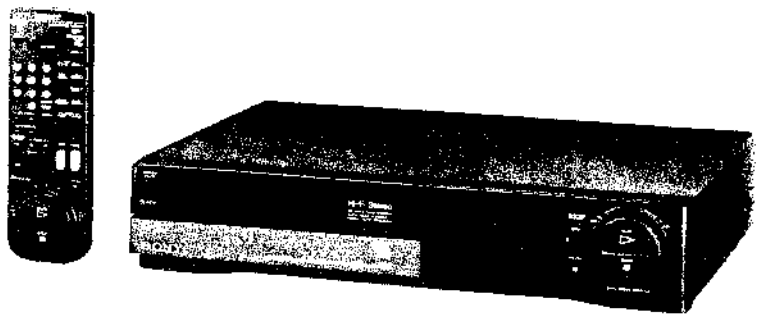
SLV-71HF/585HF/589HF/686HF
RMT-V102/V102A/V112

SERVICE MANUAL



US Model
SLV-585HF/686HF

Canadian Model
SLV-585HF/589HF/686HF

Taiwan Model
SLV-71HF

Mexican Model
SLV-686HF

PX Model
SLV-585HF

VHS Hi-Fi

- Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS II for MECHANICAL ADJUSTMENTS. (9-972-816-11)

SPECIFICATIONS

System

Format	VHS NTSC standard
Video recording system	Rotary two-head helical scanning FM system
Video signal	EIA standard, NTSC color
Tape speed	SP: 33.35 mm/sec. (1 3/8 inches/second) EP: 11.11 mm/sec. (7/16 inches/second) LP: 16.67 mm/sec. (11/16 inches/second) Playback only
Maximum recording/ playback time	8 hours in EP mode (with T-160)
Fast-forward and rewind time	Approx. 4 min. 30 sec. (with T-120)
High speed rewind time	Approx. 2 min. 30 sec. (with T-120)

Tuner Section

Channel coverage	VHF channels 2 to 13 UHF channels 14 to 69 CATV channel A-8 to A-1, A to W, W+1 to W+84
Antenna	75 ohm antenna terminal for VHF/UHF

Inputs and Outputs

LINE IN 1 and 2	VIDEO IN (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (2 each) Input level: –7.5 dBs (0 dBs = 0.775 Vrms) Input impedance: more than 47 kilohms
LINE OUT	VIDEO OUT (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT (phono jack) (2) Standard output: –7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms
CONTROL S IN	Minijack (1)

— Continued on next page —

MICROFILM

VIDEO CASSETTE RECORDER

SONY®

Timer Section

Clock	Quartz locked
Time indication	12-hour cycle
Timer setting	Only for recording 8 program in one month at max.
Power back up	Built-in self-charging capacitor Back-up duration: Up to three hours at one time

General

Power requirements	110V AC, 60 Hz (SLV-71HF) 120V AC, 50/60 Hz (SLV-686HF: MX) 110–240V AC, 50/60Hz (SLV-585HF: PX) 120V AC, 60 Hz (SLV-589HF: CND) 120V AC, 60 Hz (SLV-585HF/686HF: US/CND)
Power consumption	30W (max.) 34W (max.) (SLV-585HF: PX ONLY) 6W (in standby condition)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Dimensions	430 × 86 × 362 mm (w/h/d) (17 × 3 1/2 × 14 3/8 inches)
Weight	5.7 kg (12 lb. 9 oz)

Wireless Commander RMT-V102 (for SLV-585HF/589HF/71HF)/V102A (for SLV-686HF)

Remote control system	Infrared control
Command mode	VTR 1/2/3 switchable
Power requirements	3V DC, 2 size AA batteries (IEC designation R6)

Accessories Supplied

Wireless Commander RMT-V102 (for SLV-585HF/71HF)/V102A (for SLV-686HF) ..... (1)
Wireless Commander RMT-V112 (for SLV-589HF) ..... (1)
Size AA (R6) batteries ..... (2)
75-ohm coaxial cable with F-type connectors ..... (1)
External antenna connector ..... (1)
AC power cord ..... (1)
Audio/video connecting cable (3 phono to 3 phono) ..... (1)

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 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

7. ELECTRICAL ADJUSTMENTS

SECTION 1
GENERAL

This section is extracted from instruction manual.

Connecting a TV

To be continued ▶

In order to watch the playback picture on the TV screen and to receive TV programs on this VCR, the VCR and the TV receiver must be connected properly. The connection between the two units varies depending upon the type of TV receiver and antenna that you have. We will show you some typical ways to make connections. Before operating the unit, classify your TV for a connection by using the flow chart below, then make the correct connections.

Before making connections, check the following points

- Turn off the power to the VCR and the TV.
- Do not connect the AC power cords until all of the connections are completed.
- Make connections firmly. Loose connections may cause picture distortion.
- **If your TV does not match the three examples below...** Consult your nearest Sony dealer or qualified technician.

First Check Your TV For Connections

If your TV does not have video and audio input jacks
Check the antenna terminals on your TV

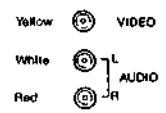
75-ohm VHF/UHF antenna terminal

VHF and UHF separate antenna terminals

Go through "Connection Examples 1 to 4" on page 7 to 9 to find the appropriate connections.
For a cable TV connection, go to "Connection Example 5 on page 10".

Then read "Setting the RF Unit" to view the playback picture of the VCR on the TV on page 13.

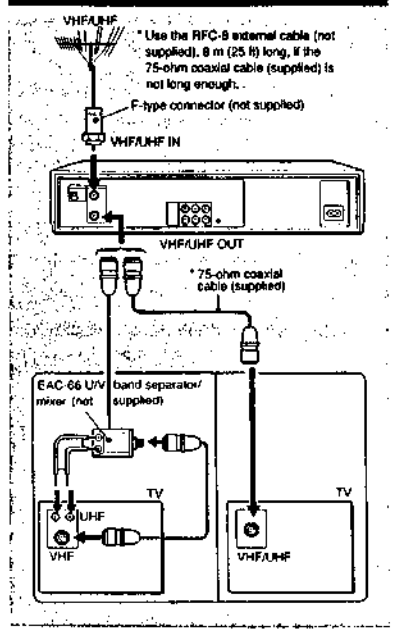
If your TV has video and audio input jacks



You can enjoy a better quality picture by connecting the VCR and TV via these jacks.
Go to "Connection Example 6" on page 11.

Caution
Connections between the recorder VHF/UHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in the instructions. Failure to do so may result in operation that violates the regulations of the Federal Never connect the output of the recorder to an antenna or make simultaneous (parallel) antenna and recorder connections at the antenna terminals of your receiver.

Connecting a Combination VHF/UHF Antenna — Connection Example 1

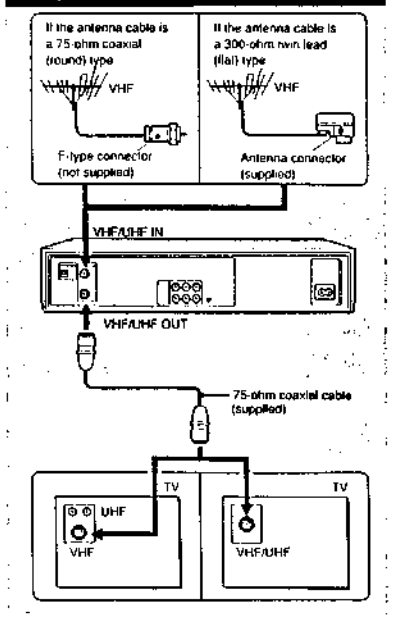


1 **Disconnect the TV antenna cable from the TV receiver and connect it to the VCR.**

2 **Connect the VCR and the TV.**
If the TV has a single terminal for the VHF/UHF antenna:
Use the 75-ohm coaxial cable (supplied).
If the TV has separate antenna terminals for VHF/UHF:
Use the EAC-66 U/V band separator/mixer (not supplied)

How to attach the U/V band separator/mixer and the F-type connector
See pages 12 and 13.

Connecting a VHF Antenna Only — Connection Example 2



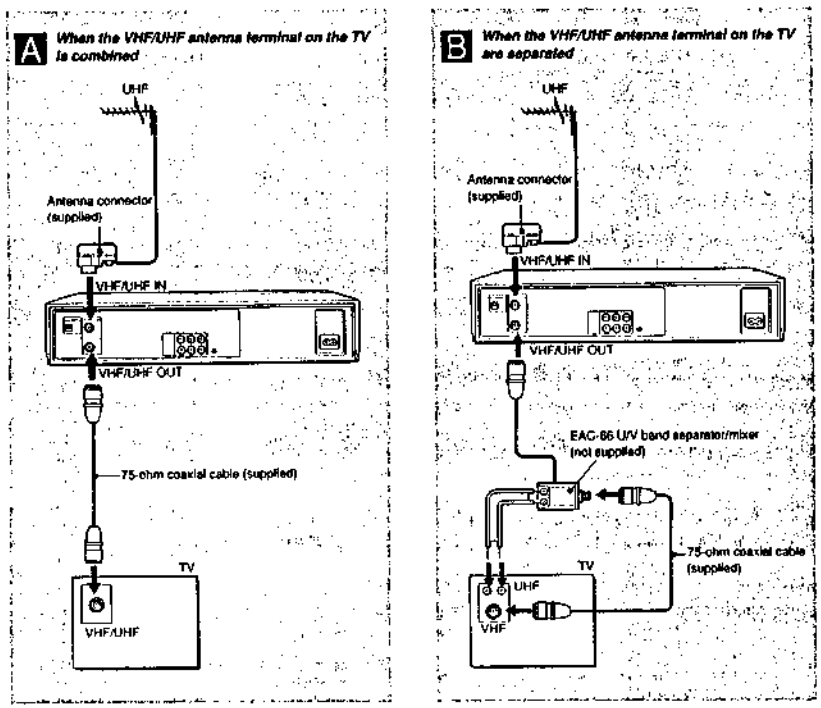
1 **Disconnect the TV antenna cable from the TV and connect it to the VCR.**
If the antenna cable is a 75-ohm coaxial (round) type:
Use the F-type connector (not supplied).
If the antenna cable is a 300-ohm twin lead (flat) type:
Use the antenna connector (supplied).

2 **Connect the VHF/UHF OUT on the VCR and the VHF IN terminal on the TV with the 75-ohm coaxial cable (supplied).**

How to attach the antenna connector and the F-type connector
See pages 12 and 13.

To be continued ▶

Connecting a UHF Antenna Only — Connection Example 3



1 Connect the antenna connector (supplied) to the antenna cable.

2 Connect the antenna connector to VHF/UHF IN on the VCR.

3 Connect VHF/UHF OUT on the VCR and the VHF/UHF antenna terminal on the TV.

How to attach the antenna connector
See pages 12 and 13.

1 Connect the antenna connector (supplied) to the antenna cable.

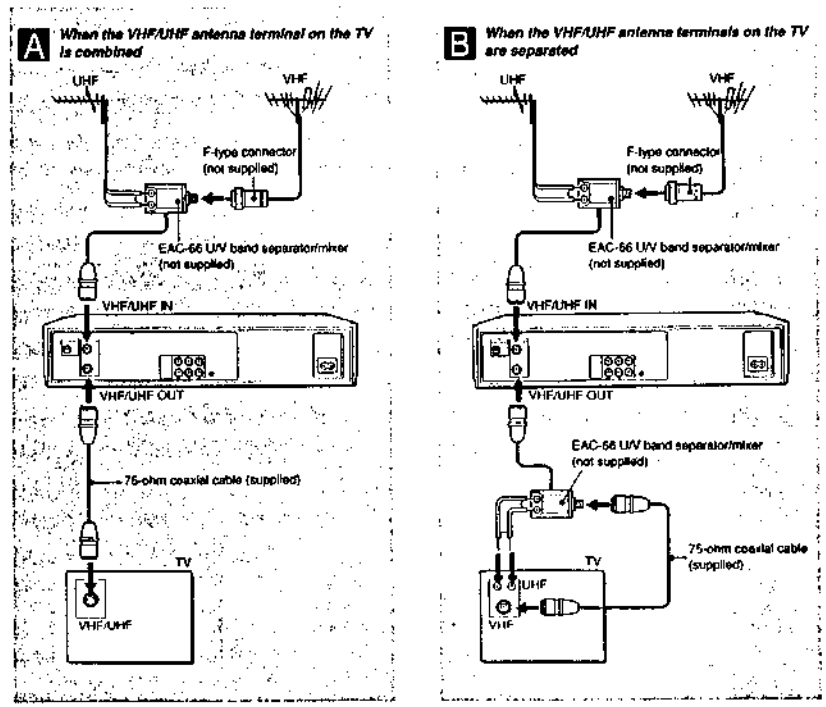
2 Connect the antenna connector to VHF/UHF IN on the VCR.

3 Connect the EAC-66 U/V band separator/mixer (not supplied) to the VHF/UHF OUT on the VCR.

4 Connect the EAC-66 U/V band separator/mixer to the VHF and UHF antenna terminals on the TV.

How to attach the antenna connector and the U/V band separator/mixer
See pages 12 and 13.

Connecting both the VHF and UHF Antennas — Connection Example 4



1 Connect the EAC-66 U/V band separator/mixer (not supplied) to the VHF and UHF antennas.

2 Connect the EAC-66 U/V band separator/mixer to the VHF/UHF IN on the VCR.

3 Connect VHF/UHF OUT on the VCR and the VHF/UHF antenna terminal on the TV.

How to attach the U/V band separator/mixer and the F-type connector
See pages 12 and 13.

1 Connect the EAC-66 U/V band separator/mixer (not supplied) to the VHF and UHF antennas.

2 Connect the EAC-66 U/V band separator/mixer to the VHF/UHF IN on the VCR.

3 Connect the EAC-66 U/V band separator/mixer to the VHF/UHF OUT on the VCR.

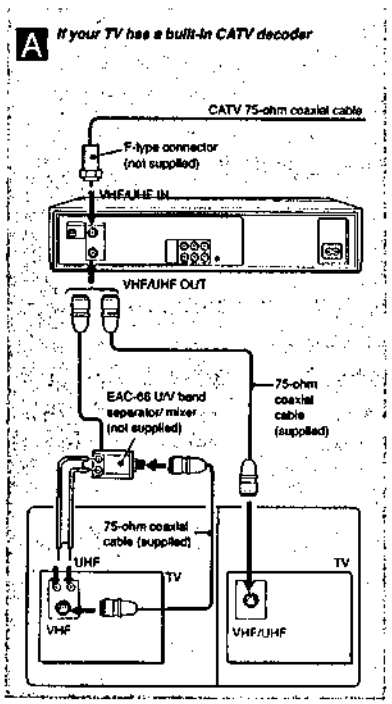
4 Connect the EAC-66 U/V band separator to the VHF and UHF antenna terminals on the TV.

How to attach the U/V band separator/mixer and the F-type connector
See pages 12 and 13.

To be continued ►

Connecting a Cable TV System — Connection Example 5

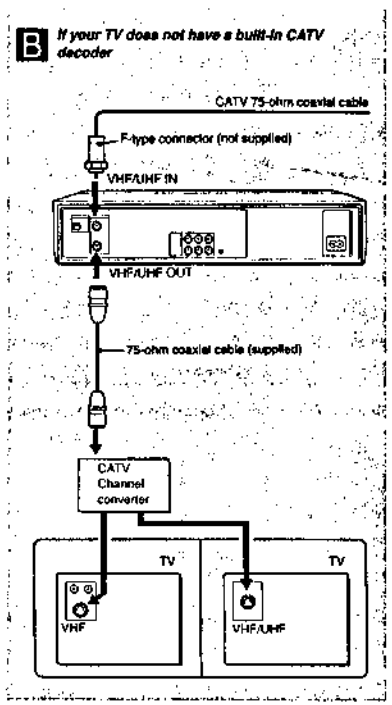
A *If your TV has a built-in CATV decoder*



A connection example is given above, but we recommend that you consult your cable company to make sure that the cable is properly connected.

How to attach the U/V band separator/mixer and the F-type connector
See pages 12 and 13.

B *If your TV does not have a built-in CATV decoder*



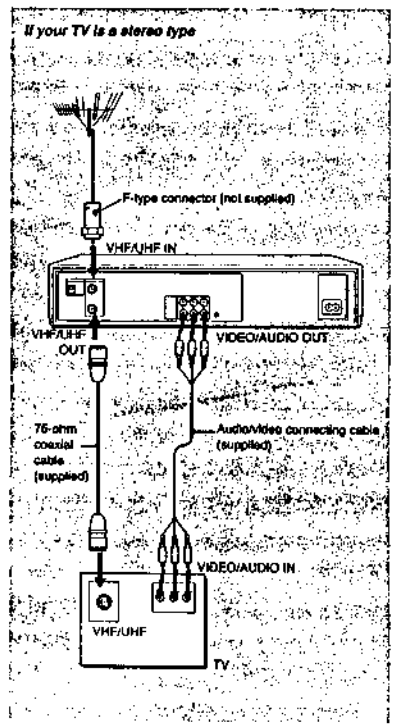
Connect the cable TV channel converter between the TV and the VCR. By setting the ANT TV/VTR switch to TV, you can watch a cable TV program while playing back or recording video sources using the VIDEO LINE IN jack on the VCR.

How to attach the F-type connector
See page 12.

Note to CATV system installer in the U.S.A.
This reminder is provided to call the cable TV system installer's attention to Article 820-22 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.

Connecting a TV Equipped with Video/Audio Input Jacks — Connection Example 6

If your TV is a stereo type



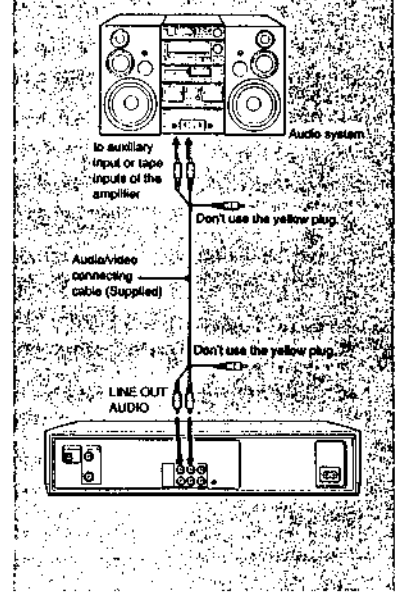
For a higher quality picture, connect a color monitor or a TV equipped with video/audio input jacks.

1. **Connect the VHF/UHF antenna to the VHF/UHF IN on the VCR.**
2. **Connect the VHF/UHF OUT on the VCR and the VHF/UHF IN terminal on the TV with the supplied 75-ohm coaxial cable.**
3. **Connect the LINE OUT jacks on the VCR to the video/audio line input jacks on the TV with the supplied audio/video connecting cable.**

How to attach the F-type connector
See page 12.

Listening to the hi-fi stereo sound of the tapes from your audio system

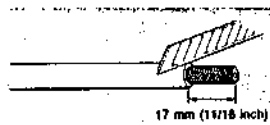
When you connect a TV following connection examples 1 through 5, you can listen to the hi-fi stereo sound of the tapes from your audio system by connecting the VCR to an audio system.



Notes
If the VCR is installed near a tuner or a radio, noise may be heard in AM reception. In this case, move the VCR away from the tuner or the radio, adjust the AM antenna for minimum noise, or connect an external AM antenna to the tuner.
- Before connecting or disconnecting the power cord of the VCR, be sure to turn off the connected amplifier.

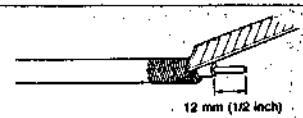
How to Attach the F-type Connector (not supplied)

1 Strip 17 mm (11/16 inch) of the black polyvinyl jacket.

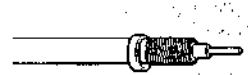


2 Fold back the woven wire.

3 Strip 12 mm (1/2 inch) of the white plastic leaving 12 mm of the center conductor.

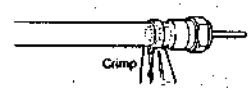


4 Slip the crimping ring over the cable.

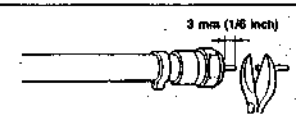


5 Insert the inner conductor into the F-type connector shaft and push the end of the cable into the connector as far as it will go.

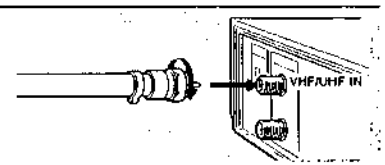
6 Slide the crimping ring over this assembly. Then pinch the crimping ring with pliers to hold the connection in place.



7 Cut the center conductor leaving 3 mm (1/6 inch) from the end.



8 Insert the F-type connector into VHF/UHF IN on the VCR.

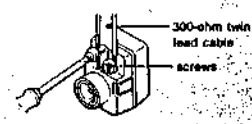


How to Attach the External Antenna Connector (supplied)

1 Loosen the screws on the antenna connector.

2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws on antenna connector.

3 Tighten the screws again.



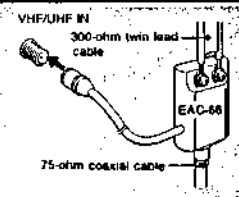
How to Attach the EAC-66 U/V Band Separator/Mixer (not supplied)

1 Loosen the screws on the U/V band separator/mixer.

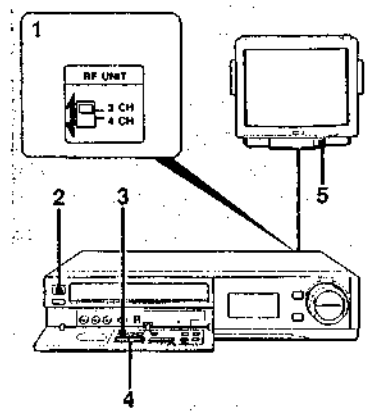
2 Fit the 300-ohm twin lead cable on the UHF antenna under the screws.

3 Connect the 75-ohm coaxial cable to the U/V band separator/mixer.

4 Connect the U/V band separator/mixer to the VHF/UHF IN on the VCR.



Setting the RF Unit



Why this setting is necessary

Your TV receiver must be set to receive the signal from your VCR. To get the proper RF signal, set the RF UNIT selector switch on the rear panel of the VCR. If channel 4 is active in your area, set the switch to 3 CH, and vice-versa. If you connect a color monitor or a TV equipped with video/audio input jacks, you do not need to make this setting.

1 Set the RF UNIT at the rear of the VCR to 3 CH or 4 CH, whichever is not active in your area.

2 Press POWER.
The indicator will light.

3 Press ANT TV/VTR so that the VTR indicator lights.

4 Check that the TUNER indicator appears in the display window, then select an active channel in your area by pressing CHANNEL +/−.

5 Turn on the TV and set the TV to the channel selected in step 1.
The TV program selectd on the VCR will appear on the screen.

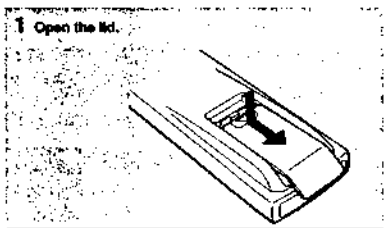
Your TV is now tuned to the VCR. Whenever you use the VCR, set the TV to the channel selected above.

Note
For details about TV channel adjustment, see the instruction manual of the TV.

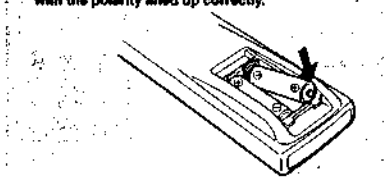
Preparing the Remote Commander

Inserting Batteries

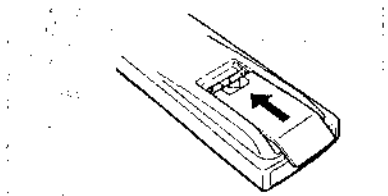
1 Open the lid.



2 Insert two size AA (IEC designation R6) batteries with the polarity lined up correctly.



3 Close the lid.

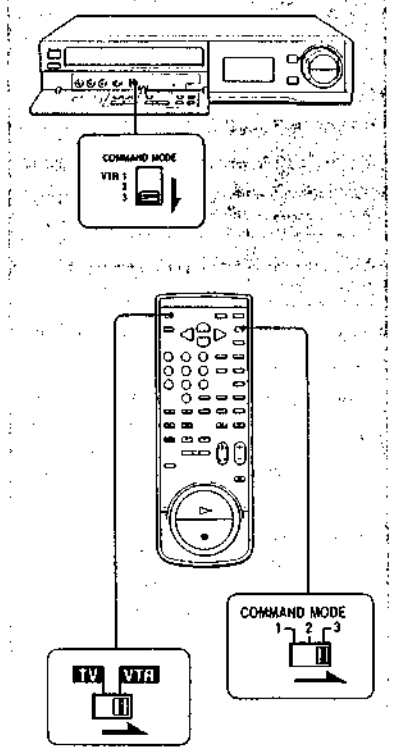


Notes on the handling of batteries

- With normal use, the batteries will last for approximately 6 months.
- If you do not use the Commander for a long period of time, remove the batteries to avoid possible damage from battery leakage.

Setting the Command Mode

You can select three different setting positions for Command Mode setting.



1 Set the COMMAND MODE VTR 1/VTR 2/VTR 3 selector on the VCR to the "VTR 3" position.

2 Set the COMMAND MODE 1/2/3 selector on the Remote Commander to the "3".

3 Set the TV/VTR remote control selector to VTR.

Controlling Other Sony Video Equipment

If other Sony video equipment has a COMMAND MODE selector

1 With the COMMAND MODE 1/2/3 selector on the Remote Commander, select a setting position (for instance, VTR 1) different from the position you have selected for this VCR.

2 Set the COMMAND MODE selector of other video equipment to the same position that you have selected in step 1.

If other Sony video equipment does not have a COMMAND MODE selector

You can control other Sony video equipment by changing the setting of the COMMAND MODE 1/2/3 selector on the Remote Commander as follows:

Infrared remote controlled Sony Betamax VCRs (Some of them may not be controlled in this mode.) : 1

Sony 8 mm format VCRs : 2

Sony VHS format VCRs : 3

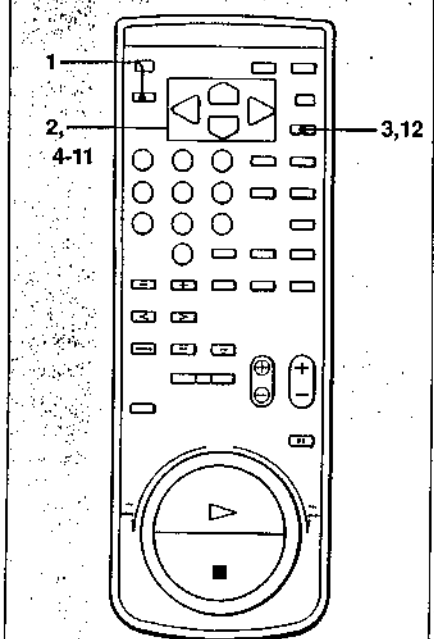
Setting the Date and Time

You can set the date and clock on the TV screen with the Commander. Note that 12:00 AM is midnight and 12:00 PM is noon.

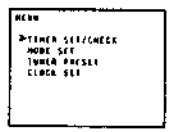
Date and Time Setting Example

Example: To set to 3:32 pm, July 4, 1991

Use ▲ and ▼ to change the numbers.
Use ◀ and ▶ to change the flashing items.

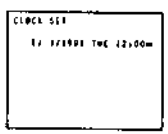


1 **Press MENU.**
The main menu appears.

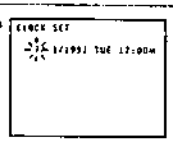


2 **Press ▲ or ▼ to move cursor (▶) to CLOCK SET.**

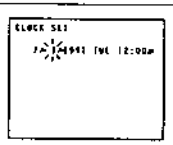
3 **Press EXECUTE.**
"1/1 1991 TUE 12:00 AM" is displayed.
The left most 1, in the "month" position, flashes.



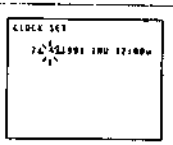
4 **Press ▲ or ▼ until 7 appears in the month position.**



5 **Press ▶ to make the next number, in the "day" position flash.**

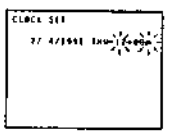


6 **Press ▲ or ▼ until 4 appears in the day position.**
The day of the week is automatically set.

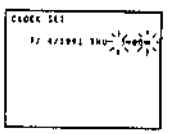


7 **Press ▶ to make the year flash and press ▲ to change the year if necessary.**

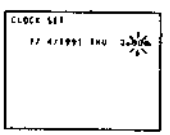
8 **Press ▶ to make the time flash.**



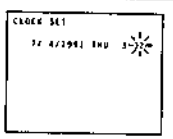
9 **Press ▲ or ▼ until 3 PM appears.**



10 **Press ▶ to make the minute flash.**



11 **Press ▲ or ▼ until 32 appears in the minute position.**



12 **Press EXECUTE simultaneously with a time signal.**
Pressing EXECUTE will set the clock to 3:32 pm 00 seconds.

To recall the date and clock on the screen
Select CLOCK SET in the main MENU and press EXECUTE.

Notes

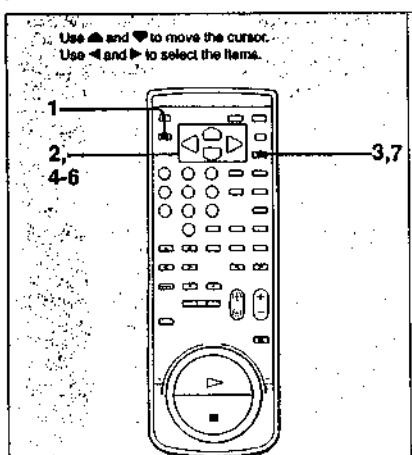
- Set the clock except during timer-activated recording, timer-activated recording standby, quick timer recording.
- When the date and clock are called up on the screen, the clock keeps running as long as no modification is made.
  The seconds do not be reset to 00 when you return to the original screen.

Presetting the Active Channels

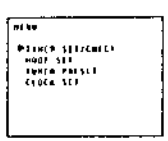
This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69, or CATV channels 1 to 125. These channels can be preset using the Commander and the TUNER PRESET display. First, we recommend that you preset the active channels in your area using the automatic preset mode. Then, if there are any unwanted channels, delete them manually. If you've already decided which channels you wish to preset on the VCR, set them directly by using the channel number buttons.

Before presetting channels, check the following points.
- Turn on the VCR and the TV.
- If you've connected the TV and the VCR using the VHF/UHF OUT on the VCR only, make sure that the TV is set to the correct channel (3 or 4) for the VCR.
- Press ANT TV/VTR to display the VTR indicator.
- Press INPUT SELECT so that the TUNER indicator and channel number appear in the display window.

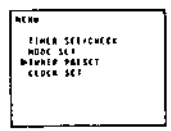
Presetting All Receivable Channels Automatically



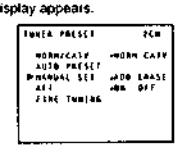
1 **Press MENU.**
The main menu appears.



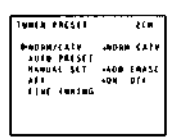
2 **Press ▲ or ▼ to move the cursor (▶) to TUNER PRESET.**



3 **Press EXECUTE.**
The TUNER PRESET display appears.

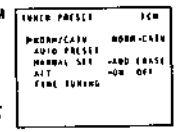


4 **Press ▲ or ▼ to move the cursor to NORMAL/CATV.**

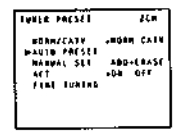


To be continued ▶

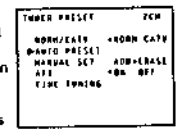
5 **Use ◀ or ▶ to select NORM to preset VHF and UHF channels.**
Select CATV to preset cable TV channels.
The lowest channel number, 2 for NORM and 1 for CATV will appear on the screen.



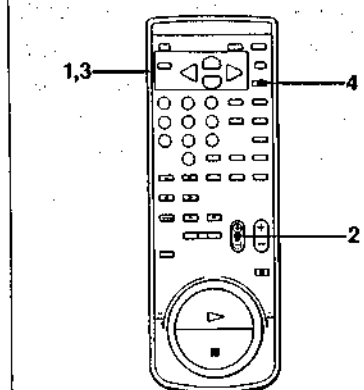
6 **Press ▼ or ▲ to move the cursor to AUTO PRESET.**



7 **Press EXECUTE.**
Receivable channels preset in numerical sequence. When no more channels can be found, the presetting stops and the picture of the lowest numbered channel is displayed with the tape counter.



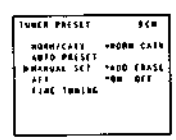
Presetting Desired Channels or Erasing Unwanted Channels



1 **Follow steps 1 to 3 in "To Preset All Receivable Channels Automatically."**

2 **After automatic presetting is over, press CHANNEL +/– to select the channels to be erased and press channel number buttons to select the channels to be added.**

3 **To add channels:**
Select channel using 0 to 9 and ENTER keys then select ADD.
To erase channels:
Select ERASE.



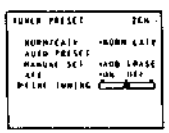
4 **Press EXECUTE.**
When pressing CHANNEL +/–, the erased channels are skipped and the added channels are displayed.

Fine-tuning

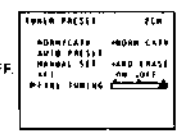
Normally the AFT (Auto Fine Tuning) setting is set to ON, and the AFT function fine-tunes the picture. If the picture of a particular channel is not acceptable, fine-tune it manually.

1 Call up the TUNER PRESET display referring to steps 1 to 3 in "To Preset Desired Channels Automatically." See page 18.

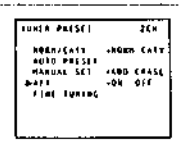
2 Press ▲ or ▼ to move the cursor to FINE TUNING. The fine tuning indicator appears.



3 Press ◀ or ▶ to get a clearer picture. The AFT ON/OFF automatically switch to OFF.



4 Press ▲ to move the cursor to AFT and select ON if you cannot get a better picture.



5 Press EXECUTE.

About the FINE TUNING indicator

The FINE TUNING indicator shows the operable fine-tuning range. When the VCR's tuner is receiving a broadcast signal in the best condition, the indicator will be at the center position or within one space right or left of the center position. However, even when a broadcast is received in the best condition, there may be cases when the indicator will not be at the position explained above.

Cable TV Channel Assignment

Cable TV systems use letters or numbers to designate the channels. To tune-in a CATV channel, refer to the chart below which shows the CATV channel numbers on this VCR and the corresponding CATV channel. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the avaiable channels.

Number on this VCR	1	2	...	13	14	15	16	17	18
Corresponding CATV channel	A-8	2	...	13	A	B	C	D	E

19	20	21	22	23	24	25	26	27	28	29	30	31	32
F	G	H	I	J	K	L	M	N	O	P	Q	R	S

33	34	35	36	37	...	84	85	86	87	88	89
T	U	V	W	W+1	..	W+58	A-5	A-4	A-3	A-2	A-1

100	...	125
W+59	...	W+84

This VCR is designed to correspond to the Standard cable system. However, the cable TV services may vary from area to area. Your local cable TV company may adopt either the HRC*1 or IRC*2 cable system. Even in these cases, this VCR is capable of receiving either of these cable systems in the best condition.

*1 **HRC (Harmonic Related Carriers)**
All channels except for 5 and 6 are 1250 kHz lower than the Standard cable system. Channels 5 and 6 are 750 kHz higher than the Standard cable system.

*2 **IRC (Incremental Related Carriers)**
All channels except for 5 and 6 are the same as the Standard cable system. Channels 5 and 6 are 2000 kHz higher than the Standard cable system.

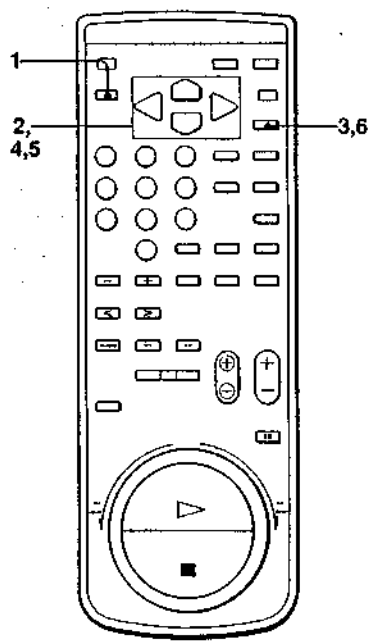
FINE TUNING indication when receiving HRC or IRC cable systems
Even when the signals are received in the best condition, the FINE TUNING indicator will not stay at the center position for channels higher or lower than the Standard cable system because of the difference in the frequency.

Note
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) in addition to the normal cable connection.

Changing the Mode Setting

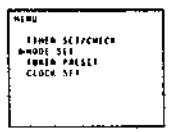
Before operating the VCR, change various mode settings, if necessary.

Use ▲ and ▼ to move cursor.
Use ◀ and ▶ to move dot.



1 **Press MENU.**
The main menu appears.

2 **Press ▲ or ▼ to move cursor (▶) to MODE SET.**



3 **Press EXECUTE.**
The MODE SET menu appears.

4 **Press ▲ or ▼ to move cursor (▶) to the desired mode.**

LANGUAGE (for Canada model only)
When you want to see on-screen displays in French, set to FRENCH.
On-screen display appears in French.

AUTO ANT SEL (Automatic Antenna Selector)
- **If your TV is not equipped with video/audio inputs**
  Set to ON.
  When playing back a tape, the picture is automatically displayed on the screen simply by selecting the channel for the VCR on the TV.
  To watch TV programs selected on the TV, press ANT TV/VTR to turn off the VTR indicator in the display window.
- **If your TV is equipped with video/audio inputs**
  Set to OFF.
  When playing back a tape, select the input for the VCR on the TV.
  To watch the TV programs selected on the TV, simply select the tuner input.

AUTO STEREO
If a stereo program received is noisy, set to OFF.
The program is recorded in monaural but noise may be reduced.

CLOCK DISPLAY
To erase the current date and time from on-screen display, set to OFF.

AUDIO MIX
To listen to the sounds recorded on both the hi-fi video track and the normal audio track of the audio-inserted tape, set to ON. For details, see page 29.

NORMAL AUDIO
When there is a SAP (Second Audio Program) broadcast, select SAP to record the SAP sound on the normal audio track. For details, see page 33.

BACK COLOR
Select the background color on the screen when no picture is displayed or the VCR is in MENU mode.
BL...blue
GR...green
PK...pink

5 **Press ◀ or ▶ to move dot to the desired setting.**

6 **Press EXECUTE to return to the original screen.**
The settings are stored.
The displayed page is stored unless the power plug is disconnected.

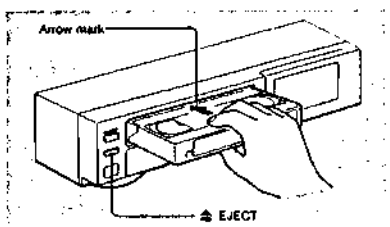
Playback

To be continued ▶

In this section, we will explain the operations and functions related to tape playback.

Putting in a Video Cassette

1 Put in a video cassette with the arrow mark facing upwards.

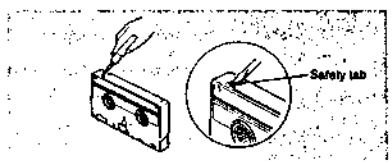


2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been loaded, the cassette indicator (📼) lights in the display window of the VTR and the VTR turns on automatically.

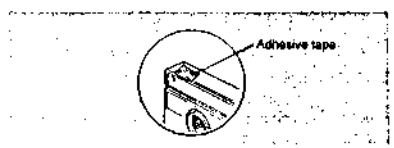
Note
If you put in a cassette without a safety tab, playback starts automatically (AUTO PLAYBACK function).

Ejecting the cassette
Press ⏏ EJECT on the VTR.
You can eject the cassette when the power is off.
When you press ⏏ EJECT, the power is turned on. After ejecting the cassette, the power is off again.

Protecting your cassette against accidental erasure
The cassette is provided with a safety tab to protect against accidental recording.
Break off the safety tab with a screwdriver or other suitable tool.
If the safety tab is removed, the cassette will be ejected when you try to record on the cassette.



To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.

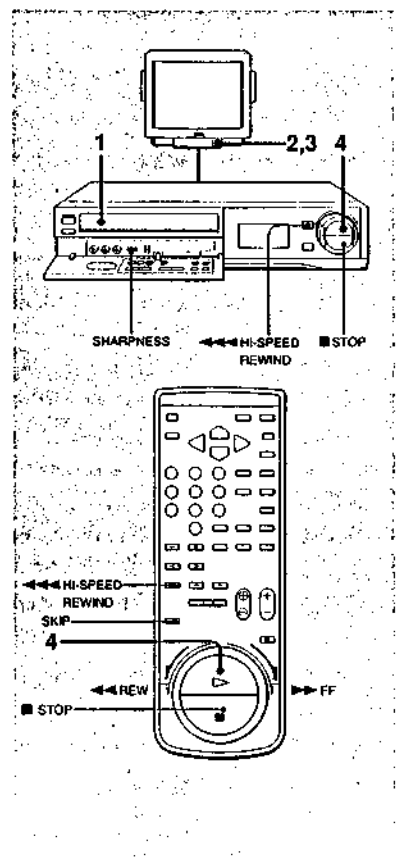


Maximum recording time of a tape
Recording in the SP or EP mode is possible with this unit. When recording, select the desired recording mode (SP or EP) with REC MODE on the Commander or the unit. During playback, the unit automatically detects the recording format, and then plays back the tape in the appropriate mode. A tape recorded in the EP mode runs three times as slowly as a tape recorded in the SP mode. Refer to the chart below for the recording/playback time available in each mode.

Cassette tape	Recording/playback time	
	SP mode	EP mode
T-160	2 hr. 40 min.	8 hr.
T-120	2 hr.	6 hr.
T-60	1 hr.	3 hr.
T-30	30 min.	1 hr. 30 min.

Tapes recorded in LP mode
Playback of tapes recorded in LP mode is also possible with this VCR. However, playback in modes other than normal forward speed is not guaranteed.
This VCR is not designed to record in the LP mode.

Playing Back a Cassette



1 Put in a cassette.

2 Turn on the TV.

3 If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR
Select the input for the VCR.
If your TV is connected only to the VHF/UHF OUT on the VCR
Select the channel for the VCR (3 CH or 4 CH).

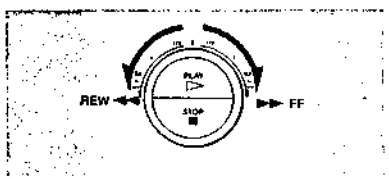
4 Press ▷ PLAY.

To be continued ▶

To stop playback
Press ■ STOP.

To stop playback for a moment
Press ❚❚ PAUSE. To resume playback, press ❚❚ PAUSE.

To advance the tape rapidly
During stop mode:
Turn the DUAL MODE SHUTTLE ring to the right (▶▶).
To rewind the tape
During stop mode:
Turn the DUAL MODE SHUTTLE ring to the left (◀◀).



To rewind the tape at high speed
Press ◀◀◀ HI-SPEED REWIND.

To rewind the tape to its beginning and to playback automatically (Auto Playback Function)
Press ▷ PLAY while turning the DUAL MODE SHUTTLE ring to the left (◀◀).
Or press ▷ PLAY while depressing ◀◀◀ HI-SPEED REWIND.
You cannot use the remote commander for the auto playback function.

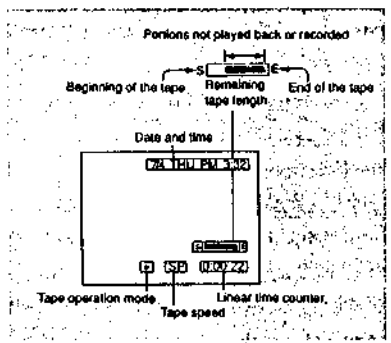
To get a sharper picture
Turn the SHARPNESS control toward SHARP.

To get a softer picture
Turn the SHARPNESS control toward SOFT.

When the tape is played back to the end
The tape is automatically rewound to the beginning (auto rewind). The power remains on.

About the Data Screen

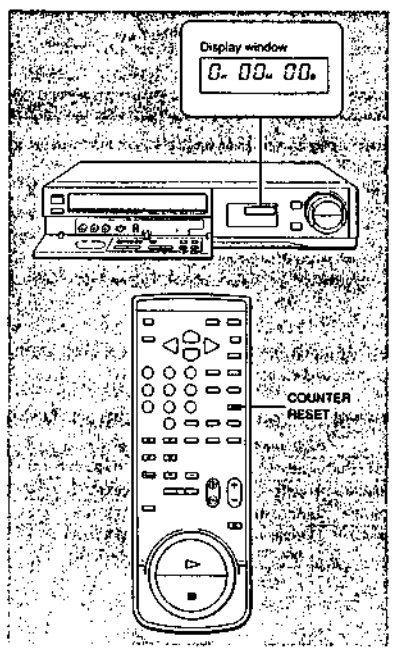
To erase or call up the data screen on the display, press DATA SCREEN on the Commander.



Notes
- The remaining tape length displayed is approximate. Therefore, use it only as an approximate reference. When you insert a short tape such as T-20, T-30 or a non-standard commercially available tape, this indicator may not function correctly.
- The data screen display cannot be called up on the screen during still mode, slow motion playback or high speed playback.

Indexing the Tape Contents

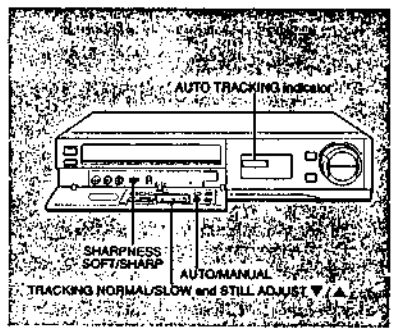
Before starting to record or playback, press COUNTER RESET to reset the counter to zero. By noting the counter reading at the desired point, you can easily find that point later by referring to the counter. Use the label on the cassette to list the programs and their counter readings.



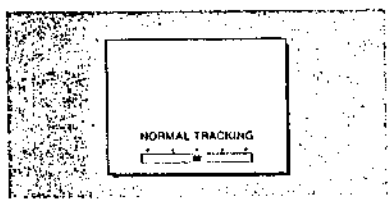
Note on counter reading
After a cassette is ejected, the counter reading is retained, however when a cassette is inserted again, the counter returns to "0H00M00S."

Playing Back a Tape Recorded on Another VCR

When playing back a tape recorded on another VCR, the tracking condition is automatically adjusted on this VCR. You can also adjust the tracking condition and the sharpness manually according to the following instructions.



Adjusting the tracking manually
When the playback picture proves to have streaks or snow during normal playback, adjust the picture manually with TRACKING NORMAL/SLOW and STILL ADJUST ▼ / ▲.
Press either ▼ or ▲ to obtain the best possible picture. The tracking meter will appear on the TV screen and the AUTO TRACKING indicator will be turned off.
When the manual adjustment proves unsatisfactory, press both of the TRACKING NORMAL SLOW and STILL ADJUST ▼ / ▲. The tracking condition will return to the center position.



Automatic tracking adjustment function
The tracking condition is automatically adjusted on this VCR. The AUTO TRACKING indicator flashes while the VCR is searching for the best tracking condition and lights when optimum playback picture is obtained. The automatic tracking control is activated in the following conditions:
— when the cassette is inserted for the first time.
— when the recording mode on the playback tape is switched from SP to EP and back again.
— when the picture is distorted by scratches on the tape.
— when the AUTO TRACKING indicator is turned on by pressing TRACKING AUTO/MANUAL after the picture is adjusted manually.

Adjusting the sharpness
Turn the SHARPNESS SOFT/SHARP control toward SHARP to obtain a sharper picture. Turn it toward SOFT to obtain a softer picture.

Notes
- Auto tracking adjustment is not possible for tapes recorded in LP mode.
- Auto tracking adjustment may be impossible and the tracking indicator may not appear on the TV screen when the recording condition of the tape is poor.
- During auto tracking adjustment, streaks or noise may appear.
- The tracking indicator will only appear on the TV screen if DATA SCREEN is in the on position.

Selecting the Monitor Sound

You can play back tapes on which stereo sound programs or bilingual programs are recorded on the VCR.

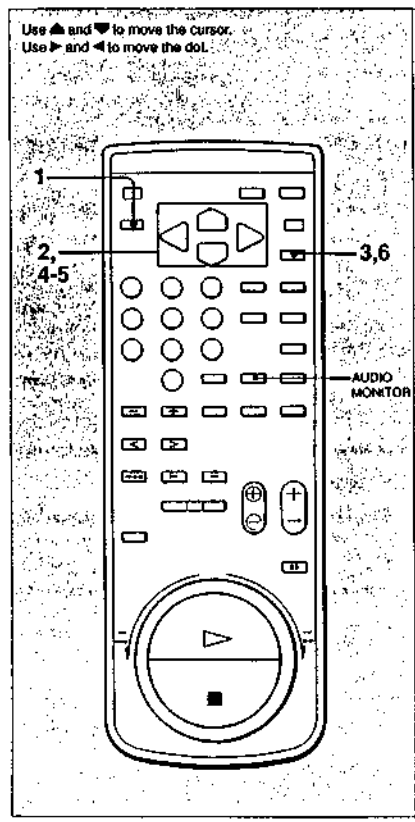
Note
When you play back a tape recorded in monaural, the sound is heard in monaural regardless of the setting of AUDIO MONITOR.

Press AUDIO MONITOR to select the desired sound. Each press of the button changes the display.

Display	Sound to be heard	
	Stereo tape	Bilingual tape
STEREO	Stereo	Left and right channels
MAIN/L	Left channel	Left channel
SUB/R	Right channel	Right channel
None	Monaural (on normal audio track)	Sound on normal audio track (SAP)

Listening to the Sounds on the Hi-Fi Track and Normal Track Mixed

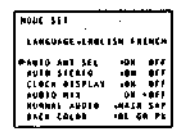
You can hear the sounds recorded on the Hi-Fi video track and the normal audio track simultaneously. This allows you to listen to an audio-inserted tape.



1 Press MENU.
The main MENU appears.

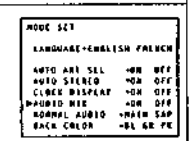
2 Press ▲ or ▼ to move the cursor (▶) to MODE SET.

3 Press EXECUTE.
The MODE SET menu appears.



4 Press ▲ or ▼ to move the cursor to AUDIO MIX.

5 Press ◀ or ▶ to move the dot to ON.



6 Press EXECUTE to return to the original screen.

Note
- When you set AUDIO MIX to ON, the AUDIO MONITOR button does not function.
- Reset to OFF after listening to the sound in AUDIO MIX mode.

Recording TV Programs

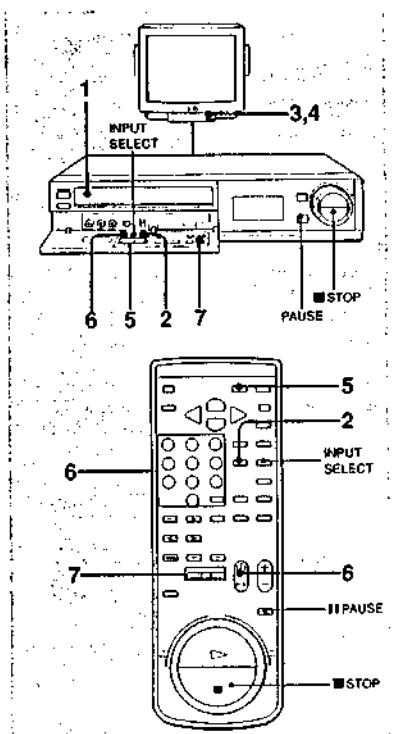
To be continued ▶

Before you begin, check the following points:

- Check the connections
  Make sure that the connections have been made correctly.
- Check the input mode indicator
  Press INPUT SELECT to light TUNER in the display window.

Caution
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. Also, use of this recorder with cable television transmission may require authorization from the cable television transmission and/or program owner.

Recording TV Programs



1 Put in a cassette.
The VCR turns on automatically (Auto power on).

2 Select the recording tape speed, SP or EP, with REC MODE (SP/EP).

3 Turn on the TV.

4 If your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR.
Select the input for the VCR.
If your TV is connected only to the VHF/UHF OUT on the VCR.
Select the channel for the VCR (3 CH or 4 CH).

5 Press ANT TV/VTR so that the VTR indicator lights.
Skip this step if your VCR is not connected via the VHF/UHF antenna terminal.

6 Select the channel to be recorded with CHANNEL +/– or channel number buttons and ENTER.

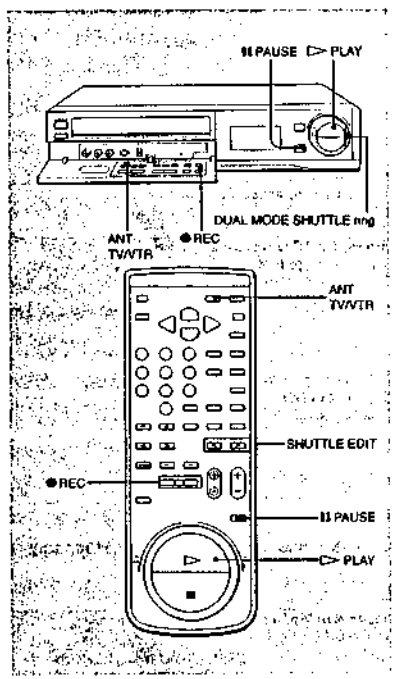
7 Press the two ● REC buttons on the Commander at the same time, or the ● REC button on the unit.

To stop recording
Press ■STOP.

To stop the tape for a moment
Press ❚❚PAUSE. To resume recording, press ❚❚PAUSE.
When the recording pause mode lasts for more than approximately 5 minutes, the unit enters the stop mode.

When the tape reaches its end
The tape rewinds to the beginning. The power will remain on.

Temporarily Stopping Recording at a Particular Point



Technique 1
You can stop recording when an unwanted scene appears and resume recording smoothly.

1 Press ❚❚PAUSE when an unwanted scene appears.
Recording will stop and the VCR enters the recording pause mode.

2 Press ❚❚PAUSE at the desired point to release the pause mode.
Recording resumes from the point set in step 1.

Technique 2
When an unwanted scene has already started to be recorded, you can return the tape to the desired point, have the VCR standby in the recording pause mode, and resume recording at the desired scene smoothly.

1 Set the VCR to the recording pause mode.

2 Turn the DUAL MODE SHUTTLE ring to the left or press SHUTTLE EDIT (for SLV-686HF only) </> to search for the point from which you wish to continue recording.
Each time you press SHUTTLE EDIT </>, the picture moves one frame. While pressing SHUTTLE EDIT </>, the frame-by-frame picture appears on screen.

3 Release the DUAL MODE SHUTTLE ring or SHUTTLE EDIT </> at the desired point.
After an instant of STILL mode, the VCR automatically enters the recording pause mode.

4 Press ❚❚PAUSE.
Recording resumes.

Watching One TV Program while Recording Another

1 Press ANT TV/VTR so that the VTR indicator goes off.

2 Select the channel you want to watch on the TV.

When the VTR indicator lights up

VTR indicator	Picture on the TV screen
Lit	Channel selected by the VCR or the playback picture of the VCR
Unlit	Channel selected by the TV

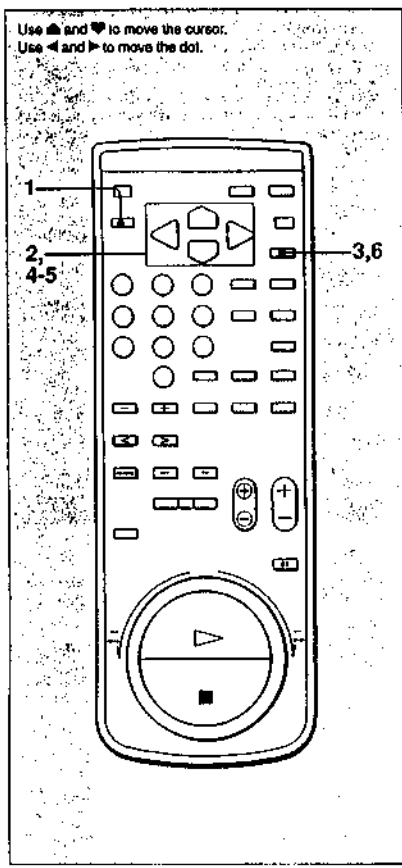
Recording a Program without Watching the TV

Turn off the power of the TV or color monitor.
There will be no interference with the recording.

Note
If you are using a color monitor, you cannot watch another program while recording unless the monitor has an internal TV tuner.

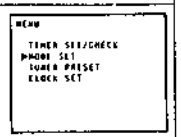
Recording Multi-channel TV Sound (MTS) Broadcasts

To record a stereo broadcast
When a stereo broadcast program is received, the STEREO indicator appears in the display window. The stereo program is automatically recorded in stereo.
If a stereo program is noisy, set AUTO STEREO to OFF in the MODE SET menu. The sound is heard in monaural but the noise is reduced.

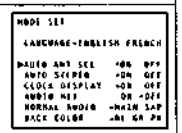


1 Press MENU.
The main menu appears.

2 Press ▲ or ▼ to move the cursor (▶) to MODE SET.



3 Press EXECUTE.
The MODE SET menu appears.

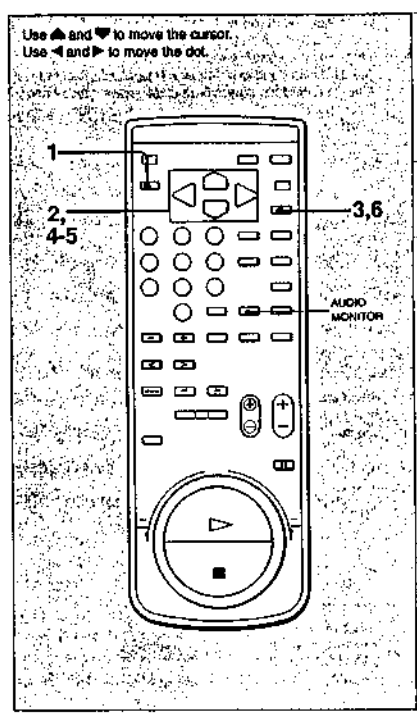


4 Press ▲ or ▼ to move the cursor to AUTO STEREO.

5 Press ◀ or ▶ to move the dot to OFF.

6 Press EXECUTE to return to the original screen.

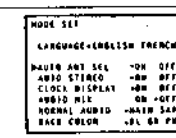
To record SAP (Second Audio Program) broadcast
Normally, set NORMAL AUDIO to MAIN in the MODE SET menu. The main sounds is recorded on the normal track.
To record the SAP sound on the normal audio track, set NORMAL AUDIO to SAP in the MODE SET menu.



1 Press MENU.
The main menu appears.

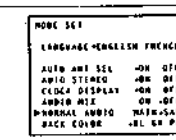
2 Press ▲ or ▼ to move the cursor (▶) to MODE SET.

3 Press EXECUTE.
The MODE SET menu appears.



4 Press ▲ or ▼ to move the cursor to NORMAL AUDIO.

5 Press ◀ or ▶ to move the dot to SAP.



6 Press EXECUTE to return to the original screen.

Notes
- When there is not SAP broadcast, select MAIN in step 5. If the SAP is selected, no sound will be recorded on the normal audio track.
- When the VCR and the TV are connected via the VHF antenna terminal, you cannot hear a program in stereo.

To monitor the SAP sound being recorded
Press AUDIO MONITOR to light the SAP indicator in the display window.

Timer Recording

To be continued ▶

You can preset up to eight recordings up to one month in advance. The recordings can be preset with the Commander while referring to the TIMER SET/CHECK display on the TV screen.

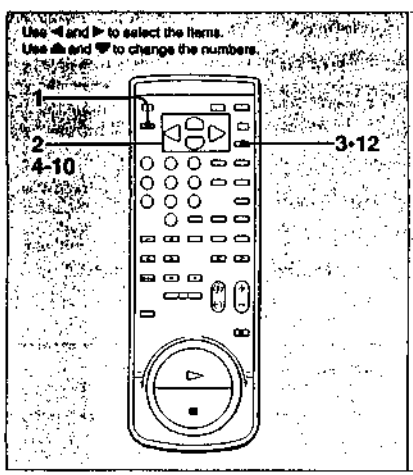
Before you begin, check the following points.

- The date and clock must be set correctly. (See "Setting the Date and Time" on page 16.)
- Make sure that the cassette tape is long enough to record all the programs.
- Make sure that the safety tab on the cassette is not broken off. If you put in a cassette without its safety tab and press TIMER REC (ON/OFF), the cassette automatically ejects.
- Turn on the VCR and the TV.

Recording from today to one month later
If today is August 31st, you can set the timer to record a program broadcast between today and September 30 (for 31 days). If today is January 31st, you can set the timer to record a program broadcast between today and February 28th (for 29 days). A leap year is automatically considered.

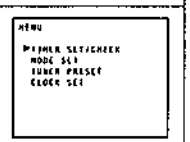
Setting the Timer

Example: Suppose you want to record a program broadcast on channel 26 from 9:00 pm to 10:55 pm on Wednesday July 10 in SP mode. Note that 12:00 AM is midnight and 12:00 PM is noon.

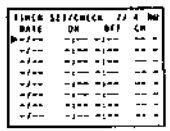


1 **Press MENU.**
The main menu appears.

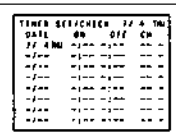
2 **Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.**



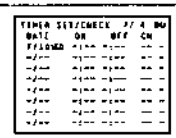
3 **Press EXECUTE.**
The TIMER SET/CHECK display appears on the screen. When the clock is not set properly, a short beep alerts you. Return to "Date and Clock Setting" (page 16) to reset the clock.



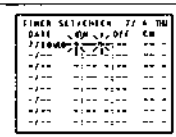
4 **Press ▶.**
Make sure that today's date is flashing. If not, re-set the correct time. See "Date and Clock Setting" (page 16).



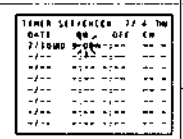
5 **Press ▲ to set the month and date to 7/10 WED.**
The day of the week is automatically set.



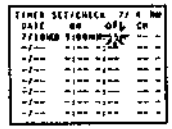
6 **Press ▶ to flash the hours section under "ON" then ▲ or ▼ until 9 PM appears.**



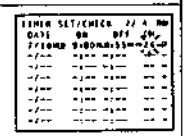
7 **Press ▶ to flash the minute section under "ON" then ▲ or ▼ until 00 appears.**



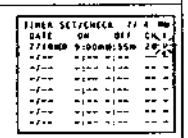
8 **Press ▶.**
The on-time flashes under "OFF". Set the turn-off time referring to steps 6 and 7.



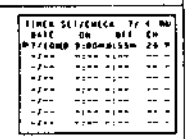
9 **Press ▶ to flash the CH position then press ▲ or ▼ until 26 appears.**
Only the channels set in the VCR will appear. The CHANNEL +/– and ENTER or channel number buttons can also be used.



10 **Press ▶ to flash the recording speed position then ▲ or ▼ until SP appears. REC MODE can also be used.**



11 **Press ▶ to store the setting.**
When all of the settings stop flashing with a ▶ on the left-most position, this indicates that this setting has been completed.



12 **Press EXECUTE.**
The message "Please push TIMER REC to set timer" appears in the display window.

13 **Press TIMER REC (ON/OFF) to enter the timer recording standby mode.**

To be continued ▶

To change or correct the setting before completing it
Press ◀ to return to the item to be changed.

To preset another program
Move the cursor to the second line after step 11 and repeat steps 4 to 11.

To record video sources from LINE IN 1 or 2 jacks
Press INPUT SELECT in step 4 to 10 to call up LINE 1 or 2 under the "CH" position. The indication returns to channel numbers on the third press.

Problems when TIMER REC (ON/OFF) is pressed

The cassette ejects	The safety tab on the inserted cassette has been removed.
The TIMER indicator does not appear	• No cassette has been inserted. • The tape is at its end.

Daily/Weekly Recording
You can preset the timer-activated recording to the same program every day of the week (Daily recording), or one day of the week (Weekly recording).
Follow steps 1 through 4 in "Setting the Timer" (page 34).

You can select the following programs.

Each time you press ▼, the indication under DATE on screen changes in the following order:

SUN—SAT (Every day of the week)
↓
MON—SAT (Every day except Sunday)
↓
MON—FRI (Every day except Saturday and Sunday)
↓
EVERY SAT
⋮
EVERY TUE
↓
EVERY MON
↓
EVERY SUN

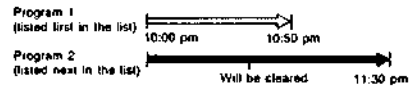
When your desired daily/weekly recording program is set and transmitted to the VCR, the corresponding indicator lights in the display window

If a power interruption occurs
- If a power interruption lasting less than approximately three hours occurs while the VCR is waiting for the preset time, the VCR will re-enter the timer recording standby mode.
- If a power interruption lasting more than approximately three hours occurs before a timer recording, the memory clears. Reset the date and time for timer recording.
- If a power interruption lasting less than approximately three hours occurs during a timer recording, the VCR starts recording again and the tape counter indicates "0H00M00S."

When Preset Timer Recordings Overlap

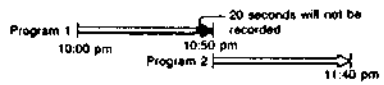
Case 1
If the turn-on time of two programs are the same

The program listed first on the TIMER SET/CHECK display has priority over the other programs. The timer recording parameters of lower priority programs will be erased from the TIMER SET/CHECK display when recording starts.



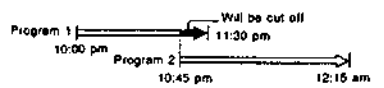
Case 2
If the recording start time of program 2 is the same as the recording end time of program 1

The last 20 seconds of program 1 will not be recorded.



Case 3
If the recording start time of program 2 comes before recording of program 1 is over

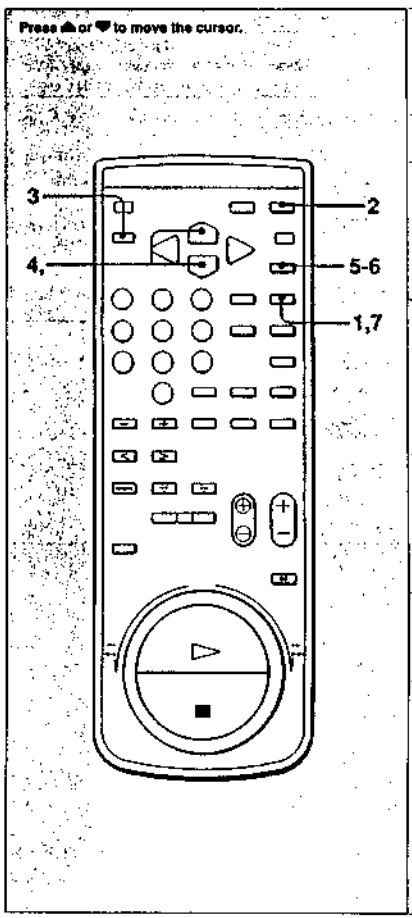
The recording of program 2 will begin before program 1 is finished.



To be continued ▶

Checking the Timer Settings

You can display all of the timer settings on the TV screen to check the settings.



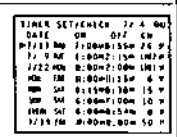
1 Press TIMER REC (ON/OFF) to turn off the TIMER indicator in the display window.

2 Press POWER.

3 Press MENU.
The main menu appears.

4 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.

5 Press EXECUTE.
The TIMER SET/CHECK display appears.



6 Press EXECUTE to return to original screen.

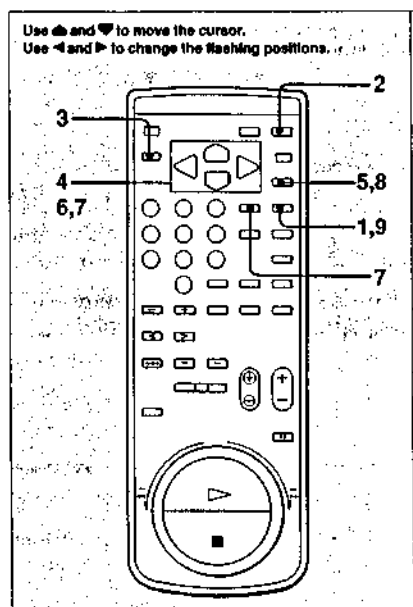
7 Press TIMER REC (ON/OFF) to return to the timer recording standby mode.

The TIMER SET/CHECK display
When a recording is set for only one day, that setting is erased from the TIMER SET/CHECK display after the recording is over.

To check the timer settings during timer recording
Follow steps 3 to 6 above.

Changing or Canceling the Timer Settings

The timer settings can be changed or canceled by referring to the TIMER SET/CHECK display.

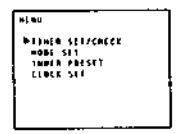


1 Press TIMER REC (ON/OFF) to turn off the TIMER indicator in the display window.

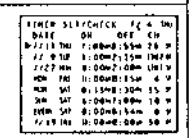
2 Press POWER.

3 Press MENU.
The main menu appears.

4 Press ▲ or ▼ to move the cursor (▶) to TIMER SET/CHECK.



5 Press EXECUTE.
TIMER SET/CHECK display appears.



6 Press ▲ or ▼ to move the cursor to the program you wish to change or cancel.

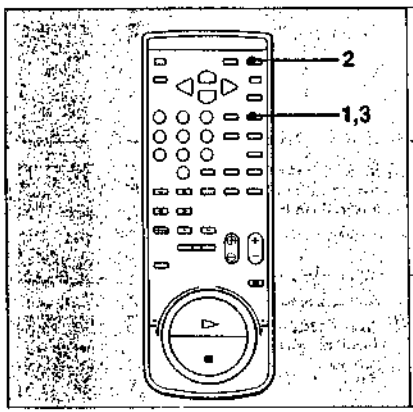
7 To change it, flash the item to be changed by pressing ◀ or ▶ and make the required changes by pressing ▲ or ▼.
To cancel it, press TIMER CLEAR.

8 Press EXECUTE to store the changes and to return to the original screen.

9 Press TIMER REC (ON/OFF) to return to the timer recording standby mode.

Using the VCR before Timer Recording Starts

If you want to use the VCR when it is in the timer recording standby mode, you must first turn off the TIMER indication in the display window and get out of the timer recording standby mode.



1 **Press TIMER REC (ON/OFF) so that the TIMER indicator in the display window goes off.**

2 **Press POWER.**
Now the VCR is ready to be used.

3 **After using the VCR, press TIMER REC (ON/OFF) to return to the timer recording standby mode and to light the TIMER indicator.**

After Entering the Timer Recording Standby Mode

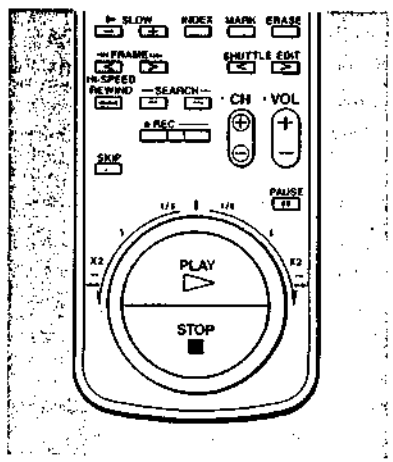
Automatic power on
The VCR goes on automatically when the set time comes on and starts recording. When it completes recording, the power automatically goes off.

To stop recording activated by the timer
Press TIMER REC (ON/OFF).

Buttons which can be operated during timer recording
- TIMER REC (ON/OFF)
- COUNTER RESET (See "Indexing the Tape Contents" page 27.)
- ANT TV/VTR (See "Watching One TV Program While Recording Another" page 31.)
- DATA SCREEN (See "About the Data Screen" page 26.)
- MENU (For checking the programs only. See "Checking the Timer Settings" page 38.)

Variable Speed Playback — DUAL MODE SHUTTLE RING

You can enjoy playing back pictures in variable speeds on the VCR. Using the DUAL MODE SHUTTLE ring, you can obtain variable speed playback easily by turning the ring to the desired playback position and holding it at that position.



Still Picture

During playbak mode, press ❚❚PAUSE. To resume normal playback, press ▷ PLAY, ❚❚PAUSE. When pause mode lasts for more than 5 minutes, the VCR re-enters playback mode automatically.

Picture Search

During playback or still mode, turn the DUAL MODE SHUTTLE ring clockwise (forward direction) or counter-clockwise (reverse direction) until the double arrows ▶▶ or ◀◀ appear on the TV screen. Hold the ring at that position. While holding it, a high speed picture without sound appears on the TV screen.
If you release the ring, normal playback returns.

Note
The picture may turn to black and white during picture search depending on the TV connected to the VCR when you play back tapes recorded in LP recording tape speed.

Locked Picture Search

During playback or playback pause mode, press ⊖ SEARCH or ⊖ SEARCH on the Commander. A high speed picture in forward or reverse appears on the screen even when the button is released. To resume normal playback, press ▷ PLAY.

Skip Playback

The skip function allows you to scan ahead 30 seconds at high speed during the playback mode. Press SKIP on the Commander.
A high speed picture of the scene for about 30 seconds appears on the screen for each press and then normal playback resumes.

Slow Motion Playback

During playback or playback pause mode, press ▮▸ SLOW + or – on the Commander. Change the slow motion speed with the + or – buttons. Press + to increase the playback speed, and – to decrease the playback speed.

Viewing a Picture Momentarily during Fast-forward or Rewind

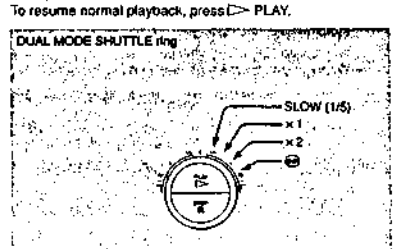
During fast-forward or rewind, turn the DUAL MODE SHUTTLE ring on the VCR clockwise (forward) or counter-clockwise (reverse direction).
You can view a picture at high speed while you hold the ring at that position.
If you release the ring, the VCR returns to the previous status (fast-forward or rewind).

Frame-by-Frame Picture

During playback pause mode, press ◀❚❚ FRAME ❚❚▶ > to advance the picture one frame or ◀❚❚ FRAME ❚❚▶ < to reverse the picture one frame. Each time you press the button, the picture moves one frame. To resume normal playback, press ▷ PLAY.

Variable Speed Playback

Various playback modes as illustrated below can be selected with DUAL MODE SHUTTLE ring during playback mode or playback pause mode. The same speeds are available in the reverse direction. If you release the ring, the VCR returns to the previous mode (playback mode or playback pause mode).
To resume normal playback, press ▷ PLAY.



Adjusting the Picture Manually in Variable Speed Playback

If streaks or noise appear on a slow motion picture
Adjust the picture with the TRACKING NORMAL/SLOW and STILL ADJUST ▼ / ▲ buttons inside the front panel.
The picture can be adjusted more easily by changing the speed closer to normal playback by pressing ▮▸ SLOW +.

If the picture appears to shake in the still mode
Adjust the picture with the STILL ADJUST ▼ / ▲ buttons inside the front panel until the picture stabilizes.

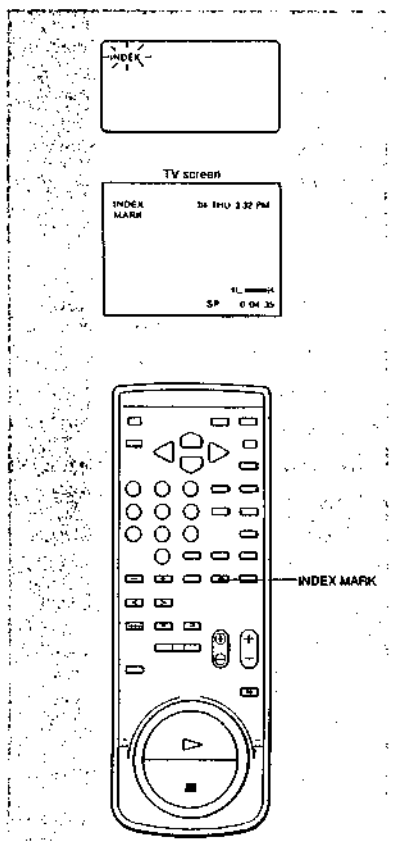
If a band appears on the top or bottom of the screen in still mode
Adjust the picture with the TRACKING NORMAL/SLOW and STILL ADJUST ▼ / ▲ buttons inside the front panel while playing back the tape in a slow motion.

Note
Streaks or noise cannot be completely eliminated in the reverse direction playback or in reverse slow modes.

Index Function

A particular program can be located easily using an index signal marked on the tape.

Marking Index Signals



The INDEX indicator flashing in the display window and the INDEX MARK display on the TV screen show that an index signal has been marked.

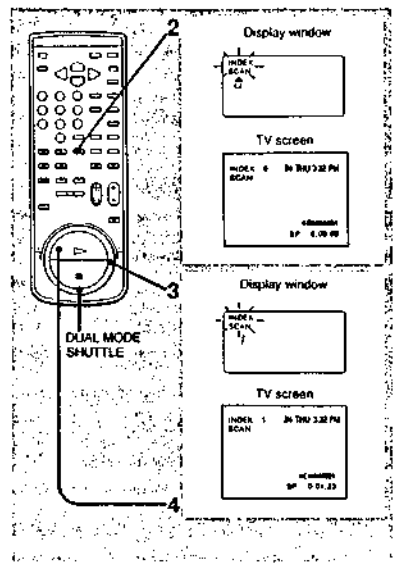
Automatic index mark
An index signal is automatically marked at the beginning of recording.

Manual index mark
Index signals can be marked at any desired point during any recording or normal playback. Press INDEX MARK to mark an index signal.

Notes

- Leave an interval of more than 2 minutes between index signals when marking them one after the other so that the VCR can detect them correctly.
- While an index signal is being marked during playback, the recorded sound will not be heard, but it will not be erased.
- You cannot mark an index signal in the following cases:
  - —On a tape without its safety tab.
  - —On an unrecorded portion of a tape.
  - —Immediately before a point on the tape where the tape speed (EP or SP) changes.
  - —When playing back a tape recorded in LP mode.

Playing Back from the Index Point — Index Scan



The beginning of each program can be found and played back by using the index signals.

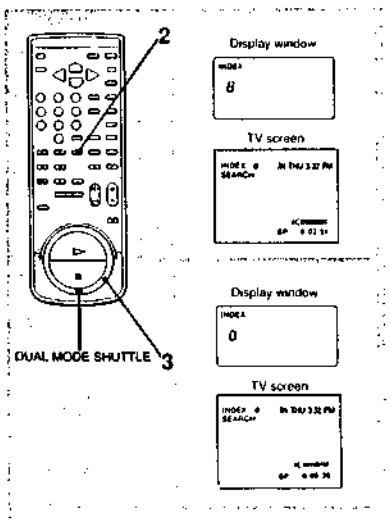
1 Put in a cassette with index signals.

2 Press INDEX once.
The INDEX and SCAN indicator flashes alternately.

3 Turn the DUAL MODE SHUTTLE ring clockwise to locate the previous program or counter-clockwise to locate the program ahead.
The INDEX SCAN indicator flashes continuously while scanning. The tape rewinds or rapidly advanced to the next marked index signal. The tape plays back for approximately 10 seconds from the index signal, and then rewinds or advances to the next index signal. Every time an index signal is detected and playback begins, the displayed index number increases.

4 When the desired program is detected, press ▷ PLAY.
Playback starts from that point.

Locating an Index — Index Search

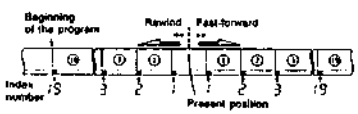


A particular program can be located and played back by designating how many index signals ahead or behind that program is from the current position. Up to 19 indexes can be searched for.

1 Put in a cassette with index signals.

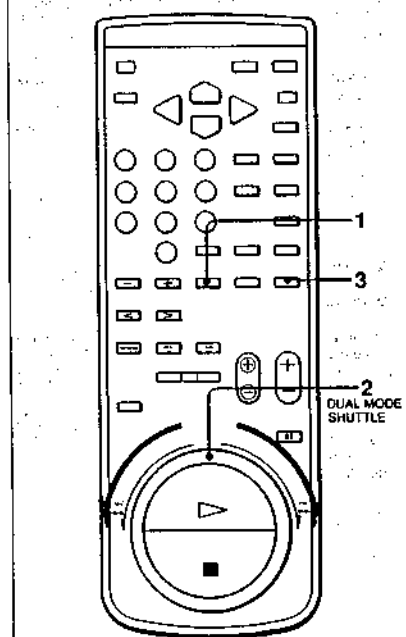
2 Press INDEX until the index number of the desired program is displayed.
The INDEX indicator and the INDEX number are displayed.

3 Turn the DUAL MODE SHUTTLE ring counterclockwise if the index is behind, or clockwise if the index is ahead of the current tape position.
The tape rewinds or rapidly advances. Every time an index signal is detected, the INDEX number decreases. When the number reaches 0, playback of your desired program begins.



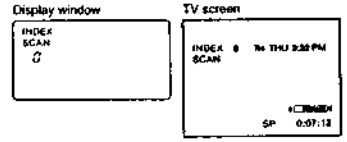
Erasing Index Signals

Unnecessary index signals can be erased.



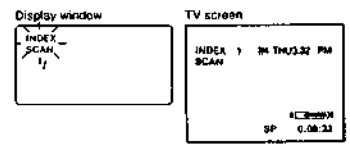
1 Press INDEX once.
The INDEX and SCAN indicator blinks alternately.

Display window / TV screen



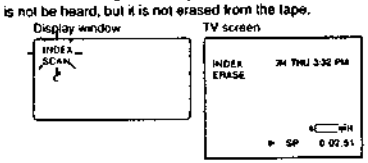
2 Turn the DUAL MODE SHUTTLE ring clockwise or counterclockwise to search for the index signal to be erased.
The tape rewinds or rapidly advances.
Every time an index signal is detected, the tape plays back and then rewinds or advances to the next index signal.

Display window / TV screen



3 When you reach the index signal you wish to erase, press INDEX ERASE within approximately 10 seconds after you have verified the playback picture.
The INDEX indicator flashes.
While the index signal is being erased, the recorded sound is not be heard, but it is not erased from the tape.

Display window / TV screen



Notes

- Index signals marked on a portion of tape just before or after the recording modes, SP and EP, are switched cannot be erased.
- Index signals marked on an LP mode tape cannot be erased.

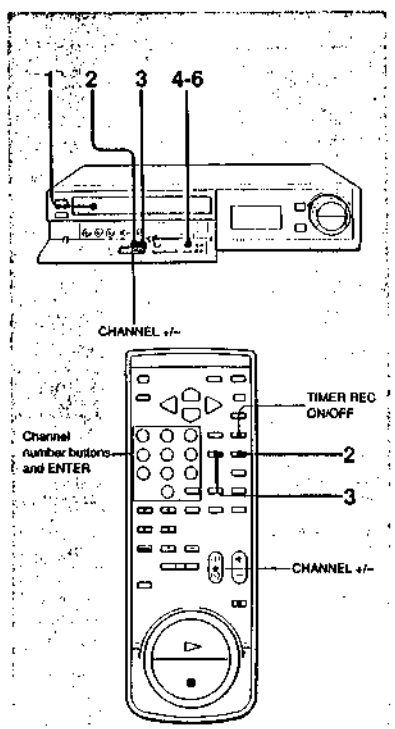
Quick Timer Recording

This function is convenient when, for example, you want to set the VCR to start recording immediately without going through the whole timer setting procedure.
However, the quick timer recording function only provides a very rough setting for the desired program.

Before you begin, check the following points.

- Press TIMER REC (ON/OFF) if the TIMER indicator is turned on.
- If you are currently recording, perform step 6 only.

Quick Timer Recording



1 **Put in a cassette.**

2 **Press INPUT SELECT so that the TUNER indicator is turned on.**

3 **Press REC MODE (SP/EP) to decide the tape speed, SP or EP.**

4 **Press QUICK TIMER on the VCR.**
Select the channel for recording with CHANNEL +/– or channel number buttons and ENTER while the channel display is flashing.

5 **Press QUICK TIMER again to start recording.**

6 **To decide the recording duration, press QUICK TIMER to change the duration indicator.**
Every press of QUICK TIMER increases the recording duration in units of 30 minutes.

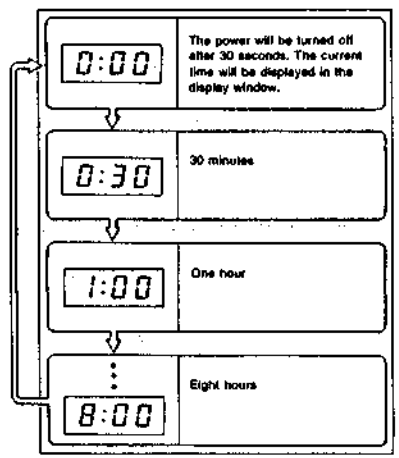
You can leave your VCR after turning off the TV. The VCR automatically goes off when the recording is finished.

If a cassette without its safety tab is inserted
The cassette is ejected automatically when you press QUICK TIMER.

To stop quick timer recording
Press TIMER REC ON/OFF.

Recording Duration Indicator

Every time you press QUICK TIMER, the recording duration indicator will change as shown in the illustration. The recording duration can be changed by pressing QUICK TIMER even during quick timer recording. The duration indicator counts down the recording time, minute by minute, during recording.



Buttons Operable during Quick Timer Recording

TIMER REC (ON/OFF)	To stop quick timer recording.
QUICK TIMER	To change recording duration.
COUNTER RESET	To reset the tape counter to zero.
INDEX MARK	To record an index signal.
ANT TV/VTR	To watch the picture broadcast on another channel. (TV)
MENU	Only operable to check the timer recording settings. (See "Checking the Timer Settings"on page 38.)

If the tape runs out during quick timer recording
Recording will stop and the power goes off. The tape will not rewind automatically.

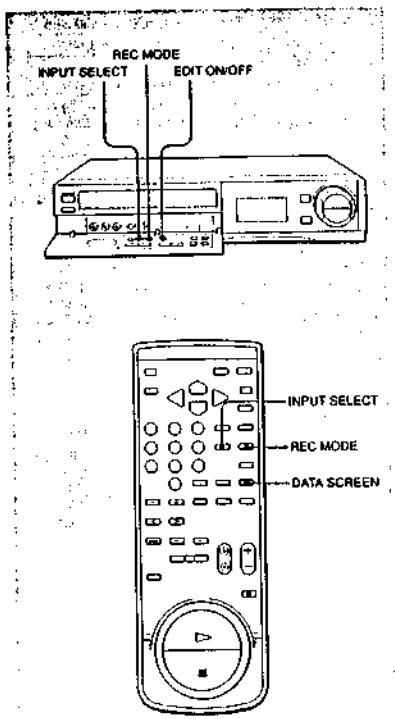
If a power interruption occurs during quick timer recording
Recording will stop and the power goes off. If the power interruption lasts less than three hours and the power is restored before the recording end time, recording will start again from that point.

Editing

To be continued ▶

Using an additional VCR, you can create original video program tapes.

Preliminary Setting for Editing



When using this VCR as the recording VCR
Before editing, check these settings:

- **INPUT SELECT:** Select LINE 1 or LINE 2, whichever the playback VCR is connected to.
- **REC MODE:** Select SP or EP.
- **EDIT indicator:** Press EDIT ON/OFF to light the EDIT indicator.

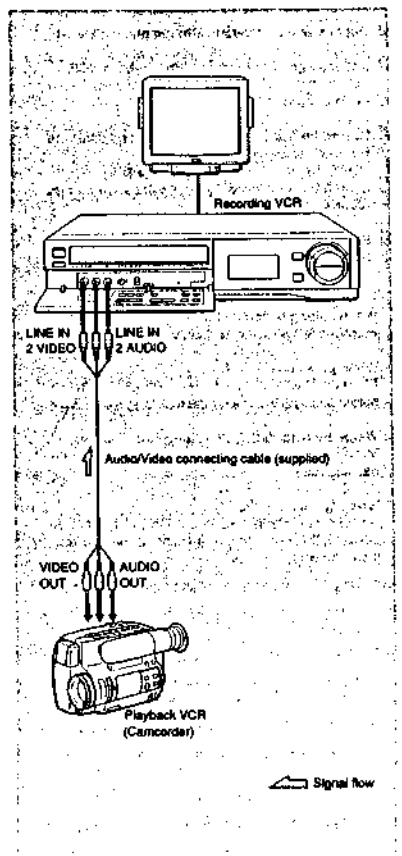
When using the SLV this VCR as the playback VCR
Before editing, check these settings:

- **EDIT indicator:** Press EDIT ON/OFF to light the EDIT indicator.
- **DATA SCREEN:** Press to erase the on-screen displays.

Use of the EDIT ON/OFF button
Even when using the EDIT mode during editing, the quality of the edited tape will have a certain amount of deterioration in picture. Avoid using an edited tape for multiple generations of editing.

Editing from Another VCR

Using this VCR as the Recording VCR and an 8 mm Video Camera Recorder as the Playback VCR



1. **Put a cassette for recording into the recording VCR.**
2. **Turn on the power of the playback VCR and insert a source cassette.**
3. **Activate the EDIT mode on the recording VCR.**
   Activate the EDIT mode on the playback VCR if the player has this function.
4. **Search for the playback start point and enter the playback pause mode.**
5. **Search for the recording start point and enter the recording pause mode.**
6. **Press the PAUSE button on both of the units.**
   Recording of the signals from the playback VCR will start.

When editing is completed
Press the STOP button on both of the VCRs.

When pressing PAUSE
Press the PAUSE button on the playback VCR a little before pressing the one on the recording VCR.

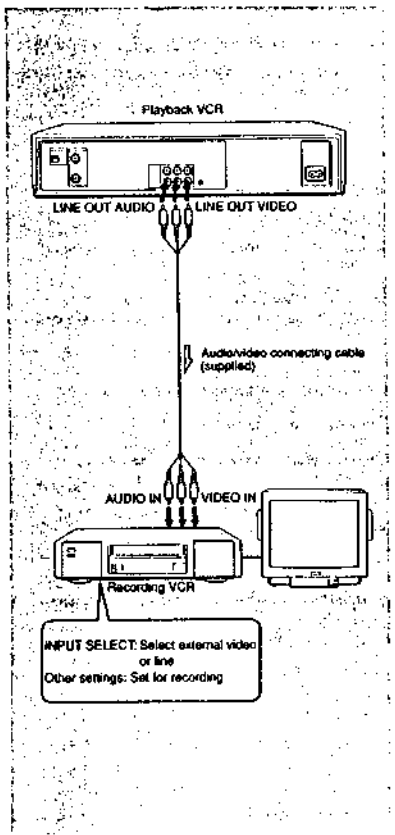
When the playback VCR is a stereo unit
Make connections with the supplied audio/video connecting cable.

When connecting the VCRs
Do not connect both LINE IN and LINE OUT jacks on the two VCRs simultaneously. Doing so may cause a humming noise.

To be continued ▶

Editing onto Another VCR

Using this VCR as the Playback VCR and a Betamax VCR as the Recording VCR



1 **Turn on the power of the recording VCR and insert a cassette for recording.**

2 **Put in a source cassette into the playback VCR.**

3 **Activate the EDIT mode on the playback VCR.**
Activate the EDIT mode on the recording VCR if the recorder has this function.

4 **Search for the playback start point and enter the playback pause mode.**

5 **Search for the recording start point and enter the recording pause mode.**

6 **Press the PAUSE button on both of the units.**
Recording of the signals from the playback VCR will start.

When editing is completed
Press the STOP button on both of the units.

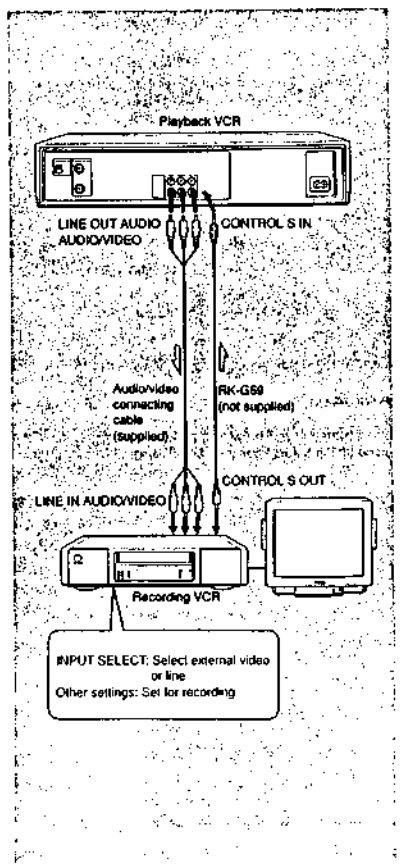
When pressing PAUSE
Press the PAUSE button on the playback VCR just before pressing the one on the recording VCR.

When the recording VCR is a monaural unit
Make connections with the VMC-910MS/920MS cable (not supplied).

When connecting the VCRs
Do not connect both LINE IN and LINE OUT jacks on the two VCRs simultaneously. Doing so may cause a humming noise.

Synchronized Editing onto Another VCR

Using this VCR as the Playback VCR and Another VCR with a Control S OUT Terminal and the Synchro Edit Function as the Recording VCR



This section shows you how to use the synchronizing function of another VCR with SYNCHRO EDIT on this VCR while editing your tape. For synchronized editing, you can use this VCR as the playback VCR and another VCR with a CONTROL S OUT terminal and the synchro edit function as the recording VCR.

1 **Turn on the power of the recording VCR and insert a tape for recording.**

2 **Put in a source tape into the playback VCR.**

3 **Activate the EDIT mode on the playback VCR.**
Activate the EDIT mode on the recording VCR if the recorder has this function.

4 **Search for the edit start point and enter the recording pause mode.**

5 **Search for the playback start point and enter the playback pause mode.**

6 **Press SYNCHRO EDIT on the recording VCR.**
Both recording and playback will start.

7 **At the desired edit end point, press SYNCHRO EDIT on the recording VCR.**
The recording VCR enters the recording pause mode and the playback VCR enters the playback pause mode.

To edit the next scene
Repeat steps 5, 6, and 7.

When editing is completed
Press STOP on both of the units.

When the recording VCR is a monaural unit
Make connections with the VMC-910MS/920MS cable (not supplied).

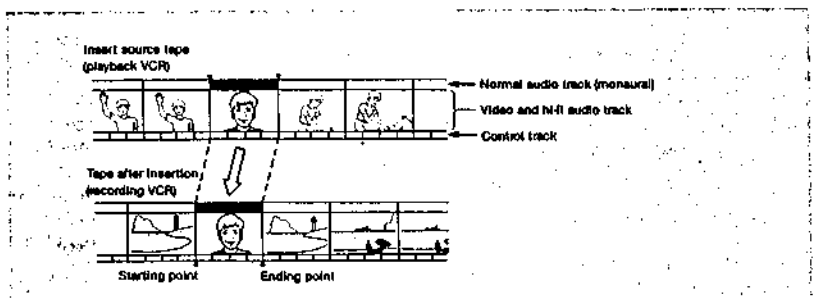
When connecting the VCRs
Do not connect both LINE IN and LINE OUT jacks on the two VCRs simultaneously. Doing so may cause a humming noise.

To be continued ▶

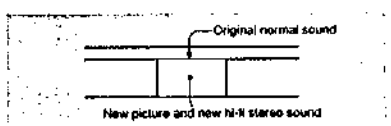
Insert Editing (SLV-686HF only)

You can easily insert a new picture and/or sound onto a pre-recorded tape. "Audio insert", "Video insert", or "Audio and video insert" can be selected with this operation. This editing is useful to replace an unnecessary scene (sound) with another scene (sound).

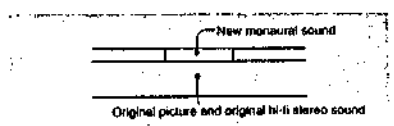
- For connection, see page 51 or 53. (The CONTROL S connections are not needed.)
- Select the insert source from the equipment connected to LINE IN 1 or 2.
- Connect the VCR to an audio system for "Audio insert."



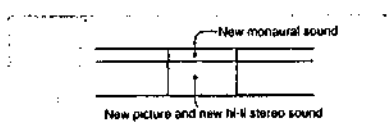
Video insert
You can insert a new picture and a new hi-fi stereo sound from video and hi-fi audio track onto a pre-recorded tape. The normal sound of the normal audio track will be retained.



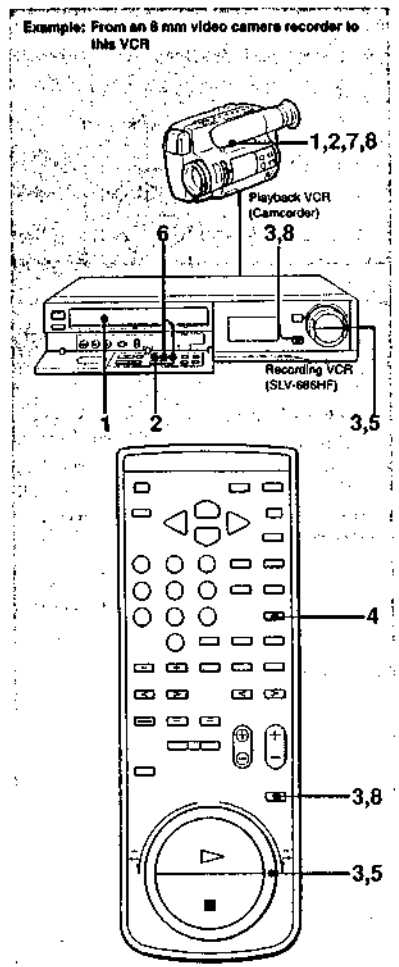
Audio Insert
You can insert the monaural part of a normal sound onto a pre-recorded tape. The picture and a hi-fi stereo sound of the video and hi-fi audio track will be retained.



Video and Audio Insert
You can insert a new picture, a new hi-fi stereo sound, and a new normal sound onto a pre-recorded tape.



Example: From an 8 mm video camera recorder to this VCR



1 Put a source tape into the playback VCR and a tape for recording into this VCR.

2 Press EDIT ON/OFF.
Activate the edit function if the playback VCR has it.

3 On this recording VCR, locate the edit end point and put this VCR into the playback pause mode.
DUAL MODE SHUTTLE is useful for locating a desired ending point.

4 On the recording VCR, press COUNTER RESET.
The counter shows "0H00M00S" and the ending point is memorized.

5 On the recording VCR, rewind the tape to locate the starting point and set the VCR to the playback pause mode.
DUAL MODE SHUTTLE is useful for locating a desired starting point.

6 Press VIDEO/AUDIO INSERT.
For audio insert, press AUDIO. The "A INSERT" lights in the display window.
For video insert, press VIDEO. The "V INSERT" lights in the display window.
For audio and video insert, press the AUDIO and then VIDEO. The "AV INSERT" lights in the display window.

7 On the playback VCR, locate the starting point where you want to start the insertion and set the VCR to the playback pause mode.

8 Press the PAUSE button on both VCRs to start the insertion.
At the ending point (0H00M00S), the insertion stops automatically. (To stop playback, press the STOP button.)

To stop the insertion temporally
Press ❚❚ PAUSE.

To stop on-going insertion
Press ■ STOP.

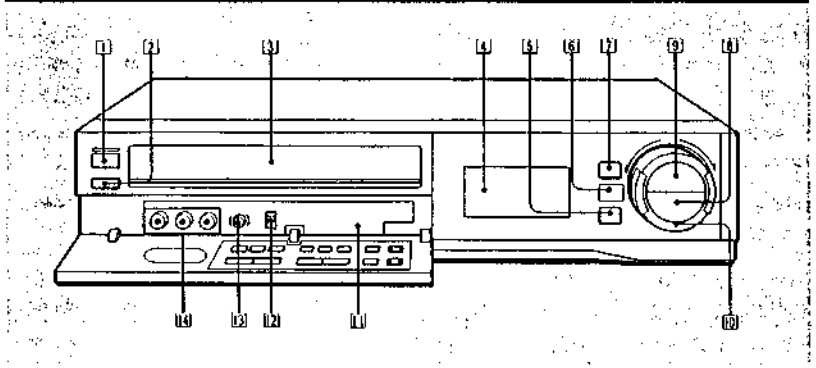
Notes
- The video/audio inserts cannot be made onto an unrecorded portion of a tape.
- After the insertion, the previous picture and/or sound will be erased.

Identifying the Parts and Controls

To be continued ▶

Refer to the pages indicated for details.

Front Panel



[1] POWER ON/OFF switch and indicator (page 13)

[2] ⏏ EJECT button (page 24)

[3] Cassette compartment

[4] Display window and function mode display (page 59)

[5] PAUSE button (page 42)

[6] Remote sensor

[7] HI-SPEED REWIND button (page 26)

[8] STOP button (page 26)

[9] PLAY button (page 25)

[10] DUAL MODE SHUTTLE ring

[11] CL (clear) button (page 63)

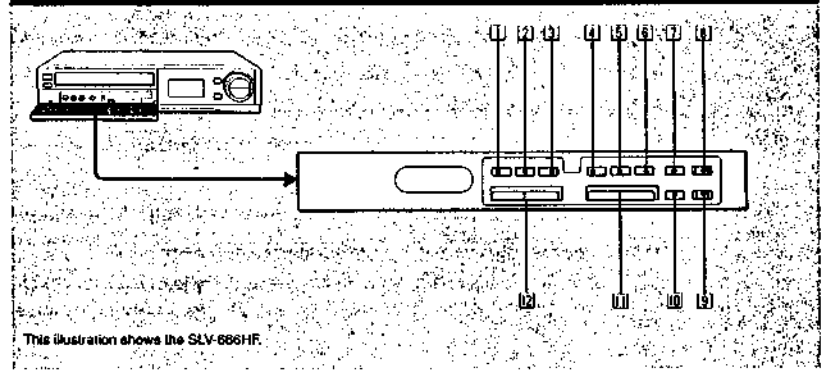
[12] COMMAND MODE VTR 1/VTR 2/VTR 3 selector (page 14)

[13] SHARPNESS SOFT/SHARP control (page 27)

[14] LINE IN 2 VIDEO and AUDIO jacks (phono type) (page 51)

Refer to the pages indicated for details.

Inside of the Front Panel



This illustration shows the SLV-686HF.

[1] ANT TV/VTR button (page 13)

[2] INPUT SELECT button (page 30)

[3] REC MODE (SP/EP) button (page 30)

[4] EDIT ON/OFF button (page 50)

[5] VIDEO INSERT button (SLV-686HF only) (page 55)

[6] AUDIO INSERT button (SLV-686HF only) (page 55)

[7] QUICK TIMER button (page 48)

[8] TIMER REC ON/OFF button (page 35)

[9] REC button (page 30)

[10] TRACKING AUTO/MANUAL button (page 27)

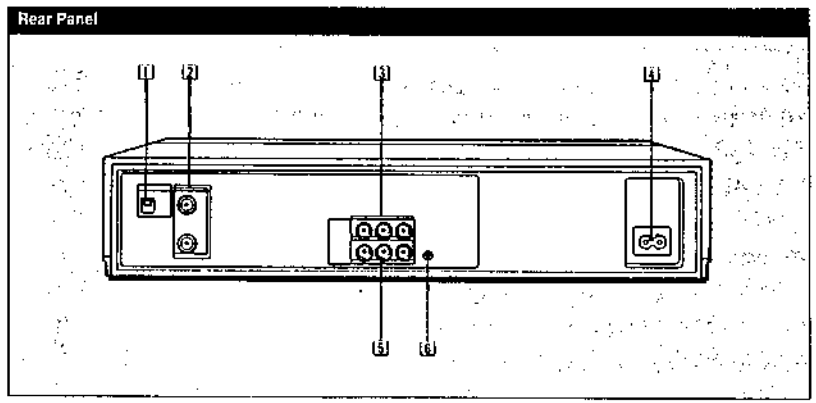
[11] TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ button (page 27)

[12] CHANNEL +/– buttons (page 30)

To be continued ▶

Refer to the pages indicated for details.

Rear Panel



[1] RF UNIT selector (page 13)

[2] VHF/UHF IN/OUT connectors (F-type) (pages 7-10)

[3] LINE IN 1 VIDEO and AUDIO jacks (phono type)

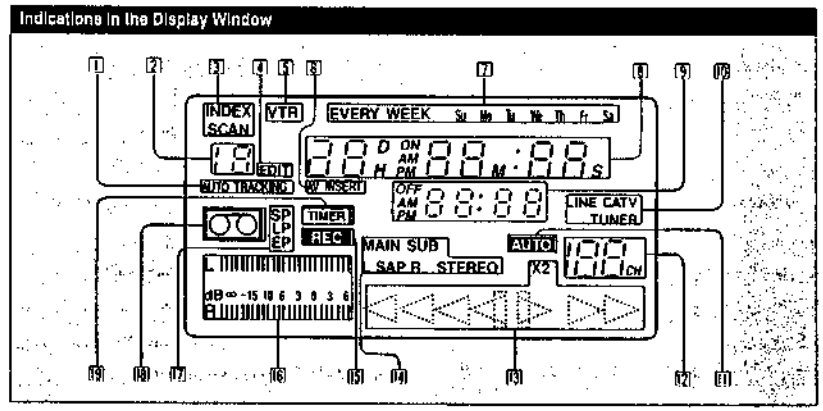
[4] AC IN socket

[5] LINE OUT VIDEO and AUDIO jacks (phono type) (page 11)

[6] CONTROL S IN jack (mini type) (page 53)

Refer to the pages indicated for details.

Indications in the Display Window



[1] AUTO TRACKING indicator (page 28)

[2] Index number indicator (page 44)

[3] INDEX, INDEX SCAN indicator (page 44)

[4] EDIT indicator (page 60)

[5] VTR indicator (page 31)

[6] AV INSERT indicator (SLV-686HF only) (page 55)
"A INSERT" lights for audio insert.
"V INSERT" lights for video insert.
"AV INSERT" lights for audio and video insert.

[7] Day of the week indicator, EVERY WEEK indicator for timer-activated recording (page 36)

[8] Linear time counter and turn-on time for timer-activated recording (pages 27,34)

[9] Turn-off time for timer-activated recording, quick timer recording time (pages 34,48)

[10] Input mode indicator

[11] AUTO indicator (page 26)

[12] Channel number/input mode indicator

[13] Tape operation indicator (page 25)

[14] Stereo program/SAP indicator (page 33)

[15] REC (recording) indicator

[16] Peak level meter

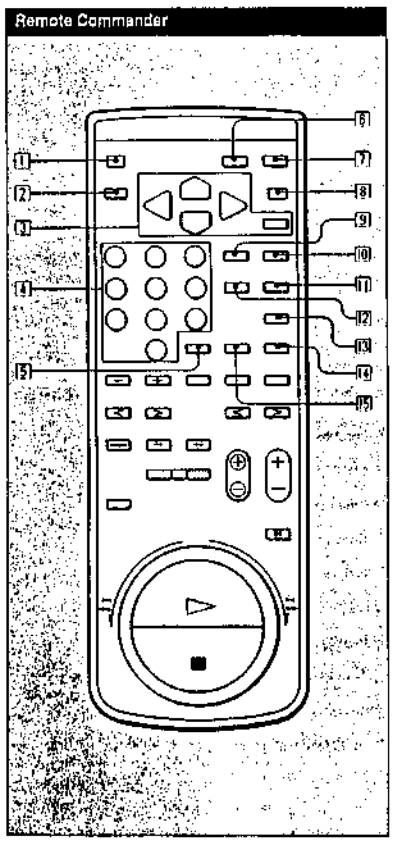
[17] Tape speed indicator (LP is for playback only.)

[18] Cassette indicator (page 24)

[19] TIMER recording indicator

To be continued ▶

Refer to the pages indicated for details.



This illustration shows the Wireless Remote Commander RMT-V102A (for SLV-686HF). The Wireless Remote Commander RMT-V102 (for SLV-585HF) is the same as the RMT-V102A except for control number 23 on page 61.

[1] TV/VTR remote control selector (page 14)

[2] MENU button

[3] EXECUTE button and cursor shift ▲/▼/◀/▶ buttons

[4] Channel number buttons (page)

[5] ENTER button

[6] ANT TV/VTR (Antenna TV/VTR) button (page 31)

[7] POWER switch (page 13)

[8] COMMAND MODE 1/2/3 selector (page 14)

[9] TIMER CLEAR button (page 39)

[10] TIMER REC ON/OFF button (page 35)

[11] INPUT SELECT button (page 30)

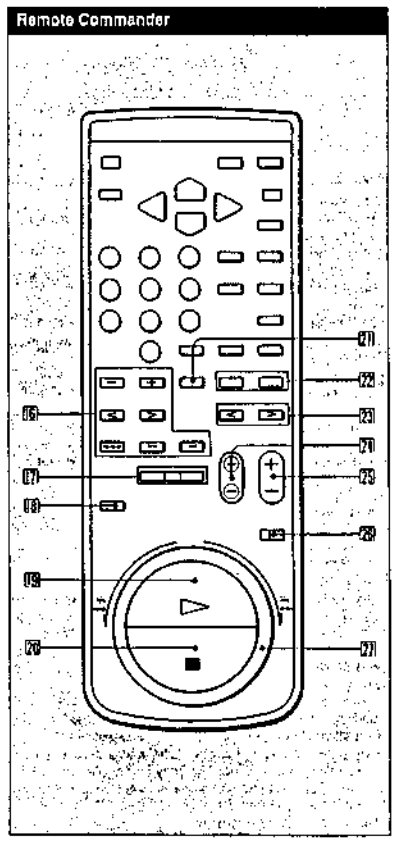
[12] REC MODE button (page 30)

[13] COUNTER RESET button (page 27)

[14] DATA SCREEN button (page 26)

[15] AUDIO MONITOR button (page 26)

Refer to the pages indecated for details.



This illustration shows the Wireless Remote Commander RMT-V102A (for SLV-686HF). The Wireless Remote Commander RMT-V102 (for SLV-585HF) is the same as the RMT-V102A except for control number 23 above.

[16] Tape transport buttons (pages 26,41-42)
▮▶ SLOW (+: to increase the speed, –: to reduce the speed)
◀▮▮ FRAME ▮▮▶ (frame-by-frame picture and tape direction for slow motion playback; >: forward / <: reverse)
HI-SPEED REWIND ◀◀◀◀
SEARCH (reverse/forward) ⊖ / ⊕

[17] ● REC buttons (Press the two buttons simultaneously) (page 30)

[18] SKIP button (page 41)

[19] PLAY button (page 25)

[20] STOP button (page 26)

[21] INDEX button (page 45)

[22] INDEX MARK/ERASE buttons (page 44)

[23] SHUTTLE EDIT buttons (RMT-V102A for SLV-686HF only) (page 31)

[24] CHANNEL +/– buttons (page 30)

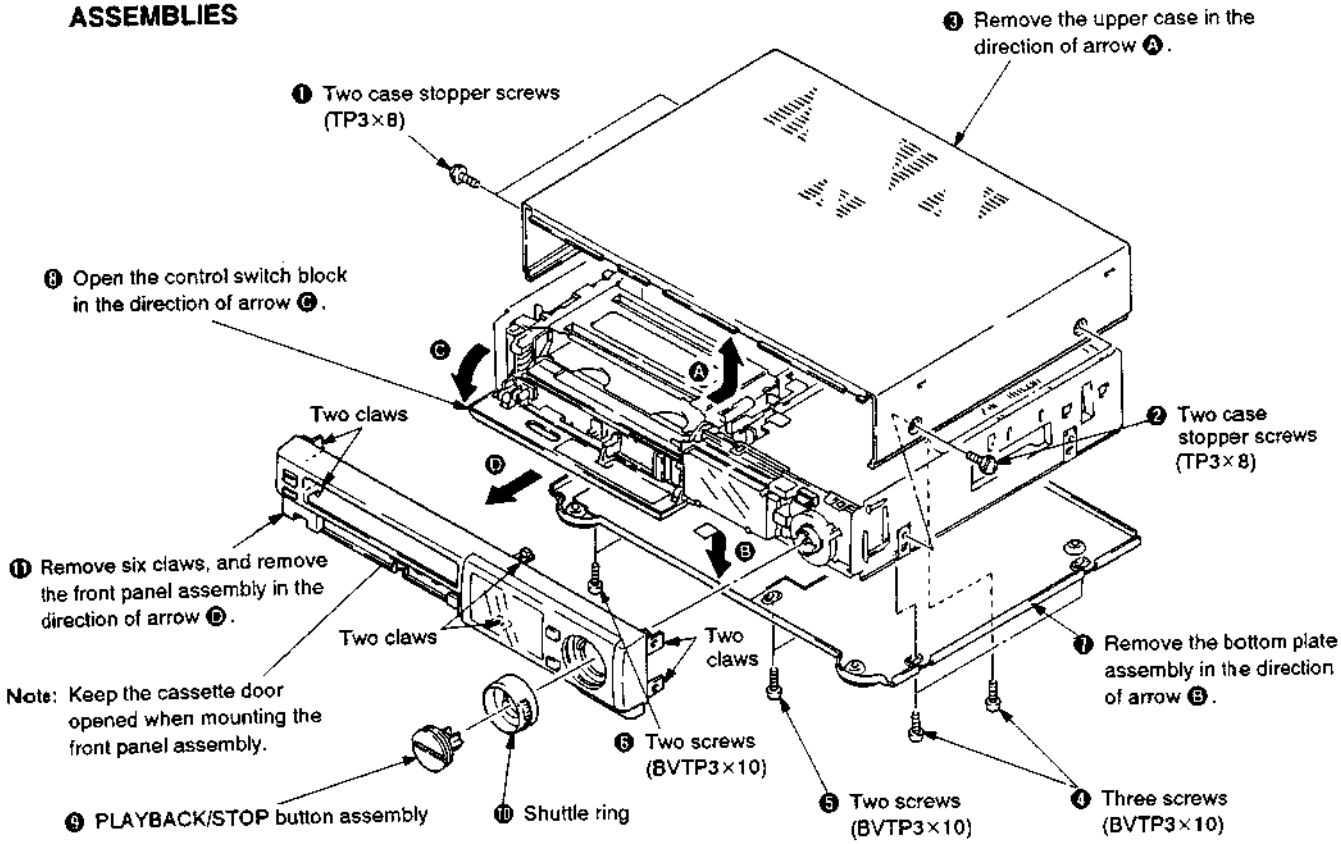
[25] VOL +/– buttons

[26] PAUSE button (page 41)

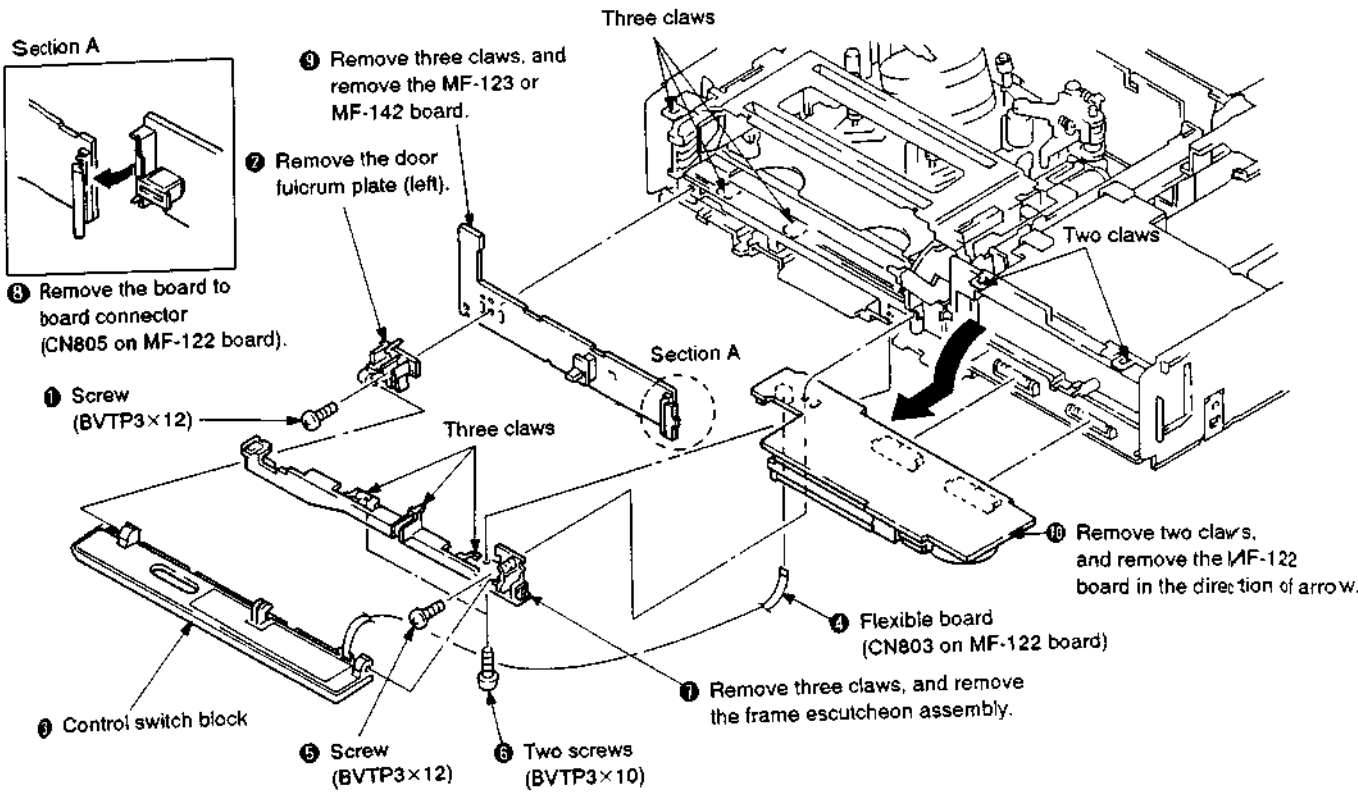
[27] DUAL MODE SHUTTLE ring (pages 26,43)

SECTION 2
DISASSEMBLY

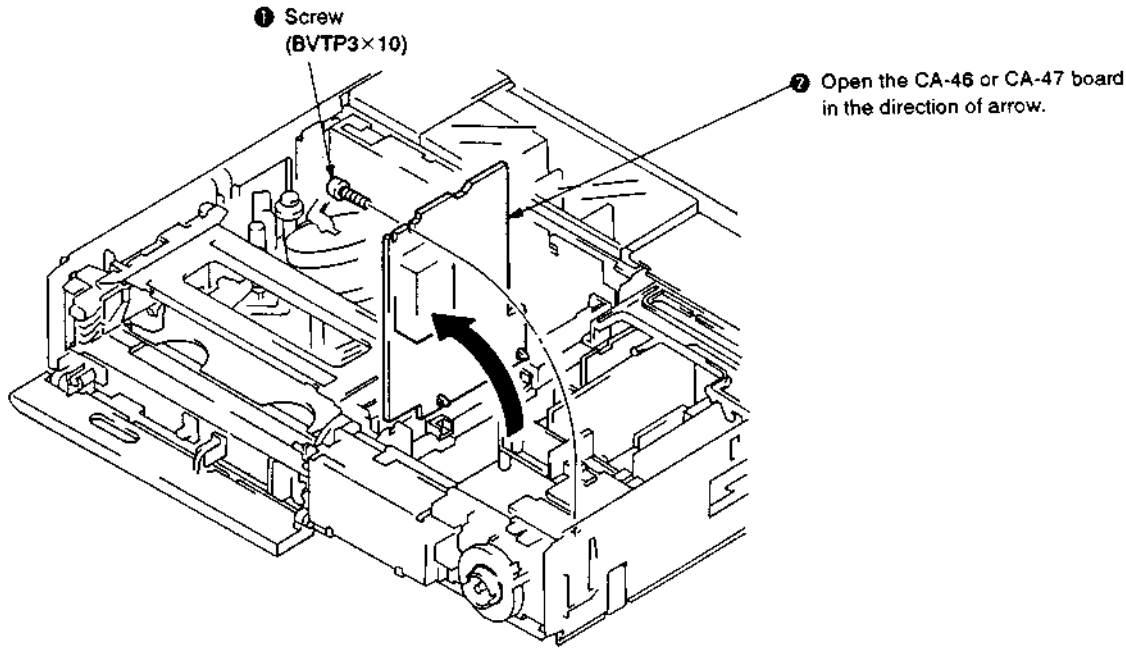
2-1. REMOVAL OF FRONT PANEL AND CABINET ASSEMBLIES



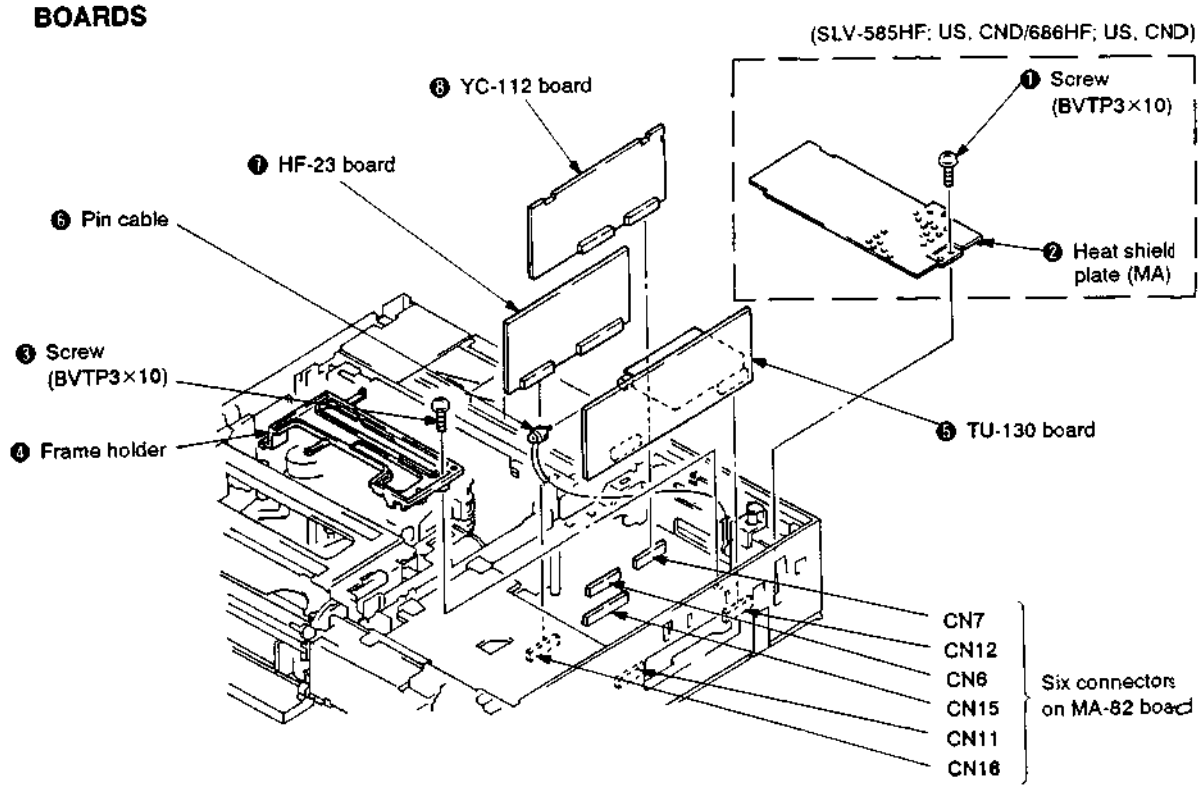
2-2. REMOVAL OF MF-122, MF-123 OR MF-142 BOARDS AND CONTROL SWITCH BLOCK



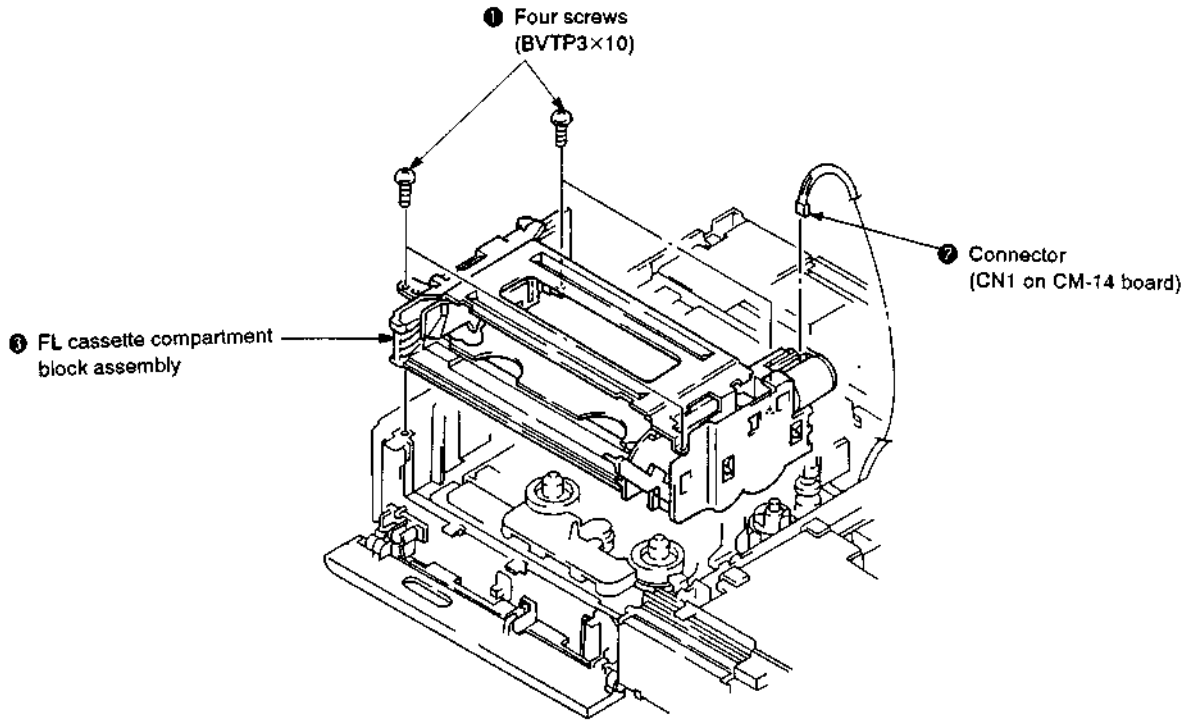
2-3. OPENING OF CA-46 OR CA-47 BOARD



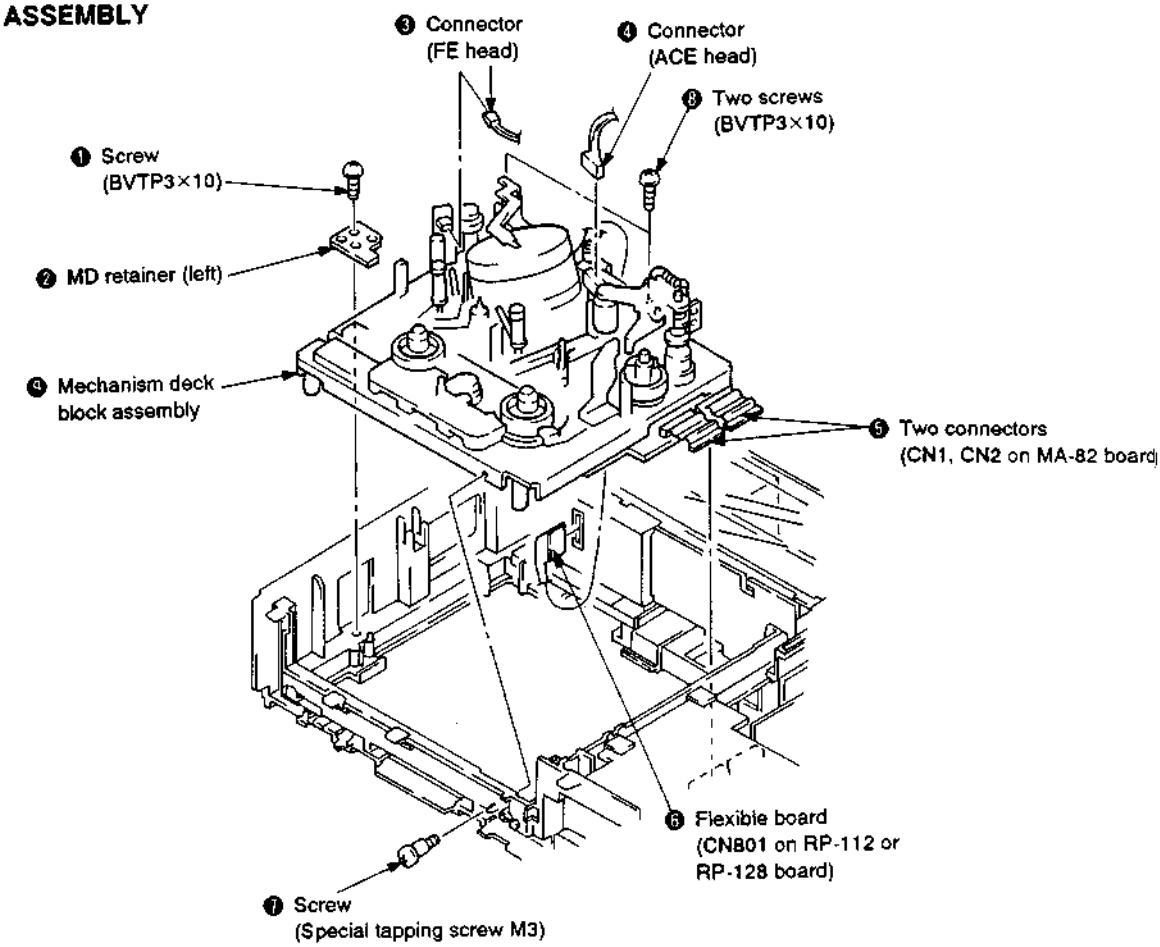
2-4. REMOVAL OF TU-130, HF-23 AND YC-112 BOARDS



2-5. REMOVAL OF FL CASSETTE COMPARTMENT BLOCK ASSEMBLY

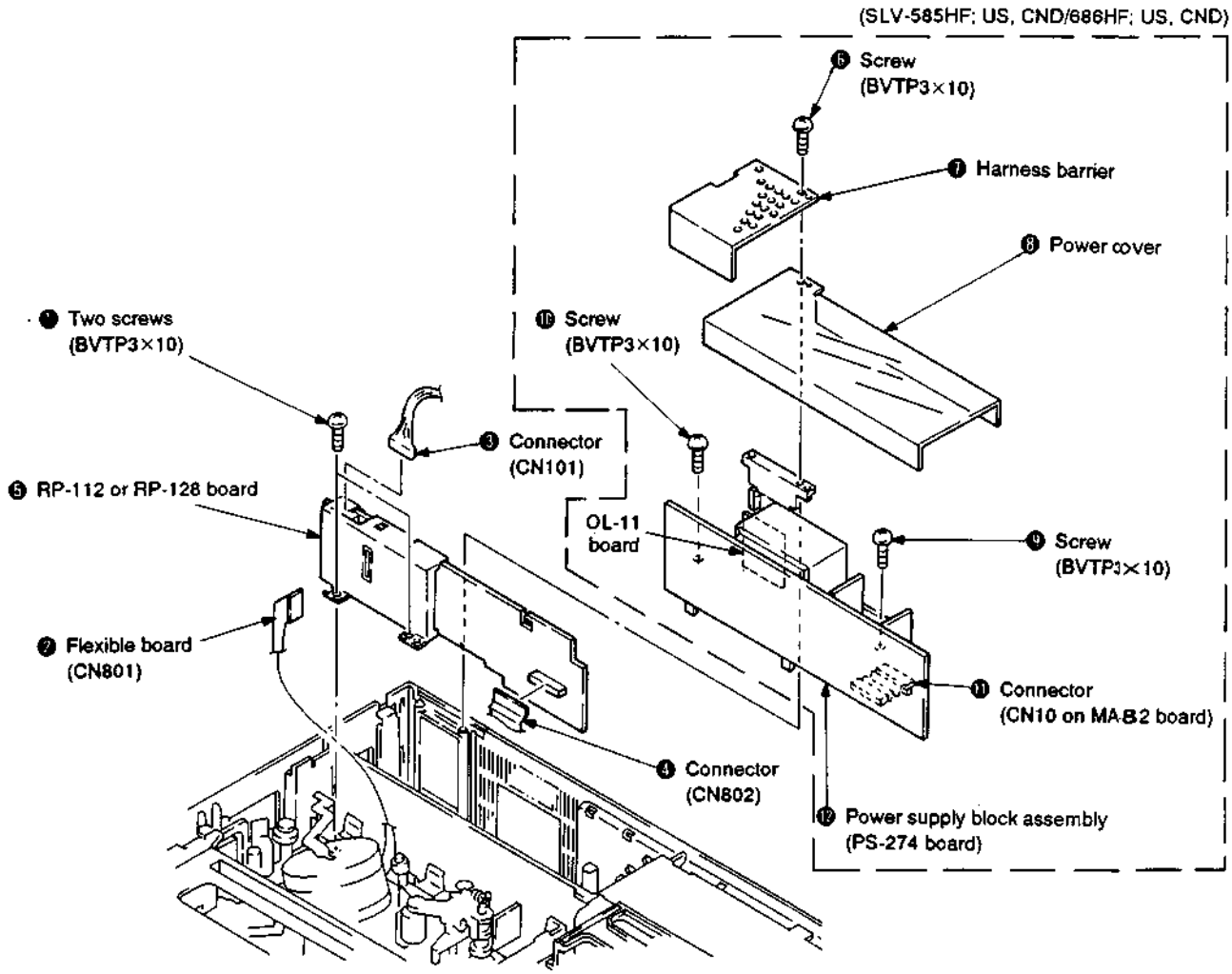


2-6. REMOVAL OF MECHANISM DECK BLOCK ASSEMBLY



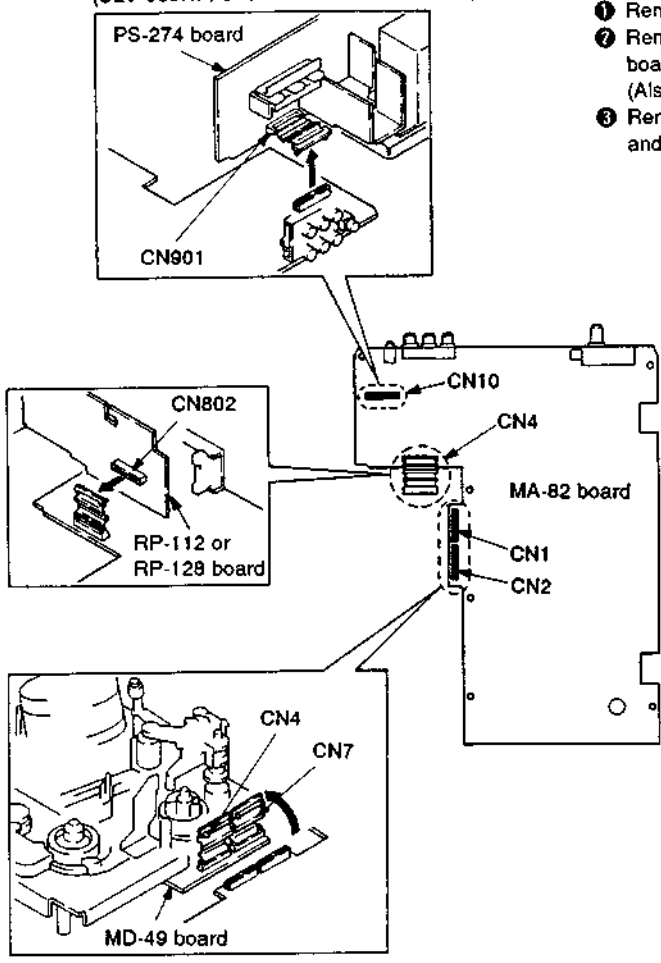
2-7. REMOVAL OF RP-112 OR RP-128 BOARD AND POWER SUPPLY BLOCK ASSEMBLY (PS-274 AND OL-11 BOARDS) (SLV-585HF; US, CND/686HF; US, CND MODEL ONLY)

Note: The following parts of power supply block assemblies should be referred to the SUPPLEMENT-1.
SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.

