JVC

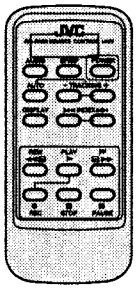
SERVICE MANUAL

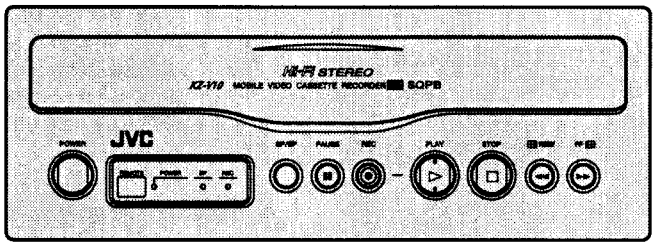
MOBILE VIDEO CASSETTE RECORDER

KZ-V10J

Area Suffix

J ---------- U.S.A.





Hi-Fi

VHS

Specifications

General

• Power supply	: DC12V (11-16V allowable) Negative ground
• Dimensions	: 10-1/4 "x3-3/4" x10-11/16" (259 x 94 x 270 mm) (width x height x depth)
• Mass	: 7.1 lbs (3.2 kg)
• Allowable working temperature	: 0°C to + 40°C (32°F to 72°F)
• Allowable relative humidity	: 35 % to 80 %
• Allowable conservation temperature	: -20°C to +60°C (12°F to 92°F)

Video

• Recording/playback system	: VHS format (with SQPB), Hi-Fi 4-heads helical scan
• Video signal	: NTSC standard signal

Audio

• Recording system	: VHS stereo Hi-Fi audio
• Audio track	: 2 Hi-Fi audio channels and 1 normal audio channel
• Remote control unit	: A code (A code and B code are switchable automatically in the main unit.)

Design and specifications subject to change without notice.

No. 49466
March 1998

⚠ CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

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JVC

VICTOR COMPANY OF JAPAN, LIMITED

KZ-V10

JVC

MOBILE VIDEO CASSETTE RECORDER

GRABADORA DE VIDEOCASSETTE MÓVIL

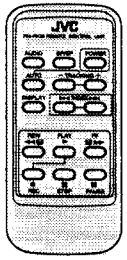
MAGNETOSCOPE MOBILE

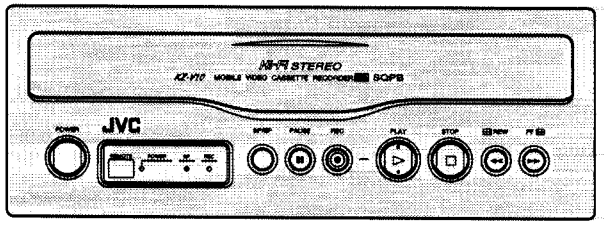
KZ-V10

ENGLISH

ESPAÑOL

FRANÇAIS





Hi-Fi VHS

For installation and connections, refer to the separate manual.
Para la instalación y las conexiones, refiérase al manual separado.
Pour l' installation et les raccordements, se référer au manuel séparé.

INSTRUCTIONS

MANUAL DE INSTRUCCIONES
MANUEL D'INSTRUCTIONS

For customer Use:
Enter below the serial No. which is located on the rear of cabinet. Retain this information for future reference.

Model No. **KZ-V10**

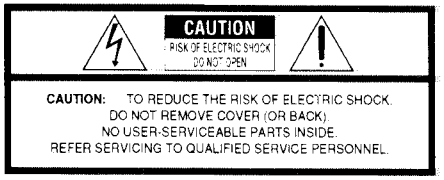
Serial No.

Printed in Japan
0398YSV*OZ*OZ

VNN3802-631
[J]

Dear Customer,
Thank you for purchasing the JVC VHS video cassette recorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of your new VCR.

CAUTIONS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

CAUTION:
This video cassette recorder should be used with DC 12V only. To prevent electric shocks and fire hazards, DO NOT use any other power source.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

"Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada."

Failure to heed the following precautions may result in damage to the VCR, remote control or video cassette.

1. DO NOT place the VCR . . .
   ... in an environment prone to extreme temperatures or humidity.
   ... in direct sunlight.
   ... in a dusty environment.
   ... in an environment where strong magnetic fields are generated.
   ... on a surface that is unstable or subject to vibration.
2. DO NOT block the VCR's ventilation openings.
3. DO NOT place heavy objects on the VCR or remote control.
4. DO NOT place anything which might spill on top of the VCR or remote control.
5. AVOID violent shocks to the VCR during transport.

****MOISTURE CONDENSATION**

Moisture in the air will condense on the VCR 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 VCR's power turned on for a few hours to let the moisture dry before inserting a tape.

****ABOUT HEAD CLEANING**

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Be sure to contact your nearest JVC dealer if such troubles occur.

Cautions on operation

- When the car is parked under the blazing sun or in an extremely cold place for a long time, wait a while to use this unit after the temperature of the cabin drops to the normal temperature.
- Use this unit as the engine is running. If this unit is used as the engine is stopping, it depletes the car battery and, if worst comes to worst, the battery fails in starting the engine.
- If this unit is disconnected during operation (playback, fast-forward, rewind, etc.), it may cause a machine failure. When disconnecting this unit, be sure to remove the video cassette from the unit beforehand.
- When the engine key is turned off, this unit is also turned off at the same time. To operate this unit again, turn it on once more after starting the engine.

VHS SQPB

- Cassettes marked "VHS" (or "S-VHS") can be used with this video cassette recorder. However, S-VHS recording is not possible with this model.
- This model is equipped with SQPB (S-VHS QUASI PLAY-BACK) that makes it possible to play back S-VHS recordings with regular VHS resolution.

CAUTION:
Change or modifications not approved by JVC could void user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

Tabel of contents

Features

- 4-heads stereo Hi-Fi video cassette recorder
- Cassette door with danger preventive dustproof cover
- Mountable in either vertical or horizontal posture thanks to the highly reliable vibration-resistant design
- Remote sensor unit extends the range to install the video cassette recorder.

Caution on recording in running

- Recording in running occasionally brings an unsatisfactory result because noise is frequently recorded in running and considerable vibration of the car makes recording disorder.

Protection circuits (self-diagnosing circuits)

This video cassette recorder incorporates some protection circuits inside.
If this video cassette recorder is used as it is dewed, it may damage the tape and video heads.

Dew sensor circuit

- When the cabin whose temperature is considerably low is rapidly heated or the humidity in the cabin is considerably high, insides of the windscreen and cabin windows are sometimes fogged. At the same time, inside of the video cassette recorder mounted on the car is dewed.
- In such the case (dewed condition), the dew sensor circuit functions to stop machine operation with indication of blinking POWER indicator lamp. When the machine falls into such the status, wait for several hours until the POWER indicator lamp stops blinking and lights continuously.

High temperature sensor circuit

- When the temperature of the machine becomes considerably high, the high temperature sensor circuit functions to stop machine operation with indication of blinking POWER indicator lamp. When the machine falls into such the status, turn off the machine and wait for a while until the POWER indicator Jamp stops blinking while leaving it in a cool place to lower the temperature. When turning on the machine again, make sure that the POWER indicator lamp does not blink before starting operation.

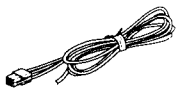
Tape protection circuit

- When the machine remains in the still playback, slow playback or recording pause mode for 5 minutes or longer, the tape protection circuit functions to turn off the machine for protecting the tape.

ACCESSORIES

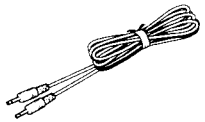
- Check to see if the following accessories are supplied with the video cassette recorder.

AV cord
(5 m/16.7ft. long)

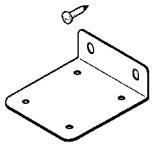


Power cord
(5m/16.7ft. long)

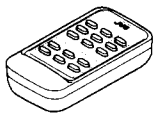
Remote sensor unit
(5m/16.7ft. long)



Remote control data cord
(5m/16.7ft. long)



Mounting bracket x 2
Tapping screw (ϕ 5 x 20 mm) x 4
Screw (M5 x 8 mm) x 4
Velcro tape x 2 sets

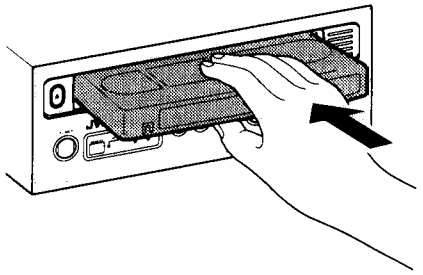


Remote control unit
(RM-RK20)

AA-size battery x 2
(for operation check)

Inserting/removing cassette

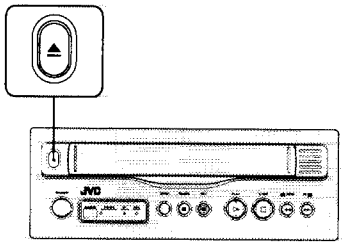
Inserting cassette into recorder



Open the dust-proof cover and insert a video cassette with the tape side up into the cassette compartment by gently pressing the center part.

- With insertion of a video cassette into the cassette compartment, the recorder is automatically turned on. (Automatic power on function)
- The tape counter is reset to 0:00:00. (Automatic counter reset function)
- When a video cassette whose recording protection tab is broken is inserted, the machine automatically starts playback of the cassette. (Automatic playback function)
- When the car is shaking, it is hard to insert a cassette because the machine is apt to hold the cassette firmly to prevent the cassette from vibration. In such a case, insert the cassette strongly or pull the cassette out of the recorder once and again try to insert it.
- When a video cassette is completely inserted, close the dust-proof cover.

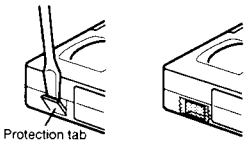
Removing cassette from recorder



Open the dust-proof cover and press the EJECT button in the STOP mode.

- Don't insert fingers or foreign substances into the cassette compartment. When a little child is near the video cassette recorder, pay heed to him/her not to do so.
- If a video cassette is inserted in wrong posture, it is automatically ejected by the function of the protection circuit. If it happens, wait for a few seconds and try to insert it correctly once again.
- After removing a cassette from the recorder, close the dust-proof cover without fail.

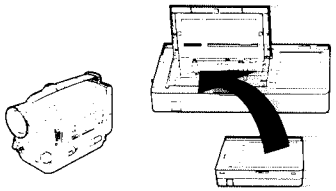
For protection of important recording



Break the recording protection tab of the cassette.

- If you want to use the cassette whose recording protection tab was broken for recording, cover the broken part with adhesive tape double.

How to play back VHS-C cassette tape recorded by Video Movie



- Use an optional VHS cassette adapter C-P6U to play back VHS-C cassette tape.

For playing back pictures clearly all the time (Use of head cleaning cassette)

■ If this video cassette recorder is used for a longtime, it makes playback pictures rough. In such a case, clean the video heads with an optional head cleaning cassette.

■ When the following symptom is observed:
- Playback picture is rough.
- Playback picture is unclear or no picture is reproduced on the screen.

What to do on such the occasions.

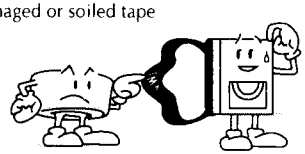
- Clean the video heads with a dry type head cleaning cassette.

■ If playback picture is still rough after the video heads are cleaned by the head cleaning cassette, consult the store that you got this recorder at or the nearest JVC dealer about the matter.

■ Factors to soil heads
- High temperature, high humidity (in the rainy season, etc.)

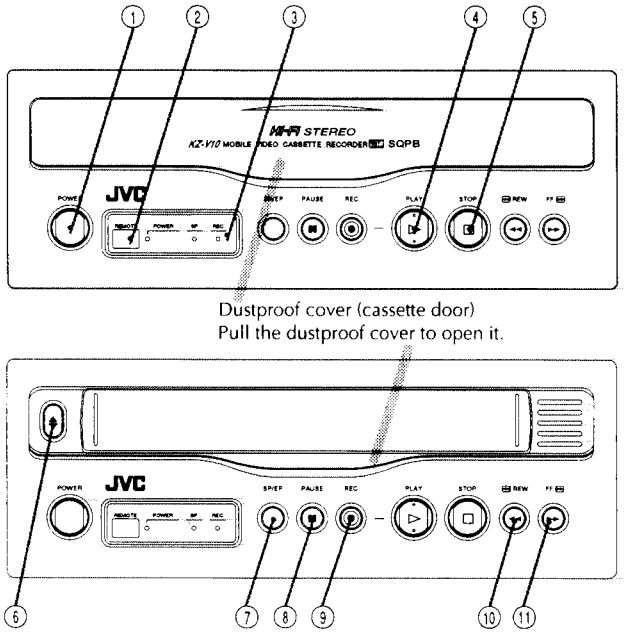
- Dust in air

- Damaged or soiled tape



- Long-time operation, etc.

FRONT VIEW



Dustproof cover (cassette door)
Pull the dustproof cover to open it.

① POWER button
Press this button to turn on or off this video cassette recorder.

② REMOTE (remote sensor)
Aim the remote control unit at this part for operating this video cassette recorder with the remote controller.

③ Indicator lamps
Each indicator lamp is on when its related function is in operation.
POWER : Power supply indicator lamp (red lamp)
SP : Standard play (SP) indicator lamp (green lamp)
REC : Recording indicator lamp (red lamp)

④ PLAY button
Press this button to play back a video cassette.

⑤ STOP button
Press this button to stop playback operation.

⑥ ⏏ (eject) button
Press this button to eject a video cassette.

⑦ SP/EP (standard play/extended play) selector button
Press this button to change the recording speed.

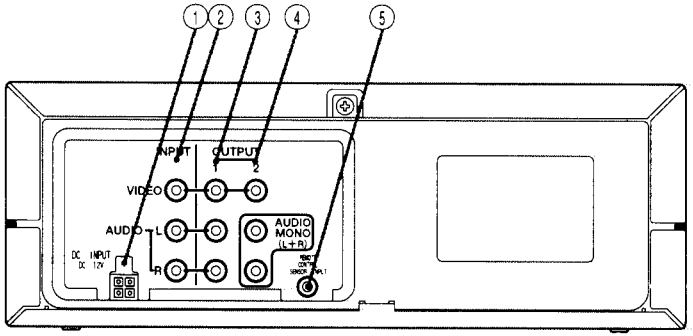
⑧ PAUSE button
Press this button to suspend recording or playback temporarily.

⑨ REC (recording) button
Press this button together with the PLAY button for recording.

⑩ REW (rewind) button
Press this button to rewind the tape.

⑪ FF (fast-forward) button
Press this button to fast-forward the tape.

REAR VIEW



① POWER CORD CONNECTOR

② INPUT (video and audio input) terminals

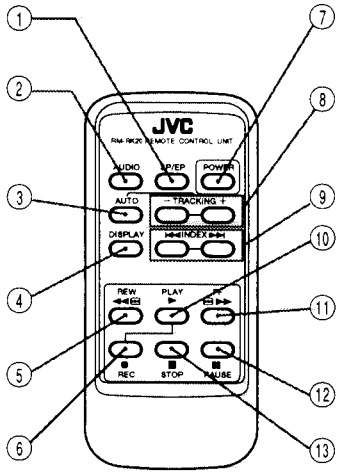
③ OUTPUT-1 (video and audio [stereo] output) terminals
Connect the video and stereo audio input terminals of a TV set to these terminals.

④ OUTPUT-2 (video and audio [monaural] output) terminals
Connect the video and monaural audio output terminals of a TV set to these terminals.

⑤ REMOTE CONTROL SENSOR INPUT terminal
Connect a supplied Remote sensor unit to this terminal.
While a Remote Sensor unit is connected to this terminal, the video cassette recorder cannot be operated by wireless remote control through the Remote sensor on the front panel.

For connecting the JVC AV control receiver (KD-SX1000R, etc.) with the Remote control data cord supplied as an accessory, refer to the instructions of the JVC AV control receiver.

REMOTE CONTROL UNIT



① SP/EP (standard play/extended play) selector button
When the standard play (SP) is selected, the SP indicator on the front panel is on.
Through recording SP and EP cannot be switched by the remote control unit.

② AUDIO selector button
Press this button to select a desired audio output.
Selected audio output is shown on the screen.
HI-FI: Hi-Fi audio output
L: Audio output on left channel only
R: Audio output on right channel only
NORM: Normal audio output
MIX: Mixed audio output

③ AUTO (automatic tracking) button
Press this button to switch on/off automatic tracking.

④ DISPLAY selector button
Press this button to select display of tape counter or tape remainder (by time).

⑤ REW (rewind) button
Press this button to rewind tape.

⑥ REC (recording) button
Press this button together with the PLAY button to start recording.

⑦ POWER button
Press this button to turn on/off the video cassette recorder.

⑧ TRACKING +/- buttons
Press these buttons for manual tape tracking. Before pressing these buttons, be sure to switch off automatic tracking with the AUTO button.

⑨ INDEX buttons
Press these buttons to search the beginning of a program.

⑩ PLAY button
Press this button to play back tape.

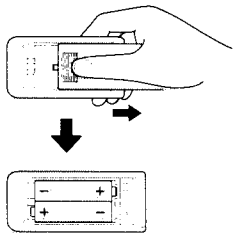
⑪ FF (fast-forward) button
Press this button to fast-forward tape.

⑫ PAUSE button
Press this button to suspend recording/playback temporarily.

⑬ STOP button
Press this button to stop playback.

How to set batteries in the battery compartment

•Set two AA-size (SUM-3, R6P) batteries in the battery compartment following the indications.



■ Cautions on batteries

- Since batteries supplied with the Remote control unit are just for operation check, they don't work for a long time.
- If the Remote controller won't be used for a considerably long time, remove batteries from it.

■ Batteries need replacement in the following condition.

- If the controllable distance of the Remote control unit becomes short, it shows that the batteries are consumed and they will be dead. In such a case, replace the batteries with new ones.

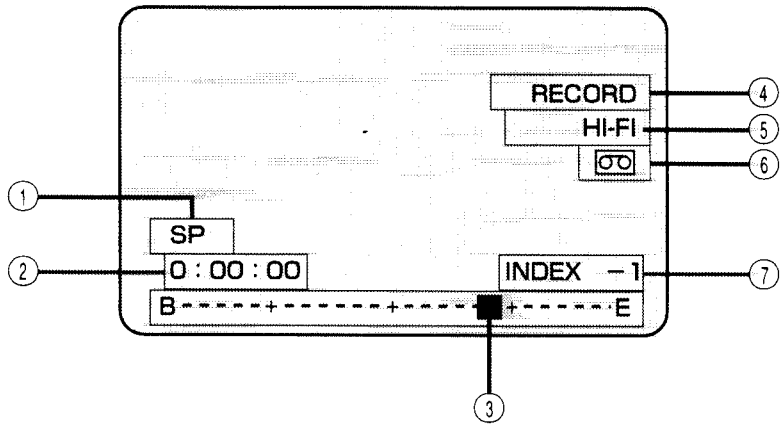
■ When replacing batteries:

- Replace batteries with two new AA-size batteries (alkaline batteries are recommended).
- Be sure to replace two batteries with new ones at the same time.
  (Don't use used batteries or different brands together.)
- Pay heed to the orientation (+ and - polarities) of each battery and set two batteries following the indications inside the battery compartment.
- Carefully read instructions appearing on the battery.

■ The Remote control unit conforms to the "A" code.

Indications on the screen

Operation and status of the video cassette recorder can be checked by indications appearing on the screen. Each time an operation button is pressed, operation of the video cassette recorder is shown for about 5 seconds.



① Recording/Playback tape speed indication
(SP/EP)

② Tape counter/Tape remainder indication (by time)
Indication of tape counter or tape remainder is switchable by the DISPLAY button on the remote controller.

③ Present tape position indication

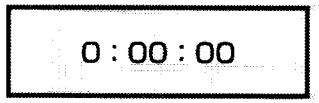
④ Tape status indication
(PLAY/RECORD/FF/REW/PAUSE)

⑤ Audio output indication
HI-FI: Hi-Fi audio output
L: Audio output on left channel only
R: Audio output on right channel only
NORM: Normal audio output
MIX: Mixed audio output

⑥ Cassette indication

⑦ Program index indication
(Indication of "MARK" blinks for about 2 seconds.)

Tape counter



Tape remainder

■ Indication of tape remainder is just a reference. Some kind of cassette needs a considerable long time to indicate the remainder of tape or fails in indicating the remainder.

Playback

Playing back

Preparation: Turn on a Monitor set or TV set connected with the video cassette recorder and set it to an external input mode (VIDEO 1, VIDEO 2, etc.).

1 Press the POWER button of the video cassette recorder to turn it on.
2 Insert a video cassette into the video cassette recorder.
When a video cassette whose recording protection tab is broken is inserted, the video cassette recorder automatically starts playback.
3 Press the PLAY button.
• Playback starts.
• Tape tracking is automatically adjusted.
■ Press the STOP button to discontinue playback.
■ When noise is generated in playback, press the AUTO button on the remote control unit to switch off the automatic tracking mode and manually adjust tape tracking with the TRACKING + and - buttons.

Fast-forwarding/Rewinding

Press the FF button or REW button when the tape remains stopping.

• Fast-forwarding or rewinding stops when the tape reaches its end or beginning.
• If the POWER button is pressed within 2 seconds after the REW button is pressed, the video cassette recorder is turned off after the tape is completely rewound to its beginning.
If the PLAY button is pressed within 2 seconds after the REW button is pressed, the video cassette recorder starts playback of the tape.

Fast-forwarding/Rewinding while looking at picture

Momentarily press the FF button or REW button in playback.

• The video cassette recorder starts search playback in the normal (FF button) or reverse (REW button) direction at a speed 7 times as fast as the normal in the SP mode or 21 times as fast as the normal in the EP mode.
• To play back the tape normally, press the PLAY button.
• If the FF button or REW button is continuously pressed for 2 seconds or longer in playback, the tape is fast played back in the normal (FF button) or reverse (REW button) direction (5 times as fast as the normal in the SP mode or 7 times as fast as the normal in the EP mode). When the FF or REW button is released from pressing, playback speed reverts to the normal.

Still playback/Frame-to-frame playback/Slow playback

Press the PAUSE button in playback.

• The playback picture becomes still.
• When the still picture fluctuates up and down, adjust tracking with the TRACKING +/- button on the remote controller so that the picture be comes stable.

Press the PAUSE button in the still playback mode.

• Each time the PAUSE button is pressed in the still playback mode, pictures are played back from frame to frame.
• If the same operation is performed in the reverse playback mode, pictures are played back from frame to frame in the reverse direction.

Continuously press the PAUSE button in playback for 2 seconds or longer.

• Playback speed goes down to 1/6 of the normal speed (slow playback).
• When noise is generated in this operation, adjust tracking with the TRACKING +/- button on the remote controller so that noise is minimized.
• If the same operation is performed in the reverse playback, slow playback is operated in the reverse direction.

■ To return to the normal playback from the slow playback, press the PLAY button.
• In playback at a speed different from the normal (in fast/slow playback), no sound is output from the video cassette recorder.
• If noise is generated in the fast playback, reverse playback or slow playback, it does not come from machine trouble.
• If still playback or slow playback is continuously operated for 5 minutes or longer, the video cassette recorder automatically stops playback for protecting the tape.
• If a badly recorded video tape or tape on which recording was performed by a different machine is played back, tracking adjustment occasionally results in failure.
• Automatic tracking is automatically activated the moment the video cassette recorder is turned on or a cassette is inserted.

Repeated playback

Press the PLAY button in playback for 5 seconds or more. (The PLAY indication blinks.)

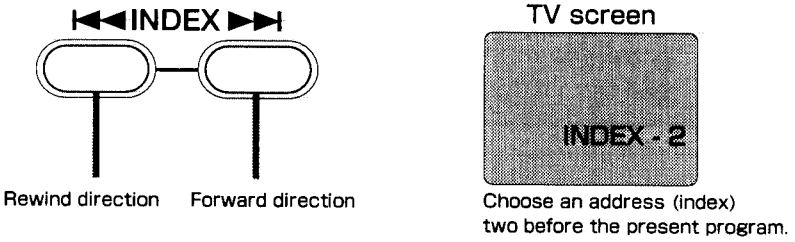
• The tape is repeatedly played back from the beginning to the end 20 times, and the 20th playback ends at the end of the tape.
■ To discontinue repeated playback halfway, press the STOP button.

Search playback

Playing back from the beginning of each program – Search playback

To start playback from the beginning of a program, search the index recorded at the beginning point of each program. Video cassette tapes recorded by JVC machine have automatically recorded the index marks.

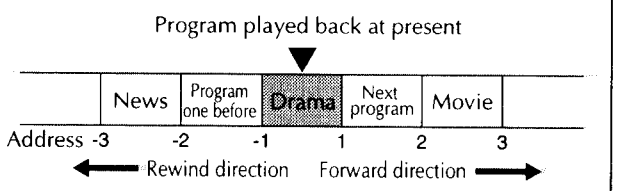
1 Choose a desired address (index) with the INDEX button on the remote control unit.



• Search a desired address (index) for automatic playback of the program.
• Each time the right button is pressed, the number of index increases. On the other hand, each time the left button is pressed, the number of index decreases.
• Maximum nine programs can be chosen at a time.

■ To discontinue search playback halfway, press the STOP button.

How to choose (specify) the address (index) of a program



[Example]
To choose the next program:
Press the INDEX button (▶▶I) once.
To choose the program one before:
Press the INDEX button (I◀◀) twice.

Connection to other apparatus

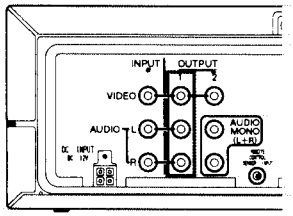
Connection to Mobile Color Monitor System KV-M65

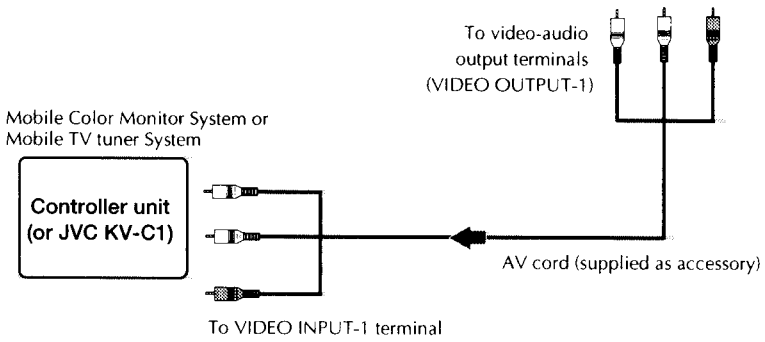
Connect the KV-M65 to the controller unit of the Mobile Color Monitor System KV-M65.

1 Connect the video-audio output terminals (VIDEO OUTPUT-1) of the KV-M65 and the video-audio input terminals (VIDEO INPUT-1) of the tuner unit of the KV-M65 with the AV cord supplied as an accessory.
2 When the JVC TV tuner system KV-C1 is used, the same applies to it.

Example of connection

➡ **Signal flow**





Connection to a video camera

If a video camera is connected to this video cassette recorder, picture and sound can be recorded by the machine. However, there are some video cameras that cannot be connected to this video cassette recorder. For details, refer to the instructions of the video camera.

