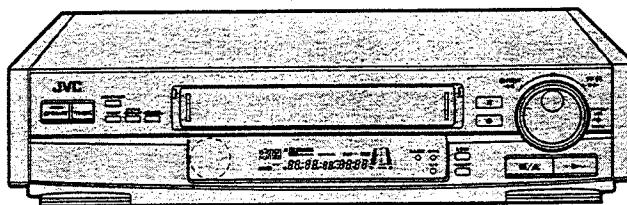


JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S7000EK



VIDEO *Plus+*

Hi-Fi **S VHS**

625

SPECIFICATIONS

GENERAL

Power requirement : AC 220 – 240 V~, 50/60 Hz
Power consumption : 28 W
Temperature
 Operating : 5°C to 40°C
 Storage : -20°C to 60°C
Operating position : Horizontal only
Dimensions (WxHxD) : 426 x 94 x 341 mm
Weight : 4.5 kg
Format : S-VHS/VHS PAL standard with Hi-Fi audio
Maximum recording time
 (SP) : 240 min. with E-240 video cassette
 (LP) : 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording/Playback system : DA4 (Double Azimuth) head helical scan system
Signal-to-noise ratio : 45 dB
Horizontal resolution : 250 lines (VHS)
 400 lines (S-VHS)
Frequency range : 70 Hz to 10,000 Hz (Normal audio)
 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output : 21-pin scart connector x 2 (IN/OUT x 1 IN x 1)
 RCA connectors
 (VIDEO IN x 1, AUDIO IN x 2, AUDIO OUT x 1)
 S connectors (IN x 1, OUT x 1)

TUNER/TIMER

TV channel storage capacity : 80 positions (+AUX position "AU")
Tuning system : Frequency synthesized tuner
Channel coverage : UHF channels 21 – 69
 (470 – 862 MHz)
 UHF channel 36
 (Adjustable 32 – 40)
Aerial output : UHF channel 36
Memory backup time : Approx. 3 min.

ACCESSORIES

Provided accessories : RF cable,
 Infrared remote control unit,
 "R03" battery x 2,
 Audio cable,
 S-Video cable

*Specifications shown are for SP mode unless otherwise specified.
E. & O.E. Design and specifications subject to change without notice.*

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Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by (⚠) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and may create shock , fire , or other hazards .
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage .

INSTRUCTIONS

Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT

Connection to the mains supply in the United Kingdom.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain a proper safety approved extension lead/adaptor or consult your dealer.

BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.

If nonetheless the mains plug is cut off remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not supplied fitted with a mains plug then follow the instructions given below:

DO NOT make any connection to the Larger Terminal coded E or Green.

The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows:

Blue wire to terminal coded N (Neutral) or coloured Black.

Brown wire to terminal coded L (Live) or coloured Red.

If in doubt — consult a competent electrician.

CAUTION

■ When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the mains outlet.

■ Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the mains outlet prior to connecting or disconnecting any signal lead or aerial.

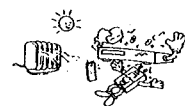
IMPORTANT

■ Please read the various precautions on p. 2 – 3 of this instruction manual before installing or operating the recorder.

■ It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

The **OPERATE** button does not completely shut off mains power from the unit, but switches operating current on and off.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.



Avoid extreme heat and direct sunlight



Avoid dust



Avoid extreme cold



Avoid places subject to vibrations



Avoid extreme humidity



Avoid strong magnetic fields

Some Do's And Dont's On The Safe Use Of Equipment

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operating instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and **NEVER** fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL

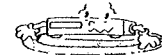
— **NEVER** let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;

— **NEVER** guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

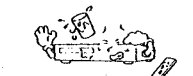
Please follow these safety precautions. Not doing so may result in damage to the recorder, remote control, or video cassette.



Do not place anything heavy on the recorder or remote control



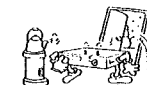
Do not place the recorder on cushions, pillows, or thick carpeting



Do not place anything which might spill on top of the recorder or remote control

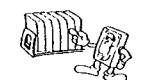


Use the recorder in a stable, horizontal position only



Beware of moisture condensation

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions — just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder's power turned on for a few hours to let the moisture dry.



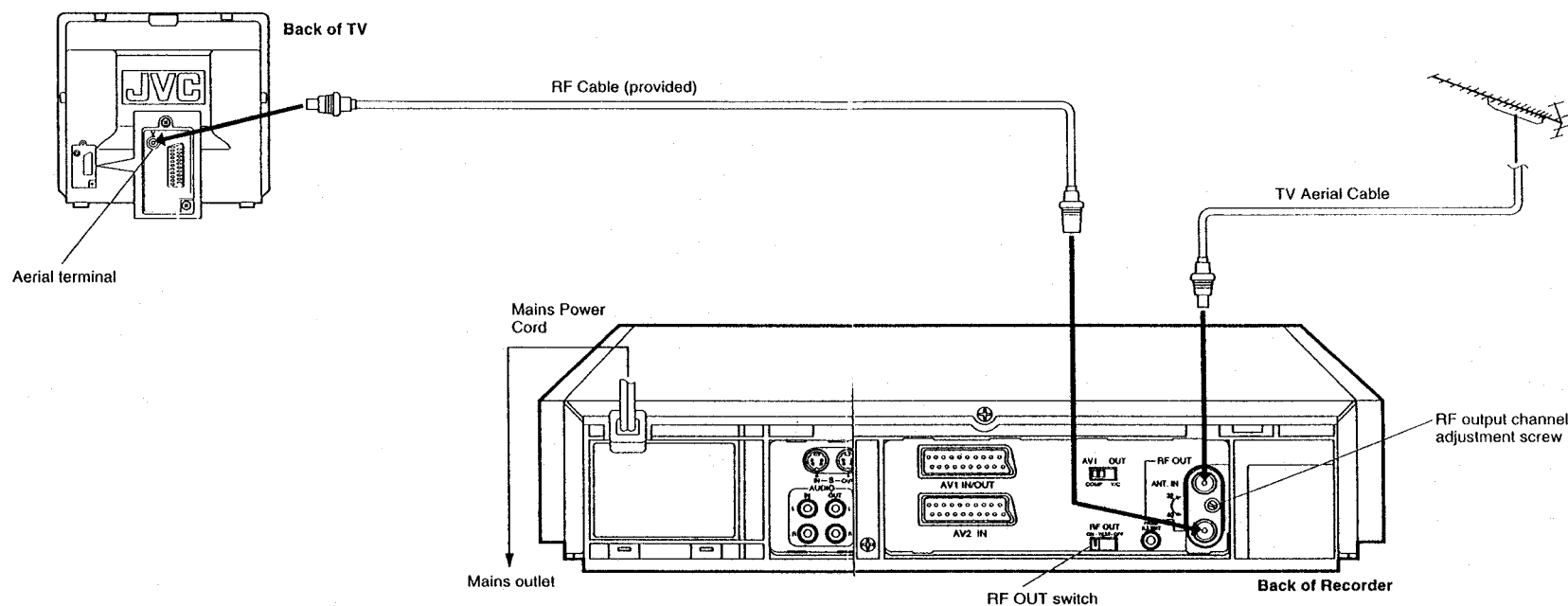
Place cassettes in cassette cases and store vertically

When transporting

■ Be sure to remove cassette from recorder before packing
■ Avoid violent shocks to the recorder during packing and transport

Installation

It's essential that your video recorder be properly connected. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.



RECORDER-TO-TV CONNECTION

RF CONNECTION

For TV sets without AV input terminals:

- 1 Connect the TV aerial cable to the recorder.
- 2 Connect the recorder with the provided RF cable to the TV's aerial terminal.

CONNECT RECORDER TO MAINS

- 1 Plug the end of the mains power cord into mains outlet.

TUNE THE TV TO YOUR VIDEO RECORDER

The video recorder sends picture and sound signals via the RF connecting cable to your TV on UHF channel 36.

TEST SIGNAL

- 1 Turn on the recorder.
- 2 Set the RF OUT switch to TEST.
- 3 Set your TV to the video preset. Tune the TV to bring the two vertical white bars on the screen most clearly. (UHF/CH 36)



- Your TV should be set to the preset designated for use with a video recorder or to a spare preset if there is not a specified video preset on your TV.
- 4 Reset the RF OUT switch to ON.

NOTE:

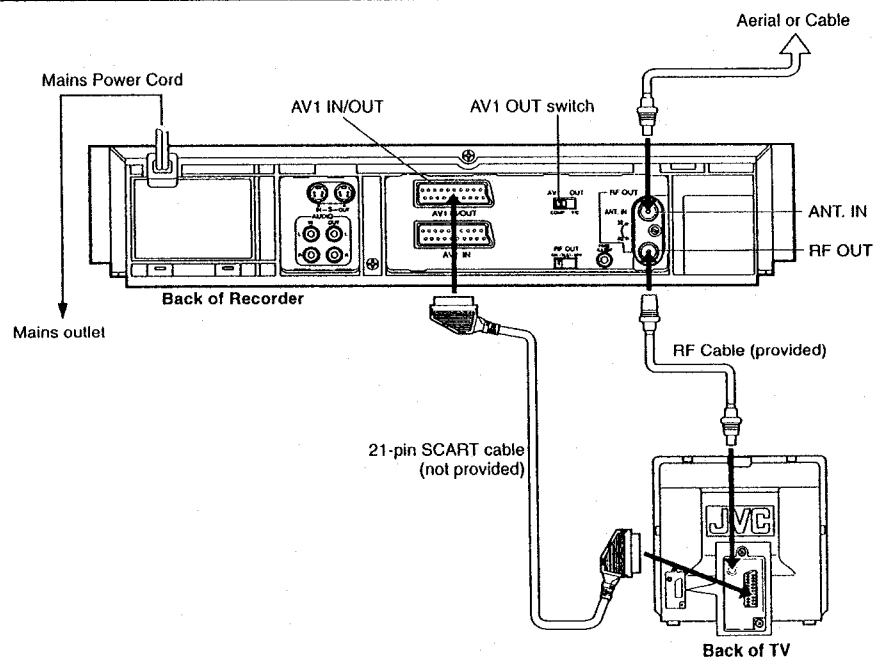
If some interference noise is continually seen on the screen, consult your JVC dealer.

IMPORTANT:

To operate the recorder with your TV using the RF connection, it is always necessary to set your TV's preset to the VIDEO preset. With an AV connection, set the TV to the VIDEO (or AV) mode.

Installation (cont'd)

AV CONNECTION



For TV sets with AV input terminals:

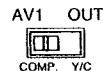
- 1 Connect the aerial, recorder and TV as per "RF CONNECTION".
- 2 Connect the recorder with an optional SCART cable to the TV's 21-pin SCART connector.
- 3 Set the RF OUT switch to OFF.

IMPORTANT:

- Set your TV to the VIDEO (or AV), Y/C, or RGB mode according to the type of your TV's SCART connector.
- For switching the TV's mode, refer to the instruction manual of your television.

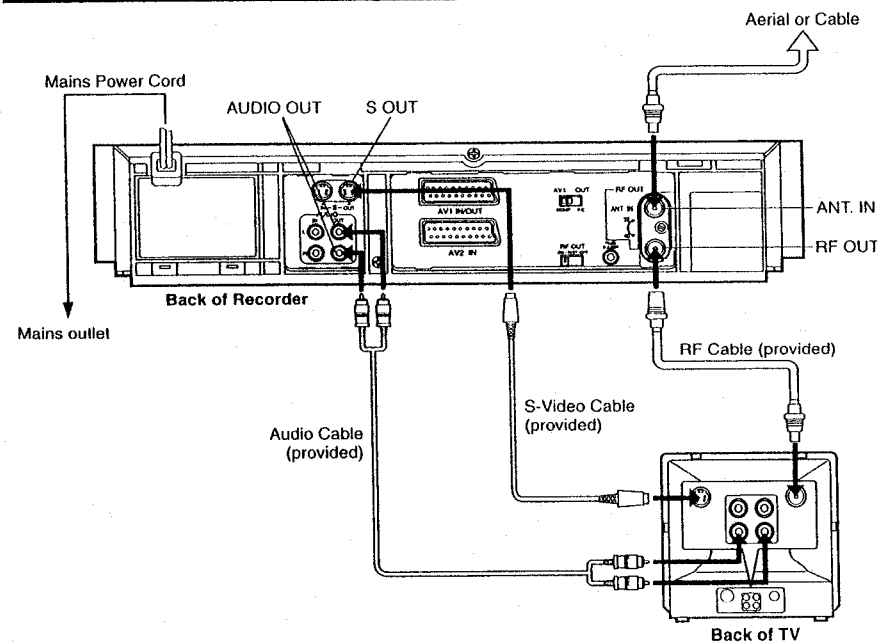
NOTES:

The AV1 IN/OUT connector accepts only a composite signal (regular video signal), but can deliver either a composite video signal or a Y/C signal (a signal in which the luminance and chrominance signals are separated) according to the setting of the rear panel AV1 OUT switch.



- If your TV's SCART connector is compatible only with the regular video signal, set this switch to COMP.
- If your TV's SCART connector is compatible with the Y/C signal, set this switch to Y/C. You will better enjoy high-quality S-VHS pictures.
- If your TV's SCART connector is RGB-compatible, connect the KM-V7EG RGB Signal Converter (optional) between the AV1 IN/OUT connector and the TV's SCART connector, and set this switch to Y/C. The Y/C signal will be converted into an RGB signal for reproduction of high-quality S-VHS pictures.

S-VIDEO CONNECTION



For TV sets with an S-VIDEO input terminal:

- 1 Connect the aerial, recorder and TV as per "RF CONNECTION".
- 2 Connect the recorder's S OUT terminal to the TV's S-VIDEO IN terminal.
- 3 Connect the recorder's AUDIO OUT terminals to the TV's AUDIO IN terminals.
- 4 Set the RF OUT switch to OFF.

IMPORTANT:

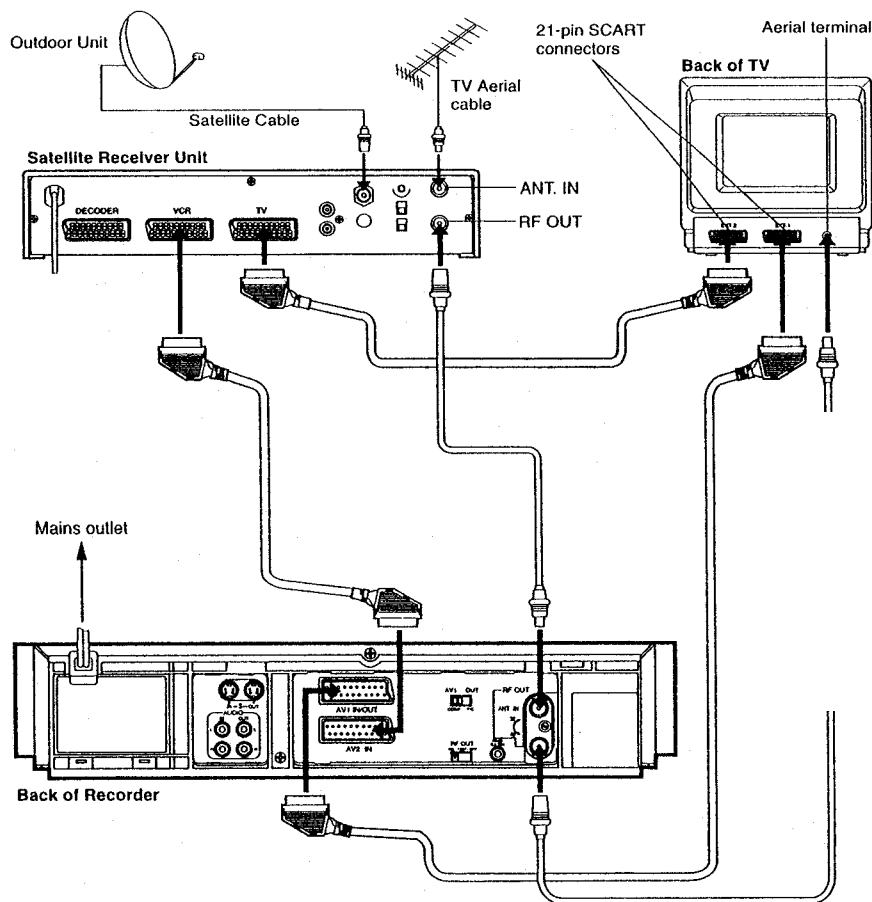
- Set your TV to the VIDEO (or AV) mode. The S-VIDEO connection has priority over AV connection.

NOTES:

- To make the most of Super VHS picture performance, we recommend you use the S-VIDEO connection.
- To operate the recorder with your TV using the S-VIDEO connection, set your TV to the VIDEO (or AV mode).
- If your television is not stereo-capable, use the recorder's AUDIO OUT connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction.

Installation (cont'd)

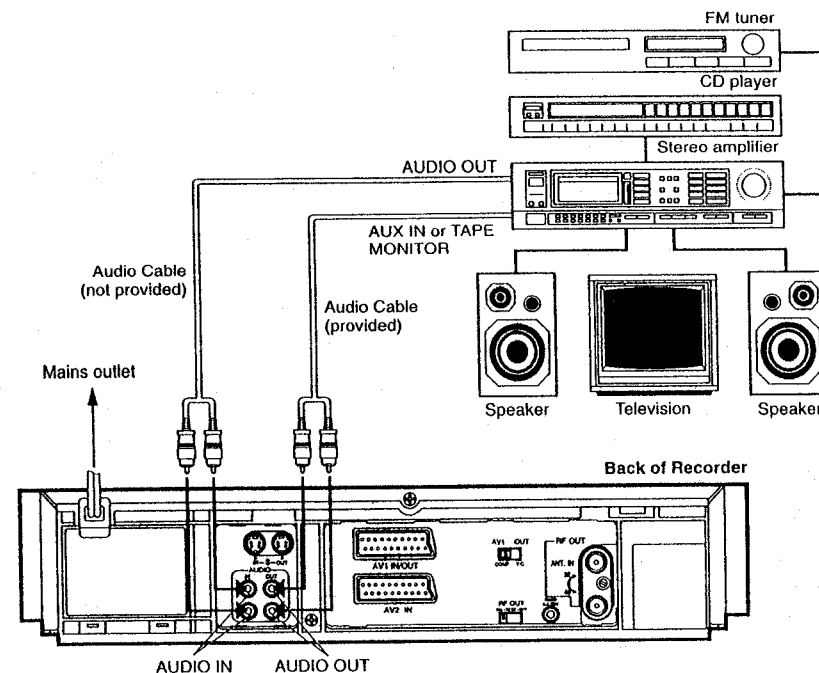
The AV2 IN socket on the rear panel of your recorder allows simple connection to a satellite receiver.



NOTES:

- When connecting your recorder to a TV equipped with 21-pin SCART connectors, follow the illustration above using the cables shown in gray.
- For details, check your satellite receiver's instruction manual.

If you have a Hi-Fi stereo system and would like to connect your video recorder to it so that the sound can be heard through your Hi-Fi system, please make these additional connections:



TO CONNECT TO A STEREO SYSTEM

- 1 Connect the AUDIO IN L and R connectors of the recorder to the recording output terminals of the amplifier.
- 2 Connect the AUDIO OUT L and R connectors of the recorder to the AUX IN or TAPE MONITOR terminals of the amplifier.

NOTES:

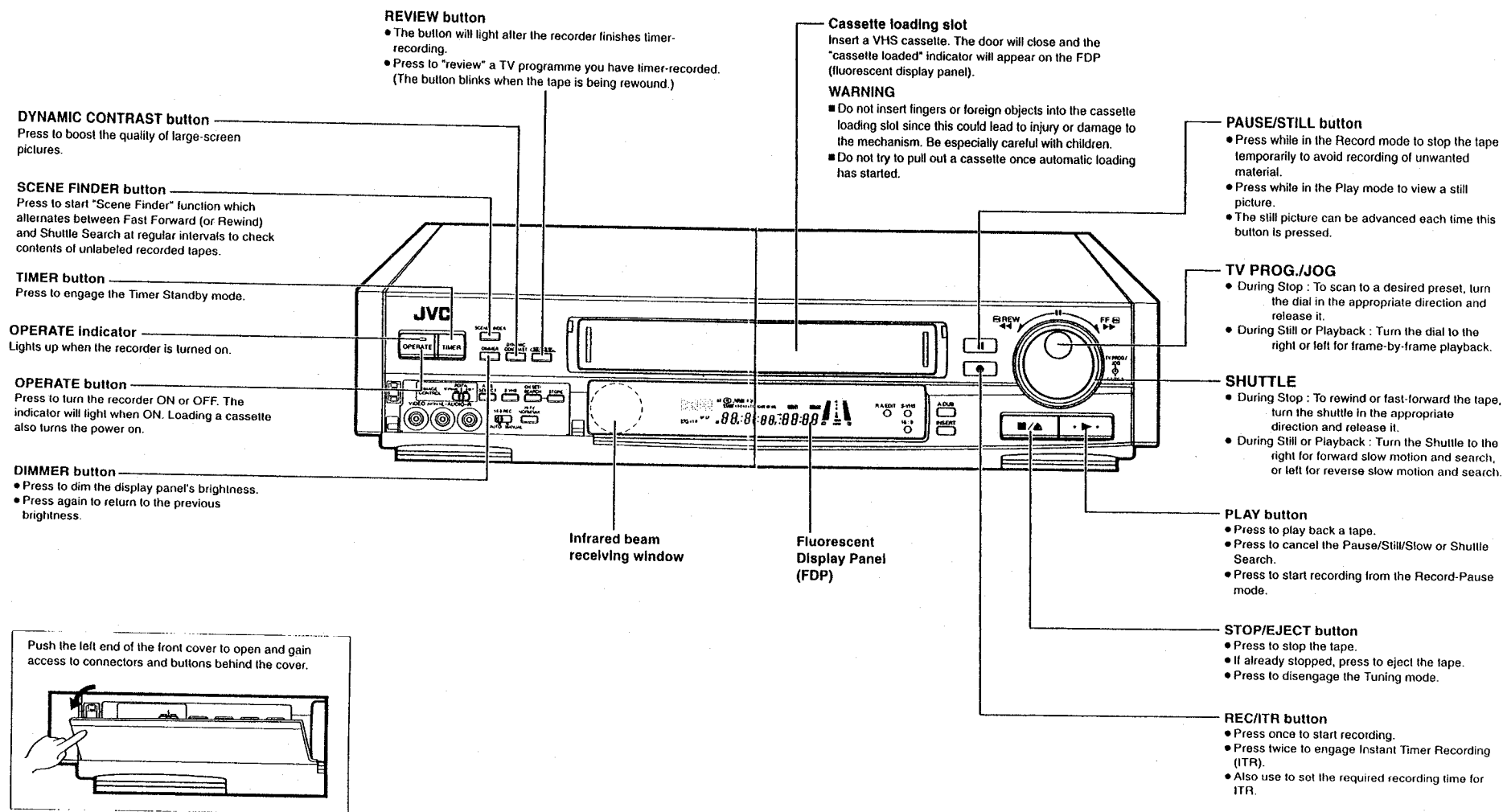
- Make sure L and R are correct when connecting the audio output connectors of the recorder to a stereo amplifier.
- If NICAM TV broadcasts are receivable in your area, this recorder can record them independently of the TV set and play them back through the connected audio system.
- When listening to sound from the connected stereo system, turn down the sound volume of the TV completely.

CAUTION:

- This recorder has a dynamic range of more than 80 dB with regards to its hi-fi audio capability. It is recommended that you check the maximum level if you are going to listen to the hi-fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set, otherwise the video playback picture may be adversely affected.

Control And Indicators

Front Panel



Control And Indicators (cont'd)

Front Panel

STORE button

Press to store a TV station in the Tuning mode.

CH SET/SEARCH button

- Press more than 2 seconds to select the Tuning mode.
- Press while in the Tuning mode to start semi-automatic channel search.

S-VHS button

Selects between S-VHS and VHS recording modes. S-VHS recordings are possible only when S-VHS cassettes are used in the S-VHS recording mode.

AV/S SELECT button

While in the AUX mode, select S or AU according to the source connection. (r p.41)

IMAGE CONTROL switch

Press to select the type of playback picture.

- **NORMAL** : For regular playback.
- **RENTAL** : For viewing rental videos.
- **Edit** : For improved editing and dubbing results.

VIDEO/AUDIO input connectors

Connect a camcorder or another recorder for editing. (r p. 40)

16:9 REC switch

Set to AUTO; your recorder automatically records wide-screen programmes as "wide" and normal programmes as "normal" (r p.47)

HI-FI/NORM/MIX

Press to select the soundtrack.

- **Hi-Fi** : The Hi-Fi(stereo) tracks.
- **NORM** : The normal(monaural) tracks.
- **MIX** : Both the Hi-Fi and normal tracks.

R.A.EDIT Indicator

S-VHS mode indicator

Lights when a cassette marked S-VHS is inserted, showing that the recorder is in the S-VHS mode. To record in the VHS mode with an S-VHS cassette, cancel the S-VHS mode by pressing the S-VHS button. In playback, S-VHS recordings are automatically detected and played back in the S-VHS mode.

A. DUB. (Audio Dubbing button)

Press while in the Still mode, then press the PLAY button to start audio dubbing. (r p.45)

INSERT button

Press for insert editing. (r p.46)

16:9 mode indicator

Lights when playing back or recording wide-screen programmes.

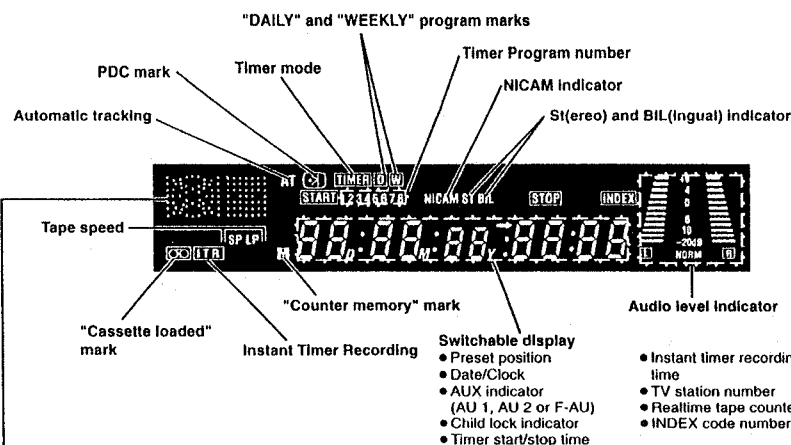
Child Lock

To avoid unwanted operation and prevent accidental recording...

1. Press the remote control's OPERATE button to turn the recorder's power off. Keep this button pressed for about 2 more seconds after the power LED indicator has gone off.
 - The Child Lock indicator (-) will appear on the display panel.
2. Child Lock is cancelled when you switch the recorder's power on with the remote's OPERATE button.
 - Pressing the TIMER button during timer-recording also cancels the Child Lock mode.

Controls And Indicators (cont'd)

Display Panel



Symbolic mode Indicators

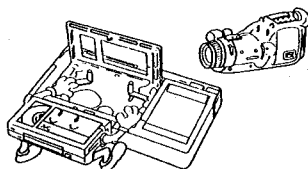
PLAY:	▶	REW VARIABLE SHUTTLE SEARCH:	◀◀	RECORD:	○	INSERT:	▶▶
FF:	▶▶	REVERSE PLAY:	◀	RECORD PAUSE:	○	INSERT PAUSE:	▶▶
REW:	◀◀	STILL: FORWARD SLOW:	▶	AUDIO DUBBING:	⊖	AUDIO DUBBING INSERT:	⊖ ▶▶
FF VARIABLE SHUTTLE SEARCH:	▶▶▶	STILL: REVERSE SLOW:	◀	AUDIO DUBBING PAUSE:	⊖	AUDIO DUBBING INSERT PAUSE:	⊖ ▶▶

* The indicator will blink during turbo search.

Usable Cassettes

Full-Size VHS
 E-30 (SE-30")
 E-60 (SE-60")
 E-90
 E-120
 E-180 (SE-180")
 E-240

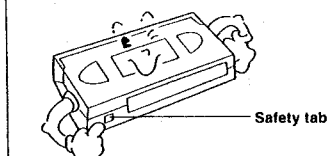
Compact VHS*
 EC-30 (SE-C30")
 EC-45 (SE-C45")



- * Compact VHS camcorder recordings can be played on this video recorder. Simply place the recorder cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.
- ** This video recorder can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

Accidental Erasure Prevention

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



Rear Panel

S OUT connector

A special S-VIDEO output connector (4-pin). Connect to the S-VIDEO input terminal of a 2nd S-VHS video recorder or a television equipped with the same type of terminal, using the provided S-VIDEO cable.

S IN connector

A special S-VIDEO input connector (4-pin). To record from this terminal, connect an appropriate source to this terminal using the provided S-VIDEO cable. Use the AUDIO IN connectors for making audio signal connections. When recording from this connector, engage the AUX mode and press the AV/S SELECT button so that the "[S]" indicator lights on the FDP.

AV1 IN/OUT socket

A 21-pin standardised audio/video input/output (SCART) socket for AV connection to a TV or a 2nd video recorder. The input from this socket can be recorded in the AUX mode engaged by obtaining "AU 1" in the preset position display.

RF converter frequency adjustment screw (CH40 - CH32)

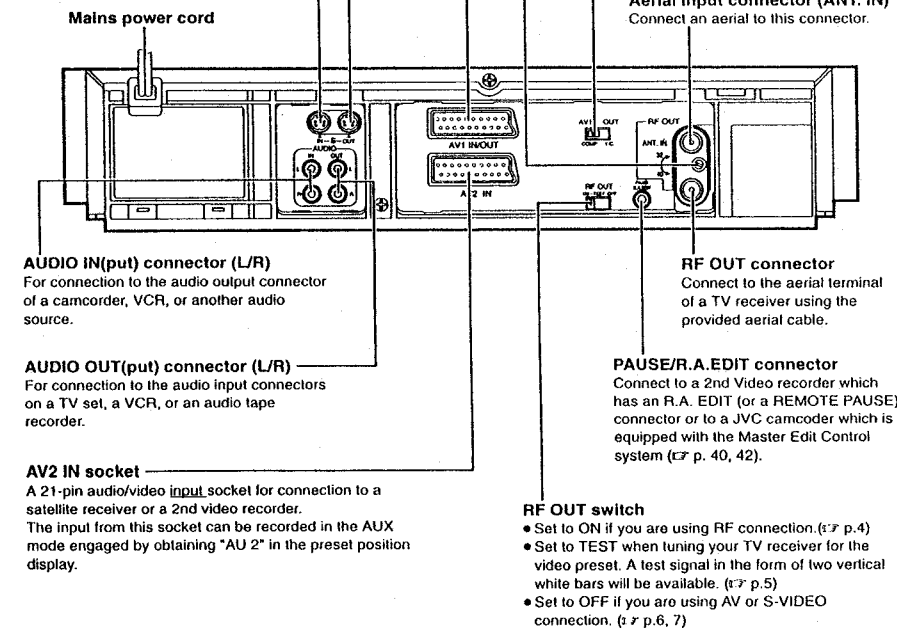
With RF connection, picture and sound signals are sent to channel 36 on a TV. If 36 is occupied by a local station, the channel can be adjusted by ± 4 (CH 32 through CH 40).

AV1 OUT select switch

Selects the output signal via the 21 pin AV1 IN/OUT socket.

Aerial input connector (ANT. IN)

Connect an aerial to this connector.



Controls And Indicators (cont'd)

Remote Control Unit

PROG./CLOCK/CH MAP button

- If the clock has not been set, press to begin clock setting.
- If the clock has already been set, each press rotates the display: Video Plus+ Timer Program → LCD Timer Program → Clock Set mode → Channel Map mode.

REVIEW button

Press to "review" a TV programme you have timer-recorded. (→ p.24)

Multi-purpose numeric keys

Clock setting:
Channel selection:
Timer Programming:
External Source recording:

CANCEL/C. RESET button

- Press to cancel a programme in the Timer Set mode.
- Press to reset the counter to "0:00:00".
- Press to delete a TV station in the Tuning mode.

SELECT/C. MEMORY

- Press to change the data in the Clock Set or Timer Program mode.
- Press to engage the Counter Memory mode.
- After entering a PlusCode, press to check or correct the entered data.
- While the remote control is in the Channel Map mode, press to set or check the GUIDE PROG. and TV PROG. number.

TV PROG. button

Press to select the recorder's preset position number with the TV/VIDEO switch set to "VIDEO"; or to select the TV's preset position number with the TV/VIDEO switch set to "TV".

MONITOR button

Press to select the TV's operating mode
TV: For viewing broadcast programmes or tape programmes via RF OUT connection.
VIDEO: For viewing programmes via the AV connection.

DISPLAY button

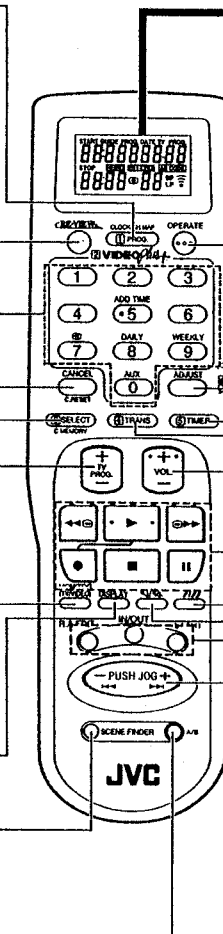
Press to switch the display among the time, date and counter reading.

SCENE FINDER button

Press to start "Scene Finder" function which alternates between Fast Forward (or Rewind) and Shuttle Search at regular intervals to check contents of unlabeled recorded tapes. (→ p.25)

A/B button

When operating two JVC video decks, press more than 2 seconds to switch this remote control from the "A" mode to "B" mode, or vice versa, depending on the deck to be controlled.



OPERATE button

Press to turn the recorder ON or OFF.
Keep this button pressed for 2 seconds when turning the power off to engage the Child Lock mode.

TV/VIDEO switch

Set to "VIDEO" to operate the recorder; set to "TV" to operate the TV (→ p.48).

ADJUST button

Press to check timer program settings.

TIMER button

Press to set the recorder to Timer mode.

TRANS button

Press to transfer the data to the recorder.

VOL. button

Use to adjust the TV's sound volume.

Basic Functions

◀◀/▶▶ (Rewind)(Fast-Forward)(Shuttle Search) buttons

▶ (Play) button

● (Record) button

Press together with the ▶ button to start recording.

■ (Stop) button

⏸ (PAUSE/STILL/SLOW) button

/// button

- When the TV/VIDEO switch is set to "VIDEO", press to select the tape speed for recording.
- When the TV/VIDEO switch is set to "TV", it works as a digit entry button to select the TV's channel (→ p.48).

⏻ button

When the TV/VIDEO switch is set to "TV", press to mute the TV's sound.

Buttons for R.A.EDIT operation

• R.A.EDIT button

Press to engage the R.A.EDIT mode.

• IN/OUT button

Press to register cut-in and out points in memory.

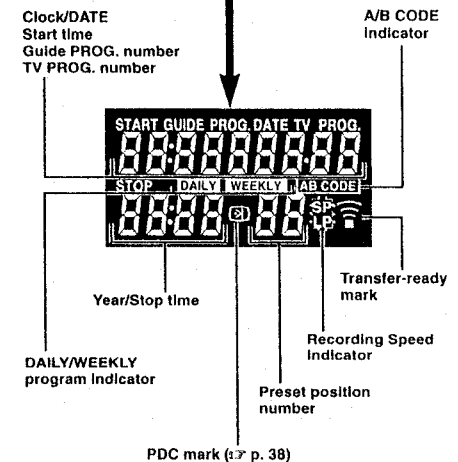
• START button

Press to start automatic editing.

PUSH JOG button

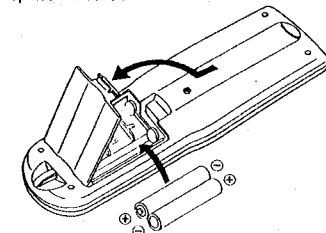
- Press during playback to search for specific segments of a programme at variable speeds.
- Press while the tape is stopped for automatic Index Search.
- Press in the Still mode for frame-by-frame playback.
- When the TV/VIDEO switch is set to "TV", it works as +10 and +20 buttons to select the TV's channel (→ p.48).

LCD (Liquid Crystal Display) Panel



Installing Batteries

- 1 Open the battery compartment cover.
- 2 Insert 2 "R03"-size batteries (provided) in the correct directions.
- 3 Replace the cover.



How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of TV sets of JVC and other brands. → p.48.

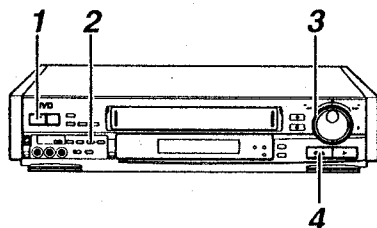
- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

Tuning In Your Video Recorder To Local TV Stations

Your recorder needs to memorise all necessary stations in preset positions in order to record TV programmes. The Auto Tuning System introduced here automatically assigns all receivable stations in your area to call them up with the TV PROG. buttons without going through any vacant channels.



POWER ON;
SELECT VIDEO
PRESET (OR AV MODE)



ENGAGE THE TUNING MODE

- 1 Press OPERATE to turn on the recorder.
- 2 Press CH SET until the display panel shows the following.

1 ch 26

Preset position number Channel number

START TUNING

- 3 Turn the SHUTTLE ring to the right and release it.
 - Auto search will start and the display will change when it is completed.

Auto

1 ch 23°

- The video recorder's clock will be automatically set if it has not been set already.

CANCEL THE TUNING MODE

- 4 Press Stop.

Preset Position Numbers

Auto search will automatically assign a station to each of the preset positions 1 - 4 as shown below, unless the reception condition is unsatisfactory.

TV Station	BBC1	BBC2	ITV	CH4
Preset position	1	2	3	4

ATTENTION:

- Some of the TV stations listed above may also be stored in other preset positions depending on the reception condition.

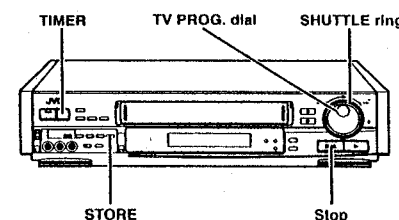
To delete those unnecessary preset positions where overlapped stations are stored, follow the instructions on the next page.

ATTENTION

During auto search, if the recorder and the aerial are not properly connected, the display panel shows the following after step 2.

1 ch: --°

If this happens, check the aerial connection and try step 2 again.



To delete, change and check preset positions

TO DELETE STORED PRESET POSITIONS

- 1 Follow steps 1 - 3 on the previous page to start auto search.
- 2 Turn the TV PROG. dial to select the preset position you want to delete.

8 ch 50°

Example: An unnecessary TV station is stored on preset position 8.

- 3 Turn the SHUTTLE ring to the left and release it.
 - The TV station on preset position 8 will be deleted and all other stations which were stored on higher-number preset positions will be re-stored on the lowest vacant preset position respectively. (When you delete a preset position from 1 through 6, other stations will not be re-stored.)

8 ch 66°

- 4 Repeat steps 2 and 3 for other unnecessary preset positions.
 - To change a preset position number, continue to step 5. To disengage the tuning mode, press STOP.

TO CHANGE AND CHECK STORED PRESET POSITIONS

- 5 Press TIMER.

10 ch 53°

- 6 Turn the TV PROG. dial or press the numeric keys to change the preset position.

20 ch 53°

- 7 Press STORE.

20 ch 53°

- If you want to change another preset position number, repeat steps 5 - 7.
- To check a preset position number where a TV station is stored, turn the TV PROG. dial.

- 8 Press STOP to disengage the tuning mode.

ATTENTION

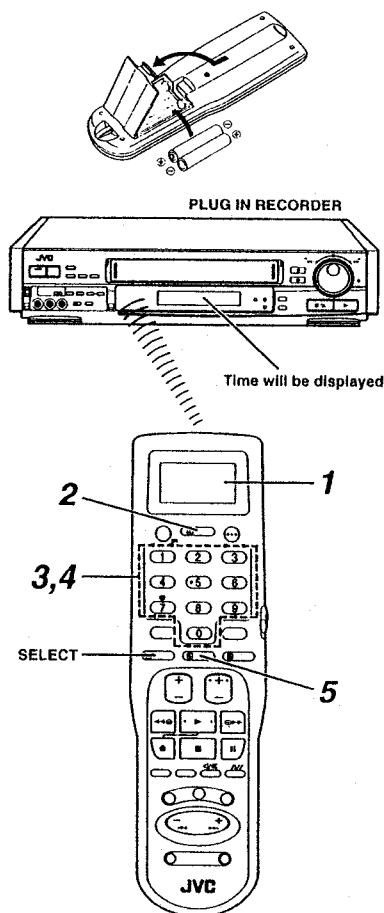
In step 6 and 7, if you store another station by mistake on a preset position where a station is already stored, the station will be replaced with the new one and "--" will be displayed for its preset position when you check preset positions by turning the TV PROG. dial.

-- ch 23°

If you want to keep the station, repeat steps 5 - 7 to re-store that station on a vacant preset position.

Setting The Clock

Since your video recorder bases all of its timer recording start and stop "decisions" on the time kept by its built-in clock, accurate setting of this clock is crucial for proper timer-recording results. Follow these instructions to set the remote control's LCD clock and transfer its contents to the recorder's clock.



LOAD BATTERIES	
1 Check the LCD. ■ The time display section (0:00) will be blinking.	
START CLOCK SETTING	
2 Press CLOCK. ■ Blinking digits will prompt you to items that can be set.	
INPUT THE TIME	
3 Press the appropriate numeric keys. ■ Example: For 21:05, press 2 1 0 5.	
INPUT THE DAY/MONTH/YEAR	
4 Press the appropriate numeric keys. ■ Example: For 6th August 1995, press 0 6 0 8 1 9 9 5. ■ After setting the year, the transfer-ready mark will appear and blink.	
TO MAKE CORRECTIONS	
Press SELECT button so that the item you want to change blinks. Re-input that item. Continue to step 5.	
SETTING THE RECORDER'S CLOCK	
5 If the recorder's clock is not set to the correct time, press TRANS with the remote control directed to the recorder's Remote Sensor window. ■ The remote control's clock will start. At the same time, the set data will be transferred to the recorder. ■ If the recorder's clock is already correctly set, press CLOCK.	

TO RESET THE CLOCK

For British Summer Time change, reset the clock as follows:

- 1 Press CLOCK three times.
- 2 Press SELECT so that the item you want to change blinks. Re-input that item.
- 3 Press TRANS with the remote control directed to the recorder's remote sensor window.

AFTER A POWER CUT

Since your video recorder has a 3-minute backup memory, it will not be affected by short power cuts. If mains power is unavailable for over 3 minutes, however, the recorder's display will reset to 0:00. In such a case, simply transfer the remote control's time to the recorder.

- 1 Press CLOCK three times.
- 2 Press TRANS with the remote control directed to the recorder's remote sensor window.

NOTES:

- If the day and month data is invalid (such as 31st April), the month digits are cleared automatically and the day digits will blink. Input again.
- If the year digits are automatically cleared in step 4, it is possible that you have input 29th February for a non-leap year. Input again.
- When the batteries are exhausted, the LCD's characters become translucent and difficult to read. Replace both batteries and set the clock again.

Auto & Just Clock

- With this recorder, you can use the "Auto & Just Clock" facility which provides accurate time keeping of the built-in clock with automatic adjustments at regular intervals by reading data from a PDC signal.
- The built-in clock will be adjusted every hour except midnight and 11 o'clock in the evening according to the time signals of the station which is stored on preset position 1.
- Although this recorder is preset to use time signals from the station which is stored on preset position 1, you can change this to another station on another preset position as required, or can turn it OFF when you do not need this function. Simply follow the instructions below:

- 1 Press ADJUST on remote control.



- If you press the Play button, the whole indication will blink and the built-in clock will be adjusted according to the current time signals. (The indication stops blinking when the clock is adjusted.)

- 2 Press Fast Forward.



To change to another preset position

- 3 Press TV PROG.



- Now preset position 2 is used for time keeping and if you have stored BBC2 on preset position 2 (p.18), the clock will be adjusted according to the time signal from BBC2.

Or...

To turn OFF the Auto & Just Clock function

- 3 Press CANCEL on remote control.



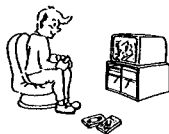
- To turn it ON again, press STORE on the recorder.
- 4 Press Fast Forward and then press ADJUST until the display panel returns to the status as before step 1.

NOTE:

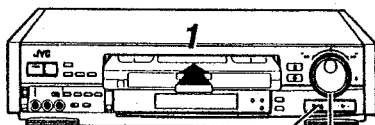
- Normally Auto & Just Clock does not function when...
 - the recorder's power is on.
 - the recorder is in the timer mode.
 - there is a difference of more than 3 minutes between the current time and the built-in clock time.
- When power is on, Auto & Just Clock will only function if the recorder is tuned to the same channel as chosen above.
- The clock will automatically be adjusted at the start/end of Summer Time.
- Auto & Just Clock may not function properly depending on the reception condition.

Basic Playback

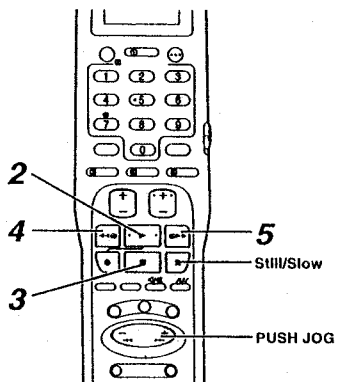
The easiest, most basic operation possible with your video recorder is tape playback. Already-recorded signals on a video tape are read by your video recorder and displayed on your TV just like a TV programme.



**POWER ON;
SELECT VIDEO PRESET
(OR AV MODE)**



6 SHUTTLE ring



NOTES:

- The recorder automatically stops when still or slow motion playback continues for more than 5 minutes.
- If the still picture is unstable (vertical jitter) use the TV PROG. buttons to correct the picture.
- During search playback, some noise bars will appear.
- There is no audio during search, still, frame-by-frame, or slow motion playback.
- The recorder automatically rewinds when the end of the tape is reached.

LOAD A CASSETTE

- 1 Insert a cassette.
 - The recorder power will come on automatically and the counter will be reset to 0:00:00.
 - If the safety tab on the cassette is removed, playback will start automatically.

TO START PLAYBACK

- 2 Press ► (Play).

TO STOP PLAYBACK

- 3 Press ■ (Stop).

TO REWIND OR FAST-FORWARD

- 4 To rewind the tape, press ◀◀ (Rewind) or turn the SHUTTLE ring to the left and release it.
- 5 To fast-forward the tape, press ▶▶ (Fast Forward) or turn the SHUTTLE ring to the right and release it.

TO EJECT THE TAPE

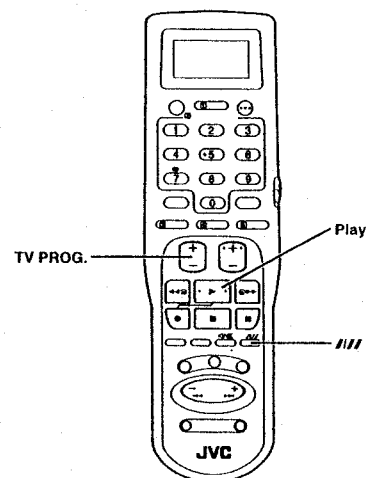
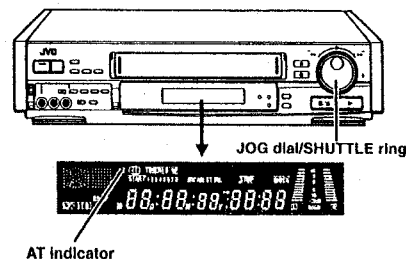
- 6 Press ■/▲ (Stop/Eject) on the recorder.

Variable-Speed/High-Speed (Turbo) Search, Still Playback/Frame Advance/Slow Motion

- During Playback:**
- 1 Press PUSH JOG ◀◀ or ▶▶ for variable-speed search.
 - The more times the button is pressed, the faster the playback picture will move.
 - To decrease speed, press the button for the opposite direction.
- During Playback:**
- 1 Press ▶▶ (Fast Forward) for high-speed forward search, or ◀◀ (Rewind) for high-speed reverse search.
 - For short searches, keep ▶▶ (Fast Forward) or ◀◀ (Rewind) pressed for more than 2 seconds. When released, normal playback will continue.
 - 2 Press II (Still/Slow) to view a still picture.
 - Press again to advance the picture frame by frame.
 - 3 Press II (Still/Slow) for 2 seconds for slow motion.
 - Press again to stop the picture.
 - 4 Press ► (Play) to resume normal playback.
- During Still:**
- 1 For frame-by-frame playback in the forward or reverse direction, press PUSH JOG ◀◀ or ▶▶ for the corresponding direction.

Playback

Take advantage of special functions possible with the recorder's controls or the remote control.

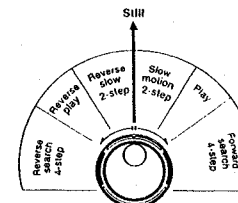


Jog/Shuttle Control

You can view pictures in slow to fast motion, or frame-by-frame.

During Still or Playback...

- 1 Turn the SHUTTLE ring to the right for forward slow motion and search.
 - Release the SHUTTLE ring for a still picture, or...
 - For fast-forward with a visible picture, turn the SHUTTLE ring all the way to the right and release it within 1 second.
- 2 Turn the SHUTTLE ring to the left for reverse play and search.
 - Release the SHUTTLE ring for a still picture, or...
 - For rewind with a visible picture, turn the SHUTTLE ring all the way to the left and release it within 1 second.



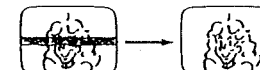
During Still or Playback...

- 1 Rotate the JOG dial clockwise or counterclockwise for JOG control. The tape moves frame-by-frame at the speed with which the dial is rotated.

To resume normal playback, press the play button.

Manual Tracking

Your video recorder is equipped with automatic tracking control; the AT indicator lights or blinks when automatic tracking is on. During playback, tracking can be adjusted manually using the TV PROG. buttons.



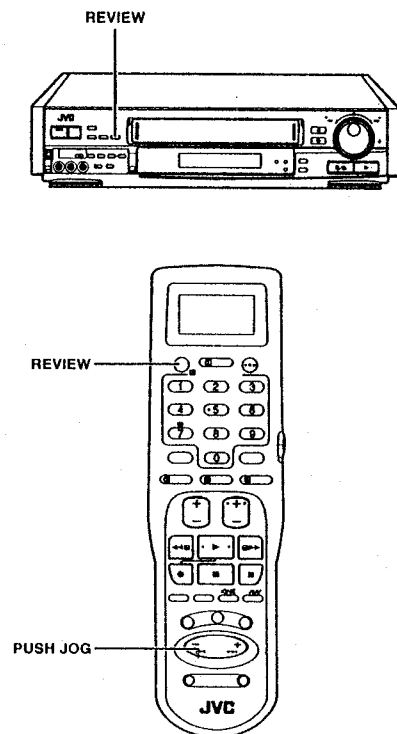
During Playback:

- 1 Press the /// button for manual override.
 - The AT indicator will go out.
- 2 Press TV PROG. (- or +) to adjust tracking.
- 3 Press the /// button to return to automatic tracking.

NOTES:

- When playing back LP recordings in the search, still, or frame-by-frame playback mode, the picture will be distorted, and there will be a loss of colour.
- When a new tape is inserted, the recorder enters the automatic tracking mode automatically.

► Playback (cont'd)



Index Search

Your recorder automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of 9 index codes in either direction.

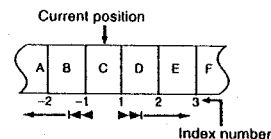


During Stop:

- 1 Press PUSH JOG ◀◀ or ▶▶. "INDEX -1" or "INDEX 1" will be displayed on the display panel and search will begin in the corresponding direction.

- 2 If you wish to access index codes 2 through 9, press PUSH JOG repeatedly until the correct index number is displayed.

Ex.: To locate the beginning of B from the current position, press PUSH JOG ◀◀ twice.
To locate the beginning of D from the current position, press PUSH JOG ▶▶ once.



- When the specified Index code is found, playback will start automatically

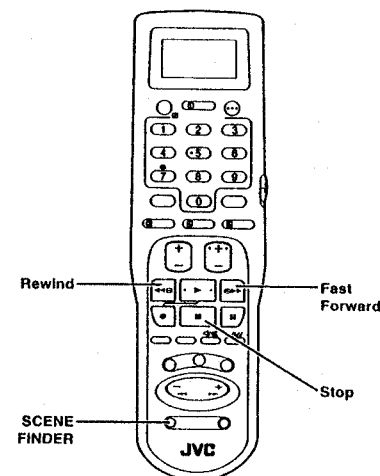
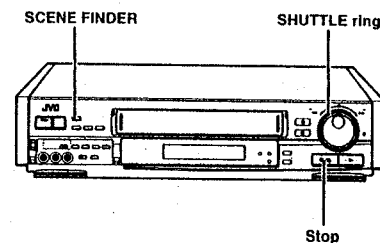
ReView Function

Simply by pressing a single button, the recorder power comes on, rewinds, and begins playback of the last recording. This makes it easier to "review" the programme you have timer-recorded.

When the recorder power is off:

- 1 Press REVIEW.

- After the recorder power comes on, the tape will be rewound to the beginning of the last recording (where the index code is placed) and playback will start automatically.
- To play back a recording located 2 index codes away, press REVIEW twice. You can access any one of up to 9 index codes.
- ReView is not possible while the recorder is in the Timer mode.



Open Search Function

Your video recorder lets you view the picture being rewound or fast-forwarded so you can easily check how far the tape has gone.

During Rewind:

- 1 Keep the remote's Rewind button pressed, or turn the SHUTTLE ring fully to the left.
 - The rewinding tape's picture will be visible.
- 2 Release the Rewind button or SHUTTLE ring to resume normal rewinding.

During Fast Forward:

- 1 Keep the remote's Fast Forward button pressed, or turn the SHUTTLE ring fully to the right.
 - The fast forwarding tape's picture will be visible.
- 2 Release the Fast Forward button or SHUTTLE ring to resume normal fast forwarding.

Scene Finder

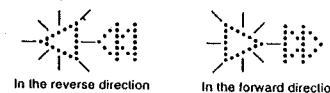
This function helps you check contents of unlabeled recorded tapes at the touch of a single button.



Anytime except during Record:

- 1 Press SCENE FINDER.

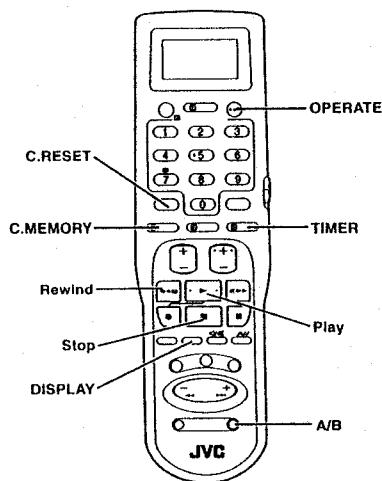
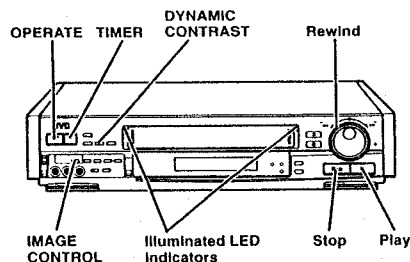
- The recorder starts high-speed forward search for 5 seconds and then fast-forwards 10 minutes on counter. This will be repeated until the end of the tape is reached.
- To start Scene Finder in the reverse direction, press SCENE FINDER and then turn the SHUTTLE ring to the left (or press the remote's Rewind button) within 2 seconds. It will be repeated until the beginning of the tape.
- During Scene Finder, the display panel shows the following.



- During Scene Finder High-Speed Search, you can also hear the tape sound. During Fast Forward (or Rewind), you will hear the current TV sound instead.
- Scene Finder does not function during Index Search and Random Assemble Editing.

- 2 Press STOP to stop Scene Finder.

▶ Playback (cont'd)



NOTE:

- When the DYNAMIC CONTRAST button is lit, Dynamic Contrast has priority over Image Control regardless of the setting of the IMAGE CONTROL switch.

Dynamic Contrast

Use this function to improve image contrast which tends to degrade especially with wide-screen pictures.

During Playback:

- 1 Press DYNAMIC CONTRAST on the recorder.
 - The button will light in green.
 - Pressing the button again turns off the light.
 - Turn on/off the light according to the type of playback picture you want.
 - The setting will remain effective even though you turn on/off the recorder.

Image Control

You can choose the type of playback picture that's best for the given application.

NORMAL: Normally set the IMAGE CONTROL switch to this position.

RENTAL: Makes the picture clearer when viewing tapes with noise due to repeated playback, such as rental videos.

EDIT: For improved dubbing and editing results.

Repeat Playback

Your video recorder can automatically play back the whole tape 20 times repeatedly.



During Playback:

- 1 Press Play for more than 5 seconds, and release.
 - The Play indicator (▶) on the display panel will blink slowly.
 - The tape will be played 20 times automatically, and then stop.
- 2 To stop playback at any time, press ■ (Stop).

Illuminated Operation

The two LED indicators, located on both sides of the cassette loading slot, confirm the recorder has received commands you send from the remote control. The operation modes and the corresponding indications are listed below.

Mode	Colour of LED indicators		How they're displayed
	Left	Right	
When loading a cassette. When power is turned on (with a cassette already loaded).	G	G	Lit for 2 seconds
When playback starts.	G	G	Blink 3
When recording starts.	R	R	Blink 3
While in the Record-Pause mode.	R	R	Lit
When FF (or Index Search FF) starts.	—	G	Blink for 5 seconds
When REW (or Index Search REW or Instant ReView) starts.	G	—	Blink for 5 seconds
When timer-programmed data is transferred from the remote control to the recorder.	O	O	Lit for 3 seconds
When timer-programmed data is not successfully transferred from the remote control to the recorder.	O	O	Blink for 5 seconds

G: Green R: Red O: Orange

To stop the indications

If you don't need the LED indications, you can turn it OFF by following the instructions below.

- 1 If there is a cassette inserted in the recorder, press the Stop/Eject button to eject the cassette, and then turn off the power.
- 2 Hold down the Stop/Eject button for more than 3 seconds.
 - Both of the LED indicators in Green will blink twice, and the function will be turned OFF.
 - If you want to turn it ON again, eject the cassette from the recorder and turn off the power, and then hold down the Stop/Eject button for more than 3 seconds. Both of the LED indicators will light up for a second and the function will be turned ON again.

Next Function Memory

Your recorder can memorise what to do after rewind.

During Stop:

For automatic start of playback after the tape is rewound:

- 1 Press ◀◀ (Rewind).
- 2 Press ▶ (Play) within 2 seconds.

For automatic power off after the tape is rewound:

- 1 Press ◀◀ (Rewind).
- 2 Press OPERATE within 2 seconds.

For automatic timer standby after the tape is rewound:

- 1 Press ◀◀ (Rewind).
- 2 Press TIMER within 2 seconds.
 - If you want the "next function" to automatically start when the counter reads "0:00:00" (instead of at the beginning of the tape), press C. MEMORY so that the "M" mark appears before pressing ◀◀ (Rewind).

Counter Memory

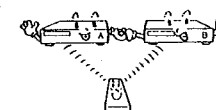
Returns to the counter reading of "0:00:00" to conveniently find a specific place on the tape automatically.

During Playback:

- 1 Press DISPLAY until a counter reading appears on the display panel.
- 2 Press C. RESET at a point you wish to locate later.
 - The counter will read "0:00:00".
- 3 Press C. MEMORY.
 - "M" will appear in front of the counter digits.
- 4 When you wish to return to that point, press ■ (Stop) and then press ◀◀ (Rewind).
 - The tape will rewind and stop at about "0:00:00" automatically.
- 5 To cancel the Counter Memory mode, press C. MEMORY again.

Remote A/B Code Switching

The remote control is capable of controlling two JVC video recorders independently; one set to respond to your remote control's A code control signals and another set to respond to B code control signals. The remote control is preset to send A code signals because your video recorder is initially set to respond to A code signals. You can easily modify your video recorder to respond to B code signals.

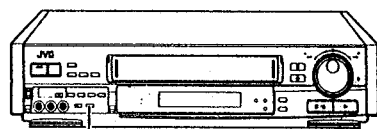


- 1 Unplug the recorder's power cord from the AC outlet.
- 2 Press A/B for more than 2 seconds to set to B code.
- 3 Plug the power cord back into the AC outlet. Do not use other remote controls at this stage.
- 4 Turn the recorder power on using the remote control's OPERATE button. The recorder will now only respond to B code signals.

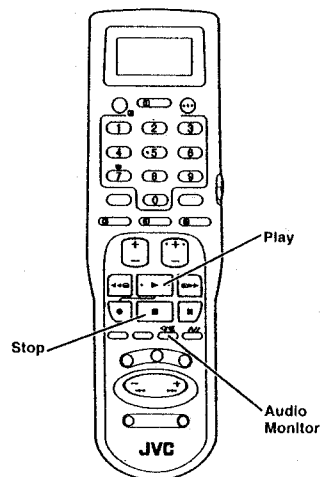
NOTE:

- Some TV sets may malfunction in response to the B mode. If this happens switch back to the A mode.

► Playback (cont'd)



HI-FI/NORM/MIX



Soundtrack Selection

Your video recorder is capable of recording three soundtracks (HIFI L, HIFI R and NORM) simultaneously, and playing back the selected soundtrack.

During Playback:

- Pressing Audio Monitor on the remote control changes the track:

Track: (on display panel)	Use:
L + R	for Hi-Fi stereo tapes.
L	for main audio of bilingual tapes.
R	for sub audio of bilingual tapes.

- Pressing HI-FI/NORM/MIX on the recorder changes the mode:

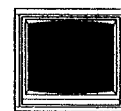
Mode:	Track: (on display panel)	Use:
HIFI	L and/or R	for Hi-Fi stereo tapes.
NORM	NORM	for audio-dubbed tapes.
MIX	NORM + L and/or R	for audio-dubbed tapes.

NOTES:

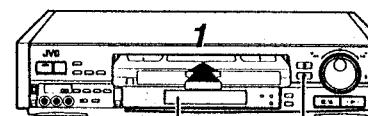
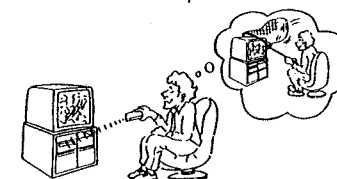
- Normally use the L + R position. Then Hi-Fi stereo tapes are played back in stereo, and tapes with normal audio only are played back automatically in the NORM mode.
- Bilingual programmes are not transmitted in the U.K. at present.

● Basic Recording

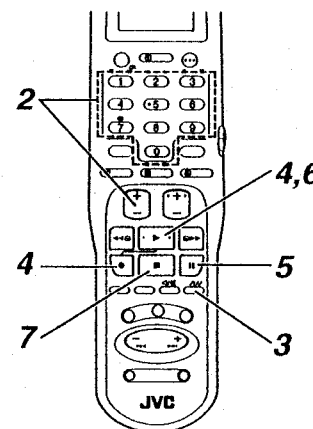
TV signals being received by the recorder's built-in tuner can be recorded onto a video tape. You can "capture" a TV programme using your video recorder.



POWER ON;
SELECT VIDEO PRESET
(OR AV MODE)



SP/LP Indicator REC/ITR



LOAD A CASSETTE

- 1 Insert a cassette with the safety tab in place and the counter will be reset to 0:00:00.
■ The recorder power will come on automatically.

CHOOSE A PROGRAMME

- 2 Press TV PROG. or the numeric keys to select the preset you wish to record.

SELECT THE TAPE SPEED

- 3 Press **III** (SP/LP).
■ Check the SP/LP indicator on the recorder to confirm the selected tape speed.

TO START RECORDING

- 4 Press **●** (Record) and **▶** (Play) simultaneously.

TO PAUSE RECORDING

- 5 Press **II** (Pause).
- 6 Press **▶** (Play) to resume recording.

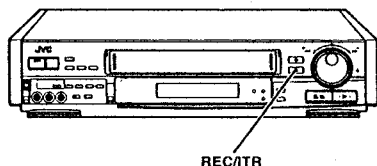
TO STOP RECORDING

- 7 Press **■** (Stop).

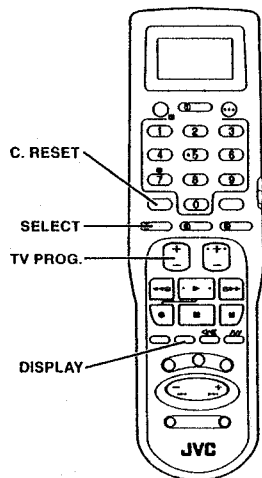
NOTES:

- To start recording with the recorder's REC/ITR button, press it once on its own. Pressing REC/ITR more than once activates the Instant Recording (ITR) function. *see* p. 30.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The recorder automatically stops when record-pause continues for more than 5 minutes.
- If the Record button does not work, check to see if the cassette's safety tab has been removed.
- The preset cannot be changed while recording is in progress. To change the preset, engage the record-pause mode, then change the preset.
- The recorder automatically rewinds when the end of the tape is reached during recording.
- The recorder automatically marks index codes at the beginning of each recording. For information on the Index Search function, *see* p. 24.