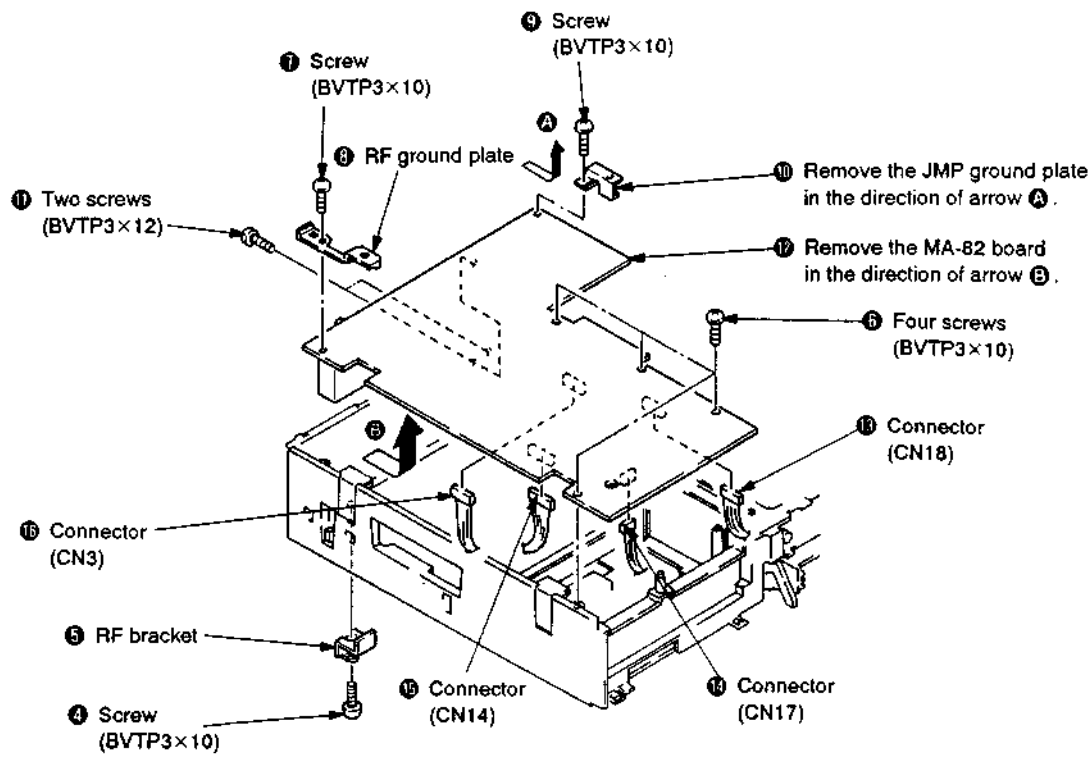


2-8. REMOVAL OF MA-82 BOARD

(SLV-585HF; US, CND/686HF; US, CND)

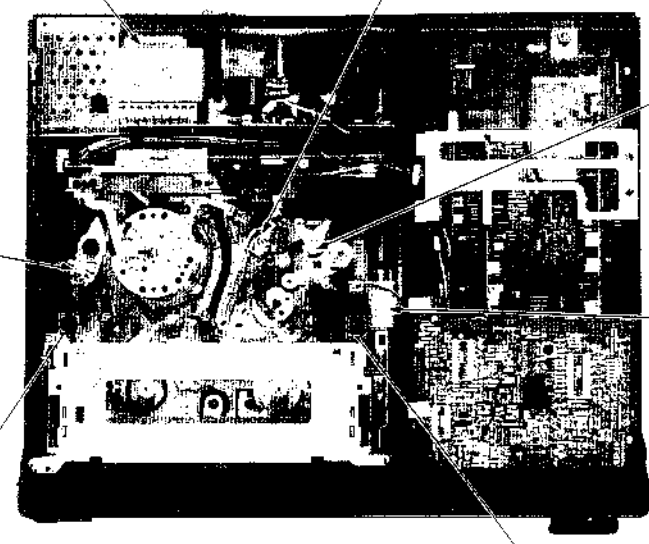


❶ Remove the MF-122 board according to 2-2.
❷ Remove the TU-130, HF-23 and YC-112 boards according to 2-4.
(Also remove the heat shield plate (MA).)
❸ Remove four connectors (CN1, CN2, CN4 and CN10) from MA-82 board.

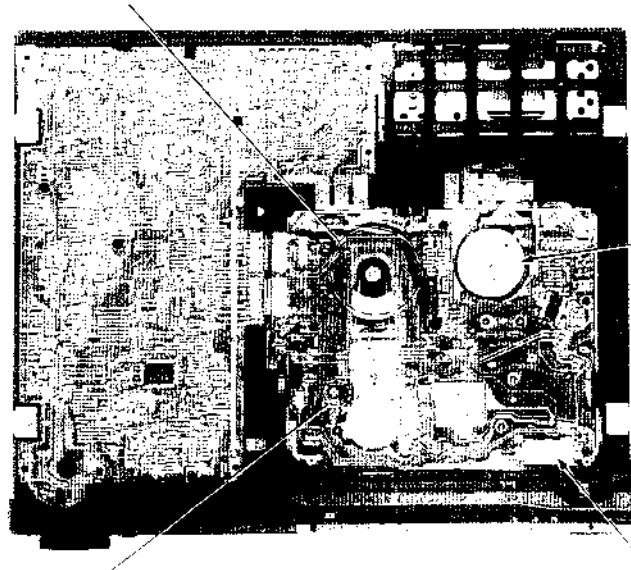


2-9. INTERNAL VIEWS

— Top Side —



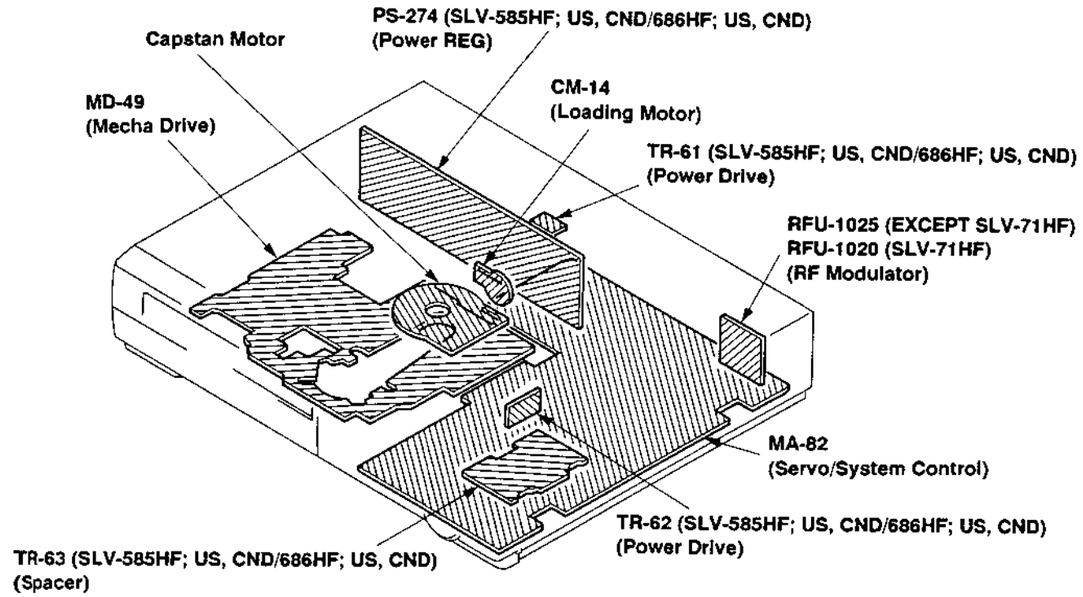
— Bottom Side —

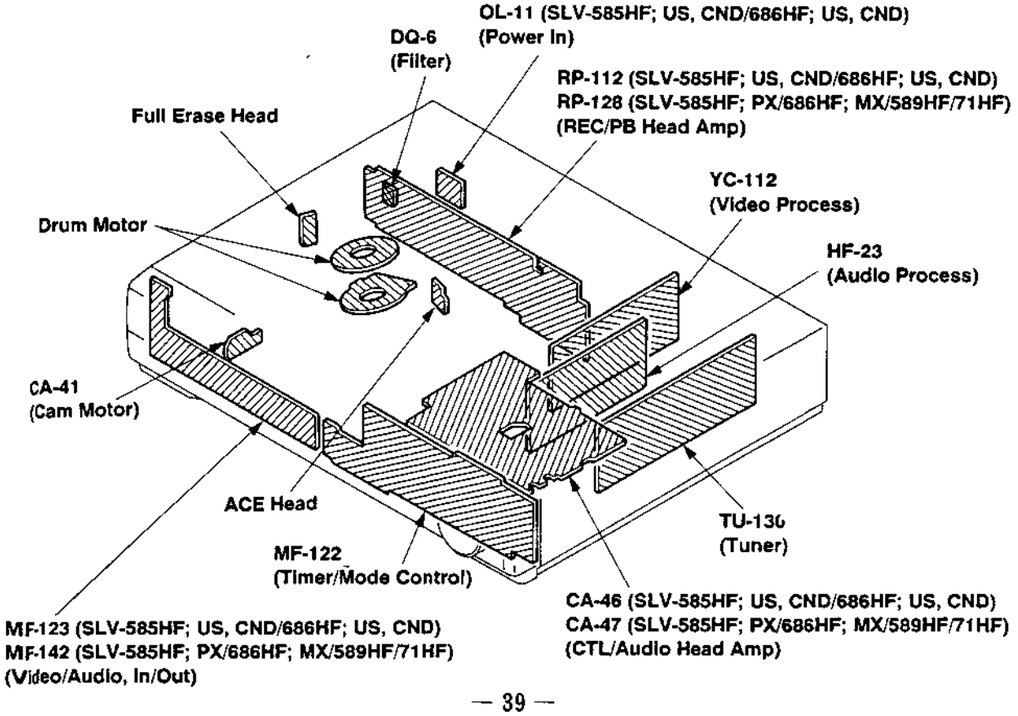


SECTION 3
DIAGRAMS

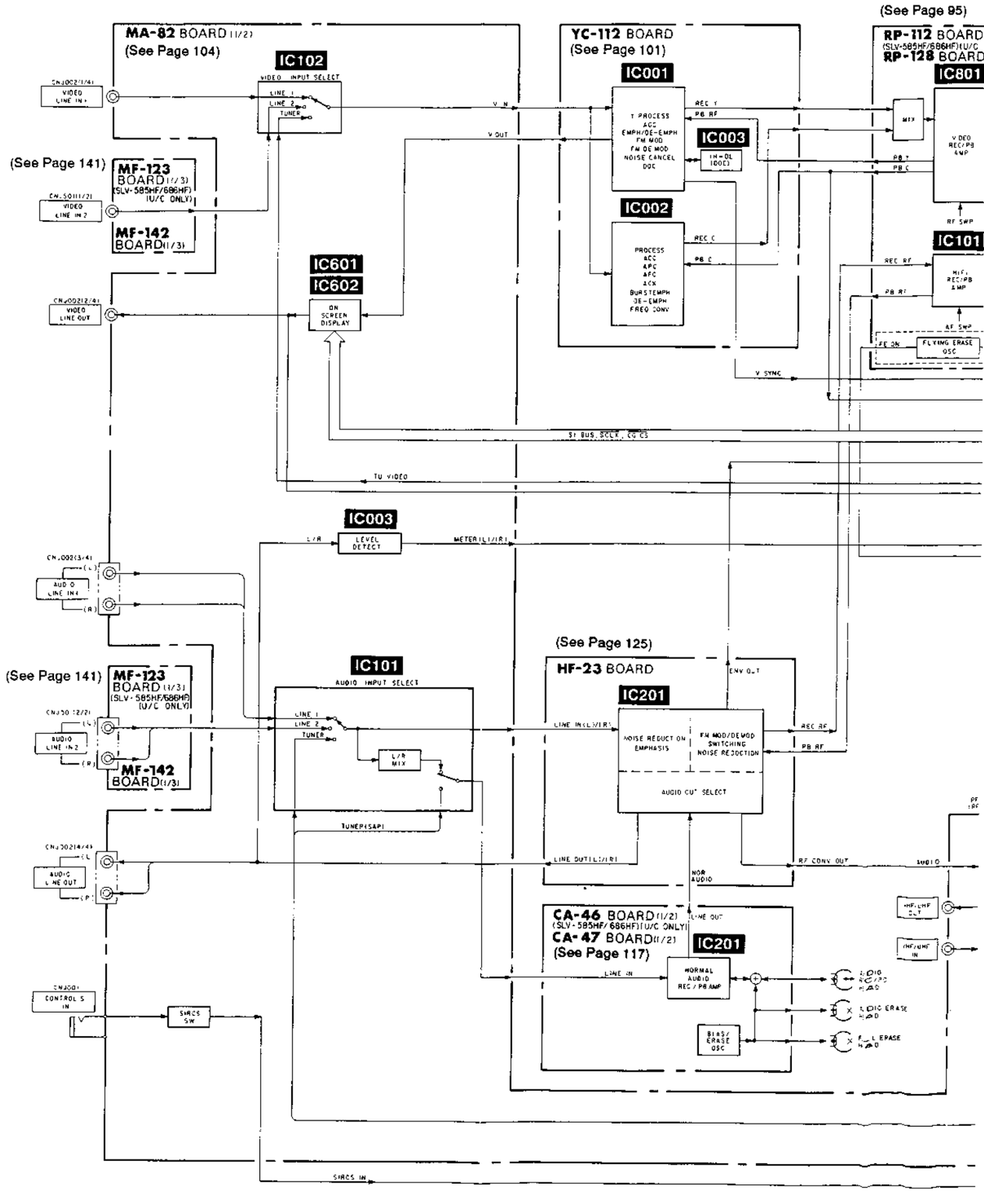
3-1. CIRCUIT BOARDS LOCATION

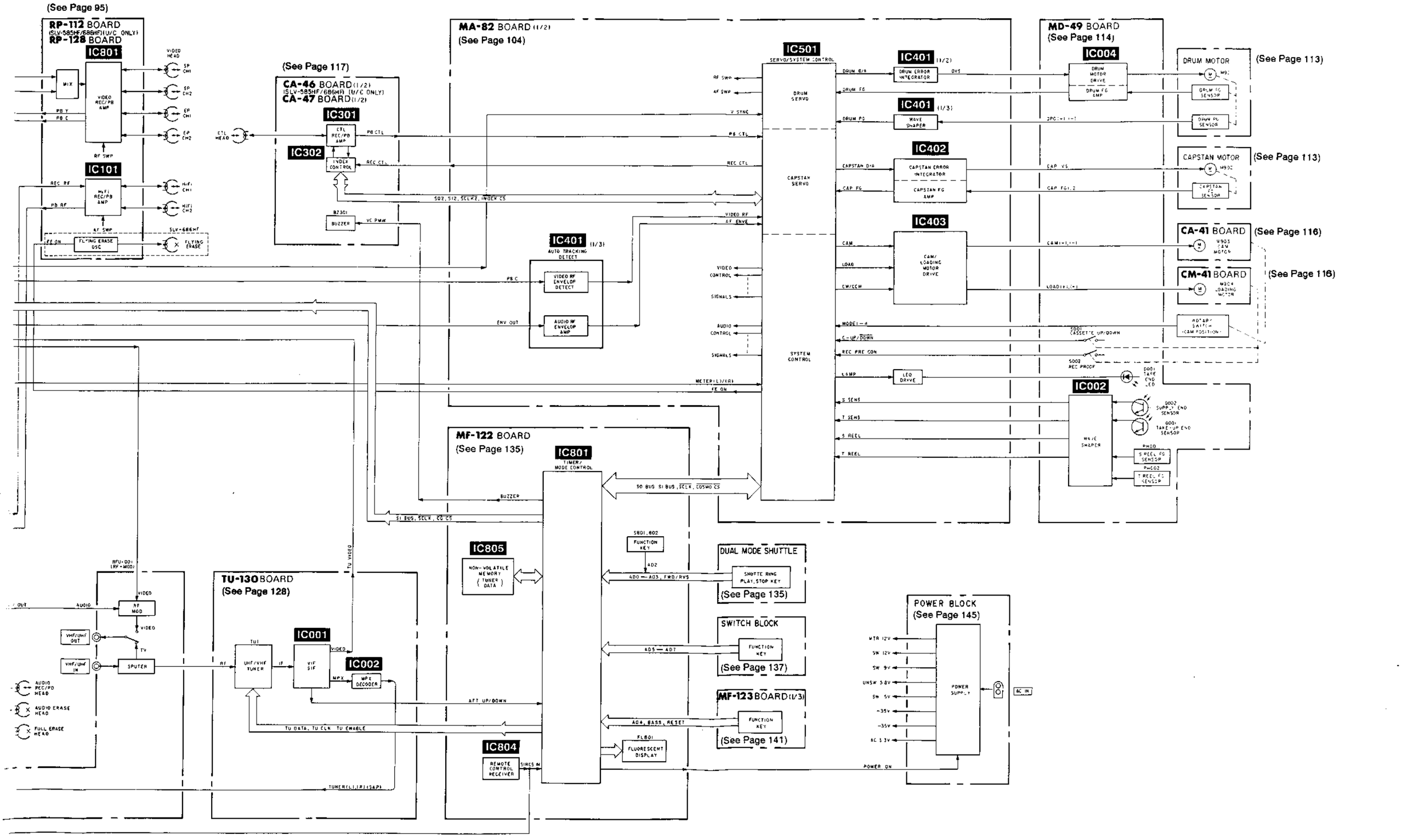
Note: The following parts of power supply block assemblies should be referred to the SUPPLEMENT-1.
SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.



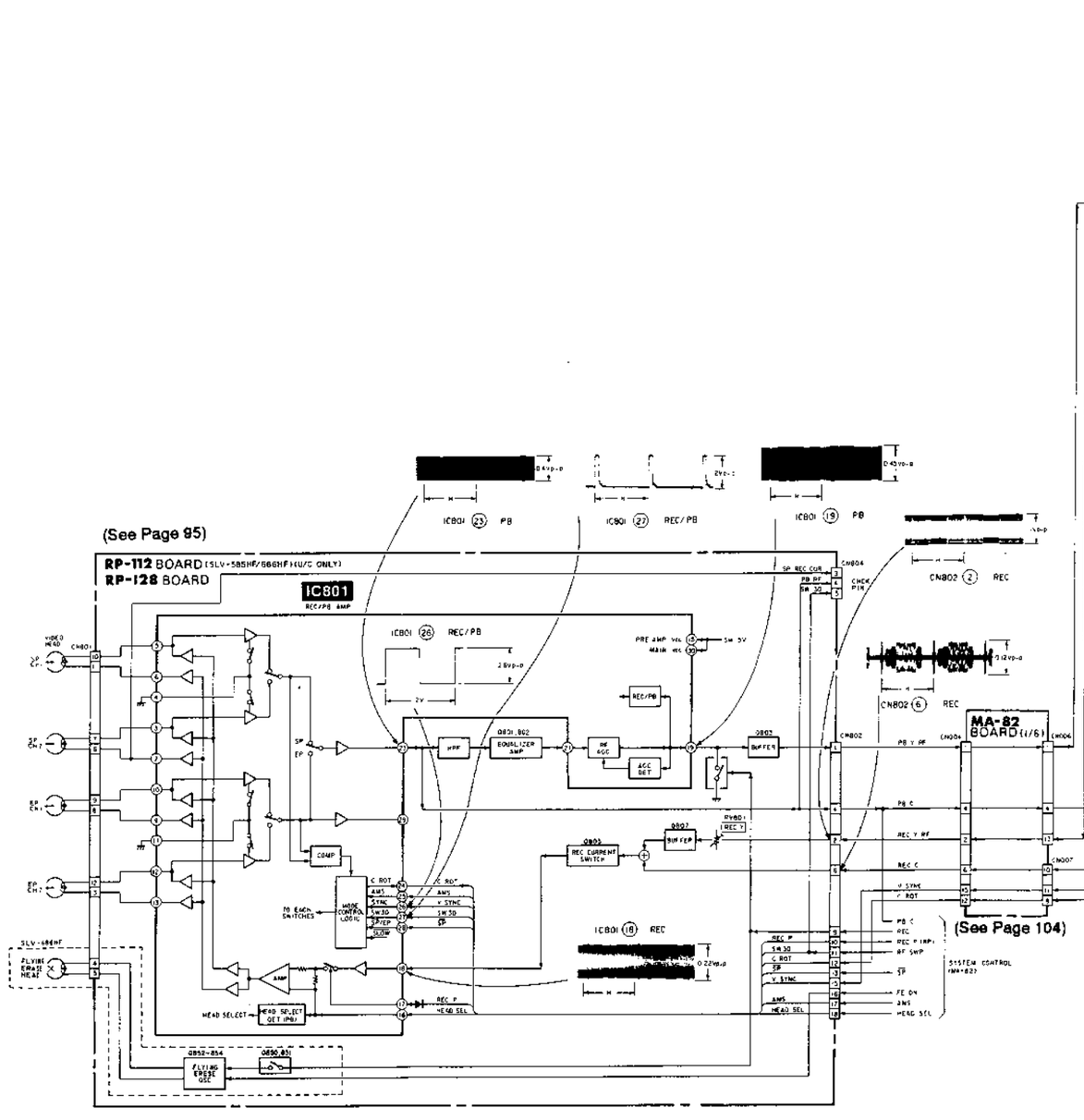


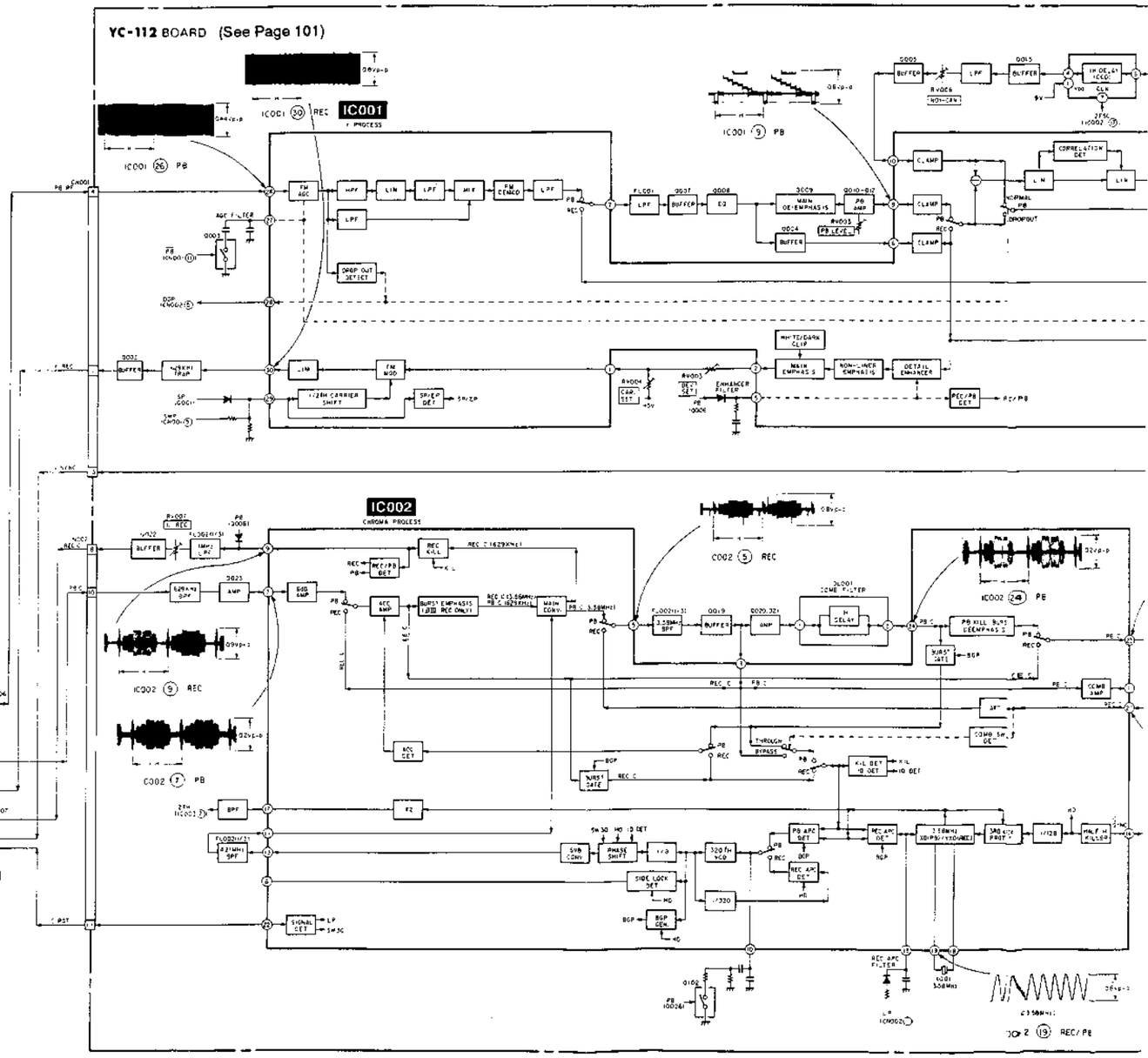
3-2. OVERALL BLOCK DIAGRAM

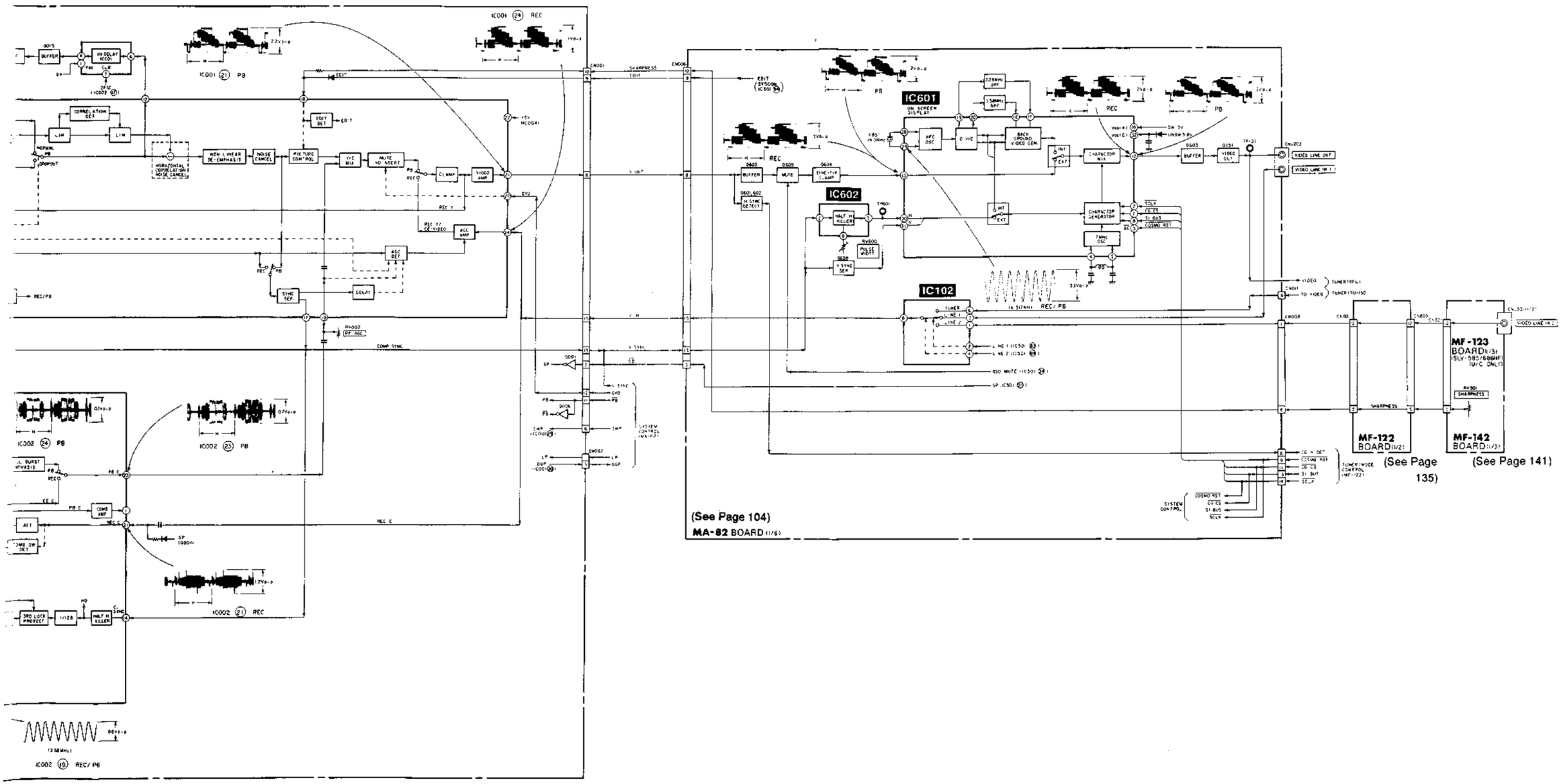



(See Page 95)
RP-112 BOARD
(SLV-585HF/686HF) (U/C ONLY)
RP-128 BOARD
IC801
VIDEO REC/PB AMP
MIX
VIDEO HEAD
SP CH1
SP CH2
EP CH1
EP CH2
PB Y
PB C
RF SWP
IC101
HI-FI REC/PB AMP
REC RF
PB RF
AF SWP
HIFI CH1
HIFI CH2
SLV-686HF
FE ON
FLYING ERASE OSC
FLYING ERASE
(See Page 117)
CA-46 BOARD (1/2)
(SLV-585HF/686HF) (U/C ONLY)
CA-47 BOARD (1/2)
IC301
CTL REC/PB AMP
CTL HEAD
IC302
INDEX CONTROL
PB CTL
REC CTL
BZ301
BUZZER
VC PWM
S02, SI2, SCLK2, INDEX CS
MA-82 BOARD (1/2)
(See Page 104)
IC501
SERVO/SYSTEM CONTROL
RF SWP
AF SWP
V SYNC
PB CTL
REC CTL
DRUM SERVO
CAPSTAN SERVO
VIDEO RF
AF ENVE
IC401 (1/3)
AUTO TRACKING DETECT
VIDEO RF ENVELOP DETECT
AUDIO RF ENVELOP AMP
PB C
ENV OUT
VIDEO CONTROL
SIGNALS
AUDIO CONTROL
SIGNALS
SYSTEM CONTROL
METER(L)/(R)
FE ON
IC401 (1/2)
DRUM ERROR INTEGRATOR
DRUM D/A
DVS
DRUM FG
IC401 (1/3)
WAVE SHAPER
DRUM PG
IC402
CAPSTAN ERROR INTEGRATOR
CAPSTAN D/A
CAP FG
CAPSTAN FG AMP
CAP VS
CAP FG1, 2
IC403
CAM/ LOADING MOTOR DRIVE
CAM
LOAD
CW/CCW
CAM1+1, -1
LOAD1+1, -1
MODE1 – 4
C – UP/DOWN
REC PRE ON
LAMP
LED DRIVE
S SENS
T SENS
S REEL
T REEL
MD-49 BOARD
(See Page 114)
IC004
DRUM MOTOR DRIVE
DRUM FG AMP
DRUM MOTOR
(See Page 113)
DRUM FG SENSOR
DRUM PG SENSOR
CAPSTAN MOTOR
(See Page 113)
CAPSTAN FG SENSOR
CA-41 BOARD
(See Page 116)
M903 CAM MOTOR
CM-41 BOARD
(See Page 116)
M902 LOADING MOTOR
ROTARY SWITCH (CAM POSITION)
S001 CASSETTE UP/DOWN
S002 REC PROOF
IC002
WAVE SHAPER
S002 SUPPLY END SENSOR
S001 TAKE-UP END SENSOR
PH001
S REEL FG SENSOR
PH002
T REEL FG SENSOR
MF-122 BOARD
(See Page 135)
IC801
TIMER/ MODE CONTROL
BUZZER
SI BUS, SCLK, CO CS
SO BUS SI BUS, SCLK, COSMO CS
IC805
NON-VOLATILE MEMORY (TUNER DATA)
SBDI, 802
FUNCTION KEY
AD2
AD0 — AD3, FWD/RVS
DUAL MODE SHUTTLE
SHUTTLE RING PLAY, STOP KEY
(See Page 135)
SWITCH BLOCK
AD5 — AD7
FUNCTION KEY
(See Page 137)
MF-123 BOARD (1/3)
AD4, BASS, RESET
FUNCTION KEY
(See Page 141)
FL801
FLUORESCENT DISPLAY
IC804
REMOTE CONTROL RECEIVER
SIRCS IN
TU VIDEO
RFU-001 (RF+MOD)
TU-130 BOARD
(See Page 128)
VIDEO
AUDIO
RF MOD
VIDEO
TV
VHF/UHF OUT
VHF/UHF IN
SPLITER
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
TUI
UHF/VHF TUNER
RF
IF
IC001
VIF SIF
VIDEO
IC002
MPX DECODER
MPX
AFT UP/DOWN
TU DATA, TU CLK TU ENABLE
TUNER(L), (R) (S&P)
POWER BLOCK
(See Page 145)
MTR 12V
SW 12V
SW 9V
UNSW 5.8V
SW 5V
–35V
–35V
AC 3.3V
POWER SUPPLY
AC IN
POWER ON

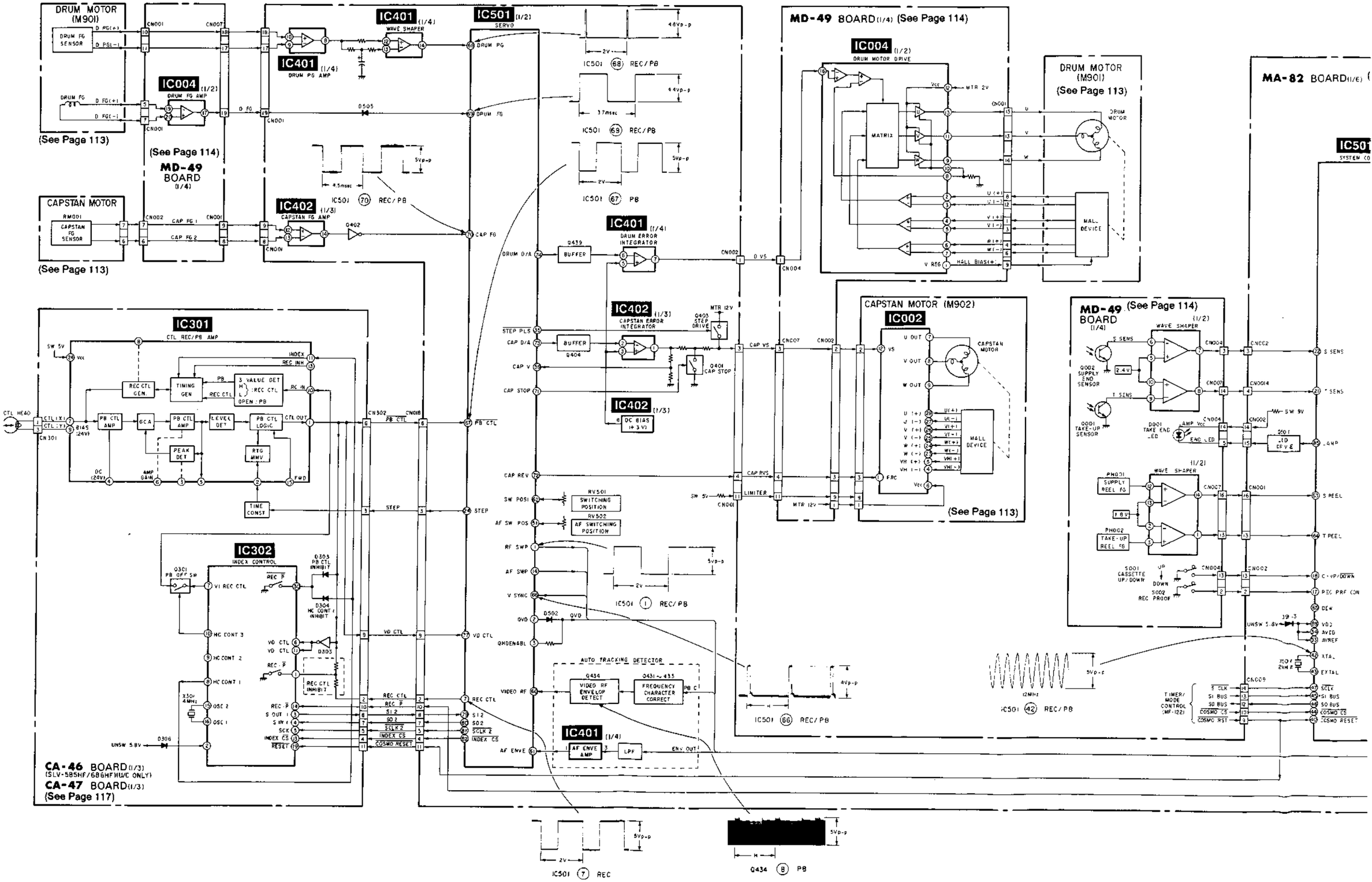
3-3. VIDEO BLOCK DIAGRAM

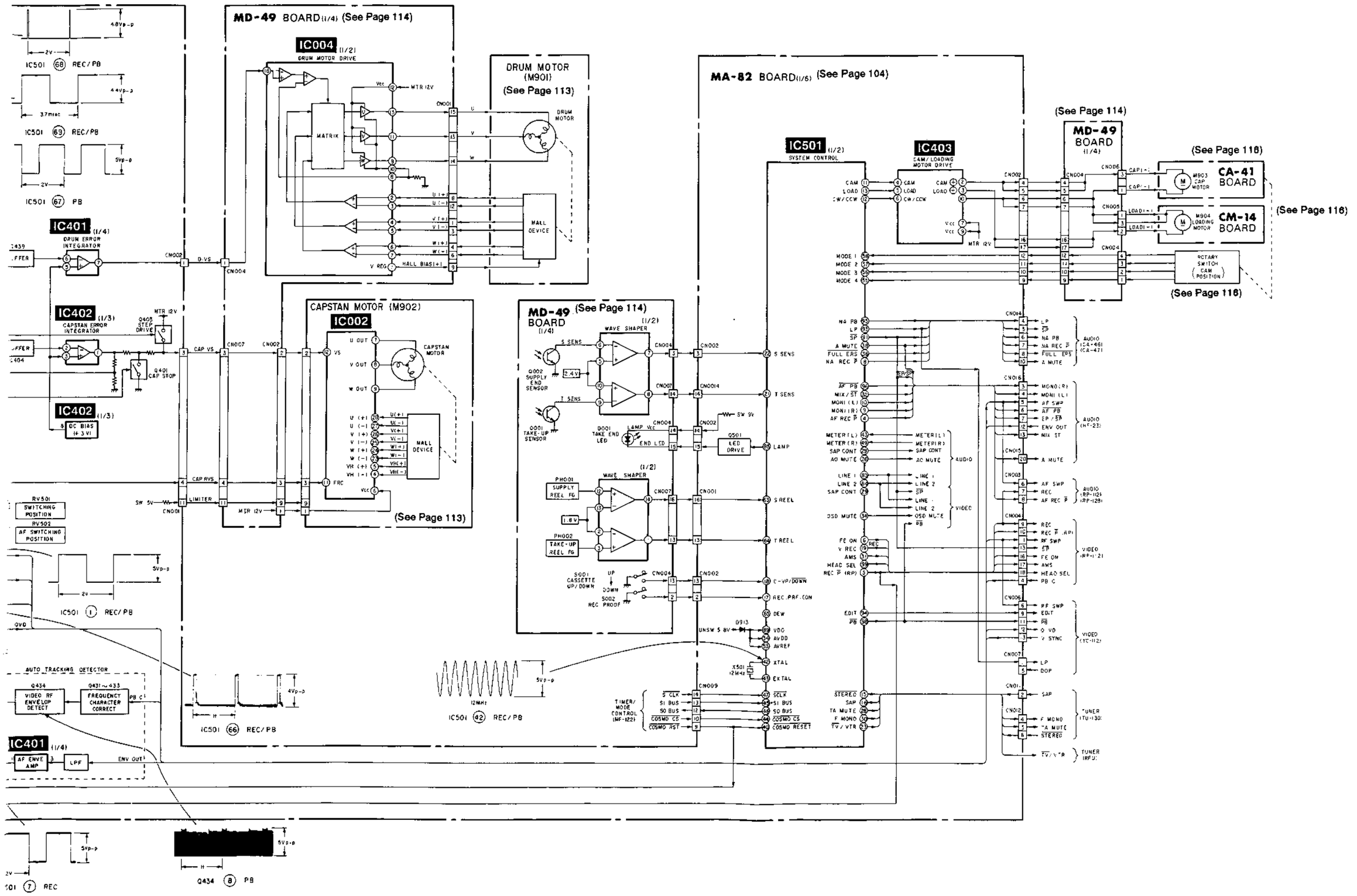





IC001 (24) REC
IC001 (21) PB
IC302 (24) PB
IC002 (23) PB
IC002 (21) REC
IC002 (19) REC/PB
IC601
ON SCREEN DISPLAY
IC602
IC102
EDIT (SYSCON IC501 54)
(See Page 104)
MA-82 BOARD (1/6)
MF-123 BOARD (1/3) (SLV-585/686HF) (U/C ONLY)
MF-122 BOARD (1/2)
MF-142 BOARD (1/3)
(See Page 135)
(See Page 141)

3-4. SERVO/SYSCON BLOCK DIAGRAM




MD-49 BOARD (I/4) (See Page 114)
IC004 (I/2) DRUM MOTOR DRIVE
MATRIX
MTR 12V
CN001
DRUM MOTOR (M901) (See Page 113)
DRUM MOTOR
HALL DEVICE
MA-82 BOARD (I/6) (See Page 104)
IC501 (I/2) SYSTEM CONTROL
IC403 CAM/LOADING MOTOR DRIVE
(See Page 114)
MD-49 BOARD (I/4)
(See Page 116)
CA-41 BOARD
M903 CAP MOTOR
CM-14 BOARD
M904 LOADING MOTOR
ROTARY SWITCH (CAM POSITION)
(See Page 116)
IC401 (I/4) DRUM ERROR INTEGRATOR
IC402 (I/3) CAPSTAN ERROR INTEGRATOR
Q403 STEP DRIVE
Q401 CAP STOP
CAPSTAN MOTOR (M902)
IC002
CAPSTAN MOTOR
FRC
(See Page 113)
MD-49 (See Page 114) BOARD (I/4)
WAVE SHAPER (I/2)
Q002 SUPPLY END SENSOR
Q001 TAKE-UP SENSOR
D001 TAKE END LED
Q501 LED DRIVE
PH001 SUPPLY REEL PG
PH002 TAKE-UP REEL PG
S001 CASSETTE UP/DOWN
S002 REC PROOF
D913
X501 12MHz
TIMER/ MODE CONTROL (MF-122)
AUDIO (CA-461) (CA-471)
AUDIO (MF-23)
AUDIO (RP-103) (RP-128)
VIDEO (RP-112)
VIDEO (YC-112)
TUNER (TU-130)
TUNER (RP-U)
RV501 SWITCHING POSITION
RV502 AF SWITCHING POSITION
AUTO TRACKING DETECTOR
Q434 VIDEO RF ENVELOP DETECT
Q431~433 FREQUENCY CHARACTER CORRECT
AF ENVE AMP
LPF
ENV OUT
IC501 (1) REC/PB
IC501 (66) REC/PB
IC501 (42) REC/PB
IC501 (7) REC
Q434 (8) PB

3-5. SYSTEM CONTROL — VIDEO BLOCK INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE
$\overline{\text{V•PB}}$	MA-82 Board IC501 ㊽	O	H	H	H	L	L	L	L	L	L	H	H
HEAD SEL	MA-82 Board IC501 ㊾	O	L	L	L	L	H	*1	H	L	L	H	L
RF SW P (SW30)	MA-82 Board IC501 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	MA-82 Board IC501 ②	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
EDIT	MA-82 Board IC501 ㊹	O	L	L	L	*10	*10	*10	*10	*10	*10	*10	L
AMS	MA-82 Board IC501 ㊶	O (O.D)	L	L	L	L	L	L	L	*5	*5	L	L
$\overline{\text{SP}}$	MA-82 Board IC501 ㊵	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
EP	MA-82 Board IC501 ㊷	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
LP	MA-82 Board IC501 ㊸	O	L	L	L	*7	*7	*7	*7	*7	*7	L	L
REC•$\overline{\text{P}}$ (RP)	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L
V REC	MA-82 Board IC501 ㊶	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	MA-82 Board IC501 ㊺	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
$\overline{\text{OSD MUTE}}$	MA-82 Board IC501 ㉔	O (O.D)	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9

*1. "H" when tape stops. "L" when tape runs (approx. for 40 msec).
*2. Synchronized with drum rotation. 30 Hz 50% duty pulse.
*3. Normally "L". "H" when CTL signal is not generated.
*4. V period "H" pulse
*5. HI-Z (2.5V) in SP mode. "L" in EP mode.
*6. Selected by SP/EP. SP mode: "L", EP mode: "H".
*7. Selected by tape recording mode.

Mode / Signal	SP	LP	EP
$\overline{\text{SP}}$ ㊵	L	H	H
EP ㊷	L	L	H
LP ㊸	L	H	L

*8. Composite sync signal (positive).
*9. "L" when menu screen or blue back screen.
*10. Normally "L". "H" in edit mode.

3-6. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE (SLV-585HF/589HF/71

Signal	Pin. No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SL
REC CTL	MA-82 Board IC501 ⑦	O	*1	*1	*1	*1	*1	*1	*1	
CAP STOP	MA-82 Board IC501 ⑪	O	H	L	L	L	L	L	H	
$\overline{\text{STEP PLS}}$	MA-82 Board IC501 ㊻	O (O.D)	H	H	H	H	H	H	H	
CAP V *3	MA-82 Board IC501 ㊾	I								
SW POSITION *4	MA-82 Board IC501 ㊼	I								
PB CTL	MA-82 Board IC501 ㊼	I	H	*6	*6			*1	H/L	
VD CTL	MA-82 Board IC501 ⑰	I	H	*6	*6			*1	H/L	
DRUM PG	MA-82 Board IC501 ㊽	I	L	*7	*7	*5	*5	*7	*7	
DRUM FG	MA-82 Board IC501 ㊾	I	L	*8	*8	*5	*5	*8	*8	
CAP FG	MA-82 Board IC501 ⑩	I	H/L	*6	*6	*5	*5	*6	H/L	
INDEX $\overline{\text{CS}}$	MA-82 Board IC501 ㊷	O	*10	*10	*10	*10	*10	*10	*10	
CAP RVS	MA-82 Board IC501 ⑫	O	H/L	L	H	L	H	L	L	
CAP DA *14	MA-82 Board IC501 ⑬	O	*11	*11	*11	*11	*11	*12	*11	
DRUM DA *14	MA-82 Board IC501 ⑭	O	*13	*13	*13	*13	*13	*13	*13	
REC•$\overline{\text{P}}$ (RP)	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	
STEP	MA-82 Board IC502 ㉔	O	L	L	L	L	L	L	L	

*1. 30 Hz pulse
*2. Pulse at tape running
*3. Input terminal for capstan constant voltage drive
Used when FF/REW, cassette loading/unloading, etc.
*4. Input terminal for video switching position adjustment.
*5. Unstable period pulse
*6. Pulse of period in proportion to tape speed
*7. 30 Hz "H" pulse

*8
*9
*1
*1
*1
*1
*1
*1

/W	REC	REC• PAUSE
	H	H
	H	L
	*2	*2
	L	L
	*10	L
	L	L
	*6	*6
	*6	*6
	L	L
	H	L
	H	H
	*8	*8
	*9	*9

3-6. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE
REC CTL	MA-82 Board IC501 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
CAP STOP	MA-82 Board IC501 ⑪	O	H	L	L	L	L	L	H	H	L	L	L	L	L
$\overline{\text{STEP PLS}}$	MA-82 Board IC501 ⑮	O (O.D)	H	H	H	H	H	H	H	*2	H	H	H	H	H
CAP V *3	MA-82 Board IC501 ⑲	I													
SW POSITION *4	MA-82 Board IC501 ⑫	I													
PB CTL	MA-82 Board IC501 ⑰	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H
VD CTL	MA-82 Board IC501 ⑰	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H
DRUM PG	MA-82 Board IC501 ⑱	I	L	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7
DRUM FG	MA-82 Board IC501 ⑲	I	L	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8
CAP FG	MA-82 Board IC501 ⑩	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L
INDEX $\overline{\text{CS}}$	MA-82 Board IC501 ⑫	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
CAP RVS	MA-82 Board IC501 ⑫	O	H/L	L	H	L	H	L	L	*2	L	L	H	L	L
CAP DA *14	MA-82 Board IC501 ⑬	O	*11	*11	*11	*11	*11	*12	*11	*11	*12	*12	*12	*12	*11
DRUM DA *14	MA-82 Board IC501 ⑭	O	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13
REC•$\overline{\text{P}}$ (RP)	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
STEP	MA-82 Board IC502 ㉔	O	L	L	L	L	L	L	L	*15	L	L	L	L	L

*1. 30 Hz pulse
*2. Pulse at tape running
*3. Input terminal for capstan constant voltage drive
Used when FF/REW, cassette loading/unloading, etc.
*4. Input terminal for video switching position adjustment.
*5. Unstable period pulse
*6. Pulse of period in proportion to tape speed
*7. 30 Hz "H" pulse
*8. 360 Hz pulse
*9. Pulse at tape running
*10. 8 msec period pulse
*11. Approx. 2 msec period "H" or "L" pulse
*12. Approx. 1.5 msec period "H" or "L" pulse
*13. Approx. 3 msec period "H" or "L" pulse
*14. 3 value output of "H", "L" and HI-Z (2.5V)
*15. "H" when FWD direction and STEP drive

3-7. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE
CAM *1	MA-82 Board IC501 ⑪	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-82 Board IC501 ⑬	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA-82 Board IC501 ⑫	O			H	L	H	L											
MODE 1	MA-82 Board IC501 ㊽	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA-82 Board IC501 ㊼	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-82 Board IC501 ㊾	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-82 Board IC501 ㊺	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-82 Board IC501 ⑰	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	MA-82 Board IC501 ⑱	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	MA-82 Board IC501 ㊹	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL	MA-82 Board IC501 ㊸	I	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
LAMP	MA-82 Board IC501 ㊽	O	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
DEW	MA-82 Board IC501 ㊻	I	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
CAP V	MA-82 Board IC501 ㊾	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
CAP STOP	MA-82 Board IC501 ㉑	O	L	H	H	H	L	L	H	L	L	L	H	H	L	L	L	L	H
CAP RVS	MA-82 Board IC501 ㉒	O	H	H			L	H	H/L	L	H	L	L	L/*9	L	L	H	L	L
CAP DA *8	MA-82 Board IC501 ㉓	O																	
T SENS	MA-82 Board IC501 ㉑	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-82 Board IC501 ㉒	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "H" when mechanism mode transition
*2. "L" when erasing protection tab is bent. "H" when not bent.
*3. Pulse of period in proportion to reel rotating speed
*4. Approx. 2 msec period "H" pulse
*5. Normally "H"
*6. Input terminal for capstan constant voltage drive. Used in FF/REW, cassette loading/unloading, etc.
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.
*8. 3 value output of "H", "L" and "HIZ (2.5V)"
*9. Pulse at tape running

3-8. SYSTEM CONTROL — SYSTEM CONTROL PERIPH (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	
$\overline{\text{COSMO•RESET}}$	MA-82 Board IC501 ㊶	I	Normally "H". "L" when service
$\overline{\text{COSMO•CS}}$	MA-82 Board IC501 ㊹	I	Chip select signal from timer m
SI•BUS	MA-82 Board IC501 ㊺	I	Serial communication data fro
SO•BUS	MA-82 Board IC501 ㊻	O	Serial communication data to t
S CLK	MA-82 Board IC501 ㊼	I	Serial communication clock wit
S IN 2	MA-82 Board IC501 ㊸	I	Serial communication data fro
S OUT 2	MA-82 Board IC501 ㊽	O	Serial communication data to i
S CLK 2	MA-82 Board IC501 ㊾	O	Serial communication clock to
INDEX $\overline{\text{CS}}$	MA-82 Board IC501 ㊷	O	Chip select signal to index IC.

CONTROL PERIPHERAL CIRCUIT INTERFACE

I/O level
ally "H", "L" when service interruption is detected or restored.
select signal from timer microprocessor. V period "L" pulse.
communication data from timer microprocessor. V period "L" pulse.
communication data to timer microprocessor. V period "L" pulse.
communication clock with timer microprocessor. V period "L" pulse.
communication data from index IC. 16 msec period "L" pulse.
communication data to index IC. 8 msec period "L" pulse.
communication clock to index IC. 8 msec period "L" pulse.
select signal to index IC. 8 msec period "L" pulse.

3-9. SYSTEM CONTROL — AUDIO BLOCK INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE
$\overline{\text{AF PB}}$	MA-82 Board IC501 ⑯	O	H	H	H	L	L	L	L	L	L	H	H
MONI (L)	MA-82 Board IC501 ⑩	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	MA-82 Board IC501 ⑨	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	MA-82 Board IC501 ⑪	I	AF RF envelope signal input terminal for automatic tracking.										
NA PB	MA-82 Board IC501 ⑮	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA-82 Board IC501 ⑱	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
$\overline{\text{SP}}$	MA-82 Board IC501 ⑰	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
NA REC•$\overline{\text{P}}$	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L
AF REC$\overline{\text{P}}$	MA-82 Board IC501 ④	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA-82 Board IC501 ⑭	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	MA-82 Board IC501 ⑬	I	Input terminal for AF switching position adjustment.										
AO MUTE *6	MA-82 Board IC501 ㉘	O	L	L	L	*7	H	H	H	H	H	L	L
MIX/$\overline{\text{ST}}$	MA-82 Board IC501 ㉜	O (O.D)	L	L	L	*8	*8	*8	*8	*8	*8	L	L
METER (L)	MA-82 Board IC501 ㊽	I	Input terminal for the audio level meter (left) indication.										
METER (R)	MA-82 Board IC501 ㊸	I	Input terminal for the audio level meter (right) indication.										
$\overline{\text{FULL ERS}}$	MA-82 Board IC501 ㊳	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. Selected by audio monitor.

Signal \ Audio monitor	STEREO OR MAIN, SUB, L, R	MAIN L	SUB R	(NORMAL)
MONI (L) ⑩	H	H	L	L
MONI (R) ⑨	H	L	H	L

*2. Selected by SP/EP selector. SP mode: "L", EP mode: "H".
*3. Selected by tape recording mode. SP mode: "L", EP mode: "H".
*4. "H" when CTL signal is not played back.
*5. 30 Hz, 50% duty pulse approx. 5 msec delayed from RF SW P.
*6. "H" when power ON/OFF selected.
*7. "H" when CTL signal is not played back.
*8. "H" when hi-fi/NORMAL MIX ON.

3-10. SYSTEM CONTROL — TUNER BLOCK INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	I/O level
STEREO	MA-82 Board IC501 ⑮	I	Tuner audio mode input terminal. "L" when stereo.
TAMUTE	MA-82 Board IC501 ㉘	O	Tuner audio mute output. "H" when not used channel is selected.
SAP CONT	MA-82 Board IC501 ㉙	O	"H" when SAP is selected for normal audio recording
F MONO	MA-82 Board IC501 ㉚	O	"L" when tuner audio and auto stereo are turned OFF

3-11. SYSTEM CONTROL AND RF MODULATOR — INPUT SELECTION BLOCK INTERFACE (SLV-585HF/589HF/71HF)

Signal	Pin. No.	I/O	I/O level
TV/VTR	MA-82 Board IC501 ㉓	O	"L" when RF modulator through.
LINE 1	MA-82 Board IC501 ⑬	O	*1. Input select control signal
LINE 2	MA-82 Board IC501 ㉔	O	

*1.

Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1 ⑱	L	H	L
LINE 2 ㉑	L	L	H

3-12. SERVO/SYSTEM CONTROL — MICROPROCESSOR TERMINAL FUNCTION (MA-82 BOARD IC501) (SLV-585HF/589HF/71HF)

Pin. No.	Port	I/O	Signal	Function
1	PB5/PPO13	O	RF SWP	Video switching pulse output
2	PB4/PPO12	O	Q VD	False VD pulse output
3	PB3/PPO11	O	Q HD ENABI	
4	PB2/PPO10	O	AF REC P	"H" output when hi-fi audio REC
5	PB1/PPO9	O	REC P	"H" output when video REC
6	PB0/PPO8	O	FE ON	Flaying erase ON/OFF output. Not used.
7	PC7/RTO7	O	REC CTL	REC CTL output
8	PC6/RTO6	O	NA REC P	"H" when normal audio REC
9	PC5/RTO5	O	MONI (R)	Audio output control signal
10	PC4/RTO4	O	MONI (L)	
11	PC3/RTO3	O	CAM	CAM motor drive output
12	PC2/PPO18	O	CW/CCW	Clockwise/counterclockwise signal output
13	PC1/PPO17	O	LOAD	Load motor drive output
14	PC0/PPO16	O	AF SWP	hi-fi switching pulse output
15	PJ7	I	STEREO	Tuner audio mode input
16	PJ6	I	BILING	Tuner audio mode input
17	PJ5	I	REC PRF	Erasing protection tab, cassette IN detection input
18	PJ4	I	C UP/DOWN	Cassette up/down detection input
19	PJ3	O	V REC	"L" output when video playback
20	PJ2	O	V MUTE	Video mute output
21	PJ1	I	T SENS	T end sensor input
22	PJ0	I	S SENS	S end sensor input
23	PD7	O	TV/VTR	Antenna output select signal. "H": VTR, "L": TV.
24	PD6	O	STEP DRIVE	"H" when capstan STEP is driven.
25	PD5	O	BASS BOOST	Not used
26	PD4	O	A OUT MUTE	Audio output MUTE signal
27	PD3	O		Not used
28	PD2	O	TA MUTE	Tuner audio MUTE signal
29	PD1	O	SAP CONT	SAP control signal
30	PD0	O	F MONO	Tuner forced monaural signal
31	PH7	O	AMS	AMS control output
32	PH6	O	MIX/ST	"H" when hi-fi MIX
33	PH5	O		Not used
34	PH4	O	OSD MUTE	Video output mute signal
35	PH3	O	STEP PLS	"L" when capstan step drive
36	PH2	O	FULL ERS	"L" when full erase head operation
37	PH1	O		Not used
38	PH0	O	A MUTE	Audio MUTE output
39	MP	I	MP	Fixed at "L" level
40	RST	I	COSMO RST	System reset input
41	Vss			GND
42	XTAL		XTAL	System clock 12 MHz
43	EXTAL		EXTAL	
44	CS0	I	COSMO CS	Chip select signal
45	SI0	I	SI0	Signal for serial communication
46	SO0	O	SO0	
47	SCK0	I	SCK0	
48	PF7/AN11	I	METER (L)	Level meter (L) input
49	PF6/AN10	I	METER (R)	Level meter (R) input
50	PF5/AN9			Not used

Pin. No.	Port	I/O	Signal	Function
51	PF4/AN8	I	AF SW POSI	VR input for hi-fi switching pulse position adjustment
52	AVss		AVss	UNSW 5V
53	AVREF		AVREF	AD port reference input. UNSW 5V
54	AVDD		AVDD	GND
55	PF3/AF7	I	MODE4	Mechanism section CAM encoder input
56	PF2/AN6	I	MODE3	
57	PF1/AN5	I	MODE2	
58	PF0/AN4	I	MODE1	
59	AN3	I	CAP V	Capstan servo voltage input
60	AN2	I	VIDEO RF	Video RF envelope input
61	AN1	I	AF ENV	hi-fi audio RF envelope input
62	AN0	I	RF SW POSI	VR input for RF SWP position adjustment
63	PG7/EXI1	I	S REEL	S reel sensor input
64	PG6/EXI0	I	T REEL	T reel sensor input
65	PG5/SYNC1	I	$\overline{DEW}$	Not used
66	PG4/SYNC0	I	COMP SYNC	Composite sync input
67	PG3/$\overline{PBCTL}$	I	PB CTL	Playback CTL input
68	PG2/DPG	I	DRM PG	Drum PG input
69	PG1/DFG	I	DRM FG	Drum FG input
70	PG0/CFG	I	CAP FG	Capstan FG input
71	PE7	O	CAP STOP	Capstan STOP signal output
72	PE6	O	CAP RVS	Capstan reverse signal output
73	PE5	O	CAP D/A	Capstan error DIA output
74	PE4	O	DRM D/A	Drum error D/A output
75	PE3/PWM1	O	CTL INV	"H" when capstan is reversed
76	PE2/PWM0	O		Not used
77	PE1	I	VD CTL	Playback CTL input
78	PE0	I		Not used
79	PI7/SI1	I	SI1	Index microprocessor serial communication signal
80	PI6/SO1	O	SO1	
81	PI5/$\overline{SCK1}$	O	$\overline{SCK1}$	Index microprocessor serial communication signal
82	PI4	O	$\overline{INDEX\ CS}$	
83	PI3	O	LINE1	Video/audio input select signal
84	PI2	O	LINE2	
85	PI1	O	LAMP	END sensor lamp drive output
86	PI0	I		
87		O		
88	Vss			GND
89	VDD			UNSW 5V
90	N.C.			Connected to UNSW 5V
91	PA7/PPO7	O	$\overline{SP}$	"L" when SP mode
92	PA6/PPO6	O	EP	"H" when EP mode. Not used.
93	PA5/PPO5	O	LP	"H" when LP mode
94	PA4/PPO4	O	EDIT	"H" when EDIT
95	PA3/PPO3	O	NA PB	"H" when normal audio playback
96	PA2/PPO2	O	$\overline{AF\ PB}$	"L" when hi-fi audio playback
97	PA1/PPO1	O	$\overline{JOG}$	"L" when special playback. Not used.
98	PA0/PPO0	O	$\overline{V\ PB}$	"L" when video playback
99	PB7/PPO15	O	HEAD SEL	Video head select signal
100	PB6/PPO14	O		Not used

3-13. TIMER/MODE CONTROL — MICROPROCESSOR PIN FUNCTION (MF-122 BOARD IC801) (SLV-585HF/589HF/71HF)

Pin. No.	Port	I/O	Signal	Function
1	S4	O	S0	Display segment signal 0
2	S5	O	S1	Display segment signal 1
3	S6	O	S2	Display segment signal 2
4	S7	O	S3	Display segment signal 3
5	S8	O	S4	Display segment signal 4
6	S9	O	S5	Display segment signal 5
7	S10	O	S6	Display segment signal 6
8	S11	O	S7	Display segment signal 7
9	S12	O	S8	Display segment signal 8
10	S13	O	S9	Display segment signal 9
11	S14	O	S10	Display segment signal 10
12	S15	O	S11	Display segment signal 11
13	S16	O	S12	Display segment signal 12
14	S17	O	S13	Display segment signal 13
15	T13	O	S14	Display segment signal 14
16	T12	O	S15	Display segment signal 15
17	T11	O	T11	Display timing signal 11
18	T10	O	T10	Display timing signal 10
19	T9	O	T9	Display timing signal 9
20	T8	O	T8	Display timing signal 8
21	T7	O	T7	Display timing signal 7
22	T6	O	T6	Display timing signal 6
23	T5	O	T5	Display timing signal 5
24	T4	O	T4	Display timing signal 4
25	T3	O	T3	Display timing signal 3
26	T2	O	T2	Display timing signal 2
27	T1	O	T1	Display timing signal 1
28	T0	O	T0	Display timing signal 0
29	INT	I	INT	Not used
30	$\overline{TX}$		TX	Clock for back-up 32.768 kHz
31	$\overline{TEX}$		ETX	Clock for back-up 32.768 kHz
32	$\overline{RST}$	I	$\overline{RESET}$	Reset signal input
33	N.C.			Connected to 5V power
34	VDD		VDD	5V power
35	AD0	I	AD0 (RING 0)	KEY input *1
36	AD1	I	AD1 (RING 1)	KEY input *1
37	AD2	I	AD2 (RING 2)	KEY input *1, *2
38	AD3	I	AD3	KEY input *2
39	AD4	I	AD4	KEY input *2
40	AD5	I	AD5	KEY input *2
41	AD6	I	AD6	KEY input *2
42	AD7	I	AD7	KEY input *2
43	EC	I	$\overline{EC}$	Not used
44	SCLK	O	SCLK0	Serial communication clock
45	SO	O	S IN0	Serial data output
46	SI	I	S OUT0	Serial data input
47	PA0	O	$\overline{CG\ CS}$	CG microprocessor chip select signal
48	PA1	O	$\overline{COSMO\ CS}$	SS microprocessor chip select signal
49	PA2	O	$\overline{COSMO\ RST}$	SS microprocessor reset signal output
50	PA3	I	$\overline{CG\ HDET}$	Video signal, existence judgment input. "L": video signal

Pin. No.	Port	I/O	Signal	Function
51	PF0	O	TA MUTE	Tuner audio mute
52	PF1	O	TU DATA	Tuner control signal
53	PF2	O	TU ENABLE	Tuner control signal
54	PF3	O	TU CLK	Tuner control signal
55	PE0	I	AFT DOWN	Tuner control signal
56	PE1	I	AFT UP	Tuner control signal
57	PE2	I		Not used
58	PE3	I		Not used
59	PY0	O		Not used
60	PWM	O	PWM	PWM output for buzzer
61	WP	I	POWER FAIL	"L" when service interruption
62	RMC	I	SIRCS IN	Remote control input
63	PD0	I	FWR/REV	Shuttle ring input *1
64	PD1	I		Not used
65	PD2	I		Not used
66	PD3	I	BASS BOOST	Not used
67	PC0	I/O		Not used
68	PC1	I/O	MEM DATA	Non-volatile memory data signal
69	PC2	I/O	U/C	Fixed at "H" level
70	PC3	I/O	F45A	Fixed at "L" level
71	Vss		Vss	GND
72	XTAL		XTAL	Clock 4.19 MHz
73	N.C.			Connected to 5V power
74	EXTAL		EXTAL	Clock 4.19 MHz
75	VREF		VREF	A/D input reference power
76	VFDP		VFDP	Power for fluorescent indicator
77	PH0	O	MEMCLK	Non-volatile memory clock signal
78	PH1	O	MEM CS	Non-volatile memory chip select signal
79	PH2	O	POWER ON	"H" output when power ON
80	PH3	O		Not used

*1. Shuttle ring position and terminal input level

Shuttle ring position	REW			STOP						FF		
	REVIEW		− × 2	− × 1		− 1/5	PLAY/ STILL	1/5		× 1	× 2	CUE	
AD0 ㉟ (RING 0)	L		L	H		H	H	H		H	L	L	
AD1 ㊱ (RING 1)	H	L	H	H		L	H	L		H	H	L	H
AD2 ㊲ (RING 2)	H	L	L	L	L	H	H	H	L	L	L	L	H
FWD/RVS ㉝	L						H						

*2. Pressed key and terminal input voltage

Input voltage / Input terminal	0V	1.1V	2.1V	3.1V	4.1V	5.5V
AD7 ㊷	TIMER REC	REC MODE (SP/EP)	(TV/VTR)			No Key input
AD6 ㊶	Quick timer	INPUT SELECT	Tracking ▲	Channel –	EDIT	No Key input
AD5 ㊵	REC	Tracking AUTO/MANUAL	Tracking ▼	Channel +		No Key input
AD4 ㊴	POWER	EJECT	VTR mode 1	VTR mode 2		VTR mode 3
AD3 ㊳	STOP	PLAY				No Key input
AD2 ㊲	Shuttle ring RING 2	PAUSE	HIGH SPEED REWIND			No Key input

3-14. SYSTEM CONTROL — VIDEO BLOCK INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE	VIDEO INSERT OR AV INSERT	VIDEO INSERT PAUSE OR AV INSERT PAUSE	AUDIO INSERT	AUDIO INSERT PAUSE
$\overline{\text{V•PB}}$	MA-82 Board IC501 ㊽	O	H	H	H	L	L	L	L	L	L	H	H	H	H	L	L
HEAD SEL	MA-82 Board IC501 ㊾	O	L	L	L	L	H	*1	H	L	L	H	L	H	L	L	L
RF SW P (SW30)	MA-82 Board IC501 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	MA-82 Board IC501 ②	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L	L	L	L	*12
FE ON	MA-82 Board IC501 ⑥	O	L	L	L	L	L	L	L	L	L	*	L	H	L	L	L
EDIT	MA-82 Board IC501 ㊿	O	L	L	L	*10	*10	*10	*10	*10	*10	*10	L	*10	L	*10	L
AMS	MA-82 Board IC501 ㊶	O (O.D)	L	L	L	L	L	L	L	*5	*5	L	L	L	L	L	L
$\overline{\text{SP}}$	MA-82 Board IC501 ㊶	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6	*7	*7	*7	*7
EP	MA-82 Board IC501 ㊷	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6	*7	*7	*7	*7
LP	MA-82 Board IC501 ㊸	O	L	L	L	*7	*7	*7	*7	*7	*7	L	L	*7	*7	*7	*7
REC•$\overline{\text{P}}$ (RP)	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L	H	L	L	L
V REC	MA-82 Board IC501 ㊶	O	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H
V SYNC	MA-82 Board IC501 ㊻	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	L	*8	L
$\overline{\text{OSD MUTE}}$	MA-82 Board IC501 ㊹	O (O.D)	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9

*1. "H" when tape stops. "L" when tape runs (approx. for 40 msec).
*2. Synchronized with drum rotation. 30 Hz 50% duty pulse.
*3. Normally "L". "H" when CTL signal is not generated.
*4. V period "H" pulse
*5. HI-Z (2.5V) in SP mode. "L" in EP mode.
*6. Selected by SP/EP. SP mode: "L", EP mode: "H".
*7. Selected by tape recording mode.

Signal \ Mode	SP	LP	EP
$\overline{\text{SP}}$ ㊶	L	H	H
EP ㊷	L	L	H
LP ㊸	L	H	L

*8. Composite sync signal (positive).
*9. "L" when menu screen or blue back screen.
*10. Normally "L". "H" in edit mode.
*11. "H" when REC starts (SP: approx. for 7 sec, EP: approx. for 21 sec).
*12. V period "H" pulse.

3-15. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE	VIDEO INSERT OR AV INSERT	VIDEO INSERT PAUSE OR AV INSERT PAUSE	AUDIO INSERT	AUDIO INSERT PAUSE
REC CTL	MA-82 Board IC501 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
CAP STOP	MA-82 Board IC501 ⑪	O	H	L	L	L	L	L	H	H	L	L	L	L	L	L	H	L	H
$\overline{\text{STEP PLS}}$	MA-82 Board IC501 ㉘	O (O.D)	H	H	H	H	H	H	H	*2	H	H	H	H	H	H	H	H	H
CAP V *3	MA-82 Board IC501 ㊾	I																	
SW POSITION *4	MA-82 Board IC501 ㊷	I																	
PB CTL	MA-82 Board IC501 ㊼	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	*1	H	*1	H
VD CTL	MA-82 Board IC501 ㊼	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	*1	H	*1	H
DRUM PG	MA-82 Board IC501 ㊽	I	L	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
DRUM FG	MA-82 Board IC501 ㊽	I	L	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
CAP FG	MA-82 Board IC501 ⑩	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	*6	H/L	*6	H/L
INDEX $\overline{\text{CS}}$	MA-82 Board IC501 ㊷	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
CAP RVS	MA-82 Board IC501 ⑫	O	H/L	L	H	L	H	L	L	*2	L	L	H	L	L	L	L	L	L
CAP DA *14	MA-82 Board IC501 ⑬	O	*11	*11	*11	*11	*11	*12	*11	*11	*12	*12	*12	*12	*11	*12	*11	*12	*11
DRUM DA *14	MA-82 Board IC501 ⑭	O	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13
REC•$\overline{\text{P}}$ (RP)	MA-82 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H	L	L	L
STEP	MA-82 Board IC502 ㉔	O	L	L	L	L	L	L	L	*15	L	L	L	L	L	L	L	L	L

*1. 30 Hz pulse
*2. Pulse at tape running
*3. Input terminal for capstan constant voltage drive
Used when FF/REW, cassette loading/unloading, etc.
*4. Input terminal for video switching position adjustment.
*5. Unstable period pulse
*6. Pulse of period in proportion to tape speed
*7. 30 Hz "H" pulse
*8. 360 Hz pulse
*9. Pulse at tape running
*10. 8 msec period pulse
*11. Approx. 2 msec period "H" or "L" pulse
*12. Approx. 1.5 msec period "H" or "L" pulse
*13. Approx. 3 msec period "H" or "L" pulse
*14. 3 value output of "H", "L" and HI-Z (2.5V)
*15. "H" when FWD direction and STEP drive

3-16. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREADING	TAPE UNTHREADING	STOP	FF	REW	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC• PAUSE
CAM *1	MA-82 Board IC501 ⑪	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-82 Board IC501 ⑬	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA-82 Board IC501 ⑫	O			H	L	H	L											
MODE 1	MA-82 Board IC501 ㊽	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA-82 Board IC501 ㊼	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-82 Board IC501 ㊻	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-82 Board IC501 ㊺	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-82 Board IC501 ⑰	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	MA-82 Board IC501 ⑱	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	MA-82 Board IC501 ㉔	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL	MA-82 Board IC501 ㉓	I	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
LAMP	MA-82 Board IC501 ㉕	O	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
DEW	MA-82 Board IC501 ㉖	I	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
CAP V	MA-82 Board IC501 ㉘	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
CAP STOP	MA-82 Board IC501 ⑪	O	L	H	H	H	L	L	H	L	L	L	H	H	L	L	L	L	H
CAP RVS	MA-82 Board IC501 ⑫	O	H	H			L	H	H/L	L	H	L	L	L/*9	L	L	H	L	L
CAP DA *8	MA-82 Board IC501 ⑬	O																	
T SENS	MA-82 Board IC501 ㉑	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-82 Board IC501 ㉒	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "H" when mechanism mode transition
*2. "L" when erasing protection tab is bent. "H" when not bent.
*3. Pulse of period in proportion to reel rotating speed
*4. Approx. 2 msec period "H" pulse
*5. Normally "H"
*6. Input terminal for capstan constant voltage drive. Used in FF/REW, cassette loading/unloading, etc.
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.
*8. 3 value output of "H", "L" and "HIZ (2.5V)"
*9. Pulse at tape running

3-17. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	I/O level
$\overline{\text{COSMO•RESET}}$	MA-82 Board IC501 ㊶	I	Normally "H". "L" when service interruption is detected or restored.
$\overline{\text{COSMO•CS}}$	MA-82 Board IC501 ㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
SI•BUS	MA-82 Board IC501 ㊺	I	Serial communication data from timer microprocessor. V period "L" pulse.
SO•BUS	MA-82 Board IC501 ㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA-82 Board IC501 ㊼	I	Serial communication clock with timer microprocessor. V period "L" pulse.
S IN 2	MA-82 Board IC501 ㊽	I	Serial communication data from index IC. 16 msec period "L" pulse.
S OUT 2	MA-82 Board IC501 ㊾	O	Serial communication data to index IC. 8 msec period "L" pulse.
S CLK 2	MA-82 Board IC501 ㊿	O	Serial communication clock to index IC. 8 msec period "L" pulse.
INDEX $\overline{\text{CS}}$	MA-82 Board IC501 (52)	O	Chip select signal to index IC. 8 msec period "L" pulse.

3-18. SYSTEM CONTROL — AUDIO BLOCK INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB• PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC• PAUSE	VIDEO INSERT OR AV INSERT	VIDEO INSERT PAUSE OR AV INSERT PAUSE	AUDIO INSERT	AUDIO INSERT PAUSE
$\overline{AF\ PB}$	MA-82 Board IC501 ㉟	O	H	H	H	L	L	L	L	L	L	H	H	*1	H	*1	H
MONI (L)	MA-82 Board IC501 ⑩	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	MA-82 Board IC501 ⑨	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	MA-82 Board IC501 ⑪	I	AF RF envelope signal input terminal for automatic tracking.														
NA PB	MA-82 Board IC501 ㉟	O	L	L	L	H	H	H	H	H	H	L	L	*1	L	*1	L
A MUTE	MA-82 Board IC501 ㊳	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L	L	L	L	L
$\overline{SP}$	MA-82 Board IC501 ㊶	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2	*3	*3	*3	*3
NA REC•$\overline{P}$	MA-82 Board IC501 ⑧	O	L	L	L	L	L	L	L	L	L	H	L	*9	L	H	L
AF REC$\overline{P}$	MA-82 Board IC501 ④	O	L	L	L	L	L	L	L	L	L	H	L	H	L	L	L
AF SWP	MA-82 Board IC501 ⑭	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	MA-82 Board IC501 ㊶	I	Input terminal for AF switching position adjustment.														
AO MUTE *6	MA-82 Board IC501 ㉘	O	L	L	L	*7	H	H	H	H	H	L	L	L	L	L	L
MIX/$\overline{ST}$	MA-82 Board IC501 ㉜	O (O.D)	L	L	L	*8	*8	*8	*8	*8	*8	L	L	L	L	L	L
METER (L)	MA-82 Board IC501 ㊻	I	Input terminal for the audio level meter (left) indication.														
METER (R)	MA-82 Board IC501 ㊸	I	Input terminal for the audio level meter (right) indication.														
$\overline{FULL\ ERS}$	MA-82 Board IC501 ㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H

*1. Selected by audio monitor.

Signal \ Audio monitor	STEREO OR MAIN, SUB, L, R	MAIN L	SUB R	(NORMAL)
MONI (L) ⑩	H	H	L	L
MONI (R) ⑨	H	L	H	L

*2. Selected by SP/EP selector. SP mode: "L", EP mode: "H".
*3. Selected by tape recording mode. SP mode: "L", EP mode: "H".
*4. "H" when CTL signal is not played back.
*5. 30 Hz, 50% duty pulse approx. 5 msec delayed from RF SW P.
*6. "H" when power ON/OFF selected.
*7. "H" when CTL signal is not played back.
*8. "H" when hi-fi/NORMAL MIX ON.
*9. "L" when video is inserted, "H" when AV is inserted.

3-19. SYSTEM CONTROL — TUNER BLOCK INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	I/O level
$\overline{\text{STEREO}}$	MA-82 Board IC501 ⑮	I	Tuner audio mode input terminal. "L" when stereo.
TAMUTE	MA-82 Board IC501 ㉘	O	Tuner audio mute output. "H" when not used channel is selected.
SAP CONT	MA-82 Board IC501 ㉙	O	"H" when SAP is selected for normal audio recording
$\overline{\text{F MONO}}$	MA-82 Board IC501 ㉚	O	"L" when tuner audio and auto stereo are turned OFF

3-20. SYSTEM CONTROL AND RF MODULATOR — INPUT SELECTION BLOCK INTERFACE (SLV-686HF)

Signal	Pin. No.	I/O	I/O level
TV/VTR	MA-82 Board IC501 ㉜	O	"L" when RF modulator through.
LINE 1	MA-82 Board IC501 ㉝	O	*1. Input select control signal
LINE 2	MA-82 Board IC501 ㉞	O	

*1.

Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1 ㉝	L	H	L
LINE 2 ㉞	L	L	H

3-21. SERVO/SYSTEM CONTROL — MICROPROCESSOR TERMINAL FUNCTION (MA-82 BOARD IC501) (SLV-686HF)

Pin. No.	Port	I/O	Signal	Function
1	PB5/PPO13	O	RF SWP	Video switching pulse output
2	PB4/PPO12	O	Q VD	False VD pulse output
3	PB3/PPO11	O	Q HD ENABI	
4	PB2/PPO10	O	AF REC $\overline{P}$	"H" output when hi-fi audio REC
5	PB1/PPO9	O	REC $\overline{P}$	"H" output when video REC
6	PB0/PPO8	O	FE ON	Flaying erase ON/OFF output.
7	PC7/RTO7	O	REC CTL	REC CTL output
8	PC6/RTO6	O	NA REC $\overline{P}$	"H" when normal audio REC
9	PC5/RTO5	O	MONI (R)	Audio output control signal
10	PC4/RTO4	O	MONI (L)	
11	PC3/RTO3	O	CAM	CAM motor drive output
12	PC2/PPO18	O	CW/$\overline{CCW}$	Clockwise/counterclockwise signal output
13	PC1/PPO17	O	LOAD	Load motor drive output
14	PC0/PPO16	O	AF SWP	hi-fi switching pulse output
15	PJ7	I	$\overline{STEREO}$	Tuner audio mode input
16	PJ6	I	$\overline{BILING}$	Tuner audio mode input
17	PJ5	I	REC PRF	Erasing protection tab, cassette IN detection input
18	PJ4	I	C UP/$\overline{DOWN}$	Cassette up/down detection input
19	PJ3	O	V REC	"L" output when video playback
20	PJ2	O	V MUTE	Video mute output
21	PJ1	I	T SENS	T end sensor input
22	PJ0	I	S SENS	S end sensor input
23	PD7	O	$\overline{TV/VTR}$	Antenna output select signal. "H": VTR, "L": TV.
24	PD6	O	STEP DRIVE	"H" when capstan STEP is driven.
25	PD5	O	BASS BOOST	Not used
26	PD4	O	$\overline{A\ OUT\ MUTE}$	Audio output MUTE signal
27	PD3	O		Not used
28	PD2	O	TA MUTE	Tuner audio MUTE signal
29	PD1	O	SAP CONT	SAP control signal
30	PD0	O	$\overline{F\ MONO}$	Tuner forced monaural signal
31	PH7	O	AMS	AMS control output
32	PH6	O	MIX/$\overline{ST}$	"H" when hi-fi MIX
33	PH5	O		Not used
34	PH4	O	$\overline{OSD\ MUTE}$	Video output mute signal
35	PH3	O	$\overline{STEP\ PLS}$	"L" when capstan step drive
36	PH2	O	$\overline{FULL\ ERS}$	"L" when full erase head operation
37	PH1	O		Not used
38	PH0	O	A MUTE	Audio MUTE output
39	MP	I	MP	Fixed at "L" level
40	$\overline{RST}$	I	$\overline{COSMO\ RST}$	System reset input
41	Vss			GND
42	XTAL		XTAL	System clock 12 MHz
43	EXTAL		EXTAL	
44	$\overline{CS0}$	I	$\overline{COSMO\ CS}$	Chip select signal
45	SI0	I	SI0	Signal for serial communication
46	SO0	O	SO0	
47	$\overline{SCK0}$	I	$\overline{SCK0}$	
48	PF7/AN11	I	METER (L)	Level meter (L) input
49	PF6/AN10	I	METER (R)	Level meter (R) input
50	PF5/AN9			Not used

Pin. No.	Port	I/O	Signal	Function
51	PF4/AN8	I	AF SW POSI	VR input for hi-fi switching pulse position adjustment
52	AVss		AVss	UNSW 5V
53	AVREF		AVREF	AD port reference input. UNSW 5V
54	AVDD		AVDD	GND
55	PF3/AF7	I	MODE4	Mechanism section CAM encoder input
56	PF2/AN6	I	MODE3	
57	PF1/AN5	I	MODE2	
58	PF0/AN4	I	MODE1	
59	AN3	I	CAP V	Capstan servo voltage input
60	AN2	I	VIDEO RF	Video RF envelope input
61	AN1	I	AF ENV	hi-fi audio RF envelope input
62	AN0	I	RF SW POSI	VR input for RF SWP position adjustment
63	PG7/EXI1	I	S REEL	S reel sensor input
64	PG6/EXI0	I	T REEL	T reel sensor input
65	PG5/SYNC1	I	$\overline{DEW}$	Not used
66	PG4/SYNC0	I	COMP SYNC	Composite sync input
67	PG3/$\overline{PBCTL}$	I	PB CTL	Playback CTL input
68	PG2/DPG	I	DRM PG	Drum PG input
69	PG1/DFG	I	DRM FG	Drum FG input
70	PG0/CFG	I	CAP FG	Capstan FG input
71	PE7	O	CAP STOP	Capstan STOP signal output
72	PE6	O	CAP RVS	Capstan reverse signal output
73	PE5	O	CAP D/A	Capstan error DIA output
74	PE4	O	DRM D/A	Drum error D/A output
75	PE3/PWM1	O	CTL INV	"H" when capstan is reversed
76	PE2/PWM0	O		Not used
77	PE1	I	VD CTL	Playback CTL input
78	PE0	I		Not used
79	PI7/SI1	I	SI1	Index microprocessor serial communication signal
80	PI6/SO1	O	SO1	
81	PI5/$\overline{SCK1}$	O	$\overline{SCK1}$	Index microprocessor serial communication signal
82	PI4	O	$\overline{INDEX\ CS}$	
83	PI3	O	LINE1	Video/audio input select signal
84	PI2	O	LINE2	
85	PI1	O	LAMP	END sensor lamp drive output
86	PI0	I		
87		O		
88	Vss			GND
89	VDD			UNSW 5V
90	N.C.			Connected to UNSW 5V
91	PA7/PPO7	O	$\overline{SP}$	"L" when SP mode
92	PA6/PPO6	O	EP	"H" when EP mode. Not used.
93	PA5/PPO5	O	LP	"H" when LP mode
94	PA4/PPO4	O	EDIT	"H" when EDIT
95	PA3/PPO3	O	NA PB	"H" when normal audio playback
96	PA2/PPO2	O	$\overline{AF\ PB}$	"L" when hi-fi audio playback
97	PA1/PPO1	O	$\overline{JOG}$	"L" when special playback. Not used.
98	PA0/PPO0	O	$\overline{V\ PB}$	"L" when video playback
99	PB7/PPO15	O	HEAD SEL	Video head select signal
100	PB6/PPO14	O		Not used

3-22. TIMER/MODE CONTROL — MICROPROCESSOR PIN FUNCTION (MF-122 BOARD IC801) (SLV-686HF)

Pin. No.	Port	I/O	Signal	Function
1	S4	O	S0	Display segment signal 0
2	S5	O	S1	Display segment signal 1
3	S6	O	S2	Display segment signal 2
4	S7	O	S3	Display segment signal 3
5	S8	O	S4	Display segment signal 4
6	S9	O	S5	Display segment signal 5
7	S10	O	S6	Display segment signal 6
8	S11	O	S7	Display segment signal 7
9	S12	O	S8	Display segment signal 8
10	S13	O	S9	Display segment signal 9
11	S14	O	S10	Display segment signal 10
12	S15	O	S11	Display segment signal 11
13	S16	O	S12	Display segment signal 12
14	S17	O	S13	Display segment signal 13
15	T13	O	S14	Display segment signal 14
16	T12	O	S15	Display segment signal 15
17	T11	O	T11	Display timing signal 11
18	T10	O	T10	Display timing signal 10
19	T9	O	T9	Display timing signal 9
20	T8	O	T8	Display timing signal 8
21	T7	O	T7	Display timing signal 7
22	T6	O	T6	Display timing signal 6
23	T5	O	T5	Display timing signal 5
24	T4	O	T4	Display timing signal 4
25	T3	O	T3	Display timing signal 3
26	T2	O	T2	Display timing signal 2
27	T1	O	T1	Display timing signal 1
28	T0	O	T0	Display timing signal 0
29	INT	I	INT	Not used
30	TX		TX	Clock for back-up 32.768 kHz
31	TEX		ETX	Clock for back-up 32.768 kHz
32	$\overline{RST}$	I	$\overline{RESET}$	Reset signal input
33	N.C.			Connected to 5V power
34	VDD		VDD	5V power
35	AD0	I	AD0 (RING 0)	KEY input *1
36	AD1	I	AD1 (RING 1)	KEY input *1
37	AD2	I	AD2 (RING 2)	KEY input *1, *2
38	AD3	I	AD3	KEY input *2
39	AD4	I	AD4	KEY input *2
40	AD5	I	AD5	KEY input *2
41	AD6	I	AD6	KEY input *2
42	AD7	I	AD7	KEY input *2
43	EC	I	$\overline{EC}$	Not used
44	SCLK	O	SCLK0	Serial communication clock
45	SO	O	S IN0	Serial data output
46	SI	I	S OUT0	Serial data input
47	PA0	O	$\overline{CG\ CS}$	CG microprocessor chip select signal
48	PA1	O	$\overline{COSMO\ CS}$	SS microprocessor chip select signal
49	PA2	O	$\overline{COSMO\ RST}$	SS microprocessor reset signal output

Pin. No.	Port	I/O	Signal	Function
50	PA3	I	CG HDET	Video signal, existence judgment input. "L": video signal
51	PF0	O	TA MUTE	Tuner audio mute
52	PF1	O	TU DATA	Tuner control signal
53	PF2	O	TU ENABLE	Tuner control signal
54	PF3	O	TU CLK	Tuner control signal
55	PE0	I	AFT DOWN	Tuner control signal
56	PE1	I	AFT UP	Tuner control signal
57	PE2	I		Not used
58	PE3	I		Not used
59	PY0	O		Not used
60	PWM	O	PWM	PWM output for buzzer
61	WP	I	POWER FAIL	"L" when service interruption
62	RMC	I	SIRCS IN	Remote control input
63	PD0	I	FWR/REV	Shuttle ring input *1
64	PD1	I		Not used
65	PD2	I		Not used
66	PD3	I	BASS BOOST	Not used
67	PC0	I/O		Not used
68	PC1	I/O	MEM DATA	Non-volatile memory data signal
69	PC2	I/O	U/C	Fixed at "H" level
70	PC3	I/O	F45A	Fixed at "H" level
71	Vss		Vss	GND
72	XTAL		XTAL	Clock 4.19 MHz
73	N.C.			Connected to 5V power
74	EXTAL		EXTAL	Clock 4.19 MHz
75	VREF		VREF	A/D input reference power
76	VFDP		VFDP	Power for fluorescent indicator
77	PH0	O	MEMCLK	Non-volatile memory clock signal
78	PH1	O	MEM CS	Non-volatile memory chip select signal
79	PH2	O	POWER ON	"H" output when power ON
80	PH3	O		Not used

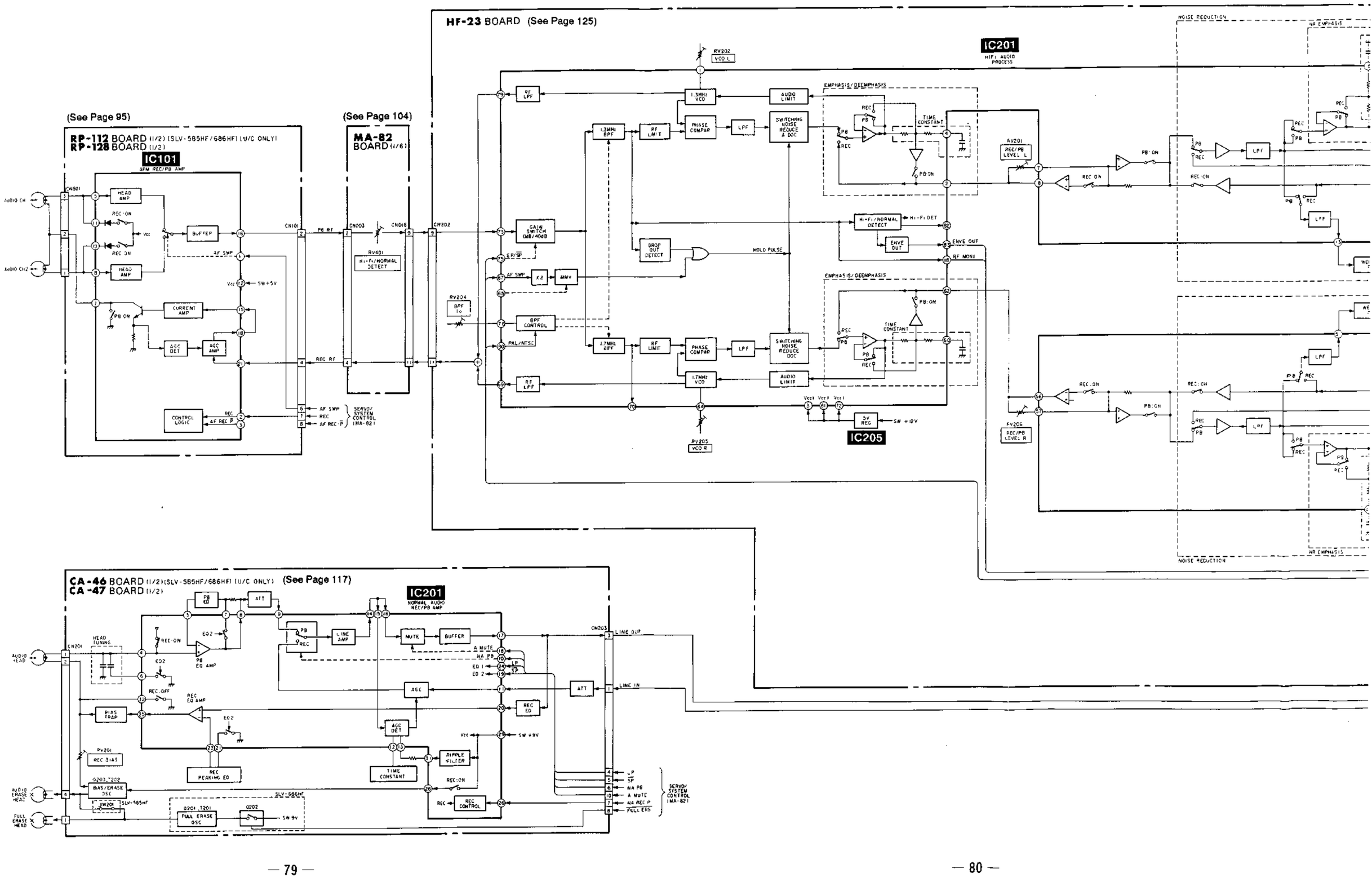
*1. Shuttle ring position and terminal input level

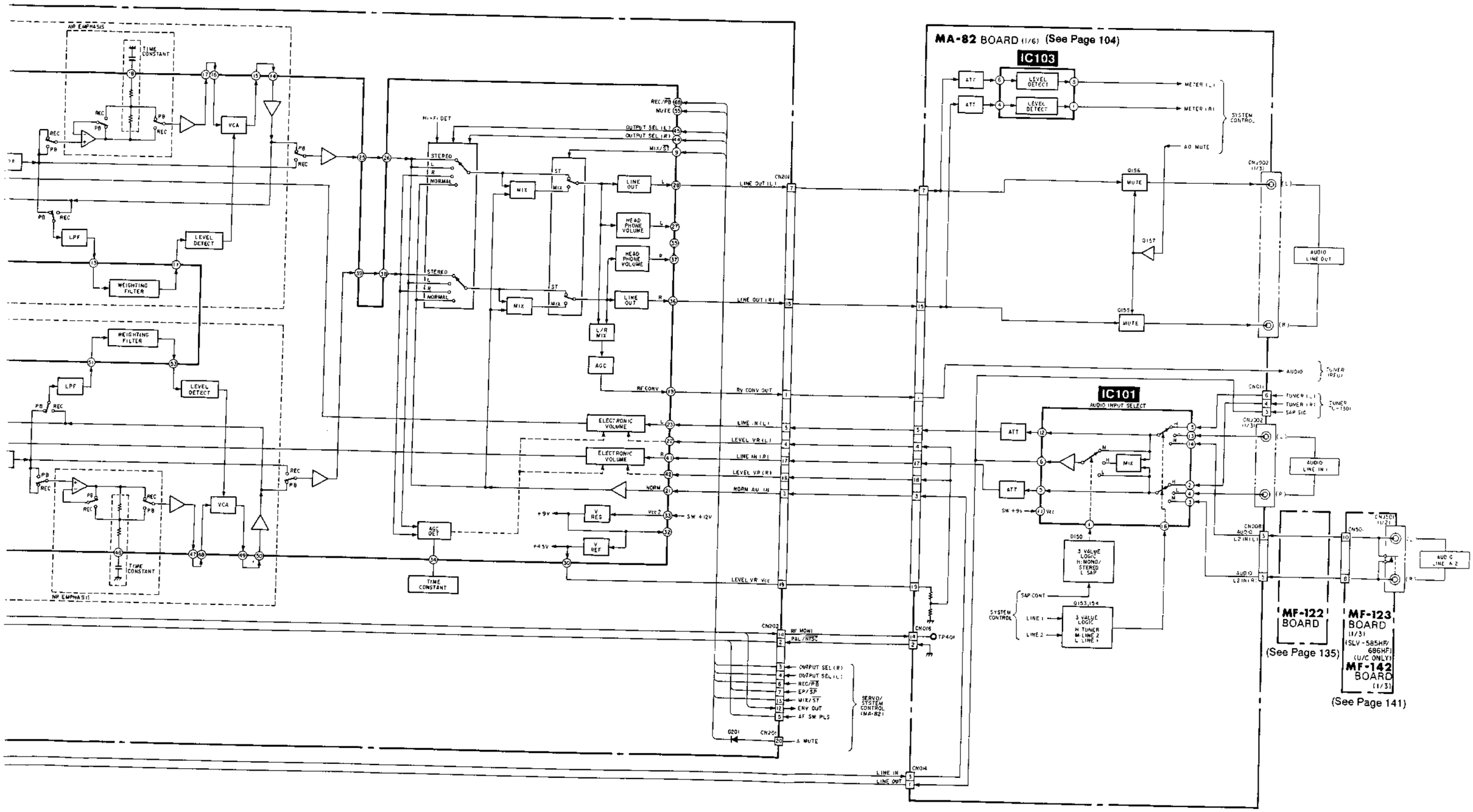
Shuttle ring position	REW				STOP						FF		
	REVIEW		− × 2	− × 1	− 1/5		PLAY/ STILL	1/5		× 1	× 2	CUE	
AD0 ㉟ (RING 0)	L		L	H	H		H	H		H	L	L	
AD1 ㊱ (RING 1)	H	L	H	H	L		H	L		H	H	L	H
AD2 ㊲ (RING 2)	H	L	L	L	L	H	H	H	L	L	L	L	H
FWD/RVS ㉞	L						H						

*2. Pressed key and terminal input voltage

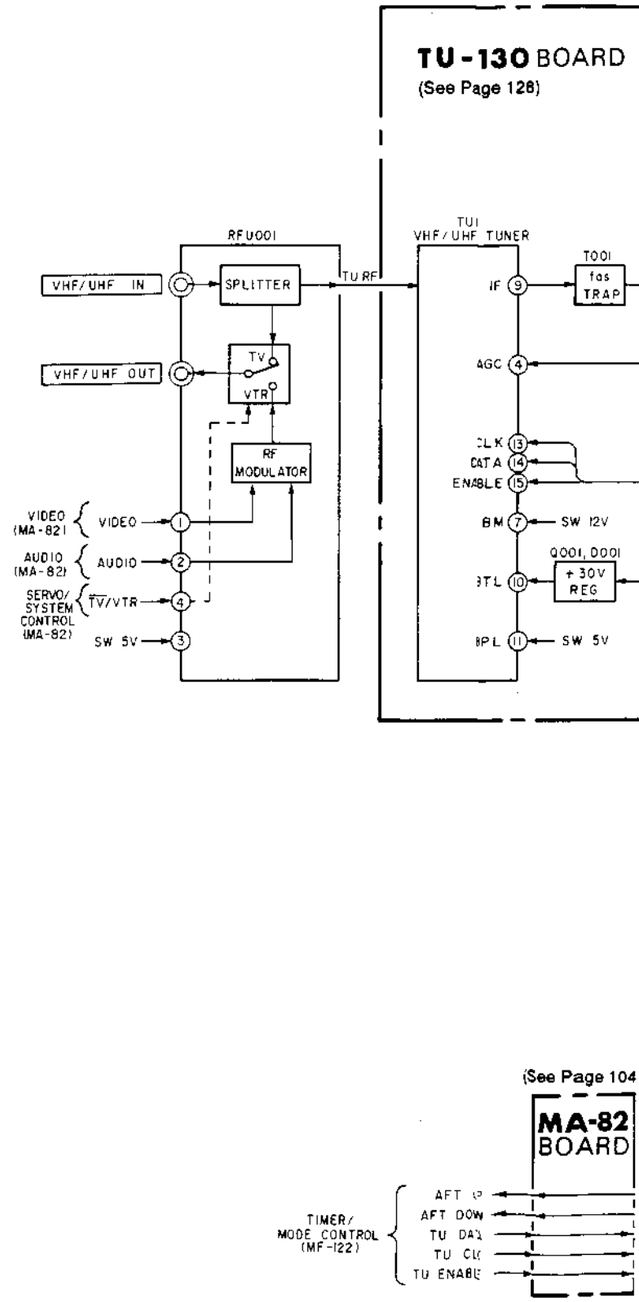
Input voltage / Input terminal	0V	1.1V	2.1V	3.1V	4.1V	5.5V
AD7 ㊷	TIMER REC	REC MODE (SP/EP)	(TV/VTR)	VIDEO INSERT	AUDIO INSERT	No Key input
AD6 ㊶	Quick timer	INPUT SELECT	Tracking ▲	Channel −	EDIT	No Key input
AD5 ㊵	REC	Tracking AUTO/MANUAL	Tracking ▼	Channel +		No Key input
AD4 ㊴	POWER	EJECT	VTR mode 1	VTR mode 2		VTR mode 3
AD3 ㊳	STOP	PLAY				No Key input
AD2 ㊲	Shuttle ring RING 2	PAUSE	HIGH SPEED REWIND			No Key input

3-23. AUDIO BLOCK DIAGRAM



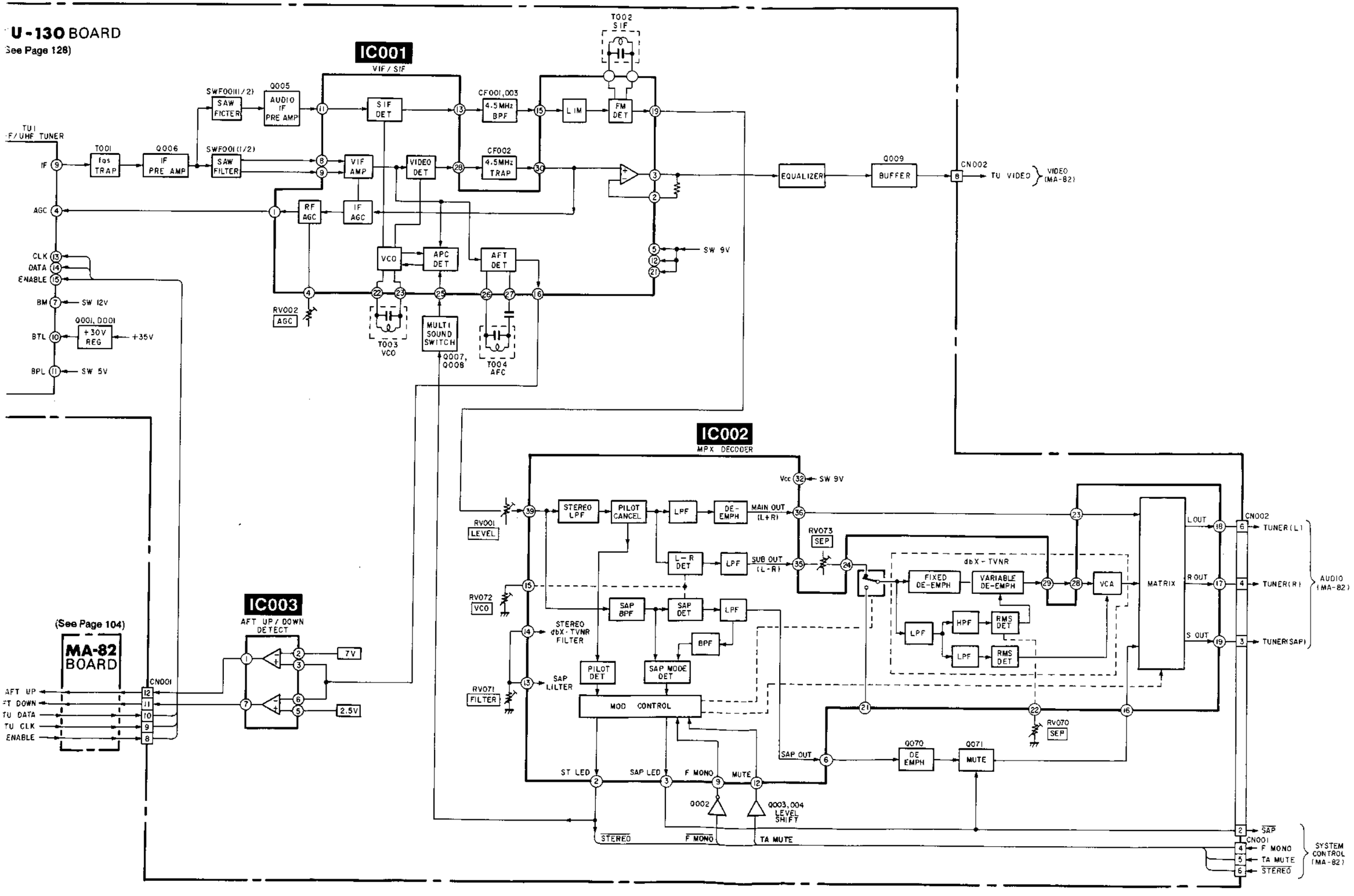

NR EMPHASIS
TIME CONSTANT
REC
PB
VCA
LPF
LEVEL DETECT
WEIGHTING FILTER
REC/PB
MUTE
OUTPUT SEL (L)
OUTPUT SEL (R)
MIX/ST
HI-FI DET
STEREO
L
R
NORMAL
MIX
ST
LINE OUT
HEAD PHONE VOLUME
L/R MIX
AGC
REC OUT
ELECTRONIC VOLUME
LINE IN (L)
LEVEL VR (L)
LINE IN (R)
LEVEL VR (R)
NORM AV IN
V REG
V REF
+9V
+4.5V
Vcc2
SW +12V
AGC DET
TIME CONSTANT
LEVEL VR Vcc
CN202
CN201
CN203
CN204
CN016
TP401
RF MONI
PAL/NTSC
OUTPUT SEL (R)
OUTPUT SEL (L)
REC/PB
EP/SP
MIX/ST
ENV OUT
AF SW PLS
A MUTE
D201
SERVO/SYSTEM CONTROL (MA-82)
LINE OUT (L)
LINE OUT (R)
REC OUT
LINE IN
LINE OUT
MA-82 BOARD (1/6) (See Page 104)
IC103
ATT
LEVEL DETECT
METER (L)
METER (R)
SYSTEM CONTRO.
AD MUTE
Q156
Q157
Q155
MUTE
CNJ302 (1/3)
AUDIO LINE OUT
IC101
AUDIO INPUT SELECT
MIX
SW +9V
Vcc
D150
3 VALUE LOGIC H: MONO/ STEREO L: SAP
SAP CONT
SYSTEM CONTROL
LINE 1
LINE 2
Q153,154
3 VALUE LOGIC M: TUNER H: LINE 2 L: LINE 1
AUDIO
TUNER (REC)
TUNER (L)
TUNER (R)
SAP SIG
CNJ301
CNJ302
AUDIO LINE IN
CN308
AUDIO L2 IN (L)
AUDIO L2 IN (R)
CN50
AUDIO LINE A2
MF-122 BOARD
(See Page 135)
MF-123 BOARD (1/3)
(SLV-585HF/686HF (U/C ONLY))
MF-142 BOARD (1/3)
(See Page 141)

3-24. TUNER BLOCK DIAGRAM

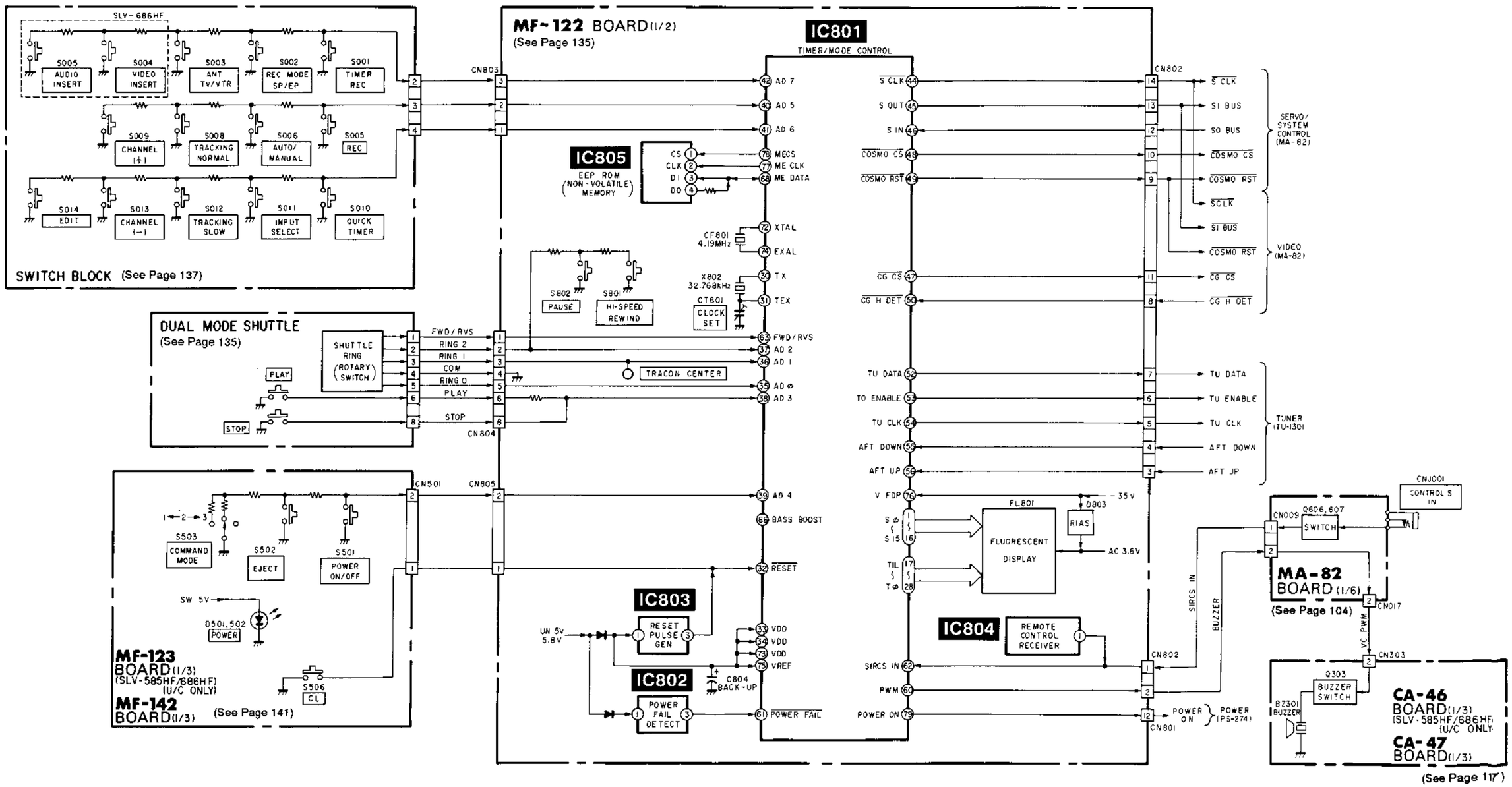


U-130 BOARD

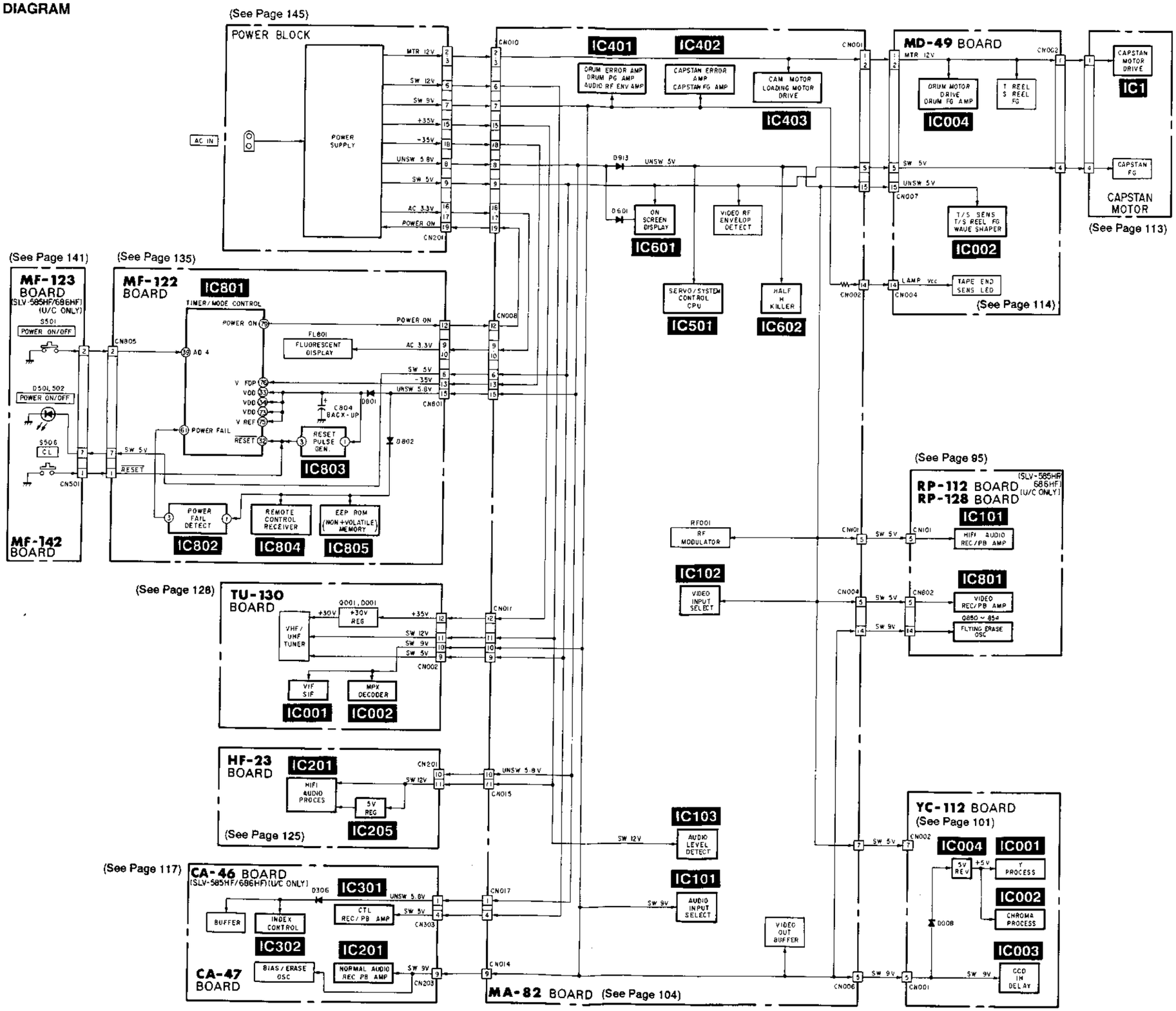
(See Page 128)



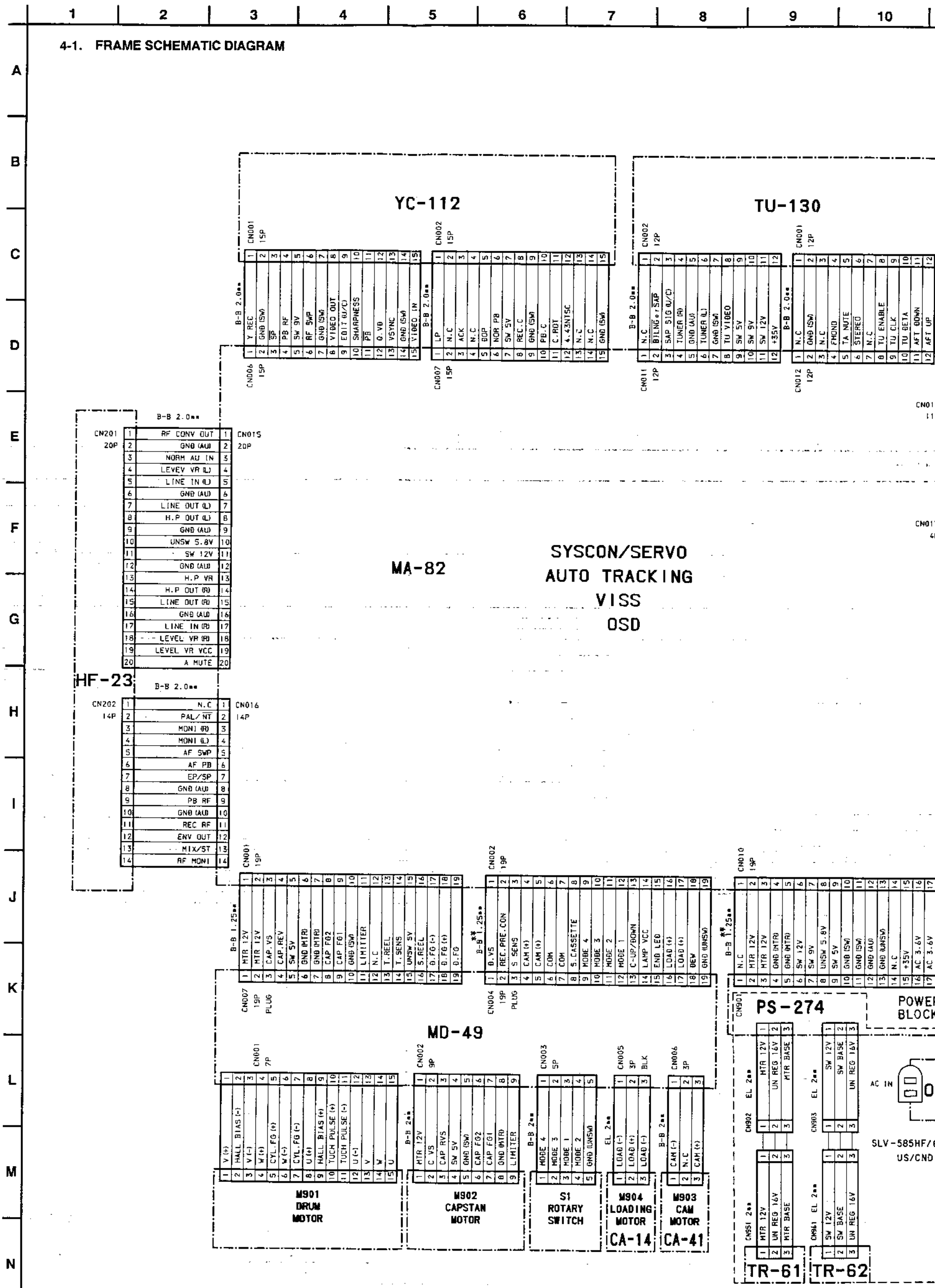
3-25. TIMER MODE CONTROL BLOCK DIAGRAM

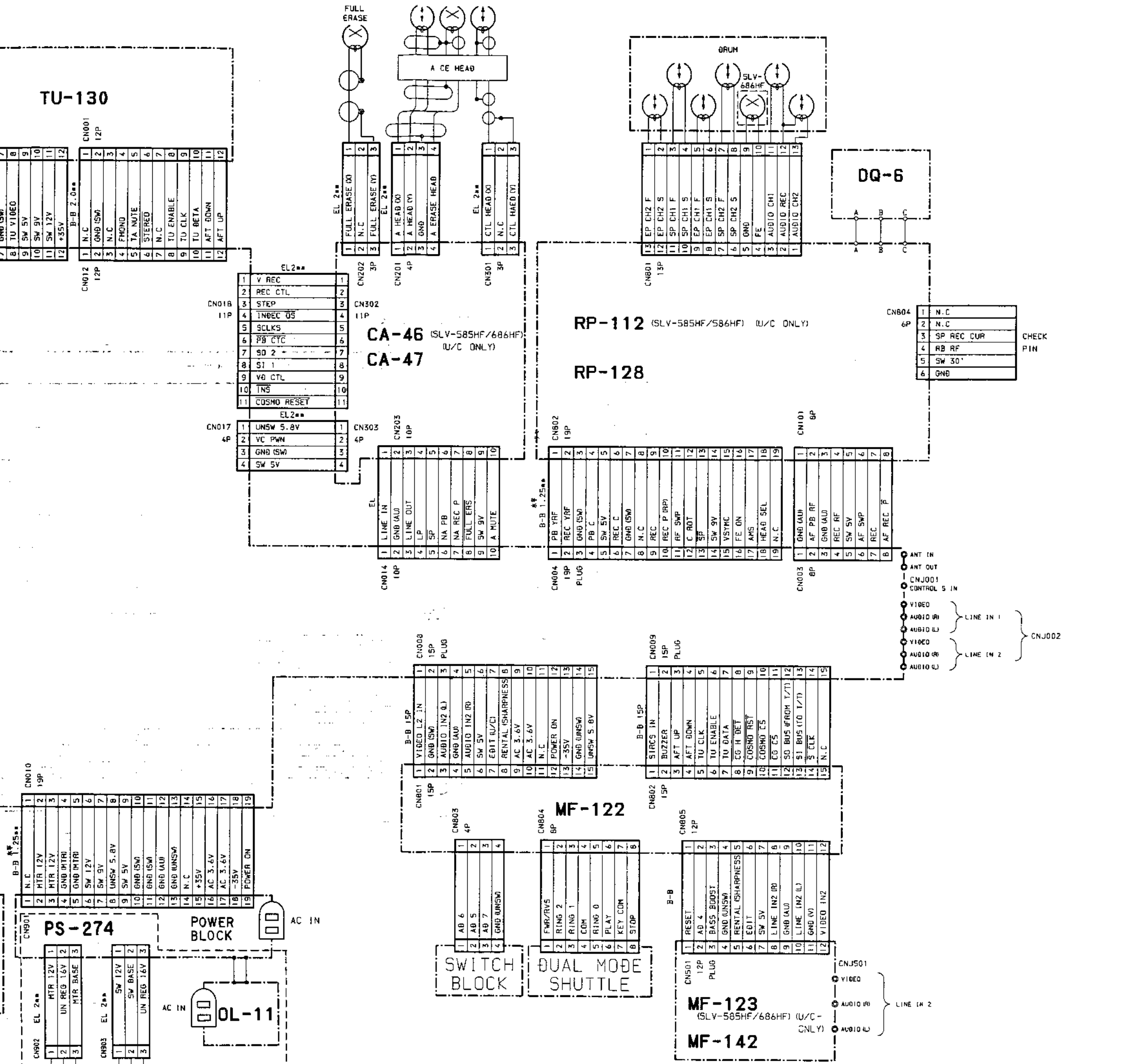


3-26. POWER BLOCK DIAGRAM



4-1. FRAME SCHEMATIC DIAGRAM




TU-130
CN001 12P
B-B 2.0**
CN012 12P
FULL ERASE
A CE HEAD
EL 2**
CN202 3P
CN201 4P
CN301 3P
DRUM
SLV-686HF
CN801 13P
DQ-6
CA-46 (SLV-585HF/686HF) (U/C ONLY)
CA-47
RP-112 (SLV-585HF/586HF) (U/C ONLY)
RP-128
CN018 11P
CN302 11P
CN017 4P
CN303 4P
CN203 10P
CN014 10P
CN802 19P
CN804 6P
CHECK PIN
CN101 8P
CN003 8P
ANT IN
ANT OUT
CNJ001
CONTROL S IN
VIDEO
AUDIO (R)
AUDIO (L)
LINE IN 1
LINE IN 2
CNJ002
CN008 15P PLUG
CN009 15P PLUG
CN801 15P
CN802 15P
MF-122
CN010 19P
CN803 4P
CN804 8P
CN805 12P
B-B 1.25**
B-B 15P
B-B
PS-274
POWER BLOCK
AC IN
CN901
CN902 EL 2**
CN903 EL 2**
CN951 2**
CN961 EL 2**
OL-11
SLV-585HF/686HF US/CND ONLY
TR-61
TR-62
SWITCH BLOCK
DUAL MODE SHUTTLE
CN501 12P PLUG
MF-123 (SLV-585HF/686HF) (U/C-CNLY)
MF-142
CNJ501
LINE IN 2

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- —— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▬ : Pattern from the side which enables seeing.
- ▬ : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the pattern 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 minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/10W 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.
- ⊣▭⊢ : nonflammable resistor.
- ⊣▭⊢ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repeair.
- ——— : 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 color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltages are taken with a VOM (Input impedance 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

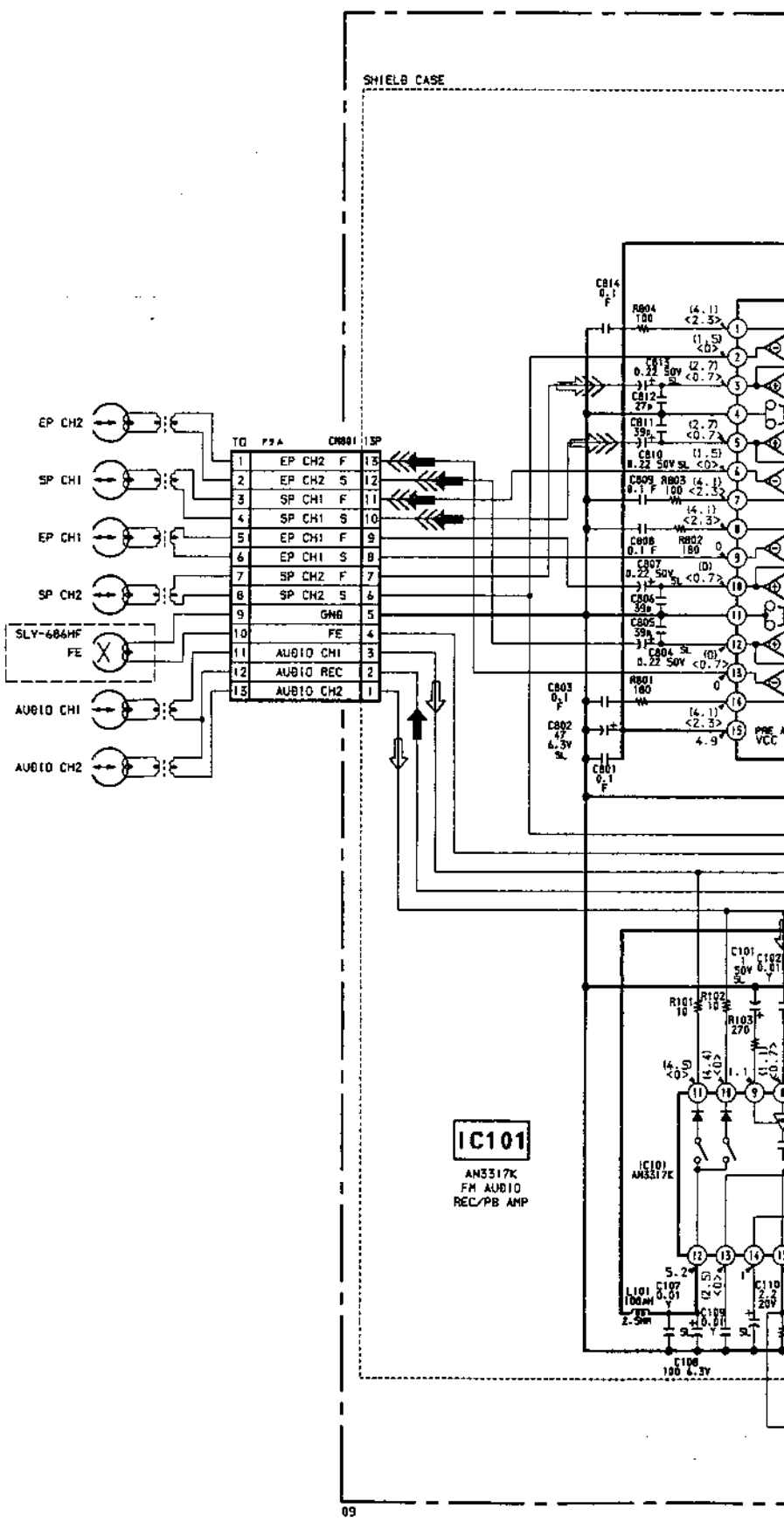
When indicating parts by reference number, please include the board name.