1 Connect the audio-video output terminals of the camera to the audio-video output terminals of this video cassette recorder.

2 Insert a video cassette whose recording protection tab is not broken.
- The video cassette recorder is automatically turned on.
- Choose a recording speed of SP or EP with the SP/EP button.

3 While pressing the PAUSE button, press the REC button to enter the machine into the pause mode.
- The REC indicator lamp blinks.

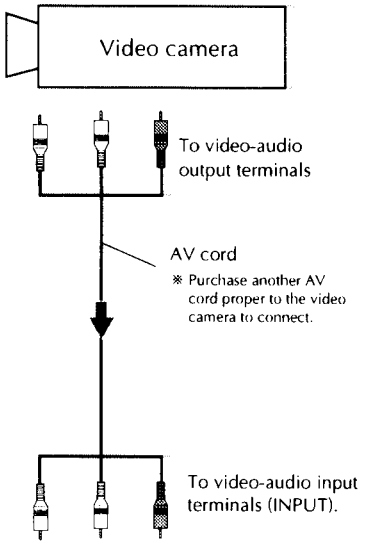
4 Press the PLAY button the moment you want to record the scene.
- The machine starts recording.

■ To suspend recording temporarily, press the PAUSE button.
■ To discontinue recording, press the STOP button.

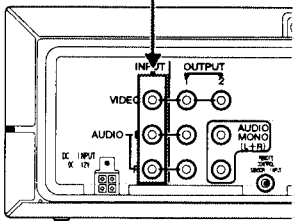
- If the machine remains in the pause mode for 5 minutes or longer, the pause mode is automatically canceled and the machine stops operation for protecting the video head.
- The copyright law forbids you to use matters that you recorded by the video cassette recorder without permission of the copyright holder except the case you use them for private enjoyment.

Example of connection

➡ **Signal flow**



KZ-V10



Troubleshooting

When you doubt if there is something wrong in the machine, check the symptom and cause referring to the following table.

■No power supply ☆Power cord is disconnected. ○Tightly plug the power cord into the jack.
■Machine does not work though power is normally supplied. (POWER indicator lamp is blinking.) ☆Machine is dewed inside, or high temperature sensor circuit is in operation. ○When the machine is dewed, wait for several hours until the inside becomes dry. ○When the high temperature sensor circuit is functioning, cool the cabin to lower the machine temperature.
■Indications don't disappear from the screen. ○Press the DISPLAY button on the remote control unit.
■Noise appears in a part (or some parts) of playback picture. ☆Abnormal tracking. ☆If noise appears in the same part of playback picture all the time, the tape is damaged by the part. ○Press the AUTO button on the remote control unit to cancel automatic tracking and manually adjust tracking with the TRACKING + and - buttons.
■Still picture fluctuates up and down. ☆Vertical hold is maladjusted. ○Adjust tracking with the TRACKING + and - buttons on the remote control unit.
■Abnormal color ■No video output ■No audio output ○Carefully read the instructions of the TV set connected to the video cassette recorder.
■Playback picture is rough or frosted. ☆Video heads are soiled. ○Clean the video heads with the head cleaning cassette.

Specifications

General

- Power supply : DC12V (11-16V allowable) Negative ground
- Dimensions : 10-1/4 "x3-3/4" x10-11/16" (259 x 94 x 270 mm) (width x height x depth)
- Mass : 7.1 lbs (3.2 kg)
- Allowable working temperature : 0°C to + 40°C (32°F to 72°F)
- Allowable relative humidity : 35 % to 80 %
- Allowable conservation temperature : -20°C to +60°C (12°F to 92°F)

Video

- Recording/playback system : VHS format (with SQPB), Hi-Fi 4-heads helical scan
- Video signal : NTSC standard signal

Audio

- Recording system : VHS stereo Hi-Fi audio
- Audio track : 2 Hi-Fi audio channels and 1 normal audio channel

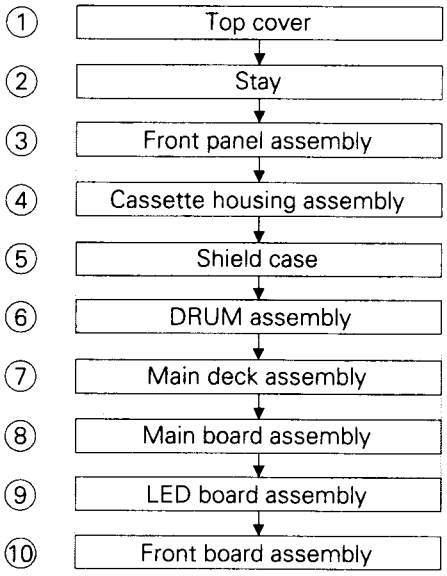
- Remote control unit : A code (A code and B code are switchable automatically in the main unit.)

Design and specifications subject to change without notice.

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling 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 laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	5(S1), 2(S2), (L1)	
②	STAY	D2	2(S3),WR1,WR2	
③	FRONT PANEL ASSEMBLY	D2	2(S4), 3(L2), *CN801	<NOTE 1> <NOTE 3>
④	CASSETTE HOUSING ASSEMBLY	D3	2(S5)	<NOTE 2>
⑤	SHIELD CASE	D4	2(S6), *CN1	
⑥	DRUM ASSEMBLY	D5	3(S7), WR3	<NOTE 3>
⑦	MAIN DECK ASSEMBLY	D6	2(S8),WR4,WR5, 2(L3),*CN703, *CN802	<NOTE 4>

(1) (2) (3) (4) (5)

(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) Indentification of part to be removed,unhooked,unlocked, released,unpluged,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	5(S1), 2(S2), (L1)	
②	STAY	D2	2(S3),WR1,WR2	
③	FRONT PANEL ASSEMBLY	D2	2(S4), 3(L2), *CN801	<NOTE 1> <NOTE 3>
④	CASSETTE HOUSING ASSEMBLY	D3	2(S5)	<NOTE 2>
⑤	SHIELD CASE	D4	2(S6), *CN1	
⑥	DRUM ASSEMBLY	D5	3(S7), WR3	<NOTE 3>
⑦	MAIN DECK ASSEMBLY	D6	2(S8),WR4,WR5, 2(L3),*CN703, *CN802	<NOTE 4>
⑧	MAIN BOARD ASSEMBLY	D7	4(L4), 2(L5)	
⑨	LED BOARD ASSEMBLY	D8	3(S9)	
⑩	FRONT BOARD ASSEMBLY	D8	2(S10)	

<NOTE1>
When reattaching the front panel assembly, make sure that the door opener ⓐ of the cassette housing assembly is lowered in position prior to the reinstallation.

<NOTE2>
When reattaching the cassette housing assembly, pay careful attention to the switch lever not to make it touch the REC switch knob of the MAIN board assembly from the upside. (If the REC switch knob of the MAIN board assembly is damaged, cassette loading is impossible.)

<NOTE3>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE4>
- When removing the Main deck assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Main deck assembly.
- When reattaching the Main deck assembly to the Main board assembly, make sure to set the spacers into the retaining slots respectively.

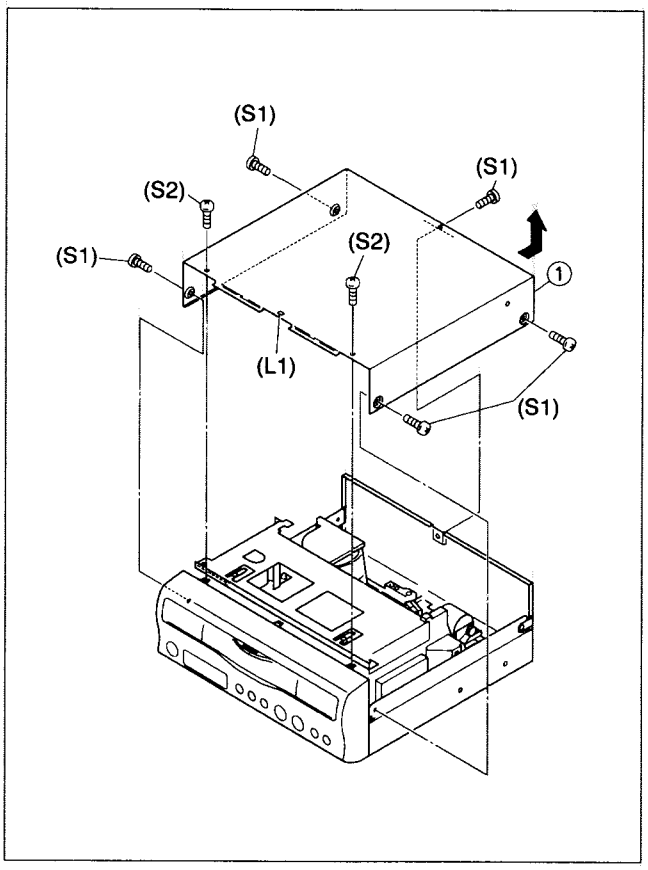


Fig. D1

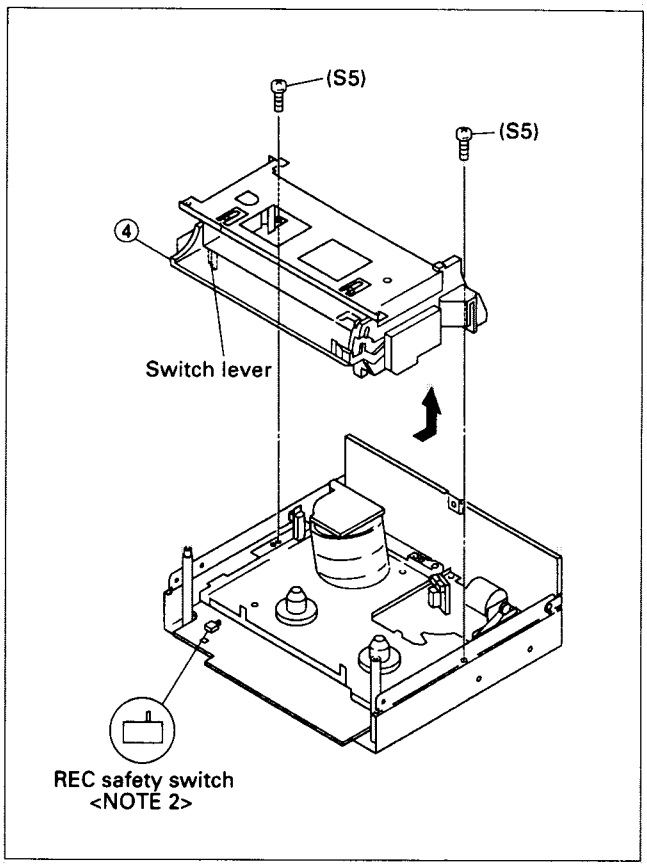


Fig. D3

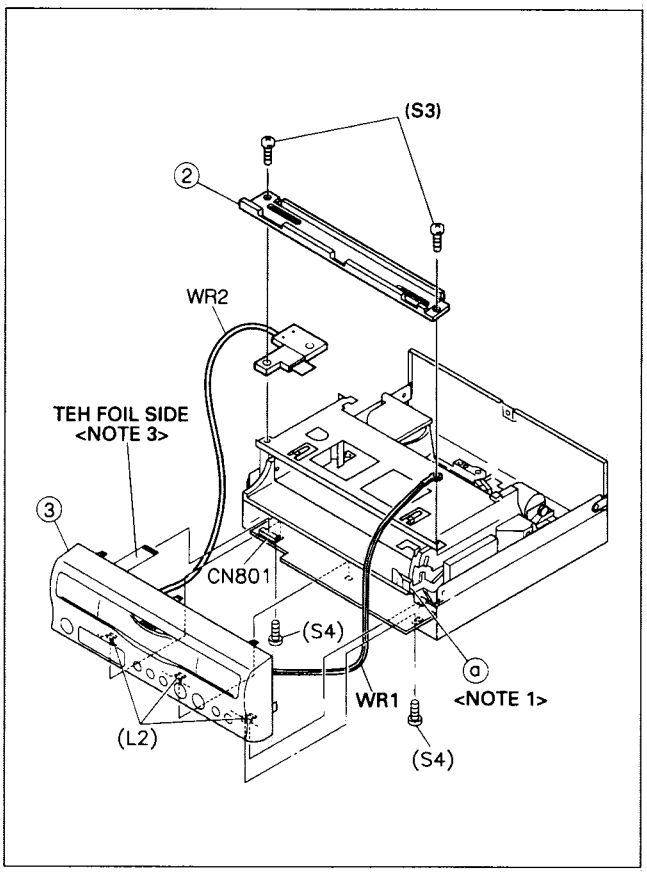


Fig. D2

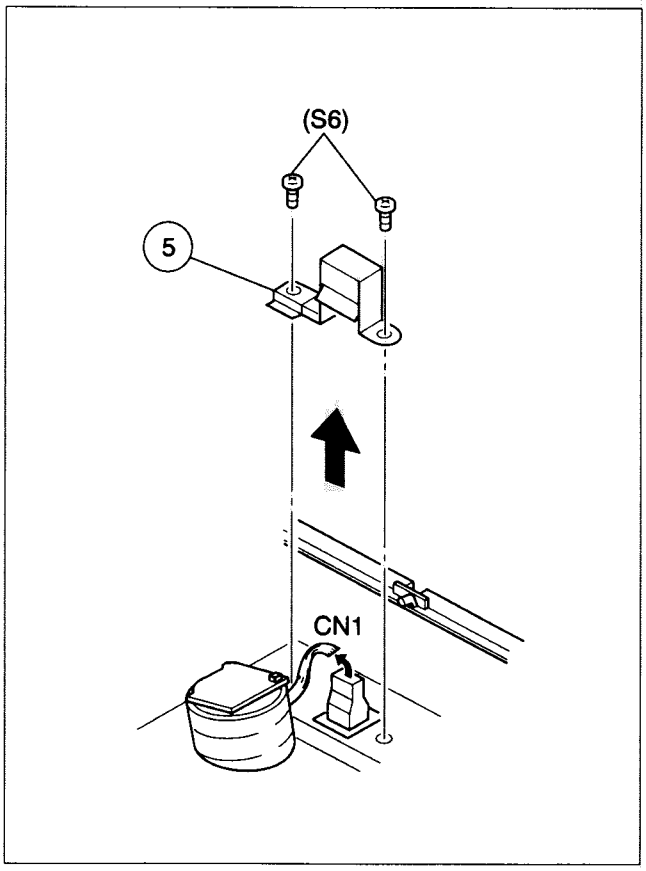


Fig. D4

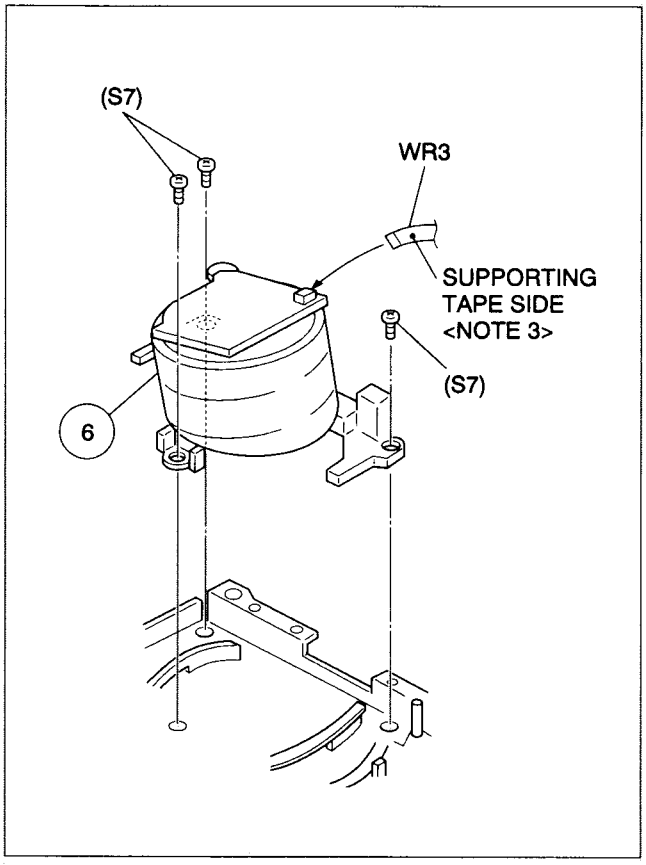


Fig. D5

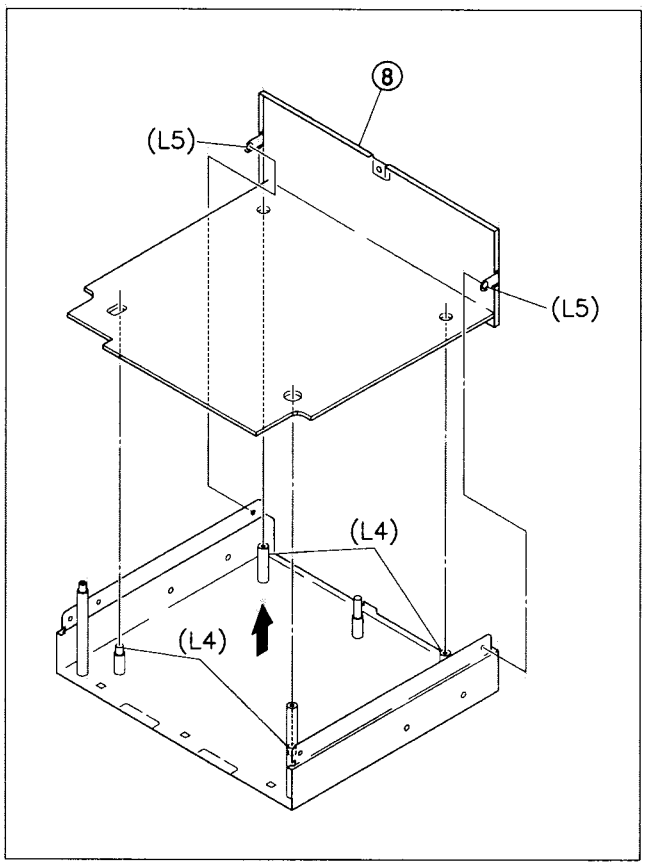


Fig. D7

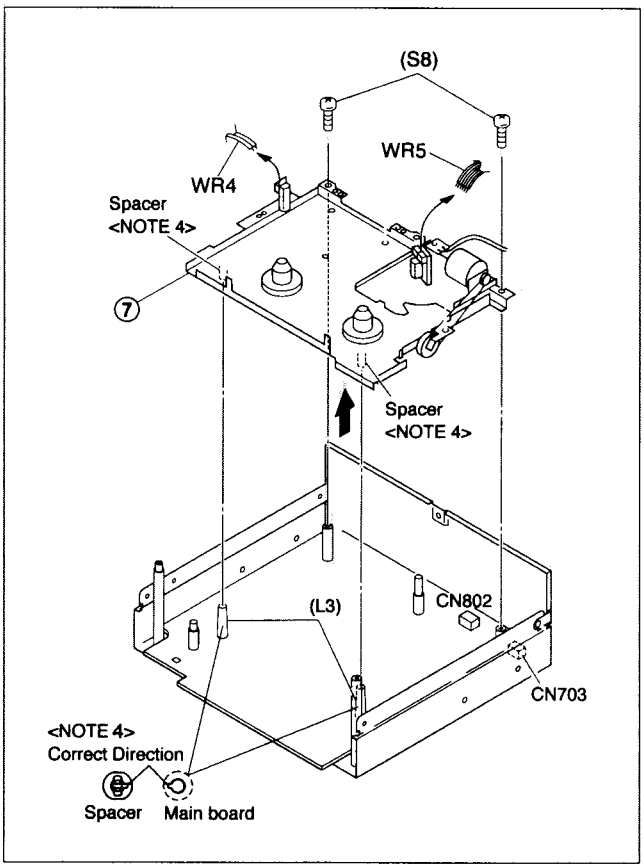


Fig. D6

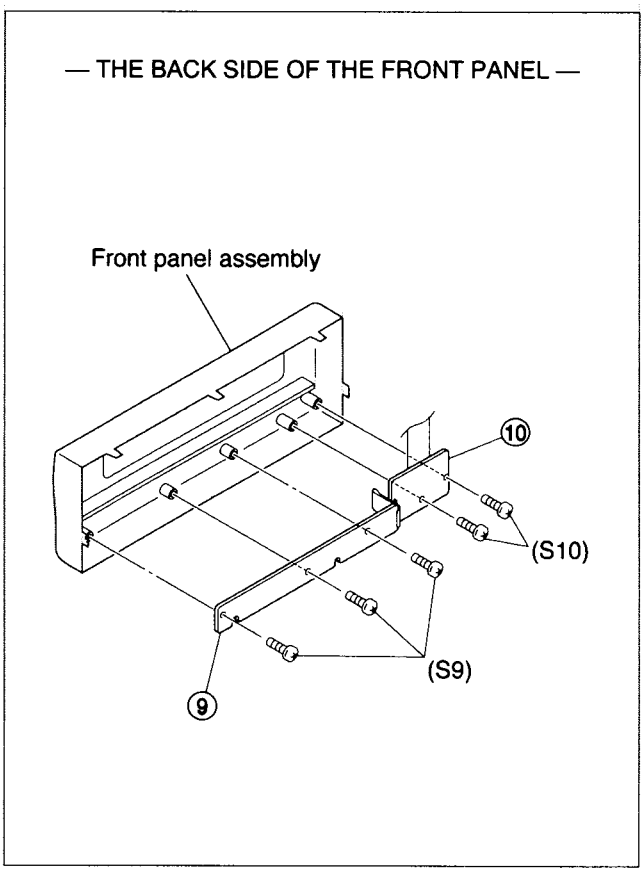


Fig. D8

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.

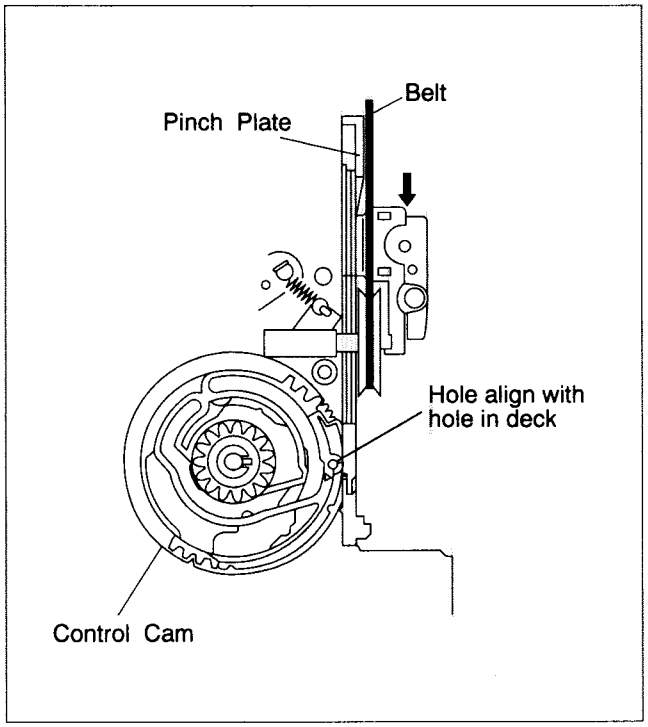


Fig. 1-4-1

1.5 SERVICE POSITION

In order to facilitate diagnosis and the repair of the Main deck assembly, this unit is constructed so as to allow the Main deck and the Main board assemblies to be removed together from the Chassis assembly.

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

(1) Remove the Top cover. (See Fig. D1 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(2) Remove the stay and Front panel assembly. (See Fig. D2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(3) Take out 2 screws Ⓐ as shown in Fig.1-5-1.

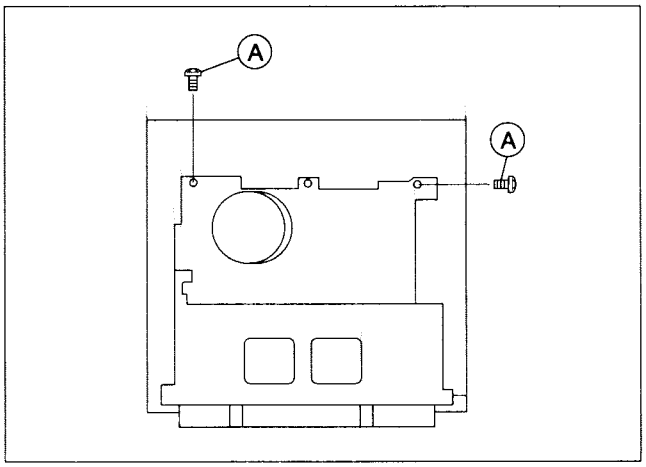


Fig. 1-5-1

(4) Remove the Mechanism assembly (including Cassette housing) and Main board assembly out of the chassis as shown in Fig. 1-5-2.

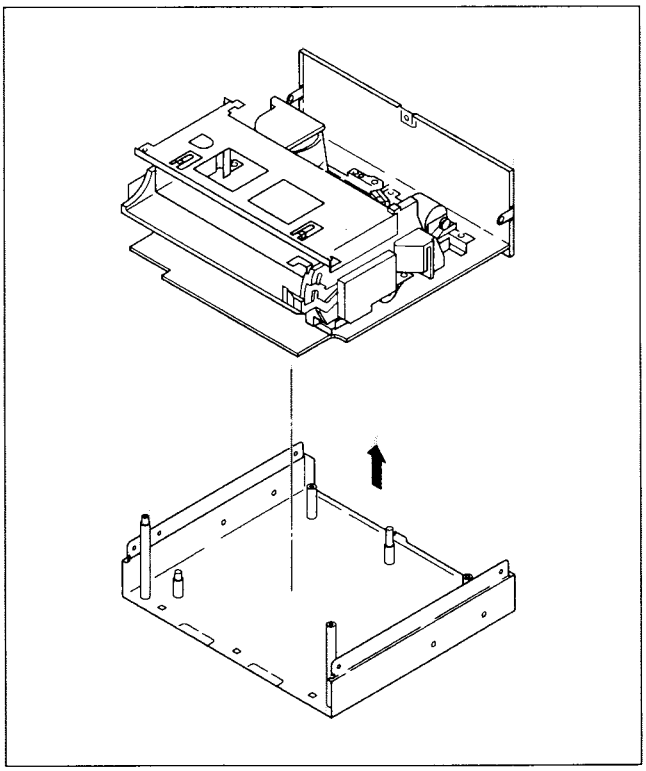


Fig. 1-5-2

(5) Turn over the Mechanism assembly and Main board assembly.
(6) Connect the flat wire of the Front panel again.
(7) Carry out checks & repairs as necessary as shown in Fig.1-5-3.