Recording



REC/ITR



C. RESET

SELECT

TV PROG.

DISPLAY

Instant Recording (ITR)

You can start a recording and then set the recorder to shut off automatically after a set duration.



During Record:

- 1 Press REC/ITR. "ITR" and "0:30" indications appear, advising that power will switch off after 30 minutes.
 - 2 Press REC/ITR again to delay the off-time by 30-minute increments (up to 4 hours).
- For more precise setting, use the remote control's SELECT and TV PROG. buttons to set the exact time required (possible up to 8 hours and 59 minutes).

To Watch Another Programme While Recording

During Record:

- 1 Use the preset controls on the TV to select the other station you wish to view.
- The programme selected with the TV's preset controls will appear on the TV screen while the one selected with the video recorder's TV PROG. buttons will be recorded on the tape.

Elapsed Recording Time Indication

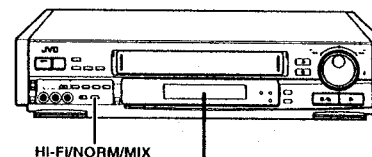
When you need to know the exact time of a recording.

- 1 Press DISPLAY until a counter reading appears on the display panel.
 - 2 Press C.RESET before starting recording or playback.
- The counter will be reset to "0:00:00" and show the exact elapsed time as the tape runs.

Display Button

When you wish to check the clock time, date, or counter reading.

- 1 Press DISPLAY to display the current clock time.
- 2 Press DISPLAY again to display the current date.
- 3 Press DISPLAY again to display the counter reading.

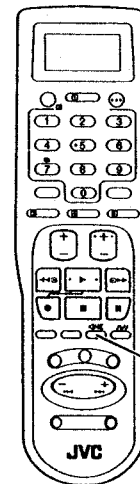


HI-FI/NORM/MIX

NICAM Indicator

ST(ereo) Indicator

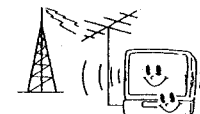
BIL(ingual) Indicator



Audio Monitor

Receiving NICAM Stereo And Bilingual Programmes

Your recorder is equipped with a Digital stereo sound decoder for reception of NICAM stereo and bilingual broadcasts.



- When a stereo programme is being received, the NICAM and ST(ereo) indicators light.
- When a bilingual programme is being received, the NICAM and BIL(ingual) indicators light.
- When a monoaural programme is being received, the NICAM indicator lights.

To Record NICAM Stereo And Bilingual Programmes

- The NICAM audio programme will be recorded on the Hi-Fi audio track, and the Standard audio programme on the normal audio track.
- To listen to a stereo programme, select "HI-FI L+R" by pressing Audio Monitor.
- To listen to a bilingual programme, select either "HI-FI L" or "HI-FI R" as required.
- To listen to the Standard audio programme, select "NORM" using the HI-FI/NORMAL/MIX button on the recorder.

NOTE:

- Bilingual programmes are not transmitted in the U.K. at present.

S-VHS And VHS

Your video recorder can record in either S-VHS or VHS.

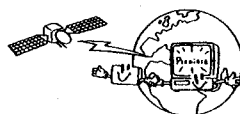
- To record in S-VHS, insert a cassette marked "S-VHS". The S-VHS indicator will light and the S-VHS recording mode is automatically selected.
- To record in VHS, insert a cassette marked "VHS". The VHS recording mode is automatically selected.
- You can also record in VHS on S-VHS cassettes. For this purpose, after inserting an S-VHS cassette, press the S-VHS button. The S-VHS indicator will go out.

Cassette	Type of recording	S-VHS Indicator
	S-VHS	On
	VHS	Off
	VHS	Off

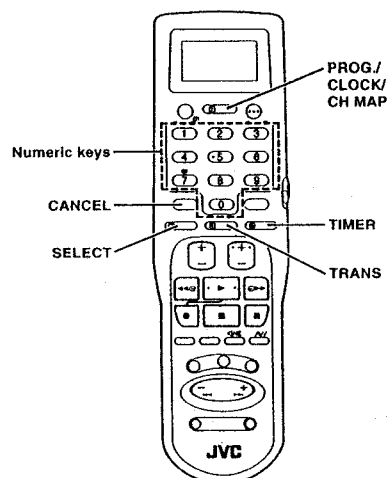


Information On Video Plus+

With Video Plus+, timer programming is greatly simplified because each TV programme has a corresponding code number which your recorder and remote control are able to recognise. The following information will help you maximise the benefits of this feature, especially if your AV system has cable or satellite capabilities.



Video Plus+ Operation Buttons



PROG./CLOCK/CH MAP button

- If the clock has not been set, press once to set the clock.
- If the clock has already been set, each press rotates the display: Video Plus+ Timer Program → LCD Timer Program → Clock Set mode → Channel Map mode.

Numeric keys

- Press to enter a PlusCode number.

SELECT button

- After entering a PlusCode, press to check or correct the entered data.
- While the remote control is in the Channel Map mode, press to set the GUIDE PROG. and TV PROG. numbers.
- While the remote control is in the Channel Map mode, press to check the entered channel numbers.

TRANS button

- Press to transfer the data to the recorder.
- After entering a PlusCode, press to check the GUIDE PROG. number.

TIMER button

- Press to engage the recorder's timer mode.

CANCEL button

- If you have entered the wrong PlusCode number, press to backspace.
- While the remote control is in the Channel Map mode, press to cancel the entered channel numbers.

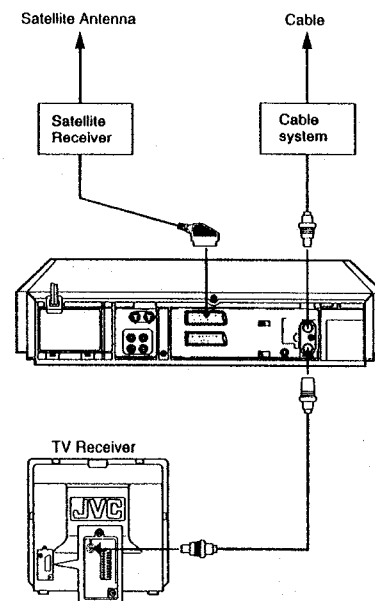
NOTES:

- **CH MAP:** To use Video Plus+, it is necessary to let the remote control know both the preset position numbers for local TV stations you have set on your video recorder, and the GUIDE PROG. numbers for those TV stations. The "list" of presets and GUIDE PROG. numbers created in the remote control's internal memory is called the "Channel Map" (CH MAP).
- **GUIDE PROG.:** The assigned TV station numbers, according to broadcast area, for Video Plus+ timer-recording. The GUIDE PROG. numbers 1 through 4 are for BBC1, BBC2, ITV and CH4 respectively. For other TV stations, refer to your TV directory.

TIMER PROGRAMMES ARE ALSO POSSIBLE FROM A SATELLITE RECEIVER AND/OR A CABLE SYSTEM.

PLEASE ENTER THE PRESET POSITIONS YOU HAVE CHOSEN FOR THESE SYSTEMS IN YOUR VIDEOPLUS REMOTE CONTROL.

IN THE EXAMPLE SHOWN, THE SATELLITE RECEIVER IS SHOWN CONNECTED TO THE "AU" (SCART) CONNECTION AND THE CABLE SYSTEM CONNECTED VIA THE AERIAL SOCKET AND TUNED TO PRESET POSITION 5 ON YOUR TV.



NOTES:

- After selecting the programme you wish to record from your cable system or satellite receiver, set the system's timer — if your cable or satellite receiver does not have a timer leave it switched on.
- When the remote control's batteries are replaced, the time or Guide Channel numbers you have set may be erased. If this happens, reset them again.

To Record Satellite And Cable System Programmes

If using a **satellite receiver**, follow steps ① – ④.
If using a **cable system**, follow steps ① – ⑦.
If using **both**, follow all steps.

PREPARATION

- ① Connect a cable system or a satellite receiver as illustrated.

- ② Set the recorder so that cable presets can be viewed on preset position "5". (p. 19.)

- ③ Press CH MAP until the LCD shows the Channel Map mode.



(*SA* = Satellite)

- ④ Use the numeric keys to enter "00" for TV PROG. number.



- "AU" will appear instead of a preset number.

- ⑤ Press SELECT.



(*CA* = Cable system)

- ⑥ Use the numeric keys to enter "05" for TV PROG. number.



- ⑦ Press SELECT.



- ⑧ Press CH MAP.

- The LCD will return to the clock display.



OPERATION

- ① Turn on the cable system or satellite receiver, and select the preset you wish to record.
- ② Enter the PlusCode number in the same way as shown in steps 1 – 8 of "Video Plus+ Timer-Recording" on p. 34 – 35.



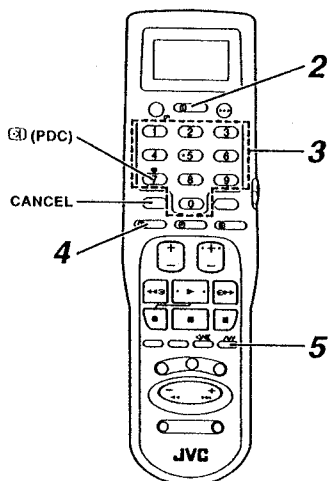
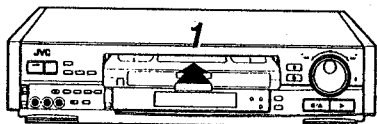
Video Plus+ Timer-Recording

Your video recorder provides a variety of timer programming methods, including Video Plus+. The built-in Video Plus+ programming system greatly simplifies timer programming because you won't have to enter all the data that is usually necessary (such as date, start and stop time, and channel). Simply key-in the PlusCode number for the TV programme you wish to record (listed in most TV directories) and then transfer it to the recorder. Another timer programming method available is the Remote Control's LCD Record Timer (p. 36). **TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.** (p. 20)



IMPORTANT

In "Tuning In Your Video Recorder To Local TV Station" (p. 18), make sure you have selected preset positions 1 through 4 for BBC1, BBC2, ITV and CH4 respectively.



LOAD A CASSETTE

- 1 Insert a cassette with the safety tab in place.
 - The recorder power will come on automatically.

ACTIVATE THE VIDEO PLUS+ MODE

- 2 Press PROG.

INPUT THE TV PROGRAMME'S CODE NUMBER

- 3 Press the appropriate numeric keys to enter the PlusCode number for the TV programme you wish to record.
 - For PlusCode numbers, refer to your newspaper or TV directory.
 - The length (number of digits) of the code number differs by programme.
 - If you made a mistake, press CANCEL to backspace and re-enter the correct PlusCode number.

1234-----

CHECK IF DATA IS CORRECT

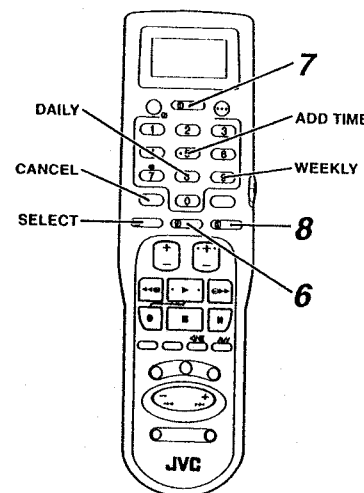
- 4 Press SELECT.
 - The LCD will show the data for the PlusCode number you just entered.
 - If the data is not correct, press PROG twice and re-enter the correct PlusCode number.
 - If the entered PlusCode number is not proper, "Error" appears on the LCD. Check the PlusCode number again and re-enter it.
 - If you wish to take advantage of PDC recording (p. 38), press (PDC) (the numeric key "7") so that "(PDC)" appears on the LCD.

START 20:00 DATE 25.12
STOP 2:00
Example

SELECT THE TAPE SPEED

- 5 Press (SP/LP).

(Continued on next page.)



TRANSFER TO THE RECORDER

- 6 Press TRANS with the remote control directed toward the recorder's Remote Sensor window.
 - Transferred program will appear on the display panel, telling you that the data has been successfully transferred to the recorder's memory.

END PROGRAMMING

- 7 Press the appropriate numeric keys to enter the PlusCode number for the TV programme you wish to record.
 - The LCD returns to the clock display and the entered data will be automatically cleared.
 - If you need to set another program, repeat steps 2-7.

2:05 DATE 06:08
L.V.P.

SET TO TIMER MODE

- 8 Press TIMER.
 - The recorder will enter the timer mode and power will go off.

To Delay The Stop Time

After you press SELECT in step 4, press the ADD TIME button. Each time the ADD TIME button is pressed, the Stop time is delayed by 5 minutes (5 minutes of recording time is added). You can easily compensate for anticipated programme schedule delays this way.

To Timer-Record Weekly Serials

This function lets you set the recorder to timer-record at the same time on the same day every week.

- After pressing SELECT in step 4, press WEEKLY (the numeric key "9").

To Timer-Record Daily Serials

This function lets you set the recorder to timer-record at the same time Monday through Friday.

- After pressing SELECT in step 4, press DAILY (the numeric key "8").

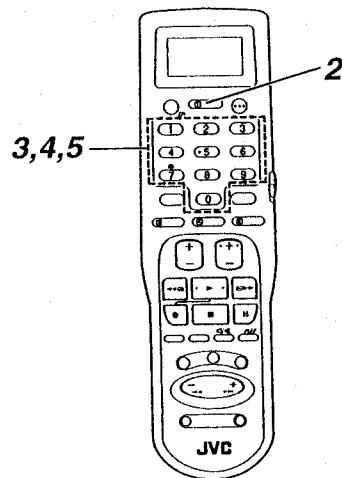
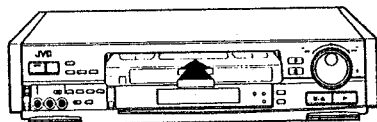
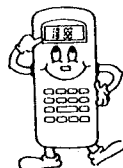
TO DISENGAGE THE TIMER

- For safety, your recorder disables all other functions while in the timer mode.
- To use your recorder, first disengage the timer mode by pressing TIMER again. Now all functions will be operable.
 - To re-engage the timer, press TIMER.



Remote Control's LCD Record Timer

The remote control's LCD programming method introduced here lets you input all necessary settings manually. It's helpful if the PlusCode for the TV programme you want isn't readily available. **TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.**

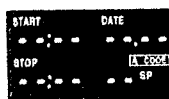


LOAD A CASSETTE

- 1 Insert a cassette with the safety tab in place.
 - The recorder power will come on automatically.

ACCESS THE LCD TIMER PROGRAM

- 2 Press PROG. twice.



INPUT THE DATE

- 3 Press the appropriate numeric keys.
 - Example: For 26th August, press 2 6 0 8.



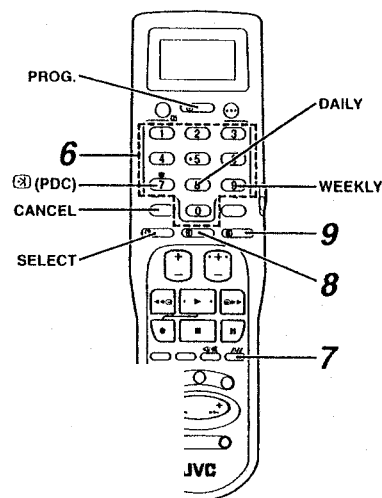
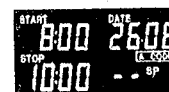
INPUT THE START TIME

- 4 Press the appropriate numeric keys.
 - Example: For 8:00, press 0 8 0 0.



INPUT THE STOP TIME

- 5 Press the appropriate numeric keys.
 - Example: For 10:00, press 1 0 0 0.



INPUT THE PRESET NUMBER

- 6 Press the appropriate numeric keys.
 - Example: Press "1" for BBC 1, if BBC 1 has been stored in preset position 1 during tuning.
 - After the preset has been entered, the transfer-ready mark will appear and blink.
 - If you wish to take advantage of PDC recording (p.38), press (PDC) (the numeric key "7") so that "PDC" appears on the LCD.



Transfer-ready mark

SELECT THE TAPE SPEED

- 7 Press (SP/LP) to select the tape speed.

TRANSFER THE DATA TO THE RECORDER

- 8 Press TRANS with the remote control directed to the recorder's Remote Sensor window.
 - You will see the program number on the display panel, telling you that the data has been successfully transferred to the recorder's memory.

SET TO TIMER MODE

- 9 Press TIMER.
 - The recorder will enter the timer mode and power will go off.
 - If you wish to disengage the timer mode, press TIMER again.
 - Press PROG. to cancel LCD Timer Program mode.

Variations in Step 3 (Weekly Program)

This function lets you set the recorder to timer-record at the same time on the same day every week. Use it to record weekly serials.

- First press numeric key "9" (WEEKLY) and then enter the date.

Variations in Step 3 (Daily Program)

This function lets you set the recorder to timer-record at the same time Monday through Friday. Use it to record daily serials.

- To record a daily serial starting on the day of setting, press numeric key "8" (DAILY) and then press SELECT until the display changes to time input mode.
- To record a daily serial starting on a certain day, press numeric key "8" (DAILY) and then enter the date.

TO MAKE CORRECTIONS

- During steps 3 and 6, press CANCEL to backspace and input new data.
- After setting the channel in step 6, press SELECT to make the item you want to change blink, and input new data.
- Pressing PROG. clears the programmed data.

NOTE:

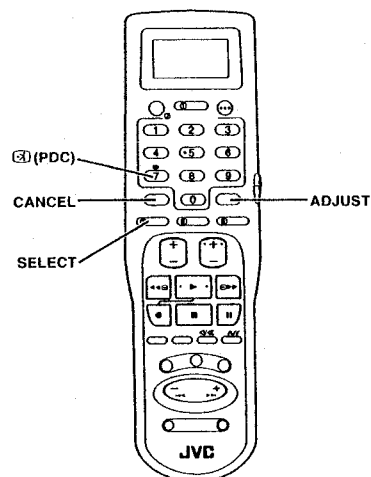
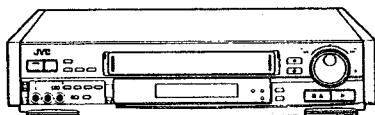
- If you have a satellite tuner connected to the recorder's AV2 IN socket and wish to timer-record satellite programmes, make sure to input "0" for the preset number in step 6 to make "AU" appear on the LCD. After you transfer the data to the recorder, "AU 2" will be displayed instead of a preset number on the recorder's display panel.

To cancel a program from the recorder's memory, see p. 38.

Any questions? see p. 39.



Other Timer-Recording Information



Some Facts On Timer Operation

- When timer-recording is successfully completed, the recorder's power is automatically switched off.
- Since the timer starts and stops recording based on the time being kept by your video recorder's built-in clock, the clock's time must be accurate for correct timer-recording results.

NOTES (PDC Recording):

- When you manually enter programmes (i.e. not using Video Plus+), set the start time (PDC time) exactly as advertised in the TV listing. A different time than advertised will result in no recording.
- PDC recording is not possible via external input.

To Check, Cancel And Replace Programs

Since executed programs are automatically cleared from memory (except those for daily and weekly serials), cases where the entire 8-event memory is full should be rare. If this should happen, check the preset programs and cancel one or more to make room for the new program(s) you wish to input.

TO CHECK PROGRAMS

- (1) Press ADJUST until the program settings are displayed.
 - Program 1 is displayed with the number blinking.
- (2) Press SELECT to review the program contents in succession.
- (3) To check another program, press ADJUST.

TO REPLACE THE PROGRAM

- (1) Press SELECT to make the item you want to change blink and press TV PROG. to replace the data.

Or...

TO CANCEL THE PROGRAM

- (1) Press CANCEL to erase the program from memory.
 - You can press CANCEL at any stage while the program is open. The erased program number will be displayed with the number blinking.
 - To erase another program, press ADJUST when a blinking program number is displayed.

- (5) When finished, press DISPLAY.

NOTE:

- If you wish to timer-record satellite programmes with a satellite tuner connected to the recorder's AV1 IN/OUT connector, be sure to select "AU 1" for the channel after transferring the programmed data to the recorder. Simply follow step 1 and 2 as shown above so that the recorder's channel display blinks and then press TV PROG. to select "AU 1".

PDC Recording

Now available from some TV stations, PDC (Program Delivery Control) is a service designed to assure safe, accurate timer-recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video recorder and have precedence over advertised times you preset in the timer. This means that your recorder will start and stop recording when the preset TV programmes actually start and end — even if the broadcast time of a preset TV programme is changed.

TO USE PDC SERVICE

- During Video Plus+ or LCD timer programming, press the ③ button (the numeric key "7") before transferring the programme data to the recorder.
- If you wish to cancel "PDC", press the ④ button (the numeric key "7") again. Pressing the ③ button alternates the setting.

Error Indications

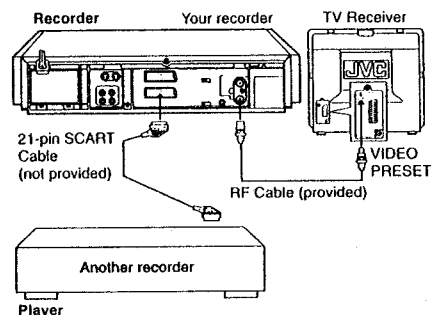
The following error indications may appear on the recorder when you press the TIMER button to engage the timer mode. Here's why, and what you should do.

INDICATION	WHY	WHAT TO DO
"TIMER" and "00" on the display panel continue blinking.	There is no cassette in the recorder.	Insert a cassette.
The cassette is automatically ejected. "TIMER" and "00" continue blinking.	The inserted cassette has its safety tab removed.	Insert a cassette with its safety tab intact. Or cover the safety tab hole of the cassette with adhesive tape and re-insert it. ¶ p. 14.
"TIMER" blinks for 10 seconds and the timer mode is cancelled.	There are no preset programs in memory, or they have all been incorrectly preset.	Check the programmed data and re-program it as necessary. Press TIMER again.

Other Indications

INDICATION	WHY
"TIMER" steady lit (with clock display).	The recorder is in the timer mode. This is the normal display you should see when you press the TIMER button.
"00" and "TIMER" steady lit.	Normal display while timer-recording is in progress.
The cassette is ejected, power is shut off and "TIMER" and "00" are blinking.	This means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.
"0:00" is blinking.	This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the recorder's power plug was pulled from the AC outlet. To set the clock. ¶ p. 20. If power was interrupted, it's also likely that all preset timer programming data has been erased. Please check and re-program as necessary.
"-----" is displayed for about 5 seconds when the TRANS button is pressed.	Data was not successfully transferred. The program may have been incorrectly preset, or the recorder's clock has not been set, or all the recorder's timer programs (1 - 8) are preset. Check the LCD program, and re-program as necessary. Transfer the correct data. Or cancel unnecessary programs, and transfer again.

▶● Editing



Editing From Another Video Recorder

Tape-to-tape editing is possible using another deck as the playback unit and your recorder as the recording unit.

PREPARATION

- 1 Connect another video recorder to the rear panel 21-pin AV1 or AV2 socket, or S IN and AUDIO IN connectors, or front panel VIDEO and AUDIO connectors.
- 2 Engage the external input mode.
 - To select the input connectors and the corresponding external input mode, see p. 41.
- 3 Set the IMAGE CONTROL switch to EDIT.

OPERATION

- 1 Load the source tape in the player, and the recording tape in your recorder.
- 2 Select the recording speed (SP or LP).
- 3 Put your recorder in the Record-Pause mode.
- 4 Play back the source tape to search for scene to be edited.
- 5 Press the recorder's Play button where you want to start editing.
- 6 Press the recorder's Pause button to stop editing.
- 7 Repeat steps 1 through 6 to continue editing.

NOTE:

- To minimize picture degradation while editing, set the IMAGE CONTROL switch to EDIT. After you finish editing, be sure to set the IMAGE CONTROL switch back to NORMAL.

Editing From A Camcorder

Tape-to-tape editing is also possible using a camcorder (equipped with playback facility) as the player and your deck as the recorder.

PREPARATION

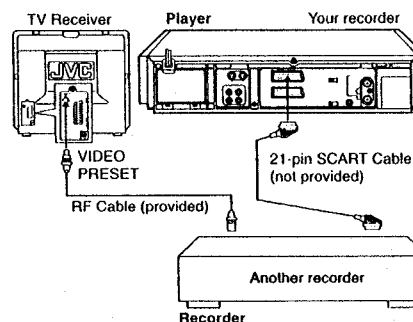
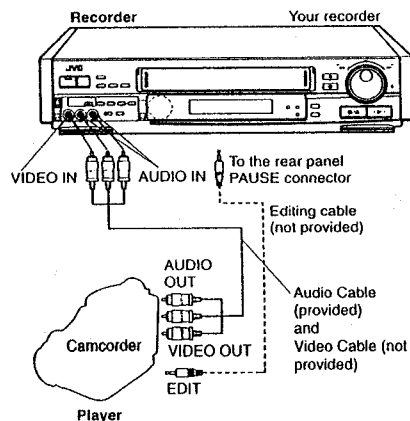
- 1 Connect the camcorder's AV OUT connector to the recorder's front panel VIDEO and AUDIO connectors.
- 2 Connect the mini-plug to the PAUSE/R.A.EDIT connector of the recorder.
- 3 Engage the external input mode. (see p. 41)
- 4 Set the IMAGE CONTROL switch to EDIT.

OPERATION

- 1 Follow steps 1 through 4 of "Editing From Another Video Recorder" on the top.

NOTES:

- If the camcorder is equipped with the Master Edit Control system, you can control the recorder using the camcorder's controls. See the camcorder's instruction manual for operating procedures.
- With this connection, you can also use the camcorder as a video camera for direct recording onto the recorder's tape. Put the recorder in Record-Pause and use the camcorder's start/stop trigger to start and pause recording. (For direct recording with a separate video camera, a camera adapter is necessary.)
- To minimize picture degradation while editing, set the IMAGE CONTROL switch to EDIT. After you finish editing, be sure to set the IMAGE CONTROL switch back to NORMAL.



Editing To Another Video Recorder

In tape-to-tape editing, your recorder can also be used as the playback unit.

PREPARATION

- 1 Connect your recorder's 21-pin AV1 IN/OUT socket or S OUT and AUDIO OUT connectors to the audio and video input connectors of the recording deck.
- 2 Load the source tape in the player and the recording tape in the recorder.
- 3 Set the IMAGE CONTROL switch to EDIT.
- 4 Engage the recorder's AUX mode.

OPERATION

- 1 Put the recorder in the Record-Pause mode.
- 2 Play back the source tape to search for a scene to be edited.
- 3 Press the recorder's Play button.
- 4 Press the recorder's Pause button to stop editing.
- 5 Repeat steps 1 through 4 to continue editing.

NOTE:

- To minimize picture degradation while editing, set the IMAGE CONTROL switch to EDIT. After you finish editing, be sure to set the IMAGE CONTROL switch back to NORMAL.

Advantages Of S-VHS Video Recorders

- You can edit from VHS to S-VHS, S-VHS to VHS, or, needless to say, from S-VHS to S-VHS.
- From VHS to S-VHS: Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to VHS: Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to S-VHS: All signals will be transferred without degradation.

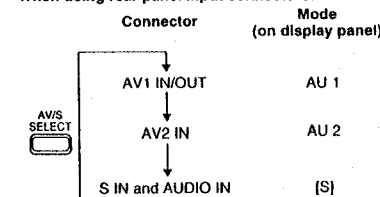
How To Select The External Input Mode

To record external audio and video signals:

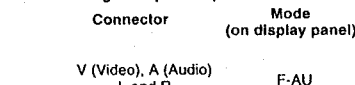
1. Press the remote control's numeric key "0".
2. Press the AV/S SELECT on the front of the recorder to select the appropriate external input mode.

■ Pressing AV/S SELECT rotates the input mode as follows:

When using rear panel input connectors:



When using front panel input connectors:

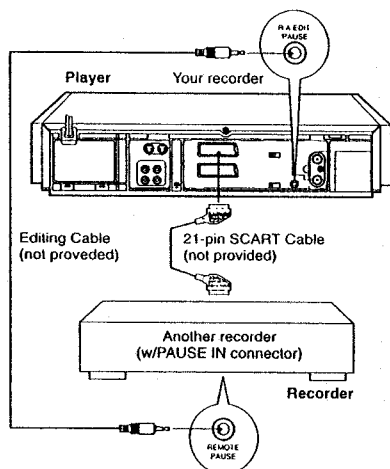


NOTES:

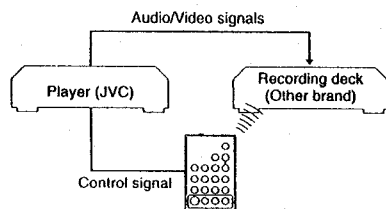
- Connections made to the front panel Video and Audio inputs automatically override the rear panel AUDIO/VIDEO input connection. If you wish to edit with another machine connected to the rear input connector, make sure that there is nothing connected to the front connectors.
- Use the L connector for monaural connection.

▶ ● Editing (cont'd)

When using a JVC video deck as the recording deck



When using a non-JVC video deck as the recording deck



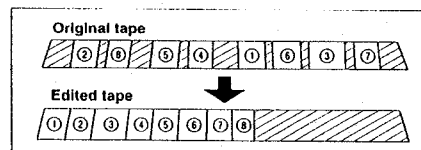
Random Assemble Editing

This function makes it easier to create edited videos when your recorder is used as the source player in combination with another video deck (JVC dedicated models only) which is equipped with a PAUSE (i.e. remote PAUSE IN) terminal. You can pre-program up to 8 scenes or "cuts" for automatic editing in the sequence you have specified.

PREPARATION

1. Connect your recorder's AV1 IN/OUT to the recording deck's AUDIO/VIDEO IN connectors.
2. Connect your recorder's R.A.EDIT/PAUSE connector to the recording deck's PAUSE connector.
 - If the recording deck does not have a PAUSE connector, connect to the R.A.EDIT connector.
3. Turn both units on.
4. Engage the recorder's AUX (iliary) mode.

("OPERATION" continued on next page.)



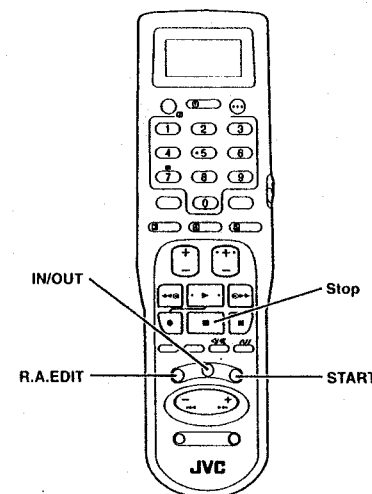
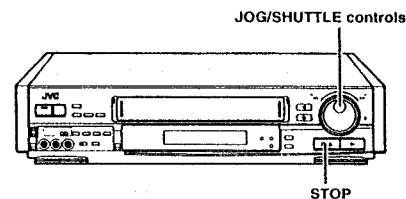
OPTIONAL RM-V704U MULTI-BRAND R.A.EDIT REMOTE CONTROL

By connecting this remote control to your recorder's R.A.EDIT/PAUSE Connector, Random Assemble Editing will become possible in conjunction with a second non-JVC deck. The RM-V704U is compatible with various European VCR brands — convenient especially if you already own a recorder other than JVC. For compatible systems and availability, please consult your JVC dealer.

BRAND LIST			
AKAI	JVC	SANYO	THOMSON
BLAUPUNKT	MITSUBISHI	SELECO	TELEFUNKEN
FERGUSON	NEC	REX	SABA
GRUNDIG	PANASONIC	SHARP	NORDMENDE
HITACHI	PHILIPS	SONY	TOSHIBA

NOTE:

■ Although the RM-V704U is designed to operate the recording deck, it may not work with some VCRs, or may have limited function capability.



Random Assemble Editing

OPERATION

1. Insert a recorded cassette into your recorder, and insert a cassette (with safety tab intact) into the recording deck.
2. Play back the tape in your recorder.
3. Press the R.A.EDIT button.
 - The display panel will change to the R.A.EDIT mode.



4. Use the Jog/Shuttle to search for the point where you want an edited scene to start, and press IN/OUT.
 - The cut-in point is registered in memory.



5. Use the Jog/Shuttle to search for the point where you want the scene to end, and press IN/OUT.
 - The cut-out point is registered in memory.



6. Specify additional scenes by repeating steps 4 - 5.
7. Put the recording deck in the Record-Pause mode.
8. Press START.
 - The function begins automatic editing; all the specified scenes are copied to the recording deck in sequential order.



- While a scene is being searched, the recording deck automatically enters the Record-Pause mode.
- When Random Assemble Editing is finished, your recorder enters the Still mode, the recording deck enters the Record-Pause mode, and the cursor blinks at the next available scene number.

9. Press R.A.EDIT again.
10. Press STOP on both decks to end Random Assemble Editing.

▶ Editing (cont'd)

Sound Shuttle

You can also monitor the sound when searching for scenes you want to edit in steps 4 – 5. (☞ p. 43)
Since you can hear the soundtrack during selection, you can avoid abrupt or unnatural sounding scene-to-scene connections.

Memory capacity

Random Assemble Editing utilizes the same memory space as the recorder's timer, so the number of sequences available to this function may not be 8, depending on how many programs are already stored in memory.

Example: When three programs are stored in memory (timer program number 1, 3 and 4).

	Program number on display panel							
Timer program	1		3	4				
R.A.EDIT program		2			5	6	7	8

Only 5 programs can be programmed for R.A.EDIT. The program numbers 2, 5, 6, 7, 8 are available and R.A.EDIT will be performed in this order.

■ If the display panel shows "-----" when you press R.A.EDIT, the memory is already full of timer programs. If this happens, cancel some of the timer programs. (☞ p. 38)

USING INDEX SEARCH WITH RANDOM ASSEMBLE EDITING

In step 8, Index Search can also be used to locate your edit points. When used, "INDEX" and the index number will appear on the display panel. For Index Search ☞ p. 24.



■ Using Index Search during R.A.EDIT will result in a reduction in accuracy.

To check programs

While in the R.A.EDIT mode:

1. Press ADJUST.

■ The display panel shows the program number and contents in chronological order as the button is pressed.



■ If you press ADJUST again after the last program is displayed, the total running time of the edited program will appear.



■ You can also check the current total running time during programming.

To cancel and replace programs

During steps 4 and 5 (☞ p. 43) or when checking programs:

1. Press ADJUST.

■ The displayed program will be cleared.

■ To cancel another program, press ADJUST until the program you want to cancel appears on the display panel, and then press CANCEL.

■ To replace a program, perform steps 4 and 5.

NOTES:

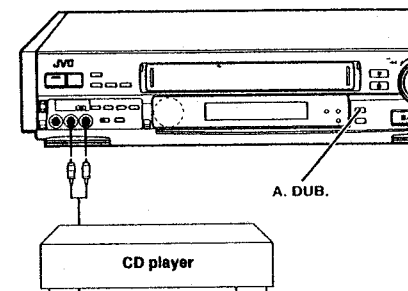
■ When editing, there may be a discrepancy of about 2 seconds on the playback tape between the locations you chose as cut-in/out points and the locations the recorder recognizes as those points.

■ For any scene, the cut-out point must have a counter reading that is at least 1 second after the cut-in point. A cut-out point with a counter reading less than or the same as the cut-in point will not be registered.

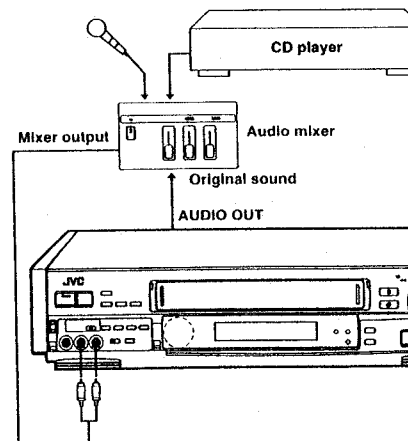
■ Since the playback deck prerolls during Random Assemble Editing, there must be at least 15 seconds worth of recorded material prior to any cut-in point on the playback tape.

■ If the search time for a cut-in point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.

A. Simple audio dubbing

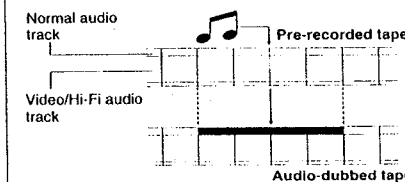


B. Audio Dubbing with audio mixing



Audio Dubbing

Audio dubbing replaces the normal audio sound of a previously recorded tape with a new soundtrack.



PREPARATION

Connect an audio component to the recorder's front panel A(Audio) L, R connectors. (For monaural equipment, use the L connector.)

OPERATION

A. Simple audio dubbing

- 1 Select the recorder's external input mode by pressing numeric key "0". "F-AU" will appear instead of a preset number.
- 2 Start playback and engage the Still mode at the point from which you wish to start audio dubbing.
- 3 Press A. DUB.
- 4 Start playback of the audio source, and then press Play.
- Audio dubbing will start.
- 5 Press Pause/Slow to stop audio dubbing temporarily.
- 6 Press Stop to stop audio dubbing.

B. Audio Dubbing with audio mixing

Perform the same procedure as described on the left, however, when the recorder is in the Audio Dubbing Pause mode in step 3, be sure to select the L+R position by pressing the Hi-Fi/NORM/MIX button. This operation is not possible without an audio mixer nor with a monaural tape.

NOTES:

■ When monitoring the sound during Audio Dubbing, the normal soundtrack will be automatically selected. If you wish to hear the mixed sound (Hi-Fi + normal soundtracks), press the Hi-Fi/NORM/MIX button to select the MIX mode. ☞ p. 28.

■ Audio dubbing will stop automatically at the counter reading of "0:00:00", and the recorder will enter the Play mode. Check the counter before starting audio dubbing.

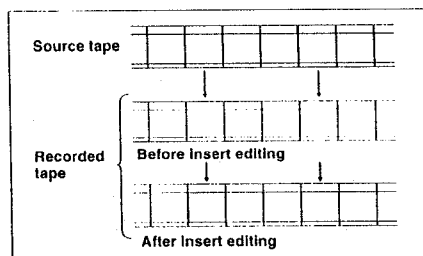
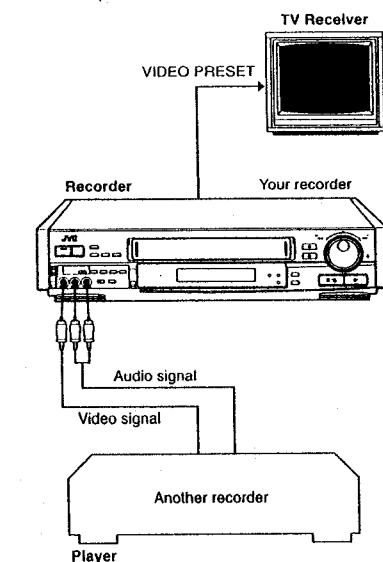
■ Audio dubbing is also possible with input via the rear panel AV1 IN/OUT or AV2 IN. In these cases, select the appropriate input mode. ☞ p. 41

■ Connections made to the front panel V(Video) and A(Audio) input automatically override the rear panel AV input connection.

■ Audio dubbing is not possible with cassettes whose safety tab has been removed.

■ When playing back an audio-dubbed tape, press the Hi-Fi/NORM/MIX button to select the soundtrack you wish to hear. (☞ p. 28)

▶ ● Editing (cont'd)



Insert Editing

Insert editing replaces part of the recorded scene with new material. Both the picture and Hi-Fi audio soundtrack are replaced with new ones, while the normal audio soundtrack remains unchanged. If you wish to change the normal audio track as well, use the audio dubbing function simultaneously.

PREPARATION

- Connect another video recorder to the rear panel 21-pin AV1 or AV2 socket, or front panel A (Audio) and V (Video) connectors.
- Engage the external input mode:
 - To select the input connectors and the corresponding external input mode, see p. 41

OPERATION

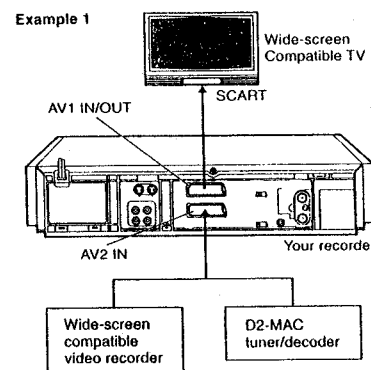
- [1] Load the source tape in the player, and the recording tape in your recorder.
- [2] Play back the recording tape and determine the edit-out point (the end of the segment to be replaced) using the JOG/SHUTTLE controls.
 - Releasing the JOG/SHUTTLE controls engages the Still mode.
- [3] Press C. RESET. (0:00:00)
- [4] Determine the edit-in point (the beginning of the segment to be replaced) using the JOG/SHUTTLE controls.
- [5] Press INSERT. (Insert-Pause mode)
 - For simultaneous replacement of the normal audio soundtrack, press A. DUB as well.
 - The TV screen changes from the still picture to the input signal you are going to record.
- [6] Play back the segment of the source tape to be inserted.
- [7] Press Play.
 - Insert editing will start. At counter 0:00:00, insert editing will stop automatically while the tape continues running in the Play mode. If you wish to stop insert editing before the specified edit-out point, press C. RESET.

NOTES:

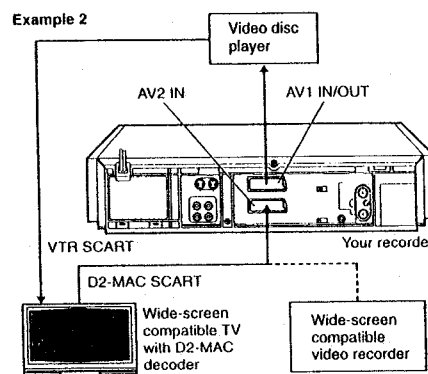
- Suitable leads can be obtained from your dealer.
- Insert editing is not possible with cassettes whose safety tab has been removed.
- In insert editing, the recording speed (SP/LP) is determined by the previous recording to be replaced. If the previous recording's speed changes within a single edit, the inserted picture will be distorted at the switching point.

Information On Wide-Screen Viewing And Recording – D2-MAC –

Example 1



Example 2



NOTES:

- When connecting a wide-screen compatible TV to the AV2 IN/DECODER connector, set the AV2 SELECT switch on the rear of the recorder to "AV2 IN".
- For the recorder to control the television, it must be connected to the TV via the AV1 IN/OUT connector.
- For the recorder to record in the correct mode automatically, the signal must be applied to either the AV1 IN/OUT or AV2 IN/DECODER connector.
- When recording wide-screen programmes via the S INPUT (S IN) or V INPUT connector, for example in tape-to-tape dubbing, set the 16:9 REC switch to MANUAL.
- When playing back wide-screen programmes via the S OUT connector, switch the television to the 16:9 mode manually.
- The 16:9 indicator will light...
 - When the 16:9 REC switch is set to MANUAL.
 - When the 16:9 REC switch is set to AUTO and a wide-screen is being played back or received via the AV1 IN/OUT or AV2 IN socket.

Wide-Screen Viewing And Recording

If your television is compatible with the 16:9 wide-screen format, please read this page to take full advantage of this recorder's Auto 16:9 function.

Set this switch to AUTO. Then your recorder will automatically record wide-screen programmes as "wide" and normal programmes as "normal". Whichever position of this switch is selected, your recorder will automatically:

- play back wide-screen programmes as "wide" and normal programmes as "normal".
- control the television (if equipped with Auto Aspect Ratio Switching function) so that both types of programmes are displayed with the right proportions.



What You See On The Screen

Normal programmes Wide-screen programmes

Normal television (4:3 aspect ratio)



Wide-compatible normal television (4:3 aspect ratio)

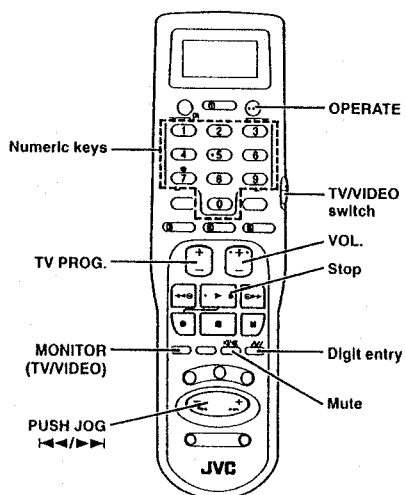
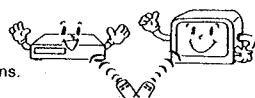


Wide-screen television (16:9 aspect ratio)



Using The Remote Control For TV Operation

The provided remote control can operate the basic functions of your television. In addition to JVC televisions, other manufacturers' televisions listed here can also be controlled by setting the remote control to the corresponding TV code. The remote control's default code is "01", which enables control of most JVC televisions.



CODE	TV BRAND NAME
01	JVC
02	SONY
03	PANASONIC
04	PHILIPS
05	FERGUSON
06	HITACHI
07	TOSHIBA
08	mitsubishi

IMPORTANT

Although the provided remote control unit is compatible with JVC televisions, as well as many TV models manufactured by others, it is possible that the provided remote control will not work with your TV, or in some instances, will have limited function capability.

TV Code Setting

Your remote control can operate the basic functions of your TV set. In addition to JVC televisions, other manufacturers' televisions listed on the left can also be controlled by setting the remote control to "TV". If your television is a JVC (Code 01), you don't have to set the TV code in step 2.

- 1 Set the TV/VIDEO switch to "TV".
- 2 While holding down the OPERATE button, press the numeric keys corresponding to the code number for your TV's brand, and then press Stop.
 - Press OPERATE to turn the TV power on.
 - Press MONITOR (TV/VIDEO) to set the TV for TV or VIDEO (or AV) mode.
 - Press TV PROG. to select the TV's preset.
 - Press VOL. to adjust the TV's sound volume.
 - Press Mute to mute the TV's sound.

[?] To operate your recorder, set the TV/VIDEO switch back to "VIDEO".

NOTES:

- The MONITOR (TV/VIDEO) button does not function with televisions using Code 05.
- With some televisions, the OPERATE button functions only to turn the TV power off, and the MONITOR (TV/VIDEO) button functions only to switch the TV to the VIDEO (AV) mode.
- Whenever you replace batteries in the remote control, it is necessary to re-set the TV code if your television is not a JVC TV.

To Control Your Television With Additional Buttons

The numeric keys can also be used to select the TV's channel by setting the remote control to the TV mode.

- 1 Set the TV/VIDEO switch to "TV".
- 2 Use the numeric keys and the Digit entry button or the PUSH JOG << / >> buttons to select the TV's channel.
 - With televisions using Codes other than 08 the Digit entry button corresponds to the 1-digit/2-digit entry switching button (often labelled <- / ->) of your TV's remote control.
 - With a JVC television using Code 1 the PUSH JOG <- / -> button corresponds to the 10 + button, and the PUSH JOG >> / + button, to the 20 + button of your TV's remote control.

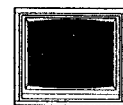
NOTES:

- The way these buttons are used is determined by your TV. Use these buttons as instructed for your TV's remote control.

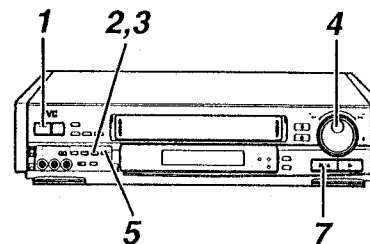


Station Presetting

The procedure introduced here lets you assign receivable TV stations in your area to preset positions on your video recorder's tuner one by one manually. If you do not want to use Auto Tuning System (p. 18), follow the instructions on this page.



POWER ON;
SELECT VIDEO
PRESET (OR AV MODE)



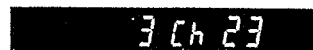
To get a clearer picture — Fine-Tuning —

After step 6, you can perform Auto Fine-Tuning for all the stored stations at once.

- 1 Press PAUSE for more than 2 seconds.
 - Auto Fine-Tuning will start.



- After completion of Auto Fine-Tuning for all the stored stations, the display panel will return to step 6.



- 2 Continue to step 7.

If you want to fine-tune a specified station, try fine-tuning manually.

- 1 Press TV PROG. (+ or -) to select the station you wish to fine-tune.
- 2 Press PAUSE briefly.
- 3 Press TV PROG. (+ or -) so that the picture becomes clearer.
- 4 Press PAUSE briefly again.
- 5 Continue to step 7.

NOTE:

- If you want to return to a lower channel number after skipping it by mistake in Step 3, hold down SEARCH to start reverse channel search. Releasing the button stops the reverse search.

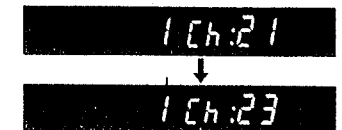
ENGAGE THE TUNING MODE

- 1 Press OPERATE to turn on the recorder.
- 2 Press CH SET until the display panel shows the following.



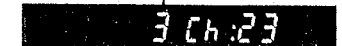
START TUNING

- 3 Press SEARCH.
 - Automatic scanning will start at the lowest station channel number, and stop when a station is detected.
 - If this is not the station you want to store, press SEARCH again.



SELECT A PRESET POSITION

- 4 Turn the TV PROG. dial to select the tuner preset position where you wish to store that TV station.



STORE THE STATION

- 5 Press STORE to store the station.



- This message indicates that UHF channel 23 has been stored in the tuner's preset position 3.

CONTINUE

- 6 Repeat steps 3 through 5 for other TV stations.
 - If the picture of the detected station is not satisfactory, try fine-tuning. See below.

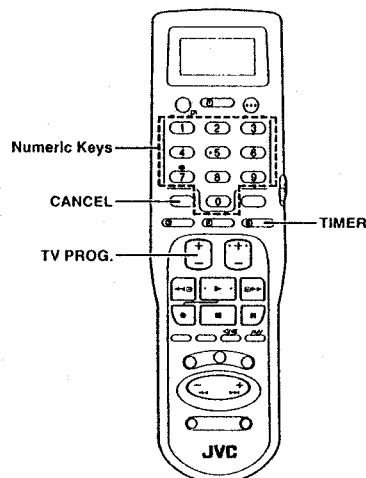
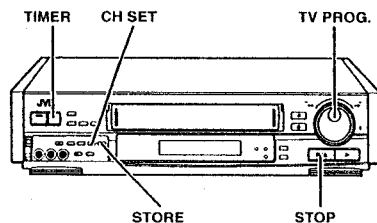
CANCEL THE TUNING MODE

- 7 Press STOP.

To change preset stations, see p. 50



Station Presetting (cont'd)



Changing Preset TV Stations

TO CHECK STORED TV STATIONS

First turn on the recorder.

- [1] Press TV PROG. to select the preset position of the stored TV station whose number you want to know.
- [2] Press CH. SET until the display shows the following.

1 ch 26

■ This indicates that preset position 1 stores the TV station on channel 26.

- [3] To check other preset positions, press TV PROG.
- [4] Press STOP to disengage the tuning mode.

TO DELETE STORED CHANNELS

First turn on the recorder.

- [1] Press TV PROG. to select the preset position you want to delete. (e.g. PR. 1)
- [2] Press CH SET until the display shows the following.

1 ch 26

- [3] Press CANCEL.

1 ch 26

Colon will appear.

■ This indicates that preset position 1 can no longer be chosen by TV PROG. buttons.

- [4] Press STOP to disengage the tuning mode.

TO STORE NEW TV STATIONS

First turn on the recorder.

- [1] Press CH SET until the display shows the following.

1 ch 26

- [2] Press TIMER.

■ The channel number starts blinking.

- [3] Press numeric keys to input the channel number you want to store. (e.g. Ch 40.)

1 ch 40

- [4] Press numeric keys to input the number of a vacant preset position (e.g. 6).

6 ch 40

- [5] Press STORE.

6 ch 40

Colon will disappear.

- [6] Press STOP to disengage the tuning mode.



TV Station Channel Number Guide

Only the main stations are listed. There are in addition many relay stations, and full lists are available from BBC and ITC.

	BBC1	BBC2	ITV	CH4		BBC1	BBC2	ITV	CH4
London & South-East					North-West				
Bluebell Hill.....	40	46	43	65	Caldbeck.....	30	34	28	32
Crystal Palace.....	26	33	23	30	Winter Hill.....	55	62	59	65
Dover.....	50	56	66	53	North-East				
Heathfield.....	49	52	64	67	Bilsdale West Moor.....	33	26	29	23
Oxford.....	57	63	60	53	Chatton.....	39	45	49	42
South-West					Pontop Pike.....	58	64	61	54
Beacon Hill.....	57	63	60	53	Scotland				
Caradon Hill.....	22	28	25	32	Angus.....	57	63	60	53
Huntshaw Cross.....	55	62	59	65	Black Hill.....	40	46	43	50
Redruth.....	51	44	41	47	Sandale.....	22	—	—	—
Stockland Hill.....	33	26	23	29	Caldbeck.....	—	34	28	32
Channel Islands					Creigkelly.....	31	27	24	21
Fremont Point.....	51	44	41	47	Darvel.....	33	26	23	29
South					Durris.....	22	28	25	32
Hannington.....	39	45	42	66	Eitshal.....	33	26	23	29
Midhurst.....	61	55	58	68	Keelylang Hill.....	40	46	43	50
Rowridge.....	31	24	27	21	Knock More.....	33	26	23	29
West					Rosemarkie.....	39	45	49	42
Mendip.....	58	64	61	54	Rumster Forest.....	31	27	24	21
East					Selkirk.....	55	62	59	65
Sandy Heath.....	31	27	24	21	Wales				
Sudbury.....	51	44	41	47	Blaenplwyl.....	31	27	24	21
Tacolneston.....	62	55	59	65	Carmel.....	57	63	60	53
Midlands					Llanddona.....	57	63	60	53
Ridge Hill.....	22	28	25	32	Moel-y-Parc.....	52	45	49	42
Sutton Coldfield.....	46	40	43	50	Presely.....	46	40	43	50
The Wrekin.....	26	33	23	29	Wenvoe.....	44	51	41	47
Waltham.....	58	64	61	54	Northern Ireland				
North					Brougher Mountain.....	22	28	25	32
Belmont.....	22	28	25	32	Divis.....	31	27	24	21
Emley Moor.....	44	51	47	41	Limavady.....	55	62	59	65

Glossary

The following glossary is for your convenience in helping you better understand your VCR and its operation.

AV: Short for Audio/Video. Often refers to separate audio (sound) and video (picture) signals which, when combined, make up a program.

AV Connection: Type of VCR-to-TV connection in which the VCR's 21-pin SCART connector is connected to the TV's 21-pin SCART connector. Audio and video signals are sent separately and directly to the TV without having to modulate them into RF signals.

Cassette Adapter: Provided with most Compact VHS camcorders, and also available optionally, it allows VHS-C cassettes to be played (and recorded) on VHS VCRs just like full-size VHS cassettes.

CH MAP: To use Video Plus+, it is necessary to let the remote control know both the preset position numbers for local TV stations you have set on your video recorder, and the GUIDE PROG. numbers for those TV stations. The "list" of presets and GUIDE PROG. numbers created in the remote control's internal memory is called the "Channel Map" (CH MAP).

Editing: Refers to dubbing or tape-to-tape editing (in which the contents of a tape in one video unit are copied to another tape in a second video unit), and to creative editing (in which video programming is actually modified to create something different from the original).

FDP: Short for Fluorescent Display Panel, which is the type of display panel used on this VCR.

GUIDE PROG.: The assigned TV station numbers, according to broadcast area, for Video Plus+ timer-recording. The GUIDE PROG. numbers 1 through 4 are for BBC1, BBC2, ITV and CH4 respectively. For other TV stations, refer to your TV directory.

Head: An electronic component which "writes" or "reads" video and audio signals on the tape.

Head Drum: A drum-shaped cylindrical assembly on which the video heads are located. It rotates at high speed, allowing the heads to "write" and "read" diagonal signal tracks on the video tape.

Hi-Fi VHS Stereo: High quality stereo sound recording/playback system developed by JVC. Uses rotary FM-audio heads which scan the tape helically at high speed.

HQ (High Quality): An enhancement feature in the VCR circuitry which provides greater picture detail.

ITR: Short for Instant Timer Recording. While the VCR is recording, pressing the REC/ITR button allows you to set the VCR to automatically stop recording (and turn off) after a certain amount of time.

LCD: Short for Liquid Crystal Display.

Mode: The status of the VCR (the operating feature being used) at any given time. (e.g. The tape is being rewind = the VCR is in the Rewind mode.)

NICAM (Near Instantaneous Companded Audio Multiplex): System developed by the BBC and adopted in the U.K. and several other countries for stereo TV sound broadcasting.

Noise: Video noise; various types of picture distortion including pulsing, streaking, and "snow". Some types are unavoidable, such as during high-speed search, while others are the result of weak TV signals or clogged video heads.

NTSC (National Television Standards Committee): The television broadcasting system used in the U.S., Japan, and other nations primarily in the Americas.

PAL (Phase Alternate Line): The colour television broadcasting system adopted in the U.K., much of Western Europe, and many other regions.

PDC (Program Delivery Control): A service designed to assure safe, accurate timer-recording by automatically compensating for changes in the broadcast schedule (such as delays and late-running programmes).

Preset Position: The "channel" numbers which are shown on the display of your video recorder, and used when choosing a station to record or timer-record. They are set during "Tuning In Your Video Recorder To Local TV Stations" procedure.

Realtime Counter: The VCR's tape counter shows tape time precisely in hours, minutes and seconds (unlike simple sequential counters). The counter resets automatically when a cassette is inserted.

RF Cable: Black insulated round cable used to connect the VCR to the TV.

RF Connection: Type of VCR-to-TV connection in which the VCR's RF (Radio Frequency) OUT terminal is connected to the TV's aerial terminal. The VCR essentially "broadcasts" the program to your TV on channel 36.

SCART: A 21-pin connector used to send/receive video and audio signals between video and audio products. Also known as a Peritel connector or a Euroconnector.

Special Effects: Playback modes other than normal-speed forward playback; includes still playback (stop motion), slow motion, and high-speed visual search.

Super VHS: A version of the VHS format which was developed to provide pictures with over 400 lines of horizontal resolution. This VCR can handle standard VHS signals only, and cannot record or play back Super VHS signals.

Tape Speeds: This determines how fast the tape travels during a recording.

SP (Standard Play):

Fast tape speed. Provides recording time of about 3 hrs. per E-180 cassette, and 4 hrs. per E-240 cassette. Most prerecorded software is recorded in SP.

LP (Long Play):

Slow tape speed. Provides recording time of about 6 hrs. per E-180 cassette, and 8 hrs. per E-240 cassette. Useful for multiple-program recording on a single cassette.

Timer-Recording: Using the VCR's built-in clock/timer for automatic, unassisted start and stop of recording.

Tracking: The video head's ability to accurately "read" recorded signals (tracks) without deviating. When tracking deviation occurs, it appears on the screen as vertical jitter and grainy streaks. The Digital Tracking function on this VCR is an extremely accurate automatic tracking system which greatly reduces the possibility of deviations.

TV PROG.: Refers to a "preset position" or the control used to select a preset position. When you set the remote control's channel numbers, the TV PROG. number for any station should be identical to the preset position number on your recorder.

UHF (Ultra High Frequency): Band of frequencies lying between 300 and 3,000 MHz. U.K. colour television broadcasts use the UHF band.

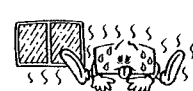
Video Plus+: A simplified system that allows timer-recording of a TV programme by simply keying-in the code number for it.

VCR: Short for Video Cassette Recorder.

VHS: The video format of this VCR, and the video format most widely used throughout the world. VHS was developed by JVC.

Special Note On Head Cleaning

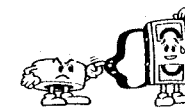
■ Video heads are affected by...



• Heat and humidity



• Dust



• Damaged dirty tape



• Continuous use

...These may clog the video heads and cause the playback picture to become blurred or interrupted.



If this happens, clean the video heads with the optional cleaning cassette (model number TCL-2) by playing it back for about 10 seconds.

■ If it does not produce a better result, please consult your JVC dealer.

In Case Of Difficulties

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	<ul style="list-style-type: none"> Is the mains power cord disconnected? — Connect it.
Clock is functioning properly, but the recorder cannot be powered.	<ul style="list-style-type: none"> Is "TIMER" displayed on the display panel? — Press the TIMER button to turn the "TIMER" indicator off.
Tape does not run during recording.	<ul style="list-style-type: none"> Is "PAUSE" displayed on the display panel? — Press the PLAY button to turn the "PAUSE" indicator off.
Tape stops during rewind or fast-forward.	<ul style="list-style-type: none"> Is the C. MEMORY button pressed? — Press again to make "M" disappear from the display panel.
Tape will not rewind or fast-forward.	<ul style="list-style-type: none"> Is the tape already fully rewound or fast-forwarded? — Check the cassette.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	<ul style="list-style-type: none"> Is a cassette loaded? Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape.
TV broadcasts cannot be recorded.	<ul style="list-style-type: none"> Has "AU" been selected? — Set to the desired channel.
Tape-to-tape editing is not possible.	<ul style="list-style-type: none"> Is the camcorder or another video recorder correctly connected? Are all necessary power switches turned ON? Has "AU" been selected? — Set to "AU".
Camera recording is not possible.	<ul style="list-style-type: none"> Is the camcorder correctly connected? Has "AU" been selected? — Set to "AU".
Timer recording is not possible.	<ul style="list-style-type: none"> Have you set the clock correctly and programmed the timer correctly? — Check once again. Is "TIMER" displayed on the display panel? — If not, press the TIMER button to display "TIMER".
Video Plus+ does not timer-record properly.	<ul style="list-style-type: none"> Are recorder's preset position numbers set properly? (p. 18.) Are remote control's preset position numbers set properly? (p. 33.)

PLAYBACK PROBLEMS

Symptoms	Check points
Playback picture does not appear while the tape is running.	<ul style="list-style-type: none"> If you are using RF OUT connection, <ul style="list-style-type: none"> Is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel (UHF 36). (p. 5) Did you turn the RF switch to OFF by mistake? — Turn it back to ON. (p. 15) If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Noise appears during visual search.	<ul style="list-style-type: none"> This is normal.
Noise appears during normal playback.	<ul style="list-style-type: none"> Is the automatic tracking mode engaged? — Try manual tracking. (p. 23)
Noise appears during slow motion playback.	<ul style="list-style-type: none"> Try manual tracking. (p. 23)
Noise appears during still playback.	<ul style="list-style-type: none"> Press Pause/Still a few times to remove the noise bars from the screen.
Playback picture is blurred or interrupted while TV broadcasts are clear.	<ul style="list-style-type: none"> Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer. (p. 53)
Breaks are noticeable in Hi-Fi audio reproduction.	<ul style="list-style-type: none"> Is the automatic tracking mode engaged? — Try manual tracking.

OTHER PROBLEMS

Symptoms	Check points
Whistling or howling is heard from TV during camera recording.	<ul style="list-style-type: none"> Move camcorder or camera's microphone away from TV or reduce TV sound volume.
Remote control's LCD clock time cannot be transferred to the recorder.	<ul style="list-style-type: none"> Is "TIMER" displayed on the display panel?
Channel cannot be switched.	<ul style="list-style-type: none"> Is recording in progress? — Press the Pause button, change the channel, and press the Play button.
Remote control does not function.	<ul style="list-style-type: none"> Are the batteries discharged? — Replace with new ones. Press the remote control's A/B button for more than 2 seconds to switch the code and then try again. Is the TV/VIDEO code switch set to the appropriate position? — Check once again.
The remote control's LCD characters are "hazy" and difficult to read.	<ul style="list-style-type: none"> The remote control's batteries are exhausted. Replace both batteries and set the clock again.

