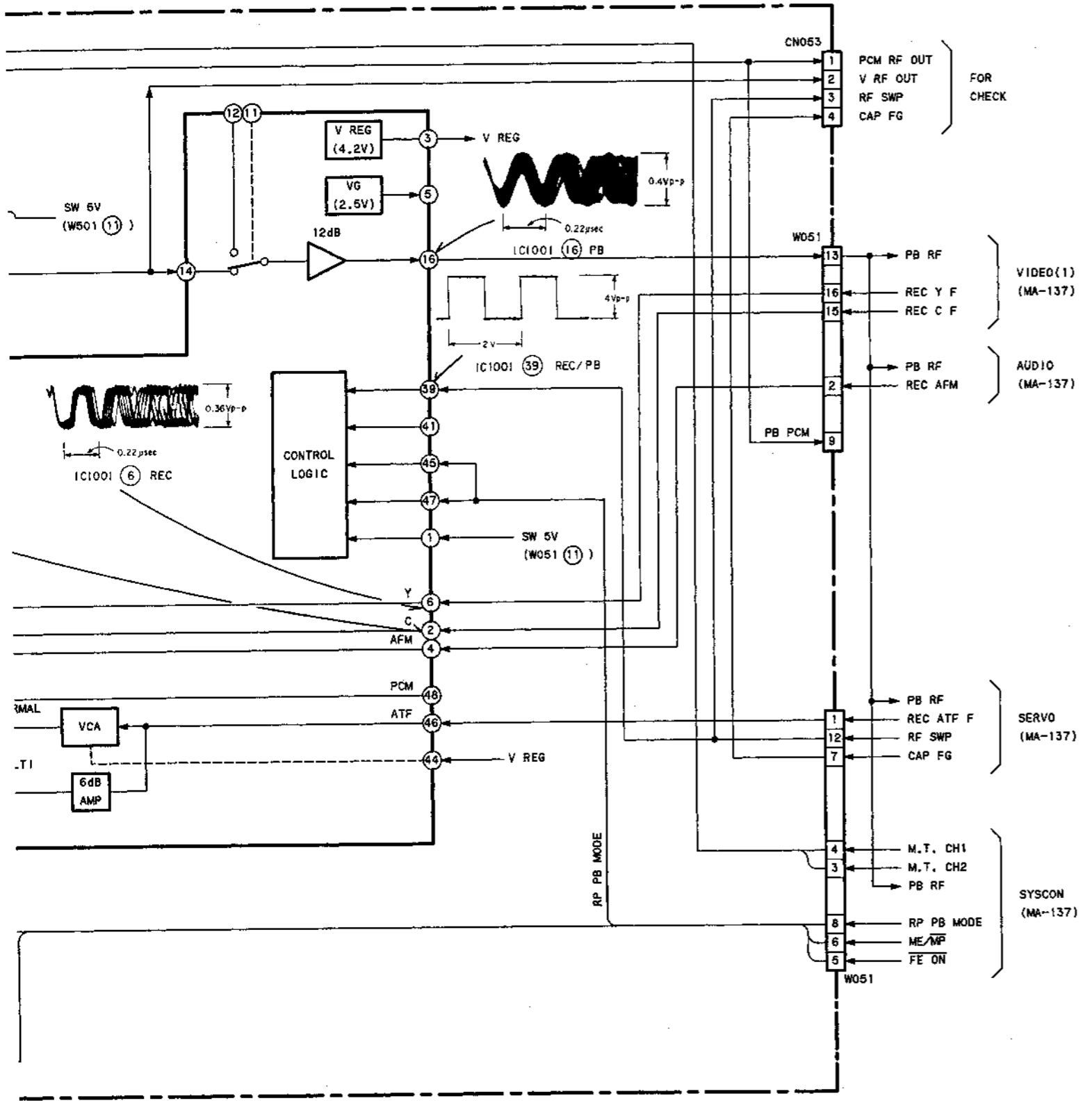
MA-137BOARD (1/6)
(See Page 83)



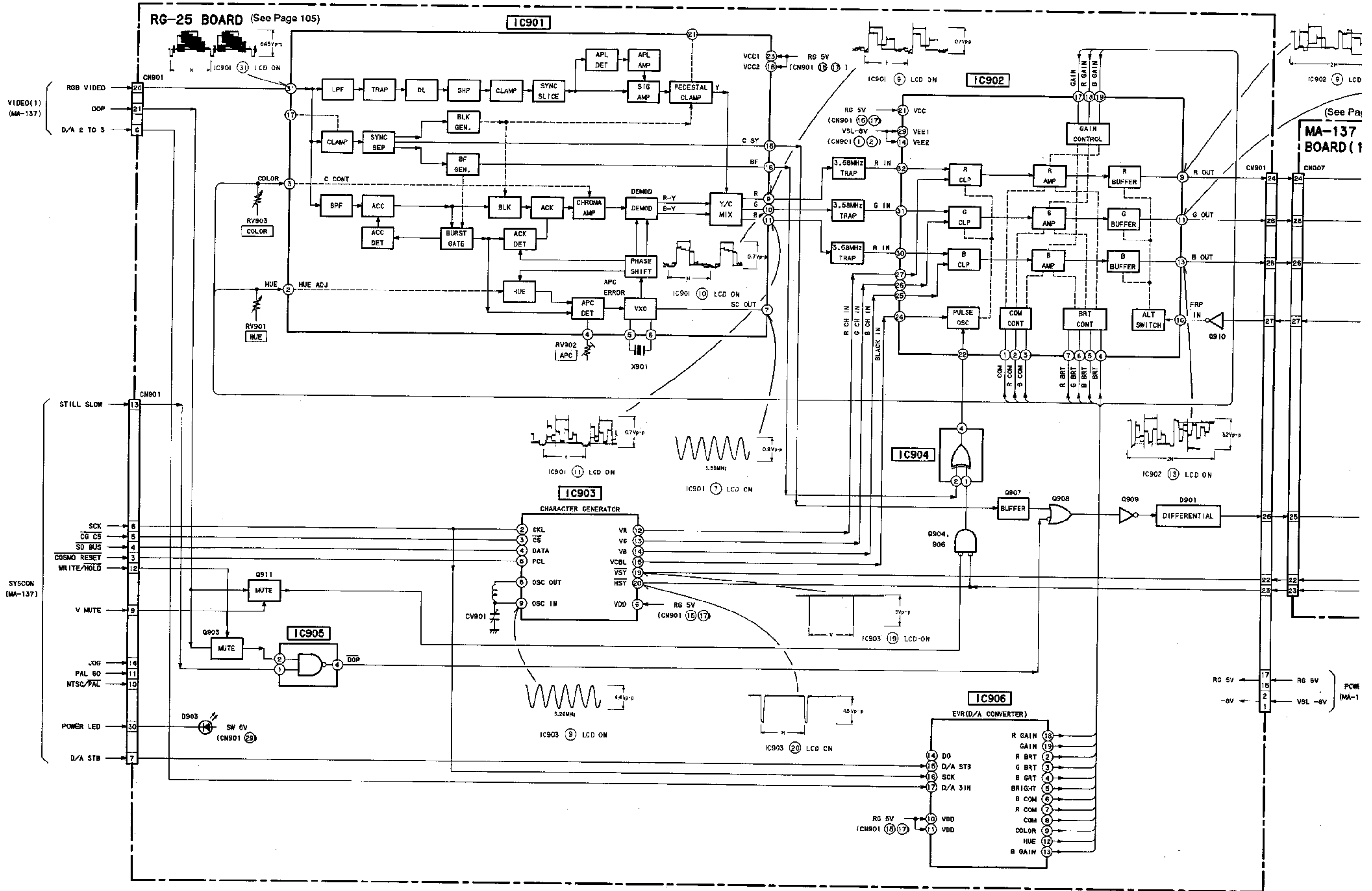


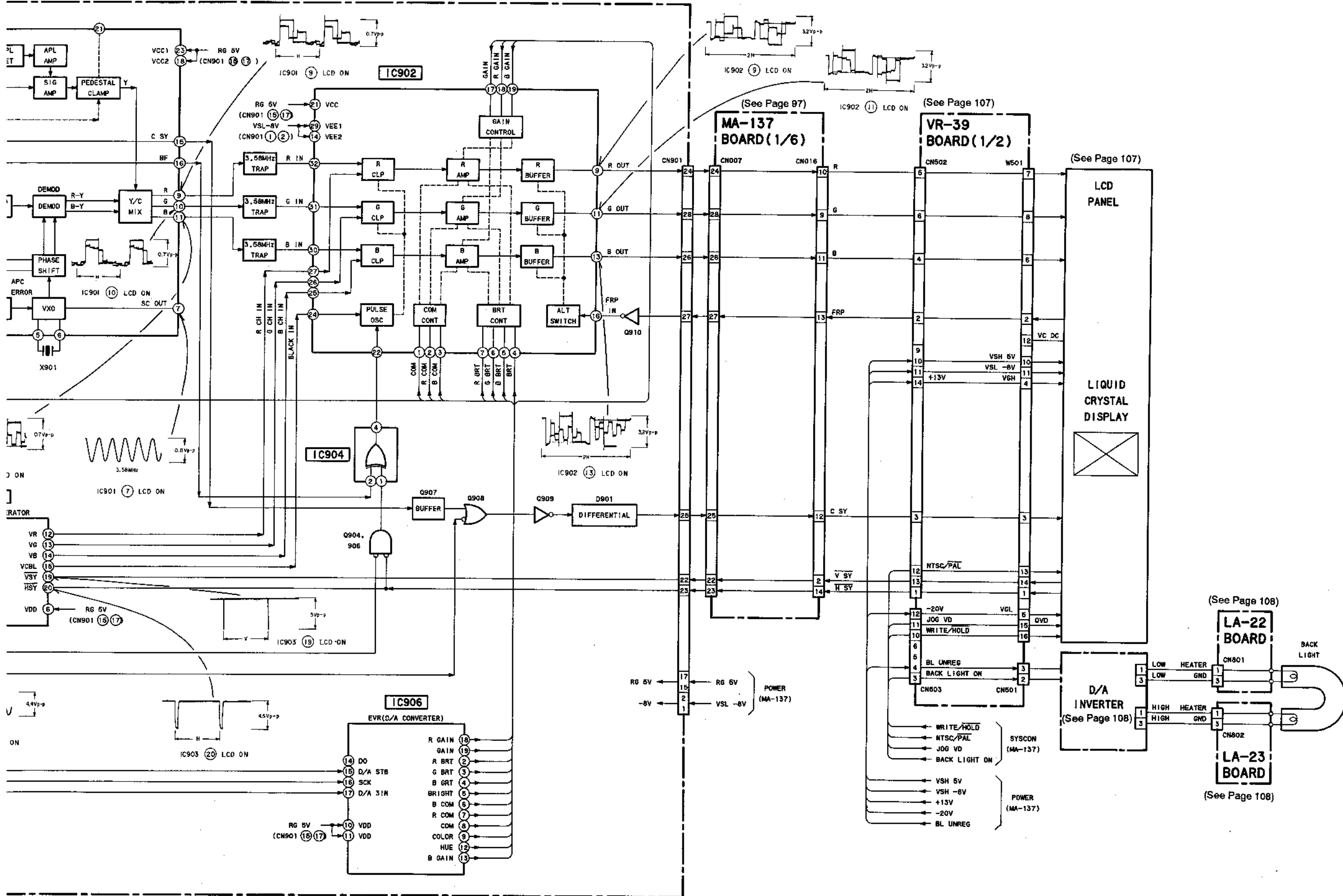
3-4. VIDEO (2) BLOCK DIAGRAM

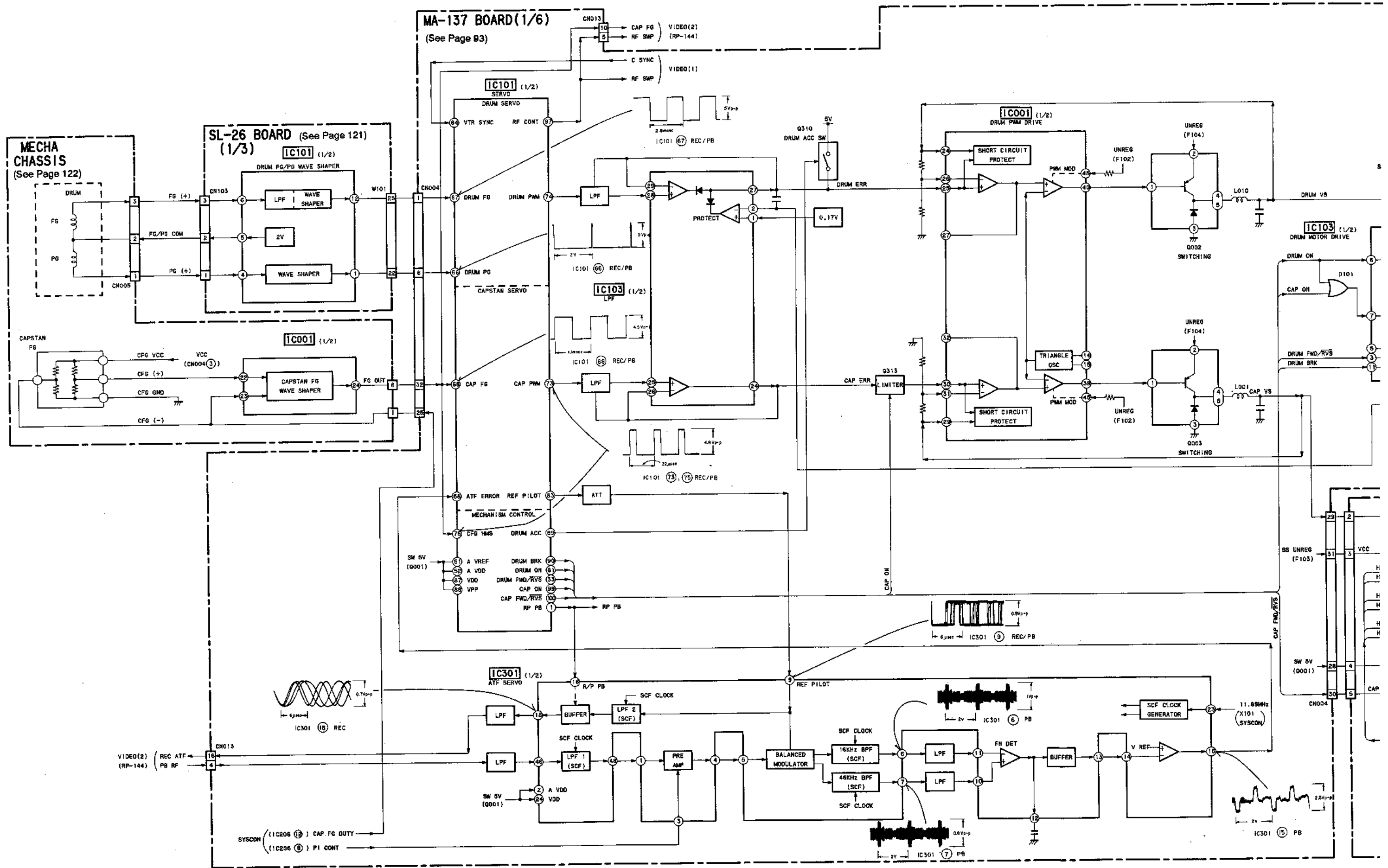




3-5. LCD BLOCK DIAGRAM





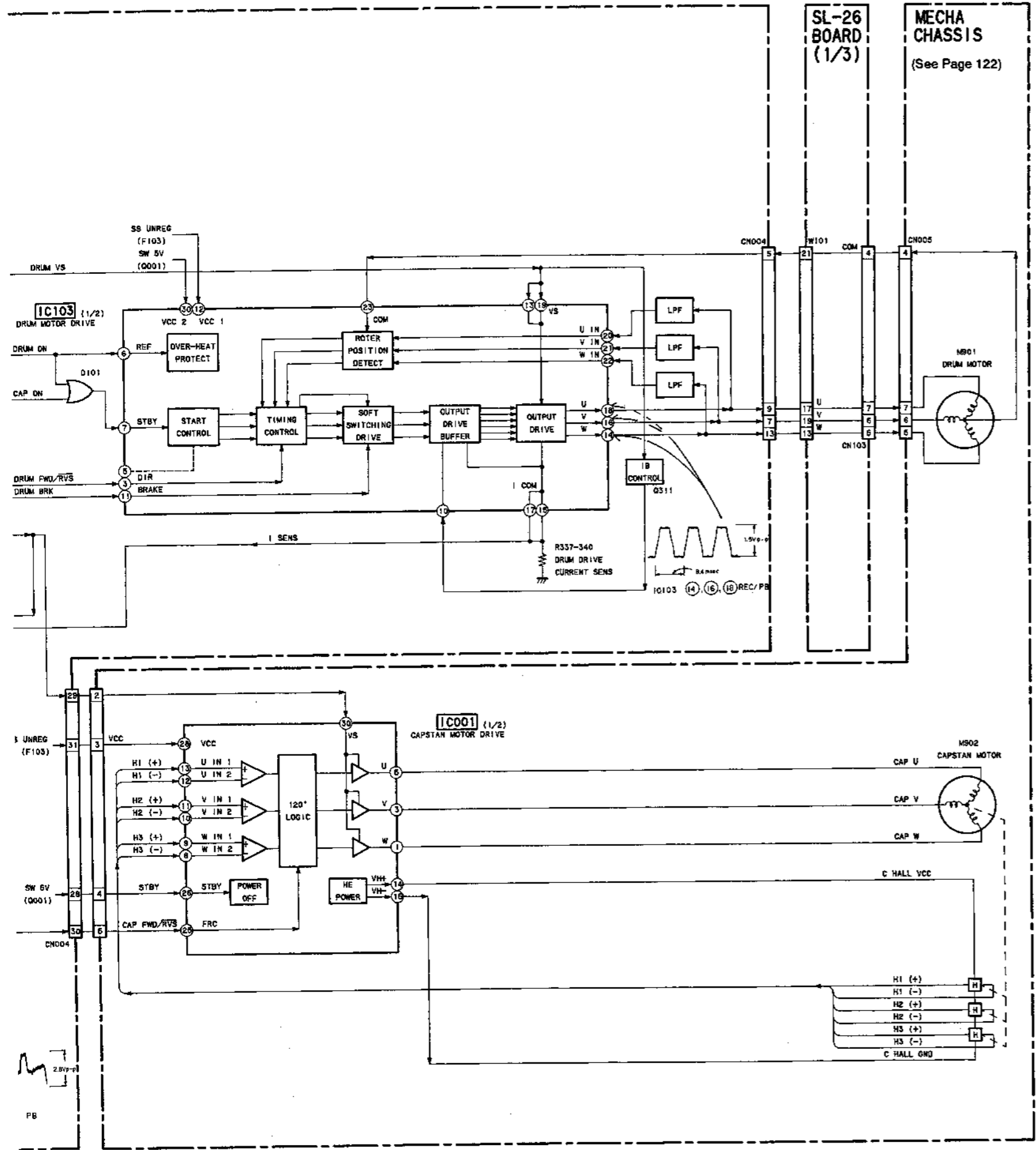


(See Page 121)

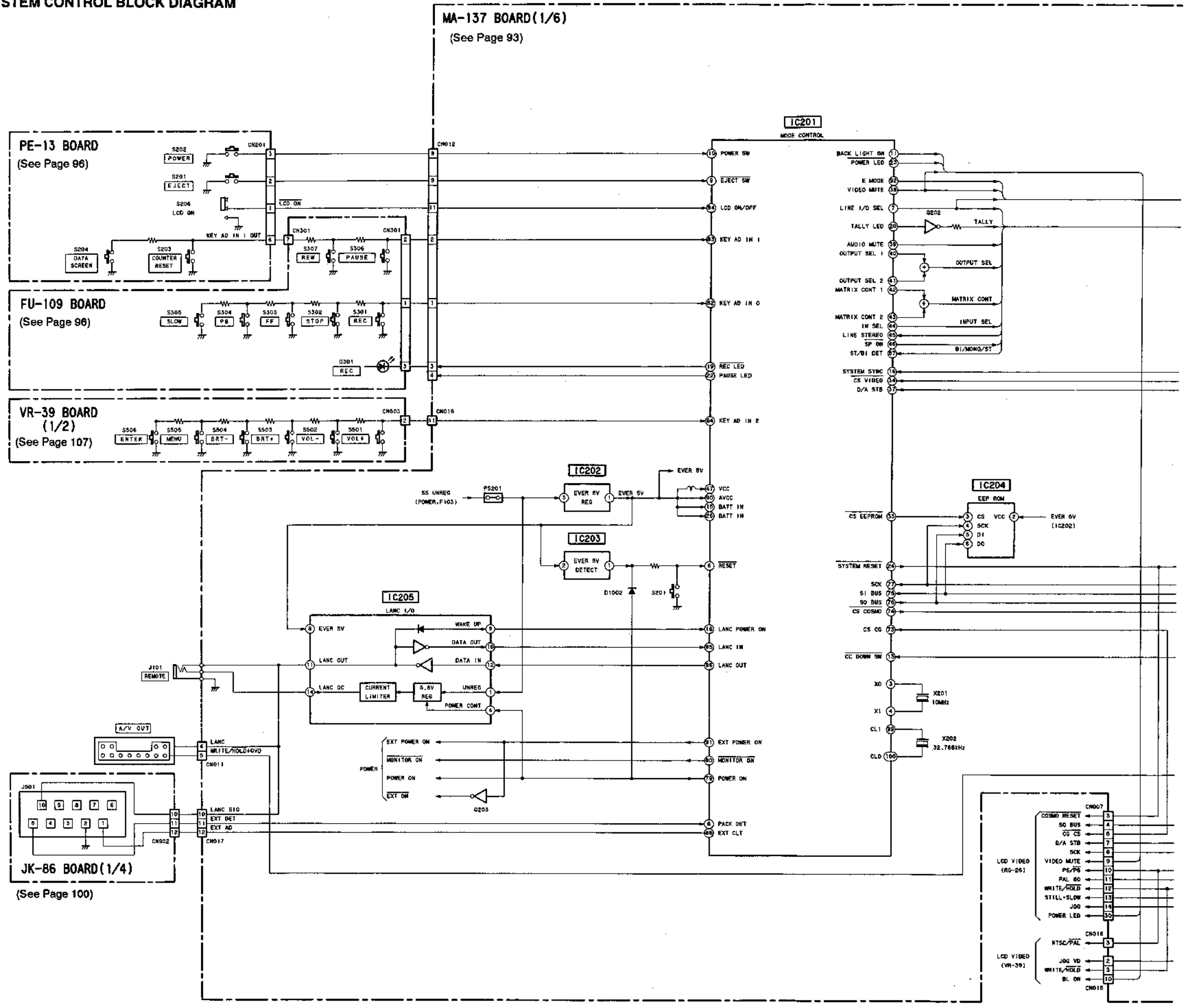
SL-26 BOARD (1/3)

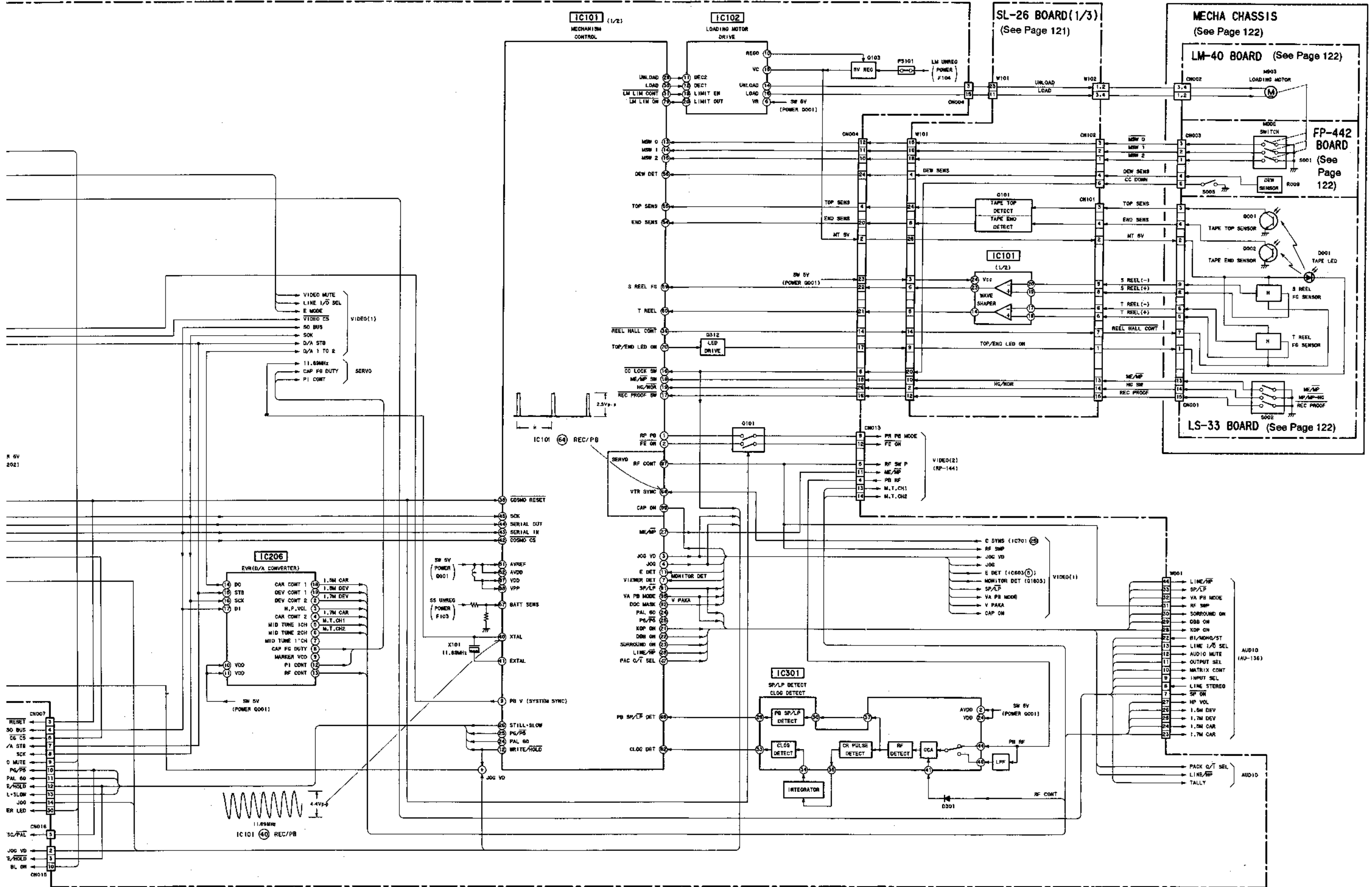
MECHA CHASSIS

(See Page 122)



3-7. SYSTEM CONTROL BLOCK DIAGRAM





N 5V
2021

**3-8. MECHANISM CONTROL MICRO PROCESSOR (IC101 on MA-137 Board: CXP80624A)
PIN FUNCTIONS**

Pin No.	Signal Name	I/O	Function																												
1	RP PB MODE	O	REC/PB switching signal of REC/PB amplifier and ATF servo IC. "H" when PB.																												
2	FE ON	O	Flying erase oscillation ON/OFF control signal. Oscillation when "L".																												
3	JOG VD	O	False VD signal inserted into playback video signal during variable speed playback.																												
4	JOG	O	Variable speed playback/normal playback switching signal of video circuit. "H" during variable speed playback.																												
5			Not used.																												
6			Not used.																												
7	VIEWER DET	I	Signal indicating that peripheral equipment is connected to A/V output pin. "H" when peripheral equipment is connected.																												
8			Not used.																												
9	PB V	O	Used as the reference for serial data communication, LANC cycle. V sync. Synchronizes with VTR SYNC (Pin 64).																												
10			Not used.																												
11	E DET	I	Normal/Hi8 discrimination input. "H" when playing back a Hi8 tape recorded.																												
12	WRITE/HOLD	O	RGB signal data writing control signal to LCD panel. Normally "H".																												
13	MODE SW 0	I	MODE switch input.																												
14	MODE SW 1	I																													
15	MODE SW 2	I																													
				<table border="1"> <thead> <tr> <th></th> <th>EJECT</th> <th>USE</th> <th>LOAD</th> <th>READY</th> <th>RP</th> <th>FF</th> </tr> </thead> <tbody> <tr> <td>MODE SW 0</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>MODE SW 1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>MODE SW 2</td> <td>1</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		EJECT	USE	LOAD	READY	RP	FF	MODE SW 0	0	1	0	1	0	0	MODE SW 1	0	0	0	0	1	0	MODE SW 2	1	1	1	0	0
	EJECT	USE	LOAD	READY	RP	FF																									
MODE SW 0	0	1	0	1	0	0																									
MODE SW 1	0	0	0	0	1	0																									
MODE SW 2	1	1	1	0	0	0																									
16	CC LOCK SW	I	Cassette compartment lock switch input. "L" when lock.																												
17	REC PROOF SW	I	Record-proof switch input. REC prohibition: "H".																												
18	ME/MP SW	I	Tape type discrimination switch input. ME: "H", MP: "L".																												
19	HG/NOR	I	MP tape type discrimination switch input. Hi8 MP tape: "H", Normal tape: "L".																												
20			Not used.																												
21																															
22	DBB ON	O	DBB ON/OFF control signal. DBB ON at "H".																												
23	SURROUND ON	O	Surround ON/OFF signal. "Surround" ON at "H".																												
24			Not used.																												
25																															
26	STILL SLOW	O	Signal indicating that STILL and SLOW playback is being performed. "H" during STILL and SLOW playback.																												
27	ME/MP	O	ME/MP switching signal output. MP tape: "L"																												
28	LINE/HP	O	Switching signal of audio signal output to accessory pack pin. LINE OUT audio: "H", Headphone audio: "L".																												
29	UNLOAD	O	Loading motor control signal. When unloading: "H" or "H" pulse.																												
30	LOAD	O	Loading motor control signal. When loading: "H" or "H" pulse.																												
31	LM LIM CONT	O	Loading motor current limiter control signal. Temporarily "H" when loading.																												
32			Not used.																												
33	DRUM FWD/REV	O	Drum rotating direction control signal. Normally "H".																												
34			Not used.																												
35																															
36	REEL HALL CONT	O	Power supply control signal of reel FG sensor. "L" pulse when REC/PB.																												
37	MP	I	Connected to GND.																												
38	COSMO RESET	I	Reset signal. Reset when "L".																												
39	VSS		GND.																												
40	XTAL	O	11.89 MHz oscillation circuit output pin.																												

Pin No.	Signal Name	I/O	Function
41	EXTAL	I	11.89 MHz oscillation circuit input pin.
42	COSMO CS	I	Chip select signal from mode control micro processor. V cycle "L" pulse.
43	SERIAL IN	I	Serial data input.
44	SERIAL OUT	O	Serial data output.
45	SCK	O	Serial clock output.
46			Not used.
47	PAC O/I SEL	O	Signal which controls the accessory pack pin signal direction. When "H", the signal is output from the main unit to the accessory pack.
48			Not used.
49			
50	AVSS		Analog port GND.
51	AVREF		Analog port reference voltage input (Connected to AVDD).
52	AVDD		Analog port power supply (+5V).
53			Not used.
54	END SENS	I	Tape end detecting signal. Normally "L". "H" pulse at tape end.
55	TOP SENS	I	Tape top detecting signal. Normally "L". "H" pulse at tape top.
56	DEW DET	I	Condensation detection signal input. "L" when condensation occurred.
57	BATT SENSE	I	Battery voltage input for battery end detecting. The voltage divided into 2 by R114 and R115 is input.
58	ATF ERROR	I	ATF error, ATF lock error voltage input.
59	S REEL	I	S reel FG signal input.
60	T REEL	I	T reel FG signal input.
61			Not used.
62			
63			
64	VTR SYNC	I	Composite sync signal input separated from recording/playback Y signal.
65	SP/LP DET	I	Recording mode discrimination signal of the tape played back when CUE/REV/FF/REW. "H" when SP tape.
66	DRUM PG	I	Drum PG signal input. For drum phase servo. 33.3 msec. cycle "H" pulse when REC/PB.
67	DRUM FG	I	Drum FG signal input. For drum speed servo. 360 Hz square wave when REC/PB.
68	CAP FG	I	Capstan FG signal input. For capstan speed servo. Approx. 993 Hz in SP mode REC/PB, Approx. 497 Hz in LP mode REC/PB.
69			Not used.
70	TOP/END LED ON	O	LED ON/OFF signal for detecting tape top and end. "H" pulse during tape running.
71			Not used.
72			
73	CAP PWM	O	Capstan error signal output. 20.15 μ sec. cycle PWM signal.
74	DRUM PWM	O	Drum error signal output. 20.15 μ sec. cycle PWM signal.
75	CFG HMS	I	Capstan FG signal input for tape counter.
76			Not used.
77			
78			
79	LM LIM ON	I	Loading motor driver current limiter detecting signal input. Normally "H". "L" when limiter is ON.
80			Not used.
81	DRUM ON	O	Drum motor ON/OFF control signal. Drum rotates at "H".
82	CLOG DET	I	Head clog detecting signal input. Normally "L".
83	REF PILOT	O	Reference pilot signal output for ATF servo. Synchronizes with drum rotation, switches four frequencies sequentially and outputs. f1=102.52 kHz, f2=118.95 kHz, f3=165.21 kHz, f4=148.69 kHz.

Pin No.	Signal Name	I/O	Function
41	EXTAL	I	11.89 MHz oscillation circuit input pin.
42	COSMO CS	I	Chip select signal from mode control micro processor. V cycle "L" pulse.
43	SERIAL IN	I	Serial data input.
44	SERIAL OUT	O	Serial data output.
45	SCK	O	Serial clock output.
46			Not used.
47	PAC O/I SEL	O	Signal which controls the accessory pack pin signal direction. When "H", the signal is output from the main unit to the accessory pack.
48			Not used.
49			Not used.
50	AVSS		Analog port GND.
51	AVREF		Analog port reference voltage input (Connected to AVDD).
52	AVDD		Analog port power supply (+5V).
53			Not used.
54	END SENS	I	Tape end detecting signal. Normally "L". "H" pulse at tape end.
55	TOP SENS	I	Tape top detecting signal. Normally "L". "H" pulse at tape top.
56	DEW DET	I	Condensation detection signal input. "L" when condensation occurred.
57	BATT SENSE	I	Battery voltage input for battery end detecting. The voltage divided into 2 by R114 and R115 is input.
58	ATF ERROR	I	ATF error, ATF lock error voltage input.
59	S REEL	I	S reel FG signal input.
60	T REEL	I	T reel FG signal input.
61			Not used.
62			
63			
64	VTR SYNC	I	Composite sync signal input separated from recording/playback Y signal.
65	SP/LP DET	I	Recording mode discrimination signal of the tape played back when CUE/REV/FF/REW. "H" when SP tape.
66	DRUM PG	I	Drum PG signal input. For drum phase servo. 33.3 msec. cycle "H" pulse when REC/PB.
67	DRUM FG	I	Drum FG signal input. For drum speed servo. 360 Hz square wave when REC/PB.
68	CAP FG	I	Capstan FG signal input. For capstan speed servo. Approx. 993 Hz in SP mode REC/PB, Approx. 497 Hz in LP mode REC/PB.
69			Not used.
70	TOP/END LED ON	O	LED ON/OFF signal for detecting tape top and end. "H" pulse during tape running.
71			Not used.
72			
73	CAP PWM	O	Capstan error signal output. 20.15 μ sec. cycle PWM signal.
74	DRUM PWM	O	Drum error signal output. 20.15 μ sec. cycle PWM signal.
75	CFG HMS	I	Capstan FG signal input for tape counter.
76			Not used.
77			
78			
79	LM LIM ON	I	Loading motor driver current limiter detecting signal input. Normally "H". "L" when limiter is ON.
80			Not used.
81	DRUM ON	O	Drum motor ON/OFF control signal. Drum rotates at "H".
82	CLOG DET	I	Head clog detecting signal input. Normally "L".
83	REF PILOT	O	Reference pilot signal output for ATF servo. Synchronizes with drum rotation, switches four frequencies sequentially and outputs. f1=102.52 kHz, f2=118.95 kHz, f3=165.21 kHz, f4=148.69 kHz.

Pin No.	Signal Name	I/O	Function
84			Not used.
85	NC		Connected to GND.
86	VSS		GND.
87	VDD		+5V power supply.
88	VPP		Connected to VDD.
89	DRUM ACC	O	Drum acceleration pulse output for fH correction. Normally "L".
90	DRUM BRK	O	Drum deceleration pulse output for fH correction. Normally "L".
91	SP/LP OUT	O	SP/LP switching signal output. SP: "H", LP: "L".
92	DOC MASK	O	DOC level switching signal output. "H" pulse which synchronizes with V sync during PB.
93			Not used.
94			
95	VA PB MODE	O	REC/PB switching signal output of video/audio circuit. "H" when PB.
96			Not used.
97	RF SWP(RF CONT)	O	PF switching pulse signal output. 30 Hz, duty cycle 50%.
98			Not used.
99	CAP ON	O	Capstan motor ON/OFF control signal output. Capstan rotates at "H".
100	CAP FWD/RVS	O	Capstan rotational direction control signal output. FWD direction: "H".

4-9. MODE CONTROL MICRO PROCESSOR (IC201 on MA-137 board: MB89092) PIN FUNCTIONS

Pin No.	Signal Name	I/O	Function																		
1	MOD0		Operation mode specification pin. Connected to GND.																		
2	MOD1																				
3	X0																				
4	X1																				
5	VSS		GND pin.																		
6	RESET	I	Reset input. "L" when resetting.																		
7	LINE I/O SEL	O	Input/output switching signal of line input/output pin. "H" only when external pack is not connected and the mode is not playback (input condition).																		
8	PACK DET	I	External pack connection signal. Standby switch is used (combined use) when camera pack is connected.																		
9	EJECT SW	I	Cassette EJECT key input. "L" when key is pressed.																		
10	POWER SW	I	POWER switch input. "L" when key is pressed.																		
11	BACK LIGHT ON	O	Liquid crystal display back light ON/OFF signal. "H" when back light ON.																		
12	START/STOP SW	I	Not used.																		
13	CC DOWN SW	I	Cassette compartment lock switch input. "L" when lock.																		
14	CAMERA STBY SW	I	Not used.																		
15	BATT IN		Fixed at "H" level.																		
16	SYSTEM SYNC(PB V)	I	VD signal input from mechanism control micro processor. Timing reference of serial data communication. V cycle "L" pulse.																		
17	SERVO V	I	Not used.																		
18	LANC POWER ON	I	POWER ON signal input by LANC. "L" when POWER is turned ON.																		
19	REC LED	O	REC LED ON/OFF signal. REC: "L".																		
20	TALLY LED	O	Camera Tally LED ON/OFF signal.																		
21			Not used.																		
22	PAUSE LED	O	Not used.																		
23	POWER LED	O	POWER LED ON/OFF signal. Power supply ON: "L".																		
24	SYSTEM RESET	O	Reset signal to mechanism control micro processor. "L" when resetting.																		
25	AD GND		For AD reference. Connected to GND.																		
26	BATT IN		Fixed at "H" level.																		
27	MARKER SI	I	Not used.																		
28	MARKER SO	O																			
29	MARKER SCK	O																			
30	RMC IN	I																			
31	MARKER RESET	O																			
32	MK REC MASK	O																			
33	CS EEPROM	O	Serial data communication chip select signal to EEPROM. V cycle "L" pulse.																		
34	CS VIDEO	O	Serial data communication chip select signal to VIDEO IC. V cycle "L" pulse.																		
35	CS MARKER	O	Not used.																		
36	CS LCD	O																			
37	D/A STB	O	D/A converter IC serial data transfer strobe signal. V cycle "H" pulse.																		
38	VIDEO MUTE	O	Video output mute signal. "H" when muting.																		
39	AUDIO MUTE	O	Audio output mute signal. "H" when muting.																		
40	OUTPUT SEL 1	O	Audio monitor switching output.																		
41	OUTPUT SEL 2	O	<table border="1"> <thead> <tr> <th></th> <th>Stereo</th> <th>Main</th> <th>Sub</th> <th>Main/Sub</th> <th>Monaural</th> </tr> </thead> <tbody> <tr> <td>OUTPUT SEL 1</td> <td>L</td> <td>H</td> <td>H</td> <td>L</td> <td>L</td> </tr> <tr> <td>OUTPUT SEL 2</td> <td>L</td> <td>H</td> <td>L</td> <td>L</td> <td>L</td> </tr> </tbody> </table>		Stereo	Main	Sub	Main/Sub	Monaural	OUTPUT SEL 1	L	H	H	L	L	OUTPUT SEL 2	L	H	L	L	L
	Stereo	Main	Sub	Main/Sub	Monaural																
OUTPUT SEL 1	L	H	H	L	L																
OUTPUT SEL 2	L	H	L	L	L																

Pin No.	Signal Name	I/O	Function												
42	MATRIX CONT 1	O	Audio matrix switching <table border="1"> <thead> <tr> <th></th> <th>Stereo</th> <th>Bilingual</th> <th>Monaural</th> </tr> </thead> <tbody> <tr> <td>MATRIX CONT 1</td> <td>H</td> <td>H</td> <td>L</td> </tr> <tr> <td>MATRIX CONT 2</td> <td>H</td> <td>L</td> <td>L</td> </tr> </tbody> </table>		Stereo	Bilingual	Monaural	MATRIX CONT 1	H	H	L	MATRIX CONT 2	H	L	L
	Stereo	Bilingual		Monaural											
MATRIX CONT 1	H	H	L												
MATRIX CONT 2	H	L	L												
43	MATRIX CONT 2	O													
44	INSEL	O	Input switching signal. "H" during line input.												
45	LINE STEREO	I	Stereo/monaural discrimination input of line input pin. "H" when plug is inserted in audio input pin (right).												
46	SP ON	O	Speaker output ON/OFF signal. Speaker ON: "L".												
47	VCC		Power supply pin.												
48	SEG15	O	Not used.												
49	SEG14	O													
50	SEG13	O													
51	SEG12	O													
52	SEG11	O													
53	SEG10	O													
54	SEG09	O													
55	SEG08	O													
56	VSS			GND pin.											
57	SEG07	O													
58	SEG06	O	Not used.												
59	SEG05	O													
60	SEG04	O													
61	SEG03	O													
62	SEG02	O													
63	SEG01	O													
64	SEG00	O													
65	V3														
66	V2														
67	V1														
68	V0		Character generator serial data communication chip select signal. V cycle "L" pulse.												
69	COM0	O													
70	COM1	O													
71	COM2	O													
72	COM3	O	Serial data communication chip select signal to mechanism control micro processor. V cycle "L" pulse.												
73	CS CG	O													
74	CS COSMO	O	Serial data communication data input. V cycle "L" pulse row.												
75	SI BUS	I													
76	SO BUS	O	Serial data communication data output. V cycle "L" pulse row.												
77	SCK	O	Clock for serial data communication.												
78			Not used.												
79	POWER ON	O	Power supply ON/OFF control signal. Power supply ON: "H".												
80	MONITOR ON	O	External monitor power supply ON/OFF control signal. Power supply ON: "L".												
81	AVSS		GND pin.												
82	KEY AD IN 0	I	Key input signal. 0V: REC, 0.9V: STOP, 1.5V: FF, 2.2V: PB, 2.8V: SLOW, 5V: No input.												
83	KEY AD IN 1	I	Key input signal. 0V: PAUSE, 0.9V: REW, 1.5V: COUNTER RESET, 2.2V: DATA SCREEN, 5V: No input.												

Pin No.	
84	I
85	I
86	I
87	S
88	I
89	.
90	.
91	I
92	.
93	.
94	.
95	.
96	.
97	.
98	.
99	.
100	.

Signal Name	I/O	Function												
MATRIX CONT 1	O	Audio matrix switching												
MATRIX CONT 2	O	<table border="1"> <thead> <tr> <th></th> <th>Stereo</th> <th>Bilingual</th> <th>Monaural</th> </tr> </thead> <tbody> <tr> <td>MATRIX CONT 1</td> <td>H</td> <td>H</td> <td>L</td> </tr> <tr> <td>MATRIX CONT 2</td> <td>H</td> <td>L</td> <td>L</td> </tr> </tbody> </table>		Stereo	Bilingual	Monaural	MATRIX CONT 1	H	H	L	MATRIX CONT 2	H	L	L
	Stereo	Bilingual	Monaural											
MATRIX CONT 1	H	H	L											
MATRIX CONT 2	H	L	L											
SEL	O	Input switching signal. "H" during line input.												
LINE STEREO	I	Stereo/monaural discrimination input of line input pin. "H" when plug is inserted in audio input pin (right).												
ON	O	Speaker output ON/OFF signal. Speaker ON: "L".												
DC		Power supply pin.												
G15	O	Not used.												
G14	O													
G13	O													
G12	O													
G11	O													
G10	O													
G09	O													
G08	O													
IS			GND pin.											
G07	O		Not used.											
G06	O													
G05	O													
G04	O													
G03	O													
G02	O													
G01	O													
G00	O													
3		Not used.												
2														
1														
0														
DM0	O													
DM1	O													
DM2	O													
DM3	O													
SCG	O		Character generator serial data communication chip select signal. V cycle "L" pulse.											
SCOSMO	O		Serial data communication chip select signal to mechanism control micro processor. V cycle "L" pulse.											
SBUS	I	Serial data communication data input. V cycle "L" pulse row.												
DBUS	O	Serial data communication data output. V cycle "L" pulse row.												
CLK	O	Clock for serial data communication.												
		Not used.												
POWER ON	O	Power supply ON/OFF control signal. Power supply ON: "H".												
MONITOR ON	O	External monitor power supply ON/OFF control signal. Power supply ON: "L".												
VSS		GND pin.												
KEY AD IN 0	I	Key input signal. 0V: REC, 0.9V: STOP, 1.5V: FF, 2.2V: PB, 2.8V: SLOW, 5V: No input.												
KEY AD IN 1	I	Key input signal. 0V: PAUSE, 0.9V: REW, 1.5V: COUNTER RESET, 2.2V: DATA SCREEN, 5V: No input.												

Pin No.	Signal Name	I/O	Function
84	KEY AD IN 2	I	Key input signal. 0V: VOLUME+, 0.9V: VOLUME-, 1.5V: BRIGHT+, 2.2V: BRIGHT-, 2.8V: MENU, 3.4V: ENTER, 5V: No input.
85	KEY AD IN 3	I	Not used.
86	EXT CTL	I	External pack control signal input.
87	ST/BI DET	I	Playback AFM STEREO/BILINGUAL detection input. 0V: Stereo, 2V: Monaural, 5V: Bilingual
88	P/N443/P60	I	Not used.
89	AUDIO SEL	I	
90	AVCC		Power supply pin.
91	EXT POWER ON	O	External pack power supply ON/OFF control signal. Power supply ON: "L".
92	E MODE	O	Normal/Hi8 switching signal. "H" when playing back a Hi8 tape recorded.
93	LINE AU BI/ST	I	Not used.
94	LCD ON/OFF	I	Liquid crystal display section open/close signal input. "H" when open.
95	LANC IN	I	LANC data input. V cycle "H" pulse row.
96	LANC OUT	O	LANC data output. V cycle "H" pulse row.
97			Not used.
98			Fixed at "H" level.
99	CLI		Sub-clock oscillation circuit. 32 kHz.
100	CLO		

3-10. INTERFACE

3-10-1. System Control – Video and Audio Block Interfaces (MA-137 Board)

Signal Name	I/O	Pin No.	VTR Mode											CAMERA Mode		
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB-PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
SP/LP	O	IC101④	*1	H	H	*2	*2	*2	*2	*2	*1	*1	*14	H/L	H/L	*14
VA PB MODE	O	IC101⑤	L	L	L	H	H	H	H	H	H	H	L	L	L	L
JOG VD	O	IC101③	L	L	L	*5	*5	L	*5	*5	*5	*5	L	L	L	L
RP PB MODE	O	IC101①	H	H	H	H	H	H	H	H	H	H	L	H	H	L
FE ON	O	IC101②	H	H	H	H	H	H	H	H	H	H	L	H	H	L
RF SWP	O	IC101⑥	L	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
JOG	O	IC101④	L	L	L	H	H	L	H	H	H	H	L	L	L	L
SP/LP DET	I	IC101⑤	L	*10	*10	*10	*10	L	*10	*10	*10		H	H	H	H
CLOG DET	I	IC101②	H	*11	*11	*11	*11	*11	*11	*11	*11	*11	H	*11	*11	H
VTR SYNC	I	IC101④	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12
DOC MASK	O	IC101⑦	L	L	L	L	L	*13	L	L	L	L	L	L	L	L
VIDEO MUTE *15	O	IC101⑧	L	L	L	L	L	L	L	L	L	L	L	L	L	L
STILL-SLOW	O	IC101⑤	L	L	L	L	L	L	L	L	H	H	L	L	L	L
AUDIO MUTE	O	IC201③	L	L	L	H	H	L	H	H	H	H	L	L	L	L
LINE I/O SEL	O	IC201⑦	H	H	H	L	L	L	L	L	L	L	H	H	L	L
CS VIDEO	O	IC201④	V cycle "L" pulse													
D/A STB	O	IC201⑥	V cycle "H" pulse													
SO BUS	O	IC201⑧	V cycle pulse row													
SCK	O	IC201⑦	V cycle "L" pulse row													

- *1. Outputs the discrimination results of the mode just before. SP mode: "H", LP mode: "L".
- *2. Outputs the discrimination results of the recording mode of the tape played back. SP mode: "H", LP mode: "L".
- *5. False VD signal.
- *7. 50% pulse of 30 Hz duty (synchronizes with drum rotation)
- *10. "H" at SP recorded section of tape, "L" at LP recorded section.

- *11. "H" at unrecorded section of tape or drop out section. Head clog detection input.
- *12. Composite sync signal input separated from line input video signal, camera video signal or playback video signal. (Polarity +)
- *13. 60 Hz pulse which is "H" for 1.3 msec. from the changing point of RF SWP.
- *14. Changes by SP/LP switching. SP mode: "H", LP mode: "L".
- *15. "H" when the mode shifts from STOP to PB.

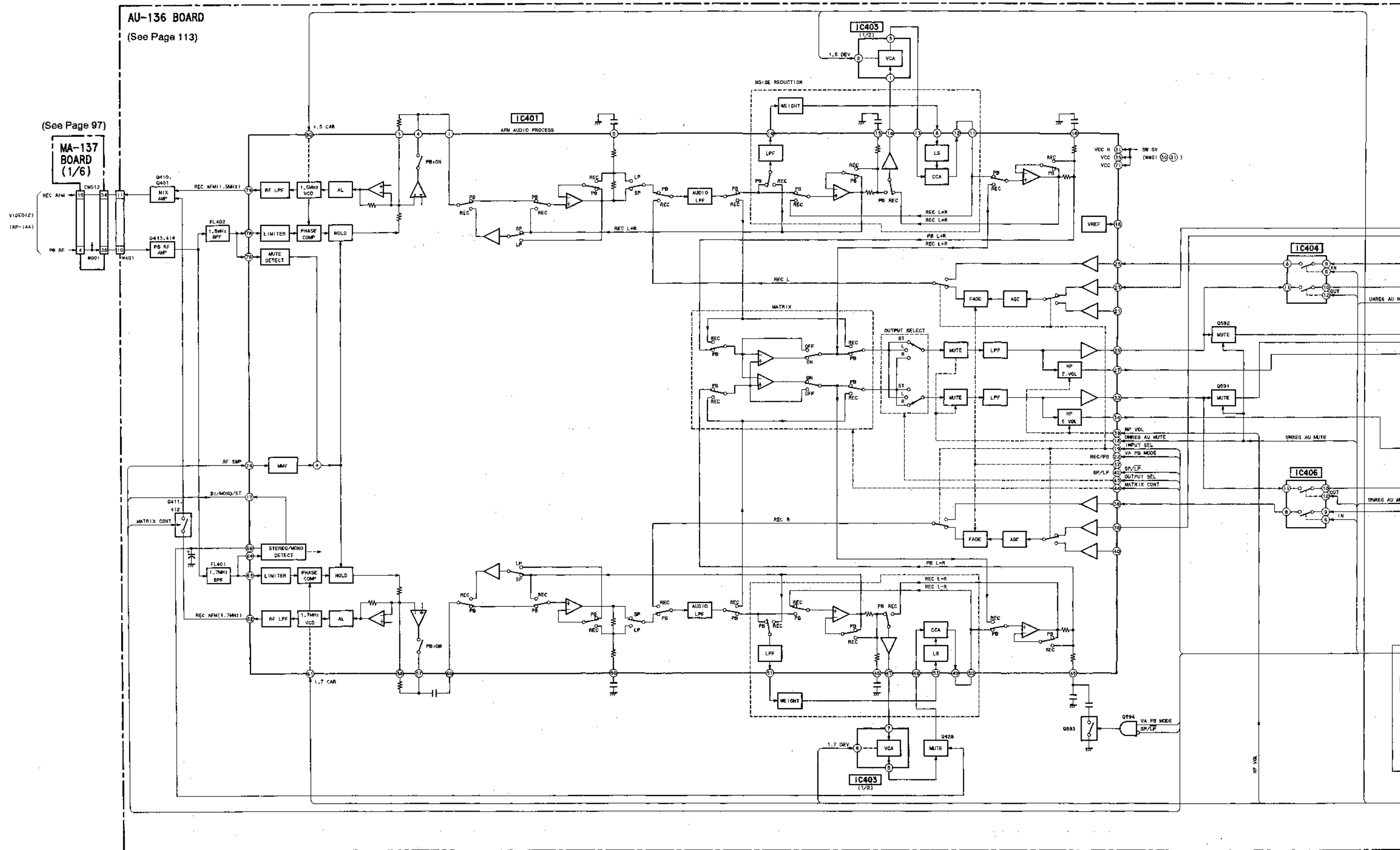
3-10-2. Mechanism Control – Servo Block Interface (MA-137 Board)

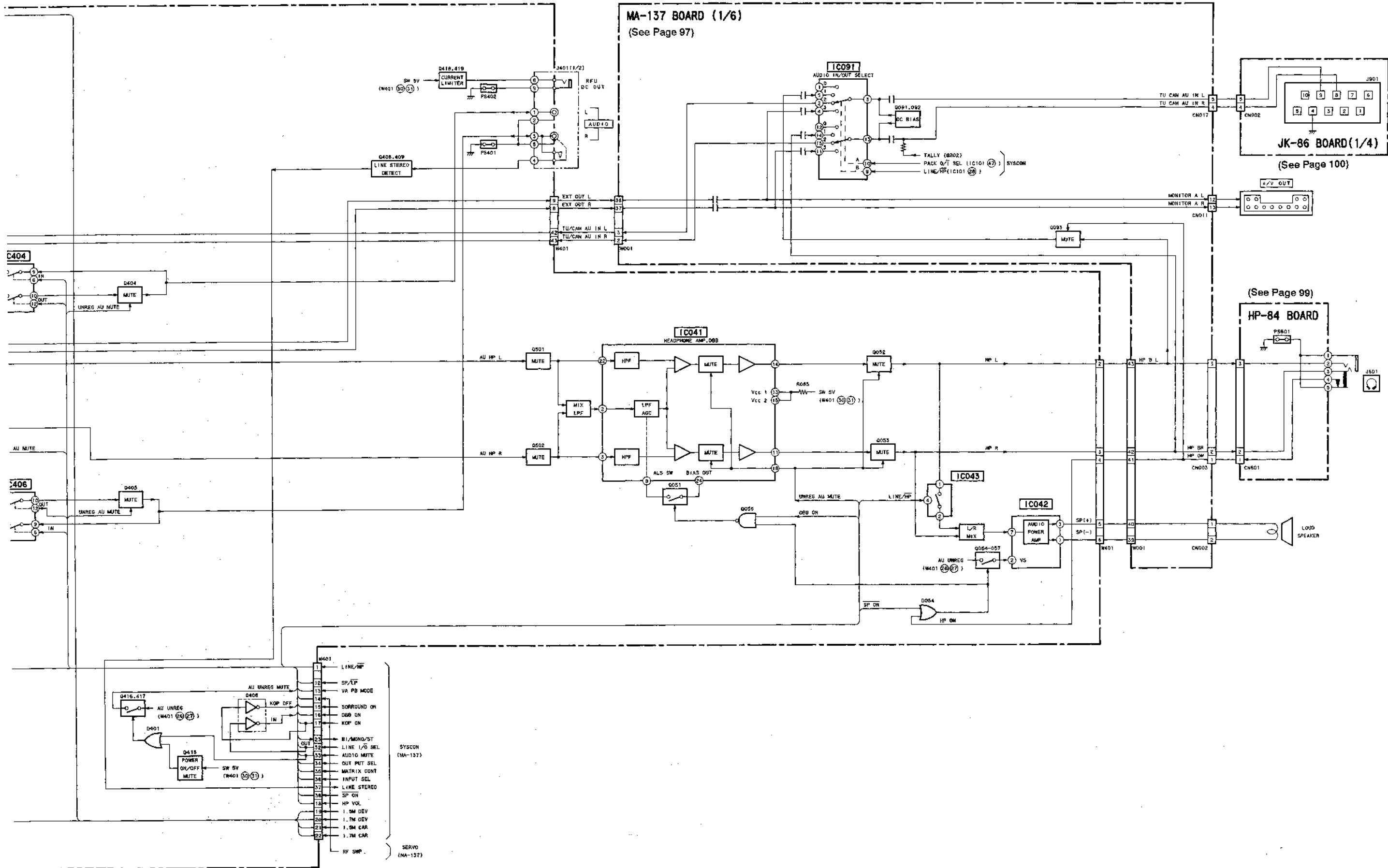
Signal Name	I/O	Pin No.	VTR Mode											CAMERA Mode		
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB-PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
T.REEL FG	I	IC101 ⑩	—	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	—	—	*1
S.REEL FG	I	IC101 ⑪	—	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	—	—	*1
ATF ERROR	I	IC101 ⑫	—	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
DRUM PG	I	IC101 ⑬	—	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
DRUM FG	I	IC101 ⑭	—	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP FG/ CFG HMS	I	IC101 ⑮, ⑯	—	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
CAP ON	O	IC101 ⑰	L	H	H	H	H	H	H	H	L	*8	H	L	L	H
REF PILOT	O	IC101 ⑱	*7	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
RP PB MODE	O	IC101 ⑲	H	H	H	H	H	H	H	H	H	H	L	H	H	L
DRUM FWD/RVS *10	O	IC101 ⑳	H	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP FWD/RVS	O	IC101 ㉑	L	H	L	H	L	H	H	L	L	*8	H	L	L	H
DRUM PWM	O	IC101 ㉒	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9
CAP PWM	O	IC101 ㉓	L	*9	*9	*9	*9	*9	*9	*9	L	*9	*9	L	L	*9
LM LIM CONT *11	O	IC101 ㉔	L	L	L	L	L	L	L	L	L	L	L	L	L	L
DRUM ON *12	O	IC101 ㉕	L	H	H	H	H	H	H	H	H	H	H	H	H	H
DRUM ACC	O	IC101 ㉖	L	L	L	L	L	L	L	L	L	*8	L	L	L	L
DRUM BRK	O	IC101 ㉗	L	L	L	L	L	L	L	L	L	*8	L	L	L	L

- *1. A pulse whose amplitude has been modulated by the rotation of the reel is input. (200 msec. cycle during REC/PB).
- *2. ATF error voltage input.
- *3. One PG pulse is input with one drum rotation. Approx. 30 Hz.
- *4. Six FG pulses are input with one drum rotation. Approx. 360 Hz.
- *5. 520 FG pulses are input with one capstan rotation. Approx. 993 Hz during REC/PB (SP).
- *6. Outputs four frequencies synchronized with the rotation of the drum. $f_1=102.54$ kHz, $f_2=118.95$ kHz, $f_3=165.21$ kHz, $f_4=148.69$ kHz.

- *7. Outputs f_2 (118.95 kHz).
- *8. "H" pulse when the tape is run.
- *9. 21.5 μ sec. cycle PWM signal.
- *10. Normally "H". Temporarily "L" only during load/unload (drum reversal).
- *11. Temporarily "H" only during cassette loading (To prevent your finger from being caught).
- *12. H level is approx. 1.3 Vdc.

3-11. AUDIO BLOCK DIAGRAM





MA-137 BOARD
(See Page 83, 93, 97)

(See Page 100)

JK-86 BOARD (1/4)

(See Page 107)

VR-39 BOARD

AU-136 BOARD
(See Page 113)

(See Page 105)

RG-25 BOARD

RP-144 BOARD
(See Page 75)

MECHA CHASSIS (See Page 122)

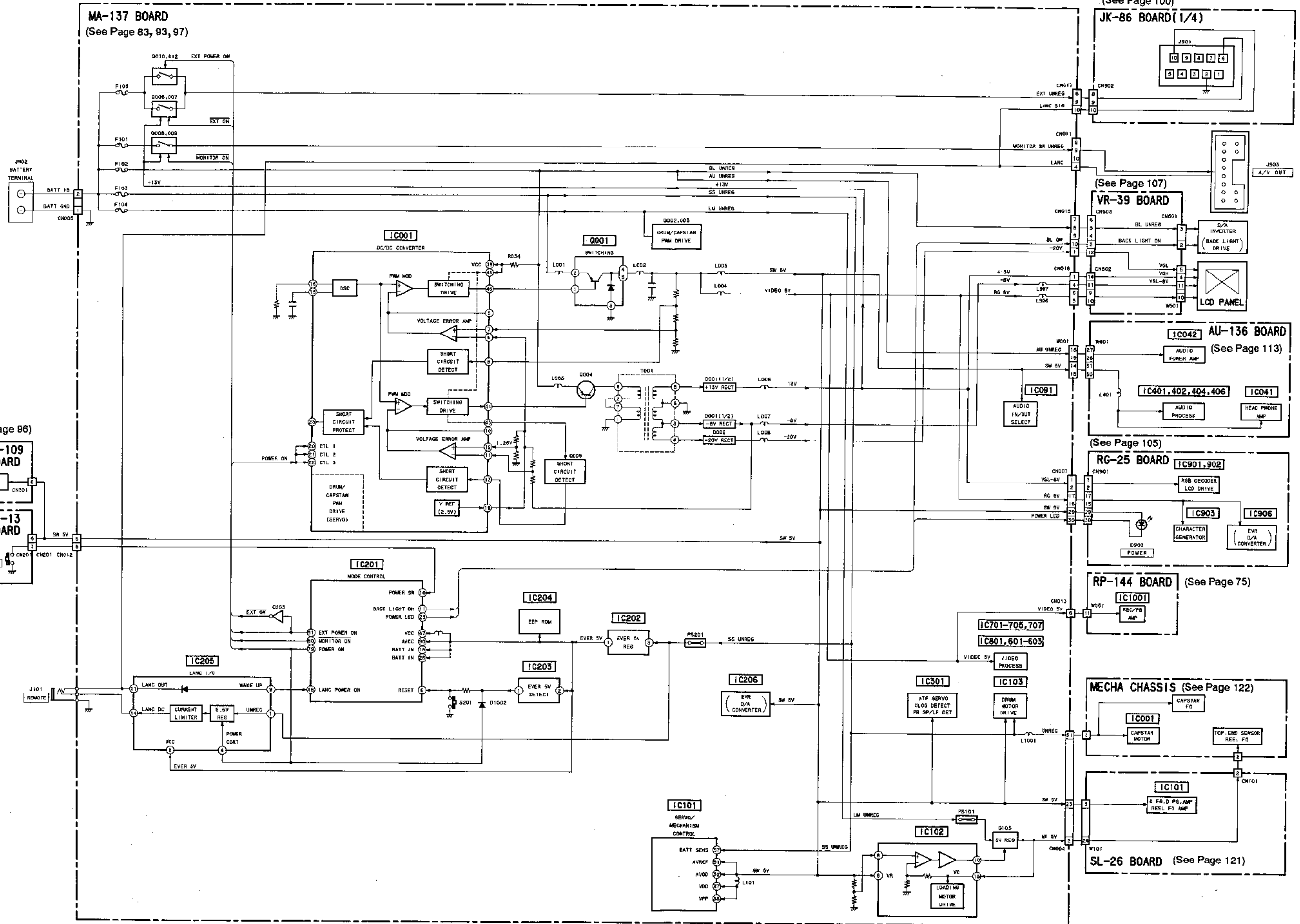
SL-26 BOARD (See Page 121)

(See Page 96)

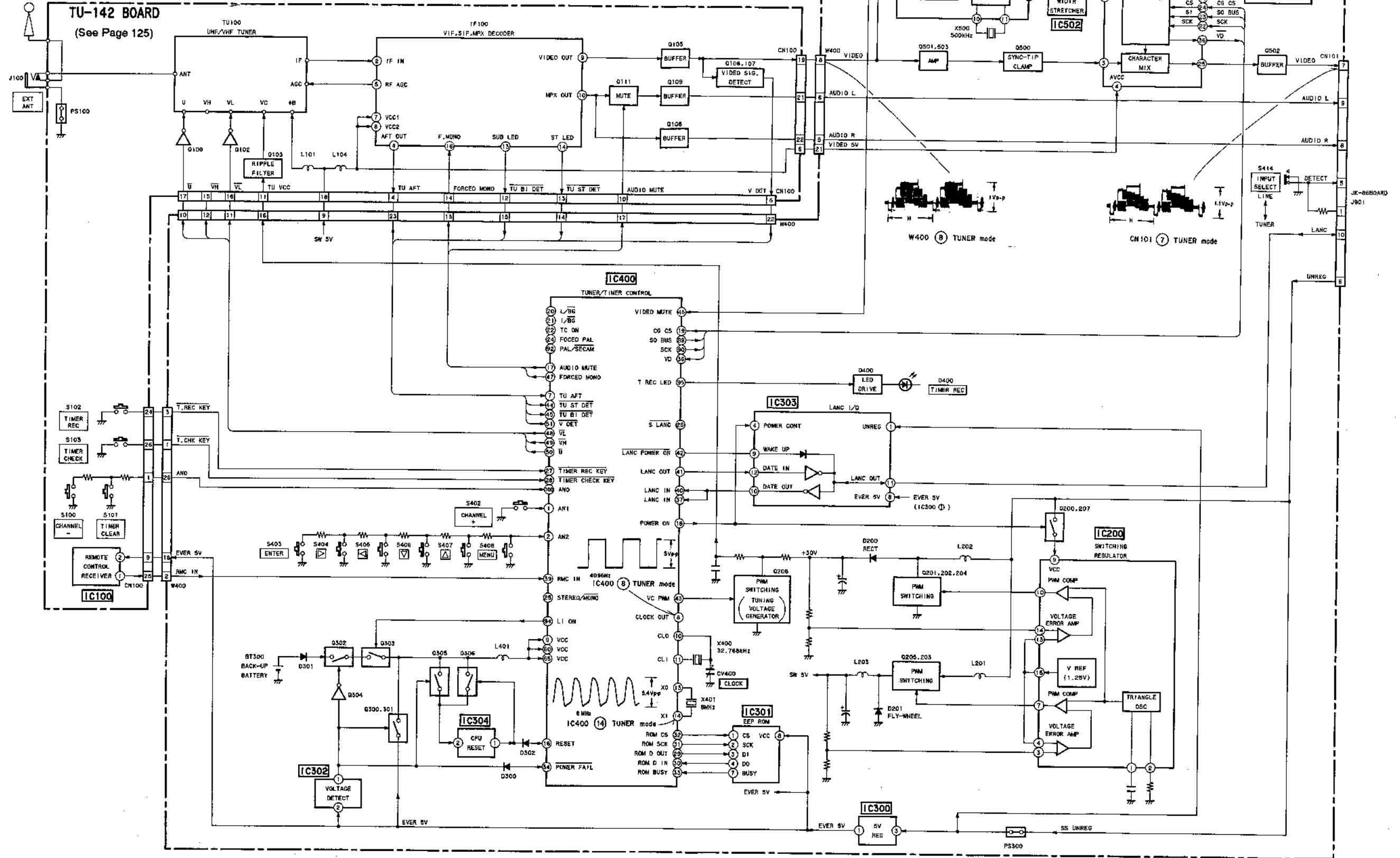
FU-109 BOARD

(See Page 98)

PE-13 BOARD



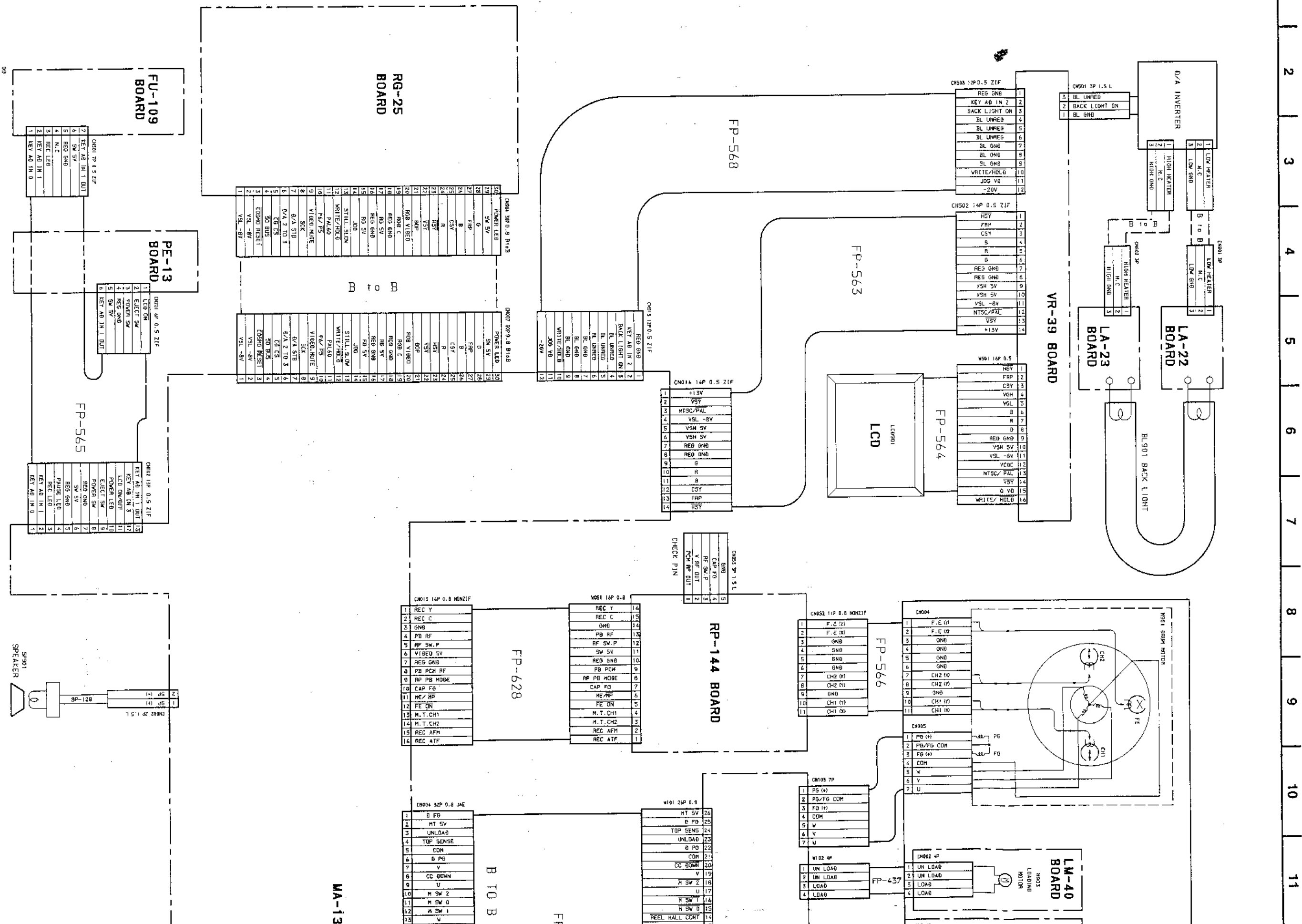
(See Page 128)



SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

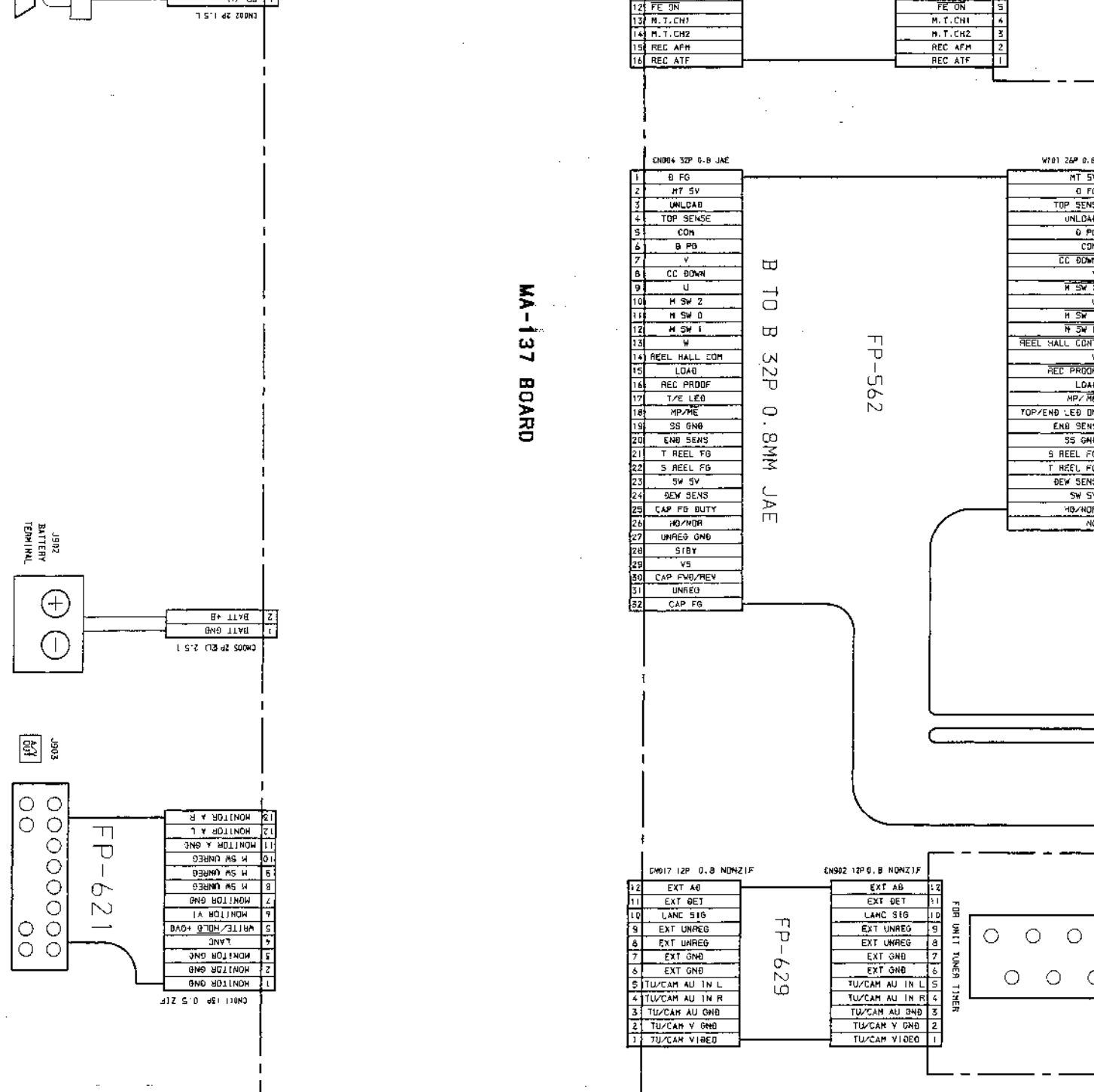
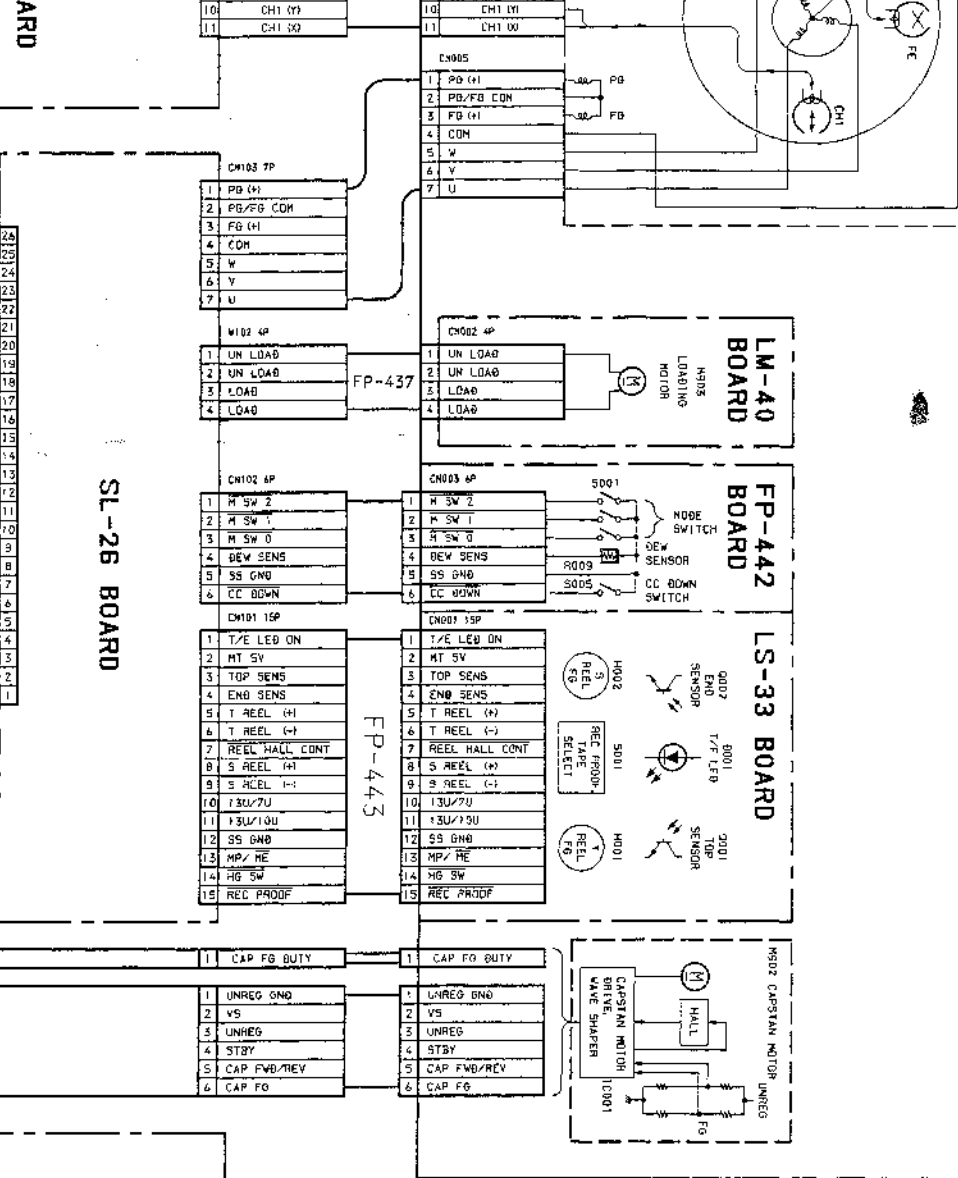
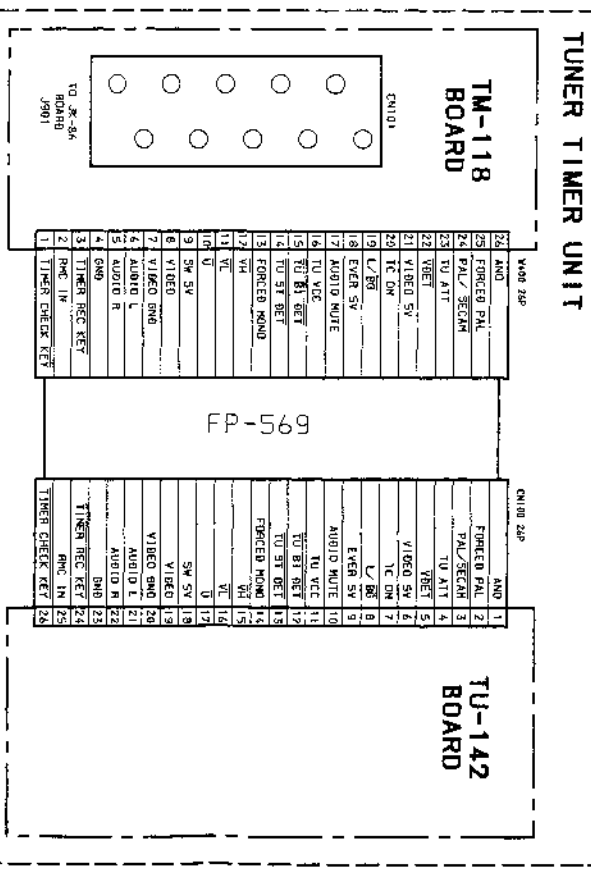
4-1. FRAME SCHEMATIC DIAGRAM



1 2 3 4 5 6 7 8 9 10 11

FRAME FRAME

A-MECHA



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.
- : Through hole
- : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)
- Circled numbers refer to waveforms.

*** Caution:**

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

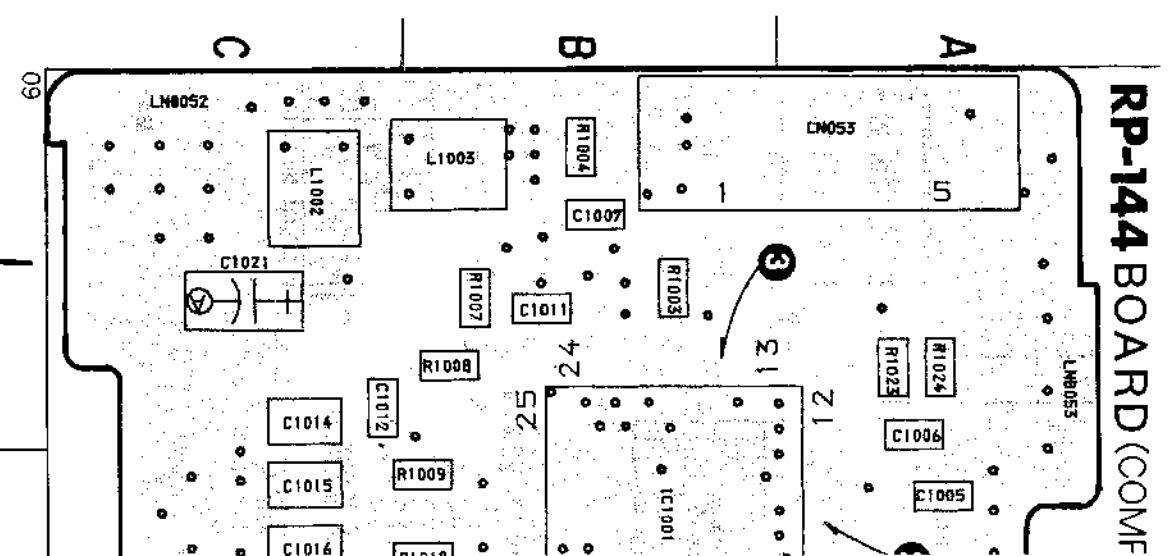
• For schematic diagrams.

- 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.
- Chip resistor are 1/10W unless otherwise noted. K Ω : 1000 Ω , M Ω : 1000K Ω .
- All capacitors are in μ F unless otherwise noted. pF: μ μ F, 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.*
- Voltages are dc between ground and measurement points.*
- Readings are taken with a digital multimeter (DC:10M Ω).*
- 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.	Note: Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--	---

*: indicated by the color red.

RP-144 (REC/IB HEAD AMPLIFIER) PRINT

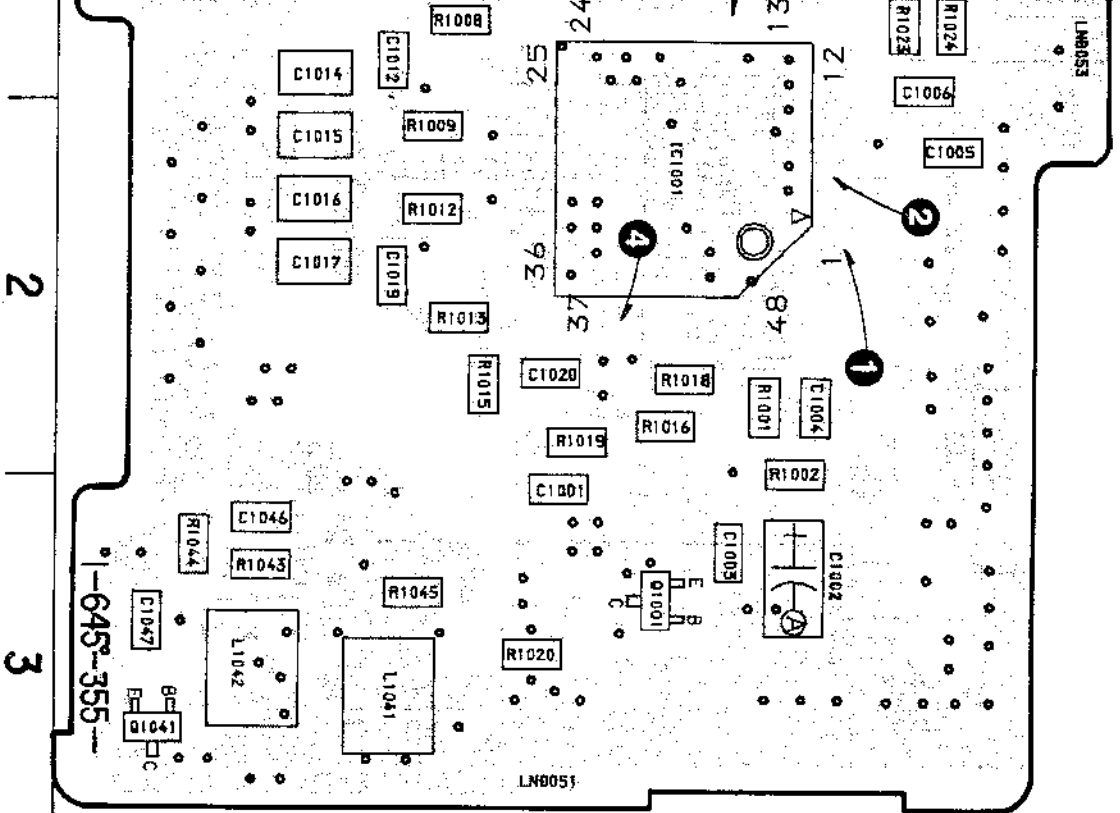


RP-144 BOARD
 IC1001 B-2
 Q1001 B-3
 Q1041 C-3
 Q1042 C-4
 Q1043 B-5

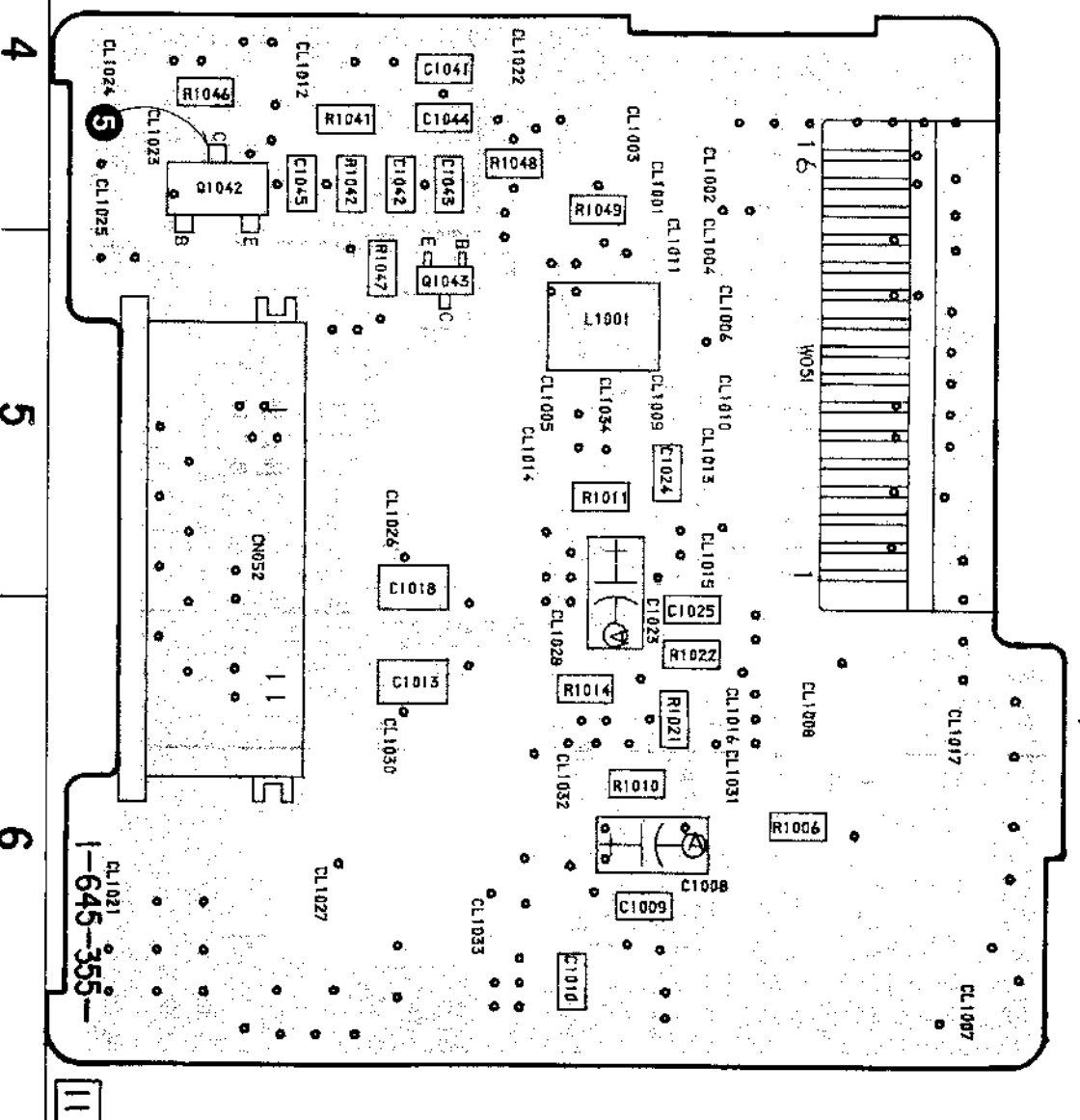
IC1001 8-752-033-38
 Q1001 8-729-928-27
 Q1041 8-729-928-19
 Q1042 8-729-820-76
 Q1043 8-729-928-19

AMPLIFIER) PRINTED WIRING BOARD

ARD (COMPONENT SIDE)



RP-144 BOARD (CONDUCTOR SIDE)



(IC)

IC1001 8-752-033-38 IC CXA1202R

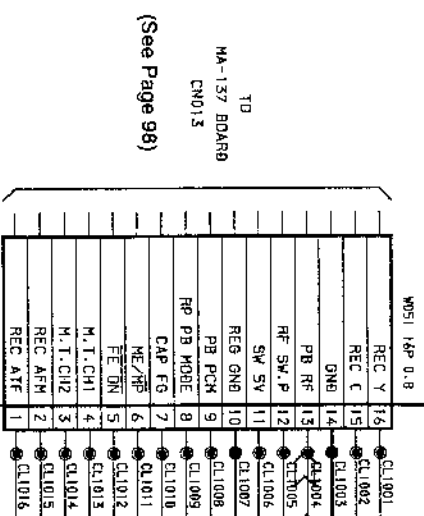
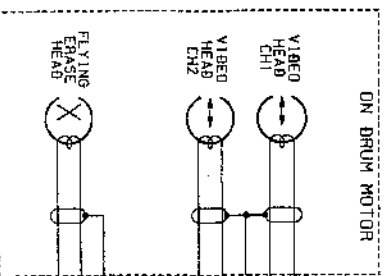
(TRANSISTOR)

Q1001 8-729-928-27 TRANSISTOR DTA144EE
Q1041 8-729-928-19 TRANSISTOR ZSA1774R
Q1042 8-729-820-76 TRANSISTOR ZSA1179-M5M6
Q1043 8-729-928-19 TRANSISTOR ZSA1774R

RP-144 (REC/PB HEAD AMPLIFIER) SCHEMATIC DIAGRAM

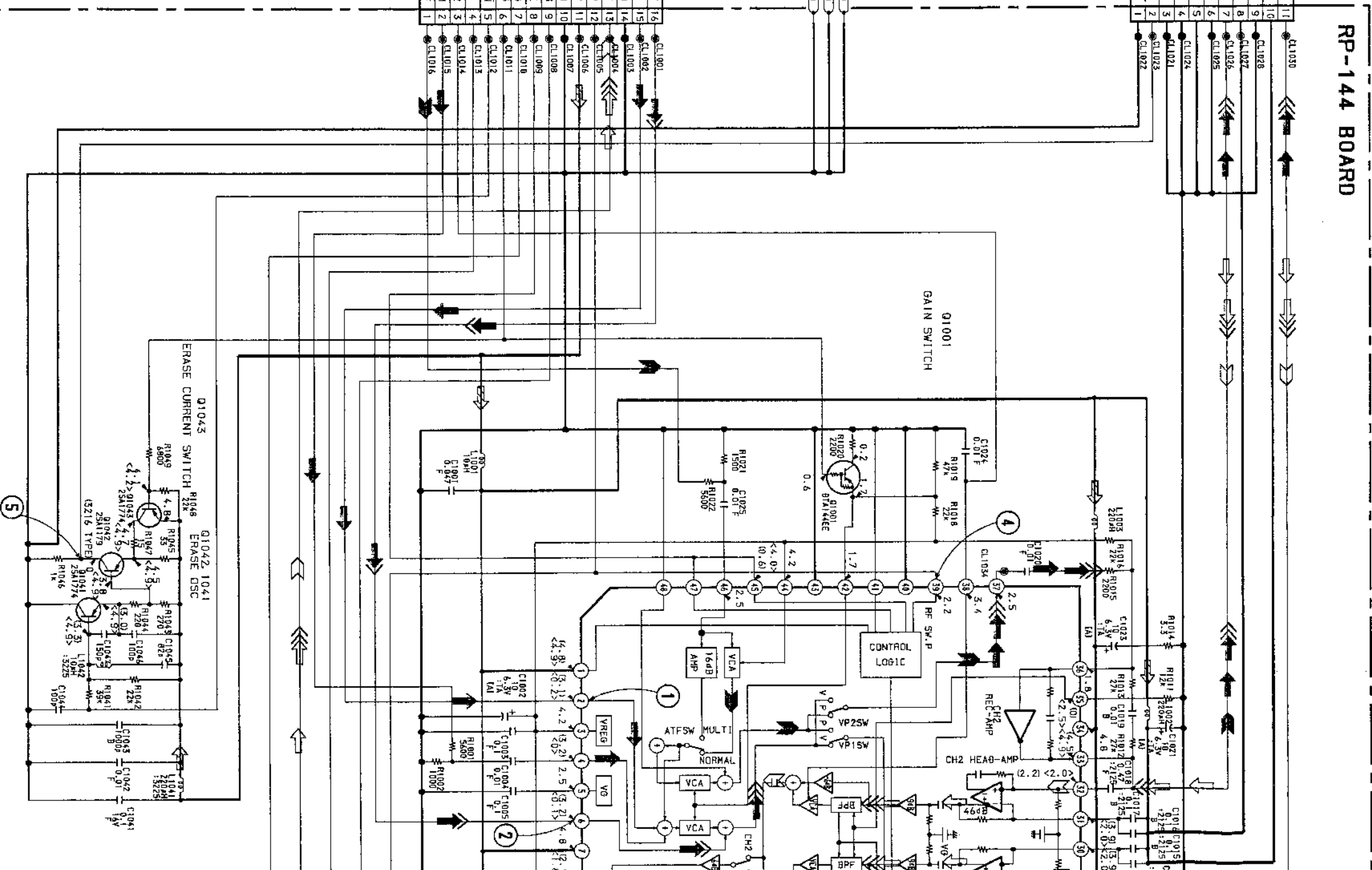
1 2 3 4 5 6 7 8 9 10 11

RP-144 BOARD

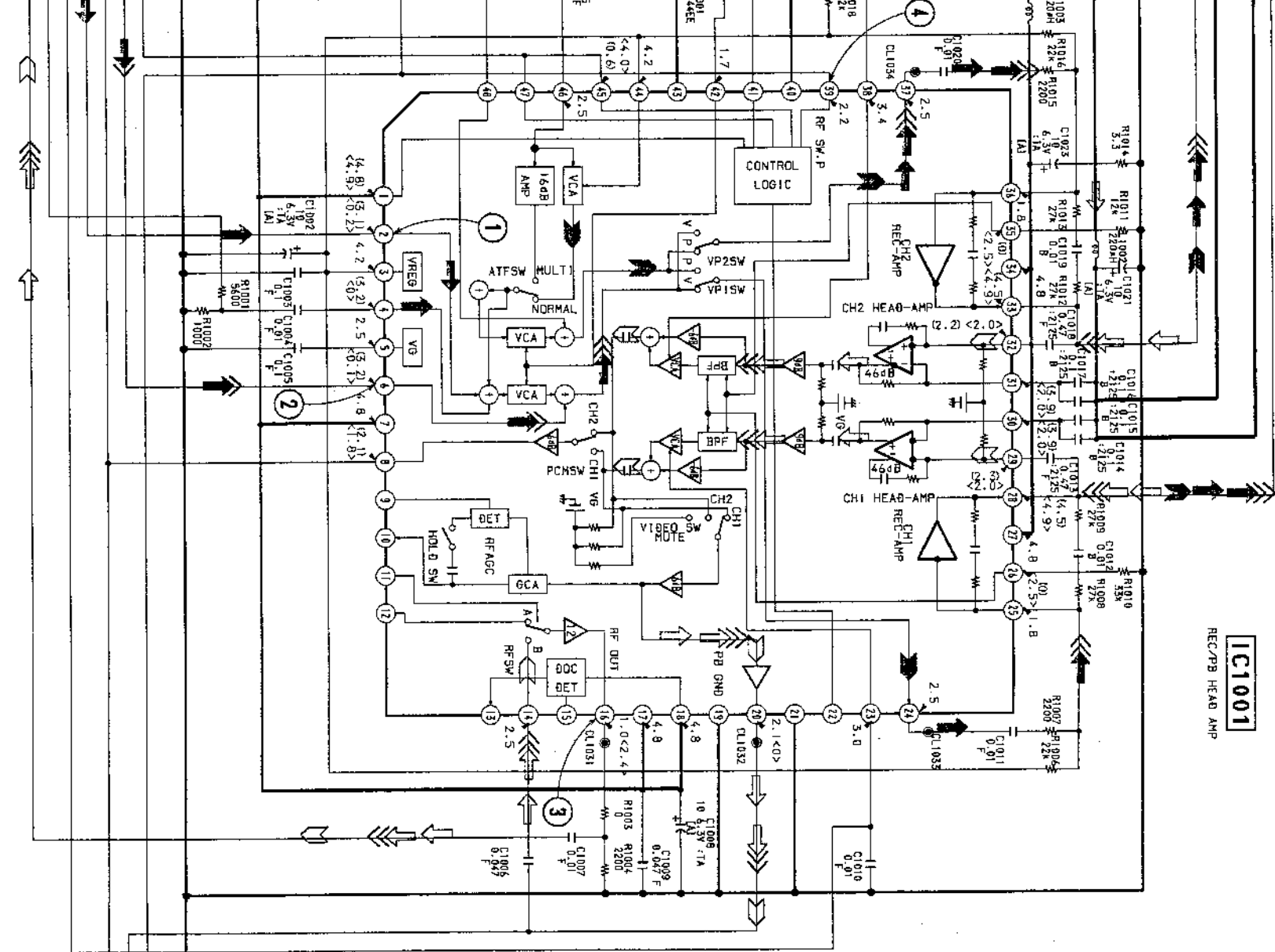


(See Page 98)

TD
MA-137 BOARD
CNO1.3



09

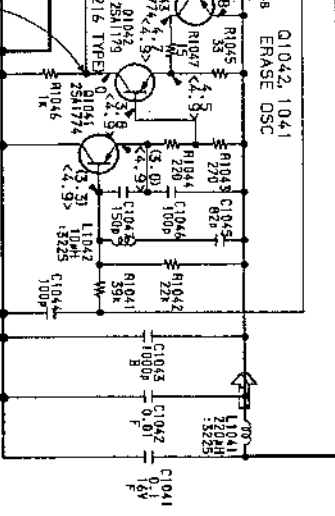


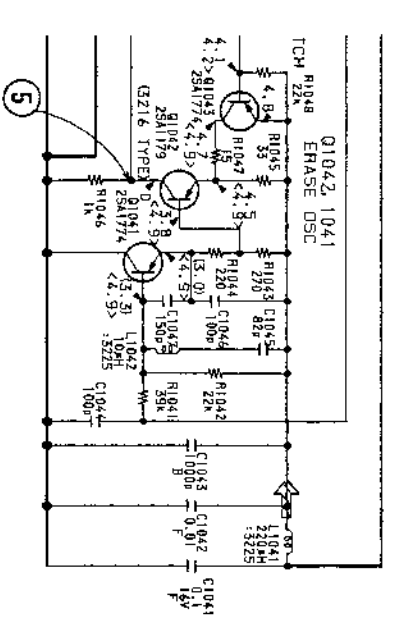
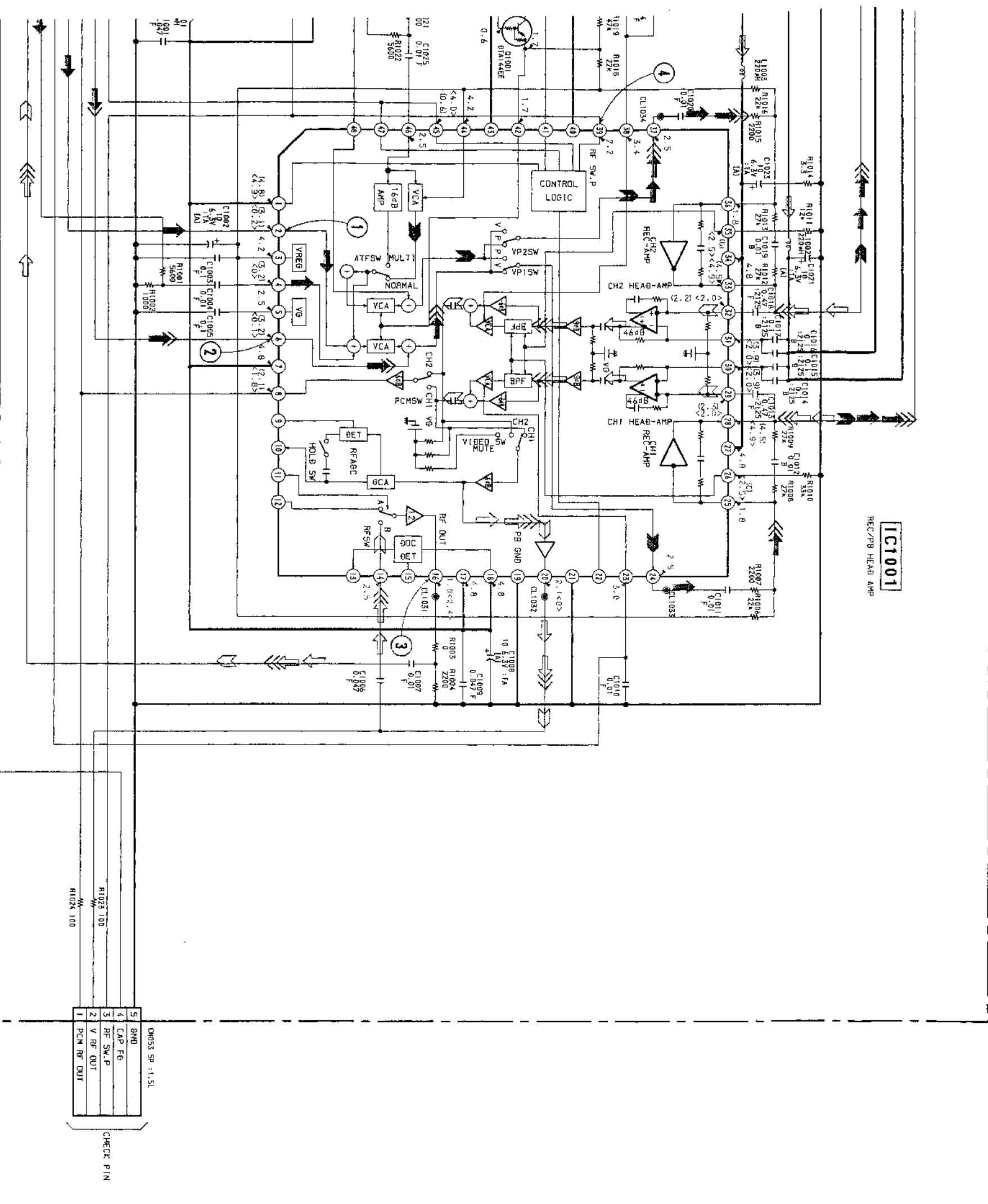
IC1001
REC/PB HEAD AMP

CMOS SP 11.5L

5	GND
4	CAP FG
3	RF SW. P
2	V RF OUT
1	PCH RF OUT

CHECK PIN





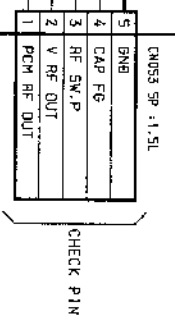
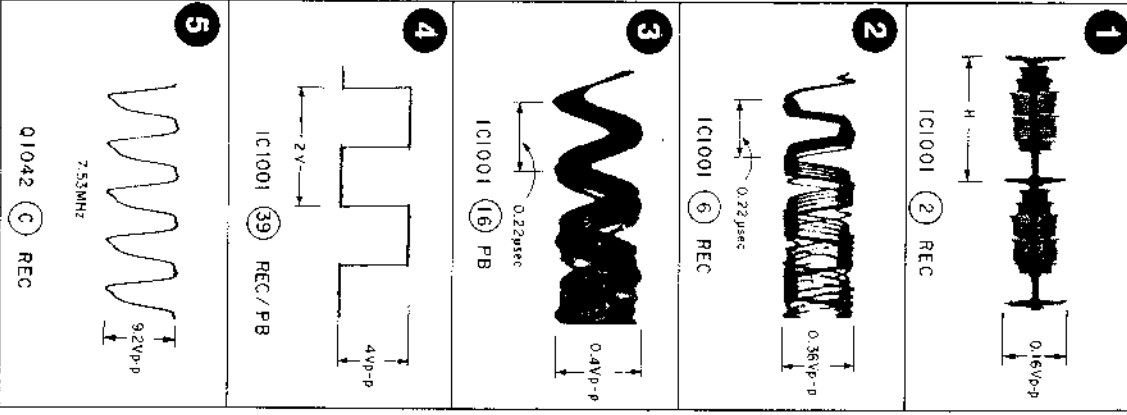
18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28

• SIGNAL PATH

	VIDEO SIGNAL		AUDIO SIGNAL
	CHROMA	Y	
REC	↔	↔	↔
PB		↔	↔

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal	↔		↔

RP-144 BOARD



MA-137 (VIDEO, SERVO/SYSTEM CONTROL, RELAY/POWER) PRINTED WIRING BOARD

MA-137 BOARD

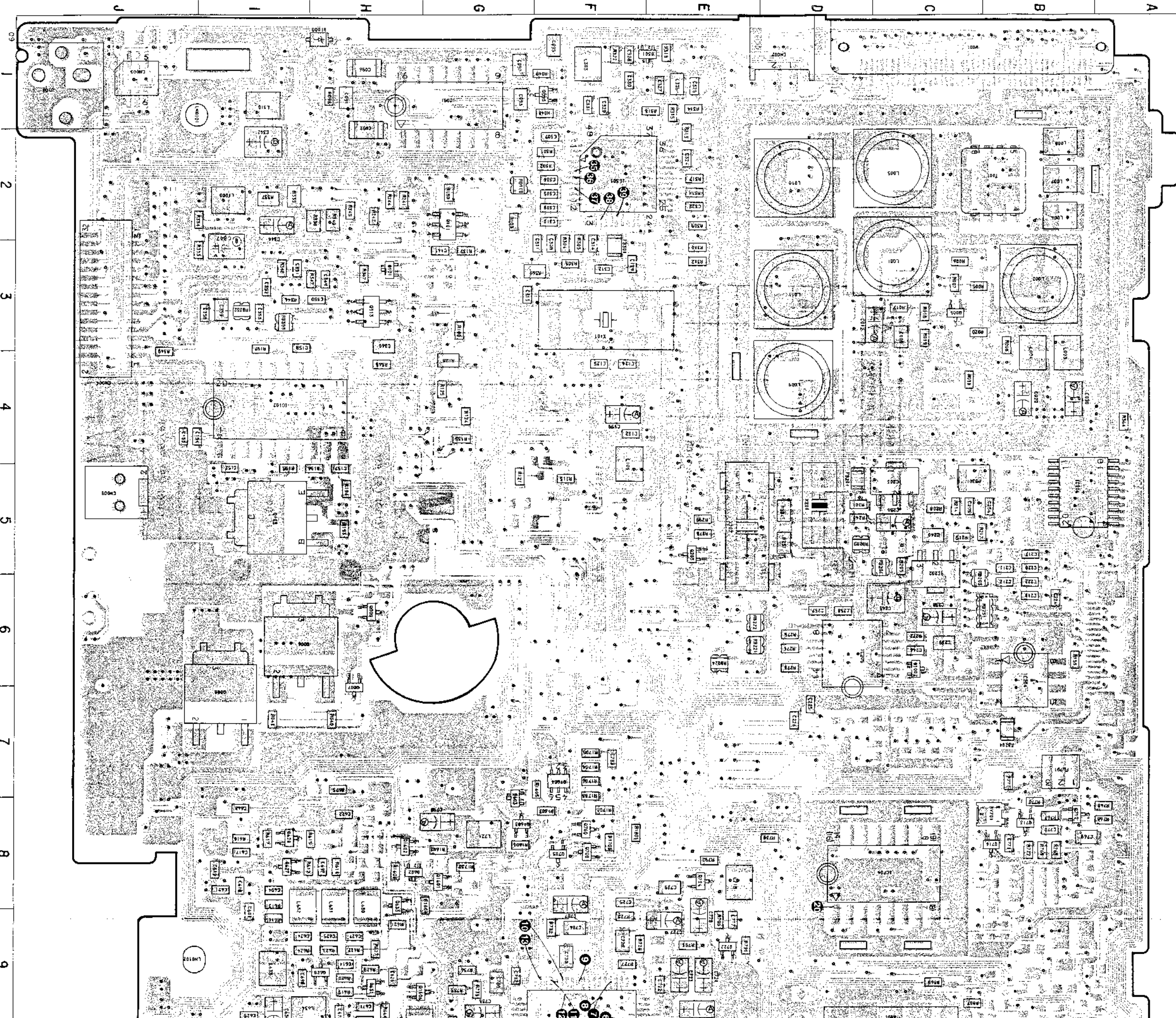
D001	B-22	IC601	H-15
D002	B-22	IC602	L-16
D004	H-19	IC603	L-17
D101	H-3	IC701	F-10
D199	L-15	IC702	F-13
D301	E-1	IC703	F-15
D310	H-22	IC704	C-8
D601	L-15	IC705	F-15
D602	H-8	IC707	C-14
D603	Q-7	IC801	C-14
D701	D-16	Q001	B-21
D1000	H-1	Q002	D-22
D1001	C-6	Q003	D-21
D1002	C-6	Q004	D-23
IC001	21	Q005	C-3
IC001	21	Q006	H-7
IC001	21	Q007	H-7
IC001	21	Q008	L-7
IC010	F-21	Q009	H-6
IC010	F-21	Q010	H-19
IC010	C-19	Q011	H-18
IC010	C-19	Q012	H-19
IC020	C-6	Q013	H-10
IC020	C-6	Q014	H-10
IC020	C-6	Q015	H-10
IC020	C-6	Q016	H-10
IC020	C-6	Q017	H-10
IC020	C-6	Q018	H-10
IC020	C-6	Q019	H-10
IC020	C-6	Q020	H-10
IC020	C-6	Q021	H-10
IC020	C-6	Q022	H-10
IC020	C-6	Q023	H-10
IC020	C-6	Q024	H-10
IC020	C-6	Q025	H-10
IC020	C-6	Q026	H-10
IC020	C-6	Q027	H-10
IC020	C-6	Q028	H-10
IC020	C-6	Q029	H-10
IC020	C-6	Q030	H-10
IC020	C-6	Q031	H-10
IC020	C-6	Q032	H-10
IC020	C-6	Q033	H-10
IC020	C-6	Q034	H-10
IC020	C-6	Q035	H-10
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IC020	C-6	Q040	H-10
IC020	C-6	Q041	H-10
IC020	C-6	Q042	H-10
IC020	C-6	Q043	H-10
IC020	C-6	Q044	H-10
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IC020	C-6	Q046	H-10
IC020	C-6	Q047	H-10
IC020	C-6	Q048	H-10
IC020	C-6	Q049	H-10
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IC020	C-6	Q051	H-10
IC020	C-6	Q052	H-10
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IC020	C-6	Q054	H-10
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IC020	C-6	Q056	H-10
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IC020	C-6	Q061	H-10
IC020	C-6	Q062	H-10
IC020	C-6	Q063	H-10
IC020	C-6	Q064	H-10
IC020	C-6	Q065	H-10
IC020	C-6	Q066	H-10
IC020	C-6	Q067	H-10
IC020	C-6	Q068	H-10
IC020	C-6	Q069	H-10
IC020	C-6	Q070	H-10
IC020	C-6	Q071	H-10
IC020	C-6	Q072	H-10
IC020	C-6	Q073	H-10
IC020	C-6	Q074	H-10
IC020	C-6	Q075	H-10
IC020	C-6	Q076	H-10
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IC020	C-6	Q078	H-10
IC020	C-6	Q079	H-10
IC020	C-6	Q080	H-10
IC020	C-6	Q081	H-10
IC020	C-6	Q082	H-10
IC020	C-6	Q083	H-10
IC020	C-6	Q084	H-10
IC020	C-6	Q085	H-10
IC020	C-6	Q086	H-10
IC020	C-6	Q087	H-10
IC020	C-6	Q088	H-10
IC020	C-6	Q089	H-10
IC020	C-6	Q090	H-10
IC020	C-6	Q091	H-10
IC020	C-6	Q092	H-10
IC020	C-6	Q093	H-10
IC020	C-6	Q094	H-10
IC020	C-6	Q095	H-10
IC020	C-6	Q096	H-10
IC020	C-6	Q097	H-10
IC020	C-6	Q098	H-10
IC020	C-6	Q099	H-10
IC020	C-6	Q100	H-10
IC020	C-6	Q101	H-10
IC020	C-6	Q102	H-10
IC020	C-6	Q103	H-10
IC020	C-6	Q104	H-10
IC020	C-6	Q105	H-10
IC020	C-6	Q106	H-10
IC020	C-6	Q107	H-10
IC020	C-6	Q108	H-10
IC020	C-6	Q109	H-10
IC020	C-6	Q110	H-10
IC020	C-6	Q111	H-10
IC020	C-6	Q112	H-10
IC020	C-6	Q113	H-10
IC020	C-6	Q114	H-10
IC020	C-6	Q115	H-10
IC020	C-6	Q116	H-10
IC020	C-6	Q117	H-10
IC020	C-6	Q118	H-10
IC020	C-6	Q119	H-10
IC020	C-6	Q120	H-10
IC020	C-6	Q121	H-10
IC020	C-6	Q122	H-10
IC020	C-6	Q123	H-10
IC020	C-6	Q124	H-10
IC020	C-6	Q125	H-10
IC020	C-6	Q126	H-10
IC020	C-6	Q127	H-10
IC020	C-6	Q128	H-10
IC020	C-6	Q129	H-10
IC020	C-6	Q130	H-10
IC020	C-6	Q131	H-10
IC020	C-6	Q132	H-10
IC020	C-6	Q133	H-10
IC020	C-6	Q134	H-10
IC020	C-6	Q135	H-10
IC020	C-6	Q136	H-10
IC020	C-6	Q137	H-10
IC020	C-6	Q138	H-10
IC020	C-6	Q139	H-10
IC020	C-6	Q140	H-10
IC020	C-6	Q141	H-10
IC020	C-6	Q142	H-10
IC020	C-6	Q143	H-10
IC020	C-6	Q144	H-10
IC020	C-6	Q145	H-10
IC020	C-6	Q146	H-10
IC020	C-6	Q147	H-10
IC020	C-6	Q148	H-10
IC020	C-6	Q149	H-10
IC020	C-6	Q150	H-10

D001	8-719-989-33	DIODE	FC806
D002	8-719-989-03	DIODE	DAN222
D004	8-719-991-00	DIODE	DAN222
D101	8-719-989-03	DIODE	DAN222
D199	8-719-422-91	DIODE	MA8091
D301	8-719-989-00	DIODE	DA221
D310	8-719-989-03	DIODE	DAN222
D601	8-719-951-22	DIODE	1M110
D602	8-719-989-03	DIODE	DAN222
D603	8-719-989-03	DIODE	DAN222
D701	8-719-989-03	DIODE	DAN222
D1000	8-719-422-91	DIODE	MA8091
D1001	8-719-422-91	DIODE	MA8091
D1002	8-719-989-03	DIODE	DAN222
IC001	8-759-060-94	IC	MR3785APV-G-BND-ER
IC009	8-759-509-13	IC	XRI4052BF
IC101	8-752-836-15	IC	CXP80624A-010R
IC102	8-759-039-01	IC	MP1720M
IC103	8-759-990-55	IC	CXA8080M
IC201	8-759-099-93	IC	MR89097-109
IC202	8-759-512-69	IC	S-81350HG-KD
IC203	8-759-946-03	IC	S-8054ALR-LN-S
IC204	8-759-044-78	IC	AK6420F
IC205	8-759-999-02	IC	TL1596CDB
IC206	8-759-635-27	IC	MR23526P
IC301	8-759-512-42	IC	CXA1481R
IC601	8-759-012-00	IC	MC10H116M
IC602	8-752-053-21	IC	CXA1211M
IC603	8-759-998-32	IC	CXD-2107M
IC701	8-752-065-54	IC	CXA1207AR
IC702	8-752-053-21	IC	CXA1211M
IC703	8-759-636-33	IC	CXA1452
IC704	8-752-332-68	IC	CXL5502M
IC705	8-759-635-27	IC	MR23526P
IC707	8-759-710-86	IC	NLM22338M
IC901	8-752-065-56	IC	CXA1208R

(DIODE)

(IC)

MA-137 BOARD (COMPONENT SIDE)



(TRANSISTOR)

-752-065-54 IC CXA1207AR
-752-053-21 IC CXA1211M
-159-636-33 IC CXA1462
-752-332-68 IC CXL5502M
-159-635-27 IC M62352GP
-159-710-86 IC N.M2238M
-152-065-56 IC CXA1208R

A0001 8-729-823-84 TRANSISTOR FP102
A0002 8-729-823-84 TRANSISTOR FP102
A0003 8-729-823-84 TRANSISTOR FP102
A0004 8-729-805-25 TRANSISTOR 2SB1121-S
0005 8-729-927-XX TRANSISTOR 2SC4617R
A0006 8-752-822-52 TRANSISTOR 2SK1469
0007 8-729-928-81 TRANSISTOR DT144EE
A0008 8-752-822-52 TRANSISTOR 2SK1469
0009 8-729-928-81 TRANSISTOR DT144EE
0010 8-729-928-27 TRANSISTOR DT144EE

0103 8-729-820-46 TRANSISTOR 2SB1202FAS
0202 8-729-927-XX TRANSISTOR 2SC4617R
0203 8-729-928-81 TRANSISTOR DT144EE
0310 8-729-927-XX TRANSISTOR 2SC4617R
0311 8-729-927-65 TRANSISTOR UMT1
0312 8-729-928-90 TRANSISTOR DT144EE
0313 8-729-823-95 TRANSISTOR FCI49
0609 8-729-927-XX TRANSISTOR 2SC4617R
0611 8-729-927-XX TRANSISTOR 2SC4617R
0619 8-729-928-72 TRANSISTOR DT1414TE

0627 8-729-927-XX TRANSISTOR 2SC4617R
0628 8-729-928-19 TRANSISTOR 2SA1774R
0629 8-729-928-19 TRANSISTOR 2SA1774R
0630 8-729-927-XX TRANSISTOR 2SC4617R
0631 8-729-927-XX TRANSISTOR 2SC4617R
0632 8-729-927-XX TRANSISTOR 2SC4617R
0633 8-729-927-XX TRANSISTOR 2SC4617R
0634 8-729-928-81 TRANSISTOR DT144EE
0701 8-729-928-81 TRANSISTOR DT144EE
0702 8-729-202-38 TRANSISTOR 2SC3326N-A

0720 8-729-927-XX TRANSISTOR ;
0721 8-729-927-XX TRANSISTOR ;
0722 8-729-927-XX TRANSISTOR ;
0723 8-729-928-21 TRANSISTOR ;
0724 8-729-928-19 TRANSISTOR ;
0730 8-729-928-81 TRANSISTOR ;
0732 8-729-927-XX TRANSISTOR ;
0755 8-729-928-90 TRANSISTOR ;
0760 8-729-927-XX TRANSISTOR ;
0761 8-729-927-XX TRANSISTOR ;

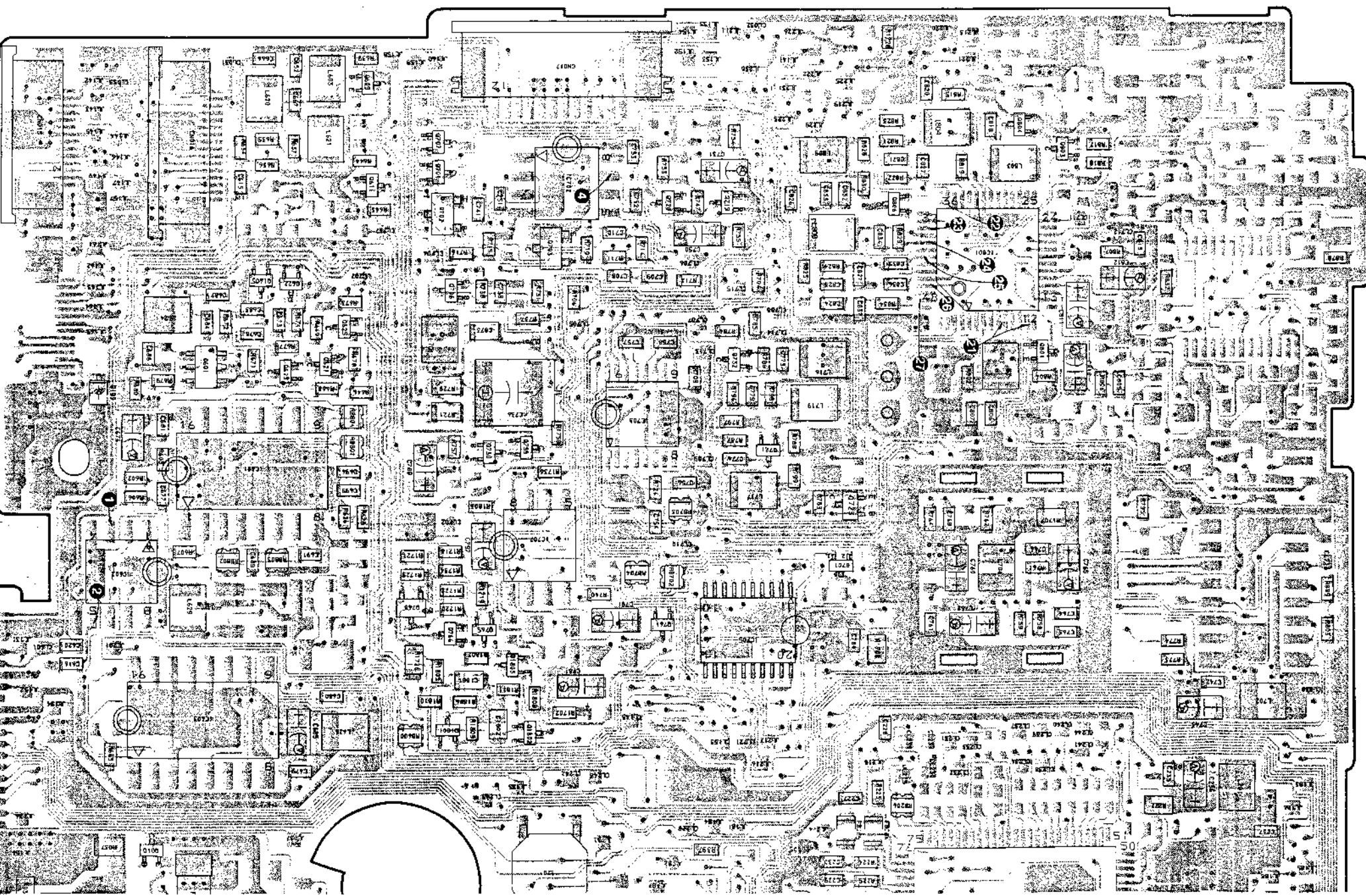
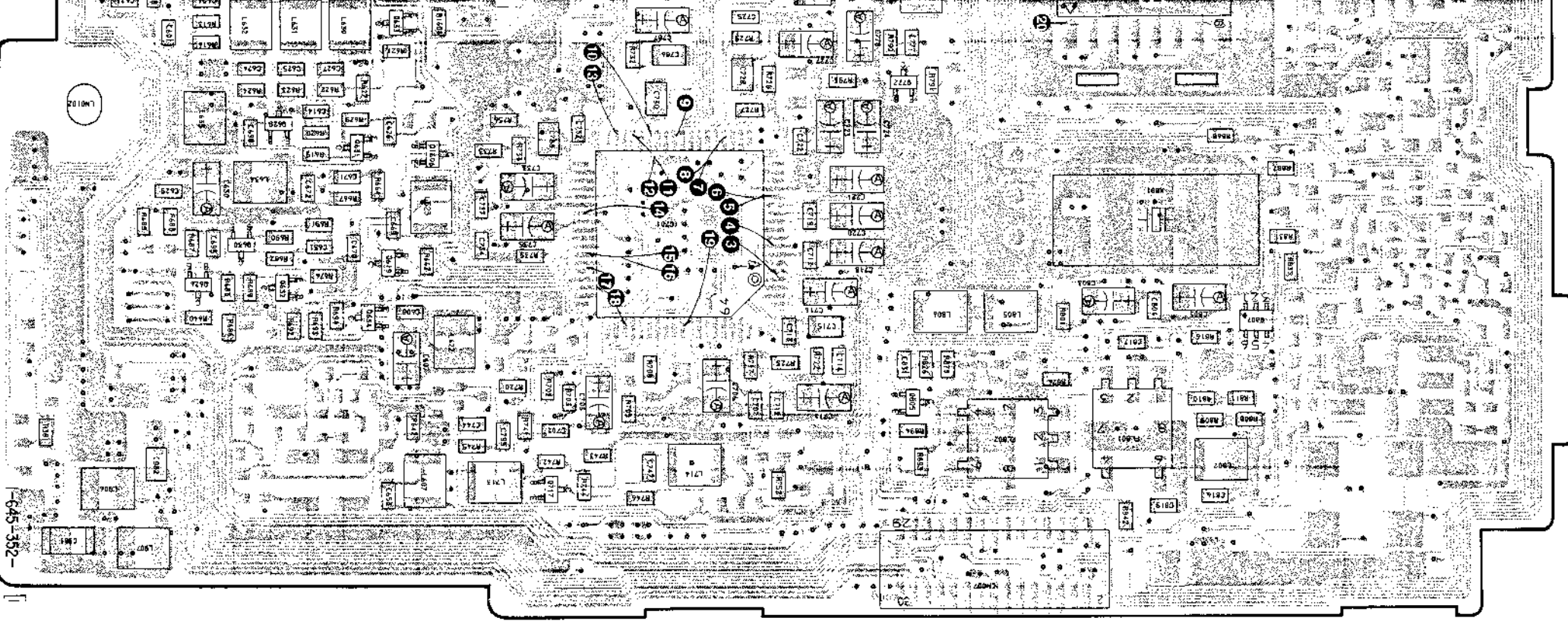
0012 8-729-928-81 TRANSISTOR DT144EE
0091 8-729-927-XX TRANSISTOR 2SC4617R
0092 8-729-927-XX TRANSISTOR 2SC4617R
0093 8-729-927-XX TRANSISTOR 2SC4617R
0101 8-729-420-12 TRANSISTOR XM4213

0621 8-729-928-72 TRANSISTOR DT1414TE
0622 8-729-927-XX TRANSISTOR 2SC4617R
0623 8-729-927-XX TRANSISTOR 2SC4617R
0625 8-729-928-72 TRANSISTOR DT1414TE
0626 8-729-927-XX TRANSISTOR 2SC4617R

0703 8-729-202-38 TRANSISTOR 2SC3326N-A
0705 8-729-928-81 TRANSISTOR DT144EE
0706 8-729-928-21 TRANSISTOR DT144EE
0707 8-729-928-81 TRANSISTOR DT144EE
0708 8-729-928-81 TRANSISTOR DT144EE

0730 8-729-928-81 TRANSISTOR ;
0732 8-729-927-XX TRANSISTOR ;
0755 8-729-928-90 TRANSISTOR ;
0760 8-729-927-XX TRANSISTOR ;
0761 8-729-927-XX TRANSISTOR ;

MA-137 BOARD (CONDUCTOR SIDE)



9 10 11 12 13 14 15 16 17 18

(TRANSISTOR)

IC701 8-752-065-54 IC CXA1207AR
 IC702 8-752-053-21 IC CXA1211M
 IC703 8-759-636-33 IC CXA1452
 IC704 8-752-332-68 IC CXL5502M
 IC705 8-759-635-27 IC M62352GP
 IC707 8-759-710-86 IC NLM233BM
 IC801 8-752-065-56 IC CXA1208R

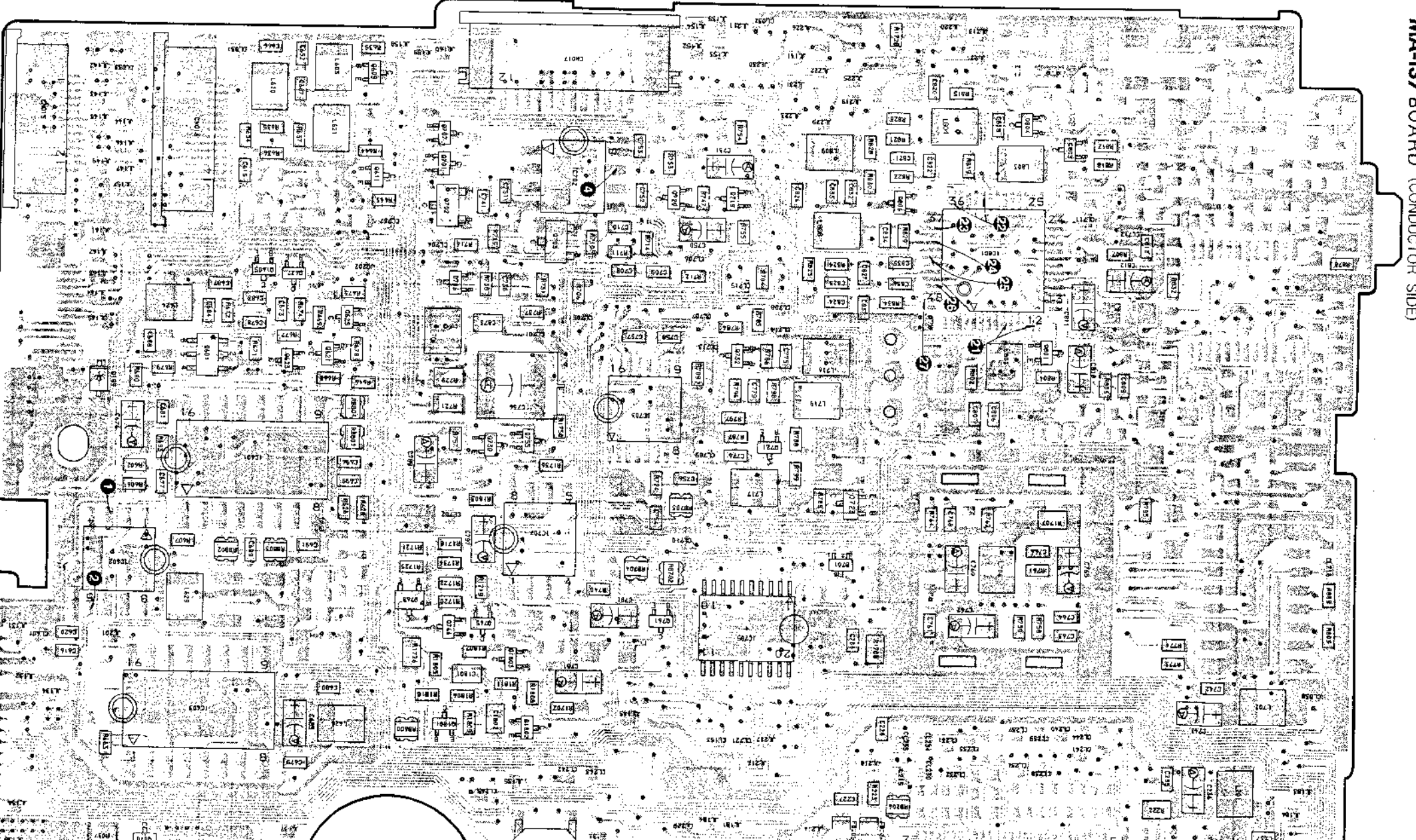
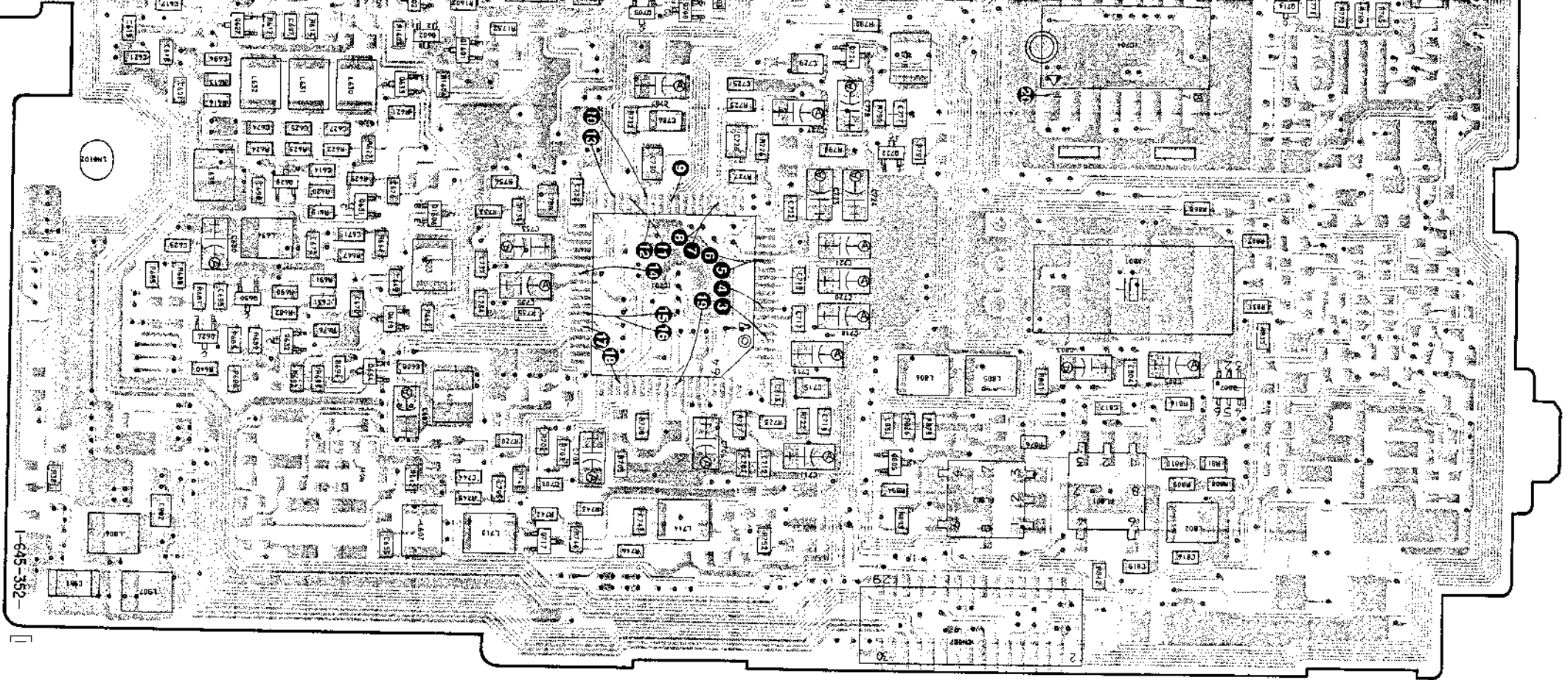
A0001 8-729-823-84 TRANSISTOR FP102
 A0002 8-729-823-84 TRANSISTOR FP102
 A0003 8-729-823-84 TRANSISTOR FP102
 A0004 8-729-805-25 TRANSISTOR 2S81121-S
 0005 8-729-927-XX TRANSISTOR 2SC4617R
 A0006 8-752-822-52 TRANSISTOR 2SK1469
 0007 8-729-928-81 TRANSISTOR DT144EE
 A0008 8-752-822-52 TRANSISTOR 2SK1469
 0009 8-729-928-81 TRANSISTOR DT144EE
 0010 8-729-928-27 TRANSISTOR DT144EE
 0012 8-729-928-81 TRANSISTOR DT144EE
 0091 8-729-927-XX TRANSISTOR 2SC4617R
 0092 8-729-927-XX TRANSISTOR 2SC4617R
 0093 8-729-927-XX TRANSISTOR 2SC4617R
 0101 8-729-420-12 TRANSISTOR XMA213

0103 8-729-820-46 TRANSISTOR 2S81202FAS
 0202 8-729-927-XX TRANSISTOR 2SC4617R
 0203 8-729-928-81 TRANSISTOR DT144EE
 0310 8-729-927-XX TRANSISTOR 2SC4617R
 0311 8-729-927-65 TRANSISTOR UMT1
 0312 8-729-928-90 TRANSISTOR DT114EE
 0313 8-729-823-95 TRANSISTOR FC149
 0609 8-729-927-XX TRANSISTOR 2SC4617R
 0611 8-729-927-XX TRANSISTOR 2SC4617R
 0619 8-729-928-72 TRANSISTOR DT114ITE
 0621 8-729-928-72 TRANSISTOR DT114ITE
 0622 8-729-927-XX TRANSISTOR 2SC4617R
 0623 8-729-927-XX TRANSISTOR 2SC4617R
 0625 8-729-928-72 TRANSISTOR DT114ITE
 0626 8-729-927-XX TRANSISTOR 2SC4617R

0627 8-729-927-XX TRANSISTOR 2SC4617R
 0628 8-729-928-19 TRANSISTOR 2SA1774R
 0629 8-729-928-19 TRANSISTOR 2SA1774R
 0630 8-729-927-XX TRANSISTOR 2SC4617R
 0631 8-729-927-XX TRANSISTOR 2SC4617R
 0632 8-729-927-XX TRANSISTOR 2SC4617R
 0633 8-729-927-XX TRANSISTOR 2SC4617R
 0634 8-729-928-81 TRANSISTOR DT144EE
 0701 8-729-928-81 TRANSISTOR DT144EE
 0702 8-729-202-38 TRANSISTOR 2SC3326N-A
 0703 8-729-202-38 TRANSISTOR 2SC3326N-A
 0705 8-729-928-81 TRANSISTOR DT144EE
 0706 8-729-928-27 TRANSISTOR DT144EE
 0707 8-729-928-81 TRANSISTOR DT144EE
 0708 8-729-928-81 TRANSISTOR DT144EE

0712 8-729-928-19 TR
 0713 8-729-927-XX TR
 0714 8-729-927-XX TR
 0717 8-729-927-XX TR
 0719 8-729-927-XX TR
 0720 8-729-927-XX TR
 0721 8-729-927-XX TR
 0722 8-729-927-XX TR
 0723 8-729-928-27 TR
 0724 8-729-928-19 TR
 0730 8-729-928-81 TR
 0732 8-729-927-XX TR
 0755 8-729-928-90 TR
 0760 8-729-927-XX TR
 0761 8-729-927-XX TR

MA-137 BOARD (CONDUCTOR SIDE)



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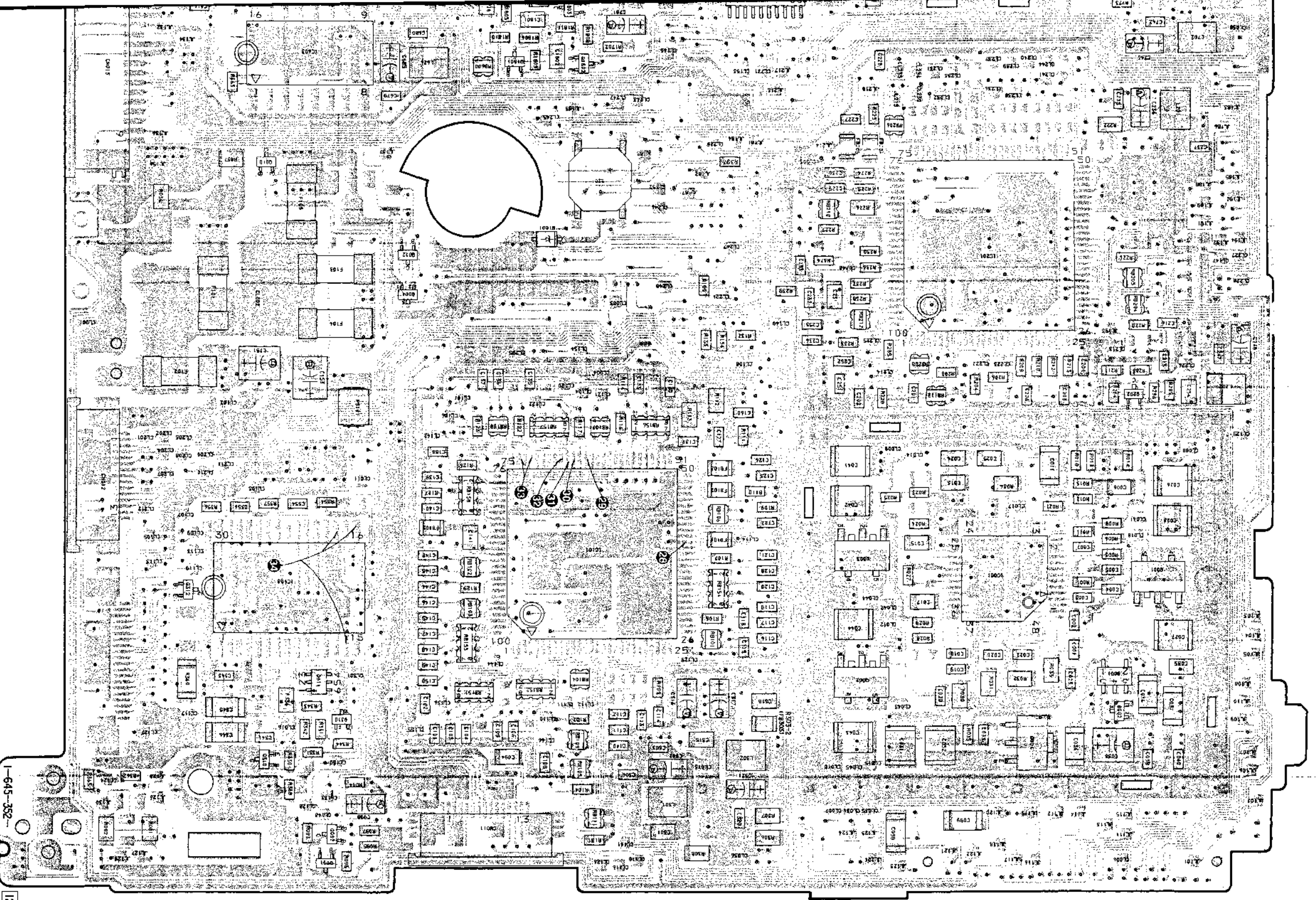
17

1-645-352

0712 8-729-928-19 TRANSISTOR 2SA1774R
 0713 8-729-927-XX TRANSISTOR 2SC4617R
 0714 8-729-927-XX TRANSISTOR 2SC4617R
 0717 8-729-927-XX TRANSISTOR 2SC4617R
 0719 8-729-927-XX TRANSISTOR 2SC4617R
 0720 8-729-927-XX TRANSISTOR 2SC4617R
 0721 8-729-927-XX TRANSISTOR 2SC4617R
 0722 8-729-927-XX TRANSISTOR 2SC4617R
 0723 8-729-928-27 TRANSISTOR DT1A44EE
 0724 8-729-928-19 TRANSISTOR 2SA1774R
 0730 8-729-928-81 TRANSISTOR DT1A44EE
 0732 8-729-927-XX TRANSISTOR 2SC4617R
 0755 8-729-928-90 TRANSISTOR DT1A44EE
 0760 8-729-927-XX TRANSISTOR 2SC4617R
 0761 8-729-927-XX TRANSISTOR 2SC4617R

0765 8-729-927-XX TRANSISTOR 2SC4617R
 0766 8-729-928-19 TRANSISTOR 2SA1774R
 0768 8-729-905-35 TRANSISTOR 2SC4081-R
 0801 8-729-927-XX TRANSISTOR 2SC4617R
 0803 8-729-928-81 TRANSISTOR DT1A44EE
 0804 8-729-927-XX TRANSISTOR 2SC4617R
 0805 8-729-928-19 TRANSISTOR 2SA1774R
 0806 8-729-927-XX TRANSISTOR 2SC4617R
 0807 8-729-930-13 TRANSISTOR UMH2
 01601 8-729-928-19 TRANSISTOR 2SA1774R
 01602 8-729-928-81 TRANSISTOR DT1A44EE
 01603 8-729-928-19 TRANSISTOR 2SA1774R
 01604 8-729-930-13 TRANSISTOR UMH2
 01605 8-729-928-81 TRANSISTOR DT1A44EE
 01606 8-729-928-72 TRANSISTOR DT1A14TE

01801 8-729-927-XX TRANSISTOR 2SC4617R
 01802 8-729-927-XX TRANSISTOR 2SC4617R
 01803 8-729-928-27 TRANSISTOR DT1A44EE



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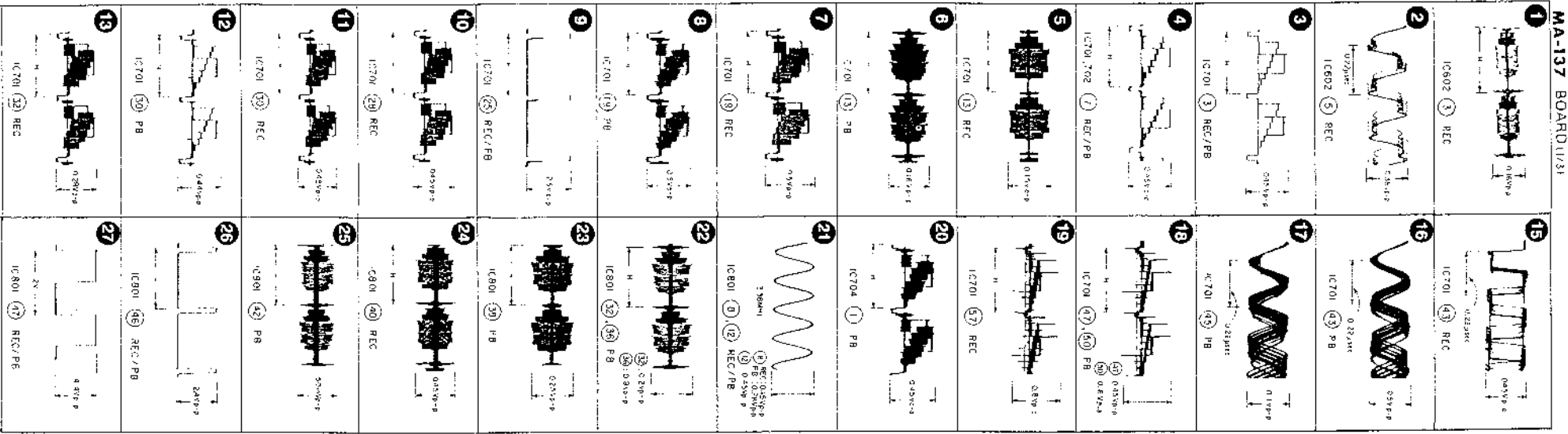
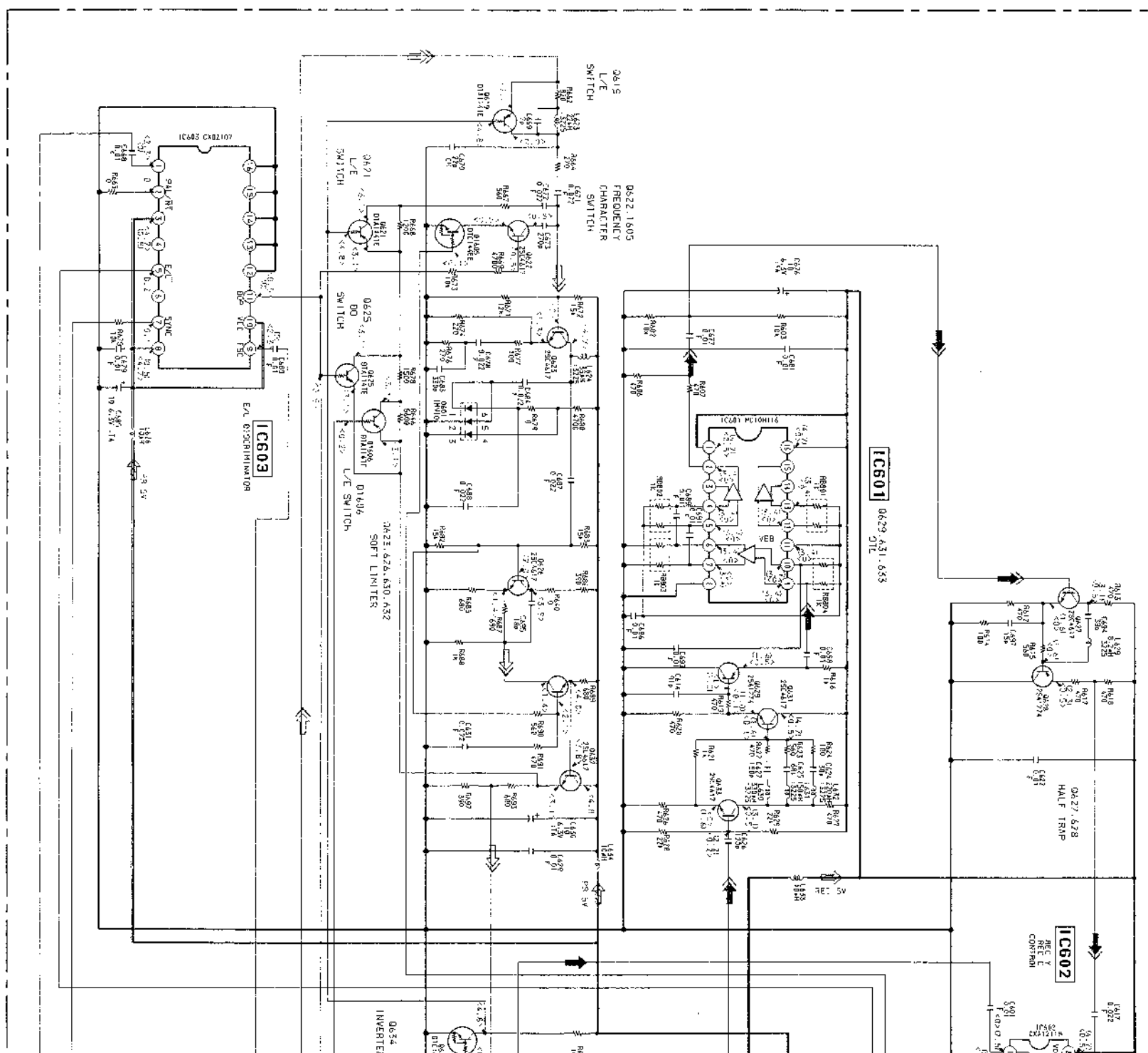
ROL, RELAY/POWER VIDEO, SERVO/SYSTEM CONTROL, RELAY/POWER

• SIGNAL PATH

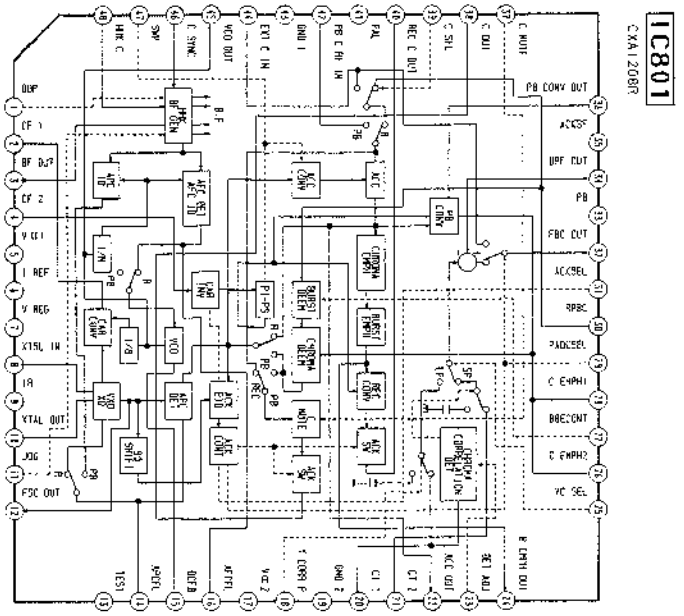
	VIDEO SIGNAL		AUDIO SIGNAL
CHROMA	→	→	→
REC	→	→	→
PB	→	→	→



MA-137 BOARD (1/3) (RF, Y/C BLOCK)

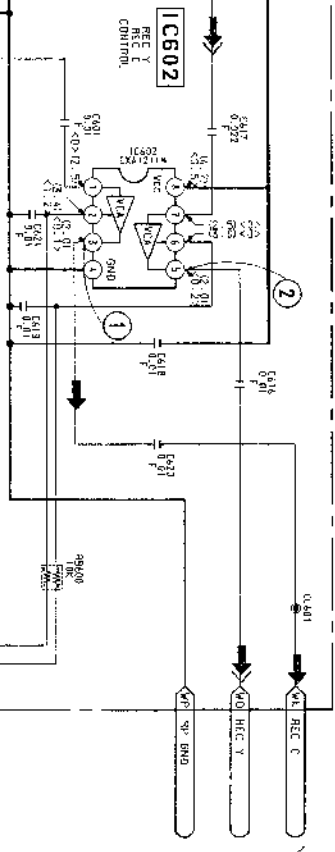


A B C D E F G H I J K L M N O P

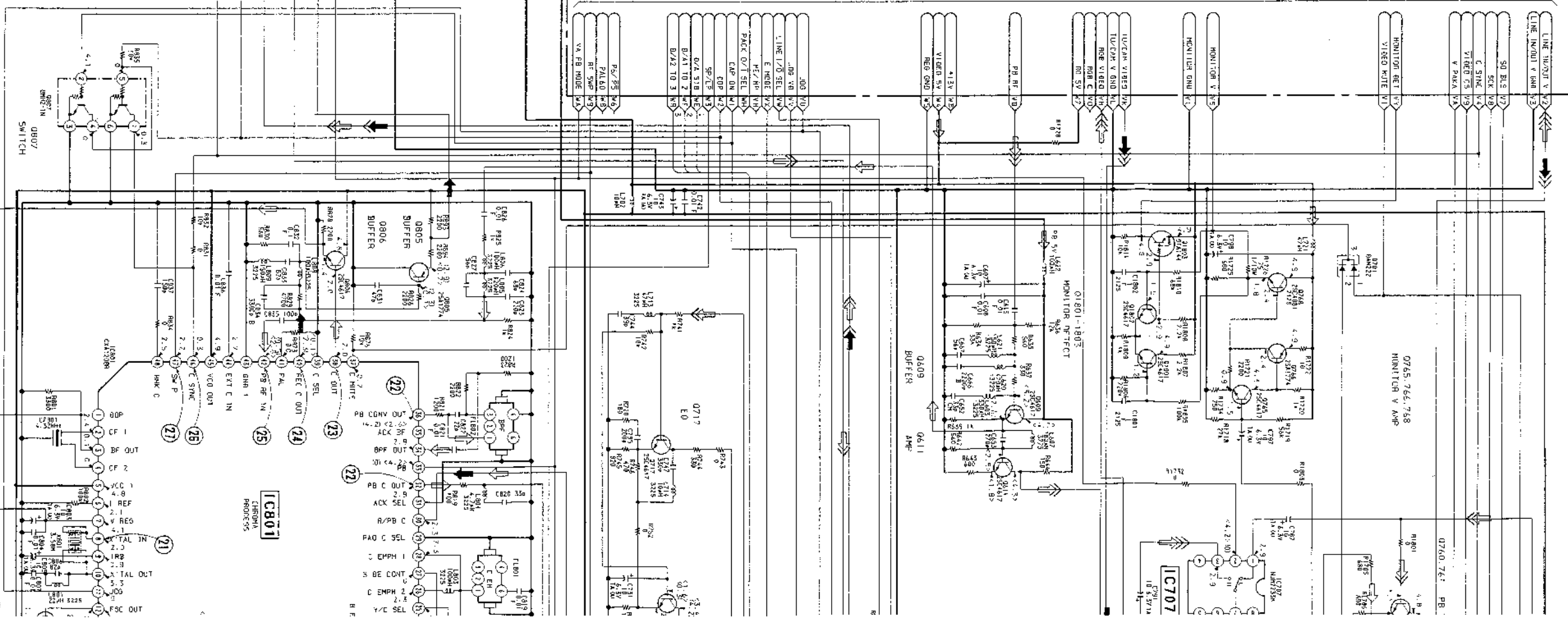
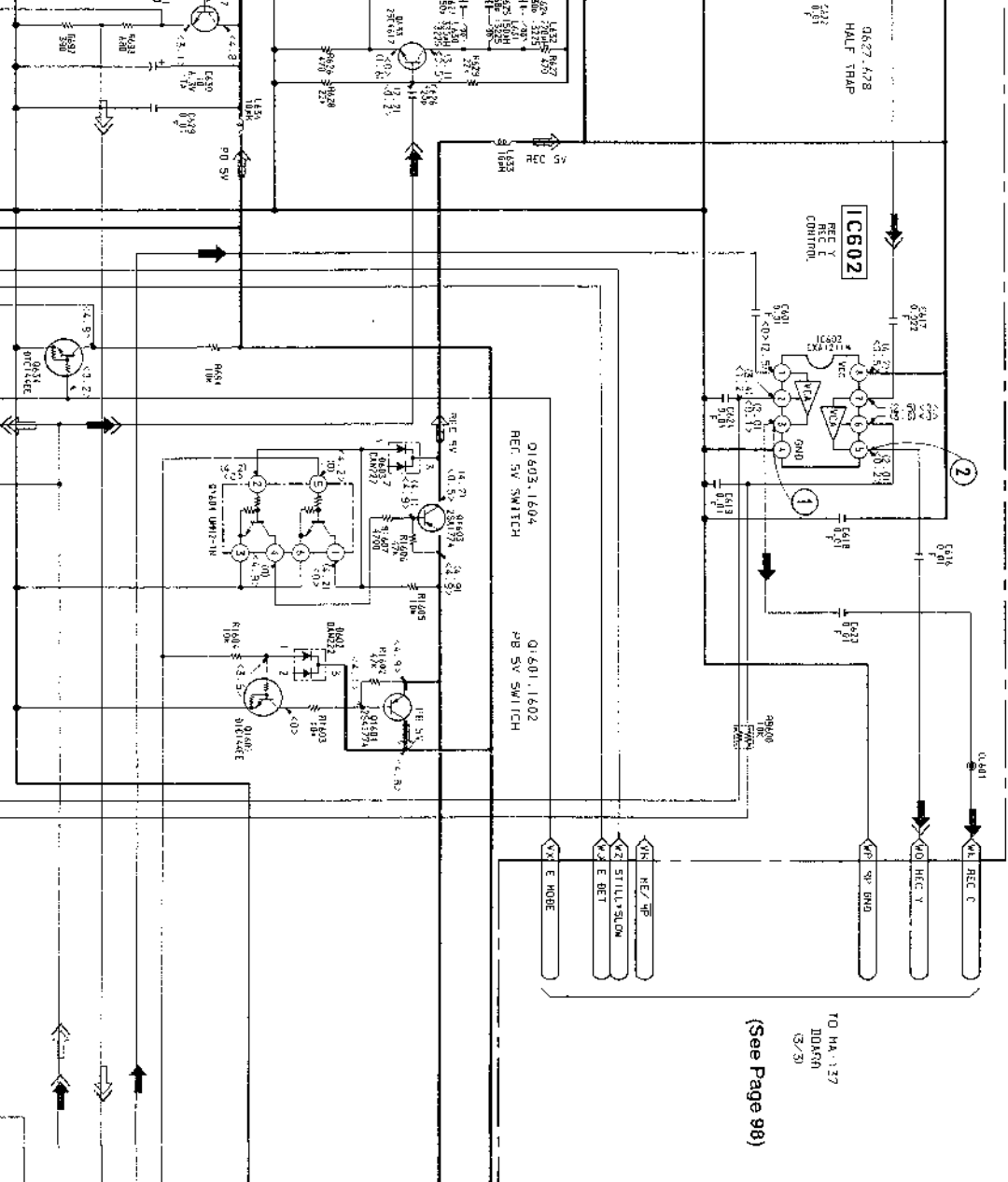


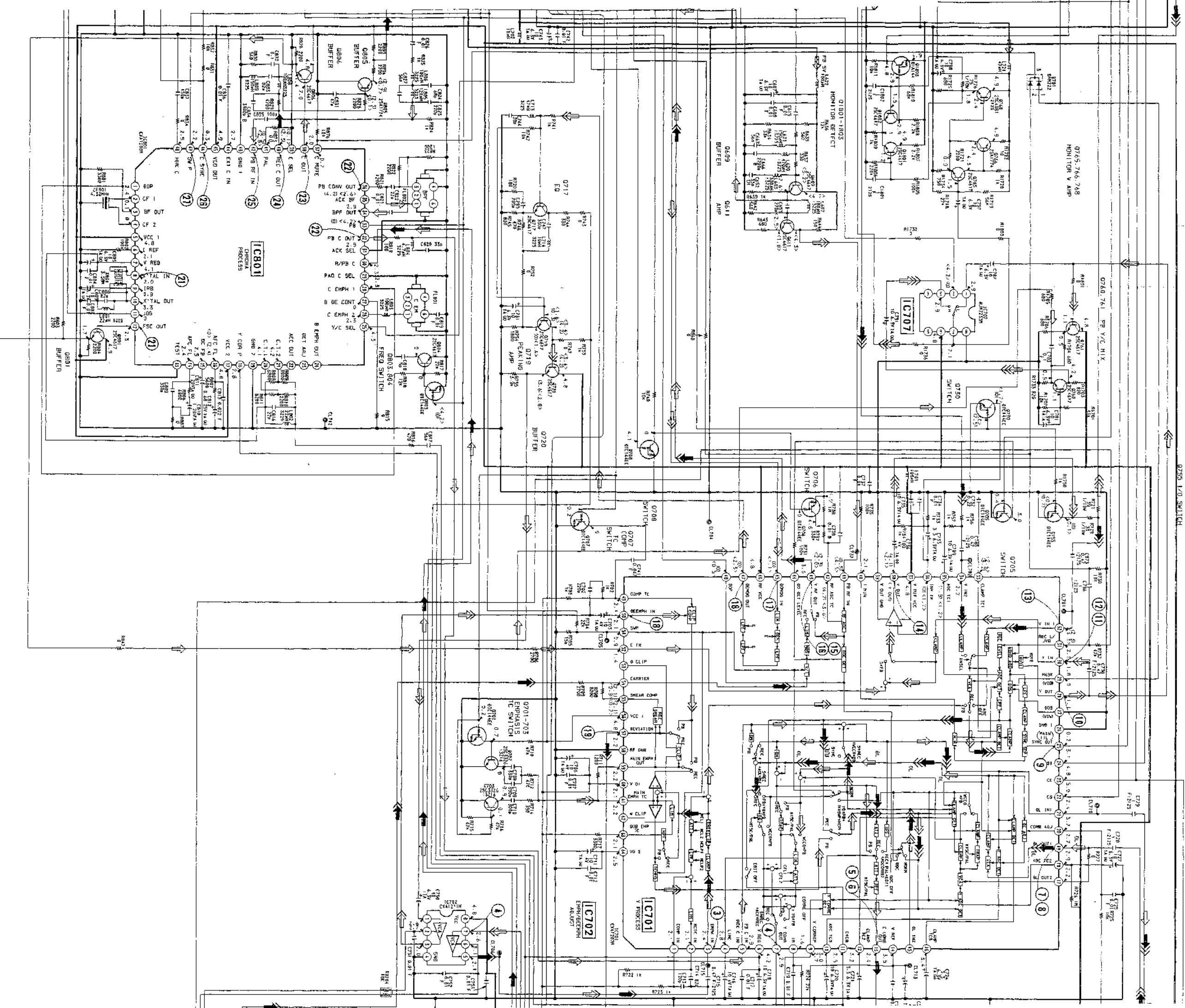
TO HA-137
BOARDS
15/20

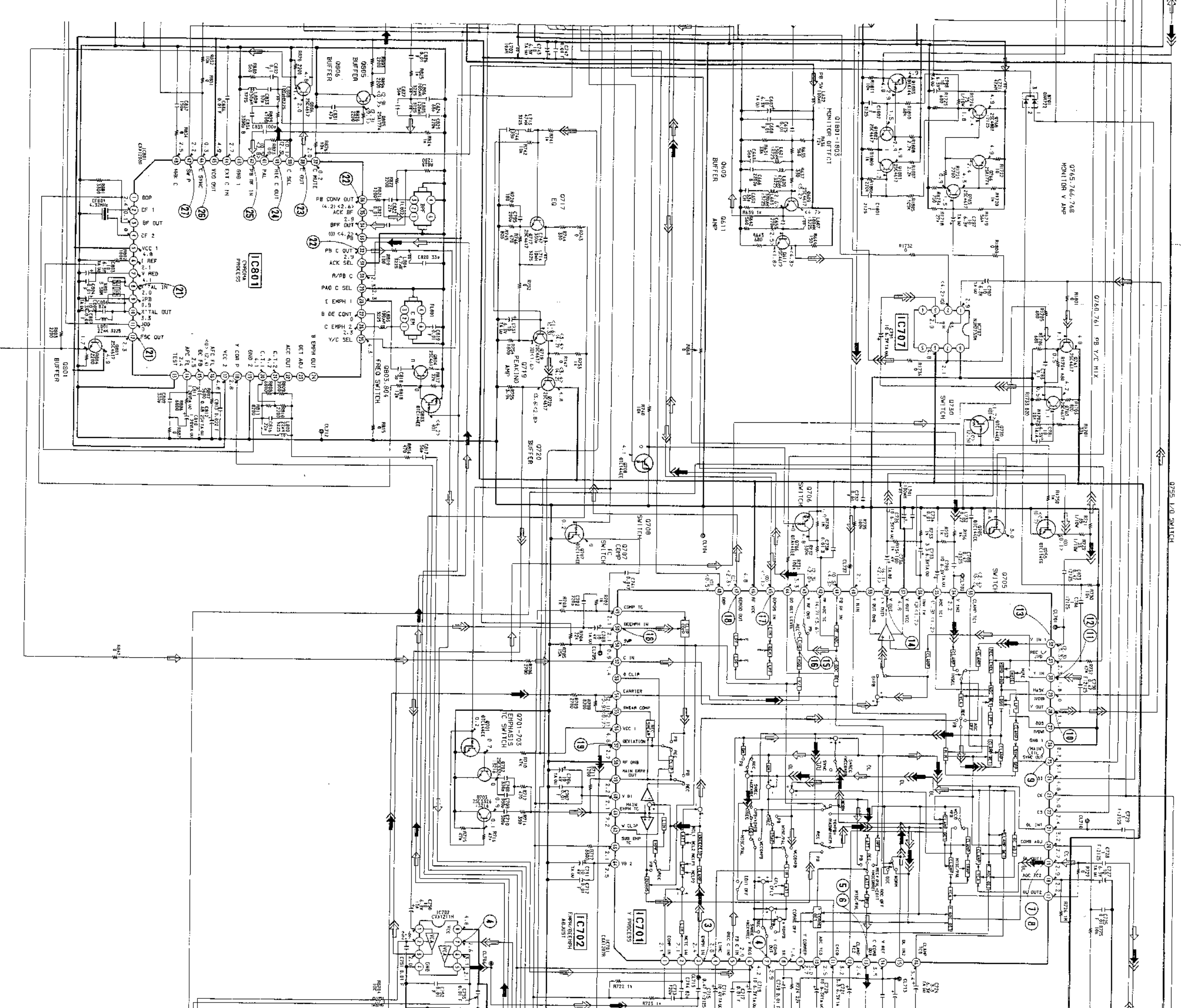
(See Page 97)

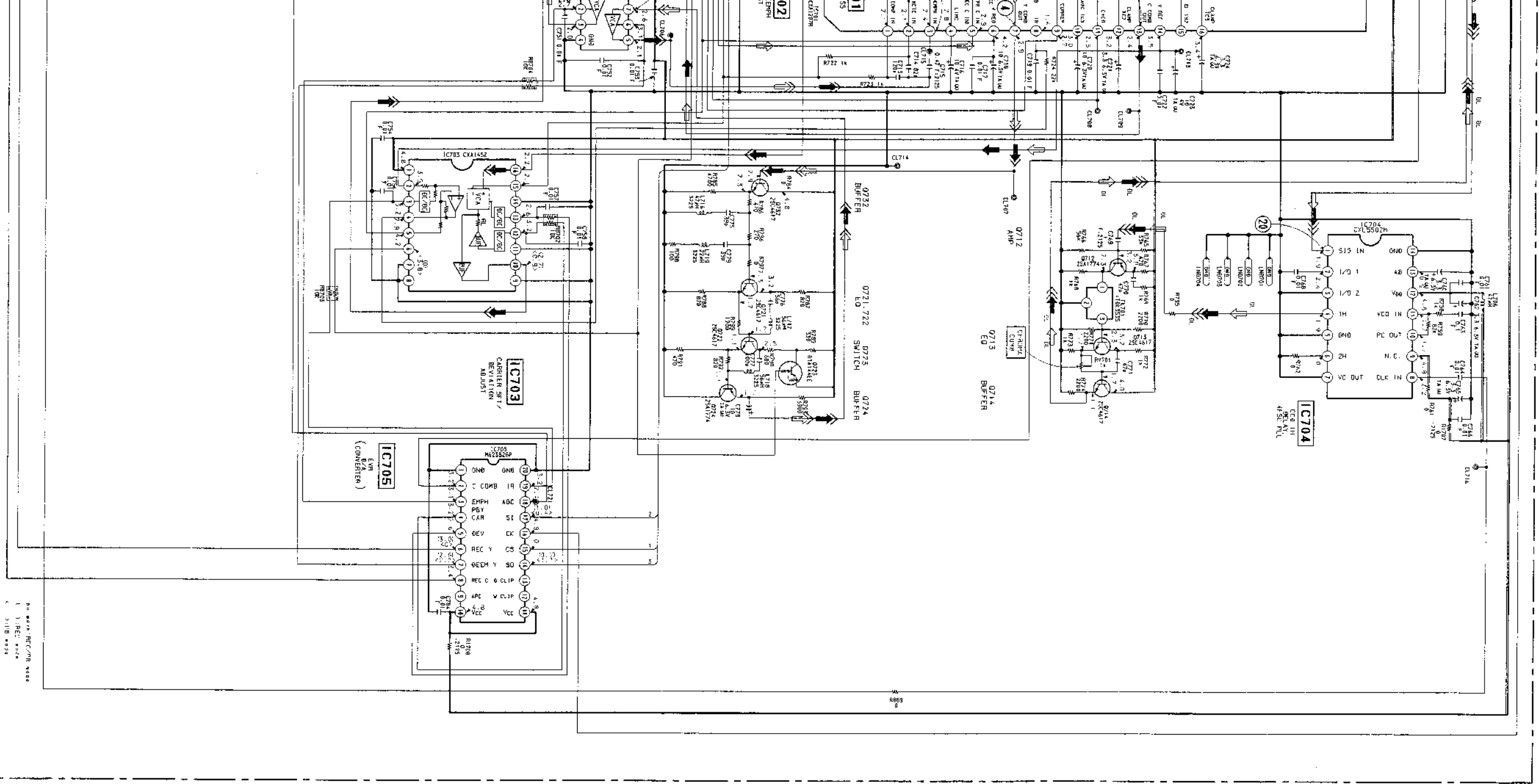


TO HA-137
BOARDS
(See Page 98)





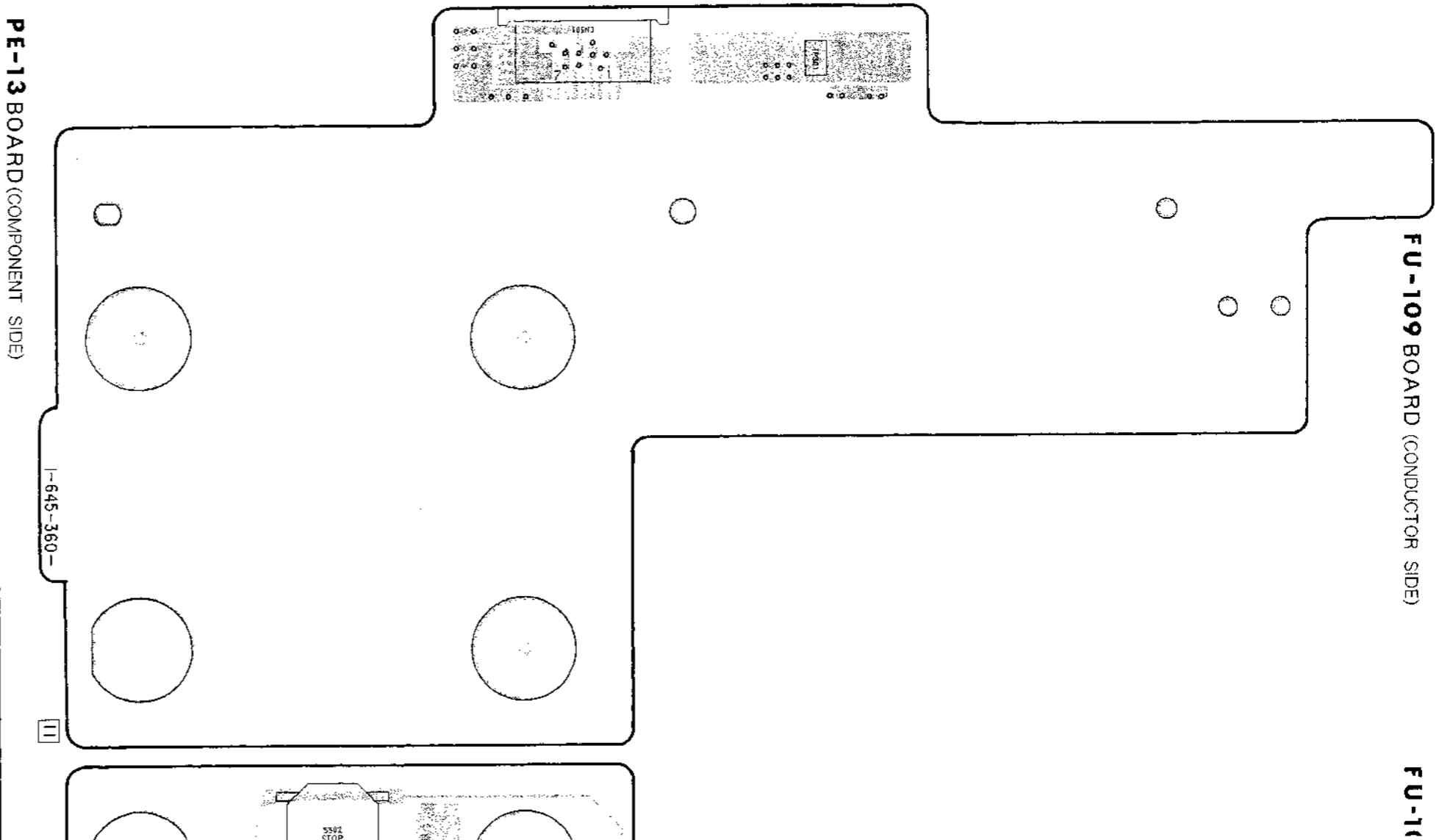




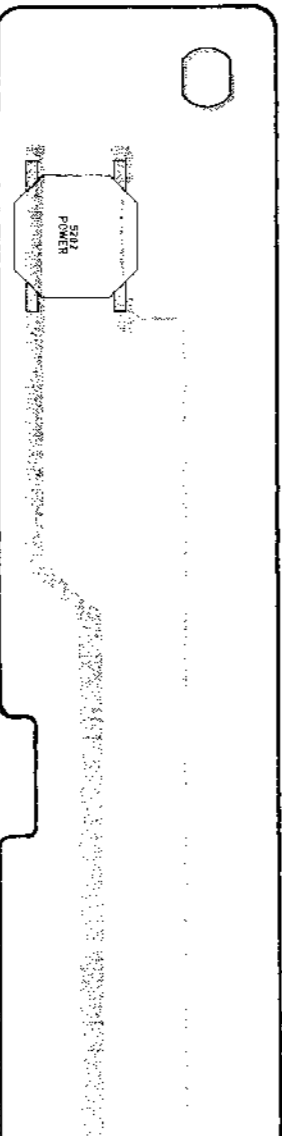
PC 4000 REC/708 4000
 1 REC 4000
 211B 4000

FU-109 BOARD (CONDUCTOR SIDE)

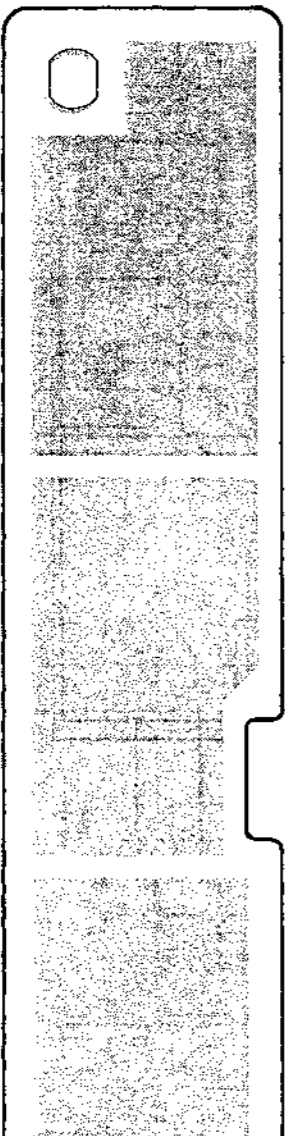
FU-110



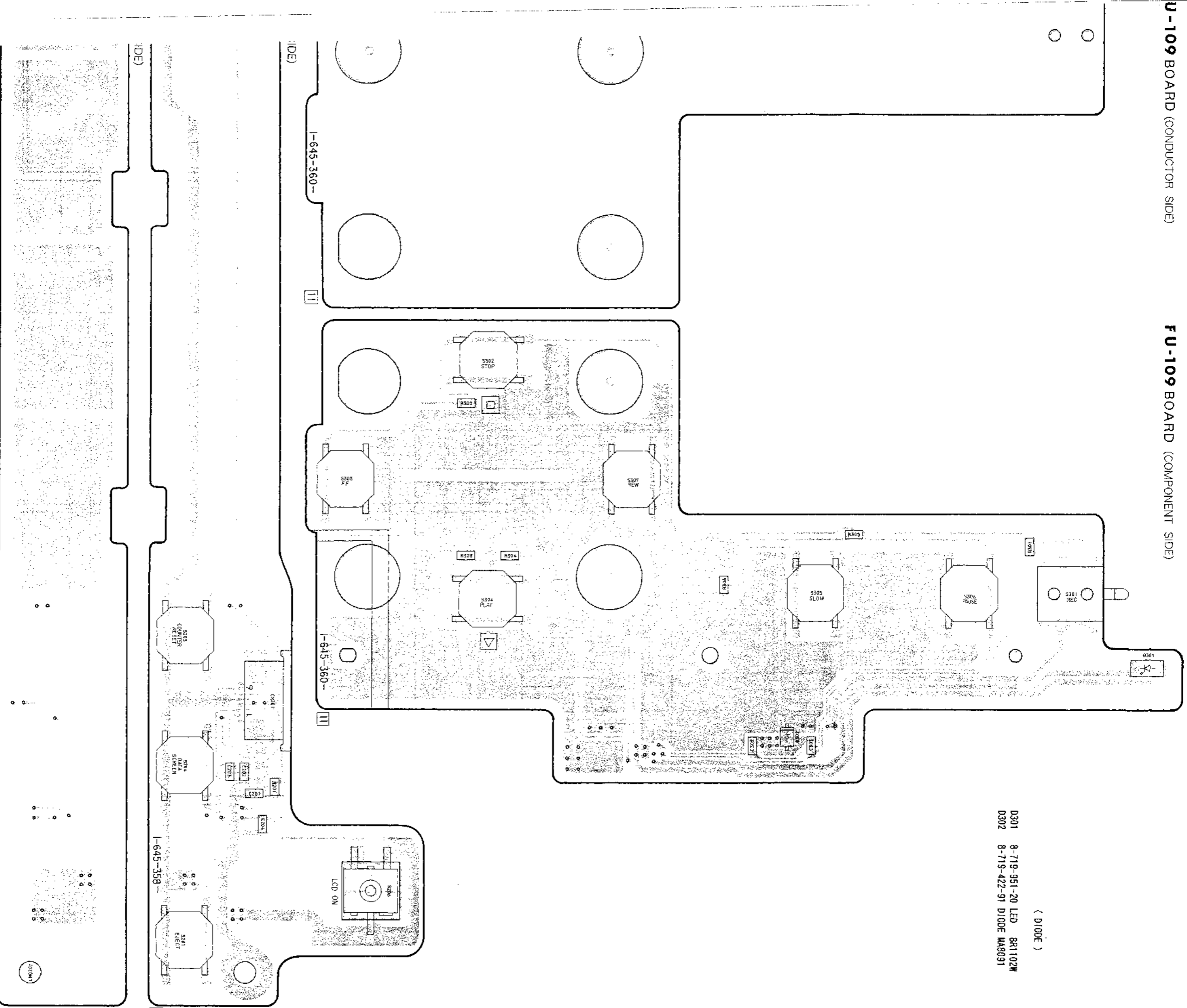
PE-13 BOARD (COMPONENT SIDE)



PE-13 BOARD (CONDUCTOR SIDE)



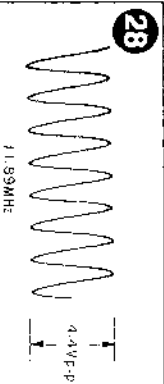
09



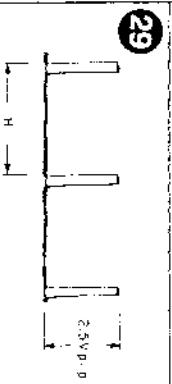
< D100E >

D301 8-719-951-20 LED BR1102W
D302 8-719-422-91 DIODE MA8091

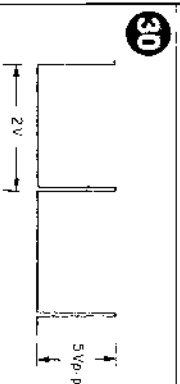
MA-137 BOARD (2/3)



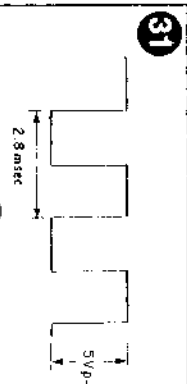
IC101 (40) REC/PB



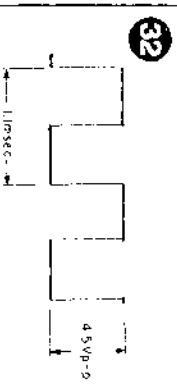
IC101 (64) REC/PB



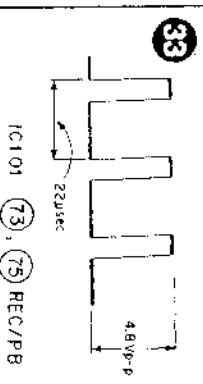
IC101 (66) REC/PB



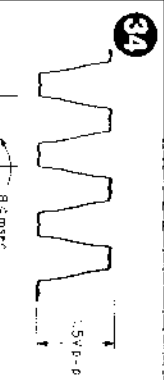
IC101 (67) REC/PB



IC101 (68) REC/PB



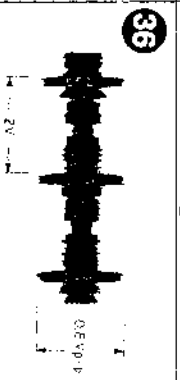
IC101 (73), (75) REC/PB



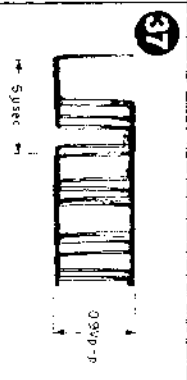
IC103 (14), (16), (18) REC/PB



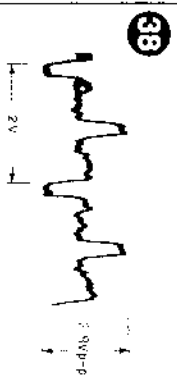
IC301 (6) PB



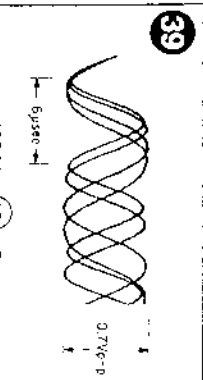
IC301 (7) PB



IC301 (9) REC/PB



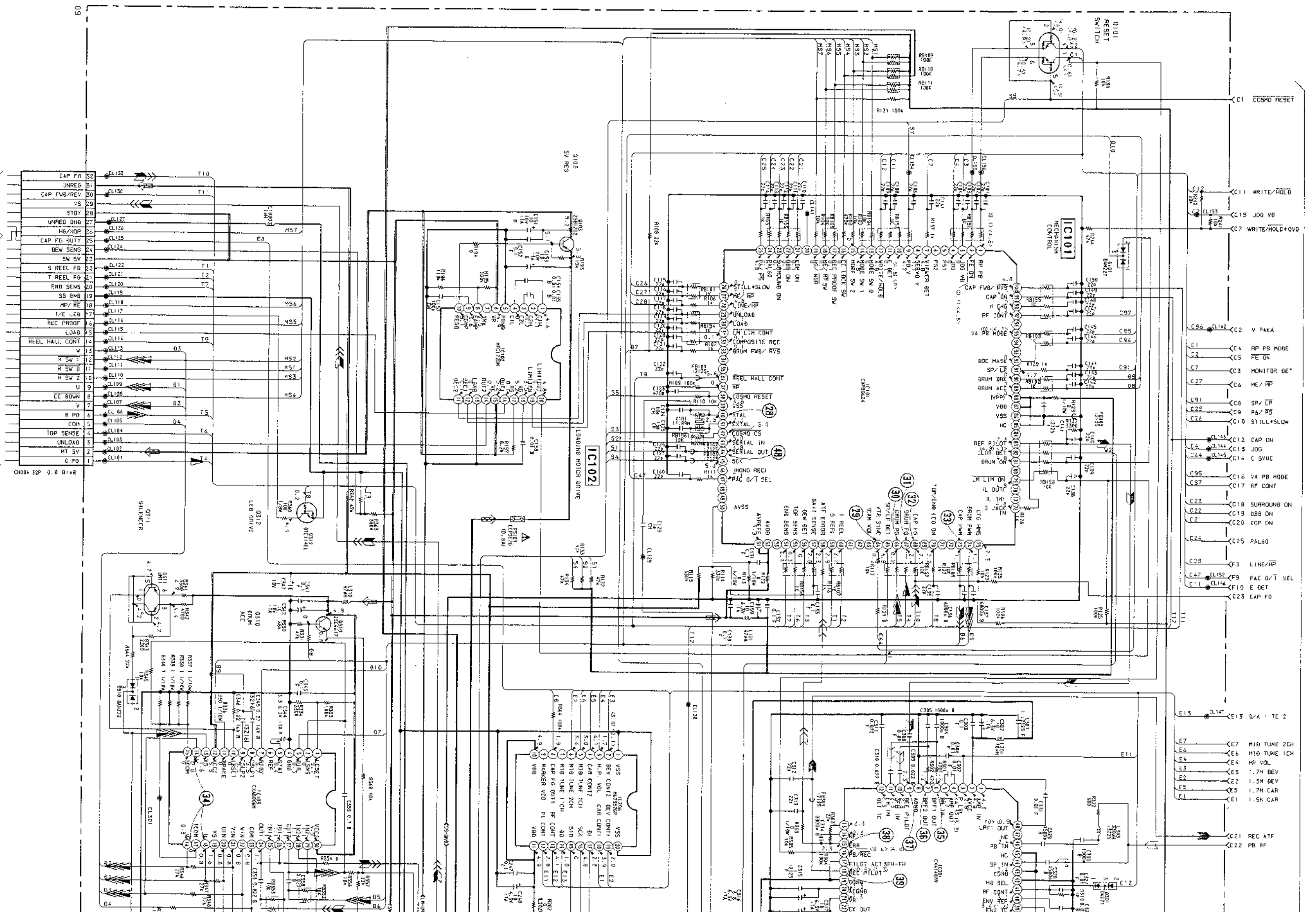
IC301 (15) PB



IC301 (18) REC

1 2 3 4 5 6 7 8 9 10 11

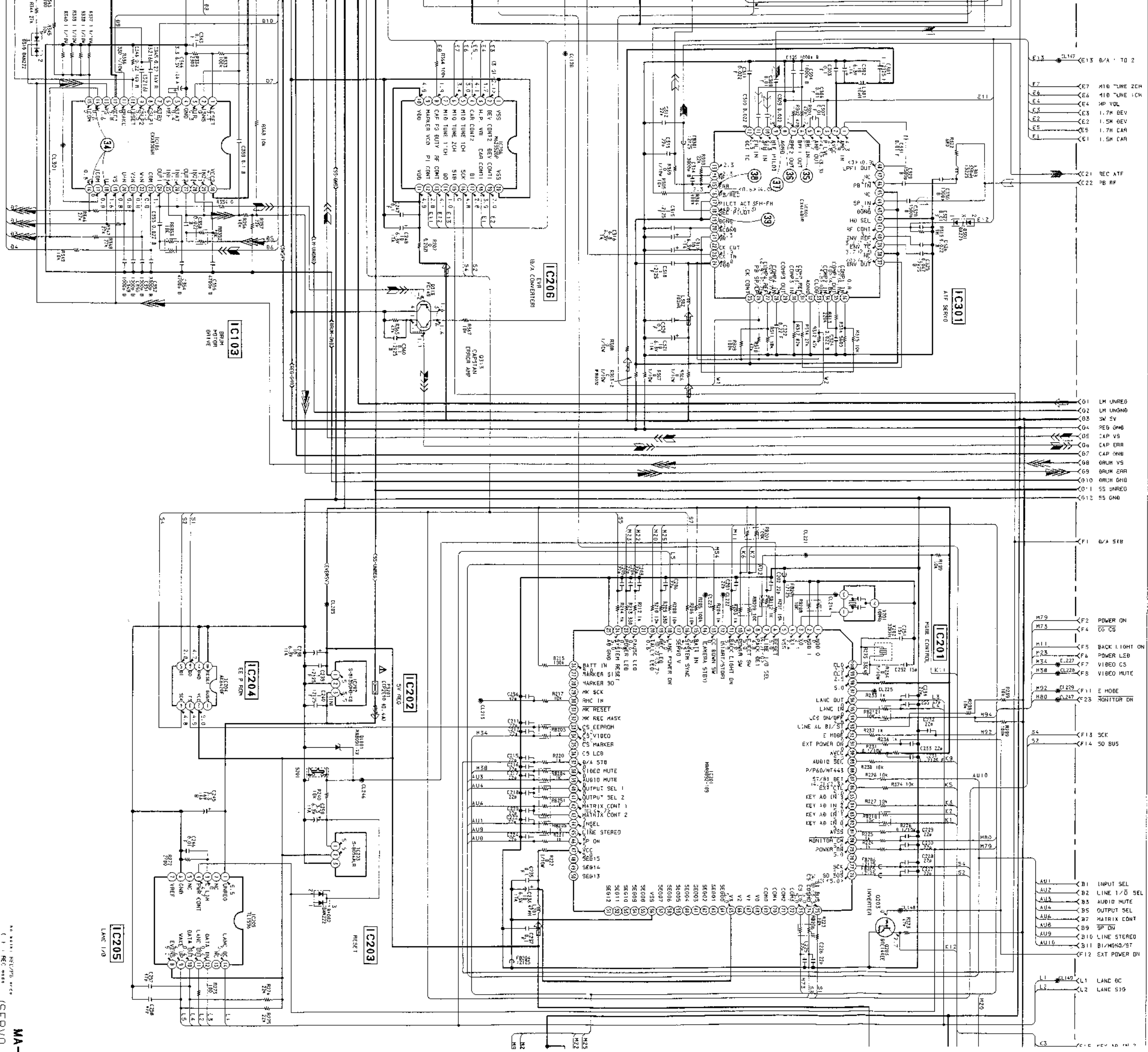
A B C D E F G H I J K L M N O P



(See Page 122) (See Page 121)

(See Page 98)

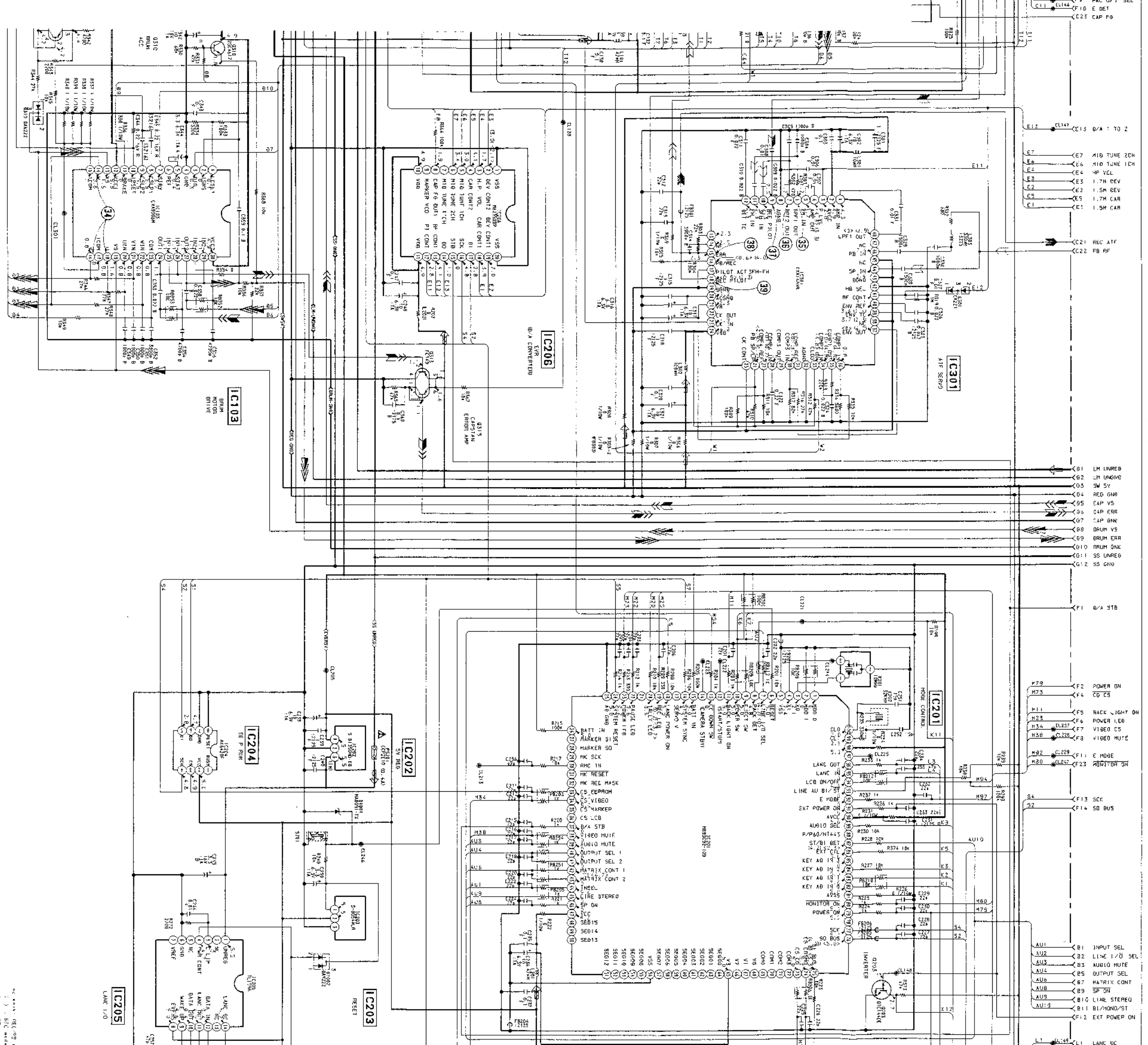
TD MA-137 BOARD (S/9)



NO. 101: REV/DPS: 01/82
 (1) REC: 0000 (SERVO)
 (2) RB: 0000

(See Page 88)

TD MA-137 BOARD (E/5)



- F10 E BET
- C23 CAP F6
- F11
- F12
- F13
- F14
- F15
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- F97
- F98
- F99
- F100

- E7 MID TUNE 2CH
- E6 MID TUNE 1CH
- E4 4P VOL
- E3 1.7H DEV
- E2 1.5H BEV
- E1 1.7H CAR
- E1 1.5H CAR

- C21 REC ATF
- C22 FB PF

- G1 LM UNREG
- G2 LM UNREG
- G3 SW SV
- G4 RED GNR
- G5 CAP VS
- G6 CAP ERR
- G7 CAP GNR
- G8 DRUM VS
- G9 DRUM ERR
- G10 DRUM SNE
- G11 SS UNREG
- G12 SS GND

- F1 B/A STB
- F2 POWER ON
- F4 CD CS
- F5 BACK LIGHT ON
- F6 POWER LED
- F7 VIBED CS
- F8 VIBED MUTE
- F11 E MODE
- F23 MONITOR ON

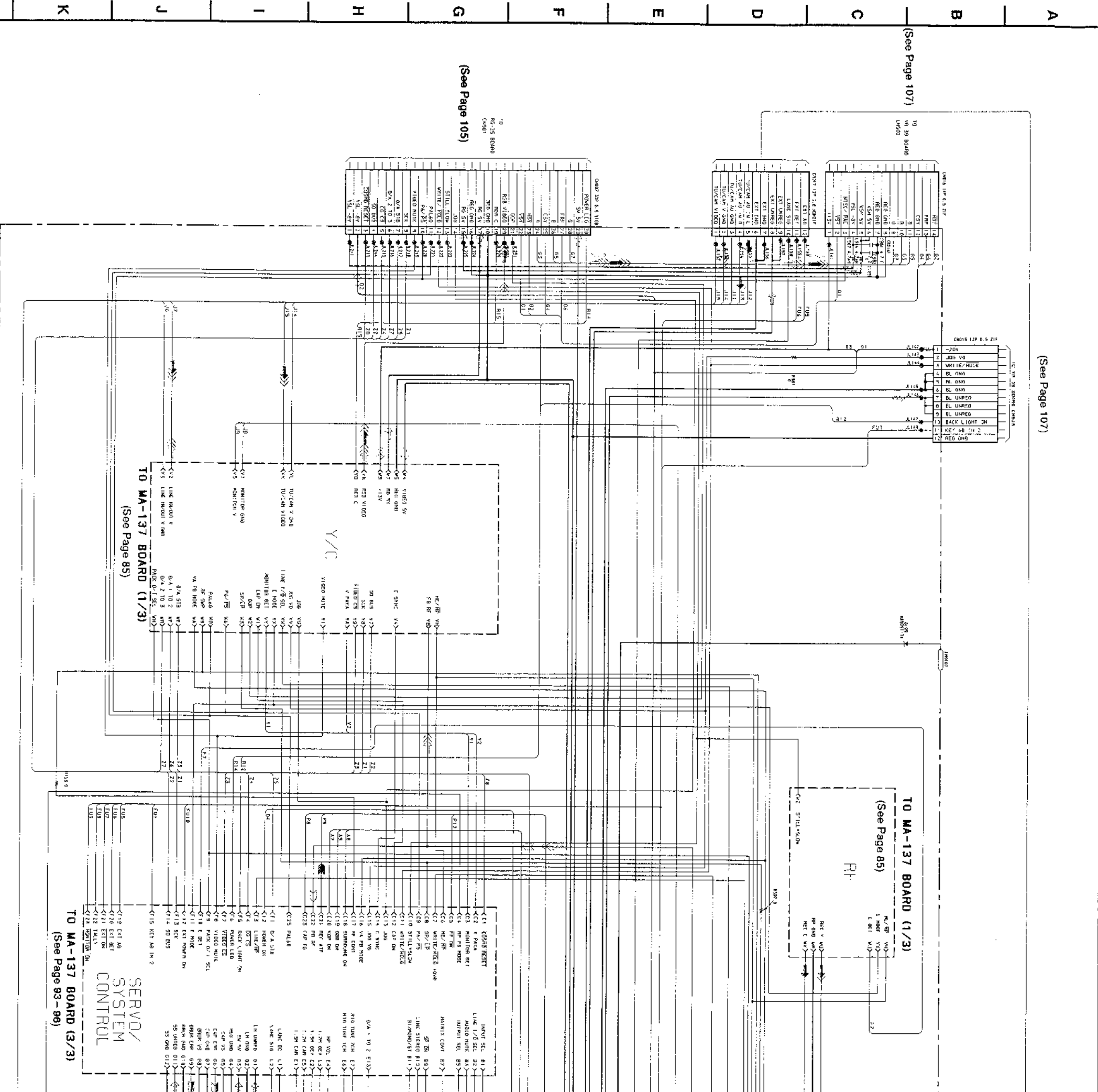
- F13 SCR
- F14 SD BUS
- F15
- F16
- F17
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- F25
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- F99
- F100

- AU1 INPUT SEL
- AU2 LANC 1/0 SEL
- AU3 AUDIO MUTE
- AU4 AUDIO MUTE
- AU5 OUTPUT SEL
- AU6 MATRIX CONT
- AU7 SP ON
- AU8 LANC STEREO
- AU9 BI/MONO/ST
- AU10 EXT POWER ON

MA-137 (RELAY/POWER), FP-621 (A/V OUTPUT JACK), HP-84 (HEADPHONE JACK), JK-86 (TUNER INPUT JACK) SCHEMATIC DIAGRAMS

• Refer to page 79 for Pri

1 2 3 4 5 6 7 8 9 10 11



(See Page 107)

(See Page 105)

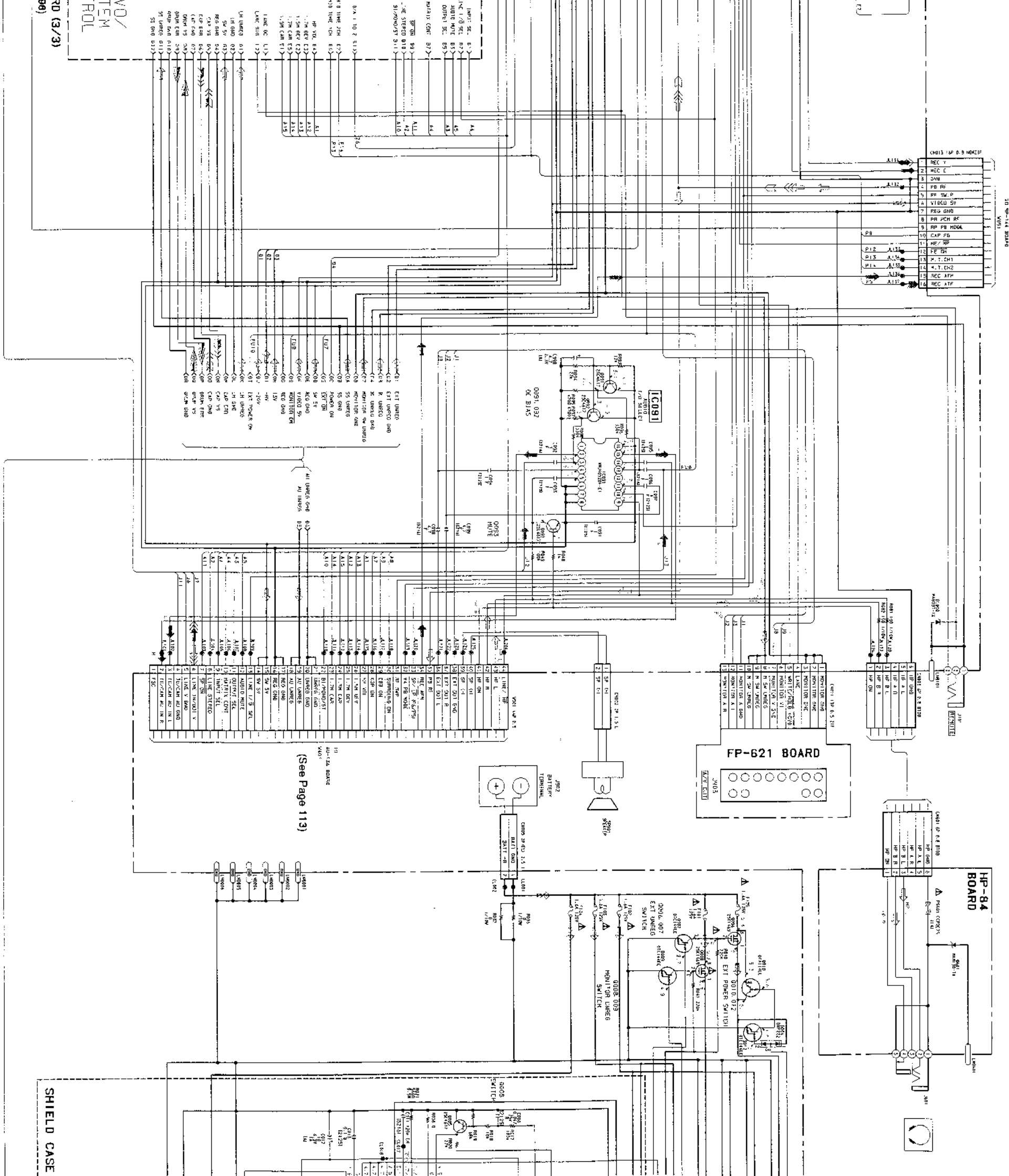
(See Page 107)

TO MA-137 BOARD (1/3)
(See Page 85)

TO MA-137 BOARD (1/3)
(See Page 85)

TO MA-137 BOARD (3/3)
(See Page 93 - 96)

(See Page 75)



(See Page 113)

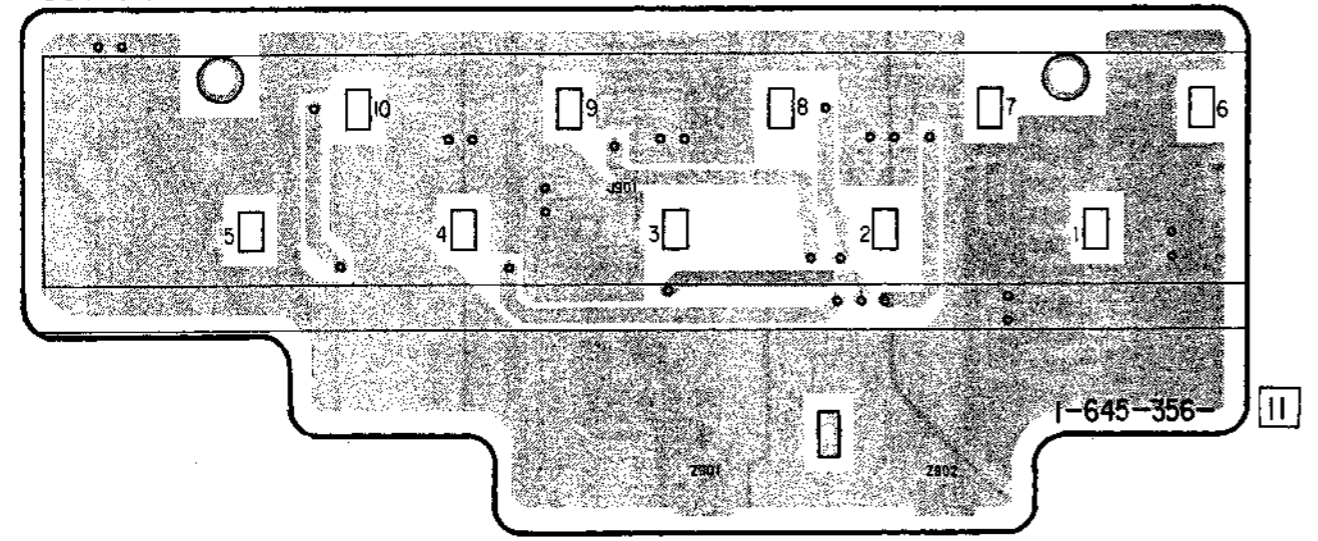
SHIELD CASE

RD (3/3)
VDD/
TEM
ROL

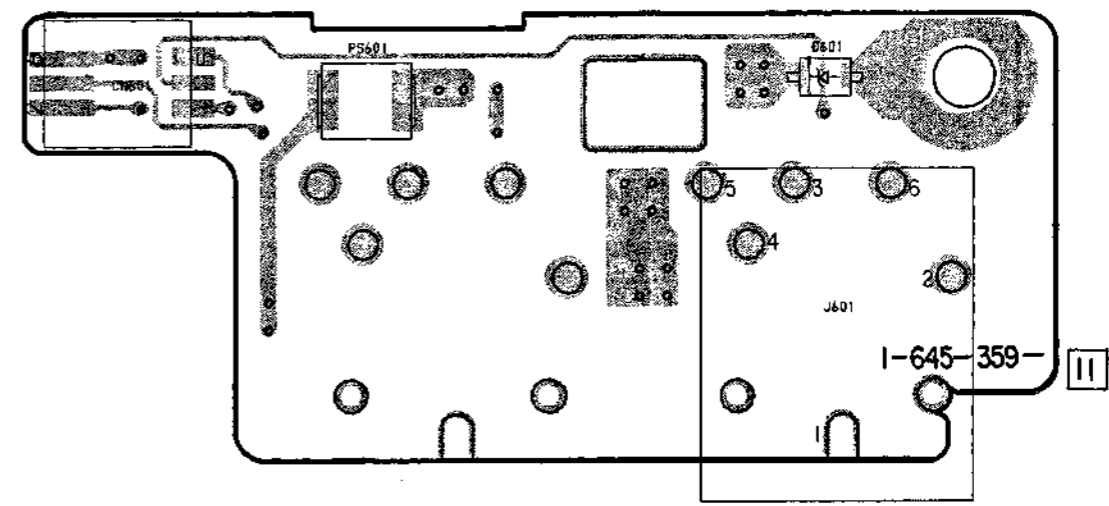
FP-621 (A/V OUTPUT JACK), HP-84 (HEADPHONE JACK), JK-86 (TUNER INPUT JACK) PRINTED WIRING BOARDS

• FP-621 board is replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

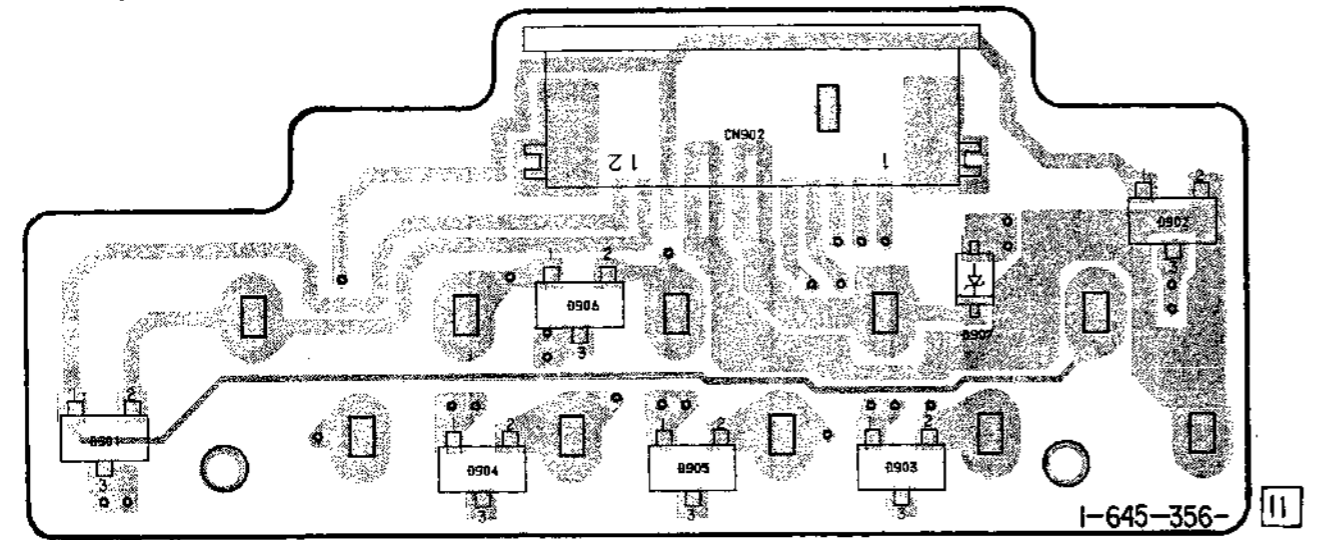
JK-86 BOARD (COMPONENT SIDE)