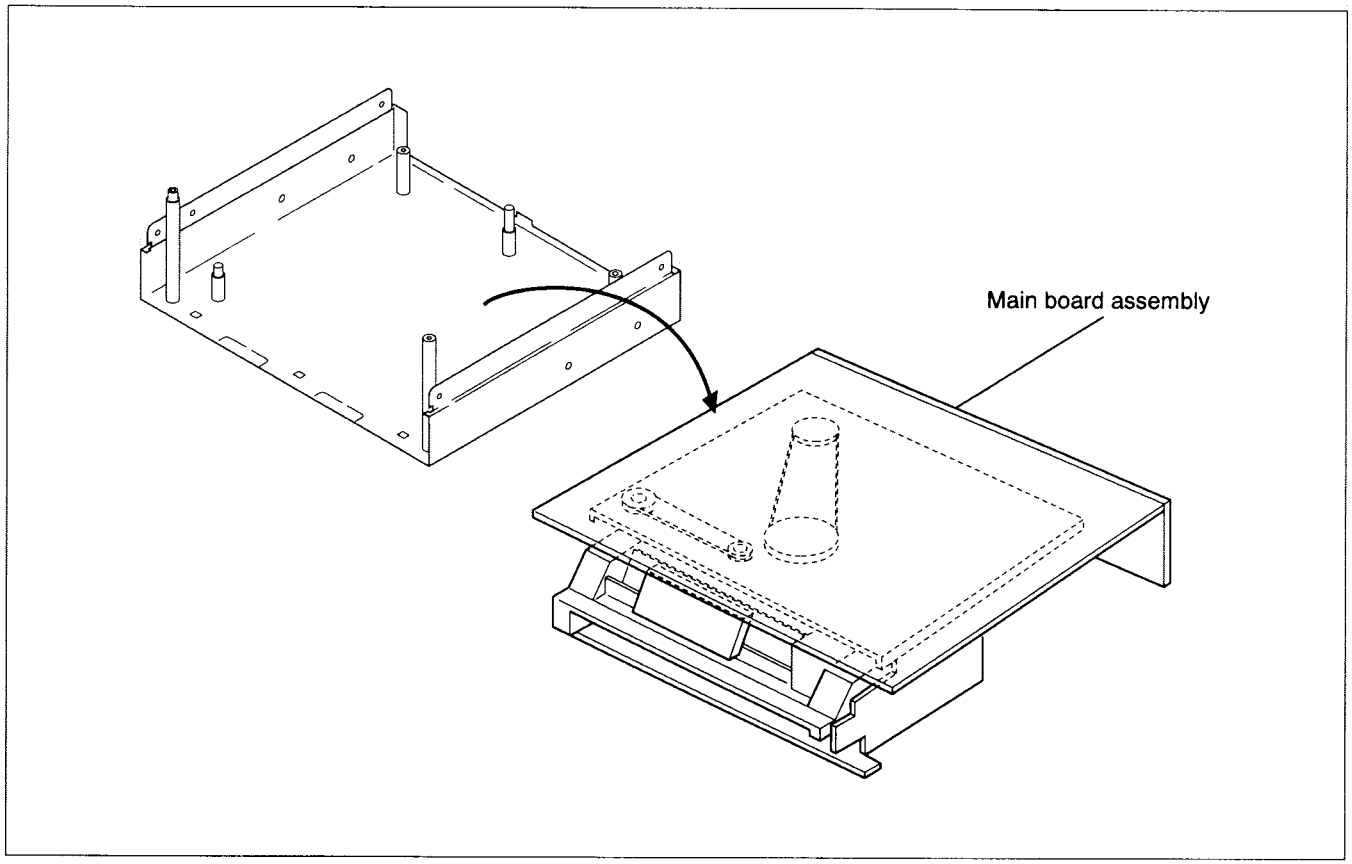


Fig. 1-5-3

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, Stay, Front panel assembly and cassette housing assembly. (See Page 1-2, 1-3.)
(3) Connect TP GND and TP1201 (TEST) on the Front board assembly 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.

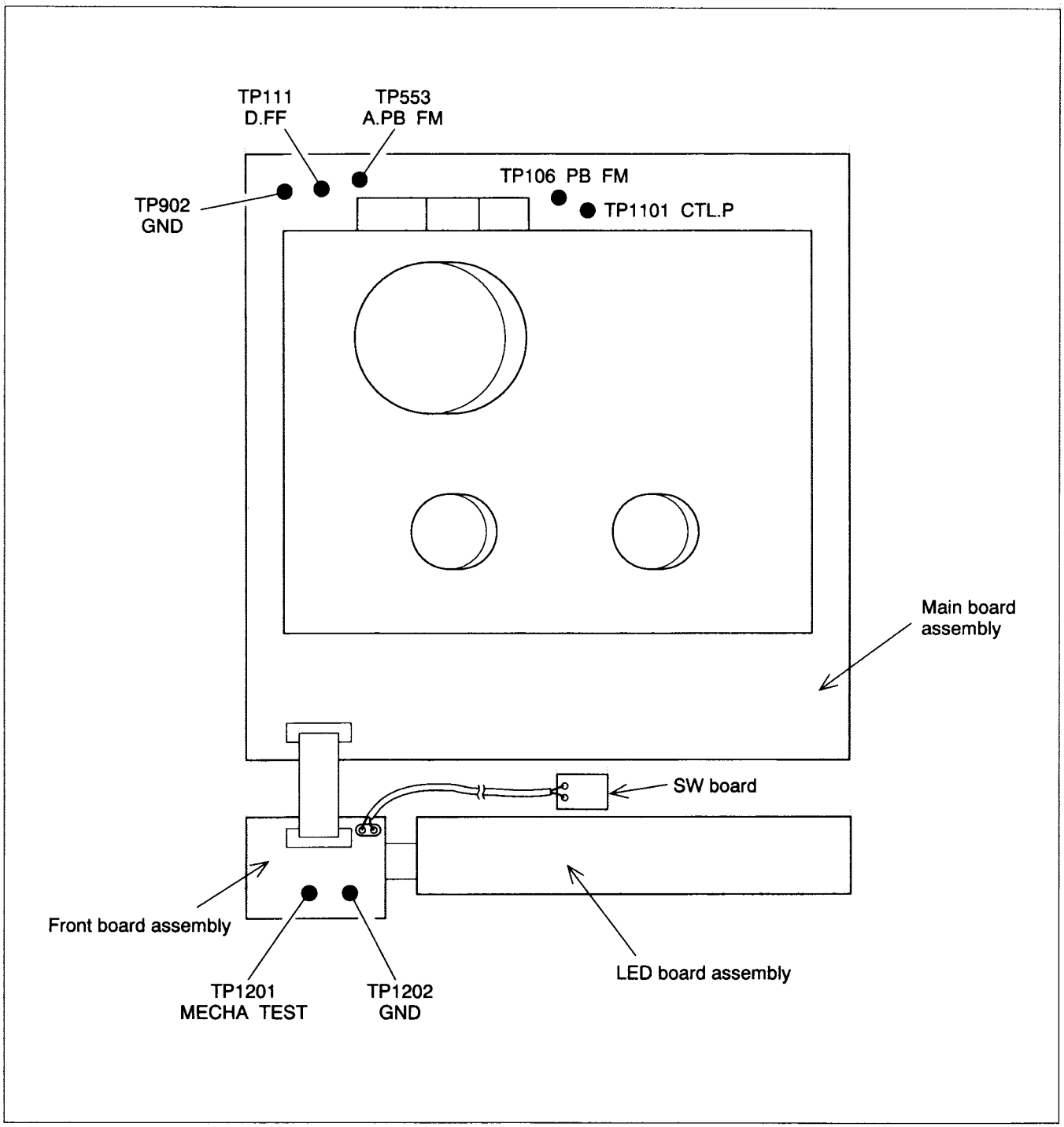


Fig. 1-6-1

1.7 EMERGENCY DISPLAY FUNCTION

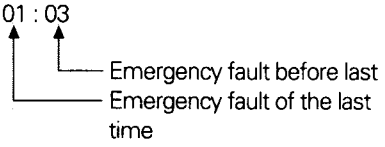
This product has the function to store the last two previous emergency faults which can be displayed in the OSD (ON SCREEN) when servicing.

1.7.1 How to display record of an emergency faults

Note 1 : *Put the unit into A mode by using the VCR remote controller. (When it is in B mode, the preset remote control codes are not accepted.)*

(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



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

1.7.2 Detail of emergency faults

EMG DATA	Symptom	Detect mode	Resulting mode
E --	No EMERGENCY		
E 01	Loading motor rotates for more than 4 Sec without shift to next mode.	Loading	POWER OFF
E 02	Loading motor rotates for more than 4 Sec without shift to next mode.	Unloading	POWER OFF
E 03	SUP REEL FG input is absent. (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/REW	STOP → POWER OFF
E 04	DRUM FF input is absent. (for more than 3 Sec)	REC/PLAY SEARCH FF/REW	STOP
E 05	(NOT USED)	—	—
E 06	CAPSTAN FG input is absent. (for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/REW	STOP → POWER OFF
E 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-7-1 EMERGENCY FAULTS

1.7.3 How to clear emergency record

Press the COUNTER RESET button (NOTE 2) on the remote controller in the emergency record display mode, and the record of the emergency fault(s) is cleared.

Note 2 : *Use the VCR remote controller.*

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 assembly only when the mechanism is in the MECHANISM ASSEMBLING MODE position.
(6) When installing the Front panel assembly,be sure to engage the housing door with the door opener of the cassette housing assembly.
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 assembly

Mechanism operations can be observed easily by removing the cassette housing assembly. Use the MECHANISM SERVICE MODE (See 1.6 MECHANISM SERVICE MODE).

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, Stay and Front panel assembly.
(2) Turn the loading motor on the Main deck assembly by hand in the unloading direction to where the pole base assembly (supply and take-up) and guide arm assembly are positioned below the cassette tape.At that time, pay careful attention to the tape not to get soiled with grease.
(3) Take out 2 screws of the cassette housing assembly.(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.

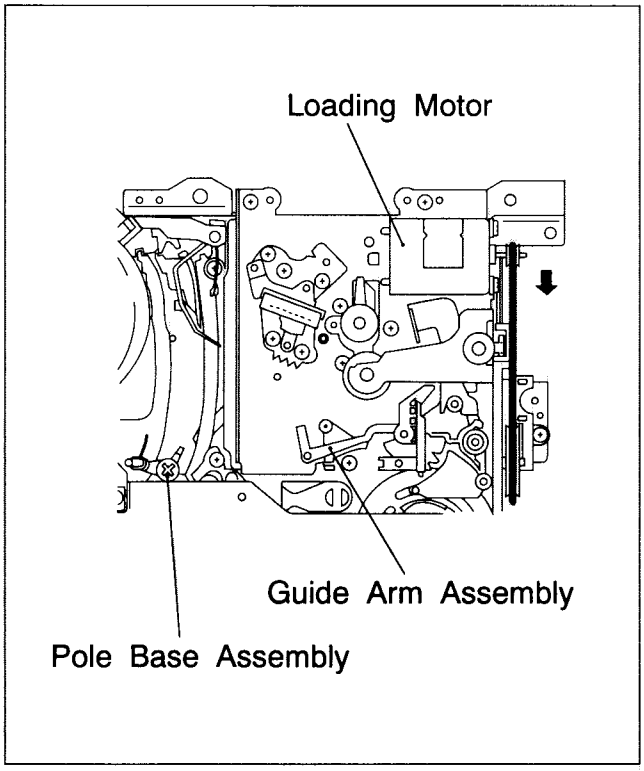


Fig. 2-1-1

2.1.4 Test Equipment

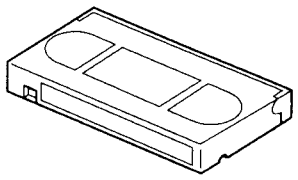
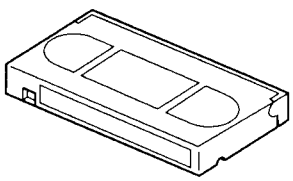
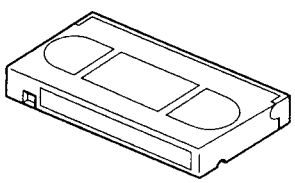
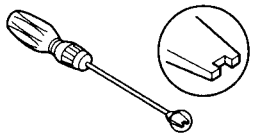
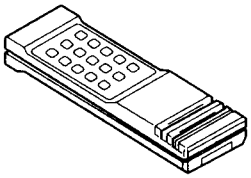
Alignment tape (SP) MHP	Alignment tape (EP) MHP-L	Back tension cassette gauge PUJ48076-2	A/C head positioning tool PTU94010
			
Roller driver PTU94002	Presetting unit PTU94008	Grease KYODO-SH-P	
			

Table 2-1-1 Test equipment

2.2 MAIN MECHANISM PARTS

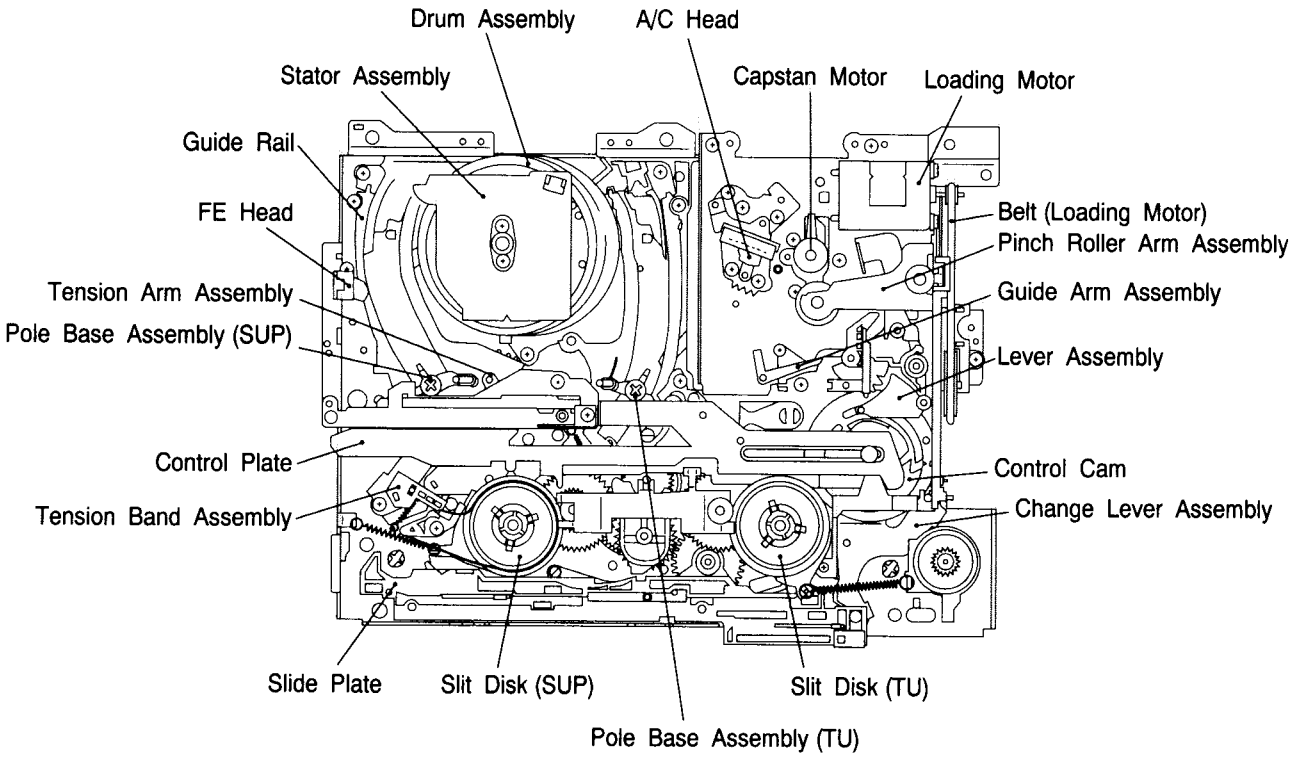


Fig. 2-2-1 Top view of main deck

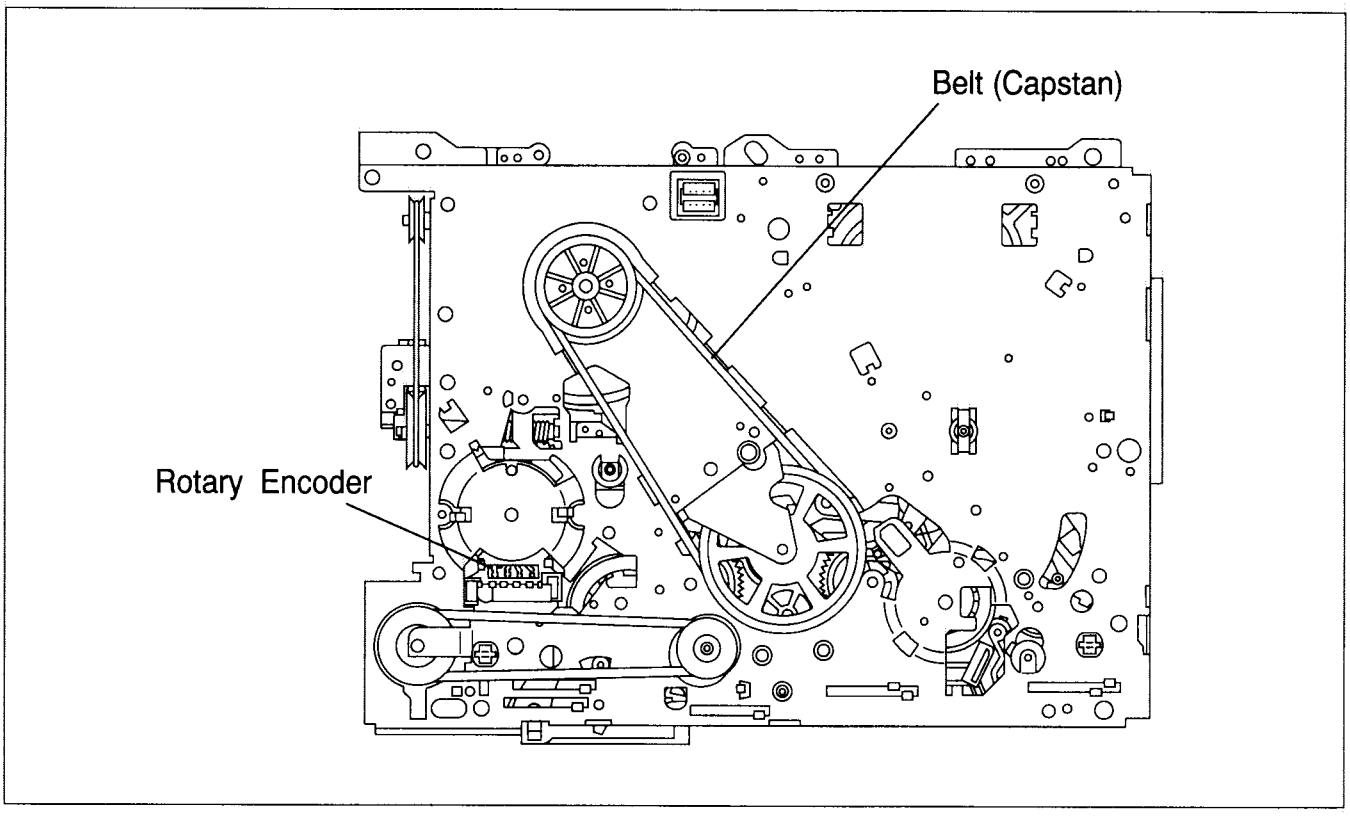


Fig. 2-2-2 Bottom view of main deck

2.2.1 Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note: ***Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.***

(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.

(3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

2.2.2 Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

(1) See the mechanism assembly and disassembly diagrams (M4) for the lubricating or greasing spots. See Table 2-2-1 for the types of oil or grease to be used.

Type	Name	Serial No.	Symbols on the disassembly diagrams
Grease	Maltemp SH-P	KYODO-SH-P	AA
Oil	Cosmohydro HV56	COSMO-HV56	BB

Table 2-2-1 Grease and oil used for the unit

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

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 assembly	★ ○	○
	A/C head	★ ○	★ ○
	Lower drum motor assembly	★	★ ○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Slit disk (supply, take-up)		○
	Clutch unit (supply, take-up)		○
	Worm gear assembly		○
	Control plate		○
	Slide plate		○
Other	Brush assembly	★ ○	★ ○
	Tension band assembly	○	○
	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 and cassette housing assembly 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.

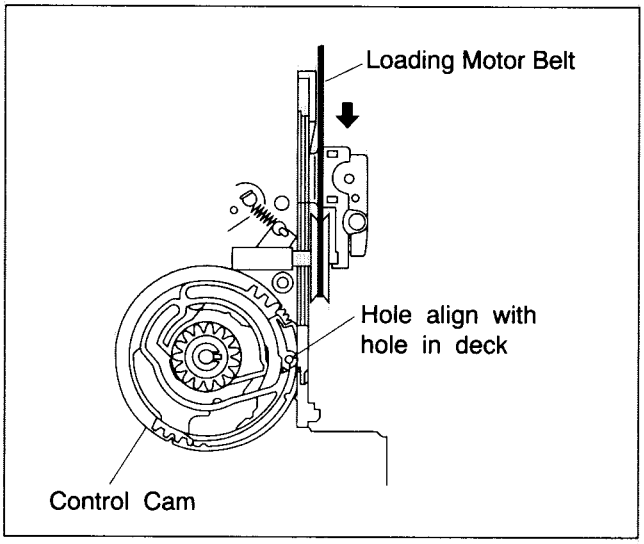


Fig. 2-4-1

2.5 MAIN PARTS REPLACEMENT OF MECHANISM

2.5.1 Pinch Roller Arm Assembly

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

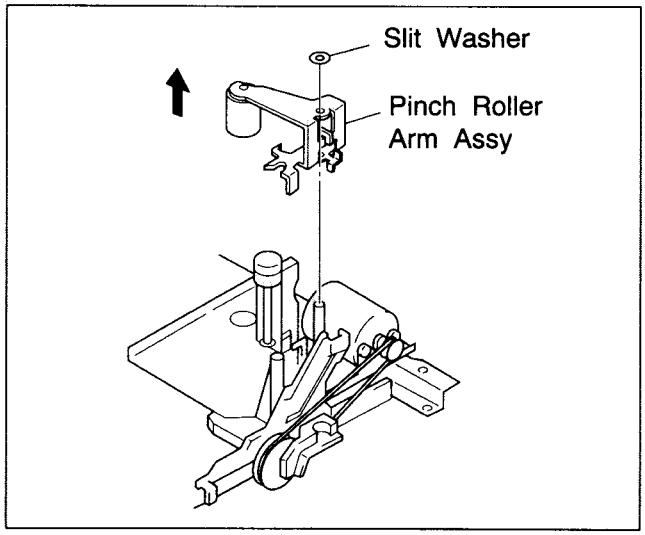


Fig.2-5-1

2.5.2 A/C Head

1. Removal

(1) Take out 2 screws (A).

(2) Remove the A/C head with head base.

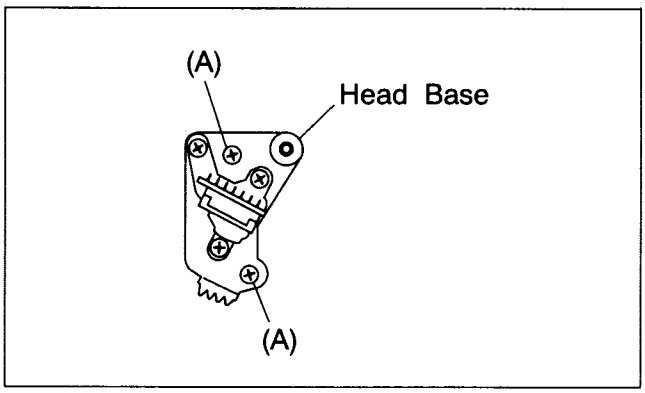


Fig.2-5-2

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

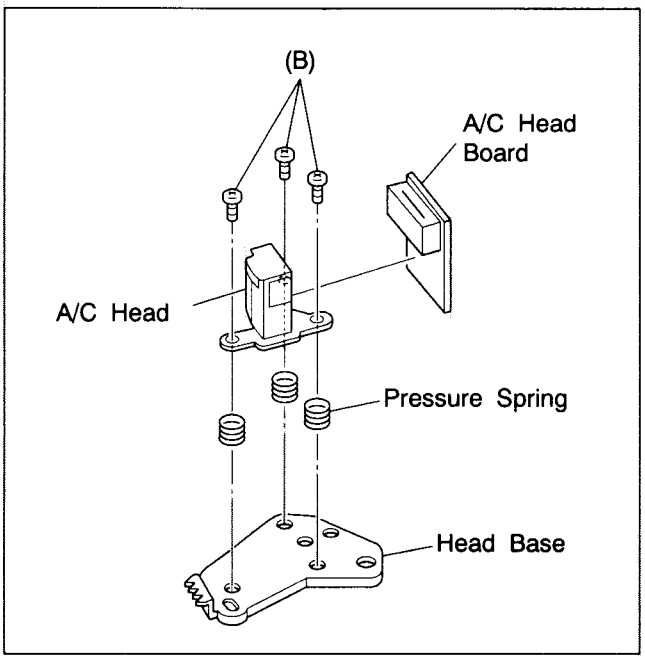


Fig.2-5-3

2. Installation

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

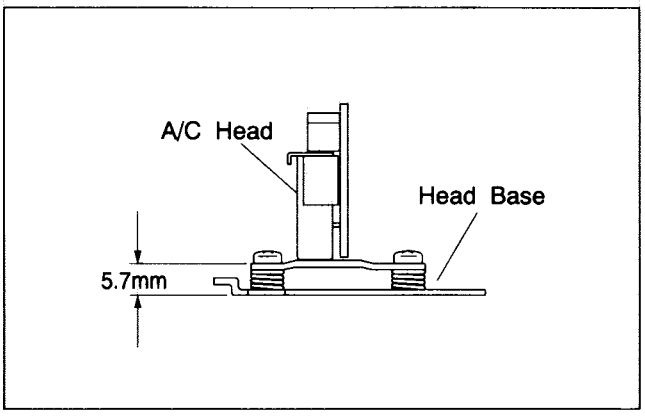


Fig.2-5-4

NOTES:

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

2.5.3 Pinch Plate

1. Removal

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

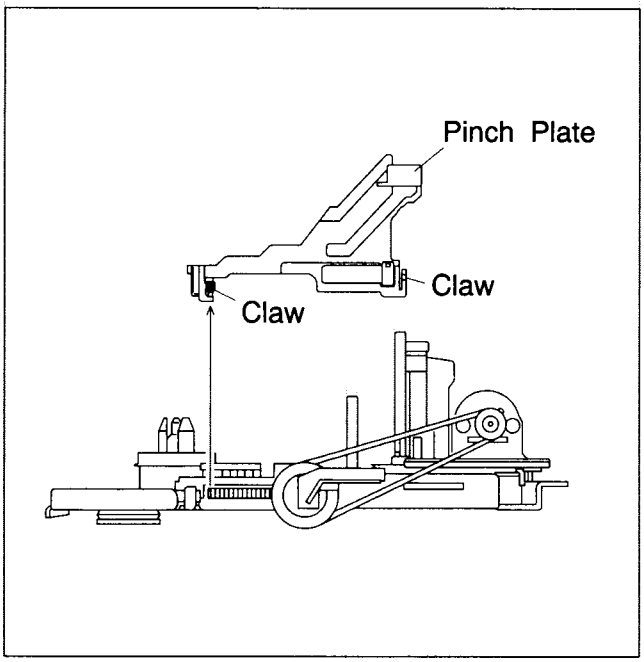


Fig.2-5-5

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.