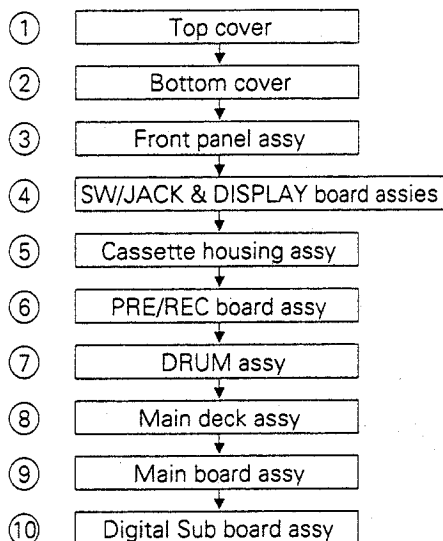
ATTENTION:

This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

SECTION 1 DISASSEMBLY

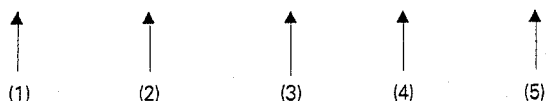
1.1 DISASSEMBLY FLOW CHART

This flowchart lists shows the disassembly steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend,route and dress the flat cables as they were originally.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	4(S1),(S2) SIDE PANEL (L),(R)	
②	BOTTOM COVER	D2	(S3), 7(L1),2(P1)	
③	FRONT PANEL ASSY	D3	7(L2),*JOG/SHUTTLE	<NOTE1>
④	SW/JACK & DISPLAY BOARD ASSIES	D4	13(L3),*CN1, *CN4	<NOTE2>
⑤	CASSETTE HOUSING ASSY	D5	2(S4),2(S5) EARTH PLATE	<NOTE3>



- (1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.
- (2) Part name to be removed or installed.
- (3) Fig.No. showing procedure or part location
- (4) Identification of part to be removed,unhooked,unlocked, released,unplugged,unclamped or unsoldered. P = Spring, W = Washer, S = Screw, L = Locking tab, * = Unhook,unlock, release,unplug or unsolder.
- (5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	4(S1),(S2) SIDE PANEL (L),(R)	
②	BOTTOM COVER	D2	(S3), 7(L1),2(P1)	
③	FRONT PANEL ASSY	D3	7(L2),*JOG/SHUTTLE	<NOTE1>
④	SW/JACK & DISPLAY BOARD ASSIES	D4	13(L3),*CN1, *CN4	<NOTE2>
⑤	CASSETTE HOUSING ASSY	D5	2(S4),2(S5) EARTH PLATE	<NOTE3>
⑥	PRE/REC BOARD ASSY	D6	2(S6),*CN1 *CN201,*CN103 SHIELD CASE	
⑦	DRUM ASSY	D7	3(S7),WR1,4(L4), INERTIA PLATE	<NOTE4>
⑧	MAIN DECK ASSY	D8	2(S8),WR2 WR3,2(L5),*CN603	<NOTE5>
⑨	MAIN BOARD ASSY	D9	2(S9),(L6)	
⑩	DIGITAL SUB BOARD ASSY	D9	2(S10),(L7)	

<NOTE1>

When reattaching the front panel assy, make sure that the door opener (a) of the cassette housing assy is lowered in position prior to the reinstallation.

<NOTE2>

When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE3>

When reattaching the cassette housing assy, pay careful attention to the switch lever not to make it touch the REC switch knob of the REC SAFETY board assy from the up-side.

(If the REC switch knob of the REC SAFETY board assy is damaged, cassette loading is impossible.)

<NOTE4>

When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE5>

- When removing the Main deck assy only, unhook the two spacers connecting it with the Main board assy with pliers from the back side of the Main board assy first, and then remove the Main deck assy.
- When reattaching the Main deck assy to the Main board assy, make sure to set the spacers into the retaining slots respectively.

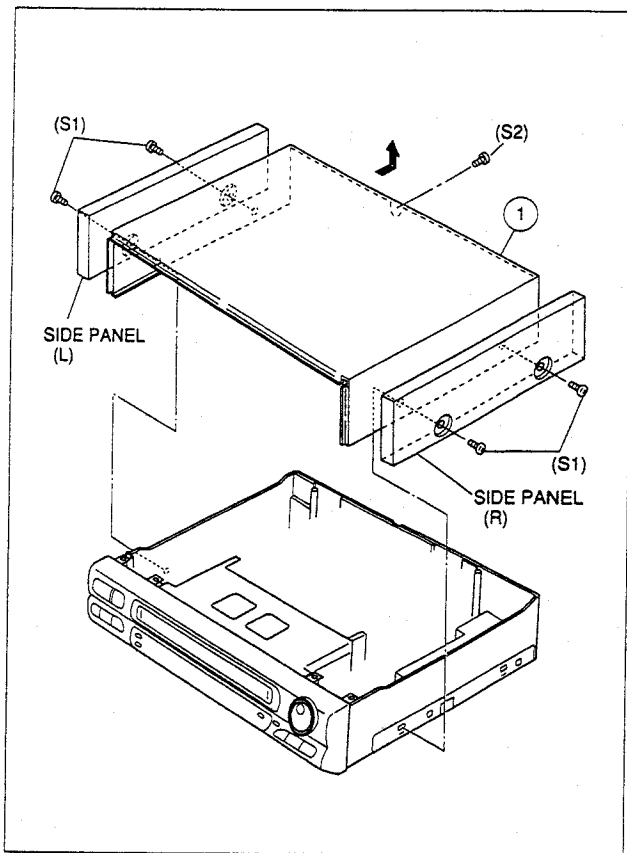


Fig. D1

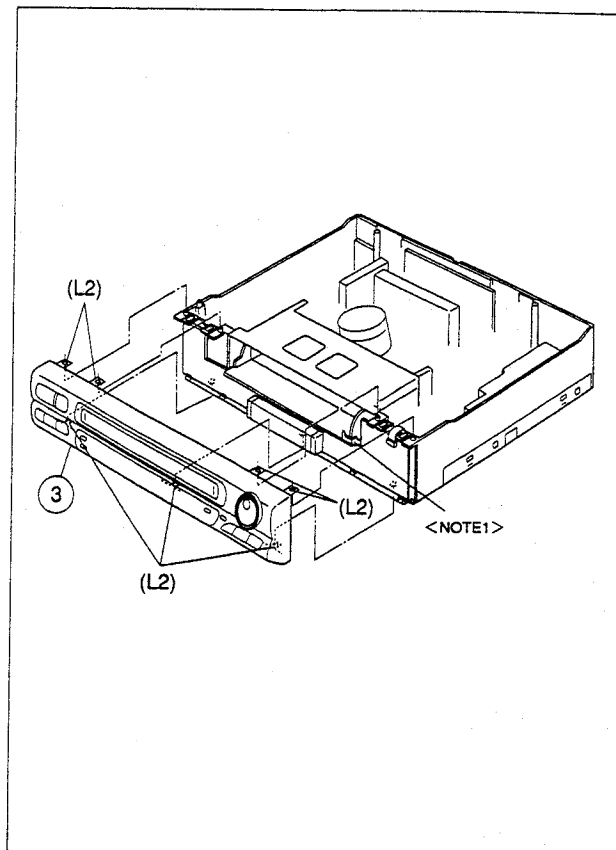


Fig. D3

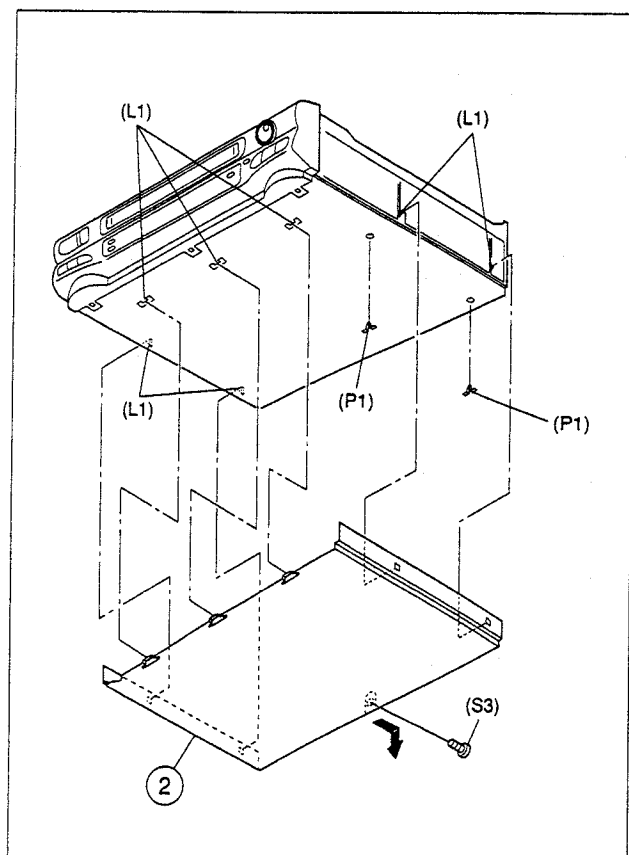


Fig. D2

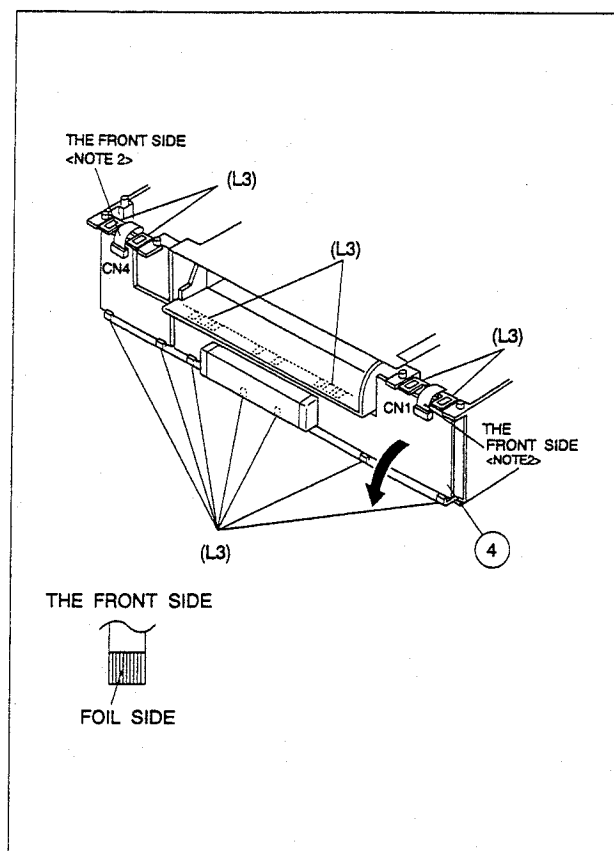


Fig. D4

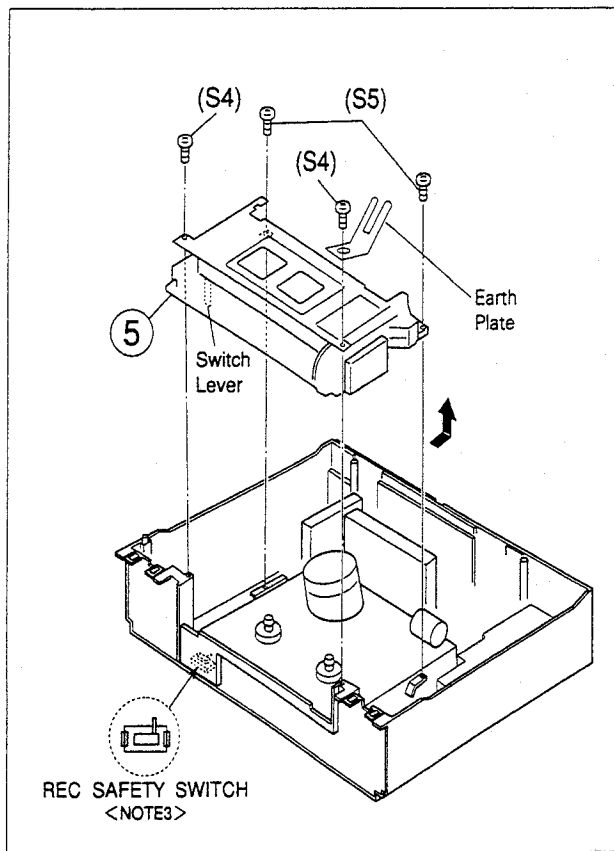


Fig. D5

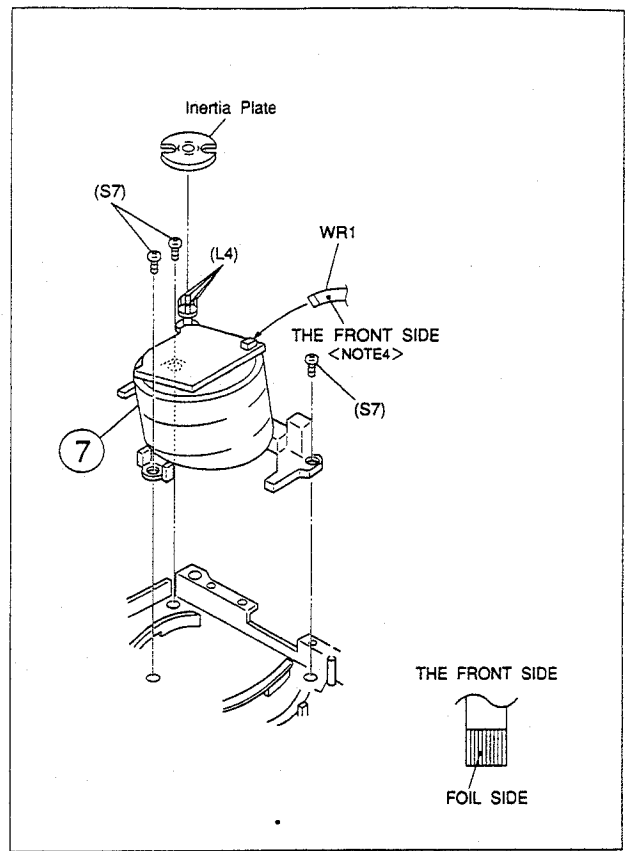


Fig. D7

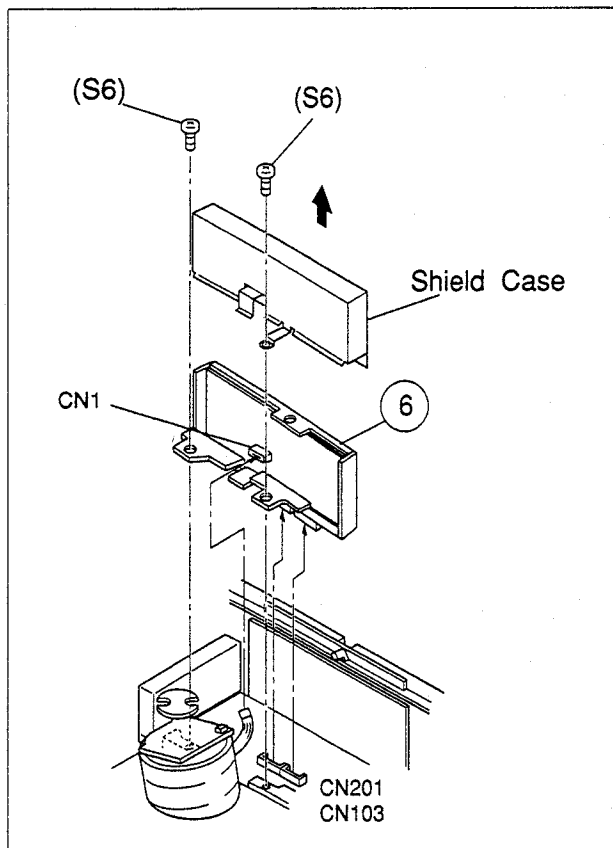


Fig. D6

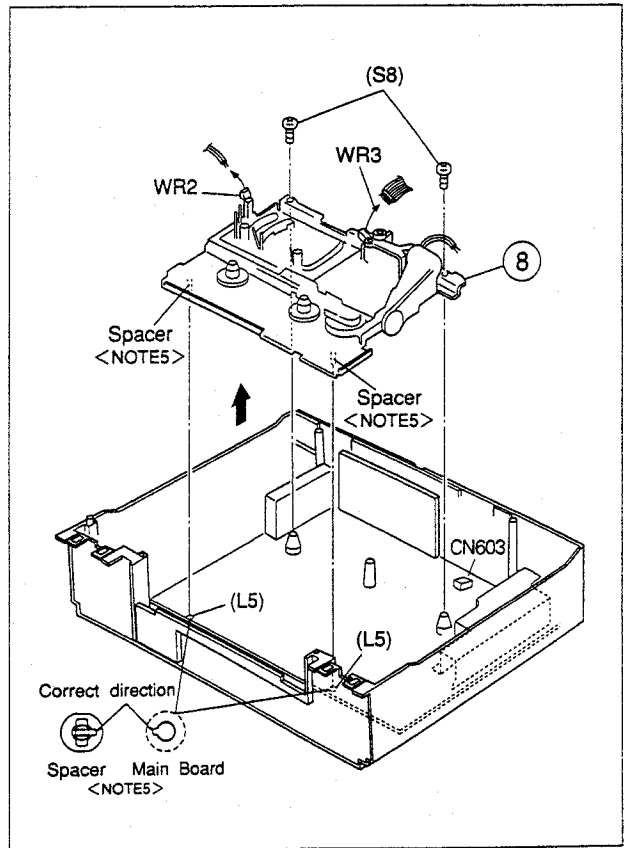


Fig. D8

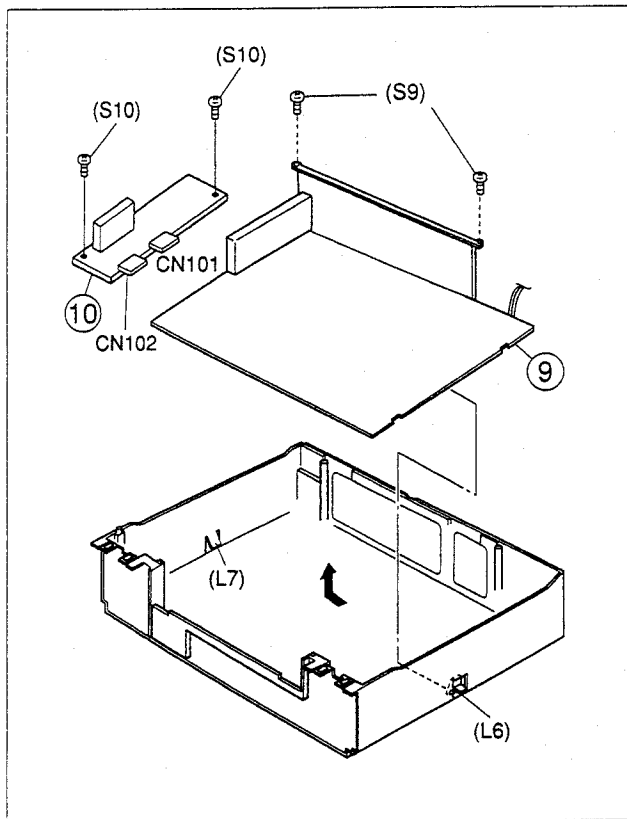


Fig. D9

1.4 CASSETTE HOUSING INSTALLATION

NOTE: Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.

1. Check that the hole of the control cam are aligned to the deck hole. If necessary, turn the loading motor belt by hand to adjust the position.

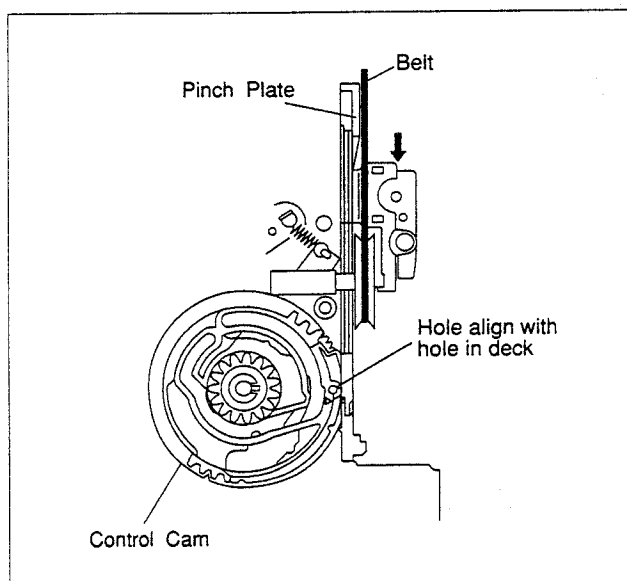


Fig. 1-4-1

1.5 SERVICE POSITION

1.5.1 How to take out the Mechanism and Main board assemblies.

- (1) Remove the Top cover, Front panel assy and CN1 and CN4 of the DISPLAY board assy.
- (2) Take out 4 screws (A), 2 screws (B), 1 screw (C) and 2 screws (D) as shown in Fig.1-5-1.

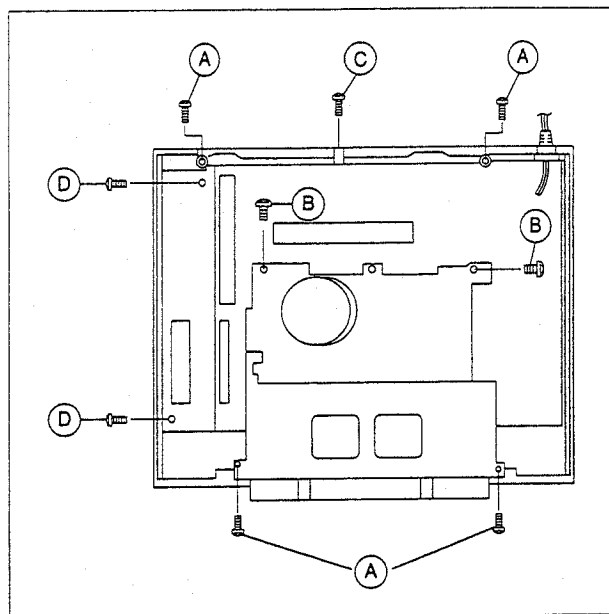


Fig. 1-5-1

- (3) Disengage 2 claws (a) from the chassis.
- (4) Remove the Mechanism assy (including Cassette housing) and Main board assy out of the chassis as shown in Fig. 1-5-2.

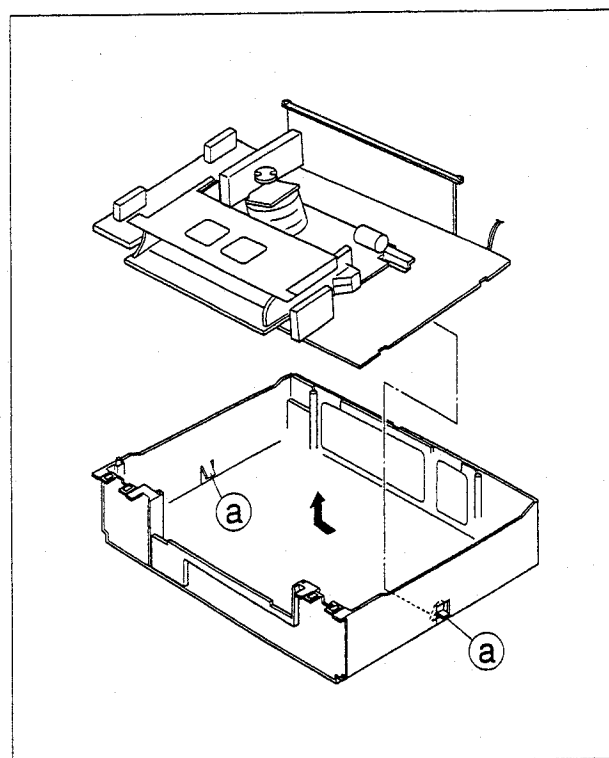


Fig. 1-5-2

- (5) Turn over the Mechanism assy and Main board assy then connect CN1 of the DISPLAY board assy.
- (6) Carry out checks & repairs as necessary as shown in Fig.1-5-3.

Note: When input the AUDIO/VIDEO signal from connector, connect CN4 of the SW/JACK board assy.

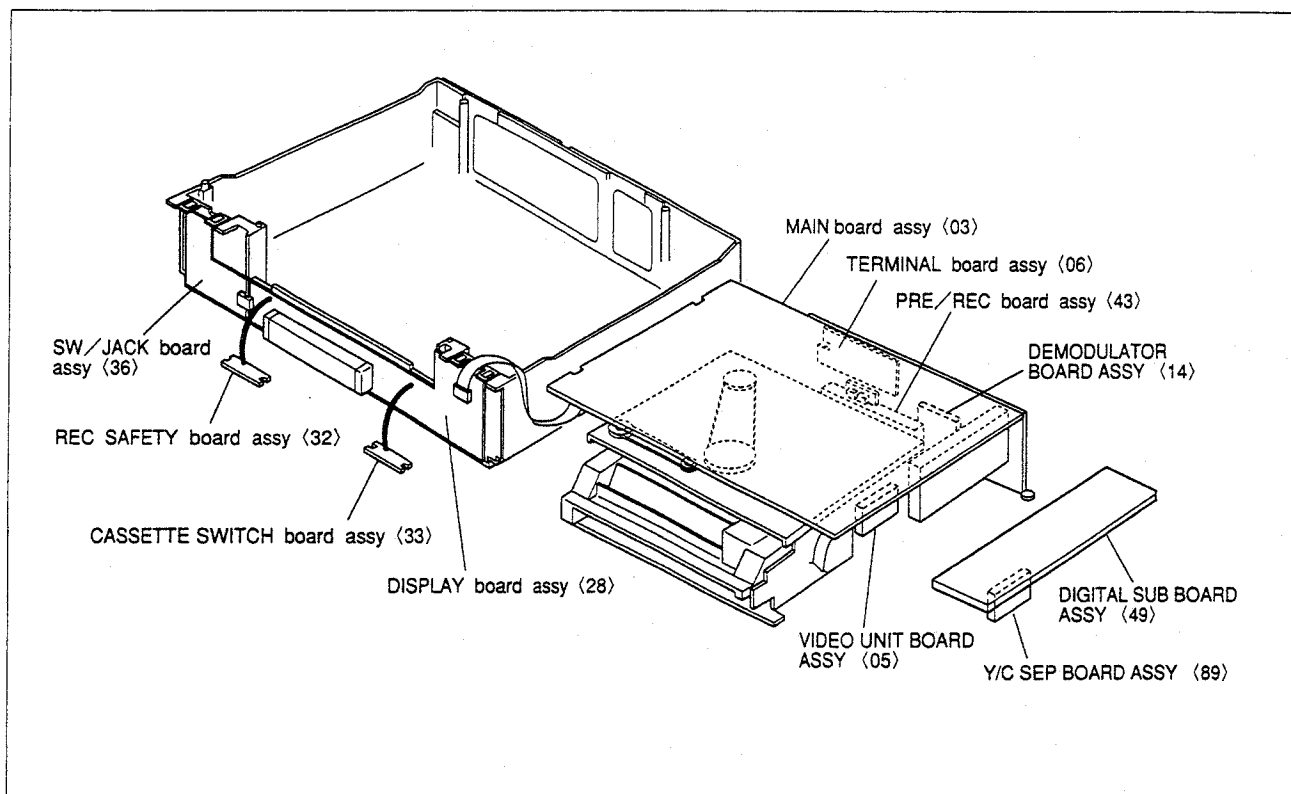


Fig. 1-5-3

1.5.2 Cautions on cassette loading when mechanism is in service position

The REC SAFETY board assembly of this set serves both for detecting the safety tab (erasure prevention tab) of a cassette and detecting a cassette loaded. Therefore, cassette loading in the condition that the mechanism is disassembled from the set needs manual operation of the switches of the REC SAFETY board assembly and the CASSETTE SWITCH board assembly.

1.5.3 Cassette loading and ejecting procedures when mechanism is in service position

- (1) Insert a cassette tape halfway into the cassette housing assembly.
- (2) Press the switch of the REC SAFETY board assembly to turn on.
- (3) When the cassette loading begins and the cassette goes down to the bottom, immediately press the switch of the REC SAFETY board assembly to turn off and hold the status that the switch of the CASSETTE SWITCH board assembly is turned on. (Fix the switch with adhesive tape or put a screwdriver, etc. on it to leave the switch in the ON status.)

- (4) In this status, desired operations (recording, playback, fast forward, rewind, etc.) can be performed.

Note: When the mechanism is in the service position, the safety tab of cassette tape is not detected and recording on cassette tapes without safety tab is possible. Therefore, carefully choose a cassette tape for operation in this mode so as to avoid using cassette tapes of important recording.

- (5) For ejecting the cassette in this status, do it in the reverse order of cassette loading mentioned above.

Note: If the manual operation REC SAFETY switch timing is incorrect, the cassette may be completely or partially ejected, and the cassette is often ejected incompletely. In such a case, it is possible to take out the cassette by hand.

If it is desired to load a cassette again after the cassette is ejected in the above procedure, make sure to set the tray of the cassette housing assembly in the frontmost position prior to loading the cassette once again.

1.5.4 Opening on the chassis.

The chassis assy has openings for easy access to the check-points and connector pins as shown in Fig.1-5-4.

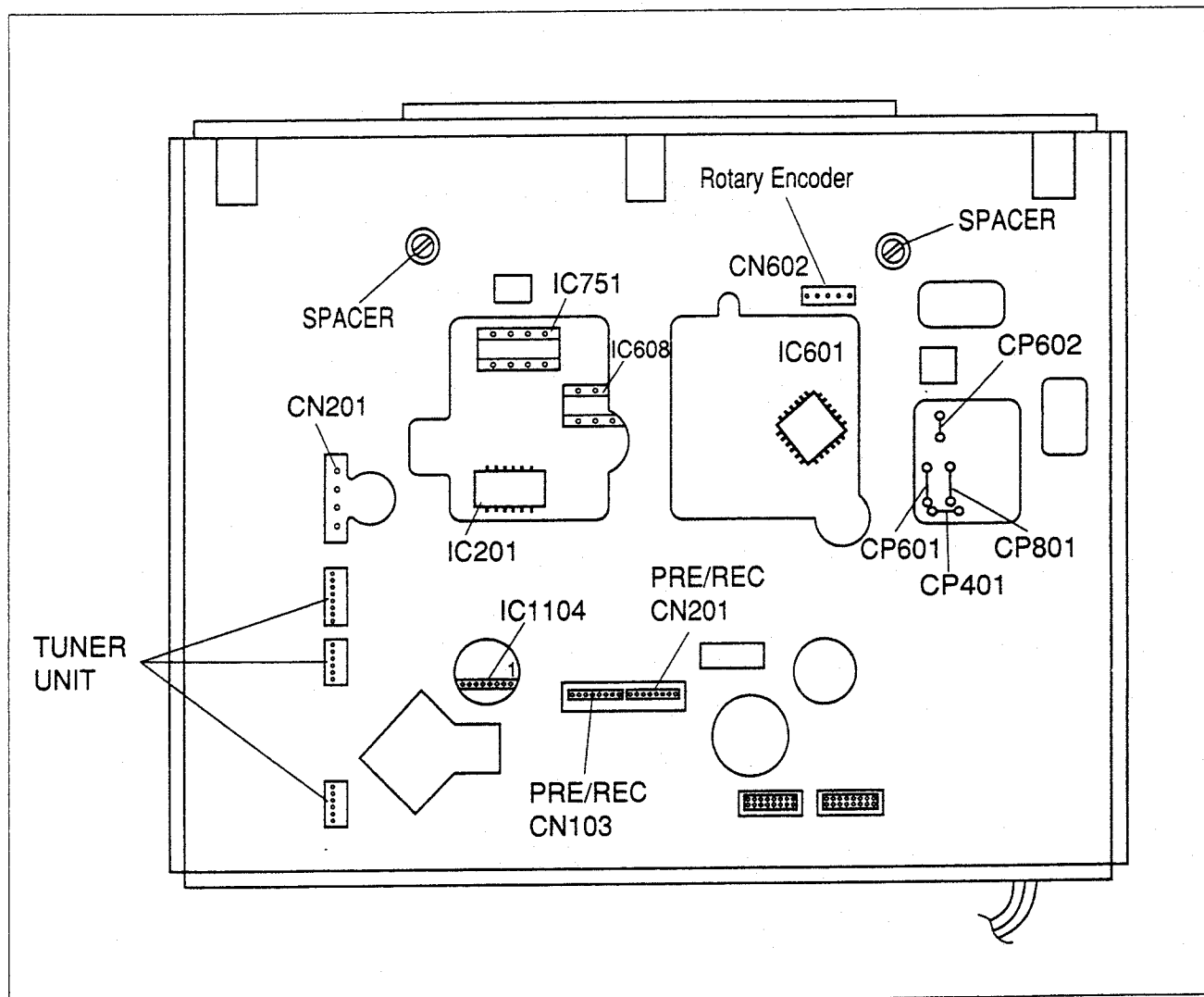


Fig. 1-5-4

1.6 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.6.1 How to set the "MECHANISM SERVICE MODE"

- (1) Disconnect VCR from AC.
- (2) Remove the Top cover, Front panel assy and cassette housing assy. (See Page 1-2, 1-3)

- (3) Connect TP2 (GND) and TP1 (TEST) on the DISPLAY board assy with a jump wire.
- (4) Connect VCR to AC.
- (5) Press the POWER button.
- (6) Select the desired operation modes with the operation buttons or remote controller.

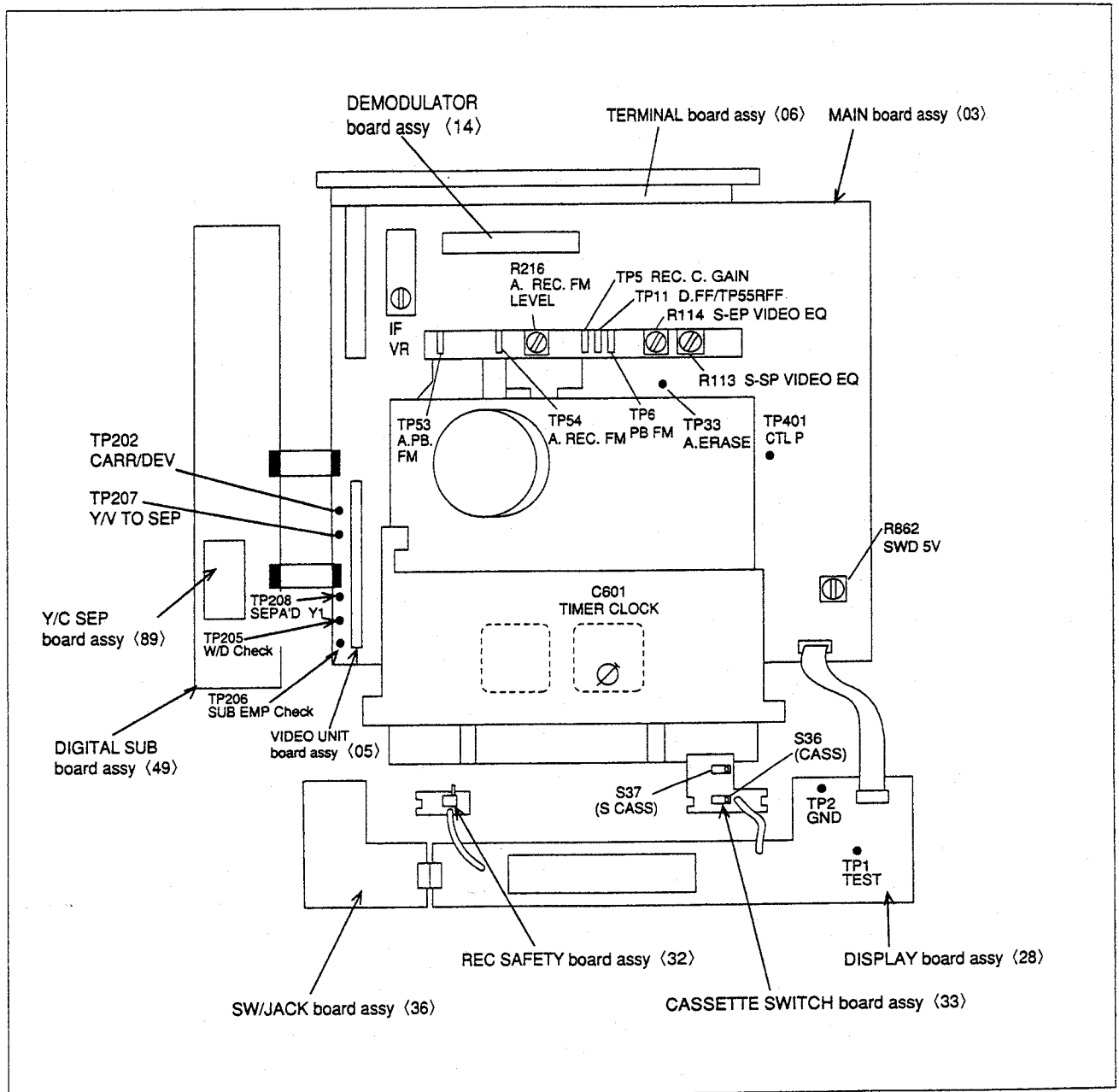


Fig. 1-6-1

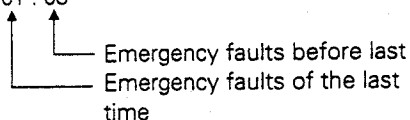
1.7 EMERGENCY DISPLAY FUNCTION

This product has the function to store the last two previous emergency faults which can be displayed in the FDP when servicing.

1.7.1 How to display record of an emergency faults

- (1) Press 'N' button of the presetting unit more than 2 seconds, and the two previous emergency faults are shown in the FDP.
- (2) Press 'N' button of the presetting unit again to return to the normal mode.

[Example] E : 01 : 03



Emergency faults before last
Emergency faults of the last time

[Example] E : — : — ← No record of emergency

1.7.2 Detail of emergency faults

FDP	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	SUP or TU REEL FG input is absent (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent(for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP
E : 06	CAPSTAN FG input is absent(for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-7-1 EMERGENCY FAULTS

SECTION 2

MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

- (1) Disconnect VCR from AC power before soldering.
- (2) Avoid imparting stress to wires when disengaging connectors.
- (3) Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarily.
- (4) Use care not to damage tabs, claws, etc during repairs.
- (5) Install the cassette housing assy only when the mechanism is in the MECHANISM ASSEMBLING MODE position.
- (6) When installing the Front panel assy, be sure to engage the housing door with the door opener of the cassette housing assy.

If this is omitted, the cassette door will not open at Eject and the cassette can not be removed. (See SECTION 1 DISASSEMBLY.)

2.1.2 Check without cassette housing assy.

Mechanism operations can be observed easily by removing the cassette housing assy. Use the MECHANISM SERVICE MODE (See SECTION 1 DIASSEMBLY)

2.1.3 Manual removal of loaded tape

When the deck enters the emergency mode with cassette tape loaded and it can not be ejected by pressing the EJECT button, take out of the cassette tape according to the following procedure.

- (1) Disconnect the power cord from AC outlet then take out the Top cover and Front panel assy.
- (2) Turn the loading motor on the Main deck assy by hand in the unloading direction to where the pole base assy (supply and take-up) is positioned below the cassette tape. At that time, pay careful attention to the tape not to get soiled with grease.
- (3) Take out 4 screws of the cassette housing assy. (See SECTION 1 DISASSEMBLY)
- (4) Remove the cassette housing with slackened tape and guard panel of cassette.
- (5) Wind up the tape by turning the reel hub (either supply or take-up side for convenience) from the bottom of the cassette, and remove the cassette tape.

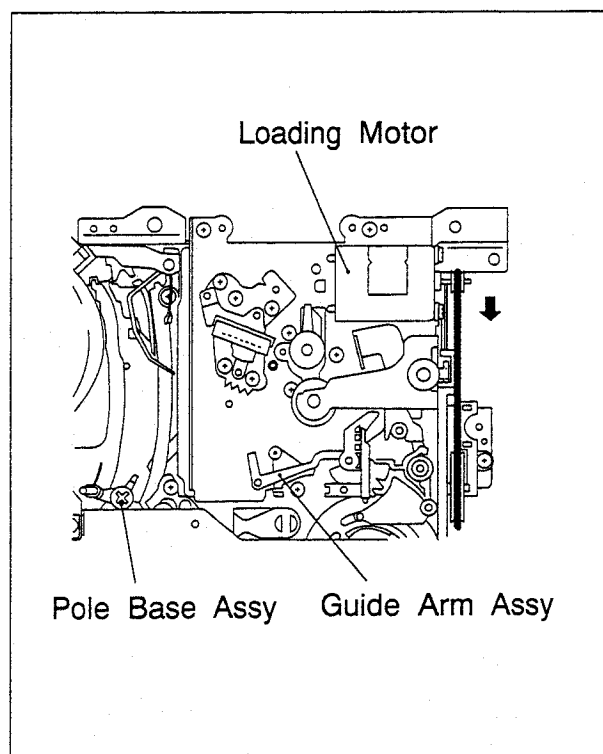


Fig. 2-1-1

2.1.4 Test Equipment

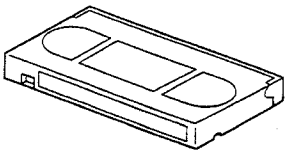
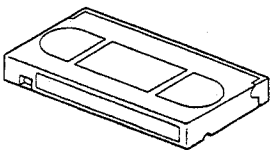
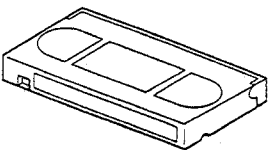

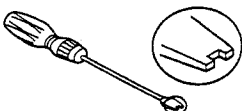
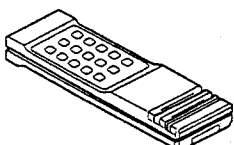

Alignment tape (SP) MHPE	Alignment tape (LP) MHPE-L	Back tension cassette gauge PUJ48076-2	A/C head positioning tool PTU94010
			
Roller driver PTU94002	Presetting unit PTU94008	Grease KYODO-SH-P	
			

Table 2-1 Test equipment

2.2 MAIN MECHANISM PARTS

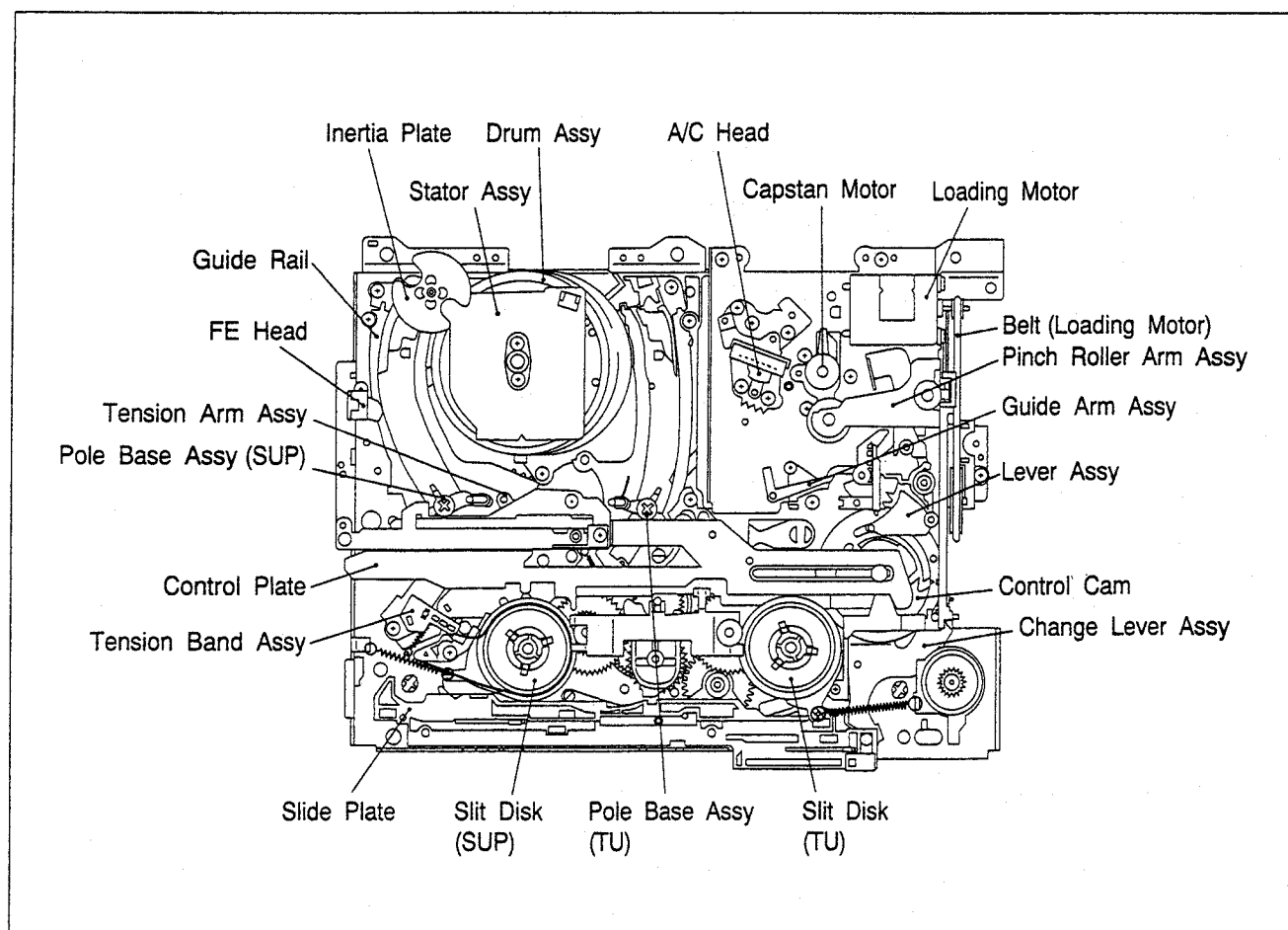


Fig. 2-2-1 Top view of main deck

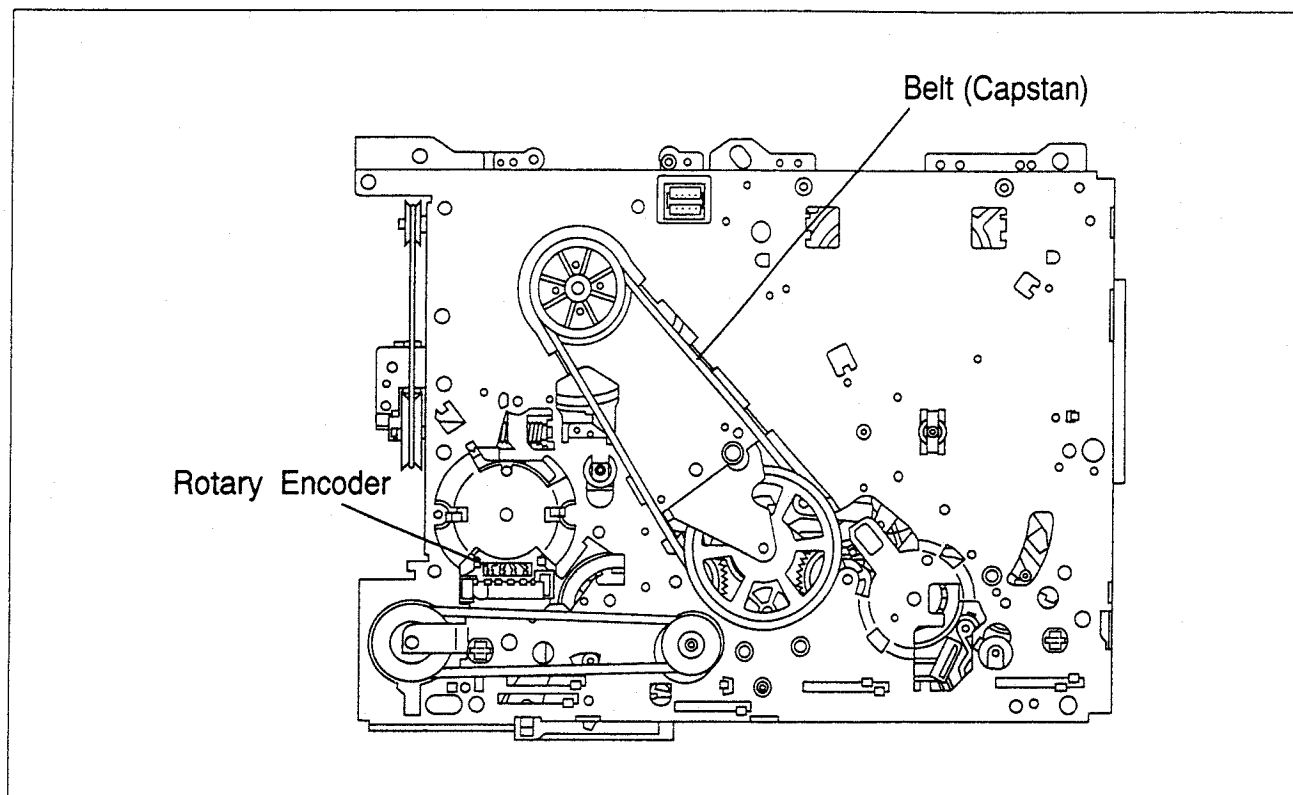


Fig. 2-2-2 Bottom view of main deck

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable, but ordinarily not feasible in practice. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brush can detract from playback picture quality and in extreme cases, even damage the tape. For cleaning, use a fine mesh cotton cloth (about the texture of a white dress-shirt) moistened in alcohol. It is recommended to also clean the tape tension posts and capstan.

- To clean the video heads, press the moistened cloth gently against the upper drum with fingertip and turn the drum by hand.
- Do not use a vertical stroke, as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenishing. Apply only when replacing lubricated parts (also clean and replace lubrication of mating parts if soiled). For parts and points to apply oil and grease, refer to the exploded views of the mechanism assy. Before oiling, clean with alcohol. Apply one or two drops of oil. Avoid excess oil.

1. Table 2-2-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents.

Category	Part No.
Oil	COSMO-HV56
Grease	KYODO-SH-P

Table 2-2-1

2. Grease is not required for a replacement cassette housing assy, as this has been applied at the factory.

NOTE : *Stir grease that has been stored for an extended period.*

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage. Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced as and when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assy	★ ○	○
	A/C head	★ ○	★ ○
	Lower drum motor assy	★	★ ○
	Pinch roller arm assy	★	★
	Full erase head	★	★
	Tension arm assy	★	★
	Guide arm assy	★	★
Drive	Capstan motor		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Slit disk (supply, take-up)		○
	Clutch unit (supply, take-up)		○
	Worm gear assy		○
	Control plate		○
	Slide plate		○
Other	Brush assy	★ ○	★ ○
	Tension band assy	○	○
	Rotary encoder		○

★ : Cleaning

○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 DISASSEMBLY/ASSEMBLY PROCEDURE OF MECHANISM

2.4.1 Precaution before disassembling mechanism

This mechanism has an exclusive operation mode provided for disassembling and installation of the mechanism (MECHANISM ASSEMBLING MODE), and it is suggested to set the mechanism to this mode before disassembly and installation. The exclusive mechanism operation mode is not generally used and becomes available by manual setting only. Then this procedure starts with the condition that the cabinet parts, cassette housing assy and PRE/REC board assy have been removed.

2.4.2 How to set the exclusive mechanism operation mode (MECHANISM ASSEMBLING MODE)

- (1) Turn the loading motor belt by hand.
- (2) Confirm that the hole of the control cam are aligned to the deck hole as shown in Fig.2-4-1.

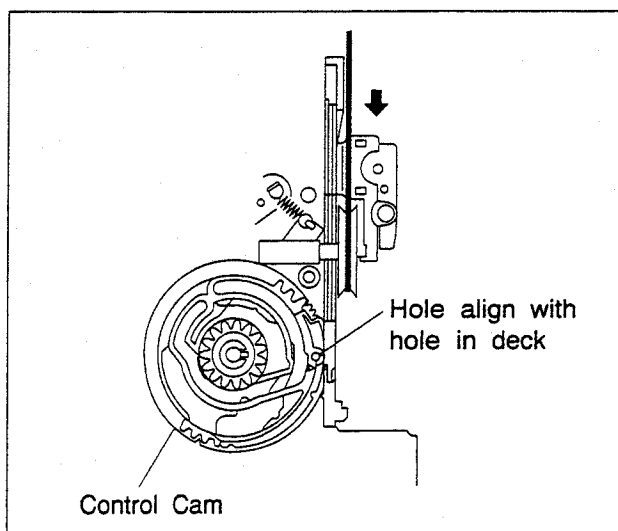


Fig. 2-4-1

2.5 MAIN PARTS REPLACEMENT OF MECHANISM

2.5.1 Pinch Roller Arm ASSY

- (1) Remove the slit washer.
- (2) Tilt up the pinch roller assy in direction of arrow.

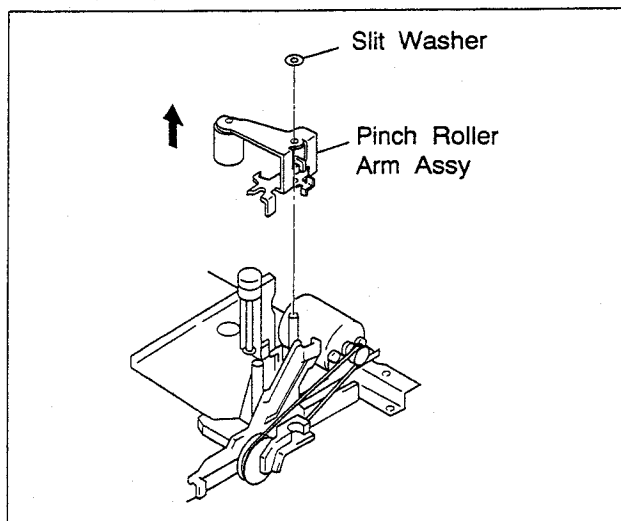


Fig.2-5-1

2.5.2 A/C Head

1. Removal

- (1) Take out 2 screws (A).
- (2) Remove the A/C head with head base.

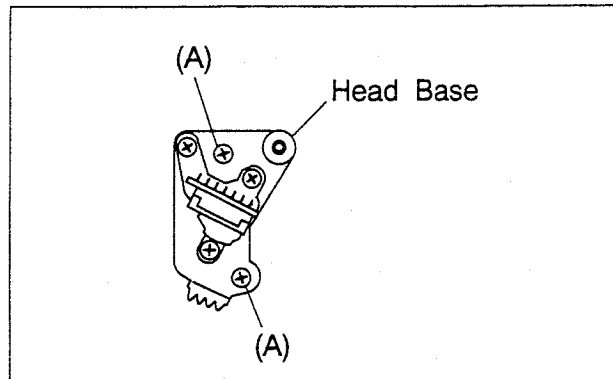


Fig.2-5-2

- (3) When replacing the A/C head only, remove 3 screws (B), use care not to misplace the 3 springs.

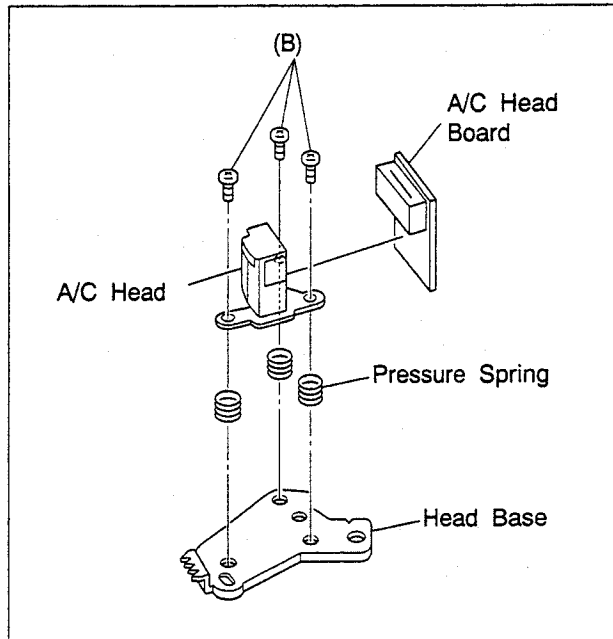


Fig.2-5-3

2. Installation

- (1) Temporarily set A/C head height as indicated in Fig. 2-5-4.

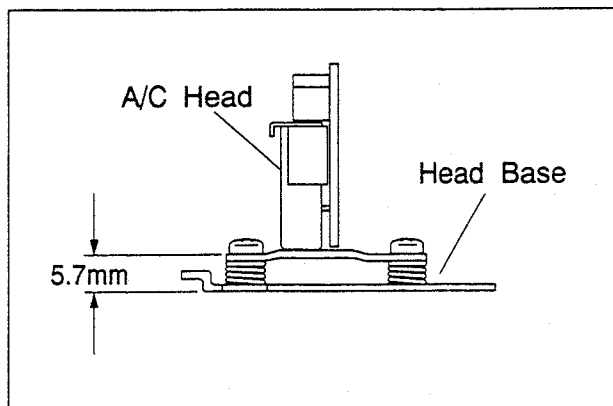


Fig.2-5-4

NOTES:

- It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.
- Perform interchangeability adjustments after electrical adjustments.

2.5.3 Pinch Plate

1. Removal

- (1) Disengage 2 claws, then remove the pinch plate.

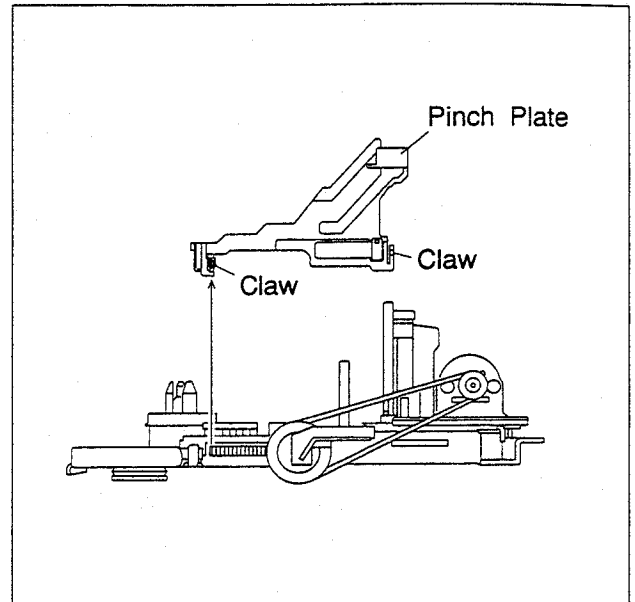


Fig.2-5-5

2. Installation

- (1) When installing pinch plate, align rack of pinch plate and triangle mark of control cam as indicated in Fig.2-5-6.

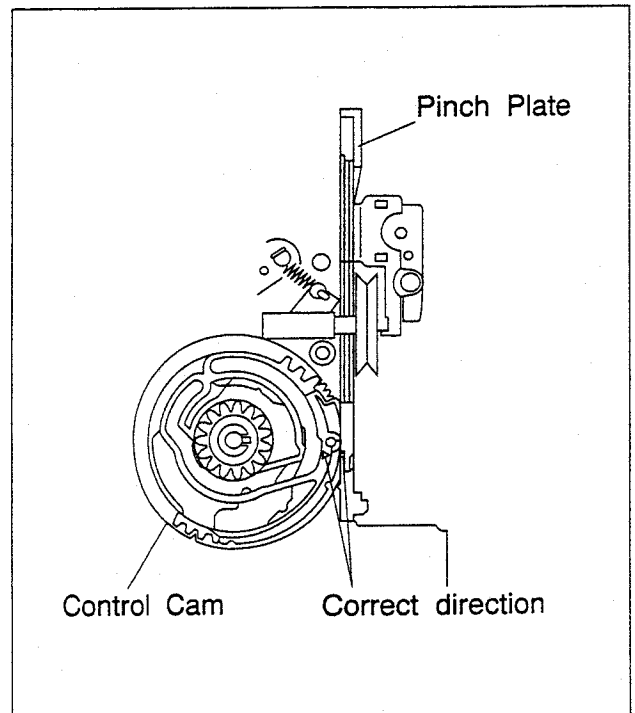


Fig. 2-5-6

2.5.4 Loading Motor

- (1) Disengage the belt between loading motor and worm gear.
- (2) Take out 2 screws (A) then remove the loading motor.

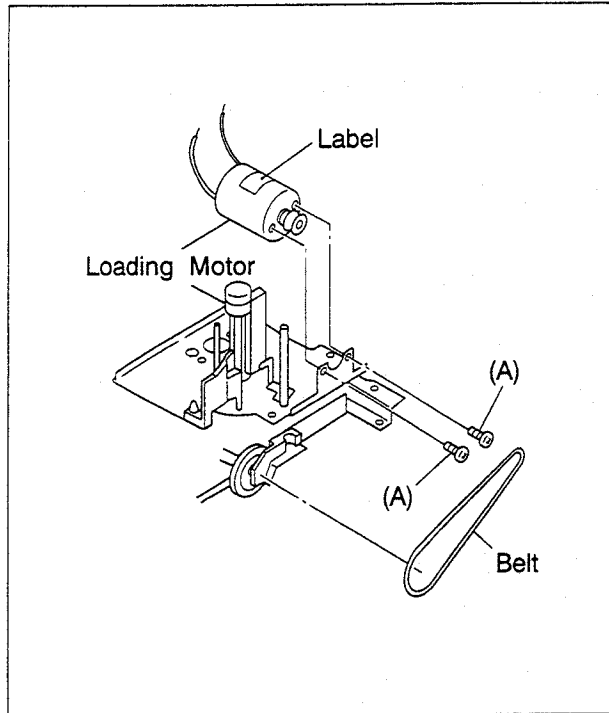


Fig.2-5-7

2.5.5 Lever Assy,Sub Deck Assy,Capstan Motor

- (1) Take out 1 slit washer, then remove the lever assy.
- (2) Disengage the belt(capstan motor) from bottom of mechanism assy first as indicated in Fig.2-5-10.
- (3) Take out 3 screws (A) and remove the sub deck assy as indicated in Fig.2-5-8.
- (4) Take out 3 screws (B) and remove the capstan motor from the sub deck assy as indicated in Fig.2-5-9.

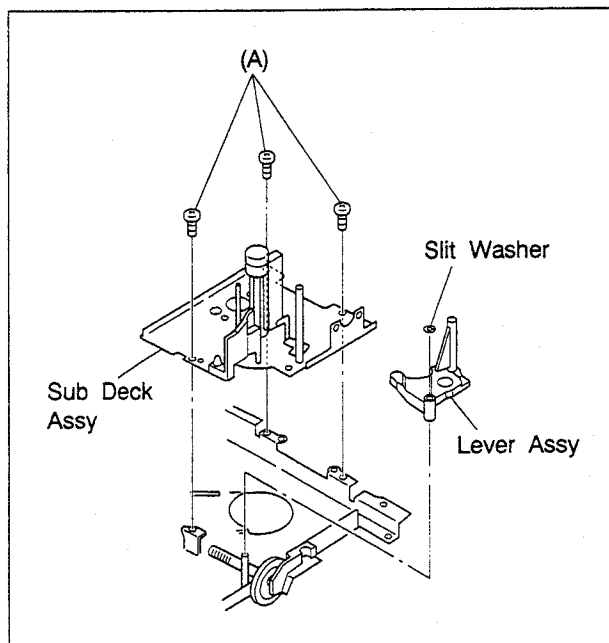


Fig.2-5-8

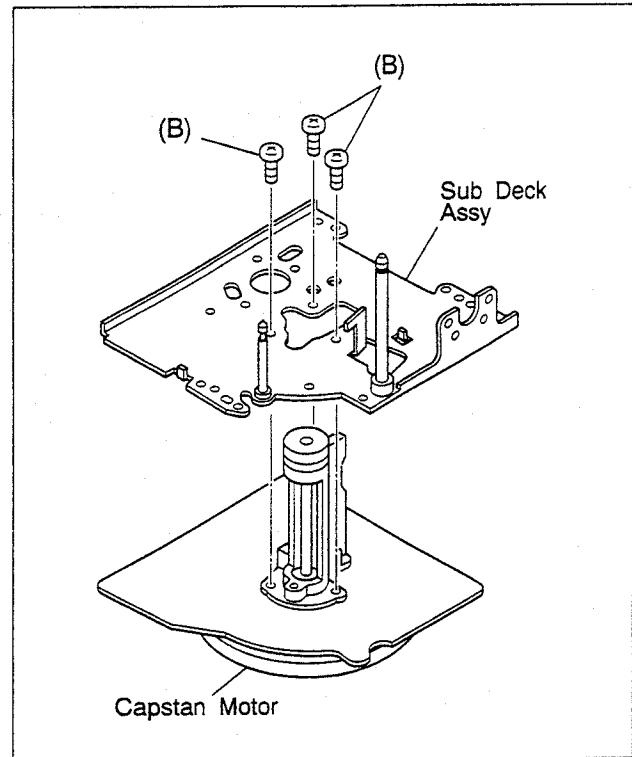


Fig.2-5-9

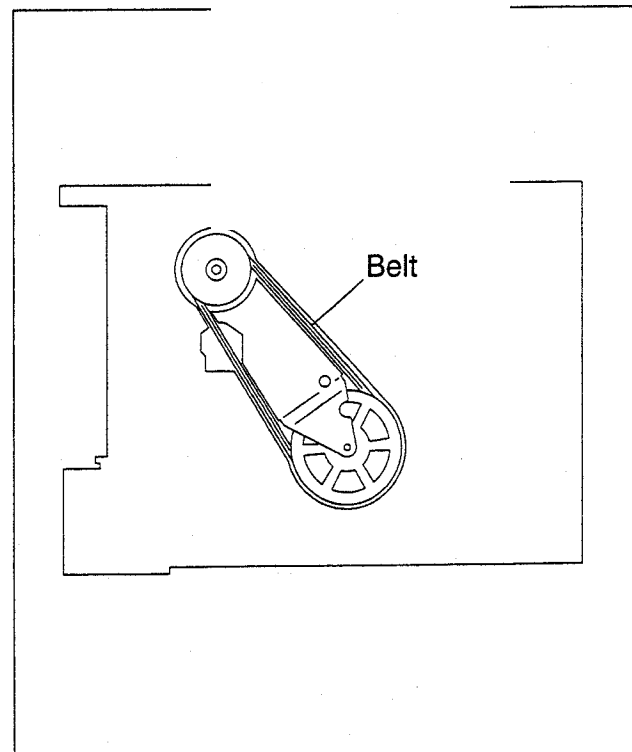


Fig.2-5-10

2.5.6 Control Bracket-1,Earth Plate

- (1) Take out 1 screw (A) and 1 screw (B).
- (2) Remove the control bracket-1 and earth plate.