RP-112/128 BOARD

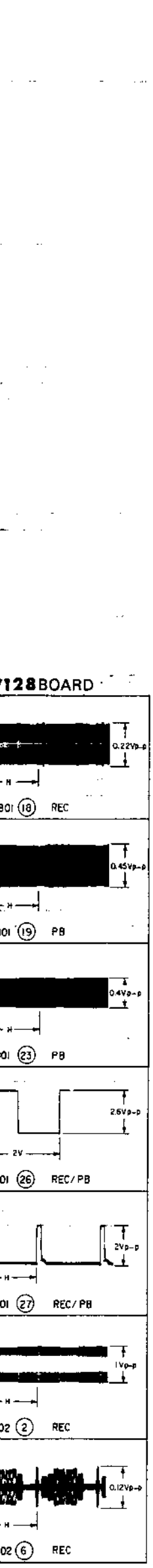
1 — IC801 (18) REC — 0.22Vp-p, H
2 — IC801 (19) PB — 0.45Vp-p, H
3 — IC801 (23) PB — 0.4Vp-p, H
4 — IC801 (26) REC/PB — 2.6Vp-p, 2V
5 — IC801 (27) REC/PB — 2Vp-p, H
6 — CN802 (2) REC — 1Vp-p, H
7 — CN802 (6) REC — 0.12Vp-p, H

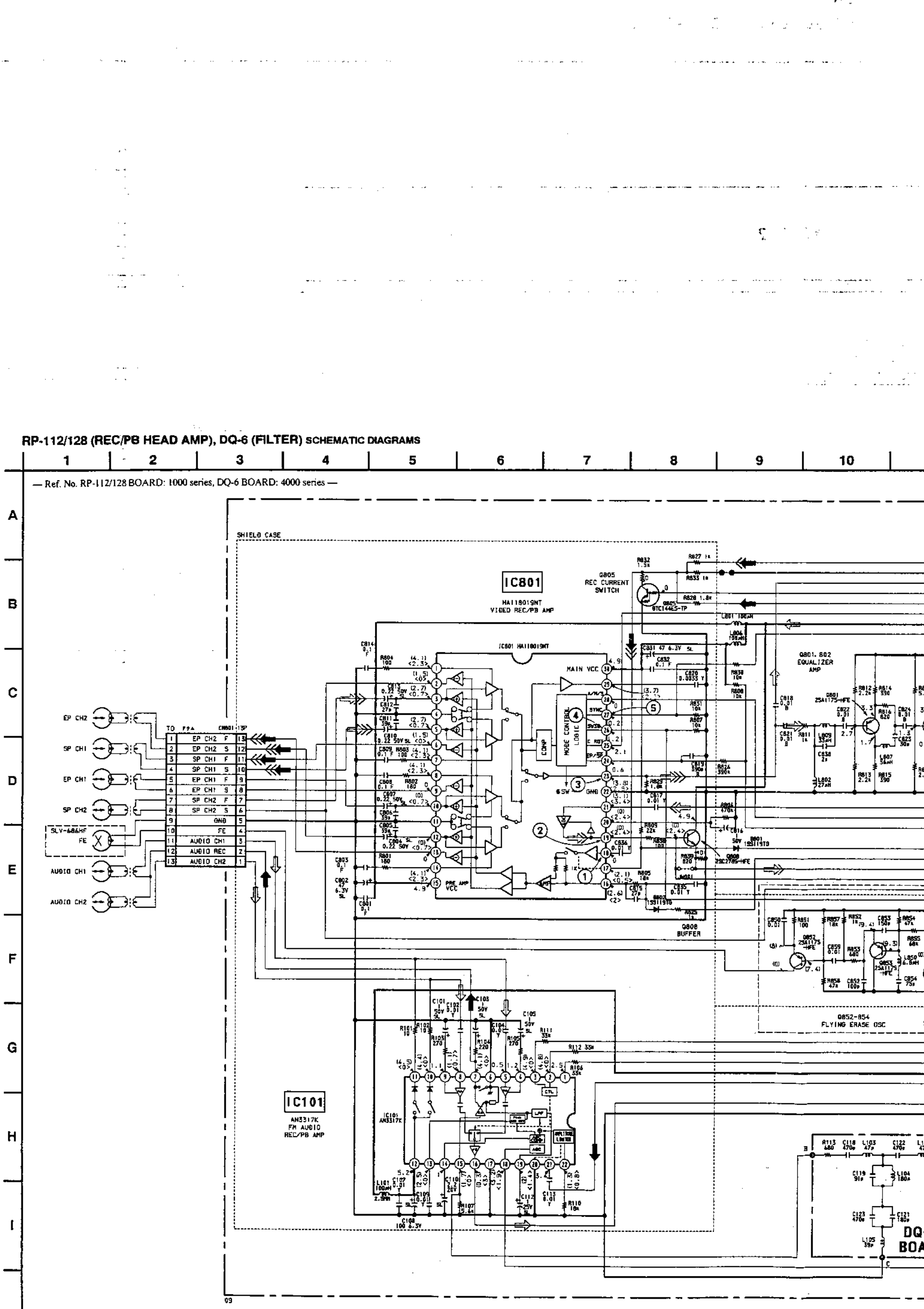
RP-112/128 (REC/PB HEAD AMP), DQ-6 (FILTER) SCHEMATIC DIAGRAMS

— Ref. No. RP-112/128 BOARD: 1000 series, DQ-6 BOARD: 4000 series —

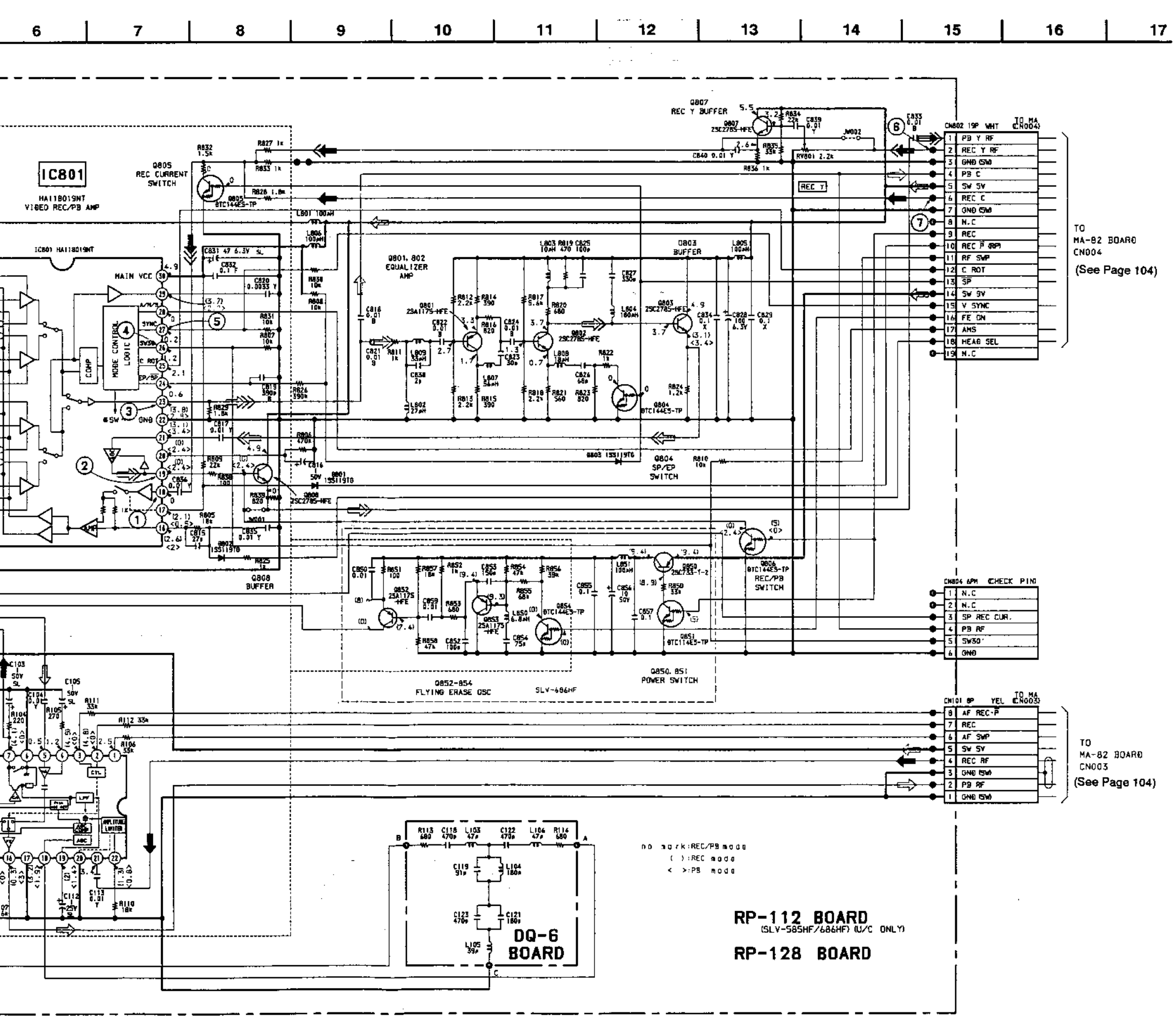


— Ref. No. RP-112/128 BOARD: 1000 series, DQ-6 BOARD: 4000 series —





VIDEO VIDEO



• SIGNAL PATH

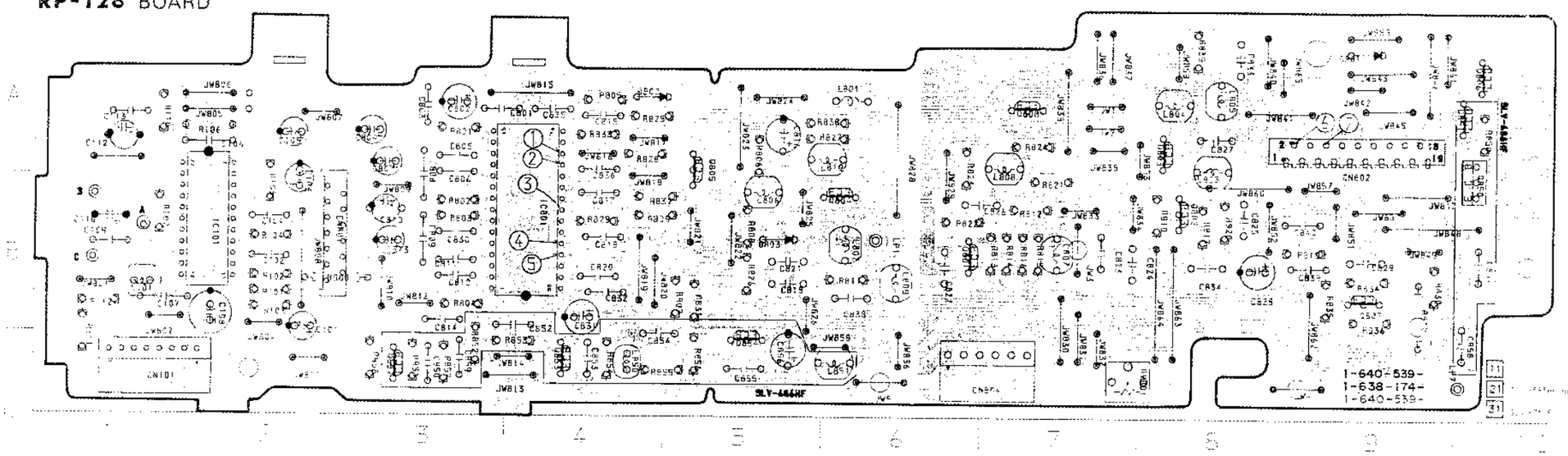
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

VIDEO VIDEO

RP-112/128 (REC/PB HEAD AMP), DQ-6 (FILTER) PRINTED WIRING BOARDS

— Ref. No. RP-112/128 BOARD: 1000 series, DQ-6 BOARD: 4000 series —

RP-112 BOARD
RP-128 BOARD



RP-112/128 BOARD

CN101 C-1
CN801 B-2
CN802 B-9
CN804 C-6

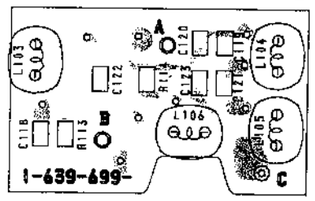
D801 A-9
D802 A-4
D803 B-5

IC101 B-2
IC801 B-4

Q801 B-6
Q802 B-8
Q803 B-6
Q804 B-6
Q805 B-5
Q806 A-10
Q807 B-9
Q808 A-7
Q850 B-10
Q851 A-10
Q852 C-3
Q853 C-4
Q854 C-5

RV801 C-7

DQ-6 BOARD



PR-112/128 BOARD, COMPLETE
****

DQ-5 BOARD
****

< DIODE >

D801	8-719-911-19	DIODE	1SS119
D802	8-719-911-19	DIODE	1SS119
D803	8-719-911-19	DIODE	1SS119

< IC >

IC101	8-759-421-19	IC	AN3317K
IC801	8-759-320-52	IC	HA118019NT

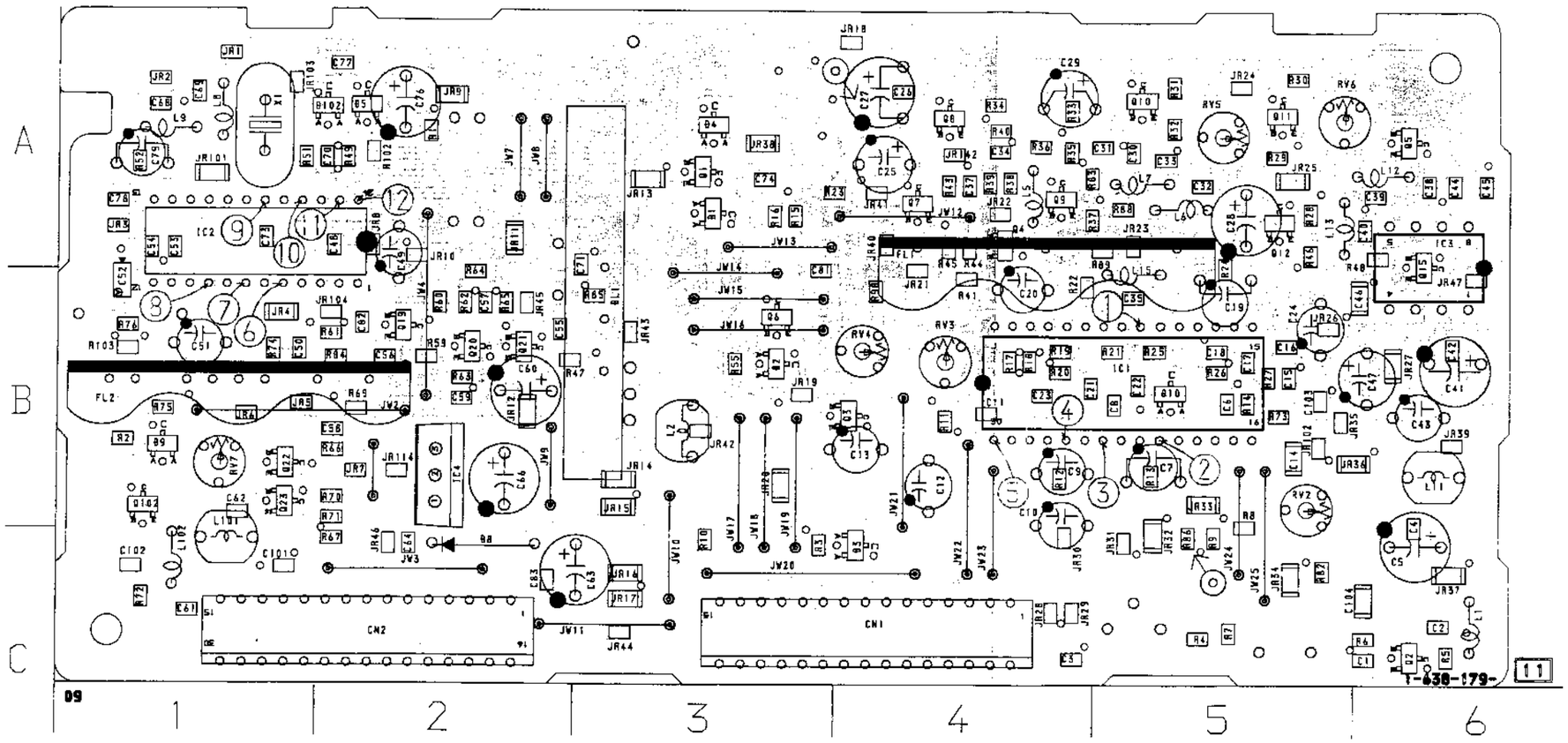
< TRANSISTOR >

Q801	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q802	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q803	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q804	8-729-900-89	TRANSISTOR	DTC144ES
Q805	8-729-900-89	TRANSISTOR	DTC144ES
Q806	8-729-900-89	TRANSISTOR	DTC144ES
Q807	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q808	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q850	8-729-113-31	TRANSISTOR	2SB733-T-2 (SLV-686HF)
Q851	8-729-900-81	TRANSISTOR	DTC114ES (SLV-686HF)
Q852	8-729-119-76	TRANSISTOR	2SA1175-HFE (SLV-686HF)
Q853	8-729-119-76	TRANSISTOR	2SA1175-HFE (SLV-686HF)
Q854	8-729-900-89	TRANSISTOR	DTC144ES (SLV-686HF)

YC-112 (VIDEO PROCESS) PRINTED WIRING BOARD

— Ref. No. YC-112 BOARD: 2000 series —

YC-112 BOARD



YC-112 BOARD

CN001 C-4
CN002 C-2

D001 A-3
D002 B-3
D003 C-4
D004 A-3
D005 A-2
D008 C-2
D009 B-1
D010 B-5
D102 A-2

IC001 B-5
IC002 A-1
IC003 B-6
IC004 B-2

Q001 A-3
Q002 C-6
Q003 B-4
Q004 A-4
Q005 A-6
Q006 B-3
Q007 A-4
Q010 A-5
Q011 A-5
Q015 B-6
Q019 B-2
Q020 B-2
Q021 B-2
Q022 B-1
Q023 B-1
Q102 B-1

RV002 C-2
RV003 B-4
RV004 B-4
RV005 A-5
RV006 A-5
RV007 B-1

YC-112 BOARD, COMPLETE
****

< DIODE >

D001	8-719-400-18	DIODE	MA152WK
D002	8-719-400-18	DIODE	MA152WK
D003	8-719-400-18	DIODE	MA152WK
D004	8-719-400-18	DIODE	MA152WK
D005	8-719-400-18	DIODE	MA152WK
D008	8-719-200-82	DIODE	1SS52
D009	8-719-400-18	DIODE	MA152WK
D010	8-719-400-18	DIODE	MA152WK
D102	8-719-400-18	DIODE	MA152WK

< IC >

IC001	8-759-821-62	IC	LA7326
IC002	8-759-821-87	IC	LA7316AN
IC003	8-759-821-50	IC	LC8991
IC004	8-759-938-15	IC	BA178M05

< TRANSISTOR >

Q001	8-729-901-06	TRANSISTOR	DTA144EK
Q002	8-729-620-05	TRANSISTOR	2SC3052-LEF
Q003	8-729-901-01	TRANSISTOR	DTC144EK
Q004	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q005	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q006	8-729-901-47	TRANSISTOR	DTA143EK
Q007	8-729-620-06	TRANSISTOR	2SC3052-EF
Q008	8-729-230-49	TRANSISTOR	2SC2712G-TE85L
Q009	8-729-230-49	TRANSISTOR	2SC2712G-TE85L
Q010	8-729-230-49	TRANSISTOR	2SC2712G-TE85L
Q011	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q012	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q015	8-729-230-49	TRANSISTOR	2SC2712G-TE85L
Q019	8-729-620-06	TRANSISTOR	2SC3052-EF
Q020	8-729-230-49	TRANSISTOR	2SC2712G-TE85L
Q021	8-729-620-06	TRANSISTOR	2SC3052EF-T1-LEF
Q022	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q023	8-729-620-06	TRANSISTOR	2SC3052-EF
Q102	8-729-900-53	TRANSISTOR	DTC114EK

YC-112 (VIDEO PROCESS) SCHEMATIC DIAGRAM

— Ref. No. YC-112 BOARD: 2000 series —

no mark:REC/PB mode
( ):REC mode
< >:PB mode

TO
MA-82 BOARD
CN006

(See Page 104)

CN001 1SP Base to Base

Y REC	1
GND	2
SP	3
PB RF	4
9V	5
SW.P	6
GND	7
V OUT	8
EDIT	9
SHP	10
PB	11
Q.VD	12
COMP SYNC	13
GND	14
V IN	15

IC001
LA7326
Y PROCESS

IC003
LC8991
1H DELAY

Q002 BUFFER
Q006 PB5V SWITCH
Q001 SP SWITCH
REC MUTE
PB.LEVEL
CAR.SET
DEV.SET
RF AGC
Q012 2SA1052C-TL
Q010 2SC2462C-TL
Q011 2SA1052C-TL
Q009 2SC2462C-TL
Q004 2SA1052C-TL
Q008 2SC2462C-TL
Q007 2SC2462C-TL
Q005 2SA1052C-TL
Q015 2SC2462C-TL
Q015 BUFFER
Q010-012 PB AMP
Q009 MAIN RE-EMPH
Q004 BUFFER
Q008 EQ
Q007 BUFFER
Q005 BUFFER

• SIGNAL PATH

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

10 11 12 13 14 15 16 17 18 19 20 21

IC004
BA178M05
5V REG

IC002
LA7316AN
CHROMA PROCESS

Q019 BUFFER
Q020, 021 AMP
Q022 BUFFER
Q023 AMP

CN002 15P Board to Board

1	LP
2	N.C.
3	SECAM ACK
4	N.C.
5	BOP
6	NOR PB
7	5V
8	REC.C
9	GND
10	PB.C
11	C.ROT
12	4.43NTSC
13	
14	
15	GND

TO
MA-82 BOARD
CN007
(See Page 104)

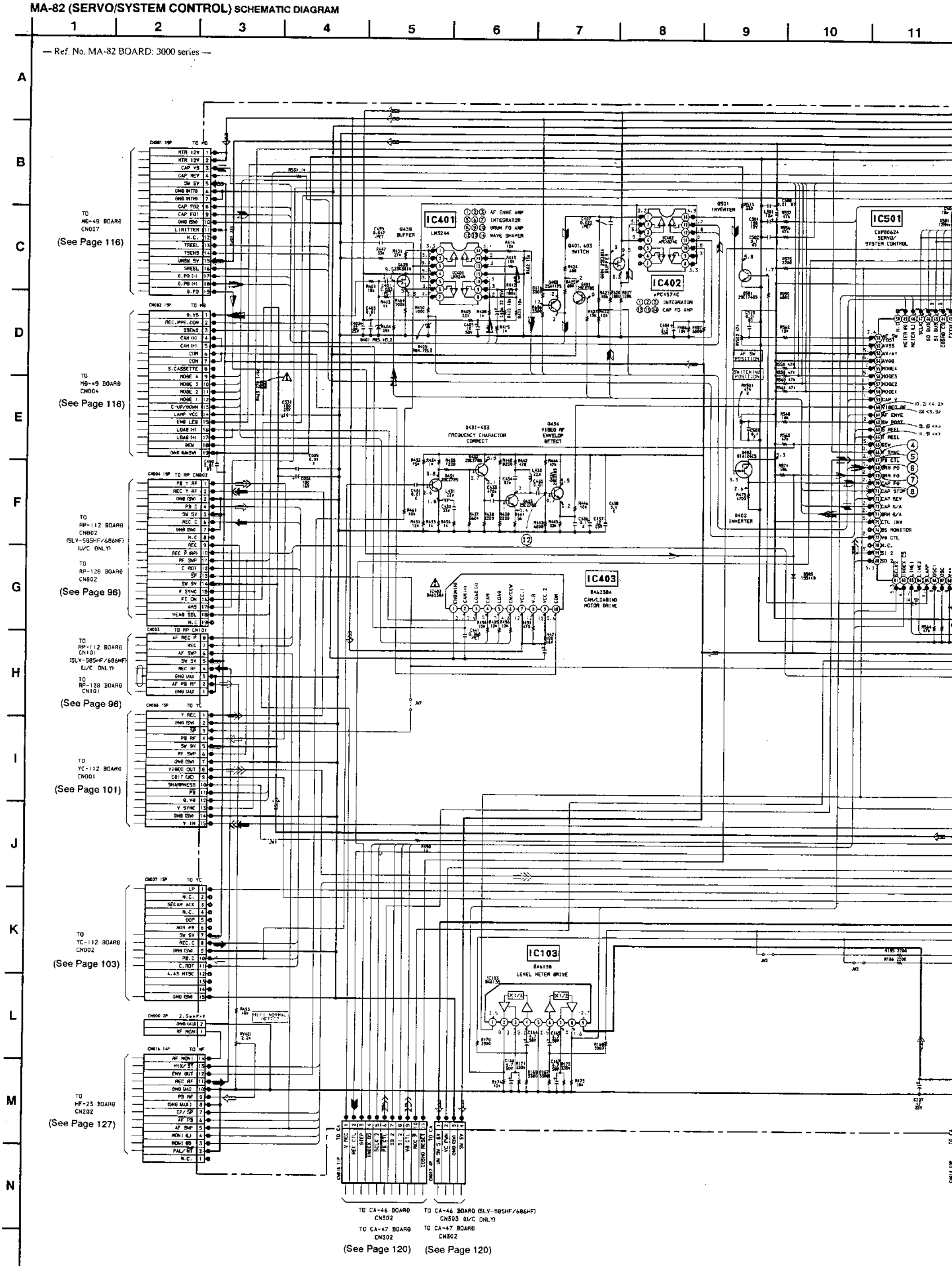
YC-112 BOARD

YC-112 BOARD

1 IC001 (9) PB — 0.6Vp-p
2 IC001 (21) PB — 2.2Vp-p
3 IC001 (24) REC — 1Vp-p
4 IC001 (26) PB — 0.44Vp-p
5 IC001 (30) REC — 0.8Vp-p
6 IC002 (5) REC — 0.8Vp-p
7 IC002 (7) PB — 0.2Vp-p
8 IC002 (9) REC — 0.9Vp-p
9 IC002 (19) REC/PB — 0.8Vp-p (13.5MHz)
10 IC002 (21) REC/PB — 1.2Vp-p
11 IC002 (23) PB — 0.7Vp-p
12 IC002 (24) PB — 0.2Vp-p

MA-82 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

— Ref. No. MA-82 BOARD: 3000 series —



5 6 7 8 9 10 11 12 13 14 15 16

IC401 LM324N
① ② ③ AF ENVE AMP
⑤ ⑥ ⑦ INTEGRATOR
⑧ ⑨ ⑩ DRUM FG AMP
⑪ ⑬ ⑭ WAVE SHAPER

IC402 μPC4574C
① ② ③ INTEGRATOR
⑫ ⑬ ⑭ CAP FG AMP

IC403 BA6238A
CAM/LOADING MOTOR DRIVE

IC501 CXP80624 SERVO/ SYSTEM CONTROL

IC601 M50555 ON SCREEN DISPLAY

IC602 μPC1555C PULSE DETECT

IC102 BA7021 VIDEO SWITCH

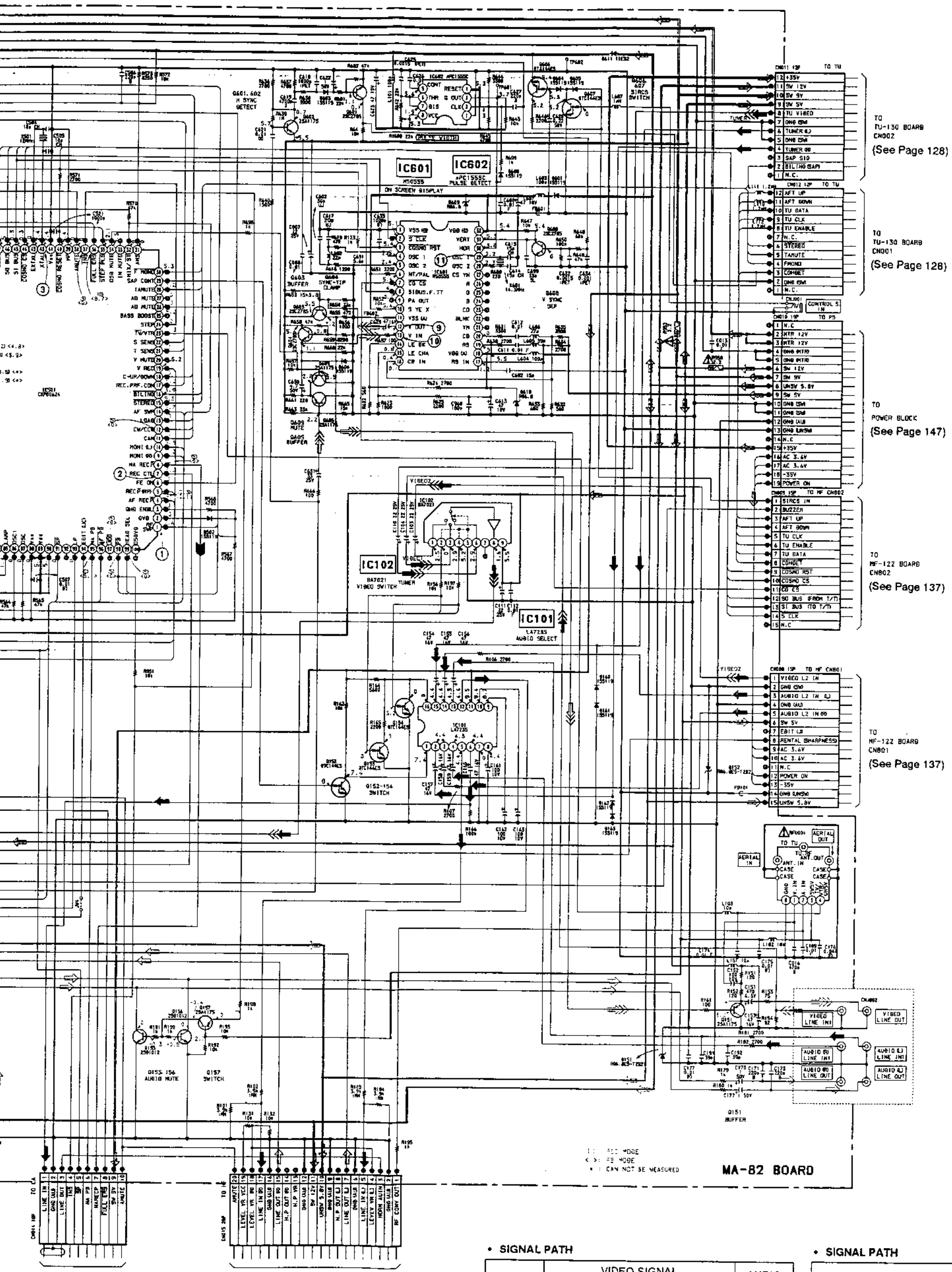
IC103 BA6138 LEVEL METER DRIVE

0439 BUFFER
0401, 403 SWITCH
0404 2SK3818 BUFFER
0501 INVERTER
0402 INVERTER
0431-433 FREQUENCY CHARACTOR CORRECT
0434 VIDEO RF ENVELOP DETECT
0401, 602 H SYNC DETECT
0403 SYNC-TIP CLAMP
0609 MUTE
0605 BUFFER
Q152-154 SWITCH
Q155, 156 AUDIO MUTE
Q157 SWITCH

TO CA-46 BOARD CN302
TO CA-47 BOARD CN302
TO CA-46 BOARD (SLV-585HF/686HF) CN303 (U/C ONLY)
TO CA-47 BOARD CN302
TO CA-46 BOARD (SLV-585HF/686HF) CN203 (U/C ONLY)
TO CA-47 BOARD CN203
TO HF-23 BOARD CN201

(See Page 120) (See Page 120) (See Page 120) (See Page 127)

SERVO/SYSTEM CONTROL SERVO/



( ) : REC MODE
< > : PB MODE
* : CAN NOT BE MEASURED

• **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	➡		

MA-82 (SERVO/SYSTEM CONTROL) PRINTED WIRING BOARD

— Ref. No. MA-82 BOARD: 3000 series —

MA-82 BOARD, COMPLETE
****

< IC >

IC101	8-759-804-80	IC	LA7235
IC102	8-759-927-56	IC	BA7021
IC103	8-759-961-38	IC	BA6138
IC401	8-759-008-71	IC	LM324N
IC402	8-759-113-18	IC	uPC4574C
IC403	8-759-983-45	IC	BA6238A
IC501	8-752-819-83	IC	CXP80624
IC601	8-759-636-15	IC	M50555-207Q
IC602	8-759-115-55	IC	uPC1555C

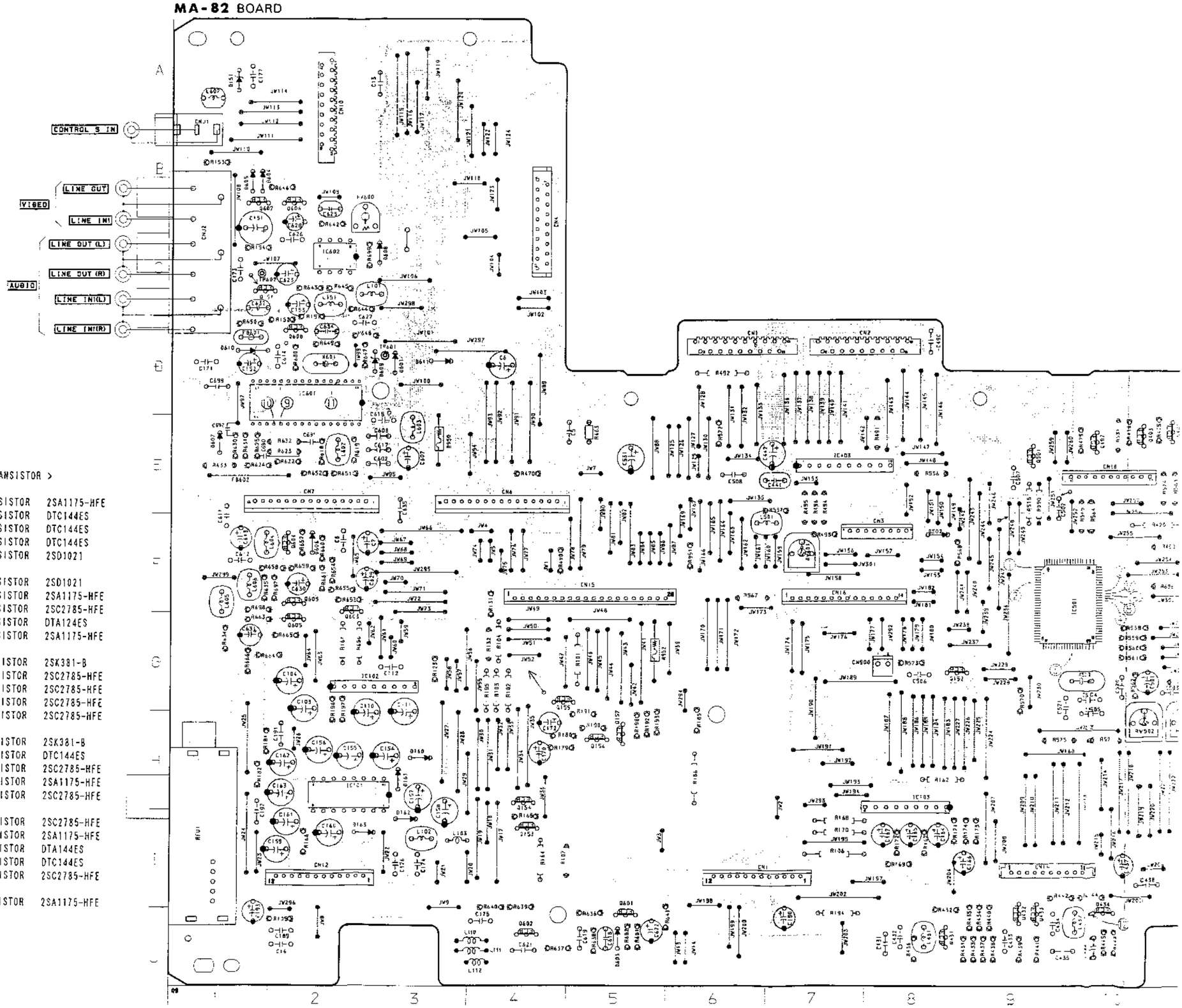
< DIODE >

D151	8-719-109-97	DIODE	RD6.8ES-B2
D152	8-719-109-97	DIODE	RD6.8ES-B2
D160	8-719-911-19	DIODE	1SS119
D161	8-719-911-19	DIODE	1SS119
D162	8-719-911-19	DIODE	1SS119
D163	8-719-911-19	DIODE	1SS119
D401	8-719-101-50	DIODE	RD5.1E-L2
D405	8-719-109-80	DIODE	RD4.7ESB1
D502	8-719-911-19	DIODE	1SS119
D505	8-719-911-19	DIODE	1SS119
D601	8-719-911-19	DIODE	1SS119
D603	8-719-911-19	DIODE	1SS119
D604	8-719-911-19	DIODE	1SS119
D605	8-719-911-19	DIODE	1SS119
D606	8-719-911-19	DIODE	1SS119
D608	8-719-911-19	DIODE	1SS119
D609	8-719-109-97	DIODE	RD6.8ES-B2
D610	8-719-109-97	DIODE	RD6.8ES-B2
D611	8-719-200-82	DIODE	11ES2

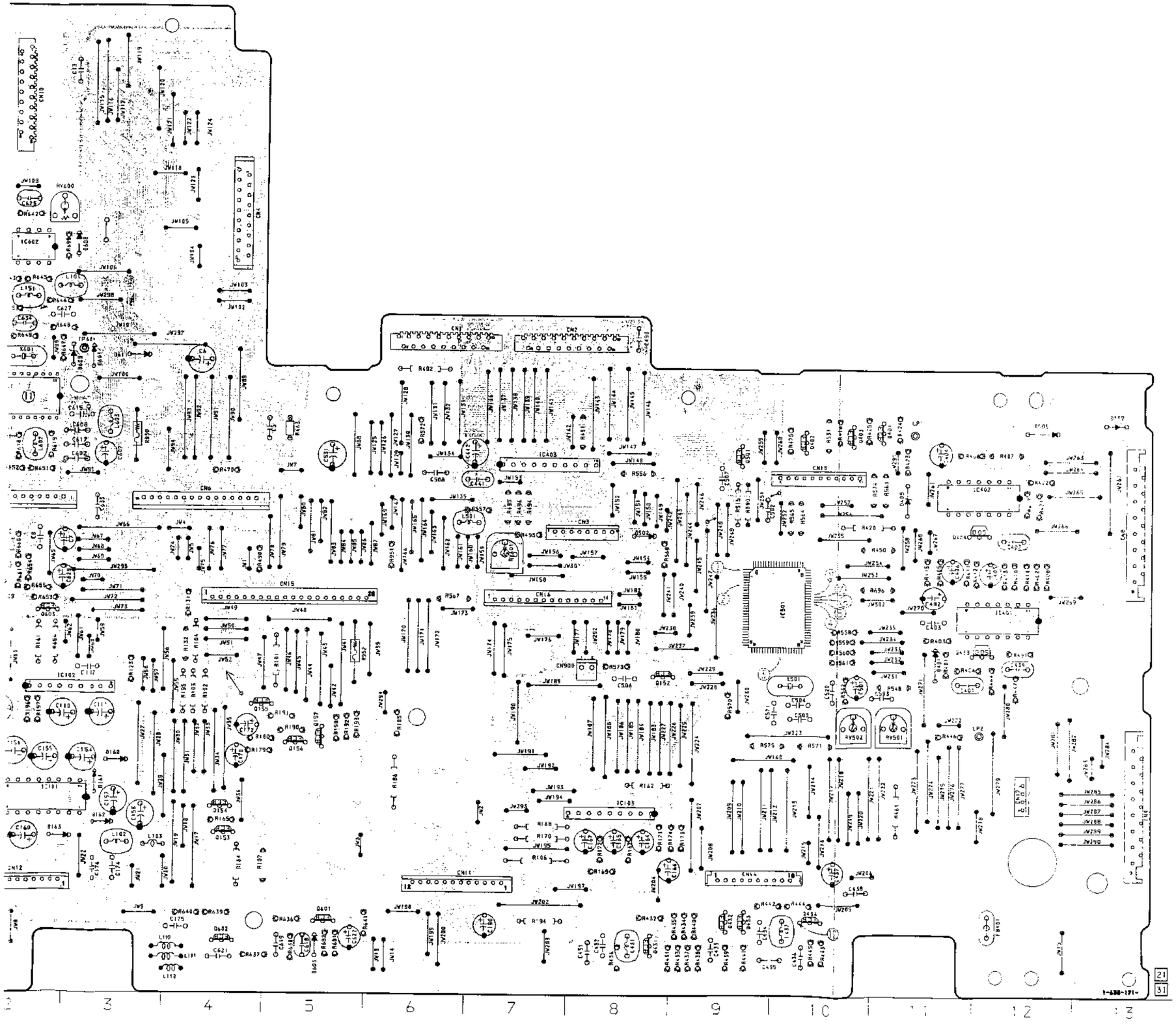
< TRANSISTOR >

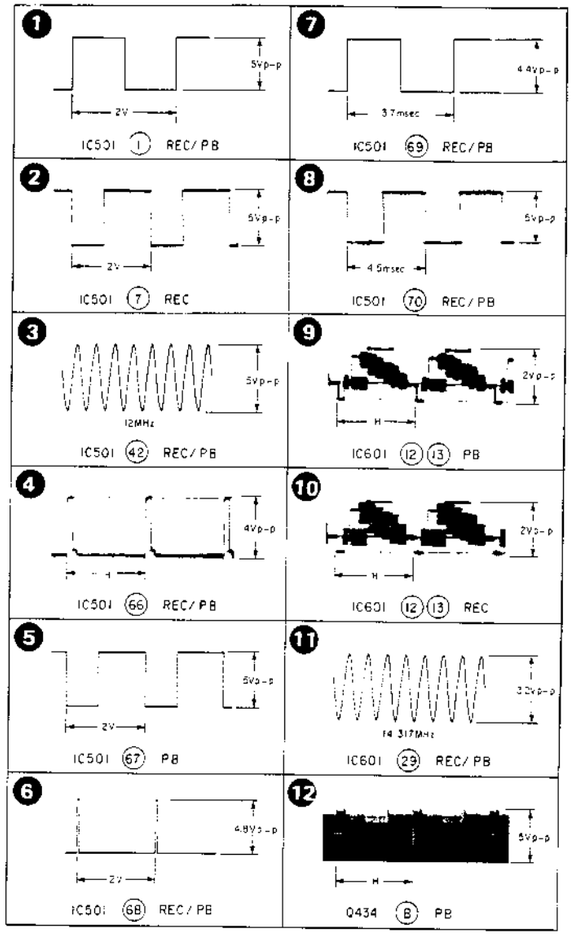
Q151	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q152	8-729-900-89	TRANSISTOR	DTC144ES
Q153	8-729-900-89	TRANSISTOR	DTC144ES
Q154	8-729-900-89	TRANSISTOR	DTC144ES
Q155	8-729-102-14	TRANSISTOR	2SD1021
Q156	8-729-102-14	TRANSISTOR	2SD1021
Q157	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q402	8-729-900-63	TRANSISTOR	DTA124ES
Q403	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q404	8-729-601-47	TRANSISTOR	2SK381-B
Q431	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q432	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q433	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q434	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q439	8-729-601-47	TRANSISTOR	2SK381-B
Q501	8-729-900-89	TRANSISTOR	DTC144ES
Q601	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q602	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q603	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q604	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q605	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q606	8-729-900-65	TRANSISTOR	DTA144ES
Q607	8-729-900-89	TRANSISTOR	DTC144ES
Q608	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q609	8-729-119-76	TRANSISTOR	2SA1175-HFE

MA-82 BOARD



MA-82 BOARD





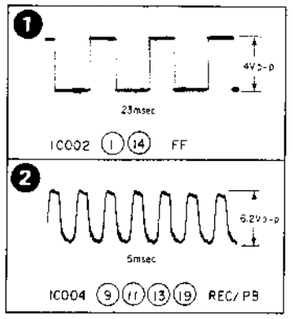
MA-82 BOARD

CN001	D-6	D502	F-8	Q202	H-6		
CN002	D-7	D505	E-12	Q203	I-6		
CN003	F-8	D601	D-3	Q204	I-5		
CN004	G-4	D603	J-5	Q401	E-11		
CN006	E-4	D604	B-1	Q402	E-10		
CN007	E-2	D605	B-1	Q403	E-10		
CN008	F-13	D606	F-2	Q404	E-11		
CN009	I-13	D608	C-2	Q431	J-8		
CN010	A-2	D609	D-2	Q432	J-9		
CN011	I-6	D610	D-1	Q433	J-10		
CN012	I-2	D611	D-3	Q434	J-10		
CN014	I-9			Q439	J-11		
CN015	F-5	IC101	H-2	Q440	F-3		
CN016	F-7	IC102	G-2	Q450	F-5		
CN017	I-2	IC103	I-8	Q501	E-9		
CN018	E-10	IC201	H-6	Q601	J-5		
		IC202	H-5	Q602	J-4		
D150	G-8	IC401	F-12	Q603	G-2		
D151	A-1	IC402	E-12	Q604	F-2		
D152	E-13	IC403	E-7	Q605	G-2		
D160	H-3	IC501	F-10	Q606	B-2		
D161	H-3	IC601	D-2	Q607	B-1		
D162	I-3	IC602	C-2	Q608	D-1		
D163	I-2			Q609	F-2		
D201	I-5	Q151	C-1				
D202	I-5	Q152	G-8	RV401	F-11		
D401	G-11	Q153	I-4	RV501	H-11		
D405	F-11	Q154	I-4	RV502	H-10		
D410	E-5	Q155	H-4	RV600	C-3		
D411	F-4	Q156	H-5				
D412	F-5	Q157	H-5				
D413	F-5	Q201	I-4				

MD-49 (MOTOR DRIVE) PRINTED WIRING BOARD

— Ref. No. MD-49 BOARD: 4000 series —

MD-49 BOARD



MD-49 BOARD, COMPLETE
****

< DIODE >

D001	8-719-985-00	DIODE	GL451VS1
D004	8-719-109-93	DIODE	RD6.2ES-B2
D005	8-719-109-93	DIODE	RD6.2ES-B2
D006	8-719-109-93	DIODE	RD6.2ES-B2
D007	8-719-109-93	DIODE	RD6.2ES-B2

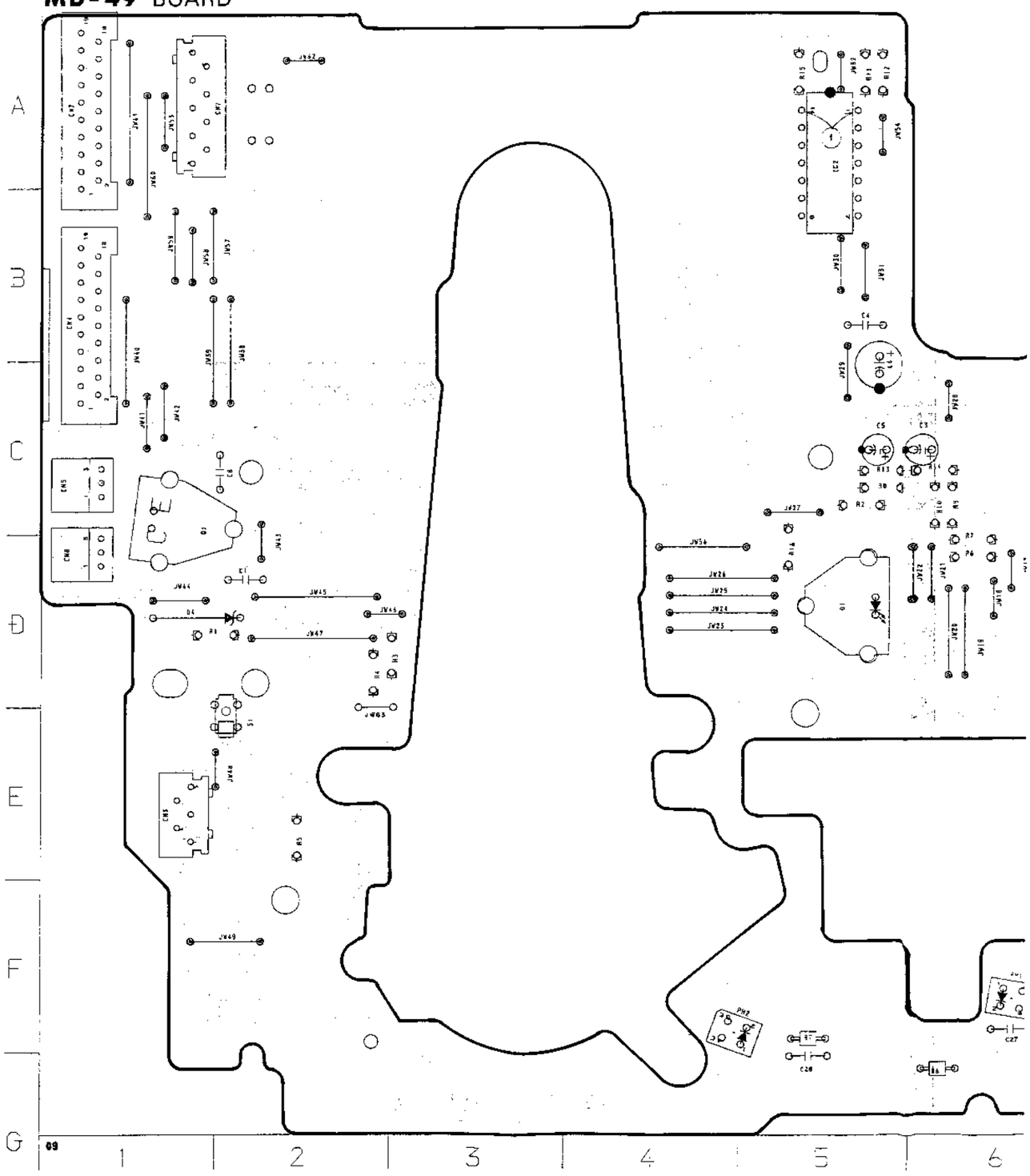
< IC >

IC002	8-759-938-12	IC	BA10324
IC004	8-759-234-03	IC	TA8424F

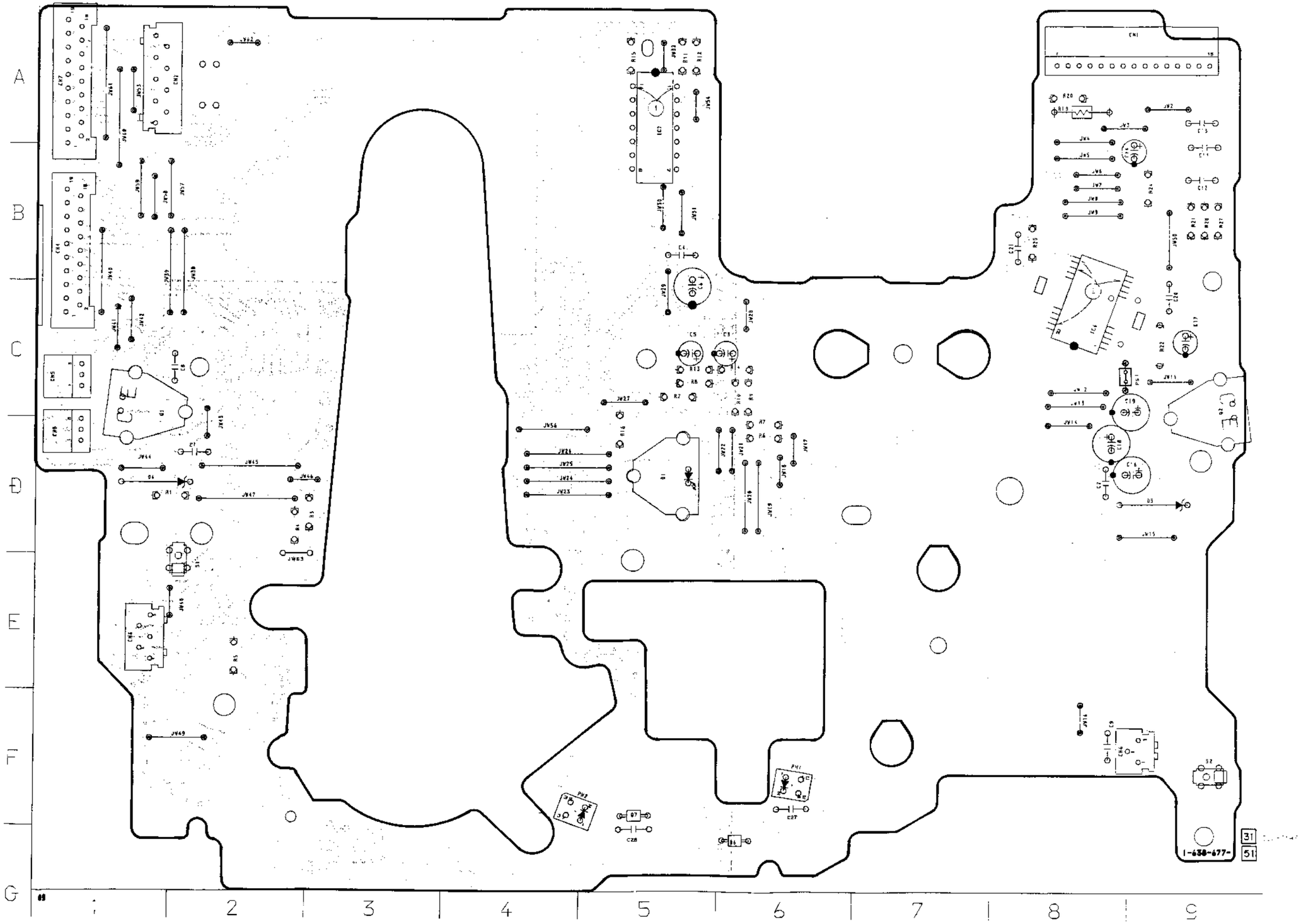
< TRANSISTOR >

Q001	8-729-926-31	PHOTO TRANSISTOR	PT483F1S
Q002	8-729-926-31	PHOTO TRANSISTOR	PT483F1S

MD-49 BOARD



MD-49 BOARD



MD-49 BOARD

CN001 A-9
CN002 A-1
CN003 E-1
CN004 B-1
CN005 C-1
CN006 F-8

D001 D-5
D004 D-1
D005 D-9
D006 F-6
D007 F-5

IC002 A-5
IC004 C-8

Q001 C-1
Q002 C-9

• **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			

MD-49 BOARD

M901
DRUM MOTOR

DRUM MOTOR

DRUM PG

DRUM FG

		CN001 15P L 2.0 mm
15	U	U 15
14	W	W 14
13	V	V 13
12	U (-)	U (-) 12
11	D PG (-)	D PG (-) 11
10	D PG (+)	D PG (+) 10
9	HALL BIAS (+)	HALL BIAS (+) 9
8	U (+)	U (+) 8
7	D.FG (-)	D.FG (-) 7
6	W (-)	W (-) 6
5	D.FG (+)	D.FG (+) 5
4	W (+)	W (+) 4
3	V (-)	V (-) 3
2	HALL BIAS (-)	HALL BIAS (-) 2
1	V (+)	V (+) 1

M902
CAPSTAN MOTOR

IC001 CAP MOTOR DRIVER

HALL DEVICE

RM001 FG

		CN002 9P B-B 2.0mm
1	MTR 12V	MTR 12V 1
2	C.VS	C.VS 2
3	CAP RVS	CAP RVS 3
4	SW 5V	SW 5V 4
5	GND (SW)	GND (SW) 5
6	CAP FG2	CAP FG2 6
7	CAP FG1	CAP FG1 7
8	GND (MTR)	GND (MTR) 8
9	LIMITER	LIMITER 9

Q001 T.SENS

Q002 S.SENS

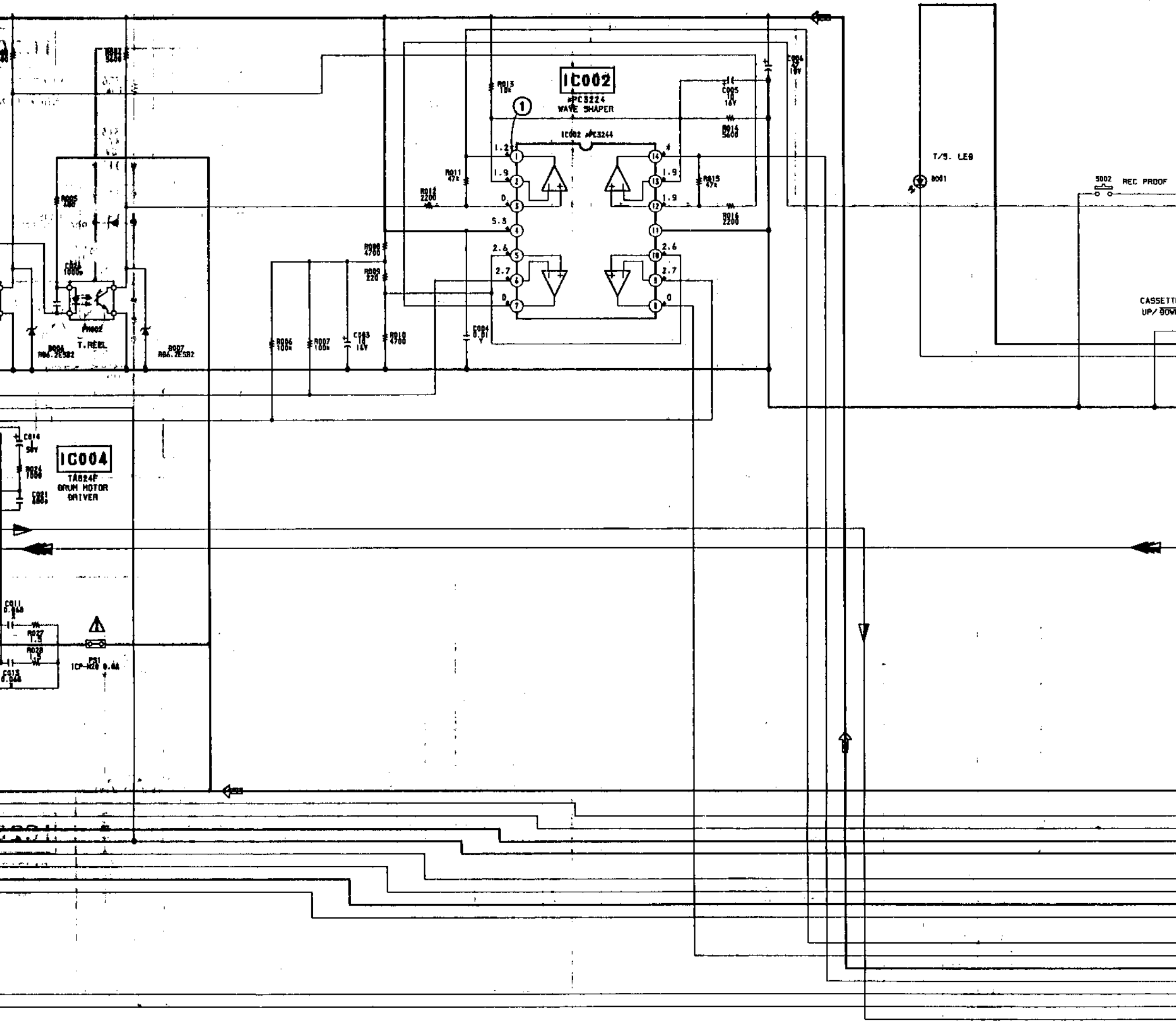
PH001 S.REEL

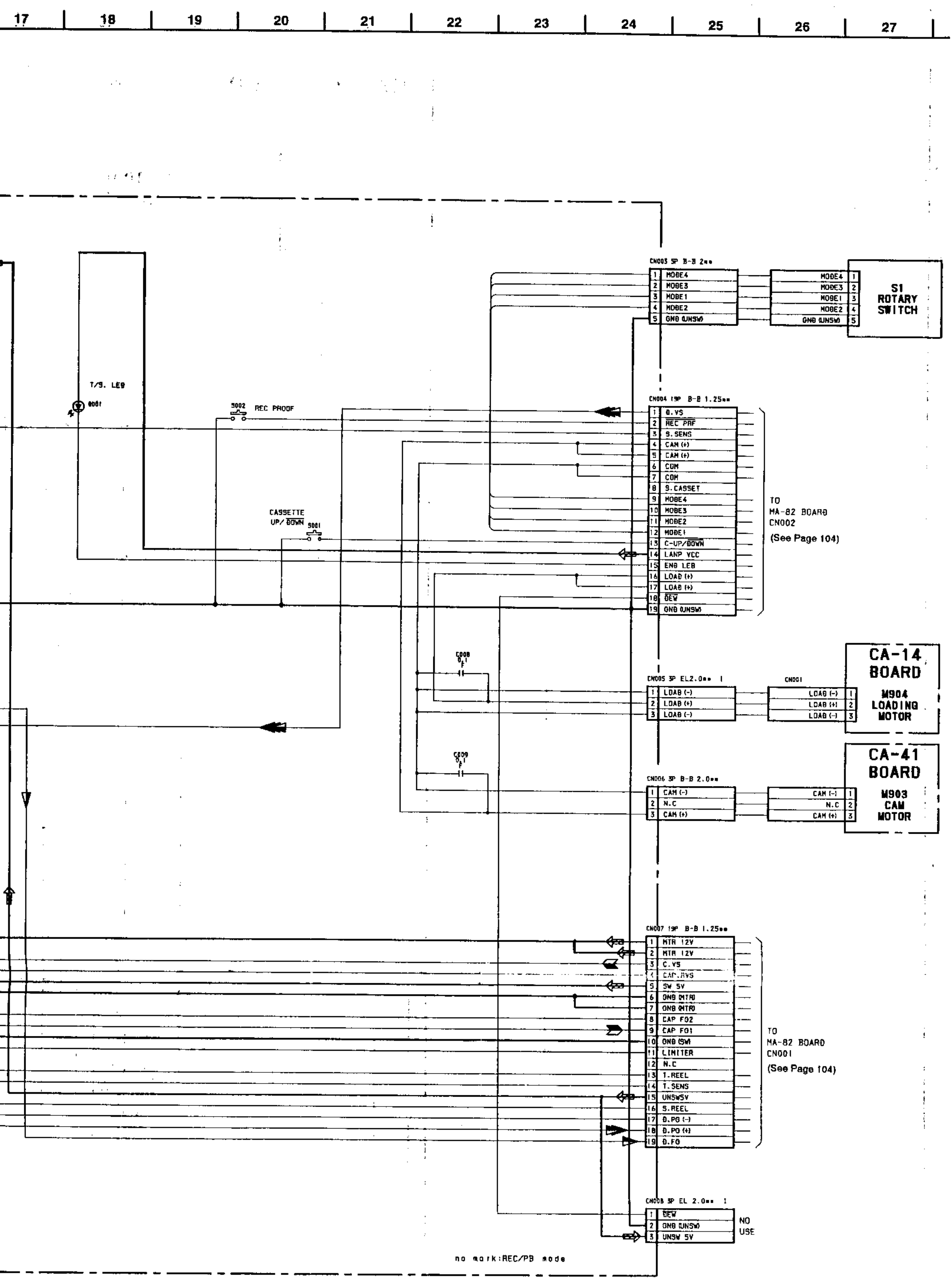
PH002 T.REEL

IC004
TA8424F
DRUM MOTOR DRIVER

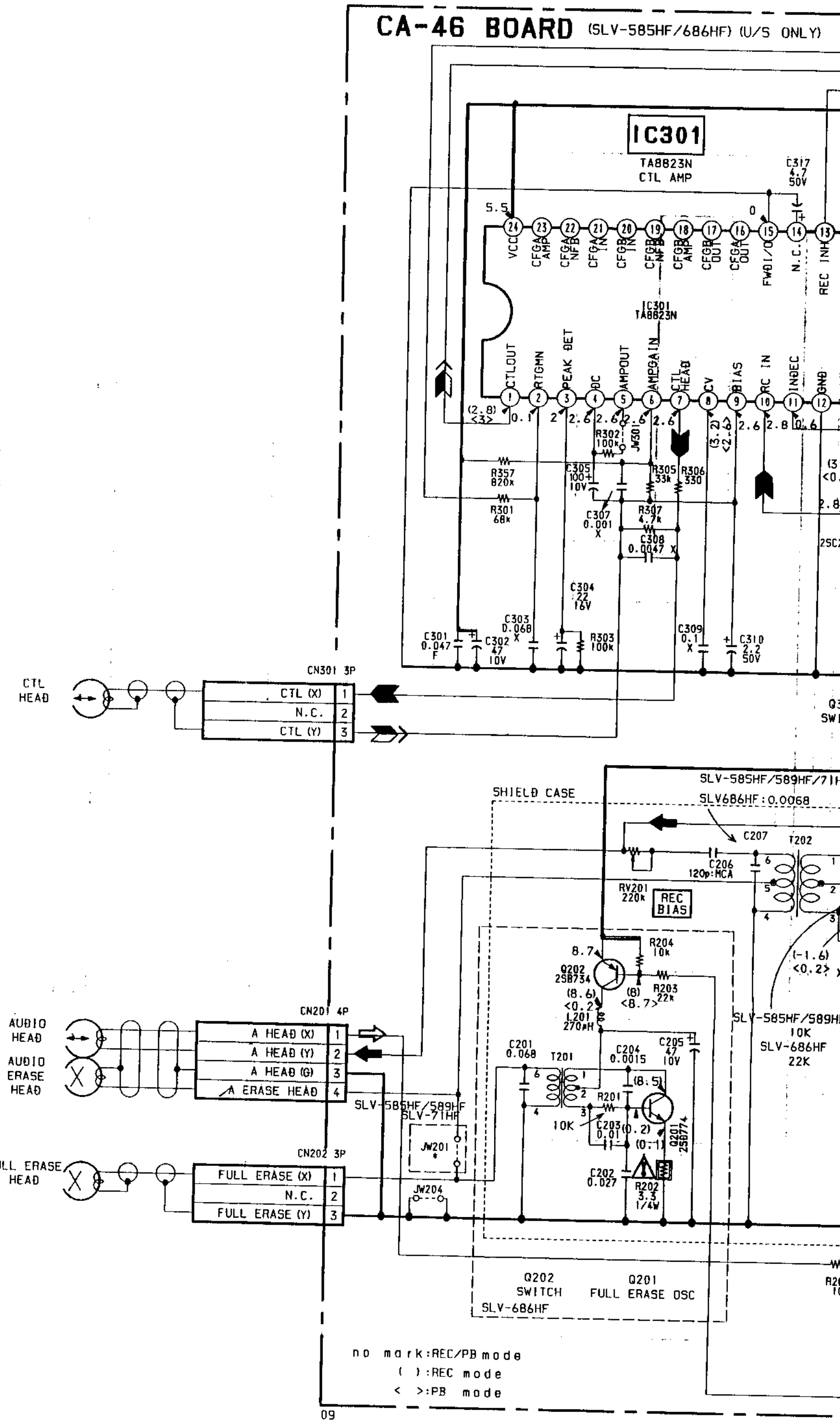
IC004 TA8424F

1	V REG	FGI (H)	20
2	HU (+)	FGI (-)	19
3	HU (-)	FGO	18
4	HV (+)	FGS	17
5	HV (-)	VS	16
6	HW (+)	FRS	15
7	HW (-)	N.C.	14
8	NF	LU	13
9	LW	VCC	12
10	RF	LV	11


IC002
μPC3224
WAVE SHAPER
IC002 μPC3244
IC004
TA824F
DRUM MOTOR
DRIVER
T/S. LED
REC PROOF
T. REEL


17
18
19
20
21
22
23
24
25
26
27
T/S. LED
8001
5002 REC PROOF
CASSETTE UP/DOWN 5001
CN003 5P B-B 2.0
1 MODE4
2 MODE3
3 MODE1
4 MODE2
5 GND (UNSW)
MODE4 1
MODE3 2
MODE1 3
MODE2 4
GND (UNSW) 5
S1 ROTARY SWITCH
CN004 19P B-B 1.25
1 D.VS
2 REC PRF
3 S.SENS
4 CAM (+)
5 CAM (+)
6 COM
7 COM
8 S.CASSET
9 MODE4
10 MODE3
11 MODE2
12 MODE1
13 C-UP/DOWN
14 LAMP VCC
15 ENB LED
16 LOAD (+)
17 LOAD (+)
18 DEW
19 GND (UNSW)
TO MA-82 BOARD CN002
(See Page 104)
C008 0.1 F
C009 0.1 F
CN005 3P EL2.0 I
1 LOAD (-)
2 LOAD (+)
3 LOAD (-)
CN001
LOAD (-) 1
LOAD (+) 2
LOAD (-) 3
CA-14 BOARD
M904 LOADING MOTOR
CN006 3P B-B 2.0
1 CAM (-)
2 N.C
3 CAM (+)
CAM (-) 1
N.C 2
CAM (+) 3
CA-41 BOARD
M903 CAM MOTOR
CN007 19P B-B 1.25
1 MTR 12V
2 MTR 12V
3 C.VS
4 CAP.RVS
5 SW 5V
6 GND (MTR)
7 GND (MTR)
8 CAP FG2
9 CAP FG1
10 GND (SW)
11 LIMITER
12 N.C
13 T.REEL
14 T.SENS
15 UNSW5V
16 S.REEL
17 D.PG (-)
18 D.PG (+)
19 D.FG
TO MA-82 BOARD CN001
(See Page 104)
CN008 3P EL 2.0 I
1 DEW
2 GND (UNSW)
3 UNSW 5V
NO USE
no mark:REC/PB mode

CA-46 BOARD (SLV-585HF/686HF) (U/S ONLY)

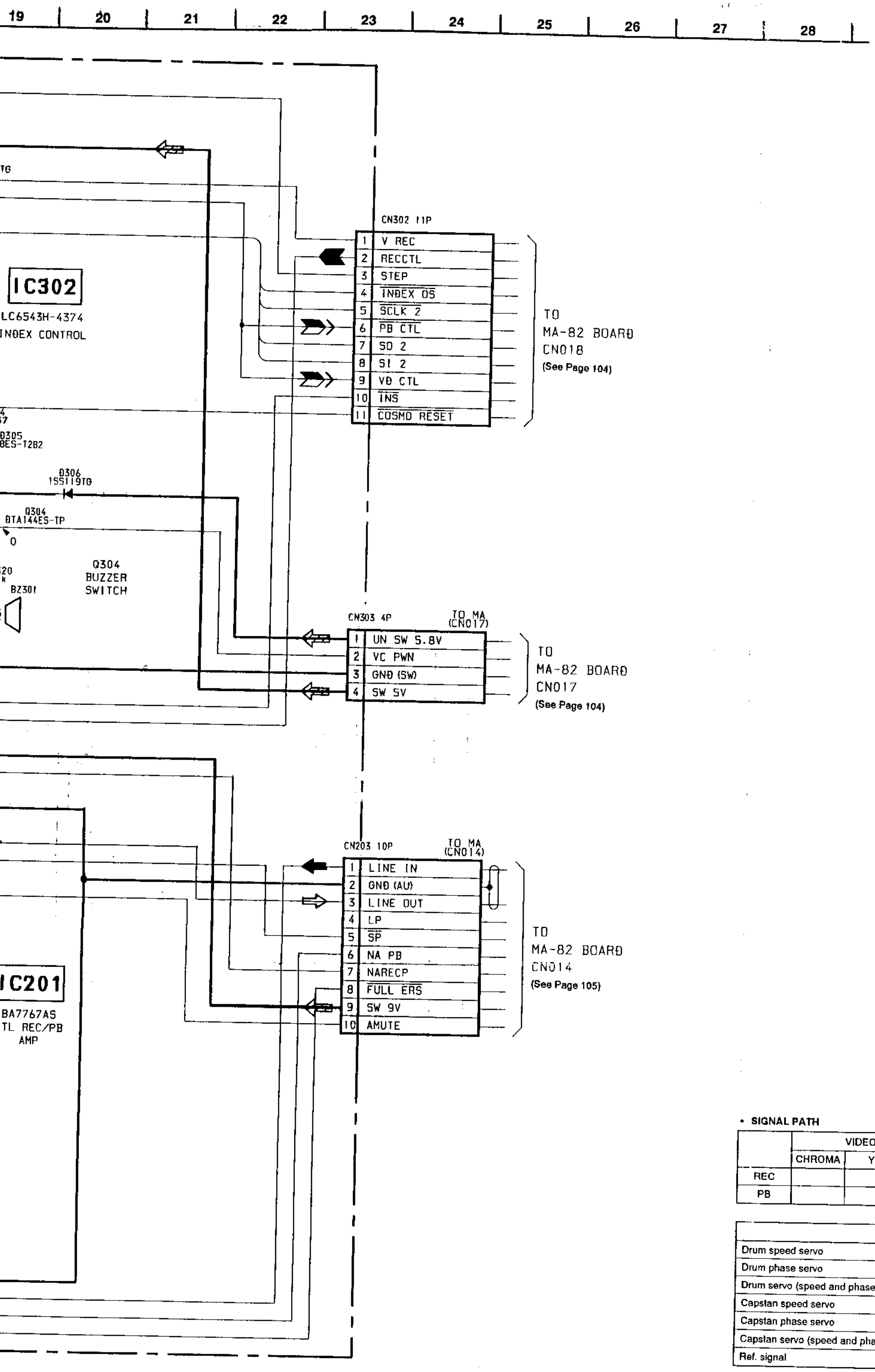


F/686HF) (U/S ONLY)

CA-47 BOARD

SLV-585HF/589HF/71HF : 0.0047

SLV686HF : 0.0068



- **SIGNAL PATH**

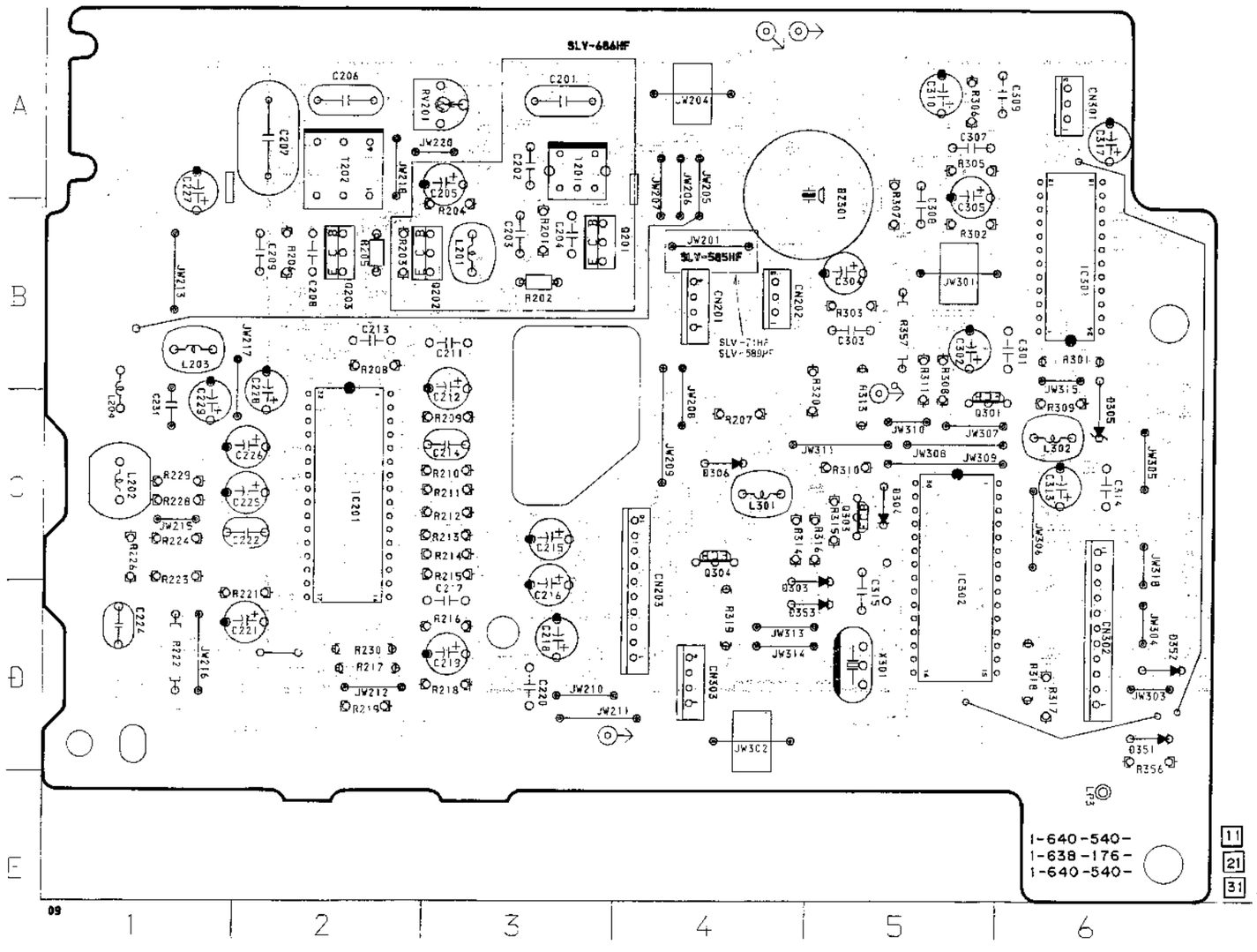
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				⇨

	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	➡		

CA-46/47 (CTL/AUDIO HEAD AMP) PRINTED WIRING BOARD

— Ref. No. CA-46/47 BOARD: 4000 series —

CA-46 BOARD
CA-47 BOARD



CA-46/47
BOARD

CN201 B-4
CN202 B-4
CN203 D-3
CN301 A-6
CN302 D-6
CN303 C-5
CN304 C-5
CN305 C-6
CN306 C-4
CN351 D-6
CN352 D-6
CN353 C-5

IC201 C-2
IC301 B-6
IC302 C-5

Q201 B-3
Q202 B-2
Q203 B-2
Q301 C-5
Q303 C-5
Q304 D-4

RV201 A-2

CA-46/47 BOARD, COMPLETE
****

< DIODE >

D303	8-719-911-19	DIODE	1SS119
D304	8-719-911-19	DIODE	1SS119
D305	8-719-109-97	DIODE	RD6.8ES-B2
D306	8-719-911-19	DIODE	1SS119
D351	8-719-911-19	DIODE	1SS119
D352	8-719-911-19	DIODE	1SS119
D353	8-719-911-19	DICDE	1SS119

< IC >

IC201	8-759-513-18	IC	BA7767AS
IC301	8-759-246-14	IC	TA8823N
IC302	8-759-822-65	IC	LC5543H-4374

< TRANSISTOR >

Q201	8-729-143-96	TRANSISTOR	2SD774-34 (SLV-686HF)
Q202	8-729-113-34	TRANSISTOR	2SB733-5 (SLV-686HF)
Q203	8-729-140-96	TRANSISTOR	2SD774-34
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q303	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q304	8-729-903-65	TRANSISTOR	DTA144ES

HF-23 (AUDIO PROCESS) PRINTED WIRING BOARD

— Ref. No. HF-23 BOARD: 5000 series —

HF-23 BOARD, COMPLETE
****

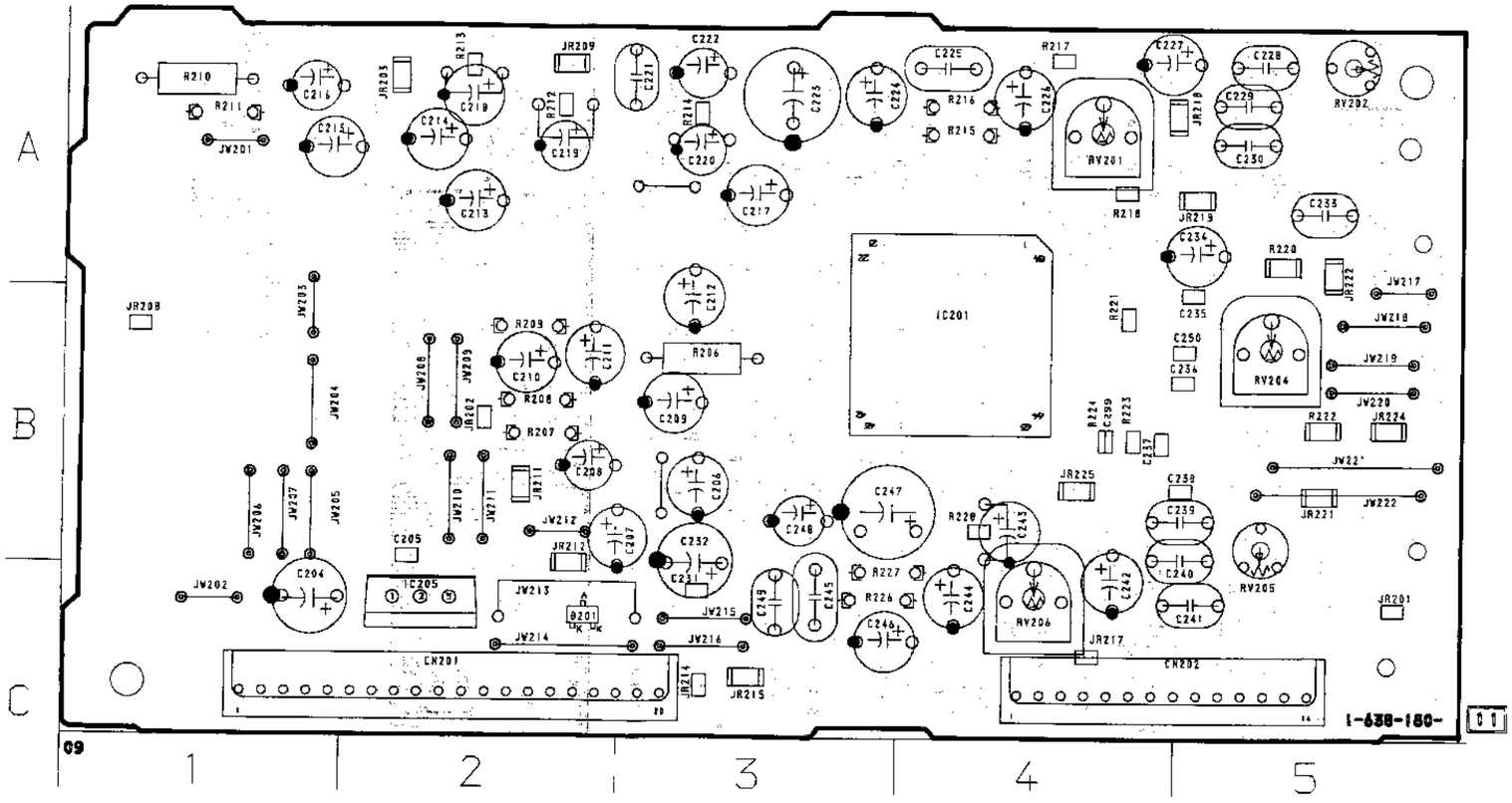
< DIODE >

D201	8-719-104-34	DIODE 1S2836

< IC >

IC201	8-759-421-08	IC	AN3937FBP
IC205	8-759-518-66	IC	BA178M05T
IC205	8-759-938-15	IC	BA178M05

HF-23 BOARD



HF-23 BOARD

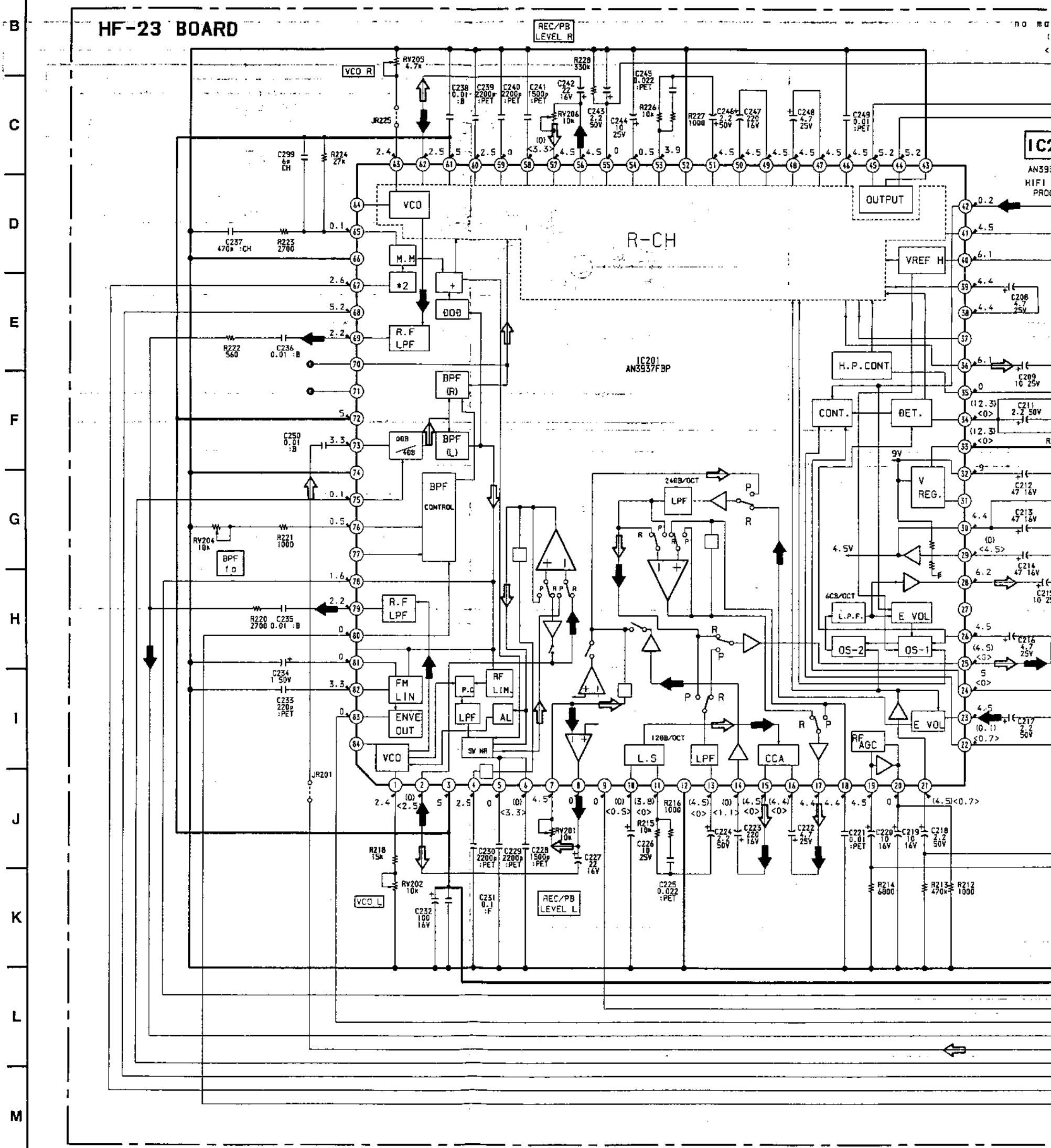
CN201 C-2
CN202 C-4

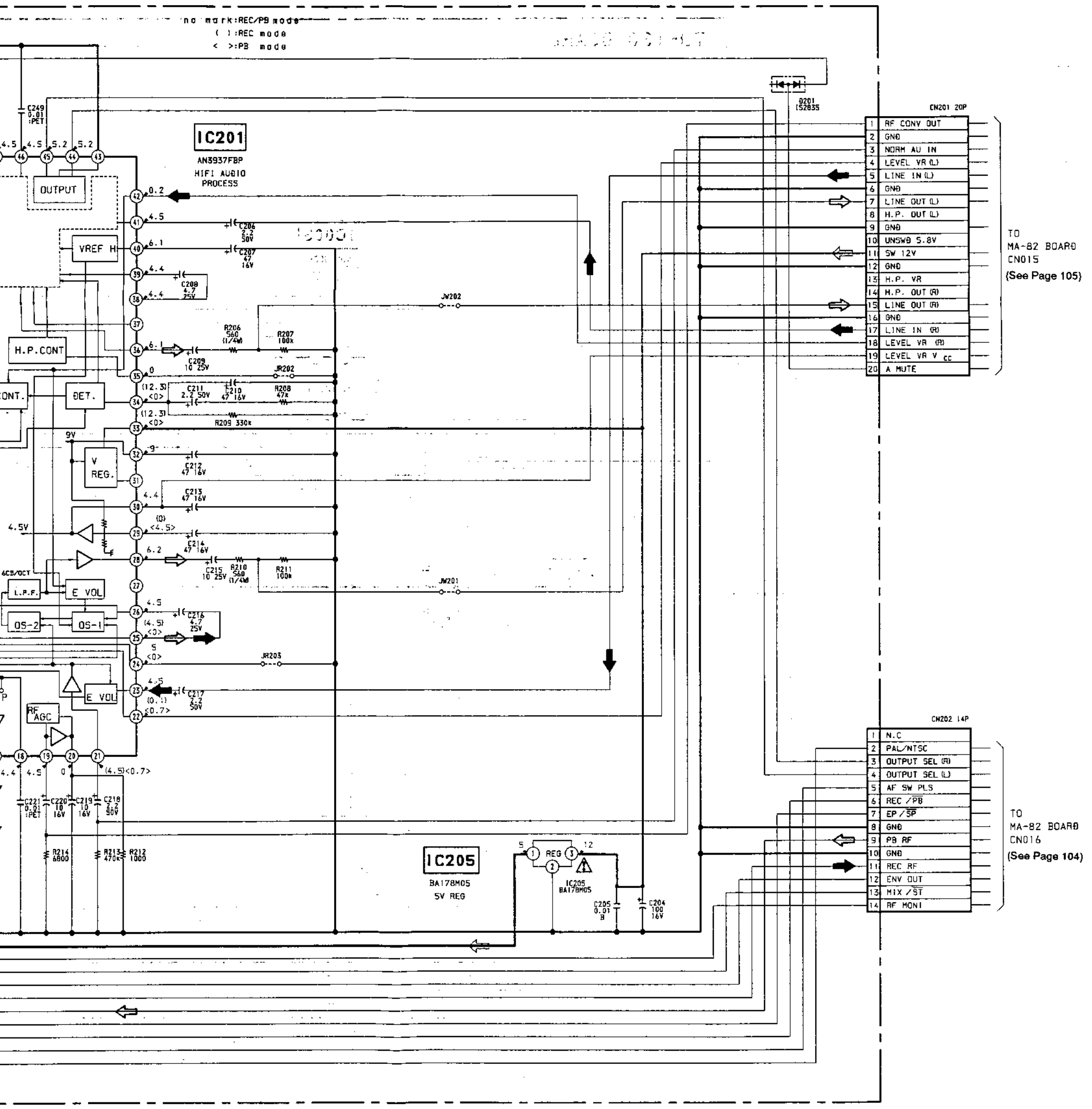
D201 C-2

IC201 B-4
IC205 C-2

RV201 A-4
RV202 A-5
RV204 B-5
RV205 C-5
RV206 C-4

— Ref. No. HF-23 BOARD: 5000 series —





• **SIGNAL PATH**

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

TU-130 (TUNER) SCHEMATIC DIAGRAM

— Ref. No. TU-130 BOARD: 5000 series —

TU-130 BOARD

no mark:REC/PB mode

IC003
NJM2903D
AFT UP/DOWN SWITCH

TU001
BTP-2A401

TO RFU

BU (NC) 1
BT (NC) 2
BH (NC) 3
AGC 4
BL (NC) 5
6
BM (SW12V) 7
8
IF 9
BTL (+30V) 10
BPL (+5V) 11
LOCK (NC) 12
CLK 13
DATA 14
ENABLE 15

D007 DA204K
PS001 ICP-N15 (0.6A)
R064 100
Q001 2SA733
R001 33k
L001 10uH
L002 100uH
C001 47 10V
C002 4.7 50V
C003 0.01 F
B001 R03EB1
R002 47k
C004 1000p 50V B
C005 100 16V
C098 22 25V
C014 47 16V
R099 18k
R013 3900
R016 22k
R015 22k
R014 4700
C015 0.022 F
R018 27k
R019 47k
R020 22k
Q009 2SC2412K
R005 100
L003 22uH
R003 330
R006 2200
R004 270
C008 43p SL
Q001 +30V REG
Q009 BUFFER

TO MA CN001 12P

AFT UP	12
AFT DOWN	11
TU DATA	10
TU CLK	9
TU ENABLE	8
N.C.	7
STEREO	6
TAMUTE	5
FMONO	4
N.C.	3
GND (SW)	2
N.C.	1

R008 1k
R009 1k
R010 220
R012 22k
Q002 DTC144EK

TO MA-82 BOARD CN012
(See Page 106)

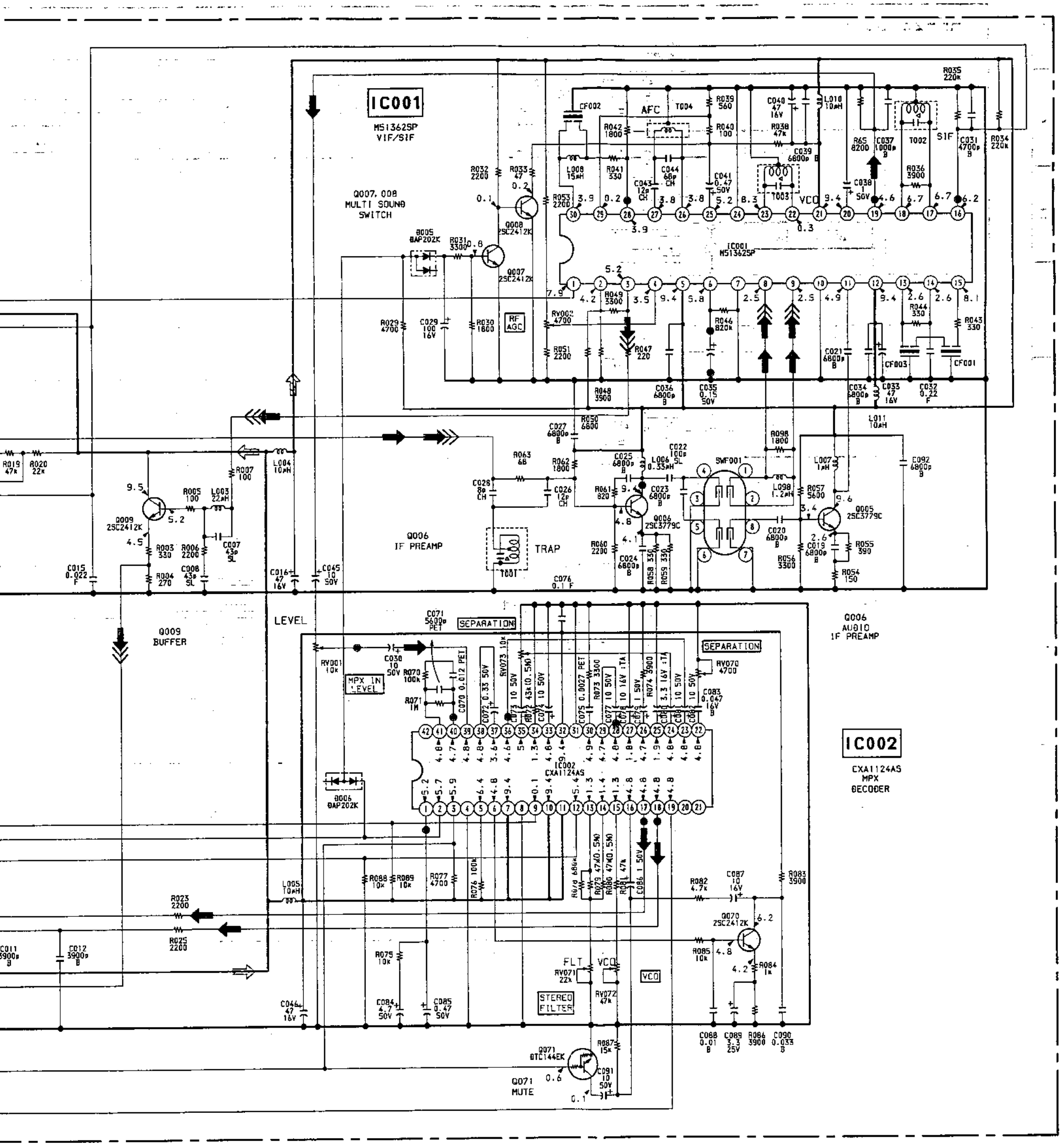
Q002 INVERTER

Q003 DTA144EK
Q004 DTC144EK
Q003, 004 SWITCH
C011 3900p B
C012 3900p B
R023 2200
R025 2200

TO MA CN002 12P

+35V	12
SW 12V	11
SW 9V	10
SW 5V	9
TU VIDEO	8
GND (SW)	7
TUNER (L)	6
GND (SW)	5
TUNER (R)	4
TUNER (SAP)	3
SAP	2
N.C.	1

TO MA-82 BOARD CN011
(See Page 106)



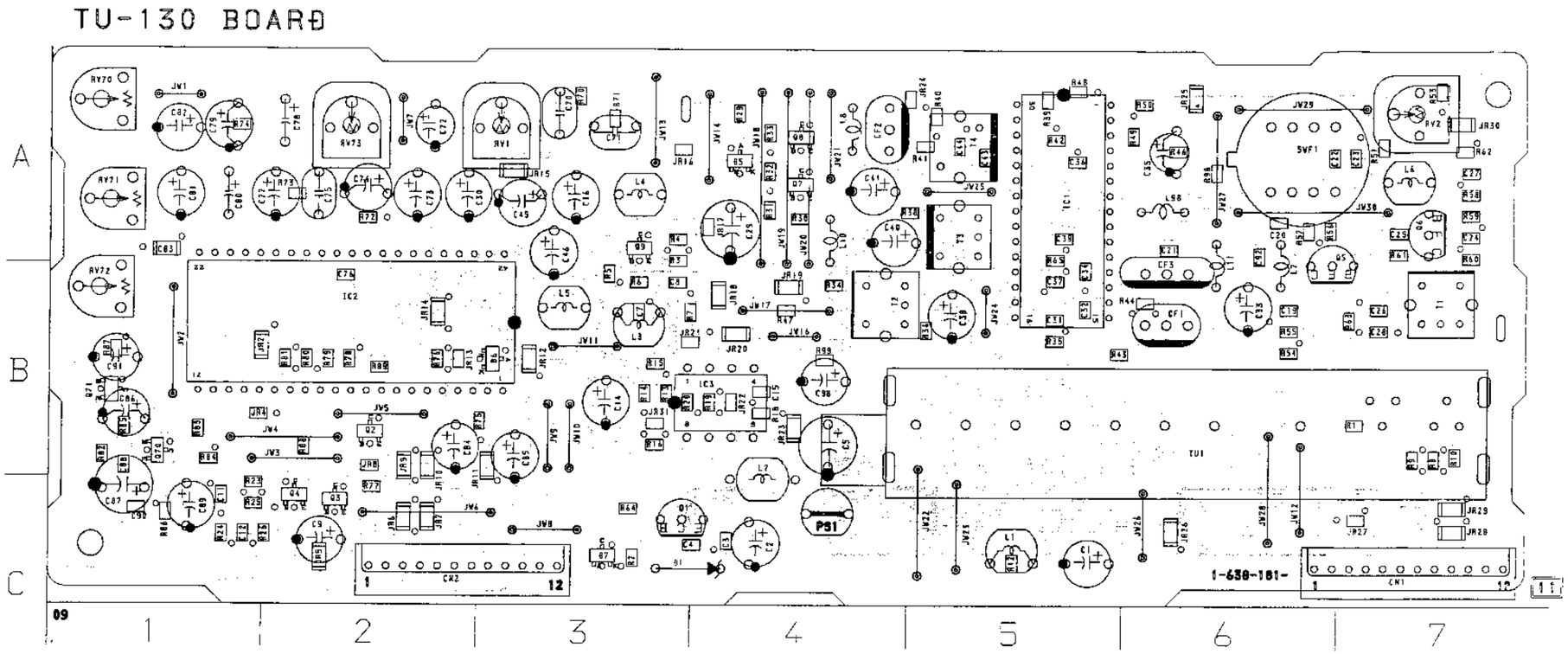
• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡⋙	➡
PB				

TU-130 (TUNER) PRINTED WIRING BOARD

— Ref. No. TU-130 BOARD: 5000 series —

TU-130 BOARD



TU-130 BOARD

CN001 C-7
CN002 C-2

D001 C-3
D005 A-4
D006 B-3
D007 C-3

IC001 A-5
IC002 B-2
IC003 B-4

Q001 C-3
Q002 B-2
Q003 C-2
Q004 C-2
Q005 B-7
Q006 A-7
Q007 A-4
Q008 A-4
Q009 A-3
Q070 B-1
Q071 B-1

RV001 A-3
RV002 A-7
RV070 A-1
RV071 A-1
RV072 B-1
RV073 A-2

TU-130 BOARD, COMPLETE
****

< DIODE >

D001	8-719-113-78	DIODE	RD33ES. B2
D005	8-719-104-34	DIODE	1S2836
D006	8-719-104-34	DIODE	1S2836
D007	8-719-800-76	DIODE	1SS226

< IC >

IC001	8-759-630-93	IC	M51362SP
IC002	8-752-035-71	IC	CXA1124AS
IC003	8-759-981-64	IC	LM2903DQ

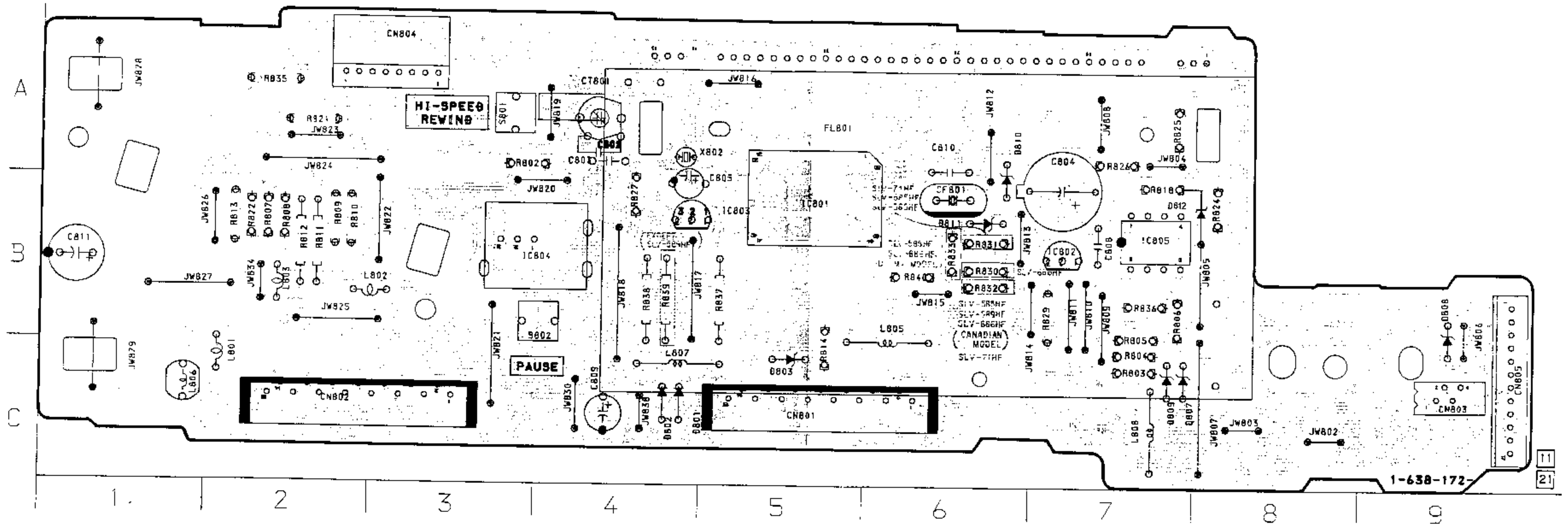
< TRANSISTOR >

Q001	8-729-173-38	TRANSISTOR	2SA733-K
Q002	8-729-901-01	TRANSISTOR	DTC144EK
Q003	8-729-901-05	TRANSISTOR	DTA144EK
Q004	8-729-901-01	TRANSISTOR	DTC144EK
Q005	8-729-822-90	TRANSISTOR	2SC3779C
Q006	8-729-822-90	TRANSISTOR	2SC3779C
Q007	8-729-923-74	TRANSISTOR	2SC2412K-QR
Q008	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q009	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q070	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q071	8-729-901-01	TRANSISTOR	DTC144EK

MF-122 (TIMER/MODE CONTROL) PRINTED WIRING BOARD

— Ref. No. MF-122 BOARD: 5000 series —

MF-122 BOARD



MF-122 BOARD

CN801	C-5
CN802	C-2
CN803	C-9
CN804	A-3
CN805	C-9
CT801	A-4
D801	C-4
D802	C-4
D803	C-5
D805	A-3
D806	A-4
D807	B-7
D808	B-9
D809	B-7
D810	B-6
D811	B-6
IC801	B-5
IC802	B-7
IC803	B-4
IC804	B-3
IC805	B-7

MF-122 BOARD, COMPLETE
****

< DIODE >

D801	8-719-200-82	DIODE	11ES2
D802	8-719-200-82	DIODE	11ES2
D803	8-719-110-08	DIODE	RD8.2ES-T2B
D807	8-719-109-97	DIODE	RD6.8ES-T2B
D808	8-719-109-97	DIODE	RD6.8ES-T2B
D809	8-719-109-97	DIODE	RD6.8ES-T2B
D810	8-719-109-97	DIODE	RD6.8ES-T2B
D811	8-719-109-97	DIODE	RD6.8ES-T2B

< IC >

IC801	8-752-818-75	IC	CXP50116-VSX112C
IC802	8-759-946-03	IC	S-8054ALP-LN-S
IC803	8-759-502-50	IC	S-8053HNB
IC804	1-466-131-21	IC	GP1U52X
IC805	8-759-996-58	IC	AK93C46

— Ref. No. MF-122 BOARD: 5000 series —

MF-122 BOARD

ND801

INDEX VTR EVERY WEEK Su Mo Tu We Th Fr Sa
SCAN
VPS DEW EDIT
AUTO TRACKING AV INSERT
SP LP EP TIMER REC
MAIN SUB NICAM AUTO
L SAP R STEREO x2
dB ∞ -15 10 6 3 0 3 6
R

ND801

F1 F1 F1 1G 2G 3G 4G 5G 6G 7G 8G 9G 10G 11G 12G NC NC P1 P2 P6 P7 P3 P5 P4 P16 P8 P9 P13 P14 P10 P12 P11 P15 NC NC NC F2 F2 F2

TEST POINT TRACON CENTER

TEST POINT

R835 1200

CNB04 BP

DUAL MODE SHUTTLE
REVERSE FORWARD PLAY STOP

1	FWR/RVS	FWR/RVS 1
2	RING 2	RING 2 2
3	RING 1	RING 1 3
4	COM	COM 4
5	RING 0	RING 0 5
6	PLAY	PLAY 6
7	KEY COM	KEY COM 7
8	STOP	STOP 8

R821 1.2k

41

IC801
CXP50116-219Q
TIMER/
MODE CONTROL

IC805
BR93C46A-EA
EEP ROM

IC804
GP1U52X
REMOTE CONTROL
RECEIVER

IC803
PST572H
RESET PULSE
GEN

IC802
PST572C
POWER FAIL
DETECT

CF801 4.19MHz

X802

R824 4.7k
R825 4.7k
R826 4.7k

R836 1k
R818 10k
R813 47k
R822 10k
R829 10k
R830 47k
R831 47k
R832 47k
R833 47k

SLV-686HF
SLV-589HF
SLV-585HF
SLV-589HF
SLV-585HF
SLV-686HF
(US MODEL)
(PX MODEL)
(MX MODEL)
SLV-714HF SLV-686HF
(CANADIAN MODEL)

R837 4.7k
R838 4.7k
R803 4.7k
R804 4.7k
(EXCEPT)
(SLV-589HF)
R839 4.7k
R840 4.7k
R805 4.7k
R806 4.7k
R807 4.7k
R808 4.7k
R809 4.7k
R810 4.7k
R827 1k

R812 1.8k
R811 1.2k

HI-SPEED REWIND
PAUSE
CLOCK SET
S801
S802

FWD/RVS
SIRCS IN
POWER FAIL
PWM
AFT UP
AFT DOWN
TU CLK
TU ENABLE
TU DATA
CG HOST
COSMO AST
COSMO CS
CG CS
S IN
S OUT
SCLK
EO
AD7
AD6

JW837

8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22

BOARD

no mark:REC/PB mode
( ):REC mode
< >:PB mode

IC805
BR93C46A-EA
EEP ROM

IC801
CXP50116-218Q
TIMER/
MODE CONTROL

IC804
GP1U52X
REMOTE CONTROL
RECEIVER

IC803
PST572H
RESET PULSE
GEN

IC802
PST572C
POWER FAIL
DETECT

CN805 12P B-B (TO MF123 CN501)

1	RESET
2	A04
3	BASS BOOST
4	GND (UNSW)
5	RENTAL (SHARPNESS)
6	EDIT (UC)
7	SW5V
8	AUDIO L2 IN (R)
9	GND (AU)
10	AUDIO L2 IN (L)
11	GND (SW)
12	VIDEO L2 IN

TO
MF-123 BOARD (SLV-585HF/686HF)
CN501 (U/C ONLY)
(See Page 142)
TO
MF-142 BOARD
CN501

CN801 15P B-B (TO MA CN008)

1	VIDEO L2 IN
2	GND (SW)
3	AUDIO L2 IN (L)
4	GND (AU)
5	AUDIO L2 IN (R)
6	SW5V
7	EDIT (UC)
8	RENTAL (SHARPNESS)
9	AC3.6V
10	AC3.6V
11	N.C
12	POWER ON
13	-35V
14	GND (UNSW)
15	UNSW5.8V

TO
MA-82 BOARD
CN008
(See Page 108)

CN802 15P B-B (TO MA CN009)

1	SIRCS IN
2	BUZZER
3	AFT UP
4	AFT DOWN
5	TU CLK
6	TU ENABLE
7	TU DATA
8	CG HDET
9	COSMO RST
10	COSMO CS
11	CG CS
12	SO BUS (TO COSMO)
13	SI BUS (FROM COSMO)
14	SCLK
15	NC

TO
MA-82 BOARD
CN009
(See Page 106)

CN803 4P

1	AD6
2	AD5
3	AD7
4	GND (UNSW)

GND (UNSW)
AD7
AD5
AD6

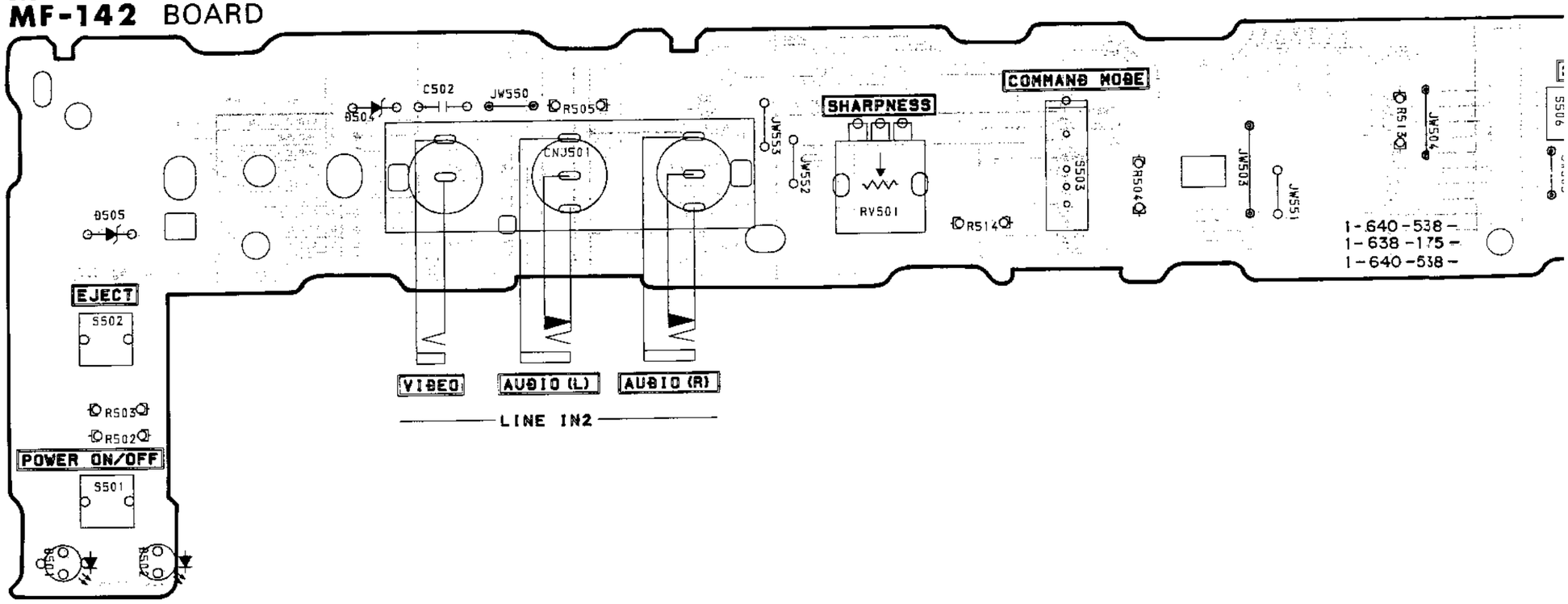
SWITCH BLOCK (CONTROL)

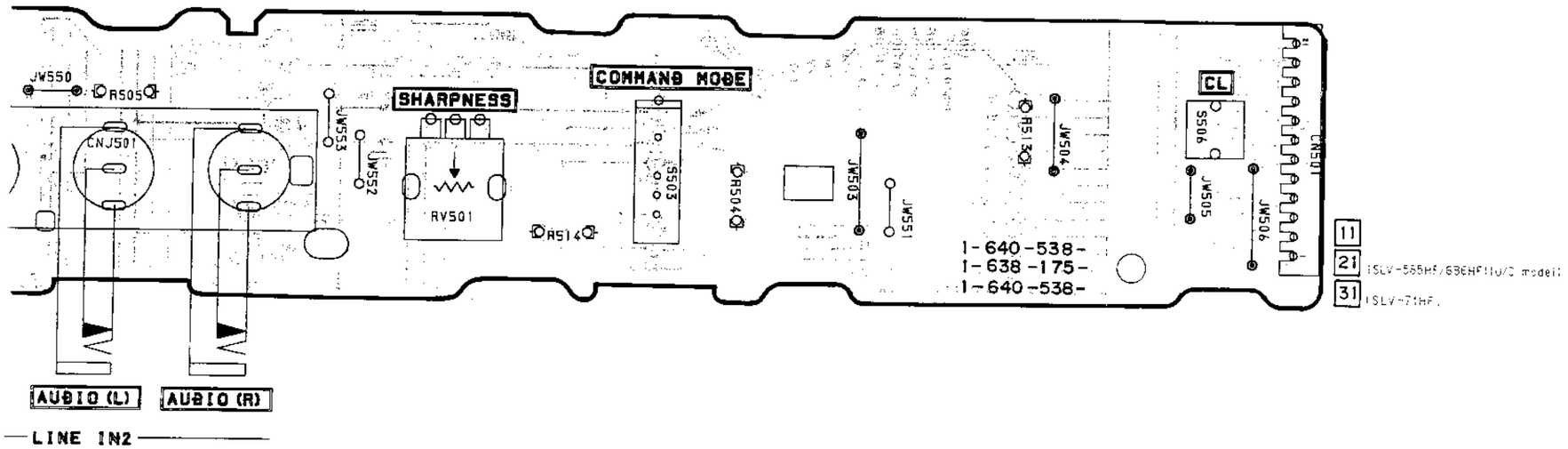
R001 1260 R004 1860 R007 3270 R010 8710
S001 S002 S003 S004 S005
TIMER REC ON/OFF | REC MODE (EP/SP) | ANT TV/VTR | VIDEO INSERT | AUDIO INSERT
R032 1260 R005 1860 R008 3270
S006 S007 S008 S009
REC | AUTO/MANUAL | TRACKING NORMAL | CHANNEL (+)
R003 1260 R006 1860 R009 3270 R011 8710
S010 S011 S012 S013 S014
QUICK TIMER | INPUT SELECT | TRACKING SLOW | CHANNEL (-) | EDIT ON/OFF

MF-123/142 (VIDEO/AUDIO IN/OUT) PRINTED WIRING BOARD

— Ref. No. MF-123/142 BOARD: 5000 series —

MF-123 BOARD (SLV-585HF/686HF/HG/C ONLY)
MF-142 BOARD





MF-123/142 BOARD, COMPLETE

< DIODE >

D501	8-719-940-82	DIODE	SLR-34MC3
D502	8-719-940-82	DIODE	SLR-34MC3
D504	8-719-109-97	DIODE	RD6.8ES-T2B

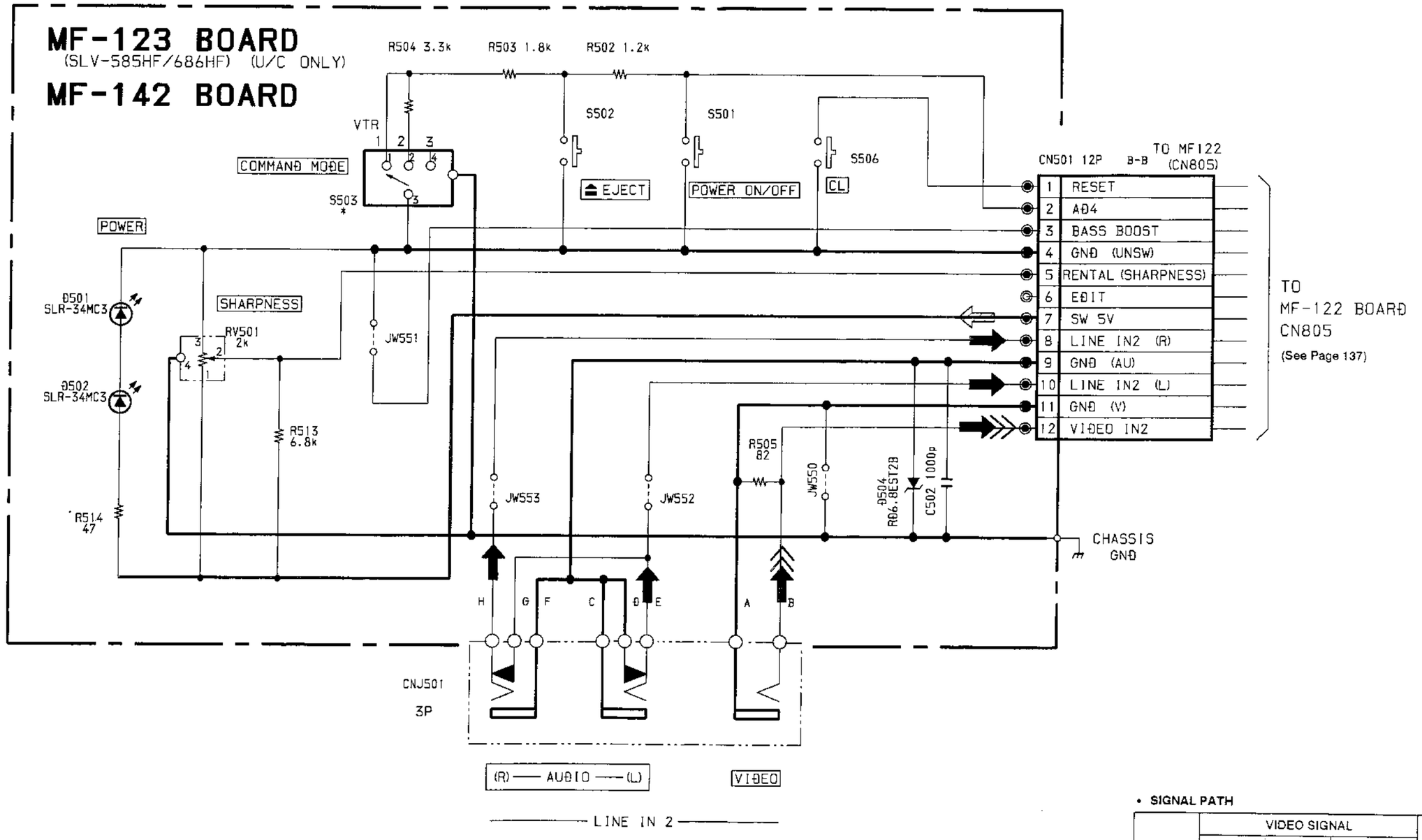
SIGNAL IN/OUT SIGNAL IN/OUT

MF-123/142 (VIDEO/AUDIO IN/OUT) SCHEMATIC DIAGRAM

— Ref. No. MF-123/142 BOARD: 5000 series —

MF-123 BOARD
(SLV-585HF/686HF) (U/C ONLY)

MF-142 BOARD



• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➠	➡
PB			⇨	⇨

PS-274 (POWER), OL-11 (POWER IN), TR-61 (POWER DRIVE), TR-62 (POWER DRIVE) PRINTED WIRING BOARDS

— Ref. No. PS-274 BOARD: 5000 series, OL-11 BOARD: 8000 series, TR-61 BOARD: 6000 series, TR-62 BOARD: 7000 series —

Note: The following parts of power supply block assemblies should be referred to the SUPPLEMENT-1.
SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.