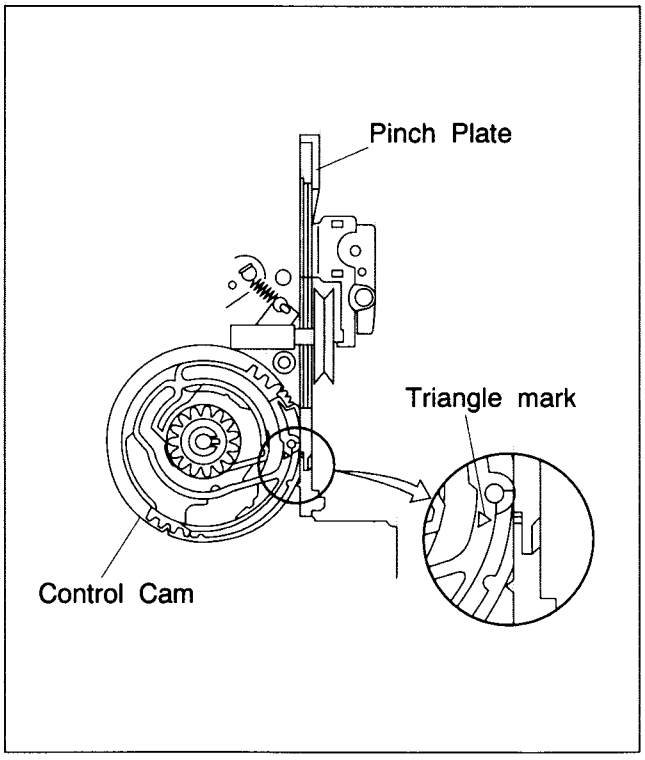


Fig. 2-5-6

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.

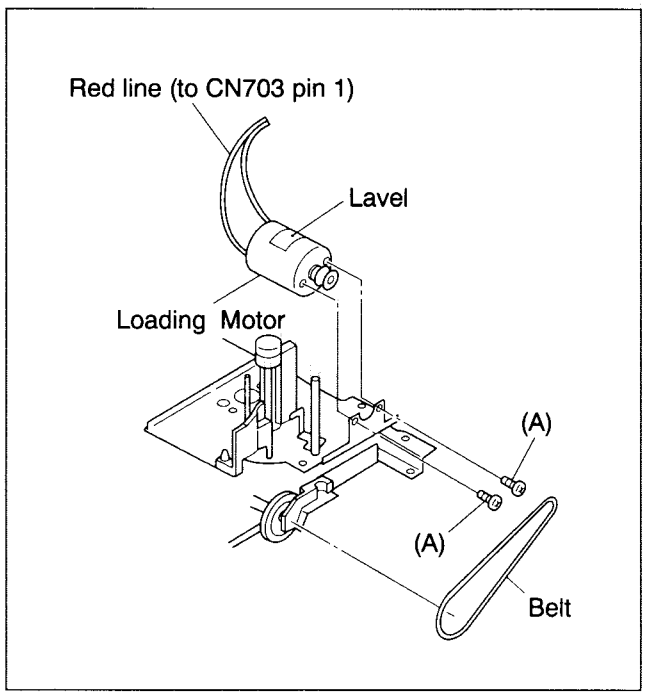


Fig.2-5-7

2.5.5 Lever Assmebly,Sub Deck Assembly,Capstan Motor

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

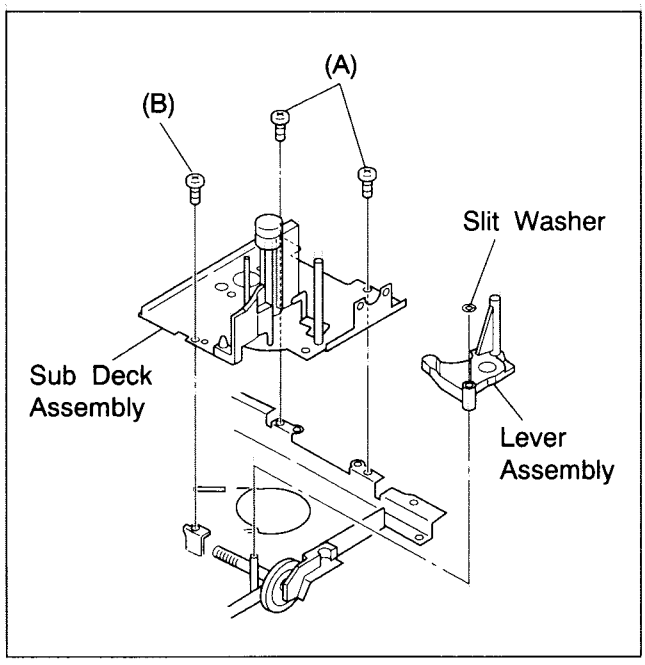


Fig.2-5-8

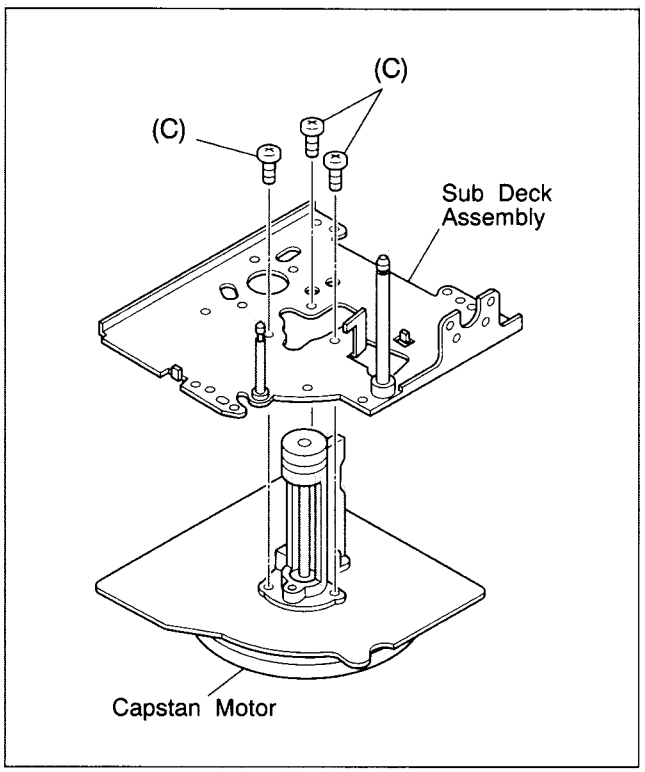


Fig.2-5-9

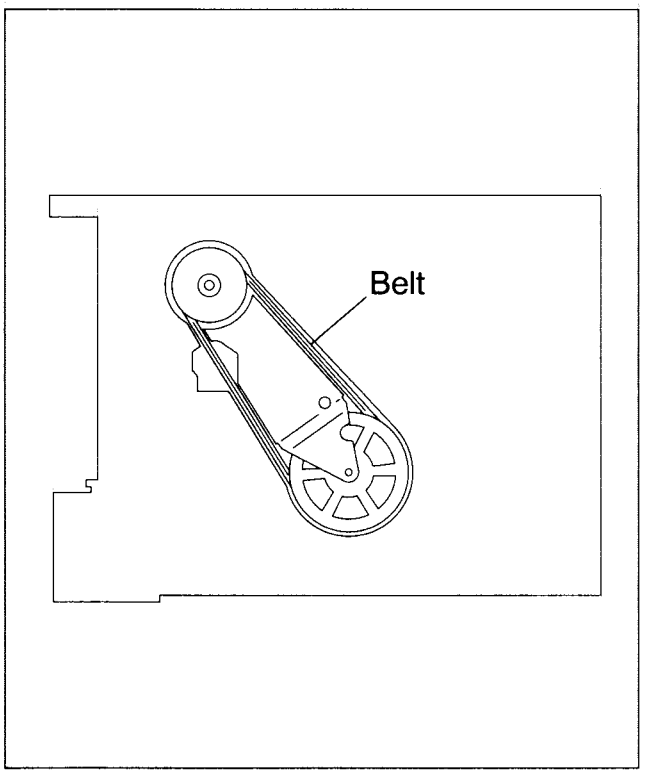


Fig.2-5-10

2.5.6 Control Bracket

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

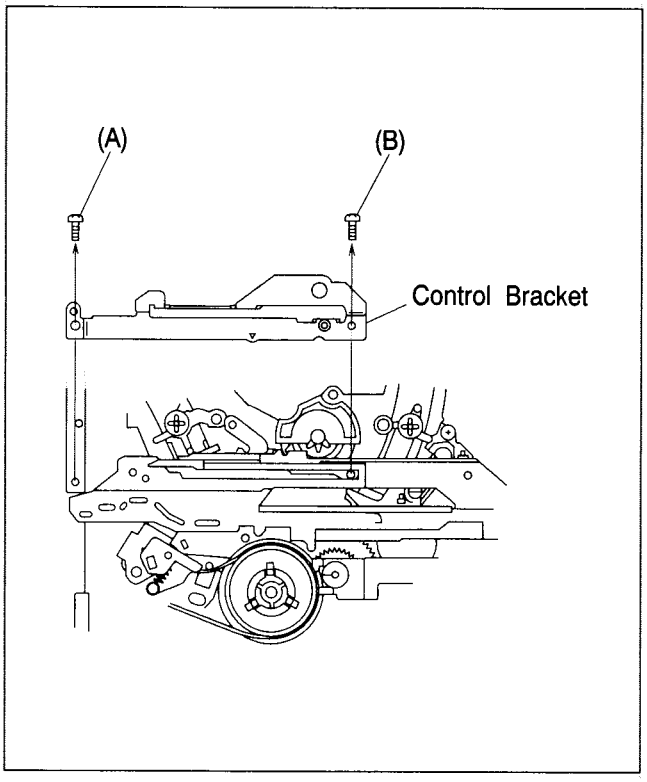


Fig.2-5-11

2.5.7 Slit disk (take-up)

(1) Take out 1 slit washer.
(2) Remove the slit disk (take-up).

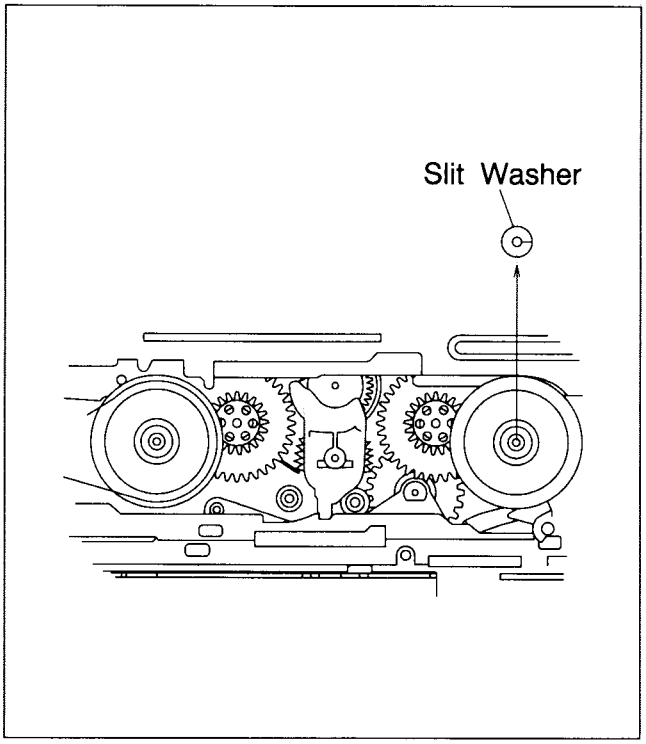


Fig.2-5-12

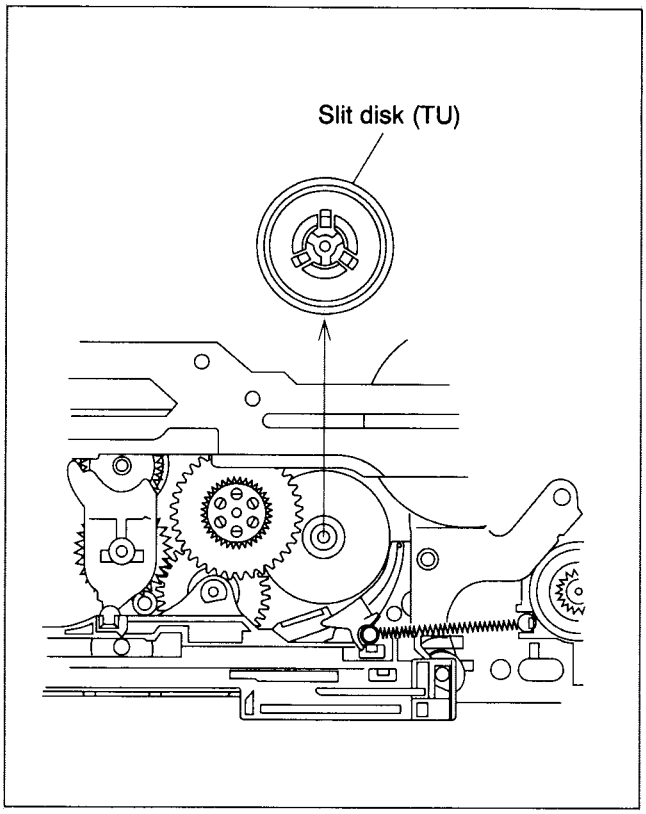


Fig.2-5-13

2.5.8 Control Plate

(1) Take out 1 slit washer.
(2) Disengage 2 claws and remove the control plate.

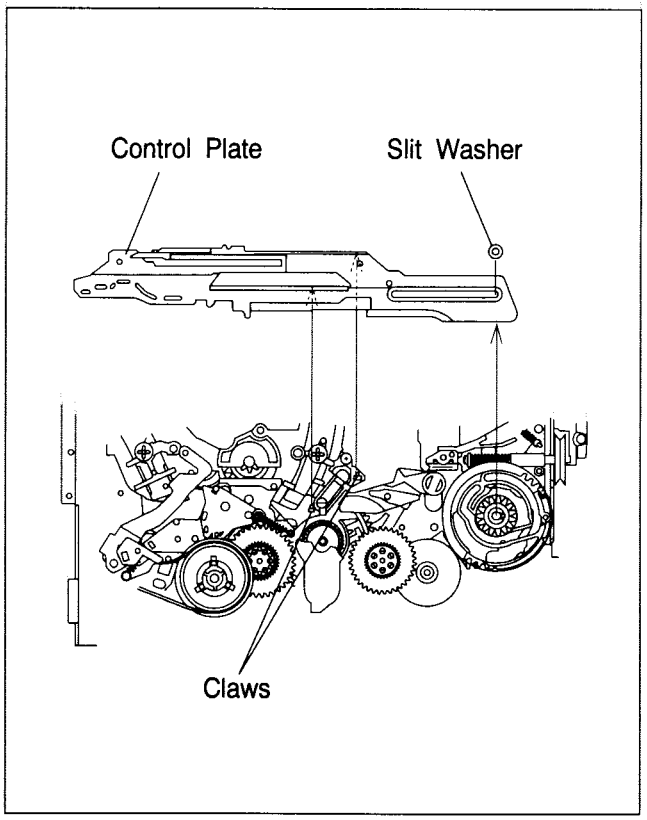


Fig.2-5-14

2.5.9 Sub Brake(take-up),Control Cam

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

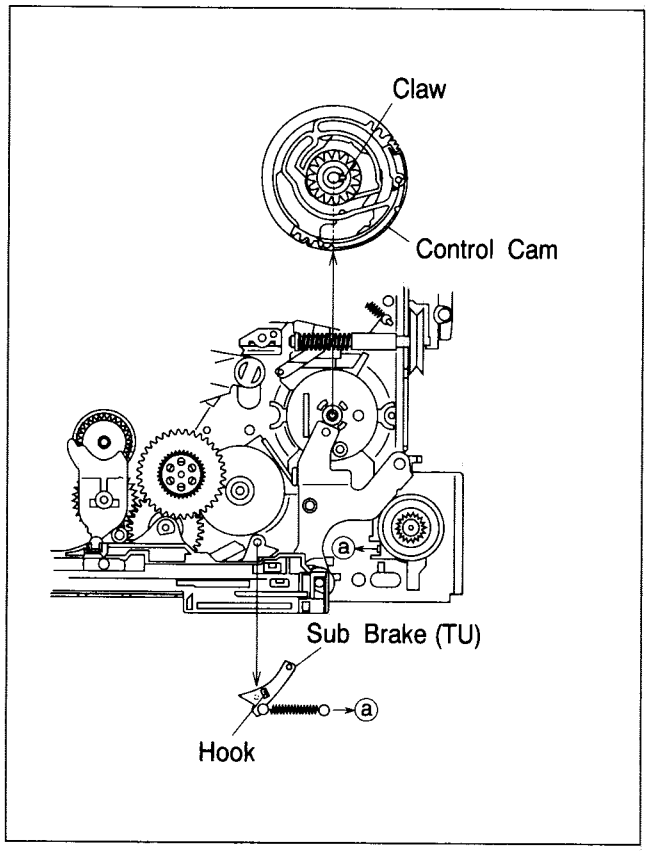


Fig.2-5-15

2.5.10 Slide Plate

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

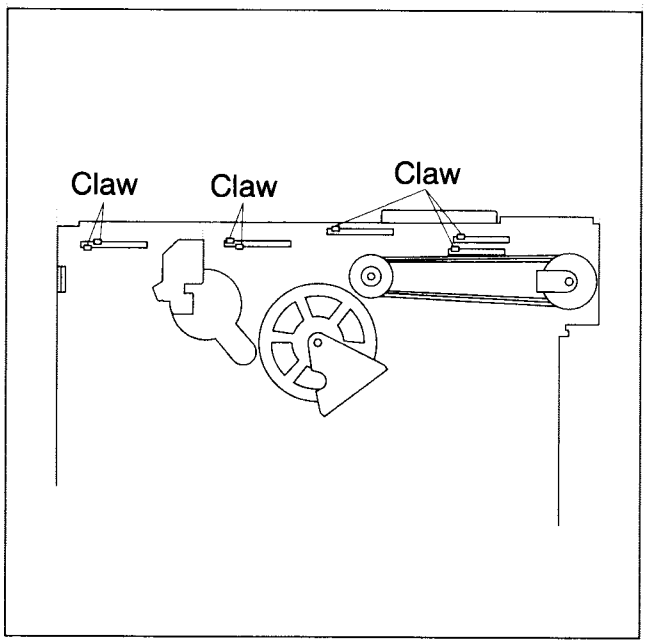


Fig. 2-5-16

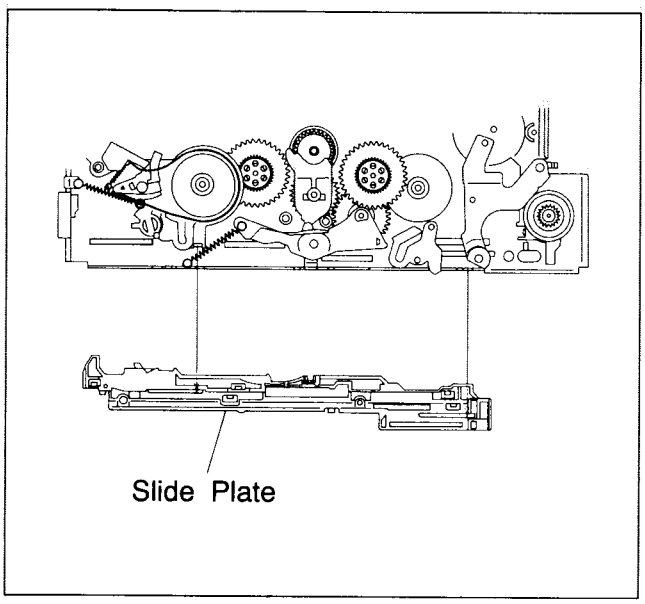


Fig. 2-5-17

2.5.11 Change Lever,Rotary Encoder

(1) Remove the change lever.
(2) Disengage 2 claws and remove the rotary encoder.
(3) When installing the rotary encoder, align the triangle mark as indicated in Fig. 2-5-18.

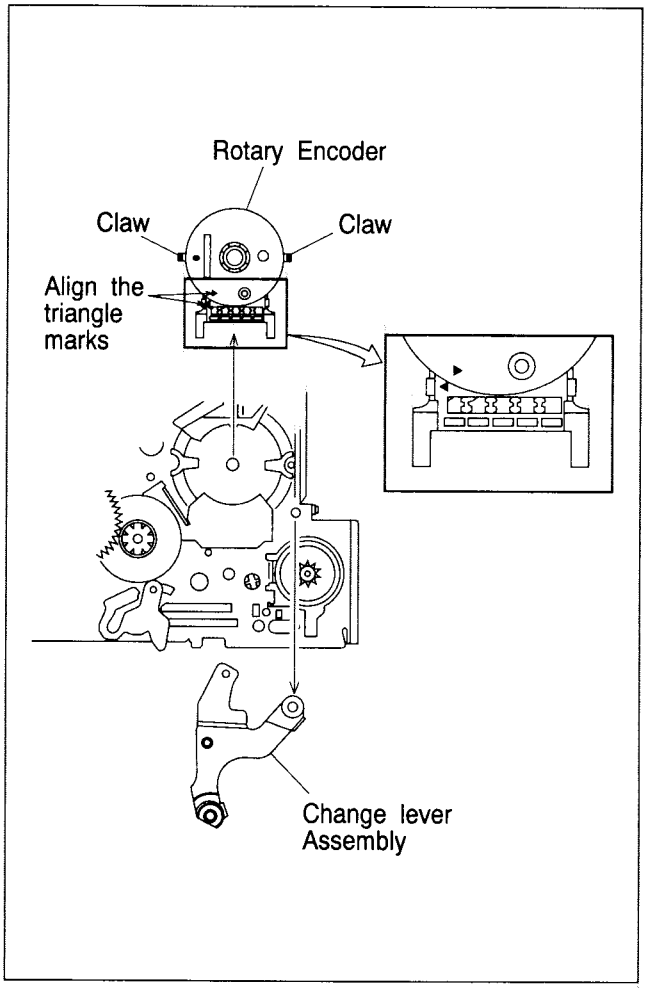


Fig. 2-5-18

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

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

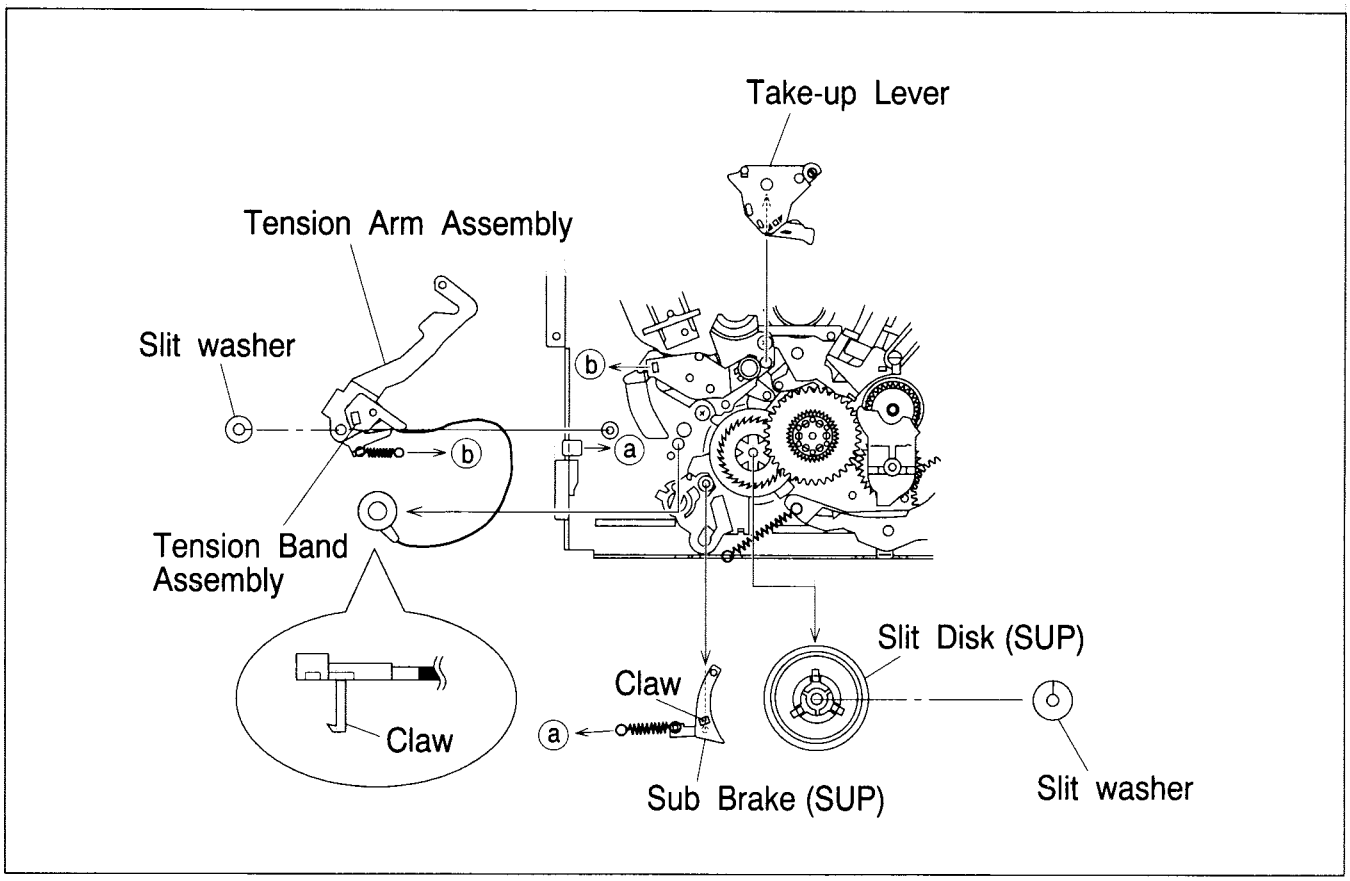


Fig. 2-5-19

2.5.13 Take-up Head,Tension Arm Lever

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

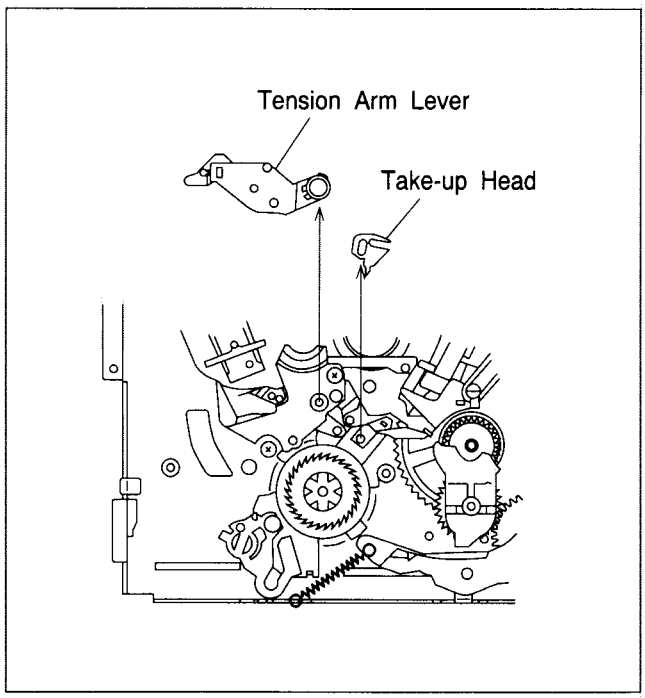


Fig.2-5-20

2.5.14 Guide Rail

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

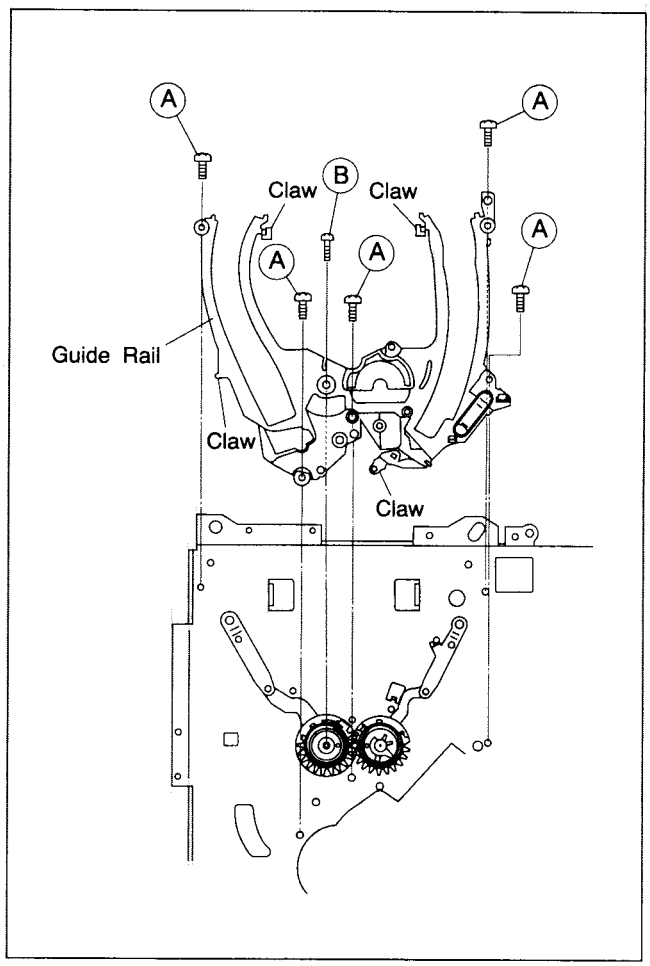


Fig. 2-5-21

2.5.15 Stator Assembly

(1) Take out 2 screws (A).
(2) Remove the stator assembly by lifting in the arrow-indicated direction (Take care that the brush spring does not jump out).
(3) Remove the flat cable.
(4) After reinstalling, be sure to perform PB switching point adjustment(See SECTION 3 ELECTRICAL ADJUSTMENT).