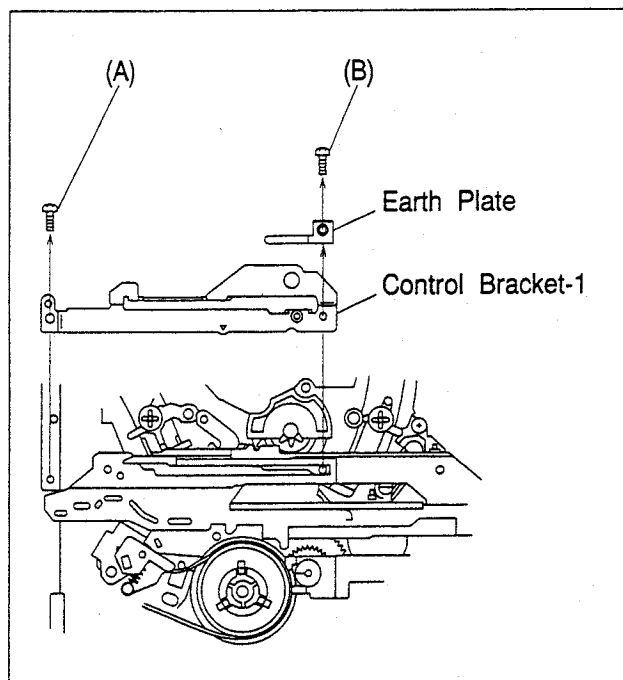


Fig.2-5-11

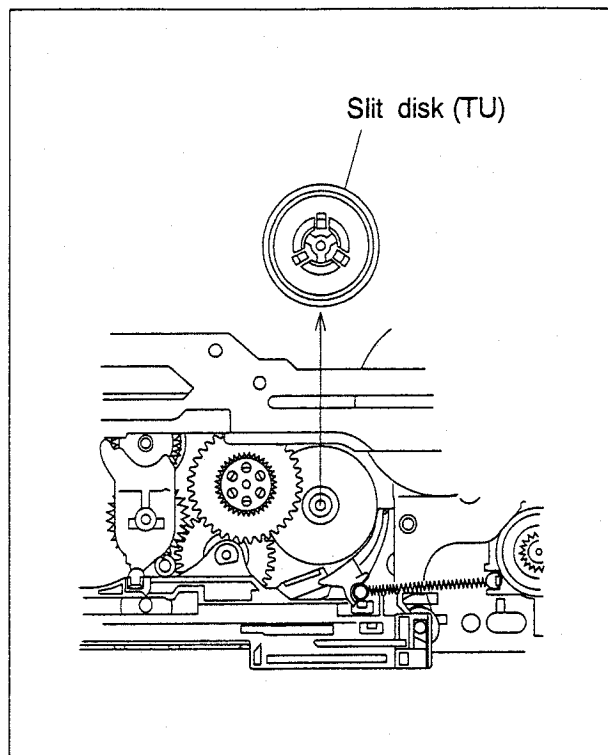


Fig.2-5-13

2.5.7 Reel Bracket,Slit disk (take-up)

- (1) Take out 2 slit washers.
- (2) Remove the reel bracket and slit disk(take-up).

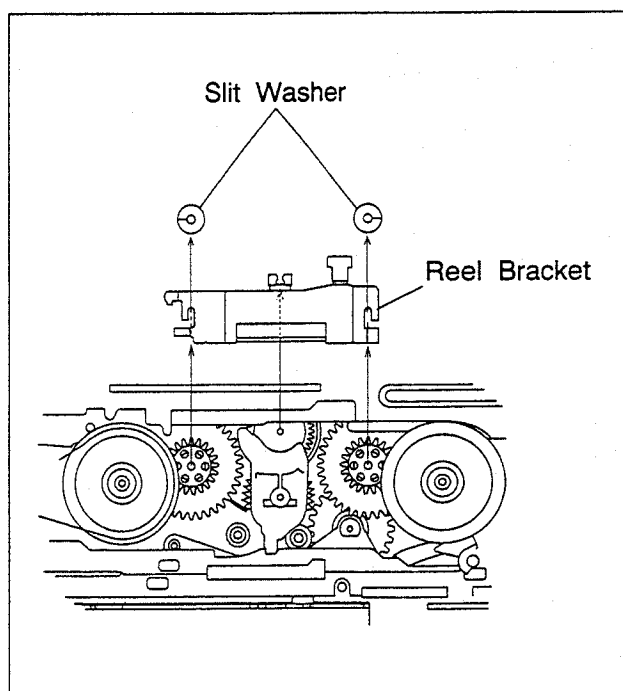


Fig.2-5-12

2.5.8 Control Bracket-2,Control Plate

- (1) Take out 1 screw (A) and remove the control bracket-2.
- (2) Take out 1 slit washer.
- (3) Disengage 2 claws and remove the control plate.

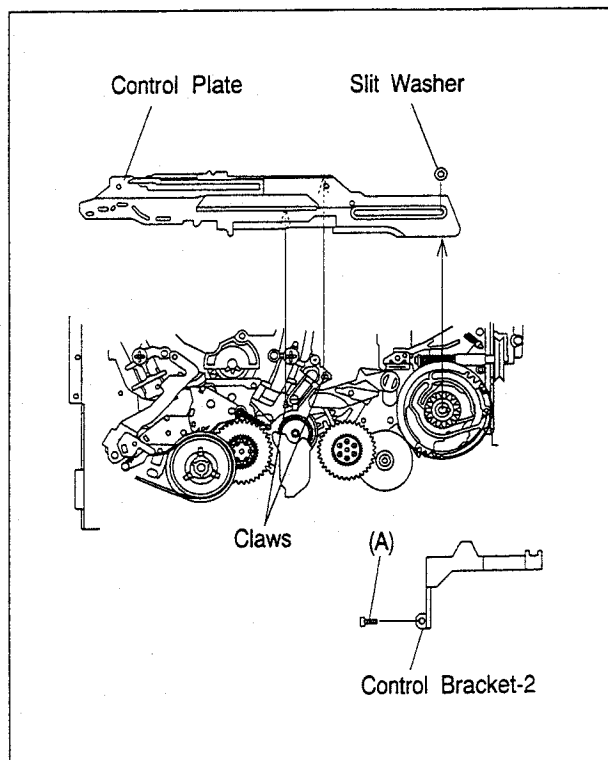


Fig.2-5-14

2.5.9 Sub Brake(take-up),Control Cam

- (1) Disengage 1 spring (a) and 1 claw then remove the sub brake (take-up).
- (2) Disengage 1 claw and remove the control cam.

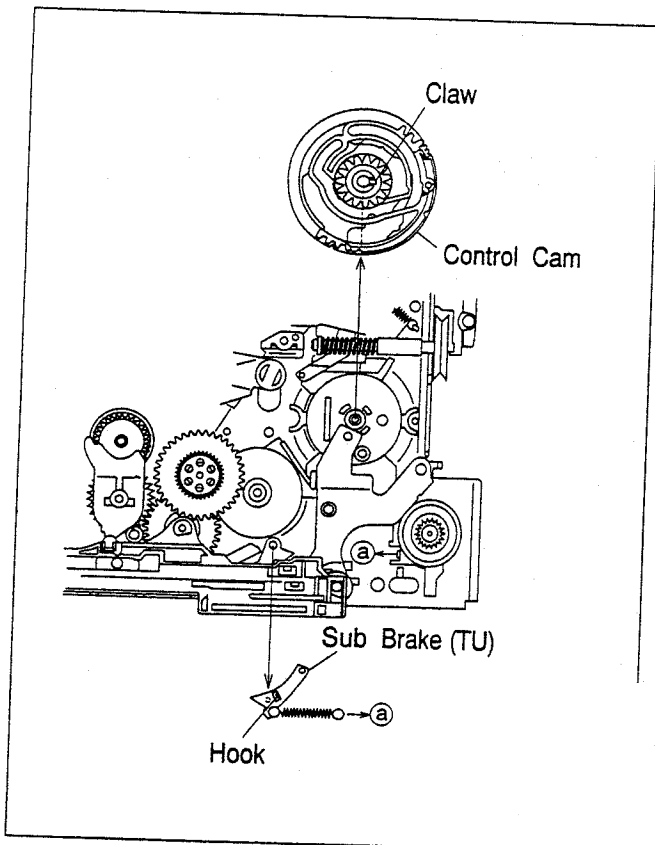


Fig.2-5-15

2.5.10 Slide Plate

- (1) Disengage 7 claws from bottom of the mechanism assy and remove the slide plate.

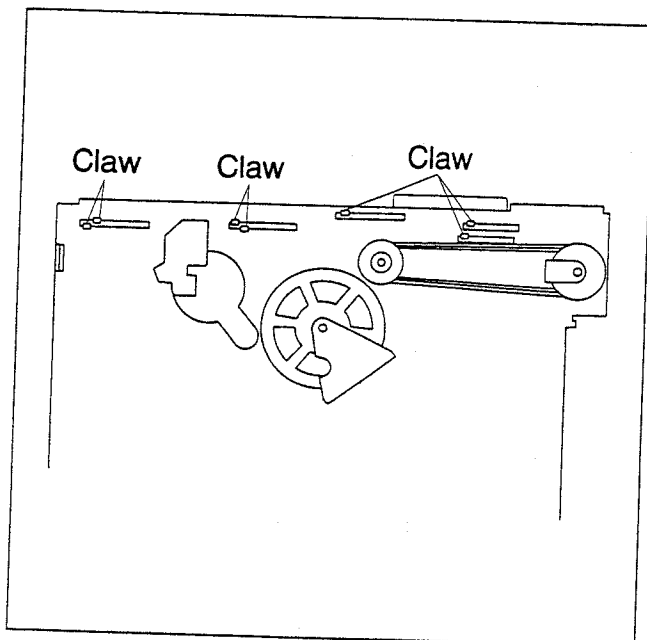


Fig. 2-5-16

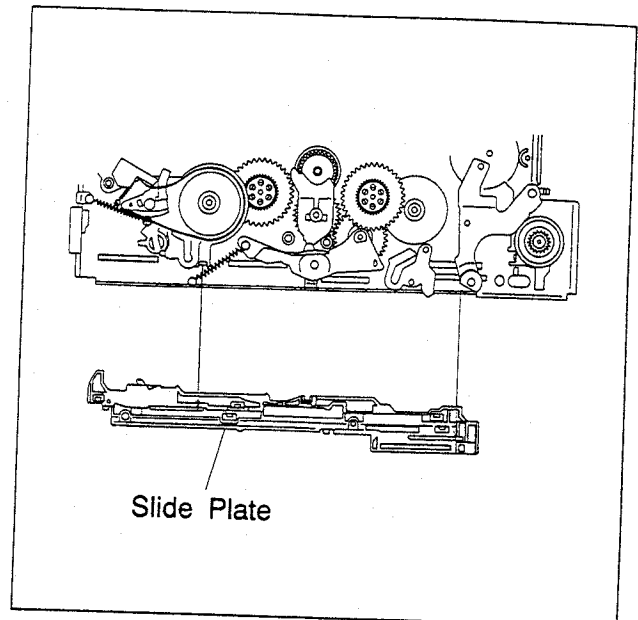


Fig. 2-5-17

2.5.11 Change Lever,Rotary Encoder

- (1) Remove the change lever.
- (2) Disengage 2 claws and remove the rotary encoder.

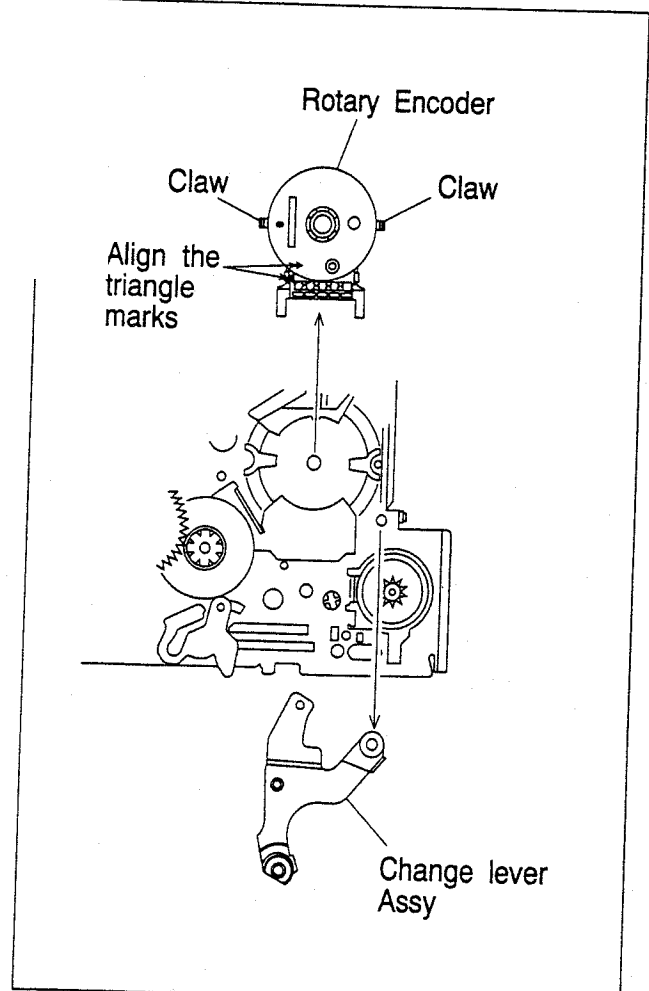


Fig. 2-5-18

2.5.12 Sub Brake (supply),Tension Band Assy,Tension Arm Assy,Take-up Lever Assy,Slit Disk(supply)

- (1) Disengage 1 spring (a).
- (2) Disengage 1 claw and remove the sub brake (supply).
- (3) Take out 1 screw (A),spring (c) and slit washer.
- (4) Remove the tension arm assy with tension band assy.
- (5) Disengage 1 spring (b) and remove the take-up lever assy.
- (6) Remove the slit disk(supply).

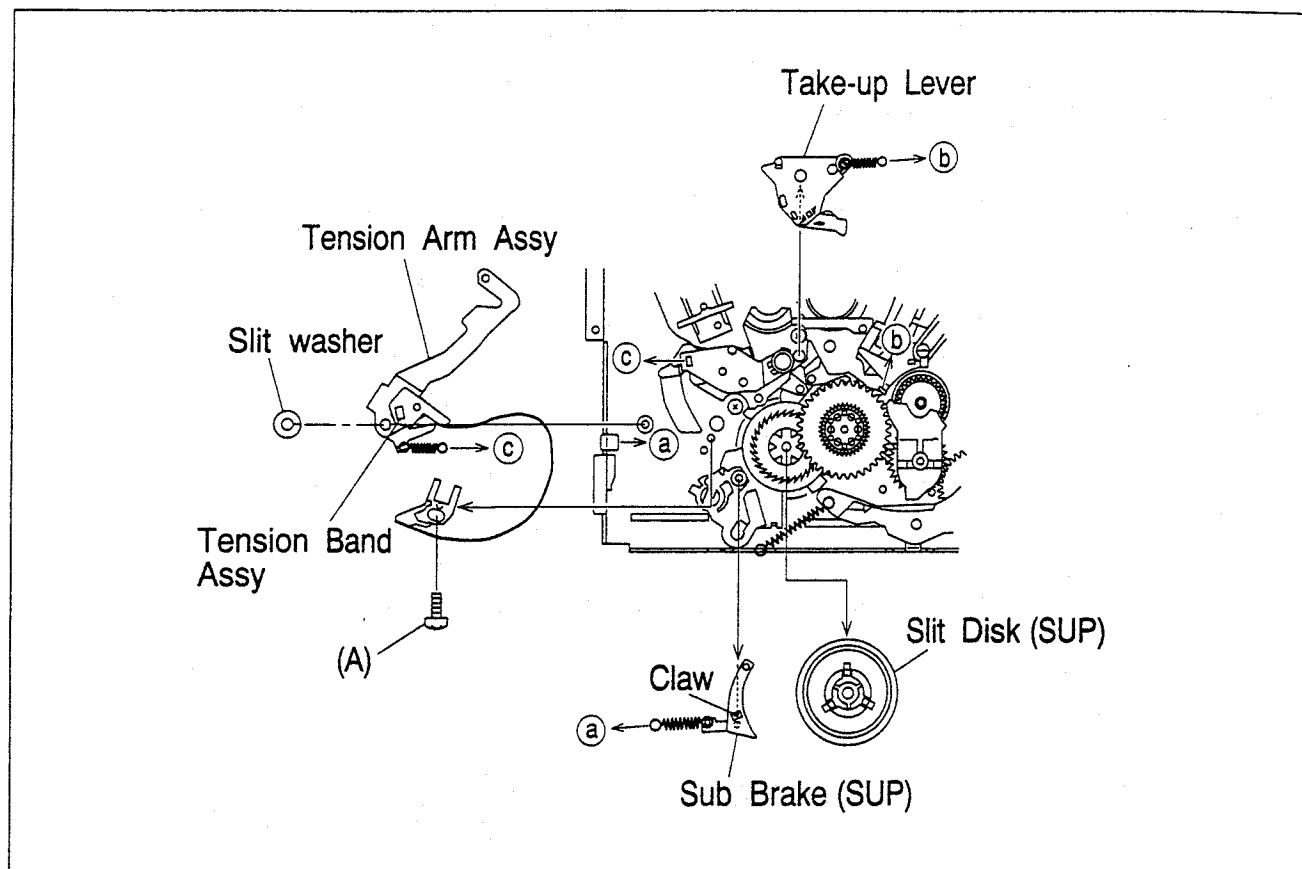


Fig. 2-5-19

2.5.13 Take-up Head,Tension Arm Lever

- (1) Remove the take-up head and tension arm lever.

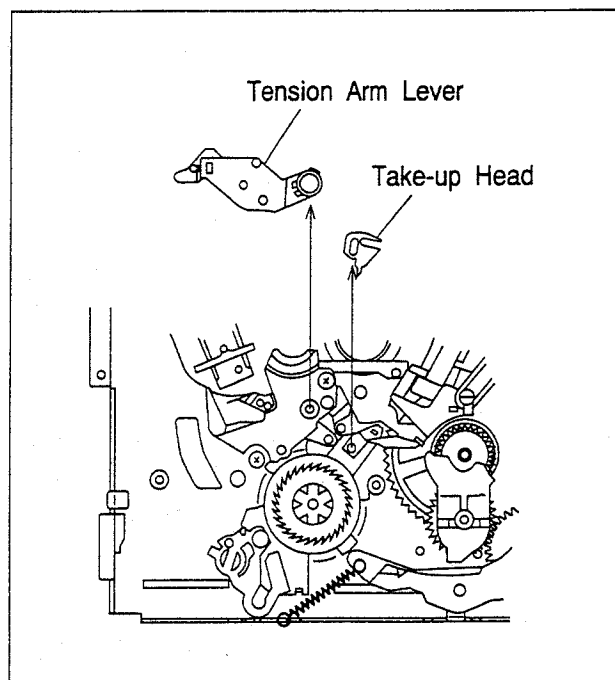


Fig.2-5-20

2.5.14 Guide Rail

- (1) Take out 5 screws (A) and 1 screw (B).
- (2) Disengage 4 claws and remove the guide rail.

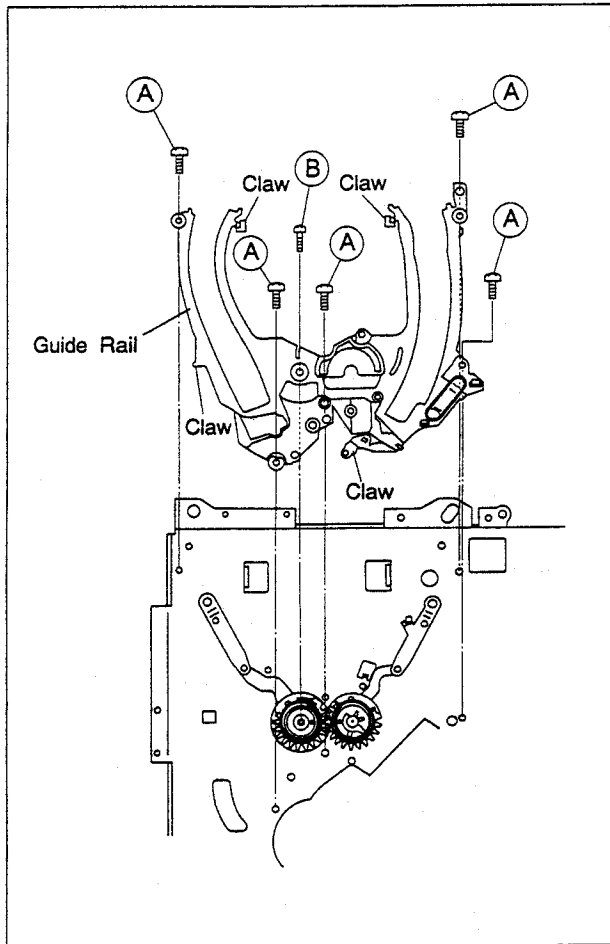


Fig. 2-5-21

2.5.15 Stator Assy

- (1) Take out 2 screws (A).
- (2) Raise the stator assy in the direction indicated by the arrow to remove it (also remove the inertia roller).
- (3) Remove the flat cable.
- (4) To reinstall, first secure the flat cable, then insert 2 screws (A).
- (5) After reinstalling, be sure to perform PB switching point adjustment (See SECTION 3 ELECTRICAL ADJUSTMENT).

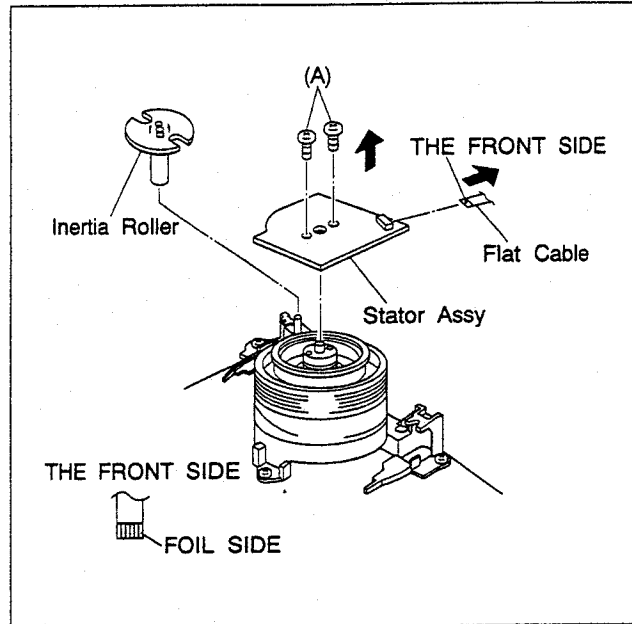


Fig. 2-5-22

NOTE : When refitting the connector, check that the flat wire is inserted correctly.

2.5.16 Rotor Assy

- (1) Remove the stator assy.
- (2) Take out 2 screws (B) and remove the rotor assy.

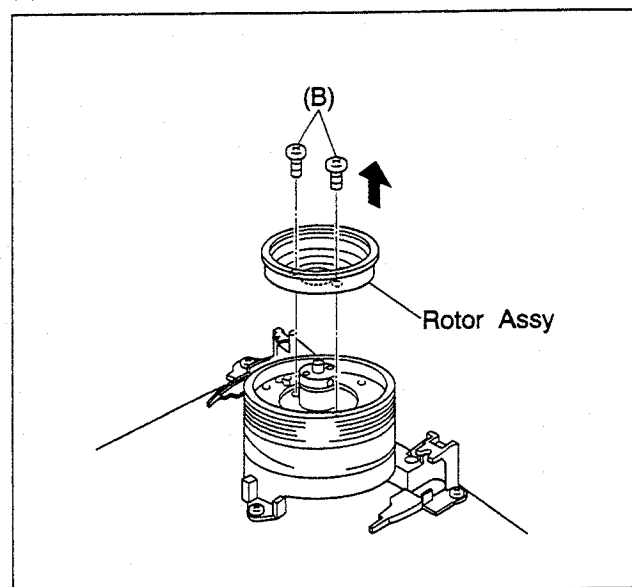


Fig.2-5-23

- (3) Align the upper drum assy and rotor assy phase as indicated in Fig.2-5-22.
- (4) Overlap holes (a) of the upper drum assy with holes (b) of the rotor assy (align holes in 3 locations) and secure with 2 screws (B) as indicated in Fig.2-5-21.

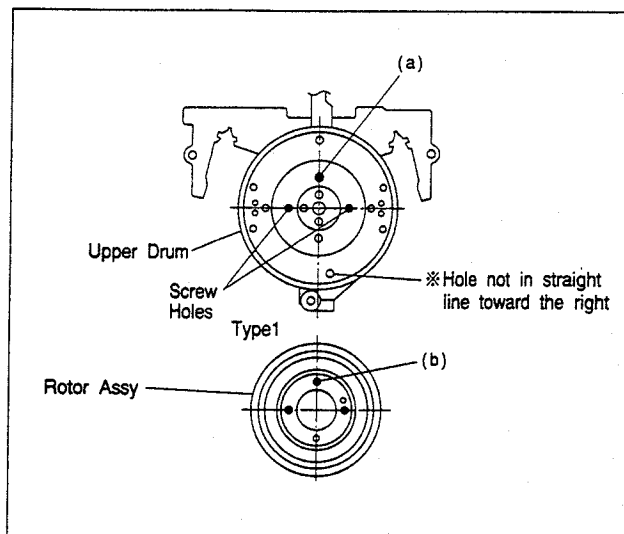


Fig. 2-5-24

2.5.17 Upper Drum Assy

1. Removal

- (1) Remove the stator assy and rotor assy.
- (2) Use a 1.5 mm hexagonal wrench to loosen the collar assy screw and remove the collar assy.
- (3) Remove the upper drum assy and use tweezers to remove the Washer.

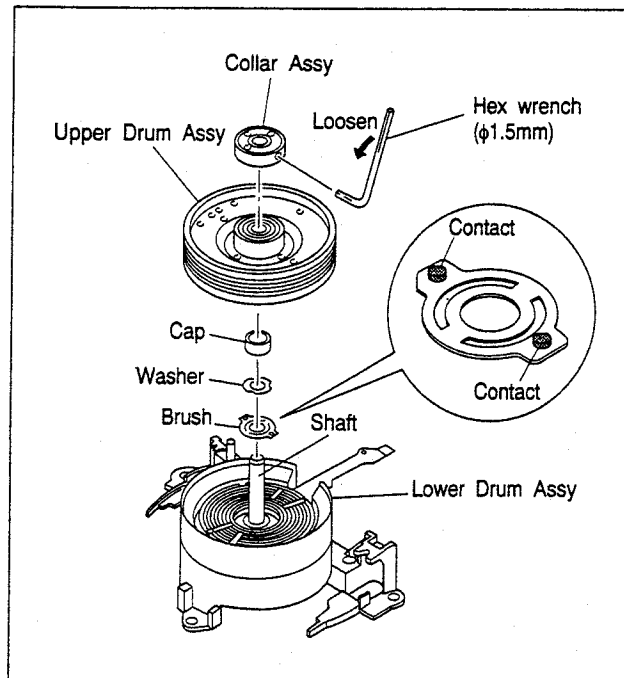


Fig. 2-5-25

NOTE : If the Brush is replaced, do not apply the grease to the contacts.

2. Installation

- (1) Use an air brush to clean the lower drum assy and the coil section of the new upper drum assy.
- (2) Set a new washer on the drum shaft as indicated in Fig.2-5-25.

NOTE : Be sure to use the new washer when replace the upper drum assy.

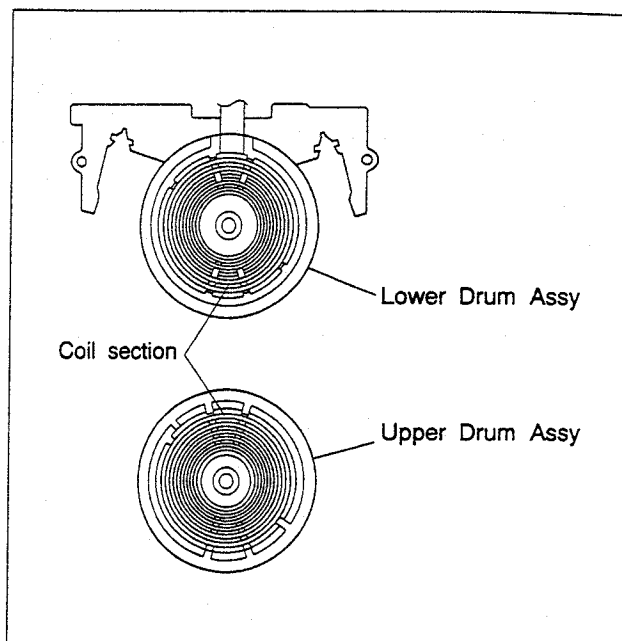


Fig.2-5-26

- (3) Note the top and bottom of the collar assy and determine the position as indicated in Fig.2-5-25.

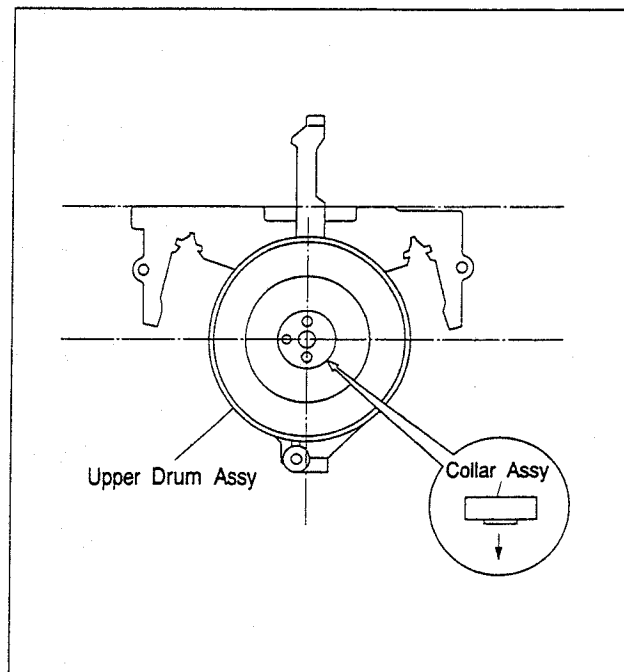


Fig.2-5-27

- (4) While pressing the collar assy evenly from above with your fingertips, secure the hexagonal screw.

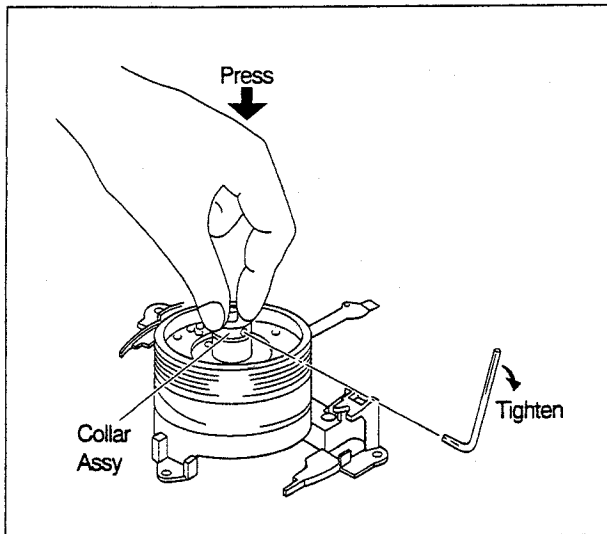


Fig.2-5-28

- (5) After installing, gently turn the upper drum by hand and confirm normal rotation.
- (6) Install the rotar assy and stator assy.
- (7) Clean the upper and lower drum assies and perform the following adjustments:
- PB switching point adjustment
 - Slow tracking preset adjustment
 - Interchangeability adjustment (be sure to check LP mode)

2.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

2.6.1 Precaution

The rotary encoder and sycon circuit are closely interrelated. Therefore, the rotary encoder and control cam conection determines the operations of mechanical parts such as plates, gears, brakes, etc. Correct positioning of these parts is essential for smooth tape loading and mechanical operations.

2.6.2 Loading Arm Assy (supply, take-up)

- (1) Install the supply loading arm assy and the take-up loading arm assy so that their positioning markings on the respective gear face each other and the holes of their arms correspond to the holes on the main deck assy respectively.
- (2) After setting the guide rails, engage the pole base assies with the tip of the loading arms respectively. Then, enter the mechanism into the unloading mode to return the pole base assies to the front position.
- (3) Reassemble the peripheral parts of the guide rail as originally.

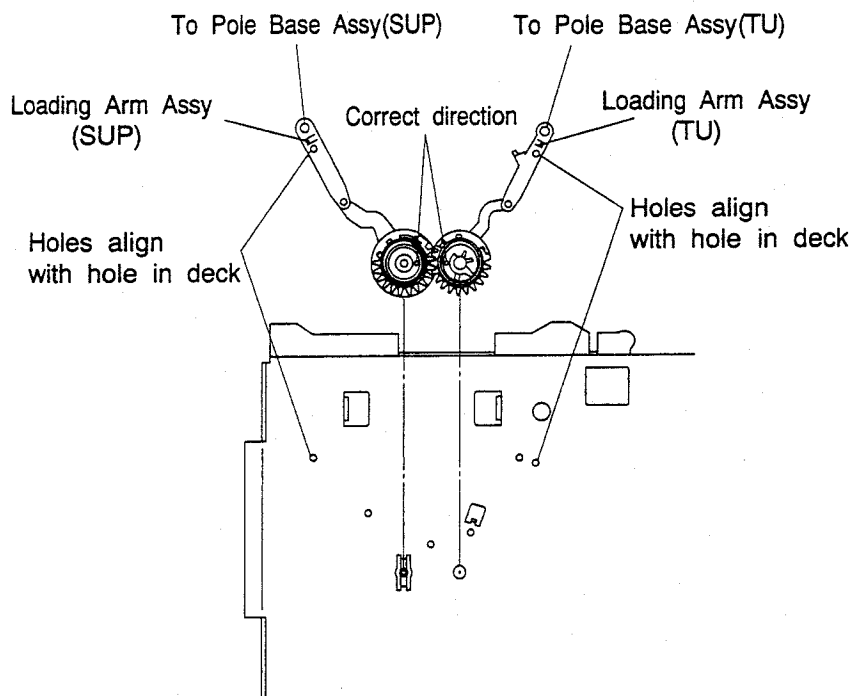


Fig. 2-6-1

2.6.3 Rotary Encoder, Change Lever, Control Cam

- (1) When reinstalling the rotary encoder, adjust its position so as to fit the triangle marks each other and push it deep untill it is locked by the pawls.
- (2) When reinstalling the change lever, set it so as to make its positioning hole correspond to the hole of the main deck assy.
- (3) When re-engaging the control cam, lower the capstan brake assy while setting it so as to make its positioning hole correspond to the hole of the main deck assy.

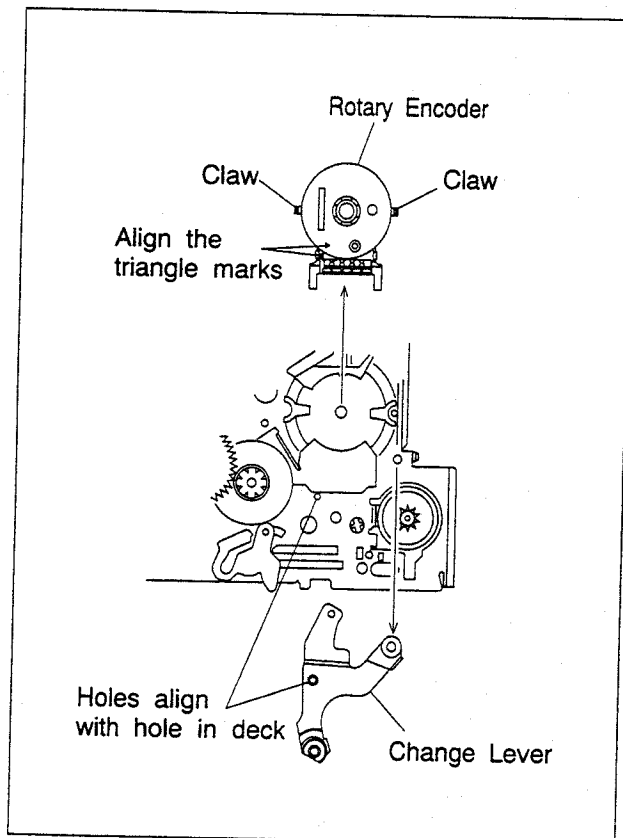


Fig. 2-6-2

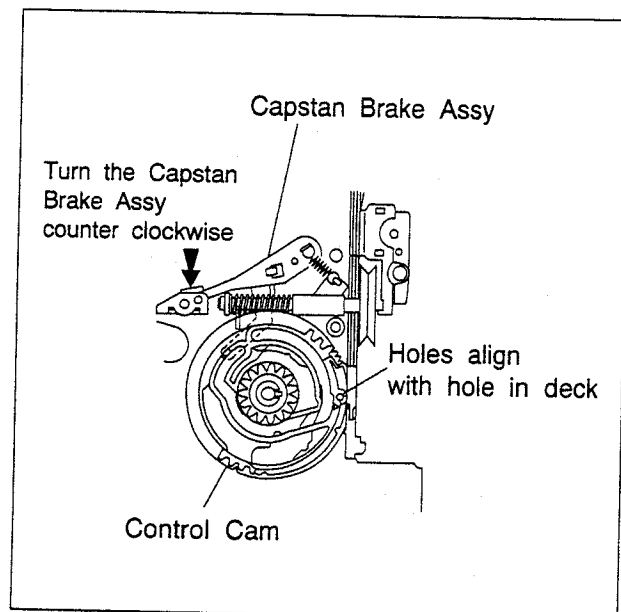


Fig. 2-6-3

2.6.4 Slide Plate

- (1) Lower both the main brake assies (supply and take-up) untill they touch the edge of the main deck assy while reinstalling the slide plate so as to make the respective positioning holes of the main brake assies correspond to the holes on the main deck assy.

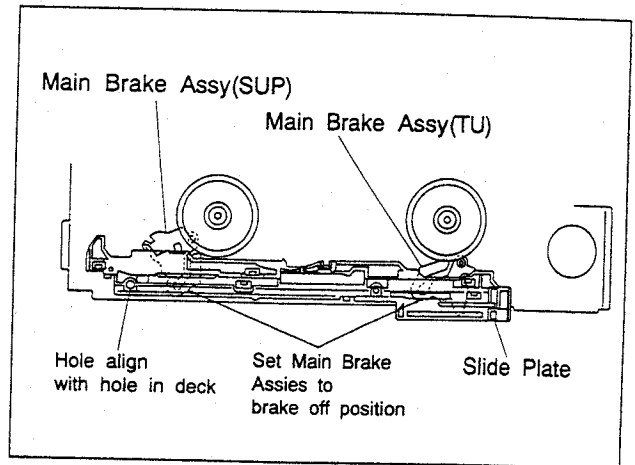


Fig.2-6-4

2.6.5 Control Plate

- (1) Reinstall the control plate so as to set the two positioning holes of it on the holes on the main deck assy respectively and to set the positioning hole of the take-up lever on the hole of the main deck at the same time. When adjusting the hole position of the take-up lever, use a pair of tweezers to hold and move it since it is pulled by a tension spring.
- (2) After reinstalling the control plate, fix it with the slit washer, control bracket-1 and -2.

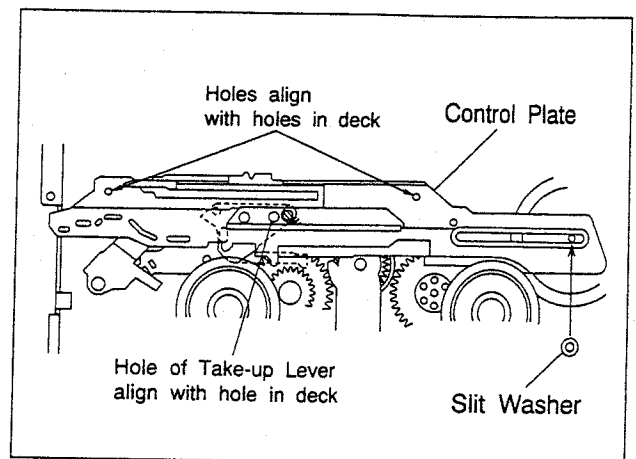


Fig. 2-6-5

2.7 TAPE INTERCHANGEABILITY ADJUSTMENT

NOTE :

- This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components(A/C head,upper/lower drum assy,pole base assy,etc).
- Before using costly alignment tape,use a spare tape and confirm correct operation of the tape transport.

2.7.1 Tape pattern

- (1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board.Use TP11(D.FF) on the PRE/REC board as a trigger.
- (2) Playback the SP staircase portion of the alignment tape [MHPE].Confirm that the FM waveform appears as indicated in Fig.2-7-1.
- (3) Set the manual tracking position by pressing the **///** button on the remote controller.
- (4) Operate the tracking adjustment (press the TV PROG buttons during playback) and set for maximum playback FM waveform.
- (5) By operating the TV PROG button,vary the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape as shown in Fig.2-7-1.
- (6) When the FM waveform does not remain flat during this process,first slightly loosen the set screw located at the bottom of the guide rollers.Using the guide roller adjustment tool (Roller driver) ,adjust the supply and take-up guide rollers (refer to Fig.2-7-2) to obtain the correct waveform as indicated in Fig.2-7-3.
- (7) By pressing the TV PROG buttons several times,vary the FM waveform output from maximum to minimum (and vice versa) gradually,and confirm that the variation proceeds in flat shape, as shown in Fig.2-7-3.
- (8) Next playback the LP staircase portion of the alignment tape [MHPE-L] and adjust the tracking control from maximum to minimum the FM waveform,confirm that FM waveform variation is always flat.
- (9) Record the signal and play it back in both of the SP and LP mode,confirm that the FM waveform is flat in both mode.
- (10) After adjustments,tighten the set screw of the guide rollers.
- (11) Confirm that the tape wrinkling does not occur at the roller upper or lower limits as indicated in Fig.2-7-4.

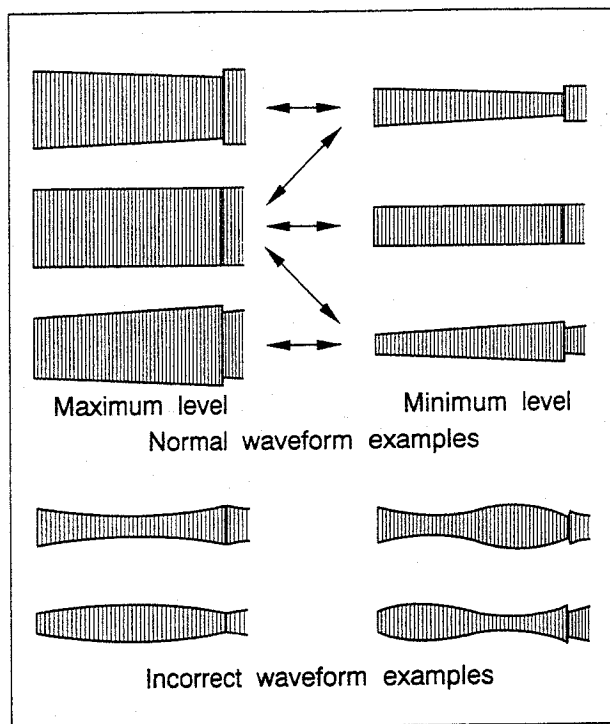


Fig. 2-7-1

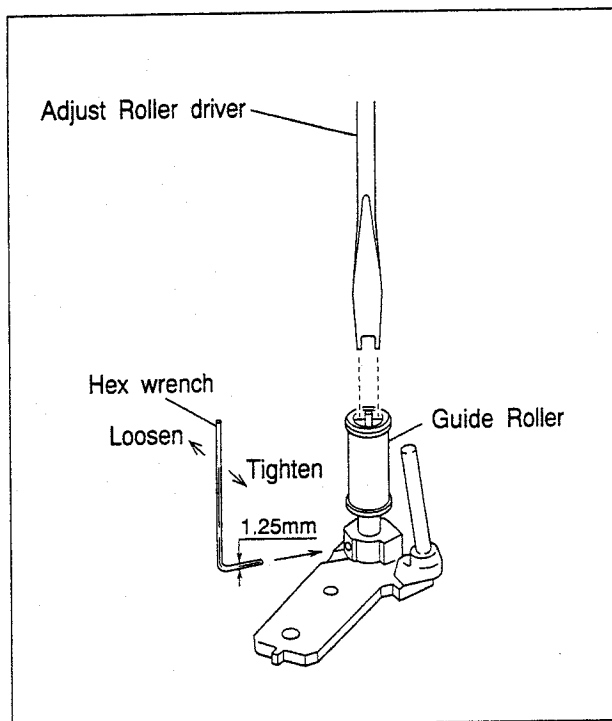


Fig. 2-7-2

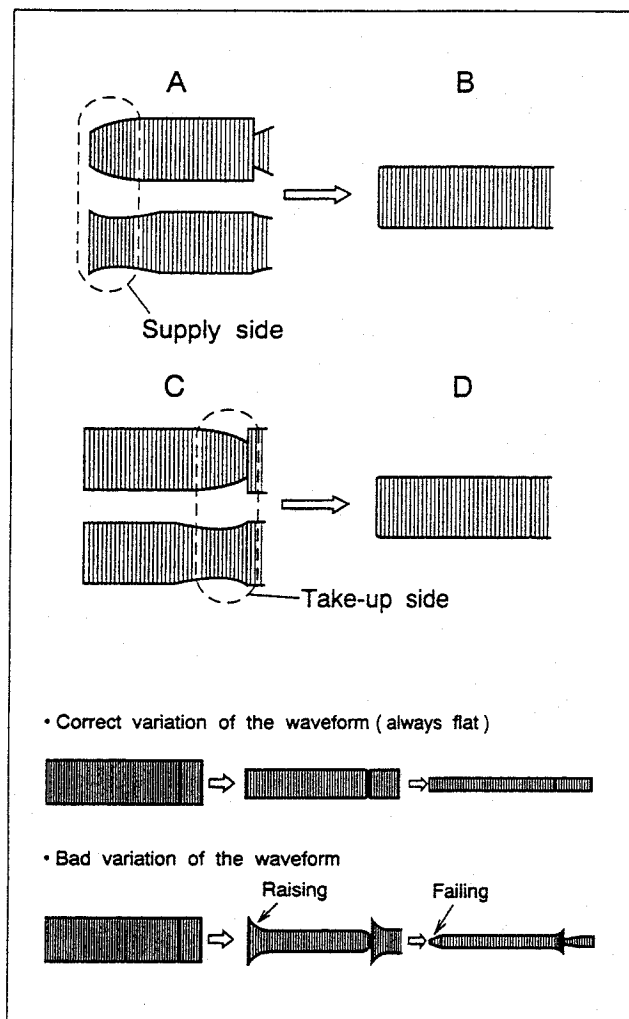


Fig. 2-7-3

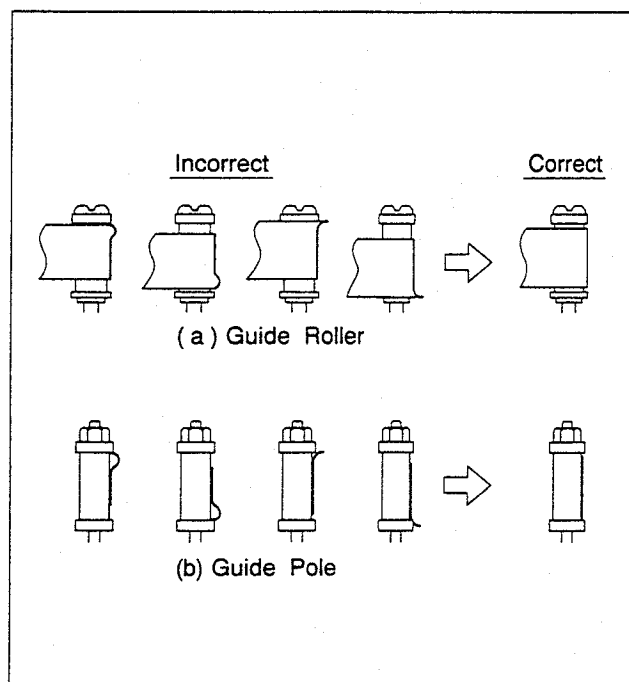


Fig. 2-7-4

2.7.2 A/C head height & azimuth

NOTE :

- Temporarily set A/C head height as indicated in Fig. 2-5-4.
- Use spare tape to check the transport and confirm the tape is not scratched or damaged.

1. Tilt

- (1) Use spare tape and set for playback.
- (2) Turn screw (3) clockwise to where the tape curls just slightly at the TU guide pole bottom flange as shown in Fig.2-7-5.
- (3) Then slowly turn screw (3) counterclockwise to where the curling ceases.

2. Height

- (1) Connect CH-1 of a dual trace oscilloscope to Audio Out.
- (2) Connect CH-2 to TP401(CTL PULSE) of the Main board assy and use the ALT mode.
- (3) Playback the SP stairstep portion of the alignment tape [MHPE].
- (4) Adjust screws (1),(2) and (3) for maximum audio output and control pulse level.

3. Azimuth

- (1) Connect the oscilloscope to Audio Out.
- (2) Playback the SP stairstep portion of the alignment tape [MHPE].
- (3) Adjust screw (2) so that the audio output is both maximum and with minimum fluctuation.

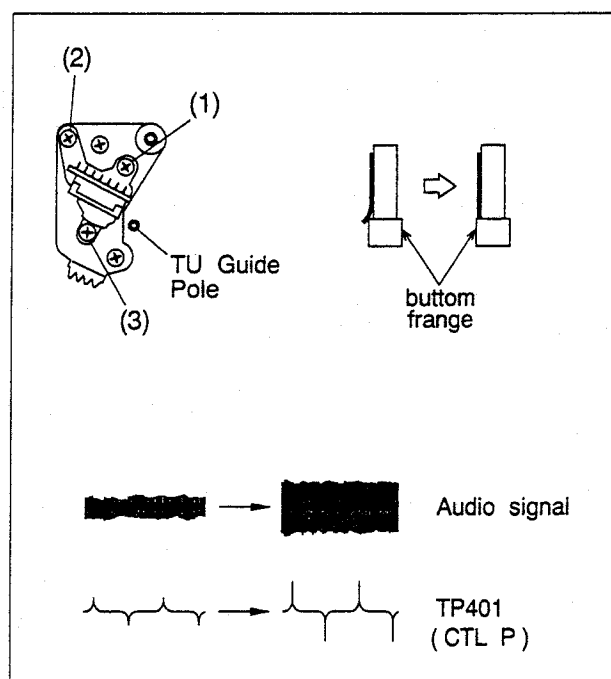


Fig. 2-7-5

2.7.3 A/C head phase(X-value)

- (1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board. Use TP11(D.FF) on the PRE/REC board as a trigger.
- (2) Playback the SP stairstep portion of the alignment tape [MHPE].
- (3) Set the neutral manual tracking position by pressing the **///** button on the remote controller.
- (4) If adjustment is required, slightly loosen screws (4) and (5). Set A/C head positioning tool on the A/C head adjusting boss as indicated in Fig.2-7-6.
- (5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig.2-7-7.
- (6) Tighten screw (5). Remove the tool and tighten screw (4).
- (7) Eject the SP alignment tape [MHPE] and then re-insert the LP alignment tape [MHPE-L].
- (8) Playback the LP stairstep portion of the alignment tape [MHPE-L].
- (9) Set the neutral manual tracking position by pressing the **///** button on the remote controller.
- (10) Confirm maximum playback FM waveform output level as shown in Fig.2-7-7.
- (11) If not maximum, slightly loosen the screws (4) and (5). Use the tool and adjust the head position for the nearest maximum point. Then tighten screws (4) and (5).

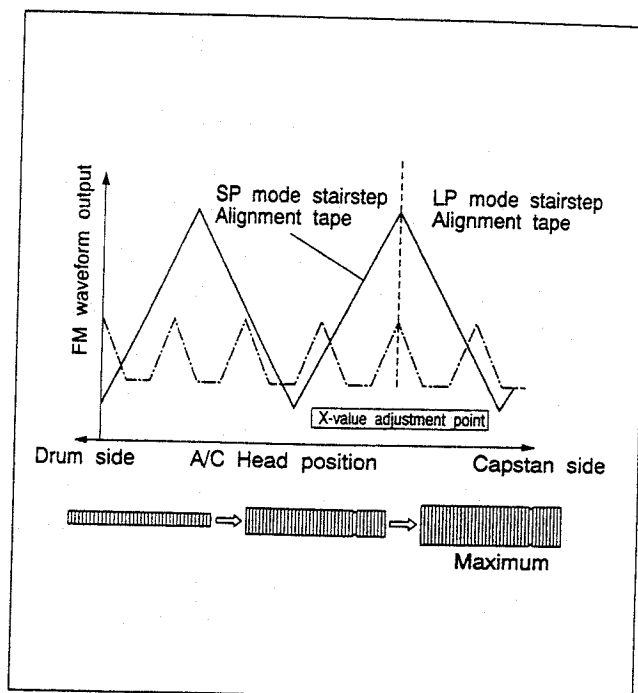


Fig. 2-7-7

2.7.4 LP mode auto tracking

NOTE : Set VCR to the mode A by remote controller.

- (1) Playback the LP stairstep portion of the alignment tape [MHPE-L].
- (2) Confirm that the Automatic tracking indication[AT] stops flashing and remains on.
- (3) Press the "D" button on the presetting unit[PTU94008] to turn off the Automatic tracking indication[AT].
- (4) Press the "D" button again to change the mode to the LP interchangeability adjustment mode and confirm that Automatic tracking indication[AT] stops flashing and goes off.
- (5) If the alignment tape ejects automatically, repeat the A/C head phase adjustment(X-value).

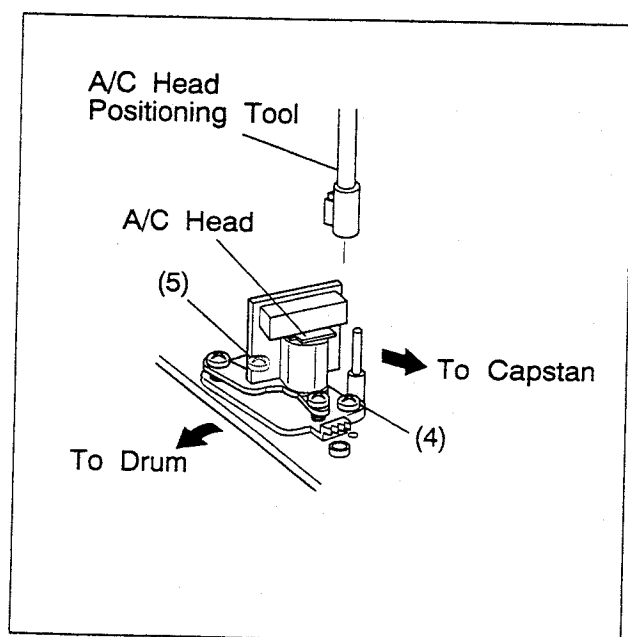


Fig. 2-7-6

2.7.5 Tension pole position

- (1) Set for playback mode using MECHANISM SERVICE MODE(See SECTION 1 DISASSEMBLY).
- (2) Slightly loosen the screw (A) .
- (3) Turn the adjust pin so that the tension arm assy does not touch $\phi 2.5$ pole on the outside.
- (4) Tighten the screw (A).
- (5) After adjustment, use the back tension cassette gauge and set for the playback mode.
- (6) Confirm reading of 29 to 46 g \cdot cm.

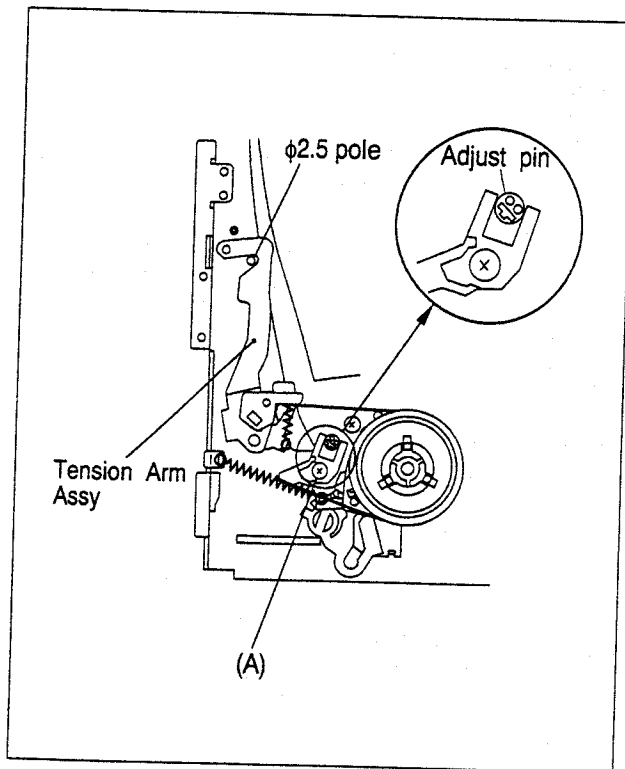


Fig. 2-7-8

SECTION 3 ELECTRICAL ADJUSTMENT

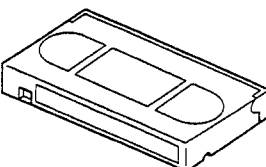
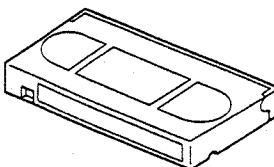
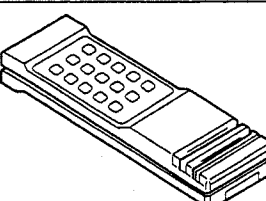
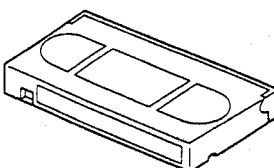
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is available.

3.1.1 Required test equipment

- ① Colour television or monitor
- ② Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- ③ Frequency counter
- ④ Digital voltmeter
- ⑤ Signal generator: RF/IF sweep/marker
- ⑥ Signal generator: PAL colour bar, staircase
- ⑦ Recording tape
- ⑧ Numeric-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP,stairstep) MHPE	Alignment tape (SP,colour bar) MHVE-2
	
Presetting unit PTU94008	Alignment tape (S-VHS SP/LP colour bar) MH-2H
	

3.1.3 Colour bar signal, colour bar pattern

● Colour bar signal

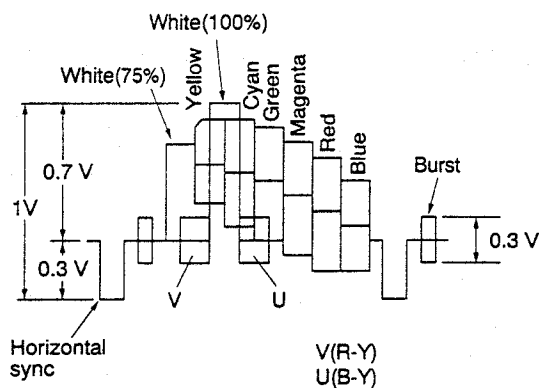


Fig.3-1-1 Colour bar signal waveform

● Colour bar pattern

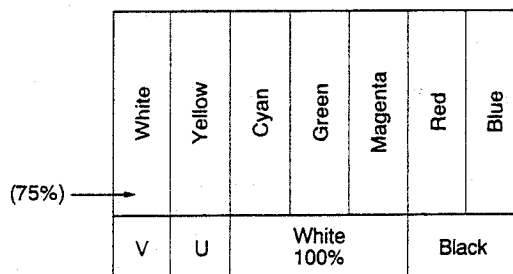


Fig.3-1-2 Colour bar pattern

3.2 SWITCHING REGULATOR CIRCUIT

Note: • Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

3.2.1 5V DC output voltage

Signal	•AUX •TUNER
Mode	•REC : SP
Equipment	•Digital voltmeter
Measurement point	•CN206-pin11 (SWD 5V)
Adjustment part	•R862 (SWD 5V)
Specification	• $5.22 \pm 0.10V$ DC

- (1) Connect a digital voltmeter to CN206-pin11 and GND.
- (2) Adjust R862 for $5.22 \pm 0.10V$ DC.

3.3 SERVO CIRCUIT

Notes: • Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

- Set VCR to the mode A by remote controller.
- Use only buttons "E" and "F", depressing other buttons during adjustment may cause adjustment errors.

3.3.1 PB switching point

Signal	• Alignment tape (MHPE), Stairstep
Mode	• PB, Automatic tracking OFF
Equipment	• Oscilloscope
Measurement point	• TP3(V.OUT) [TERMINAL board]
Trigger slope (-)	• TP11 (DRUM FF), (PRE/REC BOARD)
Adjustment tool	• Presetting unit [PTU94008]
Specification	• $6.5 \pm 0.5H$

- (1) Connect an oscilloscope to TP3 and external trigger from TP11 (negative slope).
- (2) Playback the stairstep signal of the alignment tape.
- (3) Set the tracking control to the centre position by pressing the **///** button of the remote controller.
- (4) Adjust by pressing "E" or "F" buttons of presetting unit for position the trigger point $6.5 \pm 0.5 H$ from V.sync.
- (5) Depress the STOP button.

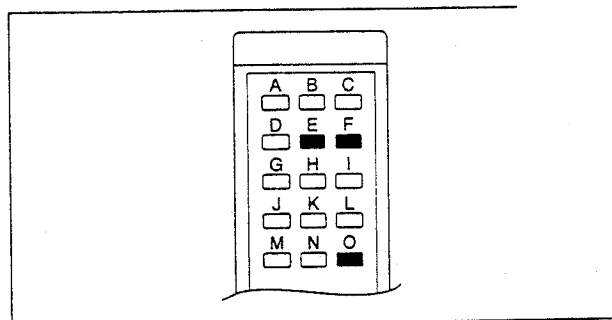


Fig.3-3-1 Presetting unit

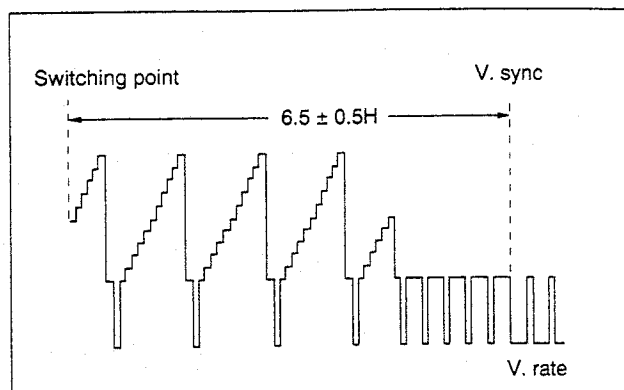


Fig.3-3-2 PB switching point

Alternate method

- (1) Playback the stairstep signal of the alignment tape.
- (2) Press the "O" button of the presetting unit.
- (3) Confirm that VCR mode becomes STOP mode.

3.3.2 Slow tracking preset

Signal	• Tuner or colour bar
Mode	• SP/LP, REC → PB(SLOW)
Equipment	• TV-Monitor
Adjustment tool	• Presetting unit [PTU94008]
Specification	• Minimum noise

Notes: • Set VCR to the mode A by remote controller.
• Use only buttons "B" and "C", depressing other buttons during adjustment may cause adjustment errors.

- (1) Record a colour bar signal in the SP mode.
- (2) Playback recorded signal on the FWD slow mode.
- (3) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "B" or "C" buttons of the presetting unit.
- (4) Depress the STOP button.
- (5) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
- (6) Repeat steps (2) to (5) in REV slow mode.
- (7) Repeat steps (1) to (6) in LP mode.

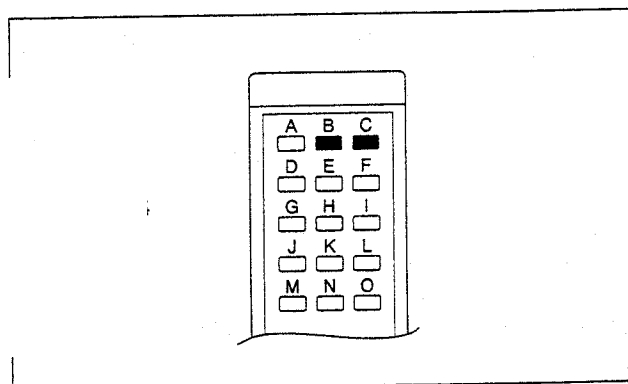


Fig.3-3-3 Presetting unit

3.4 VIDEO CIRCUIT

- Notes:**
- Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
 - VIDEO circuit adjustments are performed by the EVR system by use of the presetting unit and numeric-key remote controller.
 - S-INPUT means Y/C separated video signal in the chart.
 - Set VCR to the mode A by remote controller.
 - Set DYNAMIC CONTRAST to off mode.