PS-274 BOARD

CN901 A-3
CN902 B-4
CN903 C-3

SLV-585HF/686HF: U/C ONLY

D901 A-5
D902 B-4
D903 B-2
D904 B-1
D905 C-8
D906 C-7
D907 B-6
D908 B-1
D909 B-3
D910 B-4

Q902 B-5
Q903 B-4
Q904 A-4
Q906 B-3
Q907 B-3
Q908 B-3
Q909 B-2
Q910 B-2
Q911 B-1

PS-274 BOARD, COMPLETE
****

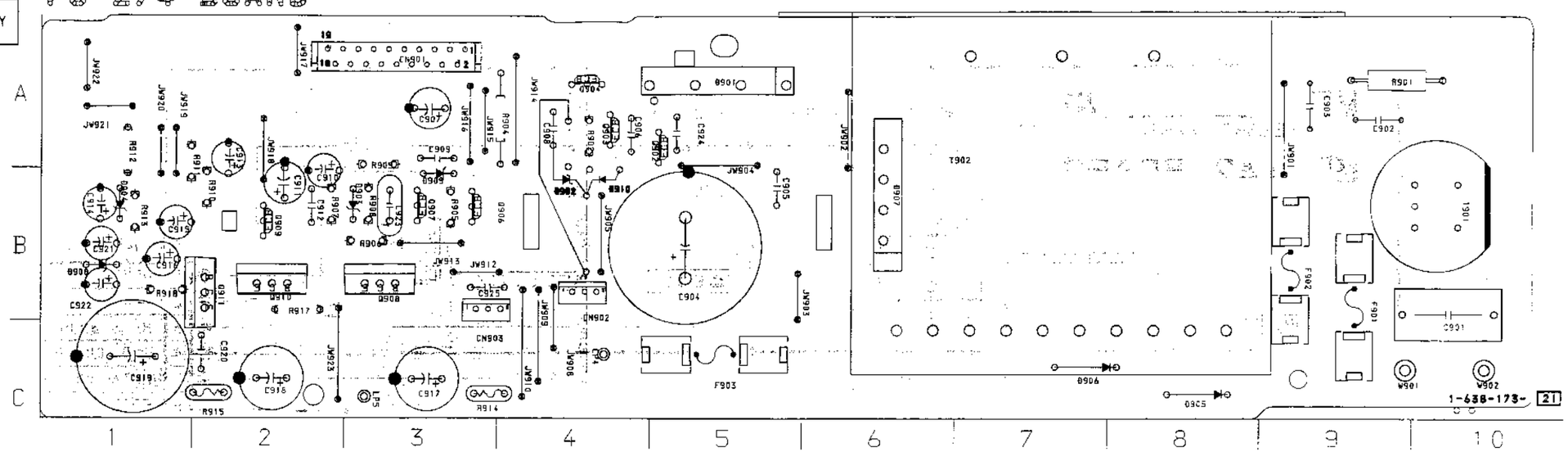
< DIODE >

D901	8-719-510-22	DIODE	D3SB60
D902	8-719-110-36	DIODE	RD13ES-B2
D903	8-719-109-85	DIODE	RD5.1ES-B2
D904	8-719-109-93	DIODE	RD5.6ES-B2
D905	8-719-200-82	DIODE	11ES2
D906	8-719-200-82	DIODE	11ES2
D907	8-719-511-40	DIODE	S1VB40
D908	8-719-109-97	DIODE	RD6.8ES-B2
D909	8-719-110-63	DIODE	RD24ES-B2
D910	8-719-911-19	DIODE	1SS119

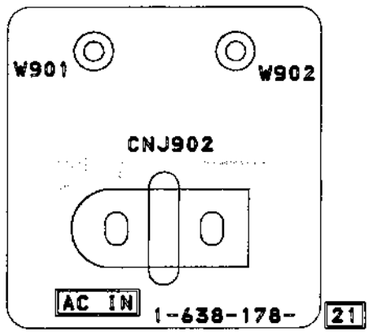
< TRANSISTOR >

Q902	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q903	8-729-900-61	TRANSISTOR	DTA114ES
Q904	8-729-900-89	TRANSISTOR	DTC144ES
Q906	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q907	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q908	8-729-111-55	TRANSISTOR	2SD1312-K
Q909	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q910	8-729-111-55	TRANSISTOR	2SD1312-K
Q911	8-729-111-55	TRANSISTOR	2SD1312-K

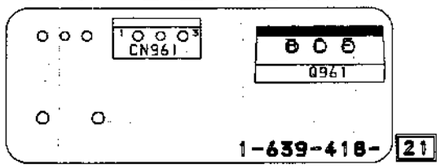
PS-274 BOARD



OL-11 BOARD



TR-62 BOARD

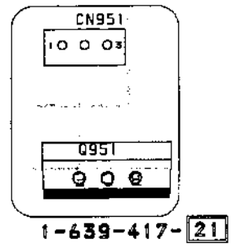


TR-62 BOARD
****

< TRANSISTOR >

Q961 8-729-111-55 TRANSISTOR 2SD2061-F

TR-61 BOARD



TR-61 BOARD
****

< TRANSISTOR >

Q951 8-729-111-55 TRANSISTOR 2SD2061-F

— Ref. No. PS-274 BOARD: 5000 series, OL-11 BOARD: 8000 series, TR-61 BOARD: 6000 series, TR-62 BOARD: 7000 series —

SLV-585HF/686HF : U/C ONLY

AC IN 120V 60Hz

CNJ902

(AC IN)

OL-11

W901 (RED)

W902 (BLUE)

F901 1.6A 125V

C901 0.1 250V

T901

R901 6.8M 1/2W

C902 2200p 400V

C903 2200p 400V

CHASSIS GND

T902

F902 4A 125V

D901 RBA-406B

C904 10000 25V

C905 0.022 F

Q902 REG DRIVE

C924 220p

Q902 2SC2785-F

Q904 DTC144ES

D910 1SS119

R902 1k

C906 0.022 F

D902 RB13ESB2

C925 220p

Q904 POWER ON

C907 100 16V

C908 0.022 F

Q903 POWER ON

Q906 2SC2785 -F

Q908, 909 12V REG

Q908 2SD2061-F

Q909 2SC2785-F

Q903 DTA114ES

R904 2200 1/2W

R906 1500

R905 4700

R907 1500

Q907 2SC2785-F

C923 0.1 PT

R908 2k

R909 1800

C909 1000p 50V BX

D909 RB18ESB

C910 47 25V

R910 910

C911 100 16V

C912 0.022 F

R911 5600

C913 10 50V

Q910 2SD2061-F

R912 1k

R913 220

C914 47 16V

C915 47 16V

C916 100 10V

D905 1ES2

D906 1ES2

C918 330 50V

C917 330 50V

R914 10 1/4W

R915 10 1/4W

D903 RD5.1ESB2

Q906, 907 REG DRIVE

D904 RD5.6ESB2

Q910 5V REG

F903 2.5A 125V

Q911 2SD2061-F

D907 D2SBA10

C919 10000 16V

C920 0.022 F

R917 5600

R918 1k

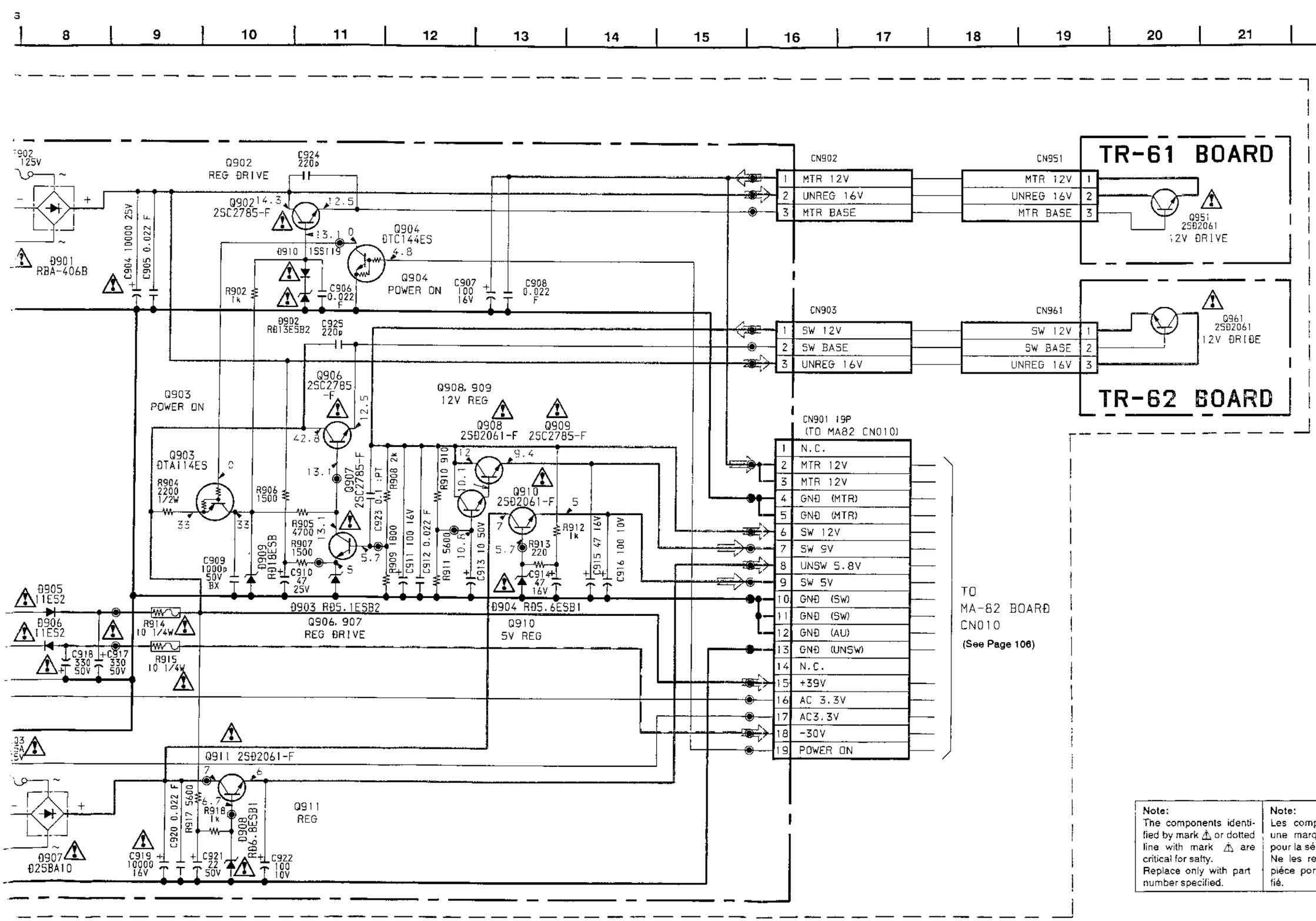
D908 RD6.8ESB1

C921 22 50V

C922 100 10V

Q911 REG

PS-274 BOARD

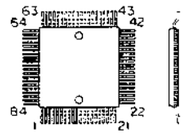


Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

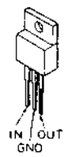
Note:
Les composants identifiés pa une marque ⚠ sont critique: pour la sécurité.
Ne les remplacer que par un: piéce portant le numéro spéci: fié.

4-3. SEMICONDUCTORS

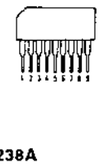
AN3937FBP



BA1780M05

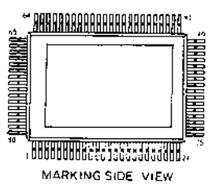


BA6138
BA7021

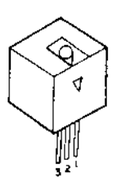


BA6238A

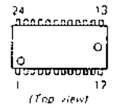
CXP50116-216Q



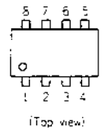
GP1U52X



LA7316AN

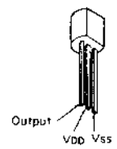


LC8991

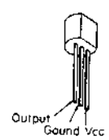


M5201L

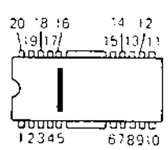
S-8053HNB



S-8054ALR

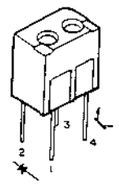


TA8424F



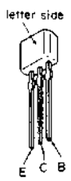
DTA124ES
DTA144ES
DTC144ES

PS6002



PT483FIS

2SA1175-HFE
2SA2785-HFE

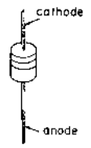


2SD774-34
2SD1312-K

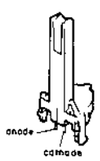
2SC3779C

2SK381-A

RD2.7ESL
RD4.7ES-B1
RD5.1ES-B2
RD6.2ES-B2
RD6.8ES-B2
RD8.2ES-B2
RD13ES-B2
RD24ES-B3
RD33ES-B2
1SS119
11ES2

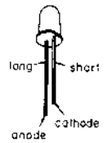


GL451VS1



RD5.1EL2

SLR-34MC3



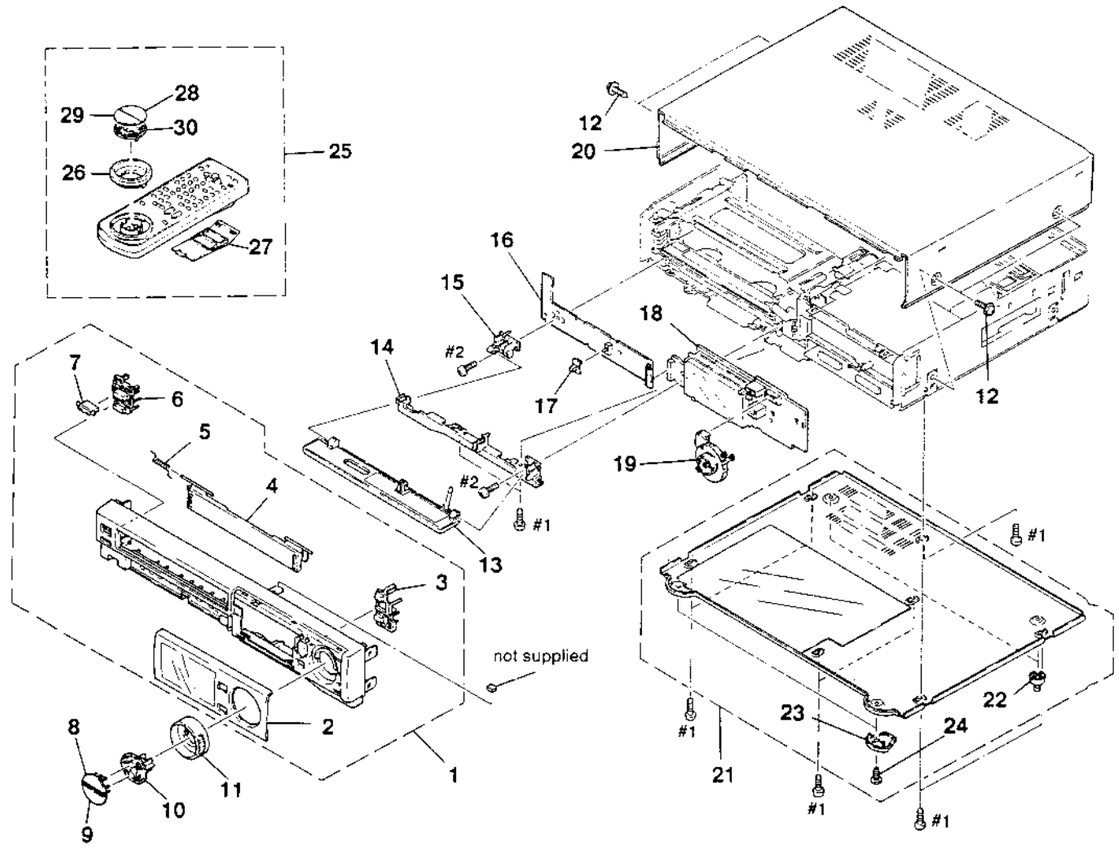
SECTION 5
EXPLODED VIEWS

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.
- Canadian model is abbreviated as CND, and also Mexican model is MX.

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 spécifé.

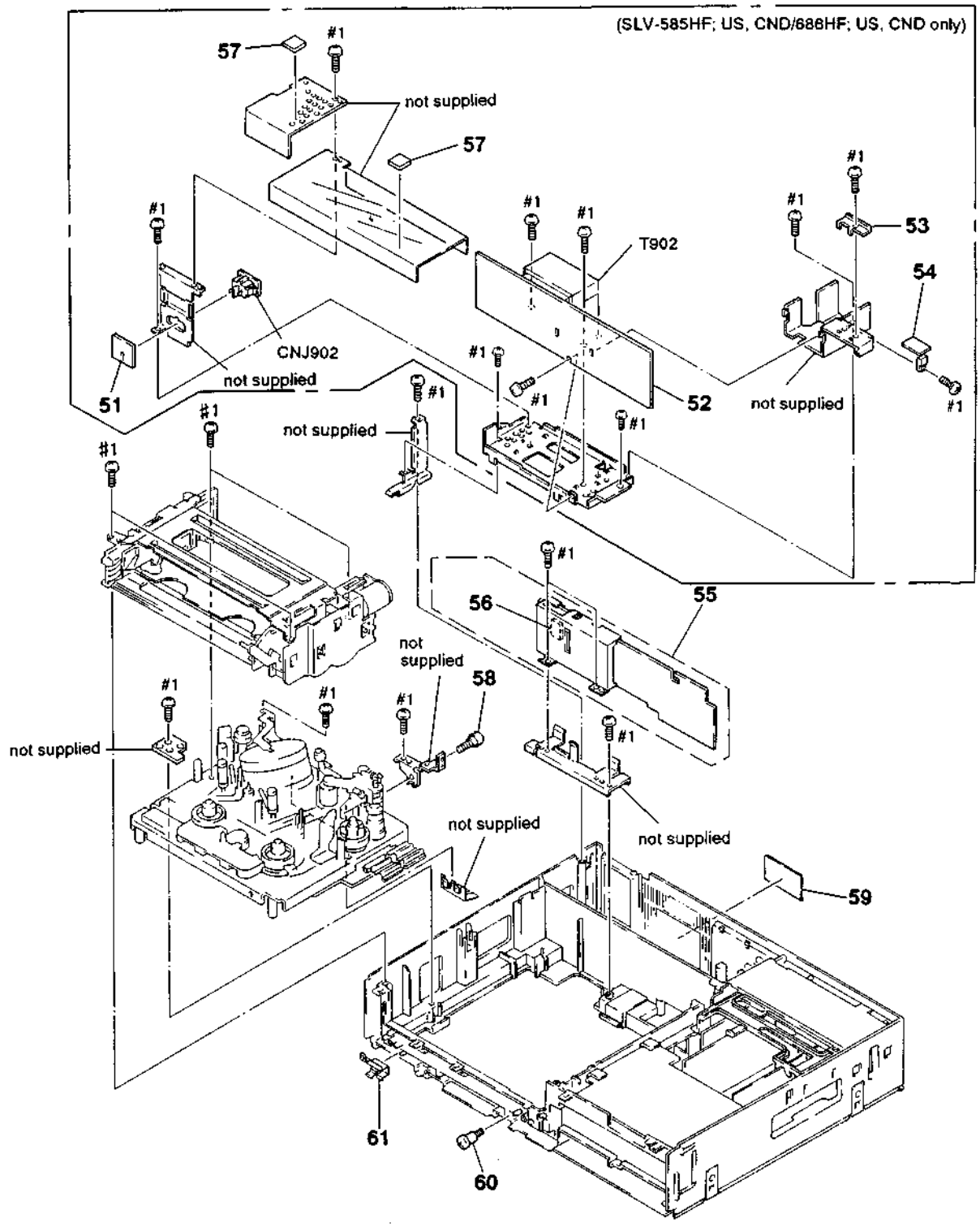
5-1. FRONT PANEL AND CASE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	X-3940-320-1	PANEL ASSY, FRONT (585HF/589HF)	
1	X-3940-321-1	PANEL ASSY, FRONT (686HF)	
1	X-3941-633-1	PANEL ASSY, FRONT (71HF)	
2	3-941-523-11	PLATE, TRANSPARENT (EXCEPT 686HF)	
2	3-941-523-21	PLATE, TRANSPARENT (686HF)	
3	3-941-521-01	BUTTON, PAUSE (EXCEPT 71HF)	
3	3-944-742-01	BUTTON, PAUSE (71HF)	
4	3-941-519-91	DOOR, CASSETTE (EXCEPT 71HF)	
4	3-944-740-01	DOOR, CASSETTE (71HF)	
5	3-941-520-01	SPRING, FL (EXCEPT 71HF)	
5	3-944-750-01	SPRING, FL (71HF)	
6	3-941-517-11	BUTTON, POWER-EJECT (EXCEPT 71HF)	
6	3-944-747-01	BUTTON, POWER-EJECT (71HF)	
7	3-941-518-01	TIP, POWER BUTTON (EXCEPT 71HF)	
7	3-944-748-01	TIP, POWER BUTTON (71HF)	
8	3-941-510-11	BUTTON, PLAYBACK	
9	3-941-511-11	BUTTON, STOP	
10	3-941-515-01	HOLDER, BUTTON	
11	3-941-512-01	RING, SHUTTLE	
12	3-710-901-11	SCREW (3X8), TAPPING	
13	1-466-497-21	SWITCH BLOCK, CONTROL (585HF)	
13	1-466-497-31	SWITCH BLOCK, CONTROL (686HF)	
13	1-466-497-41	SWITCH BLOCK, CONTROL (71HF)	
13	1-466-497-51	SWITCH BLOCK, CONTROL (589HF)	
14	X-3940-667-1	ESCUTCHEON ASSY, FRAME	
15	3-941-537-01	PLATE(LEFT), FULCRUM DOOR(EXCEPT 71HF)	
15	3-944-757-01	PLATE(LEFT), FULCRUM DOOR (71HF)	
16	* A-6756-082-A	MF-123 BOARD, COMPLETE (585HF;US, CND)	
16	* A-6756-240-A	MF-123 BOARD, COMPLETE (686HF;US, CND)	
16	* A-6756-103-A	MF-142 BOARD, COMPLETE (71HF)	
16	* A-6756-248-A	MF-142 BOARD, COMPLETE (585HF;PX/589HF)	
16	* A-6756-253-A	MF-142 BOARD, COMPLETE (686HF;MX)	

Ref. No.	Part No.	Description	Remark
17	3-744-217-01	KNOB, SELECTION	
18	* A-6721-389-A	MF-122 BOARD, COMPLETE (585HF;US, PX)	
18	* A-6721-390-A	MF-122 BOARD, COMPLETE(585HF;CND/589HF)	
18	* A-6721-391-A	MF-122 BOARD, COMPLETE (686HF;US, MX)	
18	* A-6721-393-A	MF-122 BOARD, COMPLETE (686HF;CND)	
18	* A-6721-401-A	MF-122 BOARD, COMPLETE (71HF)	
19	1-572-662-11	SWITCH, ROTARY (DUAL MODE SHUTTLE)	
20	3-741-985-01	CASE, UPPER (585HF;PX/686HF;MX/589HF/71HF)	
20	3-741-985-51	CASE, UPPER (585HF;US, CND/686HF;US, CND)	
21	X-3940-317-1	PLATE ASSY, BOTTOM (EXCEPT 71HF)	
21	X-3941-032-1	PLATE ASSY, BOTTOM (71HF)	
22	3-670-155-11	LEG	
23	3-941-509-01	INSULATOR	
24	3-721-343-01	SCREW, FIXED, M4X7	
25	1-465-770-11	REMOTE COMMANDER (RMT-V102A) (686HF)	
25	1-465-770-21	REMOTE COMMANDER (RMT-V102) (585HF/71HF)	
25	1-465-862-11	REMOTE COMMANDER (RMT-V112) (589HF)	
26	3-941-516-01	RING, SHUTTLE	
27	3-943-535-01	COVER, BATTERY	
28	3-941-617-11	BUTTON, PLAYBACK	
29	3-941-618-11	BUTTON, STOP	
30	3-941-619-01	HOLDER, DIAL	

5-2. POWER SUPPLY BLOCK ASSEMBLY



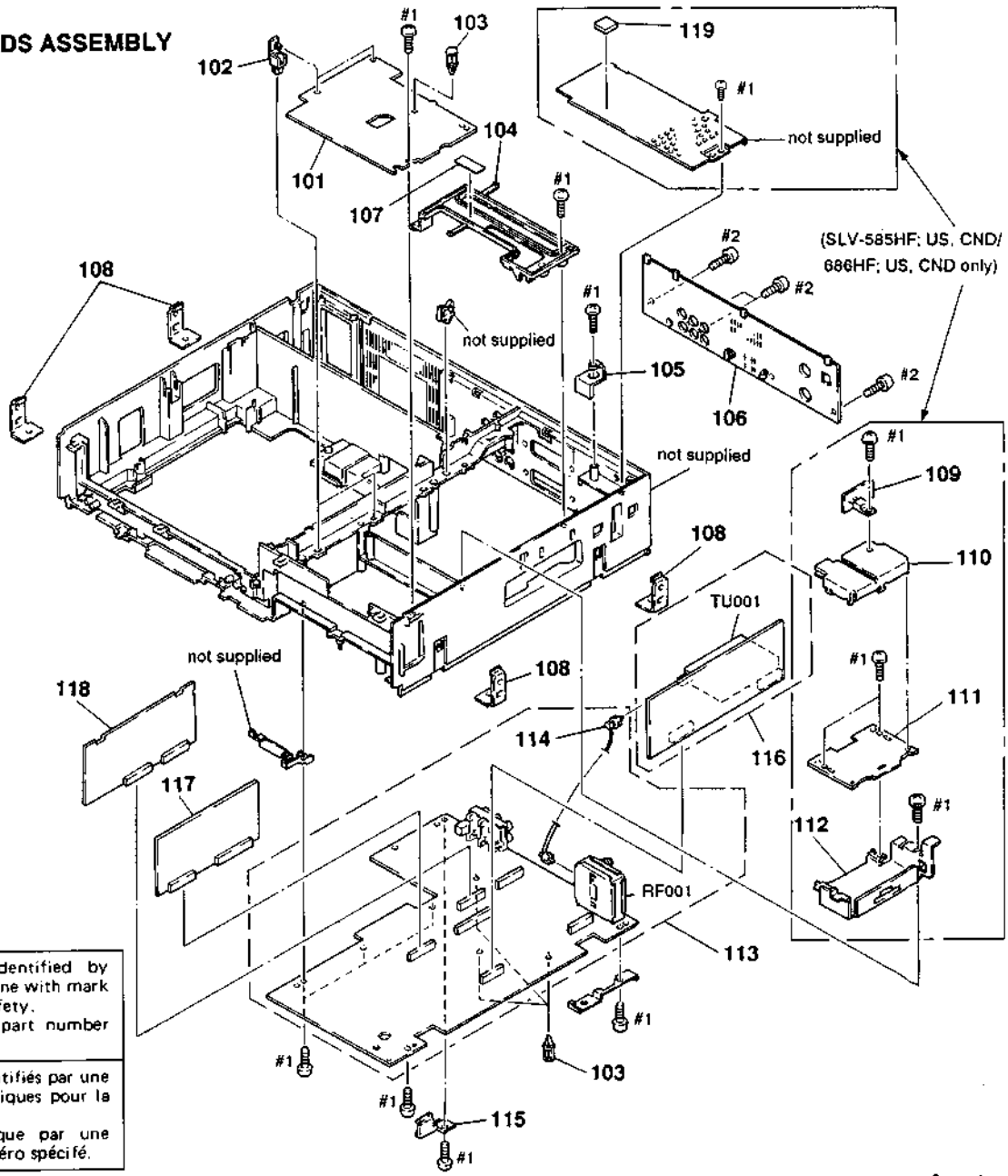
Note: The following parts of power supply block assemblies should be referred to the SUPPLEMENT-1.
SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.

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
51	* 1-638-178-21	OL-11 BOARD (585HF;US, CND/686HF;US, CND)	
52	* A-6754-236-A	PS-274 BOARD, COMPLETE (585HF;US, CND/686HF;US, CND)	
53	* 3-941-528-01	RETAINER (B), IC (585HF;US, CND/686HF;US, CND)	
54	* 1-639-417-21	TR-61 BOARD (585HF;US, CND/686HF;US, CND)	
55	* A-6727-301-A	RP-112 BOARD, COMPLETE (686HF;US, CND)	
55	* A-6727-302-A	RP-112 BOARD, COMPLETE (585HF;US, CND)	
55	* A-6727-314-A	RP-128 BOARD, COMPLETE (71HF)	
55	* A-6727-357-A	RP-128 BOARD, COMPLETE (585HF;PX/589HF)	
55	* A-6727-361-A	RP-128 BOARD, COMPLETE (686HF;MX)	
56	* 1-639-699-12	DQ-6 BOARD (EXCEPT 71HF)	
56	* 1-639-699-31	DQ-6 BOARD (71HF)	
57	9-911-839-XX	RETAINER (B), MICROPHONE	
58	3-736-055-01	SCREW (3X8), TAPPING	
59	* 3-942-769-01	LABEL, MODEL NUMBER (B) (585HF;US, CND)	
59	* 3-942-770-01	LABEL, MODEL NUMBER (C) (686HF;US, CND)	
59	* 3-944-213-01	LABEL, MODEL NUMBER (MX) (686HF;MX)	
59	* 3-944-482-01	LABEL, MODEL NUMBER (D) (589HF)	
59	* 3-944-212-01	LABEL, MODEL NUMBER (PX) (585HF;PX)	
60	3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
61	3-741-968-01	PLATE, GROUND, MF	
CNJ902	⚠1-526-985-11	INLET 2P (585HF;US, CND/686HF;US, CND)	
T902	⚠1-450-372-11	TRANSFORMER, POWER (585HF;US, CND/686HF;US, CND)	

5-3. MAIN BOARDS ASSEMBLY



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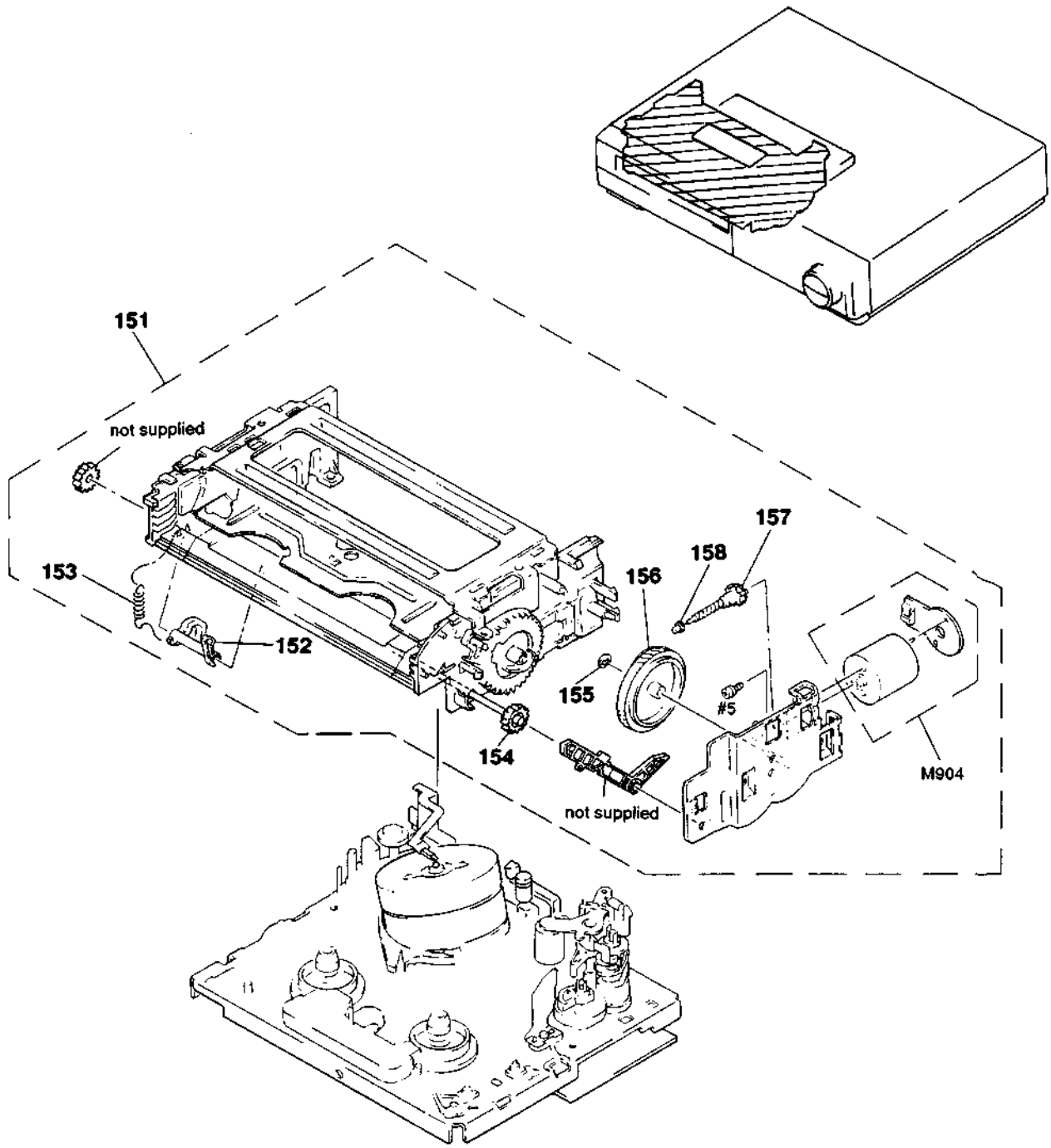
Replace only with part number specified.

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

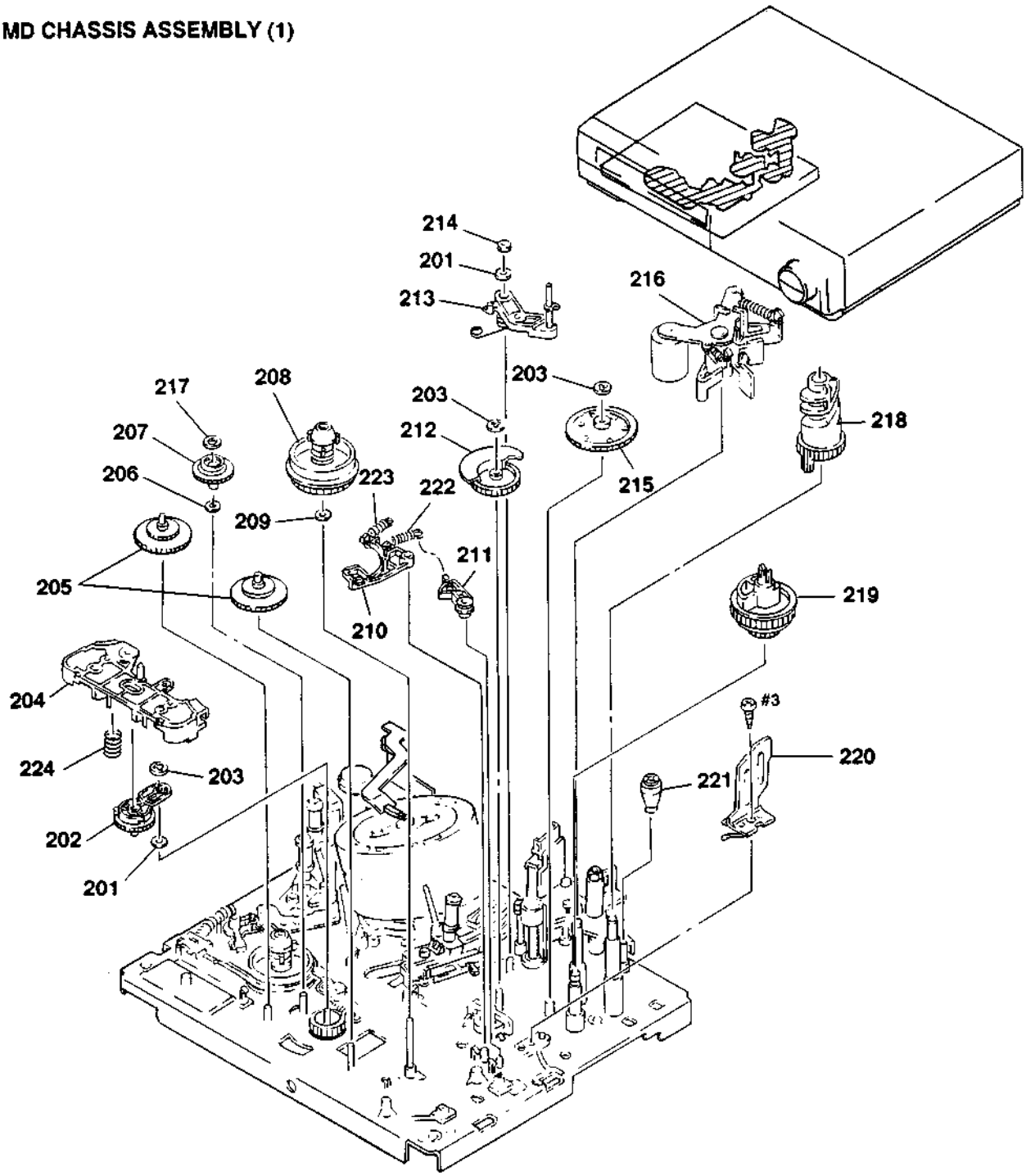
Ref. No.	Part No.	Description	Remark
101	* A-6754-240-A	CA-46 BOARD, COMPLETE (686HF;US, CND)	
101	* A-6754-248-A	CA-48 BOARD, COMPLETE (585HF;US, CND)	
101	* A-6754-264-A	CA-47 BOARD, COMPLETE (71HF)	
101	* A-6754-360-A	CA-47 BOARD, COMPLETE (585HF;PX/589HF)	
101	* A-6754-361-A	CA-47 BOARD, COMPLETE (686HF;MX)	
102	3-736-704-01	HINGE, PC BOARD	
103	3-682-057-11	SPACER (SMALL)	
104	* 3-941-524-01	HOLDER, FRAME (EXCEPT 71HF)	
104	* 3-944-753-01	HOLDER, FRAME (71HF)	
105	* 3-741-963-01	BRACKET, RF	
106	3-941-514-11	PLATE, ORNAMENTAL, JACK (EXCEPT 71HF)	
106	3-944-739-01	PLATE, ORNAMENTAL, JACK (71HF)	
107	3-942-876-01	LABEL, CAUTION	(585HF;US, CND/686HF;US, CND)
108	* 3-741-992-01	STOPPER, UPPER CASE (EXCEPT 71HF)	
108	* 3-741-992-11	STOPPER, UPPER CASE (71HF)	
109	* 1-639-418-21	TR-62 BOARD (585HF;US, CND/686HF;US, CND)	
110	* 3-942-630-01	HEAT SIN (TR)	(585HF;US, CND/686HF;US, CND)
111	* 1-639-419-21	TR-63 BOARD (585HF;US, CND/686HF;US, CND)	
112	* 3-942-629-01	STAY, TR (585HF;US, CND/686HF;US, CND)	
113	* A-6756-083-A	MA-82 BOARD, COMPLETE	(585HF;US, CND/686HF;US, CND)
113	* A-6756-104-A	MA-82 BOARD, COMPLETE (71HF)	
113	* A-6756-249-A	MA-82 BOARD, COMPLETE	(585HF;PX/686HF;MX/589HF)
114	1-558-924-41	CABLE, PIN	
115	* 3-741-962-01	PLATE, GROUND, JMP (EXCEPT 71HF)	
115	* 3-741-962-11	PLATE, GROUND, JMP (71HF)	
116	* A-6754-238-A	TU-130 BOARD, COMPLETE	
117	* A-6754-242-A	HF-23 BOARD, COMPLETE	
118	* A-6754-241-A	YC-112 BOARD, COMPLETE	
119	9-911-839-XX	RETAINER (B), MICROPHONE	(585HF;US, CND/686HF;US, CND)
RF001	⚠ 1-466-150-11	MODULATOR, RF (RFU-1025) (EXCEPT 71HF)	
RF001	⚠ 1-466-358-11	MODULATOR, RF (RFU-1020) (71HF)	
TU001	⚠ 1-465-239-11	TUNER, ET (8TP-2A401)	

5-4. FL CASSETTE COMPARTMENT ASSEMBLY



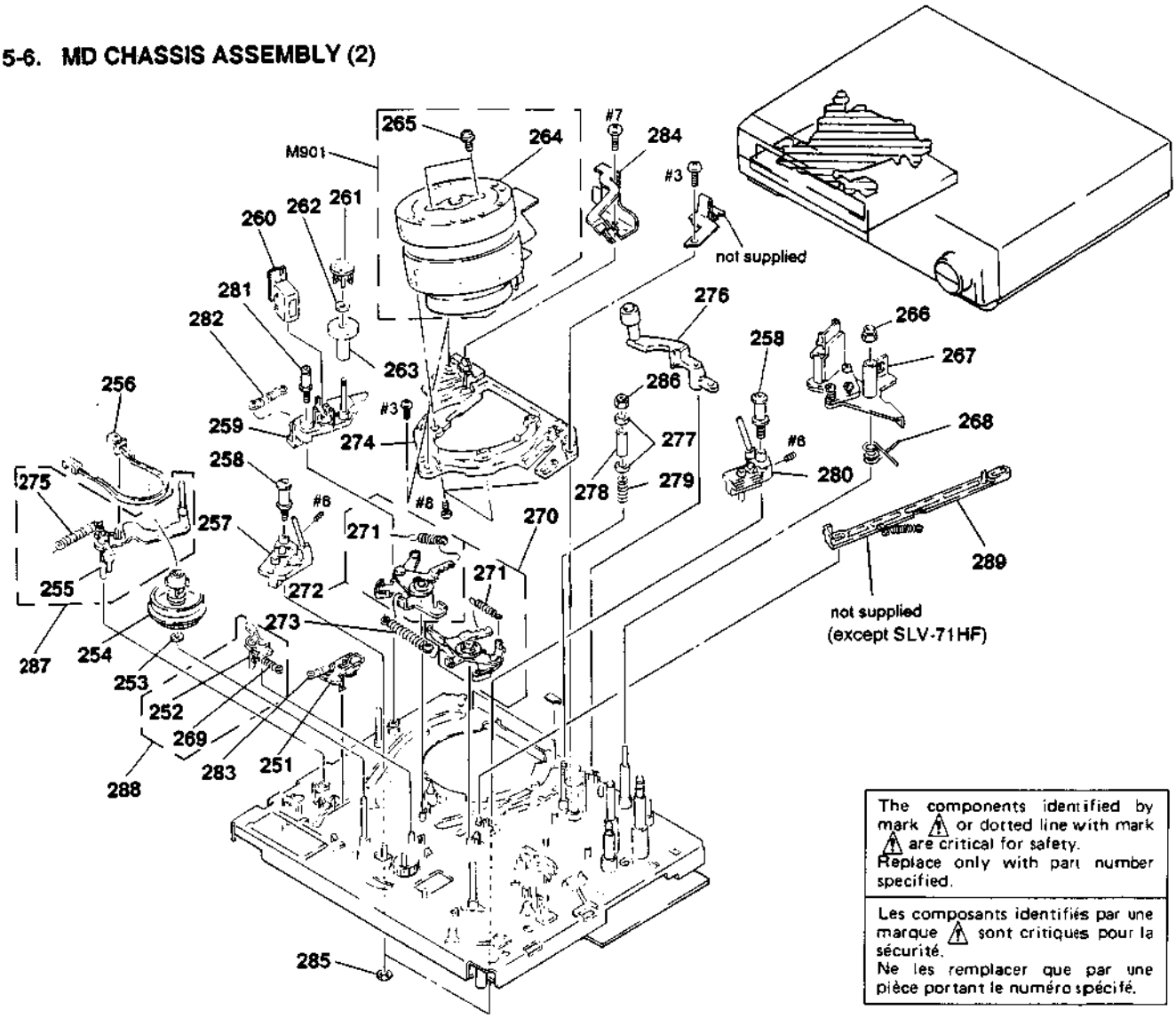
Ref. No.	Part No.	Description	Remark
151	A-6751-445-A	FL BLOCK ASSY (F45)	
152	3-736-163-01	LEVER, ERASING PROTECTION	
153	3-739-687-01	SPRING, TENSION	
154	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	
157	3-736-100-01	GEAR (FL), WORM	
158	3-716-144-02	RETAINER, WORM	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	

5-5. MD CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3727-764-1	BRAKE ASSY, T SOFT (71HF)	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT (EXCEPT 71HF)	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3729-911-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-736-069-01	RETAINER, SPRING	
218	3-736-136-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR (LO), PRESS CAM	
220	A-6750-288-A	OPENNER BLOCK ASSY, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	

5-6. MD CHASSIS ASSEMBLY (2)



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Replace only with part number specified.

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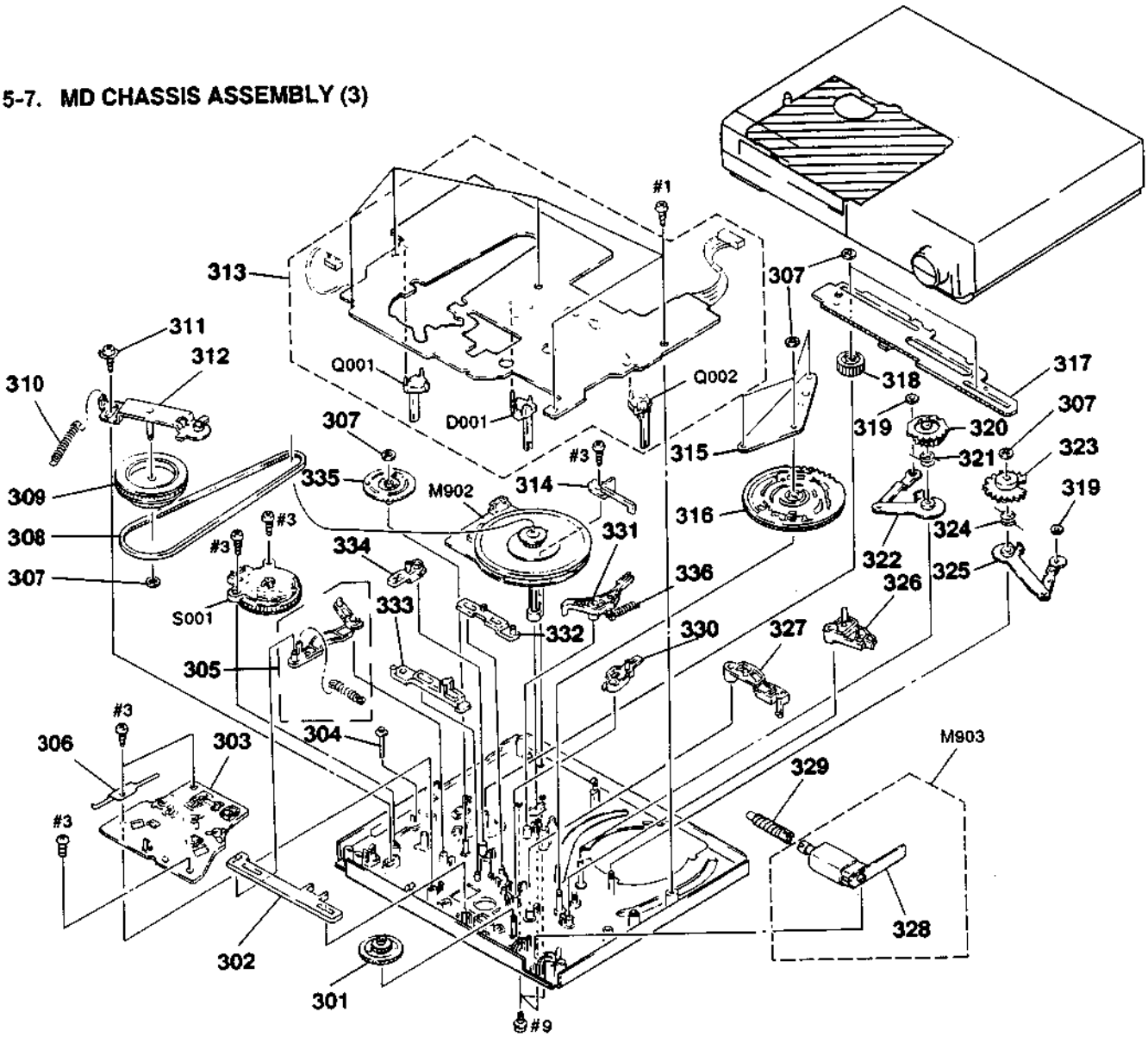
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
251	A-6759-451-A	TAKE-UP BLOCK ASSY, S (71HF)	
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S (EXCEPT 71HF)	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3729-935-3	TABLE ASSY, REEL, SUPPLY	
255	3-736-151-11	ARM (POM), TENSION REGULATOR (EXCEPT 71HF)	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
264	8-848-553-01	DRUM ASSY, ROTARY UPPER (DZR-28-R) (686HF)	
264	8-848-555-01	DRUM ASSY, ROTARY UPPER (DZR-37-R) (EXCEPT 686HF)	
265	2-643-205-01	SCREW (PSW) 3X8	
266	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
267	A-6751-129-C	HEAD BLOCK ASSY, ACE	
268	3-736-042-01	SPRING, TORSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3729-925-1	BRAKE ASSY (2), S (71HF)	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S (EXCEPT 71HF)	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3727-791-2	BASE ASSY, DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-944-033-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3733-304-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	3-942-866-01	NUT (M3) (3X0.5), NYLON	
287	X-3727-772-1	ARM ASSY, TENSION REGULATOR (7[illegible]HF)	
288	X-3727-773-1	ARM ASSY, S SOFT BRAKE (71HF)	
289	* X-3743-517-1	LEVER ASSY (S), RELEASE, C ROLLER (71HF)	
M901	⚠ 8-848-552-11	DRUM ASSY (DZH-28A-R) (686HF)	
M901	⚠ 8-848-554-01	DRUM ASSY (DZH-37A-R) (EXCEPT 686HF)	

5-7. MD CHASSIS ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	* A-6739-096-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
313	* A-6754-092-A	MD-49 BOARD, COMPLETE (71HF)	
313	* A-6754-278-A	MD-49 BOARD, COMPLETE (EXCEPT 71HF)	
314	3-736-744-01	RETAINER, ROTOR	
315	3-733-396-01	HOLDER, CAM GEAR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	

Ref. No.	Part No.	Description	Remark
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	* 1-633-460-11	CA-41 BOARD	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-03	ARM, BRAKE FUNCTION	
331	X-3727-769-1	BRAKE ASSY, CAP (71HF)	
331	X-3733-338-1	BRAKE ASSY (AT), CAP (EXCEPT 71HF)	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-738-237-01	SPRING (CAP BRAKE), TENSION	
D001	8-719-985-00	DIODE GL451VS1 (LED)	
M902	8-835-394-11	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
S001	1-571-920-11	SWITCH, ROTARY	

SECTION 6 CA-46 CA-47
ELECTRICAL PARTS LIST

NOTE:

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.

- 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
- Canadian model is abbreviated as CND, and also Mexican model is MX.
- 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...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description				Remark
	* A-6754-240-A	CA-46 BOARD, COMPLETE (686HF;US, CND)				
		**********				
	* A-6754-248-A	CA-46 BOARD, COMPLETE (585HF;US, CND)				
		**********				
	* A-6754-264-A	CA-47 BOARD, COMPLETE (71HF)				
		**********				
	* A-6754-360-A	CA-47 BOARD, COMPLETE (585HF;PX/589HF)				
		**********				
	* A-6754-361-A	CA-47 BOARD, COMPLETE (686HF;MX)				
		**********				
		(Ref. No 4,000 Series)				
	* 3-941-503-01	CASE, SHIELD, AU				
		< BUZZER >				
BZ301	1-529-080-11	BUZZER, PIEZOELECTRIC				
		< CAPACITOR >				
C201	1-137-075-11	FILM	0.068uF	5%	100V	(686HF)
C202	1-162-844-11	CERAMIC	0.027uF	10%	16V	(686HF)
C203	1-161-051-00	CERAMIC	0.01uF	10%	50V	(686HF)
C204	1-164-087-11	CERAMIC	0.0015uF	10%	50V	(686HF)
C205	1-124-126-00	ELECT	47uF	20%	10V	(686HF)
C206	1-109-676-11	MICA	120PF	1%	500V	
C207	1-136-559-11	FILM	0.0047uF	10%	630V	
C207	1-136-559-11					(585HF/589HF/71HF)
C207	1-136-561-11	FILM	0.0068uF	10%	400V	(686HF)
C208	1-164-087-11	CERAMIC	0.0015uF	10%	50V	
C209	1-161-051-00	CERAMIC	0.01uF	10%	50V	
C211	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C212	1-124-925-11	ELECT	2.2uF	20%	100V	
C213	1-161-044-00	CERAMIC	0.0039uF	10%	16V	
C214	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C215	1-126-157-11	ELECT	10uF	20%	16V	
C216	1-126-160-11	ELECT	1uF	20%	50V	
C217	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C218	1-124-589-11	ELECT	47uF	20%	16V	
C219	1-126-160-11	ELECT	1uF	20%	50V	
C220	1-164-077-11	CERAMIC	220PF	10%	50V	
C221	1-124-925-11	ELECT	2.2uF	20%	100V	
C222	1-130-483-00	MYLAR	0.01uF	5%	50V	
C224	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C225	1-124-903-11	ELECT	1uF	20%	50V	
C226	1-124-903-11	ELECT	1uF	20%	50V	
C227	1-124-126-00	ELECT	47uF	20%	10V	
C228	1-124-443-00	ELECT	100uF	20%	10V	
C229	1-124-034-51	ELECT	33uF	20%	16V	
C231	1-164-077-11	CERAMIC	220PF	10%	50V	
C301	1-164-098-11	CERAMIC	0.047uF		12V	
C302	1-124-126-00	ELECT	47uF	20%	10V	
C303	1-162-849-11	CERAMIC	0.068uF	10%	16V	
C304	1-124-234-00	ELECT	22uF	20%	16V	
C305	1-124-443-00	ELECT	100uF	20%	10V	
C307	1-161-039-00	CERAMIC	0.001uF	10%	50V	
C308	1-161-047-00	CERAMIC	0.0047uF	10%	50V	
C309	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C310	1-124-925-11	ELECT	2.2uF	20%	100V	
C313	1-124-126-00	ELECT	47uF	20%	10V	
C314	1-164-098-11	CERAMIC	0.047uF		12V	
C315	1-161-039-00	CERAMIC	0.001uF	10%	50V	
C317	1-126-163-11	ELECT	4.7uF	20%	50V	
		< CONNECTOR >				
CN201	1-506-469-11	CONNECTOR 4P, MALE				
CN202	1-506-468-11	CONNECTOR 3P, MALE				
CN203	* 1-568-787-11	PIN, CONNECTOR 10P				
CN301	1-506-468-11	CONNECTOR 3P, MALE				
CN302	* 1-568-788-21	PIN, CONNECTOR 11P				
CN303	1-506-469-11	CONNECTOR 4P, MALE				

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Ref. No.	Part No.	Description	Remark
		< DIODE >	
D303	8-719-911-19	DIODE 1SS119	
D304	8-719-911-19	DIODE 1SS119	
D305	8-719-109-97	DIODE RD6.8ES-B2	
D306	8-719-911-19	DIODE 1SS119	
D351	8-719-911-19	DIODE 1SS119	
D352	8-719-911-19	DIODE 1SS119	
D353	8-719-911-19	DIODE 1SS119	
		< IC >	
IC201	8-759-513-18	IC BA7767AS	
IC301	8-759-246-14	IC TA8823N	
IC302	8-759-822-65	IC LC6543H-4374	
		< COIL >	
L201	1-410-679-31	INDUCTOR 270uH (686HF)	
L202	1-408-247-00	INDUCTOR 33mH	
L203	1-410-120-11	INDUCTOR 1.2mH	
L204	1-410-091-31	INDUCTOR 22mH	
L301	1-408-413-00	INDUCTOR 22uH	
L302	1-408-409-00	INDUCTOR 10uH	
		< TRANSISTOR >	
Q201	8-729-140-96	TRANSISTOR 2SD774-34 (686HF)	
Q202	8-729-140-93	TRANSISTOR 2SB734-34 (686HF)	
Q203	8-729-140-96	TRANSISTOR 2SD774-34 (686HF)	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q303	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q304	8-729-900-65	TRANSISTOR DTA144ES	
		< RESISTOR >	
R201	1-249-429-11	CARBON 10K 5% 1/4W (686HF)	
R202	⚠1-249-387-11	CARBON 3.3 5% 1/4W (686HF)	
R203	1-249-433-11	CARBON 22K 5% 1/4W (686HF)	
R204	1-249-429-11	CARBON 10K 5% 1/4W (686HF)	
R205	⚠1-249-387-11	CARBON 3.3 5% 1/4W	
R206	1-249-429-11	CARBON 10K 5% 1/4W (585HF/589HF/71HF)	
R206	1-249-433-11	CARBON 22K 5% 1/4W (686HF)	
R207	1-249-393-11	CARBON 10 5% 1/4W	
R208	1-249-433-11	CARBON 22K 5% 1/4W	
R209	1-249-409-11	CARBON 220 5% 1/4W	
R210	1-247-897-11	CARBON 560K 5% 1/4W	
R211	1-249-430-11	CARBON 12K 5% 1/4W	
R212	1-249-431-11	CARBON 15K 5% 1/4W	
R213	1-249-435-11	CARBON 33K 5% 1/4W	
R214	1-249-420-11	CARBON 1.8K 5% 1/4W	
R215	1-249-419-11	CARBON 1.5K 5% 1/4W	
R216	1-247-903-00	CARBON 1M 5% 1/4W	
R217	1-249-435-11	CARBON 33K 5% 1/4W	
R218	1-249-433-11	CARBON 22K 5% 1/4W	
R219	1-249-438-11	CARBON 56K 5% 1/4W	
R221	1-249-427-11	CARBON 6.8K 5% 1/4W	
R222	1-249-429-11	CARBON 10K 5% 1/4W	
R223	1-249-433-11	CARBON 22K 5% 1/4W	
R224	1-249-415-11	CARBON 680 5% 1/4W	
R226	1-249-418-11	CARBON 1.2K 5% 1/4W	
R228	1-249-429-11	CARBON 10K 5% 1/4W	
R229	1-249-433-11	CARBON 22K 5% 1/4W	
R230	1-249-419-11	CARBON 1.5K 5% 1/4W	
R301	1-249-439-11	CARBON 68K 5% 1/4W	
R302	1-249-441-11	CARBON 100K 5% 1/4W	
R303	1-249-441-11	CARBON 100K 5% 1/4W	
R305	1-249-435-11	CARBON 33K 5% 1/4W	
R306	1-249-411-11	CARBON 330 5% 1/4W	
R307	1-249-425-11	CARBON 4.7K 5% 1/4W	
R308	1-249-417-11	CARBON 1K 5% 1/4W	
R309	1-249-429-11	CARBON 10K 5% 1/4W	
R310	1-249-429-11	CARBON 10K 5% 1/4W	
R311	1-249-425-11	CARBON 4.7K 5% 1/4W	
R313	1-249-433-11	CARBON 22K 5% 1/4W	
R314	1-249-437-11	CARBON 47K 5% 1/4W	
R315	1-249-437-11	CARBON 47K 5% 1/4W	
R316	1-249-433-11	CARBON 22K 5% 1/4W	
R317	1-249-413-11	CARBON 470 5% 1/4W	
R318	1-249-425-11	CARBON 4.7K 5% 1/4W	
R319	1-249-429-11	CARBON 10K 5% 1/4W	
R320	1-249-417-11	CARBON 1K 5% 1/4W	
R356	1-249-429-11	CARBON 10K 5% 1/4W	
R357	1-247-901-11	CARBON 820K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV201	1-238-021-11	RES. ADJ. CARBON 220K	
		< TRANSFORMER >	
T201	1-406-349-11	TRANSFORMER, OSCILLATION (686HF)	
T202	1-433-330-11	TRANSFORMER, BIAS OSCILLATION (585HF/589HF/71HF)	
T202	1-433-352-11	TRANSFORMER, BIAS OSCILLATION (686HF)	
		< VIBRATOR >	
X301	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

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Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
	* A-6754-242-A	HF-23 BOARD, COMPLETE			
		**********			
		(Ref. No 5.000 Series)			
	3-738-216-01	COVER, VOLUME			
		< CAPACITOR >			
C204	1-126-101-11	ELECT	100uF	20%	16V
C205	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C206	1-124-925-11	ELECT	2.2uF	20%	100V
C207	1-124-477-11	ELECT	47uF	20%	25V
C208	1-126-163-11	ELECT	4.7uF	20%	50V
C209	1-126-096-11	ELECT	10uF	20%	35V
C210	1-124-477-11	ELECT	47uF	20%	25V
C211	1-124-925-11	ELECT	2.2uF	20%	100V
C212	1-124-477-11	ELECT	47uF	20%	25V
C213	1-124-477-11	ELECT	47uF	20%	25V
C214	1-124-477-11	ELECT	47uF	20%	25V
C215	1-126-096-11	ELECT	10uF	20%	35V
C216	1-126-163-11	ELECT	4.7uF	20%	50V
C217	1-124-925-11	ELECT	2.2uF	20%	100V
C218	1-124-925-11	ELECT	2.2uF	20%	100V
C219	1-126-157-11	ELECT	10uF	20%	16V
C220	1-126-157-11	ELECT	10uF	20%	16V
C221	1-130-483-00	MYLAR	0.01uF	5%	50V
C222	1-126-163-11	ELECT	4.7uF	20%	50V
C223	1-124-120-11	ELECT	220uF	20%	25V
C224	1-124-925-11	ELECT	2.2uF	20%	100V
C225	1-130-487-00	MYLAR	0.022uF	5%	50V
C226	1-126-096-11	ELECT	10uF	20%	35V
C227	1-124-234-00	ELECT	22uF	20%	16V
C228	1-130-473-00	MYLAR	0.0015uF	5%	50V
C229	1-130-475-00	MYLAR	0.0022uF	5%	50V
C230	1-130-475-00	MYLAR	0.0022uF	5%	50V
C231	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C232	1-126-101-11	ELECT	100uF	20%	16V
C233	1-162-286-31	CERAMIC	220PF	10%	50V
C234	1-124-903-11	ELECT	1uF	20%	50V
C235	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C236	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C237	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C238	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C239	1-130-475-00	MYLAR	0.0022uF	5%	50V
C240	1-130-475-00	MYLAR	0.0022uF	5%	50V
C241	1-130-473-00	MYLAR	0.0015uF	5%	50V
C242	1-124-234-00	ELECT	22uF	20%	16V
C243	1-124-925-11	ELECT	2.2uF	20%	100V
C244	1-126-096-11	ELECT	10uF	20%	35V
C245	1-130-487-00	MYLAR	0.022uF	5%	50V
C246	1-124-925-11	ELECT	2.2uF	20%	100V
C247	1-124-120-11	ELECT	220uF	20%	25V
C248	1-126-163-11	ELECT	4.7uF	20%	50V
C249	1-130-483-00	MYLAR	0.01uF	5%	50V
C250	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C299	1-163-089-00	CERAMIC CHIP	6PF		50V
		< CONNECTOR >			
CN201	1-580-848-11	SOCKET, CONNECTOR (PC BOARD)	20P		
CN202	1-580-855-11	SOCKET, CONNECTOR (PC BOARD)	14P		
		< DIODE >			
D201	8-719-104-34	DIODE	1S2836		
		< IC >			
IC201	8-759-421-08	IC	AN3937FBP		
IC205	⚠ 8-759-938-15	IC	BA178M05		
		< JUMPER RESISTOR >			
JR201	1-216-295-00	METAL CHIP	0	5%	1/10W
JR202	1-216-295-00	METAL CHIP	0	5%	1/10W
JR203	1-216-296-00	METAL CHIP	0	5%	1/8W
JR208	1-216-295-00	METAL CHIP	0	5%	1/10W
JR209	1-216-296-00	METAL CHIP	0	5%	1/8W
JR211	1-216-296-00	METAL CHIP	0	5%	1/8W
JR212	1-216-296-00	METAL CHIP	0	5%	1/8W
JR214	1-216-295-00	METAL CHIP	0	5%	1/10W
JR215	1-216-296-00	METAL CHIP	0	5%	1/8W
JR217	1-216-295-00	METAL CHIP	0	5%	1/10W
JR218	1-216-296-00	METAL CHIP	0	5%	1/8W
JR219	1-216-296-00	METAL CHIP	0	5%	1/8W
JR221	1-216-296-00	METAL CHIP	0	5%	1/8W
JR222	1-216-296-00	METAL CHIP	0	5%	1/8W
JR224	1-216-296-00	METAL CHIP	0	5%	1/8W
JR225	1-216-296-00	METAL CHIP	0	5%	1/8W
		< RESISTOR >			
R206	1-247-710-11	CARBON	560	5%	1/4W
R207	1-249-441-11	CARBON	100K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-247-891-00	CARBON	330K	5%	1/4W
R210	1-247-710-11	CARBON	560	5%	1/4W
R211	1-249-441-11	CARBON	100K	5%	1/4W
R212	1-216-049-00	METAL CHIP	1K	5%	1/10W
R213	1-216-113-00	METAL CHIP	470K	5%	1/10W
R214	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R215	1-249-429-11	CARBON	10K	5%	1/4W

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Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

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Ref.No.	Part No.	Description			Remark
R216	1-249-417-11	CARBON	1K	5%	1/4W
R218	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R220	1-216-208-00	METAL GLAZE	2.7K	5%	1/8W
R221	1-216-049-00	METAL CHIP	1K	5%	1/10W
R222	1-216-192-00	METAL CHIP	560	5%	1/8W
R223	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R224	1-216-083-00	METAL CHIP	27K	5%	1/10W
R226	1-249-429-11	CARBON	10K	5%	1/4W
R227	1-249-417-11	CARBON	1K	5%	1/4W
R228	1-216-109-00	METAL CHIP	330K	5%	1/10W
		< VARIABLE RESISTOR >			
RV201	1-241-080-11	RES, ADJ, CARBON 10K			
RV202	1-230-523-11	RES, ADJ, METAL 10K			
RV204	1-241-080-11	RES, ADJ, CARBON 10K			
RV205	1-230-522-11	RES, ADJ, METAL 4.7K			
RV206	1-241-080-11	RES, ADJ, CARBON 10K			
**********					
* A-6756-083-A		MA-82 BOARD, COMPLETE (585HF;US, CND/686HF;US, CND)			
		**********			
* A-6756-104-A		MA-82 BOARD, COMPLETE (71HF)			
		**********			
* A-6756-249-A		MA-82 BOARD, COMPLETE (585HF;PX/589HF/686HF;MX)			
		**********			
		(Ref.No 3,000 Series)			
1-558-924-41		CABLE, PIN			
		< CAPACITOR >			
C005	1-161-051-00	CERAMIC	0.01uF	10%	150V
C006	1-126-101-11	ELECT	100uF	20%	16V
C007	1-124-248-00	ELECT	22uF	20%	35V
C008	1-164-096-11	CERAMIC	0.01uF		50V
C013	1-162-306-11	CERAMIC	0.01uF	20%	16V
C016	1-164-081-11	CERAMIC	470PF	10%	50V
C103	1-124-248-00	ELECT	22uF	20%	35V
C104	1-124-248-00	ELECT	22uF	20%	35V
C110	1-124-248-00	ELECT	22uF	20%	35V
C111	1-124-248-00	ELECT	22uF	20%	35V
C112	1-164-096-11	CERAMIC	0.01uF		50V
C151	1-124-472-11	ELECT	470uF	20%	10V
C152	1-124-443-00	ELECT	100uF	20%	10V
C153	1-124-477-11	ELECT	47uF	20%	25V
C154	1-124-589-11	ELECT	47uF	20%	16V
C155	1-124-589-11	ELECT	47uF	20%	16V
C156	1-124-589-11	ELECT	47uF	20%	16V
C157	1-124-589-11	ELECT	47uF	20%	16V
C158	1-124-589-11	ELECT	47uF	20%	16V

Ref.No.	Part No.	Description			Remark
C159	1-124-589-11	ELECT	47uF	20%	16V
C160	1-124-589-11	ELECT	47uF	20%	16V
C161	1-124-584-00	ELECT	100uF	20%	10V
C162	1-124-584-00	ELECT	100uF	20%	10V
C163	1-124-584-00	ELECT	100uF	20%	10V
C164	1-126-163-11	ELECT	4.7uF	20%	50V
C165	1-126-163-11	ELECT	4.7uF	20%	50V
C166	1-126-163-11	ELECT	4.7uF	20%	50V
C167	1-126-163-11	ELECT	4.7uF	20%	50V
C170	1-126-160-11	ELECT	1uF	20%	50V
C171	1-164-077-11	CERAMIC	220PF	10%	50V
C172	1-126-160-11	ELECT	1uF	20%	50V
C173	1-164-077-11	CERAMIC	220PF	10%	50V
C174	1-164-096-11	CERAMIC	0.01uF		50V
C175	1-164-096-11	CERAMIC	0.01uF		50V
C176	1-164-098-11	CERAMIC	0.047uF		12V
C177	1-164-096-11	CERAMIC	0.01uF		50V
C189	1-164-096-11	CERAMIC	0.01uF		50V
C190	1-124-477-11	ELECT	47uF	20%	25V
C191	1-162-213-31	CERAMIC	39PF	5%	50V
C192	1-162-213-31	CERAMIC	39PF	5%	50V
C401	1-130-489-00	MYLAR	0.033uF	5%	50V
C402	1-126-233-11	ELECT	22uF	20%	50V
C403	1-164-096-11	CERAMIC	0.01uF		50V
C404	1-124-925-11	ELECT	2.2uF	20%	100V
C405	1-124-907-11	ELECT	10uF	20%	50V
C406	1-126-233-11	ELECT	22uF	20%	50V
C407	1-130-487-00	MYLAR	0.022uF	5%	50V
C431	1-161-051-00	CERAMIC	0.01uF	10%	50V
C432	1-164-058-11	CERAMIC	33PF	5%	50V
C433	1-164-081-11	CERAMIC	470PF	10%	50V
C434	1-164-068-11	CERAMIC	82PF	5%	50V
C435	1-161-051-00	CERAMIC	0.01uF	10%	50V
C436	1-161-772-11	CERAMIC	0.1uF	10%	25V
C437	1-126-233-11	ELECT	22uF	20%	50V
C438	1-161-772-11	CERAMIC	0.1uF	10%	25V
C439	1-130-491-00	MYLAR	0.047uF	5%	50V
C441	1-130-493-00	MYLAR	0.068uF	5%	50V
C442	1-126-101-11	ELECT	100uF	20%	16V
C490	1-162-306-11	CERAMIC	0.01uF	20%	16V
C501	1-124-443-00	ELECT	100uF	20%	10V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C503	1-164-096-11	CERAMIC	0.01uF		50V
C504	1-164-052-11	CERAMIC	18PF	5%	50V
C505	1-164-052-11	CERAMIC	18PF	5%	50V
C506	1-164-077-11	CERAMIC	220PF	10%	50V
C507	1-164-096-11	CERAMIC	0.01uF		50V
C508	1-164-096-11	CERAMIC	0.01uF		50V
C520	1-164-096-11	CERAMIC	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C521	1-164-088-11	CERAMIC	0.001uF		50V
C531	1-124-478-11	ELECT	100uF	20%	25V
C602	1-102-962-00	CERAMIC	30PF	5%	50V
C607	1-124-126-00	ELECT	47uF	20%	10V
C608	1-164-096-11	CERAMIC	0.01uF		50V
C611	1-164-096-11	CERAMIC	0.01uF		50V
C612	1-164-096-11	CERAMIC	0.01uF		50V
C613	1-124-126-00	ELECT	47uF	20%	10V
C614	1-164-023-11	CERAMIC	15PF	5%	50V
C615	1-164-023-11	CERAMIC	15PF	5%	50V
C617	1-102-958-00	CERAMIC	20PF	5%	50V
C618	1-130-471-00	MYLAR	0.001uF	5%	50V
C619	1-161-047-00	CERAMIC	0.0047uF	10%	50V
C621	1-162-306-11	CERAMIC	0.01uF	20%	16V
C622	1-124-903-11	ELECT	1uF	20%	50V
C623	1-124-126-00	ELECT	47uF	20%	10V
C625	1-130-473-00	MYLAR	0.0015uF	5%	50V
C626	1-164-096-11	CERAMIC	0.01uF		50V
C627	1-164-077-11	CERAMIC	220PF	10%	50V
C628	1-124-464-11	ELECT	0.22uF	20%	50V
C629	1-124-589-11	ELECT	47uF	20%	16V
C630	1-124-927-11	ELECT	4.7uF	20%	100V
C631	1-124-482-11	ELECT	33uF	20%	35V
C632	1-130-473-00	MYLAR	0.0015uF	5%	50V
C634	1-130-471-00	MYLAR	0.001uF	5%	50V
C635	1-162-294-31	CERAMIC	0.001uF	10%	50V
C690	1-102-976-00	CERAMIC	180PF	5%	50V
C690	1-162-285-31	CERAMIC	180PF	10%	50V
C691	1-162-196-31	CERAMIC	5.6PF	10%	50V
C692	1-162-203-31	CERAMIC	15PF	5%	50V
C699	1-162-211-31	CERAMIC	33PF	5%	50V

< CONNECTOR >

CN001	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN002	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN003	1-506-473-11	CONNECTOR 8P, MALE	
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN006	* 1-506-744-11	PIN, CONNECTOR 15P	
CN007	* 1-506-744-11	PIN, CONNECTOR 15P	
CN008	1-580-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN009	1-580-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN010	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN011	* 1-569-797-11	PIN, CONNECTOR (PC BOARD) 12P	
CN012	* 1-569-797-11	PIN, CONNECTOR (PC BOARD) 12P	
CN014	* 1-568-787-11	PIN, CONNECTOR 10P	
CN015	1-580-849-11	PIN, CONNECTOR (PC BOARD) 20P	
CN016	1-580-856-11	PIN, CONNECTOR (PC BOARD) 14P	
CN017	1-506-469-11	CONNECTOR 4P, MALE	
CN018	* 1-568-788-21	PIN, CONNECTOR 11P	
CN900	* 1-560-890-00	PIN, CONNECTOR 2P	
CNJ001	1-507-562-00	JACK (CONTROL S IN)	
CNJ002	1-565-320-71	JACK, PIN 6P (VIDEO/AUDIO OUT)	

< DIODE >

D151	8-719-109-97	DIODE	RD6.8ES-B2
D152	8-719-109-97	DIODE	RD6.8ES-B2
D160	8-719-911-19	DIODE	1SS119
D161	8-719-911-19	DIODE	1SS119
D162	8-719-911-19	DIODE	1SS119
D163	8-719-911-19	DIODE	1SS119
D401	8-719-101-50	DIODE	RD5.1E-L2
D405	8-719-101-47	DIODE	RD4.7EL2
D502	8-719-911-19	DIODE	1SS119
D505	8-719-911-19	DIODE	1SS119
D601	8-719-911-19	DIODE	1SS119
D603	8-719-911-19	DIODE	1SS119
D604	8-719-911-19	DIODE	1SS119
D605	8-719-911-19	DIODE	1SS119
D606	8-719-911-19	DIODE	1SS119
D608	8-719-911-19	DIODE	1SS119
D609	8-719-109-97	DIODE	RD6.8ES-B2
D610	8-719-109-97	DIODE	RD6.8ES-B2
D611	8-719-200-82	DIODE	11ES2

< FERRITE BEAD INDUCTOR >

FB101	1-410-397-21	FERRITE BEAD INDUCTOR
FB601	1-410-397-21	FERRITE BEAD INDUCTOR
FB602	1-410-396-41	INDUCTOR 0.45UH

< IC >

IC101	8-759-804-80	IC	LA7235
IC102	8-759-927-56	IC	BA7021
IC103	8-759-961-38	IC	BA6138
IC401	8-759-008-71	IC	LM324N
IC402	8-759-113-18	IC	uPC4574C
IC403	⚠ 8-759-983-45	IC	BA6238A
IC501	8-752-819-83	IC	CXP80624-208Q
IC601	8-759-636-15	IC	M50555-054SP
IC602	8-759-115-55	IC	uPC1555C

< COIL >

L101	1-408-421-00	INDUCTOR 100uH
L102	1-408-409-00	INDUCTOR 10uH
L103	1-408-409-00	INDUCTOR 10uH
L103	1-410-521-11	INDUCTOR 100uH
L110	1-410-498-11	INDUCTOR 1.2uH
L111	1-410-498-11	INDUCTOR 1.2uH

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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Ref. No.	Part No.	Description	Remark
L112	1-410-498-11	INDUCTOR 1.2uH	
L151	1-408-409-00	INDUCTOR 10uH	
L431	1-408-413-00	INDUCTOR 22uH	
L432	1-408-413-00	INDUCTOR 22uH	
L501	1-408-409-00	INDUCTOR 10uH	
L602	1-412-470-21	INDUCTOR 22uH	
L603	1-408-421-00	INDUCTOR 100uH	
L604	1-408-421-00	INDUCTOR 100uH	
L605	1-408-416-00	INDUCTOR 39uH	
L606	1-408-414-00	INDUCTOR 27uH	
L607	1-408-397-00	INDUCTOR 1uH	
		< TRANSISTOR >	
Q151	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q152	8-729-900-89	TRANSISTOR DTC144ES	
Q153	8-729-900-89	TRANSISTOR DTC144ES	
Q154	8-729-900-89	TRANSISTOR DTC144ES	
Q155	8-729-102-14	TRANSISTOR 2SD1012F	
Q156	8-729-102-14	TRANSISTOR 2SD1012F	
Q157	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-900-63	TRANSISTOR DTA124ES	
Q403	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q404	8-729-601-47	TRANSISTOR 2SK381TP-A	
Q431	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q432	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q433	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q434	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q439	8-729-601-47	TRANSISTOR 2SK381-B	
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q602	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q604	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q605	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q606	8-729-900-65	TRANSISTOR DTA144ES	
Q607	8-729-900-89	TRANSISTOR DTC144ES	
Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q609	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R101	1-215-435-00	METAL 3.9K 1%	1/6W
R102	1-215-435-00	METAL 3.9K 1%	1/6W
R103	1-215-435-00	METAL 3.9K 1%	1/6W
R104	1-215-435-00	METAL 3.9K 1%	1/6W
R106	1-249-422-11	CARBON 2.7K 5%	1/4W
R107	1-249-422-11	CARBON 2.7K 5%	1/4W
R123	1-249-417-11	CARBON 1K 5%	1/4W

Ref. No.	Part No.	Description			Remark
R131	1-249-429-11	CARBON	10K	5%	1/4W
R132	1-249-429-11	CARBON	10K	5%	1/4W
R151	1-249-406-11	CARBON	120	5%	1/4W
R152	1-249-406-11	CARBON	120	5%	1/4W
R153	1-247-804-11	CARBON	75	5%	1/4W
R154	1-249-404-00	CARBON	82	5%	1/4W
R161	1-249-405-11	CARBON	100	5%	1/4W
R164	1-249-426-11	CARBON	5.6K	5%	1/4W
R165	1-249-421-11	CARBON	2.2K	5%	1/4W
R166	1-249-441-11	CARBON	100K	5%	1/4W
R167	1-249-423-11	CARBON	3.3K	5%	1/4W
R168	1-249-424-11	CARBON	3.9K	5%	1/4W
R169	1-249-423-11	CARBON	3.3K	5%	1/4W
R170	1-249-424-11	CARBON	3.9K	5%	1/4W
R171	1-247-891-00	CARBON	330K	5%	1/4W
R172	1-247-891-00	CARBON	330K	5%	1/4W
R173	1-249-429-11	CARBON	10K	5%	1/4W
R174	1-249-429-11	CARBON	10K	5%	1/4W
R179	1-249-417-11	CARBON	1K	5%	1/4W
R180	1-249-417-11	CARBON	1K	5%	1/4W
R181	1-249-422-11	CARBON	2.7K	5%	1/4W
R182	1-249-422-11	CARBON	2.7K	5%	1/4W
R185	1-249-421-11	CARBON	2.2K	5%	1/4W
R186	1-249-421-11	CARBON	2.2K	5%	1/4W
R190	1-249-417-11	CARBON	1K	5%	1/4W
R191	1-249-417-11	CARBON	1K	5%	1/4W
R192	1-249-429-11	CARBON	10K	5%	1/4W
R193	1-249-429-11	CARBON	10K	5%	1/4W
R194	1-249-429-11	CARBON	10K	5%	1/4W
R195	1-249-417-11	CARBON	1K	5%	1/4W
R196	1-249-429-11	CARBON	10K	5%	1/4W
R197	1-249-429-11	CARBON	10K	5%	1/4W
R198	1-249-417-11	CARBON	1K	5%	1/4W
R401	1-249-432-11	CARBON	18K	5%	1/4W
R402	1-249-431-11	CARBON	15K	5%	1/4W
R403	1-249-417-11	CARBON	1K	5%	1/4W
R404	1-249-436-11	CARBON	39K	5%	1/4W
R405	1-249-433-11	CARBON	22K	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R407	1-249-427-11	CARBON	6.8K	5%	1/4W
R408	1-249-417-11	CARBON	1K	5%	1/4W
R410	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-249-429-11	CARBON	10K	5%	1/4W
R412	1-247-885-00	CARBON	180K	5%	1/4W
R413	1-249-429-11	CARBON	10K	5%	1/4W
R414	1-249-430-11	CARBON	12K	5%	1/4W
R415	1-249-417-11	CARBON	1K	5%	1/4W
R416	1-249-423-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description				Remark
R417	1-249-441-11	CARBON	100K	5%	1/4W	
R420	1-247-885-00	CARBON	180K	5%	1/4W	
R421	1-249-429-11	CARBON	10K	5%	1/4W	
R422	1-249-429-11	CARBON	10K	5%	1/4W	
R423	1-249-429-11	CARBON	10K	5%	1/4W	
R424	1-249-415-11	CARBON	680	5%	1/4W	
R425	1-249-415-11	CARBON	680	5%	1/4W	
R431	1-249-430-11	CARBON	12K	5%	1/4W	
R432	1-249-431-11	CARBON	15K	5%	1/4W	
R433	1-249-417-11	CARBON	1K	5%	1/4W	
R434	1-249-417-11	CARBON	1K	5%	1/4W	
R435	1-249-418-11	CARBON	1.2K	5%	1/4W	
R436	1-249-417-11	CARBON	1K	5%	1/4W	
R437	1-247-897-11	CARBON	560K	5%	1/4W	
R438	1-249-421-11	CARBON	2.2K	5%	1/4W	
R439	1-249-421-11	CARBON	2.2K	5%	1/4W	
R440	1-249-428-11	CARBON	8.2K	5%	1/4W	
R441	1-249-402-11	CARBON	56	5%	1/4W	
R442	1-249-413-11	CARBON	470	5%	1/4W	
R443	1-249-427-11	CARBON	6.8K	5%	1/4W	
R444	1-249-437-11	CARBON	47K	5%	1/4W	
R445	1-249-435-11	CARBON	33K	5%	1/4W	
R446	1-249-429-11	CARBON	10K	5%	1/4W	
R447	1-249-435-11	CARBON	33K	5%	1/4W	
R450	1-249-417-11	CARBON	1K	5%	1/4W	
R451	1-249-434-11	CARBON	27K	5%	1/4W	
R461	1-249-429-11	CARBON	10K	5%	1/4W	
R463	⚠ 1-249-410-11	CARBON	270	5%	1/4W	
R464	1-249-441-11	CARBON	100K	5%	1/4W	
R475	1-249-425-11	CARBON	4.7K	5%	1/4W	
R490	1-249-417-11	CARBON	1K	5%	1/4W	
R491	1-249-413-11	CARBON	470	5%	1/4W	
R492	1-249-409-11	CARBON	220	5%	1/4W	
R493	1-249-429-11	CARBON	10K	5%	1/4W	
R494	1-249-429-11	CARBON	10K	5%	1/4W	
R495	1-249-429-11	CARBON	10K	5%	1/4W	
R515	1-249-411-11	CARBON	330	5%	1/4W	
R531	1-249-417-11	CARBON	1K	5%	1/4W	
R548	1-249-429-11	CARBON	10K	5%	1/4W	
R556	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R558	1-249-437-11	CARBON	47K	5%	1/4W	
R559	1-249-437-11	CARBON	47K	5%	1/4W	
R560	1-249-437-11	CARBON	47K	5%	1/4W	
R561	1-249-437-11	CARBON	47K	5%	1/4W	
R562	1-249-429-11	CARBON	10K	5%	1/4W	
R563	1-249-437-11	CARBON	47K	5%	1/4W	
R564	1-249-437-11	CARBON	47K	5%	1/4W	
R565	1-249-437-11	CARBON	47K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R567	1-249-425-11	CARBON	4.7K	5%	1/4W	
R568	1-249-425-11	CARBON	4.7K	5%	1/4W	
R570	1-249-437-11	CARBON	47K	5%	1/4W	
R571	1-249-422-11	CARBON	2.7K	5%	1/4W	
R572	1-249-429-11	CARBON	10K	5%	1/4W	
R573	1-249-428-11	CARBON	8.2K	5%	1/4W	
R574	1-249-429-11	CARBON	10K	5%	1/4W	
R575	1-249-421-11	CARBON	2.2K	5%	1/4W	
R576	1-249-429-11	CARBON	10K	5%	1/4W	
R590	1-249-427-11	CARBON	6.8K	5%	1/4W	
R618	1-249-418-11	CARBON	1.2K	5%	1/4W	
R619	1-249-413-11	CARBON	470	5%	1/4W	
R622	1-249-414-11	CARBON	560	5%	1/4W	
R623	1-249-420-11	CARBON	1.8K	5%	1/4W	
R624	1-249-422-11	CARBON	2.7K	5%	1/4W	
R625	1-249-421-11	CARBON	2.2K	5%	1/4W	
R630	1-249-422-11	CARBON	2.7K	5%	1/4W	
R631	1-249-423-11	CARBON	3.3K	5%	1/4W	
R632	1-249-414-11	CARBON	560	5%	1/4W	
R633	1-249-415-11	CARBON	680	5%	1/4W	
R634	1-249-422-11	CARBON	2.7K	5%	1/4W	
R635	1-249-424-11	CARBON	3.9K	5%	1/4W	
R636	1-249-422-11	CARBON	2.7K	5%	1/4W	
R637	1-249-425-11	CARBON	4.7K	5%	1/4W	
R638	1-249-424-11	CARBON	3.9K	5%	1/4W	
R639	1-247-903-00	CARBON	1M	5%	1/4W	
R640	1-249-419-11	CARBON	1.5K	5%	1/4W	
R641	1-249-429-11	CARBON	10K	5%	1/4W	
R642	1-215-453-00	METAL	22K	1%	1/6W	
R643	1-249-429-11	CARBON	10K	5%	1/4W	
R644	1-249-423-11	CARBON	3.3K	5%	1/4W	
R645	1-249-425-11	CARBON	4.7K	5%	1/4W	
R646	1-249-421-11	CARBON	2.2K	5%	1/4W	
R647	1-249-429-11	CARBON	10K	5%	1/4W	
R648	1-249-439-11	CARBON	68K	5%	1/4W	
R649	1-249-437-11	CARBON	47K	5%	1/4W	
R650	1-249-441-11	CARBON	100K	5%	1/4W	
R651	1-249-421-11	CARBON	2.2K	5%	1/4W	
R652	1-249-429-11	CARBON	10K	5%	1/4W	
R653	1-249-431-11	CARBON	15K	5%	1/4W	
R654	1-249-435-11	CARBON	33K	5%	1/4W	
R655	1-249-413-11	CARBON	470	5%	1/4W	
R656	1-249-417-11	CARBON	1K	5%	1/4W	
R657	1-249-405-11	CARBON	100	5%	1/4W	
R658	1-249-437-11	CARBON	47K	5%	1/4W	
R659	1-249-428-11	CARBON	8.2K	5%	1/4W	
R660	1-249-433-11	CARBON	22K	5%	1/4W	
R661	1-249-409-11	CARBON	220	5%	1/4W	
R663	1-249-435-11	CARBON	33K	5%	1/4W	

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MA-82 MD-49

Ref. No.	Part No.	Description			Remark
R665	1-249-431-11	CARBON	15K	5%	1/4W
R666	1-249-405-11	CARBON	100	5%	1/4W
R680	1-249-409-11	CARBON	220	5%	1/4W
R681	1-249-433-11	CARBON	22K	5%	1/4W
R682	1-249-437-11	CARBON	47K	5%	1/4W
R696	1-249-423-11	CARBON	3.3K	5%	1/4W
R697	1-249-429-11	CARBON	10K	5%	1/4W
R698	1-249-417-11	CARBON	1K	5%	1/4W
R699	1-249-417-11	CARBON	1K	5%	1/4W
R950	⚠1-212-942-00	FUSIBLE	2.2	5%	1/2W
R951	1-249-429-11	CARBON	10K	5%	1/4W
R952	⚠1-212-942-00	FUSIBLE	2.2	5%	1/2W
		< MODULATOR >			
RF001	⚠1-466-150-11	MODULATOR, RF (RFU-1025) (EXCEPT 71HF)			
RF001	⚠1-466-358-11	MODULATOR, RF (RFU-1020) (71HF)			
		< VARIABLE RESISTOR >			
RV401	1-238-013-11	RES, ADJ, CARBON 2.2K			
RV501	1-238-019-11	RES, ADJ, CARBON 47K			
RV502	1-238-019-11	RES, ADJ, CARBON 47K			
RV600	1-228-995-00	RES, ADJ, METAL 22K			
		< CRYSTAL >			
X501	1-578-774-11	VIBRATOR, CRYSTAL (14.3MHz)			
X601	1-577-381-11	VIBRATOR, CRYSTAL (12MHz)			
**********					
* A-6754-278-A	MD-49 BOARD, COMPLETE				
	**********				
		(Ref. No 4,000 Series)			
* 2-387-601-01	CUSHION, RUBBER				
		< CAPACITOR >			
C001	1-161-494-00	CERAMIC	0.022uF		25V
C002	1-161-494-00	CERAMIC	0.022uF		25V
C003	1-126-157-11	ELECT	10uF	20%	16V
C004	1-161-379-00	CERAMIC	0.01uF	20%	25V
C005	1-126-157-11	ELECT	10uF	20%	16V
C006	1-124-589-11	ELECT	47uF	20%	16V
C008	1-164-159-11	CERAMIC	0.1uF		50V
C009	1-164-159-11	CERAMIC	0.1uF		50V
C011	1-162-849-11	CERAMIC	0.068uF	10%	16V
C012	1-162-849-11	CERAMIC	0.068uF	10%	16V
C013	1-162-849-11	CERAMIC	0.068uF	10%	16V
C014	1-126-160-11	ELECT	1uF	20%	50V
C016	1-124-589-11	ELECT	47uF	20%	16V
C017	1-126-162-11	ELECT	3.3uF	20%	50V
C018	1-124-589-11	ELECT	47uF	20%	16V
C019	1-124-589-11	ELECT	47uF	20%	16V
C020	1-161-379-00	CERAMIC	0.01uF	20%	25V
C021	1-162-292-31	CERAMIC	680PF	10%	50V
C027	1-162-294-31	CERAMIC	0.001uF	10%	50V
C028	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
CN001	1-506-494-11	PIN, CONNECTOR 15P			
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P			
CN003	1-569-334-11	CONNECTOR, BOARD TO BOARD 5P			
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
CN005	1-506-482-11	CONNECTOR 3P, MALE			
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P			
CN007	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
CN008	1-506-482-11	CONNECTOR 3P, MALE			
		< DIODE >			
D001	8-719-985-00	DIODE GL451VS1			
D004	8-719-109-93	DIODE RD6.2ES-B2			
D005	8-719-109-93	DIODE RD6.2ES-B2			
D006	8-719-109-93	DIODE RD6.2ES-B2			
D007	8-719-109-93	DIODE RD6.2ES-B2			
		< IC >			
IC002	8-759-938-12	IC BA10324			
IC004	⚠8-759-234-03	IC TA8424F			
		< PHOTO INTERUPTER >			
PH001	8-759-144-33	PHOTO SENSOR PS6002			
PH002	8-759-144-33	PHOTO SENSOR PS6002			
		< IC LINK >			
PS001	1-532-685-00	LINK, IC (ICP-N20) 0.8A			
		< PHOTO TRANSISTOR >			
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S			
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S			
		< RESISTOR >			
R001	1-249-423-11	CARBON	3.3K	5%	1/4W
R002	1-249-423-11	CARBON	3.3K	5%	1/4W
R003	1-249-426-11	CARBON	5.6K	5%	1/4W
R004	1-249-426-11	CARBON	5.6K	5%	1/4W
R005	1-249-417-11	CARBON	1K	5%	1/4W
R006	1-249-441-11	CARBON	100K	5%	1/4W
R007	1-249-441-11	CARBON	100K	5%	1/4W
R008	1-249-425-11	CARBON	4.7K	5%	1/4W
R009	1-249-409-11	CARBON	220	5%	1/4W
R010	1-249-425-11	CARBON	4.7K	5%	1/4W

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Ref. No.	Part No.	Description				Remark
R011	1-249-437-11	CARBON	47K	5%	1/4W	
R012	1-249-421-11	CARBON	2.2K	5%	1/4W	
R013	1-249-429-11	CARBON	10K	5%	1/4W	
R014	1-249-426-11	CARBON	5.6K	5%	1/4W	
R015	1-249-437-11	CARBON	47K	5%	1/4W	
R016	1-249-421-11	CARBON	2.2K	5%	1/4W	
R019	⚠1-249-377-11	CARBON	0.47	5%	1/4W	F
R020	1-249-406-11	CARBON	120	5%	1/4W	
R021	1-249-383-11	CARBON	1.5	5%	1/6W	
R022	1-249-408-11	CARBON	180	5%	1/4W	
R024	1-249-417-11	CARBON	1K	5%	1/4W	
R025	1-247-891-00	CARBON	330K	5%	1/4W	
R027	1-249-383-11	CARBON	1.5	5%	1/6W	
R028	1-249-383-11	CARBON	1.5	5%	1/6W	

< SWITCH >

S001	1-570-953-11	SWITCH, PUSH (1 KEY)
S002	1-570-953-11	SWITCH, PUSH (1 KEY)

****

* A-6721-389-A MF-122 BOARD, COMPLETE (585HF;US, PX)
****
* A-6721-390-A MF-122 BOARD, COMPLETE (585HF;CND/589HF)
****
* A-6721-391-A MF-122 BOARD, COMPLETE (686HF;US, MX)
****
* A-6721-393-A MF-122 BOARD, COMPLETE (686HF;CND)
****
* A-6721-401-A MF-122 BOARD, COMPLETE (71HF)
****
(Ref. No 5,000 Series)

* 3-941-531-01 HOLDER, FL

< CAPACITOR >

C803	1-164-056-11	CERAMIC	27PF	5%	50V
C804	1-125-486-11	DUBLE LAYERS	0.22F		5.5V
C805	1-126-160-11	ELECT	1uF	20%	50V
C808	1-161-494-00	CERAMIC	0.022uF		25V
C809	1-126-154-11	ELECT	47uF	20%	6.3V
C810	1-161-494-00	CERAMIC	0.022uF		25V
C811	1-128-057-11	ELECT	330uF	20%	6.3V

< VIBRATOR >

CF801	1-577-101-11	VIBRATOR, CERAMIC

< CONNECTOR >

CN801	1-580-846-11	CONNECTOR, BOARD TO BOARD 15P
CN802	1-580-846-11	CONNECTOR, BOARD TO BOARD 15P
CN803	1-562-631-11	SOCKET, CONNECTOR
CN804	1-580-850-11	CONNECTOR (DMS) 8P
CN805	1-568-672-11	CONNECTOR, BOARD TO BOARD 12P

< TRIMMER >

CT801	1-141-318-11	CAP, VAR, TRIMMER 20P

< DIODE >

D801	8-719-200-82	DIODE 11ES2
D802	8-719-200-82	DIODE 11ES2
D803	8-719-110-08	DIODE RD8.2ES-B2
D807	8-719-109-97	DIODE RD6.8ES-B2
D808	8-719-109-97	DIODE RD6.8ES-B2
D809	8-719-109-97	DIODE RD6.8ES-B2
D810	8-719-109-97	DIODE RD6.8ES-B2
D811	8-719-109-97	DIODE RD6.8ES-B2
D812	8-719-109-93	DIODE RD6.2ES-B2

< IC >

IC801	8-752-818-76	IC CXP50116-218Q
IC802	8-759-510-43	IC PST572C
IC803	8-759-515-58	IC PST-572H
IC804	1-466-131-21	IC GP1U52X
IC805	8-759-996-58	IC AK93C46

< COIL >

L802	1-410-316-11	INDUCTOR 1uH
L803	1-410-316-11	INDUCTOR 1uH
L805	1-412-488-11	INDUCTOR 1uH
L806	1-408-397-00	INDUCTOR 1uH
L808	1-410-316-11	INDUCTOR 1uH

< INDICATOR TUBE >

ND801	1-519-660-11	INDICATOR TUBE, FLUORESCENT

< RESISTOR >

R802	1-249-437-11	CARBON	47K	5%	1/4W
R803	1-249-425-11	CARBON	4.7K	5%	1/4W
R804	1-249-425-11	CARBON	4.7K	5%	1/4W
R805	1-249-425-11	CARBON	4.7K	5%	1/4W
R806	1-249-425-11	CARBON	4.7K	5%	1/4W
R807	1-249-425-11	CARBON	4.7K	5%	1/4W
R808	1-249-425-11	CARBON	4.7K	5%	1/4W
R809	1-249-425-11	CARBON	4.7K	5%	1/4W
R810	1-249-425-11	CARBON	4.7K	5%	1/4W
R811	1-249-418-11	CARBON	1.2K	5%	1/4W
R812	1-249-420-11	CARBON	1.8K	5%	1/4W
R813	1-249-437-11	CARBON	47K	5%	1/4W
R814	1-249-427-11	CARBON	6.8K	5%	1/4W

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MF-122 MF-123 MF-142

Ref.No.	Part No.	Description				Remark
R818	1-249-429-11	CARBON	10K	5%	1/4W	
R821	1-249-418-11	CARBON	1.2K	5%	1/4W	
R822	1-249-429-11	CARBON	10K	5%	1/4W	
R824	1-249-425-11	CARBON	4.7K	5%	1/4W	
R825	1-249-425-11	CARBON	4.7K	5%	1/4W	
R826	1-249-425-11	CARBON	4.7K	5%	1/4W	
R827	1-249-417-11	CARBON	1K	5%	1/4W	
R829	1-249-429-11	CARBON	10K	5%	1/4W	
R830	1-249-437-11	CARBON	47K	5%	1/4W	(686HF)
R831	1-249-437-11	CARBON	47K	5%	1/4W	(585HF/589HF/71HF)
R832	1-249-437-11	CARBON	47K	5%	1/4W	
R832		(585HF;CND/589HF/71HF/686HF;CND)				
		< RESISTOR >				
R833	1-249-437-11	CARBON	47K	5%	1/4W	
		(585HF;US.PX/686HF;MX)				
		< RESISTOR >				
R835	1-249-418-11	CARBON	1.2K	5%	1/4W	
R836	1-249-417-11	CARBON	1K	5%	1/4W	
R837	1-249-425-11	CARBON	4.7K	5%	1/4W	
R838	1-249-425-11	CARBON	4.7K	5%	1/4W	
R839	1-249-425-11	CARBON	4.7K	5%	1/4W	(EXCEPT; 589HF)
R840	1-249-425-11	CARBON	4.7K	5%	1/4W	
		< SWITCH >				
S801	1-571-977-11	SWITCH, TACTIL (HI-SPEED REWIND)				
S802	1-571-977-11	SWITCH, TACTIL (PAUSE)				
		< CRYSTAL >				
X802	1-567-098-00	CRYSTAL (32.768MHz)				

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Ref.No.	Part No.	Description				Remark
*	A-6756-082-A	MF-123 BOARD, COMPLETE (585HF;US.CND)				
		**********				
*	A-6756-240-A	MF-123 BOARD, COMPLETE (686HF;US.CND)				
		**********				
*	A-6756-103-A	MF-142 BOARD, COMPLETE (71HF)				
		**********				
*	A-6756-248-A	MF-142 BOARD, COMPLETE (585HF;PX/589HF)				
		**********				
*	A-6756-253-A	MF-142 BOARD, COMPLETE (686HF;MX)				
		**********				
		(Ref.No 5,000 Series)				
		< CONNECTOR >				
CN501	1-568-666-11	CONNECTOR, BOARD TO BOARD 12P				
		< JACK >				
CNJ501	1-580-845-11	JACK, PIN 3P				
		< DIODE >				
D501	8-719-940-82	DIODE SLR-34MC3				
D502	8-719-940-82	DIODE SLR-34MC3				
D504	8-719-109-97	DIODE RD6.8ES-B2				
		< COIL >				
L502	1-162-294-31	CERAMIC 0.001uF		10%	50V	
		< RESISTOR >				
R502	1-249-418-11	CARBON	1.2K	5%	1/4W	
R503	1-249-420-11	CARBON	1.8K	5%	1/4W	
R504	1-249-423-11	CARBON	3.3K	5%	1/4W	
R505	1-249-404-00	CARBON	82	5%	1/4W	
R513	1-249-427-11	CARBON	6.8K	5%	1/4W	
R514	1-249-401-11	CARBON	47	5%	1/4W	
		< VARIABLE RESISTOR >				
RV501	1-230-819-11	RES, VAR, CARBON 2K (SHARPNESS)				
		< SWITCH >				
S501	1-571-977-11	SWITCH, TACTIL (POWER ON/OFF)				
S502	1-571-977-11	SWITCH, TACTIL (EJECT)				
S503	1-570-854-11	SWITCH, SLIDE (COMMAND MODE)				
S506	1-571-977-11	SWITCH, TACTIL (CL)				

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Ref. No.	Part No.	Description			Remark
⚠*	A-6754-236-A	PS-274 BOARD, COMPLETE (585HF/686HF;US, CND)			
		**********			
		(Ref. No 5,000 Series)			
*	1-533-189-11	HOLDER, FUSE			
		< CAPACITOR >			
C901	⚠1-136-345-21	FILM	0.1uF	20% 125V	
C902	⚠1-161-742-00	CERAMIC	0.0022uF	20% 400V	
C903	⚠1-161-742-00	CERAMIC	0.0022uF	20% 400V	
C904	⚠1-128-337-11	ELECT	10000uF	20% 25V	
C905	1-161-494-00	CERAMIC	0.022uF	25V	
C906	1-161-494-00	CERAMIC	0.022uF	25V	
C907	1-126-101-11	ELECT	100uF	20% 16V	
C908	1-161-494-00	CERAMIC	0.022uF	25V	
C909	1-162-294-31	CERAMIC	0.001uF	10% 50V	
C910	1-124-477-11	ELECT	47uF	20% 25V	
C911	1-126-101-11	ELECT	100uF	20% 16V	
C912	1-161-494-00	CERAMIC	0.022uF	25V	
C913	1-124-907-11	ELECT	10uF	20% 50V	
C914	1-124-477-11	ELECT	47uF	20% 25V	
C915	1-124-477-11	ELECT	47uF	20% 25V	
C916	1-124-443-00	ELECT	100uF	20% 10V	
C917	⚠1-124-912-11	ELECT	330uF	20% 50V	
C918	⚠1-124-912-11	ELECT	330uF	20% 50V	
C919	⚠1-126-939-11	ELECT	10000uF	20% 16V	
C920	1-161-494-00	CERAMIC	0.022uF	25V	
C921	1-126-233-11	ELECT	22uF	20% 50V	
C922	1-124-443-00	ELECT	100uF	20% 10V	
C923	1-130-495-00	MYLAR	0.1uF	5% 50V	
C924	1-162-286-31	CERAMIC	220PF	10% 50V	
C925	1-162-286-31	CERAMIC	220PF	10% 50V	
		< CONNECTOR >			
CN901	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
CN902	1-506-468-11	CONNECTOR 3P, MALE			
CN903	1-506-468-11	CONNECTOR 3P, MALE			
		< DIODE >			
D901	⚠8-719-510-22	DIODE	D3SB60		
D902	⚠8-719-110-36	DIODE	RD13ES-B2		
D903	8-719-109-85	DIODE	RD5.1ES-B2		
D904	⚠8-719-109-93	DIODE	RD5.6ES-B2		
D905	⚠8-719-200-82	DIODE	11ES2		
D906	⚠8-719-200-82	DIODE	11ES2		
D907	⚠8-719-511-40	DIODE	S1VB40		
D908	⚠8-719-109-97	DIODE	RD6.8ES-B2		
D909	8-719-110-63	DIODE	RD24ES-B2		
D910	⚠8-719-911-19	DIODE	1SS119		

Ref. No.	Part No.	Description			Remark
		< FUSE >			
F901	⚠1-532-742-11	FUSE, GLASS TUBE (1.6A 125V)			
F902	⚠1-532-745-11	FUSE, GLASS TUBE (4A 125V)			
F903	⚠1-532-744-11	FUSE, GLASS TUBE (2.5A 125V)			
		< TRANSISTOR >			
Q902	⚠8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q903	8-729-900-61	TRANSISTOR	DTA114ES		
Q904	8-729-900-89	TRANSISTOR	DTC144ES		
Q906	⚠8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q907	⚠8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q908	⚠8-729-111-55	TRANSISTOR	2SD1312-K		
Q909	⚠8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q910	⚠8-729-111-55	TRANSISTOR	2SD1312-K		
Q911	⚠8-729-111-55	TRANSISTOR	2SD1312-K		
		< RESISTOR >			
R901	⚠1-202-729-00	SOLID	6.8M	10% 1/2W	
R902	1-249-417-11	CARBON	1K	5% 1/4W	
R904	1-247-756-11	CARBON	2.2K	5% 1/2W	
R905	1-249-425-11	CARBON	4.7K	5% 1/4W	
R906	1-249-419-11	CARBON	1.5K	5% 1/4W	
R907	1-249-419-11	CARBON	1.5K	5% 1/4W	
R908	1-215-428-00	METAL	2K	1% 1/6W	
R909	1-215-427-00	METAL	1.8K	1% 1/6W	
R910	1-215-420-81	METAL	910	1% 1/6W	
R911	1-215-439-00	METAL	5.6K	1% 1/6W	
R912	1-249-417-11	CARBON	1K	5% 1/4W	
R913	1-249-409-11	CARBON	220	5% 1/4W	
R914	⚠1-219-112-11	FUSIBLE	10	5% 1/4W F	
R915	⚠1-219-112-11	FUSIBLE	10	5% 1/4W F	
R918	1-249-417-11	CARBON	1K	5% 1/4W	
		< TRANSFORMER >			
T901	⚠1-421-765-11	FILTER, LINE			
T902	⚠1-450-372-11	TRANSFORMER, POWER			

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Note: The following parts of power supply block assemblies should be referred to the SUPPLEMENT-1.
SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safey.
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.