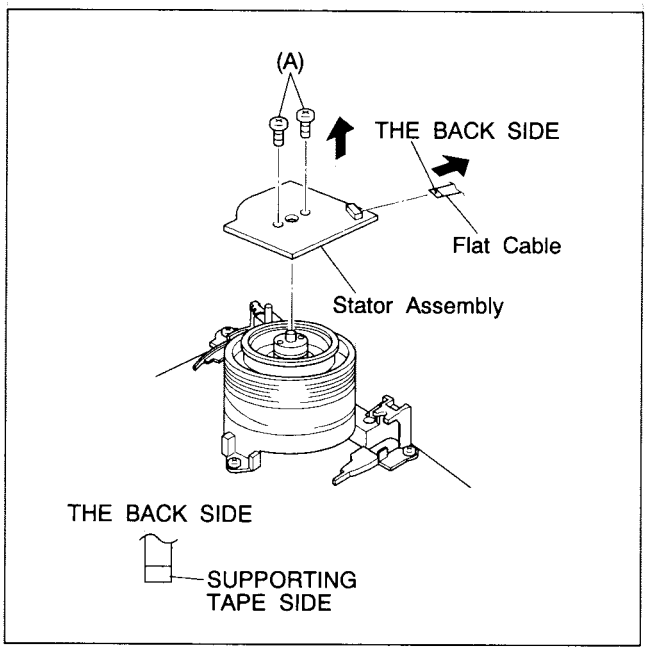


Fig. 2-5-22

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

2.5.16 Rotor Assembly

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

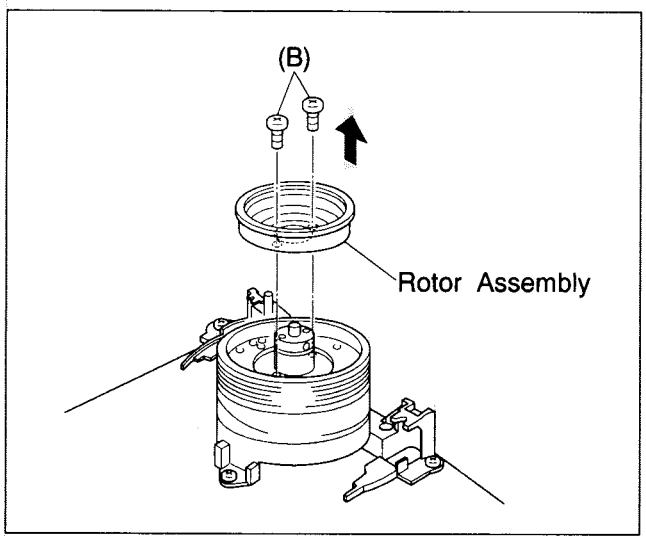


Fig.2-5-23

Note: *When installing the rotor assembly, note that a normal picture cannot be obtained without ensuring the phase matching as mentioned below.*

(3) Align the upper drum assembly and rotor assembly phase as indicated in Fig.2-5-24.
(4) Overlap holes (a) of the upper drum assembly with holes (b) of the rotor assembly and secure with 2 screws (B) as indicated in Fig.2-5-23.

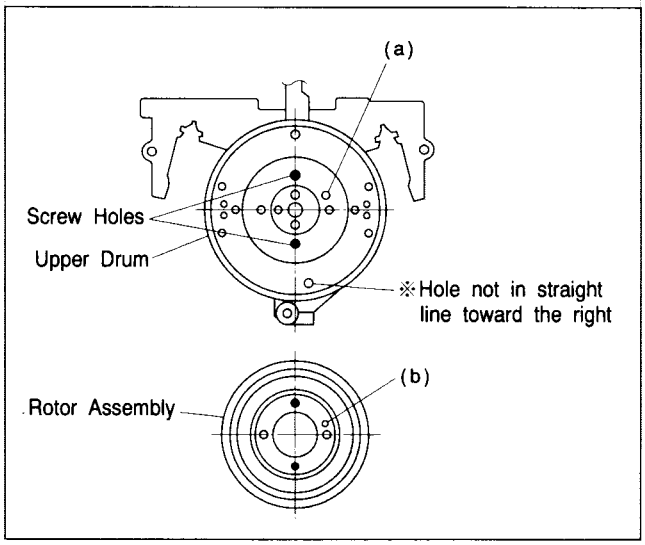


Fig. 2-5-24

2.5.17 Upper Drum Assembly

1. Removal

(1) Remove the stator assembly and rotor assembly (See 2.5.15 and 2.5.16).
(2) Use a 1.5 mm hexagonal wrench to loosen the collar assembly screw and remove the collar assembly with brush, and remove the cap.
(3) Remove the upper drum assembly and use tweezers to remove the washer.

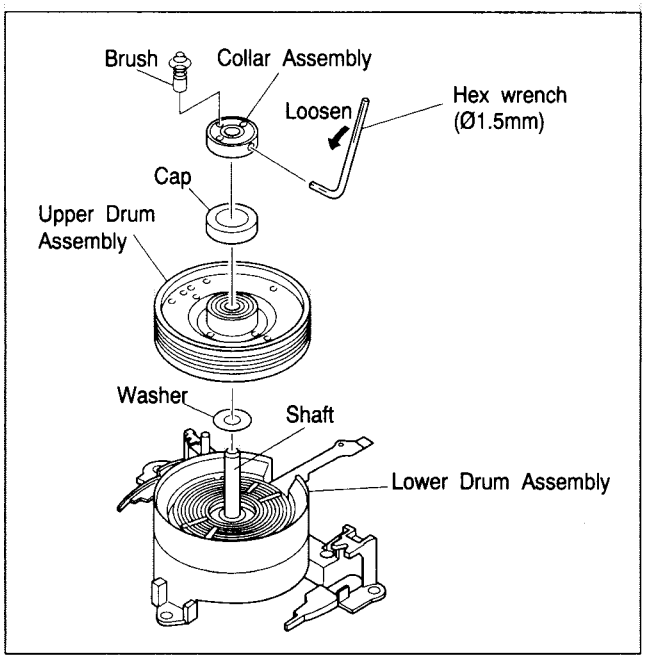


Fig. 2-5-25

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 assembly and the coil section of the new upper drum assembly.
(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 assembly.*

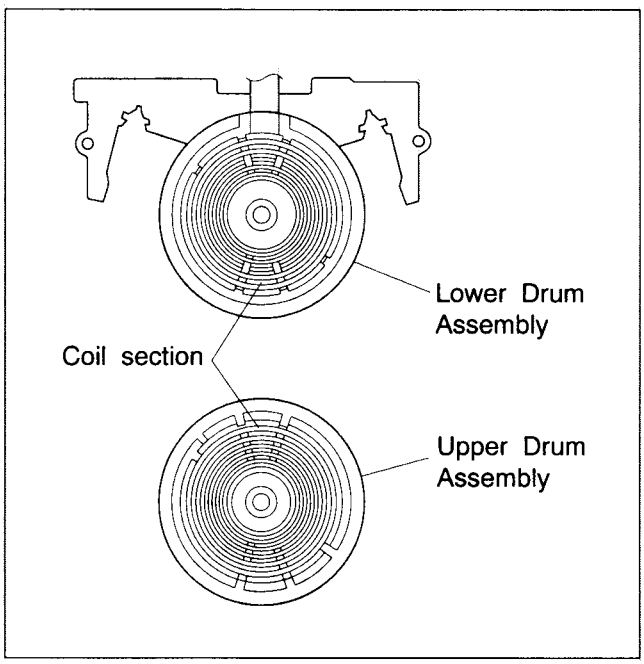


Fig.2-5-26

(3) Note the top and bottom of the collar assembly and determine the position as indicated in Fig.2-5-27.

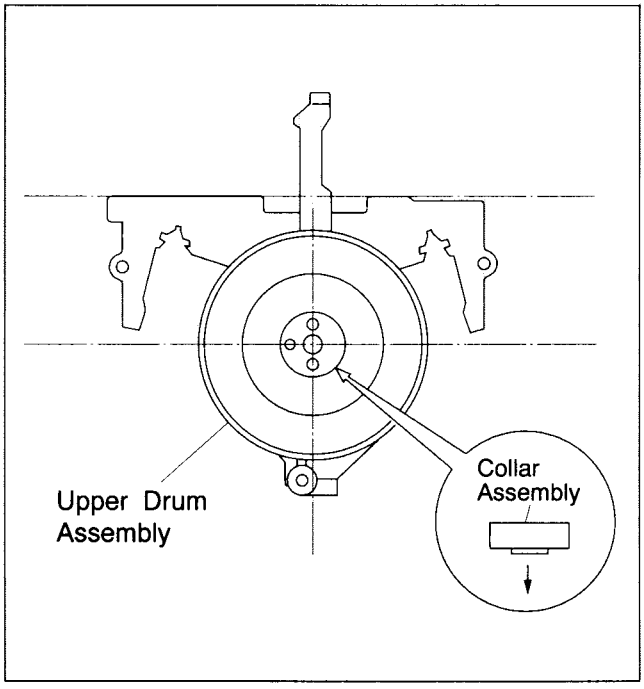


Fig.2-5-27

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

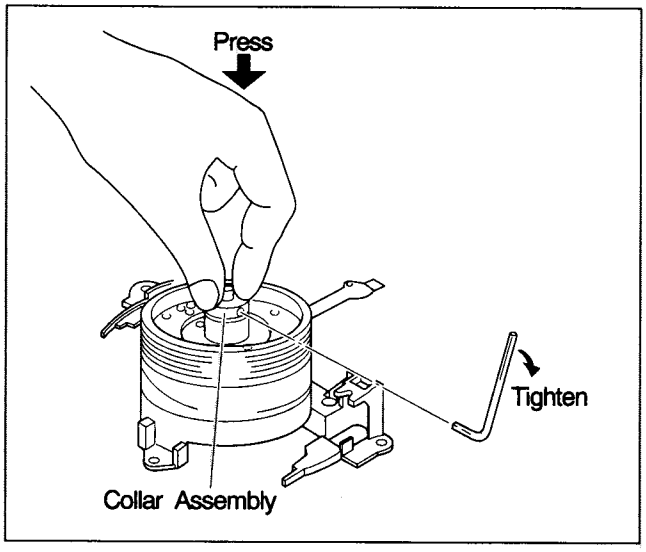


Fig.2-5-28

(5) After installing,gently turn the upper drum by hand and confirm normal rotation.
(6) Install the rotor assembly and stator assembly (See 2.5.15 and 2.5.16).
(7) Clean the upper and lower drum assembly and perform the following adjustments;
- PB switching point adjustment
- Slow tracking preset adjustment
- Compatibility adjustment (be sure to check EP mode)

2.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

2.6.1 Precaution

The rotary encoder and syscon circuit are closely interrelated.Therefore,the rotary encoder and control cam connection 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 Assembly (supply,take-up)

(1) Install the supply loading arm assembly and the take-up loading arm assembly 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 assembly respectively.
(2) After setting the guide rails,engage the pole base assemblies with the tip of the loading arms respectively. Then,enter the mechanism into the unloading mode to return the pole base assemblies to the front position.
(3) Reassemble the peripheral parts of the guide rail to its original position.

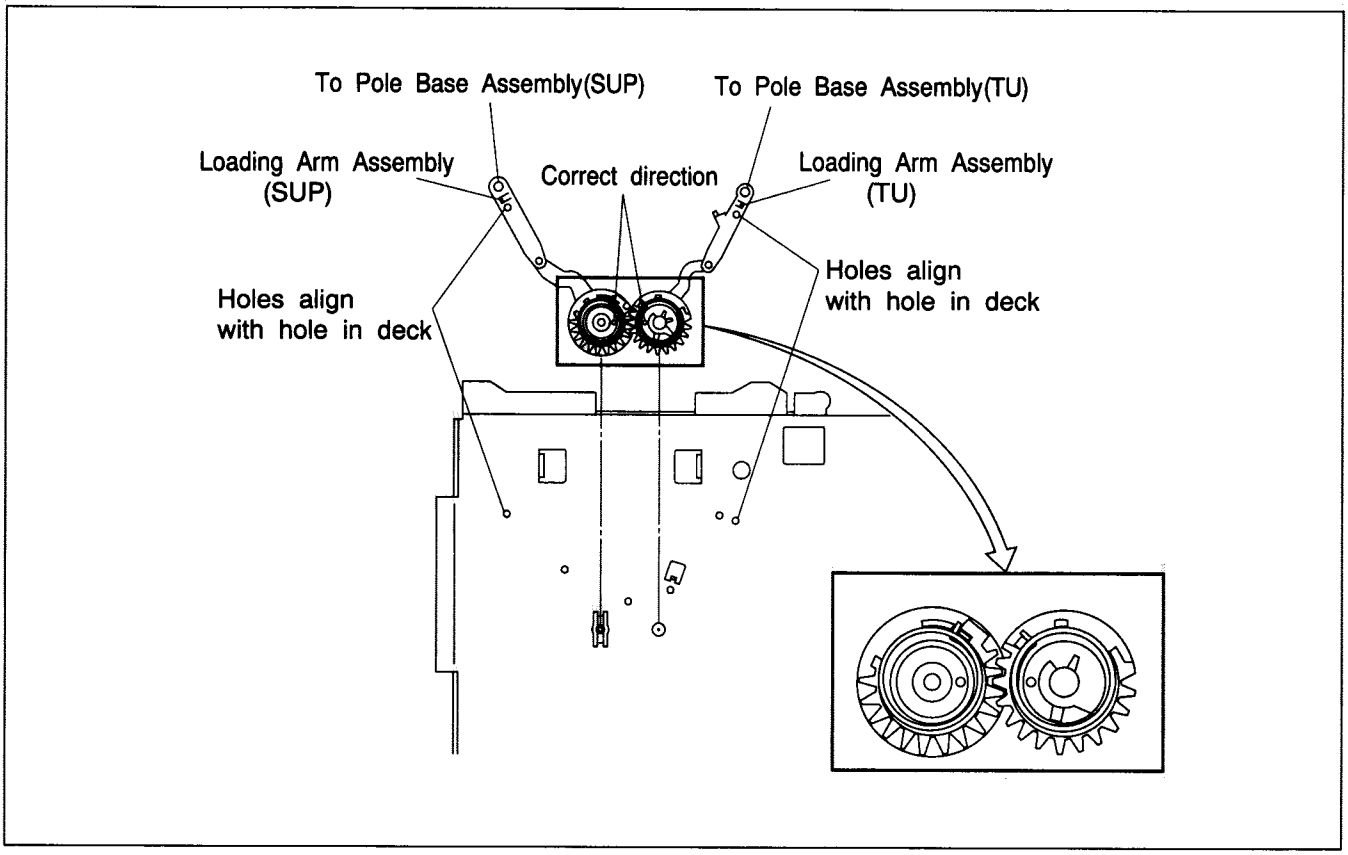


Fig. 2-6-1

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 claws.
(2) When reinstalling the change lever,set it so as to make its positioning hole correspond to the hole of the main deck assembly.
(3) When re-engaging the control cam,lower the capstan brake assembly while setting it so as to make its positioning hole correspond to the hole of the main deck assembly.

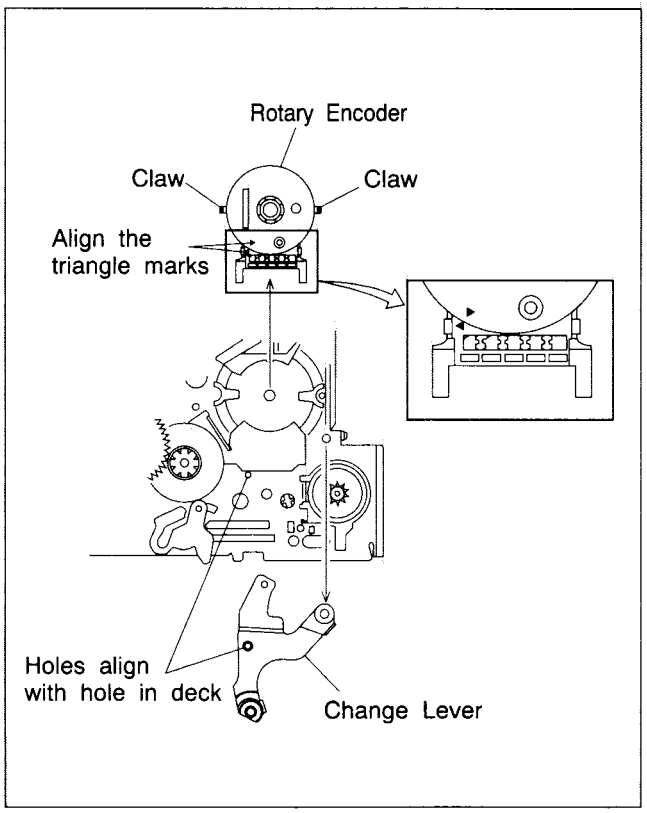


Fig. 2-6-2

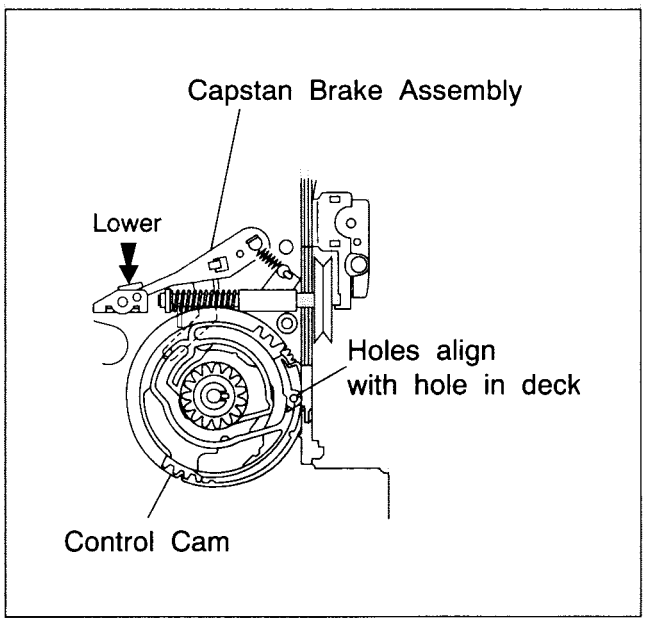


Fig. 2-6-3

2.6.4 Slide Plate

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

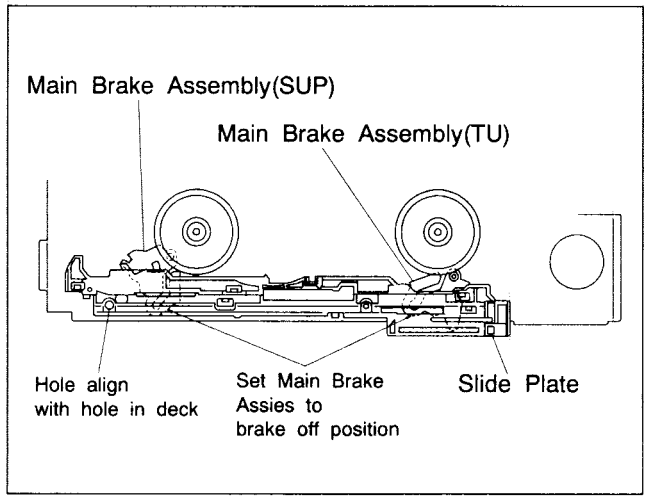


Fig.2-6-4

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 assembly 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 and control bracket.

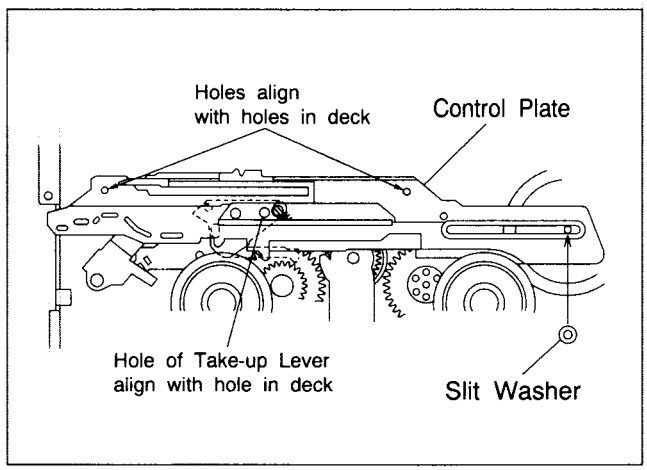


Fig. 2-6-5

2.7 COMPATIBILITY ADJUSTMENT

Notes: • *Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the audio control head, drum assembly or any part of the tape transport system.*

• *To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.*

2.7.1 Checking/Adjustment of FM Waveform Linearity

(1) Connect the oscilloscope to TP106(PB FM/COL) of the main board assembly and to TP111(D.FF) of the main board assembly for external sync connection.
(2) Playing the alignment tape MHP, observe the FM waveform.
(3) Press the "AUTO" buttons of the remote controller during playback. (This also brings tracking to the center.)
(4) Make sure that there is no significant level drop of the FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (Fig.2-7-1)
(5) Slightly loosen the set screw under the pole base assembly with a 1.25 mm hexagonal wrench (Take care not to loosen too much). (Fig.2-7-2)
(6) Reduce the FM waveform while pressing the channel buttons (+, –) during playback. If a drop in level is found on the left side as shown in Fig.2-7-3, turn the guide roller of the pole base assembly (supply side) with the roller driver (PTU94002) to make the FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (Fig.2-7-3)
(7) Then play MHP-L and make sure that the FM waveform varies in parallel and linearly with the tracking operation. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
(8) After adjustment, tighten the set screw under the pole base assembly. (Take care not to tighten too much)
(9) After tightening the set screw, play the alignment tape MHP and MHP-L again to make sure that the FM waveform has correct variation.