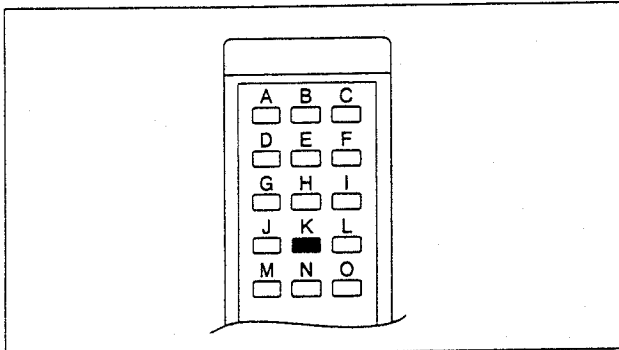


Fig.3-4-1 Presetting unit

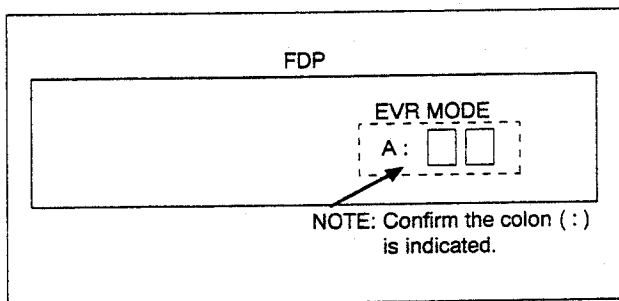


Fig.3-4-2 EVR mode

3.4.1 AGC Y LEVEL

Signal	• Colour bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP3 (V.OUT) [TERMINAL board]
Adjustment tool	• Presetting unit (PTU94008) • Numeric-key remote controller
EVR mode	• A : 11
Specification	• $1.00 \pm 0.03V_{p-p}$ (terminated)

- (1) Connect an oscilloscope to TP3.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 11" pressing 1 numeric key twice of the remote controller.
- (4) Adjust TV PROG "-" or "+" button for $1.00 \pm 0.03 V_{p-p}$.
- (5) Set normal VCR mode by pressing "K" button of the pre-setting unit again so adjustment data is memorized.

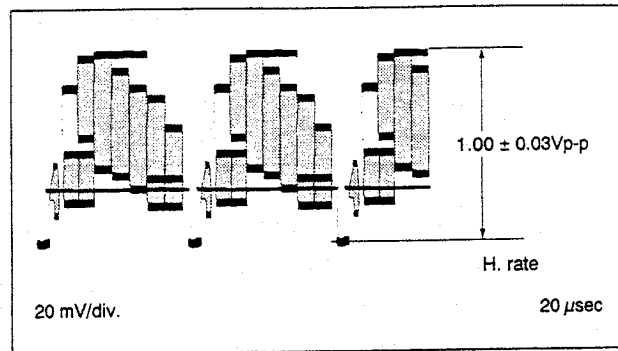


Fig. 3-4-3 EE Y level

3.4.2 WHITE/DARK CLIP (S-VHS/VHS)

Signal	• Colour bar
Mode	• EE • S-VHS/VHS
Equipment	• Oscilloscope
Measurement point	• TP205 (W/D CHECK)
Adjustment tool	• Presetting unit (PTU94008) • Numeric-key remote controller
EVR mode	• A : 14
Specification	• WHITE CLIP : $110 \pm 4\%$ (S-VHS) $90 \pm 4\%$ (VHS) DARK CLIP : $70 \pm 8\%$ (S-VHS) $45 \pm 8\%$ (VHS)

- (1) Connect an oscilloscope to TP205.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 14" pressing 1 and 4 numeric keys of the remote controller.
- (4) Adjust TV PROG "-" or "+" button for $110 \pm 4\%$ (S-VHS), $90 \pm 4\%$ (VHS) white clip and $70 \pm 8\%$ (S-VHS), $45 \pm 8\%$ (VHS) dark clip as shown in Fig.3-4-4.
- (5) Set normal VCR mode by pressing "K" button of the pre-setting unit again so adjustment data is memorized.

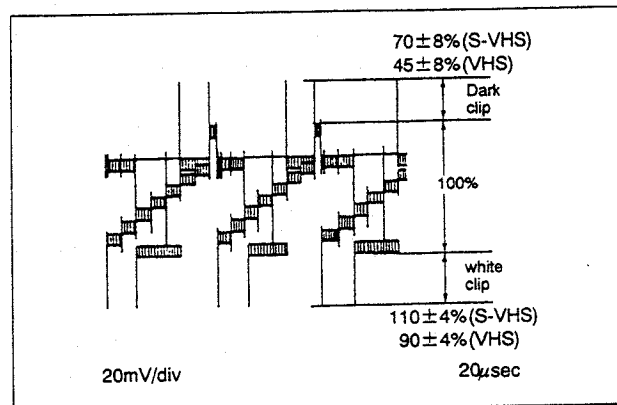


Fig.3-4-4 White/dark clip

3.4.3 SUB EMPHASIS INPUT LEVEL

Signal	• Colour bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP206 (SUB EMP CHECK)
Adjustment tool	• Presetting unit [PTU94008] • Numeric-key remote controller
EVR mode	• A : 15
Specification	• 400 ± 20 mVp-p

- (1) Connect an oscilloscope to TP206.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 15" pressing 1 and 5 numeric keys of the remote controller.
- (4) Adjust TV PROG "-" or "+" button of the remote controller for 400 ± 20 mVp-p.
- (5) Set normal VCR mode by pressing "K" button of the pre-setting unit again so adjustment data is memorized.

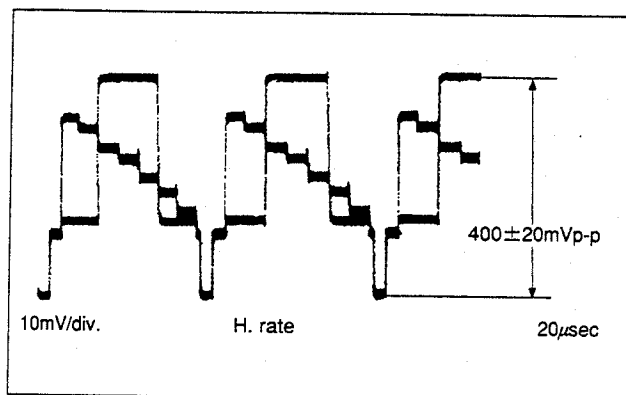


Fig. 3-4-5 Sub emphasis input level

3.4.4 PB Y LEVEL (S-VHS/VHS)

Signal	• Alignment tape [MHVE-2, MH-2H], • Colour bar
Mode	• PB
Equipment	• Oscilloscope
Measurement point	• TP3(V, OUT) [TERMINAL board]
Adjustment tool	• Presetting unit [PTU94008] • Numeric-key remote controller
EVR mode	• A : 11
Specification	• 1.00 ± 0.03 Vp-p (terminated)

- (1) Connect an oscilloscope to TP3.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 11" pressing 1 numeric key twice of the remote controller.
- (4) Playback the color bar signal of the alignment tape. (MH-2H and MHVE-2)
- (5) Adjust TV PROG "-" or "+" button for 1.00 ± 0.03 Vp-p as shown in Fig.3-4-6.
- (6) Set normal VCR mode by pressing "K" button of the pre-setting unit again so adjustment data is memorized.

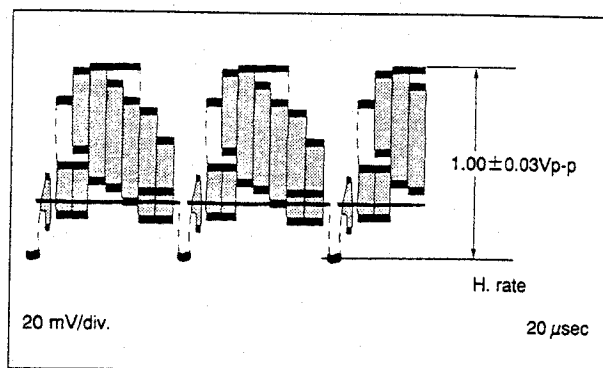


Fig.3-4-6 PB Y level

3.4.5 SP/LP REC COLOUR LEVEL

Signal	• Alignment tape [MH-2H] Colour bar
Mode	• PB (SP/LP) • REC → PB : SP/LP • S-VHS
Equipment	• Oscilloscope
Measurement point	• PB colour out
Trigger slope (-)	• TP11 (DRUM FF) [PRE/REC board]
Adjustment tool	• Presetting unit [PTU94008] • Numeric-key remote controller
EVR mode	• A : 2
Specification	• "B" × $130 \pm 5\%$: SP • "B" × $100 \pm 5\%$: LP

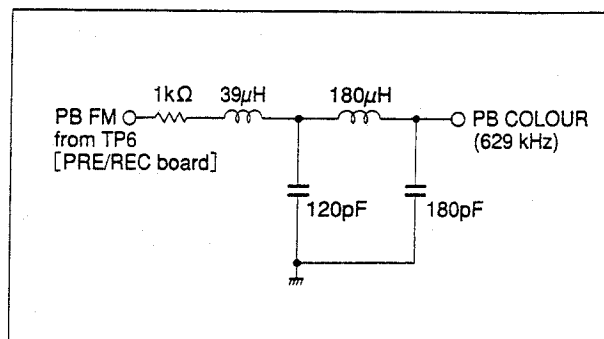


Fig. 3-4-7 LPF

- (1) Use a LPF as shown in Fig. 3-4-7.
- (2) Playback the SP (LP) colour bar signal of MH-2H alignment tape.
- (3) Set the tracking to the Auto tracking off position by pressing the **///** button of the remote controller.
- (4) Adjust by pressing the TV PROG "-" or "+" buttons of the remote controller for maximum level of the colour waveform and make a note of the higher colour level "B".
- (5) Press the STOP/EJECT button and eject the MH-2H alignment tape.
- (6) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (7) Set "A : 2" by pressing 2 numeric key of the remote controller.
- (8) Record a colour bar signal in SP (LP) mode, and playback recorded colour bar signal.
- (9) Before recording, adjust TV PROG "-" or "+" button of the remote controller so that the higher level channel becomes $130 \pm 5\%$: SP ($100 \pm 5\%$: LP) of the note "B" level during playback as shown in Fig. 3-4-8.
- (10) Set normal VCR mode by pressing "K" button again so adjustment data is memorized.

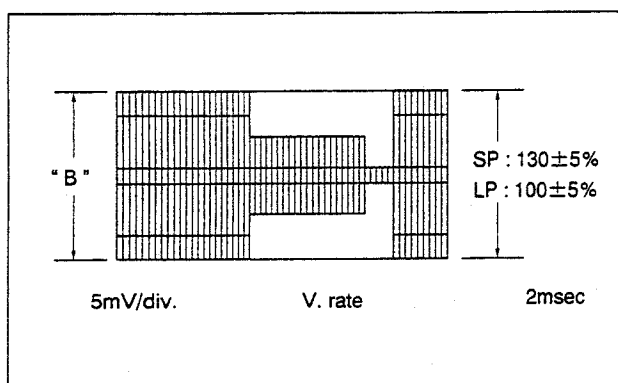


Fig. 3-4-8 REC colour level

3.4.6 S-VHS VIDEO EQ

Signal	<ul style="list-style-type: none"> • S INPUT • Video sweep
Mode	<ul style="list-style-type: none"> • SP/LP • REC (IMAGE CONTROL SW : NORMAL) • PB (IMAGE CONTROL SW : EDIT) • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP1 (Y.OUT) [TERMINAL BOARD]
Adjustment part	<ul style="list-style-type: none"> • R113 (S-SP VIDEO EQ) [PRE/REC board] • R114 (S-EP VIDEO EQ) [PRE/REC board]
Specification	<ul style="list-style-type: none"> • 3.6 ± 0.2 scale R113 : SP • 2.8 ± 0.2 scale R114 : LP

- (1) Connect an oscilloscope to TP1.
- (2) Record a video sweep signal in S-VHS SP mode, then play it back.
- (3) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R113 so that 3.58 MHz marker level becomes 3.6 ± 0.2 scale divisions.
- (4) Record a video sweep signal in S-VHS LP mode, then play it back.
- (5) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R114 so that 3.58 MHz marker level becomes 2.8 ± 0.2 scale divisions.

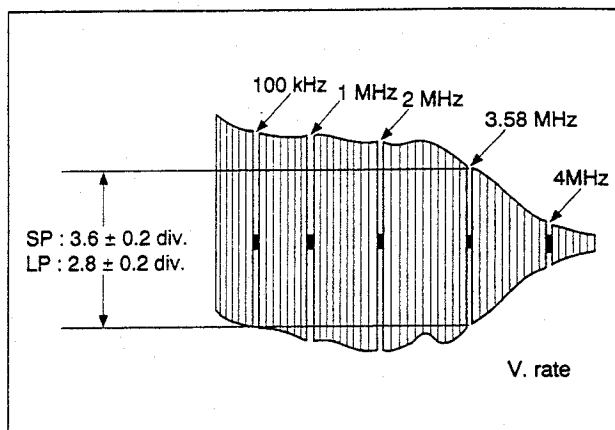


Fig. 3-4-9 S-VHS VIDEO EQ

Alternate method

- (1) Record a colour bar signal in S-VHS SP mode,
- (2) Play it back to observe the picture and adjust R113 for best resolution, without impaired S/N.
- (3) So after adjustment, confirm black or white spot.
- (4) Record a colour bar signal in S-VHS LP mode.
- (5) Play it back to observe the picture and adjust R114 for best resolution, without impaired S/N.
- (6) So after adjustment, confirm black or white spot.

3.4.7 PILOT BURST LEVEL

Signal	• Colour bar
Mode	<ul style="list-style-type: none"> • EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• CN203 pin 4
Adjustment tool	<ul style="list-style-type: none"> • Presetting unit [PTU94008] • Numeric-key remote controller
EVR mode	• A : 16
Specification	• Equal level

- (1) Connect an oscilloscope to pin 4 of CN203.
- (2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
- (3) Set "A : 16" by press 1 and 6 numeric keys of the remote controller.
- (4) Adjust TV PROG "-" or "+" button of the remote controller for equal pilot burst level.
- (5) Set normal VCR mode by pressing "K" button again so adjustment data is memorized.

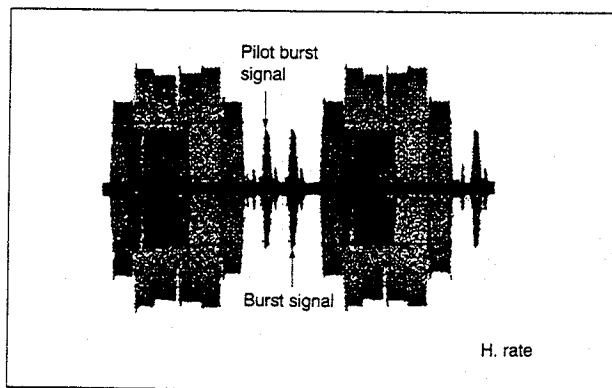


Fig. 3-4-10 Pilot burst level

3.5 SYSCON CIRCUIT

Notes:

- Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.
- When performing this adjustment, remove the MECHANISM assy.

3.5.1 TIMER CLOCK

Signal	• No signal
Mode	• Power off
Equipment	• Frequency counter
Measurement point	• IC601 pin 64 (TP602)
Adjustment part	• C601 (TIMER CLOCK)
Specification	• 1024.008 ± 0.001 Hz [976.5549 ± 0.0010 usec]

- (1) Connect the frequency counter to IC601 pin 64 (TP602) and GND.
- (2) Connect the short wire between TP601 (TEST) and VCC (AL5V).
- (3) Short the leads of capacitor C604 once in order to reset IC601.
- (4) Disconnect the short wire then connect it again.
- (5) Adjust C601 for 1024.008 ± 0.001 Hz.
(976.5549 ± 0.0010 usec)

3.6 AUDIO CIRCUIT

Note: Unless otherwise specified, all measurement point and adjustment parts are located on the PRE/REC BOARD.

3.6.1 AUDIO REC FM

Signal	• AUX • VIDEO : Colour bar • Audio : No signal
Mode	• REC → PB : LP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP53 (A. PB FM)
Trigger slope (-)	• TP11 (DRUM FF)
Adjustment part	• R216 (A. REC FM LEVEL)
Specification	• 90 ± 10 mVp-p

- (1) Connect an oscilloscope to TP53.
- (2) Record a colour bar signal without an audio signal in S-VHS LP mode then playback.
- (3) Adjust R216 for 90 mVp-p playback level of higher channel level before recording.
- (4) Confirm that the lower channel level is more than 60 mVp-p.

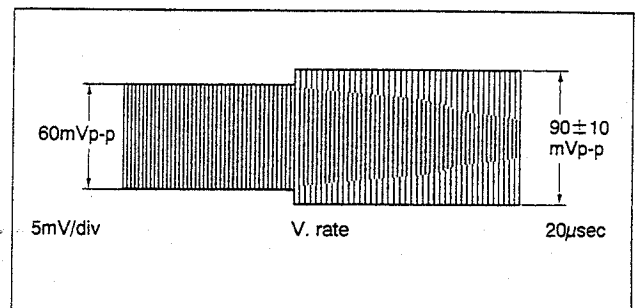


Fig. 3-6-1 Audio REC FM level

3.7 TUNER CIRCUIT

Note: Unless otherwise specified, all measurement point and adjustment parts are located on the IF UNIT.

3.7.1 RF VCO

Signal	• TV broadcasting
Mode	• Tuner
Equipment	• TV monitor
Measurement point	• IF UNIT
Adjustment tool	• IF VR
Specification	• Minimum noise

Note: Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs due to strong electrical fields.

- (1) Adjust IF VR to minimize noise or streaks on the TV screen.
- (2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

3.8 Y/C SEP CIRCUIT

Note: Unless otherwise specified, all measurement point and adjustment parts are located on the Y/C SEP BOARD.

3.8.1 DIGITAL I/O LEVEL


Signal	• Colour bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP207 (Y/V To SEP) • TP208 (SEPAD Y1) [MAIN board]
Adjustment part	• R68 (DIGITAL I/O LEVEL)
Specification	• Equal level

- (1) Connect the channel (CH-1) of a dual trace oscilloscope to TP207 and the other channel (CH-2) to TP208.
- (2) Set the oscilloscope for DUAL mode, and overlap the waveform.
- (3) Adjust R68 for equal Y levels.

SECTION 4 CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Schematic diagram values

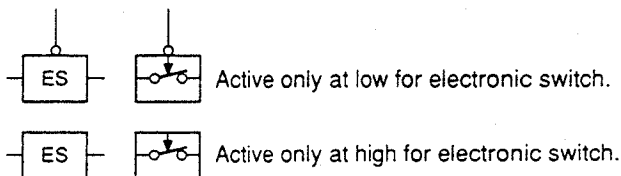
Unless otherwise specified.

- 1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K: K Ω (1000 Ω), M: M Ω (1000K Ω)
- 2) All capacitance values are in μ F, (P: PF).
- 3) All inductance values in μ H, (m: mH).
- 4) All diodes are 1SS133 or MA165, (refer to parts list).

2. Indications

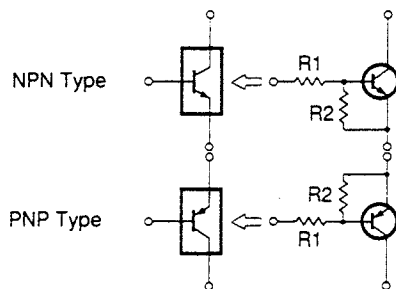
AUX : Active only at high.

$\overline{\text{AUX}}$: Active only at low.

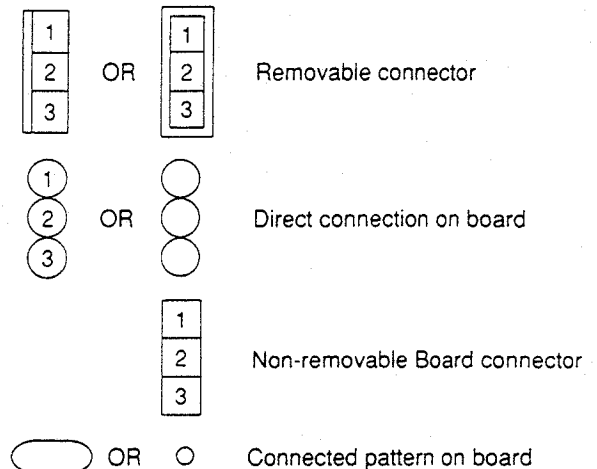


Digital transistor :

The digital transistor includes built in resistors.
It features small size and high reliability.

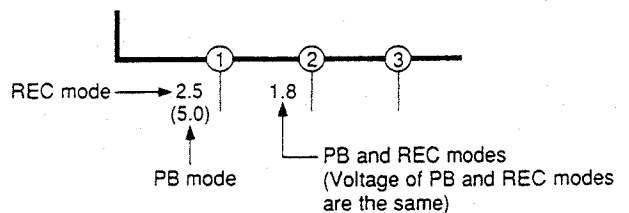


3. Interpreting Connector indications



4. Voltage measurement

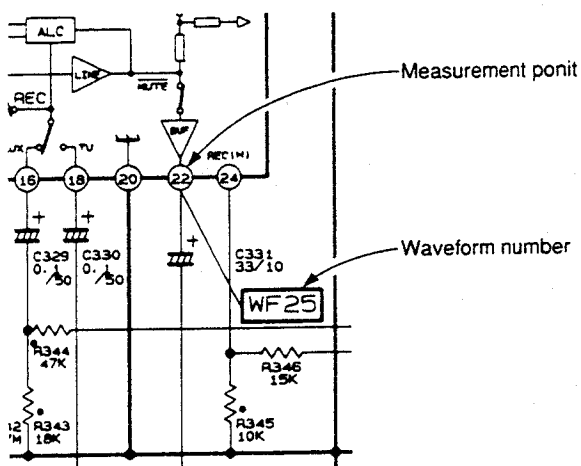
- 1) Video circuits
REC: Colour bar signal in SP mode, normal VHS mode.
PB : Alignment tape, colour bar SP mode, normal VHS mode.
— : Unmeasurable or unnecessary to measure.
- 2) Audio circuits
REC: 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode.
PB : REC then playback it.
- 3) Movie Camera circuits
Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
- 4) Indication on schematic diagram
Voltage Indications for REC and PB modes on the schematic diagram are as shown below.



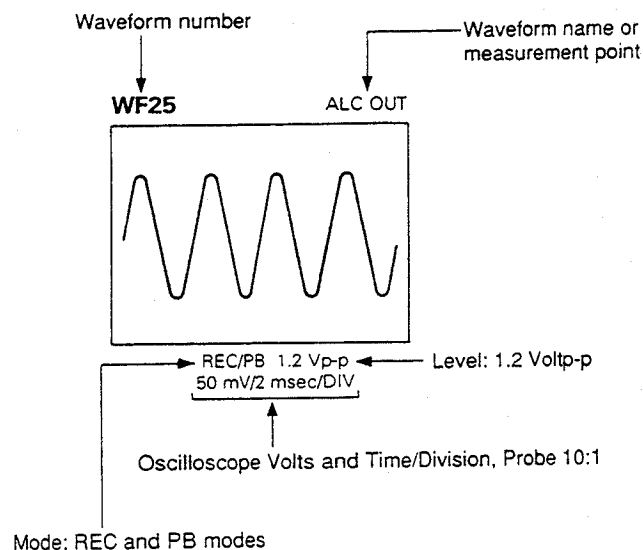
Note: If do not indicate for voltage measurement on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- 1) Video circuits
REC: Colour bar signal in SP mode, normal VHS mode.
PB : Alignment tape, colour bar SP mode, normal VHS mode.
- 2) Audio circuits
REC: 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode.
PB : REC then playback it.
- 3) Movie Camera circuits
Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
- 4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

- Playback signal path
- Playback and recording signal path
- Recording signal path (including E-E signal path)
- Y signal path
- Colour (Chroma) signal path
- R or R-Y signal path
- B or B-Y signal path
- Capstan servo path
- Drum servo path
- Reel servo path

CIRCUIT BOARD NOTES

1. Colour indications

- 1) Foil side :
Foil side patterns are indicated at GREY shading.
- 2) Component side :
Component side patterns are indicated at RED shading.

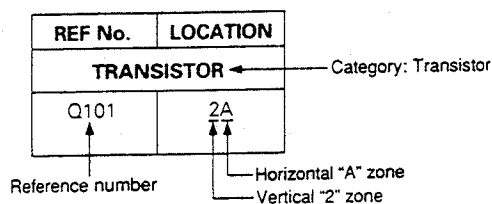
2. Foil and Component sides

- 1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :
Parts on the component side seen from component face (parts face) are indicated.

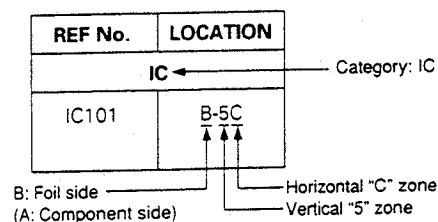
3. Parts location guides

Parts location are indicated by guide scale on the circuit board.

1) Signal pattern :



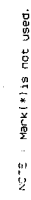
2) Double pattern :



Notes:

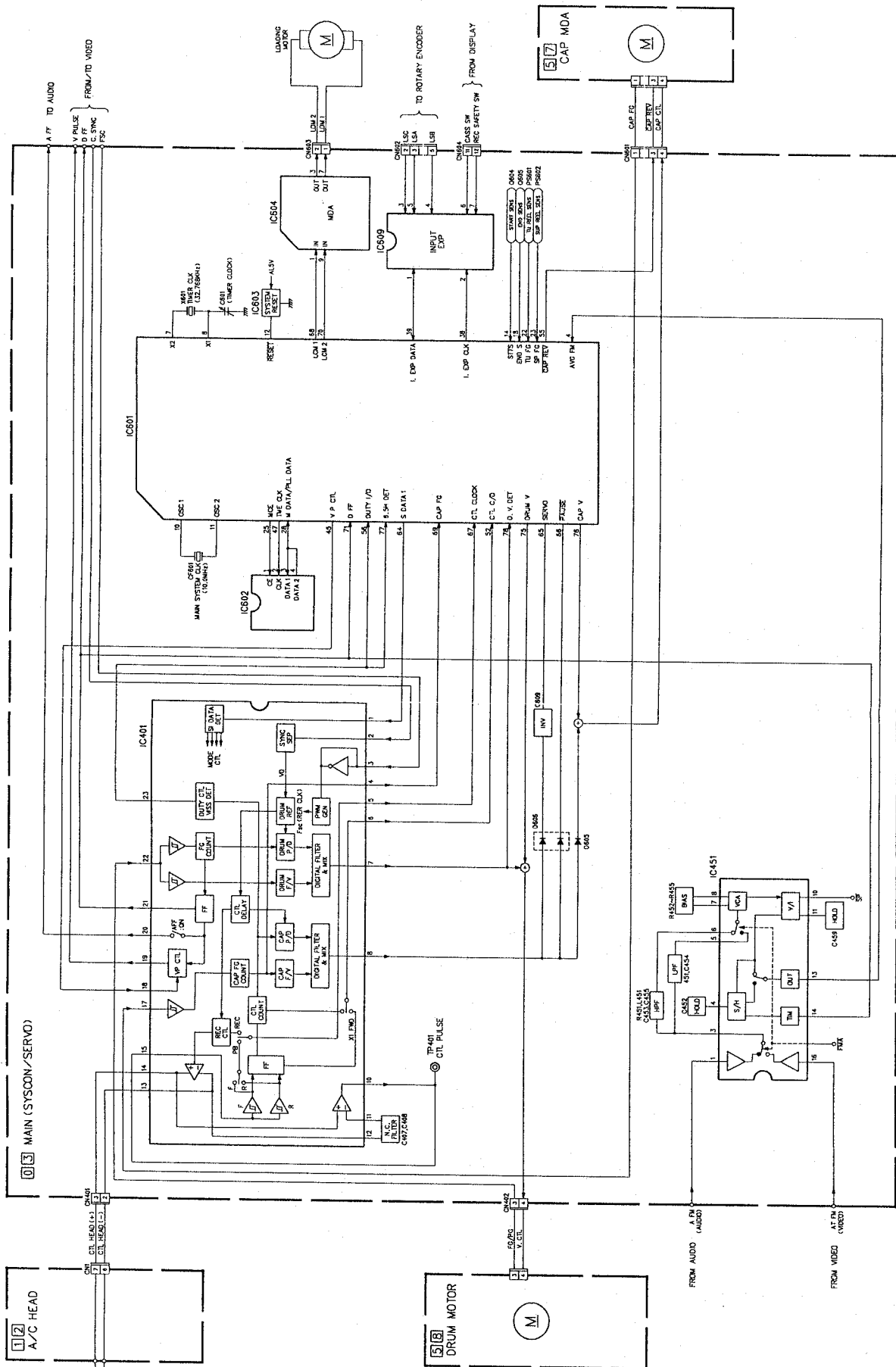
- 1) For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).
- 2) For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.

4.1

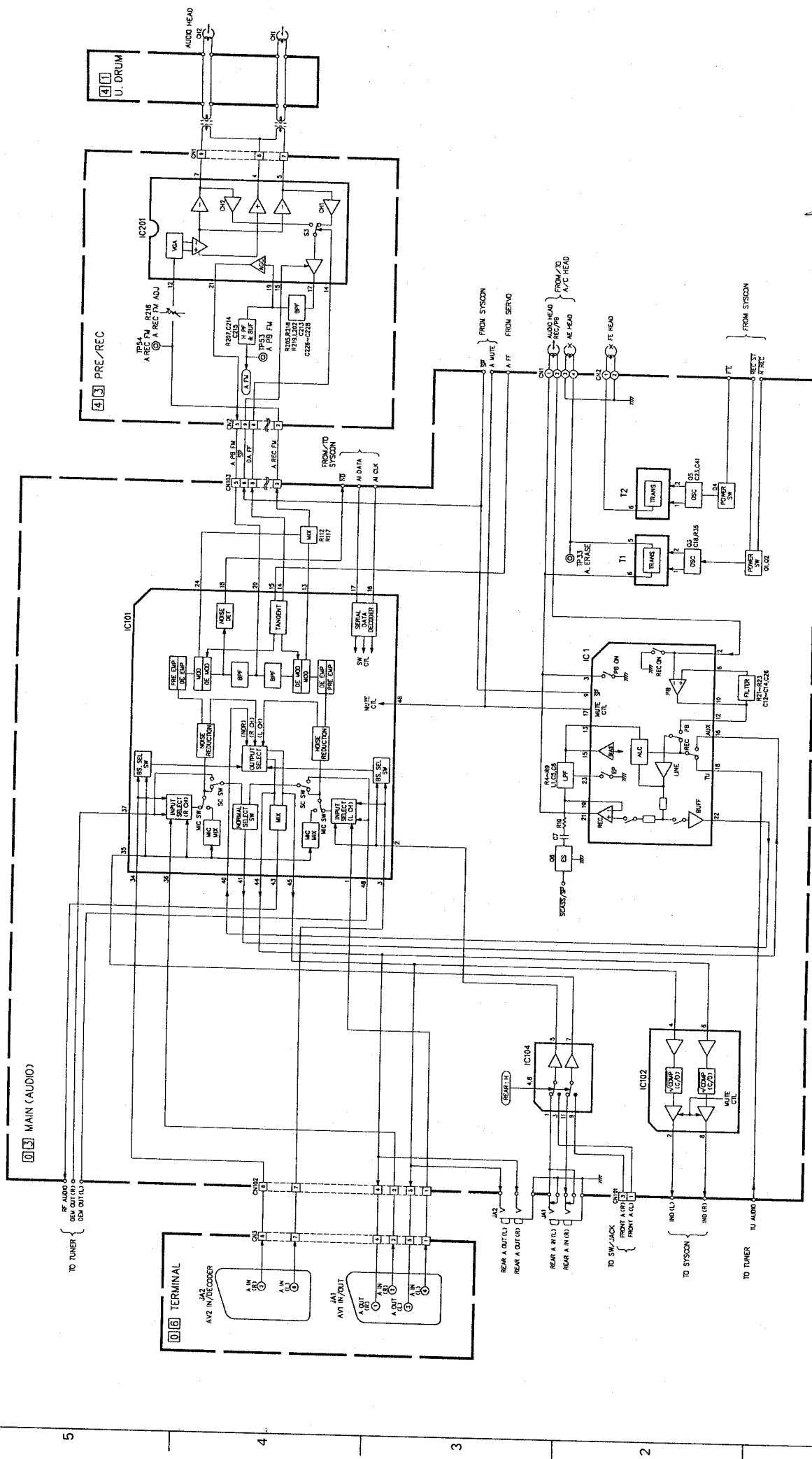


V IN A IN A IN
JA101 JA102 JA103

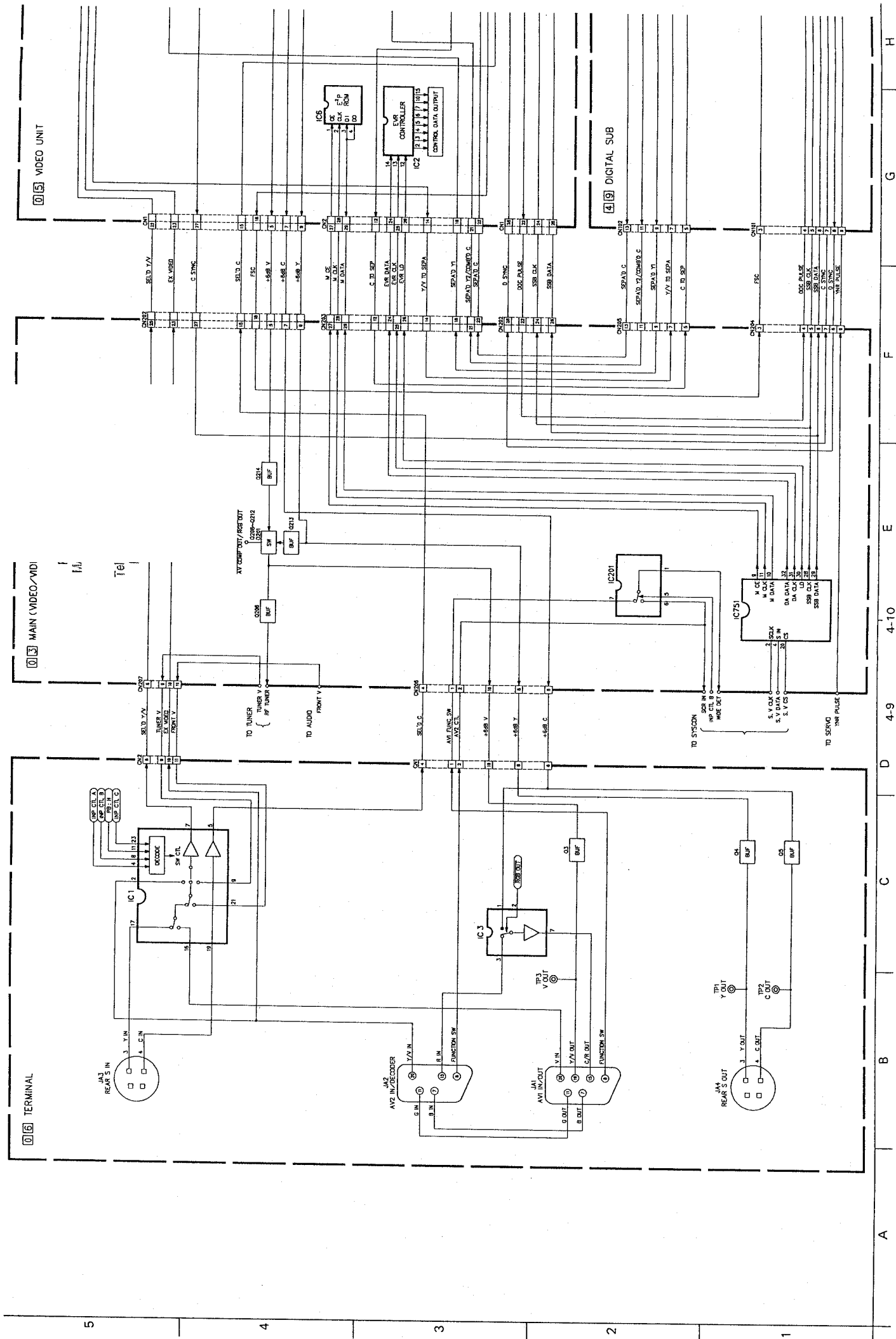
4.2 SYSCON/SERVO BLOCK DIAGRAM

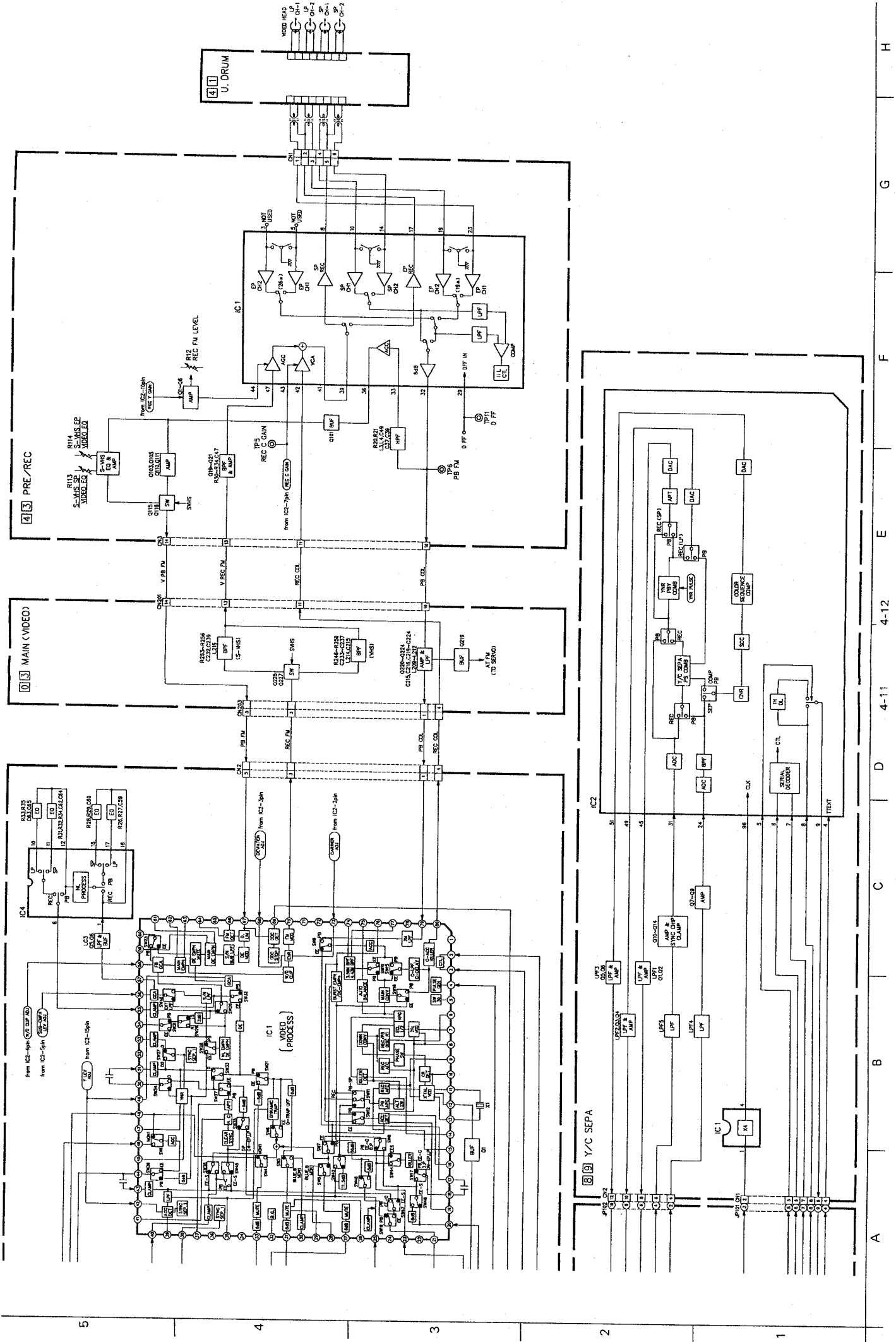


4.3 AUDIO BLOCK DIAGRAM

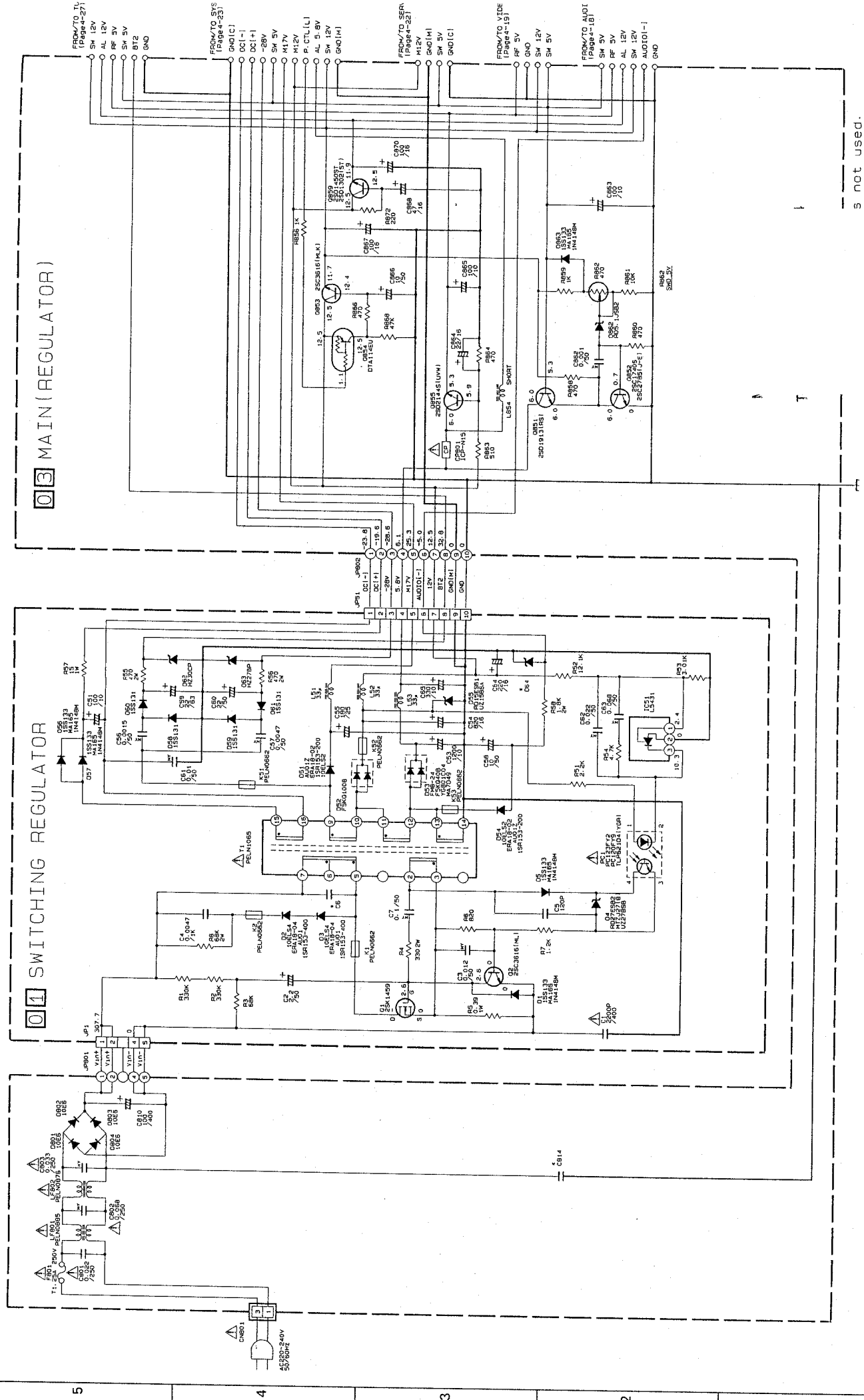


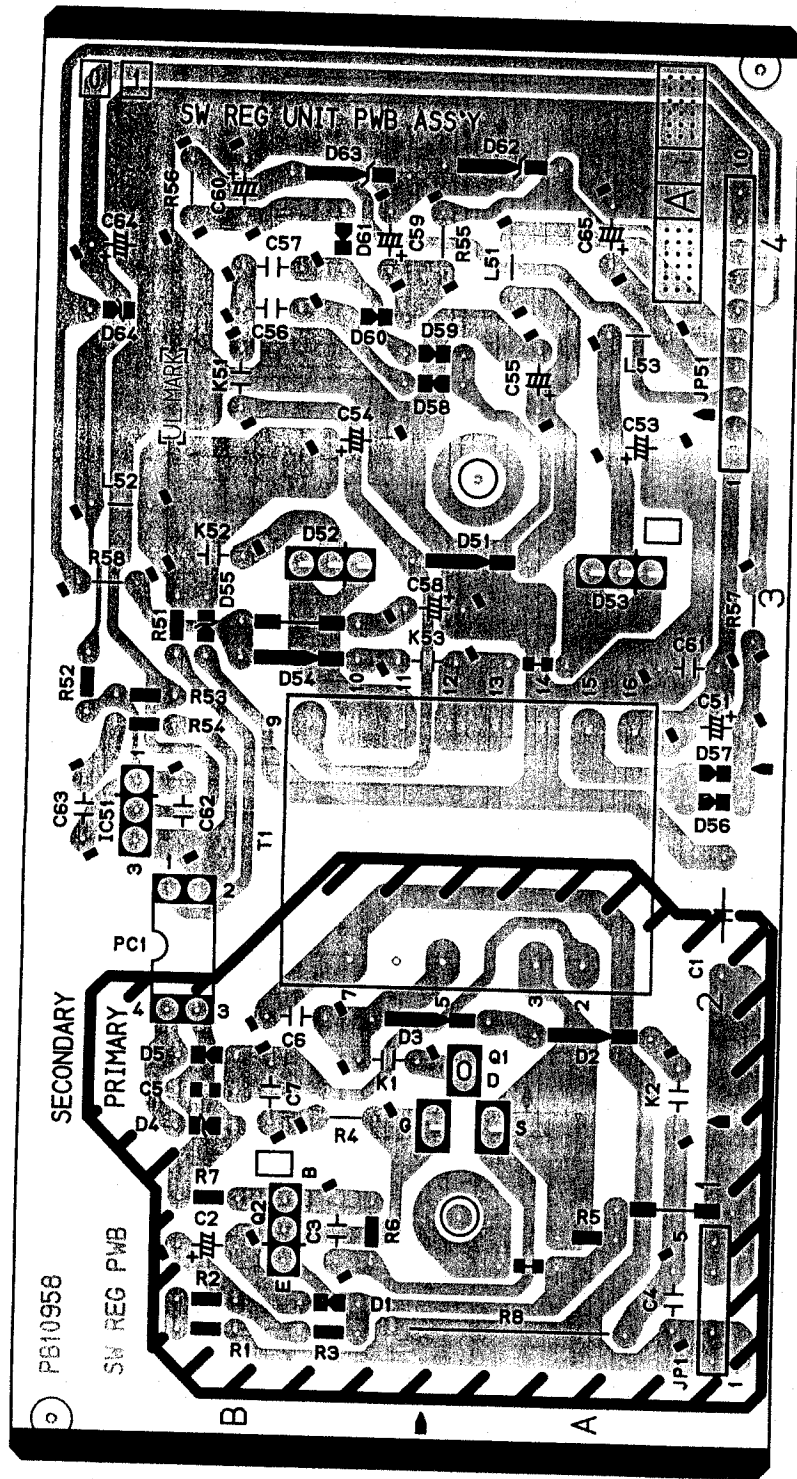
4.4 VIDEO BLOCK DIAGRAM





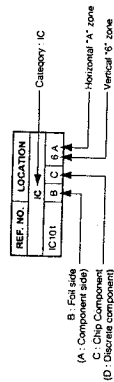
4.5 SWITCHING REGULATOR SCHEMATIC DIAGRAM



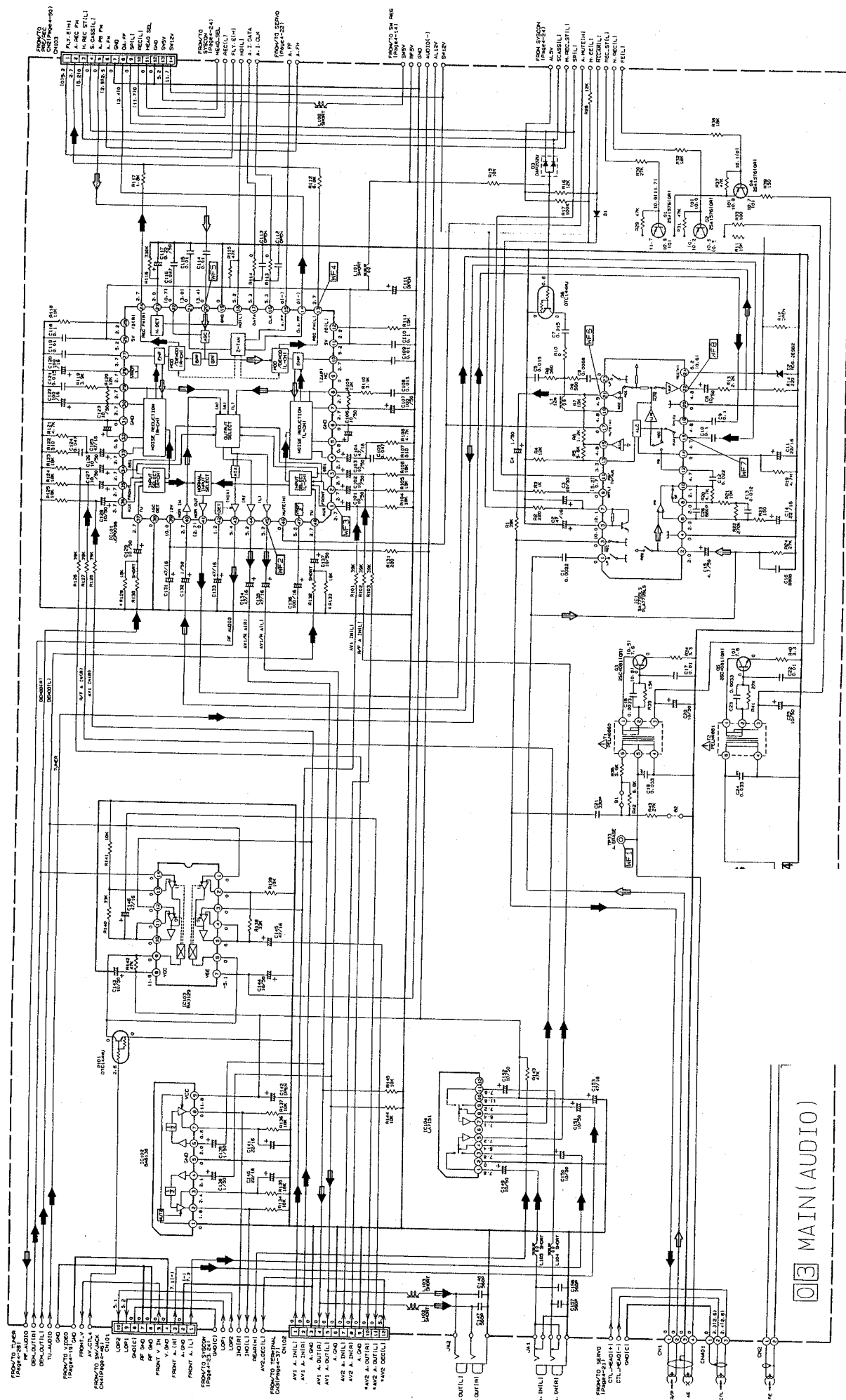


COMPONENT PARTS LOCATION GUIDE

REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION
CAPACITOR	D2	2A	L53	A	4A	K1	2B
	D3	1B	D4	D	2B	K2	2A
	D4	D	D5	D	1B	K51	4B
	D5	D	D6	D	2B	K52	3B
	D6	D	D7	D	3B	K53	3A
	D7	D	D8	D	1A	PC1	2B
	D8	D	D9	D	1B	T1	2A
	D9	D	D10	D	1B		
	D10	D	D11	D	1A		
	D11	D	D12	D	1B		
DIODE	D1	1B	D13	D	1A		
	D2	D	D14	D	1B		
	D3	D	D15	D	1A		
	D4	D	D16	D	1B		
	D5	D	D17	D	1A		
	D6	D	D18	D	1B		
	D7	D	D19	D	1A		
	D8	D	D20	D	1B		
	D9	D	D21	D	1A		
	D10	D	D22	D	1B		
COIL	L51	4A	L52	3B	JP51	A	1A
	L52	D				A	3A
						A	3C
						A	3C
						A	3C
						A	3C
						A	3C
						A	3C
						A	3C
						A	3C
OTHER	IC51	A	IC52	D	IC53	A	3A
	IC54	D	IC55	D	IC56	A	3A
	IC57	D	IC58	D	IC59	A	3A
	IC60	D	IC61	D	IC62	A	3A
	IC63	D	IC64	D	IC65	A	3A
	IC66	D	IC67	D	IC68	A	3A
	IC69	D	IC70	D	IC71	A	3A
	IC72	D	IC73	D	IC74	A	3A
	IC75	D	IC76	D	IC77	A	3A
	IC78	D	IC79	D	IC80	A	3A

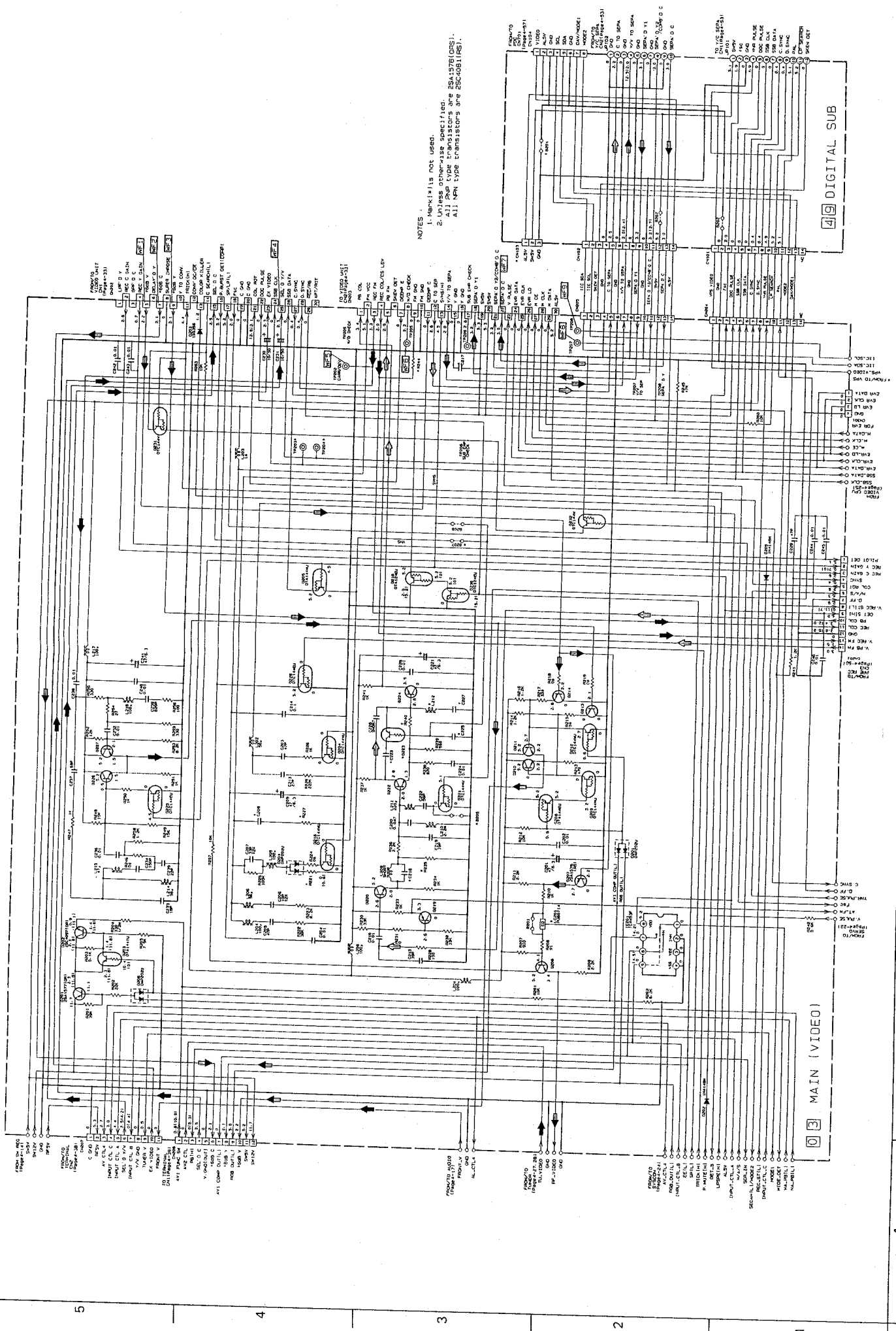


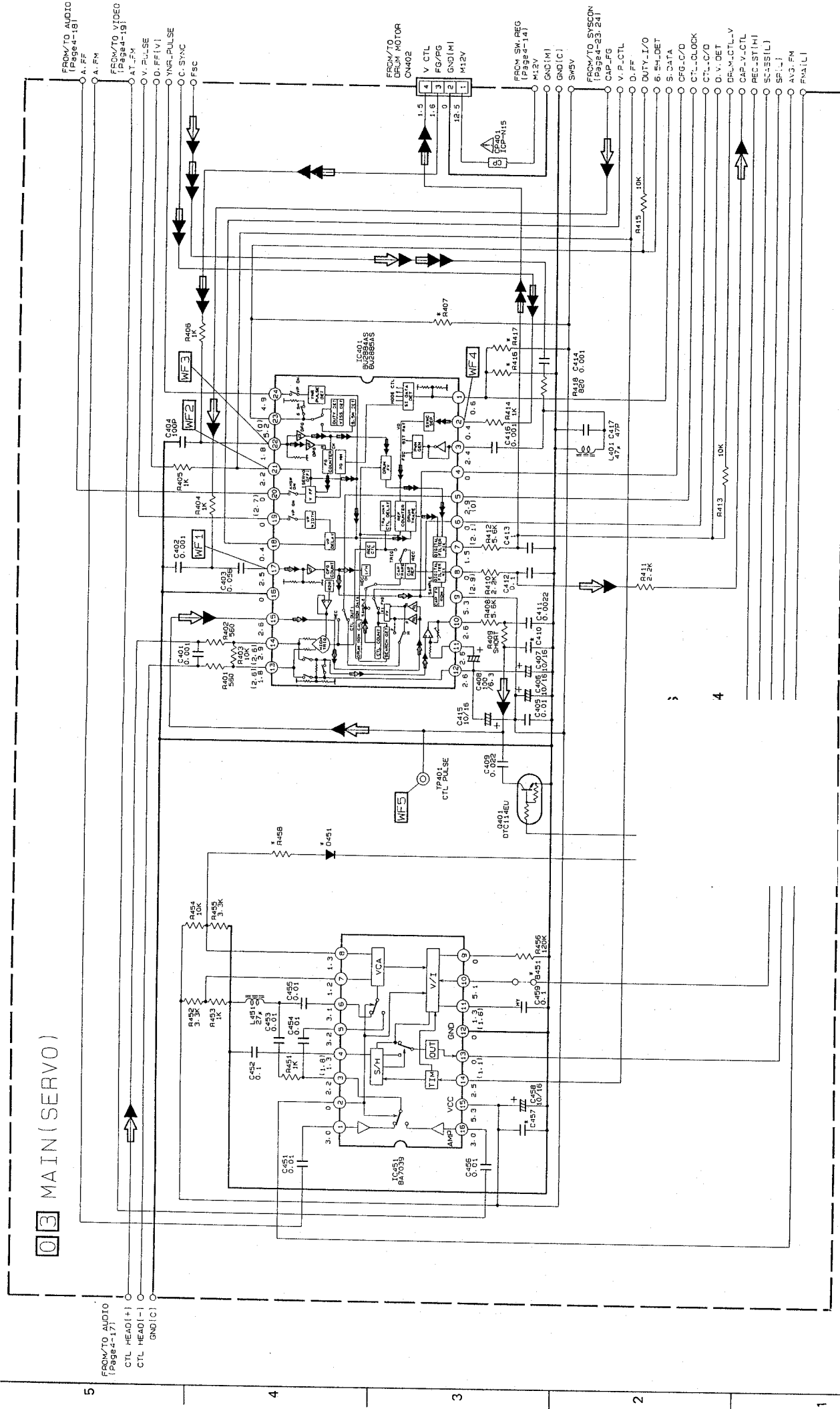
4.7 AUDIO SCHEMATIC DIAGRAM



NOTE: Mark (*) is not used.

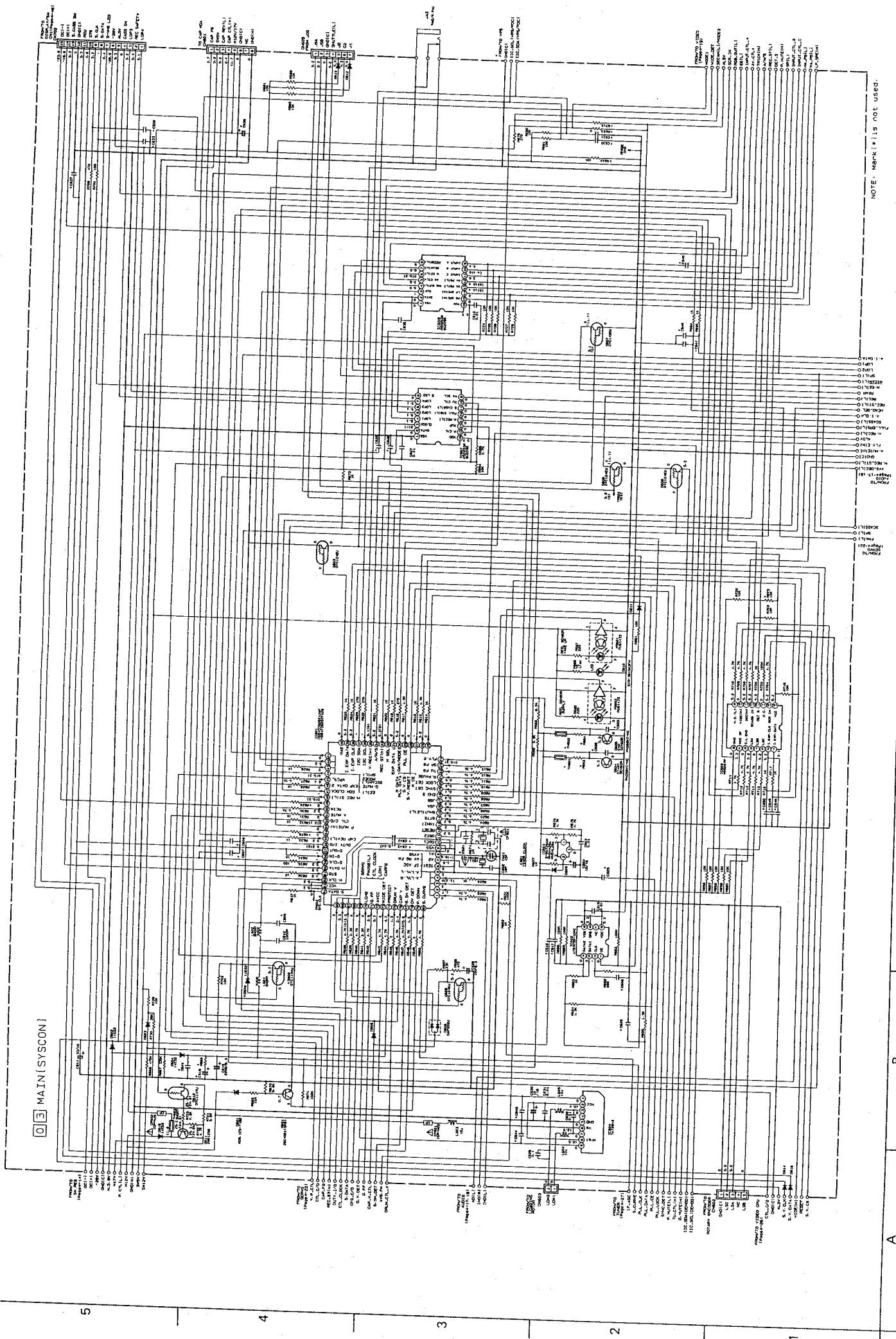
4.8 VIDEO SCHEMATIC DIAGRAM



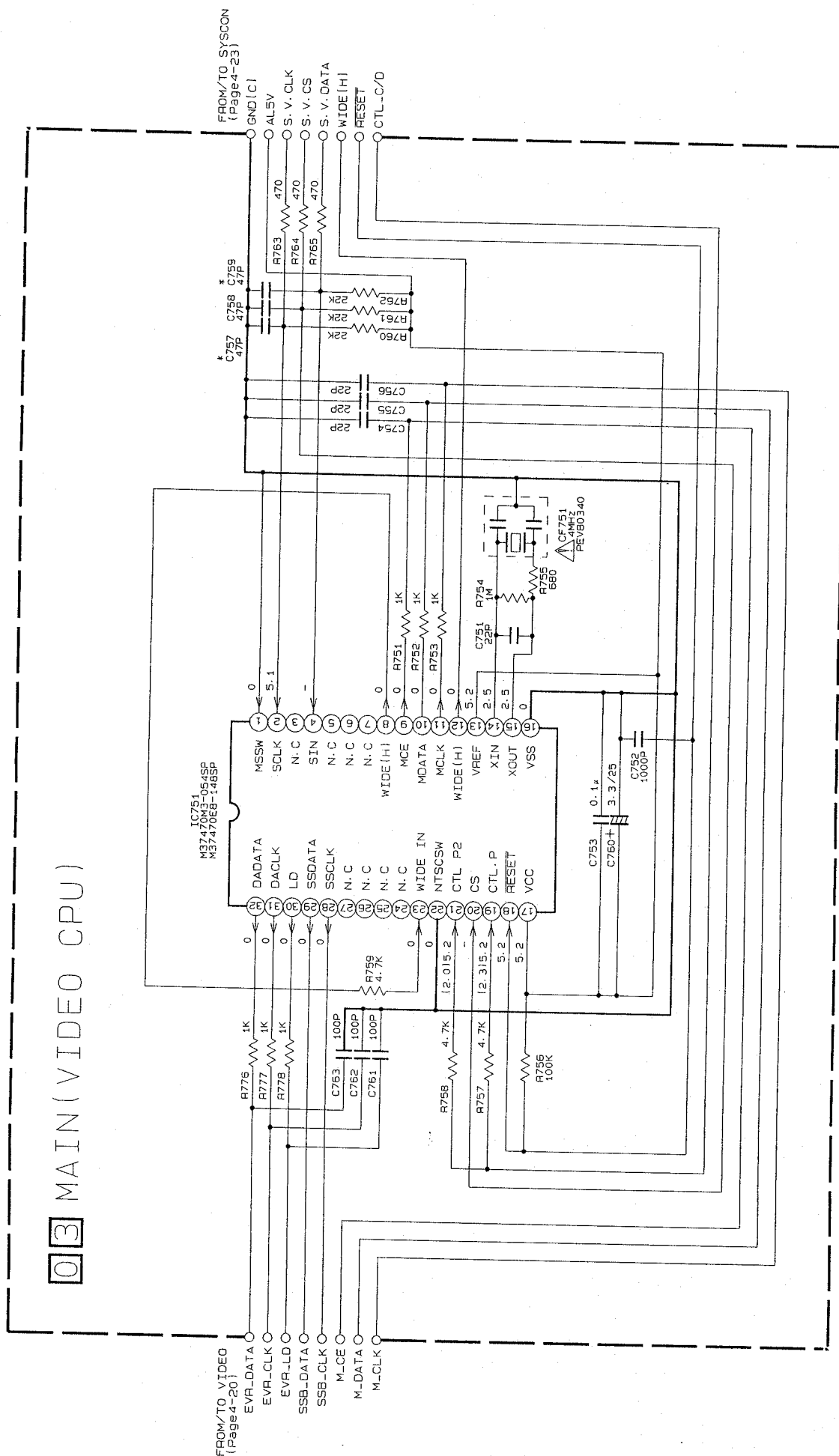


NOTE : Mark (*) is not used.