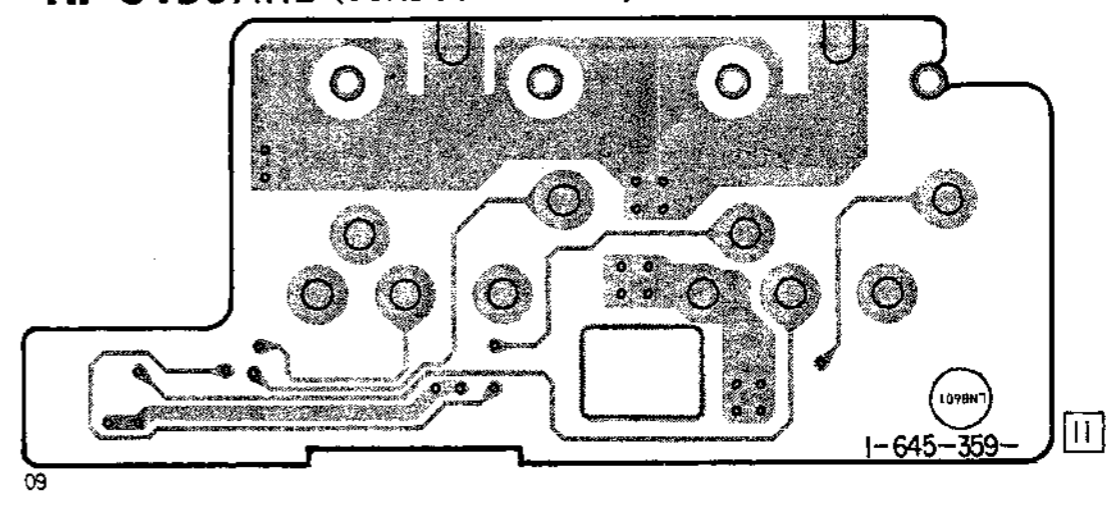
HP-84 BOARD (COMPONENT SIDE)



JK-86 BOARD (CONDUCTOR SIDE)



HP-84 BOARD (CONDUCTOR SIDE)

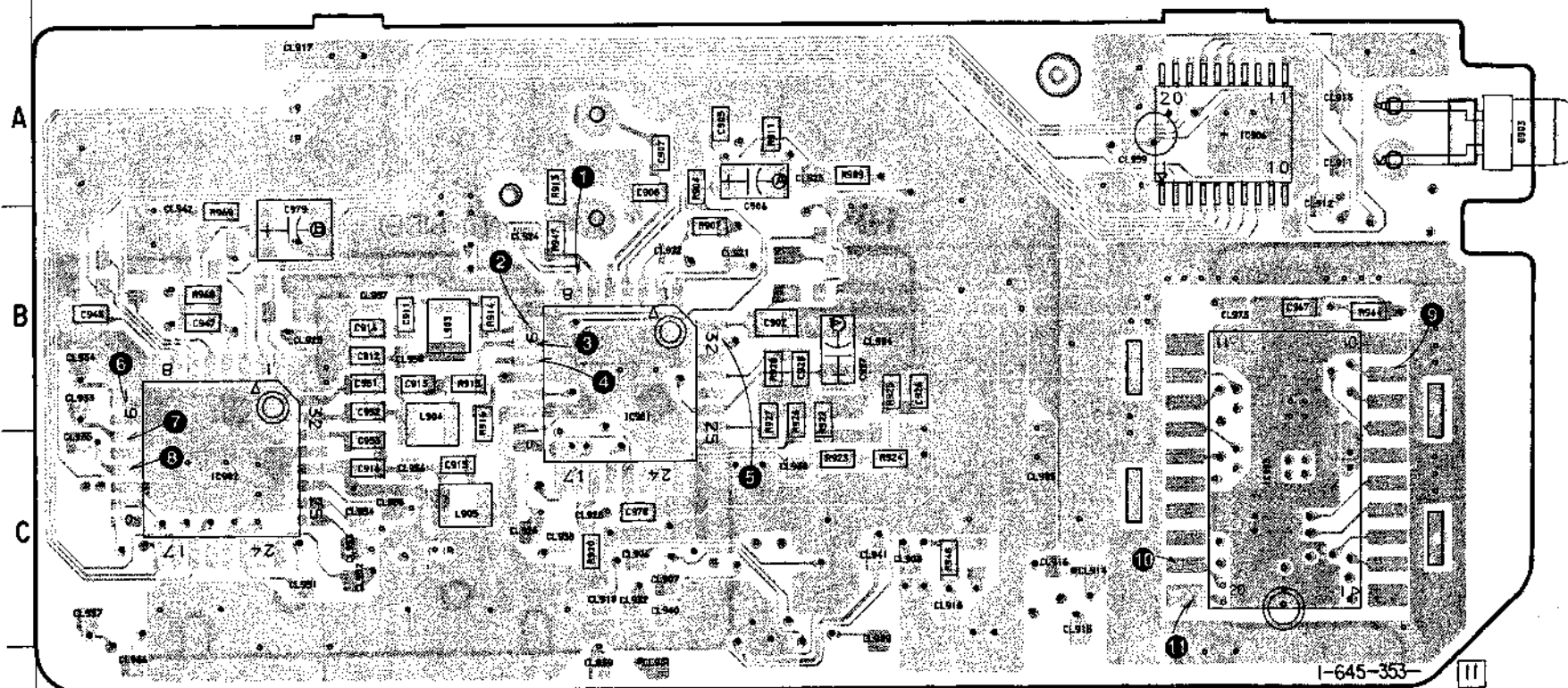


- < DIODE >
- D901 8-719-420-81 DIODE MA3075WA
 - D902 8-719-420-81 DIODE MA3075WA
 - D903 8-719-420-81 DIODE MA3075WA
 - D904 8-719-420-81 DIODE MA3075WA
 - D905 8-719-420-81 DIODE MA3075WA
 - D906 8-719-420-81 DIODE MA3075WA
 - D907 8-719-420-87 DIODE MA8130

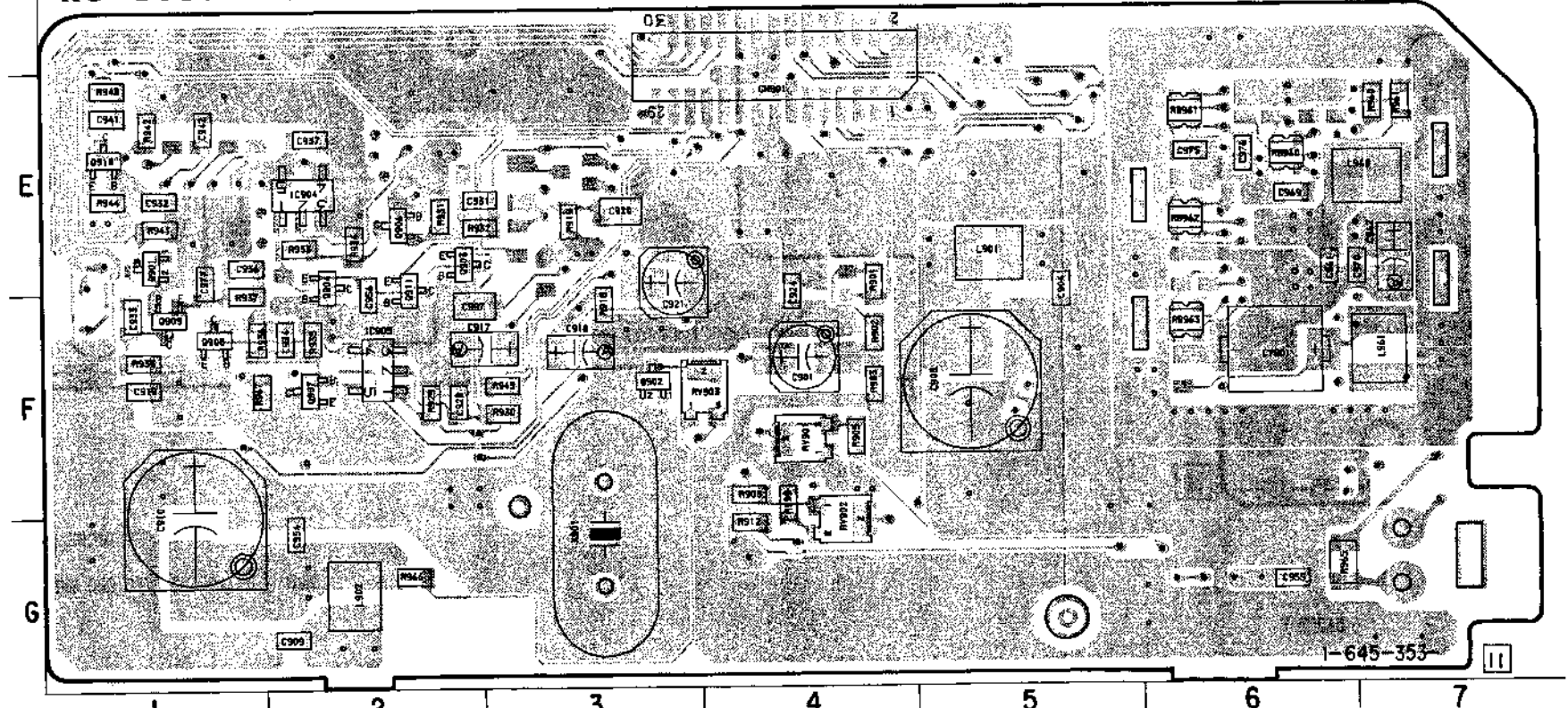
< DIODE >
D601 - 8-719-420-87 DIODE MA8130

RG-25 BOARD (CONDUCTOR SIDE)

- RG-25 BOARD
- D901 E-1
 - D902 F-3
 - D903 A-7
 - IC901 B-3
 - IC902 C-1
 - IC903 C-6
 - IC904 E-2
 - IC905 F-2
 - IC906 A-6
 - Q903 E-2
 - Q904 E-2
 - Q906 F-2
 - Q907 F-2
 - Q908 F-1
 - Q909 F-1
 - Q910 F-1
 - Q911 F-2



RG-25 BOARD (COMPONENT SIDE)



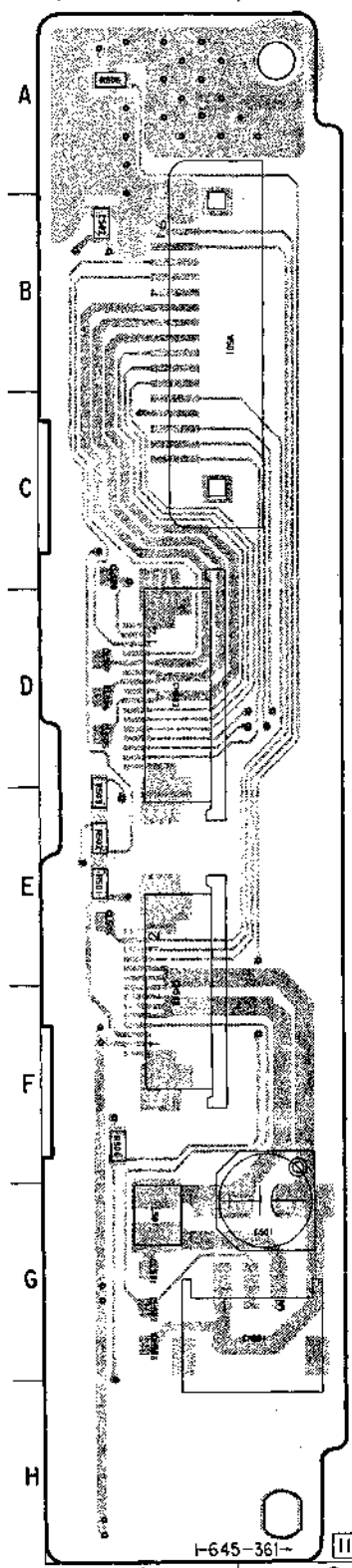
- < DIODE >
- D901 8-719-989-03 DIODE DAN222
 - D902 8-719-989-03 DIODE DAN222
 - D903 8-719-938-67 LED GL-3E68

- < IC >
- IC901 8-752-056-40 IC CXA1385Q
 - IC902 8-752-057-28 IC CXA1485Q
 - IC903 8-759-084-06 IC JPD6453GT-622-E2
 - IC904 8-759-234-13 IC TC4S30F
 - IC905 8-759-209-69 IC TC4S11F
 - IC906 8-759-635-27 IC M62352GP

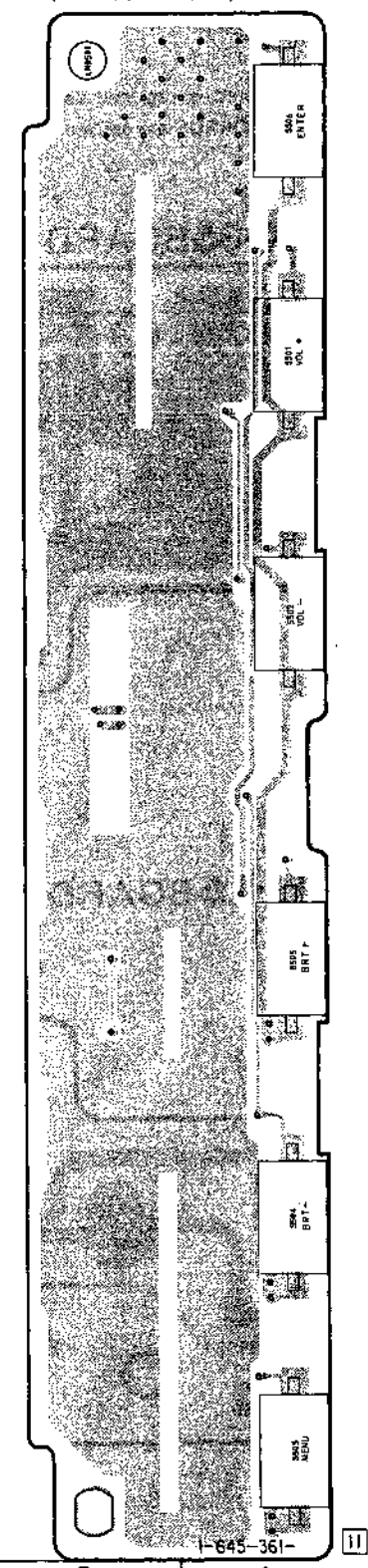
- < TRANSISTOR >
- Q903 8-729-928-81 TRANSISTOR DTC144EE
 - Q904 8-729-928-81 TRANSISTOR DTC144EE
 - Q906 8-729-928-19 TRANSISTOR 2SA1774R
 - Q907 8-729-927-XX TRANSISTOR 2SC4617R

- Q908 8-729-928-27 TRANSISTOR DTA144EE
- Q909 8-729-927-XX TRANSISTOR 2SC4617R
- Q910 8-729-928-19 TRANSISTOR 2SA1774R
- Q911 8-729-928-81 TRANSISTOR DTC144EE

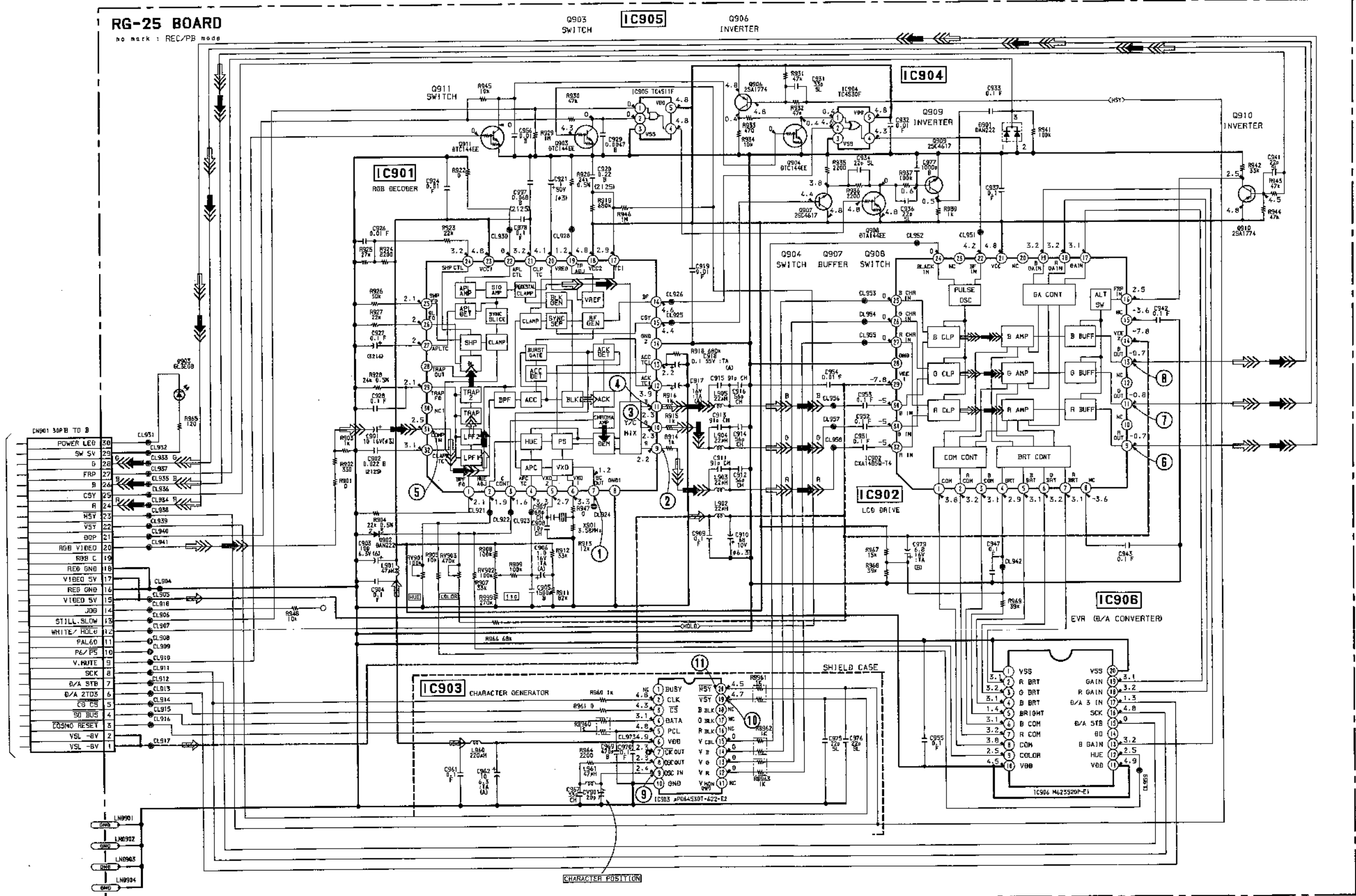
VR-39 BOARD (COMPONENT SIDE)



VR-39 BOARD (CONDUCTOR SIDE)



A
B
C
D
E
F
G
H
I
J



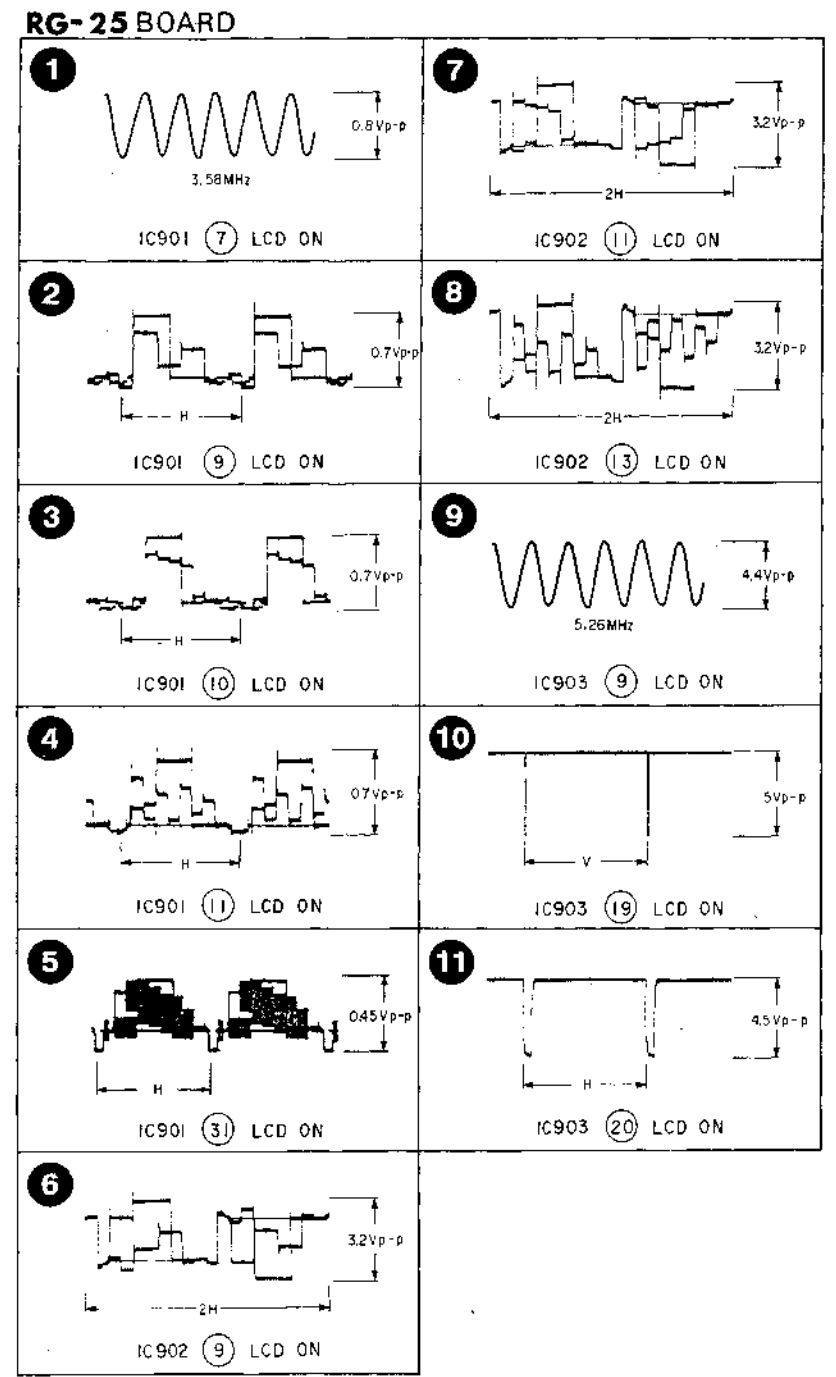
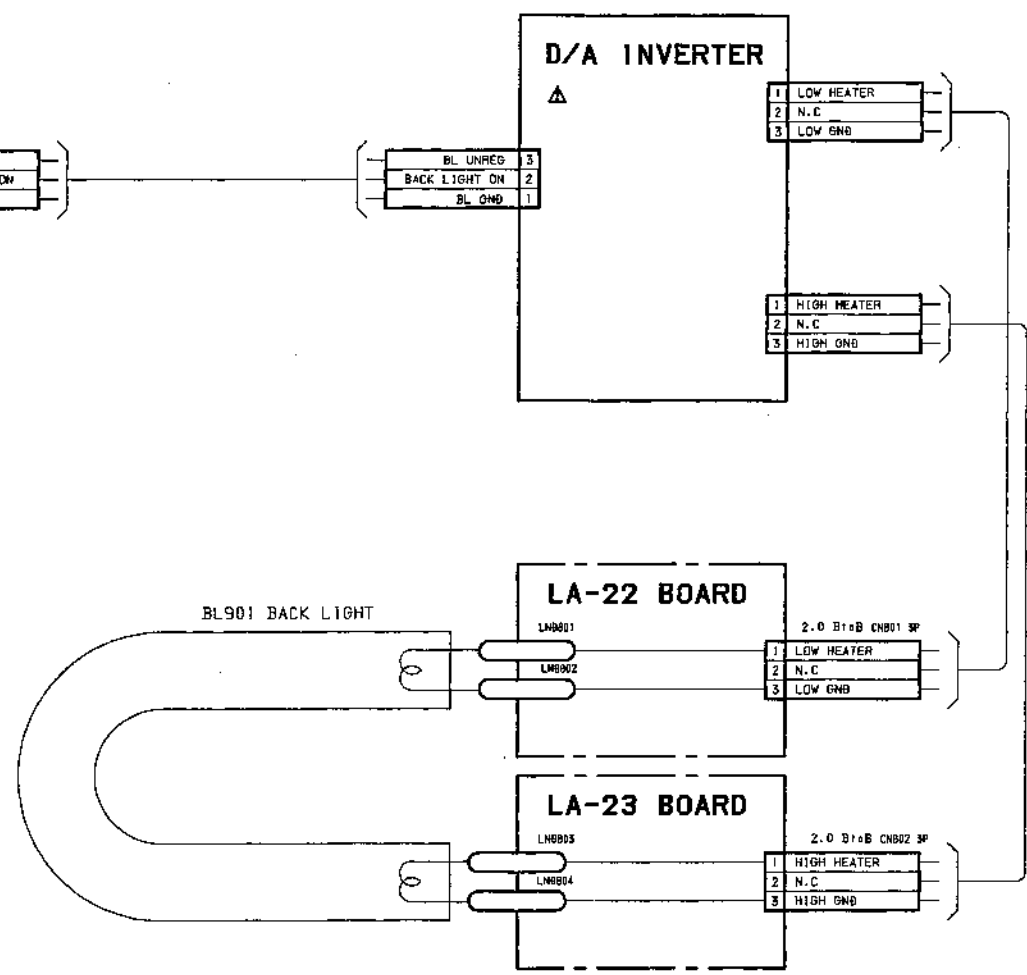
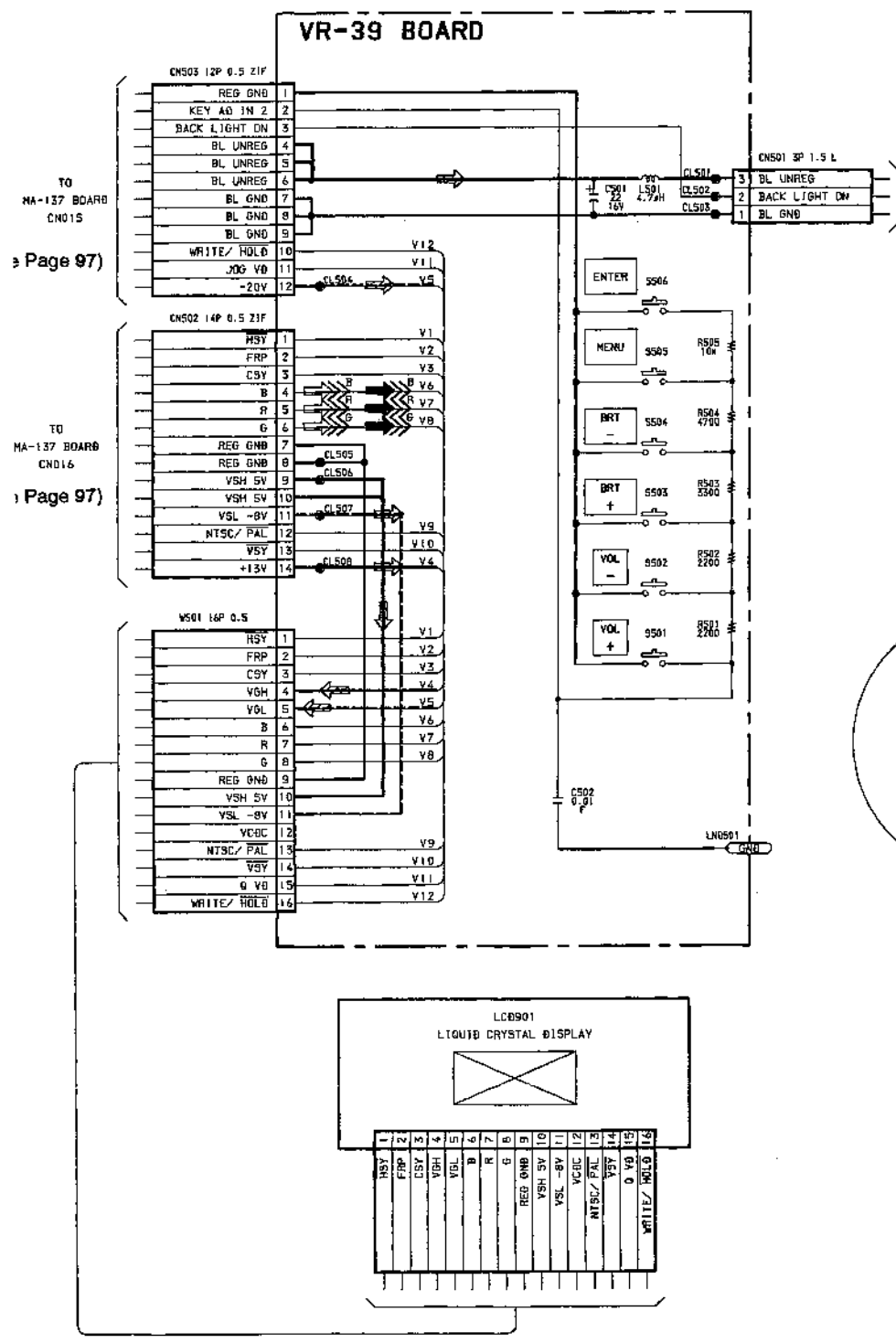
TO MA-137 BOARD CN007 (See Page 97)

TO MA-137 BOARD CN015 (See Page 97)

TO MA-137 BOARD CN016 (See Page 97)

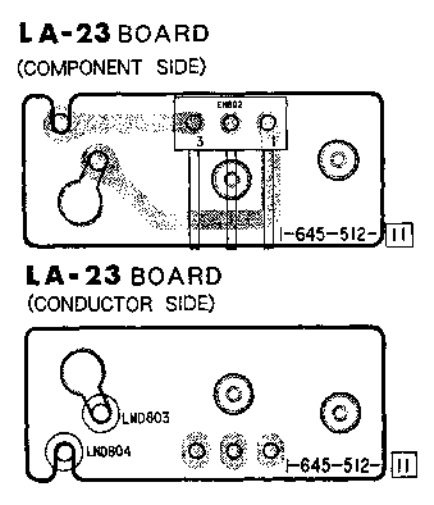
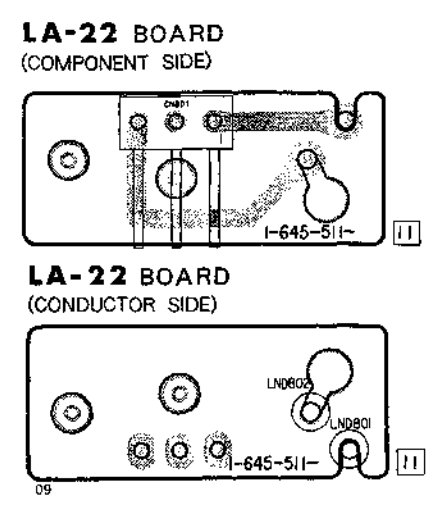
1	VSS	20	VSS
2	R BRT	15	GAIN
3	G BRT	16	R GAIN
4	B BRT	17	B/A 3 IN
5	BR/BHT	18	SCK
6	B COM	19	B/A STB
7	R COM	20	BD
8	G COM	21	B BA1N
9	COLOR	22	COM
10	VDD	23	HUE
11		24	VDD

• SK
REC
PB



• SIGNAL PATH

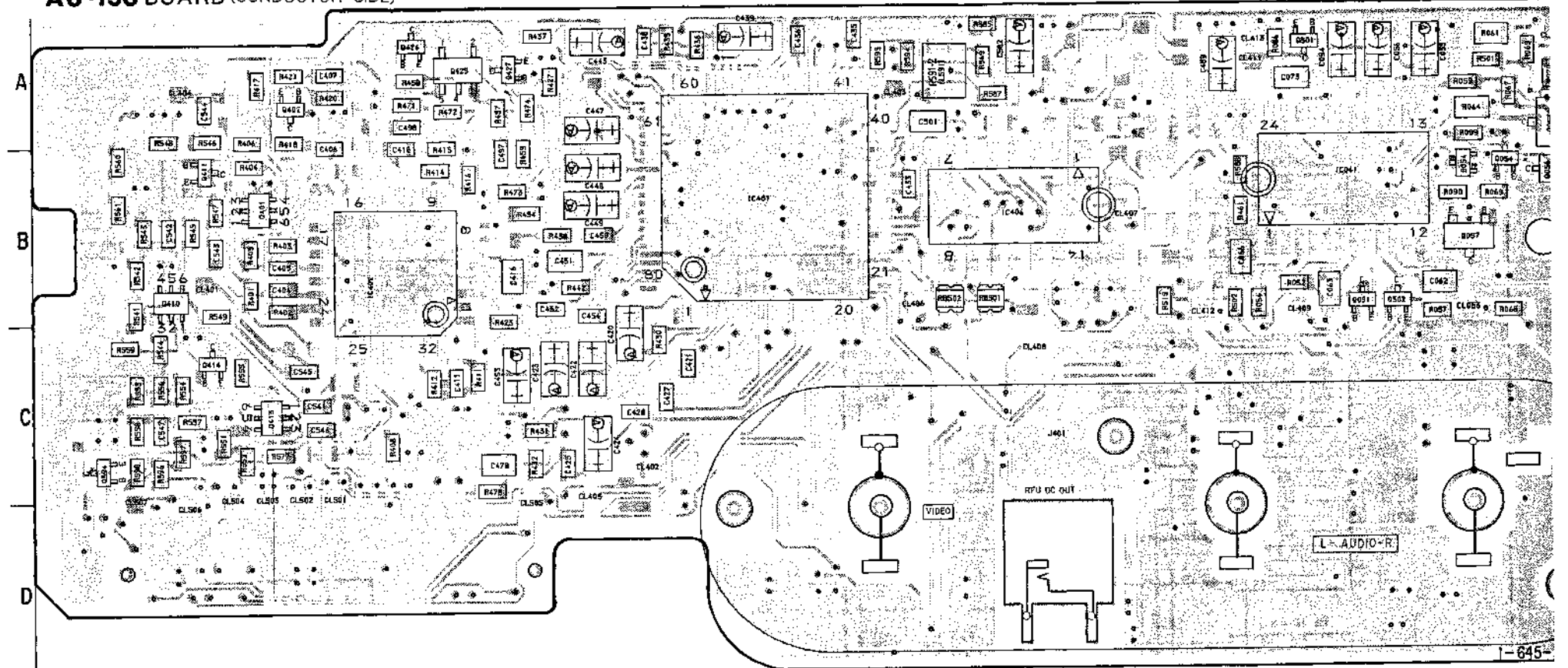
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	→	→	→	
PB	→	→	→	



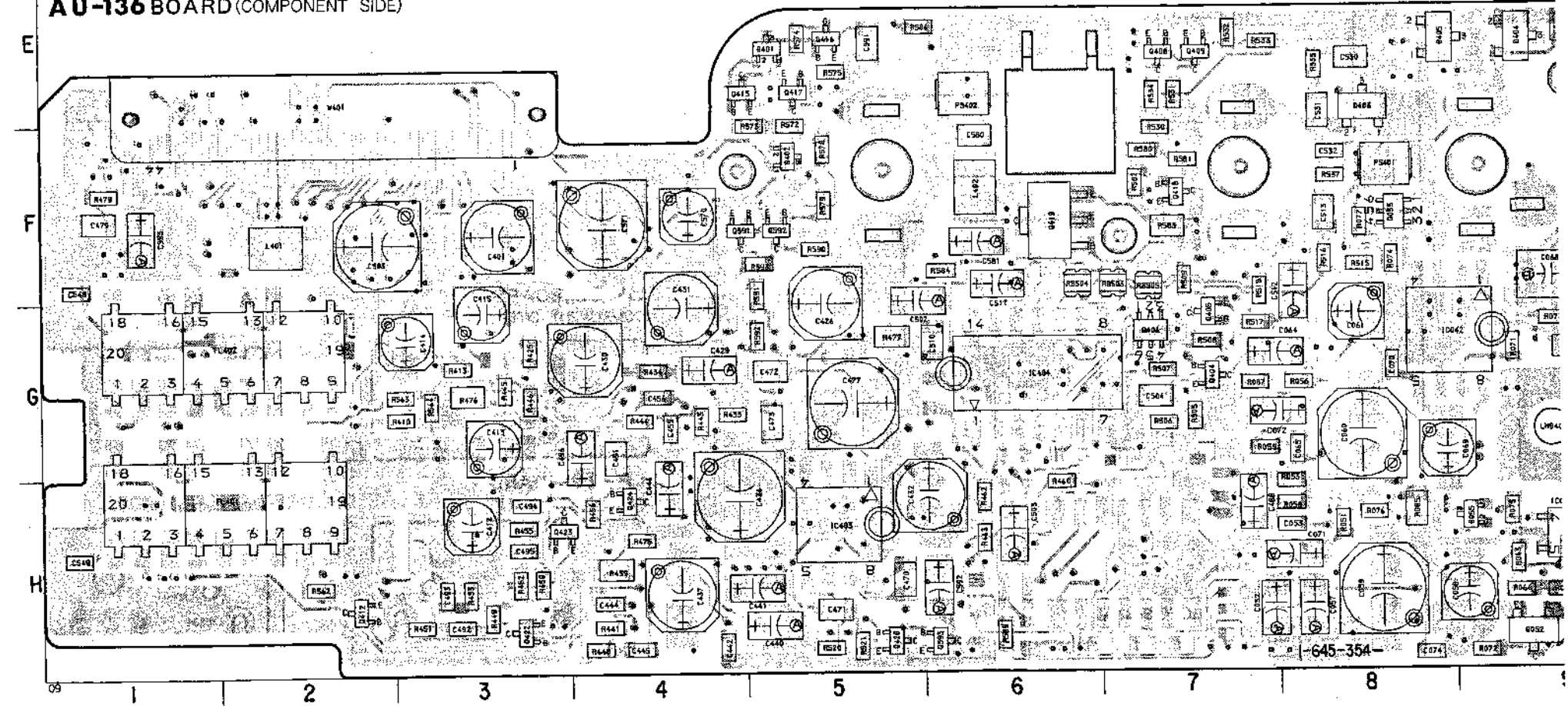
AU-136 (AUDIO) PRINTED WIRING BOARD

AU-136 BOARD (CONDUCTOR SIDE)

(DIODE)		AU-136 BOARD	
D054	8-719-989-03 DIODE DAN222	D054	B-9
D055	8-719-989-03 DIODE DAN222	D055	H-9
D401	8-719-989-03 DIODE DAN222	D401	F-5
D402	8-719-989-03 DIODE DAN222	D402	F-5
D403	8-719-989-00 DIODE DA221	D403	F-8
D404	8-719-420-81 DIODE MA3075WA	D404	F-8
D405	8-719-420-81 DIODE MA3075WA	D405	F-8
(IC)		AU-136 BOARD	
IC041	8-759-510-56 IC BA3570FS	IC041	B-8
IC042	8-759-701-02 IC NJM2073M	IC042	G-8
IC043	8-759-234-77 IC TC4S66F	IC043	H-9
IC401	8-759-077-12 IC CXA1542R	IC401	B-5
IC402	8-752-334-42 IC CXD21060	IC402	B-2
IC403	8-752-053-21 IC CXA1211M	IC403	H-5
IC404	8-759-108-09 IC uPD4012BG	IC404	G-6
IC406	8-759-108-09 IC uPD4012BG	IC406	B-6
(TRANSISTOR)		AU-136 BOARD	
Q051	8-729-928-81 TRANSISTOR DTC144EE	Q051	B-8
Q052	8-729-202-38 TRANSISTOR 2SC3326N-A	Q052	H-9
Q053	8-729-202-38 TRANSISTOR 2SC3326N-A	Q053	A-9
Q054	8-729-928-87 TRANSISTOR DTC124EE	Q054	B-9
Q055	8-729-927-62 TRANSISTOR UMX1	Q055	F-8
Q056	8-729-928-81 TRANSISTOR DTC144EE	Q056	B-9
Q057	8-729-141-48 TRANSISTOR 2SB624-BV345	Q057	B-9
Q401	8-729-927-62 TRANSISTOR UMX1	Q401	B-2
Q402	8-729-927-XX TRANSISTOR 2SC4617R	Q402	A-2
Q404	8-729-927-XX TRANSISTOR 2SC4617R	Q404	G-7
Q405	8-729-927-XX TRANSISTOR 2SC4617R	Q405	G-7
Q406	8-729-930-13 TRANSISTOR UMH2	Q406	G-7
Q408	8-729-927-XX TRANSISTOR 2SC4617R	Q408	G-7
Q409	8-729-927-XX TRANSISTOR 2SC4617R	Q409	E-7
Q410	8-729-927-62 TRANSISTOR UMX1	Q410	B-1
Q411	8-729-927-XX TRANSISTOR 2SC4617R	Q411	B-1
Q412	8-729-928-81 TRANSISTOR DTC144EE	Q412	H-2
Q413	8-729-927-62 TRANSISTOR UMX1	Q413	C-2
Q414	8-729-927-XX TRANSISTOR 2SC4617R	Q414	C-1
Q415	8-729-928-19 TRANSISTOR 2SA1774R	Q415	E-5
Q416	8-729-928-81 TRANSISTOR DTC144EE	Q416	E-5
Q417	8-729-928-19 TRANSISTOR 2SA1774R	Q417	E-5
Q418	8-729-927-XX TRANSISTOR 2SC4617R	Q418	F-7
Q419	8-729-141-48 TRANSISTOR 2SB624-BV345	Q419	F-6
Q422	8-729-928-19 TRANSISTOR 2SA1774R	Q422	H-3
Q423	8-729-927-XX TRANSISTOR 2SC4617R	Q423	H-3
Q424	8-729-927-XX TRANSISTOR 2SC4617R	Q424	H-4
Q425	8-729-903-10 TRANSISTOR FMN1	Q425	A-3
Q426	8-729-927-XX TRANSISTOR 2SC4617R	Q426	A-3
Q427	8-729-928-19 TRANSISTOR 2SA1774R	Q427	A-3
Q428	8-729-928-81 TRANSISTOR DTC144EE	Q428	H-5
Q501	8-729-927-XX TRANSISTOR 2SC4617R	Q501	A-8
Q502	8-729-927-XX TRANSISTOR 2SC4617R	Q502	B-8
Q591	8-729-927-XX TRANSISTOR 2SC4617R	Q591	F-4
Q592	8-729-927-XX TRANSISTOR 2SC4617R	Q592	F-6
Q593	8-729-928-90 TRANSISTOR DTC144EE	Q593	H-6
Q594	8-729-928-81 TRANSISTOR DTC144EE	Q594	C-1



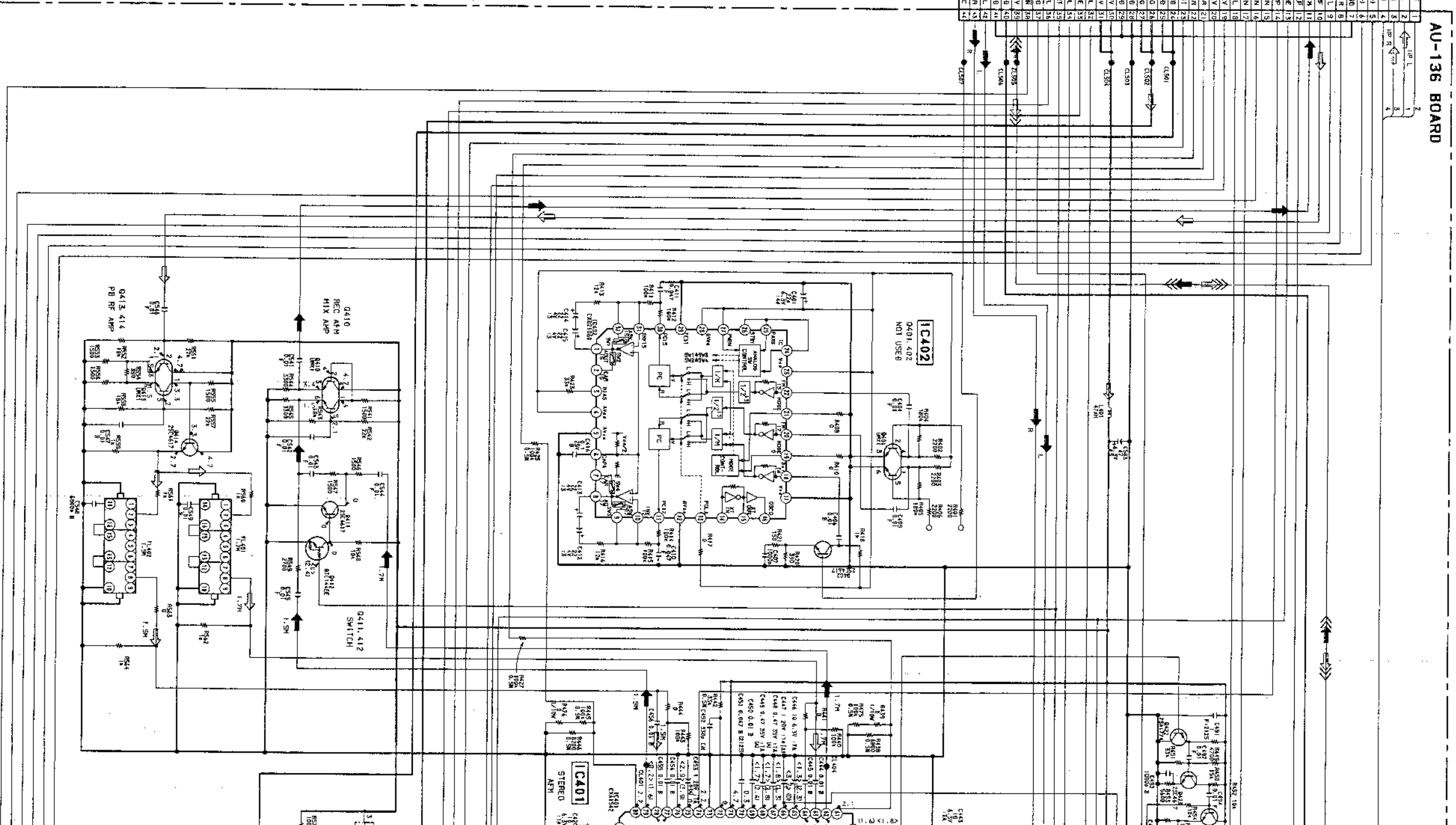
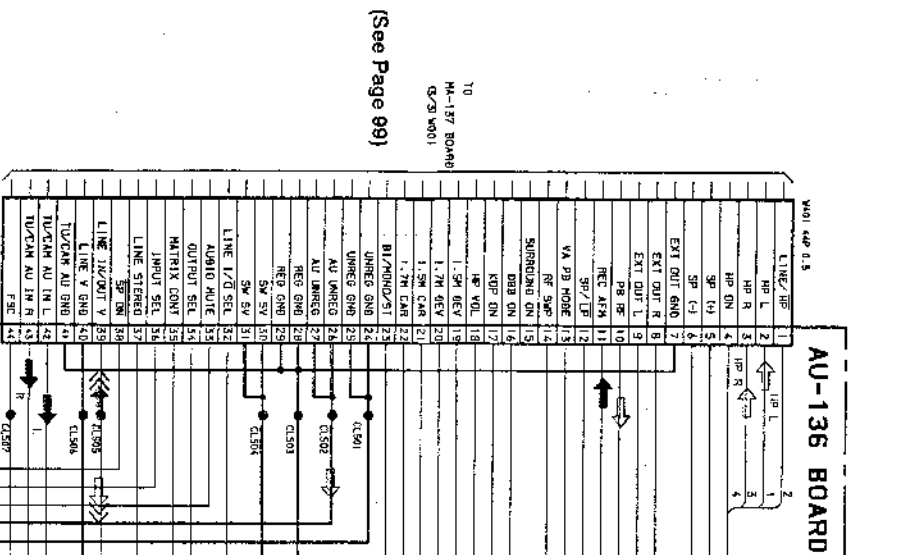
AU-136 BOARD (COMPONENT SIDE)

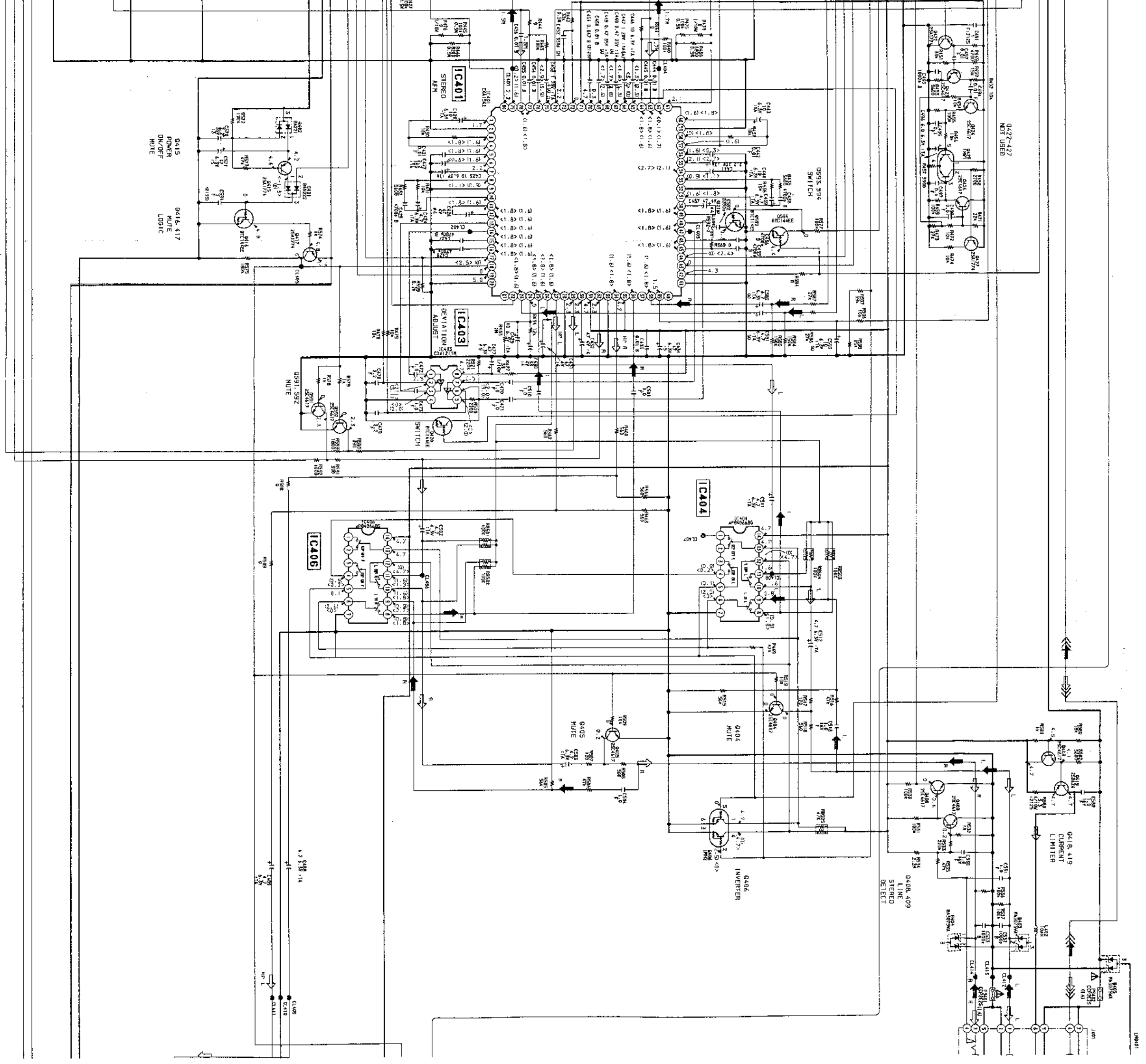


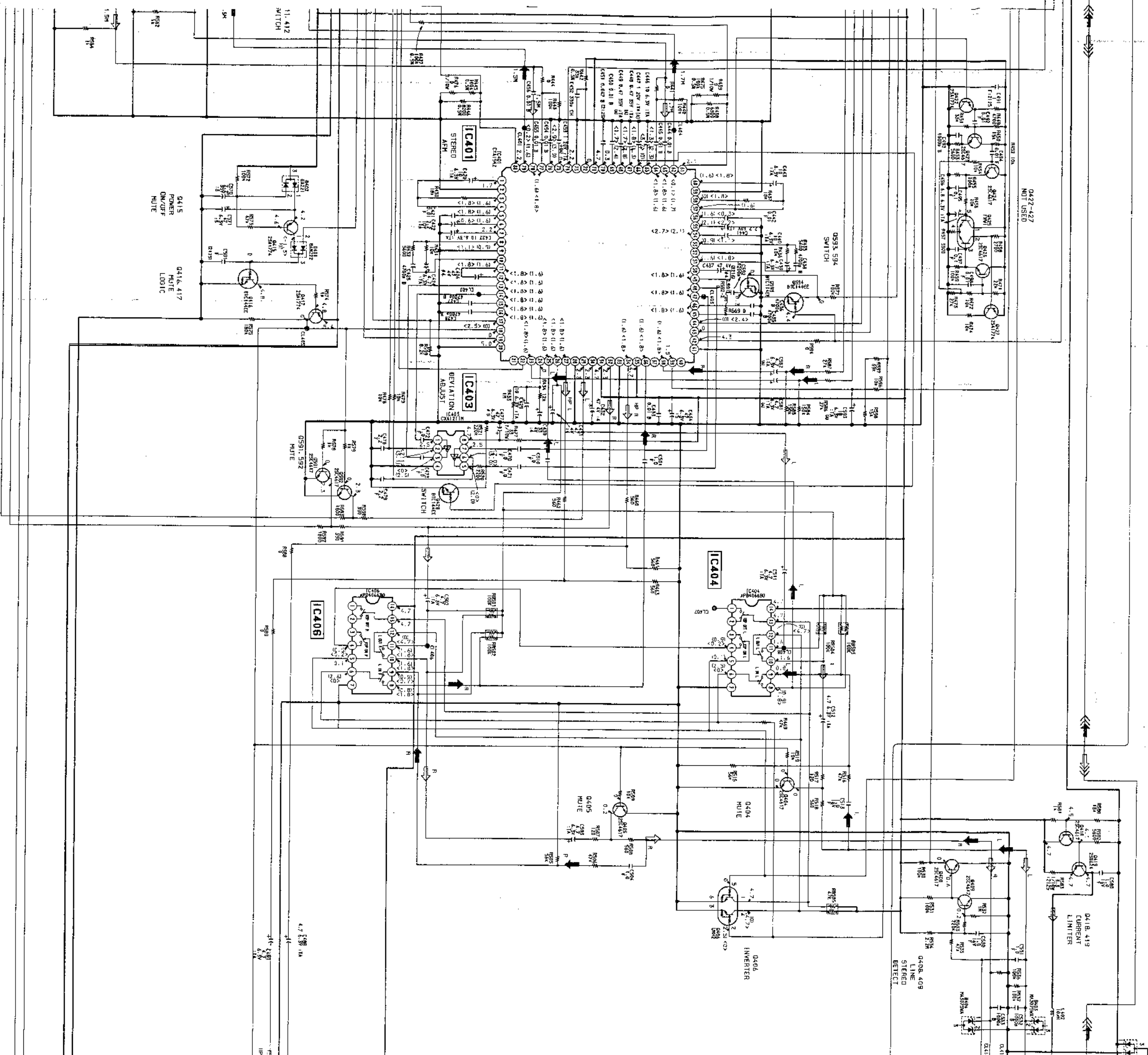
AUDIO AUDIO

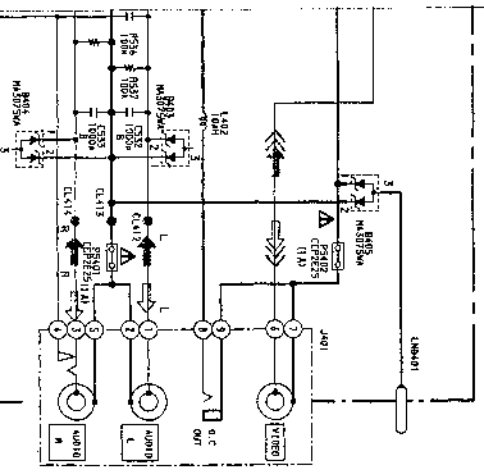
AU-136 (AUDIO) SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9







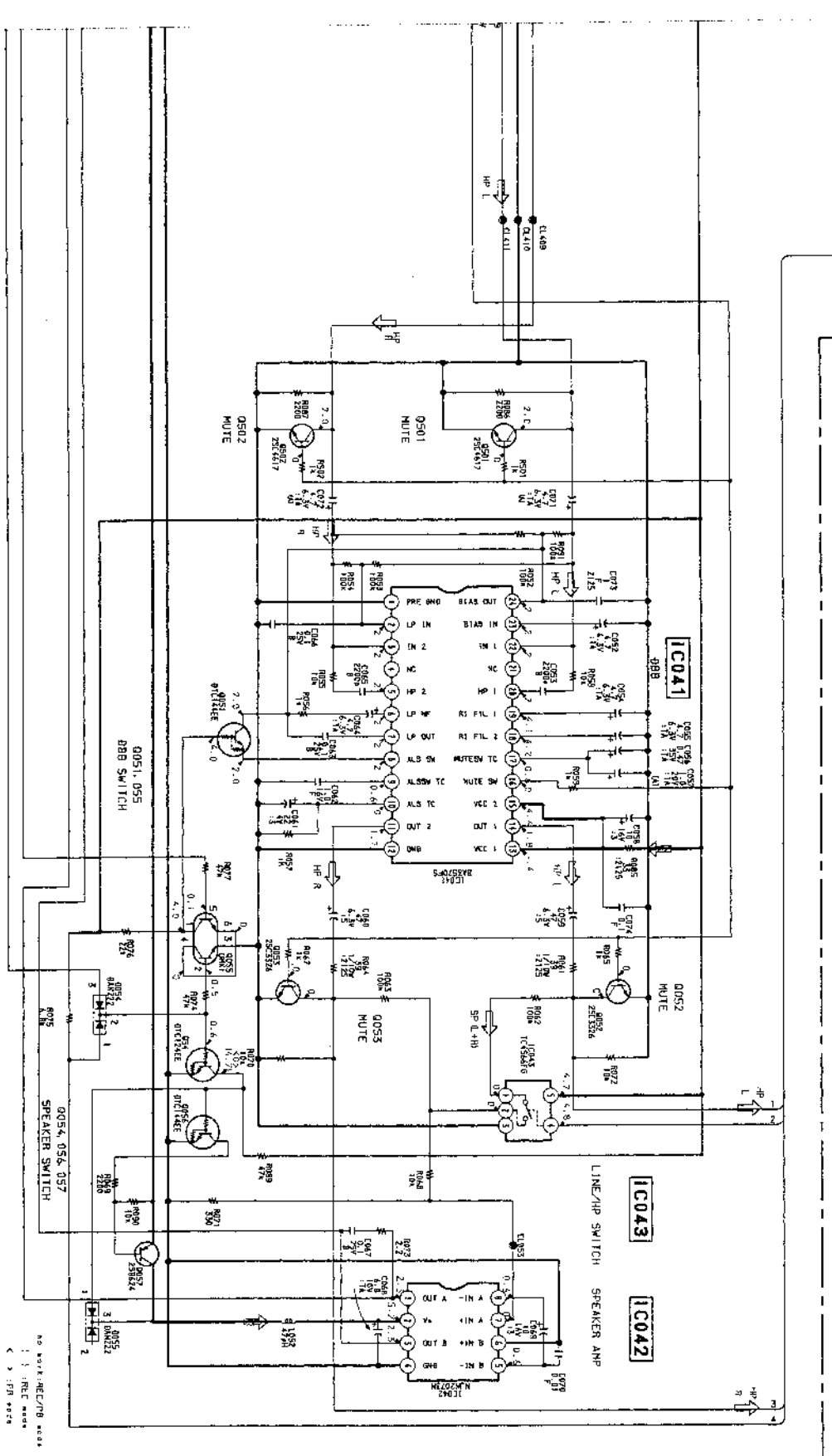


DAOR.409
LINE
STEREO
RELECT

4406
CENTER

• SIGNAL PATH

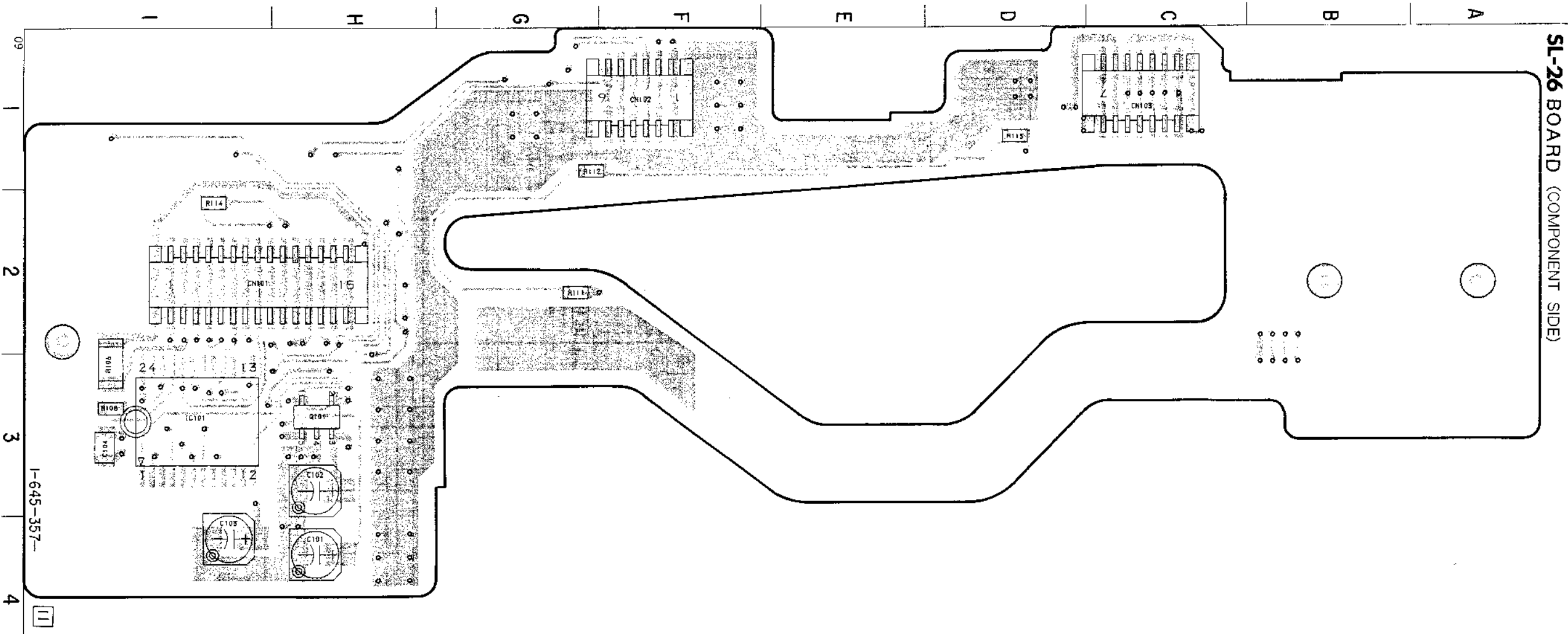
	VIDEO SIGNAL		AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	→
REC		→→→	→
PB		⇄⇄⇄	⇄



SL-26 (FG/P/G WAVEFORM SHAPING), FP-442 (MODE SWITCH), LM-40 (LOADING MOTOR), LS-33 (MECH SENSOR) PRINTED WIRING BOARDS

• FP-442, LM-40, LS-33 boards are replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

- SL-26 BOARD
- IC101 I-3
- Q101 H-3
- (IC)
- IC101 8-759-059-09 IC LB8111V
- (TRANSISTOR)
- Q101 8-729-902-93 TRANSISTOR FMG4



I-645-357-

SL-26 (FG/PG WAVEFORM SHAPING), FP-442 (MODE SWITCH), LM-40 (LOADING MOTOR), LS-33 (MECH SENSOR) PRINTED WIRING BOARDS

• FP-442, LM-40, LS-33 boards are replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

SL-26 BOARD
 IC101 1-3
 Q101 H-3

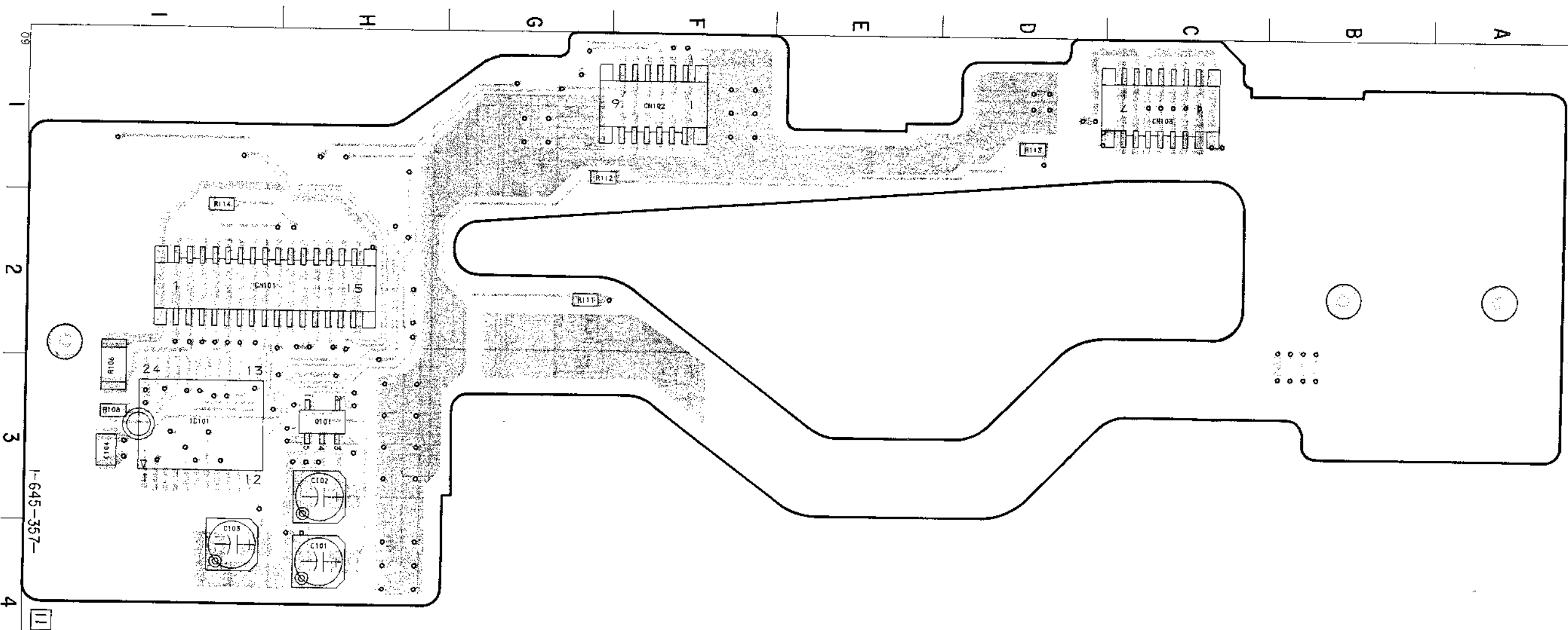
< IC >

IC101 8-759-059-09 IC LB8111V

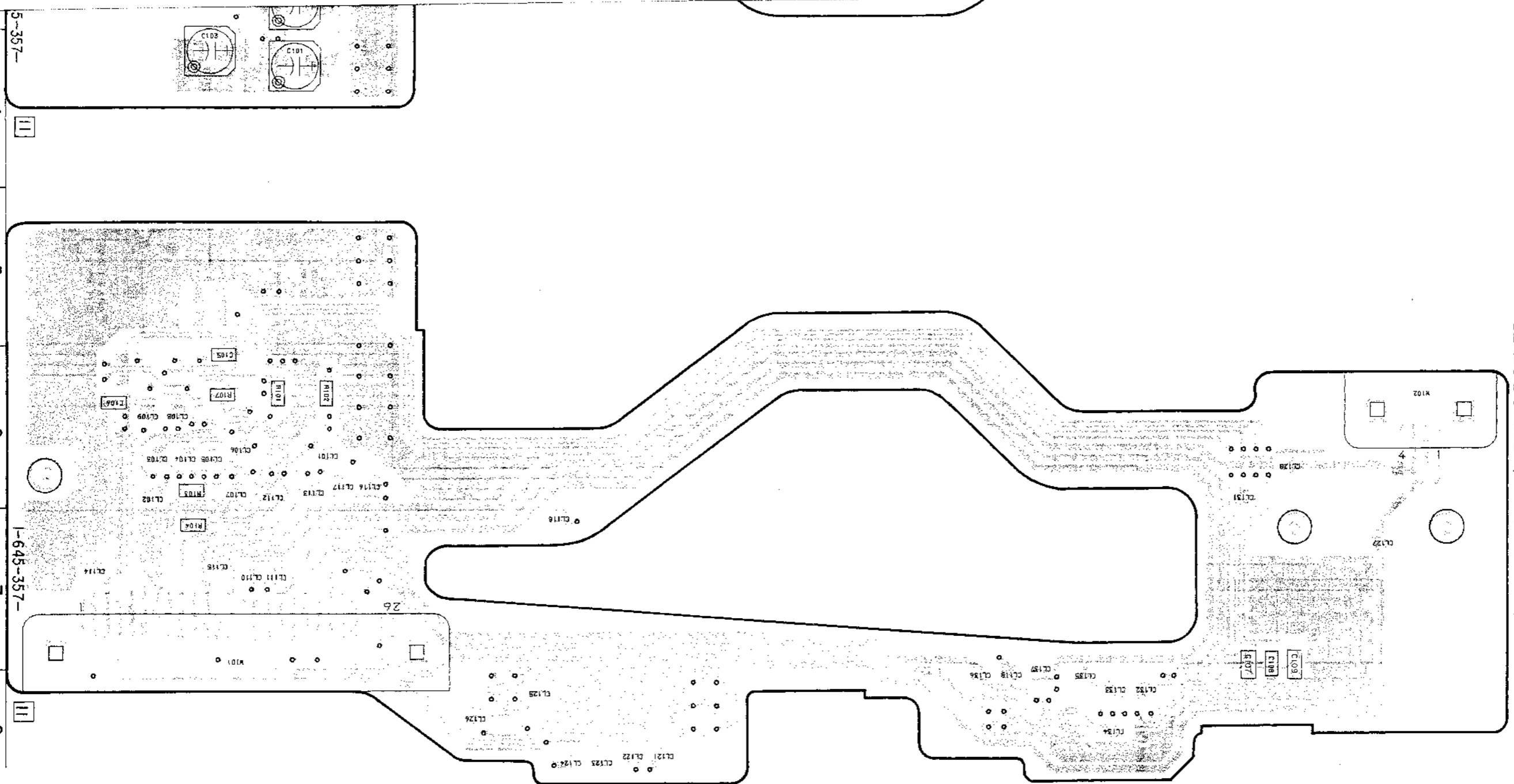
< TRANSISTOR >

Q101 8-729-902-93 TRANSISTOR FMG4

SL-26 BOARD (COMPONENT SIDE)



SL-26 BOARD (CONDUCTOR SIDE)



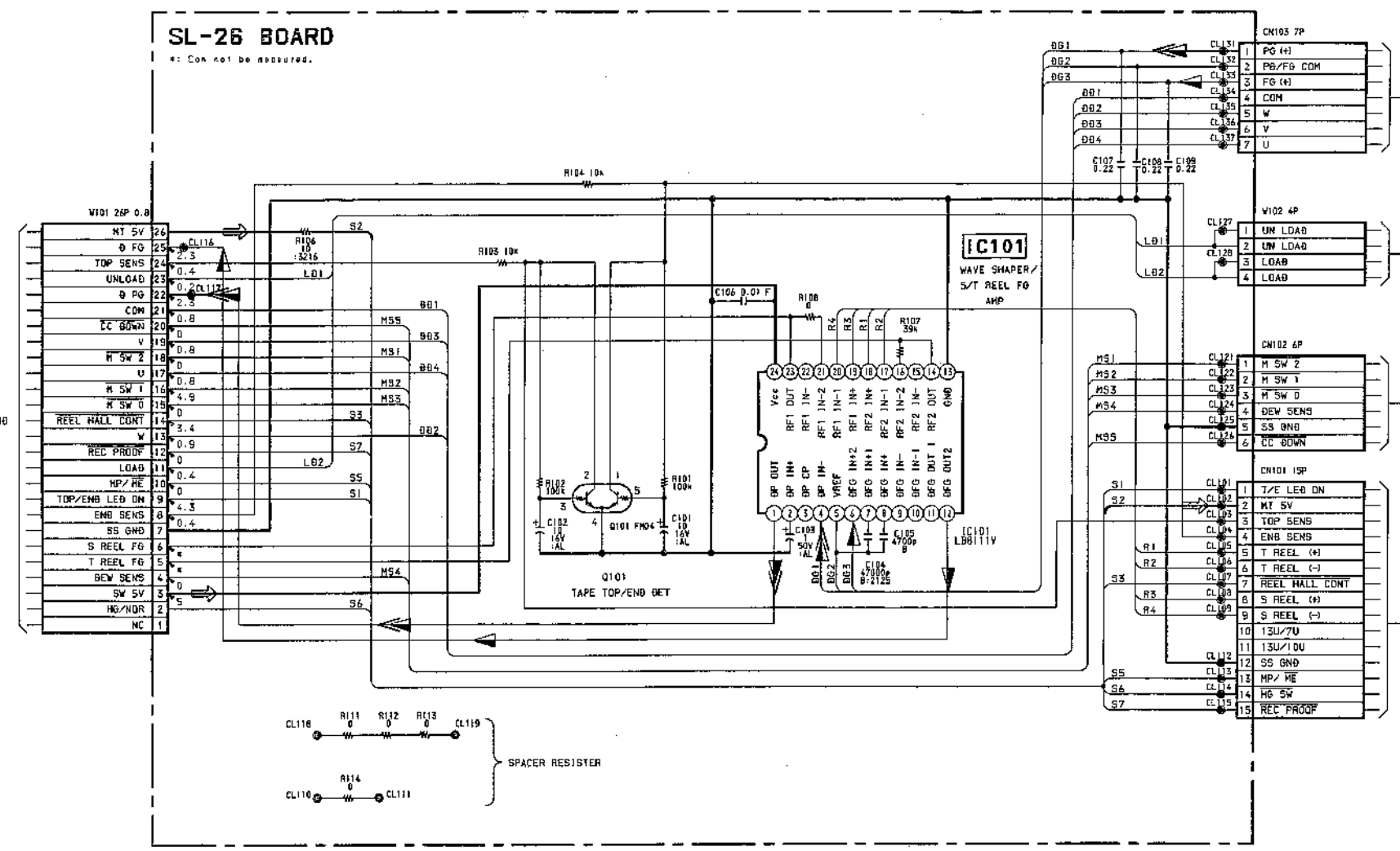
5-357-

645-357-

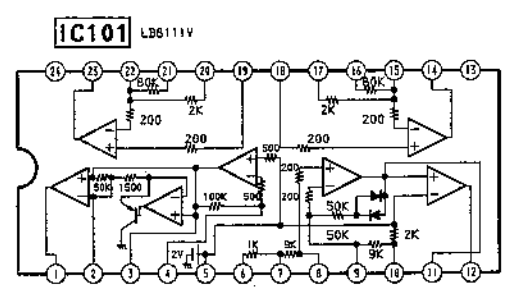
MECH DECK MECH DECK

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

A
B
C
D
E
F
G
H
I
J



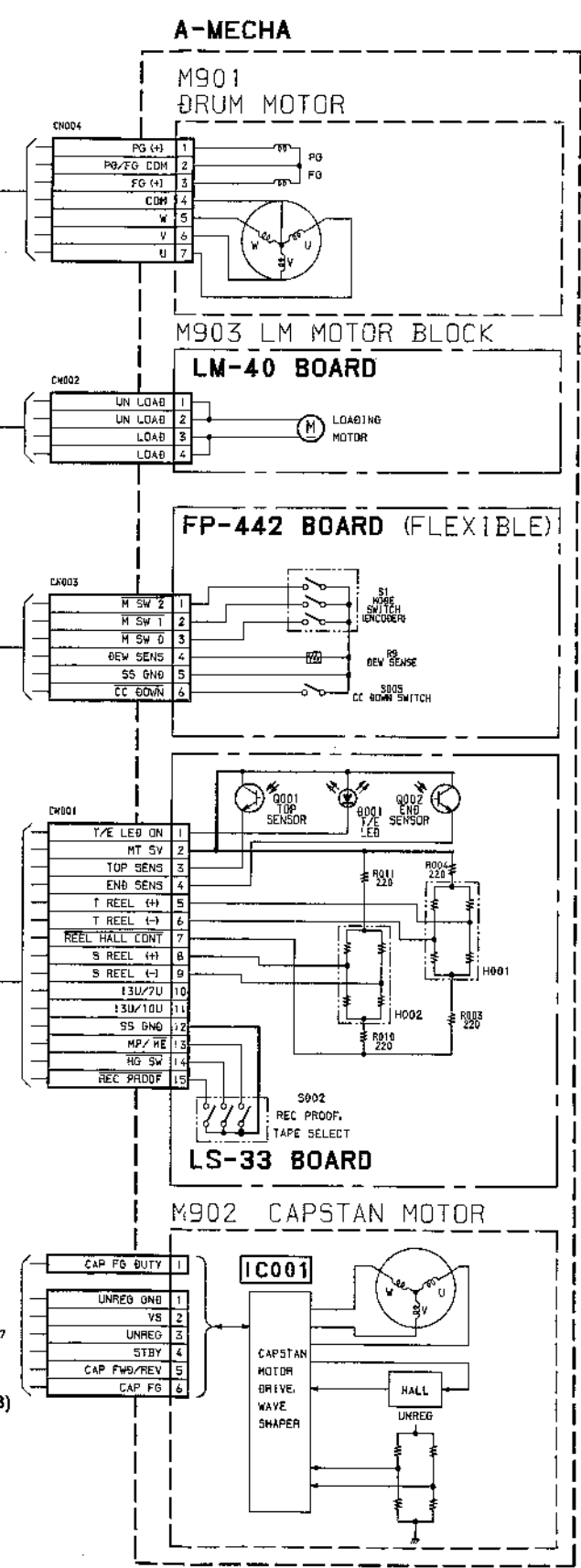
TO MA-137 BOARD CN004
(See Page 93, 94)



• SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶	
Drum servo (speed and phase)		▶	
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

TO MA-137 BOARD CN004
(See Page 93)



TU-142 BOARD

- D100 D-10
- Q100 C-2
- Q102 C-3
- Q103 D-3
- Q105 D-7
- Q106 C-10
- Q107 D-10
- Q108 B-10
- Q109 C-9
- Q111 B-9

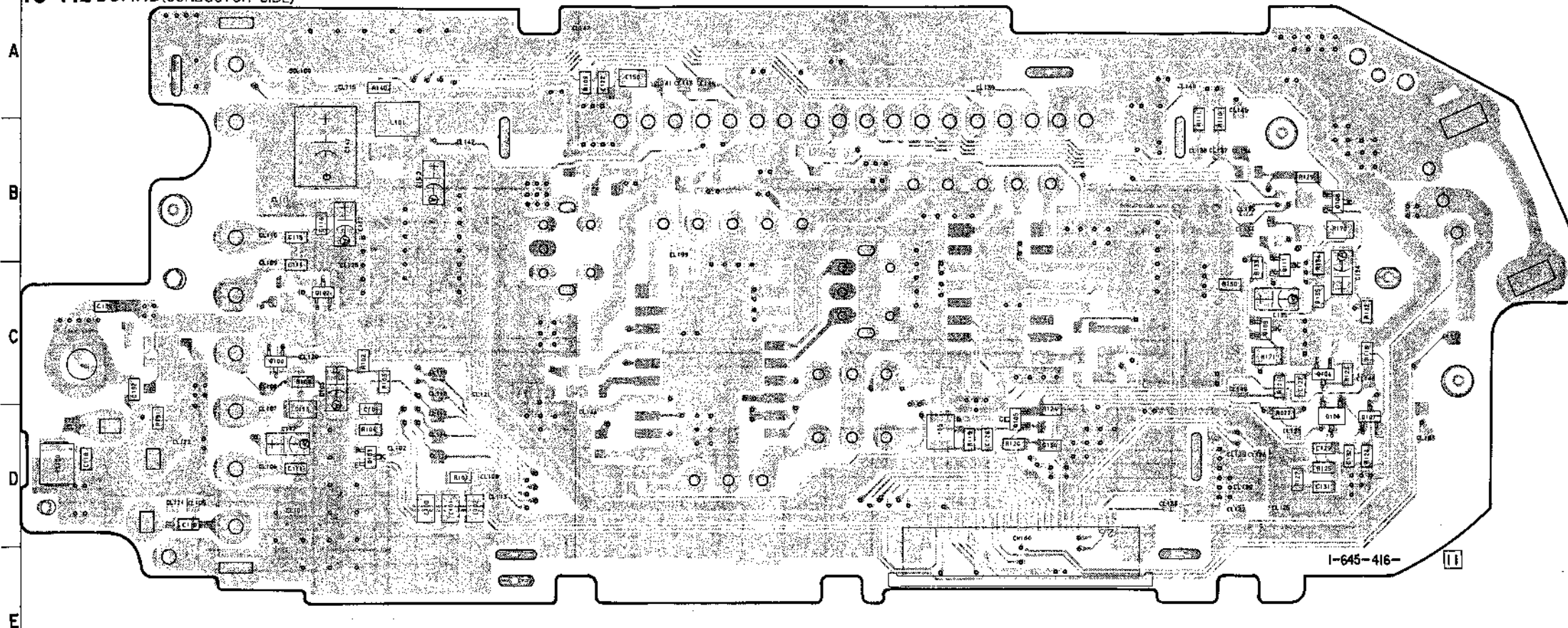
(DIODE)

- D100 8-719-941-09 DIODE DAP202U

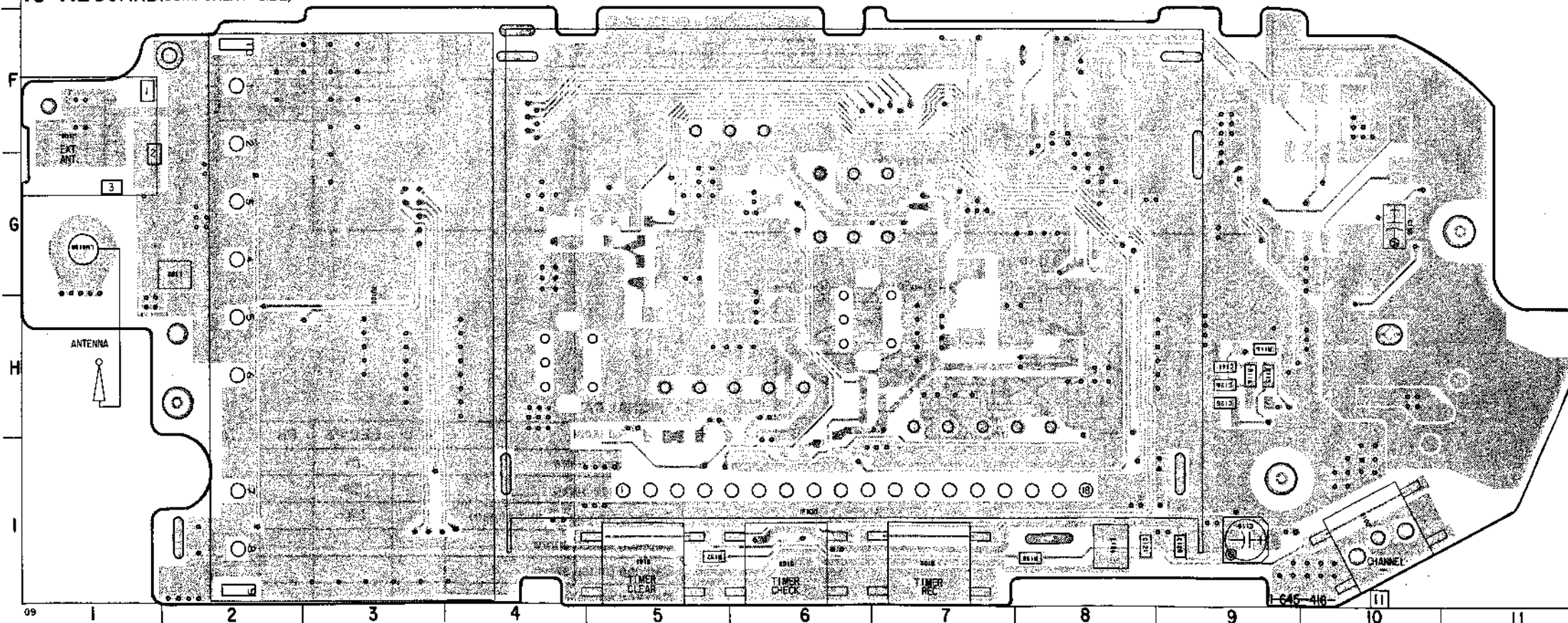
(TRANSISTOR)

- Q100 8-729-928-42 TRANSISTOR DTA143EE
- Q102 8-729-928-42 TRANSISTOR DTA143EE
- Q103 8-729-425-64 TRANSISTOR 2SD2216Q
- Q105 8-729-425-64 TRANSISTOR 2SD2216Q
- Q106 8-729-425-50 TRANSISTOR 2SB1462Q
- Q107 8-729-425-64 TRANSISTOR 2SD2216Q
- Q108 8-729-425-64 TRANSISTOR 2SD2216Q
- Q109 8-729-425-64 TRANSISTOR 2SD2216Q
- Q111 8-729-425-64 TRANSISTOR 2SD2216Q

TU-142 BOARD(CONDUCTOR SIDE)

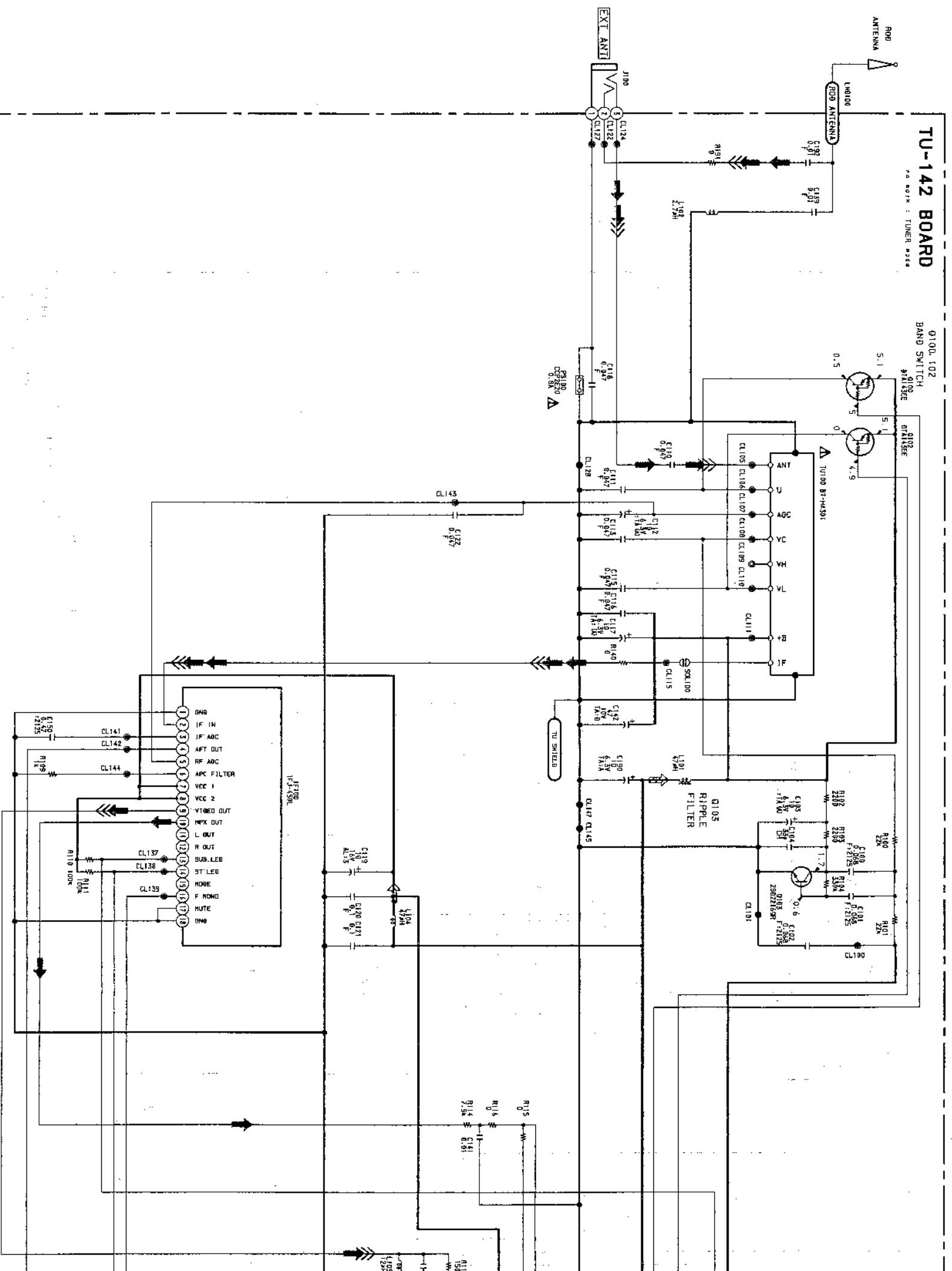


TU-142 BOARD(COMPONENT SIDE)



TU-142 (TUNER) SCHEMATIC DIAGRAM

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



09

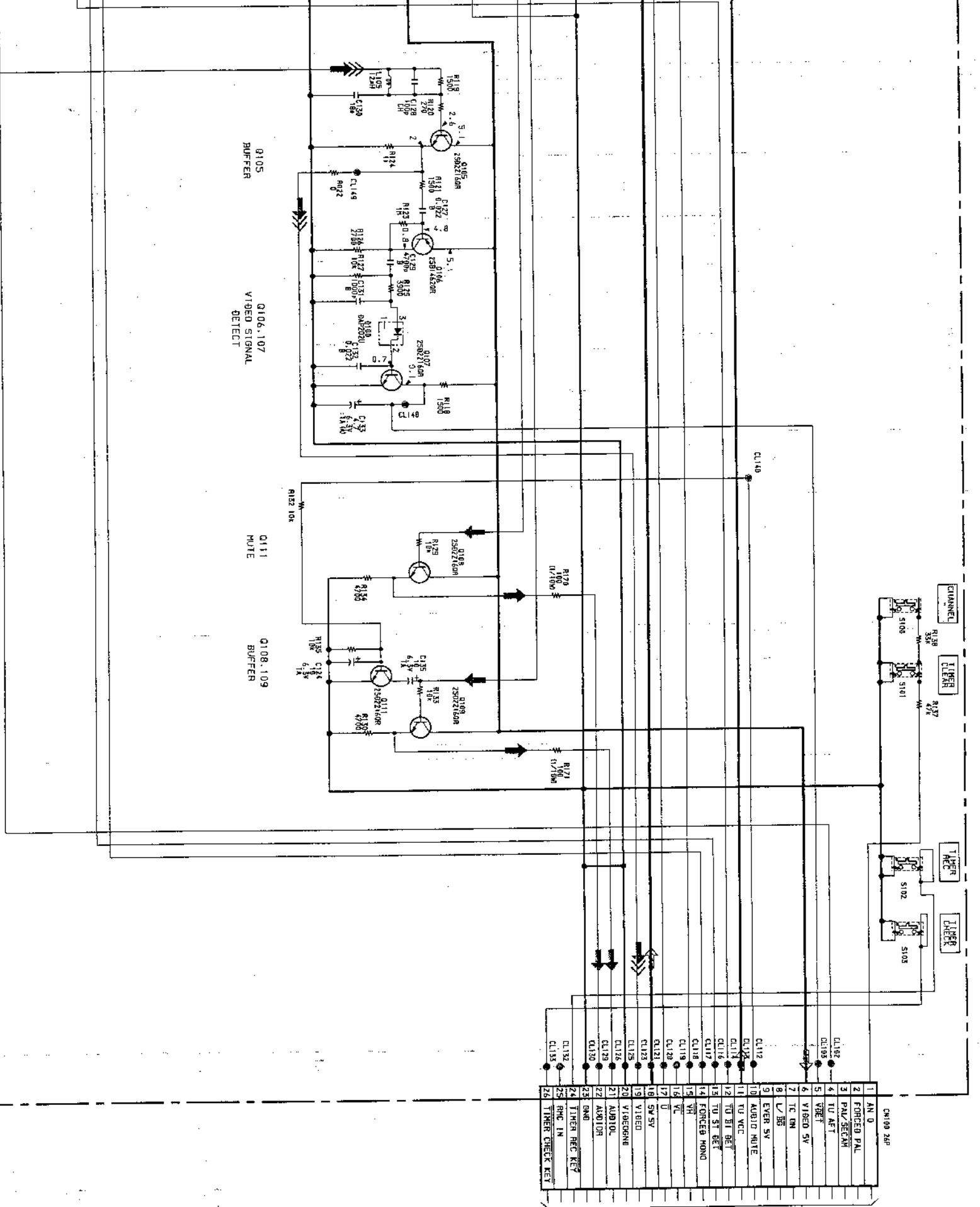
• SIGNAL PATH

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

12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22

1	AN D
2	FORCED PAL
3	PAL/SECAM
4	TU AFT
5	VIBET
6	VIBED SV
7	TC ON
8	V BS
9	EVER SV
10	AUDIO MUTE
11	TU VCC
12	TU BT DET
13	TU ST DET
14	FORCED HOND
15	VH
16	VC
17	BT
18	SV SV
19	VIBED
20	VIBEGND
21	AUDIO L
22	AUDIO R
23	GND
24	TIMER REC KEY
25	RNC IN
26	TIMER CHECK KEY

10
TH-119 BOARD
V400
(See Page 128)



Q105
BUFFER
VIBED SIGNAL
DETECT

Q111
MUTE

Q108, 109
BUFFER

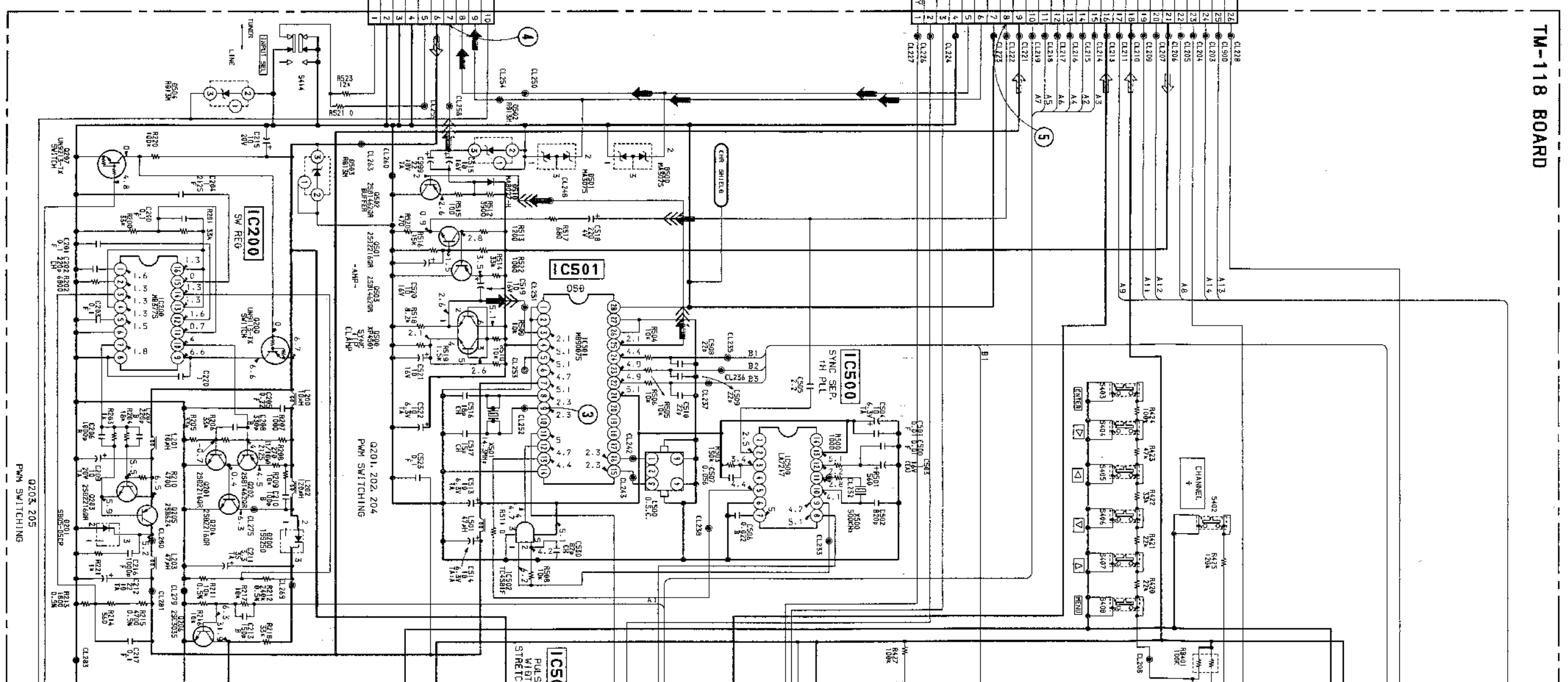
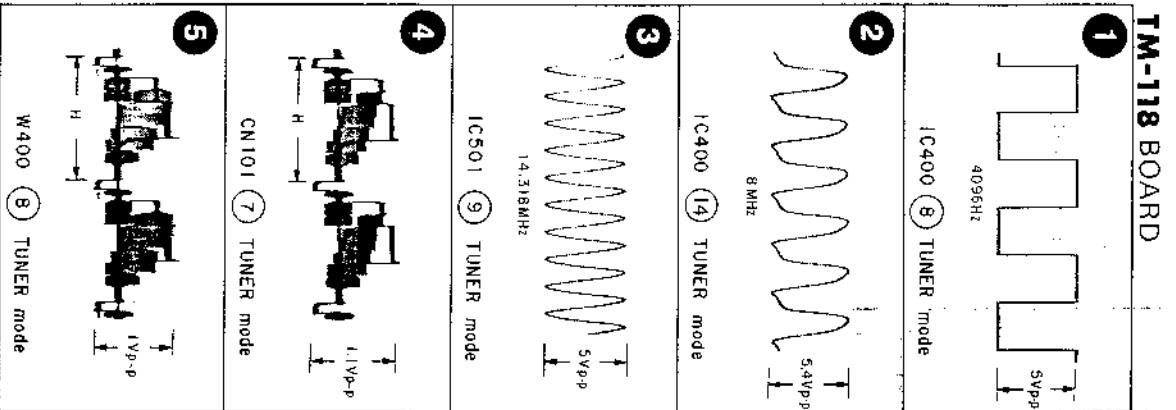
1 2 3 4 5 6 7 8 9

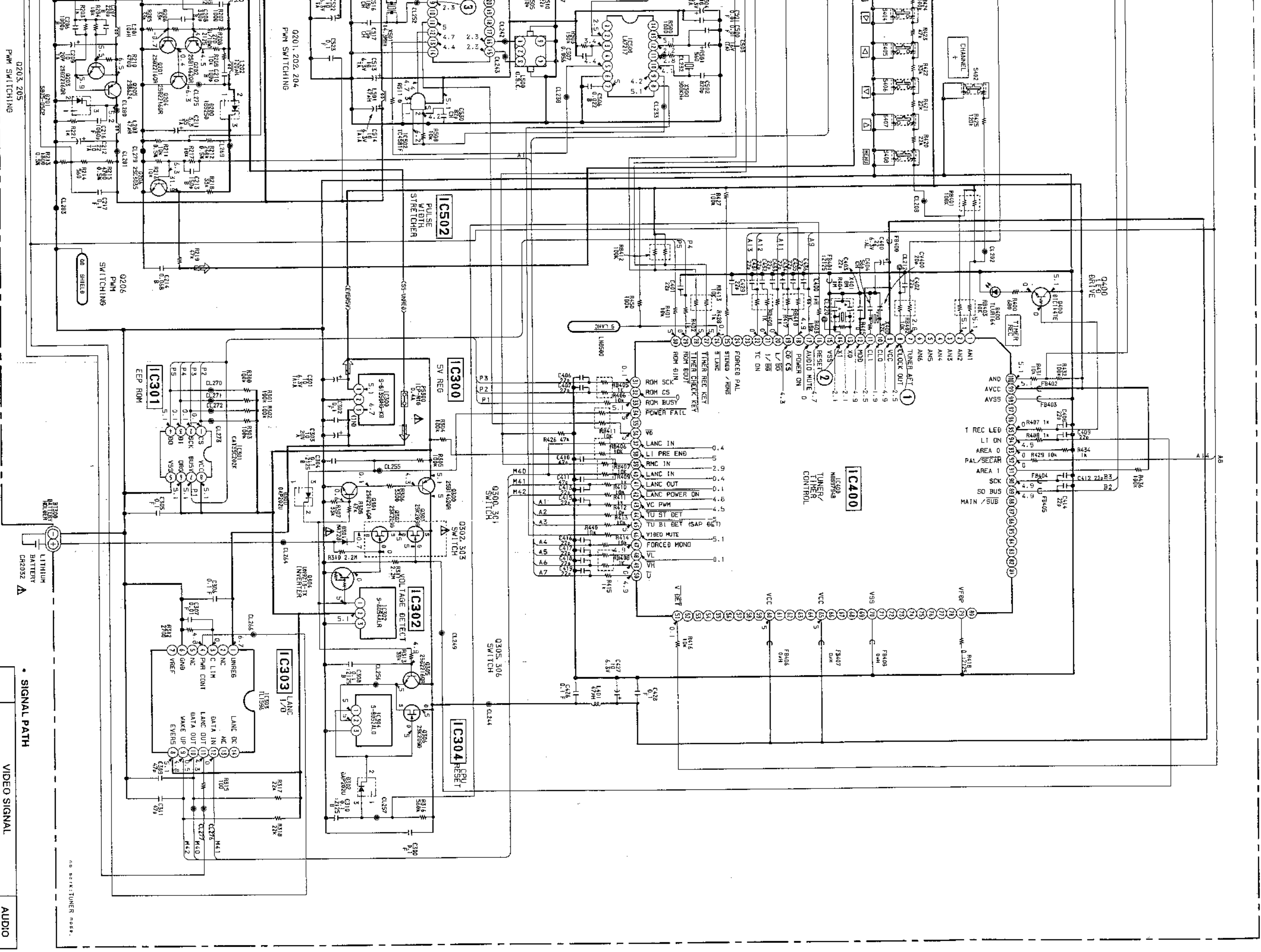
TM-118 BOARD

AN 0	CL228	A1.3
FORCED PAL	CL300	A1.3
PAL/SEKAM	CL203	A1.4
TU AFT	CL204	A.8
VDET	CL205	A.8
VIDEO SV	CL206	A.8
TC ON	CL207	A1.2
L/BG	CL209	A1.1
EVER 5V	CL210	A.9
AUDIO MUTE	CL211	
TU VCC	CL213	A.3
TU BT BET	CL215	A.2
TU ST BET	CL216	A.4
FORCED HDND	CL217	A.4
VH	CL218	A.5
V	CL219	A.7
SW SV	CL221	
VIDEO	CL222	
VIDEOBGND	CL223	
AUDIO L	CL224	
AUDIO R	CL225	
TUNER REC KEY	CL226	
TUNER CHECK KEY	CL227	

(See Page 127)

(See Page 100)





SIGNAL PATH

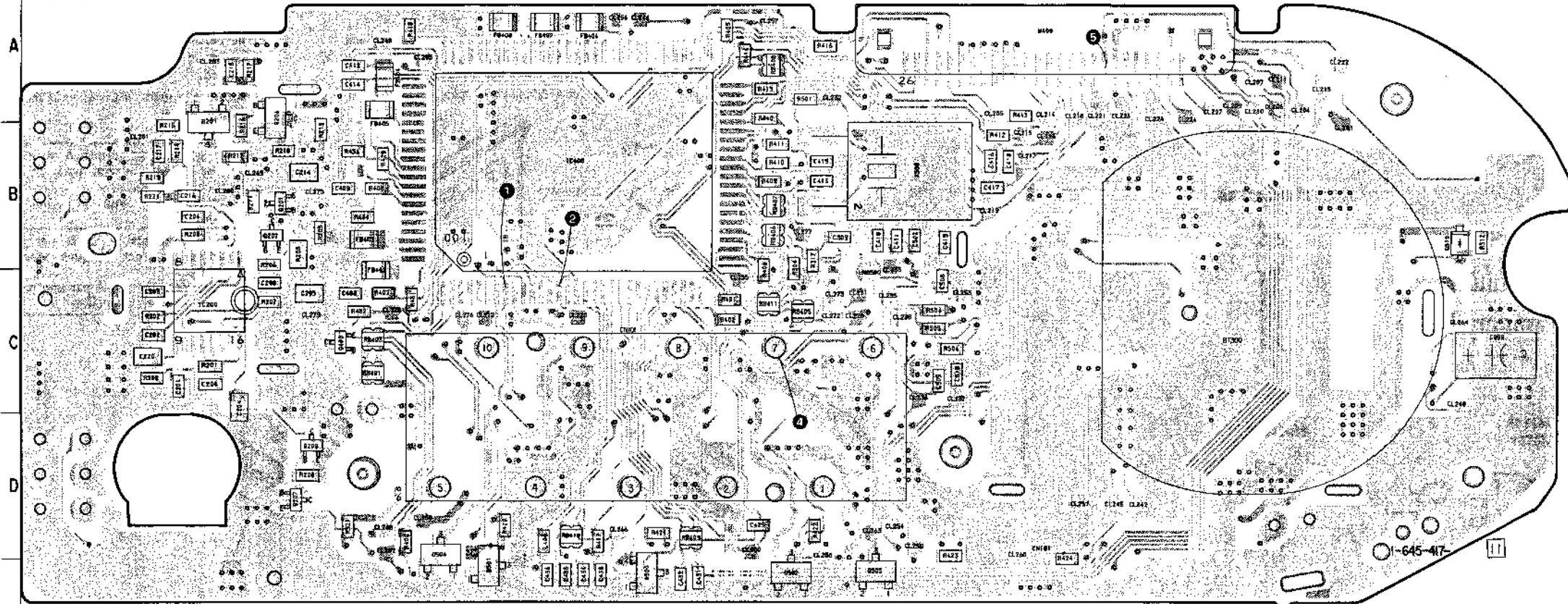
	VIDEO SIGNAL	AUDIO SIGNAL
REC	CHROMA	Y
PB	Y/CHROMA	

Q203, 205
PWM SWITCHING

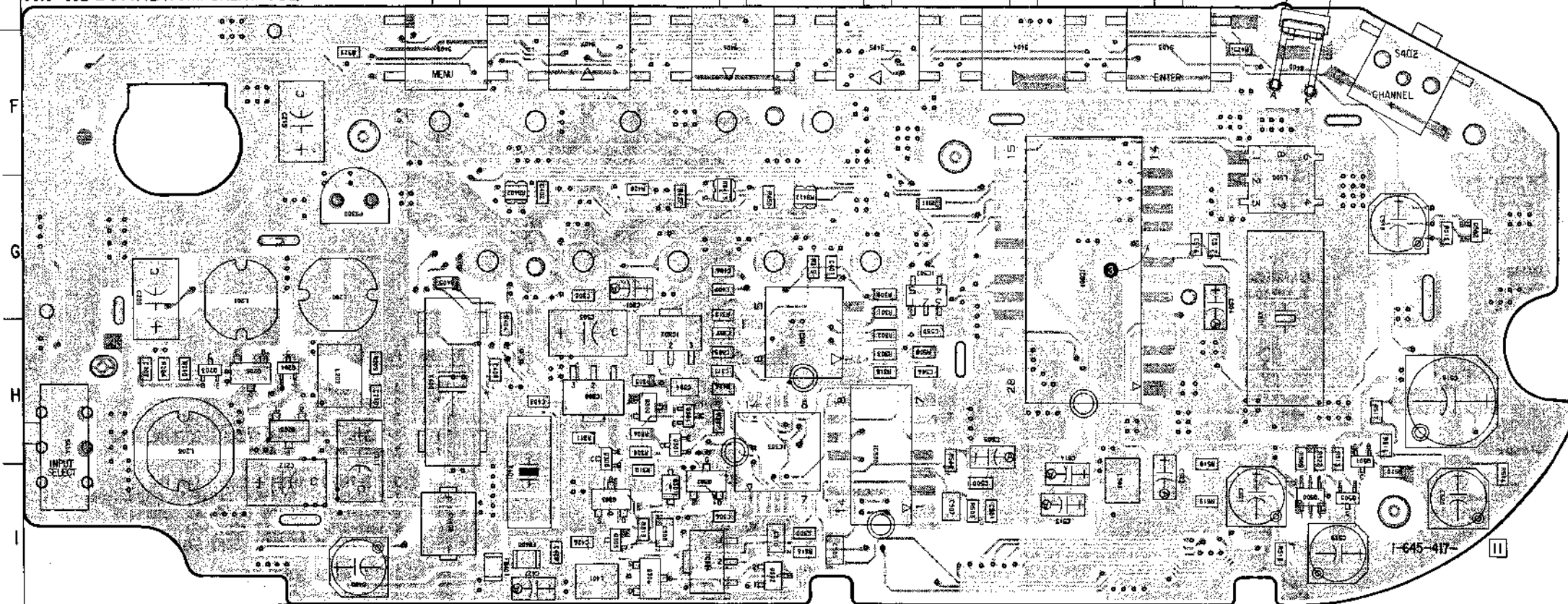
Q201, 202, 204
PWM SWITCHING

Q206
PWM
SWITCHING

TM-118 BOARD(CONDUCTOR SIDE)



TM-118 BOARD(COMPONENT SIDE)



TM-118 BOARD

D200	H-2	Q200	D-2
D201	B-2	Q201	B-2
D300	H-5	Q202	B-2
D301	I-5	Q203	H-2
D302	I-6	Q204	H-2
D400	F-9	Q205	H-2
D500	E-5	Q206	A-2
D501	E-4	Q207	D-2
D502	E-6	Q300	I-5
D503	E-6	Q301	H-5
D504	D-3	Q302	I-5
D510	B-10	Q303	I-5
		Q304	H-5
IC200	C-2	Q305	I-5
IC300	H-4	Q306	I-5
IC301	H-8	Q400	C-3
IC302	H-5	Q500	I-9
IC303	H-6	Q501	I-10
IC304	I-5	Q502	G-11
IC400	B-4	Q503	I-10
IC500	H-6		
IC501	G-8		
IC502	G-7		

(DIODE)

D200	8-719-802-36	DIODE	1SS250
D201	8-719-938-75	DIODE	SB05-05CP
D300	8-719-941-09	DIODE	DAP202U
D301	8-719-421-27	DIODE	MA728
D302	8-719-941-09	DIODE	DAP202U
D400	8-719-800-56	LED	TLUR164
D500	8-719-420-81	DIODE	MA3075WA
D501	8-719-420-81	DIODE	MA3075WA
D502	8-719-106-80	DIODE	RD13M-B2
D503	8-719-106-80	DIODE	RD13M-B2
D504	8-719-106-80	DIODE	RD13M-B2
D510	8-719-421-15	DIODE	MA8027

(IC)

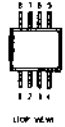
IC200	8-759-990-45	IC	MB3775PFV
IC300	8-759-512-69	IC	S-81350HG-KD
IC301	8-759-720-45	IC	CAT35C202K
IC302	8-759-946-03	IC	S-8054ALR-LN-S
IC303	8-759-999-02	IC	TL1596CDB
IC304	8-759-940-33	IC	S-8052ALO-LG-S
IC400	8-759-083-08	IC	MB897948PF-177
IC500	8-759-083-11	IC	LA7217M
IC501	8-759-098-47	IC	MB90075PF-122
IC502	8-759-209-97	IC	TC4S81F

(TRANSISTOR)

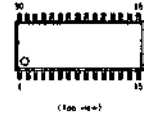
Q200	8-729-428-88	TRANSISTOR	UN9113
Q201	8-729-425-64	TRANSISTOR	2SD2216Q
Q202	8-729-425-50	TRANSISTOR	2SB1462Q
Q203	8-729-425-64	TRANSISTOR	2SD2216Q
Q204	8-729-425-64	TRANSISTOR	2SD2216Q
Q205	8-729-141-48	TRANSISTOR	2SB624-BV345
Q206	8-729-601-58	TRANSISTOR	2SC3053-C
Q207	8-729-429-18	TRANSISTOR	UN9213
Q300	8-729-425-50	TRANSISTOR	2SB1462Q
Q301	8-729-425-64	TRANSISTOR	2SD2216Q
Q302	8-729-220-93	TRANSISTOR	2SK209-G
Q303	8-729-220-93	TRANSISTOR	2SK209-G
Q304	8-729-429-18	TRANSISTOR	UN9213
Q305	8-729-425-64	TRANSISTOR	2SD2216Q
Q306	8-729-220-93	TRANSISTOR	2SK209-G
Q400	8-729-929-26	TRANSISTOR	DTC114TE
Q500	8-729-427-72	TRANSISTOR	XP4501
Q501	8-729-425-64	TRANSISTOR	2SD2216Q
Q502	8-729-425-50	TRANSISTOR	2SB1462Q
Q503	8-729-425-50	TRANSISTOR	2SB1462Q

4-3. SEMICONDUCTOR

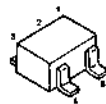
AK6420F



CXA8006M



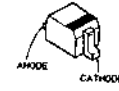
TC4S11F
TC4S66F
TC4S81F



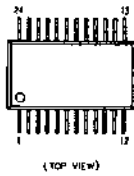
2SB1121



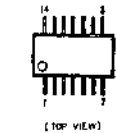
MA8027
MA8091



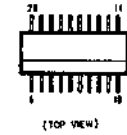
BA3570FS
LB8111V



CXL5502M
LA7217M
TL1596CDB



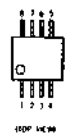
μPD6453GT-622



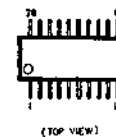
2SB1202FA5



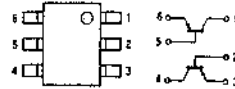
CAT35C202K
CXA1211M
NJM2073M



M62352GP
MPC1720M



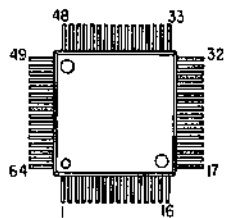
FC149
UMT1



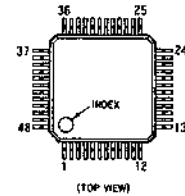
2SK1469



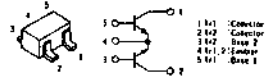
CXA1207AR



MB3785APFV-G-BND-ER



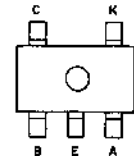
FMG4



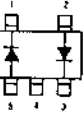
BR1102W



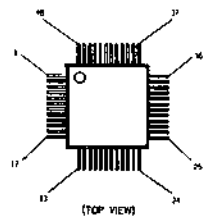
FP102



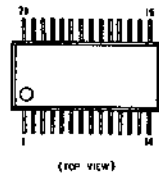
FC806



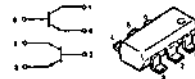
CXA1208R



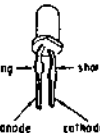
MB90075PF



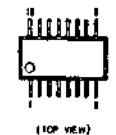
UMH2
UMX1
XN4213



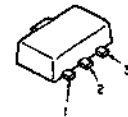
GL-3EG8
TLUR164



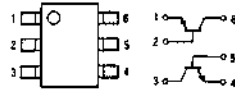
CXA1452N
CXD2107M
MB3775PFV
MC10H116M
XRU4052BF



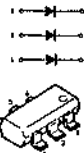
S-8053ALO-LG-S
S-8054ALR-LN-S
S-81350HG-KD



XP4501



IMN10



SECTION 5
EXPLODED VIEWS

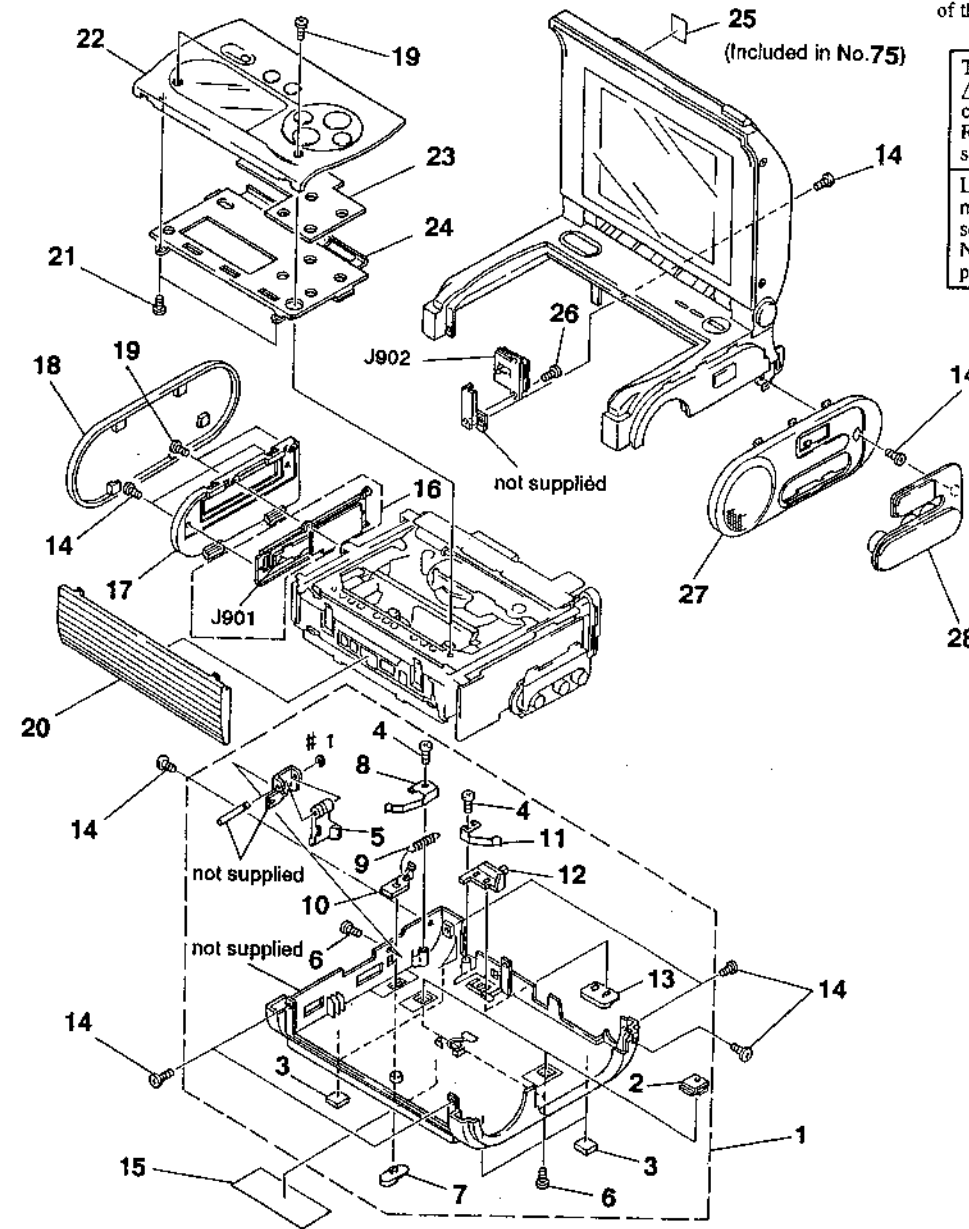
NOTE:

• -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.

• 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.

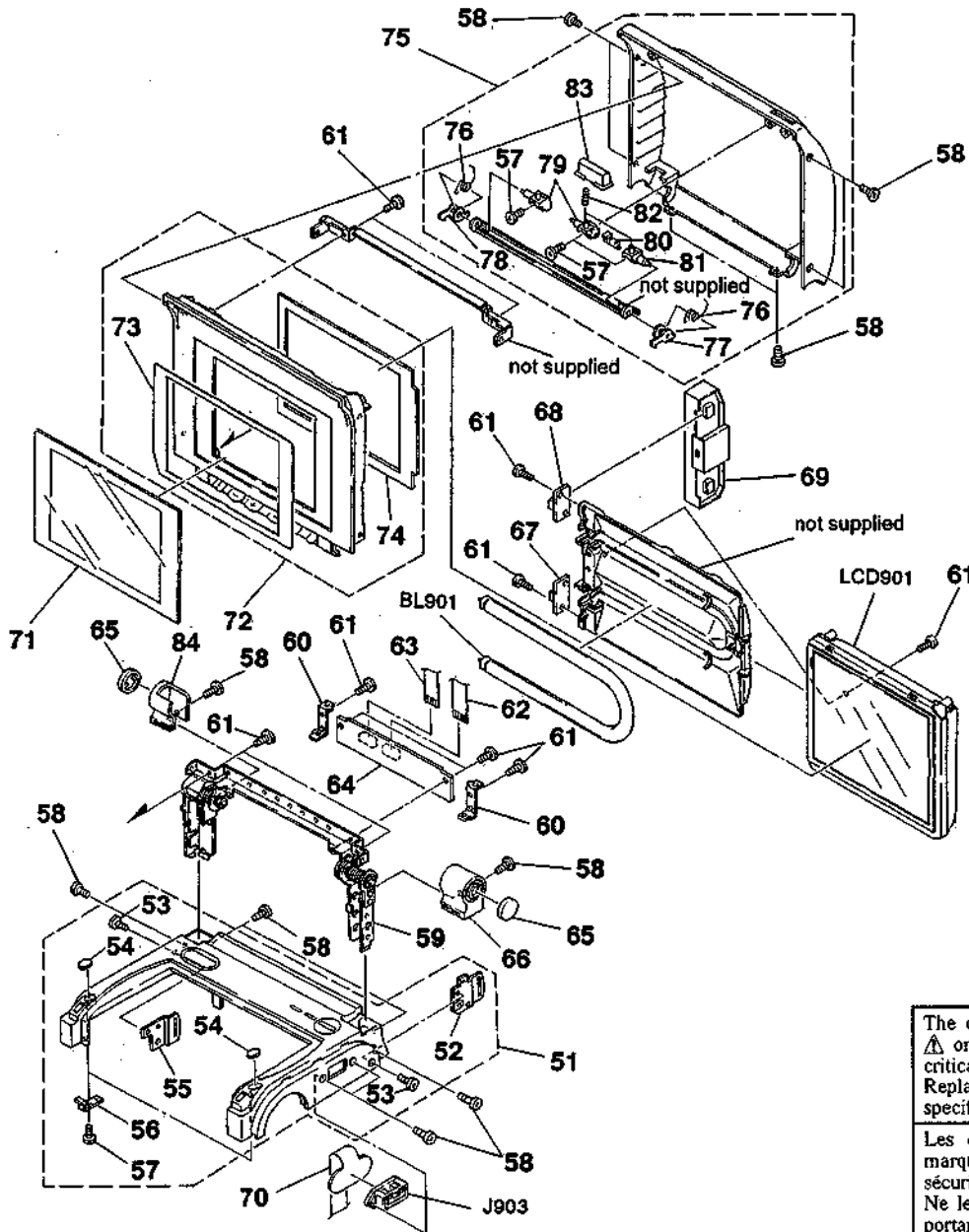
5-1. CABINET ASSEMBLY



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3942-026-1	CABINET ASSY, LOWER		* 16	A-7071-698-A	JK-86 BOARD, COMPLETE	
2	3-736-496-01	BRACKET, STAND		17	3-949-424-01	RAIL, TU	
* 3	3-949-383-01	FOOT, RUBBER		18	3-949-425-01	CABINET (L), SIDE	
4	3-945-884-01	SCREW (2X5)		19	3-733-912-41	SCREW (M2X9), SPECIAL HEAD	
5	3-949-471-01	KNOB, TU LOCK		20	X-3941-982-1	LID ASSY, LS	
6	3-713-786-81	SCREW (M2X2.5)		21	3-713-790-11	SCREW (M2X5), TAPPING, P3	
7	3-949-465-01	BUTTON, TU RELEASE		22	X-3942-029-1	LID ASSY, CASSETTE COMPARTMENT	
* 8	3-949-472-01	SPRING, TU LOCK		* 23	A-7071-699-A	FU-109 (A) BOARD, COMPLETE	
9	3-949-470-01	SPRING, COIL		24	X-3942-225-1	BRACKET ASSY, FU	
* 10	3-949-473-01	SLIDER, TU		* 25	3-703-713-41	STICKER, SONY SYMBOL (10)	
* 11	3-949-469-01	SPRING, BATT LOCK		26	3-713-786-51	SCREW (M2X3)	
* 12	3-949-468-01	SLIDER, BATT		27	X-3942-022-1	CABINET (R) ASSY, SIDE	
13	3-949-467-01	BUTTON, BATT RELEASE		28	3-949-422-01	COVER, JACK	
14	3-719-381-01	SCREW (M2X4)		J901	1-537-449-11	TERMINAL BOARD (TUNER/CAMERA)	
* 15	3-949-754-01	LABEL, MODEL NUMBER (U)		J902	1-537-420-21	TERMINAL BOARD (BATTERY)	

5-2. UPPER CABINET AND SC BLOCK ASSEMBLIES

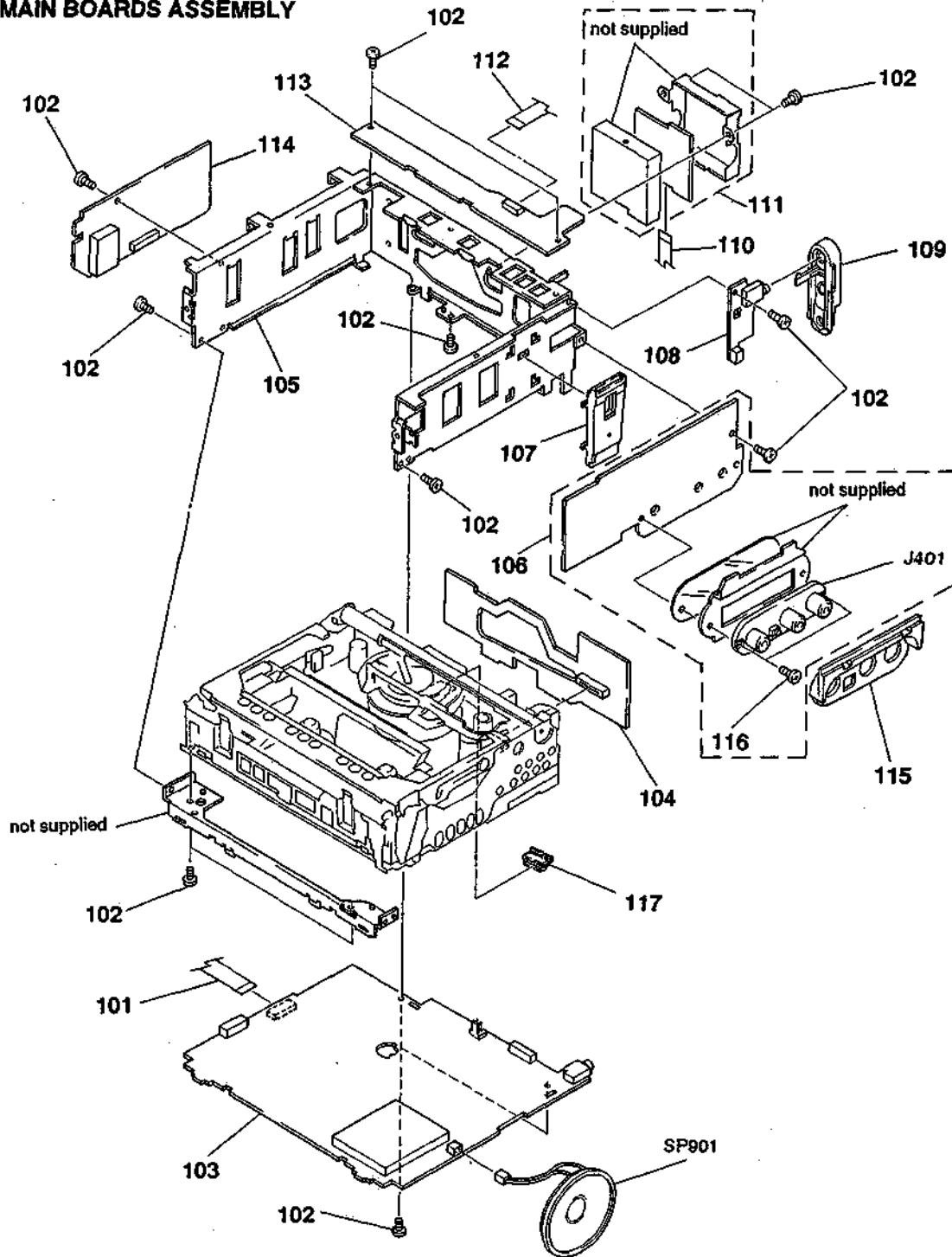


The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3942-036-1	CABINET ASSY, UPPER		70	1-645-369-11	FP-621 FLEXIBLE BOARD	
52	3-949-461-01	BRACKET (R), STRAP		71	3-949-413-01	WINDOW, SC	
53	3-713-786-81	SCREW (M2X2.5)		72	X-3942-035-1	CABINET ASSY, LOWER, SC	
54	3-949-464-01	CUSHION		73	3-949-408-01	SHEET, ADHESIVE, SC WINDOW	
55	3-949-462-01	BRACKET (L), STRAP		74	3-949-414-01	SHEET, DUST PROTECTION	
56	3-949-487-01	PLATE, LOCK		75	X-3942-034-1	CABINET ASSY, UPPER, SC	
57	3-945-884-01	SCREW (2X5)		76	3-949-426-01	SPRING, LOCK	
58	3-719-381-01	SCREW (M2X4)		* 77	3-949-415-01	ARM (R), LOCK	
59	X-3941-986-1	FRAME ASSY, HINGE		* 78	3-949-419-01	ARM (L), LOCK	
* 60	3-949-409-01	REINFORCEMENT, HINGE		79	3-949-430-01	FULCRUM BLOCK (B)	
61	3-713-790-11	SCREW (M2X5), TAPPING, P3		80	3-949-428-01	PLATE, SLIDE, LOCK	
62	1-645-364-11	FP-563 FLEXIBLE BOARD		81	3-949-427-01	FULCRUM BLOCK (A)	
63	1-645-368-11	FP-568 FLEXIBLE BOARD		82	3-944-333-01	SPRING, COMPRESSION	
* 64	A-7071-700-A VR-39 (A) BOARD, COMPLETE			83	3-949-417-01	BUTTON, RELEASE	
65	3-949-411-01	CAP		84	3-949-412-01	COVER, L	
66	3-949-406-01	COVER, R		BL901	1-517-126-11	FLUORESCENT TUBE, HEAT CATHODE	
* 67	A-7071-714-A LA-23 BOARD, COMPLETE			J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE) 12P (A/V OUT)	
* 68	A-7071-713-A LA-22 BOARD, COMPLETE			LCD901	1-809-500-11	MODULE, COLOR LIQUID CRYSTAL	
▲ 69	1-466-791-11	INVERTER UNIT, DC/AC (DPS-28)					

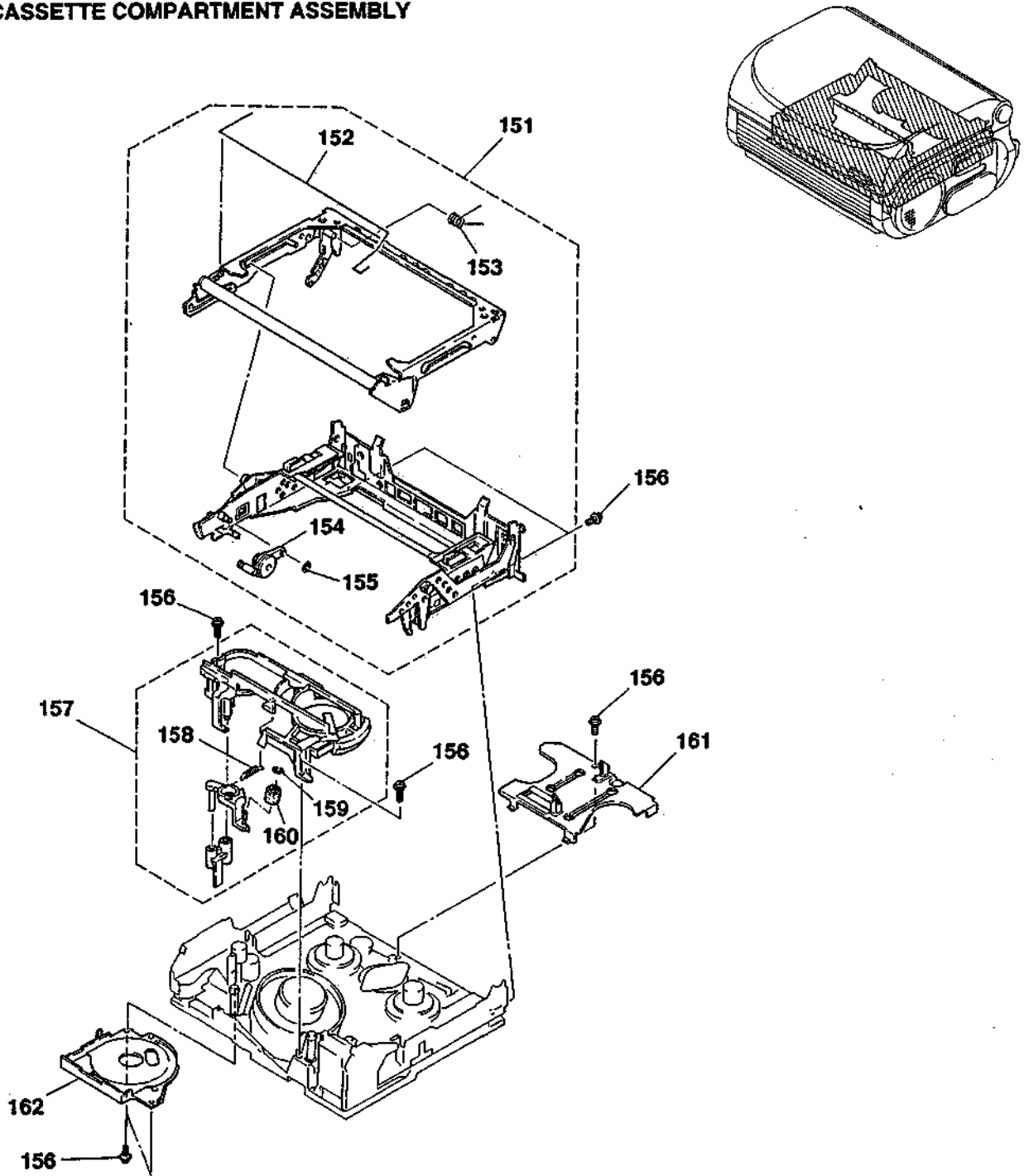
5-3. MAIN BOARDS ASSEMBLY



Ref. No.	Part No.	Description
101	1-645-995-11	FP-629 FLEXIBLE BOARD
102	3-713-786-51	SCREW (M2X3)
103	A-7053-386-A	MA-137 (B) BOARD, COMPLETE
* 104	A-7063-329-A	SL-26 BOARD, COMPLETE
105	X-3942-265-1	FRAME ASSY
106	A-7053-385-A	AU-136 (B) BOARD, COMPLETE
* 107	3-949-443-01	HOLDER, FLEXIBLE
* 108	A-7071-696-A	HP-84 (A) BOARD, COMPLETE
109	3-949-407-11	CAP, HP
110	1-645-367-11	FP-566 FLEXIBLE BOARD

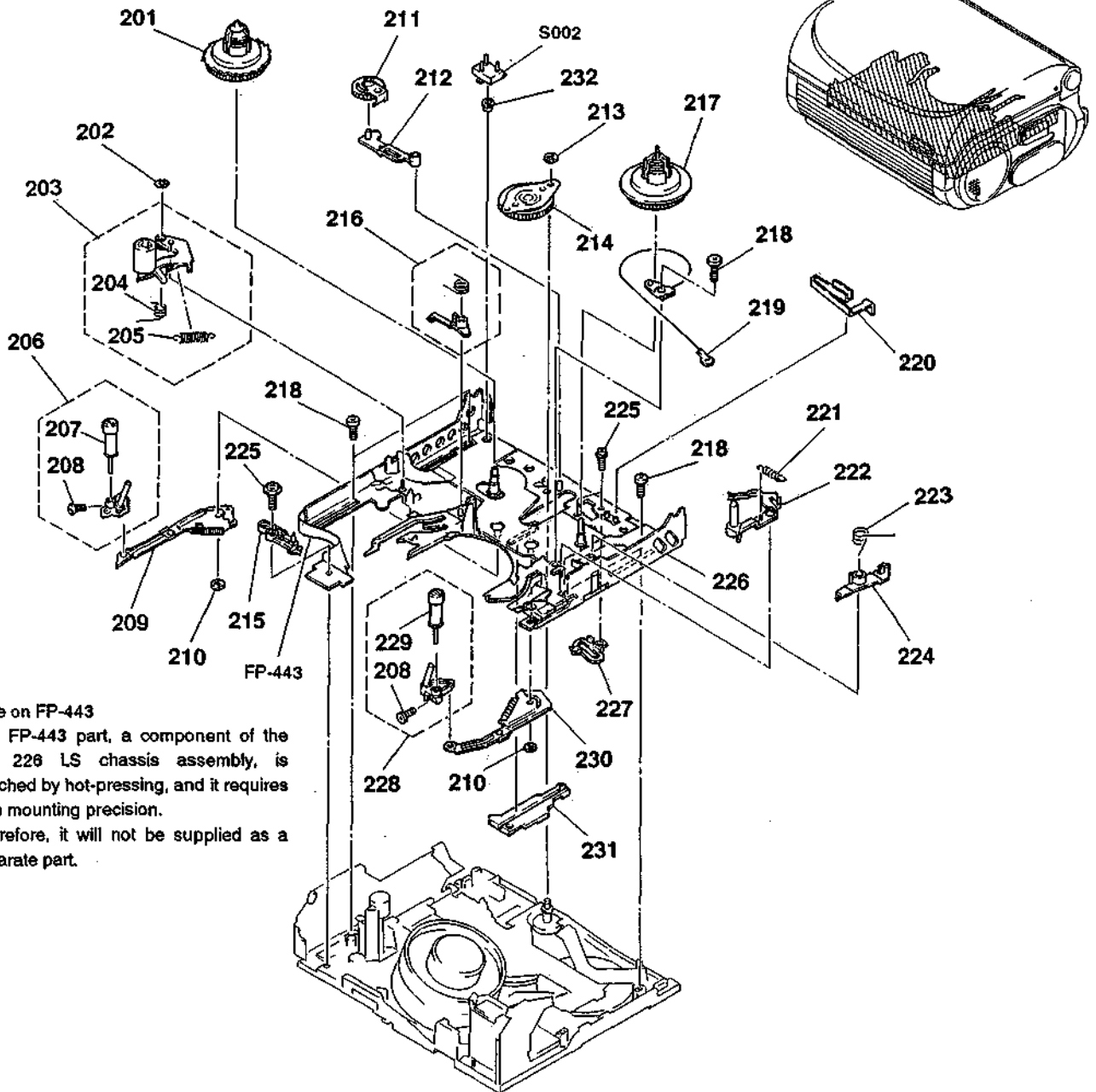
Remark	Ref. No.	Part No.	Description	Remark
	111	A-7063-328-A	RP-144 BOARD, COMPLETE	
	112	1-645-366-11	FP-565 FLEXIBLE BOARD	
	* 113	A-7071-697-A	PE-13 BOARD, COMPLETE	
	114	A-7053-327-A	RG-25 (A) BOARD, COMPLETE	
	115	3-949-442-01	PLATE, JACK	
	116	3-719-381-01	SCREW (M2X4)	
	117	1-691-471-11	CONNECTOR, TRANSLATION 11P	
	J401	1-569-556-11	JACK (VIDEO/AUDIO)	
	SP901	1-504-137-11	SPEAKER (3.6CM)	

5-4. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	A-7040-312-A	CASSETTE COMPARTMENT BLOCK ASSY		157	A-7040-309-A	PROTECT (BASE) BLOCK ASSY	
152	3-945-773-01	BAR, TORSION		158	3-945-760-01	SPRING, TENSION	
153	3-945-771-01	SPRING, TORSION		159	3-321-393-01	WASHER, STOPPER	
154	X-3941-287-2	DAMPER ASSY		160	X-3726-817-3	ROLLER ASSY, HC	
155	3-315-384-31	WASHER, STOPPER		161	X-3941-280-1	RETAINER ASSY, GOOSENECK	
156	3-947-503-01	SCREW (M1. 4X2. 5)		162	3-945-733-01	COVER, CAPSTAN	

5-5. LS CHASSIS ASSEMBLY

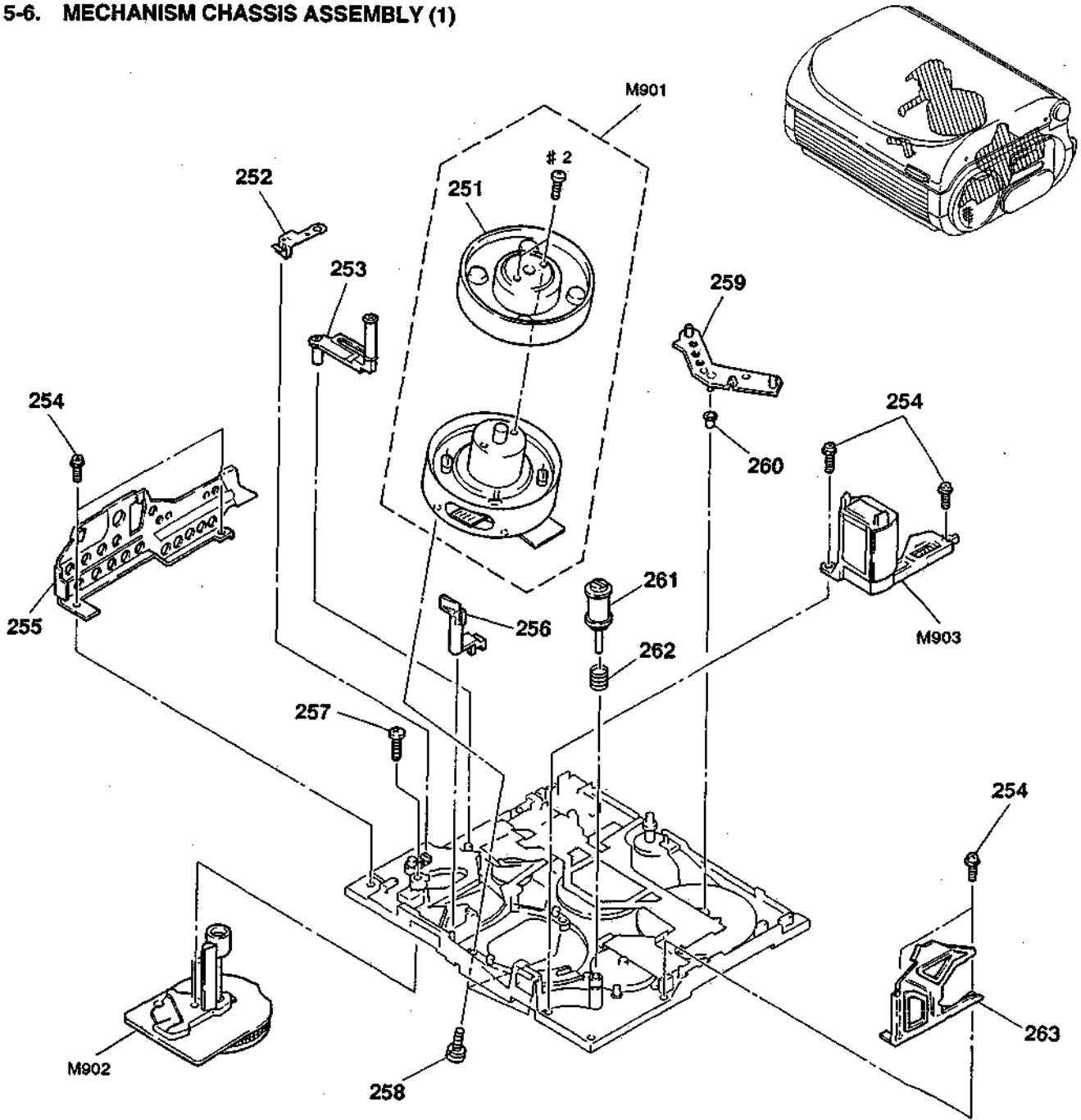


Note on FP-443

The FP-443 part, a component of the No. 226 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision. Therefore, it will not be supplied as a separate part.

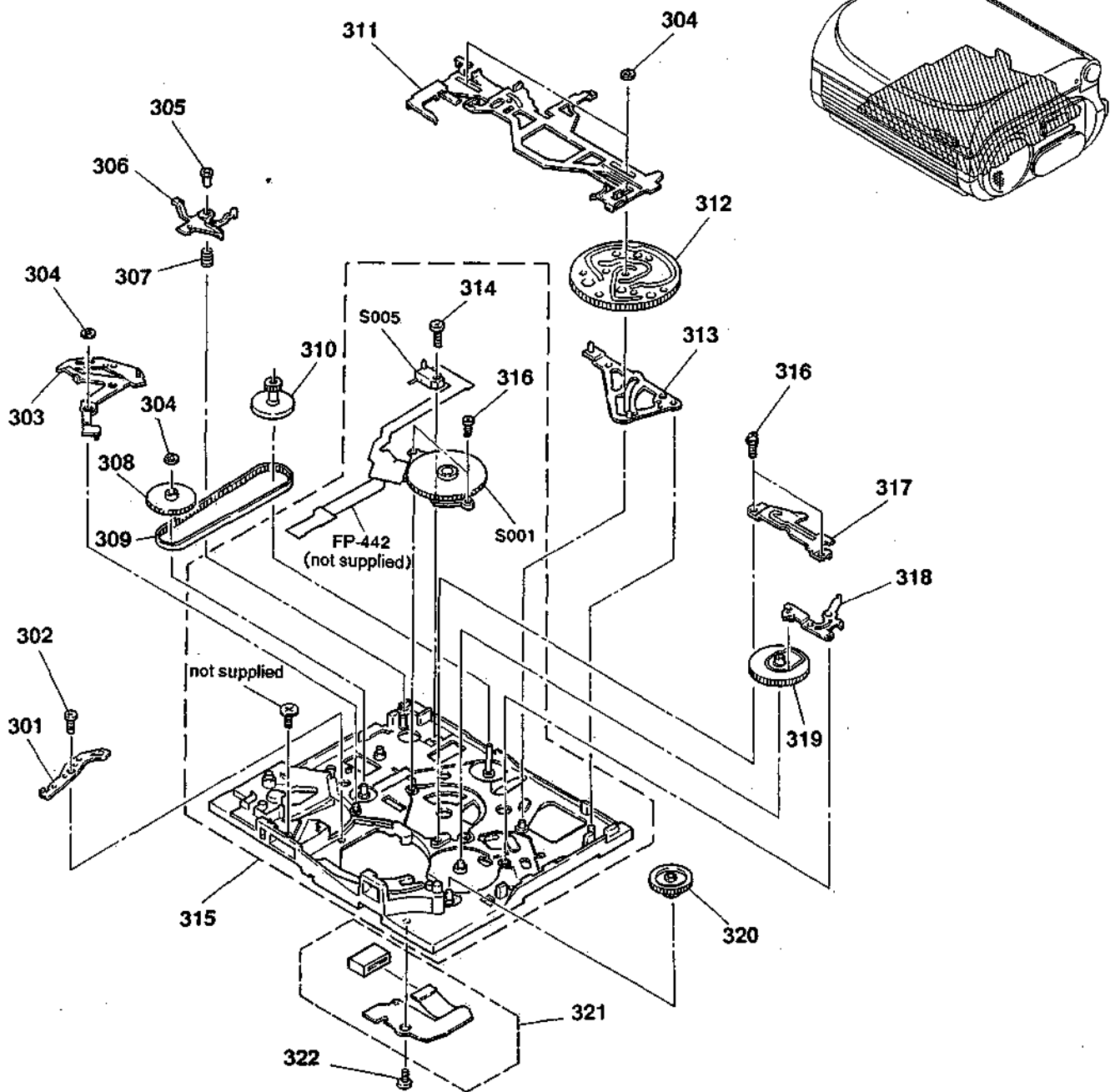
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	X-3941-274-1	TABLE ASSY, REEL, T		218	3-945-756-01	SCREW (M1. 4X3)	
202	3-331-007-21	WASHER		219	X-3941-277-1	STRING BLOCK ASSY	
203	X-3941-271-1	ARM ASSY, PINCH		220	3-945-801-01	BRAKE, S SOFT	
204	3-945-743-01	SPRING, TORSION		221	3-948-810-01	SPRING, TENSION	
205	3-945-783-01	SPRING, TENSION		222	X-3941-276-1	TG1 ASSY	
206	A-7040-322-A	GUIDE (BASE) (T) BLOCK ASSY (2)		223	3-945-752-01	SPRING, TORSION	
207	X-3941-756-1	ROLLER ASSY (2), TG6		224	3-945-799-01	BRAKE, S HARD	
208	3-947-504-01	SCREW (M1. 2X2)		225	3-947-503-01	SCREW (M1. 4X2. 5)	
209	X-3941-267-1	ARM (T) ASSY, GUIDE		226	X-3941-265-1	CHASSIS ASSY, LS	
210	3-669-465-00	WASHER (1. 5) STOPPER		227	3-945-784-01	PLATE, CAM, LS	
211	X-3941-273-1	SOFT ASSY, T		228	A-7040-323-A	GUIDE (BASE) (S) BLOCK ASSY (2)	
212	3-945-753-01	ARM, T SOFT		229	X-3941-755-1	ROLLER ASSY (2), TG3	
213	3-726-829-01	WASHER, STOPPER		230	X-3941-266-1	ARM (S) ASSY, GUIDE	
214	X-3941-279-1	GEAR ASSY, GOOSENECK		231	3-945-837-01	SLIDER, GL	
215	3-947-644-01	RETAINER, TG5 (BASE)		232	3-949-881-01	SLEEVE	
216	A-7040-321-A	CLAW BLOCK ASSY, T HARD		S002	1-572-987-11	SWITCH, PUSH (3 KEY)	
217	X-3941-275-1	TABLE ASSY, REEL, S				(REC PROOF, ME/MP, MP/MP-HG)	

5-6. MECHANISM CHASSIS ASSEMBLY (1)



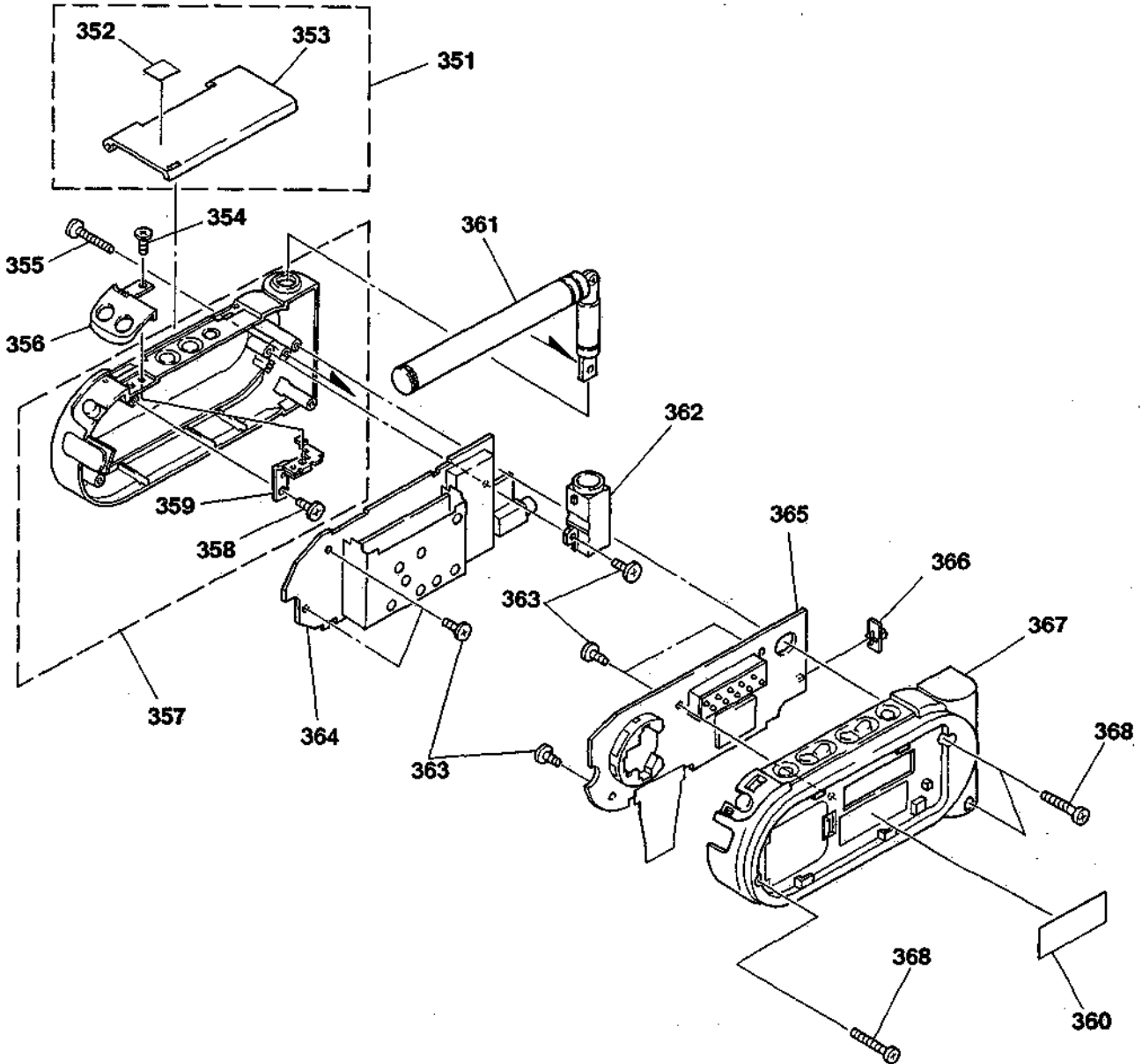
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	A-7049-568-A	DRUM ASSY, UPPER (DGR-93-R)		259	3-945-701-01	ARM, LS	
252	3-945-822-01	SPRING, LEAF, TG7 ARM		260	3-945-702-01	ROLLER, LS	
253	A-7040-305-A	ARM BLOCK ASSY, TG7		261	X-3941-193-1	ROLLER ASSY (2), TG2	
254	3-947-503-01	SCREW (M1.4X2.5)		262	3-945-774-01	SPRING, COMPRESSION	
255	X-3941-255-1	PLATE (T) ASSY, SIDE		263	3-945-691-01	PLATE (S), SIDE	
256	3-945-735-01	ARM, HC CONVERSION		M901	A-7048-635-A	DRUM ASSY (DGH-93A-R)	
257	3-713-786-71	SCREW (M2X5)		M902	8-835-492-01	MOTOR, DC SCE-0102A (CAPSTAN)	
258	3-686-493-01	SCREW (M2X5), P1		M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	

5-7. MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
301	3-945-734-01	ARM, HC DRIVING		313	X-3941-258-1	ARM ASSY, GL	
302	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD		314	3-713-786-71	SCREW (M2X5)	
303	X-3941-259-1	ARM ASSY, PINCH PRESS		315	A-7040-303-A	CHASSIS ASSY, MECHANICAL	
304	3-726-829-01	WASHER, STOPPER		316	3-947-503-01	SCREW (M1.4X2.5)	
305	3-945-730-01	SLEEVE, EJECT		317	3-945-722-01	RETAINER, GEAR	
306	3-945-706-01	LEVER, EJECT		318	X-3941-257-1	ARM ASSY, FF	
307	3-945-729-01	SPRING, COMPRESSION		319	3-945-697-01	GEAR (B), L	
308	X-3941-256-1	GEAR ASSY, CHANGE		320	3-945-700-01	GEAR (A), L	
309	3-944-539-01	BELT, RELAY		321	A-7040-311-A	FP-444 ASSY	
310	3-945-695-01	PULLEY, RELAY		322	3-945-756-01	SCREW (M1.4X3)	
311	X-3941-260-1	SLIDER ASSY, M		S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
312	3-945-696-01	CAM		S005	1-570-771-21	SWITCH (C DOWN)	

5-8. TUNER/TIMER UNIT ASSEMBLY



Ref. No.	Part No.	Description
351	X-3942-226-1	DOOR ASSY, BUTTON
* 352	3-703-713-41	STICKER, SONY SYMBOL (10)
353	3-949-503-01	DOOR, BUTTON
354	3-719-381-01	SCREW (M2X4)
355	3-740-546-01	SCREW (M2X10)
356	X-3942-048-1	PANEL ASSY, FRONT
357	X-3942-047-1	CABINET (L) ASSY
358	3-713-786-21	SCREW (M2X3)
359	X-3942-163-1	NUT ASSY, PLATE
* 360	3-949-752-01	LABEL, MODEL NUMBER

Remark	Ref. No.	Part No.	Description	Remark
	361	1-501-456-11	ANTENNA, TELESCOPIC	
	* 362	3-949-513-01	HOLDER, ANTENNA	
	363	3-713-790-11	SCREW (M2X5), TAPPING, P3	
	364	A-7063-380-A	TU-142 (B) BOARD, COMPLETE	
	365	A-7063-381-A	TM-118 (B) BOARD, COMPLETE	
	366	3-949-512-01	BUTTON, INPUT SELECTION	
	367	X-3942-046-1	CABINET (R) ASSY	
	368	3-713-790-31	SCREW (M2X8), TAPPING, P3	

**SECTION 6
ELECTRICAL PARTS LIST**

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- Hardware (# mark) list is given in the last of this parts list.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark		
*	A-7053-385-A	AU-136 BOARD, COMPLETE *****		C423	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V		
	3-719-381-01	SCREW (M2X4) (CAPACITOR)		C424	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V		
C052	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C425	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	
C053	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	C426	1-126-607-11	ELECT CHIP 47uF	20%	4V
C054	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C427	1-162-968-11	CERAMIC CHIP 0.0047uF	10%	50V
C055	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C428	1-162-968-11	CERAMIC CHIP 0.0047uF	10%	50V
C056	1-135-145-11	TANTALUM CHIP 0.47uF	10%	35V	C429	1-135-259-11	TANTALUM CHIP 10uF	20%	6.3V
C057	1-135-177-21	TANTALUM CHIP 1uF	20%	20V	C430	1-126-207-11	ELECT CHIP 33uF	20%	4V
C058	1-128-004-11	ELECT CHIP 10uF	20%	16V	C431	1-126-607-11	ELECT CHIP 47uF	20%	4V
C059	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	C432	1-126-607-11	ELECT CHIP 47uF	20%	4V
C060	1-126-205-11	ELECT CHIP 47uF	20%	6.3V	C433	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C061	1-128-003-11	ELECT CHIP 22uF	20%	4V	C434	1-126-205-11	ELECT CHIP 47uF	20%	6.3V
C062	1-164-346-11	CERAMIC CHIP 1uF		16V	C435	1-162-968-11	CERAMIC CHIP 0.0047uF	10%	50V
C063	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V	C436	1-162-968-11	CERAMIC CHIP 0.0047uF	10%	50V
C064	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C437	1-126-607-11	ELECT CHIP 47uF	20%	4V
C065	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	C438	1-162-968-11	CERAMIC CHIP 0.0047uF	10%	50V
C066	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V	C439	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V
C067	1-164-004-11	CERAMIC CHIP 0.1uF	10%	25V	C440	1-135-259-11	TANTAL. CHIP 10uF	20%	6.3V
C068	1-135-156-21	TANTALUM CHIP 6.8uF	10%	10V	C441	1-135-149-21	TANTALUM CHIP 2.2uF	20%	10V
C069	1-128-004-11	ELECT CHIP 10uF	20%	16V	C442	1-162-974-11	CERAMIC CHIP 0.01uF		50V
C070	1-162-974-11	CERAMIC CHIP 0.01uF		50V	C443	1-135-259-11	TANTAL. CHIP 10uF	20%	6.3V
C071	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C444	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C072	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V	C445	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C073	1-164-346-11	CERAMIC CHIP 1uF		16V	C446	1-135-259-11	TANTAL. CHIP 10uF	20%	6.3V
C074	1-164-360-11	CERAMIC CHIP 0.1uF		16V	C447	1-135-177-21	TANTALUM CHIP 1uF	20%	20V
C401	1-124-778-00	ELECT CHIP 22uF	20%	6.3V	C448	1-135-145-11	TANTALUM CHIP 0.47uF	10%	35V
C404	1-162-974-11	CERAMIC CHIP 0.01uF		50V	C449	1-135-145-11	TANTALUM CHIP 0.47uF	10%	35V
C405	1-162-974-11	CERAMIC CHIP 0.01uF		50V	C450	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C406	1-162-974-11	CERAMIC CHIP 0.01uF		50V	C451	1-163-809-11	CERAMIC CHIP 0.047uF	10%	25V
C407	1-162-971-11	CERAMIC CHIP 0.001uF		50V	C452	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C410	1-164-361-11	CERAMIC CHIP 0.047uF		16V	C453	1-135-177-21	TANTALUM CHIP 1uF	20%	20V
C411	1-164-361-11	CERAMIC CHIP 0.047uF		16V	C454	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C412	1-128-003-11	ELECT CHIP 22uF	20%	4V	C455	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C413	1-128-003-11	ELECT CHIP 22uF	20%	4V	C456	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C414	1-128-003-11	ELECT CHIP 22uF	20%	4V	C470	1-164-346-11	CERAMIC CHIP 1uF		16V
C415	1-128-003-11	ELECT CHIP 22uF	20%	4V	C471	1-164-346-11	CERAMIC CHIP 1uF		16V
C416	1-164-633-11	CERAMIC CHIP 0.1uF	10%	25V	C472	1-164-346-11	CERAMIC CHIP 1uF		16V
C420	1-135-259-11	TANTAL. CHIP 10uF	20%	6.3V	C473	1-164-346-11	CERAMIC CHIP 1uF		16V
C421	1-162-974-11	CERAMIC CHIP 0.01uF		50V	C477	1-126-205-11	ELECT CHIP 47uF	20%	6.3V
C422	1-135-149-21	TANTALUM CHIP 2.2uF	20%	10V	C478	1-164-505-11	CERAMIC CHIP 2.2uF		16V
					C479	1-164-505-11	CERAMIC CHIP 2.2uF		16V
					C488	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V
					C489	1-135-181-21	TANTALUM CHIP 4.7uF	20%	6.3V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C491	1-164-346-11	CERAMIC CHIP 1uF	16V	FL402	1-236-837-21	FILTER, BAND PASS	
C492	1-162-974-11	CERAMIC CHIP 0.01uF	50V			(IC)	
C493	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	IC041	8-759-510-56	IC BA3570FS	
C494	1-162-974-11	CERAMIC CHIP 0.01uF	50V	IC042	8-759-701-02	IC NJM2073M	
C495	1-164-360-11	CERAMIC CHIP 0.1uF	16V	IC043	8-759-234-77	IC TC4S66F	
C496	1-135-211-11	TANTAL. CHIP 6.8uF	20% 6.3V	IC401	8-759-077-12	IC CXA1542R	
C497	1-164-360-11	CERAMIC CHIP 0.1uF	16V	IC402	8-752-334-42	IC CXD2106G	
C498	1-162-974-11	CERAMIC CHIP 0.01uF	50V	IC403	8-752-053-21	IC CXA1211M	
C501	1-164-346-11	CERAMIC CHIP 1uF	16V	IC404	8-759-108-09	IC uPD4012BG	
C502	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	IC406	8-759-108-09	IC uPD4012BG	
C503	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V			(JACK)	
C504	1-164-346-11	CERAMIC CHIP 1uF	16V	J401	1-569-556-11	JACK (VIDEO, AUDIO)	
C510	1-164-346-11	CERAMIC CHIP 1uF	16V			(COIL)	
C511	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	L052	1-412-031-11	INDUCTOR CHIP 47uH	
C512	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	L401	1-412-031-11	INDUCTOR CHIP 47uH	
C513	1-164-346-11	CERAMIC CHIP 1uF	16V	L402	1-412-029-11	INDUCTOR CHIP 10uH	
C530	1-164-346-11	CERAMIC CHIP 1uF	16V			(LINK, IC)	
C531	1-164-346-11	CERAMIC CHIP 1uF	16V	△PS401	1-576-124-21	LINK, IC CCP2E25 (1A)	
C532	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	△PS402	1-576-124-21	LINK, IC CCP2E25 (1A)	
C533	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V			(TRANSISTOR)	
C541	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q051	8-729-928-81	TRANSISTOR DTC144EE	
C542	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q052	8-729-202-38	TRANSISTOR 2SC3326N-A	
C543	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q053	8-729-202-38	TRANSISTOR 2SC3326N-A	
C544	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q054	8-729-928-87	TRANSISTOR DTC124EE	
C545	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q055	8-729-927-62	TRANSISTOR UMX1	
C546	1-162-974-11	CERAMIC CHIP 0.01uF	50V	Q056	8-729-928-81	TRANSISTOR DTC144EE	
C547	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	Q057	8-729-141-48	TRANSISTOR 2SB624-BV345	
C548	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V	Q401	8-729-927-62	TRANSISTOR UMX1	
C549	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	Q402	8-729-927-XX	TRANSISTOR 2SC4617R	
C570	1-128-007-11	ELECT CHIP 2.2uF	20% 35V	Q404	8-729-927-XX	TRANSISTOR 2SC4617R	
C571	1-126-205-11	ELECT CHIP 47uF	20% 6.3V	Q405	8-729-927-XX	TRANSISTOR 2SC4617R	
C580	1-164-346-11	CERAMIC CHIP 1uF	16V	Q406	8-729-930-13	TRANSISTOR UMH2	
C581	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V	Q408	8-729-927-XX	TRANSISTOR 2SC4617R	
C582	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V	Q409	8-729-927-XX	TRANSISTOR 2SC4617R	
C583	1-126-205-11	ELECT CHIP 47uF	20% 6.3V	Q410	8-729-927-62	TRANSISTOR UMX1	
C591	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	Q411	8-729-927-XX	TRANSISTOR 2SC4617R	
C592	1-163-058-00	CERAMIC CHIP 0.0082uF	10% 50V	Q412	8-729-928-81	TRANSISTOR DTC144EE	
C593	1-135-259-11	TANTALUM CHIP 10uF	20% 6.3V	Q413	8-729-927-62	TRANSISTOR UMX1	
		(DIODE)		Q414	8-729-927-XX	TRANSISTOR 2SC4617R	
D054	8-719-989-03	DIODE DAN222		Q415	8-729-928-19	TRANSISTOR 2SA1774R	
D055	8-719-989-03	DIODE DAN222		Q416	8-729-928-81	TRANSISTOR DTC144EE	
D401	8-719-989-03	DIODE DAN222		Q417	8-729-928-19	TRANSISTOR 2SA1774R	
D402	8-719-989-00	DIODE DA221		Q418	8-729-927-XX	TRANSISTOR 2SC4617R	
D403	8-719-420-81	DIODE MA3075WA		Q419	8-729-141-48	TRANSISTOR 2SB624-BV345	
D404	8-719-420-81	DIODE MA3075WA		Q422	8-729-928-19	TRANSISTOR 2SA1774R	
D405	8-719-420-81	DIODE MA3075WA					
		(FILTER)					
FL401	1-236-838-21	FILTER, BAND PASS					

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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AU-136

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q423	8-729-927-XX	TRANSISTOR 2SC4617R		R408	1-216-864-11	METAL CHIP	0 5% 1/16W
Q424	8-729-927-XX	TRANSISTOR 2SC4617R		R410	1-216-864-11	METAL CHIP	0 5% 1/16W
Q425	8-729-903-10	TRANSISTOR FMM1		R411	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q426	8-729-927-XX	TRANSISTOR 2SC4617R		R412	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q427	8-729-928-19	TRANSISTOR 2SA1774R					
Q428	8-729-928-81	TRANSISTOR DTC144EE		R413	1-216-834-11	METAL CHIP	12K 5% 1/16W
Q501	8-729-927-XX	TRANSISTOR 2SC4617R		R414	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q502	8-729-927-XX	TRANSISTOR 2SC4617R		R415	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q591	8-729-927-XX	TRANSISTOR 2SC4617R		R416	1-216-834-11	METAL CHIP	12K 5% 1/16W
Q592	8-729-927-XX	TRANSISTOR 2SC4617R		R417	1-216-864-11	METAL CHIP	0 5% 1/16W
Q593	8-729-928-90	TRANSISTOR DTC114EE		R418	1-216-821-11	METAL CHIP	1K 5% 1/16W
Q594	8-729-928-81	TRANSISTOR DTC144EE		R420	1-216-816-11	METAL CHIP	390 5% 1/16W
		< RESISTOR >		R421	1-216-811-11	METAL CHIP	150 5% 1/16W
R051	1-216-845-11	METAL CHIP	100K 5% 1/16W	R422	1-216-839-11	METAL CHIP	33K 5% 1/16W
R052	1-216-845-11	METAL CHIP	100K 5% 1/16W	R425	1-218-740-11	METAL CHIP	100K 0.50% 1/16W
R053	1-216-845-11	METAL CHIP	100K 5% 1/16W	R427	1-218-740-11	METAL CHIP	100K 0.50% 1/16W
R054	1-216-845-11	METAL CHIP	100K 5% 1/16W	R430	1-216-836-11	METAL CHIP	18K 5% 1/16W
R055	1-216-833-11	METAL CHIP	10K 5% 1/16W	R431	1-216-833-11	METAL CHIP	10K 5% 1/16W
R056	1-216-821-11	METAL CHIP	1K 5% 1/16W	R432	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R057	1-216-857-11	METAL CHIP	1M 5% 1/16W	R433	1-216-857-11	METAL CHIP	1M 5% 1/16W
R058	1-216-833-11	METAL CHIP	10K 5% 1/16W	R434	1-216-834-11	METAL CHIP	12K 5% 1/16W
R059	1-216-821-11	METAL CHIP	1K 5% 1/16W	R435	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R061	1-216-015-00	METAL CHIP	39 5% 1/10W	R436	1-216-833-11	METAL CHIP	10K 5% 1/16W
R062	1-216-845-11	METAL CHIP	100K 5% 1/16W	R437	1-216-836-11	METAL CHIP	18K 5% 1/16W
R063	1-216-845-11	METAL CHIP	100K 5% 1/16W	R438	1-216-795-11	METAL CHIP	6.8K 0.50% 1/16W
R064	1-216-015-00	METAL CHIP	39 5% 1/10W	R439	1-216-295-00	METAL CHIP	0 5% 1/10W
R065	1-216-821-11	METAL CHIP	1K 5% 1/16W	R440	1-216-845-11	METAL CHIP	100K 5% 1/16W
R067	1-216-821-11	METAL CHIP	1K 5% 1/16W	R441	1-216-864-11	METAL CHIP	0 5% 1/16W
R068	1-216-833-11	METAL CHIP	10K 5% 1/16W	R442	1-216-839-11	METAL CHIP	33K 5% 1/16W
R069	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R443	1-216-845-11	METAL CHIP	100K 5% 1/16W
R070	1-216-833-11	METAL CHIP	10K 5% 1/16W	R444	1-216-864-11	METAL CHIP	0 5% 1/16W
R071	1-216-815-11	METAL CHIP	330 5% 1/16W	R445	1-218-740-11	METAL CHIP	100K 0.50% 1/16W
R072	1-216-833-11	METAL CHIP	10K 5% 1/16W	R446	1-218-714-11	METAL CHIP	8.2K 0.50% 1/16W
R073	1-216-789-11	METAL CHIP	2.2 5% 1/16W	R449	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R074	1-216-841-11	METAL CHIP	47K 5% 1/16W	R450	1-216-835-11	METAL CHIP	15K 5% 1/16W
R075	1-216-833-11	METAL CHIP	10K 5% 1/16W	R451	1-216-839-11	METAL CHIP	33K 5% 1/16W
R076	1-216-837-11	METAL CHIP	22K 5% 1/16W	R452	1-216-833-11	METAL CHIP	10K 5% 1/16W
R077	1-216-841-11	METAL CHIP	47K 5% 1/16W	R453	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R085	1-216-013-00	METAL CHIP	33 5% 1/10W	R454	1-216-833-11	METAL CHIP	10K 5% 1/16W
R086	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R455	1-216-845-11	METAL CHIP	100K 5% 1/16W
R087	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R456	1-216-833-11	METAL CHIP	10K 5% 1/16W
R089	1-216-841-11	METAL CHIP	47K 5% 1/16W	R457	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R090	1-216-833-11	METAL CHIP	10K 5% 1/16W	R458	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
R401	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R459	1-216-845-11	METAL CHIP	100K 5% 1/16W
R402	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R460	1-216-818-11	METAL CHIP	560 5% 1/16W
R403	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R461	1-216-818-11	METAL CHIP	560 5% 1/16W
R404	1-216-848-11	METAL CHIP	180K 5% 1/16W	R462	1-216-818-11	METAL CHIP	560 5% 1/16W
R405	1-216-848-11	METAL CHIP	180K 5% 1/16W	R463	1-216-818-11	METAL CHIP	560 5% 1/16W
R406	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R471	1-216-837-11	METAL CHIP	22K 5% 1/16W
				R472	1-216-833-11	METAL CHIP	10K 5% 1/16W
				R473	1-216-838-11	METAL CHIP	27K 5% 1/16W

Ref. No.	Part No.	Description	Remark
R474	1-216-833-11	METAL CHIP	10K 5% 1/16W
R475	1-218-740-11	METAL CHIP	100K 0.50% 1/16W
R476	1-216-295-00	METAL CHIP	0 5% 1/10W
R477	1-216-013-00	METAL CHIP	33 5% 1/10W
R478	1-216-833-11	METAL CHIP	10K 5% 1/16W
R479	1-216-833-11	METAL CHIP	10K 5% 1/16W
R501	1-216-821-11	METAL CHIP	1K 5% 1/16W
R502	1-216-821-11	METAL CHIP	1K 5% 1/16W
R505	1-216-842-11	METAL CHIP	56K 5% 1/16W
R506	1-216-841-11	METAL CHIP	47K 5% 1/16W
R507	1-216-810-11	METAL CHIP	120 5% 1/16W
R508	1-216-818-11	METAL CHIP	560 5% 1/16W
R509	1-216-833-11	METAL CHIP	10K 5% 1/16W
R515	1-216-842-11	METAL CHIP	56K 5% 1/16W
R516	1-216-841-11	METAL CHIP	47K 5% 1/16W
R517	1-216-810-11	METAL CHIP	120 5% 1/16W
R518	1-216-818-11	METAL CHIP	560 5% 1/16W
R519	1-216-833-11	METAL CHIP	10K 5% 1/16W
R520	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R521	1-216-849-11	METAL CHIP	220K 5% 1/16W
R530	1-216-845-11	METAL CHIP	100K 5% 1/16W
R531	1-216-845-11	METAL CHIP	100K 5% 1/16W
R532	1-216-857-11	METAL CHIP	1M 5% 1/16W
R533	1-216-849-11	METAL CHIP	220K 5% 1/16W
R534	1-216-861-11	METAL CHIP	2.2M 5% 1/16W
R535	1-216-841-11	METAL CHIP	47K 5% 1/16W
R536	1-216-845-11	METAL CHIP	100K 5% 1/16W
R537	1-216-845-11	METAL CHIP	100K 5% 1/16W
R541	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R542	1-216-837-11	METAL CHIP	22K 5% 1/16W
R543	1-216-836-11	METAL CHIP	18K 5% 1/16W
R544	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R545	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R546	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R547	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R548	1-216-833-11	METAL CHIP	10K 5% 1/16W
R549	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
R551	1-216-837-11	METAL CHIP	22K 5% 1/16W
R552	1-216-836-11	METAL CHIP	18K 5% 1/16W
R553	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R554	1-216-816-11	METAL CHIP	390 5% 1/16W
R555	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R556	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R557	1-216-837-11	METAL CHIP	22K 5% 1/16W
R558	1-216-836-11	METAL CHIP	18K 5% 1/16W
R559	1-216-821-11	METAL CHIP	1K 5% 1/16W
R560	1-216-821-11	METAL CHIP	1K 5% 1/16W
R561	1-216-821-11	METAL CHIP	1K 5% 1/16W
R562	1-216-821-11	METAL CHIP	1K 5% 1/16W
R563	1-216-864-11	METAL CHIP	0 5% 1/16W

Ref. No.	Part No.	Description	Remark
R564	1-216-821-11	METAL CHIP	1K 5% 1/16W
R569	1-216-864-11	METAL CHIP	0 5% 1/16W
R572	1-216-845-11	METAL CHIP	100K 5% 1/16W
R573	1-216-841-11	METAL CHIP	47K 5% 1/16W
R574	1-216-821-11	METAL CHIP	1K 5% 1/16W
R575	1-216-848-11	METAL CHIP	180K 5% 1/16W
R577	1-216-845-11	METAL CHIP	100K 5% 1/16W
R578	1-216-821-11	METAL CHIP	1K 5% 1/16W
R579	1-216-821-11	METAL CHIP	1K 5% 1/16W
R580	1-216-836-11	METAL CHIP	18K 5% 1/16W
R581	1-216-821-11	METAL CHIP	1K 5% 1/16W
R582	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R583	1-216-304-11	METAL CHIP	3.3 5% 1/10W
R584	1-216-847-11	METAL CHIP	150K 5% 1/16W
R585	1-216-847-11	METAL CHIP	150K 5% 1/16W
R586	1-216-838-11	METAL CHIP	27K 5% 1/16W
R587	1-216-838-11	METAL CHIP	27K 5% 1/16W
R588	1-216-864-11	METAL CHIP	0 5% 1/16W
R589	1-216-864-11	METAL CHIP	0 5% 1/16W
R590	1-216-816-11	METAL CHIP	390 5% 1/16W
R591	1-216-816-11	METAL CHIP	390 5% 1/16W
R591-2	1-216-296-00	METAL CHIP	0 5% 1/8W
R592	1-216-824-11	METAL CHIP	1.8K 5% 1/16W
R593	1-216-824-11	METAL CHIP	1.8K 5% 1/16W
R594	1-216-864-11	METAL CHIP	0 5% 1/16W
R596	1-216-833-11	METAL CHIP	10K 5% 1/16W
R597	1-216-840-11	METAL CHIP	39K 5% 1/16W
R598	1-216-835-11	METAL CHIP	15K 5% 1/16W
R599	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
(NETWORK, RES)			
RB501	1-236-436-11	NETWORK, RES	100K
RB502	1-236-436-11	NETWORK, RES	100K
RB503	1-236-436-11	NETWORK, RES	100K
RB504	1-236-436-11	NETWORK, RES	100K
RB505	1-236-432-11	NETWORK, RES	47K
(FLEXIBLE BOARD)			
W001	1-645-362-11	FP-561 FLEXIBLE BOARD	

	1-645-369-11	FP-621 FLEXIBLE BOARD	

(JACK)			
J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE)12P	

FU-109 **HP-84** **JK-86** **LA-22** **LA-23** **MA-137**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7071-699-A	FU-109 BOARD, COMPLETE *****		*	A-7071-698-A	JK-86 BOARD, COMPLETE *****	
		(CAPACITOR)				(CONNECTOR)	
C301	1-162-974-11	CERAMIC CHIP 0.01uF	50V	CN902	1-691-491-21	CONNECTOR, FFC/FPC 12P	
C302	1-162-974-11	CERAMIC CHIP 0.01uF	50V			(DIODE)	
		(CONNECTOR)		D901	8-719-420-81	DIODE MA3075WA	
CN301	1-573-916-21	CONNECTOR, FFC/FPC (ZIF) 7P		D902	8-719-420-81	DIODE MA3075WA	
		(DIODE)		D903	8-719-420-81	DIODE MA3075WA	
D301	8-719-951-20	LED BR1102W		D904	8-719-420-81	DIODE MA3075WA	
D302	8-719-422-91	DIODE MA8091		D905	8-719-420-81	DIODE MA3075WA	
		(RESISTOR)		D906	8-719-420-81	DIODE MA3075WA	
R301	1-216-825-11	METAL CHIP 2.2K 5% 1/16W		D907	8-719-420-87	DIODE MA8130	
R302	1-216-825-11	METAL CHIP 2.2K 5% 1/16W				(JACK)	
R303	1-216-827-11	METAL CHIP 3.3K 5% 1/16W		J901	1-537-449-11	TERMINAL BOARD (TUNER)	
R304	1-216-829-11	METAL CHIP 4.7K 5% 1/16W				*****	
R305	1-216-825-11	METAL CHIP 2.2K 5% 1/16W		*	A-7071-713-A	LA-22 BOARD, COMPLETE *****	
R306	1-216-825-11	METAL CHIP 2.2K 5% 1/16W				(CONNECTOR)	
		(SWITCH)		CN801	1-569-628-12	CONNECTOR, BOARD TO BOARD 3P	
S301	1-572-467-11	SWITCH, PUSH (1 KEY) (REC)				*****	
S302	1-572-921-11	SWITCH, KEY BOARD (STOP)		*	A-7071-714-A	LA-23 BOARD, COMPLETE *****	
S303	1-572-921-11	SWITCH, KEY BOARD (FF)				(CONNECTOR)	
S304	1-572-921-11	SWITCH, KEY BOARD (PLAY)		CN802	1-569-628-12	CONNECTOR, BOARD TO BOARD 3P	
S305	1-572-921-11	SWITCH, KEY BOARD (SLOW)				*****	
S306	1-572-921-11	SWITCH, KEY BOARD (STILL)		*	A-7053-386-A	MA-137 BOARD, COMPLETE *****	
S307	1-572-921-11	SWITCH, KEY BOARD (REW)				(CAPACITOR)	
		*****		C001	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
*	A-7071-696-A	HP-84 BOARD, COMPLETE *****		C002	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
		(CONNECTOR)		C003	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
CN601	1-573-331-21	CONNECTOR, BOARD TO BOARD 6P		C004	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
		(DIODE)		C005	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
D601	8-719-420-87	DIODE MA8130		C006	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
		(JACK)		C007	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
J601	1-695-514-21	JACK (SMALL TYPE) 1P (PHONES)		C008	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
		(LINK, IC)		C011	1-163-183-00	CERAMIC CHIP 120PF 5% 50V	
△PS601	1-576-124-21	LINK, IC CCP2E25 (1A)		C012	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark
C013	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C015	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C017	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C018	1-164-473-11	CERAMIC CHIP 820PF	10% 50V
C019	1-164-473-11	CERAMIC CHIP 820PF	10% 50V
C020	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C021	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C022	1-162-962-11	CERAMIC CHIP 470PF	10% 50V
C023	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C024	1-164-634-11	CERAMIC CHIP 1uF	16V
C025	1-164-634-11	CERAMIC CHIP 1uF	16V
C026	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C027	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C028	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C029	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C030	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C031	1-162-638-11	CERAMIC CHIP 1uF	16V
C032	1-164-337-11	CERAMIC CHIP 2.2uF	16V
C033	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C034	1-162-638-11	CERAMIC CHIP 1uF	16V
C035	1-164-634-11	CERAMIC CHIP 1uF	16V
C036	1-164-337-11	CERAMIC CHIP 2.2uF	16V
C037	1-162-638-11	CERAMIC CHIP 1uF	16V
C038	1-135-212-21	TANTAL. CHIP 2.2uF	20% 35V
C039	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C040	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C041	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C042	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C043	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C044	1-164-836-11	CERAMIC CHIP 6.8uF	16V
C091	1-164-346-11	CERAMIC CHIP 1uF	16V
C092	1-164-346-11	CERAMIC CHIP 1uF	16V
C093	1-164-346-11	CERAMIC CHIP 1uF	16V
C094	1-164-346-11	CERAMIC CHIP 1uF	16V
C095	1-164-346-11	CERAMIC CHIP 1uF	16V
C096	1-164-346-11	CERAMIC CHIP 1uF	16V
C097	1-164-346-11	CERAMIC CHIP 1uF	16V
C098	1-164-506-11	CERAMIC CHIP 4.7uF	16V
C099	1-164-506-11	CERAMIC CHIP 4.7uF	16V
C101	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C102	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C103	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C104	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C106	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C108	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C109	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C110	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C111	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C112	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C113	1-162-945-11	CERAMIC CHIP 22PF	5% 50V

Ref. No.	Part No.	Description	Remark
C114	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C115	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C116	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C117	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C118	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C119	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C120	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C121	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C122	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C123	1-164-362-11	CERAMIC CHIP 470PF	5% 50V
C124	1-162-918-11	CERAMIC CHIP 18PF	5% 50V
C125	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C126	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C127	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C128	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C129	1-162-905-11	CERAMIC CHIP 1PF	0.25PF50V
C130	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C131	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C132	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C133	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C135	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C136	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V
C137	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V
C138	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C139	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C140	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C141	1-164-634-11	CERAMIC CHIP 1uF	16V
C142	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C143	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C144	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C145	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C146	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C147	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C148	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C149	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C150	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C151	1-135-216-11	TANTALUM CHIP 10uF	20% 10V
C152	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C153	1-135-216-11	TANTALUM CHIP 10uF	20% 10V
C154	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C155	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C157	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C158	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C159	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C160	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C161	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C201	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C202	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C203	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C204	1-162-945-11	CERAMIC CHIP 22PF	5% 50V

MA-137

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C205	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C312	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C206	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C313	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C211	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C314	1-164-173-11	CERAMIC CHIP 0.0039uF	10% 50V
C212	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C315	1-164-634-11	CERAMIC CHIP 1uF	16V
C215	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C316	1-135-211-11	TANTAL. CHIP 6.8uF	20% 6.3V
C216	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C317	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C217	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C318	1-164-634-11	CERAMIC CHIP 1uF	16V
C218	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C320	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C220	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C321	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C222	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C322	1-165-128-11	CERAMIC CHIP 0.22uF	16V
C224	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C324	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C225	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C325	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C226	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C326	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C227	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C327	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C228	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C328	1-162-965-11	CERAMIC CHIP 0.0015uF	10% 50V
C229	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C329	1-162-965-11	CERAMIC CHIP 0.0015uF	10% 50V
C230	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C330	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C231	1-164-634-11	CERAMIC CHIP 1uF	16V	C331	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C232	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C341	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C233	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C342	1-135-216-11	TANTALUM CHIP 10uF	20% 10V
C234	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C343	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C235	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C344	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C236	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C345	1-164-330-21	CERAMIC CHIP 0.22uF	10% 16V
C237	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C346	1-164-330-21	CERAMIC CHIP 0.22uF	10% 16V
C238	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C347	1-135-216-11	TANTALUM CHIP 10uF	20% 10V
C239	1-164-634-11	CERAMIC CHIP 1uF	16V	C349	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C240	1-164-634-11	CERAMIC CHIP 1uF	16V	C350	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C245	1-135-092-21	TANTALUM CHIP 3.3uF	10% 16V	C351	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C246	1-162-974-11	CERAMIC CHIP 0.01uF	50V	C352	1-162-967-11	CERAMIC CHIP 0.0033uF	10% 50V
C247	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C353	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C248	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C354	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V
C250	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V	C356	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V
C251	1-162-943-11	CERAMIC CHIP 15PF	5% 50V	C358	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C252	1-162-943-11	CERAMIC CHIP 15PF	5% 50V	C359	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C254	1-164-346-11	CERAMIC CHIP 1uF	16V	C360	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C255	1-162-949-11	CERAMIC CHIP 47PF	5% 50V	C601	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C256	1-162-949-11	CERAMIC CHIP 47PF	5% 50V	C607	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C257	1-162-949-11	CERAMIC CHIP 47PF	5% 50V	C608	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C258	1-162-949-11	CERAMIC CHIP 47PF	5% 50V	C614	1-164-461-11	CERAMIC CHIP 91PF	5% 50V
C301	1-164-634-11	CERAMIC CHIP 1uF	16V	C615	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C302	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C616	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C303	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C617	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C304	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	C618	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C305	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	C619	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C306	1-162-974-11	CERAMIC CHIP 0.01uF	50V	C620	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C307	1-162-974-11	CERAMIC CHIP 0.01uF	50V	C621	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C308	1-162-974-11	CERAMIC CHIP 0.01uF	50V	C622	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C309	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C624	1-164-457-11	CERAMIC CHIP 30PF	5% 50V
C310	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C625	1-162-951-11	CERAMIC CHIP 68PF	5% 50V
C311	1-162-995-11	CERAMIC CHIP 0.022uF	50V	C626	1-162-954-11	CERAMIC CHIP 120PF	5% 50V

Ref. No.	Part No.	Description	Remark
C627	1-162-955-11	CERAMIC CHIP 150PF	5% 50V
C629	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C630	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C631	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C652	1-162-921-11	CERAMIC CHIP 33PF	5% 50V
C653	1-162-958-11	CERAMIC CHIP 270PF	5% 50V
C666	1-162-966-11	CERAMIC CHIP 0.0022uF	10% 50V
C667	1-162-950-11	CERAMIC CHIP 56PF	5% 50V
C668	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C669	1-162-938-11	CERAMIC CHIP 7PF	0.5PF 50V
C670	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C671	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C672	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C673	1-162-958-11	CERAMIC CHIP 270PF	5% 50V
C676	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C677	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C678	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C679	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C680	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C681	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C683	1-162-959-11	CERAMIC CHIP 330PF	5% 50V
C684	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C685	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C687	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C688	1-162-995-11	CERAMIC CHIP 0.022uF	50V
C689	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C691	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C694	1-162-948-11	CERAMIC CHIP 39PF	5% 50V
C695	1-162-944-11	CERAMIC CHIP 18PF	5% 50V
C696	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C697	1-162-943-11	CERAMIC CHIP 15PF	5% 50V
C698	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C699	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C702	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C703	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C706	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C707	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C708	1-162-959-11	CERAMIC CHIP 330PF	5% 50V
C709	1-164-145-11	CERAMIC CHIP 390PF	5% 50V
C710	1-164-467-11	CERAMIC CHIP 300PF	5% 50V
C711	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C712	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C713	1-162-954-11	CERAMIC CHIP 120PF	5% 50V
C714	1-162-952-11	CERAMIC CHIP 82PF	5% 50V
C715	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C716	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C717	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C718	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C719	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C720	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V

Ref. No.	Part No.	Description	Remark
C721	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C722	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C723	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C724	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C725	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C727	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C728	1-164-634-11	CERAMIC CHIP 1uF	16V
C729	1-164-634-11	CERAMIC CHIP 1uF	16V
C730	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C731	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C732	1-165-128-11	CERAMIC CHIP 0.22uF	16V
C733	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C734	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C735	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C736	1-135-335-91	TANTAL. CHIP 100uF	20% 4V
C737	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C738	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C741	1-164-361-11	CERAMIC CHIP 0.047uF	16V
C742	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C743	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C744	1-162-948-11	CERAMIC CHIP 39PF	5% 50V
C747	1-162-955-11	CERAMIC CHIP 150PF	5% 50V
C750	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C751	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C752	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C753	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C754	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C756	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C757	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C758	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C760	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C761	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C762	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C763	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C764	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C765	1-135-180-21	TANTALUM CHIP 3.3uF	20% 6.3V
C766	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C768	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C769	1-164-634-11	CERAMIC CHIP 1uF	16V
C770	1-162-949-11	CERAMIC CHIP 47PF	5% 50V
C771	1-162-949-11	CERAMIC CHIP 47PF	5% 50V
C775	1-162-948-11	CERAMIC CHIP 39PF	5% 50V
C776	1-162-950-11	CERAMIC CHIP 56PF	5% 50V
C777	1-162-953-11	CERAMIC CHIP 100PF	5% 50V
C778	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C779	1-162-948-11	CERAMIC CHIP 39PF	5% 50V
C781	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C783	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C784	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C786	1-164-634-11	CERAMIC CHIP 1uF	16V

MA-137

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C787	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	CN007	1-573-343-21	CONNECTOR, BOARD TO BOARD 30P	
C788	1-164-005-11	CERAMIC CHIP 0.47uF	25V	CN011	1-573-922-21	CONNECTOR, FFC/FPC (ZIF) 13P	
C789	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	CN012	1-573-353-21	CONNECTOR, FFC/FPC 13P	
C791	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	CN013	1-691-495-21	CONNECTOR, FFC/FPC 16P	
C795	1-164-465-91	CERAMIC CHIP 200PF	5% 50V	CN015	1-573-921-11	CONNECTOR, FFC/FPC (ZIF) 12P	
C797	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	CN016	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P	
C798	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	CN017	1-691-491-21	CONNECTOR, FFC/FPC 12P	
C803	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V			(DIODE)	
C804	1-162-974-11	CERAMIC CHIP 0.01uF	50V	D001	8-719-989-33	DIODE FC806	
C805	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	D002	8-719-989-03	DIODE DAN222	
C806	1-162-952-11	CERAMIC CHIP 82PF	5% 50V	D004	8-719-991-00	DIODE DAP222	
C807	1-162-974-11	CERAMIC CHIP 0.01uF	50V	D101	8-719-989-03	DIODE DAN222	
C809	1-162-959-11	CERAMIC CHIP 330PF	5% 50V	D199	8-719-422-91	DIODE MA8091	
C810	1-135-177-21	TANTALUM CHIP 1uF	20% 20V	D301	8-719-989-00	DIODE DA221	
C811	1-135-177-21	TANTALUM CHIP 1uF	20% 20V	D310	8-719-989-03	DIODE DAN222	
C812	1-135-146-21	TANTALUM CHIP 0.68uF	20% 25V	D601	8-719-951-22	DIODE IMN10	
C813	1-162-995-11	CERAMIC CHIP 0.022uF	50V	D602	8-719-989-03	DIODE DAN222	
C816	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	D603	8-719-989-03	DIODE DAN222	
C817	1-162-950-11	CERAMIC CHIP 56PF	5% 50V	D701	8-719-989-03	DIODE DAN222	
C818	1-162-936-11	CERAMIC CHIP 5PF	0.25PF 50V	D1000	8-719-422-91	DIODE MA8091	
C819	1-162-974-11	CERAMIC CHIP 0.01uF	50V	D1001	8-719-422-91	DIODE MA8091	
C820	1-162-947-11	CERAMIC CHIP 33PF	5% 50V	D1002	8-719-989-03	DIODE DAN222	
C821	1-162-974-11	CERAMIC CHIP 0.01uF	50V			(FUSE)	
C822	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	△F101	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
C823	1-162-957-11	CERAMIC CHIP 220PF	5% 50V	△F102	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
C824	1-162-951-11	CERAMIC CHIP 68PF	5% 50V	△F103	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
C826	1-162-974-11	CERAMIC CHIP 0.01uF	50V	△F104	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
C827	1-162-950-11	CERAMIC CHIP 56PF	5% 50V	△F105	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
C831	1-162-949-11	CERAMIC CHIP 47PF	5% 50V			(FERRITE BEAD)	
C832	1-164-360-11	CERAMIC CHIP 0.1uF	16V	FB101	1-412-390-21	INDUCTOR CHIP 0uH	
C833	1-162-952-11	CERAMIC CHIP 82PF	5% 50V	FB102	1-412-390-21	INDUCTOR CHIP 0uH	
C834	1-162-967-11	CERAMIC CHIP 0.0033uF	10% 50V	FB103	1-412-390-21	INDUCTOR CHIP 0uH	
C835	1-162-953-11	CERAMIC CHIP 100PF	5% 50V	FB105	1-412-390-21	INDUCTOR CHIP 0uH	
C836	1-162-974-11	CERAMIC CHIP 0.01uF	50V	FB201	1-412-390-21	INDUCTOR CHIP 0uH	
C837	1-162-955-11	CERAMIC CHIP 150PF	5% 50V	FB204	1-412-390-21	INDUCTOR CHIP 0uH	
C873	1-164-005-11	CERAMIC CHIP 0.47uF	25V	FB205	1-412-390-21	INDUCTOR CHIP 0uH	
C981	1-164-506-11	CERAMIC CHIP 4.7uF	16V	FB206	1-412-390-21	INDUCTOR CHIP 0uH	
C982	1-164-505-11	CERAMIC CHIP 2.2uF	16V	FB301	1-412-390-21	INDUCTOR CHIP 0uH	
C998	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V			(FILTER)	
C1801	1-164-634-11	CERAMIC CHIP 1uF	16V	FL701	1-236-757-21	FILTER, LOW PASS (C)	
C1802	1-164-634-11	CERAMIC CHIP 1uF	16V	FL801	1-239-348-21	FILTER, BAND PASS (CE.NTSC)	
		(FILTER, CERAMIC)		FL802	1-239-109-21	FILTER, BAND PASS	
CF801	1-579-370-11	FILTER, CERAMIC				(IC)	
		(CONNECTOR)		1C001	8-759-060-94	IC MB3785APFV-G-BND-ER	
* CN002	1-580-055-21	PIN, CONNECTOR 2P		1C091	8-759-509-13	IC XRU40528F	
CN003	1-573-303-21	CONNECTOR, BOARD TO BOARD 6P					
CN004	1-695-883-21	CONNECTOR, BOARD TO BOARD 32P					
* CN005	1-560-890-00	PIN, CONNECTOR 2P					

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC101	8-752-836-15	IC CXP80624A-010R		L629	1-410-380-31	INDUCTOR CHIP 8.2uH	
IC102	8-759-039-01	IC MPC1720M		L630	1-412-280-31	INDUCTOR 330uH	
IC103	8-759-990-55	IC CXA8006M		L631	1-410-656-11	INDUCTOR CHIP 150uH	
IC201	8-759-099-93	IC MB89092-109		L632	1-410-658-31	INDUCTOR CHIP 220uH	
IC202	8-759-512-69	IC S-81350HG-KD		L633	1-412-029-11	INDUCTOR CHIP 10uH	
IC203	8-759-946-03	IC S-8054ALR-LN-S		L634	1-412-029-11	INDUCTOR CHIP 10uH	
IC204	8-759-044-78	IC AK6420F		L701	1-412-032-11	INDUCTOR CHIP 100uH	
IC205	8-759-999-02	IC TL1596CDB		L702	1-412-029-11	INDUCTOR CHIP 10uH	
IC206	8-759-635-27	IC M62352GP		L706	1-412-031-11	INDUCTOR CHIP 47uH	
IC301	8-759-512-42	IC CXA1481R		L713	1-410-389-31	INDUCTOR CHIP 47uH	
IC601	8-759-012-00	IC MC10H116M		L714	1-410-381-11	INDUCTOR CHIP 10uH	
IC602	8-752-053-21	IC CXA1211M		L716	1-410-389-31	INDUCTOR CHIP 47uH	
IC603	8-759-998-32	IC CXD-2107M		L717	1-410-390-11	INDUCTOR CHIP 56uH	
IC701	8-752-065-54	IC CXA1207AR		L718	1-410-390-11	INDUCTOR CHIP 56uH	
IC702	8-752-053-21	IC CXA1211M		L719	1-410-385-11	INDUCTOR CHIP 22uH	
IC703	8-759-636-33	IC CXA1452		L721	1-412-031-11	INDUCTOR CHIP 47uH	
IC704	8-752-332-68	IC CXL5502M		L801	1-410-385-11	INDUCTOR CHIP 22uH	
IC705	8-759-635-27	IC M62352GP		L802	1-410-385-11	INDUCTOR CHIP 22uH	
IC707	8-759-710-86	IC NJM2233BM		L803	1-410-393-11	INDUCTOR CHIP 100uH	
IC801	8-752-065-56	IC CXA1208R		L804	1-410-377-31	INDUCTOR CHIP 4.7uH	
		(JACK)		L805	1-410-655-31	INDUCTOR CHIP 120uH	
J101	1-565-276-21	JACK, ULTRA SMALL 1P (REMOTE)		L806	1-410-393-11	INDUCTOR CHIP 100uH	
		(COIL)		L808	1-410-393-11	INDUCTOR CHIP 100uH	
L001	1-424-653-11	COIL, CHOKE 10uH		L809	1-410-656-11	INDUCTOR CHIP 150uH	
L002	1-424-674-21	COIL, CHOKE 22uH		L906	1-412-028-11	INDUCTOR CHIP 4.7uH	
L003	1-412-028-11	INDUCTOR CHIP 4.7uH		L907	1-412-028-11	INDUCTOR CHIP 4.7uH	
L004	1-412-028-11	INDUCTOR CHIP 4.7uH		L1000	1-412-026-11	INDUCTOR CHIP 1uH	
L005	1-424-653-11	COIL, CHOKE 10uH				(LINK, IC)	
L006	1-412-032-11	INDUCTOR CHIP 100uH		△PS101	1-576-123-21	LINK, IC CCP2E20 (0.8A)	
L007	1-412-032-11	INDUCTOR CHIP 100uH		△PS201	1-576-122-21	LINK, IC CCP2E10 (0.4A)	
L008	1-412-032-11	INDUCTOR CHIP 100uH				(TRANSISTOR)	
L009	1-424-653-11	COIL, CHOKE 10uH		△Q001	8-729-823-84	TRANSISTOR FP102	
L010	1-424-674-21	COIL, CHOKE 22uH		△Q002	8-729-823-84	TRANSISTOR FP102	
L011	1-424-674-21	COIL, CHOKE 22uH		△Q003	8-729-823-84	TRANSISTOR FP102	
L101	1-412-031-11	INDUCTOR CHIP 47uH		△Q004	8-729-805-25	TRANSISTOR 2SB1121-S	
L201	1-412-031-11	INDUCTOR CHIP 47uH		Q005	8-729-927-XX	TRANSISTOR 2SC4617R	
L301	1-412-029-11	INDUCTOR CHIP 10uH		△Q006	8-752-822-52	TRANSISTOR 2SK1469	
L302	1-412-032-11	INDUCTOR CHIP 100uH		Q007	8-729-928-81	TRANSISTOR DTC144EE	
L303	1-412-280-31	INDUCTOR 330uH		△Q008	8-752-822-52	TRANSISTOR 2SK1469	
L310	1-412-031-11	INDUCTOR CHIP 47uH		Q009	8-729-928-81	TRANSISTOR DTC144EE	
L603	1-412-280-31	INDUCTOR 330uH		Q010	8-729-928-27	TRANSISTOR DTA144EE	
L607	1-410-657-21	INDUCTOR CHIP 180uH		Q012	8-729-928-81	TRANSISTOR DTC144EE	
L620	1-412-282-41	INDUCTOR 470uH		Q091	8-729-927-XX	TRANSISTOR 2SC4617R	
L621	1-410-656-11	INDUCTOR CHIP 150uH		Q092	8-729-927-XX	TRANSISTOR 2SC4617R	
L622	1-412-032-11	INDUCTOR CHIP 100uH		Q093	8-729-927-XX	TRANSISTOR 2SC4617R	
L623	1-410-385-11	INDUCTOR CHIP 22uH		Q101	8-729-420-12	TRANSISTOR XN4213	
L624	1-410-388-21	INDUCTOR CHIP 39uH		Q103	8-729-820-46	TRANSISTOR 2SB1202FAS	
L626	1-412-029-11	INDUCTOR CHIP 10uH		Q202	8-729-927-XX	TRANSISTOR 2SC4617R	

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MA-137

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q203	8-729-928-81	TRANSISTOR DTC144EE		Q806	8-729-927-XX	TRANSISTOR 2SC4617R	
Q310	8-729-927-XX	TRANSISTOR 2SC4617R		Q807	8-729-930-13	TRANSISTOR LMH2	
Q311	8-729-927-65	TRANSISTOR UMT1		Q1601	8-729-928-19	TRANSISTOR 2SA1774R	
Q312	8-729-928-90	TRANSISTOR DTC114EE		Q1602	8-729-928-81	TRANSISTOR DTC144EE	
Q313	8-729-823-95	TRANSISTOR FC149		Q1603	8-729-928-19	TRANSISTOR 2SA1774R	
Q609	8-729-927-XX	TRANSISTOR 2SC4617R		Q1604	8-729-930-13	TRANSISTOR LMH2	
Q611	8-729-927-XX	TRANSISTOR 2SC4617R		Q1605	8-729-928-81	TRANSISTOR DTC144EE	
Q619	8-729-928-72	TRANSISTOR DTA114TE		Q1606	8-729-928-72	TRANSISTOR DTA114TE	
Q621	8-729-928-72	TRANSISTOR DTA114TE		Q1801	8-729-927-XX	TRANSISTOR 2SC4617R	
Q622	8-729-927-XX	TRANSISTOR 2SC4617R		Q1802	8-729-927-XX	TRANSISTOR 2SC4617R	
Q623	8-729-927-XX	TRANSISTOR 2SC4617R		Q1803	8-729-928-27	TRANSISTOR DTA144EE	
Q625	8-729-928-72	TRANSISTOR DTA114TE				(RESISTOR)	
Q626	8-729-927-XX	TRANSISTOR 2SC4617R		R001	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q627	8-729-927-XX	TRANSISTOR 2SC4617R		R003	1-216-864-11	METAL CHIP 0 5% 1/16W	
Q628	8-729-928-19	TRANSISTOR 2SA1774R		R004	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
Q629	8-729-928-19	TRANSISTOR 2SA1774R		R005	1-218-345-11	METAL CHIP 9.1K 0.50% 1/16W	
Q630	8-729-927-XX	TRANSISTOR 2SC4617R		R006	1-218-714-11	METAL CHIP 8.2K 0.50% 1/16W	
Q631	8-729-927-XX	TRANSISTOR 2SC4617R		R007	1-216-836-11	METAL CHIP 18K 5% 1/16W	
Q632	8-729-927-XX	TRANSISTOR 2SC4617R		R008	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q633	8-729-927-XX	TRANSISTOR 2SC4617R		R009	1-216-847-11	METAL CHIP 150K 5% 1/16W	
Q634	8-729-928-81	TRANSISTOR DTC144EE		R011	1-216-864-11	METAL CHIP 0 5% 1/16W	
Q701	8-729-928-81	TRANSISTOR DTC144EE		R012	1-216-834-11	METAL CHIP 12K 5% 1/16W	
Q702	8-729-202-38	TRANSISTOR 2SC3326N-A		R013	1-218-738-11	METAL CHIP 82K 0.50% 1/16W	
Q703	8-729-202-38	TRANSISTOR 2SC3326N-A		R014	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
Q705	8-729-928-81	TRANSISTOR DTC144EE		R015	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
Q706	8-729-928-27	TRANSISTOR DTA144EE		R016	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
Q707	8-729-928-81	TRANSISTOR DTC144EE		R017	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q708	8-729-928-81	TRANSISTOR DTC144EE		R018	1-216-833-11	METAL CHIP 10K 5% 1/16W	
Q712	8-729-928-19	TRANSISTOR 2SA1774R		R019	1-216-843-11	METAL CHIP 68K 5% 1/16W	
Q713	8-729-927-XX	TRANSISTOR 2SC4617R		R020	1-216-838-11	METAL CHIP 27K 5% 1/16W	
Q714	8-729-927-XX	TRANSISTOR 2SC4617R		R021	1-218-295-11	METAL CHIP 5.6K 0.50% 1/16W	
Q717	8-729-927-XX	TRANSISTOR 2SC4617R		R023	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
Q719	8-729-927-XX	TRANSISTOR 2SC4617R		R024	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
Q720	8-729-927-XX	TRANSISTOR 2SC4617R		R025	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
Q721	8-729-927-XX	TRANSISTOR 2SC4617R		R027	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
Q722	8-729-927-XX	TRANSISTOR 2SC4617R		R028	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
Q723	8-729-928-27	TRANSISTOR DTA144EE		R029	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
Q724	8-729-928-19	TRANSISTOR 2SA1774R		R030	1-216-033-00	METAL CHIP 220 5% 1/10W	
Q730	8-729-928-81	TRANSISTOR DTC144EE		R031	1-216-033-00	METAL CHIP 220 5% 1/10W	
Q732	8-729-927-XX	TRANSISTOR 2SC4617R		R032	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q755	8-729-928-90	TRANSISTOR DTC114EE		R033	1-216-021-00	METAL CHIP 68 5% 1/10W	
Q760	8-729-927-XX	TRANSISTOR 2SC4617R		R034	1-216-009-00	METAL CHIP 22 5% 1/10W	
Q761	8-729-927-XX	TRANSISTOR 2SC4617R		R035	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
Q765	8-729-927-XX	TRANSISTOR 2SC4617R		R036	1-216-295-00	METAL CHIP 0 5% 1/10W	
Q766	8-729-928-19	TRANSISTOR 2SA1774R		R037	1-216-295-00	METAL CHIP 0 5% 1/10W	
Q768	8-729-905-35	TRANSISTOR 2SC4081-R		R038	1-216-864-11	METAL CHIP 0 5% 1/16W	
Q801	8-729-927-XX	TRANSISTOR 2SC4617R		R040	1-216-849-11	METAL CHIP 220K 5% 1/16W	
Q803	8-729-928-81	TRANSISTOR DTC144EE		R041	1-216-849-11	METAL CHIP 220K 5% 1/16W	
Q804	8-729-927-XX	TRANSISTOR 2SC4617R		R048	1-216-821-11	METAL CHIP 1K 5% 1/16W	
Q805	8-729-928-19	TRANSISTOR 2SA1774R					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R049	1-216-845-11	METAL CHIP	100K 5% 1/16W	R201	1-216-833-11	METAL CHIP	10K 5% 1/16W
R081	1-216-025-00	METAL CHIP	100 5% 1/10W	R202	1-216-295-00	METAL CHIP	0 5% 1/10W
R082	1-216-025-00	METAL CHIP	100 5% 1/10W	R203	1-216-821-11	METAL CHIP	1K 5% 1/16W
R093	1-216-834-11	METAL CHIP	12K 5% 1/16W	R204	1-216-821-11	METAL CHIP	1K 5% 1/16W
R094	1-216-837-11	METAL CHIP	22K 5% 1/16W	R205	1-216-845-11	METAL CHIP	100K 5% 1/16W
R095	1-216-829-11	METAL CHIP	4. 7K 5% 1/16W	R206	1-216-833-11	METAL CHIP	10K 5% 1/16W
R096	1-216-851-11	METAL CHIP	330K 5% 1/16W	R208	1-216-833-11	METAL CHIP	10K 5% 1/16W
R097	1-216-829-11	METAL CHIP	4. 7K 5% 1/16W	R209	1-216-815-11	METAL CHIP	330 5% 1/16W
R098	1-216-851-11	METAL CHIP	330K 5% 1/16W	R210	1-216-833-11	METAL CHIP	10K 5% 1/16W
R102	1-216-833-11	METAL CHIP	10K 5% 1/16W	R211	1-216-845-11	METAL CHIP	100K 5% 1/16W
R103	1-216-853-11	METAL CHIP	470K 5% 1/16W	R212	1-216-821-11	METAL CHIP	1K 5% 1/16W
R104	1-216-833-11	METAL CHIP	10K 5% 1/16W	R213	1-216-815-11	METAL CHIP	330 5% 1/16W
R105	1-216-821-11	METAL CHIP	1K 5% 1/16W	R214	1-216-821-11	METAL CHIP	1K 5% 1/16W
R106	1-216-821-11	METAL CHIP	1K 5% 1/16W	R215	1-216-845-11	METAL CHIP	100K 5% 1/16W
R107	1-216-821-11	METAL CHIP	1K 5% 1/16W	R217	1-216-833-11	METAL CHIP	10K 5% 1/16W
R108	1-216-837-11	METAL CHIP	22K 5% 1/16W	R220	1-216-821-11	METAL CHIP	1K 5% 1/16W
R109	1-216-845-11	METAL CHIP	100K 5% 1/16W	R221	1-216-821-11	METAL CHIP	1K 5% 1/16W
R110	1-216-833-11	METAL CHIP	10K 5% 1/16W	R222	1-216-295-00	METAL CHIP	0 5% 1/10W
R111	1-216-821-11	METAL CHIP	1K 5% 1/16W	R223	1-216-833-11	METAL CHIP	10K 5% 1/16W
R112	1-216-295-00	METAL CHIP	0 5% 1/10W	R224	1-216-821-11	METAL CHIP	1K 5% 1/16W
R113	1-216-295-00	METAL CHIP	0 5% 1/10W	R225	1-216-821-11	METAL CHIP	1K 5% 1/16W
R114	1-216-851-11	METAL CHIP	330K 5% 1/16W	R226	1-216-295-00	METAL CHIP	0 5% 1/10W
R115	1-216-851-11	METAL CHIP	330K 5% 1/16W	R227	1-216-833-11	METAL CHIP	10K 5% 1/16W
R116	1-216-821-11	METAL CHIP	1K 5% 1/16W	R228	1-216-833-11	METAL CHIP	10K 5% 1/16W
R117	1-216-833-11	METAL CHIP	10K 5% 1/16W	R230	1-216-833-11	METAL CHIP	10K 5% 1/16W
R121	1-216-864-11	METAL CHIP	0 5% 1/16W	R231	1-216-295-00	METAL CHIP	0 5% 1/10W
R122	1-216-821-11	METAL CHIP	1K 5% 1/16W	R233	1-216-821-11	METAL CHIP	1K 5% 1/16W
R123	1-216-833-11	METAL CHIP	10K 5% 1/16W	R234	1-216-295-00	METAL CHIP	0 5% 1/10W
R124	1-216-845-11	METAL CHIP	100K 5% 1/16W	R235	1-216-851-11	METAL CHIP	330K 5% 1/16W
R125	1-216-845-11	METAL CHIP	100K 5% 1/16W	R236	1-216-821-11	METAL CHIP	1K 5% 1/16W
R126	1-216-821-11	METAL CHIP	1K 5% 1/16W	R237	1-216-821-11	METAL CHIP	1K 5% 1/16W
R127	1-216-827-11	METAL CHIP	3. 3K 5% 1/16W	R238	1-216-833-11	METAL CHIP	10K 5% 1/16W
R128	1-216-295-00	METAL CHIP	0 5% 1/10W	R239	1-216-833-11	METAL CHIP	10K 5% 1/16W
R129	1-216-821-11	METAL CHIP	1K 5% 1/16W	R240	1-216-833-11	METAL CHIP	10K 5% 1/16W
R130	1-216-833-11	METAL CHIP	10K 5% 1/16W	R241	1-216-833-11	METAL CHIP	10K 5% 1/16W
R131	1-216-845-11	METAL CHIP	100K 5% 1/16W	R242	1-216-833-11	METAL CHIP	10K 5% 1/16W
R132	1-216-841-11	METAL CHIP	47K 5% 1/16W	R244	1-216-841-11	METAL CHIP	47K 5% 1/16W
R133	1-216-841-11	METAL CHIP	47K 5% 1/16W	R272	1-216-826-11	METAL CHIP	2. 7K 5% 1/16W
R134	1-216-841-11	METAL CHIP	47K 5% 1/16W	R273	1-216-809-11	METAL CHIP	100 5% 1/16W
R135	1-216-845-11	METAL CHIP	100K 5% 1/16W	R274	1-216-837-11	METAL CHIP	22K 5% 1/16W
R137	1-216-821-11	METAL CHIP	1K 5% 1/16W	R275	1-216-837-11	METAL CHIP	22K 5% 1/16W
R153	1-216-864-11	METAL CHIP	0 5% 1/16W	R283	1-216-833-11	METAL CHIP	10K 5% 1/16W
R193	1-216-833-11	METAL CHIP	10K 5% 1/16W	R284	1-216-821-11	METAL CHIP	1K 5% 1/16W
R194	1-216-864-11	METAL CHIP	0 5% 1/16W	R285	1-216-843-11	METAL CHIP	68K 5% 1/16W
R195	1-216-845-11	METAL CHIP	100K 5% 1/16W	R286	1-216-851-11	METAL CHIP	330K 5% 1/16W
R196	1-216-348-11	METAL CHIP	110K 5% 1/16W	R299	1-216-845-11	METAL CHIP	100K 5% 1/16W
R197	1-216-832-11	METAL CHIP	8. 2K 5% 1/16W	R301	1-216-817-11	METAL CHIP	470 5% 1/16W
R198	1-216-849-11	METAL CHIP	220K 5% 1/16W	R302	1-216-817-11	METAL CHIP	470 5% 1/16W
R199	1-216-833-11	METAL CHIP	10K 5% 1/16W	R303	1-216-837-11	METAL CHIP	22K 5% 1/16W
R199	1-216-845-11	METAL CHIP	100K 5% 1/16W	R303-2	1-216-295-00	METAL CHIP	0 5% 1/10W