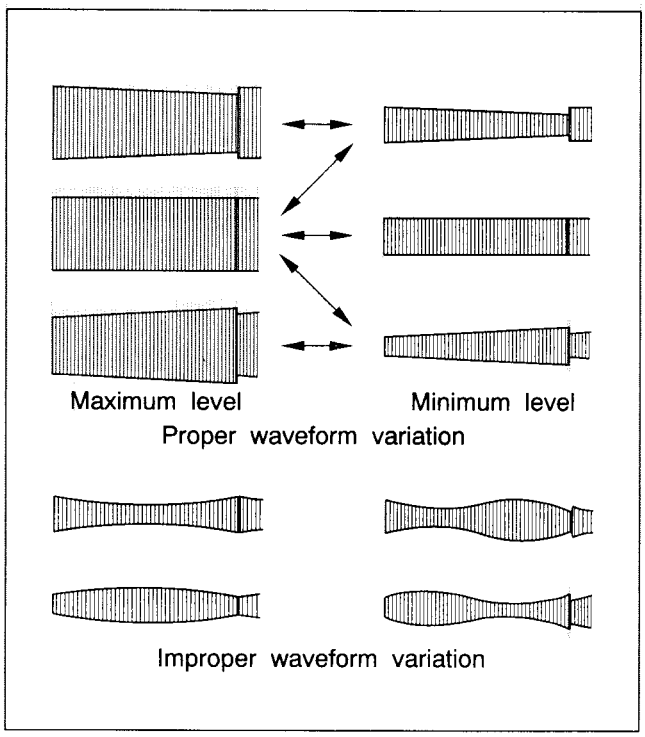


Fig. 2-7-1

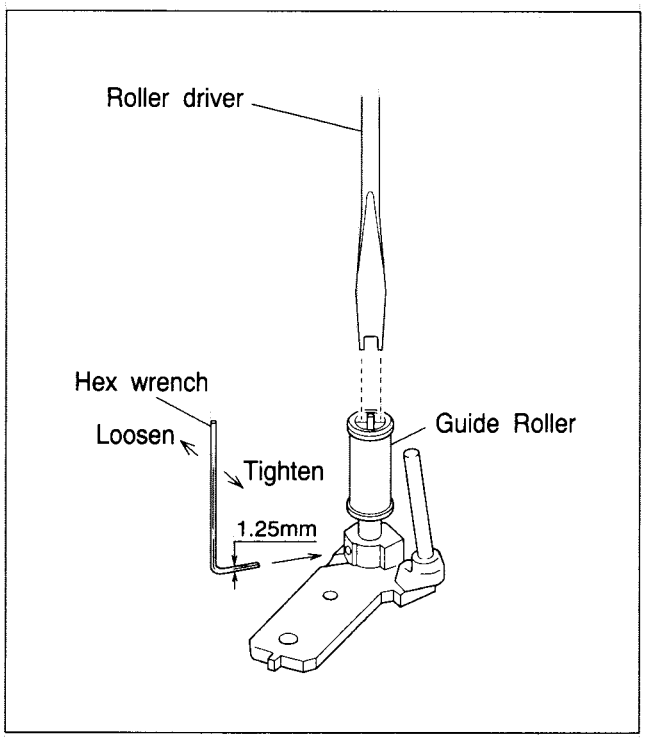


Fig. 2-7-2

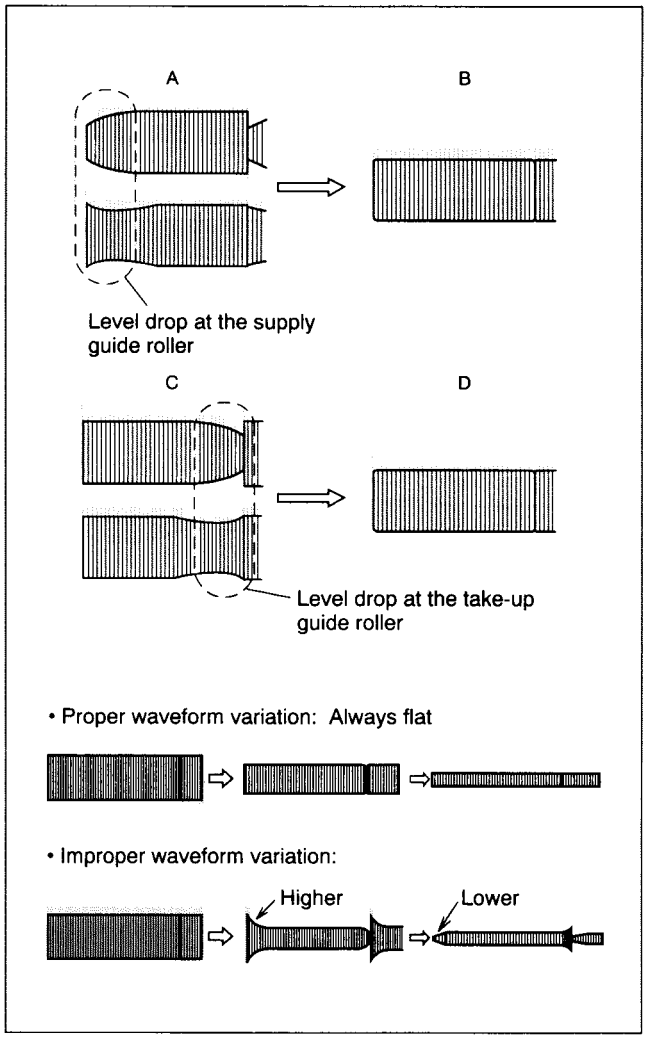


Fig. 2-7-3

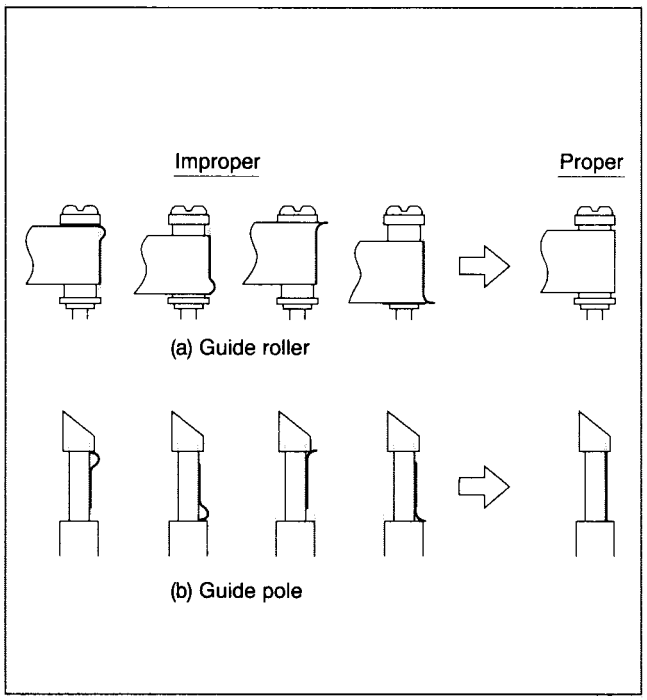


Fig. 2-7-4

2.7.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head

Note: *Set a temporary level of the height of the A/C head in advance to make the adjustment easier. (See Fig.2-5-4)*

(1) Connect CH-1 of the oscilloscope to AUDIO OUT and CH-2 to TP1101 (CTL P) of the main board and observe the waveforms on both channels in the ALT mode.
(2) Play the alignment tape MHP and adjust it by turning screws (1), (2) and (3) little by little until the waveform of both the audio output signal and the control pulse reach maximum. Screw (1) and screw (3) are for adjustment of tilt and screw (2) for azimuth.

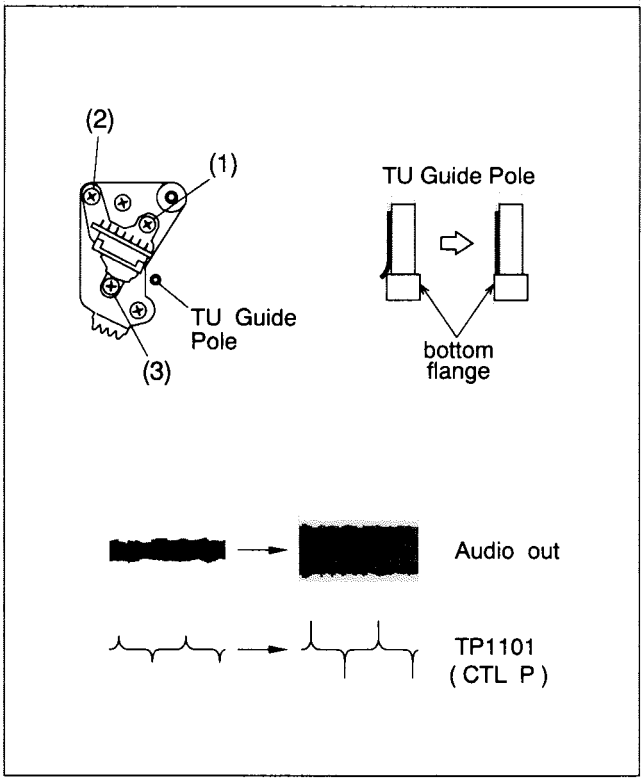


Fig. 2-7-5

2.7.3 Checking/Adjustment of the Audio Control Head Phase (X-Value)

(1) Connect the oscilloscope to TP106(PB FM/COL) of the main board assembly and to TP111(D.FF) of the main board assembly for external sync connection.
(2) Play the alignment tape MHP and observe the FM waveforms.
(3) Press the "AUTO" buttons of the remote controller during playback. (This also brings tracking to the center.)
(4) Loosen screws (4) and (5) so that the A/C head position bit (PTU94010) is set as indicated in Fig.2-7-6.
(5) Turn the A/C head position and first move the audio control head fully up to the capstan head. Then gradually return the audio control head toward the drum and stop it where the FM waveform reaches its maximum for the first time. Then tighten screw (4) temporarily.

(6) Then play the alignment tape MHP-L.
(7) Press the "AUTO" buttons of the remote controller during playback. (This also brings the tracking to the center.)
(8) Perform the tracking operation and make sure that the FM waveform is at its maximum.
(9) If it is not at maximum, loosen the temporarily tightened screw (4) and turn the A/C head position bit to bring the audio control head to a position, around where the waveform reaches its maximum for the first time. Then tighten screws (4) and (5).

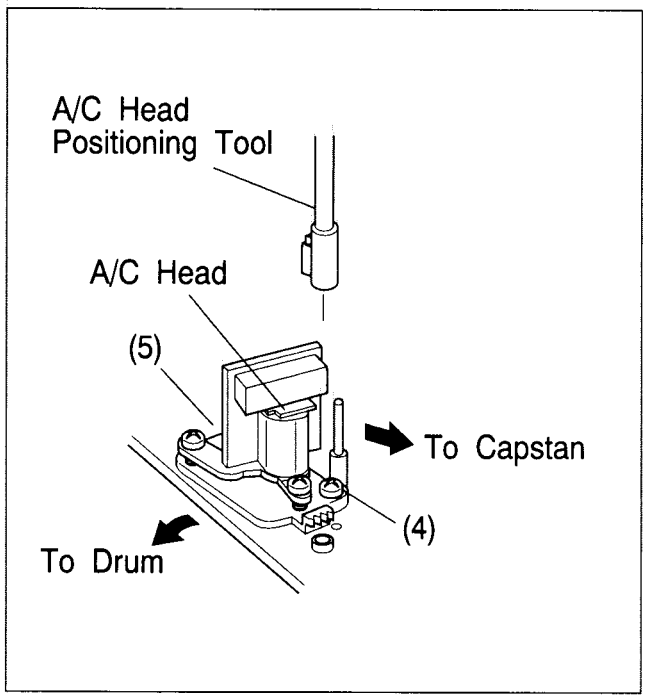


Fig. 2-7-6

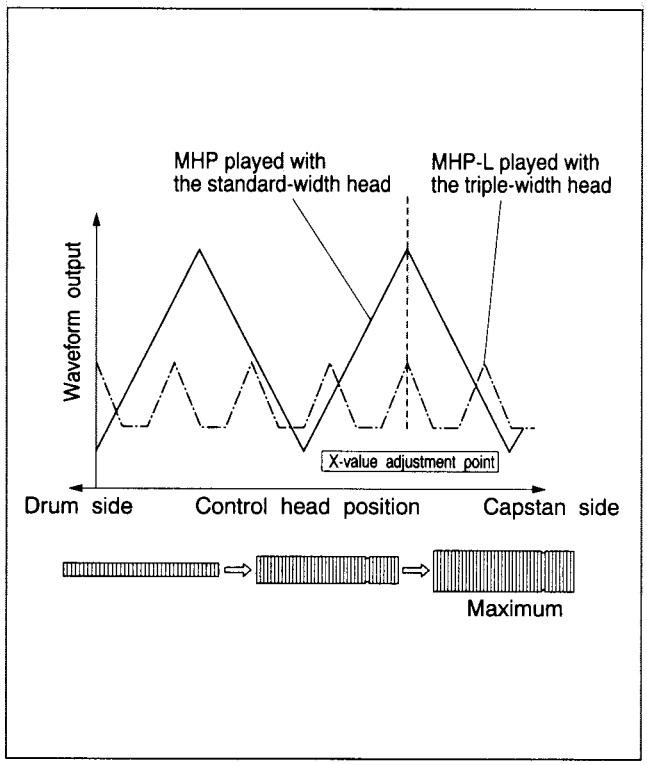


Fig. 2-7-7

2.7.4 Checking/Adjustment of the Tension Pole position

(1) Check the back tension cassette gauge (PUJ48076-2) to make sure that the indicator points to 29 - 46 g-cm.
(2) If the indicated value is outside this range, carry out the following adjustment steps.
  1) Select the mechanism servicing mode. (See 1.6 MECHANISM SERVICE MODE.)
  2) While in the Play mode, turn the adjustment pin with a straight-slot screwdriver while taking care not to touch the 2.5 mm dia. pole. (See Fig.2-7-8).

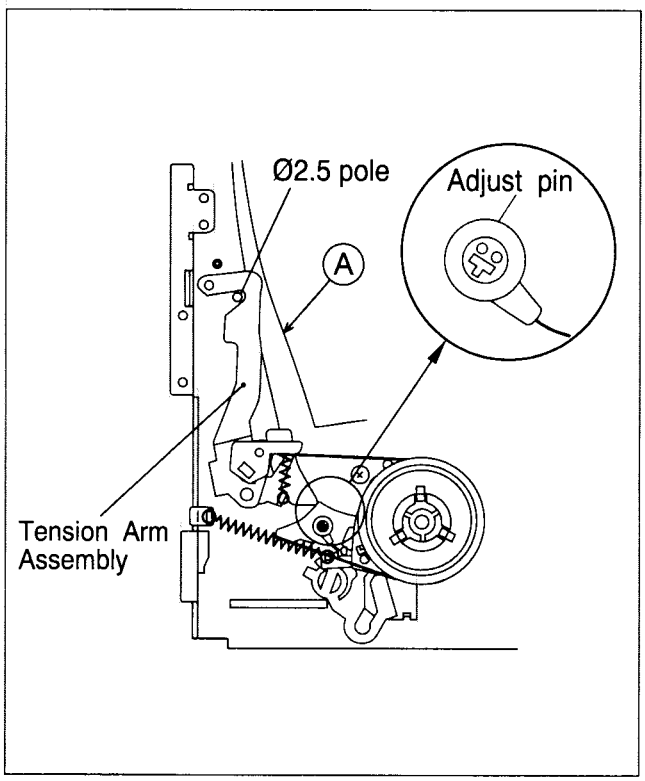


Fig. 2-7-8

SECTION 3
ELECTRICAL ADJUSTMENT

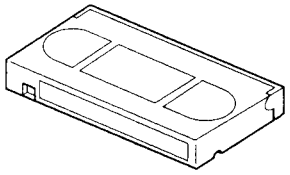
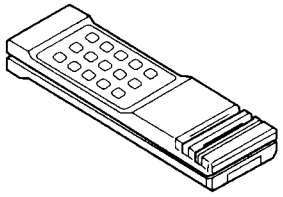
3.1 PRECAUTION

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 Color television or monitor
② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
③ Frequency counter
④ Digital voltmeter
⑤ Signal generator: RF/IF sweep/maker
⑥ Signal generator: NTSC color bar, stairstep
⑦ Recording tape
⑧ Digit-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP,stairstep) MHP	Presetting unit PTU94008
	

3.1.3 Color bar signal,color bar pattern

● Color bar signal

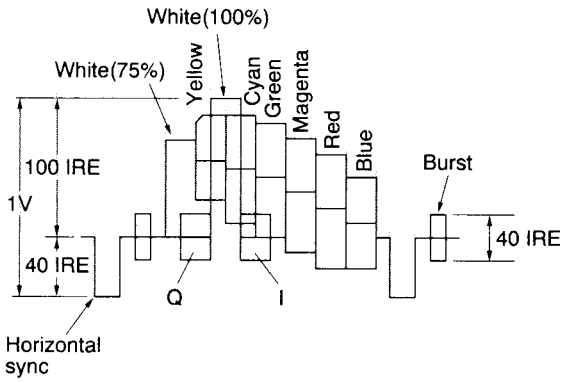


Fig.3-1-1 Color bar signal waveform

● Color bar pattern

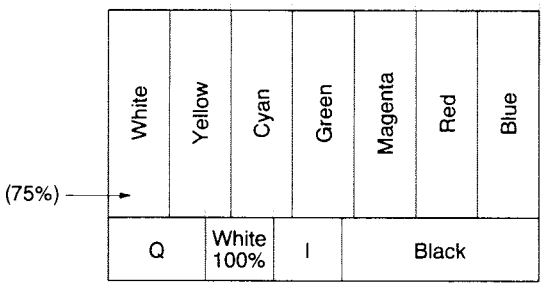


Fig.3-1-2 Color bar pattern

3.2 SERVO CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Set VCR to the mode A by remote controller.*

3.2.1 PB switching point

Signal	• Alignment tape [MHP],Stairstep
Mode	• PB,Automatic tracking OFF
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Trigger slope (–)	• TP111(DRUM FF)
Adjustment tool	• Presetting unit [PTU94008]
Specification	• 6.5 ± 0.5H

(1) Connect an oscilloscope to VIDEO OUT TERMINAL and external trigger from TP111 (negative slope).
(2) Playback the stairstep signal of the alignment tape.
(3) Press the "O" button of the presetting unit.
(4) The adjustment is performed automatically. Once the adjustment is performed, the VCR will go into the STOP mode.
(5) Playback the alignment tape again, confirm the switching point (See Fig.3-2-2).

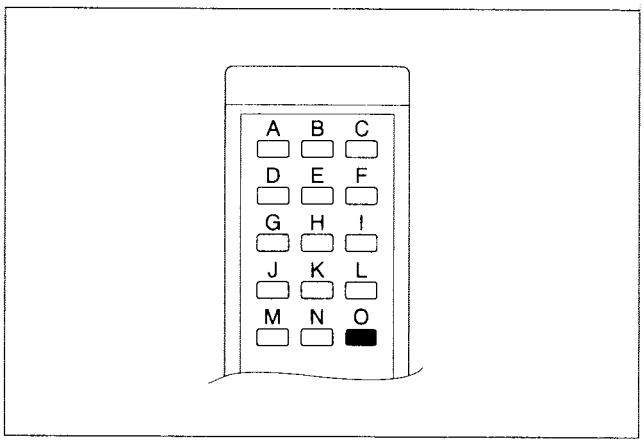


Fig.3-2-1 Presetting unit

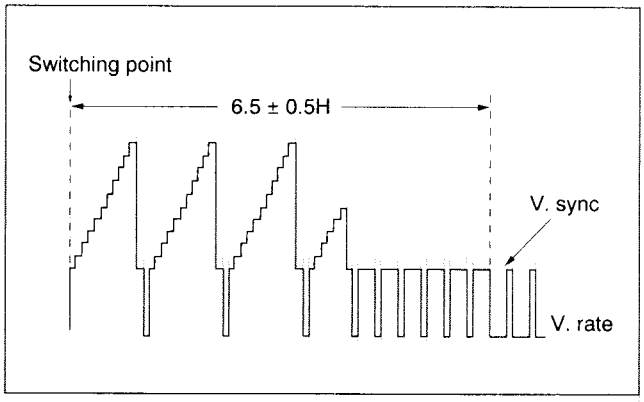


Fig.3-2-2 PB switching point

3.2.2 Slow tracking preset

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

Note : *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 color bar signal in the SP mode.
(2) Playback recorded signal on the FWD slow mode.
(3) Set the tracking control to the center position by simultaneously pressing the CH " ▲ " and " ▼ " buttons.
(4) 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.
(5) Depress the STOP button.
(6) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
(7) Repeat steps (2) to (6) in REV slow mode.
(8) Repeat steps (1) to (7) in EP mode.

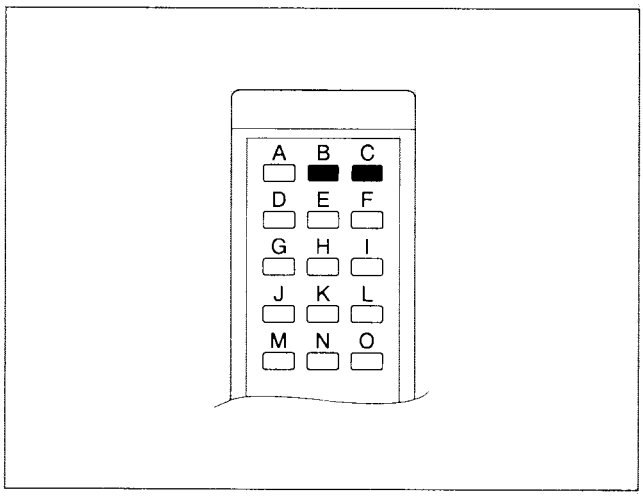


Fig.3-2-3 Presetting unit

3.3 VIDEO CIRCUIT

Notes: • *Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Set VCR to the mode A by remote controller.*

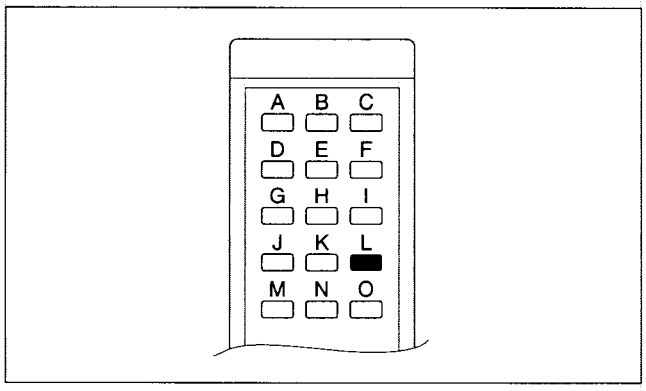


Fig.3-3-1 Presetting unit

3.3.1 Auto picture

Signal	• Monoscope
Mode	• Auto picture : OFF • REC then PB • SP/EP
Adjustment tool	• Presetting unit[PTU94008]
Specification	• STOP mode

(1) Record a monoscope signal in the SP mode.
(2) Playback the recorded signal.
(3) Press the "L" button of the presetting unit during playback.
(4) Confirm that VCR will go into the STOP mode.
(5) Repeat steps (2) to (4) in the EP mode.

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

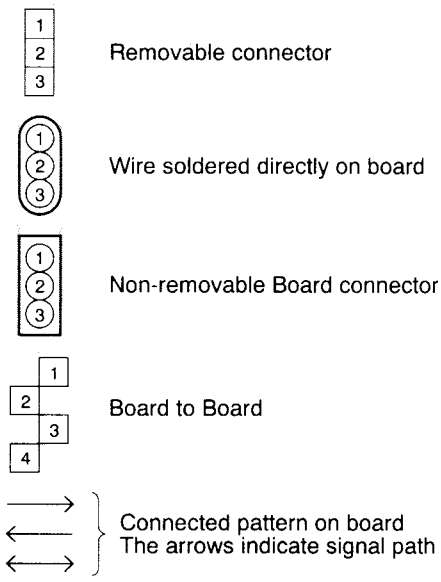
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

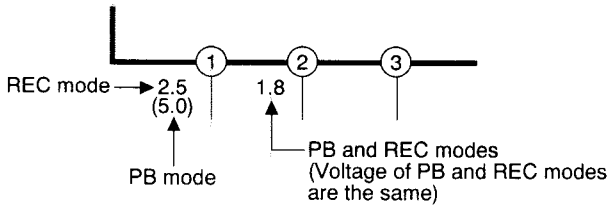
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications



4. Voltage measurement

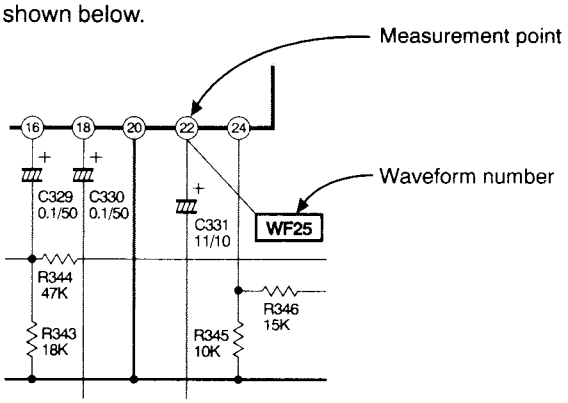
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie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



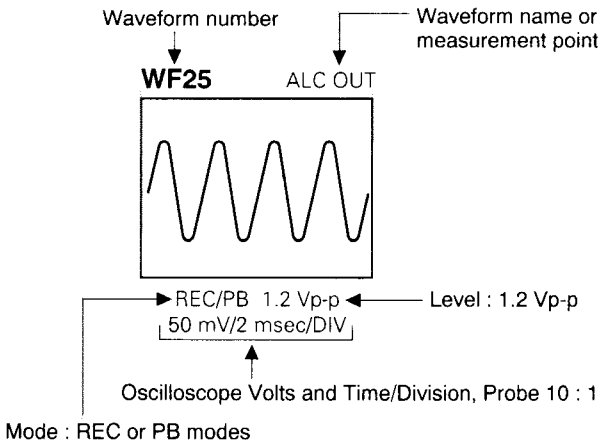
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

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 gray scale or colour bar test chatrs 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)

Capstan servo path

Drum servo path

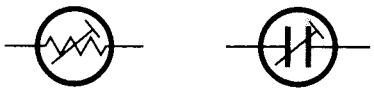
(Example)

R-Y Playback R-Y signal path

Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

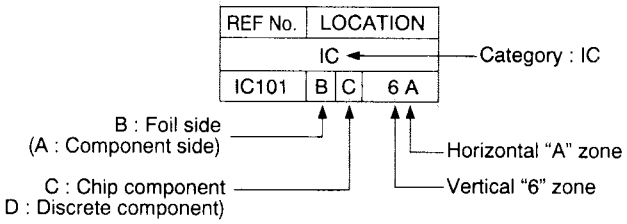
CIRCUIT BOARD NOTES

1. 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) indicated.

2. Parts location guides

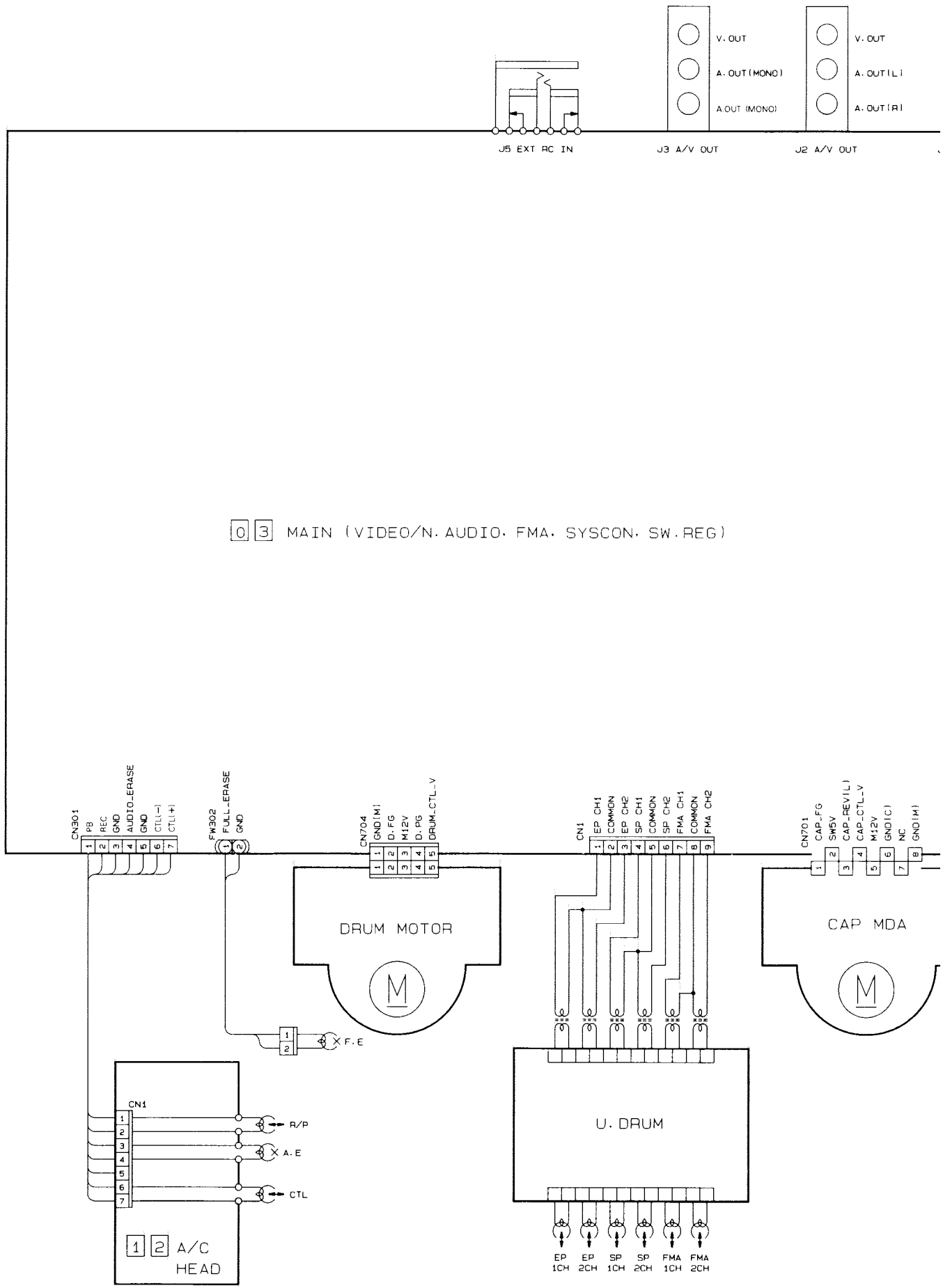
Parts location are indicated by guide scale on the circuit board.