RP-112 RP-128 DQ-6

Ref.No.	Part No.	Description			Remark
	* A-6727-301-A	RP-112 BOARD, COMPLETE (686HF;US,CND)			
		**********			
	* A-6727-302-A	RP-112 BOARD, COMPLETE (585HF;US,CND)			
		**********			
	* A-6727-314-A	RP-128 BOARD, COMPLETE (71HF)			
		**********			
	* A-6727-357-A	RP-128 BOARD, COMPLETE (585HF;PX/589HF)			
		**********			
	* A-6727-361-A	RP-128 BOARD, COMPLETE (686HF;MX)			
		**********			
		(Ref.No 1,000 Series)			
	* 1-639-699-12	DQ-6 BOARD (Ref.No. 4,000 Series)			
	* 1-639-699-31	DQ-6 BOARD (71HF)			
		**********			
	3-682-057-11	SPACER (SMALL)			
	* 3-941-530-01	CASE, SHIELD, RP			
		< CAPACITOR >			
C101	1-126-160-11	ELECT	1uF	20%	50V
C102	1-162-306-11	CERAMIC	0.01uF	20%	16V
C103	1-126-160-11	ELECT	1uF	20%	50V
C104	1-162-306-11	CERAMIC	0.01uF	20%	16V
C105	1-126-160-11	ELECT	1uF	20%	50V
C107	1-162-306-11	CERAMIC	0.01uF	20%	16V
C108	1-124-584-00	ELECT	100uF	20%	10V
C109	1-162-306-11	CERAMIC	0.01uF	20%	16V
C110	1-131-349-00	TANTALUM	2.2uF	10%	35V
C112	1-131-347-00	TANTALUM	1uF	10%	35V
C113	1-162-306-11	CERAMIC	0.01uF	20%	16V
C118	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C119	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C121	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C122	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C801	1-164-159-11	CERAMIC	0.1uF		50V
C802	1-126-154-11	ELECT	47uF	20%	6.3V
C803	1-164-159-11	CERAMIC	0.1uF		50V
C804	1-124-464-11	ELECT	0.22uF	20%	50V
C805	1-162-213-31	CERAMIC	39PF	5%	50V
C806	1-162-213-31	CERAMIC	39PF	5%	50V
C807	1-124-464-11	ELECT	0.22uF	20%	50V
C808	1-164-159-11	CERAMIC	0.1uF		50V
C809	1-164-159-11	CERAMIC	0.1uF		50V
C810	1-124-464-11	ELECT	0.22uF	20%	50V
C811	1-162-213-31	CERAMIC	39PF	5%	50V
C812	1-162-209-31	CERAMIC	27PF	5%	50V
C813	1-124-464-11	ELECT	0.22uF	20%	50V
C814	1-164-159-11	CERAMIC	0.1uF		50V
C815	1-162-209-31	CERAMIC	27PF	5%	50V

Ref.No.	Part No.	Description			Remark
C816	1-124-903-11	ELECT	1uF	20%	50V
C817	1-162-306-11	CERAMIC	0.01uF	20%	16V
C818	1-164-095-11	CERAMIC	0.01uF	10%	16V
C819	1-162-289-31	CERAMIC	390PF	10%	50V
C820	1-161-327-00	CERAMIC	0.0033uF	20%	16V
C821	1-164-095-11	CERAMIC	0.01uF	10%	16V
C822	1-164-095-11	CERAMIC	0.01uF	10%	16V
C823	1-102-962-00	CERAMIC	30PF	5%	50V
C824	1-164-095-11	CERAMIC	0.01uF	10%	16V
C825	1-164-070-11	CERAMIC	100PF	5%	50V
C826	1-164-066-11	CERAMIC	68PF	5%	50V
C827	1-102-820-00	CERAMIC	330PF	5%	50V
C828	1-124-443-00	ELECT	100uF	20%	10V
C829	1-162-851-11	CERAMIC	0.1uF	10%	16V
C831	1-126-154-11	ELECT	47uF	20%	6.3V
C832	1-164-159-11	CERAMIC	0.1uF		50V
C833	1-164-095-11	CERAMIC	0.01uF	10%	16V
C834	1-162-851-11	CERAMIC	0.1uF	10%	16V
C835	1-162-306-11	CERAMIC	0.01uF	20%	16V
C836	1-162-306-11	CERAMIC	0.01uF	20%	16V
C838	1-102-935-00	CERAMIC	2.0PF	+-0.25PF	50V
C839	1-162-306-11	CERAMIC	0.01uF	20%	16V
C840	1-162-306-11	CERAMIC	0.01uF	20%	16V
C850	1-162-306-11	CERAMIC	0.01uF	20% 16V	(686HF)
C852	1-162-282-31	CERAMIC	100PF	10% 50V	(686HF)
C853	1-101-361-00	CERAMIC	150PF	5% 50V	(686HF)
C854	1-101-890-00	CERAMIC	75PF	5% 50V	(686HF)
C855	1-164-159-11	CERAMIC	0.1uF	50V	(686HF)
C856	1-124-907-11	ELECT	10uF	20% 50V	(686HF)
C857	1-164-159-11	CERAMIC	0.1uF	50V	(686HF)
C859	1-162-306-11	CERAMIC	0.01uF	20% 16V	(686HF)
		< CONNECTOR >			
CN101	1-506-487-11	CONNECTOR 8P, MALE			
CN801	* 1-563-590-11	CONNECTOR, FLEXIBLE 13P			
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P			
CN804	* 1-564-031-00	PIN, CONNECTOR 6P			
		< DIODE >			
D801	8-719-911-19	DIODE 1SS119			
D802	8-719-911-19	DIODE 1SS119			
D803	8-719-911-19	DIODE 1SS119			
		< IC >			
IC101	8-759-421-19	IC AN3317K			
IC801	8-759-320-52	IC HA118019NT			

Ref. No.	Part No.	Description			Remark
		< COIL >			
L101	1-407-169-XX	INDUCTOR 100uH			
L103	1-408-978-21	INDUCTOR 47uH			
L104	1-408-985-21	INDUCTOR 180uH			
L105	1-408-977-21	INDUCTOR 39uH			
L106	1-408-978-21	INDUCTOR 47uH			
L801	1-408-421-00	INDUCTOR 100uH			
L802	1-408-414-00	INDUCTOR 27uH			
L803	1-408-409-00	INDUCTOR 10uH			
L804	1-408-424-00	INDUCTOR 180uH			
L805	1-408-421-00	INDUCTOR 100uH			
L806	1-408-421-00	INDUCTOR 100uH			
L807	1-408-418-00	INDUCTOR 56uH			
L808	1-408-412-00	INDUCTOR 18uH			
L809	1-408-415-00	INDUCTOR 33uH			
L850	1-408-968-21	INDUCTOR 6.8uH (686HF)			
L851	1-408-421-00	INDUCTOR 100uH (686HF)			
		< CONNECTOR >			
LP101	* 1-573-234-11	PIN. CONNECTOR (PC BOARD) 1P			
LP102	* 1-573-234-11	PIN. CONNECTOR (PC BOARD) 1P			
		< TRANSISTOR >			
Q801	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q803	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q804	8-729-900-89	TRANSISTOR DTC144ES			
Q805	8-729-900-89	TRANSISTOR DTC144ES			
Q806	8-729-900-89	TRANSISTOR DTC144ES			
Q807	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q808	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q850	8-729-113-31	TRANSISTOR 2SB733-2 (686HF)			
Q851	8-729-900-80	TRANSISTOR DTC114ES (686HF)			
Q852	8-729-119-76	TRANSISTOR 2SA1175-HFE (686HF)			
Q853	8-729-119-76	TRANSISTOR 2SA1175-HFE (686HF)			
Q854	8-729-900-89	TRANSISTOR DTC144ES (686HF)			
		< RESISTOR >			
R101	1-249-393-11	CARBON	10	5%	1/4W
R102	1-249-393-11	CARBON	10	5%	1/4W
R103	1-249-410-11	CARBON	270	5%	1/4W
R104	1-249-409-11	CARBON	220	5%	1/4W
R105	1-249-410-11	CARBON	270	5%	1/4W
R106	1-249-435-11	CARBON	33K	5%	1/4W
R107	1-249-426-11	CARBON	5.6K	5%	1/4W
R110	1-249-432-11	CARBON	18K	5%	1/4W
R111	1-249-435-11	CARBON	33K	5%	1/4W
R112	1-249-435-11	CARBON	33K	5%	1/4W
R113	1-216-045-00	METAL CHIP	680	5%	1/10W
R114	1-216-045-00	METAL CHIP	680	5%	1/10W
R801	1-249-408-11	CARBON	180	5%	1/4W
R802	1-249-408-11	CARBON	180	5%	1/4W
R803	1-249-405-11	CARBON	100	5%	1/4W
R804	1-249-405-11	CARBON	100	5%	1/4W
R805	1-249-432-11	CARBON	18K	5%	1/4W
R806	1-247-895-00	CARBON	470K	5%	1/4W
R807	1-249-429-11	CARBON	10K	5%	1/4W
R808	1-249-429-11	CARBON	10K	5%	1/4W
R809	1-249-433-11	CARBON	22K	5%	1/4W
R810	1-249-429-11	CARBON	10K	5%	1/4W
R811	1-249-417-11	CARBON	1K	5%	1/4W
R812	1-249-421-11	CARBON	2.2K	5%	1/4W
R813	1-249-421-11	CARBON	2.2K	5%	1/4W
R814	1-249-412-11	CARBON	390	5%	1/4W
R815	1-249-412-11	CARBON	390	5%	1/4W
R816	1-249-416-11	CARBON	820	5%	1/4W
R817	1-249-426-11	CARBON	5.6K	5%	1/4W
R818	1-249-421-11	CARBON	2.2K	5%	1/4W
R819	1-249-413-11	CARBON	470	5%	1/4W
R820	1-249-415-11	CARBON	680	5%	1/4W
R821	1-249-414-11	CARBON	560	5%	1/4W
R822	1-249-417-11	CARBON	1K	5%	1/4W
R823	1-249-416-11	CARBON	820	5%	1/4W
R824	1-249-418-11	CARBON	1.2K	5%	1/4W
R825	1-249-417-11	CARBON	1K	5%	1/4W
R826	1-247-893-11	CARBON	390K	5%	1/4W
R827	1-249-417-11	CARBON	1K	5%	1/4W
R828	1-249-420-11	CARBON	1.8K	5%	1/4W
R829	1-249-420-11	CARBON	1.8K	5%	1/4W
R830	1-249-429-11	CARBON	10K	5%	1/4W
R831	1-249-429-11	CARBON	10K	5%	1/4W
R832	1-249-419-11	CARBON	1.5K	5%	1/4W
R833	1-249-417-11	CARBON	1K	5%	1/4W
R834	1-249-433-11	CARBON	22K	5%	1/4W
R835	1-249-435-11	CARBON	33K	5%	1/4W
R836	1-249-417-11	CARBON	1K	5%	1/4W
R838	1-249-405-11	CARBON	100	5%	1/4W
R839	1-249-416-11	CARBON	820	5%	1/4W
R850	1-249-435-11	CARBON	33K	5%	1/4W (686HF)
R851	1-249-405-11	CARBON	100	5%	1/4W (686HF)
R852	1-249-417-11	CARBON	1K	5%	1/4W (686HF)
R853	1-249-415-11	CARBON	680	5%	1/4W (686HF)
R854	1-249-437-11	CARBON	47K	5%	1/4W (686HF)
R855	1-249-439-11	CARBON	68K	5%	1/4W (686HF)
R856	1-249-436-11	CARBON	39K	5%	1/4W (686HF)
R857	1-249-432-11	CARBON	18K	5%	1/4W (686HF)
R858	1-249-437-11	CARBON	47K	5%	1/4W (686HF)

RP-112 RP-128 DQ-6 TU-130

Ref. No.	Part No.	Description			Remark
		< VARIABLE RESISTOR >			
RV801	1-238-545-11	RES. ADJ. CARBON 2.2K			
**********					
	* A-6754-238-A	TU-130 BOARD, COMPLETE			
		**********			
		(Ref. No 5,000 Series)			
	* 3-710-578-01	COVER, VOLUME, 6 MOLD			
		< CAPACITOR >			
C001	1-124-589-11	ELECT	47uF	20%	16V
C002	1-126-163-11	ELECT	4.7uF	20%	50V
C003	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C004	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C005	1-126-101-11	ELECT	100uF	20%	16V
C007	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C008	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C011	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C012	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C014	1-124-477-11	ELECT	47uF	20%	25V
C015	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C016	1-124-477-11	ELECT	47uF	20%	25V
C019	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C020	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C021	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C022	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C023	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C024	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C025	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C026	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C027	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C028	1-163-091-00	CERAMIC CHIP	8PF		50V
C029	1-126-101-11	ELECT	100uF	20%	16V
C030	1-124-907-11	ELECT	10uF	20%	50V
C031	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C032	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C033	1-124-477-11	ELECT	47uF	20%	25V
C034	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C035	1-124-250-00	ELECT	0.15uF	20%	50V
C036	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C037	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C038	1-124-903-11	ELECT	1uF	20%	50V
C039	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C040	1-124-477-11	ELECT	47uF	20%	25V
C041	1-124-902-00	ELECT	0.47uF	20%	50V
C043	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C044	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C045	1-124-907-11	ELECT	10uF	20%	50V
C046	1-124-477-11	ELECT	47uF	20%	25V
C070	1-136-154-00	MYLAR	0.012uF	10%	50V
C071	1-130-480-00	MYLAR	0.0056uF	5%	50V
C072	1-124-252-00	ELECT	0.33uF	20%	50V
C073	1-124-907-11	ELECT	10uF	20%	50V
C074	1-124-907-11	ELECT	10uF	20%	50V
C075	1-130-476-00	MYLAR	0.0027uF	5%	50V
C076	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C077	1-124-907-11	ELECT	10uF	20%	50V
C078	1-131-365-00	TANTALUM	10uF	10%	20V
C079	1-124-903-11	ELECT	1uF	20%	50V
C080	1-131-368-00	TANTALUM	3.3uF	10%	16V
C081	1-124-907-11	ELECT	10uF	20%	50V
C082	1-124-907-11	ELECT	10uF	20%	50V
C083	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C084	1-124-927-11	ELECT	4.7uF	20%	100V
C085	1-124-902-00	ELECT	0.47uF	20%	50V
C086	1-124-903-11	ELECT	1uF	20%	50V
C087	1-126-157-11	ELECT	10uF	20%	16V
C088	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C089	1-126-162-11	ELECT	3.3uF	20%	50V
C090	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C091	1-124-907-11	ELECT	10uF	20%	50V
C092	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C098	1-126-233-11	ELECT	22uF	20%	50V
		< FILTER >			
CF001	1-577-559-11	FILTER, CERAMIC			
CF002	1-409-332-00	CERAMIC TRAP			
CF003	1-527-943-00	FILTER, CERAMIC			
		< CONNECTOR >			
CN001	* 1-569-796-11	SOCKET, CONNECTOR 12P			
CN002	* 1-569-796-11	SOCKET, CONNECTOR 12P			
		< DIODE >			
D001	⚠ 8-719-110-78	DIODE RD33ES-B2			
D005	8-719-104-34	DIODE 1S2836			
D006	8-719-104-34	DIODE 1S2836			
D007	8-719-800-76	DIODE 1SS226			
		< IC >			
IC001	8-759-630-93	IC M51362SP			
IC002	8-752-035-71	IC CXA1124AS			
IC003	8-759-981-64	IC LM2903DQ			

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
		< JUMPER RESISTOR >			
JP002	1-216-296-00	METAL CHIP	0	5%	1/8W
JP004	1-216-295-00	METAL CHIP	0	5%	1/10W
JP005	1-216-296-00	METAL CHIP	0	5%	1/8W
JP006	1-216-296-00	METAL CHIP	0	5%	1/8W
JP007	1-216-296-00	METAL CHIP	0	5%	1/8W
JP008	1-216-295-00	METAL CHIP	0	5%	1/10W
JP009	1-216-296-00	METAL CHIP	0	5%	1/8W
JP010	1-216-296-00	METAL CHIP	0	5%	1/8W
JP011	1-216-296-00	METAL CHIP	0	5%	1/8W
JP012	1-216-296-00	METAL CHIP	0	5%	1/8W
JP013	1-216-295-00	METAL CHIP	0	5%	1/10W
JP014	1-216-296-00	METAL CHIP	0	5%	1/8W
JP015	1-216-296-00	METAL CHIP	0	5%	1/8W
JP016	1-216-295-00	METAL CHIP	0	5%	1/10W
JP017	1-216-295-00	METAL CHIP	0	5%	1/10W
JP018	1-216-296-00	METAL CHIP	0	5%	1/8W
JP019	1-216-296-00	METAL CHIP	0	5%	1/8W
JP020	1-216-296-00	METAL CHIP	0	5%	1/8W
JP021	1-216-295-00	METAL CHIP	0	5%	1/10W
JP022	1-216-295-00	METAL CHIP	0	5%	1/10W
JP023	1-216-296-00	METAL CHIP	0	5%	1/8W
JP024	1-216-295-00	METAL CHIP	0	5%	1/10W
JP025	1-216-296-00	METAL CHIP	0	5%	1/8W
JP026	1-216-296-00	METAL CHIP	0	5%	1/8W
JP027	1-216-295-00	METAL CHIP	0	5%	1/10W
JP028	1-216-296-00	METAL CHIP	0	5%	1/8W
JP029	1-216-296-00	METAL CHIP	0	5%	1/8W
JP030	1-216-296-00	METAL CHIP	0	5%	1/8W
JP031	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L001	1-408-409-00	INDUCTOR 10uH			
L002	1-410-509-11	INDUCTOR 10uH			
L003	1-408-413-00	INDUCTOR 22uH			
L004	1-408-409-00	INDUCTOR 10uH			
L005	1-408-409-00	INDUCTOR 10uH			
L006	1-410-787-31	INDUCTOR 0.33uH			
L007	1-410-316-11	INDUCTOR 1uH			
L008	1-408-411-00	INDUCTOR 15uH			
L010	1-410-509-11	INDUCTOR 10uH			
L011	1-410-509-11	INDUCTOR 10uH			
L098	1-410-498-11	INDUCTOR 1.2uH			
		< IC LINK >			
PS001	⚠1-532-679-00	LINK, IC (ICP-N15) 0.6A			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q001	⚠8-729-173-38	TRANSISTOR	2SA733-K		
Q002	8-729-901-01	TRANSISTOR	DTC144EK		
Q003	8-729-901-06	TRANSISTOR	DTA144EK		
Q004	8-729-901-01	TRANSISTOR	DTC144EK		
Q005	8-729-822-90	TRANSISTOR	2SC3779C		
Q006	8-729-822-90	TRANSISTOR	2SC3779C		
Q007	8-729-920-74	TRANSISTOR	2SC2412K-QR		
Q008	8-729-920-74	TRANSISTOR	2SC2412K-QR		
Q009	8-729-920-74	TRANSISTOR	2SC2412K-QR		
Q070	8-729-920-74	TRANSISTOR	2SC2412K-QR		
Q071	8-729-901-01	TRANSISTOR	DTC144EK		
		< RESISTOR >			
R001	1-216-085-00	METAL CHIP	33K	5%	1/10W
R002	1-216-089-00	METAL CHIP	47K	5%	1/10W
R003	1-216-037-00	METAL CHIP	330	5%	1/10W
R004	1-216-035-00	METAL CHIP	270	5%	1/10W
R005	1-216-025-00	METAL CHIP	100	5%	1/10W
R006	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R007	1-216-025-00	METAL CHIP	100	5%	1/10W
R008	1-216-049-00	METAL CHIP	1K	5%	1/10W
R009	1-216-049-00	METAL CHIP	1K	5%	1/10W
R010	1-216-033-00	METAL CHIP	220	5%	1/10W
R012	1-216-081-00	METAL CHIP	22K	5%	1/10W
R013	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R014	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R015	1-216-081-00	METAL CHIP	22K	5%	1/10W
R016	1-216-081-00	METAL CHIP	22K	5%	1/10W
R018	1-216-083-00	METAL CHIP	27K	5%	1/10W
R019	1-216-089-00	METAL CHIP	47K	5%	1/10W
R020	1-216-081-00	METAL CHIP	22K	5%	1/10W
R023	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R025	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R029	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R030	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R031	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R032	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R033	1-216-017-00	METAL CHIP	47	5%	1/10W
R034	1-216-105-00	METAL CHIP	220K	5%	1/10W
R035	1-216-105-00	METAL CHIP	220K	5%	1/10W
R036	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R038	1-216-089-00	METAL CHIP	47K	5%	1/10W
R039	1-216-043-00	METAL CHIP	560	5%	1/10W
R040	1-216-025-00	METAL CHIP	100	5%	1/10W
R041	1-216-037-00	METAL CHIP	330	5%	1/10W
R042	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R043	1-216-037-00	METAL CHIP	330	5%	1/10W

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

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

TU-130 YC-112

Ref.No.	Part No.	Description			Remark
R044	1-216-037-00	METAL CHIP	330	5%	1/10W
R046	1-216-119-00	METAL CHIP	820K	5%	1/10W
R047	1-216-033-00	METAL CHIP	220	5%	1/10W
R048	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R049	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R050	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R051	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R053	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R054	1-216-029-00	METAL CHIP	150	5%	1/10W
R055	1-216-039-00	METAL CHIP	390	5%	1/10W
R056	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R057	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R058	1-216-037-00	METAL CHIP	330	5%	1/10W
R059	1-216-037-00	METAL CHIP	330	5%	1/10W
R060	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R061	1-216-047-00	METAL CHIP	820	5%	1/10W
R062	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R063	1-216-021-00	METAL CHIP	68	5%	1/10W
R064	1-216-025-00	METAL CHIP	100	5%	1/10W
R065	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R070	1-216-097-00	METAL CHIP	100K	5%	1/10W
R071	1-216-121-00	METAL CHIP	1M	5%	1/10W
R072	1-216-690-11	METAL CHIP	43K	0.5%	1/10W
R073	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R074	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R075	1-216-073-00	METAL CHIP	10K	5%	1/10W
R076	1-216-097-00	METAL CHIP	100K	5%	1/10W
R077	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R078	1-216-117-00	METAL CHIP	680K	5%	1/10W
R079	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R080	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R081	1-216-089-00	METAL CHIP	47K	5%	1/10W
R082	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R083	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R084	1-216-049-00	METAL CHIP	1K	5%	1/10W
R085	1-216-073-00	METAL CHIP	10K	5%	1/10W
R086	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R087	1-216-077-00	METAL CHIP	15K	5%	1/10W
R088	1-216-073-00	METAL CHIP	10K	5%	1/10W
R089	1-216-073-00	METAL CHIP	10K	5%	1/10W
R098	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R099	1-216-079-00	METAL CHIP	18K	5%	1/10W
		< VARIABLE RESISTOR >			
RV001	1-241-080-11	RES, ADJ, CARBON 10K			
RV002	1-241-079-11	RES, ADJ, CARBON 4.7K			
RV070	1-228-993-00	RES, ADJ, METAL 4.7K			
RV071	1-228-995-00	RES, ADJ, METAL 22K			
RV072	1-228-996-00	RES, ADJ, METAL 47K			
RV073	1-241-080-11	RES, ADJ, CARBON 10K			

Ref.No.	Part No.	Description			Remark
		< SWITCH >			
SWF001	1-404-971-11	FILTER, SURFACE WAVE			
		< COIL >			
T001	1-404-749-11	COIL			
T002	1-404-802-11	COIL			
T003	1-404-752-11	COIL			
T004	1-404-744-11	COIL, IF			
		< TUNER >			
TU001	⚠1-465-239-11	TUNER, ET (BTP-2A401)			

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* A-6754-241-A YC-112 BOARD, COMPLETE

****

(Ref.No 2,000 Series)

3-729-971-01 COVER, VOLUME

< CAPACITOR >

C001	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C002	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C003	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C005	1-124-589-11	ELECT	47uF	20%	16V
C006	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C007	1-126-163-11	ELECT	4.7uF	20%	50V
C008	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C009	1-126-157-11	ELECT	10uF	20%	16V
C010	1-124-257-00	ELECT	2.2uF	20%	50V
C011	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C012	1-124-465-00	ELECT	0.47uF	20%	50V
C013	1-126-157-11	ELECT	10uF	20%	16V
C014	1-164-157-11	CERAMIC CHIP	0.068uF	10%	25V
C015	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C016	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C017	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C018	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C019	1-124-257-00	ELECT	2.2uF	20%	50V
C020	1-124-465-00	ELECT	0.47uF	20%	50V
C021	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C022	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C023	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C024	1-124-257-00	ELECT	2.2uF	20%	50V
C025	1-124-638-11	ELECT	22uF	20%	10V
C026	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C027	1-124-589-11	ELECT	47uF	20%	16V
C028	1-126-177-11	ELECT	100uF	20%	10V

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

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Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C029	1-124-638-11	ELECT	22uF	20%	10V
C030	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C031	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C032	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C033	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C034	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C035	1-163-110-00	CERAMIC CHIP	51PF	5%	50V
C037	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C038	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C039	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C040	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C041	1-124-589-11	ELECT	47uF	20%	16V
C042	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C043	1-126-301-11	ELECT	1uF	20%	50V
C044	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C045	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C046	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C047	1-126-163-11	ELECT	4.7uF	20%	50V
C048	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C049	1-126-301-11	ELECT	1uF	20%	50V
C050	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C051	1-126-301-11	ELECT	1uF	20%	50V
C052	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C053	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C054	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C055	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C056	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C057	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C058	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C059	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C060	1-124-589-11	ELECT	47uF	20%	16V
C061	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C062	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C063	1-124-589-11	ELECT	47uF	20%	16V
C064	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C066	1-126-176-11	ELECT	220uF	20%	10V
C068	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C069	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C070	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C071	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C073	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C074	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C076	1-124-589-11	ELECT	47uF	20%	16V
C077	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C078	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C079	1-126-301-11	ELECT	1uF	20%	50V
C081	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C082	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C083	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C101	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C102	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C103	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C104	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V

< CONNECTOR >

CN001	* 1-563-258-11	SOCKET, CONNECTOR 15P	
CN002	* 1-563-258-11	SOCKET, CONNECTOR 15P	

< DIODE >

D001	8-719-400-18	DIODE	MA152WK
D002	8-719-400-18	DIODE	MA152WK
D003	8-719-400-18	DIODE	MA152WK
D004	8-719-400-18	DIODE	MA152WK
D005	8-719-400-18	DIODE	MA152WK
D008	8-719-200-82	DIODE	1ES2
D009	8-719-400-18	DIODE	MA152WK
D010	8-719-400-18	DIODE	MA152WK
D102	8-719-400-18	DIODE	MA152WK

< DELAY LINE >

DL001	1-415-668-11	DELAY LINE, ULTRASONIC
DL001	1-415-668-31	DELAY LINE, ULTRASONIC
DL001	1-415-668-11	DELAY LINE, ULTRASONIC

< FILTER >

FL001	1-236-488-21	L.P.F
FL002	1-236-489-11	B.P.F

< IC >

IC001	8-759-821-62	IC	LA7326
IC002	8-759-821-87	IC	LA7316AN
IC003	8-759-821-50	IC	LC8991
IC004	8-759-938-15	IC	BA178M05

< JUMPER RESISTOR >

JR001	1-216-295-00	METAL CHIP	0	5%	1/10W
JR002	1-216-295-00	METAL CHIP	0	5%	1/10W
JR003	1-216-295-00	METAL CHIP	0	5%	1/10W
JR004	1-216-296-00	METAL CHIP	0	5%	1/8W
JR005	1-216-295-00	METAL CHIP	0	5%	1/10W
JR006	1-216-295-00	METAL CHIP	0	5%	1/10W
JR007	1-216-295-00	METAL CHIP	0	5%	1/10W
JR008	1-216-295-00	METAL CHIP	0	5%	1/10W
JR009	1-216-296-00	METAL CHIP	0	5%	1/8W
JR010	1-216-295-00	METAL CHIP	0	5%	1/10W
JR011	1-216-296-00	METAL CHIP	0	5%	1/8W
JR012	1-216-296-00	METAL CHIP	0	5%	1/8W

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Ref. No.	Part No.	Description				Remark
JR013	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR014	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR015	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR016	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR017	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR018	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR019	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR020	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR021	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR022	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR023	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR024	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR025	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR026	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR027	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR028	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR029	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR030	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR031	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR032	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR033	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR034	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR035	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR036	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR037	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR038	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR039	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR040	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR041	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR101	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR103	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< JUMPER WIRE >				
JW002	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW004	1-216-295-00	METAL CHIP	0	5%	1/10W	
JW014	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< COIL >				
L001	1-410-524-41	INDUCTOR 180uH				
L002	1-410-667-31	INDUCTOR 22uH				
L005	1-408-417-00	INDUCTOR 47uH				
L006	1-408-424-00	INDUCTOR 180uH				
L007	1-410-335-11	INDUCTOR 150uH				
L008	1-410-509-11	INDUCTOR 10uH				
L009	1-410-516-11	INDUCTOR 39uH				
L011	1-408-421-00	INDUCTOR 100uH				
L012	1-408-419-00	INDUCTOR 68uH				
L013	1-408-419-00	INDUCTOR 68uH				
L015	1-410-516-11	INDUCTOR 39uH				

Ref. No.	Part No.	Description				Remark
L101	1-410-437-11	INDUCTOR 330uH				
L102	1-410-435-21	INDUCTOR 220uH				
		< TRANSISTOR >				
Q001	8-729-901-06	TRANSISTOR	DTA144EK			
Q002	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q003	8-729-901-01	TRANSISTOR	DTC144EK			
Q004	8-729-305-25	TRANSISTOR	2SA1052C			
Q005	8-729-305-25	TRANSISTOR	2SA1052C			
Q006	8-729-901-47	TRANSISTOR	DTA143EK			
Q007	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q008	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q009	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q010	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q011	8-729-305-25	TRANSISTOR	2SA1052C			
Q012	8-729-305-25	TRANSISTOR	2SA1052C			
Q015	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q019	8-729-620-06	TRANSISTOR	2SC3052EF			
Q020	8-729-230-49	TRANSISTOR	2SC2712G-YG			
Q021	8-729-620-06	TRANSISTOR	2SC3052EF			
Q022	8-729-305-25	TRANSISTOR	2SA1052C			
Q023	8-729-620-06	TRANSISTOR	2SC3052EF			
Q102	8-729-900-53	TRANSISTOR	DTC114EK			
		< RESISTOR >				
R001	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R002	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R003	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R004	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R005	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R006	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R007	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R008	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R009	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R010	1-216-084-00	METAL GLAZE	30K	5%	1/10W	
R011	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R012	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R013	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R014	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R015	1-216-047-00	METAL CHIP	820	5%	1/10W	
R016	1-216-043-00	METAL CHIP	560	5%	1/10W	
R017	1-216-052-00	METAL CHIP	1.3K	5%	1/10W	
R018	1-216-036-00	METAL CHIP	300	5%	1/10W	
R019	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R020	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R021	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R022	1-216-041-00	METAL CHIP	470	5%	1/10W	
R023	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R024	1-216-121-00	METAL CHIP	1M	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R025	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R026	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R027	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R028	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R029	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R030	1-216-045-00	METAL CHIP	680	5%	1/10W	
R031	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R032	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R033	1-216-748-11	METAL CHIP	39K	5%	1/10W	
R034	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R035	1-216-037-00	METAL CHIP	330	5%	1/10W	
R036	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R037	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R038	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R039	1-216-043-00	METAL CHIP	560	5%	1/10W	
R040	1-216-043-00	METAL CHIP	560	5%	1/10W	
R041	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R042	1-216-295-00	METAL CHIP	0	5%	1/10W	
R043	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R044	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R045	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R046	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R047	1-216-039-00	METAL CHIP	390	5%	1/10W	
R048	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R049	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R051	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R052	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R055	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R059	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R060	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R061	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R062	1-216-039-00	METAL CHIP	390	5%	1/10W	
R063	1-216-043-00	METAL CHIP	560	5%	1/10W	
R064	1-216-031-00	METAL CHIP	180	5%	1/10W	
R065	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R066	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R067	1-216-041-00	METAL CHIP	470	5%	1/10W	
R069	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R070	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R071	1-216-052-00	METAL CHIP	1.3K	5%	1/10W	
R072	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R073	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R074	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R075	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R076	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R082	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R083	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R084	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R085	1-216-043-00	METAL CHIP	560	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R086	1-216-025-00	METAL CHIP	100	5%	1/10W	
R088	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R089	1-216-041-00	METAL CHIP	470	5%	1/10W	
R098	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R100	1-216-047-00	METAL CHIP	820	5%	1/10W	
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R102	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R103	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV002	1-238-166-11	RES, ADJ, CARBON 1K				
RV003	1-230-523-11	RES, ADJ, METAL 10K				
RV004	1-237-723-11	RES, ADJ, CARBON 4.7K				
RV005	1-237-723-11	RES, ADJ, CARBON 4.7K				
RV006	1-238-166-11	RES, ADJ, CARBON 1K				
RV007	1-238-166-11	RES, ADJ, CARBON 1K				
		< CRYSTAL >				
X001	1-577-380-11	VIBRATOR, CRYSTAL (3.58MHz)				
**********						
	* 1-638-178-21	OL-11 BOARD (Ref. No 8,000 Series)				
		**********				
		< CONNECTOR >				
CNJ902	⚠1-526-985-11	AC INLET 2p (7A 125V)				
**********						
	* 1-639-417-21	TR-61 BOARD (585HF/686HF;US, CND)				
		********** (Ref. No 6,000 Series)				
		< CONNECTOR >				
CN951	1-506-468-11	CONNECTOR 3P, MALE				
		< TRANSISTOR >				
Q951	⚠8-729-111-55	TRANSISTOR 2SD2061-F				
**********						
	* 1-639-418-21	TR-62 BOARD (585HF/686HF;US, CND)				
		********** (Ref. No 7,000 Series)				
		< CONNECTOR >				
CN961	1-506-468-11	CONNECTOR 3P, MALE				
		< TRANSISTOR >				
Q961	⚠8-729-111-55	TRANSISTOR 2SD2061-F				
**********						

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
		MISCELLANEOUS	
		*************	
	1-466-497-21	SWITCH BLOCK, CONTROL (585HF)	
	1-466-497-31	SWITCH BLOCK, CONTROL (686HF)	
	1-466-497-41	SWITCH BLOCK, CONTROL (71HF)	
	1-466-497-51	SWITCH BLOCK, CONTROL (589HF)	
	1-572-662-11	SWITCH, ROTARY (DUAL MODE SHUTTLE)	
	1-543-647-11	HEAD, FE	
	A-6761-129-C	HEAD BLOCK ASSY, ACE	
D001	8-719-985-00	DIODE GL451VS1 (LED)	
M901	⚠8-848-552-11	DRUM ASSY (DZH-28A-R) (686HF)	
M901	⚠8-848-554-01	DRUM ASSY (DZH-37A-R) (EXCEPT 686HF)	
M902	⚠8-835-394-11	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	
RF001	⚠1-466-150-11	MODULATOR, RF (RFU-1025) (EXCEPT 71HF)	
RF001	⚠1-466-358-11	MODULATOR, RF (RFU-1020) (71HF)	
S001	1-571-920-11	SWITCH, ROTARY	
TU001	⚠1-465-239-11	TUNER, ET (BTP-2A401)	
		ACCESSORIES & PACKING MATERIALS	
		********************************	
	1-417-063-00	TRANSFORMER, ANTENNA (EAC-24) (71HF)	
	1-417-139-11	MATCHING TRANSFORMER, ANTENNA (EXCEPT 71HF)	
	1-465-770-11	REMOTE COMMANDER (RMT-V102A) (686HF)	
	1-465-770-21	REMOTE COMMANDER (RMT-V102) (585HF/71HF)	
	1-465-862-11	REMOTE COMMANDER (RMT-V112) (589HF)	
	1-513-379-00	CONVERTER (EAC-25) (71HF)	
	1-558-076-41	CORD, CONNECTION	
	⚠1-569-008-11	ADAPTER, CONVERSION 2P (585HF;PX)	
	⚠1-574-085-11	CORD, POWER (585HF;US, CND/686HF/589HF)	
	⚠1-575-131-11	CORD, POWER (585HF;PX)	
	1-575-334-11	CORD, CONNECTION	
	⚠1-575-491-11	CORD, POWER (71HF)	
	3-752-813-41	MANUAL, INSTRUCTION (CHINESE) (71HF)	
	3-752-868-21	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT 71HF)	
	3-752-868-31	MANUAL, INSTRUCTION (FRENCH) (585HF;CND/686HF;CND/589HF)	
	3-752-868-41	MANUAL, INSTRUCTION (SPANISH) (686HF;MX)	
	3-753-871-31	INSTRUCTION (589HF)	
*	3-759-581-21	SAFEGUARD (SONY), IMPORTANT (585HF;US/686HF;US)	
*	3-941-533-01	CUSHION (UPPER) (EXCEPT 71HF)	
*	3-941-534-01	CUSHION (LOWER) (EXCEPT 71HF)	
*	3-941-538-01	INDIVIDUAL CARTON (585HF)	
*	3-941-538-11	INDIVIDUAL CARTON (686HF)	
*	3-944-220-11	INDIVIDUAL CARTON (71HF)	
*	3-944-222-01	INDIVIDUAL CARTON (589HF)	
*	3-944-227-01	CUSHION (UPPER) (71HF)	
*	3-944-228-01	CUSHION (LOWER) (71HF)	
		HARDWARE LIST	
		*************	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#4	7-682-546-04	SCREW +P 3X5	
#5	7-682-645-01	SCREW +PS 3X4	
#6	7-621-732-08	SET-SCT, HEX. 2X3 FLAT POINT	
#7	7-682-547-04	SCREW +P 3X6	
#8	7-682-548-04	SCREW +P 3X8	
#9	7-628-254-00	SCREW +PS 2.6X5	
#10	7-627-552-08	SCREW, PRECISION +P 1.7X2.5	

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.

SECTION 7
ELECTRICAL ADJUTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 192.

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

(Instruments to be Used)

1) Color TV
2) Single or dual trace type oscilloscope, band more than 15 MHz, delay mode, as provided.
3) Frequency counter (4 digits or more)
4) NTSC pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion factor gauge
10) Audio multiple signal generator
11) Alignment tape
    Part code: H7099046H (MH-1)
12) Hi-Fi alignment tape
    Part code: H7099153H (Hi-Fi 400 Hz)

(Connection)

Unless otherwise specified, connect and adjust the measurement equipment as follows.

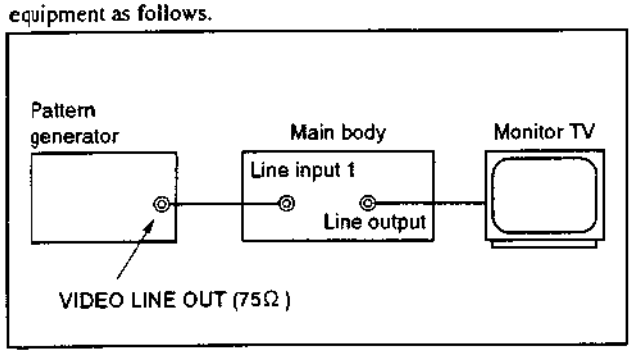


Fig. 7-1.

(Set-up for Adjustment)

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscope to the video input terminal on the MA-82 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red signal" are 0.30 : 0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the electrical adjustment.

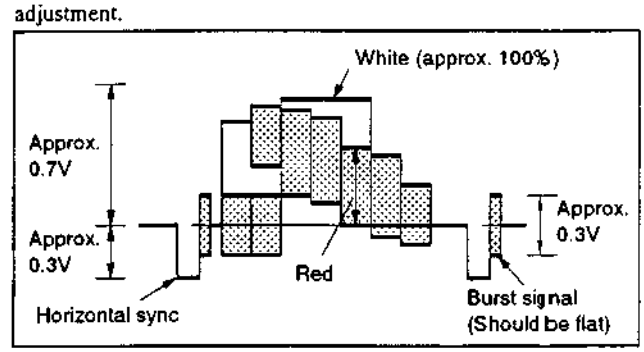


Fig. 7-2. Color bar signal of pattern generator

(Alignment Tape (MH-1))

	Mode	Time	video signal	Audio signal
1	SP	Ten minutes	Stair-step	7 kHz
2		Five minutes	——	3 kHz
3		Ten minutes	Color bar	1 kHz
4		Three minutes	RF sweep	

(HI-FI Alignment Tape)

	Mode	Time	video signal	Audio signal
1	SP	Six minutes	Monaural scope	Normal: no signal
				HIFI: 400 Hz

(Specified Input/Output Level Impedance)

Input/output terminal

Video input — Pin jack
Input signal: 1 Vp-p, 75Ω , unbalanced
Sync negative

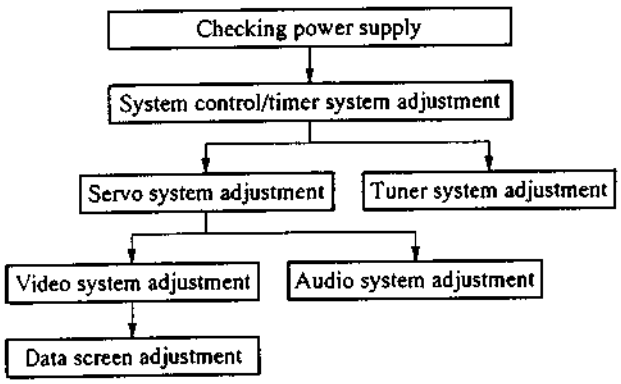
VIDEO LINE OUT — Pin jack
Output signal: 1 Vp-p, 75Ω , unbalanced
Sync negative

AUDIO LINE IN — Pin jack
Input level: –7.5 dBs
(0 dBs=0.775 Vrms)
Input impedance: More than 47 kΩ

AUDIO LINE OUT — Pin jack
Specified output: –7.5 dBs
At 47 kΩ loaded.
Load impedance: More than 10 kΩ

(Adjustment Sequence)

Make the electrical adjustment in the following sequences.



7-1. POWER SUPPLY CHECK (POWER BLOCK) (SLV-585HF/686HF: U/C ONLY)

POWER BLOCK CHECK

Mode	E-E
Measurement Equipment	Digital voltmeter
UNSW 5.8V check	
Measurement Point	Pin ⑧ of CN711/CN901
Specified Value	5.8 ± 0.3 Vdc
MTR 12V check	
Measurement Point	Pin ② of CN711/CN901
Specified Value	12.0 ± 0.3 Vdc
SW 12V check	
Measurement Point	Pin ⑥ of CN711/CN901
Specified Value	12.3 ± 0.3 Vdc
SW 9V check	
Measurement Point	Pin ⑦ of CN711/CN901
Specified Value	9.0 ± 0.3 Vdc
SW 5V check	
Measurement Point	Pin ⑨ of CN711/CN901
Specified Value	5.0 ± 0.3 Vdc
+39V check	
Measurement Point	Pin ⑮ of CN711/CN901
Specified Value	42 ± 3 Vdc
–30V check	
Measurement Point	Pin ⑱ of CN711/CN901
Specified Value	–33 ± 2 Vdc
AC 3.3V check	
Measurement Point	Between Pin ⑯ and Pin ⑰ of CN711/CN901
Specified Value	3.3 ± 0.2 Vdc

Note: CN711, SLV-585HF: PX ONLY

Checking Method:

1) Confirm that each voltage meets the specified value.

7-2. SYSTEM CONTROL/TIMER SYSTEM ADJUSTMENT

1. Clock adjustment (MF-122 board)

Measurement Point	Pin ㉛ of IC801
Measurement Equipment	Frequency counter (Interval counter mode)
Adjustment Element	CT801
Specified Value	0.125 ± 0.0000005 sec

Note: Do not adjust CT801 except when replacing IC801.

Adjustment Method:

1) Connect the frequency counter as shown below.
2) Set oscillation frequency to the specified value using CT801.

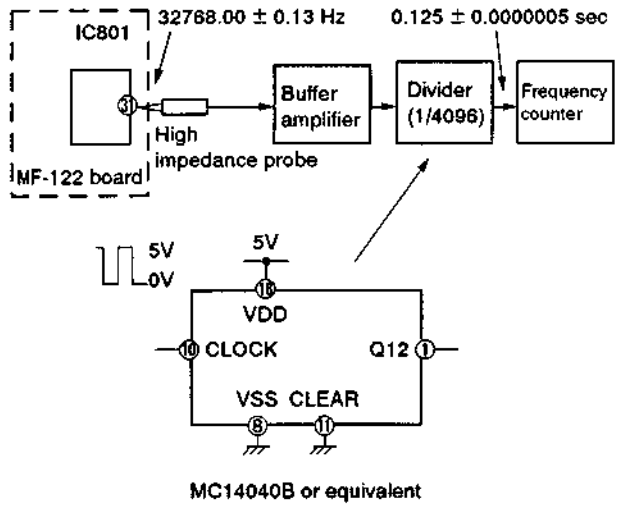


Fig. 7-3.

7-3. SERVO SYSTEM ADJUSTMENT

1. Switching position adjustment (MA-82 board)

Mode	Playback
Signal	Alignment tape, Stair step
Measurement Point	CH1: VIDEO LINE OUT terminal CH2: Pin ⑥ of CN006 (RF SWP)
Measurement Equipment	Oscilloscope
Adjustment Element	RV501
Specified Value	413 ± 32 μsec (6.5 ± 0.5H)

Adjustment Method:

1) Press the tracking buttons ▼ and ▲ at a time.
2) Adjust for 413 ± 32 μsec (6.5 ± 0.5) using RV501.

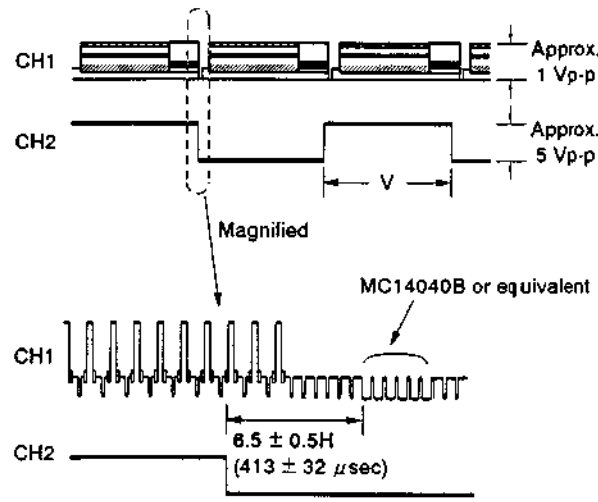


Fig. 7-4. Switching position adjustment

7-4. VIDEO ADJUSTMENT

Adjust the video system in the following sequences as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode. Make sure that sync and color burst signals meet requirements specified at set up of adjustment shown in Fig. 7-2.

(Adjustment Sequences)

1) Crystal oscillation frequency confirmation
2) Noise cancel adjustment
3) Playback Y signal level adjustment
4) Sync AGC adjustment
5) Sync tip carrier set and deviation adjustment
6) Recording chroma signal level adjustment
7) Y signal recording current adjustment

1. Crystal oscillation frequency confirmation (YC-112 board)

Mode	Playback
Signal	Any tape
Measurement Point	Pin ⑰ of IC002
Measurement Equipment	Frequency counter, Oscilloscope
Specified Value	7159090 ± 108 Hz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc) of high input impedance (1 MΩ or more) and low capacity (10 pF or less).

Confirmation Method:

1) Make sure that the frequency is 7159090 ± 108 Hz.
2) Make sure that the amplitude is 550 ± 250 mp-p.

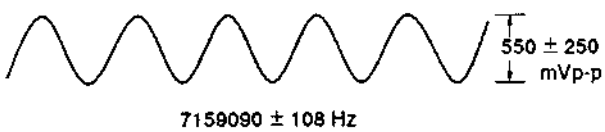


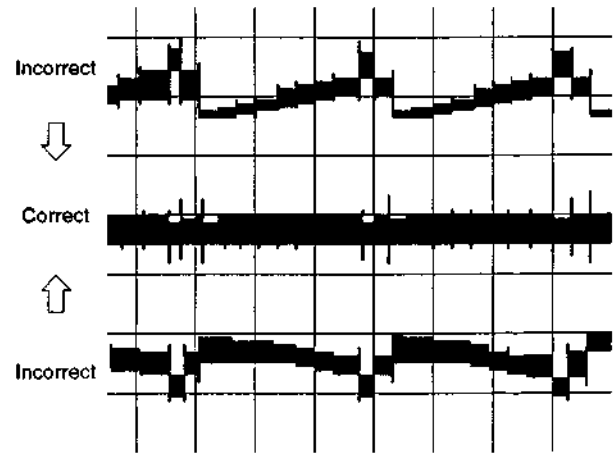
Fig. 7-5.

2. Noise cancel (YC-112 board)

Mode	Playback
Signal	Alignment tape, color bar
Measurement Point	CH1: Pin ⑩ of IC001 CH2: Pin ⑨ of IC001
Measurement Equipment	Oscilloscope (ADD mode) (CH2: invert mode)
Adjustment Element	Amplitude is minimum
Specified Value	RV006

Adjustment Method:

1) Invert and add CH2 waveform to CH1 waveform. (CH1 and CH2 have the same VOLT/DIV range.)
2) Make amplitude minimum using RV006.



V: 50 mV/div
H: 20 μsec/div

Fig. 7-6.

3. Playback Y signal level adjustment (YC-112 board)

Mode	Playback
Signal	Alignment tape, color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV005
Specified Value	1.00 ± 0.05 Vp-p

Note 1: VIDEO LINE OUT should be terminated at 75Ω .
Note 2: Make this adjustment EDIT OFF condition.

Adjustment Method:
1) Adjust for 1.00 ± 0.05 Vp-p using RV005.

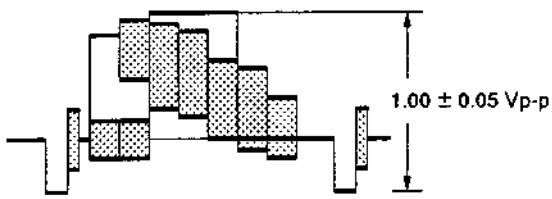


Fig. 7-7.

4. Sync AGC adjustment (YC-112 board)

Mode	Recording or EE
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV002
Specified Value	1.00 ± 0.05 Vp-p

Note: VIDEO LINE OUT should be terminated at 75Ω .

Adjustment Method:
1) Adjust for 1.00 ± 0.05 Vp-p using RV002.

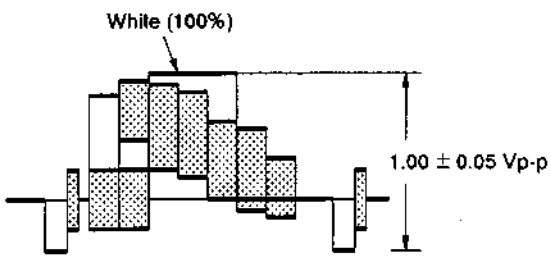


Fig. 7-8.

5. Sync tip carrier set and deviation adjustment (YC-112 board)

Before starting this adjustment, be sure to check that "3. recording Y signal level adjustment" has been completed.

Sync tip carrier set	
Mode	E-E
Signal	No signal
Measurement Point	Pin ㉚ of IC001
Measurement Equipment	Frequency counter
Adjustment Element	RV004
Specified Value	3.45 ± 0.05 MHz
Deviation adjustment	
Mode	Recording and playback
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal (75Ω terminated)
Measurement Equipment	Oscilloscope
Adjustment Element	RV003
Specified Value	1.00 ± 0.05 Vp-p

Note 1: Make this adjustment EDIT OFF condition.
Note 2: VIDEO LINE OUT should be terminated at 75Ω .

Adjustment Method:
1) Make no signal state and select the E-E mode.
2) Connect the frequency counter to the Pin ㉚ of IC001 and adjust for 3.45 ± 0.05 MHz using RV004.
3) Input the color bar signal to make recording.
4) Playback the recorded tape portion and check the play back Y signal level of VIDEO LINE OUT terminal (75Ω terminated).
   Specification: Should be 1.00 ± 0.05 Vp-p.
5) If does not meet the specification, repeat 1) to 2) after adjusting RV003.

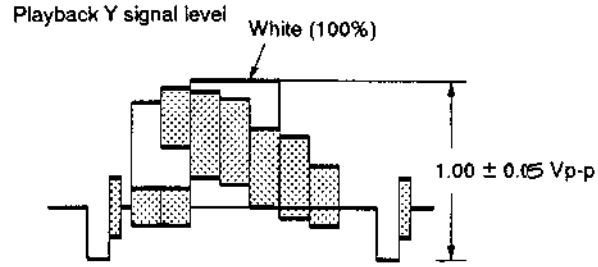


Fig. 7-9.

6. Recording chroma signal level adjustment (YC-112 board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ⑧ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	RV007
Specified Value	100± 5 mVp-p

Adjustment Method:

1) Adjust the color bar "red" level to 100 ± 5 mVp-p using RV007.

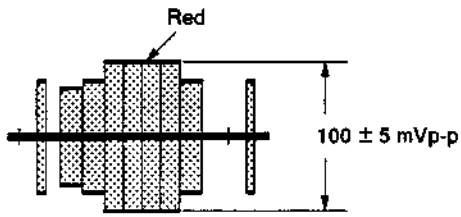


Fig. 7-10.

7. Y signal recording current adjustment (RP-112/128 board)

Mode	SP mode recording
Signal	No signal
Measurement Point	Pin ③ of CN804
Measurement Equipment	Oscilloscope
Adjustment element	RV801
Specified Value	1.60 ± 0.05 Vp-p

Adjustment Method:

1) Adjust for 1.60 ± 0.05 Vp-p using RV801.

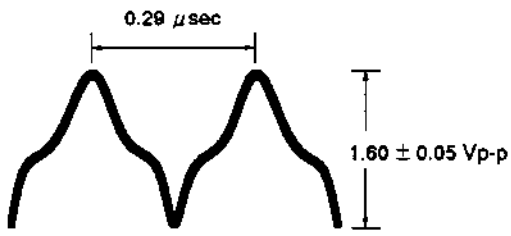


Fig. 7-11.

7-5. DATA SCREEN ADJUSTMENT

1. 4 fsc clock confirmation (MA-82 board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ㉘ of IC601 (Note 1)
Measurement Equipment	Frequency counter
Specified Value	14318180 ± 100 Hz

Note 1: Connect a probe of high input impedance (1 MΩ or more) and low capacity (10 pF or less) through 1 kΩ resistor.

Confirmation Method:

1) Make sure that the clock frequency meets the specified value.
(A value approx. 100 Hz lower than the actual value may be indicated due to the probe.)

2. H sync pulse width adjustment (MA-82 board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ③ of IC602
Measurement Equipment	Oscilloscope
Adjustment Element	RV600
Specified Value	58.8 ± 0.2 μsec

Adjustment Method:

1) Adjust pulse width to 58.8 ± 0.2 μsec using RV600.

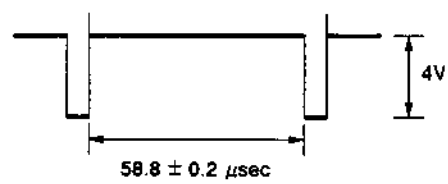


Fig. 7-12.

3. Character clock frequency confirmation (MA-82 board)

Mode	Playback
Signal	Alignment tape, color bar or stair case
Measurement Point	Pin ⑤ of IC601 (Note 1)
Measurement Equipment	Frequency counter
Specified Value	7.3 ± 0.3 MHz

Note 1: Connect a probe of high input impedance (1 MΩ or more) and low capacity (10 pF or less) to the measurement point through 1 kΩ resistor.

Confirmation Method:

1) Make sure that the clock frequency meets the specified value.
   (A value approx. 0.1 to 0.2 MHz lower than the actual value may be indicated due to the probe.)
2) Make sure that tracking indication appears at the nearly center of the width when manual tracking ON.

7-6. AUDIO SYSTEM ADJUSTMENT

[Connection]

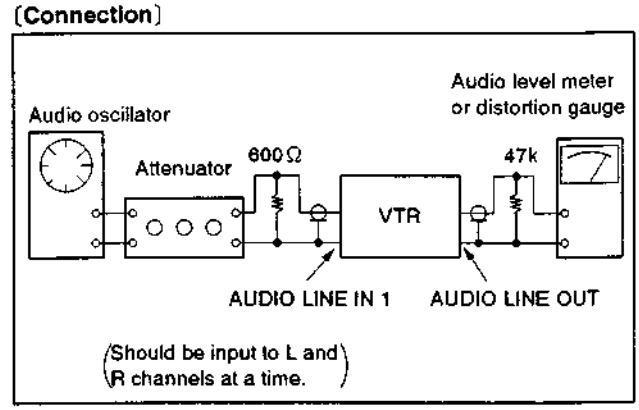


Fig. 7-13.

7-6-1. Hi-Fi Audio System Adjustment

Unless otherwise specified, set and adjust as follows.
Input selection ·····Line 1
Audio monitor·····Stereo

[Adjustment Sequence]

1) VCO fo adjustment
2) Band pass filter fo adjustment
3) Switching position adjustment
4) Hi-Fi/normal discrimination adjustment
5) Deviation adjustment
6) E-E output level confirmation
7) Overall level characteristic confirmation

1. VCO fo adjustment (HF-23 board)

Mode	Recording
Signal	No signal
Measurement Equipment	Frequency counter
1.3 MHz adjustment	
Measurement Equipment	Pin ⑲ of IC201
Adjustment Element	RV202
Specified Value	1.300 ± 0.002 MHz
1.7 MHz adjustment	
Measurement Point	Pin ⑱ of IC201
Adjustment Element	RV205
Specified Value	1.700 ± 0.002 MHz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) of high input impedance (1 MΩ or more) and low capacity (10 pF or less).

Adjustment Method:

1) Connect the frequency counter to Pin ⑲ [⑱] of IC201.
2) Adjust for 1.300 ± 0.002 MHz [1.700 ± 0.002 MHz] using RV202 [RV205].

2. Band-pass filter fo adjustment (HF-23 board)

Mode	Playback
Signal	Tape recorded in SP mode
Measurement Point	CH1: Pin ⑳ of IC201 CH2: Pin ⑱ of IC201
Measurement Equipment	Oscilloscope
Adjustment Element	RV204
Specified Value	A=B

Connection:

1) Remove CN003 on the MA-82 board and input 50 mVp-p, 1.5 MHz ± 2 kHz sine-wave from the signal generator to Pin ⑨ of CN016.

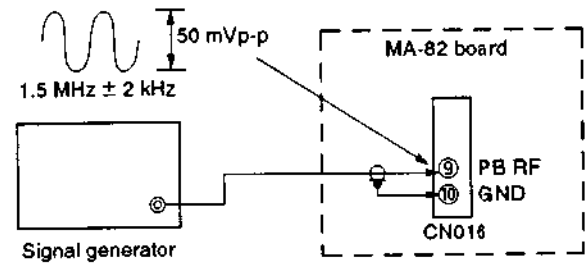


Fig. 7-14.

Adjustment Method:

1) Adjust so that the signal level of Pin ⑳ and ⑱ of IC201 are equal using RV204 (Signal level is approximately 300 mVp-p).

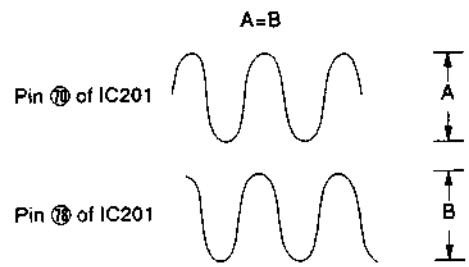


Fig. 7-15.

3. Switching position adjustment (MA-82 board)

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	CH1: Pin ⑤ of CN016 (AF SWP) CH2: Pin ⑭ of CN016 (RF monitor)
Measurement Equipment	Oscilloscope
Adjustment Element	RV502
Specified Value	Be sure that there is no lacking portion.

Adjustment Method:

1) Press tracking buttons [▲] and [▼] at a time.
2) Correct the lacking portion of RF signal using RV502.

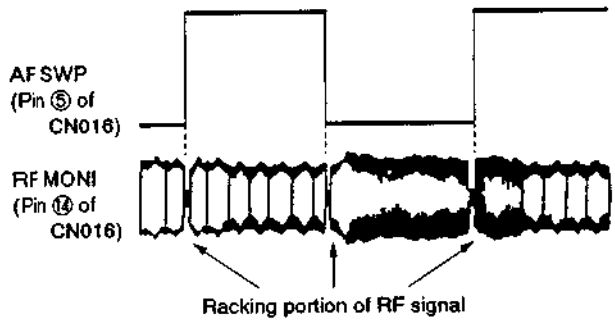


Fig. 7-16.

4. Hi-Fi/normal discrimination adjustment (MA-82 board)

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	CH1: Pin ⑤ of CN016 (AF SWP) CH2: Pin ⑭ of CN016 (RF monitor)
Measurement Equipment	Oscilloscope
Adjustment Element	RV401
Specified Value	300 ± 10 mVp-p

Adjustment Method:

1) Adjust the RF signal level to the maximum using the tracking buttons ([▲] and [▼]).
2) Adjust the RF signal level to 300 ± 10 mVp-p using RV401.
3) Shift the tracking until playback picture goes out of order and check the followings.
   1. "STEREO" lit at the tracking center on the fluorescent display should be disappeared.
   2. 400 Hz audio output should be eliminated and no audio output is obtained.
      (The playback noise of normal audio can be heard.)
   3. Abnormal noise should not be generated.

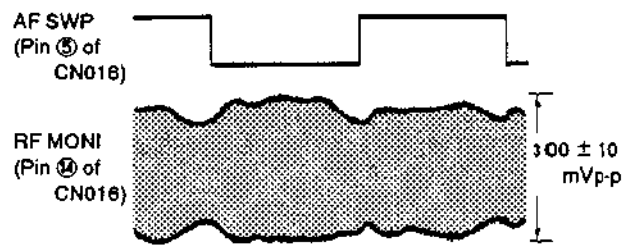


Fig. 7-17.

5. Deviation adjustment (HF-23 board)

The adjustment element of the right channel is indicated in [ ].

Mode	Playback
Signal	Hi-Fi alignment tape
Measurement Point	AUDIO LINE OUT left [right]
Measurement Equipment	Audio level meter
Adjustment Element	RV201 [RV206]
Specified Value	−7.5 ± 0.2 dBs

Adjustment Method:

1) Make sure that "STEREO" segment lights on the fluorescent display.
2) Adjust left [right] channel audio output level to −7.5 ± 0.2 dBs using RV201 [RV206].

6. E-E output level confirmation (HF-23 board)

The measurement point of the right channel is indicated in [ ].

Mode	E-E
Signal	400 Hz
Measurement Point	AUDIO LINE OUT terminal left [right]
Measurement Equipment	Audio level meter
Specified Value	–7.5 ± 2 dBs

Confirmation Method:

1) Connect the audio level meter to Pin ⑤ [⑰] of CN201.
2) Adjust audio generator output level so that 400 Hz signal level becomes -15.5 dBs.
3) Make sure that 400 Hz signal level of left [right] channel AUDIO LINE OUT terminal is –7.5 ± 0.2 dBs.
4) Make sure that REC level indication of left [right] channel on the front panel indicates 0 dB.

7. Overall level characteristic confirmation

The measurement point of the right channel is indicated in [ ].

Mode	Recording and playback
Signal	400 Hz
Measurement Point	AUDIO LINE OUT terminal: left [right]
Measurement Equipment	Audio level meter
Specified Value	–7.5 ± 0.2 dBs

Confirmation Method:

1) Adjust audio generator output level so that left [right] AUDIO LINE IN level is –7.5 ± 0.1 dBs.
2) Record signal.
3) Playback the recorded portion.
4) Make sure that left [right] channel AUDIO LINE OUT level is –7.5 ± 0.2 dBs.

7-6-2. Normal Audio System Adjustment (CA-46/47 board)

- Make adjustment in the SP mode.
- Set the audio monitor in normal (*1).

  *1: A condition in which "STEREO", "MAIN L" and "SUB R" do not appear on the fluorescent display in playback.

[Adjustment Sequence]

1) ACE head adjustment...See mechanism block adjustment.
2) Playback output level check
3) E-E output level check
4) Recording bias adjustment
5) Overall level characteristic and distortion factor check
6) Overall S/N check

1. ACE head adjustment

See "Mechanism Block Adjustment".

2. Playback output level check

Mode	Playback
Signal	Alignment tape, 1 kHz (color bar) portion
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	–7.5 ± 2 dBs

Confirmation Method:

1) Playback 1 kHz portion and make sure that AUDIO LINE OUT signal level is –7.5 ± 2 dBs.

3. E-E output level check (CA-46/47 board)

Mode	E-E
Signal	L, R: 400 Hz, –7.5 dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	–7.5 ± 2 dBs

Confirmation Method:

1) Input signal of 400 Hz, –7.5 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make sure that AUDIO LINE OUT signal level is –7.5 ± 2 dBs.

4. Recording bias adjustment (CA-46/47 board)

Mode	Recording and playback (SP mode)
Signal	400 Hz, –30 dBs 7 kHz, –30 dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Adjustment Element	RV201
Specified Value	0 ± 3 dB

Note: Tape path adjustment should have been completed.

Adjustment Method:

1) Input signal of 400 Hz, –30 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make recording.
3) Set the AUDIO LINE IN signal to 7 kHz, –30 dBs and make recording.
4) Playback a recorded portion and measure output levels at 400 Hz and 7 kHz.
5) Confirm that the 7 kHz playback signal level is within a range of 0 ± 3 dB against the 400 Hz playback signal level . When beyond this range, adjust RV201 and repeat the steps (1) through (5).

5. Overall level characteristic and distortion factor check

Mode	Recording and playback (SP mode)
Signal	AUDIO LINE OUT terminal
Measurement Point	Audio level meter and distortion factor gauge
Measurement Equipment	Playback level:–7.5 ± 2 dBs
Specified Value	Distortion factor: 4% or less

Adjustment Method:

1) Input audio signal of 400 Hz, –7.5 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make recording.
3) Playback the recorded portion.
4) Make sure that playback level is –7.5 ± 2 dBs.
5) Make sure that distortion factor is within 4%.

6. Overall S/N check

Mode	Recording and playback (SP mode)
Signal	400 Hz, –7.5 dBs and no signal
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	35 dB or more

Confirmation Method:

1) Input signal of 400 Hz, –7.5 dBs simultaneously to both L and R channels of AUDIO LINE IN.
2) Make recording.
3) Make no signal input with recording mode kept.
4) Playback the recorded portion and make sure that the difference between 400 Hz portion and no signal portion (A portion right after 400 Hz signal) is should be more than 35 dB.

7-7. TUNER SYSTEM ADJUSTMENT

7-7-1. RF AGC Adjustment (TU-130 Board)

Signal	Broad cast TV signal
Adjustment Element	RV002

Adjustment Method:

1) Adjust the monitor TV to a maximum contrast.
2) Turn the VR002 to make snow noise visible.
3) Turn the VR002 in an opposite direction and set it to the point where the snow noise disappears.
4) Receive each channel and confirm that there are no beat picture or snow noise due to cross modulation.

7-7-2. Audio Multiple Recorder Adjustment

1. Stereo filter and VCO adjustment (TU-130 board)

[Connection]

1) Connect the audio generator, frequency counter, 10 μF capacitor and 600Ω resistor as follows.
2) Tuner should be received no signal.

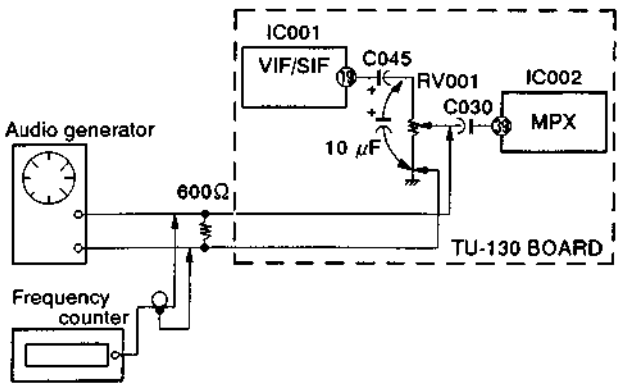


Fig. 7-18

1-1. Stereo filter adjustment

Signal	22.9 kHz, 700 mVp-p
Measurement Point	Pin ㊱ of IC002
Measurement Equipment	Oscilloscope
Adjustment Element	RV071
Specified Value	4 mVp-p or less

Adjusting Method:

1) Connect the oscilloscope to Pin ㉞ of IC002
2) Adjust audio generator output level so that signal level of 22.9 kHz becomes 700 mVp-p.
3) Connect the oscilloscope to Pin ㊱ of IC002
4) Make signal level of 22.9 kHz minimum using RV071.

1-2. VCO adjustment

Signal	15.734 kHz, 140 mVp-p
Measurement Point	Pin ㊵ of IC002
Measurement Equipment	Oscilloscope (DC range)
Adjustment Element	RV072
Specified Value	The volt difference should be 0 ± 0.1 Vdc against when no signal input.

Adjustment Method:

1) Connect the oscilloscope to Pin ㉞ of IC002.
2) Adjust audio generator output level so that signal level of 15.734 kHz becomes 140 mVp-p.
3) Connect the oscilloscope to Pin ㊵ of IC002. (The oscilloscope is DC range.)
4) Turn the audio generator OFF and measure DC level. (DC level in no signal is approximately 4.5 Vdc.)
5) Turn the audio generator ON.
6) Make DC level equal to that in no signal using RV072.
7) Make sure that Pin ⑥ of CN001 ($\overline{\text{STEREO}}$) is "L" level.

2. Separation adjustment (TU-130 board)

Make adjustment by connecting the audio multiple signal generator to VHF/UHF input terminal.

2-1. MPX input level rough adjustment

Signal	Monaural RF signal (400 Hz, 100% MOD)
Measurement Point	Pin ㉙ of IC002
Measurement Equipment	Oscilloscope
Adjustment Element	RV001
Specified Value	693 ± 25 mVp-p (−10 ± 1 dBs)

Adjustment Method:

1) Set for 693 ± 25 mVp-p using RV001.

2-2. Separation rough adjustment

Signal	Stereo RF signal (L: 400 Hz, R: 2 kHz 30% MOD)
Measurement Point	R: Pin ④ of CN002 L: Pin ⑥ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	R: RV073 L: RV070
Specified Value	Cross talk component is minimum.

Adjustment Method:

1) Connect the oscilloscope to Pin ④ of CN002
2) Make cross talk component (400 Hz) mixed to 2 kHz signal minimum using RV073.
3) Connect the oscilloscope to Pin ⑥ of CN002
   Make cross talk component (2 kHz), mixed to 400 Hz signal, minimum using RV070.
4) Repeat steps 1) through 3). (The procedure should be ended at 3).)

2-3. Separation fine adjustment

Signal	Stereo RF signal (L: 400 Hz, R: 2 kHz 30% MOD)
Measurement Point	R: Pin ④ of CN002 L: Pin ⑥ of CN002
Measurement Equipment	Oscilloscope
Adjustment Element	R: RV001 L: RV070
Specified Value	Cross talk component is minimum.

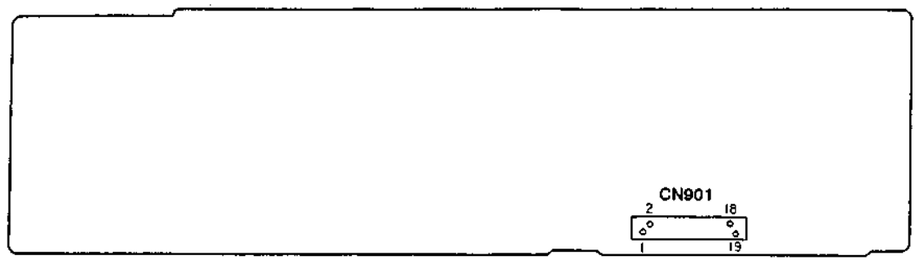
Adjustment Method:

1) Connect the oscilloscope to Pin ④ of CN002
2) Make cross talk component (400 Hz), mixed to 2 kHz signal, minimum using RV001.
3) Connect the oscilloscope to Pin ⑥ of CN002
4) Make cross talk component (2 kHz), mixed to 400 Hz signal, minimum using RV070.
5) Make sure that the cross talk component of Pin ④ and ⑥.

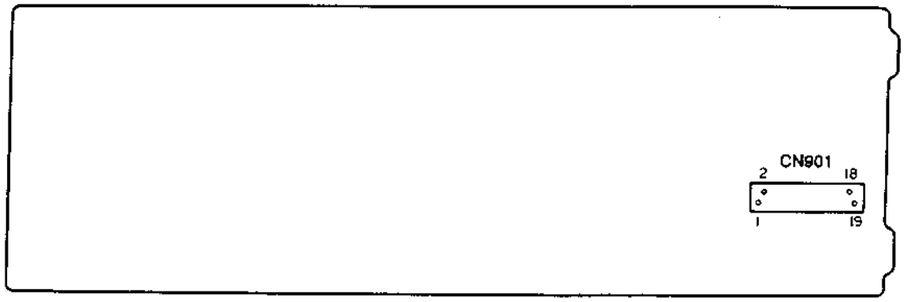
* If this adjustment can not be succeeded, repeat steps from "Separation rough adjustment". (The procedure should be stopped at "Separation fine adjustment" 5.)

7-8. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

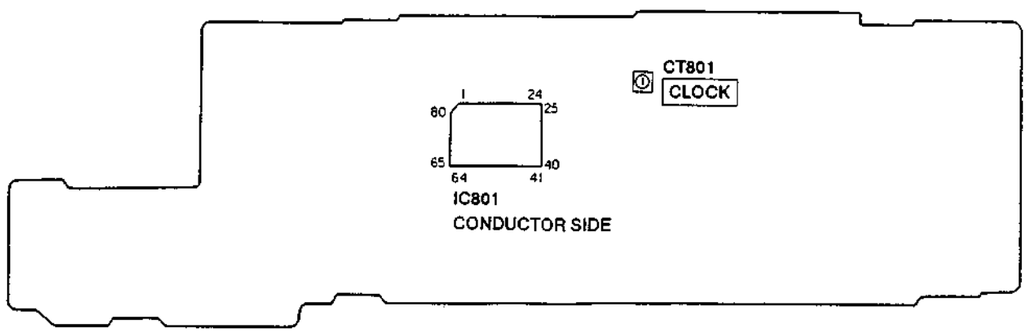
PS-274 BOARD (CONDUCTOR SIDE)
(SLV-585HF/686HF: U/C ONLY)



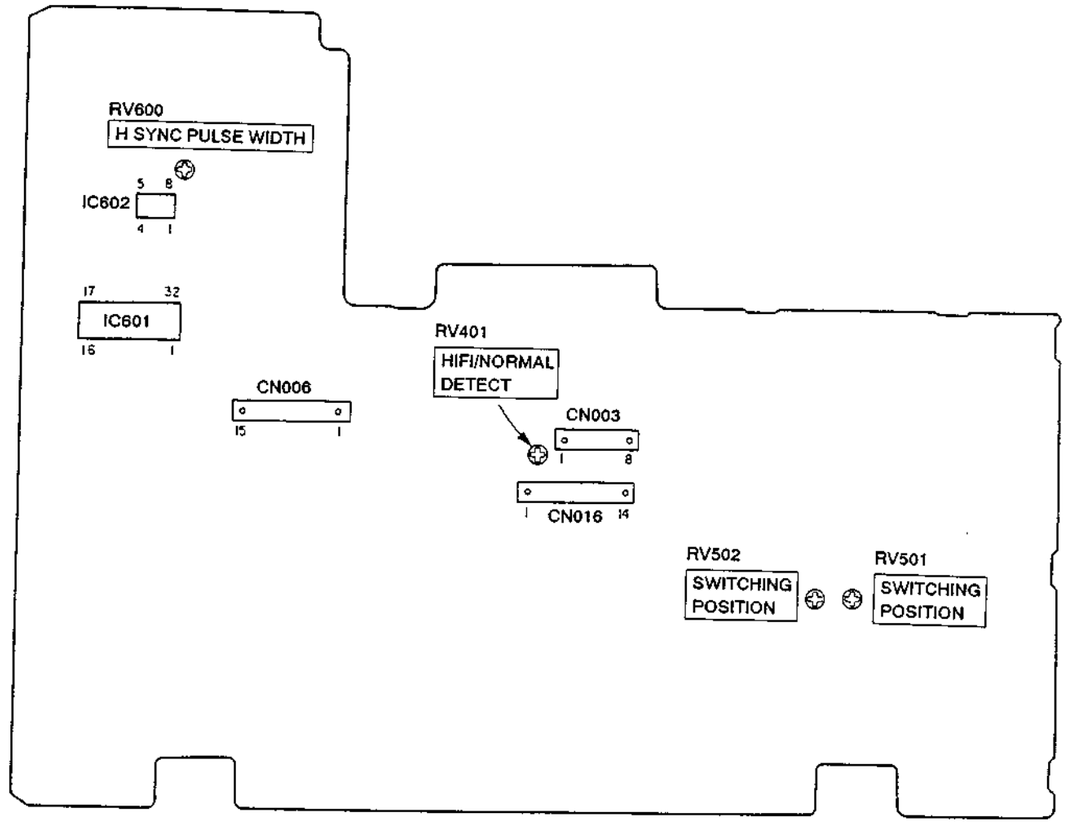
POWER BLOCK (CONDUCTOR SIDE)



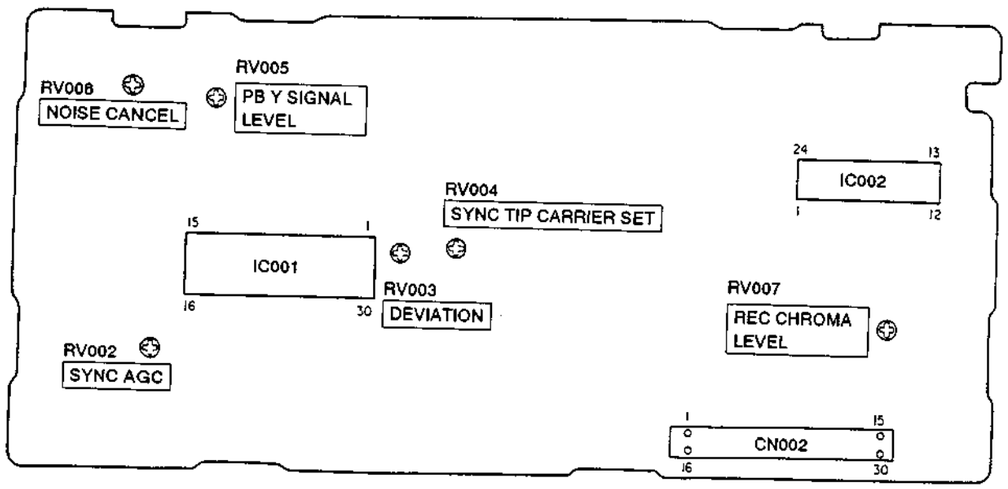
MF-122 BOARD (COMPONENT SIDE)



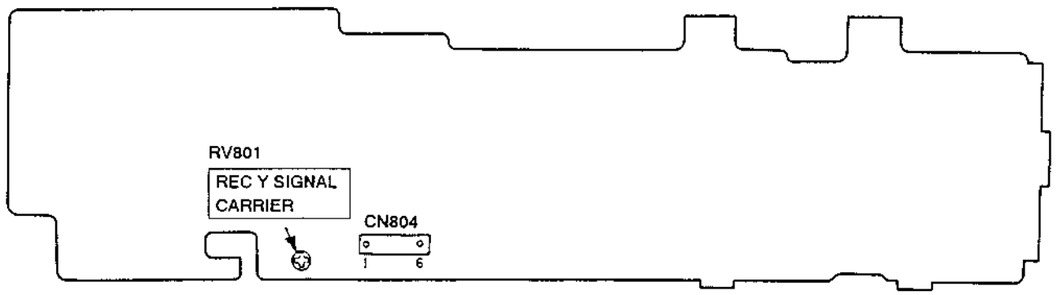
MA-82 BOARD (CONDUCTOR SIDE)



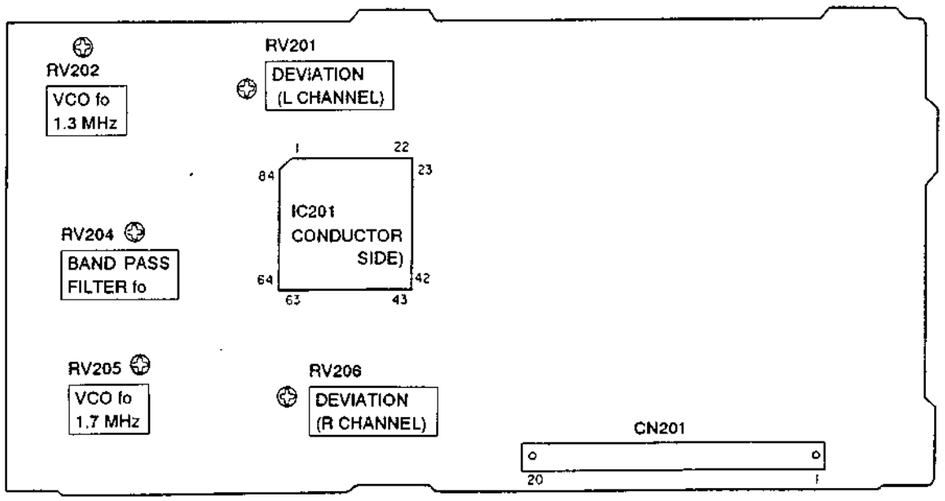
YC-112 BOARD (COMPONENT SIDE)



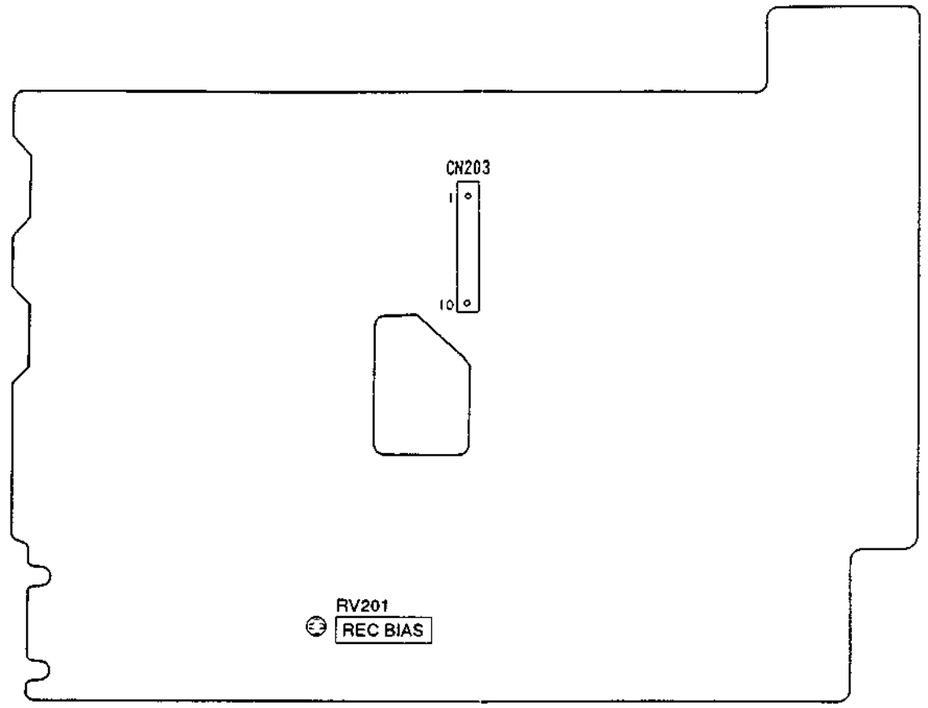
RP-112/128 BOARD (COMPONENT SIDE)



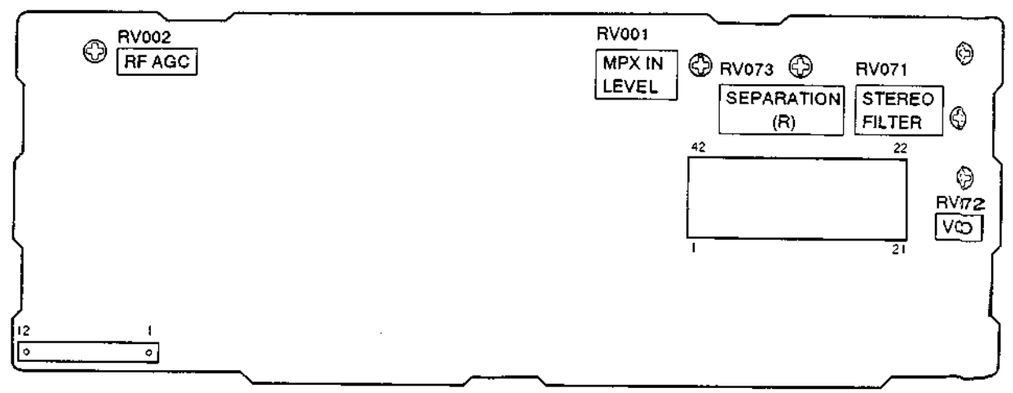
HF-23 BOARD (COMPONENT SIDE)



CA-46/47 BOARD (COMPONENT SIDE)



TU-130 BOARD (COMPONENT SIDE)



SLV-71HF/585HF/589HF/686HF

RMT-V102/V102A/V112

SONY

SERVICE MANUAL

US Model
SLV-585HF/686HF

Canadian Model
SLV-585HF/589HF/686HF

Taiwan Model
SLV-71HF

Mexican Model
SLV-686HF

PX Model
SLV-585HF

SUPPLEMENT-1

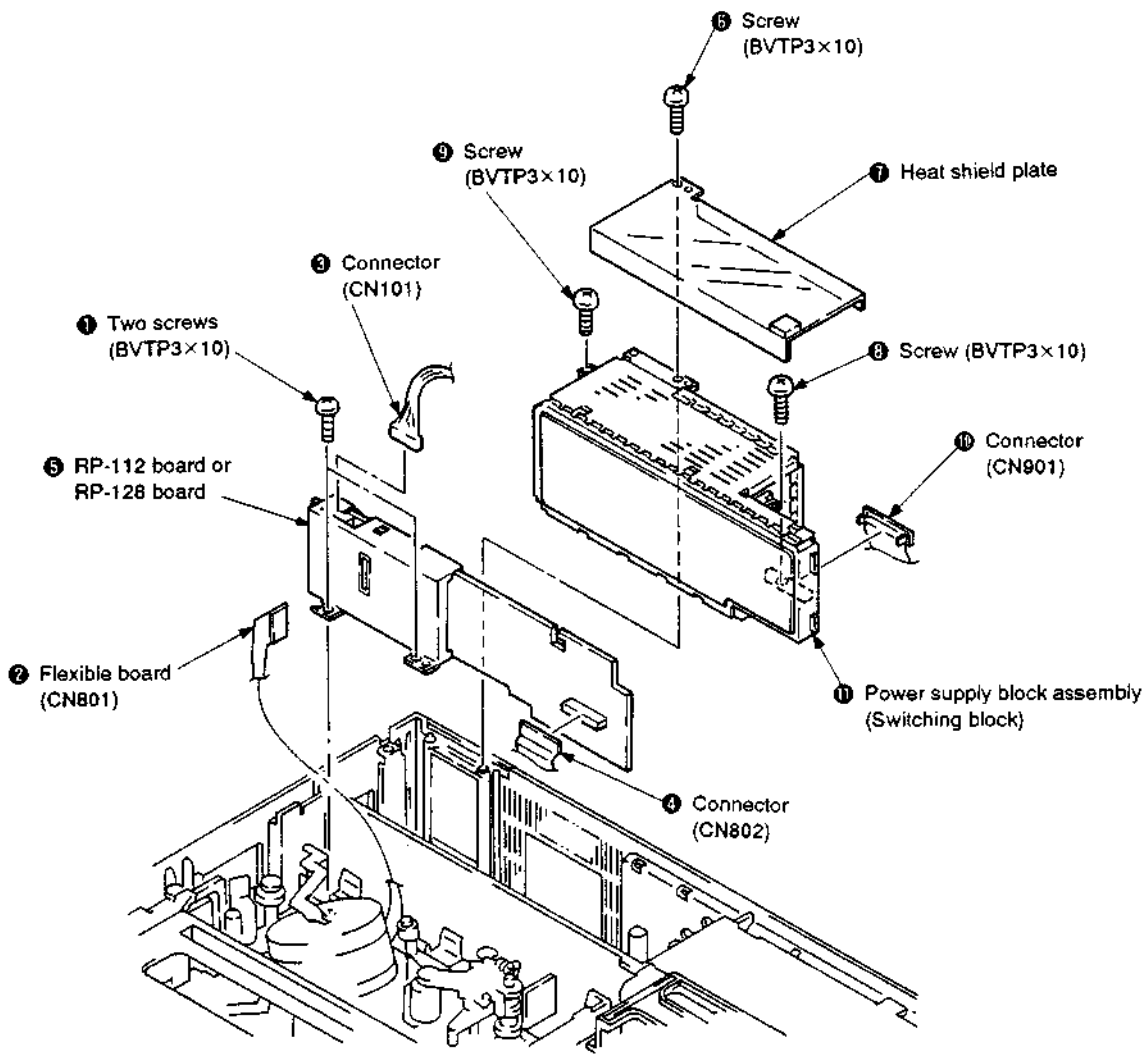
Use together with the service manual already issued.

- **Circuits of the power supplies are changed.**
  Each change is performed from the serial numbers as follows.

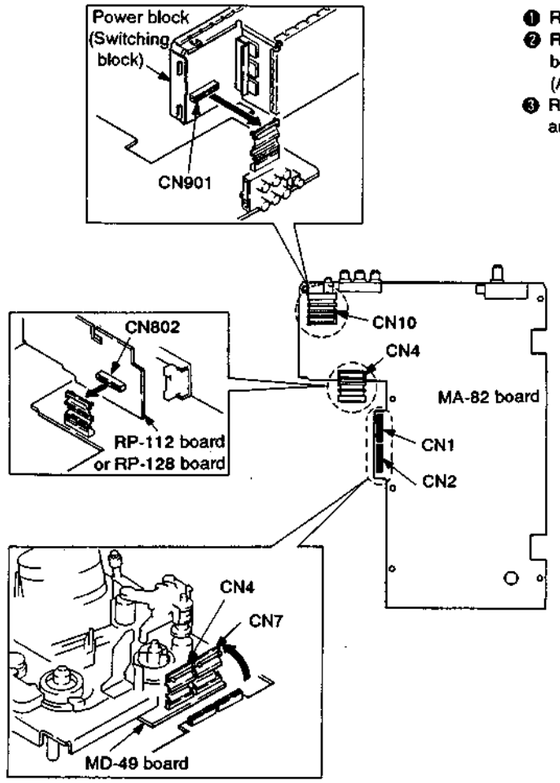
  SLV-585HF; US/686HF; US MODEL: serial No. 1,000,001 later.
  SLV-585HF; CND/686HF; CND MODEL: serial No. 900,001 later.
  SLV-585HF; PX/686HF; MX/589HF/71HF: serial No. 10,001 later.

SECTION 2
DISASSEMBLY

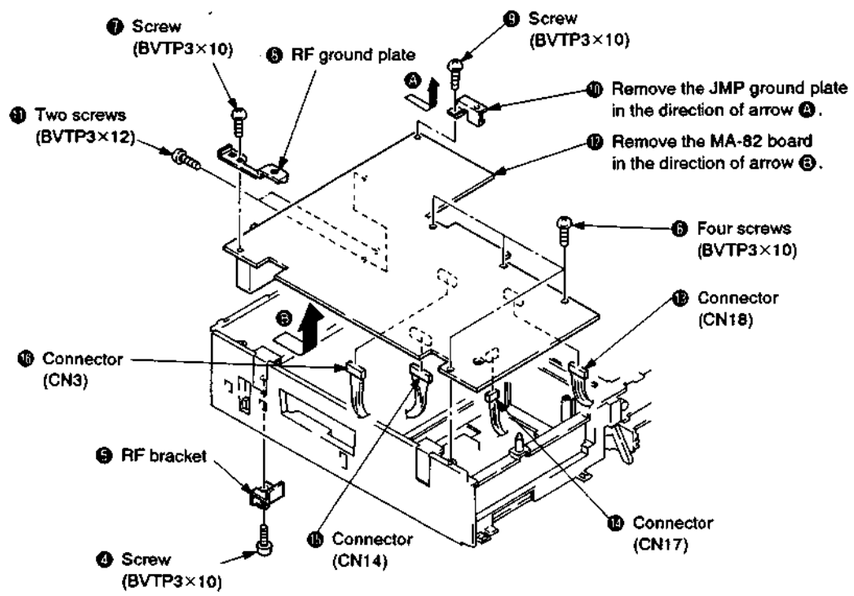
2-7. REMOVAL OF RP-112 OR RP-128 BOARD AND POWER SUPPLY BLOCK ASSEMBLY (SWITCHING BLOCK)



2-8. REMOVAL OF MA-82 BOARD

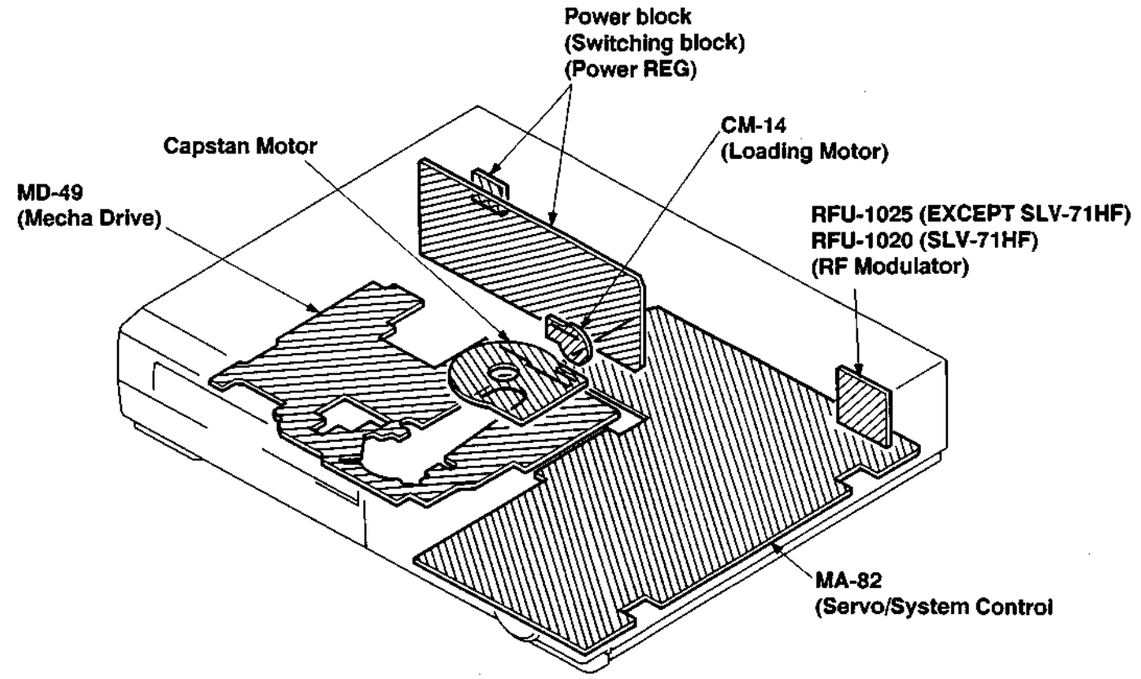


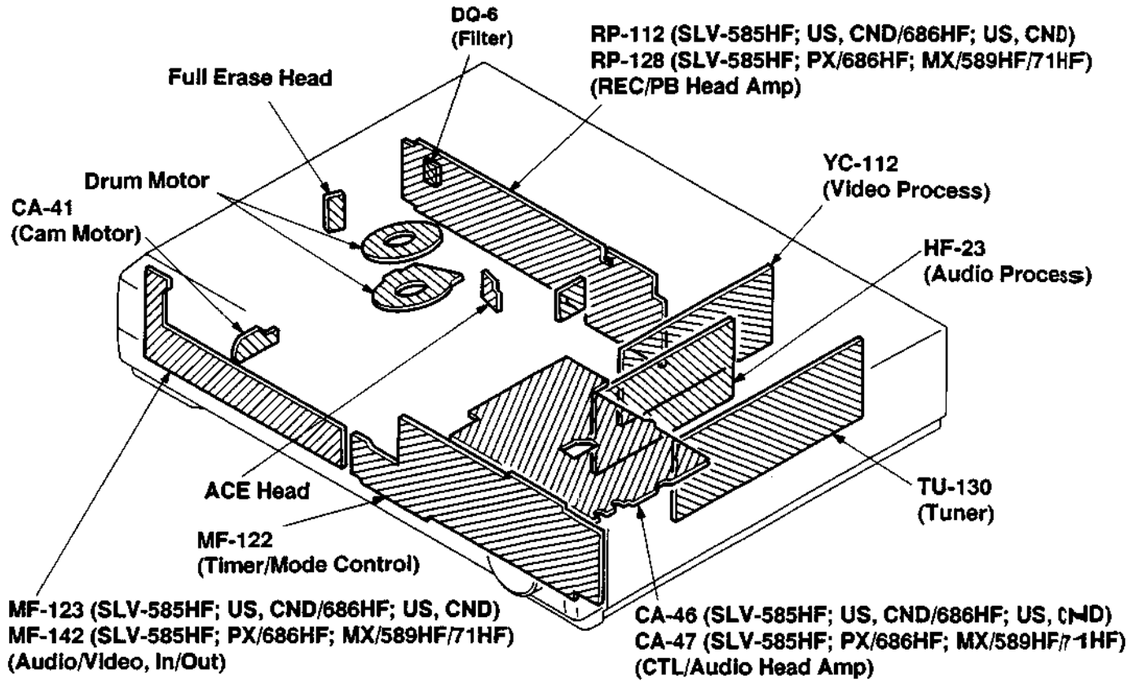
❶ Remove the MF-122 board according to 2-2.
❷ Remove the TU-130, HF-23 and YC-112 boards according to 2-4.
(Also remove the heat shield plate (MA).)
❸ Remove four connectors (CN1, CN2, CN4 and CN10) from MA-82 board.



SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION





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

- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- —— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the pattern 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 minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms. 1/4W unless otherwise noted.
  Chip resistor are 1/10W 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.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repeair.
- ——— : 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 color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltages are taken with a VOM (Input impedance 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

SW POWER BLOCK (EXCEPT: SLV-585HF (PX)) PRINTED WIRING BOARD

— Ref. No. SW POWER BLOCK (EXCEPT: SLV-585HF (PX)): 9000 series —

SW POWER BLOCK

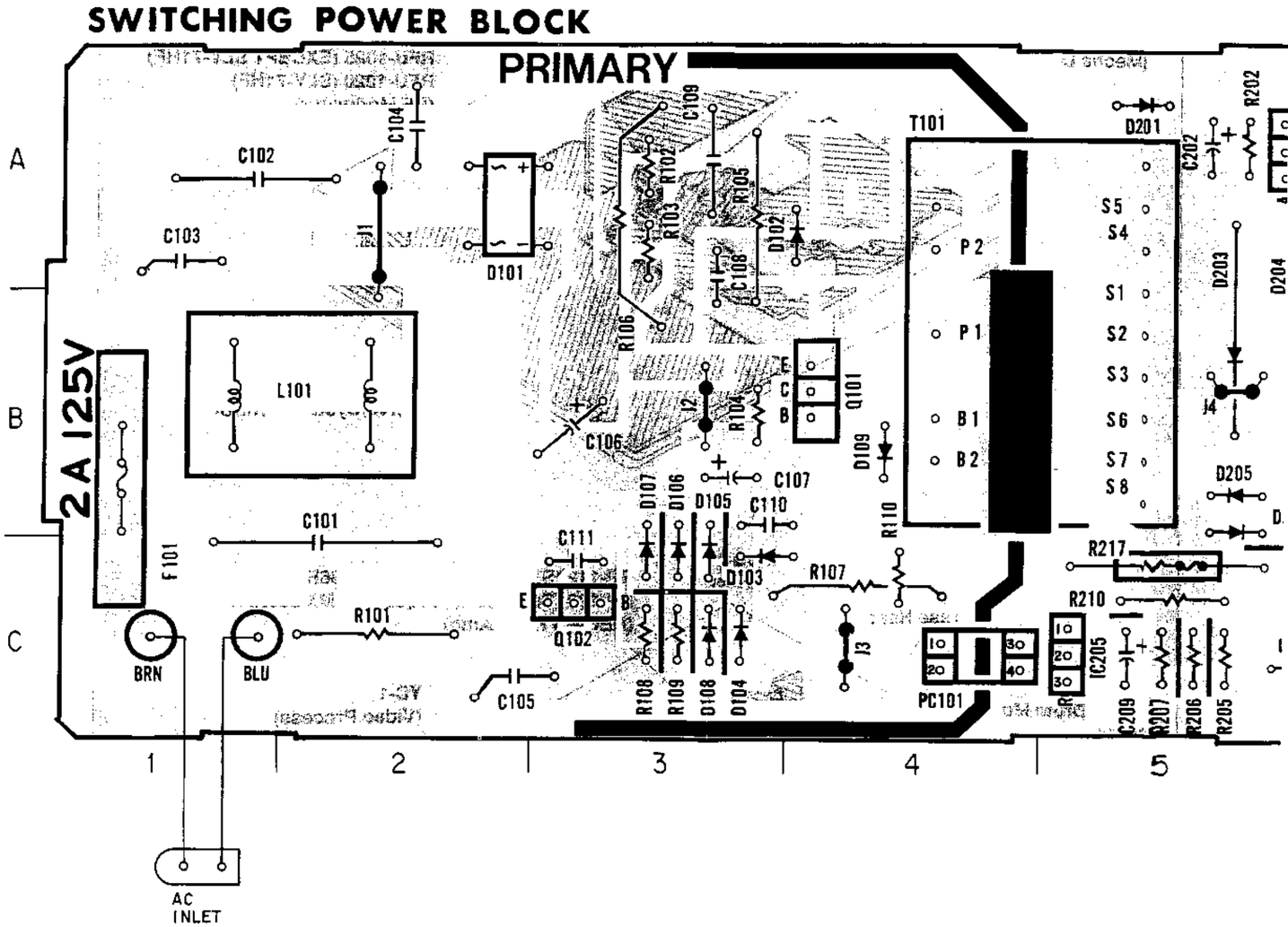
CNS01 B-8

D101 A-2
D102 A-3
D103 C-3
D104 C-3
D105 C-3
D106 C-3
D107 C-3
D108 C-3
D109 B-4
D201 A-5
D202 B-6
D203 B-5
D204 B-5
D205 B-5
D206 B-5

IC201 C-7
IC202 B-7
IC203 A-7
IC204 A-8
IC205 C-5

Q101 B-4
Q102 C-3
Q201 A-8
Q202 A-6

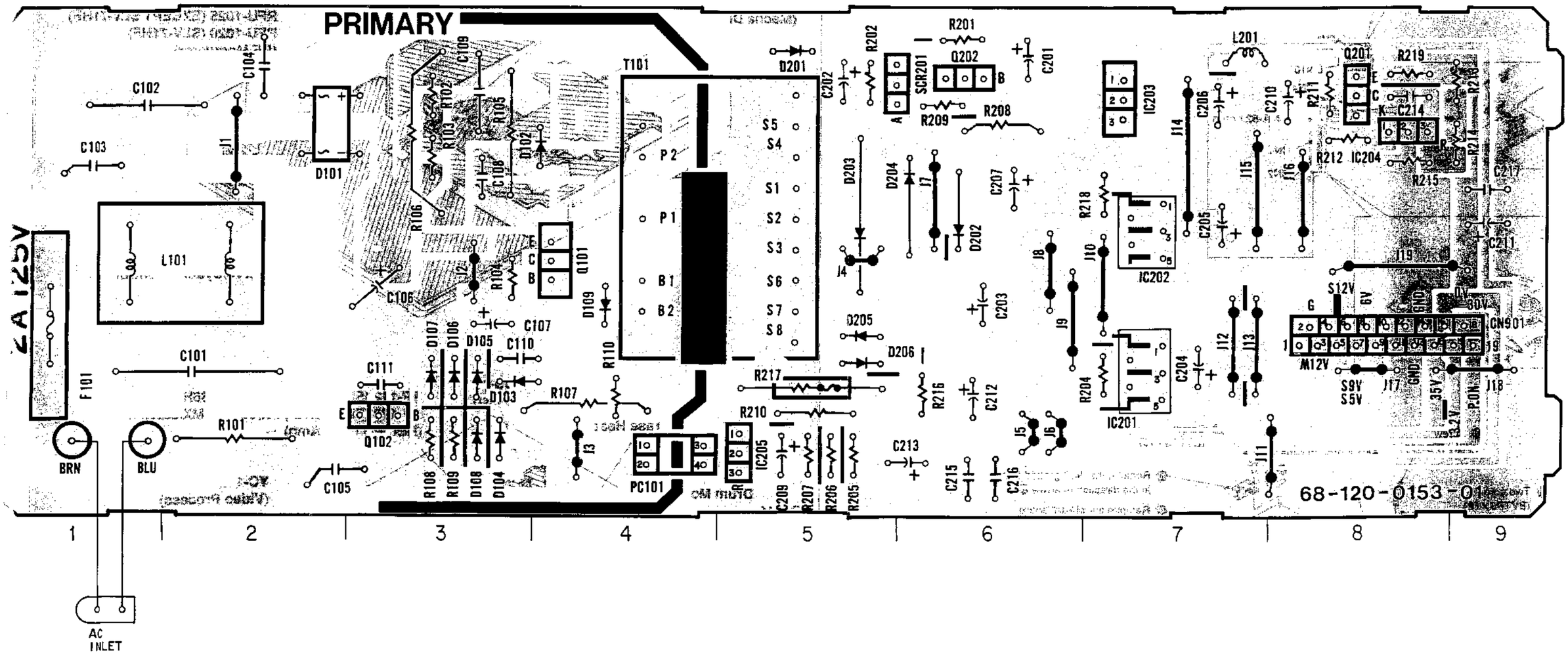
SCR201 A-5



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

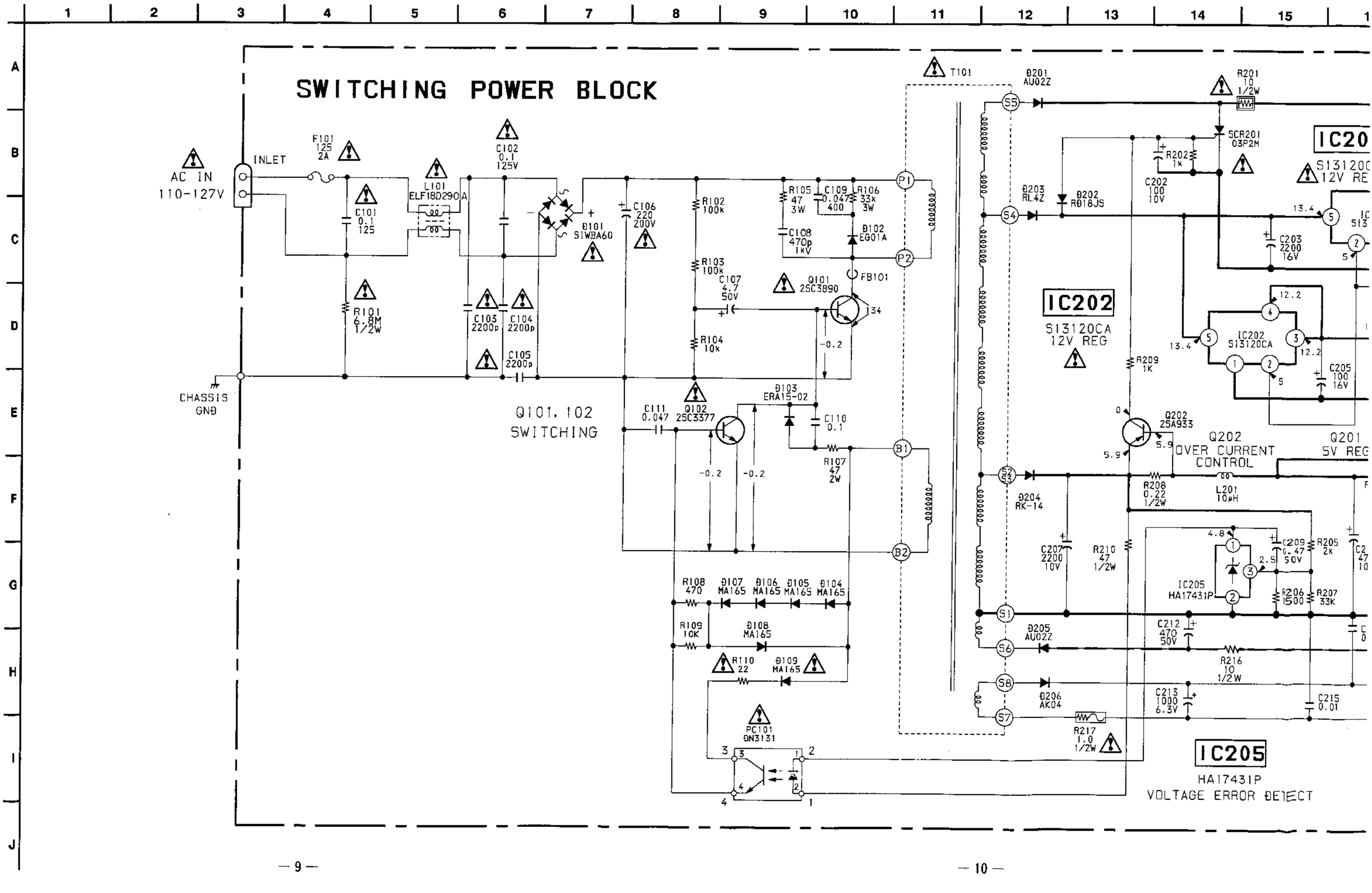
SW POWER BLOCK (EXCEPT: SLV-585HF (PX)) PRINTED WIRING BOARD
— Ref. No. SW POWER BLOCK (EXCEPT: SLV-585HF (PX)): 9000 series —

SWITCHING POWER BLOCK



SW POWER BLOCK (EXCEPT: SLV-585HF (PX)) SCHEMATIC DIAGRAM

— Ref. No. SW POWER BLOCK (EXCEPT: SLV-585HF (PX)): 9000 series —



8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

OCK

T101

D201 AU02Z

R201 10 1/2W

SCR201 03P2M

IC201 S13120CS 12V REG

R204 390

C201 100 50V

R202 1k

C202 100 10V

D203 RL4Z

D202 RD18J5

C203 2200 16V

C204 100 16V

IC202 S13120CA 12V REG

IC203 AN7809 9V REG

C205 100 16V

C206 100 16V

R209 1K

Q202 2SA933

Q202 OVER CURRENT CONTROL

Q201 5V REG

Q201 2SC2060

R208 0.22 1/2W

L201 10uH

D204 RK-14

R211 100

R212 100

R219 1k

R213 1500

R214 220

C207 2200 10V

R210 47 1/2W

C209 0.47 50V

R205 2k

C210 470 10V

C214 0.01

C211 100 10V

C217 0.1

IC205 HA17431P

R206 1500

R207 33K

IC204 AN1431T

R215 1500

R218 10k

C212 470 50V

D205 AU02Z

C216 0.01

R216 10 1/2W

C213 1000 6.3V

C215 0.01

D206 AK04

R217 1.0 1/2W

IC205 HA17431P VOLTAGE ERROR DETECT

IC204 AN1431T 5V REG

C106 220 200V

R102 100k

R105 47 3W

C109 0.047 400

R106 33k 3W

C108 470p 1kV

D102 EG01A

R103 100k

C107 4.7 50V

Q101 2SC3890

FB101

R104 10k

D103 ERA15-02

C111 0.047

Q102 2SC3377

C110 0.1

R107 47 2W

R108 470

D107 MA165

D106 MA165

D105 MA165

D104 MA165

R109 10K

D108 MA165

R110 22

D109 MA165

PC101 PN3131

CN901 19P

1	N.C.
2	MTR 12V
3	MTR 12V
4	MTR GND
5	MTR GND
6	SW 12V
7	SW 9V
8	UNSW 6V
9	SW 5V
10	SW GND
11	SW GND
12	AU GND
13	UNSW GND
14	UNSW GND
15	+35V
16	DC 0V
17	DC 3.2V
18	-30V
19	POWER ON

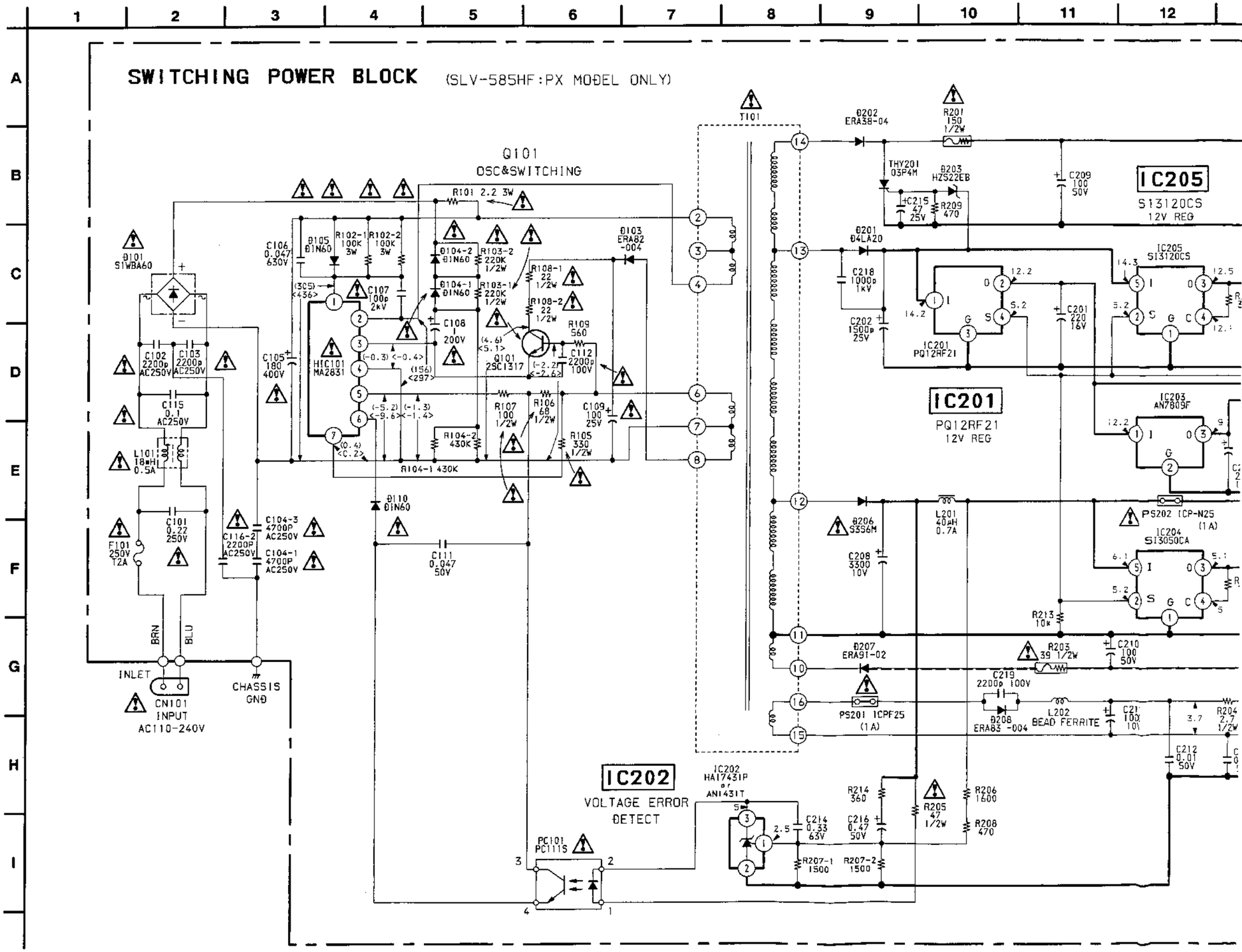
TO MA-82 BOARD CN010

(See Page 106)

CHASSIS GND

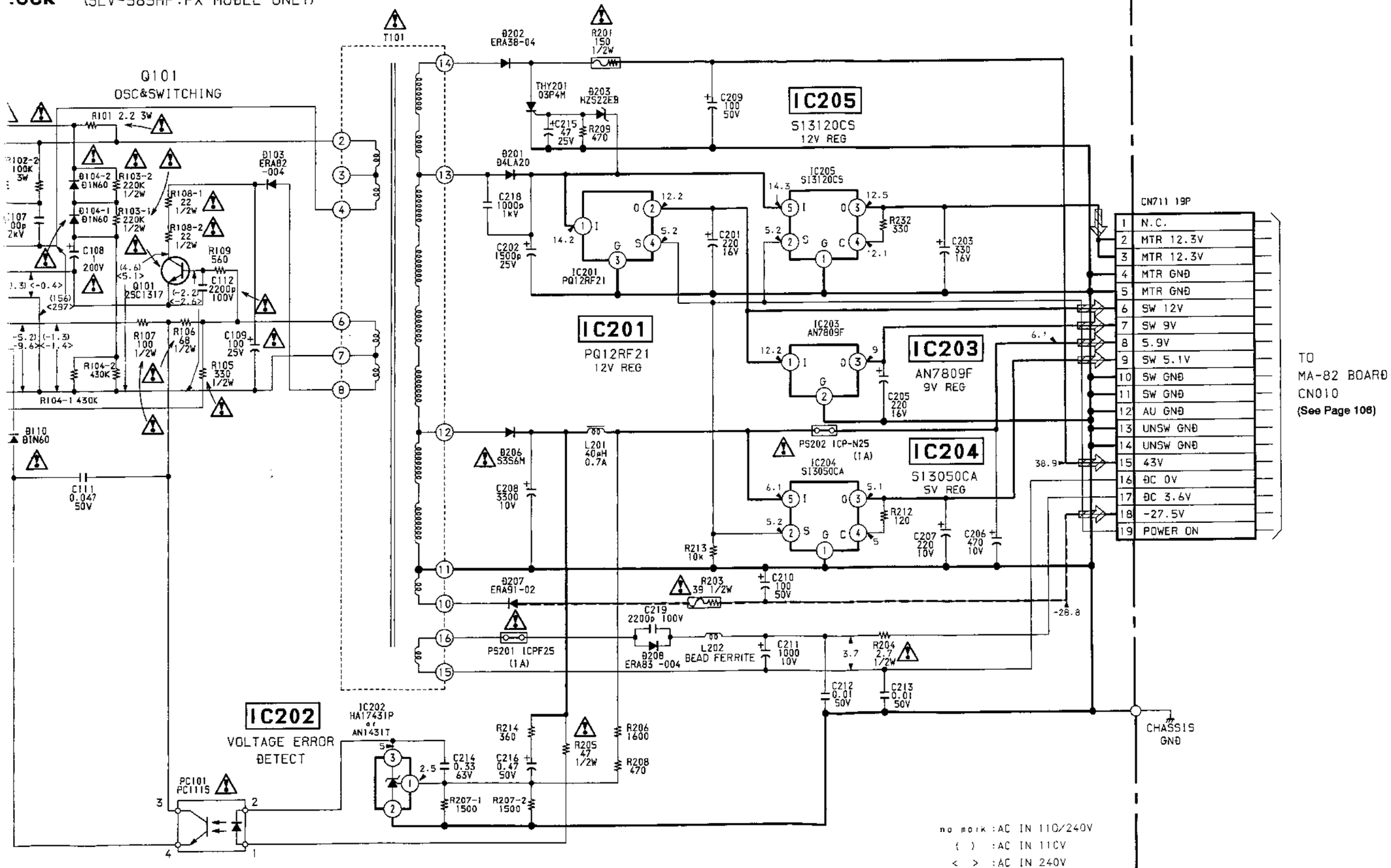
SW POWER BLOCK (SLV-585HF (PX) ONLY) SCHEMATIC DIAGRAM

— Ref. No. SW POWER BLOCK (SLV-585HF (PX) ONLY): 10000 series —



4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

.OCK (SLV-585HF:PX MODEL ONLY)



SWITCHING POWER BLOCK

SWITCHING POWER BLOCK

SW POWER BLOCK (SLV-585HF (PX) ONLY) PRINTED WIRING BOARD

— Ref. No. SW POWER BLOCK (SLV-585HF (PX) ONLY): 10000 series —

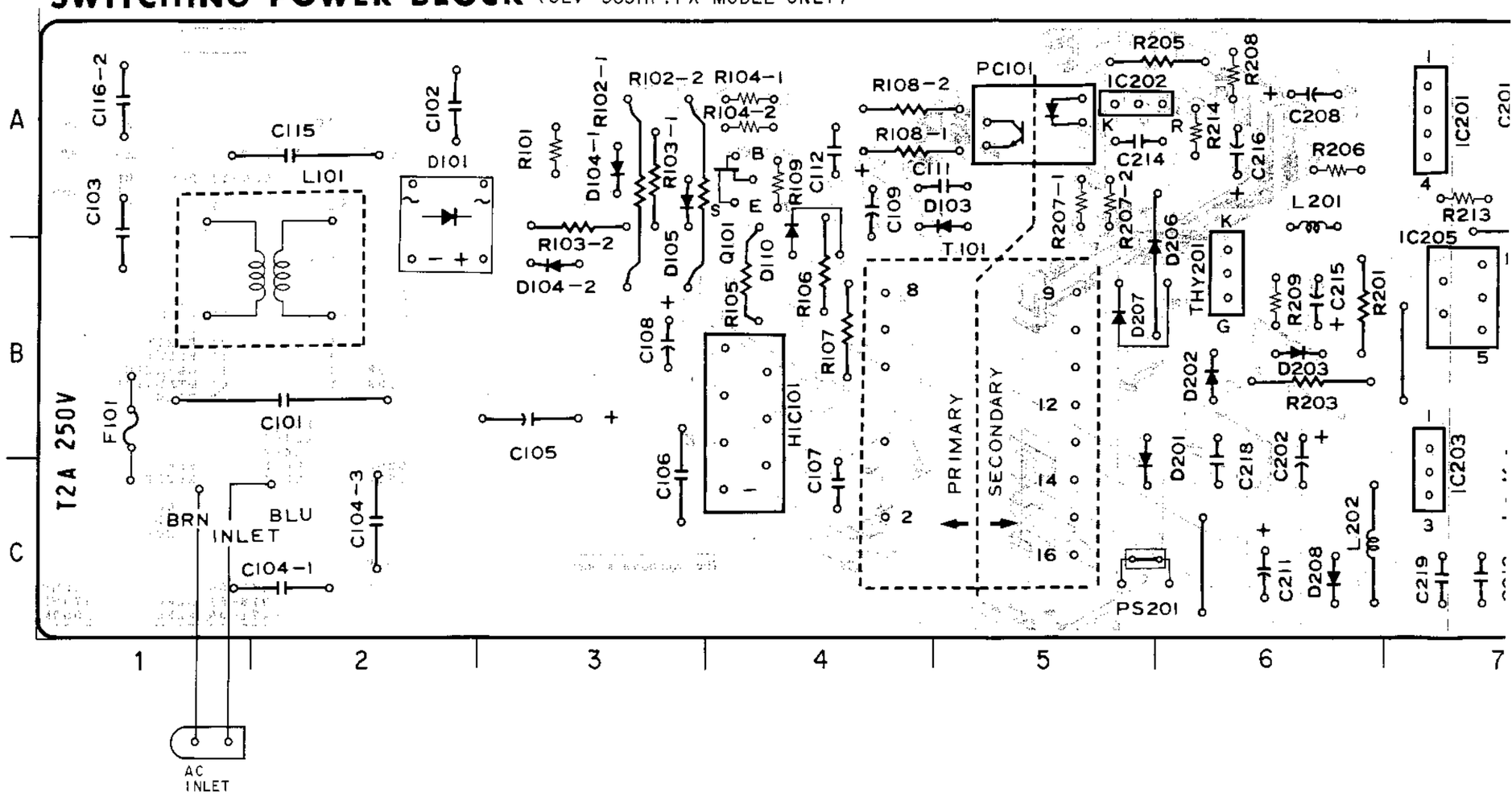
SW POWER BLOCK (PX model only)

CN711 B-8

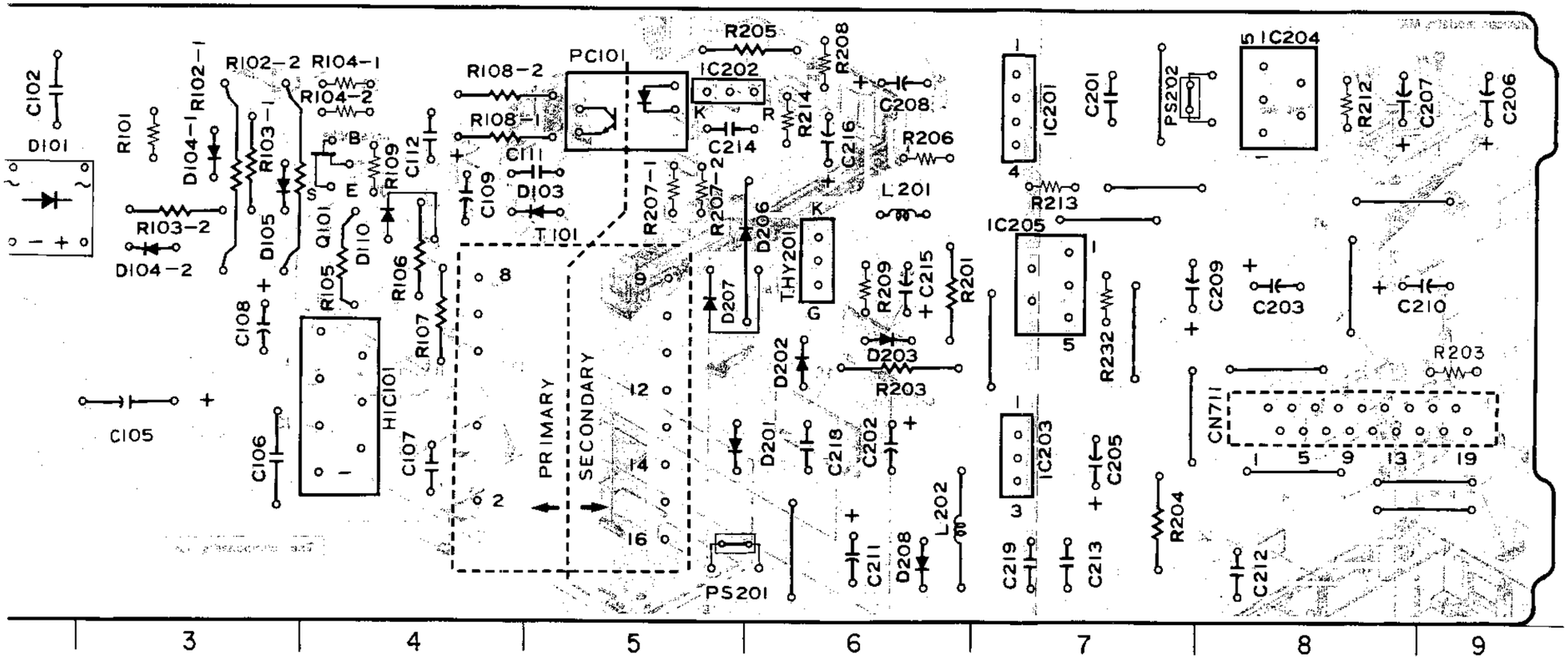
D101 A-2
D103 A-5
D104-1 A-3
D104-2 B-3
D105 A-3
D110 A-4
D201 B-6
D202 B-6
D203 B-6
D206 A-6
D207 B-5
D208 C-6

IC201 A-7
IC202 A-5
IC203 C-7
IC204 A-8
IC205 B-7

Q101 A-4



BLOCK (SLV-585HF: PX MODEL ONLY)

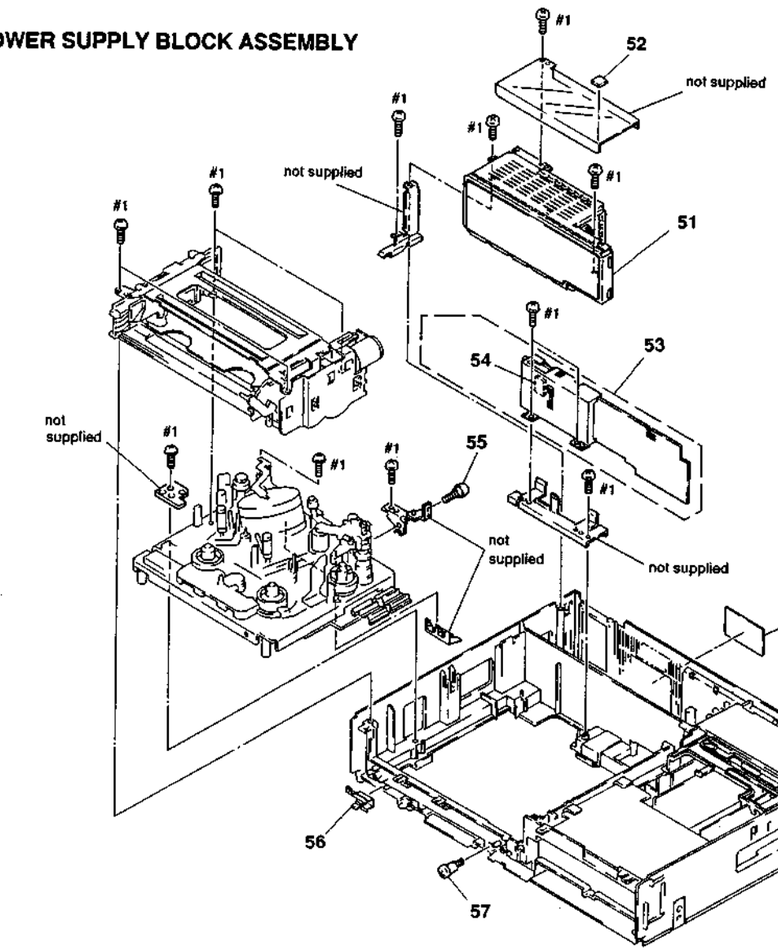


SECTION 5
EXPLODED VIEWS

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.
- Canadian model is abbreviated as CND, and also Mexican model is MX.