MA-137

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R304	1-216-845-11	METAL CHIP	100K 5% 1/16W	R603	1-216-833-11	METAL CHIP	10K 5% 1/16W
R305	1-216-833-11	METAL CHIP	10K 5% 1/16W	R606	1-216-817-11	METAL CHIP	470 5% 1/16W
R306	1-216-295-00	METAL CHIP	0 5% 1/10W	R607	1-216-817-11	METAL CHIP	470 5% 1/16W
R307	1-216-295-00	METAL CHIP	0 5% 1/10W	R612	1-216-817-11	METAL CHIP	470 5% 1/16W
R308	1-216-295-00	METAL CHIP	0 5% 1/10W	R613	1-216-817-11	METAL CHIP	470 5% 1/16W
R309	1-216-845-11	METAL CHIP	100K 5% 1/16W	R614	1-216-809-11	METAL CHIP	100 5% 1/16W
R310	1-216-841-11	METAL CHIP	47K 5% 1/16W	R615	1-216-818-11	METAL CHIP	560 5% 1/16W
R311	1-216-836-11	METAL CHIP	18K 5% 1/16W	R616	1-216-821-11	METAL CHIP	1K 5% 1/16W
R312	1-216-841-11	METAL CHIP	47K 5% 1/16W	R617	1-216-817-11	METAL CHIP	470 5% 1/16W
R313	1-216-849-11	METAL CHIP	220K 5% 1/16W	R618	1-216-817-11	METAL CHIP	470 5% 1/16W
R314	1-216-830-11	METAL CHIP	5. 6K 5% 1/16W	R619	1-216-817-11	METAL CHIP	470 5% 1/16W
R315	1-216-833-11	METAL CHIP	10K 5% 1/16W	R620	1-216-817-11	METAL CHIP	470 5% 1/16W
R316	1-216-838-11	METAL CHIP	27K 5% 1/16W	R621	1-216-821-11	METAL CHIP	1K 5% 1/16W
R317	1-216-844-11	METAL CHIP	82K 5% 1/16W	R622	1-216-817-11	METAL CHIP	470 5% 1/16W
R319	1-216-857-11	METAL CHIP	1M 5% 1/16W	R623	1-216-818-11	METAL CHIP	560 5% 1/16W
R322	1-216-819-11	METAL CHIP	680 5% 1/16W	R624	1-216-812-11	METAL CHIP	180 5% 1/16W
R330	1-216-843-11	METAL CHIP	68K 5% 1/16W	R626	1-216-817-11	METAL CHIP	470 5% 1/16W
R331	1-216-841-11	METAL CHIP	47K 5% 1/16W	R627	1-216-817-11	METAL CHIP	470 5% 1/16W
R333	1-216-845-11	METAL CHIP	100K 5% 1/16W	R628	1-216-837-11	METAL CHIP	22K 5% 1/16W
R334	1-216-827-11	METAL CHIP	3. 3K 5% 1/16W	R629	1-216-837-11	METAL CHIP	22K 5% 1/16W
R336	1-216-037-00	METAL CHIP	330 5% 1/10W	R634	1-216-839-11	METAL CHIP	33K 5% 1/16W
R337	1-217-671-11	METAL CHIP	1 5% 1/10W	R635	1-216-818-11	METAL CHIP	560 5% 1/16W
R338	1-217-671-11	METAL CHIP	1 5% 1/10W	R636	1-216-834-11	METAL CHIP	12K 5% 1/16W
R339	1-217-671-11	METAL CHIP	1 5% 1/10W	R637	1-216-815-11	METAL CHIP	330 5% 1/16W
R340	1-217-671-11	METAL CHIP	1 5% 1/10W	R639	1-216-821-11	METAL CHIP	1K 5% 1/16W
R341	1-216-827-11	METAL CHIP	3. 3K 5% 1/16W	R640	1-216-864-11	METAL CHIP	0 5% 1/16W
R342	1-216-829-11	METAL CHIP	4. 7K 5% 1/16W	R642	1-216-818-11	METAL CHIP	560 5% 1/16W
R343	1-216-825-11	METAL CHIP	2. 2K 5% 1/16W	R643	1-216-819-11	METAL CHIP	680 5% 1/16W
R344	1-216-838-11	METAL CHIP	27K 5% 1/16W	R644	1-216-811-11	METAL CHIP	150 5% 1/16W
R345	1-216-833-11	METAL CHIP	10K 5% 1/16W	R646	1-216-830-11	METAL CHIP	5. 6K 5% 1/16W
R346	1-216-838-11	METAL CHIP	27K 5% 1/16W	R662	1-216-820-11	METAL CHIP	820 5% 1/16W
R347	1-216-838-11	METAL CHIP	27K 5% 1/16W	R663	1-216-864-11	METAL CHIP	0 5% 1/16W
R348	1-216-838-11	METAL CHIP	27K 5% 1/16W	R664	1-216-814-11	METAL CHIP	270 5% 1/16W
R349	1-216-833-11	METAL CHIP	10K 5% 1/16W	R667	1-216-818-11	METAL CHIP	560 5% 1/16W
R354	1-216-864-11	METAL CHIP	0 5% 1/16W	R668	1-216-822-11	METAL CHIP	1. 2K 5% 1/16W
R356	1-216-833-11	METAL CHIP	10K 5% 1/16W	R669	1-216-829-11	METAL CHIP	4. 7K 5% 1/16W
R357	1-216-837-11	METAL CHIP	22K 5% 1/16W	R671	1-216-834-11	METAL CHIP	12K 5% 1/16W
R360	1-216-174-00	METAL CHIP	100 5% 1/8W	R672	1-216-835-11	METAL CHIP	15K 5% 1/16W
R362	1-216-841-11	METAL CHIP	47K 5% 1/16W	R673	1-216-833-11	METAL CHIP	10K 5% 1/16W
R363	1-216-851-11	METAL CHIP	330K 5% 1/16W	R674	1-216-813-11	METAL CHIP	220 5% 1/16W
R364	1-216-845-11	METAL CHIP	100K 5% 1/16W	R675	1-216-833-11	METAL CHIP	10K 5% 1/16W
R365	1-216-841-11	METAL CHIP	47K 5% 1/16W	R676	1-216-814-11	METAL CHIP	270 5% 1/16W
R367	1-216-833-11	METAL CHIP	10K 5% 1/16W	R677	1-216-809-11	METAL CHIP	100 5% 1/16W
R368	1-216-833-11	METAL CHIP	10K 5% 1/16W	R678	1-216-823-11	METAL CHIP	1. 5K 5% 1/16W
R369	1-216-295-00	METAL CHIP	0 5% 1/10W	R679	1-216-864-11	METAL CHIP	0 5% 1/16W
R373	1-216-841-11	METAL CHIP	47K 5% 1/16W	R680	1-216-829-11	METAL CHIP	4. 7K 5% 1/16W
R374	1-216-833-11	METAL CHIP	10K 5% 1/16W	R682	1-216-834-11	METAL CHIP	12K 5% 1/16W
R381	1-216-864-11	METAL CHIP	0 5% 1/16W	R683	1-216-835-11	METAL CHIP	15K 5% 1/16W
R397	1-216-864-11	METAL CHIP	0 5% 1/16W	R685	1-216-819-11	METAL CHIP	680 5% 1/16W
R602	1-216-833-11	METAL CHIP	10K 5% 1/16W	R686	1-216-816-11	METAL CHIP	390 5% 1/16W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R687	1-216-819-11	METAL CHIP	680 5% 1/16W	R755	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R688	1-216-821-11	METAL CHIP	1K 5% 1/16W	R756	1-216-821-11	METAL CHIP	1K 5% 1/16W
R689	1-216-819-11	METAL CHIP	680 5% 1/16W	R757	1-216-821-11	METAL CHIP	1K 5% 1/16W
R690	1-216-818-11	METAL CHIP	560 5% 1/16W	R758	1-216-821-11	METAL CHIP	1K 5% 1/16W
R691	1-216-817-11	METAL CHIP	470 5% 1/16W	R759	1-216-844-11	METAL CHIP	82K 5% 1/16W
R692	1-216-816-11	METAL CHIP	390 5% 1/16W	R761	1-216-864-11	METAL CHIP	0 5% 1/16W
R693	1-216-819-11	METAL CHIP	680 5% 1/16W	R762	1-216-864-11	METAL CHIP	0 5% 1/16W
R694	1-216-833-11	METAL CHIP	10K 5% 1/16W	R764	1-216-857-11	METAL CHIP	1M 5% 1/16W
R702	1-216-821-11	METAL CHIP	1K 5% 1/16W	R765	1-216-839-11	METAL CHIP	33K 5% 1/16W
R703	1-216-821-11	METAL CHIP	1K 5% 1/16W	R766	1-216-842-11	METAL CHIP	56K 5% 1/16W
R704	1-216-837-11	METAL CHIP	22K 5% 1/16W	R767	1-216-817-11	METAL CHIP	470 5% 1/16W
R705	1-216-835-11	METAL CHIP	15K 5% 1/16W	R768	1-216-821-11	METAL CHIP	1K 5% 1/16W
R706	1-216-826-11	METAL CHIP	2.7K 5% 1/16W	R769	1-216-821-11	METAL CHIP	1K 5% 1/16W
R708	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R770	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R709	1-216-826-11	METAL CHIP	2.7K 5% 1/16W	R771	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R710	1-216-841-11	METAL CHIP	47K 5% 1/16W	R772	1-216-821-11	METAL CHIP	1K 5% 1/16W
R711	1-216-822-11	METAL CHIP	1.2K 5% 1/16W	R773	1-216-821-11	METAL CHIP	1K 5% 1/16W
R712	1-216-817-11	METAL CHIP	470 5% 1/16W	R774	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R714	1-216-816-11	METAL CHIP	390 5% 1/16W	R784	1-216-864-11	METAL CHIP	0 5% 1/16W
R715	1-216-841-11	METAL CHIP	47K 5% 1/16W	R785	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R716	1-216-841-11	METAL CHIP	47K 5% 1/16W	R786	1-216-817-11	METAL CHIP	470 5% 1/16W
R717	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R787	1-216-820-11	METAL CHIP	820 5% 1/16W
R720	1-216-812-11	METAL CHIP	180 5% 1/16W	R788	1-216-820-11	METAL CHIP	820 5% 1/16W
R721	1-216-015-00	METAL CHIP	39 5% 1/10W	R789	1-216-815-11	METAL CHIP	330 5% 1/16W
R722	1-216-821-11	METAL CHIP	1K 5% 1/16W	R790	1-216-819-11	METAL CHIP	680 5% 1/16W
R723	1-216-821-11	METAL CHIP	1K 5% 1/16W	R791	1-216-817-11	METAL CHIP	470 5% 1/16W
R724	1-216-837-11	METAL CHIP	22K 5% 1/16W	R792	1-216-820-11	METAL CHIP	820 5% 1/16W
R725	1-216-833-11	METAL CHIP	10K 5% 1/16W	R793	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R726	1-216-857-11	METAL CHIP	1M 5% 1/16W	R795	1-216-864-11	METAL CHIP	0 5% 1/16W
R727	1-216-864-11	METAL CHIP	0 5% 1/16W	R796	1-216-814-11	METAL CHIP	270 5% 1/16W
R729	1-216-013-00	METAL CHIP	33 5% 1/10W	R797	1-216-864-11	METAL CHIP	0 5% 1/16W
R730	1-216-833-11	METAL CHIP	10K 5% 1/16W	R798	1-216-809-11	METAL CHIP	100 5% 1/16W
R731	1-216-845-11	METAL CHIP	100K 5% 1/16W	R799	1-216-822-11	METAL CHIP	1.2K 5% 1/16W
R732	1-216-841-11	METAL CHIP	47K 5% 1/16W	R801	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R733	1-216-821-11	METAL CHIP	1K 5% 1/16W	R802	1-216-845-11	METAL CHIP	100K 5% 1/16W
R734	1-216-821-11	METAL CHIP	1K 5% 1/16W	R803	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R735	1-216-845-11	METAL CHIP	100K 5% 1/16W	R804	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R737	1-216-851-11	METAL CHIP	330K 5% 1/16W	R806	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
R738	1-216-853-11	METAL CHIP	470K 5% 1/16W	R807	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R740	1-216-833-11	METAL CHIP	10K 5% 1/16W	R808	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
R741	1-216-821-11	METAL CHIP	1K 5% 1/16W	R809	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R742	1-216-833-11	METAL CHIP	10K 5% 1/16W	R810	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R743	1-216-864-11	METAL CHIP	0 5% 1/16W	R811	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R744	1-216-815-11	METAL CHIP	330 5% 1/16W	R815	1-216-864-11	METAL CHIP	0 5% 1/16W
R745	1-216-820-11	METAL CHIP	820 5% 1/16W	R816	1-216-817-11	METAL CHIP	470 5% 1/16W
R746	1-216-817-11	METAL CHIP	470 5% 1/16W	R817	1-216-837-11	METAL CHIP	22K 5% 1/16W
R747	1-216-864-11	METAL CHIP	0 5% 1/16W	R818	1-216-834-11	METAL CHIP	12K 5% 1/16W
R752	1-216-864-11	METAL CHIP	0 5% 1/16W	R819	1-216-809-11	METAL CHIP	100 5% 1/16W
R753	1-216-821-11	METAL CHIP	1K 5% 1/16W	R821	1-216-822-11	METAL CHIP	1.2K 5% 1/16W
R754	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R822	1-216-825-11	METAL CHIP	2.2K 5% 1/16W

MA-137

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R823	1-216-822-11	METAL CHIP	1.2K 5% 1/16W	R1806	1-216-849-11	METAL CHIP	220K 5% 1/16W
R824	1-216-821-11	METAL CHIP	1K 5% 1/16W	R1807	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R825	1-216-821-11	METAL CHIP	1K 5% 1/16W	R1808	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R826	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R1809	1-216-821-11	METAL CHIP	1K 5% 1/16W
R828	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R1810	1-216-843-11	METAL CHIP	68K 5% 1/16W
R829	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R1811	1-216-833-11	METAL CHIP	10K 5% 1/16W
R830	1-216-818-11	METAL CHIP	560 5% 1/16W			< NETWORK, RES >	
R831	1-216-864-11	METAL CHIP	0 5% 1/16W	RB101	1-236-412-11	NETWORK, RES	1.0K
R832	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB102	1-236-412-11	NETWORK, RES	1.0K
R834	1-216-864-11	METAL CHIP	0 5% 1/16W	RB103	1-236-412-11	NETWORK, RES	1.0K
R835	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB104	1-236-424-11	NETWORK, RES	10K
R842	1-216-864-11	METAL CHIP	0 5% 1/16W	RB105	1-236-424-11	NETWORK, RES	10K
R868	1-216-864-11	METAL CHIP	0 5% 1/16W	RB106	1-236-424-11	NETWORK, RES	10K
R873	1-216-864-11	METAL CHIP	0 5% 1/16W	RB107	1-236-412-11	NETWORK, RES	1.0K
R876	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB108	1-236-424-11	NETWORK, RES	10K
R887	1-216-864-11	METAL CHIP	0 5% 1/16W	RB109	1-236-436-11	NETWORK, RES	100K
R889	1-216-864-11	METAL CHIP	0 5% 1/16W	RB110	1-236-436-11	NETWORK, RES	100K
R893	1-216-821-11	METAL CHIP	1K 5% 1/16W	RB111	1-236-436-11	NETWORK, RES	100K
R894	1-216-821-11	METAL CHIP	1K 5% 1/16W	RB112	1-236-412-11	NETWORK, RES	1.0K
R1000	1-216-295-00	METAL CHIP	0 5% 1/10W	RB151	1-236-904-11	NETWORK, RES	1.0K
R1602	1-216-841-11	METAL CHIP	47K 5% 1/16W	RB152	1-236-904-11	NETWORK, RES	1.0K
R1603	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB153	1-236-904-11	NETWORK, RES	1.0K
R1604	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB154	1-236-904-11	NETWORK, RES	1.0K
R1605	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB155	1-236-904-11	NETWORK, RES	1.0K
R1606	1-216-841-11	METAL CHIP	47K 5% 1/16W	RB156	1-236-904-11	NETWORK, RES	1.0K
R1607	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	RB157	1-236-908-11	NETWORK, RES	10K
R1701	1-216-839-11	METAL CHIP	33K 5% 1/16W	RB158	1-236-908-11	NETWORK, RES	10K
R1702	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB201	1-236-436-11	NETWORK, RES	100K
R1703	1-216-820-11	METAL CHIP	820 5% 1/16W	RB203	1-236-412-11	NETWORK, RES	1.0K
R1704	1-216-819-11	METAL CHIP	680 5% 1/16W	RB204	1-236-412-11	NETWORK, RES	1.0K
R1705	1-216-819-11	METAL CHIP	680 5% 1/16W	RB205	1-236-412-11	NETWORK, RES	1.0K
R1706	1-216-819-11	METAL CHIP	680 5% 1/16W	RB206	1-236-412-11	NETWORK, RES	1.0K
R1707	1-216-864-11	METAL CHIP	0 5% 1/16W	RB208	1-236-424-11	NETWORK, RES	10K
R1708	1-216-864-11	METAL CHIP	0 5% 1/16W	RB209	1-236-424-11	NETWORK, RES	10K
R1718	1-216-838-11	METAL CHIP	27K 5% 1/16W	RB210	1-236-424-11	NETWORK, RES	10K
R1719	1-216-842-11	METAL CHIP	56K 5% 1/16W	RB212	1-236-424-11	NETWORK, RES	10K
R1720	1-216-821-11	METAL CHIP	1K 5% 1/16W	RB221	1-236-424-11	NETWORK, RES	10K
R1721	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	RB222	1-236-424-11	NETWORK, RES	10K
R1722	1-216-797-11	METAL CHIP	10 5% 1/16W	RB224	1-236-424-11	NETWORK, RES	10K
R1725	1-216-819-11	METAL CHIP	680 5% 1/16W	RB251	1-236-904-11	NETWORK, RES	1.0K
R1726	1-216-022-00	METAL CHIP	75 5% 1/10W	RB352	1-236-424-11	NETWORK, RES	10K
R1728	1-216-864-11	METAL CHIP	0 5% 1/16W	RB353	1-236-424-11	NETWORK, RES	10K
R1732	1-216-864-11	METAL CHIP	0 5% 1/16W	RB600	1-236-424-11	NETWORK, RES	10K
R1733	1-216-820-11	METAL CHIP	820 5% 1/16W	RB702	1-236-424-11	NETWORK, RES	10K
R1734	1-218-484-11	METAL CHIP	750 5% 1/16W	RB703	1-236-424-11	NETWORK, RES	10K
R1736	1-216-864-11	METAL CHIP	0 5% 1/16W	RB704	1-236-424-11	NETWORK, RES	10K
R1750	1-216-821-11	METAL CHIP	1K 5% 1/16W	RB801	1-236-412-11	NETWORK, RES	1.0K
R1801	1-216-864-11	METAL CHIP	0 5% 1/16W	RB802	1-236-412-11	NETWORK, RES	1.0K
R1803	1-216-864-11	METAL CHIP	0 5% 1/16W	RB803	1-236-412-11	NETWORK, RES	1.0K
R1805	1-216-845-11	METAL CHIP	100K 5% 1/16W				

Ref. No.	Part No.	Description	Remark
RB804	1-236-412-11	NETWORK, RES 1.0K (VARIABLE RESISTOR)	
RV701	1-241-475-11	RES, ADJ, CERMET 1K (SWITCH)	
S201	1-572-921-11	SWITCH, KEY BOARD (TRANSFORMER)	
T001	1-423-308-21	TRANSFORMER, CONVERTER (CRYSTAL)	
X101	1-579-367-21	VIBRATOR, CRYSTAL (11.89MHz)	
X201	1-579-369-21	VIBRATOR (10MHz)	
X202	1-579-550-11	VIBRATOR, CRYSTAL (32.768kHz)	
X801	1-579-365-21	VIBRATOR, CRYSTAL (3.58MHz)	

*	A-7071-697-A	PE-13 BOARD, COMPLETE ***** (CAPACITOR)	
C201	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C202	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C203	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C204	1-162-974-11	CERAMIC CHIP 0.01uF	50V
(CONNECTOR)			
CN201	1-573-346-21	CONNECTOR, FFC/FPC 6P (RESISTOR)	
R201	1-216-827-11	METAL CHIP 3.3K 5% 1/16W (SWITCH)	
S201	1-572-921-11	SWITCH, KEY BOARD (EJECT)	
S202	1-572-921-11	SWITCH, KEY BOARD (POWER)	
S203	1-572-921-11	SWITCH, KEY BOARD (COUNTER RESET)	
S204	1-572-921-11	SWITCH, KEY BOARD (DATA SCREEN)	
S206	1-692-280-11	SWITCH, PUSH (1 KEY) (LCD ON SW)	

*	A-7053-327-A	RG-25 BOARD, COMPLETE ***** (CAPACITOR)	
C901	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C902	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C903	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C904	1-164-360-11	CERAMIC CHIP 0.1uF 16V	

Ref. No.	Part No.	Description	Remark
C905	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C906	1-135-091-00	TANTALUM CHIP 1uF 20% 16V	
C907	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C908	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C909	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C910	1-128-085-11	ELECT CHIP 68uF 20% 10V	
C911	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C912	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C913	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C914	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C915	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C916	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C917	1-135-091-00	TANTALUM CHIP 1uF 20% 16V	
C918	1-135-070-00	TANTALUM CHIP 0.1uF 10% 35V	
C919	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C920	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C921	1-128-013-11	ELECT CHIP 1uF 20% 50V	
C924	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C926	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C927	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	
C928	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C929	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C931	1-162-947-11	CERAMIC CHIP 33PF 5% 50V	
C932	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C933	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C934	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C936	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C937	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C941	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C942	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C943	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C947	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C951	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C952	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C953	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C954	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C955	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C956	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C961	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C962	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C967	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C969	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C970	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C975	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C976	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C977	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C978	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C979	1-135-215-21	TANTAL. CHIP 6.8uF 20% 16V	
C997	1-163-833-00	CERAMIC CHIP 0.068uF 25V	

RG-25

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
(CONNECTOR)							
CN901	1-573-315-21	CONNECTOR, BOARD TO BOARD 30P		R913	1-216-834-11	METAL CHIP 12K 5% 1/16W	
(CAP, TRIMMER)							
CV901	1-141-311-11	CAP, TRIMMER 20PF		R914	1-216-821-11	METAL CHIP 1K 5% 1/16W	
(DIODE)							
D901	8-719-989-03	DIODE DAN222		R915	1-216-821-11	METAL CHIP 1K 5% 1/16W	
D902	8-719-989-03	DIODE DAN222		R916	1-216-821-11	METAL CHIP 1K 5% 1/16W	
D903	8-719-938-67	LED GL-3EG8		R918	1-216-855-11	METAL CHIP 680K 5% 1/16W	
(IC)							
IC901	8-752-056-40	IC CXA1385Q		R919	1-216-855-11	METAL CHIP 680K 5% 1/16W	
IC902	8-752-057-28	IC CXA1485Q		R920	1-218-725-11	METAL CHIP 24K 0.50% 1/16W	
IC903	8-759-084-06	IC uPD6453GT-622-E2		R922	1-216-864-11	METAL CHIP 0 5% 1/16W	
IC904	8-759-234-13	IC TC4S30F		R923	1-216-837-11	METAL CHIP 22K 5% 1/16W	
IC905	8-759-209-69	IC TC4S11F		R924	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
IC906	8-759-635-27	IC M62352GP		R925	1-216-838-11	METAL CHIP 27K 5% 1/16W	
(COIL)							
L901	1-412-031-11	INDUCTOR CHIP 47uH		R926	1-218-294-11	METAL CHIP 30K 5% 1/16W	
L902	1-412-030-11	INDUCTOR CHIP 22uH		R927	1-216-837-11	METAL CHIP 22K 5% 1/16W	
L903	1-412-955-11	INDUCTOR 22uH		R928	1-218-725-11	METAL CHIP 24K 0.50% 1/16W	
L904	1-412-955-11	INDUCTOR 22uH		R929	1-216-857-11	METAL CHIP 1M 5% 1/16W	
L905	1-412-955-11	INDUCTOR 22uH		R930	1-216-841-11	METAL CHIP 47K 5% 1/16W	
L960	1-412-198-11	INDUCTOR 220uH		R931	1-216-841-11	METAL CHIP 47K 5% 1/16W	
L961	1-412-191-11	INDUCTOR 47uH		R932	1-216-841-11	METAL CHIP 47K 5% 1/16W	
(TRANSISTOR)							
Q903	8-729-928-81	TRANSISTOR DTC144EE		R933	1-216-817-11	METAL CHIP 470 5% 1/16W	
Q904	8-729-928-81	TRANSISTOR DTC144EE		R934	1-216-833-11	METAL CHIP 10K 5% 1/16W	
Q906	8-729-928-19	TRANSISTOR 2SA1774R		R935	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
Q907	8-729-927-XX	TRANSISTOR 2SC4617R		R936	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
Q908	8-729-928-27	TRANSISTOR DTA144EE		R937	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q909	8-729-927-XX	TRANSISTOR 2SC4617R		R939	1-216-821-11	METAL CHIP 1K 5% 1/16W	
Q910	8-729-928-19	TRANSISTOR 2SA1774R		R941	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q911	8-729-928-81	TRANSISTOR DTC144EE		R942	1-216-839-11	METAL CHIP 33K 5% 1/16W	
(RESISTOR)							
R901	1-216-864-11	METAL CHIP 0 5% 1/16W		R943	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R902	1-216-815-11	METAL CHIP 330 5% 1/16W		R944	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R903	1-216-821-11	METAL CHIP 1K 5% 1/16W		R945	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R904	1-218-724-11	METAL CHIP 22K 0.50% 1/16W		R947	1-216-864-11	METAL CHIP 0 5% 1/16W	
R905	1-216-833-11	METAL CHIP 10K 5% 1/16W		R948	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R907	1-216-839-11	METAL CHIP 33K 5% 1/16W		R960	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R908	1-216-845-11	METAL CHIP 100K 5% 1/16W		R961	1-216-864-11	METAL CHIP 0 5% 1/16W	
R909	1-216-845-11	METAL CHIP 100K 5% 1/16W		R964	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R911	1-216-844-11	METAL CHIP 82K 5% 1/16W		R965	1-216-027-00	METAL CHIP 120 5% 1/10W	
R912	1-216-839-11	METAL CHIP 33K 5% 1/16W		R966	1-216-843-11	METAL CHIP 68K 5% 1/16W	
				(NETWORK, RES)			
				RB960 1-236-412-11 NETWORK, RES 1.0K			
				RB961 1-236-412-11 NETWORK, RES 1.0K			
				RB962 1-236-412-11 NETWORK, RES 1.0K			
				RB963 1-236-412-11 NETWORK, RES 1.0K			
				(VARIABLE RESISTOR)			
				RV901 1-241-481-11 RES, ADJ, CERMET 100K			
				RV902 1-241-481-11 RES, ADJ, CERMET 100K			
				RV903 1-241-483-11 RES, ADJ, CERMET 470K			

Ref. No.	Part No.	Description	Remark
(CRYSTAL)			
X901	1-579-041-11	VIBRATOR, CRYSTAL (3.58MHz)	

*	A-7063-328-A	RP-144 BOARD, COMPLETE	*****
(CAPACITOR)			
C1001	1-164-361-11	CERAMIC CHIP 0.047uF	16V
C1002	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C1003	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C1004	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1005	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C1006	1-164-361-11	CERAMIC CHIP 0.047uF	16V
C1007	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1008	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C1009	1-164-361-11	CERAMIC CHIP 0.047uF	16V
C1010	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1011	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1012	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C1013	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C1014	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C1015	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C1016	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C1017	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C1018	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C1019	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C1020	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1021	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C1023	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C1024	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1025	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1041	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C1042	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C1043	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C1044	1-162-953-11	CERAMIC CHIP 100PF	5% 50V
C1045	1-162-952-11	CERAMIC CHIP 82PF	5% 50V
C1046	1-162-953-11	CERAMIC CHIP 100PF	5% 50V
C1047	1-162-955-11	CERAMIC CHIP 150PF	5% 50V
(CONNECTOR)			
CN052	1-691-490-21	CONNECTOR, FFC/FPC 11P	
CN053	1-573-768-21	PIN, CONNECTOR (1.5MM) (SMD) 5P	
(IC)			
IC1001	8-752-033-38	IC CXA1202R	

Ref. No.	Part No.	Description	Remark
(COIL)			
L1001	1-412-029-11	INDUCTOR CHIP 10uH	
L1002	1-412-033-11	INDUCTOR CHIP 220uH	
L1003	1-412-033-11	INDUCTOR CHIP 220uH	
L1041	1-412-198-11	INDUCTOR 220uH	
L1042	1-412-137-11	INDUCTOR 10uH	
(TRANSISTOR)			
Q1001	8-729-928-27	TRANSISTOR DTA144EE	
Q1041	8-729-928-19	TRANSISTOR 2SA1774R	
Q1042	8-729-820-76	TRANSISTOR 2SA1179-MSM6	
Q1043	8-729-928-19	TRANSISTOR 2SA1774R	
(RESISTOR)			
R1001	1-216-830-11	METAL CHIP 5.6K 5%	1/16W
R1002	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1003	1-216-864-11	METAL CHIP 0 5%	1/16W
R1004	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1006	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1007	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1008	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1009	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1010	1-216-839-11	METAL CHIP 33K 5%	1/16W
R1011	1-216-834-11	METAL CHIP 12K 5%	1/16W
R1012	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1013	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1014	1-216-791-11	METAL CHIP 3.3 5%	1/16W
R1015	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1016	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1018	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1019	1-216-841-11	METAL CHIP 47K 5%	1/16W
R1020	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1021	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R1022	1-216-830-11	METAL CHIP 5.6K 5%	1/16W
R1023	1-216-809-11	METAL CHIP 100 5%	1/16W
R1024	1-216-809-11	METAL CHIP 100 5%	1/16W
R1041	1-216-840-11	METAL CHIP 39K 5%	1/16W
R1042	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1043	1-216-814-11	METAL CHIP 270 5%	1/16W
R1044	1-216-813-11	METAL CHIP 220 5%	1/16W
R1045	1-216-803-11	METAL CHIP 33 5%	1/16W
R1046	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1047	1-216-799-11	METAL CHIP 15 5%	1/16W
R1048	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1049	1-216-831-11	METAL CHIP 6.8K 5%	1/16W
(FLEXIBLE BOARD)			
W051	1-645-994-11	FP-628 FLEXIBLE BOARD	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7063-329-A	SL-26 BOARD, COMPLETE *****				(CAPACITOR)	
		(CAPACITOR)		C200	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C101	1-128-004-11	ELECT CHIP 10uF 20% 16V		C201	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C102	1-128-004-11	ELECT CHIP 10uF 20% 16V		C202	1-164-816-11	CERAMIC CHIP 220PF 2%	50V
C103	1-128-013-11	ELECT CHIP 1uF 20% 50V		C203	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C104	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V		C204	1-164-346-11	CERAMIC CHIP 1uF	16V
C105	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V		C205	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C106	1-162-974-11	CERAMIC CHIP 0.01uF 50V		C206	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C107	1-165-128-11	CERAMIC CHIP 0.22uF 16V		C207	1-162-960-11	CERAMIC CHIP 220PF 10%	50V
C108	1-165-128-11	CERAMIC CHIP 0.22uF 16V		C208	1-162-961-11	CERAMIC CHIP 330PF 10%	50V
C109	1-165-128-11	CERAMIC CHIP 0.22uF 16V		C209	1-135-159-21	TANTALUM CHIP 10uF 10%	20V
		(CONNECTOR)		C210	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
CN101	1-691-482-21	CONNECTOR, FFC/FPC 15P		C211	1-135-079-21	TANTALUM CHIP 3.3uF 10%	35V
CN102	1-691-472-21	CONNECTOR, FFC/FPC 6P		C212	1-135-161-21	TANTALUM CHIP 22uF 10%	10V
CN103	1-691-473-21	CONNECTOR, FFC/FPC 7P		C213	1-162-955-11	CERAMIC CHIP 150PF 5%	50V
		(IC)		C214	1-163-036-00	CERAMIC CHIP 0.068uF	50V
IC101	8-759-059-09	IC LB8111V		C215	1-135-159-21	TANTALUM CHIP 10uF 10%	20V
		(TRANSISTOR)		C216	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
Q101	8-729-902-93	TRANSISTOR FMG4		C217	1-164-360-11	CERAMIC CHIP 0.1uF	16V
		(RESISTOR)		C220	1-164-346-11	CERAMIC CHIP 1uF	16V
R101	1-216-845-11	METAL CHIP 100K 5% 1/16W		C300	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R102	1-216-845-11	METAL CHIP 100K 5% 1/16W		C301	1-135-259-11	TANTAL CHIP 10uF 20%	6.3V
R103	1-216-833-11	METAL CHIP 10K 5% 1/16W		C302	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R104	1-216-833-11	METAL CHIP 10K 5% 1/16W		C303	1-135-159-21	TANTALUM CHIP 10uF 10%	20V
R106	1-216-150-00	METAL CHIP 10 5% 1/8W		C304	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
R107	1-216-840-11	METAL CHIP 39K 5% 1/16W		C305	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R108	1-216-864-11	METAL CHIP 0 5% 1/16W		C306	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R111	1-216-864-11	METAL CHIP 0 5% 1/16W		C307	1-162-974-11	CERAMIC CHIP 0.01uF	50V
R112	1-216-864-11	METAL CHIP 0 5% 1/16W		C308	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
R113	1-216-864-11	METAL CHIP 0 5% 1/16W		C309	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
R114	1-216-864-11	METAL CHIP 0 5% 1/16W		C310	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
		(FLEXIBLE BOARD)		C311	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
W101	1-645-363-11	FP-562 FLEXIBLE BOARD		C400	1-124-778-00	ELECT CHIP 22uF 20%	6.3V
W102	1-642-186-11	FP-437 FLEXIBLE BOARD		C401	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
		*****		C402	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
*	A-7063-381-A	TM-118 BOARD, COMPLETE *****		C403	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
		(BATTERY HOLDER)		C404	1-162-924-11	CERAMIC CHIP 56PF 5%	50V
BT300	1-550-414-11	HOLDER, BATTERY		C406	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C407	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C408	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C409	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C410	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
				C411	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
				C412	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C413	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C414	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C415	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C416	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C417	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
				C418	1-162-945-11	CERAMIC CHIP 22PF 5%	50V

Ref. No.	Part No.	Description	Remark
C419	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C426	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C427	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C428	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C429	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C430	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C431	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C432	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C433	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C434	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C435	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C436	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C500	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C501	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C502	1-164-473-11	CERAMIC CHIP 820PF	5% 50V
C503	1-135-091-00	TANTALUM CHIP 1uF	20% 16V
C504	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C505	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C506	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C507	1-164-343-11	CERAMIC CHIP 0.056uF	10% 25V
C508	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C509	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C510	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C513	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C514	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C515	1-124-779-00	ELECT CHIP 10uF	20% 16V
C516	1-162-918-11	CERAMIC CHIP 18PF	5% 50V
C517	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C518	1-126-246-11	ELECT CHIP 220uF	20% 4V
C519	1-124-779-00	ELECT CHIP 10uF	20% 16V
C520	1-124-779-00	ELECT CHIP 10uF	20% 16V
C521	1-124-779-00	ELECT CHIP 10uF	20% 16V
C522	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C523	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C530	1-162-926-11	CERAMIC CHIP 82PF	5% 50V
C999	1-135-161-21	TANTALUM CHIP 22uF	10% 10V
(CAP, ADJ)			
CV400	1-141-423-61	CAP, ADJ	
(DIODE)			
D200	8-719-802-36	DIODE 1SS250	
D201	8-719-938-75	DIODE SB05-05CP	
D300	8-719-941-09	DIODE DAP202U	
△D301	8-719-421-27	DIODE MA728	
D302	8-719-941-09	DIODE DAP202U	
D400	8-719-800-56	LED TLUR164	
D500	8-719-420-81	DIODE MA3075WA	
D501	8-719-420-81	DIODE MA3075WA	
D502	8-719-106-80	DIODE RD13M-B2	

Ref. No.	Part No.	Description	Remark
D503	8-719-106-80	DIODE RD13M-B2	
D504	8-719-106-80	DIODE RD13M-B2	
D510	8-719-421-15	DIODE MA8027	
(FERRITE BEAD)			
FB400	1-412-390-21	INDUCTOR CHIP 0uH	
FB401	1-412-390-21	INDUCTOR CHIP 0uH	
FB402	1-412-390-21	INDUCTOR CHIP 0uH	
FB403	1-412-390-21	INDUCTOR CHIP 0uH	
FB404	1-412-390-21	INDUCTOR CHIP 0uH	
FB405	1-412-390-21	INDUCTOR CHIP 0uH	
FB406	1-412-390-21	INDUCTOR CHIP 0uH	
FB407	1-412-390-21	INDUCTOR CHIP 0uH	
FB408	1-412-390-21	INDUCTOR CHIP 0uH	
(IC)			
IC200	8-759-990-45	IC MB3775PFV	
IC300	8-759-512-69	IC S-81350HG-KD	
IC301	8-759-720-45	IC CAT35C202K	
IC302	8-759-946-03	IC S-8054ALR-LN-S	
IC303	8-759-999-02	IC TL1596CDB	
IC304	8-759-940-33	IC S-8052ALO-L6-S	
IC400	8-759-083-08	IC MB89794BPF-177	
IC500	8-759-083-11	IC LA7217M	
IC501	8-759-098-47	IC MB90075PF-122	
IC502	8-759-209-97	IC TC4S81F	
(COIL)			
L200	1-424-522-21	COIL, CHOKE 10uH	
L201	1-424-522-21	COIL, CHOKE 10uH	
L202	1-408-790-00	INDUCTOR CHIP 120uH	
L203	1-424-524-21	COIL, CHOKE 47uH	
L400	1-412-979-21	INDUCTOR 1uH	
L401	1-412-031-11	INDUCTOR CHIP 47uH	
L500	1-406-452-11	COIL, OSC	
L501	1-412-031-11	INDUCTOR CHIP 47uH	
(LINK, IC)			
△PS300	1-532-605-00	LINK, IC ICP-N10 (0.4A)	
(TRANSISTOR)			
Q200	8-729-428-88	TRANSISTOR UN9113	
Q201	8-729-425-64	TRANSISTOR 2SD2216Q	
Q202	8-729-425-50	TRANSISTOR 2SB1462Q	
Q203	8-729-425-64	TRANSISTOR 2SD2216Q	
Q204	8-729-425-64	TRANSISTOR 2SD2216Q	
Q205	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q206	8-729-601-58	TRANSISTOR 2SC3053-C	
Q207	8-729-429-18	TRANSISTOR UN9213	
Q300	8-729-425-50	TRANSISTOR 2SB1462Q	

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

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q301	8-729-425-64	TRANSISTOR 2SD2216Q		R317	1-216-837-11	METAL CHIP 22K 5%	1/16W
△Q302	8-729-220-93	TRANSISTOR 2SK209-G		R318	1-216-837-11	METAL CHIP 22K 5%	1/16W
△Q303	8-729-220-93	TRANSISTOR 2SK209-G		R400	1-216-819-11	METAL CHIP 680 5%	1/16W
Q304	8-729-429-18	TRANSISTOR UN9213		R401	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q305	8-729-425-64	TRANSISTOR 2SD2216Q		R402	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q306	8-729-220-93	TRANSISTOR 2SK209-G		R403	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q400	8-729-929-26	TRANSISTOR DTC114TE		R404	1-216-857-11	METAL CHIP 1M 5%	1/16W
Q500	8-729-427-72	TRANSISTOR XP4501		R405	1-216-864-11	METAL CHIP 0 5%	1/16W
Q501	8-729-425-64	TRANSISTOR 2SD2216Q		R406	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q502	8-729-425-50	TRANSISTOR 2SB1462Q		R407	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q503	8-729-425-50	TRANSISTOR 2SB1462Q		R408	1-216-821-11	METAL CHIP 1K 5%	1/16W
		(RESISTOR)		R409	1-216-821-11	METAL CHIP 1K 5%	1/16W
				R410	1-216-833-11	METAL CHIP 10K 5%	1/16W
R200	1-216-839-11	METAL CHIP 33K 5%	1/16W	R411	1-216-821-11	METAL CHIP 1K 5%	1/16W
R201	1-216-839-11	METAL CHIP 33K 5%	1/16W	R412	1-216-833-11	METAL CHIP 10K 5%	1/16W
R202	1-216-831-11	METAL CHIP 6.8K 5%	1/16W	R413	1-216-833-11	METAL CHIP 10K 5%	1/16W
R203	1-216-821-11	METAL CHIP 1K 5%	1/16W	R414	1-216-833-11	METAL CHIP 10K 5%	1/16W
R204	1-216-836-11	METAL CHIP 18K 5%	1/16W	R415	1-216-821-11	METAL CHIP 1K 5%	1/16W
R205	1-216-839-11	METAL CHIP 33K 5%	1/16W	R416	1-216-833-11	METAL CHIP 10K 5%	1/16W
R206	1-216-839-11	METAL CHIP 33K 5%	1/16W	R417	1-216-821-11	METAL CHIP 1K 5%	1/16W
R207	1-216-821-11	METAL CHIP 1K 5%	1/16W	R418	1-216-864-11	METAL CHIP 0 5%	1/16W
R208	1-216-035-00	METAL CHIP 270 5%	1/10W	R420	1-216-837-11	METAL CHIP 22K 5%	1/16W
R209	1-216-833-11	METAL CHIP 10K 5%	1/16W	R421	1-216-837-11	METAL CHIP 22K 5%	1/16W
R210	1-216-829-11	METAL CHIP 4.7K 5%	1/16W	R422	1-216-839-11	METAL CHIP 33K 5%	1/16W
R211	1-216-776-11	METAL CHIP 10K 0.50%	1/16W	R423	1-216-841-11	METAL CHIP 47K 5%	1/16W
R212	1-216-749-11	METAL CHIP 240K 0.50%	1/16W	R424	1-216-845-11	METAL CHIP 100K 5%	1/16W
R213	1-216-898-11	METAL CHIP 1.8K 0.50%	1/16W	R425	1-216-846-11	METAL CHIP 120K 5%	1/16W
R214	1-216-818-11	METAL CHIP 560 5%	1/16W	R426	1-216-841-11	METAL CHIP 47K 5%	1/16W
R215	1-216-708-11	METAL CHIP 4.7K 0.50%	1/16W	R427	1-216-845-11	METAL CHIP 100K 5%	1/16W
R216	1-216-833-11	METAL CHIP 10K 5%	1/16W	R428	1-216-821-11	METAL CHIP 1K 5%	1/16W
R217	1-216-833-11	METAL CHIP 10K 5%	1/16W	R429	1-216-833-11	METAL CHIP 10K 5%	1/16W
R218	1-216-839-11	METAL CHIP 33K 5%	1/16W	R431	1-216-833-11	METAL CHIP 10K 5%	1/16W
R219	1-216-841-11	METAL CHIP 47K 5%	1/16W	R432	1-216-845-11	METAL CHIP 100K 5%	1/16W
R220	1-216-845-11	METAL CHIP 100K 5%	1/16W	R434	1-216-821-11	METAL CHIP 1K 5%	1/16W
R221	1-216-821-11	METAL CHIP 1K 5%	1/16W	R436	1-216-845-11	METAL CHIP 100K 5%	1/16W
R300	1-216-845-11	METAL CHIP 100K 5%	1/16W	R440	1-216-833-11	METAL CHIP 10K 5%	1/16W
R301	1-216-845-11	METAL CHIP 100K 5%	1/16W	R450	1-216-845-11	METAL CHIP 100K 5%	1/16W
R302	1-216-845-11	METAL CHIP 100K 5%	1/16W	R500	1-216-821-11	METAL CHIP 1K 5%	1/16W
R303	1-216-845-11	METAL CHIP 100K 5%	1/16W	R501	1-216-818-11	METAL CHIP 560 5%	1/16W
R304	1-216-845-11	METAL CHIP 100K 5%	1/16W	R503	1-216-847-11	METAL CHIP 150K 5%	1/16W
R305	1-216-845-11	METAL CHIP 100K 5%	1/16W	R504	1-216-833-11	METAL CHIP 10K 5%	1/16W
R306	1-216-827-11	METAL CHIP 3.3K 5%	1/16W	R505	1-216-833-11	METAL CHIP 10K 5%	1/16W
R307	1-216-839-11	METAL CHIP 33K 5%	1/16W	R506	1-216-833-11	METAL CHIP 10K 5%	1/16W
R308	1-216-841-11	METAL CHIP 47K 5%	1/16W	R508	1-216-833-11	METAL CHIP 10K 5%	1/16W
R310	1-216-861-11	METAL CHIP 2.2M 5%	1/16W	R509	1-216-833-11	METAL CHIP 10K 5%	1/16W
R311	1-216-861-11	METAL CHIP 2.2M 5%	1/16W	R510	1-216-833-11	METAL CHIP 10K 5%	1/16W
R312	1-216-826-11	METAL CHIP 2.7K 5%	1/16W	R511	1-216-864-11	METAL CHIP 0 5%	1/16W
R313	1-216-840-11	METAL CHIP 39K 5%	1/16W	R512	1-216-828-11	METAL CHIP 3.9K 5%	1/16W
R315	1-216-809-11	METAL CHIP 100 5%	1/16W	R513	1-216-822-11	METAL CHIP 1.2K 5%	1/16W
R316	1-216-854-11	METAL CHIP 560K 5%	1/16W	R514	1-216-839-11	METAL CHIP 33K 5%	1/16W

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Ref. No.	Part No.	Description	Remark
R515	1-216-809-11	METAL CHIP	100 5% 1/16W
R516	1-216-835-11	METAL CHIP	15K 5% 1/16W
R517	1-216-819-11	METAL CHIP	680 5% 1/16W
R518	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R519	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R520	1-216-817-11	METAL CHIP	470 5% 1/16W
R521	1-216-864-11	METAL CHIP	0 5% 1/16W
R522	1-216-821-11	METAL CHIP	1K 5% 1/16W
R523	1-216-834-11	METAL CHIP	12K 5% 1/16W
(NETWORK, RES)			
RB401	1-236-436-11	NETWORK, RES	100K
RB402	1-236-424-11	NETWORK, RES	10K
RB403	1-236-424-11	NETWORK, RES	10K
RB405	1-236-412-11	NETWORK, RES	1.0K
RB406	1-236-424-11	NETWORK, RES	10K
RB407	1-236-424-11	NETWORK, RES	10K
RB408	1-236-412-11	NETWORK, RES	1.0K
RB409	1-236-412-11	NETWORK, RES	1.0K
RB410	1-236-412-11	NETWORK, RES	1.0K
RB411	1-236-424-11	NETWORK, RES	10K
RB412	1-236-436-11	NETWORK, RES	100K
RB413	1-236-424-11	NETWORK, RES	10K
(SWITCH)			
S402	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(CHANNEL +)
S403	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(ENTER)
S404	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(▷)
S405	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(◁)
S406	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(▽)
S407	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(△)
S408	1-692-032-21	SWITCH, TACTILE (HORIZONTAL)	(MENU)
S414	1-570-114-11	SWITCH, SLIDE (INPUT SEL)	
(FLEXIBLE BOARD)			
W400	1-645-418-11	FP-569 FLEXIBLE BOARD	
(CRYSTAL)			
X400	1-579-550-11	VIBRATOR, CRYSTAL (32.768kHz)	
X401	1-578-689-21	VIBRATOR (8MHz)	
X500	1-578-690-11	VIBRATOR, CERAMIC (500kHz)	
X501	1-579-738-21	VIBRATOR, CRYSTAL (14.318MHz)	

*	A-7063-380-A	TU-142 BOARD, COMPLETE	

(CAPACITOR)			
C100	1-163-036-00	CERAMIC CHIP	0.068uF 50V

Ref. No.	Part No.	Description	Remark
C101	1-163-036-00	CERAMIC CHIP	0.068uF 50V
C102	1-163-036-00	CERAMIC CHIP	0.068uF 50V
C103	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C104	1-162-921-11	CERAMIC CHIP	33PF 5% 50V
C110	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C111	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C112	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C113	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C115	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C116	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C117	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C118	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C119	1-124-779-00	ELECT CHIP	10uF 20% 16V
C120	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C121	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C122	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C124	1-135-149-21	TANTALUM CHIP	2.2uF 20% 6.3V
C127	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C128	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C129	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C130	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
C131	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C132	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C133	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
C135	1-135-259-11	TANTALUM CHIP	10uF 20% 6.3V
C139	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C141	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C142	1-135-166-21	TANTALUM CHIP	47uF 10% 10V
C150	1-164-005-11	CERAMIC CHIP	0.47uF 25V
C190	1-135-259-11	TANTALUM CHIP	10uF 20% 6.3V
C192	1-162-974-11	CERAMIC CHIP	0.01uF 50V
(CONNECTOR)			
CN100	1-573-366-21	CONNECTOR, FFC/FPC	26P
(DIODE)			
D100	8-719-941-09	DIODE DAP202U	
(IF BLOCK)			
IF100	1-466-869-21	IF BLOCK (IFJ-450L)	
(JACK)			
J100	1-507-921-00	JACK (EXT ANT)	
(COIL)			
L101	1-412-031-11	INDUCTOR CHIP	47uH
L102	1-412-944-11	INDUCTOR	2.7uH
L104	1-412-031-11	INDUCTOR CHIP	47uH
L105	1-412-952-11	INDUCTOR	12uH

Ref. No.	Part No.	Description	Remark
		< LINK, IC >	
△PS100	1-576-123-21	LINK, IC CCP2E20 (0.8A)	
		< TRANSISTOR >	
Q100	8-729-928-42	TRANSISTOR DTA143EE	
Q102	8-729-928-42	TRANSISTOR DTA143EE	
Q103	8-729-425-64	TRANSISTOR 2SD2216Q	
Q105	8-729-425-64	TRANSISTOR 2SD2216Q	
Q106	8-729-425-50	TRANSISTOR 2SB1462Q	
Q107	8-729-425-64	TRANSISTOR 2SD2216Q	
Q108	8-729-425-64	TRANSISTOR 2SD2216Q	
Q109	8-729-425-64	TRANSISTOR 2SD2216Q	
Q111	8-729-425-64	TRANSISTOR 2SD2216Q	
		< RESISTOR >	
R022	1-216-864-11	METAL CHIP 0 5% 1/16W	
R100	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R101	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R102	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R103	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R104	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R109	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R110	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R111	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R114	1-218-344-11	METAL CHIP 7.5K 5% 1/16W	
R115	1-216-864-11	METAL CHIP 0 5% 1/16W	
R116	1-216-864-11	METAL CHIP 0 5% 1/16W	
R118	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R119	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R120	1-216-814-11	METAL CHIP 270 5% 1/16W	
R121	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R123	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R124	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R125	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R126	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R127	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R129	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R130	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R132	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R133	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R134	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R135	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R137	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R138	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R140	1-216-864-11	METAL CHIP 0 5% 1/16W	
R170	1-216-025-11	METAL CHIP 100 5% 1/16W	
R171	1-216-025-11	METAL CHIP 100 5% 1/16W	
R191	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S100	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (CHANNEL -)	
S101	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER CLEAR)	
S102	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER REC)	
S103	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER CHECK)	
		< TUNER, ET >	
△TU100	1-465-926-11	TUNER, ET (BT-HA301)	

*	A-7071-700-A	VR-39 BOARD, COMPLETE	*****
		< CAPACITOR >	
C501	1-126-395-11	ELECT 22uF 20% 16V	
C502	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
		< CONNECTOR >	
CN501	1-580-056-21	PIN, CONNECTOR 3P	
CN502	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P	
CN503	1-573-921-11	CONNECTOR, FFC/FPC (ZIF) 12P	
		< COIL >	
L501	1-412-028-11	INDUCTOR CHIP 4.7uH	
		< RESISTOR >	
R501	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R502	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R503	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R504	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R505	1-216-833-11	METAL CHIP 10K 5% 1/16W	
		< SWITCH >	
S501	1-572-473-11	SWITCH, TACTIL (VOL +)	
S502	1-572-473-11	SWITCH, TACTIL (VOL -)	
S503	1-572-473-11	SWITCH, TACTIL (BRT +)	
S504	1-572-473-11	SWITCH, TACTIL (BRT -)	
S505	1-572-473-11	SWITCH, TACTIL (MENU)	
S506	1-572-473-11	SWITCH, TACTIL (ENTER)	
		< FLEXIBLE BOARD >	
W501	1-645-365-11	FP-564 FLEXIBLE BOARD	

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Ref. No.	Part No.	Description	Remark
MISCELLANEOUS *****			
62	1-645-364-11	FP-563 FLEXIBLE BOARD	
63	1-645-368-11	FP-568 FLEXIBLE BOARD	
△69	1-466-791-11	INVERTER UNIT, DC/AC (DPS-28)	
101	1-645-995-11	FP-629 FLEXIBLE BOARD	
110	1-645-367-11	FP-566 FLEXIBLE BOARD	
112	1-645-366-11	FP-565 FLEXIBLE BOARD	
117	1-691-471-11	CONNECTOR, TRANSLATION 11P	
251	A-7049-568-A	DRUM ASSY, UPPER (DGR-93-R)	
361	1-501-456-11	ANTENNA, TELESCOPIC	
BL901	1-517-126-11	FLUORESENT TUBE, HEAT CATHODE	
J401	1-569-556-11	JACK (VIDEO/AUDIO)	
J901	1-537-449-11	TERMINAL BOARD (TUNER/CAMERA)	
J902	1-537-420-21	TERMINAL BOARD (BATTERY)	
J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE) 12P (A/V OUT)	
LCD901	1-809-500-11	MODULE, COLOR LIQUID CRYSTAL	
M901	A-7048-635-A	DRUM ASSY (DGH-93A-R)	
M902	8-835-492-01	MOTOR, DC SCE-0102A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	
S005	1-570-771-21	SWITCH (C DOWN)	
SP901	1-504-137-11	SPEAKER (3.6CM)	

ACCESSORIES & PACKING MATERIALS *****			
	1-417-173-11	DISTRIBUTOR, ANTENNA	
	1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE) (US)	
	3-316-688-01	BAG, PROTECTION	
	3-755-611-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-755-611-31	MANUAL, INSTRUCTION (FRENCH) (Canadian)	
	3-755-628-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-755-628-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (Canadian)	
*	3-949-755-01	INDIVIDUAL CARTON	
*	3-949-756-01	CUSHION (LOWER)	
*	3-949-758-01	CUSHION, ACC	
	8-953-314-95	HEADPHONE MDR-E757/BK SET	

HARDWARE LIST *****			
#1	7-624-102-04	STOP RING 1.5, TYPE -E	
#2	7-627-853-57	PRECISION SCREW +P2X5	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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SECTION 7 MECHANICAL SECTION ADJUSTMENTS

Mechanism Section Adjustments

For details of adjustments and checks of the mechanism section, and the replacement of mechanism parts, refer to the separate volume "8 mm Video MECHANISM ADJUSTMENT Manual IV [A MECHANISM]" (9-973-199-11).

Refer to the following for how to set the track shift mode.

7-1. SETTING OF TRACK SHIFT MODE

- 1) Refer to "2. DISASSEMBLY", and supply the power with the cabinet section removed. (So that the mechanism deck section can be operated.)
- 2) Connect the adjusting remote commander, and turn on the HOLD switch.
- 3) Select page: 1, address: 00, and set data: 01. (Releasing the protect.)
- 4) Select page: D, address: 01, and set data: 03. (Setting the track shift mode.)
- 5) Press the PAUSE button of the adjusting remote commander.
- 6) Turn off the HOLD switch of the adjusting remote commander. (The adjusting remote commander can be removed after this.)
- 7) After completing all operations, be sure to perform "7-3. Processing After Operations".

7-2. PREPARATIONS FOR ADJUSTMENTS

- 1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
- 2) Connect the oscilloscope.
CH1: Pin ② of CN053 on RP-144 board (V RF OUT)
CH2: Pin ③ of CN053 on RP-144 board (RF SW P)
- 3) Play back the alignment tape for adjusting tracking (WRS-1NP: 8-967-995-02).
- 4) Check that the RF waveform of the oscilloscope is flat at the entrance and exit. (Refer to Figs. 7-1, 7-2.)
If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment IV (A Mechanism).
- 5) After adjusting, perform "7-3. Processing After Operations".

7-3. Processing After Operations

- 1) Connect the adjusting remote commander, and turn on the HOLD switch.
- 2) Select page: 1, address: 00, and set data: 01.
- 3) Select page: D, address: 01, and set data: 00.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Disconnect the power supply of the unit.

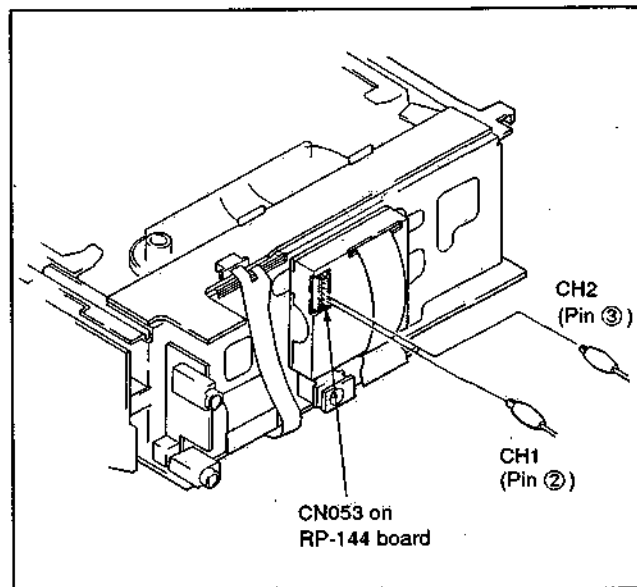


Fig.7-1.

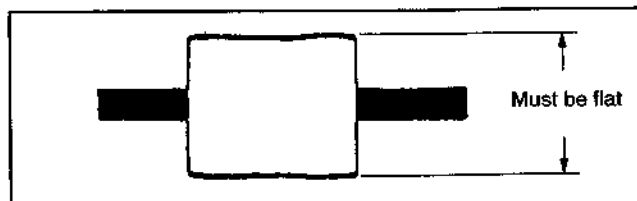


Fig.7-2.

SECTION 8

ELECTRICAL ADJUSTMENTS

When adjusting, refer to the layout diagrams for adjustment related parts beginning from page 206.

8-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring equipments for adjusting the video section.

8-1-1. Equipments Used

- 1) TV Monitor
- 2) Oscilloscope 2 phenomena, band 30 MHz or wider, with delay mode (Use 10:1 probe unless specified otherwise.)
- 3) Frequency counter
- 4) Pattern generator with video output terminal
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Regulated power supply
- 11) Alignment tape

For adjusting tracking (WR5-1NP)

Part code: 8-967-995-02

For adjusting video frequency characteristics (WR5-7NE)

Part code: 8-967-995-13

For checking operations

(WR5-4NL)^{Note 1}

Part code: 8-967-995-51

(WR5-5NSP)^{Note 2}

Part code: 8-967-995-42

(WR5-8NSE)

Part code: 8-967-995-43

For checking AFM stereo operations (WR5-9NS)

Part code: 8-967-995-23

Note: 1) The WR5-3NL (8-967-995-31) alignment tape can be used instead.

2) The WR5-4NSP (8-967-995-41) alignment tape can be used instead.

- 12) Adjusting remote commander (J-6082-053-A)

Note: If the micro processor IC in the adjusting remote commander is not the new model (μ PD7503G-C56-12), pages cannot be switched. Therefore, replace with the new one (8-759-148-35).

8-1-2. Connecting the Equipments

Connect the measuring equipments as shown in Fig. 8-1 and adjust, unless specified otherwise.

- Connect the adjusting remote commander to the remote control terminal (J101 on MA-137 board).

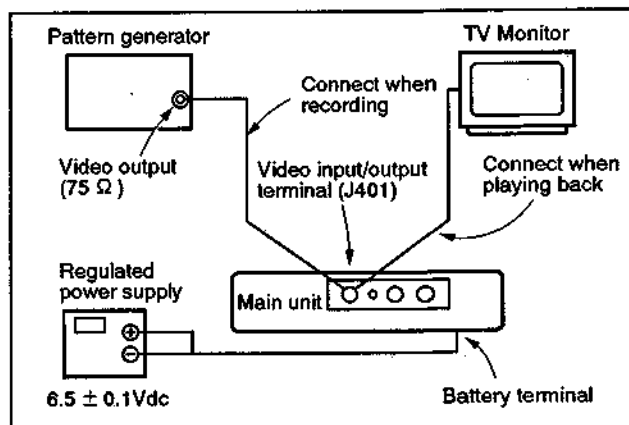


Fig. 8-1.

8-1-3. Precautions Upon Adjustments

- 1) The LCD unit is not required except in the "LCD system adjustment". Remove it when not required.

8-1-4. Setup during Adjustment

Because the video signal obtained from the pattern generator is used as the adjustment signal for electrical adjustments, it must satisfy the given specifications.

Connect the oscilloscope to the video input/output terminal of the AU-136 board, and check that the amplitude of the sync signal of the video signal is approximately 0.3V, the amplitude of the video section is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and flat, and the level ratio of the burst signal to the "red" signal is 0.30:0.66. The video signal (color bar) used in electrical adjustments is shown in Fig. 8-2.

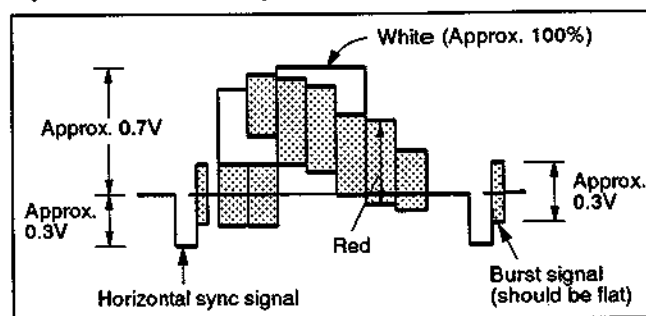


Fig. 8-2. Color Bar Signal of Pattern Generator

8-1-5. Alignment Tape

The following table lists available alignment tapes. Use the tape specified in the signal column for each adjustment.

If the tape type is not specified for adjustments using tapes to check operations, use whichever tape for checking operations.

Name	Recording Mode	Tape Type	Tape Speed	Recording Contents		Uses
				Video Area	PCM Area	
Tracking WR5-1NP	L	MP	SP	CH2: 1 MHz tape path adjusting signal		Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	E	ME	SP	RF sweep 0 to 15 MHz Marker 2, 4.5, 7, 8.5, 10 MHz		Adjusting frequency characteristics
Checking operations (SP mode) WR5-5NSP	L	MP	SP	<ul style="list-style-type: none"> Video signal Color bar 4 minutes Monoscope 4 minutes Audio signal (AFM) 400 Hz 60% modulation 	<ul style="list-style-type: none"> Audio signal (PCM) Monoscope section 20Hz, 20 sec. 400Hz, 20 sec. 14kHz, 20 sec. Color bar section 1 kHz, 4 minutes Repeated 4 times	Checking operations
Checking operations (LP mode) WR5-4NL	L	MP	LP	<ul style="list-style-type: none"> Video signal Color bar 4 minutes Monoscope 4 minutes Audio signal (AFM) 400 Hz 60% modulation 		
Checking operations (Hi8 SP mode) WR5-8NSE	E	ME	SP	<ul style="list-style-type: none"> Video signal Color bar 4 minutes Monoscope 4 minutes Audio signal (AFM) 400 Hz 60% modulation 	<ul style="list-style-type: none"> Audio signal (PCM) 400 Hz 	
Checking AFM stereo operations WR5-9NS	L	MP	SP	<ul style="list-style-type: none"> Video signal Color bar 4 minutes Monoscope 4 minutes Audio signal (AFM) Stereo section (Color bar) Lch: 400 Hz, Rch: 1 kHz (L+R: 1.5 MHz ± 60 kHz DEV) (L-R: 1.7 MHz ± 30 kHz DEV) Bilingual section (Monoscope) MAIN: 400 Hz (1.5 MHz ± 60 kHz DEV) SUB: 1 kHz (1.7 MHz ± 30 kHz DEV) 	<ul style="list-style-type: none"> Audio signal (PCM) 400 Hz, 8 minutes 	Checking AFM stereo operations

Note: Recording mode

- L Conventional mode
- E Hi8 (Hi-band) mode

Tape types

- MP Metal particle tape
- ME Metal evaporated tape

Table 8-1.

The 75% color bar signal recorded on the alignment tape is shown in Fig. 8-3.

Note: Measured at the video input/output terminal (terminated at 75 Ω)

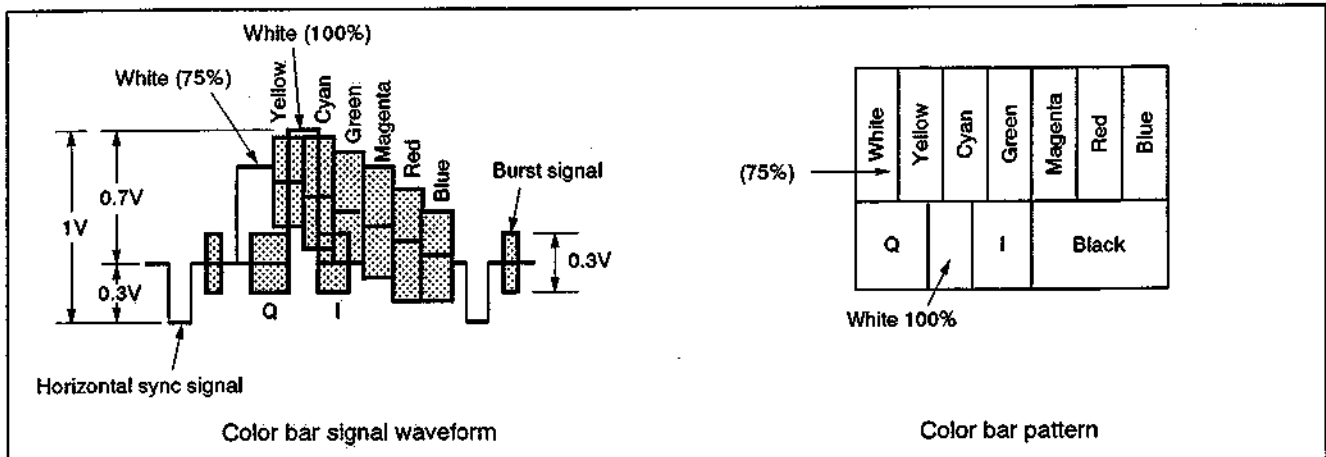


Fig. 8-3. Alignment Tape Color Bar Signal

8-1-6. Input/Output Level and Impedance

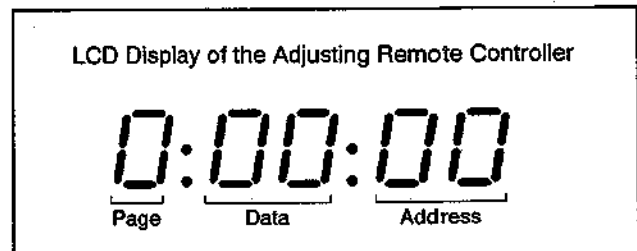
Video input	Pin jack Input signal: 1 V _{p-p} , 75 Ω unbalanced, sync negative
Video output	Pin jack Output signal: 1 V _{p-p} , 75 Ω unbalanced, sync negative
Audio input	Pin jack Input level: -7.5 dBs (0 dBs=0.775 V _{rms}) Input impedance: Above 47 k Ω
Audio output	Pin jack Standard output: -7.5 dBs Output impedance: Below 10 k Ω

8-1-7. Service Mode

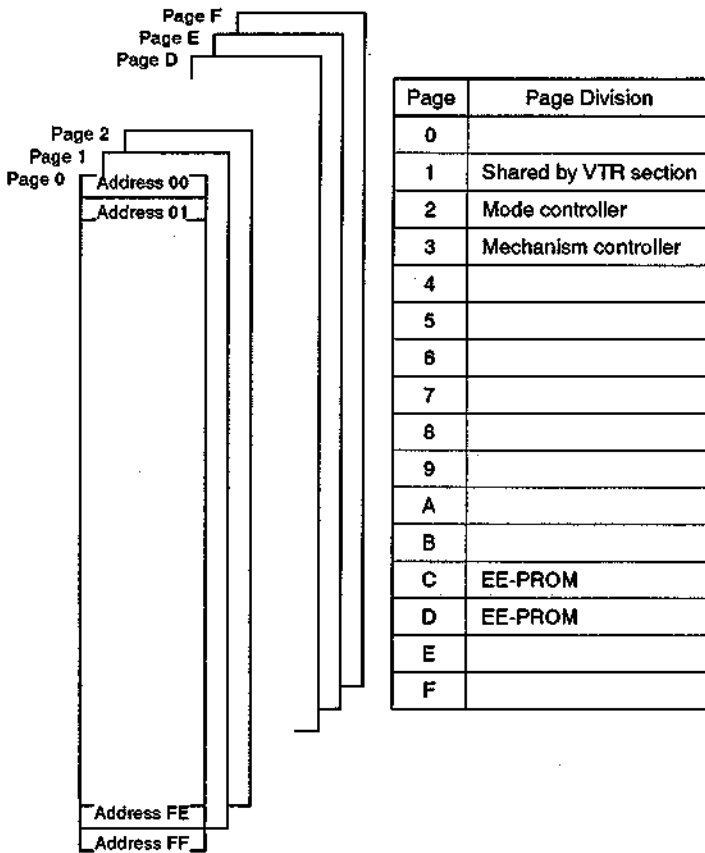
1. Service Mode Setting

The service mode consists of the adjusting mode which adjusts the EVR and the test mode which displays the condition of the unit.

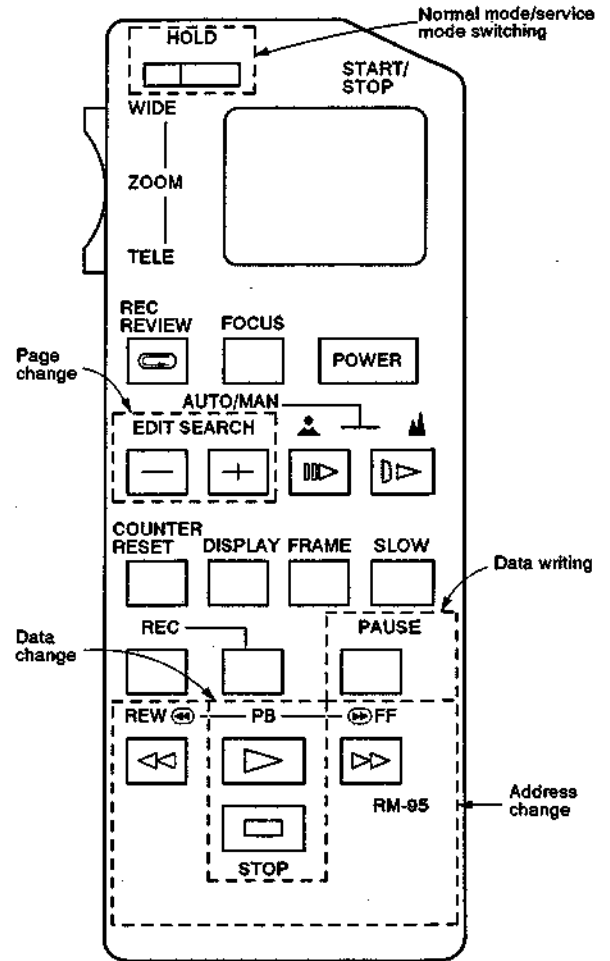
The unit can be set into the test mode and adjusting mode by connecting the adjusting remote commander (Set the HOLD switch to "HOLD").



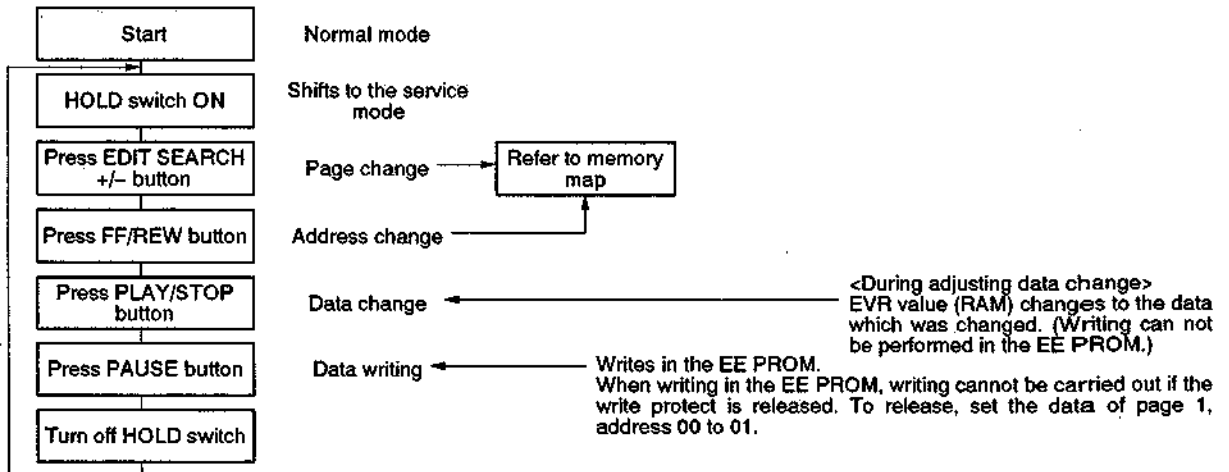
(1) Service LANC memory map



Adjusting remote commander RM-95 (J-6082-053-A)



[Shifting to the service mode using the adjusting remote commander]



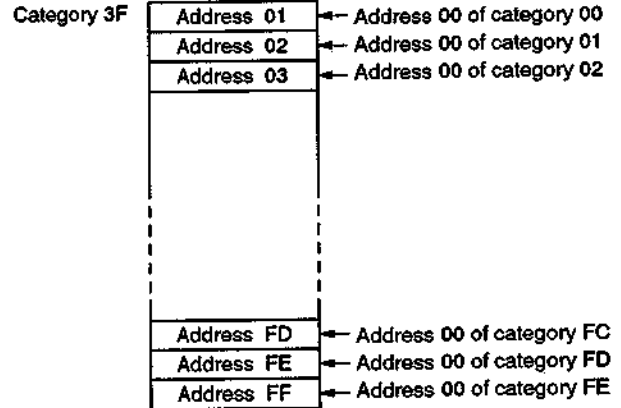
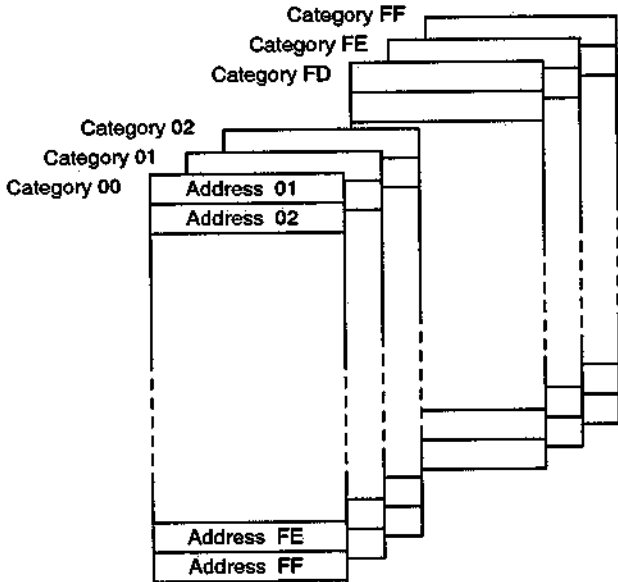
Command Name	Command Function	Normal LANC Command
Page Up	Page+1	Edit Search+
Page Down	Page-1	Edit Search -
Direct Page Set	Sets to the specified page	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address-1	Rewind
Data Up	Data+1	Play Back
Data Down	Data-1	Stop
Store	Writes data in the EEPROM, RAM	Pause

(2) Category Codes

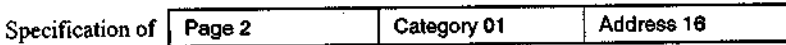
This unit uses category codes for pages 2 and 3. The 256 addresses from 00 to FF are insufficient for the mode controller and mechanism controller to access the RAM. Therefore, new category codes have been used to seemingly increase addresses (Addresses 0000 to FFFF).

However, the data of address 00 are actually used as page numbers to form the 256 pages from 00 to FF, as shown in the following figure. These address 00 data are called category codes to discriminate them from the real page numbers. The new pages are called categories.

(Supplement) As each category no longer has address 00 as it is, this address cannot be accessed using the adjusting remote commander. Therefore, category 3F is used for accessing address 00.



(Example)



↑
Page 2 is the mode controller
Page 3 is the mechanism controller

The actual category and address are specified by the adjusting remote commander as follows.

Order	Page	Address	Data	Procedure
1	2	00	01	Select category 01 using the data of page 2, address 00. From here onwards, category 01 will be selected at page 2 until the data of page 2, address 01 is rewritten.
2	2	16		As the data of page 2, address 00 is 01, select page 2, address 16 to select page 2, category 01, address 16. (The data of this address is the A/D conversion value of the input voltage of Pin ② of the mode controller.)

2. Page D Write Protect

Release/set the page D write protect.

Page 1	Address 00
Data	Function
00	Normal (Write protect condition)
01	Write protect release

3. Test Mode Setting

Set/release various test mode. Release the protect (page: 1, address: 00, data: 01) before setting the data.

Page D	Address 01
Data	Function
00	Normal
01	Test mode 1 Various emergency prohibitions and releases Drum, capstan, loading motor, reel, tape top and end, DEW SP/LP automatic discrimination prohibition, manual switching 5 minutes pause release prohibition Power off prohibition/release by battery end
02	Test mode 2 Not used
03	Test mode 3 Track shift Performs the track shift playback Rear lock discrimination prohibition during PB SP/LP automatic discrimination prohibition, manual switching
04	Test mode 4 Rear lock mode Performs rear lock playback SP/LP automatic discrimination prohibition, manual switching

- ※ The data of these addresses can be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power supply (6.5 Vdc) has been turned off.
- ※ Be sure to return the data of this address to 00 after adjustments/repairs.

4. Emergency code

Fault (error) symptoms can be checked.

Page D	Address 06
--------	------------

First emergency code

.....The first error code generated

Page D	Address 07
--------	------------

Last emergency code

.....The last error code generated (This data will be renewed each time an error occurs.)

- ※ Be sure to rewrite the data of addresses 06 and 07 to 00 after repairs/adjustments.
- ※ When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

Code	Error Condition
00	No error
01	Loading motor error
02	Reel error during unloading
03	Reel errors at other times
04	Capstan error
05	FG error during drum start up
06	PG error during drum start up
07	FG error when drum is normal
08	PG error when drum is normal
09	Phase error when drum is normal

5. Emergency mode

The operation mode set when the error occurred can be checked

Page D	Address 08
--------	------------

First emergency mode

.....The operation mode set when the first error occurred

Page D	Address 09
--------	------------

Last emergency mode

.....The operation mode set when the last error occurred
(This data will be renewed each time an error occurs.)

Code	Error Conditions
00	BEFOR INITIALIZE
01	EJECTED
02	NORMAL STOP
03	FF
04	NORMAL REC
06	NORMAL PB
07	PB PAUSE
12	LOADING
14	REC PAUSE
26	X1
27	1/5 SLOW
31	UNLOADING
36	-X1
37	-1/5 SLOW
46	CUE
47	1/10 SLOW
56	REVIEW
57	-1/10 SLOW
62	STOP TAPE END
66	X2
67	FRAME
72	STOP TAPE TOP
76	-X2
77	-FRAME
83	REWIND
85	REC REVIEW (+)
95	REC REVIEW (-)
A2	EMERGENCY STOP
A5	EDIT SEARCH(+)
B1	EMERGENCY UNLOADING
B2	STOP EMERGENCY 1
B5	EDIT SEARCH (-)
C2	STOP EMERGENCY 2
E2	STOP NO CASSETTE
F5	EDIT PAUSE

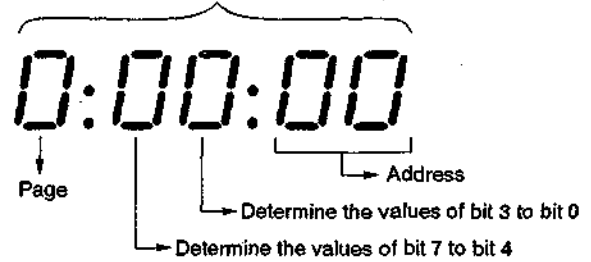
※ Be sure to rewrite the data of addresses 08 and 09 to 00 after repairs/adjustments.

※ When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

6. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".

Adjusting remote commander display



Remote controller display	Bit value			
	bit 3 or bit 7	bit 2 or bit 6	bit 1 or bit 5	bit 0 or bit 4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ → 8	1	0	0	0
9	1	0	0	1
A(A)	1	0	1	0
B(b)	1	0	1	1
C(c)	1	1	0	0
D(d)	1	1	0	1
Ⓑ → E(E)	1	1	1	0
F(F)	1	1	1	1

(Example) If the remote commander display data is "8E", bit values from bit 7 to bit 4 can be discriminated from column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

7. Key Input check

Page 2	Category 3F	Address 01
--------	-------------	------------

Bit	Key Switch	Condition of Switch
0		"1"=OFF "0"=ON
1	PACK DET	
2	Cassette eject (PE-13, S201)	
3	Power supply (PE-13, S202)	
4		
5		
6	CC DOWN (Mechanism section)	
7		

Using method:

Order	Page	Address	Data	Procedure
1	2	00	3F	Specification of category 3F
2	2	01		The on/off of each key switch can be discriminated by discriminating the bit values of the display data.

Page 2	Category 00	Address 0E
--------	-------------	------------

Bit	Switch	Condition of Switch
0		
1		
2		
3		
4		
5		
6	LINE STEREO	Audio input/output terminal (right), "1"=Connected, "0"=Open
7		

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	0E		The on/off of the switches can be discriminated by discriminating the bit values of the display data.

Page 2	Category 00	Address 1C
--------	-------------	------------

Bit	Switch	Condition of Switch
3	LCD ON/OFF (PE-13, S206)	"1"=ON, "0"=OFF

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	1C		The on/off of the switches can be discriminated by discriminating the bit values of the display data.

8. Key Input check (A/D Port)

Page 2	Category 01	Address 16 - 18
--------	-------------	-----------------

Display Data Address	Approx. 00	Approx. 2D	Approx. 4C	Approx. 70	Approx. 8E	Approx. B2	Approx. FF
16 (KEY AD IN 0 IC201 Ⓢ)	REC (FU-109, S301)	STOP (FU-109, S302)	FF (FU-109, S303)	PLAY (FU-109, S304)	SLOW (FU-109, S305)		No key input
17 (KEY AD IN 1 IC201 Ⓢ)	PAUSE (FU-109, S308)	REW (FU-109, S307)	COUNTER RESET (PE-13, S203)	DATA SCREEN (PE-13, S204)			No key input
18 (KEY AD IN 2 IC201 Ⓢ)	VOLUME + (VR-39, S501)	VOLUME - (VR-39, S502)	BRIGHT+ (VR-39, S503)	BRIGHT - (VR-39, S504)	MENU (VR-39, S505)	ENTER (VR-39, S506)	No key input

Using method:

Order	Page	Address	Data	Procedure
1	2	00	01	Specification of category 01
2	2	16-18		The key pressed can be discriminated by the display data of each address.

9. Battery voltage check

Page 3	Category 02	Address 10
--------	-------------	------------

Display Data	Battery Voltage
FF	Approx. 10 Vdc
F0	Approx. 9.4 Vdc
E0	Approx. 8.8 Vdc
D0	Approx. 8.2 Vdc
C0	Approx. 7.5 Vdc
B0	Approx. 6.9 Vdc
A0	Approx. 6.3 Vdc
90	Approx. 5.6 Vdc
80	Approx. 5.0 Vdc

Using method:

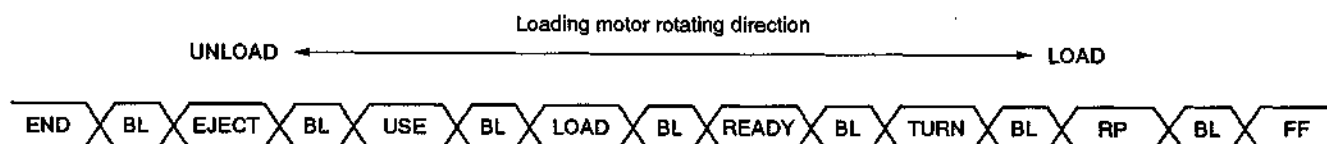
Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	10		The battery voltage can be discriminated by the display data.

10. Mechanism section switch, etc. check

Page 2	Category 00	Address 86
--------	-------------	------------

Bit	Switch, etc.	Condition
0	HG/NOR	"1"=Hi8 MP tape, "0"=Others
1	E DET	"1"=Hi8 mode playback, "0"=Others
2	ME/MP SW	"1"=ME tape, "0"=MP tape
3	REC PROOF	"1"=Recording prohibited, "0"=Recording possible
4		
5	MODE SW 2	Refer to the following table.
6	MODE SW 1	
7	MODE SW 0	

Display Data	MODE SW 0	MODE SW 1	MODE SW 2	Mechanism Position	Function	CC DOWN
0	0	0	0	BL	Interval between each position	
6	0	1	1	END	FULL END processing (Releasing the T side lock.)	1
2	0	0	1	EJECT	Eject position of cassette compartment	1
A	1	0	1	USE	EJECTED (Unskate end)	1
2	0	0	1	LOAD	LOADING (Skate in)	0
8	1	0	0	READY	NORMAL STOP position	0
C	1	1	0	TURN	Only pinch roller turns off during PB ↔ REV (oscillating position)	0
4	0	1	0	RP	PB, REC, RVS, REV, REW, CUE	0
0	0	0	0	FF	FF	0



Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	86		The mode switch position can be discriminated by the upper digit of the display data. The condition of each switch can be discriminated by the bit value of the lower digit.

11. Mechanism controller input/output check

Page 2	Category 00	Address 85
--------	-------------	------------

Bit	I/O Signal	Condition
0	PB LP/SP DET	"1"=LP playback, "0"=Others
1	SYNC DET	"1"=VTR SYNC present, "0"=No VTR SYNC
2	REC CLOG	"1"=Clog occurred, "0"=Others
3		
4	JOG	"1"=Variable speed playback, "0"=Others
5	VA PB MODE	"1"=Playback mode, "0"=E-E mode
6	AUDIO MUTE	"1"=Mute, "0"=Audio output
7	VIDEO MUTE	"1"=Mute, "0"=Video output

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	85		The condition of each input/output signal can be discriminated by the bit value of the display data.

12. Mechanism controller A/D Port input voltage check

Page 3	Category 02	Address 14
--------	-------------	------------

Display Data	A/D Port Input Voltage
00 to FF	Approx. 0 Vdc to approx. 5 Vdc

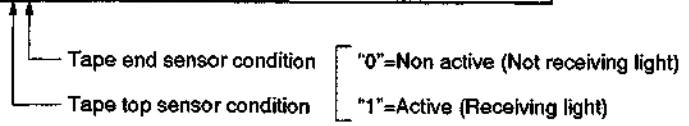
Using method:

Order	Page	Address	Data	Procedure																
1	3	00	02	Specification of category 02																
2	3	0E	02	Permission for A/D conversion operations																
3	3	13		Set the data according to the following table, and specify the A/D port of the mechanism controller. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Data</th> <th>Mechanism Controller Port</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>Pin ⑩; AN0, T REEL FG</td> </tr> <tr> <td>01</td> <td>Pin ⑨; AN1, S REEL FG</td> </tr> <tr> <td>02</td> <td>Pin ⑧; AN2, ATF ERROR</td> </tr> <tr> <td>03</td> <td>Pin ⑦; AN3, BATT SENS</td> </tr> <tr> <td>04</td> <td>Pin ⑥; AN4, DEW DET</td> </tr> <tr> <td>05</td> <td>Pin ⑤; AN5, TAPE TOP</td> </tr> <tr> <td>06</td> <td>Pin ④; AN6, TAPE END</td> </tr> </tbody> </table>	Data	Mechanism Controller Port	00	Pin ⑩; AN0, T REEL FG	01	Pin ⑨; AN1, S REEL FG	02	Pin ⑧; AN2, ATF ERROR	03	Pin ⑦; AN3, BATT SENS	04	Pin ⑥; AN4, DEW DET	05	Pin ⑤; AN5, TAPE TOP	06	Pin ④; AN6, TAPE END
Data	Mechanism Controller Port																			
00	Pin ⑩; AN0, T REEL FG																			
01	Pin ⑨; AN1, S REEL FG																			
02	Pin ⑧; AN2, ATF ERROR																			
03	Pin ⑦; AN3, BATT SENS																			
04	Pin ⑥; AN4, DEW DET																			
05	Pin ⑤; AN5, TAPE TOP																			
06	Pin ④; AN6, TAPE END																			
4	3	14		The A/D port input voltage can be discriminated according to the display data.																

13. Tape top/end sensor check

Page 3	Category 02	Address 0A
--------	-------------	------------

Display Data	Tape Top/End Sensor Condition
00	Tape present (Middle of tape)
01	Tape top
10	Tape end
11	No tape



Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0E	10	Request for tape top/end sampling operations
3	3	0A		The condition of the tape top/end sensor can be discriminated by the display data.

14. Individual operations of drum, capstan, and loading motor

Page 2	Category 02	Address 11
--------	-------------	------------

Data	Operations
00	Normal
02	Drum in normal rotation
04	Drum in reverse rotation
06	Capstan in normal rotation
08	Capstan in reverse rotation
0A	Loading motor in normal rotation
0C	Loading motor in reverse rotation
01	All motors stop
03	
05	
07	
09	
0B	
0D	
0F	

Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0E	01	Permission for individual operations of motor
3	3	11		The motor can be operated individually by setting the data indicated above.
4				Turn off the main power supply (6.3 Vdc).

15. Page D Address List

Address	Name	Function () contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
00	Category code		00	00
01	Test mode		00	00
02			05	05
03	BATT END DATA	Battery end adjustment	80	
04	SW POS ADJ DATA LOW	Switching position adjustment (Fine adjustment)	80	
05	SW POS ADJ DATA HIGH	Switching position adjustment (Rough adjustment)	0A	
06	EMERGENCY CODE FIRST	Error codes and modes are recorded in the memory. Rewrite the data of these addresses to 00 after repairs/adjustments.	00	00
07	EMERGENCY CODE LAST		00	00
08	EMERGENCY MODE FIRST		00	00
09	EMERGENCY MODE LAST		00	00
0A	VIDEO DATA MP SP	CXA1207 serial data	6A	6A
0B	VIDEO DATA MP LP	CXA1207 serial data	55	55
0C	VIDEO DATA MP SP HI8	CXA1207 serial data	6A	6A
0D	VIDEO DATA MP LP HI8	CXA1207 serial data	55	55
0E	VIDEO DATA ME SP	CXA1207 serial data	6A	6A
0F	VIDEO DATA ME LP	CXA1207 serial data	55	55
10	VIDEO DATA ME SP HI8	CXA1207 serial data	6A	6A
11	VIDEO DATA ME LP HI8	CXA1207 serial data	55	55
12	VIDEO DATA EDIT	CXA1207 serial data	6A	6A
13	VIDEO DATA EDIT HI8	CXA1207 serial data	55	55
14 to 17		Not used		
18	SLOW TRACON SP	"Slow tracking adjustment (SP mode)" (Note 1)	00	00
19	SLOW TRACON LP	"Slow tracking adjustment (LP mode)" (Note 1)	00	00
1A	HP VOL	"Volume" adjustment center value (IC206 ③)	80	80
1B	BRIGHT	"Brightness" adjustment center value (IC906 ⑤)	80	80
1C	COLOR	"Color" adjustment (IC906 ⑨) (Note 1)	80	80
1D	HUE	"Hue" adjustment (IC906 ⑫) (Note 1)	80	80
1E	MENU DATA 1	(Note 1)	00	00
1F	MENU DATA 1	(Note 1)	00	00
20	SET VARIATION		00	00
21	ADJUST MODE		00	00
22 to 2C		Not used		
2D	BATT REMAIN LOW	Battery end adjustment	95	
2E	BATT REMAIN MIDDLE	Battery end adjustment	9B	
2F	BATT REMAIN FULL	Battery end adjustment	9F	
30	REC C	REC C level adjustment (IC705 ⑧)	B0	
31 to 35		Not used		
36	M TUNE 1CH	Playback frequency characteristics adjustment (IC206 ⑤)	AA	
37 to 3D		Not used		
3E	M TUNE 2CH	Playback frequency characteristics adjustment (IV206 ⑥)	AA	
3F to 47		Not used		
48	RF CONT ME		AB	AB
49	RF CONT MP		C7	C7

Table 8-2 (1).

Note 1: User control (Adjust or set on the menu display.)

Address	Name	Function () contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
4A	SYNC AGC	SYNC AGC adjustment (IC705 ⑩)	7A	
4B		Not used		
4C	C COMB ADJUST	Y/C separation adjustment (IC705 ②)	AA	
4D	IR	IR adjustment (IC705 ②)	AA	
4E	CAR HI8	(IC705 ④)	50	50
4F	CAR	Y FM carrier frequency adjustment (IC705 ④)	A5	
50	DEVIATION HI8	(IC705 ⑤)	50	50
51	DEVIATION	Y FM deviation adjustment (IC705 ⑤)	90	
52	REC Y HI8 ME	(IC705 ⑥)	D0	D0
53	REC Y HI8 MP	(IC705 ⑥)	D0	D0
54	REC Y	REC Y level adjustment (IC705 ⑥)	A0	
55		Not used		
56	REC Y PB		00	00
57	DEEMPH Y REC		90	90
58	DEEMPH Y PB	DEEMPH Y level adjustment (IC705 ⑦)	70	
59		Not used		
5A	EMPH/PB Y REC	EMPH Y level adjustment (IC705 ③)	A5	
5B	EMPH/PB Y PB	PB Y level adjustment (IC705 ③)	AA	
5C to 63		Not used		
64	PILOT CONT ME		C0	C0
65	PILOT CONT MP		90	90
66		Not used		
67	PAL JOG	Not used (IC705 ⑨)	FF	FF
68 to 77		Not used		
78	1.5 DEV PB	1.5 MHz playback level adjustment (IC206 ⑩)	A0	
79	1.7 DEV PB	1.7 MHz playback level adjustment (IC206 ②)	80	
7A	1.5 IR	1.5 MHz carrier frequency adjustment (IC206 ⑩)	A0	
7B	1.5 DEV REC	1.5 MHz deviation adjustment (IC206 ⑩)	80	
7C	1.7 IR	1.5 MHz carrier frequency adjustment (IC206 ④)	A0	
7D	1.7 DEV REC	1.5 MHz deviation adjustment (IC206 ②)	80	
7E to 83		Not used		
84	R BRT	R sub-bright adjustment (IC906 ②)	A8	
85	G BRT	G sub-bright adjustment (IC906 ③)	A8	
86	B BRT	B sub-bright adjustment (IC906 ④)	A8	
87	B COM	B sub-bias adjustment (IC906 ⑤)	A8	
88	R COM	R sub-bias adjustment (IC906 ⑦)	A8	
89	COM	RGB bias adjustment (IC906 ⑧)	A8	
8A	GAIN	Contrast adjustment (IC906 ⑩)	A8	
8B	R GAIN	R contrast adjustment (IC906 ⑩)	A8	
8C	B GAIN	B contrast adjustment (IC906 ⑩)	A8	
8D	CAP FG DUTY	CAP FG duty adjustment (IC206 ③)	80	
8E	(RF CONT ME)	Not used		
8F	(RF CONT MP)	Not used		

Table 8-2 (2).

Address	Name	Function () contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
90	(PILOT CONT ME)	Not used		
91	(PILOT CONT MP)	Not used		
92	HP VOL	"Volume" adjustment value (IC206 ③)	80	80
93	BRIGHT	"Brightness" adjustment value (IC906 ⑤)	80	80
94	COLOR	"Color" adjustment value (IC906 ⑨)	80	80
95	HUE	"Hue" adjustment value (IC906 ⑫)	80	80
96 to FF		Not used		

Table 8-2 (3).

Note 2: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the data of Page D has been erased due to some reason.

Note 3: The data written in the adjustment data memo column are fixed.

After adjusting, check that these data have not been rewritten by mistake.

8-2. ELECTRICAL SYSTEM ADJUSTMENTS

1. Oscillation frequency check (MA-137 board)

Mode	E-E
Measurement Point	Q001 collector
Measuring Instrument	Frequency counter
Specified Value	1000 ± 30 kHz

2. Power supply voltage check (MA-137 board)

Mode	E-E
Measuring Instrument	Digital voltmeter
SW 5V check	
Measurement Point	Pins ⑭ and ⑮ of W001
Specified Value	4.95 ± 0.2 Vdc
13V check	
Measurement Point	Pin ① of CN016
Specified Value	13.0 ± 0.5 Vdc
-8V check	
Measurement Point	Pin ④ of CN016
Specified Value	-8.0 ± 0.5 Vdc
-20V check	
Measurement Point	Pin ① of CN015
Specified Value	-20 ± 1 Vdc
DRUM VS check	
Measurement Point	Pin ⑬ of IC103
Specified Value	1.5 ± 0.3 Vdc (Note)
CAPSTAN VS check	
Measurement Point	Pin ② of CN004
Specified Value	2.0 ± 0.3 Vdc (Note)

Note: The voltages of the drum and capstan servo will change according to tape and load conditions.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. EEPROM data input

If the data of page D has been erased due to some reason, input data to this page before adjusting. Refer to the "Page D address list" in "8-1-7. Service Mode" for the data of page D.

(1) Page D data input

Mode	E-E
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	00 to 95

Inputting method:

- 1) Release the write protect.
Page: 1, address: 00, data: 01
- 2) Select page D, and input the initial value to each address.
(After setting the data (initial value), be sure to press the PAUSE button of the adjusting remote commander before changing the address.)

2. Battery end adjustment

Mode	Record (SP)
Signal	Arbitrary
Measurement Point	LCD display of adjusting remote commander
Measuring Instrument	
Adjustment Page	D
Adjustment Address	03 (BATT END DATA)

Connection:

- 1) Connect the regulated power supply and digital voltmeter as shown in Fig. 8-4.

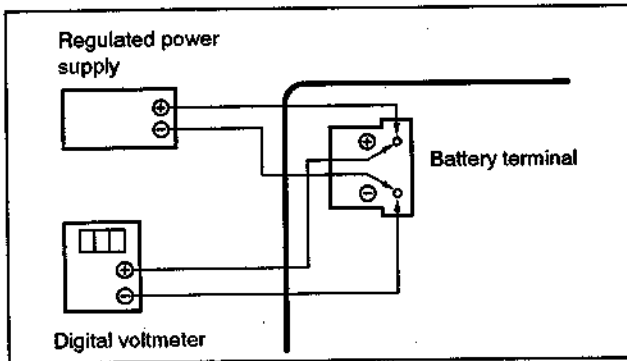


Fig. 8-4.

Adjusting method:

- 1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display becomes 6.5 ± 0.1 Vdc.
 - 2) Set the record mode.
 - 3) Release the protect.
Page: 1, address: 00, data: 01
 - 4) Set data: 01 to page: D, address: 01.
(Setting test mode 1.)
 - 5) Lower the output voltage of the regulated power supply so that the digital voltmeter display becomes 5.50 ± 0.01 Vdc.
 - 6) Select page: 3, address: 00, and set data: 02.
(Specifying category 02.)
 - 7) Select page: 3, address: 10, read the display data of the adjusting remote commander, and take it as D03.
 - 8) Set data: D03 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
 - 9) Convert D03 to a decimal numeral to obtain D03'.
 - 10) Calculate the adjustment data (decimal numeral) from the following equation (decimal calculation), convert it to a hexadecimal numeral, and input to each adjustment address.
Address: 2D $D2D' = D03' + 15$
Address: 2E $D2E' = D03' + 19$
Address: 2F $D2F' = D03' + 21$
- Note:** Be sure to press the PAUSE button of the adjusting remote commander after setting each data.
- 11) Set data: 00 to page: D, address: 01.
(Releasing test mode 1)
 - 12) Perform "Battery down check".

3. Battery down check

Mode	Tuner record
Signal	Arbitrary

Connection:

- 1) Connect the regulated power supply and digital voltmeter as shown in Fig. 8-4.

Checking method:

Remove the adjusting remote commander, and check as follows. If unsatisfactory, re-adjust.

- 1) Adjust the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 6.5 ± 0.1 Vdc.
- 2) Set the tuner recording mode.
- 3) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.75 ± 0.01 Vdc.
- 4) Check that the power lamp is not blinking.
- 5) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.55 ± 0.01 Vdc.
- 6) Check that the power lamp blinks every second.
- 7) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.45 ± 0.01 Vdc.
- 8) Check that the power lamp blinks faster, the VTR stops, and the power supply turns off.

8-4. SERVO SYSTEM ADJUSTMENTS

1. Switching position adjustment (RP-144 board)

Mode	Playback
Signal	Alignment tape: For adjusting tracking (WR5-INP)
Measurement Point	CH1: Pin ③ of CN053 (RF SWP) CH2: Pin ② of CN053 (V RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	04 (SW POS ADJ DATA LOW) 05 (SW POS ADJ DATA HIGH)
Specified Value	$t_1=0 \pm 5 \mu\text{sec.}$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Set data: 80 to page: D, address: 04.
- 3) Change the data of address: 05 (for rough adjustment) and address: 04 (for fine adjustment) of page: D, and adjust the switching position (t_1) to the specified value.
Note: Be sure to press the PAUSE button of the adjusting remote commander before changing the address. If not, the new data will not be written in the memory.
- 4) Press the PAUSE button of the adjusting remote commander.

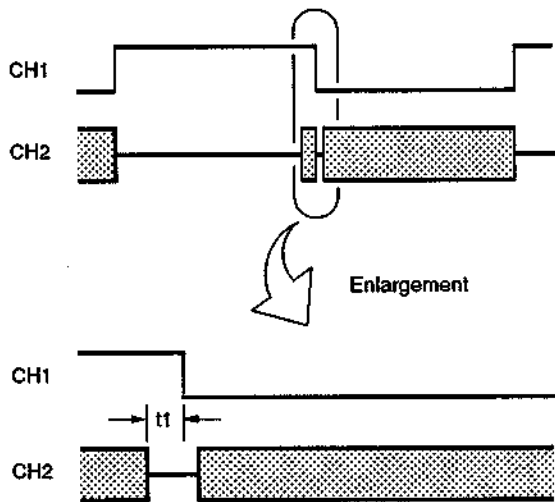


Fig. 8-5.

2. CAP FG duty adjustment (RP-144 board)

Mode	Record (SP)
Signal	Color bar
Measurement Point	Pin ④ of CN053 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8D (CAP FG DUTY)
Specified Value	Duty=50 ± 1%

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Set data: 80 to page: D, address: 8D.
- 3) Change the data of page: D, address: 8D, and adjust the CFG waveform duty to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.

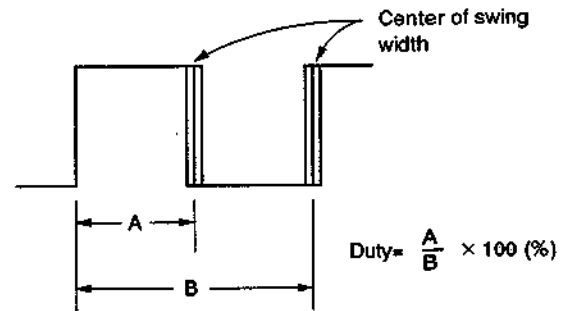


Fig. 8-6.

8-5. VIDEO ADJUSTMENTS

Basically, the video system must be adjusted according to the following adjustment procedures.

The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in the recording mode. Check that the sync signal and the color burst signal satisfy the specifications specified for the set-up for adjustments shown in Fig. 8-2.

[Adjusting Procedure]

- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) VXO oscillation frequency check
- 4) SYNC AGC adjustment
- 5) IR adjustment
- 6) Y/C separation adjustment
- 7) EMPH Y level adjustment
- 8) DE EMPH Y level adjustment
- 9) PB Y level adjustment
- 10) Y FM carrier frequency adjustment
- 11) Y FM deviation adjustment
- 12) Chroma emphasis fb adjustment
- 13) REC Y level adjustment
- 14) REC C level adjustment
- 15) REC ATF level check

1. Playback frequency characteristics adjustment (RP-144 board)

Note: [] contains the adjusting element of CH2.

Mode	Playback
Signal	Alignment tape: For adjusting frequency characteristics (WR5-7NE)
Measurement Point	CH1: Pin ② of CN053 (V RF OUT) External trigger: Pin ③ of CN053 (RF SWP)
Measuring Instrument	Oscilloscope TRIG. SLOW: +[-]
Adjustment Page	D
Adjustment Address	36 (M TUNE 1CH) [3E (M TUNE 2CH)]
Specified Value	4.5 MHz level: 7 MHz level= 40:(34 ± 2)

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 36 [address: 3E], and adjust the 4.5 MHz and 7 MHz level ratio of the PB RF output waveform to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

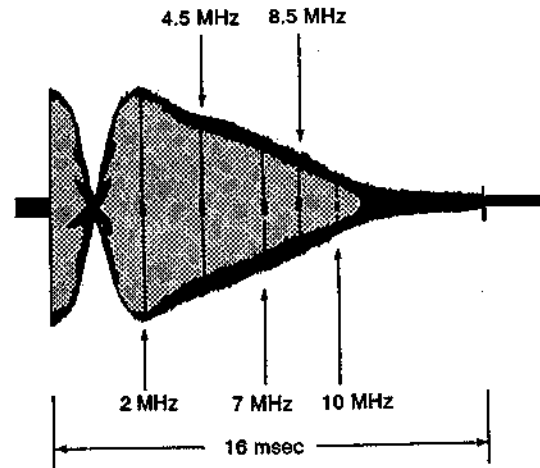


Fig. 8-7.

2. Flying erase check (RP-144 board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ② of CN052 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: Above 7.8 ± 0.7 MHz Voltage: Above 7.0 Vp-p

Note: Use a MP type tape.

Checking method:

- 1) Check that the oscillating frequency is 7.8 ± 0.7 MHz, and that the oscillating voltage is above 7.0 Vp-p.

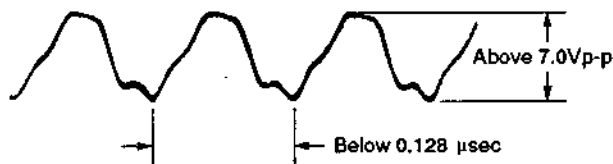


Fig. 8-8.

3. VXO oscillating frequency check (MA-137 board)

Mode	Playback
Signal	Color bar
Measurement Point	Q801 emitter
Measuring Instrument	Frequency counter
Specified Value	3579545 ± 150 Hz

Note: Connect the frequency counter via a high impedance (Approx. $10 \text{ M}\Omega$) and low capacity buffer (below 10 pF).

Adjusting method:

- 1) Check that the fsc signal frequency is 3579545 ± 150 Hz.



$(3579545 \pm 150 \text{ Hz})$

Fig. 8-9.

4. SYNC AGC level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑦ of IC707 (Pin ② of CN007)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	4A (SYNC AGC)
Specified Value	$A=0.50 \pm 0.02 \text{ V}$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 4A, and adjust the Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

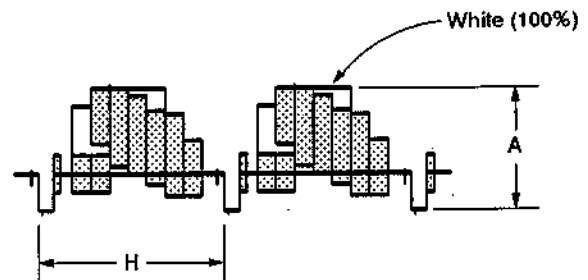


Fig. 8-10.

5. IR adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑦ of IC701 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	4D (IR)
Specified Value	Minimum residual chroma component (A) (Below 60 mVp-p)

Connection:

- 1) Connect Pin ⑭ of IC701 (or Pin ② of IC703) to Pin ⑤ of IC701 with a jumper wire.

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 4D, and minimize the residual chroma component (A).
- 3) Press the PAUSE button of the adjusting remote commander.

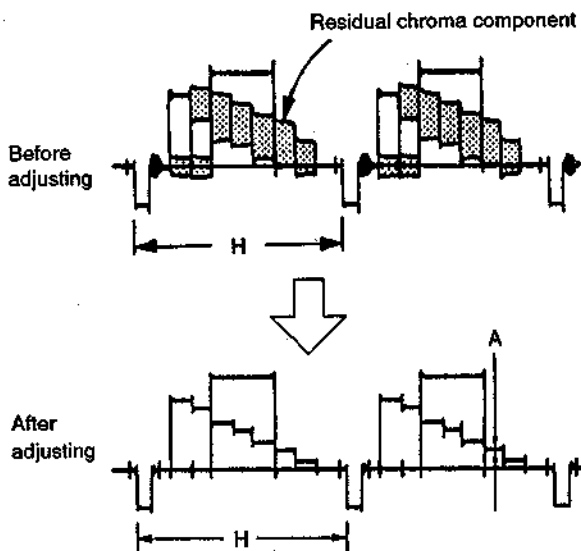


Fig. 8-11.

6. Y/C separation adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑭ of IC701 (C+CD)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (phase)
Adjustment Page	D
Adjustment Address	4C (C COMB ADJUST)
Specified Value	Minimum residual chroma component (A)

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 4C, and minimize the residual chroma component.
- 3) Minimize the residual chroma component (A) with RV701.
- 4) Repeat until the specifications in steps 2) and 3) are satisfied.
- 5) Press the PAUSE button of the adjusting remote commander.

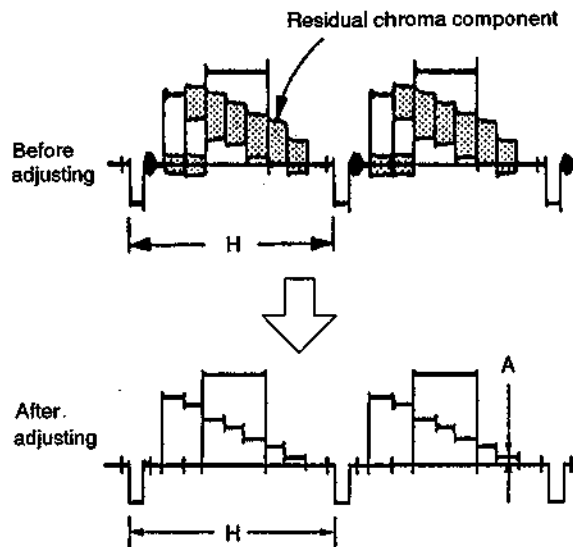


Fig. 8-12.

7. EMPH Y level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑤ of IC702 (or Pin ③ of IC701)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	5A (EMPH Y)
Specified Value	$A=0.50 \pm 0.02V$

Adjusting method:

- 1) Release the protect.
Page: I, address: 00, data: 01
- 2) Change the data of page: D, address: 5A, and adjust the Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

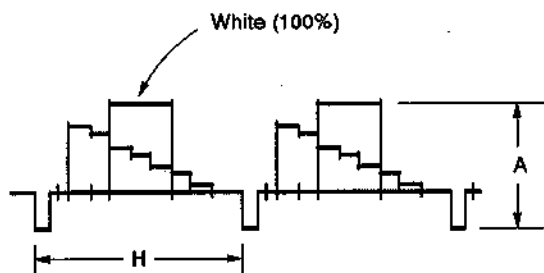


Fig. 8-13.

8. DE EMPH Y level adjustment (MA-137 board)

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section • Normal mode WR5-5NSP • Hi8 mode WR5-8NSE
Measurement Point	Pin ② of IC701
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	58 (DE EMPH)
Specified Value	$A=0.50 \pm 0.02V$

Adjusting method:

- 1) Release the protect.
Page: I, address: 00, data: 01
- 2) Play back the color bar section of the normal mode alignment tape (WR5-5NSP).
- 3) Change the data of page: D, address: 58, and adjust the Y signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Play back the color bar section of the Hi8 mode alignment tape (WR5-8NSE).
- 6) Check that the Y signal level (A) is $0.50 \pm 0.02V$.

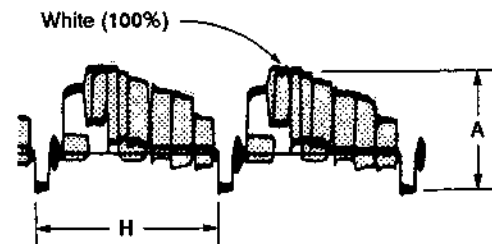


Fig. 8-14.

9. PB Y level adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Video input/output terminal (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	5B (PB Y)
Specified Value	A=1.0 ± 0.05V

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 5B, and adjust the video signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

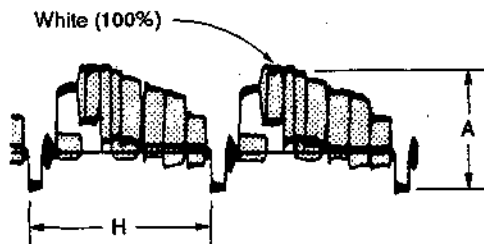


Fig. 8-15.

10. Y FM carrier frequency adjustment (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ① of CN013 (REC Y)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	4F (CAR)
Specified Value	4.38 ± 0.02 MHz

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 4F, and adjust the Y FM carrier frequency to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Perform the "Deviation adjustment".

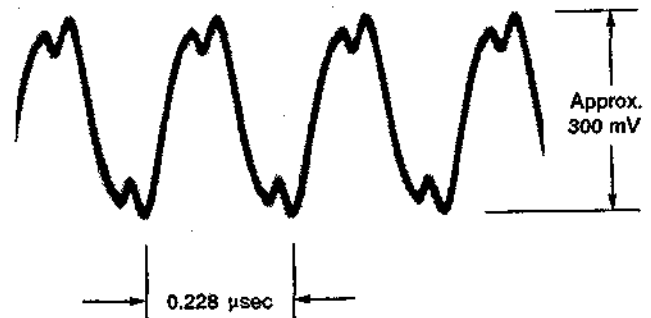


Fig. 8-16.

11. Y FM deviation adjustment (MA-137 board)

Mode	Record and playback
Signal	Color bar
Measurement Point	Pin ② of IC701
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	51 (DEV)
Specified Value	$A=0.50 \pm 0.02V$

Note: Check that the "DE EMPH Y level adjustment", and "Y FM carrier frequency adjustment" have been completed.

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Record the color bar signal.
- 3) Play back the recorded signal.
- 4) Check the playback signal level (A).
Specification: $A=0.50 \pm 0.02V$
- 5) If the specification has not been satisfied, change the data of page: D, address: 51, and repeat steps 2) to 4).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

- 6) Press the PAUSE button of the adjusting remote commander.

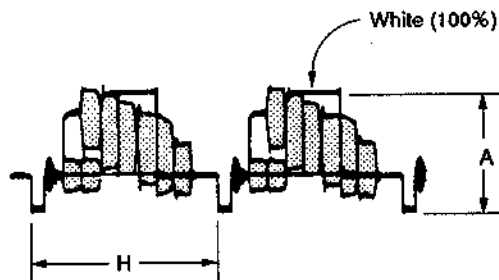


Fig. 8-17.

12. Chroma emphasis fo adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ② of IC801
Measuring Instrument	Oscilloscope
Adjustment Page	FL801
Adjustment Address	Minimum fo component

Connection:

- 1) Connect a 3.3 kΩ resistor (1-249-423-11) between Pin ② of IC801 and the GND.

Adjusting method:

- 1) Minimize the amplitude of the latter section of the yellow part of the chroma signal with FL801.

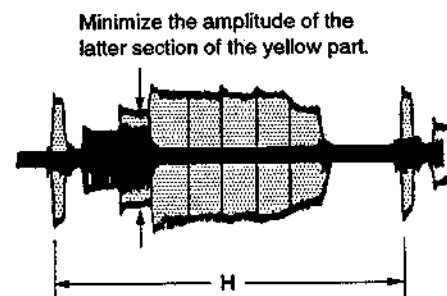


Fig. 8-18.

13. REC Y level adjustment (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ① of CN013 (REC Y)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	54 (REC Y)
Specified Value	$A=280 \pm 10 \text{ mVp-p}$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 54, and adjust the Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

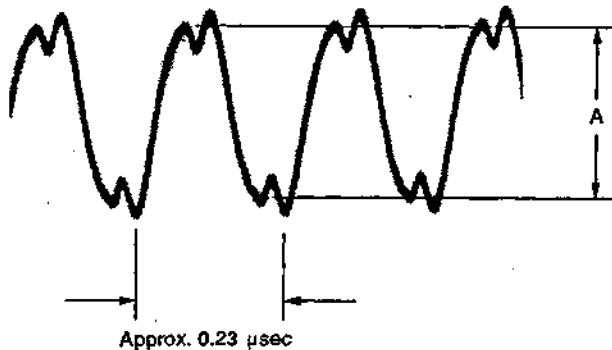


Fig. 8-19.

14. REC C level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ② of CN013 (REC C)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	30 (REC C RF)
Specified Value	$A=140 \pm 10 \text{ mVp-p}$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 30, and adjust the amplitude (A) of the flat section of the chroma signal (red) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

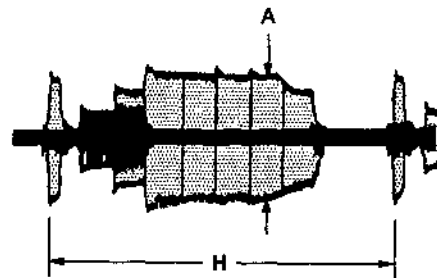


Fig. 8-20.

15. REC ATF level check (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑩ of CN013 (REC ATF)
Measuring Instrument	Oscilloscope
Specified Value	$A=600 \pm 30 \text{ mVp-p}$

Checking method:

- 1) Check that the REC ATF signal level (A) satisfies the specified value.

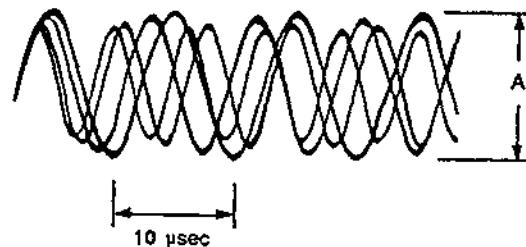


Fig. 8-21.

8-6. LCD SYSTEM ADJUSTMENTS

Note: Do not touch the LCD unit back light holder as you may receive an electric shock.

[Preparation]

- 1) Be sure to connect the LCD unit before adjusting.
- 2) Be sure to perform "EVR initial data input" before adjusting.

[Adjusting procedure]

1. fsc adjustment
2. EVR initial data input
3. G sub-bright adjustment
4. R sub-bright adjustment
5. B sub-bright adjustment
6. Contrast adjustment
7. R contrast adjustment
8. B contrast adjustment
9. Color adjustment
10. Hue adjustment
11. R sub-bias adjustment
12. B sub-bias adjustment
13. RGB bias adjustment
14. White balance adjustment
15. Character position adjustment

[Video input signal for adjustments]

Input a color bar signal whose chroma and burst signals are turned off into the video input terminal as the video input signal for adjustments. Check the signal level at the video input/output terminal.

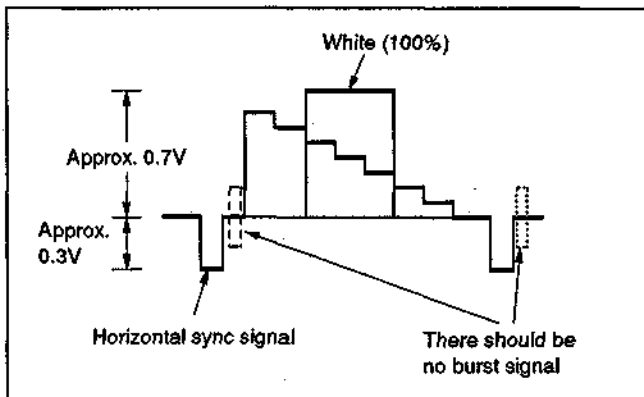


Fig. 8-22. Color bar signal whose chroma and burst signals are turned off.

1. fsc adjustment (RG-25 board)

Mode	POWER ON
Signal	No signal
Measurement Point	Pin ⑦ of IC901
Measuring Instrument	Frequency counter
Adjustment Page	RV902 (APC)
Adjustment Address	3579545 ± 50 Hz

Note: Connect the frequency counter with a high impedance (above 1 MΩ) and low capacity (below 20 pF) probe.

Adjusting method:

- 1) Adjust the fsc frequency to 3579545 ± 50 Hz with RV902.

2. EVR initial data input

Mode	POWER ON
Signal	Arbitrary
Adjustment Page	D

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Select page D, and input the data in the following table.
Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
1B (BRIGHT)	80
1C (COLOR)	80
1D (HUE)	80
84 (R BRT)	A8
85 (G BRT)	A8
86 (B BRT)	A8
87 (B COM)	A8
88 (R COM)	A8
89 (COM)	A8
8A (GAIN)	A8
8B (R GAIN)	A8
8C (B GAIN)	A8
93 (BRIGHT)	80
94 (COLOR)	80
95 (HUE)	80

3. G sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑩ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑩ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	85 (G BRT)
Specified Value	$A=3.6 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Check that the data of page: D, address: 1B is 80 with the adjusting remote commander.
- 3) Change the data of page: D, address: 85, and adjust the amplitude level (A) of the VG signal to the specified value.
Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
- 4) Press the PAUSE button of the adjusting remote commander.

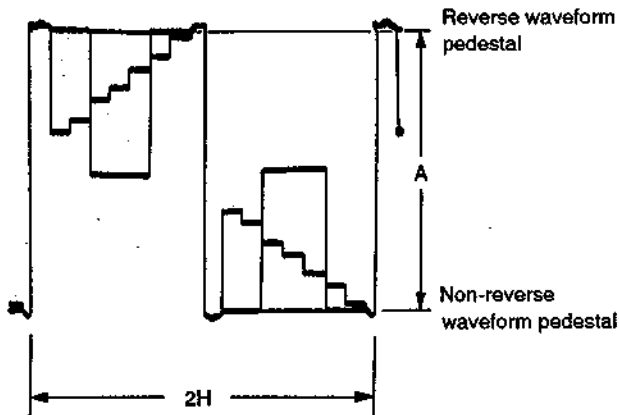


Fig. 8-23.

4. R sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑩ of IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑩ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	84 (R BRT)
Specified Value	Amplitude level difference between VR and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 84, and equalize the amplitude level of the CH1 waveform and the CH2 waveform.
- 3) Press the PAUSE button of the adjusting remote commander.

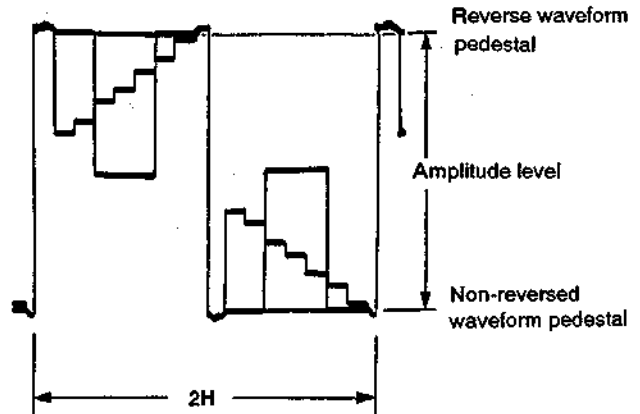


Fig. 8-24.

5. B sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑩ of IC902 (VG) CH2: Pin ⑪ of IC902 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑫ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	86 (B BRT)
Specified Value	Amplitude level difference between VB and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 86, and equalize the amplitude level of the CH1 waveform and the CH2 waveform.
- 3) Press the PAUSE button of the adjusting remote commander.

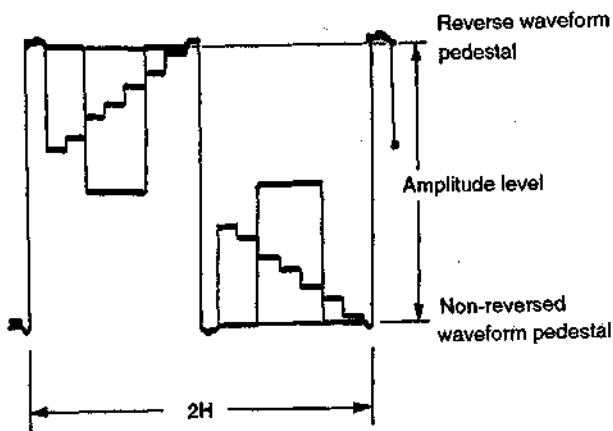


Fig. 8-25.

6. Contrast adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑩ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑫ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8A (GAIN)
Specified Value	$A=2.6 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8A and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

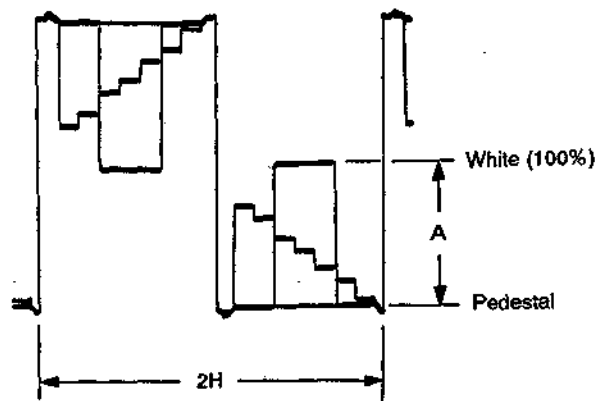


Fig. 8-26.

7. R contrast adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑩ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8B (R GAIN)
Specified Value	$A=2.6 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8B, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

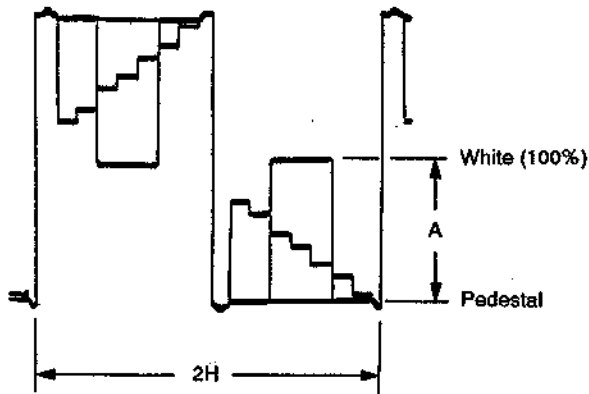


Fig. 8-27.

8. B contrast (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑬ of IC902 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑭ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8C (B GAIN)
Specified Value	$A=2.6 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8C, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

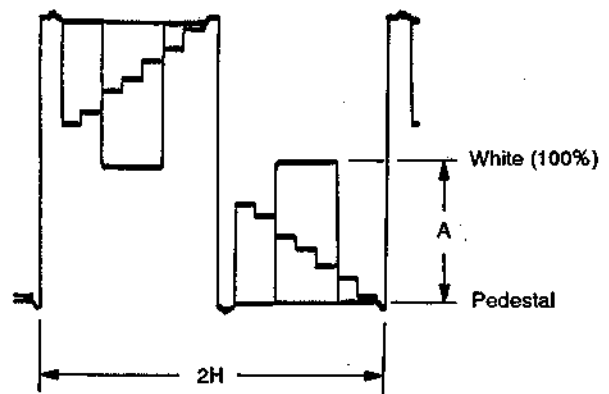


Fig. 8-28.

9. Color adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar (Chroma and burst signals ON)
Measurement Point	Pin ⑩ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑩ of IC902 (FRP)
Adjusting Element	RV903
Specified Value	$A=0 \pm 0.1V$

Adjusting method:

- 1) Check that the data of page: D, address 1C is 80 with the adjusting remote commander.
- 2) Minimize the level difference (A) of the white 75% and green with RV903.

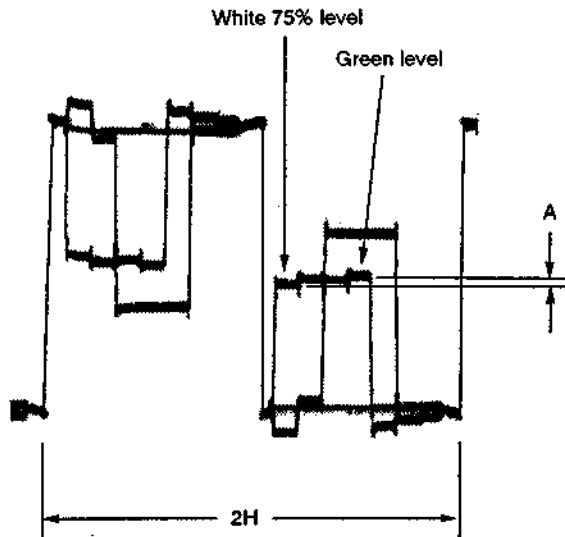


Fig. 8-29.

10. Hue adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar (Chroma and burst signals ON)
Measurement Point	CH1: Pin ⑩ if IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑩ of IC902 (FRP)
Adjusting Element	RV901 (HUE)
Specified Value	$B=A \pm 0.1V$

Adjusting method:

- 1) Check that the data of page: D, address: 1D is 80 with the adjusting remote commander.
- 2) Equalize the yellow level of the VG signal (A) and that of the VR signal (B) with RV901.

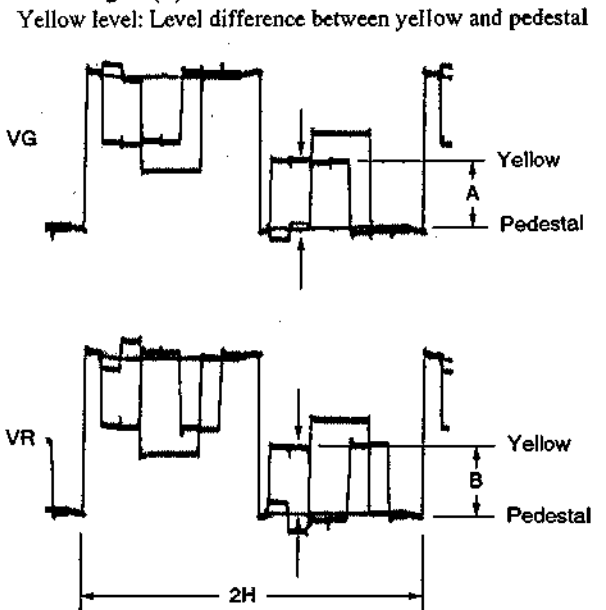


Fig. 8-30.

11. R sub-bias adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope (DC range) External trigger: Pin ⑩ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	88 (R COM)
Specified Value	DC level difference between the VR and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Check that the data of page: D, address: 89 is A8 with the adjusting remote commander.
- 2) Set the oscilloscope to the DC range, and equalize the GND levels of CH1 and CH2.
- 3) Release the protect.
Page: 1, address: 00, data: 01
- 4) Change the data of page: D, address: 88, and coincide the CH1 and CH2 waveform. (To equalize the DC levels of the CH1 and CH2 waveform.)
- 5) Press the PAUSE button of the adjusting remote commander.

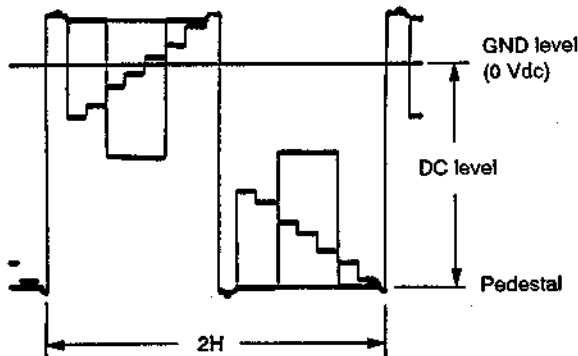


Fig. 8-31.

12. B sub-bias adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑬ of IC902 (VB)
Measuring Instrument	Oscilloscope (DC range) External trigger: Pin ⑩ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	87 (B COM)
Specified Value	DC level difference between the VB and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Set the oscilloscope to the DC range, and equalize the GND levels of CH1 and CH2.
- 2) Release the protect.
Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: 87, and coincide the CH1 and CH2 waveform. (To equalize the DC levels of the CH1 and CH2 waveform.)
- 4) Press the PAUSE button of the adjusting remote commander.

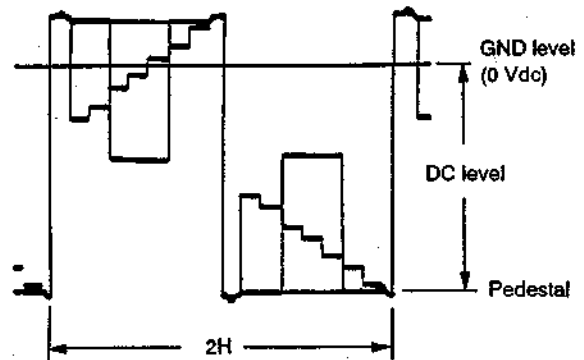


Fig. 8-32.

13. RGB bias adjustment

Mode	PB and PAUSE (LP)
Signal	Alignment tape: For checking operations (WR5-4NL) Monoscope section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	89 (COM)
Specified Value	Minimum flicker

Adjusting method:

- 1) Play back the monoscope section of the LP alignment tape, and press the PAUSE button.
- 2) Release the protect with the adjusting remote commander.
Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: 89, and minimize the flicker of the LCD display.
- 4) Press the PAUSE button of the adjusting remote commander.

14. White balance adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	84 (R BRT), 86 (B BRT)
Specified Value	The display should not be colored

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Check that the LCD display is not colored. If it is, change the data of address: 84 and address: 86 of page: D, and adjustment the display is not colored.
- 3) Press the PAUSE button of the adjusting remote commander.

15. Character position adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjusting Element	CV901
Specified Value	A=B

Adjusting method:

- 1) Press the MENU button, and set the menu display.
- 2) Select "SOUND".
- 3) Adjust A=B with CV901.

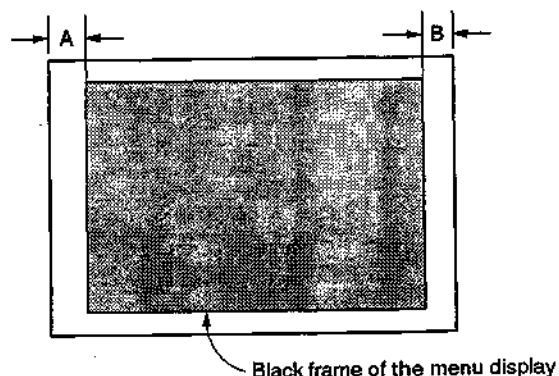


Fig. 8-33.

8-7. AUDIO SYSTEM ADJUSTMENTS

- Adjust using the color bar signal as the video signal input.

- Set the following modes at the menu display.

SOUND..... NORMAL

REC MODE SP

ST MONITOR (Note 1).... STEREO

Note 1: Displayed on the menu display when the AFM stereo tape is played back.

[Connecting the measuring equipments for audio]

In addition to the measuring equipments for the video system, connect the measuring equipments for the audio system as shown in Fig. 8-34, and adjust with the power supply switch at "VTR ON" mode.

Note: 1) When inputting the audio signal, input the same signal to both the L and R channels, unless specified otherwise.

- 2)** Be sure to insert the plug (shorting plug or dummy plug, etc.,) into the audio input/output terminal (right). If the plug is not inserted, the monaural mode will be set, and correct adjustments cannot be carried out.

(Monaural mode)

During recording ... The REC AFM RF 1.7 MHz carrier will not be output.

During playback ... The L+R signal will be output from the audio input/output terminal (left).

- 3)** Adjustments for channel R in adjustments for both channels L and R are indicated in the [].

[Adjusting Procedure]

- 1) E-E output level check
- 2) REC matrix L-R check
- 3) REC matrix L+R check
- 4) 1.5 MHz carrier frequency adjustment
- 5) 1.7 MHz carrier frequency adjustment
- 6) 1.5 MHz record level check
- 7) 1.7 MHz record level check
- 8) 1.5 MHz playback level adjustment
- 9) 1.7 MHz playback level adjustment
- 10) 1.5 MHz deviation adjustment
- 11) 1.7 MHz deviation adjustment
- 12) Overall level characteristics, distortion rate check
- 13) Separation check
- 14) Overall noise level check

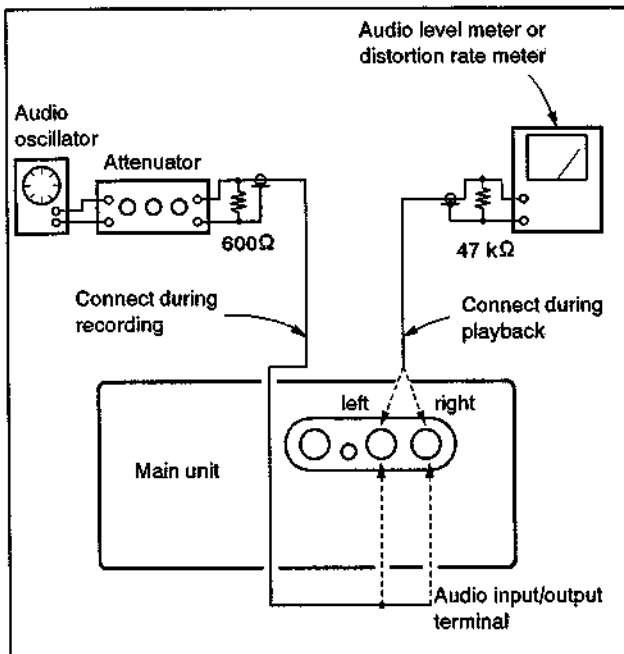


Fig. 8-34.

1. E-E output level check (AU-136 board)

Mode	Record
Signal	400 Hz, -7.5 dBs audio input terminal (right [left])
Measurement Point	Pin ⑩ of IC404 [Pin ⑩ of IC406]
Measuring Instrument	Oscilloscope or audio level meter
Specified Value	$925 \begin{smallmatrix} +240 \\ -190 \end{smallmatrix}$ mVp-p (-7.5 ± 2 dBs)

Checking method:

- 1) Check that the 400 Hz signal level satisfies the specification.

2. REC matrix L-R check (AU-136 board)

Mode	E-E
Signal	400 Hz, -7.5 dBs Input to both left and right audio input terminals
Measurement Point	Pin ⑦ of IC403
Measuring Instrument	Oscilloscope (Use 1: 1 probe)
Specified Value	0 ± 2 mVp-p

Checking method:

- 1) Input a 400 Hz, -7.5 dBs signal only to the right audio input terminal.
- 2) Check that the signal level of Pin ⑦ of IC403 is approximately 120 mVp-p.
- 3) Input a 400 Hz, -7.5 dBs signal to both the right and left audio input terminals.
- 4) Check that the signal level of Pin ⑦ of IC403 is 0 ± 2 mVp-p. (Note: Remove the video signal input)

3. REC matrix L+R check (AU-136 board)

Mode	Record
Signal	1. 400 Hz, -7.5 dBs: Audio input terminal (left) No signal: Audio input terminal (right) 2. No signal: Audio input terminal (left) 400 Hz, -7.5 dBs: Audio input terminal (right)
Measurement Point	Pin ① of IC403
Measuring Instrument	Oscilloscope
Specified Value	Level difference should be 0 ± 5 mVp-p when input only to the left terminal, and when input only to the right terminal.

Adjusting method:

- 1) Input the 400 Hz, -7.5 dBs signal only to the left audio input terminal. (Insert the shorting plug in the right audio input terminal.)
- 2) Read the 400 Hz signal level of Pin ① of IC403, and note it down. (Approx. 120 mVp-p)
- 3) Input the 400 Hz, -7.5 dBs signal only to the right audio input terminal. (Insert the shorting plug in the left audio input terminal.)
- 4) Check that the 400 Hz signal level of Pin ① of IC403 (value noted at step 2) is ± 5 mVp-p.

4. 1.5 MHz carrier frequency adjustment (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑧ of IC401 (1.5M CAR OUT)
Measuring Instrument	Frequency counter (Note)
Adjustment Page	D
Adjustment Address	7A (1.5 IR)
Specified Value	1.500 ± 0.003 MHz

Note: Use a high impedance (above 1 MΩ) and low capacity (below 20 pF) probe.

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 7A, and adjust the carrier frequency to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

5. 1.7 MHz carrier frequency adjustment (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ② of IC401 (1.7M CAR OUT)
Measuring Instrument	Frequency counter (Note)
Adjustment Page	D
Adjustment Address	7C (1.7 IR)
Specified Value	1.700 ± 0.003 MHz

Note: Use a high impedance (above 1 MΩ), and low capacity (below 20 pF) probe.

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 7C, and adjust the carrier frequency to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

6. 1.5 MHz carrier level check (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ② of IC401 (1.5M CAR OUT)
Measuring Instrument	Oscilloscope
Specified Value	A=450 ± 50 mVp-p

Checking method:

- 1) Check that the 1.5 MHz carrier level satisfies the specified value.

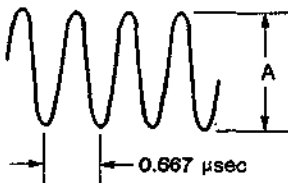


Fig. 8-35.

7. 1.7 MHz carrier level check (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ② of IC401 (1.7M CAR OUT)
Measuring Instrument	Oscilloscope
Specified Value	420 ± 50 mVp-p

Checking method:

- 1) Check that the 1.7 MHz carrier level satisfies the specified value.

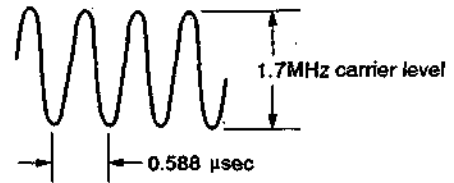


Fig. 8-36.

8. 1.5 MHz playback level adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP)
Measurement Point	Left or right audio output terminal
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	78 (1.5 DEV PB)
Specified Value	-7.5 ± 0.5 dBs

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 78, and adjust the 400 Hz signal level to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

9. 1.7 MHz playback level adjustment

Mode	Playback
Signal	Alignment tape: For checking AFM stereo operations (WR5-9NS) Stereo (color bar) section
Measurement Point	Audio output terminal (right)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	79 (1.7 DEV PB)
Specified Value	Minimum 400 Hz crosstalk component

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 79, and minimize the 400 Hz crosstalk component.
- 3) Press the PAUSE button of the adjusting remote commander.

10. 1.5 MHz deviation adjustment

Mode	Record and playback
Signal	400 Hz, -7.5 dBs
Measurement Point	Audio input/output terminal (left)
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	7B (1.5 DEV REC)
Specified Value	-7.5 ± 0.5 dBs

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Input the 400 Hz, -7.5 dBs signal only to the left audio input terminal.
(Insert a shorting plug in the right audio input terminal.)
- 3) Record the signal.
- 4) Remove the input signal.
- 5) Play back the recorded section.
- 6) Check that the playback signal level satisfies the specified value.
- 7) If not, change the data of page: D, address: 7B and repeat steps 2) to 6).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

- 9) Press the PAUSE button of the adjusting remote commander.

11. 1.7 MHz deviation adjustment

Mode	Record and playback
Signal	400 Hz, -7.5 dBs
Measurement Point	Audio input/output terminal (right)
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	7D (1.7 DEV REC)
Specified Value	-7.5 ± 0.5 dBs

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Input the 400 Hz, -7.5 dBs signal only to the right audio input terminal.
(Insert a shorting plug in the left audio input terminal.)
- 3) Record the signal.
- 4) Remove the input signal.
- 5) Play back the recorded section.
- 6) Check that the playback signal level satisfies the specified value.
- 7) If not, change the data of page: D, address: 7D and repeat steps 2) to 6).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

- 9) Press the PAUSE button of the adjusting remote commander.

12. Overall level characteristics distortion rate check

Mode	Self recording/playback
Signal	400 Hz, -7.5 dBs: Audio input terminal (left [right]) No signal: Audio input terminal (right [left])
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: -7.5 ± 2 dBs Distortion rate: Below 1.2% (Note 2)

Note: 1) [] contains points to be measured when checking the right channel.

2) Value when the following filter is used

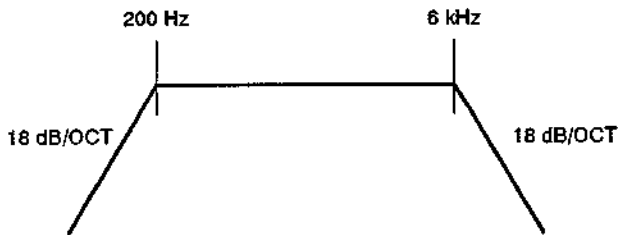


Fig. 8-37.

Checking method:

- 1) Input the 400 Hz, -7.5 dBs signal only to the left audio input terminal [right].

Note: Be sure to insert the shorting plug in the terminal without any signal input.

- 2) Record the signal.
- 3) Remove the input signal.
- 4) Play back the recorded section.
- 5) Check that the 400 Hz signal level of the left audio output terminal [right] is -7.5 ± 2 dBs, and distortion rate is below 1.2% (Note 2).

13. Separation check

Mode	Self recording/playback
Signal	No signal: Audio input terminal (left [right]) 1 kHz, -7.5 dBs: Audio input terminal (right [left])
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter (Use the IHF-A curve auditory correction filter)
Specified Value	Below -27.5 dBs

Note: [] contains points to be measured when checking the right channel.

Checking method:

- 1) Insert the shorting plug into the left audio input terminal [right], and input the 1 kHz, -7.5 dBs signal only to the right audio input terminal [left].
- 2) Record the signal.
- 3) Remove the input signal.
- 4) Play back the recorded section.
- 5) Check that the crosstalk (1 kHz) level of the left audio output terminal [right] is below -27.5 dBs.

14. Overall noise level check

Mode	Self-recording
Signal	No signal: Audio input terminal (left and right)
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter (Use the IHF-A curve auditory correction filter)
Specified Value	Below -63.0 dBs

Note: [] contains points to be measured when checking the right channel.

Checking method:

- 1) Insert the shorting plug in both the left and right audio input terminals.
- 2) Record.
- 3) Remove the shorting plug.
- 4) Play back the recorded section.
- 5) Check that the noise level of the left audio output terminal [right] is below -63.0 dBs.

8-8. TGV-3 ELECTRICAL ADJUSTMENTS

Use the following measuring equipments in electrical adjustments.

(Equipments Used)

- 1) TV Monitor
- 2) Oscilloscope 2 phenomena, band 30 MHz or wider, with delay mode (Use 10:1 probe unless specified otherwise.)
- 3) Frequency counter
- 4) Pattern generator
- 5) Digital voltmeter
- 6) Voice multiplexed signal generator
- 7) Regulated power supply
- 8) Video cassette recorder (GV-S50)

(Connecting the Equipments)

Connect the video cassette recorder (GV-S50) and adjust, unless specified otherwise.

Position of Tuner Timer Unit (TGV-3) Switch

- Input/output selection switch TV position

1. Clock adjustment (TM-118 board)

Measurement Point	Pin ③ of IC400
Measuring Instrument	Frequency counter
Adjusting Element	CV400
Specified Value	4096.010 ± 0.015 Hz

Adjusting method:

- 1) Adjust the clock frequency to the specified value with CV400.

2. RF AGC adjustment (TU-142 board)

Measurement Point	TV broadcasting signal
Measuring Instrument	Connect the TV monitor and check
Adjusting Element	
Specified Value	Refer to Fig. 8-38.

Adjusting method:

- 1) Adjust the contrast of the TV monitor to maximum.
- 2) Rotate the RV for adjusting RF AGC until the snow noise appears.
- 3) Rotate it in the opposite direction until the snow noise disappears.
- 4) Repeat each channel and check that there is no beat or image distortion by cross modulations, nor snow noise.

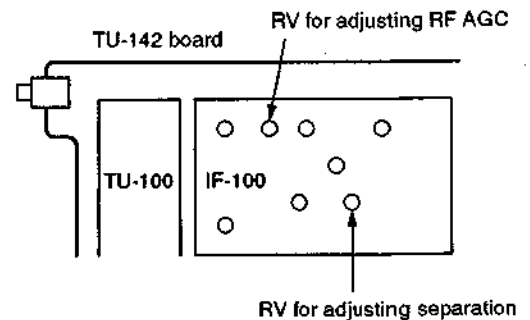


Fig. 8-38.

3. Separation adjustment (TU-142 board)

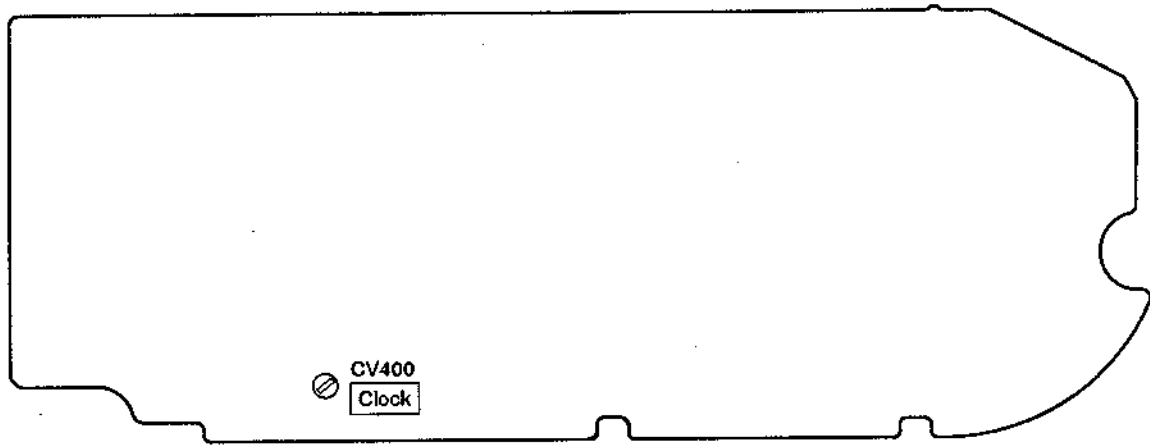
Signal	Voice multiplexed RF signal (VIDEO : Color bar) (AUDIO L : 400 Hz) (AUDIO R : 1 kHz)
Measurement Point	Lch: Pin ② of CN100 Rch: Pin ② of CN100
Measuring Instrument	Oscilloscope
Specified Value	Refer to Fig. 8-38.

Adjusting method:

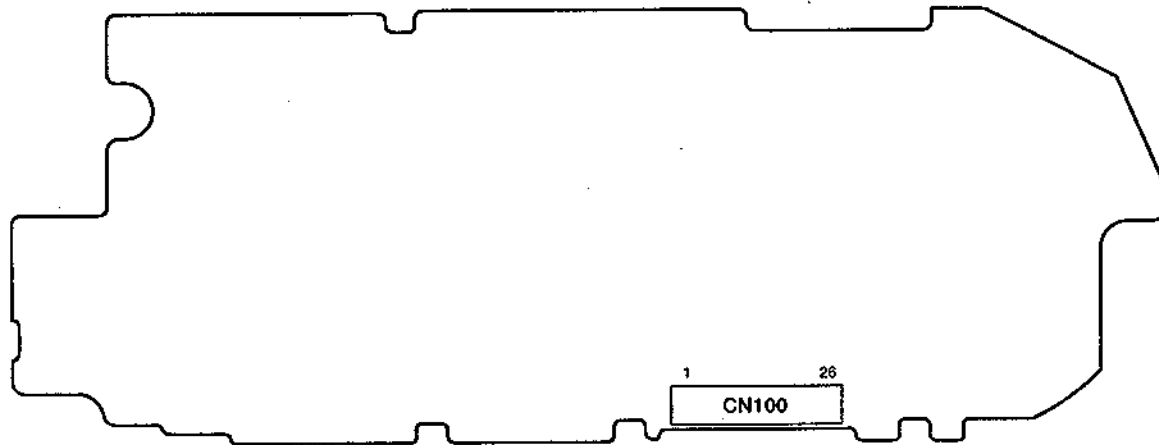
- 1) Adjust the RV for adjusting separation so that the crosstalk component (1 kHz) for Lch and that (400 Hz) for Rch become minimum.

8-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

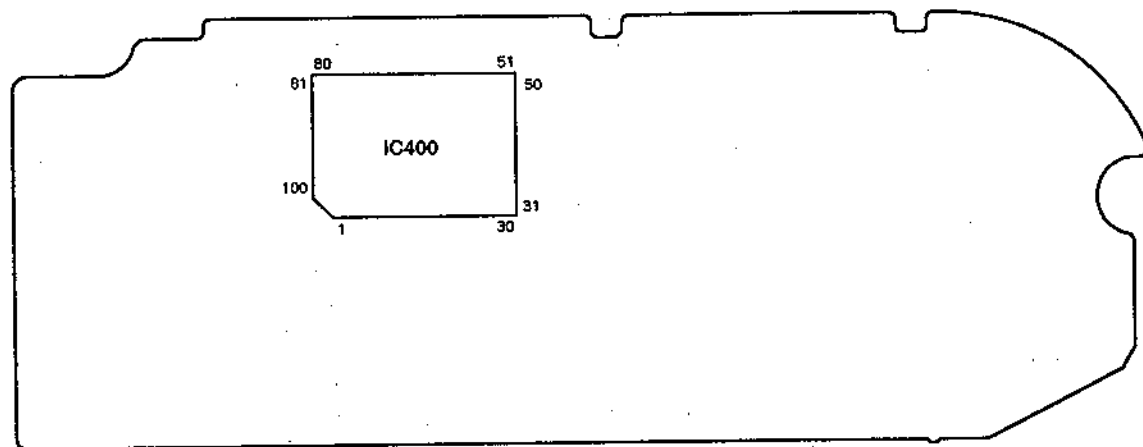
TM-118 BOARD (COMPONENT SIDE)



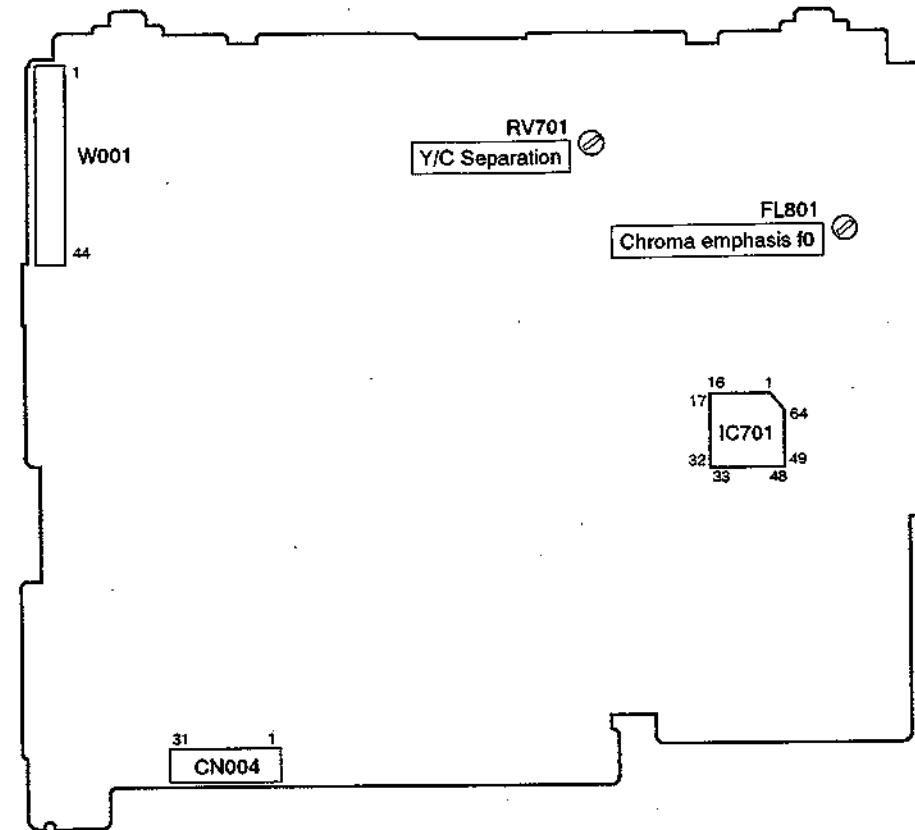
TM-118 BOARD (CONDUCTOR SIDE)



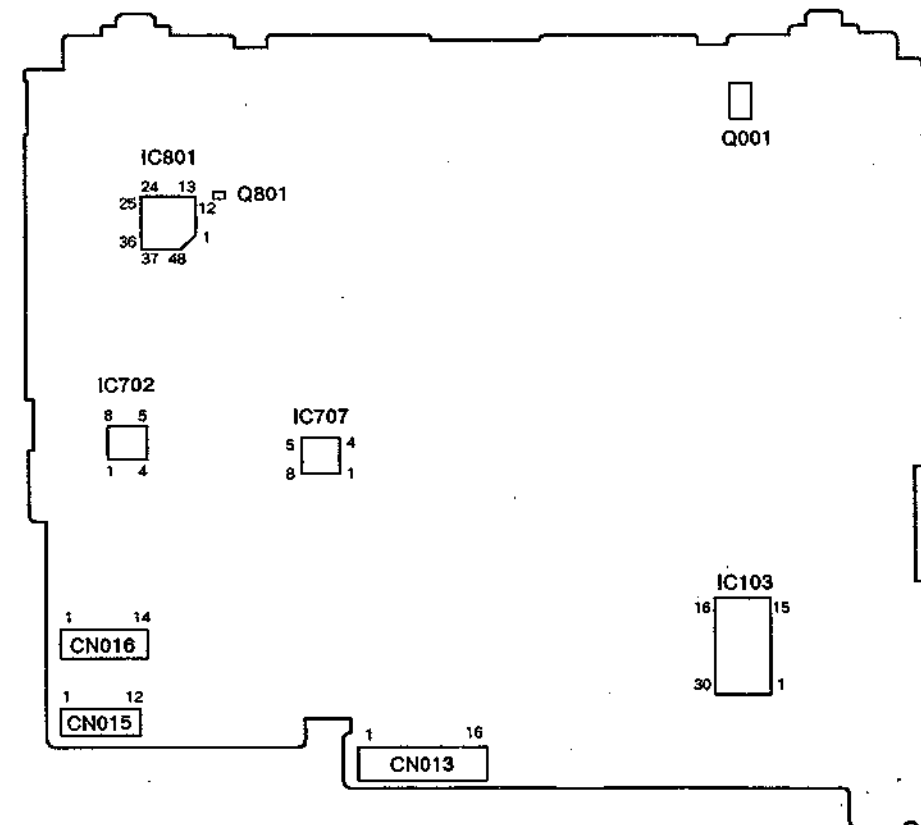
TU-142 BOARD (CONDUCTOR SIDE)



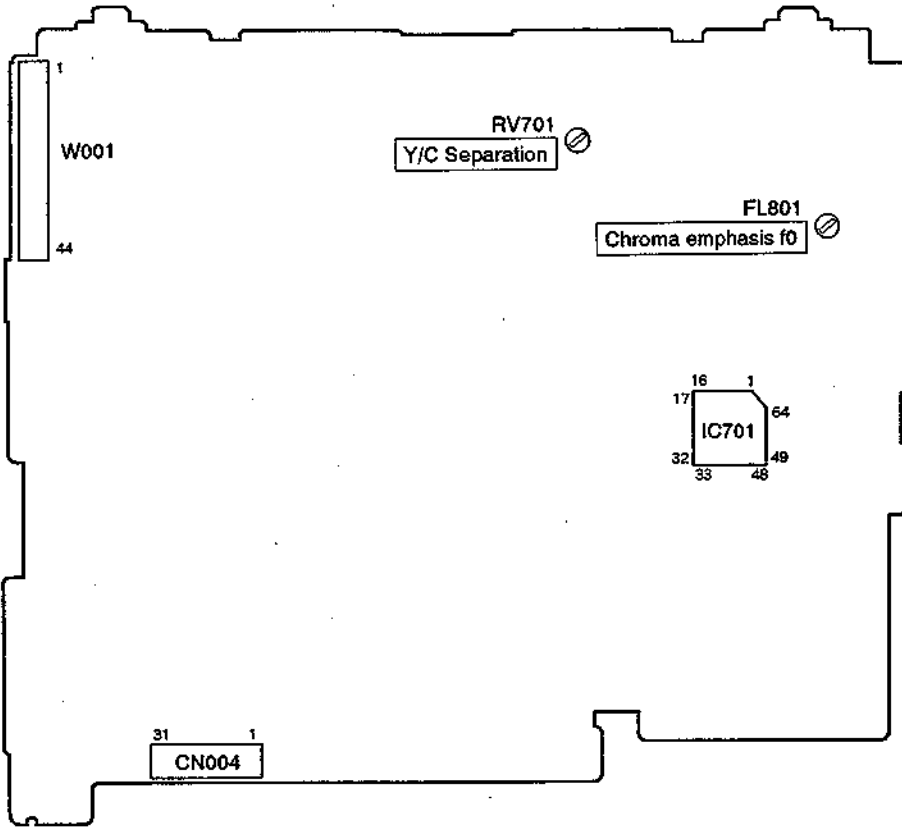
MA-137 BOARD (COMPONENT SIDE)



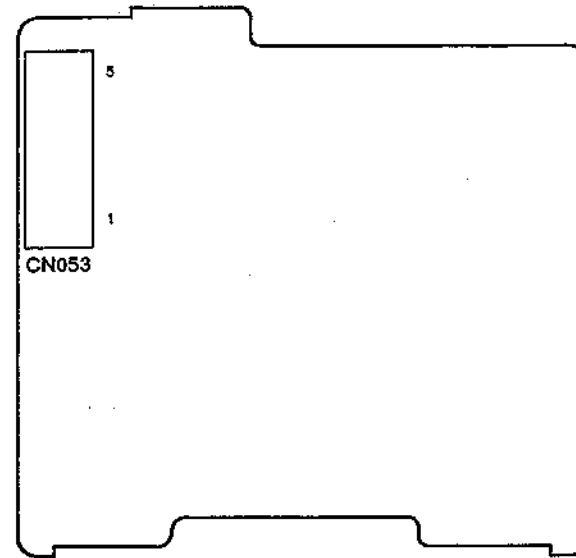
MA-137 BOARD (CONDUCTOR SIDE)



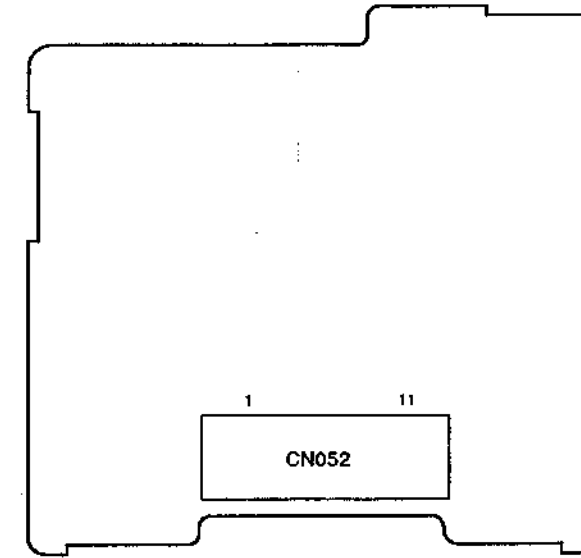
MA-137 BOARD (COMPONENT SIDE)



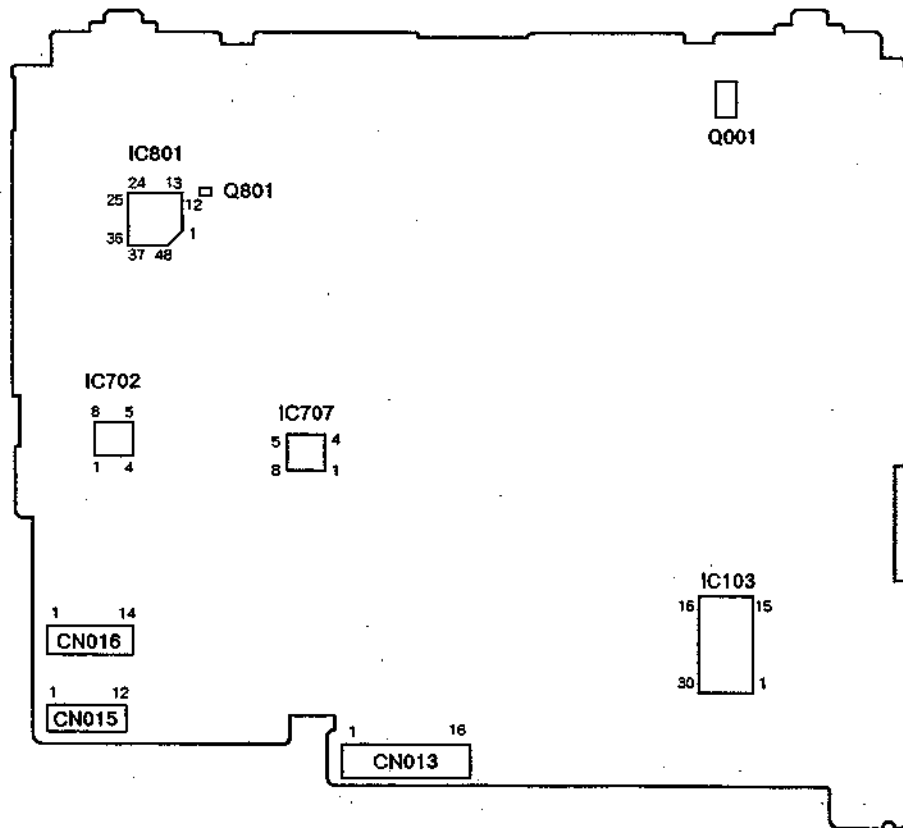
RP-144 BOARD (COMPONENT SIDE)



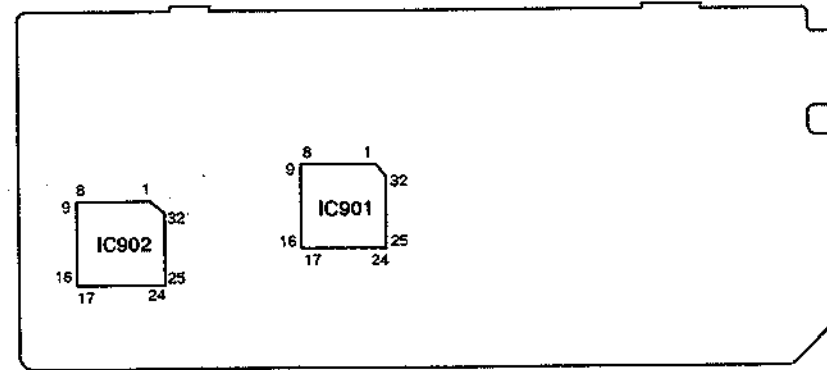
RP-144 BOARD (CONDUCTOR SIDE)



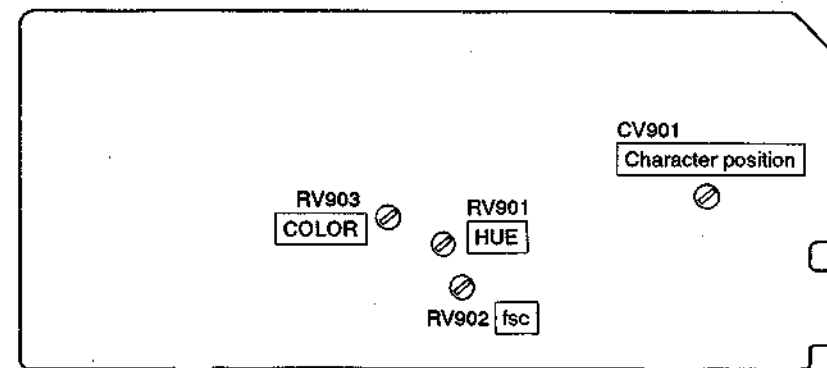
MA-137 BOARD (CONDUCTOR SIDE)



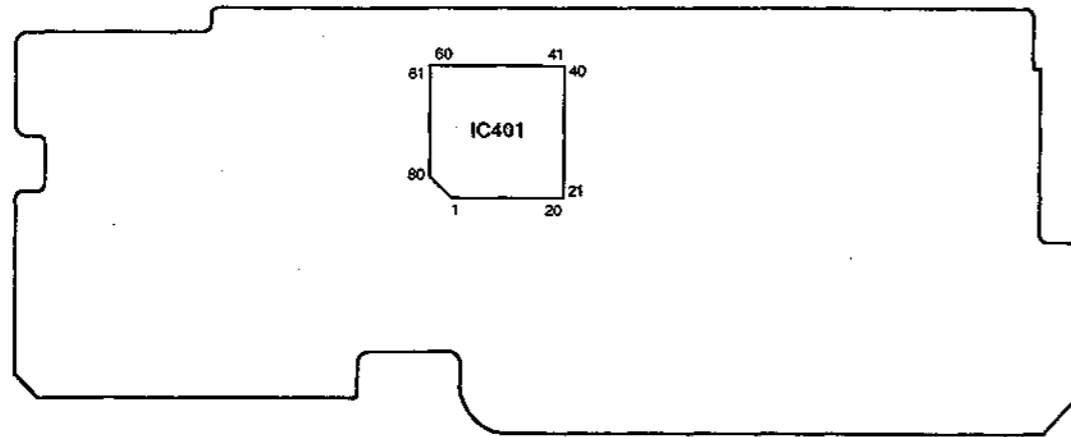
RG-25 BOARD (CONDUCTOR SIDE)



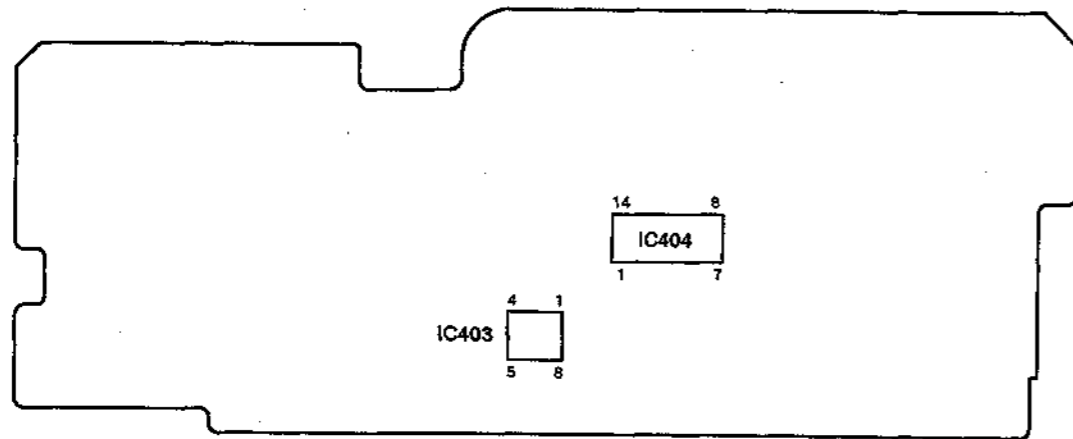
RG-25 BOARD (COMPONENT SIDE)



AU-136 BOARD (CONDUCTOR SIDE)



AU-136 BOARD (COMPONENT SIDE)

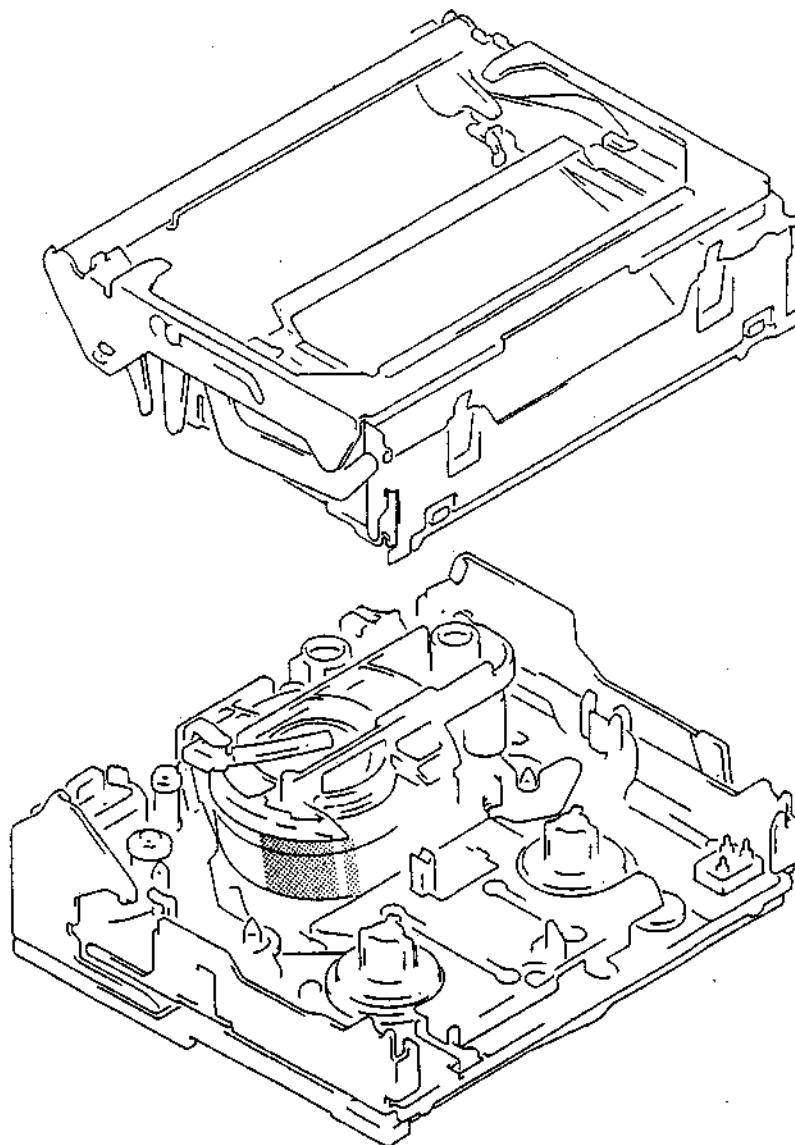


8 mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM

Video 8

File with the SERVICE MANUAL



8 VIDEO RECORDER
SONY®

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT		3-10.	Supply Reel Table Assembly and TG-1 Arm Assembly -----	23
1-1.	Cassette compartment Assembly -----	3	3-11.	TG-2 Roller Assembly -----	24
1-2.	Operation with Cassette compartment Assembly Removed -----	5	3-12.	TG-7 Arm Assembly -----	25
1-3.	Handling of Mode Selector -----	6	3-13.	LM Motor Assembly -----	26
1-4.	Mode Selector Schematic Diagram -----	7	3-14.	LS Arm -----	27
1-5.	Mode Selector Parts List -----	7	3-15.	M Slider Assembly -----	28
2.	PERIODIC CHECK AND MAINTENANCE		3-16.	Pinch Press Arm Assembly -----	29
2-1.	Cleaning of Rotaly Drum Assembly -----	8	3-17.	Cam -----	30
2-2.	Cleaning of Tape Path -----	8	3-18.	GL Arm Assembly -----	31
2-3.	Periodic Check Items -----	9	3-19.	L Gear A and L Gear B -----	32
2-4.	Service Jigs List -----	10	3-20.	Relay Pulley and Change Gear Assembly -----	33
3.	MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT		3-21.	Rotary Upper Drum Replacement -----	34
3-1.	Retainer, Gooseneck Assembly -----	12	3-22.	Adjustment of Tension Regulator Position -----	35
3-2.	Protector Base Assembly -----	13	3-23.	FWD Back Tension Adjustment -----	35
3-3.	Drum Assembly -----	14	3-24.	Reel Torque Check -----	35
3-4.	Capstan Motor Assembly -----	15	4.	TAPE PATH ADJUSTMENT	
3-5.	Take-UP Reel Assembly and T-Soft Assembly -----	16	4-1.	Preparation for Adjustment -----	37
3-6.	Pinch Arm Assembly -----	17	4-2.	Tracking Adjustment -----	38
3-7.	LS Chassis Assembly -----	18	4-3.	No.2 Guide (TG-2) Adjustment -----	38
3-8.	Guide Base T Assembly and Guide Base S Assembly -----	20	4-3-1.	No.2 Guide (TG-2) Height Presetting -----	38
3-9.	Guide Arm T Assembly and Guide Arm S Assembly -----	22	4-3-2.	No.2 Guide (TG-2) Adjustment -----	39
			4-4.	No.7 Guide (TG-7) Adjustment -----	39
			4-5.	CUE and REW Waveform Check -----	39
			4-6.	Check After Adjustment -----	40
			4-6-1.	Tracking Check -----	40
			4-6-2.	Rising Check -----	40
			4-6-3.	Tape Path Check -----	40

1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

For removal of the cabinet and boards, refer to "Disassembly" in each Service Manual.

Mechanical adjustment is done in the **USE** mode. (To select the **USE** mode, refer to "1-3, Handling of Mode Selector".)

1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removal (Fig. 1)

- 1) Select the **USE** mode.
- 2) Push the part ① of lock arm **1** toward the arrow ④ to unlock from lock guide **2**, and raise the cassette compartment as shown in Fig. a.
- 3) Remove two screws **3** and remove the LS frame **4** toward the arrow **5**.
- 4) With the cassette compartment assembly **5** pushed in arrow **6** direction, distort tabs ⑦ and ⑧ of MD side plate toward the arrow **7** to disengage from catches ④ and ⑤ of cassette compartment assembly respectively.

In such a case, insert a screwdriver between MD side plate and catch and disengage the tab ⑦ first, then disengage the tab ⑧ for easy removal as shown in Fig. b.

- 5) Raise the cassette compartment assembly **5** in the opposite direction of arrow **6** until the shafts ① and ② are disengaged, and push left and right side plates toward arrow **8** to remove the cassette compartment assembly.

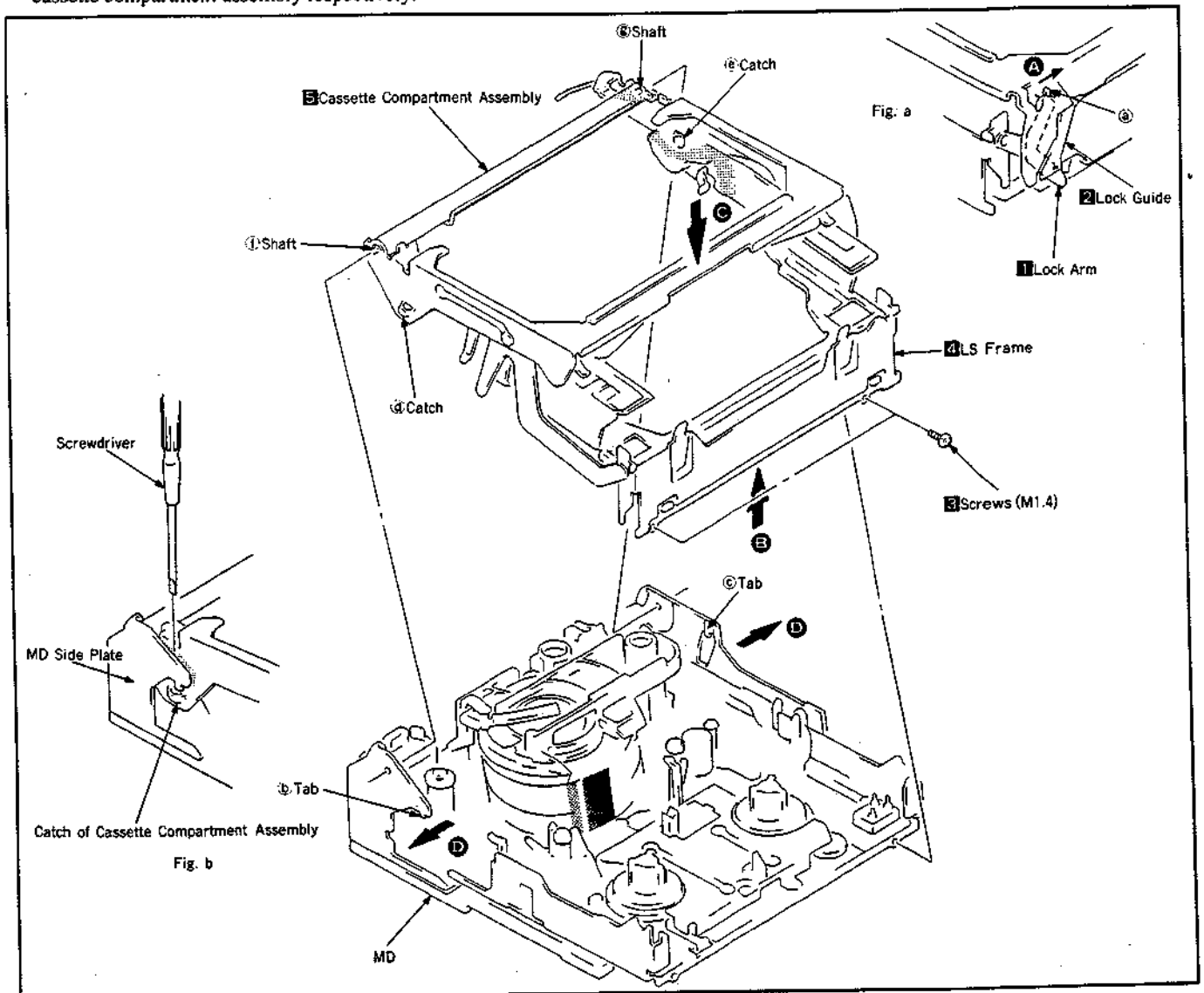


Fig. 1

2. Mounting (Fig. 2)

- 1) Select the **USE** mode.
- 2) Draw the cassette holder **6** of cassette compartment assembly **5** toward the arrow **E**, and lower the LS frame **4** toward the arrow **F**.
- 3) With the cassette compartment assembly **5** tilted by about 45° against MD, insert shafts **1** and **2** of cassette compartment assembly into holes **b** and **1** of MD side plate respectively.

At this time, the part **1** of torsion bar must be positioned on the side **a** of LS flexible board (FP-443) (not on the side **1**), as shown in Fig. c.

- 4) Holding holes **b** and **1** of MD side plate, press the cassette compartment assembly **5** so that its catches **d** and **e** are

engaged with tabs **b** and **c** of MD side plate. In such a case, the lock arm **1** of cassette compartment assembly must be inserted into a groove in the guide rail **7** on the MD side plate as shown in Fig. d.

- 5) Insert left and right side plates **10** and **11** of LS frame **4** inside the LS chassis **3**.
- 6) Push down the cassette compartment to lock.

Note : Make sure that the shafts **1**, **2** and the tabs **b**, **c** are set in the MD side plate properly.

- 7) Tighten two screws **3**.

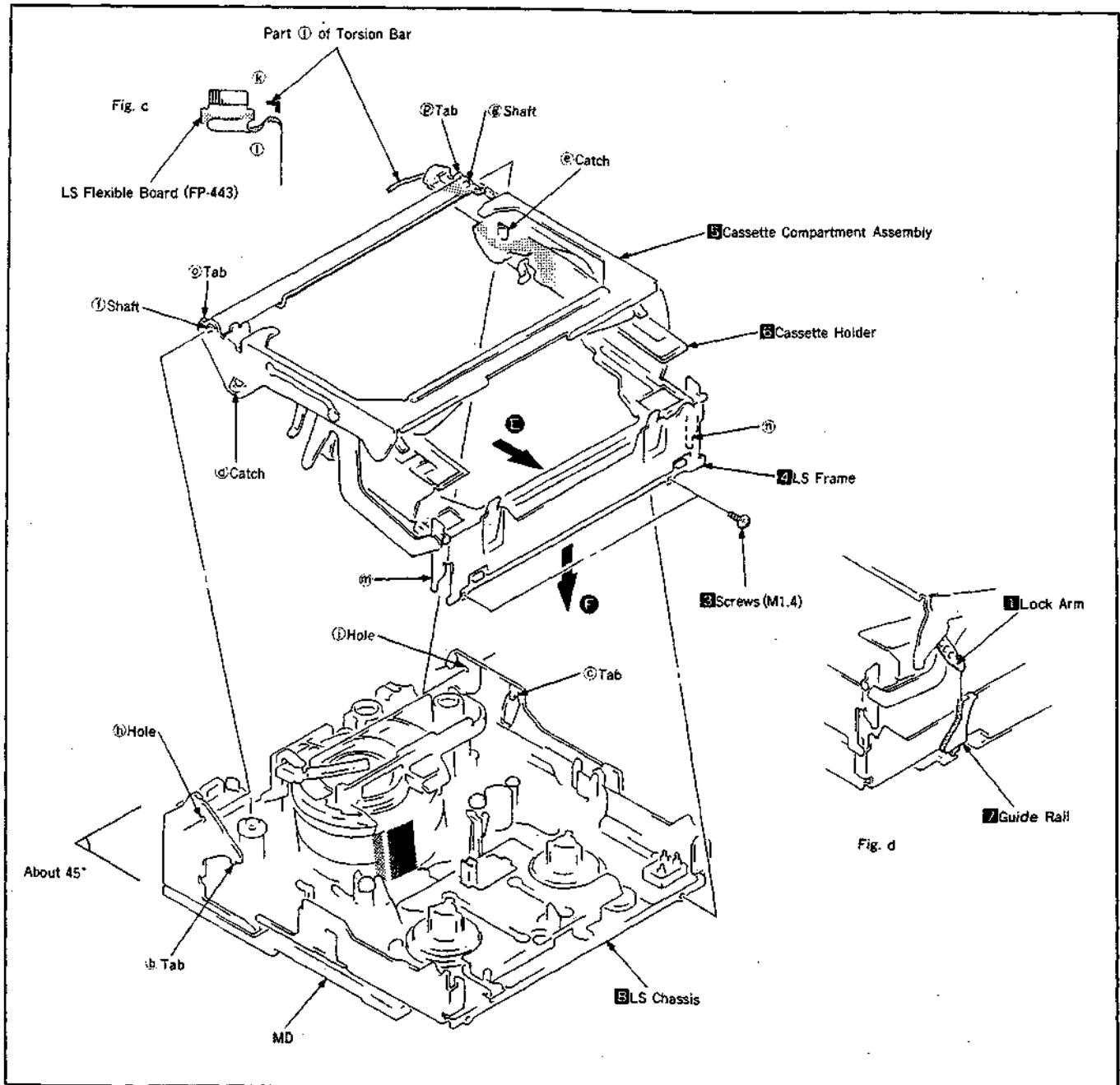


Fig. 2

1-2. OPERATION WITH CASSETTE COMPARTMENT ASSEMBLY REMOVED (Fig. 3)

- 1) Referring to the Service Manual, supply power with the cabinet and camera removed. (Make the mechanical deck ready to operate.)
- 2) Place the cap **2** on the Reflector C **1**.
- 3) Press the pin of the push switch **3** (ON state) and fix it with adhesive tape **4** in that state.

Note : Press the asterisked (*) pin to set the REC mode.
(This is not required for the other modes.)

- 4) Push the cassette compartment DOWN switch **5** in an arrow direction as shown in Fig. a.

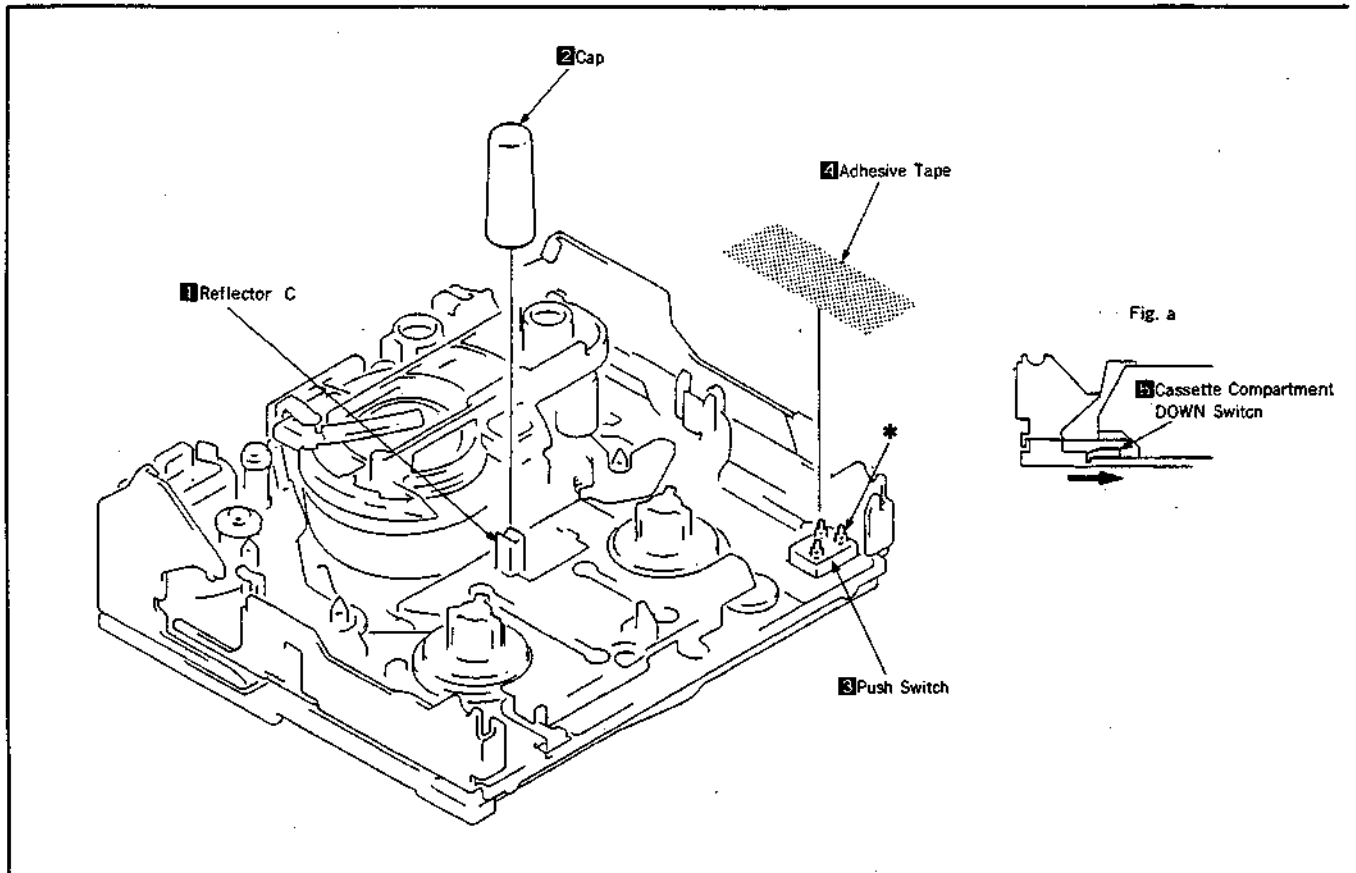


Fig. 3 .

1-3. HANDLING OF MODE SELECTOR

- Stick the MD process table label to the mode selector IV panel, then mount the panel on the mode selector.
U, U', FL, O, O' and A mechanisms have different mode indications respectively. Select your desired type. (Fig.4)

1 Construction (Fig.5)

2 Connection (Fig.6)

For CCD-FX410 series

- 1) Insert the FP-425 flexible connector **1** and M-SW connector **2** into the mode selector IV conversion connector **3** respectively.

3. Handling

- 1) Use the M mode selector buttons only.
- 2) During mode selection, "BLANK" lights up when no mode is being selected.
- 3) If the right M mode selector button is kept pressed, END, EJECT, USE, LOAD, READY, TURN, REC and FF light up in that order.
- 4) When changing over from the FF mode back to the END mode, press the left M mode selector button to select your desired mode.

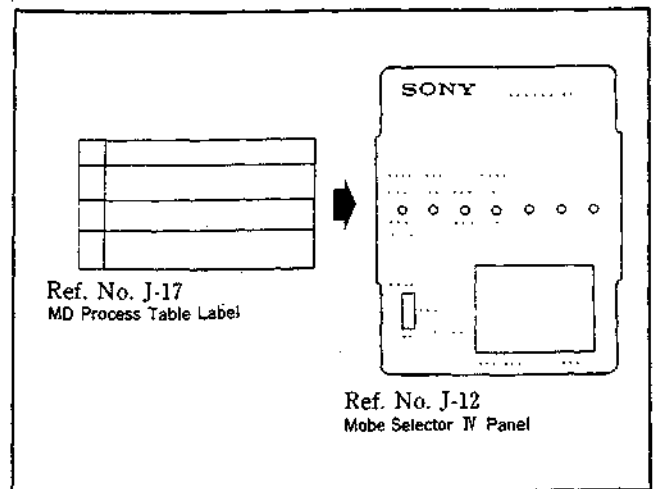


Fig. 4

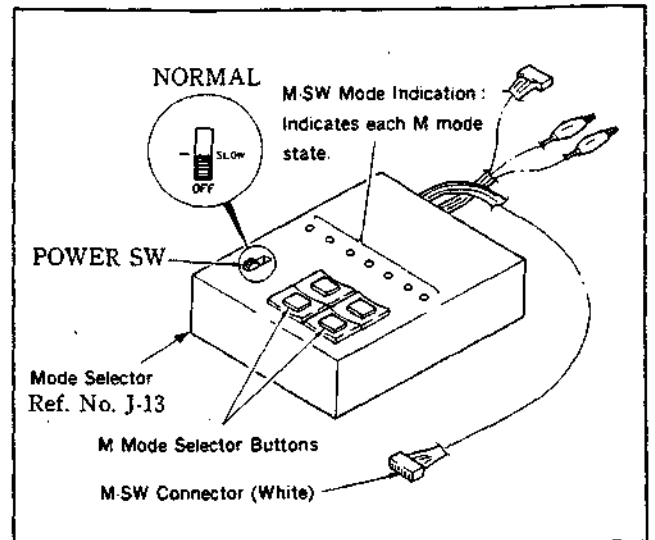


Fig. 5

For CCD-FX410 series

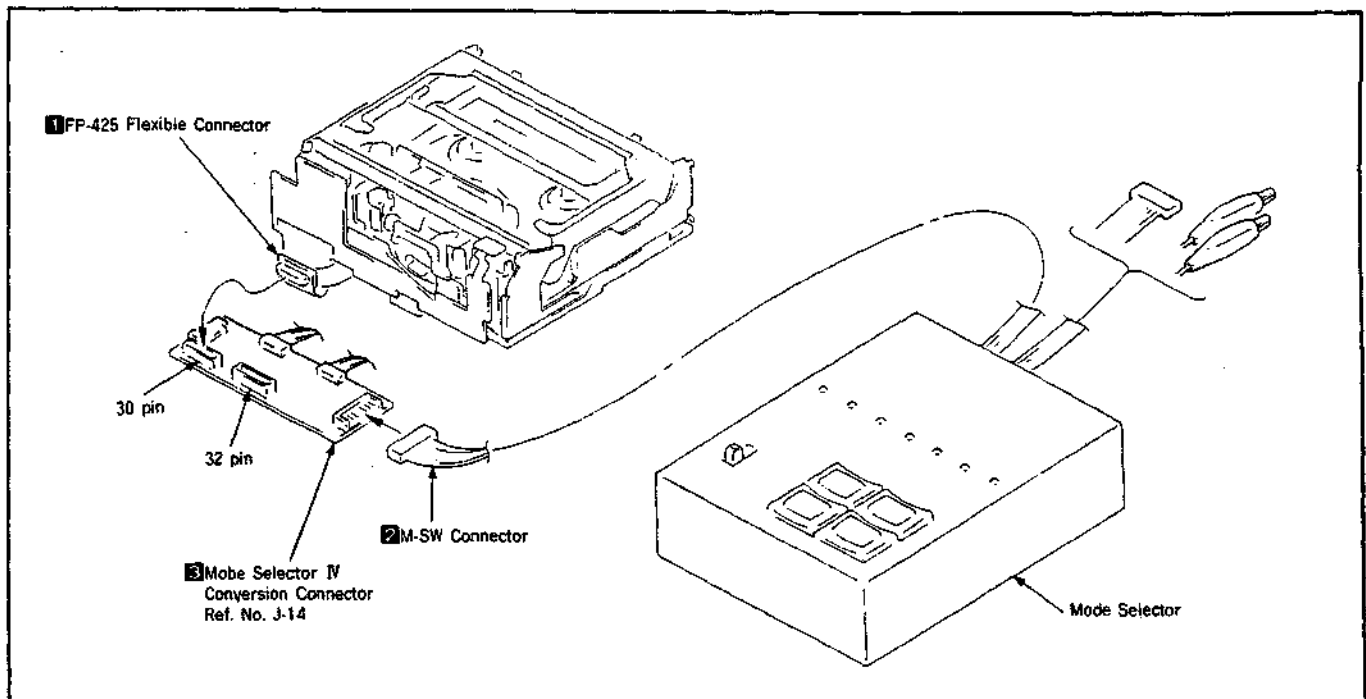
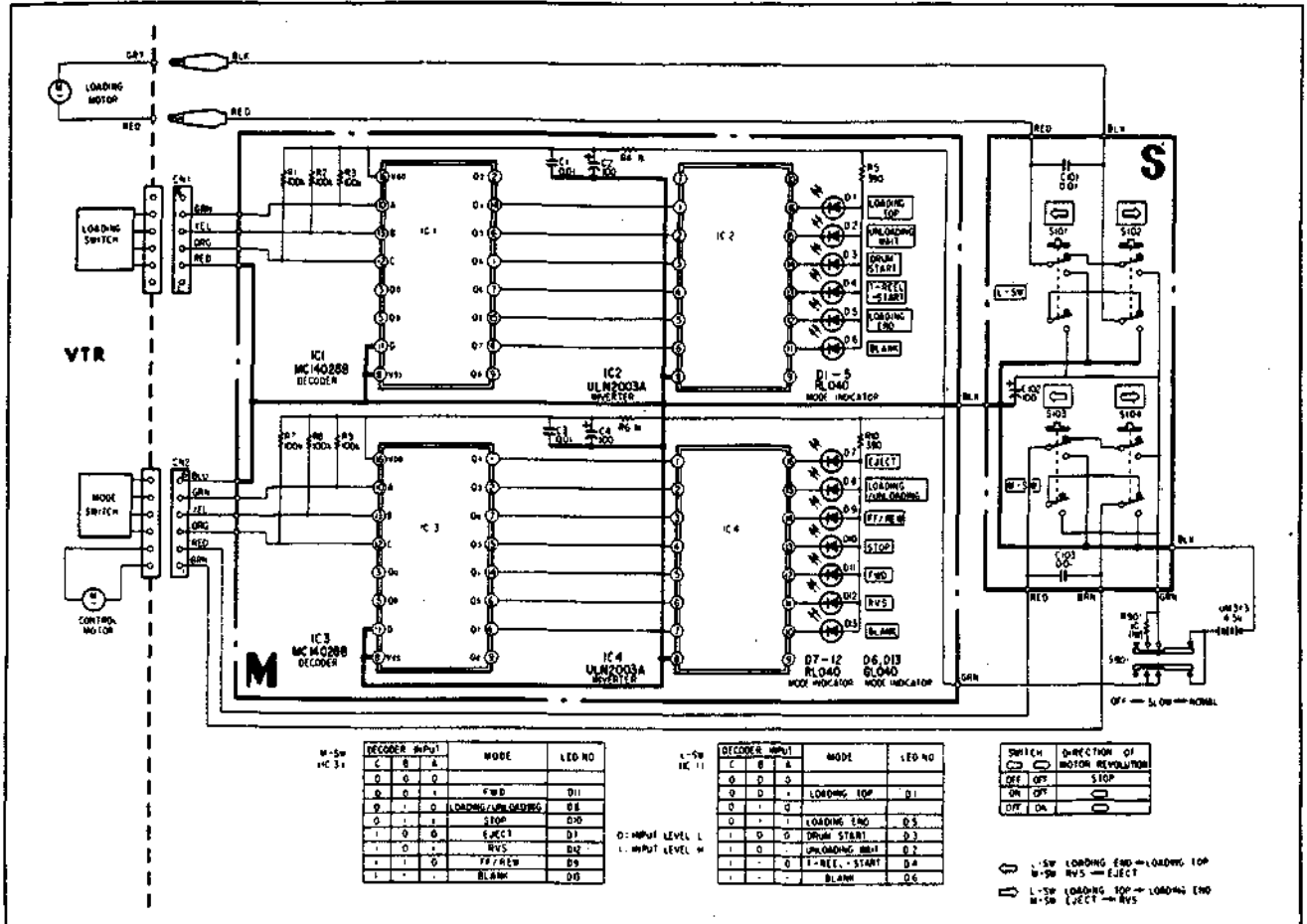


Fig. 6

1-4. MODE SELECTOR SCHEMATIC DIAGRAM



1-5. MODE SELECTOR PARTS LIST

Ref. No	Part No.	Description	Ref. No	Part No.	Description
CAPACITOR			IC		
C1	1-108-579-00	MILER 0.01μF 50V	IC1	8-752-240-28	IC TC4028BP
C2	1-123-333-00	ELECT 100μF 24V	IC2	8-752-120-03	IC μPA2003C
C3	1-108-579-00	MILER 0.01μF 50V	IC3	8-759-240-28	IC TC4028BP
C4	1-123-333-00	ELECT 100μF 24V	IC4	8-759-120-03	IC μPA2003C
C101	1-108-579-00	MILER 0.01μF 50V	RESISTOR		
C102	1-123-333-00	ELECT 100μF 24V	R1	1-247-179-00	CARBON 100K 1/4W
C103	1-108-579-00	MILER 0.01μF 50V	R2	1-247-179-00	CARBON 100K 1/4W
DIODE			R3	1-247-179-00	CARBON 100K 1/4W
D1	8-719-812-31	DIODE TLR123	R4	1-247-131-00	CARBON 1K 1/4W
D2	8-719-812-31	DIODE TLR123	R5	1-247-121-00	CARBON 390 1/4W
D3	8-719-812-31	DIODE TLR123	R6	1-247-131-00	CARBON 1K 1/4W
D4	8-719-812-31	DIODE TLR123	R7	1-247-179-00	CARBON 100K 1/4W
D5	8-719-812-31	DIODE TLR123	R8	1-247-179-00	CARBON 100K 1/4W
D6	8-719-812-33	DIODE TLG123A	R9	1-247-179-00	CARBON 100K 1/4W
D7	8-719-812-31	DIODE TLR123	R10	1-247-121-00	CARBON 390 1/4W
D8	8-719-812-31	DIODE TLR123	R901	1-214-594-00	METAL 10 1W
D9	8-719-812-31	DIODE TLR123			
D10	8-719-812-31	DIODE TLR123			
D11	8-719-812-31	DIODE TLR123			
D12	8-719-812-31	DIODE TLR123			
D13	8-719-812-33	DIODE TLG123A			

2. PERIODIC CHECK AND MAINTENANCE

Carry out the following maintenance and periodic checks in order not only to fully exhibit the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

- 1) Gently apply chamois cloth (Ref. No. J-2) soaked in cleaning liquif (Ref. No. J-1) to the rotary drum assembly.
Clean it by rotating the upper rotary drum assembly slowly counterclockwise by hand.

Note : Do not rotate the motor by power or rotate the upper rotary drum assembly clockwise by hand. Also, the head tip is highly likely to be damaged if the chamois cloth is moved in a pependicular direction to the it. make sure to follow the instructions above for cleaning the rotarydrum assembly.

2-2. CLEANING OF TAPE PATH (Fig.7)

- 1) In the **USE** mode, clean the tape running system (TG - 1, - 2, - 3, - 4, - 5, - 6, - 7, pinch roller, and capstan shaft) and the lower drum, using a super fine applicator (Ref. No. J - 3) soaked in the cleaning liquid.

Note : Note that no oil or grease of each link mechanism adheres to the super fine applicator (Ref. No. J - 3).

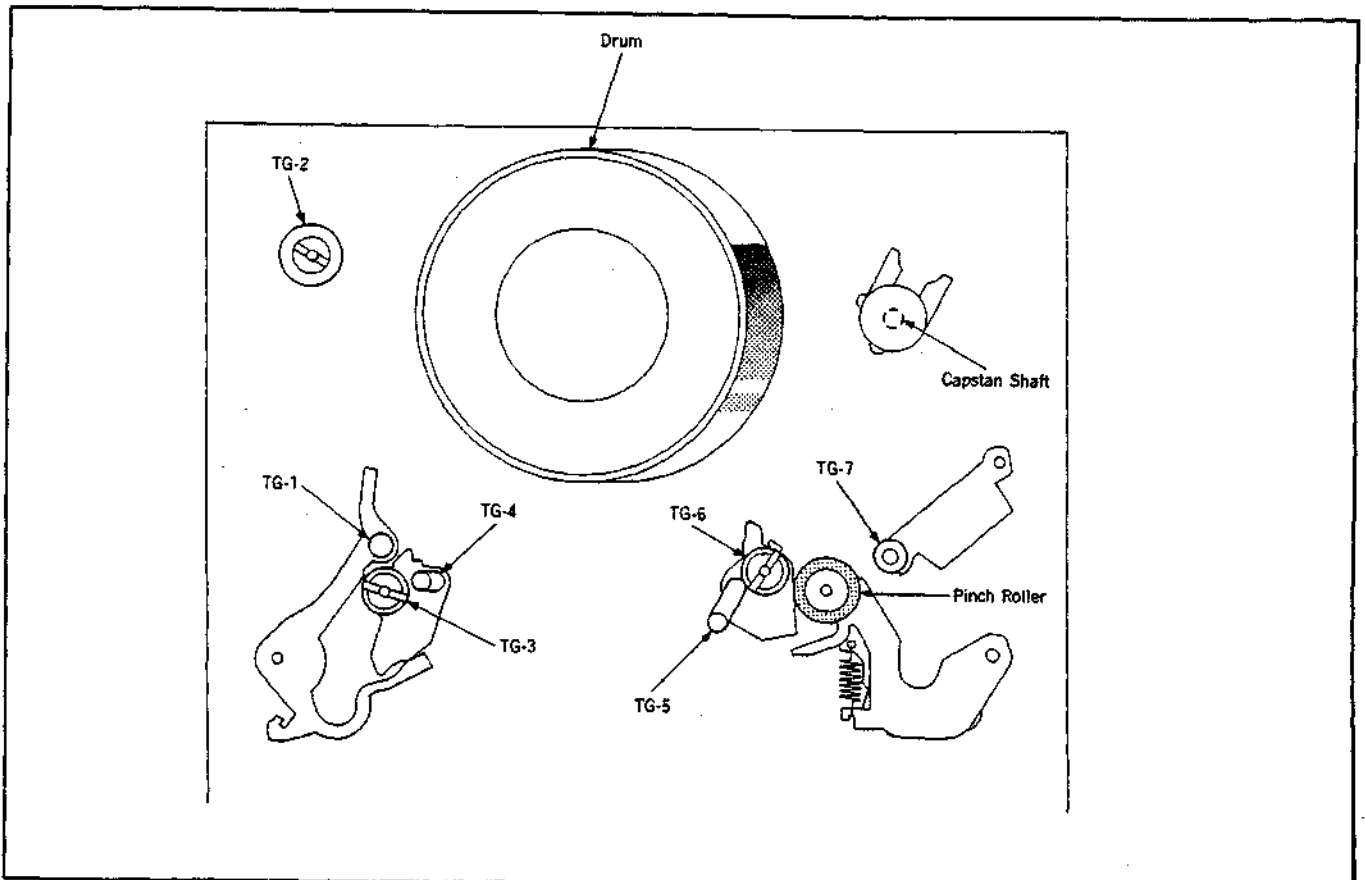


Fig. 7

2-3. PERILDIC CHECK ITEMS

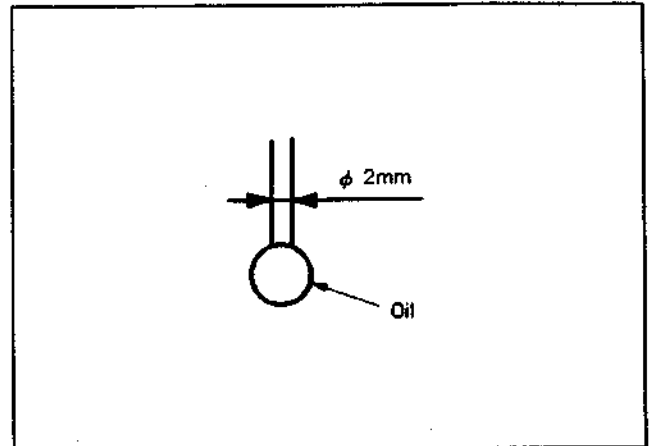
Location of Maintenance and check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
Tape trans- portion System	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaus- sing of rotary assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Driving System	Relay belt	-	☆	-	☆	-	☆	-	☆	-	☆	3-944-539-01
	Capstan shaft	-	◎	-	◎	-	◎	-	◎	-	◎	Be adsolutely careful not to get oil on the tape path surface.
	Relay pulley shaft	-	◎	-	◎	-	◎	-	◎	-	◎	
	Loading motor	-	☆	-	☆	-	☆	-	☆	-	☆	A-7040-304-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	-	☆	-	☆	-	☆	-	☆	-	☆	
	Brake system	-	☆	-	☆	-	☆	-	☆	-	☆	
	FWD. RVS torque measurement	-	☆	-	☆	-	☆	-	☆	-	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note : When overhauling, refer to the items above to replace parts.