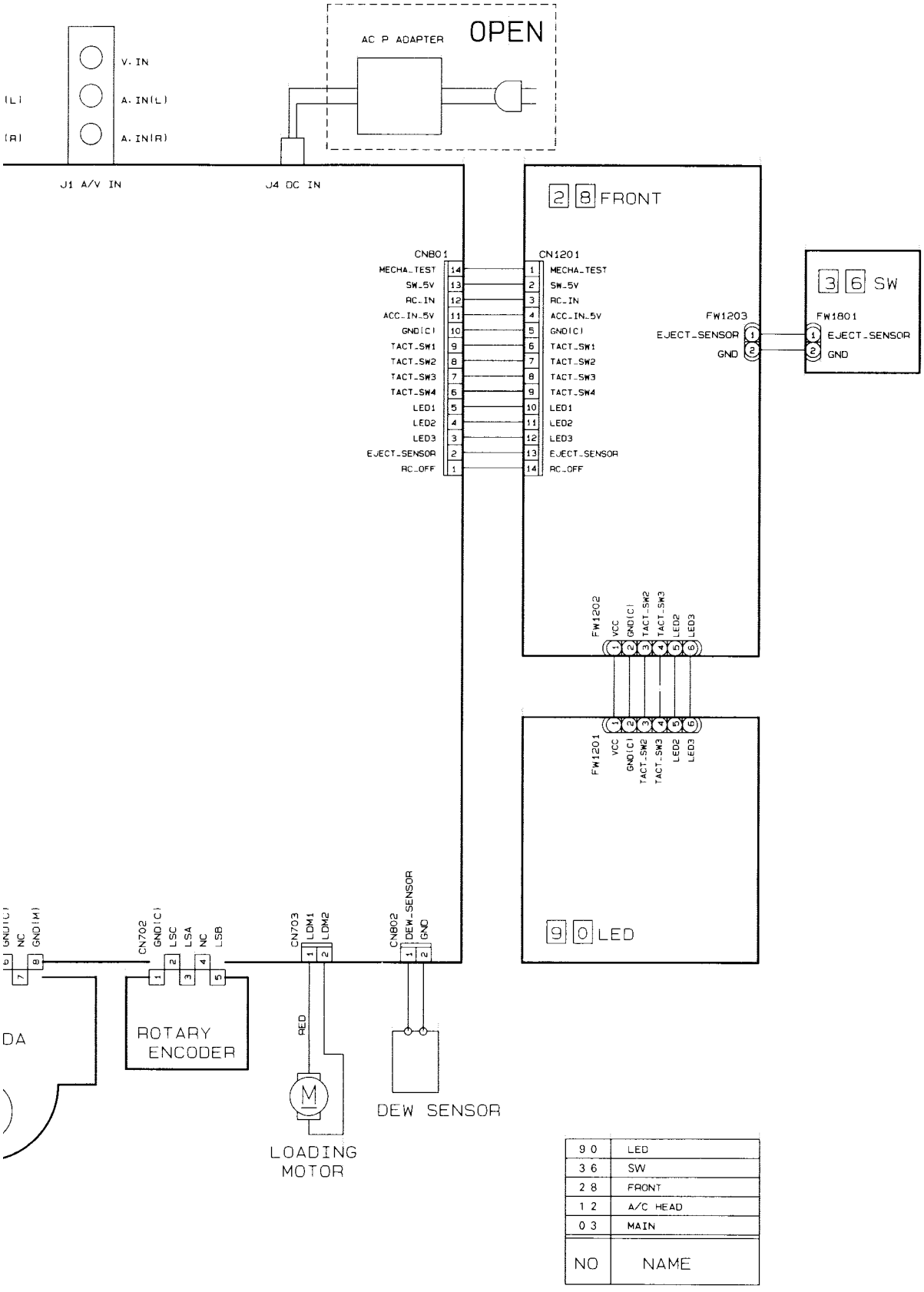


Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

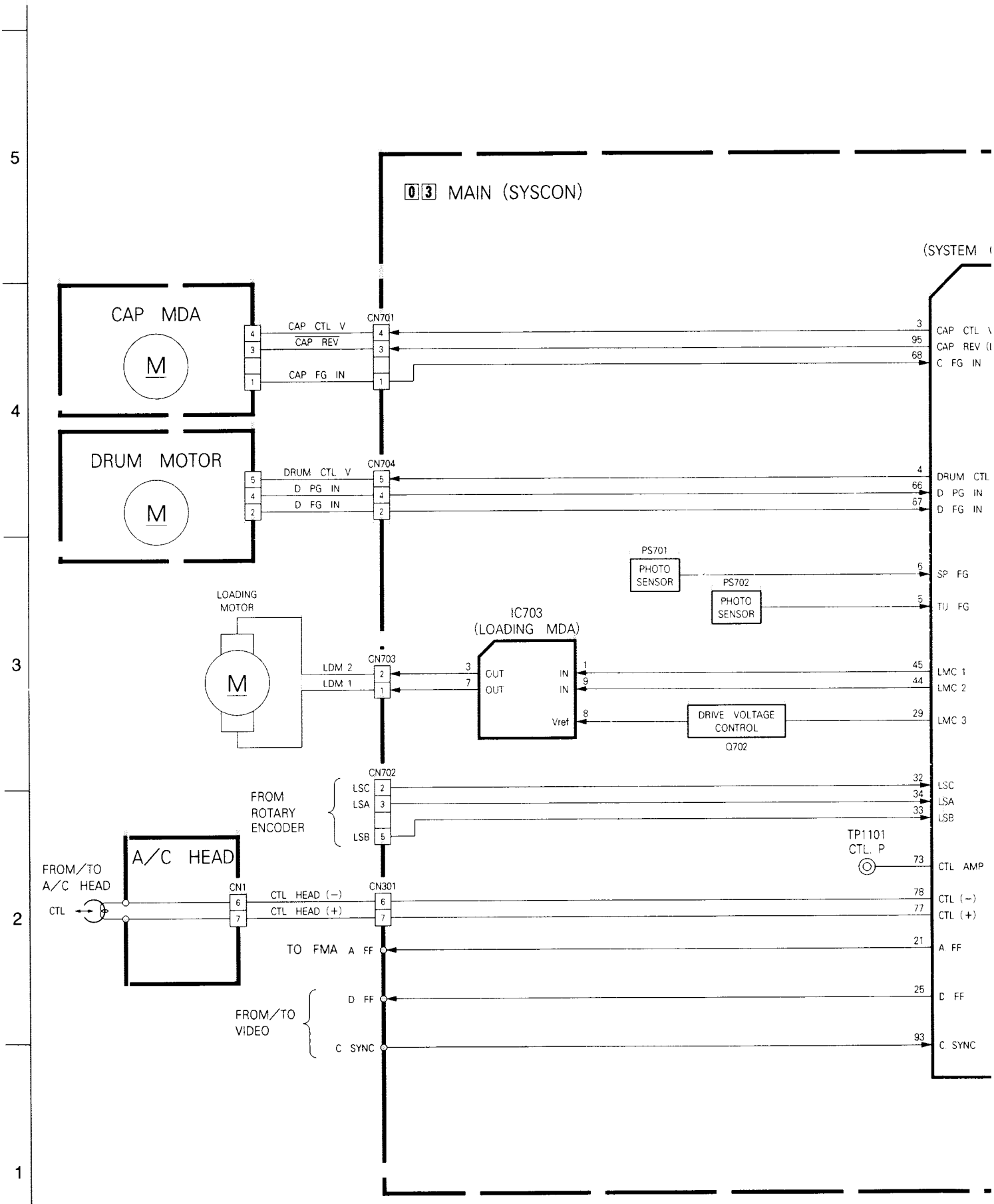
4.1 BOARD INTERCONNECTIONS

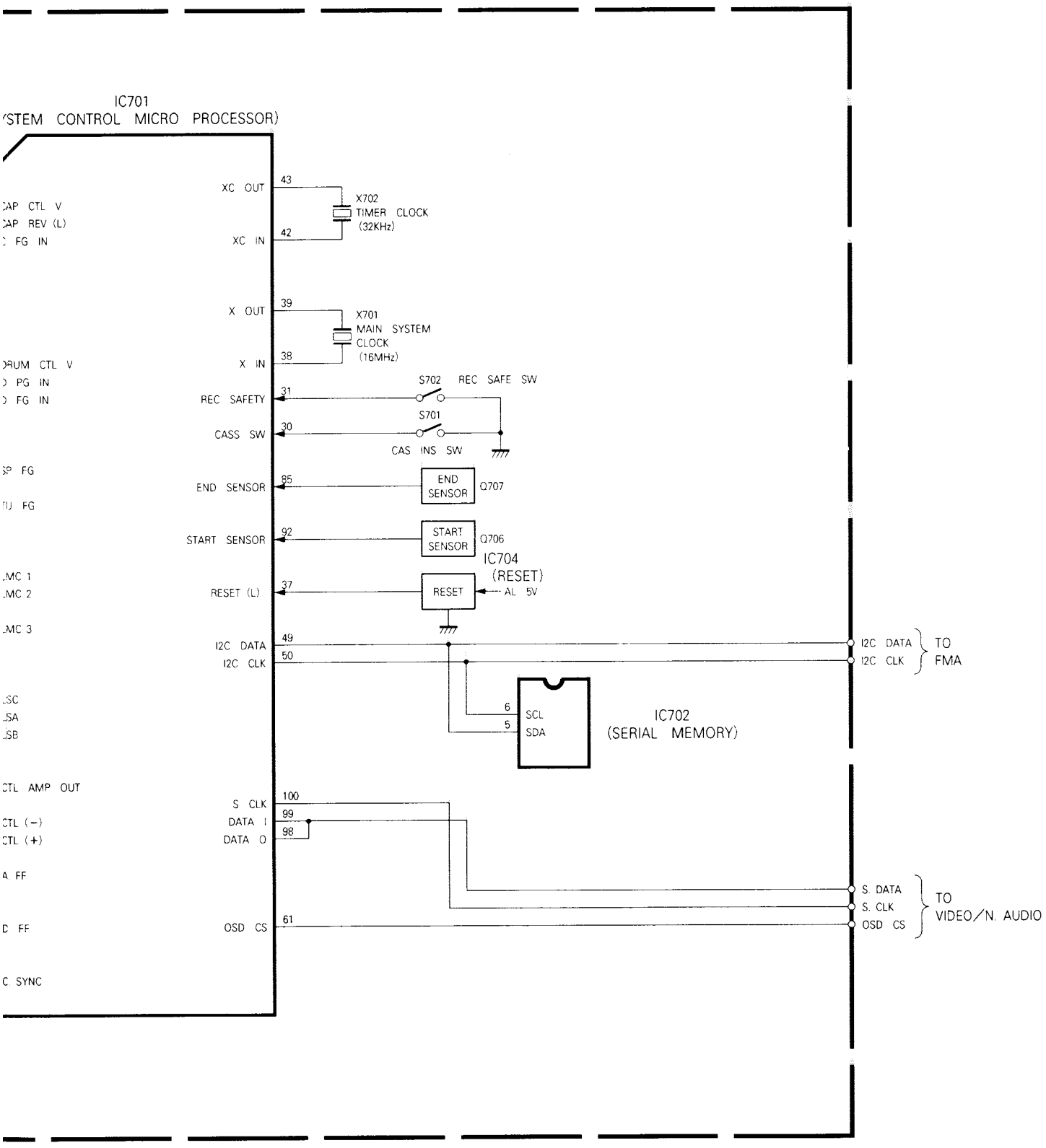




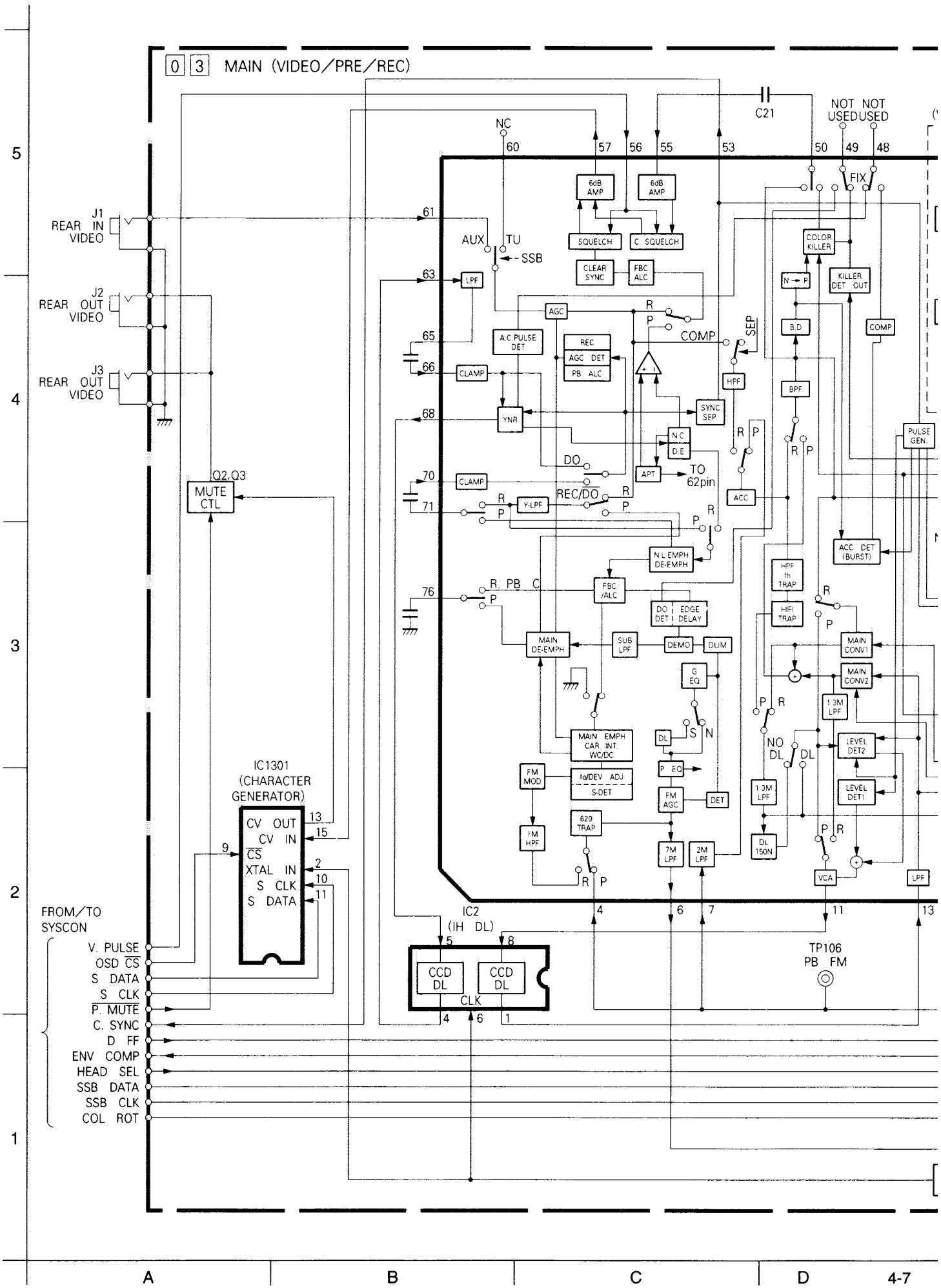
9 0	LED
3 6	SW
2 8	FRONT
1 2	A/C HEAD
0 3	MAIN
NO	NAME

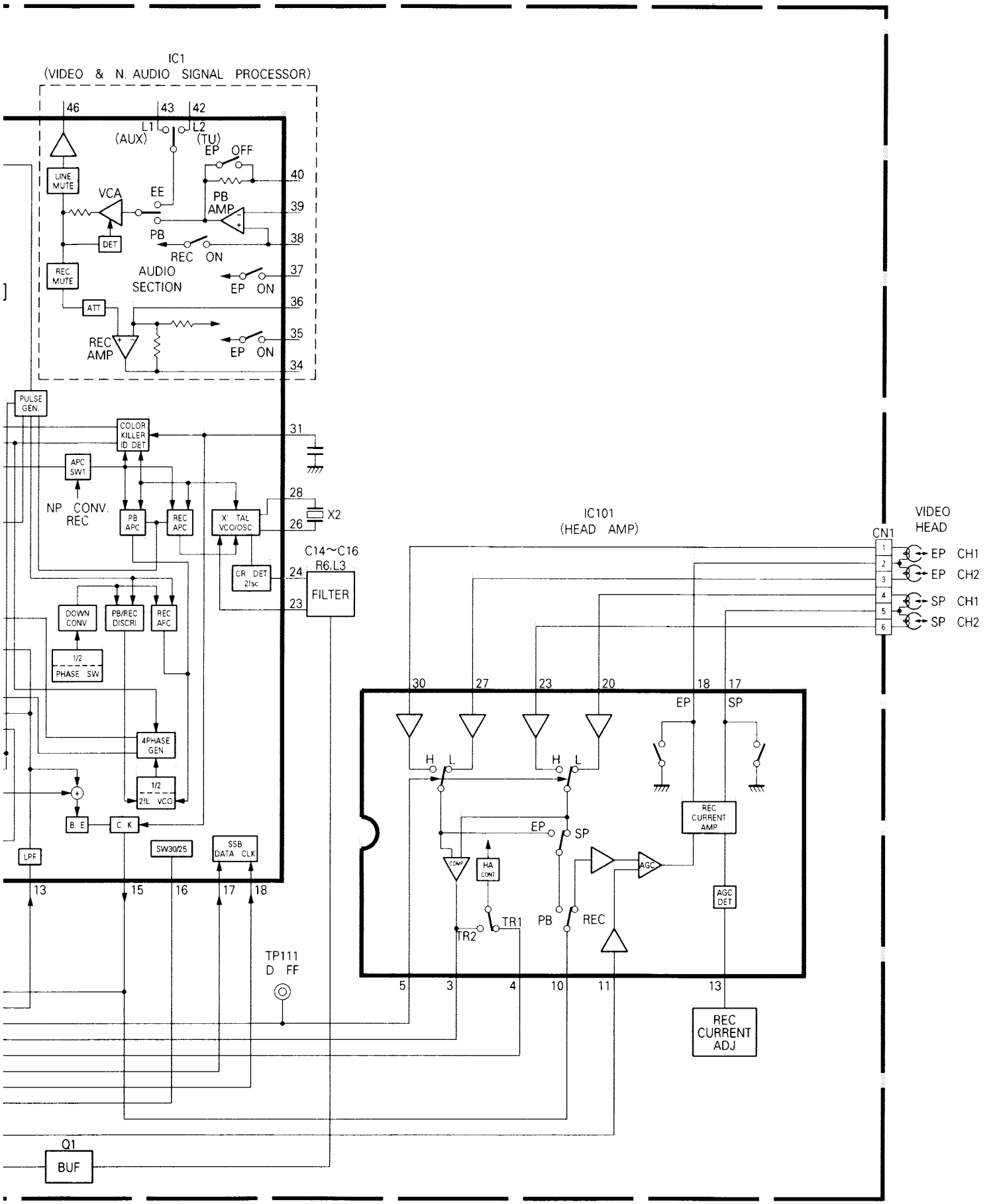
4.2 SYSTEM CONTROL BLOCK DIAGRAM



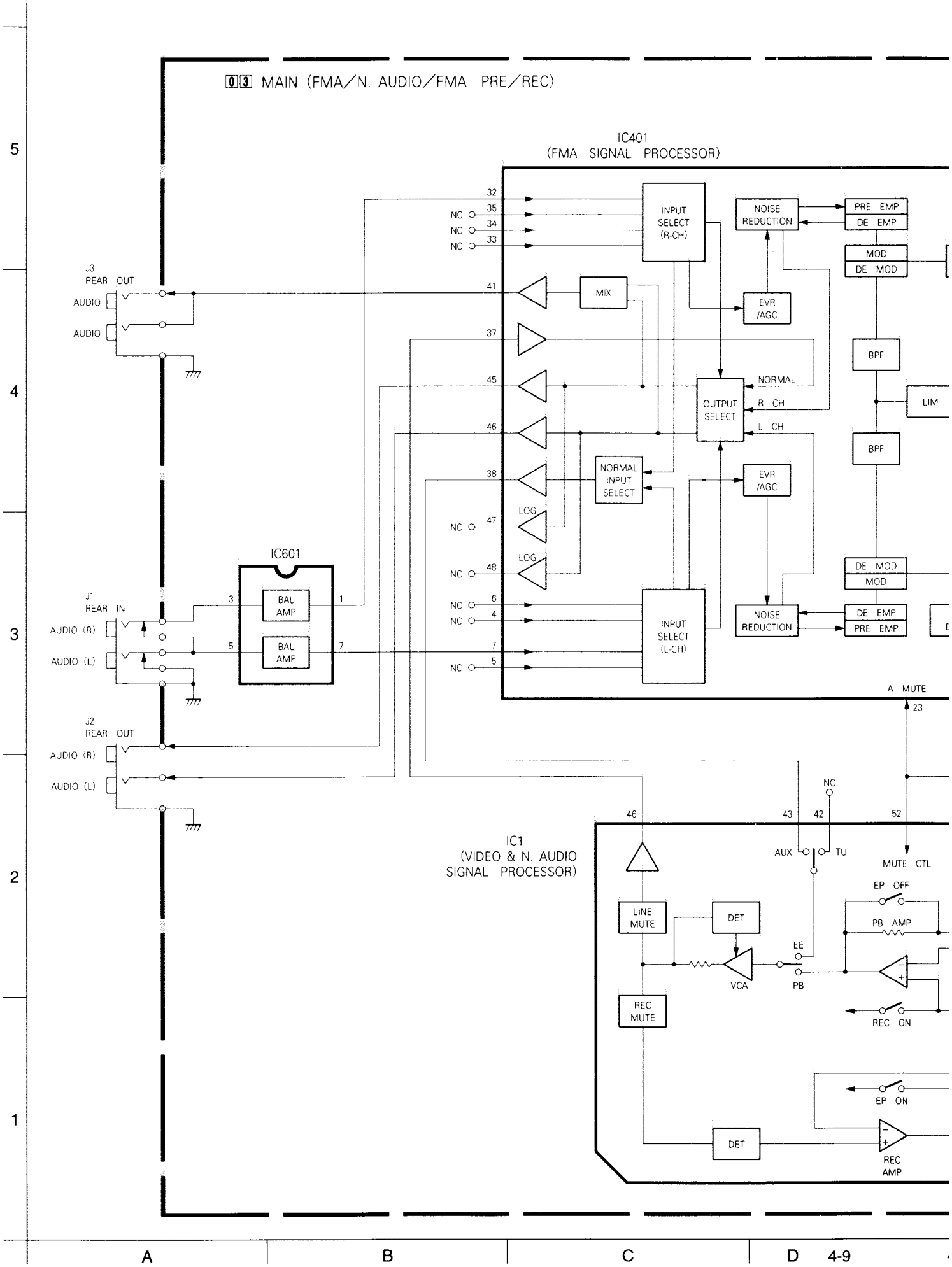

IC701
'STEM CONTROL MICRO PROCESSOR)
XC OUT
43
X702
TIMER CLOCK
(32KHz)
XC IN
42
X OUT
39
X701
MAIN SYSTEM
CLOCK
(16MHz)
X IN
38
S702 REC SAFE SW
REC SAFETY
31
S701
CASS SW
30
CAS INS SW
END SENSOR
95
END SENSOR
Q707
START SENSOR
92
START SENSOR
Q706
IC704
(RESET)
RESET (L)
37
RESET
AL 5V
I2C DATA
49
I2C CLK
50
6
SCL
5
SDA
IC702
(SERIAL MEMORY)
I2C DATA
I2C CLK
TO
FMA
S CLK
100
DATA I
99
DATA O
98
OSD CS
61
S. DATA
S. CLK
OSD CS
TO
VIDEO/N. AUDIO