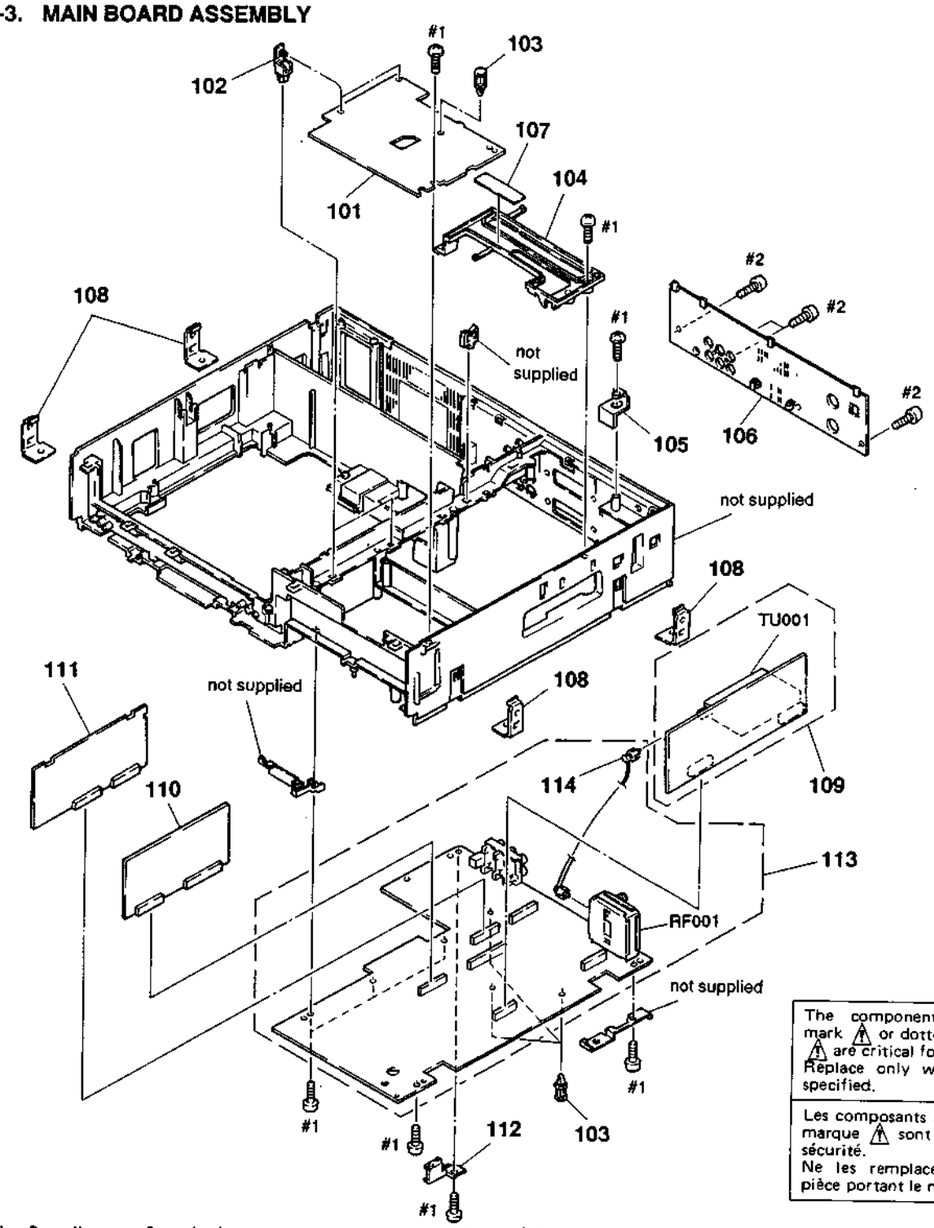
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

5-2. POWER SUPPLY BLOCK ASSEMBLY



Ref.No.	Part No.	Description	Remark
51	⚠ 1-413-648-11	POWER BLOCK (SWITCHING BLOCK) (585HF;PX)	
51	⚠ 1-413-650-11	POWER BLOCK (SWITCHING BLOCK) (EXCEPT 585HF;PX)	
52	9-911-839-XX	RETAINER (B), MICROPHONE	
53	*A-6727-301-A	RP-112 BOARD, COMPLETE (686HF;US, CND)	
53	*A-6727-302-A	RP-112 BOARD, COMPLETE (585HF;US, CND)	
53	*A-6727-314-A	RP-128 BOARD, COMPLETE (71HF)	
53	*A-6727-357-A	RP-128 BOARD, COMPLETE (585HF;PX/589HF)	
53	*A-6727-361-A	RP-128 BOARD, COMPLETE (686HF;MX)	
54	*1-639-699-12	DQ-6 BOARD (EXCEPT 71HF)	
54	*1-639-699-31	DQ-6 BOARD (71HF)	
55	3-736-055-01	SCREW (3x8), TAPPING	
56	3-741-968-01	PLATE, GROUND, MF	
57	3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
58	*3-942-769-01	LABEL, MODEL NUMBER (B) (585HF;US, CND)	
58	*3-942-770-01	LABEL, MODEL NUMBER (C) (686HF;US, CND)	
58	*3-944-213-01	LABEL, MODEL NUMBER (MX) (686HF;MX)	
58	*3-944-482-01	LABEL, MODEL NUMBER (D) (589HF)	
58	*3-944-212-01	LABEL, MODEL NUMBER (PX) (585HF;PX)	

5-3. MAIN BOARD ASSEMBLY



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
101	*A-6754-240-A	CA-46 BOARD, COMPLETE (686HF;US, CND)	
101	*A-6754-248-A	CA-46 BOARD, COMPLETE (585HF;US, CND)	
101	*A-6754-264-A	CA-47 BOARD, COMPLETE (71HF)	
101	*A-6754-360-A	CA-47 BOARD, COMPLETE (585HF;PX/589HF)	
101	*A-6754-361-A	CA-47 BOARD, COMPLETE (686HF;MX)	
102	3-736-704-01	HINGE, PC BOARD	
103	3-682-057-11	SPACER (SMALL)	
104	*3-941-524-01	HOLDER, FRAME (EXCEPT 71HF)	
104	*3-944-753-01	HOLDER, FRAME (71HF)	
105	*3-741-963-01	BRACKET, RF	
106	3-941-514-11	PLATE, ORNAMENTAL, JACK (EXCEPT 71HF)	
106	3-944-739-01	PLATE, ORNAMENTAL, JACK (71HF)	
107	3-942-876-01	LABEL, CAUTION (585HF;US, CND/686HF;US, CND)	
108	*3-741-992-01	STOPPER, UPPER CASE (EXCEPT 71HF)	
108	*3-741-992-11	STOPPER, UPPER CASE (71HF)	
109	*A-6754-238-A	TU-130 BOARD, COMPLETE	
110	*A-6754-242-A	HF-23 BOARD, COMPLETE	
111	*A-6754-241-A	YC-112 BOARD, COMPLETE	
112	*3-741-962-01	PLATE, GROUND, JMP (EXCEPT 71HF)	
112	*3-741-962-11	PLATE, GROUND, JMP (71HF)	
113	*A-6756-083-A	MA-82 BOARD, COMPLETE (585HF;US, CND/686HF;US, CND)	
113	*A-6756-104-A	MA-82 BOARD, COMPLETE (71HF)	
113	*A-6756-249-A	MA-82 BOARD, COMPLETE (585HF;PX/686HF;MX/589HF)	
114	1-558-924-41	CABLE, PIN	
RF001	⚠ 1-466-150-11	MODULATOR, RF (RFU-1025) (EXCEPT 71HF)	
RF001	⚠ 1-466-358-11	MODULATOR, RF (RFU-1020) (71HF)	
TU001	⚠ 1-465-239-11	TUNER, ET (BTP-2A401)	

POWER BLOCK

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

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 piéce portant le numéro spécifié.

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

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

ELECTRICAL PARTS LIST (EXCEPT: SLV-585HF (PX))

Ref. No.	Part No.	Description		Remark
	1-413-650-11	POWER BLOCK (Ref. No. 9000 Series)		
	⚠1-526-985-11	AC INLET		
		<CAPACITOR>		
C101	⚠9-900-521-01	FILM	0.1MF	125V
C102	⚠9-900-521-01	FILM	0.1MF	125V
C103	⚠9-900-522-01	FILM	2200PF	125V
C104	⚠9-900-522-01	FILM	2200PF	125V
C105	⚠9-900-522-01	FILM	2200PF	125V
C106	⚠9-900-523-01	ELECT	220MF	200V
C107	1-124-927-11	ELECT	4.7MF	50V
C108	1-164-350-11	CERAMIC	470PF	1KV
C109	9-900-525-01	MTALAIZED	0.047MF	400V
C110	1-130-495-00	FILM	0.1MF	50V
C111	1-130-491-00	FILM	0.047MF	50V
C201	1-124-122-11	ELECT	100MF	50V
C202	1-124-443-00	ELECT	100MF	10V
C203	9-900-540-01	ELECT	2200MF	16V
C204	1-126-101-11	ELECT	100MF	16V
C205	1-126-101-11	ELECT	100MF	16V
C206	1-126-101-11	ELECT	100MF	16V
C207	9-900-541-01	ELECT	2200MF	10V
C209	1-124-902-00	ELECT	0.47MF	50V
C210	9-900-542-01	ELECT	470MF	10V
C211	1-124-443-00	ELECT	100MF	10V
C212	1-124-913-51	ELECT	470MF	50V
C213	1-124-471-00	ELECT	1000MF	6.3V
C214	1-130-483-00	FILM	0.01MF	50V
C215	1-130-483-00	FILM	0.01MF	50V
C216	1-130-483-00	FILM	0.01MF	50V
C217	1-130-495-00	FILM	0.1MF	50V
		<CONNECTOR>		
CN901	9-900-546-01	CONNECTOR 19P		
		<DIODE>		
D101	⚠9-900-511-01	DIODE	S1WBA60	
D102	9-996-310-01	DIODE	AG01A	
D103	8-719-200-82	DIODE	11ES2	
D104	8-719-911-19	DIODE	1SS119	
D105	8-719-911-19	DIODE	1SS119	
D106	8-719-911-19	DIODE	1SS119	
D107	8-719-911-19	DIODE	1SS119	
D108	8-719-911-19	DIODE	1SS119	
D109	⚠8-719-911-19	DIODE	1SS119	
D201	9-900-534-01	DIODE	ERA18-02	
D202	8-719-114-87	DIODE	RD18JSB	
D203	9-900-536-01	DIODE	RL4Z	
D204	8-719-981-00	DIODE	ERB81-004	
D205	9-900-534-01	DIODE	ERA18-02	
D206	8-719-975-85	DIODE	ERA83-004	
		<FUSE>		
F101	⚠1-532-743-11	FUSE 2A 125V		
		<BEAD, CORE>		
FB101	9-900-981-01	BEAD, CORE		
		<IC>		
IC201	⚠1-808-796-11	IC	SI-3120CS	
IC202	⚠8-749-920-43	IC	SI-3120CA	
IC203	⚠9-900-530-01	IC	AN7809F	
IC204	9-900-532-01	IC	AN1431T	
IC205	9-900-532-01	IC	AN1431T	
		<COIL>		
L101	⚠9-900-520-01	FILTER, LINE AC		
L201	9-900-539-01	CHOCK COIL 10μH		
		<TRANSISTOR>		
Q101	⚠9-900-515-01	TRANSISTOR 2SC3890		
Q102	⚠8-729-140-96	TRANSISTOR 2SD774-34		
Q201	⚠8-729-140-96	TRANSISTOR 2SD774-34		
Q202	8-729-119-76	TRANSISTOR 2SA933		
		<PHOTO COUPPLER>		
PC101	⚠9-900-518-01	PHOTO COUPPLER PS2501		
		<RESISTOR>		
R101	1-102-729-00	SLOID	6.8M	1/2W
R102	1-249-441-11	CARBON	100K	1/4W
R103	1-249-441-11	CARBON	100K	1/4W
R104	1-249-429-11	CARBON	10K	1/4W
R105	1-215-909-00	METAL	47	3W
R106	9-900-527-01	METAL	33K	3W
R107	9-900-528-01	METAL	47	2W
R108	1-249-413-11	CARBON	470	1/4W
R109	1-249-429-11	CARBOM	10K	1/4W
R110	⚠1-249-397-11	CARBON	22	1/4W
R201	⚠1-247-727-11	CARBON	10	1/2W
R202	1-249-417-11	CARBON	1K	1/4W
R204	1-215-411-00	METAL	390	1/4W
R205	1-215-428-00	METAL	2K	1/4W
R206	1-215-425-00	METAL	1.5K	1/4W
R207	1-215-457-00	METAL	33K	1/4W

POWER BLOCK

Ref. No.	Part No.	Description		Remark
R208	9-900-543-01	CARBON	0.22	1/2W
R209	1-249-417-11	CARBON	1K	1/4W
R210	9-900-544-01	CARBON	47K	1/2W
R211	1-247-405-11	CARBON	100	1/4W
R212	1-247-405-11	CARBON	100	1/4W
R213	1-215-425-00	METAL	1.5K	1/4W
R214	1-249-409-11	CARBON	220	1/4W
R215	1-215-425-00	METAL	1.5K	1/4W
R216	1-247-727-11	CARBON	10	1/2W
R217	⚠9-900-545-01	FUSIBLE	1	1/2W
R218	1-249-429-11	CARBON	10K	1/4W
R219	1-249-417-11	CARBON	1K	1/4W
		<THYRISTOR>		
SCR201	⚠9-900-538-01	THYRISTOR	03P2M	
		<TRANCE>		
T101	⚠9-900-529-01	TRANCE, CONVERTOR		

****

ELECTRICAL PARTS LIST (SLV-585HF (PX) ONLY)

Ref. No.	Part No.	Description		Remark
	1-413-648-12	POWER BLOCK (Ref. No. 10000 Series)		
		<CAPACITOR>		
C101	⚠9-900-768-01	FILM	0.22MF	250V
C102	⚠9-900-769-01	CERAMIC	2200PF	250V
C103	⚠9-900-769-01	CERAMIC	2200PF	250V
C104-1	⚠9-900-770-01	CERAMIC	4700PF	250V
C104-3	⚠9-900-770-01	CERAMIC	4700PF	250V
C105	⚠9-900-772-01	ELECT	180MF	400V
C106	⚠9-900-771-01	FILM	0.047MF	630V
C107	⚠9-900-773-01	CERAMIC	100PF	2KV
C108	⚠9-900-774-01	ELECT	1MF	200V
C109	⚠9-900-775-01	ELECT	100MF	25V
C111	9-900-776-01	FILM	0.047MF	50V
C112	⚠9-900-783-01	FILM	2200PF	100V
C115	⚠9-900-778-01	FILM	0.1	AC250V
C116-2	⚠9-900-796-01	CERAMIC	2200PF	AC250V
C201	1-124-570-11	ELECT	220MF	16V
C202	9-900-779-01	ELECT	1500MF	25V
C203	1-124-119-00	ELECT	330MF	16V
C205	1-124-570-11	ELECT	220MF	16V
C206	1-124-472-11	ELECT	470MF	10V
C207	1-126-176-11	ELECT	220MF	10V
C208	1-124-520-11	ELECT	3300MF	10V
C209	1-124-122-11	ELECT	100MF	50V
C210	1-124-122-11	ELECT	100MF	50V
C211	1-124-559-51	ELECT	1000MF	10V
C212	9-900-780-01	FILM	0.01MF	50V
C213	9-900-780-01	FILM	0.01MF	50V
C214	9-900-781-01	FILM	0.33MF	63V
C215	1-124-126-00	ELECT	47MF	25V
C216	1-123-379-00	ELECT	0.47MF	50V
C218	9-900-782-01	CERAMIC	1000PF	1KV
C219	9-900-783-01	FILM	2200PF	100V

Ref. No.	Part No.	Description		Remark
		<CONNECTOR>		
CN101	⚠9-900-765-01	INLET, AC		
CN711	9-900-766-01	CONNECTOR		
		<DIODE>		
D101	⚠8-719-510-06	DIODE	D1WBA60	
D103	⚠8-719-913-44	DIODE	ERA82-004	
D104	⚠9-900-740-01	DIODE	D1N60	
D105	⚠9-900-740-01	DIODE	D1N60	
D110	⚠9-900-740-01	DIODE	D1N60	
D201	9-944-171-01	DIODE	D4LA20	
D202	9-900-743-01	DIODE	ERA38-04	
D203	8-719-110-57	DIODE	RD22ESB2	
D206	⚠8-719-500-65	DIODE	S3S6M	
D207	8-719-951-30	DIODE	ERA91-02	
D208	9-900-747-01	DIODE	ERA83-004	
		<FUSE>		
F101	⚠9-900-748-01	FUSE 2A		
		<HIC>		
HIC101	⚠9-900-758-01	HIC MA2831		
		<IC>		
IC201	8-759-518-68	IC PQ12RF21		
IC202	8-759-420-19	IC AN431T		
IC203	8-759-231-56	IC TA7809S		
IC204	8-749-920-43	IC SI3050CA		
IC205	1-808-796-11	IC SI3120CS		
		<COIL>		
L101	⚠9-900-752-01	FILTER LINE	18MH	
L201	9-900-754-01	CHOCK COIL	40μH	
L202	9-900-575-01	BEAD FERRITE		
		<COUPLER>		
PC101	⚠9-900-762-01	COUPLER, PHOTO	PC111LS	
		<PROTECTOR>		
PS201	⚠1-532-637-00	PROTECTOR, ICICPN25	1A	
PS202	⚠1-532-637-00	PROTECTOR, ICICPN25	1A	
		<TRANSISTOR>		
Q101	⚠8-729-100-13	TRANSISTOR 2SC2001		
		<RESISTOR>		
R101	⚠9-900-784-01	CEMENT	2.2	3W
R102	⚠9-900-785-01	METAL	100K	3W
R103	⚠9-900-786-01	CARBON	220K	1/2W
R104	1-247-894-11	CARBON	430K	1/4W
R105	⚠9-900-787-01	CARBON	330	1/2W
R106	⚠9-900-788-01	CARBON	68	1/2W
R107	⚠9-900-789-01	CARBON	100	1/2W
R108	⚠9-900-790-01	CARBON	22	1/2W
R109	1-249-414-11	CARBON	560	1/4W
R201	⚠9-901-622-01	FUSE	150	1/2W
R203	⚠9-901-623-01	FUSE	39	1/2W
R204	⚠9-900-793-01	CARBON	2.7	1/2W
R205	⚠9-900-794-01	CARBON	47	1/2W
R206	1-215-426-00	METAL	1.6K	1/4W
R207-1	1-215-425-00	METAL	1.5K	1/4W

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.

POWER BLOCK

Ref. No.	Part No.	Description		Remark
R207-2	1-215-455-00	METAL	27K	1/4W
R208	1-215-413-00	METAL	470	1/4W
R209	1-249-413-11	CARBON	470	1/4W
R212	1-215-399-00	METAL	120	1/4W
R213	1-249-429-11	CARBON	10K	1/4W
R214	1-247-820-11	CARBON	360	1/4W
R232	1-215-409-00	METAL	330	1/4W
		<TRANCE>		
T101	⚠9-900-751-01	TRANCE, CONVERTOR		
		<THYRISTOR>		
THY201	9-900-764-01	THYRISTOR	03P4M	

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.

9-973-127-81

Sony Corporation
Home Video Group

English
9110939-1
Printed in Japan

Published by Customer Relations and Service Group

SLV-71HF/585HF/589HF/686HF

RMT-V102/V102A/V112

SONY

SERVICE MANUAL

US Model
SLV-585HF/686HF

Canadian Model
SLV-585HF/589HF/686HF

Taiwan Model
SLV-71HF

Mexican Model
SLV-686HF

PX Model
SLV-585HF

SUPPLEMENT-2

Use the previously published service manual (original) and this service manual (SUPPLEMENT-1) together.

SLV-71HF is not listed in SUPPLEMENT-2 as there were no change.

Each change is performed from the serial numbers as follows.

SLV-585HF; US MODEL: serial No. 1,053,211 later.
SLV-686HF; US MODEL: serial No. 1,020,001 later.
SLV-585HF; CND MODEL: serial No. A912,001 later.
SLV-589HF; CND MODEL: serial No. 801,001 later.
SLV-686HF; CND MODEL: serial No. A904,001 later.
SLV-686HF; MX MODEL: serial No. 804,301 later.
SLV-585HF; PX MODEL: serial No. 807,501 later.

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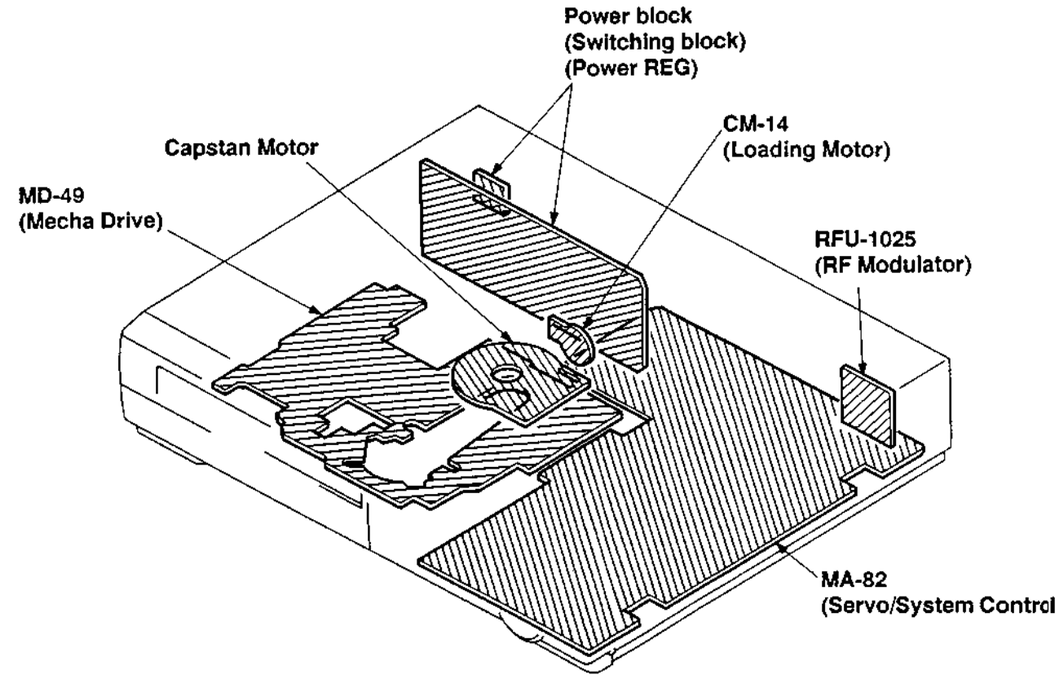
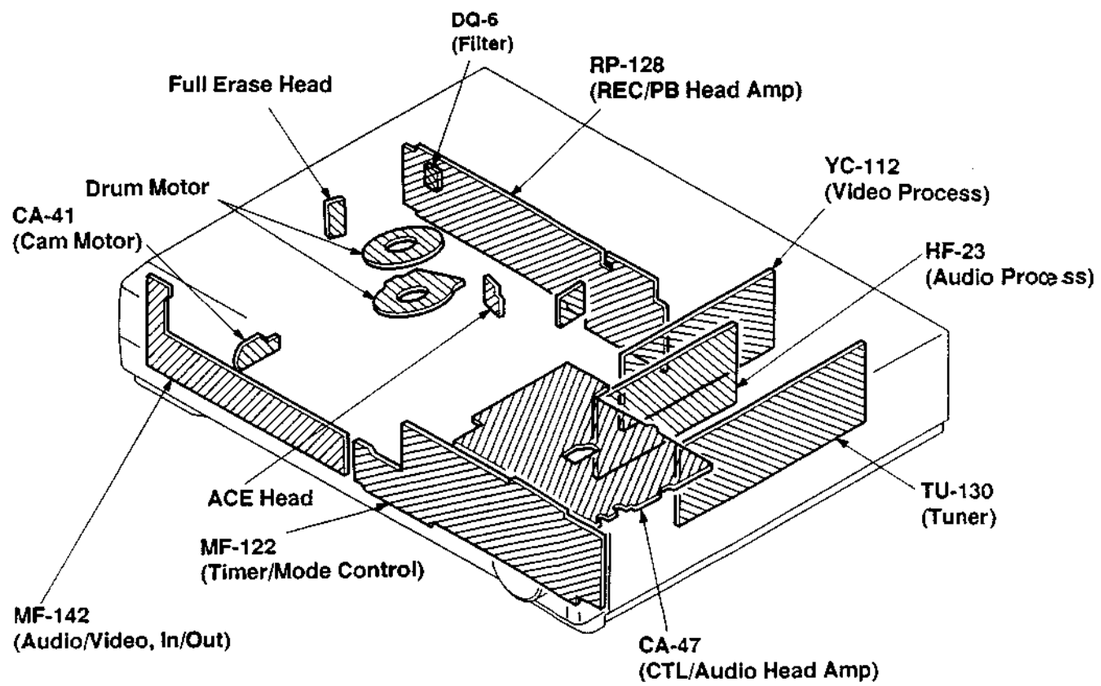
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

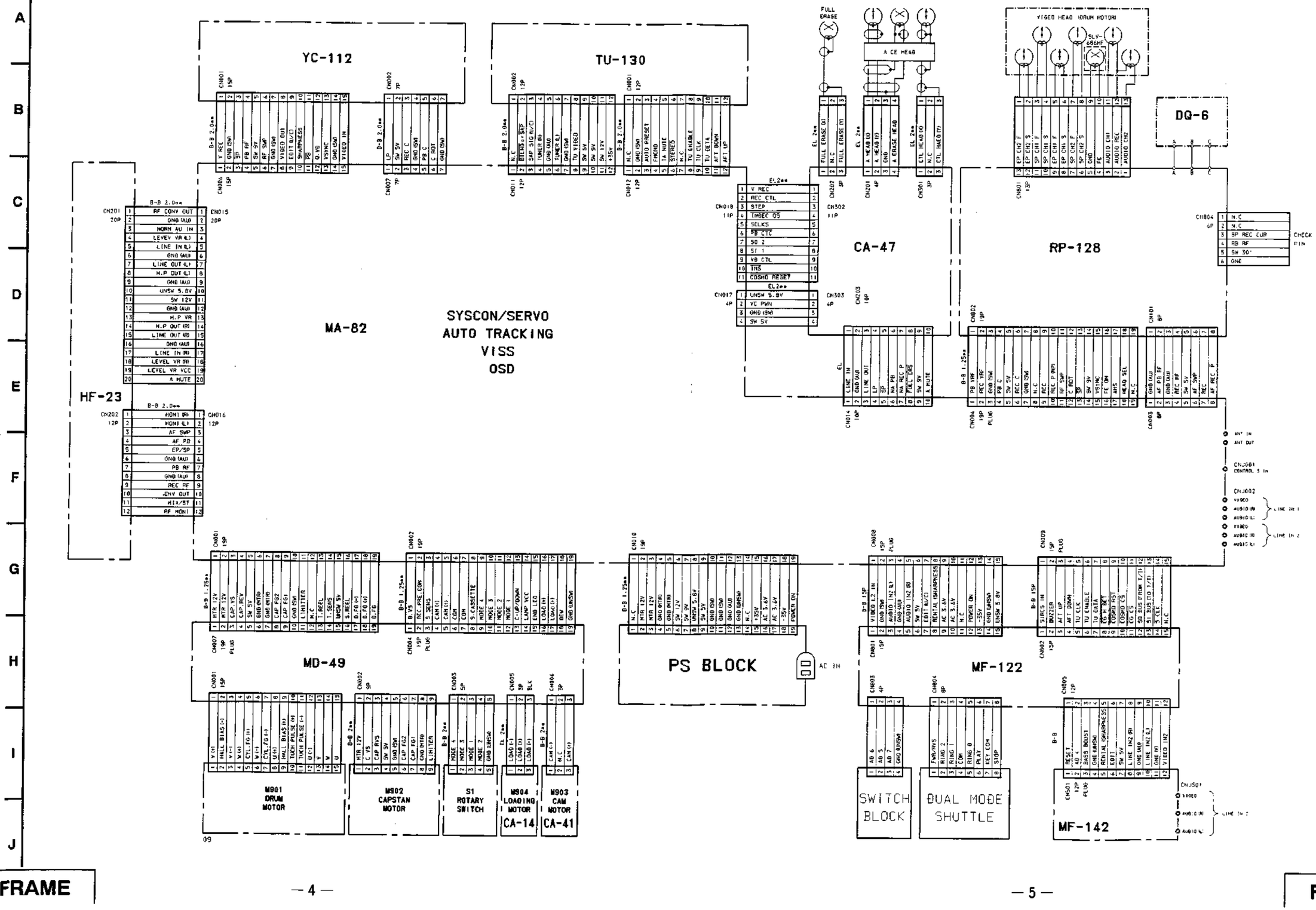




SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

- **For printed wiring boards.**
- ○ : Through hole.
- ▨ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

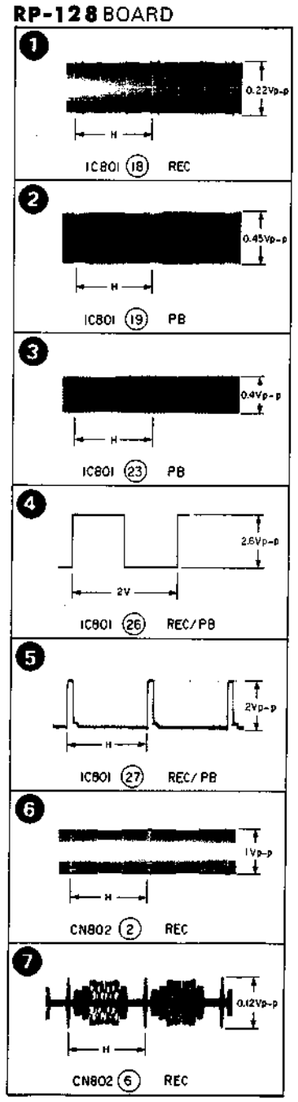
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/10W 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.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repeair.
- ——— : 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 color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltages are taken with a VOM (Input impedance 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

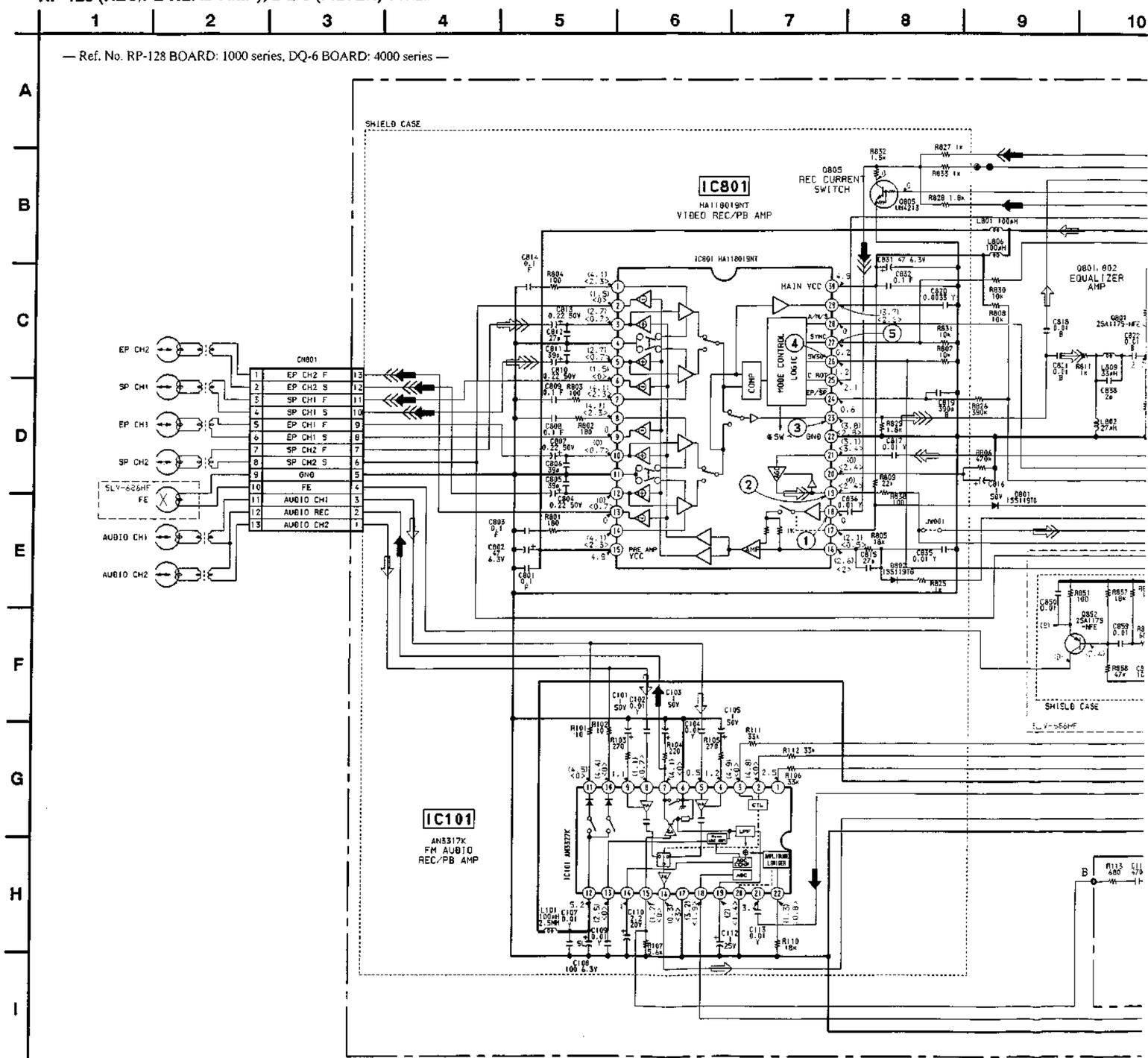
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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

RP-128 BOARD

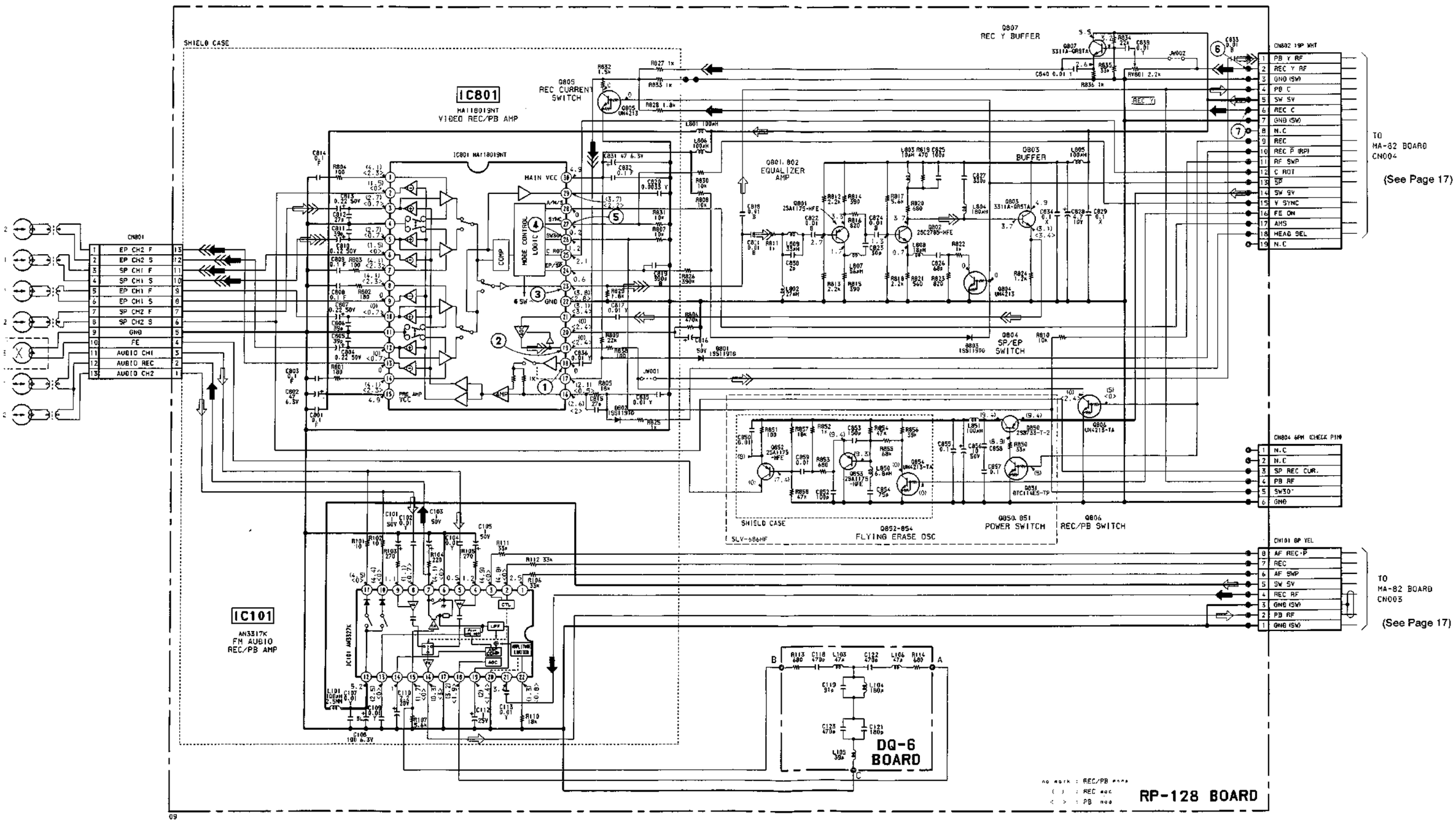


RP-128 (REC/PB HEAD AMP), DQ-6 (FILTER) SCHEMATIC DIAGRAMS



2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

-128 BOARD: 1000 series, DQ-6 BOARD: 4000 series —



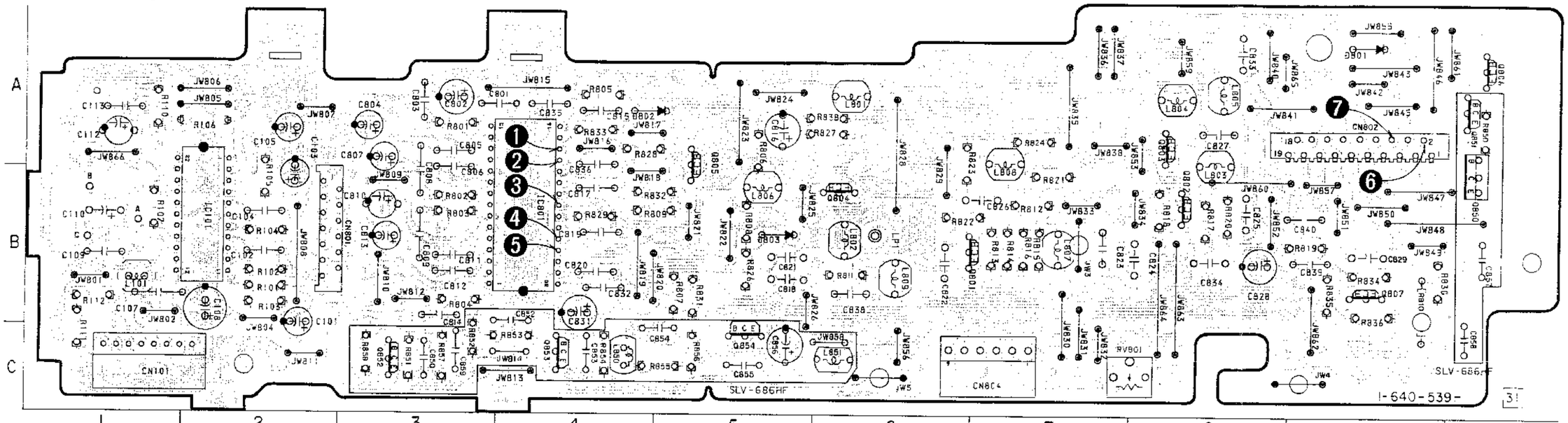
• SIGNAL PATH

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

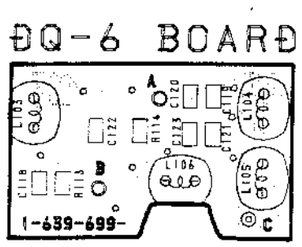
RP-128 (REC/PB HEAD AMP), DQ-6 (FILTER) PRINTED WIRING BOARDS

— Ref. No. RP-128 BOARD: 1000 series, DQ-6 BOARD: 4000 series —

RP-128 BOARD



DQ-6 BOARD



(DIODE)

D801	8-719-911-19	DIODE	1SS119
D802	8-719-911-19	DIODE	1SS119
D803	8-719-911-19	DIODE	1SS119

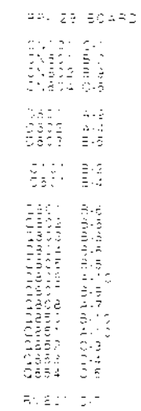
(IC)

IC101	8-759-421-19	IC	AN3317K
IC801	8-759-320-62	IC	HA118019NT

(TRANSISTOR)

Q801	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q802	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q803	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q804	8-729-900-89	TRANSISTOR	DTC144ES
Q805	8-729-900-89	TRANSISTOR	DTC144ES
Q806	8-729-900-89	TRANSISTOR	DTC144ES
Q807	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q850	8-729-113-31	TRANSISTOR	2SB733-2 (686HF)
Q851	8-729-900-80	TRANSISTOR	DTC114ES (686HF)
Q852	8-729-119-76	TRANSISTOR	2SA1175-HFE (686HF)
Q853	8-729-119-76	TRANSISTOR	2SA1175-HFE (686HF)
Q854	8-729-900-89	TRANSISTOR	DTC144ES (686HF)

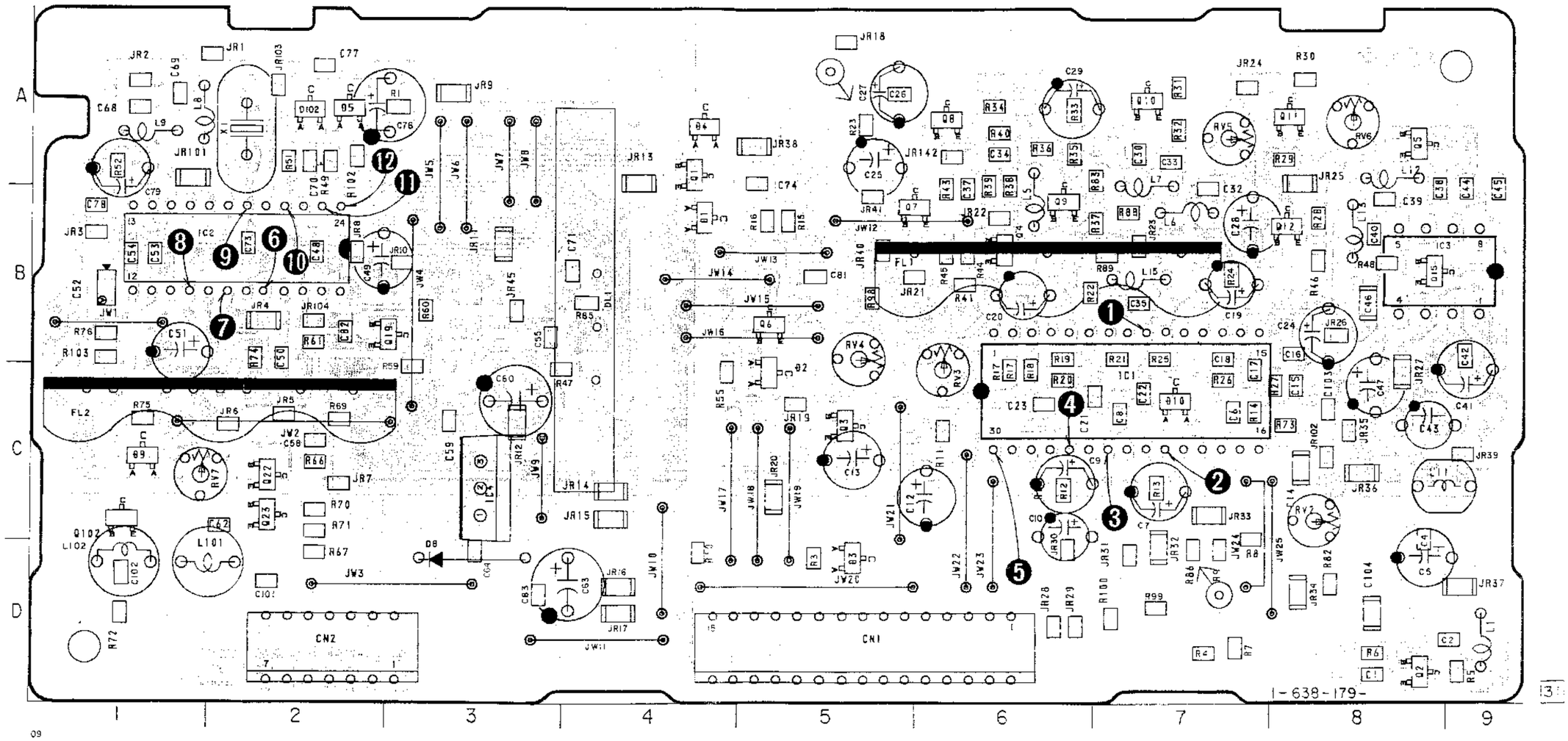
RP-29 BOARD



YC-112 (VIDEO PROCESS) PRINTED WIRING BOARD

— Ref. No. YC-112 BOARD: 2000 series —

YC-112 BOARD



(DIODE)

D001	8-719-400-18	DIODE	MA152WK
D002	8-719-400-18	DIODE	MA152WK
D003	8-719-400-18	DIODE	MA152WK
D004	8-719-400-18	DIODE	MA152WK
D005	8-719-400-18	DIODE	MA152WK
D008	8-719-200-32	DIODE	11ES2
D009	8-719-400-18	DIODE	MA152WK
D010	8-719-400-18	DIODE	MA152WK
D102	8-719-400-18	DIODE	MA152WK

(IC)

IC001	8-759-821-62	IC	LA7326
IC002	8-759-821-87	IC	LA7316AN
IC003	8-759-821-50	IC	LC8991
IC004	8-759-938-15	IC	BA178M05

(TRANSISTOR)

Q001	8-729-901-06	TRANSISTOR	DTA144EK
Q002	8-729-230-49	TRANSISTOR	2SC2712-YG
Q003	8-729-901-01	TRANSISTOR	DTC144EK
Q004	8-729-305-25	TRANSISTOR	2SA1052-C
Q005	8-729-305-25	TRANSISTOR	2SA1052-C
Q006	8-729-901-47	TRANSISTOR	DTA143EK
Q007	8-729-230-49	TRANSISTOR	2SC2712-YG
Q008	8-729-230-49	TRANSISTOR	2SC2712-YG
Q009	8-729-230-49	TRANSISTOR	2SC2712-YG
Q010	8-729-230-49	TRANSISTOR	2SC2712-YG
Q011	8-729-305-25	TRANSISTOR	2SA1052-C
Q012	8-729-305-25	TRANSISTOR	2SA1052-C
Q015	8-729-230-49	TRANSISTOR	2SC2712-YG
Q019	8-729-620-06	TRANSISTOR	2SC3052-EF
Q022	8-729-305-25	TRANSISTOR	2SA1052-C
Q023	8-729-620-06	TRANSISTOR	2SC3052-EF
Q102	8-729-930-53	TRANSISTOR	DTC114EK

YC-112 (VIDEO PROCESS) SCHEMATIC DIAGRAM

— Ref. No. YC-112 BOARD: 2000 series —

TO
MA-82 BOARD
CN006

(See Page 17)

CN001 15P

Y REC	1
GND	2
SP	3
PB RF	4
9V	5
SW.P	6
GND	7
Y OUT	8
EDIT	9
SHP	10
PB	11
Q.V9	12
COMP SYNC	13
GND	14
V IN	15

R086 100

Q006
PB5V SWITCH
DTA143EK-T146

Q001
DTA144EK-T146
SP SWITCH

Q002
BUFFER
2SC2462C-TL

Q003
DTC144EK-T146
REC MUTE

IC001
LA7326
Y PROCESS

IC002
LA7316AN
CHROMA PROCESS

RF AGC

<5V>

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

IC004
BA178M05
5V REG

IC004 BA178M05
5V REG
5
8.7
B008 1IES2-TA2
<5V>

CN002 7P

1	LP
2	SW 5V
3	REC.C
4	GND (SW)
5	PB.C
6	C.ROT
7	GND (SW)

TO MA-62 BOARD CN007

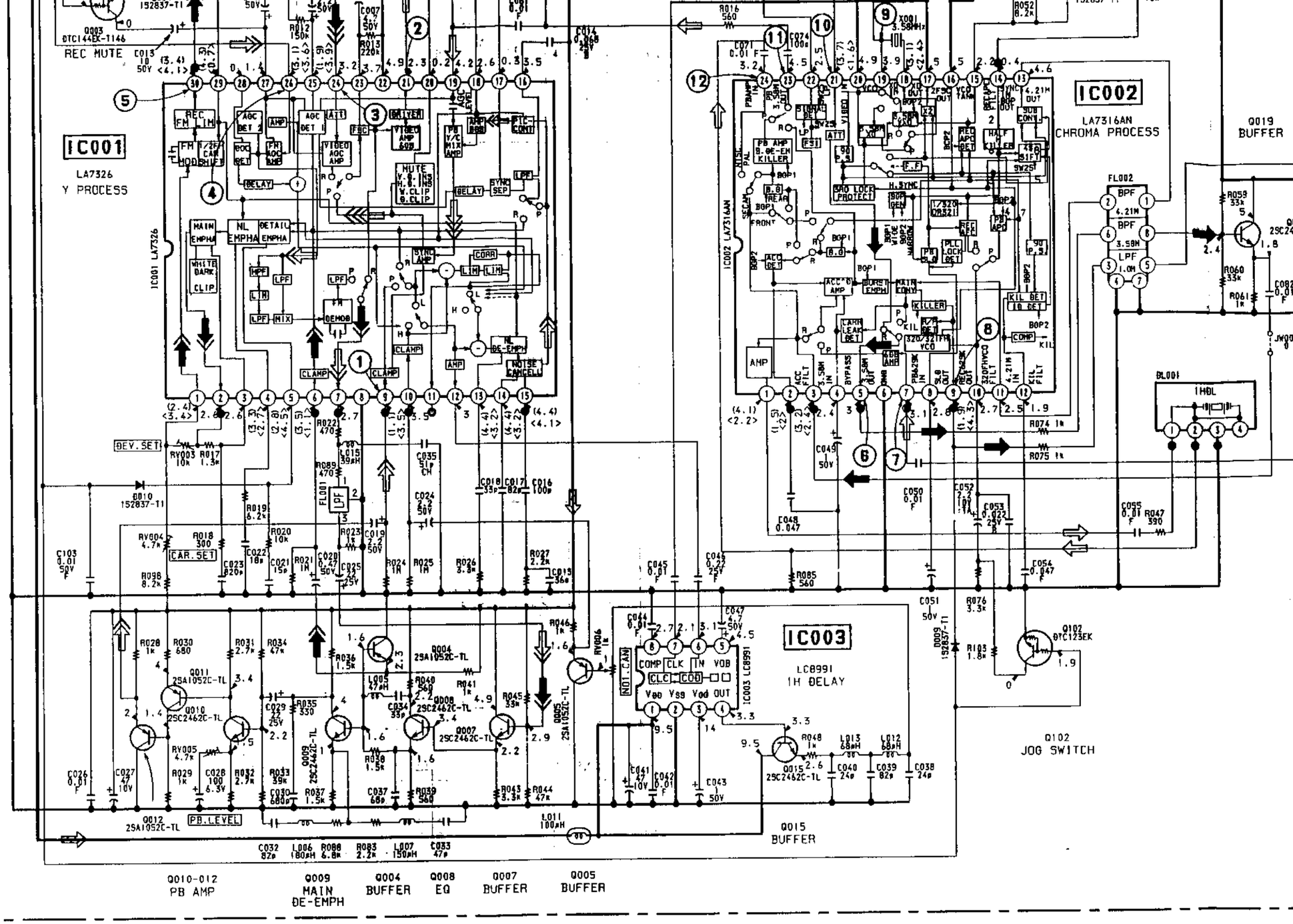
(See Page 17)

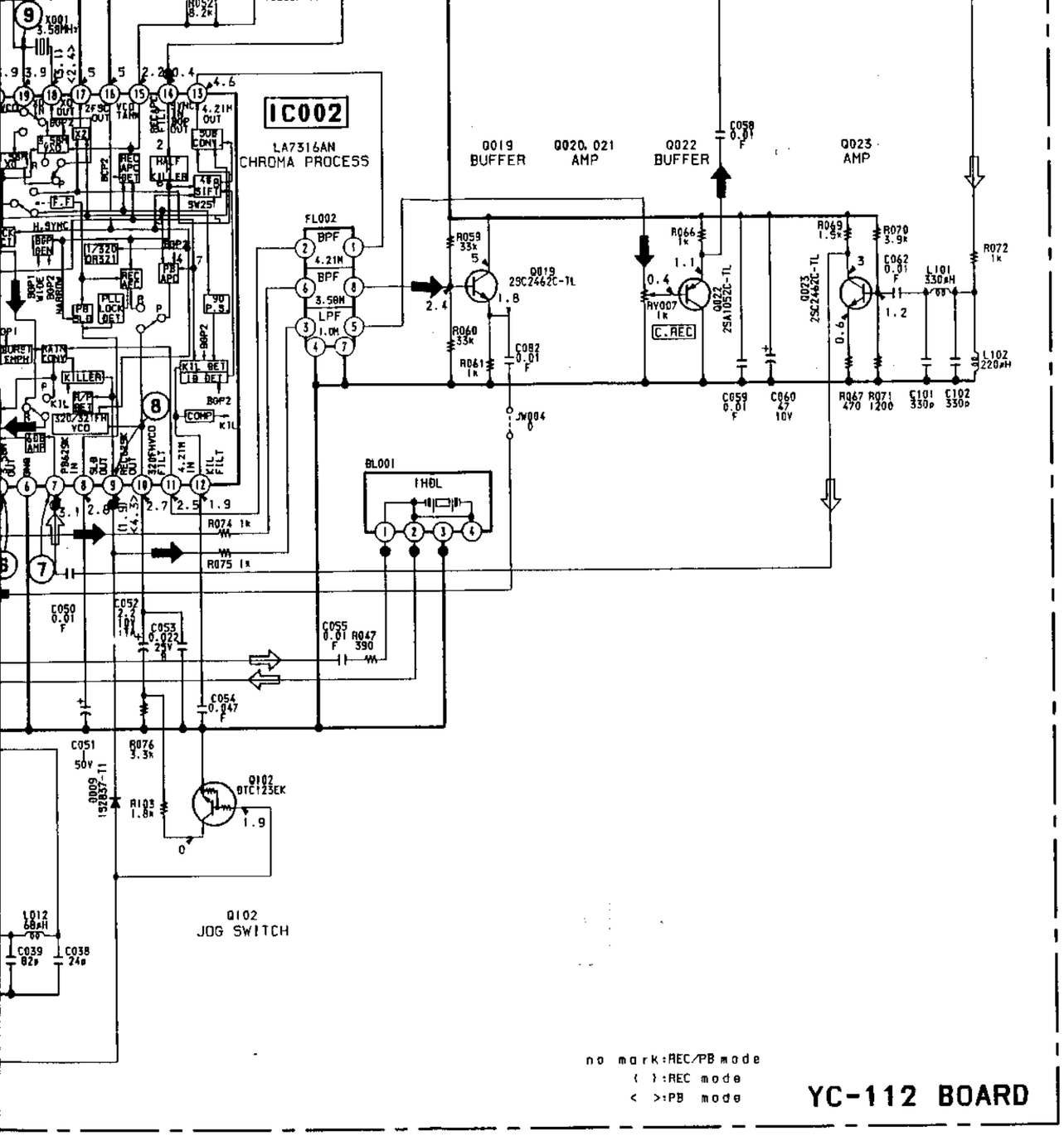
C064 0.01 50V F
C063 10 50V
C083 0.01 F
C076 47 10V
C077 0.01 F
L008 10uH
C069 33p
L009 39uH
C068 33p
C073 10p
C078 0.01 F
C079 50V
R102 3.9k
R052 8.2k
D102 1S2837-11
R055 10k
X001 3.58MHz
IC002
LA7316AN
CHROMA PROCESS
Q019 BUFFER
Q020, 021 AMP
Q022 BUFFER
Q023 AMP
C058 0.01 F
FL002
BPF 4.21M
BPF 3.58M
LPF 1.0M
R059 33k
Q019 2SC2462C-TL
R060 33k
C082 0.01 F
R066 1k
RV007 1k
C.REC
Q022 2SA1052C-TL
R069 1.5k
R070 3.9k
Q023 2SC2462C-TL
C062 0.01 F
L101 330uH
R072 1k
L102 220uH

• SIGNAL PATH

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

YC-112 BOARD

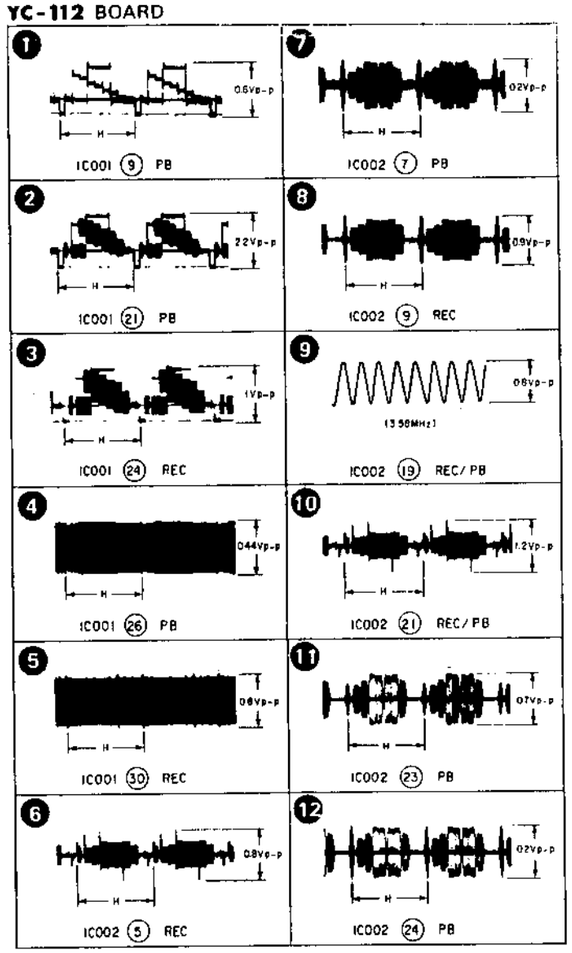

IC001
LA7326
Y PROCESS
IC002
LA7316AN
CHROMA PROCESS
IC003
LC8991
1H DELAY
Q019
BUFFER
Q102
JOG SWITCH
Q015
BUFFER
REC MUTE
DEV.SET
CAR.SET
PB.LEVEL
Q010-012
PB AMP
Q009
MAIN
DE-EMPH
Q004
BUFFER
Q008
EQ
Q007
BUFFER
Q005
BUFFER



• **SIGNAL PATH**

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

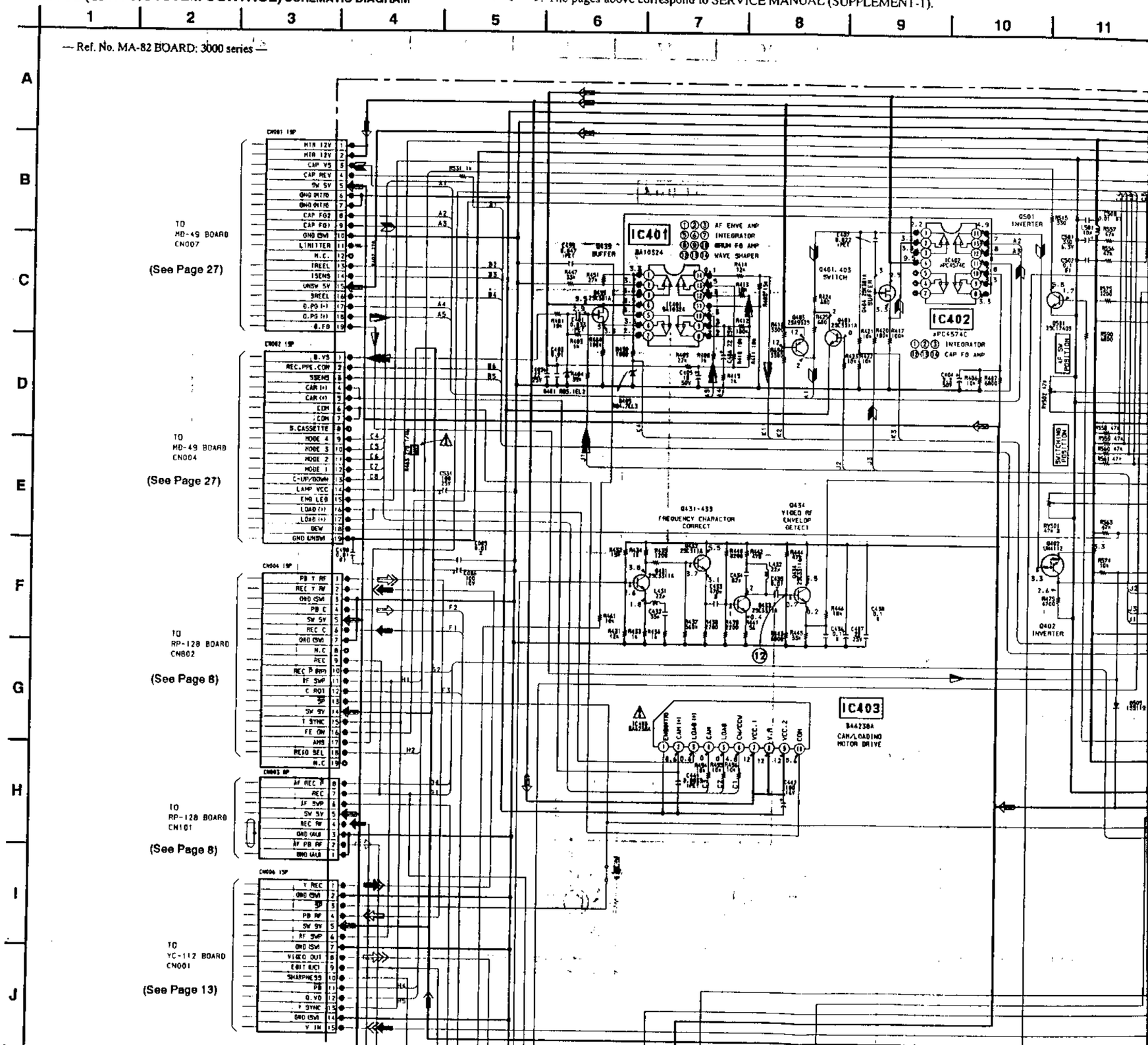
YC-112 BOARD



MA-82 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

• < >: The pages above correspond to SERVICE MANUAL (SUPPLEMENT-1).

— Ref. No. MA-82 BOARD: 3000 series —

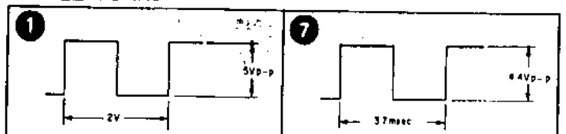


• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
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	▶		

MA-82 BOARD



MENT-1).

9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

IC501
CXP80624
SERVO/
SYSTEM CONTROL

IC402
μPC4574C
INTEGRATOR
CAP FB AMP

IC601
MS0555
ON SCREEN DISPLAY PULSE DETECT

IC602
μPC1555C
PULSE WIDTH

IC102
BA7021
VIDEO SWITCH

IC101
LA7235
AUDIO SELECT

Q501
INVERTER

Q502
INVERTER

Q601, 602
H SYNC
DETECT

Q603
BUFFER

Q604
SYNC-TIP
CLAMP

Q605
MUTE

Q605
BUFFER

Q606
607
SIRCS
SWITCH

Q608
V SYNC
SEP

Q152-154
SWITCH

TUNER

TO
TU-130 BOARD
CN002

(See Page 39)

TO
TU-130 BOARD
CN001

(See Page 39)

TO
POWER BLOCK

〈See Page 6〉

TO
MF-122 BOARD
CN802

(See Page 44)

TO
MF-122 BOARD
CN801

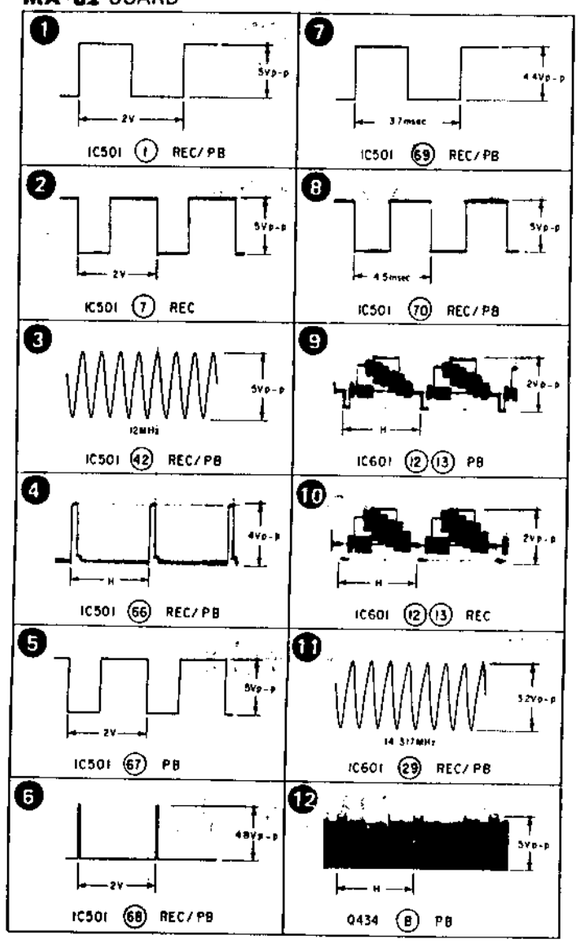
(See Page 44)

CONTROL S IN

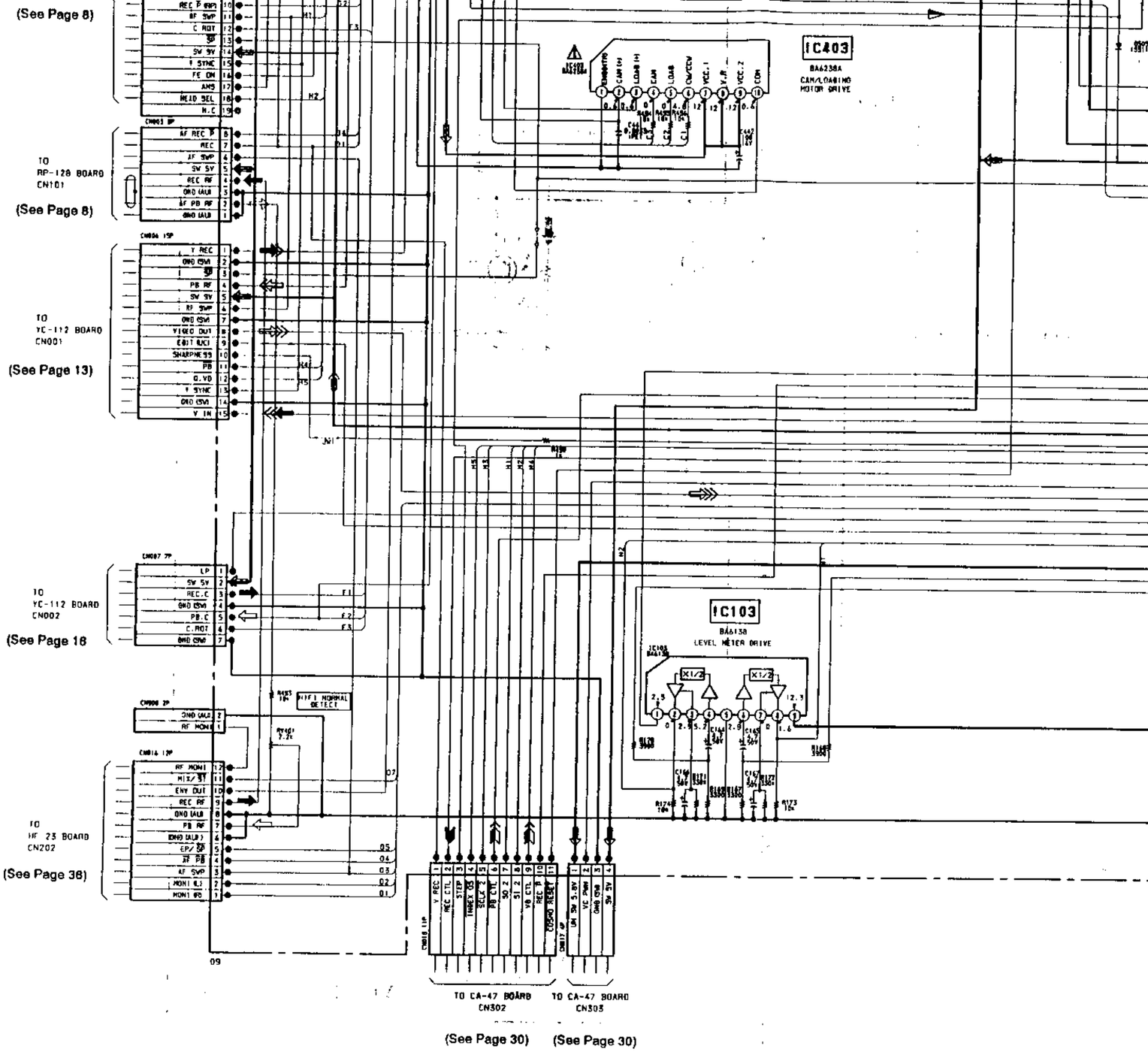
REC			➡⋙	➡
PB			⇨⋙	⇨

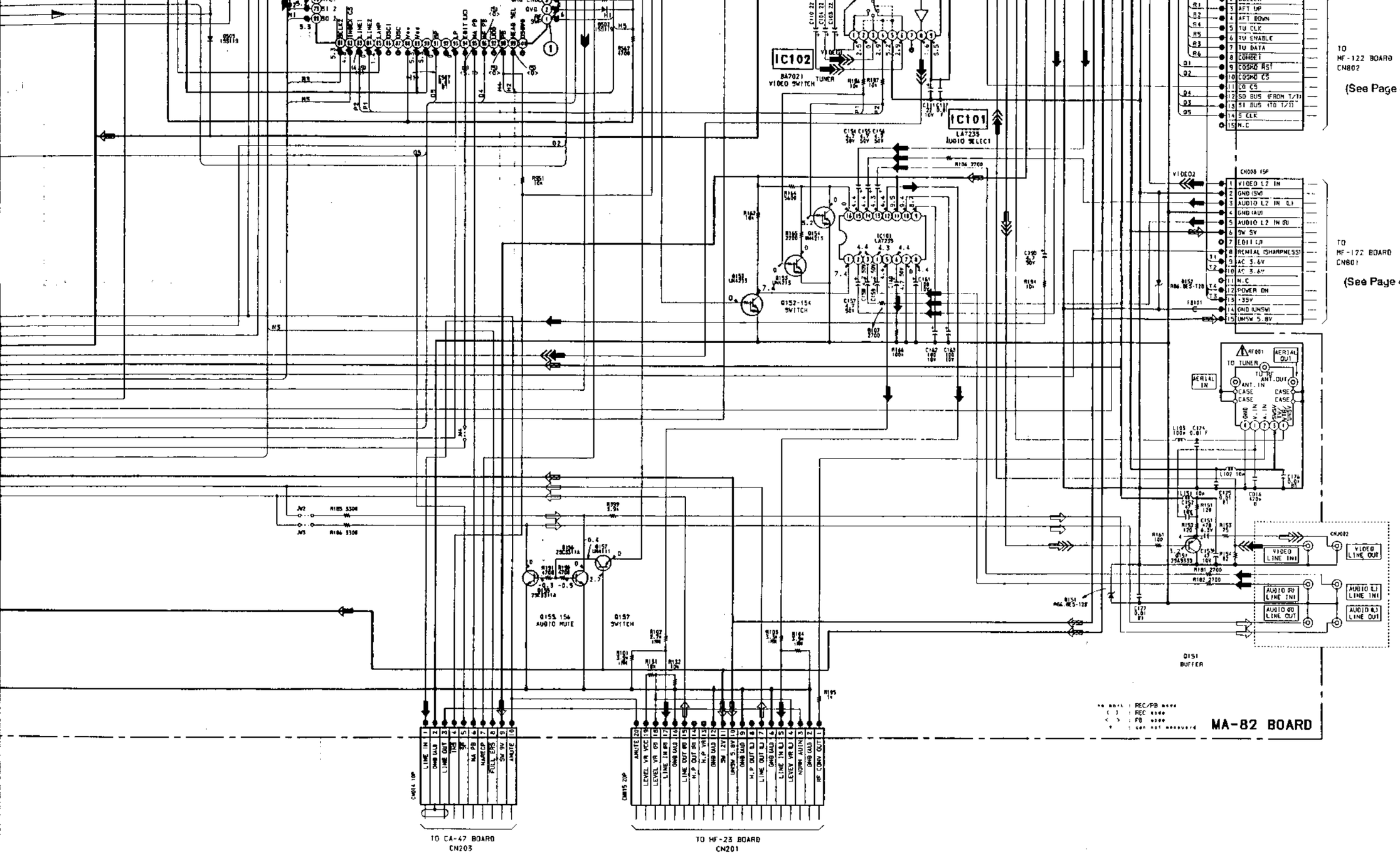
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷⋙	
Drum servo (speed and phase)		▷⋙	
Capstan speed servo		⇨	
Capstan phase servo		⇨⋙	
Capstan servo (speed and phase)			
Ref. signal	▶		

MA-82 BOARD



SERVO/SYSTEM CONTROL




IC102
BA7021
VIDEO SWITCH
TUNER
IC101
LA7235
AUDIO SELECT
Q152-154
SWITCH
Q155 156
AUDIO MUTE
Q157
SWITCH
Q151
BUFFER
CN008 15P
VIDEO2
1 VIDEO L2 IN
2 GND (SW)
3 AUDIO L2 IN (L)
4 GND (AU)
5 AUDIO L2 IN (R)
6 SW 5V
7 EDIT I/O
8 RENTAL (SHARPNESS)
9 AC 3.6V
10 AC 3.6V
11 N.C
12 POWER ON
13 -35V
14 GND (UNSW)
15 UNSW 5.8V
TO MF-122 BOARD CN801
(See Page 44)
CN802
1 TU BT
2 AFT UP
3 AFT DOWN
4 TU CLK
5 TU ENABLE
6 TU DATA
7 COMBET
8 COSMO RST
9 COSMO CS
10 CO CS
11 SO BUS (FROM T/T)
12 SI BUS (TO T/T)
13 S CLK
14 N.C
15
TO MF-122 BOARD CN802
(See Page 44)
AERIAL OUT
AERIAL IN
TO TUNER
TU-RF
ANT. OUT
ANT. IN
CASE
CN002
VIDEO LINE IN
VIDEO LINE OUT
AUDIO (R) LINE IN
AUDIO (L) LINE IN
AUDIO (R) LINE OUT
AUDIO (L) LINE OUT
CN006 20P
CN015 20P
TO CA-47 BOARD CN203
(See Page 30)
TO MF-23 BOARD CN201
(See Page 36)
MA-82 BOARD

MA-82 (SERVO/SYSTEM CONTROL) PRINTED WIRING BOARD

— Ref. No. MA-82 BOARD: 3000 series —

MA-82 BOARD

(DIODE)

D151	8-719-109-97	DIODE	RD6. 8ES-B2
D151	8-719-110-02	DIODE	RD7. 5ES-B1
D151	8-719-110-03	DIODE	RD7. 5ES-B2
D152	8-719-109-97	DIODE	RD6. 8ES-B2
D152	8-719-110-02	DIODE	RD7. 5ES-B1
D152	8-719-110-03	DIODE	RD7. 5ES-B2
D401	8-719-101-50	DIODE	RD5. 1E-L2
D405	8-719-101-47	DIODE	RD4. 7E-L2
D502	8-719-911-19	DIODE	1SS119
D505	8-719-911-19	DIODE	1SS119
D601	8-719-911-19	DIODE	1SS119
D603	8-719-911-19	DIODE	1SS119
D604	8-719-911-19	DIODE	1SS119
D605	8-719-911-19	DIODE	1SS119
D606	8-719-911-19	DIODE	1SS119
D608	8-719-911-19	DIODE	1SS119
D610	8-719-109-97	DIODE	RD6. 8ES-B2
D611	8-719-200-82	DIODE	11ES2

(IC)

IC101	8-759-804-80	IC	LA7235
IC102	8-759-927-56	IC	BA7021
IC103	8-759-961-38	IC	BA6138
IC401	8-759-008-71	IC	LM324N
IC402	8-759-113-18	IC	uPC4574C
⚠IC403	8-759-983-45	IC	BA6238A
IC501	8-752-819-83	IC	CXP80624-208Q
IC601	8-759-636-15	IC	M50555-054SP
IC602	8-759-115-55	IC	uPC1555C

(TRANSISTOR)

Q151	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q152	8-729-900-89	TRANSISTOR	DTC144ES
Q153	8-729-900-89	TRANSISTOR	DTC144ES
Q154	8-729-900-89	TRANSISTOR	DTC144ES
Q155	8-729-102-14	TRANSISTOR	2SD1012F
Q156	8-729-102-14	TRANSISTOR	2SD1012F
Q157	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q402	8-729-900-63	TRANSISTOR	DTA124ES
Q403	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q404	8-729-601-47	TRANSISTOR	2SK381-B
Q431	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q432	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q433	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q434	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q439	8-729-601-47	TRANSISTOR	2SK381-B
Q501	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q601	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q602	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q603	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q605	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q606	8-729-900-65	TRANSISTOR	DTA144ES
Q607	8-729-900-89	TRANSISTOR	DTC144ES
Q608	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q609	8-729-119-76	TRANSISTOR	2SA1175-HFE

MA-82 BOARD

CN001 D-6
CN002 D-7
CN003 F-8
CN004 C-4
CN006 E-4
CN007 E-2
CN008 F-13
CN009 I-13
CN010 A-2
CN011 I-6
CN012 I-2
CN014 I-9
CN015 F-5
CN016 F-7
CN017 I-12
CN018 E-10

D150 C-6
D151 A-1
D152 E-13
D160 H-3
D161 H-3
D162 I-3
D163 I-2
D201 I-5
D202 I-5
D401 G-11
D405 F-11
D410 E-5
D411 E-4
D412 E-5
D413 E-5
D502 F-8
D505 E-12
D601 D-3
D603 J-5
D604 B-1
D605 B-1
D606 F-2
D608 C-2
D609 D-2
D610 D-1
D611 D-3

IC101 H-2
IC102 G-2
IC103 I-8
IC201 H-6
IC202 H-5
IC401 F-12
IC402 E-12
IC403 E-7
IC501 F-10
IC601 D-2
IC602 C-2

Q151 C-1
Q152 C-8
Q153 C-7
Q154 C-6
Q155 C-6
Q156 C-1
Q157 C-1
Q201 I-4
Q202 I-6
Q203 I-5
Q204 I-5
Q401 F-11
Q402 E-10
Q403 E-10
Q404 F-11
Q431 J-8
Q432 J-9
Q433 J-9
Q434 J-10
Q439 J-11
Q440 F-3
Q450 F-5
Q501 F-9
Q601 J-5
Q602 J-4
Q603 J-3
Q604 J-2
Q605 B-2
Q606 B-2
Q607 B-1
Q608 B-1
Q609 B-2

RV401 F-11
RV501 F-11
RV502 C-10
RV600 C-3

MD-49 (MOTOR DRIVE) PRINTED WIRING BOARD

— Ref. No. MD-49 BOARD: 4000 series —

MD-49 BOARD

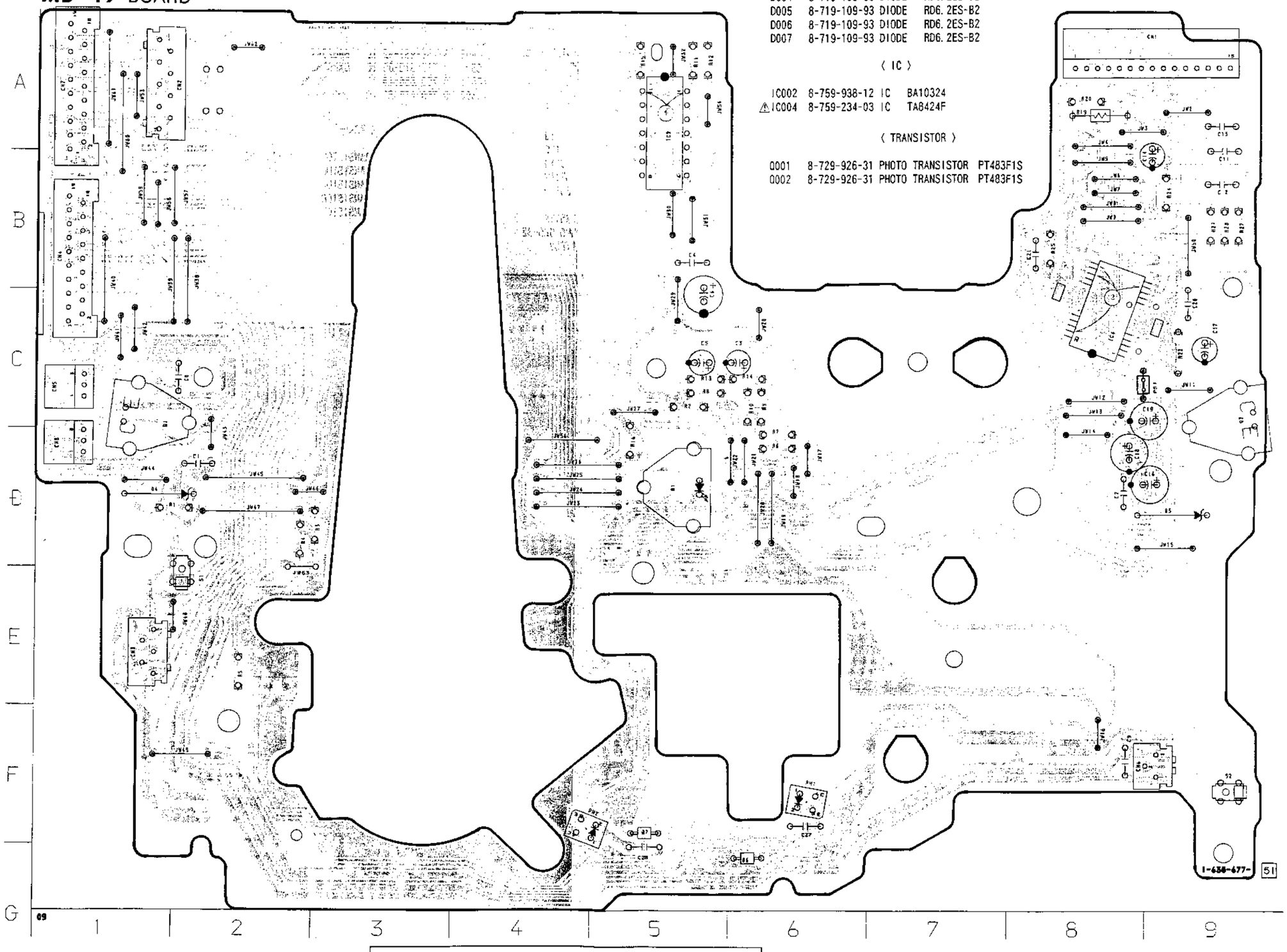
CN001 A-9
CN002 A-1
CN003 E-1
CN004 B-1
CN005 C-1
CN006 F-8

D001 D-5
D004 D-1
D005 D-9
D006 F-6
D007 F-5

IC002 A-5
IC004 C-8

Q001 C-1
Q002 C-9

MD-49 BOARD



(DIODE)

D001	8-719-985-00	DIODE	GL451VS1
D004	8-719-109-93	DIODE	RD6. 2ES-B2
D005	8-719-109-93	DIODE	RD6. 2ES-B2
D006	8-719-109-93	DIODE	RD6. 2ES-B2
D007	8-719-109-93	DIODE	RD6. 2ES-B2

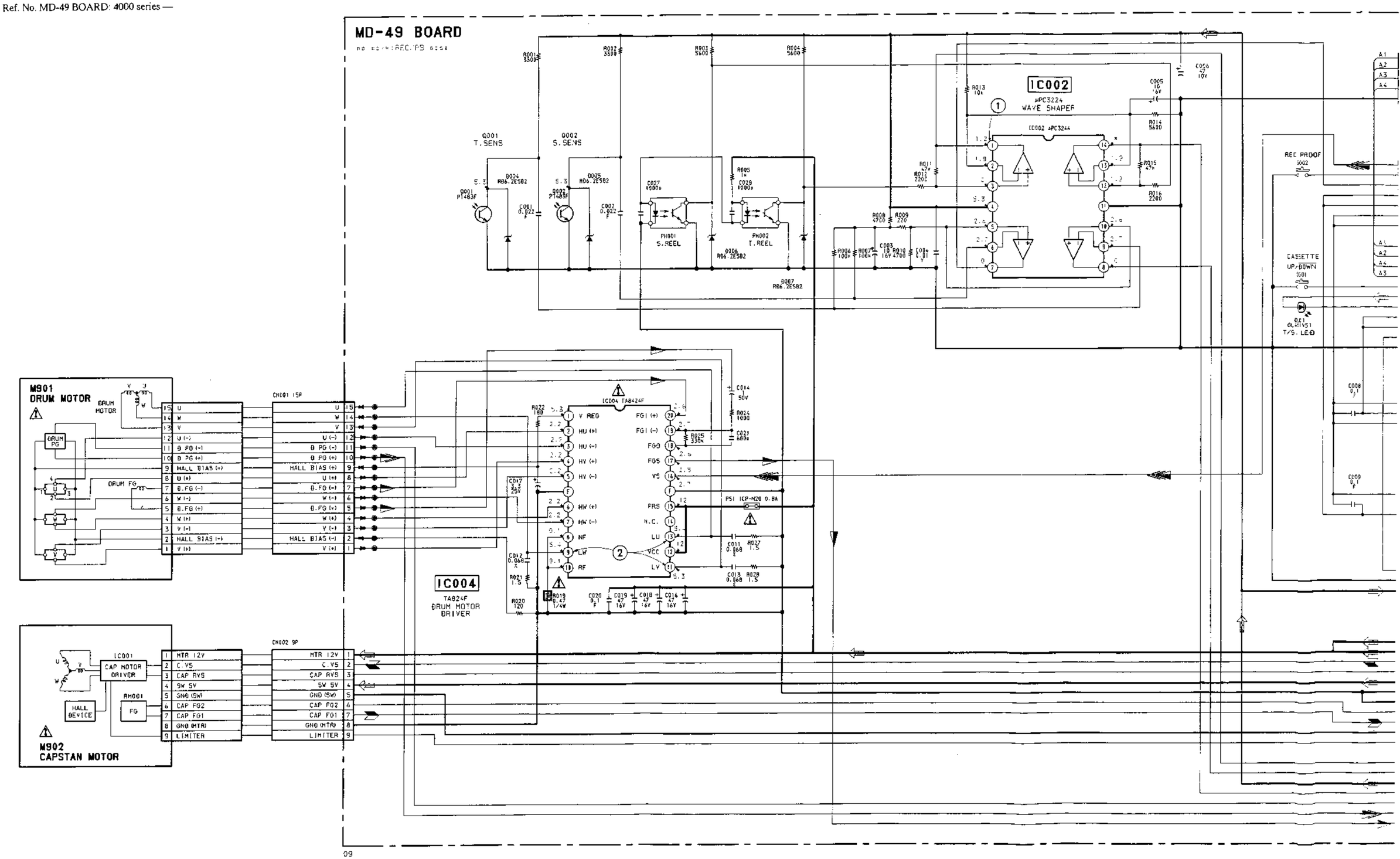
(IC)

IC002	8-759-938-12	IC	BA10324
⚠IC004	8-759-234-03	IC	TA8424F

(TRANSISTOR)

Q001	8-729-926-31	PHOTO TRANSISTOR	PT483F1S
Q002	8-729-926-31	PHOTO TRANSISTOR	PT483F1S

— Ref. No. MD-49 BOARD: 4000 series —



8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

IC002
μPC3224
WAVE SHAPER

IC002 μPC3244

CN003 5P
MODE4
MODE3
MODE1
MODE2
GND (UNSW)

S1
ROTARY
SWITCH

REC PROOF
S002

CASSETTE
UP/DOWN
S001

D001
GL451YS1
T/S. LED

CN004 19P
0.VS
REC PRF
S.SENS
CAM (+)
CAM (-)
COM
COM
S.CASSET
MODE4
MODE3
MODE2
MODE1
C-UP/DOWN
LAMP VCC
END LED
LOAD (+)
LOAD (-)
DEW
GND (UNSW)

TO
MA-82 BOARD
CN002

(See Page 17)

CN005 3P
LOAD (-)
LOAD (+)
LOAD (-)

CN001
LOAD (-)
LOAD (+)
LOAD (-)

CA-14
BOARD
M904
LOADING
MOTOR

CN006 3P
CAM (-)
N.C
CAM (+)

CN001
CAM (-)
N.C
CAM (+)

CA-41
BOARD
M903
CAM
MOTOR

CN008 3P
DEW
GND (UNSW)
UNSW 5V

NO USE

CN007 19P
MTR 12V
MTR 12V
C.VS
CAP.RVS
SW 5V
GND (MTR)
GND (MTR)
CAP FG2
CAP FG1
GND (SW)
LIMITER
N.C
T.REEL
T.SENS
UNSWSV
S.REEL
D.PG (-)
D.PG (+)
D.FG

TO
MA-82 BOARD
CN001

(See Page 17)

IC004 TA8424F
FG1 (+)
FG1 (-)
FG0
FG5
VS
FR5
N.C.
LU
VCC
LV

PS1 1CP-N20 0.8A

PH001
S.REEL

PH002
T.REEL

D006
RD6.2ES2

D007
RD6.2ES2

MD-49 BOARD

1 4Vp-p 25msec IC002 (1)(14) FF

2 6.2Vp-p 5msec IC004 (9)(11)(13)(19) 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			

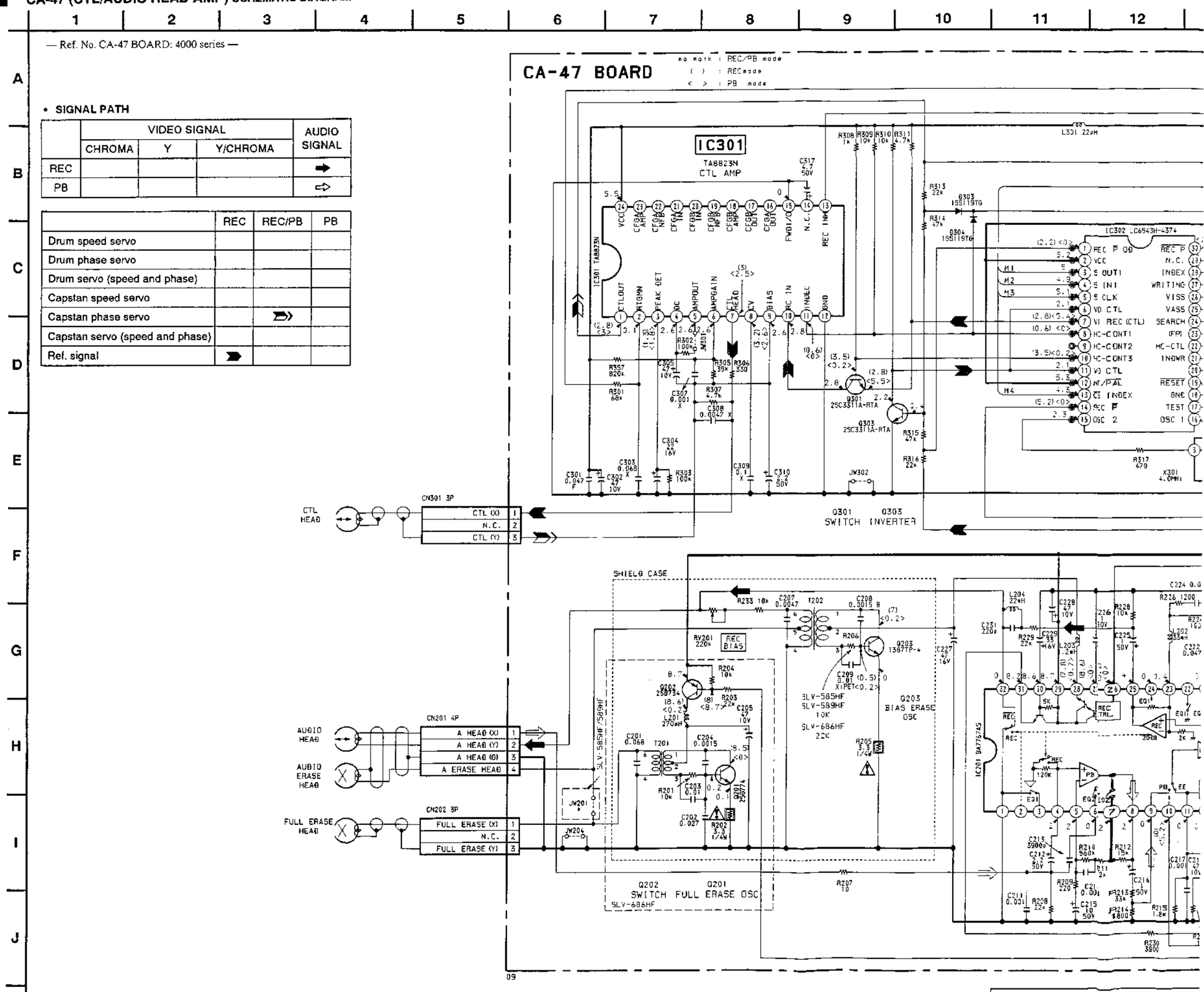
CA-47 (CTL/AUDIO HEAD AMP) SCHEMATIC DIAGRAM

— Ref. No. CA-47 BOARD: 4000 series —

• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
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	➡		



CA-47 BOARD

no mark : REC/PB mode
( ) : REC mode
< > : PB mode

IC301
TA8823N
CTL AMP

IC302
LC6543H-4374
INDEX CONTROL

IC201
BA7767AS
CTL REC/PB AMP

CN302 11P
1 V REC
2 RECCTL
3 STEP
4 INDEX DS
5 SCLK 2
6 PB CTL
7 SO 2
8 SI 2
9 V0 CTL
10 INS
11 COSMO RESET

TO MA-82 BOARD CN018
(See Page 18)

CN303 4P
1 UN SW 5.8V
2 VC PWM
3 GND (SW)
4 SW 5V

TO MA-82 BOARD CN017
(See Page 18)

CN203 10P
1 LINE IN
2 GND (AU)
3 LINE OUT
4 LP
5 SP
6 NA PB
7 NARECP
8 FULL ERS
9 SW 9V
10 AMUTE

TO MA-82 BOARD CN014
(See Page 19)

CN301 3P
CTL (X) 1
N.C. 2
CTL (Y) 3

CN201 4P
A HEAD (X) 1
A HEAD (Y) 2
A HEAD (G) 3
A ERASE HEAD 4

CN202 3P
FULL ERASE (X) 1
N.C. 2
FULL ERASE (Y) 3

Q301 Q303
SWITCH INVERTER

Q202 Q201
SWITCH FULL ERASE OSC

SHIELD CASE

SLV-585HF/589HF

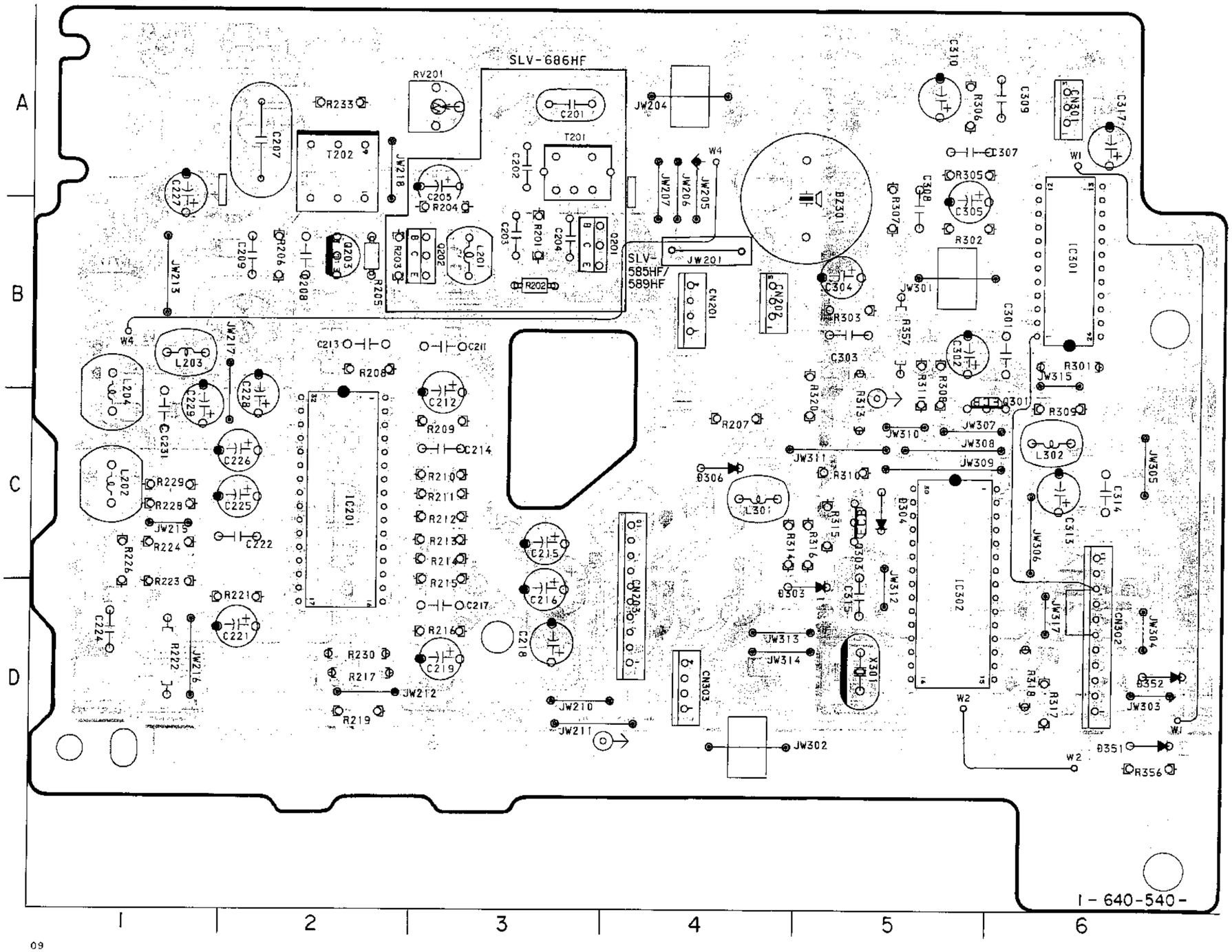
SLV-585HF
SLV-589HF
10K
SLV-686HF
22K

SLV-686HF

CA-47 (CTL/AUDIO HEAD AMP) PRINTED WIRING BOARD

— Ref. No. CA-47 BOARD: 4000 series —

CA-47 BOARD



CA-47 BOARD

CN201 B-4
CN202 B-4
CN203 D-3
CN301 A-6
CN302 D-6
CN303 C-5
CN304 C-5
CN305 C-6
CN306 C-4
CN351 D-6
CN352 D-5
CN353 C-5

IC201 C-2
IC301 B-6
IC302 C-5

Q201 B-3
Q202 B-2
Q203 B-2
Q301 C-5
Q303 C-5
Q304 D-4

RV201 A-2

(DIODE)

D303	8-719-911-19	DIODE	1SS119
D304	8-719-911-19	DIODE	1SS119
D306	8-719-911-19	DIODE	1SS119
D351	8-719-911-19	DIODE	1SS119
D352	8-719-911-19	DIODE	1SS119

(IC)

IC201	8-759-513-18	IC	BA7767AS
IC301	8-759-246-14	IC	TA8823N
IC302	8-759-822-65	IC	LC6543H-4374

(TRANSISTOR)

Q201	8-729-140-96	TRANSISTOR	2SD774-34 (686HF)
Q202	8-729-140-93	TRANSISTOR	2SB734-34 (686HF)
Q203	8-729-140-96	TRANSISTOR	2SD774-34
Q301	8-729-119-78	TRANSISTOR	2SC2785-HE
Q303	8-729-119-78	TRANSISTOR	2SC2785-HE

HF-23 (AUDIO PROCESS) PRINTED WIRING BOARD

— Ref. No. HF-23 BOARD: 5000 series —

HF-23 BOARD

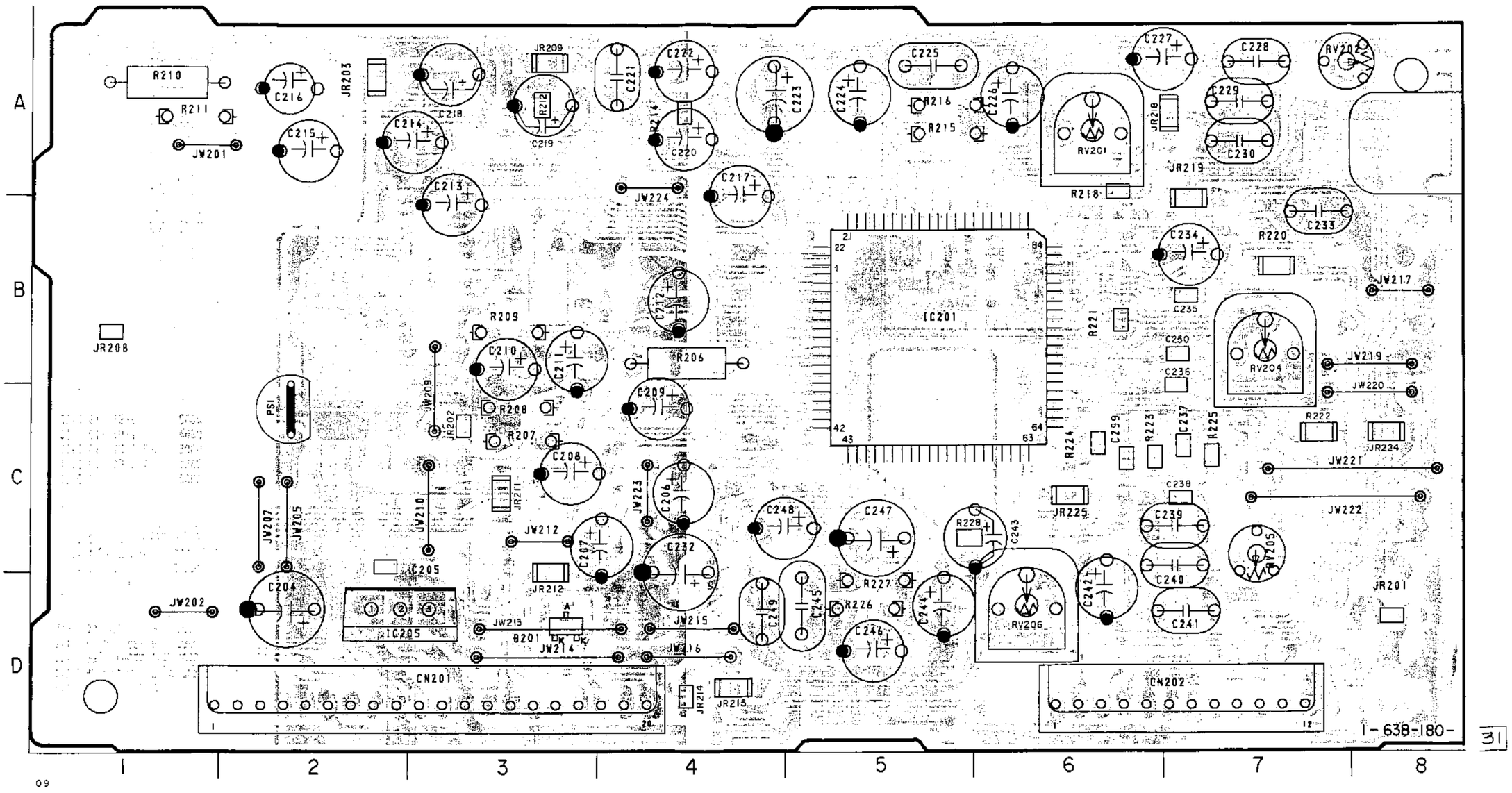
HF-23 BOARD

CN201 C-2
CN202 C-4

D201 C-2

IC201 B-4
IC205 C-2

RV201 A-4
RV202 A-5
RV204 B-5
RV205 C-5
RV206 C-4



〈 DIODE 〉

D201 8-719-104-34 DIODE 1S2836

〈 IC 〉

IC201 8-759-421-08 IC AN3937FBP
⚠IC205 8-759-938-15 IC BA178M05

AUDIO AUDIO

HF-23 (AUDIO PROCESS) SCHEMATIC DIAGRAM

— Ref. No. HF-23 BOARD: 5000 series —

HF-23 BOARD

R-CH

IC201
AN3937FBP
HIFI AUDIO PROCESS

IC205
BA178M05
5V REG

(See Page 19)

(See Page 17)

• SIGNAL PATH

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

TU-130 (TUNER) PRINTED WIRING BOARD

— Ref. No. TU-130 BOARD: 5000 series —

TU-130 BOARD

CN001 C-7
CN002 C-2

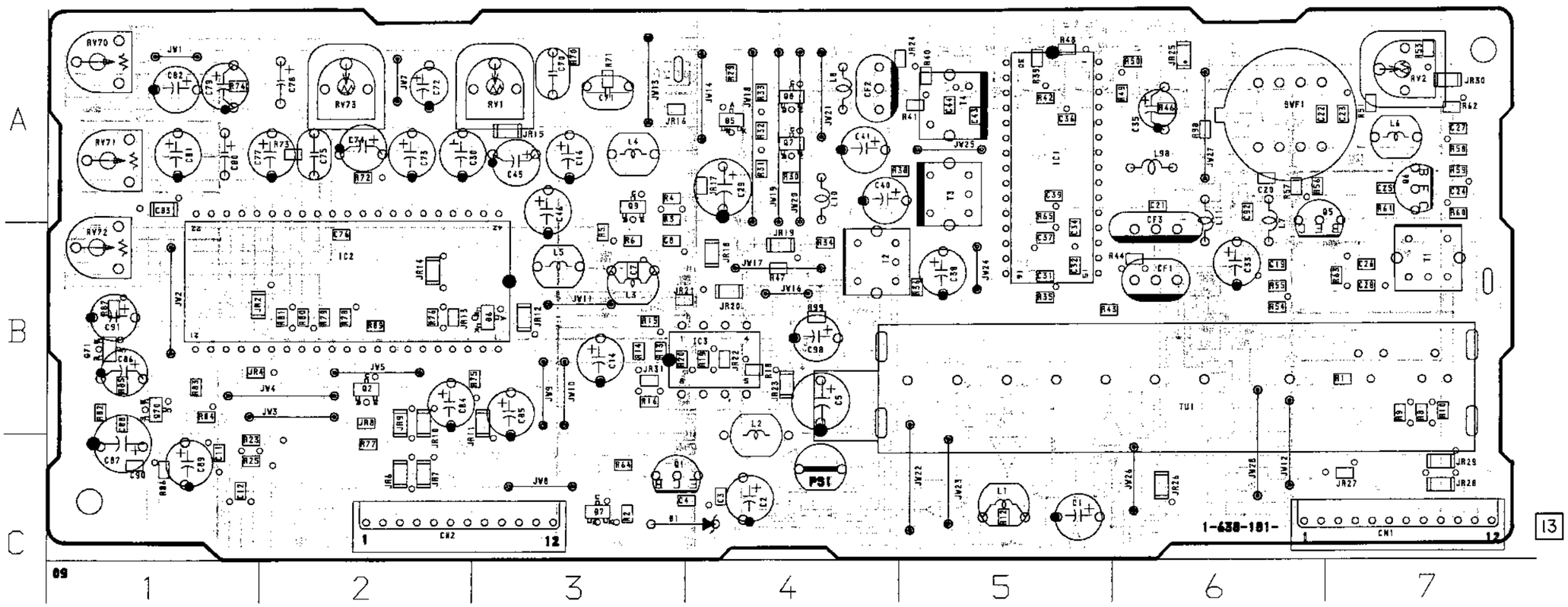
D001 C-3
D005 A-4
D006 B-3
D007 C-3

IC001 A-5
IC002 B-2
IC003 B-4

Q001 C-3
Q002 B-2
Q003 C-2
Q004 C-2
Q005 B-7
Q006 A-7
Q007 A-4
Q008 A-4
Q009 A-3
Q070 B-1
Q071 B-1

RV001 A-3
RV002 A-7
RV070 A-1
RV071 A-1
RV072 B-1
RV073 A-2

TU-130 BOARD



(DIODE)

⚠D001	8-719-110-78	DIODE	RD33ES-82
D005	8-719-104-34	DIODE	1S2836
D006	8-719-104-34	DIODE	1S2836
D007	8-719-800-76	DIODE	1SS226

(IC)

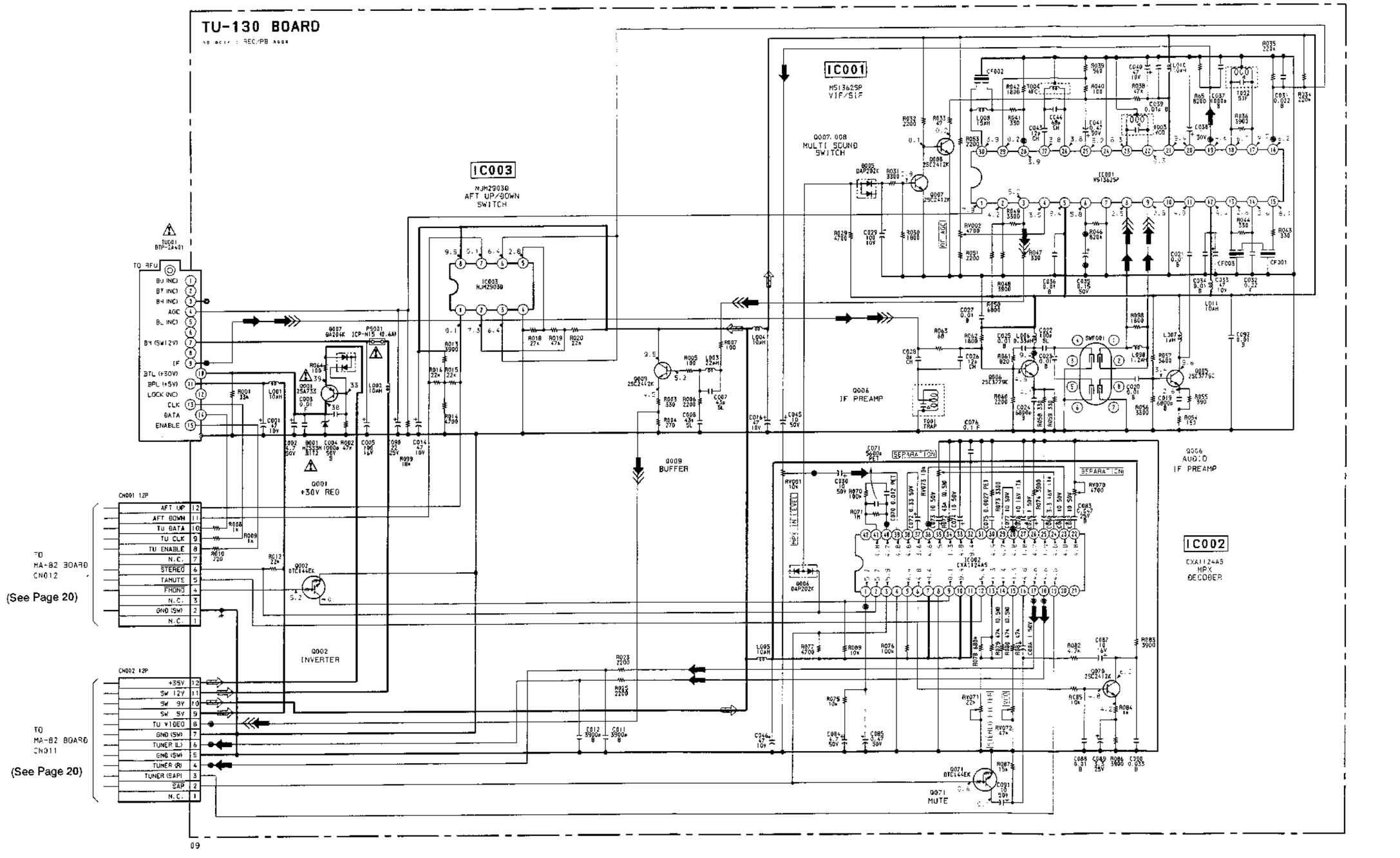
IC001	8-759-630-93	IC	M51362SP
IC002	8-752-035-71	IC	CXA1124AS
IC003	8-759-981-64	IC	LM2903DQ

(TRANSISTOR)

Q001	8-729-173-38	TRANSISTOR	2SA733-K
Q002	8-729-901-01	TRANSISTOR	DTC144EK
Q005	8-729-822-90	TRANSISTOR	2SC3779C
Q006	8-729-822-90	TRANSISTOR	2SC3779C
Q007	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q008	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q009	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q070	8-729-920-74	TRANSISTOR	2SC2412K-QR
Q071	8-729-901-01	TRANSISTOR	DTC144EK

TU-130 (TUNER) SCHEMATIC DIAGRAM

— Ref. No. TU-130 BOARD: 5000 series —



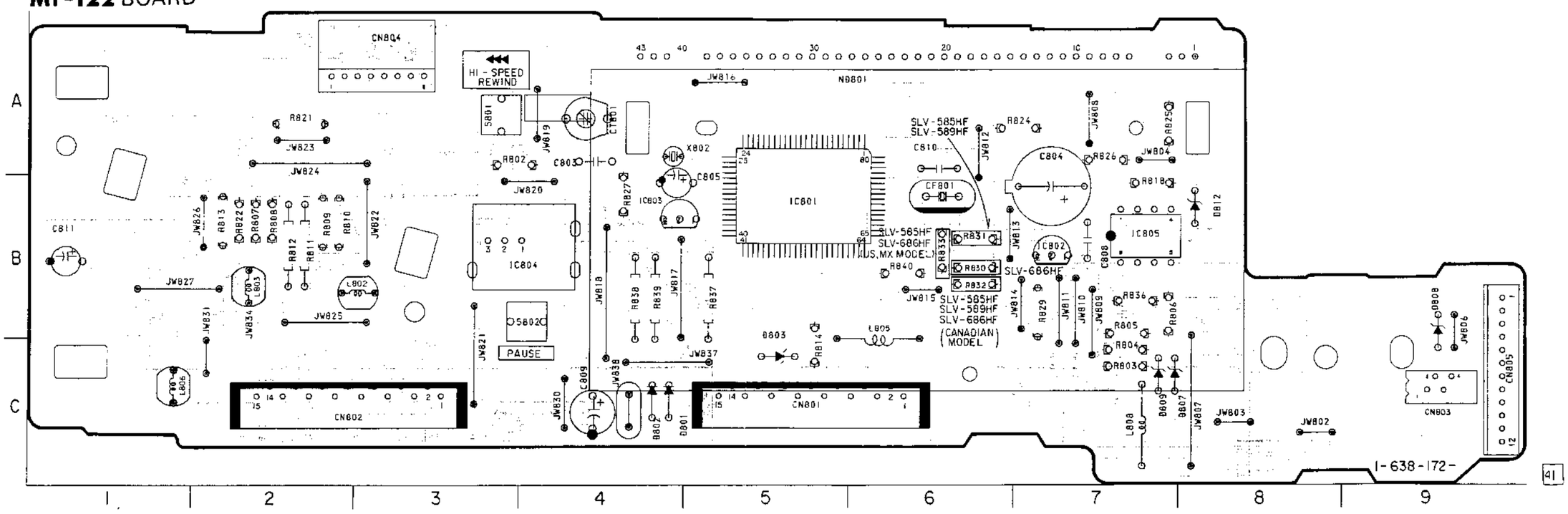
• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB				➡

MF-122 (TIMER/MODE CONTROL) PRINTED WIRING BOARD

— Ref. No. MF-122 BOARD: 5000 series —

MF-122 BOARD



09

IC801 B-5
IC802 B-7
IC803 B-4
IC804 B-3
IC805 B-7

(DIODE)

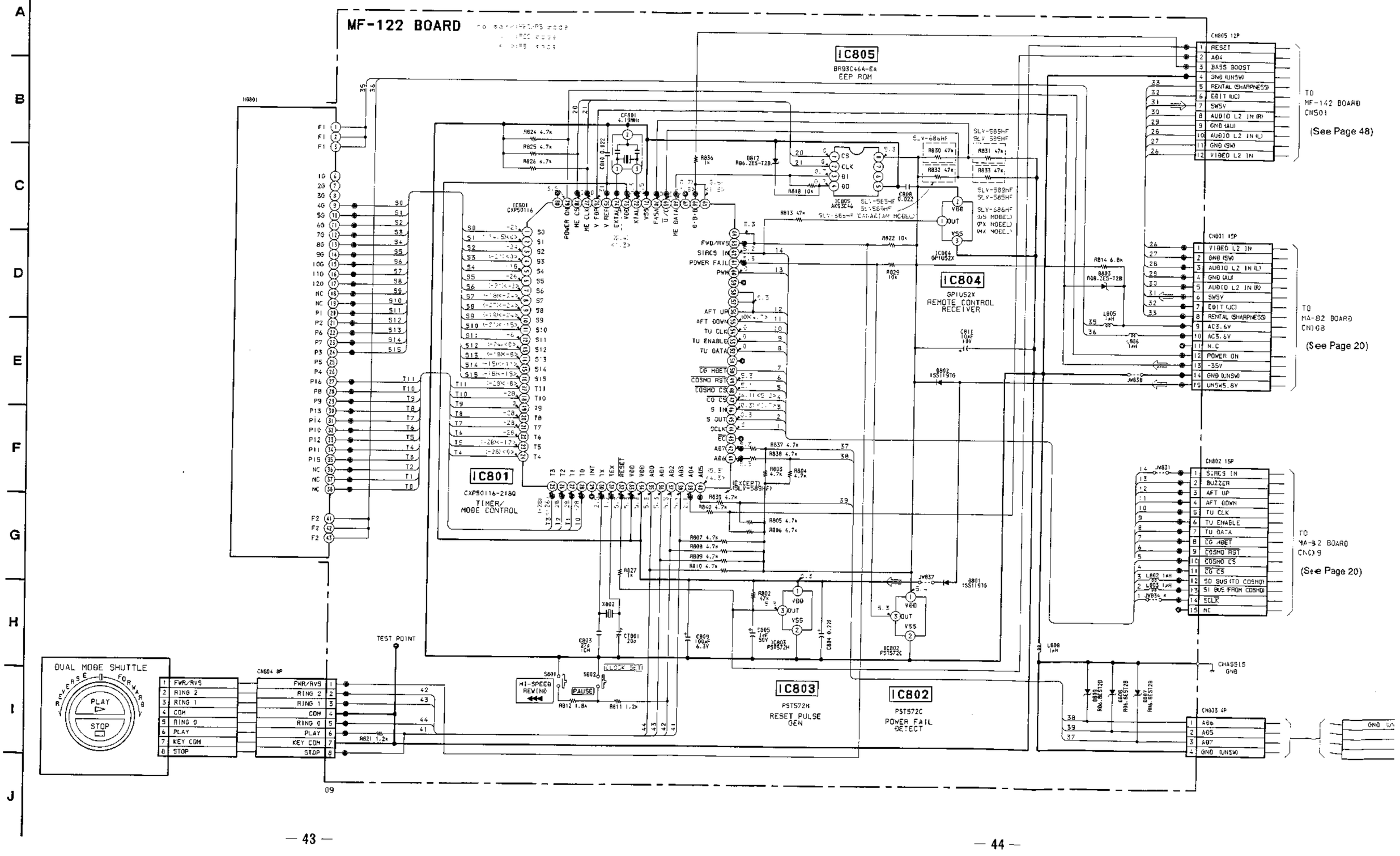
D801	8-719-200-82	DIODE	11ES2
D802	8-719-200-82	DIODE	11ES2
D803	8-719-110-08	DIODE	RD8.2ES-B2
D807	8-719-109-97	DIODE	RD6.8ES-B2
D808	8-719-109-97	DIODE	RD6.8ES-B2
D809	8-719-109-97	DIODE	RD6.8ES-B2
D812	8-719-109-93	DIODE	RD6.2ES-B2

(IC)

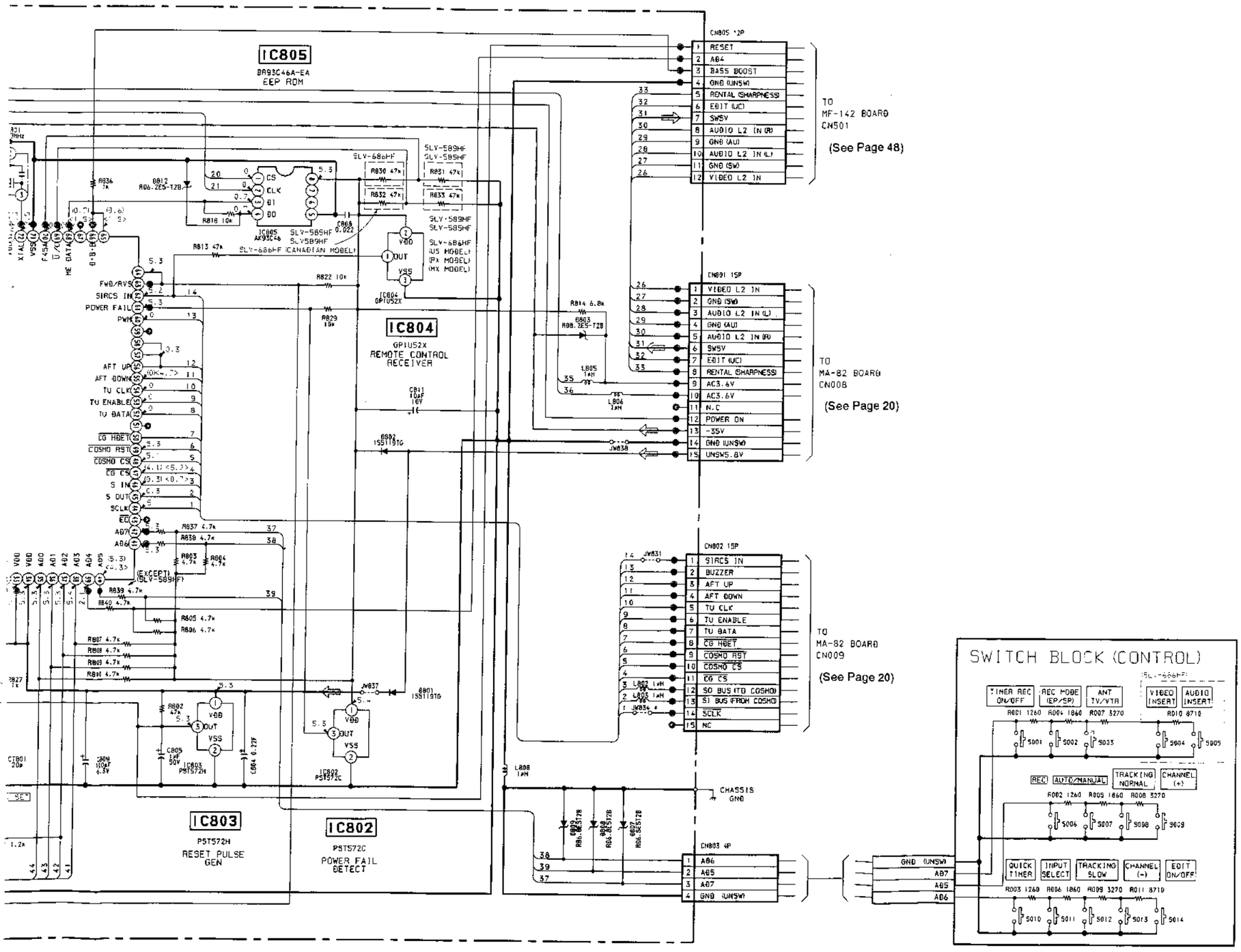
IC801	8-752-818-76	IC	CXP50116-218Q
IC802	8-759-510-43	IC	PST572C
IC803	8-759-515-58	IC	PST572H
IC804	1-466-131-21	IC	GP1U52X
IC805	8-759-996-58	IC	AK93C46

MF-122 (TIMER/MODE CONTROL) SCHEMATIC DIAGRAM

— Ref. No. MF-122 BOARD: 5000 series —



8 9 10 11 12 13 14 15 16 17 18 19 20 21 22



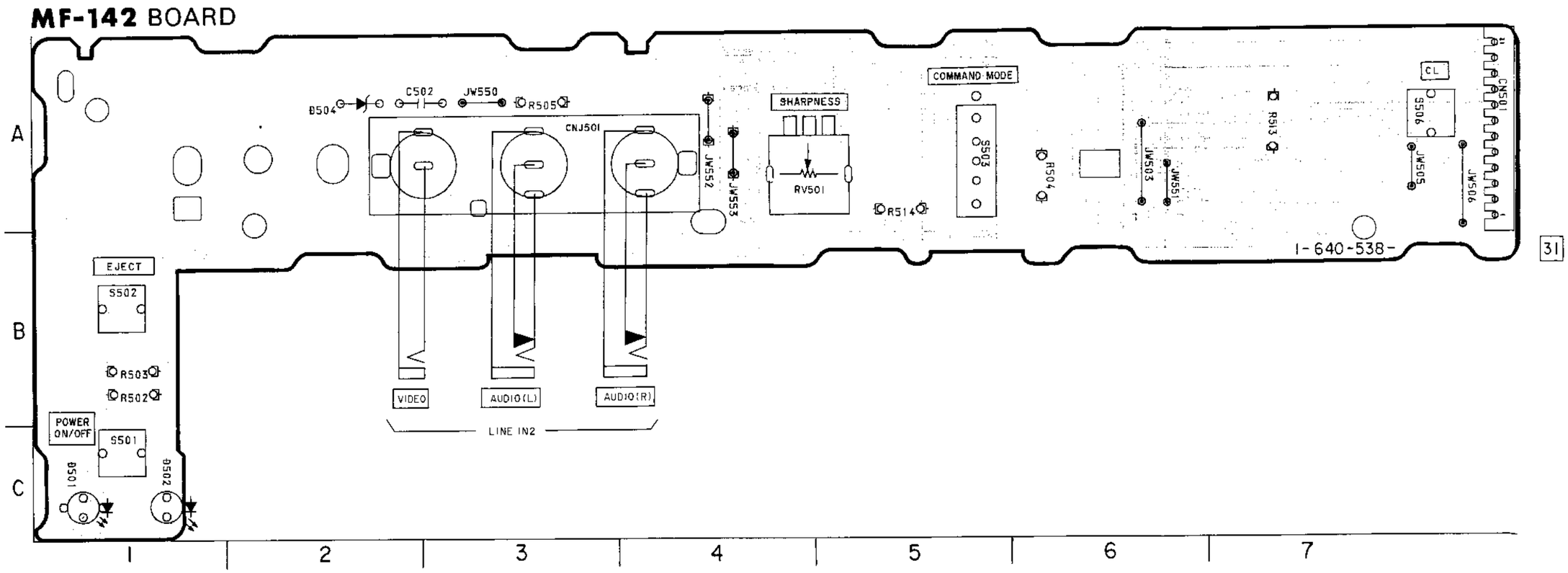
MF-142 (VIDEO/AUDIO IN/OUT) PRINTED WIRING BOARD

— Ref. No. MF-142 BOARD: 5000 series —

MF-142 BOA

CN501 A-7

D501 C-1
D502 C-1
D504 A-2

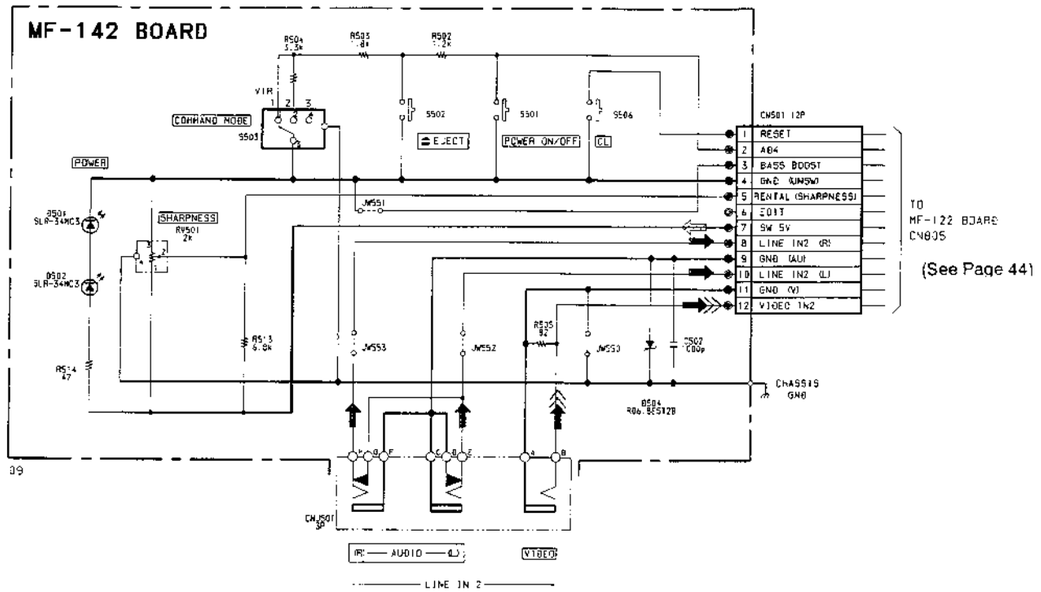


(DIODE)

D501	8-719-940-82 LED	SLR34MC3
D502	8-719-940-82 LED	SLR34MC3
D504	8-719-109-97 DIODE	RD6. 8ES-B2

MF-142 (VIDEO/AUDIO IN/OUT) SCHEMATIC DIAGRAM

— Ref. No. MF-142 BOARD: 5000 series —



• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡⋙	➡
PB			⇨⋙	⇨

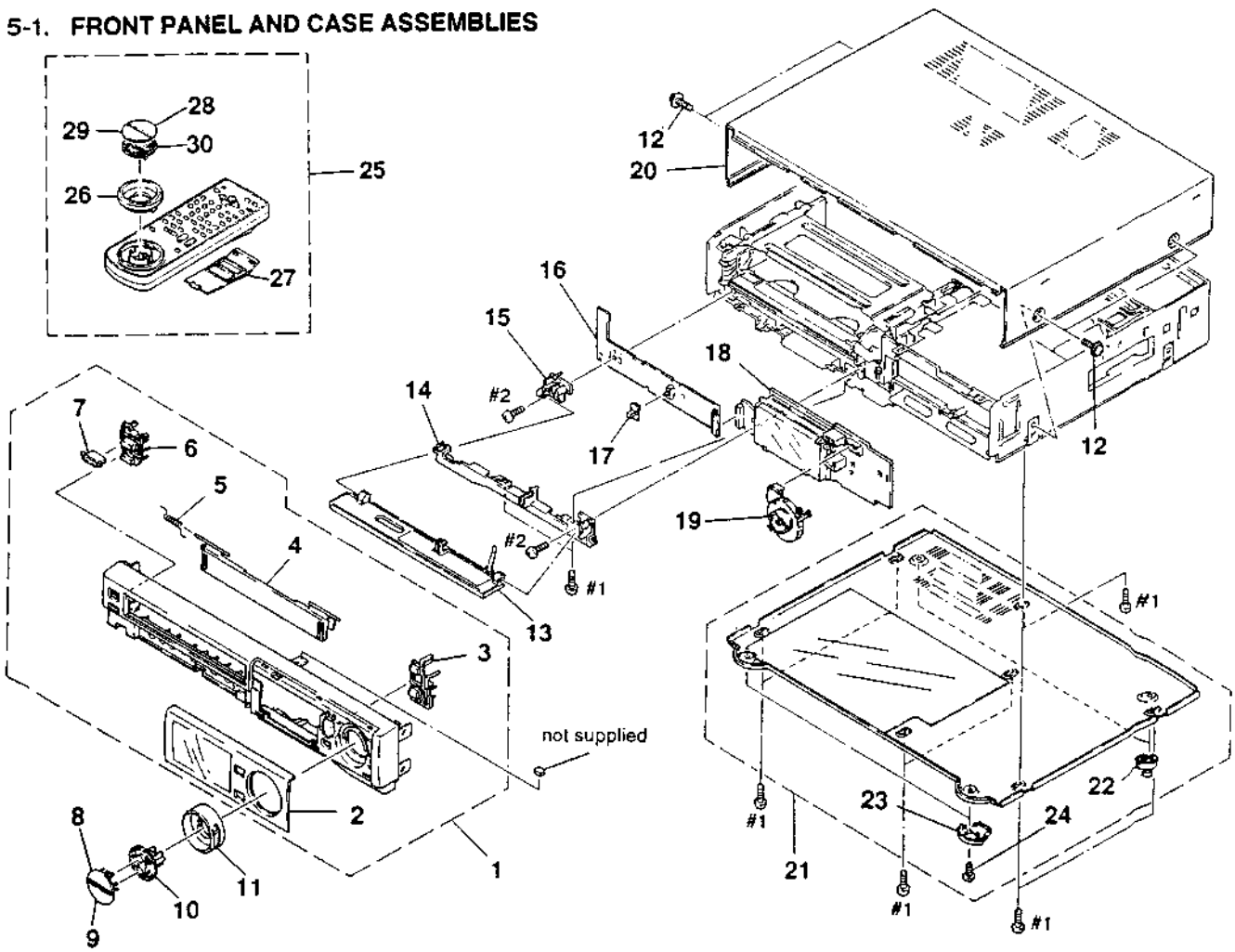
SECTION 5
EXPLODED VIEWS

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.
- Canadian model is abbreviated as CND, and also Mexican model is MX.