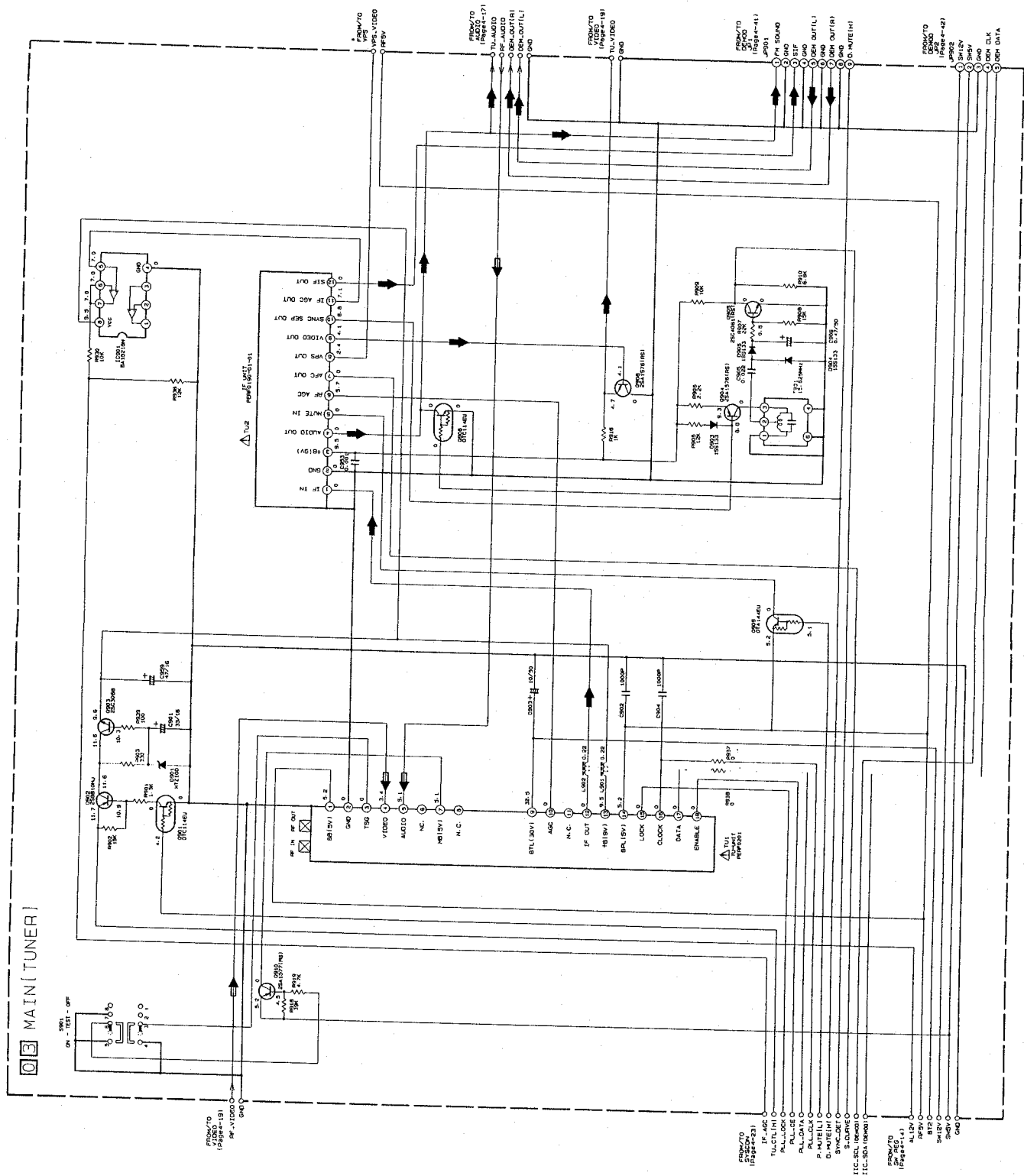
4.10 SYSTEM CONTROL SCHEMATIC DIAGRAM



4.11 VIDEO CPU SCHEMATIC DIAGRAM



4.12 TUNER SCHEMATIC DIAGRAM



A

3

1

Copyright Clearance Center

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1

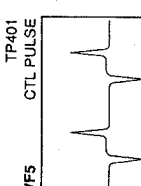
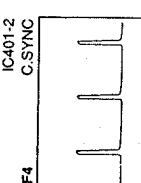
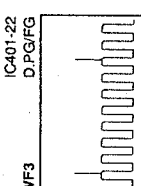
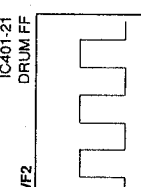
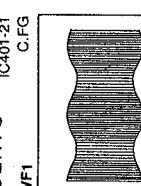
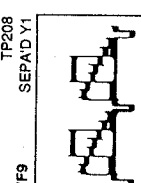
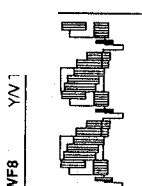
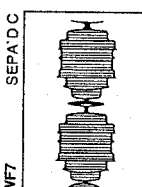
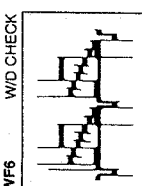
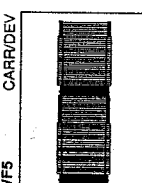
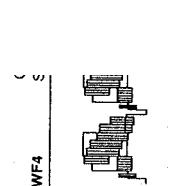
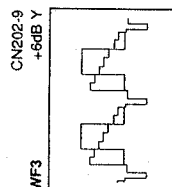
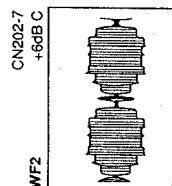
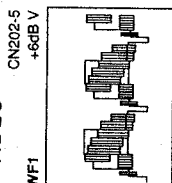
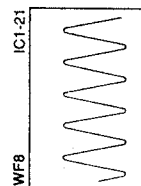
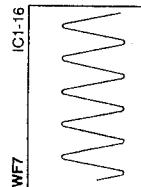
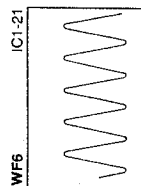
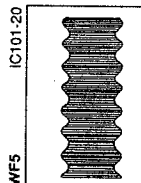
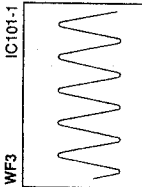
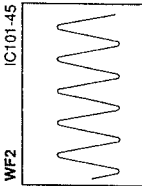
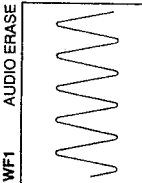
1

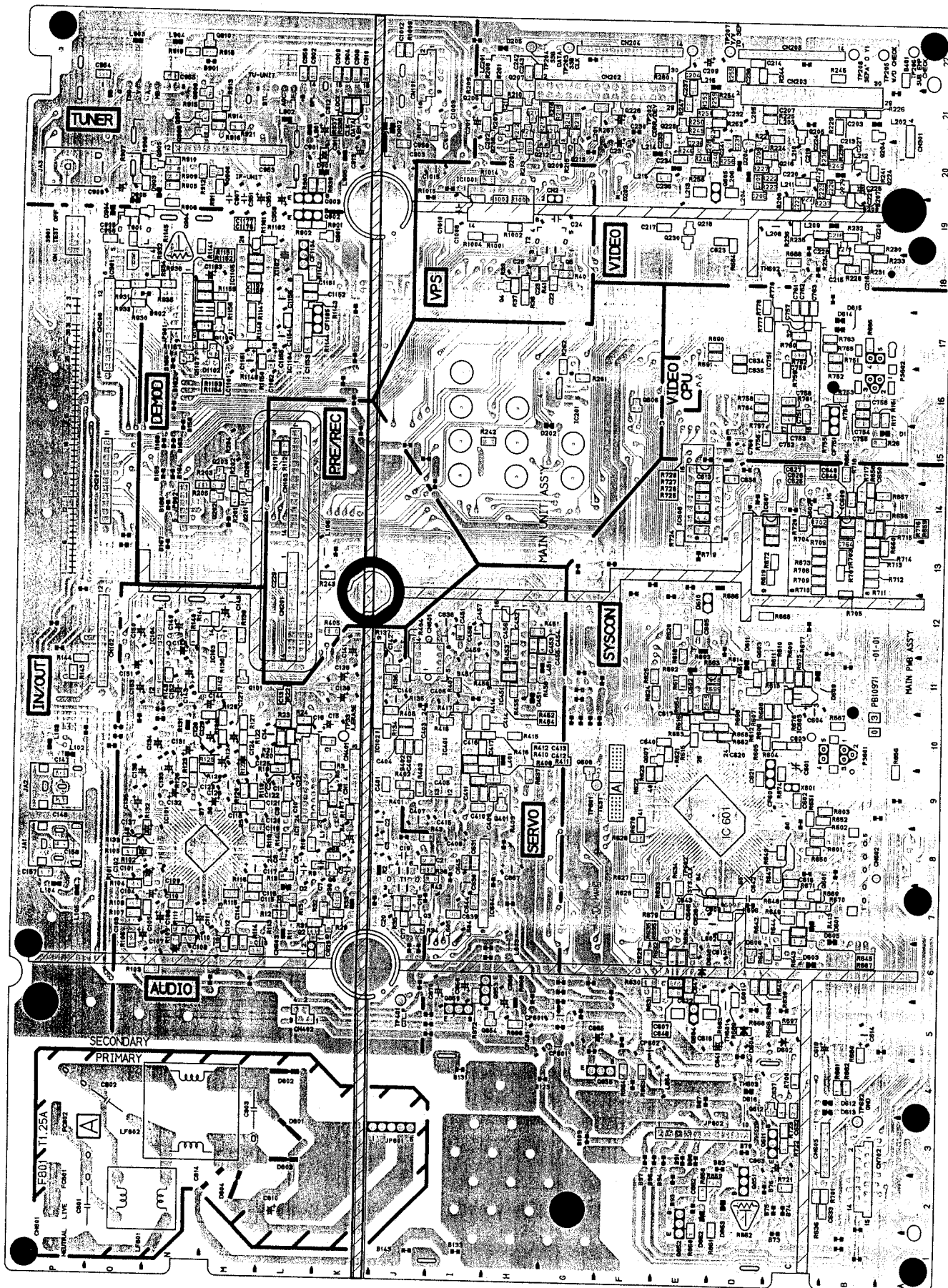
4.13 MAIN CIRCUIT BOARD

WAVEFORMS

—AUDIO—

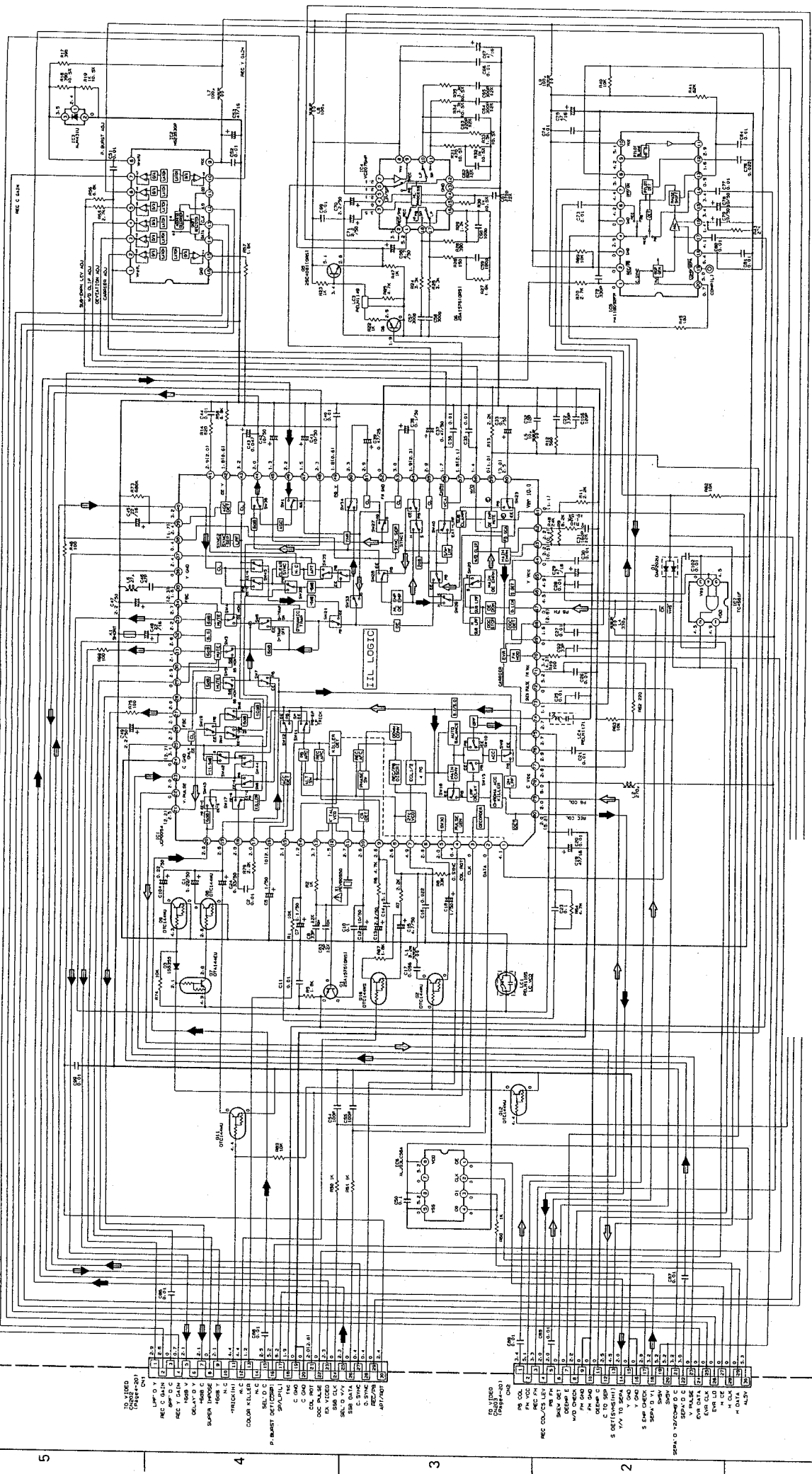
TP33





4.14 VIDEO UNIT SCHEMATIC DIAGRAM

VIDEO UNIT



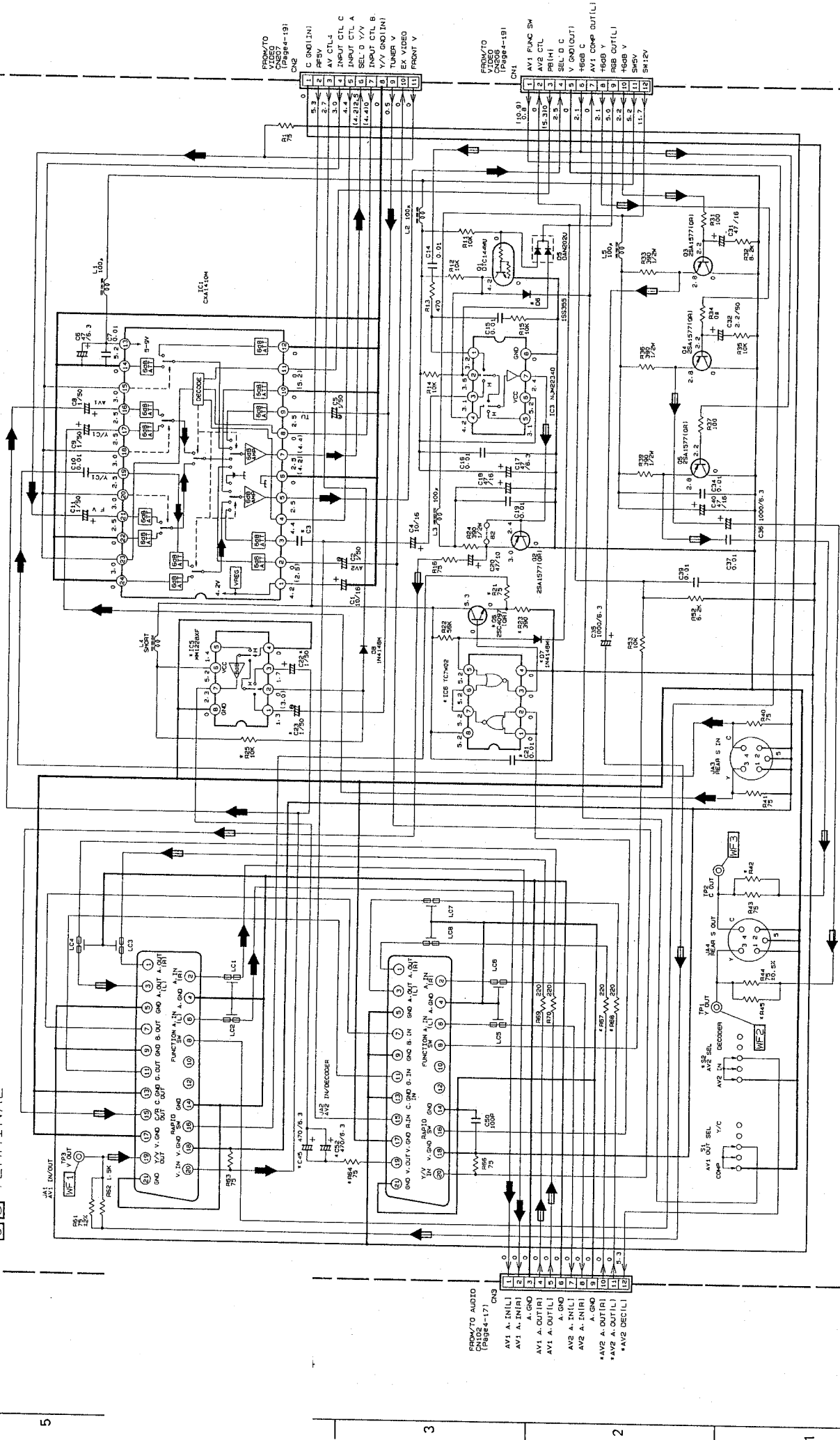
NOTE: MAPK(4)15 NOT USED

—FOIL SIDE (B) —

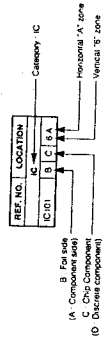
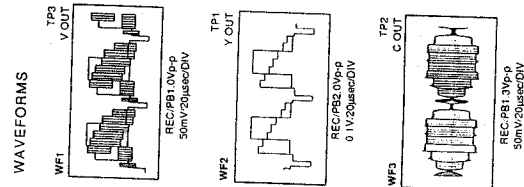
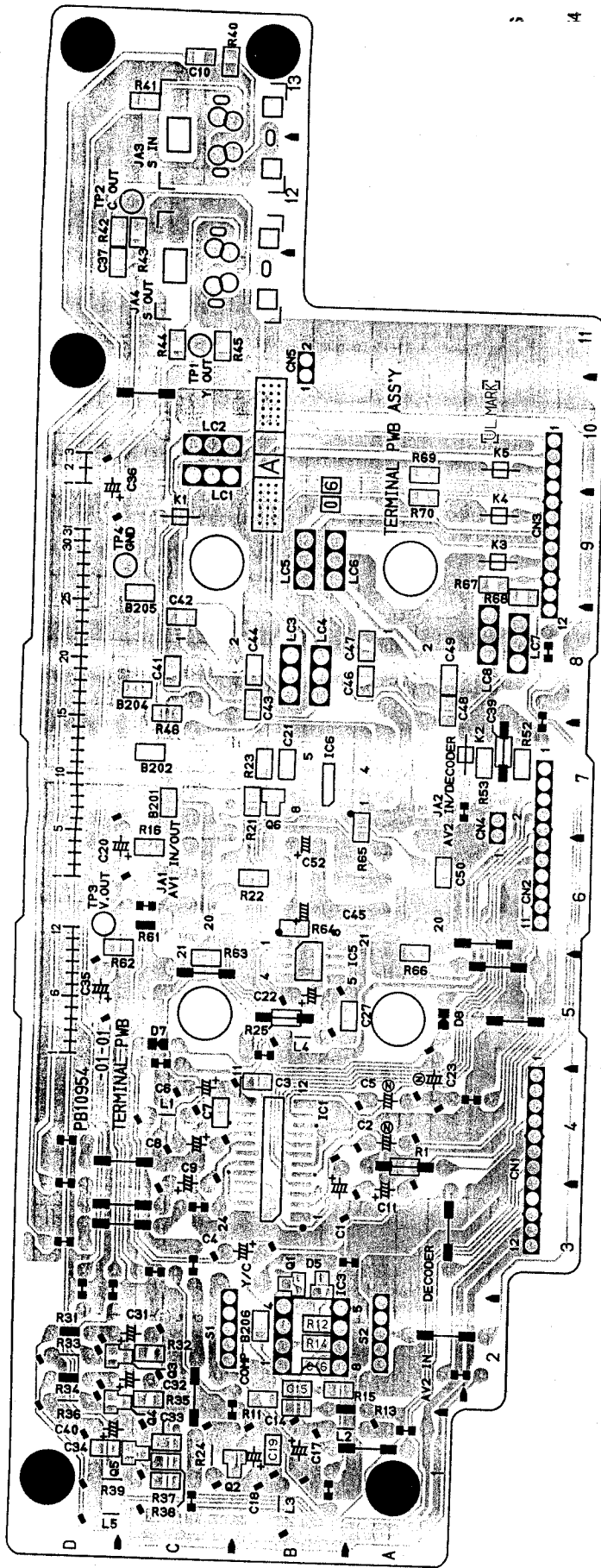
4-36

4.16 TERMINAL SCHEMATIC DIAGRAM

TERMINAL



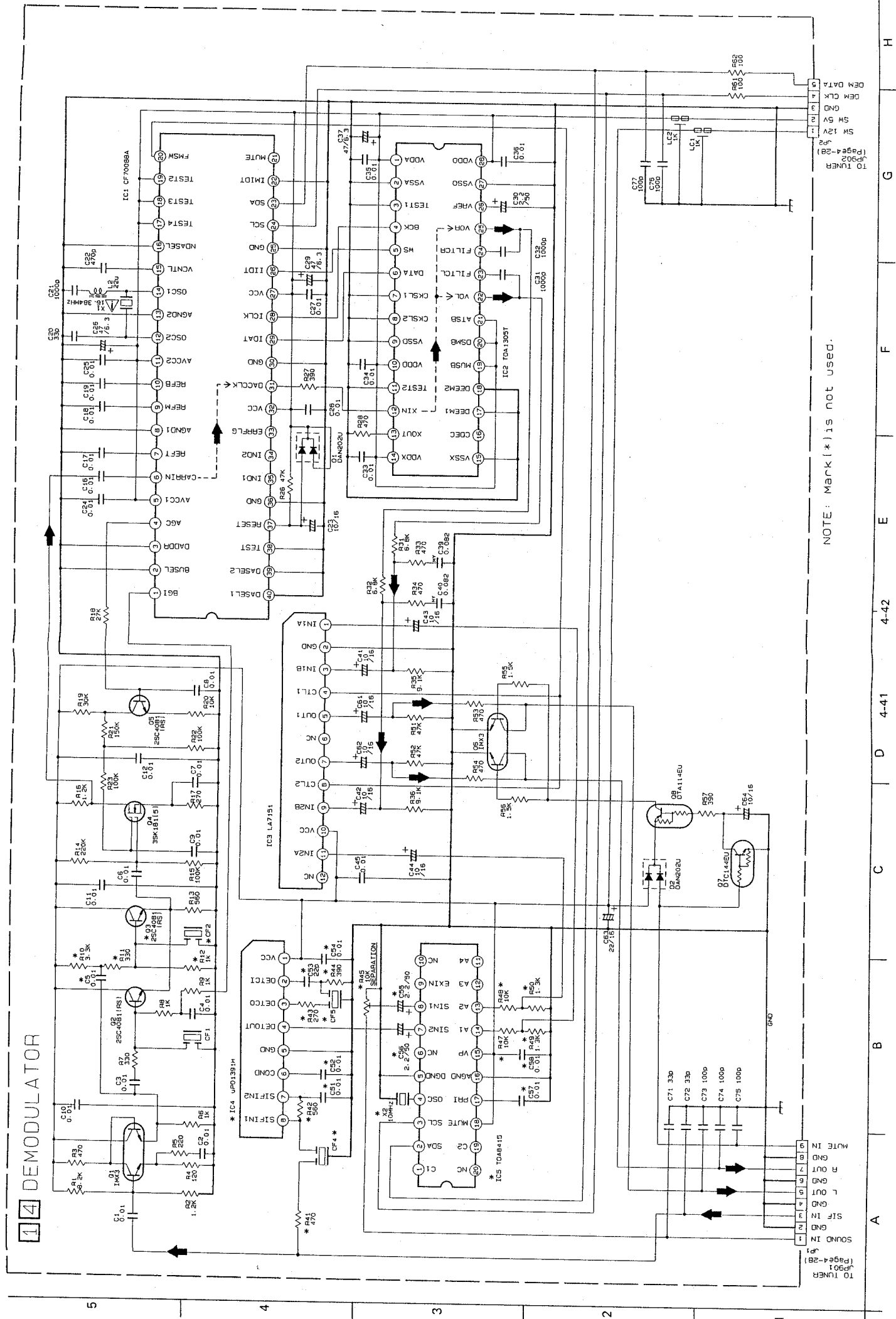
NOTE: MARK(*) IS NOT USED.

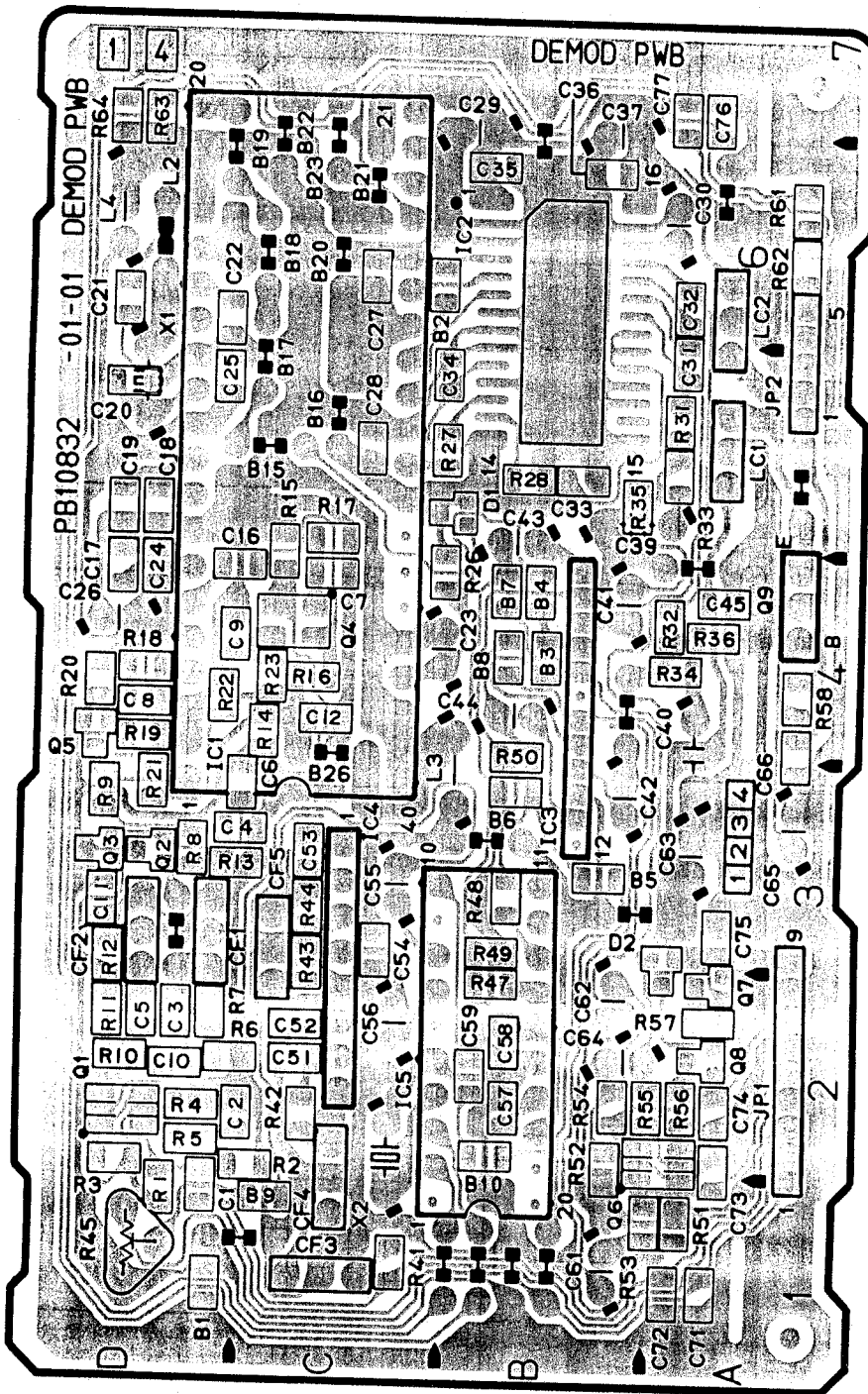


COMPONENT PARTS LOCATION GUIDE

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
C1	A D 4C	C35	A D 5E	R13	A D 5B	A D 2B	A D 2C	R61	A D 6D
C2	A D 4B	C36	A D 10E	R14	B C 8E	B C 2C	B C 2C	R62	B C 8E
C3	A D 5C	C37	B C 12E	R15	B C 6D	B C 2C	B C 2C	R63	B C 6D
C4	A D 5B	C38	B C 9A	R16	B C 7D	B C 2C	B C 2C	R64	B C 7D
C5	A D 5D	C39	B C 10C	R17	B C 6C	B C 2C	B C 2C	R65	B C 6C
C6	A D 5D	C40	A D 2E	R18	B C 7C	B C 2C	B C 2C	R66	B C 7C
C7	B C 4D	C41	B C 8D	R19	B C 6C	B C 2C	B C 2C	R67	B C 6C
C8	A D 4D	C42	B C 9D	R20	B C 7C	B C 2C	B C 2C	R68	B C 7C
C9	A D 4D	C43	B C 8D	R21	B C 6C	B C 2C	B C 2C	R69	B C 6C
C10	B C 4D	C44	B C 9D	R22	B C 7C	B C 2C	B C 2C	R70	B C 7C
C11	A D 4B	C45	A D 6C	R23	B C 6C	B C 2C	B C 2C		
C12	A D 4B	C46	B C 8C	R24	B C 7C	B C 2C	B C 2C		
C13	B C 2C	C47	B C 8B	R25	B C 6C	B C 2C	B C 2C		
C14	B C 2C	C48	B C 8B	R26	B C 7C	B C 2C	B C 2C		
C15	B C 2C	C49	B C 8B	R27	B C 6C	B C 2C	B C 2C		
C16	B C 2C	C50	B C 8B	R28	B C 7C	B C 2C	B C 2C		
C17	A D 2C	C51	A D 7C	R29	B C 6C	B C 2C	B C 2C		
C18	A D 1C	C52	A D 7C	R30	B C 7C	B C 2C	B C 2C		
C19	B C 1C	C53	B C 3C	R31	B C 6C	B C 2C	B C 2C		
C20	A D 6E	C54	B C 10D	R32	B C 7C	B C 2C	B C 2C		
C21	A D 7C	C55	B C 2E	R33	B C 6C	B C 2C	B C 2C		
C22	A D 5C	C56	B C 2E	R34	B C 7C	B C 2C	B C 2C		
C23	A D 5B	C57	B C 10A	R35	B C 6C	B C 2C	B C 2C		
C24	B C 5B	C58	B C 10A	R36	B C 7C	B C 2C	B C 2C		
C25	B C 5C	C59	B C 11C	R37	B C 6C	B C 2C	B C 2C		
C26	A D 2E	C60	B C 11C	R38	B C 7C	B C 2C	B C 2C		
C27	A D 2E	C61	B C 11C	R39	B C 6C	B C 2C	B C 2C		
C28	B C 2D	C62	B C 11C	R40	B C 7C	B C 2C	B C 2C		
C29	B C 2D	C63	B C 11C	R41	B C 6C	B C 2C	B C 2C		
C30	B C 2D	C64	B C 11C	R42	B C 7C	B C 2C	B C 2C		
C31	B C 2D	C65	B C 11C	R43	B C 6C	B C 2C	B C 2C		
C32	B C 2D	C66	B C 11C	R44	B C 7C	B C 2C	B C 2C		
C33	B C 2D	C67	B C 11C	R45	B C 6C	B C 2C	B C 2C		
C34	B C 2D	C68	B C 11C	R46	B C 7C	B C 2C	B C 2C		

4.18 DEMODULATOR SCHEMATIC DIAGRAM

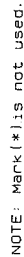




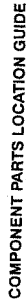
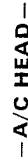
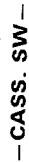
MAIN COMPONENT PARTS
LOCATION GUIDE

REF. NO.	LOCATION	REF. NO.	LOCATION
CAPACITOR			
C1	10	C101	10
C2	20	C102	20
C3	30	C103	30
C4	40	C104	40
C5	50	C105	50
C6	60	C106	60
C7	70	C107	70
C8	80	C108	80
C9	90	C109	90
C10	100	C110	100
C11	110	C111	110
C12	120	C112	120
C13	130	C113	130
C14	140	C114	140
C15	150	C115	150
C16	160	C116	160
C17	170	C117	170
C18	180	C118	180
C19	190	C119	190
C20	200	C120	200
C21	210	C121	210
C22	220	C122	220
C23	230	C123	230
C24	240	C124	240
C25	250	C125	250
C26	260	C126	260
C27	270	C127	270
C28	280	C128	280
C29	290	C129	290
C30	300	C130	300
C31	310	C131	310
C32	320	C132	320
C33	330	C133	330
C34	340	C134	340
C35	350	C135	350
C36	360	C136	360
C37	370	C137	370
C38	380	C138	380
C39	390	C139	390
C40	400	C140	400
C41	410	C141	410
C42	420	C142	420
C43	430	C143	430
C44	440	C144	440
C45	450	C145	450
C46	460	C146	460
C47	470	C147	470
C48	480	C148	480
C49	490	C149	490
C50	500	C150	500
C51	510	C151	510
C52	520	C152	520
C53	530	C153	530
C54	540	C154	540
C55	550	C155	550
C56	560	C156	560
C57	570	C157	570
C58	580	C158	580
C59	590	C159	590
C60	600	C160	600
C61	610	C161	610
C62	620	C162	620
C63	630	C163	630
C64	640	C164	640
C65	650	C165	650
C66	660	C166	660
C67	670	C167	670
C68	680	C168	680
C69	690	C169	690
C70	700	C170	700
C71	710	C171	710
C72	720	C172	720
C73	730	C173	730
C74	740	C174	740
C75	750	C175	750
C76	760	C176	760
C77	770	C177	770
C78	780	C178	780
C79	790	C179	790
C80	800	C180	800
C81	810	C181	810
C82	820	C182	820
C83	830	C183	830
C84	840	C184	840
C85	850	C185	850
C86	860	C186	860
C87	870	C187	870
C88	880	C188	880
C89	890	C189	890
C90	900	C190	900
C91	910	C191	910
C92	920	C192	920
C93	930	C193	930
C94	940	C194	940
C95	950	C195	950
C96	960	C196	960
C97	970	C197	970
C98	980	C198	980
C99	990	C199	990
C100	1000	C200	1000
TRANSISTOR			
B1	10	B101	10
B2	20	B102	20
B3	30	B103	30
B4	40	B104	40
B5	50	B105	50
B6	60	B106	60
B7	70	B107	70
B8	80	B108	80
B9	90	B109	90
B10	100	B110	100
B11	110	B111	110
B12	120	B112	120
B13	130	B113	130
B14	140	B114	140
B15	150	B115	150
B16	160	B116	160
B17	170	B117	170
B18	180	B118	180
B19	190	B119	190
B20	200	B120	200
B21	210	B121	210
B22	220	B122	220
B23	230	B123	230
B24	240	B124	240
B25	250	B125	250
B26	260	B126	260
B27	270	B127	270
B28	280	B128	280
B29	290	B129	290
B30	300	B130	300
B31	310	B131	310
B32	320	B132	320
B33	330	B133	330
B34	340	B134	340
B35	350	B135	350
B36	360	B136	360
B37	370	B137	370
B38	380	B138	380
B39	390	B139	390
B40	400	B140	400
B41	410	B141	410
B42	420	B142	420
B43	430	B143	430
B44	440	B144	440
B45	450	B145	450
B46	460	B146	460
B47	470	B147	470
B48	480	B148	480
B49	490	B149	490
B50	500	B150	500
B51	510	B151	510
B52	520	B152	520
B53	530	B153	530
B54	540	B154	540
B55	550	B155	550
B56	560	B156	560
B57	570	B157	570
B58	580	B158	580
B59	590	B159	590
B60	600	B160	600
B61	610	B161	610
B62	620	B162	620
B63	630	B163	630
B64	640	B164	640
B65	650	B165	650
B66	660	B166	660
B67	670	B167	670
B68	680	B168	680
B69	690	B169	690
B70	700	B170	700
B71	710	B171	710
B72	720	B172	720
B73	730	B173	730
B74	740	B174	740
B75	750	B175	750
B76	760	B176	760
B77	770	B177	770
B78	780	B178	780
B79	790	B179	790
B80	800	B180	800
B81	810	B181	810
B82	820	B182	820
B83	830	B183	830
B84	840	B184	840
B85	850	B185	850
B86	860	B186	860
B87	870	B187	870
B88	880	B188	880
B89	890	B189	890
B90	900	B190	900
B91	910	B191	910
B92	920	B192	920
B93	930	B193	930
B94	940	B194	940
B95	950	B195	950
B96	960	B196	960
B97	970	B197	970
B98	980	B198	980
B99	990	B199	990
B100	1000	B200	1000
DIODE			
D1	10	D101	10
D2	20	D102	20
D3	30	D103	30
D4	40	D104	40
D5	50	D105	50
D6	60	D106	60
D7	70	D107	70
D8	80	D108	80
D9	90	D109	90
D10	100	D110	100
D11	110	D111	110
D12	120	D112	120
D13	130	D113	130
D14	140	D114	140
D15	150	D115	150
D16	160	D116	160
D17	170	D117	170
D18	180	D118	180
D19	190	D119	190
D20	200	D120	200
D21	210	D121	210
D22	220	D122	220
D23	230	D123	230
D24	240	D124	240
D25	250	D125	250
D26	260	D126	260
D27	270	D127	270
D28	280	D128	280
D29	290	D129	290
D30	300	D130	300
D31	310	D131	310
D32	320	D132	320
D33	330	D133	330
D34	340	D134	340
D35	350	D135	350
D36	360	D136	360
D37	370	D137	370
D38	380	D138	380
D39	390	D139	390
D40	400	D140	400
D41	410	D141	410
D42	420	D142	420
D43	430	D143	430
D44	440	D144	440
D45	450	D145	450
D46	460	D146	460
D47	470	D147	470
D48	480	D148	480
D49	490	D149	490
D50	500	D150	500
D51	510	D151	510
D52	520	D152	520
D53	530	D153	530
D54	540	D154	540
D55	550	D155	550
D56	560	D156	560
D57	570	D157	570
D58	580	D158	580
D59	590	D159	590
D60	600	D160	600
D61	610	D161	610
D62	620	D162	620
D63	630	D163	630
D64	640	D164	640
D65	650	D165	650
D66	660	D166	660
D67	670	D167	670
D68	680	D168	680
D69	690	D169	690
D70	700	D170	700
D71	710	D171	710
D72	720	D172	720
D73	730	D173	730
D74	740	D174	740
D75	750	D175	750
D76	760	D176	760
D77	770	D177	770
D78	780	D178	780
D79	790	D179	790
D80	800	D180	800
D81	810	D181	810
D82	820	D182	820
D83	830	D183	830
D84	840	D184	840
D85	850	D185	850
D86	860	D186	860
D87	870	D187	870
D88	880	D188	880
D89	890	D189	890
D90	900	D190	900
D91	910	D191	910
D92	920	D192	920
D93	930	D193	930
D94	940	D194	940
D95	950	D195	950
D96	960	D196	960
D97	970	D197	970
D98	980	D198	980
D99	990	D199	990
D100	1000	D200	1000
OTHER			
IC1	10	IC101	10
IC2	20	IC102	20
IC3	30	IC103	30
IC4	40	IC104	40
IC5	50	IC105	50
IC6	60	IC106	60
IC7	70	IC107	70
IC8	80	IC108	80
IC9	90	IC109	90
IC10	100	IC110	100
IC11	110	IC111	110
IC12	120	IC112	120
IC13	130	IC113	130
IC14	140	IC114	140
IC15	150	IC115	150
IC16	160	IC116	160
IC17	170	IC117	170
IC18	180	IC118	180
IC19	190	IC119	190
IC20	200	IC120	200
IC21	210	IC121	210
IC22	220	IC122	220

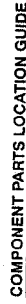
28 DISPLAY/SW



DIGITAL SUB



— DISPLAY/SW —



REF. NO. LOCATION

IC Category IC

A B C D

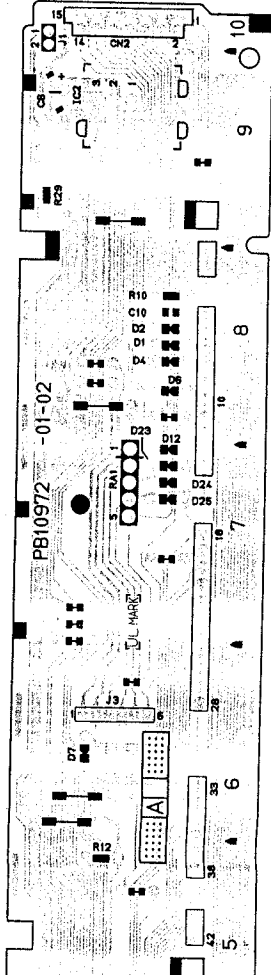
IC101

B. For side

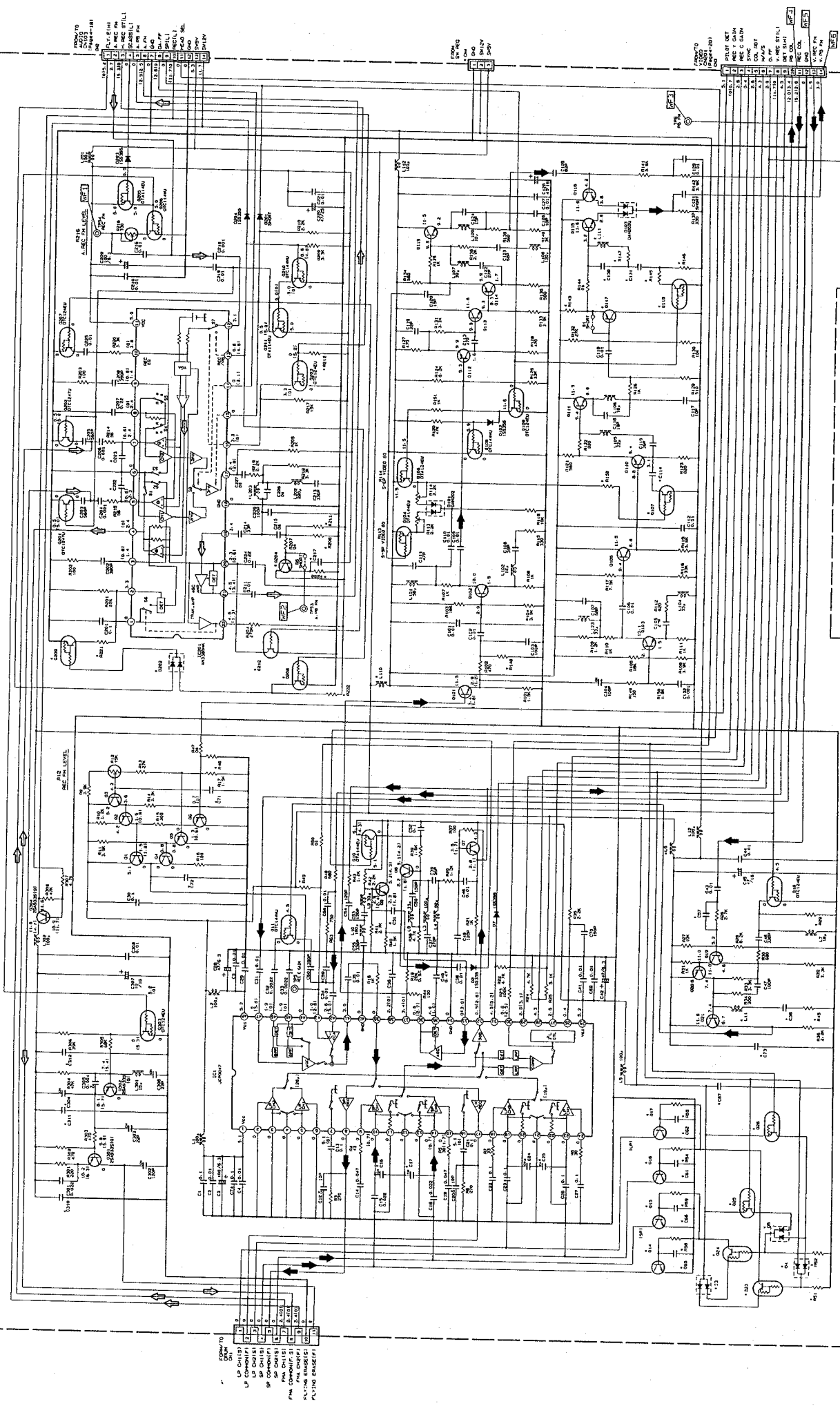
A. Component side

Horizontal 1/2 inch

Vertical 1/2 inch

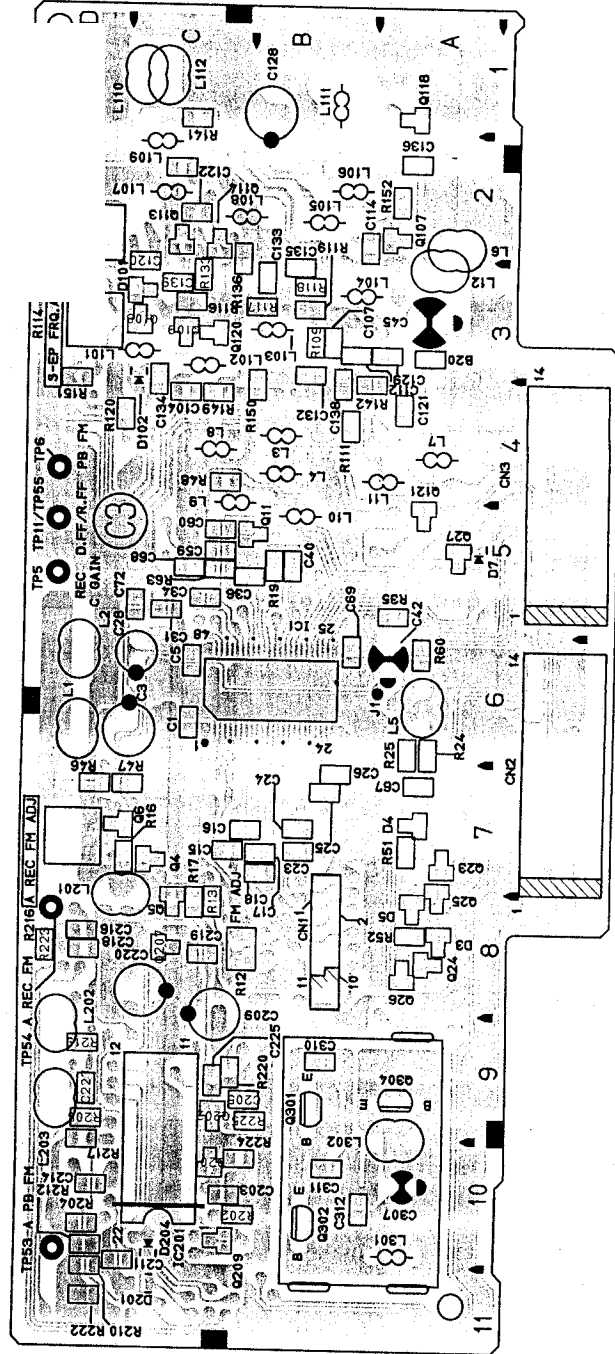
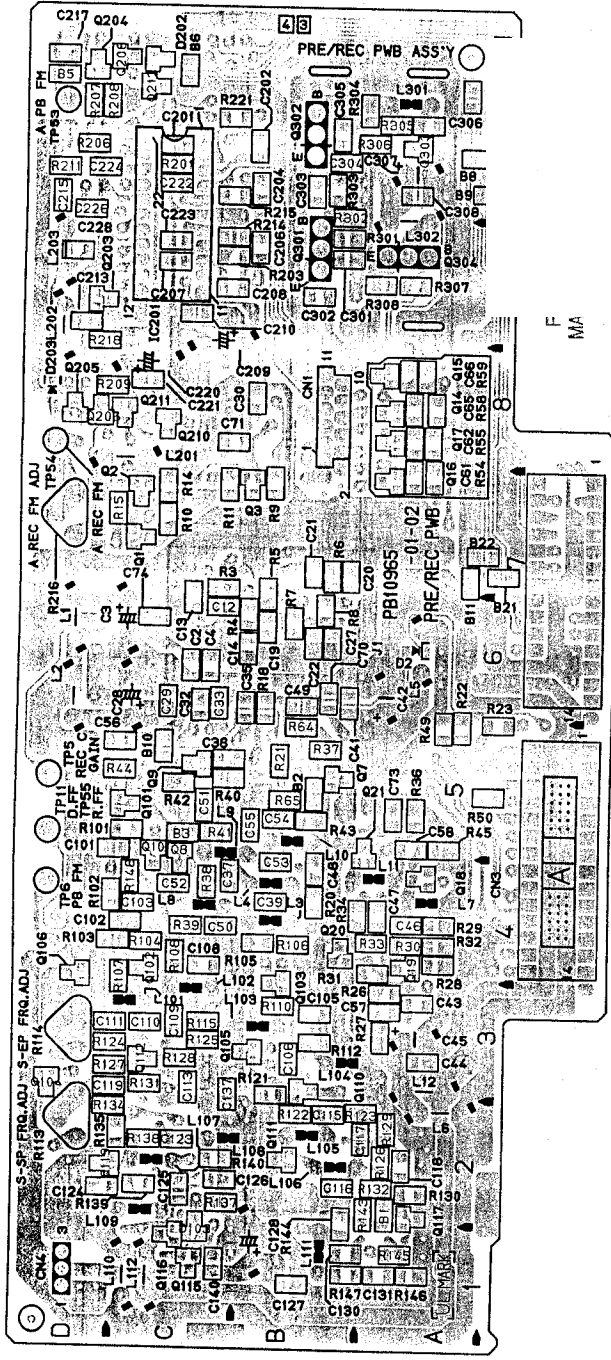
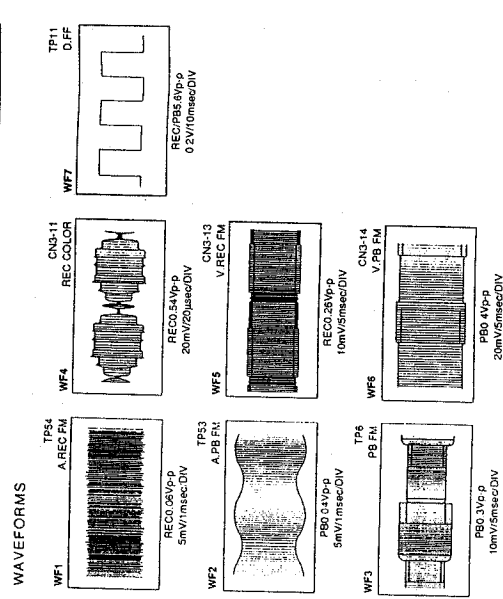


PRE/REC

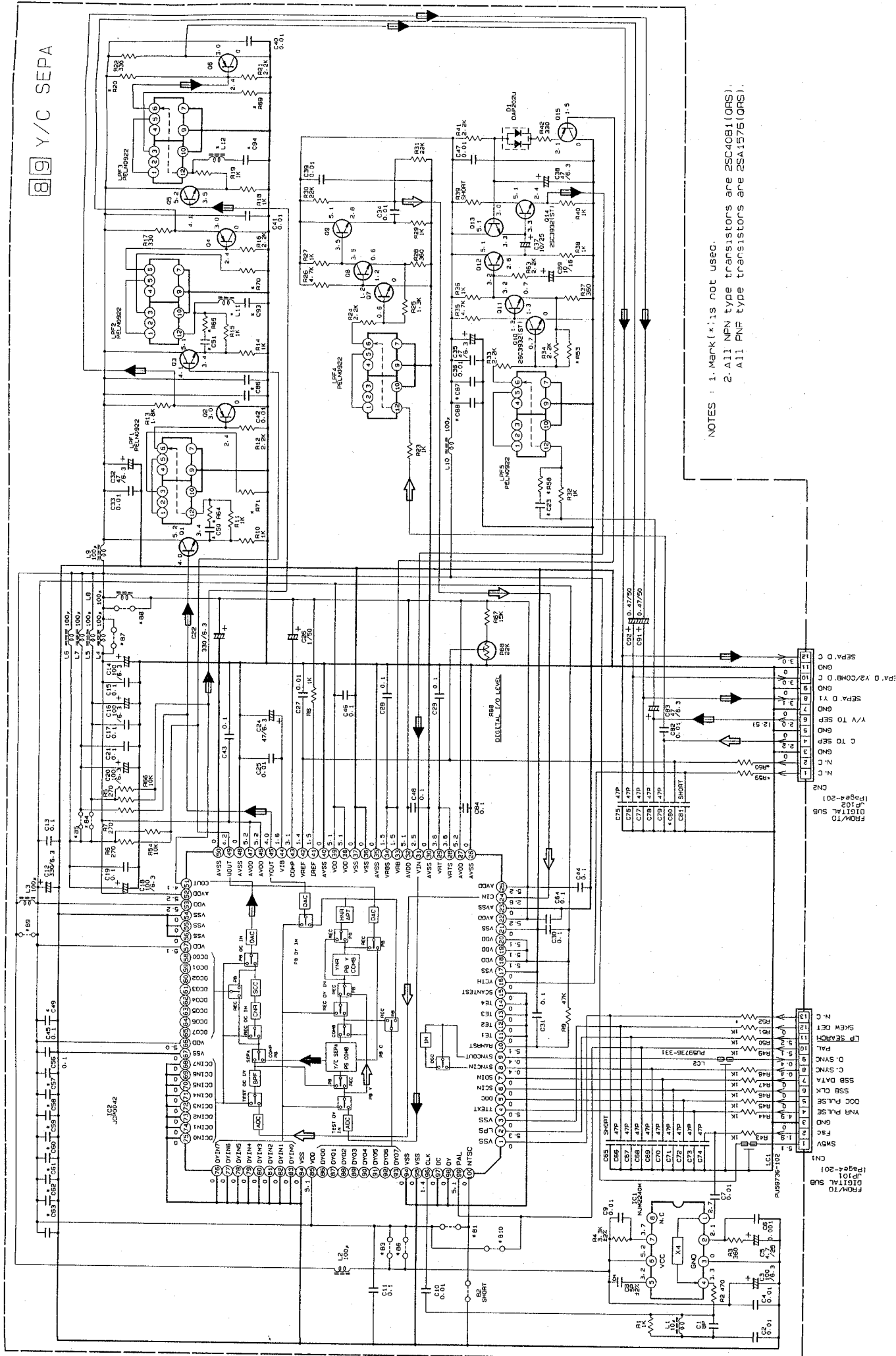


NOTES : 1. Mark (X) is not used.
 2. Signal Path: → AUDIO SIGNAL PATH
 3. All NPN type transistors are 2SC4081 (QRS).
 All PNP type transistors are 2SA1576 (QRS).

— FOIL SIDE (B) —

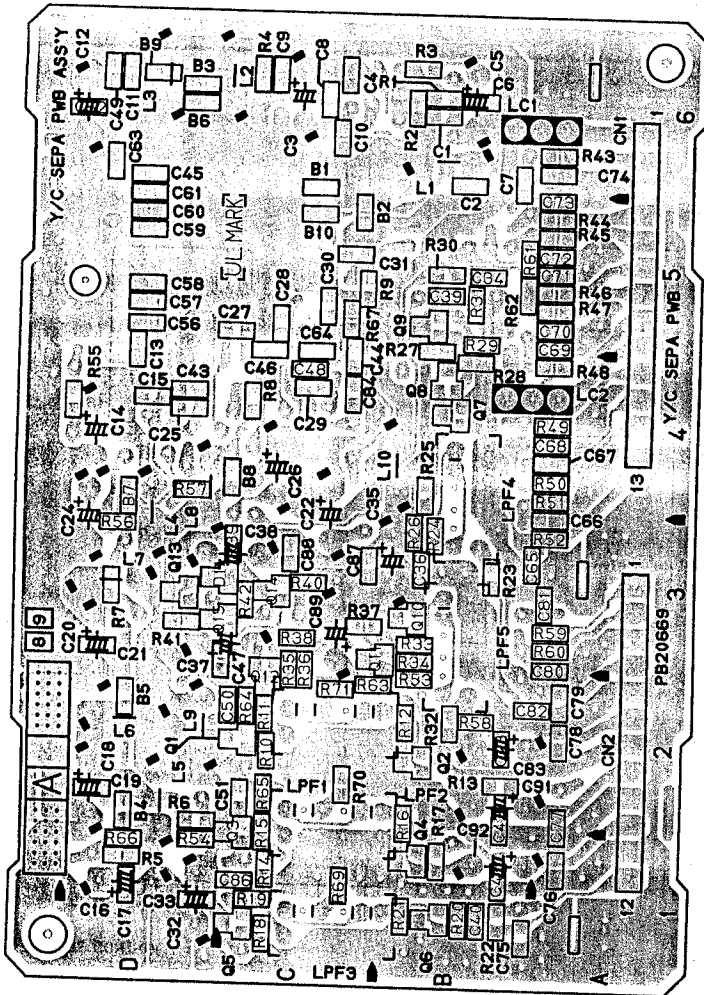


4.24 Y/C SEPA SCHEMATIC DIAGRAM

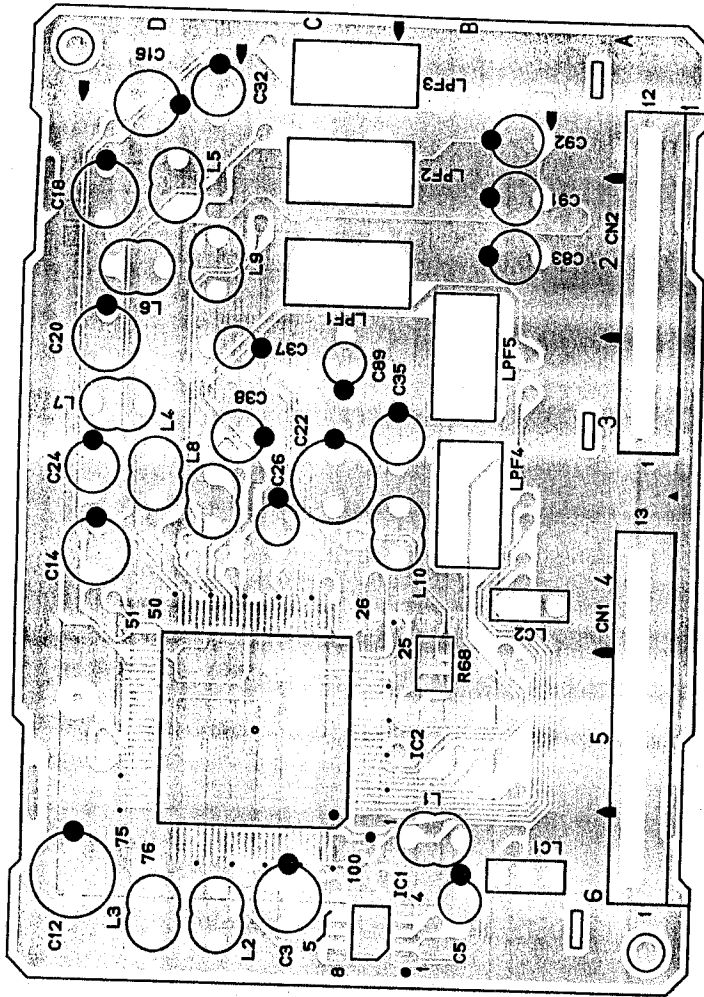


NOTES : 1. MARK(*) is not used.
2. All NPN type transistors are 2SC4081(QRS).
All PNP type transistors are 2SA1575(QRS).