Note : Concerning oil





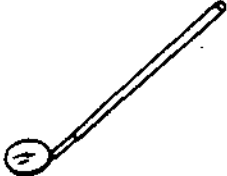
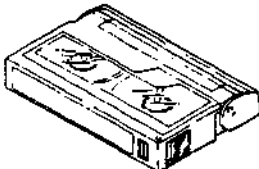
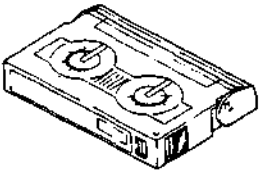

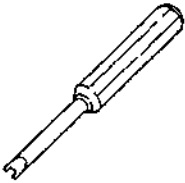
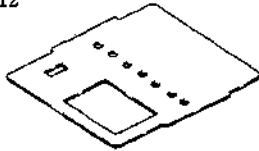
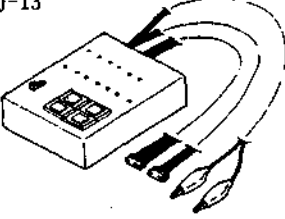
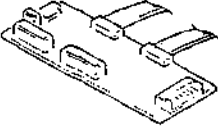
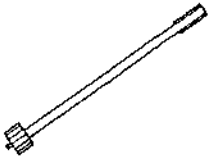
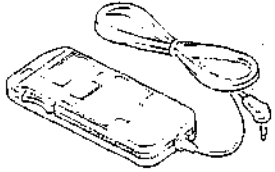
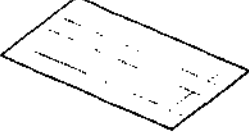
- Be sure to use specified oil. (If you use oil with different viscosity, etc., it may cause troubles.)
Oil : Part No. 7-661-018-18 (Mitsubishi Diamond Oil Hydrofluid NT - 68)
- When lubricating bearings, be sure use oil free from dust, etc. (If you use oil with dust, etc. contained, it may cause bearings to be worn out or seized.)
- A drip of oil refers to an amount attached to the tip of a ϕ 2mm stick shown in the right figure.



2-4. Service jigs list

Ref. No.	Name	Part No.	Fixture No.	Usage and Others
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Chamois cloth	2-034-697-00		
J-3	Super fine applicator (Made by NIPPON APPLICATOR, P752D)			
J-4	Head degausser	Widely available		
J-5	Small mirror for adjustment Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-6	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-9	FWD and RVS winding torque cassette	J-6080-824-A	GD-2086	
J-10	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-11	Screwdriver for tape path	J-6082-026-A		For tape guide adjustment
J-12	Mode selector IV panel	J-6082-105-A		
J-13	Mode selector	J-6080-825-A		For all models
J-14	Mode selector IV conversion connector	J-6082-167-A		
J-15	FWD B.T. adjusting driver	J-6082-182-A		
J-16	Adjusting remote controller	J-6082-053-B		Tape path (Setting of PATH mode)
J-17	MD process table label	J-6082-166-A		

Other equipment ● Oscilloscope
● Analog tester (20 kΩ)

<p>J-1</p> 	<p>J-2</p> 	<p>J-3</p> 	<p>J-4</p> 
<p>J-5</p> 	<p>J-6</p> 	<p>J-9</p> 	<p>J-10</p>  <p>(Attached to the maintenance rotary upper drum)</p>
<p>J-11</p> 	<p>J-12</p> 	<p>J-13</p> 	<p>J-14</p> 
<p>J-15</p> 	<p>J-16</p> 	<p>J-17</p> 	

3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note : Use the mode selector (Ref. No. J-13) for the following mechanical checks, adjustments and replacements.

Note : The modes in are those set by pressing the mode selector buttons.

3-1. RETAINER, GOOSENECK ASSEMBLY (Fig. 8)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove a screw .
- 3) Remove the Retainer, Gooseneck assembly .

2. Mounting

- 1) Mount the Retainer, Gooseneck assembly with its two tabs and holes of LS chassis engaged with its hole and a boss of LS chassis.
- 2) Tighten the screw .
- 3) Referring to 1-1, mount the cassette compartment assembly.

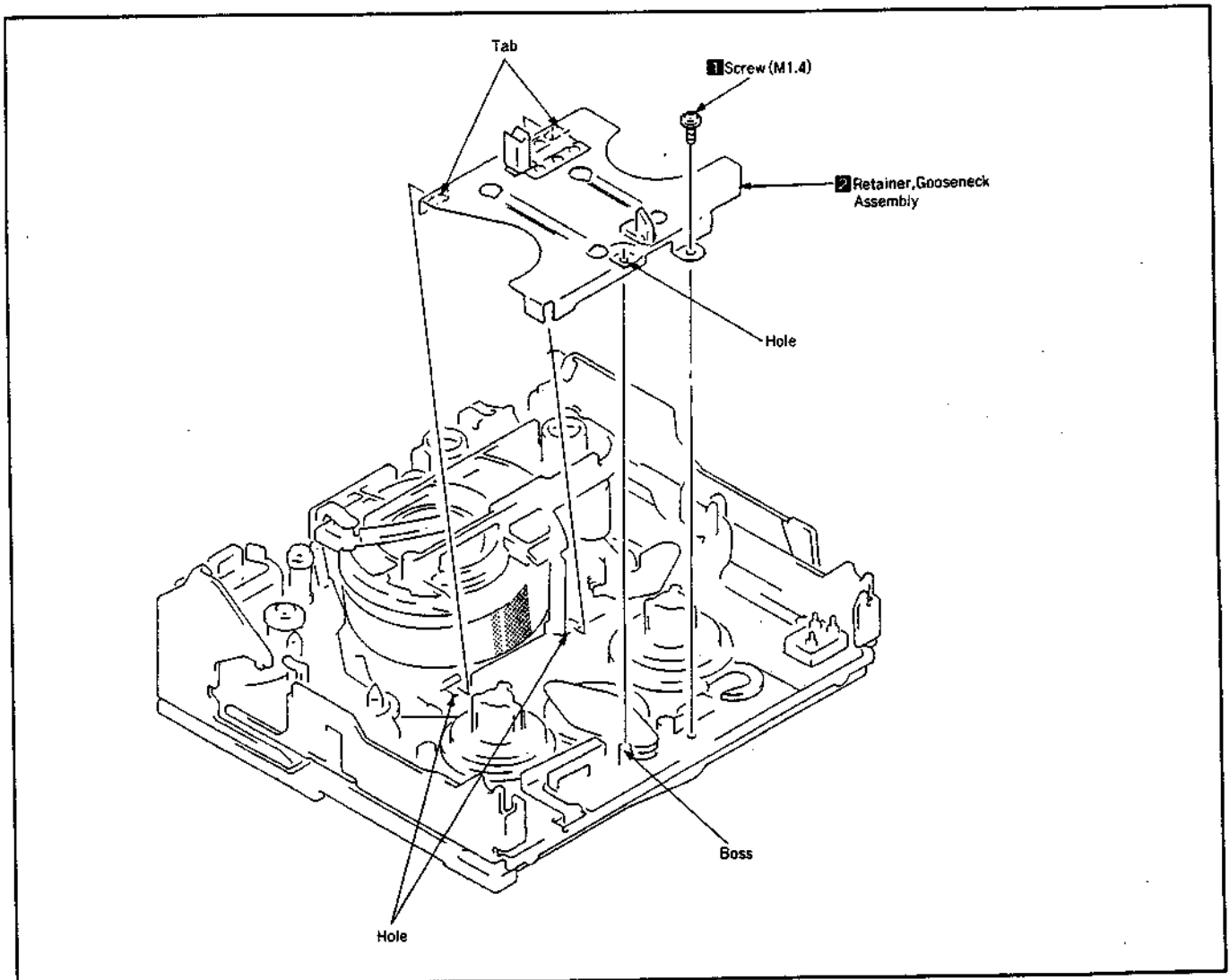


Fig. 8

3-2. PROTECTOR BASE ASSEMBLY (Fig. 9)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove two screws **1**, then the protector base assembly **2**.

2. Mounting

- 1) Mount the protector base assembly **2** with its three holes engaged with two dowels of mechanical chassis, and a dowel of TG-5 Base Holder **3**.
- 2) Tighten two screws **1**.
- 3) Referring to 1-1, mount the cassette compartment assembly.

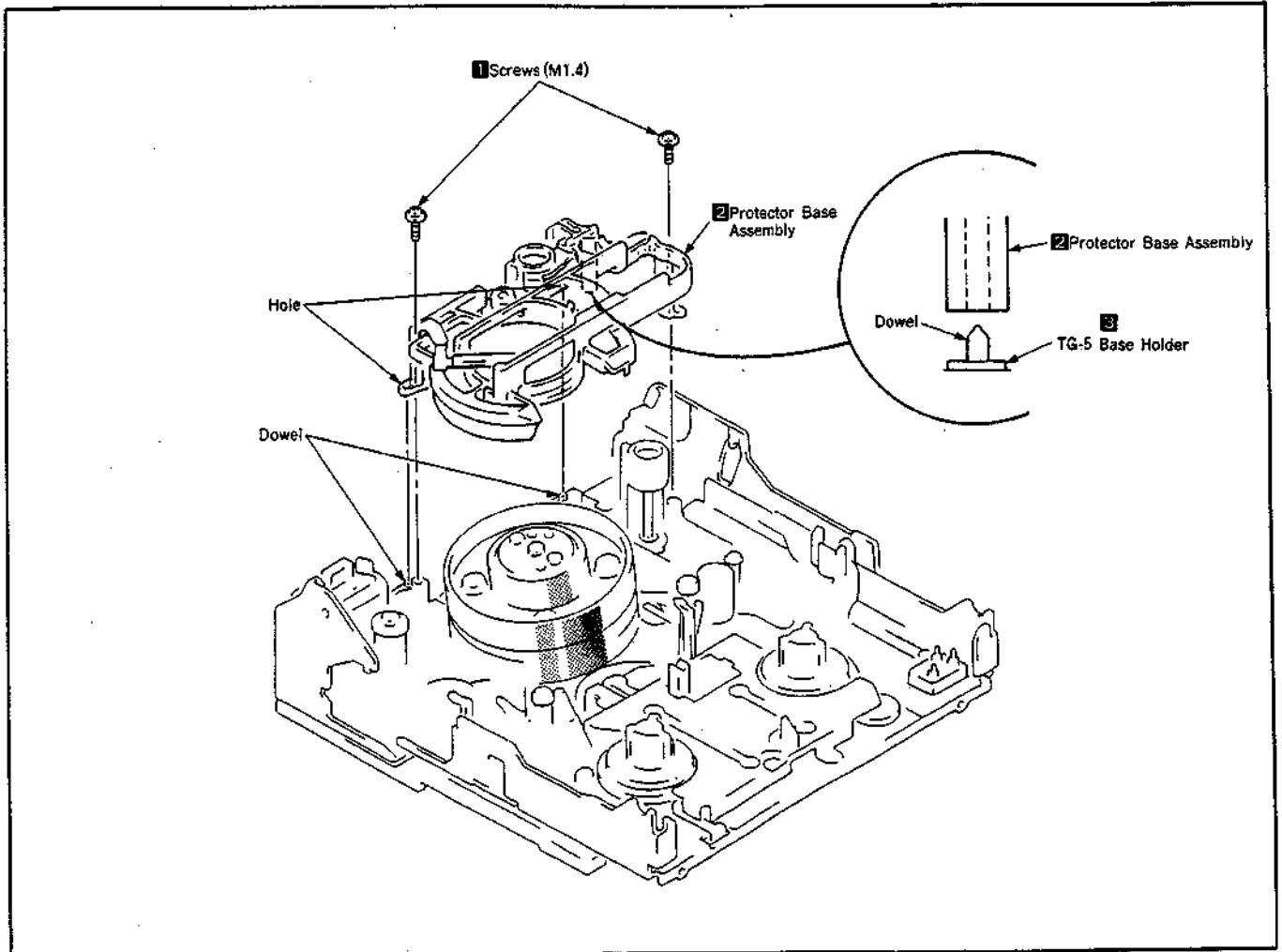


Fig. 9

3-3. DRUM ASSEMBLY (Fig. 10)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-2, remove the protect base assembly.
- 3) Disconnect the connector of FP-444 flexible board **1** on the back of MD.
- 4) Remove three screw **2**, then the drum assembly **3**.

Note : Do not touch the outer surfaced of drum (hold portions **A** and **B** of drum).

2. Mounting

- 1) Mount the drum assembly **3** while aligning with two dowels **4** of chassis.

Note : Do not touch the outer surfaced of drum (hold portions **A** and **B** of drum).

- 2) Tighten three screw assemblies **2** in the order of 1, 2 and 3.

Note : Tighten lightly not to deform the drum lead.

- 3) Apply a screw locking agent to prevent screws from loosening.

Note : In tightening the screws, pushing down the drum extremely will allow the drum to float up.

- 4) Connect the connector of FP-444 flexible board **1** on the back of MD.

- 5) Referring to 3-2, mount the protect base assembly.

- 6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, make tape path adjustment in Section 4.

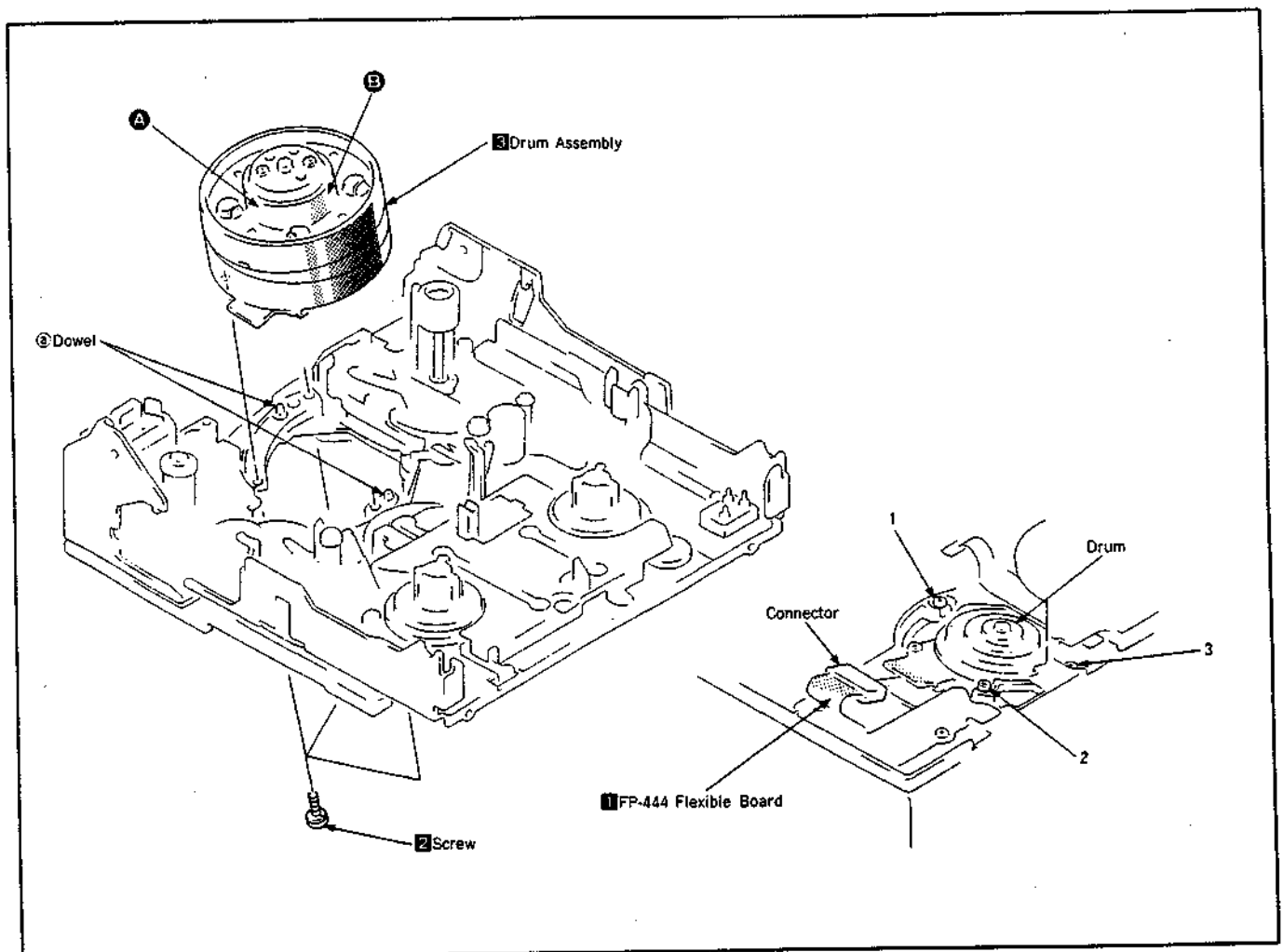


Fig. 10

3-4. CAPSTAN MOTOR ASSEMBLY (Fig. 11)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove two screw **1**, then the capstan cover **2**.
- 3) Remove the screw **3**, then the capstan motor assembly **4**.

2. Mounting

- 1) Mount the capstan motor assembly **4** and tighten the screw **3**.

Note : In mounting the capstan motor assembly, hold lightly the capstan motor assembly until the rotor gear aligns with the change gear Assy, then insert fully the assembly when both gears are engaged completely by manually rotating the rotor. (Take care not to damage the change gear Assy.)

- 2) Mount the capstan cover **2** and tighten two screws **1**.
- 3) Referring to 1-1, mount the cassette compartment assembly.

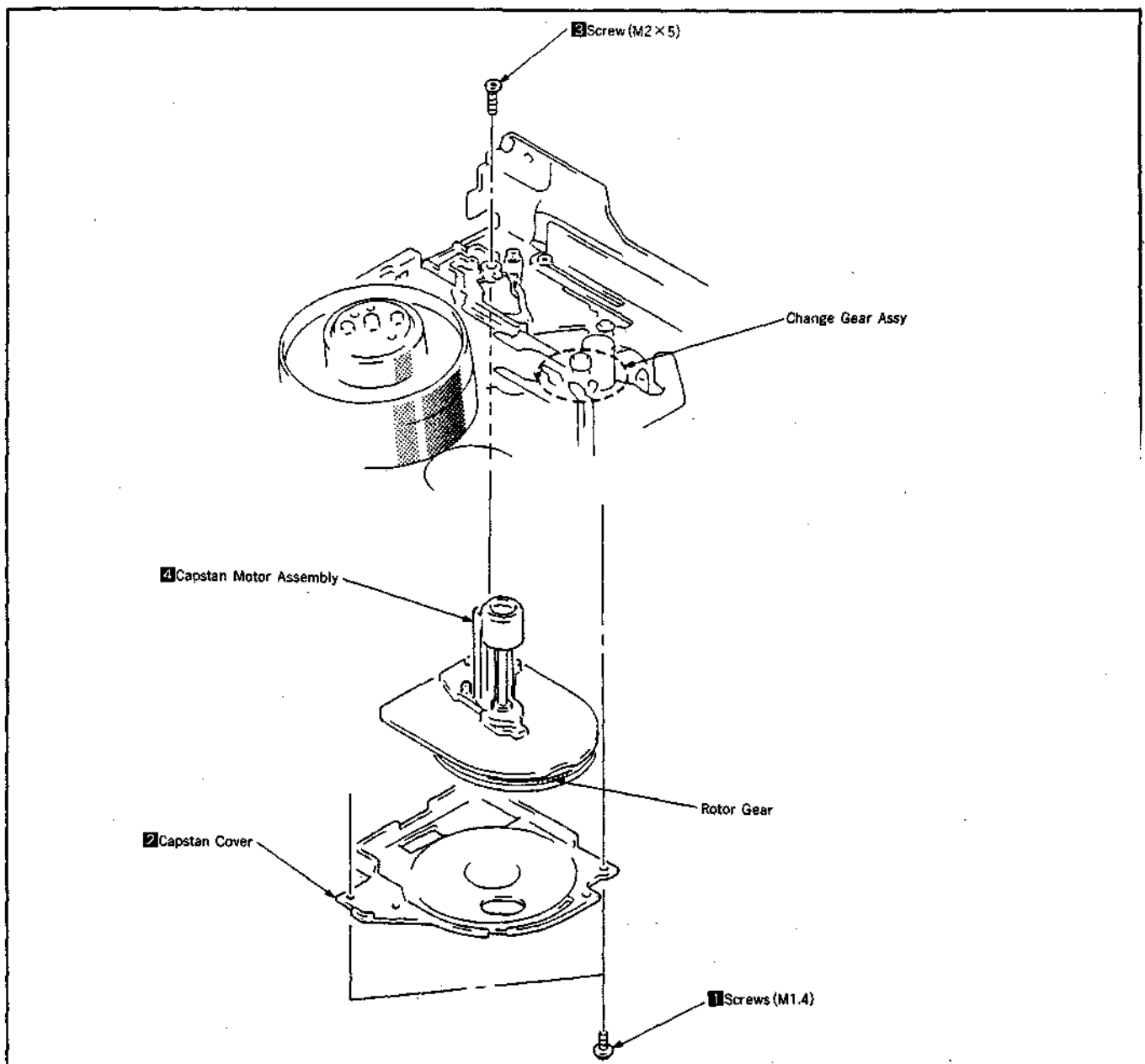


Fig. 11

3-5. TAKE-UP REEL TABLE ASSEMBLY AND T- SOFT ASSEMBLY (Fig. 12)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Remove the take-up reel table assembly **1**.
- 4) Remove the T soft assembly **2**, then the T soft arm **3**.

2. Mounting

- 1) Mount the T soft arm **3** with its long hole **©** engaged with the boss **④** of LS chassis.
- 2) Mount the T soft assembly **2** with its tab **ⓐ** engaged with a square hole **ⓑ** of T soft arm, as shown in Fig. a.
- 3) Mount the take-up reel table assembly **1** and rotate it toward the arrow **Ⓐ** to be latched with T hard claw.
- 4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 5) Referring to 1-1, mount the cassette compartment assembly.

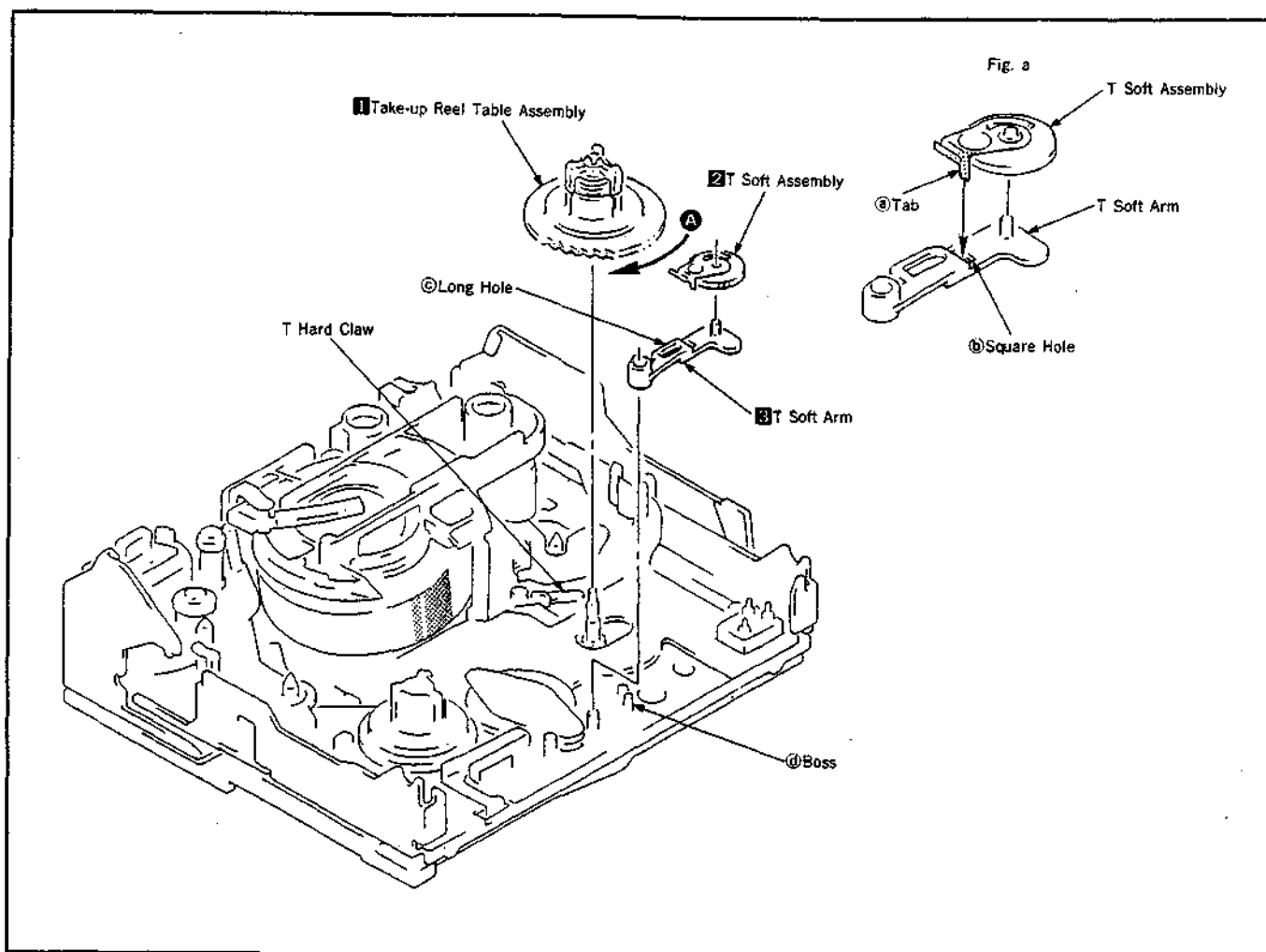


Fig. 12

3-6. PINCH ARM ASSEMBLY (Fig. 13)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Select the **READY** mode.
- 3) Remove a washer **1**, then the pinch arm assembly **2**.

2. Mounting

- 1) Select the **READY** mode.
- 2) Hooking a spring of pinch arm assembly **2** to the cassette positioning boss on the chassis, mount the pinch arm assembly on the shaft of LS chassis assembly as shown in Fig. a.
- 3) Push in the spring with tweezers up to the root of boss as shown in Fig. b.
- 4) Mount the washer **1**.
- 5) Referring to 1-1, mount the cassette compartment assembly.

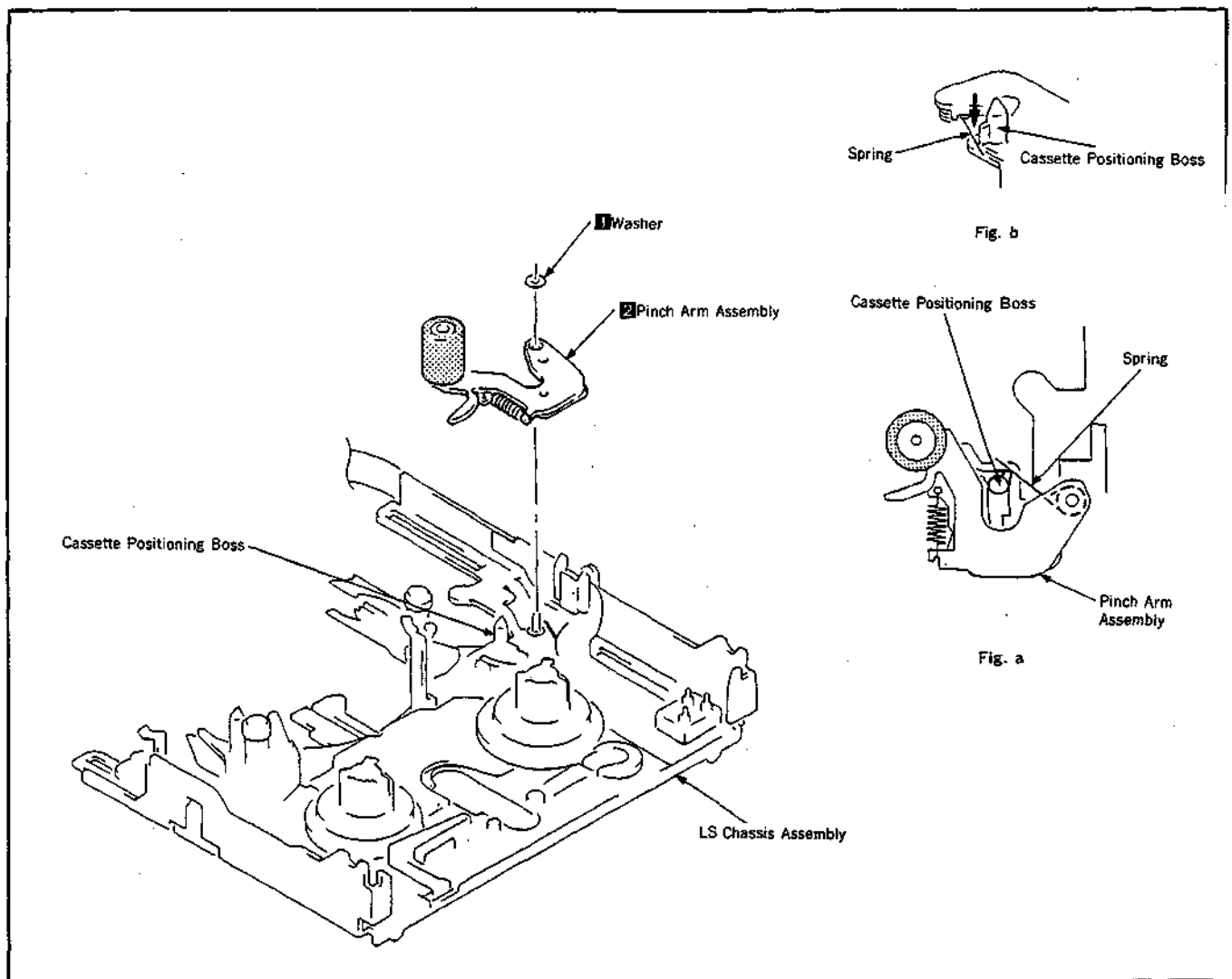


Fig. 13

3-7. LS CHASSIS ASSEMBLY (Fig. 14)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Remove a screw **1**, TG-5 base holder **2**, and LS flexible board **3**.
- 5) Remove a lock washer **4**, then the gooseneck assembly **5**.
- 6) Remove four screws **6**, then the LS chassis assembly **7**.

2. Mounting

- 1) Select the **USE** mode.
- 2) Confirm that the T hard claw and the outsert on the back of LS chassis are positioned as shown in Fig. a. (The T hard claw must be higher than corner **a** of chassis hole.) If not high, turn the outsert in the arrow direction while pushing the T hard claw from LS chassis to the chassis.
- 3) Sliding the GL slider, align the top edge of long hole **b** in GL slider with the edge face **c** of LS chassis hole as shown in Fig. b.
- 4) Mount the LS chassis assembly **7** on the chassis.

Note : At this time, align a dowel **d** on LS chassis with a long hole **e** of No.7 guide on chassis, a long hole of GL slider with a GL arm pin, a groove of LS cam plate with an LS arm pin respectively as shown in Fig. c and d.

- 5) Tighten four screws **6**.
- 6) Mount the LS flexible board **3** and TG-5 base holder **2**, then tighten the screw **1**.
- 7) Mount the Gooseneck assembly **5** and fix it with a washer **4**.

Note : Using the mode selector, confirm that loading and unloading are performed smoothly.

- 8) Referring to 3-2, mount the protector base assembly.
- 9) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 10) Referring to 1-1, mount the cassette compartment assembly.

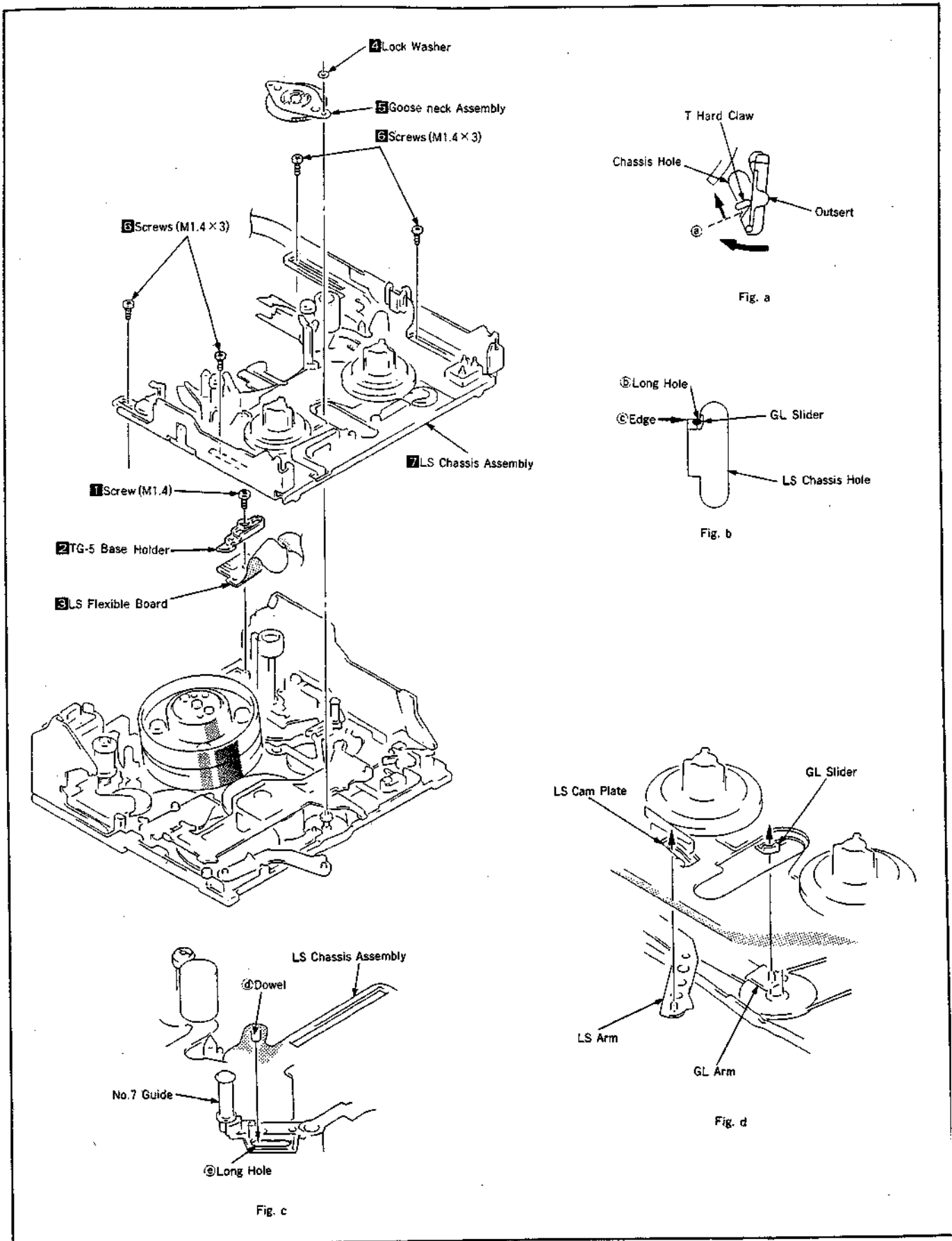


Fig. 14

3-8. GUIDE BASE T ASSEMBLY AND GUIDE BASE S ASSEMBLY (Fig. 15, 16)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Push in the GL slider **1** toward the arrow **A**, and remove the guide base T assembly **2** and guide base S assembly **3** from the guide rail respectively as shown in Fig. 15.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 6) Turning the guide base T assembly **2** and guide base S assembly **3** respectively, align the shaft to hole to remove as shown in Fig. a.

2. Mounting

- 1) Turning the guide base T assembly **2** and guide base S assembly **3** respectively, align the shaft with a hole to mount as shown in Fig. a (Fig. 15).
- 2) On the back side of chassis, insert the guide arm T assembly **4**, guide arm S assembly **5** and GL slider **1** from position shown in Fig.b to position shown in Fig. c. Also, aligning the guide base T assembly **2** and guide base S assembly **3** with the respective guide rails, push in the GL slider **1** toward the arrow **B** as shown in Fig. 16.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm.

- 6) Referring to 1-1, mount the cassette compartment assembly.

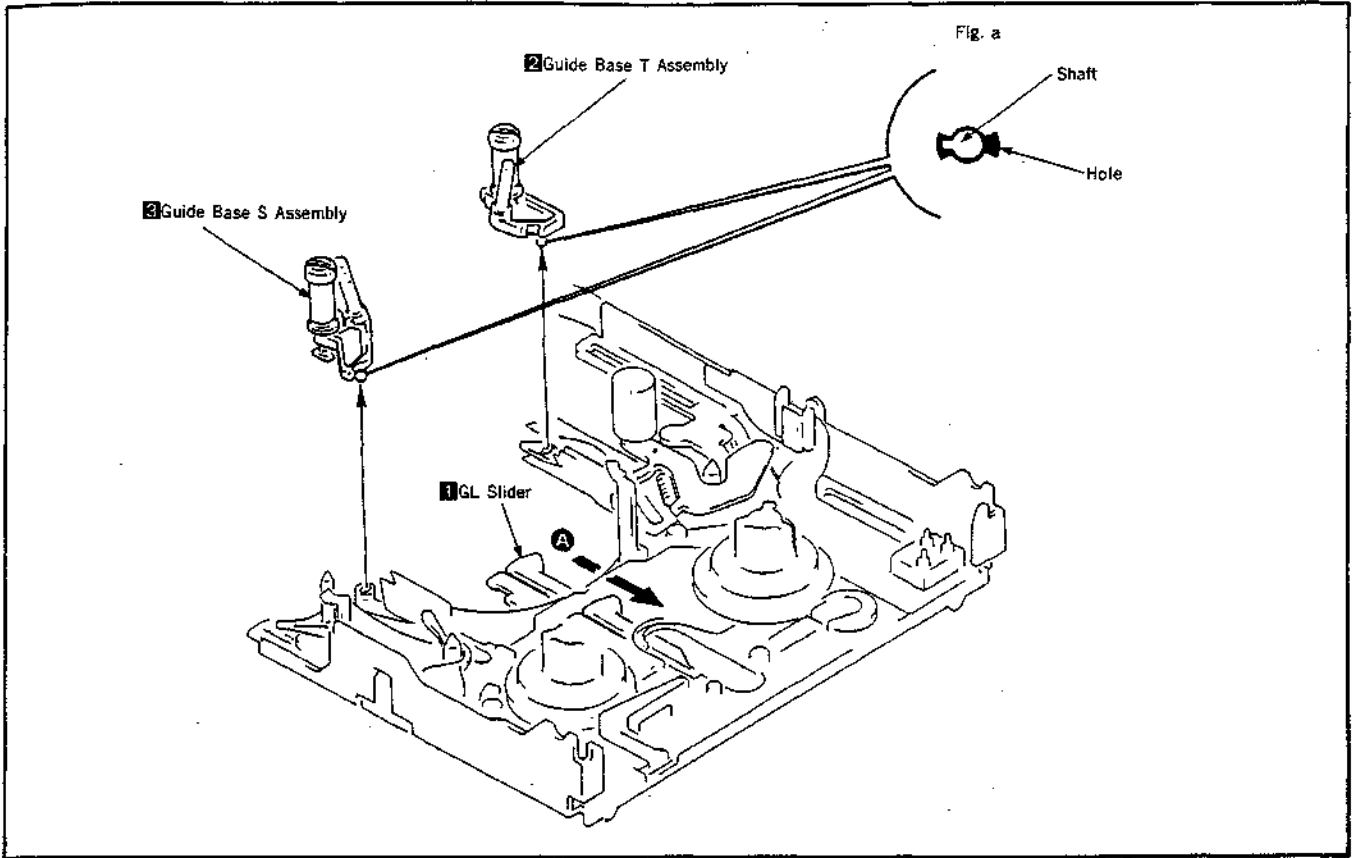


Fig. 15

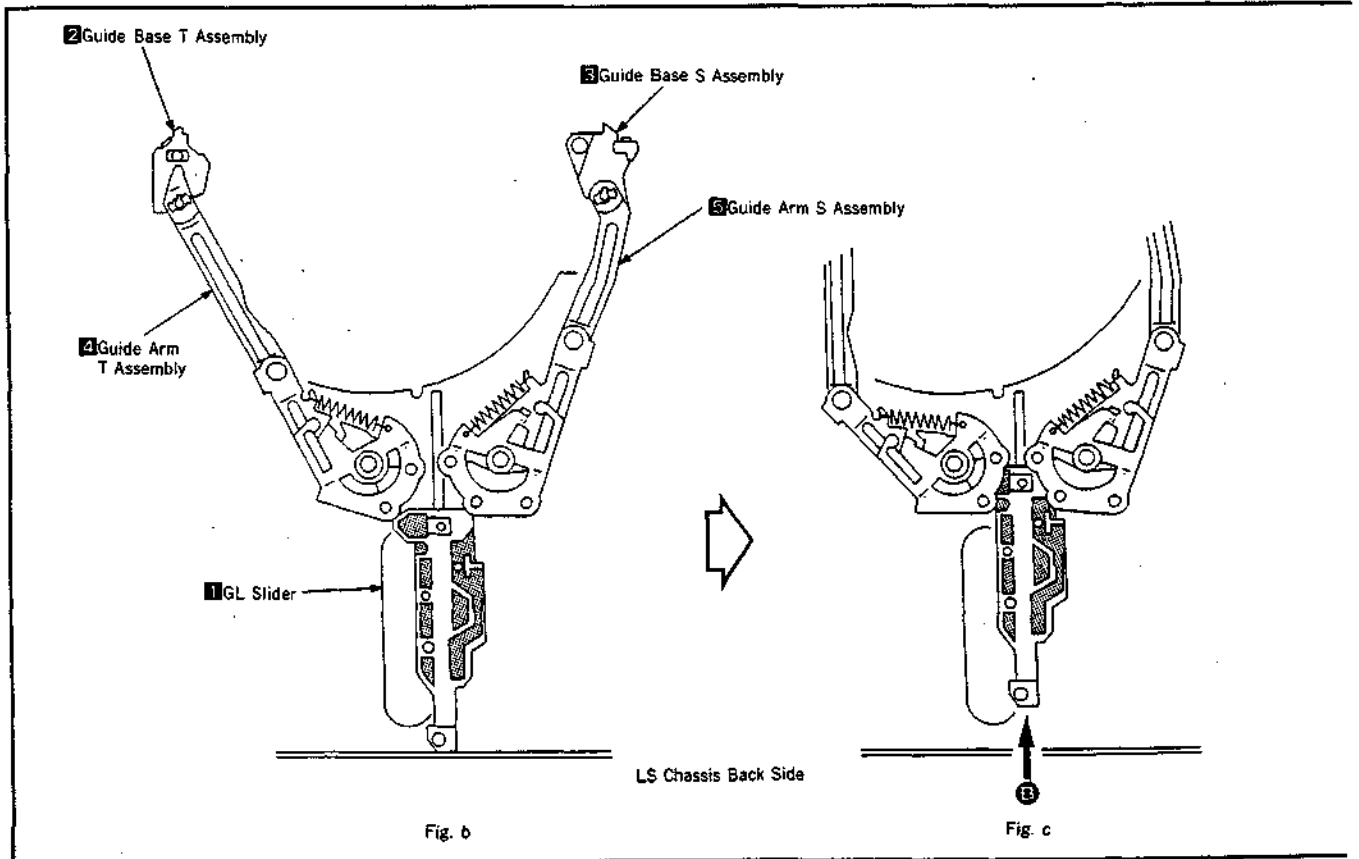


Fig. 16

3-9. GUIDE ARM T ASSEMBLY AND GUIDE ARM S ASSEMBLY (Fig. 17)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-8, remove the guide base T assembly and guide base S assembly.
- 6) Remove lock washers **1**, then the guide arm T assembly **2** and guide arm S assembly **3** respectively from the back side of chassis.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2. Mounting

- 1) Mount the guide arm T assembly **2** and guide arm S assembly **3**, then fix them with a lock washer **1** respectively.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 2) Referring to 3-8, mount the guide base T assembly, guide-base S assembly and GL slider.
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

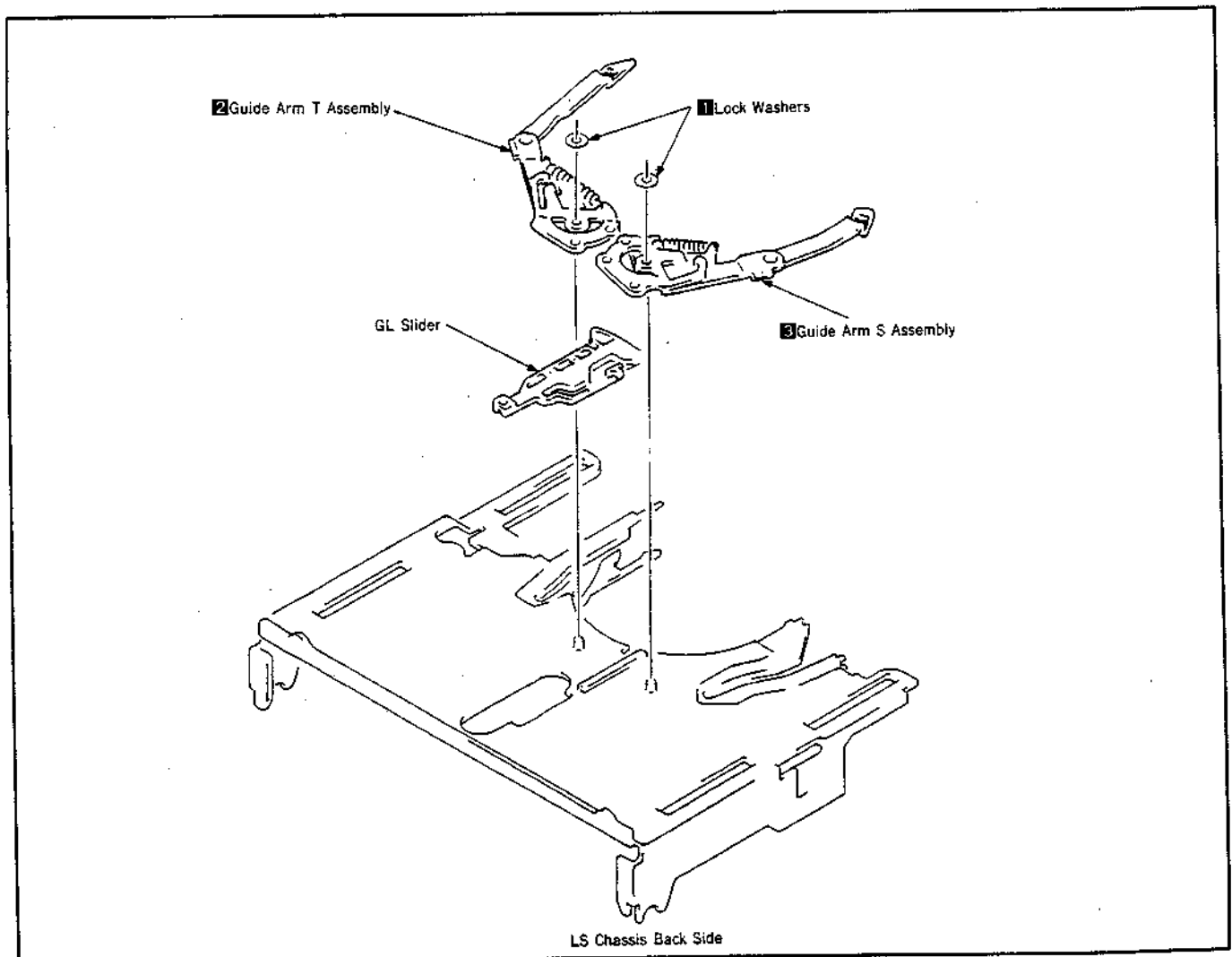


Fig. 17

3-10. SUPPLY REEL TABLE ASSEMBLY AND TG-1 ARM ASSEMBLY (Fig. 18)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-8, remove the guide base S assembly.
- 6) Remove a screw **1**, then the string **2** from the supply reel table assembly **3**. For easy removal of string block **4**, insert a flat-blade screwdriver into a groove **a** and push it up (Fig. a).
- 7) Remove the supply reel table assembly **3**.
- 8) Remove a tension coil spring **5**.
- 9) Turn the TG-1 arm assembly **6** up to a portion **c** of LS chassis hole in the arrow **A** direction so that its tab **b** can be disengaged (Fig. b).

2. Mounting

- 1) Pushing the S soft brake **7** toward the arrow **B**, mount the supply reel table assembly **3**.
- 2) Route the string **2** under the TG-1 arm assembly **6**, and insert the tab **b** of TG-1 arm assembly into the LS chassis hole **c**, then turn the TG-1 arm assembly in the reverse direction of arrow **A** (Fig. b).

- 3) Wind the string **2** along the groove of supply reel table assembly **3** (Fig. a).

Note : Do not curl the string extremely. Also, avoid adhesion of oil, otherwise the image will be distorted.

- 4) Using the FWD B.T. adjusting driver (Ref. No. J-15), shift the string block **4** toward the arrow **c** and tighten the screw **1** (Fig. a).
- 5) Engage the tension coil spring **5** to the chassis hook.

Note : Confirm that the string **2** is surely wound around the groove of supply reel table assembly **3** (Fig.a).

- 6) Referring to 3-8, mount the guide base S assembly.
- 7) Referring to 3-7, mount the LS chassis assembly.
- 8) Referring to 3-2, mount the protector base assembly.
- 9) Referring to 3-1, mount the Retainer, Gooseneck assembly

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm. (Refer to 3-5 Take-up Reel Table Assembly and Take-up Soft Assembly.)

- 10) Referring to 1-1, mount the cassette compartment assembly

Note : Referring to 3-22, adjust the tension regulator position

Note : Referring to 3-23, adjust the forward back tension.

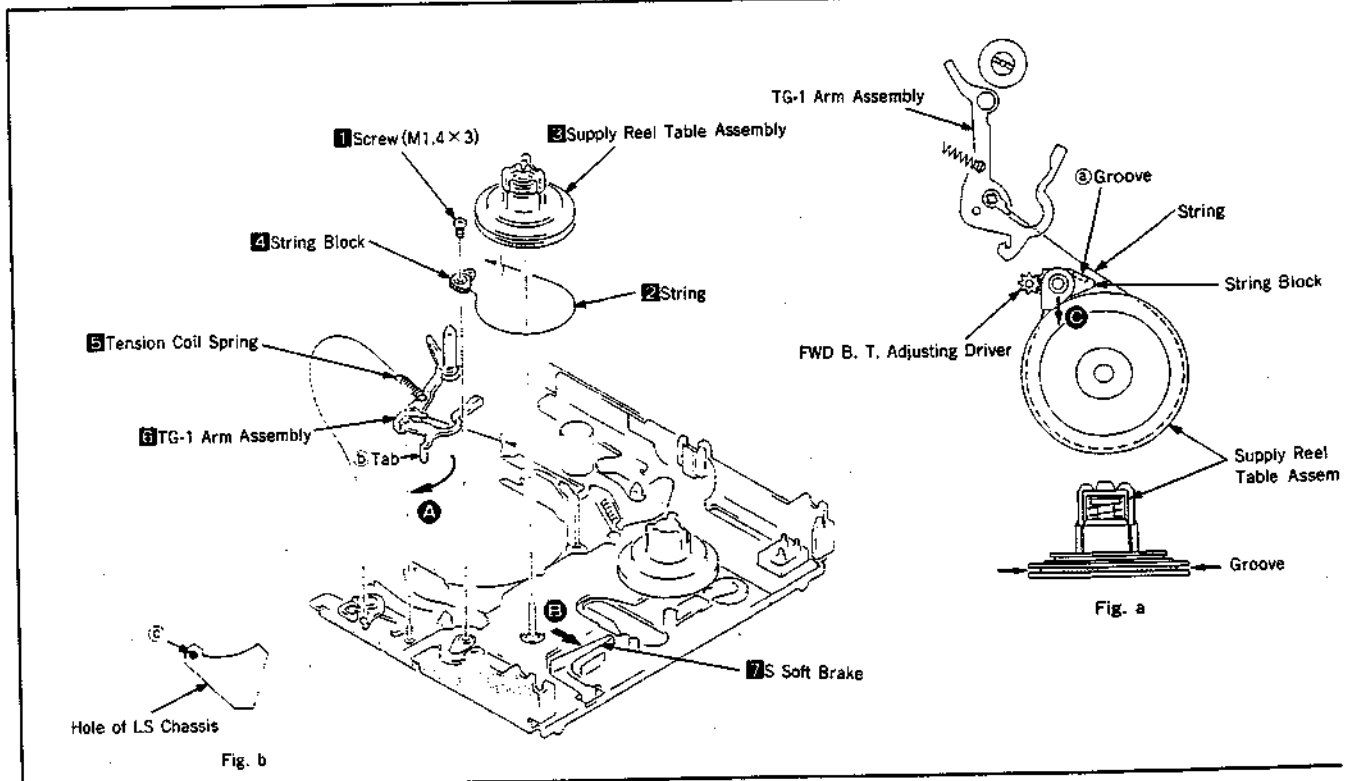


Fig. 18

3-11. TG-2 ROLLER ASSEMBLY (Fig. 19)

1. Removal

- 1) Remove the TG-2 roller assembly **1**.
- 2) Remove a compression coil spring **2**.

2. Mounting

- 1) Insert a compression coil spring **2** into the boss on chassis.
- 2) Rotate gently the TG-2 roller assembly **1** until the screw is engaged.

3. Presetting of TG-2 Roller Height (Fig. a)

- 1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to $3.3 \pm 0.05\text{mm}$.

Note : After adjustment, perform 4. TAPE PATH ADJUSTMENT.

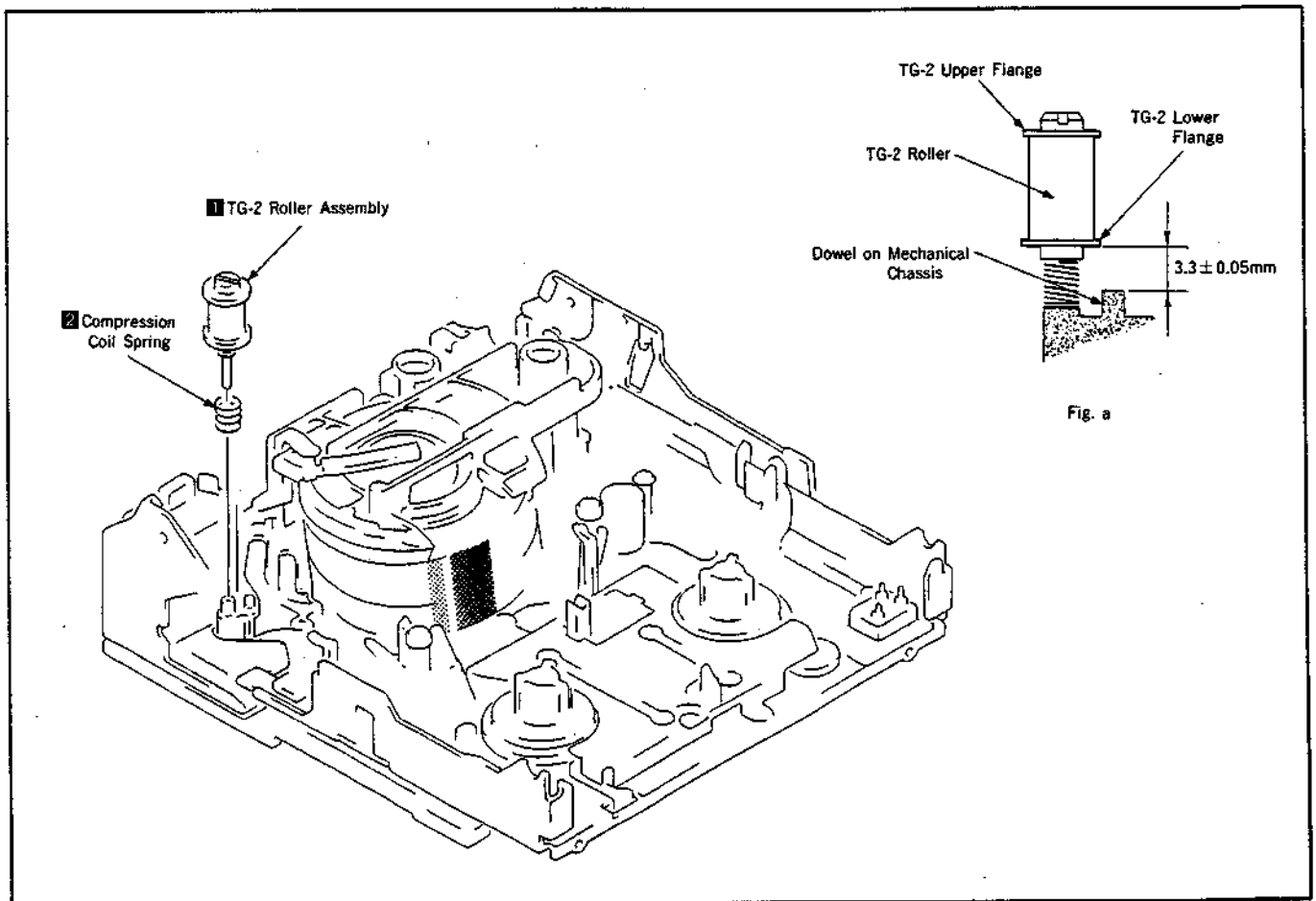


Fig. 19

3-12. TG-7 ARM ASSEMBLY (Fig. 20)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Raise a portion @ of TG-7 arm Leaf spring 1 in arrow direction with a flat-blade screwdriver or tweezers to disengage the tab from the chassis, then remove the TG-7 arm Leaf spring as shown in Fig. a.
- 6) Remove the TG-7 assembly 2 from the shaft of mechanical chassis.

2. Mounting

- 1) Mount the TG-7 arm assembly 2 to the shaft of mechanical chassis.
- 2) Mount the TG-7 arm Leaf spring 1 to the mechanical chassis.
* Push in the tab of Leaf spring until it clicks into a detent of chassis (Fig. a).
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, perform 4. TAPE PATH ADJUSTMENT.

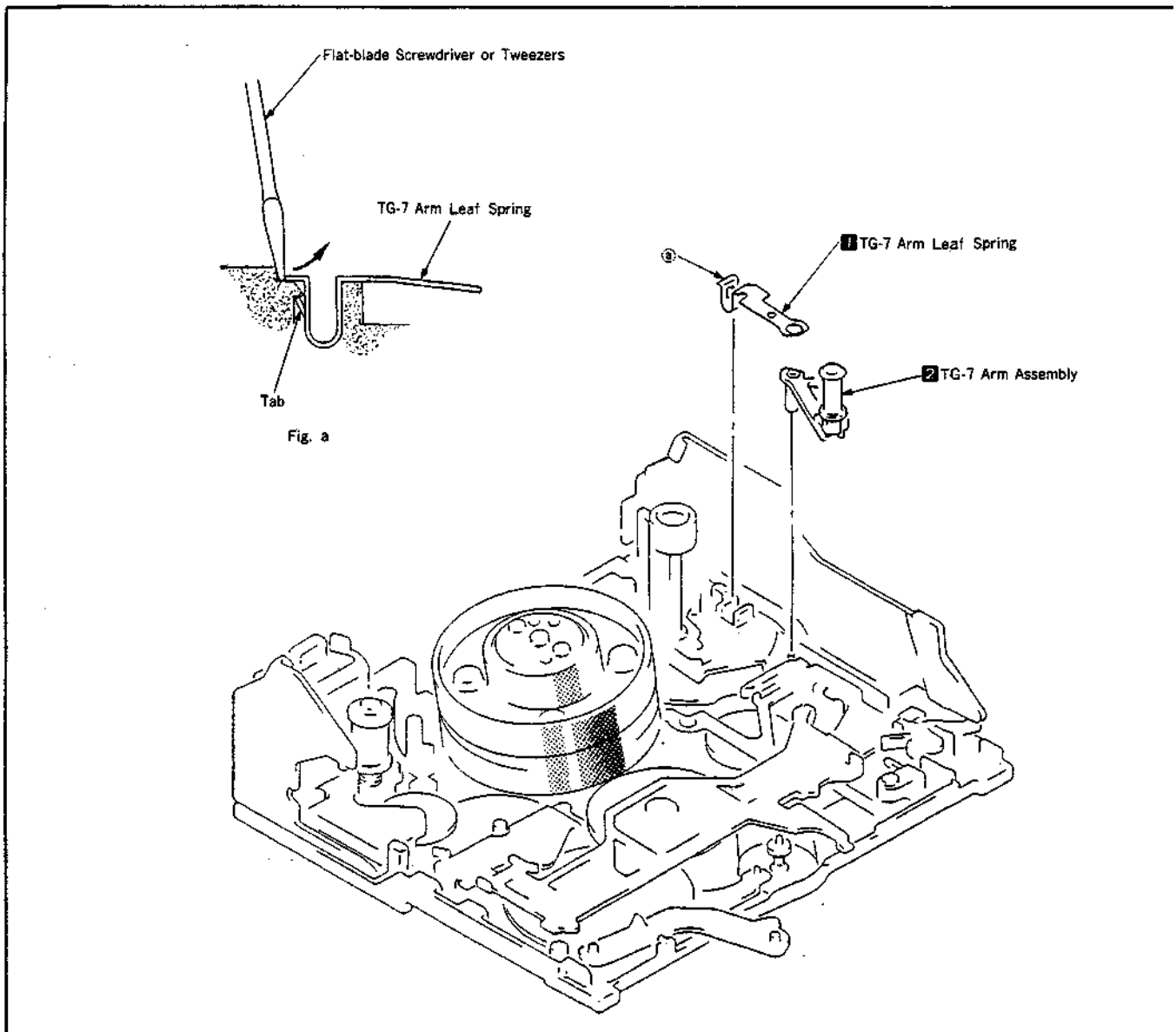


Fig. 20

3-13. LM MOTOR ASSEMBLY (Fig. 21)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Select the **LOAD** mode (at the position where the FF arm assembly is not above the screw **1**).
- 6) Remove two screws **1**, then the LM motor assembly **2**.

2. Mounting

- 1) Aligning the dowel **a** of LM motor assembly **2** with the hole **b** of mechanical chassis, mount the LM motor assembly with its hole **c** inserted into the mechanical chassis shaft **d**.
- 2) Tighten two screws **1**.
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

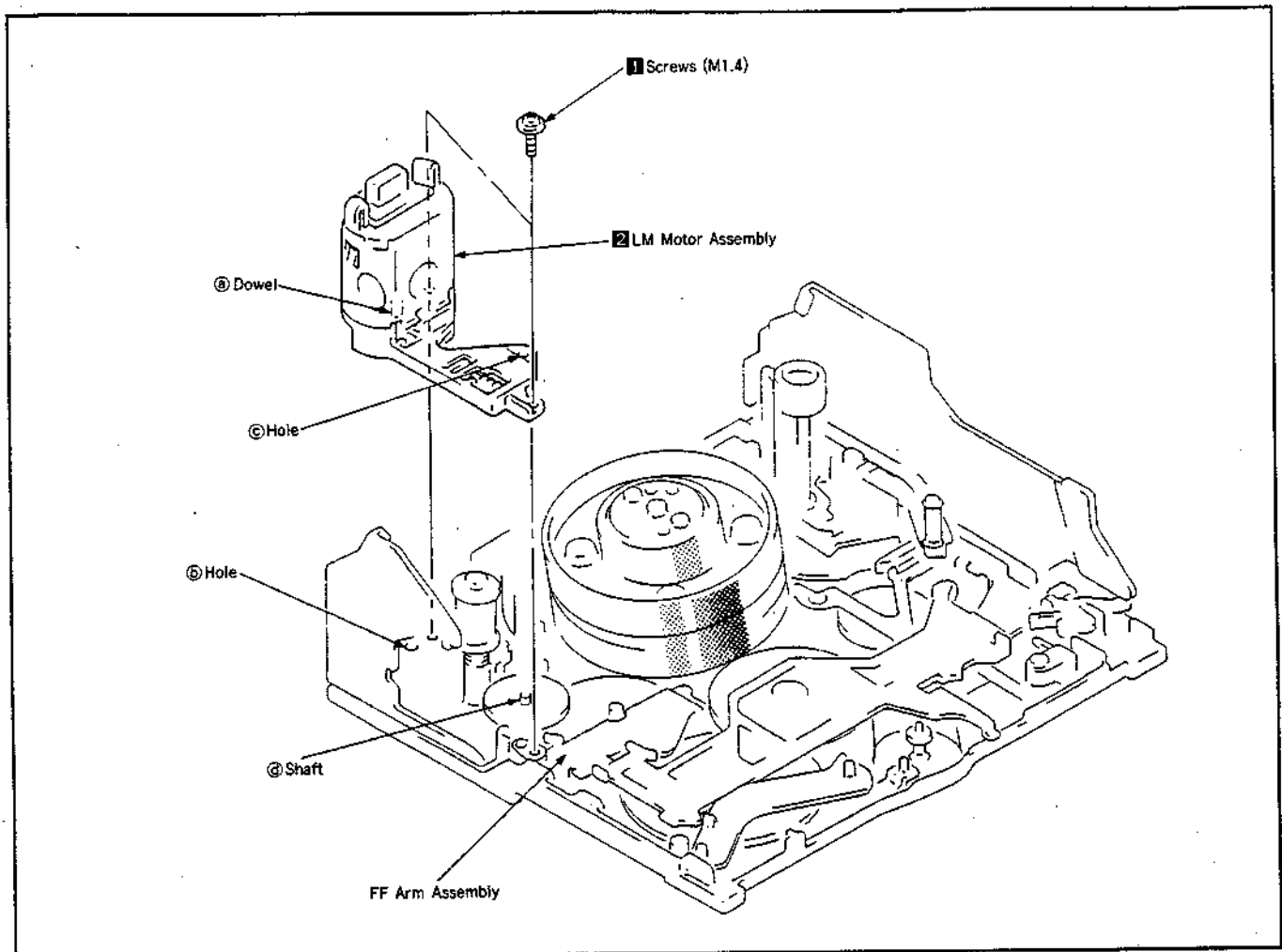


Fig. 21

3-14. LS ARM (Fig. 22)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Remove the LS arm **1** from the shaft of mechanical chassis.

Note : Take care not to drop the LS roller **2**.

2. Mounting

- 1) Mount the LS arm **1** meeting with mechanical chassis shaft and cam groove.

Note : Move the LS arm **1** in arrow direction to confirm that the LS roller **2** is surely inserted.

- 2) Referring to 3-7, mount the LS chassis assembly.
- 3) Referring to 3-2, mount the protector base assembly.
- 4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 5) Referring to 1-1, mount the cassette compartment assembly.

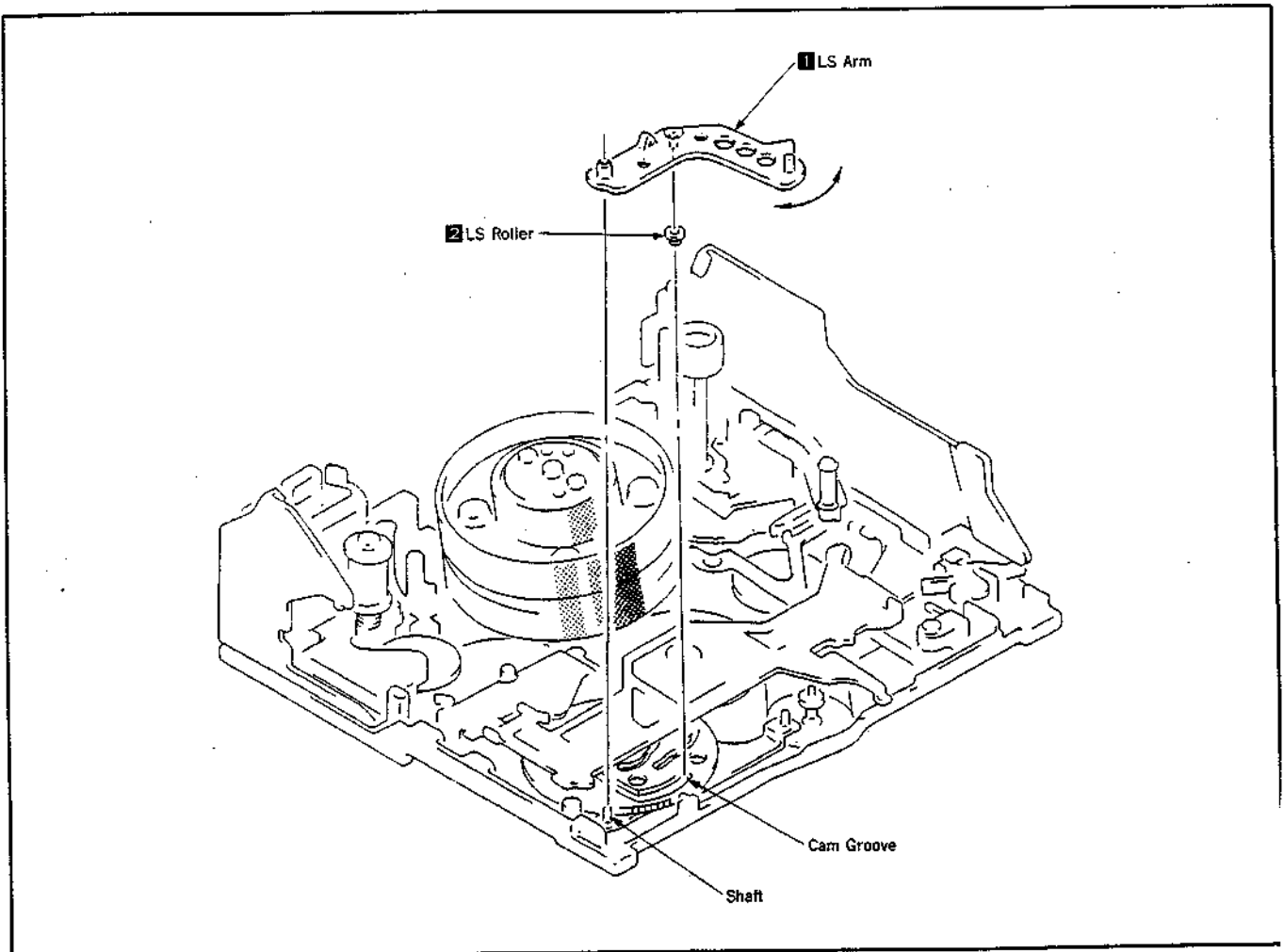


Fig. 22

3-15. M SLIDER ASSEMBLY (Fig. 23)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Remove two screws **1**, then the gear holder **2**.
- 6) Remove two lock washers **3**; then the M slider assembly **4**.

2. Mounting

- 1) Mount the M slider assembly **4**, aligning long holes **3** and **4** of M slider assembly with shafts **5** and **6** of mechanical chassis, and a long hole **3** with shaft **7** of press arm assembly, and also shaft **5** with outer groove **8** of cam respectively.
- 2) Mount two lock washers **3**.
- 3) Mount the gear holder **2** with its outserts **1** and **1** inserted into holes in the mechanical chassis.
- 4) Tighten two screws **1**.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-2, mount the protector base assembly.
- 7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 8) Referring to 1-1, mount the cassette compartment assembly.

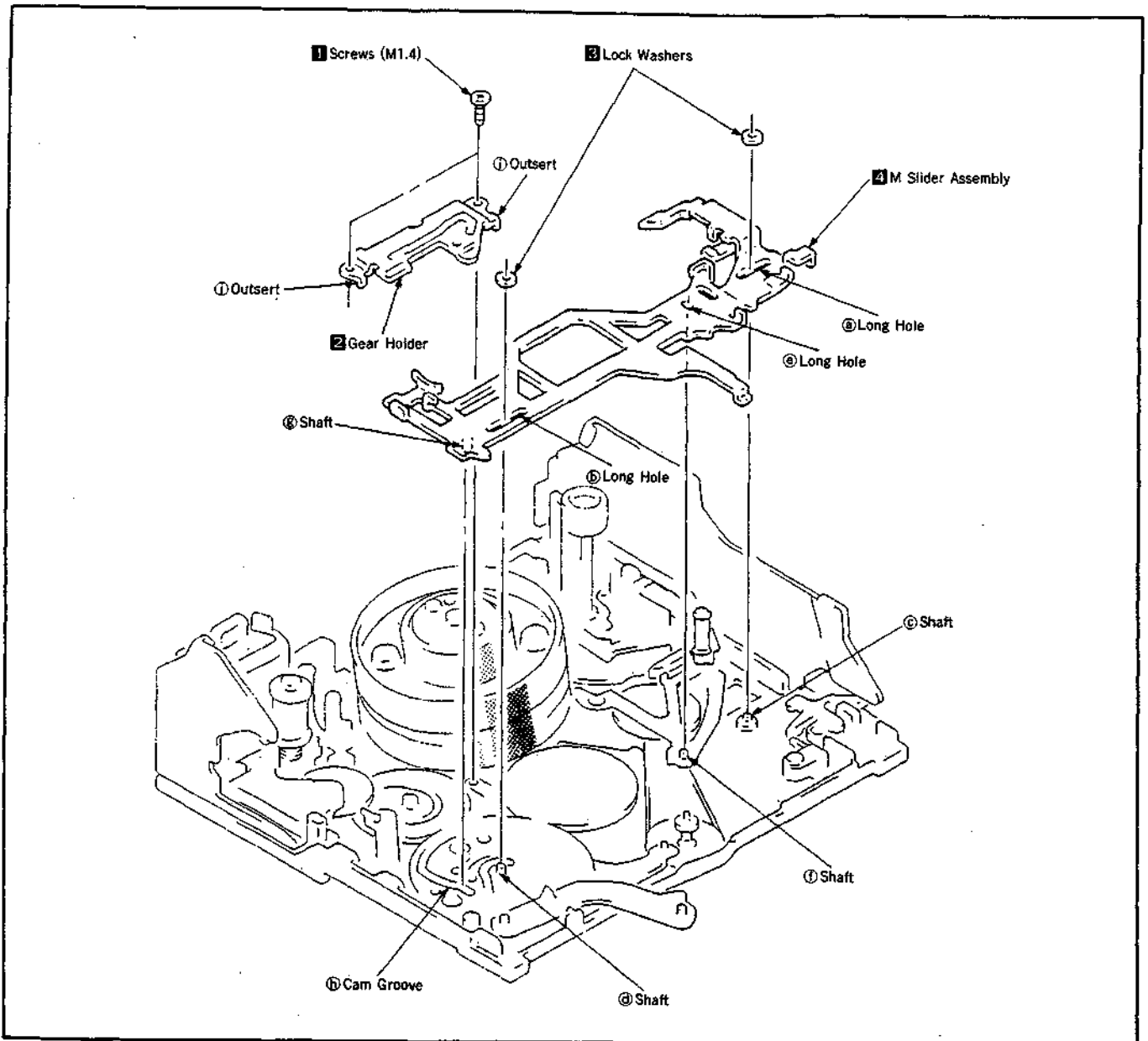


Fig. 23

3-16. PINCH PRESS ARM ASSEMBLY (Fig. 24)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-3, remove the drum assembly.
- 5) Referring to 3-7, remove the LS chassis assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Remove a lock washer **1**, then pinch press arm assembly **2**.

2. Mounting

- 1) Mount the pinch press arm assembly **2**, inserting its shaft **4** into the cam groove **5** of HC drive arm, and hole **3** into the shaft **4** of mechanical chassis.
- 2) Mount the lock washer **1**.
- 3) After mounting, shift the pinch press arm assembly toward the arrow direction.
- 4) Referring to 3-15, mount the M slider assembly.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-3, mount the drum assembly.
- 7) Referring to 3-2, mount the protector base assembly.
- 8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 9) Referring to 1-1, mount the cassette compartment assembly.

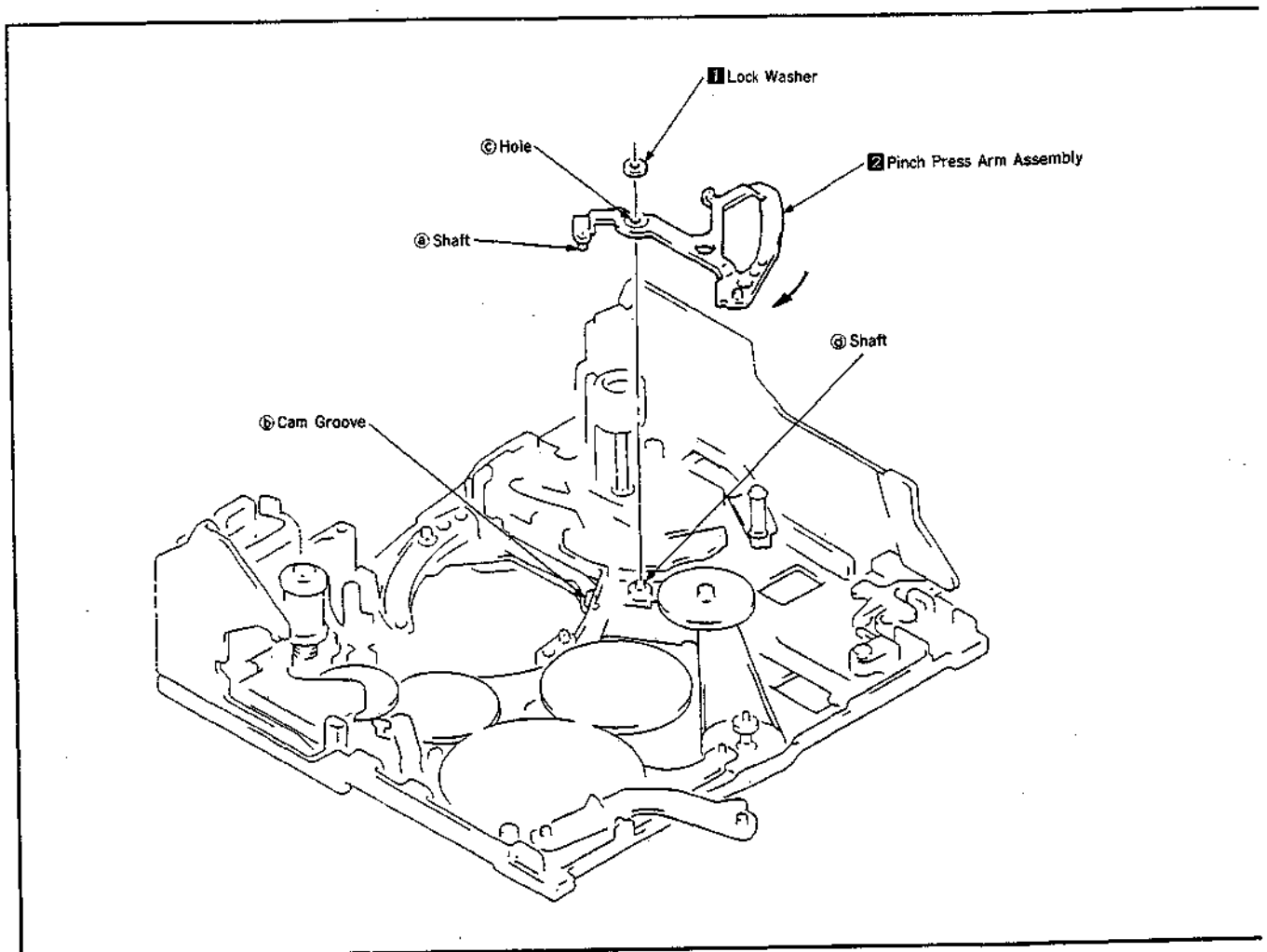


Fig. 24

3-17. CAM (Fig. 25)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Remove the cam **1**.

2. Mounting

- 1) Referring to 3-13, remove the LM motor assembly.

Note : Take care not to allow grease of LM motor assembly to stick to the TG-2 roller assembly.

- 2) Mount the cam **1**, aligning its center hole with shaft of mechanical chassis, and the cam groove with the shaft of GL arm assembly. At this time, make sure that the **▲** mark on L gear B is aligned with that on the cam and also a recess is aligned with the phase aligning hole respectively as shown in Fig. a.

Note : Apply grease to the cam groove if it scarcely remains.

- 3) Mount the LM motor assembly.
- 4) Referring to 3-15, mount the M slider assembly.
- 5) Referring to 3-14, mount the LS arm assembly.
- 6) Referring to 3-7, mount the LS chassis assembly.
- 7) Referring to 3-2, mount the protector base assembly.
- 8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 9) Referring to 1-1, mount the cassette compartment assembly.

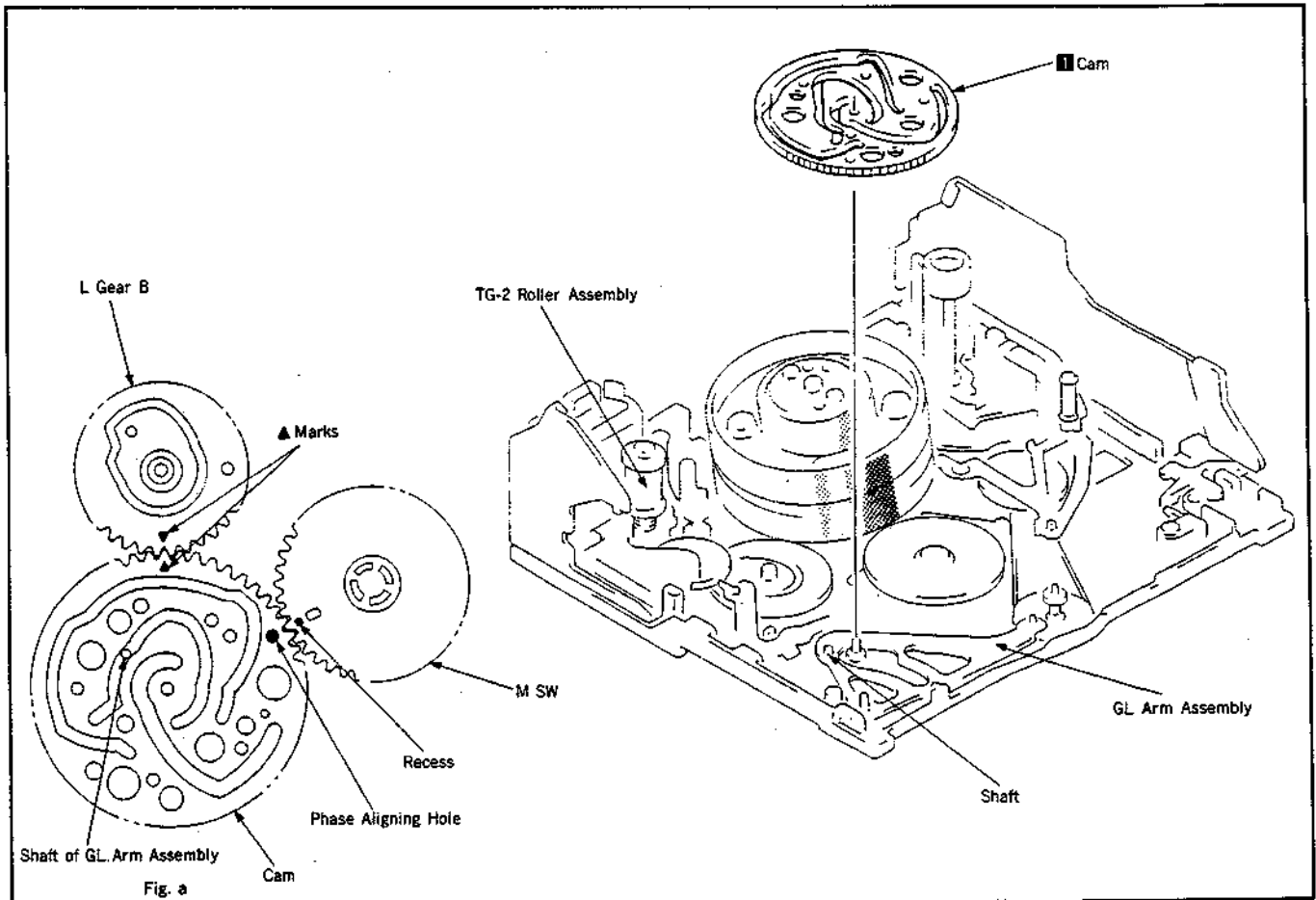


Fig. 25

3-18. GL ARM ASSEMBLY (Fig. 26)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Referring to 3-17, remove the cam.
- 8) Remove the GL arm assembly **1**.

2. Mounting

- 1) Mount the GL arm assembly **1** with its hole **Ⓐ** inserted into the shaft **Ⓑ** of mechanical chassis.
- 2) Referring to 3-17, mount the cam.
- 3) Referring to 3-15, mount the M slider assembly.
- 4) Referring to 3-14, mount the LS arm assembly.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-2, mount the protector base assembly.
- 7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 8) Referring to 1-1, mount the cassette compartment assembly.

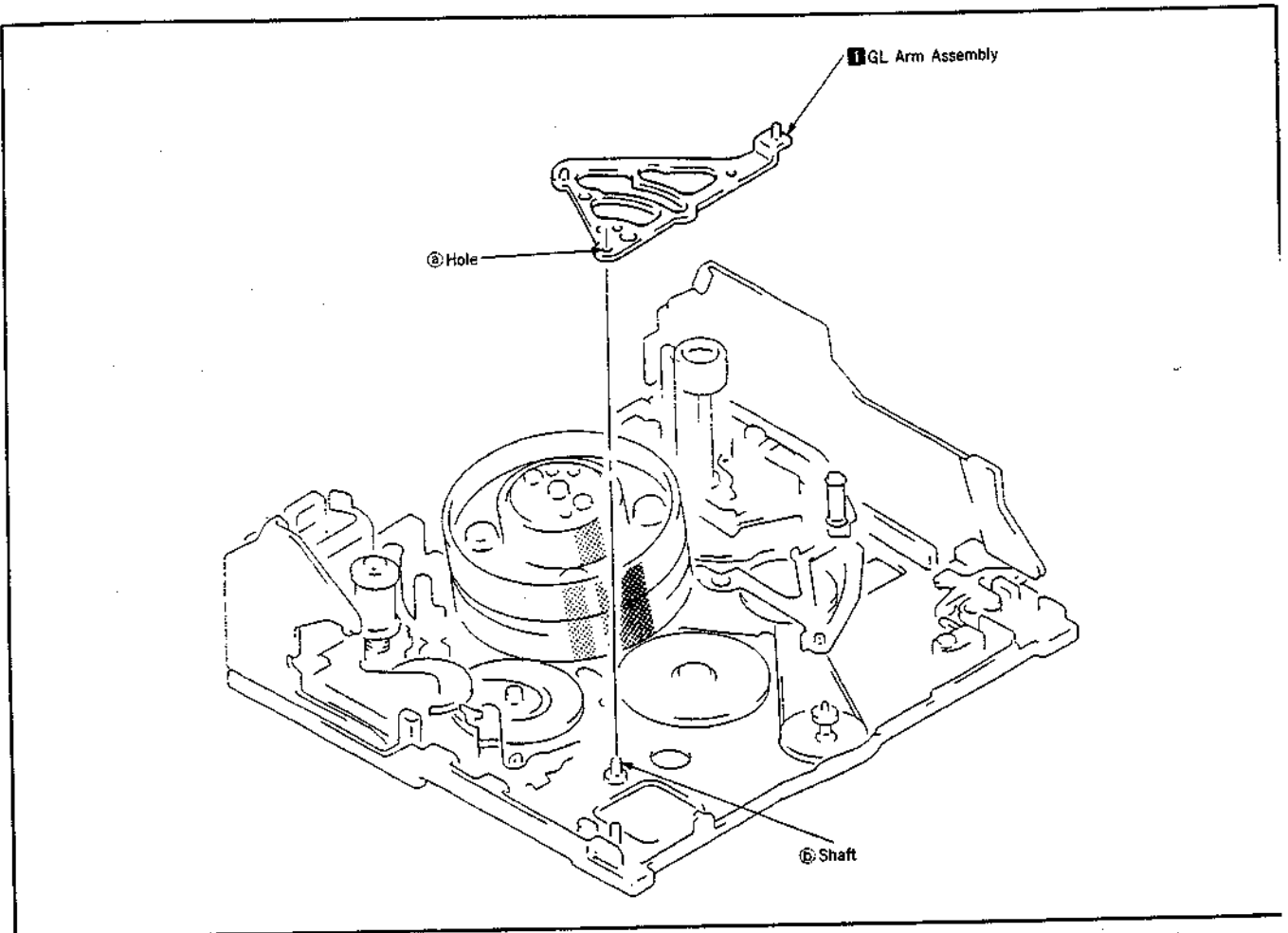


Fig. 26

3-19. L GEAR A AND L GEAR B (Fig. 27)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Referring to 3-17, remove the cam.
- 8) Referring to 3-13, remove the LM motor assembly.
- 9) Remove the FF arm assembly 1.
- 10) Remove the L gear A 2.
- 11) Remove the L gear B 3.

2. Mounting

- 1) Insert the L gear B 3 into the shaft of mechanical chassis. (At this time, the phase aligning mark ▲ should be faced toward the cam mounting shaft ④.)
- 2) Insert the L gear A 2 into the shaft of mechanical chassis.
- 3) Mount the FF arm assembly 1 with its two shafts inserted into the cam groove of L gear B 3 and the hole of mechanical chassis.
- 4) Referring to 3-17, mount the cam.
- 5) Referring to 3-13, mount the LM motor assembly.
- 6) Referring to 3-15, mount the M slider assembly.
- 7) Referring to 3-14, mount the LS arm assembly.
- 8) Referring to 3-7, mount the LS chassis assembly.
- 9) Referring to 3-2, mount the protector base assembly.
- 10) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 11) Referring to 1-1, mount the cassette compartment assembly.

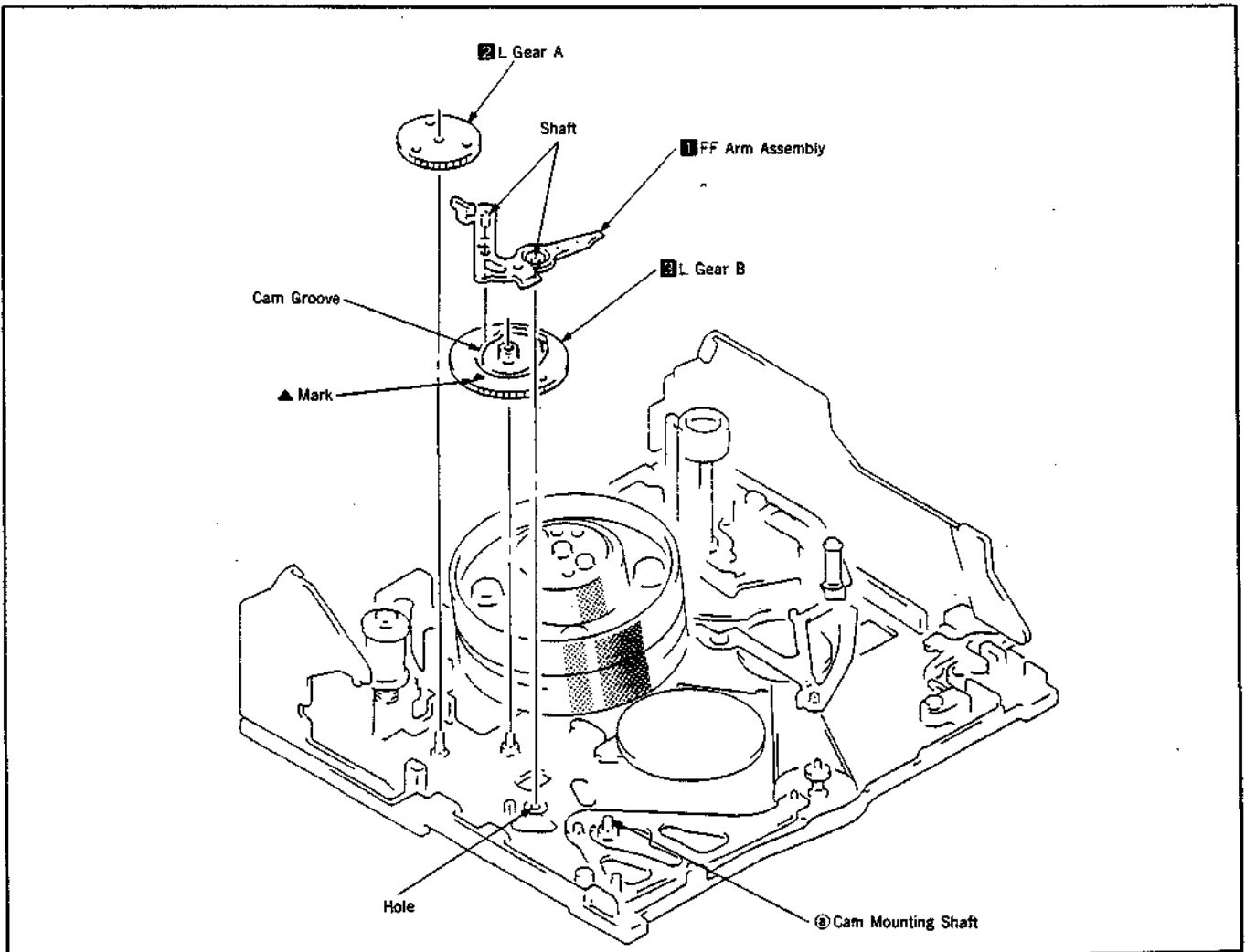


Fig. 27

3-20. RELAY PULLEY AND CHANGE GEAR ASSEMBLY (Fig. 28)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-3, remove the drum assembly.
- 5) Referring to 3-7, remove the LS chassis assembly.
- 6) Referring to 3-14, remove the LS arm assembly.
- 7) Referring to 3-15, remove the M slider assembly.
- 8) Referring to 3-17, remove the cam.
- 9) Referring to 3-18, remove the GL arm assembly.
- 10) Referring to 3-16, remove the pinch press arm assembly.
- 11) Remove a lock washer **1**, then remove together the Change gear assembly **2**, relay belt **3** and relay pulley **4**.

2. Mounting

- *Give one or two drips of oil to the conversion gear shaft and relay pulley shaft respectively. (Oiling range is under the neck as shown in Fig. a.)
- 1) Hooking the relay belt **3** to the relay pulley **4** and Change gear assembly **2**, mount respective parts.
- * At first, insert the relay pulley into the mechanical chassis shaft, then the change gear assembly by engaging with the capstan motor gear.

- Note :** Take care not to damage the Change gear by the capstan motor gear.
- 2) Mount a lock washer **1**.
 - 3) Referring to 3-16, mount the pinch press arm assembly.
 - 4) Referring to 3-18, mount the GL arm assembly.
 - 5) Referring to 3-17, mount the cam.
 - 6) Referring to 3-15, mount the M slider assembly.
 - 7) Referring to 3-14, mount the LS arm assembly.
 - 8) Referring to 3-7, mount the LS chassis assembly.
 - 9) Referring to 3-3, mount the drum assembly.
 - 10) Referring to 3-2, mount the protector base assembly.
 - 11) Referring to 3-1, mount the Retainer, Gooseneck assembly
 - 12) Referring to 1-1, mount the cassette compartment assembly

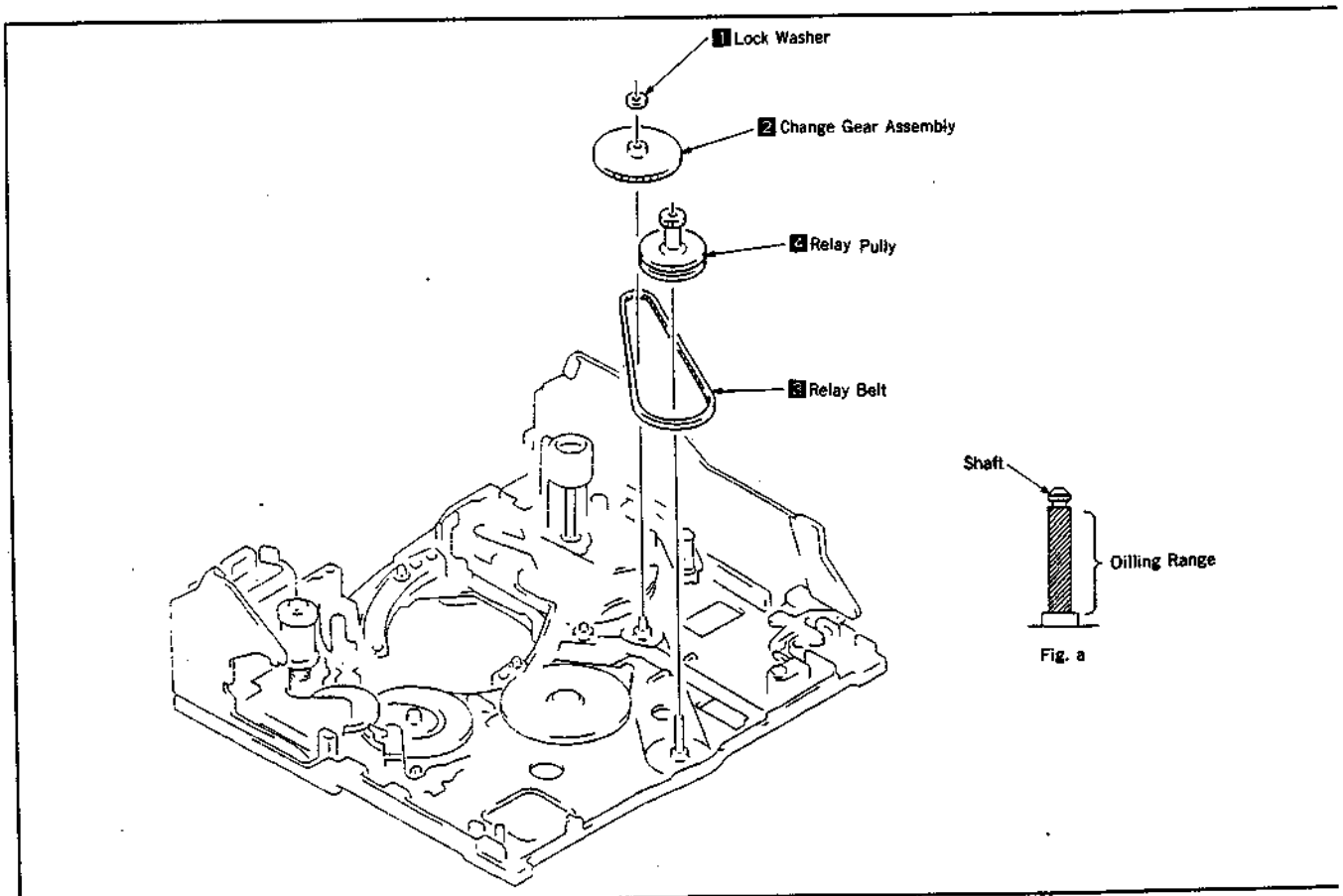


Fig. 28

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

If possible, make a recording before removal.

- 1) Remove the two screws **1** (Fig. 29).
- 2) Mount the jig **2** (Ref. No. J-10) with the two supplied screws **3**, then screw the attached hexagon socket screws **4** to the jig **2**. The rotary upper drum **5** will move upward and come off (Fig. 30).

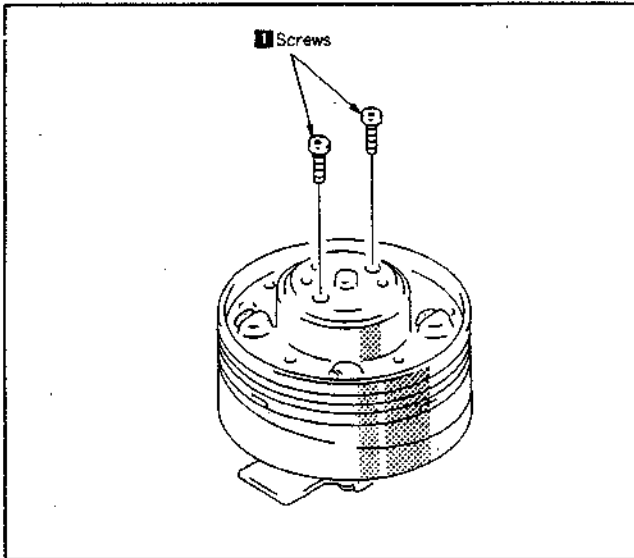


Fig. 29

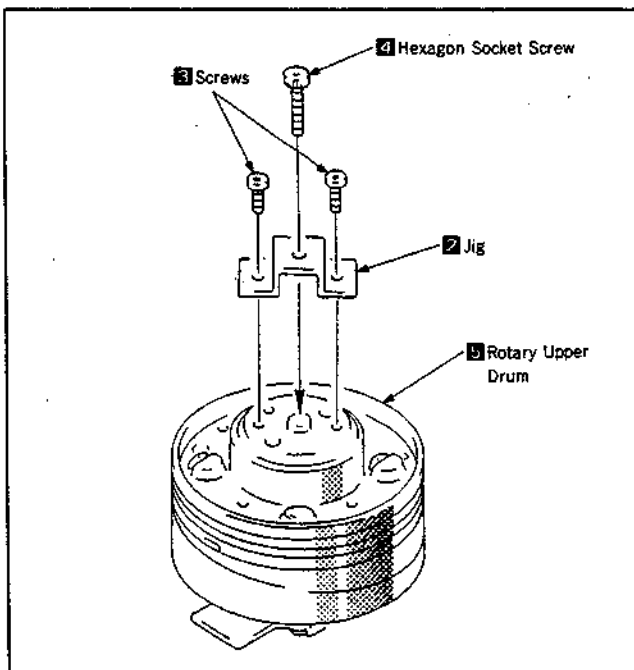


Fig. 30

2. Installation

- 1) Wipe clean the flange surface and the rotary upper drum **5** surface that makes contact with it, and confirm that they are free from dirt and scratches.
- 2) Insert the jig **6** (Ref. No. J-10) into the drum positioning hole **7**, then set the rotary upper drum **5** by passing the jig through its positioning hole **7**. (Fig.31)
- 3) Remove the jig **6** and push down the rotary upper drum **5** gently by hand. If it does not go all the way down, secure it temporarily by tightening the two screws **1** alternately (Fig.29).
- 4) Insert the jig **6** into the positioning hole **7** again and confirm that it goes in smoothly. If it does not, loosen the two screws **1**, repeat step 2) of the Removal paragraph and restart the setting procedure.
- 5) Tighten the screws **1**.

Note : After installing, be sure to perform tape path adjustment as described in section 4.

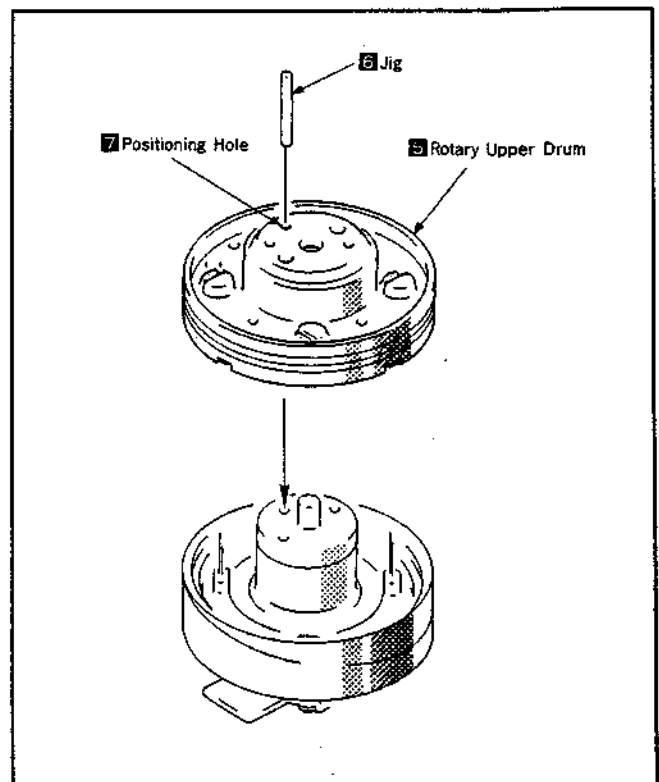


Fig. 31

3-22. ADJUSTMENT OF TENSION REGULATOR POSITION (Fig. 32)

1. Adjustment

- 1) Set a cassette tape and run the tape in the PB mode.
- 2) With the tape running, check that the distance from No.1 guide to No. 2 guide upper flange is 4.2 mm.
- 3) If they are not at the specified positions, perform adjustment in step 4) and subsequent steps.
- 4) Loosen the screw **I**.
- 5) If No.1 guide is located inside the specified position, shift the string block toward the arrow **A** using the FWD B.T. adjusting driver (Ref No. J-15). Or, if it is located outside, shift toward the arrow **B**.
- 6) Tighten the screw **I**.

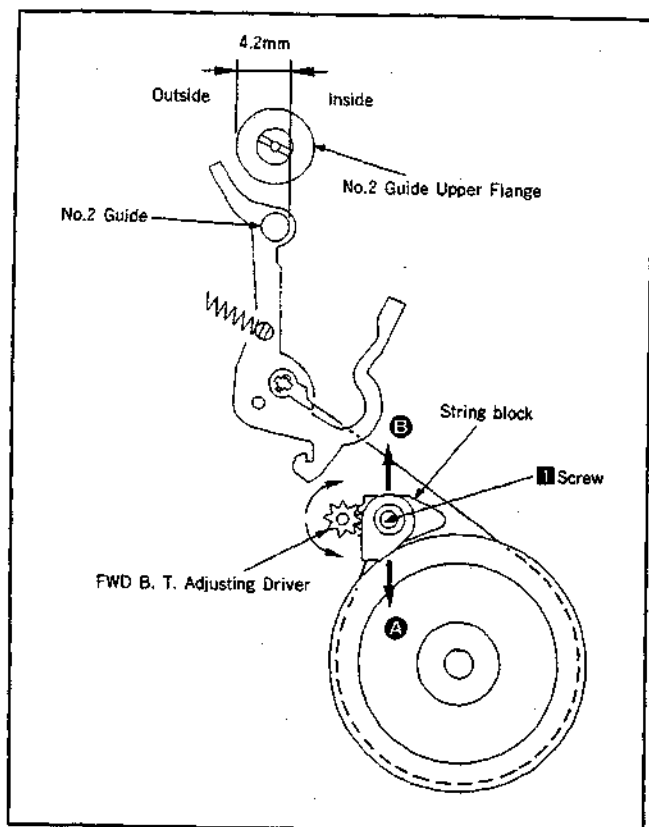


Fig. 32

3-23. FWD BACK TENSION ADJUSTMENT (Fig.33)

- 1) Select the TEST mode 1 using the adjusting remote controller (Ref No. J-17).
- 2) Set the torque cassette (Ref No. J-10).
- 3) Select the FWD mode, and check that the torque of S reel table is 8.5 ~ 11.5 g · cm.
If it is out of standard, adjust the TG-1 spring hook position using the FWD B.T. adjusting driver (Ref No. J-15).

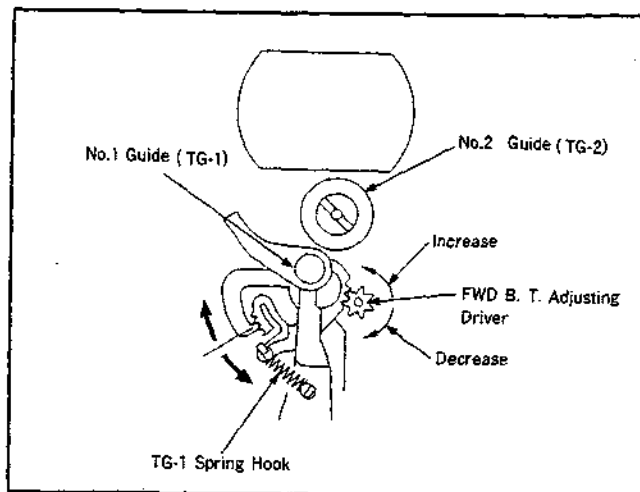


Fig. 33

3-24. REEL TORQUE CHECK

- 1) Set the torque cassette.
- 2) Select the FWD mode, and check that the torque fluctuation center of T reel table is 7 ~ 17 g · cm
- 3) Select the REV mode, and check that the torque fluctuation center of S reel table is 25 ~ 39 g · cm.
- 4) Select the REV mode, and check that the torque of T reel table is 7 ~ 17 g · cm.
- 5) If the above data is not satisfied, the tension regulator band, 1 hard tab or T soft assembly will be faulty. Check them first, and if no abnormality is found, replace respective reel tables.

4. TAPE PATH ADJUSTMENT

The 8mm video system uses ATF (Automatic Track Finding) which instantaneously controls a tape running speed based on 4 types of pilot signals and performs high-precision tracking.

This does away a tracking control knob and allows accurate track tracing.

On the other hand, however, the ATF system has a problem in adjusting the tape path system. That is, if head tracing is out of order a little, the ATF automatically corrects it, which means that perfect adjustment cannot be done.

Therefore, in the A mechanism, the ATF system is forcibly operated to shift a tracking amount constantly (approx. 1/4) by setting the PATH mode with the adjusting remote controller (Ref No.J-16). So, fine tracking adjustment can be easily done. Also, the PATH mode setting varies with the model, and therefore, refer to the Service Manual.

Example) For CCD-FX410 series

Set the adjusting remote controller to the HOLD ON side.

- 1) Set PAGE : 1, ADDRESS : 00, DATA : 01 to cancel the PROTECT mode.
- 2) Set PAGE : D, ADDRESS : 01, DATA : 03 to select the PATH mode.

Note : Setting of PATH mode = TRACK SHIFT mode

If the adjusting remote controller (Ref No.J-16) is set to HOLD OFF once, then set to HOLD ON again after mode setting, the display of ADDRESS and DATA changes.

- 3) After adjustment is over, set DATA : 00, and press the PAUSE button on the adjusting remote controller (Ref No. J-16).

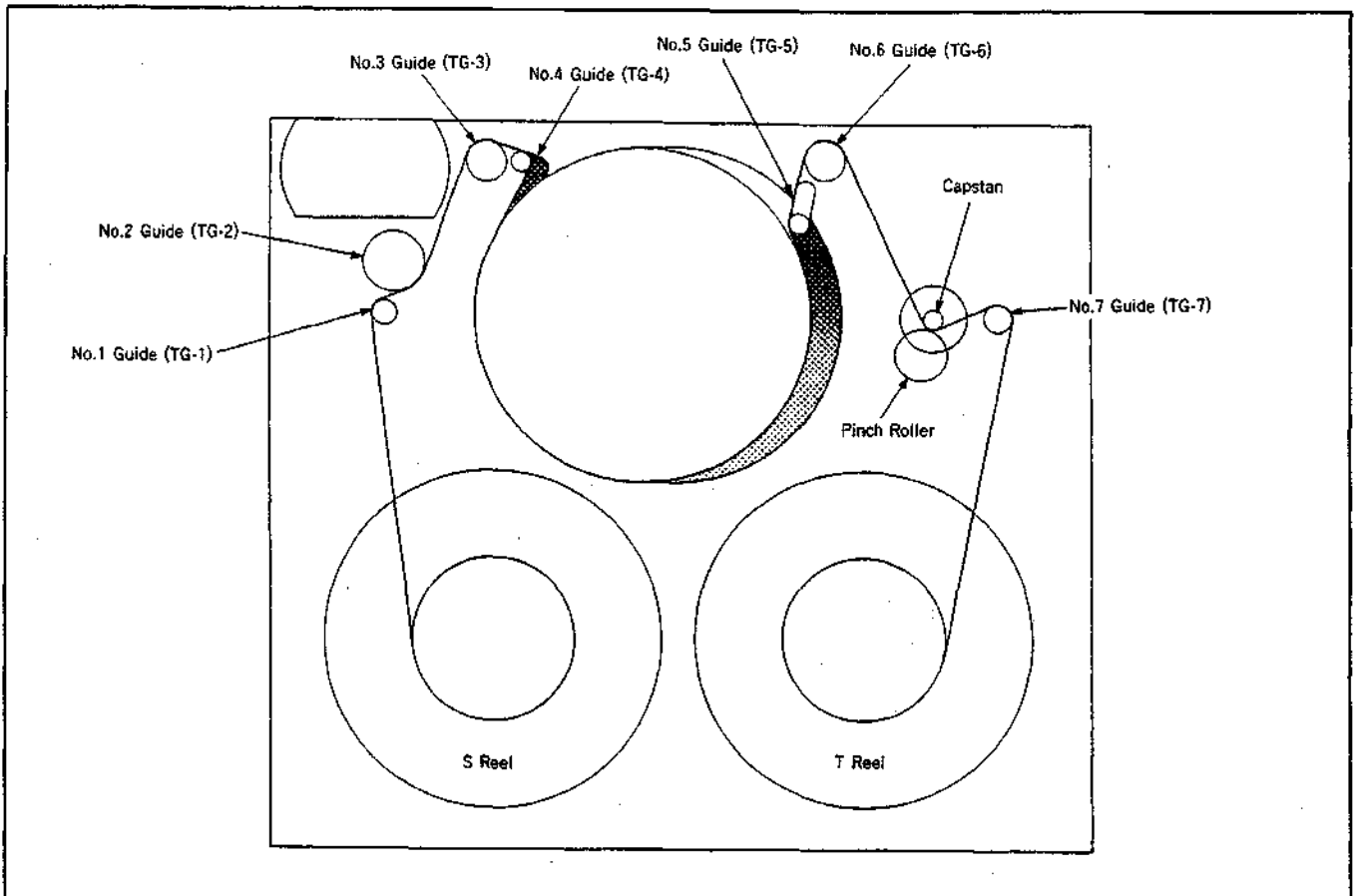


Fig. 34-A

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig.41). Therefore, when performing section 4-4. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-6), modified as follows, and perform adjustment in playback mode.

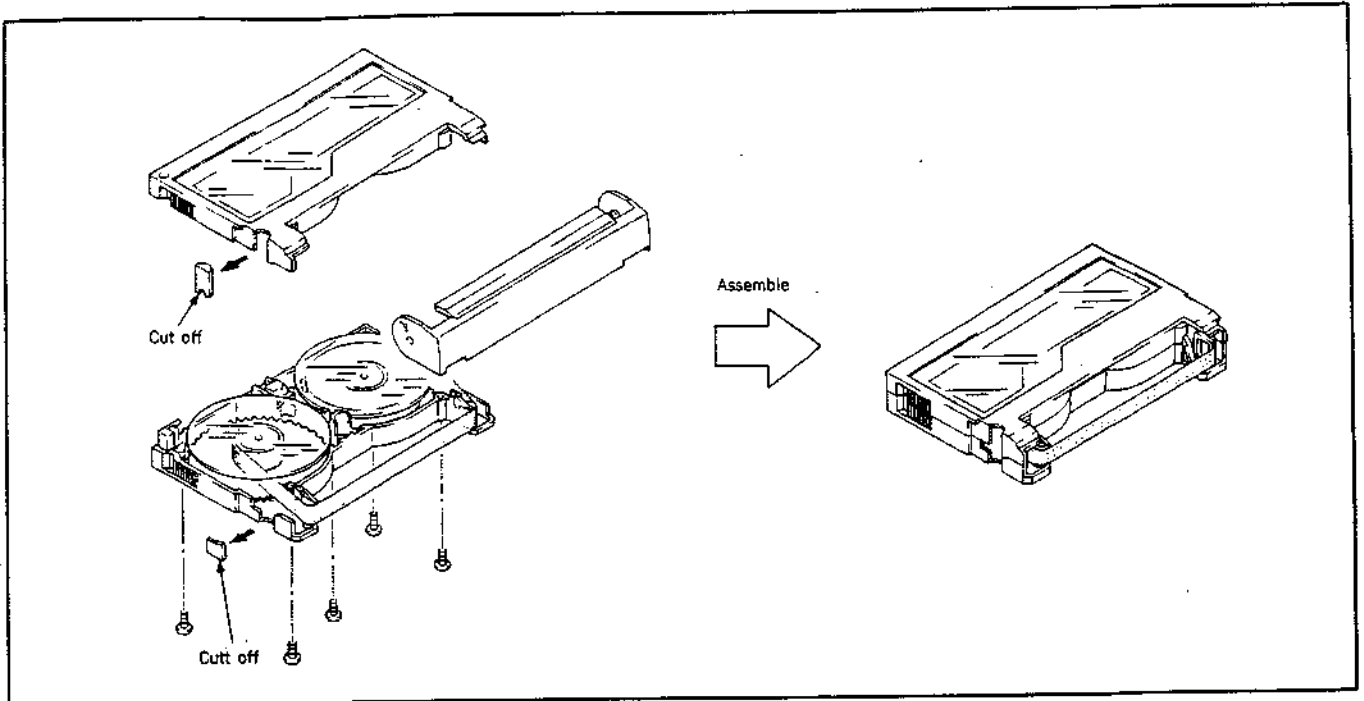


Fig. 34-B

4-1. PREPARATION FOR ADJUSTMENT

- 1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller) (Fig. 34-A).
 - 2) Set the PATH mode using the adjusting remote controller.
 - 3) connect an oscilloscope to the check pin connector of the set.
Example) For CCD-FX410 series
CH1 : CN001 pin ③ (PB RF OUT) on CS-31 board
CH2 : CN001 pin ④ (RF SWP) on CS-31 board
 - 4) Play back a tracking alignment tape (NTSC : WR5-1N, or PAL : WR5-1C).
 - 5) Check that a RF waveform is flat at the inlet and outlet of the oscilloscope (Fig. 35 ㉑).
- If not flat, make adjustment with the procedures below.
When the RF waveform is not flat at the inlet/outlet ; See Fig. 35 ㉒ and ㉓.

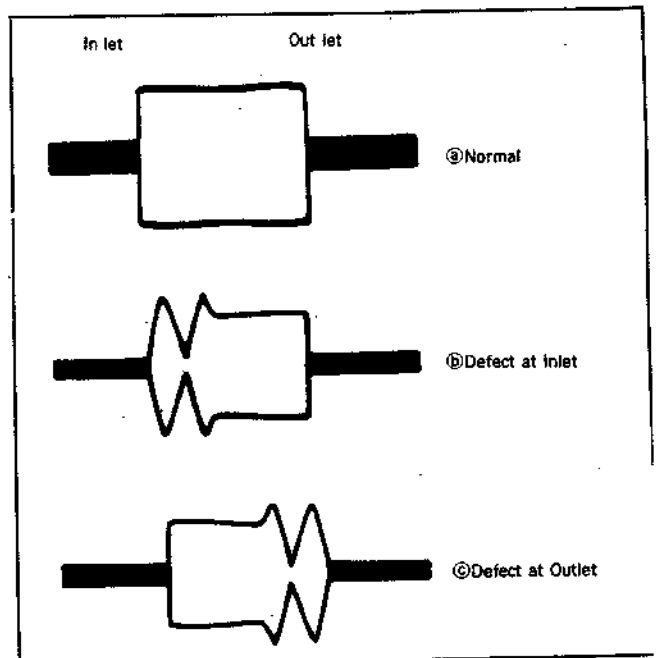


Fig. 35

4-2. TRACKING ADJUSTMENT (Fig. 36, 37)

- 1) Play back the tracking alignment tape.
- 2) Loosen the No.3 guide (TG-3) lock screw **1** and turn the No.3 guide to flatten the waveform at the inlet.
- 3) Tighten the No.3 guide (TG-3) lock screw **1** to lock the No.3 guide.
- 4) Loosen the No.6 guide (TG-6) lock screw **2** and turn the No.6 guide to flatten the waveform at the outlet.
- 5) Tighten the No.6 guide (TG-6) lock screw **2** to lock the No.6 guide. When this is done, make sure that the waveform does not change at the outlet.

Note : Be careful not to loosen the lock screw too much because the guide is easily moved.

: Take care not to allow interference between No.6 guide and drum when tightening the No.6 guide lock screw.

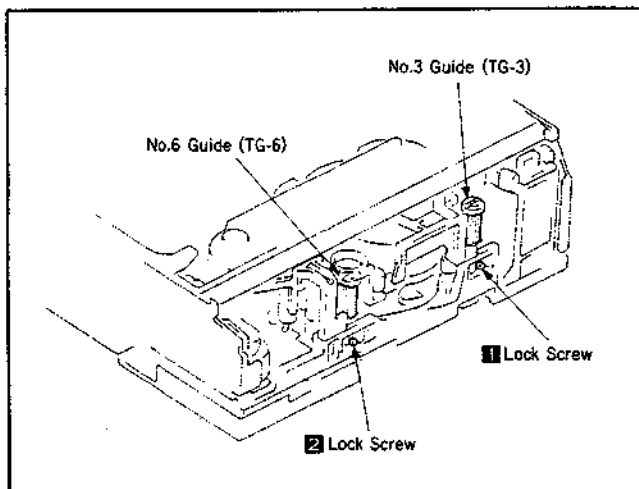


Fig. 36

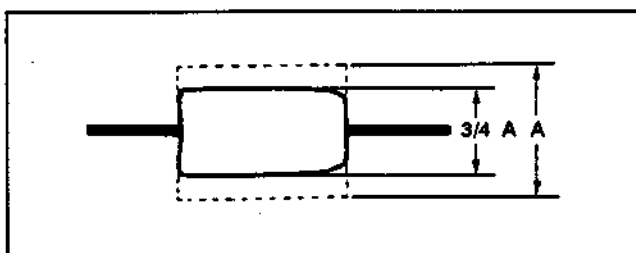


Fig. 37

4-3. No.2 GUIDE (TG-2) ADJUSTMENT

When the No.2 guide has been turned or replaced, perform height presetting before this adjustment.

4-3-1. No. 2 GUIDE (TG-2) HEIGHT PRESETTING (Fig. 38)

- 1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3.3 ± 0.05 mm.

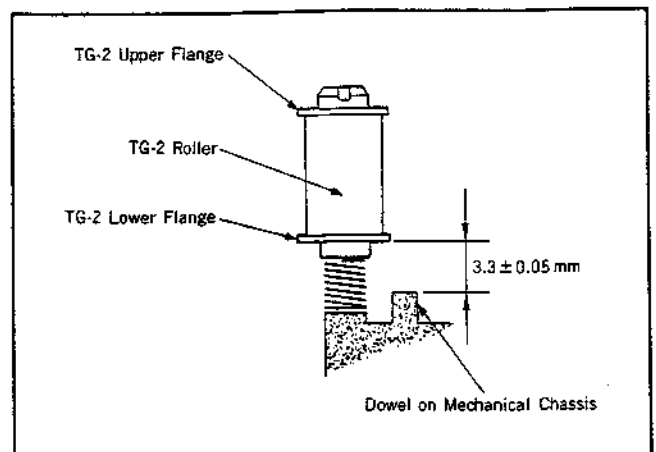


Fig. 38

[Reference]

This A mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Clockwise
	Lower	Counterclockwise

4-3-2. No. 2 GUIDE (TG-2) ADJUSTMENT (Fig. 39, 40)

- 1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
 - 2) Confirm that the tape is not bent at the lower flange ② of the No.2 guide (TG-2) ① (Fig. 39). If it is, turn the upper flange ③ of the No.2 guide (TG-2) clockwise with a screwdriver, lowering it until the tape is straightened.
 - 3) Play back the alignment tape for tracking adjustment.
 - 4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-2.
 - 5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
 - 6) If the waveform is not normal (Fig. 40), turn the upper flange ③ of the No. 2 guide (TG-2) ① 90° counterclockwise and repeat step 5.
- Repeat steps 5) and 6) until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5).

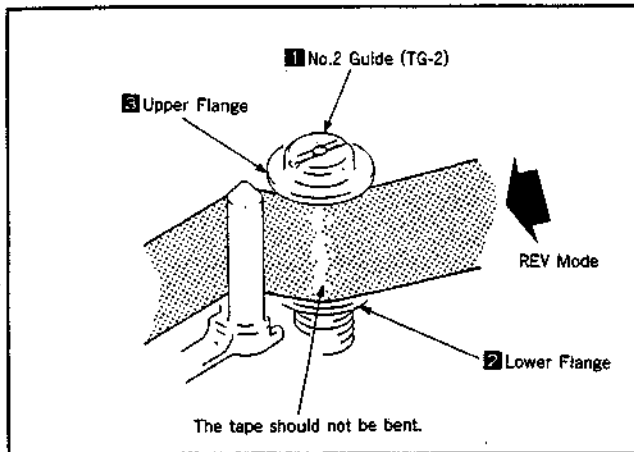


Fig. 39

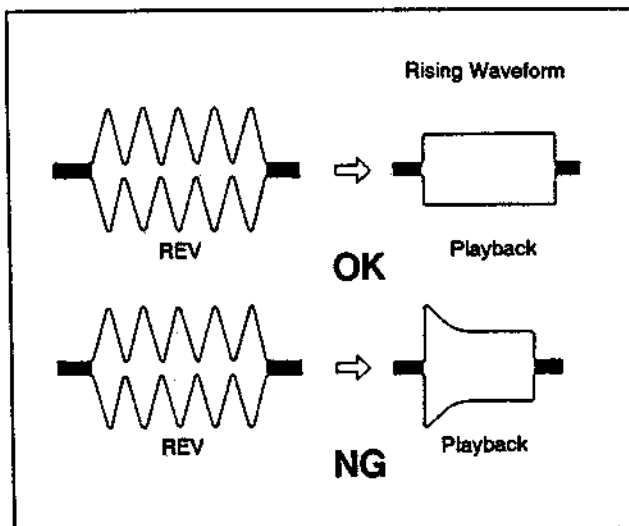


Fig. 40

4-4. No.7 GUIDE (TG-7) ADJUSTMENT (Fig. 41)

Note : This adjustment requires the No. 7 guide adjusting cassette (Fig. 34-B).

- 1) Play back the No.7 guide adjusting cassette and set the REV mode.
- 2) Confirm that the tape is not bent between the No.6 guide (TG-6) ① and the capstan ②. If it is, turn the height adjusting screw ④ of the No.7 guide (TG-7) ③ until the tape is straightened.
- 3) Set the playback mode again and confirm that the tape is not bent between the capstan ② and the height adjusting screw ④ of the No.7 guide (specification : 0.5mm or less). If the tape is bent beyond the specification, turn the No.7 guide (TG-7) ③ until bending is within the specification (0.5mm). If in the REV mode tape bending between the No. 6 guide (TG-6) ① and the capstan ② is 0.3mm or less, adjustment can be considered completed.

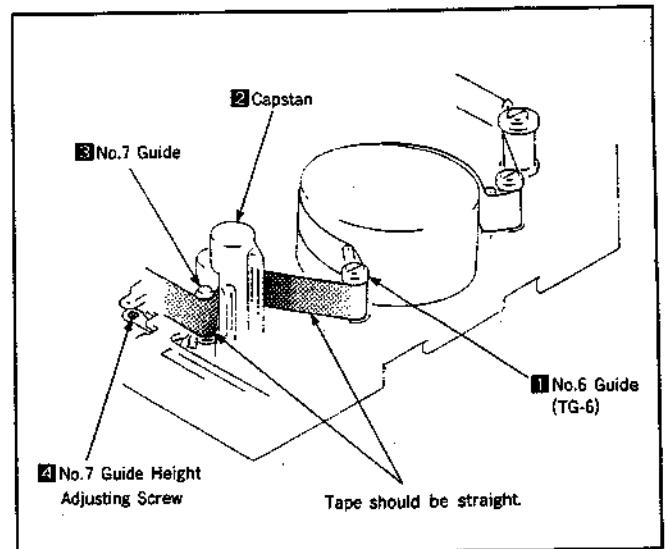


Fig. 41

4-5. CUE AND REV WAVEFORM CHECK (Fig. 42)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (Fig. 42). In case pitch is not constant, perform section 4-2.Tracking Fine Adjustment and section 4-4. No.7 Guide Adjustment.
- 2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (Fig. 42). Otherwise, perform section 4-2 Tracking Fine Adjustment.

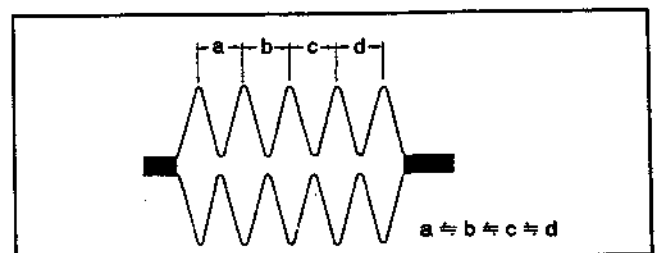


Fig. 42

4-6. CHECK AFTER ADJUSTMENT

4-6-1. TRACKING CHECK

- 1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (Fig. 43).
- 2) Then, confirm that the minimum amplitude value (E_{MIN}) is 65 % of the maximum value (E_{MAX}) or larger (Fig. 44).
- 3) Confirm that no large fluctuations occur on the waveform (Fig. 45).

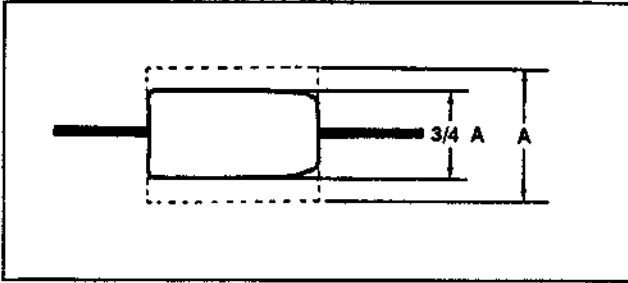


Fig. 43

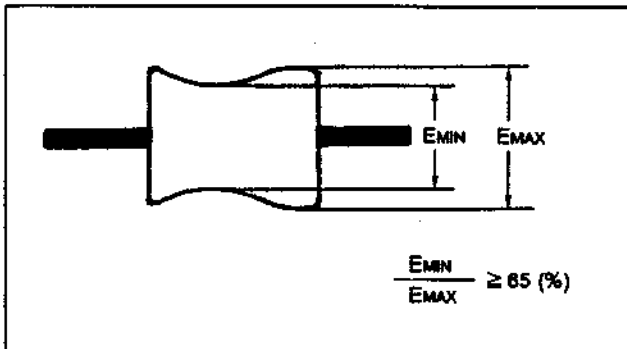


Fig. 44

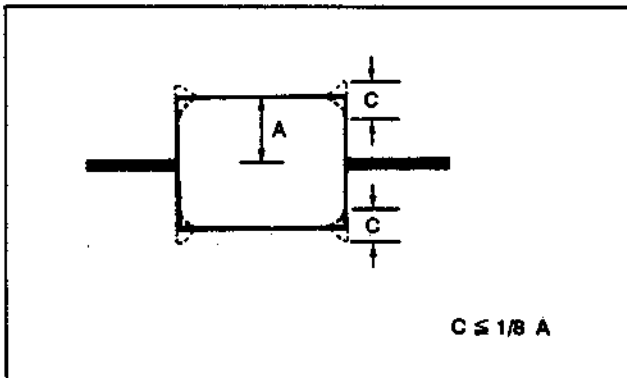


Fig. 45

4-6-2. RISING CHECK (Fig. 46)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Cancel the track shift mode.
- 3) Eject the tape, then load it again.
- 4) Set the playback mode and confirm that the RF wave form rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 6) Repeat steps 3) to 5) once more.

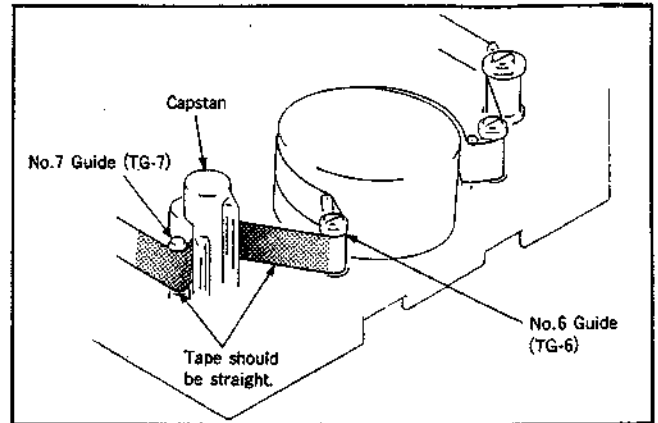


Fig. 46

4-6-3. TAPE PATH CHECK (Fig. 47)

- 1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3mm, at the lower flange of the No. 2 guide, the upper flange of the No.3 guide, the upper flange of the No. 6 guide and the No.7 guide upper and lower flanges.
- 2) Confirm that no tape rising occurs and that curling is less than 0.3mm at the flange of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REV button to set the REV mode.

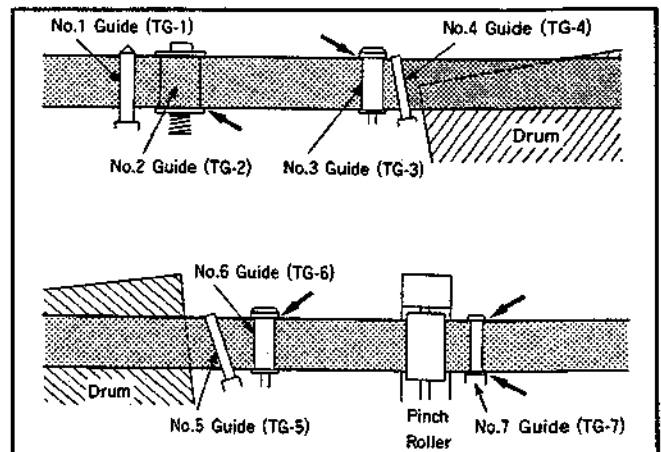


Fig. 47

GV-S50

V19548

SONY. SERVICE MANUAL

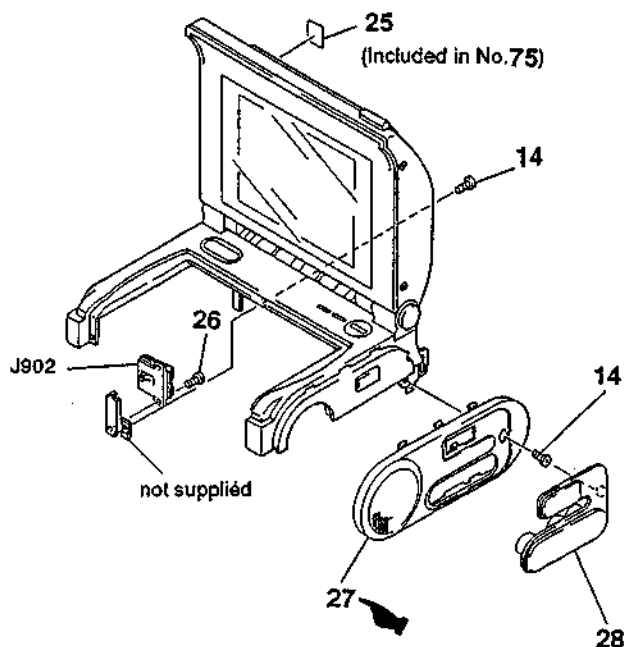
US Model
Canadian Model

CORRECTION-1

Correct your service manual as shown below.

- Page 134 5-1. CABINET ASSEMBLY for the EXPLODED VIEWS

✎ : Corrected portion



Incorrect			Correct		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
27	X-3942-022-1	CABINET (R) ASSY, SIDE	27	<u>3-949-395-11</u>	<u>CABINET (R), SIDE</u>

9-973-280-91

Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

English
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Published by Personal A&V Products Div.
Quality Engineering Dept.

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

SUPPLEMENT-1

- Guide to LS-33 Board Electrical Parts of the LS Chassis Assembly
- Guide to Changes in Mechanism Parts

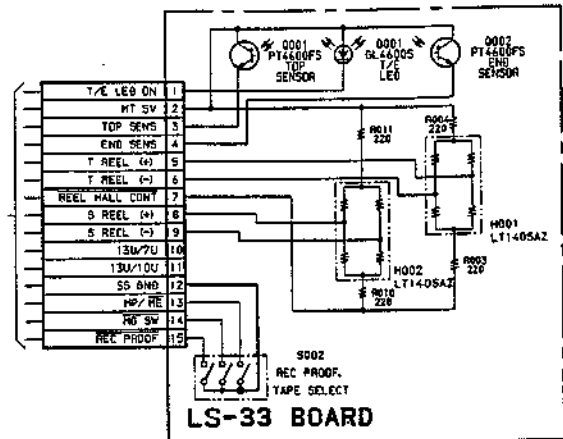
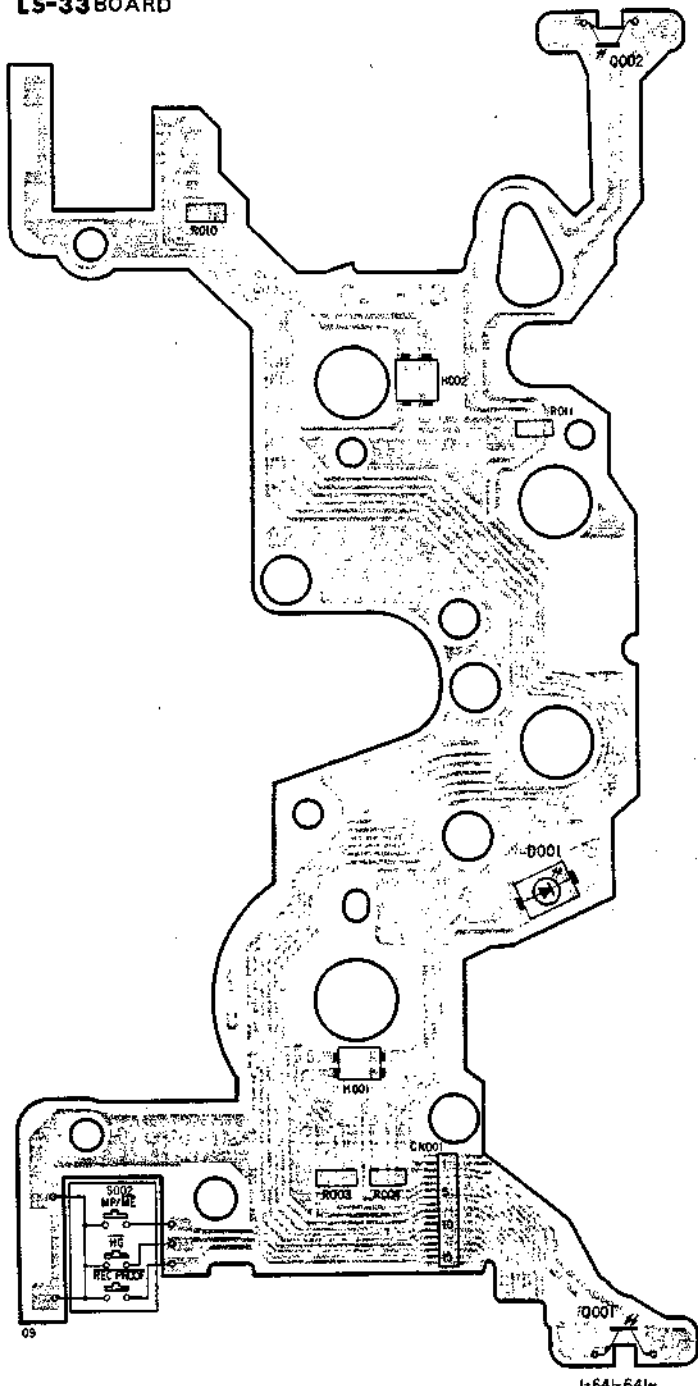
(Models)

CCD-FX300/FX310/FX311, CCD-FX400/FX410/FX411, CCD-FX500/FX510/FX511

CCD-FX700/FX710, CCD-FX300E, CCD-FX400E, CCD-FX500E

GV-M20, GV-S50, GV-S50E, CCD-TR31/TR303/TR303PK, CCD-TR303E/TR303EP

LS-33 BOARD

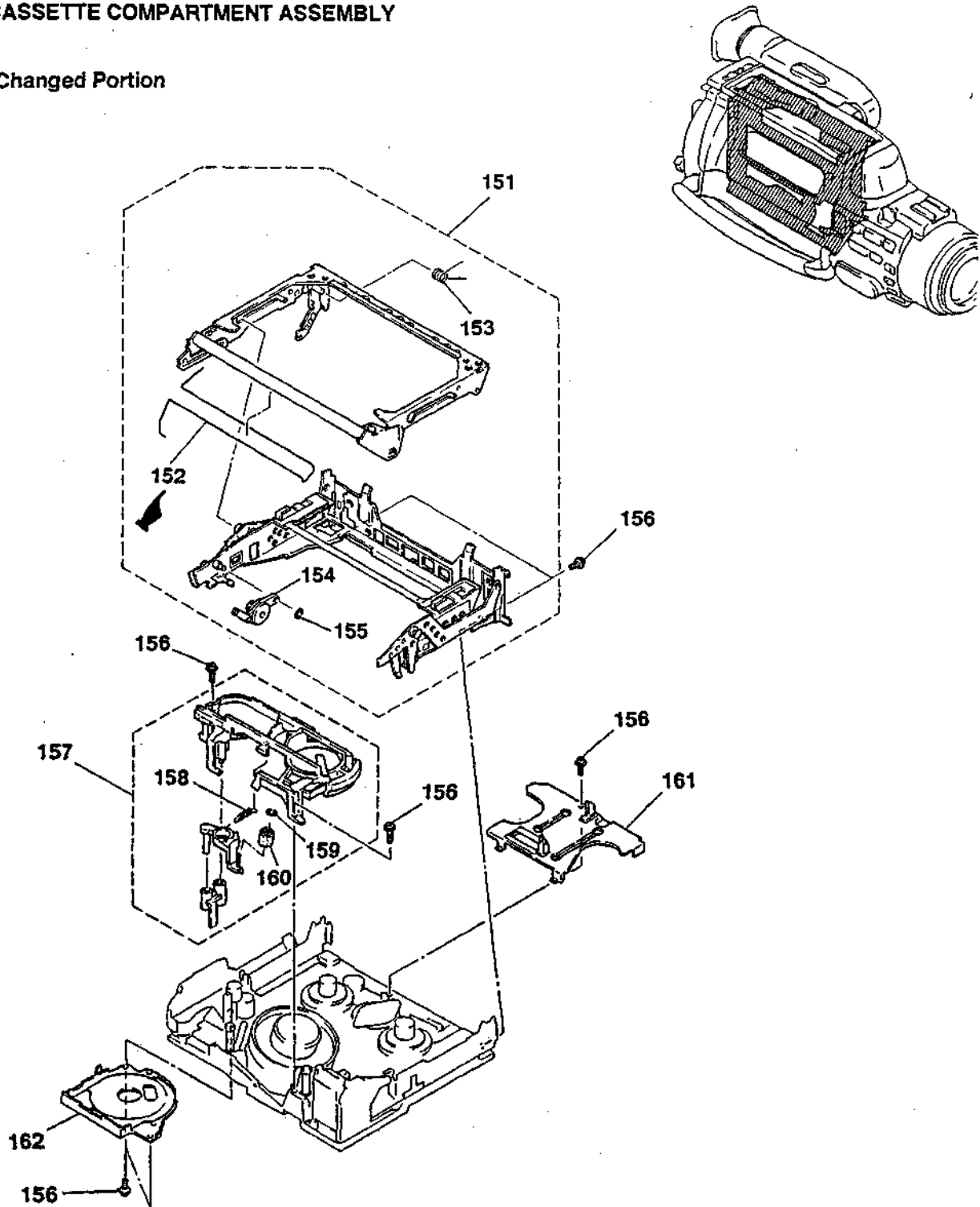


Ref. No.	Part No.	Description	Remark
		LS-33 BOARD, COMPLETE	

		< DIODE >	
D001	8-719-989-52	DIODE GL4600S	
		< DIODE >	
H001	8-719-987-62	DIODE LT140SAZ	
H002	8-719-987-62	DIODE LT140SAZ	
		< TRANSISTOR >	
Q001	8-729-012-46	TRANSISTOR PT4600FS	
Q002	8-729-012-46	TRANSISTOR PT4600FS	
		< RESISTOR >	
R003	1-216-033-00	METAL CHIP 220 5%	1/10W
R004	1-216-033-00	METAL CHIP 220 5%	1/10W
R010	1-216-033-00	METAL CHIP 220 5%	1/10W
R011	1-216-033-00	METAL CHIP 220 5%	1/10W
		< SWITCH >	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, TAPE SELECT)	

5-4. CASSETTE COMPARTMENT ASSEMBLY

 : Changed Portion

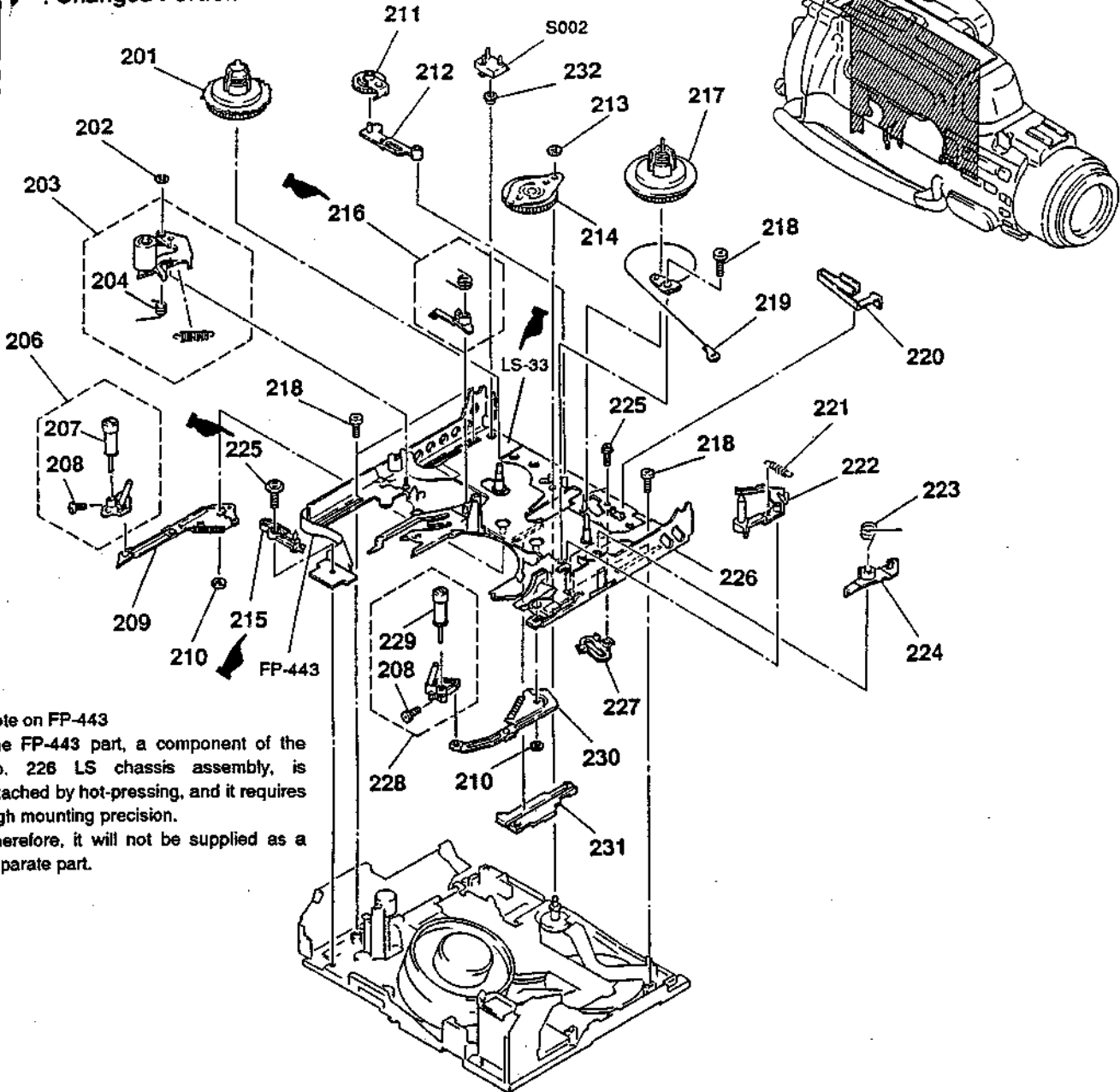


Ref. No.	Part No.	Description
151	A-7040-312-H	CASSETTE COMPARTMENT BLOCK ASSY
152	3-945-773-01	BAR, TORSION
153	3-945-771-01	SPRING, TORSION
154	X-3941-287-2	DAMPER ASSY
155	3-315-384-31	WASHER, STOPPER
156	3-947-508-01	SCREW (M1.4X2.5)

Remark	Ref. No.	Part No.	Description
	157	A-7040-309-A	PROTECT (BASE) BLOCK ASSY
	158	3-945-760-01	SPRING, TENSION
	159	3-321-393-01	WASHER, STOPPER
	160	X-3166-813-1	ROLLER ASSY, HC
	161	X-3941-280-1	RETAINER ASSY, GOOSENECK
	162	3-945-733-01	COVER, CAPSTAN

5. LS CHASSIS ASSEMBLY

▼ : Changed Portion



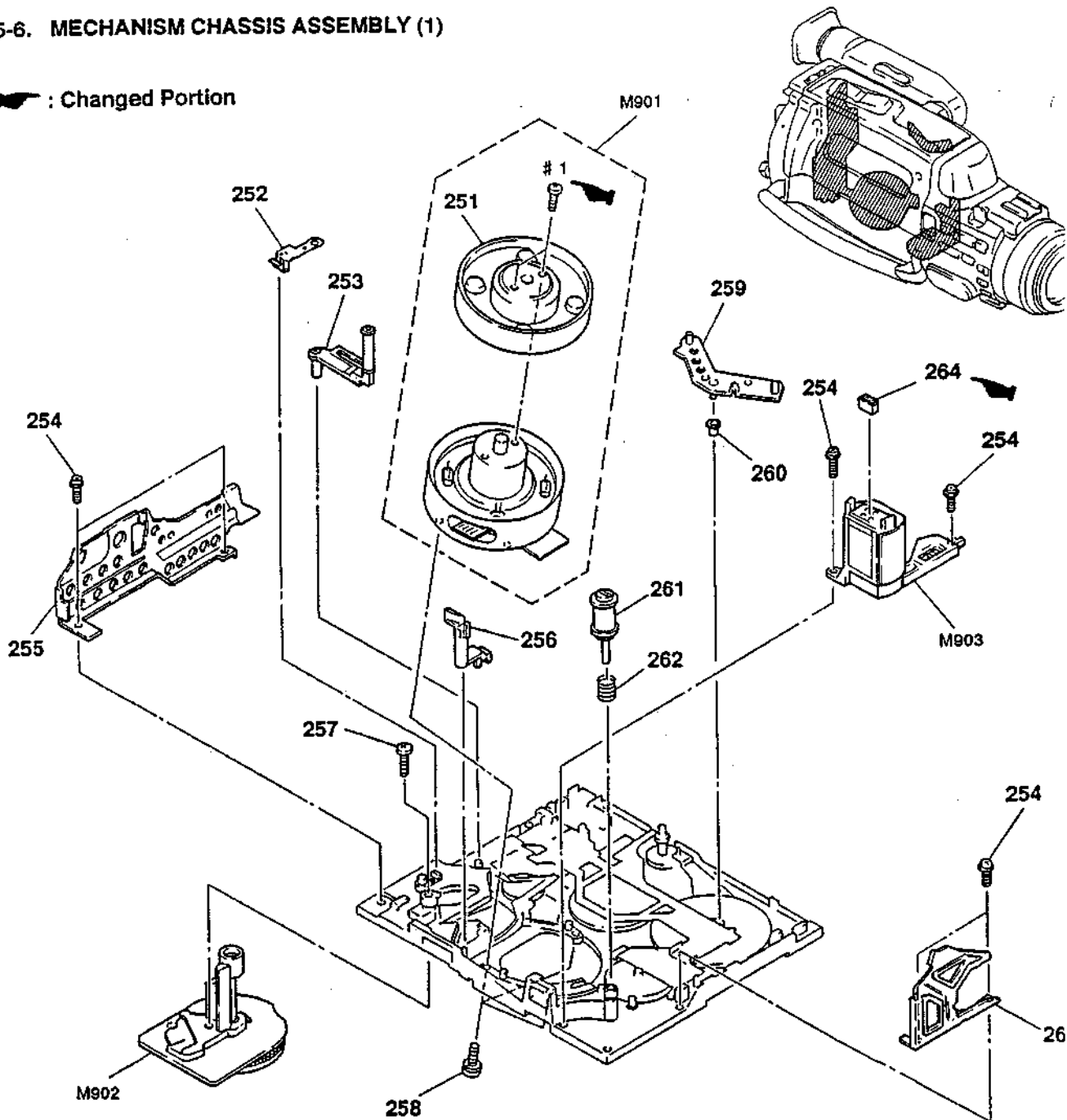
Note on FP-443
 The FP-443 part, a component of the 226 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision. Therefore, it will not be supplied as a separate part.

No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
01	X-3941-274-1	TABLE ASSY, REEL, T		219	X-3941-277-1	STRING BLOCK ASSY	
02	3-331-007-21	WASHER		220	3-945-801-01	BRAKE, S SOFT	
03	X-3941-271-5	ARM ASSY, PINCH		221	3-948-810-01	SPRING, TENSION	
04	3-945-743-01	SPRING, TORSION		222	X-3941-276-1	TG1 ASSY	
06	A-7040-307-A	GUIDE (BASE) (T) BLOCK ASSY		223	3-945-752-01	SPRING, TORSION	
07	X-3941-424-1	ROLLER ASSY, TG6		224	3-945-799-01	BRAKE, S HARD	
08	3-947-504-01	SCREW (M1. 2X2)		225	3-947-503-01	SCREW (M1. 4X2. 5)	
09	X-3941-267-1	ARM (T) ASSY, GUIDE		226	X-3941-265-1	CHASSIS ASSY, LS	
10	3-689-465-00	WASHER (1. 5), STOPPER		227	3-945-784-01	PLATE, CAM, LS	
11	X-3941-273-1	SOFT ASSY, T		228	A-7040-306-A	GUIDE (BASE) (S) BLOCK ASSY	
12	3-945-753-01	ARM, T SOFT		229	X-3941-269-1	ROLLER ASSY, TG3	
13	3-726-829-01	WASHER, STOPPER		230	X-3941-266-1	ARM (S) ASSY, GUIDE	
14	X-3941-279-5	GEAR ASSY, GOOSENECK		231	3-945-837-01	SLIDER, GL	
15	3-947-644-01	RETAINER, TG5 (BASE)					
16	A-7040-321-A	CLAW BLOCK ASSY, T HARD		232	3-949-881-01	SLEEVE	
17	X-3941-275-6	TABLE ASSY, REEL, S		S002	1-572-987-11	SWITCH, PUSH (3 KEY)	
18	3-945-756-01	SCREW (M1. 4X3)				(REC PROOF, ME/MP, MP/MP-HG)	

8mm Video MECHANICAL ADJUSTMENT MANUAL IV


5-6. MECHANISM CHASSIS ASSEMBLY (1)

 : Changed Portion



* The mark differs according to the model.

Ref. No.	Part No.	Description
251	*	DRUM ASSY, UPPER *
252	3-945-822-01	SPRING, LEAF, TG7 ARM
253	A-7040-305-A	ARM BLOCK ASSY, TG7
254	3-947-503-01	SCREW (M1.4X2.5)
255	X-3941-255-1	PLATE (T) ASSY, SIDE
256	3-945-735-01	ARM, HC CONVERSION
257	3-713-786-71	SCREW (M2X5)
258	3-686-493-01	SCREW (M2X5), P1
259	3-945-701-01	ARM, LS

Remark	Ref. No.	Part No.	Description
	260	3-945-702-01	ROLLER, LS
	261	X-3941-262-1	ROLLER ASSY, TG2
	262	3-945-774-01	SPRING, COMPRESSION
	263	3-945-691-01	PLATE (S), SIDE
	264	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P
	M901	*	DRUM ASSY *
	M902	8-835-477-01	MOTOR, DC SCE-0101A (CAPSTAN)
	M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)
	#1	7-627-853-59	SCREW (+P 2X5) 

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM SUPPLIMENT-2

Video 8

<Connection of Mode Selector IV Conversion Connector>

In use of Mode selector IV conversion connector(J-6082-167-A), there are two different connecting methods depending on the model connected:

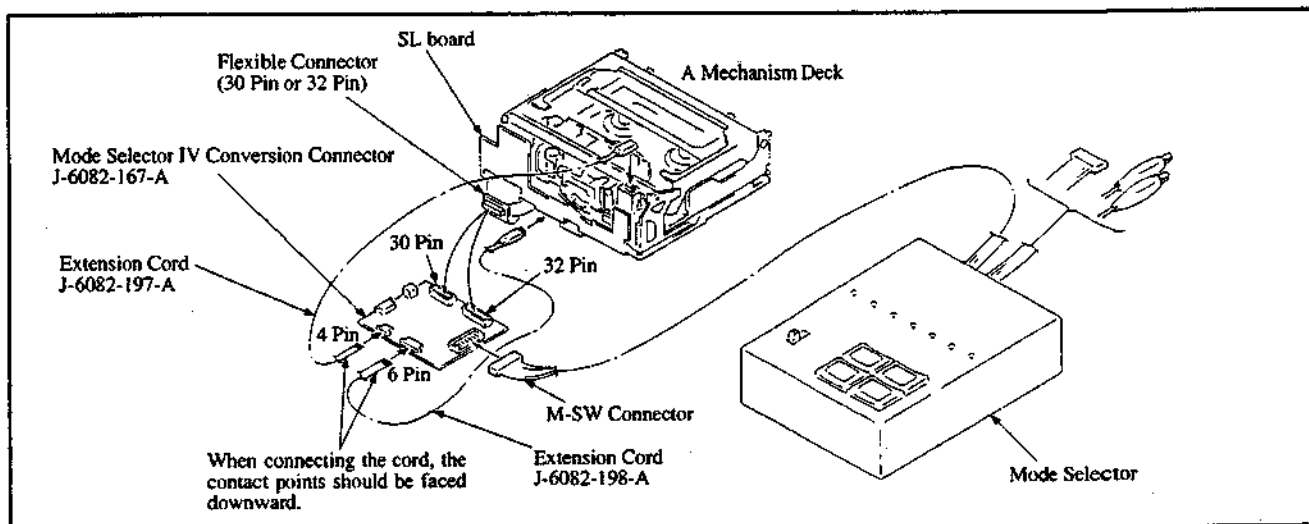
1. CCD-FX series

With the SL board mounted on mechanical deck, connect 30-pin(or 32-pin) connector to 30-pin(or 32-pin) Mode selector IV conversion connector.

CCD-FX300 series, FX400 series, FX500 series
→ 30-pin connector (FP425 or FP600)
CCD-FX700 series → 32-pin connector (FP477)

2. Models other than above

Connect the extension cord (J-6082-197-A) to loading motor 4-pin connector and extension cord (J-6082-198-A) to mode switch 6-pin connector in mechanical deck, then connect the other end of cord to 4-pin and 6-pin connectors of Mode selector IV conversion connector respectively, as shown below.



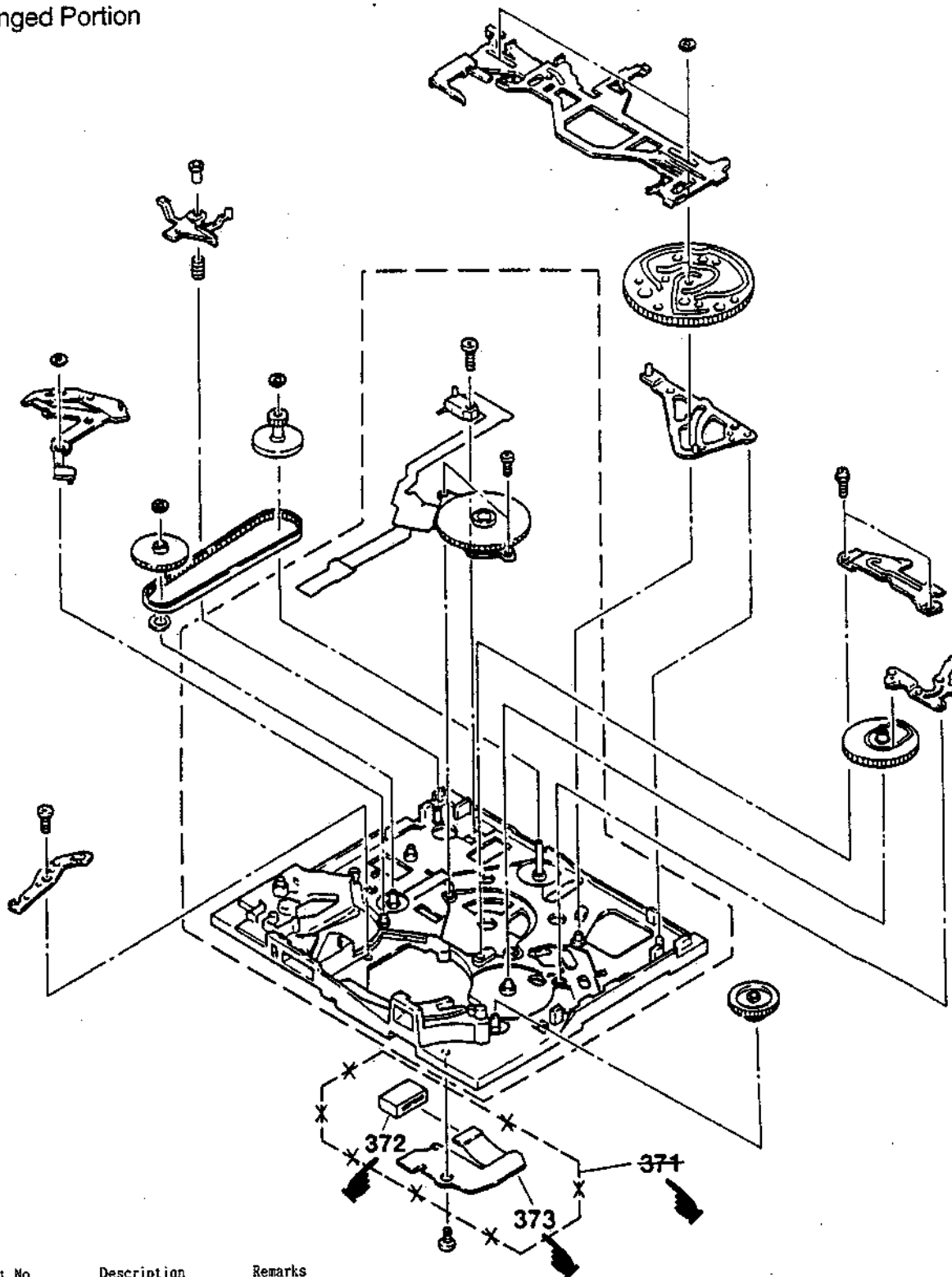
<CORRECTION>




P10. 2-4 Service jigs list

		Incorrect	Correct
J-15	FWD B.T adjusting driver	J-6082-182-A	→ J-6082-187-A

MECHANISM CHASSIS ASSEMBLY (2)

 : Changed Portion



Ref.No.	Part No.	Description	Remarks
371	A-7040-211-A	FP-441 ASSY	
372	1-691-254-13	CONNECTOR, TRANSLATION TOP	
373	1-641-639-13	FP-442 FLEXIBLE BOARD	

9-973-199-84

Sony Corporation
Personal Video Group

English
93E18163-1
Printed in Japan
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8 mm Video MECHANICAL ADJUSTMENT MANUAL IV

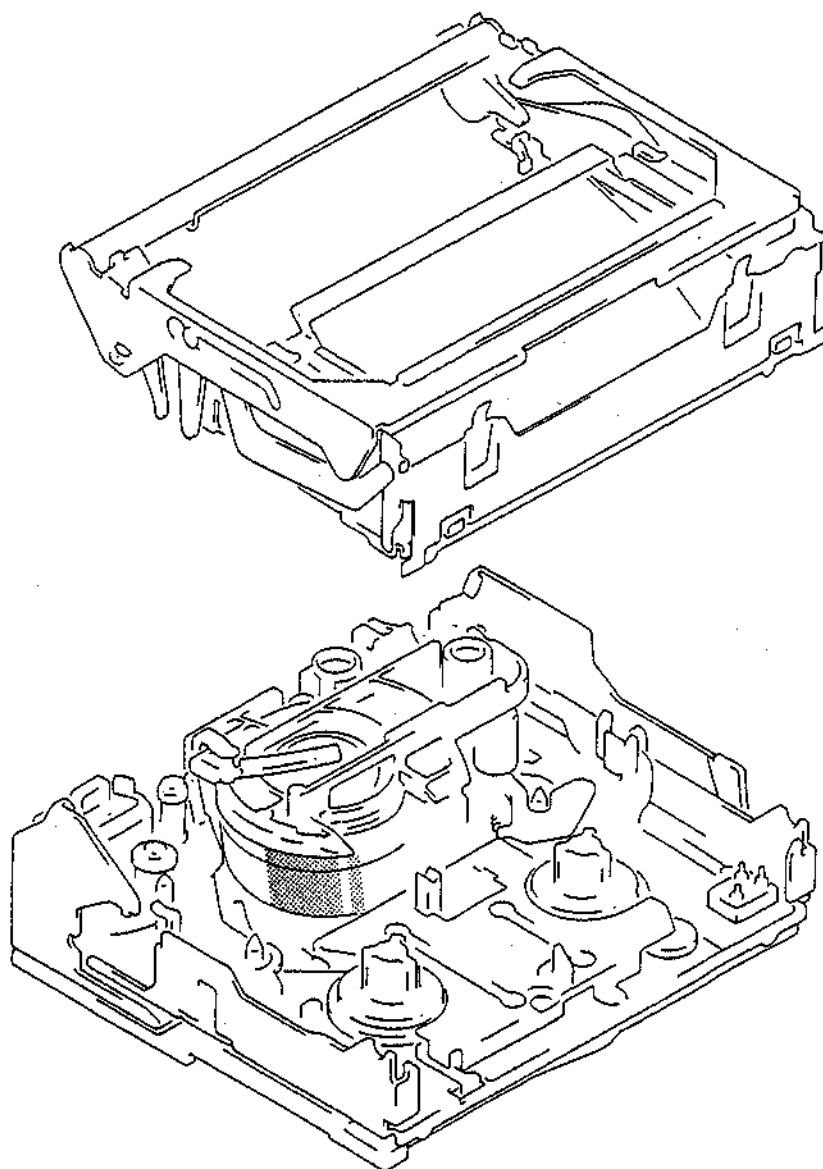


V12995

A MECHANISM

Video 8

File with the SERVICE MANUAL



8 VIDEO RECORDER
SONY[®]

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT					
1-1.	Cassette compartment Assembly	3	3-10.	Supply Reel Table Assembly and TG-1 Arm Assembly	23
1-2.	Operation with Cassette compartment Assembly Removed	5	3-11.	TG-2 Roller Assembly	24
1-3.	Handling of Mode Selector	6	3-12.	TG-7 Arm Assembly	25
1-4.	Mode Selector Schematic Diagram	7	3-13.	LM Motor Assembly	26
1-5.	Mode Selector Parts List	7	3-14.	LS Arm	27
2. PERIODIC CHECK AND MAINTENANCE			3-15.	M Slider Assembly	28
2-1.	Cleaning of Rotary Drum Assembly	8	3-16.	Pinch Press Arm Assembly	29
2-2.	Cleaning of Tape Path	8	3-17.	Cam	30
2-3.	Periodic Check Items	9	3-18.	GL Arm Assembly	31
2-4.	Service Jigs List	10	3-19.	L Gear A and L Gear B	32
3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT			3-20.	Relay Pulley and Change Gear Assembly	33
3-1.	Retainer, Gooseneck Assembly	12	3-21.	Rotary Upper Drum Replacement	34
3-2.	Protector Base Assembly	13	3-22.	Adjustment of Tension Regulator Position	35
3-3.	Drum Assembly	14	3-23.	FWD Back Tension Adjustment	35
3-4.	Capstan Motor Assembly	15	3-24.	Reel Torque Check	35
3-5.	Take-UP Reel Assembly and T-Soft Assembly	16	4. TAPE PATH ADJUSTMENT		
3-6.	Pinch Arm Assembly	17	4-1.	Preparation for Adjustment	37
3-7.	LS Chassis Assembly	18	4-2.	Tracking Adjustment	38
3-8.	Guide Base T Assembly and Guide Base S Assembly	20	4-3.	No.2 Guide (TG-2) Adjustment	38
3-9.	Guide Arm T Assembly and Guide Arm S Assembly	22	4-3-1.	No.2 Guide (TG-2) Height Presetting	38
			4-3-2.	No.2 Guide (TG-2) Adjustment	39
			4-4.	No.7 Guide (TG-7) Adjustment	39
			4-5.	CUE and REW Waveform Check	39
			4-6.	Check After Adjustment	40
			4-6-1.	Tracking Check	40
			4-6-2.	Rising Check	40
			4-6-3.	Tape Path Check	40

1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

For removal of the cabinet and boards, refer to "Disassembly" in each Service Manual.

Mechanical adjustment is done in the **USE** mode. (To select the **USE** mode, refer to "1-3, Handling of Mode Selector".)

1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removal (Fig. 1)

- 1) Select the **USE** mode.
- 2) Push the part ① of lock arm **1** toward the arrow **A** to unlock from lock guide **2**, and raise the cassette compartment as shown in Fig. a.
- 3) Remove two screws **3** and remove the LS frame **4** toward the arrow **B**.
- 4) With the cassette compartment assembly **5** pushed in arrow **C** direction, distort tabs **6** and **7** of MD side plate toward the arrow **D** to disengage from catches **4** and **5** of cassette compartment assembly respectively.

In such a case, insert a screwdriver between MD side plate and catch and disengage the tab **6** first, then disengage the tab **7** for easy removal as shown in Fig. b.

- 5) Raise the cassette compartment assembly **5** in the opposite direction of arrow **C** until the shafts **1** and **2** are disengaged, and push left and right side plates toward arrow **E** to remove the cassette compartment assembly.

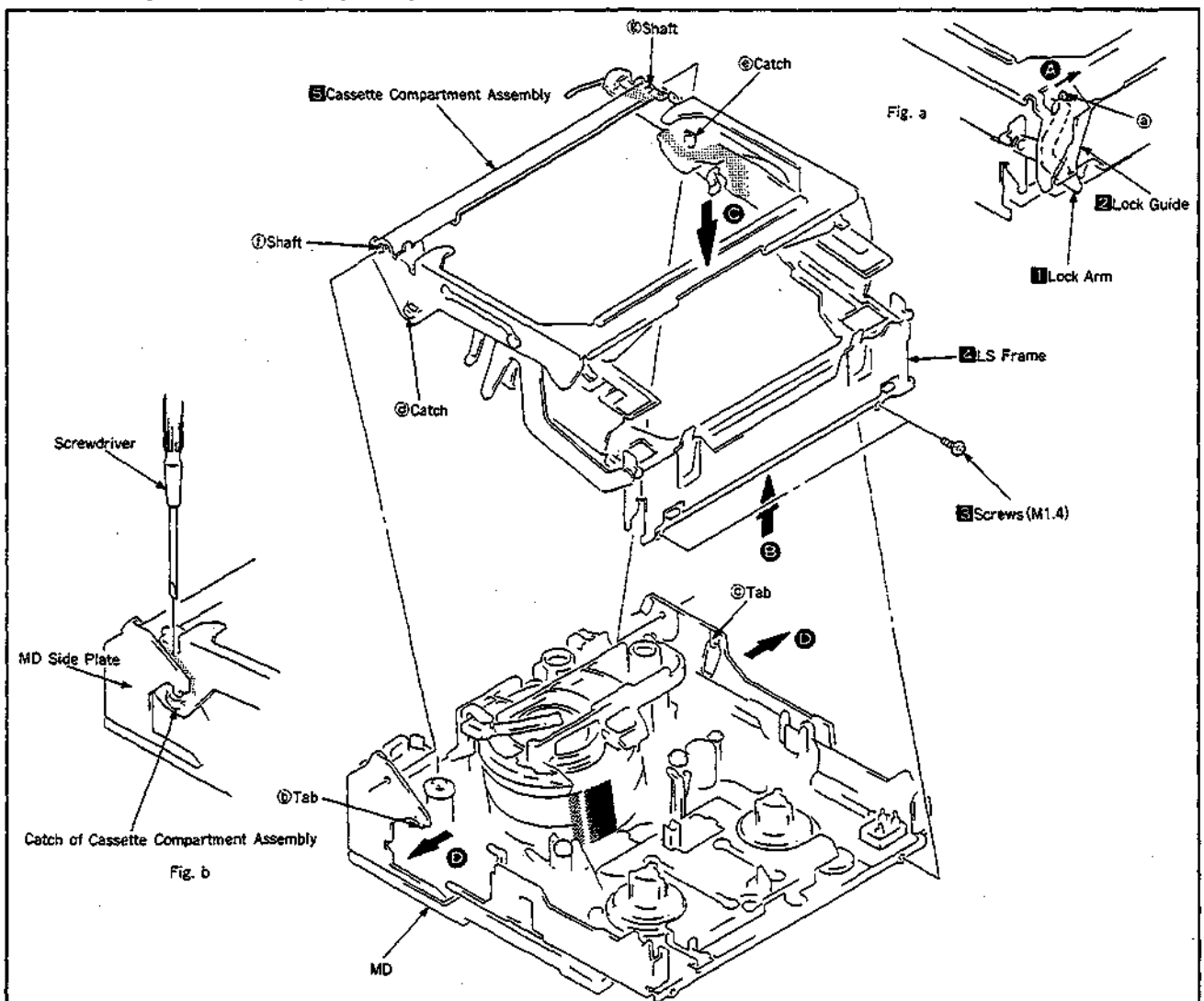


Fig. 1

2. Mounting (Fig. 2)

- 1) Select the **USE** mode.
- 2) Draw the cassette holder **5** of cassette compartment assembly **5** toward the arrow **5**, and lower the LS frame **4** toward the arrow **6**.
- 3) With the cassette compartment assembly **5** tilted by about 45° against MD, insert shafts **1** and **2** of cassette compartment assembly into holes **h** and **i** of MD side plate respectively.

At this time, the part **1** of torsion bar must be positioned on the side **k** of LS flexible board (FP-443) (not on the side **l**), as shown in Fig. c.

- 4) Holding holes **h** and **i** of MD side plate, press the cassette compartment assembly **5** so that its catches **3** and **4** are

engaged with tabs **6** and **7** of MD side plate. In such a case, the lock arm **1** of cassette compartment assembly must be inserted into a groove in the guide rail **2** on the MD side plate as shown in Fig. d.

- 5) Insert left and right side plates **8** and **9** of LS frame **4** inside the LS chassis **3**.
- 6) Push down the cassette compartment to lock.

Note : Make sure that the shafts **1**, **2** and the tabs **6**, **7** are set in the MD side plate properly.

- 7) Tighten two screws **10**.

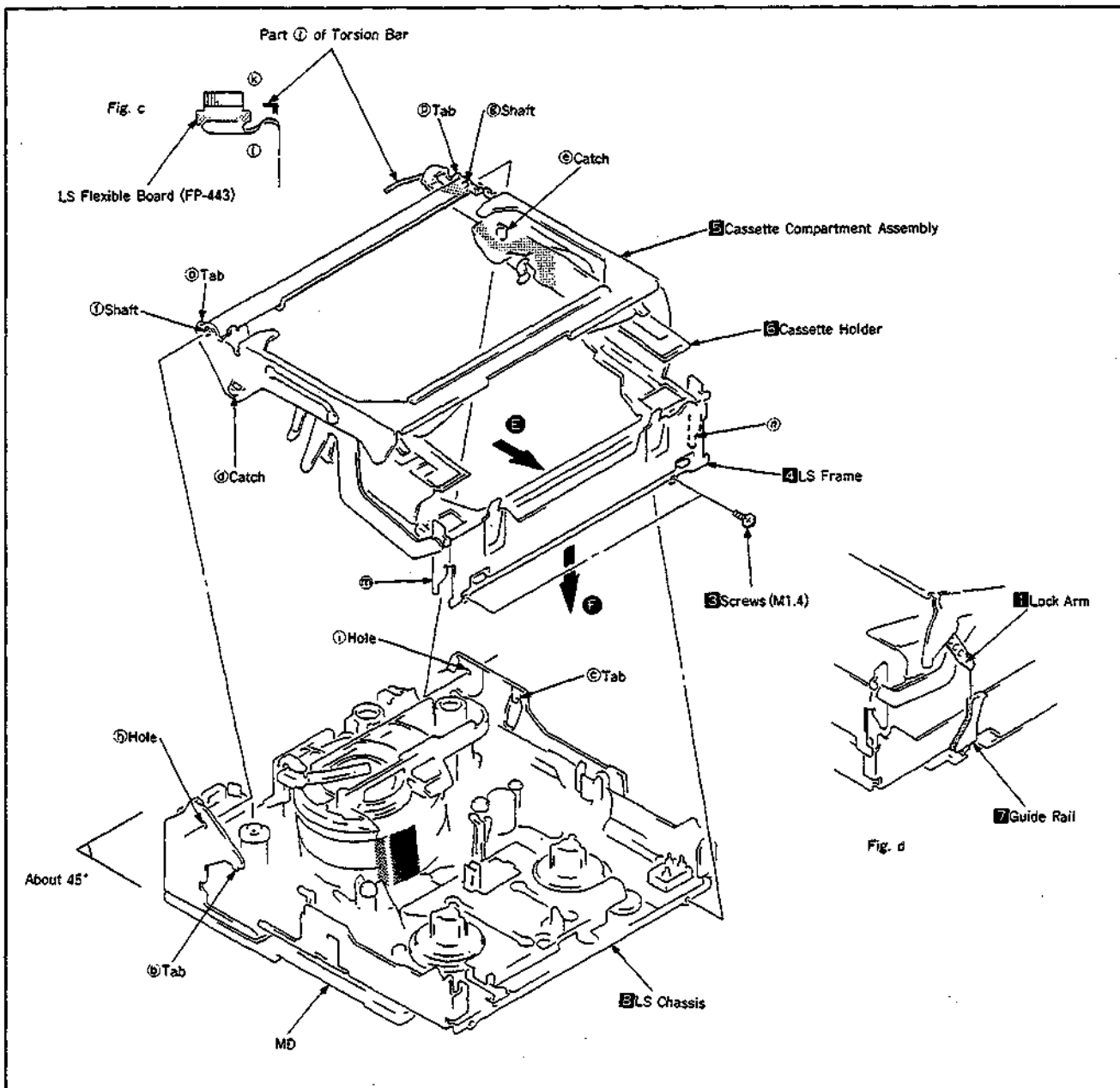


Fig. 2

1-2. OPERATION WITH CASSETTE COMPARTMENT ASSEMBLY REMOVED (Fig. 3)

- 1) Referring to the Service Manual, supply power with the cabinet and camera removed. (Make the mechanical deck ready to operate.)
- 2) Place the cap 2 on the Reflector C 1.
- 3) Press the pin of the push switch 3 (ON state) and fix it with adhesive tape 4 in that state.

Note : Press the asterisk (*) pin to set the REC mode.
(This is not required for the other modes.)

- 4) Push the cassette compartment DOWN switch 5 in an arrow direction as shown in Fig. a.

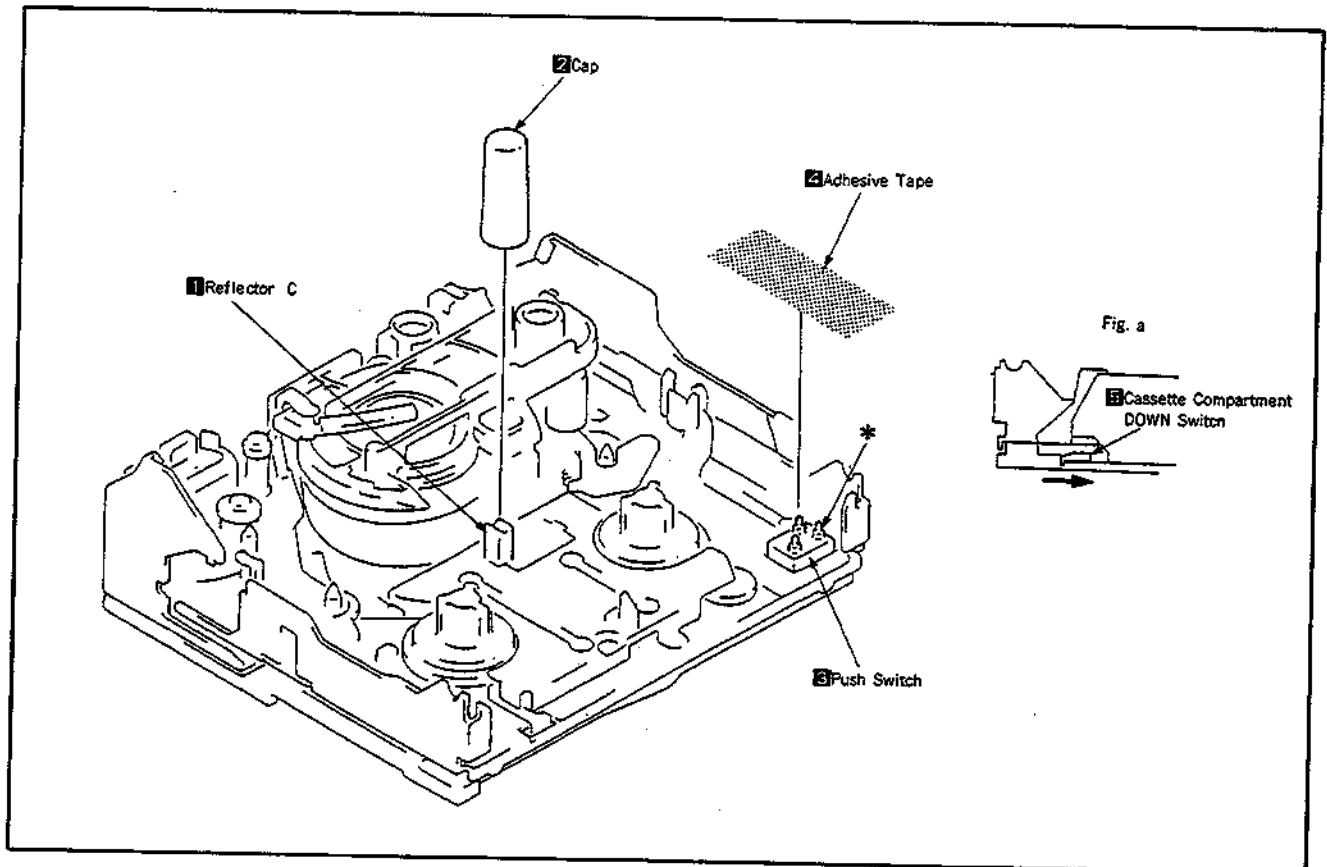


Fig. 3

1-3. HANDLING OF MODE SELECTOR

- Stick the MD process table label to the mode selector IV panel, then mount the panel on the mode selector.
- U, U', FL, O, O' and A mechanisms have different mode indications respectively. Select your desired type. (Fig.4)

1 Construction (Fig.5)

2 Connection (Fig.6)

For CCD-FX410 series

- 1) Insert the FP-425 flexible connector **1** and M-SW connector **2** into the mode selector IV conversion connector **3** respectively.

3. Handling

- 1) Use the M mode selector buttons only.
- 2) During mode selection, "BLANK" lights up when no mode is being selected.
- 3) If the right M mode selector button is kept pressed, END, EJECT, USE, LOAD, READY, TURN, REC and FF light up in that order.
- 4) When changing over from the FF mode back to the END mode, press the left M mode selector button to select your desired mode.

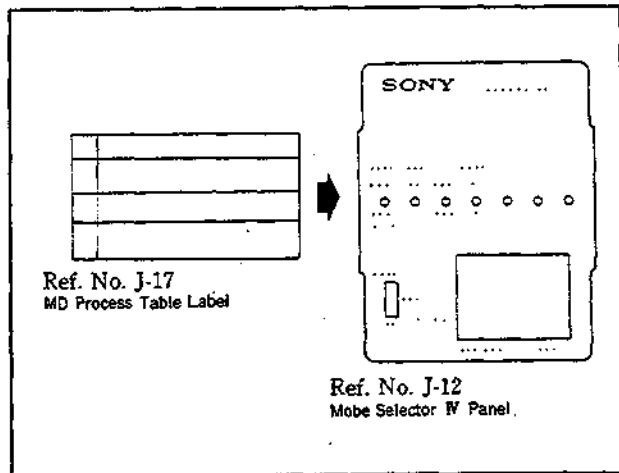


Fig. 4

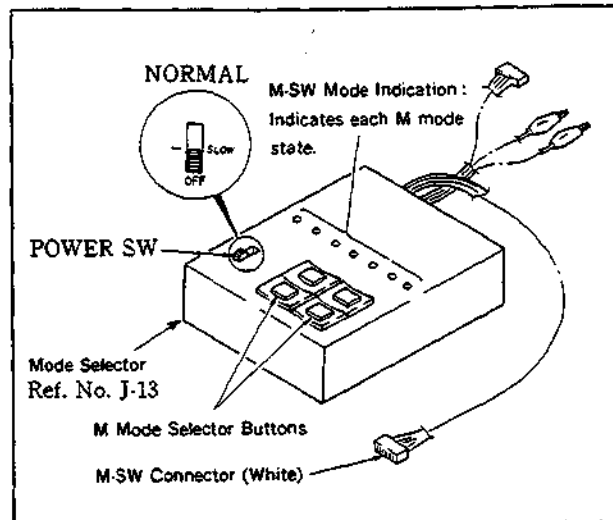


Fig. 5

For CCD-FX410 series

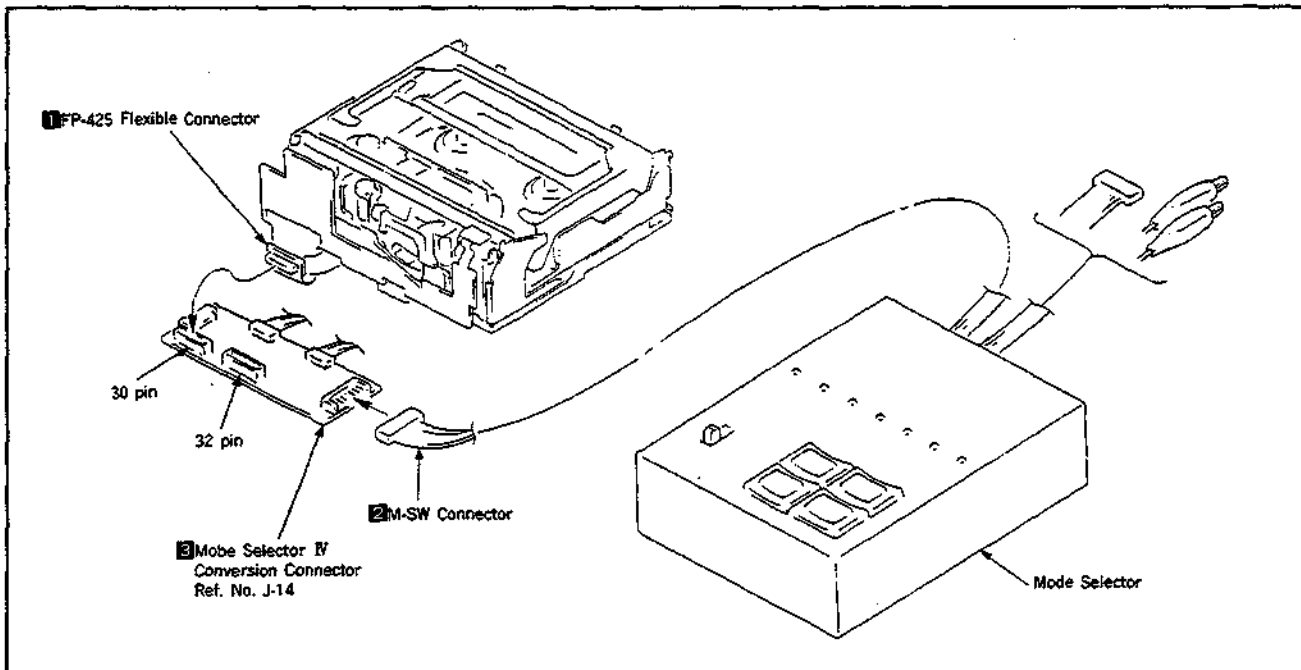
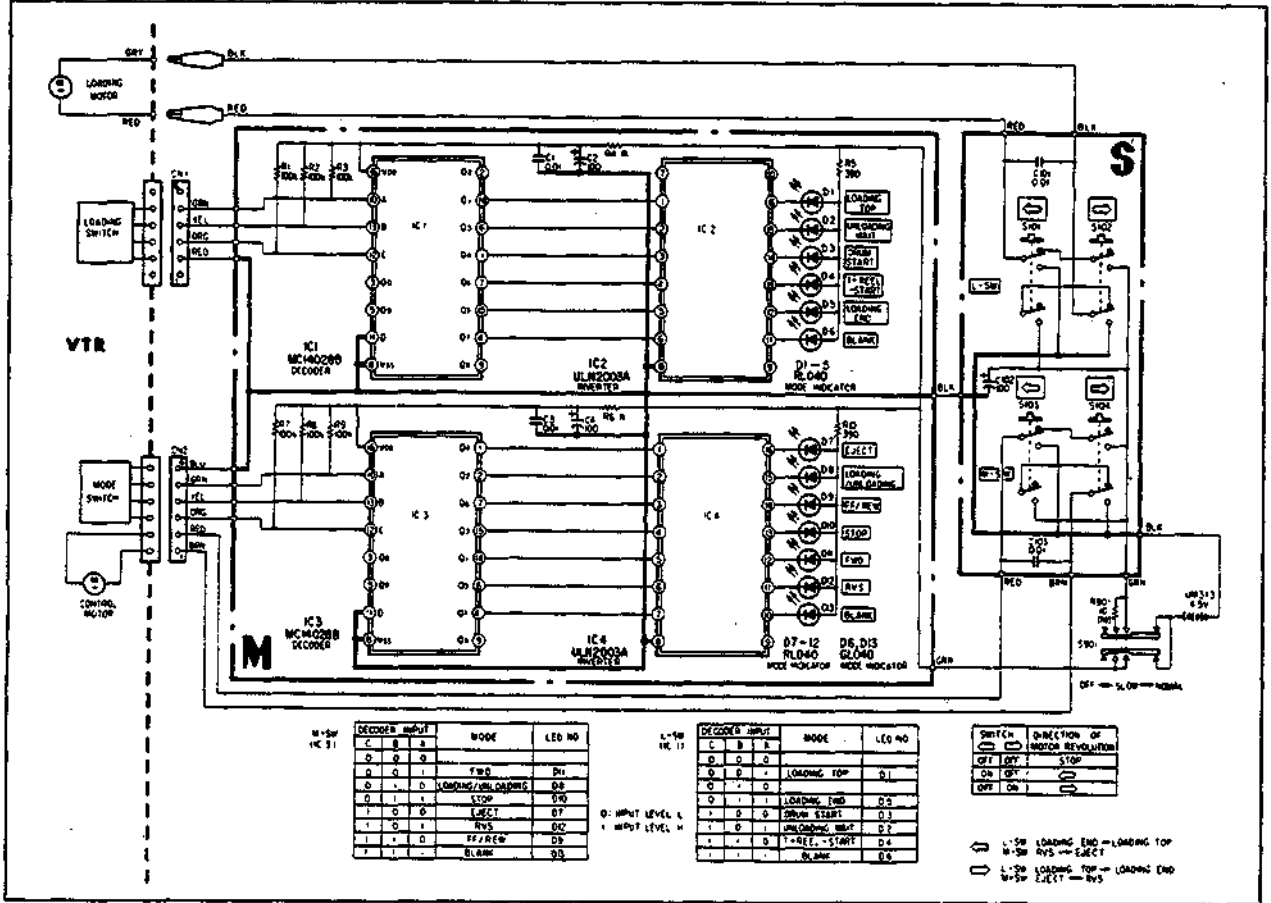


Fig. 6

1-4. MODE SELECTOR SCHEMATIC DIAGRAM



1-5. MODE SELECTOR PARTS LIST

Ref. No	Part No.	Description	Ref. No	Part No.	Description
CAPACITOR			IC		
C1	1-108-579-00	MILER 0.01 μ F 50V	IC1	8-752-240-28	IC TC4028BP
C2	1-123-333-00	ELECT 100 μ F 24V	IC2	8-752-120-03	IC μ PA2003C
C3	1-108-579-00	MILER 0.01 μ F 50V	IC3	8-759-240-28	IC TC4028BP
C4	1-123-333-00	ELECT 100 μ F 24V	IC4	8-759-120-03	IC μ PA2003C
C101	1-108-579-00	MILER 0.01 μ F 50V	RESISTOR		
C102	1-123-333-00	ELECT 100 μ F 24V	R1	1-247-179-00	CARBON 100K 1/4W
C103	1-108-579-00	MILER 0.01 μ F 50V	R2	1-247-179-00	CARBON 100K 1/4W
DIODE			R3	1-247-179-00	CARBON 100K 1/4W
D1	8-719-812-31	DIODE TLR123	R4	1-247-131-00	CARBON 1K 1/4W
D2	8-719-812-31	DIODE TLR123	R5	1-247-121-00	CARBON 390 1/4W
D3	8-719-812-31	DIODE TLR123	R6	1-247-131-00	CARBON 1K 1/4W
D4	8-719-812-31	DIODE TLR123	R7	1-247-179-00	CARBON 100K 1/4W
D5	8-719-812-31	DIODE TLR123	R8	1-247-179-00	CARBON 100K 1/4W
D6	8-719-812-33	DIODE TLG123A	R9	1-247-179-00	CARBON 100K 1/4W
D7	8-719-812-31	DIODE TLR123	R10	1-247-121-00	CARBON 390 1/4W
D8	8-719-812-31	DIODE TLR123	R901	1-214-594-00	METAL 10 1W
D9	8-719-812-31	DIODE TLR123			
D10	8-719-812-31	DIODE TLR123			
D11	8-719-812-31	DIODE TLR123			
D12	8-719-812-31	DIODE TLR123			
D13	8-719-812-33	DIODE TLG123A			

2. PERIODIC CHECK AND MAINTENANCE

Carry out the following maintenance and periodic checks in order not only to fully exhibit the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Gently apply chamois cloth (Ref. No. J-2) soaked in cleaning liquif (Ref. No. J-1) to the rotary drum assembly.

Clean it by rotating the upper rotary drum assembly slowly counterclockwise by hand.

Note : Do not rotate the motor by power or rotate the upper rotary drum assembly clockwise by hand. Also, the head tip is highly likely to be damaged if the chamois cloth is moved in a pependicular direction to the it. make sure to follow the instructions above for cleaning the rotarydrum assembly.

2-2. CLEANING OF TAPE PATH (Fig.7)

1) In the USE mode, clean the tape running system (TG - 1, - 2, - 3, - 4, - 5, - 6, - 7, pinch roller, and capstan shaft) and the lower drum, using a super fine applicator (Ref. No. J - 3) soaked in the cleaning liquid.

Note : Note that no oil or grease of each link mechanism adheres to the super fine applicator (Ref. No. J - 3).

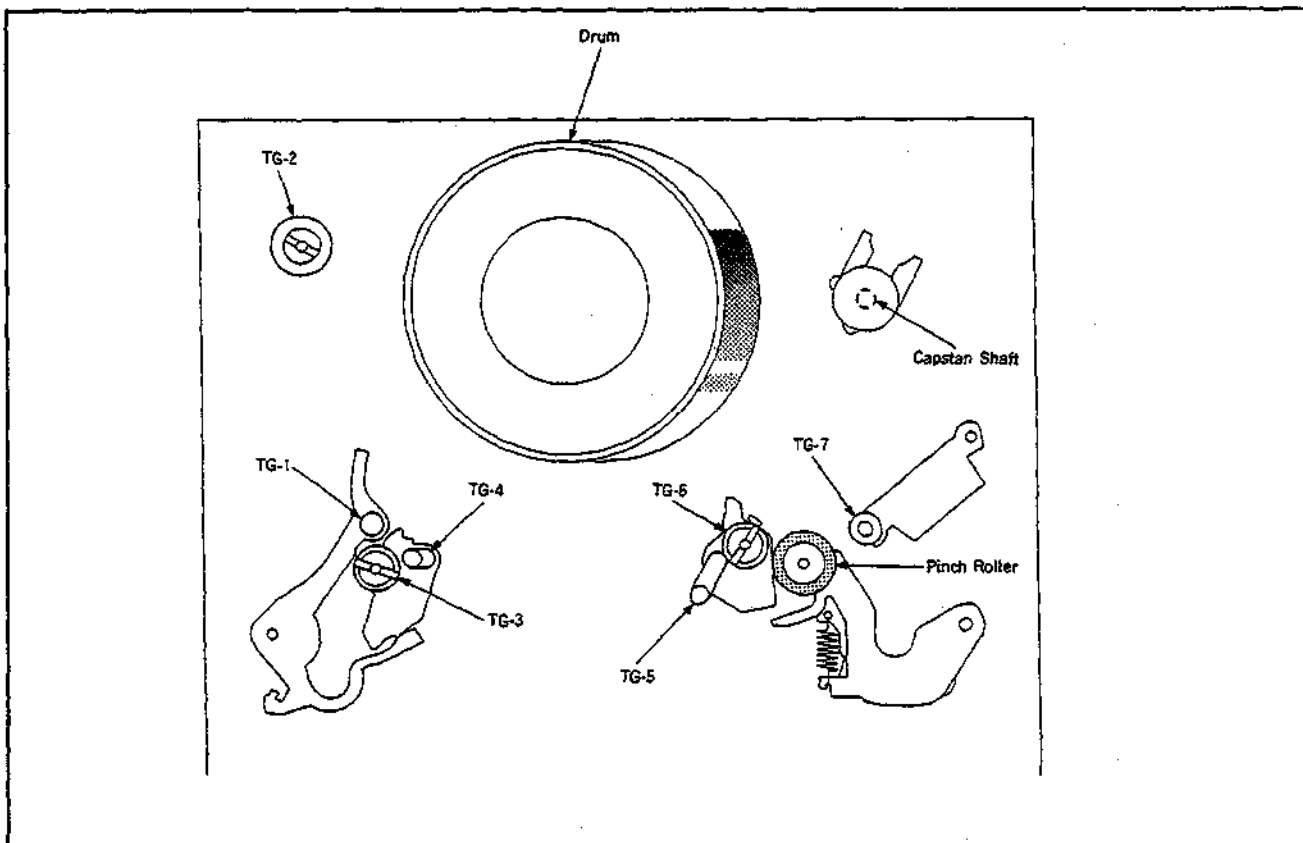


Fig. 7

2-3. PERILDIC CHECK ITEMS

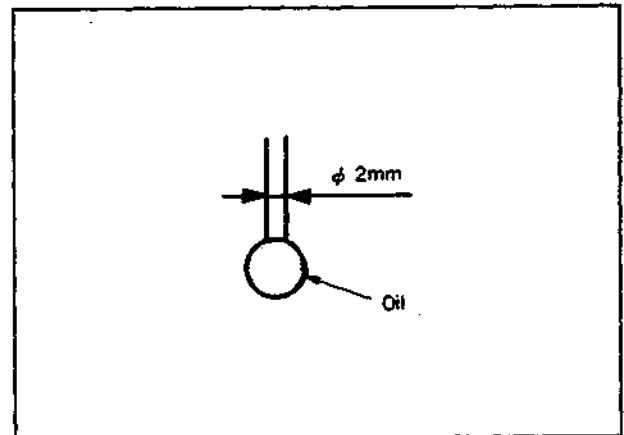
Location of Maintenance and check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
Tape trans- portion System	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaus- sing of rotary assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Driving System	Relay belt	-	☆	-	☆	-	☆	-	☆	-	☆	3-944-539-01
	Capstan shaft	-	◎	-	◎	-	◎	-	◎	-	◎	Be absolutely careful not to get oil on the tape path surface.
	Relay pulley shaft	-	◎	-	◎	-	◎	-	◎	-	◎	
	Loading motor	-	☆	-	☆	-	☆	-	☆	-	☆	A-7040-304-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	-	☆	-	☆	-	☆	-	☆	-	☆	
	Brake system	-	☆	-	☆	-	☆	-	☆	-	☆	
	FWD. RVS torque measurement	-	☆	-	☆	-	☆	-	☆	-	☆	

○: Cleaning ◎: Oil ☆: Confirmation

Note : When overhauling, refer to the items above to replace parts.

Note : Concerning oil





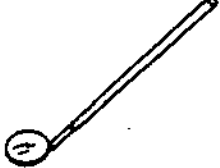
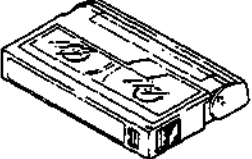
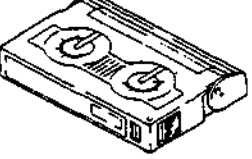

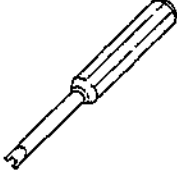

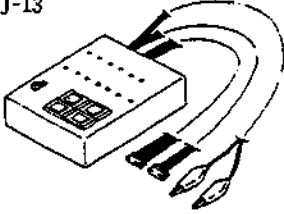
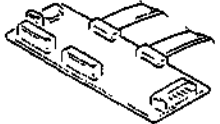
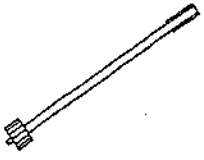
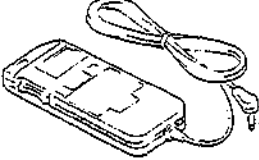
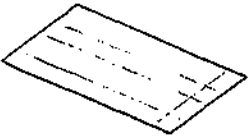
- Be sure to use specified oil. (If you use oil with different viscosity, etc., it may cause troubles.)
Oil : Part No. 7-661-018-13 (Mitsubishi Diamond Oil Hydrofluid NT - 68)
- When lubricating bearings, be sure use oil free from dust, etc. (If you use oil with dust, etc. contained, it may cause bearings to be worn out or seized.)
- A drip of oil refers to an amount attached to the tip of a ϕ 2mm stick shown in the right figure.



2-4. Service jigs list

Ref. No.	Name	Part No.	Fixture No.	Usage and Others
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Chamois cloth	2-034-697-00		
J-3	Super fine applicator (Made by NIPPON APPLICATOR, P752D)			
J-4	Head degausser	Widely available		
J-5	Small mirror for adjustment Spare mirror	J-6080-029-A J-6080-030-I	SL-5052	Tape path
J-6	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-9	FWD and RVS winding torque cassette	J-6080-824-A	GD-2086	
J-10	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-11	Screwdriver for tape path	J-6082-026-A		For tape guide adjustment
J-12	Mode selector IV panel	J-6082-105-A		
J-13	Mode selector	J-6080-825-A		For all models
J-14	Mode selector IV conversion connector	J-6082-167-A		
J-15	FWD B.T. adjusting driver	J-6082-182-A		
J-16	Adjusting remote controller	J-6082-053-B		Tape path (Setting of PATH mode)
J-17	MD process table label	J-6082-166-A		

Other equipment ● Oscilloscope
● Analog tester (20 k Ω)

<p>J-1</p> 	<p>J-2</p> 	<p>J-3</p> 	<p>J-4</p> 
<p>J-5</p> 	<p>J-6</p> 	<p>J-9</p> 	<p>J-10</p>  <p>(Attached to the maintenance rotary upper drum)</p>
<p>J-11</p> 	<p>J-12</p> 	<p>J-13</p> 	<p>J-14</p> 
<p>J-15</p> 	<p>J-16</p> 	<p>J-17</p> 	

3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note : Use the mode selector (Ref. No. J-13) for the following mechanical checks, adjustments and replacements.

Note : The modes in are those set by pressing the mode selector buttons.

3-1. RETAINER, GOOSENECK ASSEMBLY (Fig. 8)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove a screw **1**.
- 3) Remove the Retainer, Gooseneck assembly **2**.

2. Mounting

- 1) Mount the Retainer, Gooseneck assembly **2** with its two tabs and holes of LS chassis engaged with its hole and a boss of LS chassis.
- 2) Tighten the screw **1**.
- 3) Referring to 1-1, mount the cassette compartment assembly.

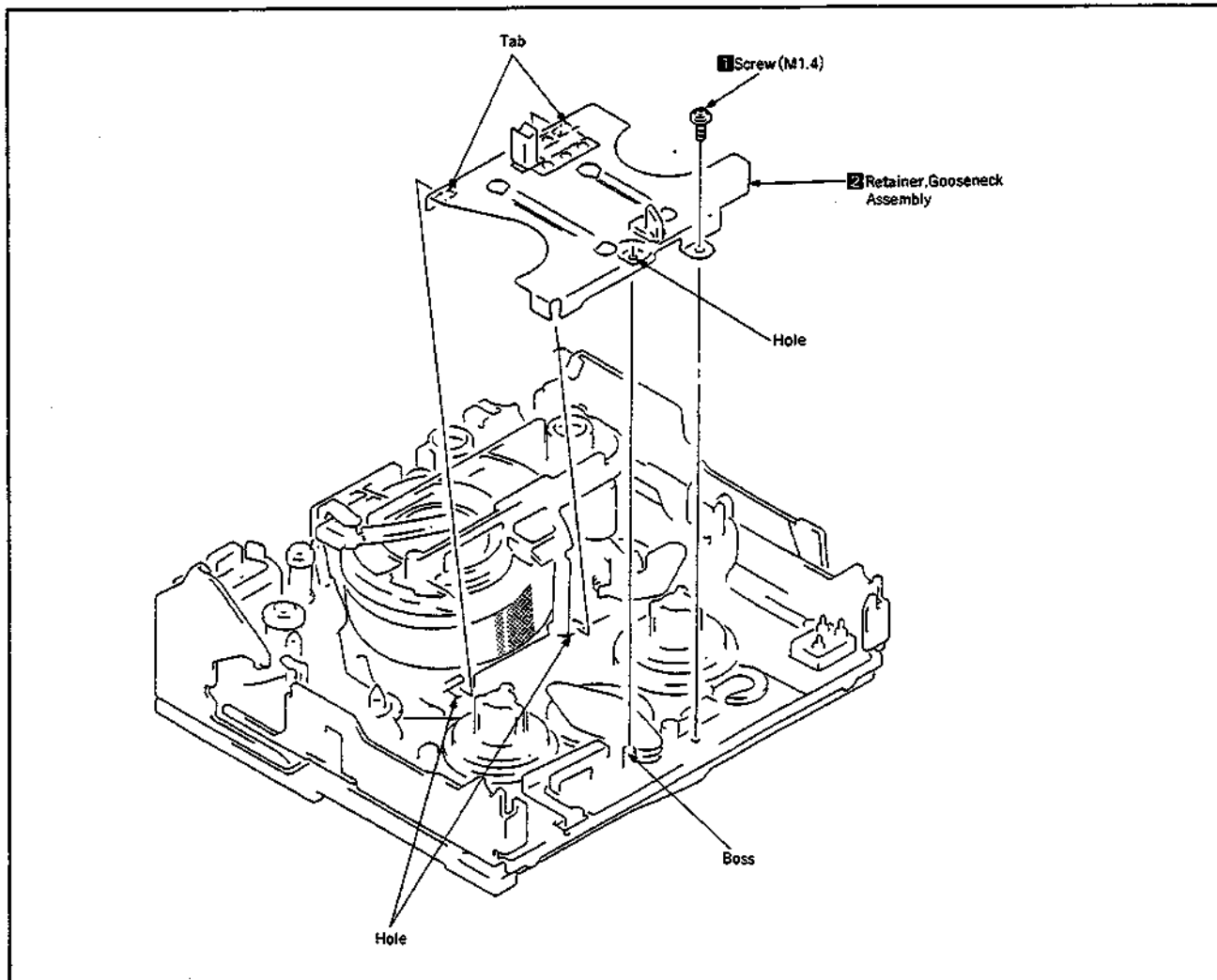


Fig. 8

3-2. PROTECTOR BASE ASSEMBLY (Fig. 9)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove two screws **1**, then the protector base assembly **2**.

2. Mounting

- 1) Mount the protector base assembly **2** with its three hole engaged with two dowels of mechanical chassis, and a dowel of TG-5 Base Holder **3**.
- 2) Tighten two screws **1**.
- 3) Referring to 1-1, mount the cassette compartment assembly.

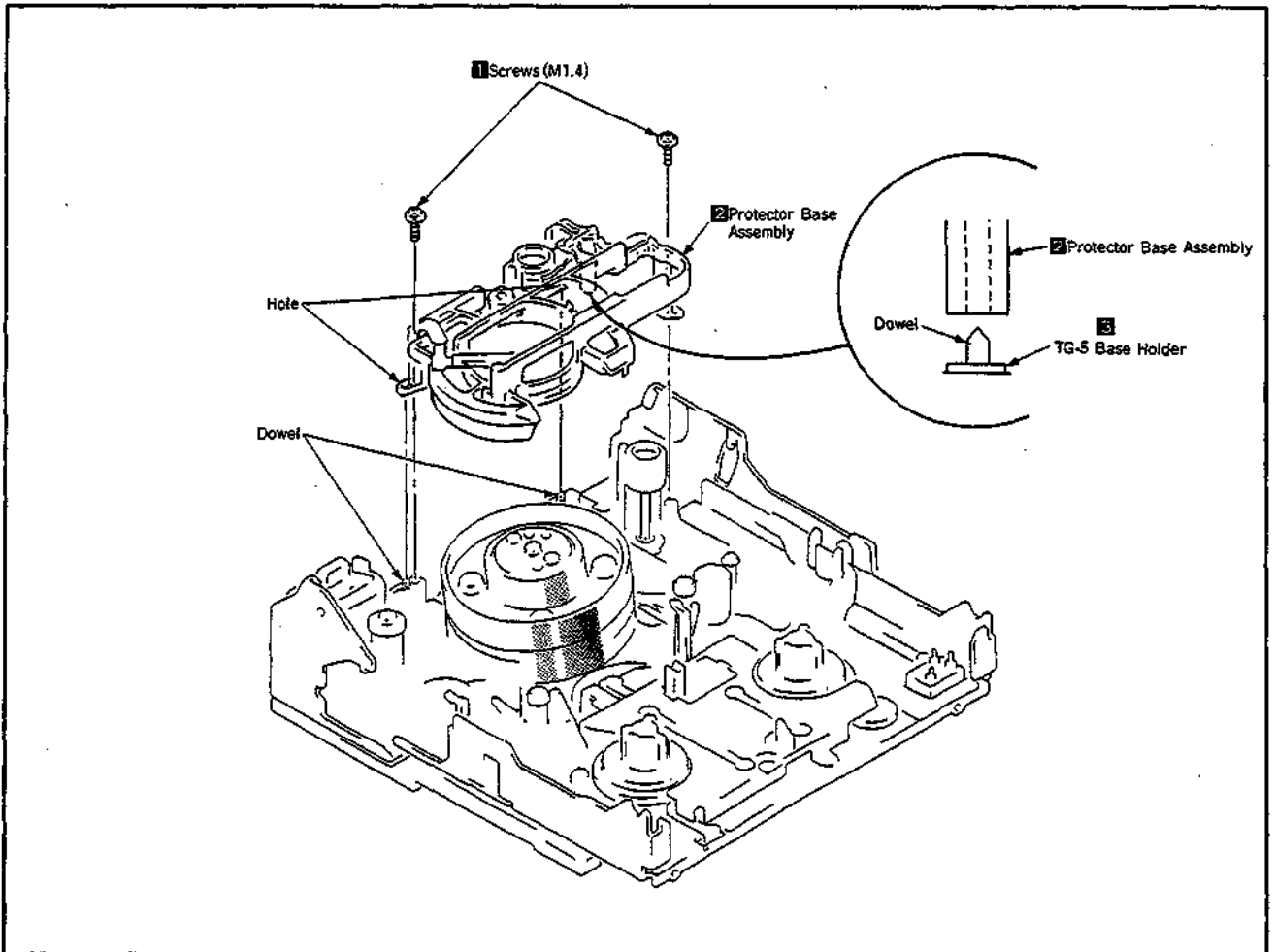


Fig. 9

3-3. DRUM ASSEMBLY (Fig. 10)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-2, remove the protect base assembly.
- 3) Disconnect the connector of FP-444 flexible board **1** on the back of MD.
- 4) Remove three screw **2**, then the drum assembly **3**.

Note : Do not touch the outer surfaced of drum (hold portions **A** and **B** of drum).

2. Mounting

- 1) Mount the drum assembly **3** while aligning with two dowels **a** of chassis.

Note : Do not touch the outer surfaced of drum (hold portions **A** and **B** of drum).

- 2) Tighten three screw assemblies **2** in the order of 1, 2 and 3.

Note : Tighten lightly not to deform the drum lead.

- 3) Apply a screw locking agent to prevent screws from loosening.

Note : In tightening the screws, pushing down the drum extremely will allow the drum to float up.

- 4) Connect the connector of FP-444 flexible board **1** on the back of MD.

- 5) Referring to 3-2, mount the protect base assembly.

- 6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, make tape path adjustment in Section 4.