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

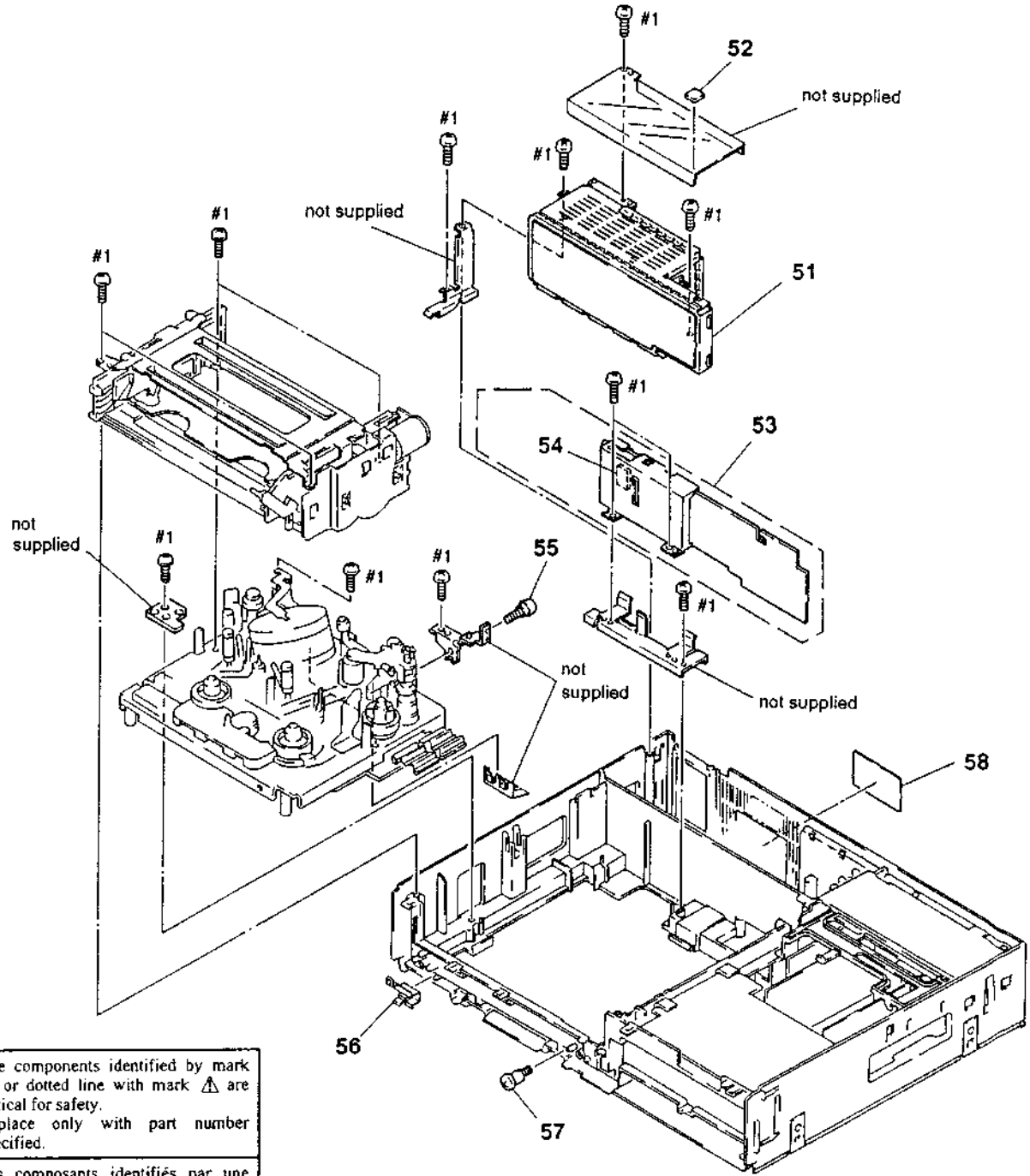
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. FRONT PANEL AND CASE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	X-3940-321-1	PANEL ASSY, FRONT (686HF)	
1	X-3940-320-1	PANEL ASSY, FRONT (585HF/589HF)	
2	3-941-523-21	PLATE, TRANSPARENT (686HF)	
2	3-941-523-11	PLATE, TRANSPARENT (EXCEPT 686HF)	
3	3-941-521-01	BUTTON, PAUSE	
4	3-941-519-91	DOOR, CASSETTE	
5	3-941-520-01	SPRING, FL	
6	3-941-517-11	BUTTON, POWER-EJECT	
7	3-941-518-01	TIP, POWER BUTTON	
8	3-941-510-11	BUTTON, PLAYBACK	
9	3-941-511-11	BUTTON, STOP	
10	3-941-515-01	HOLDER, BUTTON	
11	3-941-512-01	RING, SHUTTLE	
12	3-710-901-11	SCREW, TAPPING	
13	1-466-497-31	SWITCH BLOCK, CONTROL (686HF)	
13	1-466-497-21	SWITCH BLOCK, CONTROL (585HF)	
13	1-466-497-51	SWITCH BLOCK, CONTROL (589HF)	
14	X-3940-667-1	ESCUTCHEON ASSY, FRAME	
15	3-941-537-01	PLATE (LEFT), FULCRUM, DOOR	
* 16	A-6756-253-A	MF-142 BOARD, COMPLETE (686HF)	
* 16	A-6756-248-A	MF-142 BOARD, COMPLETE (585HF/589HF)	
17	3-744-217-01	KNOB, SELECTION	
* 18	A-6721-391-A	MF-122 BOARD, COMPLETE (686HF:US, MX)	
* 18	A-6721-389-A	MF-122 BOARD, COMPLETE (585HF:US, PX)	
* 18	A-6721-390-A	MF-122 BOARD, COMPLETE (585HF:CND/589HF)	
* 18	A-6721-393-A	MF-122 BOARD, COMPLETE (686HF:CND)	
19	1-572-662-11	SWITCH, ROTARY (DUAL MODE SHUTTLE)	
20	3-741-985-01	CASE, UPPER	
21	X-3940-317-1	PLATE ASSY, BOTTOM	
22	3-670-155-11	LEG	
23	3-941-509-01	INSULATOR	
24	3-721-343-01	SCREW, FIXED, M4X7	
25	1-465-770-11	REMOTE COMMANDER (RMT-V102A) (686HF)	
25	1-465-770-21	REMOTE COMMANDER (RMT-V102) (589HF)	
25	1-465-862-11	REMOTE COMMANDER (RMT-V112) (589HF)	
26	3-941-616-01	RING, SHUTTLE	
27	3-943-535-01	COVER, BATTERY	
28	3-941-617-11	BUTTON PLAYBACK	
29	3-941-618-11	BUTTON STOP	
30	3-941-619-01	HOLDER, DIAL	

5-2. POWER SUPPLY BLOCK ASSEMBLY

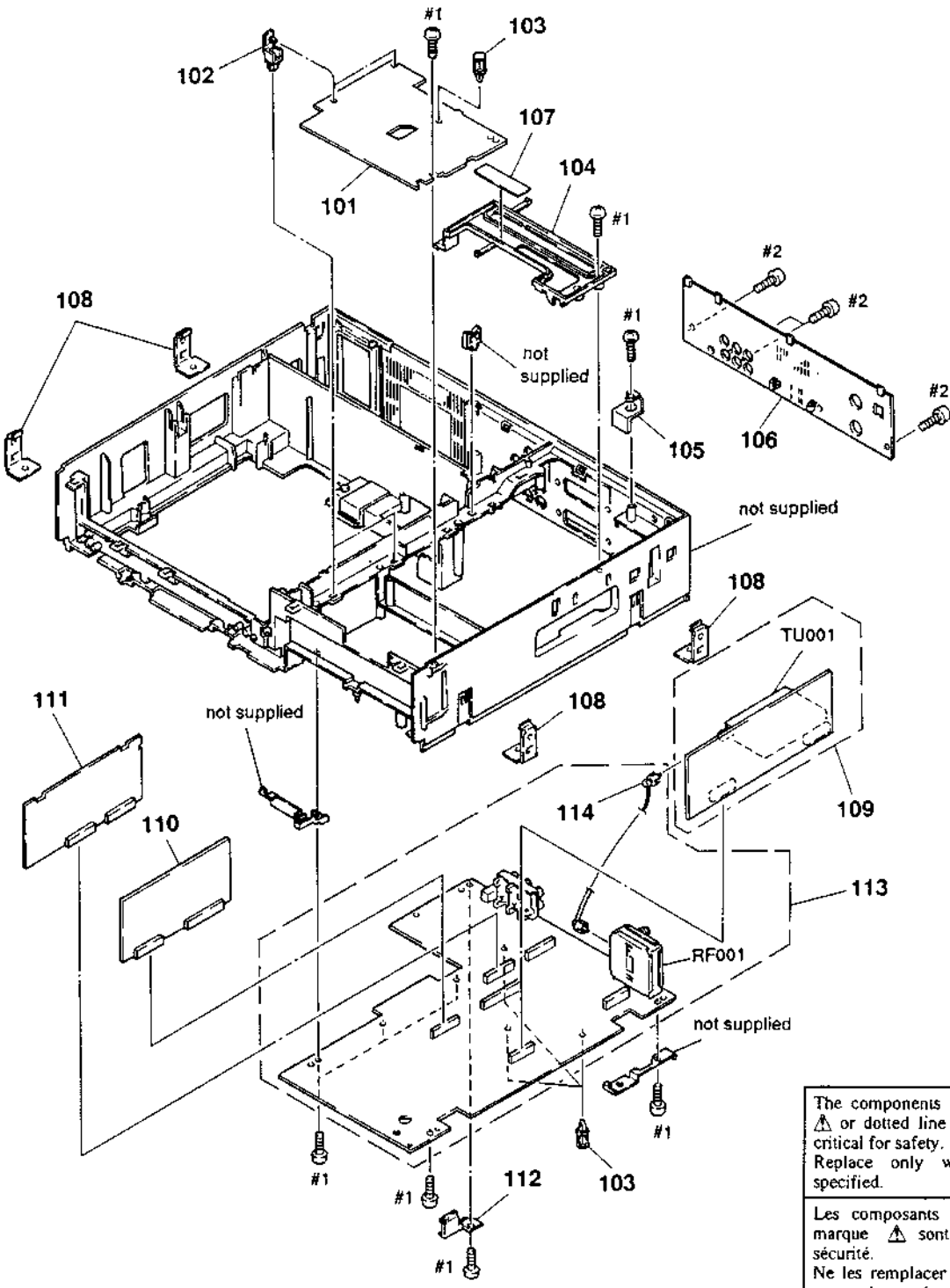


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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

Ref.No.	Part No.	Description	Remark
⚠51	1-413-650-11	POWER BLOCK (SWITCHING BLOCK) (EXCEPT 585HF;PX)	
⚠51	1-413-648-11	POWER BLOCK (SWITCHING BLOCK) (585HF;PX)	
52	9-911-839-XX	RETAINER (B), MICROPHONE	
* 53	A-6727-357-A	RP-128 BOARD, COMPLETE (585HF/589HF)	
* 53	A-6727-361-A	RP-128 BOARD, COMPLETE (686HF)	
* 54	1-639-699-12	DQ-6 BOARD	
55	3-736-055-01	SCREW (3X8), TAPPING	
56	3-741-968-01	PLATE, GROUND, MF	
57	3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
* 58	3-942-770-02	LABEL, MODEL NUMBER (C) (686HF;US, CND)	
* 58	3-942-769-01	LABEL, MODEL NUMBER(B) (585HF;US, CND)	
* 58	3-944-212-01	LABEL, MODEL NUMBER(PX) (585HF;PX)	
* 58	3-944-213-01	LABEL, MODEL NUMBER(MX) (686HF;MX)	
* 58	3-944-482-01	LABEL, MODEL NUMBER(D) (589HF)	

5-3. MAIN BOARDS ASSEMBLY

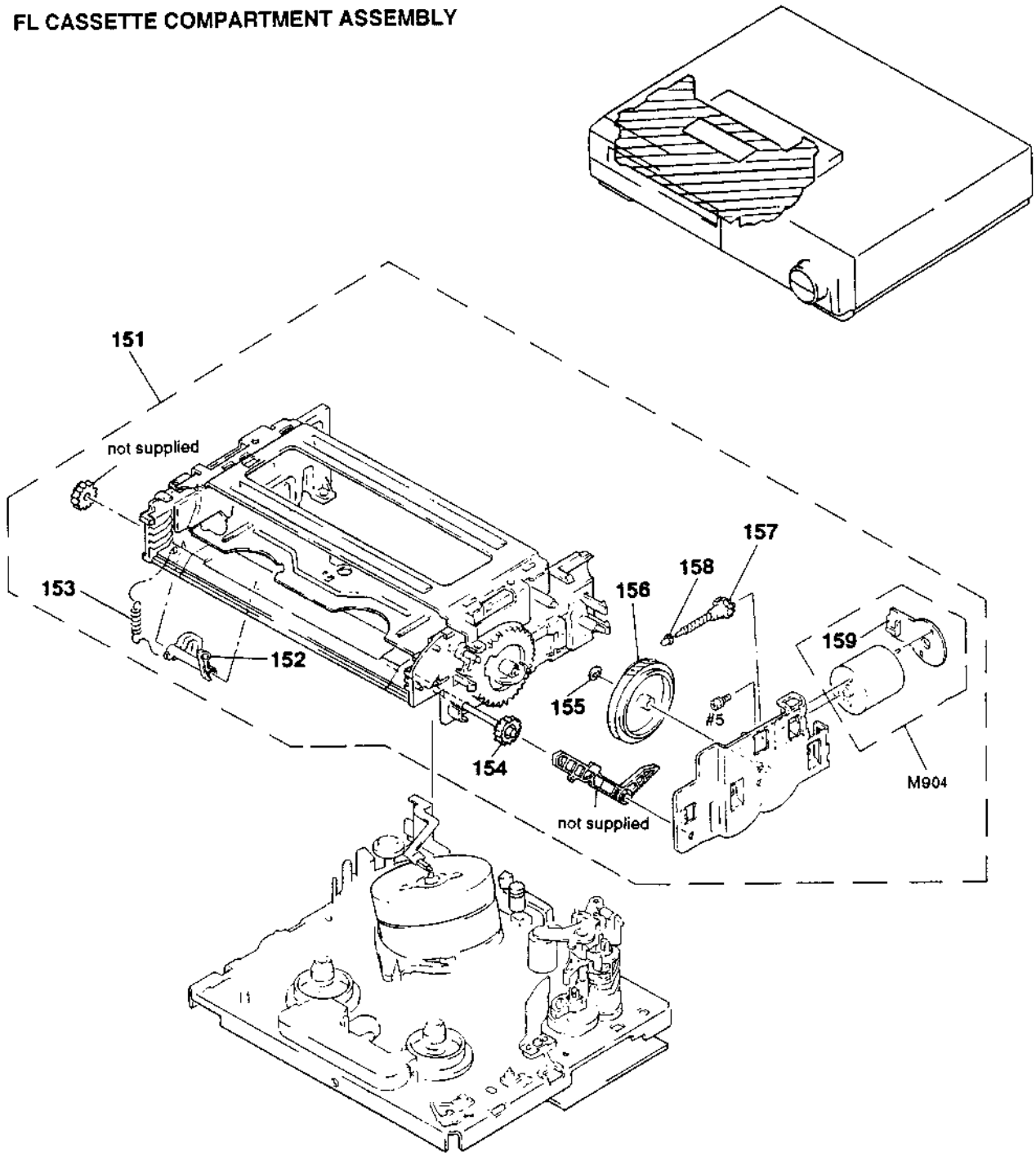


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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

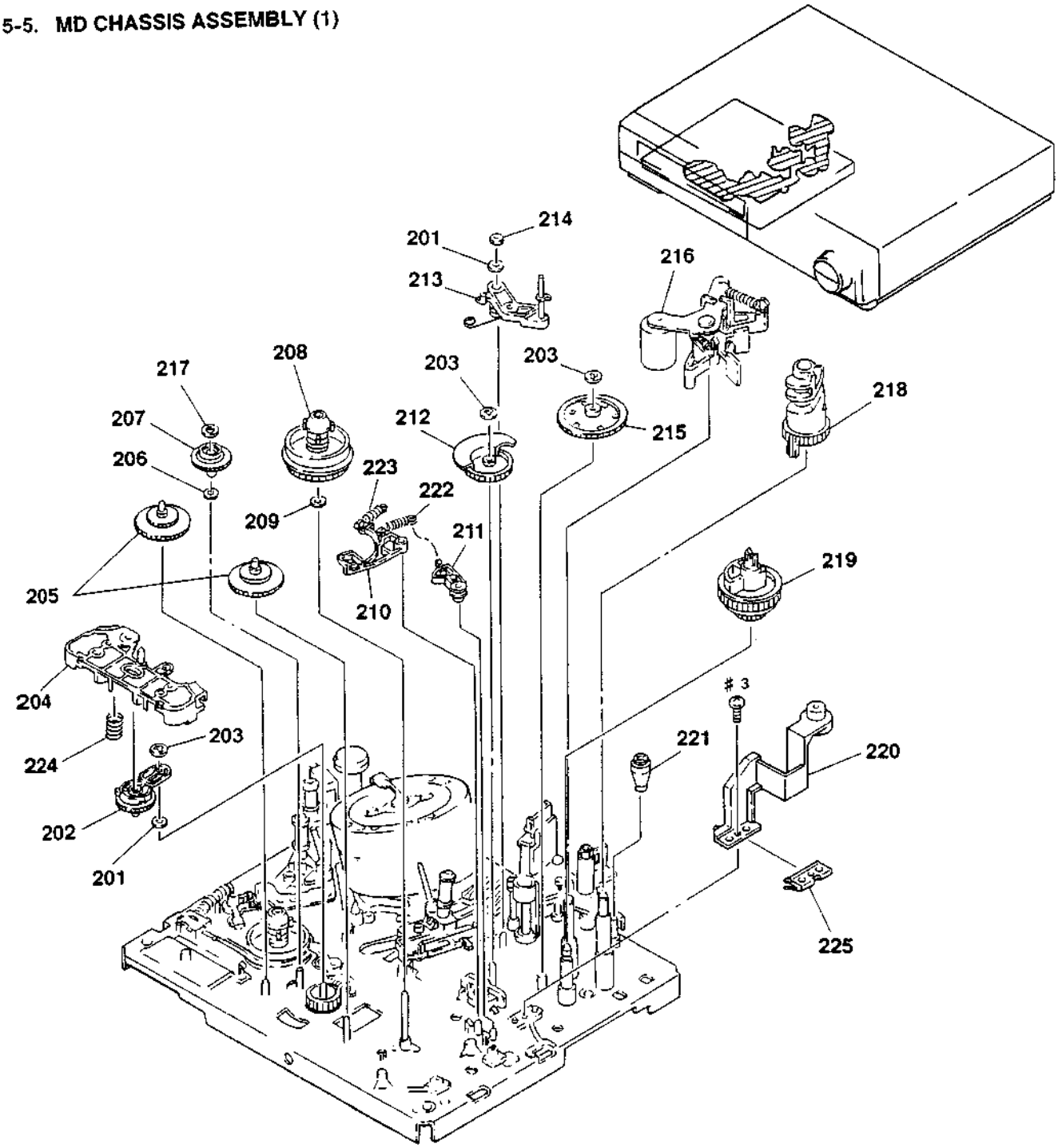
Ref. No.	Part No.	Description	Remark
* 101	A-6754-360-A	CA-47 BOARD, COMPLETE (585HF/589HF)	
* 101	A-6754-361-A	CA-47 BOARD, COMPLETE (686HF)	
102	3-736-704-01	HINGE, PC BOARD	
103	3-682-057-11	SPACER (SMALL)	
* 104	3-941-524-01	HOLDER, FRAME	
* 105	3-741-963-01	BRACKET, RF	
106	3-941-514-11	PLATE, ORNAMENTAL, JACK	
107	3-942-876-02	LABEL, CAUTION (585HF:US, CND/686HF:US, CND)	
* 108	3-741-992-01	STOPPER, UPPER CASE	
* 109	A-6754-238-A	TU-130 BOARD, COMPLETE	
* 110	A-6754-400-B	HF-23 BOARD, COMPLETE	
111	A-6754-372-B	YC-112 BOARD, COMPLETE	
* 112	3-741-962-01	PLATE, GROUND, JMP	
* 113	A-6756-249-B	MA-82 BOARD, COMPLETE	
114	1-558-924-41	CABLE, PIN	
⚠RF001	1-466-150-11	MODULATOR, RF (RFU-1025)	
⚠TU001	1-465-239-11	TUNER, ET (BTP-2A401)	

5-4. FL CASSETTE COMPARTMENT ASSEMBLY



Ref.No.	Part No.	Description	Remark
151	A-6751-445-A	FL BLOCK ASSY (F45)	
152	3-736-163-01	LEVER, ERASING PROTECTION	
153	3-739-687-01	SPRING, TENSION	
154	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	
157	3-736-100-01	GEAR (FL), WORM	
158	3-716-144-02	RETAINER, WORM	
159	1-506-482-11	CONNECTOR 3P, MALE	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	

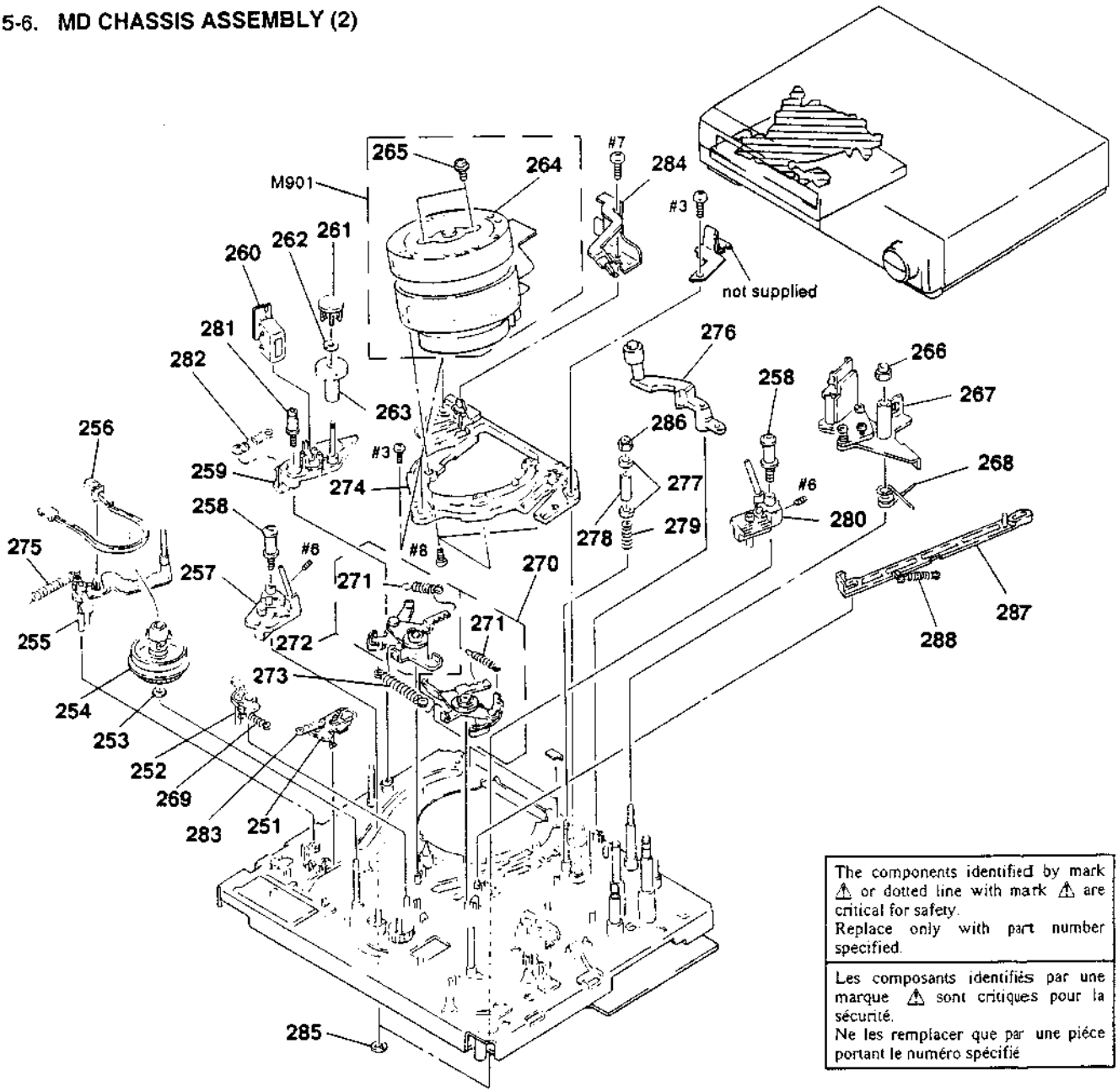
5-5. MD CHASSIS ASSEMBLY (1)



Ref.No.	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-03	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3729-911-1	ARM ASSY, RVS	

Ref.No.	Part No.	Description	Remark
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-736-069-01	RETAINER, SPRING	
218	3-736-136-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR (LO), PRESS CAM	
220	3-942-828-01	OPENNER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-942-829-01	SPRING (2) (ATOM), GROUND, FL	

5-6. MD CHASSIS ASSEMBLY (2)



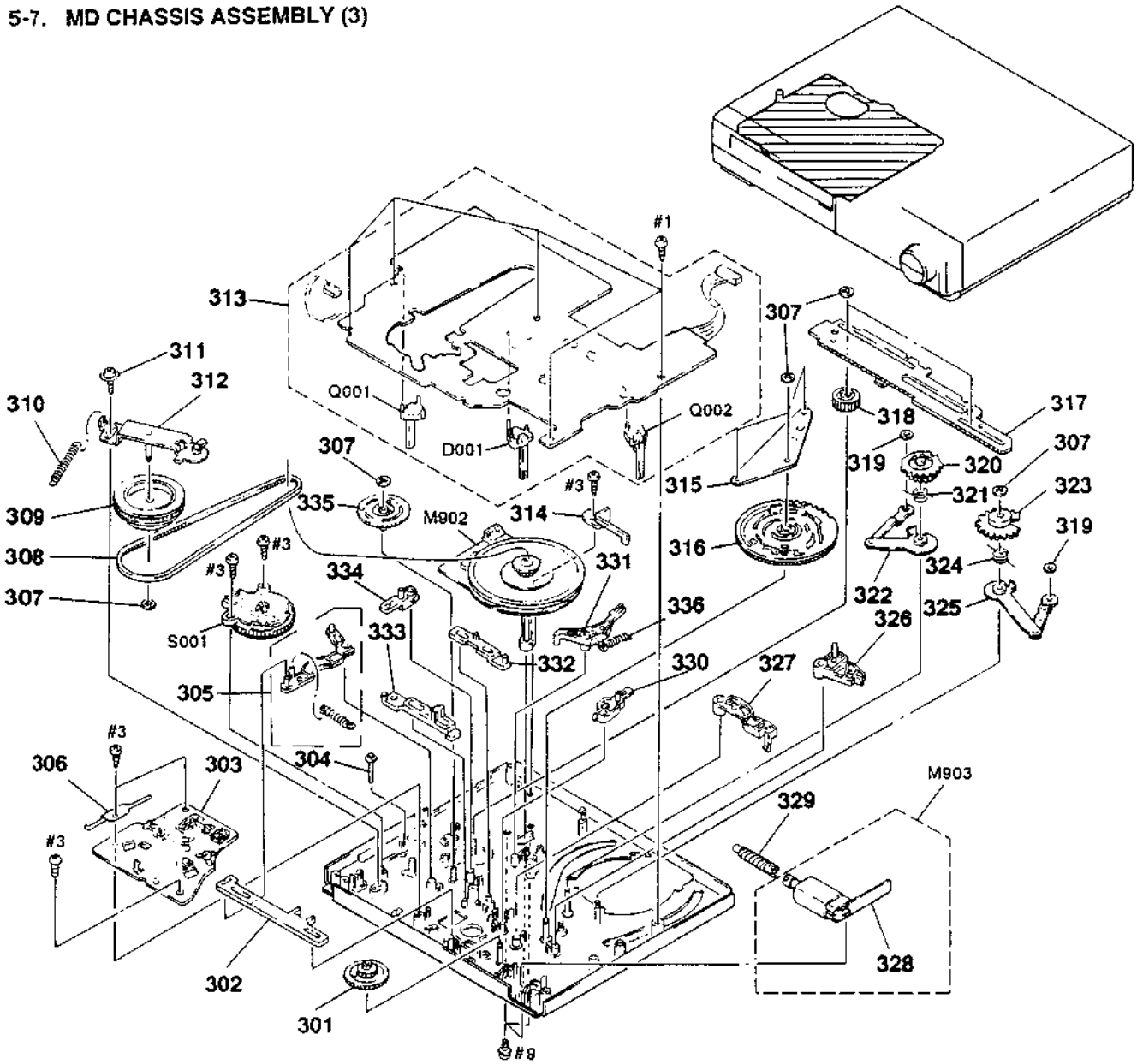
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING RETAINING	
263	X-3727-771-1	STABILIZER ASSY, TAPE	
264	8-848-553-01	DRUM ASSY, ROTARY UPPER(DZR-28-R)(686HF)	
264	8-848-555-01	DRUM ASSY, ROTARY UPPER(DZR-37-R) (EXCEPT 686HF)	
265	2-643-205-01	SCREW (PSW)3X8	
266	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3-736-042-01	SPRING, TORSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	

Ref.No.	Part No.	Description	Remark
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3727-791-2	BASE ASSY, DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-944-033-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3733-304-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	3-942-866-01	NUT (M3) (3X0.5), NYLON	
287	X-3743-517-1	LEVER (S), RELEASE, C ROLLER	
288	3-736-735-03	SPRING, TENSION	
⚠M901	8-848-552-11	DRUM ASSY (DZH-28A-R)(686HF)	
⚠M901	8-848-554-01	DRUM ASSY (DZH-37A-R)(EXCEPT 686HF)	

5-7. MD CHASSIS ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-084-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
313	A-6754-420-A	MD-49 BOARD, COMPLETE	
314	3-736-744-01	RETAINER, ROTOR	
315	3-733-396-01	HOLDER, CAM GEAR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	

Ref. No.	Part No.	Description	Remark
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
* 328	1-633-460-11	CA-41 BOARD	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-05	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-738-237-01	SPRING (CAP BRAKE), TENSION	
D001	8-719-985-00	DIODE GL451VS1 (LED)	
M902	8-835-394-11	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
S001	1-692-062-11	SWITCH, ROTARY	

CA-47

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

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 piéce portant le numéro spécifié.

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -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.
- Canadian model is abbreviated as CND, and also Mexican model is MX.
- 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...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
	A-6754-360-B	CA-47 BOARD, COMPLETE (585HF/589HF)			
		**********			
*	A-6754-361-B	CA-47 BOARD, COMPLETE (686HF)			
		**********			
		(Ref. No 4000 Series)			
*	3-941-503-01	CASE, SHIELD, AU			
		< BUZZER >			
BZ301	1-529-080-11	BUZZER, PIEZOELECTRIC			
		< CAPACITOR >			
C201	1-137-075-11	FILM	0.068uF	5%	100V (686HF)
C202	1-162-844-11	CERAMIC	0.027uF	10%	16V (686HF)
C203	1-161-051-00	CERAMIC	0.01uF	10%	50V (686HF)
C204	1-164-087-11	CERAMIC	0.0015uF	10%	50V (686HF)
C205	1-124-126-00	ELECT	47uF	20%	10V (686HF)
C207	1-136-559-11	FILM	0.0047uF	10%	630V (585HF/589HF)
C207	1-136-561-11	FILM	0.0068uF	10%	400V (686HF)
C208	1-164-087-11	CERAMIC	0.0015uF	10%	50V
C209	1-161-051-00	CERAMIC	0.01uF	10%	50V
C211	1-164-085-11	CERAMIC	0.001uF	10%	50V
C212	1-124-925-11	ELECT	2.2uF	20%	100V
C213	1-161-044-00	CERAMIC	0.0039uF	10%	16V
C214	1-162-837-11	CAP, CERAMIC	0.0068uF X		
C215	1-124-907-11	ELECT	10uF	20%	50V
C216	1-124-903-11	ELECT	1uF	20%	50V
C217	1-164-085-11	CERAMIC	0.001uF	10%	50V
C218	1-124-126-00	ELECT	47uF	20%	10V
C219	1-124-903-11	ELECT	1uF	20%	50V
C221	1-124-925-11	ELECT	2.2uF	20%	100V
C222	1-161-051-00	CERAMIC	0.01uF	10%	50V
C224	1-162-835-11	CERAMIC	0.0047uF	10%	16V
C225	1-124-903-11	ELECT	1uF	20%	50V
C226	1-124-903-11	ELECT	1uF	20%	50V
C227	1-124-126-00	ELECT	47uF	20%	10V
C228	1-124-126-00	ELECT	47uF	20%	10V
C229	1-124-034-51	ELECT	33uF	20%	16V
C231	1-164-077-11	CERAMIC	220PF	10%	50V
C301	1-164-098-11	CERAMIC	0.047uF		12V
C302	1-124-126-00	ELECT	47uF	20%	10V
C303	1-162-849-11	CERAMIC	0.068uF	10%	16V
C304	1-124-234-00	ELECT	22uF	20%	16V
C305	1-124-443-00	ELECT	100uF	20%	10V
C307	1-161-039-00	CERAMIC	0.001uF	10%	50V
C308	1-161-047-00	CERAMIC	0.0047uF	10%	50V
C309	1-162-851-11	CERAMIC	0.1uF	10%	16V
C310	1-124-925-11	ELECT	2.2uF	20%	100V
C313	1-124-126-00	ELECT	47uF	20%	10V
C314	1-164-098-11	CERAMIC	0.047uF		12V
C315	1-164-085-11	CERAMIC	0.001uF	10%	50V
C317	1-126-163-11	ELECT	4.7uF	20%	50V
		< CONNECTOR >			
CN201	1-506-469-11	CONNECTOR	4P, MALE		
CN202	1-506-468-11	CONNECTOR	3P, MALE		
* CN203	1-568-787-11	PIN, CONNECTOR 10P			
CN301	1-506-468-11	CONNECTOR	3P, MALE		
* CN302	1-568-788-21	PIN, CONNECTOR 11P			
CN303	1-506-469-11	CONNECTOR	4P, MALE		
		< DIODE >			
D303	8-719-911-19	DIODE 1SS119			
D304	8-719-911-19	DIODE 1SS119			
D306	8-719-911-19	DIODE 1SS119			
D351	8-719-911-19	DIODE 1SS119			
D352	8-719-911-19	DIODE 1SS119			
		< IC >			
IC201	8-759-513-18	IC BA7767AS			
IC301	8-759-246-14	IC TA8823N			
IC302	8-759-822-65	IC LC6543H-4374			
		< COIL >			
L201	1-410-679-31	INDUCTOR	270uH		
L202	1-408-247-00	INDUCTOR	33mH		
L203	1-410-120-11	INDUCTOR	1.2mH		
L204	1-410-091-31	INDUCTOR	22mH		
L301	1-408-413-00	INDUCTOR	22uH		
L302	1-408-409-00	INDUCTOR	10uH		

Ref. No.	Part No.	Description				Remark
		(TRANSISTOR)				
Q201	8-729-140-96	TRANSISTOR	2SD774-34 (686HF)			
Q202	8-729-140-93	TRANSISTOR	2SB734-34 (686HF)			
Q203	8-729-140-96	TRANSISTOR	2SD774-34			
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q303	8-729-119-78	TRANSISTOR	2SC2785-HFE			
		(RESISTOR)				
R201	1-249-429-11	CARBON	10K	5%	1/4W	(686HF)
⚠R202	1-249-387-11	CARBON	3.3	5%	1/4W	(686HF)
R203	1-249-433-11	CARBON	22K	5%	1/4W	(686HF)
R204	1-249-429-11	CARBON	10K	5%	1/4W	(686HF)
⚠R205	1-249-387-11	CARBON	3.3	5%	1/4W	
R206	1-249-429-11	CARBON	10K	5%	1/4W	(585HF/589HF)
R206	1-249-433-11	CARBON	22K	5%	1/4W	(686HF)
R207	1-249-393-11	CARBON	10	5%	1/4W	
R208	1-249-433-11	CARBON	22K	5%	1/4W	
R209	1-249-409-11	CARBON	220	5%	1/4W	
R210	1-247-897-11	CARBON	560K	5%	1/4W	
R211	1-249-430-11	CARBON	12K	5%	1/4W	
R212	1-249-431-11	CARBON	15K	5%	1/4W	
R213	1-249-435-11	CARBON	33K	5%	1/4W	
R214	1-249-420-11	CARBON	1.8K	5%	1/4W	
R215	1-249-419-11	CARBON	1.5K	5%	1/4W	
R216	1-247-903-00	CARBON	1M	5%	1/4W	
R217	1-249-435-11	CARBON	33K	5%	1/4W	
R219	1-249-438-11	CARBON	56K	5%	1/4W	
R221	1-249-429-11	CARBON	10K	5%	1/4W	
R222	1-249-429-11	CARBON	10K	5%	1/4W	
R223	1-249-433-11	CARBON	22K	5%	1/4W	
R224	1-249-415-11	CARBON	680	5%	1/4W	
R226	1-249-418-11	CARBON	1.2K	5%	1/4W	
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R229	1-249-433-11	CARBON	22K	5%	1/4W	
R230	1-249-424-11	CARBON	3.9K	5%	1/4W	
R233	1-249-429-11	CARBON	10K	5%	1/4W	
R301	1-249-439-11	CARBON	68K	5%	1/4W	
R302	1-249-441-11	CARBON	100K	5%	1/4W	
R303	1-249-441-11	CARBON	100K	5%	1/4W	
R305	1-249-435-11	CARBON	33K	5%	1/4W	
R306	1-249-411-11	CARBON	330	5%	1/4W	
R307	1-249-425-11	CARBON	4.7K	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-425-11	CARBON	4.7K	5%	1/4W	
R313	1-249-433-11	CARBON	22K	5%	1/4W	
R314	1-249-437-11	CARBON	47K	5%	1/4W	
R315	1-249-437-11	CARBON	47K	5%	1/4W	
R316	1-249-433-11	CARBON	22K	5%	1/4W	
R317	1-249-413-11	CARBON	470	5%	1/4W	
R318	1-249-425-11	CARBON	4.7K	5%	1/4W	
R320	1-249-425-11	CARBON	4.7K	5%	1/4W	
R356	1-249-429-11	CARBON	10K	5%	1/4W	
R357	1-247-901-11	CARBON	820K	5%	1/4W	
		(VARIABLE RESISTOR)				
RV201	1-238-021-11	RES, ADJ, CARBON 220K				
		(TRANSFORMER)				
T201	1-406-349-11	TRANSFORMER, OSCILLATION				(686HF)
T202	1-433-330-11	TRANSFORMER, BIAS OSCILLATION				(585HF/589HF)
T202	1-433-352-11	TRANSFORMER, BIAS OSCILLATION				(686HF)
		(VIBRATOR)				
X301	1-577-358-21	VIBRATOR, CERAMIC (4MHz)				
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*	A-6754-400-B	HF-23 BOARD, COMPLETE				
		**********				
		(Ref. No 5000 Series)				
	3-738-216-01	COVER, VOLUME				
		(CAPACITOR)				
C204	1-124-477-11	ELECT	47uF	20%	25V	
C205	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C206	1-124-925-11	ELECT	2.2uF	20%	100V	
C207	1-124-126-00	ELECT	47uF	20%	10V	
C208	1-124-927-11	ELECT	4.7uF	20%	100V	
C209	1-124-907-11	ELECT	10uF	20%	50V	
C210	1-124-126-00	ELECT	47uF	20%	10V	
C211	1-124-925-11	ELECT	2.2uF	20%	100V	
C212	1-124-126-00	ELECT	47uF	20%	10V	
C213	1-124-126-00	ELECT	47uF	20%	10V	
C214	1-124-126-00	ELECT	47uF	20%	10V	
C215	1-124-907-11	ELECT	10uF	20%	50V	
C216	1-126-163-11	ELECT	4.7uF	20%	50V	
C217	1-124-925-11	ELECT	2.2uF	20%	100V	
C218	1-124-925-11	ELECT	2.2uF	20%	100V	
C219	1-124-907-11	ELECT	10uF	20%	50V	
C220	1-124-907-11	ELECT	10uF	20%	50V	
C221	1-130-483-00	MYLAR	0.01uF	5%	50V	
C222	1-124-927-11	ELECT	4.7uF	20%	100V	
C223	1-126-176-11	ELECT	220uF	20%	10V	
C224	1-124-925-11	ELECT	2.2uF	20%	100V	
C225	1-130-487-00	MYLAR	0.022uF	5%	50V	

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HF-23 MA-82

Ref. No.	Part No.	Description			Remark
C226	1-124-907-11	ELECT	10uF	20%	50V
C227	1-126-233-11	ELECT	22uF	20%	50V
C228	1-130-473-00	MYLAR	0.0015uF	5%	50V
C229	1-130-475-00	MYLAR	0.0022uF	5%	50V
C230	1-130-475-00	MYLAR	0.0022uF	5%	50V
C232	1-124-443-00	ELECT	100uF	20%	10V
C233	1-130-477-00	MYLAR	0.0033uF	5%	50V
C234	1-124-903-11	ELECT	1uF	20%	50V
C235	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C236	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C237	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C238	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C239	1-130-475-00	MYLAR	0.0022uF	5%	50V
C240	1-130-475-00	MYLAR	0.0022uF	5%	50V
C241	1-130-473-00	MYLAR	0.0015uF	5%	50V
C242	1-126-233-11	ELECT	22uF	20%	50V
C243	1-124-925-11	ELECT	2.2uF	20%	100V
C244	1-124-907-11	ELECT	10uF	20%	50V
C245	1-130-487-00	MYLAR	0.022uF	5%	50V
C246	1-124-925-11	ELECT	2.2uF	20%	100V
C247	1-126-176-11	ELECT	220uF	20%	10V
C248	1-124-927-11	ELECT	4.7uF	20%	100V
C249	1-130-483-00	MYLAR	0.01uF	5%	50V
C250	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C299	1-163-089-00	CERAMIC CHIP	6PF		50V
		(CONNECTOR)			
CN201	1-580-848-11	SOCKET, CONNECTOR(PC BOARD) 20P			
* CN202	1-569-796-11	SOCKET, CONNECTOR 12P			
		(DIODE)			
D201	8-719-104-34	DIODE 1S2836			
		(IC)			
IC201	8-759-421-08	IC AN3937FBP			
⚠IC205	8-759-938-15	IC BA178M05			
		(JUMPER RESISTOR)			
JR201	1-216-295-00	METAL CHIP	0	5%	1/10W
JR202	1-216-295-00	METAL CHIP	0	5%	1/10W
JR203	1-216-296-00	METAL CHIP	0	5%	1/8W
JR208	1-216-295-00	METAL CHIP	0	5%	1/10W
JR209	1-216-296-00	METAL CHIP	0	5%	1/8W
JR211	1-216-296-00	METAL CHIP	0	5%	1/8W
JR212	1-216-296-00	METAL CHIP	0	5%	1/8W
JR214	1-216-295-00	METAL CHIP	0	5%	1/10W
JR215	1-216-296-00	METAL CHIP	0	5%	1/8W
JR218	1-216-296-00	METAL CHIP	0	5%	1/8W
JR219	1-216-296-00	METAL CHIP	0	5%	1/8W
JR224	1-216-296-00	METAL CHIP	0	5%	1/8W
JR225	1-216-296-00	METAL CHIP	0	5%	1/8W
		(IC LINK)			
⚠PS001	1-532-679-00	LINK, IC (ICP-N15) 0.6A			
		(RESISTOR)			
R206	1-249-414-11	CARBON	560	5%	1/4W
R207	1-249-441-11	CARBON	100K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-247-891-00	CARBON	330K	5%	1/4W
R210	1-249-414-11	CARBON	560	5%	1/4W
R211	1-249-441-11	CARBON	100K	5%	1/4W
R212	1-216-049-00	METAL CHIP	1K	5%	1/10W
R214	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R215	1-249-429-11	CARBON	10K	5%	1/4W
R216	1-249-417-11	CARBON	1K	5%	1/4W
R218	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R220	1-216-208-00	METAL GLAZE	2.7K	5%	1/8W
R221	1-216-049-00	METAL CHIP	1K	5%	1/10W
R222	1-216-192-00	METAL CHIP	560	5%	1/8W
R223	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R224	1-216-083-00	METAL CHIP	27K	5%	1/10W
R225	1-215-447-00	METAL	12K	1%	1/6W
R226	1-249-429-11	CARBON	10K	5%	1/4W
R227	1-249-417-11	CARBON	1K	5%	1/4W
R228	1-216-109-00	METAL CHIP	330K	5%	1/10W
		(VARIABLE RESISTOR)			
RV201	1-241-629-11	RES, ADJ, CARBON 4.7K			
RV202	1-230-523-11	RES, ADJ, METAL 10K			
RV204	1-241-630-11	RES, ADJ, CARBON 10K			
RV205	1-230-522-11	RES, ADJ, METAL 4.7K			
RV206	1-241-629-11	RES, ADJ, CARBON 4.7K			

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* A-6756-249-B MA-82 BOARD, COMPLETE

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(Ref. No 3000 Series)

	1-558-924-41	CABLE, PIN			
*	3-342-612-01	TAPE, SW (D) REED			
	3-682-057-11	SPACER (SMALL)			
	3-710-578-01	COVER, 6 MOLD VOLUME			
		(CAPACITOR)			
C005	1-164-096-11	CERAMIC	0.01uF		50V
C006	1-124-443-00	ELECT	100uF	20%	10V
C007	1-124-248-00	ELECT	22uF	20%	35V
C008	1-164-096-11	CERAMIC	0.01uF		50V
C013	1-162-306-11	CERAMIC	0.01uF	20%	16V

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Ref. No.	Part No.	Description			Remark
C016	1-164-081-11	CERAMIC	470PF	10%	50V
C103	1-124-638-11	ELECT	22uF	20%	10V
C104	1-124-638-11	ELECT	22uF	20%	10V
C110	1-124-638-11	ELECT	22uF	20%	10V
C111	1-124-638-11	ELECT	22uF	20%	10V
C112	1-164-096-11	CERAMIC	0.01uF		50V
C151	1-124-472-11	ELECT	470uF	20%	10V
C152	1-124-126-00	ELECT	47uF	20%	10V
C153	1-124-126-00	ELECT	47uF	20%	10V
C154	1-126-163-11	ELECT	4.7uF	20%	50V
C155	1-126-163-11	ELECT	4.7uF	20%	50V
C156	1-126-163-11	ELECT	4.7uF	20%	50V
C157	1-126-163-11	ELECT	4.7uF	20%	50V
C158	1-126-163-11	ELECT	4.7uF	20%	50V
C159	1-126-163-11	ELECT	4.7uF	20%	50V
C160	1-126-163-11	ELECT	4.7uF	20%	50V
C161	1-124-584-00	ELECT	100uF	20%	10V
C162	1-124-584-00	ELECT	100uF	20%	10V
C163	1-124-584-00	ELECT	100uF	20%	10V
C164	1-124-927-11	ELECT	4.7uF	20%	100V
C165	1-124-927-11	ELECT	4.7uF	20%	100V
C166	1-124-927-11	ELECT	4.7uF	20%	100V
C167	1-124-927-11	ELECT	4.7uF	20%	100V
C174	1-164-096-11	CERAMIC	0.01uF		50V
C175	1-164-096-11	CERAMIC	0.01uF		50V
C176	1-164-096-11	CERAMIC	0.01uF		50V
C177	1-164-096-11	CERAMIC	0.01uF		50V
C190	1-124-927-11	ELECT	4.7uF	20%	100V
C401	1-130-489-00	MYLAR	0.033uF	5%	50V
C402	1-126-233-11	ELECT	22uF	20%	50V
C403	1-164-096-11	CERAMIC	0.01uF		50V
C404	1-124-925-11	ELECT	2.2uF	20%	100V
C405	1-124-907-11	ELECT	10uF	20%	50V
C406	1-126-233-11	ELECT	22uF	20%	50V
C407	1-130-487-00	MYLAR	0.022uF	5%	50V
C432	1-164-058-11	CERAMIC	33PF	5%	50V
C433	1-164-081-11	CERAMIC	470PF	10%	50V
C434	1-164-068-11	CERAMIC	82PF	5%	50V
C435	1-164-096-11	CERAMIC	0.01uF		50V
C436	1-162-851-11	CERAMIC	0.1uF	10%	16V
C437	1-126-233-11	ELECT	22uF	20%	50V
C438	1-162-851-11	CERAMIC	0.1uF	10%	16V
C439	1-130-491-00	MYLAR	0.047uF	5%	50V
C441	1-161-045-00	CERAMIC	0.0033uF	10%	50V
C442	1-126-101-11	ELECT	100uF	20%	16V
C490	1-162-306-11	CERAMIC	0.01uF	20%	16V
C501	1-124-442-00	ELECT	330uF	20%	6.3V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C504	1-164-052-11	CERAMIC	18PF	5%	50V
C505	1-164-052-11	CERAMIC	18PF	5%	50V

Ref. No.	Part No.	Description			Remark
C506	1-164-077-11	CERAMIC	220PF	10%	50V
C507	1-164-096-11	CERAMIC	0.01uF		50V
C508	1-162-306-11	CERAMIC	0.01uF	20%	16V
C521	1-164-088-11	CERAMIC	0.001uF		50V
C531	1-124-478-11	ELECT	100uF	20%	25V
C602	1-102-964-00	CERAMIC	36PF	5%	50V
C607	1-124-126-00	ELECT	47uF	20%	10V
C608	1-164-096-11	CERAMIC	0.01uF		50V
C611	1-164-096-11	CERAMIC	0.01uF		50V
C612	1-164-096-11	CERAMIC	0.01uF		50V
C613	1-124-126-00	ELECT	47uF	20%	10V
C614	1-164-023-11	CERAMIC	15PF	5%	50V
C615	1-164-023-11	CERAMIC	15PF	5%	50V
C617	1-102-958-00	CERAMIC	20PF	5%	50V
C618	1-130-471-00	MYLAR	0.001uF	5%	50V
C619	1-162-835-11	CERAMIC	0.0047uF	10%	16V
C621	1-164-096-11	CERAMIC	0.01uF		50V
C622	1-124-903-11	ELECT	1uF	20%	50V
C623	1-124-126-00	ELECT	47uF	20%	10V
C624	1-164-096-11	CERAMIC	0.01uF		50V
C625	1-136-480-11	FILM	0.0015uF	5%	100V
C626	1-164-096-11	CERAMIC	0.01uF		50V
C627	1-164-077-11	CERAMIC	220PF	10%	50V
C628	1-124-902-00	ELECT	0.47uF	20%	50V
C629	1-126-154-11	ELECT	47uF	20%	6.3V
C630	1-124-927-11	ELECT	4.7uF	20%	100V
C631	1-124-034-51	ELECT	33uF	20%	16V
C632	1-130-473-00	MYLAR	0.0015uF	5%	50V
C634	1-130-471-00	MYLAR	0.001uF	5%	50V
C635	1-162-294-31	CERAMIC	0.001uF	10%	50V
C690	1-162-285-31	CERAMIC	180PF	10%	50V
C691	1-162-196-31	CERAMIC	5.6PF	10%	50V
C692	1-162-203-31	CERAMIC	15PF	5%	50V
C699	1-162-211-31	CERAMIC	33PF	5%	50V

(CONNECTOR)

CN001	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P
CN002	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P
CN003	1-506-473-11	CONNECTOR 8P, MALE
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P
* CN006	1-506-744-11	PIN, CONNECTOR 15P
* CN007	1-568-714-11	PIN, CONNECTOR 7P
CN008	1-580-847-11	CONNECTOR, BOARD TO BOARD 15P
CN009	1-580-847-11	CONNECTOR, BOARD TO BOARD 15P
CN010	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P
* CN011	1-569-797-11	PIN, CONNECTOR (PC BOARD) 12P
* CN012	1-569-797-11	PIN, CONNECTOR (PC BOARD) 12P
* CN014	1-568-787-11	PIN, CONNECTOR 10P
CN015	1-580-849-11	PIN, CONNECTOR (PC BOARD) 20P
* CN016	1-569-797-11	PIN, CONNECTOR (PC BOARD) 12P
CN017	1-506-469-11	CONNECTOR 4P, MALE

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Ref. No.	Part No.	Description	Remark
* CN018	1-568-788-21	PIN, CONNECTOR 11P	
* CN900	1-560-890-00	PIN, CONNECTOR 2P	
		(JACK)	
CNJ001	1-507-562-00	JACK (CONTROL S IN)	
CNJ002	1-565-320-71	JACK, PIN 6P (LINE IN1 / V/A OUT)	
		(DIODE)	
D151	8-719-109-97	DIODE RD6.8ES-B2	
D151	8-719-110-02	DIODE RD7.5ES-B1	
D151	8-719-110-03	DIODE RD7.5ES-B2	
D152	8-719-109-97	DIODE RD6.8ES-B2	
D152	8-719-110-02	DIODE RD7.5ES-B1	
D152	8-719-110-03	DIODE RD7.5ES-B2	
D401	8-719-101-50	DIODE RD5.1E-L2	
D405	8-719-101-47	DIODE RD4.7E-L2	
D502	8-719-911-19	DIODE 1SS119	
D505	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D606	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
D610	8-719-109-97	DIODE RD6.8ES-B2	
D611	8-719-200-82	DIODE 11ES2	
		(FERRITE BEAD)	
FB101	1-410-397-21	FERRITE BEAD INDUCTOR	
FB601	1-410-397-21	FERRITE BEAD INDUCTOR	
FB602	1-410-396-41	INDUCTOR 0.45UH	
		(IC)	
IC101	8-759-804-80	IC LA7235	
IC102	8-759-927-56	IC BA7021	
IC103	8-759-961-38	IC BA6138	
IC401	8-759-008-71	IC LM324N	
IC402	8-759-113-18	IC uPC4574C	
⚠IC403	8-759-983-45	IC BA6238A	
IC501	8-752-819-83	IC CXP80624-208Q	
IC601	8-759-636-15	IC M50555-054SP	
IC602	8-759-115-55	IC uPC1555C	
		(COIL)	
L101	1-408-421-00	INDUCTOR 100uH	
L102	1-408-409-00	INDUCTOR 10uH	
L103	1-410-977-11	INDUCTOR 100uH	
L110	1-410-498-11	INDUCTOR 1.2uH	
L111	1-410-498-11	INDUCTOR 1.2uH	
L112	1-410-498-11	INDUCTOR 1.2uH	
L151	1-408-409-00	INDUCTOR 10uH	
L431	1-408-413-00	INDUCTOR 22uH	
L432	1-408-413-00	INDUCTOR 22uH	
L501	1-408-409-00	INDUCTOR 10uH	
L602	1-412-470-21	INDUCTOR 22uH	
L603	1-408-421-00	INDUCTOR 100uH	
L604	1-408-421-00	INDUCTOR 100uH	
L605	1-408-416-00	INDUCTOR 39uH	
L606	1-408-414-00	INDUCTOR 27uH	
		(TRANSISTOR)	
Q151	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q152	8-729-900-89	TRANSISTOR DTC144ES	
Q153	8-729-900-89	TRANSISTOR DTC144ES	
Q154	8-729-900-89	TRANSISTOR DTC144ES	
Q155	8-729-102-14	TRANSISTOR 2SD1012F	
Q156	8-729-102-14	TRANSISTOR 2SD1012F	
Q157	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-900-63	TRANSISTOR DTA124ES	
Q403	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q404	8-729-601-47	TRANSISTOR 2SK381-B	
Q431	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q432	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q433	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q434	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q439	8-729-601-47	TRANSISTOR 2SK381-B	
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q602	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q605	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q606	8-729-900-65	TRANSISTOR DTA144ES	
Q607	8-729-900-89	TRANSISTOR DTC144ES	
Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q609	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		(RESISTOR)	
R101	1-215-435-00	METAL 3.9K 1% 1/6W	
R102	1-215-431-00	METAL 2.7K 1% 1/6W	
R103	1-215-433-00	METAL 3.3K 1% 1/6W	
R104	1-215-435-00	METAL 3.9K 1% 1/6W	
R106	1-249-422-11	CARBON 2.7K 5% 1/4W	
R107	1-249-422-11	CARBON 2.7K 5% 1/4W	
R123	1-249-417-11	CARBON 1K 5% 1/4W	
R131	1-249-429-11	CARBON 10K 5% 1/4W	
R132	1-249-429-11	CARBON 10K 5% 1/4W	
R151	1-249-406-11	CARBON 120 5% 1/4W	
R152	1-249-406-11	CARBON 120 5% 1/4W	
R153	1-247-804-11	CARBON 75 5% 1/4W	
R154	1-249-404-00	CARBON 82 5% 1/4W	

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
R161	1-249-405-11	CARBON	100	5%	1/4W	
R162	1-249-429-11	CARBON	10K	5%	1/4W	
R164	1-249-426-11	CARBON	5.6K	5%	1/4W	
R165	1-249-421-11	CARBON	2.2K	5%	1/4W	
R166	1-249-441-11	CARBON	100K	5%	1/4W	
R167	1-249-423-11	CARBON	3.3K	5%	1/4W	
R168	1-249-424-11	CARBON	3.9K	5%	1/4W	
R169	1-249-423-11	CARBON	3.3K	5%	1/4W	
R170	1-249-424-11	CARBON	3.9K	5%	1/4W	
R171	1-247-891-00	CARBON	330K	5%	1/4W	
R172	1-247-891-00	CARBON	330K	5%	1/4W	
R173	1-249-429-11	CARBON	10K	5%	1/4W	
R174	1-249-429-11	CARBON	10K	5%	1/4W	
R181	1-249-422-11	CARBON	2.7K	5%	1/4W	
R182	1-249-422-11	CARBON	2.7K	5%	1/4W	
R185	1-249-423-11	CARBON	3.3K	5%	1/4W	
R186	1-249-423-11	CARBON	3.3K	5%	1/4W	
R190	1-249-425-11	CARBON	4.7K	5%	1/4W	
R191	1-249-425-11	CARBON	4.7K	5%	1/4W	
R194	1-249-429-11	CARBON	10K	5%	1/4W	
R195	1-249-417-11	CARBON	1K	5%	1/4W	
R196	1-249-429-11	CARBON	10K	5%	1/4W	
R197	1-249-429-11	CARBON	10K	5%	1/4W	
R399	1-249-424-11	CARBON	3.9K	5%	1/4W	
R401	1-249-432-11	CARBON	18K	5%	1/4W	
R402	1-249-431-11	CARBON	15K	5%	1/4W	
R403	1-249-417-11	CARBON	1K	5%	1/4W	
R404	1-249-436-11	CARBON	39K	5%	1/4W	
R405	1-249-433-11	CARBON	22K	5%	1/4W	
R406	1-249-429-11	CARBON	10K	5%	1/4W	
R407	1-249-427-11	CARBON	6.8K	5%	1/4W	
R408	1-249-417-11	CARBON	1K	5%	1/4W	
R410	1-249-429-11	CARBON	10K	5%	1/4W	
R411	1-249-429-11	CARBON	10K	5%	1/4W	
R412	1-247-885-00	CARBON	180K	5%	1/4W	
R413	1-249-429-11	CARBON	10K	5%	1/4W	
R414	1-249-430-11	CARBON	12K	5%	1/4W	
R415	1-249-417-11	CARBON	1K	5%	1/4W	
R416	1-249-423-11	CARBON	3.3K	5%	1/4W	
R417	1-249-441-11	CARBON	100K	5%	1/4W	
R420	1-247-885-00	CARBON	180K	5%	1/4W	
R421	1-249-429-11	CARBON	10K	5%	1/4W	
R422	1-249-429-11	CARBON	10K	5%	1/4W	
R423	1-249-429-11	CARBON	10K	5%	1/4W	
R424	1-249-415-11	CARBON	680	5%	1/4W	
R425	1-249-415-11	CARBON	680	5%	1/4W	
R431	1-249-430-11	CARBON	12K	5%	1/4W	
R432	1-249-431-11	CARBON	15K	5%	1/4W	
R433	1-249-417-11	CARBON	1K	5%	1/4W	
R434	1-249-417-11	CARBON	1K	5%	1/4W	
R435	1-249-418-11	CARBON	1.2K	5%	1/4W	
R436	1-249-417-11	CARBON	1K	5%	1/4W	
R437	1-247-897-11	CARBON	560K	5%	1/4W	
R438	1-249-421-11	CARBON	2.2K	5%	1/4W	
R439	1-249-421-11	CARBON	2.2K	5%	1/4W	
R440	1-249-428-11	CARBON	8.2K	5%	1/4W	
R441	1-249-402-11	CARBON	56	5%	1/4W	
R442	1-249-413-11	CARBON	470	5%	1/4W	
R443	1-249-427-11	CARBON	6.8K	5%	1/4W	
R444	1-249-437-11	CARBON	47K	5%	1/4W	
R445	1-249-435-11	CARBON	33K	5%	1/4W	
R446	1-249-429-11	CARBON	10K	5%	1/4W	
R447	1-249-435-11	CARBON	33K	5%	1/4W	
R450	1-249-417-11	CARBON	1K	5%	1/4W	
R451	1-249-434-11	CARBON	27K	5%	1/4W	
R461	1-249-429-11	CARBON	10K	5%	1/4W	
R463	1-249-410-11	CARBON	270	5%	1/4W	
R464	1-249-441-11	CARBON	100K	5%	1/4W	
R475	1-249-425-11	CARBON	4.7K	5%	1/4W	
R490	1-249-417-11	CARBON	1K	5%	1/4W	
R492	1-249-409-11	CARBON	220	5%	1/4W	
R493	1-249-429-11	CARBON	10K	5%	1/4W	
R494	1-249-429-11	CARBON	10K	5%	1/4W	
R495	1-249-429-11	CARBON	10K	5%	1/4W	
R496	1-249-429-11	CARBON	10K	5%	1/4W	
R515	1-249-411-11	CARBON	330	5%	1/4W	
R531	1-249-417-11	CARBON	1K	5%	1/4W	
R556	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R558	1-249-437-11	CARBON	47K	5%	1/4W	
R559	1-249-437-11	CARBON	47K	5%	1/4W	
R560	1-249-437-11	CARBON	47K	5%	1/4W	
R561	1-249-437-11	CARBON	47K	5%	1/4W	
R563	1-249-437-11	CARBON	47K	5%	1/4W	
R567	1-249-425-11	CARBON	4.7K	5%	1/4W	
R568	1-249-425-11	CARBON	4.7K	5%	1/4W	
R570	1-249-437-11	CARBON	47K	5%	1/4W	
R571	1-249-422-11	CARBON	2.7K	5%	1/4W	
R572	1-249-429-11	CARBON	10K	5%	1/4W	
R573	1-249-428-11	CARBON	8.2K	5%	1/4W	
R574	1-249-429-11	CARBON	10K	5%	1/4W	
R575	1-249-421-11	CARBON	2.2K	5%	1/4W	
R590	1-249-427-11	CARBON	6.8K	5%	1/4W	
R618	1-249-413-11	CARBON	470	5%	1/4W	
R619	1-249-413-11	CARBON	470	5%	1/4W	
R622	1-249-414-11	CARBON	560	5%	1/4W	
R623	1-249-420-11	CARBON	1.8K	5%	1/4W	
R624	1-249-422-11	CARBON	2.7K	5%	1/4W	
R625	1-249-421-11	CARBON	2.2K	5%	1/4W	
R630	1-249-422-11	CARBON	2.7K	5%	1/4W	

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Ref. No.	Part No.	Description				Remark
R631	1-249-423-11	CARBON	3.3K	5%	1/4W	
R632	1-249-414-11	CARBON	560	5%	1/4W	
R633	1-249-415-11	CARBON	680	5%	1/4W	
R634	1-249-422-11	CARBON	2.7K	5%	1/4W	
R635	1-249-424-11	CARBON	3.9K	5%	1/4W	
R636	1-249-422-11	CARBON	2.7K	5%	1/4W	
R637	1-249-425-11	CARBON	4.7K	5%	1/4W	
R638	1-249-424-11	CARBON	3.9K	5%	1/4W	
R639	1-247-903-00	CARBON	1M	5%	1/4W	
R640	1-249-419-11	CARBON	1.5K	5%	1/4W	
R641	1-249-429-11	CARBON	10K	5%	1/4W	
R642	1-215-453-00	METAL	22K	1%	1/6W	
R643	1-249-429-11	CARBON	10K	5%	1/4W	
R644	1-249-423-11	CARBON	3.3K	5%	1/4W	
R645	1-249-425-11	CARBON	4.7K	5%	1/4W	
R646	1-249-421-11	CARBON	2.2K	5%	1/4W	
R647	1-249-429-11	CARBON	10K	5%	1/4W	
R648	1-249-439-11	CARBON	68K	5%	1/4W	
R649	1-249-437-11	CARBON	47K	5%	1/4W	
R650	1-249-441-11	CARBON	100K	5%	1/4W	
R653	1-249-431-11	CARBON	15K	5%	1/4W	
R654	1-249-435-11	CARBON	33K	5%	1/4W	
R655	1-249-413-11	CARBON	470	5%	1/4W	
R656	1-249-417-11	CARBON	1K	5%	1/4W	
R657	1-249-405-11	CARBON	100	5%	1/4W	
R658	1-249-417-11	CARBON	1K	5%	1/4W	
R660	1-249-433-11	CARBON	22K	5%	1/4W	
R661	1-249-409-11	CARBON	220	5%	1/4W	
R663	1-249-435-11	CARBON	33K	5%	1/4W	
R665	1-249-431-11	CARBON	15K	5%	1/4W	
R680	1-249-409-11	CARBON	220	5%	1/4W	
R681	1-249-433-11	CARBON	22K	5%	1/4W	
R682	1-249-437-11	CARBON	47K	5%	1/4W	
R696	1-249-423-11	CARBON	3.3K	5%	1/4W	
R697	1-249-429-11	CARBON	10K	5%	1/4W	
R699	1-249-417-11	CARBON	1K	5%	1/4W	
R951	1-249-429-11	CARBON	10K	5%	1/4W	
		(RF MODULATOR)				
⚠RF001	1-466-150-11	MODULATOR, RF (RFU-1025)				
		(VARIABLE RESISTOR)				
RV401	1-241-628-11	RES, ADJ, CARBON 2.2K				
RV501	1-241-632-11	RES, ADJ, CARBON 47K				
RV502	1-241-632-11	RES, ADJ, CARBON 47K				
RV600	1-228-995-00	RES, ADJ, METAL 22K				
		(VIBRATOR)				
X501	1-578-774-11	VIBRATOR, CRYSTAL (14.3MHz)				
X601	1-577-381-11	VIBRATOR, CRYSTAL (12MHz)				

Ref. No.	Part No.	Description			Remark
**********					
	A-6754-420-A	MD-49 BOARD, COMPLETE			
		**********			
		(Ref. No 4000 Series)			
	1-691-643-11	CONNECTOR, BOARD TO BOARD			
*	2-387-601-01	CUSHION, RUBBER			
		(CAPACITOR)			
C001	1-161-494-00	CERAMIC	0.022uF	25V	
C002	1-161-494-00	CERAMIC	0.022uF	25V	
C003	1-126-157-11	ELECT	10uF 20%	16V	
C004	1-161-379-00	CERAMIC	0.01uF 20%	25V	
C005	1-126-157-11	ELECT	10uF 20%	16V	
C006	1-124-589-11	ELECT	47uF 20%	16V	
C008	1-164-159-11	CERAMIC	0.1uF	50V	
C009	1-164-159-11	CERAMIC	0.1uF	50V	
C011	1-162-849-11	CERAMIC	0.068uF 10%	16V	
C012	1-162-849-11	CERAMIC	0.068uF 10%	16V	
C013	1-162-849-11	CERAMIC	0.068uF 10%	16V	
C014	1-126-160-11	ELECT	1uF 20%	50V	
C016	1-124-589-11	ELECT	47uF 20%	16V	
C017	1-126-162-11	ELECT	3.3uF 20%	50V	
C018	1-124-589-11	ELECT	47uF 20%	16V	
C019	1-124-589-11	ELECT	47uF 20%	16V	
C020	1-161-379-00	CERAMIC	0.01uF 20%	25V	
C021	1-162-292-31	CERAMIC	680PF 10%	50V	
C027	1-162-294-31	CERAMIC	0.001uF 10%	50V	
C028	1-162-294-31	CERAMIC	0.001uF 10%	50V	
		(CONNECTOR)			
CN001	1-506-494-11	PIN, CONNECTOR 15P			
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P			
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
CN005	1-506-482-11	CONNECTOR 3P, MALE			
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P			
CN007	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
		(DIODE)			
D001	8-719-985-00	DIODE GL451VS1			
D004	8-719-109-93	DIODE RD6.2ES-B2			
D005	8-719-109-93	DIODE RD6.2ES-B2			
D006	8-719-109-93	DIODE RD6.2ES-B2			
D007	8-719-109-93	DIODE RD6.2ES-B2			
		(IC)			
IC002	8-759-938-12	IC BA10324			
⚠IC004	8-759-234-03	IC TA8424F			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifié 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
		(PHOTO SENSOR)				
PH001	8-759-144-33	PHOTO SENSOR	PS6002			
PH002	8-759-144-33	PHOTO SENSOR	PS6002			
		(IC LINK)				
⚠PS001	1-532-685-00	LINK, IC (ICP-N20) 0.8A				
		(TRANSISTOR)				
Q001	8-729-926-31	PHOTO TRANSISTOR	PT483F1S			
Q002	8-729-926-31	PHOTO TRANSISTOR	PT483F1S			
		(RESISTOR)				
R001	1-249-423-11	CARBON	3.3K	5%	1/4W	
R002	1-249-423-11	CARBON	3.3K	5%	1/4W	
R003	1-249-426-11	CARBON	5.6K	5%	1/4W	
R004	1-249-426-11	CARBON	5.6K	5%	1/4W	
R005	1-249-417-11	CARBON	1K	5%	1/4W	
R006	1-249-441-11	CARBON	100K	5%	1/4W	
R007	1-249-441-11	CARBON	100K	5%	1/4W	
R008	1-249-425-11	CARBON	4.7K	5%	1/4W	
R009	1-249-409-11	CARBON	220	5%	1/4W	
R010	1-249-425-11	CARBON	4.7K	5%	1/4W	
R011	1-249-437-11	CARBON	47K	5%	1/4W	
R012	1-249-421-11	CARBON	2.2K	5%	1/4W	
R013	1-249-429-11	CARBON	10K	5%	1/4W	
R014	1-249-426-11	CARBON	5.6K	5%	1/4W	
R015	1-249-437-11	CARBON	47K	5%	1/4W	
R016	1-249-421-11	CARBON	2.2K	5%	1/4W	
R019	1-249-377-11	CARBON	0.47	5%	1/4W	F
R019	1-249-443-11	CARBON	0.47	5%	1/4W	F
R020	1-249-406-11	CARBON	120	5%	1/4W	
R021	1-249-383-11	CARBON	1.5	5%	1/6W	
R022	1-249-408-11	CARBON	180	5%	1/4W	
R024	1-249-417-11	CARBON	1K	5%	1/4W	
R025	1-247-891-00	CARBON	330K	5%	1/4W	
R027	1-249-383-11	CARBON	1.5	5%	1/6W	
R028	1-249-383-11	CARBON	1.5	5%	1/6W	
		(SWITCH)				
S001	1-570-953-11	SWITCH, PUSH (1 KEY)				
S002	1-570-953-11	SWITCH, PUSH (1 KEY)				

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Ref. No.	Part No.	Description				Remark
	A-6721-389-B	MF-122 BOARD, COMPLETE (585HF;US/PX)				
		**********				
	A-6721-390-B	MF-122 BOARD, COMPLETE (585HF/589HF;CND)				
		**********				
	A-6721-393-B	MF-122 BOARD, COMPLETE (686HF;CND)				
		**********				
*	A-6721-391-B	MF-122 BOARD, COMPLETE (686HF;US/MX)				
		**********				
		(Ref.No 5000 Series)				
*	3-941-531-01	HOLDER, FL				
		(CAPACITOR)				
C803	1-164-056-11	CERAMIC	27PF	5%	50V	
C804	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V	
C805	1-126-160-11	ELECT	1uF	20%	50V	
C808	1-161-494-00	CERAMIC	0.022uF		25V	
C809	1-124-584-00	ELECT	100uF	20%	10V	
C810	1-161-494-00	CERAMIC	0.022uF		25V	
C811	1-126-157-11	ELECT	10uF	20%	16V	
		(VIBRATOR)				
CF801	1-577-101-11	VIBRATOR, CERAMIC				
		(CONNECTOR)				
CN801	1-580-846-11	CONNECTOR, BOARD TO BOARD 15P				
CN802	1-580-846-11	CONNECTOR, BOARD TO BOARD 15P				
CN803	1-562-631-11	SOCKET, CONNECTOR				
CN804	1-580-850-11	CONNECTOR (DMS) 8P				
CN805	1-568-672-11	CONNECTOR, BOARD TO BOARD 12P				
		(TRIMMER)				
CT801	1-141-318-11	CAP, VAR, TRIMMER				
		(DIODE)				
D801	8-719-200-82	DIODE	11ES2			
D802	8-719-200-82	DIODE	11ES2			
D803	8-719-110-08	DIODE	RD8.2ES-B2			
D807	8-719-109-97	DIODE	RD6.8ES-B2			
D808	8-719-109-97	DIODE	RD6.8ES-B2			
D809	8-719-109-97	DIODE	RD6.8ES-B2			
D812	8-719-109-93	DIODE	RD6.2ES-B2			
		(IC)				
IC801	8-752-818-76	IC	CXP50116-218Q			
IC802	8-759-510-43	IC	PST572C			
IC803	8-759-515-58	IC	PST572H			
IC804	1-466-131-21	IC	GP1U52X			
IC805	8-759-996-58	IC	AK93C46			

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.

MF-122 MF-142

Ref. No.	Part No.	Description	Remark
		(COIL)	
L802	1-410-316-11	INDUCTOR 1uH	
L803	1-410-316-11	INDUCTOR 1uH	
L805	1-412-488-11	INDUCTOR 1uH	
L806	1-408-397-00	INDUCTOR 1uH	
L808	1-410-316-11	INDUCTOR 1uH	
		(FLUORECENT INDICATOR)	
ND801	1-519-660-11	INDICATOR TUBE, FLUORESCENT	
		(RESISTOR)	
R802	1-249-437-11	CARBON 47K 5% 1/4W	
R803	1-249-425-11	CARBON 4.7K 5% 1/4W	
R804	1-249-425-11	CARBON 4.7K 5% 1/4W	
R805	1-249-425-11	CARBON 4.7K 5% 1/4W	
R806	1-249-425-11	CARBON 4.7K 5% 1/4W	
R807	1-249-425-11	CARBON 4.7K 5% 1/4W	
R808	1-249-425-11	CARBON 4.7K 5% 1/4W	
R809	1-249-425-11	CARBON 4.7K 5% 1/4W	
R810	1-249-425-11	CARBON 4.7K 5% 1/4W	
R811	1-249-418-11	CARBON 1.2K 5% 1/4W	
R812	1-249-420-11	CARBON 1.8K 5% 1/4W	
R813	1-249-437-11	CARBON 47K 5% 1/4W	
R814	1-249-427-11	CARBON 6.8K 5% 1/4W	
R818	1-249-429-11	CARBON 10K 5% 1/4W	
R821	1-249-418-11	CARBON 1.2K 5% 1/4W	
R822	1-249-429-11	CARBON 10K 5% 1/4W	
R824	1-249-425-11	CARBON 4.7K 5% 1/4W	
R825	1-249-425-11	CARBON 4.7K 5% 1/4W	
R826	1-249-425-11	CARBON 4.7K 5% 1/4W	
R827	1-249-417-11	CARBON 1K 5% 1/4W	
R829	1-249-429-11	CARBON 10K 5% 1/4W	
R830	1-249-437-11	CARBON 47K 5% 1/4W	(686HF)
R831	1-249-437-11	CARBON 47K 5% 1/4W	(585HF/589HF)
R832	1-249-437-11	CARBON 47K 5% 1/4W	(585HF;CND/589HF/686HF;CND)
R833	1-249-437-11	CARBON 47K 5% 1/4W	(585HF;US, PX/686HF;US, MX)
R836	1-249-417-11	CARBON 1K 5% 1/4W	
R837	1-249-425-11	CARBON 4.7K 5% 1/4W	
R838	1-249-425-11	CARBON 4.7K 5% 1/4W	
R839	1-249-425-11	CARBON 4.7K 5% 1/4W	
R840	1-249-425-11	CARBON 4.7K 5% 1/4W	
		(SWITCH)	
S801	1-571-977-11	SWITCH, TACTIL (HI-SPEED REWIND)	
S802	1-571-977-11	SWITCH, TACTIL (PAUSE)	

Ref. No.	Part No.	Description	Remark
		(VIBRATOR)	
X802	1-567-098-00	OSCILLATOR, CRYSTAL (32.768MHz)	
**********			
	A-6756-248-B	MF-142 BOARD, COMPLETE (585HF/589HF)	
		**********	
*	A-6756-253-B	MF-142 BOARD, COMPLETE (686HF)	
		**********	
		(Ref. No 5000 Series)	
		(CAPACITOR)	
C502	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		(CONNECTOR)	
CN501	1-568-666-11	CONNECTOR, BOARD TO BOARD 12P	
		(JACK)	
CNJ501	1-580-845-11	JACK, PIN 3P (LINE IN2)	
		(DIODE)	
D501	8-719-940-82	LED SLR34MC3	
D502	8-719-940-82	LED SLR34MC3	
D504	8-719-109-97	DIODE RD6.8ES-B2	
		(RESISTOR)	
R502	1-249-418-11	CARBON 1.2K 5% 1/4W	
R503	1-249-420-11	CARBON 1.8K 5% 1/4W	
R504	1-249-423-11	CARBON 3.3K 5% 1/4W	
R505	1-249-404-00	CARBON 82 5% 1/4W	
R513	1-249-427-11	CARBON 6.8K 5% 1/4W	
R514	1-249-401-11	CARBON 47 5% 1/4W	
		(VARIABLE RESISTOR)	
RV501	1-230-819-11	RES, VAR, CARBON 2K	
		(SWITCH)	
S501	1-571-977-11	SWITCH, TACTIL (POWER ON/OFF)	
S502	1-571-977-11	SWITCH, TACTIL (EJECT)	
S503	1-572-907-11	SWITCH, SLIDE (COMMAND MODE)	
S506	1-571-977-11	SWITCH, TACTIL (CL)	
**********			

Ref.No.	Part No.	Description			Remark
	A-6727-357-B	RP-128 BOARD, COMPLETE (585HF/589HF)			
		**********			
*	A-6727-361-B	RP-128 BOARD, COMPLETE (686HF)			
		**********			
		(Ref.No 1000 Series)			
*	1-639-699-12	DQ-6 BOARD			
	3-682-057-11	SPACER (SMALL)			
*	3-941-530-01	CASE, SHIELD, RP			
		(CAPACITOR)			
C101	1-126-160-11	ELECT	1uF	20%	50V
C102	1-162-306-11	CERAMIC	0.01uF	20%	16V
C103	1-126-160-11	ELECT	1uF	20%	50V
C104	1-162-306-11	CERAMIC	0.01uF	20%	16V
C105	1-126-160-11	ELECT	1uF	20%	50V
C107	1-162-306-11	CERAMIC	0.01uF	20%	16V
C108	1-124-584-00	ELECT	100uF	20%	10V
C109	1-162-306-11	CERAMIC	0.01uF	20%	16V
C110	1-131-349-00	TANTALUM	2.2uF	10%	35V
C112	1-131-347-00	TANTALUM	1uF	10%	35V
C113	1-162-306-11	CERAMIC	0.01uF	20%	16V
C118	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C119	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C121	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C122	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C801	1-164-159-11	CERAMIC	0.1uF		50V
C802	1-126-154-11	ELECT	47uF	20%	6.3V
C803	1-164-159-11	CERAMIC	0.1uF		50V
C804	1-124-464-11	ELECT	0.22uF	20%	50V
C805	1-162-213-31	CERAMIC	39PF	5%	50V
C806	1-162-213-31	CERAMIC	39PF	5%	50V
C807	1-124-464-11	ELECT	0.22uF	20%	50V
C808	1-164-159-11	CERAMIC	0.1uF		50V
C809	1-164-159-11	CERAMIC	0.1uF		50V
C810	1-124-464-11	ELECT	0.22uF	20%	50V
C811	1-162-213-31	CERAMIC	39PF	5%	50V
C812	1-162-209-31	CERAMIC	27PF	5%	50V
C813	1-124-464-11	ELECT	0.22uF	20%	50V
C814	1-164-159-11	CERAMIC	0.1uF		50V
C815	1-162-209-31	CERAMIC	27PF	5%	50V
C816	1-124-903-11	ELECT	1uF	20%	50V
C817	1-162-306-11	CERAMIC	0.01uF	20%	16V
C818	1-164-096-11	CERAMIC	0.01uF		50V
C819	1-162-289-31	CERAMIC	390PF	10%	50V
C820	1-161-327-00	CERAMIC	0.0033uF	20%	16V
C821	1-164-096-11	CERAMIC	0.01uF		50V
C822	1-164-096-11	CERAMIC	0.01uF		50V
C823	1-102-962-00	CERAMIC	30PF	5%	50V
C824	1-164-096-11	CERAMIC	0.01uF		50V
C825	1-164-070-11	CERAMIC	100PF	5%	50V
C826	1-164-066-11	CERAMIC	68PF	5%	50V
C827	1-102-820-00	CERAMIC	330PF	5%	50V
C828	1-124-126-00	ELECT	47uF	20%	10V
C829	1-162-851-11	CERAMIC	0.1uF	10%	16V
C831	1-126-154-11	ELECT	47uF	20%	6.3V
C832	1-164-159-11	CERAMIC	0.1uF		50V
C833	1-164-095-11	CERAMIC	0.01uF	10%	16V
C834	1-162-851-11	CERAMIC	0.1uF	10%	16V
C835	1-162-306-11	CERAMIC	0.01uF	20%	16V
C836	1-162-306-11	CERAMIC	0.01uF	20%	16V
C838	1-102-935-00	CERAMIC	2.0PF	+-0.25PF	50V
C839	1-162-306-11	CERAMIC	0.01uF	20%	16V
C840	1-162-306-11	CERAMIC	0.01uF	20%	16V
C850	1-162-306-11	CERAMIC	0.01uF	20%	16V (686HF)
C852	1-162-282-31	CERAMIC	100PF	10%	50V (686HF)
C853	1-101-361-00	CERAMIC	150PF	5%	50V (686HF)
C854	1-101-890-00	CERAMIC	75PF	5%	50V (686HF)
C855	1-164-159-11	CERAMIC	0.1uF		50V (686HF)
C856	1-124-907-11	ELECT	10uF	20%	50V (686HF)
C857	1-164-159-11	CERAMIC	0.1uF		50V (686HF)
C859	1-162-306-11	CERAMIC	0.01uF	20%	16V (686HF)
		(CONNECTOR)			
CN101	1-506-487-11	CONNECTOR	8P, MALE		
* CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P			
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P			
* CN804	1-564-031-00	PIN, CONNECTOR 6P			
		(DIODE)			
D801	8-719-911-19	DIODE 1SS119			
D802	8-719-911-19	DIODE 1SS119			
D803	8-719-911-19	DIODE 1SS119			
		(IC)			
IC101	8-759-421-19	IC AN3317K			
IC801	8-759-320-52	IC HA118019NT			
		(COIL)			
L101	1-407-169-XX	INDUCTOR	100uH		
L103	1-408-978-21	INDUCTOR	47uH		
L104	1-408-985-21	INDUCTOR	180uH		
L105	1-408-977-21	INDUCTOR	39uH		
L106	1-408-978-21	INDUCTOR	47uH		

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Ref. No.	Part No.	Description				Remark
L801	1-408-421-00	INDUCTOR	100uH			
L802	1-408-414-00	INDUCTOR	27uH			
L803	1-408-409-00	INDUCTOR	10uH			
L804	1-408-424-00	INDUCTOR	180uH			
L805	1-408-421-00	INDUCTOR	100uH			
L806	1-408-421-00	INDUCTOR	100uH			
L807	1-408-418-00	INDUCTOR	56uH			
L808	1-408-412-00	INDUCTOR	18uH			
L809	1-408-415-00	INDUCTOR	33uH			
L850	1-408-968-21	INDUCTOR	6.8uH			(686HF)
L851	1-408-421-00	INDUCTOR	100uH			(686HF)
		(CONNECTOR)				
* LP101	1-573-234-11	PIN, CONNECTOR (PC BOARD) 1P				
* LP102	1-573-234-11	PIN, CONNECTOR (PC BOARD) 1P				
		(TRANSISTOR)				
Q801	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q802	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q803	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q804	8-729-900-89	TRANSISTOR	DTC144ES			
Q805	8-729-900-89	TRANSISTOR	DTC144ES			
Q806	8-729-900-89	TRANSISTOR	DTC144ES			
Q807	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q850	8-729-113-31	TRANSISTOR	2SB733-2			(686HF)
Q851	8-729-900-80	TRANSISTOR	DTC114ES			(686HF)
Q852	8-729-119-76	TRANSISTOR	2SA1175-HFE			(686HF)
Q853	8-729-119-76	TRANSISTOR	2SA1175-HFE			(686HF)
Q854	8-729-900-89	TRANSISTOR	DTC144ES			(686HF)
		(RESISTOR)				
R101	1-249-393-11	CARBON	10	5%	1/4W	
R102	1-249-393-11	CARBON	10	5%	1/4W	
R103	1-249-410-11	CARBON	270	5%	1/4W	
R104	1-249-409-11	CARBON	220	5%	1/4W	
R105	1-249-410-11	CARBON	270	5%	1/4W	
R106	1-249-435-11	CARBON	33K	5%	1/4W	
R107	1-249-426-11	CARBON	5.6K	5%	1/4W	
R110	1-249-432-11	CARBON	18K	5%	1/4W	
R111	1-249-435-11	CARBON	33K	5%	1/4W	
R112	1-249-435-11	CARBON	33K	5%	1/4W	
R113	1-216-045-00	METAL CHIP	680	5%	1/10W	
R114	1-216-045-00	METAL CHIP	680	5%	1/10W	
R801	1-249-408-11	CARBON	180	5%	1/4W	
R802	1-249-408-11	CARBON	180	5%	1/4W	
R803	1-249-405-11	CARBON	100	5%	1/4W	
R804	1-249-405-11	CARBON	100	5%	1/4W	
R805	1-249-432-11	CARBON	18K	5%	1/4W	
R806	1-247-895-00	CARBON	470K	5%	1/4W	
R807	1-249-429-11	CARBON	10K	5%	1/4W	
R808	1-249-429-11	CARBON	10K	5%	1/4W	
R809	1-249-433-11	CARBON	22K	5%	1/4W	
R810	1-249-429-11	CARBON	10K	5%	1/4W	
R811	1-249-417-11	CARBON	1K	5%	1/4W	
R812	1-249-421-11	CARBON	2.2K	5%	1/4W	
R813	1-249-421-11	CARBON	2.2K	5%	1/4W	
R814	1-249-412-11	CARBON	390	5%	1/4W	
R815	1-249-412-11	CARBON	390	5%	1/4W	
R816	1-249-416-11	CARBON	820	5%	1/4W	
R817	1-249-426-11	CARBON	5.6K	5%	1/4W	
R818	1-249-421-11	CARBON	2.2K	5%	1/4W	
R819	1-249-413-11	CARBON	470	5%	1/4W	
R820	1-249-415-11	CARBON	680	5%	1/4W	
R821	1-249-414-11	CARBON	560	5%	1/4W	
R822	1-249-417-11	CARBON	1K	5%	1/4W	
R823	1-249-416-11	CARBON	820	5%	1/4W	
R824	1-249-418-11	CARBON	1.2K	5%	1/4W	
R826	1-247-893-11	CARBON	390K	5%	1/4W	
R827	1-249-417-11	CARBON	1K	5%	1/4W	
R828	1-249-420-11	CARBON	1.8K	5%	1/4W	
R829	1-249-420-11	CARBON	1.8K	5%	1/4W	
R830	1-249-429-11	CARBON	10K	5%	1/4W	
R831	1-249-429-11	CARBON	10K	5%	1/4W	
R832	1-249-419-11	CARBON	1.5K	5%	1/4W	
R833	1-249-417-11	CARBON	1K	5%	1/4W	
R834	1-249-433-11	CARBON	22K	5%	1/4W	
R835	1-249-435-11	CARBON	33K	5%	1/4W	
R836	1-249-417-11	CARBON	1K	5%	1/4W	
R838	1-249-405-11	CARBON	100	5%	1/4W	
R850	1-249-435-11	CARBON	33K	5%	1/4W	(686HF)
R851	1-249-405-11	CARBON	100	5%	1/4W	(686HF)
R852	1-249-417-11	CARBON	1K	5%	1/4W	(686HF)
R853	1-249-415-11	CARBON	680	5%	1/4W	(686HF)
R854	1-249-437-11	CARBON	47K	5%	1/4W	(686HF)
R855	1-249-439-11	CARBON	68K	5%	1/4W	(686HF)
R856	1-249-436-11	CARBON	39K	5%	1/4W	(686HF)
R857	1-249-432-11	CARBON	18K	5%	1/4W	(686HF)
R858	1-249-437-11	CARBON	47K	5%	1/4W	(686HF)
		(VARIABLE RESISTOR)				
RV801	1-241-120-11	RES, ADJ, CARBON 2.2K				
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*	A-6754-238-A	TU-130 BOARD, COMPLETE				
		**********				
		(Ref.No 5000 Series)				
	3-710-578-01	COVER, 6 MOLD VOLUME				

Ref. No.	Part No.	Description			Remark
		(CAPACITOR)			
C001	1-124-589-11	ELECT	47uF	20%	16V
C002	1-126-163-11	ELECT	4.7uF	20%	50V
C003	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C004	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C005	1-126-101-11	ELECT	100uF	20%	16V
C007	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C008	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C011	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C012	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C014	1-124-126-00	ELECT	47uF	20%	10V
C016	1-124-126-00	ELECT	47uF	20%	10V
C019	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C020	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C021	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C023	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C025	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C026	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C027	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C028	1-163-091-00	CERAMIC CHIP	8PF		50V
C029	1-124-443-00	ELECT	100uF	20%	10V
C030	1-124-907-11	ELECT	10uF	20%	50V
C031	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C032	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C033	1-124-126-00	ELECT	47uF	20%	10V
C034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C035	1-124-250-00	ELECT	0.15uF	20%	50V
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C037	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C038	1-124-903-11	ELECT	1uF	20%	50V
C039	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C040	1-124-126-00	ELECT	47uF	20%	10V
C041	1-124-902-00	ELECT	0.47uF	20%	50V
C043	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C044	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C045	1-124-907-11	ELECT	10uF	20%	50V
C046	1-124-126-00	ELECT	47uF	20%	10V
C070	1-136-154-00	MYLAR	0.012uF	10%	50V
C071	1-130-480-00	MYLAR	0.0056uF	5%	50V
C072	1-124-252-00	ELECT	0.33uF	20%	50V
C073	1-124-907-11	ELECT	10uF	20%	50V
C074	1-124-907-11	ELECT	10uF	20%	50V
C075	1-130-476-00	MYLAR	0.0027uF	5%	50V
C076	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C077	1-124-907-11	ELECT	10uF	20%	50V
C078	1-131-365-00	TANTALUM	10uF	10%	20V
C079	1-124-903-11	ELECT	1uF	20%	50V
C080	1-131-368-00	TANTALUM	3.3uF	10%	16V
C081	1-124-907-11	ELECT	10uF	20%	50V
C082	1-124-907-11	ELECT	10uF	20%	50V
C083	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C084	1-124-927-11	ELECT	4.7uF	20%	100V
C085	1-124-902-00	ELECT	0.47uF	20%	50V
C086	1-124-903-11	ELECT	1uF	20%	50V
C087	1-126-157-11	ELECT	10uF	20%	16V
C088	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C089	1-126-162-11	ELECT	3.3uF	20%	50V
C090	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C091	1-124-907-11	ELECT	10uF	20%	50V
C092	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C098	1-126-233-11	ELECT	22uF	20%	50V
		(FILTER)			
CF001	1-577-559-11	FILTER, CERAMIC			
CF002	1-409-332-00	CERAMIC TRAP			
CF003	1-527-943-00	FILTER, CERAMIC			
		(CONNECTOR)			
* CN001	1-569-796-11	SOCKET, CONNECTOR 12P			
* CN002	1-569-796-11	SOCKET, CONNECTOR 12P			
		(DIODE)			
⚠ D001	8-719-110-78	DIODE RD33ES-B2			
D005	8-719-104-34	DIODE 1S2836			
D006	8-719-104-34	DIODE 1S2836			
D007	8-719-800-76	DIODE 1SS226			
		(IC)			
IC001	8-759-630-93	IC M51362SP			
IC002	8-752-035-71	IC CXA1124AS			
IC003	8-759-981-64	IC LM2903DQ			
		(JUMPER RESISTOR)			
JR002	1-216-296-00	METAL CHIP	0	5%	1/8W
JR004	1-216-295-00	METAL CHIP	0	5%	1/10W
JR006	1-216-296-00	METAL CHIP	0	5%	1/8W
JR007	1-216-296-00	METAL CHIP	0	5%	1/8W
JR008	1-216-295-00	METAL CHIP	0	5%	1/10W
JR009	1-216-296-00	METAL CHIP	0	5%	1/8W
JR010	1-216-296-00	METAL CHIP	0	5%	1/8W
JR011	1-216-296-00	METAL CHIP	0	5%	1/8W
JR012	1-216-296-00	METAL CHIP	0	5%	1/8W
JR013	1-216-295-00	METAL CHIP	0	5%	1/10W
JR014	1-216-296-00	METAL CHIP	0	5%	1/8W
JR015	1-216-296-00	METAL CHIP	0	5%	1/8W
JR016	1-216-295-00	METAL CHIP	0	5%	1/10W
JR017	1-216-295-00	METAL CHIP	0	5%	1/10W
JR018	1-216-296-00	METAL CHIP	0	5%	1/8W

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.

TU-130

Ref. No.	Part No.	Description				Remark
JR019	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR020	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR021	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR022	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR023	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR024	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR025	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR026	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR027	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR028	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR029	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR030	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR031	1-216-295-00	METAL CHIP	0	5%	1/10W	
		(COIL)				
L001	1-408-409-00	INDUCTOR	10uH			
L002	1-410-971-11	INDUCTOR	10uH			
L003	1-408-413-00	INDUCTOR	22uH			
L004	1-408-409-00	INDUCTOR	10uH			
L005	1-408-409-00	INDUCTOR	10uH			
L006	1-410-787-31	INDUCTOR	0.33uH			
L007	1-410-316-11	INDUCTOR	1uH			
L008	1-410-972-11	INDUCTOR	15uH			
L010	1-410-971-11	INDUCTOR	10uH			
L011	1-410-971-11	INDUCTOR	10uH			
L098	1-412-292-11	INDUCTOR	1.2uH			
		(IC LINK)				
⚠PS001	1-532-679-00	LINK, IC (ICP-N15) 0.6A				
		(TRANSISTOR)				
Q001	8-729-173-38	TRANSISTOR	2SA733-K			
Q002	8-729-901-01	TRANSISTOR	DTC144EK			
Q005	8-729-822-90	TRANSISTOR	2SC3779C			
Q006	8-729-822-90	TRANSISTOR	2SC3779C			
Q007	8-729-920-74	TRANSISTOR	2SC2412K-QR			
Q008	8-729-920-74	TRANSISTOR	2SC2412K-QR			
Q009	8-729-920-74	TRANSISTOR	2SC2412K-QR			
Q070	8-729-920-74	TRANSISTOR	2SC2412K-QR			
Q071	8-729-901-01	TRANSISTOR	DTC144EK			
		(RESISTOR)				
R001	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R002	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R003	1-216-037-00	METAL CHIP	330	5%	1/10W	
R004	1-216-035-00	METAL CHIP	270	5%	1/10W	
R005	1-216-025-00	METAL CHIP	100	5%	1/10W	
R006	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R008	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R009	1-216-049-00	METAL CHIP	1K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R010	1-216-033-00	METAL CHIP	220	5%	1/10W	
R012	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R013	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R014	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R015	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R016	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R018	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R019	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R020	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R023	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R025	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R029	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R030	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R031	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R032	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R033	1-216-017-00	METAL CHIP	47	5%	1/10W	
R034	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R035	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R036	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R038	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R039	1-216-043-00	METAL CHIP	560	5%	1/10W	
R040	1-216-025-00	METAL CHIP	100	5%	1/10W	
R041	1-216-037-00	METAL CHIP	330	5%	1/10W	
R042	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R043	1-216-037-00	METAL CHIP	330	5%	1/10W	
R044	1-216-037-00	METAL CHIP	330	5%	1/10W	
R046	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R047	1-216-037-00	METAL CHIP	330	5%	1/10W	
R048	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R049	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R050	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R051	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R053	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R054	1-216-029-00	METAL CHIP	150	5%	1/10W	
R055	1-216-039-00	METAL CHIP	390	5%	1/10W	
R056	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R057	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R058	1-216-037-00	METAL CHIP	330	5%	1/10W	
R059	1-216-037-00	METAL CHIP	330	5%	1/10W	
R060	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R061	1-216-047-00	METAL CHIP	820	5%	1/10W	
R062	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R063	1-216-021-00	METAL CHIP	68	5%	1/10W	
R064	1-216-025-00	METAL CHIP	100	5%	1/10W	
R065	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R070	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R071	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R072	1-216-690-11	METAL CHIP	43K	0.5%	1/10W	
R073	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R074	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	

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Ref. No.	Part No.	Description				Remark
R075	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R076	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R077	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R078	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R079	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R080	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R081	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R082	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R083	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R084	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R085	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R086	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R087	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R089	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R098	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R099	1-216-079-00	METAL CHIP	18K	5%	1/10W	
		(VARIABLE RESISTOR)				
RV001	1-241-630-11	RES, ADJ, CARBON 10K				
RV002	1-241-079-11	RES, ADJ, CARBON 4.7K				
RV070	1-228-993-00	RES, ADJ, METAL 4.7K				
RV071	1-228-995-00	RES, ADJ, METAL 22K				
RV072	1-228-996-00	RES, ADJ, METAL 47K				
RV073	1-241-630-11	RES, ADJ, CARBON 10K				
		(SWITCH)				
SWF001	1-404-971-11	FILTER, SURFACE WAVE				
		(COIL)				
T001	1-404-749-11	COIL				
T002	1-404-802-11	COIL				
T003	1-404-752-11	COIL				
T004	1-404-744-11	COIL, IF				
		(TUNER)				
⚠TU001	1-465-239-11	TUNER, ET (BTP-2A401)				

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A-6754-372-B YC-112 BOARD, COMPLETE
****
(Ref. No 2000 Series)

3-729-971-01 COVER, VOLUME

(CAPACITOR)

Ref. No.	Part No.	Description				Remark
C001	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C002	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C004	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C005	1-124-126-00	ELECT	47uF	20%	10V	
C006	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C007	1-124-927-11	ELECT	4.7uF	20%	100V	
C008	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C009	1-126-157-11	ELECT	10uF	20%	16V	
C010	1-124-925-11	ELECT	2.2uF	20%	100V	
C012	1-124-902-00	ELECT	0.47uF	20%	50V	
C013	1-124-907-11	ELECT	10uF	20%	50V	
C014	1-164-157-11	CERAMIC CHIP	0.068uF	10%	25V	
C015	1-163-106-00	CERAMIC CHIP	36PF	5%	50V	
C016	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C017	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C018	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C019	1-124-257-00	ELECT	2.2uF	20%	50V	
C020	1-124-465-00	ELECT	0.47uF	20%	50V	
C021	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C022	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C023	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C024	1-124-925-11	ELECT	2.2uF	20%	100V	
C025	1-126-233-11	ELECT	22uF	20%	50V	
C026	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C027	1-124-126-00	ELECT	47uF	20%	10V	
C028	1-124-443-00	ELECT	100uF	20%	10V	
C029	1-126-233-11	ELECT	22uF	20%	50V	
C030	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C032	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C033	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C034	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C035	1-163-110-00	CERAMIC CHIP	51PF	5%	50V	
C037	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C038	1-163-102-00	CERAMIC CHIP	24PF	5%	50V	
C039	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C040	1-163-102-00	CERAMIC CHIP	24PF	5%	50V	
C041	1-124-126-00	ELECT	47uF	20%	10V	
C042	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C043	1-126-301-11	ELECT	1uF	20%	50V	
C044	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C045	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C046	1-163-081-00	CERAMIC CHIP	0.22uF		25V	
C047	1-124-927-11	ELECT	4.7uF	20%	100V	
C048	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C049	1-124-903-11	ELECT	1uF	20%	50V	
C050	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C051	1-124-903-11	ELECT	1uF	20%	50V	
C052	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	
C053	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C054	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C055	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C058	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C059	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C060	1-124-126-00	ELECT	47uF	20%	10V	

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 critiqus pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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Ref. No.	Part No.	Description			Remark
C062	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C063	1-124-907-11	ELECT	10uF	20%	50V
C064	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C068	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C069	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C070	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C071	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C073	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C074	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C076	1-124-126-00	ELECT	47uF	20%	10V
C077	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C078	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C079	1-126-301-11	ELECT	1uF	20%	50V
C081	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C082	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C083	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C101	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C102	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C103	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C104	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
		(CONNECTOR)			
* CN001	1-563-258-11	SOCKET, CONNECTOR 15P			
* CN002	1-568-715-11	SOCKET, CONNECTOR 7P			
		(DIODE)			
D001	8-719-400-18	DIODE	MA152WK		
D002	8-719-400-18	DIODE	MA152WK		
D003	8-719-400-18	DIODE	MA152WK		
D004	8-719-400-18	DIODE	MA152WK		
D005	8-719-400-18	DIODE	MA152WK		
D008	8-719-200-82	DIODE	11ES2		
D009	8-719-400-18	DIODE	MA152WK		
D010	8-719-400-18	DIODE	MA152WK		
D102	8-719-400-18	DIODE	MA152WK		
		(DELAY LINE)			
DL001	1-415-668-11	DELAY LINE, ULTRASONIC			
DL001	1-415-668-31	DELAY LINE, ULTRASONIC			
DL001	1-415-668-11	DELAY LINE, ULTRASONIC			
		(FILTER)			
FL001	1-236-488-21	L.P.F			
FL002	1-236-489-11	B.P.F			
		(IC)			
IC001	8-759-821-62	IC	LA7326		
IC002	8-759-821-87	IC	LA7316AN		
IC003	8-759-821-50	IC	LC8991		
IC004	8-759-938-15	IC	BA178M05		

Ref. No.	Part No.	Description				Remark
		(JUMPER RESISTOR)				
JR001	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR002	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR003	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR004	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR005	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR006	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR007	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR008	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR009	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR010	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR011	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR012	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR013	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR014	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR015	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR016	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR017	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR018	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR019	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR020	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR021	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR022	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR023	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR024	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR025	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR026	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR027	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR028	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR029	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR030	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR031	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR032	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR033	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR034	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR035	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR036	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR037	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR038	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR039	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR040	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR041	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR045	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR101	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR103	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR104	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR142	1-216-295-00	METAL CHIP	0	5%	1/10W	

Ref.No.	Part No.	Description				Remark
		(COIL)				
L001	1-412-318-11	INDUCTOR	180uH			
L005	1-410-975-11	INDUCTOR	47uH			
L006	1-408-424-00	INDUCTOR	180uH			
L007	1-410-978-11	INDUCTOR	150uH			
L008	1-410-509-11	INDUCTOR	10uH			
L009	1-410-516-11	INDUCTOR	39uH			
L011	1-408-421-00	INDUCTOR	100uH			
L012	1-410-976-11	INDUCTOR	68uH			
L013	1-410-976-11	INDUCTOR	68uH			
L015	1-410-516-11	INDUCTOR	39uH			
L101	1-410-437-11	INDUCTOR	330uH			
L102	1-410-435-21	INDUCTOR	220uH			
		(TRANSISTOR)				
Q001	8-729-901-06	TRANSISTOR	DTA144EK			
Q002	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q003	8-729-901-01	TRANSISTOR	DTC144EK			
Q004	8-729-305-25	TRANSISTOR	2SA1052-C			
Q005	8-729-305-25	TRANSISTOR	2SA1052-C			
Q006	8-729-901-47	TRANSISTOR	DTA143EK			
Q007	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q008	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q009	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q010	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q011	8-729-305-25	TRANSISTOR	2SA1052-C			
Q012	8-729-305-25	TRANSISTOR	2SA1052-C			
Q015	8-729-230-49	TRANSISTOR	2SC2712-YG			
Q019	8-729-620-06	TRANSISTOR	2SC3052-EF			
Q022	8-729-305-25	TRANSISTOR	2SA1052-C			
Q023	8-729-620-06	TRANSISTOR	2SC3052-EF			
Q102	8-729-900-53	TRANSISTOR	DTC114EK			
		(RESISTOR)				
R001	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R003	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R004	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R005	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R006	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R007	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R008	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R009	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R010	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R011	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R012	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R013	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R014	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R015	1-216-047-00	METAL CHIP	820	5%	1/10W	
R016	1-216-043-00	METAL CHIP	560	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R017	1-216-052-00	METAL CHIP	1.3K	5%	1/10W	
R018	1-216-036-00	METAL CHIP	300	5%	1/10W	
R019	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R020	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R021	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R022	1-216-041-00	METAL CHIP	470	5%	1/10W	
R023	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R024	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R025	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R026	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R027	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R028	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R029	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R030	1-216-045-00	METAL CHIP	680	5%	1/10W	
R031	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R032	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R033	1-216-748-11	METAL CHIP	39K	1%	1/10W	
R034	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R035	1-216-037-00	METAL CHIP	330	5%	1/10W	
R036	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R037	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R038	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R039	1-216-043-00	METAL CHIP	560	5%	1/10W	
R040	1-216-043-00	METAL CHIP	560	5%	1/10W	
R041	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R043	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R044	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R045	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R046	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R047	1-216-039-00	METAL CHIP	390	5%	1/10W	
R048	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R049	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R051	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R052	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R055	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R059	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R060	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R061	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R066	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R067	1-216-041-00	METAL CHIP	470	5%	1/10W	
R069	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R070	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R071	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R072	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R073	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R074	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R075	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R076	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R082	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R083	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	

YC-112

Ref. No.	Part No.	Description				Remark
R085	1-216-043-00	METAL CHIP	560	5%	1/10W	
R086	1-216-025-00	METAL CHIP	100	5%	1/10W	
R088	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R089	1-216-041-00	METAL CHIP	470	5%	1/10W	
R098	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R099	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R100	1-216-047-00	METAL CHIP	820	5%	1/10W	
R102	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R103	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
		(VARIABLE RESISTOR)				
RV002	1-238-166-11	RES, ADJ, CARBON 1K				
RV003	1-230-523-11	RES, ADJ, METAL 10K				
RV004	1-237-723-11	RES, ADJ, CARBON 4.7K				
RV005	1-237-723-11	RES, ADJ, CARBON 4.7K				
RV006	1-238-166-11	RES, ADJ, CARBON 1K				
RV007	1-238-166-11	RES, ADJ, CARBON 1K				
		(VIBRATOR)				
X001	1-577-380-11	VIBRATOR, CRYSTAL (3.58MHz)				

****

MISCELLANEOUS
****

13	1-466-497-21	SWITCH BLOCK, CONTROL (585HF)	
13	1-466-497-31	SWITCH BLOCK, CONTROL (686HF)	
13	1-466-497-51	SWITCH BLOCK, CONTROL (589HF)	
19	1-572-662-11	SWITCH, ROTARY (DUAL MODE SHUTTLE)	
⚠51	1-413-648-11	POWER BLOCK (SWITCHING BLOCK) (585HF;PX)	
⚠51	1-413-650-11	POWER BLOCK (SWITCHING BLOCK) (EXCEPT 585HF;PX)	
260	1-543-647-11	HEAD, FE	
264	8-848-553-01	DRUM ASSY, ROTARY UPPER(DZR-28-R) (686HF)	
264	8-848-555-01	DRUM ASSY, ROTARY UPPER(DZR-37-R) (EXCEPT 686HF)	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
D001	8-719-985-00	DIODE GL451VS1 (LED)	
⚠M901	8-848-552-11	DRUM ASSY (DZH-28A-R) (686HF)	
⚠M901	8-848-554-01	DRUM ASSY (DZH-37A-R) (EXCEPT 686HF)	
M902	8-835-394-11	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
M904	X-3727-784-1	MOTOR ASSY (LOADING)	
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
S001	1-692-062-11	SWITCH, ROTARY	

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-417-139-11	MATCHING TRANSFORMER, ANTENNA	
	1-465-770-11	REMOTE COMMANDER (RMT-V102A) (686HF)	
	1-465-770-21	REMOTE COMMANDER (RMT-V102) (585HF)	
	1-465-862-11	REMOTE COMMANDER (RMT-V112) (589HF)	
	1-558-076-41	CORD, CONNECTION	
⚠	1-569-008-11	ADAPTER CONVERSION 2P (585HF;PX)	
⚠	1-574-085-11	CORD, POWER (585HF;US, CND/686HF/589HF)	
⚠	1-575-131-11	CORD, POWER (585HF;PX)	
	1-575-334-11	CORD, CONNECTION	
	3-701-625-00	BAG, POLYETHYLENE	
	3-752-868-21	MANUAL, INSTRUCTION (ENGLISH)	
	3-752-868-31	MANUAL, INSTRUCTION (FRENCH) (585HF;CND/686HF;CND/589HF)	
	3-752-868-41	MANUAL, INSTRUCTION (SPANISH) (686HF;MX)	
	3-753-871-31	INSTRUCTION (589HF)	
*	3-795-581-21	SAFEGUARD (SONY), IMPORTANT (585HF;US/686HF;US)	
*	3-941-533-01	CUSHION (UPPER)	
*	3-941-534-01	CUSHION (LOWER)	
*	3-941-538-01	INDIVIDUAL CARTON (585HF)	
*	3-941-538-11	INDIVIDUAL CARTON (686HF)	
*	3-944-222-01	INDIVIDUAL CARTON (589HF)	

****

****
HARDWARE LIST
****

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
#4	7-682-546-04	SCREW +P 3X5
#5	7-682-645-01	SCREW +PS 3X4
#6	7-621-732-08	SET-SCT, HEX. 2X3 FLAT POINT
#7	7-682-547-04	SCREW +P 3X6
#8	7-682-548-04	SCREW +P 3X8
#9	7-628-254-00	SCREW +PS 2.6X5
#10	7-627-552-08	SCREW, PRECISION +P 1.7X2.5

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.

English
9Z-F0938-1
Printed in Japan
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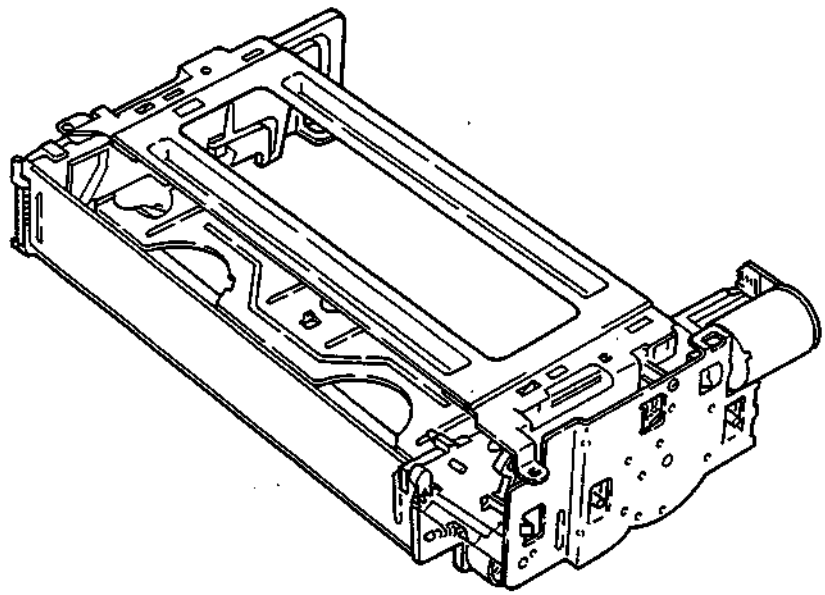
Published by Customer Relations and Service Group

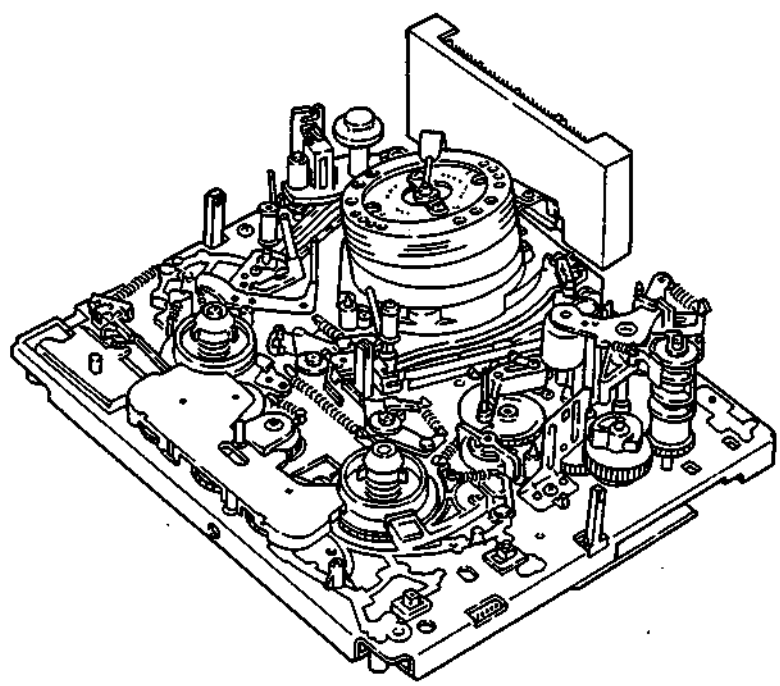
Sony Corporation
Home Video Group

9-973-127-82

VHS MECHANICAL ADJUSTMENT MANUAL II

- Please use in conjunction with the SERVICE MANUAL.
- This VHS MECHANICAL ADJUSTMENT MANUAL II can be used for NTSC system and PAL system.





MICROFILM

VHS VIDEO RECORDER

SONY®

TABLE OF CONTENTS

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

Note : Refer to "Replacement Method" in the Service Guide for instructions on replacing the cabinet and PC boards. DO not perform cassette loading or threading with the VCR positioned upside-down.

1-1. LOADING AND UNLOADING VIDEO CASSETTES WITH THE POWER OFF. (Fig. 1-1.)

1-1-1. Manual loading and unloading

1) Rotate the loading motor in the direction of arrow Ⓐ until loading is compleated.
(When unloading, rotate the loading motor in the direction of arrowⒷ.)

1-1-2. Loading and unloading using a separate power source.

1) Cassette loading is performed by applying approx. 10V (300 mA) to the power terminal of the loading motor using a stabilized DC power source.
(When unloading, apply the same voltage to the opposite polarity of the power terminal.)

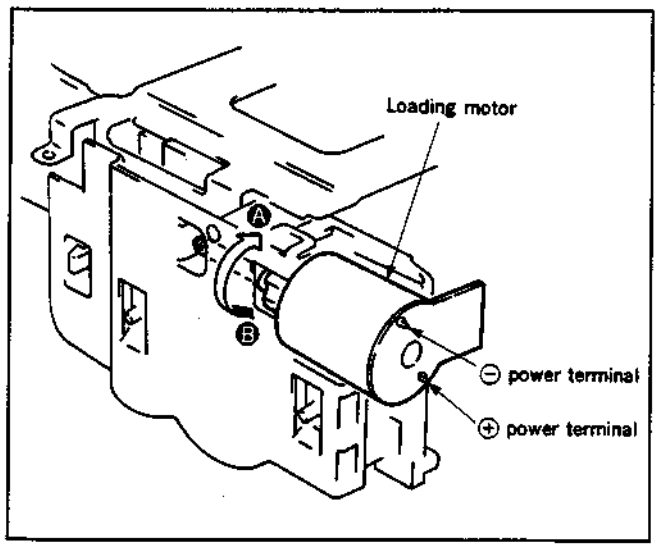


Fig. 1-1.