— FOIL SIDE(B) —

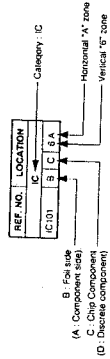


— COMPONENT SIDE(A) —

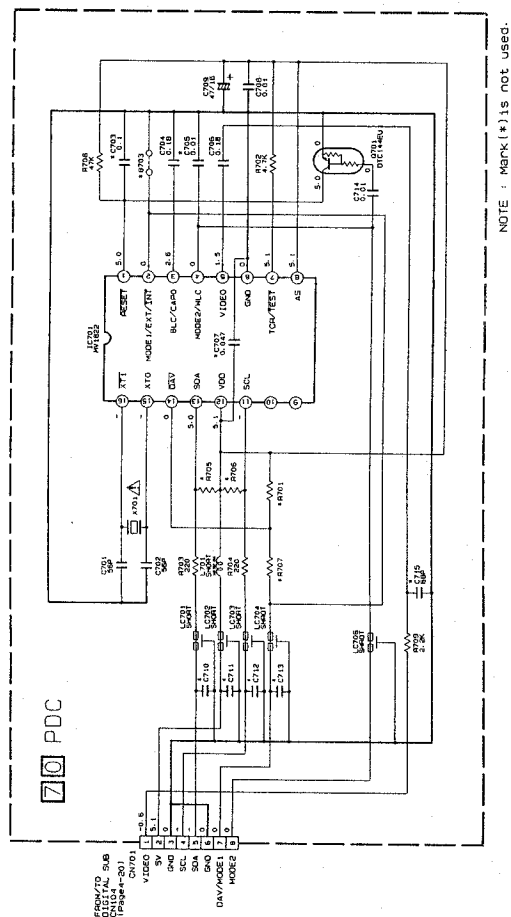


COMPONENT PARTS LOCATION GUIDE

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
C1	1	C2	2	C3	3	C4	4
C5	5	C6	6	C7	7	C8	8
C9	9	C10	10	C11	11	C12	12
C13	13	C14	14	C15	15	C16	16
C17	17	C18	18	C19	19	C20	20
C21	21	C22	22	C23	23	C24	24
C25	25	C26	26	C27	27	C28	28
C29	29	C30	30	C31	31	C32	32
C33	33	C34	34	C35	35	C36	36
C37	37	C38	38	C39	39	C40	40
C41	41	C42	42	C43	43	C44	44
C45	45	C46	46	C47	47	C48	48
C49	49	C50	50	C51	51	C52	52
C53	53	C54	54	C55	55	C56	56
C57	57	C58	58	C59	59	C60	60
C61	61	C62	62	C63	63	C64	64
C65	65	C66	66	C67	67	C68	68
C69	69	C70	70	C71	71	C72	72
C73	73	C74	74	C75	75	C76	76
C77	77	C78	78	C79	79	C80	80
C81	81	C82	82	C83	83	C84	84
C85	85	C86	86	C87	87	C88	88
C89	89	C90	90	C91	91	C92	92
C93	93	C94	94	C95	95	C96	96
C97	97	C98	98	C99	99	C100	100
R1	1	R2	2	R3	3	R4	4
R5	5	R6	6	R7	7	R8	8
R9	9	R10	10	R11	11	R12	12
R13	13	R14	14	R15	15	R16	16
R17	17	R18	18	R19	19	R20	20
R21	21	R22	22	R23	23	R24	24
R25	25	R26	26	R27	27	R28	28
R29	29	R30	30	R31	31	R32	32
R33	33	R34	34	R35	35	R36	36
R37	37	R38	38	R39	39	R40	40
R41	41	R42	42	R43	43	R44	44
R45	45	R46	46	R47	47	R48	48
R49	49	R50	50	R51	51	R52	52
R53	53	R54	54	R55	55	R56	56
R57	57	R58	58	R59	59	R60	60
R61	61	R62	62	R63	63	R64	64
R65	65	R66	66	R67	67	R68	68
R69	69	R70	70	R71	71	R72	72
R73	73	R74	74	R75	75	R76	76
R77	77	R78	78	R79	79	R80	80
R81	81	R82	82	R83	83	R84	84
R85	85	R86	86	R87	87	R88	88
R89	89	R90	90	R91	91	R92	92
R93	93	R94	94	R95	95	R96	96
R97	97	R98	98	R99	99	R100	100
IC1	1	IC2	2	IC3	3	IC4	4
IC5	5	IC6	6	IC7	7	IC8	8
IC9	9	IC10	10	IC11	11	IC12	12
IC13	13	IC14	14	IC15	15	IC16	16
IC17	17	IC18	18	IC19	19	IC20	20
IC21	21	IC22	22	IC23	23	IC24	24
IC25	25	IC26	26	IC27	27	IC28	28
IC29	29	IC30	30	IC31	31	IC32	32
IC33	33	IC34	34	IC35	35	IC36	36
IC37	37	IC38	38	IC39	39	IC40	40
IC41	41	IC42	42	IC43	43	IC44	44
IC45	45	IC46	46	IC47	47	IC48	48
IC49	49	IC50	50	IC51	51	IC52	52
IC53	53	IC54	54	IC55	55	IC56	56
IC57	57	IC58	58	IC59	59	IC60	60
IC61	61	IC62	62	IC63	63	IC64	64
IC65	65	IC66	66	IC67	67	IC68	68
IC69	69	IC70	70	IC71	71	IC72	72
IC73	73	IC74	74	IC75	75	IC76	76
IC77	77	IC78	78	IC79	79	IC80	80
IC81	81	IC82	82	IC83	83	IC84	84
IC85	85	IC86	86	IC87	87	IC88	88
IC89	89	IC90	90	IC91	91	IC92	92
IC93	93	IC94	94	IC95	95	IC96	96
IC97	97	IC98	98	IC99	99	IC100	100
LPF1	1	LPF2	2	LPF3	3	LPF4	4
LPF5	5	LPF6	6	LPF7	7	LPF8	8
LPF9	9	LPF10	10	LPF11	11	LPF12	12
LPF13	13	LPF14	14	LPF15	15	LPF16	16
LPF17	17	LPF18	18	LPF19	19	LPF20	20
LPF21	21	LPF22	22	LPF23	23	LPF24	24
LPF25	25	LPF26	26	LPF27	27	LPF28	28
LPF29	29	LPF30	30	LPF31	31	LPF32	32
LPF33	33	LPF34	34	LPF35	35	LPF36	36
LPF37	37	LPF38	38	LPF39	39	LPF40	40
LPF41	41	LPF42	42	LPF43	43	LPF44	44
LPF45	45	LPF46	46	LPF47	47	LPF48	48
LPF49	49	LPF50	50	LPF51	51	LPF52	52
LPF53	53	LPF54	54	LPF55	55	LPF56	56
LPF57	57	LPF58	58	LPF59	59	LPF60	60
LPF61	61	LPF62	62	LPF63	63	LPF64	64
LPF65	65	LPF66	66	LPF67	67	LPF68	68
LPF69	69	LPF70	70	LPF71	71	LPF72	72
LPF73	73	LPF74	74	LPF75	75	LPF76	76
LPF77	77	LPF78	78	LPF79	79	LPF80	80
LPF81	81	LPF82	82	LPF83	83	LPF84	84
LPF85	85	LPF86	86	LPF87	87	LPF88	88
LPF89	89	LPF90	90	LPF91	91	LPF92	92
LPF93	93	LPF94	94	LPF95	95	LPF96	96
LPF97	97	LPF98	98	LPF99	99	LPF100	100
OTHERS		OTHERS		OTHERS		OTHERS	
LC1	1	LC2	2	LC3	3	LC4	4
LC5	5	LC6	6	LC7	7	LC8	8
LC9	9	LC10	10	LC11	11	LC12	12
LC13	13	LC14	14	LC15	15	LC16	16
LC17	17	LC18	18	LC19	19	LC20	20
LC21	21	LC22	22	LC23	23	LC24	24
LC25	25	LC26	26	LC27	27	LC28	28
LC29	29	LC30	30	LC31	31	LC32	32
LC33	33	LC34	34	LC35	35	LC36	36
LC37	37	LC38	38	LC39	39	LC40	40
LC41	41	LC42	42	LC43	43	LC44	44
LC45	45	LC46	46	LC47	47	LC48	48
LC49	49	LC50	50	LC51	51	LC52	52
LC53	53	LC54	54	LC55	55	LC56	56
LC57	57	LC58	58	LC59	59	LC60	60
LC61	61	LC62	62	LC63	63	LC64	64
LC65	65	LC66	66	LC67	67	LC68	68
LC69	69	LC70	70	LC71	71	LC72	72
LC73	73	LC74	74	LC75	75	LC76	76
LC77	77	LC78	78	LC79	79	LC80	80
LC81	81	LC82	82	LC83	83	LC84	84
LC85	85	LC86	86	LC87	87	LC88	88
LC89	89	LC90	90	LC91	91	LC92	92
LC93	93	LC94	94	LC95	95	LC96	96
LC97	97	LC98	98	LC99	99	LC100	100

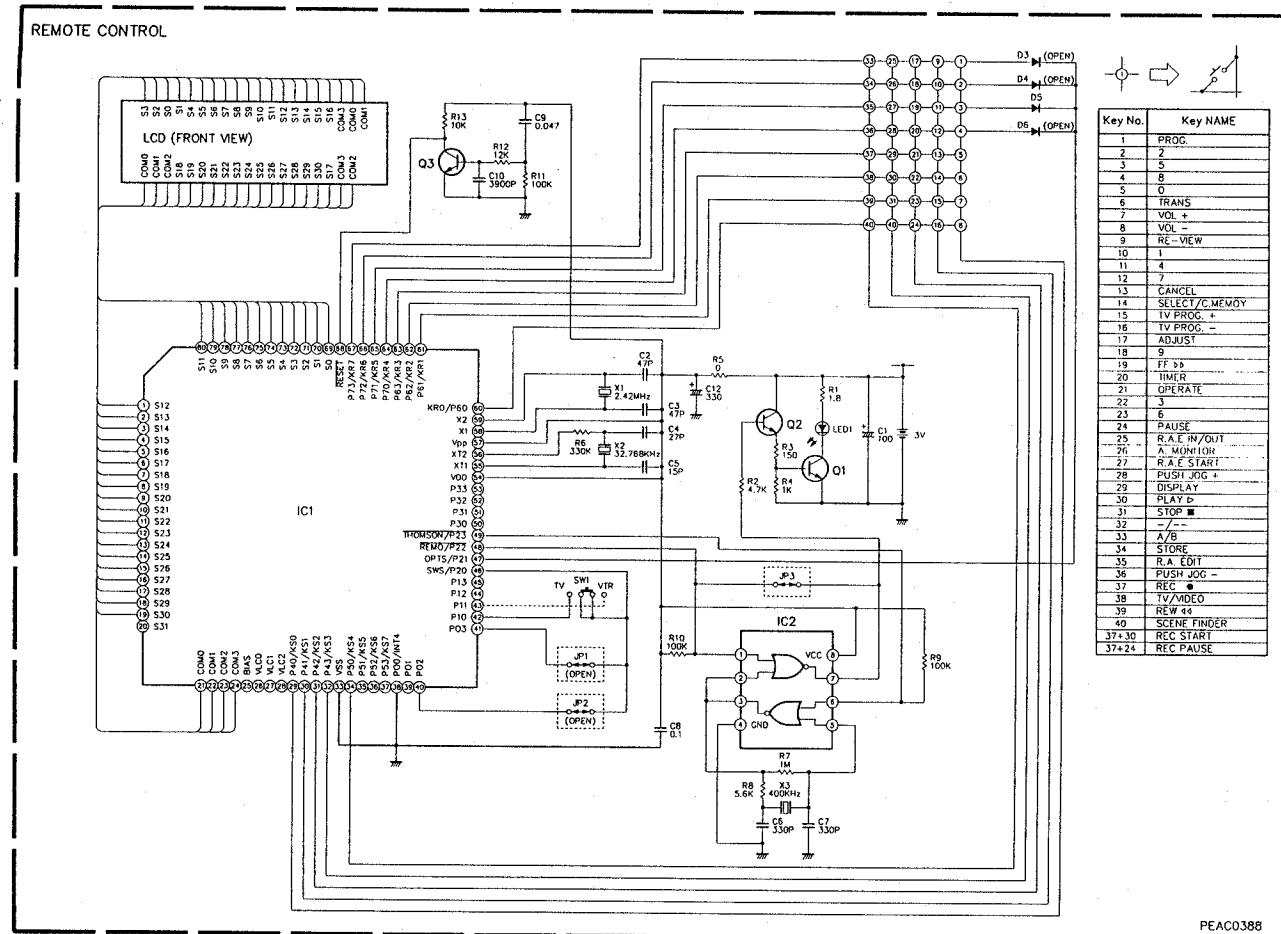


4.26 PDC SCHEMATIC DIAGRAM AND CIRCUIT BOARD



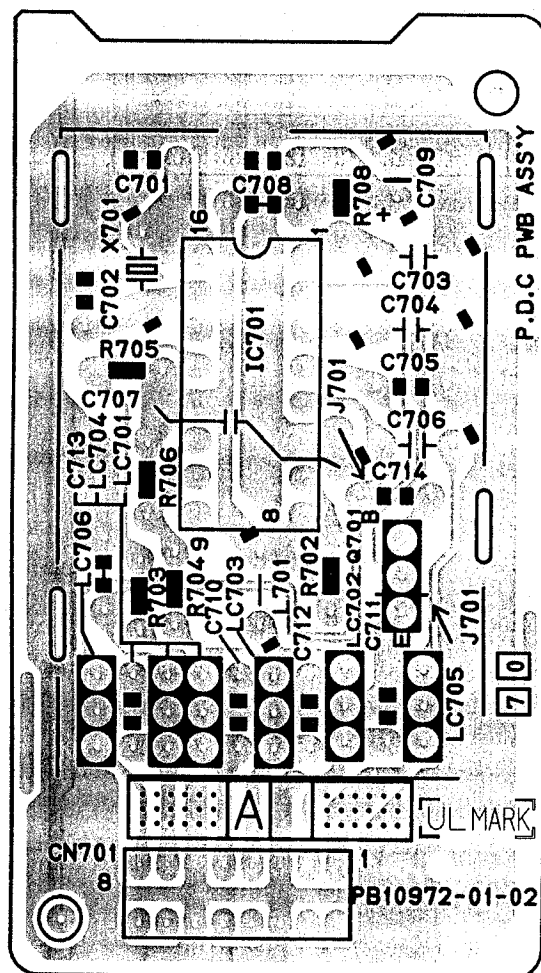
NOTE : Mark (*) is not used.

4.2.7 REMOTE CONTROL SCHEMATIC DIAGRAM



Key No.	Key Name
1	PROG
2	2
3	5
4	8
5	0
6	TRANS
7	VOL +
8	VOL -
9	RE -VIEW
10	1
11	4
12	7
13	CANCEL
14	SELECT / MEMORY
15	TV PROG. +
16	TV PROG. -
17	ADJUST
18	9
19	IT 35
20	TIMER
21	OPERATE
22	3
23	6
24	PAUSE
25	R.A.E IN/OUT
26	A. MUMPH
27	R.A.E START
28	PUSH JOG +
29	DISPLAY
30	PLAY P
31	STOP ■
32	- - -
33	A/B
34	STORE
35	R.A. EDIT
36	PUSH JOG -
37	REC ●
38	TV/VIDEO
39	REW 44
40	SCENE FINDER
37424	REC PAUSE


PEAC0388



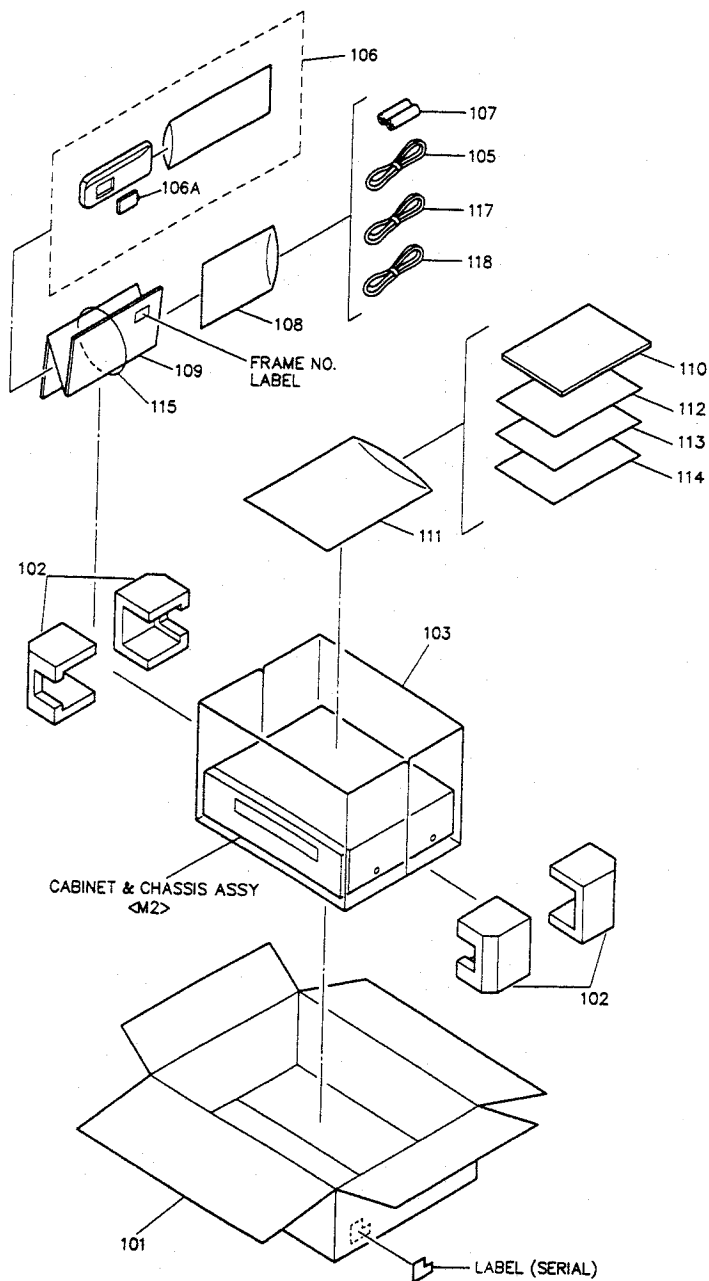
PB10972-01-02

SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the  symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>



#	△	REF No.	PART No.	PART NAME, DESCRIPTION
---	---	---------	----------	------------------------

PACKING AND ACCESSORY ASSEMBLY <M1>

	101	PQ35414-4	PACKING CASE
	102	PQ35350A-1	CHUSION ASSEMBLY
	103	PQM30021-95	POLY(FOAM)BAG
△	105	PEAC0300-02	RF CABLE
△	106	PQ21831F	REMOTE CONTROLLER
	106A	PQ46491	COVER(BATTERY)
	107	R03BPA-2ST	BATTERY,X2

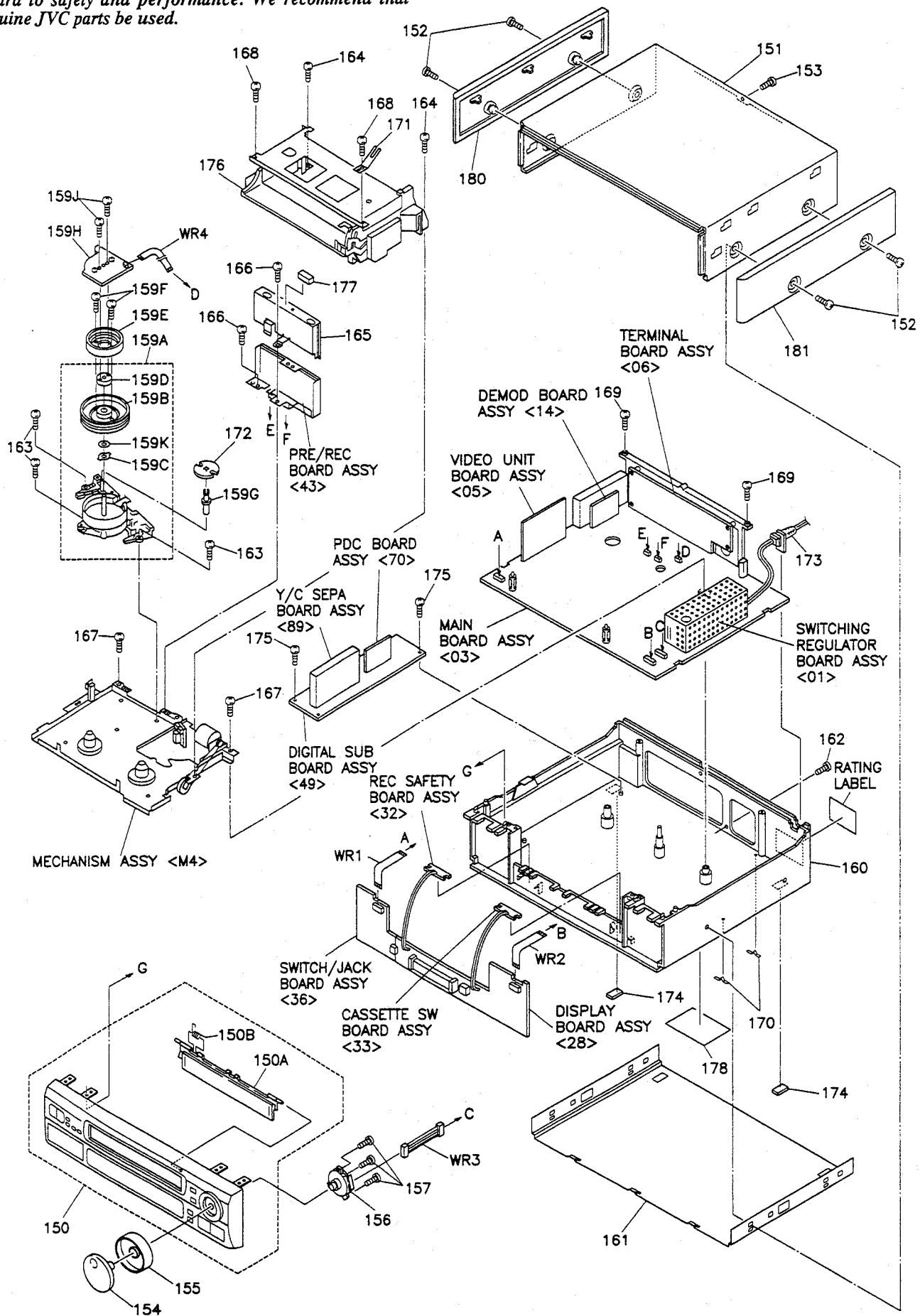
#	△	REF No.	PART No.	PART NAME, DESCRIPTION
---	---	---------	----------	------------------------

	108	PQ35364-3	POLY BAG
	109	PQ35274-1-1	SHEET,ACCESSORY
△	110	PU30425-1767	INSTRUCTIONS
	111	PQ35364-6	POLY BAG
	112	BT-54003-1	GUARANTY CARD
	113	BT-20066A	E.DISTRI.LIST
	114	PQ35322-10	SHEET(SET UP)
	115	PQ46504	RUBBER BAND
	117	PU60111	S CABLE
	118	PU56142-5	PIN CORD ASSEMBLY

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

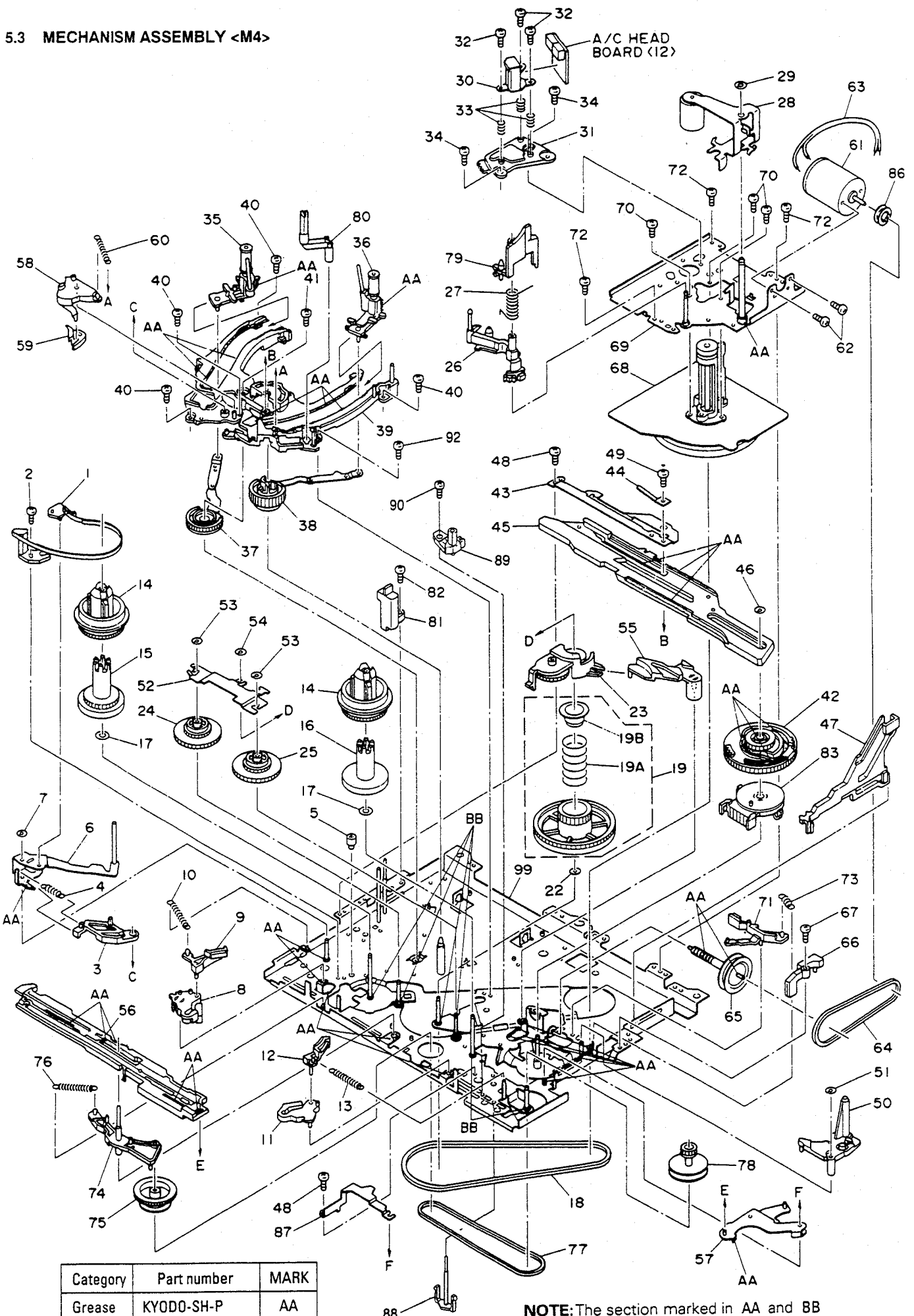


#	REF No.	PART No.	PART NAME, DESCRIPTION

CABINET AND CHASSIS ASSEMBLY <M2>

	150	PQ11802AF	FRONT PANEL ASSEMBLY
	150A	PQ21818-16	CASSETTE DOOR
	150B	PQ46448	TORSION SPRING
△	151	PQ11676-14	TOP COVER
	152	PQ43930	SPECIAL SCREW,X4 SIDE PANEL
	153	SDSF3010M	SCREW,TOP COVER
	154	PQ35247	KNOB(JOG)
	155	PQ35295-2	KNOB(SHUTTLE)
	156	PEME0757-03	JOG SHUTTLE ASSEMBLY
	157	SDSF2608Z	SCREW,X3
	159A	PDM2261AB	DRUM SUB ASSEMBLY
	159B	PDM3353AU	UPPER DRUM ASSEMBLY
	159C	PDM4400C	BRUSH ASSEMBLY
	159D	PDM4345A	COLLAR ASSEMBLY
	159E	PDZ0141-2	ROTOR ASSEMBLY
	159F	SPSH2660Z	SCREW,X2
	159G	PDM4311A-1	ROLLER ASSEMBLY
△	159H	PDZ0141-1-2	STATOR ASSEMBLY
	159J	SPSP2606Z	SCREW,X2
	159K	PDM4050-9	WASHER
△	160	PQ11666-3	BOTTOM CHASSIS
△	161	PQ11668-2	BOTTOM COVER
	162	SDSF3010M	SCREW TERMINAL
	163	SPST2608Z	SCREW,X3 DRUM
	164	SPST2610Z	SCREW,X2 CASS HOUSING ASSY
	165	PQ21806	SHIELD CASE,PRE REC
	166	SDST2606Z	SCREW,X2 PRE REC
	167	SDSF4012Z	SCREW,X2 MECH
	168	SDSF3010Z	SCREW,X2 CASS HOUSING
	169	SDSF3010Z	SCREW,X2 TERMINAL
△	170	PQ46412-2	EARTH SPRING,X2
	171	PQ41556	EARTH PLATE,CASS HOUSING
	172	PQ45160	INERTIA PLATE
△	173	QMP51K0-170	POWER CORD
	174	PQ43013-5	FOOT,X2
	175	SDSF3010Z	SCREW,X2 DIGITAL SUB BOARD
	176	PUS29724A-5	CASSETTE HOUSING ASSY
	177	PQM30029-235	SPACER,S CASE
△	178	PQ46485	SPACER(SAFETY),BOTTOM CHASSIS
	180	PQ11842-2	SIDE PANEL(L)
	181	PQ11843-2	SIDE PANEL(R)
	WR1	PW30802-1026	WIRE,CN101
	WR2	PW30802-1516	WIRE,CN702
	WR3	PW30202-0771613	WIRE,JOG
	WR4	PW30803-0422	WIRE,DRUM

5.3 MECHANISM ASSEMBLY <M4>



#△ REF No. PART No. PART NAME, DESCRIPTION

MECHANISM ASSEMBLY <M4>

1	PQ46298A-5	TENSION BAND ASSEMBLY
2	SDST2608Z	SCREW
3	PQ35012-1-3	TENSION ARM LEVER
4	PQM30001-385109	TENSION SPRING
5	PQ46302-1-3	ADJUST PIN
6	PQ46303A-3	TENSION ARM ASSEMBLY
7	PQM30017-47	SLIT WASHER
8	PQ46305B-3	MAIN BRAKE ASSEMBLY(SUPPLY)
9	PQ46306A-3	SUB BRAKE ASSEMBLY(SUPPLY)
10	PQM30001-393	TENSION SPRING
11	PQ46308A-3	MAIN BRAKE ASSEMBLY(TAKE UP)
12	PQ46309A-4	SUB BRAKE ASSEMBLY (TAKE UP)
13	PQM30001-389102	TENSION SPRING
14	PQ21683-1-7	REEL DISK,X2
15	PQ35014-1-1	SLIT DISK(SUPPLY)
16	PQ35015-1-1	SLIT DISK(TAKE UP)
17	Q03093-828	WASHER,X2
18	PQM30003-33	BELT(CAPSTAN)
19	PQ46497B	PULLEY ASSEMBLY
19A	PQM30002-233	COMPRESSION SPRING
19B	PQ46311	SPRING CAP
22	PQM30018-69	SPACER
23	PQ46312B	IDLER ARM ASSEMBLY
24	PQ46316A-1	CLUTCH UNIT(SUPPLY)
25	PQ46323A-1	CLUTCH UNIT(TAKE UP)
26	PQ46325B	GUIDE ARM ASSEMBLY
27	PQ46326-1-2	TORSION SPRING
28	PQ46327A	PINCH ROLLER ARM ASSEMBLY
29	PQM30017-24	SLIT WASHER
30	PEHE0182	AUDIO/CONTROL HEAD
31	PQ35206	HEAD BASE
32	PQ43687A	SPECIAL SCREW,X3
33	PQM30002-192	COMPRESSION SPRING,X3
34	SDST2604Z	SCREW,X2
35	PQ46330A-1	POLE BASE ASSY(SUPPLY)
36	PQ46331A-1	POLE BASE ASSY(TAKE UP)
37	PQ46332A-3	LOADING ARM ASSY(SUPPLY)
38	PQ46337A-4	LOADING ARM ASSY(TAKE UP)
39	PQ11657-1-9	GUIDE RAIL
40	SPST2608Z	SCREW,X4
41	SDST2612Z	SCREW
42	PQ21684-1-3	CONTROL CAM
43	PQ35138-1-2	CONTROL BRACKET
44	PQ46423	EARTH PLATE

#△ REF No. PART No. PART NAME, DESCRIPTION

45	PQ11658-1-5	CONTROL PLATE
46	PQM30017-8	SLIT WASHER
47	PQ21685-2-6	PINCH PLATE
48	SPST2606Z	SCREW,X2
49	SPSF2608M	SCREW
50	PQ46342A-6	LEVER ASSY
51	PQM30017-8	SLIT WASHER
52	PQ35083-1-7	REEL BRACKET
53	PQM30017-51	SLIT WASHER,X2
54	Q03093-830	WASHER
55	PQ35026-1-4	IDLER LEVER
56	PQ11659-1-10	SLIDE PLATE
57	PQ46344A-2	CHANGE LEVER ASSEMBLY
58	PQ21686	TAKE UP LEVER
59	PQ46345	TAKE UP HEAD
60	PQM30001-387106	TENSION SPRING
△ 61	PU60628-4	LOADING MOTOR
62	SPSP3003Z	SCREW,X2
63	PW30101-80AJ632	WIRE
64	PQM30003-34-17	BELT
65	PQ46395A	WORM GEAR ASSEMBLY
66	PQ21699	WORM BEARING
67	SPST2606Z	SCREW
△ 68	PU61435	CAPSTAN MOTOR
69	PQ46347B-8	SUB DECK ASSEMBLY
70	SPSG2608Z	SCREW,X3
71	PQ46356A-1	CAPSTAN BRAKE ASSEMBLY
72	SDST2608Z	SCREW,X3
73	PQM30001-384101	TENSION SPRING,C.BRAKE
74	PQ46353A-2	CHANGE ARM ASSEMBLY
75	PQ46354	CHANGE GEAR
76	PQM30001-386	TENSION SPRING
77	PQM30003-35	BELT
78	PQ46355	CASSETTE GEAR
79	PQ35030-1-4	LID GUIDE
80	PQ21689	LED PRISM
81	PEHE0237	FULL ERASE HEAD
82	SDST2610Z	SCREW
83	PU61432-1-1	ROTARY ENCODER
86	PQ43546-1-2	MOTOR PULLEY
87	PQ35217-1-2	CONTROL BRACKET 2
88	PQ46473	S-SW PIN
89	PQ46474-1-2	S-SW HOLDER
90	SPST2606Z	SCREW
92	SDST2608Z	SCREW
99	PQ21680B-11	MAIN DECK ASSEMBLY

5.4 ELECTRICAL PARTS LIST

#△ REF No. PART No. PART NAME, DESCRIPTION

SW.REGULATOR BOARD ASSEMBLY <01>

PWBA	PB10958A	SWITCH REG BOARD ASSY	
IC51	L5431	IC	
Q1	2SK1459-CB14	FE TRANSISTOR	
Q2	2SC3616(ML)	TRANSISTOR	
D1	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D2	10ELS4	FR DIODE	
	or ERA18-04-T2	FR DIODE	
	or 1SR153-400-T2	FR DIODE	
	or AU01	FR DIODE	
D3	10ELS4	FR DIODE	
	or ERA18-04-T2	FR DIODE	
	or 1SR153-400-T2	FR DIODE	
	or AU01	FR DIODE	
D4	RD27ES-T1B2	ZENER DIODE	
	or UZ27BSB	ZENER DIODE	
	or MTZJ27(B)	ZENER DIODE	
D5	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D51	1SR153-200-T2	FR DIODE	
	or ERA18-02-T2	FR DIODE	
	or AU01Z	FR DIODE	
	or 10ELS2	FR DIODE	
D52	F5KQ100B	SB DIODE	
D53	FMB-24	BARRIER DIODE	
	or F5KQ40B	BARRIER DIODE	
	or MA7D49	SB DIODE	
	or YG801C04	SB DIODE	
D54	10ELS2	FR DIODE	
	or 1SR153-200-T2	FR DIODE	
	or AU01Z	FR DIODE	
	or ERA18-02-T2	FR DIODE	
D55	RD15ES-T1B1	ZENER DIODE	
	or UZ15BSA	DIODE	
D56	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D57	1N4148M	DIODE	
	or 1SS133	DIODE	
	or MA165	DIODE	
D58	1SS131Y	DIODE	
D59	1SS131Y	DIODE	
D60	1SS131Y	DIODE	
D61	1SS131Y	DIODE	
D62	HZ30CP	ZENER DIODE	
D63	HZ27BP	ZENER DIODE	
R1	QRD161J-334	RESISTOR	330kΩ, 1/6W
R2	QRD161J-334	RESISTOR	330kΩ, 1/6W
R3	QRD161J-683	RESISTOR	68kΩ, 1/6W
R4	QRG02DJ-331X	OMF RESISTOR	330Ω, 2W
R5	QRX014J-R39Z	MF RESISTOR	0.39Ω, 1W
R6	QRD161J-821	RESISTOR	820Ω, 1/6W
R7	QRD161J-122	RESISTOR	1.2kΩ, 1/6W
R8	QRG029J-683G	OMF RESISTOR	68kΩ, 2W
R51	QRD161J-222	RESISTOR	2.2kΩ, 1/6W
R52	QRV144F-1212AY	CMF RESISTOR	12.1kΩ, 1/4W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R53	QRV144F-3011AY	RESISTOR	3.01kΩ, 1/4W
R54	QRD161J-472	RESISTOR	4.7kΩ, 1/6W
R55	QRG02DJ-471X	OMF RESISTOR	470Ω, 2W
R56	QRG02DJ-471X	OMF RESISTOR	470Ω, 2W
R57	QRG01DJ-150X	MF RESISTOR	15Ω, 1W
R58	QRG02DJ-182X	OMF RESISTOR	1.8kΩ, 2W
△ C1	QCZ9026-222	CAPACITOR	0.0022μF
C2	QETC1HM-225	E CAPACITOR	2.2μF, 50V
C3	QFLA1HJ-123Z	F CAPACITOR	0.012μF, 50V
C4	QCZ0212-472	CAPACITOR	0.0047μF, 1kV
C5	QCBB1HJ-121	CAPACITOR	120pF, 50V
C7	QFV11HJ-104	F CAPACITOR	0.1μF, 50V
C51	QEMR1AM-107	E CAPACITOR	100μF, 10V
C53	QEMQ1AM-128	E CAPACITOR	1200μF, 10V
C54	QEMQ1CM-827	E CAPACITOR	820μF, 16V
C55	QEMN1EM-187	E CAPACITOR	180μF, 25V
C56	QCY31HK-152	CAPACITOR	0.0015μF, 50V
C57	QCY31HK-472	CAPACITOR	0.0047μF, 50V
C58	QETC1HM-106	E CAPACITOR	10μF, 50V
C59	QETC1JM-226	E CAPACITOR	22μF, 63V
C60	QETC1HM-226	E CAPACITOR	22μF, 50V
C61	QFLA1HJ-103Z	F CAPACITOR	0.01μF, 50V
C62	QFLA1HJ-223Z	F CAPACITOR	0.022μF, 50V
C63	QFN31HJ-683	F CAPACITOR	0.068μF, 50V
C64	QETC1CM-227	E CAPACITOR	220μF, 16V
C65	QETC1AM-337	E CAPACITOR	330μF, 10V
L51	PELN0270-330KZ	COIL	33μH
L52	PELN0270-330KZ	COIL	33μH
L53	PELN0270-330KZ	COIL	33μH
K1	PELN0662-Z	FERRITE BEADS	
K2	PELN0662-Z	FERRITE BEADS	
△ PC1	PC123FY2	PH COUPLER	
△ T1	PELN1065	SW TRANS	
K51	PELN0662-Z	FERRITE BEADS	
K52	PELN0662-Z	FERRITE BEADS	
K53	PELN0662-Z	FERRITE BEADS	
△ HS1	PQ46583	HEAT SINK, X2 Q1 D52 D53	
JP1	PEMC0712-105	PIN HEADER	
SCW1	SDST3008Z	SCREW, X2	
SCW3	SDST3006Z	SCREW, X3 Q1 D52 D53	
JP51	PEMC0712-110	PIN HEADER	

MAIN BOARD ASSEMBLY <03>

PWBA	PB10971B-01	MAIN BOARD ASSEMBLY	
OTH1	PQ46408-1-2	SENSOR CAP, X2	
△ TU1	PERF0201	TUNER UNIT	
△ TU2	PERF0190-01-01	IF UNIT	
IC1	BA7795LS	IC	
	or XLA7795LS	IC	
IC101	JCP0056	IC	
IC102	BA6138	IC	
IC103	BA3129	IC	
IC104	LA7151	IC	
IC201	TC4W53F	IC	

#△ REF No.	PART No.	PART NAME, DESCRIPTION
IC451	BA7039	IC
	or XRA7039	IC
IC601	HD6433928TA28F	QFP IC (MCU)
IC602	AT93C56-10PC	IC
	or XLJ93LC56A	IC
	or 93LC56/P	IC
	or 93LC56B/P	IC
	or 93C56/P	IC
IC603	S-80728AN-DR-X	IC
	or RH5VL28AA-XE	IC
	or RH5VA28AA-XE	IC
IC604	TA7291S	IC
IC607	M50253P	IC
	or BU2090	IC
IC608	M50253P	IC
	or BU2090	IC
IC609	M66007P	IC
IC751	M37470M3-054SP	IC
IC901	BA15218F-XE	IC
Q1	2SA1576(QR)	TRANSISTOR
Q2	2SA1576(QR)	TRANSISTOR
Q3	2SC4081(QR)	TRANSISTOR
Q4	2SA1576(QR)	TRANSISTOR
Q5	2SC4081(QR)	TRANSISTOR
Q6	DTC144WU	TRANSISTOR
Q101	DTC144WU	TRANSISTOR
Q201	2SA1577(QR)	TRANSISTOR
Q202	2SC4097(QR)	TRANSISTOR
Q203	DTA144TU	TRANSISTOR
Q204	DTC144WU	TRANSISTOR
Q205	DTA144WU	TRANSISTOR
Q206	2SC4081(RS)	TRANSISTOR
Q207	2SA1576(RS)	TRANSISTOR
Q208	DTA144EU	TRANSISTOR
Q209	DTC144WU	TRANSISTOR
Q210	2SC4081(RS)	TRANSISTOR
Q211	2SC4081(RS)	TRANSISTOR
Q212	DTC144WU	TRANSISTOR
Q213	2SA1576(QRS)	TRANSISTOR
Q214	2SA1576(QRS)	TRANSISTOR
Q216	DTC144WU	TRANSISTOR
Q218	DTA124EU	TRANSISTOR
Q219	2SA1576(QRS)	TRANSISTOR
Q220	2SC4081(RS)	TRANSISTOR
Q221	DTC144WU	TRANSISTOR
Q222	2SC4081(RS)	TRANSISTOR
Q224	2SA1576(QRS)	TRANSISTOR
Q225	DTC144EU	TRANSISTOR
Q226	2SC4081(RS)	TRANSISTOR
Q227	2SC4081(RS)	TRANSISTOR
Q228	DTC144EU	TRANSISTOR
Q230	DTC124EU	TRANSISTOR
Q231	DTC144WS	TRANSISTOR
Q232	DTC144WS	TRANSISTOR
Q401	DTC114EU	TRANSISTOR
Q601	2SC4081(QRS)	TRANSISTOR
Q603	DTC124EU	TRANSISTOR
Q604	PN268VI	PHOTO TRANSISTOR
Q605	PN268VI	PHOTO TRANSISTOR
Q606	DTC124EU	TRANSISTOR

#△ REF No.	PART No.	PART NAME, DESCRIPTION
Q607	DTC143EU	TRANSISTOR
Q608	DTC124EU	TRANSISTOR
Q609	DTC124EU	TRANSISTOR
Q611	2SB1256	TRANSISTOR
Q612	DTC114TU	TRANSISTOR
Q851	2SD1913(RS)	TRANSISTOR
Q852	2SC1740S	TRANSISTOR
	or 2SC2785(J-E)-T	TRANSISTOR
Q853	2SC3616(MLK)	TRANSISTOR
Q854	DTA114EU	TRANSISTOR
Q855	2SD2144S(UVW)	TRANSISTOR
Q859	2SD1450S,T	TRANSISTOR
	or 2SD1302(ST)	TRANSISTOR
Q901	DTC114EU	TRANSISTOR
Q902	2SB810H,J	TRANSISTOR
Q903	2SC3068	TRANSISTOR
Q904	2SA1576(RS)	TRANSISTOR
Q905	2SC4081(RS)	TRANSISTOR
Q906	DTC114EU	TRANSISTOR
Q908	2SA1576(RS)	TRANSISTOR
Q909	DTA144EU	TRANSISTOR
Q910	2SA1577(RS)	TRANSISTOR
D1	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D2	RD6.2ESB2	ZENER DIODE
D3	DAP202U	DIODE
D201	DAP202U	DIODE
D202	1N4148M	DIODE
	or MA165	DIODE
	or 1SS133	DIODE
D203	1SS356	DIODE
D204	DAP202U	DIODE
D205	1N4148M	DIODE
	or 1SS133	DIODE
	or MA165	DIODE
D206	DAP202U	DIODE
D601	RD9.1ES-T1B2	ZENER DIODE
D602	11ES2	DIODE
D603	1N4148M	DIODE
	or MA165	DIODE
	or 1SS133	DIODE
D604	11ES2	DIODE
D605	1N4148M	DIODE
	or MA165	DIODE
	or 1SS133	DIODE
D606	DAP202U	DIODE
D609	1N4148M	DIODE
	or 1SS133	DIODE
	or MA165	DIODE
D610	SIR-381SB3FM	LE DIODE
D611	1N4148M	DIODE
	or 1SS133	DIODE
	or MA165	DIODE
D612	1N4148M	DIODE
	or MA165	DIODE
	or 1SS133	DIODE
D613	1N4148M	DIODE
	or 1SS133	DIODE
	or MA165	DIODE

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
D614	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D615	1N4148M	DIODE	
	or 1SS133	DIODE	
	or MA165	DIODE	
D616	11ES2	DIODE	
D801	10E6-F2	DIODE	
D802	10E6-F2	DIODE	
D803	10E6-F2	DIODE	
D804	10E6-F2	DIODE	
D862	RD5.1JS-T1B2	ZENER DIODE	
D863	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D901	MTZ10D	ZENER DIODE	
D903	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
D904	1SS133	DIODE	
	or 1N4148M	DIODE	
	or MA165	DIODE	
D905	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
R1	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R2	QRD161J-221	RESISTOR	220Ω, 1/6W
R3	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R4	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R5	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W
R6	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R7	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W
R8	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R9	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R10	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R11	QRD161J-153	RESISTOR	15kΩ, 1/6W
R13	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R14	QRSA08J-221YN	RESISTOR	220Ω, 1/10W
R15	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R16	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R17	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R19	QRSA08J-475YN	RESISTOR	4.7MΩ, 1/10W
R20	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R21	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R22	QRSA08J-274YN	RESISTOR	270kΩ, 1/10W
R23	QRSA08J-151YN	RESISTOR	150Ω, 1/10W
R24	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R26	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R29	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R30	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R31	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R32	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R33	QRD161J-101	RESISTOR	100Ω, 1/6W
R34	QRSA08J-3R3YN	RESISTOR	3.3Ω, 1/10W
R35	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W
R36	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W
R37	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R38	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R39	QRSA08J-151YN	RESISTOR	150Ω, 1/10W
R40	QRSA08J-3R3YN	RESISTOR	3.3Ω, 1/10W
R41	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R42	QRSA08J-682YN	RESISTOR	6.8kΩ, 1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R43	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R51	QRD161J-0R0	RESISTOR	0Ω, 1/6W
R52	QRD161J-0R0	RESISTOR	0Ω, 1/6W
R101	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R102	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R103	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R104	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R105	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R106	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R107	QRSA08J-511YN	RESISTOR	510Ω, 1/10W
R108	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R109	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R110	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R111	NRVA62B-153N	RESISTOR	15kΩ, 1/16W
R112	QRSA08J-682YN	RESISTOR	6.8kΩ, 1/10W
R113	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R114	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R115	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R116	QRSA08J-334YN	RESISTOR	330kΩ, 1/10W
R117	QRSA08J-182YN	RESISTOR	1.8kΩ, 1/10W
R118	NRVA62B-113N	RESISTOR	11kΩ, 1/16W
R119	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R120	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R121	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R122	QRSA08J-511YN	RESISTOR	510Ω, 1/10W
R123	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R124	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R125	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R126	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R127	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R128	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R130	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R131	QRD161J-221	RESISTOR	220Ω, 1/6W
R132	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R134	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R135	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R136	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R137	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R138	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W
R139	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R140	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W
R141	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R142	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R143	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R144	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R145	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R201	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R202	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R203	QRSA08J-512YN	RESISTOR	5.1kΩ, 1/10W
R204	QRD123J-331SX	RESISTOR	330Ω, 1/2W
R205	QRSA08J-752YN	RESISTOR	7.5kΩ, 1/10W
R207	QRSA08J-911YN	RESISTOR	910Ω, 1/10W
R208	QRSA08J-910YN	RESISTOR	91Ω, 1/10W
R209	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R210	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R211	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R212	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R213	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R214	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R215	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R216	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R217	QRSA08J-330YN	RESISTOR	33Ω, 1/10W

#△ REF No.	PART No.	PART NAME, DESCR		PART No.	PART NAME, DESCRIPTION	
R218	QRSA08J-0R0Y	RESISTOR			QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R219	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R603	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R222	QRSA08J-363YN	RESISTOR	36kΩ, 1/10W	R604	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R223	QRSA08J-822YN	RESISTOR	8.2kΩ, 1/10W	R605	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R224	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R606	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R225	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W	R607	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R226	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R608	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R228	QRSA08J-101YN	RESISTOR	100Ω, 1/10W	R609	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R229	QRSA08J-224YN	RESISTOR	220kΩ, 1/10W	R610	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R230	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W	R611	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R231	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R612	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R232	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W	R613	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R233	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R614	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R234	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R615	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R236	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W	R616	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R237	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R617	QRSA08J-152YN	RESISTOR 1.5kΩ, 1/10W
R238	QRSA08J-821YN	RESISTOR	820Ω, 1/10W	R618	QRSA08J-271YN	RESISTOR 270Ω, 1/10W
R239	QRSA08J-561YN	RESISTOR	560Ω, 1/10W	R619	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R241	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R620	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R242	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W	R621	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R243	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W	R622	QRSA08J-271YN	RESISTOR 270Ω, 1/10W
R245	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W	R623	QRSA08J-271YN	RESISTOR 270Ω, 1/10W
R246	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R624	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R247	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R625	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R248	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R626	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R249	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W	R627	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R250	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R628	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R251	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R630	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R252	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W	R631	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R253	QRSA08J-822YN	RESISTOR	8.2kΩ, 1/10W	R632	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R254	QRSA08J-270YN	RESISTOR	27Ω, 1/10W	R633	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R255	QRSA08J-331YN	RESISTOR	330Ω, 1/10W	R634	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R256	QRSA08J-101YN	RESISTOR	100Ω, 1/10W	R635	QRSA08J-101YN	RESISTOR 100Ω, 1/10W
R257	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R636	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R258	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W	R637	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R259	QRSA08J-331YN	RESISTOR	330Ω, 1/10W	R638	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R260	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R639	QRSA08J-332YN	RESISTOR 3.3kΩ, 1/10W
R261	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R640	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R262	QRSA08J-622YN	RESISTOR	6.2kΩ, 1/10W	R641	QRSA08J-332YN	RESISTOR 3.3kΩ, 1/10W
R263	QRD161J-103	RESISTOR	10kΩ, 1/6W	R642	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R401	QRSA08J-561YN	RESISTOR	560Ω, 1/10W	R643	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R402	QRSA08J-561YN	RESISTOR	560Ω, 1/10W	R644	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R403	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R645	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W
R404	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R646	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R405	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R647	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R406	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R648	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R408	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W	R649	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W
R409	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R650	QRSA08J-472YN	RESISTOR 4.7kΩ, 1/10W
R410	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W	R652	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R411	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W	R653	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W
R412	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W	R654	QRSA08J-152YN	RESISTOR 1.5kΩ, 1/10W
R413	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R655	QRSA08J-152YN	RESISTOR 1.5kΩ, 1/10W
R414	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R656	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R415	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R657	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R418	QRSA08J-821YN	RESISTOR	820Ω, 1/10W	R658	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R451	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R659	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R452	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W	R660	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R453	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R661	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R454	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R662	QRSA08J-681YN	RESISTOR 680Ω, 1/10W
R455	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W	R663	QRSA08J-104YN	RESISTOR 100kΩ, 1/10W
R456	QRSA08J-124YN	RESISTOR	120kΩ, 1/10W	R664	QRSA08J-103YN	RESISTOR 10kΩ, 1/10W
R601	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R665	QRSA08J-272YN	RESISTOR 2.7kΩ, 1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION		#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R666	QRSA08J-474YN	RESISTOR	470kΩ, 1/10W	R756	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R667	QRSA08J-334YN	RESISTOR	330kΩ, 1/10W	R757	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R668	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W	R758	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R669	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R759	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R670	QRSA08J-682YN	RESISTOR	6.8kΩ, 1/10W	R760	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R671	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W	R761	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R672	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R762	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R674	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W	R763	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R675	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R764	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R676	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R765	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R677	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R776	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R678	QRSA08J-271YN	RESISTOR	270Ω, 1/10W	R777	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R680	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R778	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R681	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R856	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R682	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R858	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R685	QRSA08J-221YN	RESISTOR	220Ω, 1/10W	R859	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R686	QRD161J-750	RESISTOR	75Ω, 1/6W	R860	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R687	QRSA08J-221YN	RESISTOR	220Ω, 1/10W	R861	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R688	QRSA08J-822YN	RESISTOR	8.2kΩ, 1/10W	R862	QVPA606-471Z	V RESISTOR, SWD 5V	
R689	QRSA08J-682YN	RESISTOR	6.8kΩ, 1/10W	R863	QRSA08J-511YN	RESISTOR	510Ω, 1/10W
R690	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R864	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R691	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R866	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R694	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R868	QRD161J-473	RESISTOR	47kΩ, 1/6W
R695	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R872	QRSA08J-221YN	RESISTOR	220Ω, 1/10W
R696	QRSA08J-471YN	RESISTOR	470Ω, 1/10W	R901	QRSA08J-152YN	RESISTOR	1.5kΩ, 1/10W
R697	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W	R902	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W
R698	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W	R903	QRSA08J-331YN	RESISTOR	330Ω, 1/10W
R700	QRSA08J-471YN	RESISTOR	470Ω, 1/10W	R905	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R701	QRSA08J-101YN	RESISTOR	100Ω, 1/10W	R906	QRSA08J-182YN	RESISTOR	1.8kΩ, 1/10W
R702	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R907	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R703	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	R908	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W
R704	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R909	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R705	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W	R910	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R706	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	R911	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R707	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R916	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R708	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R918	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W
R709	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R919	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R710	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R930	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R711	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R936	QRSA08J-123YN	RESISTOR	12kΩ, 1/10W
R712	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R937	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R713	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R938	QRSA08J-0R0Y	RESISTOR	0Ω, 1/10W
R714	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	R939	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R715	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	B99	QRD161J-0R0	RESISTOR	0Ω, 1/6W
R716	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	C1	QCYA1HK-222	CAPACITOR	0.0022μF, 50V
R717	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	C2	QEKJ1CM-476	E CAPACITOR	47μF, 16V
R718	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C3	QEKJ1HM-106	E CAPACITOR	10μF, 50V
R720	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C4	QETC1HM-105	E CAPACITOR	1μF, 50V
R721	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W	C5	QCC11EJ-153	CAPACITOR	0.015μF, 25V
R722	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	C6	QCC11EJ-682	CAPACITOR	0.0068μF, 25V
R723	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W	C7	QCC11EJ-153	CAPACITOR	0.015μF, 25V
R724	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C8	QEKJ1HM-106	E CAPACITOR	10μF, 50V
R725	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C9	QCYA1EK-104	CAPACITOR	0.1μF, 25V
R726	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C10	QCYA1EK-104	CAPACITOR	0.1μF, 25V
R727	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C11	QERF1CM-226	E CAPACITOR	22μF, 16V
R728	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W	C12	QCYA1EK-223	CAPACITOR	0.022μF, 25V
R729	QRD161J-103	RESISTOR	10kΩ, 1/6W	C13	QCYA1EK-123	CAPACITOR	0.012μF, 25V
R730	QRD161J-393	RESISTOR	39kΩ, 1/6W	C14	QERF1CM-226	E CAPACITOR	22μF, 16V
R751	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	C15	QETC1HM-475	E CAPACITOR	4.7μF, 50V
R752	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	C16	QCYA1HK-681	CAPACITOR	680pF, 50V
R753	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W	C17	QCYA1HK-103	CAPACITOR	0.01μF, 50V
R754	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W	C18	QCYA1HK-332	CAPACITOR	0.0033μF, 50V
R755	QRSA08J-681YN	RESISTOR	680Ω, 1/10W	C19	QFLC1HJ-333Z	F CAPACITOR	0.033μF, 50V

#△ REF No.	PART No.	PART NAME, DESCRIPT		PART No.	PART NAME, DESCRIPTION		
C20	QEKJ1HM-106	E CAPACITOR		QCTA1CH-100	CAPACITOR	10pF,16V	
C21	QCYA1HK-331	CAPACITOR	330pF,50V	QCTA1CH-330	CAPACITOR	33pF,16V	
C22	QCYA1HK-103	CAPACITOR	0.01μF,50V	C209	QETC1CM-476	E CAPACITOR	47μF,16V
C23	QCYA1HK-332	CAPACITOR	0.0033μF,50V	C213	QCTA1CH-270	CAPACITOR	27pF,16V
C24	QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V	C214	QCYA1EK-104	CAPACITOR	0.1μF,25V
C25	QEKJ1HM-106	E CAPACITOR	10μF,50V	C215	QCTA1CH-390	CAPACITOR	39pF,16V
C26	QCYA1HK-681	CAPACITOR	680pF,50V	C216	QCYA1HK-103	CAPACITOR	0.01μF,50V
C101	QETC1HM-106	E CAPACITOR	10μF,50V	C217	QCYA1EK-104	CAPACITOR	0.1μF,25V
C102	QETC1HM-106	E CAPACITOR	10μF,50V	C219	QCTA1CH-390	CAPACITOR	39pF,16V
C103	QETC1HM-106	E CAPACITOR	10μF,50V	C220	QCYA1EK-473	CAPACITOR	0.047μF,25V
C104	QETC1CM-476	E CAPACITOR	47μF,16V	C221	QETC1CM-476	E CAPACITOR	47μF,16V
C105	QCYA1EK-473	CAPACITOR	0.047μF,25V	C222	QCTA1CH-560	CAPACITOR	56pF,16V
C106	QETC1HM-106	E CAPACITOR	10μF,50V	C224	QCYA1HK-103	CAPACITOR	0.01μF,50V
C107	QETC1HM-107	E CAPACITOR	100μF,50V	C226	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
C108	QCYA1HK-153	CAPACITOR	0.015μF,50V	C228	QCYA1HK-103	CAPACITOR	0.01μF,50V
C109	QCYA1HK-103	CAPACITOR	0.01μF,50V	C229	QCTA1CH-470	CAPACITOR	47pF,16V
C110	QCYA1EK-104	CAPACITOR	0.1μF,25V	C230	QETC1HM-106	E CAPACITOR	10μF,50V
C114	QCYA1HK-103	CAPACITOR	0.01μF,50V	C231	QETC1HM-106	E CAPACITOR	10μF,50V
C115	QCYA1HK-103	CAPACITOR	0.01μF,50V	C232	QCYA1HK-103	CAPACITOR	0.01μF,50V
C116	QCYA1EK-473	CAPACITOR	0.047μF,25V	C233	QCTA1CH-180	CAPACITOR	18pF,16V
C117	QERF1HM-224	E CAPACITOR	0.22μF,50V	C234	QCTA1CH-151	CAPACITOR	150pF,16V
C118	QCYA1EK-104	CAPACITOR	0.1μF,25V	C235	QCTA1CH-220	CAPACITOR	22pF,16V
C119	QCYA1HK-103	CAPACITOR	0.01μF,50V	C236	QCYA1HK-103	CAPACITOR	0.01μF,50V
C120	QEKJ1CM-107	E CAPACITOR	100μF,16V	C237	QCTA1CH-680	CAPACITOR	68pF,16V
C121	QCYA1HK-153	CAPACITOR	0.015μF,50V	C238	QCYA1HK-103	CAPACITOR	0.01μF,50V
C122	QEKJ1CM-107	E CAPACITOR	100μF,16V	C239	QCTA1CH-821	CAPACITOR	820pF,16V
C123	QEKJ1HM-106	E CAPACITOR	10μF,50V	C240	QCYA1HK-103	CAPACITOR	0.01μF,50V
C124	QCYA1EK-473	CAPACITOR	0.047μF,25V	C241	QEKJ1CM-476	E CAPACITOR	47μF,16V
C125	QEK1CM-476	E CAPACITOR	47μF,16V	C242	QCYA1HK-103	CAPACITOR	0.01μF,50V
C126	QETC1HM-106	E CAPACITOR	10μF,50V	C243	QCYA1HK-103	CAPACITOR	0.01μF,50V
C127	QETC1HM-106	E CAPACITOR	10μF,50V	C244	QCVB1CN-103	CAPACITOR	0.01μF,16V
C128	QETC1HM-106	E CAPACITOR	10μF,50V	C245	QCVB1CN-103	CAPACITOR	0.01μF,16V
C129	QETC1HM-106	E CAPACITOR	10μF,50V	C246	QCVB1CN-103	CAPACITOR	0.01μF,16V
C131	QETC1CM-476	E CAPACITOR	47μF,16V	C401	QCYA1HK-102	CAPACITOR	0.001μF,50V
C132	QETC1HM-105	E CAPACITOR	1μF,50V	C402	QCYA1HK-102	CAPACITOR	0.001μF,50V
C133	QETC1CM-476	E CAPACITOR	47μF,16V	C404	QCTA1CH-101	CAPACITOR	100pF,16V
C134	PECA0772-476MZ	E CAPACITOR		C405	QCYA1HK-103	CAPACITOR	0.01μF,50V
C135	PECA0772-476MZ	E CAPACITOR		C406	QEKJ1CM-106	E CAPACITOR	10μF,16V
C136	QE231CM-107ZE	E CAPACITOR	100μF,16V	C407	QEKJ1CM-106	E CAPACITOR	10μF,16V
C137	QETC1HM-106	E CAPACITOR	10μF,50V	C408	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
C138	QETC1HM-105	E CAPACITOR	1μF,50V	C409	QCYA1EK-223	CAPACITOR	0.022μF,25V
C139	QETC1HM-105	E CAPACITOR	1μF,50V	C411	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C140	QERF1CM-226	E CAPACITOR	22μF,16V	C412	QCYA1EK-104	CAPACITOR	0.1μF,25V
C141	QETC1CM-226	E CAPACITOR	22μF,16V	C413	QCY81CK-105	CAPACITOR	1μF,16V
C143	QETC1HM-106	E CAPACITOR	10μF,50V	C414	QCYA1HK-102	RESISTOR	
C144	QETC1HM-106	E CAPACITOR	10μF,50V	C415	QEKJ1CM-106	E CAPACITOR	10μF,16V
C145	QETC1CM-476	E CAPACITOR	47μF,16V	C416	QCYA1HK-102	CAPACITOR	0.001μF,50V
C146	QETC1CM-476	E CAPACITOR	47μF,16V	C417	QCTA1CH-470	CAPACITOR	47pF,16V
C147	QCTA1CH-561	CAPACITOR	560pF,16V	C451	QCYA1HK-103	CAPACITOR	0.01μF,50V
C148	QCTA1CH-561	CAPACITOR	560pF,16V	C452	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C149	QETC1HM-106	E CAPACITOR	10μF,50V	C453	QCYA1HK-103	CAPACITOR	0.01μF,50V
C150	QETC1HM-106	E CAPACITOR	10μF,50V	C454	QCYA1HK-103	CAPACITOR	0.01μF,50V
C151	QETC1HM-106	E CAPACITOR	10μF,50V	C455	QCYA1HK-103	CAPACITOR	0.01μF,50V
C152	QETC1HM-106	E CAPACITOR	10μF,50V	C456	QCYA1HK-103	CAPACITOR	0.01μF,50V
C153	QETC1CM-476	E CAPACITOR	47μF,16V	C458	QEKJ1CM-106	E CAPACITOR	10μF,16V
C157	QCTA1CH-561	CAPACITOR	560pF,16V	C459	QFV11HJ-104	F CAPACITOR	0.1μF,50V
C158	QCTA1CH-561	CAPACITOR	560pF,16V	C601	QAT3120-450Z	TRIM CAPACITOR,TIMER CLOCK	
C201	QETC1CM-476	E CAPACITOR	47μF,16V	C602	QCTA1CH-180	CAPACITOR	18pF,16V
C202	QCYA1HK-103	CAPACITOR	0.01μF,50V	C603	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C203	QCTA1CH-470	CAPACITOR	47pF,16V	C604	QEKF1CM-106	E CAPACITOR	10μF,16V
C204	QCYA1HK-103	CAPACITOR	0.01μF,50V	C609	QCYA1HK-103	CAPACITOR	0.01μF,50V
C205	QCTA1CH-470	CAPACITOR	47pF,16V	C612	QCYA1HJ-102	CAPACITOR	0.001μF,50V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C613	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C614	QERF1AM-336	E CAPACITOR	33μF,10V
C615	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C618	QETC1AM-107	E CAPACITOR	100μF,10V
C619	PU60676-223	E CAPACITOR	0.022μF,5.5V
C627	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C628	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
C629	QCYA1EK-104	CAPACITOR	0.1μF,25V
C630	QEKJ1CM-106	E CAPACITOR	10μF,16V
C631	QCYA1HJ-103	CAPACITOR	0.01μF,50V
C639	QCYA1HK-103	CAPACITOR	0.01μF,50V
C751	QCTA1CH-220	CAPACITOR	22pF,16V
C752	QCYA1HK-102	CAPACITOR	0.001μF,50V
C753	QCYA1EK-104	CAPACITOR	0.1μF,25V
C754	QCTA1CH-220	CAPACITOR	22pF,16V
C755	QCTA1CH-220	CAPACITOR	22pF,16V
C756	QCTA1CH-220	CAPACITOR	22pF,16V
C758	QCTA1CH-470	CAPACITOR	47pF,16V
C760	QERF1HM-335	E CAPACITOR	3.3μF,50V
C761	QCTA1CH-101	CAPACITOR	100pF,16V
C762	QCTA1CH-101	CAPACITOR	100pF,16V
C763	QCTA1CH-101	CAPACITOR	100pF,16V
△ C801	QFZ9051-223	F CAPACITOR	0.022μF
△ C802	QFZ9051-683	F CAPACITOR	0.068μF
△ C803	QFZ9051-333	F CAPACITOR	0.033μF
C810	PECA0738-107	E CAPACITOR	
C863	QETC1AM-107	E CAPACITOR	100μF,10V
C864	QETC1CM-226	E CAPACITOR	22μF,16V
C865	QETC1AM-107	E CAPACITOR	100μF,10V
C866	QETC1HM-106	E CAPACITOR	10μF,50V
C867	QEKJ1CM-107	E CAPACITOR	100μF,16V
C868	QETC1CM-476	E CAPACITOR	47μF,16V
C870	QETC1CM-107	E CAPACITOR	100μF,16V
C901	QETC1CM-336	E CAPACITOR	33μF,16V
C902	QCYA1HK-102	CAPACITOR	0.001μF,50V
C903	QERF1HM-106	E CAPACITOR	10μF,50V
C904	QCYA1HK-102	CAPACITOR	0.001μF,50V
C905	QCYA1EK-223	CAPACITOR	0.022μF,25V
C906	QETC1HM-474	E CAPACITOR	0.47μF,50V
C953	QCYA1HK-102	CAPACITOR	0.001μF,50V
C959	QETC1CM-476	E CAPACITOR	47μF,16V
L1	PU58308-123J	COIL	12mH
L201	PU48530-101K	COIL	100μH
L202	PU59988-560J	COIL	56μH
L203	PU48530-102J	COIL	1mH
L204	PU59988-101J	COIL	100μH
L205	PU59988-151JY	COIL	150μH
L206	PU59988-560J	COIL	56μH
L208	PU48530-101K	COIL	100μH
L210	PU48530-222J	COIL	2.2mH
L211	PU59988-221J	COIL	220μH
L213	PU48530-101K	COIL	100μH
L214	PU59988-560J	COIL	56μH
L215	PU59988-470J	COIL	47μH
L216	PU59988-101J	COIL	100μH
L401	PU59988-270J	COIL	27μH
L451	PU59988-270J	COIL	27μH
L601	QRD161J-0R0	RESISTOR	0Ω,1/6W
L602	QRD161J-0R0	RESISTOR	0Ω,1/6W
L603	PU48530-100J	COIL	10μH
L604	PU48530-100J	COIL	10μH
L605	PU48530-100J	COIL	10μH