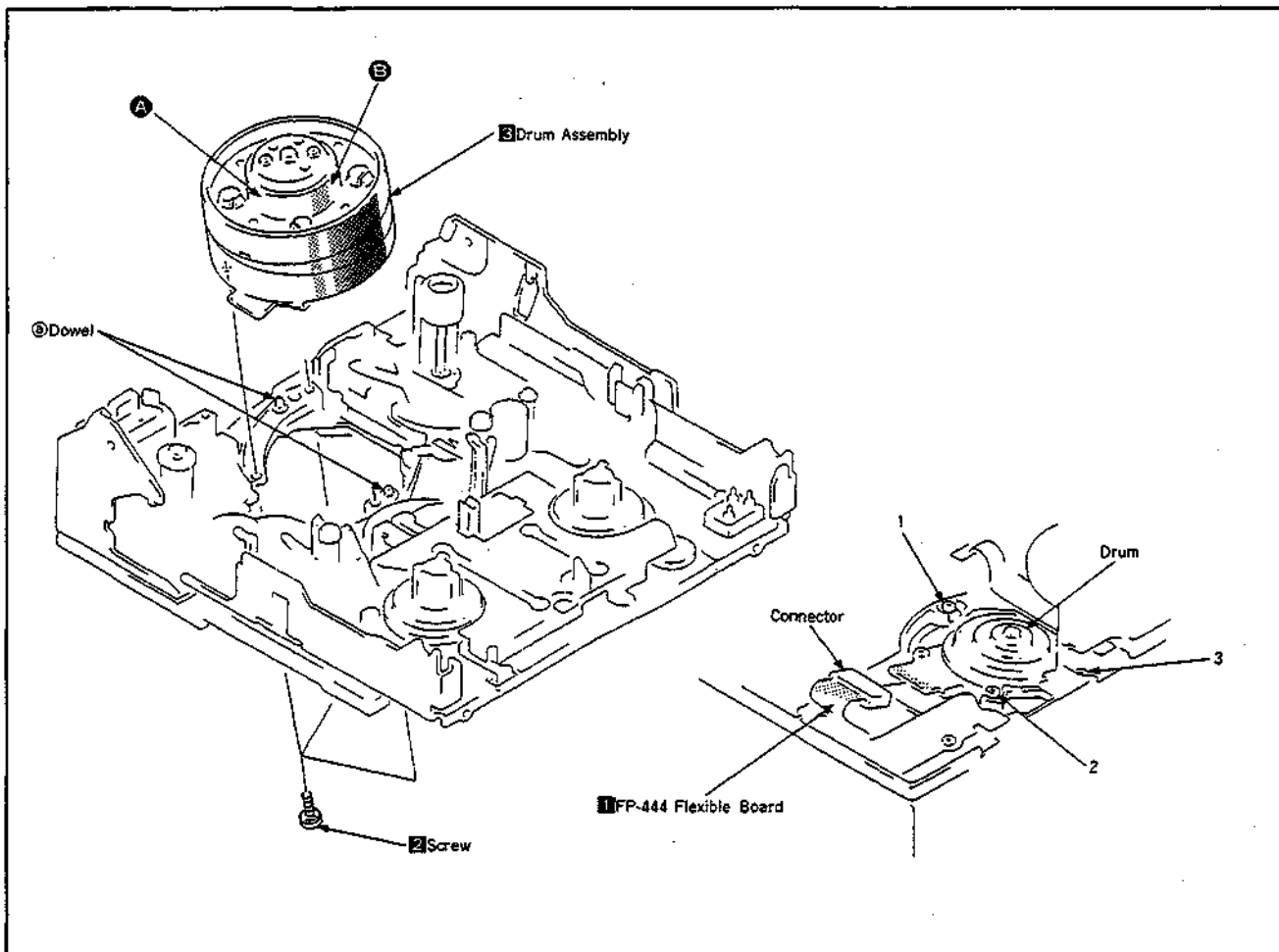


Fig. 10

3-4. CAPSTAN MOTOR ASSEMBLY (Fig. 11)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Remove two screw **1**, then the capstan cover **2**.
- 3) Remove the screw **3**, then the capstan motor assembly **4**.

2. Mounting

- 1) Mount the capstan motor assembly **4** and tighten the screw **3**.

Note : In mounting the capstan motor assembly, hold lightly the capstan motor assembly until the rotor gear aligns with the change gear Assy, then insert fully the assembly when both gears are engaged completely by manually rotating the rotor. (Take care not to damage the change gear Assy.)

- 2) Mount the capstan cover **2** and tighten two screws **1**.
- 3) Referring to 1-1, mount the cassette compartment assembly.

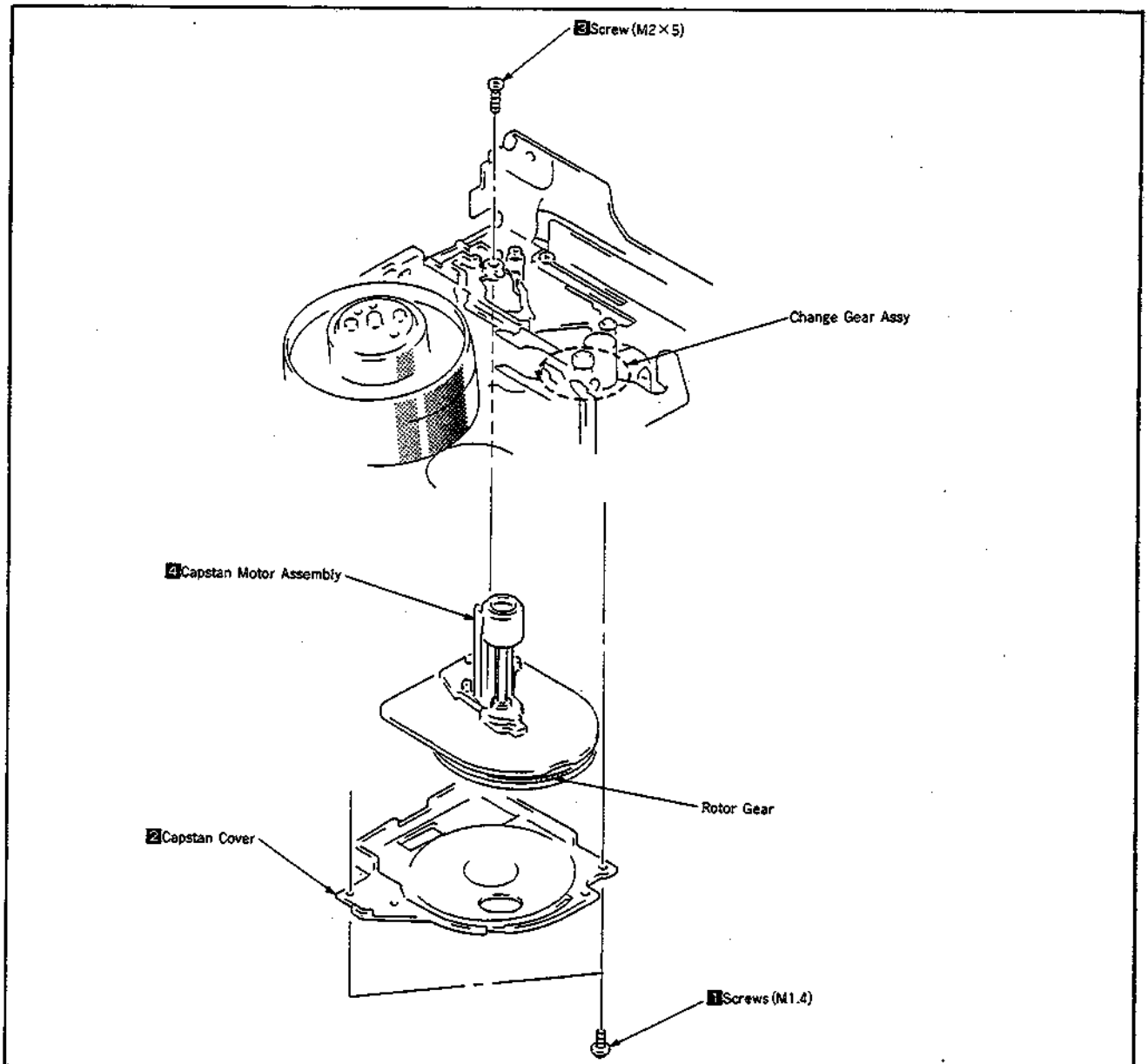


Fig. 11

3-5. TAKE-UP REEL TABLE ASSEMBLY AND T- SOFT ASSEMBLY (Fig. 12)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Remove the take-up reel table assembly **1**.
- 4) Remove the T soft assembly **2**, then the T soft arm **3**.

2. Mounting

- 1) Mount the T soft arm **3** with its long hole **Ⓒ** engaged with the boss **Ⓓ** of LS chassis.
- 2) Mount the T soft assembly **2** with its tab **Ⓐ** engaged with a square hole **Ⓔ** of T soft arm, as shown in Fig. a.
- 3) Mount the take-up reel table assembly **1** and rotate it toward the arrow **Ⓐ** to be latched with T hard claw.
- 4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 5) Referring to 1-1, mount the cassette compartment assembly.

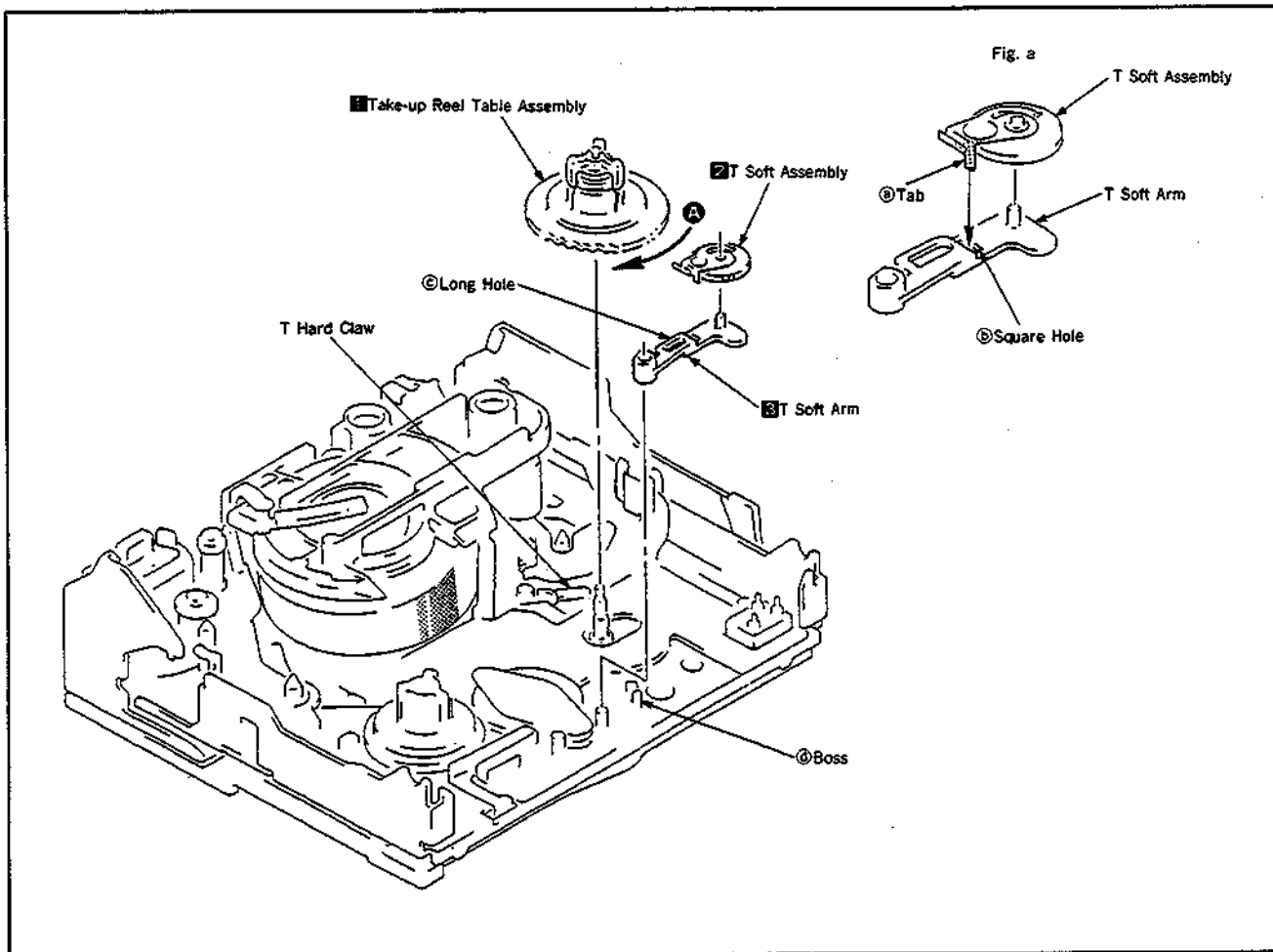


Fig. 12

3-6. PINCH ARM ASSEMBLY (Fig. 13)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Select the **READY** mode.
- 3) Remove a washer **1**, then the pinch arm assembly **2**.

2. Mounting

- 1) Select the **READY** mode.
- 2) Hooking a spring of pinch arm assembly **2** to the cassette positioning boss on the chassis, mount the pinch arm assembly on the shaft of LS chassis assembly as shown in Fig. a.
- 3) Push in the spring with tweezers up to the root of boss as shown in Fig. b.
- 4) Mount the washer **1**.
- 5) Referring to 1-1, mount the cassette compartment assembly.

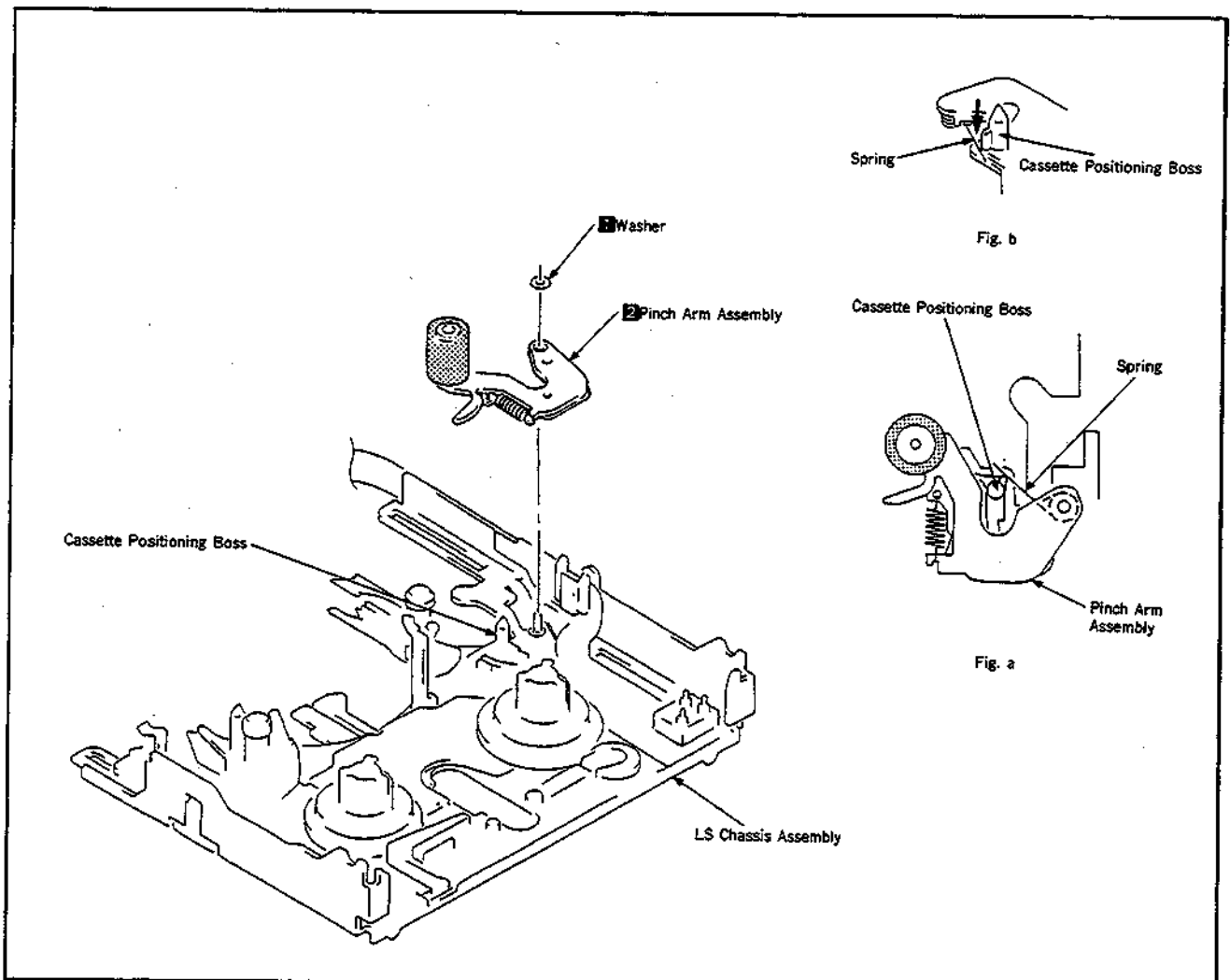


Fig. 13

3. LS CHASSIS ASSEMBLY (Fig. 14)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Remove a screw ①, TG-5 base holder ②, and LS flexible board ③.
- 5) Remove a lock washer ④, then the gooseneck assembly ⑤.
- 6) Remove four screws ⑥, then the LS chassis assembly ⑦.

2. Mounting

- 1) Select the **USE** mode.
- 2) Confirm that the T hard claw and the outsert on the back of LS chassis are positioned as shown in Fig. a. (The T hard claw must be higher than corner ① of chassis hole.) If not high, turn the outsert in the arrow direction while pushing the T hard claw from LS chassis to the chassis.
- 3) Sliding the GL slider, align the top edge of long hole ② in GL slider with the edge face ③ of LS chassis hole as shown in Fig. b.
- 4) Mount the LS chassis assembly ⑦ on the chassis.

Note : At this time, align a dowel ④ on LS chassis with a long hole ⑤ of No.7 guide on chassis, a long hole of GL slider with a GL arm pin, a groove of LS cam plate with an LS arm pin respectively as shown in Fig. c and d.

- 5) Tighten four screws ⑥.
- 6) Mount the LS flexible board ③ and TG-5 base holder ②, then tighten the screw ①.
- 7) Mount the Gooseneck assembly ⑤ and fix it with a washer ④.

Note : Using the mode selector, confirm that loading and unloading are performed smoothly.

- 8) Referring to 3-2, mount the protector base assembly.
- 9) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 10) Referring to 1-1, mount the cassette compartment assembly.

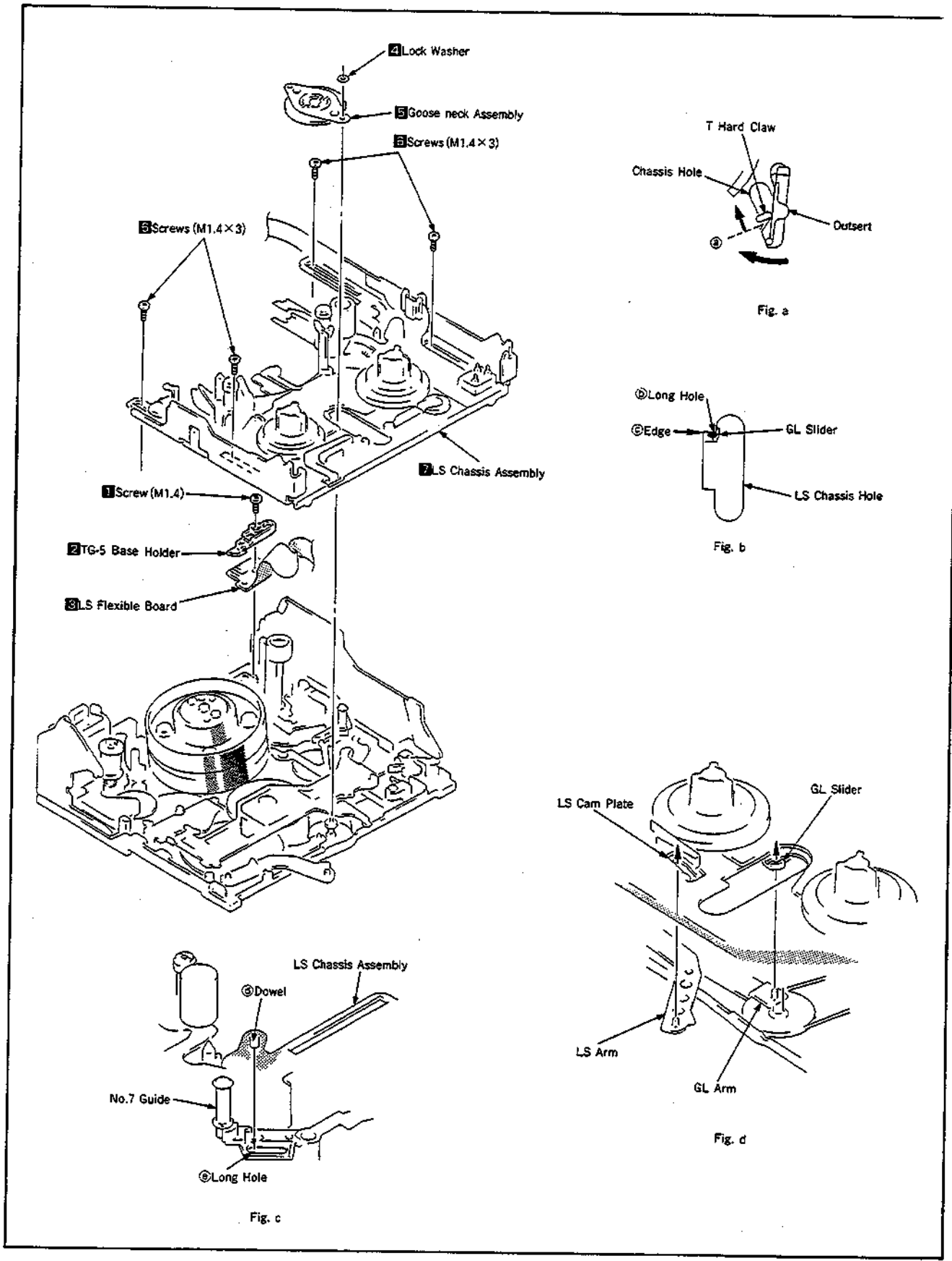


Fig. 14

3- GUIDE BASE T ASSEMBLY AND GUIDE BASE S ASSEMBLY (Fig. 15, 16)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Push in the GL slider ❶ toward the arrow ㉔, and remove the guide base T assembly ❷ and guide base S assembly ❸ from the guide rail respectively as shown in Fig. 15.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 6) Turning the guide base T assembly ❷ and guide base S assembly ❸ respectively, align the shaft to hole to remove as shown in Fig. a.

2. Mounting

- 1) Turning the guide base T assembly ❷ and guide base S assembly ❸ respectively, align the shaft with a hole to mount as shown in Fig. a (Fig. 15).
- 2) On the back side of chassis, insert the guide arm T assembly ❹, guide arm S assembly ❺ and GL slider ❶ from position shown in Fig.b to position shown in Fig. c. Also, aligning the guide base T assembly ❷ and guide base S assembly ❸ with the respective guide rails, push in the GL slider ❶ toward the arrow ㉔ as shown in Fig. 16.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm.

- 6) Referring to 1-1, mount the cassette compartment assembly.

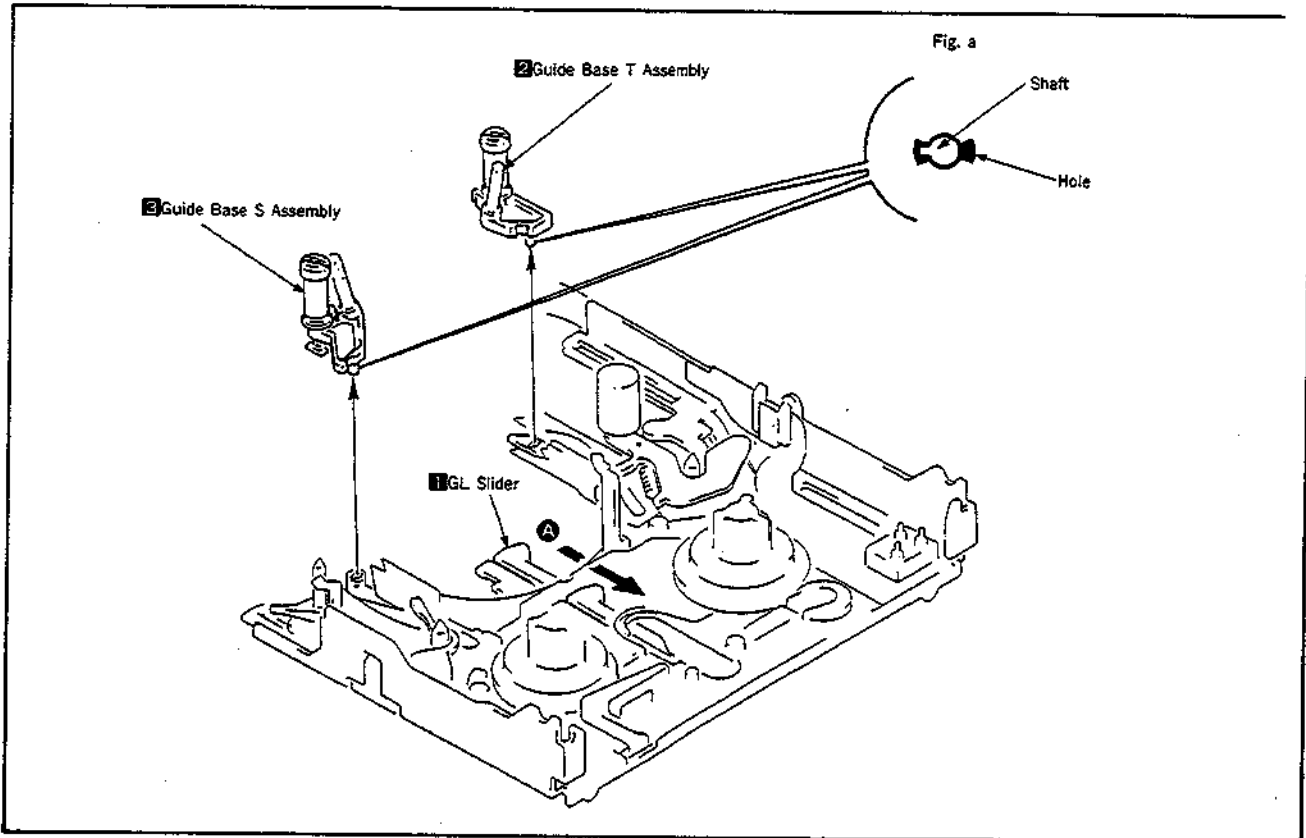
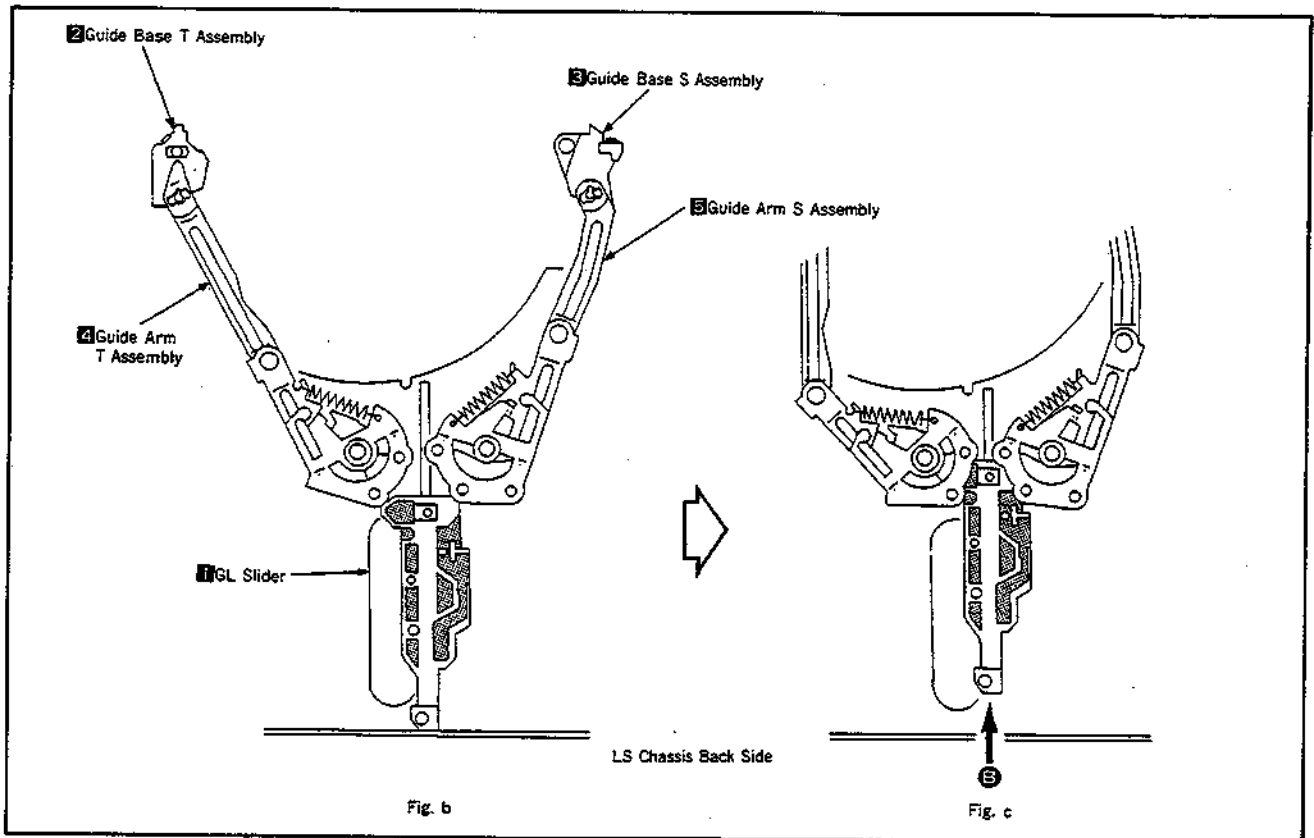


Fig. 15



LS Chassis Back Side

Fig. b

Fig. c

Fig. 16

3. GUIDE ARM T ASSEMBLY AND GUIDE ARM S ASSEMBLY (Fig. 17)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-8, remove the guide base T assembly and guide base S assembly.
- 6) Remove lock washers **1**, then the guide arm T assembly **2** and guide arm S assembly **3** respectively from the back side of chassis.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assbly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2. Mounting

- 1) Mount the guide arm T assembly **2** and guide arm S assembly **3**, then fix them with a lock washer **1** respectively.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

- 2) Referring to 3-8, mount the guide base T assembly, guide-base S assembly and GL slider.
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

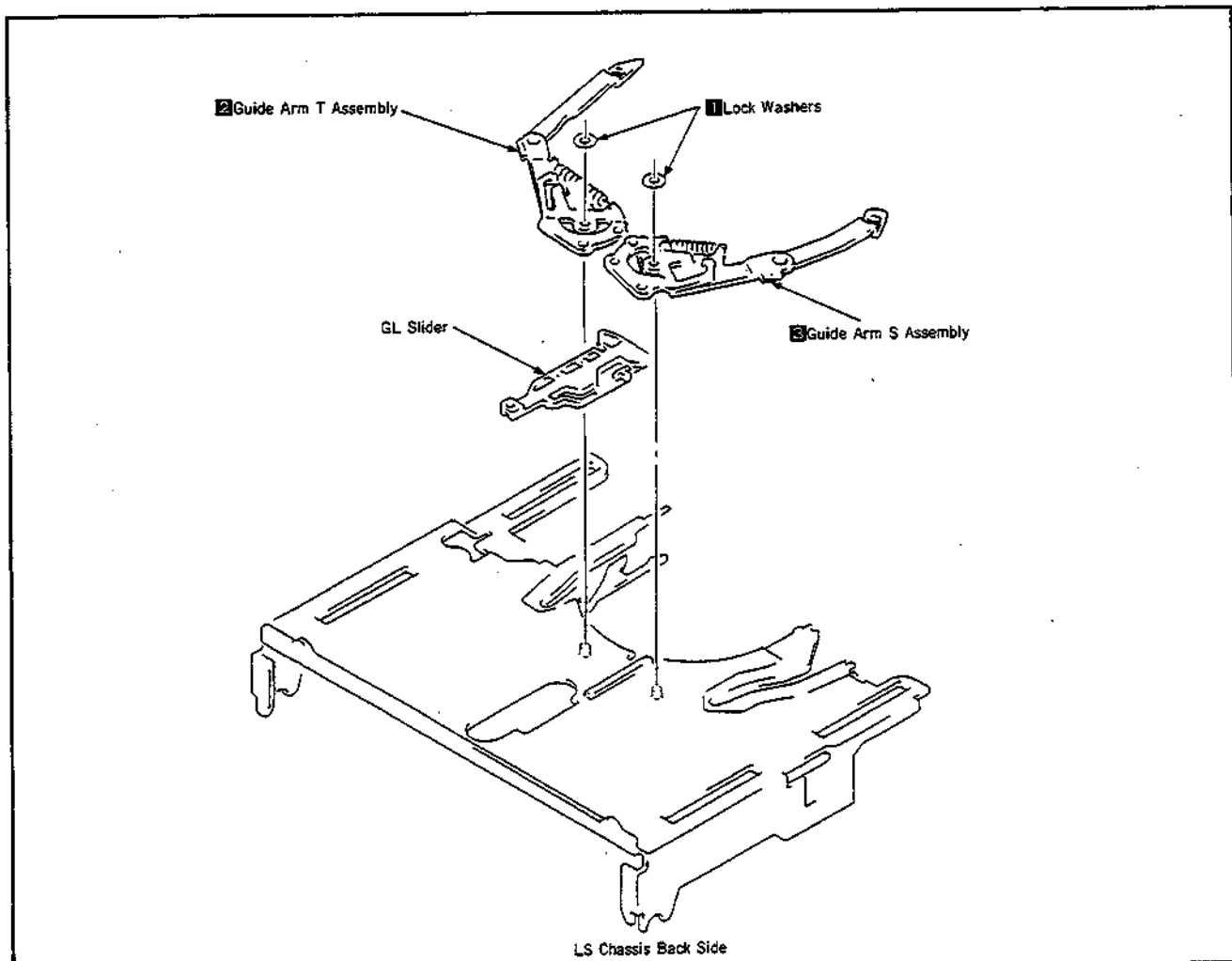


Fig. 17

3-10. SUPPLY REEL TABLE ASSEMBLY AND TG-1 ARM ASSEMBLY (Fig. 18)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-8, remove the guide base S assembly.
- 6) Remove a screw **1**, then the string **2** from the supply reel table assembly **3**. For easy removal of string block **4**, insert a flat-blade screwdriver into a groove **5** and push it up (Fig. a).
- 7) Remove the supply reel table assembly **3**.
- 8) Remove a tension coil spring **5**.
- 9) Turn the TG-1 arm assembly **6** up to a portion **c** of LS chassis hole in the arrow **A** direction so that its tab **b** can be disengaged (Fig. b).

2. Mounting

- 1) Pushing the S soft brake **7** toward the arrow **c**, mount the supply reel table assembly **3**.
- 2) Route the string **2** under the TG-1 arm assembly **6**, and insert the tab **b** of TG-1 arm assembly into the LS chassis hole **c**, then turn the TG-1 arm assembly in the reverse direction of arrow **A** (Fig. b).

- 3) Wind the string **2** along the groove of supply reel table assembly **3** (Fig. a).

Note : Do not curl the string extremely. Also, avoid adhesion of oil, otherwise the image will be distorted.

- 4) Using the FWD B.T. adjusting driver (Ref. No. J-15), shift the string block **4** toward the arrow **c** and tighten the screw **1** (Fig. a).
- 5) Engage the tension coil spring **5** to the chassis hook.

Note : Confirm that the string **2** is surely wound around the groove of supply reel table assembly **3** (Fig.a).

- 6) Referring to 3-8, mount the guide base S assembly.
- 7) Referring to 3-7, mount the LS chassis assembly.
- 8) Referring to 3-2, mount the protector base assembly.
- 9) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm. (Refer to 3-5 Take-up Reel Table Assembly and Take-up Soft Assembly.)

- 10) Referring to 1-1, mount the cassette compartment assembly.

Note : Referring to 3-22, adjust the tension regulator position.

Note : Referring to 3-23, adjust the forward back tension.

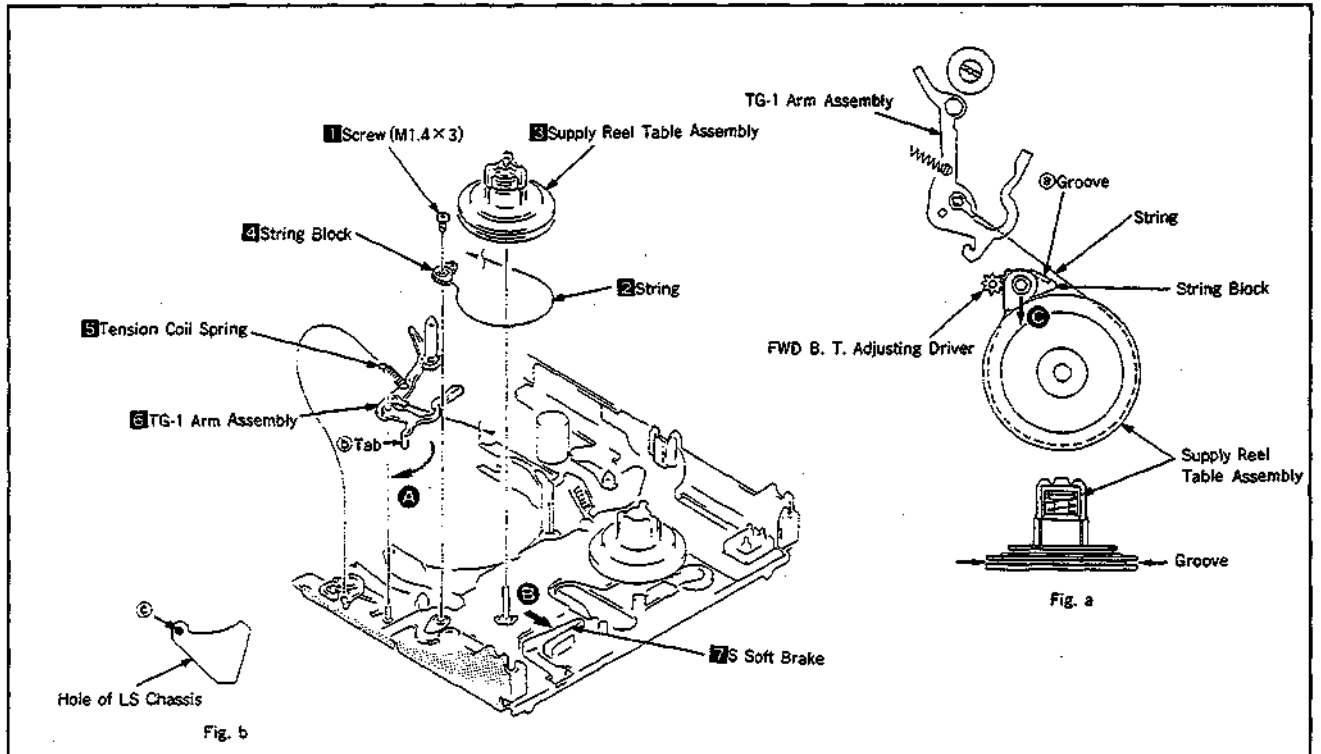


Fig. 18

3. TG-2 ROLLER ASSEMBLY (Fig. 19)

1. Removal

- 1) Remove the TG-2 roller assembly **1** .
- 2) Remove a compression coil spring **2** .

2. Mounting

- 1) Insert a compression coil spring **2** into the boss on chassis.
- 2) Rotate gently the TG-2 roller assembly **1** until the screw is engaged.

3. Presetting of TG-2 Roller Height (Fig. a)

- 1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to $3.3 \pm 0.05\text{mm}$.

Note : After adjustment, perform 4. TAPE PATH ADJUSTMENT.

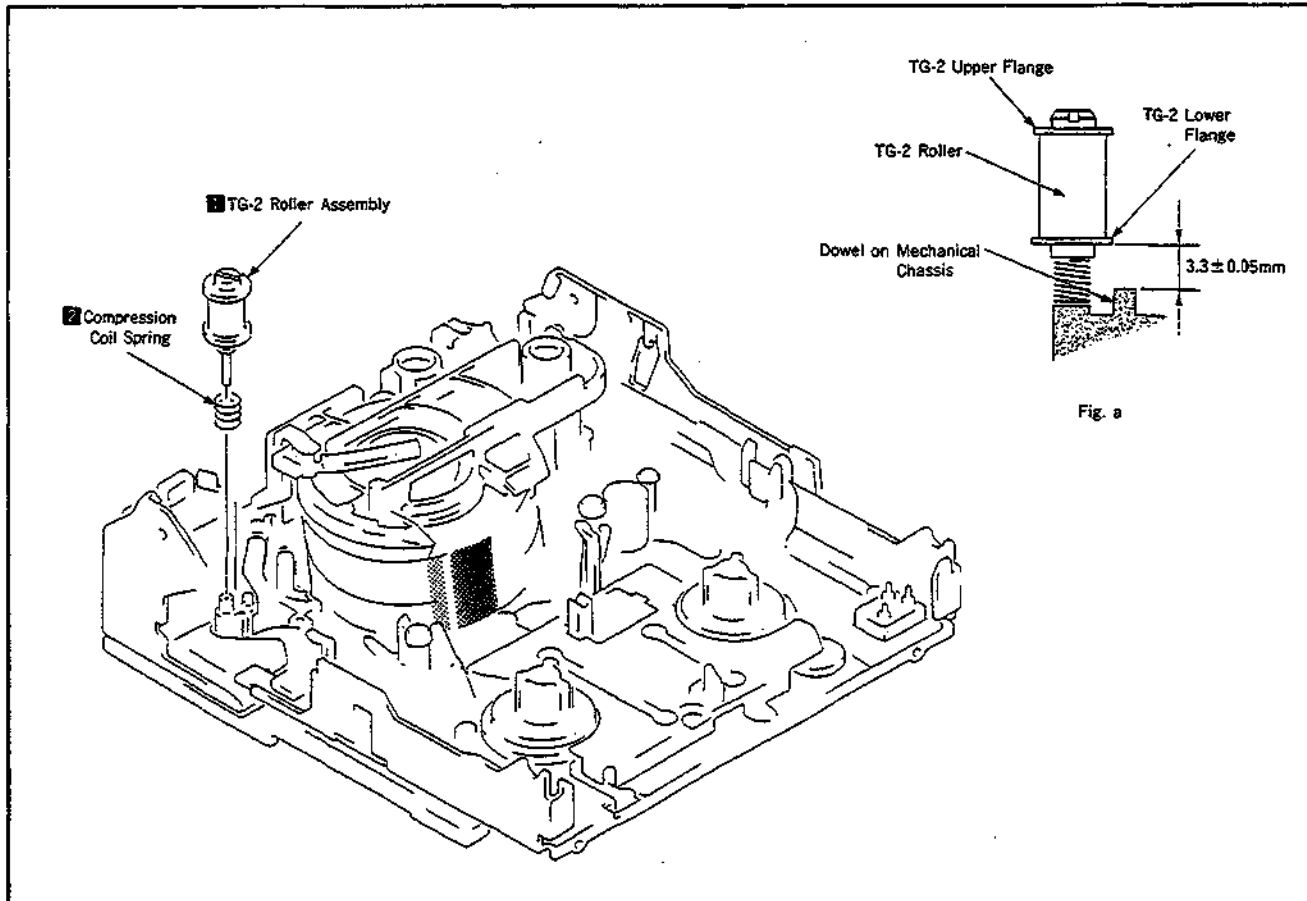


Fig. 19

3-12. TG-7 ARM ASSEMBLY (Fig. 20)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Raise a portion ③ of TG-7 arm Leaf spring 1 in arrow direction with a flat-blade screwdriver or tweezers to disengage the tab from the chassis, then remove the TG-7 arm Leaf spring as shown in Fig. a.
- 6) Remove the TG-7 assembly 2 from the shaft of mechanical chassis.

2. Mounting

- 1) Mount the TG-7 arm assembly 2 to the shaft of mechanical chassis.
- 2) Mount the TG-7 arm Leaf spring 1 to the mechanical chassis.
* Push in the tab of Leaf spring until it clicks into a detent of chassis (Fig. a).
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, perform 4. TAPE PATH ADJUSTMENT.

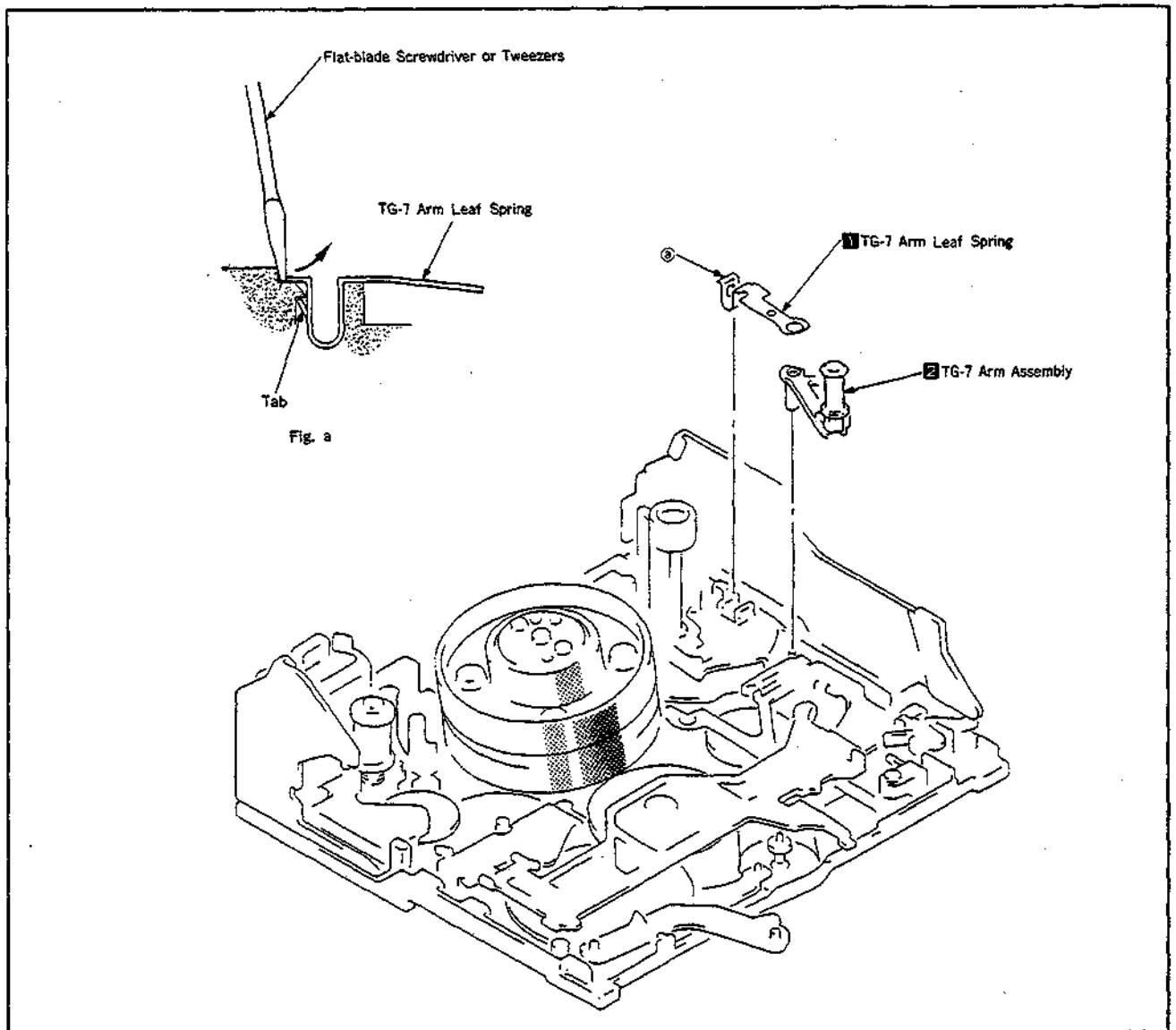


Fig. 20

3 LM MOTOR ASSEMBLY (Fig. 21)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Select the **LOAD** mode (at the position where the FF arm assembly is not above the screw 1).
- 6) Remove two screws 1, then the LM motor assembly 2.

2. Mounting

- 1) Aligning the dowel 3 of LM motor assembly 2 with the hole 4 of mechanical chassis, mount the LM motor assembly with its hole 5 inserted into the mechanical chassis shaft 6.
- 2) Tighten two screws 1.
- 3) Referring to 3-7, mount the LS chassis assembly.
- 4) Referring to 3-2, mount the protector base assembly.
- 5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 6) Referring to 1-1, mount the cassette compartment assembly.

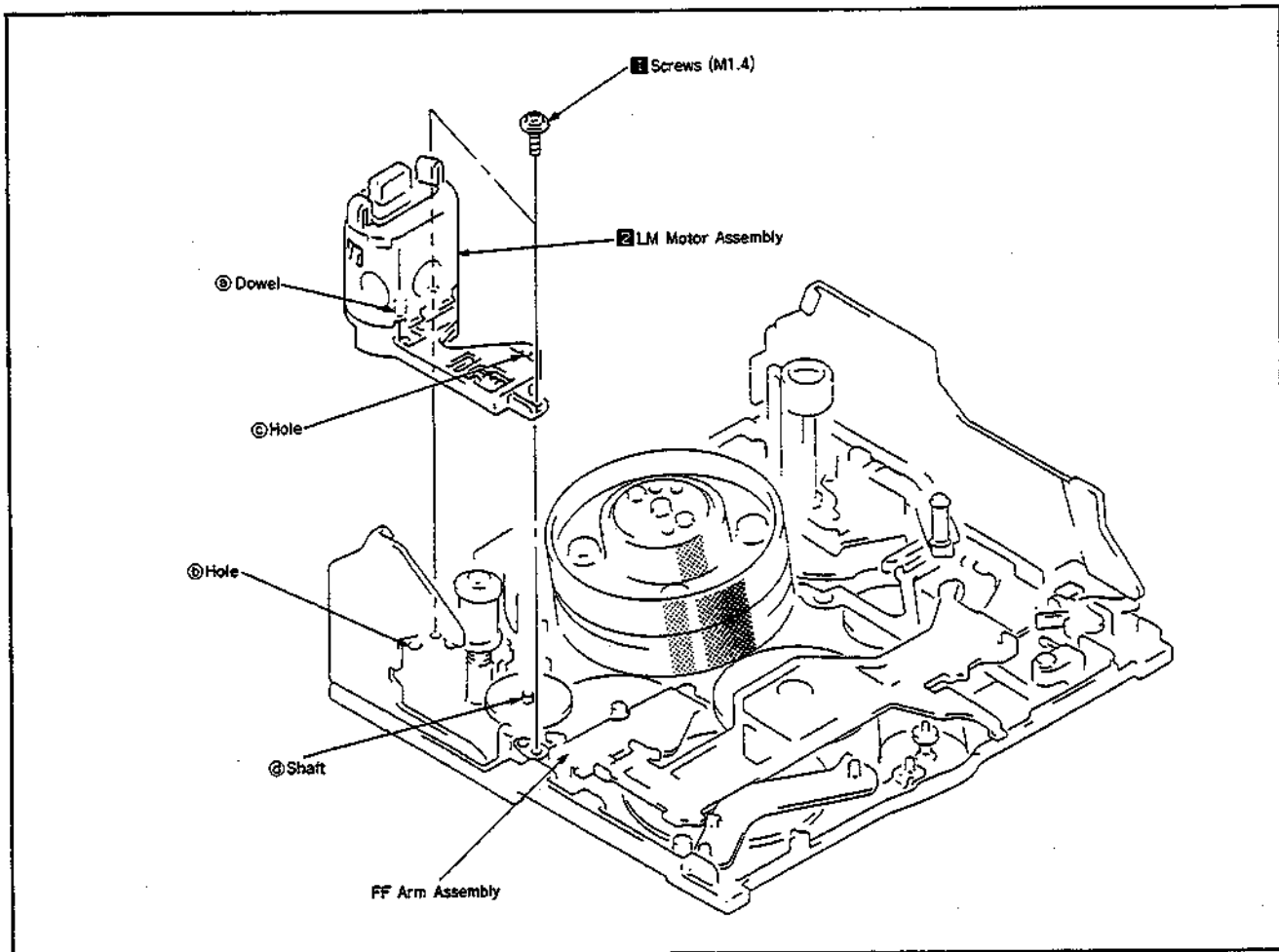


Fig. 21

3-14. LS ARM (Fig. 22)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Remove the LS arm 1 from the shaft of mechanical chassis.

Note : Take care not to drop the LS roller 2.

2. Mounting

- 1) Mount the LS arm 1 meeting with mechanical chassis shaft and cam groove.

Note : Move the LS arm 1 in arrow direction to confirm that the LS roller 2 is surely inserted.

- 2) Referring to 3-7, mount the LS chassis assembly.
- 3) Referring to 3-2, mount the protector base assembly.
- 4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 5) Referring to 1-1, mount the cassette compartment assembly.

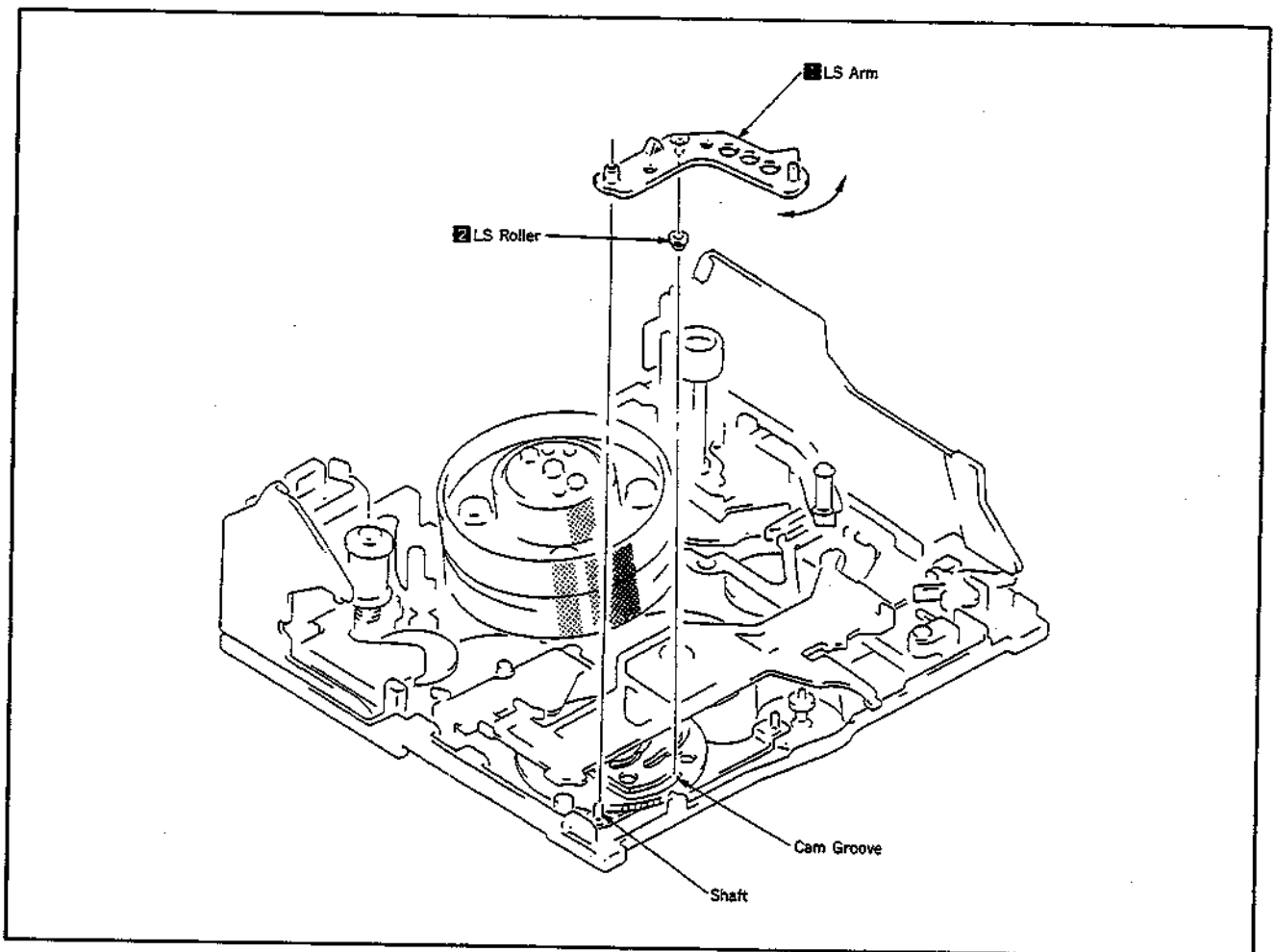


Fig. 22

M SLIDER ASSEMBLY (Fig. 23)

removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Remove two screws **1**, then the gear holder **2**.
- 6) Remove two lock washers **3**, then the M slider assembly **4**.

2. Mounting

- 1) Mount the M slider assembly **4**, aligning long holes **a** and **b** of M slider assembly with shafts **c** and **d** of mechanical chassis, and a long hole **e** with shaft **f** of press arm assembly, and also shaft **e** with outer groove **f** of cam respectively.
- 2) Mount two lock washers **3**.
- 3) Mount the gear holder **2** with its outserts **g** and **h** inserted into holes in the mechanical chassis.
- 4) Tighten two screws **1**.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-2, mount the protector base assembly.
- 7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 8) Referring to 1-1, mount the cassette compartment assembly.

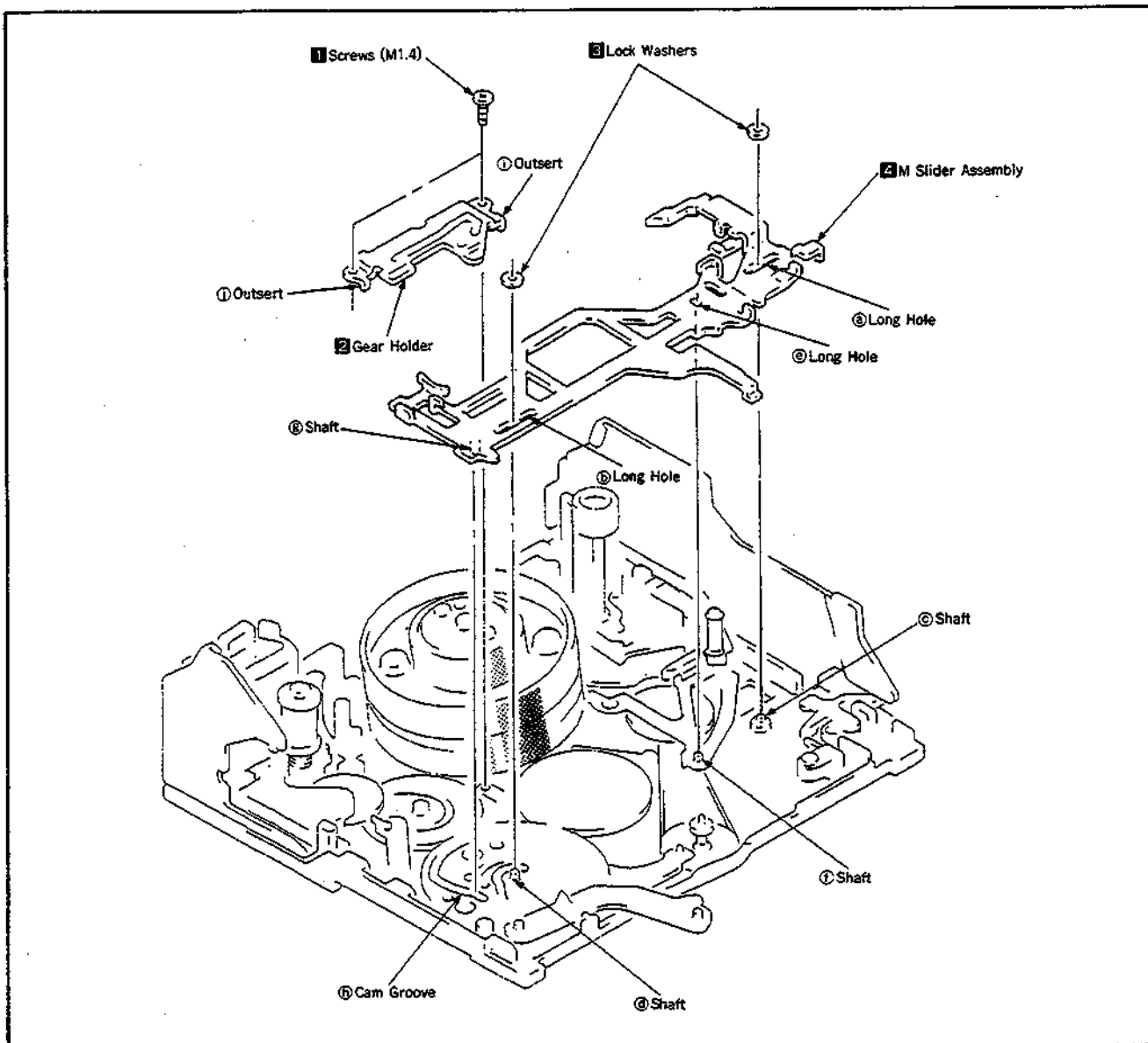


Fig. 23

3-16. PINCH PRESS ARM ASSEMBLY (Fig. 24)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-3, remove the drum assembly.
- 5) Referring to 3-7, remove the LS chassis assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Remove a lock washer **1**, then pinch press arm assembly **2**.

2. Mounting

- 1) Mount the pinch press arm assembly **2**, inserting its shaft **3** into the cam groove **4** of HC drive arm, and hole **5** in the shaft **6** of mechanical chassis.
- 2) Mount the lock washer **1**.
- 3) After mounting, shift the pinch press arm assembly toward the arrow direction.
- 4) Referring to 3-15, mount the M slider assembly.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-3, mount the drum assembly.
- 7) Referring to 3-2, mount the protector base assembly.
- 8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 9) Referring to 1-1, mount the cassette compartment assembly.

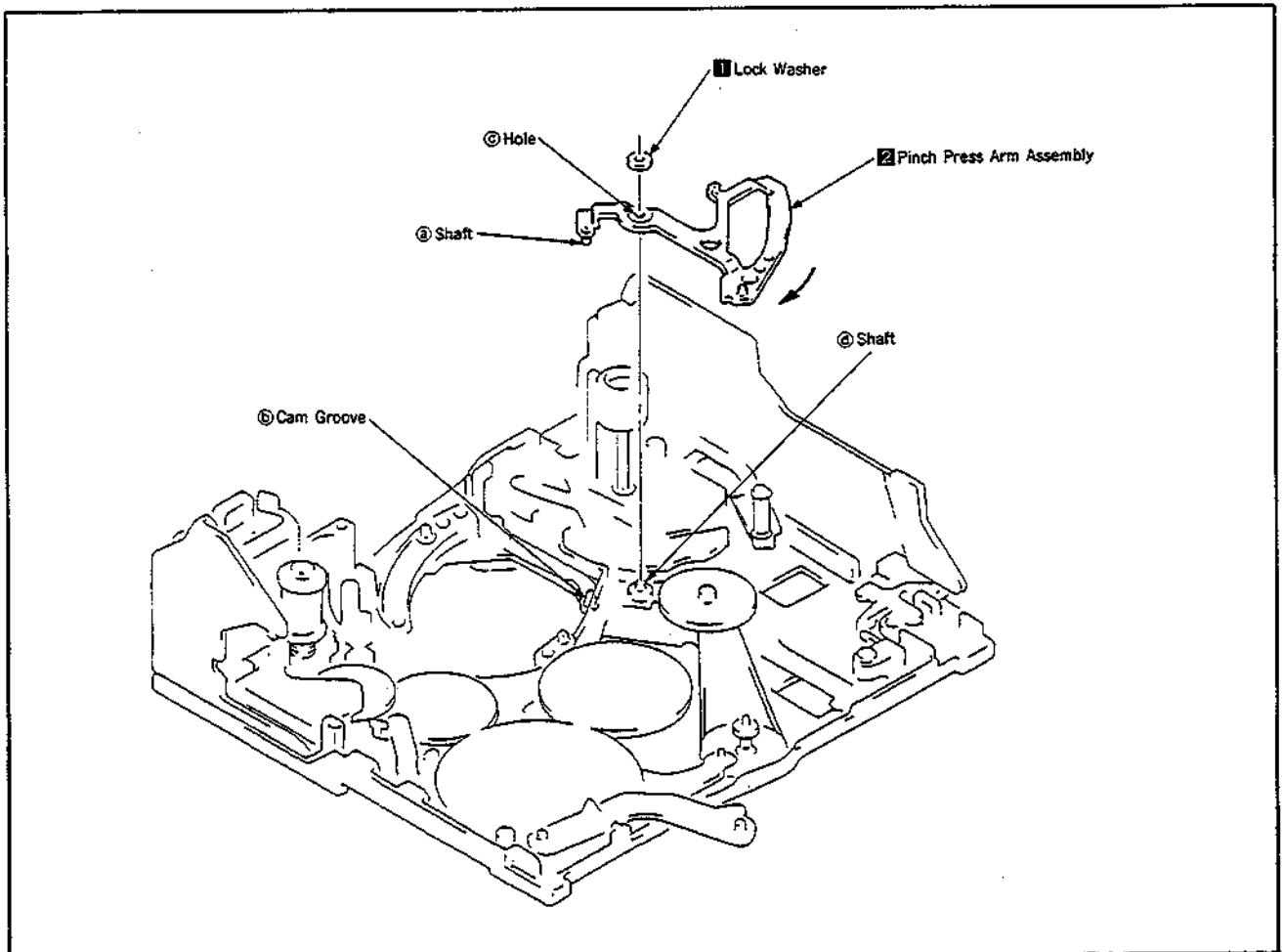


Fig. 24

7. CAM (Fig. 25)

removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Remove the cam **■**.

2. Mounting

- 1) Referring to 3-13, remove the LM motor assembly.

Note : Take care not to allow grease of LM motor assembly to stick to the TG-2 roller assembly.

- 2) Mount the cam **■**, aligning its center hole with shaft of mechanical chassis, and the cam groove with the shaft of GL arm assembly. At this time, make sure that the **▲** mark on L gear B is aligned with that on the cam and also a recess is aligned with the phase aligning hole respectively as shown in Fig. a.

Note : Apply grease to the cam groove if it scarcely remains.

- 3) Mount the LM motor assembly.
- 4) Referring to 3-15, mount the M slider assembly.
- 5) Referring to 3-14, mount the LS arm assembly.
- 6) Referring to 3-7, mount the LS chassis assembly.
- 7) Referring to 3-2, mount the protector base assembly.
- 8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 9) Referring to 1-1, mount the cassette compartment assembly.

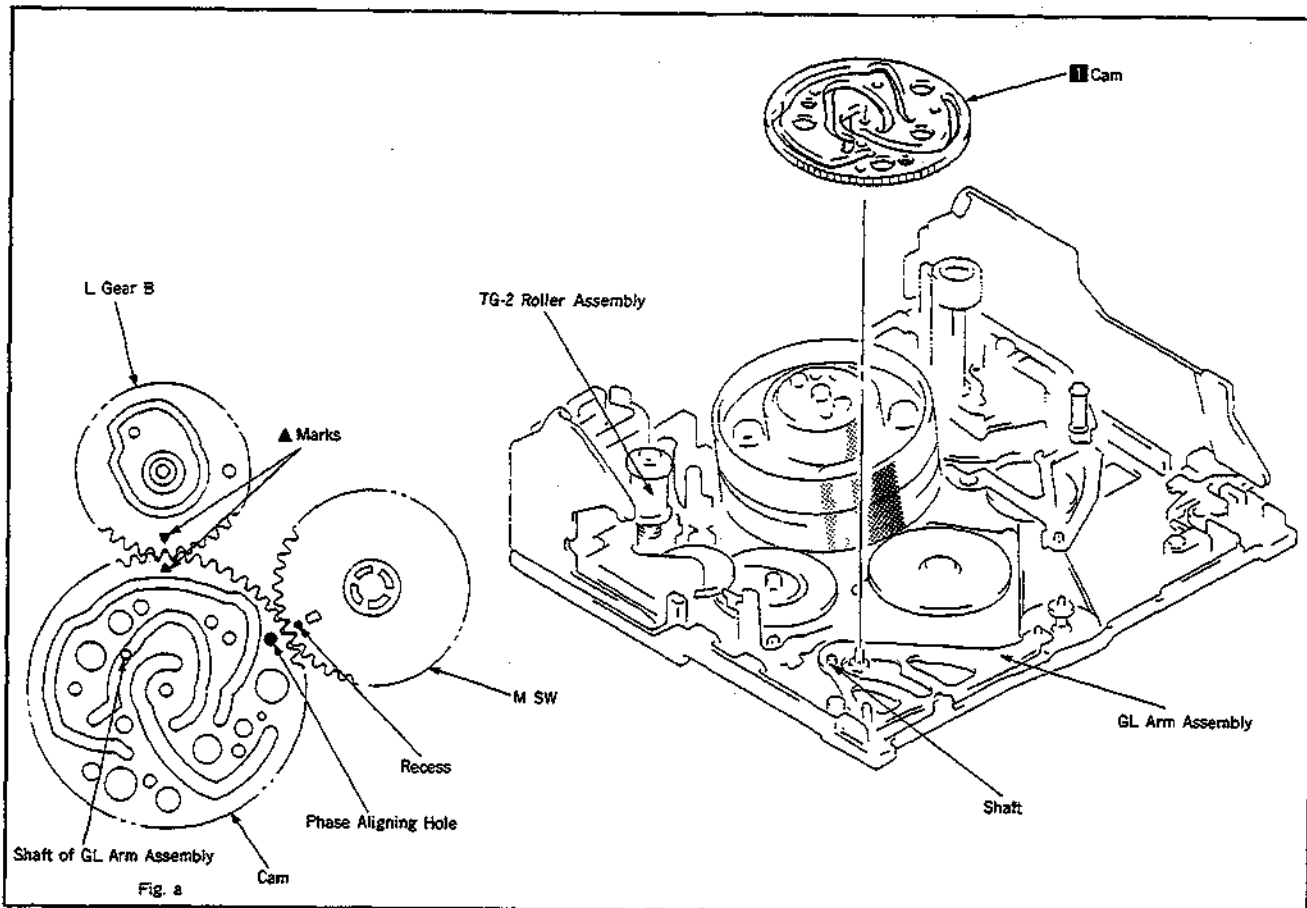


Fig. 25

3-18. GL ARM ASSEMBLY (Fig. 26)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Referring to 3-17, remove the cam.
- 8) Remove the GL arm assembly ■.

2. Mounting

- 1) Mount the GL arm assembly ■ with its hole ⊙ inserted in the shaft ⊕ of mechanical chassis.
- 2) Referring to 3-17, mount the cam.
- 3) Referring to 3-15, mount the M slider assembly.
- 4) Referring to 3-14, mount the LS arm assembly.
- 5) Referring to 3-7, mount the LS chassis assembly.
- 6) Referring to 3-2, mount the protector base assembly.
- 7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 8) Referring to 1-1, mount the cassette compartment assembly.

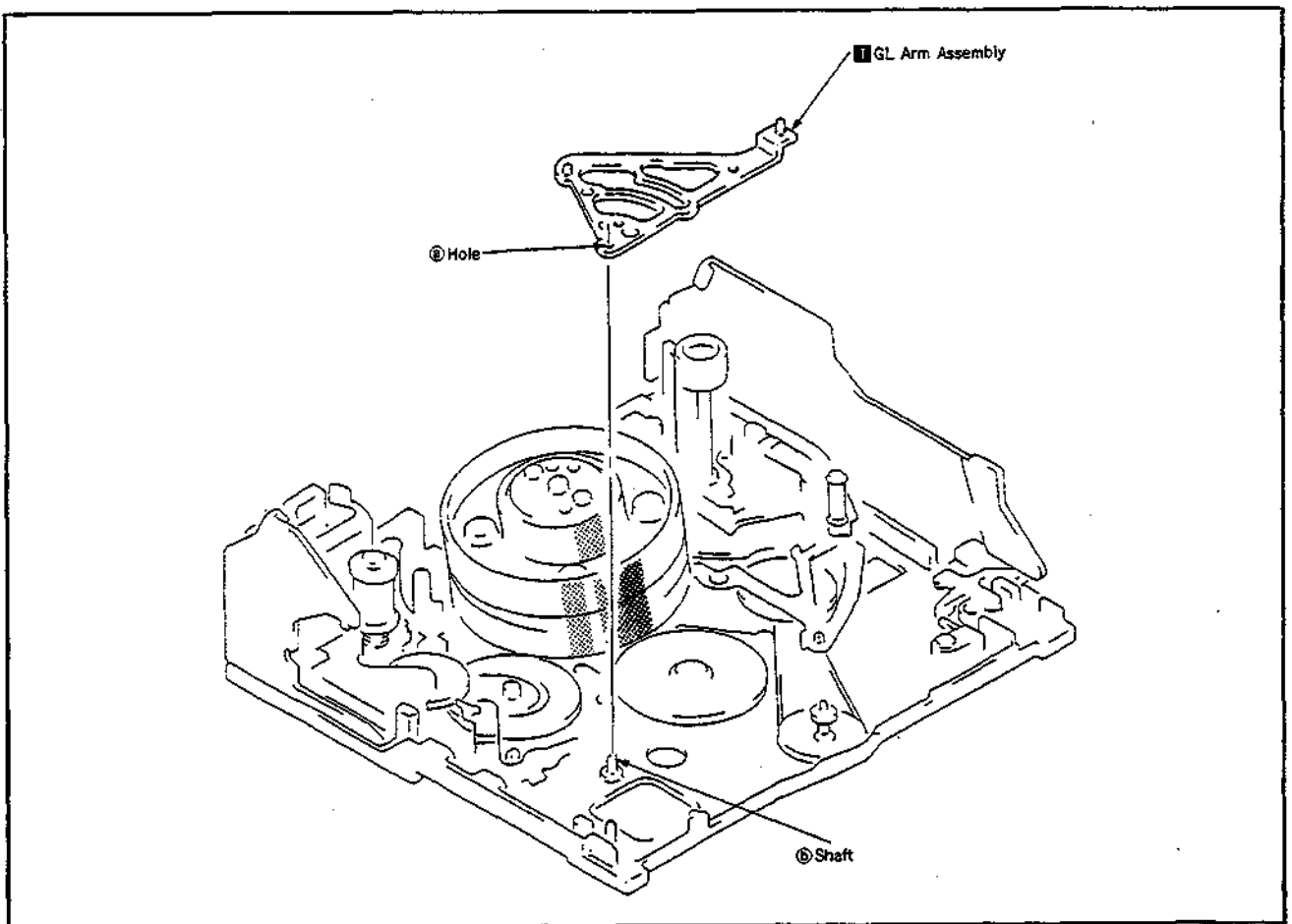


Fig. 26

9. L GEAR A AND L GEAR B (Fig. 27)

Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-7, remove the LS chassis assembly.
- 5) Referring to 3-14, remove the LS arm assembly.
- 6) Referring to 3-15, remove the M slider assembly.
- 7) Referring to 3-17, remove the cam.
- 8) Referring to 3-13, remove the LM motor assembly.
- 9) Remove the FF arm assembly **1**.
- 10) Remove the L gear A **2**.
- 11) Remove the L gear B **3**.

2. Mounting

- 1) Insert the L gear B **3** into the shaft of mechanical chassis. (At this time, the phase aligning mark **▲** should be faced toward the cam mounting shaft **Ⓞ**.)
- 2) Insert the L gear A **2** into the shaft of mechanical chassis.
- 3) Mount the FF arm assembly **1** with its two shafts inserted into the cam groove of L gear B **3** and the hole of mechanical chassis.
- 4) Referring to 3-17, mount the cam.
- 5) Referring to 3-13, mount the LM motor assembly.
- 6) Referring to 3-15, mount the M slider assembly.
- 7) Referring to 3-14, mount the LS arm assembly.
- 8) Referring to 3-7, mount the LS chassis assembly.
- 9) Referring to 3-2, mount the protector base assembly.
- 10) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 11) Referring to 1-1, mount the cassette compartment assembly.

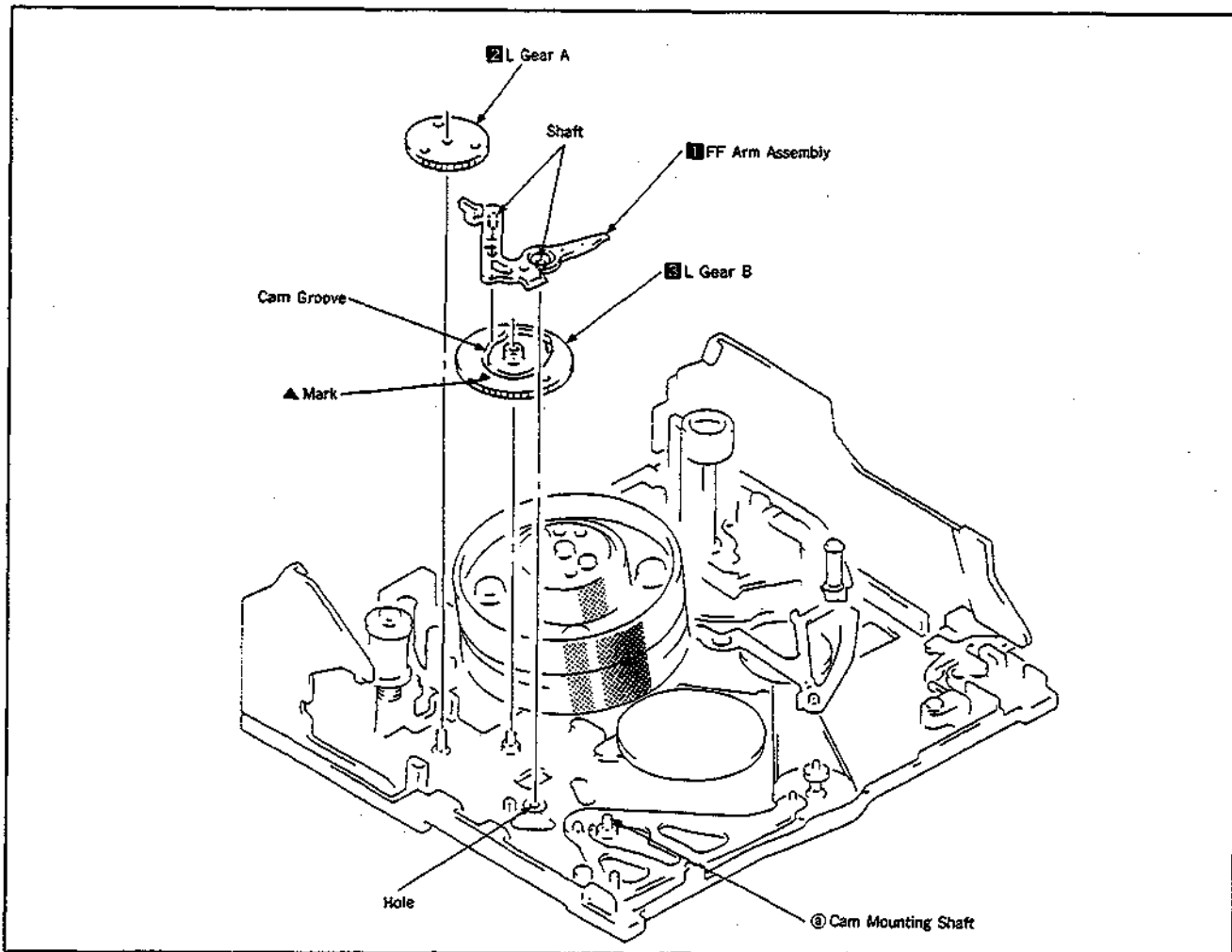


Fig. 27

3-20. RELAY PULLEY AND CHANGE GEAR ASSEMBLY (Fig. 28)

1. Removal

- 1) Referring to 1-1, remove the cassette compartment assembly.
- 2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
- 3) Referring to 3-2, remove the protector base assembly.
- 4) Referring to 3-3, remove the drum assembly.
- 5) Referring to 3-7, remove the LS chassis assembly.
- 6) Referring to 3-14, remove the LS arm assembly.
- 7) Referring to 3-15, remove the M slider assembly.
- 8) Referring to 3-17, remove the cam.
- 9) Referring to 3-18, remove the GL arm assembly.
- 10) Referring to 3-16, remove the pinch press arm assembly.
- 11) Remove a lock washer **1**, then remove together the Change gear assembly **2**, relay belt **3** and relay pulley **4**.

2. Mounting

*Give one or two drips of oil to the conversion gear shaft and relay pulley shaft respectively. (Oiling range is under the neck as shown in Fig. a.)

- 1) Hooking the relay belt **3** to the relay pulley **4** and Change gear assembly **2**, mount respective parts.

*At first, insert the relay pulley into the mechanical chassis-shaft, then the change gear assembly by engaging with the capstan motor gear.

Note : Take care not to damage the Change gear by the capstan motor gear.

- 2) Mount a lock washer **1**.
- 3) Referring to 3-16, mount the pinch press arm assembly.
- 4) Referring to 3-18, mount the GL arm assembly.
- 5) Referring to 3-17, mount the cam.
- 6) Referring to 3-15, mount the M slider assembly.
- 7) Referring to 3-14, mount the LS arm assembly.
- 8) Referring to 3-7, mount the LS chassis assembly.
- 9) Referring to 3-3, mount the drum assembly.
- 10) Referring to 3-2, mount the protector base assembly.
- 11) Referring to 3-1, mount the Retainer, Gooseneck assembly.
- 12) Referring to 1-1, mount the cassette compartment assembly.

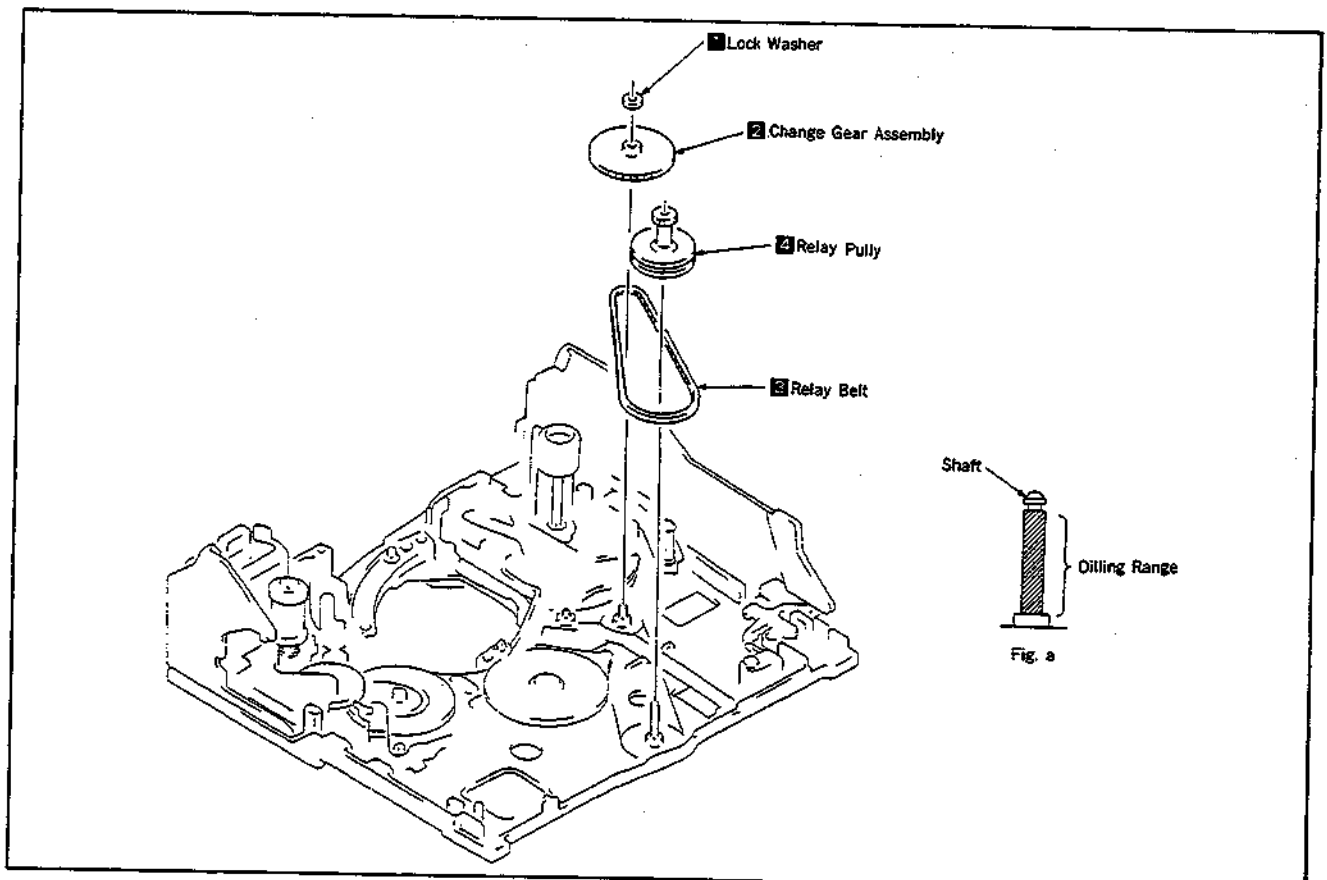


Fig. 28

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

• If possible, make a recording before removal.

- 1) Remove the two screws **1** (Fig. 29).
- 2) Mount the jig **2** (Ref. No. J-10) with the two supplied screws **3**, then screw the attached hexagon socket screws **4** to the jig **2**. The rotary upper drum **5** will move upward and come off (Fig. 30).

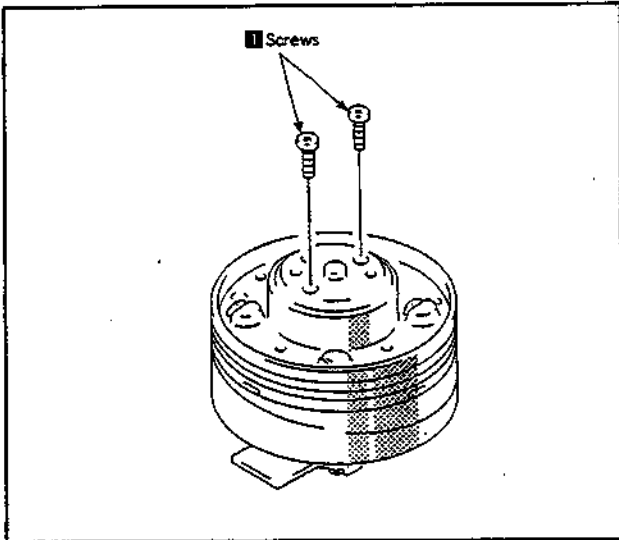


Fig. 29

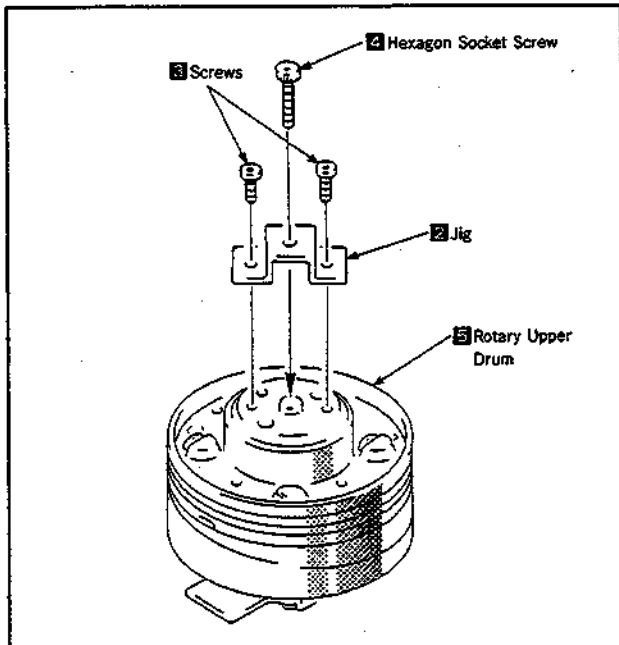


Fig. 30

2. Installation

- 1) Wipe clean the flange surface and the rotary upper drum **5** surface that makes contact with it, and confirm that they are free from dirt and scratches.
- 2) Insert the jig **6** (Ref. No. J-10) into the drum positioning hole, then set the rotary upper drum **5** by passing the jig through its positioning hole **7**. (Fig.31)
- 3) Remove the jig **6** and push down the rotary upper drum **5** gently by hand. If it does not go all the way down, secure it temporarily by tightening the two screws **8** alternately (Fig.29).
- 4) Insert the jig **6** into the positioning hole **7** again and confirm that it goes in smoothly. If it does not, loosen the two screws **8**, repeat step 2) of the Removal paragraph and restart the setting procedure.
- 5) Tighten the screws **8**.

Note : After installing, be sure to perform tape path adjustment as described in section 4.

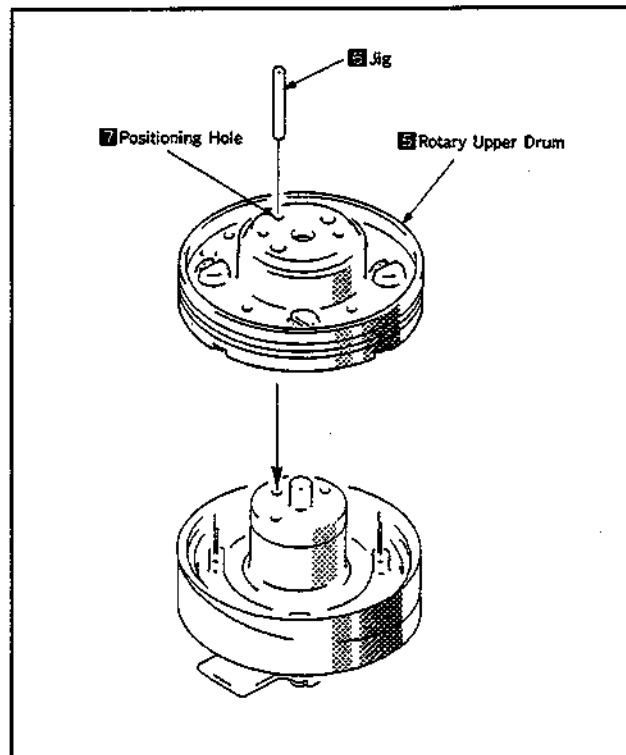


Fig. 31

3-22. ADJUSTMENT OF TENSION REGULATOR POSITION (Fig. 32)

1. Adjustment

- 1) Set a cassette tape and run the tape in the PB mode.
- 2) With the tape running, check that the distance from No.1 guide to No. 2 guide upper flange is 4.2 mm.
- 3) If they are not at the specified positions, perform adjustment in step 4) and subsequent steps.
- 4) Loosen the screw **I**.
- 5) If No.1 guide is located inside the specified position, shift the string block toward the arrow **A** using the FWD B.T. adjusting driver (Ref No. J-15). Or, if it is located outside, shift toward the arrow **B**.
- 6) Tighten the screw **I**.

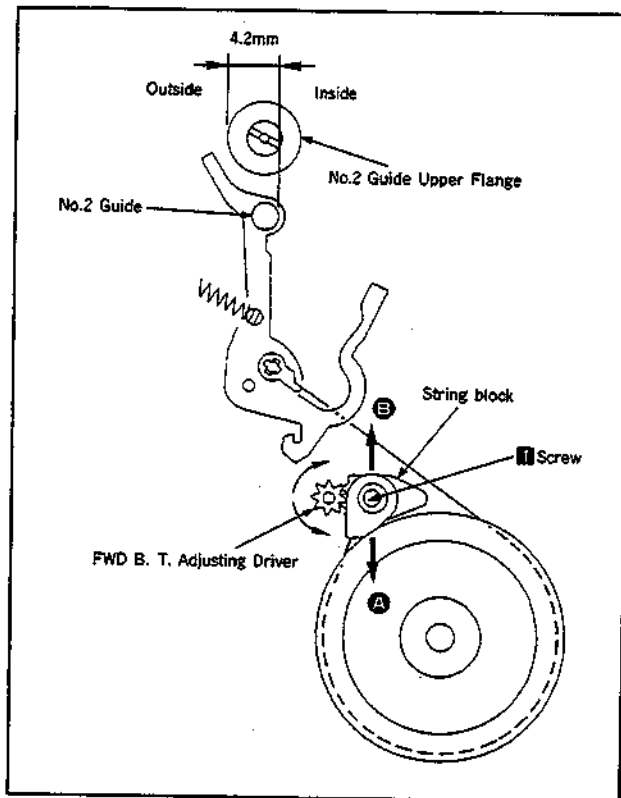


Fig. 32

3-23. FWD BACK TENSION ADJUSTMENT (Fig.33)

- 1) Select the TEST mode 1 using the adjusting remote controller (Ref No. J-17).
- 2) Set the torque cassette (Ref No. J-10).
- 3) Select the FWD mode, and check that the torque of S reel table is $8.5 \sim 11.5 \text{ g} \cdot \text{cm}$.
If it is out of standard, adjust the TG-1 spring hook position using the FWD B.T. adjusting driver (Ref No. J-15).

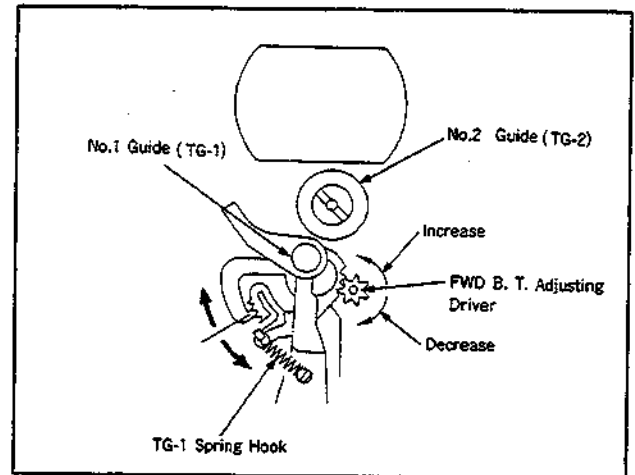


Fig. 33

3-24. REEL TORQUE CHECK

- 1) Set the torque cassette.
- 2) Select the FWD mode, and check that the torque fluctuation center of T reel table is $7 \sim 17 \text{ g} \cdot \text{cm}$
- 3) Select the REV mode, and check that the torque fluctuation center of S reel table is $25 \sim 39 \text{ g} \cdot \text{cm}$.
- 4) Select the REV mode, and check that the torque of T reel table is $7 \sim 17 \text{ g} \cdot \text{cm}$.
- 5) If the above data is not satisfied, the tension regulator band, T hard tab or T soft assembly will be faulty. Check them first, and if no abnormality is found, replace respective reel tables.

4. TAPE PATH ADJUSTMENT

The 8mm video system uses ATF (Automatic Track Finding) which instantaneously controls a tape running speed based on 4 types of pilot signals and performs high-precision tracking.

This does away a tracking control knob and allows accurate track tracing.

On the other hand, however, the ATF system has a problem in adjusting the tape path system. That is, if head tracing is out of order a little, the ATF automatically corrects it, which means that perfect adjustment cannot be done.

Therefore, in the A mechanism, the ATF system is forcibly operated to shift a tracking amount constantly (approx. 1/4) by setting the PATH mode with the adjusting remote controller (Ref No.J-16). So, fine tracking adjustment can be easily done. Also, the PATH mode setting varies with the model, and therefore, refer to the Service Manual.

Example) For CCD-FX410 series

Set the adjusting remote controller to the HOLD ON side.

- 1) Set PAGE : 1, ADDRESS : 00, DATA : 01 to cancel the PROTECT mode.
- 2) Set PAGE : D, ADDRESS : 01, DATA : 03 to select the PATH mode.

Note : Setting of PATH mode = TRACK SHIFT mode

If the adjusting remote controller (Ref No.J-16) is set to HOLD OFF once, then set to HOLD ON again after mode setting, the display of ADDRESS and DATA changes.

- 3) After adjustment is over, set DATA : 00, and press the PAUSE button on the adjusting remote controller (Ref No. J-16).

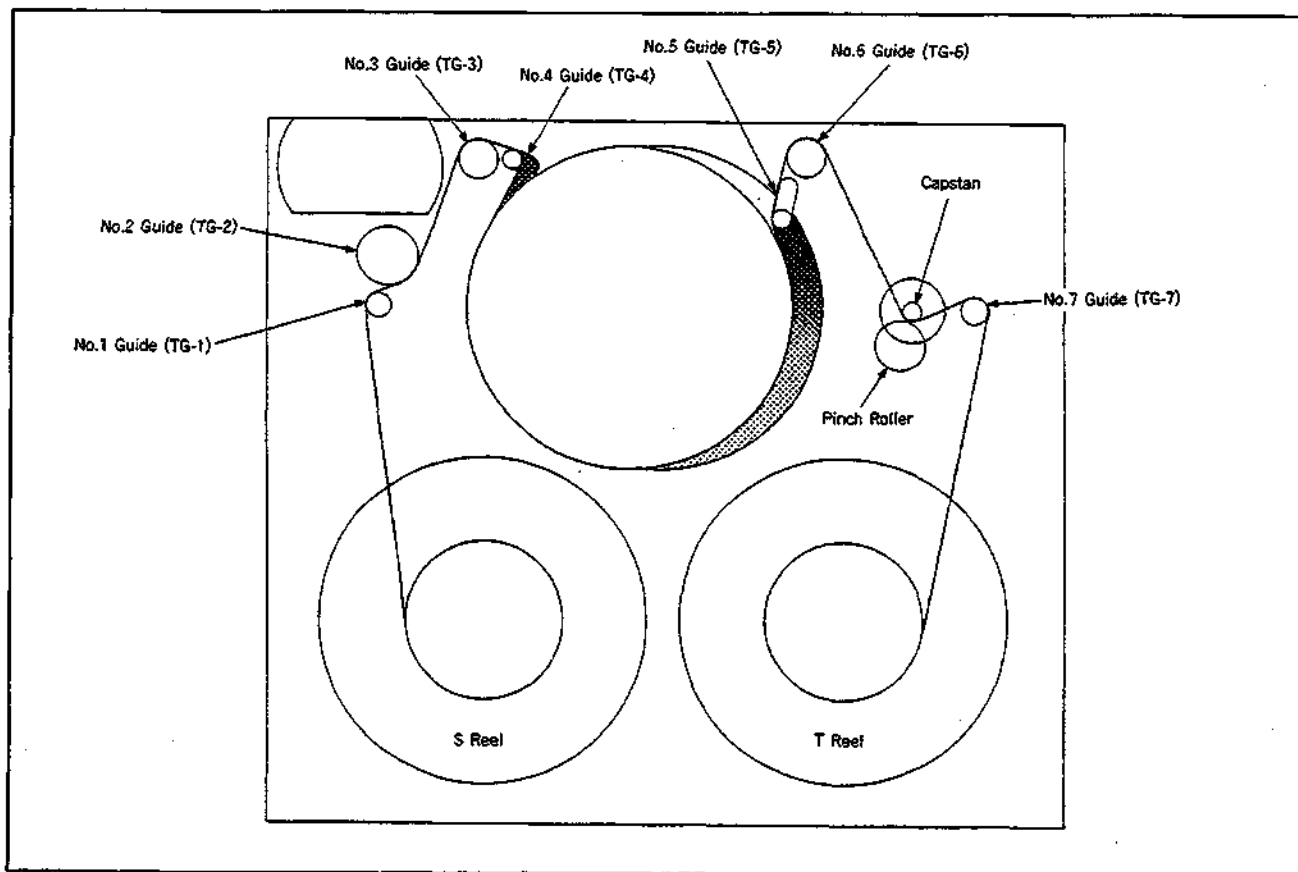


Fig. 34-A

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig.41).

Therefore, when performing section 4-4. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-6), modified as follows, and perform adjustment in playback mode.

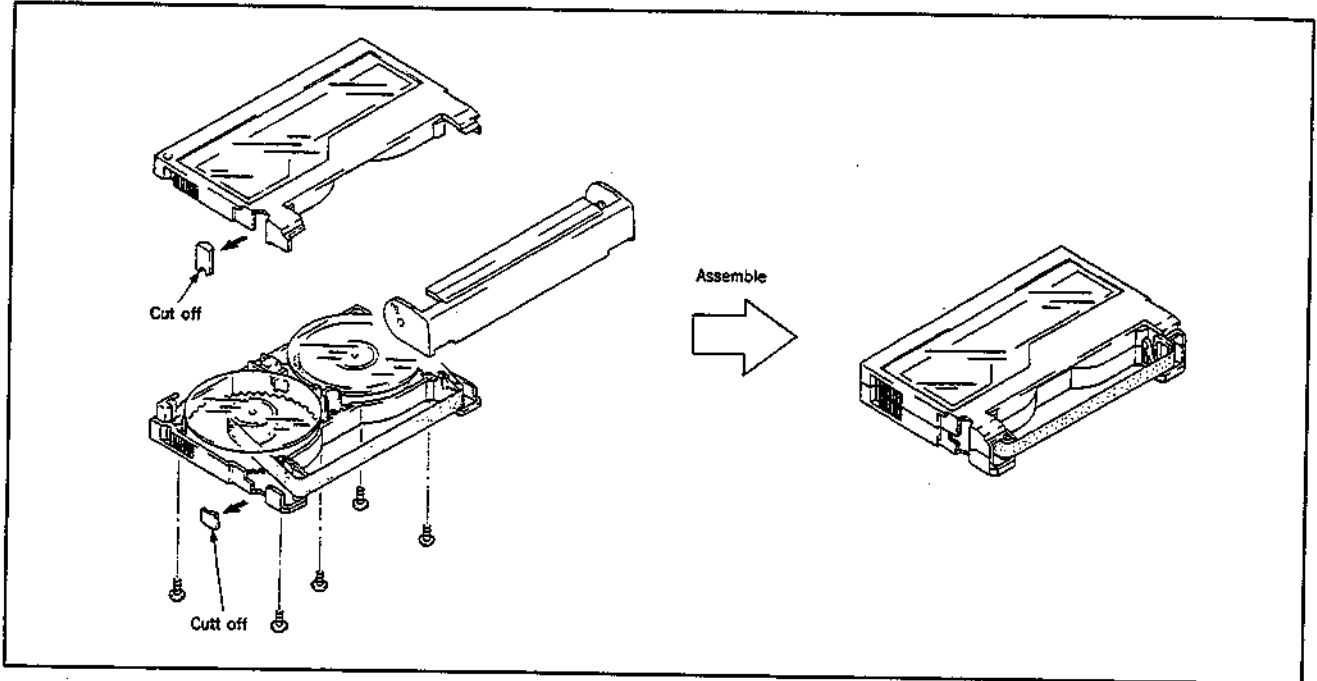


Fig. 34-B

4-1. PREPARATION FOR ADJUSTMENT

- 1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller) (Fig. 34-A).
 - 2) Set the PATH mode using the adjusting remote controller.
 - 3) connect an oscilloscope to the check pin connector of the set.
Example) For CCD-FX410 series
CH1 : CN001 pin ③ (PB RF OUT) on CS-31 board
CH2 : CN001 pin ④ (RF SWP) on CS-31 board
 - 4) Play back a tracking alignment tape (NTSC : WR5-1N, or PAL : WR5-1C).
 - 5) Check that a RF waveform is flat at the inlet and outlet of the oscilloscope (Fig. 35 ㉔).
- If not flat, make adjustment with the procedures below.
When the RF waveform is not flat at the inlet/outlet ; See Fig. 35 ㉕ and ㉖.

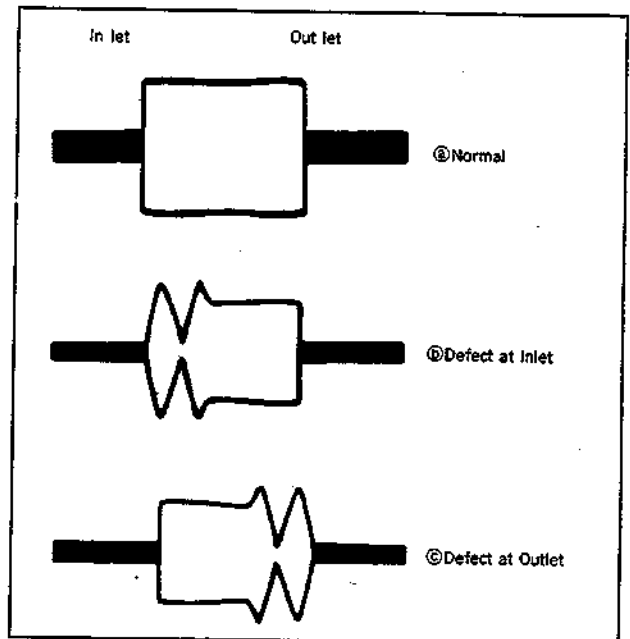


Fig. 35

4-2. TRACKING ADJUSTMENT (Fig. 36, 37)

- 1) Play back the tracking alignment tape.
- 2) Loosen the No.3 guide (TG-3) lock screw **1** and turn the No.3 guide to flatten the waveform at the inlet.
- 3) Tighten the No.3 guide (TG-3) lock screw **1** to lock the No.3 guide.
- 4) Loosen the No.6 guide (TG-6) lock screw **2** and turn the No.6 guide to flatten the waveform at the outlet.
- 5) Tighten the No.6 guide (TG-6) lock screw **2** to lock the No.6 guide. When this is done, make sure that the waveform does not change at the outlet.

Note : Be careful not to loosen the lock screw too much because the guide is easily moved.

: Take care not to allow interference between No.6 guide and drum when tightening the No.6 guide lock screw.

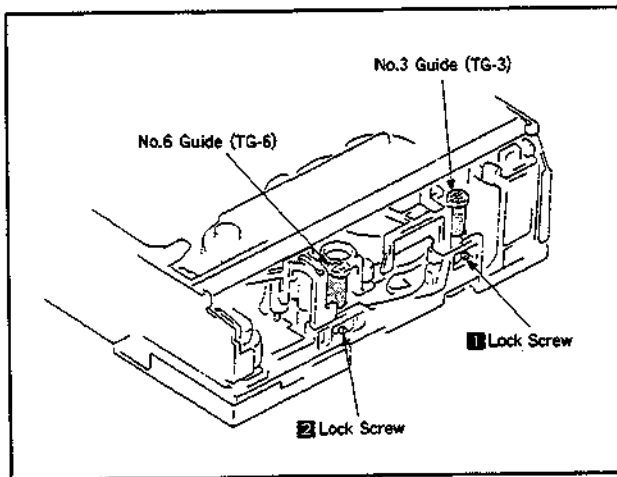


Fig. 36

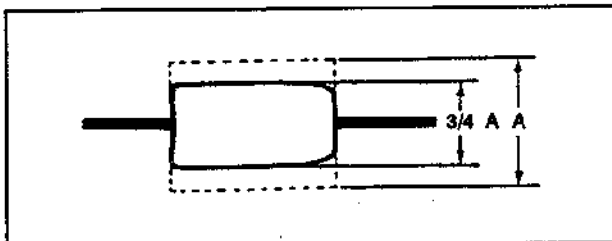


Fig. 37

4-3. No.2 GUIDE (TG-2) ADJUSTMENT

When the No.2 guide has been turned or replaced, perform height presetting before this adjustment.

4-3-1. No. 2 GUIDE (TG-2) HEIGHT PRESETTING (Fig. 38)

- 1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3.3 ± 0.05 mm.

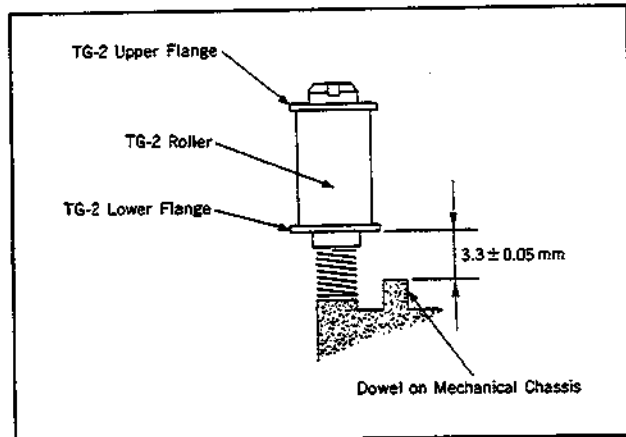


Fig. 38

[Reference]

This A mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Clockwise
	Lower	Counterclockwise

4-3-2. No. 2 GUIDE (TG-2) ADJUSTMENT (Fig. 39, 40)

- 1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
 - 2) Confirm that the tape is not bent at the lower flange ② of the No.2 guide (TG-2) ① (Fig. 39). If it is, turn the upper flange ③ of the No.2 guide (TG-2) clockwise with a screwdriver, lowering it until the tape is straightened.
 - 3) Play back the alignment tape for tracking adjustment.
 - 4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-2.
 - 5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
 - 6) If the waveform is not normal (Fig. 40), turn the upper flange ③ of the No. 2 guide (TG-2) ① 90° counterclockwise and repeat step 5.
- Repeat steps 5) and 6) until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5).

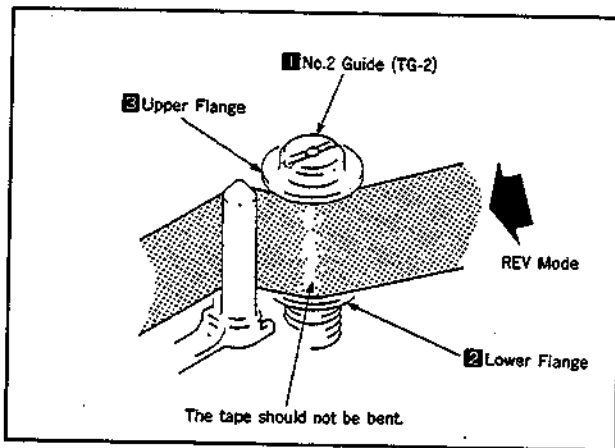


Fig. 39

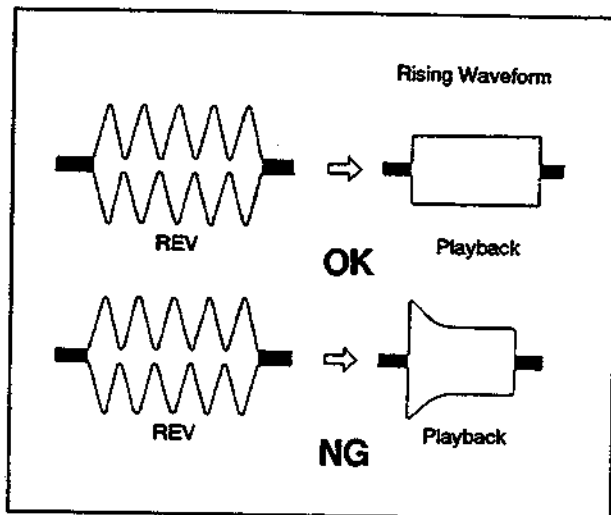


Fig. 40

4-4. No.7 GUIDE (TG-7) ADJUSTMENT (Fig. 41)

Note : This adjustment requires the No. 7 guide adjusting cassetape (Fig. 34-B).

- 1) Play back the No.7 guide adjusting cassetape and set the REV mode.
- 2) Confirm that the tape is not bent between the No.6 guide (TG-6) ① and the capstan ②. If it is, turn the high adjusting screw ④ of the No.7 guide (TG-7) ③ until the tape is straightened.
- 3) Set the playback mode again and confirm that the tape is not bent between the capstan ② and the high adjusting screw ④ of the No.7 guide (specification : 0.5mm or less). If the tape is bent beyond the specification, turn the No.7 guide (TG-7) ③ until bending is within the specification (0.5mm). If in the REV mode tape bending between the No. 6 guide (TG-6) ① and the capstan ② is 0.3mm or less, adjustment can be considered completed.

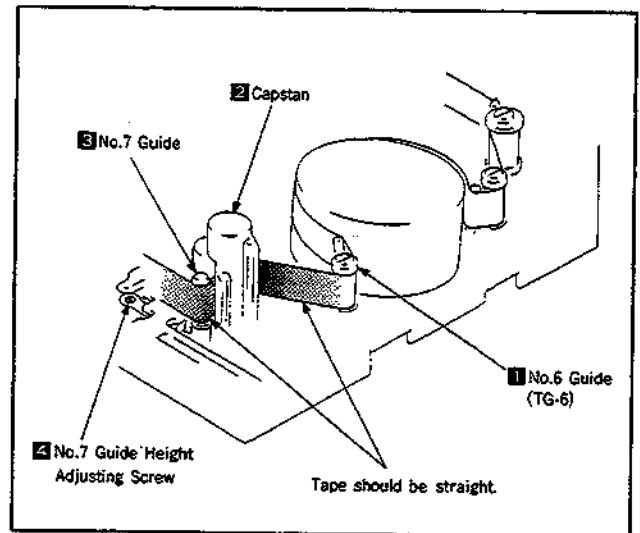


Fig. 41

4-5. CUE AND REV WAVEFORM CHECK (Fig. 42)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (Fig. 42). In case pitch is not constant, perform section 4-2.Tracking Fine Adjustment and section 4-4. No.7 Guide Adjustment.
- 2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (Fig. 42). Otherwise, perform section 4-2 Tracking Fine Adjustment.

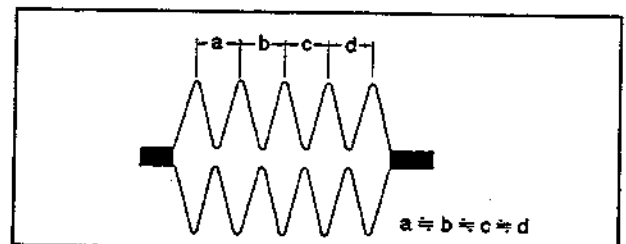


Fig. 42

4-6. CHECK AFTER ADJUSTMENT

4-6-1. TRACKING CHECK

- 1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (Fig. 43).
- 2) Then, confirm that the minimum amplitude value (EMIN) is 65 % of the maximum value (EMAX) or larger (Fig. 44).
- 3) Confirm that no large fluctuations occur on the waveform (Fig. 45).

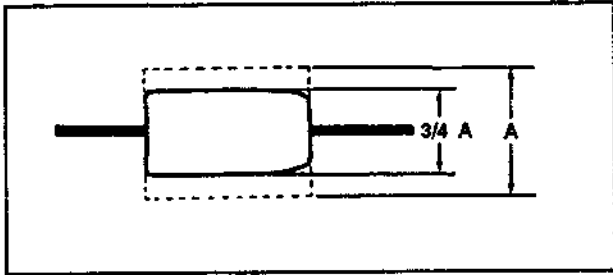


Fig. 43

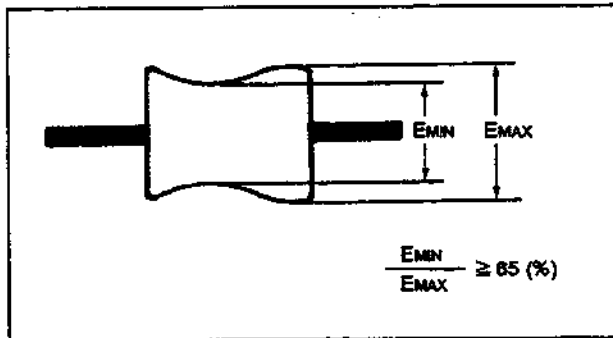


Fig. 44

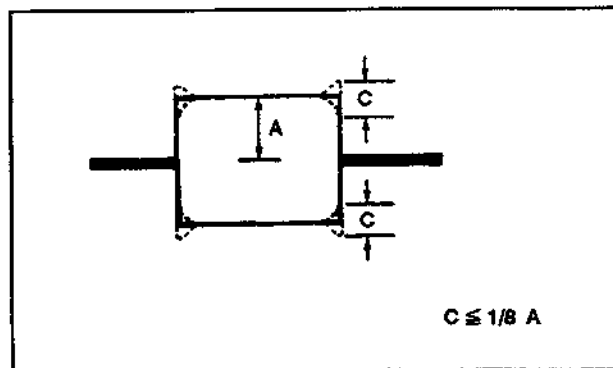


Fig. 45

4-6-2. RISING CHECK (Fig. 46)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Cancel the track shift mode.
- 3) Eject the tape, then load it again.
- 4) Set the playback mode and confirm that the RF wave form rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 6) Repeat steps 3) to 5) once more.

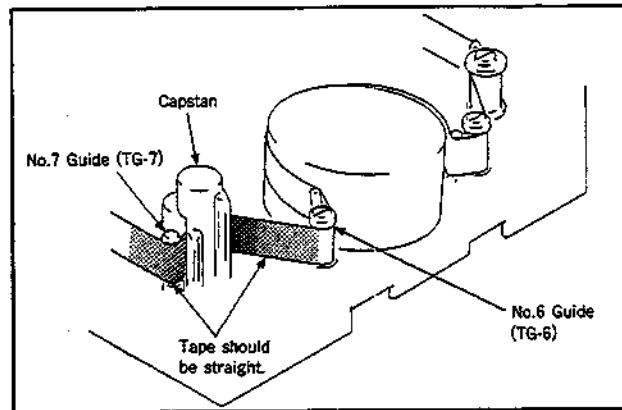


Fig. 46

4-6-3. TAPE PATH CHECK (Fig. 47)

- 1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3mm, at the lower flange of the No. 2 guide, the upper flange of the No.3 guide, the upper flange of the No. 6 guide and the No.7 guide upper and lower flanges.
- 2) Confirm that no tape rising occurs and that curling is less than 0.3mm at the flange of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

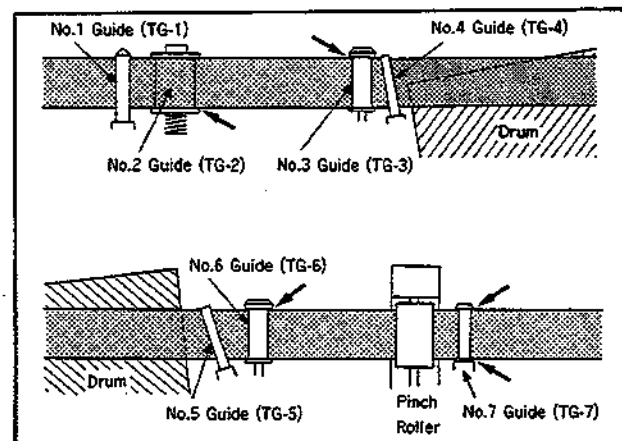


Fig. 47

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM SUPPLIMENT-2

Video 8

<Connection of Mode Selector IV Conversion Connector>

In use of Mode selector IV conversion connector(J-6082-167-A), there are two different connecting methods depending on the model connected:

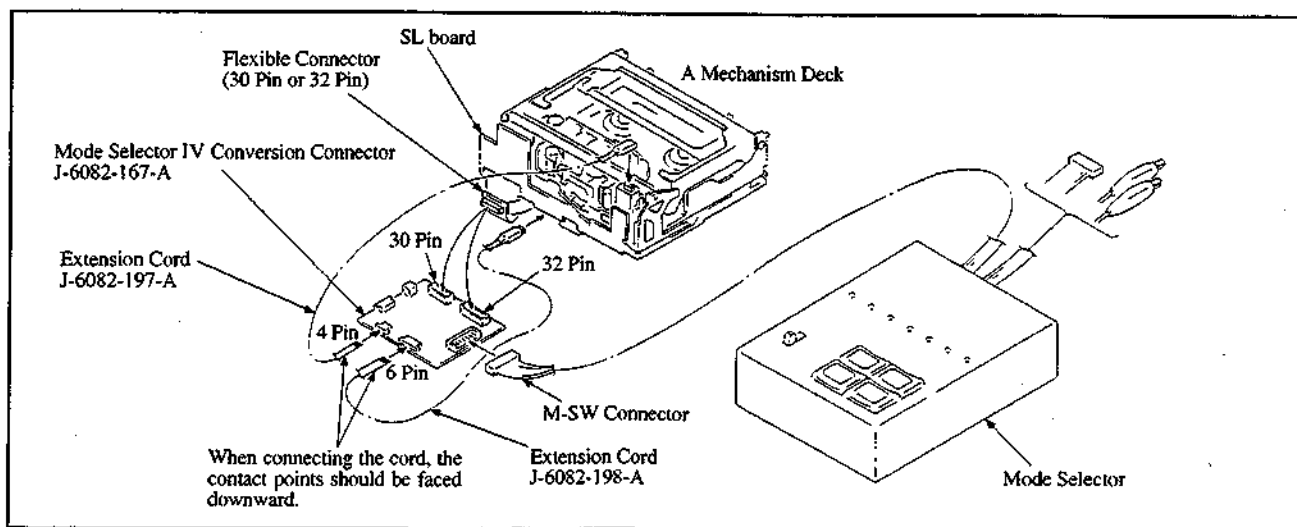
1. CCD-FX series

With the SL board mounted on mechanical deck, connect 30-pin(or 32-pin) connector to 30-pin(or 32-pin) Mode selector IV conversion connector.

{
 CCD-FX300 series, FX400 series, FX500 series
 → 30-pin connector (FP425 or FP600)
 CCD-FX700 series → 32-pin connector (FP477)
 }

2. Models other than above

Connect the extension cord (J-6082-197-A) to loading motor 4-pin connector and extension cord (J-6082-198-A) to mode switch 6-pin connector in mechanical deck, then connect the other end of cord to 4-pin and 6-pin connectors of Mode selector IV conversion connector respectively, as shown below.



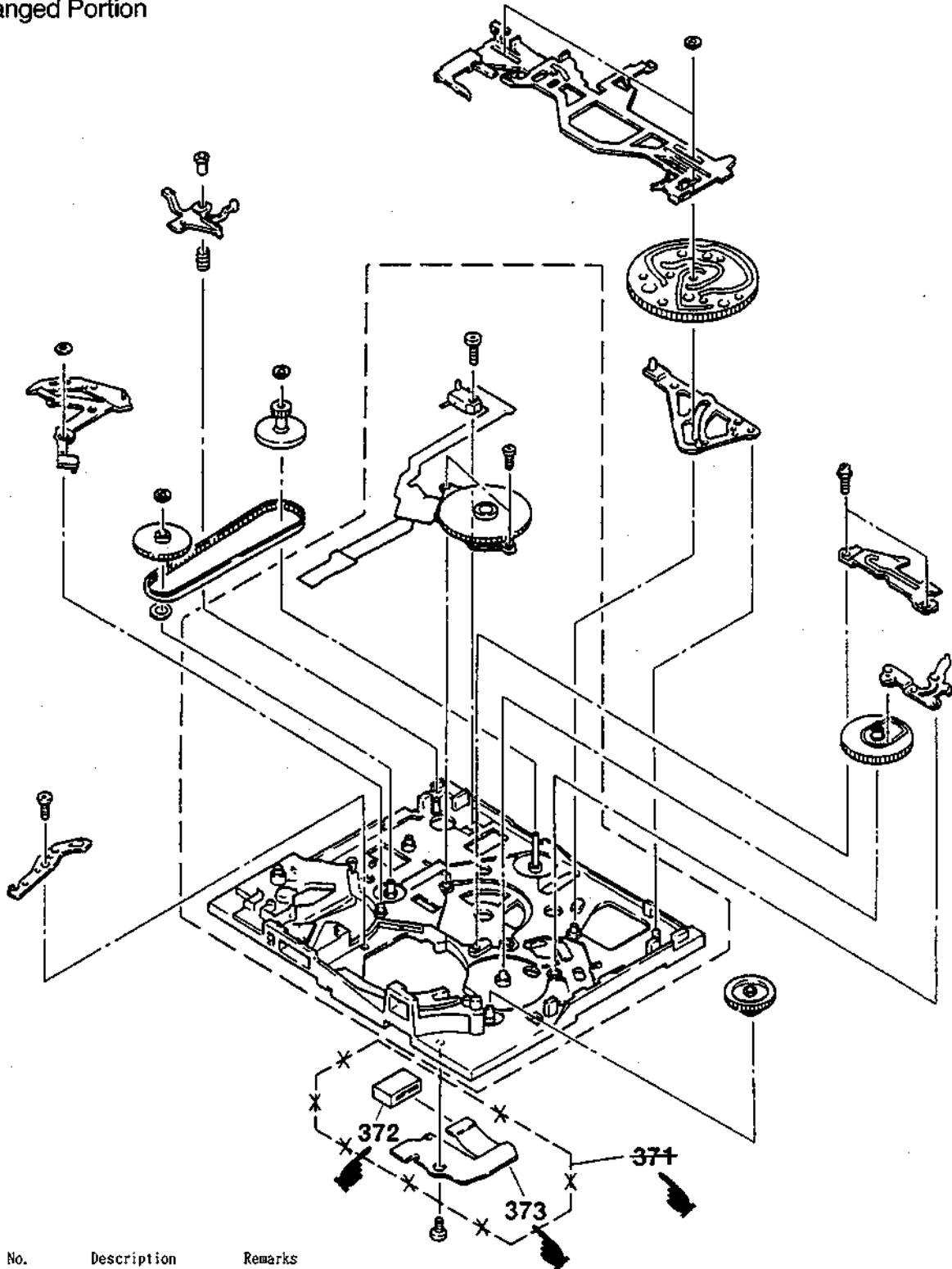
<CORRECTION>




P10. 2-4 Service jigs list

		Incorrect	Correct
J-15	FWD B.T adjusting driver	J-6082-182-A	→ J-6082-187-A

MECHANISM CHASSIS ASSEMBLY (2)

 : Changed Portion



Ref. No.	Part No.	Description	Remarks
371	A 7040-311-A	FR-444 ASSY	
372	1-691-254-13	CONNECTOR, TRANSLATION 10P	
373	1-641-639-13	FP-442 FLEXIBLE BOARD	

GV-300E

SERVICE MANUAL

*AEP Model
UK Model
Germany Model*



**VIDEO
WALKMAN**

SPECIFICATIONS

System		General	
Video recording system	Rotary two-head helical scanning FM system	Power requirements	Battery mounting surface input: 6 C (v. battery pack) 6.5 V DC pack (DCP-77)
Audio recording system	Rotary head, FM system	Power consumption	6.9 W (for continuous playback)
Video signal	CCIR system B, G, H and I PAL colour	Operating temperature	0°C to 40°C (32°F to 104°F)
Usable cassettes	8 mm video format cassettes	Storage temperature	-20°C to 60°C (-4°F to 140°F)
Tape speed	SP approx. 2.0051 cm/sec. LP approx. 1.0058 cm/sec.	Dimensions	129 × 71 × 226 mm (w/h/d) (5 1/8 × 2 7/8 × 9 inches)
Recording time	LP mode: 3 hours SP mode: 1.5 hours (with Sony PS-90 cassette)	Weight	Approx. 1.1 kg (2 lb 7 oz) (not incl. battery pack)
Playback time	LP mode: 3 hours SP mode: 1.5 hours (with Sony PS-90 cassette)	Accessories supplied	Stereo earphones (1) Connecting cord (1) Carrying case (1) Battery pack NP-66H (1) (AEP, UK Model) AC power adaptor AC-V30 (1) Lithium battery (1)
Fast forward/rewinding time	Approx. 7 minutes (with Sony PS-90 cassette)		
LCD section		AC-V30	
Picture	4 inches measured diagonally 8.2 × 6.2 cm (3 1/4 × 2 1/2 inches)	Power consumption	20 W
On-screen display	TN LCD/TFT active matrix method Total picture-element number: 112,066 (479 × 234)	Power requirements	100 - 240 V AC, 50/60 Hz
		Output voltage	DC OUT: 7.5 V, 1.6 A in operating mode 10 V, 1.3 A in charge mode
Tuner section		Battery charge terminal	Operating temperature
Channel coverage	VHF: E2 - E12 channels UHF: 21 - 69 channels Cable TV channels: S01 - S20	Operating temperature	0°C to 40°C (32°F to 104°F)
Aerial input	75-ohm minijack for VHF/UHF	Storage temperature	-20°C to 60°C (-4°F to 140°F)
		Dimensions	Approx. 67 × 39 × 138 mm (w/h/d) (2 3/4 × 1 3/8 × 5 1/2 inches) including projecting parts and controls
Inputs/outputs		Weight	Approx. 310 g (11.02)
VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation		
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative	Design and specifications are subject to change without notice.	
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative		
Audio input	Phono jack, -7.5 dBs (0 dBs = 0.775 Vrms) input impedance more than 47 kilohms	Note	This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression
Audio output	Phono jack, -7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms		
Speakers	16 ohms, 150 mW		
Earphones	Stereo minijack, 8 ohms, 2		
CONTROL S	Minijack		
Camera input	12-pin		
Timer section			
Clock	Crystal lock		
Time indication	24-hour cycle		
Timer setting	Only for recording, 1 event/24 hours		

— Continued on next page —

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

8 VIDEO TV RECORDER
SONY®



MICROFILM

LIST OF RECOMMENDED ACCESSORIES

	Model name	Page
Battery pack	NP-77H, NP-77, NP-55	12
AC power adaptor/Battery charger	AC-V55, BC-55	12
Car battery charger	DC-V30	11
DC pack	DCP-77, DCP-55	17
Color video camera	CCD-G100STE, CCD-G100E, CCD-G1E	47, 48
Pan tilter	HVR-200	51
Connecting cord	VMC-810ES/820ES (1m/2m) VMC-710EM/720EM (1m/2m)	52, 56
Cleaning cassette	V8-25CLH	62
RFU adaptor kit	RFU-89EKA	55

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.

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.

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1. GENERAL					
•	Features	5			
•	Location of Parts and Controls	5			
•	Power Sources	6			
•	Setting the Clock	8			
•	Presetting TV Channels	9			
•	Watching TV Programmes	10			
•	Adjusting the Picture and Sound	11			
•	Using the SLEEP Timer	11			
•	Inserting a Cassette	12			
•	Recording TV Programmes	12			
•	Using the Timer-Activated Recording Feature	13			
•	Playing Back the Recorded Tapes	14			
•	Connecting an Outdoor Aerial	15			
•	Connecting other VTRs or Monitors	15			
•	Editing Tapes	18			
•	Precautions	19			
•	Maintenance	19			
•	Notes on Moisture Condensation	19			
•	Using Your Video TV Recorder Abroad	20			
•	List of On-Screen Displays	20			
2. DISASSEMBLY					
2-1.	Removal of Cabinet (Upper) Assy	21			
2-2.	Removal of SC Unit	21			
2-3.	Removal of Liquid Crystal Display Module	21			
2-4.	Removal of Control Switch Block	22			
2-5.	Removal of Cassette Compartment Assy	22			
2-6.	Removal of TU-126 Board	22			
2-7.	Removal of SB Block and Lithium Battery	23			
2-8.	Removal of DC-22P Board	23			
2-9.	Removal of Mechanism Deck	23			
2-10.	Internal Views	24			
3. DIAGRAMS					
3-1.	Circuit Boards Location	25			
3-2.	Overall Block Diagram	26			
3-3.	Head Amp Block Diagram	29			
3-4.	Video Block Diagram	31			
3-5.	LCD Video Block Diagram	33			
3-6.	Servo/System Control Block Diagram	36			
3-7.	Table of SV-66 Board IC206 (CXP-80116) Port	39			
3-8.	Test Mode	41			
3-9.	List of SIRCS Code	44			
3-10.	System Control—Video • Audio Part Interface	45			
3-11.	System Control—Servo Peripheral Circuit Interface	47			
3-12.	System Control—System Control Peripheral Circuit Interface	49			
3-13.	System Control—Mechanism Control Part Interface	51			
3-14.	Tuner Block Diagram	52			
3-15.	Audio Block Diagram	55			
3-16.	Power Block Diagram	61			
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS					
4-1.	Frame Schematic Diagram	63			
4-2.	Printed Wiring Boards and Schematic Diagrams	66			
	• RP-105 Board	67			
	• RG-22 Board	72			
	• CC-55, CN-6P and SV-66 (Video) Boards	79			
	• SV-66 (Servo, System Control) Board	88			
	• AU-98 Board	98			
	• SB-3P and TU-126 Boards	106			
	• DC-22P, KB-10P and UC-6 Boards	113			
4-3.	Semiconductors	117			
5. EXPLODED VIEWS					
5-1.	Cabinet (Upper) Assembly	119			
5-2.	SC Unit Assembly	120			
5-3.	Cabinet (Lower) Assembly	121			
5-4.	Mechanism Deck Assembly (1)	122			
5-5.	Mechanism Deck Assembly (2)	123			
5-6.	Mechanism Deck Assembly (3)	124			
6. ELECTRICAL PARTS LIST					
	Hardware List	125			
		149			
7. MECHANICAL ADJUSTMENTS					
7-1.	Setting the Track Shift Mode	150			
7-2.	Preparation for Adjustment	150			
8. ELECTRICAL ADJUSTMENTS					
8-1.	Preparation for Adjustment	151			
	8-1-1. Using Instruments	151			
	8-1-2. Connection of Instruments	151			
	8-1-3. VIDEO/AUDIO Terminal of the Unit	152			
	8-1-4. Set-up at the Adjustment	152			
	8-1-5. Alignment Tape	153			
	8-1-6. Input/Output Level and Impedance	154			
	8-1-7. Test Mode	155			
8-2.	Power Source Part Adjustment	158			
	8-2-1. UNREG Power Source Voltage Check	158			
	8-2-2. Switch 5V Adjustment	158			
	8-2-3. DD Converter Frequency Adjustment	158			
	8-2-4. -8V Adjustment	158			
	8-2-5. LCD Power Source Voltage Check	158			
	8-2-6. CAM UNREG Check	159			
8-3.	System Control System Adjustment	159			
	8-3-1. Clock Precision Adjustment	159			
	8-3-2. Battery Down Adjustment	159			

8-4.	Servo System Adjustment	159
8-4-1.	CUE/REV Adjustment	159
8-4-2.	Switching Position Adjustment	160
8-5.	Video System Adjustment	160
8-5-1.	Playback Frequency Characteristic Adjustment	161
8-5-2.	fsc Check	161
8-5-3.	SYNC AGC Adjustment	161
8-5-4.	IR Adjustment	162
8-5-5.	Y/C Separation Adjustment	162
8-5-6.	Emphasis Y Level Adjustment	163
8-5-7.	De-emphasis Y Level Adjustment	163
8-5-8.	Playback Y Level Adjustment	163
8-5-9.	Playback V Level Adjustment	163
8-5-10.	Y FM Carrier Adjustment	164
8-5-11.	Y FM Deviation Adjustment	164
8-5-12.	Recording Y Level Adjustment	165
8-5-13.	Chroma Emphasis Adjustment	165
8-5-14.	Recording Chroma Level Adjustment	165
8-6.	LCD System Adjustment	166
8-6-1.	Contrast Adjustment	166
8-6-2.	R Gain Adjustment	166
8-6-3.	B Gain Adjustment	167
8-6-4.	Sub Bright Adjustment	167
8-6-5.	fsc Adjustment	167
8-6-6.	White Balance Adjustment	167
8-6-7.	V COM DC Adjustment	168
8-6-8.	Character Position Adjustment	168
8-7.	Tuner System Adjustment	169
8-7-1.	RF AGC Adjustment	169
8-8.	Audio System Adjustment	169
8-8-1.	1.5MHz Carrier Frequency Adjustment	170
8-8-2.	1.7MHz Carrier Frequency Adjustment	170
8-8-3.	E-E Output Level Check	171
8-8-4.	1.5MHz Carrier Level Check	171
8-8-5.	1.7MHz Carrier Level Adjustment	171
8-8-6.	1.5MHz Deviation Adjustment	172
8-8-7.	Recording Matrix L+R Adjustment	172
8-8-8.	Recording Matrix L-R Adjustment	172
8-8-9.	Bilingual Mode Adjustment	172
8-8-10.	Playback Matrix Adjustment	173
8-8-11.	Total Level Characteristic Separation Check ..	173
8-8-12.	Total Distortion Rate Check	173
8-9.	Adjusting Parts Location Diagram	176

SECTION 1 GENERAL

This section is extracted from instruction manual.

Features

The "Video Walkman" GV-300E is an 8 mm video recorder with a LCD (Liquid Crystal Display). Its compact and lightweight design allows you to watch TV programmes and video tapes anywhere and anytime you like.

- With this video TV recorder, you can:
- view the playback picture of 8 mm video tapes
 - view TV programmes
 - record TV programmes

In addition, by connecting it to a video camera (not supplied), you can record pictures with the camera, and play back the recorded pictures on it immediately.

Other features

- Hi-fi stereo for high quality sound *
- CRYSTAL-CLEAR still/slow picture search on LCD
- Timer-activated recording
- SLEEP timer for turning off the unit automatically
- MEGA BASS circuit for dynamic bass sound

* Hi-Fi Stereo System

On the 8 mm video standard track, the sound is recorded/played back in Hi-fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option.

With this unit, Hi-fi stereo sound can be recorded on the standard track. To maintain compatibility with the conventional Hi-fi monaural equipment, the Hi-fi stereo sound is recorded as L - R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal.

To play back the tape recorded by its Hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-fi monaural equipment is used to play back a tape recorded in Hi-fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier.

The Hi-fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 2 005 cm/second) and the LP mode (approximately 1 005 cm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

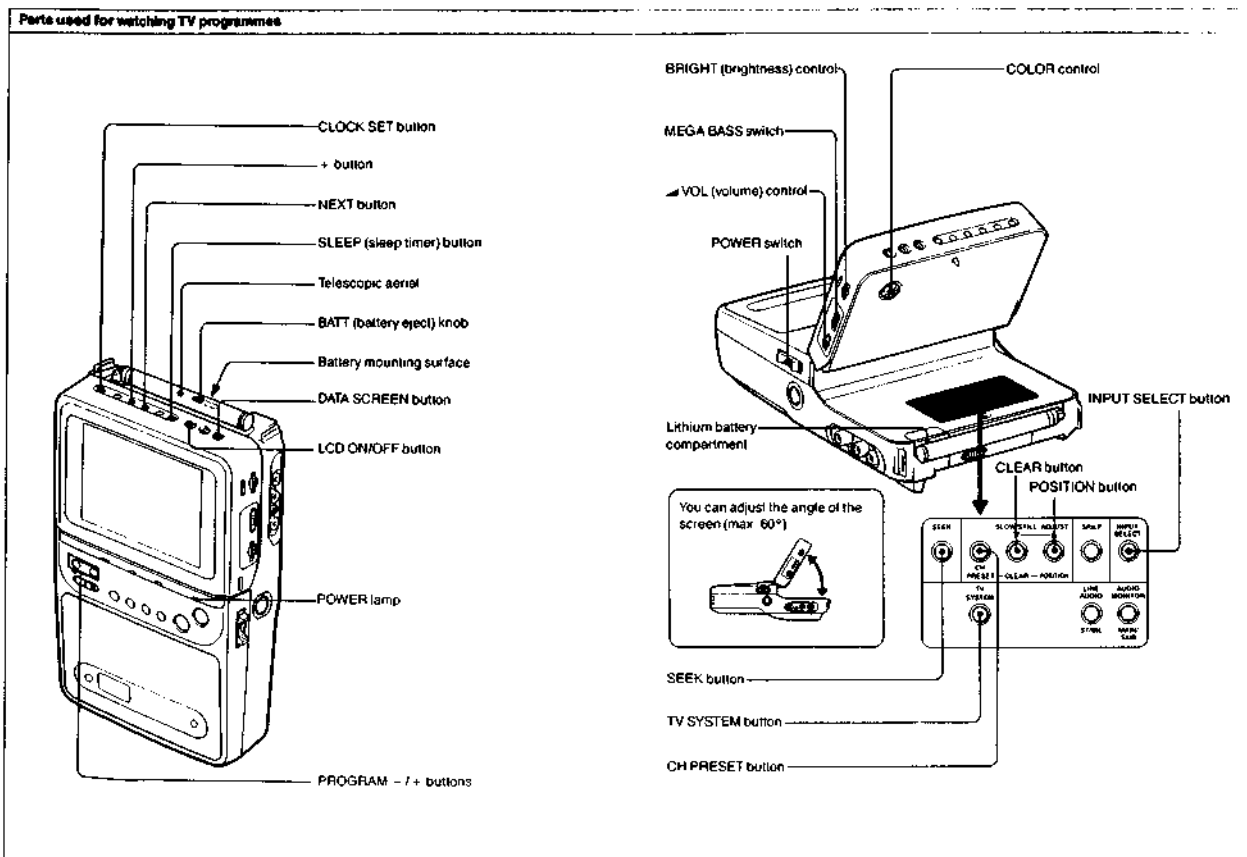
PCM recording/playback is not possible with this unit. The PCM sound recorded with another recorder cannot be played back with this unit.

For using this unit abroad, see page 64

4

5

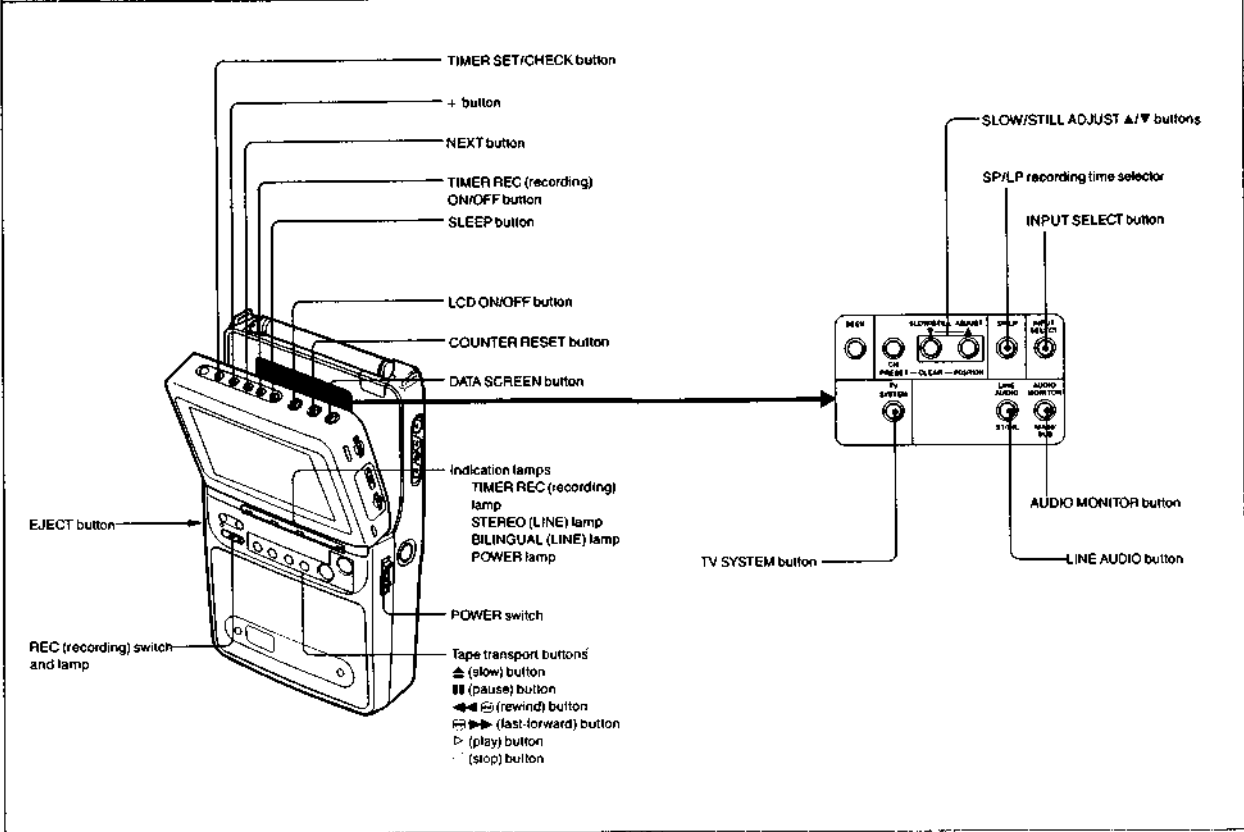
Location of Parts and Controls



6

7

Parts used for VTR playback/recording

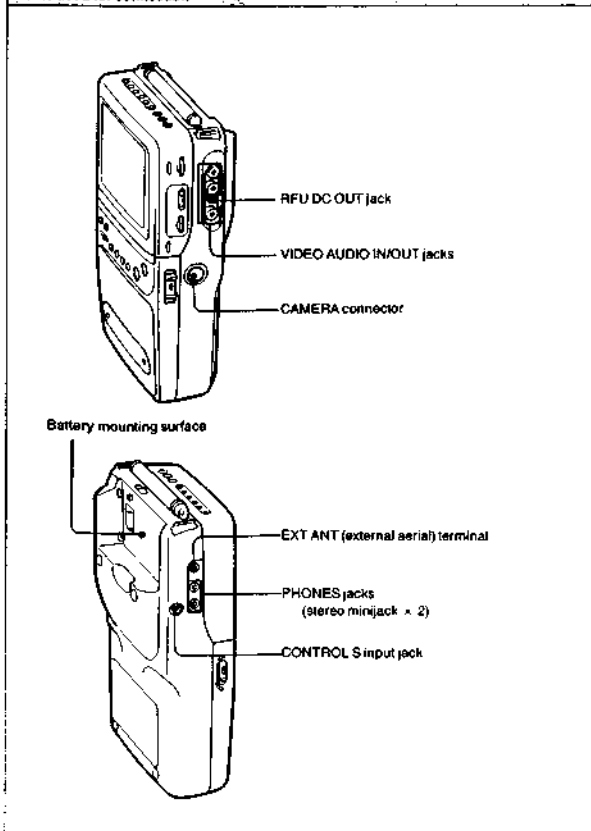


8

9

Getting Ready **Power Sources**

Parts used for connection



10

Selection of Power Sources

Place	Power sources	Page
Indoors	AC power adaptor AC-V30 (supplied)	16
Outdoors	Battery pack NP-66H (supplied), NP-77H or NP-77	12
In the car	DC pack DCP-77 Car battery charger DC-V30	17

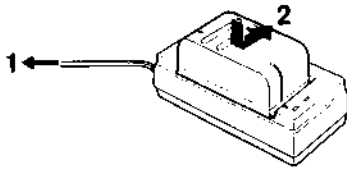
The above accessories, except for the AC-V30 and NP-66H, are not supplied.

Disconnecting the power source during recording or playback operations may damage the cassette tape. If this is done accidentally, supply the power again immediately and turn the power on.

11

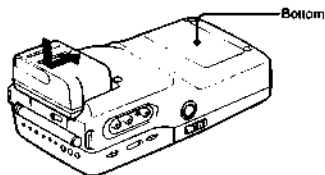
Using with Battery Pack — NP-66H, NP-77H, NP-77 or NP-55

- 1 First, charge the battery pack.
Use the supplied AC-V30 AC power adaptor.



- 2 Connect the AC-V30 to a wall outlet.
- 3 Install the battery pack.
Align the right side of the battery pack with the line on the AC power adaptor.
- 4 While pressing the battery pack, slide it in the direction of the arrow.
The POWER lamp (green) and the CHARGE lamp (orange) on the AC-V30 light up.
The charging begins.
When the charging is completed, the CHARGE lamp goes out.
Unplug the unit from the wall outlet and the POWER lamp goes out.

- 2 Attach the battery pack to the video TV recorder.
Align the battery pack with the white line on the video TV recorder, then while pressing, slide the battery pack in the direction of the arrow.



- The charging time is about 100 minutes for NP-66H, 120 minutes for an NP-77, 140 minutes for NP-77H, and 60 minutes for an NP-55.
- The unit cannot be operated with the AC power adaptor when it is used for charging a battery pack, and the battery pack cannot be charged when the AC power adaptor is used to operate the unit.
- An NP-66H, NP-77, NP-55 or NP-77H can also be charged with the BC-55 or AC-V55 battery charger/AC power adaptor.

12

Using the Battery Pack Efficiently

How to prepare the rechargeable battery packs

Have sufficient battery pack power to perform 2 or 3 times the amount of recording that you plan to do.

"Battery life" as indicated in the instruction manual or catalogue of the video TV recorder is measured by the continuous use of the video TV recorder, at room temperature, using a fully charged battery.

Fast winding or rewinding tape operations consumes much more battery power than normal tape transport operation. Consequently, battery life becomes shorter when these operations are performed frequently.

Battery life is shorter in a cold climate.

Cold climates reduce the efficiency of a battery and cause it to run out more quickly.

When to replace the rechargeable battery pack

When the battery pack is exhausted, the POWER lamp (during recording, the "BATTERY DOWN" indication on the screen as well) starts blinking slowly about five minutes before the battery pack is discharged. (When this happens, some of the indications may not appear on the screen.)

Replace the battery when the blinking changes from slow to fast, and the "BATTERY DOWN" indication starts blinking rapidly.

Turn off the power of the video TV recorder before replacing the battery. While replacing the battery, keep the cassette inside the cassette holder. When the battery has been replaced, recording can be resumed smoothly without any picture distortion.

Notes on battery exhaustion when a camera is connected

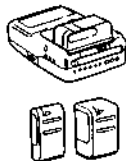
When the battery is exhausted, the tally lamp (red) displayed in the viewfinder of the camera starts blinking, and the power goes off automatically. Replace the battery pack with a fully charged one when the blinking starts.

Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.

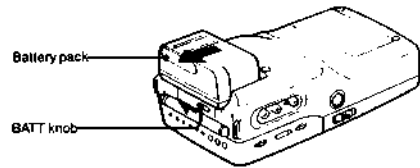
Recharge the battery pack when it is fully exhausted.

- If the operation is completed before the BATTERY DOWN indication on the screen or POWER lamp starts blinking, it is recommended that you discharge the battery pack by playing back a tape until BATTERY DOWN or POWER lamp starts blinking rapidly.
- Do not recharge the battery pack before it has been discharged completely. Repeated charging while some capacity remains will reduce the battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery pack again.



14

To remove the battery pack



While sliding the BATT knob in the direction of the arrow, slide the battery pack as illustrated.

Operating time

A fully-charged battery pack can operate this unit as follows.

	LCD ON/OFF	NP-77H	NP-77	NP-66H	NP-55
Watching TV programs	ON	Approx. 130 min.	Approx. 110 min.	Approx. 100 min.	Approx. 55 min.
VTR playing back	ON	Approx. 120 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
TV programme recording	ON	Approx. 95 min.	Approx. 75 min.	Approx. 70 min.	Approx. 40 min.
TV programme recording	OFF	Approx. 140 min.	Approx. 120 min.	Approx. 105 min.	Approx. 60 min.
Camera recording*	OFF	Approx. 100 min.	Approx. 80 min.	Approx. 75 min.	Approx. 40 min.

* When connecting the color video camera CCD-G100STE (not supplied).

13

Keep the terminals clean

If the terminals (metal parts on the back) are soiled, the battery life will become shorter. When the terminals are soiled, or when the battery pack has not been used for a long time, repeatedly attach and remove it several times. This will improve the contact of the battery pack and the video TV recorder. Also, wipe the + and - terminals with a soft cloth or paper.

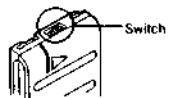
Notes on the rechargeable battery pack

Battery pack care

- Remove the battery pack from the video TV recorder after use, and keep it in a cool place.
- When the battery pack is installed on a video TV recorder, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and, consequently, shortens the life of the battery.
- The battery pack is always discharging - even when it is not in use. Thus, the battery should be charged before each use.

How to use the switch on the battery pack

Use this switch as a reminder of the charging condition. Set the switch to the "no mark" position when the charging is completed. Set the switch to the "red mark" position when the battery has been discharged.



How many times can the battery pack be recharged

It can be fully charged and discharged about 500 times under normal temperatures. If the BATTERY DOWN indication blinks rapidly just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a brand new one.

Charging temperature

Lower temperatures require a longer charging time. Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why the battery pack heats up

While the battery pack is being charged or used, a chemical change occurs inside the battery pack which generates electric energy. Consequently, the battery pack becomes warm, but this is not dangerous.

Carrying the battery pack

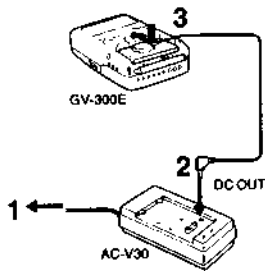
If the + and - terminals are short-circuited with a piece of metal, the battery heat up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metal object.

If the battery pack is not used for a long time (about 1 year)

Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

15

Using with AC Power Adaptor — AC-V30



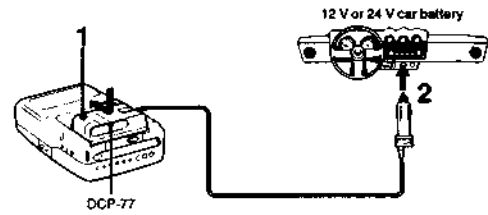
- 1 Connect the AC power adaptor to a wall outlet.
- 2 Insert into the DC OUT jack.
- 3 Align the left side of the connecting plate with the white line on the video TV recorder, and while pressing it, slide in the direction of the → mark.

To remove the connecting plate

While sliding the BATT knob, slide out the connecting plate

- The unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation

Using This Unit with a Car Battery — DCP-77



- 1 Attach the DC pack to the video TV recorder.
- 2 Connect the plug to the cigarette lighter socket.

- Connect the DCP-77 only to a car with a negative ground car batteries of 12 V or 24 V
- Attach or remove the DC pack in the same way as the battery pack.

Notes

- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not used, keep it in its case.
- Keep the video TV recorder away from the power source. If not, noise may appear on the screen.

Notes on using this unit in a car

- For your safety, do not watch the TV or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while your car is not in use, the car battery will be consumed. Avoid using this unit in such condition for more than 12 hours.

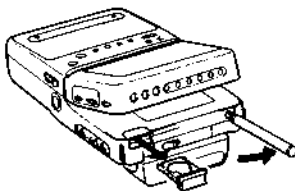
16

Setting the Clock

Before you set the clock, install a lithium battery. With a lithium battery installed, this unit powers the clock and keeps the last channel in memory when the power source is disconnected.

Inserting a Lithium Battery

- 1 Pull out the lithium battery compartment.



- 2 Install the supplied CR2032 lithium battery with the + side facing out.



- 3 Reinsert the compartment.

To remove the lithium battery
Press the battery upward and remove it as illustrated.



Lithium battery life

Approximately 1 year in normal operation.

If the lithium battery becomes weak, the 0:00 indication appears on the screen when the DATA SCREEN button is pressed, and the clock does not operate. In this case, replace the battery with a Sony CR2032 lithium battery. Use of another battery may present a risk of fire or explosion. After replacing the battery, reset the clock.

Cautions

- Keep the lithium battery out of the reach of children.
- Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

Warning

Battery may explode if misreated. Do not recharge, disassemble or dispose of intire.

17

18

19

Setting the Clock

Before setting
Make sure that the power source is connected correctly.

1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left to turn the power on.

2 Press the CLOCK SET button with a pen or similar object.
The screen will enter the time setting mode.
The screen becomes dark.
The next item to be set blinks.

3 Set the hour.
Press the + button repeatedly until you get the desired setting.
If you keep the button pressed, the indication will advance continuously.

4 Press the NEXT button.

5 Set the minute.
Press repeatedly until you get the desired setting.
If you keep the button pressed, the indication will advance continuously.

6 Press the NEXT button.
The clock starts.
The screen goes back to the normal brightness.

Note
If the lithium battery is not installed, the clock will go back to "0.00" each time the power source is disconnected.

Watching TV Presetting TV Channels

Your receiver is capable of receiving VHF channels E2-E12, UHF channels 21-69, and CATV channels S01-S20. Up to 60 channels can be allocated to any desired programme position.

To Preset Channels

Before you start presetting, pull out the telescopic aerial or connect an external aerial.

1 Turn the power on.
The POWER lamp lights up.
If the TV programme is not displayed, press the INPUT SELECT button.

While pressing the green button, slide the POWER switch to the left.

2 Press the CH PRESET button.

3 Press the TV SYSTEM button to select the TV system in your area.
The indication changes as follows:
BiG - I

Note
If the TV system is not selected correctly, the sound will be poor or noise may be heard.

BiG: Other western European countries
I: UK/Ireland

4 Press the POSITION button to select the desired programme position where the channel is to be stored.

5 Press the PROGRAM +/- buttons repeatedly to select the channel to be stored.
The UHF channel range is displayed after the VHF range*.
Repeat steps 4 and 5 for other channels to be preset.

6 Press the CH PRESET button.
Channel presetting is completed.
The on-screen display disappears.

Programme scanning on your video TV recorder
When the PROGRAM + button is pressed, the channels are scanned in the following order:
When the PROGRAM - button is pressed, the scanning order is reversed.

* After the channel range is displayed, wait for about 2 seconds before next operation.

To change the order of the channel to be stored
Follow the above steps.

To Erase Channels

The erased programme position is skipped when you press the PROGRAM +/- button

1 Press the CH PRESET button.

2 Press the POSITION button and select the programme position to be erased.

3 Press the CLEAR button. The SKIP indication appears.

Repeat steps 2 and 3 for other programme position to be erased.

4 Press the CH PRESET button. The on-screen display disappears.

Example: To erase programme position 11

To add the erased channels again
See "To Preset Channels" on page 22.

Note
Once you have pressed the CLEAR button to display the SKIP indication, make sure it remains displayed until the operation is completed. The indication may disappear depending on the reception condition. If this happens, press the CLEAR button once more to display the indication again.

Watching TV Programmes

1 Pull out the aerial fully. Be sure to pull out the base of the aerial. If you have connected an external aerial or CATV cable, be sure to fold in the telescopic aerial.

2 Turn the power on. The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.

3 If a TV programme is not displayed, press the INPUT SELECT button. The input mode will change as follows:

TV programme → LINE

CAMERA

4 Select the desired programme. Press + for higher-numbered programmes and - for lower-numbered programmes. The programmes will appear in numerical sequence. Press PROGRAM +/- repeatedly until you get the desired programme on the screen.

5 Adjust the aerial for the best reception.

6 Adjust the volume and brightness.

VOL: To decrease volume (left arrow), To increase volume (right arrow)

BRIGHT: For less brightness (left arrow), For more brightness (right arrow)

To turn off the TV

While pressing the green button, slide the POWER switch to the left. The POWER lamp goes out.

To put the aerial away

Slide in the base of the telescopic aerial first, then the center and the point.

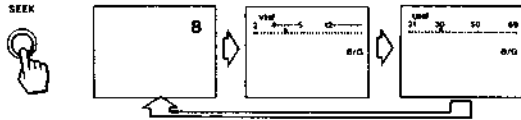
To View a TV Programme Without Presetting Channels

When you do not know the channel number of the TV programme you wish to view or if you want to use the unit in the moving car, search for the programme as follows.

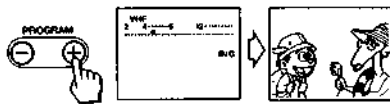
- 1 Press the SEEK button.
The channel range display appears.
Each time you press the button, the receiving channels changes as follows.

VHF → UHF → normal display

Note
To change the TV system, press the TV system button.



- 2 Press the PROGRAM +/- buttons to select the channel.

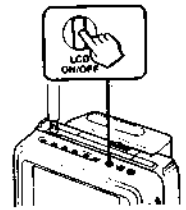


After selecting the channel, the channel range display goes out after a few seconds.

To mute (turn off) the picture

Press LCD ON/OFF button.
The screen will be muted.

It is recommended to mute the picture when you view the playback picture with another TV or monitor. The picture noise of the TV or monitor is reduced. Battery life will also last longer if you use the unit with the picture turned off. To restore the picture on this unit, press LCD ON/OFF again.

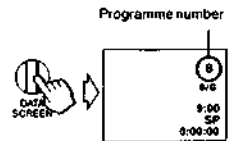


Note
When no picture is displayed and the volume is low, or the earphones are connected, the unit appears to be turned off even though it is not. Be sure to turn off the unit with the POWER switch when it is not in use.

To display the programme number

Press the DATA SCREEN button.

To make the on-screen display disappear, press the DATA SCREEN button again.
After the SEEK button is pressed, the VHF or UHF channel range is displayed instead of the programme number, then goes off after a few seconds.



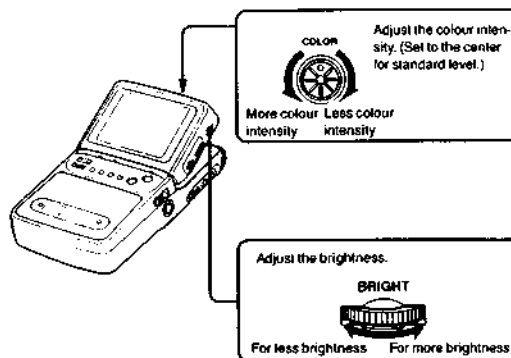
"Last channel" memory function

- While you are watching TV programmes, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized. When you turn on the unit again, the last channel appears on the screen. The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

Adjusting the Picture and Sound

Adjust the picture and sound to your preference.

To adjust the picture



To listen to the dynamic bass sound

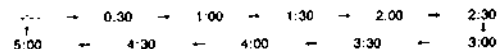
MEGA BASS function
Used for listening to the sound with the stereo headphones. Bass sound increases as you set the MEGA BASS switch from NORM to MAX.



Using the SLEEP Timer

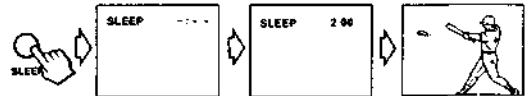
You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV programme, video playback, or while recording.

Each time you press the SLEEP button, the display will change as follows:



Example: To turn off the TV after 2 hours

- 1 Make sure the clock is set correctly (page 18).
No indication will appear on the screen if the clock is not set.
- 2 Select the desired time interval by pressing the SLEEP button.

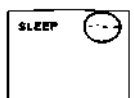


The screen becomes dark.
The normal display will be restored after a few seconds.

The TV will be turned off after 2 hours.
The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.

To cancel the SLEEP timer

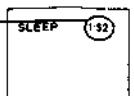
Press the SLEEP button repeatedly until the "..." display appears.
The SLEEP timer can also be canceled by turning off the unit with the POWER switch.



To check the remaining time

Press SLEEP once.
The remaining time is displayed.
The indication will go off after a few seconds.

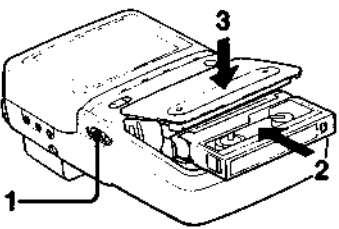
The unit will be turned off after about 1 hour and 52 minutes.



Note
When you use the unit with rechargeable batteries, the unit may turn off before the selected time because the batteries are exhausted.

Inserting a Cassette

Make sure that the power source is connected to the unit.



To insert a cassette

- 1 Open the cassette holder with the EJECT button.
While pressing, slide the button to the right.
- 2 Insert the cassette with the window side facing up.
- 3 Close the cassette holder.

When you slide the EJECT button, power is supplied and the cassette holder opens even if the power is turned off. When the cassette holder opens, the power goes off automatically. Slide POWER if you want to continue operation.

32

To eject a cassette

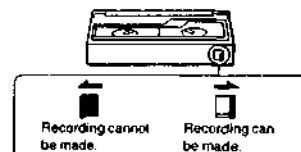
Slide the EJECT button. Make sure the tape is not running.

Note

Do not open the cassette holder while the unit is in the vertical position. If you do, the cassette may fall out of the holder and be damaged.

To Prevent Accidental Erasure

When a new recording is made on a previously recorded tape, the previous recording is automatically erased. To protect a recording, slide the red safety tab out to cover the opening.



Notes on opening and closing the cassette holder

- Do not insert your finger into the cabinet when the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

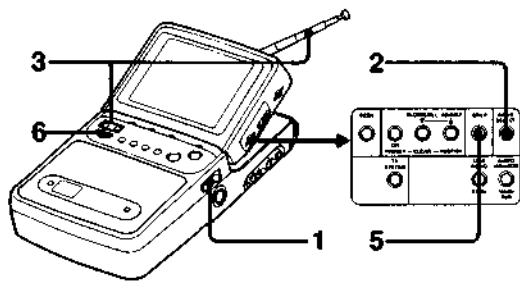
Notes on the cassette

- Store cassettes in their cases when they are not being used and keep them in an upright position to prevent intrusion of dust and uneven winding.
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Remove the cassette from the video TV recorder when not in use.

33

Recording TV Programmes

You can record a TV programme while viewing it. For optimal picture and sound quality, connecting an external aerial is recommended. (See page 45.)



- 1 Turn the power on.
The POWER lamp lights up.
While pressing the green button, slide the POWER switch to the left.
- 2 If the TV programme is not displayed, press the INPUT SELECT button.
The input mode will change as follows:
TV programme → LINE
← CAMERA

When the tape is recorded to the end

The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn the power off with the POWER switch.

About the recorded sound

The VOL control setting has no effect on the recording level.

- 3 Select the desired TV channel. (See page 27.)
Adjust the telescopic aerial for the best reception. (See page 27.)

- 4 Insert the cassette. (See page 32.)

- 5 Select the recording mode, SP or LP.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, set to SP.



- 6 Slide the REC switch to the right.
Recording starts.



To stop recording for a moment
Press [II].

To resume recording
Press [II] again.
(If the [II] button is not pressed again for about 5 minutes, the pause mode will be released automatically and the unit will stop. This is to protect the video heads.)

To stop recording
Press [OFF].

Changing the channel during recording

Set the unit in the recording pause mode and then select another channel. You cannot watch another programme while recording.

When recording from the beginning of a tape

Run the video TV recorder for about 15 seconds at the beginning of a cassette before recording. This will prevent missing the starting point or having any previously recorded picture appear when playing back on another video cassette recorder.

34

35

Recording/playback time

Two tape speeds can be selected with the SP/LP selector. The recording time in the LP mode is twice as long as that in the SP mode. For better picture and sound, recording in the SP mode is recommended. During playback, the mode in which the tape was recorded is selected automatically.

Cassettes and their recording time

There are two formats for 8mm video recording, PAL and NTSC. Video cassette tapes are made to correspond to one of these formats. Use PAL format cassette tapes for this unit. You will find "PS" on the package of PAL cassettes. In some countries, however, only NTSC format cassette tapes with "P6" on the packages are available. If a NTSC format cassette is used with this unit, the actual recording time may differ from the recording time indicated on the cassette.

Note

If you record with this unit on a tape that has been recorded in the PCM mode, and if you play back this tape on a VTR with PCM function, the sound may be cut off occasionally. In this case, set the audio monitor switch of the VTR to the standard position.

To stop recording automatically after a certain time — Quick timer

Press the SLEEP button during recording. You can leave the unit function when you go to bed or when you go out, etc.

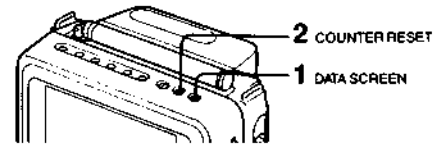
The unit will be turned off automatically at the preset time. For operation, see page 31.

Are you having trouble?

Symptom	Possible cause	Correction
"CASSETTE" indication is displayed when you slide the REC switch	The safety tab on the cassette is slid out.	Slide the tab in or use a new cassette.
	The tape is at its end	Rewind the tape or use a new cassette
	No cassette is inserted	Insert a cassette

Using the Tape Counter

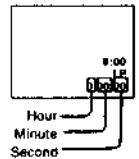
During recording or playback, the digits on the counter indicate the actual recording or playback time. By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.



1 Press DATA SCREEN so that the counter is displayed.



2 During recording or playback, press COUNTER RESET at the point you later want to locate. The counter will be set to 0:00:00.



Use the counter to find this point later.

Notes

- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.
- There will also be a time lag of several seconds when a tape recorded in both the LP or SP modes or a tape having a blank portion between the recorded portions is played back.

Using the Timer-Activated Recording Feature

By using the timer-activated recording feature, you can programme this unit to automatically record a TV programme that will be shown within 24 hours of activating the timer. For better recording of picture and sound, use of an external antenna is recommended. See page 45.

Before setting the timer

- Make sure that the power is supplied. (Is the battery pack fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock (see page 18.)
- Insert a cassette (see page 32.) Make sure that the safety tab is slid in.

Example: To record the programme from 20:30 to 21:45.

1 Press the **TIMER SET/CHECK** button. The screen becomes dark. Input mode/programme number

2 Press the **+** button to set the hour. Each time you press the + button, the hour indication increases by one. If you keep the button pressed, the indication will increase continuously.

3 Press the **NEXT** button. The starting time is now set.

4 Press the **+** button to set the minutes. Each time you press the + button, the minutes indication increases by one. If you keep the button pressed, the indication will increase continuously.

5 Press the **NEXT** button. The starting time is now set.

ON TIME (7:--)
OFF TIME (12:30)
Recording mode Ending time

2 Select the Input mode with the **INPUT SELECT** button, and the recording mode with the **SP/LP** button. For TV programme recording, select the desired channel.



3 Set the time for the recording to begin.

1) Press the **+** button to set the hour. Each time you press the + button, the hour indication increases by one. If you keep the button pressed, the indication will increase continuously.



2) Press the **NEXT** button.



3) Press the **+** button to set the minutes. Each time you press the + button, the minutes indication increases by one. If you keep the button pressed, the indication will increase continuously.

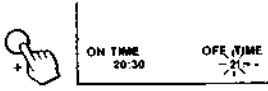


4) Press the **NEXT** button. The starting time is now set.




4 Set the time for the recording to stop.

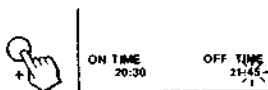
1) Set the hour with the + button.




2) Press the NEXT button.



3) Set the minute with the + button.

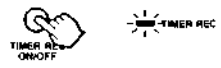


4) Press the NEXT button. The ending time is now set. The on-screen display disappears.



If you have made a mistake
Turn the power off, then on again. Repeat steps from 1 to 4.

5 Press the TIMER REC ON/OFF button.
The power goes off and the TIMER REC lamp lights up (timer recording standby mode). The recording starts automatically at the preset start time and the power goes off at the preset end time.



Notes

- During timer recording, both picture and sound will be muted. To listen to the sound and watch the picture, press the LCD ON/OFF button.
- When you press the TIMER REC ON/OFF button, the "CASSETTE" indication will appear if the safety tab on the cassette is slid out or if no cassette is inserted.

To stop the timer recording

Press the TIMER REC ON/OFF button again. The TIMER REC lamp goes out.

To check the setting

Press the TIMER SET/CHECK button while the TIMER REC lamp is lit. The power is turned on and the starting and ending time is displayed for a few seconds.



To change the timer setting after completing the setting

Press the TIMER REC ON/OFF button to cancel the timer recording mode, then turn the unit on and set the timer again.

To set the timer while the tape is running

Only the starting and ending time can be set during playback or recording. After stopping the tape, set the recording mode (SP/LP) and programme number, and then press the TIMER REC ON/OFF button.

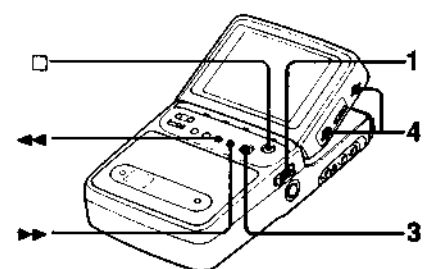
If a power interruption occurs when the unit is connected to the AC power source

Recording stops. Recording starts again after the power is resupplied. When a power interruption occurs during the timer recording standby mode and the power is resupplied, the timer settings will not be affected as long as the lithium battery is installed.

To record to the end of the tape


Set the starting and ending time the same. When the tape reaches the end, retarding will stop and the power goes off.

Playing Back the Recorded Tapes




1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.




2 Insert a recorded tape (see page 32.)

3 Press > to start playback.



4 Adjust the volume and the brightness.



To decrease volume To increase volume For less brightness For more brightness

To stop playback: Press the □ button.
To rewind the tape: Press the ◀ button.
To advance the tape: Press the ▶ button.

To rewind the tape and play it back automatically — Auto play

While pressing the ◀ button, press the ▷ button. The "AUTO PLAY" indication appears.

To mute the picture

Press the LCD ON/OFF button. To restore the picture, press the LCD ON/OFF button again.



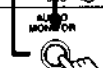
To adjust the picture

Adjust the BRIGHT and COLOR controls (see page 30.)

To stop playback at the desired time

Use the SLEEP function. The unit goes off at the preset time. (see page 31.)

To playback the tape recorded in stereo or bilingual mode

AUDIO MONITOR	Stereo		Bilingual	
	Display	Sound	Display	Sound
	(S)	Stereo (To listen to the stereo sound, use the earphones)	MAIN	MAIN
	(S) L	Left channel	SUB	SUB
	(S) R	Right channel	MAIN+SUB	MAIN+SUB

To stop the tape for a moment — Still picture	During playback STILL	To resume normal playback, press ▶. These modes will be automatically released after the following time intervals: Still: 5 minutes Slow*: 1 minute
To view the slow playback picture	During playback SLOW 1/5	
To locate a particular point while viewing the picture — Picture search	During playback (FF)	When you release the button, the unit will return to the previous mode.
	During playback (REW)	
To view the picture at high speed — FR picture search	While rewinding (FF)	
	While fast forwarding (REW)	

* After normal playback is resumed, the button will not function for about 5 seconds.

If streaks appear in the still and slow playback mode

Adjust the picture as follows:

- 1 Play back the slow motion picture.
- 2 Press the SLOW/STILL ADJUST , buttons to adjust the picture so that the noise does not appear.



To adjust the upper portion of the picture, press the button. To adjust the lower portion of the picture, press the button. The still picture is adjusted at the same time.

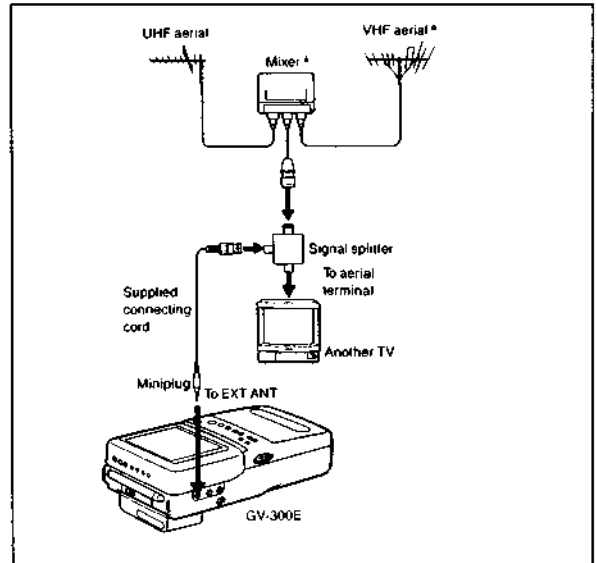
When the playback picture is viewed on another TV or monitor

The horizontal bands appear in the still, slow, picture search and FR picture search modes. Noise appears in the still and slow modes. To reduce the horizontal bands, press LCD ON/OFF button to mute the picture of this unit.

Notes on the CRYSTAL-CLEAR still/slow/picture search on LCD

Noiseless pictures can be viewed in the still, slow and picture search modes, owing to the characteristics of the liquid crystal.

If you cannot obtain satisfactory reception with the telescopic aerial, or when recording TV programmes, use an outdoor aerial



* The mixer and the VHF aerial are not necessary in the United Kingdom as only UHF is available.

Notes

- Before connecting the aeriels, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use a commercially available car aerial, etc. For details, refer to the instruction manual of the car antenna.

Connecting other VTRs or Monitors

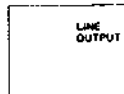
Notes on the VIDEO/AUDIO IN/OUT Jacks

The VIDEO/AUDIO IN/OUT jacks are automatically set to the input or output jacks according to the operating condition of the unit.

Refer to the following diagram:

Mode selected with INPUT SELECT button	Stop or recording mode	Playback mode
TUNER (TV program)	output	output
LINE *	input	output
CAMERA	output	output

* When the LINE mode is selected with INPUT SELECT, the INPUT or OUTPUT indication appears with LINE.



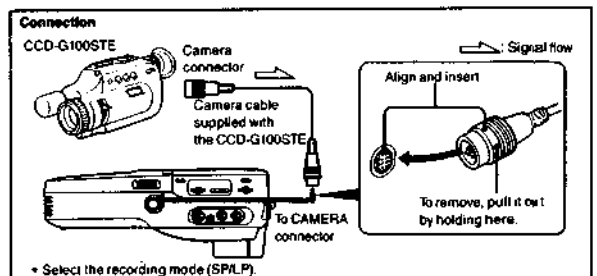
Note

When the LINE OUT jacks of other equipment are connected to the VIDEO/AUDIO IN/OUT jacks on this unit, and signals are output from the jacks of the other equipment to this unit, the picture and sound of the other equipment may be distorted. In such case, turn off the power of this unit or disconnect the other equipment.

Camera Recording — Controlling from the Camera


By connecting an optional Video Camera CCD-G100STE, stereo recording controlled from the camera is possible. You can hold the camera and keep this unit in a carrying case while recording.

For details, refer to the instruction manual of the video camera



* Select the recording mode (SP/PLP).

Recording with CCD-G100STE

- 1 Set the POWER switch of this unit to CAMERA. While pressing the green button, slide the POWER switch to the right. 
- 2 Insert the cassette
- 3 Set the STANDBY switch of the camera to STANDBY. The power of this unit is turned on, and the POWER, STEREO lamp light up. To have the picture on the screen of this unit, press LCD ON/OFF button.
- 4 Start recording. Press the START/STOP button of the camera.


To stop recording for a moment
Press the START/STOP button. Press it again to start recording.

To stop recording
Set the STANDBY switch to LOCK.

For CCD-G100E
Operation is the same as CCD-G100STE. However, since the microphone of the CCD-G100E is monaural, the sound is recorded in monaural although the STEREO lamp of GV-300E lights up.

For CCD-G1E
CCD-G1E can be connected to this unit. However only recording/pause mode switching can be controlled on the camera. Power on/off and recording stop can be controlled only on GV-300E. The sound will be recorded in monaural although the STEREO lamp of this unit lights up.

Playing back the newly recorded pictures

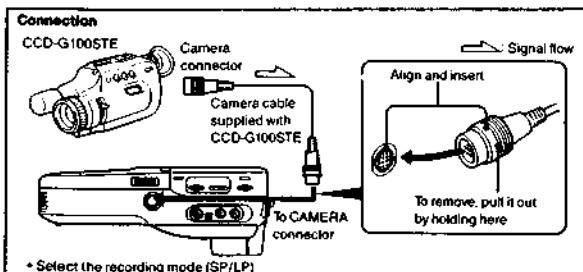
- 1 Turn the power on of this unit. The POWER lamp lights up. While pressing the green button, slide to the left. 
- 2 Press <=> button of this unit to rewind the tape.
- 3 Press | button of this unit.
- 4 Press > button of this unit.

Caution
Do not operate this unit for a long time when it is in a carrying case like the one supplied. Internal heat build-up may occur which can cause this unit to malfunction.




When the POWER switch is set to CAMERA, the operable buttons are: POWER switch, EJECT button, LCD ON/OFF button, DATA SCREEN button, COUNTER RESET button, and SP/LP button.

Camera Recording — Controlling from This Unit

By connecting the optional video camera CCD-G100STE, it is possible to record with this unit while using the camera in a distant place. For details, refer to the instruction manual of the video camera.



Recording

- 1 Turn the power on of this unit. The POWER lamp lights up. While pressing the green button, slide the POWER switch to the left. 
- 2 Press the INPUT SELECT button of this unit to display "CAMERA" on the screen. The STEREO lamp lights up. The picture to be recorded appears on the screen. If the focus or colour need adjustments, adjust them on the camera. To have the picture disappear, press the LCD ON/OFF button. 
- 3 Slide the REC switch of this unit. Recording starts. 

To stop recording for a moment
Press II button of this unit

To stop recording
Press <=> button of this unit

You can also use the CCD-G100E and CCD-G1E however the sound will be recorded in monaural

Playing back the newly recorded pictures

- 1 Press <=> button to rewind the tape.
- 2 Press | button.
- 3 Press > button.

Recording with a camera from a distant place

Use the optional pan filter HVR-200 for camera recording from a distant place, maximum distance of 5m

To listen to the sound that is being recorded
While recording, no sound is heard from the speaker. Connect the supplied stereo earphones to PHONES jack to listen to the sound

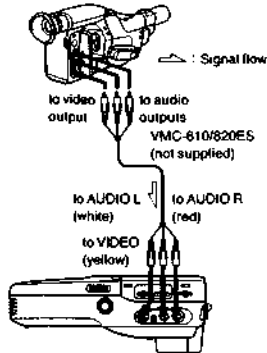
To use a camera with the timer-activated recording feature
This feature allows you to record a desired activity at a designated time, for example, a train passing by at a certain time. To set the timer, see page 38. The recording will start automatically at the time you set.

Using This Unit as a 8mm Video Camera Recorder Monitor

With the following connection, you can view pictures being recorded by the connected video camera recorder. Also you can view the playback pictures from the video camera recorder on this unit.

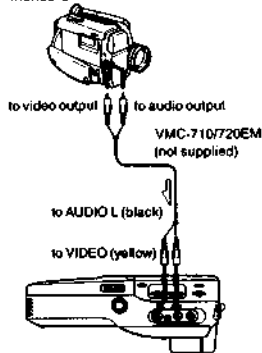
Connection

If the video camera recorder is stereo



This unit operates in the stereo mode automatically.

If the video camera recorder is monaural



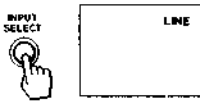
This unit operates in the monaural mode automatically.

Operation

1 Turn the power on.
The POWER lamp lights up

While pressing the green button, slide the POWER switch to the left.

2 Press the INPUT SELECT button to display "LINE" on the screen.

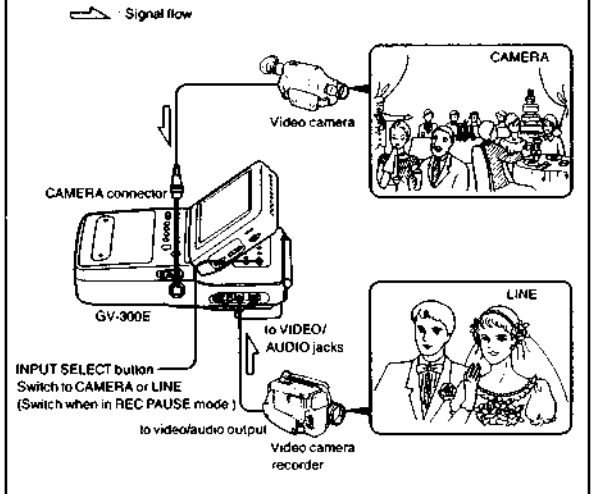


3 Operate the video camera recorder.

52

When connecting both a video camera recorder and a video camera

Set each unit to different angles, then, using the INPUT SELECT button, switch the picture to be recorded on this unit.

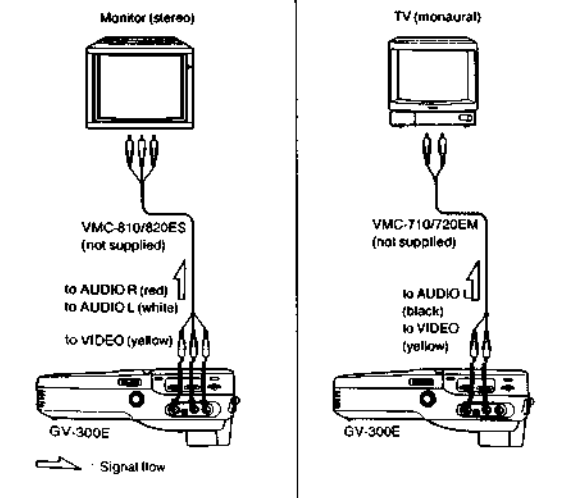


53

To Connect Another TV or Colour Monitor

If you connect this unit to another TV or colour monitor, you can view the playback pictures or the selected TV program on a larger screen and listen to the dynamic sound. In this case, mute the picture of GV-300E by pressing the LCD ON/OFF button to reduce horizontal bands and noise in the picture of the TV or color monitor during various playback modes.

To connect a TV/monitor with video and audio inputs

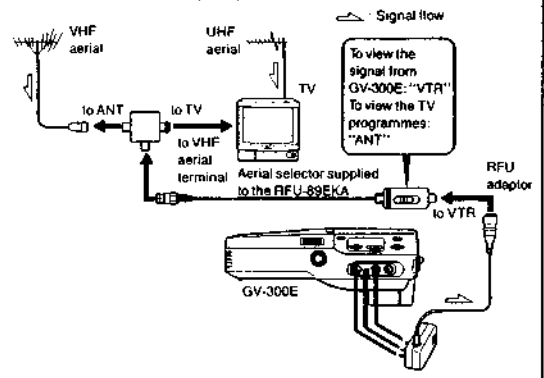


Note
When connecting only to the AUDIO L jack, the L and R sounds are automatically mixed and always output is monaural

54

To connect a TV without video and audio inputs

Use the RFU-89EKA RFU kit (not supplied)



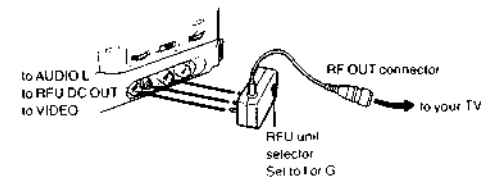
Note on the RFU-89EKA RFU kit

The RFU-89EKA includes the following accessories:
— RFU adaptor (1)
— Aerial selector (1)

Channel for VTR

To view the playback picture of this unit, set the RFU unit selector of the RFU adaptor according to the TV system of your country, then turn on the TV and select a programme position that is not used to receive a TV station

To connect the RFU adaptor

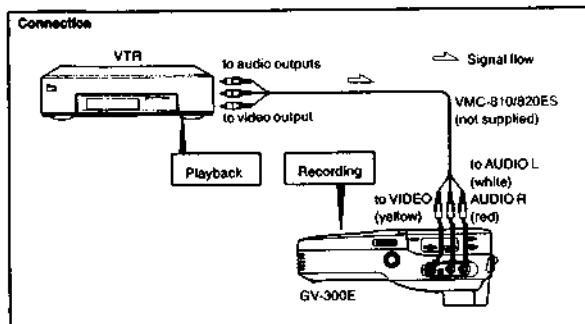


55

Editing Tapes

You can edit tapes by connecting another VTR (8mm, Beta or VHS format) with video/audio input.

To Edit from Another VTR to This Unit



If the VTR to be connected has a monaural audio output only, use a commercially available connecting cord such as the VMC-710/720EM. In this case, connect to the AUDIO L and VIDEO jacks.

Operation

- Turn the power on. The POWER lamp lights up. While pressing green button, slide the POWER switch to the left. *
- Insert the cassette.
- Press the INPUT SELECT button so that the "LINE" indication appears.
- Select the recording mode (SP/LP) by pressing the SP/LP button.
- For playing back stereo or bilingual recorded tape, select the desired mode with the LINE AUDIO button. *
- Play back the tape on another VTR and press the II (PAUSE) button at the point you want to start playing back.
- Set this unit in the recording pause mode.
- Release the II (PAUSE) buttons on both units.
- After editing is completed, press the I (STOP) buttons on both units to stop recording.

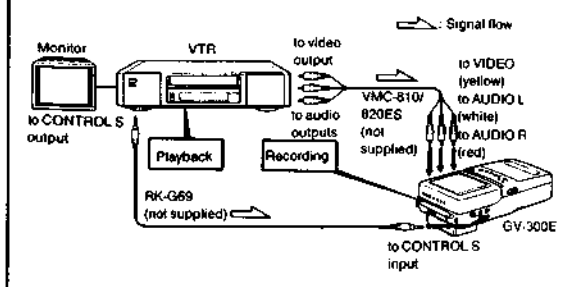
* The signal is recorded in the selected mode. When playing back the recorded tape, the mode is selected automatically.

56

57

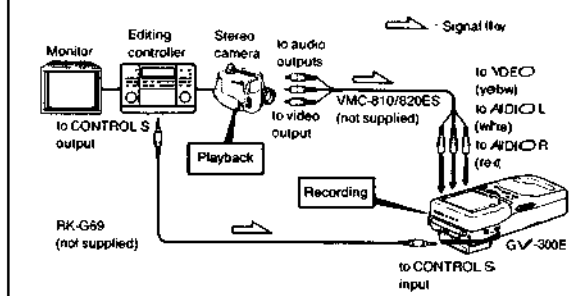
To edit from the VTR equipped with the CONTROL S output

Connect the CONTROL S input jack on this unit and the CONTROL S output jack on the other equipment. Playback/pause on the other VTR and recording/pause on this unit can be operated simultaneously.



To edit with the editing controller

By connecting the editing controller, the recorder and player can be operated easily with the controller.



Note on an optional wireless remote control kit

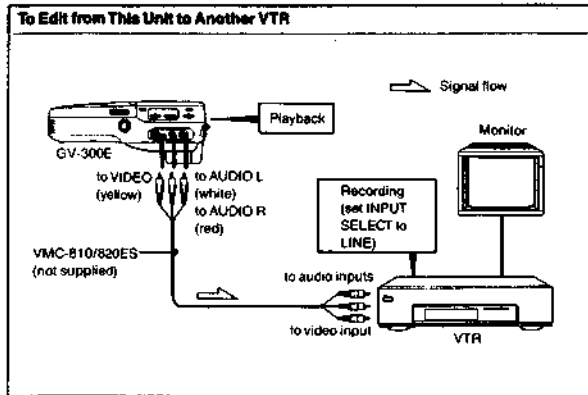
When the receiver of the wireless remote control kit is connected to the CONTROL S jack on this unit, it can be controlled remotely. This set up makes it convenient to use this unit's tuner of a color monitor.

When the unit is not in use, remove the receiver. If the receiver remains connected, a very small amount of electric current flows.

For details, please read the instruction manual of the wireless remote control kit.

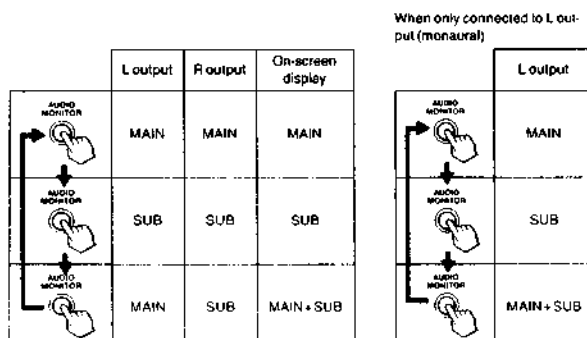
58

59



If the VTR to be connected has a monaural audio input only, use a commercially available connecting cord such as VMC-710/720EM. In this case, connect to the AUDIO L and VIDEO jacks.

To edit the tape recorded in bilingual mode
Select the output signal with the AUDIO MONITOR button. The signal is selected as follows:



60

Maintenance

Video Head Cleaning

To ensure a clear picture, clean the video heads periodically. If playback pictures are noisy or hardly visible, the video heads may be contaminated. In this case, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) according to the instructions.

Caution

Do not use commercially available wet-type cleaning cassettes. They may damage the video heads.

Note

If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

If the Video Head is Damaged

When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. In this case, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Note on the built-in lighting system

A built-in lighting system is assembled inside the liquid crystal screen of this unit. The life of the small fluorescent tube used for this built-in lighting system runs out over a period of use. If the lamp becomes dimmer or goes off immediately after you turn it on, even with new batteries, replace the lamp with a new one. To replace the lamp, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tube is about three years if this unit is used for an hour each day. When you use this unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

Note on the LCD

- Do not push the display forcibly.
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C (104°F).
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

62

Others

Precautions

Operation

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.5 V (DC pack DCP-77).
- For DC or AC operation, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations:
 - Locations susceptible to vibration
 - Locations exposed to strong magnetic fields
 - Locations near TV or radio transmitters where strong radio waves are generated
- Do not place the unit on the sand.

Care

- When the unit is not used for a long period of time, periodically turn on the power, operate the recorder and play back a tape for about three minutes.
- Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

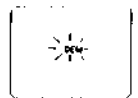
61

Notes on Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drums, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, do not leave the tape inside the unit.

If moisture condenses inside the unit

The "DEW" indication appears on the screen. In this case, no button will function except the EJECT button (However, if you have been watching a TV program, you can continue to do so.) Eject the cassette, turn off the unit and leave the cassette holder open at least for an hour.



The unit can be used again if the DEW indication does not appear when one of the tape transport buttons is pressed.

63

Using Your Video TV Recorder Abroad

If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply of 100 V-240 V), you can use your recorder in any country.







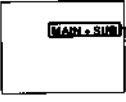
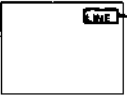
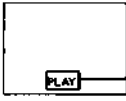
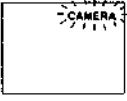
Each country has special TV color broadcast and electricity systems. This unit is designed to record and play back using the PAL colour video signals. Recording and playback of video sources based on other color systems cannot be guaranteed.

PAL system countries:
Australia, Austria, Belgium, China, Denmark, Finland, Great Britain, Holland, Hong Kong, Italy, Kuwait, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, West Germany, etc.

64

List of On-Screen Displays

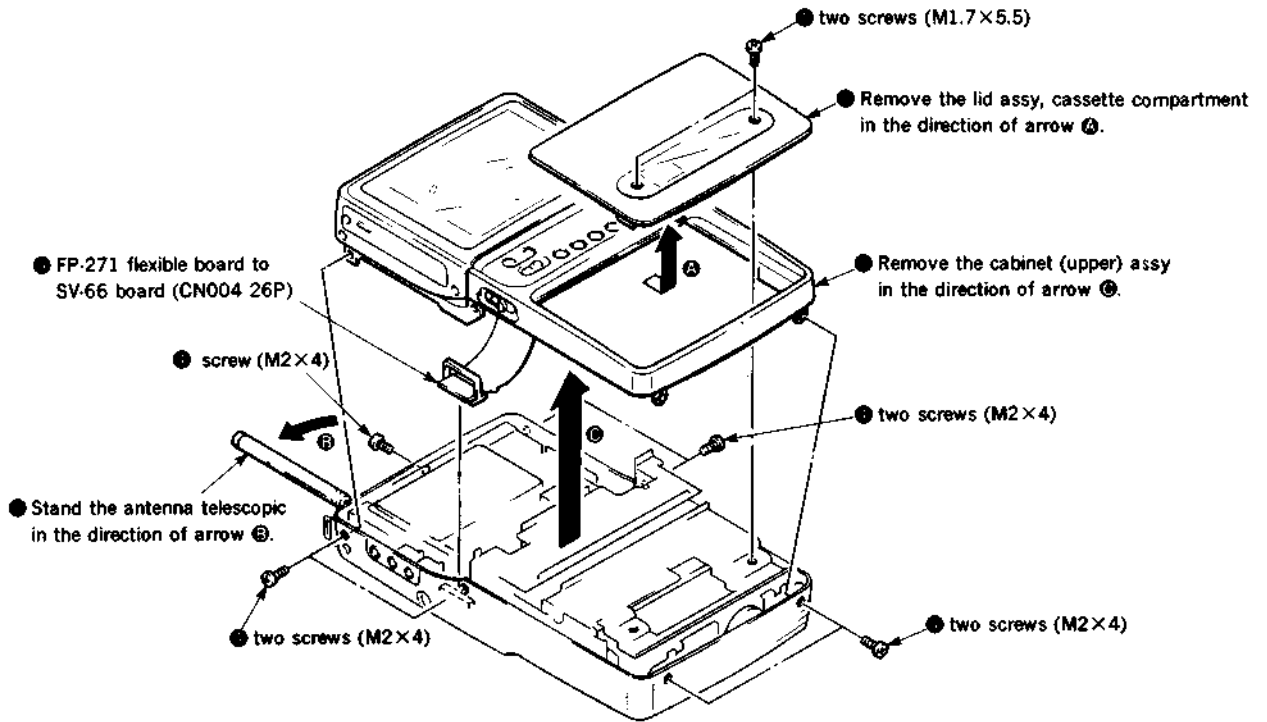
The following indications appear on the screen indicating the operation condition and cautions.