1-2. THREADING AND UNTHREADING WITH THE POWER OFF. (Fig. 1-2)

1-2-1. Manual threading and unthreading

1) Rotate the cam motor ● in the direction of arrowⒶuntil threading is completed.
(When unthreading, rotate the cam motor ● in the direction of arrowⒷ.)

1-2-2. Threading and unthreading using a separate power source.

1) Threading is performed by applying approx. 10V (500 mA) to the power terminal for the cam motor ● using a DC stabilized power source.
(When unthreading, apply the same voltage to the opposite polarity of the power terminal.)

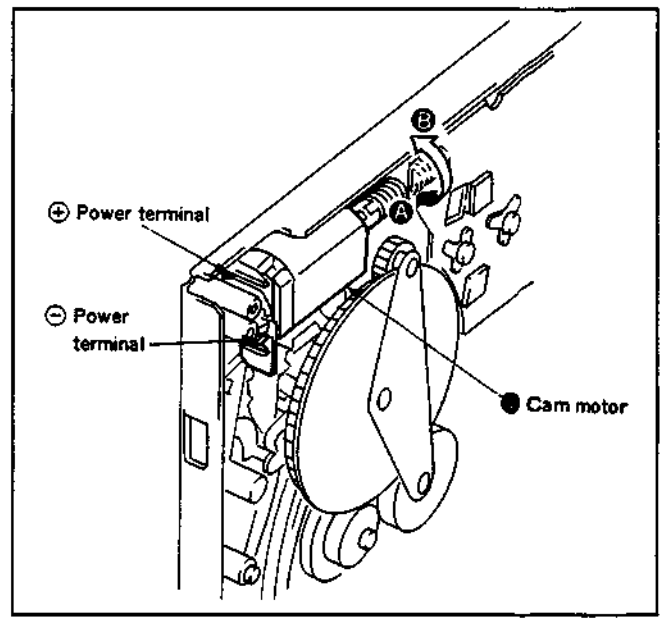


Fig. 1-2.

1-3. TO COMPLETE THREADING WITH THE FL CASSETTE CONTROLLER REMOVED. (Fig. 1-3)

1) Unplug the AC power cord from the power outlet.
2) Shield the supply, take-up sensors and the LED with black-masking tape.
3) Hold the cassatte down switch depressed by taping it, etc.
4) Plug the AC power cord into a power outlet.
   (At this time, the power should turn on and the tape rewinds for approx. 10 seconds, and the power turns off.)
5) Turn the power switch ON so that the mechanism is ready for loading.

Note : In this condition, the VTR is ready to operate in the different operating modes, including the record mode. At this time, rewind the tape for at least 15 seconds, then perform fast forward (FF).

Note : Following the above, be sure to reset the mechanism to the previous state as outlined below.

1) Remove the black-masking tape shielding the supply and take-up sensors, the LED and the tape holding cassette down switch.
2) Unplug the AC power cord from the power outlet to reset the system control microprocessor.

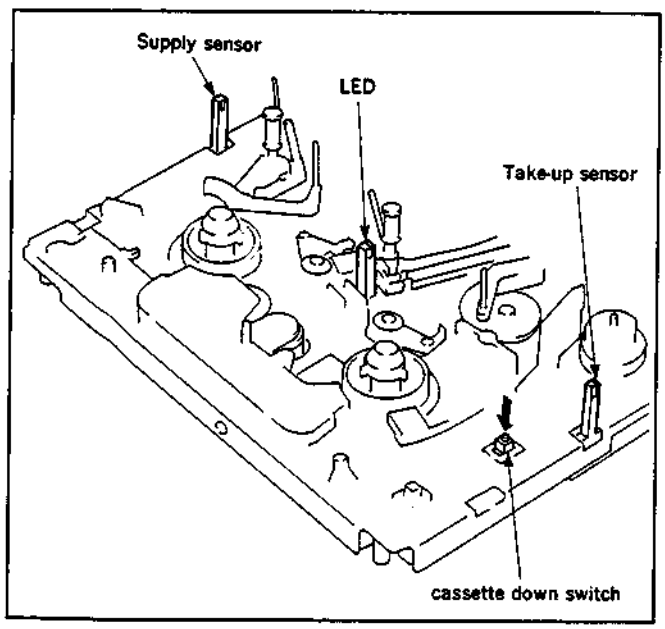


Fig. 1-3.

2. PERIODICAL INSPECTION AND REPLACEMENT

We recommend performing the following periodical inspections and maintenance in order to ensure that the unit operates in top condition and offers full performance, as well as realizes a long life of the mechanism and tapes.

* Be sure to perform the following maintenance procedures after the unit is repaired (regardless how long the unit has been used.)

2-1. CLEANING THE ROTARY HEAD DISC ASS'Y

1) Press Attach a deer skin cloth (Jig. Ref. No. J-7) soaked in cleaning solution (Jig. Ref. No. J-5) lightly to the rotary drum ass'y, then turn the rotary head disc slowly by hand to clean the surface of the rotary drum ass'y. (At this time, do not turn on the power motor to rotate the rotary head disc for cleaning.)
2) Also, do not wipe the drum ass'y by moving the deer skin cloth vertically across the head as this could damage of the tip of the head.

2-2. CLEANING THE TAPE TRANSPORT SYSTEM

1) Clean the tape transport surfaces (tape guide, a drum ass'y surfaces, capstan, pinch roller, etc.) with a deer skin cloth soaked in an approved in the recommended cleaning solution.

2-3. CLEANING THE DRIVE SYSTEM

1) Wipe the drive mechanism with an ordinary cloth soaked in an approved cleaning solution.

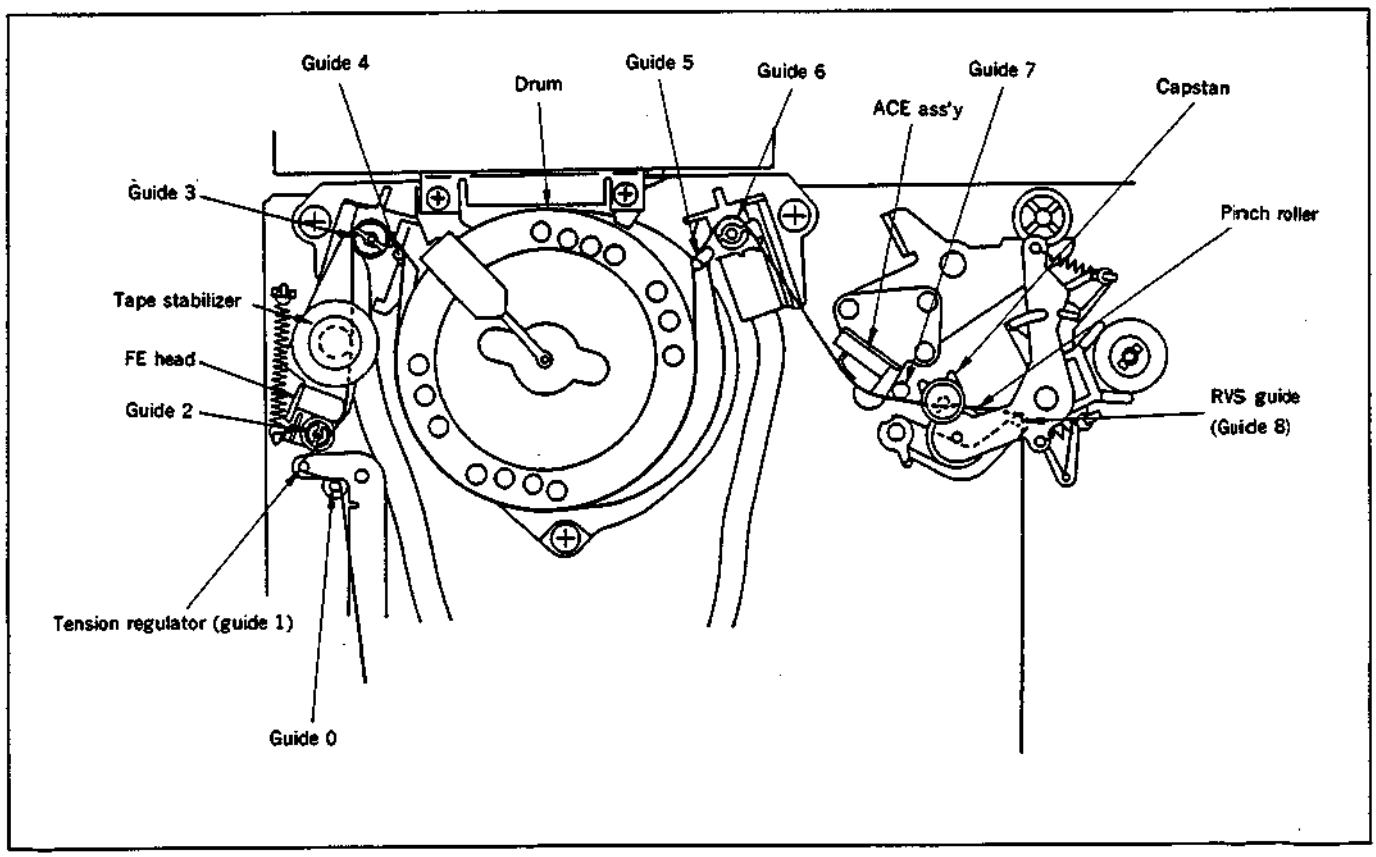


Fig. 2-1.

2-4. PERIODIC MAINTENANCE

Location of Maintenance and Check		User Hours / Replacement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Performance Check	Clean tape running surfaces	——	○	○	○	○	○	○	○	○	○	○	Always perform after repair.
	Clean, degauss ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Clean, degauss video disc ass'y	——	○	○	○	○	○	○	○	○	○	○	Head life is greatly affected by environment and method of use.
Driving System	Reel belt	3-736-013-01	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
Tape Running System	Abnormal noise	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace source of abnormal noise.
	Back tension measurement	——	–	☆	–	☆	–	☆	–	☆	–	☆	Check according to 4-1-1. Spec : 24 — 34g/cm (Measured with torque cassette)
	Brake system check	——	–	☆	–	☆	–	☆	–	☆	–	☆	
	REC/PB function check	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
	Forward torque measurement		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Spec : 80 — 140 g·cm

○ Cleaning ☆ Check

Note : Refer to the above items for part replacement when performing an overhaul.

2-5. SERVICE TOOLS AND JIGS

Ref. No.	Description	Part No.	Printing on jig	Remarks
J-1	Master plane	H-7099-279-H		
J-2	Reel disc height jig	H-7099-038-H		
J-3	Torque gauge adapter	H-7099-035-H		
J-4	Torque gauge	H-7099-039-H		
J-5	0.93mm Allen wrench	H-7099-202-H		
J-6	NTSC torque cassette VHT-063S PAL torque cassette	J-6082-011-A J-6082-066-A		For rewind torque and back tension
	NTSC torque cassette VHT-404S PAL torque cassette	J-6082-012-A J-6082-067-A		For cue/review
J-7	NTSC alignment tape JVC-MH-1 PAL alignment tape JVC-MH-2	H-7099-046-H H-7099-052-H		
	NTSC Hi-Fi alignment tape PAL Hi-Fi alignment tape	H-7099-153-H H-7099-175-H		
J-8	Cleaning fluid	Y-2031-001-0	———	
J-9	Chamois cloth	2-034-697-00	———	Cleaning
J-10	Head degausser	Widely available	———	Video, audio head degaussing
J-11	Small adjustment mirror (with handle) Small adjustment mirror (mirror only)	J-6080-029-A J-6080-030-1	SL-5052	For tape path and tape running adjustment and check

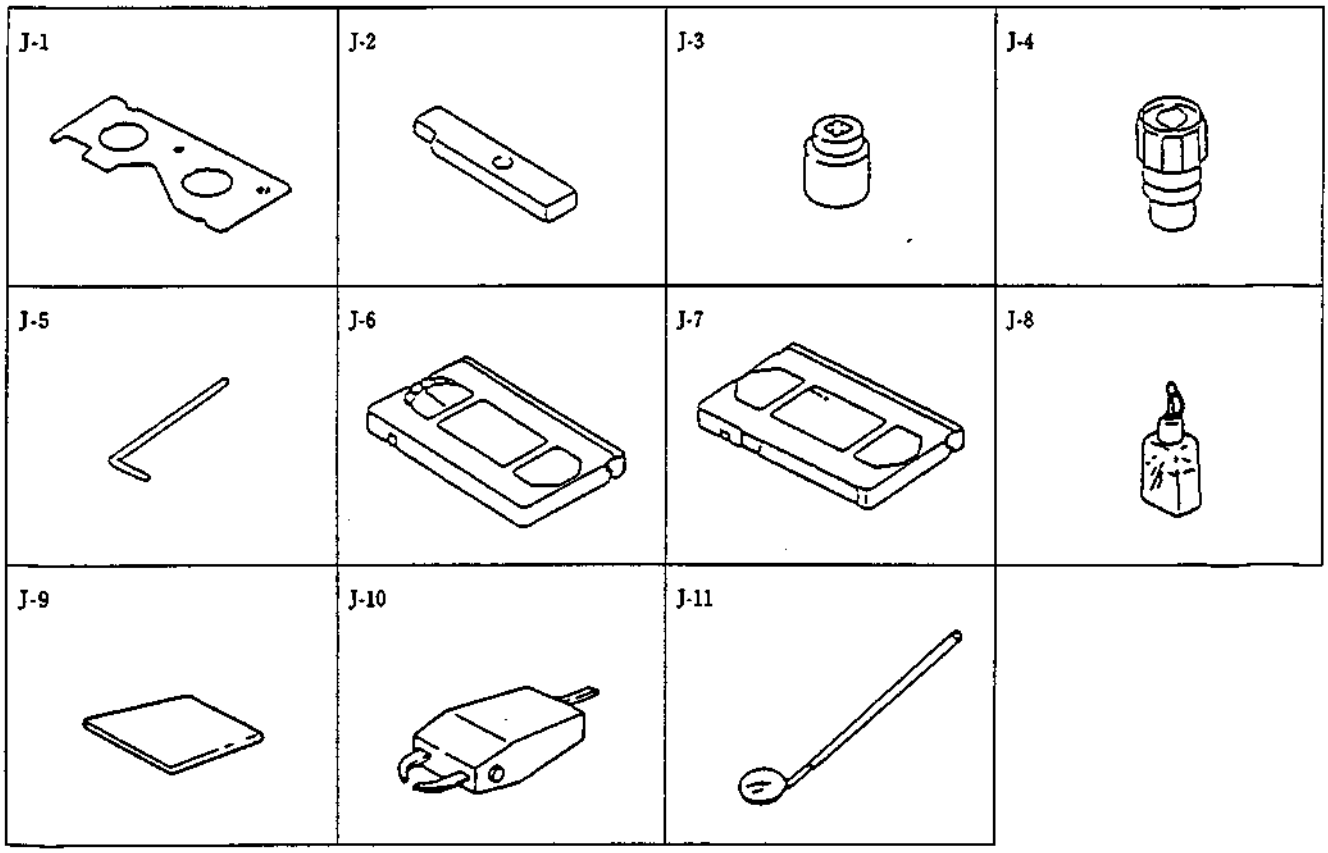


Fig. 2-2. Service tools and jigs

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

Note: ○ Refer to "Replacement Method" in the Service Guide for replacing the cabinet and PC boards.
○ When mounting parts, reverse the replacement procedure while referring to "Precautions on Mounting Parts".

3-1. FL MECHANISM

3-1-1. FL door (Fig. 3-1.)

1) Press the claw ❶ in the direction of arrow Ⓐ, then remove the FL door ❷ in the direction of arrow Ⓑ.

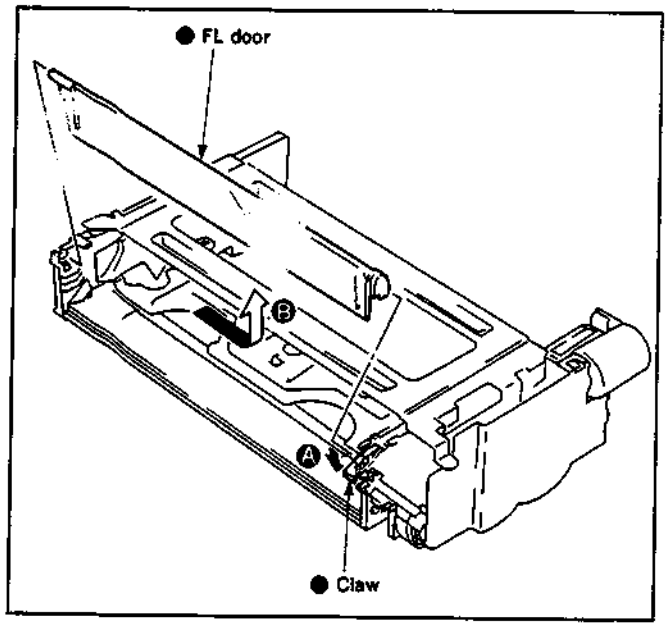


Fig. 3-1.

3-1-2. Erasure protection lever (Fig. 3-2)

1) Remove the spring ❶.
2) Disengage the claw ❷, then slide the erasure protection lever ❸ in the direction of arrow Ⓐ.
3) Disengage the erasure protection lever ❸ in the direction of arrow Ⓑ.

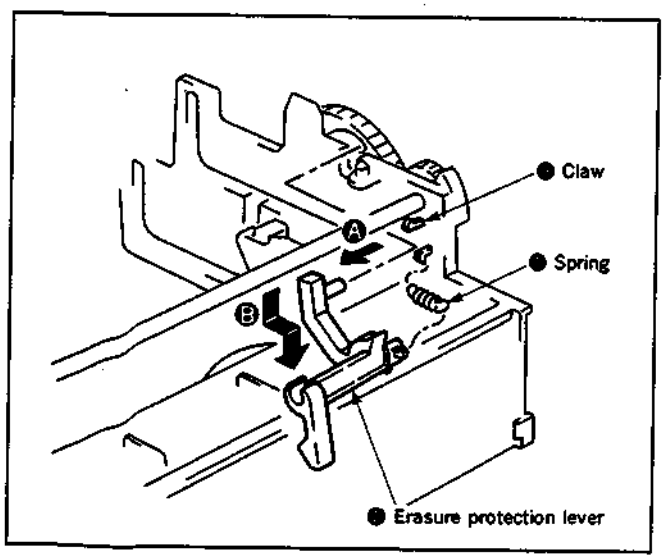


Fig. 3-2.

○ After grease coated parts such as gears are replaced, re-grease the replaced part.
○ Do not touch the guides (taped surface) and brake shoe directly with your fingers or grease them, etc.
○ Gears must be mounted so that they mesh with each other.

3-1-3. Gear cover ass'y (Fig. 3-3)

1) Disengage the four claws ❶, then remove the gear cover ass'y ❷.

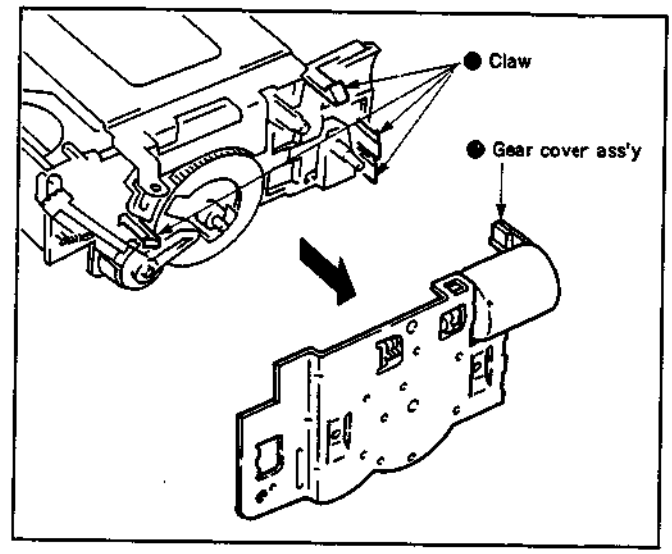


Fig. 3-3.

3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing (Fig. 3-4)

1) Remove washer 3 ❶, then pull out the worm wheel (FL) ❷.
2) Remove the two screws ❸, then remove the loading motor ❹.
3) Remove the worm gear (FL) ❺ and worm bearing ❻.

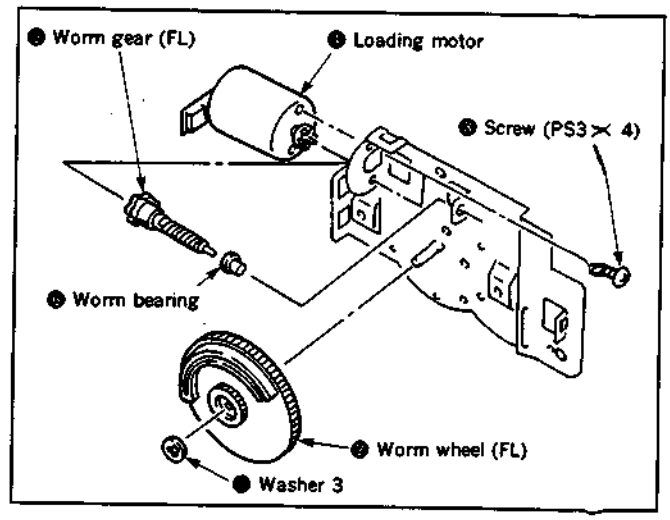


Fig. 3-4.

3-1-5. Door OPEN/CLOSE arm (Fig. 3-5)

1) Remove the spring ❶.
2) Pull out the door OPEN/CLOSE arm ❷.

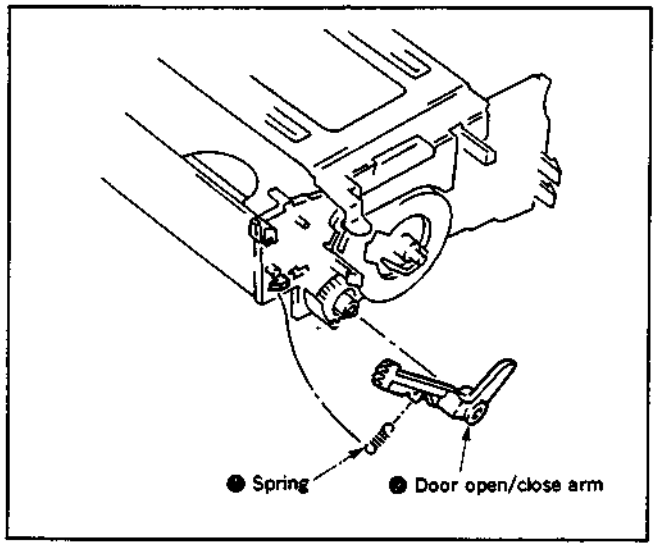


Fig. 3-5.

[Precautions on remounting] (Figs. 3-6 and 3-7.)

- ○ When mounting the gear cover ass'y, match up the two holes on the gear cover ass'y with the two holes on the worm wheel (FL) and then with the hole on the right drive arm ass'y.
- ○ Mesh the FL door and the door OPEN/CLOSE arm together as shown in Ⓐ section in the figure below.
- ○ The erasure protection lever shaft must fit into the groove on the left drive arm ass'y.

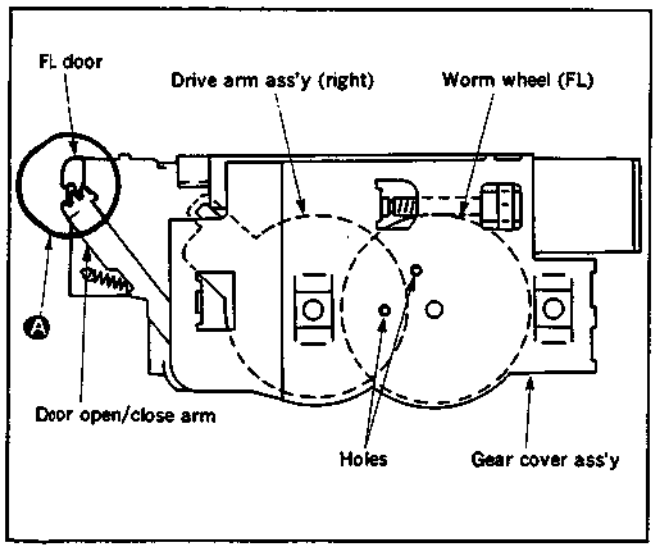


Fig. 3-6.

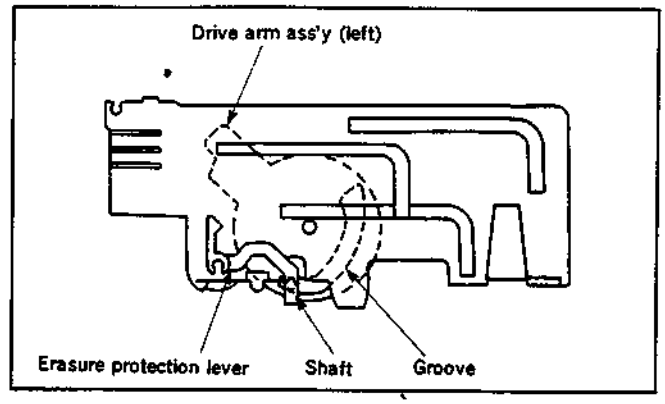


Fig. 3-7.

3-2. TS ASS'Y AND GUIDE ROLLER ASS'Y No. 2 (Fig. 3-8)

1) Remove the spring ❶.
2) Remove the TS ass'y ❷ in the direction of arrow Ⓐ.
3) Turn guide roller ass'y No. 2 ❸ in the direction of arrow Ⓑ and pull it out.

[Precautions on remounting]

- ○ Clean the surface of guide roller No. 2 ❸ where the tape is attached.
- ○ Apply lubricant over the section shown in Figure A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

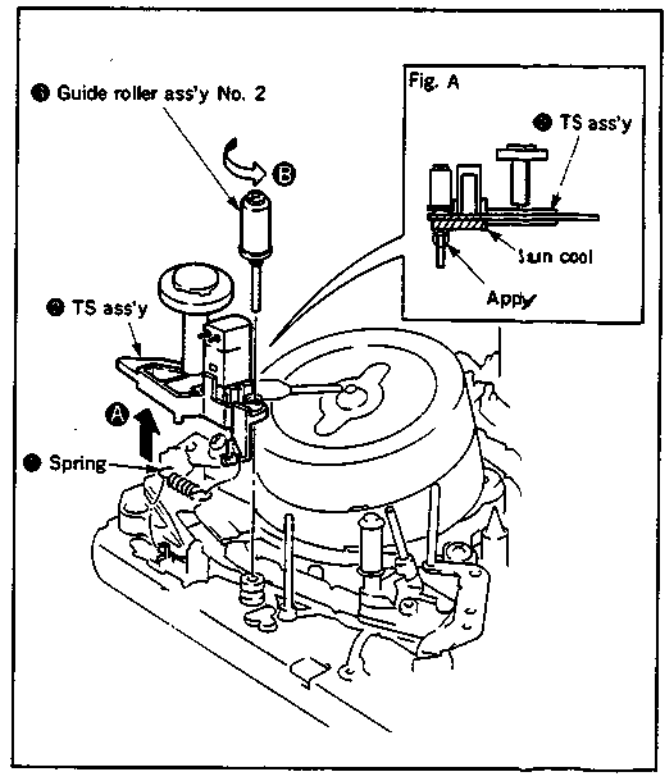


Fig. 3-8.

3-3. ACE ASS'Y (Fig. 3-9)

1) Slide the torsion coil spring ❶ in the direction of the arrow.
2) Remove the nylon nut N3 ❷, then pull out the ACE ass'y ❸.
3) Remove the ACE adjuster screw ❹.

[Precautions on remounting]

- Clean the surface of the ACE ass'y ❸ where the tape is attached.
- Hook both ends of the torsion coil spring ❶ to the ass'y as shown in Figure A below.
- Adjust the ACE adjuster screw ❹ to the height shown in Figure A.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

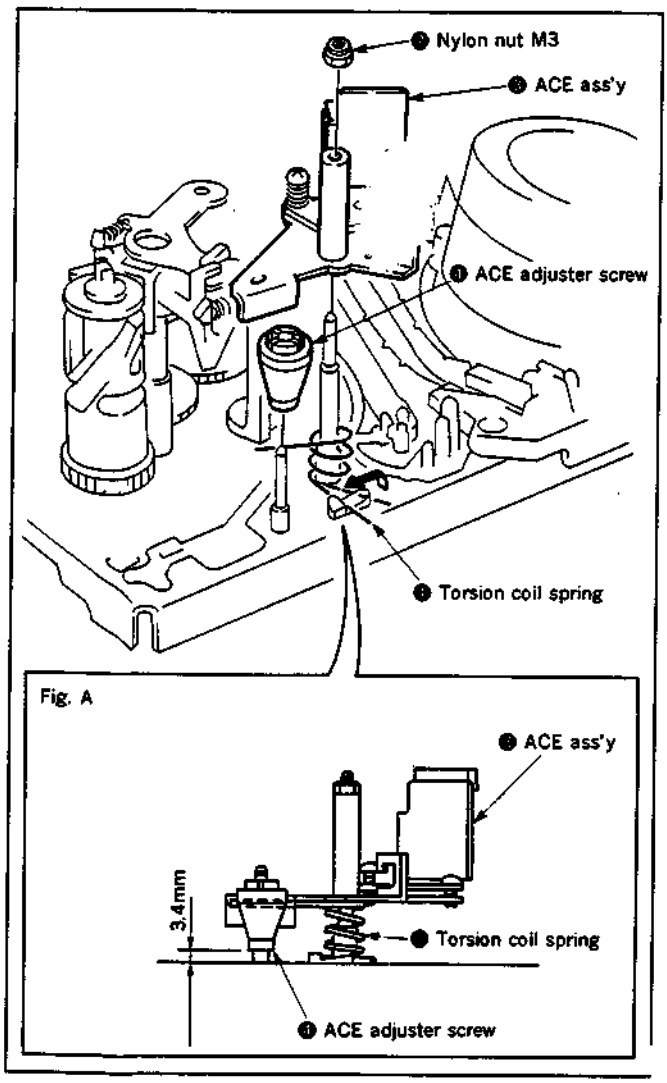


Fig. 3-9.

3-4. DRUM ASS'Y (Fig. 3-10)

1) Remove the three screws ❶, then remove the drum ass'y ❷.

[Precautions on remounting]

- Do not touch the head tips ❸ and the ground plate ❹ directly with your fingers or tools.
- Clean the surface of the drum ass'y ❷ where a tape is attached.
- The stopper ❺ must be attached at the point shown in the figure below
- Screws must be fastened with a 6kg·cm (±1kg·cm) screw fastening torque. (The screws can be mounted in any order.)

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

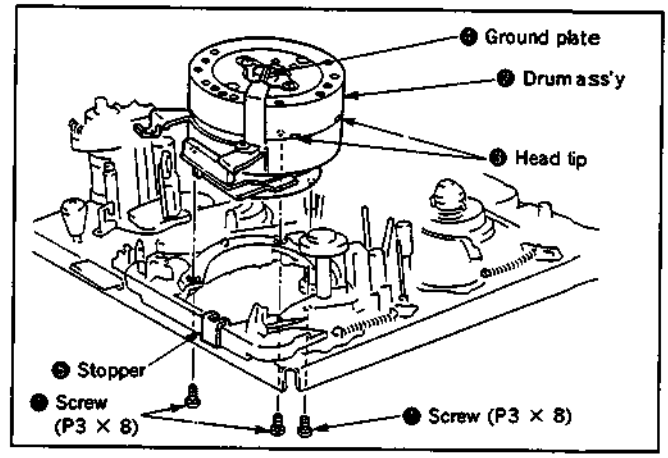


Fig. 3-10.

3-5. DRUM BASE ASS'Y (Fig. 3-11)

1) Remove the drum. (Refer to 3-4.)
2) Remove the three screws ❶, then remove the drum base ass'y ❷.

[Precautions on remounting]

- The spacer ❸ for the drum base must be mounted in its previous position as shown in the figure below. [Note that some units do not feature the spacer ❸.]
- Fastening torque must be 10kg·cm (±1kg·cm)
- The screws must be mounted in order of (a),(b) and (c).

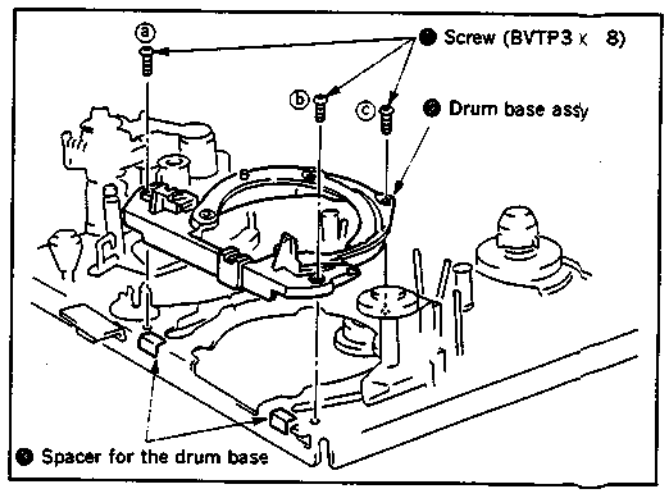


Fig. 3-11.

3-6. PINCH ROLLER ASS'Y AND ELEVATOR CAM (Fig. 3-12)

1) Remove the two claws ❶, then pull out the stopper ❷.
2) Pull out the pinch roller ass'y ❸.
3) Pull out the elevator cam ❹.

[Precautions on remounting]

- ○ Clean the surface of the pinch roller ass'y ❸ where the tape is attached.
- ○ Match up the ▯ marks on the elevator cam ❹ and cam gear, press ❺.

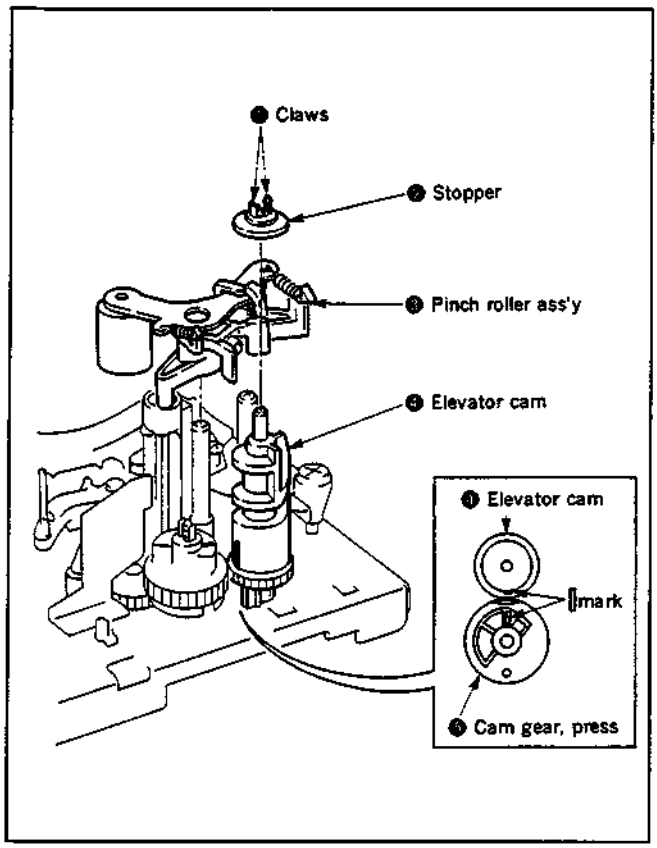


Fig. 3-12.

3-7. CAM GEAR, PRESS AND TRANSMISSION GEAR (Fig. 3-13)

1) Remove the pinch roller ass'y. (Refer to 3-6.)
2) Remove the screw ❶, then remove the lid release plate ❷.
3) Remove the two claws ❸, then pull out the cam gear, press ❹.
4) Remove the washer 2 ❺, then pull out the transmission gear ❻.

[Precautions on remounting]

- ○ Check the top and bottom of the transmission gear ❻.
- ○ Match up the hole ❼ on the chassis with the hole ❼ on the cam gear, press ❹.
- ○ Match up the ▯ mark on the cam gear, press ❹ with the ▯ mark on the alleviator cam ❽.

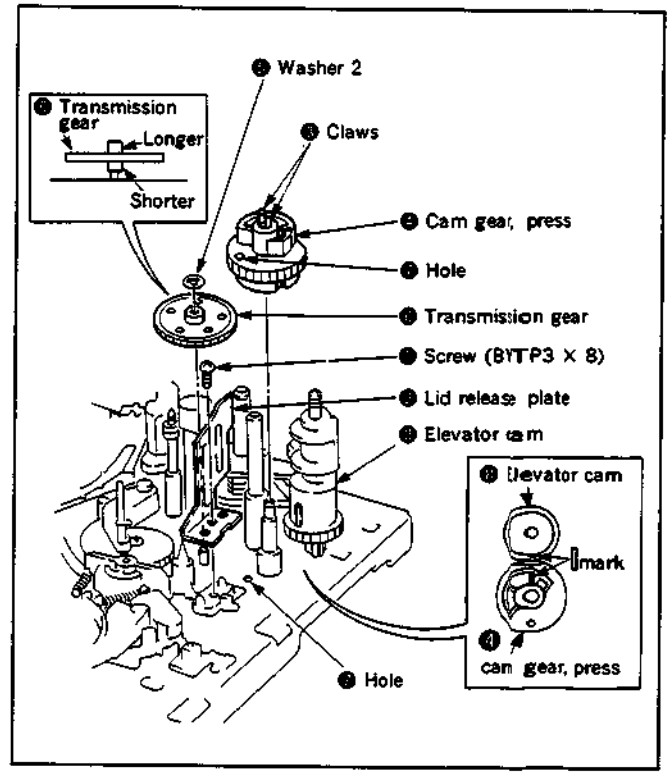


Fig. 3-13.

3-8. RVS ARM ASS'Y AND RVS CAM GEAR (Fig. 3-14)

1) Remove the nylon nut M2 ❶ and plastic washer ❷.
2) Disengage the claw ❸, then pull out the RVS arm ass'y ❹.
3) Remove washer 2 ❺, then pull out the RVS cam gear ❻.

[Precautions on remounting]

- The holes ❼ in the chassis and in the RVS cam gear ❻ must match up. Also, make sure to match up the holes ❾ on the cam gear, press ❽ and the chassis.
- The spring ❿ must be hooked as shown in Fig. A below.
- Clean the surface of the RVS arm ass'y ❹ where a tape is attached.
- Apply 1/2 drop of lubricant to the shaft ⓫.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

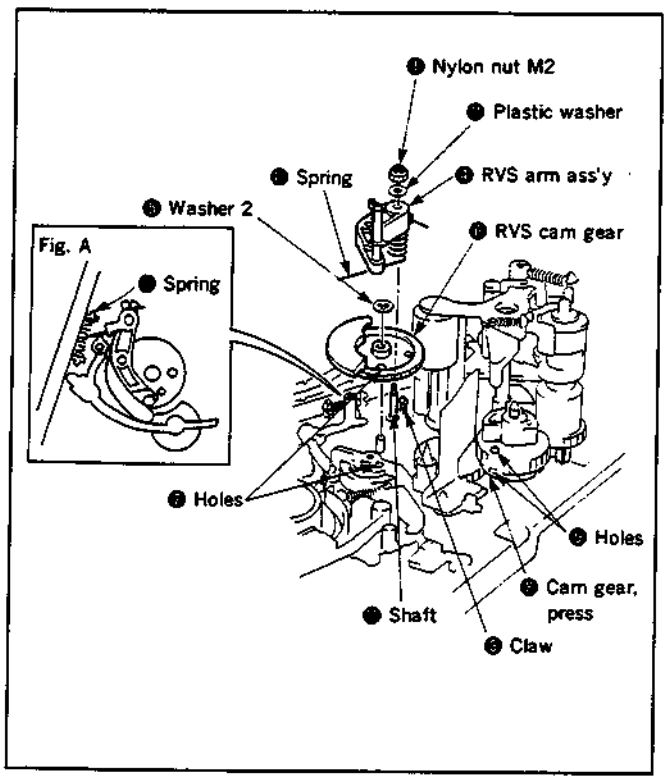


Fig. 3-14.

3-9. GUIDE No. 7 (Fig. 3-15)

1) Remove the nylon nut M3 ❶.
2) Pull out guide flange No. 7 ❷, guide sleeve No. 7 ❸, guide flange No. 7 ❹ and compression coil spring ❺ in the given order.

[Precautions on remounting]

- Clean the surface of the guide sleeve No. 7 ❸ where the tape is attached.
- Adjust the height of guide No. 7 to the height shown in Fig. A below.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

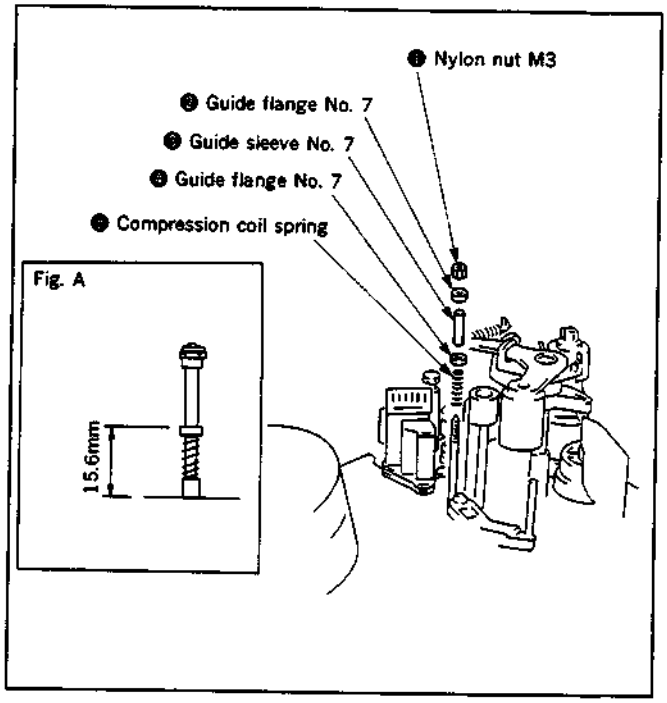


Fig. 3-15.

3-10. S-BRAKE ASS'Y, T-BRAKE ASS'Y (Fig. 3-16)

1) Remove the spring ❶.
2) Disengage the claw ❷, then pull out the S-brake ass'y ❸.
3) Disengage the claw ❹, then pull out the T-brake ass'y ❺.

[Precautions on remounting]

- Do not touch the brake shoes for the respective S-brake ❸ and T-brake ❺ assy's directly with your fingers.
- Do not hold on to the S-brake ❸ and T-brake ❺ assy's by the arms when inserting them.
- The T-brake ass'y ❺ must be positioned above the S-brake ass'y ❸ as shown in Fig. A below.

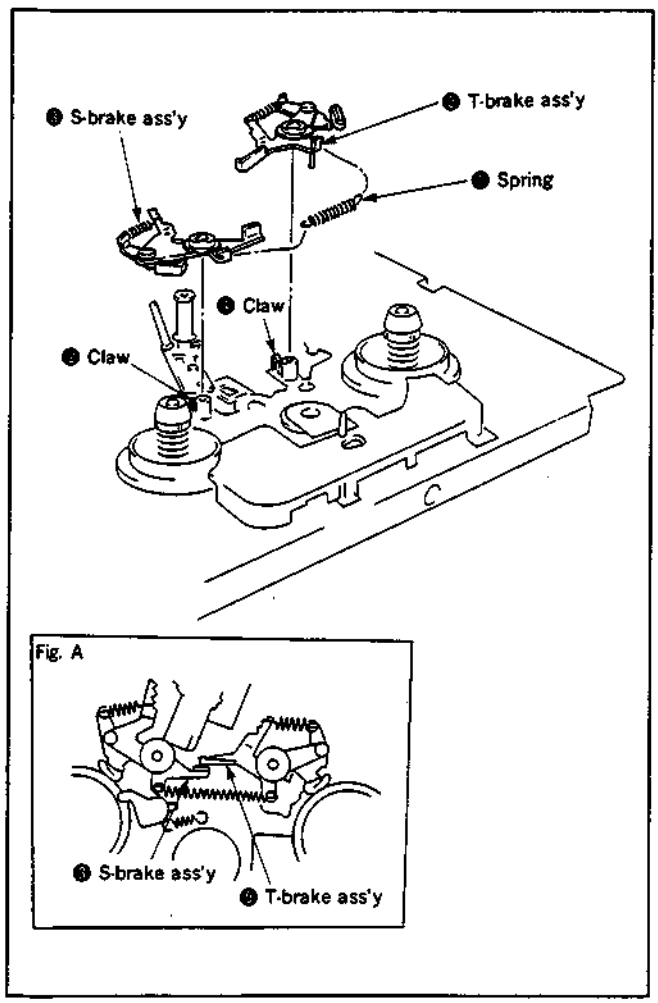


Fig. 3-16.

3-11. T-SOFT BRAKE ASS'Y REV BRAKE ARM (Fig. 3-17)

1) Remove the end of the spring ❶ from the REV brake arm ❷.
2) Remove the end of the spring ❸ from the chassis.
3) Disengage the claw ❹, then pull out the T-soft brake ass'y ❺.
4) Disengage the claw ❻, then pull out the REV brake arm ❷.

[Precautions on remounting]

- Do not touch the brake shoe of the T-soft brake ass'y ❺ directly with your fingers.

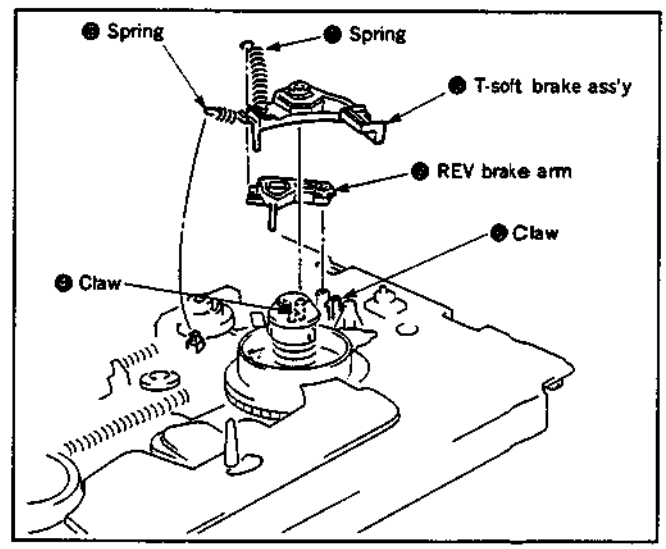


Fig. 3-17.

3-12. S-SOFT BRAKE ARM ASS'Y (Fig. 3-18)

1) Unhook the end of the spring ❶ from the chassis.
2) Disengage the claw ❷, then pull out the S-soft brake arm ass'y ❸.

[Precautions on remounting]

- The S-soft brake arm ass'y must not clamp down the tension regulator band ass'y ❹ nor be positioned below the tension regulator band ❹.

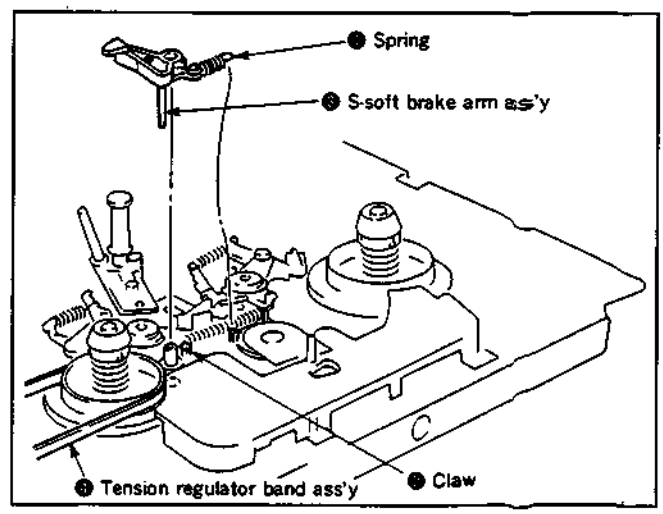


Fig. 3-18.

3-13. S-GUIDE AND T-GUIDE ROLLER ASSY'S (Fig. 3-19)

1) Loosen the setscrew ❶, then remove the S-guide roller ass'y ❷ by turning it in the direction of the arrow Ⓐ.
2) Loosen the setscrew ❸, then remove the T-guide roller ass'y ❹ by turning it in the direction of arrow Ⓑ.

[Precautions on remounting]

○ Clean the surfaces of the S-guide roller ❷ and T-guide roller assy's ❹ where a tape is attached.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

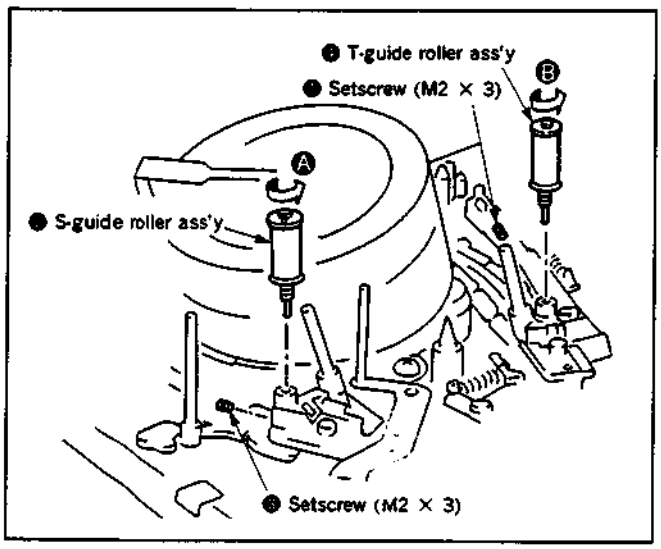


Fig. 3-19.

3-14. REEL LOCK RELEASE AND REW GEAR (Fig. 3-20)

1) Disengage the two claws ❶, then remove the reel lock release ❷ along with the spring ❸ (while the spring is still attached).
2) Next, pull out the REW gear ❹ with the spring bearing ❺ still attached).

[Precautions on remounting]

○ Make sure that the small thrust bearing ❺ remains attached.
○ Make sure that the two claws ❶ lock the real lock release ❷ in place.
○ Apply 1/2 drop of lubricant to the shaft ❼.
○ Make sure that the spring ❸ adheres to the reel lock release ❷ and that it fits inside the rib of the REW gear ❹.
○ Mount the REW gear ❹ by meshing it with gear ❽.

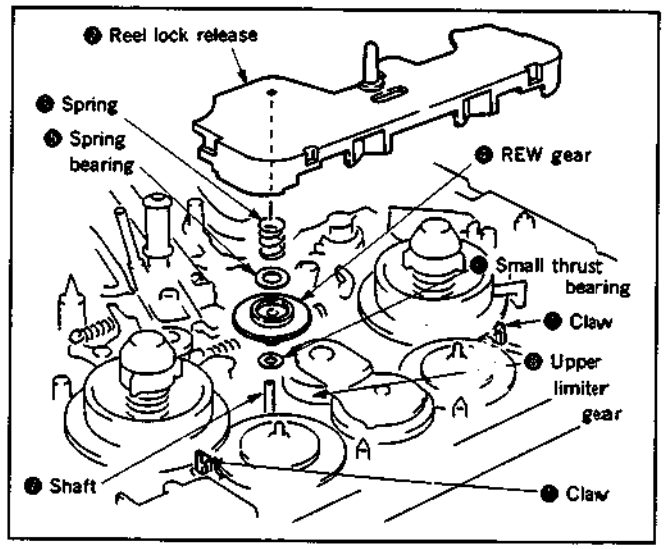


Fig. 3-20.

3-15. TENSION REGULATOR ARM ASS'Y, TENSION REGULATOR BAND ASS'Y (Fig. 3-21)

1) Remove the reel lock release ass'y. (Refer to Fig. 3-14.)
2) Disengage the three claws marked ❶ and the claw marked ❷, then remove the tension regulator band ass'y ❸.
3) Unhook the end of the spring ❹ from the chassis.
4) Disengage the claw ❺, then pull out the tension regulator arm ass'y ❻.

[Precautions on remounting]

- Roll up the tension regulator band ❸ on the S-reel by turning the S-soft brake arm ass'y ❼ in the direction of the arrow.
- Hook the spring ❹ at the center of the spring hook ❽.
- Do not touch the brake shoe of the tension regulator band ass'y ❸ directly with your fingers.
- Mount the tension regulator arm ass'y ❻ at the position shown in Fig. A below.

[Adjustment after replacement]

- Check the back tension. (Refer to 4-1-1.)
- Perform tape path adjustments as described in 4-1.

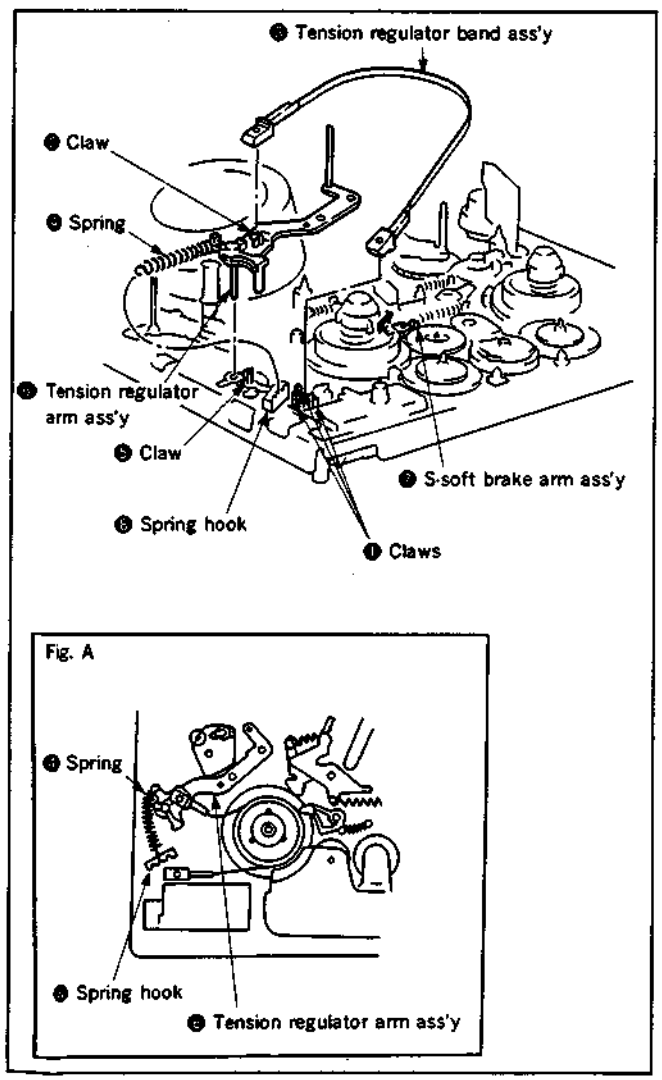


Fig. 3-21.

3-16. S TAKE-UP ASS'Y (Fig. 3-22)

1) Remove the tension regulator arm ass'y and the tension regulator band ass'y. (Refer to 3-15.)
2) Unhook the end of the spring ❶ from the S take-up arm ❷.
3) Disengage the two claws ❸, then remove the S take-up ass'y ❹.

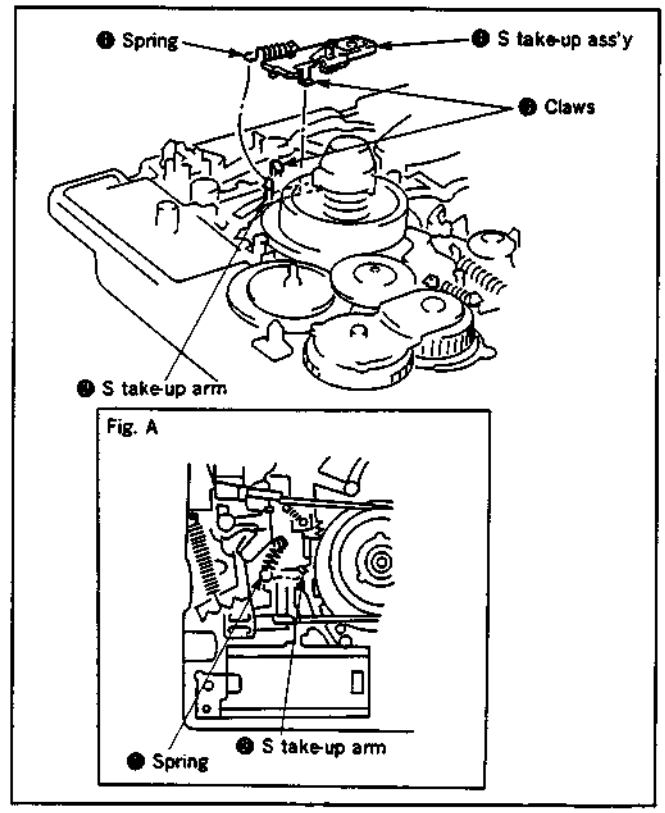


Fig. 3-22.

3-17. S-REEL ASS'Y (Fig. 3-23)

1) Remove the S-soft brake arm ass'y. (Refer to 3-12.)
2) Remove the reel lock release. (Refer to 3-14.)
3) Remove the tension regulator band ass'y. (Refer to 3- 15.)
4) Turn the S-brake ass'y ❶ in the direction of the arrow.
5) Pull out the S-reel ass'y ❷.

[Precautions on remounting]

- At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- Do not touch the outer edge of the S-reel ass'y ❷ directly with your fingers.
- Apply 1/2 drop of lubricant over the shaft ❹.
- Mount the S-reel ass'y ❷ while meshing it with the relay gear ❺.

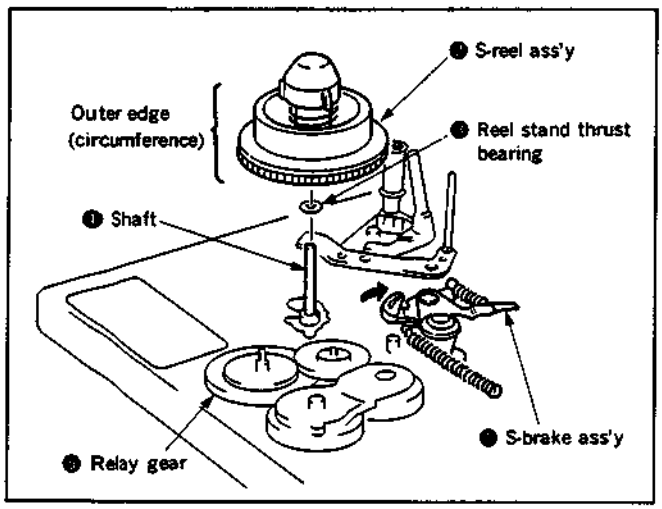


Fig. 3-23.

3-18. T-REEL ASS'Y (Fig. 3-24)

1) Remove the T-soft brake ass'y. (Refer to 3-11.)
2) Remove the reel lock release ass'y. (Refer to 3-14.)
3) Turn the T-brake ass'y ❶ in the direction of the arrow.
4) Pull out the T-reel ass'y ❷.

[Precautions on remounting]

- At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- Do not touch the outer edge of the T-reel ass'y ❷ directly with your fingers.
- Apply 1/2 drop of lubricant on the shaft ❹.
- Mount the T-reel ass'y ❷ while meshing it with the relay gear ❺.

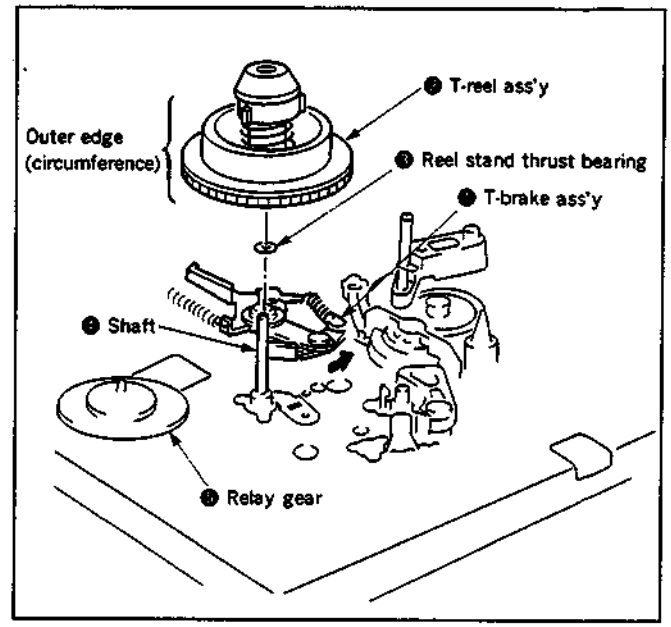


Fig. 3-24.

3-19. PENDULUM ARM ASS'Y (Fig. 3-25)

1) Remove the reel lock release ass'y. (Refer to 3-14.)
2) Remove the washer 2 ❶, then pull out the pendulum arm ass'y ❷.

[Precautions on remounting]

- Fit the boss on the pendulum cap ❸ into the gap in the pendulum slide plate ❹.
- The plastic slider ❺ must be attzched.
- Apply 1/2 drop of lubricant on the shaft ❻.
- Mount the pendulum arm ass'y ❷ by meshing it with the upper limiter gear ❼.

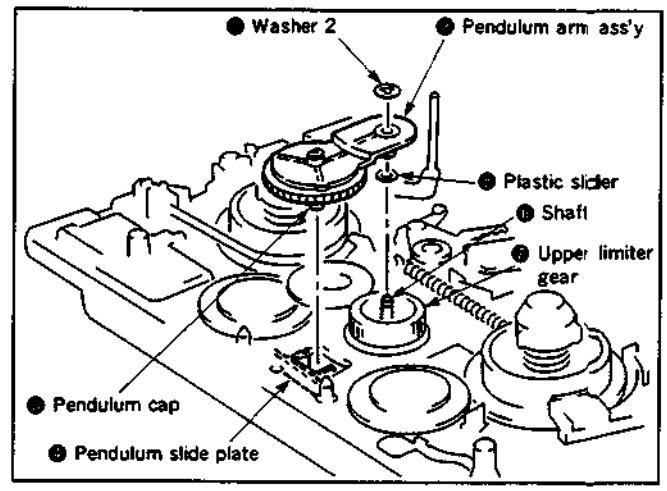


Fig. 3-25.

3-20. RELAY GEAR (Fig. 3-26)

1) Remove the reel lock release and REW gear. (Refer to 3-14.)
2) Remove the S-reel ass'y. (Refer to 3-17.)
3) Remove the T-reel ass'y. (Refer to 3-18).
4) Pull out the two relay gears ❶.

[Precautions on remounting]

- The relay gears ❶ must rotate smoothly after remounting.
- Apply 1/2 drop of lubricant to the respective shafts ❷.

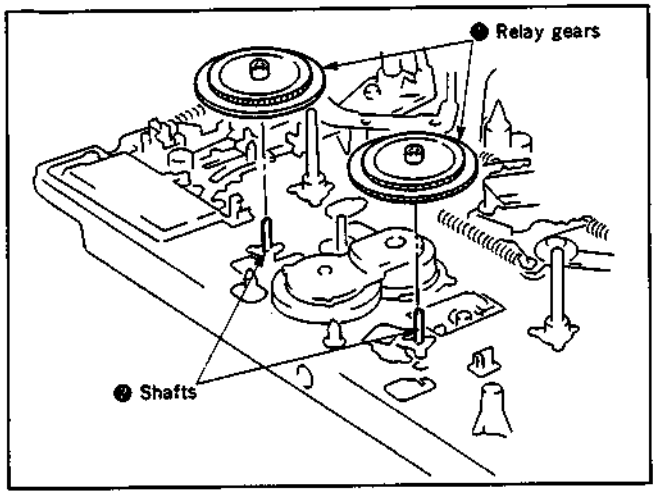


Fig. 3-26.

3-21. ADJUSTER ARM ASS'Y (Fig. 3-27)

1) Remove screw ❶.
2) Remove washer ❻.
3) Remove the end of the spring ❷ hooked to the chassis.
4) Remove the end of the timing belt ❸ from the capstan motor arm ass'y.
5) Disengage the claw ❹, then remove the adjuster arm ass'y.

[Precautions on remounting]

- First mount the adjuster arm ass'y ❺, timing belt ❸ and spring ❷, then attach the washer ❻ and fasten the screw ❶.
- The screw fastening torque must be within 5kg·cm (±1kg·cm).

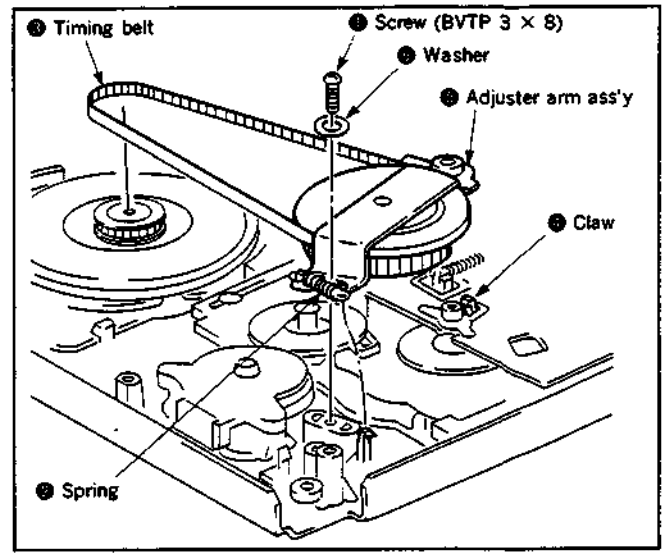


Fig. 3-27.

3-22. CAP BRAKE ASS'Y (Fig. 3-28)

1) Loosen the screw ❶, then push the timing belt ❷ in the direction of the arrow.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage claw ❹, then pull out CAP brake ass'y ❺.

[Precautions on remounting]

- Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

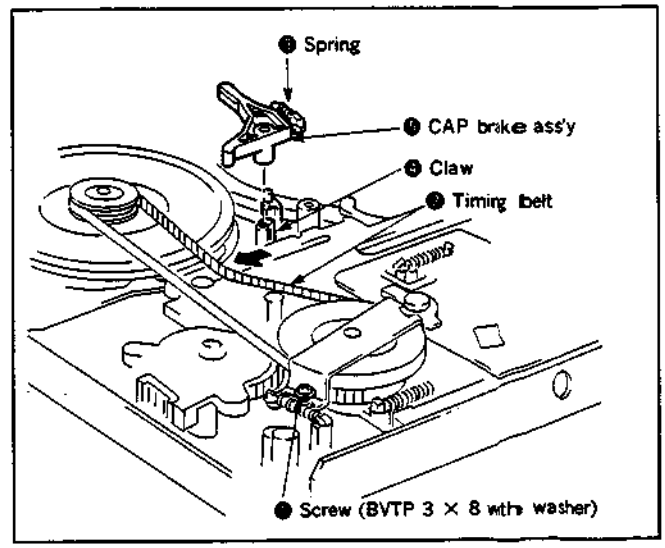


Fig. 3-28.

3-23. CAPSTAN MOTOR (Fig. 3-29)

1) Turn the ACE ass'y ❶ in the direction of arrow Ⓐ as shown in Fig. A below, then remove three screws ❷.
2) Remove screw ❸, then remove the rotor clamp ❹.
3) Turn the CAP brake ass'y ❺ in the direction of arrow Ⓑ, then pull out the capstan motor ❻.

[Precautions on remounting]

- Clean the section of the capstan motor ❻ where the tape is attached.
- Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.
- Of the three screws ❷, first fasten screw A temporarily, then fasten screws B and C firmly, followed by screw A.
- The screw fastening torque must be within 3kg•cm ± 1kg•cm.

[Adjustments after mounting]

- Perform tape path adjustments as described in 4-1.

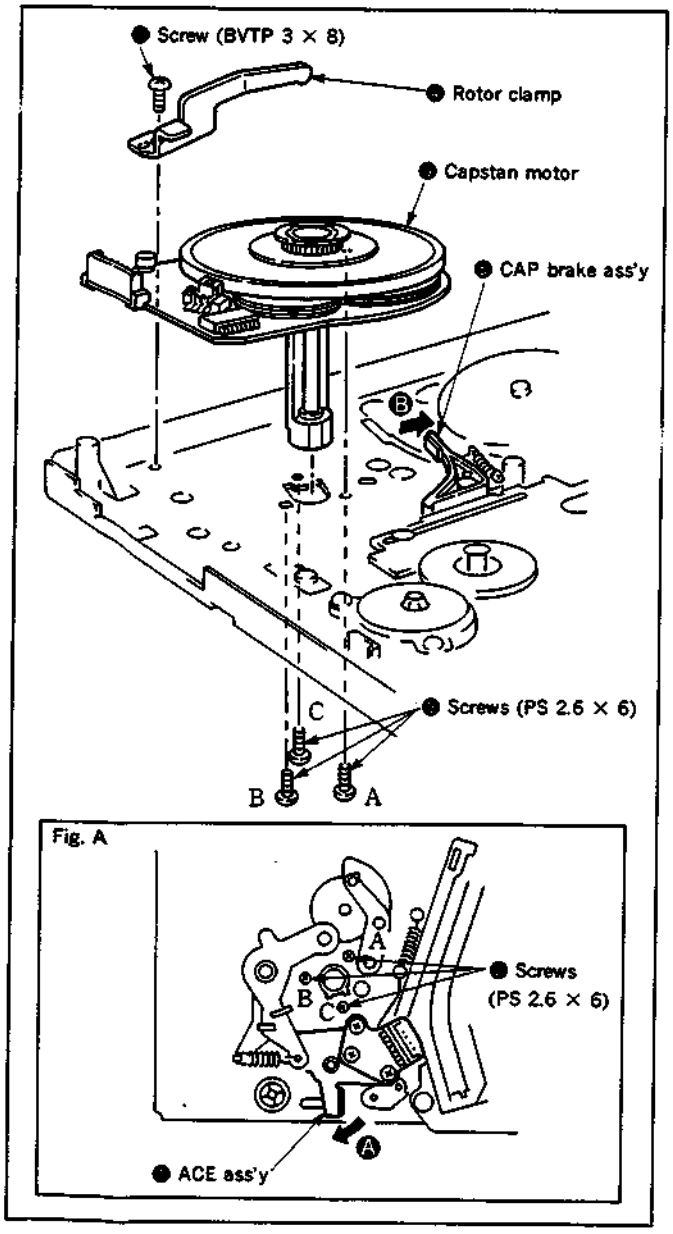


Fig. 3-29.

3-24. ROTARY SWITCH (Fig. 3-30)

1) Remove the adjuster arm ass'y. (Refer to 3-21.)
2) Remove the screws ❶ and ❷, then pull out the rotary switch ❸.

[Precautions on remounting]

- Match up the ● mark on the rotary switch ❸ with the ▲ mark on the RKB cam gear ❶ as shown in Fig. A.
- Match up holes ❻ on the pendulum arm ❺ and the chassis.

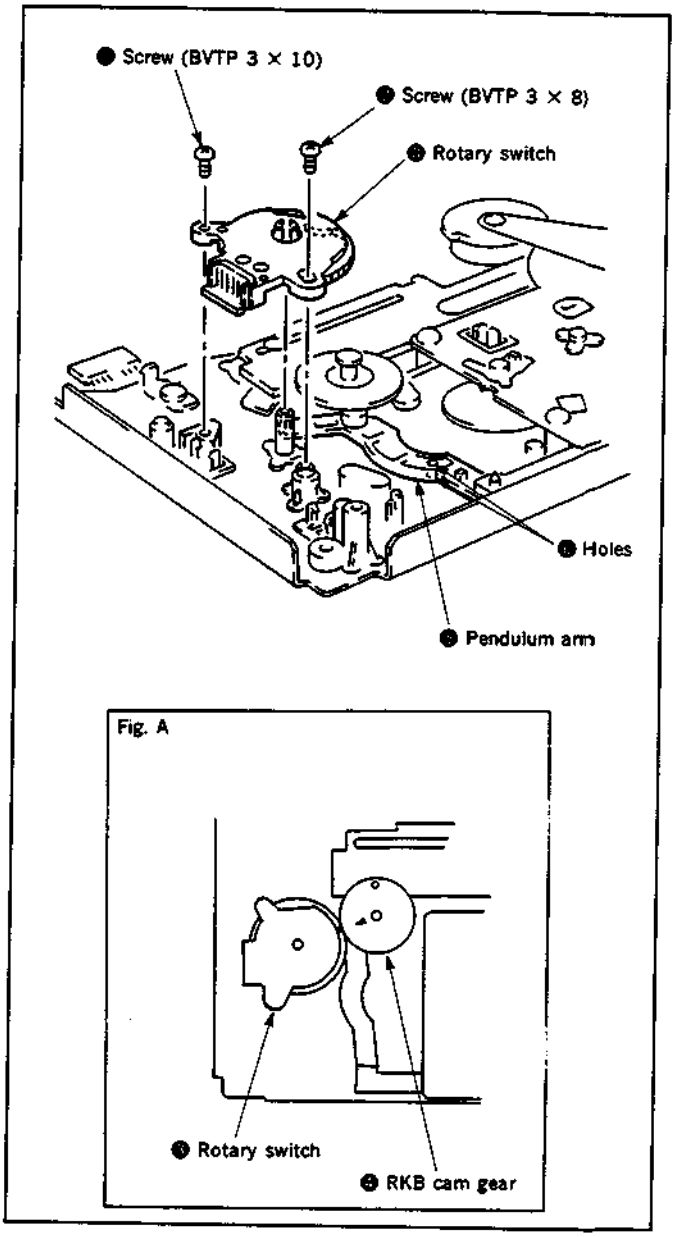


Fig. 3-30.

3-25. RKB CAM GEAR (Fig. 3-31)

1) Remove the adjuster arm ass'y. (Refer to 3-22.)
2) Remove washer 2 ❶, then pull out the RKB cam gear ❷.

[Precautions on remounting]

- When the limiter arm ❸ is pushed in the direction of the arrow, the pin must fit into the notch on the RKB cam gear ❷.
- The ■ mark on rotary switch ❺ must match up with the ◀ mark on the RKB cam gear ❷ as shown in Fig. A.
- Apply 1/2 drop of lubricant to shaft ❻.
- Match up the holes ❹ on the RKB cam gear ❷ and the mode slide plate.

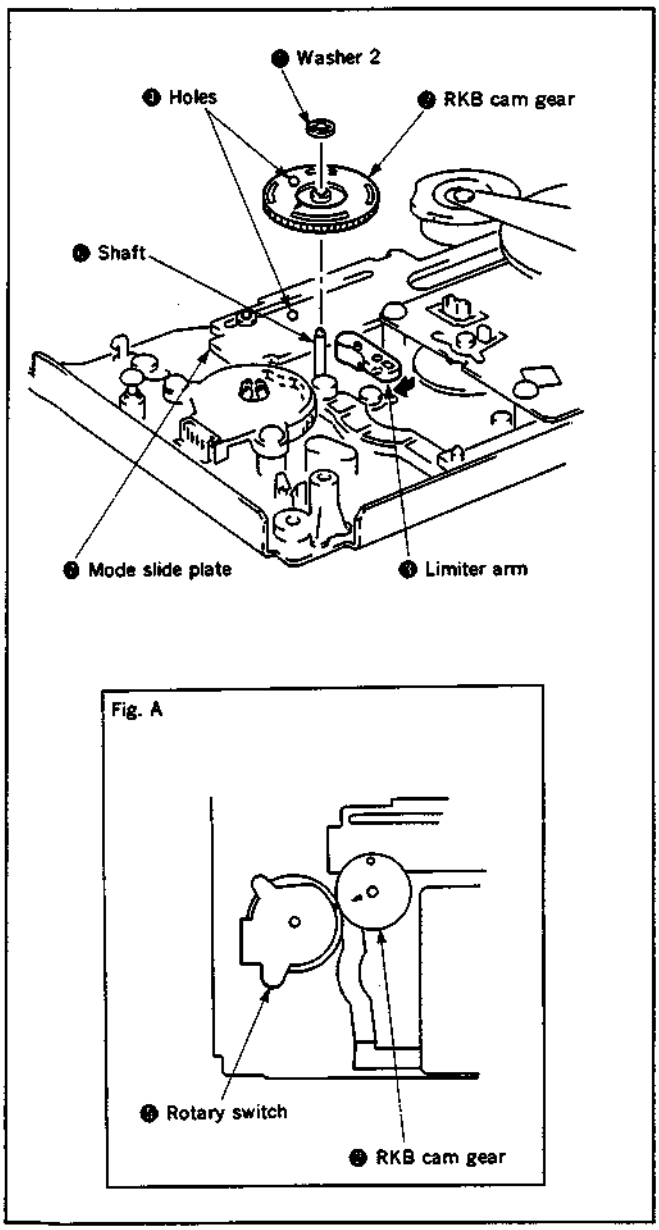


Fig. 3-31.

3-26. SUB-CHASSIS ASS'Y (Fig. 3-32)

1) Remove the reel lock release arm and REW gear. (Refer to 3-15.)
2) Remove the pendulum arm ass'y. (Refer to 3-19.)
3) Remove the adjuster arm ass'y. (Refer to 3-22.)
4) Remove the three screws ❶, then remove sub-chassis ass'y ❷.

[Precautions on remounting]

- The switching arm ❸ must be switched in the direction of the arrow.
- The screws must be fastened in order of a, b and c.
- Mount the sub-chassis carefully so as not to damage the gear.
- The corner edge of the lug terminal ❹ must fit into the gap between the chassis ass'y ❷ and mechanism chassis.

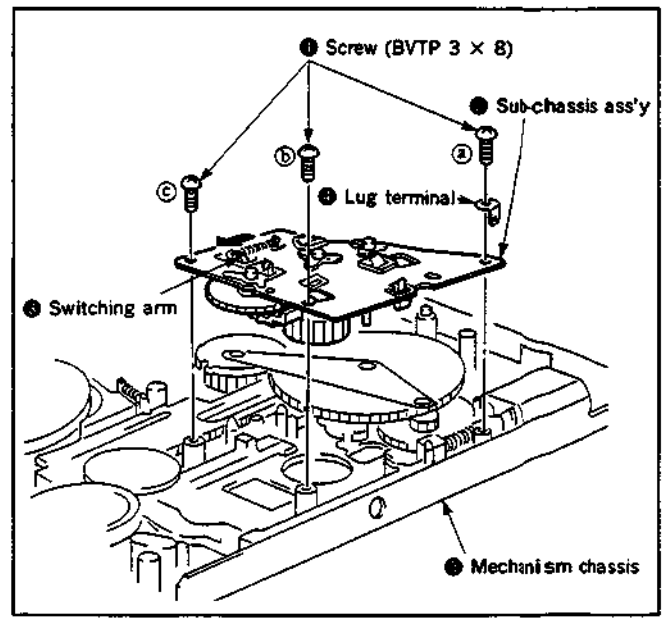


Fig. 3-32.

3-27. PENDULUM SLIDE PLATE, PENDULUM ARM (Fig. 3-33)

1) Remove the rotary switch. (Refer to 3-24.)
2) Remove the RKB cam gear. (Refer to 3-25.)
3) Remove the sub-chassis ass'y. (Refer to 3-26.)
4) Disengage the two claws ❶, then pull out the pendulum slide plate ❷.
5) Unhook the spring ❸.
6) Disengage the claw ❹, then pull out pendulum arm ❺.

[Precautions on remounting]

○ The shaft ❻ must fit into hole ❼.

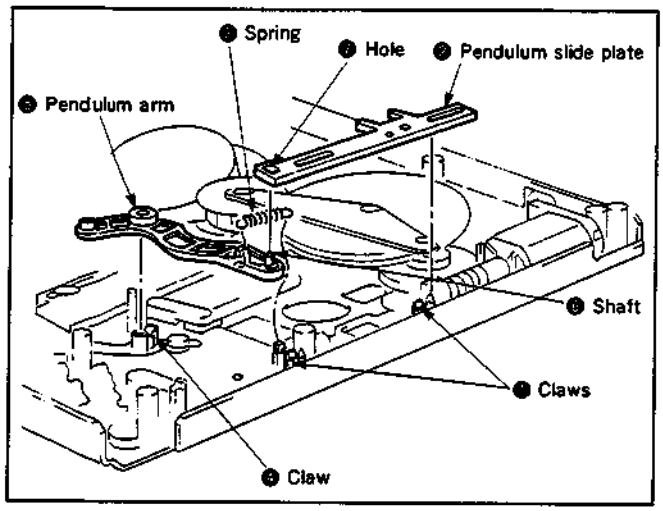


Fig. 3-33.

3-28. THE LIMITER ARM AND LIMITER SLIDE PLATE (Fig. 3-24)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the sub-chassis. (Refer to Fig. 3-26.)
3) Disengage the claw ❶, then pull out the limiter arm ❷.
4) Disengage the two claws ❸, then pull out the limiter slide plate ❹.

[Precautions on remounting]

○ The shaft ❺ must fit into the hole ❻.

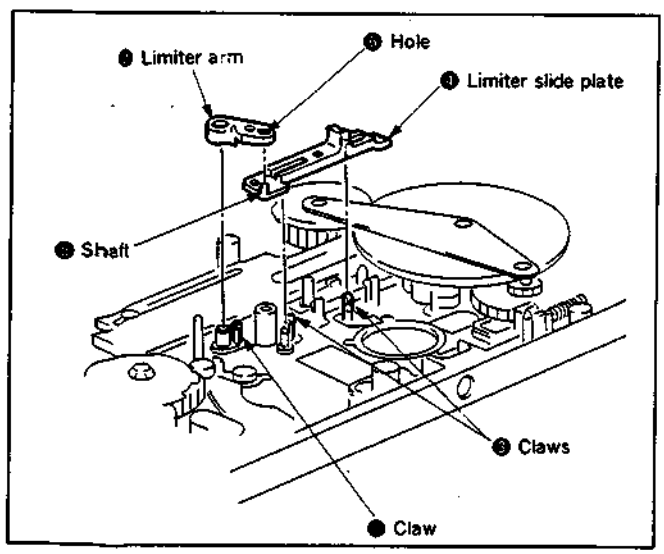


Fig. 3-34.

3-29. CAM MOTOR (Fig. 3-35)

1) Remove the sub- chassis ass'y. (Refer to 3-26.)
2) Disengage the six claws ❶, then remove the cam motor ❷ and worm gear ❸.

[Precautions on remounting]

○ Check the meshing of cam motor ❷ and worm gear ❸.

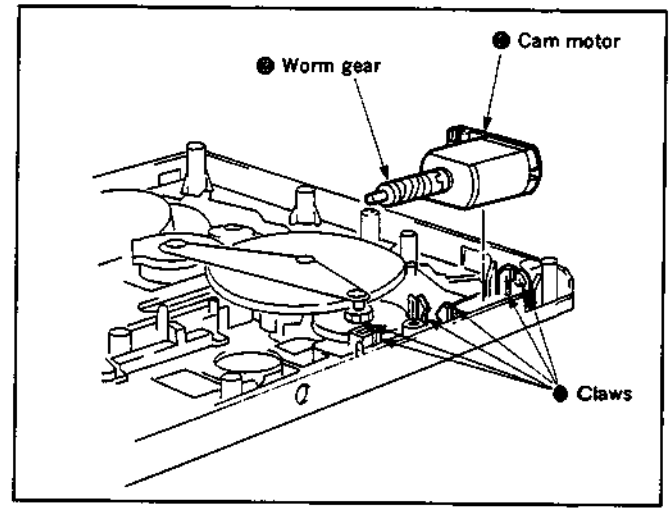


Fig. 3-35.

3-30. CAM GEAR (Fig. 3-36)

1) Remove the three washers 2 ❶, then pull out the cam gear holder ❷.
2) Pull out the cam gear ❸.

[Precautions on remounting]

○ Match up the right loading gear ass'y, the tension regulator arm, the S take-up arm, the work wheel, the brake arm and the mode slide plate with respective holes ❹ to ❾ on the chassis in that order.
○ Match up the hole ❿ on the mode slide plate with the hole ⓫ in cam gear ❸.
○ Apply 1/2 drop of lubricant to the shaft ⓫.

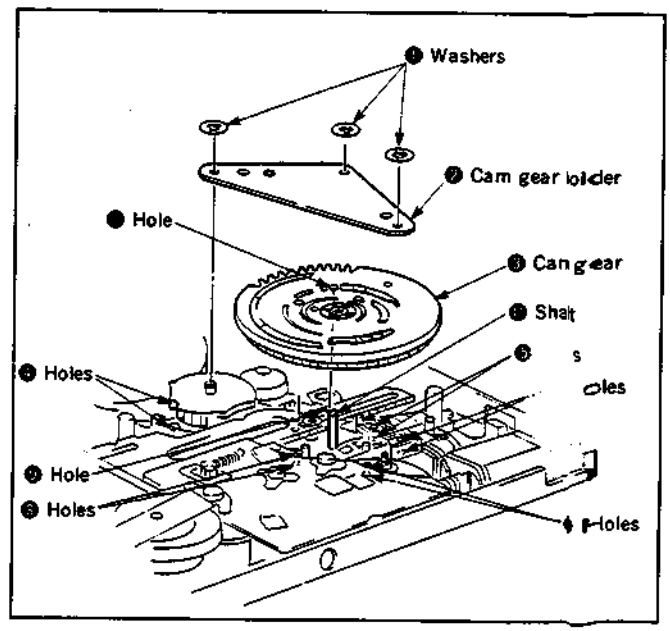


Fig. 3-36.

3-31. TENSION REGULATOR ARM, S TAKE-UP ARM (Fig. 3-37)

1) Remove the cam gear. (Refer to 3-30)
2) Disengage the claw ❶, then remove the tension regulator arm ❷.
3) Remove the end of the spring ❸ from the S take-up arm ❹.
4) Disengage the claw ❺, then pull out S take-up arm ❹.

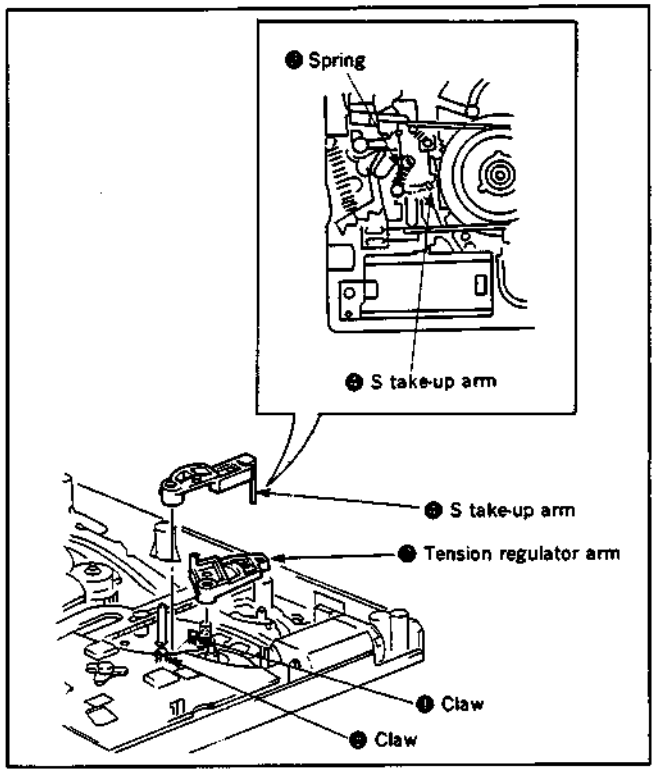


Fig. 3-37.

3-32. MODE SLIDE PLATE, RVS RELAY GEAR (Fig. 3-38)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the cam gear. (Refer to 3-30.)
3) Remove the two washers 2 ❶.
4) Turn the CAP brake ❷ in the direction of the arrow, then pull out mode slide plate ❸.
5) Pull out the RVS relay gear ❹.

[Precautions on remounting]

- Match up the hole ❺ on the RVS relay gear ❹ with hole ❺ in the chassis.
- Match up the holes ❻ on the mode slide plate ❸ with holes ❻ in the chassis.
- Apply 1/2 drop of lubricant to the shaft ❼.

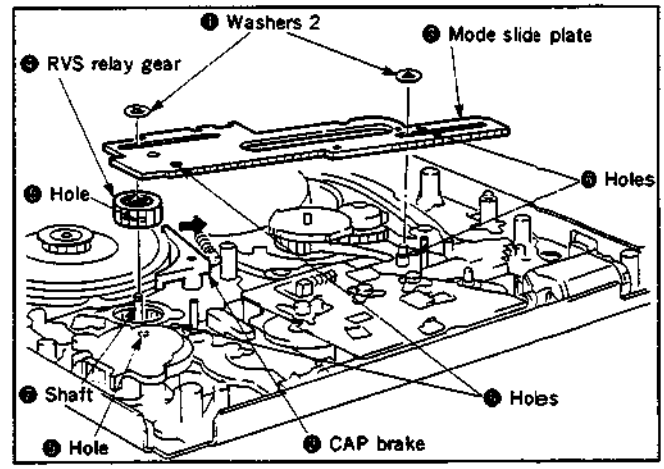


Fig. 3-38.

3-33. BRAKE ARM, BRAKE SLIDE PLATE (Fig. 3-39)

1) Remove the sub-chassis. (Refer to 3-26.)
2) Remove the cam gear. (Refer to 3-30.)
3) Disengage the claw ❶, then pull out the brake arm ❷.
4) Disengage the two claws ❸, then pull out the brake slide plate ❹.

[Precautions on remounting]

- Insert the shaft ❺ into hole ❻.

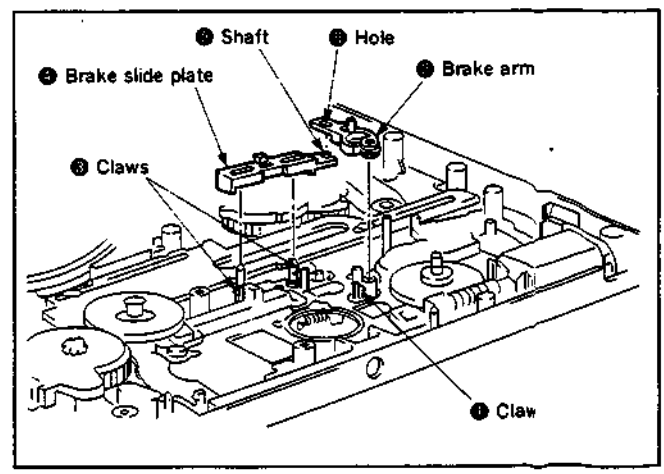


Fig. 3-39.

3-34. RIGHT SHUTTLE, RIGHT LOADING GEAR ASSY'S (Fig. 3-40)

1) Remove the mode slide plate. (Refer to 3-32.)
2) Remove the plastic slider ❶, then pull out the right shuttle ass'y ❷.
3) Pull out the right loading gear ass'y ❸.

[Precautions on remounting]

- ○ Match up the ▲ mark on the right loading gear ass'y ❸ with the ▲ mark on the left loading gear ass'y ❹ as shown in Fig. A below.
- ○ Apply 1/2 drop of lubricant to the shaft ❺.
- ○ Do not hold on to the arm when pressing on the right loading gear ❸.
- ○ Clean the section of the right shuttle ass'y ❷ where the tape is attached.

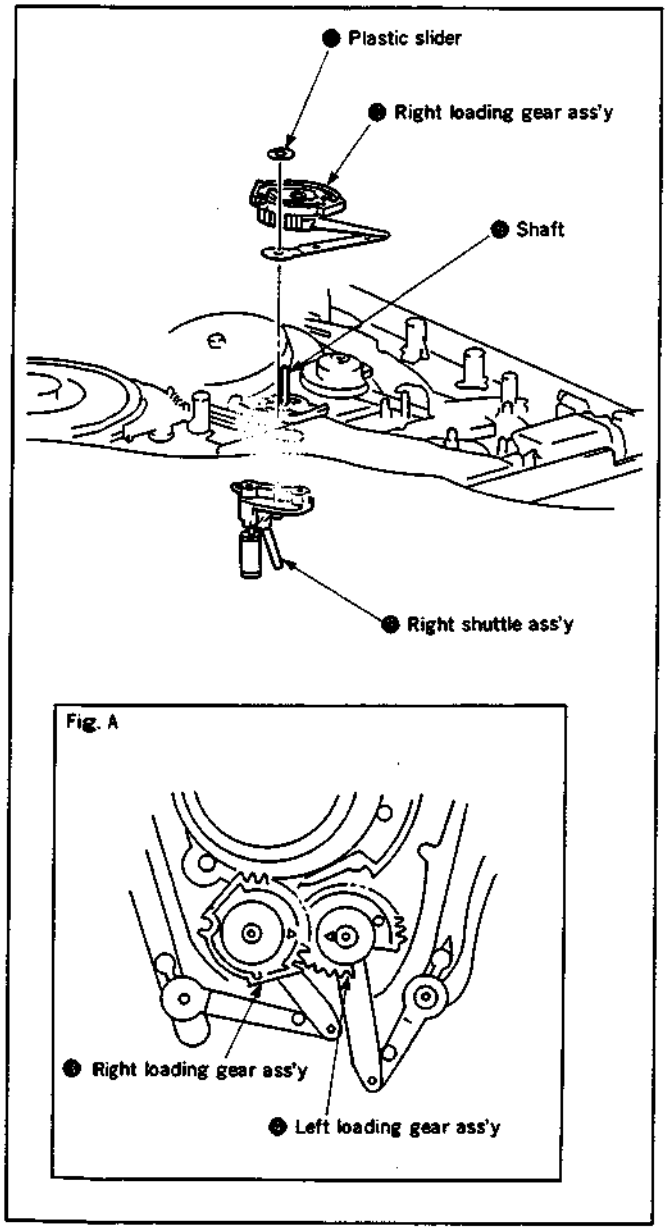


Fig. 3-40.

3-35. LEFT SHUTTLE ASS'Y, LEFT LOADING GEAR ASS'Y (Fig. 3-41)

1) Remove the right shuttle ass'y and right loading gear ass'y. (Refer to 3-34.)
2) Remove the plastic slider ❶, then pull out the left shuttle ass'y ❷.
3) Remove washer 2 ❸, then pull out the left loading gear ass'y ❹.

[Precautions on remounting]

- ○ Apply 1/2 drop of lubricant to shaft ❺.
- ○ The tension regulator arm ass'y ❻ and left shuttle ass'y ❷ must be positioned as shown in Fig. A below.
- ○ Do not hold on to the arm of the left loading gear ass'y ❹ when the left loading gear ass'y ❹ is pressed.
- ○ Clean the section of the felt shuttle ass'y ❷ where the tape is attached.

[Adjustments after replacement]

- ○ Perform tape path adjustments as described in 4-1.

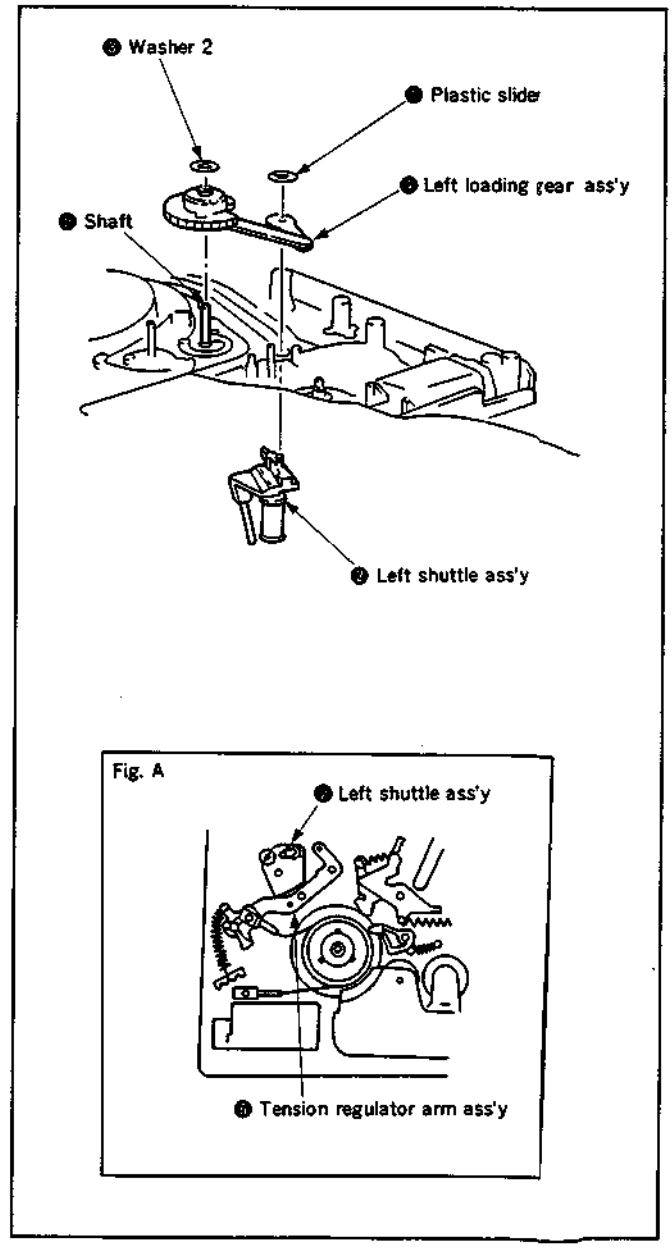


Fig. 3-41.

3-36. C-ROLLER ARM ASS'Y, C-ROLLER RELEASE LEVER (Fig. 3-42)

1) Disengage the claw ❶, then pull out the C-roller arm ass'y ❷.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage the two claws ❹, then pull out the C-roller release lever ❺.

[Precautions on remounting]

○ Mount C-roller arm ass'y ❷ so that the hole ❻ on the C-roller arm ass'y ❷ fits into the boss ❼ on the C-roller release lever ❺.

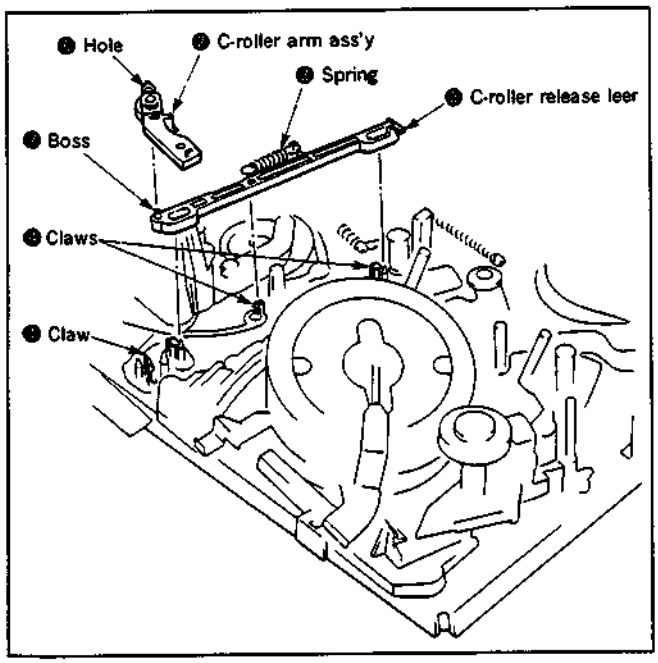


Fig. 3-42.

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads. Each component part of the tape transport system, particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted. when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. Tension regulator position/tension adjustment (Fig. 4-1.)

Purpose: Stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

- **Position adjustment**

Mode	Threading is completed without a cassette loaded. (Refer to section 1-2.)
Adjustment locations	Tension band holder

[Adjustment method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the VTR unit to playback, then turn the tension band adjuster lever so that the gap between guide No. 0 and tension arm is within 4.5±0.4mm. *(Set the unit to playback without a cassette loaded.)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

- **Tension adjustment**

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specification	28 to 34 g•cm

[Adjustment method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

Note: Move the spring to the tension spring hook position and recheck the tension arm position. If the arm position is misaligned, adjust the position and tension of the tension arm.

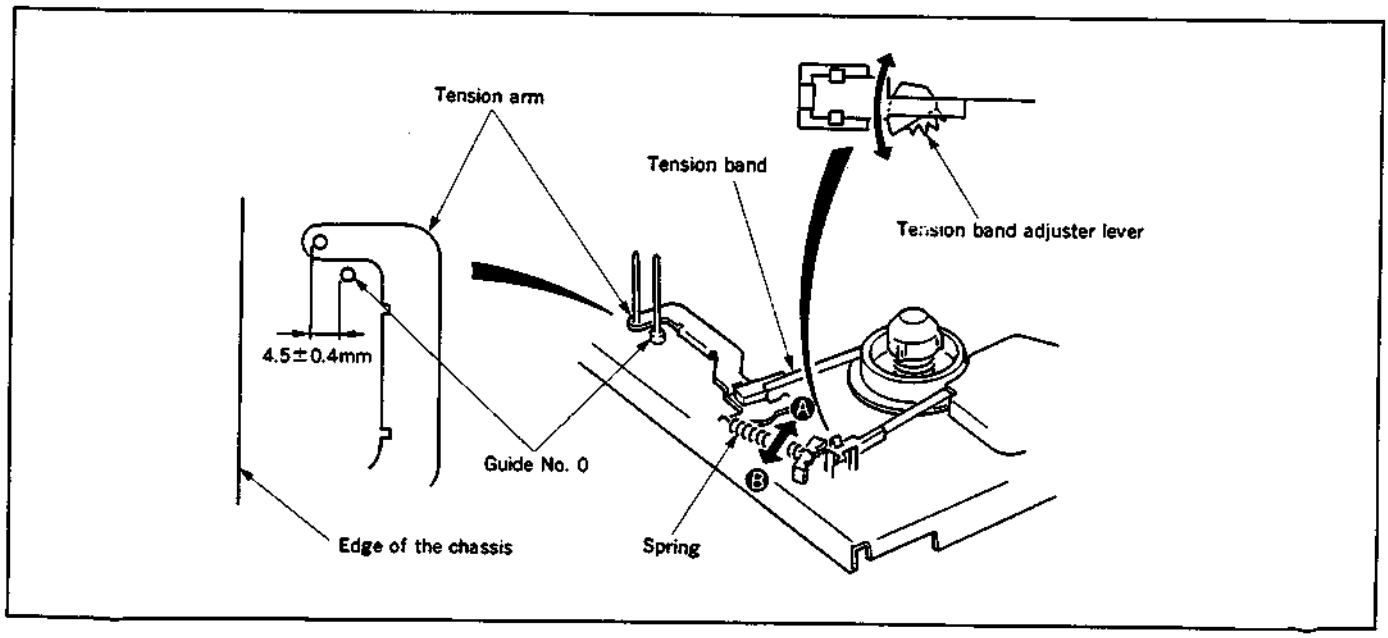


Fig. 4-1.

4-1-2. Height adjustment of the guide roller No. 2 (Fig. 4-2)

Mode	Playback
Tool	Blank tape
Adjustment locations	Guide roller height adjuster screw

[Adjustment method]

1) Load a new tape in the unit, then play it back.
2) Make sure that the lower flange of guide roller No. 2 does not curl up.
3) When the tape curls up : Turn the guide roller adjuster screw clockwise.
   When the tape does not fit into the lower flange : Turn the guide roller adjuster screw counter-clockwise.
4) After the above check, separate the tension arm from the tape, then re-attach it slowly. At this time, check if the tape curls up at the lower flange of the guide roller No. 2 and if the curl disappears within 2 seconds.
5) If curl does not disappear in two seconds : Turn the adjuster screw clockwise.
   If the tape does not curl up : Turn the adjuster screw counter-clockwise.

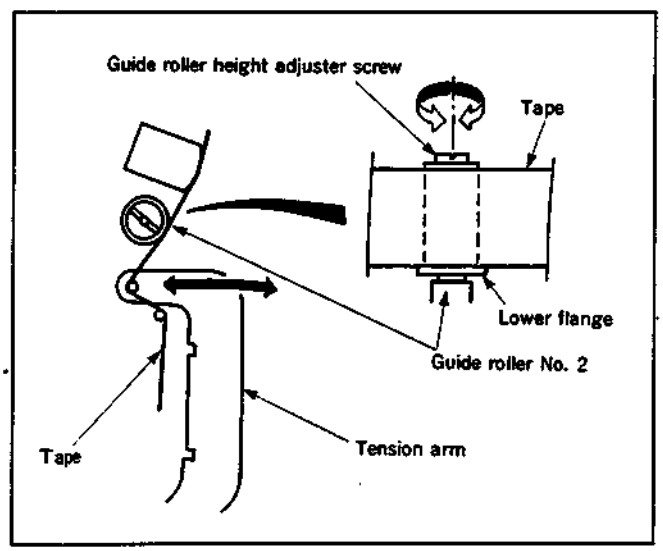


Fig. 4-2.

4-1-3. Height adjustment of guide roller No. 7 and the RVS arm (Fig. 4-3.)

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut

[Adjustment method]

1) Load the tape into the VTR and play it back, then adjust the height of the guide roller No. 7 so that the tape runs along the lower flange of guide roller No. 7.
2) If the guide roller is too low : Turn the height adjuster nut counter-clockwise.
   If the guide roller is too high : Turn the height adjuster nut clockwise.
3) Run the tape in REV, then adjust the height of the RVS arm so that the tape runs along guide roller No. 7.
4) If the tape gets caught in the upper flange of guide roller No. 7 : Turn the RVS arm height adjuster nut clockwise.
5) If the tape catches on the lower flange of guide roller No. 7 : Turn the RVS arm height adjuster nut counter-clockwise.

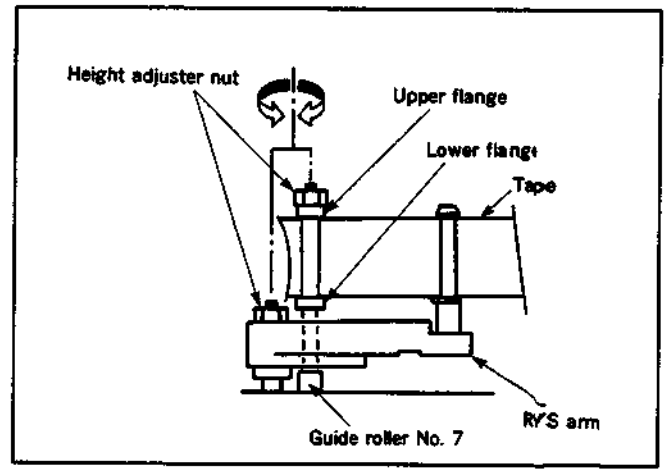


Fig. 4-3.

4-1-4. Height adjustment of guide rollers No. 3 and No. 6 (Fig. 4-4)

Mode	Playback
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw.

[Adjustment method]

1) Tracking (playback) : Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
   (If adjustment is made after the drum is replaced, the tracking must be set at the max. Rf output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

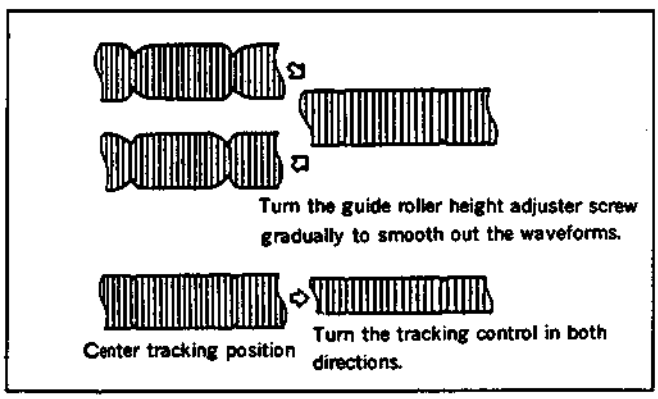


Fig. 4-4.

4-1-5. ACE head ass'y adjustment (rough adjustment) (Figs. 4-5 and 4-6)

Purpose : Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, tilt adjuster screw

[Adjustment method]

1) Mount the ACE head ass'y. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or raise up noticeably near the ACE head.
4) If the yape curls up or rarises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
   (The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

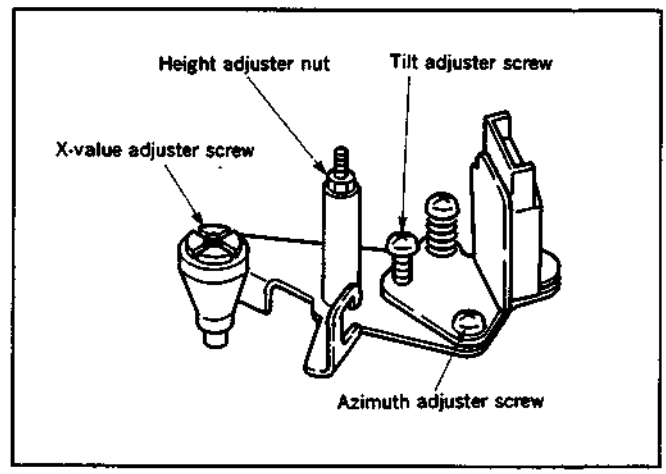


Fig. 4-5.

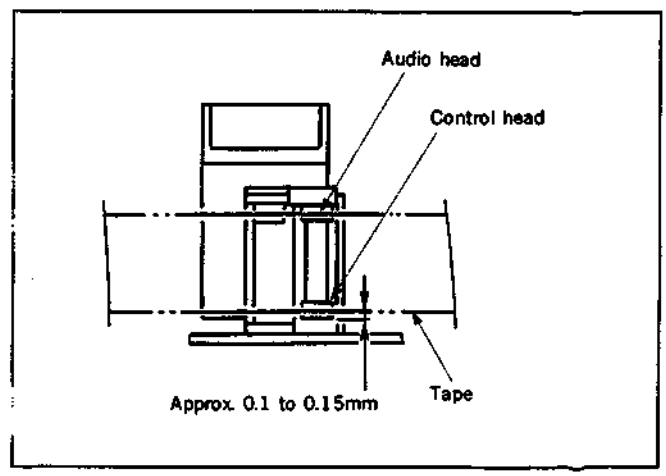


Fig. 4-6.

4-1-6. ACE head assembly adjustment (precision adjustment)

Mode	Playback
Signal	Alignment tape (JVC-MH-1 1KHz)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw Height adjuster nut Tilt adjuster screw

[Adjustment method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or raise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

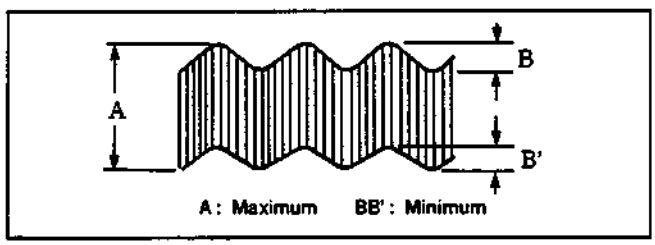


Fig. 4-7.

4-1-7. X-value adjustment

Purpose : To obtain compatibility with other VTR.

Precaution : Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playbadk
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz), alignment tape (JVC-MH-1)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check. (Check with the CHA head)
Adjustment locations	X-value adjuster screw

[Adjustment method]

- **Adjustment by Hi-Fi alignment tape**
  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

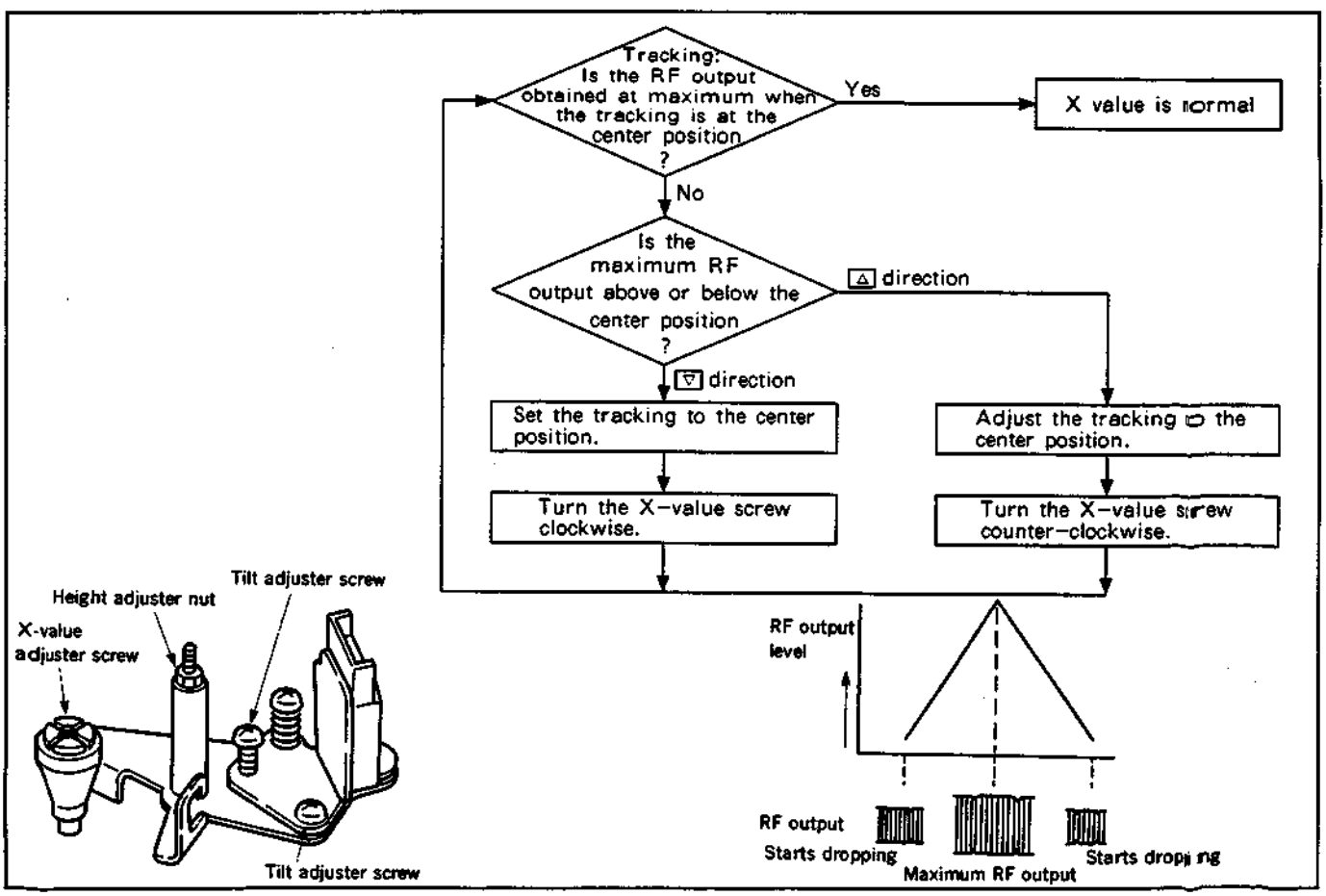


Fig. 4-8.

● **Adjustment by Alignment tape (JVC-MH-1)**

Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

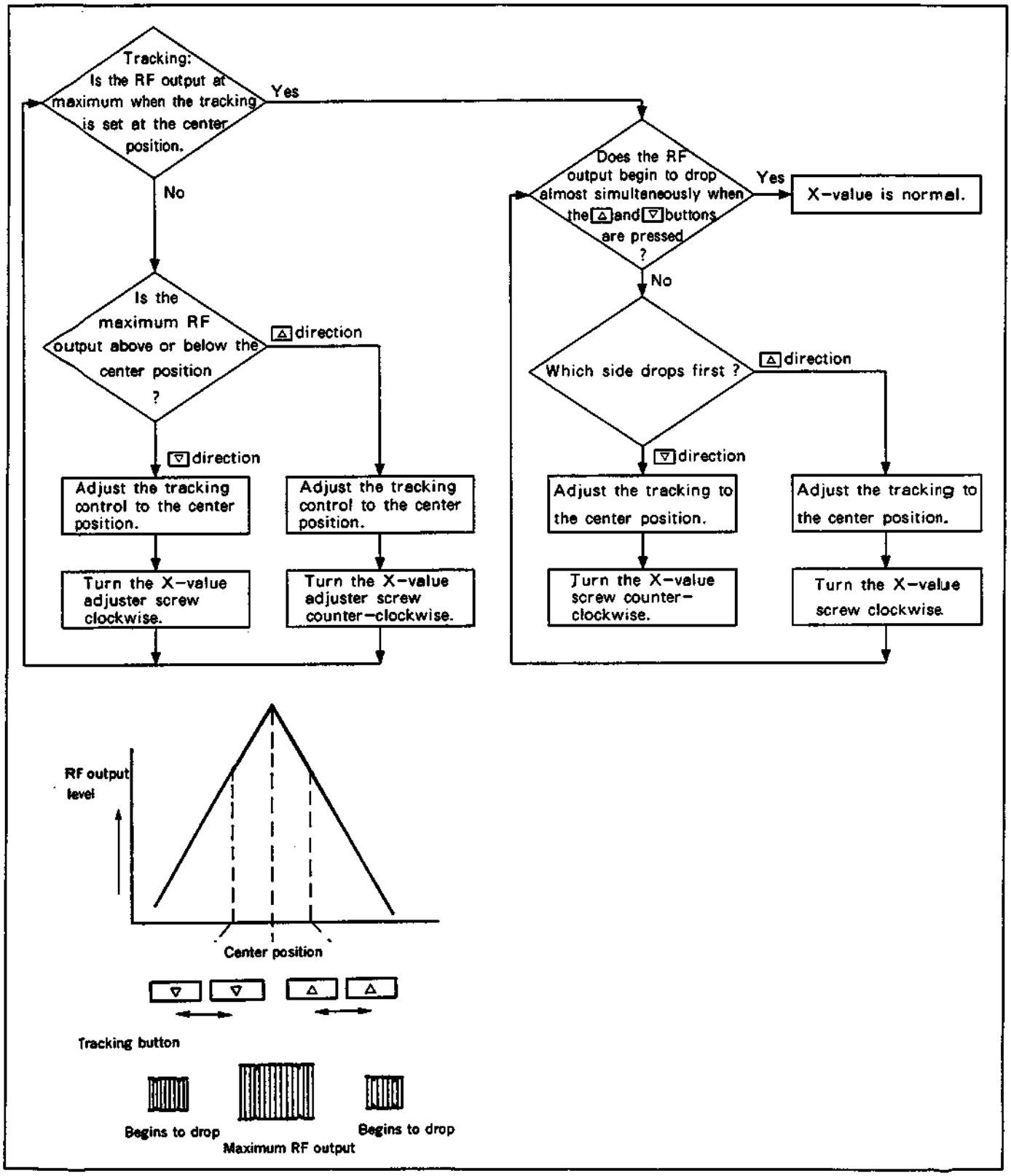


Fig. 4-9.

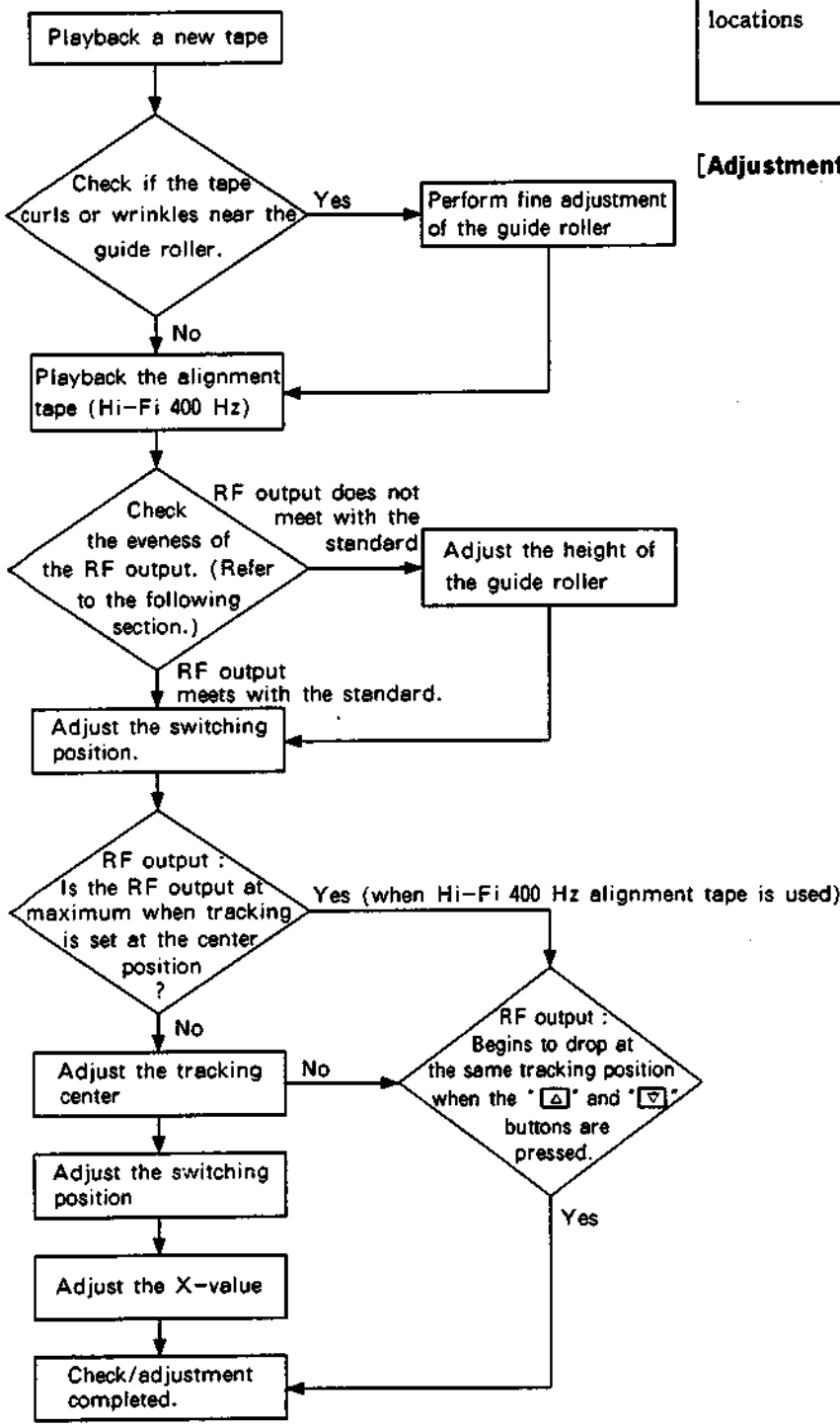
4-1-8. Adjustments after replacing the drum (video head)

Purpose : Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution : Turn off the auto tracking and set the manual tracking mode.

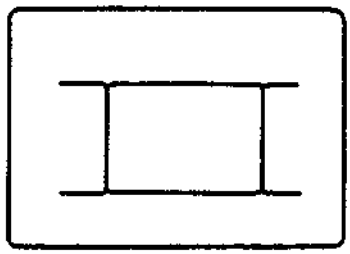
Mode	Playback
Signal	Alignment tape (JVC-MH-1), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-5.) Switching position, Tracking preset, SP delay mono-multi, X-value (refer to 4-1-8) } (Refer to the Service Guide)

[Adjustment method]

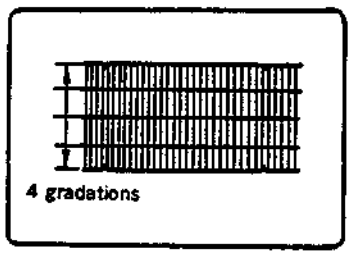


[Checking the eveness and fluctuation of the RF output]

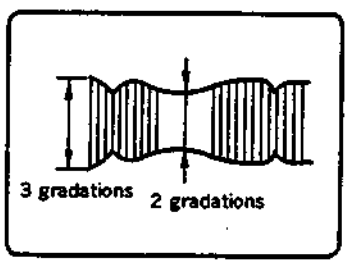
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-9. Checking the tension and torque

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adapter

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170g•cm or more
Review torque	Review	Supply reel	180±30g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	80 to 140g•cm (using torque cassette)
Back tension torque	Rewind	Take-up reel	4 to 25 g•cm

[Check method]
Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

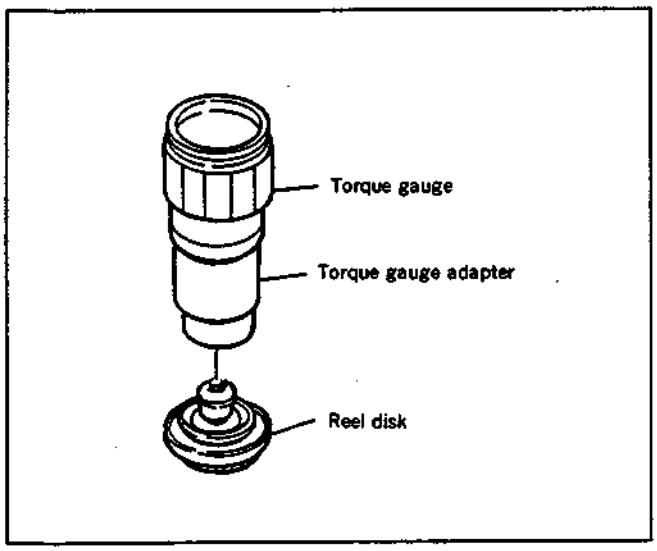


Fig. 4-13.

9-972-816-11

Sony Corporation
Home Video Group

English
89104-89-1

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Published by A/V Engineering Service Dept.

Printed by: Schaltungsdienst Lange, Berlin (GERMANY)