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
L901	PU59152-R22J	COIL	0.22μH
L902	PU59152-R22J	COIL	0.22μH
△ CF601	PEVB0497	RESONATOR	
△ CF751	PEVB0340	RESONATOR	
△ X601	PEVB0422	CRYSTAL RESONATOR	
S901	PESW0672-02	SLIDE SWITCH,RF/TEST	
△ T1	PELN0860	OSC TRANSFORMER	
△ T2	PELN0861	OSC TRANSFORMER	
PS601	PU61433	REEL SENSOR	
PS602	PU61433	REEL SENSOR	
T901	PELN0806	COIL	
ETH1	PQ21623-1-2	EARTH PLATE(RF),TUNER	
JA1	PU61150-2	PIN JACK(SW),R AUDIO IN	
JA2	PU61149-4	PIN JACK,AUDIO OUT	
JA3	PU60612	MINI JACK,PAUSE/RAE	
SCW1	SDSF3008Z	SCREW,TERMINAL BOARD L	
SLD1	PQ21911	SHIELD CASE	
SPC1	PEME0947-01-01	SPACER,X2	
△ FC801	PEMC0965-Z	FUSE CLIP,F801	
△ FC802	PEMC0965-Z	FUSE CLIP,F801	
△ LF801	PELN0885	LINE FILTER	
△ LF802	PELN0876	LINE FILTER	
CN1	PW30705-12AAYY	WIRE,(1-4)	
CN2	PW30701-12AAYY	WIRE,(1-2)	
CN101	PEMC1102-010	CONNECTOR,(1-10)SW/JACK	
CN102	PEMC0969-109	CONNECTOR,(1-9)TERMINAL	
CN103	PEMC1055-014	CONNECTOR,(1-14)PRE/REC	
CN201	PEMC1055-014	CONNECTOR,(1-14)PRE/REC	
CN204	PEMC0846-014	CONNECTOR,(1-14)DIGITAL SUB	
CN205	PEMC0846-014	CONNECTOR,(1-14)DIGITAL SUB	
CN206	PEMC0969-112	CONNECTOR,(1-12)TERMINAL	
CN207	PEMC0969-111	CONNECTOR,(1-11)TERMINAL	
CN301	PU59555-4	CONNECTOR,(1-4)EVR	
CN401	PW30702-12AAYY	WIRE,(1-3)	
CN402	PEMC1102-004	CONNECTOR,(1-4)DRUM MOTOR	
CN601	PEMC1077	CONNECTOR,(1-8)CAP MDA	
CN602	PU61434-1-1	CONNECTOR,(1-5)ROTARY ENCODER	
CN603	PU60727-2	CONNECTOR,(1-2)LOADING MOTOR	
CN605	PU59555-7	CONNECTOR,(1-7)JOG	
CN702	PEMC1102-015	CONNECTOR,(1-15)DISPLAY/SW	
△ CN801	PU60250-2	CONNECTOR,(1-2)AC IN	
△ CP401	ICP-N15	CIRCUIT PROTECTOR	
△ CP601	ICP-N25	CIRCUIT PROTECTOR	
△ CP602	ICP-N25	CIRCUIT PROTECTOR	
△ CP801	ICP-N15	CIRCUIT PROTECTOR	
△ F801	QMF51E2-1R25J1	FUSE	T1.2A

VIDEO UNIT BOARD ASSEMBLY <05>

PWBA	PB10966E	VIDEO UNIT BOARD ASSEMBLY
IC1	JCP0054	IC
IC2	M62353GP	IC
IC3	NJM431U-XE	IC
IC4	VC2076MP-XE	IC
IC5	HA118092FP-XE	IC
IC6	93LC56/P	IC
	or 93LC56B/P	IC

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
IC7	TC4S81F	IC	
Q1	2SA1576(QRS)	TRANSISTOR	
Q2	DTC144WU	TRANSISTOR	
Q5	2SC4081(QRS)	TRANSISTOR	
Q6	2SA1576(QRS)	TRANSISTOR	
Q7	DTA144EU	TRANSISTOR	
Q8	DTC144WU	TRANSISTOR	
Q9	DTC144WU	TRANSISTOR	
Q11	DTC144WU	TRANSISTOR	
Q12	DTC144WU	TRANSISTOR	
Q16	DTC144WS	TRANSISTOR	
D1	DAP202U	DIODE	
D3	1SS355	DIODE	
R1	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R2	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R3	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R5	NRSA63J-182N	RESISTOR	1.8kΩ, 1/16W
R6	NRSA63J-472N	RESISTOR	4.7kΩ, 1/16W
R7	QRD162J-222	RESISTOR	2.2kΩ, 1/6W
R8	NRSA63J-333N	RESISTOR	33kΩ, 1/16W
R9	NRVA63D-822N	MF RESISTOR	8.2kΩ, 1/16W
R10	NRVA63D-152N	MF RESESTOR	
R11	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R12	NRSA63J-561N	RESISTOR	560Ω, 1/16W
R13	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R14	NRSA63J-821N	RESISTOR	820Ω, 1/16W
R17	NRSA63J-391N	RESISTOR	390Ω, 1/16W
R18	NRVA63D-391N	RESISTOR	390Ω, 1/16W
R19	NRVA63D-102N	MF RESISTOR	1kΩ, 1/16W
R20	NRVA63D-391N	RESISTOR	390Ω, 1/16W
R22	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R23	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R24	NRSA63J-332N	RESISTOR	3.3kΩ, 1/16W
R25	NRSA63J-332N	RESISTOR	3.3kΩ, 1/16W
R26	NRSA63J-151N	RESISTOR	150Ω, 1/16W
R27	NRSA63J-162N	RESISTOR	1.6kΩ, 1/16W
R28	NRSA63J-391N	RESISTOR	390Ω, 1/16W
R29	NRSA63J-122N	RESISTOR	1.2kΩ, 1/16W
R30	NRVA63D-102N	MF RESISTOR	1kΩ, 1/16W
R31	NRVA63D-471N	RESISTOR	470Ω, 1/16W
R32	NRVA63D-102N	MF RESISTOR	1kΩ, 1/16W
R33	NRVA63D-152N	MF RESESTOR	
R34	NRVA63D-332N	MF RESISTOR	3.3kΩ, 1/16W
R35	NRVA63D-332N	MF RESISTOR	3.3kΩ, 1/16W
R37	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R39	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R40	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R41	NRSA63J-823N	RESISTOR	82kΩ, 1/16W
R43	NRSA63J-273N	RESISTOR	27kΩ, 1/16W
R45	NRSA63J-181N	RESISTOR	180Ω, 1/16W
R46	NRSA63J-101N	RESISTOR	100Ω, 1/16W
R47	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R48	NRVA63D-243N	RESISTOR	24kΩ, 1/16W
R49	NRSA63J-101N	RESISTOR	100Ω, 1/16W
R50	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R51	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R52	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R53	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R54	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R55	NRVA63D-272N	MF RESISTOR	2.7kΩ, 1/16W
R56	NRVA63D-682N	MF RESISTOR	6.8kΩ, 1/16W
R57	NRVA63D-162N	MF RESISTOR	1.6kΩ, 1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R58	NRVA63D-682N	MF RESISTOR	6.8kΩ, 1/16W
R59	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R60	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R61	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R62	NRSA63J-221N	RESISTOR	220Ω, 1/16W
R63	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R64	NRSA63J-475N	RESISTOR	4.7MΩ, 1/16W
R65	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R68	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R69	NRSA63J-101N	RESISTOR	100Ω, 1/16W
R70	NRSA63J-272N	RESISTOR	2.7kΩ, 1/16W
R73	NRSA63J-684N	RESISTOR	680kΩ, 1/16W
R74	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R75	NRSA63J-101N	RESISTOR	100Ω, 1/16W
R79	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R82	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R83	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R85	NRSA63J-472N	RESISTOR	4.7kΩ, 1/16W
R87	QRD161J-182	RESISTOR	1.8kΩ, 1/6W
C1	QETC1HM-224	E CAPACITOR	0.22μF, 50V
C2	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C5	QETC1HM-105	E CAPACITOR	1μF, 50V
C7	QETC1HM-104	E CAPACITOR	0.1μF, 50V
C8	NCT08CH-330A	CAPACITOR	33pF, 50V
C10	NCB31CK-104A	CAPACITOR	0.1μF, 16V
C11	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C12	QETC1HM-106	E CAPACITOR	10μF, 50V
C13	QETC1HM-225	E CAPACITOR	2.2μF, 50V
C14	NCB31CK-104A	CAPACITOR	0.1μF, 16V
C15	QETA1HM-475	E CAPACITOR	4.7μF, 50V
C16	NCB31EK-123A	CAPACITOR	0.012μF, 25V
C17	QCYA1EK-563	CAPACITOR	0.056μF, 25V
C18	QETC1HM-105	E CAPACITOR	1μF, 50V
C19	QETC1CM-476	E CAPACITOR	47μF, 16V
C20	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C21	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C22	NCT08CH-331A	CAPACITOR	330pF, 50V
C23	QCYA1EK-104	CAPACITOR	0.1μF, 25V
C24	QETC1HM-334	E CAPACITOR	0.33μF, 50V
C25	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C26	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C27	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C28	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C29	QETC1CM-476	E CAPACITOR	47μF, 16V
C30	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C31	NCT08CH-161A	CAPACITOR	160pF, 50V
C32	NCS31HJ-120A	CAPACITOR	12pF, 50V
C33	QETC1HM-104	E CAPACITOR	0.1μF, 50V
C35	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C36	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C37	QETC1HM-474	E CAPACITOR	0.47μF, 50V
C38	QETC1HM-104	E CAPACITOR	0.1μF, 50V
C39	QETC1HM-474	E CAPACITOR	0.47μF, 50V
C40	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C41	QETC1HM-106	E CAPACITOR	10μF, 50V
C42	QETC1HM-106	E CAPACITOR	10μF, 50V
C43	QCC31CK-473	CAPACITOR	0.047μF, 16V
C44	NCB31EK-103A	CAPACITOR	0.01μF, 25V
C45	QETC1CM-226	E CAPACITOR	22μF, 16V
C46	NCS31HJ-470A	CAPACITOR	47pF, 50V
C47	QETC1HM-225	E CAPACITOR	2.2μF, 50V
C48	QETC1CM-226	E CAPACITOR	22μF, 16V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C49	QETC1HM-225	E CAPACITOR	2.2μF,50V
C50	NCB31CK-104A	CAPACITOR	0.1μF,16V
C51	NCB31EK-103A	CAPACITOR	0.01μF,25V
C52	NCB31EK-103A	CAPACITOR	0.01μF,25V
C53	QETC1CM-476	E CAPACITOR	47μF,16V
C54	NCT06CH-101A	CAPACITOR	100pF,50V
C55	NCT06CH-101A	CAPACITOR	100pF,50V
C56	QETC1HM-475	E CAPACITOR	4.7μF,50V
C57	NCT08CH-301A	CAPACITOR	300pF,50V
C58	NCT08CH-301A	CAPACITOR	300pF,50V
C59	NCT06CH-181A	CAPACITOR	180pF,50V
C60	NCT06CH-101A	CAPACITOR	100pF,50V
C61	NCT08CH-271A	CAPACITOR	270pF,50V
C62	NCT08CH-820A	CAPACITOR	82pF,50V
C63	NCT08CH-221A	CAPACITOR	220pF,50V
C64	NCT08CH-301A	CAPACITOR	300pF,50V
C65	NCT08CH-301A	CAPACITOR	300pF,50V
C66	NCB31EK-103A	CAPACITOR	0.01μF,25V
C67	QETC1CM-476	E CAPACITOR	47μF,16V
C69	NCB31EK-103A	CAPACITOR	0.01μF,25V
C70	QETC1HM-225	E CAPACITOR	2.2μF,50V
C71	QETC1HM-225	E CAPACITOR	2.2μF,50V
C72	NCT08CH-331A	CAPACITOR	330pF,50V
C73	NCB31EK-103A	CAPACITOR	0.01μF,25V
C74	NCB31EK-103A	CAPACITOR	0.01μF,25V
C75	QETC1CM-476	E CAPACITOR	47μF,16V
C76	NCB31EK-223A	CAPACITOR	0.022μF,25V
C77	NCB31EK-103A	CAPACITOR	0.01μF,25V
C78	QETC1HM-105	E CAPACITOR	1μF,50V
C79	QETC1HM-106	E CAPACITOR	10μF,50V
C80	NCB31EK-103A	CAPACITOR	0.01μF,25V
C81	NCB31EK-103A	CAPACITOR	0.01μF,25V
C83	NCT08CH-5R0A	CAPACITOR	5pF,50V
C84	NCB31EK-103A	CAPACITOR	0.01μF,25V
C85	NCB31EK-103A	CAPACITOR	0.01μF,25V
C86	NCB31EK-103A	CAPACITOR	0.01μF,25V
C87	NCB31EK-103A	CAPACITOR	0.01μF,25V
C88	NCB31EK-103A	CAPACITOR	0.01μF,25V
C89	NCB31EK-103A	CAPACITOR	0.01μF,25V
C92	NCT06CH-101A	CAPACITOR	100pF,50V
C99	NCB31EK-103A	CAPACITOR	0.01μF,25V
C102	NCB31EK-103A	CAPACITOR	0.01μF,25V
C104	QETC1HM-224	E CAPACITOR	0.22μF,50V
C106	NCT08CH-121A	CAPACITOR	120pF,50V
L1	PU59153-822J	COIL	8.2mH
L2	PU48530-271K	COIL	270μH
L4	PU48530-331K	COIL	330μH
L5	PU48530-100J	COIL	10μH
L6	PU48530-270J	COIL	27μH
L7	PU48530-101K	COIL	100μH
L8	PU48530-101K	COIL	100μH
L9	PU48530-101K	COIL	100μH
LC1	PELN1165	LC TRA,LC VCO	
LC3	PELN1149	EQUALIZER	
LC4	PELN1171	LC TRAP	
△ X1	PEVB0550-Z	CRYSTAL RESONATOR	
K1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
CN1	PEMC0919-130K	PIN HEADER	
CN2	PEMC0919-130K	PIN HEADER	

#△ REF No. PART No. PART NAME, DESCRIPTION

TERMINAL BOARD ASSEMBLY <06>

PWBA	PB10954B-01	TERMINAL BOARD ASSEMBLY	
IC1	CXA1410M-XE	IC	
IC3	NJM2234D	IC	
Q1	DTC144WU	TRANSISTOR	
Q2	2SA1577(QR)	TRANSISTOR	
Q3	2SA1577(QR)	TRANSISTOR	
Q4	2SA1577(QR)	TRANSISTOR	
Q5	2SA1577(QR)	TRANSISTOR	
D5	DAN202U	DIODE	
R1	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R11	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R12	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R13	QRD161J-471	RESISTOR	470Ω,1/6W
R14	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R15	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R16	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R24	QRD123J-391SX	RESISTOR	390Ω,1/2W
R31	QRD161J-101	RESISTOR	100Ω,1/6W
R32	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R33	QRD123J-391SX	RESISTOR	390Ω,1/2W
R35	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R36	QRD123J-391SX	RESISTOR	390Ω,1/2W
R37	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R39	QRD123J-391SX	RESISTOR	390Ω,1/2W
R40	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R41	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R43	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R44	NRVA62D-750N	RESISTOR	75Ω,1/16W
R46	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R52	QRSA08J-622YN	RESISTOR	6.2kΩ,1/10W
R53	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R61	QRD161J-750	RESISTOR	75Ω,1/6W
R62	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R63	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R66	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R69	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R70	QRSA08J-221YN	RESISTOR	220Ω,1/10W
C1	QEK1CM-106	E CAPACITOR	10μF,16V
C2	QEP61HM-105	NP E CAPACITOR	1μF,50V
C4	QEK1CM-106	E CAPACITOR	10μF,16V
C5	QEP61CM-106	NP E CAPACITOR	10μF,16V
C6	QEK0JM-476	E CAPACITOR	47μF,6.3V
C7	QCYA1HK-103	CAPACITOR	0.01μF,50V
C8	QEK1CM-106	E CAPACITOR	10μF,16V
C9	QEK1CM-106	E CAPACITOR	10μF,16V
C10	QCYA1HK-103	CAPACITOR	0.01μF,50V
C11	QEK1CM-106	E CAPACITOR	10μF,16V
C14	QCYA1HK-103	CAPACITOR	0.01μF,50V
C15	QCYA1HK-103	CAPACITOR	0.01μF,50V
C16	QCYA1HK-103	CAPACITOR	0.01μF,50V
C17	QEK1CM-476	E CAPACITOR	47μF,16V
C18	QEK0JM-476	E CAPACITOR	47μF,6.3V
C19	QCYA1HK-103	CAPACITOR	0.01μF,50V
C20	QEK1AM-476	E CAPACITOR	47μF,10V
C31	QEK1CM-476	E CAPACITOR	47μF,16V
C32	QEK1HM-225	E CAPACITOR	2.2μF,50V
C34	QCYA1HK-103	CAPACITOR	0.01μF,50V
C35	PECA0783-108MZ	E CAPACITOR	

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C36	PECA0783-108MZ	E CAPACITOR	
C37	QCYA1HK-103	CAPACITOR	0.01μF,50V
C39	QCYA1HK-103	CAPACITOR	0.01μF,50V
C40	QEKFC1CM-476	E CAPACITOR	47μF,16V
C50	QCTA1CH-101	CAPACITOR	100pF,16V
L1	PU48530-101K	COIL	100μH
L2	PU48530-101K	COIL	100μH
L3	PU48530-101K	COIL	100μH
L5	PU48530-101K	COIL	100μH
LC1	PU59885-102	N FILTER	
LC2	PU59885-102	N FILTER	
LC3	PU59885-102	N FILTER	
LC4	PU59885-102	N FILTER	
LC5	PU59885-102	N FILTER	
LC6	PU59885-102	N FILTER	
S1	PU58486-1-1	SLIDE SWITCH,AV1 OUT SEL	
JA1	PU59592	RGB21P SOCKET,AV1	
JA2	PU59592	RGB21P SOCKET,AV2/DEC	
JA3	PEMC0963	S JACK,S IN	
JA4	PEMC0963	S JACK,S OUT	
SCW1	SDSF3008Z	SCREW,X8 TERMINAL BOARD ASSY	
TB1	PQ35456B	TERMINAL BOARD ASSEMBLY	
CN1	PEMC0970-212	CONNECTOR,(1-12)MAIN VIDEO	
CN2	PEMC0970-211	CONNECTOR,(1-11)MAIN VIDEO	
CN3	PEMC0970-209	CONNECTOR,(1-9)MAIN AUDIO	

A/C HEAD B1

PWBA	PB40068A	A/I
CN1	PU60910-107	CONNECTOR,(1-7)MAIN

DEMOD BOARD ASSEMBLY <14>

PWBA	PB10832A-02	DEMOD BOARD ASSEMBLY
IC1	CF70088A	IC
IC2	TDA1305T-XE	IC
IC3	LA7151	IC
Q1	IMX3	TRANSISTOR
Q2	2SC4081(RS)	TRANSISTOR
Q4	3SK181(5)	FE TRANSISTOR
Q5	2SC4081(RS)	TRANSISTOR
Q6	IMX3	TRANSISTOR
Q7	DTC144EU	TRANSISTOR
Q8	DTA114EU	TRANSISTOR
D1	DAN202U	DIODE
D2	DAN202U	DIODE
R1	QRSA08J-822YN	RESISTOR 8.2kΩ, 1/10W
R2	QRSA08J-122YN	RESISTOR 1.2kΩ, 1/10W
R3	QRSA08J-471YN	RESISTOR 470Ω, 1/10W
R4	QRSA08J-121YN	RESISTOR 120Ω, 1/10W
R5	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
R6	QRSA08J-102YN	RESISTOR 1kΩ, 1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R7	QRSA08J-331YN	RESISTOR	330Ω, 1/10W
R8	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R9	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R13	QRSA08J-681YN	RESISTOR	680Ω, 1/10W
R14	QRSA08J-224YN	RESISTOR	220kΩ, 1/10W
R15	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R16	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R17	QRSA08J-271YN	RESISTOR	270Ω, 1/10W
R18	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R19	QRSA08J-303YN	RESISTOR	30kΩ, 1/10W
R20	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R21	QRSA08J-154YN	RESISTOR	150kΩ, 1/10W
R22	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R23	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R26	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R27	QRSA08J-331YN	RESISTOR	330Ω, 1/10W
R28	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R31	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R32	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R33	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R34	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R35	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R36	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R51	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R52	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R53	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R54	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R55	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R56	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R57	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R61	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R62	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
C1	QCYA1HK-103	CAPACITOR	0.01μF,50V
C2	QCYA1HK-103	CAPACITOR	0.01μF,50V
C3	QCYA1HK-103	CAPACITOR	0.01μF,50V
C4	QCYA1HK-103	CAPACITOR	0.01μF,50V
C6	QCYA1HK-103	CAPACITOR	0.01μF,50V
C7	QCYA1HK-103	CAPACITOR	0.01μF,50V
C8	QCYA1HK-103	CAPACITOR	0.01μF,50V
C9	QCYA1HK-103	CAPACITOR	0.01μF,50V
C10	QCYA1HK-103	CAPACITOR	0.01μF,50V
C11	QCYA1HK-103	CAPACITOR	0.01μF,50V
C12	QCYA1HK-103	CAPACITOR	0.01μF,50V
C16	QCYA1HK-103	CAPACITOR	0.01μF,50V
C17	QCYA1HK-103	CAPACITOR	0.01μF,50V
C18	QCYA1HK-103	CAPACITOR	0.01μF,50V
C19	QCYA1HK-103	CAPACITOR	0.01μF,50V
C20	QCTA1CH-330	CAPACITOR	33pF,16V
C21	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C22	QCSA1HJ-471	CAPACITOR	470pF,50V
C23	QEKFC1CM-106	E CAPACITOR	10μF,16V
C24	QCYA1HK-103	CAPACITOR	0.01μF,50V
C25	QCYA1HK-103	CAPACITOR	0.01μF,50V
C26	QEKFOJM-476	E CAPACITOR	47μF,6.3V
C27	QCYA1HK-103	CAPACITOR	0.01μF,50V
C28	QCYA1HK-103	CAPACITOR	0.01μF,50V
C29	QEKFOJM-476	E CAPACITOR	47μF,6.3V
C30	QEKFC1HM-225	E CAPACITOR	2.2μF,50V
C31	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C32	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C33	QCYA1HK-103	CAPACITOR	0.01μF,50V
C34	QCYA1HK-103	CAPACITOR	0.01μF,50V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C35	QCYA1HK-103	CAPACITOR	0.01μF,50V
C36	QCYA1HK-103	CAPACITOR	0.01μF,50V
C37	QEKFOJM-476	E CAPACITOR	47μF,6.3V
C39	QFLA1HJ-823Z	F CAPACITOR	0.082μF,50V
C40	QFLA1HJ-823Z	F CAPACITOR	0.082μF,50V
C41	QEKF1CM-106	E CAPACITOR	10μF,16V
C42	QEKF1CM-106	E CAPACITOR	10μF,16V
C43	QEKF1CM-106	E CAPACITOR	10μF,16V
C44	QEKF1CM-106	E CAPACITOR	10μF,16V
C45	QCYA1HK-103	CAPACITOR	0.01μF,50V
C61	QEKF1CM-106	E CAPACITOR	10μF,16V
C62	QEKF1CM-106	E CAPACITOR	10μF,16V
C63	QEKF1CM-226	E CAPACITOR	22μF,16V
C64	QEKF1CM-106	E CAPACITOR	10μF,16V
C71	QCSA1HJ-330	CAPACITOR	33pF,50V
C72	QCSA1HJ-330	CAPACITOR	33pF,50V
C73	QCSA1HJ-101	CAPACITOR	100pF,50V
C74	QCSA1HJ-101	CAPACITOR	100pF,50V
C75	QCSA1HJ-101	CAPACITOR	100pF,50V
C76	QCSA1HJ-101	CAPACITOR	100pF,50V
C77	QCSA1HJ-101	CAPACITOR	100pF,50V
L2	PU59152-220J	COIL	22μH
CF1	PEVB0556	C TRAP	
LC1	PU59736-102	N FILTER	
LC2	PU59736-102	N FILTER	
△ X1	PEVB0573	CRYSTAL RESONATOR	
JP1	PEMC0778-109	PIN HEADER	
JP2	PEMC0778-105	PIN HEADER	
SLD1	PQ35058	SHIELD COVER,X2	
SLD2	PQ35057	SHIELD FRAME	

DISPLAY BOARD ASSEMBLY <28>

PWBA1	PB10972B1	DISPLAY BOARD ASSEMBLY
IC1	UPD16311GC(K)	IC
	or UPD16311GC(P)	IC
	or UPD16311GC(E)	IC
IC2	GP1U581X	IR DETECT UNIT
	or HC-377J	IR DETECT UNIT
Q1	DTA144ES	TRANSISTOR
Q2	DTA144ES	TRANSISTOR
D1	1SS132Y	DIODE
	or 1N4148M	DIODE
D2	1SS132Y	DIODE
	or 1N4148M	DIODE
D3	1SS132Y	DIODE
	or 1N4148M	DIODE
D4	1SS132Y	DIODE
	or 1N4148M	DIODE
D6	1SS132Y	DIODE
	or 1N4148M	DIODE
D7	1SS132Y	DIODE,A DUB
	or 1N4148M	DIODE
D8	SLR-342MG3F	LE DIODE,16:9 REC
D10	SLR-342DU3F	LE DIODE,RAE
D11	RD4.7ES-T1B2	ZENER DIODE

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
D12	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D13	PESC0974	LE DIODE,LIGHT OP	
D22	SLR-342MG3F	LE DIODE,S-VHS	
D24	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D31	11ES2	DIODE	
D32	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
D33	1SS133	DIODE	
	or 1N4148M	DIODE	
	or MA165	DIODE	
D34	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
R1	QRD161J-333	RESISTOR	33kΩ,1/6W
R2	QRD161J-333	RESISTOR	33kΩ,1/6W
R3	QRD161J-333	RESISTOR	33kΩ,1/6W
R4	QRD161J-333	RESISTOR	33kΩ,1/6W
R5	QRD161J-472	RESISTOR	4.7kΩ,1/6W
R6	QRD161J-472	RESISTOR	4.7kΩ,1/6W
R7	QRD161J-102	RESISTOR	1kΩ,1/6W
R8	QRD161J-563	RESISTOR	56kΩ,1/6W
R9	QRD161J-103	RESISTOR	10kΩ,1/6W
R10	QRD161J-103	RESISTOR	10kΩ,1/6W
R11	QRD161J-331	RESISTOR	330Ω,1/6W
R12	QRD161J-331	RESISTOR	330Ω,1/6W
R13	QRD161J-333	RESISTOR	33kΩ,1/6W
R15	QRD161J-103	RESISTOR	10kΩ,1/6W
R16	QRD161J-472	RESISTOR	4.7kΩ,1/6W
R17	QRD161J-151	RESISTOR	150Ω,1/6W
R19	QRD161J-103	RESISTOR	10kΩ,1/6W
R21	QRD161J-331	RESISTOR	330Ω,1/6W
R22	QRD161J-331	RESISTOR	330Ω,1/6W
R30	QRD161J-331	RESISTOR	330Ω,1/6W
RA1	QRB045J-333F	RESISTOR ARRAY	33kΩ,4W
C1	QERFOJM-476	E CAPACITOR	47μF,6.3V
C2	QCFB1HZ-104	CAPACITOR	0.1μF,50V
C3	QERF1HM-106	E CAPACITOR	10μF,50V
C4	QCSB1HJ-330	CAPACITOR	33pF,50V
C5	QCSB1HJ-330	CAPACITOR	33pF,50V
C6	QERFOJM-227	E CAPACITOR	220μF,6.3V
C7	QCVB1CN-103	CAPACITOR	0.01μF,16V
C10	QCFB1HZ-473	CAPACITOR	0.047μF,50V
C11	QCFB1HZ-473	CAPACITOR	0.047μF,50V
C20	QCB1HJ-102	CAPACITOR	0.001μF,50V
L1	PU48530-101J	COIL	100μH
S5	PESW0525-02Z	TACT SWITCH,PAUSE	
S6	PESW0525-02Z	TACT SWITCH,REC/OTR	
S7	PESW0525-02Z	TACT SWITCH,PLAY	
S8	PESW0525-02Z	TACT SWITCH,STOP/EJECT	
S25	PESW0525-02Z	TACT SWITCH,INSERT	
S27	PESW0525-02Z	TACT SWITCH,A DUB	
FDP1	PEDP0106-03	FLUORESCENT DISPLAY PANEL	
CL1	PU56729-2	WIRE CLAMP,J3	
HD1	PQ34668	FDP HOLDER(L)	
HD2	PQ34669	FDP HOLDER(R)	
HD3	PQM30038-6	LED HOLDER,D8	
HD4	PQM30038-6	LED HOLDER,D10	
HD5	PQ46516	LED HOLDER,D13	
HD6	PQM30038-6	LED HOLDER,D22	

#△ REF No.	PART No.	PART NAME, DESCRIPTION
J1	PW30101-60AA442	PARALLEL WIRE
J2	PW30101-60AA443	PARALLEL WIRE
J3	PW30219-0661824	WIRE
CN1	PEMC1102-115	CONNECTOR,(1-15)MAIN
CN2	PEMC0889-015	CONNECTOR,(1-15)SW/JACK

REC SAFETY BOARD ASSEMBLY <32>

PWBA4	PB10972A4	REC SAFETY BOARD ASSEMBLY
S41	PESW0589	PUSH SWITCH,REC SAFETY

CASSETTE SW BOARD ASSEMBLY <33>

PWBA3	PB10972A3	CASSETTE SWITCH BOARD ASSEMBLY
S42	PU61320	PUSH SWITCH,CASS
S43	PU61320	PUSH SWITCH,S CASS

SWITCH/JACK BOARD ASSEMBLY <36>

PWBA2	PB10972B2	SWITCH JACK BOARD ASSEMBLY
Q3	DTA144ES	TRANSISTOR
Q4	DTA144ES	TRANSISTOR
D14	PESC0974	LE DIODE,LIGIT OP
D15	SLR-342MC3F	LE DIODE,D CONTRAST
D16	SLR-342DC3F	LE DIODE,REVIEW
D17	SLR-342VC3F	LE DIODE,OPERATE
D20	1N4148M	DIODE
	or 1SS132Y	DIODE
D21	1N4148M	DIODE
	or 1SS132Y	DIODE
D101	1N4148M	DIODE
	or 1SS133	DIODE
	or MA165	DIODE
D102	1N4148M	DIODE
	or MA165	DIODE
	or 1SS133	DIODE
R14	QRD161J-331	RESISTOR 330Ω,1/6W
R18	QRD161J-331	RESISTOR 330Ω,1/6W
R20	QRD161J-331	RESISTOR 330Ω,1/6W
R23	QRD161J-331	RESISTOR 330Ω,1/6W
R24	QRD161J-331	RESISTOR 330Ω,1/6W
R101	QRD161J-750	RESISTOR 75Ω,1/6W
S1	PESW0575	SLIDE SWITCH,16:9 REC
S2	PESW0574	SLIDE SWITCH,IMAGE CTL
S3	PESW0525-02Z	TACT SWITCH,OPERATE
S4	PESW0525-02Z	TACT SWITCH,TIMER
S12	PESW0525-02Z	TACT SWITCH,DIMMER

#△ REF No.	PART No.	PART NAME, DESCRIPTION
S15	PESW0525-02Z	TACT SWITCH,STORE
S16	PESW0525-02Z	TACT SWITCH,CH SEARCH
S17	PESW0525-02Z	TACT SWITCH,D CONTRAST
S18	PESW0525-02Z	TACT SWITCH,AV/S SEL
S19	PESW0525-02Z	TACT SWITCH,S-VHS
S21	PESW0525-02Z	TACT SWITCH,S FINDER
S23	PESW0525-02Z	TACT SWITCH,H/N/M
S24	PESW0525-02Z	TACT SWITCH,REVIEW
HD1	PQ46516	LED HOLDER,D14
HD2	PQM30038-2-2	LED HOLDER,D15
HD3	PQM30038-2-2	LED HOLDER,D16
HD4	PQM30038-6	LED HOLDER,D17
JA101	PEMC1076	PIN JACK(SW),VIDEO IN
JA102	PEMC1076	PIN JACK(SW),AUDIO IN L
JA103	PEMC1076	PIN JACK(SW),AUDIO IN R
CN3	PEMC0825-015	CONNECTOR,(1-15)DISPLAY
CN4	PEMC1102-110	CONNECTOR,(1-10)MAIN

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D ASSEMBLY <43>

IC1	JCP004/-WE	PRE/REC BOARD ASSEMBLY
IC201	AN3380NK	IC
Q1	2SC4081(QRS)	IC
Q2	2SA1576(QR)	TRANSISTOR
Q3	2SC4081(QRS)	TRANSISTOR
Q4	2SC4081(QRS)	TRANSISTOR
Q5	2SA1576(QR)	TRANSISTOR
Q6	2SA1576(QR)	TRANSISTOR
Q7	2SC4081(QRS)	TRANSISTOR
Q8	2SC4081(QRS)	TRANSISTOR
Q9	2SC4081(QRS)	TRANSISTOR
Q10	DTA144EU	TRANSISTOR
Q11	DTC144WU	TRANSISTOR
Q18	DTC143EU	TRANSISTOR
Q19	2SC4081(QRS)	TRANSISTOR
Q20	2SA1576(QR)	TRANSISTOR
Q21	2SC4081(QRS)	TRANSISTOR
Q101	2SC4081(QRS)	TRANSISTOR
Q102	2SC4081(QRS)	TRANSISTOR
Q103	2SC4081(QRS)	TRANSISTOR
Q104	DTA144EU	TRANSISTOR
Q105	2SC4081(QRS)	TRANSISTOR
Q106	DTA124EU	TRANSISTOR
Q108	DTC144WU	TRANSISTOR
Q109	DTC124EU	TRANSISTOR
Q110	2SA1576(QR)	TRANSISTOR
Q111	2SC4081(QRS)	TRANSISTOR
Q112	2SA1576(QR)	TRANSISTOR
Q113	2SC4081(QRS)	TRANSISTOR
Q114	2SA1576(QR)	TRANSISTOR
Q115	2SC4081(QRS)	TRANSISTOR
Q116	2SC4081(QRS)	TRANSISTOR
Q119	2SC4081(QRS)	TRANSISTOR
Q201	DTC124TU	TRANSISTOR
Q202	DTC124TU	TRANSISTOR
Q203	DTC124EU	TRANSISTOR

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
Q205	DTA114EU	TRANSISTOR	
Q206	DTC114WU	TRANSISTOR	
Q207	DTC124EU	TRANSISTOR	
Q210	DTC144WU	TRANSISTOR	
Q211	DTA114EU	TRANSISTOR	
Q301	2SA933S(Q)	TRANSISTOR	
Q302	2SA933S(Q)	TRANSISTOR	
Q303	DTC124EU	TRANSISTOR	
Q304	2SA933S(Q)	TRANSISTOR	
D2	1SS355	DIODE	
D7	1SS355	DIODE	
D101	DAN202U	DIODE	
	or MA141WK	DIODE	
D102	1SS355	DIODE	
D103	DAN202U	DIODE	
	or MA141WK	DIODE	
D203	1SS355	DIODE	
D204	1SS355	DIODE	
R3	QRSA08J-271YN	RESISTOR	270Ω, 1/10W
R4	QRSA08J-430YN	RESISTOR	43Ω, 1/10W
R5	QRSA08J-300YN	RESISTOR	30Ω, 1/10W
R6	QRSA08J-271YN	RESISTOR	270Ω, 1/10W
R7	QRSA08J-330YN	RESISTOR	33Ω, 1/10W
R8	QRSA08J-300YN	RESISTOR	30Ω, 1/10W
R9	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R10	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R11	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R12	NVP1311-153N	V RESISTOR, REC FM LEVEL	
R13	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R14	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R15	QRSA08J-301YN	RESISTOR	300Ω, 1/10W
R16	QRSA08J-151YN	RESISTOR	150Ω, 1/10W
R17	QRSA08J-152YN	RESISTOR	1.5kΩ, 1/10W
R18	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R19	NRVA62D-203N	RESISTOR	20kΩ, 1/16W
R20	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R21	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R22	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R23	QRSA08J-104YN	RESISTOR	100kΩ, 1/10W
R24	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R25	QRSA08J-512YN	RESISTOR	5.1kΩ, 1/10W
R26	QRSA08J-272YN	RESISTOR	2.7kΩ, 1/10W
R27	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R28	QRSA08J-822YN	RESISTOR	8.2kΩ, 1/10W
R30	QRSA08J-681YN	RESISTOR	680Ω, 1/10W
R31	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R32	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R33	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R34	QRSA08J-301YN	RESISTOR	300Ω, 1/10W
R35	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R36	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R37	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R38	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W
R39	QRSA08J-162YN	RESISTOR	1.6kΩ, 1/10W
R40	QRSA08J-152YN	RESISTOR	1.5kΩ, 1/10W
R41	QRSA08J-272YN	RESISTOR	2.7kΩ, 1/10W
R42	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R43	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R44	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R48	QRSA08J-681YN	RESISTOR	680Ω, 1/10W
R101	QRSA08J-152YN	RESISTOR	1.5kΩ, 1/10W
R102	QRSA08J-471YN	RESISTOR	470Ω, 1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R103	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R104	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R105	QRSA08J-183YN	RESISTOR	18kΩ, 1/10W
R106	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R107	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R108	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R109	QRSA08J-122YN	RESISTOR	1.2kΩ, 1/10W
R110	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R111	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R112	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
R113	QVPA603-222Z	V RESISTOR, S-SP VIDEO EQ	
R114	QVPA603-222Z	V RESISTOR, S-EP VIDEO EQ	
R115	QRSA08J-331YN	RESISTOR	330Ω, 1/10W
R116	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R117	QRSA08J-752YN	RESISTOR	7.5kΩ, 1/10W
R118	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W
R119	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W
R120	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R121	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R122	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
R123	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
R124	QRSA08J-822YN	RESISTOR	8.2kΩ, 1/10W
R125	QRSA08J-333YN	RESISTOR	33kΩ, 1/10W
R126	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R127	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R128	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R129	QRSA08J-511YN	RESISTOR	510Ω, 1/10W
R130	QRSA08J-103YN	RESISTOR	10kΩ, 1/10W
R131	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R132	QRSA08J-273YN	RESISTOR	27kΩ, 1/10W
R133	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R134	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R135	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R136	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R137	QRSA08J-331YN	RESISTOR	330Ω, 1/10W
R138	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R139	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
R140	QRSA08J-302YN	RESISTOR	3kΩ, 1/10W
R141	QRSA08J-562YN	RESISTOR	5.6kΩ, 1/10W
R142	QRSA08J-392YN	RESISTOR	3.9kΩ, 1/10W
R149	QRSA08J-151YN	RESISTOR	150Ω, 1/10W
R150	QRSA08J-182YN	RESISTOR	1.8kΩ, 1/10W
R151	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R201	QRSA08J-223YN	RESISTOR	22kΩ, 1/10W
R202	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R203	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
R204	QRSA08J-274YN	RESISTOR	270kΩ, 1/10W
R205	QRSA08J-102YN	RESISTOR	1kΩ, 1/10W
R209	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R214	QRSA08J-560YN	RESISTOR	56Ω, 1/10W
R215	QRSA08J-560YN	RESISTOR	56Ω, 1/10W
R216	QVPA603-331Z	V RESISTOR, AUDIO REC FM LEVEL	
R217	QRSA08J-153YN	RESISTOR	15kΩ, 1/10W
R218	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R219	QRSA08J-222YN	RESISTOR	2.2kΩ, 1/10W
R220	QRSA08J-332YN	RESISTOR	3.3kΩ, 1/10W
R301	QRSA08J-221YN	RESISTOR	220Ω, 1/10W
R302	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R303	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
R304	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W
R305	QRSA08J-683YN	RESISTOR	68kΩ, 1/10W
R306	QRSA08J-393YN	RESISTOR	39kΩ, 1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION		#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R307	QRSA08J-472YN	RESISTOR	4.7kΩ, 1/10W	C112	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
R308	QRSA08J-473YN	RESISTOR	47kΩ, 1/10W	C113	QCTA1CH-470	CAPACITOR	47pF, 16V
C1	QCYA1EK-104	CAPACITOR	0.1μF, 25V	C115	QCTA1CH-390	CAPACITOR	39pF, 16V
C2	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C116	QCTA1CH-180	CAPACITOR	18pF, 16V
C3	QEK60JM-107	E CAPACITOR	100μF, 6.3V	C117	QCTA1CH-100	CAPACITOR	10pF, 16V
C4	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C118	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
C5	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C119	QCTA1CH-220	CAPACITOR	22pF, 16V
C12	QCTA1CH-100	CAPACITOR	10pF, 16V	C120	QCTA1CH-150	CAPACITOR	15pF, 16V
C13	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C122	QCTA1CH-270	CAPACITOR	27pF, 16V
C14	QCYA1EK-473	CAPACITOR	0.047μF, 25V	C123	QCTA1CH-680	CAPACITOR	68pF, 16V
C15	QCYA1EK-223	CAPACITOR	0.022μF, 25V	C124	QCTA1CH-150	CAPACITOR	15pF, 16V
C18	QCFA1EK-223	CAPACITOR	0.022μF, 25V	C125	QCSA1HJ-820	CAPACITOR	82pF, 50V
C19	QCYA1EK-473	CAPACITOR	0.047μF, 25V	C126	QCTA1CH-100	CAPACITOR	10pF, 16V
C20	QCTA1CH-100	CAPACITOR	10pF, 16V	C127	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
C21	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C128	QEK61CM-476	E CAPACITOR	47μF, 16V
C22	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C129	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
C23	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C132	QCYA1HK-102	CAPACITOR	0.001μF, 50V
C26	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C201	QCFA1EZ-104	CAPACITOR	0.1μF, 25V
C27	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C202	QCTA1CH-391	CAPACITOR	390pF, 16V
C28	QEK60JM-476	E CAPACITOR	47μF, 6.3V	C203	QCTA1CH-561	CAPACITOR	560pF, 16V
C29	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C204	QCTA1CH-102	CAPACITOR	0.001μF, 16V
C30	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C205	QCTA1CH-561	CAPACITOR	560pF, 16V
C31	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C206	QCTA1CH-102	CAPACITOR	0.001μF, 16V
C32	QCYA1HJ-222	CAPACITOR	0.0022μF, 50V	C207	QCFA1CZ-224	CAPACITOR	0.22μF, 16V
C33	QCYA1HJ-222	CAPACITOR	0.0022μF, 50V	C208	QCTA1CH-391	CAPACITOR	390pF, 16V
C34	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C209	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C35	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C210	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C36	QCFA1CZ-105	CAPACITOR	1μF, 16V	C211	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C37	QCTA1CH-391	CAPACITOR	390pF, 16V	C213	QCTA1CH-331	CAPACITOR	330pF, 16V
C38	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C214	QCTA1CH-330	CAPACITOR	33pF, 16V
C39	QCTA1CH-151	CAPACITOR	150pF, 16V	C216	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C40	QCFA1CZ-474	CAPACITOR	0.47μF, 16V	C218	QCTA1CH-102	CAPACITOR	0.001μF, 16V
C41	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C219	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C42	QEK60JM-476	E CAPACITOR	47μF, 6.3V	C220	QEK61AM-476	E CAPACITOR	47μF, 10V
C43	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C221	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C44	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C224	QCFA1CZ-224	CAPACITOR	0.22μF, 16V
C45	QEK61CM-476	E CAPACITOR	47μF, 16V	C225	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C46	QCTA1CH-331	CAPACITOR	330pF, 16V	C226	QCTA1CH-101	CAPACITOR	100pF, 16V
C47	QCTA1CH-101	CAPACITOR	100pF, 16V	C301	QCYA1EK-223	CAPACITOR	0.022μF, 25V
C48	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	C302	QCTA1CH-121	CAPACITOR	120pF, 16V
C49	QCTA1CH-121	CAPACITOR	120pF, 16V	C303	QCTA1CH-220	CAPACITOR	22pF, 16V
C50	QCTA1CH-151	CAPACITOR	150pF, 16V	C305	QCTA1CH-102	CAPACITOR	0.001μF, 16V
C52	QCFA1EZ-104	CAPACITOR	0.1μF, 25V	C306	QCTA1CH-220	CAPACITOR	22pF, 16V
C53	QCTA1CH-121	CAPACITOR	120pF, 16V	C307	QEK61CM-106	E CAPACITOR	10μF, 16V
C54	QCTA1CH-121	CAPACITOR	120pF, 16V	C308	QCYA1HK-103	CAPACITOR	0.01μF, 50V
C55	QCTA1CH-331	CAPACITOR	330pF, 16V	L1	PELN0975-101JZ	COIL	100μH
C60	QCTA1CH-361	CAPACITOR	360pF, 16V	L2	PELN0975-101JZ	COIL	100μH
C68	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L3	PU59988-151JY	COIL	150μH
C69	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L4	PU59988-221J	COIL	220μH
C70	QCTA1CH-151	CAPACITOR	150pF, 16V	L5	PELN0975-101JZ	COIL	100μH
C74	QCYA1EK-104	CAPACITOR	0.1μF, 25V	L7	PU59988-180J	COIL	18μH
C101	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L8	PU59988-330J	COIL	33μH
C102	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L9	PU59988-330J	COIL	33μH
C103	QCTA1CH-101	CAPACITOR	100pF, 16V	L10	PU59988-181J	COIL	180μH
C104	QCTA1CH-101	CAPACITOR	100pF, 16V	L12	PELN0975-101JZ	COIL	100μH
C105	QCTA1CH-270	CAPACITOR	27pF, 16V	L101	PU59988-560J	COIL	56μH
C106	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L102	PU59988-120J	COIL	12μH
C107	QCTA1CH-680	CAPACITOR	68pF, 16V	L103	PU59988-330J	COIL	33μH
C108	QCTA1CH-390	CAPACITOR	39pF, 16V	L104	PU59988-330J	COIL	33μH
C109	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L105	PU59988-220JY	COIL	22μH
C110	QCFA1HZ-103	CAPACITOR	0.01μF, 50V	L106	PU59988-180J	COIL	18μH
C111	QCTA1CH-470	CAPACITOR	47pF, 16V	L107	PU59988-390J	COIL	39μH

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
L108	PU59988-121JY	COIL	120μH
L109	PU59988-100J	COIL	10μH
L112	PELN0975-101JZ	COIL	100μH
L201	PELN0975-101JZ	COIL	100μH
L202	PELN0530-221JZ	COIL	220μH
L301	PU59988-150J	COIL	15μH
L302	PELN0975-101JZ	COIL	100μH
SLD1	PQ21805	SHIELD FLAME	
CN1	PU59973-11	CONNECTOR,(1-11)UPPER DRUM	
CN2	PEMC1056-114	CONNECTOR,(1-14)MAIN AUDIO	
CN3	PEMC1056-114	CONNECTOR,(1-14)MAIN VIDEO	

DIGITAL SUB BOARD ASSEMBLY <49>

PWBA5	PB10972B5	DIGITAL SUB BOARD ASSEMBLY
CN101	PEMC0723-014	CONNECTOR,(1-14)MAIN
CN102	PEMC0723-014	CONNECTOR,(1-14)MAIN
CN104	PEMC1079-008	CONNECTOR,(1-8)DIGITAL SUB

PDC BOARD ASSEMBLY <70>

PWBA6	PB10972B6	PDC BOARD ASSEMBLY	
IC701	MV1822	IC	
Q701	DTC144ES	TRANSISTOR	
R702	QRD161J-472	RESISTOR	4.7kΩ, 1/6W
R703	QRD161J-221	RESISTOR	220Ω, 1/6W
R704	QRD161J-221	RESISTOR	220Ω, 1/6W
R708	QRD161J-473	RESISTOR	47kΩ, 1/6W
R709	QRD161J-221	RESISTOR	220Ω, 1/6W
C701	QCSB1HJ-560	CAPACITOR	56pF, 50V
C702	QCSB1HJ-560	CAPACITOR	56pF, 50V
C704	QFV21HJ-184	F CAPACITOR	0.18μF, 50V
C706	QFV21HJ-184	F CAPACITOR	0.18μF, 50V
C708	QCVB1CN-103	CAPACITOR	0.01μF, 16V
C709	QEKJ1CM-476	E CAPACITOR	47μF, 16V
C714	QFV11HJ-103	F CAPACITOR	0.01μF, 50V
△ X701	PEVB0551	CRYSTAL RESONATOR	
CN701	PEMC1080-108	CONNECTOR, (1-8) DIGITAL SUB	

Y/C SEPA BOARD ASSEMBLY <89>

PWBA	PB20669D	Y/C SEPA BOARD ASSEMBLY
IC1	NJM2240M	IC
IC2	JCP0042	IC
Q1	2SC4081(QRS)	TRANSISTOR
Q2	2SA1576(QRS)	TRANSISTOR
Q3	2SC4081(QRS)	TRANSISTOR

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
Q4	2SA1576(QRS)	TRANSISTOR	
Q5	2SC4081(QRS)	TRANSISTOR	
Q6	2SA1576(QRS)	TRANSISTOR	
Q7	2SC4081(QRS)	TRANSISTOR	
Q8	2SC4081(QRS)	TRANSISTOR	
Q9	2SC4081(QRS)	TRANSISTOR	
Q10	2SC3932(ST)	TRANSISTOR	
Q11	2SC4081(QRS)	TRANSISTOR	
Q12	2SC4081(QRS)	TRANSISTOR	
Q13	2SC4081(QRS)	TRANSISTOR	
Q14	2SC3932(ST)	TRANSISTOR	
Q15	2SA1576(QRS)	TRANSISTOR	
D1	DAP202U	DIODE	
R1	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R2	NRSA63J-471N	RESISTOR	470Ω, 1/16W
R3	NRSA63J-361N	RESISTOR	360Ω, 1/16W
R4	NRSA63G-332N	RESISTOR	3.3kΩ, 1/16W
R5	NRSA63J-271N	RESISTOR	270Ω, 1/16W
R6	NRSA63J-271N	RESISTOR	270Ω, 1/16W
R7	NRSA63J-271N	RESISTOR	270Ω, 1/16W
R8	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R9	NRSA63J-473N	RESISTOR	47kΩ, 1/16W
R10	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R11	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R12	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R13	NRSA63J-182N	RESISTOR	1.8kΩ, 1/16W
R14	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R15	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R16	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R17	NRSA63J-681N	RESISTOR	680Ω, 1/16W
R18	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R19	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R21	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R22	NRSA63J-681N	RESISTOR	680Ω, 1/16W
R23	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R24	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R25	NRSA63J-132N	RESISTOR	1.3kΩ, 1/16W
R26	NRSA63J-472N	RESISTOR	4.7kΩ, 1/16W
R27	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R28	NRSA63J-361N	RESISTOR	360Ω, 1/16W
R29	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R30	NRSA63J-223N	RESISTOR	22kΩ, 1/16W
R31	NRSA63J-223N	RESISTOR	22kΩ, 1/16W
R32	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R33	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R34	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R35	NRSA63J-472N	RESISTOR	4.7kΩ, 1/16W
R36	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R37	NRSA63J-361N	RESISTOR	360Ω, 1/16W
R38	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R39	NRSA63J-0R0N	RESISTOR	0Ω, 1/16W
R40	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R41	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R42	NRSA63J-331N	RESISTOR	330Ω, 1/16W
R43	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R44	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R45	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R46	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R47	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R48	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R49	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R50	NRSA63J-102N	RESISTOR	1kΩ, 1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R51	NRSA63J-102N	RESISTOR	1kΩ, 1/16W
R54	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R63	NRSA63J-222N	RESISTOR	2.2kΩ, 1/16W
R66	NRSA63J-103N	RESISTOR	10kΩ, 1/16W
R67	NRSA63J-153N	RESISTOR	15kΩ, 1/16W
R68	NVP1311-223N	V RESISTOR, DIGITAL I/O LEVEL	
C1	NCS31HJ-8R0A	CAPACITOR	8pF, 50V
C2	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C3	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C4	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C5	QEK61EM-475	E CAPACITOR	4.7μF, 25V
C6	NCB31HK-102A	CAPACITOR	0.001μF, 50V
C7	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C8	NCT06CH-5R0A	CAPACITOR	5pF, 50V
C9	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C10	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C11	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C12	QEK60JM-337	E CAPACITOR	330μF, 6.3V
C13	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C14	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C15	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C16	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C17	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C18	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C19	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C20	QEK60JM-107	E CAPACITOR	100μF, 6.3V
C21	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C22	QEK60JM-337	E CAPACITOR	330μF, 6.3V
C24	QEK60JM-476	E CAPACITOR	47μF, 6.3V
C25	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C26	QEK61HM-105	E CAPACITOR	1μF, 50V
C27	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C28	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C29	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C30	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C31	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C32	QEK60JM-476	E CAPACITOR	47μF, 6.3V
C33	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C34	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C35	QEK60JM-476	E CAPACITOR	47μF, 6.3V
C36	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C37	QEK61CM-106	E CAPACITOR	10μF, 16V
C38	QEK60JM-476	E CAPACITOR	47μF, 6.3V
C39	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C40	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C41	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C42	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C43	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C44	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C45	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C46	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C47	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C48	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C56	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C64	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C66	NCS31HJ-470A	CAPACITOR	47pF, 50V
C67	NCS31HJ-470A	CAPACITOR	47pF, 50V
C68	NCS31HJ-470A	CAPACITOR	47pF, 50V
C69	NCS31HJ-470A	CAPACITOR	47pF, 50V
C70	NCS31HJ-470A	CAPACITOR	47pF, 50V
C71	NCS31HJ-470A	CAPACITOR	47pF, 50V
C72	NCS31HJ-470A	CAPACITOR	47pF, 50V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C73	NCS31HJ-470A	CAPACITOR	47pF, 50V
C74	NCS31HJ-470A	CAPACITOR	47pF, 50V
C75	NCS31HJ-470A	CAPACITOR	47pF, 50V
C76	NCS31HJ-470A	CAPACITOR	47pF, 50V
C77	NCS31HJ-470A	CAPACITOR	47pF, 50V
C78	NCS31HJ-470A	CAPACITOR	47pF, 50V
C79	NCS31HJ-470A	CAPACITOR	47pF, 50V
C82	NCB31HK-103A	CAPACITOR	0.01μF, 50V
C83	QEK60JM-476	E CAPACITOR	47μF, 6.3V
C84	NCF31EZ-104A	CAPACITOR	0.1μF, 25V
C89	QEK61CM-106	E CAPACITOR	10μF, 16V
C91	QEK61HM-474	E CAPACITOR	0.47μF, 50V
C92	QEK61HM-474	E CAPACITOR	0.47μF, 50V
L1	PU48530-100J	COIL	10μH
L2	PU48530-101K	COIL	100μH
L3	PU59153-101K	COIL	100μH
L4	PU59153-101K	COIL	100μH
L5	PU48530-101K	COIL	100μH
L6	PU48530-101K	COIL	100μH
L7	PU48530-101K	COIL	100μH
L8	PU59153-101K	COIL	100μH
L9	PU48530-101K	COIL	100μH
L10	PU48530-101K	COIL	100μH
LPF1	PELN0922-S	LOW PASS FILTER	
LPF2	PELN0922-S	LOW PASS FILTER	
LPF3	PELN0922-S	LOW PASS FILTER	
LPF4	PELN0922-S	LOW PASS FILTER	
LPF5	PELN0922-S	LOW PASS FILTER	
LC1	PU59736-102	N FILTER	
LC2	PU59736-331	N FILTER	
SLD1	PQ34851-1-1	SHIELD FRAME	
SLD2	PQ34852-1-2	SHIELD COVER	
CN1	PEMC0712-112	PIN HEADER	
CN2	PEMC0712-110	PIN HEADER	

SECTION 6

TECHNICAL INFORMATION

6.1 SYSCON CIRCUIT

6.1.1 Syscon CPU pin function(IC601) 1/2

PIN NO.	LABEL	IN/OUT	NOTE
1	A. LVL. R	IN	AUDIO INDICATOR LEVEL INPUT (Rch)
2	A. LVL. L	IN	AUDIO INDICATOR LEVEL INPUT (Lch)
3	IF AGC	IN	IF AGC DETECTION (Not used)
4	AVRG FM	IN	AUTO TRACKING DATA (AVRG VOLTAGE OF PB LEVEL INPUT)
5	AVSS	-	GND
6	TEST	-	GND
7	X2	OUT	TIMER CLOCK (32.768KHz)
8	X1	IN	TIMER CLOCK (32.768KHz)
9	VSS	-	GND
10	OSC1	IN	SYSTEM CLOCK (10MHz)
11	OSC2	OUT	SYSTEM CLOCK (10MHz)
12	RESET	IN	RESET AT CONNECT VCR TO AC
13	(NMI)	-	NC
14	STTS	IN	LEADER TAPE DETECTION (DETECT ON:L)
15	SHUTTLE	IN	SHUTTLE SWITCH
16	JSA	IN	JOG DIAL PULSE INPUT (A)
17	JSB	IN	JOG DIAL PULSE INPUT (A)
18	END. S	IN	TRAILER TAPE DETECTION (DETECT ON:L)
19	SYNC DET	IN	SYNC DETECTION (NO SYNC:H)
20	LOCK DET	IN	TUNING LOCK CHECK
21	R. PAUSE	IN	REMOTE PAUSE CONTROL (PAUSE ON:L)
22	TU FG	IN	TAKE-UP REEL ROTATION DET/TAPE REMAIN
23	SUP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN
24	FLY E.	OUT	FLYING ERASE HEAD CONTROL (FE ON:H)
25	M. CE	OUT	MEMORY IC CHIP ENABLE
26	S. V. RESET	OUT	VIDEO CPU RESET
27	S. V. CS	OUT	VIDEO CPU CHIP ENABLE
28	M DATA	OUT	MEMORY IC DATA
29	PLL CE	OUT	TUNING IC CHIP ENABLE
30	MODE1	OUT	"L" FIXED
31	EXP DATA	OUT	EXPANDER IC DATA OUTPUT
32	H SEL	OUT	HEAD SELECT CONTROL (SP:L/LP:M/EP:H)
33	REC ST (H)	OUT	REC START:H
34	A/M/S	OUT	PRE/REC CIRCUIT CONTROL (AUTO:M/MANUAL:H/S&S:L)
35	V. REC (H)	OUT	VIDEO REC MODE:H
36	I2C SCL	OUT	NICAM DATA TRANSFER CLOCK
37	I2C SDA	OUT	NICAM CONTROL DATA OUTPUT
38	I. EXP CLK	OUT	EXPANDER IC (IC609) TRANSFER CLOCK
39	I. EXP DATA	OUT	EXPANDER IC (IC609) SERIAL DATA
40	RAE	OUT	REMOTE PAUSE CONTROL OUTPUT

Table 6-1-1 SYSCON CPU pin function(1/2)

6.1.2 Syscon CPU pin function(IC601) 2/2

PIN NO.	LABEL	IN/OUT	NOTE
41	SP (L)	OUT	SP MODE:L
42	MODE2	OUT	TIME LABEL DETECTION : L, COUNTRY CODE SEARCH:H
43	D. MUTE	OUT	DEMODULATOR AUDIO MUTE CONTROL (MUTE ON:H)
44	EE	OUT	EE MODE:L
45	VPCTL	OUT	V. PULSE ADDITION TIMING CONTROL
46	EXP DATA 2	OUT	EXPANDER IC(IC608) DATA OUTPUT
47	COM CLOCK	OUT	MEMORY IC DATA TRANSFER CLOCK
48	H REC ST	OUT	HiFi AUDIO REC START:L
49	-	-	GND
50	RC IN	IN	REMOTE CONTROL DATA INPUT
51	A. MUTE	OUT	AUDIO MUTE CONTROL (MUTE ON:H)
52	CTL C/D	IN	CTL PULSE INPUT (MODE DETECT/BLANK PORTION DET)
53	P. MUTE	OUT	PICTURE MUTE CONTROL (MUTE:L)
54	-	-	NC
55	CAP REV	OUT	CAPSTAN MOTOR CONTROL (FWD:H/REV:L)
56	DUTY I/O	IN/OUT	IN/OUT INDEX DATA CONTROL
57	S-OUT	OUT	ON SCREEN CONTROL DATA
58	S-IN	IN	ON SCREEN/FDP CONTROL DATA
59	S-CLK	OUT	DATA TRANSFER CLOCK
60	H DATA	OUT	VIDEO IC CONTROL DATA
61	STB	OUT	CLOCK OUTPUT PERMISSION
62	H CLK	OUT	VIDEO IC DATA TRANSFER CLOCK
63	VCC	-	SYSTEM POWER
64	S. DATA	OUT	SERVO IC CONTROL DATA
65	SERVO	OUT	CAPSTAN MOTOR CONTROL (SERVO:L/SYSCON:H)
66	PAUSE (L)	OUT	CAPSTAN MOTOR CONTROL (PAUSE:L)
67	CTL CLOCK	IN	INDEX CONTROL
68	LCM1	OUT	LOADING MOTOR DRIVE (1)
69	CAP FG	IN	TAPE SPEED DETECTION / BACK SPACE COUNT
70	LCM2	OUT	LOADING MOTOR DRIVE (2)
71	D. FF	IN	DRUM ROTATION DETECTION / REC TIMING CONTROL
72	AVCC	-	SYSTEM POWER (for ANALOG)
73	WIDE DET	IN	WIDE ASPECT DETECTION
74	PROTECT	IN	SWD5V/12V DETECT
75	DRUM V	OUT	DRUM MOTOR VOLTAGE CONTROL
76	CAP V	OUT	CAPSTAN MOTOR VOLTAGE DETECT
77	6.5H DET	IN	PB SWITCHING POINT ADJUST PULSE
78	DV DET	IN	DRUM DRIVE VOLTAGE DET
79	P. DOWN	IN	POWER DOWN DETECT (POWER DOWN:L)
80	S CURVE	IN	TUNING CHECK

Table 6-1-2 SYSCON CPU pin function(1/2)