Indication	Meaning (reference page)	Indication	Meaning
	Programme number (page 27)		Caution for the cassette (page 36)
	Current time (page 35) Recording mode (page 35) Counter (page 37)		Battery is exhausted (page 14)
	Stereo (page 43)		Moisture condensation (page 63)
	Bilingual (page 43)		Input from VIDEO/AUDIO jacks (page 46)
	Tape transport operation (page 42 - 44)		Input from CAMERA connector (page 50)

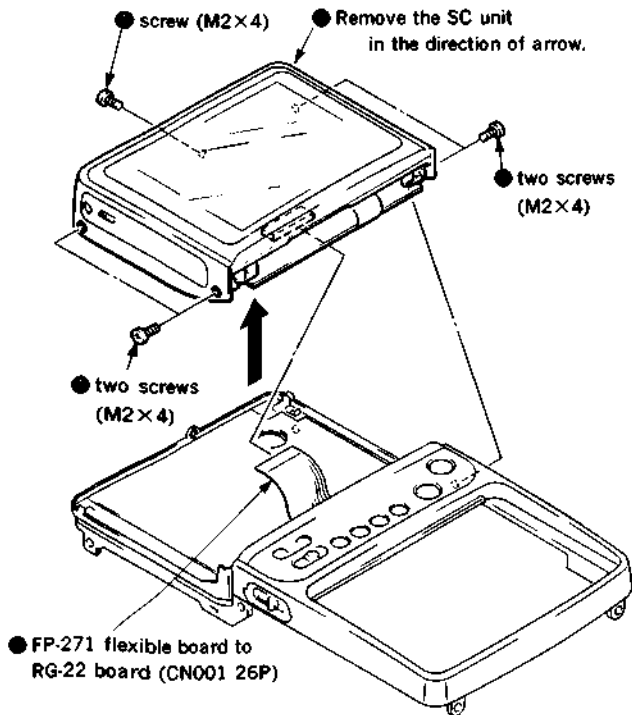
70

**SECTION 2
DISASSEMBLY**

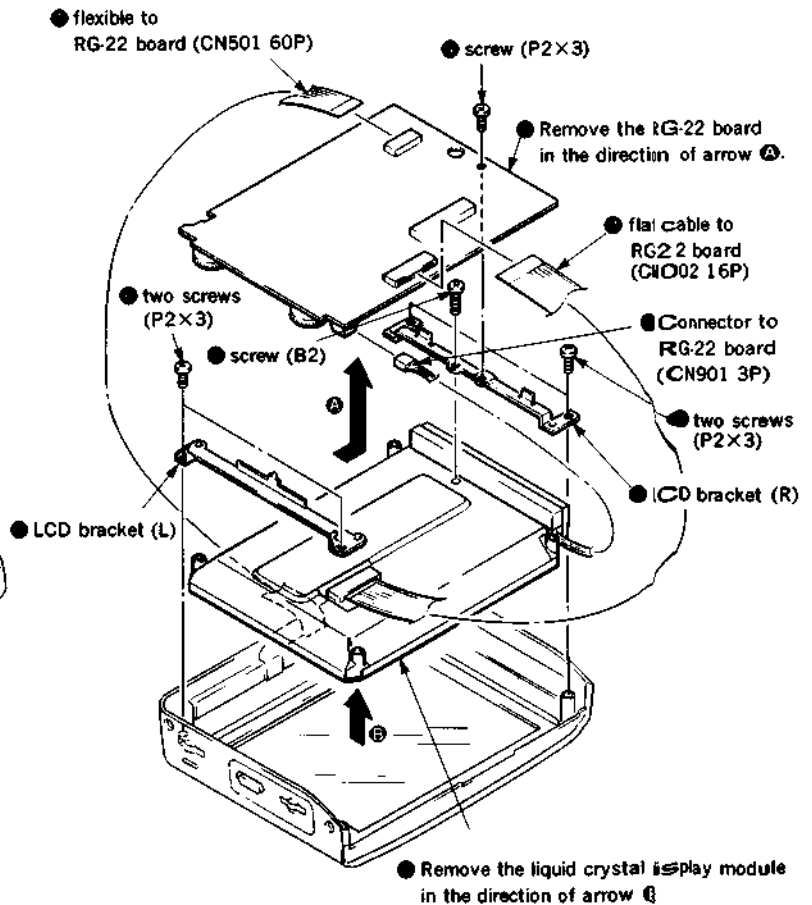
2-1. REMOVAL OF CABINET (UPPER) ASSY



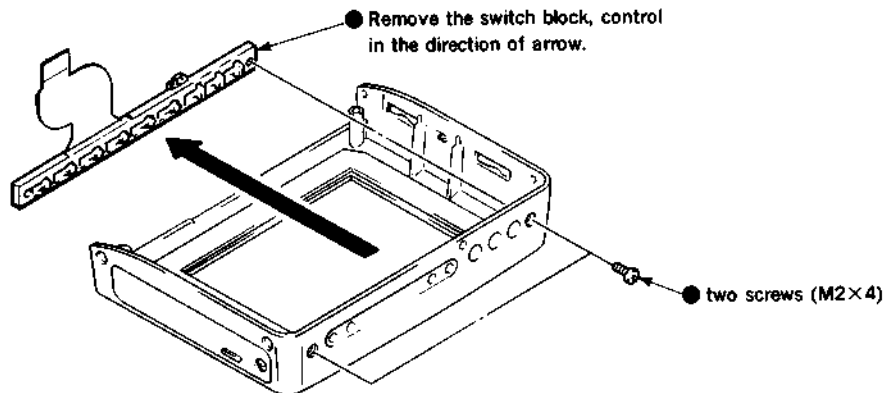
2-2. REMOVAL OF SC UNIT



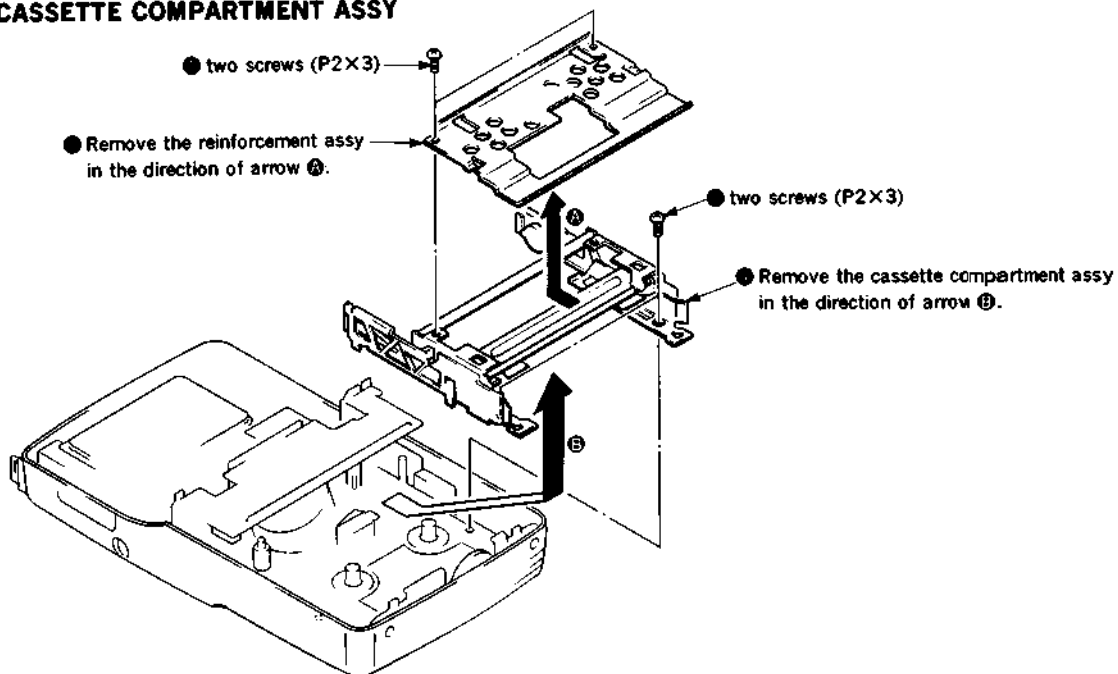
2-3. REMOVAL OF LIQUID CRYSTAL DISPLAY MODULE



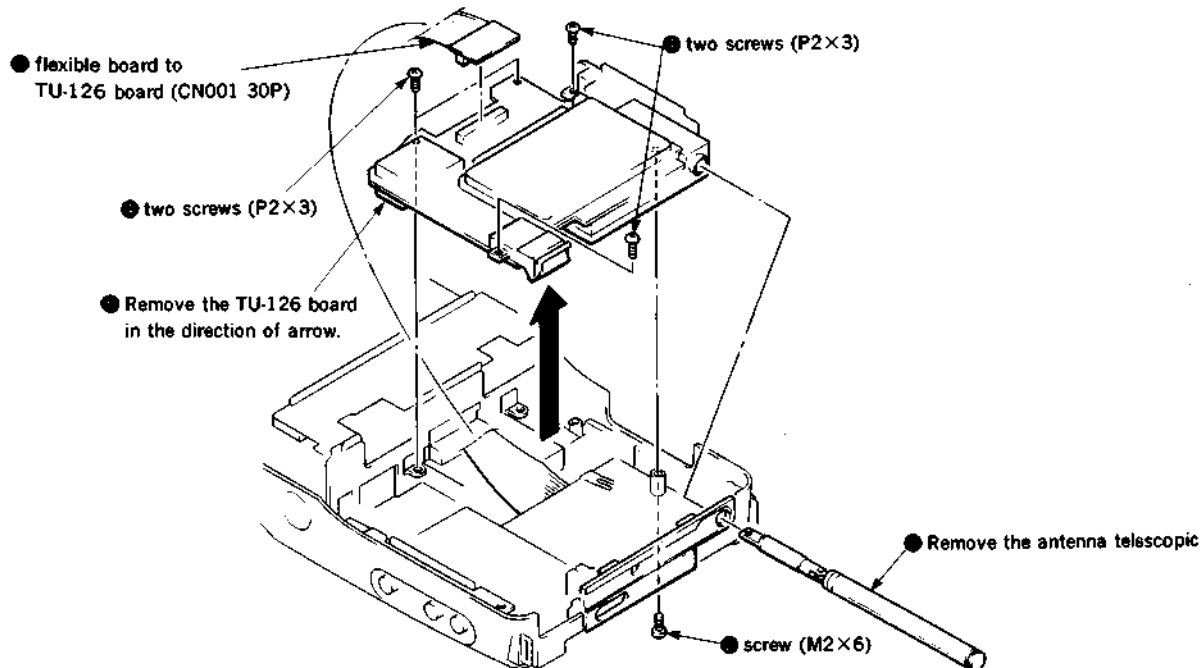
2-4. REMOVAL OF CONTROL SWITCH BLOCK



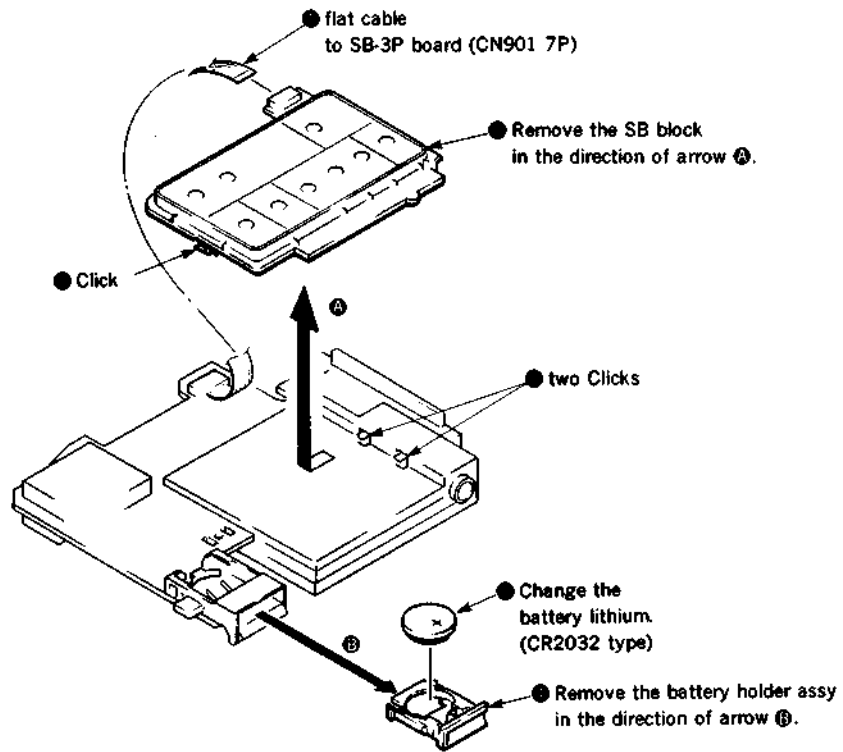
2-5. REMOVAL OF CASSETTE COMPARTMENT ASSY



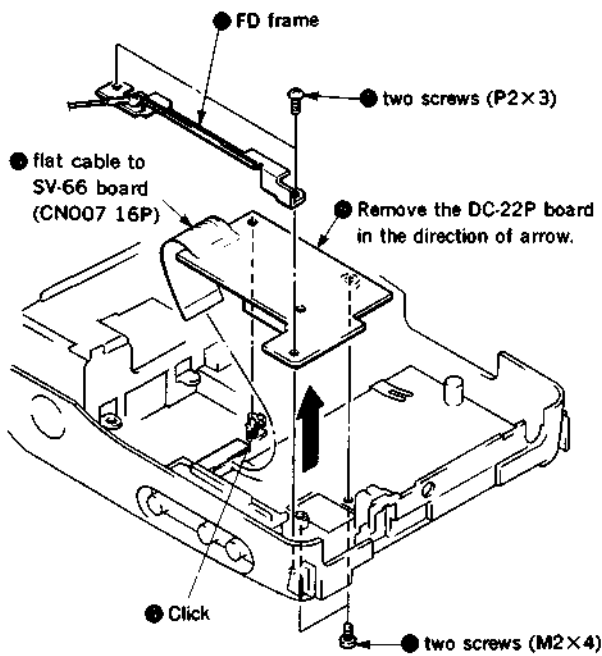
2-6. REMOVAL OF TU-126 BOARD



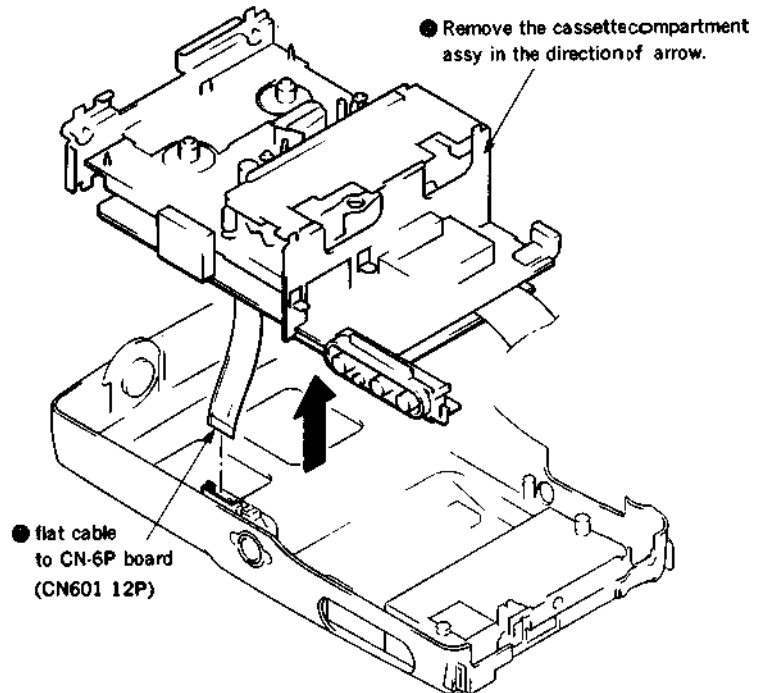
2-7. REMOVAL OF SB BLOCK AND LITHIUM BATTERY



2-8. REMOVAL OF DC-22P BOARD

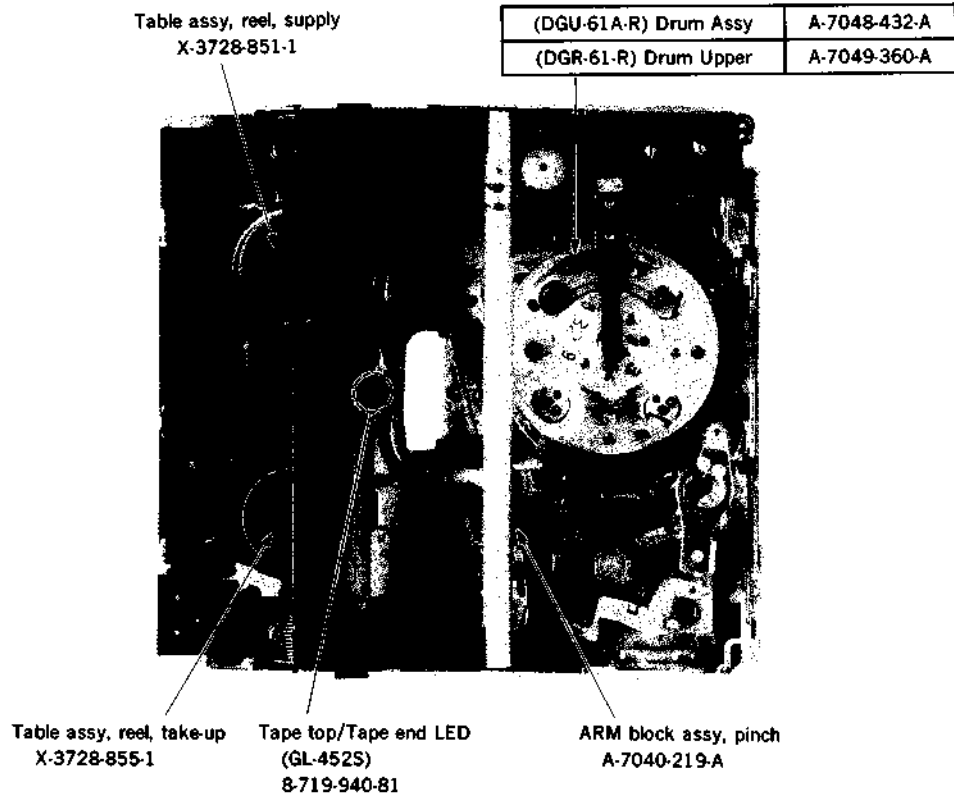


2-9. REMOVAL OF MECHANISM DECK

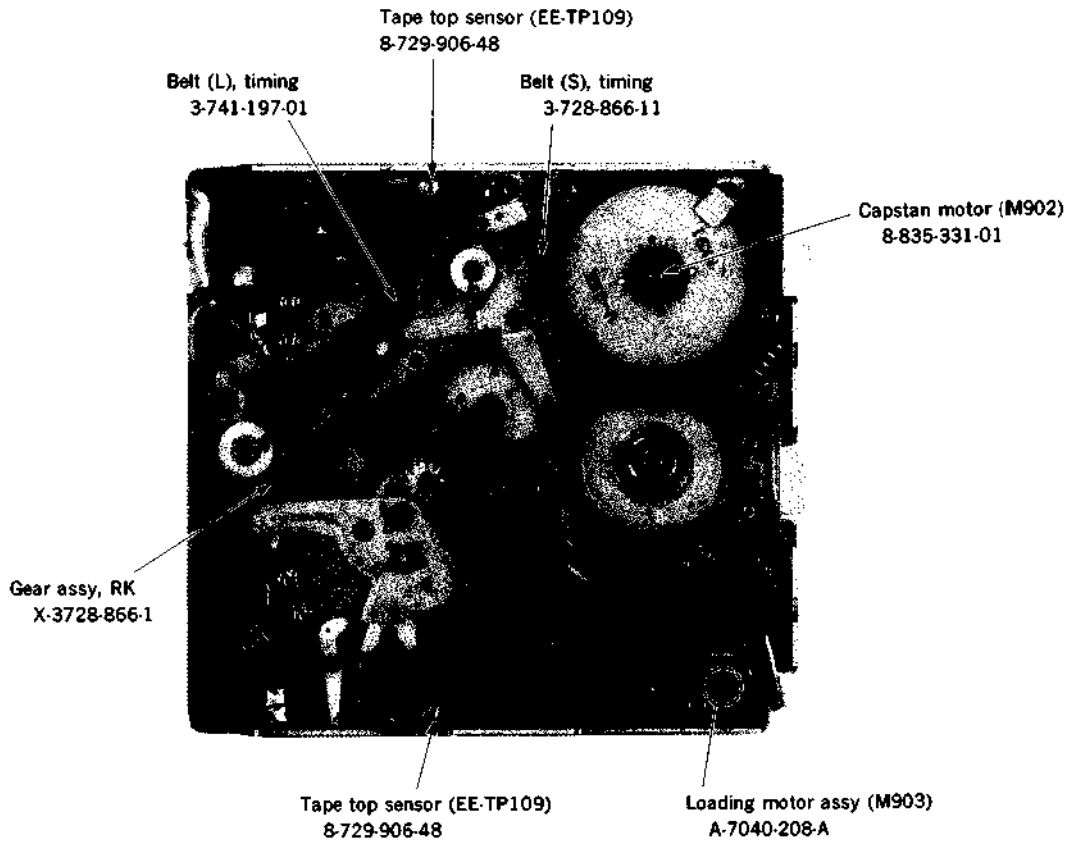


2-10. INTERNAL VIEWS

— UPPER —



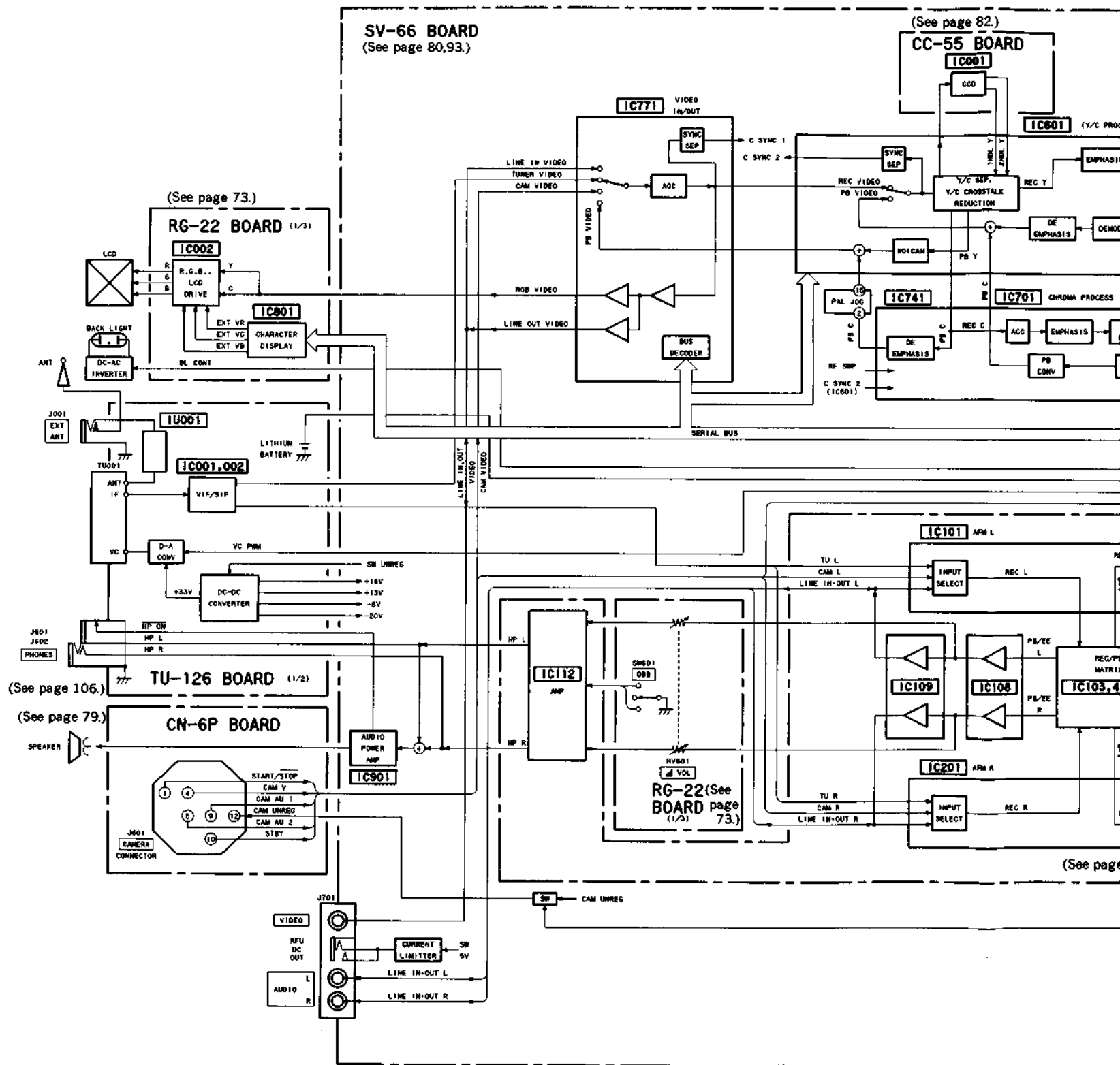
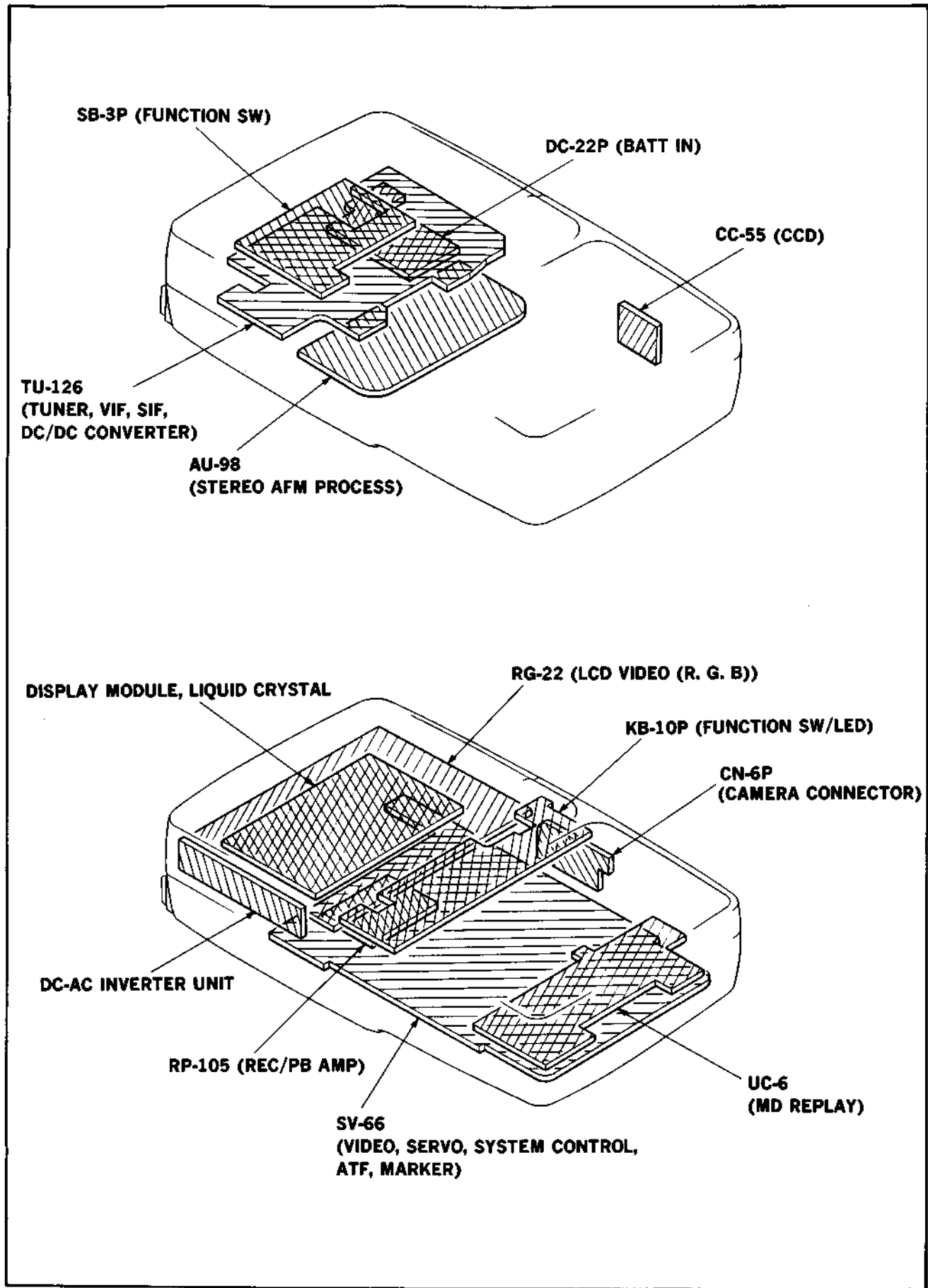
— LOWER —

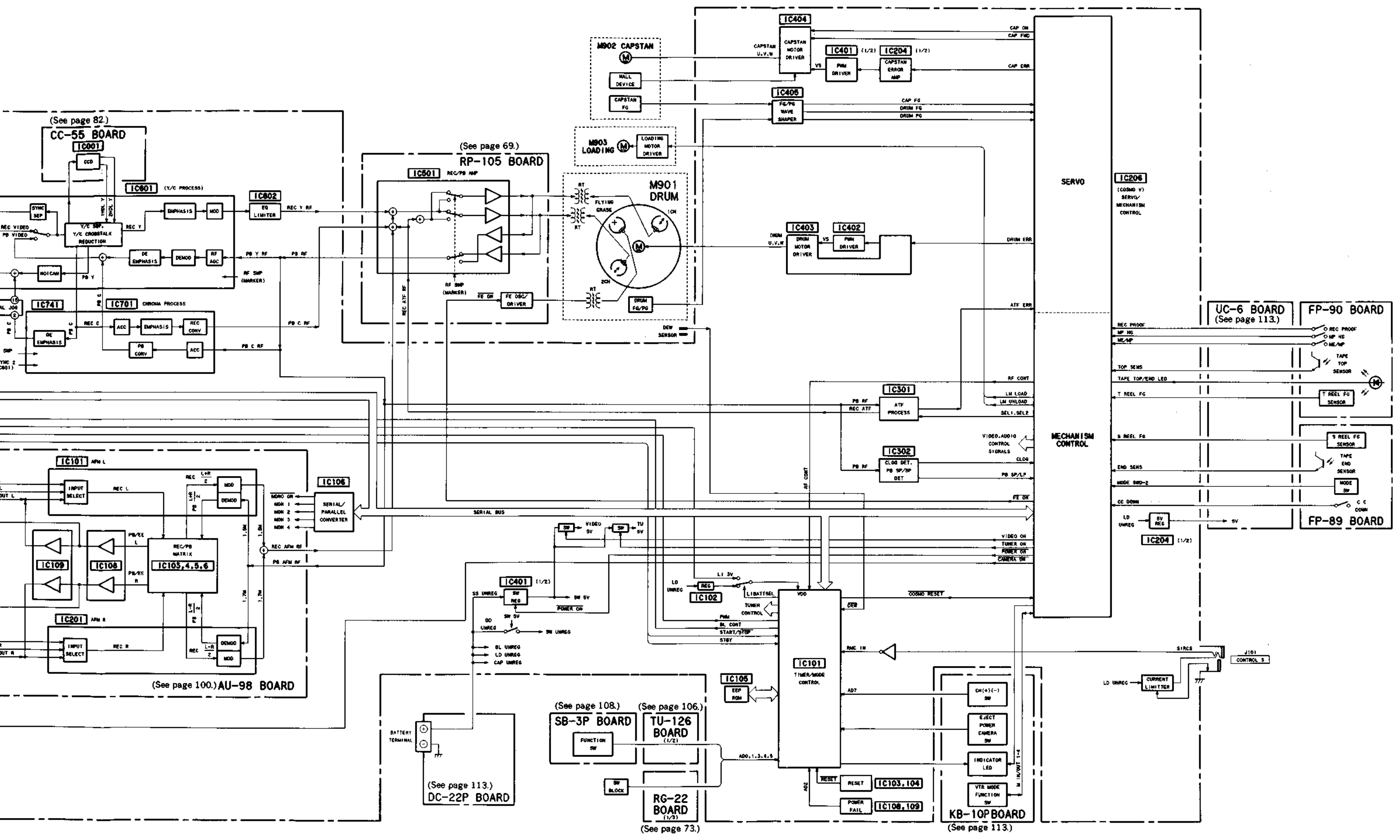


SECTION 3 DIAGRAMS

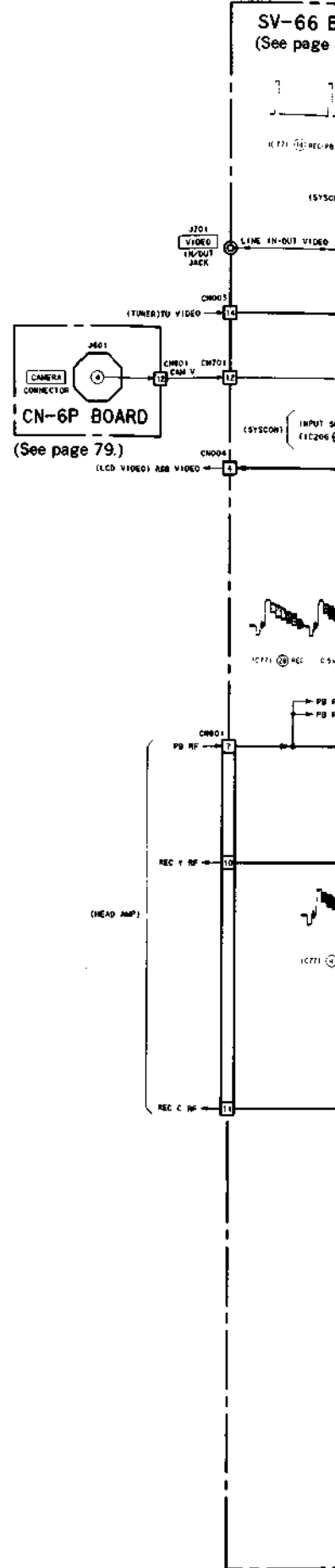
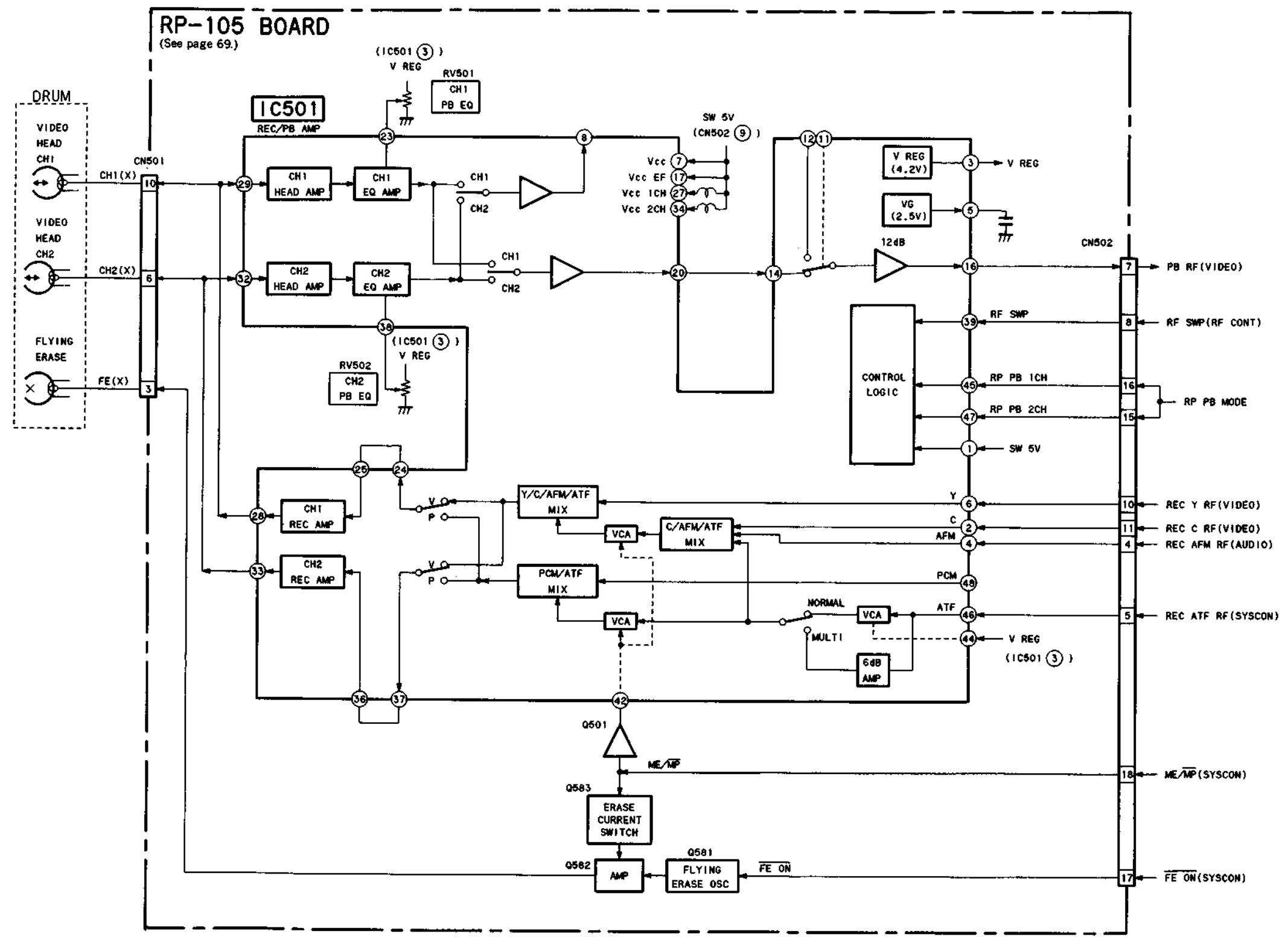
3-2. OVERALL BLOCK DIAGRAM

3-1. CIRCUIT BOARDS LOCATION



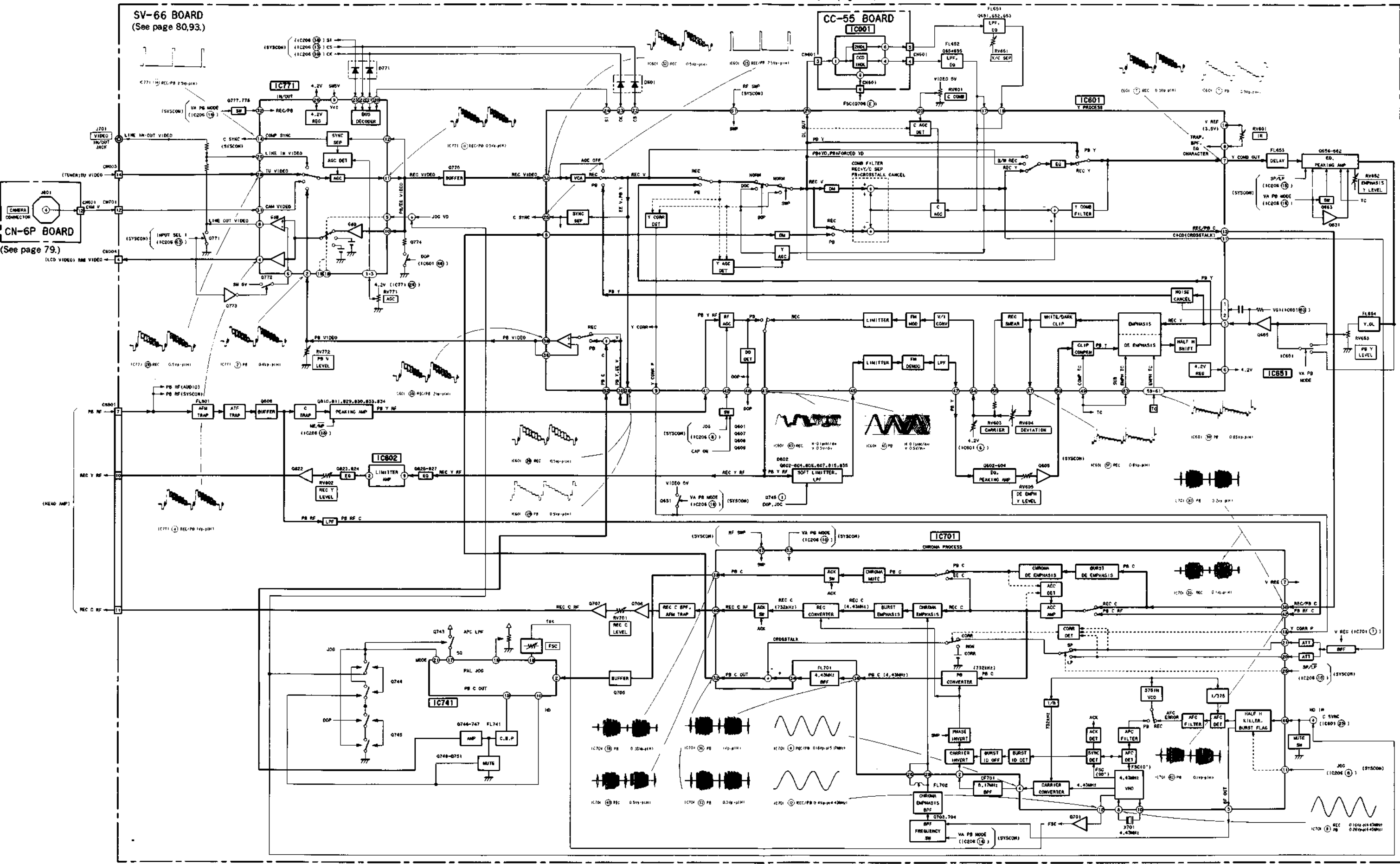


3-3. HEAD AMP BLOCK DIAGRAM

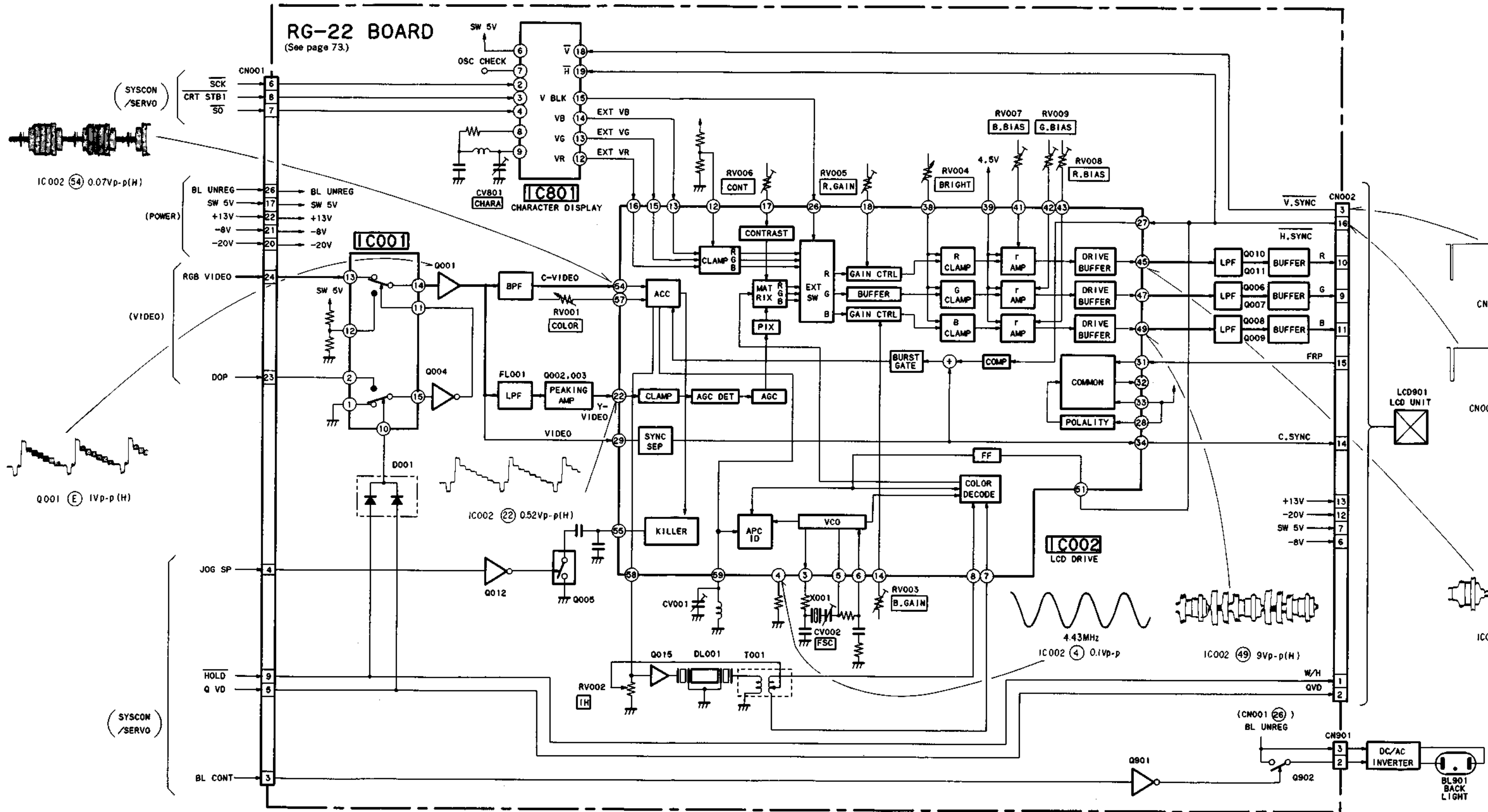


3-4. VIDEO BLOCK DIAGRAM

(See page 82.)

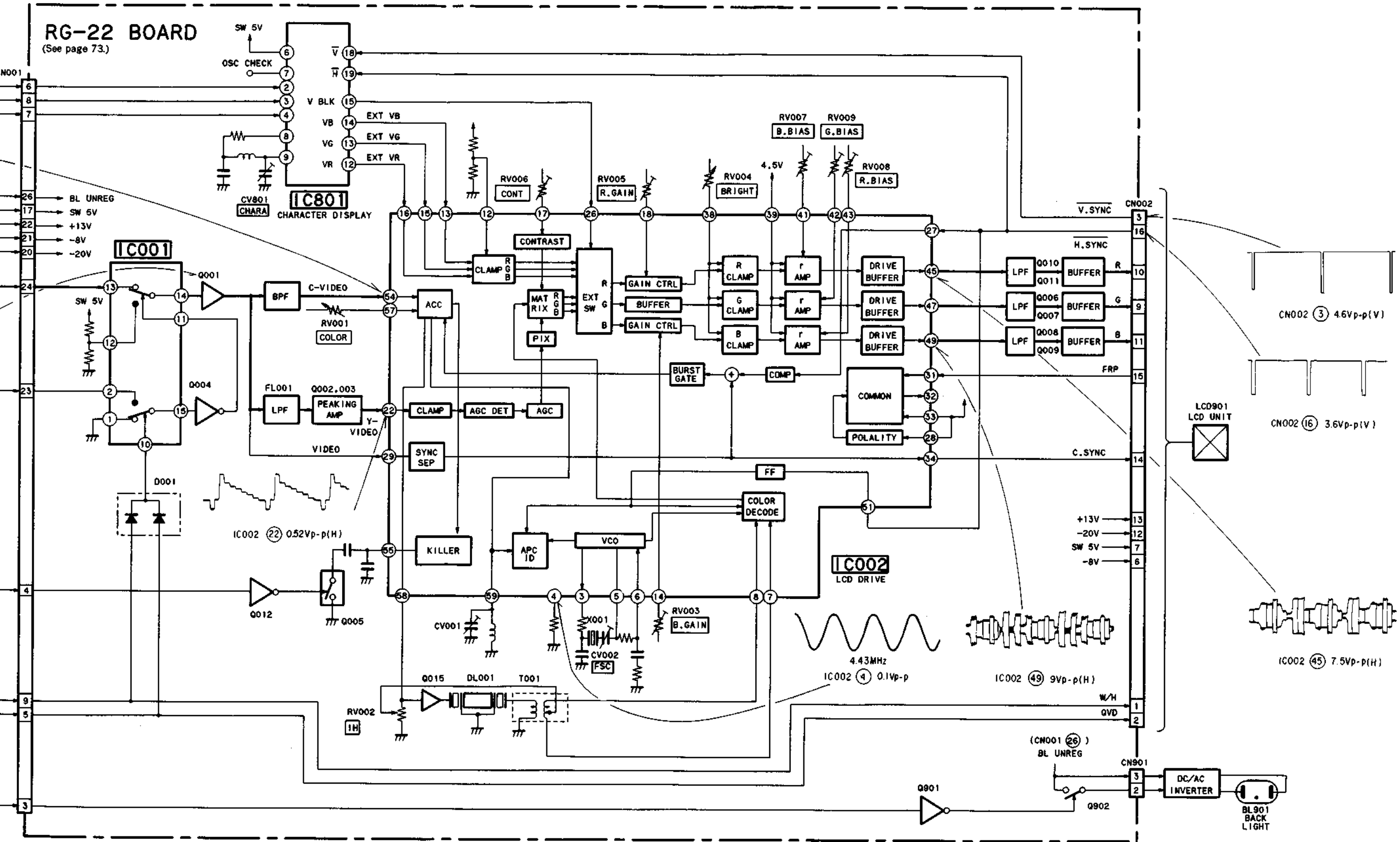


3-5. LCD VIDEO BLOCK DIAGRAM



RG-22 BOARD

(See page 73.)

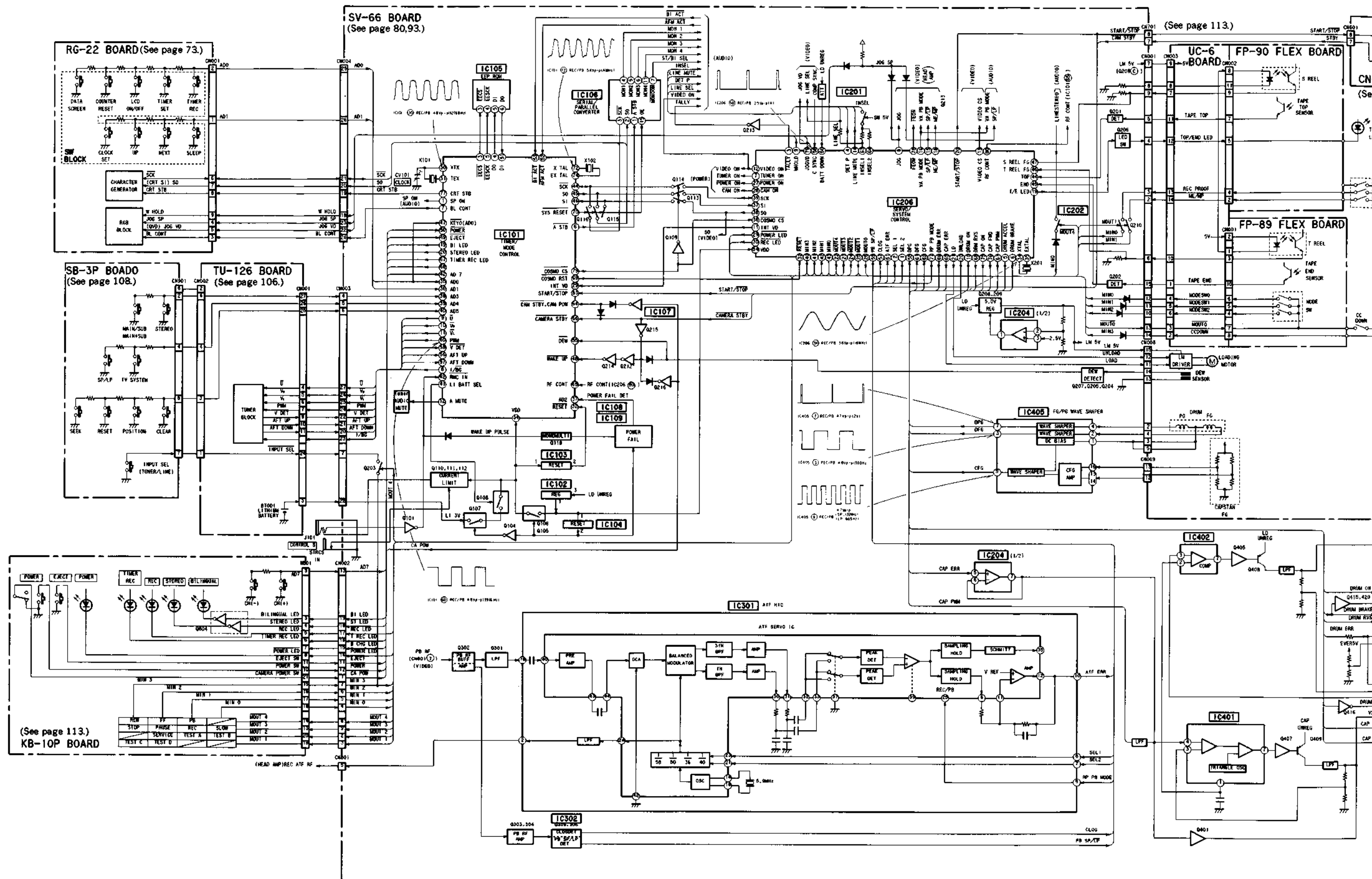


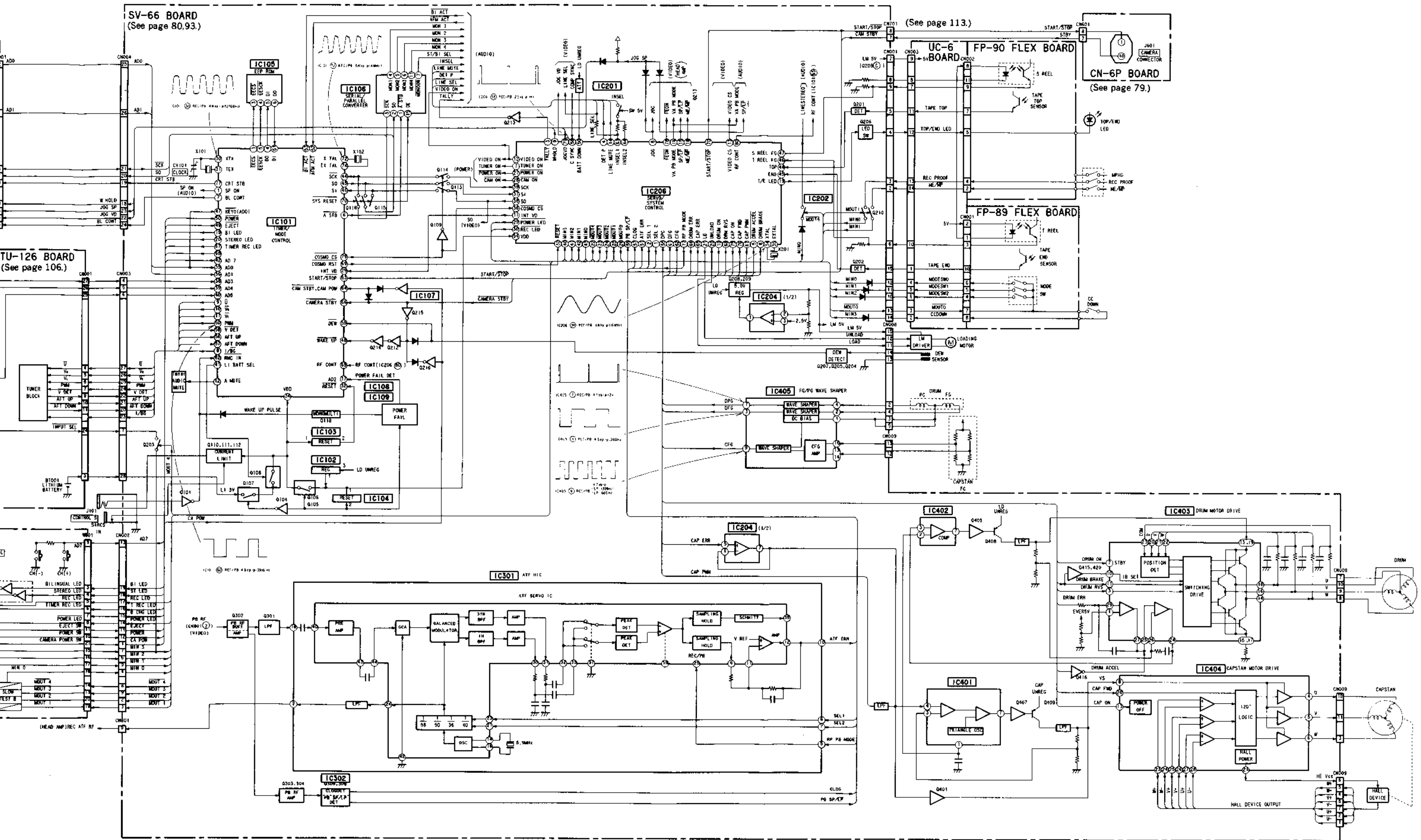
CN002 (3) 4.6Vp-p(V)

CN002 (16) 3.6Vp-p(V)

IC002 (45) 7.5Vp-p(H)

3-6. SERVO/SYSTEM CONTROL BLOCK DIAGRAM





3-7. TABLE OF SV-66 BOARD IC206 (CXP-80116) PORT

Terminal No.	Signal Name.	I/O	Definition	POWOFF
1	SEL2	O	ATF REF SELECT	L
2	SEL1	O	ATF REF SELECT	L
3	TALLY	O	TALLY output for external camera	L
4	DET P	O	ST/BI determination pulse	L
5	DRM ACCEL	O	Drum FH acceleration pulse	L
6	DRM BREAK	O	Drum FH deceleration pulse	L
7	TUNER ON	O	TUNER 5V power ON/OFF signal	L
8	JOG	O	H signal at varying speed playback	L
9	W HOLD	O	Signal for LCD VIDEO HOLD	L
10	DRUM ON	O	DRUM DRIVER control signal	L
11	INT VD	O	INTERNAL VD output	L
12	VIDEO ON	O	VIDEO power ON/OFF signal	L
13	VIDEO CS	O	Chip select for VIDEO communication	L
14	LINE MUTE	O	Audio MUTE signal	L
15	SP/LP	O	SPEED MODE signal	L
16	VAPB MODE	O	VIDEO, AUDIO REC/PB selecting signal	L
17		O		L
18	ME/MP	O	ME/MP TAPE determination signal	L
19	T/E LED	O	TAPE TOP/END detection signal	L
20	UN LD	O	LOADING MOTOR control signal	L
21	LD	O	LOADING MOTOR control signal	L
22	M OUT4	O	KEY MATRIX output	L
23	M OUT3	O	KEY MATRIX output	L
24	M OUT2	O	KEY MATRIX output	L
25	M OUT1	O	KEY MATRIX output	L
26	M OUT0	O	KEY MATRIX output	L
27	POW ON	O	SW 5V system power source control signal	Hiz
28	CAMERA ON	O	Power source control signal for CAMERA	Hiz
29	(POWER)BATT LED	O	POWER LED control signal	Hiz
30	REC LED	O	REC LED control signal	Hiz
31	MP			—
32	CC RESET	I	COSMO RESET terminal	—
33	V _{SS}		GND	
34	XTAL		Terminal for 16MHz Xtal	
35	EXTAL		Terminal for 16MHz Xtal	
36	SYNCON CS	I/O	Chip select for SYNCON	—
37	SYNCON SI	I	Serial data input	—
38	SYNCON SO	I	Serial data output	—
39	SYNCON SCK	I/O	Serial clock	—
40	M IN3	I	MATRIX input	—

Terminal No.	Signal Name.	I/O	Definition	POWOFF
41	M IN2	I	MATRIX input	—
42	M IN1	I	MATRIX input	—
43	M IN0	I	MATRIX input	—
44	TAPE TOP	I	TAPE TOP A/D	—
45	TAPE END	I	TAPE END A/D	—
46	T REEL FG	I	T REEL FG A/D	—
47	S REEL FG	I	S REEL FG A/D	—
48		I		—
49		I		—
50	BATT DOWN	I	BATT DOWN A/D	—
51	ATF ERROR	I	ATF ERROR A/D	—
52	AD GND			
53	AV REF		Standard voltage for A/D	
54	AV _{DD}		Power source for A/D	
55	DRUM PG	I	DRUM PG input	—
56				
57	CLOG	I	CLOG detection input	—
58	COMP SYNC	I	COMP SYNC input	—
59	PB SP/LP	I	FF/REW CUE/REV SP/LP determination input	—
60	DRUM PG	I	DRUM PG input	—
61	DRUM FG	I	DRUM FG input	—
62	CAP FG	I	CAP FG input	—
63	INPUT SEL1	O	Input selecting signal for audio	H
64	INPUT SEL2	O	Input selecting signal for audio	H
65	CAP ER	O	CAPSTAN ERROR output	Hiz
66	DRM ER	O	DRUM 3STATE ERROR output	Hiz
67	CAP PWM	O	CAPSTAN PWM ERROR output	L
68	DRUM RVS	O	DRUM direction selecting signal	L
69	CAP FG	O	CAPSTAN FG input for HMS	—
70	START/STOP	O	External camera START/STOP input	—
71	~NMI			
72	V _{DD}		Power source for COSMO	
73	V _{SS}		GND	
74	V _{PP}			
75	CAP ON	O	CAPSTAN DRIVER ON OFF signal	L
76	CAP FWD	O	CAPSTAN direction selecting signal	L
77	RP PB MODE	O	REC/PB selecting signal	L
78	FE ON	O	Flying erase oscillation ON/OFF signal	L
79	JOG VD	O	VD signal inserting to VIDEO at varying speed playback	L
80	RF CONT	O	RF CONT output	L

⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10P board Q803)

The following display is shown on the LCD.

VIDEO DATA

```

CFL1  1  (RESET)
CFL2  1  (DISPLAY)
NCL1  1  (SLEEP)
NCL2  1  (NEXT)
NCLP1 1  (UP)
NCLP2 1  (CLOCK)
    
```

KB-10P BOARD (Component Side)

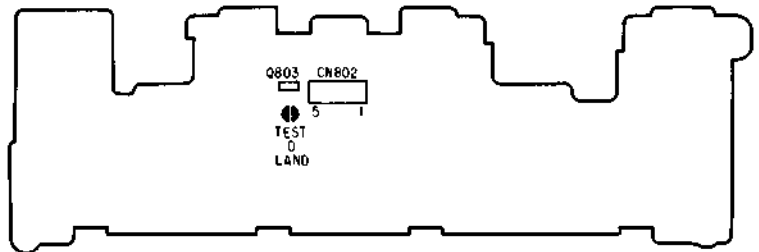


Fig3-2.

Six types of DATA are varied with the KEY on the SC part.

```

RESET    → COUNTER RESET KEY
DISPLAY  → DATA SCREEN KEY
SLEEP    → SLEEP KEY
NEXT     → NEXT KEY
UP       → + KEY
CLOCK    → CLOCK SET KEY
    
```

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)

Four modes are adjusted by the types of TAPE (ME, MP) and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 3-1. for the data writing to EEPROM.)

Table 3-1. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	L	L
1	0	0	1	9	LP•MP	L	H	L	H	H	L
1	0	1	0	A	SP•ME	H	L	H	L	L	L
1	0	1	1	B	LP•ME	L	H	L	H	H	L

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

3-9. LIST OF SIRCS CODE (CATEGORY : VTR2)

CODE No.	CODE	COMMAND
01	00	CH-1/1
02	01	CH-2/2
03	02	CH-3/3
04	03	CH-4/4
05	04	CH-5/5
06	05	CH-6/6
07	06	CH-7/7
08	07	CH-8/8
09	08	CH-9/9
10	09	CH-10/0
11	0 A	CH-11/*
12	0 B	CH-12/CH/ENTER/#
13	0 C	CH-13/1-
14	0 D	CH-14/2-
17	10	CH-HIGH(+)
18	11	CH-LOW(-)
22	15	POWER ON/OFF
23	16	EJECT
24	17	MPX MAIN/SUB
25	18	STOP
26	19	PAUSE

CODE No.	CODE	COMMAND
27	1 A	PB
28	1 B	REWIND
29	1 C	FF
30	1 D	REC
33	20	STILL
36	23	1/5 SLOW
47	2 E	POWER ON
48	2 F	POWER OFF
50	31	FORWARD
55	36	SLEEP
71	46	COUNTER RESET
72	47	MEM CNTR ON/OFF
80	4F	INPUT SELECT
89	58	SPEED CHANGE
91	5A	COUNTER DISPLAY ON/OFF
97	60	TIMER SET
98	61	NEXT
102	65	TIMER REC

3-10. SYSTEM CONTROL — VIDEO · AUDIO PART INTERFACE

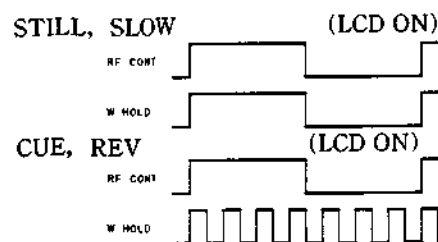
Signal mode	I/O	Terminal No.	VTR MODE										CAMERA MODE			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
DET P	O	IC206④	H	H	H	H	H	* 1	H	H	H	H	* 2	H	H	H
JOG	O	IC206⑧	L	L	L	H	H	L	H	H	H	H	L	L	L	L
W HOLD	O	IC206⑨	H	H	H	* 3	* 3	H	* 3	* 3	* 4	* 4	H	H	H	H
VIDEO ON	O	IC206⑫	L	L	L	H	H	H	H	H	H	H	H	H	H	H
VIDEO CS	O	IC206⑬	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5
LINE MUTE	O	IC206⑭	L	L	L	H	H	L	H	H	H	H	L	L	L	L
SP/LP	O	IC206⑮	H/L	H/L	H/L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	H/L	H/L	H/L	H/L
VA PB MODE	O	IC206⑯	L	L	L	H	H	H	H	H	H	H	L	L	L	L
ME/MP	O	IC206⑰	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8
SYSCON SO	O	IC206⑱	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
SYSCON SCK	I/O	IC206㉑	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10
CLOG	I	IC206⑵	H	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	H	H	H	H
COMP SYNC	I	IC206⑶	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13
PB SP/LP	I	IC206⑷	L	* 14	* 14	* 14	* 14	L	* 14	* 14	L	L	L	L	L	L
INPUT SEL1	O	IC206⑸	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15
INPUT SEL2	O	IC206⑹	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16
RP PB MODE	O	IC206⑺	H	H	H	H	H	H	H	H	H	H	L	H	H	L
FE ON	O	IC206⑻	H	H	H	H	H	H	H	H	H	H	L	H	H	L
JOG V _D	O	IC206⑼	L	L	L	* 7	* 7	L	* 7	* 7	* 7	* 7	L	L	L	L
RF CONT	O	IC206⑽	L	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11

* 1, 2 DET P



PB : "L" pulse every 1V
 REC : "H" at STEREO and MONO
 REC : "L" pulse every 1V at BILIGUAL

* 3, 4 W HOLD



"H" at LCD OFF

"H" at LCD OFF

- * 5: "L" pulse of 1V period
- * 6: By the recording mode of the playback tape.
- * 7: "H" pulse of 1V period.
- * 8: "L" at using MP TAPE.
- * 9: "L" pulse of 1V period.
- * 10: "L" pulse of 1V period.
- * 11: Duty pulse of 50% of 2V period.
- * 12: "H" when the video head is loaded, and "L" at normal.
- * 13: Positive polarity composite synchronizing signal.
- * 14: "H" at the SP recorded tape, "L" at the LP recorded tape.
- * 15, * 16: Output according to the input mode.

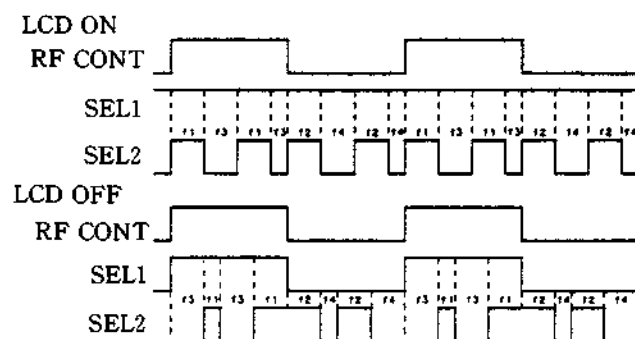
INPUT MODE	INPUT SEL1	INPUT SEL2
TUNER	L	L
LINE	H	H
CAMERA	H	L
PB	L	L
POWER OFF	H	H

3-11. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

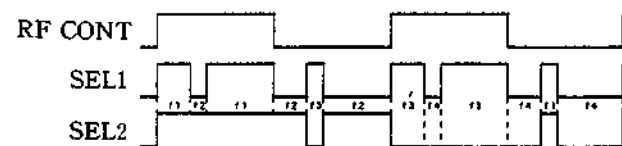
Signal Name	I/O	Terminal No.	VTR MODE											CAMERA MODE		
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
SEL2	O	IC206 ①	L	H	H	* 1	* 1	* 2	* 1	* 1	H/L	* 3	* 4	L	L	* 4
SEL1	O	IC206 ②	L	H	H	* 5	* 5	* 6	* 5	* 5	H	* 7	* 8	H	H	* 8
DRUM ON	O	IC206 ⑩	L	H	H	H	H	H	H	H	H	H	H	H	H	H
INT VD	O	IC206 ⑪	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
ATF ER	I	IC206 ⑪	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11
DRUM PG	I	IC206 ⑫	L	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12
DRUM FG	I	IC206 ⑬	L	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13
CAP FG	I	IC206 ⑭	L	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14
CAP ER	O	IC206 ⑮	L	* 15	* 15	* 15	* 15	* 15	* 15	* 15	L	* 15	* 15	L	L	* 15
DRUM ER	O	IC206 ⑯	L	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16
CAP PWM	O	IC206 ⑰	L	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	L	L	* 17
DRUM RVS	O	IC206 ⑱	L	L	L	L	L	L	L	L	L	L	L	L	L	L
CAP ON	O	IC206 ⑲	L	H	H	H	H	H	H	H	L	* 19	H	L	L	H
CAPFWD	O	IC206 ⑳	L	H	L	H	L	H	H	L	L	* 20	H	L	L	H
DRM ACCEL	O	IC206 ㉑	H	H	H	H	H	H	H	H	H	* 21	H	H	H	H
DRM BRAK	O	IC206 ㉒	L	L	L	L	L	L	L	L	L	* 22	L	L	L	L
RF CONT	O	IC206 ㉓	L	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10

(* 18)

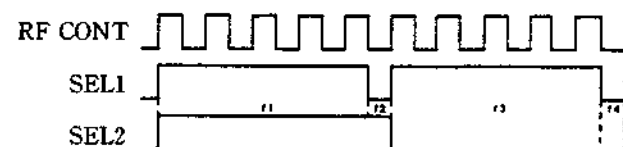
* 1, 5



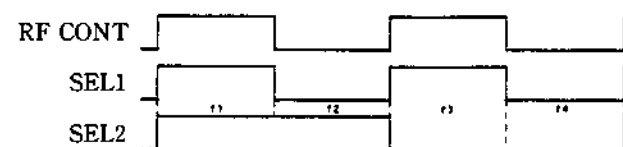
* 2, 6



* 3, 7(1/5 SLOW)



* 4, 8



* 9: "H" pulse of 1V

* 10: Pulse of 50% 2V period Duty.

* 11: ATF error voltage

* 12: "H" pulse of 2V

* 13: Pulse of 1.4msec

* 14: Pulse with frequency in proportion to the tape speed

* 15: Pulse output of CAPSTAN rise/fall time

* 16: PWM output of 6msec of "H", "L", "Hiz" (2.5VDC)

* 17: Pulse width is varied in proportion to the PWM signal tape speed of 64msec.

* 18: Instant "H" at loading the full top tape.

* 19: "H" for the intermittent feeding tape at SLOW.

* 20: BRAKE pulse of the intermittent feeding tape at SLOW.

* 21: Acceleration of the acceleration pulse "L" for FH correction of the DRUM at SLOW.

* 22: Deceleration of the deceleration pulse "H" for FH correction of the DRUM at SLOW.

3-12. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal name	I/O	Terminal No.	Input-output level
TALLY	O	IC206③	"H" at normal, "L" at the CAMERA mode with REC
TUNER ON	O	IC206⑦	"H" at TUNER of the INPUT mode, "L" at the other.
VIDEO ON	O	IC206⑫	"H" when the operation of VTR part of the REC • PB mode is required, "L" at the other.
SP/LP	O	IC206⑮	"H" at playing back of the tape recoded in SP mode and at the SP recorded mode.
ME/MP	O	IC206⑱	"L" at using the MP tape, "H" at using the ME tape.
T/E LED	O	IC206⑲	Pulse period of which pulse train is PB • REC, 100msec., FF • REW, 4msec., CUE • REV, 8msec.
UNLD	O	IC206㉓	"L" at normal, "H" at UNTHREADING. "H" pulse at the mechanical mode transition.
LD	O	IC206㉔	"L" at normal, "H" at THREADING. "H" pulse at the mechanical mode transition.
M OUT4	O	IC206㉖	"L" pulse of 19msec period.
M OUT3	O	IC206㉗	"L" pulse of 19msec period.
M OUT2	O	IC206㉘	"H" pulse of 19msec period.
M OUT1	O	IC206㉙	"H" pulse of 19msec period.
M OUT0	O	IC206㉚	"L" pulse of 2msec period.
POW ON	O	IC206㉛	"L" at turning ON the power.
CAMERA ON	O	IC206㉜	"L" in the camera mode.
(POWER)BATT LED	O	IC206㉝	"L" at lightening POWER LED, L pulse train at warning BATTERY DOWN.
REC LED	O	IC206㉞	"L" at REC
CC RESET	I	IC206㉟	"H" at normal, "L" at reset
SYSCON CS	I	IC206㊱	"L" pulse train of 1V period
SYSCON SI	I	IC206㊲	"L" pulse train of 1V period
SYSCON SO	O	IC206㊳	"L" pulse train of 1V period
SYSCON SCK	I/O	IC206㊴	"L" pulse train of 1V period
MIN3	I	IC206㊵	Key matrix input "H" at normal, "L" pulse at input
MIN2	I	IC206㊶	Key matrix input "H" at normal, "L" pulse at input
MIN1	I	IC206㊷	Key matrix input "H" at normal, "L" pulse at input
MIN0	I	IC206㊸	Key matrix input "H" at normal, "L" pulse at input
TAPE TOP		IC206㊹	TAPE TOP determination input Pulse train of 0.5 or more at TOP, "L" at the other.
TAPE END		IC206㊺	TAPE END determination input Pulse train of 0.5 or more at TOP.
T REEL FG		IC206㊻	Pulse of 2.0Vp-p or more generated by rotation of the T REEL
S REEL FG		IC206㊼	Pulse of 2.0Vp-p or more generated by rotation of the S REEL
BATT DOWN		IC206㊽	Input by dividing the main battery. Adjust Battery Down based on this.
START/STOP		IC206㊾	"L" at pressing the camera START/STOP button, "H" at normal

Matrix table

	M IN3	M IN2	M IN1	M IN0
M OUT4	REW	FF	PB	LINE STEREO
M OUT3	STOP	PAUSE	REC	SW
M OUT2	TUNER/ LINE/ CAMERA	SERVICE	TEST A	TEST B
M OUT1	TEST C	TEST D	ME/MP	REC PROOF
M OUT0	CC LOCK	M SW2	M SW1	M SW0

3-13. SYSTEM

Signal Name
ME/MP
REC PROOF
TOP/END
TOP SEN
T REEL F
S REEL F
MODE SW
MODE SW
MODE SW
MOUT0 (CC
CC DOWN
END SEN

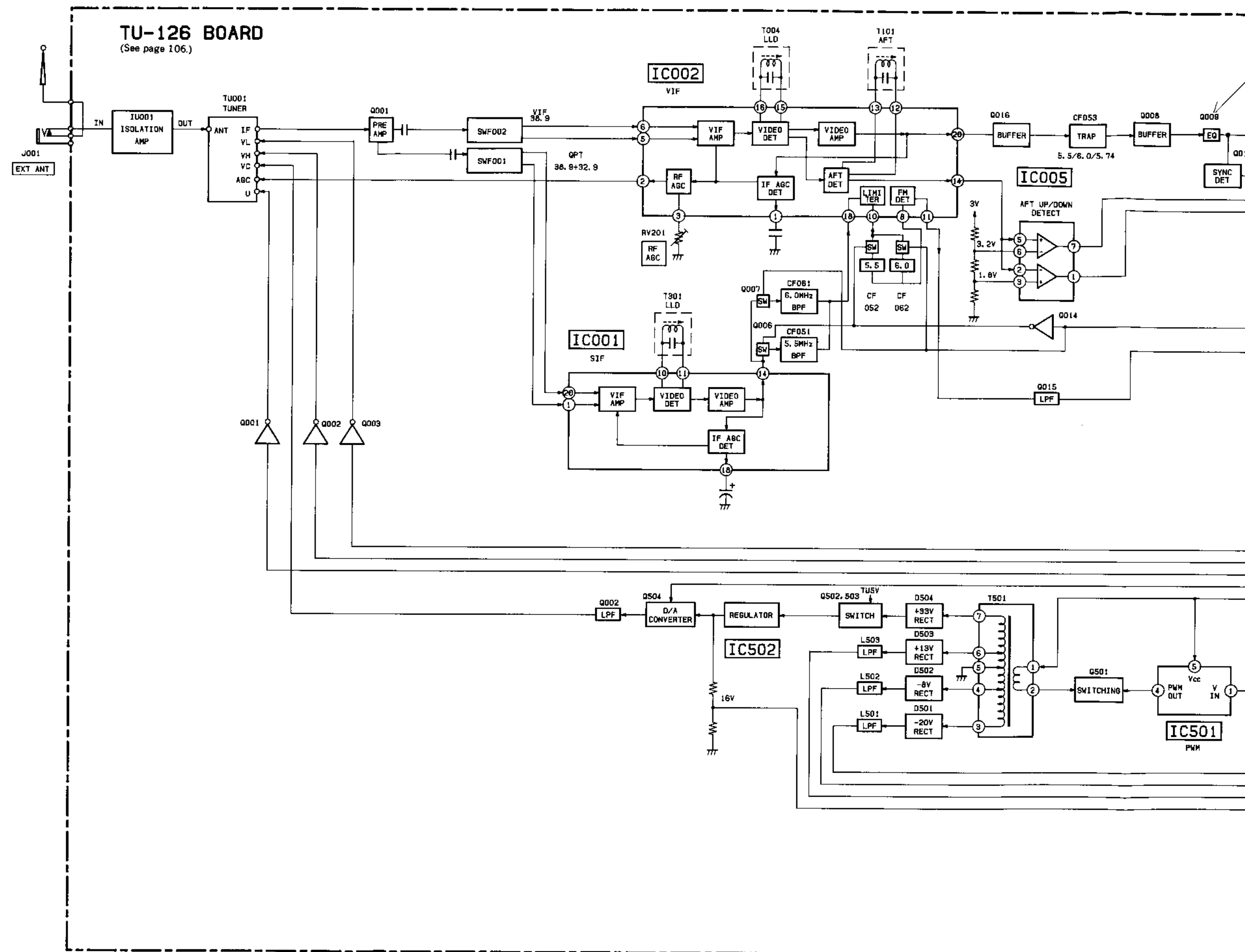
Matrix table

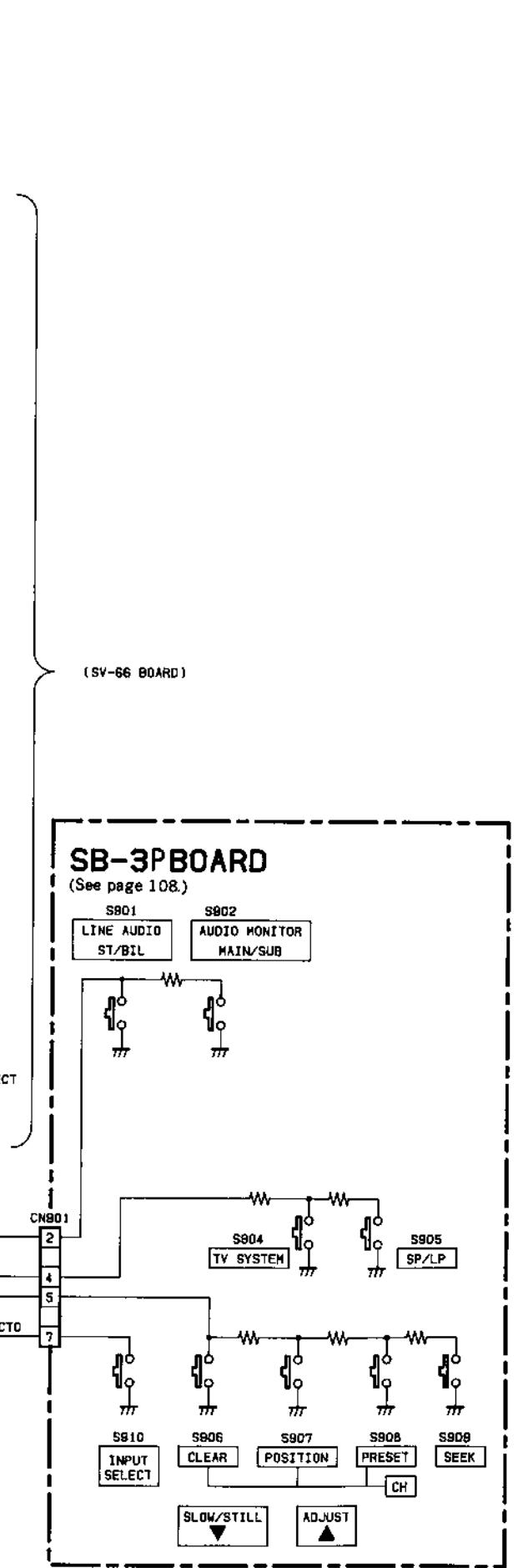
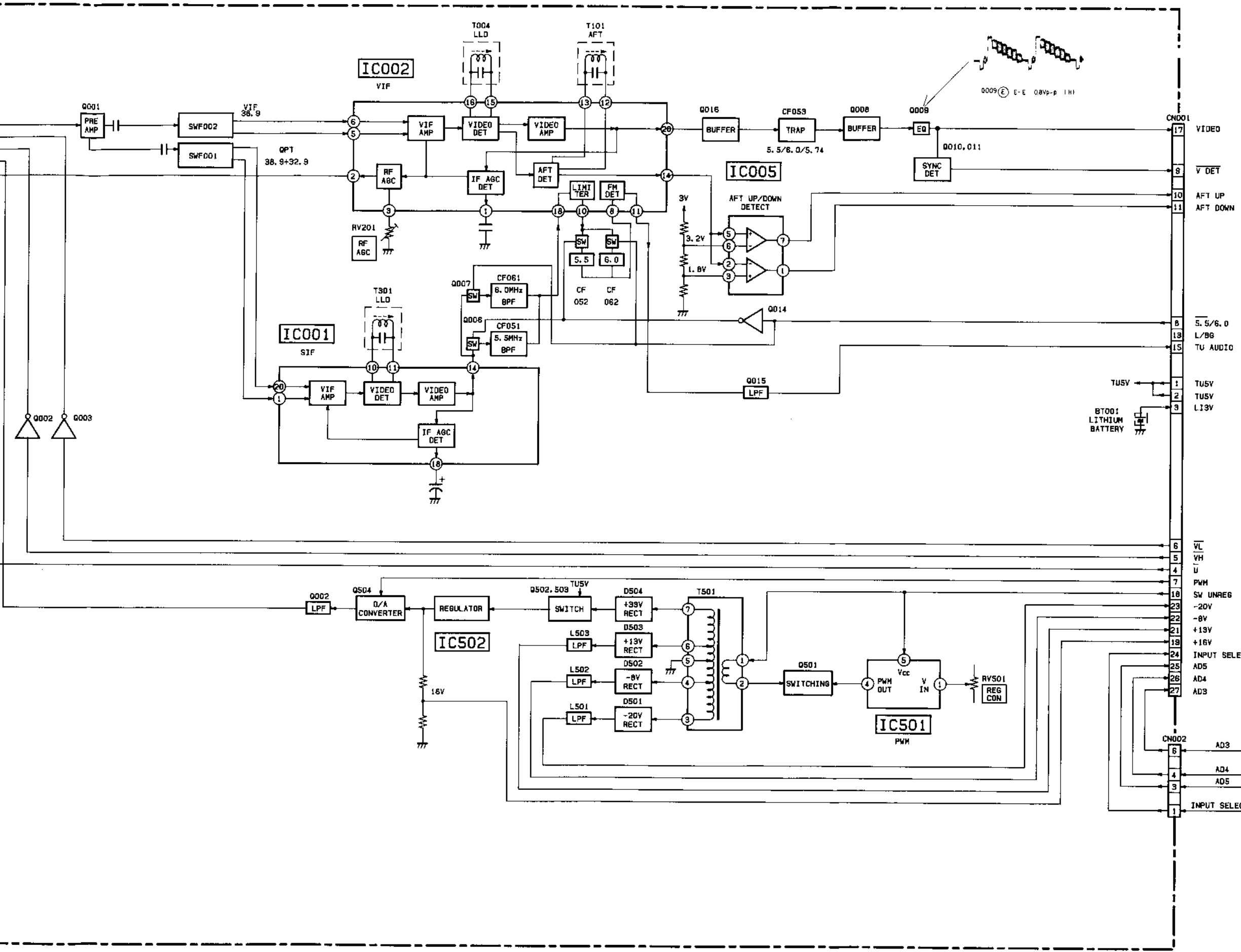
	M IN3	M IN2	M IN1	M IN0
M OUT4	REW	FF	PB	LINE STEREO
M OUT3	STOP	PAUSE	REC	SW
M OUT2	TUNER/ LINE/ CAMERA	SERVICE	TEST A	TEST B
M OUT1	TEST C	TEST D	ME/MP	REC PROOF
M OUT0	CC LOCK	M SW2	M SW1	M SW0

3-13. SYSTEM CONTROL — MECHANISM CONTROL PART INTERFACE

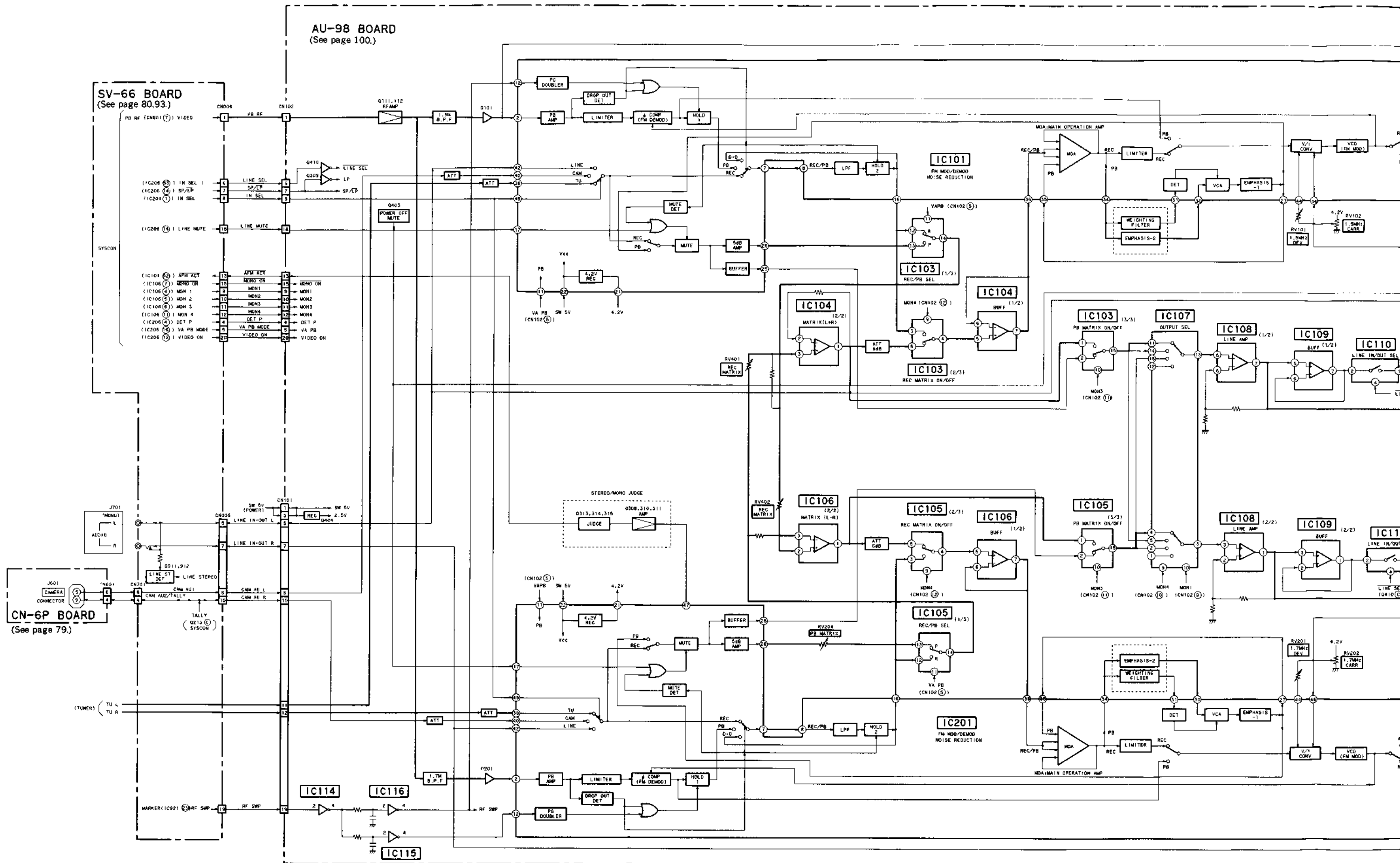
Signal Name	I/O	Terminal No.	Input-output Level																				
ME/ \overline{MP}	I	CN001 ②	"L" pulse at using the MP tape, "H" pulse at the other (19msec period)																				
REC PROOF	I	CN001 ③	"L" pulse when the recording cassette is inserted, "H" pulse at the other (19msec period)																				
TOP/END LED	O	CN001 ④	"L" pulse of 1Vp-p, the pulse period is 100msec to 4msec																				
TOP SENS	I	CN001 ⑤	"L" at normal, "L" pulse at TAPE TOP and without a cassette																				
T REEL FG	I	CN001 ⑥	Pulse generated by the T reel rotation (2.0Vp-p or more)																				
S REEL FG	I	CN001 ⑨	Pulse generated by the S reel rotation (2.0Vp-p or more)																				
MODE SW2	I	CN001 ⑩	<table border="1"> <thead> <tr> <th></th> <th>EJECTED</th> <th>THREADING UNTHREADING</th> <th>STOP</th> <th>REC/PB/FF/ REW/CEU/REV PAUSE/SLOW</th> </tr> </thead> <tbody> <tr> <td>M SW2 (10P-13P)</td> <td>○</td> <td>○</td> <td>×</td> <td>○</td> </tr> <tr> <td>M SW1 (11P-13P)</td> <td>×</td> <td>○</td> <td>○</td> <td>×</td> </tr> <tr> <td>M SW0 (12P-13P)</td> <td>×</td> <td>×</td> <td>○</td> <td>○</td> </tr> </tbody> </table> <p>○ : Short × : Open</p>		EJECTED	THREADING UNTHREADING	STOP	REC/PB/FF/ REW/CEU/REV PAUSE/SLOW	M SW2 (10P-13P)	○	○	×	○	M SW1 (11P-13P)	×	○	○	×	M SW0 (12P-13P)	×	×	○	○
	EJECTED	THREADING UNTHREADING		STOP	REC/PB/FF/ REW/CEU/REV PAUSE/SLOW																		
M SW2 (10P-13P)	○	○		×	○																		
M SW1 (11P-13P)	×	○		○	×																		
M SW0 (12P-13P)	×	×	○	○																			
MODE SW1	I	CN001 ⑪																					
MODE SW0	I	CN001 ⑫																					
MOUT0 (COM)	O	CN001 ⑬																					
CC DOWN	I	CN001 ⑭	Between 13P and 14P is shortened when the cassette control goes down. Between 13P and 14P is opened when the cassette control does not go down.																				
END SENS	I	CN001 ⑮	"L" pulse at normal, "H" pulse at the tape end and at having no tape.																				

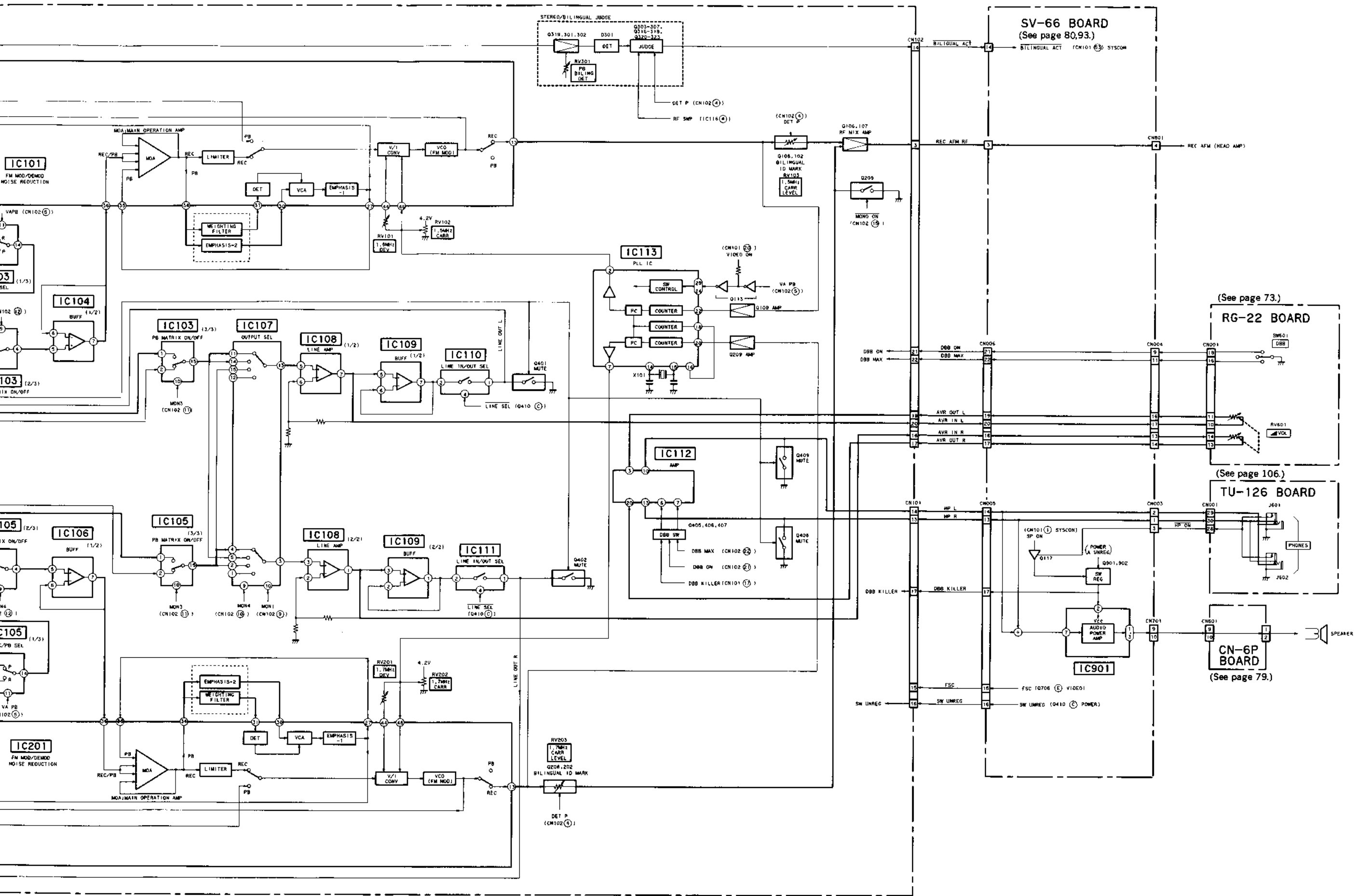
3-14. TUNER BLOCK DIAGRAM



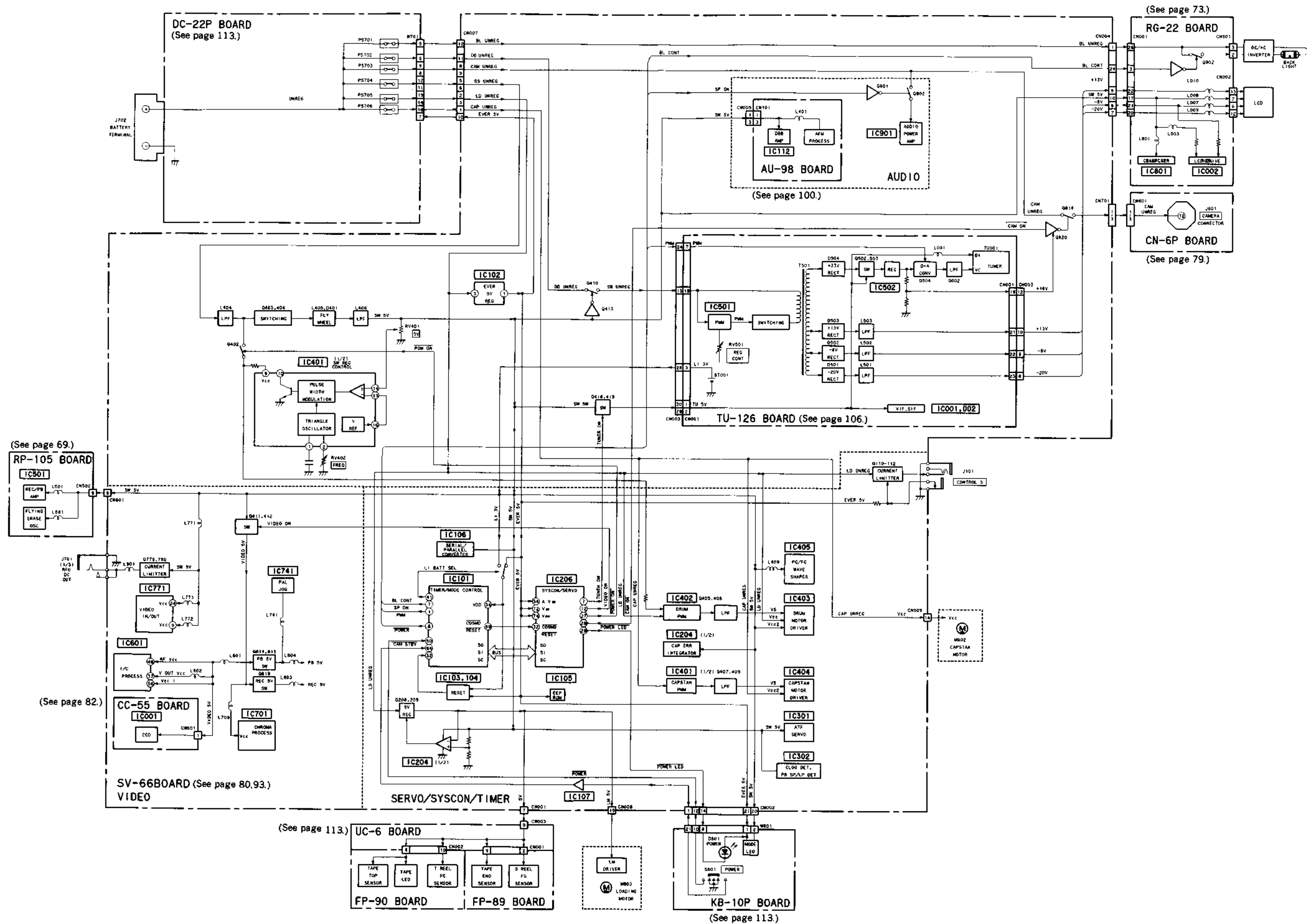


3-15. AUDIO BLOCK DIAGRAM





3-16. POWER BLOCK DIAGRAM

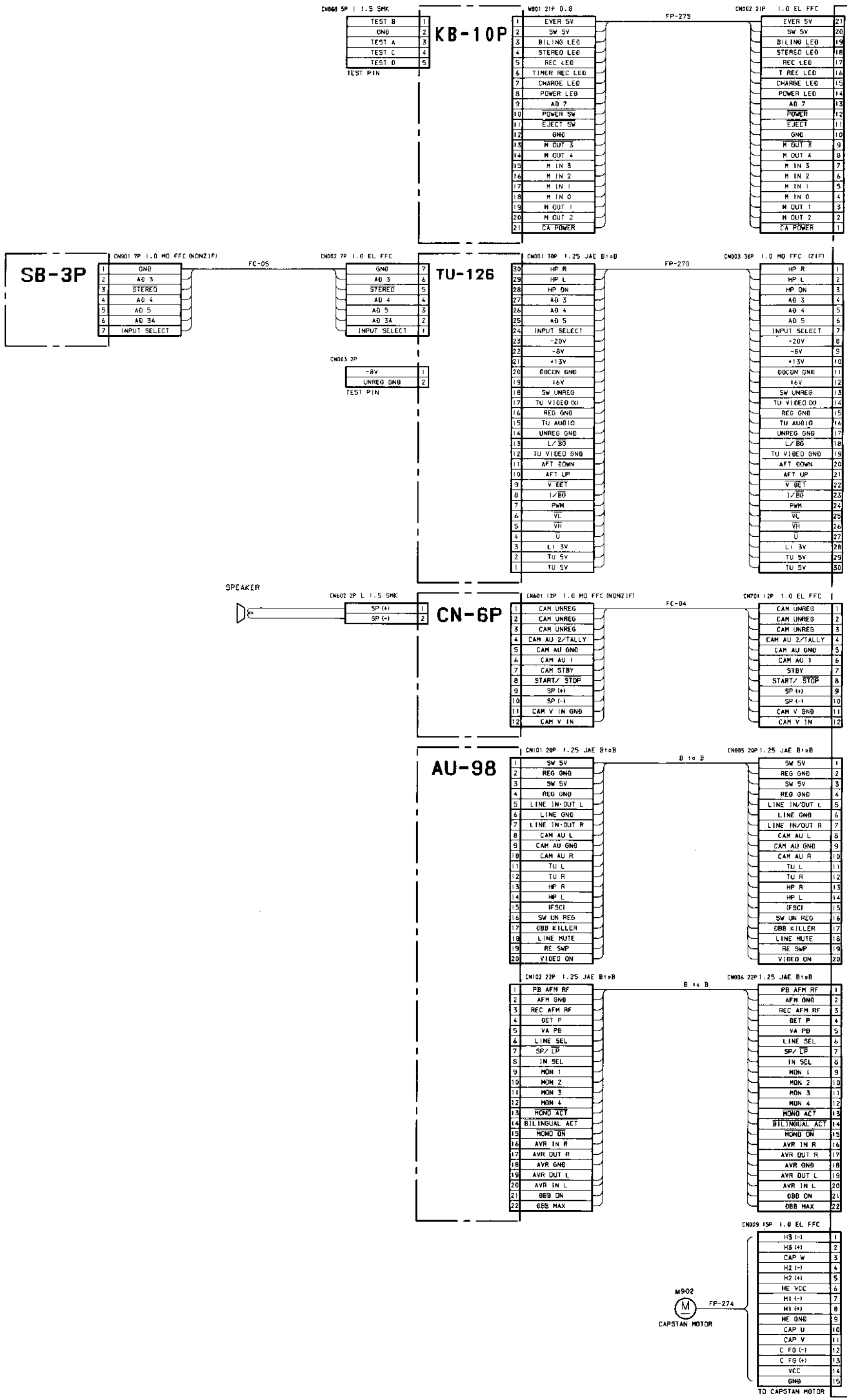


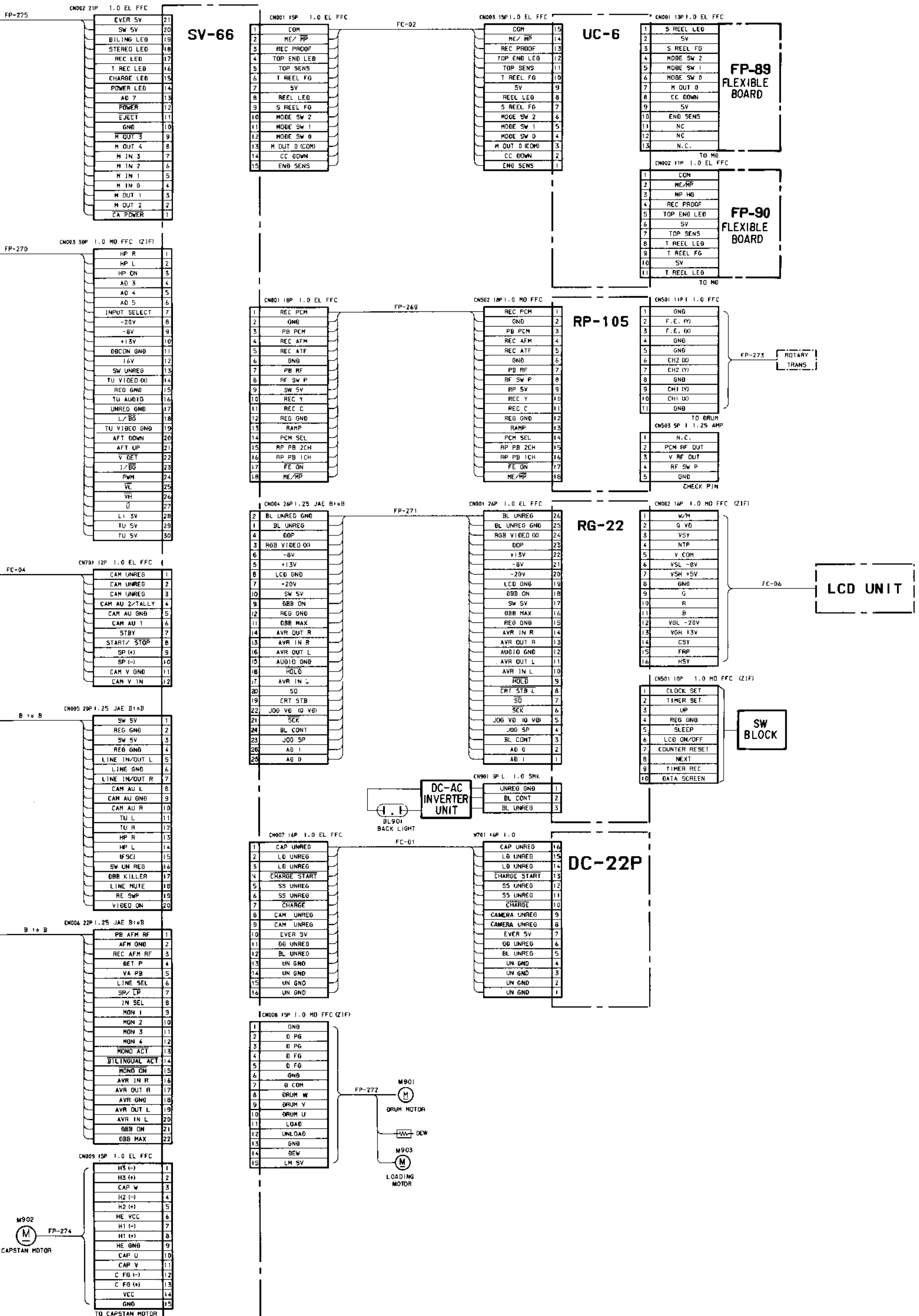
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

1 2 3 4 5 6 7 8 9 10 11

4-1. FRAME SCHEMATIC DIAGRAM



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D
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K
L
M
N
O
P





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.
 - ● : Through hole.
 - [Pattern] : Pattern from the side which enables seeing.
 - [Pattern] : Pattern of the rear side.
 - Circled numbers refer to waveforms.
 - The part codes and the part names for correction of the semiconductor on the print board are described in the space of each print figure. Please use it when ordering parts.
- For schematic diagram.
 - Caution when replacing chip parts.
 New parts must be attached after removal of chip.
 Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
 - All resistors are in ohms, 1/4W or less unless otherwise noted.
 kΩ: 1000Ω, MΩ: 1000kΩ.
 - All capacitors are in μF unless otherwise noted. pF : μμF.
 50V or less are not indicated except for electrolytics and tantalums.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - [Symbol] : nonflammable resistor.
 - [Symbol] : fusible resistor.
 - [Symbol] : panel designation.
 - Δ : internal component.
 - [Symbol] : adjustment for repair.
 - — : B + Line
 - - - - : B - Line.
 - Circled numbers refer to waveforms.
 - [Symbol] : IN/OUT direction of B (+, -) line.
 - The voltage value is the reference value to the ground when the color bar signal (RF signal) is input tuner from the color bar generator. (Tester for use: DC10mΩ)
 - When measuring the SV-66 board, the measurement is performed without the AU-98 board.

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

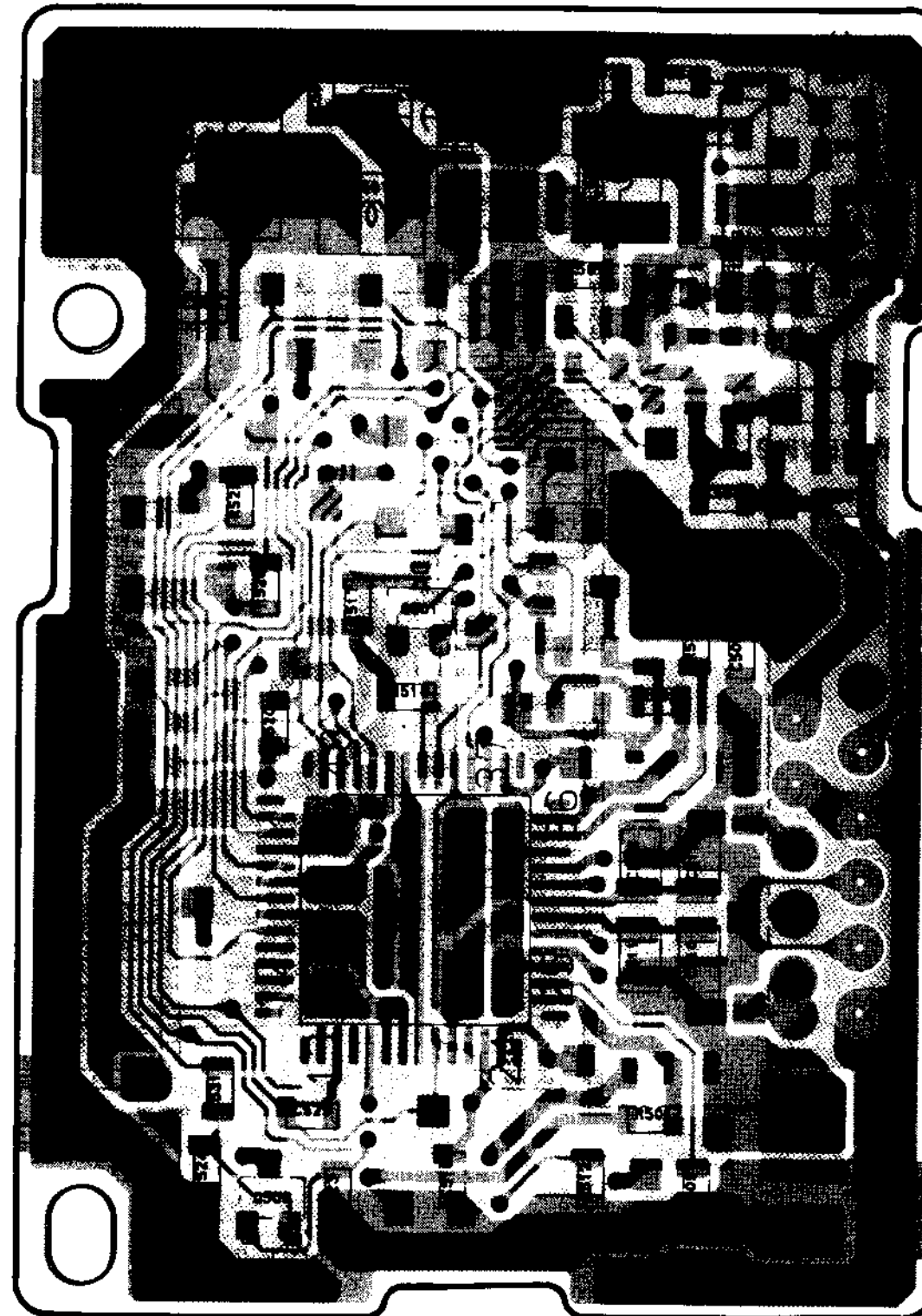
When indicating parts by reference number, please include the board name.

[TEST MODE]
 This unit selects the test mode by shorting and opening the terminals of CN802 on the KB-10P BOARD. When servicing, attaching the "test mode set jig" (J-6082-110-A) to the CN802 allows to select twelve types of test mode with the hexadecimal selecting switches.
 See to "3-8. Test Mode" on page 41 for details.

RP-105 (REC/PB AMP) PRINTED WIRING BOARD
 — Ref. No, RP-105 BOARD : 1000 series —

RP-105 BOARD (CONDUCTOR SIDE)

<u>IC</u>	
IC501	8-752-033-38 IC CXA1202R
<u>TRANSISTOR</u>	
Q501	8-729-905-12 TRANSISTOR OTA144EU
Q502	8-729-905-35 TRANSISTOR 2SC4081R
Q581	8-729-905-23 TRANSISTOR 2SA1576R
Q582	8-729-820-76 TRANSISTOR 2SA1179-M5M6



04

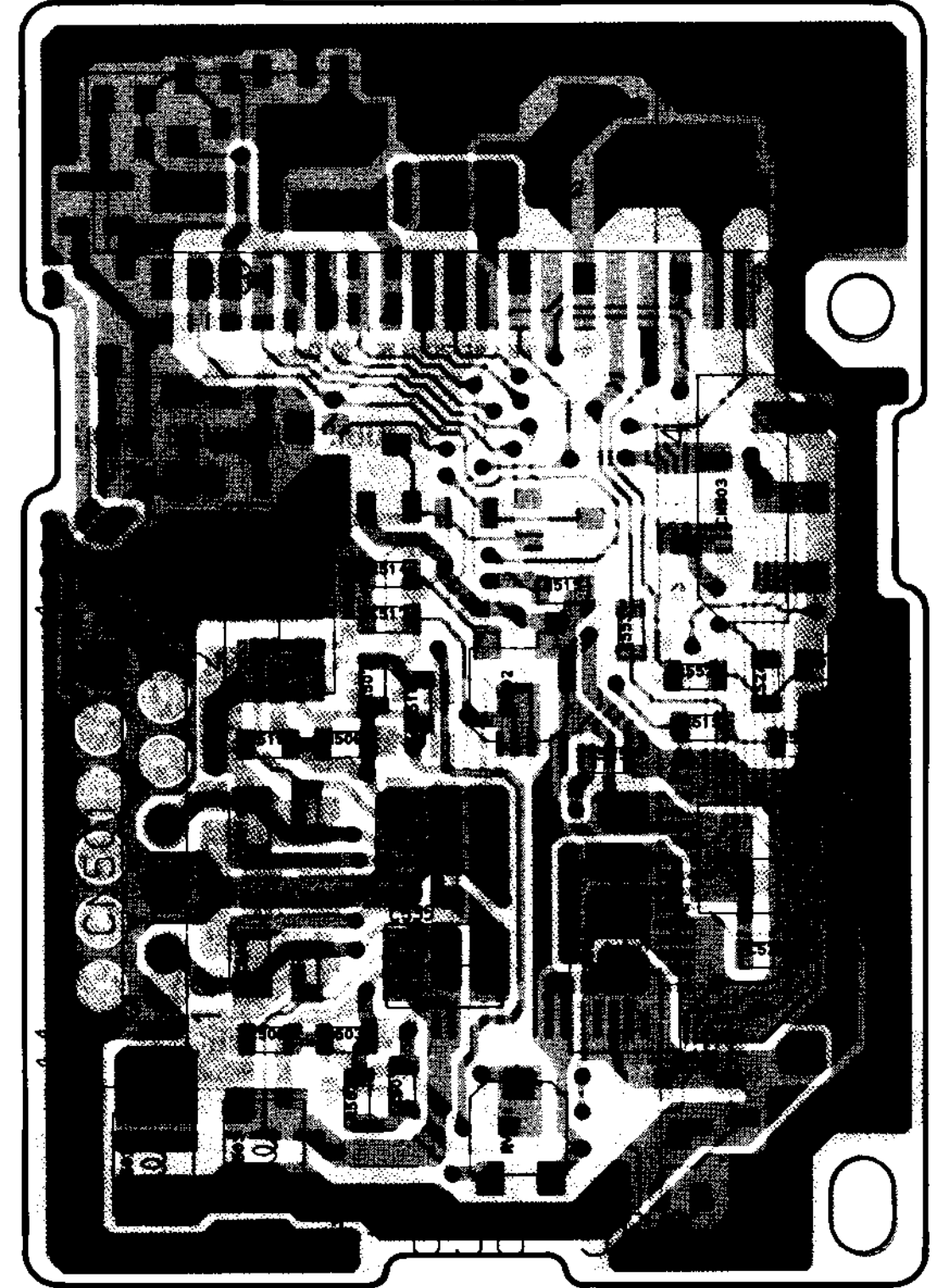
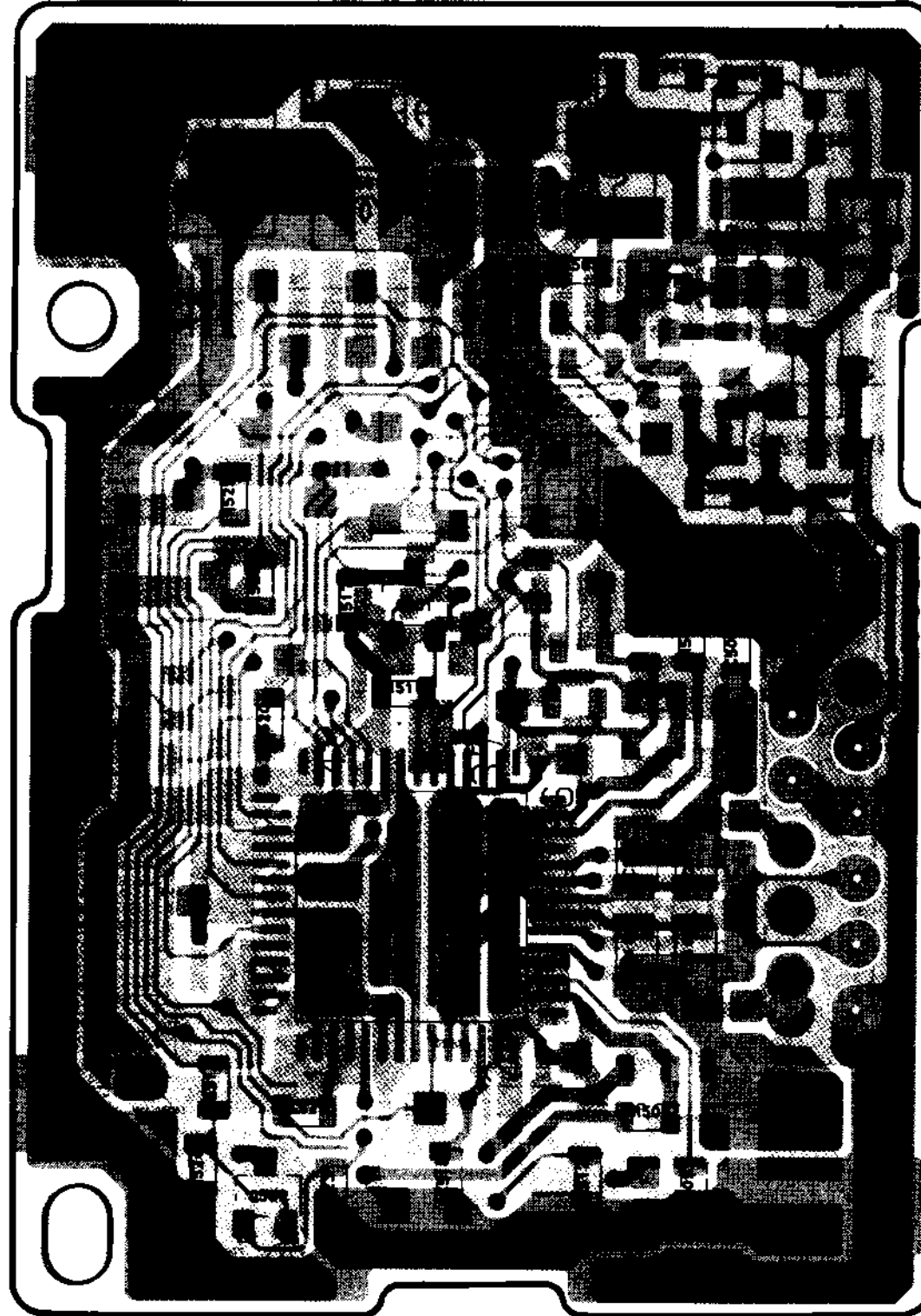


RP-105 (REC/PB AMP) PRINTED WIRING BOARD
 — Ref. No, RP-105 BOARD : 1000 series —

RP-105 BOARD (CONDUCTOR SIDE)

RP-105 BOARD (COMPONENT SIDE)

<u>IC</u>			
IC501	8-752-033-38	IC	CXA1202R
<u>TRANSISTOR</u>			
Q501	8-729-905-12	TRANSISTOR	DTA144EU
Q502	8-729-905-35	TRANSISTOR	2SC4081R
Q581	8-729-905-23	TRANSISTOR	2SA1576R
Q582	8-729-820-76	TRANSISTOR	2SA1179-M5M6

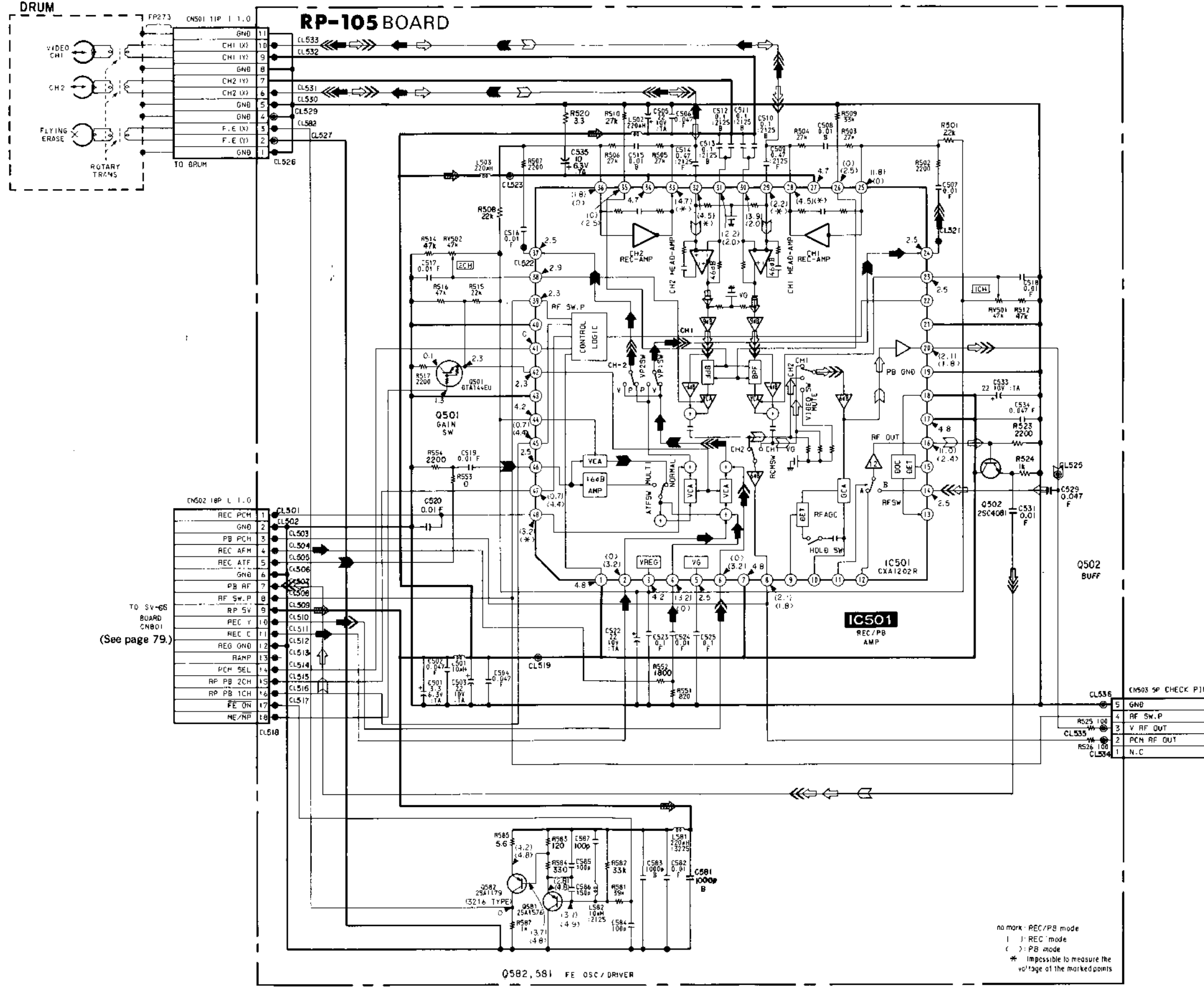


04

11

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

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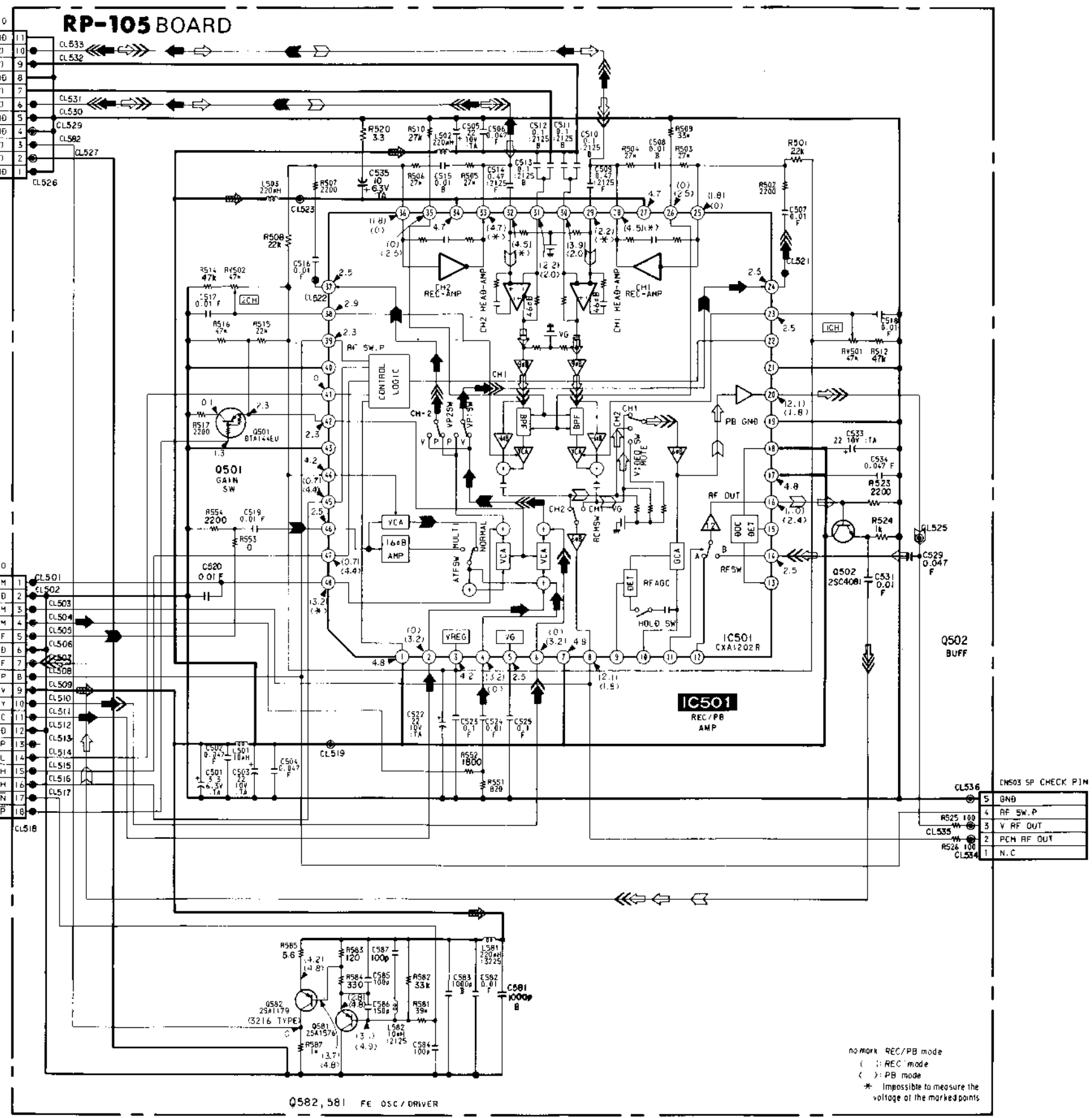
CL536	CN503 5P CHECK PIN
5	GND
4	RF SW.P
3	V RF OUT
2	PCH RF OUT
1	N.C

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	→	→	→	→
PB			→	→

• Signal path

Ref. signal	REC	REC/PB	PB
		→	→



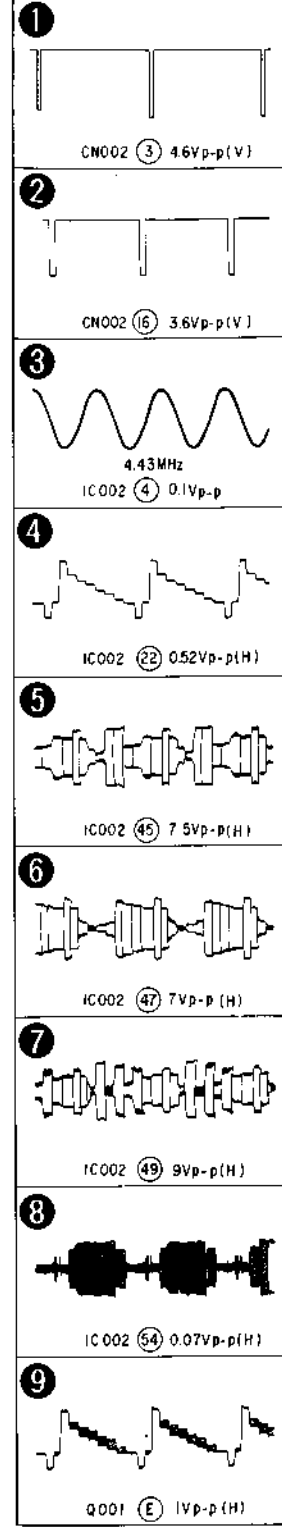
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➔	➔	➔	➔
PB			➔	➔

• Signal path

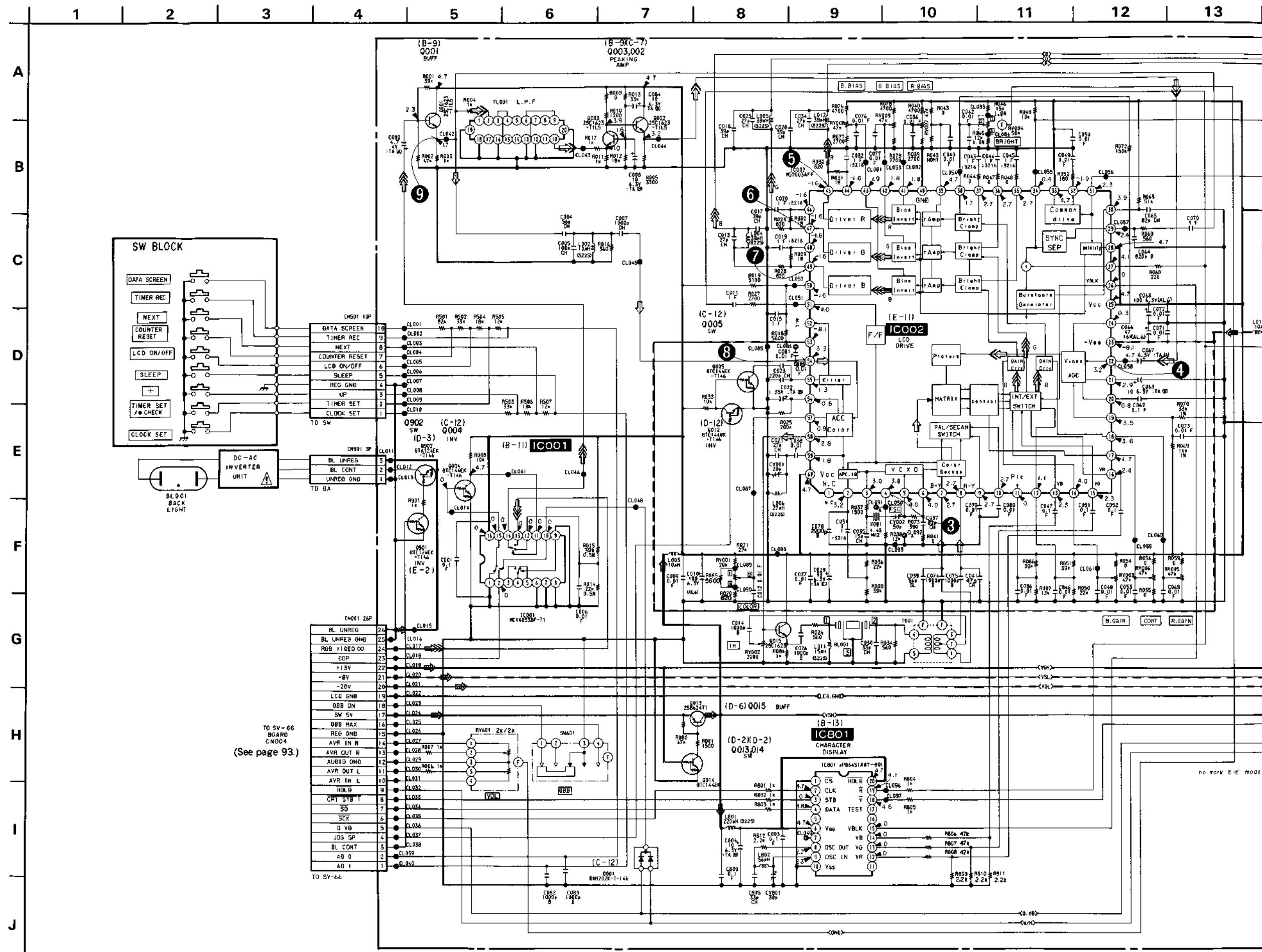
Ref. signal	REC	REC/PB	PB
	➔		➔

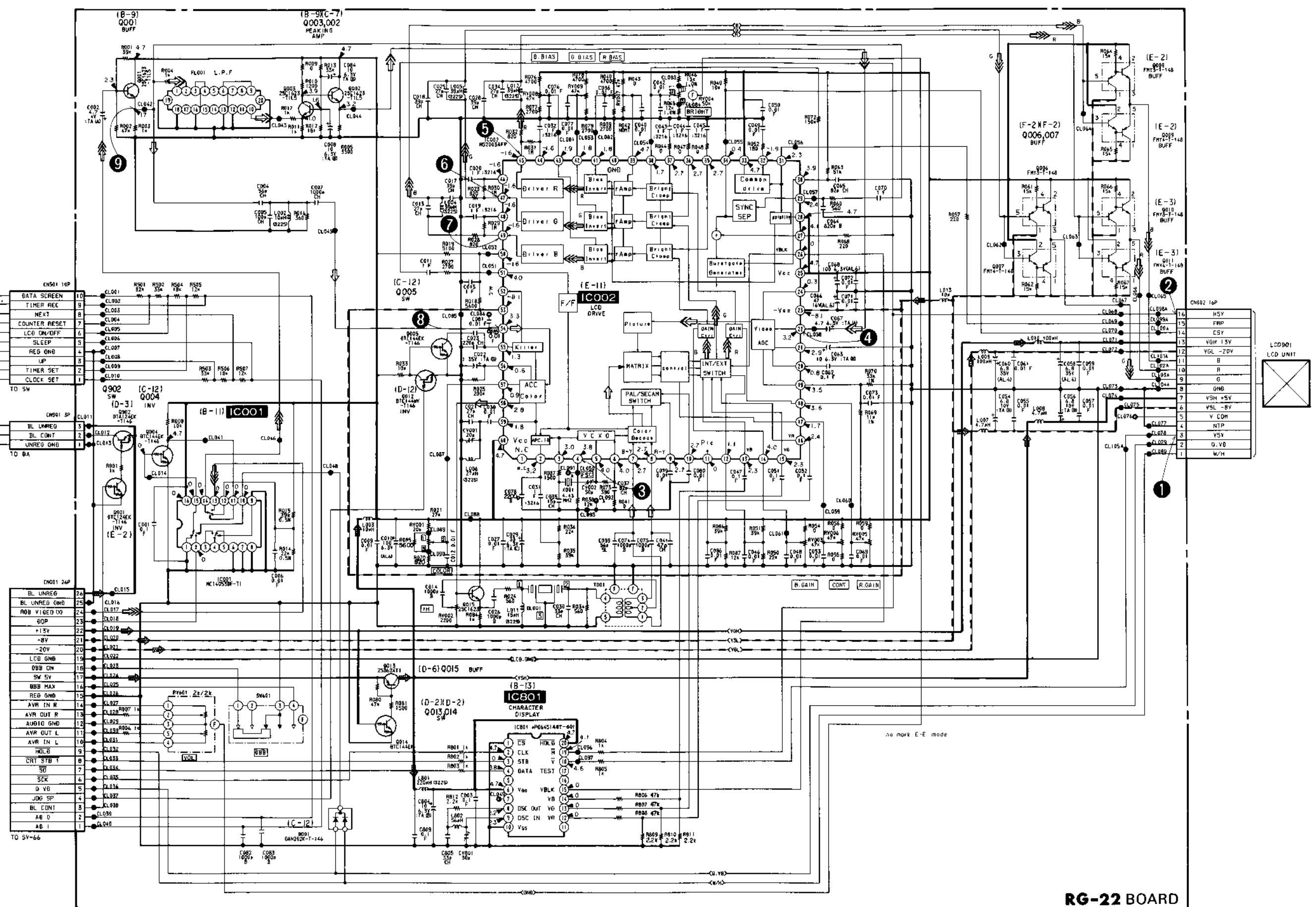
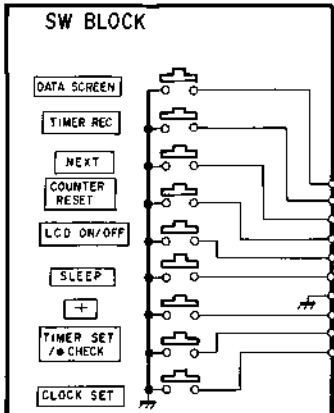
RG-22 BOARD (E-E mode)



• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
PB	→	⇒	⇒⇒

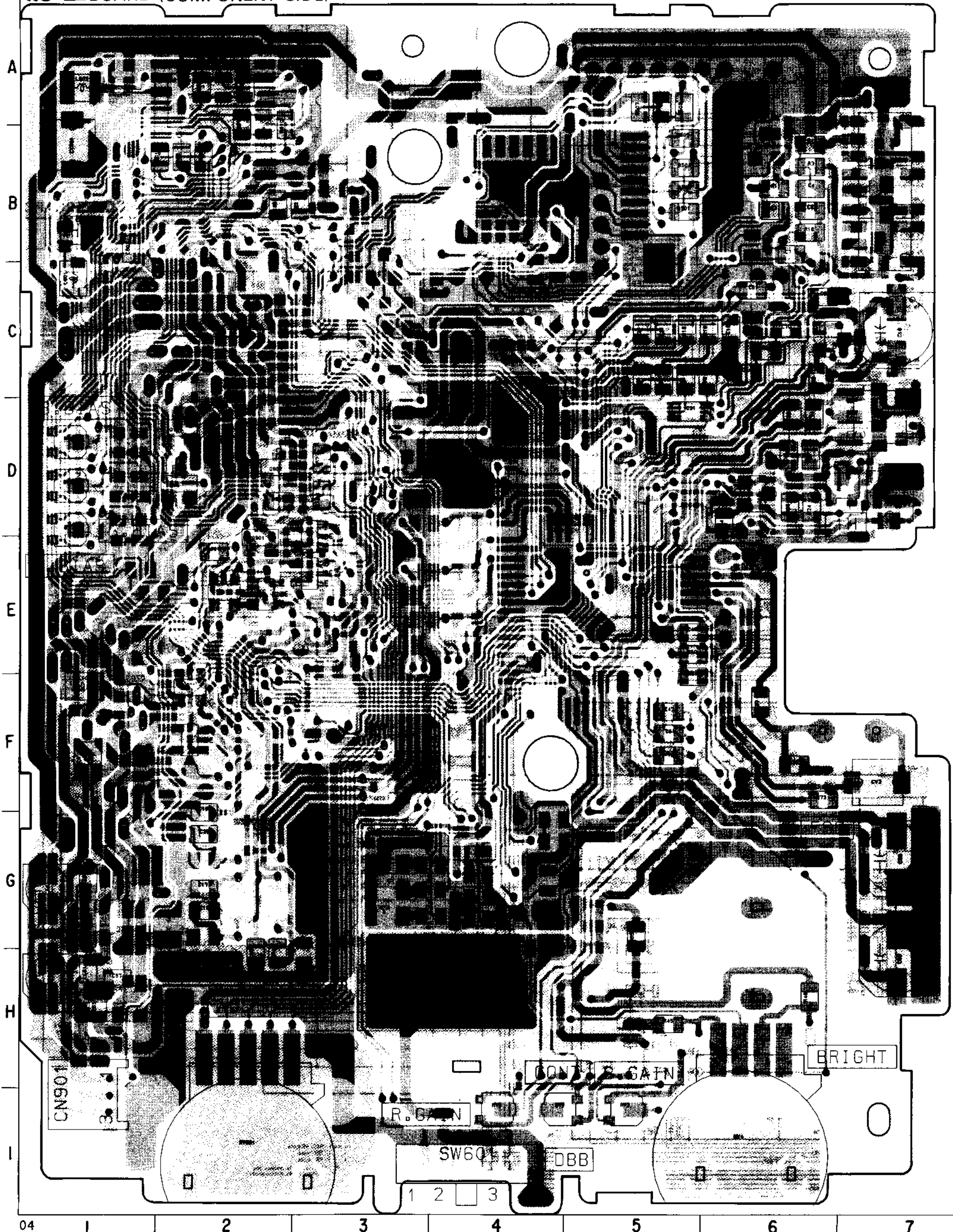




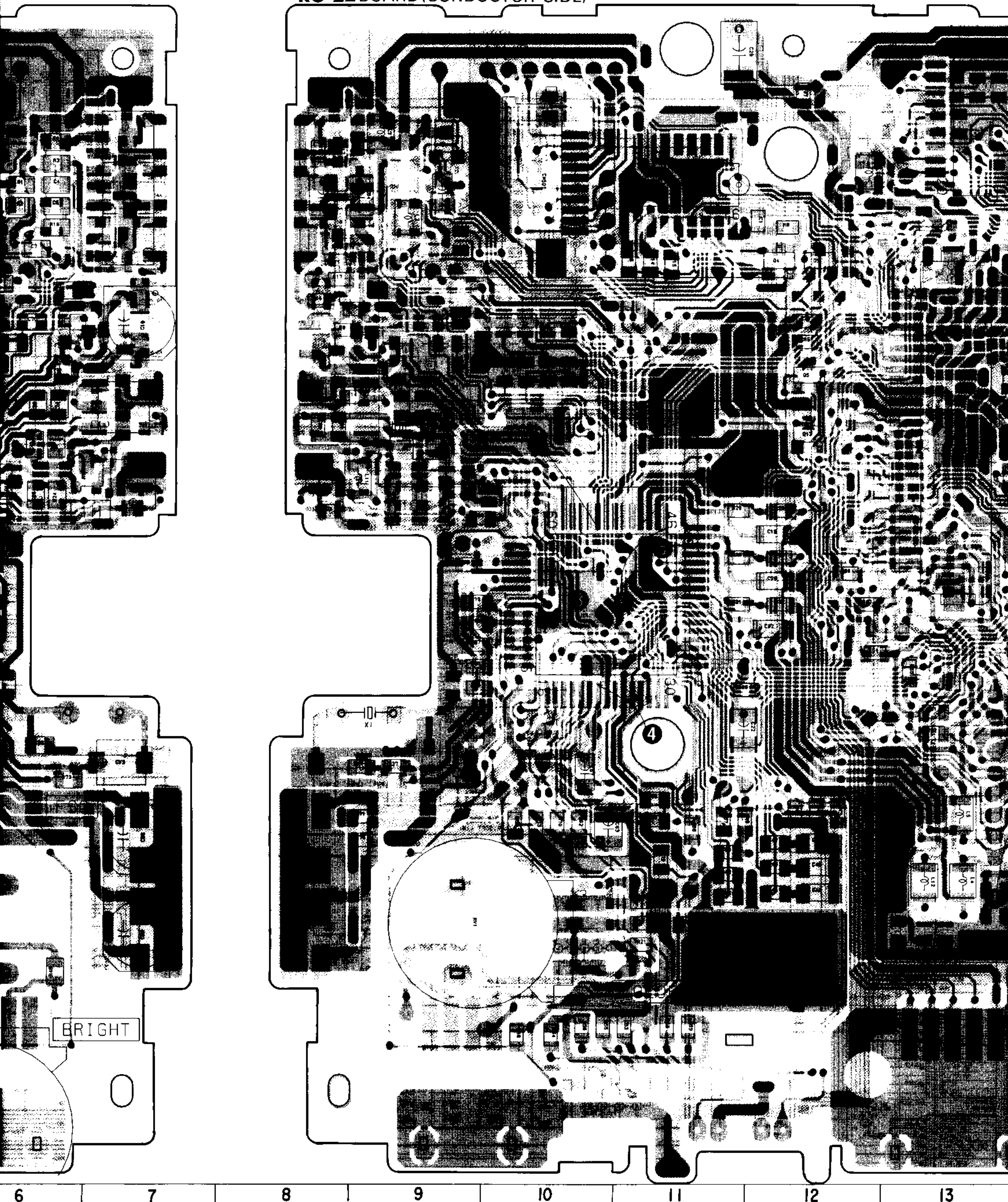
TO SV-66
 BOARD
 CND04
 (See page 93.)

RG-22 BOARD

RG-22 BOARD (COMPONENT SIDE)



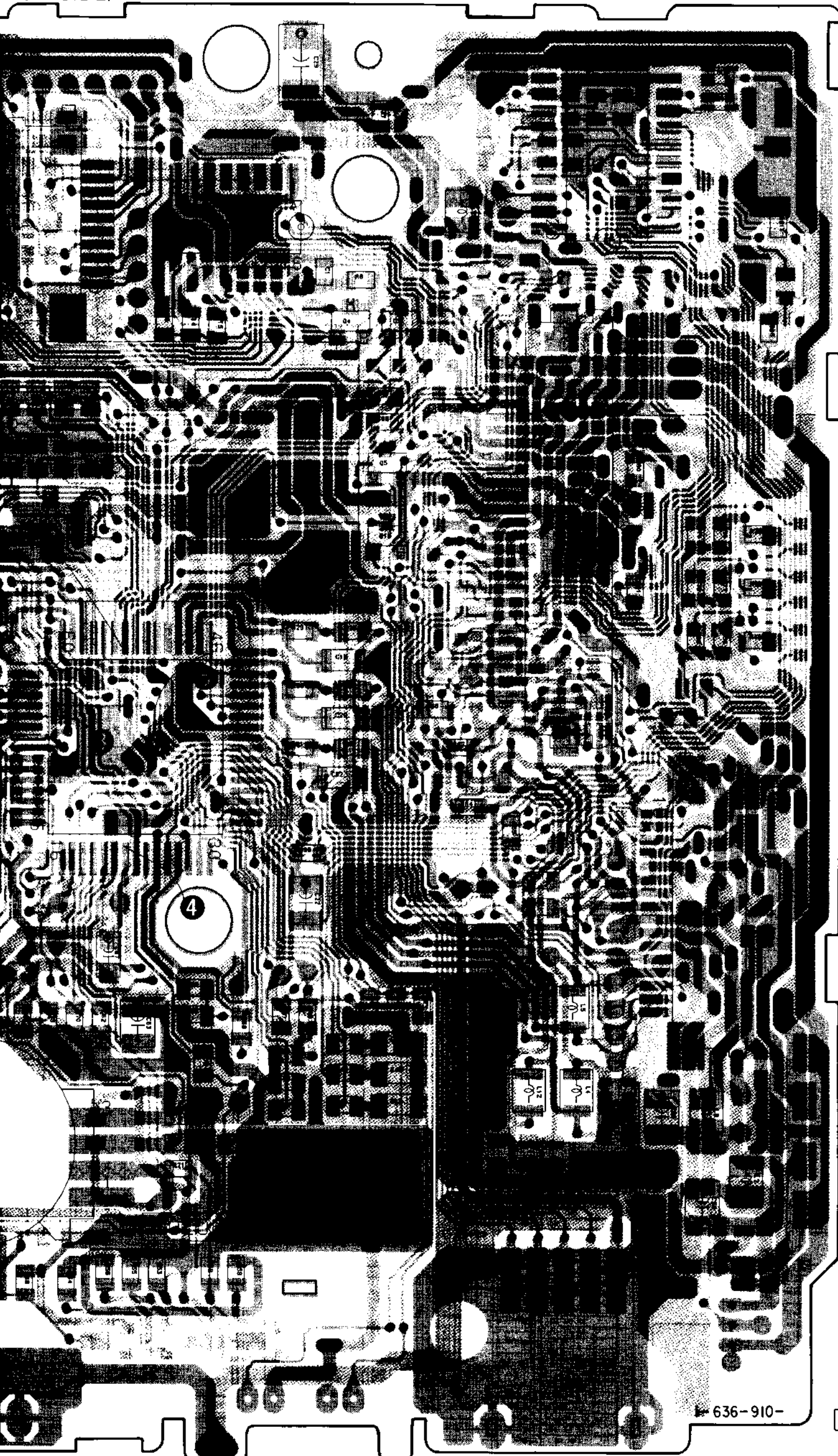
RG-22 BOARD(CONDUCTOR SIDE)



BRIGHT

6 7 8 9 10 11 12 13

CTOR SIDE)



DIODE

D001 8-719-914-47 DIODE MA152WK

IC

IC001 8-759-009-07 IC MC14053BF
 IC002 8-759-635-37 IC M52003AFP
 IC801 8-759-150-07 IC UPD6451AGT-601

TRANSISTOR

Q001 8-729-100-66 TRANSISTOR 2SC1623
 Q002 8-729-100-66 TRANSISTOR 2SC1623
 Q003 8-729-100-66 TRANSISTOR 2SC1623
 Q004 8-729-901-01 TRANSISTOR DTC144EK
 Q005 8-729-901-01 TRANSISTOR DTC144EK

 Q006 8-729-904-41 TRANSISTOR FMY3
 Q007 8-729-904-44 TRANSISTOR FMY4
 Q008 8-729-904-41 TRANSISTOR FMY3
 Q009 8-729-904-44 TRANSISTOR FMY4
 Q010 8-729-904-41 TRANSISTOR FMY3

 Q011 8-729-904-44 TRANSISTOR FMY4
 Q012 8-729-100-66 TRANSISTOR 2SC1623
 Q013 8-729-141-48 TRANSISTOR 2SB624-BV345
 Q014 8-729-901-01 TRANSISTOR DTC144EK
 Q015 8-729-100-66 TRANSISTOR 2SC1623

 Q901 8-729-901-00 TRANSISTOR DTC124EK
 Q902 8-729-901-05 TRANSISTOR DTA124EK

636-910-

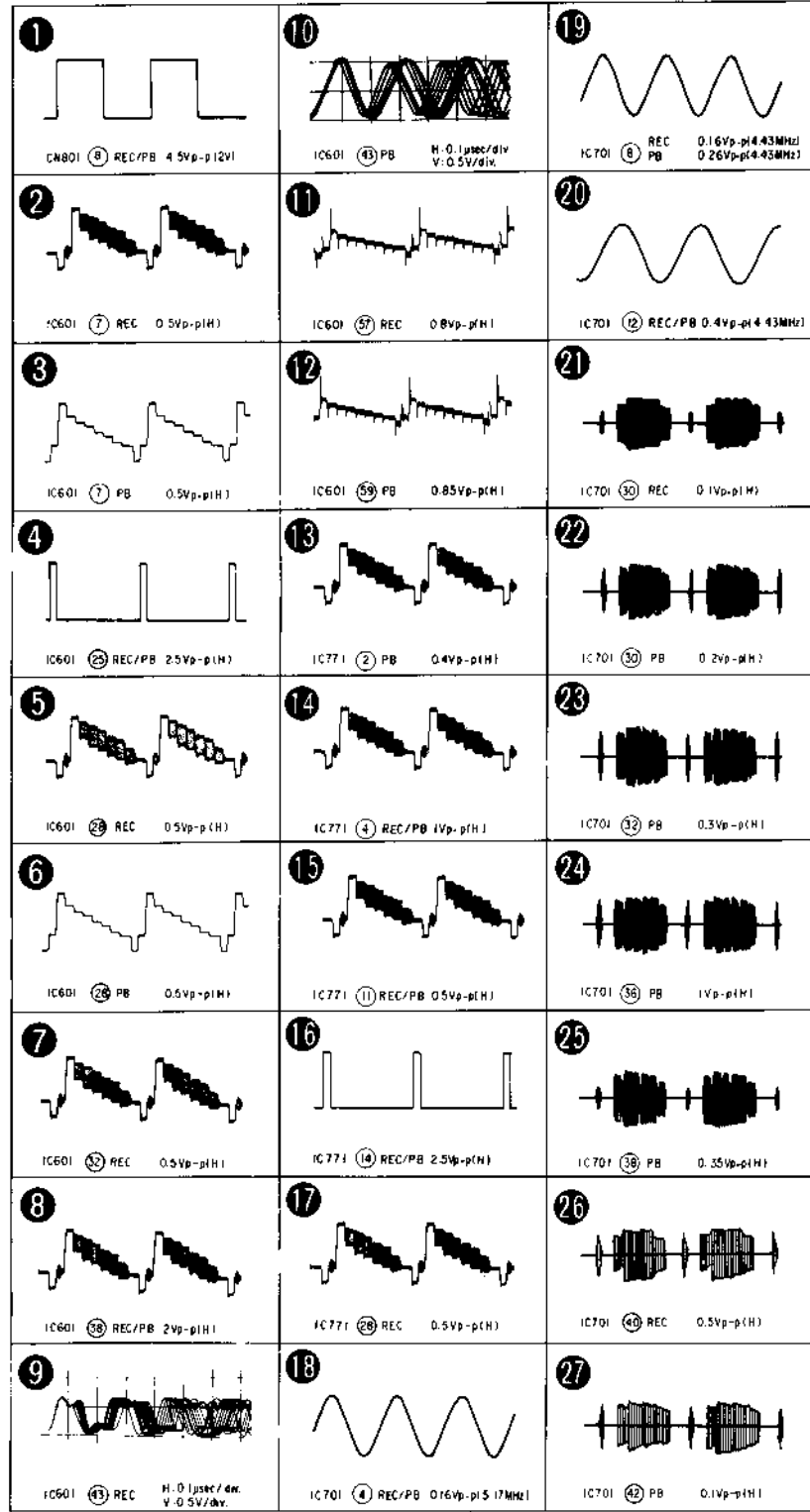
II

10 | 11 | 12 | 13 | 14

1 2 3 4 5 6 7 8 9 10 11

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O

SV-66 BOARD (VIDEO)



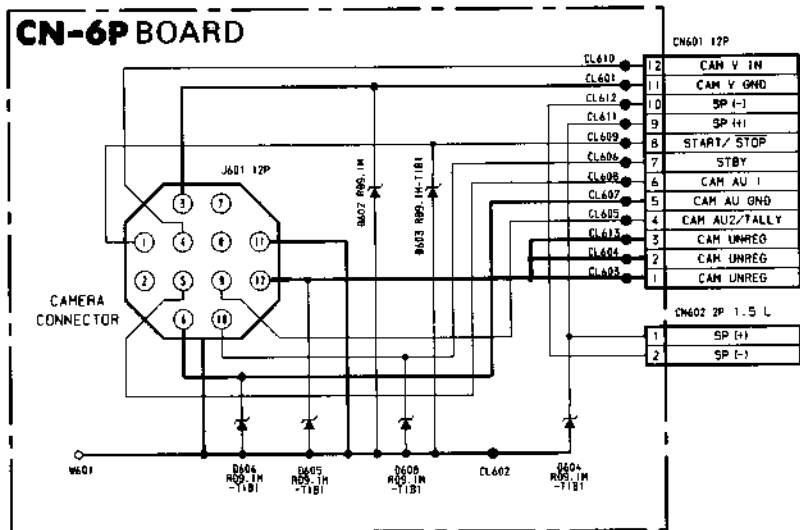
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	→	⇒	⇒⇒	→
PB	⇒	⇒⇒	⇒⇒⇒	⇒

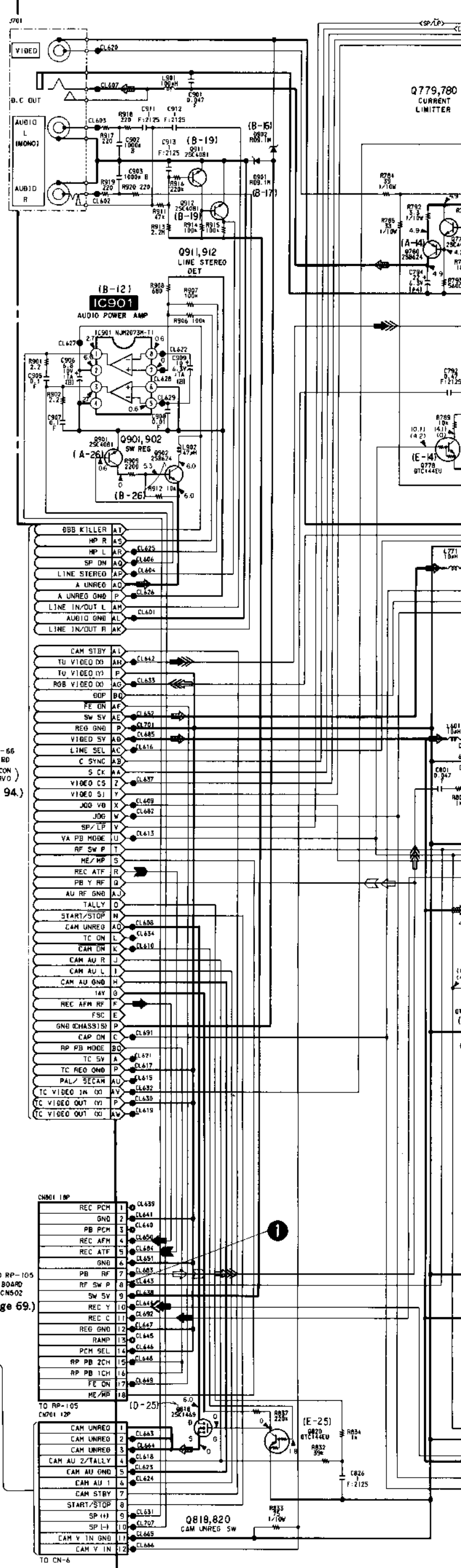
• Signal path

	REC	REC/PB	PB
Ref. signal	→	⇒	⇒⇒

CN-6P BOARD



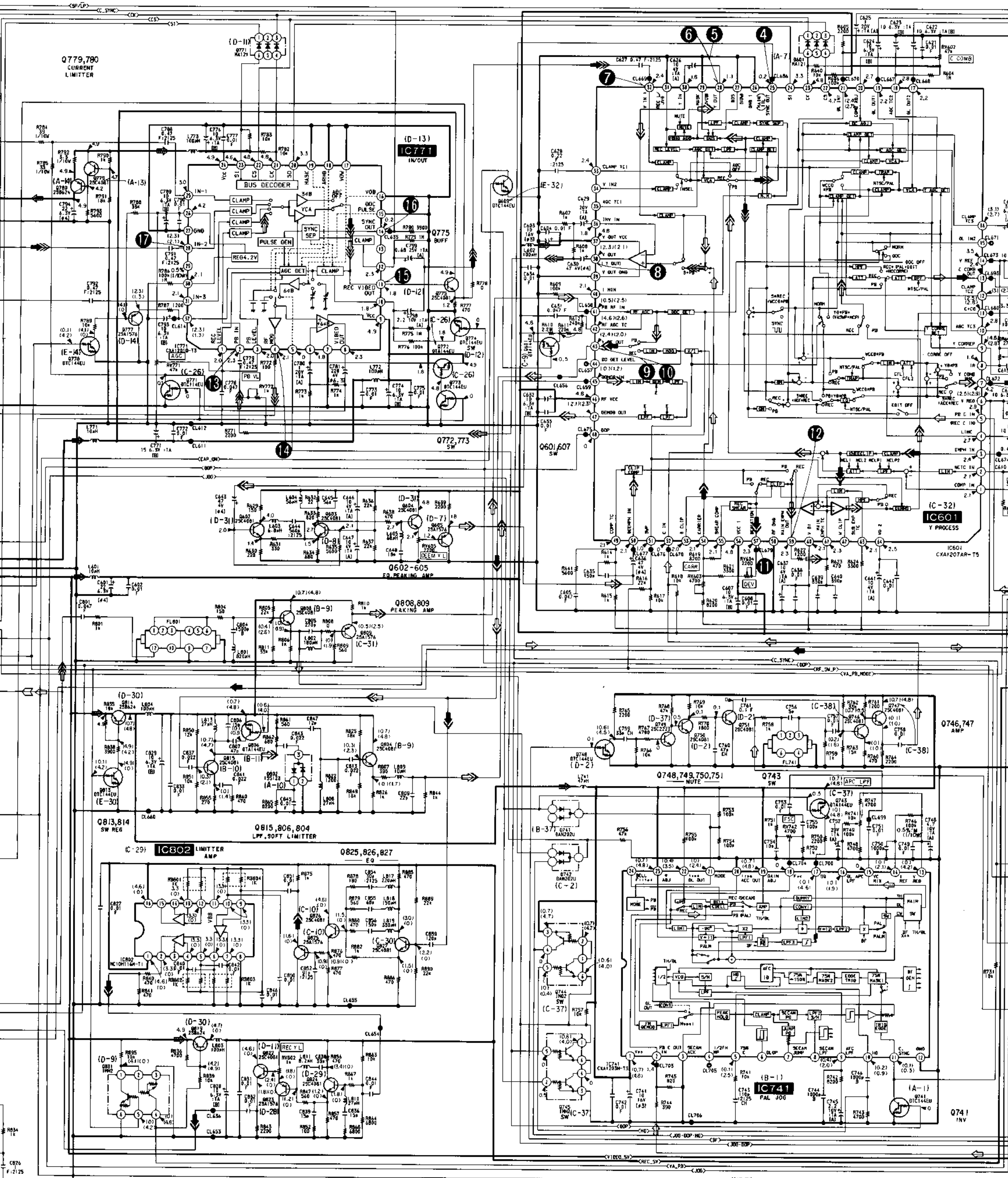
SV-66 BOARD (1/2) VIDEO



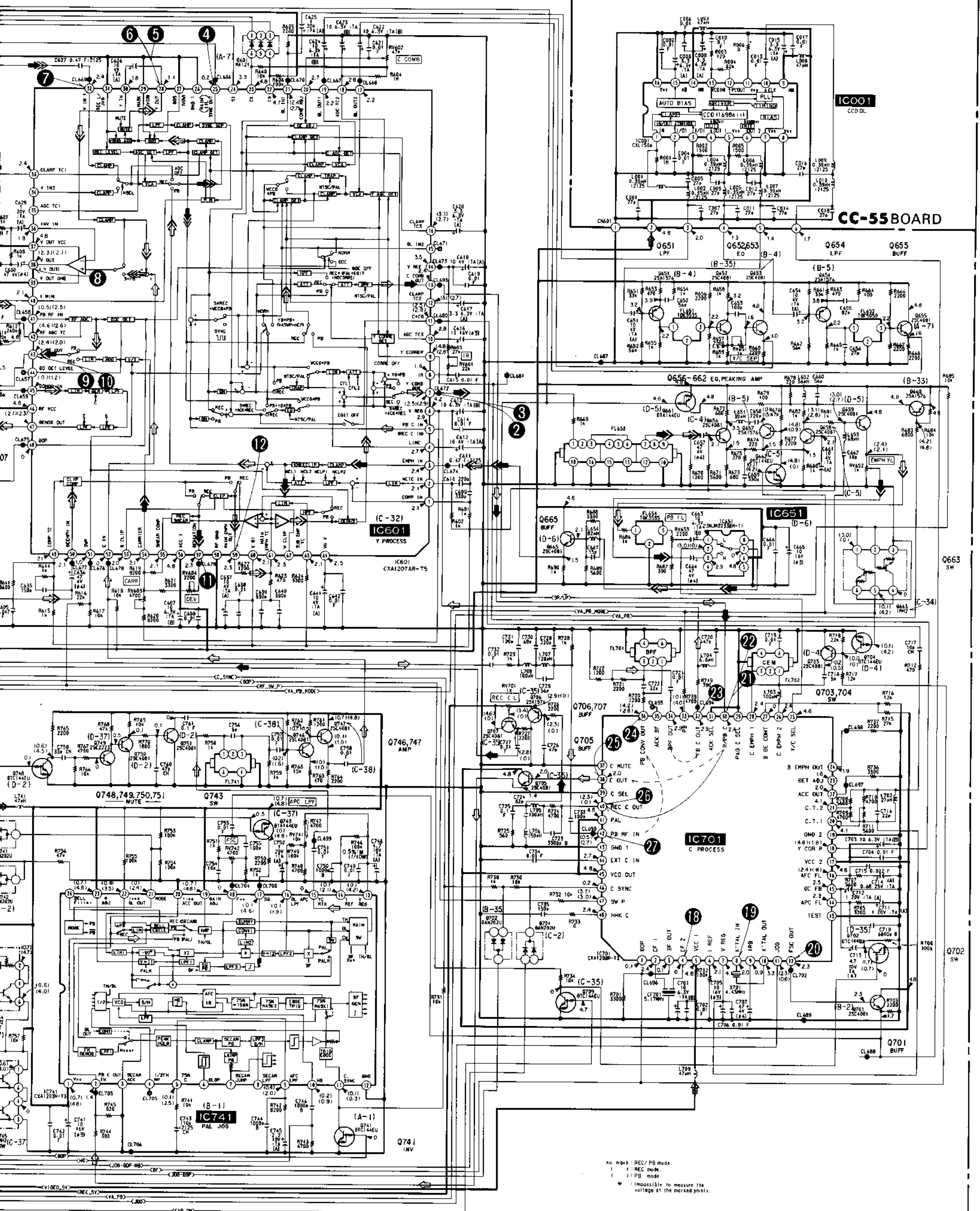
TO SV-66 BOARD (SYNCON /SERVO)
(See page 94.)

TO RP-105 BOARD (CN502)
(See page 69.)

TO RP-106 BOARD (CN501)
(See page 69.)



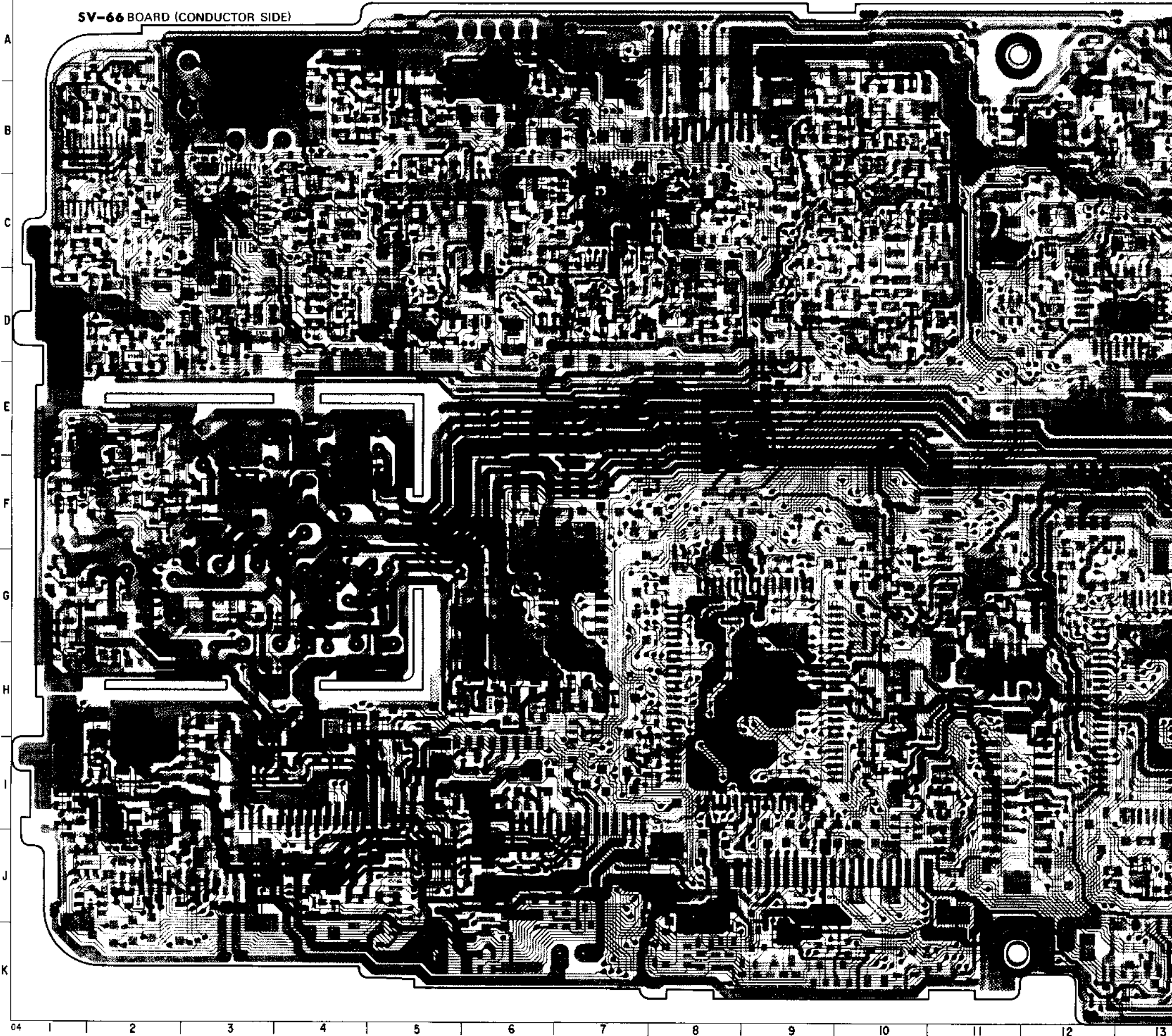
Q831 SW
 Q819 SW REG
 Q822 BUFF
 Q823,824 EQ



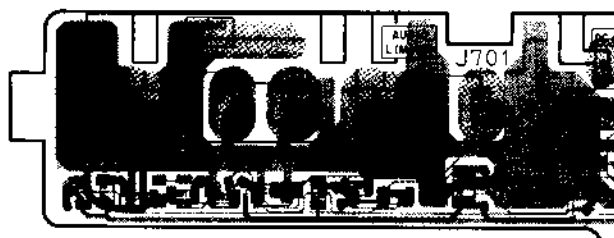
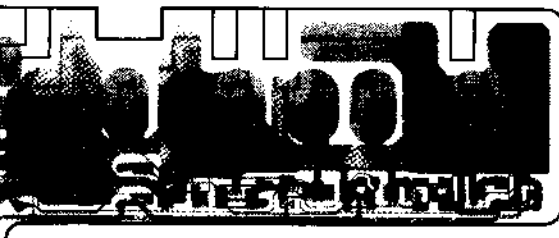
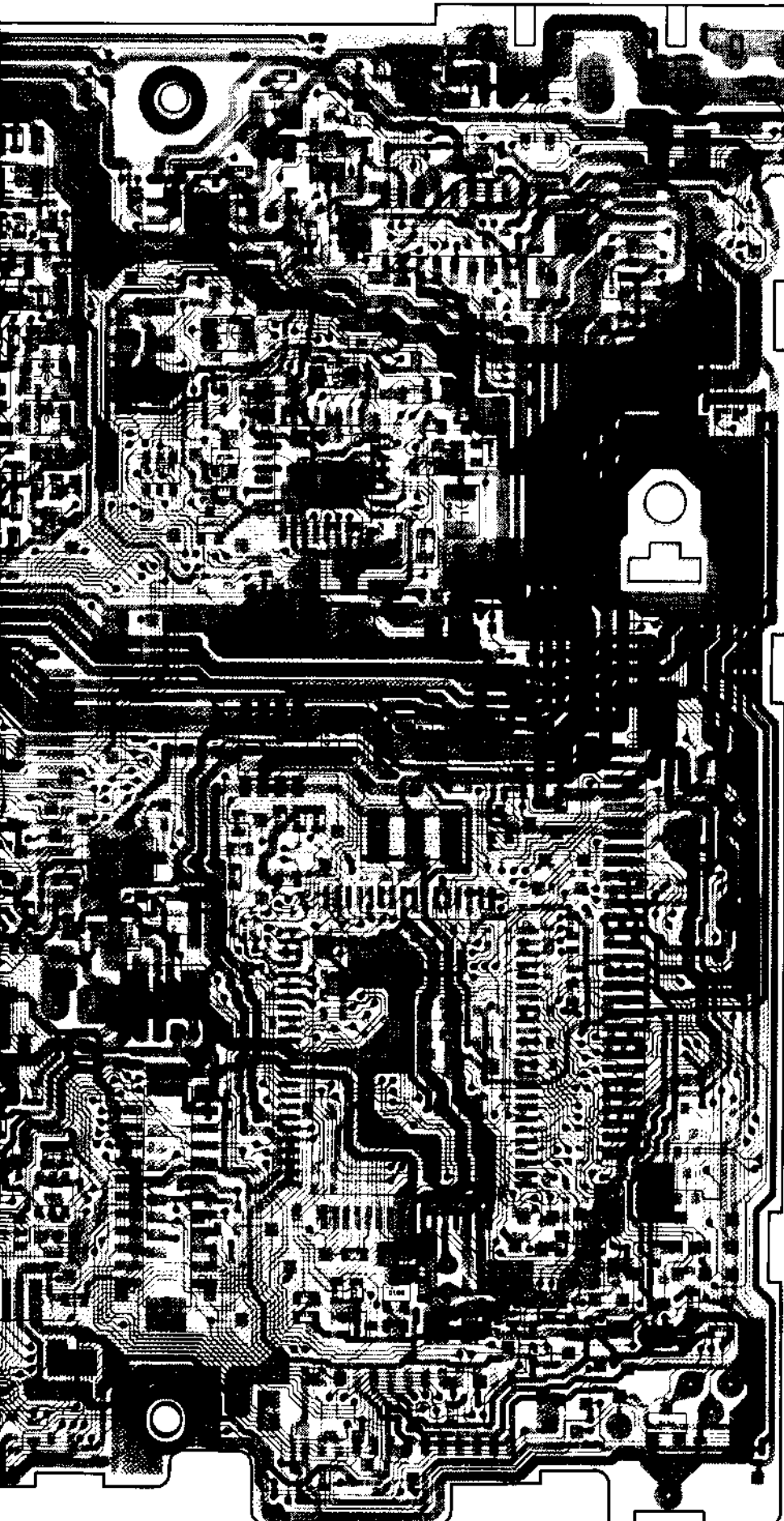
no mark: REC/PB mode.
 1: REC mode.
 2: PB mode.
 * : impossible to measure the voltage of the marked points.

		DIODE		IC	
D101	8-719-938-72	DIODE	SB01-05CP	IC101	8-752-815-30 IC CXP50116-093Q
D103	8-719-105-52	DIODE	RD3.6M-B2	IC102	8-759-502-36 IC S-81350HG
D104	8-719-105-XX	DIODE	RD6.2M-B1	IC103	8-759-940-33 IC S-8052ALO-LG-S
D107	8-719-941-09	DIODE	DAP202U	IC104	8-759-946-03 IC S-8054ALR-LN-S
D108	8-719-404-40	DIODE	MA121	IC105	8-759-720-23 IC AK93C57F
D201	8-719-941-86	DIODE	DAN202U	IC106	8-759-009-22 IC MC140948F
D202	8-719-404-40	DIODE	MA121	IC107	8-759-209-15 IC TC45069F
D203	8-719-404-40	DIODE	MA121	IC108	8-759-209-97 IC TC4S81F
D204	8-719-941-09	DIODE	DAP202U	IC109	8-759-209-97 IC TC4S81F
D205	8-719-941-09	DIODE	DAP202U	IC201	8-759-234-77 IC TC4S66F
D206	8-719-941-09	DIODE	DAP202U	IC202	8-759-234-77 IC TC4S66F
D301	8-719-941-86	DIODE	DAN202U	IC204	8-759-999-11 IC LM358D
D401	8-719-938-78	DIODE	SB10-05PCP	IC206	8-752-815-31 IC CXP80116-805Q
D402	8-719-941-09	DIODE	DAP202U	IC301	1-809-200-11 ATF-H1C (PAL)
D403	8-719-938-75	DIODE	SB05-05CP	IC302	8-759-100-97 IC UPC339G2
D404	8-719-938-75	DIODE	SB05-05CP	IC401	8-759-945-17 IC MB3775PF
D601	8-719-404-40	DIODE	MA121	IC402	8-759-998-94 IC LM311D
D701	8-719-941-86	DIODE	DAN202U	IC403	8-759-990-55 IC CXA8006M
D702	8-719-941-86	DIODE	DAN202U	IC404	8-759-805-06 IC CXA1127M
D741	8-719-941-86	DIODE	DAN202U	IC405	8-759-107-68 IC CX20115A
D742	8-719-941-86	DIODE	DAN202U	IC601	8-752-036-19 IC CXA1207
D771	8-719-404-40	DIODE	MA121	IC651	8-759-710-86 IC NJM2233BM
D802	8-719-900-76	DIODE	1SS226	IC701	8-752-036-20 IC CXA1208R
D901	8-719-106-44	DIODE	RD9.1M-B2	IC741	8-759-605-61 IC CXA1203N
D902	8-719-106-44	DIODE	RD9.1M-B2	IC771	8-752-033-40 IC CXA1201Q
				IC802	8-759-012-00 IC MC104116M
				IC901	8-759-701-02 IC NJM2073M

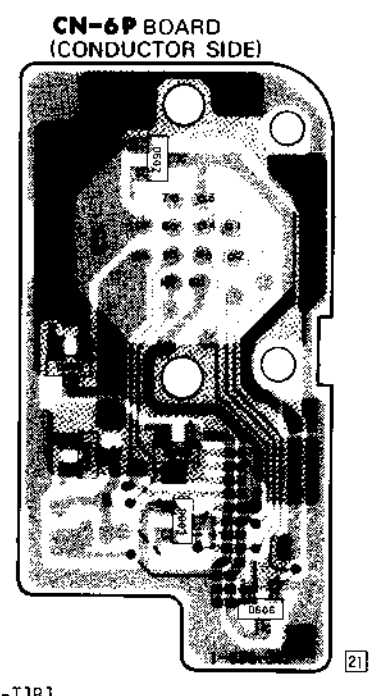
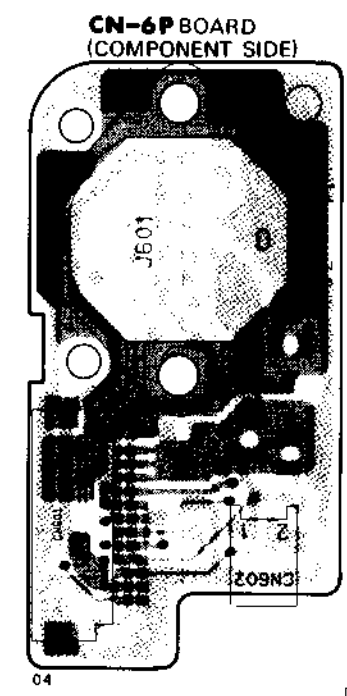
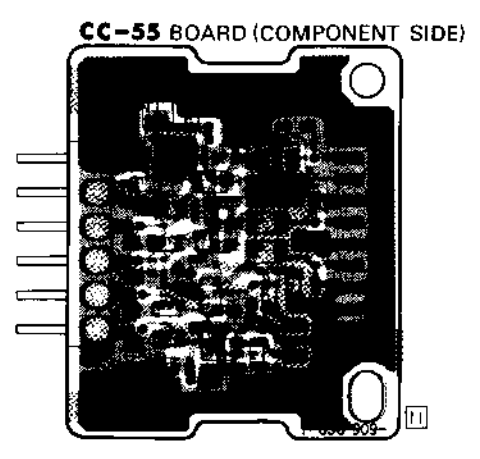
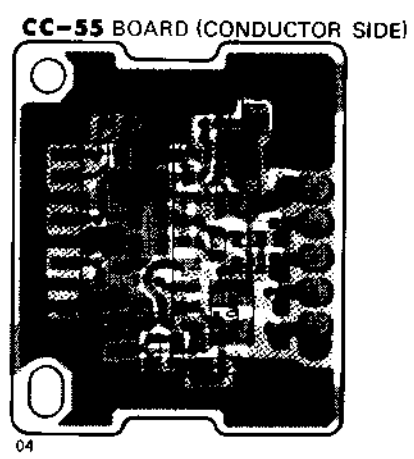
CC-55 (CCD), CN-6 (CAMERA CONNECTOR), SV-66(VIDEO) PRINTED WIRING BOARDS
 — Ref. No, CN-6 BOARD : 3000 series, CC-55 and SV-66 BOARDS : 5000series —



IC			TRANSISTOR											
01	8-752-815-30	IC CXP50116-093Q	Q101	8-729-905-18	TRANSISTOR DTC144EU	Q303	8-729-905-23	TRANSISTOR 2SA1576R	Q655	8-729-905-35	TRANSISTOR 2SC4081R	Q777	8-729-905-35	TRANSISTOR 2SC4081R
02	8-759-502-36	IC S-81350HG	Q102	8-729-905-35	TRANSISTOR 2SC4081R	Q304	8-729-905-35	TRANSISTOR 2SC4081R	Q656	8-729-905-35	TRANSISTOR 2SC4081R	Q778	8-729-905-35	TRANSISTOR 2SC4081R
03	8-759-940-33	IC S-8052ALO-LG-S	Q103	8-729-220-93	TRANSISTOR 2SK209G	Q305	8-729-905-18	TRANSISTOR DTC144EU	Q657	8-729-905-23	TRANSISTOR 2SA1576R	Q779	8-729-905-35	TRANSISTOR 2SC4081R
04	8-759-946-03	IC S-8054ALR-LM-S	Q104	8-729-905-18	TRANSISTOR DTC144EU	Q306	8-729-905-18	TRANSISTOR DTC144EU	Q658	8-729-905-35	TRANSISTOR 2SC4081R	Q780	8-729-905-35	TRANSISTOR 2SC4081R
05	8-759-720-23	IC AK93C57F	Q105	8-729-905-35	TRANSISTOR 2SC4081R	Q307	8-729-920-48	TRANSISTOR 1MH2	Q659	8-729-905-35	TRANSISTOR 2SC4081R	Q804	8-729-905-35	TRANSISTOR 2SC4081R
06	8-759-009-22	IC MC14094BF	Q106	8-729-905-23	TRANSISTOR 2SA1576R	Q401	8-729-905-35	TRANSISTOR 2SC4081R	Q660	8-729-905-23	TRANSISTOR 2SA1576R	Q806	8-729-905-35	TRANSISTOR 2SC4081R
07	8-759-209-15	IC TC45U69F	Q107	8-729-220-93	TRANSISTOR 2SK209G	Q402	8-729-901-04	TRANSISTOR DTA114EK	Q661	8-729-905-12	TRANSISTOR DTA144EU	Q808	8-729-905-35	TRANSISTOR 2SC4081R
08	8-759-209-97	IC TC4581F	Q108	8-729-220-93	TRANSISTOR 2SK209G	Q403	8-729-905-35	TRANSISTOR 2SC4081R	Q662	8-729-905-18	TRANSISTOR DTC144EU	Q809	8-729-905-35	TRANSISTOR 2SC4081R
09	8-759-209-97	IC TC4581F	Q109	8-729-905-12	TRANSISTOR DTA144EU	Q404	8-729-805-25	TRANSISTOR 2SB1121	Q663	8-729-920-48	TRANSISTOR 1MH2	Q813	8-729-905-35	TRANSISTOR 2SC4081R
10	8-759-234-77	IC TC4566F	Q110	8-729-905-35	TRANSISTOR 2SC4081R	Q405	8-729-905-35	TRANSISTOR 2SC4081R	Q665	8-729-905-35	TRANSISTOR 2SC4081R	Q814	8-729-905-35	TRANSISTOR 2SC4081R
11	8-759-234-77	IC TC4566F	Q111	8-729-905-26	TRANSISTOR 2SA1576Q	Q406	8-729-905-61	TRANSISTOR DTC124EU	Q701	8-729-905-35	TRANSISTOR 2SC4081R	Q815	8-729-905-35	TRANSISTOR 2SC4081R
12	8-759-999-11	IC LM358D	Q112	8-729-905-26	TRANSISTOR 2SA1576Q	Q407	8-729-905-35	TRANSISTOR 2SC4081R	Q702	8-729-905-18	TRANSISTOR DTC144EU	Q818	8-729-905-35	TRANSISTOR 2SC4081R
13	8-752-815-31	IC CXP80116-805Q	Q113	8-729-921-08	TRANSISTOR DTC144TU	Q408	8-729-805-25	TRANSISTOR 2SB1121	Q703	8-729-905-35	TRANSISTOR 2SC4081R	Q819	8-729-905-35	TRANSISTOR 2SC4081R
14	1-809-200-11	ATF-H1C (PAL)	Q114	8-729-403-24	TRANSISTOR XN4210	Q409	8-729-805-25	TRANSISTOR 2SB1121	Q704	8-729-905-18	TRANSISTOR DTC144EU	Q820	8-729-905-35	TRANSISTOR 2SC4081R
15	8-759-100-97	IC UPC339G2	Q116	8-729-403-24	TRANSISTOR XN4210	Q410	8-729-805-25	TRANSISTOR 2SB1121	Q705	8-729-905-35	TRANSISTOR 2SC4081R	Q822	8-729-905-35	TRANSISTOR 2SC4081R
16	8-759-945-17	IC MB3775PF	Q117	8-729-905-18	TRANSISTOR DTC144EU	Q411	8-729-805-25	TRANSISTOR 2SB1121	Q706	8-729-905-23	TRANSISTOR 2SA1576R	Q823	8-729-905-35	TRANSISTOR 2SC4081R
17	8-759-998-94	IC LM311D	Q118	8-729-920-59	TRANSISTOR 1MX2	Q412	8-729-905-35	TRANSISTOR 2SC4081R	Q707	8-729-905-35	TRANSISTOR 2SC4081R	Q824	8-729-905-35	TRANSISTOR 2SC4081R
18	8-759-990-55	IC CXA8006M	Q120	8-729-905-35	TRANSISTOR 2SC4081R	Q413	8-729-907-00	TRANSISTOR DTC114EU	Q709	8-729-905-18	TRANSISTOR DTC144EU	Q825	8-729-905-35	TRANSISTOR 2SC4081R
19	8-759-805-06	IC CXA1127M	Q201	8-729-905-35	TRANSISTOR 2SC4081R	Q415	8-729-905-18	TRANSISTOR DTC144EU	Q741	8-729-905-18	TRANSISTOR DTC144EU	Q826	8-729-905-35	TRANSISTOR 2SC4081R
20	8-759-107-68	IC CX20115A	Q202	8-729-905-35	TRANSISTOR 2SC4081R	Q416	8-729-905-12	TRANSISTOR DTA144EU	Q743	8-729-905-12	TRANSISTOR DTA144EU	Q827	8-729-905-35	TRANSISTOR 2SC4081R
21	8-752-036-19	IC CXA1207	Q203	8-729-921-08	TRANSISTOR DTC144TU	Q418	8-729-141-48	TRANSISTOR 2SB624-BV345	Q744	8-729-907-39	TRANSISTOR 1MD2	Q831	8-729-905-35	TRANSISTOR 2SC4081R
22	8-759-710-86	IC NJM2233BM	Q204	8-729-902-96	TRANSISTOR FMS1	Q419	8-729-907-00	TRANSISTOR DTC114EU	Q745	8-729-920-48	TRANSISTOR 1MH2	Q901	8-729-905-35	TRANSISTOR 2SC4081R
23	8-752-036-20	IC CXA1208R	Q205	8-729-903-82	TRANSISTOR FMW2	Q420	8-729-907-00	TRANSISTOR DTC114EU	Q746	8-729-905-35	TRANSISTOR 2SC4081R	Q902	8-729-905-35	TRANSISTOR 2SC4081R
24	8-759-605-61	IC CXA1203N	Q206	8-729-907-00	TRANSISTOR DTC114EU	Q601	8-729-905-12	TRANSISTOR DTA144EU	Q747	8-729-905-35	TRANSISTOR 2SC4081R	Q911	8-729-905-35	TRANSISTOR 2SC4081R
25	8-752-033-40	IC CXA1201Q	Q207	8-729-905-35	TRANSISTOR 2SC4081R	Q602	8-729-905-35	TRANSISTOR 2SC4081R	Q748	8-729-905-18	TRANSISTOR DTC144EU	Q912	8-729-905-35	TRANSISTOR 2SC4081R
26	8-759-012-00	IC MC10H116M	Q208	8-729-820-46	TRANSISTOR 2SB1202FAS	Q603	8-729-905-35	TRANSISTOR 2SC4081R	Q749	8-729-102-07	TRANSISTOR 2SC2223-F13			
27	8-759-701-02	IC NJM2073M	Q209	8-729-905-35	TRANSISTOR 2SC4081R	Q604	8-729-905-35	TRANSISTOR 2SC4081R	Q750	8-729-905-35	TRANSISTOR 2SC4081R			
			Q210	8-729-403-24	TRANSISTOR XN4210	Q605	8-729-905-23	TRANSISTOR 2SA1576R	Q751	8-729-905-35	TRANSISTOR 2SC4081R			
			Q212	8-729-905-12	TRANSISTOR DTA144EU									
			Q213	8-729-905-18	TRANSISTOR DTC144EU									
			Q214	8-729-905-18	TRANSISTOR DTC144EU									
			Q215	8-729-905-18	TRANSISTOR DTC144EU									
			Q216	8-729-905-35	TRANSISTOR 2SC4081R									
			Q301	8-729-905-23	TRANSISTOR 2SA1576R									
			Q302	8-729-905-35	TRANSISTOR 2SC4081R									

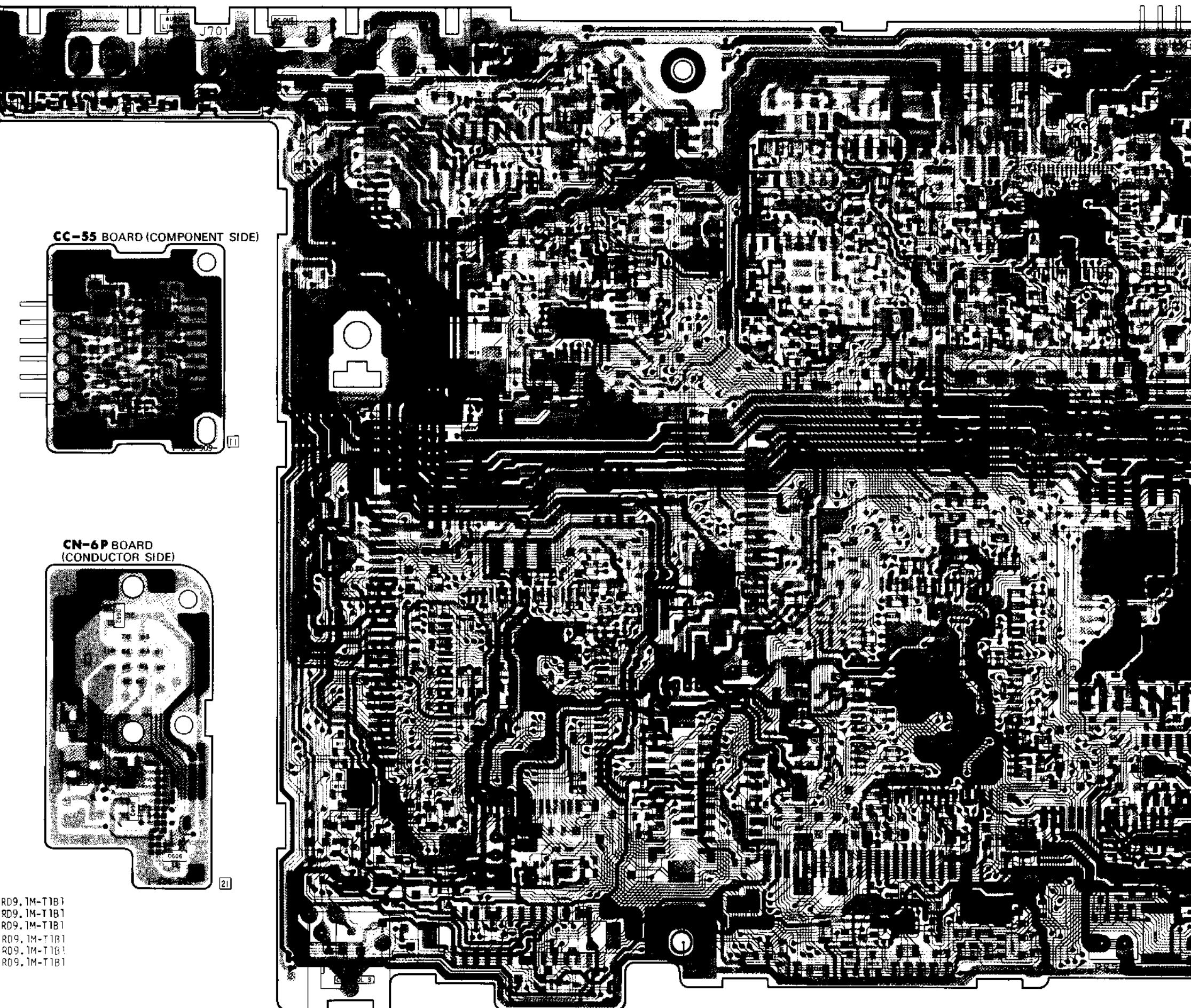


IC
IC001 8-752-333-24 IC CXL1506M



DIODE
D602 8-719-106-43 DIODE RD9.1M-T1B1
D603 8-719-106-43 DIODE RD9.1M-T1B1
D604 8-719-106-43 DIODE RD9.1M-T1B1
D605 8-719-105-43 DIODE RD9.1M-T1B1
D606 8-719-106-43 DIODE RD9.1M-T1B1
D608 8-719-105-43 DIODE RD9.1M-T1B1

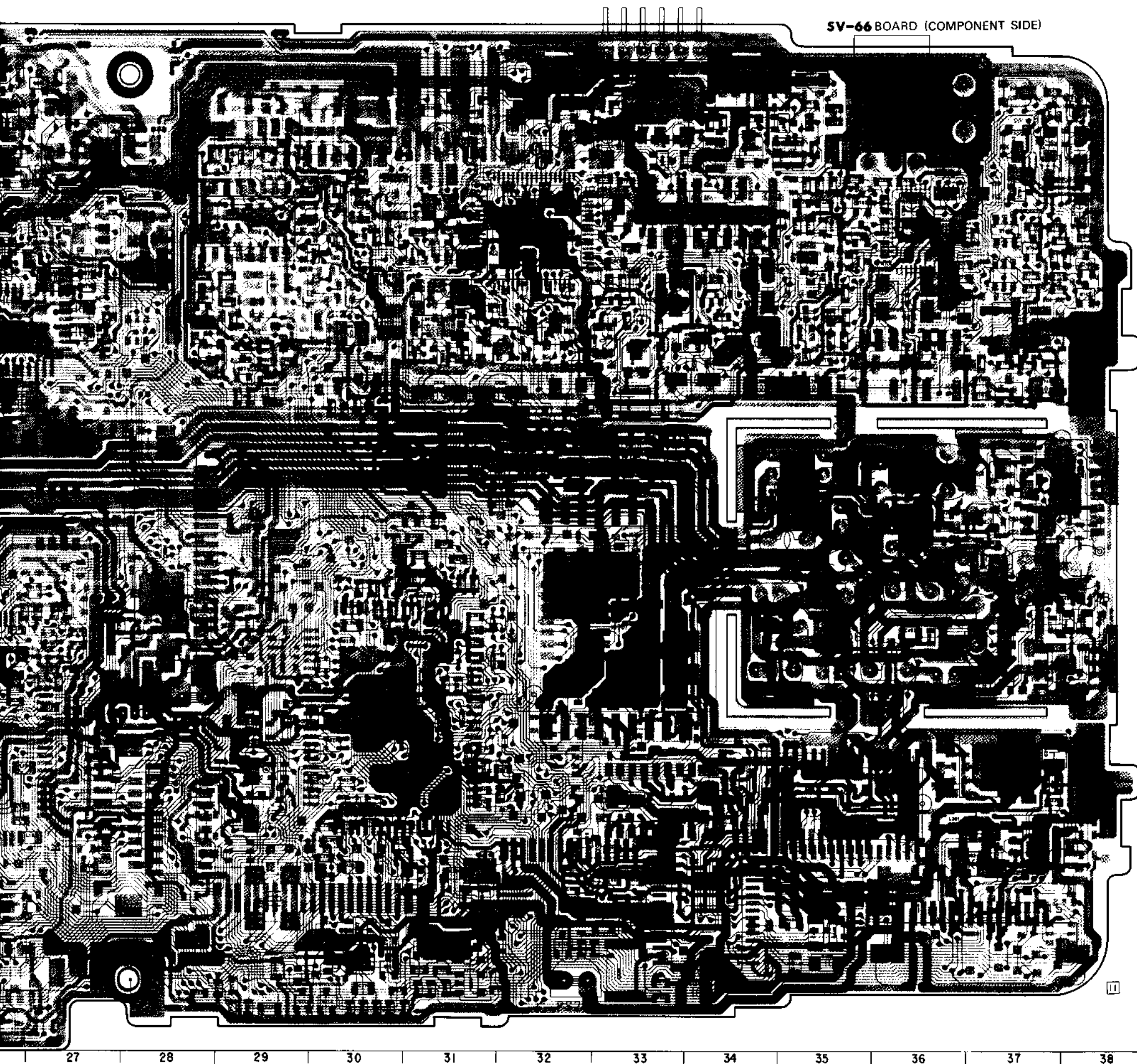
905-35	TRANSISTOR	2SC4081R	Q777	8-729-905-23	TRANSISTOR	2SA1576R
905-35	TRANSISTOR	2SC4081R	Q778	8-729-905-18	TRANSISTOR	DTC144EU
905-23	TRANSISTOR	2SA1576R	Q779	8-729-905-35	TRANSISTOR	2SC4081R
905-35	TRANSISTOR	2SC4081R	Q780	8-729-141-48	TRANSISTOR	2SB624-BV345
905-35	TRANSISTOR	2SC4081R	Q804	8-729-905-35	TRANSISTOR	2SC4081R
905-23	TRANSISTOR	2SA1576R	Q806	8-729-905-12	TRANSISTOR	DTA144EU
905-12	TRANSISTOR	DTA144EU	Q808	8-729-905-35	TRANSISTOR	2SC4081R
905-18	TRANSISTOR	DTC144EU	Q809	8-729-905-23	TRANSISTOR	2SA1576R
920-48	TRANSISTOR	IMH2	Q813	8-729-905-18	TRANSISTOR	DTC144EU
905-35	TRANSISTOR	2SC4081R	Q814	8-729-141-48	TRANSISTOR	2SB624-BV345
905-35	TRANSISTOR	2SC4081R	Q815	8-729-905-35	TRANSISTOR	2SC4081R
905-18	TRANSISTOR	DTC144EU	Q818	8-729-822-51	TRANSISTOR	2SK1469-FA
905-35	TRANSISTOR	2SC4081R	Q819	8-729-141-48	TRANSISTOR	2SB624-BV345
905-18	TRANSISTOR	DTC144EU	Q820	8-729-905-18	TRANSISTOR	DTC144EU
905-35	TRANSISTOR	2SC4081R	Q822	8-729-905-35	TRANSISTOR	2SC4081R
905-23	TRANSISTOR	2SA1576R	Q823	8-729-905-23	TRANSISTOR	2SA1576R
905-35	TRANSISTOR	2SC4081R	Q824	8-729-905-35	TRANSISTOR	2SC4081R
905-18	TRANSISTOR	DTC144EU	Q825	8-729-905-23	TRANSISTOR	2SA1576R
905-18	TRANSISTOR	DTC144EU	Q826	8-729-905-35	TRANSISTOR	2SC4081R
905-12	TRANSISTOR	DTA144EU	Q827	8-729-905-35	TRANSISTOR	2SC4081R
907-39	TRANSISTOR	IMD2	Q831	8-729-920-48	TRANSISTOR	IMH2
920-48	TRANSISTOR	IMH2	Q901	8-729-905-35	TRANSISTOR	2SC4081R
905-35	TRANSISTOR	2SC4081R	Q902	8-729-141-48	TRANSISTOR	2SB624-BV345
905-35	TRANSISTOR	2SC4081R	Q911	8-729-905-35	TRANSISTOR	2SC4081R
905-18	TRANSISTOR	DTC144EU	Q912	8-729-905-35	TRANSISTOR	2SC4081R
902-07	TRANSISTOR	2SC2223-F13				
905-35	TRANSISTOR	2SC4081R				
905-35	TRANSISTOR	2SC4081R				
907-00	TRANSISTOR	DTC144EU				
905-12	TRANSISTOR	DTA144EU				
905-18	TRANSISTOR	DTC144EU				
905-18	TRANSISTOR	DTC144EU				
905-35	TRANSISTOR	2SC4081R				



RD9, 1M-T1B1
RD9, 1M-T1B1
RD9, 1M-T1B1
RD9, 1M-T1B1
RD9, 1M-T1B1
RD9, 1M-T1B1
RD9, 1M-T1B1

21 22 23 24 25 26 27 28 29 30 31 32 33



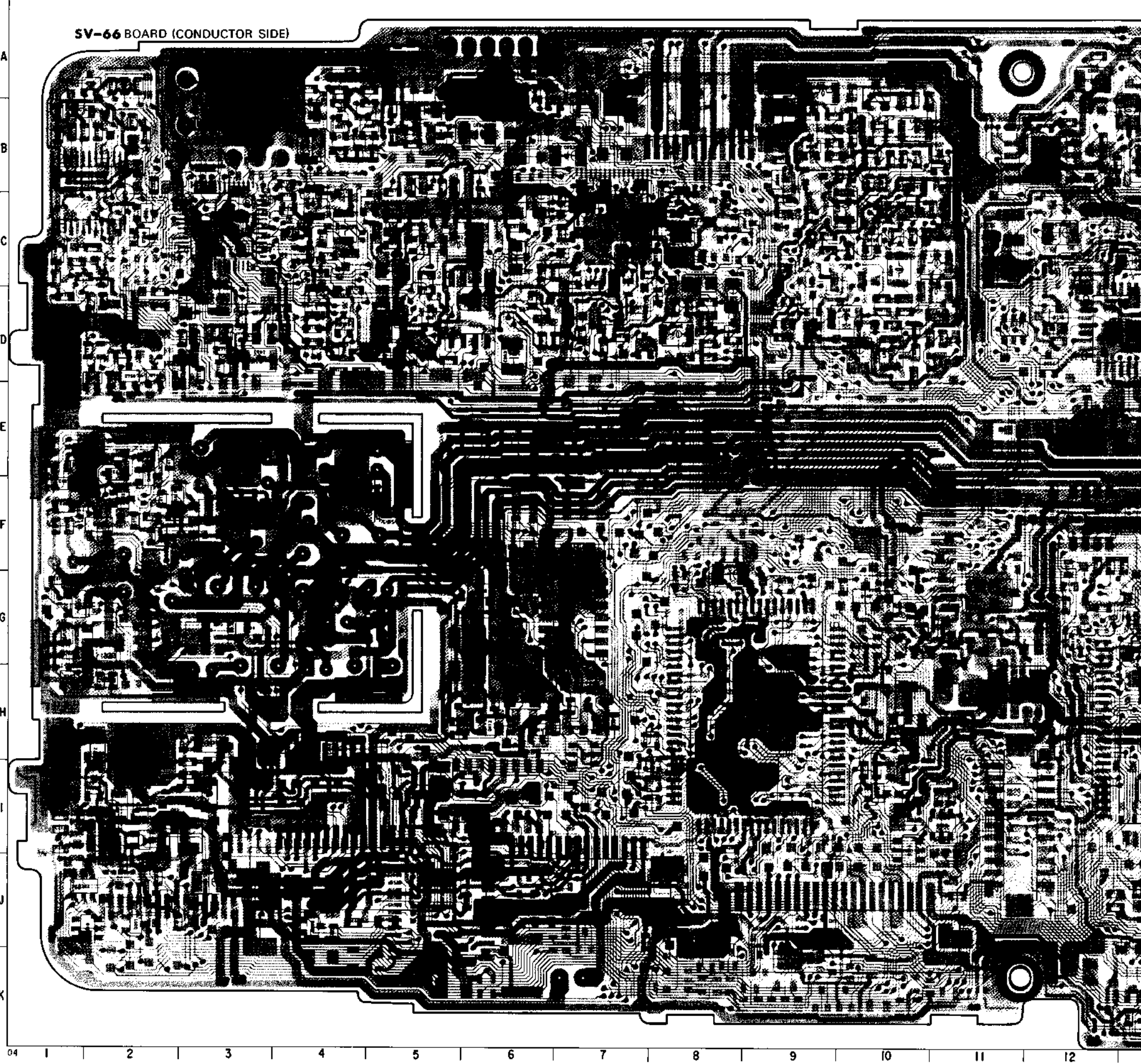


SV-66 BOARD (COMPONENT SIDE)

27 28 29 30 31 32 33 34 35 36 37 38

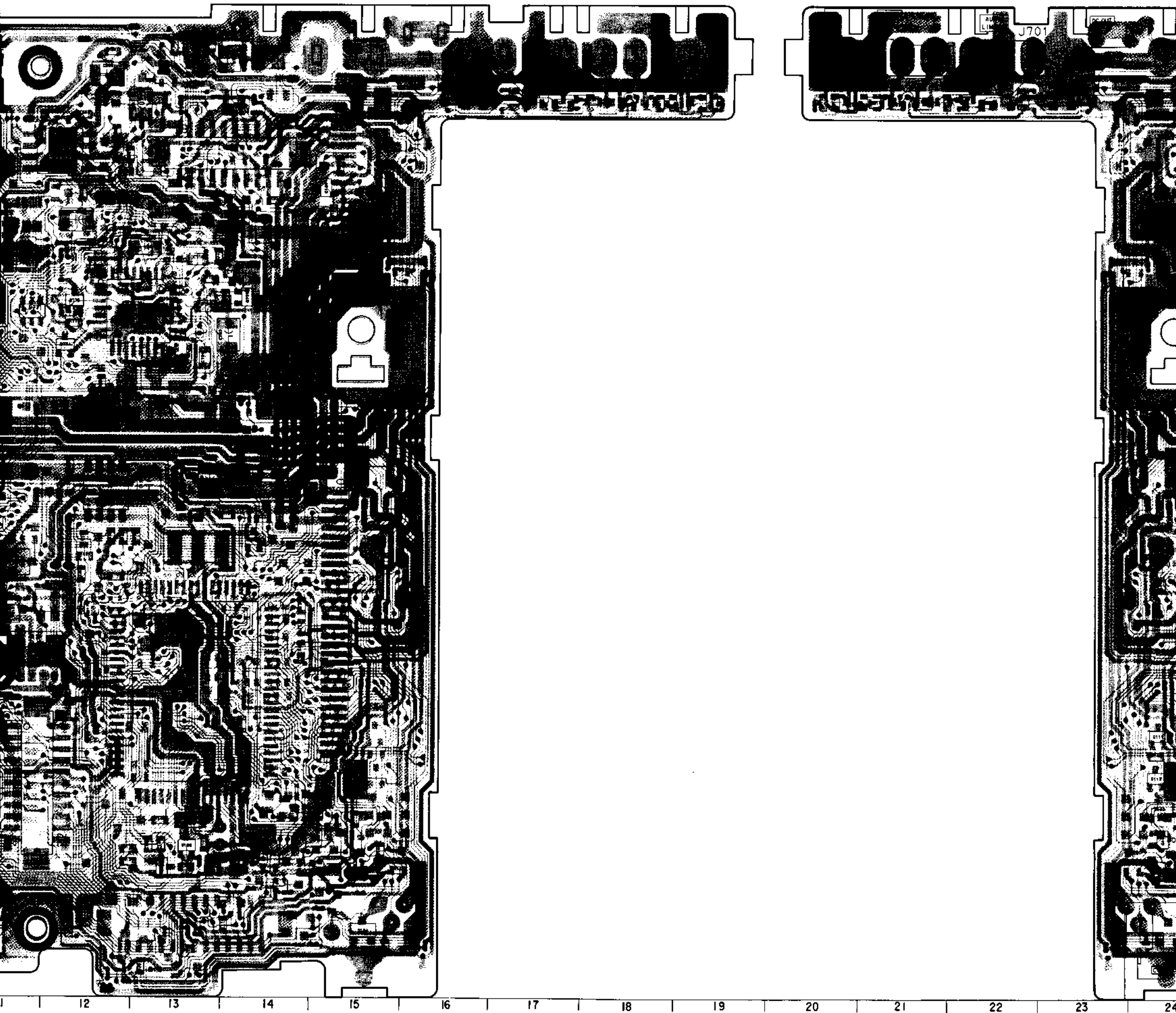
DIODE				IC					
D101	8-719-938-72	DIODE	SB01-05CP	IC101	8-752-815-30	IC	CXP50116-093Q	Q101	8-729-
D103	8-719-105-52	DIODE	RD3.6M-B2	IC102	8-759-502-36	IC	S-81350HG	Q102	8-729-
D104	8-719-105-XX	DIODE	RD6.2M-B1	IC103	8-759-940-33	IC	S-8052ALO-LG-S	Q103	8-729-
D107	8-719-941-09	DIODE	DAP202U	IC104	8-759-946-03	IC	S-8054ALR-LM-S	Q104	8-729-
D108	8-719-404-40	DIODE	MA121	IC105	8-759-720-23	IC	AK93C57F	Q105	8-729-
D201	8-719-941-86	DIODE	DAN202U	IC106	8-759-009-22	IC	MC140948F	Q106	8-729-
D202	8-719-404-40	DIODE	MA121	IC107	8-759-209-15	IC	TC45069F	Q107	8-729-
D203	8-719-404-40	DIODE	MA121	IC108	8-759-209-97	IC	TC4581F	Q108	8-729-
D204	8-719-941-09	DIODE	DAP202U	IC109	8-759-209-97	IC	TC4581F	Q109	8-729-
D205	8-719-941-09	DIODE	DAP202U	IC201	8-759-234-77	IC	TC4566F	Q110	8-729-
D206	8-719-941-09	DIODE	DAP202U	IC202	8-759-234-77	IC	TC4566F	Q111	8-729-
D301	8-719-941-86	DIODE	DAN202U	IC204	8-759-999-11	IC	LM358D	Q112	8-729-
D401	8-719-938-78	DIODE	SB10-05PCP	IC206	8-752-815-31	IC	CXP80116-805Q	Q113	8-729-
D402	8-719-941-09	DIODE	DAP202U	IC301	1-809-200-11	ATF-HIC (PAL)		Q114	8-729-
D403	8-719-938-75	DIODE	SB05-05CP	IC302	8-759-100-97	IC	UPC339G2	Q116	8-729-
D404	8-719-938-75	DIODE	SB05-05CP	IC401	8-759-946-17	IC	MB3775PF	Q117	8-729-
D601	8-719-404-40	DIODE	MA121	IC402	8-759-998-94	IC	LM311D	Q118	8-729-
D701	8-719-941-86	DIODE	DAN202U	IC403	8-759-990-55	IC	CXA8006M	Q120	8-729-
D702	8-719-941-86	DIODE	DAN202U	IC404	8-759-805-06	IC	CXA1127M	Q201	8-729-
D741	8-719-941-86	DIODE	DAN202U	IC405	8-759-107-68	IC	CX20115A	Q202	8-729-
D742	8-719-941-86	DIODE	DAN202U	IC601	8-752-036-19	IC	CXA1207	Q203	8-729-
D771	8-719-404-40	DIODE	MA121	IC651	8-759-710-86	IC	NJM2233BM	Q204	8-729-
D802	8-719-800-75	DIODE	1SS226	IC701	8-752-036-20	IC	CXA1208R	Q205	8-729-
D901	8-719-106-44	DIODE	RD9.1M-B2	IC741	8-759-605-61	IC	CXA1203M	Q206	8-729-
D902	8-719-106-44	DIODE	RD9.1M-B2	IC771	8-752-033-40	IC	CXA1201Q	Q207	8-729-
				IC802	8-759-012-00	IC	MC10H116M	Q208	8-729-
				IC901	8-759-701-02	IC	NJM2073M	Q209	8-729-
								Q210	8-729-
								Q212	8-729-
								Q213	8-729-
								Q214	8-729-
								Q215	8-729-
								Q215	8-729-
								Q301	8-729-
								Q302	8-729-

SV-66 (SERVO, SYSTEM CONTROL) PRINTED WIRING BOARD
 — Ref. No. SV-66 BOARD : 5000 series —



TRANSISTOR

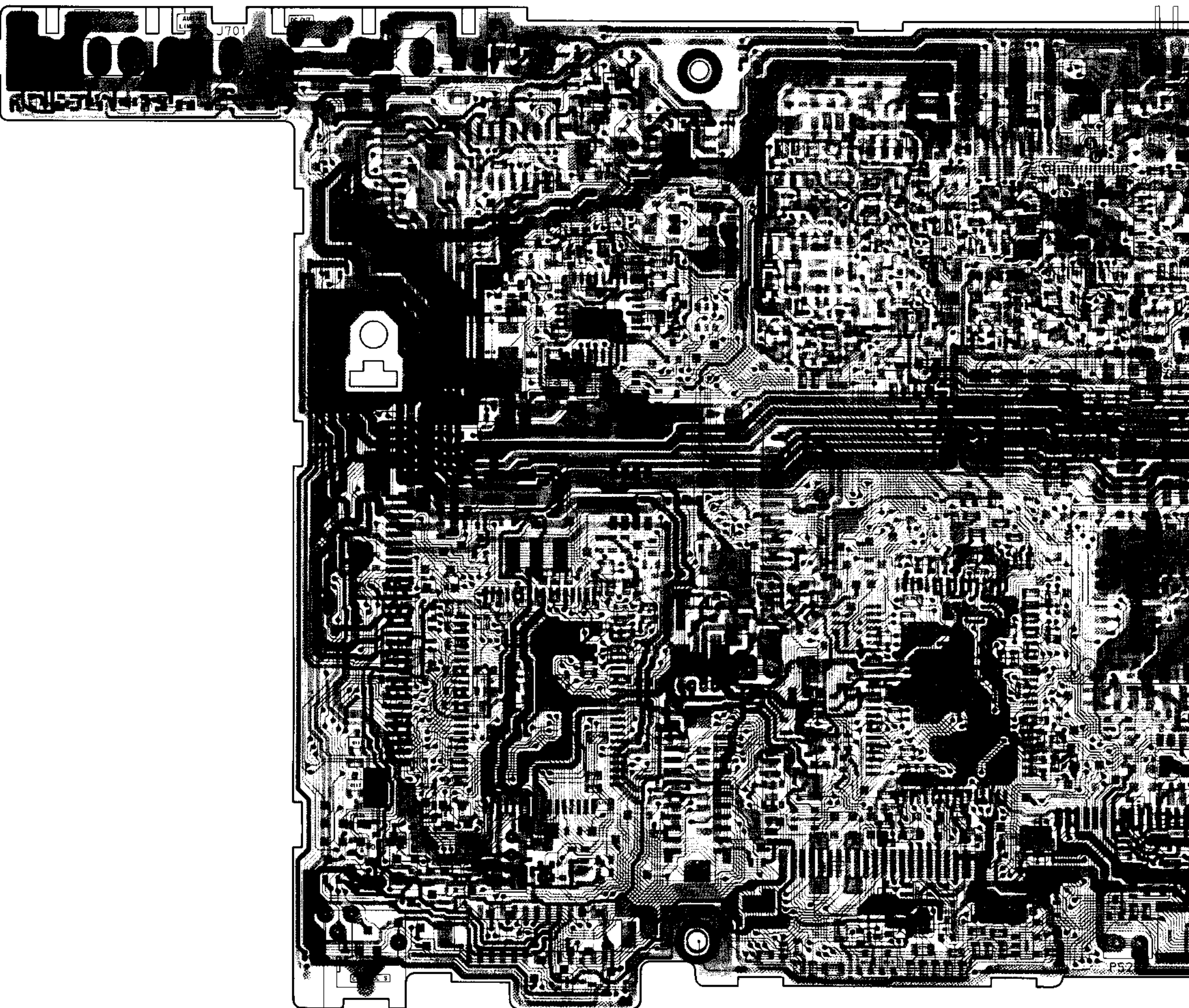
Q101	8-729-905-18	TRANSISTOR	DTC144EU	Q303	8-729-905-23	TRANSISTOR	2SA1576R	Q655	8-729-905-35	TRANSISTOR	2SC4081R	Q777	8-729-905-23	TRANSISTOR	2SA1576R
Q102	8-729-905-35	TRANSISTOR	2SC4081R	Q304	8-729-905-35	TRANSISTOR	2SC4081R	Q656	8-729-905-35	TRANSISTOR	2SC4081R	Q778	8-729-905-18	TRANSISTOR	DTC144EU
Q103	8-729-220-93	TRANSISTOR	2SK209G	Q305	8-729-905-18	TRANSISTOR	DTC144EU	Q657	8-729-905-23	TRANSISTOR	2SA1576R	Q779	8-729-905-35	TRANSISTOR	2SC4081R
Q104	8-729-905-18	TRANSISTOR	DTC144EU	Q306	8-729-905-18	TRANSISTOR	DTC144EU	Q658	8-729-905-35	TRANSISTOR	2SC4081R	Q780	8-729-141-48	TRANSISTOR	2SB624-BV345
Q105	8-729-905-35	TRANSISTOR	2SC4081R	Q307	8-729-920-48	TRANSISTOR	1MH2	Q659	8-729-905-35	TRANSISTOR	2SC4081R	Q804	8-729-905-35	TRANSISTOR	2SC4081R
Q106	8-729-905-23	TRANSISTOR	2SA1576R	Q401	8-729-905-35	TRANSISTOR	2SC4081R	Q660	8-729-905-23	TRANSISTOR	2SA1576R	Q806	8-729-905-12	TRANSISTOR	DTA144EU
Q107	8-729-220-93	TRANSISTOR	2SK209G	Q402	8-729-901-04	TRANSISTOR	DTA114EK	Q661	8-729-905-12	TRANSISTOR	DTA144EU	Q808	8-729-905-35	TRANSISTOR	2SC4081R
Q108	8-729-220-93	TRANSISTOR	2SK209G	Q403	8-729-905-35	TRANSISTOR	2SC4081R	Q662	8-729-905-18	TRANSISTOR	DTC144EU	Q809	8-729-905-23	TRANSISTOR	2SA1576R
Q109	8-729-905-12	TRANSISTOR	DTA144EU	Q404	8-729-805-25	TRANSISTOR	2SB1121	Q663	8-729-920-48	TRANSISTOR	1MH2	Q813	8-729-905-18	TRANSISTOR	DTC144EU
Q110	8-729-905-35	TRANSISTOR	2SC4081R	Q405	8-729-905-35	TRANSISTOR	2SC4081R	Q665	8-729-905-35	TRANSISTOR	2SC4081R	Q814	8-729-141-48	TRANSISTOR	2SB624-BV345
Q111	8-729-905-26	TRANSISTOR	2SA1576Q	Q406	8-729-905-61	TRANSISTOR	DTC124EU	Q701	8-729-905-35	TRANSISTOR	2SC4081R	Q815	8-729-905-35	TRANSISTOR	2SC4081R
Q112	8-729-905-26	TRANSISTOR	2SA1576Q	Q407	8-729-905-35	TRANSISTOR	2SC4081R	Q702	8-729-905-18	TRANSISTOR	DTC144EU	Q818	8-729-822-51	TRANSISTOR	2SK1469-FA
Q113	8-729-921-08	TRANSISTOR	DTC144TU	Q408	8-729-805-25	TRANSISTOR	2SB1121	Q703	8-729-905-35	TRANSISTOR	2SC4081R	Q819	8-729-141-48	TRANSISTOR	2SB624-BV345
Q114	8-729-403-24	TRANSISTOR	XN4210	Q409	8-729-805-25	TRANSISTOR	2SB1121	Q704	8-729-905-18	TRANSISTOR	DTC144EU	Q820	8-729-905-18	TRANSISTOR	DTC144EU
Q116	8-729-403-24	TRANSISTOR	XN4210	Q410	8-729-805-25	TRANSISTOR	2SB1121	Q705	8-729-905-35	TRANSISTOR	2SC4081R	Q822	8-729-905-35	TRANSISTOR	2SC4081R
Q117	8-729-905-18	TRANSISTOR	DTC144EU	Q411	8-729-805-25	TRANSISTOR	2SB1121	Q706	8-729-905-23	TRANSISTOR	2SA1576R	Q823	8-729-905-23	TRANSISTOR	2SA1576R
Q118	8-729-920-59	TRANSISTOR	1MX2	Q412	8-729-905-35	TRANSISTOR	2SC4081R	Q707	8-729-905-35	TRANSISTOR	2SC4081R	Q824	8-729-905-35	TRANSISTOR	2SC4081R
Q120	8-729-905-35	TRANSISTOR	2SC4081R	Q413	8-729-907-00	TRANSISTOR	DTC114EU	Q709	8-729-905-18	TRANSISTOR	DTC144EU	Q825	8-729-905-23	TRANSISTOR	2SA1576R
Q201	8-729-905-35	TRANSISTOR	2SC4081R	Q415	8-729-905-18	TRANSISTOR	DTC144EU	Q741	8-729-905-18	TRANSISTOR	DTC144EU	Q826	8-729-905-35	TRANSISTOR	2SC4081R
Q202	8-729-905-35	TRANSISTOR	2SC4081R	Q416	8-729-905-12	TRANSISTOR	DTA144EU	Q743	8-729-905-12	TRANSISTOR	DTA144EU	Q827	8-729-905-35	TRANSISTOR	2SC4081R
Q203	8-729-921-08	TRANSISTOR	DTC144TU	Q418	8-729-141-48	TRANSISTOR	2SB624-BV345	Q744	8-729-907-39	TRANSISTOR	1MD2	Q831	8-729-920-48	TRANSISTOR	1MH2
Q204	8-729-902-96	TRANSISTOR	FMS1	Q419	8-729-907-00	TRANSISTOR	DTC114EU	Q745	8-729-920-48	TRANSISTOR	1MH2	Q901	8-729-905-35	TRANSISTOR	2SC4081R
Q205	8-729-903-82	TRANSISTOR	FMW2	Q420	8-729-907-00	TRANSISTOR	DTC114EU	Q746	8-729-905-35	TRANSISTOR	2SC4081R	Q902	8-729-141-48	TRANSISTOR	2SB624-BV345
Q206	8-729-907-00	TRANSISTOR	DTC114EU	Q601	8-729-905-12	TRANSISTOR	DTA144EU	Q747	8-729-905-35	TRANSISTOR	2SC4081R	Q911	8-729-905-35	TRANSISTOR	2SC4081R
Q207	8-729-905-35	TRANSISTOR	2SC4081R	Q602	8-729-905-35	TRANSISTOR	2SC4081R	Q748	8-729-905-18	TRANSISTOR	DTC144EU	Q912	8-729-905-35	TRANSISTOR	2SC4081R
Q208	8-729-820-46	TRANSISTOR	2SB1202FAS	Q603	8-729-905-35	TRANSISTOR	2SC4081R	Q749	8-729-102-07	TRANSISTOR	2SC2223-F13				
Q209	8-729-905-35	TRANSISTOR	2SC4081R	Q604	8-729-905-35	TRANSISTOR	2SC4081R	Q750	8-729-905-35	TRANSISTOR	2SC4081R				
Q210	8-729-403-24	TRANSISTOR	XN4210	Q605	8-729-905-23	TRANSISTOR	2SA1576R	Q751	8-729-905-35	TRANSISTOR	2SC4081R				
Q212	8-729-905-12	TRANSISTOR	DTA144EU	Q609	8-729-905-18	TRANSISTOR	DTC144EU	Q771	8-729-907-00	TRANSISTOR	DTC114EU				
Q213	8-729-905-18	TRANSISTOR	DTC144EU	Q651	8-729-905-23	TRANSISTOR	2SA1576R	Q772	8-729-905-12	TRANSISTOR	DTA144EU				
Q214	8-729-905-18	TRANSISTOR	DTC144EU	Q652	8-729-905-35	TRANSISTOR	2SC4081R	Q773	8-729-905-18	TRANSISTOR	DTC144EU				
Q215	8-729-905-18	TRANSISTOR	DTC144EU	Q653	8-729-905-35	TRANSISTOR	2SC4081R	Q774	8-729-905-18	TRANSISTOR	DTC144EU				
Q216	8-729-905-35	TRANSISTOR	2SC4081R	Q654	8-729-905-23	TRANSISTOR	2SA1576R	Q775	8-729-905-35	TRANSISTOR	2SC4081R				
Q301	8-729-905-23	TRANSISTOR	2SA1576R												
Q302	8-729-905-35	TRANSISTOR	2SC4081R												



TOR 2SC4081R	Q777	8-729-905-23	TRANSISTOR	2SA1576R
TOR 2SC4081R	Q778	8-729-905-18	TRANSISTOR	DTC144EU
TOR 2SA1576R	Q779	8-729-905-35	TRANSISTOR	2SC4081R
TOR 2SC4081R	Q780	8-729-141-48	TRANSISTOR	2SB624-BV345
TOR 2SC4081R	Q804	8-729-905-35	TRANSISTOR	2SC4081R
TOR 2SA1576R	Q806	8-729-905-12	TRANSISTOR	DTA144EU
TOR DTA144EU	Q808	8-729-905-35	TRANSISTOR	2SC4081R
TOR DTC144EU	Q809	8-729-905-23	TRANSISTOR	2SA1576R
TOR 1MH2	Q813	8-729-905-18	TRANSISTOR	DTC144EU
TOR 2SC4081R	Q814	8-729-141-48	TRANSISTOR	2SB624-BV345
TOR 2SC4081R	Q815	8-729-905-35	TRANSISTOR	2SC4081R
TOR DTC144EU	Q818	8-729-822-51	TRANSISTOR	2SK1469-FA
TOR 2SC4081R	Q819	8-729-141-48	TRANSISTOR	2SB624-BV345
TOR DTC144EU	Q820	8-729-905-18	TRANSISTOR	DTC144EU
TOR 2SC4081R	Q822	8-729-905-35	TRANSISTOR	2SC4081R
TOR 2SA1576R	Q823	8-729-905-23	TRANSISTOR	2SA1576R
TOR 2SC4081R	Q824	8-729-905-35	TRANSISTOR	2SC4081R
TOR DTC144EU	Q825	8-729-905-23	TRANSISTOR	2SA1576R
TOR DTC144EU	Q826	8-729-905-35	TRANSISTOR	2SC4081R
TOR DTA144EU	Q827	8-729-905-35	TRANSISTOR	2SC4081R
TOR 1MD2	Q831	8-729-920-48	TRANSISTOR	1MH2
TOR 1MH2	Q901	8-729-905-35	TRANSISTOR	2SC4081R
TOR 2SC4081R	Q902	8-729-141-48	TRANSISTOR	2SB624-BV345
TOR 2SC4081R	Q911	8-729-905-35	TRANSISTOR	2SC4081R
TOR DTC144EU	Q912	8-729-905-35	TRANSISTOR	2SC4081R

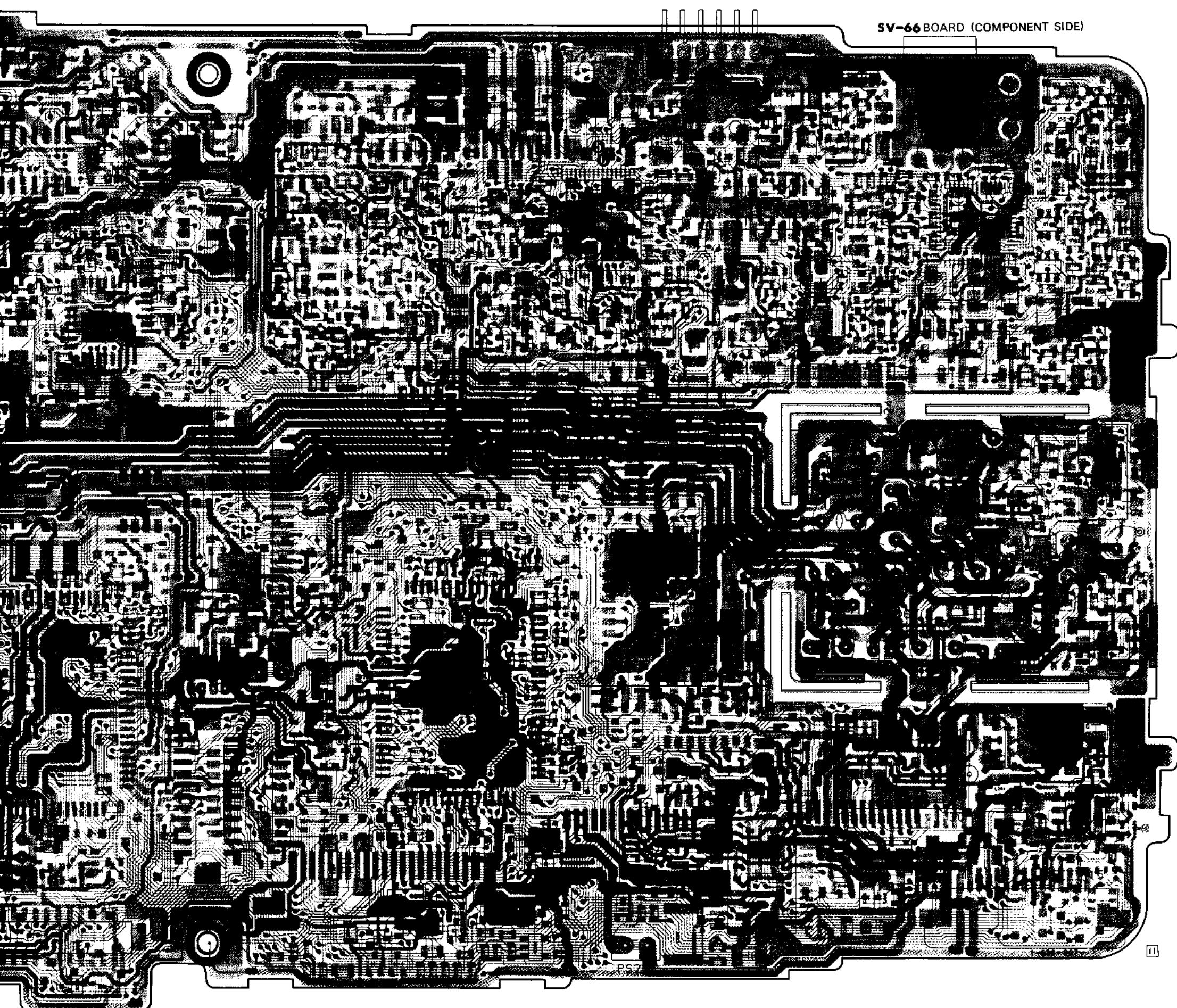
TOR 2SC2223-F13
TOR 2SC4081R
TOR 2SC4081R

TOR DTC114EU
TOR DTA144EU
TOR DTC144EU
TOR DTC144EU
TOR 2SC4081R



20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33

SV-66 BOARD (COMPONENT SIDE)



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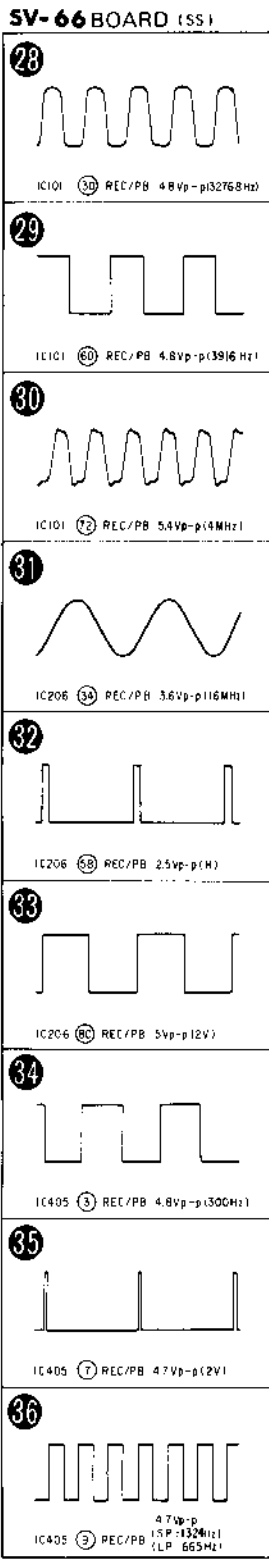
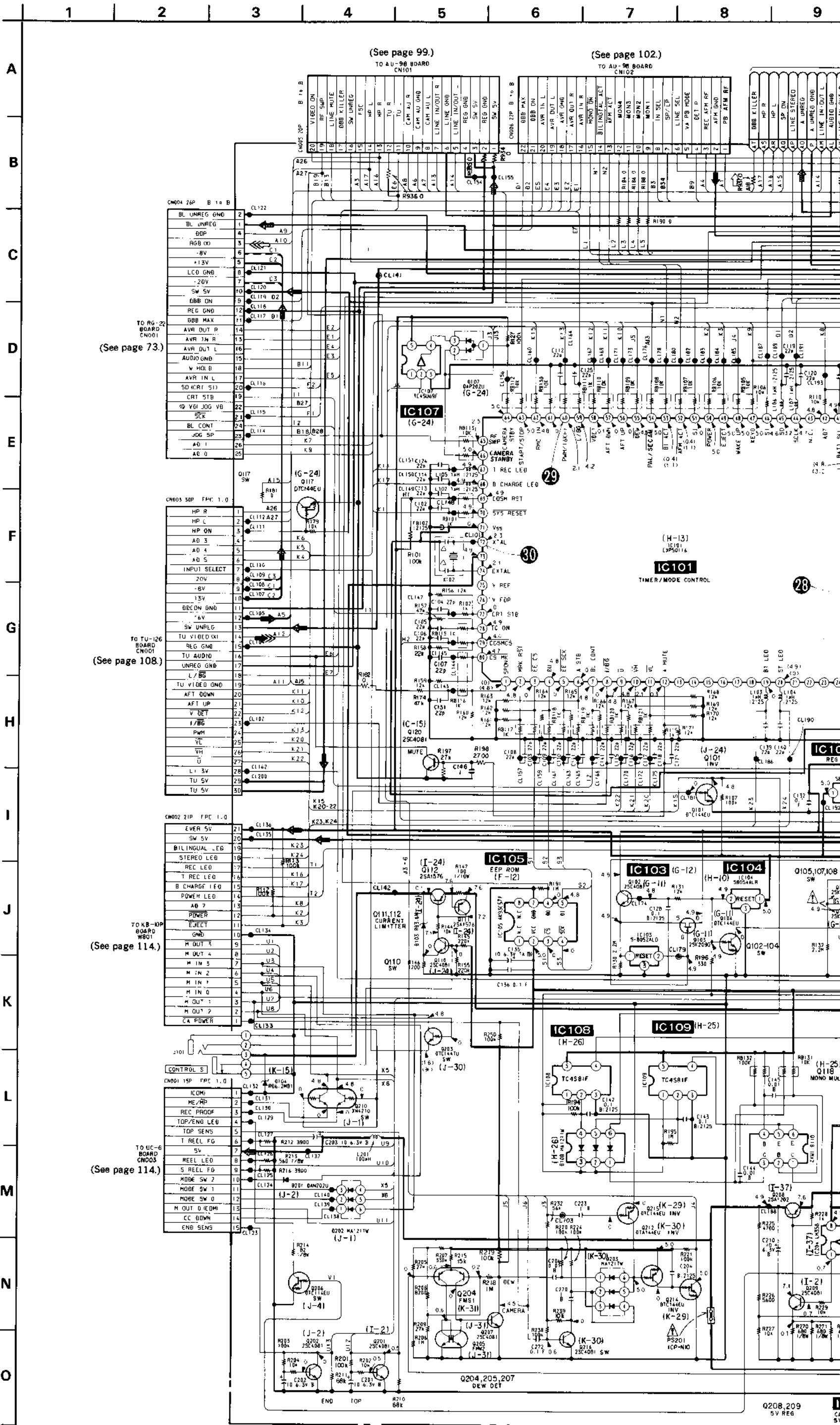
35

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SV-66 (SERVO, SYSTEM CONTROL) SCHEMATIC DIAGRAM
 - Ref. No. SV-66 BOARD : 5000 series -



(See page 99.) TO AU-96 BOARD CN101

(See page 102.) TO AU-96 BOARD CN102

(See page 73.) TO RG-22 BOARD CN001

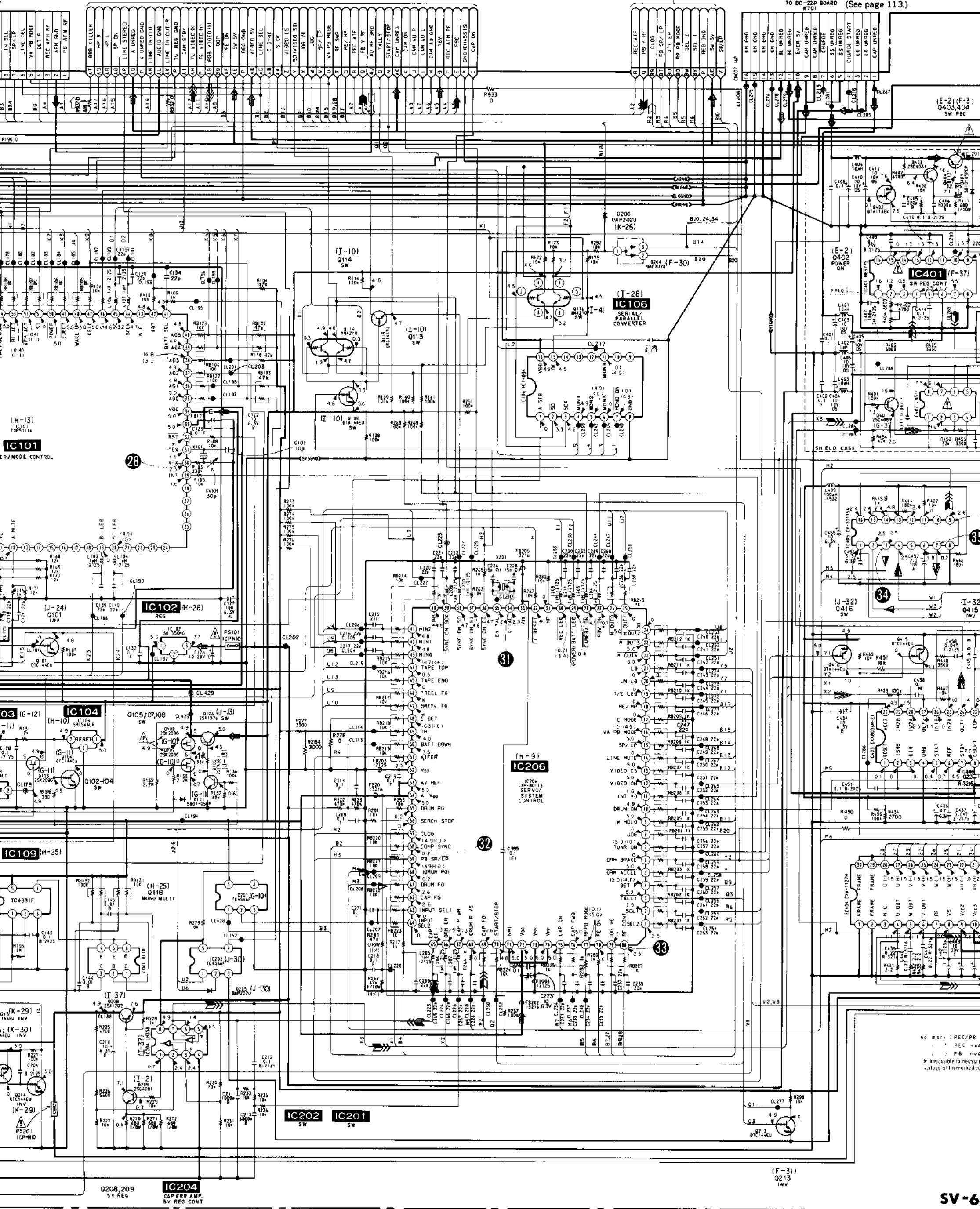
(See page 108.) TO TU-126 BOARD CN001

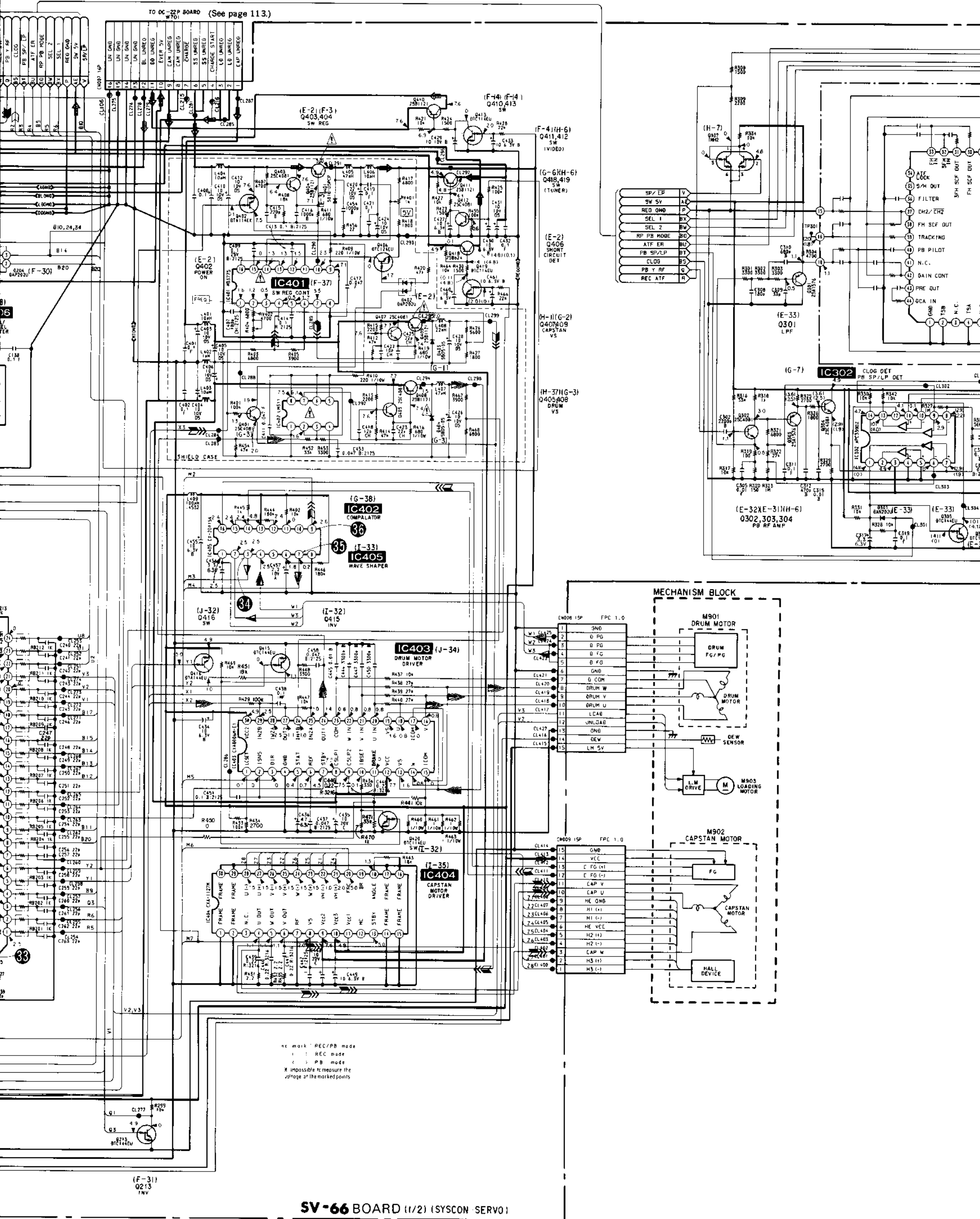
(See page 114.) TO XB-10P BOARD W801

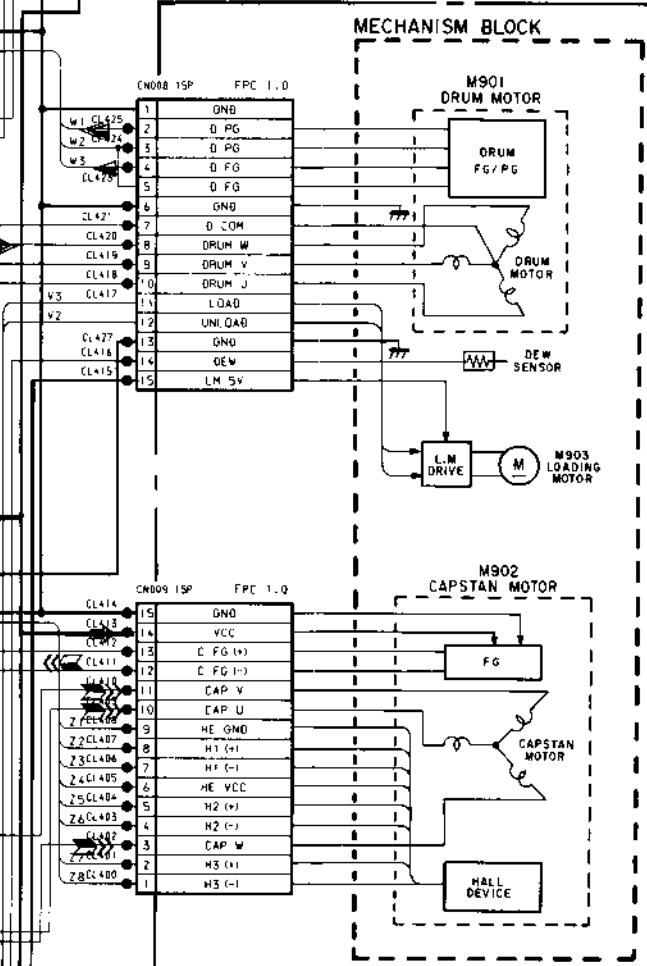
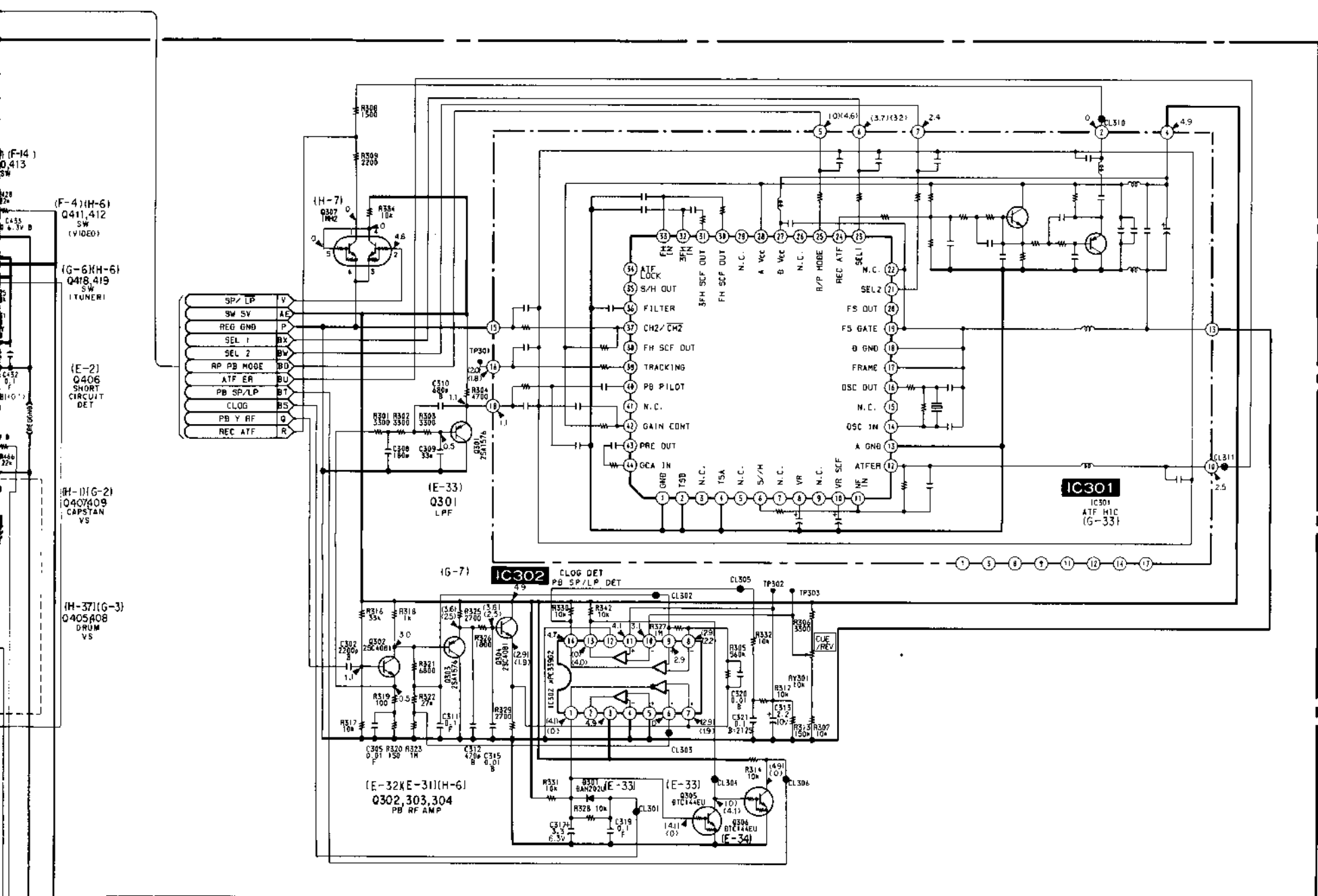
(See page 114.) TO UC-6 BOARD CN003

(See page 79.)
TO 5V-6B BOARD
(VIDEO)

TO DC-22P BOARD (See page 113.)





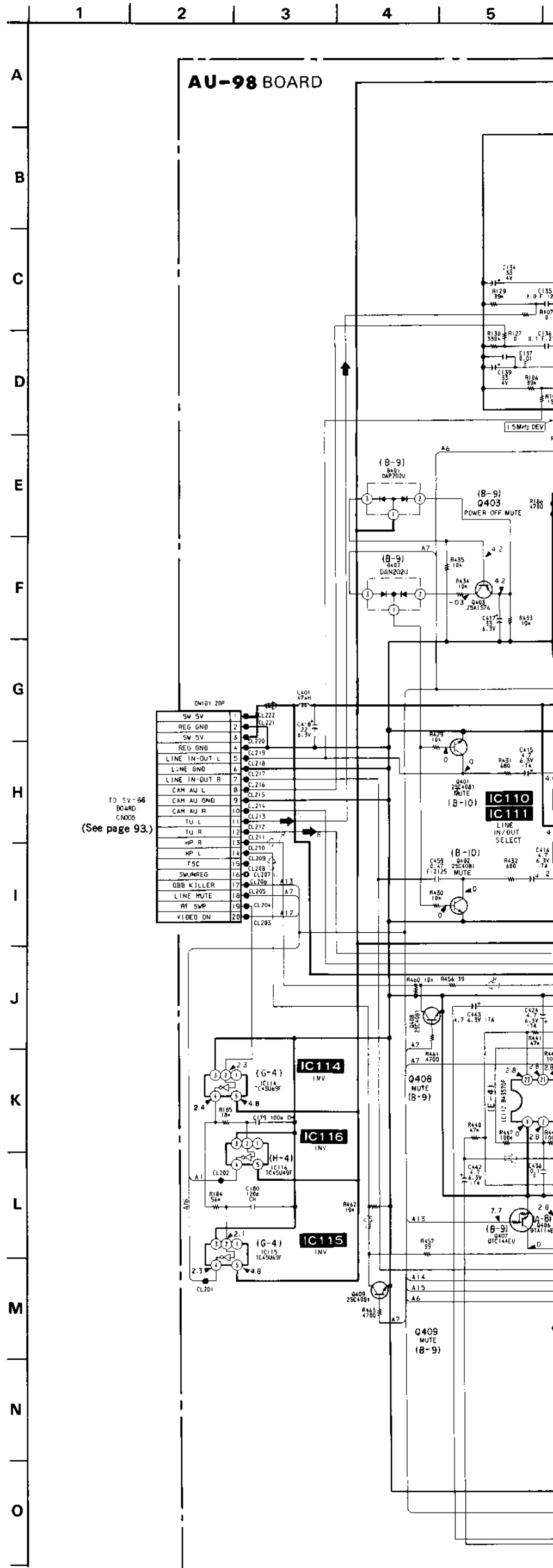


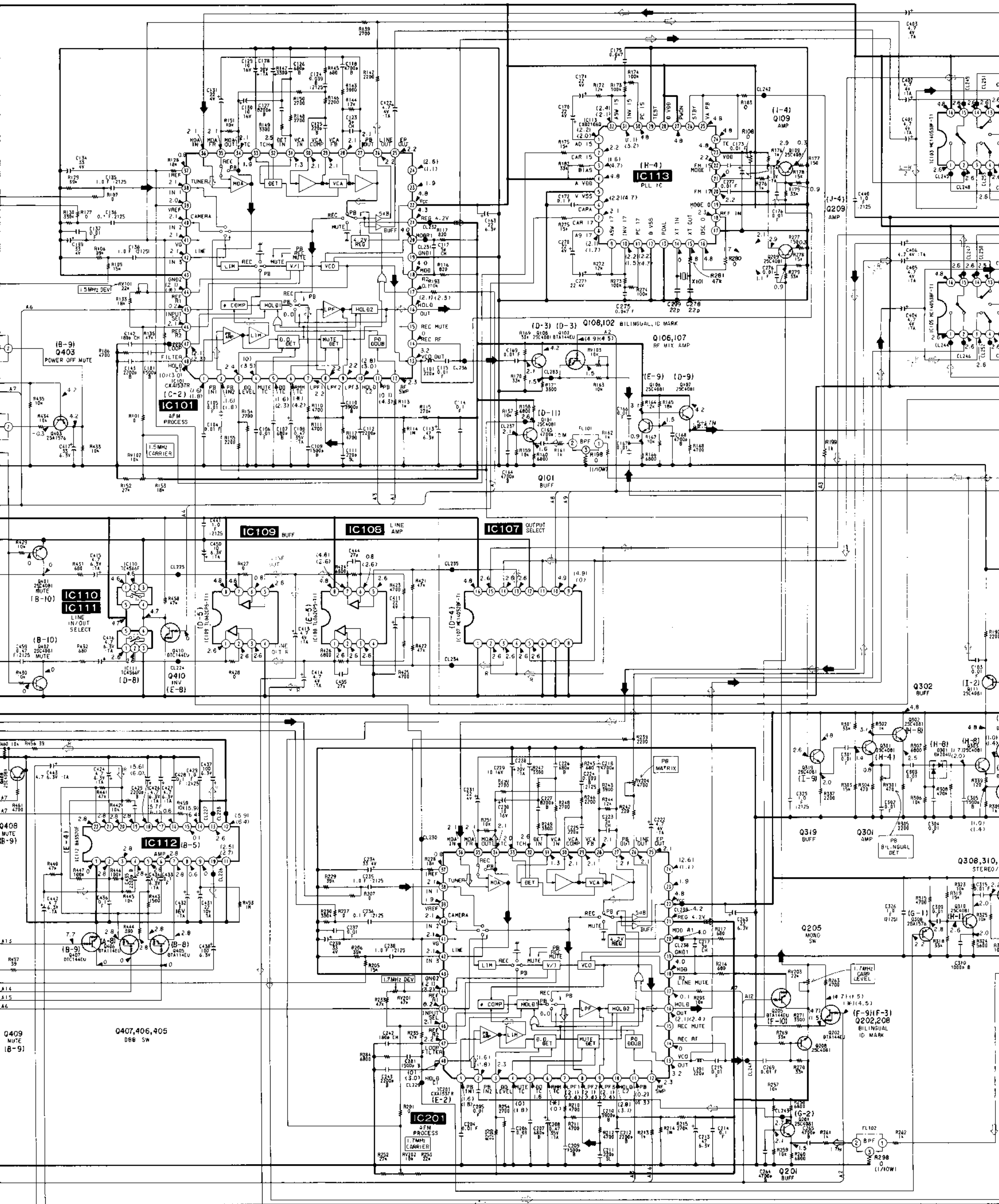
• Signal path

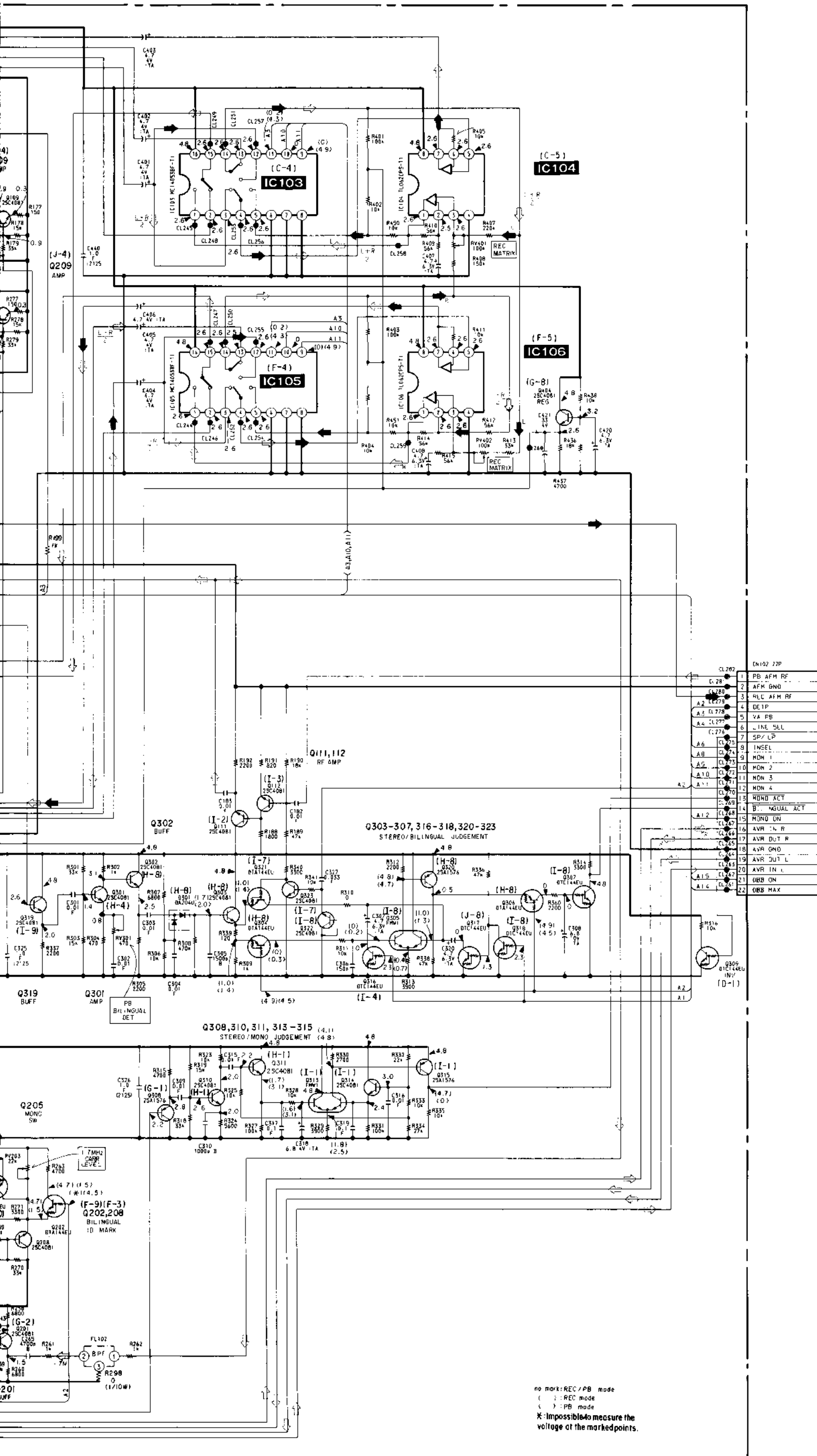
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➔	➔➔	➔➔➔	➔
PB	➔	➔➔	➔➔➔	➔

• Signal path

	REC	REC/PB	PB
Drum speed servo		➔	
Drum phase servo		➔	
Drum servo(speed and phase)		➔➔	
Capstan speed servo		➔	
Capstan phase servo	➔➔	➔➔	➔➔
Capstan servo(speed and phase)		➔➔➔	
Ref.signal	➔➔	➔➔	➔➔







DN102 22P

1	PB AFH RF
2	AFH GND
3	REC AFH RF
4	DE1P
5	V4 FB
6	LINE SLL
7	SP/LP
8	INSEL
9	MON 1
10	MON 2
11	MON 3
12	MON 4
13	MONO ACT
14	BILINGUAL ACT
15	MONO ON
16	AVR IN R
17	AVR OUT R
18	AVR GND
19	AVR OUT L
20	AVR IN L
21	DBB ON
22	DBB MAX

TO SV-66 BOARD CN006 (See page 94.)

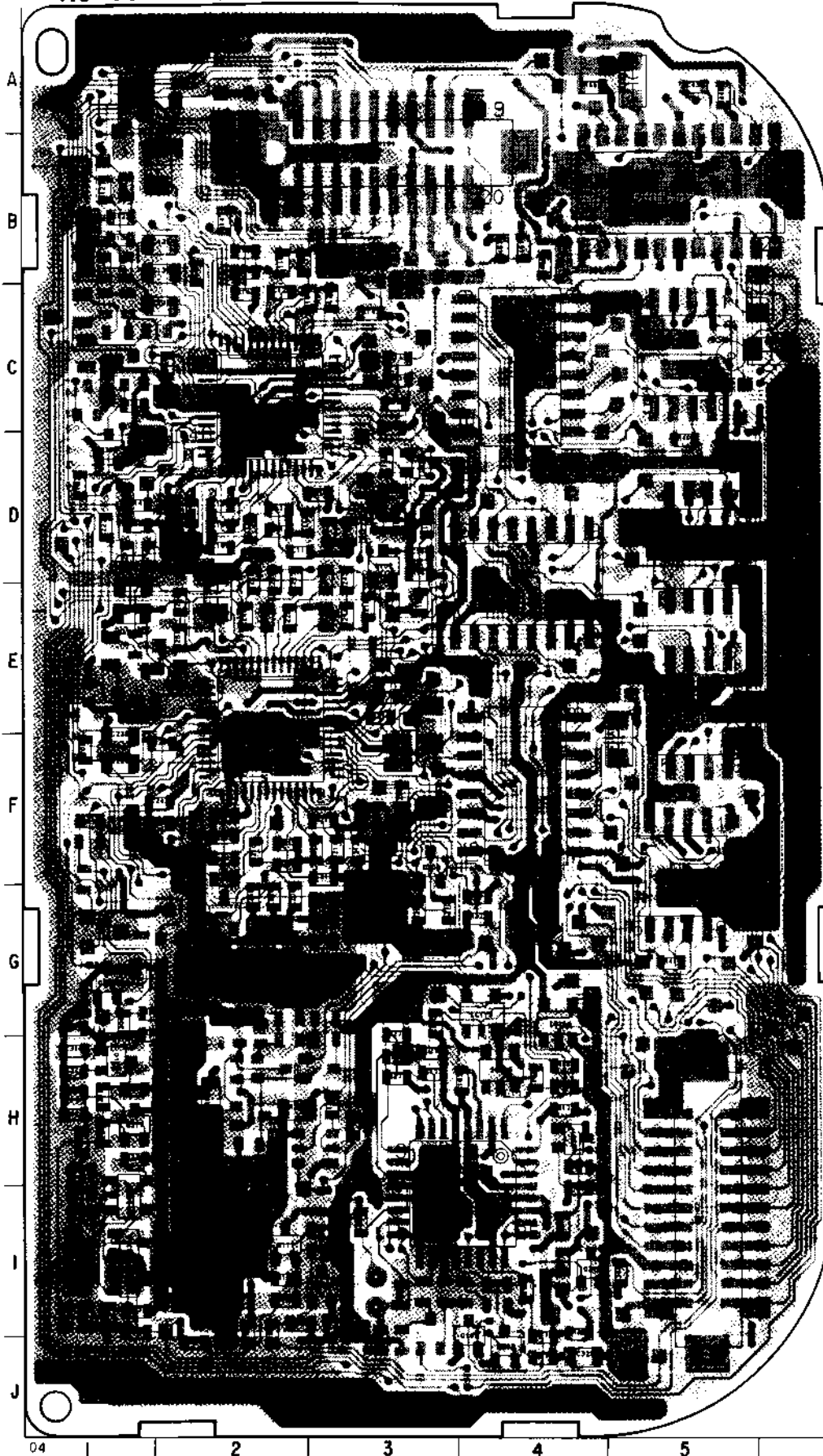
- Reference voltage value
- The following two types of extension harness are required to measure the voltage of the AU-98 board
- 20P extension harness (J-6082-111-A)
- 22P extension harness (J-6082-112-A)

no mark: REC / PB mode
 () : REC mode
 [] : PB mode
 * : Impossible to measure the voltage of the marked points.

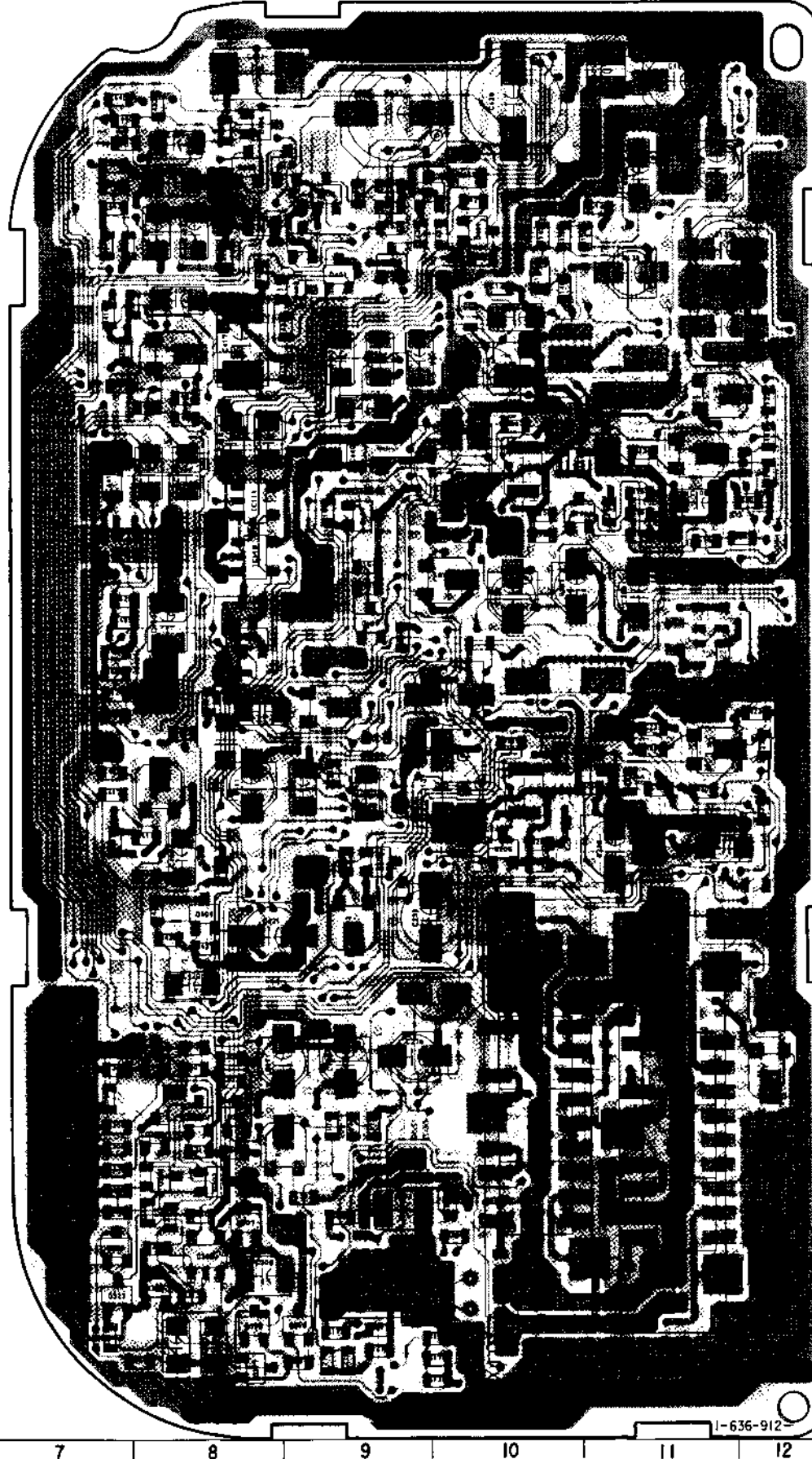
• Signal path

	AUDIO Signal
REC	➔
PB	➡

AU-98 BOARD (CONDUCTOR SIDE)



AU-98 BOARD (COMPONENT SIDE)



DIODE

D301	8-719-941-23	DIODE DA204U
D401	8-719-941-09	DIODE DAP202U
D402	8-719-941-86	DIODE DAN202U

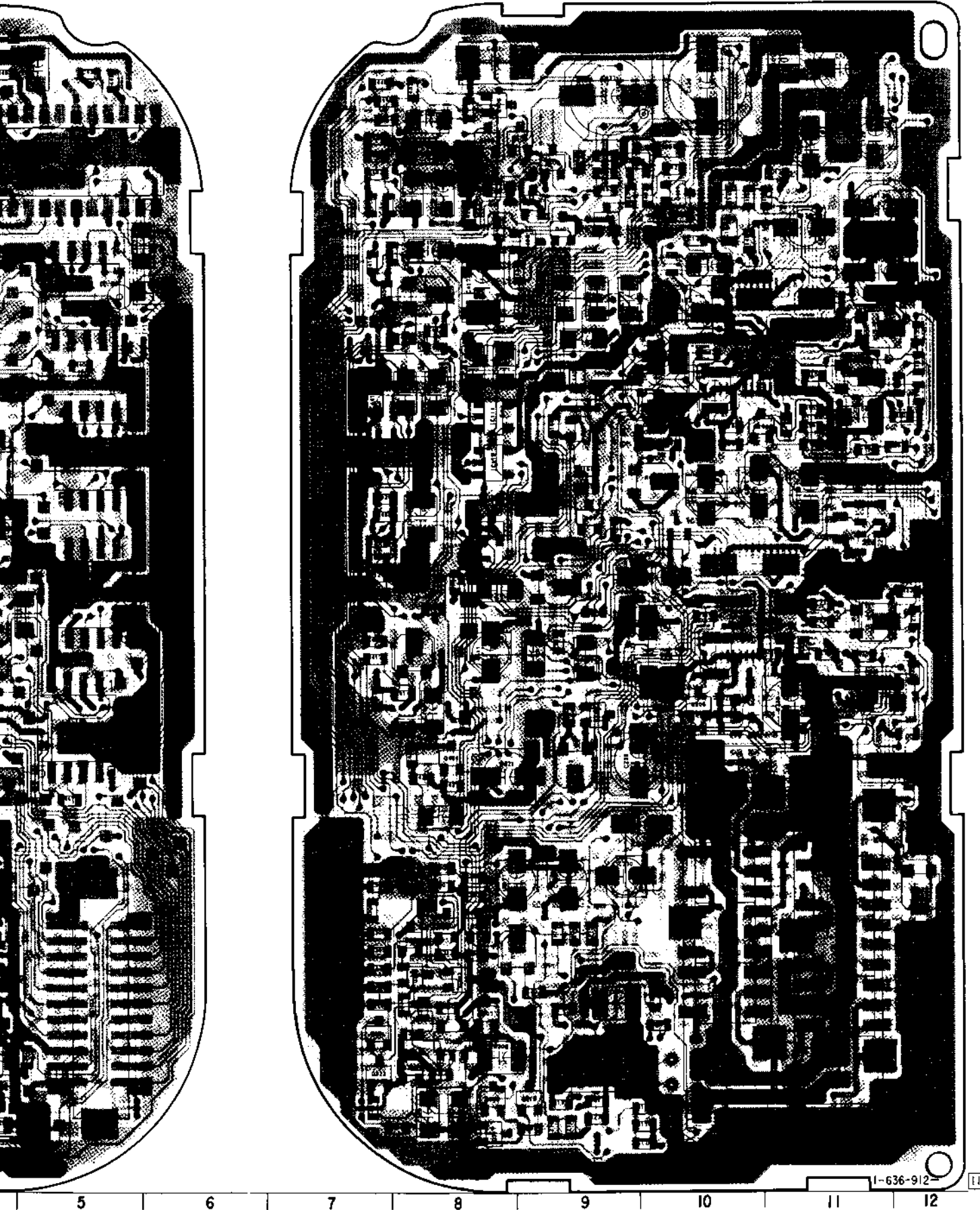
IC

IC101	8-752-053-04	IC CXA1537R
IC103	8-759-009-07	IC MC14053BF
IC104	8-759-030-16	IC MC34182M
IC105	8-759-009-07	IC MC14053BF
IC106	8-759-030-16	IC MC34182M
IC107	8-759-009-06	IC MC14052BF
IC108	8-759-030-16	IC MC34182M
IC109	8-759-030-16	IC MC34182M
IC110	8-759-234-77	IC TC4566F
IC111	8-759-234-77	IC TC4566F
IC112	8-759-991-27	IC BA3570F
IC113	8-752-334-42	IC CXD2106Q
IC114	8-759-209-15	IC TC45U69F
IC115	8-759-209-15	IC TC45U69F
IC116	8-759-209-15	IC TC45U69F
IC201	8-752-053-04	IC CXA1537R

TRANSISTOR

Q101	8-729-905-35	TRANSISTOR 2SC4081R
Q102	8-729-905-12	TRANSISTOR DTA144EU
Q106	8-729-905-35	TRANSISTOR 2SC4081R
Q107	8-729-905-35	TRANSISTOR 2SC4081R
Q108	8-729-905-35	TRANSISTOR 2SC4081R
Q109	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-35	TRANSISTOR 2SC4081R
Q112	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-12	TRANSISTOR DTA144EU
Q205	8-729-905-12	TRANSISTOR DTA144EU
Q208	8-729-905-35	TRANSISTOR 2SC4081R
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q301	8-729-905-35	TRANSISTOR 2SC4081R
Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-35	TRANSISTOR 2SC4081R
Q304	8-729-905-12	TRANSISTOR DTA144EU
Q305	8-729-903-10	TRANSISTOR FMW1
Q306	8-729-905-12	TRANSISTOR DTA144EU
Q307	8-729-905-18	TRANSISTOR DTC144EU
Q308	8-729-905-23	TRANSISTOR 2SA1576R
Q309	8-729-905-18	TRANSISTOR DTC144EU
Q310	8-729-905-35	TRANSISTOR 2SC4081R
Q311	8-729-905-35	TRANSISTOR 2SC4081R
Q313	8-729-903-10	TRANSISTOR FMW1
Q314	8-729-905-35	TRANSISTOR 2SC4081R
Q315	8-729-905-23	TRANSISTOR 2SA1576R
Q316	8-729-905-18	TRANSISTOR DTC144EU
Q317	8-729-905-18	TRANSISTOR DTC144EU
Q318	8-729-905-18	TRANSISTOR DTC144EU
Q319	8-729-905-35	TRANSISTOR 2SC4081R
Q320	8-729-905-23	TRANSISTOR 2SA1576R
Q321	8-729-905-12	TRANSISTOR DTA144EU
Q322	8-729-905-35	TRANSISTOR 2SC4081R
Q323	8-729-905-35	TRANSISTOR 2SC4081R
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-905-35	TRANSISTOR 2SC4081R
Q403	8-729-905-23	TRANSISTOR 2SA1576R
Q404	8-729-905-35	TRANSISTOR 2SC4081R
Q405	8-729-920-XX	TRANSISTOR DTA114EU
Q406	8-729-920-XX	TRANSISTOR DTA114EU
Q407	8-729-905-18	TRANSISTOR DTC144EU
Q408	8-729-905-35	TRANSISTOR 2SC4081R
Q409	8-729-905-35	TRANSISTOR 2SC4081R
Q410	8-729-905-18	TRANSISTOR DTC144EU

AU-98 BOARD (COMPONENT SIDE)



DIODE

D301	8-719-941-23	DIODE DA204U
D401	8-719-941-09	DIODE DAP202U
D402	8-719-941-86	DIODE DAN202U

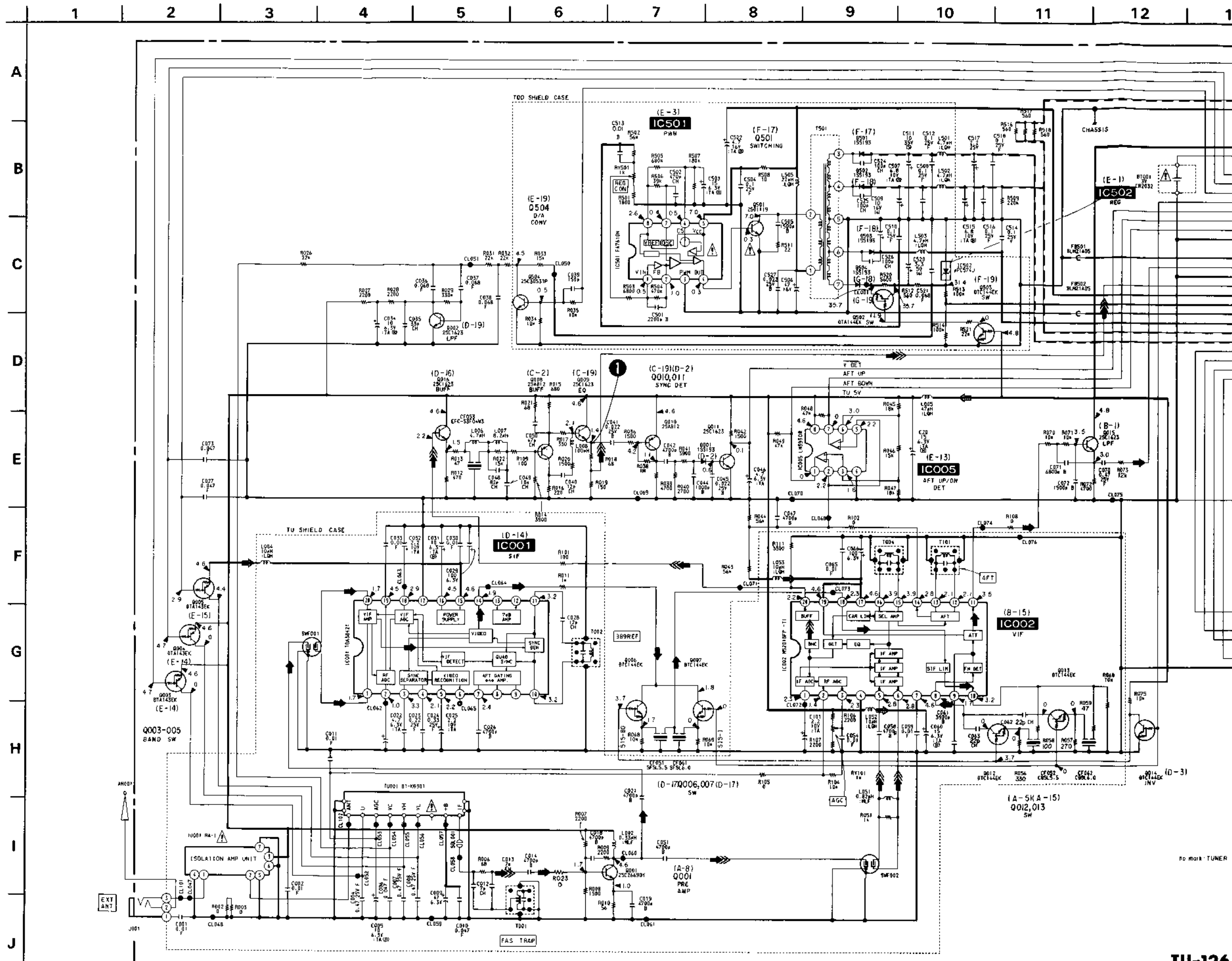
IC

IC101	8-752-053-04	IC CXA1537R
IC103	8-759-009-07	IC MC14053BF
IC104	8-759-030-16	IC MC34182M
IC105	8-759-009-07	IC MC14053BF
IC106	8-759-030-16	IC MC34182M
IC107	8-759-009-06	IC MC14052BF
IC108	8-759-030-16	IC MC34182M
IC109	8-759-030-16	IC MC34182M
IC110	8-759-234-77	IC TC4S66F
IC111	8-759-234-77	IC TC4S66F
IC112	8-759-991-27	IC BA3570F
IC113	8-752-334-42	IC CXD2106Q
IC114	8-759-209-15	IC TC4SU69F
IC115	8-759-209-15	IC TC4SU69F
IC116	8-759-209-15	IC TC4SU69F
IC201	8-752-053-04	IC CXA1537R

TRANSISTOR

Q101	8-729-905-35	TRANSISTOR 2SC4081R
Q102	8-729-905-12	TRANSISTOR DTA144EU
Q106	8-729-905-35	TRANSISTOR 2SC4081R
Q107	8-729-905-35	TRANSISTOR 2SC4081R
Q108	8-729-905-35	TRANSISTOR 2SC4081R
Q109	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-35	TRANSISTOR 2SC4081R
Q112	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-12	TRANSISTOR DTA144EU
Q205	8-729-905-12	TRANSISTOR DTA144EU
Q208	8-729-905-35	TRANSISTOR 2SC4081R
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q301	8-729-905-35	TRANSISTOR 2SC4081R
Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-35	TRANSISTOR 2SC4081R
Q304	8-729-905-12	TRANSISTOR DTA144EU
Q305	8-729-903-10	TRANSISTOR FMW1
Q306	8-729-905-12	TRANSISTOR DTA144EU
Q307	8-729-905-18	TRANSISTOR DTC144EU
Q308	8-729-905-23	TRANSISTOR 2SA1576R
Q309	8-729-905-18	TRANSISTOR DTC144EU
Q310	8-729-905-35	TRANSISTOR 2SC4081R
Q311	8-729-905-35	TRANSISTOR 2SC4081R
Q313	8-729-903-10	TRANSISTOR FMW1
Q314	8-729-905-35	TRANSISTOR 2SC4081R
Q315	8-729-905-23	TRANSISTOR 2SA1576R
Q316	8-729-905-18	TRANSISTOR DTC144EU
Q317	8-729-905-18	TRANSISTOR DTC144EU
Q318	8-729-905-18	TRANSISTOR DTC144EU
Q319	8-729-905-35	TRANSISTOR 2SC4081R
Q320	8-729-905-23	TRANSISTOR 2SA1576R
Q321	8-729-905-12	TRANSISTOR DTA144EU
Q322	8-729-905-35	TRANSISTOR 2SC4081R
Q323	8-729-905-35	TRANSISTOR 2SC4081R
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-905-35	TRANSISTOR 2SC4081R
Q403	8-729-905-23	TRANSISTOR 2SA1576R
Q404	8-729-905-35	TRANSISTOR 2SC4081R
Q405	8-729-920-XX	TRANSISTOR DTA114EU
Q406	8-729-920-XX	TRANSISTOR DTA114EU
Q407	8-729-905-18	TRANSISTOR DTC144EU
Q408	8-729-905-35	TRANSISTOR 2SC4081R
Q409	8-729-905-35	TRANSISTOR 2SC4081R
Q410	8-729-905-18	TRANSISTOR DTC144EU

SB-3P (FUNCTION SW), TU-126 (TUNER, VIF, SIF, DC/DC CONVERTER) SCHEMATIC DIAGRAM
 - Ref. No. SB-3P and TU-126 BOARDS : 6000 series -



• Signal path

REC	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
			→	→

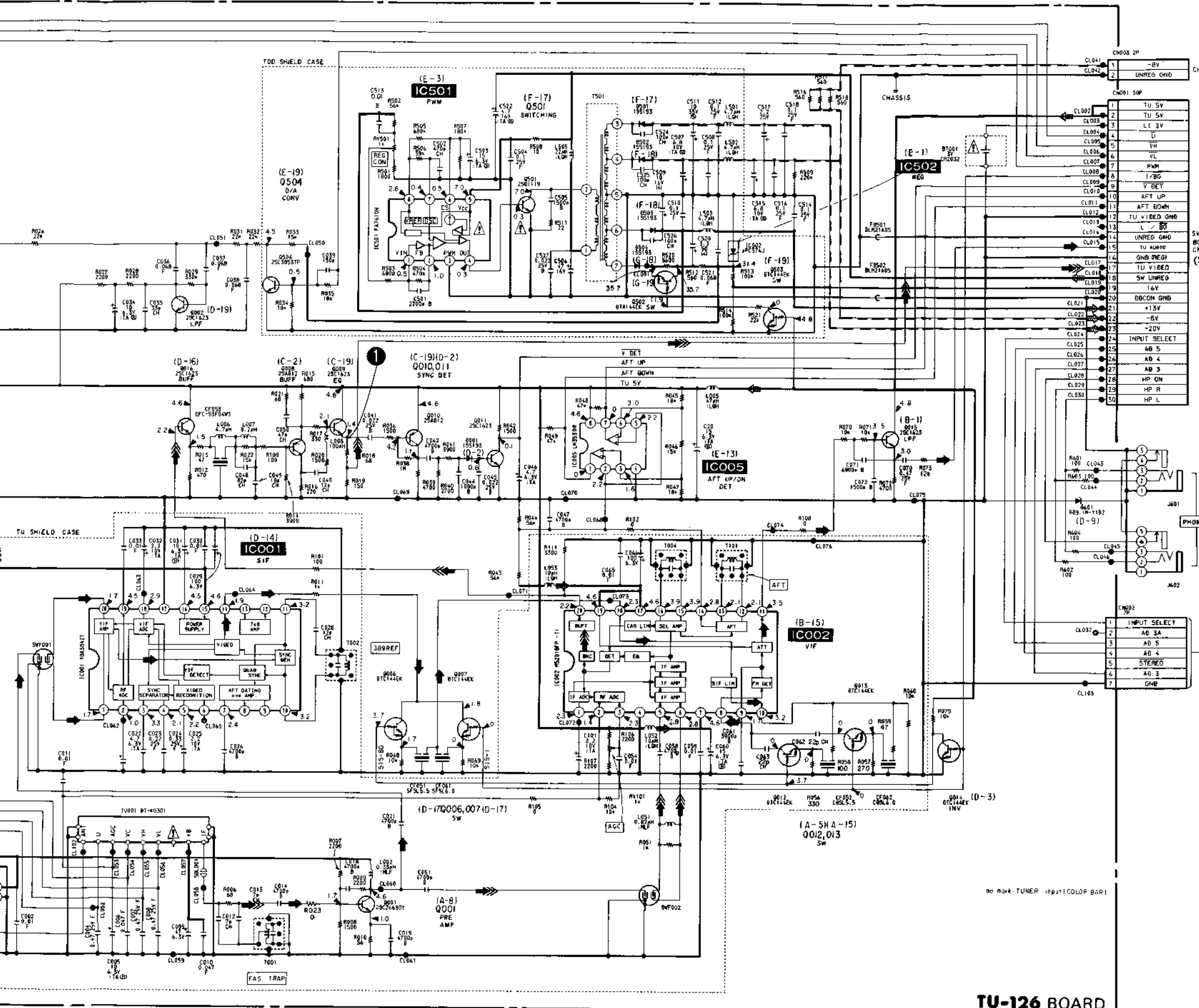
TUNER, POWER

GV-300E

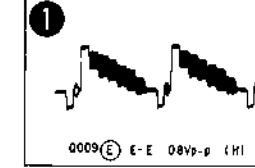
TUNER, POWER TUNER,

TU-126

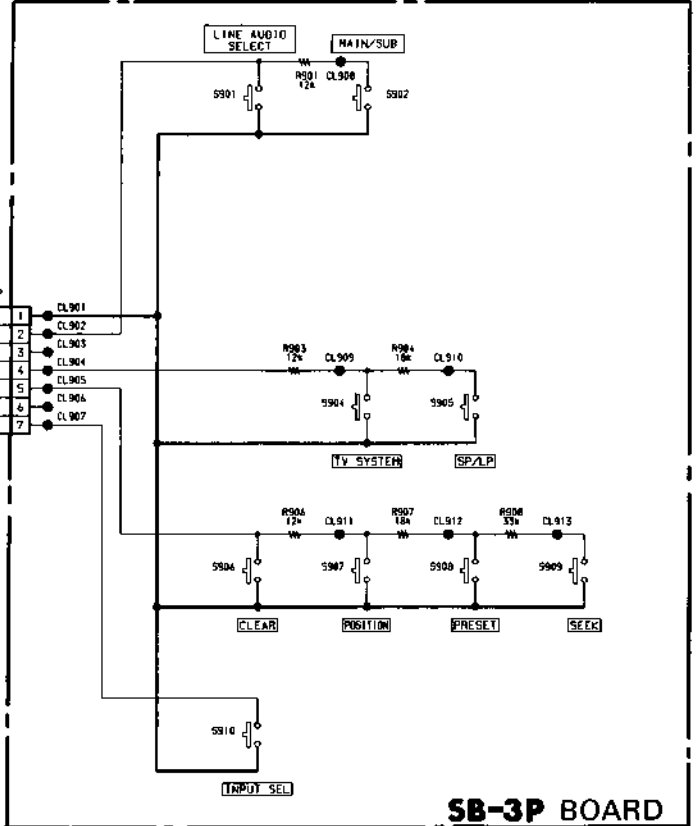
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19



TU-126 BOARD



TO SV-66 BOARD (See page 93.)



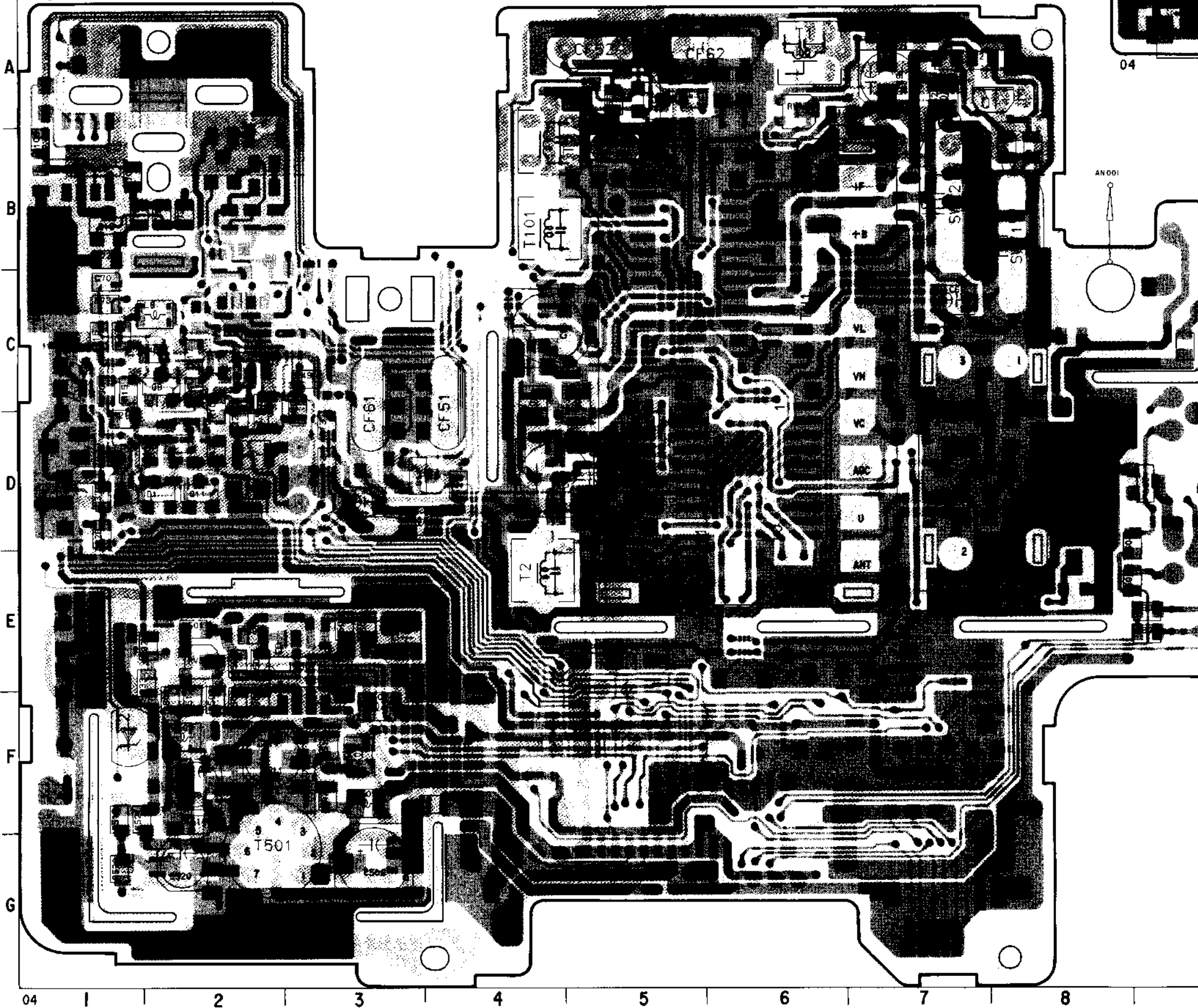
SB-3P BOARD

TU-126 BOARD

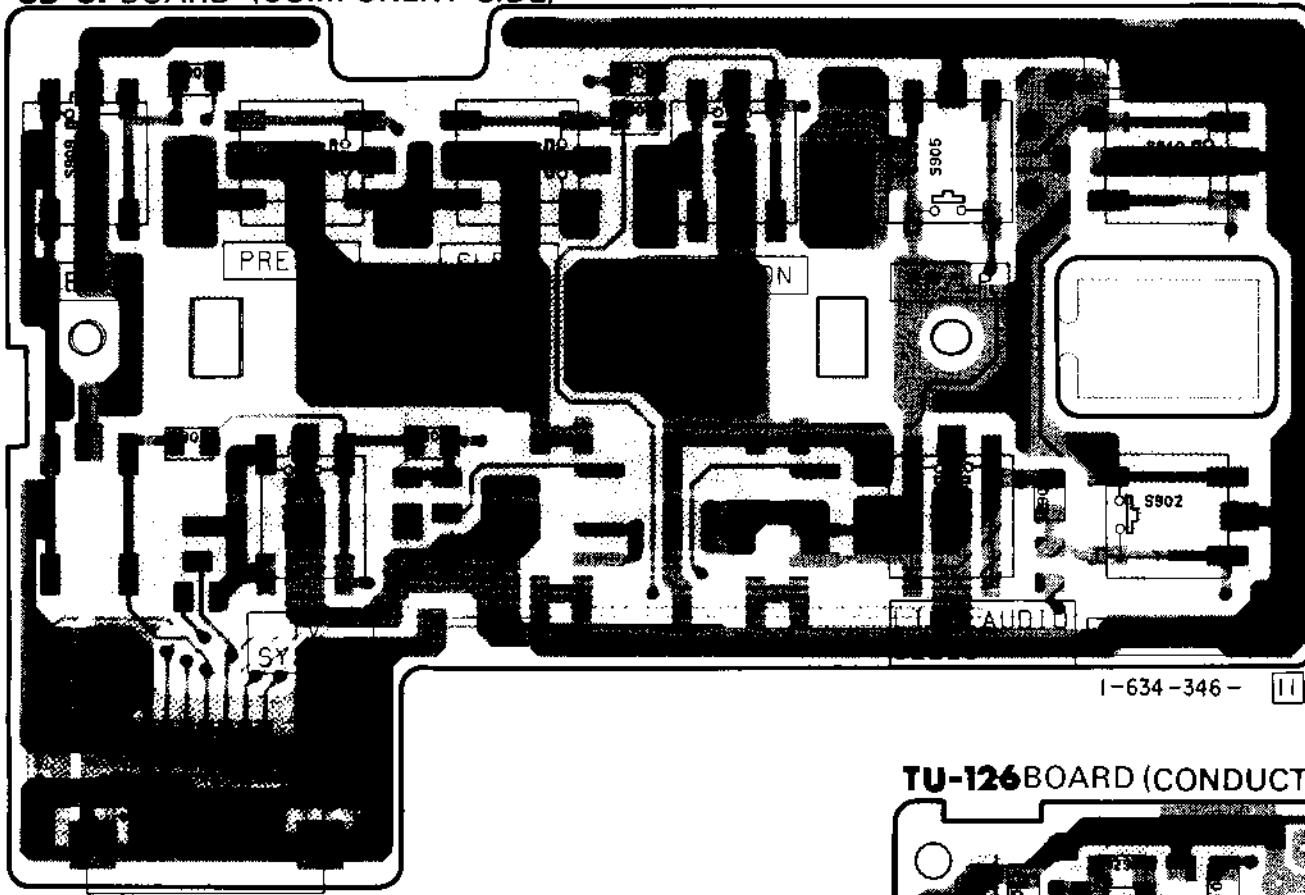
SB-3P (FUNCTION SW), TU-126 (TUNER, VIF, SIF, DC/DC CONVERTER) PRINTED WIRING BOARDS
 — Ref. No, SB-3P and TU-126 BOARDS : 6000 series —

DIODE			TRANSISTOR		
D001	8-719-801-50	DIODE MA152WK	Q001	8-729-230-XX	TRANSISTOR 2SC26690Y
D501	8-719-801-50	DIODE MA152WK	Q002	8-729-100-66	TRANSISTOR 2SC1623
D502	8-719-801-50	DIODE MA152WK	Q003	8-729-901-47	TRANSISTOR DTA143EK
D503	8-719-801-50	DIODE MA152WK	Q004	8-729-901-47	TRANSISTOR DTA143EK
D504	8-719-801-50	DIODE MA152WK	Q005	8-729-901-47	TRANSISTOR DTA143EK
D601	8-719-106-44	DIODE R09.1M-B2	Q006	8-729-901-01	TRANSISTOR DTC144EK
IC			Q007	8-729-901-01	TRANSISTOR DTC144EK
IC001	8-759-504-59	IC TDA3842T-T	Q008	8-729-216-22	TRANSISTOR 2SA1162
IC002	8-759-634-94	IC M52018FP	Q009	8-729-100-66	TRANSISTOR 2SC1623
IC005	8-759-998-92	IC LM393D	Q010	8-729-216-22	TRANSISTOR 2SA1162
IC501	8-759-500-70	IC FA7610W	Q011	8-729-100-66	TRANSISTOR 2SC1623
IC502	8-759-157-40	IC UPC574J	Q012	8-729-901-01	TRANSISTOR DTC144EK
			Q013	8-729-901-01	TRANSISTOR DTC144EK
			Q014	8-729-901-01	TRANSISTOR DTC144EK
			Q015	8-729-100-66	TRANSISTOR 2SC1623
			Q016	8-729-100-66	TRANSISTOR 2SC1623
			Q501	8-729-421-15	TRANSISTOR 2SD1119-Q
			Q502	8-729-901-06	TRANSISTOR DTA144EK
			Q503	8-729-901-01	TRANSISTOR DTC144EK
			Q504	8-729-601-58	TRANSISTOR 2SC3053-C

TU-126 BOARD (COMPONENT SIDE)

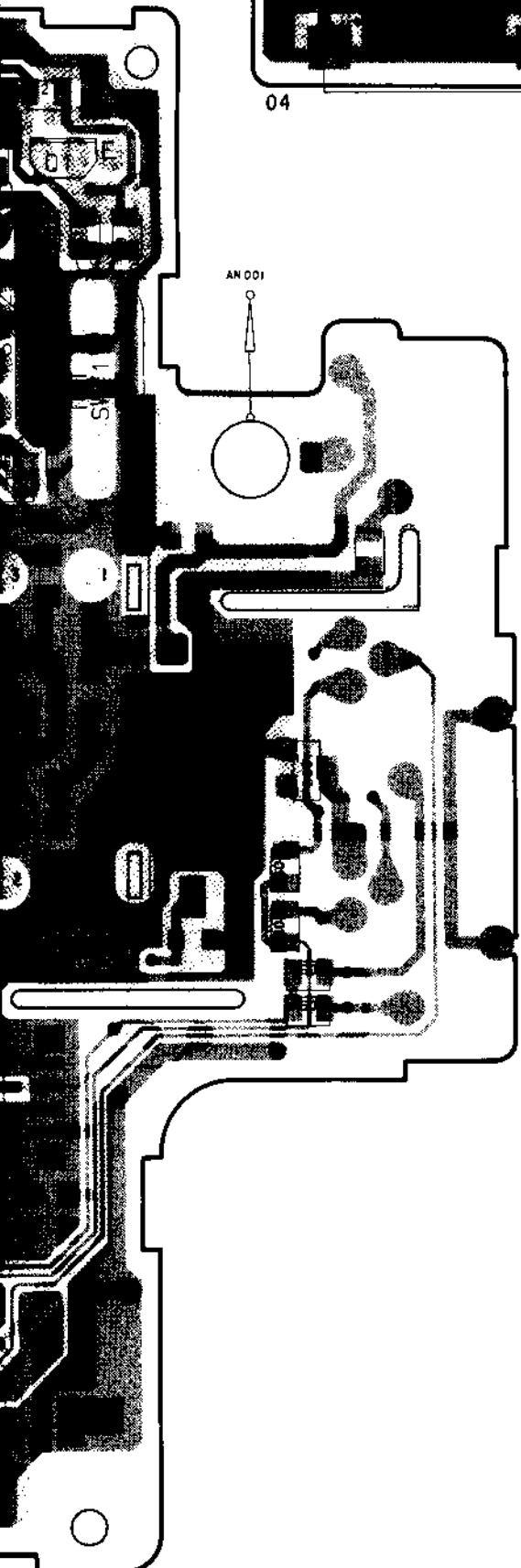
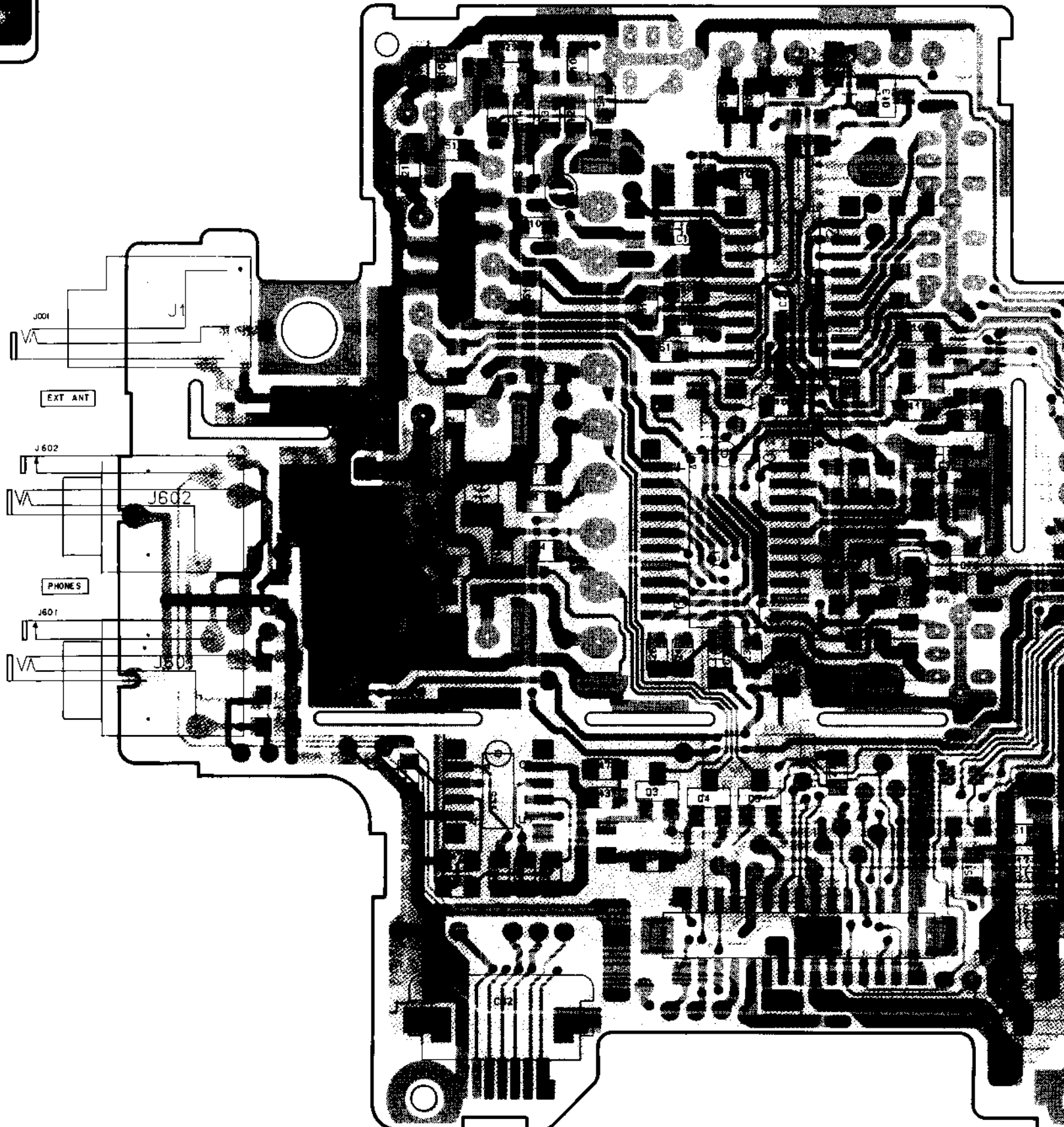


SB-3PBOARD (COMPONENT SIDE)

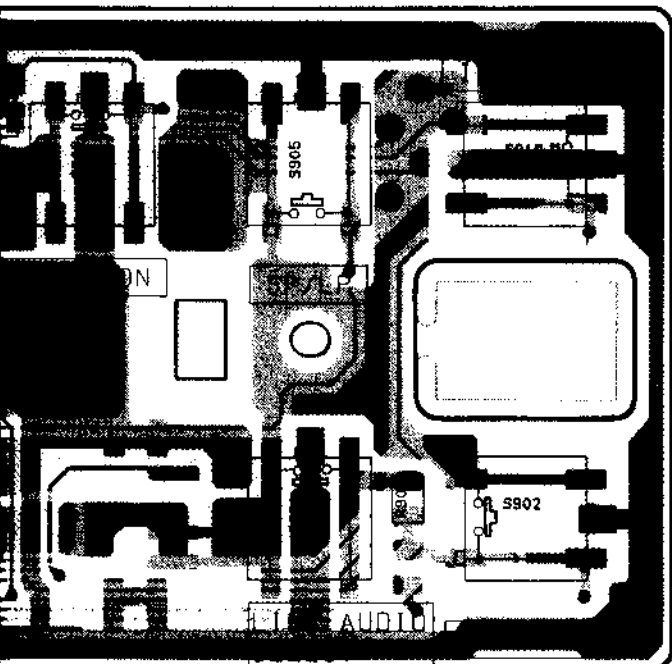


1-634-346-11

TU-126BOARD (CONDUCTOR SIDE)

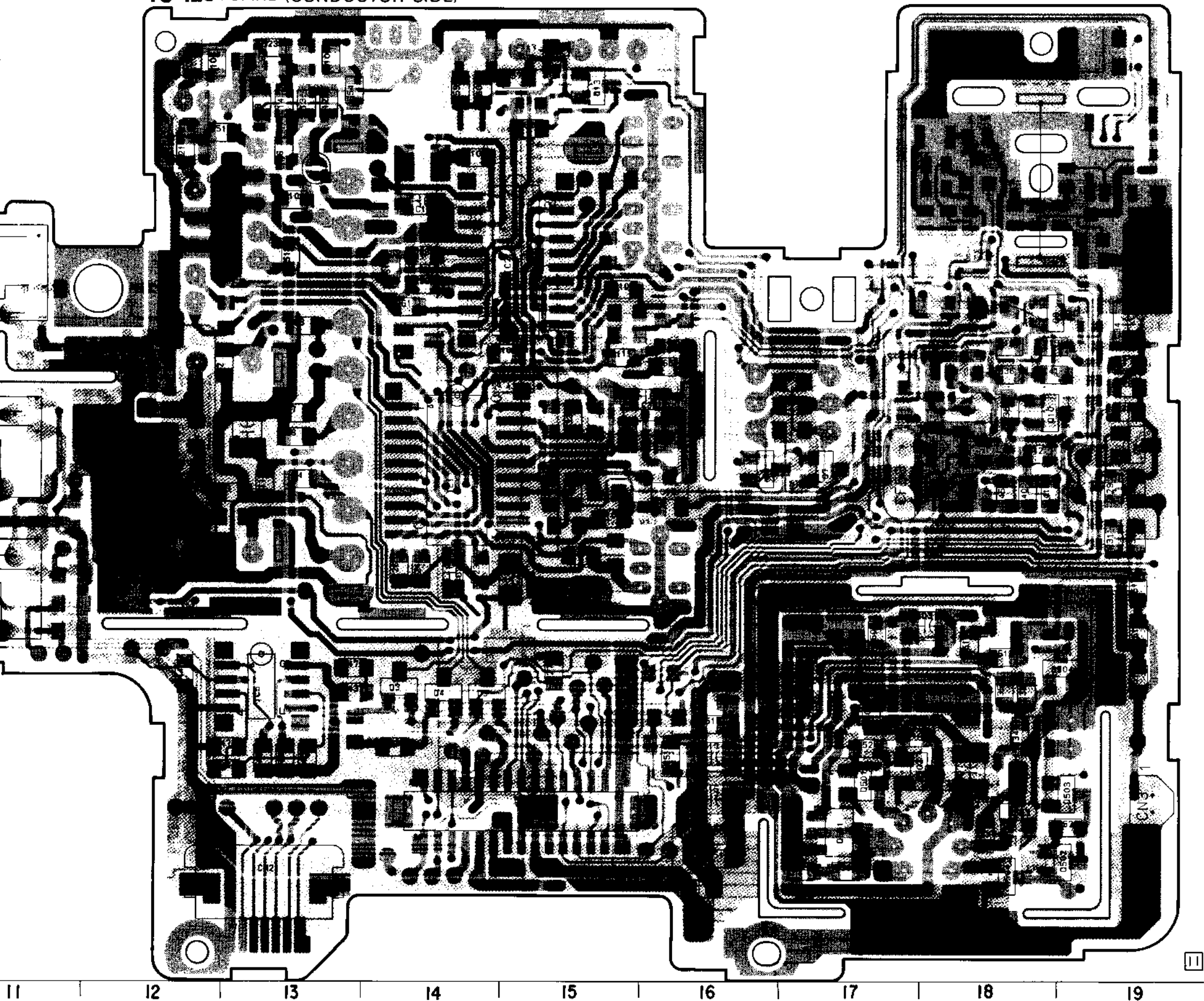


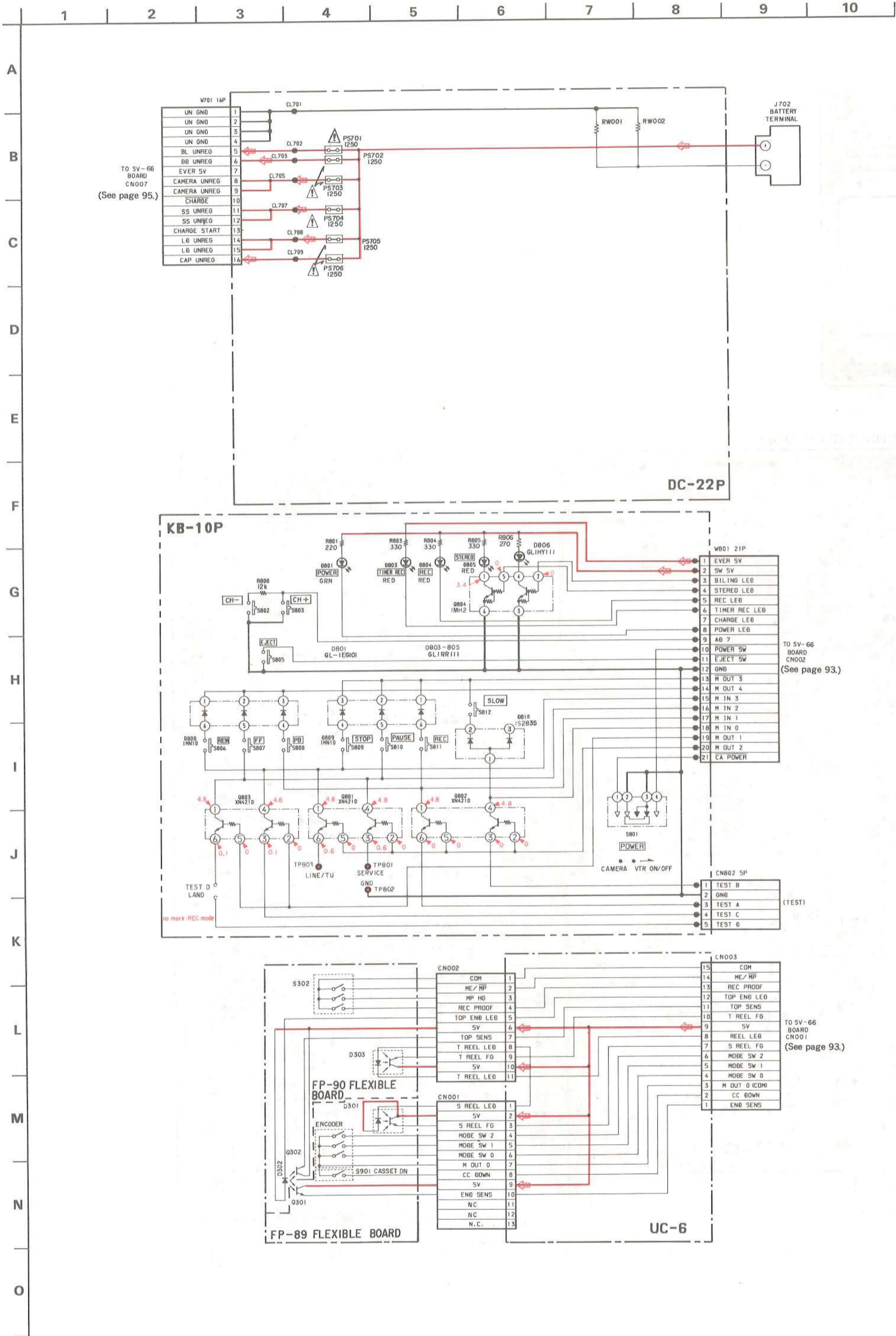
8 9 10 11 12 13 14 15 16



1-634-346- [II]

TU-126 BOARD (CONDUCTOR SIDE)



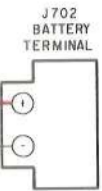


TO SV-66 BOARD CN007 (See page 95.)

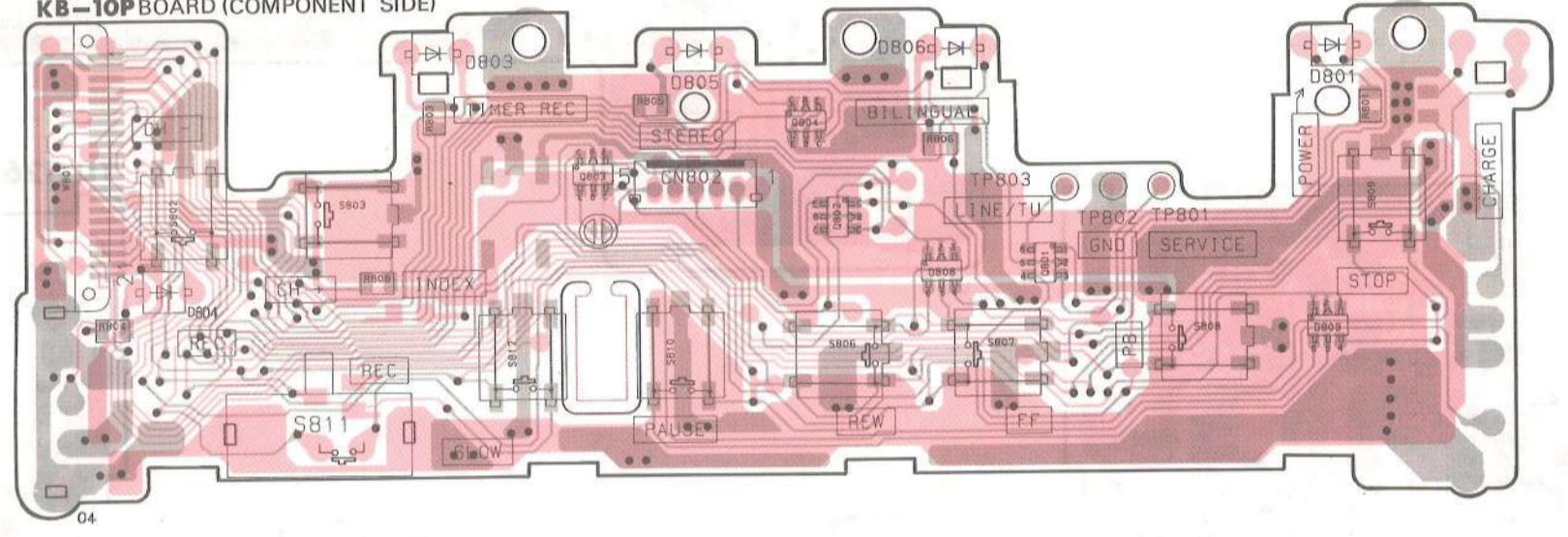
TO SV-66 BOARD CN002 (See page 93.)

(TEST)

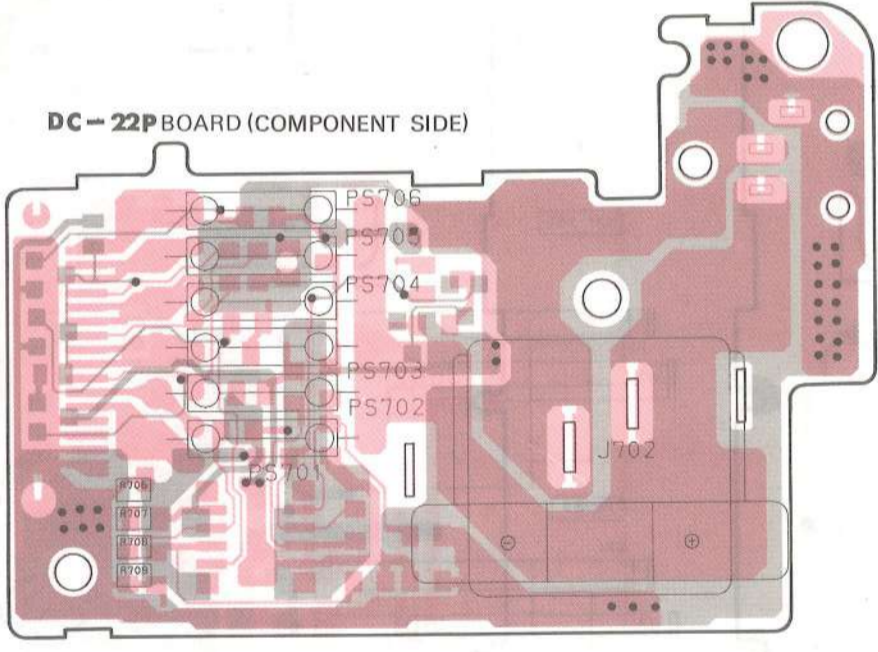
TO SV-66 BOARD CN001 (See page 93.)



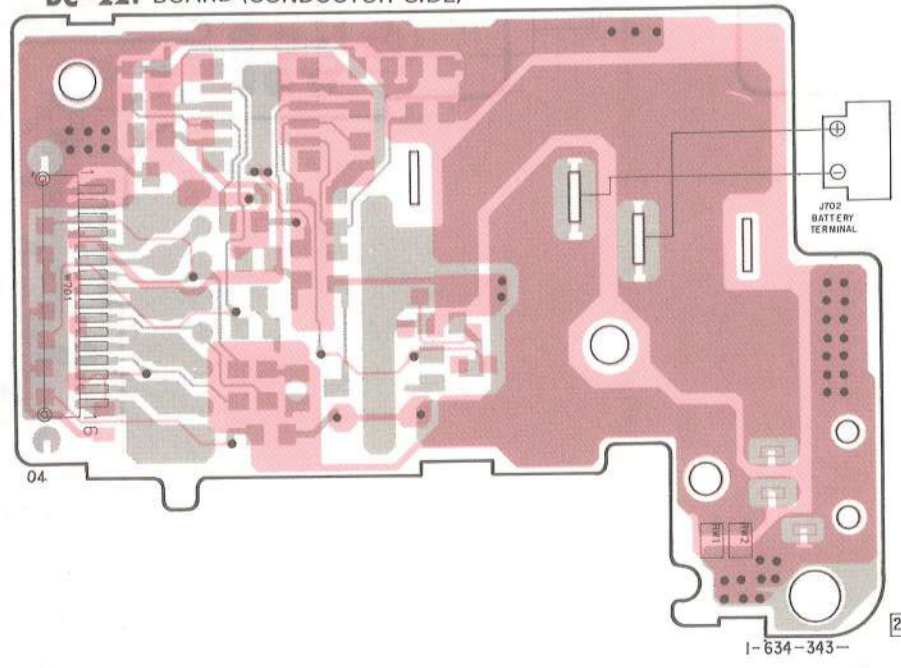
KB-TOP BOARD (COMPONENT SIDE)



DC-22P BOARD (COMPONENT SIDE)



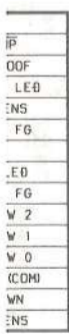
DC-22P BOARD (CONDUCTOR SIDE)



TO SV-66
BOARD
CNO02
(See page 93.)



(TEST)



TO SV-66
BOARD
CNO01
(See page 93.)

I-634-343- [21]

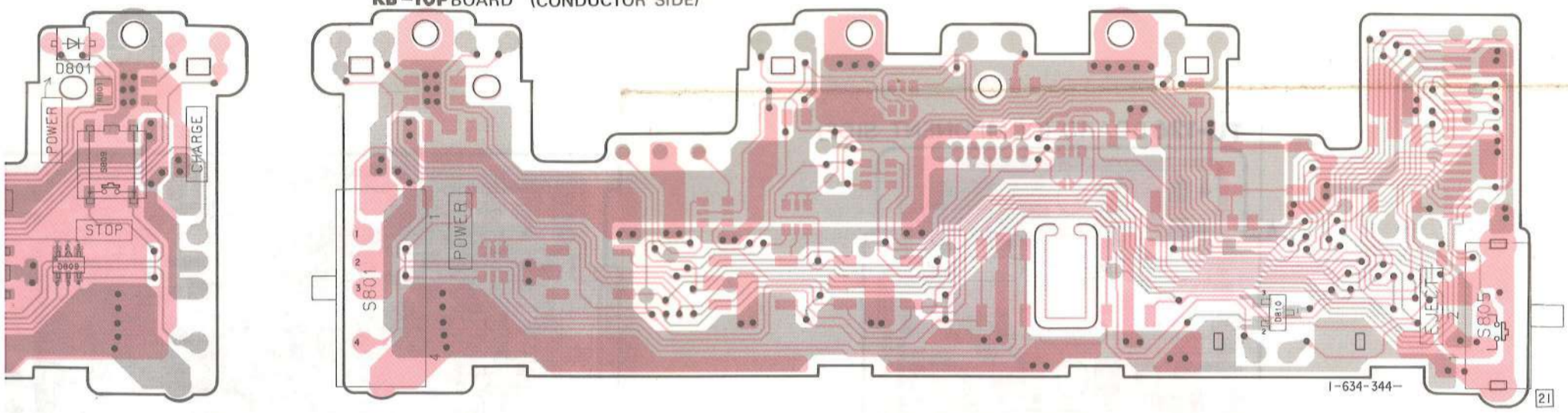
DIODE

D801	8-719-937-45	DIODE GL1EG101
D803	8-719-975-81	DIODE GL1PR111
D804	8-719-975-81	DIODE GL1PR111
D805	8-719-975-81	DIODE GL1PR111
D806	8-719-970-14	DIODE GL1HY111
D808	8-719-951-22	DIODE IMN10T108
D809	8-719-951-22	DIODE IMN10T108
D810	8-719-104-34	DIODE 1S2835-T1

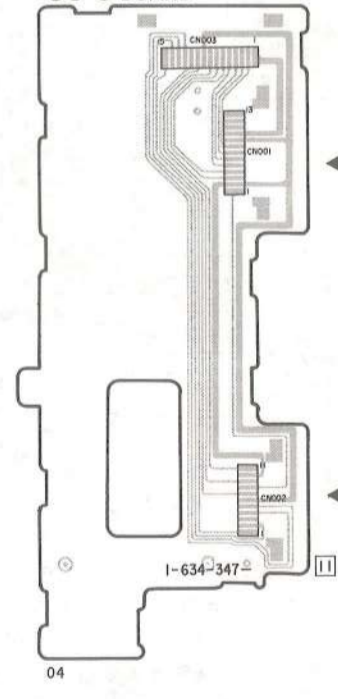
TRANSISTOR

Q801	8-729-403-24	TRANSISTOR XN4210-TW
Q802	8-729-403-24	TRANSISTOR XN4210-TW
Q803	8-729-403-24	TRANSISTOR XN4210-TW
Q804	8-729-920-48	TRANSISTOR IMH2-T110

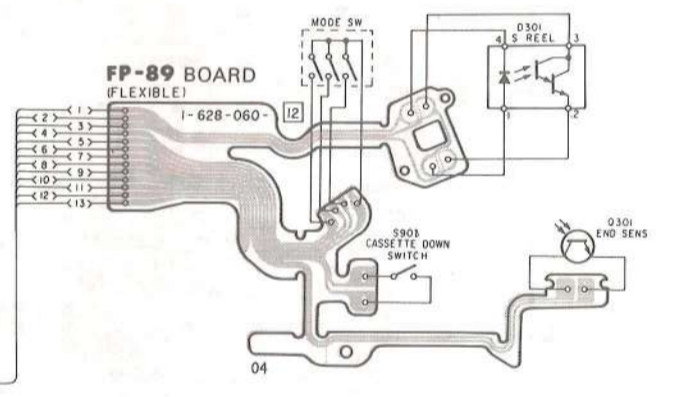
KB-10PBOARD (CONDUCTOR SIDE)



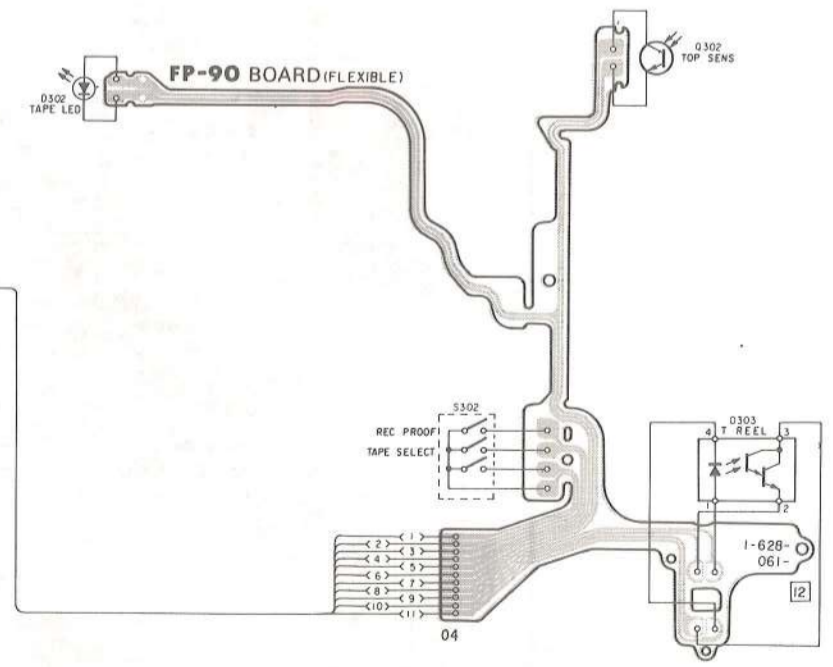
UC-6 BOARD



FP-89 BOARD (FLEXIBLE)

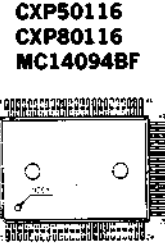
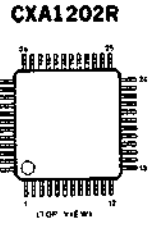


FP-90 BOARD (FLEXIBLE)

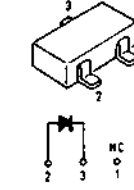
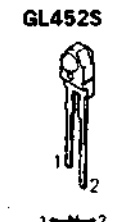
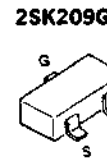
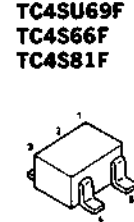
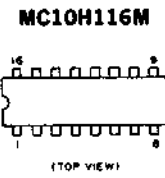
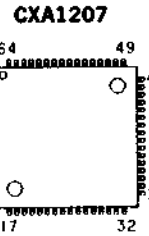
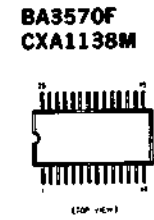
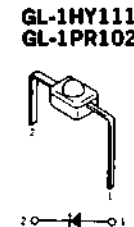
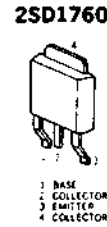
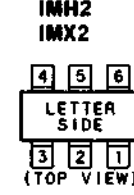
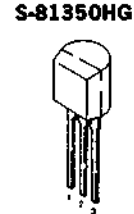
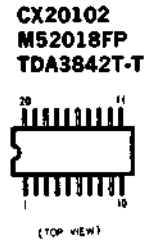
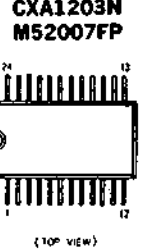
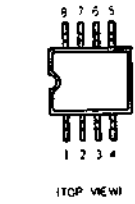
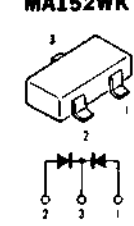
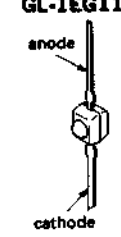
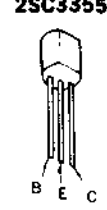
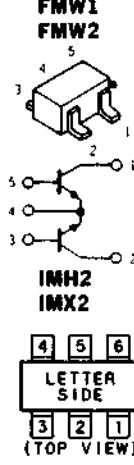


4-3. SEMICONDUCTORS

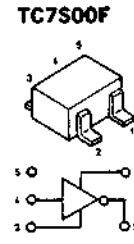
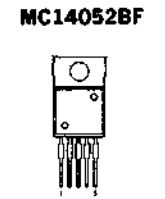
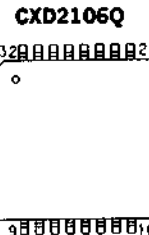
AK93C57F
FA7610N
LM311D
LM358D
LM358PS
LM393D
MC34182M
LM393ML
NJM2073M
NJM2233BM



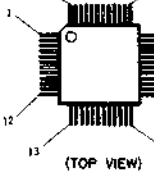
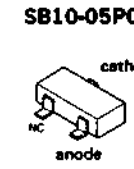
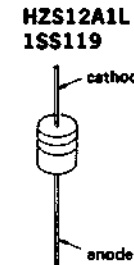
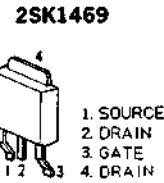
DTA114EK
DTA124EK
DTA143EK
DTA144EK
DTC114EK
DTC124EK
DTC144EK
DTC144WK
2SA1037K
2SA1162
2SA1179
2SA1576
2SB624
2SC1623
2SC2223
2SC2412K
2SC3053
2SC3326N
2SC4081



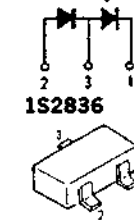
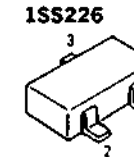
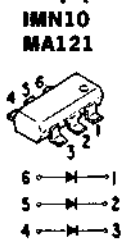
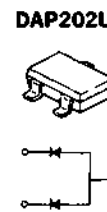
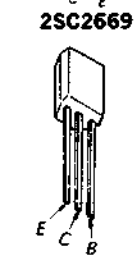
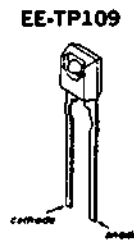
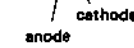
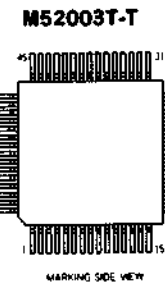
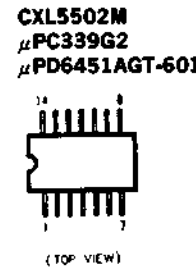
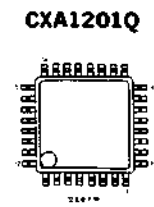
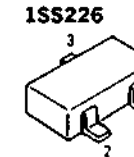
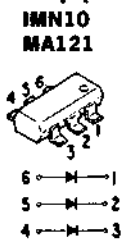
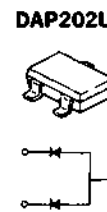
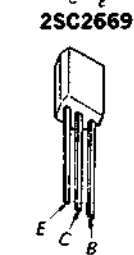
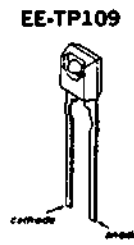
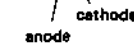
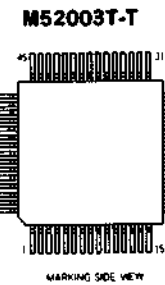
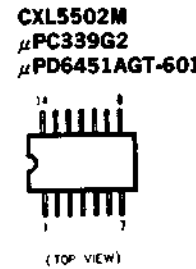
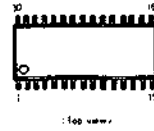
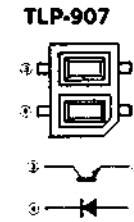
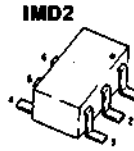
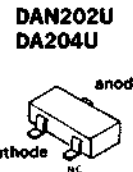
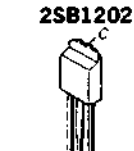
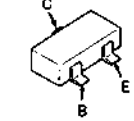
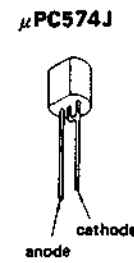
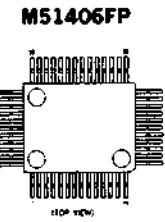
CXA1124AQ
CXA1208R
CXA1537R
MB606199



DTA114EU
DTA144EU
DTC114EU
DTC124EU
DTC143EU
DTC144EU
DTC144TU
DTC144WU
2SD1119



CXD2107M
CXL1506M
CX20115A
MB3775PF
MC14053BF





SECTION 5 EXPLODED VIEWS

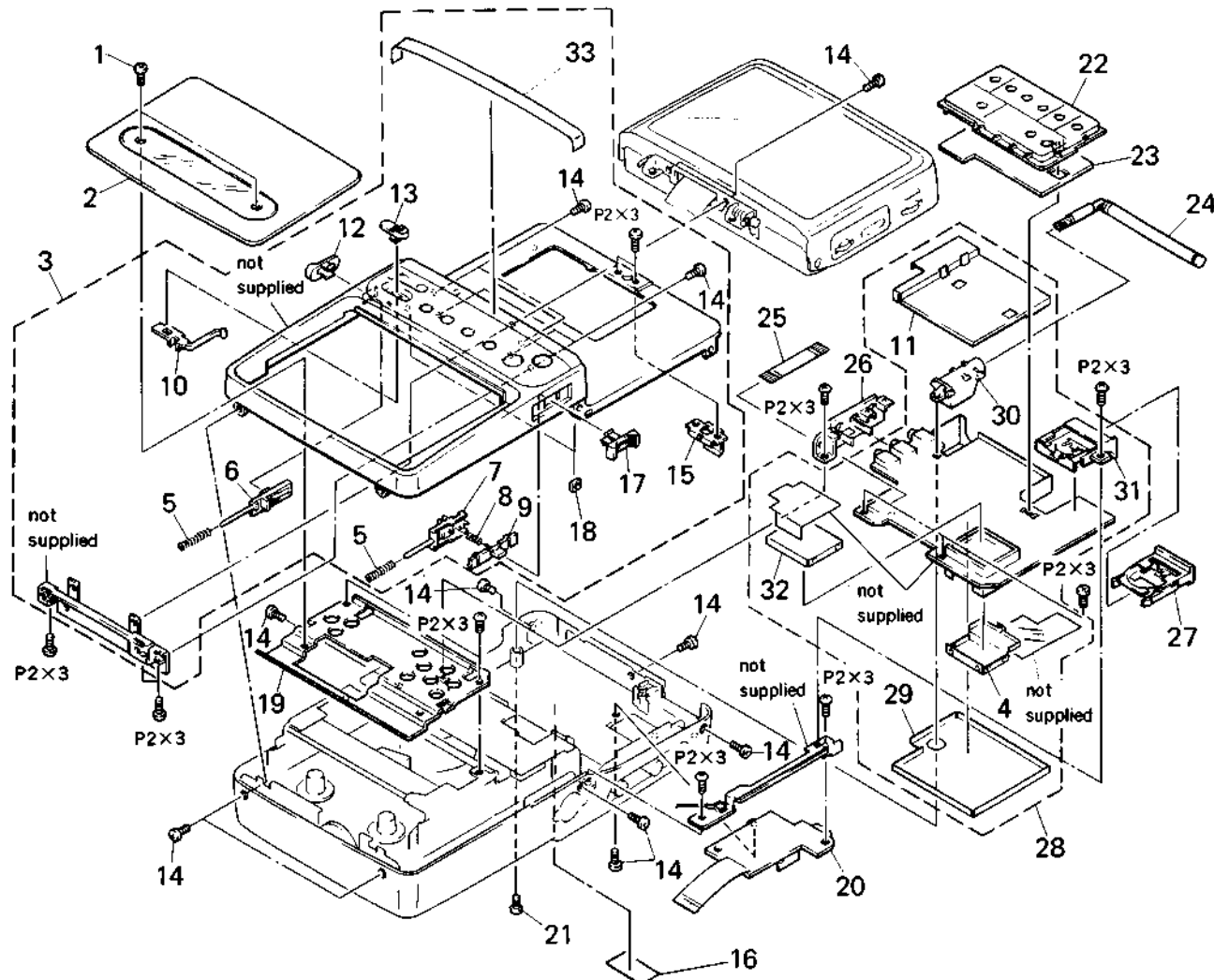
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

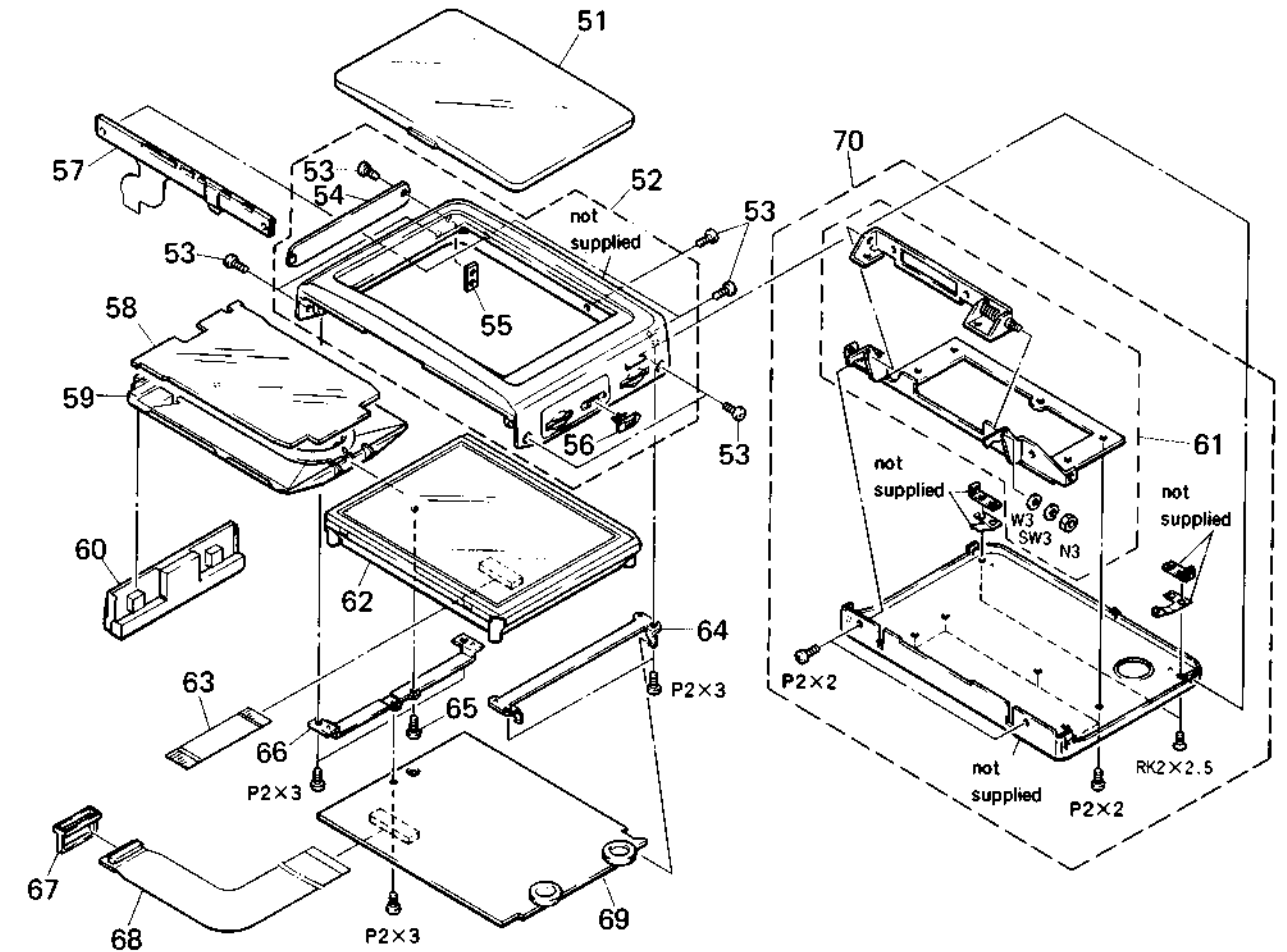
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.



5-1. CABINET (UPPER) ASSEMBLY




No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	3-719-555-11	SCREW (M1.7X5.5)		18	3-718-233-01	NUT, PLATE	
2	X-3940-024-1	LID ASSY, CASSETTE COMPARTMENT (AEP, UK MODEL)		19	X-3940-021-1	REINFORCEMENT ASSY	
	X-3940-018-1	LID ASSY, CASSETTE COMPARTMENT (Germany MODEL)		20	*A-7071-288-A	DC-22P BOARD, COMPLETE	
3	X-3940-025-1	CABINET ASSY, UPPER 5-10,12-15,17,18,33		21	3-719-381-21	SCREW (M2X6)	
4	3-746-907-01	LID, TDD SHIELD CASE		22	X-3940-020-1	HOLDER ASSY, SB	
5	3-741-137-01	SPRING, COMPRESSION		23	*A-7071-290-A	SB-3P BOARD, COMPLETE	
6	3-740-655-01	BUTTON, EJECT LOCK		24	1-501-456-11	ANTENNA, TELESCOPIC	
7	3-744-133-01	PLATE, SLIDE, POWER		25	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
8	3-303-973-00	SPRING, COMPRESSION		26	3-744-165-01	COVER, HP JACK (AEP, UK MODEL)	
9	3-744-128-01	BUTTON, POWER LOCK			3-744-165-31	COVER, HP JACK (Germany MODEL)	
10	3-744-132-01	PLATE, SLIDE, REC		27	X-3728-883-1	HOLDER ASSY, BATTERY	
11	X-3728-886-1	LID ASSY, TU SHIELD CASE		28	*A-7062-438-A	TU-126 BOARD, COMPLETE	4, 11, 29-32
12	3-740-647-01	BUTTON, EJECT		29	3-746-915-01	LID, REAR, TU SHILED CASE	
13	3-740-648-11	BUTTON, POWER (REC)		30	3-744-166-01	HOLDER, ANTENNA	
14	3-719-381-01	SCREW (M2X4)		31	X-3728-887-1	GUIDE ASSY, BATTERY	
15	X-3940-043-1	PLATE, LOCK ASSY		32	3-746-908-01	LID, REAR, TDD SHILED CASE	
16	*3-940-211-01	LABEL, MODEL NUMBER (E)		33	3-744-134-31	PLATE, TRANSPARENT, LED	
17	3-744-131-01	BUTTON, POWER					

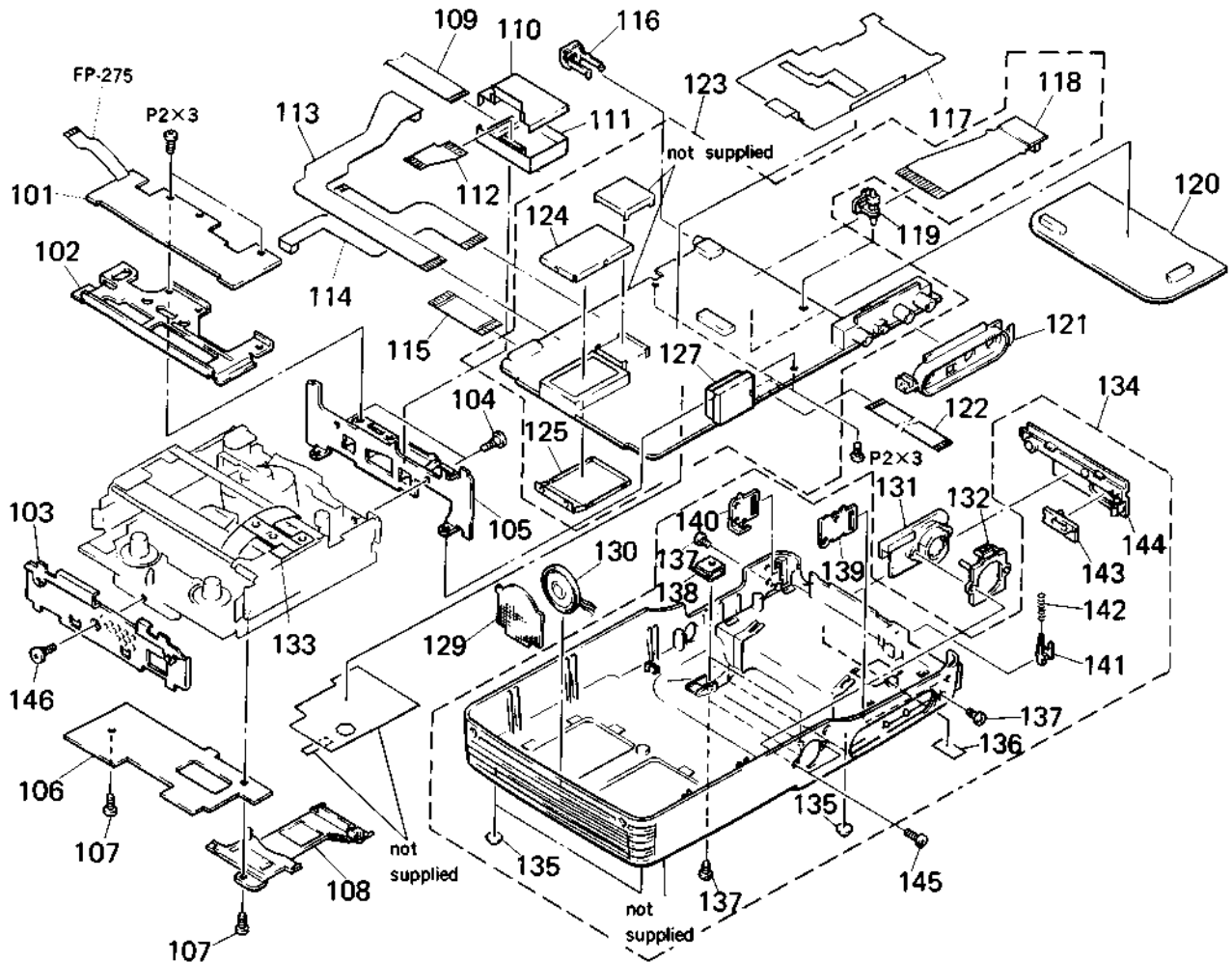
5-2. SC UNIT ASSEMBLY



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

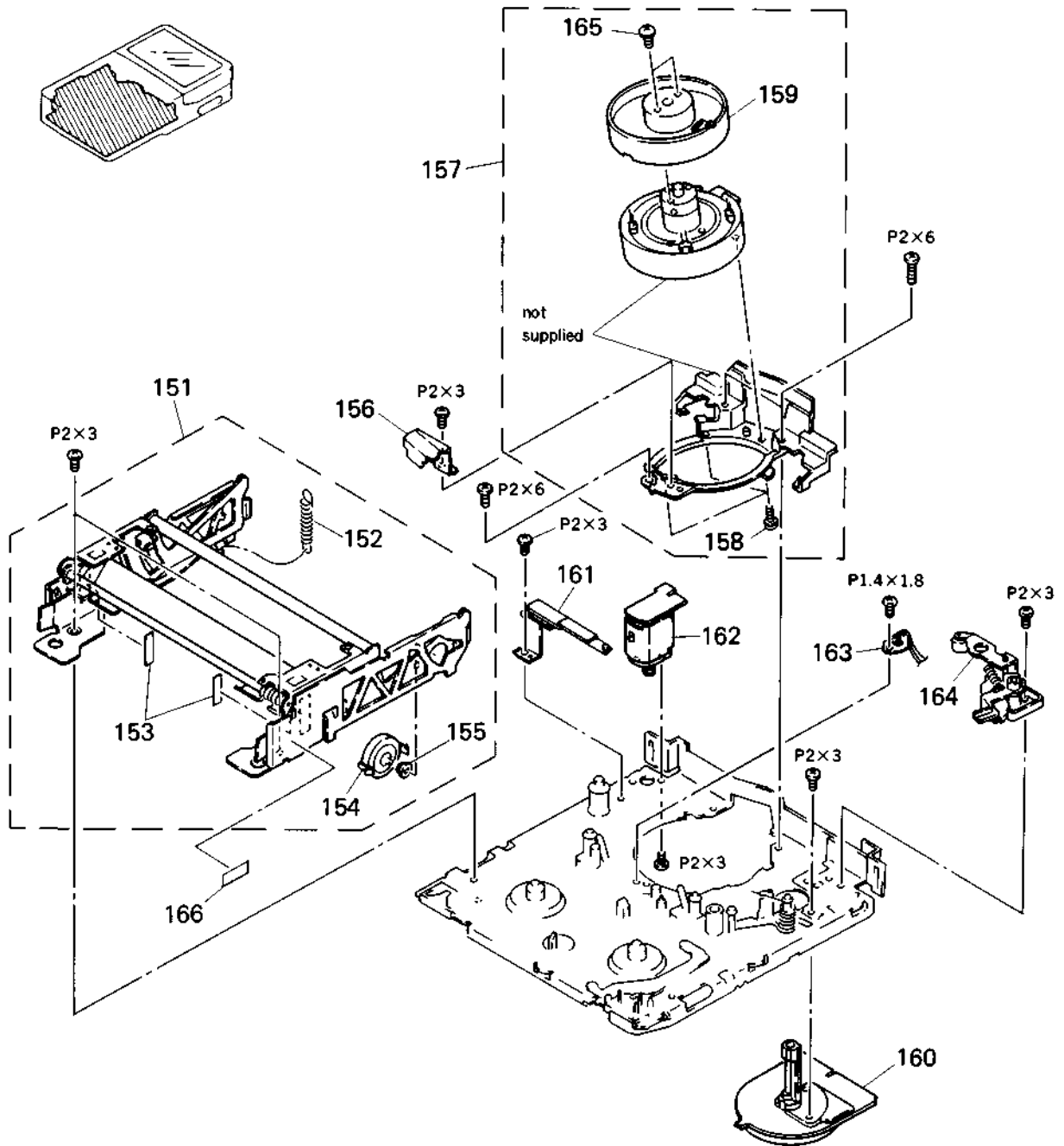
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	3-941-319-01	WINDOW, SC		62	1-809-002-12	DISPLAY MODULE, LIQUID CRYSTAL (LCD901)	
52	X-3940-023-1	CABINET ASSY, UPPER, SC		63	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE (LCD FLEXIBLE)	
53	3-719-381-01	SCREW (M2X4)		64	*3-744-198-01	BRACKET (R), LCD	
54	3-744-174-01	COVER, SIDE		65	3-719-408-01	SCREW (B2), TAPPING, P3	
55	3-730-103-01	NUT, PLATE		66	*3-744-199-01	BRACKET (L), LCD	
56	3-744-162-01	KNOR, DBB		67	3-744-152-01	HOLDER, FPC	
57	1-466-334-11	SWITCH BLOCK, CONTROL		68	1-634-994-11	FP-271 FLEXIBLE BOARD	
58	3-744-127-01	CURTAIN		69	*A-7062-437-A	RG-22 BOARD, COMPLETE	
59	1-518-668-11	TUBE UNIT, FLUORECENT (BL901)		70	X-3940-019-1	CABINET ASSY, BOTTOM, SC	61
60	 1-466-333-11	INVERTER UNIT, DC-AC					
61	X-3749-223-1	ARM, HINGE ASSY					

5-3. CABINET (LOWER) ASSEMBLY



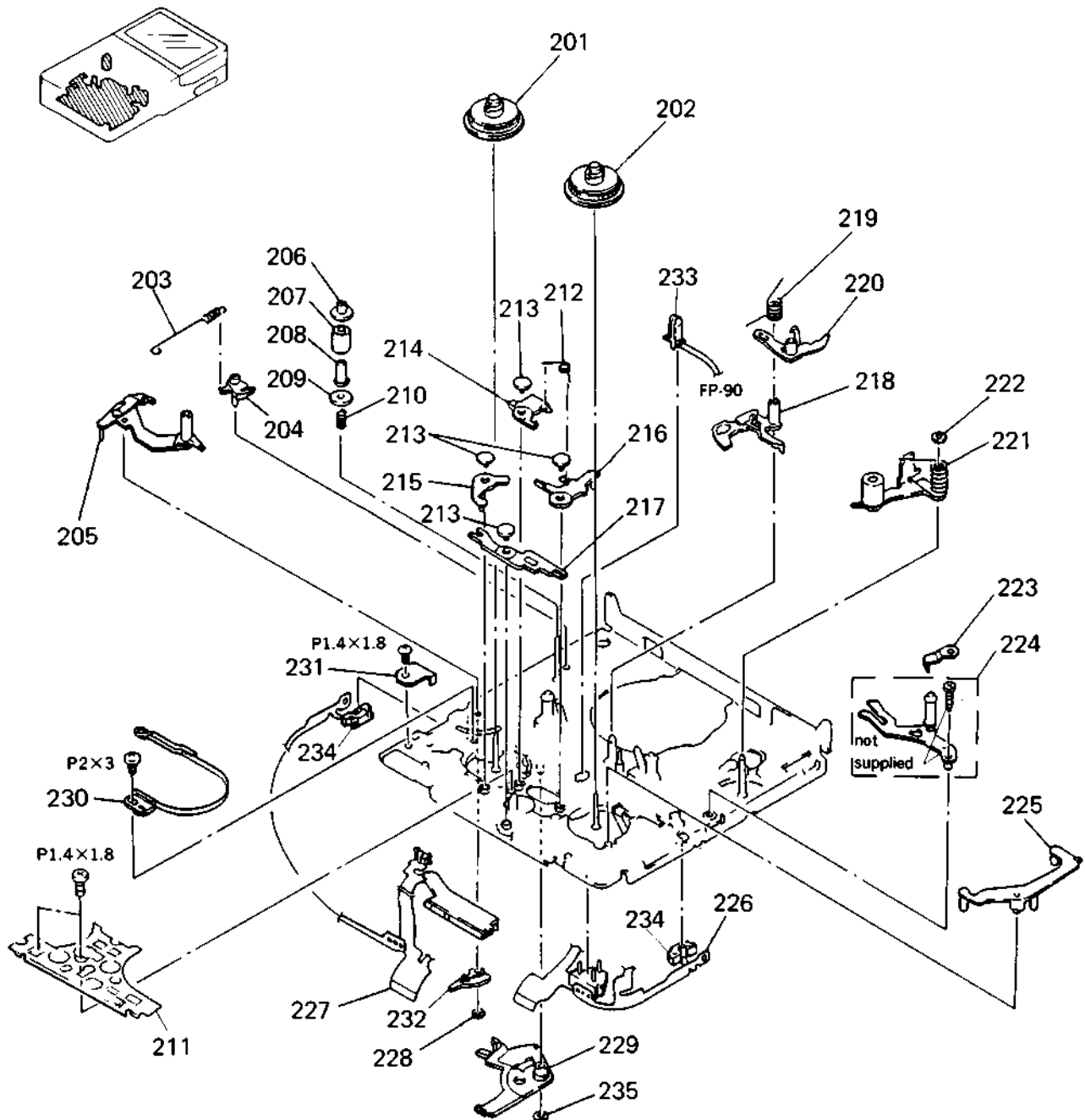
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	*A-7071-287-A	KB-10P BOARD, COMPLETE		124	*3-746-902-01	CASE (LID), SHIELD, SDD	
102	X-3728-889-1	FRAME ASSY, KR		125	*X-3728-888-1	LID ASSY, REAR, SDD SHIELD CASE	
103	X-3728-884-1	FRAME (FRONT) ASSY, MD		127	A-7062-436-A	CC-55 BOARD, COMPLETE	
104	3-732-791-11	SCREW (M2X3)		129	X-3728-892-1	SPACER ASSY, SP	
105	X-3728-891-1	FRAME (REAR) ASSY, MD		130	1-544-323-11	SPEAKER	
106	*1-634-347-11	UC-6 BOARD		131	*A-7071-289-A	CN-6P BOARD, COMPLETE	
107	3-719-408-01	SCREW (B2), TAPPING, P3		132	3-744-157-01	SPACER, CN	
108	*3-744-176-01	COVER, MD		133	3-746-960-01	RIBBON, LID RETAINER	
109	1-634-992-11	FP-269 FLEXIBLE BOARD		134	X-3940-022-1	CABINET ASSY, LOWER	135-144
110	X-3728-885-1	LID ASSY, RP SHIELD CASE		135	3-740-607-01	CUSHION	
111	*A-7062-433-A	RP-105 BOARD, COMPLETE		136	*3-747-370-01	LABEL, BATTERY FITTING	
112	1-634-996-11	FP-273 FLEXIBLE BOARD		137	3-719-381-01	SCREW (M2X4)	
113	1-634-997-11	FP-274 FLEXIBLE BOARD		138	3-736-496-01	BRACKET, STAND	
114	1-634-995-11	FP-272 FLEXIBLE BOARD		139	3-744-156-01	HOOK (R), BELT	
115	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE		140	3-744-155-01	HOOK (L), BELT	
116	3-744-169-01	COVER, CS JACK		141	3-744-159-01	LEVER, RELEASE	
117	*3-941-171-01	COVER, SV		142	3-564-951-00	SPRING, COMPRESSION	
118	1-634-993-11	FP-270 FLEXIBLE BOARD		143	3-744-161-01	KNOB, RELEASE	
119	3-742-816-01	SUPPORT (V), PC BOARD		144	3-744-168-01	COVER, ANTENNA	
120	*A-7062-434-A	AU-98 BOARD, COMPLETE		145	3-719-381-21	SCREW (M2X6)	
121	3-744-175-01	COVER, IO JACK		146	3-744-603-11	SCREW	
122	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE					
123	*A-7062-435-A	SV-66 BOARD, COMPLETE	118, 124-128				

5-4. MECHANISM DECK ASSEMBLY (1)



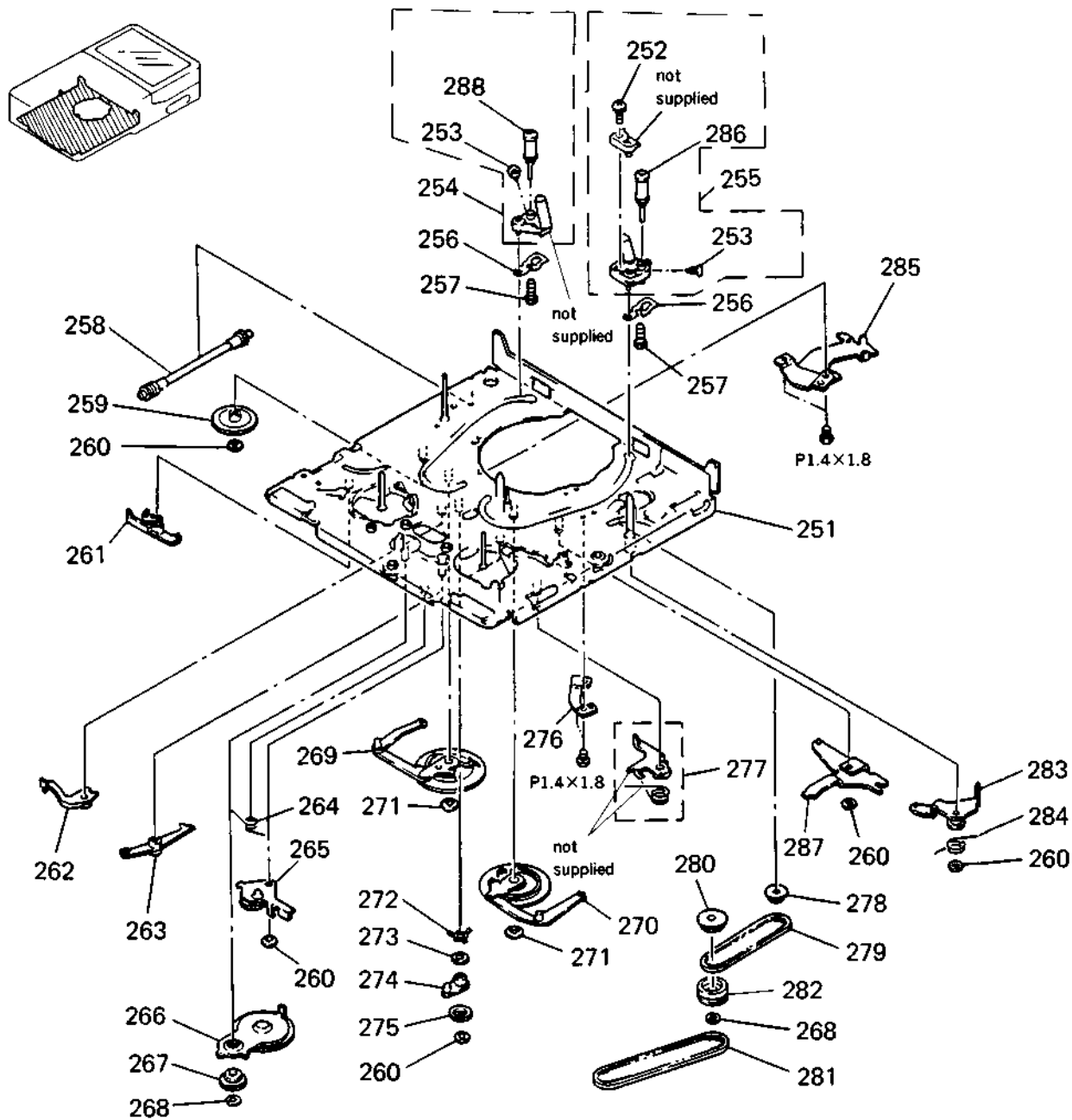
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	X-3728-873-1	CASSETTE COMPARTMENT ASSY	152-155	159	A-7049-360-A	DRUM ASSY, ROTARY 9(UPPER) DGR-61-R	
152	3-728-825-03	SPRING, TENSION		160	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
153	*3-728-829-01	TAPE		161	X-3728-864-1	GROUND ASSY, SHAFT	
154	3-728-867-02	DAMPER, OIL		162	A-7040-208-A	MOTOR ASSY, THREADING (LOADING) (M903)	
155	3-728-828-02	GEAR, DAMPER		163	1-808-505-12	SENSOR (DEW)	
156	3-728-868-01	GUARD, GUIDE		164	A-7040-207-A	ROLLER BLOCK ASSY, HC	
157	A-7048-432-A	DRUM ASSY (DGR-61A-R)	158, 159, 165	165	3-727-847-01	SCREW (M2X4)	
158	3-686-493-01	SCREW, (M2X5), P1		166	*3-730-176-11	SHEET, MD	

5-5. MECHANISM DECK ASSEMBLY (2)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S		219	3-726-864-01	SPRING (RK), TORSTON	
202	X-3728-855-1	TABLE ASSY, REEL, T		220	3-728-852-02	ARM, RK STOPPER	
203	3-736-414-01	SPRING, TENSION		221	A-7040-219-A	ARM BLOCK ASSY, PINCH	
204	3-728-855-03	ARM, ADJUSTMENT		222	3-669-465-00	WASHER (1.5), STOPPER	
205	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR		223	3-728-808-01	SPRING, LEAF	
206	3-726-884-01	FLANGE, UPPER, TG2		224	X-3728-869-1	ARM ASSY, TG7	
207	3-726-883-01	ROLLER, TG2		225	3-726-848-01	ARM, LB RELEASE	
208	3-726-885-01	SLEEVE, TG2		226	1-628-061-12	FP-90 FLEXIBLE BOARD	
209	3-726-882-02	FLANGE, LOWER, TG2		227	1-628-060-12	FP-89 FLEXIBLE BOARD	
210	3-726-886-01	SPRING, COMPRESSION		228	3-321-393-11	WASHER, STOPPER	
211	3-741-195-01	PLATE, BLIND, RK		229	X-3728-863-1	LEVER ASSY, SW	
212	3-726-866-01	SPRING (ST), TORSTION		230	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
213	3-726-858-01	PIN, SHAFT RETAINER		231	3-730-125-01	RETAINER, SW	
214	3-728-849-01	BRAKE, S		232	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
215	3-726-852-01	BRAKE, LB		233	3-728-837-01	HOLDER, LED	
216	3-728-850-01	BRAKE, T		234	3-728-869-02	HOLDER, SENSOR	
217	3-726-853-01	LEVER, LB		235	3-726-829-01	WASHER, STOPPER	
218	3-728-875-01	STOPPER, RK					

5-6. MECHANISM DECK ASSEMBLY (3)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	X-3728-862-1	CHASSIS ASSY, MECHANICAL		270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
252	3-736-473-01	SCREW (M2X0.25) (THREE LOCK)		271	3-669-465-00	WASHER (1.5), STOPPER	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD		272	3-726-867-01	SPRING, LEAF	
254	A-7040-184-A	COASTER (LEFT) BLOCK ASSY-ND	253, 288	273	3-701-436-21	WASHER, POLYETHYLENE	
255	A-7040-217-A	COASTER (RIGHT) BLOCK ASSY (N1P)	252, 253, 286	274	3-726-857-02	ARM, UL	
256	3-736-485-01	SPRING, LEAF, COSTER		275	3-726-856-02	GEAR, UL	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)		276	*3-726-805-01	REINFORCEMENT (TT)	
258	X-3728-868-1	WORM ASSY		277	X-3726-808-2	BRAKE ASSY, TS	
259	3-744-109-01	GEAR, WHEEL		278	X-3726-805-1	GEAR ASSY, JOINT	
260	3-726-829-01	WASHER, STOPPER		279	3-728-866-11	BELT (S), TIMING	
261	3-728-842-01	LEVER, EJECT		280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
262	3-728-851-01	BRAKE, UL		281	3-741-197-01	BELT (L), TIMING	
263	3-726-854-01	ARM, BRAKE RELEASE		282	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
264	3-726-865-01	SPRING (LB), TORSION		283	X-3726-824-1	ARM ASSY, PINCH SUB	
265	A-7040-225-A	GEAR BLOCK ASSY (N), LB		284	3-726-895-01	SPRING	
266	X-3728-866-1	GEAR ASSY, RK		285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
267	X-3728-858-1	GEAR ASSY, RC		286	X-3728-810-1	ROLLER ASSY (U)(PLATING), GUIDE	
268	3-321-393-11	WASHER, STOPPER		287	X-3728-846-1	LEVER ASSY, THREADING	
269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE		288	X-3726-820-1	ROLLER ASSY (U), GUIDE	

SECTION 6
ELECTRICAL PARTS LIST

RP-105

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: μ MF.

RESISTORS
• All resistors are in ohms.
• F: nonflammable

COILS
• MMH: mH, UH: μ H

SEMICONDUCTORS
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

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.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7062-433-A	RP-105	BOARD, COMPLETE (Ref.No 1,000 Series)					
	1-634-992-11	FP-269 FLEXIBLE BOARD					
		<u>CAPACITOR</u>					
C501	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V			
C502	1-164-361-11	CERAMIC CHIP 0.047MF		16V			
C503	1-135-161-21	TANTAL. CHIP 22MF	20%	10V			
C504	1-164-361-11	CERAMIC CHIP 0.047MF		16V			
C505	1-135-161-21	TANTAL. CHIP 22MF	20%	10V			
C506	1-164-361-11	CERAMIC CHIP 0.047MF		16V			
C507	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C508	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V			
C509	1-164-005-11	CERAMIC CHIP 0.47MF		25V			
C510	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V			
C511	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V			
C512	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V			
C513	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V			
C514	1-164-005-11	CERAMIC CHIP 0.47MF		25V			
C515	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V			
C516	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C517	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C518	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C519	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C520	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C522	1-135-161-21	TANTAL. CHIP 22MF	20%	10V			
C523	1-164-360-11	CERAMIC CHIP 0.1MF		16V			
C524	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C525	1-164-360-11	CERAMIC CHIP 0.1MF		16V			
C529	1-164-361-11	CERAMIC CHIP 0.047MF		16V			
C531	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C533	1-135-161-21	TANTAL. CHIP 22MF	20%	10V			
C534	1-164-361-11	CERAMIC CHIP 0.047MF		16V			
C535	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V			
C581	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V			
C582	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C583	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V			
C584	1-162-953-11	CERAMIC CHIP 100PF	5%	50V			
C585	1-162-953-11	CERAMIC CHIP 100PF	5%	50V			
C586	1-162-955-11	CERAMIC CHIP 150PF	5%	50V			
C587	1-162-953-11	CERAMIC CHIP 100PF	5%	50V			
		<u>CONNECTOR</u>					
CN501	1-565-849-11	SOCKET, CONNECTOR 11P					
CN502	1-568-740-11	CONNECTOR, FPC (1.0MM)(ZIF)18P					
CN503	1-568-340-41	CONNECTOR, BOARD TO BOARD 5P					
		<u>IC</u>					
IC501	8-752-033-38	IC CXA1202R					
		<u>COIL</u>					
L501	1-412-029-11	INDUCTOR CHIP 10UH					
L502	1-412-033-11	INDUCTOR CHIP 220UH					
L503	1-412-033-11	INDUCTOR CHIP 220UH					
L581	1-412-198-11	INDUCTOR 220UH					
L582	1-412-137-11	INDUCTOR 10UH					
		<u>TRANSISTOR</u>					
Q501	8-729-905-12	TRANSISTOR DTA144EU					
Q502	8-729-905-35	TRANSISTOR 2SC4081R					
Q581	8-729-905-23	TRANSISTOR 2SA1576R					
Q582	8-729-820-76	TRANSISTOR 2SA1179-M5M6					
		<u>RESISTOR</u>					
R501	1-216-837-11	METAL GLAZE 22K 5%		1/16W			
R502	1-216-825-11	METAL GLAZE 2.2K 5%		1/16W			
R503	1-216-838-11	METAL GLAZE 27K 5%		1/16W			
R504	1-216-838-11	METAL GLAZE 27K 5%		1/16W			
R505	1-216-838-11	METAL GLAZE 27K 5%		1/16W			
R506	1-216-838-11	METAL GLAZE 27K 5%		1/16W			
R507	1-216-825-11	METAL GLAZE 2.2K 5%		1/16W			
R508	1-216-837-11	METAL GLAZE 22K 5%		1/16W			
R509	1-216-839-11	METAL GLAZE 33K 5%		1/16W			
R510	1-216-838-11	METAL GLAZE 27K 5%		1/16W			
R512	1-216-841-11	METAL GLAZE 47K 5%		1/16W			
R514	1-216-841-11	METAL GLAZE 47K 5%		1/16W			
R515	1-216-837-11	METAL GLAZE 22K 5%		1/16W			
R516	1-216-841-11	METAL GLAZE 47K 5%		1/16W			
R517	1-216-825-11	METAL GLAZE 2.2K 5%		1/16W			
R520	1-216-791-11	METAL GLAZE 3.3 5%		1/16W			
R523	1-216-825-11	METAL GLAZE 2.2K 5%		1/16W			
R524	1-216-821-11	METAL GLAZE 1K 5%		1/16W			
R525	1-216-809-11	METAL GLAZE 100 5%		1/16W			
R526	1-216-809-11	METAL GLAZE 100 5%		1/16W			
R551	1-216-820-11	METAL GLAZE 820 5%		1/16W			
R552	1-216-824-11	METAL GLAZE 1.8K 5%		1/16W			
R553	1-216-864-11	METAL GLAZE 0 5%		1/16W			
R554	1-216-825-11	METAL GLAZE 2.2K 5%		1/16W			
R581	1-216-840-11	METAL GLAZE 39K 5%		1/16W			
R582	1-216-839-11	METAL GLAZE 33K 5%		1/16W			
R583	1-216-810-11	METAL GLAZE 120 5%		1/16W			
R584	1-216-815-11	METAL GLAZE 330 5%		1/16W			
R585	1-216-794-11	METAL GLAZE 5.6 5%		1/16W			
R587	1-216-821-11	METAL GLAZE 1K 5%		1/16W			
		<u>VARIABLE RESISTOR</u>					
RV501	1-238-092-11	RES, ADJ CERMET 47K					
RV502	1-238-092-11	RES, ADJ CERMET 47K					

AU-98

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7062-434-A	AU-98 BOARD, COMPLETE	(Ref.No 7,000 Series)		C182	1-162-974-11	CERAMIC CHIP 0.01MF	50V
*****				C183	1-162-974-11	CERAMIC CHIP 0.01MF	50V
CAPACITOR				C204	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C104	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C205	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C105	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C206	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C106	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C207	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C107	1-162-963-11	CERAMIC CHIP 680PF	10% 50V	C208	1-135-145-11	TANTAL. CHIP 0.47MF	20% 35V
C108	1-135-145-11	TANTAL. CHIP 0.47MF	20% 35V	C209	1-162-965-11	CERAMIC CHIP 0.0015MF	10% 50V
C109	1-162-965-11	CERAMIC CHIP 0.0015MF	10% 50V	C210	1-164-173-11	CERAMIC CHIP 0.0039MF	10% 50V
C110	1-164-173-11	CERAMIC CHIP 0.0039MF	10% 50V	C211	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C111	1-162-957-11	CERAMIC CHIP 220PF	5% 50V	C212	1-162-966-11	CERAMIC CHIP 0.0022MF	10% 50V
C112	1-162-966-11	CERAMIC CHIP 0.0022MF	10% 50V	C213	1-126-205-11	ELECT CHIP 47MF	20% 6.3V
C113	1-126-205-11	ELECT CHIP 47MF	20% 6.3V	C214	1-164-156-11	CERAMIC CHIP 0.1MF	25V
C114	1-164-156-11	CERAMIC CHIP 0.1MF	25V	C215	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C115	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C217	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V
C117	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V	C218	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V
C118	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V	C222	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V
C122	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V	C223	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V
C123	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V	C224	1-162-587-11	CERAMIC CHIP 0.039MF	10% 25V
C124	1-162-587-11	CERAMIC CHIP 0.039MF	10% 25V	C225	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C125	1-162-960-11	CERAMIC CHIP 220PF	10% 50V	C226	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C126	1-162-963-11	CERAMIC CHIP 680PF	10% 50V	C227	1-164-174-11	CERAMIC CHIP 0.0082MF	10% 25V
C127	1-164-174-11	CERAMIC CHIP 0.0082MF	10% 25V	C228	1-135-177-21	TANTAL. CHIP 1MF	20% 20V
C128	1-135-177-21	TANTAL. CHIP 1MF	20% 20V	C229	1-128-004-11	ELECT CHIP 10MF	20% 16V
C129	1-128-004-11	ELECT CHIP 10MF	20% 16V	C230	1-128-004-11	ELECT CHIP 10MF	20% 16V
C130	1-128-004-11	ELECT CHIP 10MF	20% 16V	C231	1-128-003-11	ELECT CHIP 22MF	20% 4V
C131	1-128-003-11	ELECT CHIP 22MF	20% 4V	C234	1-126-207-11	ELECT CHIP 33MF	20% 4V
C134	1-126-207-11	ELECT CHIP 33MF	20% 4V	C235	1-164-634-11	CERAMIC CHIP 1MF	16V
C135	1-164-634-11	CERAMIC CHIP 1MF	16V	C236	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C136	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C237	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C137	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C238	1-164-634-11	CERAMIC CHIP 1MF	16V
C138	1-164-634-11	CERAMIC CHIP 1MF	16V	C239	1-126-207-11	ELECT CHIP 33MF	20% 4V
C139	1-126-207-11	ELECT CHIP 33MF	20% 4V	C242	1-164-218-11	CERAMIC CHIP 180PF	0.25PF 50V
C142	1-164-218-11	CERAMIC CHIP 180PF	0.25PF 50V	C243	1-162-966-11	CERAMIC CHIP 0.0022MF	10% 50V
C143	1-162-966-11	CERAMIC CHIP 0.0022MF	10% 50V	C263	1-124-778-00	ELECT CHIP 22MF	20% 6.3V
C163	1-124-778-00	ELECT CHIP 22MF	20% 6.3V	C264	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V
C164	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V	C265	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V
C165	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V	C269	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C166	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C270	1-128-003-11	ELECT CHIP 22MF	20% 4V
C167	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C271	1-128-003-11	ELECT CHIP 22MF	20% 4V
C168	1-162-968-11	CERAMIC CHIP 0.0047MF	10% 50V	C275	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C169	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C276	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C170	1-128-003-11	ELECT CHIP 22MF	20% 4V	C277	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C171	1-128-003-11	ELECT CHIP 22MF	20% 4V	C278	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C172	1-164-156-11	CERAMIC CHIP 0.1MF	25V	C281	1-162-965-11	CERAMIC CHIP 0.0015MF	10% 50V
C173	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C299	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C174	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C301	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C175	1-164-361-11	CERAMIC CHIP 0.047MF	16V	C302	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C176	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C303	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C179	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	C304	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C180	1-162-928-11	CERAMIC CHIP 120PF	5% 50V	C305	1-162-965-11	CERAMIC CHIP 0.0015MF	10% 50V
C181	1-162-965-11	CERAMIC CHIP 0.0015MF	10% 50V	C306	1-162-955-11	CERAMIC CHIP 150PF	5% 50V
				C307	1-135-181-21	TANTAL. CHIP 4.7MF	20% 6.3V

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C308	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V	CN102	1-569-636-41	CONNECTOR, BOARD TO BOARD 22P
C309	1-162-974-11	CERAMIC CHIP 0.01MF		50V			
C310	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V		<u>DIODE</u>	
C315	1-162-974-11	CERAMIC CHIP 0.01MF		50V	D301	8-719-941-23	DIODE DA204U
C316	1-162-974-11	CERAMIC CHIP 0.01MF		50V	D401	8-719-941-09	DIODE DAP202U
					D402	8-719-941-86	DIODE DAN202U
C317	1-164-156-11	CERAMIC CHIP 0.1MF		25V		<u>FILTER</u>	
C318	1-135-170-21	TANTAL. CHIP 6.8MF	20%	4V	FL101	1-236-831-11	FILTER, BAND PASS
C319	1-164-156-11	CERAMIC CHIP 0.1MF		25V	FL102	1-236-832-11	FILTER, BAND PASS
C320	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V		<u>IC</u>	
C325	1-164-634-11	CERAMIC CHIP 1MF		16V	IC101	8-752-053-04	IC CXA1537R
C326	1-164-634-11	CERAMIC CHIP 1MF		16V	IC103	8-759-009-07	IC MC14053BF
C401	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC104	8-759-030-16	IC MC34182M
C402	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC105	8-759-009-07	IC MC14053BF
C403	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC106	8-759-030-16	IC MC34182M
C404	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC107	8-759-009-06	IC MC14052BF
C405	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC108	8-759-030-16	IC MC34182M
C406	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC109	8-759-030-16	IC MC34182M
C407	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	IC110	8-759-234-77	IC TC4S66F
C408	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	IC111	8-759-234-77	IC TC4S66F
C411	1-128-003-11	ELECT CHIP 22MF	20%	4V	IC112	8-759-991-27	IC BA3570F
C413	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC113	8-752-334-42	IC CXD2106Q
C414	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V	IC114	8-759-209-15	IC TC4SU69F
C415	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	IC115	8-759-209-15	IC TC4SU69F
C416	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	IC116	8-759-209-15	IC TC4SU69F
C417	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V	IC201	8-752-053-04	IC CXA1537R
C418	1-124-778-00	ELECT CHIP 22MF	20%	6.3V		<u>COIL</u>	
C420	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	L101	1-412-066-21	INDUCTOR CHIP 220UH
C421	1-126-207-11	ELECT CHIP 33MF	20%	4V	L201	1-412-066-21	INDUCTOR CHIP 220UH
C424	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	L401	1-412-031-11	INDUCTOR CHIP 47UH
C425	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V		<u>TRANSISTOR</u>	
C426	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	Q101	8-729-905-35	TRANSISTOR 2SC4081R
C427	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	Q102	8-729-905-12	TRANSISTOR DTA144EU
C428	1-164-156-11	CERAMIC CHIP 0.1MF		25V	Q106	8-729-905-35	TRANSISTOR 2SC4081R
C429	1-164-634-11	CERAMIC CHIP 1MF		16V	Q107	8-729-905-35	TRANSISTOR 2SC4081R
C431	1-135-161-21	TANTAL. CHIP 22MF	20%	10V	Q108	8-729-905-35	TRANSISTOR 2SC4081R
C432	1-162-638-11	CERAMIC CHIP 1MF		16V	Q109	8-729-905-35	TRANSISTOR 2SC4081R
C433	1-164-156-11	CERAMIC CHIP 0.1MF		25V	Q111	8-729-905-35	TRANSISTOR 2SC4081R
C434	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	Q112	8-729-905-35	TRANSISTOR 2SC4081R
C435	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V	Q201	8-729-905-35	TRANSISTOR 2SC4081R
C436	1-164-156-11	CERAMIC CHIP 0.1MF		25V	Q202	8-729-905-12	TRANSISTOR DTA144EU
C437	1-126-206-11	ELECT CHIP 100MF	20%	6.3V	Q205	8-729-905-12	TRANSISTOR DTA144EU
C438	1-126-206-11	ELECT CHIP 100MF	20%	6.3V	Q208	8-729-905-35	TRANSISTOR 2SC4081R
C440	1-164-634-11	CERAMIC CHIP 1MF		16V	Q209	8-729-905-35	TRANSISTOR 2SC4081R
C441	1-164-634-11	CERAMIC CHIP 1MF		16V	Q301	8-729-905-35	TRANSISTOR 2SC4081R
C442	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	Q302	8-729-905-35	TRANSISTOR 2SC4081R
C443	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	Q303	8-729-905-35	TRANSISTOR 2SC4081R
C444	1-162-946-11	CERAMIC CHIP 27PF	5%	50V	Q304	8-729-905-12	TRANSISTOR DTA144EU
C450	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V			
C455	1-162-946-11	CERAMIC CHIP 27PF	5%	50V			
C459	1-164-005-11	CERAMIC CHIP 0.47MF		25V			
<u>CONNECTOR</u>							
CN101	1-569-635-41	CONNECTOR, BOARD TO BOARD 20P					

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

AU-98

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q305	8-729-903-10	TRANSISTOR FMW1		R145	1-216-819-11	METAL GLAZE 680 5%	1/16W
Q306	8-729-905-12	TRANSISTOR DTA144EU		R146	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
Q307	8-729-905-18	TRANSISTOR DTC144EU		R147	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
Q308	8-729-905-23	TRANSISTOR 2SA1576R		R148	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
Q309	8-729-905-18	TRANSISTOR DTC144EU		R149	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
Q310	8-729-905-35	TRANSISTOR 2SC4081R		R150	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
Q311	8-729-905-35	TRANSISTOR 2SC4081R		R151	1-216-833-11	METAL GLAZE 10K 5%	1/16W
Q313	8-729-903-10	TRANSISTOR FMW1		R152	1-216-838-11	METAL GLAZE 27K 5%	1/16W
Q314	8-729-905-35	TRANSISTOR 2SC4081R		R153	1-216-836-11	METAL GLAZE 18K 5%	1/16W
Q315	8-729-905-23	TRANSISTOR 2SA1576R		R154	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
Q316	8-729-905-18	TRANSISTOR DTC144EU		R155	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
Q317	8-729-905-18	TRANSISTOR DTC144EU		R157	1-216-833-11	METAL GLAZE 10K 5%	1/16W
Q318	8-729-905-18	TRANSISTOR DTC144EU		R158	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
Q319	8-729-905-35	TRANSISTOR 2SC4081R		R159	1-216-833-11	METAL GLAZE 10K 5%	1/16W
Q320	8-729-905-23	TRANSISTOR 2SA1576R		R160	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
Q321	8-729-905-12	TRANSISTOR DTA144EU		R161	1-216-821-11	METAL GLAZE 1K 5%	1/16W
Q322	8-729-905-35	TRANSISTOR 2SC4081R		R162	1-216-821-11	METAL GLAZE 1K 5%	1/16W
Q323	8-729-905-35	TRANSISTOR 2SC4081R		R163	1-216-833-11	METAL GLAZE 10K 5%	1/16W
Q401	8-729-905-35	TRANSISTOR 2SC4081R		R164	1-216-834-11	METAL GLAZE 12K 5%	1/16W
Q402	8-729-905-35	TRANSISTOR 2SC4081R		R165	1-216-836-11	METAL GLAZE 18K 5%	1/16W
Q403	8-729-905-23	TRANSISTOR 2SA1576R		R166	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
Q404	8-729-905-35	TRANSISTOR 2SC4081R		R167	1-216-833-11	METAL GLAZE 10K 5%	1/16W
Q405	8-729-920-XX	TRANSISTOR DTA114EU		R168	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
Q406	8-729-920-XX	TRANSISTOR DTA114EU		R169	1-216-839-11	METAL GLAZE 33K 5%	1/16W
Q407	8-729-905-18	TRANSISTOR DTC144EU		R170	1-216-839-11	METAL GLAZE 33K 5%	1/16W
Q408	8-729-905-35	TRANSISTOR 2SC4081R		R171	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
Q409	8-729-905-35	TRANSISTOR 2SC4081R		R172	1-216-834-11	METAL GLAZE 12K 5%	1/16W
Q410	8-729-905-18	TRANSISTOR DTC144EU		R173	1-216-845-11	METAL GLAZE 100K 5%	1/16W
				R174	1-216-845-11	METAL GLAZE 100K 5%	1/16W
				R175	1-216-835-11	METAL GLAZE 15K 5%	1/16W
				R176	1-216-821-11	METAL GLAZE 1K 5%	1/16W
				R177	1-216-811-11	METAL GLAZE 150 5%	1/16W
				R178	1-216-835-11	METAL GLAZE 15K 5%	1/16W
				R179	1-216-839-11	METAL GLAZE 33K 5%	1/16W
				R182	1-216-839-11	METAL GLAZE 33K 5%	1/16W
				R183	1-216-864-11	METAL GLAZE 0 5%	1/16W
				R184	1-216-842-11	METAL GLAZE 56K 5%	1/16W
				R185	1-216-836-11	METAL GLAZE 18K 5%	1/16W
				R186	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
				R188	1-216-824-11	METAL GLAZE 1.8K 5%	1/16W
				R189	1-216-841-11	METAL GLAZE 47K 5%	1/16W
				R190	1-216-836-11	METAL GLAZE 18K 5%	1/16W
				R191	1-216-820-11	METAL GLAZE 820 5%	1/16W
				R192	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
				R193	1-216-833-11	METAL GLAZE 10K 5%	1/16W
				R198	1-216-295-00	METAL GLAZE 0 5%	1/10W
				R199	1-216-821-11	METAL GLAZE 1K 5%	1/16W
				R201	1-216-864-11	METAL GLAZE 0 5%	1/16W
				R205	1-216-835-11	METAL GLAZE 15K 5%	1/16W
				R206	1-216-840-11	METAL GLAZE 39K 5%	1/16W
				R207	1-216-864-11	METAL GLAZE 0 5%	1/16W
				R210	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
				R211	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R101	1-216-864-11	METAL GLAZE 0 5%	1/16W				
R105	1-216-835-11	METAL GLAZE 15K 5%	1/16W				
R106	1-216-840-11	METAL GLAZE 39K 5%	1/16W				
R107	1-216-864-11	METAL GLAZE 0 5%	1/16W				
R108	1-216-864-11	METAL GLAZE 0 5%	1/16W				
R110	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W				
R111	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W				
R112	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W				
R113	1-216-821-11	METAL GLAZE 1K 5%	1/16W				
R114	1-216-857-11	METAL GLAZE 1M 5%	1/16W				
R115	1-216-850-11	METAL GLAZE 270K 5%	1/16W				
R116	1-216-820-11	METAL GLAZE 820 5%	1/16W				
R117	1-216-820-11	METAL GLAZE 820 5%	1/16W				
R127	1-216-864-11	METAL GLAZE 0 5%	1/16W				
R128	1-216-836-11	METAL GLAZE 18K 5%	1/16W				
R129	1-216-840-11	METAL GLAZE 39K 5%	1/16W				
R130	1-216-851-11	METAL GLAZE 330K 5%	1/16W				
R133	1-216-836-11	METAL GLAZE 18K 5%	1/16W				
R135	1-216-841-11	METAL GLAZE 47K 5%	1/16W				
R139	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W				
R142	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W				
R143	1-216-828-11	METAL GLAZE 3.9K 5%	1/16W				
R144	1-216-834-11	METAL GLAZE 12K 5%	1/16W				

RESISTOR

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R212	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W	R303	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R213	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R304	1-216-817-11	METAL GLAZE	470 5% 1/16W
R214	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R305	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R215	1-216-850-11	METAL GLAZE	270K 5% 1/16W	R306	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R216	1-216-819-11	METAL GLAZE	680 5% 1/16W	R307	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R217	1-216-819-11	METAL GLAZE	680 5% 1/16W	R308	1-216-853-11	METAL GLAZE	470K 5% 1/16W
R227	1-216-864-11	METAL GLAZE	0 5% 1/16W	R309	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R228	1-216-836-11	METAL GLAZE	18K 5% 1/16W	R310	1-216-864-11	METAL GLAZE	0 5% 1/16W
R229	1-216-840-11	METAL GLAZE	39K 5% 1/16W	R311	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R230	1-216-851-11	METAL GLAZE	330K 5% 1/16W	R312	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R233	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R313	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R235	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R314	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R239	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R315	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R242	1-216-813-11	METAL GLAZE	220 5% 1/16W	R316	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R243	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W	R318	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R244	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R319	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R245	1-216-819-11	METAL GLAZE	680 5% 1/16W	R323	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R246	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R324	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R247	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W	R325	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R248	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W	R327	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R249	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W	R328	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R250	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W	R329	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R251	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R330	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W
R252	1-216-838-11	METAL GLAZE	27K 5% 1/16W	R331	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R253	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R332	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R254	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W	R333	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R255	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R334	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R257	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R335	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R258	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W	R336	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R259	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R337	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R260	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W	R338	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R261	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R339	1-216-810-11	METAL GLAZE	120 5% 1/16W
R262	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R340	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R263	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W	R341	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R269	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R360	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R270	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R401	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R271	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W	R402	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R272	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R403	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R273	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R404	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R274	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R405	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R275	1-216-835-11	METAL GLAZE	15K 5% 1/16W	R407	1-216-849-11	METAL GLAZE	220K 5% 1/16W
R276	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R408	1-216-847-11	METAL GLAZE	150K 5% 1/16W
R277	1-216-811-11	METAL GLAZE	150 5% 1/16W	R409	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R278	1-216-835-11	METAL GLAZE	15K 5% 1/16W	R410	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R279	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R411	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R280	1-216-864-11	METAL GLAZE	0 5% 1/16W	R412	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R281	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R413	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R284	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W	R414	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R293	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R415	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R298	1-216-295-00	METAL GLAZE	0 5% 1/10W	R421	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R301	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R422	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R302	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R423	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
				R424	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W

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AU-98 SV-66

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R425	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W		*A-7062-435-A	SV-66 BOARD, COMPLETE (Ref.No 5,000 Series) ***** (Including the CC-55 board)	
R426	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W		1-634-993-11	FP-270 FLEXIBLE BOARD	
R427	1-216-864-11	METAL GLAZE 0 5%	1/16W		*3-746-902-01	CASE (LTD), SHIELD, SDD	
R428	1-216-864-11	METAL GLAZE 0 5%	1/16W		<u>CAPACITOR</u>		
R429	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C101	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V
R430	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C102	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R431	1-216-819-11	METAL GLAZE 680 5%	1/16W	C103	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R432	1-216-819-11	METAL GLAZE 680 5%	1/16W	C104	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R433	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C105	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R434	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C106	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R435	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C107	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R436	1-216-836-11	METAL GLAZE 18K 5%	1/16W	C108	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R437	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W	C109	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R438	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C110	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R440	1-216-841-11	METAL GLAZE 4.7K 5%	1/16W	C111	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R441	1-216-841-11	METAL GLAZE 4.7K 5%	1/16W	C112	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R442	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C113	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R443	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W	C114	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R444	1-216-816-11	METAL GLAZE 390 5%	1/16W	C115	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R445	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C116	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R446	1-216-845-11	METAL GLAZE 100K 5%	1/16W	C117	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R447	1-216-845-11	METAL GLAZE 100K 5%	1/16W	C118	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R450	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C119	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R451	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C120	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R453	1-216-857-11	METAL GLAZE 1M 5%	1/16W	C121	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R456	1-216-804-11	METAL GLAZE 39 5%	1/16W	C122	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
R457	1-216-804-11	METAL GLAZE 39 5%	1/16W	C123	1-162-974-11	CERAMIC CHIP 0.01MF	50V
R458	1-216-841-11	METAL GLAZE 4.7K 5%	1/16W	C124	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R459	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C125	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
R460	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C126	1-135-159-21	TANTAL. CHIP 10MF	20% 20V
R461	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W	C127	1-126-206-11	ELECT CHIP 100MF	20% 6.3V
R462	1-216-833-11	METAL GLAZE 10K 5%	1/16W	C128	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
R463	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W	C131	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
				C132	1-164-360-11	CERAMIC CHIP 0.1MF	16V
		<u>VARIABLE RESISTOR</u>		C134	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
RV101	1-238-091-11	RES, ADJ CERMET 22K		C135	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
RV102	1-238-090-11	RES, ADJ CERMET 10K		C136	1-164-360-11	CERAMIC CHIP 0.1MF	16V
RV103	1-238-090-11	RES, ADJ CERMET 10K		C138	1-164-360-11	CERAMIC CHIP 0.1MF	16V
RV201	1-238-092-11	RES, ADJ CERMET 47K		C139	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
RV202	1-238-090-11	RES, ADJ CERMET 10K		C140	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
RV203	1-238-091-11	RES, ADJ CERMET 22K		C141	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
RV204	1-238-089-11	RES, ADJ CERMET 4.7K		C142	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
RV301	1-238-086-11	RES, ADJ CERMET 470		C143	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
RV401	1-238-093-11	RES, ADJ CERMET 100K		C144	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V
RV402	1-238-093-11	RES, ADJ CERMET 100K		C145	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V
		<u>CRYSTAL</u>		C146	1-164-634-11	CERAMIC CHIP 1MF	16V
X101	1-579-050-11	VIBRATOR, CRYSTAL		C201	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V

				C202	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
				C203	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C204	1-164-634-11	CERAMIC CHIP 1MF	16V	C261	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C206	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V	C262	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C208	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C263	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C209	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C265	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C210	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C266	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C211	1-162-964-11	CERAMIC CHIP 0.001MF	10% 50V	C267	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C212	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V	C268	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C213	1-162-969-11	CERAMIC CHIP 0.0068MF	10% 25V	C269	1-162-945-11	CERAMIC CHIP 22PF	5% 50V
C214	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C270	1-164-634-11	CERAMIC CHIP 1MF	16V
C215	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C271	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C216	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C272	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C217	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C273	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C218	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C302	1-162-966-11	CERAMIC CHIP 0.0022MF	10% 50V
C219	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C305	1-162-974-11	CERAMIC CHIP 0.01MF	5% 50V
C220	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C308	1-162-956-11	CERAMIC CHIP 180PF	5% 50V
C221	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C309	1-162-947-11	CERAMIC CHIP 33PF	5% 50V
C222	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C310	1-162-963-11	CERAMIC CHIP 680PF	10% 50V
C223	1-164-634-11	CERAMIC CHIP 1MF	16V	C311	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C224	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C312	1-162-962-11	CERAMIC CHIP 470PF	10% 50V
C226	1-162-917-11	CERAMIC CHIP 15PF	5% 50V	C313	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V
C228	1-162-917-11	CERAMIC CHIP 15PF	5% 50V	C315	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V
C229	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C317	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V
C230	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C319	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C231	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C320	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V
C232	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C321	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
C233	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C401	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C234	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C402	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C235	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C403	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C236	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C404	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C237	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C405	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C238	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C406	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C239	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C407	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C240	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C408	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C241	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C409	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
C242	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C410	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C243	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C411	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C244	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C412	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C245	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C413	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
C246	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C414	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V
C247	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C415	1-162-960-11	CERAMIC CHIP 220PF	10% 50V
C248	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C416	1-162-964-11	CERAMIC CHIP 0.001MF	10% 50V
C249	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C417	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C250	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C418	1-162-916-11	CERAMIC CHIP 12PF	5% 50V
C251	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C419	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C252	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C420	1-127-491-00	ELECT(SOLID) 22MF	20% 10V
C253	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C421	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C254	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C422	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V
C255	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C423	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C256	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C424	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C257	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C425	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C258	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C426	1-127-489-11	ELECT(SOLID) 10MF	20% 10V
C259	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C427	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C260	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C428	1-127-489-11	ELECT(SOLID) 10MF	20% 10V

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SV-66

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C429	1-135-216-11	TANTAL. CHIP 10MF	20% 10V	C624	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C430	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C625	1-135-177-21	TANTAL. CHIP 1MF	20% 4V
C431	1-127-489-11	ELECT(SOLID) 10MF	20% 10V	C626	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C432	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C627	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C433	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C628	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C434	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C629	1-135-177-21	TANTAL. CHIP 1MF	20% 20V
C435	1-135-159-21	TANTAL. CHIP 10MF	20% 20V	C630	1-126-607-11	ELECT CHIP 47MF	20% 4V
C436	1-135-181-21	TANTAL. CHIP 4.7MF	20% 6.3V	C631	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C437	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C632	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C438	1-136-718-11	TANTAL. CHIP 0.1MF	5% 25V	C633	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C439	1-164-330-21	CERAMIC CHIP 0.22MF	10% 16V	C634	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C440	1-164-330-21	CERAMIC CHIP 0.22MF	10% 16V	C635	1-162-955-11	CERAMIC CHIP 150PF	5% 50V
C441	1-164-330-21	CERAMIC CHIP 0.22MF	10% 16V	C636	1-126-607-11	ELECT CHIP 47MF	20% 4V
C442	1-164-634-11	CERAMIC CHIP 1MF	16V	C637	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C443	1-135-159-21	TANTAL. CHIP 10MF	20% 20V	C638	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C444	1-162-967-11	CERAMIC CHIP 0.0033MF	10% 50V	C639	1-162-959-11	CERAMIC CHIP 330PF	5% 50V
C445	1-162-970-11	CERAMIC CHIP 0.01MF	10% 25V	C640	1-164-145-11	CERAMIC CHIP 390PF	5% 50V
C446	1-164-330-21	CERAMIC CHIP 0.22MF	10% 16V	C641	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C447	1-162-967-11	CERAMIC CHIP 0.0033MF	10% 50V	C642	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C448	1-164-330-21	CERAMIC CHIP 0.22MF	10% 16V	C643	1-126-607-11	ELECT CHIP 47MF	20% 4V
C449	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C644	1-163-135-00	CERAMIC CHIP 560PF	5% 50V
C450	1-162-967-11	CERAMIC CHIP 0.0033MF	10% 50V	C645	1-162-950-11	CERAMIC CHIP 56PF	5% 50V
C451	1-164-633-11	CERAMIC CHIP 0.1MF	10% 25V	C646	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C453	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C647	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C454	1-162-964-11	CERAMIC CHIP 0.001MF	10% 50V	C648	1-162-944-11	CERAMIC CHIP 18PF	5% 50V
C455	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C651	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C456	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C652	1-162-950-11	CERAMIC CHIP 56PF	5% 50V
C457	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V	C653	1-162-953-11	CERAMIC CHIP 100PF	5% 50V
C458	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C654	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C460	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C655	1-162-952-11	CERAMIC CHIP 82PF	5% 50V
C461	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C656	1-162-946-11	CERAMIC CHIP 27PF	5% 50V
C601	1-124-778-00	ELECT CHIP 22MF	20% 6.3V	C657	1-126-607-11	ELECT CHIP 47MF	20% 4V
C602	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C658	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C603	1-128-004-11	ELECT CHIP 10MF	20% 16V	C659	1-162-959-11	CERAMIC CHIP 330PF	5% 50V
C604	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C660	1-162-950-11	CERAMIC CHIP 56PF	5% 50V
C605	1-164-361-11	CERAMIC CHIP 0.047MF	16V	C661	1-135-201-11	TANTAL. CHIP 10MF	20% 4V
C607	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C662	1-162-944-11	CERAMIC CHIP 18PF	5% 50V
C608	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C663	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C609	1-162-959-11	CERAMIC CHIP 330PF	5% 50V	C664	1-126-607-11	ELECT CHIP 47MF	20% 4V
C610	1-162-957-11	CERAMIC CHIP 220PF	5% 50V	C665	1-128-004-11	ELECT CHIP 10MF	20% 16V
C611	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C666	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C612	1-135-201-11	TANTAL. CHIP 10MF	20% 4V	C667	1-162-943-11	CERAMIC CHIP 15PF	5% 50V
C613	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C701	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C614	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C702	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C615	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C703	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C616	1-128-004-11	ELECT CHIP 10MF	20% 16V	C704	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C617	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C705	1-128-004-11	ELECT CHIP 10MF	20% 16V
C618	1-135-201-11	TANTAL. CHIP 10MF	20% 4V	C706	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C619	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C707	1-126-607-11	ELECT CHIP 47MF	20% 4V
C620	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C710	1-162-969-11	CERAMIC CHIP 0.0068MF	10% 25V
C621	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C711	1-135-177-21	TANTAL. CHIP 1MF	20% 20V
C622	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C712	1-135-177-21	TANTAL. CHIP 1MF	20% 20V
C623	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C713	1-135-210-11	TANTAL. CHIP 4.7MF	20% 10V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark	
C714	1-135-146-21	TANTAL. CHIP 0.68MF	20%	25V	C788	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C715	1-162-995-11	CERAMIC CHIP 0.022MF		50V	C789	1-135-157-21	TANTAL. CHIP 10MF	20%
C716	1-162-945-11	CERAMIC CHIP 22PF	5%	50V	C790	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C717	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V	C791	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C718	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V	C792	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C719	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C793	1-135-157-21	TANTAL. CHIP 10MF	20%
C720	1-162-949-11	CERAMIC CHIP 47PF	5%	50V	C794	1-124-778-00	ELECT CHIP 22MF	20%
C721	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C798	1-135-149-21	TANTAL. CHIP 2.2MF	20%
C722	1-162-945-11	CERAMIC CHIP 22PF	5%	50V	C799	1-135-146-21	TANTAL. CHIP 0.68MF	20%
C723	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V	C801	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C724	1-162-952-11	CERAMIC CHIP 82PF	5%	50V	C804	1-162-965-11	CERAMIC CHIP 0.0015MF	10%
C725	1-164-360-11	CERAMIC CHIP 0.1MF		16V	C805	1-162-958-11	CERAMIC CHIP 270PF	5%
C726	1-162-949-11	CERAMIC CHIP 47PF	5%	50V	C806	1-162-943-11	CERAMIC CHIP 15PF	5%
C727	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C807	1-162-949-11	CERAMIC CHIP 47PF	5%
C728	1-162-957-11	CERAMIC CHIP 220PF	5%	50V	C809	1-162-945-11	CERAMIC CHIP 22PF	5%
C729	1-162-950-11	CERAMIC CHIP 56PF	5%	50V	C813	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C730	1-162-951-11	CERAMIC CHIP 68PF	5%	50V	C826	1-164-634-11	CERAMIC CHIP 1MF	16V
C731	1-162-954-11	CERAMIC CHIP 120PF	5%	50V	C827	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C732	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C828	1-135-157-21	TANTAL. CHIP 10MF	20%
C733	1-162-953-11	CERAMIC CHIP 100PF	5%	50V	C829	1-135-157-21	TANTAL. CHIP 10MF	20%
C734	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C831	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C735	1-162-955-11	CERAMIC CHIP 150PF	5%	50V	C832	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C741	1-129-004-11	ELECT CHIP 10MF	20%	16V	C833	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C742	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C836	1-162-943-11	CERAMIC CHIP 15PF	5%
C743	1-163-118-00	CERAMIC CHIP 110PF	5%	50V	C837	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C744	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V	C838	1-162-948-11	CERAMIC CHIP 39PF	5%
C745	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V	C839	1-162-943-11	CERAMIC CHIP 15PF	5%
C746	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V	C840	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C748	1-135-210-11	TANTAL. CHIP 4.7MF	20%	10V	C841	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C749	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C842	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C750	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V	C843	1-162-995-11	CERAMIC CHIP 0.022MF	50V
C751	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C844	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C752	1-135-177-21	TANTAL. CHIP 1MF	20%	20V	C845	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C753	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C846	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C754	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V	C847	1-162-942-11	CERAMIC CHIP 12PF	5%
C755	1-162-953-11	CERAMIC CHIP 100PF	5%	50V	C850	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C756	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V	C851	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C757	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C852	1-163-116-00	CERAMIC CHIP 91PF	5%
C758	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C854	1-163-104-00	CERAMIC CHIP 30PF	5%
C759	1-162-921-11	CERAMIC CHIP 33PF	5%	50V	C855	1-162-951-11	CERAMIC CHIP 68PF	5%
C760	1-162-923-11	CERAMIC CHIP 47PF	5%	50V	C856	1-162-955-11	CERAMIC CHIP 150PF	5%
C761	1-164-360-11	CERAMIC CHIP 0.1MF		16V	C859	1-162-954-11	CERAMIC CHIP 120PF	5%
C771	1-135-217-21	TANTAL. CHIP 15MF	20%	6.3V	C901	1-164-361-11	CERAMIC CHIP 0.047MF	16V
C772	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C902	1-162-964-11	CERAMIC CHIP 0.001MF	10%
C773	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C903	1-162-964-11	CERAMIC CHIP 0.001MF	10%
C774	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V	C905	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C775	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C906	1-135-156-21	TANTAL. CHIP 6.8MF	20%
C776	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V	C907	1-164-360-11	CERAMIC CHIP 0.1MF	16V
C777	1-162-974-11	CERAMIC CHIP 0.01MF		50V	C908	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C778	1-164-361-11	CERAMIC CHIP 0.047MF		16V	C909	1-135-157-21	TANTAL. CHIP 10MF	20%
C779	1-164-005-11	CERAMIC CHIP 0.47MF		25V	C911	1-164-634-11	CERAMIC CHIP 1MF	16V
C780	1-135-177-21	TANTAL. CHIP 1MF	20%	20V	C912	1-164-634-11	CERAMIC CHIP 1MF	16V
C781	1-126-246-11	ELECT CHIP 220MF	20%	4V	C913	1-164-634-11	CERAMIC CHIP 1MF	16V
					C999	1-161-772-11	CERAMIC 0.1MF	10%

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SV-66

Ref.No	Part No.	Description
<u>FILTER</u>		
CF701	1-577-162-11	FILTER, CERAMIC (5.17MHZ)
<u>CONNECTOR</u>		
CN001	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN002	1-569-030-11	CONNECTOR, FPC (ZIF) 21P
CN003	1-569-481-11	CONNECTOR, FPC 30P
CN004	1-569-633-61	CONNECTOR, BOARD TO BOARD 26P
CN005	1-569-631-41	CONNECTOR, BOARD TO BOARD 20P
CN006	1-569-632-41	CONNECTOR, BOARD TO BOARD 22P
CN007	1-566-532-11	CONNECTOR, FPC (ZIF) 16P
CN008	1-569-363-21	CONNECTOR, FPC 15P
CN009	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN601	*1-566-091-11	PIN, BOARD TO BOARD 6P
CN701	1-566-528-21	CONNECTOR, FPC (ZIF) 12P
CN801	1-566-534-21	CONNECTOR, FPC (ZIF) 18P
<u>TRIMMER</u>		
CV101	1-141-424-11	CAP, ADJ 30P
<u>DIODE</u>		
D101	8-719-938-72	DIODE SB01-05CP
D103	8-719-105-52	DIODE RD3.6M-B2
D104	8-719-105-XX	DIODE RD6.2M-B1
D107	8-719-941-09	DIODE DAP202U
D108	8-719-404-40	DIODE MA121
D201	8-719-941-86	DIODE DAN202U
D202	8-719-404-40	DIODE MA121
D203	8-719-404-40	DIODE MA121
D204	8-719-941-09	DIODE DAP202U
D205	8-719-941-09	DIODE DAP202U
D206	8-719-941-09	DIODE DAP202U
D301	8-719-941-86	DIODE DAN202U
D401	8-719-938-78	DIODE SB10-05PCP
D402	8-719-941-09	DIODE DAP202U
D403	8-719-938-75	DIODE SB05-05CP
D404	8-719-938-75	DIODE SB05-05CP
D601	8-719-404-40	DIODE MA121
D701	8-719-941-86	DIODE DAN202U
D702	8-719-941-86	DIODE DAN202U
D741	8-719-941-86	DIODE DAN202U
D742	8-719-941-86	DIODE DAN202U
D771	8-719-404-40	DIODE MA121
D802	8-719-800-76	DIODE 1SS225
D901	8-719-106-44	DIODE RD9.1M-B2
D902	8-719-106-44	DIODE RD9.1M-B2
<u>FERRITE BEAD</u>		
FB101	1-543-256-11	BEAD, FERRITE
FB102	1-412-390-21	INDUCTOR CHIP OUH
FB201	1-543-256-11	BEAD, FERRITE
FB202	1-543-256-11	BEAD, FERRITE

Remark	Ref.No	Part No.	Description	Remark
	FB203	1-412-390-21	INDUCTOR CHIP OUH	
	FB204	1-412-390-21	INDUCTOR CHIP OUH	
	FB205	1-543-256-11	BEAD, FERRITE	
<u>FILTER</u>				
	FL651	1-236-848-21	FILTER, LOW PASS	
	FL652	1-236-847-21	FILTER, LOW PASS	
	FL653	1-236-751-21	FILTER, LOW PASS	
	FL654	1-415-764-21	DELAY LINE, LC	
	FL701	1-236-849-21	FILTER, BAND PASS	
	FL702	1-236-186-11	FILTER, BAND PASS	
	FL741	1-236-850-21	FILTER, BAND PASS	
	FL801	1-409-475-21	FILTER, TRAP	
<u>IC</u>				
	IC101	8-752-815-30	IC CXP50116-093Q	
	IC102	8-759-502-36	IC S-81350HG	
	IC103	8-759-940-33	IC S-8052AL0-LG-S	
	IC104	8-759-946-03	IC S-8054ALR-LN-S	
	IC105	8-759-720-23	IC AK93C57F	
	IC106	8-759-009-22	IC MC14094BF	
	IC107	8-759-209-15	IC TC4S69F	
	IC108	8-759-209-97	IC TC4S81F	
	IC109	8-759-209-97	IC TC4S81F	
	IC201	8-759-234-77	IC TC4S66F	
	IC202	8-759-234-77	IC TC4S66F	
	IC204	8-759-999-11	IC LM358D	
	IC206	8-752-815-31	IC CXP80116-805Q	
	IC301	1-809-200-11	ATF-H1C (PAL)	
	IC302	8-759-100-97	IC UPC339G2	
	IC401	8-759-945-17	IC MB3775PF	
	IC402	8-759-998-94	IC LM311D	
	IC403	8-759-990-55	IC CXA8006M	
	IC404	8-759-805-06	IC CXA1127M	
	IC405	8-759-107-68	IC CX20115A	
	IC601	8-752-036-19	IC CXA1207	
	IC651	8-759-710-86	IC NJM2233BM	
	IC701	8-752-036-20	IC CXA1208R	
	IC741	8-759-605-61	IC CXA1203N	
	IC771	8-752-033-40	IC CXA1201Q	
	IC802	8-759-012-00	IC MC10H116M	
	IC901	8-759-701-02	IC NJM2073M	
<u>JACK</u>				
	J101	1-563-282-11	JACK, SMALL TYPE	
	J701	1-569-639-11	JACK, PIN 3P	
<u>COIL</u>				
	L102	1-410-993-11	INDUCTOR CHIP 1UH	
	L103	1-410-993-11	INDUCTOR CHIP 1UH	
	L104	1-410-993-11	INDUCTOR CHIP 1UH	
	L105	1-410-993-11	INDUCTOR CHIP 1UH	
	L106	1-410-993-11	INDUCTOR CHIP 1UH	

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

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	Remark	Ref.No	Part No.	Description	Remark
L107	1-410-993-11	INDUCTOR CHIP 7UH		L901	1-412-032-11	INDUCTOR CHIP 100UH	
L201	1-408-789-21	INDUCTOR CHIP 100UH		L902	1-412-031-11	INDUCTOR CHIP 47UH	
L203	1-410-993-11	INDUCTOR CHIP 7UH				<u>IC LINK</u>	
L204	1-410-993-11	INDUCTOR CHIP 7UH		PS101A	1-532-605-00	LINK, IC	
L205	1-410-993-11	INDUCTOR CHIP 7UH		PS201A	1-532-605-00	LINK, IC	
L206	1-410-993-11	INDUCTOR CHIP 7UH				<u>TRANSISTOR</u>	
L207	1-410-993-11	INDUCTOR CHIP 7UH		Q101	8-729-905-18	TRANSISTOR DTC144EU	
L208	1-410-993-11	INDUCTOR CHIP 7UH		Q102	8-729-905-35	TRANSISTOR 2SC4081R	
L209	1-410-993-11	INDUCTOR CHIP 7UH		Q103	8-729-220-93	TRANSISTOR 2SK209G	
L210	1-410-993-11	INDUCTOR CHIP 7UH		Q104	8-729-905-18	TRANSISTOR DTC144EU	
L211	1-410-993-11	INDUCTOR CHIP 7UH		Q105	8-729-905-35	TRANSISTOR 2SC4081R	
L401	1-424-104-11	COIL, CHOKE 10UH		Q106	8-729-905-23	TRANSISTOR 2SA1576R	
L402	1-410-337-11	INDUCTOR 7UH		Q107	8-729-220-93	TRANSISTOR 2SK209G	
L403	1-424-104-11	COIL, CHOKE 10UH		Q108	8-729-220-93	TRANSISTOR 2SK209G	
L404	1-424-104-11	COIL, CHOKE 10UH		Q109	8-729-905-12	TRANSISTOR DTA144EU	
L405	1-424-105-11	COIL, CHOKE 47UH		Q110	8-729-905-35	TRANSISTOR 2SC4081R	
L406	1-424-104-11	COIL, CHOKE 10UH		Q111	8-729-905-26	TRANSISTOR 2SA1576Q	
L407	1-424-105-11	COIL, CHOKE 47UH		Q112	8-729-905-26	TRANSISTOR 2SA1576Q	
L408	1-424-105-11	COIL, CHOKE 22UH		Q113	8-729-921-08	TRANSISTOR DTC144TU	
L409	1-408-789-21	INDUCTOR CHIP 100UH		Q114	8-729-403-24	TRANSISTOR XN4210	
L601	1-412-029-11	INDUCTOR CHIP 10UH		Q116	8-729-403-24	TRANSISTOR XN4210	
L602	1-412-032-11	INDUCTOR CHIP 100UH		Q117	8-729-905-18	TRANSISTOR DTC144EU	
L603	1-410-379-31	INDUCTOR CHIP 6.8UH		Q118	8-729-920-59	TRANSISTOR IMX2	
L604	1-410-390-11	INDUCTOR CHIP 56UH		Q120	8-729-905-35	TRANSISTOR 2SC4081R	
L605	1-410-391-11	INDUCTOR CHIP 68UH		Q201	8-729-905-35	TRANSISTOR 2SC4081R	
L651	1-410-388-21	INDUCTOR CHIP 39UH		Q202	8-729-905-35	TRANSISTOR 2SC4081R	
L652	1-410-390-11	INDUCTOR CHIP 56UH		Q203	8-729-921-08	TRANSISTOR DTC144TU	
L653	1-410-391-11	INDUCTOR CHIP 68UH		Q204	8-729-902-96	TRANSISTOR FMS1	
L654	1-410-392-11	INDUCTOR CHIP 82UH		Q205	8-729-903-82	TRANSISTOR FMW2	
L702	1-410-386-11	INDUCTOR CHIP 27UH		Q206	8-729-907-00	TRANSISTOR DTC114EU	
L703	1-410-393-11	INDUCTOR CHIP 100UH		Q207	8-729-905-35	TRANSISTOR 2SC4081	
L704	1-410-379-31	INDUCTOR CHIP 6.8UH		Q208	8-729-820-46	TRANSISTOR 2SB1202FAS	
L705	1-410-393-11	INDUCTOR CHIP 100UH		Q209	8-729-905-35	TRANSISTOR 2SC4081R	
L706	1-410-656-11	INDUCTOR CHIP 150UH		Q210	8-729-403-24	TRANSISTOR XN4210	
L707	1-410-655-31	INDUCTOR CHIP 120UH		Q212	8-729-905-12	TRANSISTOR DTA144EU	
L708	1-410-393-11	INDUCTOR CHIP 100UH		Q213	8-729-905-18	TRANSISTOR DTC144EU	
L709	1-412-031-11	INDUCTOR CHIP 47UH		Q214	8-729-905-18	TRANSISTOR DTC144EU	
L741	1-412-031-11	INDUCTOR CHIP 47UH		Q215	8-729-905-18	TRANSISTOR DTC144EU	
L771	1-412-029-11	INDUCTOR CHIP 10UH		Q216	8-729-905-35	TRANSISTOR 2SC4081R	
L772	1-412-032-11	INDUCTOR CHIP 100UH		Q301	8-729-905-23	TRANSISTOR 2SA1576R	
L773	1-412-032-11	INDUCTOR CHIP 100UH		Q302	8-729-905-35	TRANSISTOR 2SC4081R	
L801	1-410-167-41	INDUCTOR CHIP 820UH		Q303	8-729-905-23	TRANSISTOR 2SA1576R	
L802	1-410-657-21	INDUCTOR CHIP 180UH		Q304	8-729-905-35	TRANSISTOR 2SC4081R	
L803	1-412-032-11	INDUCTOR CHIP 100UH		Q305	8-729-905-18	TRANSISTOR DTC144EU	
L804	1-412-032-11	INDUCTOR CHIP 100UH		Q306	8-729-905-18	TRANSISTOR DTC144EU	
L808	1-410-386-11	INDUCTOR CHIP 27UH		Q307	8-729-920-48	TRANSISTOR 1M2	
L809	1-410-381-11	INDUCTOR CHIP 10UH		Q401	8-729-905-35	TRANSISTOR 2SC4081R	
L810	1-410-386-11	INDUCTOR CHIP 27UH		Q402	8-729-901-04	TRANSISTOR DTA114EK	
L811	1-410-380-31	INDUCTOR CHIP 8.2UH		Q403	8-729-905-35	TRANSISTOR 2SC4081R	
L813	1-410-386-11	INDUCTOR CHIP 27UH		Q404	8-729-805-25	TRANSISTOR 2SB1121	
L817	1-410-658-31	INDUCTOR CHIP 220UH		Q405	8-729-905-35	TRANSISTOR 2SC4081R	
L818	1-410-656-11	INDUCTOR CHIP 150UH					
L819	1-412-280-31	INDUCTOR 330UH					

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SV-66

Ref.No	Part No.	Description
Q406	8-729-905-61	TRANSISTOR DTC124EU
Q407	8-729-905-35	TRANSISTOR 2SC4081R
Q408	▲8-729-805-25	TRANSISTOR 2SB1121
Q409	▲8-729-805-25	TRANSISTOR 2SB1121
Q410	8-729-805-25	TRANSISTOR 2SB1121
Q411	8-729-805-25	TRANSISTOR 2SB1121
Q412	8-729-905-35	TRANSISTOR 2SC4081R
Q413	8-729-907-00	TRANSISTOR DTC114EU
Q415	8-729-905-18	TRANSISTOR DTC144EU
Q416	8-729-905-12	TRANSISTOR DTA144EU
Q418	8-729-141-48	TRANSISTOR 2SB624-BV345
Q419	8-729-907-00	TRANSISTOR DTC114EU
Q420	8-729-907-00	TRANSISTOR DTC114EU
Q601	8-729-905-12	TRANSISTOR DTA144EU
Q602	8-729-905-35	TRANSISTOR 2SC4081R
Q603	8-729-905-35	TRANSISTOR 2SC4081R
Q604	8-729-905-35	TRANSISTOR 2SC4081R
Q605	8-729-905-23	TRANSISTOR 2SA1576R
Q609	8-729-905-18	TRANSISTOR DTC144EU
Q651	8-729-905-23	TRANSISTOR 2SA1576R
Q652	8-729-905-35	TRANSISTOR 2SC4081R
Q653	8-729-905-35	TRANSISTOR 2SC4081R
Q654	8-729-905-23	TRANSISTOR 2SA1576R
Q655	8-729-905-35	TRANSISTOR 2SC4081R
Q656	8-729-905-35	TRANSISTOR 2SC4081R
Q657	8-729-905-23	TRANSISTOR 2SA1576R
Q658	8-729-905-35	TRANSISTOR 2SC4081R
Q659	8-729-905-35	TRANSISTOR 2SC4081R
Q660	8-729-905-23	TRANSISTOR 2SA1576R
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-18	TRANSISTOR DTC144EU
Q663	8-729-920-48	TRANSISTOR 1MH2
Q665	8-729-905-35	TRANSISTOR 2SC4081R
Q701	8-729-905-35	TRANSISTOR 2SC4081R
Q702	8-729-905-18	TRANSISTOR DTC144EU
Q703	8-729-905-35	TRANSISTOR 2SC4081R
Q704	8-729-905-18	TRANSISTOR DTC144EU
Q705	8-729-905-35	TRANSISTOR 2SC4081R
Q706	8-729-905-23	TRANSISTOR 2SA1576R
Q707	8-729-905-35	TRANSISTOR 2SC4081R
Q709	8-729-905-18	TRANSISTOR DTC144EU
Q741	8-729-905-18	TRANSISTOR DTC144EU
Q743	8-729-905-12	TRANSISTOR DTA144EU
Q744	8-729-907-39	TRANSISTOR 1MD2
Q745	8-729-920-48	TRANSISTOR 1MH2
Q746	8-729-905-35	TRANSISTOR 2SC4081R
Q747	8-729-905-35	TRANSISTOR 2SC4081R
Q748	8-729-905-18	TRANSISTOR DTC144EU
Q749	8-729-102-07	TRANSISTOR 2SC2223-F13
Q750	8-729-905-35	TRANSISTOR 2SC4081R
Q751	8-729-905-35	TRANSISTOR 2SC4081R

Remark	Ref.No	Part No.	Description	Remark
	Q771	8-729-907-00	TRANSISTOR DTC114EU	
	Q772	8-729-905-12	TRANSISTOR DTA144EU	
	Q773	8-729-905-18	TRANSISTOR DTC144EU	
	Q774	8-729-905-18	TRANSISTOR DTC144EU	
	Q775	8-729-905-35	TRANSISTOR 2SC4081R	
	Q777	8-729-905-23	TRANSISTOR 2SA1576R	
	Q778	8-729-905-18	TRANSISTOR DTC144EU	
	Q779	8-729-905-35	TRANSISTOR 2SC4081R	
	Q780	8-729-141-48	TRANSISTOR 2SB624-BV345	
	Q804	8-729-905-35	TRANSISTOR 2SC4081R	
	Q806	8-729-905-12	TRANSISTOR DTA144EU	
	Q808	8-729-905-35	TRANSISTOR 2SC4081R	
	Q809	8-729-905-23	TRANSISTOR 2SA1576R	
	Q813	8-729-905-18	TRANSISTOR DTC144EU	
	Q814	8-729-141-48	TRANSISTOR 2SB624-BV345	
	Q815	8-729-905-35	TRANSISTOR 2SC4081R	
	Q818	8-729-822-51	TRANSISTOR 2SK1469-FA	
	Q819	8-729-141-48	TRANSISTOR 2SB624-BV345	
	Q820	8-729-905-18	TRANSISTOR DTC144EU	
	Q822	8-729-905-35	TRANSISTOR 2SC4081R	
	Q823	8-729-905-23	TRANSISTOR 2SA1576R	
	Q824	8-729-905-35	TRANSISTOR 2SC4081R	
	Q825	8-729-905-23	TRANSISTOR 2SA1576R	
	Q826	8-729-905-35	TRANSISTOR 2SC4081R	
	Q827	8-729-905-35	TRANSISTOR 2SC4081R	
	Q831	8-729-920-48	TRANSISTOR 1MH2	
	Q901	8-729-905-35	TRANSISTOR 2SC4081R	
	Q902	8-729-141-48	TRANSISTOR 2SB624-BV345	
	Q911	8-729-905-35	TRANSISTOR 2SC4081R	
	Q912	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

Ref.No	Part No.	Description	Value	Power	Temp
R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R102	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R103	1-216-851-11	METAL GLAZE	330K	5%	1/16W
R104	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R105	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R106	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R107	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R108	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R109	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R110	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R112	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R113	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R115	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R118	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R127	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R130	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R131	1-216-834-11	METAL GLAZE	12K	5%	1/16W
R132	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R133	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R135	1-216-839-11	METAL GLAZE	33K	5%	1/16W

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R136	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R210	1-216-843-11	METAL GLAZE	68K 5% 1/16W
R137	1-216-843-11	METAL GLAZE	68K 5% 1/16W	R211	1-216-843-11	METAL GLAZE	68K 5% 1/16W
R138	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R212	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R139	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R213	1-216-192-00	METAL GLAZE	560 5% 1/8W
R140	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R214	1-216-172-00	METAL GLAZE	82 5% 1/8W
R141	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R215	1-216-835-11	METAL GLAZE	15K 5% 1/16W
R144	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R216	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R145	1-216-849-11	METAL GLAZE	220K 5% 1/16W	R217	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R146	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W	R218	1-216-857-11	METAL GLAZE	1M 5% 1/16W
R147	1-216-025-00	METAL GLAZE	100 5% 1/10W	R219	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R155	1-216-849-11	METAL GLAZE	220K 5% 1/16W	R220	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R156	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R221	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R157	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R222	1-216-853-11	METAL GLAZE	470K 5% 1/16W
R158	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R223	1-216-853-11	METAL GLAZE	470K 5% 1/16W
R159	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R224	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R160	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R225	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R161	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R226	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R162	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R227	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R163	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R228	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R164	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R229	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R165	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R230	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R166	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R231	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R167	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R232	1-216-842-11	METAL GLAZE	56K 5% 1/16W
R168	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R233	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R169	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R235	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R170	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R236	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R171	1-216-834-11	METAL GLAZE	12K 5% 1/16W	R237	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R172	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R238	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R173	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R239	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R174	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R241	1-216-336-11	METAL GLAZE	47K 1% 1/10W
R175	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R242	1-216-336-11	METAL GLAZE	47K 1% 1/10W
R179	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R250	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R181	1-216-864-11	METAL GLAZE	0 5% 1/16W	R251	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R182	1-216-864-11	METAL GLAZE	0 5% 1/16W	R252	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R184	1-216-864-11	METAL GLAZE	0 5% 1/16W	R253	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R186	1-216-864-11	METAL GLAZE	0 5% 1/16W	R262	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R188	1-216-864-11	METAL GLAZE	0 5% 1/16W	R264	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R190	1-216-864-11	METAL GLAZE	0 5% 1/16W	R265	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R191	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R267	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R194	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R268	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R195	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R269	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R196	1-216-815-11	METAL GLAZE	330 5% 1/16W	R270	1-216-194-00	METAL GLAZE	680 5% 1/8W
R197	1-216-838-11	METAL GLAZE	27K 5% 1/16W	R271	1-216-194-00	METAL GLAZE	680 5% 1/8W
R198	1-216-826-11	METAL GLAZE	2.7K 5% 1/16W	R272	1-216-194-00	METAL GLAZE	680 5% 1/8W
R201	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R273	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R202	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R274	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R203	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R275	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R204	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R276	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R205	1-216-838-11	METAL GLAZE	27K 5% 1/16W	R277	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R206	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R278	1-216-864-11	METAL GLAZE	0 5% 1/16W
R207	1-216-851-11	METAL GLAZE	330K 5% 1/16W	R279	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R208	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W	R280	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R209	1-216-838-11	METAL GLAZE	27K 5% 1/16W	R281	1-216-833-11	METAL GLAZE	10K 5% 1/16W

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SV-66

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R282	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R421	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R283	1-216-821-11	METAL GLAZE 1K 5%	1/16W	R422	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R284	1-216-865-11	METAL GLAZE 3K 5%	1/16W	R423	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W
R299	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R424	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W
R301	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W	R425	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R302	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W	R426	1-216-830-11	METAL GLAZE 5.6K 5%	1/16W
R303	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W	R427	1-216-824-11	METAL GLAZE 1.8K 5%	1/16W
R304	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W	R428	1-216-837-11	METAL GLAZE 22K 5%	1/16W
R305	1-216-854-11	METAL GLAZE 560K 5%	1/16W	R429	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R306	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W	R430	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W
R307	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R431	1-216-789-11	METAL GLAZE 2.2 5%	1/16W
R308	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W	R432	1-216-789-11	METAL GLAZE 2.2 5%	1/16W
R309	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W	R433	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R312	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R434	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
R313	1-216-847-11	METAL GLAZE 150K 5%	1/16W	R435	1-216-789-11	METAL GLAZE 2.2 5%	1/16W
R314	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R436	1-216-815-11	METAL GLAZE 330 5%	1/16W
R316	1-216-839-11	METAL GLAZE 33K 5%	1/16W	R437	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R317	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R438	1-216-838-11	METAL GLAZE 27K 5%	1/16W
R318	1-216-821-11	METAL GLAZE 1K 5%	1/16W	R439	1-216-838-11	METAL GLAZE 27K 5%	1/16W
R319	1-216-809-11	METAL GLAZE 100 5%	1/16W	R440	1-216-838-11	METAL GLAZE 27K 5%	1/16W
R320	1-216-811-11	METAL GLAZE 150 5%	1/16W	R441	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R321	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W	R443	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R322	1-216-838-11	METAL GLAZE 27K 5%	1/16W	R444	1-216-848-11	METAL GLAZE 180K 5%	1/16W
R323	1-216-857-11	METAL GLAZE 1M 5%	1/16W	R445	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R325	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W	R446	1-216-848-11	METAL GLAZE 180K 5%	1/16W
R326	1-216-824-11	METAL GLAZE 1.8K 5%	1/16W	R447	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R327	1-216-857-11	METAL GLAZE 1M 5%	1/16W	R448	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
R328	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R450	1-216-864-11	METAL GLAZE 0 5%	1/16W
R329	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W	R451	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R330	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R452	1-216-839-11	METAL GLAZE 33K 5%	1/16W
R331	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R453	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
R332	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R454	1-216-841-11	METAL GLAZE 47K 5%	1/16W
R334	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R455	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R342	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R456	1-216-801-11	METAL GLAZE 22 5%	1/16W
R401	1-216-845-11	METAL GLAZE 100K 5%	1/16W	R460	1-217-671-11	METAL GLAZE 1 5%	1/10W
R402	1-216-833-11	METAL GLAZE 10K 5%	1/16W	R461	1-217-671-11	METAL GLAZE 1 5%	1/10W
R403	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W	R462	1-217-671-11	METAL GLAZE 1 5%	1/10W
R404	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W	R463	1-217-671-11	METAL GLAZE 1 5%	1/10W
R405	1-216-828-11	METAL GLAZE 3.9K 5%	1/16W	R464	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R407	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W	R466	1-216-837-11	METAL GLAZE 22K 5%	1/16W
R408	1-216-836-11	METAL GLAZE 18K 5%	1/16W	R467	1-216-828-11	METAL GLAZE 3.9K 5%	1/16W
R409	1-216-033-00	METAL GLAZE 220 5%	1/10W	R468	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
R410	1-216-033-00	METAL GLAZE 220 5%	1/10W	R469	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R411	1-216-045-00	METAL GLAZE 680 5%	1/10W	R470	1-216-815-11	METAL GLAZE 330 5%	1/16W
R412	1-216-841-11	METAL GLAZE 47K 5%	1/16W	R471	1-216-839-11	METAL GLAZE 33K 5%	1/16W
R413	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W	R601	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R414	1-216-841-11	METAL GLAZE 47K 5%	1/16W	R602	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R415	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W	R603	1-216-838-11	METAL GLAZE 27K 5%	1/16W
R416	1-216-045-00	METAL GLAZE 680 5%	1/10W	R604	1-216-857-11	METAL GLAZE 1M 5%	1/16W
R417	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W	R605	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
R418	1-216-824-11	METAL GLAZE 1.8K 5%	1/16W	R606	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R419	1-216-045-00	METAL GLAZE 680 5%	1/10W	R607	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R420	1-216-841-11	METAL GLAZE 47K 5%	1/16W	R608	1-216-821-11	METAL GLAZE 1K 5%	1/16W

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R609	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R676	1-216-841-11	METAL GLAZE	47K 5% 1/16W
R610	1-216-861-11	METAL GLAZE	2.2M 5% 1/16W	R677	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R611	1-216-849-11	METAL GLAZE	220K 5% 1/16W	R678	1-216-813-11	METAL GLAZE	220 5% 1/16W
R612	1-216-349-11	METAL GLAZE	240K 5% 1/16W	R679	1-216-809-11	METAL GLAZE	100 5% 1/16W
R614	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R680	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R615	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R681	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R616	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R682	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R617	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R683	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R618	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R684	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R619	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W	R685	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R620	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W	R686	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R621	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W	R687	1-216-816-11	METAL GLAZE	390 5% 1/16W
R622	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W	R688	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R623	1-216-817-11	METAL GLAZE	470 5% 1/16W	R689	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R624	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W	R690	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R629	1-216-811-11	METAL GLAZE	150 5% 1/16W	R701	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R630	1-216-813-11	METAL GLAZE	220 5% 1/16W	R702	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R631	1-216-815-11	METAL GLAZE	330 5% 1/16W	R703	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R632	1-216-801-11	METAL GLAZE	22 5% 1/16W	R705	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R633	1-216-820-11	METAL GLAZE	820 5% 1/16W	R706	1-249-441-11	CARBON	100K
R634	1-216-819-11	METAL GLAZE	680 5% 1/16W	R707	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R635	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W	R708	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R636	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R709	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R637	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R710	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R638	1-216-817-11	METAL GLAZE	470 5% 1/16W	R711	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W
R639	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R712	1-216-817-11	METAL GLAZE	470 5% 1/16W
R640	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R715	1-216-838-11	METAL GLAZE	27K 5% 1/16W
R641	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W	R716	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R651	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R717	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R652	1-216-842-11	METAL GLAZE	56K 5% 1/16W	R718	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R653	1-216-817-11	METAL GLAZE	470 5% 1/16W	R719	1-216-816-11	METAL GLAZE	390 5% 1/16W
R654	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R720	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W
R655	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R721	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R656	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R722	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W
R657	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R724	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R658	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R725	1-216-818-11	METAL GLAZE	560 5% 1/16W
R659	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R726	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R660	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R727	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R661	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R728	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R662	1-216-842-11	METAL GLAZE	56K 5% 1/16W	R729	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R663	1-216-817-11	METAL GLAZE	470 5% 1/16W	R730	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R664	1-216-809-11	METAL GLAZE	100 5% 1/16W	R731	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R665	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R732	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R666	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R733	1-216-864-11	METAL GLAZE	0 5% 1/16W
R667	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R734	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R668	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R736	1-216-827-11	METAL GLAZE	3.3K 5% 1/16W
R669	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R737	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R670	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W	R738	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R671	1-216-830-11	METAL GLAZE	5.6K 5% 1/16W	R739	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R672	1-216-819-11	METAL GLAZE	680 5% 1/16W	R741	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R673	1-216-819-11	METAL GLAZE	680 5% 1/16W	R742	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W
R674	1-216-813-11	METAL GLAZE	220 5% 1/16W	R743	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R675	1-216-814-11	METAL GLAZE	270 5% 1/16W	R744	1-216-816-11	METAL GLAZE	390 5% 1/16W
				R745	1-216-820-11	METAL GLAZE	820 5% 1/16W

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SV-66

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R746	1-216-699-11	METAL CHIP	100K 0.50% 1/10W	R809	1-216-818-11	METAL GLAZE	560 5% 1/16W
R747	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W	R810	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R748	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W	R811	1-216-839-11	METAL GLAZE	33K 5% 1/16W
R749	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R822	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W
R750	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R825	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R751	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R826	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R752	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R832	1-216-840-11	METAL GLAZE	39K 5% 1/16W
R753	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R833	1-216-022-00	METAL GLAZE	75 5% 1/10W
R754	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R834	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R755	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R835	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R756	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R836	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W
R757	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R837	1-216-849-11	METAL GLAZE	220K 5% 1/16W
R758	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R838	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W
R759	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R839	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R760	1-216-817-11	METAL GLAZE	470 5% 1/16W	R840	1-216-817-11	METAL GLAZE	470 5% 1/16W
R761	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W	R841	1-216-817-11	METAL GLAZE	470 5% 1/16W
R762	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R843	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R763	1-216-835-11	METAL GLAZE	15K 5% 1/16W	R844	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R764	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R847	1-216-818-11	METAL GLAZE	560 5% 1/16W
R765	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R849	1-216-836-11	METAL GLAZE	18K 5% 1/16W
R766	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R850	1-216-834-11	METAL GLAZE	12K 5% 1/16W
R767	1-216-829-11	METAL GLAZE	4.7K 5% 1/16W	R851	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R768	1-216-841-11	METAL GLAZE	47K 5% 1/16W	R852	1-216-809-11	METAL GLAZE	100 5% 1/16W
R769	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R855	1-216-814-11	METAL GLAZE	270 5% 1/16W
R770	1-216-824-11	METAL GLAZE	1.8K 5% 1/16W	R856	1-216-817-11	METAL GLAZE	470 5% 1/16W
R771	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W	R857	1-216-817-11	METAL GLAZE	470 5% 1/16W
R772	1-216-809-11	METAL GLAZE	100 5% 1/16W	R860	1-216-817-11	METAL GLAZE	470 5% 1/16W
R773	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R861	1-216-818-11	METAL GLAZE	560 5% 1/16W
R774	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R862	1-216-819-11	METAL GLAZE	680 5% 1/16W
R775	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R863	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R776	1-216-845-11	METAL GLAZE	100K 5% 1/16W	R864	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R777	1-216-817-11	METAL GLAZE	470 5% 1/16W	R865	1-216-832-11	METAL GLAZE	8.2K 5% 1/16W
R778	1-216-864-11	METAL GLAZE	0 5% 1/16W	R867	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R779	1-216-857-11	METAL GLAZE	1M 5% 1/16W	R868	1-216-831-11	METAL GLAZE	6.8K 5% 1/16W
R780	1-216-828-11	METAL GLAZE	3.9K 5% 1/16W	R875	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R782	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R876	1-216-817-11	METAL GLAZE	470 5% 1/16W
R783	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R877	1-216-817-11	METAL GLAZE	470 5% 1/16W
R784	1-216-015-00	METAL GLAZE	39 5% 1/10W	R878	1-216-812-11	METAL GLAZE	180 5% 1/16W
R785	1-216-013-00	METAL GLAZE	33 5% 1/10W	R879	1-216-818-11	METAL GLAZE	560 5% 1/16W
R786	1-216-699-11	METAL CHIP	100K 0.50% 1/10W	R880	1-216-817-11	METAL GLAZE	470 5% 1/16W
R787	1-216-822-11	METAL GLAZE	1.2K 5% 1/16W	R882	1-216-821-11	METAL GLAZE	1K 5% 1/16W
R788	1-216-839-11	METAL GLAZE	33K 5% 1/16W	R885	1-216-817-11	METAL GLAZE	470 5% 1/16W
R789	1-216-833-11	METAL GLAZE	10K 5% 1/16W	R886	1-216-817-11	METAL GLAZE	470 5% 1/16W
R790	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R889	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R791	1-216-836-11	METAL GLAZE	18K 5% 1/16W	R890	1-216-837-11	METAL GLAZE	22K 5% 1/16W
R792	1-216-304-11	METAL GLAZE	3.3 5% 1/10W	R895	1-216-833-11	METAL GLAZE	10K 5% 1/16W
R793	1-216-830-11	METAL GLAZE	5.8K 5% 1/16W	R901	1-216-789-11	METAL GLAZE	2.2 5% 1/16W
R801	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R902	1-216-789-11	METAL GLAZE	2.2 5% 1/16W
R804	1-216-811-11	METAL GLAZE	150 5% 1/16W	R906	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R805	1-216-837-11	METAL GLAZE	22K 5% 1/16W	R907	1-216-845-11	METAL GLAZE	100K 5% 1/16W
R806	1-216-821-11	METAL GLAZE	1K 5% 1/16W	R908	1-216-819-11	METAL GLAZE	680 5% 1/16W
R807	1-216-816-11	METAL GLAZE	390 5% 1/16W	R909	1-216-825-11	METAL GLAZE	2.2K 5% 1/16W
R808	1-216-864-11	METAL GLAZE	0 5% 1/16W	R911	1-216-841-11	METAL GLAZE	47K 5% 1/16W

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

Ref.No	Part No.	Description	Remark
R912	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R913	1-216-861-11	METAL GLAZE 2.2M 5%	1/16W
R914	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R915	1-216-845-11	METAL GLAZE 100K 5%	1/16W
R916	1-216-849-11	METAL GLAZE 220K 5%	1/16W
R917	1-216-813-11	METAL GLAZE 220 5%	1/16W
R918	1-216-813-11	METAL GLAZE 220 5%	1/16W
R919	1-216-813-11	METAL GLAZE 220 5%	1/16W
R920	1-216-813-11	METAL GLAZE 220 5%	1/16W
R931	1-216-864-11	METAL GLAZE 0 5%	1/16W
R932	1-216-864-11	METAL GLAZE 0 5%	1/16W
R933	1-216-864-11	METAL GLAZE 0 5%	1/16W
R934	1-216-864-11	METAL GLAZE 0 5%	1/16W
R935	1-216-864-11	METAL GLAZE 0 5%	1/16W
R936	1-216-864-11	METAL GLAZE 0 5%	1/16W

NETWORK RESISTOR

RB101	1-236-412-11	NETWORK, RES 1.0K
RB102	1-236-432-11	NETWORK, RES 47K
RB103	1-236-432-11	NETWORK, RES 47K
RB104	1-236-424-11	NETWORK, RES 10K
RB105	1-236-424-11	NETWORK, RES 10K
RB106	1-236-424-11	NETWORK, RES 10K
RB107	1-236-424-11	NETWORK, RES 10K
RB108	1-236-424-11	NETWORK, RES 10K
RB109	1-236-424-11	NETWORK, RES 10K
RB110	1-236-424-11	NETWORK, RES 10K
RB111	1-236-412-11	NETWORK, RES 1.0K
RB112	1-236-412-11	NETWORK, RES 1.0K
RB113	1-236-424-11	NETWORK, RES 10K
RB115	1-236-412-11	NETWORK, RES 1.0K
RB116	1-236-412-11	NETWORK, RES 1.0K
RB117	1-236-412-11	NETWORK, RES 1.0K
RB118	1-236-412-11	NETWORK, RES 1.0K
RB119	1-236-412-11	NETWORK, RES 1.0K
RB120	1-236-412-11	NETWORK, RES 1.0K
RB121	1-236-412-11	NETWORK, RES 1.0K
RB122	1-236-424-11	NETWORK, RES 10K
RB123	1-236-424-11	NETWORK, RES 10K
RB130	1-236-424-11	NETWORK, RES 10K
RB131	1-236-424-11	NETWORK, RES 10K
RB132	1-236-436-11	NETWORK, RES 100K
RB201	1-236-412-11	NETWORK, RES 1.0K
RB202	1-236-412-11	NETWORK, RES 1.0K
RB203	1-236-412-11	NETWORK, RES 1.0K
RB204	1-236-412-11	NETWORK, RES 1.0K
RB205	1-236-412-11	NETWORK, RES 1.0K
RB206	1-236-412-11	NETWORK, RES 1.0K
RB207	1-236-412-11	NETWORK, RES 1.0K
RB208	1-236-412-11	NETWORK, RES 1.0K
RB209	1-236-412-11	NETWORK, RES 1.0K
RB210	1-236-412-11	NETWORK, RES 1.0K
RB211	1-236-412-11	NETWORK, RES 1.0K

Ref.No	Part No.	Description	Remark
RB212	1-236-412-11	NETWORK, RES 1.0K	
RB213	1-236-412-11	NETWORK, RES 1.0K	
RB214	1-236-424-11	NETWORK, RES 10K	
RB215	1-236-424-11	NETWORK, RES 10K	
RB216	1-236-424-11	NETWORK, RES 10K	
RB217	1-236-424-11	NETWORK, RES 10K	
RB218	1-236-424-11	NETWORK, RES 10K	
RB219	1-236-424-11	NETWORK, RES 10K	
RB220	1-236-424-11	NETWORK, RES 10K	
RB221	1-236-424-11	NETWORK, RES 10K	
RB222	1-236-424-11	NETWORK, RES 10K	
RB223	1-236-412-11	NETWORK, RES 1.0K	
RB224	1-236-424-11	NETWORK, RES 10K	
RB225	1-236-412-11	NETWORK, RES 1.0K	
RB227	1-236-412-11	NETWORK, RES 1.0K	
RB801	1-236-412-11	NETWORK, RES 1.0K	
RB802	1-236-412-11	NETWORK, RES 1.0K	
RB803	1-236-412-11	NETWORK, RES 1.0K	
RB804	1-236-412-11	NETWORK, RES 1.0K	

VARIABLE RESISTOR

RV301	1-238-090-11	RES, ADJ CERMET 10K
RV401	1-238-087-11	RES, ADJ CERMET 1K
RV402	1-238-089-11	RES, ADJ CERMET 4.7K
RV601	1-238-091-11	RES, ADJ CERMET 22K
RV602	1-238-092-11	RES, ADJ CERMET 47K
RV603	1-238-089-11	RES, ADJ CERMET 4.7K
RV604	1-238-088-11	RES, ADJ CERMET 2.2K
RV605	1-238-088-11	RES, ADJ CERMET 2.2K
RV651	1-238-087-11	RES, ADJ CERMET 1K
RV652	1-238-087-11	RES, ADJ CERMET 1K
RV653	1-238-088-11	RES, ADJ CERMET 2.2K
RV701	1-238-087-11	RES, ADJ CERMET 1K
RV741	1-238-090-11	RES, ADJ CERMET 10K
RV742	1-238-089-11	RES, ADJ CERMET 4.7K
RV771	1-238-092-11	RES, ADJ CERMET 47K
RV772	1-238-087-11	RES, ADJ CERMET 1K
RV802	1-238-087-11	RES, ADJ CERMET 1K

CRYSTAL

X101	1-527-997-21	VIBRATOR, CRYSTAL
X102	1-577-118-11	VIBRATOR, LITHIUM NIOBATE
X201	1-577-349-21	VIBRATOR, CRYSTAL
X701	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)

A-7062-436-A CC-55 BOARD, COMPLETE (Ref.No 5,000 Series)

CAPACITOR

CO01	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
CO02	1-162-974-11	CERAMIC CHIP 0.01MF		50V
CO03	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V

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

CC-55**RG-22**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C004	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C011	1-164-634-11	CERAMIC CHIP 1MF	16V
C005	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C012	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C006	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C013	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C007	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C014	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C008	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C015	1-164-634-11	CERAMIC CHIP 1MF	16V
C009	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C017	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
C010	1-164-360-11	CERAMIC CHIP 0.1MF	16V	C018	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
C011	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C019	1-162-638-11	CERAMIC CHIP 1MF	16V
C012	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C020	1-162-638-11	CERAMIC CHIP 1MF	16V
C013	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C021	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C014	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C022	1-135-076-21	TANTAL. CHIP 1MF	20% 35V
C015	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C023	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C016	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C025	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C017	1-162-974-11	CERAMIC CHIP 0.01MF	50V	C026	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C018	1-162-946-11	CERAMIC CHIP 27PF	5% 50V	C027	1-164-232-11	CERAMIC CHIP 0.01MF	50V
<u>IC</u>				C028	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
IC001	8-752-333-24	IC CXL1506M		C029	1-135-162-21	TANTAL. CHIP 33MF	20% 6.3V
<u>COIL</u>				C030	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
L001	1-410-988-11	INDUCTOR CHIP 0.39UH		C031	1-162-638-11	CERAMIC CHIP 1MF	16V
L002	1-410-988-11	INDUCTOR CHIP 0.39UH		C032	1-162-638-11	CERAMIC CHIP 1MF	16V
L003	1-412-031-11	INDUCTOR CHIP 47UH		C034	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
L004	1-410-988-11	INDUCTOR CHIP 0.39UH		C035	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
L005	1-410-988-11	INDUCTOR CHIP 0.39UH		C036	1-164-232-11	CERAMIC CHIP 0.01MF	50V
L006	1-410-988-11	INDUCTOR CHIP 0.39UH		C037	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
L007	1-410-988-11	INDUCTOR CHIP 0.39UH		C038	1-164-232-11	CERAMIC CHIP 0.01MF	50V
L008	1-412-031-11	INDUCTOR CHIP 47UH		C039	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
L009	1-410-988-11	INDUCTOR CHIP 0.39UH		C040	1-164-232-11	CERAMIC CHIP 0.01MF	50V
L010	1-410-988-11	INDUCTOR CHIP 0.39UH		C041	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
<u>RESISTOR</u>				C042	1-164-232-11	CERAMIC CHIP 0.01MF	50V
R001	1-216-857-11	METAL GLAZE 1M 5%	1/16W	C043	1-162-638-11	CERAMIC CHIP 1MF	16V
R002	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W	C044	1-162-638-11	CERAMIC CHIP 1MF	16V
R003	1-216-810-11	METAL GLAZE 120 5%	1/16W	C045	1-162-638-11	CERAMIC CHIP 1MF	16V
R004	1-216-844-11	METAL GLAZE 82K 5%	1/16W	C046	1-164-232-11	CERAMIC CHIP 0.01MF	50V
R005	1-216-823-11	METAL GLAZE 1.5K 5%	1/16W	C047	1-163-038-00	CERAMIC CHIP 0.1MF	25V
R006	1-216-864-11	METAL GLAZE 0 5%	1/16W	C048	1-164-232-11	CERAMIC CHIP 0.01MF	50V
*****				C049	1-164-232-11	CERAMIC CHIP 0.01MF	50V
*A-7062-437-A RG-22 BOARD, COMPLETE (Ref.No 2,000 Series)				C050	1-164-232-11	CERAMIC CHIP 0.01MF	50V
*****				C051	1-163-038-00	CERAMIC CHIP 0.1MF	25V
<u>CAPACITOR</u>				C052	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C001	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C053	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C002	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V	C054	1-135-156-21	TANTAL. CHIP 6.8MF	20% 10V
C004	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	C055	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C005	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C056	1-135-156-21	TANTAL. CHIP 6.8MF	20% 10V
C006	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C057	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C007	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C058	1-126-199-11	ELECT CHIP 6.8MF	20% 35V
C008	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C059	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C009	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C060	1-126-199-11	ELECT CHIP 6.8MF	20% 35V
C010	1-126-206-11	ELECT CHIP 100MF	20% 6.3V	C061	1-164-232-11	CERAMIC CHIP 0.01MF	50V
				C062	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C063	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
				C064	1-163-139-00	CERAMIC CHIP 820PF	10% 50V
				C065	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
				C066	1-126-204-11	ELECT CHIP 47MF	20% 16V

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C067	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	L003	1-412-029-11	INDUCTOR CHIP 10UH
C068	1-126-206-11	ELECT CHIP 100MF	20%	6.3V	L004	1-410-388-21	INDUCTOR CHIP 39UH
C069	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L005	1-410-388-21	INDUCTOR CHIP 39UH
C070	1-164-634-11	CERAMIC CHIP 1MF		16V	L006	1-410-386-11	INDUCTOR CHIP 27UH
C071	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L007	1-412-028-11	INDUCTOR CHIP 4.7UH
C072	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L008	1-412-028-11	INDUCTOR CHIP 4.7UH
C073	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L009	1-412-032-11	INDUCTOR CHIP 100UH
C074	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	L010	1-412-032-11	INDUCTOR CHIP 100UH
C075	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	L011	1-410-383-31	INDUCTOR CHIP 15UH
C076	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L012	1-410-388-21	INDUCTOR CHIP 39UH
C077	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L013	1-412-029-11	INDUCTOR CHIP 10UH
C078	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	L801	1-412-066-21	INDUCTOR CHIP 220UH
C079	1-164-232-11	CERAMIC CHIP 0.01MF		50V	L802	1-412-192-11	INDUCTOR 56UH
C080	1-164-232-11	CERAMIC CHIP 0.01MF		50V			
C081	1-164-232-11	CERAMIC CHIP 0.01MF		50V			
C082	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V			
C083	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V			
C084	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V			
C085	1-164-232-11	CERAMIC CHIP 0.01MF		50V			
C086	1-164-232-11	CERAMIC CHIP 0.01MF		50V			
C803	1-163-038-00	CERAMIC CHIP 0.1MF		25V			
C804	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V			
C805	1-163-105-00	CERAMIC CHIP 33PF	5%	50V			
C809	1-163-038-00	CERAMIC CHIP 0.1MF		25V			
<u>CONNECTOR</u>							
CN001	1-565-212-11	CONNECTOR, FPC (ZIF) 26P					
CN002	1-568-238-11	CONNECTOR, FPC (1.0MM) (ZIF) 16P					
CN501	1-568-235-21	CONNECTOR, FPC (1.0MM) (ZIF) 10P					
CN901	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P					
<u>TRIMMER</u>							
CV001	1-141-311-11	CAP, CHIP TRIMMER					
CV002	1-141-370-11	CAP, CHIP TRIMMER					
CV801	1-141-368-11	CAP, CHIP TRIMMER					
<u>DIODE</u>							
D001	8-719-914-47	DIODE MA152WK					
<u>DELAY LINE</u>							
DL001	1-415-649-11	DELAY LINE, 1H (ULTRASONIC)					
<u>FILTER</u>							
FL001	1-236-955-11	FILTER, LOW PASS (Y:PAL)					
<u>IC</u>							
IC001	8-759-009-07	IC MC14053BF					
IC002	8-759-635-37	IC M52003AFP					
IC801	8-759-150-07	IC UPD6451AGT-601					
<u>COIL</u>							
L002	1-410-381-11	INDUCTOR CHIP 10UH					
L003	1-412-029-11	INDUCTOR CHIP 10UH					
L004	1-410-388-21	INDUCTOR CHIP 39UH					
L005	1-410-388-21	INDUCTOR CHIP 39UH					
L006	1-410-386-11	INDUCTOR CHIP 27UH					
L007	1-412-028-11	INDUCTOR CHIP 4.7UH					
L008	1-412-028-11	INDUCTOR CHIP 4.7UH					
L009	1-412-032-11	INDUCTOR CHIP 100UH					
L010	1-412-032-11	INDUCTOR CHIP 100UH					
L011	1-410-383-31	INDUCTOR CHIP 15UH					
L012	1-410-388-21	INDUCTOR CHIP 39UH					
L013	1-412-029-11	INDUCTOR CHIP 10UH					
L801	1-412-066-21	INDUCTOR CHIP 220UH					
L802	1-412-192-11	INDUCTOR 56UH					
<u>TRANSISTOR</u>							
Q001	8-729-100-66	TRANSISTOR 2SC1623					
Q002	8-729-100-66	TRANSISTOR 2SC1623					
Q003	8-729-100-66	TRANSISTOR 2SC1623					
Q004	8-729-901-01	TRANSISTOR DTC144EK					
Q005	8-729-901-01	TRANSISTOR DTC144EK					
Q006	8-729-904-41	TRANSISTOR FMY3					
Q007	8-729-904-44	TRANSISTOR FMY4					
Q008	8-729-904-41	TRANSISTOR FMY3					
Q009	8-729-904-44	TRANSISTOR FMY4					
Q010	8-729-904-41	TRANSISTOR FMY3					
Q011	8-729-904-44	TRANSISTOR FMY4					
Q012	8-729-901-03	TRANSISTOR DTC144WK					
Q013	8-729-141-48	TRANSISTOR 2SB624-BV345					
Q014	8-729-901-01	TRANSISTOR DTC144EK					
Q015	8-729-100-66	TRANSISTOR 2SC1623					
Q901	8-729-901-00	TRANSISTOR DTC124EK					
Q902	8-729-901-05	TRANSISTOR DTA124EK					
<u>RESISTOR</u>							
R001	1-216-748-11	METAL GLAZE 39K 5%		1/10W			
R002	1-216-089-00	METAL GLAZE 47K 5%		1/10W			
R003	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R004	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R005	1-216-061-00	METAL GLAZE 3.3K 5%		1/10W			
R006	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R007	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R008	1-216-073-00	METAL GLAZE 10K 5%		1/10W			
R009	1-216-295-00	METAL GLAZE 0 5%		1/10W			
R010	1-216-051-00	METAL GLAZE 1.2K 5%		1/10W			
R011	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R012	1-216-079-00	METAL GLAZE 18K 5%		1/10W			
R013	1-216-085-00	METAL GLAZE 33K 5%		1/10W			
R014	1-216-683-11	METAL CHIP 22K 0.50%		1/10W			
R015	1-216-689-11	METAL CHIP 39K 0.50%		1/10W			
R016	1-216-038-00	METAL GLAZE 360 5%		1/10W			
R017	1-216-049-00	METAL GLAZE 1K 5%		1/10W			
R018	1-216-067-00	METAL GLAZE 5.6K 5%		1/10W			
R019	1-216-066-00	METAL GLAZE 5.1K 5%		1/10W			

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

RG-22

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R020	1-216-047-00	METAL GLAZE 820 5%	1/10W	R087	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R021	1-216-083-00	METAL GLAZE 27K 5%	1/10W	R084	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R023	1-216-047-00	METAL GLAZE 820 5%	1/10W	R085	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R024	1-216-043-00	METAL GLAZE 560 5%	1/10W	R086	1-216-748-11	METAL GLAZE 39K 5%	1/10W
R025	1-216-104-00	METAL GLAZE 200K 5%	1/10W	R087	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R027	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	R501	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R028	1-216-047-00	METAL GLAZE 820 5%	1/10W	R502	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R029	1-216-121-00	METAL GLAZE 1M 5%	1/10W	R503	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R030	1-216-121-00	METAL GLAZE 1M 5%	1/10W	R504	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R031	1-216-121-00	METAL GLAZE 1M 5%	1/10W	R505	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R032	1-216-047-00	METAL GLAZE 820 5%	1/10W	R506	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R033	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R507	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R034	1-216-043-00	METAL GLAZE 560 5%	1/10W	R801	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R035	1-216-748-11	METAL GLAZE 39K 5%	1/10W	R802	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R036	1-216-081-00	METAL GLAZE 22K 5%	1/10W	R803	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R037	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W	R804	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R038	1-216-075-00	METAL GLAZE 12K 5%	1/10W	R805	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R039	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W	R806	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R040	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	R807	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R041	1-216-295-00	METAL GLAZE 0 5%	1/10W	R808	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R043	1-216-295-00	METAL GLAZE 0 5%	1/10W	R809	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R044	1-216-295-00	METAL GLAZE 0 5%	1/10W	R810	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R045	1-216-542-11	METAL GLAZE 12K 1%	1/10W	R811	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R046	1-216-333-11	METAL GLAZE 15K 1%	1/10W	R812	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R047	1-216-295-00	METAL GLAZE 0 5%	1/10W	R901	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R048	1-216-295-00	METAL GLAZE 0 5%	1/10W	<u>VARIABLE RESISTOR</u>			
R049	1-216-073-00	METAL GLAZE 10K 5%	1/10W	RV001	1-241-118-11	RES, VAR, CARBON 20K	
R050	1-216-081-00	METAL GLAZE 22K 5%	1/10W	RV002	1-238-088-11	RES, ADJ, CERMET 2.2K	
R051	1-216-748-11	METAL GLAZE 39K 5%	1/10W	RV003	1-238-092-11	RES, ADJ CERMET 47K	
R052	1-216-031-00	METAL GLAZE 180 5%	1/10W	RV004	1-241-006-11	RES, VAR, CARBON 50K	
R054	1-216-295-00	METAL GLAZE 0 5%	1/10W	RV005	1-238-092-11	RES, ADJ CERMET 47K	
R055	1-216-295-00	METAL GLAZE 0 5%	1/10W	RV006	1-238-092-11	RES, ADJ CERMET 47K	
R056	1-216-295-00	METAL GLAZE 0 5%	1/10W	RV007	1-238-092-11	RES, ADJ CERMET 47K	
R057	1-216-033-00	METAL GLAZE 220 5%	1/10W	RV008	1-238-092-11	RES, ADJ CERMET 47K	
R059	1-216-295-00	METAL GLAZE 0 5%	1/10W	RV009	1-238-092-11	RES, ADJ CERMET 47K	
R060	1-216-043-00	METAL GLAZE 560 5%	1/10W	RV601	1-241-029-11	RES, VAR, CARBON 2K/2K	
R061	1-216-077-00	METAL GLAZE 15K 5%	1/10W	<u>SWITCH</u>			
R062	1-216-077-00	METAL GLAZE 15K 5%	1/10W	SW601	1-570-386-21	SWITCH, SLIDE (DBB)	
R063	1-216-090-00	METAL GLAZE 51K 5%	1/10W	<u>COIL</u>			
R064	1-216-077-00	METAL GLAZE 15K 5%	1/10W	T001	1-459-949-11	COIL	
R065	1-216-077-00	METAL GLAZE 15K 5%	1/10W	<u>CRYSTAL</u>			
R066	1-216-077-00	METAL GLAZE 15K 5%	1/10W	X001	1-567-504-81	OSCILLATOR, CRYSTAL (4.43MHz)	
R067	1-216-077-00	METAL GLAZE 15K 5%	1/10W	*****			
R068	1-216-033-00	METAL GLAZE 220 5%	1/10W				
R069	1-216-332-11	METAL GLAZE 11K 1%	1/10W				
R070	1-216-747-11	METAL GLAZE 33K 1%	1/10W				
R072	1-216-101-00	METAL GLAZE 150K 5%	1/10W				
R073	1-216-039-00	METAL GLAZE 390 5%	1/10W				
R076	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W				
R077	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W				
R078	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W				
R079	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W				
R080	1-216-089-00	METAL GLAZE 47K 5%	1/10W				

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7062-438-A		TU-126 BOARD, COMPLETE (Ref.No *****)	6,000 Series)	C051	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
	3-744-166-01	HOLDER, ANTENNA		C054	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	3-746-907-01	LID, TOD SHIELD CASE		C058	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
	3-746-908-01	LID, REAR, TOD SHIELD CASE		C059	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	3-746-915-01	LID, REAR, TU SHIELD CASE		C060	1-135-217-21	TANTAL. CHIP 15MF	20% 6.3V
<u>CAPACITOR</u>				C061	1-163-016-00	CERAMIC CHIP 0.0039MF	10% 50V
C001	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C062	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C002	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C063	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C004	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C065	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C005	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C066	1-126-206-11	ELECT CHIP 100MF	20% 6.3V
C006	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C070	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C007	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C071	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C008	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C072	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C009	1-126-205-11	ELECT CHIP 47MF	20% 6.3V	C073	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C010	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C101	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V
C011	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C501	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C012	1-163-090-00	CERAMIC CHIP 7PF	0.25PF 50V	C502	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C013	1-163-090-00	CERAMIC CHIP 7PF	0.25PF 50V	C503	1-135-217-21	TANTAL. CHIP 15MF	20% 6.3V
C014	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C504	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C018	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C505	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C019	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C506	1-126-204-11	ELECT CHIP 47MF	20% 16V
C020	1-135-217-21	TANTAL. CHIP 15MF	20% 6.3V	C507	1-135-156-21	TANTAL. CHIP 6.8MF	20% 10V
C021	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C508	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C022	1-135-181-21	TANTAL. CHIP 4.7MF	20% 6.3V	C509	1-124-779-00	ELECT CHIP 10MF	20% 16V
C023	1-164-222-11	CERAMIC CHIP 0.22MF	25V	C510	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C024	1-164-336-11	CERAMIC CHIP 0.33MF	25V	C511	1-126-200-11	ELECT CHIP 10MF	20% 35V
C025	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V	C512	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C026	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C513	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C027	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C514	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C028	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C515	1-135-156-21	TANTAL. CHIP 6.8MF	20% 10V
C029	1-126-206-11	ELECT CHIP 100MF	20% 6.3V	C516	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C030	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C517	1-135-153-21	TANTAL. CHIP 2.2MF	20% 25V
C031	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C518	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C032	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V	C520	1-126-602-11	ELECT CHIP 3.3MF	20% 50V
C033	1-164-232-11	CERAMIC CHIP 0.01MF	50V	C521	1-163-036-00	CERAMIC CHIP 0.068MF	50V
C034	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C522	1-135-155-21	TANTAL. CHIP 4.7MF	20% 16V
C035	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C524	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C036	1-163-036-00	CERAMIC CHIP 0.068MF	50V	C525	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C037	1-163-036-00	CERAMIC CHIP 0.068MF	50V	C526	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C038	1-163-036-00	CERAMIC CHIP 0.068MF	50V	C527	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C039	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	<u>FILTER</u>			
C040	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	CF051	1-577-560-11	FILTER, CERAMIC	
C041	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	CF052	1-579-217-11	DISCRIMINATOR, CERAMIC	
C042	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	CF053	1-409-478-11	FILTER, TRAP (CERAMIC)	
C044	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	CF061	1-577-561-11	FILTER, CERAMIC	
C045	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	CF062	1-579-218-11	DISCRIMINATOR, CERAMIC	
C046	1-135-181-21	TANTAL. CHIP 4.7MF	20% 6.3V	<u>CONNECTOR</u>			
C047	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	CN001	1-569-634-41	CONNECTOR, BOARD TO BOARD 30P	
C048	1-163-115-00	CERAMIC CHIP 82PF	5% 50V	CN002	1-566-523-11	CONNECTOR, FPC (ZIF) 7P	
C049	1-163-099-00	CERAMIC CHIP 18PF	5% 50V	CN003	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
C050	1-163-109-00	CERAMIC CHIP 47PF	5% 50V				

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

TU-126

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>DIODE</u>							
D001	8-719-801-50	DIODE MA152WK		Q010	8-729-216-22	TRANSISTOR 2SA1162	
D501	8-719-801-50	DIODE MA152WK		Q011	8-729-100-66	TRANSISTOR 2SC1623	
D502	8-719-801-50	DIODE MA152WK		Q012	8-729-901-01	TRANSISTOR DTC144EK	
D503	8-719-801-50	DIODE MA152WK		Q013	8-729-901-01	TRANSISTOR DTC144EK	
D504	8-719-801-50	DIODE MA152WK		Q014	8-729-901-01	TRANSISTOR DTC144EK	
D601	8-719-106-44	DIODE RD9.1M-B2		Q015	8-729-100-66	TRANSISTOR 2SC1623	
<u>INDUCTOR CHIP</u>							
F8501	1-412-390-21	INDUCTOR CHIP OUH		Q016	8-729-100-66	TRANSISTOR 2SC1623	
F8502	1-412-390-21	INDUCTOR CHIP OUH		Q501	8-729-421-15	TRANSISTOR 2SD1119-Q	
<u>IC</u>							
IC001	8-759-504-59	IC TDA3842T-T		Q502	8-729-901-06	TRANSISTOR DTA144EK	
IC002	8-759-634-94	IC M52018FP		Q503	8-729-901-01	TRANSISTOR DTC144EK	
IC005	8-759-998-92	IC LM393D		Q504	8-729-601-58	TRANSISTOR 2SC3053-C	
IC501	8-759-500-70	IC FA7610W		<u>RESISTOR</u>			
IC502	8-759-157-40	IC UPC574J		R002	1-216-295-00	METAL GLAZE 0 5%	1/10W
<u>AMPLIFIER</u>							
IU001	1-466-330-11	AMPLIFIER, ISOLATION (RA-1)		R003	1-216-295-00	METAL GLAZE 0 5%	1/10W
<u>JACK</u>							
J001	1-507-921-00	JACK		R006	1-216-021-00	METAL GLAZE 68 5%	1/10W
J601	1-563-282-21	JACK, SMALL TYPE		R007	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
J602	1-563-282-21	JACK, SMALL TYPE		R008	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
<u>COIL</u>							
L002	1-410-987-11	INDUCTOR CHIP 0.33UH		R009	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
L004	1-412-029-11	INDUCTOR CHIP 10UH		R010	1-216-019-00	METAL GLAZE 56 5%	1/10W
L005	1-412-031-11	INDUCTOR CHIP 47UH		R011	1-216-049-00	METAL GLAZE 1K 5%	1/10W
L006	1-410-377-31	INDUCTOR CHIP 4.7UH		R012	1-216-041-00	METAL GLAZE 470 5%	1/10W
L007	1-410-380-31	INDUCTOR CHIP 8.2UH		R013	1-216-017-00	METAL GLAZE 47 5%	1/10W
L008	1-410-393-11	INDUCTOR CHIP 100UH		R014	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
L051	1-410-992-11	INDUCTOR CHIP 0.82UH		R015	1-216-045-00	METAL GLAZE 680 5%	1/10W
L052	1-412-029-11	INDUCTOR CHIP 10UH		R016	1-216-033-00	METAL GLAZE 220 5%	1/10W
L053	1-412-029-11	INDUCTOR CHIP 10UH		R017	1-216-037-00	METAL GLAZE 330 5%	1/10W
L501	1-412-028-11	INDUCTOR CHIP 4.7UH		R018	1-216-021-00	METAL GLAZE 68 5%	1/10W
L502	1-412-028-11	INDUCTOR CHIP 4.7UH		R019	1-216-029-00	METAL GLAZE 150 5%	1/10W
L503	1-412-028-11	INDUCTOR CHIP 4.7UH		R020	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
L505	1-412-030-11	INDUCTOR CHIP 22UH		R021	1-216-021-00	METAL GLAZE 68 5%	1/10W
<u>TRANSISTOR</u>							
Q001	8-729-230-XX	TRANSISTOR 2SC26690Y		R022	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q002	8-729-100-66	TRANSISTOR 2SC1623		R023	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q003	8-729-901-47	TRANSISTOR DTA143EK		R026	1-216-081-00	METAL GLAZE 22K 5%	1/10W
Q004	8-729-901-47	TRANSISTOR DTA143EK		R027	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q005	8-729-901-47	TRANSISTOR DTA143EK		R028	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
Q006	8-729-901-01	TRANSISTOR DTC144EK		R029	1-216-109-00	METAL GLAZE 330K 5%	1/10W
Q007	8-729-901-01	TRANSISTOR DTC144EK		R031	1-216-081-00	METAL GLAZE 22K 5%	1/10W
Q008	8-729-216-22	TRANSISTOR 2SA1162		R032	1-216-081-00	METAL GLAZE 22K 5%	1/10W
Q009	8-729-100-66	TRANSISTOR 2SC1623		R033	1-216-077-00	METAL GLAZE 15K 5%	1/10W
				R034	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R035	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R036	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
				R038	1-216-121-00	METAL GLAZE 1M 5%	1/10W
				R039	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
				R040	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
				R041	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
				R042	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
				R043	1-216-091-00	METAL GLAZE 56K 5%	1/10W
				R044	1-216-091-00	METAL GLAZE 56K 5%	1/10W
				R045	1-216-079-00	METAL GLAZE 18K 5%	1/10W
				R046	1-216-077-00	METAL GLAZE 15K 5%	1/10W
				R047	1-216-079-00	METAL GLAZE 18K 5%	1/10W

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

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

TU-126**UC-6****KB-10P**

Ref.No	Part No.	Description	Quantity	Material	Power	Temp
R048	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R049	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R051	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R056	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R057	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R058	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R059	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R060	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R068	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R069	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R070	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R071	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R072	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R073	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R075	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R101	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R102	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R105	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R106	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R107	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R108	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R109	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R111	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R501	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R502	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R503	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R504	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R505	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R506	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R507	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R508	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R509	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R511	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R512	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R513	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R514	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R516	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R517	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R518	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R520	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R521	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R601	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R602	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R603	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R604	1-216-025-00	METAL GLAZE	100	5%	1/10W	
<u>VARIABLE RESISTOR</u>						
RV101	1-238-087-11	RES, ADJ CERMET 1K				
RV501	1-238-087-11	RES, ADJ CERMET 1K				

Ref.No	Part No.	Description	Quantity	Material	Power	Temp
<u>FILTER</u>						
SWF001	1-579-170-11	FILTER, SAW				
SWF002	1-579-169-11	FILTER, SAW				
<u>TRANSFORMER</u>						
T001	1-460-079-11	COIL				
T002	1-460-078-11	COIL				
T004	1-460-078-11	COIL				
T101	1-460-078-11	COIL				
T501	1-450-107-11	TRANSFORMER, DC-DC CONVERTER				
<u>TUNER</u>						
TU001	<u>A</u> 1-465-569-11	TUNER, ET (BT-KG301)				

	*1-634-347-11	UC-6 BOARD (Ref.No 4,000 Series)				

	*3-746-939-01	INSULATOR, UC				
<u>CONNECTOR</u>						
CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P				
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P				
CN003	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P				

	*A-7071-287-A	KB-10P BOARD, COMPLETE (Ref.No 4,000 Series)				

	*3-744-130-01	HOLDER (PC), LED				
<u>CONNECTOR</u>						
CN802	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P				
<u>DIODE</u>						
D801	8-719-937-45	DIODE GL-1EG101				
D803	8-719-975-81	DIODE GL1PR111				
D804	8-719-975-81	DIODE GL1PR111				
D805	8-719-975-81	DIODE GL1PR111				
D806	8-719-970-14	DIODE GL1HY111				
D808	8-719-951-22	DIODE 1M10T108				
D809	8-719-951-22	DIODE 1M10T108				
D810	8-719-104-34	DIODE 1S2835-T1				
<u>TRANSISTOR</u>						
Q801	8-729-403-24	TRANSISTOR XN4210-TW				
Q802	8-729-403-24	TRANSISTOR XN4210-TW				
Q803	8-729-403-24	TRANSISTOR XN4210-TW				
Q804	8-729-920-48	TRANSISTOR 1M2-T110				
<u>RESISTOR</u>						
R801	1-216-033-00	METAL GLAZE	220	5%	1/10W	

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

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

KB-10P**DC-22P****CN-6P****SB-3P**

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
R803	1-216-037-00	METAL GLAZE 330 5% 1/10W		D605	8-719-106-43	DIODE RD9, 1M-T1B1	
R804	1-216-037-00	METAL GLAZE 330 5% 1/10W		D606	8-719-106-43	DIODE RD9, 1M-T1B1	
R805	1-216-037-00	METAL GLAZE 330 5% 1/10W		D608	8-719-106-43	DIODE RD9, 1M-T1B1	
R806	1-216-035-00	METAL GLAZE 270 5% 1/10W					
R808	1-216-075-00	METAL GLAZE 12K 5% 1/10W					
		SWITCH					
S801	1-572-344-11	SWITCH, SLIDE (POWER)		J601	1-562-952-11	CONNECTOR 12P	
S802	1-572-078-11	SWITCH, TACTILE (CH -)					
S803	1-572-078-11	SWITCH, TACTILE (CH +)					
S805	1-571-102-11	SWITCH, SLIDE (EJECT)					
S806	1-572-078-11	SWITCH, TACTILE (REW)					
S807	1-572-078-11	SWITCH, TACTILE (FF)					
S808	1-572-078-11	SWITCH, TACTILE (PB)					
S809	1-572-078-11	SWITCH, TACTILE (STOP)					
S810	1-572-078-11	SWITCH, TACTILE (PAUSE)					
S811	1-571-102-11	SWITCH, SLIDE (REC)					
S812	1-572-078-11	SWITCH, TACTILE (SLOW)					

	*A-7071-288-A	DC-22P BOARD, COMPLETE (Ref.No 4,000 Series)					
	*3-744-170-01	HOLDER, DC					
	3-746-959-01	SPACER, DC					
		JACK					
J702	1-537-241-11	TERMINAL BOARD (BATTERY)					
		IC LINK					
PS701	△1-532-840-21	LINK, IC					
PS702	△1-532-840-21	LINK, IC					
PS703	△1-532-840-21	LINK, IC					
PS704	△1-532-840-21	LINK, IC					
PS705	△1-532-840-21	LINK, IC					
PS706	△1-532-840-21	LINK, IC					
		FLAT CABLE					
W701	1-575-823-11	CABLE, FLAT (1.0MM PITCH) 16P					

	*A-7071-289-A	CN-6P BOARD, COMPLETE (Ref.No 3,000 Series)					
		CONNECTOR					
CN601	1-566-544-41	CONNECTOR, FPC (NON ZIF) 12P					
CN602	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P					
		DIODE					
D602	8-719-106-43	DIODE RD9, 1M-T1B1					
D603	8-719-106-43	DIODE RD9, 1M-T1B1					
D604	8-719-106-43	DIODE RD9, 1M-T1B1					

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		JACK	
J601	1-562-952-11	CONNECTOR 12P	

	*A-7071-290-A	SB-3P BOARD, COMPLETE (Ref.No 6,000 Series)	
		CONNECTOR	
CN901	1-566-539-11	CONNECTOR, FPC (NON ZIF) 7P	
		RESISTOR	
R901	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R903	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R904	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R906	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R907	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R908	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
		SWITCH	
S901	1-572-078-11	SWITCH, TACTILE (LINE AUDIO SELECT)	
S902	1-572-078-11	SWITCH, TACTILE (MAIN/SUB)	
S904	1-572-078-11	SWITCH, TACTILE (TV SYSTEM)	
S905	1-572-078-11	SWITCH, TACTILE (SP/LP)	
S906	1-572-078-11	SWITCH, TACTILE (CLEAR)	
S907	1-572-078-11	SWITCH, TACTILE (POSITION)	
S908	1-572-078-11	SWITCH, TACTILE (PRESET)	
S909	1-572-078-11	SWITCH, TACTILE (SEEK)	
S910	1-572-078-11	SWITCH, TACTILE (INPUT SEL)	

		MISCELLANEOUS	

△	1-466-333-11	INVERTER UNIT, DC-AC	
	1-466-334-11	SWITCH BLOCK, CONTROL	
	1-501-456-11	ANTENNA, TELESCOPIC	
	1-544-323-11	SPEAKER	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE	
	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE	
	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-994-11	FP-271 FLEXIBLE BOARD	
	1-634-995-11	FP-272 FLEXIBLE BOARD	

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

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

Ref.No	Part No.	Description	Remark
	1-634-996-11	FP-273 FLEXIBLE BOARD	
	1-634-997-11	FP-274 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
BL901	1-518-668-11	TUBE UNIT, FLUORECENT	
D301	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
LCD901	1-809-002-12	DISPLAY MODULE, LIQUID CRYSTAL	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S302	1-572-298-11	SWITCH, PUSH (ME/MP, MP HG, REC PROOF)	
S901	1-571-099-11	SWITCH (CASSETTE DOWN)	

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
1-417-176-11	DISTRIBUTOR, ANTENNA (GERMANY MODEL)	
▲ 1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)	
1-574-517-11	CORD, CONNECTION	
2-366-919-00	BAG, PROTECTION	
3-728-996-01	CASE, SOFT	
*3-744-184-01	CUSHION (UPPER)	
*3-744-185-01	CUSHION (LOWER)	
3-751-853-11	MANUAL, INSTRUCTION (ENGLISH) (AEP/UK MODEL)	
3-751-853-41	MANUAL, INSTRUCTION (GERMAN/FRENCH/SPANISH) (AEP MODEL)	
3-751-853-51	MANUAL, INSTRUCTION (DUTCH/SWEDISH/ITALIAN) (AEP MODEL)	
3-751-853-61	MANUAL, INSTRUCTION (GERMAN) (GERMANY MODEL)	

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

- *3-749-794-01 CUSHION (UPPER), ACC
- *3-749-785-01 CUSHION (LOWER), ACC
- ** AC-V30 AC POWER ADAPTOR
- *** NP-66H BATTERY PACK (AEP MODEL)
- *** MDR-E454 HEAD PHONE

Note

- ** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
- *** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

Ref.No	Part No.	Description	Remark
		HARDWARE LIST *****	
		SCREW	
	7-627-553-18	SCREW, PRECISTON +P 2X2	
	7-627-555-88	SCREW, PRECISTON +P 1.4X1.8	
	7-627-652-08	SCREW, PRECISTON +RK 2X2.5	
	7-627-553-37	SCREW, PRECISTON +P 2X3 TYPE 3	
	7-627-553-68	SCREW, PRECISTON +P 2X6 TYPE 3	
		NUT	
	7-584-023-04	N 3, TYPE 2	
		WASHER	
	7-623-208-22	SW 3, TYPE 2	
	7-688-003-01	W 3, SMALL	

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

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

SECTION 7 MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

Refer to mechanical adjustment (8 mm Video MECHANICAL ADJUSTMENT MANUAL III) manual for the adjustments and checks of mechanism section and the mechanical parts replacement. (9-972-732-11)

For setting of the track shift mode, however, refer to the following.

7-1. SETTING THE TRACK SHIFT MODE

[Setting Method]

- 1) Setting the test mode* 0011 (Jig switching position 3)

CN802

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

Jig switching
position 3

*Refer to [8-1-7. Test mode].

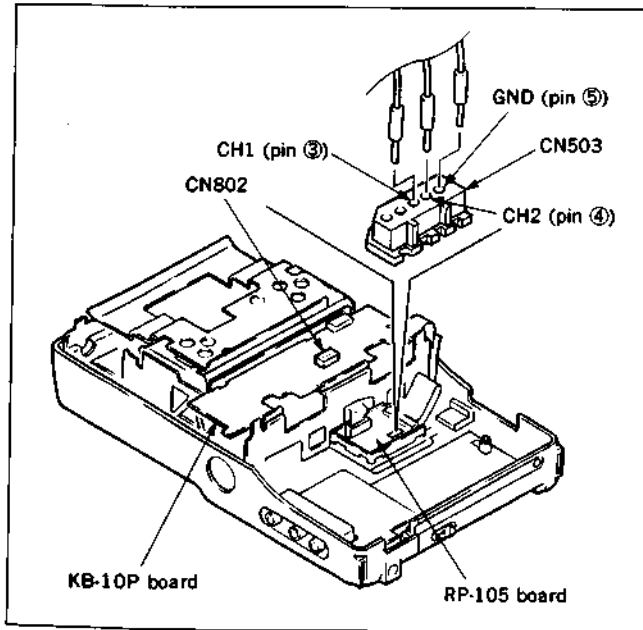


Fig. 7-1.

7-2. PREPARATION FOR ADJUSTMENT

- 1) Clean the tape running surfaces (tape guide, drum, capstan shaft, pinch roller.)
- 2) Connect to the oscilloscope.
CH1 : RP-105 board CN503 pin ③ (PB RF)
CH2 : RP-105 board CN503 pin ④ (SWP)
- 3) Play back the tracking alignment tape (WR5-1CP) (8-967-995-07).
- 4) Check that the RF waveform of the oscilloscope is flat at both inlet and outlet sides. When not flat, make adjustment as follows. (Refer to mechanical adjustment manual.)

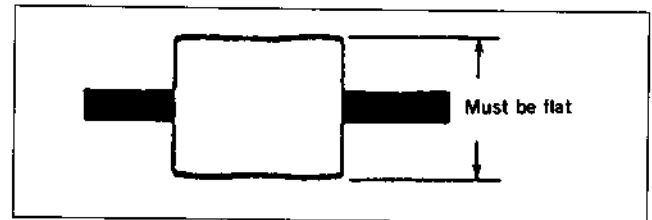


Fig. 7-2.

**SECTION 8
ELECTRICAL ADJUSTMENTS**

See the adjusting parts location diagram from on page 174 for the adjustment.

8-1. PREPARATION FOR ADJUSTMENT

The following measurement instruments are used for the electric adjustment.

8-1-1. Using Instruments

- 1) Monitor TV
- 2) Oscilloscope having two phenomena, band of 10MHz or more, and the delay mode.
- 3) Frequency counter
- 4) Pattern generator (having the video output terminal)
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion rate meter
- 9) Audio attenuator
- 10) Stabilized power source
- 11) Alignment tape
 - For tracking adjustment (WR5-1CP) Part code: 8-967-995-07
 - For checking of SP mode operation (WR5-5CSP) Part code: 8-967-995-47
 - For checking of LP mode operation (WR5-4CSP) Part code: 8-967-995-46
 - For checking of LP mode operation (WR5-4CL) Part code: 8-967-995-56
 - For checking of AFM stereo operation (WR5-9CS) Part code: 8-967-995-28
 - For video frequency characteristic adjustment (WR5-6C) Part code: 8-967-995-17

- 12) Extension harness
 - Between AU-98 board CN101 and SV-66 board CN005 J-6082-111-A
 - Between AU-98 board CN102 and SV-66 board CN006 J-6082-112-A
 - Between RG-22 board CN001 and SV-66 board CN004 J-6082-113-A
- 13) COMMON voltage adjustment jig (J-6082-024-A)

8-1-2. Connection of Instruments

If there is no special direction, connect the measuring instru-

ments as shown in the following figure and perform the adjustment.

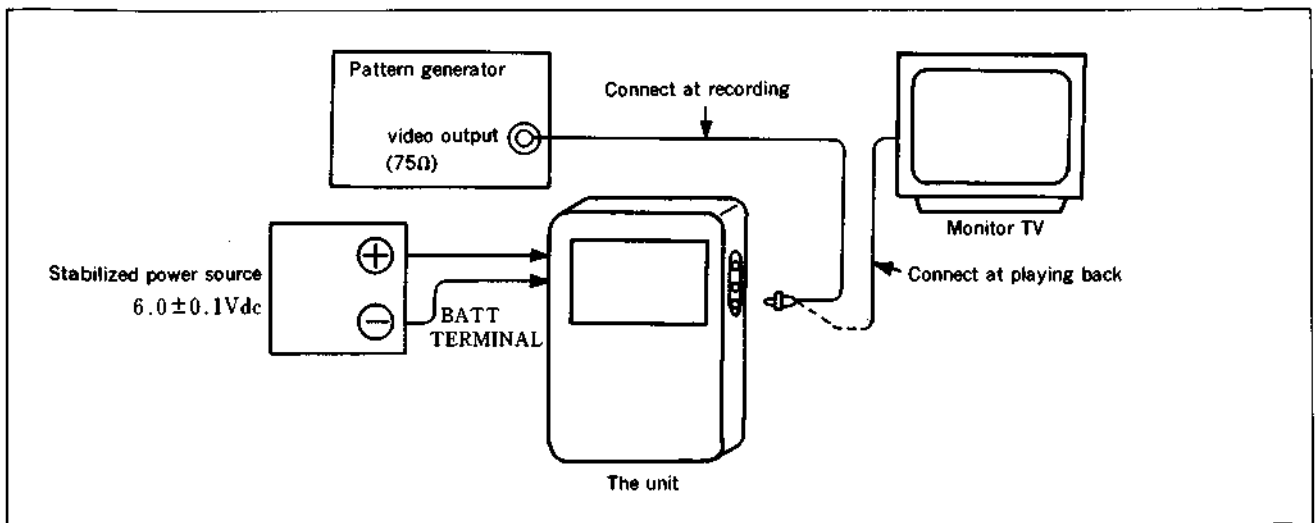


Fig. 8-1.

8-1-3. VIDEO/AUDIO Terminal of the Unit

The VIDEO/AUDIO (L/R) terminal of the unit has the function of both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operating condition of the unit.

When connecting with the other instruments, perform the connection according to the input-output of the terminal.

The operation condition of the unit and the automatic input-output selection of the terminal.

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is selected.	The case that the unit is set to the playback mode.
TUNER (television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

* When the LINE is selected with the INPUT SELECT button, the display of INPUT or OUTPUT is shown according to the operation condition.

8-1-4. Set-up at the Adjustment

As the video signal obtained from the pattern generator is used as the adjustment signal for adjusting, it is required that the video output signal satisfies the specified value. Connect the pattern generator and the oscilloscope with the VIDEO input-output terminal. Check that the amplitude of the synchronous signal of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the level proportion of the burst signal and the red signal is 0.30 : 0.66.

The video signal (color bar) used for the adjustment is shown in the Fig. 8-2.

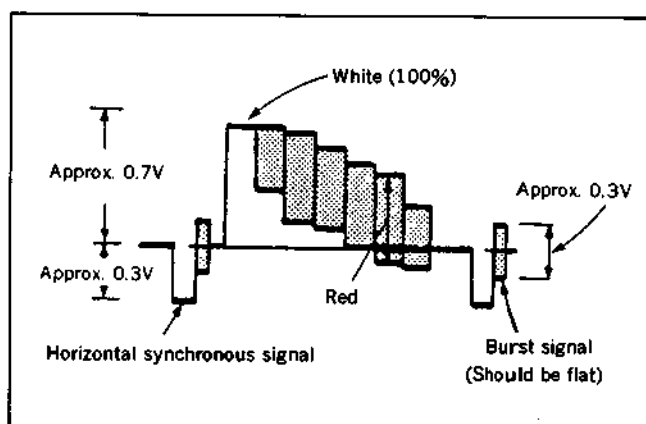


Fig. 8-2. Color bar signal of the pattern generator

8-1-5. Alignment Tape

The following tapes are prepared for the alignment tape.

Use the tape designated in the signal column of each adjustment.

Name	Recording mode	Type of tape	Speed of tape	Recording contents		Usage
				Video area	PCM area	
Tracking WR5-1CP	L	MP	SP	CH2: 1MHz Signal for tape pass adjustment Marker for switching position adjustment(CH1: 9MHz)		Tape pass adjustment Switching position adjustment
Video frequency characteristic WR5-6C	L	MP	SP	RF sweep 0~15MHz Marker 1, 3.58, 5.5, 7MHz		Frequency characteristic adjustment
Checking operation WR5-4CSP or WR5-5CSP	L	MP	SP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400Hz 60% modulation 	<ul style="list-style-type: none"> • Audio signal (PCM) monoscope part 20Hz, 20sec. } repeat 400Hz, 20sec. } four 14kHz, 20sec. } times Color bar part 1kHz 4 minutes 	Checking operation
WR5-4CL	L	MP	LP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes monoscope 4 minutes • Audio signal (AFM) 400Hz 60% modulation 		
AFM stereo checking operation WR5-9CS	L	MP	SP	<ul style="list-style-type: none"> • Video signal Color bar 4 minutes 400Hz 8minutes • Audio signal (AFM) • Color bar part Lch: 400Hz L+R (1.5MHz±60kHz) Rch: 1kHz L-R (1.7MHz±30kHz) • monoscope part DEV+Bilingual (Including a RF ID signal.) 	<ul style="list-style-type: none"> • Audio signal (PCM) 400Hz 8minutes 	AFM stereo PB matrix adjustment

Note: Recording mode
L.....Normal mode

Types of tape
MP.....Application type metal tape

Table 8-1.

The color bar signal recorded in the alignment tape is shown in the Fig.8-3.

Note : Measure with the VIDEO INPUT-OUTPUT terminal (75Ω terminal) playback mode.

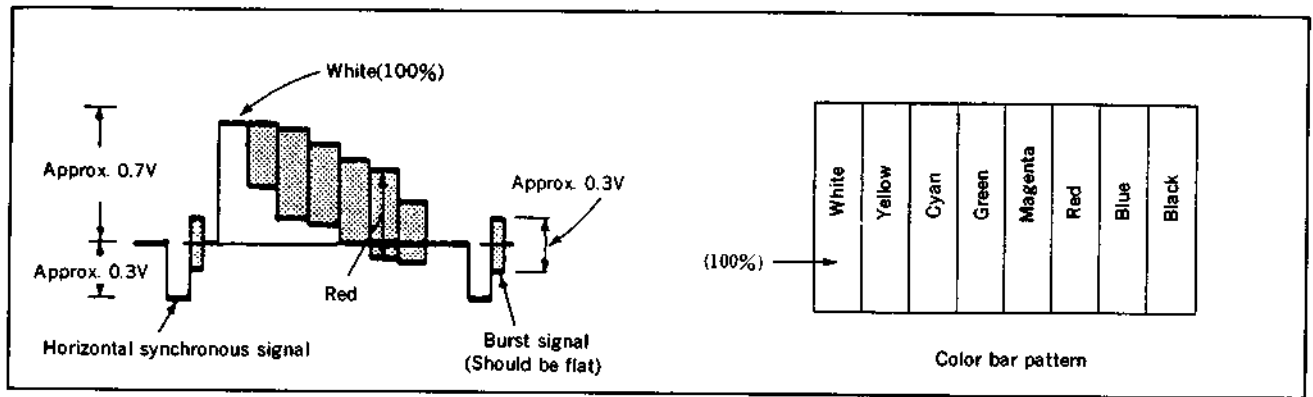


Fig.8-3. Color bar signal of the alignment tape

8-1-6. Input/Output Level and Impedance

VIDEO/AUDIO (L/R) Input-output terminal (phono jack)
 VIDEO input Input signal : 1Vp-p, 75Ω unbalance, Synchronous negative
 VIDEO output Output signal : 1Vp-p, 75Ω unbalance, Synchronous negative
 AUDIO input Input level : -7.5dBs(0dBs=0.775Vrms)
 Input impedance : 47kΩ or more

AUDIO output Specified output : -7.5dBs
 Output impedance : 10kΩ or less

8-1-7. TEST MODE

Use CN802 on the KB-10P board.

CN802 pin position

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

When each terminal of the TEST A, B, C and D is shortened and opened, twelve types of TEST MODE are selected.

When servicing, attaching the "test mode set jig" (J-6082-110-A) to CN802 allows to select twelve types of test mode with the hexadecimal selecting switches of the jig.

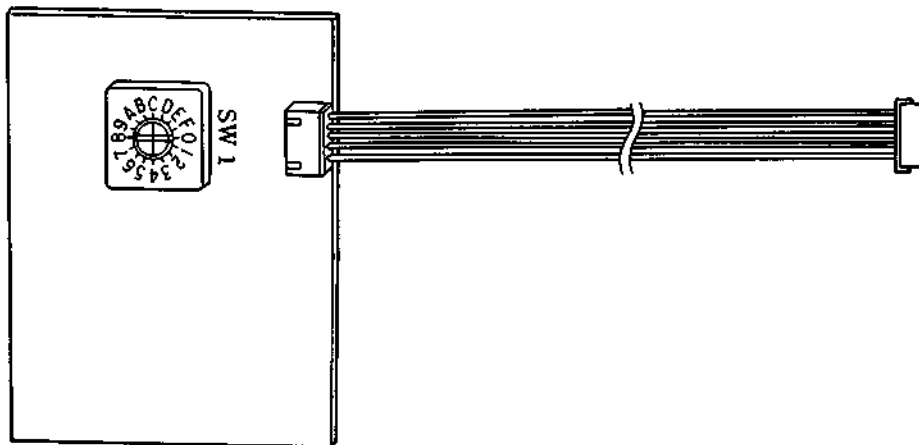


Fig8-4. Test mode set jig

TEST MODE table		Switch position of the test mode set jig.
DCBA	SELECT MODE	
0 0 0 0	Normal mode	0
0 0 0 1	Emergency off	1
0 0 1 0	TT TEST	2
0 0 1 1	Track shift	3
0 1 0 0	SW POSI L	4
0 1 0 1	SW POSI H	5
0 1 1 0	BATT DOWN PRE	6
0 1 1 1	BATT DOWN END	7
1 0 0 0	VIDEO DATA, MP, SP	8
1 0 0 1	VIDEO DATA, MP, LP	9
1 0 1 0	VIDEO DATA, ME, SP	A
1 0 1 1	VIDEO DATA, ME, LP	B

The test code is designated by four figures.

MSB LSB
"D", TEST "C", TEST "B", TEST "A"

At short : 1, At open : 0

VIDEO DATA SELECT MODE is set at the TEST, "D" MAKE.

① Normal mode

Normal set condition

② Emergency off (Release of emergency stop)

③ TT TEST

MODE for extending the SIRCS code (For producing line)

④ Track shift

Run on the ATF track shift condition at the playback mode.

Timer microcomputer is in the clock adjustment mode.

⑤ SW POSI

Adjustment mode of switch position.

SWPOSI is stored in EEPROM as 16bit DATA. This data is adjusted dividing high 8bit and low 8bit. Use CH +/− KEY.

TEST MODE0101 : Varies at 16μsec per 1STEP.

TEST MODE0100 : Varies at 1μsec per 1STEP. When low 8 bit is incremented from FF. HEX, high 8 bit goes UP. And when it is decremented from 00.HEX, high 8 bit goes DOWN.

When the EEPROM has been replaced, it takes considerable time to adjust it. Therefore, the data must be preset before entering adjustment.

Preset function of the SW POSI is added. The preset function sets to high 8 bit to 07. HEX, when the DATA SCREEN KEY of SC part is pressed in the SW POSI adjustment mode. The low 8 bit is not varied.

<When the SV-66 Board IC206 is CXP80116-805Q>

If SW POSI adjustment has been done (for example, for mechanism deck replacement), IC206 should be replaced by CXP80116-821Q (8-752-818-67).

⑥ BATTERY DOWN ADJUSTMENT

Adjusted with TEST MODE 0111. When this mode is set, the following display is shown on LCD.

PRE	-1.76	} ex
DOWN	-1.74	

Supplying voltage for adjusting is performed with applying 5.50V + 0.02V to the battery terminal in the TUNER REC SP MODE. When pressing the CH + KEY on the KB-10P board, the color of display on the LCD turns to blue for few seconds from white, and then returns to white. The voltage of the battery PRE, DOWN is stored in EEPROM as the 8bit DATA by this operation.

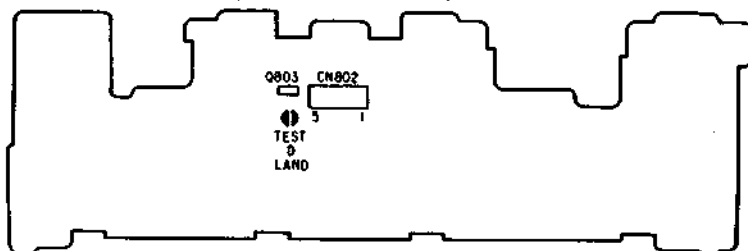
⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10P board Q803)
The following display is shown on the LCD.

VIDEO DATA

- CFL1 1 (RESET)
- CFL2 1 (DISPLAY)
- NCL1 1 (SLEEP)
- NCL2 1 (NEXT)
- NCLP1 1 (UP)
- NCLP2 1 (CLOCK)

KB-10P BOARD (COMPONENT SIDE)



Six types of DATA are varied with the KEY on the SC part.

- RESET → COUNTER RESET KEY
- DISPLAY → DATA SCREEN KEY
- SLEEP → SLEEP KEY
- NEXT → NEXT KEY
- UP → + KEY
- CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)

Four modes are adjusted by the types of TAPE (ME, MP) and TAPE SPEED (SP, LP). when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 8-2. for the data writing to EEPROM.)

Table 8-2. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	L	L
1	0	0	1	9	LP•MP	L	H	L	H	H	L
1	0	1	0	A	SP•ME	H	L	H	L	L	L
1	0	1	1	B	LP•ME	L	H	L	H	H	L

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

8-2. POWER SOURCE PART ADJUSTMENT

8-2-1. UNREG Power Source Voltage Check (SV-66 board)

Mode	Stop (POWER ON)
Measuring instrument	Digital voltmeter
BL UNREG check	
Measurement point	CN007 Pin ⑫
Specified value	5.9 ± 0.2 Vdc
DD UNREG check	
Measurement point	CN007 Pin ⑪
Specified value	5.9 ± 0.2 Vdc
SS UNREG check	
Measurement point	CN007 Pin ⑥
Specified value	5.9 ± 0.2 Vdc
LD UNREG check	
Measurement point	CN007 Pin ③
Specified value	5.9 ± 0.2 Vdc
CAP UNREG check	
Measurement point	CN007 Pin ①
Specified value	5.9 ± 0.2 Vdc

[Checking method]

- 1) Check that the voltage of the stabilized power source is 6.0 ± 0.1 Vdc.
- 2) Each specified value should be satisfied.

8-2-2. Switch 5V Adjustment (SV-66 board)

Mode	Tuner receiver, record (SP mode)
Signal	Optional TV broadcast
Measurement point	CN009 Pin ⑭
Measuring instrument	Digital voltmeter
Adjustment element	RV401
Specified value	4.95 ± 0.05 Vdc

[Adjustment Method]

- 1) Adjust with RV401 to 4.95 ± 0.05 Vdc.

8-2-3. DD Converter Frequency Adjustment (SV-66 board)

Mode	Stop (POWER ON)
Measurement point	IC401 Pin ①
Measuring instrument	Frequency counter
Adjustment element	RV402
Specified value	479 ± 5 kHz

[Adjustment Method]

- 1) Adjust the oscillation frequency to 479 ± 5 Vdc with RV402.

8-2-4. -8V Adjustment (TU-126 board)

Mode	Stop (POWER ON)
Measurement point	CN001 Pin ②
Measuring instrument	Digital voltmeter
Adjustment element	RV501
Specified value	-8.0 ± 0.1 Vdc

[Adjustment Method]

- 1) Adjust with RV501 to -8.0 ± 0.1 Vdc.

8-2-5. LCD Power Source Voltage Check (RG-22 board)

Mode	Stop
Measuring instrument	Digital voltmeter
+13V check	
Measurement point	CN001 Pin ②
Specified value	13.0 ± 0.7 Vdc
-20V check	
Measurement point	CN001 Pin ②
Specified value	-20.0 ± 1.5 Vdc

[Checking Method]

- 1) Each specified value should be satisfied.

8-2-6. CAM UNREG Check (CN-6P board)

Mode	Camera standby
Measurement point	CN601 Pin ①
Measuring instrument	Digital voltmeter
Specified value	5.75±0.10Vdc

[Connection]

- 1) Connect the CAMERA connector with the camera.
If there is no camera, connect the resistance of 12Ω 5W between CN601 Pin ① and Pin ⑤.

[Checking Method]

- 1) Turn on the power, and input CAMERA with the INPUT SELECT button.
- 2) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
- 3) Check that the voltage of the CN601 Pin ① is 5.75±0.10Vdc.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

8-3-1. Clock Precision Adjustment (SV-66 board)

Mode	Stop (POWER ON)
Test mode *	0011 (Jig switch position 3)
Measurement point	CN003 Pin ②
Measuring instrument	Frequency counter
Adjustment element	CV101
Specified value	16384.0±0.2Hz

* Refer to [8-1-7. Test mode].

[Adjustment Method]

- 1) Set the test mode * 0011 (jig switch position 3).
- 2) Adjust with CV101 to 16384.0±0.2Hz.

8-3-2. Battery Down Adjustment

Refer to [8-1-7. Test Mode ⑥ Battery Down Adjustment].

8-4. SERVO SYSTEM ADJUSTMENT

8-4-1. CUE/REV Adjustment (SV-66 board)

Mode	CUE and REV
Signal	Alignment tape : for checking the SP mode operation (WR5-5CSP) : for checking the LP mode operation (WR5-4CL)
Measurement point	IC302 Pin ⑩ and Pin ⑪ and Q306 ③
Measuring instrument	Oscilloscope
Adjustment element	RV301
Specified value	WR5-5CSP at CUE/REV Q306 ③ DC voltage level is "H" WR5-4CL at CUE/REV Q306 ③ DC voltage level is "L"

[Adjustment Method]

- 1) Adjust the IC302 Pin ⑩ to 3.2±0.1Vdc with RV301.
- 2) Play back the WR5-5CSP and set the CUE and REV mode, check that the DC voltage level of Q306 ③ is "H" (4Vdc or more). And play back the WR5-4CL and set the CUE and REV mode, check that the DC voltage level of Q306 ③ is "L" (1Vdc or less).
- 3) When the item 2) is not satisfied, play back the WR5-5CSP and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑩. Set this value as V_{SP} . Play back the WR5-4CL and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑩. Set this value as V_{LP} .

$$V = \frac{V_{SP} + V_{LP}}{2}$$

Obtain the value of V, and adjust with RV301 so that the DC voltage of IC302 Pin ⑩ is the value of V.

- 4) Return to the item 2) and reconfirm.

8-4-2. Switching Position Adjustment (RP-105 board)

Mode	Playback
Test mode *	0101 (Jig switching position 5) and 0100 (Jig switching position 4)
Signal	Alignment tape : for tracking adjustment (WR5-1CP)
Measurement point	CH1 : CN503 Pin ④ (RF SW P) CH2 : CN503 Pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment KEY	KB-10P board S802 (CH-) and S803 (CH+)
Specified value	$t=0\pm 10\mu\text{sec}$

* Refer to [8-1-7. Test mode].

[Adjustment Method]

- 1) Set the test mode * 0101 (Jig switching position 5).
- 2) Press the DATA SCREEN button on the upper part of the LCD.
- 3) Press the S802(CH-) and S803(CH+) switches on the KB-10P board so that "t" is nearly 0. (rough adjustment)
- 4) Set the test mode * 0100 (Jig switching position 4).
- 5) Press S802(CH-) and S803 (CH+) switches on the KB-10 board so that $t=0\pm 10\mu\text{sec}$. (fine adjustment)
- 6) Disconnect the test mode jig.

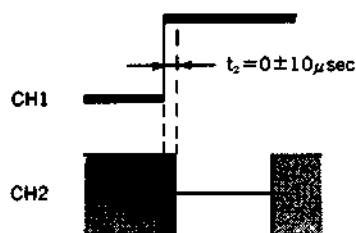


Fig. 8-6.

8-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following procedures in principle. The color bar signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the synchronous signal and the color burst signal are satisfied with the specified value designated to the adjusting setup as shown in the figure 8-2.

[Adjustment Procedures]

- 1) Playback frequency characteristic adjustment
- 2) fsc check
- 3) SYNC AGC adjustment
- 4) IR adjustment
- 5) Y/C separation adjustment
- 6) Emphasis Y level adjustment
- 7) De-emphasis Y level adjustment
- 8) Playback Y level adjustment
- 9) Playback V level adjustment
- 10) Y FM carrier adjustment
- 11) Y FM deviation adjustment
- 12) Recording Y level adjustment
- 13) Chroma emphasis adjustment
- 14) Recording chroma level adjustment

8-5-1. Playback Frequency Characteristic Adjustment (RP-105 board)

Mode	Playback
Signal	Alignment tape : for frequency characteristic adjustment(WR5-6C)
Measurement point	CH1 : CN503 Pin ④(RF SWP) CH2 : CN503 Pin ③(PB RF)
Measuring instrument	Oscilloscope
Adjustment element	PB1-CH : RV501 PB2-CH : RV502
Specified value	3.5MHz level : 5.5MHz level = 4 : 3

[Adjustment Method]

- 1) Adjust with each RV so that the PB1-CH, PB2-CH and PB RF OUT satisfy the specified value.

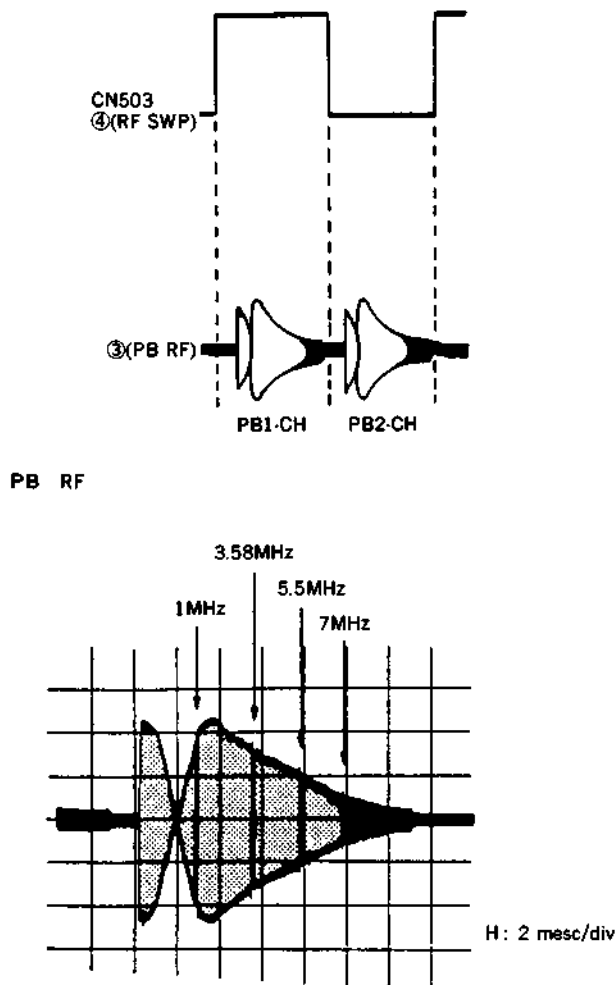


Fig. 8-7

8-5-2. fsc Check (SV-66 board)

Mode	Playback
Signal	Alignment tape : for operation check(WR5-5CSP) Color bar part
Measurement point	IC701 Pin ⑫
Measuring instrument	Oscilloscope Frequency counter
Specified value	Oscillation frequency : $4433619 \pm 150\text{Hz}$ Output level : $400 \pm 50\text{mVp-p}$

[Checking Method]

- 1) Check that the oscillation frequency of the IC701 Pin ⑫ is $4433619 \pm 150\text{Hz}$ and the output level is $400 \pm 50\text{mVp-p}$.

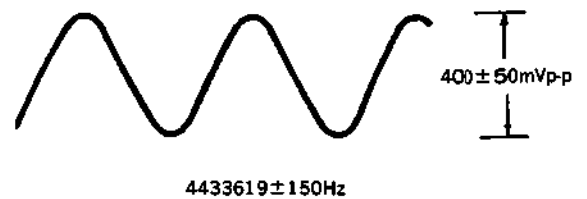


Fig.8-8.

8-5-3. SYNC AGC Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑫
Measuring instrument	Oscilloscope
Adjustment element	RV771
Specified value	$0.50 \pm 0.02\text{Vp-p}$

[Adjustment Method]

- 1) Adjust with RV771 to $0.50 \pm 0.02\text{Vp-p}$.

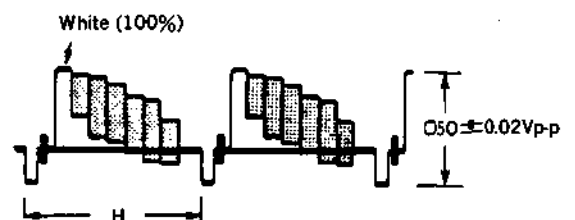


Fig. 8-9.

8-5-4. IR Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV601
Specified value	Minimize the red remaining chroma element (60mVp-p or less)

[Preparation]

- 1) Short with the jumper wire between the Pin ⑭ and Pin ⑮ of IC601.

[Adjustment Method]

- 1) Minimize the red remaining chroma element with RV601. (60mVp-p)
- 2) After the adjustment, disconnect the jumper wire.

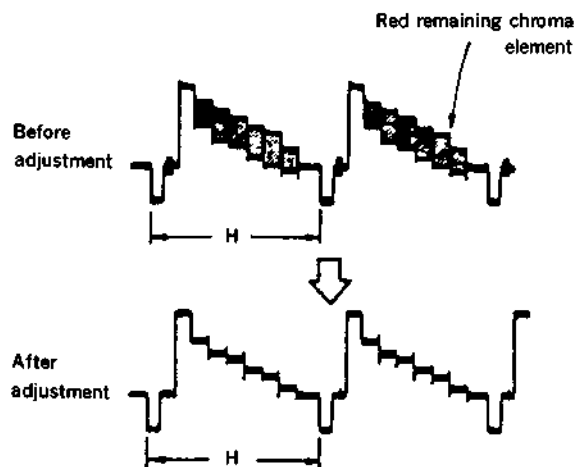


Fig.8-10.

8-5-5. Y/C Separation Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV602, RV651 (alternate adjustment)
Specified value	Minimize the red remaining chroma element (30mVp-p or less)

[Adjustment Method]

- 1) Adjust RV602 and RV651 alternately, and minimize the red remaining chroma element.

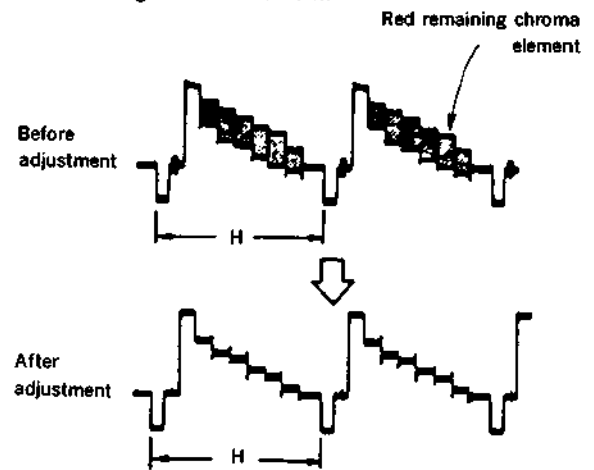


Fig.8-11.

8-5-6. Emphasis Y Level Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV652
Specified value	$0.50 \pm 0.02V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV652 to $0.50 \pm 0.02V_{p-p}$.

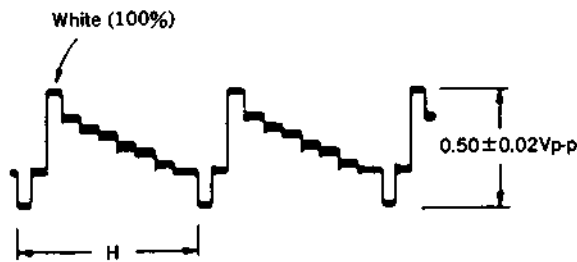


Fig.8-12.

8-5-7. De-emphasis Y Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP)
Measurement point	IC601 Pin ②
Measuring instrument	Oscilloscope
Adjustment element	RV605
Specified value	$0.50 \pm 0.02V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV605 to $0.50 \pm 0.02V_{p-p}$.

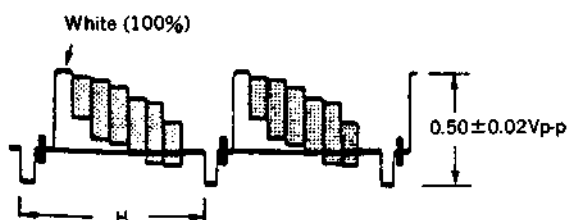


Fig.8-13.

8-5-8. Playback Y Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP) color bar part
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV653
Specified value	$0.50 \pm 0.02V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV653 to $0.50 \pm 0.02V_{p-p}$.

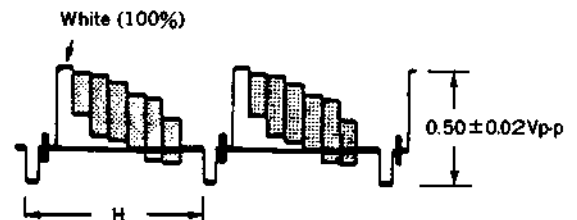


Fig.8-14.

8-5-9. Playback V Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP) color bar part
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV772
Specified value	$1.00 \pm 0.05V_{p-p}$

[Adjustment Method]

- 1) Adjust with RV772 to $1.00 \pm 0.05V_{p-p}$.

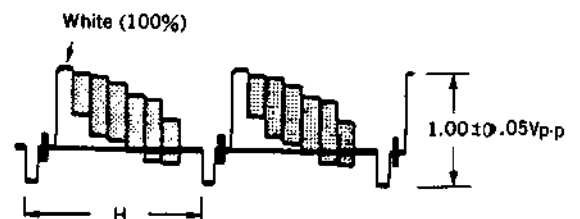


Fig.8-15.

8-5-10. Y FM Carrier Adjustment (SV-66 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin @
Measuring instrument	Frequency counter
Adjustment element	RV603
Specified value	$4.37 \pm 0.02\text{MHz}$

[Adjustment Method]

- 1) Adjust with RV603 to $4.37 \pm 0.02\text{MHz}$.
- 2) After the adjustment, be sure to perform [Y FM deviation adjustment].

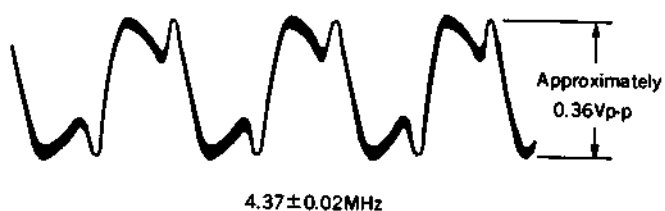


Fig.8-16.

8-5-11. Y FM Deviation Adjustment (SV-66 board)

Mode	Recording and playback
Signal	Color bar
Measurement point	VIDEO input-output terminal (75Ω terminal)
Measuring instrument	Oscilloscope
Adjustment element	RV604
Specified value	Playback level is $1.00 \pm 0.05\text{Vp-p}$

Note) [De-emphasis Y level adjustment], [Playback Y level adjustment] and [Y FM carrier adjustment] should be completed.

[Adjustment Method]

- 1) Record the color bar signal.
- 2) Play back the recorded signal.
- 3) Check the playback output.
Specified value : $1.00 \pm 0.05\text{Vp-p}$
- 4) When the specified value is not satisfied, rotate RV604 as shown in the following table and return to the item 1), and then perform the reconfirmation.

	Rotating direction of RV604
Over the specified value	Clockwise (↻)
Under the specified value	Counterclockwise (↺)

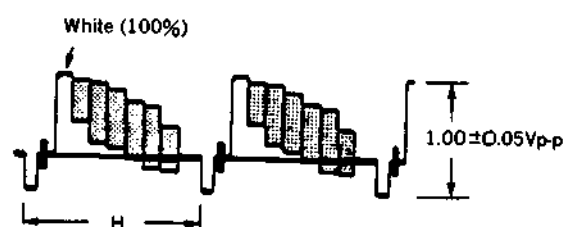


Fig.8-17

8-5-12. Recording Y Level Adjustment (SV-66 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Oscilloscope (20MHz band limit ON)
Adjustment element	RV802
Specified value	$360 \pm 5\text{mV}$

[Adjustment Method]

- 1) Adjust with RV802 to $360 \pm 5\text{mV}$.

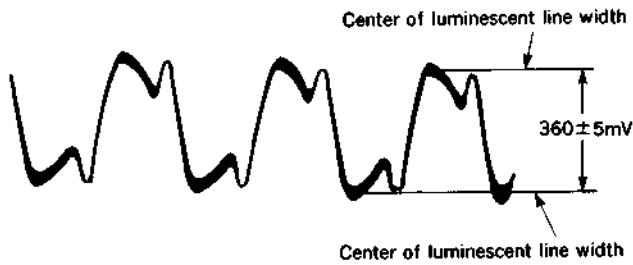


Fig.8-18.

8-5-13. Chroma Emphasis Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC701 Pin ⑳
Measuring instrument	Oscilloscope
Adjustment element	FL702
Specified value	Minimize the red level

[Preparation]

- 1) Connect the resistance of $3.3\text{k}\Omega$ between the IC701 Pin ⑳ and GND.

[Adjustment Method]

- 1) Minimize the red level with FL702.
- 2) After the adjustment, disconnect the resistance connected in the preparation.

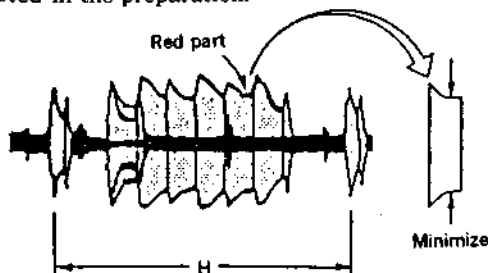


Fig.8-19.

8-5-14. Recording Chroma Level Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	CN801 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV701
Specified value	Red level : $160 \pm 10\text{mVp-p}$

[Adjustment Method]

- 1) Adjust the red level to $160 \pm 10\text{mVp-p}$ with RV701.

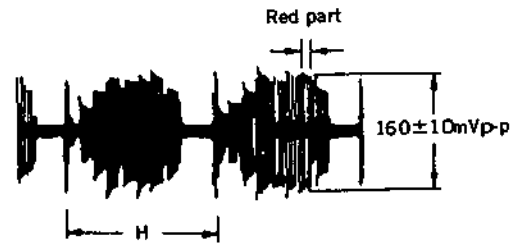


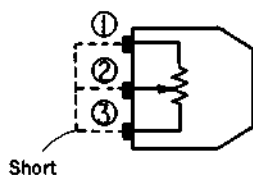
Fig.8-20.

8-6. LCD SYSTEM ADJUSTMENT

Caution: If you touch the back light holder, you may receive an electric shock. Be careful to perform the adjustment.

[Preparation]

- 1) The adjustment except for [white balance adjustment] and [V COM DC adjustment], the back light unit is not required. Remove it and perform the adjustment.
- 2) Set the VR as follows if there is no special direction.
 - BRIGHT (RV004)
 -Set the mechanical center position and short among pin ①, ② and ③.



• COLOR (RV001)

.....The position where the voltage of IC002 ⑤ of the RG-22 board is $1.5 \pm 0.1Vdc$.

[Video input signal for adjustment]

Input the color bar signal, which the chroma signal and the burst signal are turned off, to the video input terminal as a video input signal for adjustment. Check with the CN001 pin ④ of the RG-22 board.

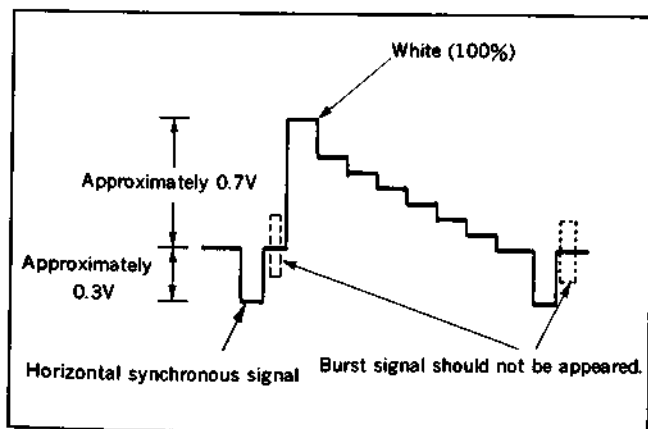


Fig.8-21. Color bar signal which the chroma signal and the burst signal are turned off

8-6-1. Contrast Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	CN002 Pin ⑨
Measuring instrument	Oscilloscope
Adjustment element	RV006
Specified value	$3.0 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV006 so that the voltage between white (100%) and the pedestal is $3.0 \pm 0.1V$.

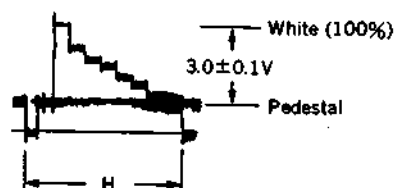


Fig.8-22.

8-6-2. R Gain Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV005
Specified value	$3.0 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV005 so that the voltage between white (100%) and the pedestal is $3.0 \pm 0.1V$.

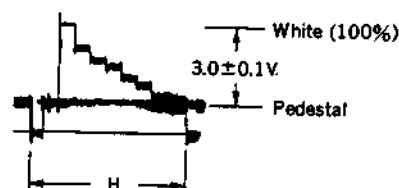


Fig. 8-23.

8-6-3. B Gain Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are tured off
Measurement point	CN002 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	$2.6 \pm 0.1V$

[Adjustment Method]

- 1) Adjust with RV003 so that the voltage between white (100%) and the pedestal is $2.6 \pm 0.1V$.

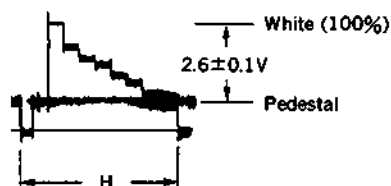


Fig. 8-24.

8-6-4. Sub Bright Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑨, Pin ⑩ and Pin ⑪ (G) (R) (B)
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV010, RV007 and RV008
Specified value	$-3.4 \pm 0.1V$

[Connection]

- 1) Install the LCD unit and perform the adjustment.

[Adjustment Method]

- 1) Adjust with RV009 so that the DC level of the pedestal part of the positive polarity G signal is $-3.4 \pm 0.1Vdc$.
- 2) Adjust with RV007 so that the DC level of the pedestal part of the positive polarity R signal is $-3.4 \pm 0.1Vdc$.
- 3) Adjust with RV008 so that the DC level of the pedestal part of the positive polarity B signal is $-3.4 \pm 0.1Vdc$.

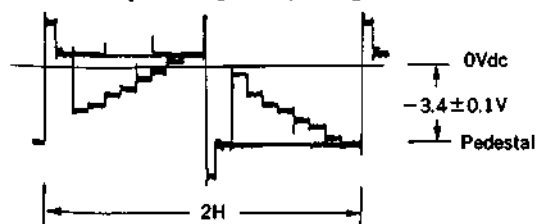


Fig.8-25.

8-6-5. fsc Adjustment (RG-22 board)

Mode	POWER ON
Signal	Video signal which the chroma signal, the burst signal and the Y signal are turned off.(Video signal with only synchronous signal)
Measurement point	IC002 Pin ④
Measuring instrument	Frequency counter
Adjustment element	CV002
Specified value	$4433619 \pm 300Hz$

Note: Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high impedance ($1M\Omega$ or more) and low capacity.

[Adjustment Method]

- 1) Adjust with CV002 so that the fsc frequency is $4433619 \pm 300Hz$.

8-6-6. White Balance Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	Check on the LCD screen
Measuring instrument	
Adjustment element	RV003 (B gain) RV005 (R gain)
Specified value	Screen should not be colored.

[Connection]

- 1) Perform the adjustment connecting the LCD unit and the back light.

[Adjustment Method]

- 1) Check that the LCD screen is not colored. If the screen is colored, adjust with RV003 (B gain) and RV005 (R gain).

8-6-7. V COM DC Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	LCD screen
Measuring instrument	Oscilloscope
Adjustment element	V COM DC VR on the LCD unit
Specified value	The amplitude of the flicker waveform is the minimum.

Note: Perform the [V COM DC adjustment.] with assembling the LCD block.

Take care that the external light should not enter into the light receiving part of the COMMON voltage adjustment jig.

[Adjustment Method]

- 1) Expose the light receiving part of the COMMON voltage adjustment jig to the LCD screen. (Point down the LCD screen not to receive the external light.)
- 2) Connect the oscilloscope with the COMMON voltage adjustment jig.
- 3) Turn V COM DC VR and check that the flicker waveform as shown in the fig.8-26 is output.
(When the flicker waveform is not output, check the exposing method of the light receiving part and the external light condition, and check with turning the BRIGHT control.)
- 4) Minimize the flicker waveform amplitude with V COM DC VR.

Note: Turn V COM DC VR slowly because it takes long time to respond to LCD.

The minimum point of the flicker waveform amplitude is nearly coincided with the maximum point of the contrast.

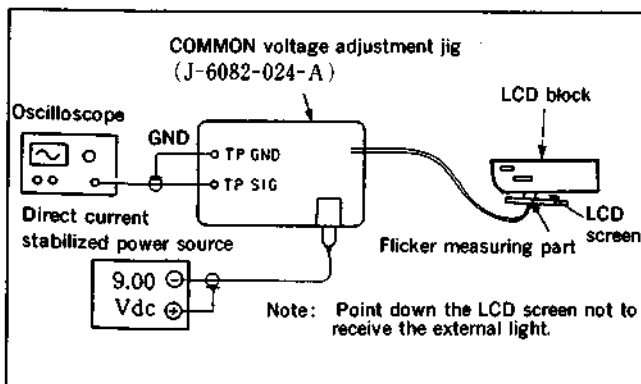


Fig.8-26



Fig.8-27.

8-6-8. Character Position Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar
Measurement point	LCD screen
Measuring instrument	
Adjustment element	CV801
Specified value	Fig.8-28.

[Adjustment Method]

- 1) Press the CLOCK SET button of the LCD block and check that black frame and "0 : 00" display on the LCD screen.
- 2) Make black frame on the right end of the LCD screen with CV801 and adjust so that it disappears.
- 3) Press twice the NEXT button of the LCD block and turn off the black frame on the LCD screen. (It takes approximately five seconds to turn off the frame.)

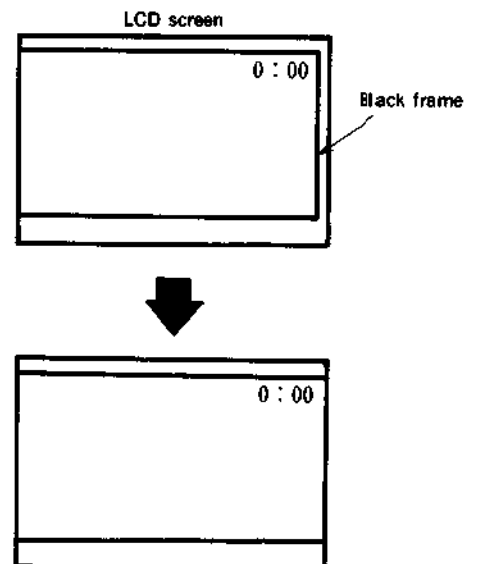


Fig.8-28.

8-7. TUNER SYSTEM ADJUSTMENT

8-7-1. RF AGC Adjustment (TU-126 board)

Mode	E-E
Signal	Broadcast TV signal
Adjustment element	RV101

[Adjustment Method]

- 1) Connect the monitor TV.
- 2) Adjust the monitor TV to the most proper contrast and receive the broadcast TV signal.
- 3) Turn RV101 to show the snow noise.
- 4) Turn RV101 in the reverse direction, and set to the point that the snow noise disappears.
- 5) Receive each channel and check that there is no beat by the cross modulation, picture distortion and snow noise.

8-8. AUDIO SYSTEM ADJUSTMENT

- Adjust using the color bar signal as the video signal input.

[Connection of the measuring instruments for audio]

Connect the audio system measuring instruments as shown in the following figure as well as the video system measuring instruments. Set the power switch to the [VTR] side if there is no special direction.

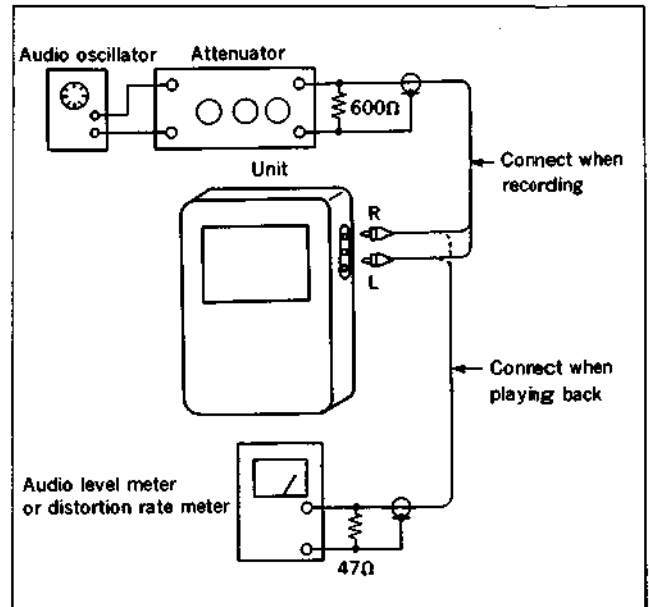


Fig.8-29.

[VIDEO/AUDIO terminal of the unit]

The VIDEO and AUDIO (L/R) terminal has a function both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operation mode of the unit.

When connecting with other instruments, perform according to input-output of the terminal.

Operation mode of the unit and the input-output automatic selection of the terminal

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is set	The case that the unit is set to the playback mode
TUNER (Television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

*When the LINE is selected with the INPUT SELECT button, the display of INPUT and OUTPUT is shown.

[Setting of the switches]

Set the following mode if there is no special direction.

- SP/LP buttonSP
- INPUT SELECT buttonLINE
- AUTO STEREO switchON
- LINE AUDIO button.....ST
- AUDIO MONITOR button.....(S) and MAIN

[Notes]

- When the sound signal is input, input the same signal to both L and R channel if there is no special direction.
- Be sure to insert a plug (shorting plug or dummy plug) to the AUDIO R input-output terminal if there is no special direction. When a plug is not inserted, the monaural mode is set and the proper adjustment is not performed.

(Monaural mode)

At recording.....REC AFM RF 1.7MHz carrier is not output.

At playing backL+R signal is output from the AUDIO L input-output terminal.

[Adjustment Procedures]

- 1.5MHz carrier frequency adjustment
- 1.7MHz carrier frequency adjustment
- E-E output level check
- 1.5MHz carrier level check
- 1.7MHz carrier level adjustment
- 1.5MHz deviation adjustment
- 1.7MHz deviation adjustment note)
- Recording matrix L+R adjustment
- Recording matrix L-R adjustment
- Bilingual mode adjustment
- Playback bilingual mode detect adjustment note)
- Playback matrix adjustment
- Total level characteristic separation check
- Total distortion rate check

Note) The adjustment method of the 1.7 MHz deviation adjustment and Playback bilingual mode detect adjustment are shown later.

8-8-1. 1.5MHz Carrier Frequency Adjustment (AU-98 board)

Mode	Recording
Signal	No signal
Measurement point	IC101 Pin ③
Measuring instrument	Frequency counter
Adjustment element	RV102
Specified value	1.50±0.02MHz

Note : Use the 10:1 probe for connecting the frequency counter.

[Connection]

- 1) Short with the jumper wire between IC113 pin ⑤ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

- 1) Adjust with RV102 to 1.50±0.02MHz.
- 2) Keep the jumper wire for connecting and perform the 1.7MHz carrier frequency adjustment.

8-8-2. 1.7MHz Carrier Frequency Adjustment (AU-98 board)

Mode	Recording
Signal	No signal
Measurement point	IC201 Pin ③
Measuring instrument	Frequency counter
Adjustment element	RV202
Specified value	1.70±0.01MHz

Note : Use the 10:1 probe for connecting the frequency counter.

[Connection]

- 1) Short with the jumper wire between IC113 pin ⑤ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

- 1) Adjust with RV202 to 1.70±0.01MHz.
- 2) After the adjustment, disconnect the jumper wire.

8-8-3. E-E Output Level Check

Mode	Camera recording
Signal	CN-6P board J601 Pin ⑤ [Pin ⑨] 400Hz, -15dBs
Measurement point	AUDIO L [R] Input-output terminal
Measuring instrument	Audio level meter
Specified value	$-7.5 \pm 2\text{dBs}$

[Checking Method]

- 1) Check that the 400Hz signal is $-7.5 \pm 2\text{dBs}$.

8-8-4. 1.5MHz Carrier Level Check (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600 Ω terminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Specified value	$128 \pm 10\text{mVp-p}$

[Preparation]

- 1) Terminate both L and R AUDIO terminals at 600 Ω . The pin plug should not be inserted to the R terminal. (For setting to the monaural mode)

[Checking Method]

- 1) Check that the 1.5MHz REC AFM RF signal level is $128 \pm 10\text{mVp-p}$. (Read the center level of the luminescent width.)

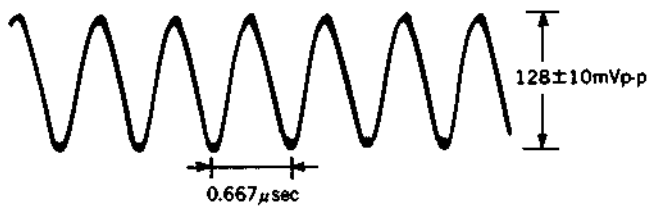


Fig.8-30.

8-8-5. 1.7MHz Carrier Level Adjustment (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600 Ω terminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV203
Specified value	$(1.5\text{MHz carrier level}) - (1.7\text{MHz carrier level}) = 27 \pm 10\text{mV}$

[Preparation]

- 1) Terminate both L and R AUDIO terminals at 600 Ω . Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode)

[Adjustment Method]

- 1) Connect the capacitor of 0.01 μF between IC201 pin ⑩ and GND.
- 2) Measure the 1.5MHz carrier level by the oscilloscope and write it down.
- 3) Disconnect the capacitor connected in the procedure 1).
- 4) Connect the capacitor of 0.01 μF between IC101 Pin ⑩ and GND.
- 5) Measure the 1.7MHz carrier level by the oscilloscope and adjust with RV203 to $(1.5\text{MHz carrier level}) - (1.7\text{MHz carrier level}) = 27 \pm 10\text{mV}$.
- 6) Disconnect the capacitor connected in the procedure 4).

8-8-6. 1.5MHz Deviation Adjustment (AU-98 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-4CSP)
Measurement point	CN101 Pin ⑤
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	$925 \pm 21\text{mVp-p}$ ($-7.5 \pm 0.2\text{dBs}$)

[Adjustment Method]

- 1) Adjust with RV101 so that the 400Hz signal level is $925 \pm 21\text{mVp-p}$.

8-8-7. Recording Matrix L+R Adjustment (AU-98 board)

Mode	Recording
Signal	1. 400Hz, -7.5dBs AUDIO L input-output terminal Input 2. 400Hz, -7.5dBs AUDIO R input-output terminal Input
Measurement point	IC104 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV401
Specified value	The level difference at the L terminal input and the R terminal input is $0 \pm 5\text{mVp-p}$.

Note: Measure the signal level after passing one minute or more from the signal input.

[Adjustment Method]

- 1) Input 400Hz and -7.5dBs signal to the AUDIO L input-output terminal. (Insert the shorting plug to the R terminal.)
- 2) Read the signal level of IC104 Pin ① and write it down.
- 3) Input 400Hz and -7.5dBs signal to the AUDIO R input-output terminal. (Insert the shorting plug to the L terminal.)
- 4) Adjust with RV401 so that the signal level of IC104 Pin ① is $\pm 5\text{mVp-p}$ measured in the procedure 2).

8-8-8. Recording Matrix L-R Adjustment (AU-98 board)

Mode	Recording
Signal	400Hz, -7.5dBs Input to the both L and R terminal of AUDIO input-output terminal.
Measurement point	IC106 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV402
Specified value	$0 \pm 10\text{mVp-p}$

Note: Use the 1:1 probe.

[Adjustment Method]

- 1) Adjust with RV402 so that the signal level of IC106 Pin ① is $0 \pm 10\text{mVp-p}$.

8-8-9. Bilingual Mode Adjustment (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600Ω terminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV103
Specified value	A : B = 100:250 $\pm 2\%$

[Preparation]

- 1) Terminate both L and R AUDIO terminals at 600Ω . Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode.)

[Adjustment Method]

- 1) Adjust with RV103 to A : B = 100 : 250 $\pm 2\%$.

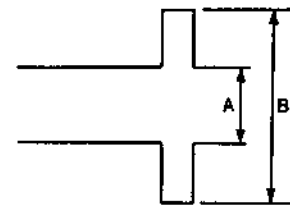


Fig.8-31.

8-8-10. Playback Matrix Adjustment (AU-98 board)

Mode	Playback
Signal	Alignment tape : for AFM stereo operation check (WR5-9CS)
Measurement point	CN101 Pin ⑤ and Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV204
Specified value	The distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

[Adjustment Method]

- 1) Adjust with RV204 so that the distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

8-8-11. Total Level Characteristic Separation Check

Mode	Self playback
Signal	400Hz, -7.5dBs: AUDIO L [R] input-output terminal No signal (Insert a shorting plug.): AUDIO R [L] input-output terminal
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Audio level meter
Specified value	Signal level : -7.5 ± 2 dBs Cross talk level : -25.0 dBs or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback output level.

[Checking Method]

- 1) Record the signal.
- 2) Connect the audio level meter to the AUDIO L [R] input-output terminal.
- 3) Play back the recorded part and check that the L [R] output signal level is -7.5 ± 2 dBs.
- 4) Check that the R [L] output cross talk level is -25.0 dBs or less.

8-8-12. Total Distortion Rate Check

Mode	Self playback
Signal	400Hz, -7.5dBs Input both L and R AUDIO input-output terminals
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Distortion Rate Meter
Specified value	1.2% or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback distortion rate.

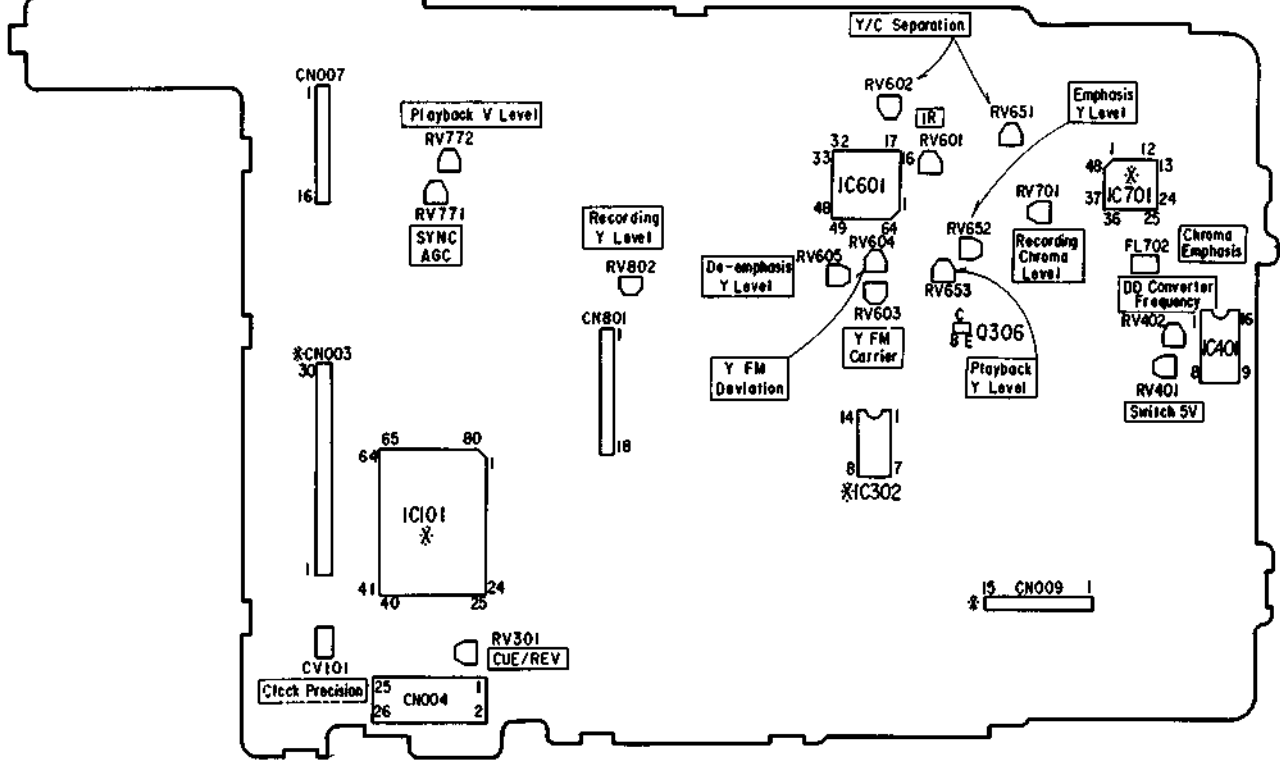
[Checking Method]

- 1) Record the signal.
- 2) Connect the distortion rate meter to the AUDIO L [R] input-output terminal.
- 3) Play back the recorded part and check that the distortion rate of the L [R] output is 1.2% or less.

8-9. ADJUSTING PARTS LOCATION DIAGRAM

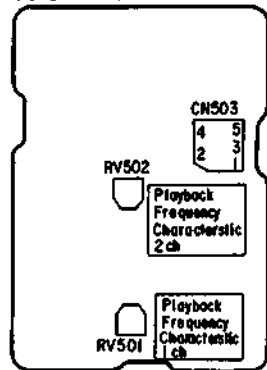
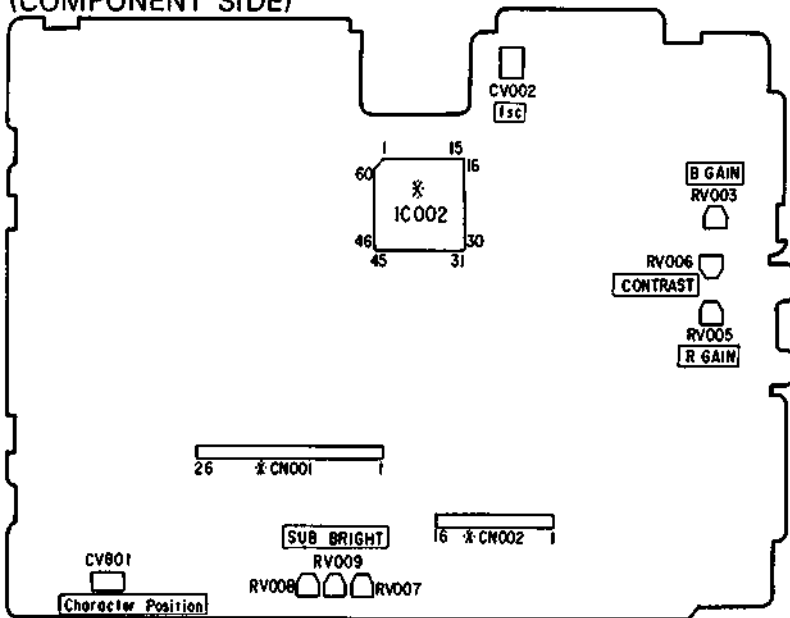
SV-66 BOARD (COMPONENT SIDE)

*: Indicates a adjustment element mounted on the conductor side.



RG-22 BOARD (COMPONENT SIDE)

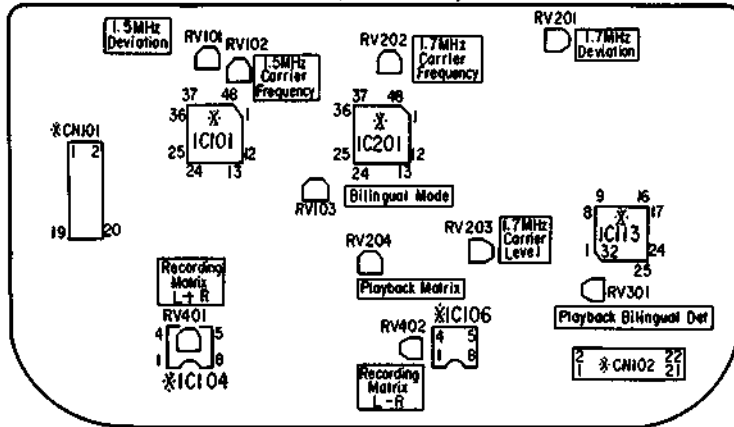
RP-105 BOARD (COMPONENT SIDE)



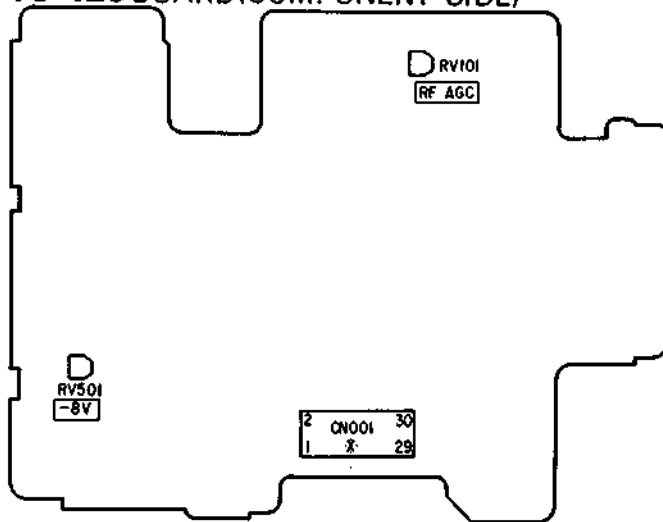
*: Indicates a adjustment element mounted on the conductor side.

AU-98 BOARD (COMPONENT SIDE)

*: Indicates a adjustment element mounted the conductor side.

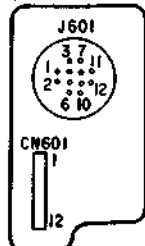


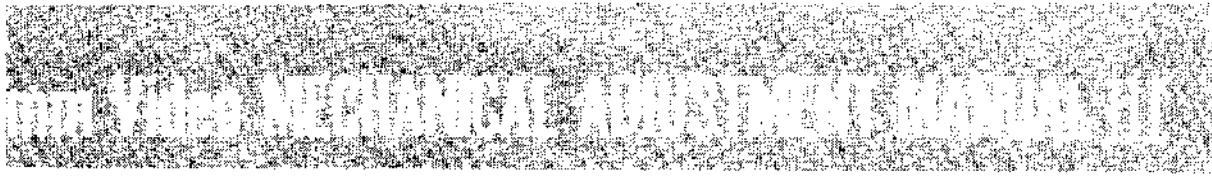
TU-126 BOARD (COMPONENT SIDE)



*: Indicates a adjustment element mounted on the conductor side.

CN-6P BOARD (COMPONENT SIDE)

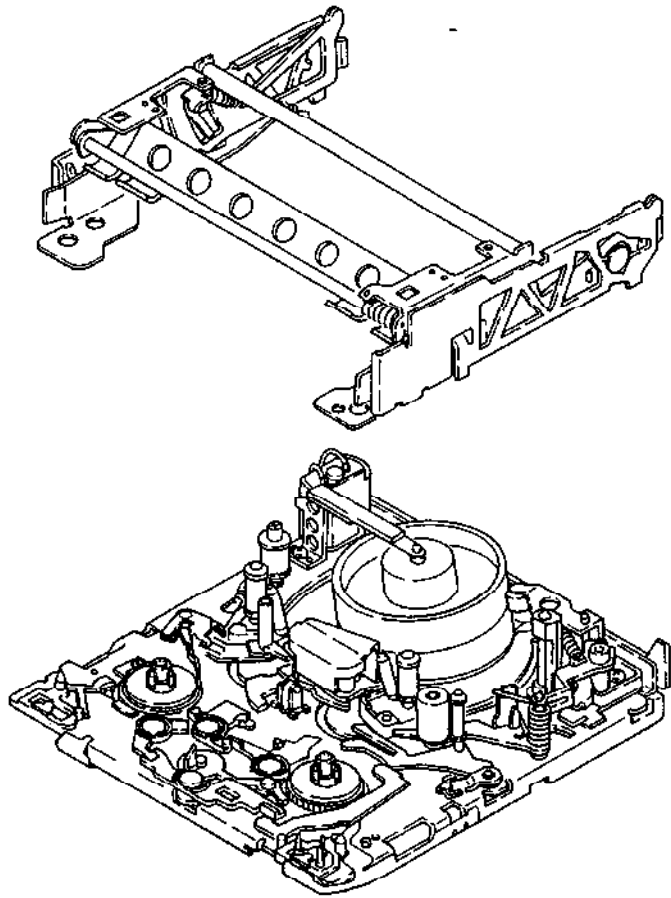




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TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT		4.	TAPE PATH ADJUSTMENT	
1-1.	Operation without Cassette Compartment Assembly and Tape	3	4-1.	Track Shift Mode Setting	28
1-1-1.	How to Trigger the Loading Operation	3	4-2.	Preparations for Adjustment	29
1-1-2.	Setting the Playback Mode	3	4-3.	Tracking Adjustment	30
1-1-3.	Eject Operation	3	4-4.	Tracking Fine Adjustment	30
1-2.	The Mode Selector	4	4-5.	No.2 Guide (TG-2) Adjustment	30
1-2-1.	Name of Each Part (external)	4	4-5-1.	No.2 Guide (TG-2) Height Presetting	30
1-2-2.	Connections	4	4-5-2.	No.2 Guide (TG-2) Adjustment	31
1-2-3.	Handling	4	4-6.	No.7 Guide (TG-7) Adjustment	31
			4-7.	Cue and REV Waveform Check	31
			4-8.	Check After Adjustment	32
			4-8-1.	Tracking Check	32
2.	PERIODICAL CHECK AND MAINTENANCE		4-8-2.	Rising Check	32
2-1.	Rotary Drum Assembly Cleaning	5	4-8-3.	Tape Path Check	32
2-2.	Tape Path Cleaning	5			
2-3.	Drive System Cleaning	5			
2-4.	Periodical Check Items	6			
2-5.	Servicing Tools	7			
3.	MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT				
3-1.	HC Roller Assembly	8			
3-2.	Guide Guard Assembly	8			
3-3.	DC Motor (Capstan Motor) Assembly	9			
3-4.	S Brake, T Brake	10			
3-5.	LB Brake, Axle Holding Pins	11			
3-6.	LB Release Arm	12			
3-7.	RK Stopper, RK Stopper Arms	12			
3-8.	Pinch Arm Assembly, TG-7 Assembly	13			
3-9.	TG-2 Assembly	14			
3-10.	S Reel Table Assembly, T Reel Table Assembly	15			
3-11.	Tension Regulator Band Assembly, Tension Regulator Arm Assembly	16			
3-12.	Tension Regulator FWD Position Preset	17			
3-13.	Drum Assembly, Dew Sensor	18			
3-14.	Eject Lever, Switch Lever Assembly, Pinch Roller Sub Arm Assembly	19			
3-15.	Timing Belt (L), RC Gear Assembly, Loading Lever Assembly, Timing Belt (S), Connecting Gear Assembly	20			
3-16.	Idler Pulley, TS Brake Assembly, LB Gear Assembly, RK Gear Assembly	21			
3-17.	UL Gear, UL Brake, UL Arm, LB Plate Spring	22			
3-18.	Coaster (Right) Assembly, Drive Gear (Right) Assembly	23			
3-19.	Coaster (Left) Assembly, Drive Gear (Left) Assembly	24			
3-20.	Loading Motor, Brake Release Arm, Wheel Gear, Worm Assembly	25			
3-21.	Rotary Upper Drum Replacement	26			
3-22.	FWD Back Tension	27			
3-23.	Reel Torque Check	27			

1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

- 1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
- 2) Cover the LED assembly with an opaque cap, etc. ①.
- 3) Attach a piece of tape to the RECOG switch ② so that the pin is held down.
- 4) Push the EJECT lever ③ in the direction of the arrow ④.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

- 1) Follow the procedures in section 1-1-1. above.
- 2) Put the rubber band ⑤ around the S and T reels.
- 3) Press the PLAY switch of unit, then push the tension regulator arm assembly ⑥ in the direction of the arrow ⑦ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
- 4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

- 1) To eject, turn the EJECT switch on.

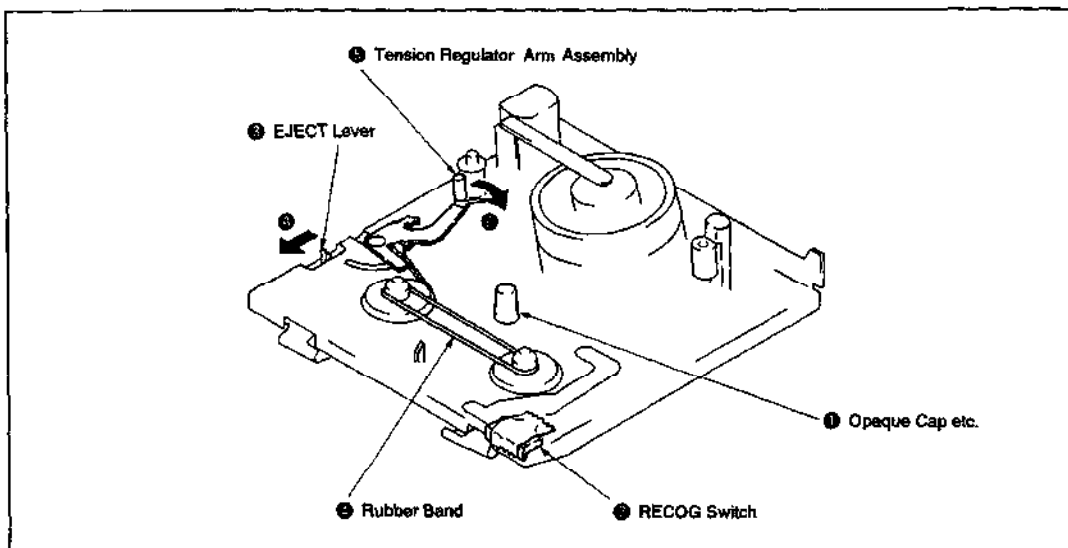


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

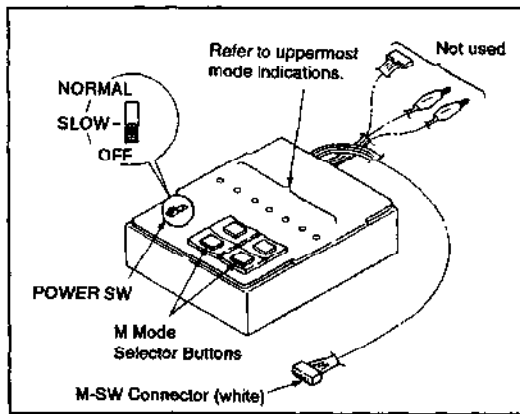


Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

- 1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ① onto the mode selector.
- 2) Attach the conversion connector (Ref. No. J-8) ③ of MODE SELECTOR III to the 6-pin connector (white) ② of the mode selector M-SW.
- 3) Remove the FP-89 flexible board ④ from the flexible connector ⑤.
- 4) Attach the FP-89 flexible board ④ to the flexible connector ⑥ of the MODE SELECTOR III conversion connector ③, then attach the 2-pin connector (white) ⑦ of the loading motor to the 2-pin connector (white) ⑧.

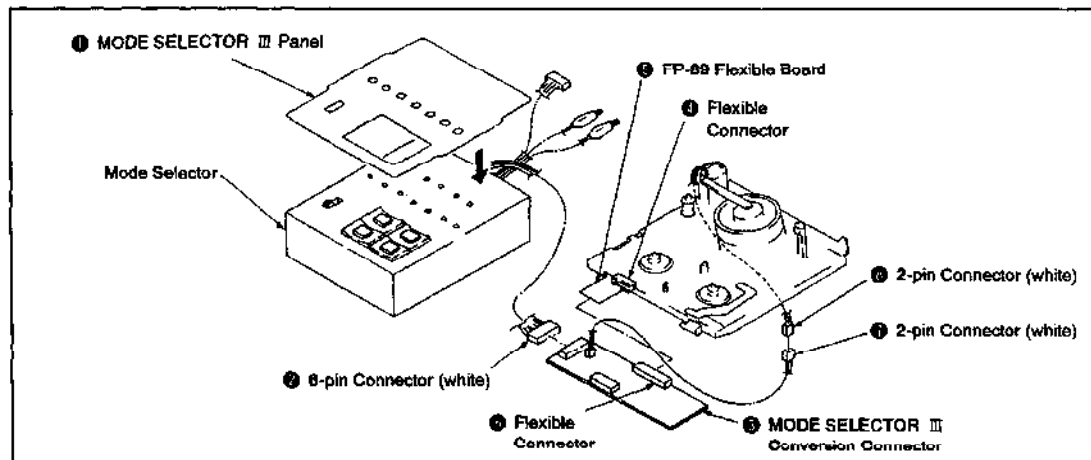


Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

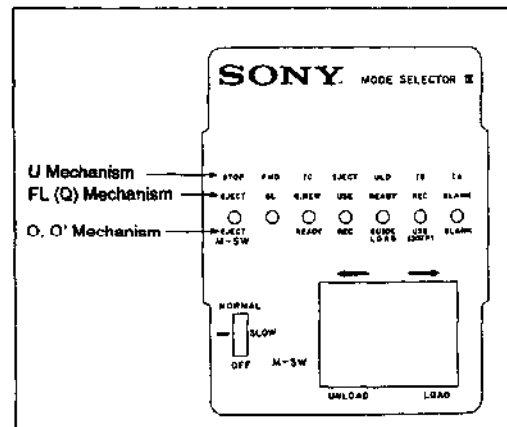


Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

- 1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.

Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

- 1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

- 1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

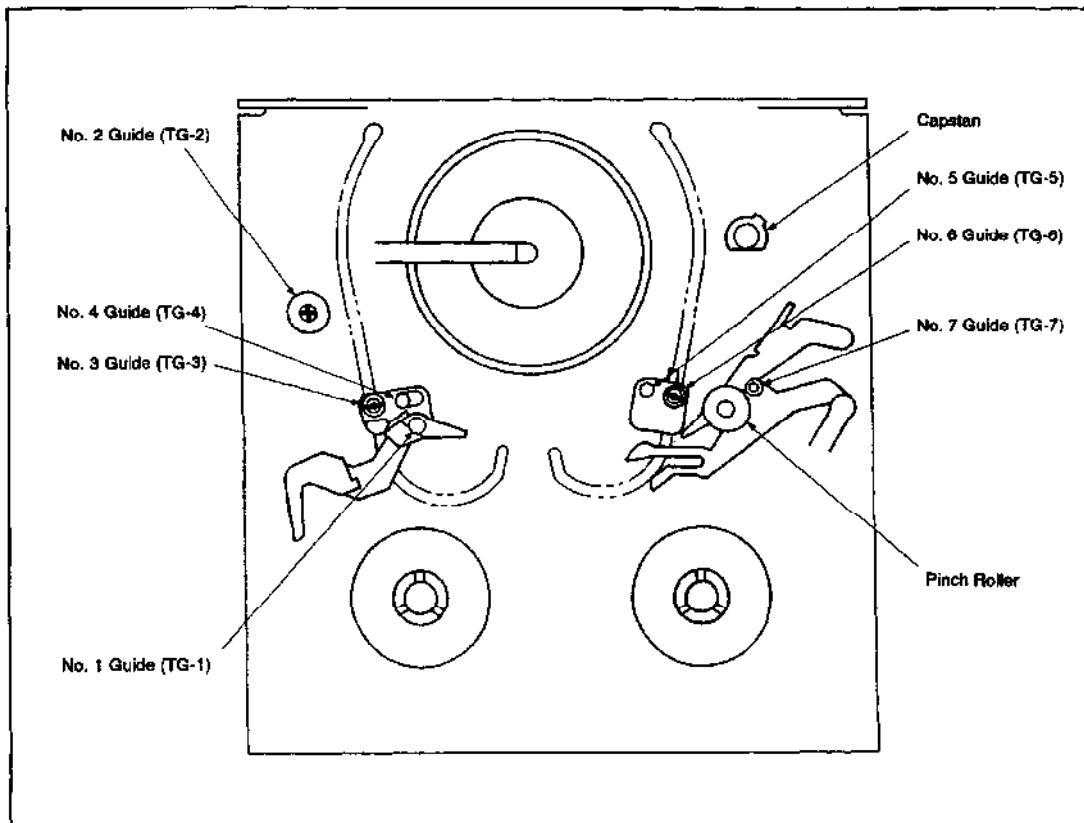


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	-	☆	-	☆	-	☆	-	☆	-	☆	3-728-866-01
	Relay belt (long)	-	☆	-	☆	-	☆	-	☆	-	☆	3-728-865-01
	Capstan shaft	-	◎	-	◎	-	◎	-	◎	-	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	-	◎	-	◎	-	◎	-	◎	-	◎	
Performance Check	Loading motor	-	☆	-	☆	-	☆	-	☆	-	☆	1-541-612-11
	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	-	☆	-	☆	-	☆	-	☆	-	☆	
	Brake system	-	☆	-	☆	-	☆	-	☆	-	☆	
	FWD, RVS torque measurement	-	☆	-	☆	-	☆	-	☆	-	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
Specified oil: Part No. 7-661-018-01
(Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
Grease: Part No. 7-662-010-08
(Sony grease SGL-701)

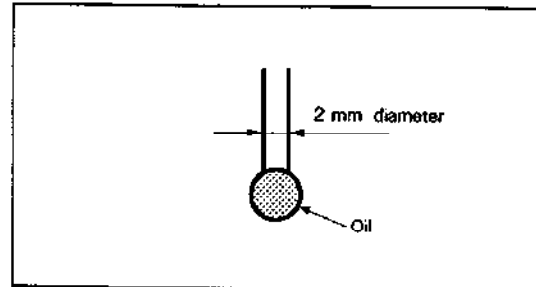
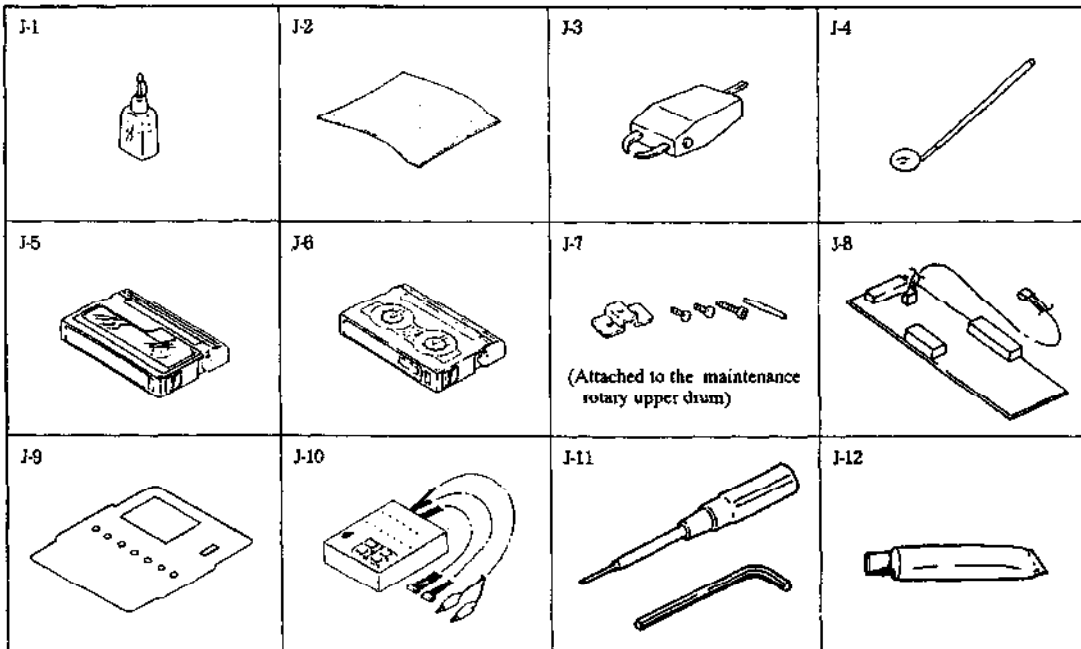


Fig. 2-2.

2-5. SERVICING TOOLS

Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	—	
J-2	Chamois cloth	2-034-697-00	—	
J-3	Head demagnetizer	Commercially available	—	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WRS-1N) PAL (WRS-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 k Ω)



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

- Notes:**
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
 - Modes within a frame are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

- 1) Remove the screw ①, then remove the HC roller assembly ②.

2. Installation (See Fig. 3-1.)

- 1) Align the two dowels ③ attached to the HC roller assembly ② with the two holes ④ in the mechanism chassis.
- 2) Secure the HC roller assembly ② with the screw ①.

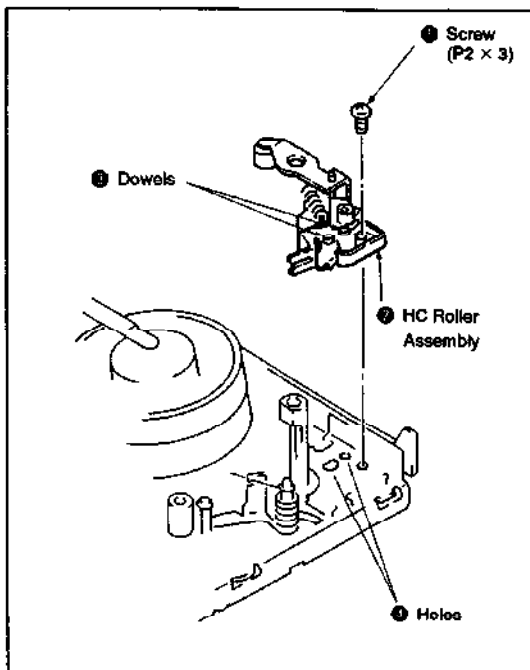


Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

- Remove the screw ①, then remove the guide guard assembly ②.

2. Installation (See Fig. 3-2.)

- 1) Align the dowel ③ attached to the guide guard assembly ② with the hole ④.
- 2) Secure the guide guard assembly ② with the screw ①.

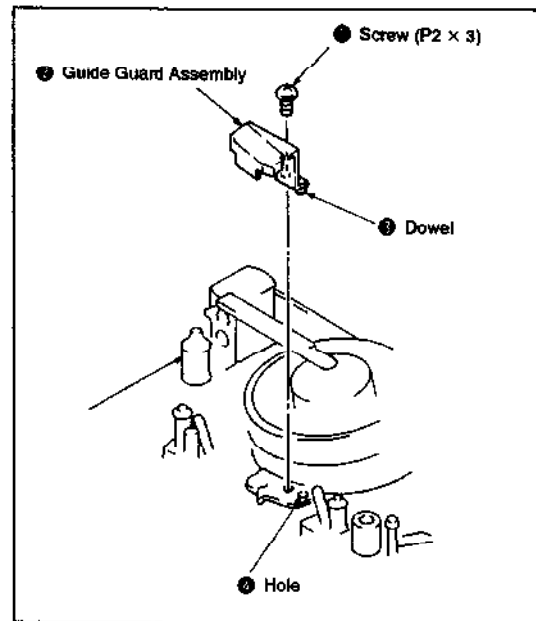


Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

- 1) Set the **[U/LD]** mode.
- 2) Turn the stopper ❶ in the direction of the arrow ❷ as far as it will go.
- 3) Remove the two screws ❸, then remove the DC motor ❹.

2. Installation (See Fig. 3-3.)

- 1) Align the two screwed dowels ❷ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❶.
- 2) Secure the DC motor assembly ❹ with the two screws ❸.
- 3) Turn the stopper ❶ in the direction of the arrow ❷ as far as it will go.

- Note:**
- When engaging the gears, take care not to damage their teeth.
 - Do not leave any clearance between the DC motor ❹ and the chassis.
 - Do not touch the capstan motor axle*, the oil seal* and the rotor*.

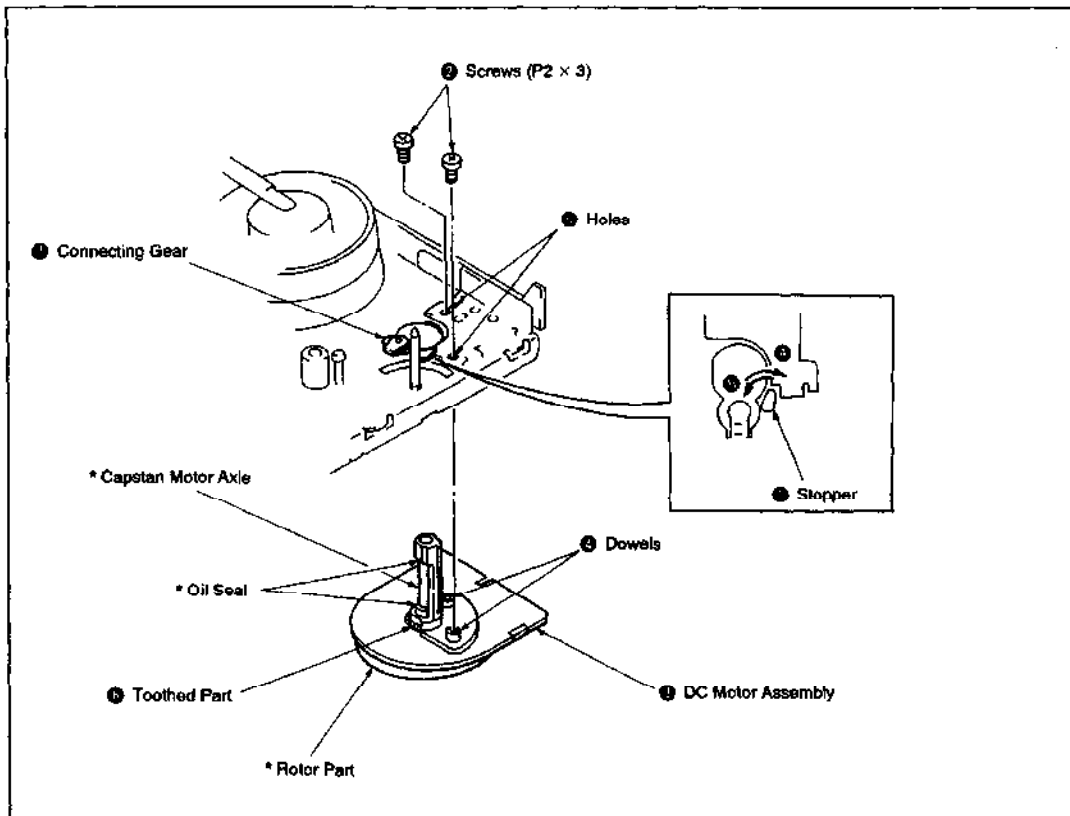


Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

- 1) Remove the torsion coil spring (ST) ①.
- 2) Remove the axle holding pin ②, then remove the T brake ③.
- 3) Remove the axle holding pin ④, then remove the S brake ⑤.

2. Installation (See Fig. 3-4.)

- 1) While fitting the toothed part ⑥ into the notch ⑦, mount the S brake ⑤.
- 2) Insert the axle holding pin ②.
- 3) Insert the axle ⑧ to the S reel side of the brake release arm ⑨ so that the ⑥ part comes closer to the drum than part ④, and mount the T brake ③.
- 4) Insert the axle holding pin ④.
- 5) Insert the torsion coil spring (ST) ① below the claw ⑩ of the axle ⑧, then hook it to two claws ⑩.

Note: Confirm that the claws of axle holding pins ② and ④ are not broken before assembling.

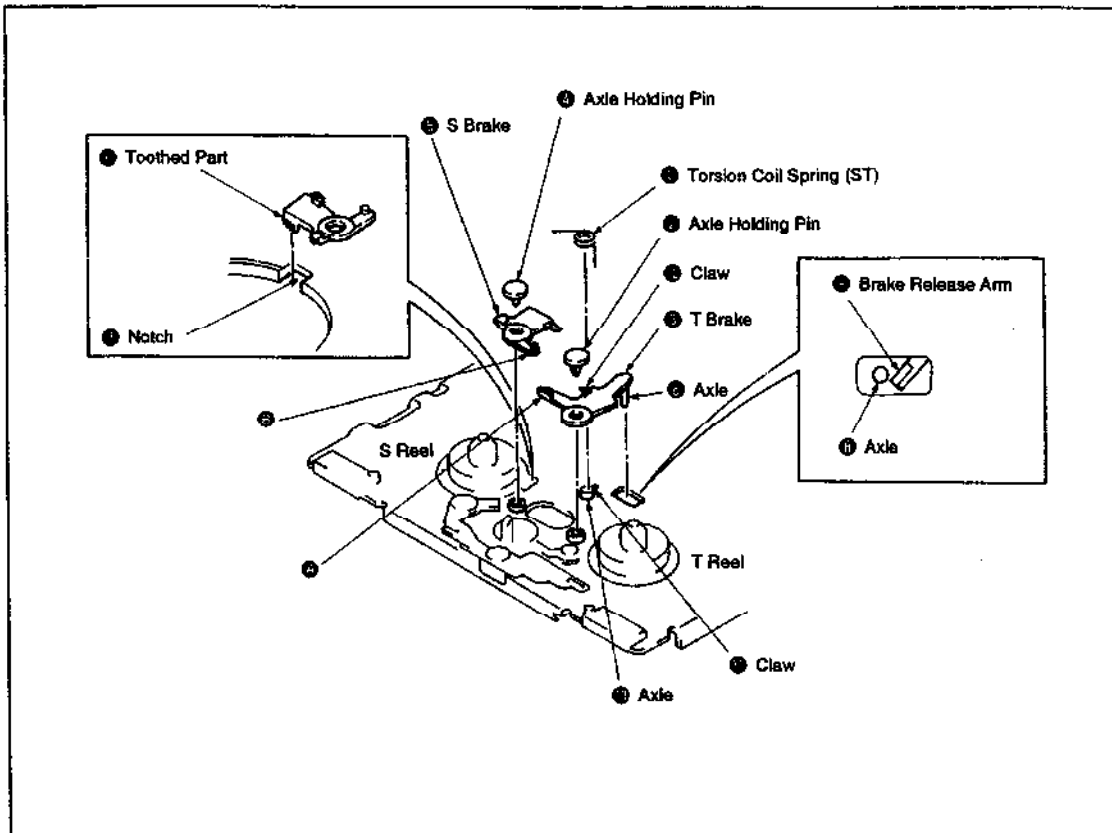


Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

- 1) Remove the screw ①, then remove the TL holding plate ②.
- 2) Remove the axle holding pin ③, then remove the LB brake ④.
- 3) Remove the axle holding pin ⑤, then remove the LB lever ⑥.

2. Installation (See Fig. 3-5.)

- 1) Mount the LB lever ⑥ matching it to pin ⑦ of the LB gear, then secure it with the axle holding pin ⑤.
- 2) Insert the pin ⑧ into the notch ⑨ of the LB lever ⑥, then mount the LB brake ④ while inserting the toothed part ⑩ into the notch ⑨.
- 3) Insert the axle holding pin ③.
- 4) Align the dowel ⑪ with the hole ⑫, then mount the TL holding plate and secure it with the screw ①.

Note: Confirm that the claws of axle holding pins ③ and ⑤ are not broken before assembling.

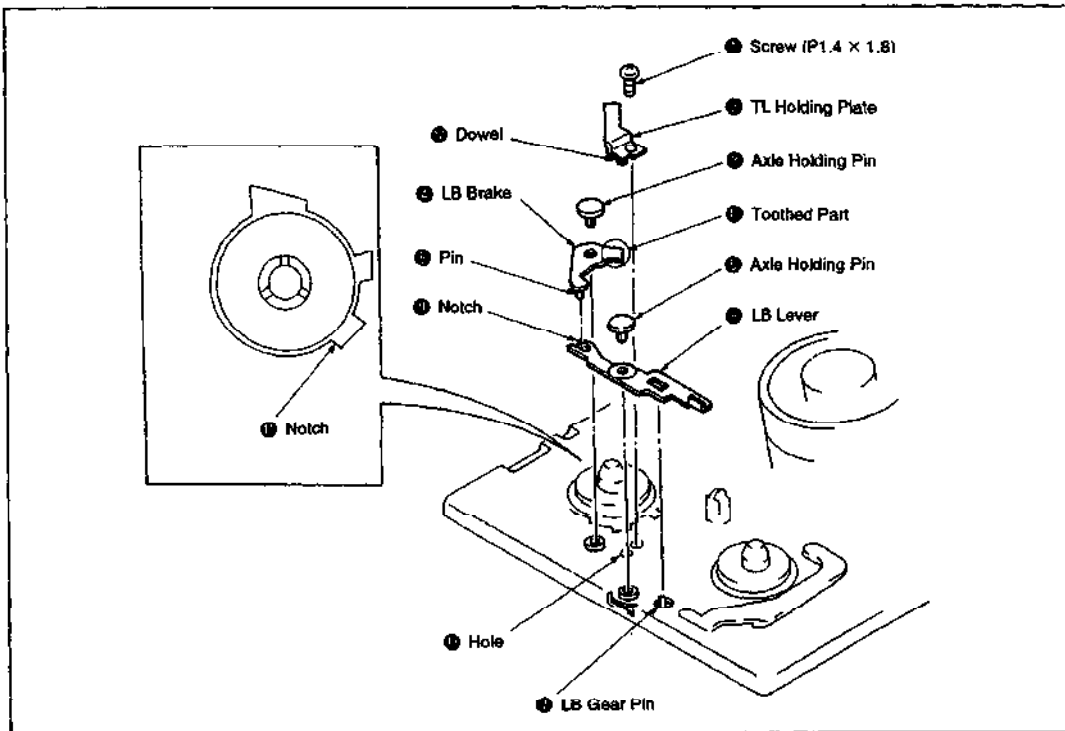


Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

- 1) While pushing the claw ① in the direction of the arrow, remove the LB release arm ②.

2. Installation (See Fig. 3-6.)

- 1) Fit the LB release arm ② to the axle ③, insert protrusions ④, ⑤, ⑥ into the three holes ⑦, then secure with the claw ①.

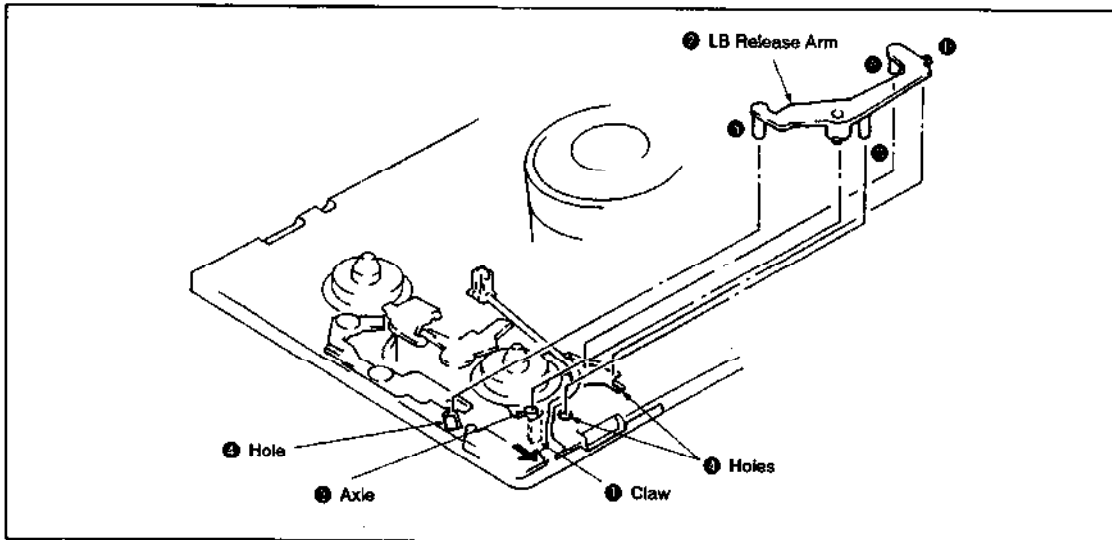


Fig. 3-6.

3-7. RK STOPPER. RK STOPPER ARMS

1. Removal (See Fig. 3-7.)

- 1) Remove the torsion coil spring (RK) ①.
- 2) Open the chassis claw ②, then remove the RK stopper arm ③.
- 3) Remove the RK stopper ④.

2. Installation (See Fig. 3-7.)

- 1) Mount the RK stopper ④ onto the axle ⑤.
- 2) Mount the RK stopper arm ③ onto the axle ⑤, insert Pin ⑥ into hole ⑦, then hook the claw ② of the chassis to the hole ⑦.
- 3) Insert the torsion coil spring (RK) ① into the axle ⑤, then hook it to claws ③ and ④.

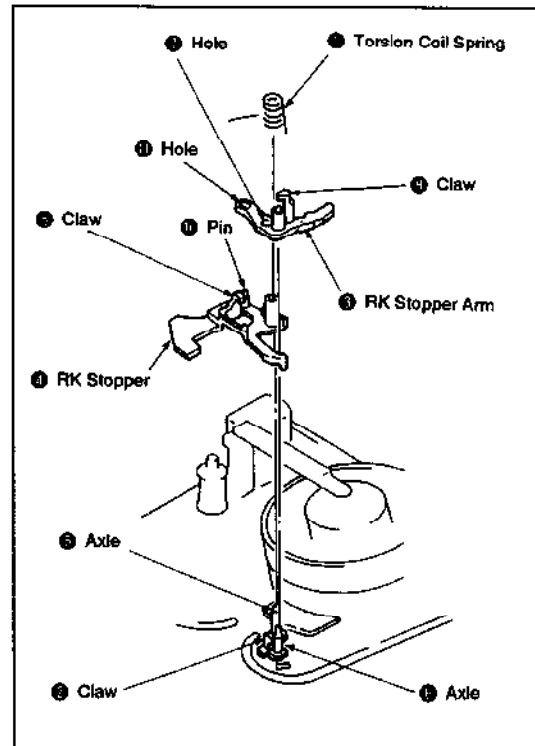


Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

- 1) Set the **[B]** mode.
- 2) Remove the stopper washer ①, then remove the pinch arm assembly ②.
- 3) Bend the claw ④ inside hole ③ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ⑤.
- 4) Remove the TG-7 arm assembly ⑥.

2. Installation (See Fig. 3-8.)

- 1) Grease the inner surfaces of hole ③ (See Fig. A).
- 2) Insert the axle ④ of the TG-7 arm assembly ⑥ into the hole ③.
- 3) Grease the shaded section ④ (See Fig. A).
- 4) Insert the TG-7 plate spring ⑤ into the hole ③, then secure it with the claw ④.
- 5) Apply half a drop of oil to the axle ④ (See Fig. B).
- 6) Fit the pinch arm assembly ② to the axle ④ and insert the pinch roller sub arm assembly tab ⑩ into the ⑪ part.
- 7) Install the stopper washer ①.

- Note:**
- Take care not to grease the screw ① of the TG-7 arm assembly ⑥ (See Fig. A).
 - When fitting the pinch arm assembly ② to the axle ④, make sure that it does not touch the TG-7 guide ⑦ or the rubber roller ⑧.
 - After assembling, be sure to perform tape path adjustment as described in section 4.

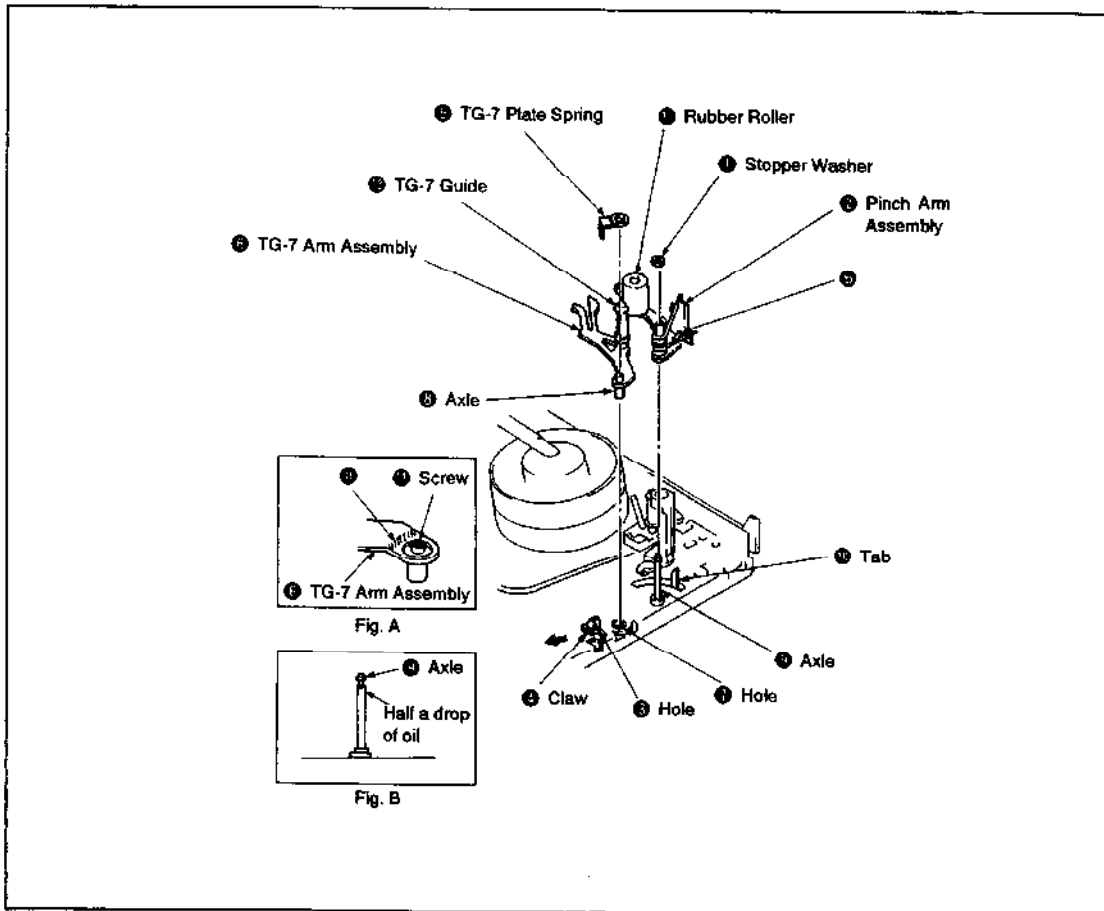


Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

- 1) Remove the TG-2 upper flange assembly ❶.
- 2) Remove the TG-2 roller ❷, the TG-2 sleeve ❸, the TG-2 lower flange ❹ and the compression spring ❺.

2. Installation (See Fig. 3-9.)

- 1) Mount the compression spring ❺, the TG-2 lower flange ❹, the TG-2 sleeve ❸ and the TG-2 roller ❷ to the axle.
- 2) Secure the TG-2 upper flange ❶ to the axle by rotating it 4 to 6 turns.

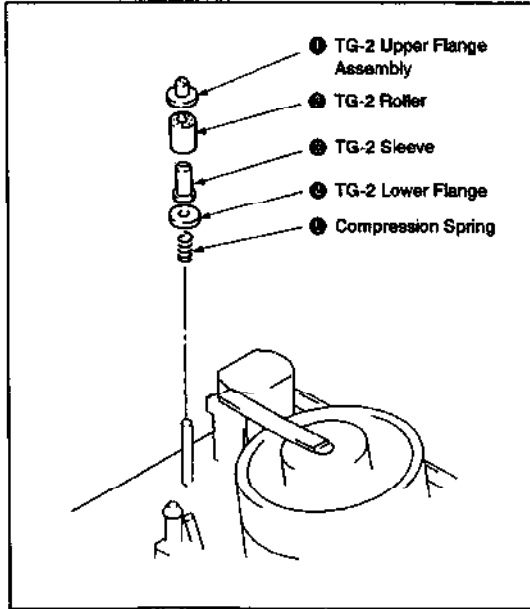


Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

- 1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by turning the TG-2 upper flange ❶.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

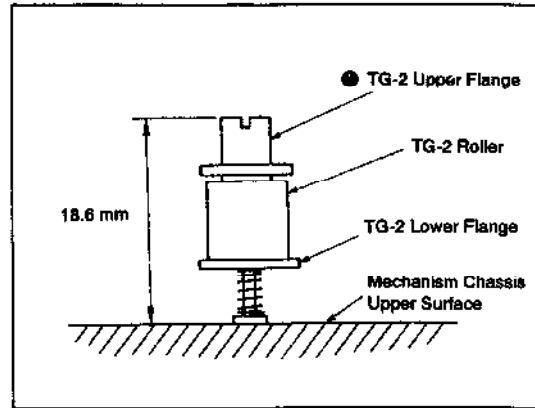


Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

- 1) Remove the S brake and T brake as described in section 3-4.
- 2) Remove the TL holding plate as described in section 3-5.
- 3) Remove the tension regulator band assembly as described in section 3-11.
- 4) Remove the S reel table assembly ①.
- 5) Turn the stopper ② approx. 90° in the direction of the arrow ③.
- 6) While sliding the LB release arm ④ in the direction of the arrow ⑤, remove the T reel table assembly ⑥.

2. Installation (See Fig. 3-11.)

- 1) Apply half a drop of oil to the axle ⑦ (See Fig. A).
- 2) Move the RK gear ⑧ in the direction of the arrow ⑨ and the TS brake ⑩ in the direction of the arrow ⑪, putting them out of the way.
- 3) While sliding the LB release arm ④ in the direction of the arrow ⑫, mount the T reel table assembly ⑥ onto the axle ⑦, then turn the stopper ② in the direction of the arrow ⑬ as far as it will go.
- 4) Apply half a drop of oil to the axle ⑦ (See Fig. B).
- 5) Move the RK gear ⑧ in the direction of the arrow ⑨, the UL brake ⑭ in the direction of the arrow ⑯ and the LB brake ⑰ in the direction of the arrow ⑱, putting them out of the way.
- 6) Mount the S reel table ① onto the axle ⑦.
- 7) Mount the tension regulator band assembly as described in section 3-11.
- 8) Mount the TL holding plate as described in section 3-5.
- 9) Mount the S brake and T brake assemblies as described in section 3-4.

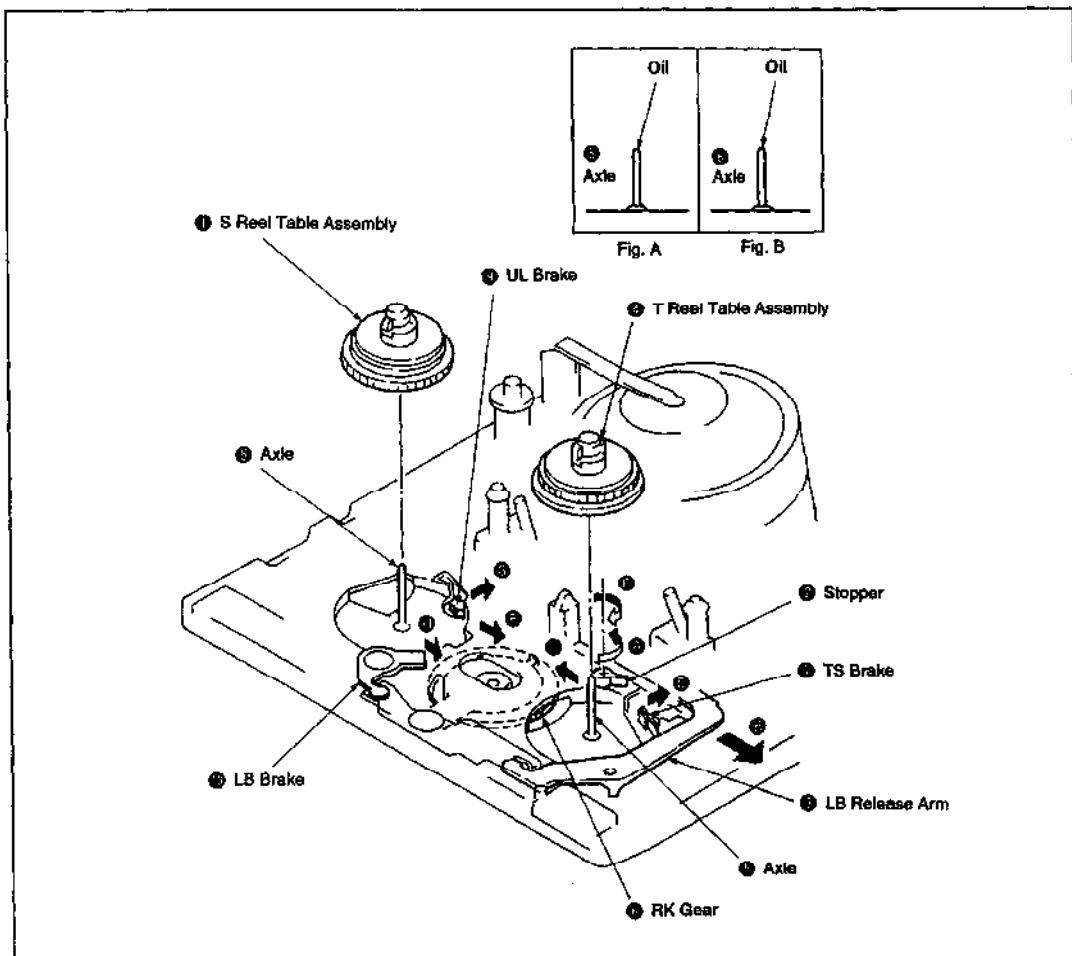


Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

- 1) Remove the TL holding plate as described in section 3-5.
- 2) Remove the screw ①.
- 3) Using a thin screwdriver or the like, remove the tension regulator band assembly ④ from the axle ⑤ of tension regulator arm assembly ⑦.
- 4) Remove the tension spring ③.
- 5) Remove the stopper washer ⑩ from the back of the mechanism chassis, then remove the tension regulator arm assembly ⑦.
- 6) Open the claw ⑧, then remove the adjust arm ⑥.

Note: When removing the tension regulator band assembly ④, take care not to twist or bend it, and not to touch the felt surface ②.

2. Installation (See Fig. 3-12.)

- 1) Engage the adjust arm ⑥ in the position shown in Fig. A, then close the claw ⑧.
- 2) Apply half a drop of oil to the hole ⑨.
- 3) Mount the tension regulator arm assembly ⑦, then insert it into the slot ⑪ so that the ⑫ part comes to the arrow ⑬ side of the switch lever assembly (See Fig. B).

- 4) While holding the tension regulator arm assembly ⑦ from the mechanism chassis front, secure it with the stopper washer ⑩ from the back.
- 5) Hook the R hook of the tension spring ③ to the adjust arm ⑥ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ⑦.
- 6) Mount the tension regulator band assembly ④ onto the axle ⑤ of tension regulator arm assembly ⑦, and place it so that the felt surface ② comes against the shaded portion of the S reel table assembly ⑭.
- 7) Mount the tension regulator plate ⑮ of the tension regulator band assembly ④ so that it is aligned with the dowel ⑯ of the mechanism chassis, then secure it temporarily with the screw ①.
- 8) Mount the TL holding plate as described in section 3-5.
- 9) Adjust tension regulator FWD position as described in section 3-12.
- 10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ④, take care not to twist or bend it, and not to touch the felt surface ②.

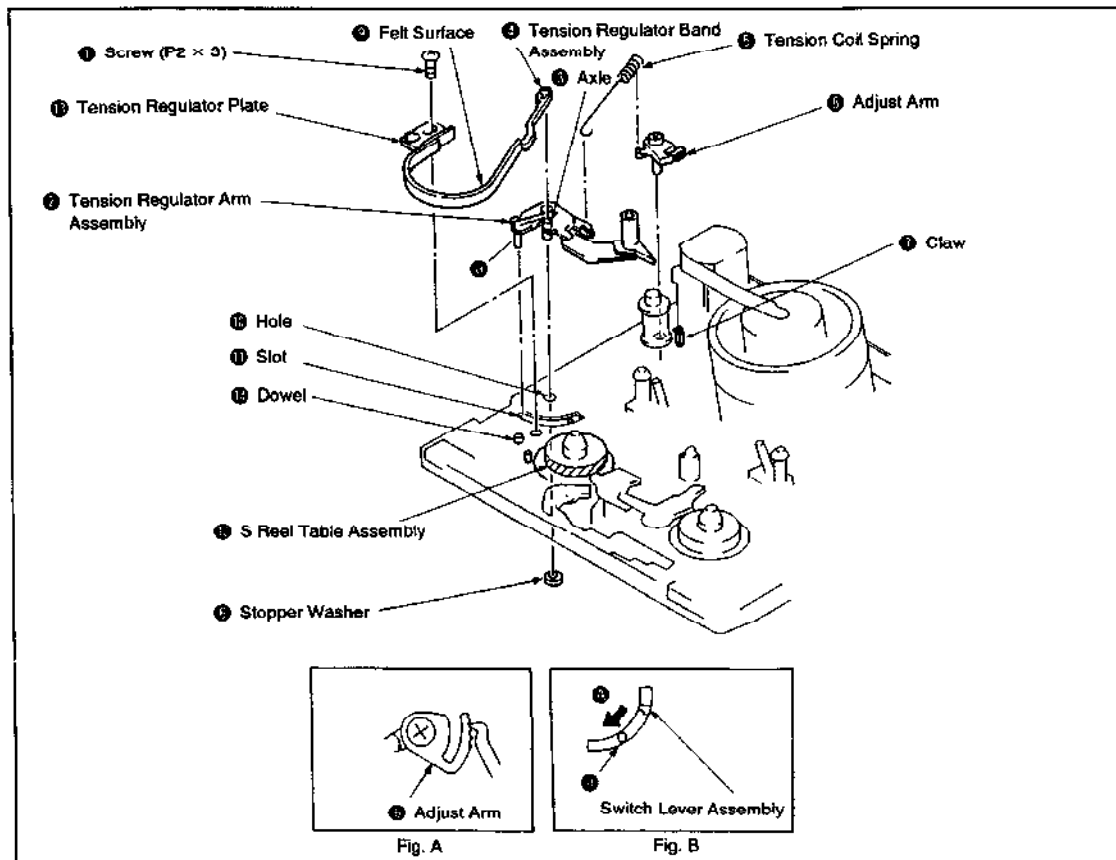


Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

- 1) Load a cassette tape and set the [FWD] mode.
- 2) Confirm whether the distance between ① part of the tension regulator arm and the groove ② of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
- 3) Loosen the fixing screw ④ of the tension regulator band assembly ③.
- 4) Slide the tension regulator plate ⑤ in the direction of the arrow ⑥ if the measured distance is over the specified range, and in the direction of the arrow ⑦ if it is under that range. Then, fix it with the screw ④.
- 5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

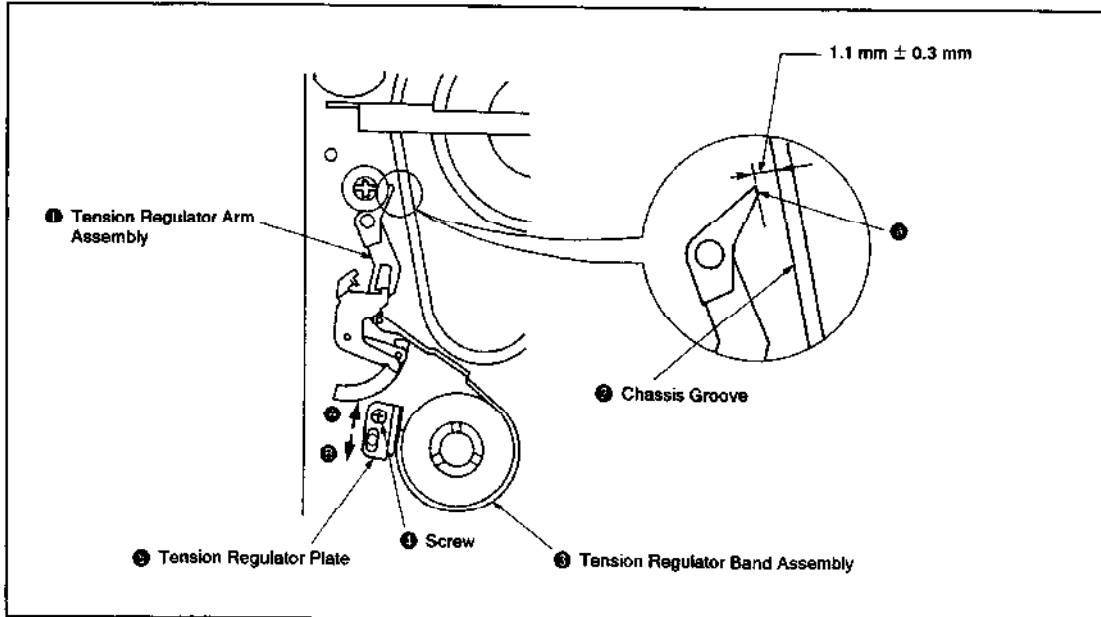


Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

- 1) Set the **EJECT** mode.
- 2) Remove the flexible board ① and the two connectors ②.
- 3) Remove the guide guard assembly as described in section 3-2.
- 4) Remove the screw ③, then remove the axle ground terminal ④.
- 5) Remove the three screws ⑤, then remove the drum assembly ⑥ from the mechanism chassis.
- 6) Remove the connector ⑦.
- 7) Remove the screw ⑧, then remove the dew sensor ⑨.

Note:

- When removing the drum assembly ⑥ from the mechanism chassis, take care not to cut the flexible board ① or the harness.
- Take care not to touch the head tip ⑩.

2. Installation (See Fig. 3-14.)

- 1) Insert part ⑩ of the dew sensor ⑨ into the notch ⑪ of the mechanism chassis, then secure it with the screw ⑧.
- 2) Mount the connector ⑦.
- 3) Clamp the harness ⑬ of the dew sensor ⑨ with the reinforcing the claw ⑭ of the plate SS assembly (See Fig. A).
- 4) Insert the connector ⑦ and the flexible board ① into the hole ⑫ of the mechanism chassis, align the drum assembly ⑥ with the two dowels ⑮ and secure it with the three screws ⑤.
- 5) Align the axle ground terminal ④ with the two dowels ⑮ of the mechanism chassis and secure it with the screw ③.
- 6) Mount the guide guard assembly as described in section 3-2.
- 7) Mount the two connectors ② and the flexible board ①.

Note:

- Take care not to cut the flexible board ① or the harness ⑬.
- Take care not to touch the head tip ⑩.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

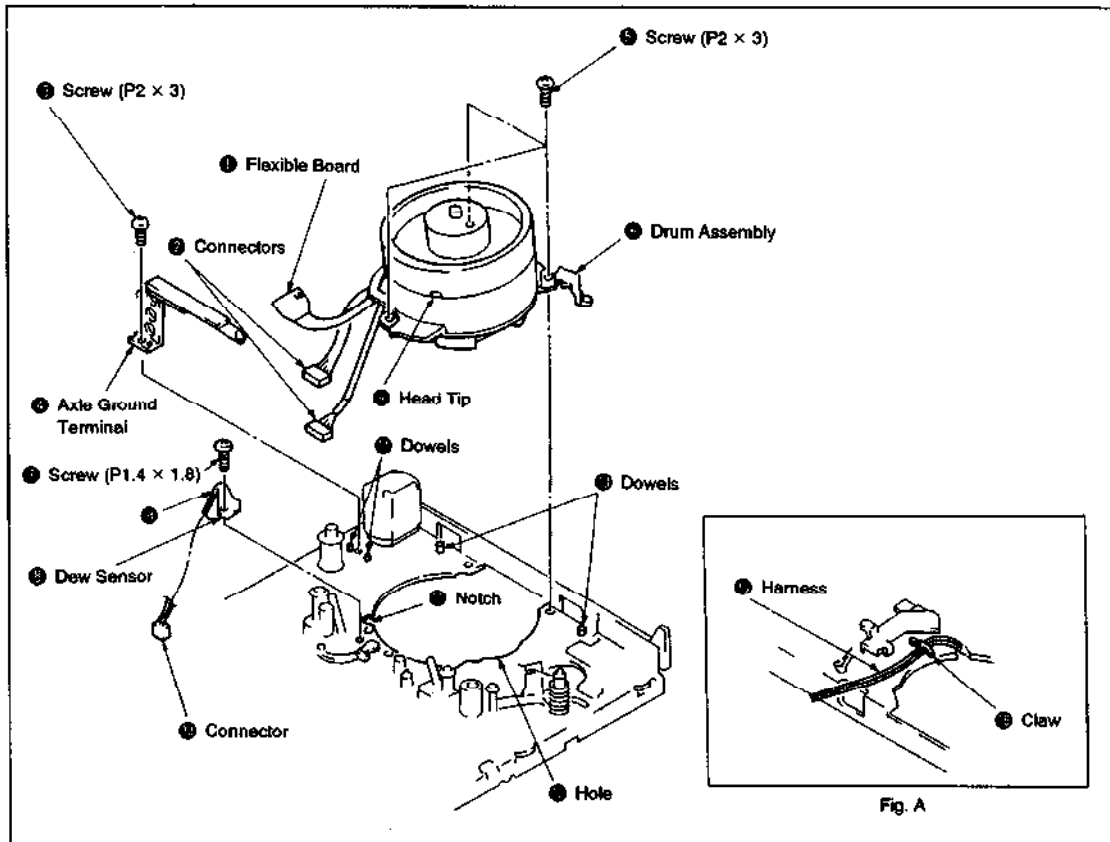


Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Set the **STOP** mode.
- 3) Remove the claw ①, then remove the eject lever ②.
- 4) Remove the stopper washer ③, then remove the switch lever assembly ④.
- 5) Remove the pinch roller load spring ⑤.
- 6) Remove the stopper washer ⑥, then remove the pinch roller sub arm assembly ⑦.

2. Installation (See Fig. 3-15.)

- 1) Grease the axle ⑧ (See Fig. A).
- 2) Assemble by inserting ⑧ part of the pinch roller sub arm assembly ⑦ into the slot ⑨, then insert the pin ⑩ into the loading lever assembly notch ⑪.
- 3) Secure with the stopper washer ③.

- 4) Mount the pinch roller load spring ⑤ by catching its ⑫ end between the claw ① and the chassis side and its ⑬ end to the claw ①.
- 5) Apply half a drop of oil to the axle ⑭ (See Fig. B).
- 6) Align the groove ⑮ of the switch lever assembly ④ with the mode detector switch protrusion ⑯, mount it on the axle ⑭, then insert the pin ⑰ into the drive gear (left) assembly ⑱ outer groove.
- 7) Secure with the stopper washer ③.
- 8) Mount the eject lever ② and close the claw ①.
- 9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ④ onto the axle ⑭ with the tension regulator arm assembly installed, set the pin ⑰ to the arrow ⑲ side of the switch lever assembly ④.

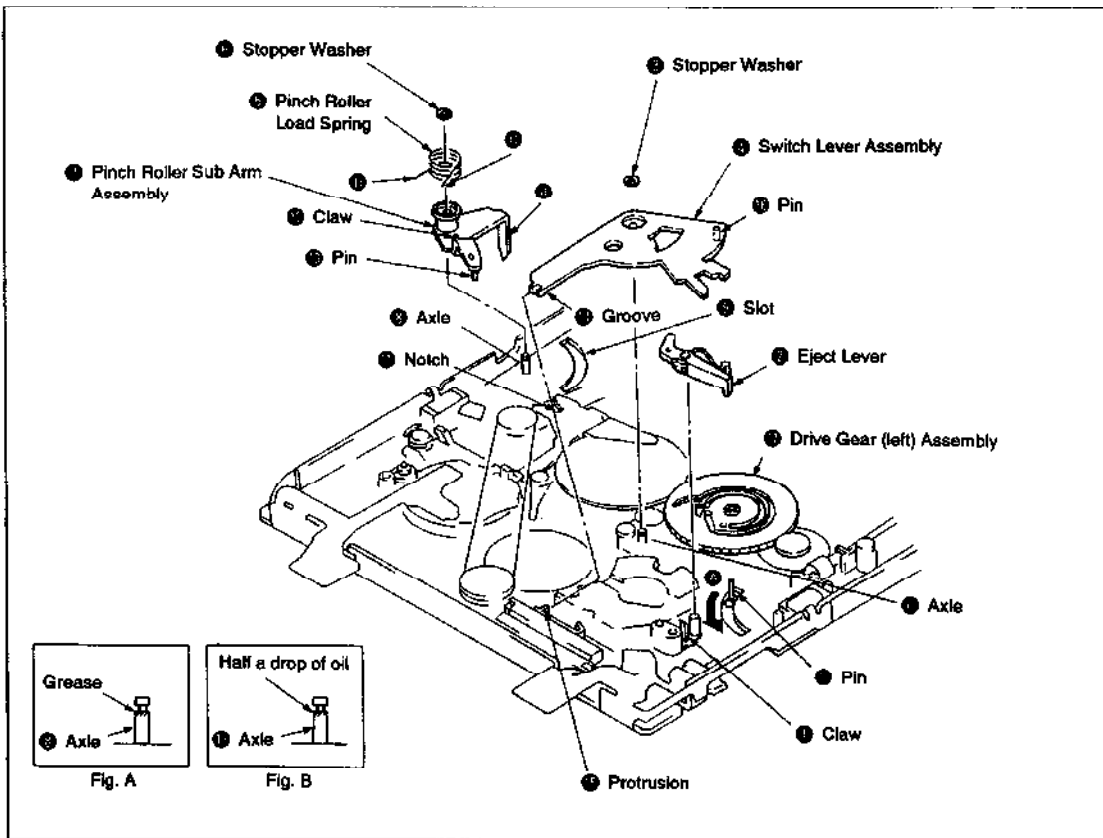


Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the pinch roller sub arm assembly as described in section 3-14.
- 3) Set the **STOP** mode.
- 4) Remove the stopper washer ①, then remove the RC gear assembly ② from the axle ③ with the timing belt (L) ④ attached.
- 5) Remove the timing belt (L) ④ from the idler pulley assembly ⑤.
- 6) Remove the stopper washer ⑥ and remove the loading lever assembly ⑦ while pushing the claw ⑧ in the direction of the arrow ⑨.
- 7) Turn the stopper ⑩ approx. 90° in the direction of the arrow ⑪.
- 8) Remove the connecting gear assembly ⑫ from the axle ⑬ with the timing belt (S) ⑭ attached.
- 9) Remove the timing belt (S) ⑭ from the idler pulley assembly ⑤.

Note: When removing the connecting gear ⑫, take care not to touch the flange section ⑬.

2. Installation (See Fig. 3-16.)

- 1) Apply half a drop of oil to the axle ⑬ (See Fig. F).
- 2) Hook one end of the timing belt (S) ⑭ onto the connecting gear assembly ⑫ and the other end onto gear ⑮ of the idler pulley assembly ⑤. (Refer to the figure.)
- 3) Mount the connecting gear assembly ⑫ with the timing belt (S) ⑭ attached to the axle ⑬.
- 4) Turn the stopper ⑩ in the direction of the arrow ⑪ as far as it will go.
- 5) Apply half a drop of oil to the axle ⑬ (See Fig. A).
- 6) Fit the loading lever assembly ⑦ to the axle ⑬, secure the ⑧ part with the claw ⑧ and place the pin ⑯ into the groove of the drive gear (right) assembly ⑰.
- 7) Install the stopper washer ⑥.
- 8) Place the timing belt (L) ④ around the gears of the RC gear assembly ② indicated in Fig. B, and its opposite side around the gear ⑮ of the idler pulley assembly ⑤. (See Fig. E.)
- 9) Mount the RC gear assembly ② onto the axle ③ with the timing belt (L) ④ attached, and engage it with the gear of the RK gear assembly ⑱.
- 10) Install the stopper washer ⑥.
- 11) Grease parts of the loading lever assembly ⑦ indicated in Fig. C.
- 12) Mount the pinch roller sub arm assembly as described in section 3-14.
- 13) Mount the DC motor (capstan motor) as described in section 3-3.

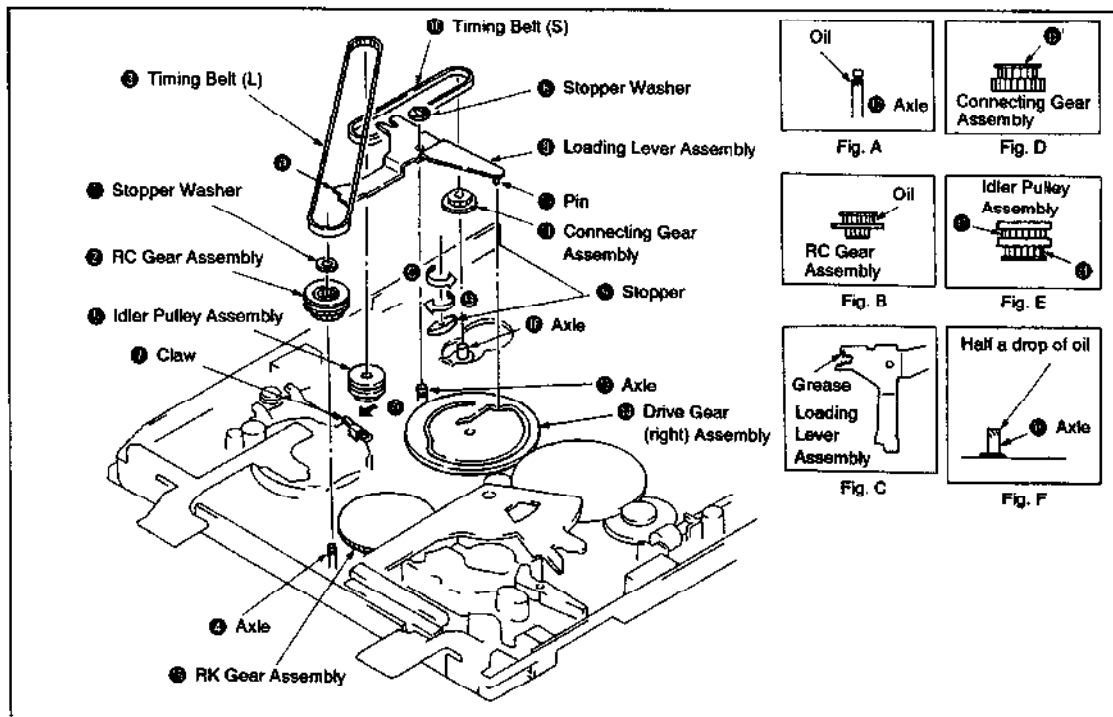


Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the switch lever assembly as described in section 3-14.
- 3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
- 4) Set the **STOP** mode.
- 5) Remove the stopper washer ①, then remove the idler pulley ②.
- 6) Open the claw ③, then remove the TS brake assembly ④.
- 7) Remove the torsion coil spring (L.B) ⑤.
- 8) Remove the stopper washer ⑥, then remove the LB gear assembly ⑦.
- 9) Remove the RK gear assembly ⑧.

Note: When removing the idler pulley ②, take care not to touch the flange section ⑨. (See Fig. C.)

2. Installation (See Fig. 3-17.)

- 1) Apply half a drop of oil to the axle ⑩ (See Fig. A).
- 2) Mount the RK gear assembly ⑧ onto the axle ⑩, keeping it in horizontal position.
- 3) Apply half a drop of oil to the axle ⑪ (See Fig. B).
- 4) Mount the LB gear assembly ⑦ onto the axle ⑪ and secure it with the stopper washer ⑥.
- 5) Insert the torsion coil spring (LB) ⑤ into the axle ⑫, then hook it to the mechanism chassis notch ⑬ and to the tab ⑭.
- 6) Mount the TS brake assembly ④ and close the claw ③.
- 7) Apply half a drop of oil to the axle ⑬ (See Fig. D).
- 8) Mount the idler pulley ② onto the axle ⑬, then secure it with the stopper washer ①.
- 9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
- 10) Mount the switch lever assembly as described in section 3-14.
- 11) Mount the DC motor (capstan motor) as described in section 3-3.

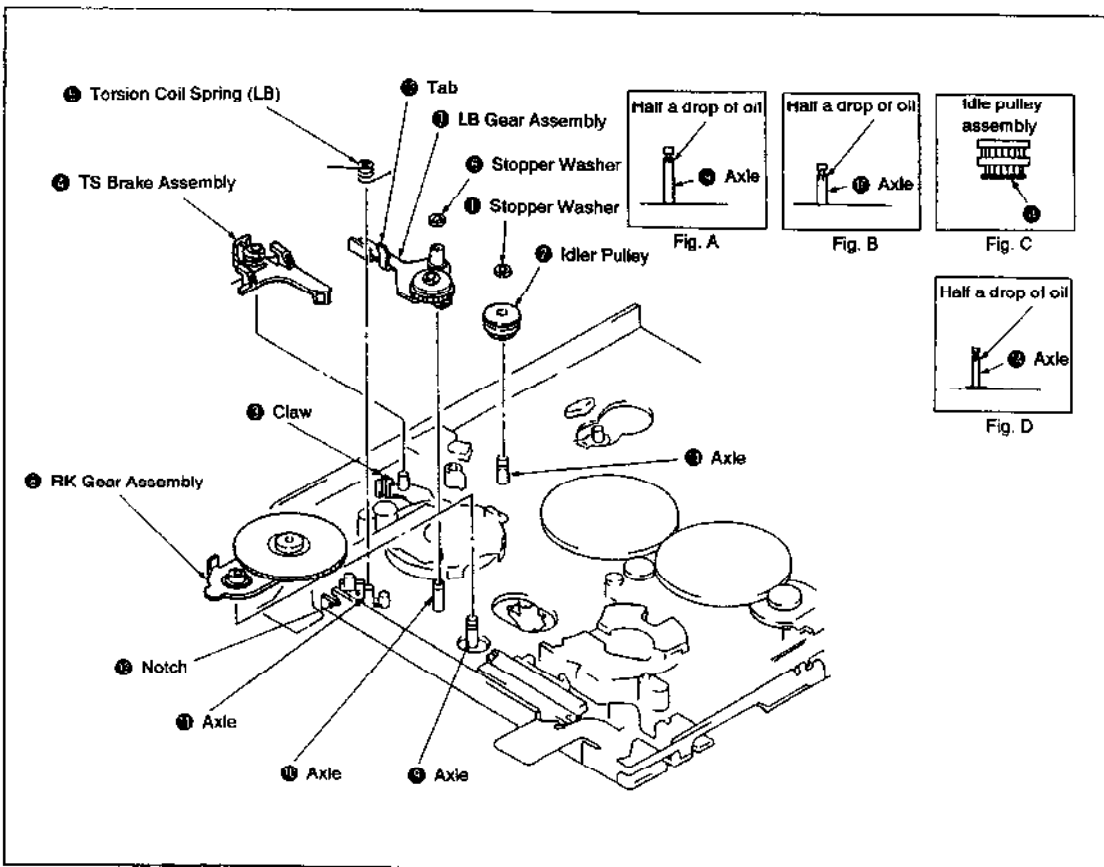


Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

- 1) Remove the switch lever assembly as described in section 3-14.
- 2) Remove the stopper washer ①, then remove the UL gear ②.
- 3) Remove the UL arm ③, the 1.6 mm-diameter poly washer ④ and the LB plate spring ⑤.
- 4) Remove the UL brake ⑥.

2. Installation (See Fig. 3-18.)

- 1) Mount the UL brake ⑥.
- 2) Apply half a drop of oil to the axle ⑦ (See Fig. A).
- 3) Mount the LB plate spring ⑤ to the axle ⑦ as shown in Fig. B, then install the 1.6mm-diameter poly washer ④.
- 4) Mount the UL arm ③ to the axle ⑦ so that the protrusion ⑧ comes into the groove ⑨ of the UL brake ⑥.
- 5) Mount the UL gear ② to the axle ⑦ and engage it with the gear of the drive gear (left) assembly ⑩.
- 6) Install the stopper washer ①.
- 7) Mount the switch lever assembly as described in section 3-14.

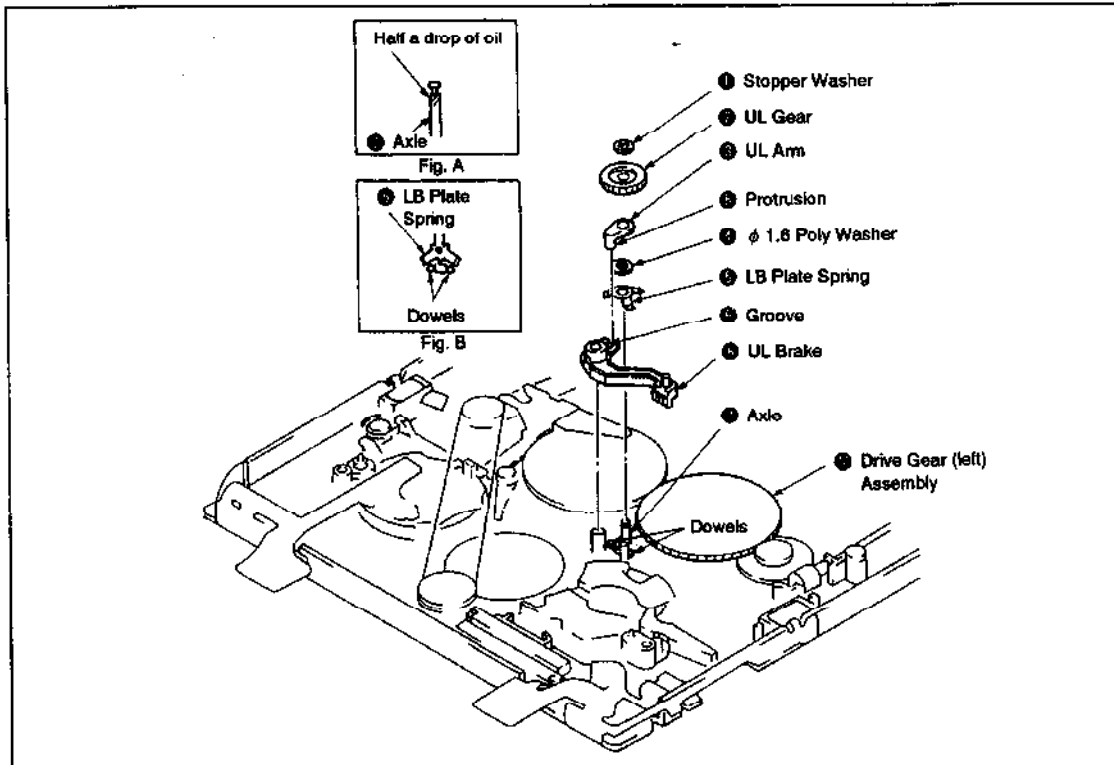


Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

1. Removal (See Fig. 3-19.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the drum unit as described in section 3-13.
- 3) Remove the switch lever assembly as described in section 3-14.
- 4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 5) Set the **STOP** mode.
- 6) Remove the screw ①, then remove the coaster plate spring ② and the coaster (right) assembly ③.
- 7) Remove the two screws ④, then remove the reinforcing plate TT ⑤.
- 8) Remove the stopper washer 1.5 ⑥, then remove the drive gear (right) assembly ⑦.

2. Installation (See Fig. 3-19.)

- 1) Grease the points of the mechanism chassis shown in Fig. A.
- 2) Apply half a drop of oil to the axle ⑧ (See Fig. F).
- 3) Grease pin ⑨, axle ⑧ and dowel ⑩ of the coaster (right) assembly ③ (See Fig. D).
- 4) Mount by aligning the pin ⑨ and the axle ⑧ with the slot ⑪ of the mechanism chassis.
- 5) Move the brake release arm ⑫ in the direction of the arrow ⑬ to put it out of the way.

- 6) Mount the drive gear (right) assembly ⑦ to the axle ⑧, and engage it with the drive gear (left) assembly ⑬ as shown in Fig. B.
- 7) Align the ⑭ part with the ⑮ part, and the hole ⑯ with the pin ⑨ of the coaster (right) assembly ③.
- 8) Install the stopper washer 1.5 ⑥.
- 9) Mount by aligning the coaster plate spring ② with the axle ⑧ of the coaster (right) assembly ③ and pin ⑨, then secure with the screw ①.
- 10) Mount the reinforcing plate TT ⑤ aligning it with the dowel ⑩, then tighten the two screws ④ in the indicated order.
- 11) Grease the points indicated in Figs. C and E.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly as described in section 3-14.
- 14) Mount the drum unit as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

- Note:**
- Screw ① should be tightened with a tightening torque of approx. 500g*cm. If tightened too much, the coaster (right) assembly ③ and the coaster plate spring ② will be deformed.
 - After installing, be sure to perform tape path adjustment as described in section 4.

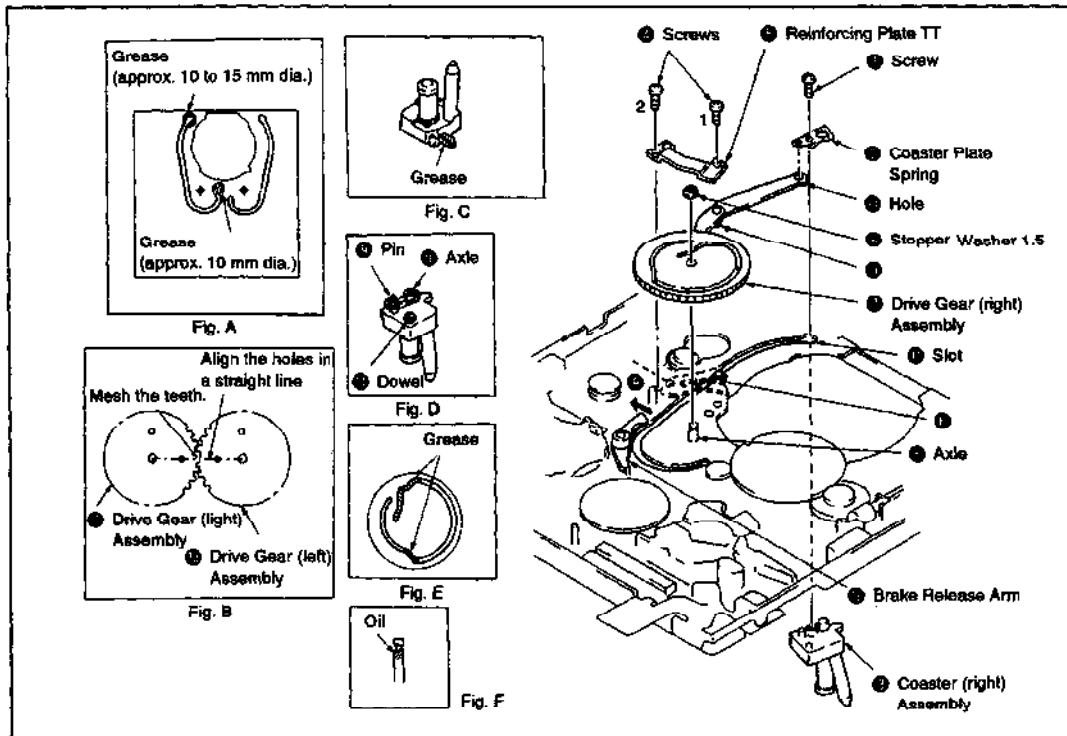


Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the drum assembly as described in section 3-13.
- 3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
- 4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 5) Remove the coaster (right) assembly and the drive gear (right) assembly as described in section 3-18.
- 6) Remove the screw ①, then remove the coaster plate spring ② and the coaster (left) assembly ③.
- 7) Remove the two screws ④, then remove the reinforcing plate SS assembly ⑤.
- 8) Remove the stopper washer 1.5 ⑥, then remove the drive gear (left) assembly ⑦.

2. Installation (See Fig. 3-20.)

- 1) Grease the points of the mechanism chassis shown in Fig. A.
- 2) Apply half a drop of oil to the axle ④ (See Fig. E).
- 3) Grease pin ①, axle ④ and dowel ⑤ of the coaster (left) assembly ③ (See Fig. B).
- 4) Mount by aligning the pin ① and the axle ④ with the slot ⑧ of the mechanism chassis.
- 5) Fit the drive gear (left) assembly ⑦ to the axle ④, and mount so that the gear engages with the wheel gear ⑨ and the UL gear ⑩.

- 6) Align the ⑪ part with the slot ⑧, and the hole ⑫ with the pin ① of the coaster (left) assembly ③.
- 7) Install the stopper washer 1.5 ⑥.
- 8) Mount by aligning the coaster plate spring ② with the axle ④ and pin ① of the coaster (left) assembly ③, then secure with the screw ①.
- 9) Mount the reinforcing plate SS assembly ⑤ aligning it with the dowel ⑤, then tighten the two screws ④ in the indicated order.
- 10) Grease points indicated in Figs. C and D.
- 11) Mount the coaster (right) assembly and the drive gear (right) assembly as described in section 3-18.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 14) Mount the drum assembly as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

- Note:**
- Screw ① should be tightened with a tightening torque of approx. 500g·cm. If tightened too much, the coaster (right) assembly ③ and the coaster plate spring ② will be deformed.
 - After installing, be sure to perform tape path adjustment as described in section 4.

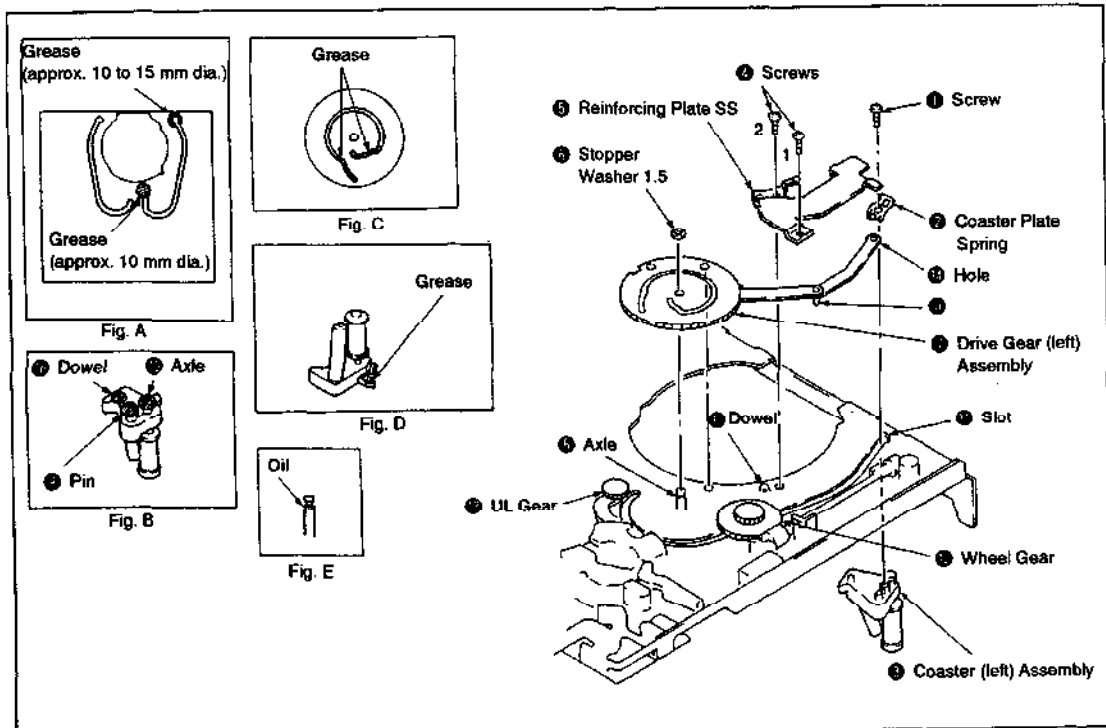


Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 4) Remove the drive gear (right) assembly as described in section 3-18.
- 5) Remove the drive gear (left) assembly as described in section 3-19.
- 6) Remove the two screws ①, then remove the loading motor assembly ②.
- 7) Remove the brake release arm ③.
- 8) Remove the stopper washer ④, then remove the wheel gear ⑤.
- 9) Remove the worm assembly ⑥ from the six claws ⑦.

2. Installation (See Fig. 3-21.)

- 1) Mount the worm assembly ⑥, matching it to the six claws ⑦.
- 2) Grease the shaded parts of the worm assembly ⑥ (five places) (see Fig. A).
- 3) Apply half a drop of oil to the axle ⑧ (See Fig. B).
- 4) Fit the wheel gear ⑤ to the axle ⑧ and engage it with the gear of the worm assembly ⑥.
- 5) Mount the brake release arm ③.
- 6) Grease the whole perimeter of the gear of the loading motor assembly ②.
- 7) Align the loading motor assembly ② with the mechanism chassis and secure it with the two screws ①.
- 8) Mount the drive gear (left) assembly as described in section 3-19.
- 9) Mount the drive gear (right) assembly as described in section 3-18.
- 10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 12) Mount the DC motor (capstan motor) as described in section 3-3.

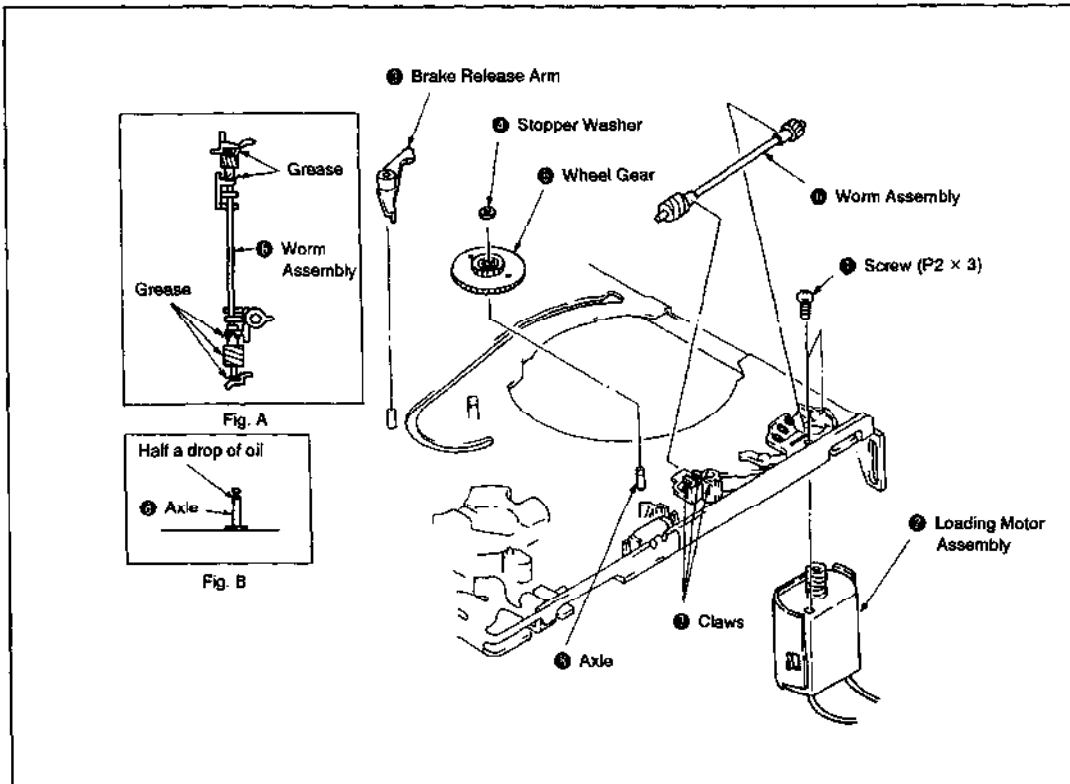


Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.
- 1) Detach the six solderings ①, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
- 2) Remove the two screws ② (See Fig. 3-22).
- 3) Mount the jig ③ (Ref. No. J-7) with the two supplied screws ④, then screw the attached hexagon socket screws ⑤ to the jig ③. The rotary upper drum ⑥ will move upward and come off (See Fig. 3-23).

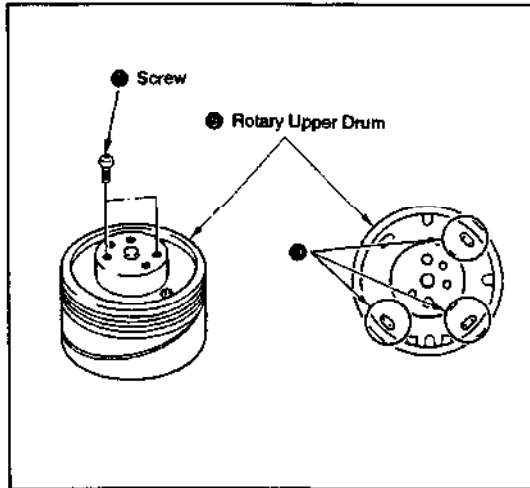


Fig. 3-22.

2. Installation

- 1) Wipe clean the flange surface and the rotary upper drum ⑥ surface that makes contact with it, and confirm that they are free from dirt and scratches.
 - 2) Insert the jig ③ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ⑥ by passing the jig through its positioning hole ⑦.
- Note:** Confirm that the terminals ⑧ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
- 3) Remove the jig ③ and push down the rotary upper drum ⑥ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ⑤ alternately.
 - 4) Insert the jig ③ into the positioning hole ⑦ again and confirm that it goes in smoothly. If it does not, loosen the two screws ⑤, repeat step 3 of the Removal paragraph and restart the setting procedure.
 - 5) Tighten the screws ④.
 - 6) Solder the terminals ⑧ (& ⑨ in Fig. 3-22).

Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

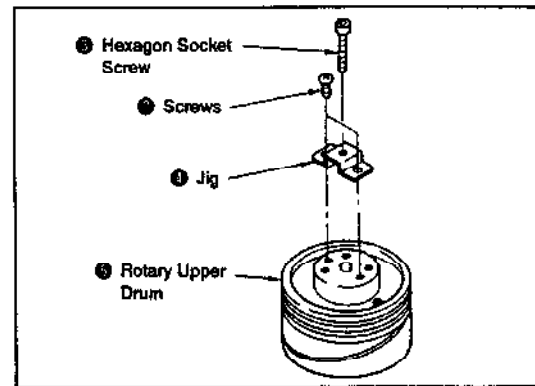


Fig. 3-23.

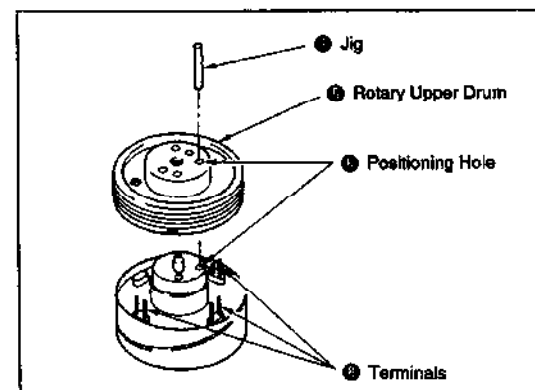


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

- 1) Set the torque cassette (Ref. No. J-6).
- 2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g \cdot cm.
- 3) If the torque value does not meet the specification, adjust the adjust arm ●.

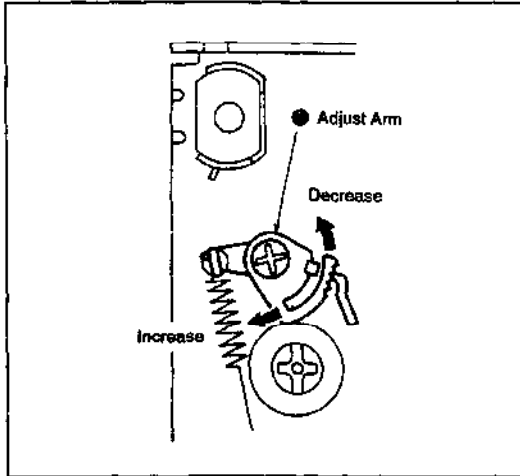


Fig. 3-25.

3-23. REEL TORQUE CHECK

- 1) Set the torque cassette.
- 2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g \cdot cm.
- 3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g \cdot cm.
- 4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g \cdot cm.
- 5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

• Connect the TEST A and TEST B terminals to the COM terminal.

Example:

NTSC GV-8

PAL GV-8E

Connect Pins ① and pin ③ of CN017 on the
{ SV-34 board (GV-8) } to pin ② of it. (See Fig. 4-1)

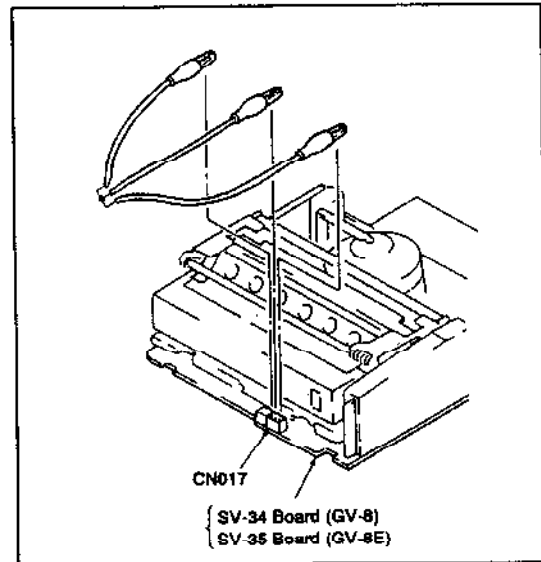


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).

Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.

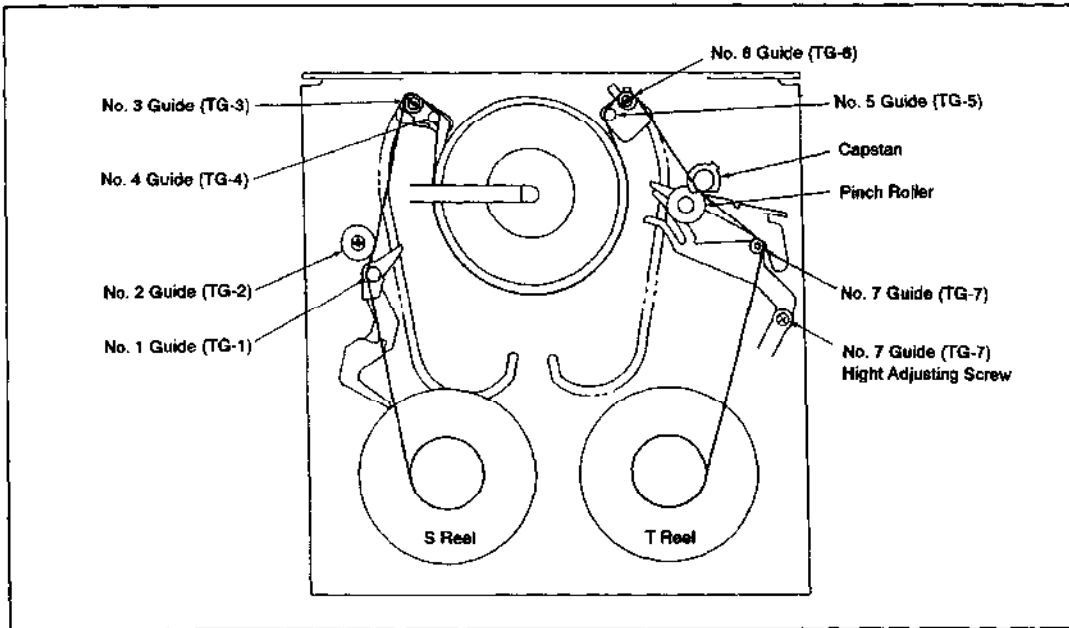
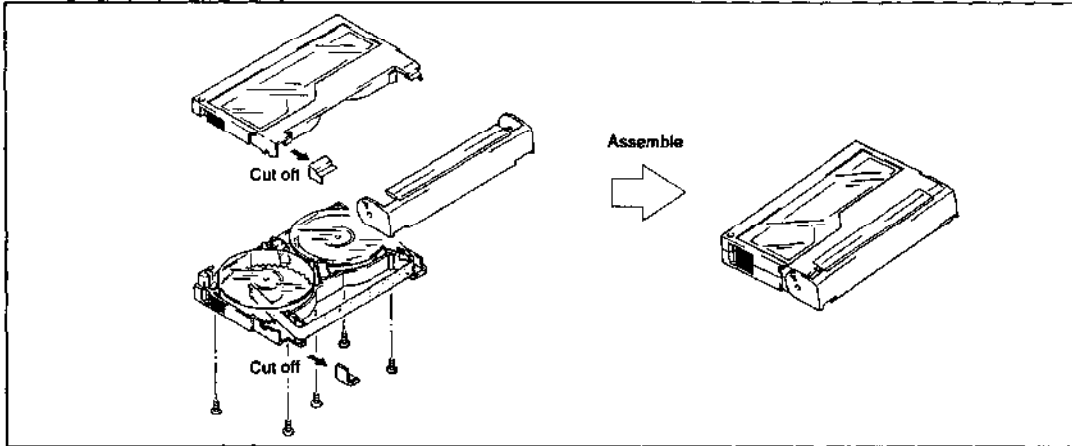


Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

- 1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
- 2) Connection of oscilloscope and output method of waveform.
CH 1: RF signal output of the drum head (V RF OUT)
Method for signal output:
Short-circuit the external trigger output (RF SW. P) and GND.

Example:

NTSC GV-8

PAL GV-8E

CH 1: Pin ③ (V RF OUT) of CN018 on the

- { SV-34 board (GV-8)
- { SV-35 board (GV-8E)

Method for signal output:

Short-circuit pin ① (GND) and pin ② (RF SW.P)

- { SV-34 board (GV-8)
- { SV-35 board (GV-8E)

- 3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
- 4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

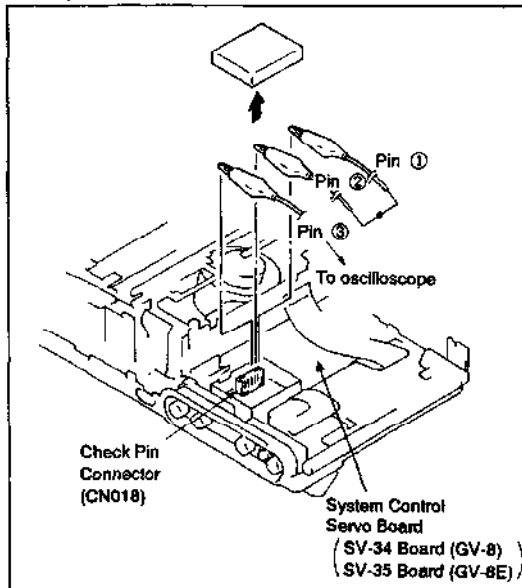


Fig. 4-3.

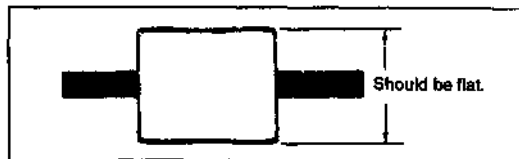


Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ①, loosen the lock screw ② a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ③.
- 3) Pass a hexagonal wrench, screwdriver or the like through the hole ④, loosen the lock screw ⑤ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ⑥.

Note: Take care not to loosen lock screws too much, since guides come loose easily.

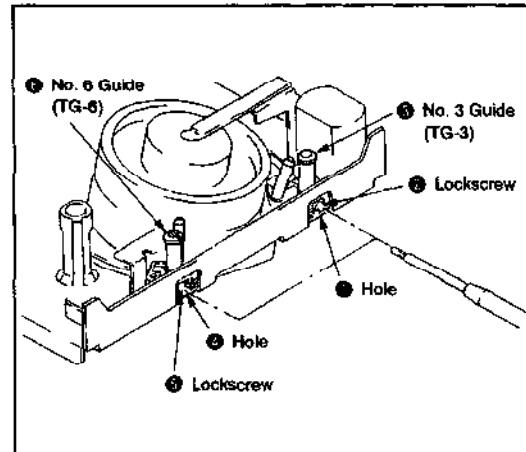


Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT
(See Figs. 4-5. and 4-6.)

- 1) Play back the alignment tape for tracking adjustment and set the track shift mode.
- 2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
- 3) Fix the No. 3 guide ③ by tightening its lock screw ④. Then confirm that the entrance side waveform has not changed.
- 4) Fix the No. 6 guide ⑥ by tightening its lock screw ⑤. Then confirm that the exit side waveform has not changed.

Note: The set screws ④ and ⑤ should be tightened with a tightening torque of approx. 200g·cm ± 10%.
If tightened too much, there is danger of damaging the thread.

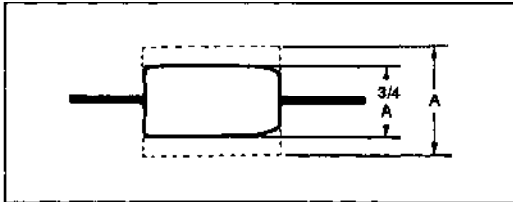


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting
(See Fig. 4-7.)

- 1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ① upper surface to 18.6 mm by rotating the TG-2 upper flange ①.

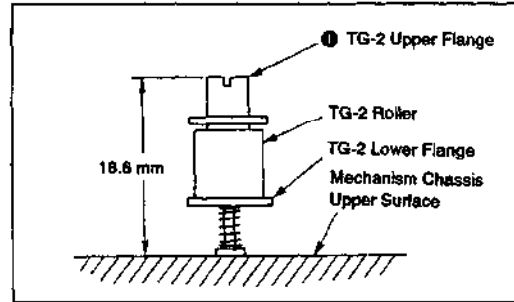


Fig. 4-7.

[Reference]

This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment
(See Figs. 4-8. and 4-9.)

- 1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
 - 2) Confirm that the tape is not bent at the lower flange ② of the No. 2 guide (TG-2) ① (See Fig. 4-8). If it is, turn the upper flange ③ of the No. 2 guide (TG-2) ④ clockwise with a screwdriver, lowering it until the tape is straightened.
 - 3) Play back the alignment tape for tracking adjustment.
 - 4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
 - 5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
 - 6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ③ of the No. 2 guide (TG-2) ④ 90° counter-clockwise and repeat step 5.
- Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

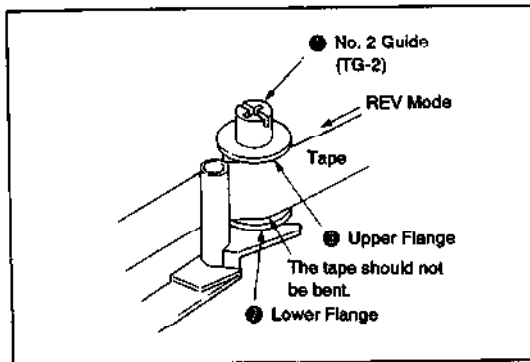


Fig. 4-8.

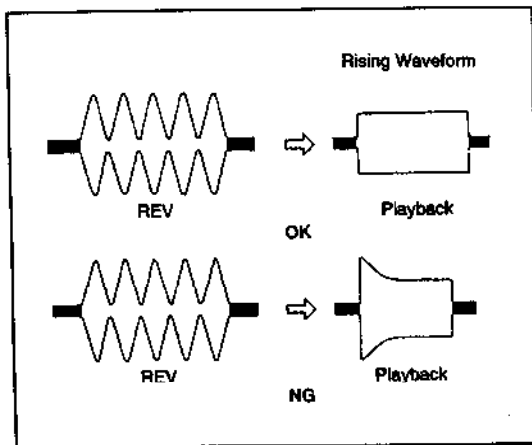


Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT
(See Fig. 4-10.)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode.
- 2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ① and the capstan ②. If it is, turn the high adjusting screw ③ of the No. 7 guide (TG-7) ④ until the tape is straightened.
- 3) Set the playback mode again and confirm that the tape is not bent between the capstan ② and the high adjusting screw ④ of the No. 7 guide (specification: 0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ④ until bending is within the specification (0.5 mm). If in the REV mode tape bending between the No. 6 guide (TG-6) ① and the capstan ② is 0.3 mm or less, adjustment can be considered completed.

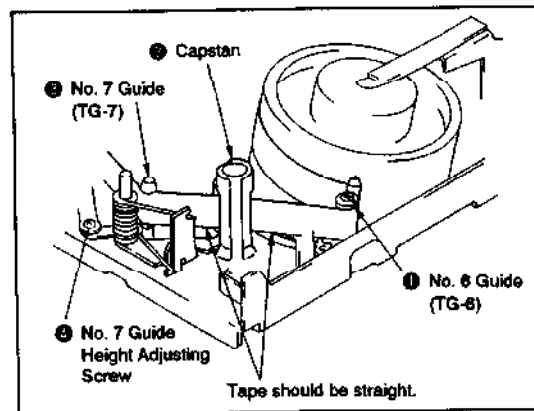


Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK
(See Fig. 4-11.)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
- 2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

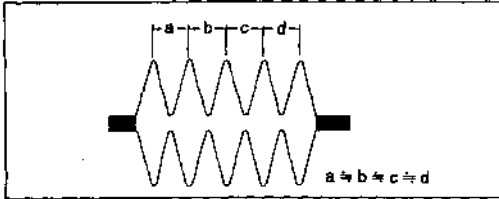


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

- 1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
- 2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
- 3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

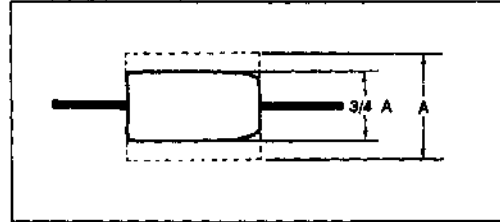


Fig. 4-12.

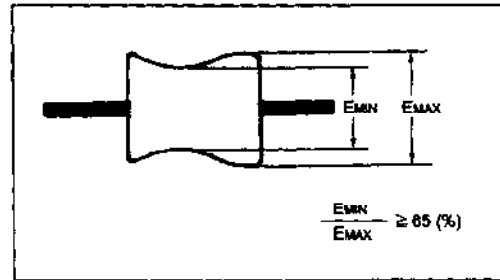


Fig. 4-13.

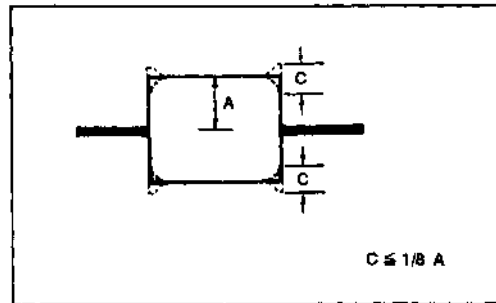


Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Cancel the track shift mode.
- 3) Eject the tape, then load it again.
- 4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
- 5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 6) Repeat steps 3) to 5) once more.

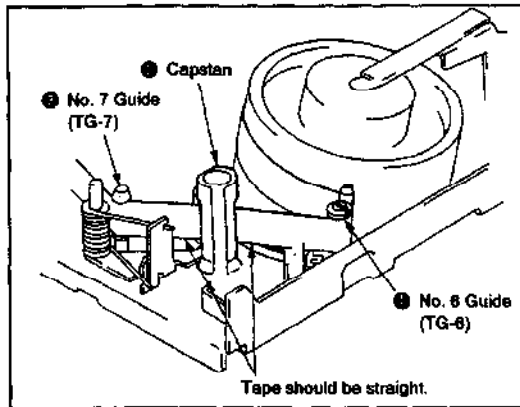


Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

- 1) Play back a thin tape like the P6-120MP (NTSC) or PS-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
- 2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REV button to set the REV mode.

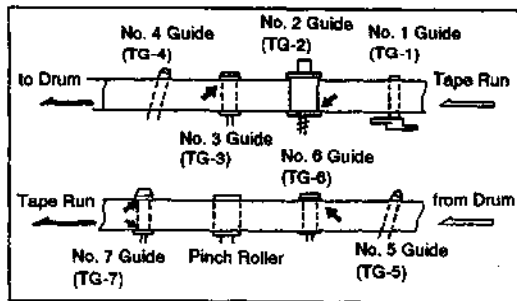


Fig. 4-16.