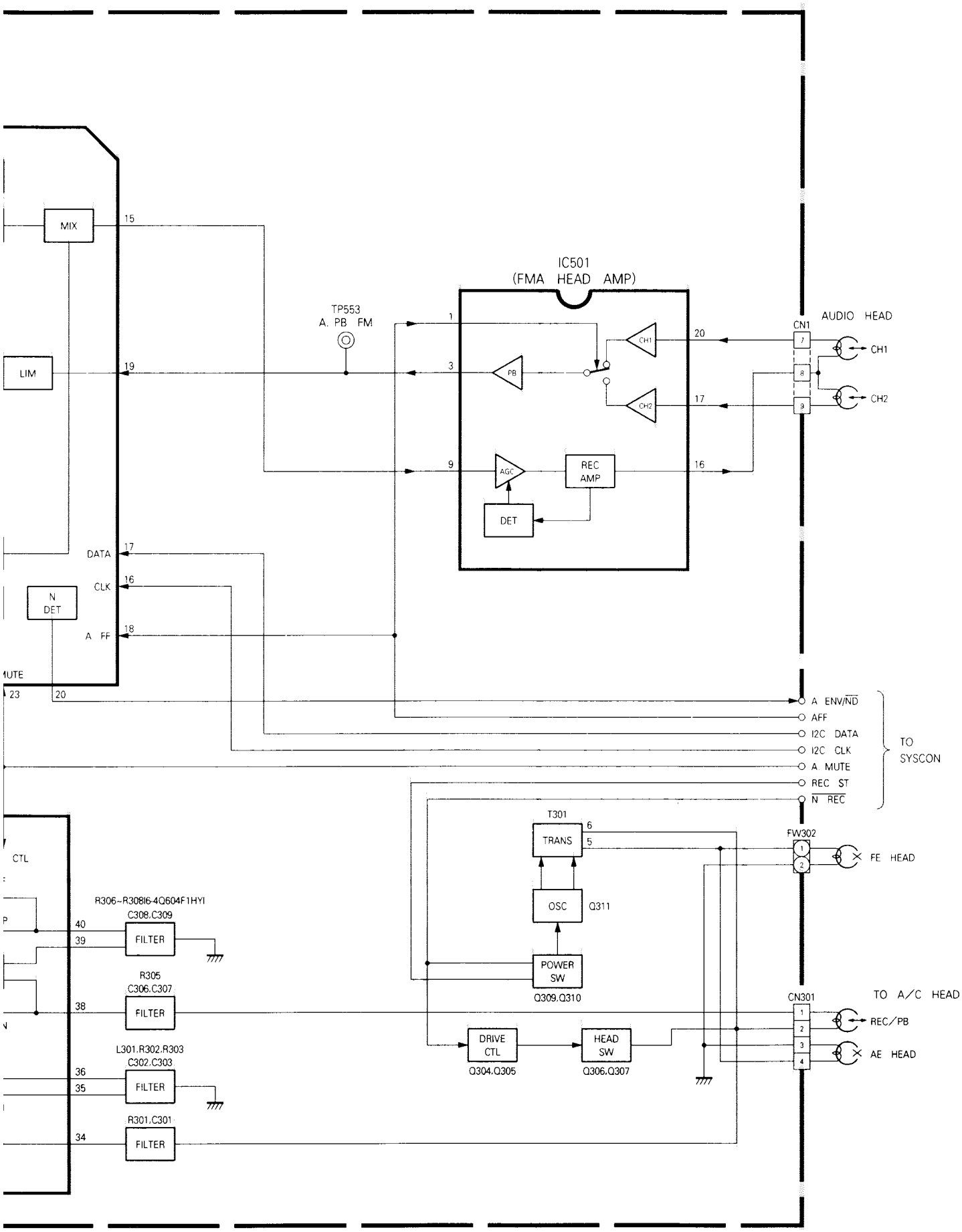
4.3 VIDEO BLOCK DIAGRAM



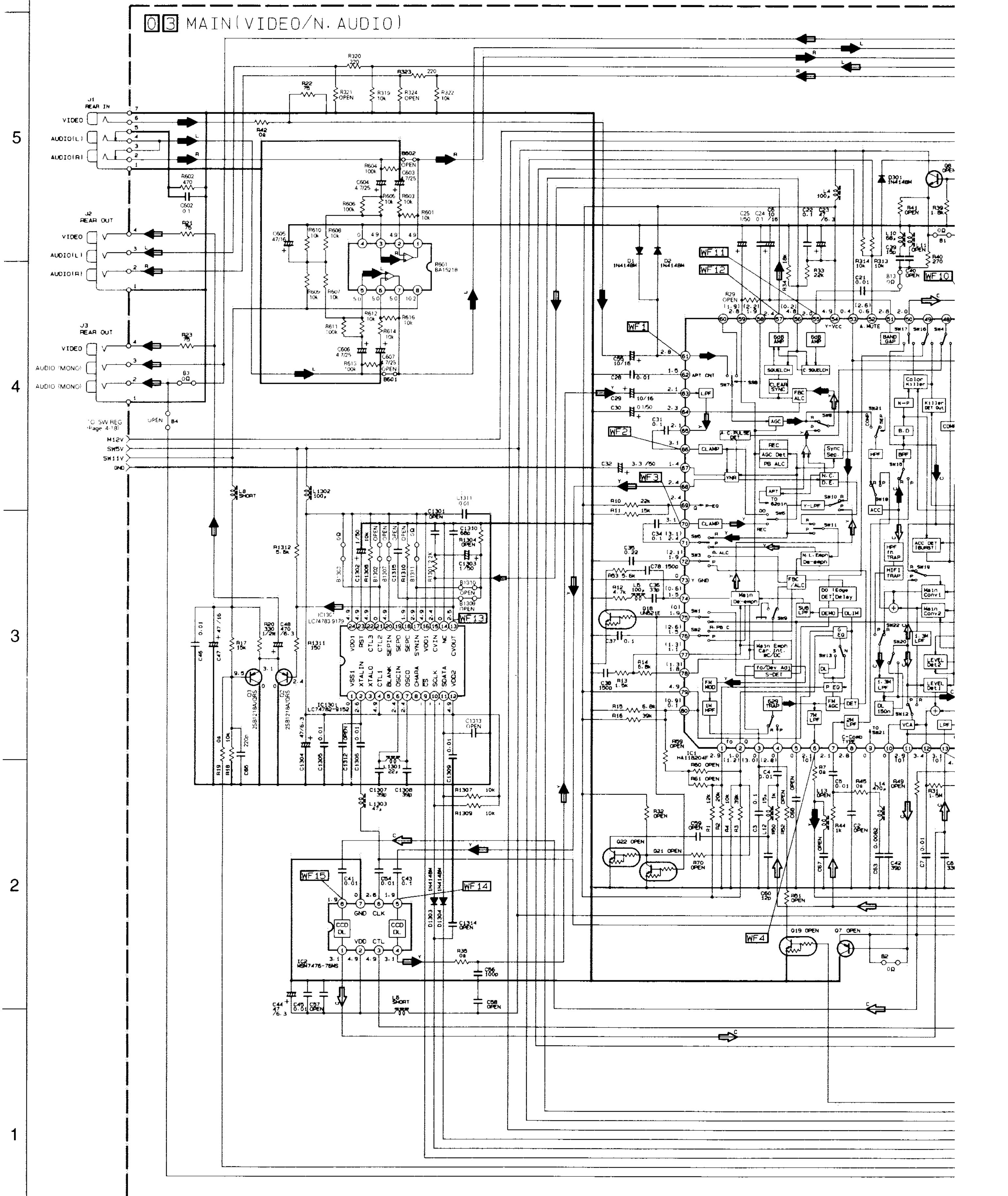

IC1
(VIDEO & N. AUDIO SIGNAL PROCESSOR)
46
43
42
L1
(AUX)
L2
(TU)
EP OFF
LINE MUTE
VCA
EE
PB AMP
40
39
PB
DET
REC ON
38
REC MUTE
AUDIO SECTION
EP ON
37
ATT
36
REC AMP
EP ON
35
34
PULSE GEN.
COLOR KILLER ID DET
31
APC SW1
NP CONV. REC
28
X2
PB APC
REC APC
X' TAL VCO/OSC
26
C14~C16
R6,L3
CR DET 2fsc
24
FILTER
23
DOWN CONV
PB/REC DISCRI
REC AFC
1/2 PHASE SW
4PHASE GEN
1/2 2fL VCO
B. E
C. K
LPF
SW30/25
SSB DATA CLK
13
15
16
17
18
TP111
D FF
Q1
BUF
IC101
(HEAD AMP)
CN1
VIDEO HEAD
EP CH1
EP CH2
SP CH1
SP CH2
30
27
23
20
18
17
EP
SP
H
L
REC CURRENT AMP
COMP
HA CONT
AGC
AGC DET
TR1
TR2
PB
REC
5
3
4
10
11
13
REC CURRENT ADJ

4.4 AUDIO BLOCK DIAGRAM



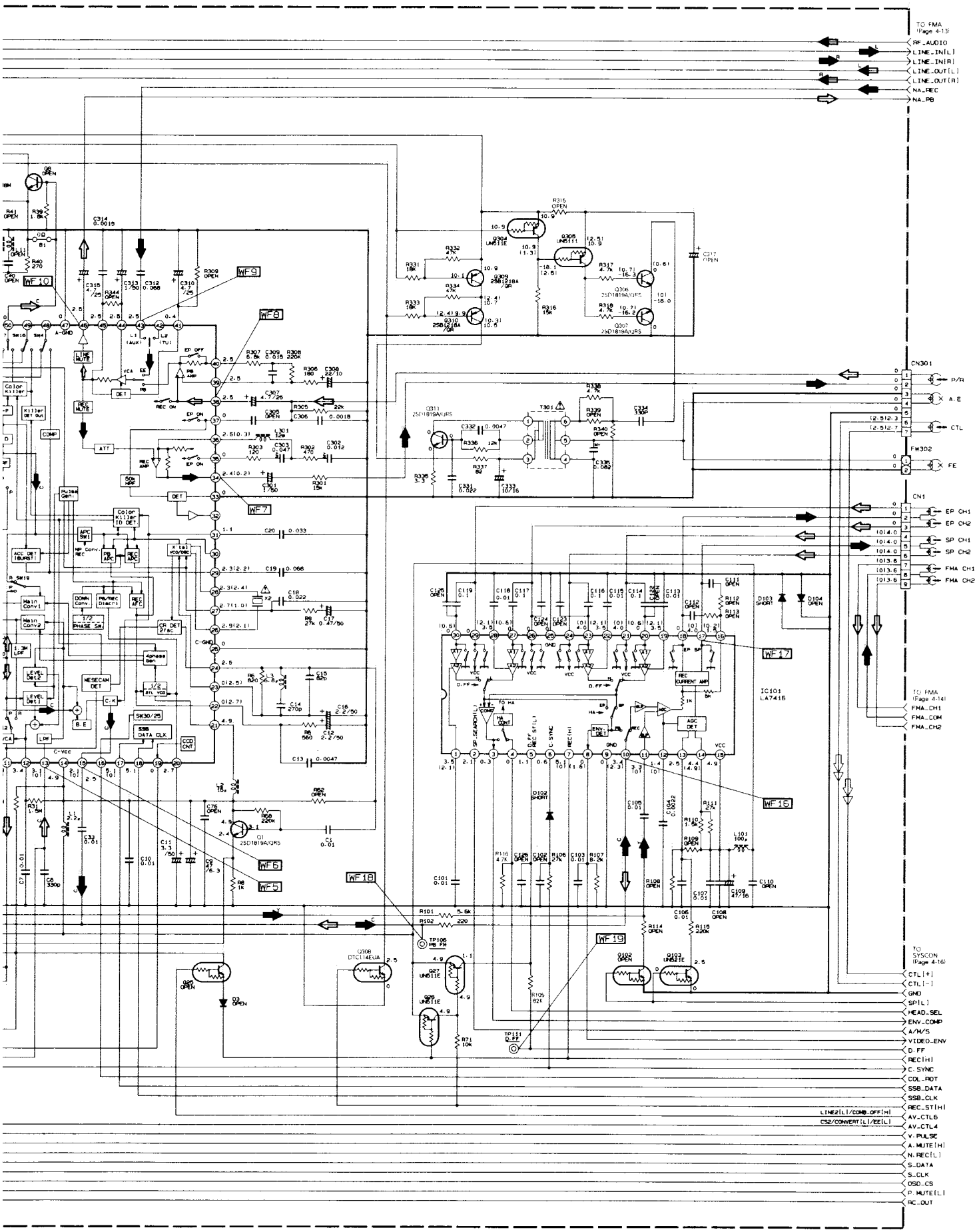

MIX
15
LIM
19
IC501
(FMA HEAD AMP)
TP553
A. PB FM
1
3
9
PB
AGC
REC
AMP
DET
CH1
CH2
20
17
16
CN1
AUDIO HEAD
CH1
CH2
DATA
17
CLK
16
N
DET
A FF
18
MUTE
23
20
A ENV/ND
AFF
I2C DATA
I2C CLK
A MUTE
REC ST
N REC
TO
SYSCON
CTL
T301
TRANS
6
5
FW302
FE HEAD
OSC
Q311
POWER
SW
Q309.Q310
R306~R308I6-4Q604F1HYI
C308.C309
40
39
FILTER
R305
C306.C307
38
FILTER
L301.R302.R303
C302.C303
36
35
FILTER
R301.C301
34
FILTER
DRIVE
CTL
Q304.Q305
HEAD
SW
Q306.Q307
CN301
TO A/C HEAD
REC/PB
AE HEAD

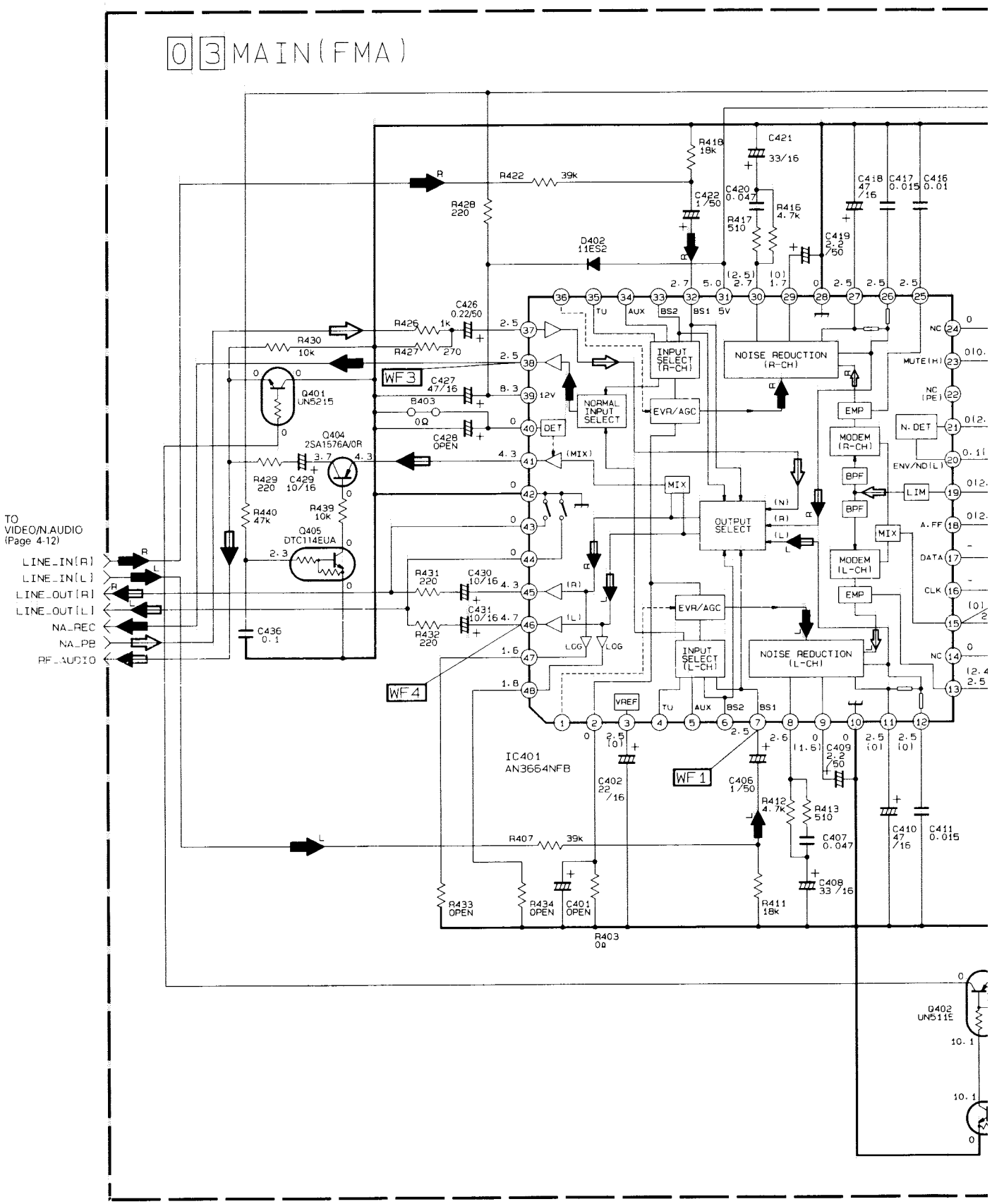
4.5 VIDEO/N.AUDIO SCHEMATIC DIAGRAM



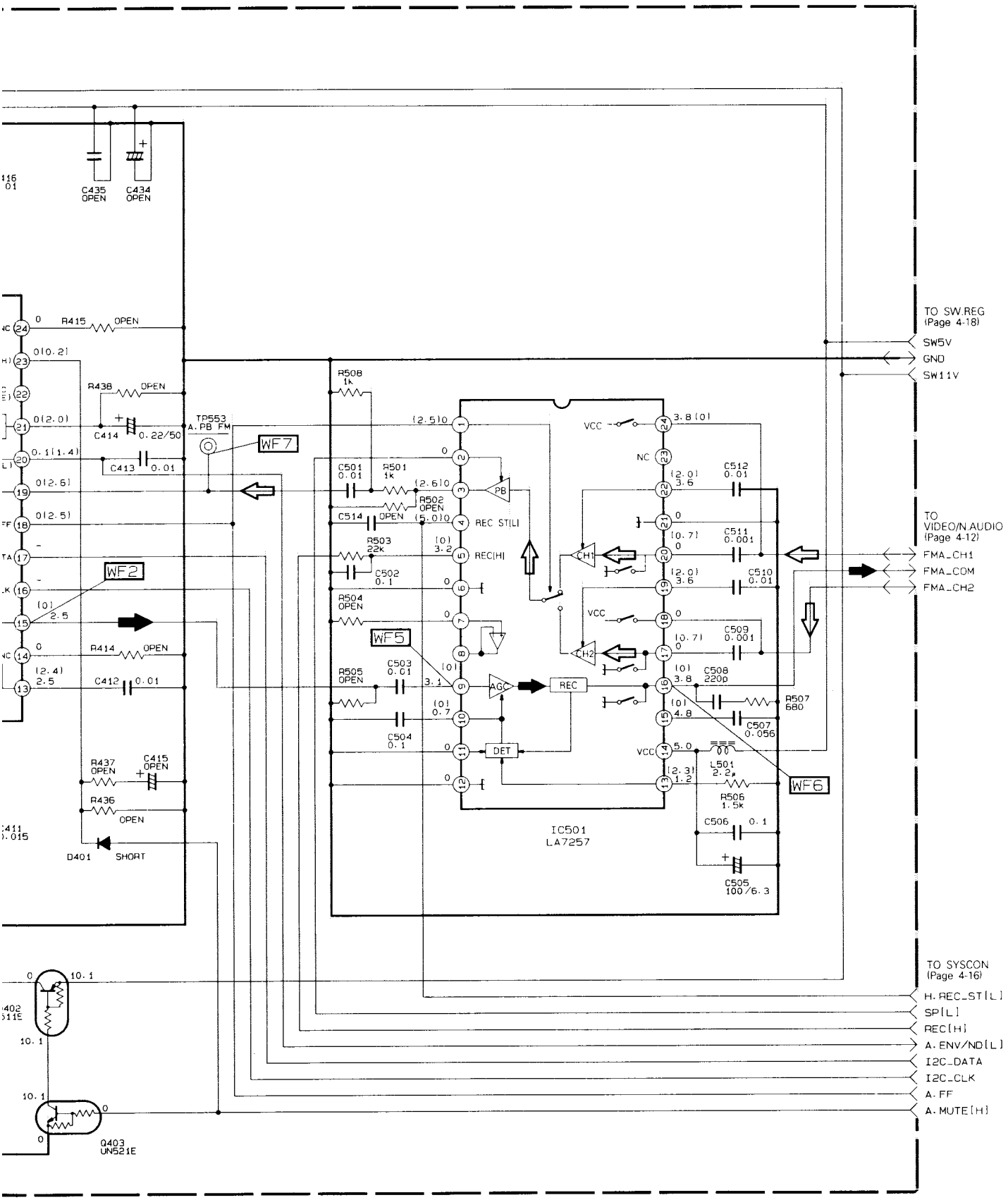
NOTE: For VIDEO. PRE/REC and AUDIO waveforms, please refer to page4-24.

A B C D

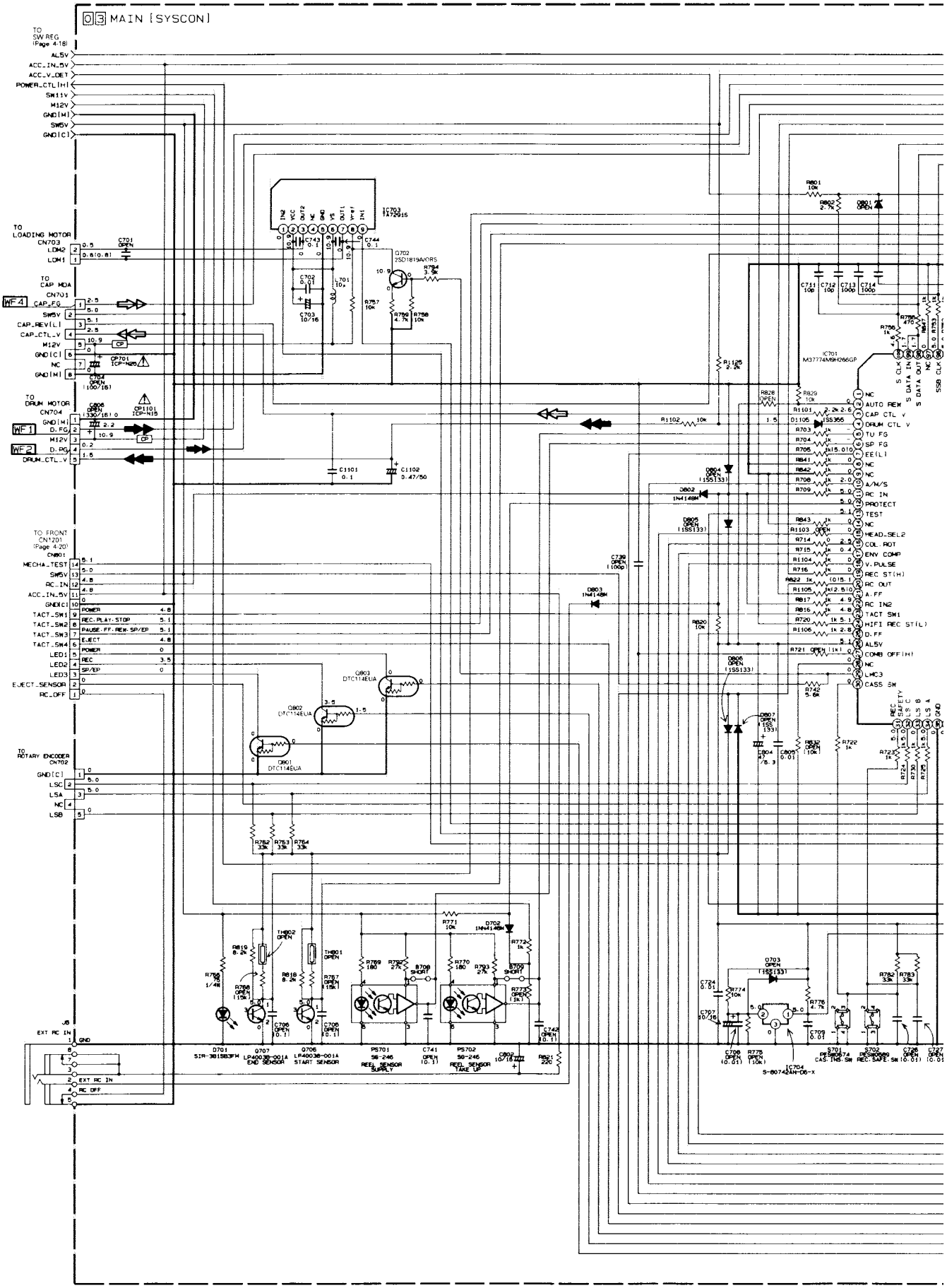

TO FMA (Page 4-13)
RF_AUDIO
LINE_IN[L]
LINE_IN[R]
LINE_OUT[L]
LINE_OUT[R]
NA_REC
NA_PB
CN301
P/R
A.E
CTL
FW302
FE
CN1
EP CH1
EP CH2
SP CH1
SP CH2
FMA CH1
FMA CH2
TO FMA (Page 4-14)
FMA_CH1
FMA_COM
FMA_CH2
TO SYSCON (Page 4-16)
CTL[+]
CTL[-]
GND
SP[L]
HEAD_SEL
ENV_COMP
A/M/S
VIDEO_ENV
D.FF
REC[H]
C.SYNC
COL_ROT
SSB_DATA
SSB_CLK
REC_ST[H]
AV_CTL6
AV_CTL4
V.PULSE
A.MUTE[H]
N.REC[L]
S_DATA
S_CLK
OSD_CS
P.MUTE[L]
RC_OUT
LINE2[L]/COMB_OFF[H]
CS2/CONVERT[L]/EE[L]
IC101 LA7416
WF5
WF6
WF7
WF8
WF9
WF10
WF15
WF16
WF17
WF18
WF19



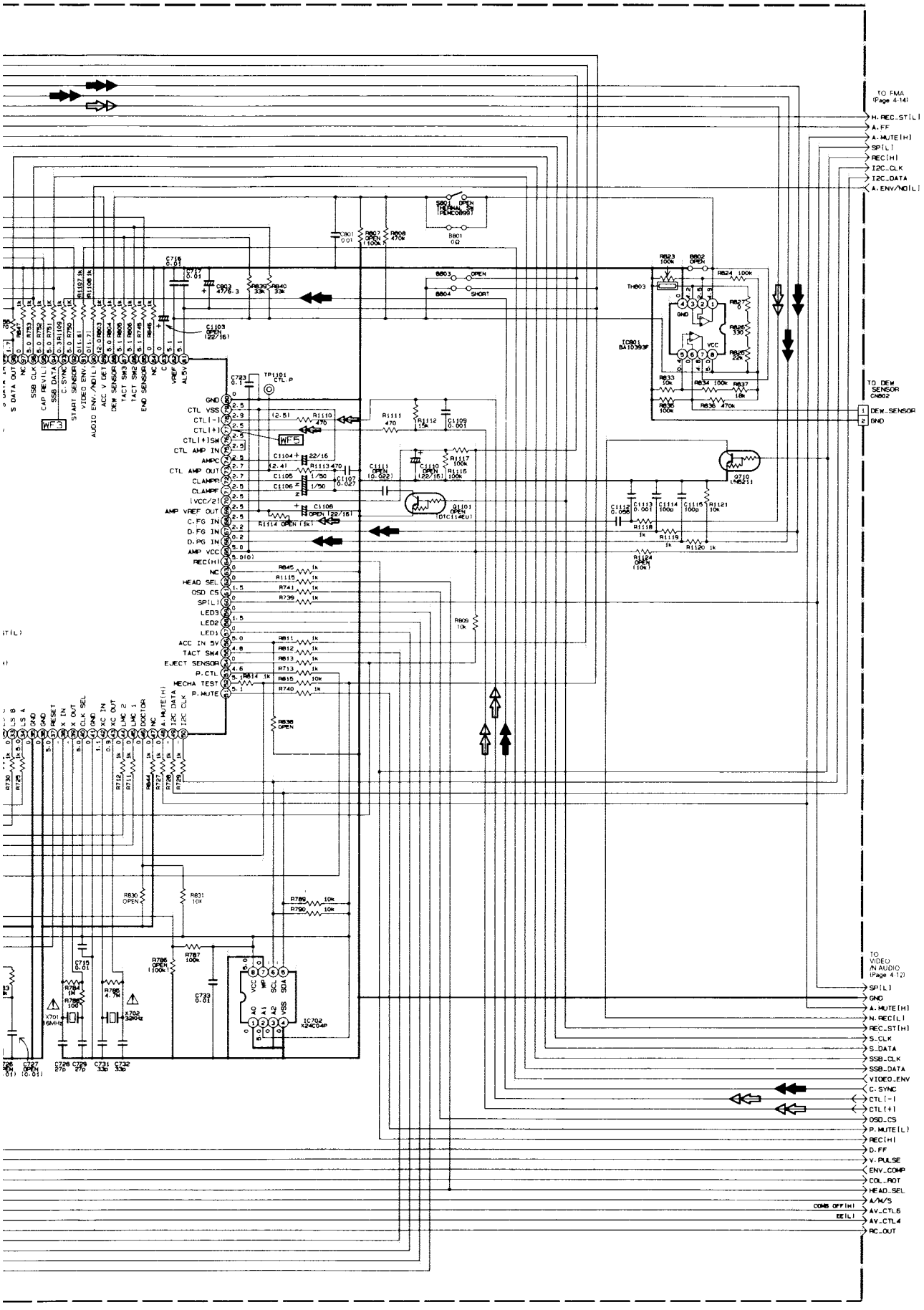
NOTE: For FMA waveforms, please refer to page4-24.

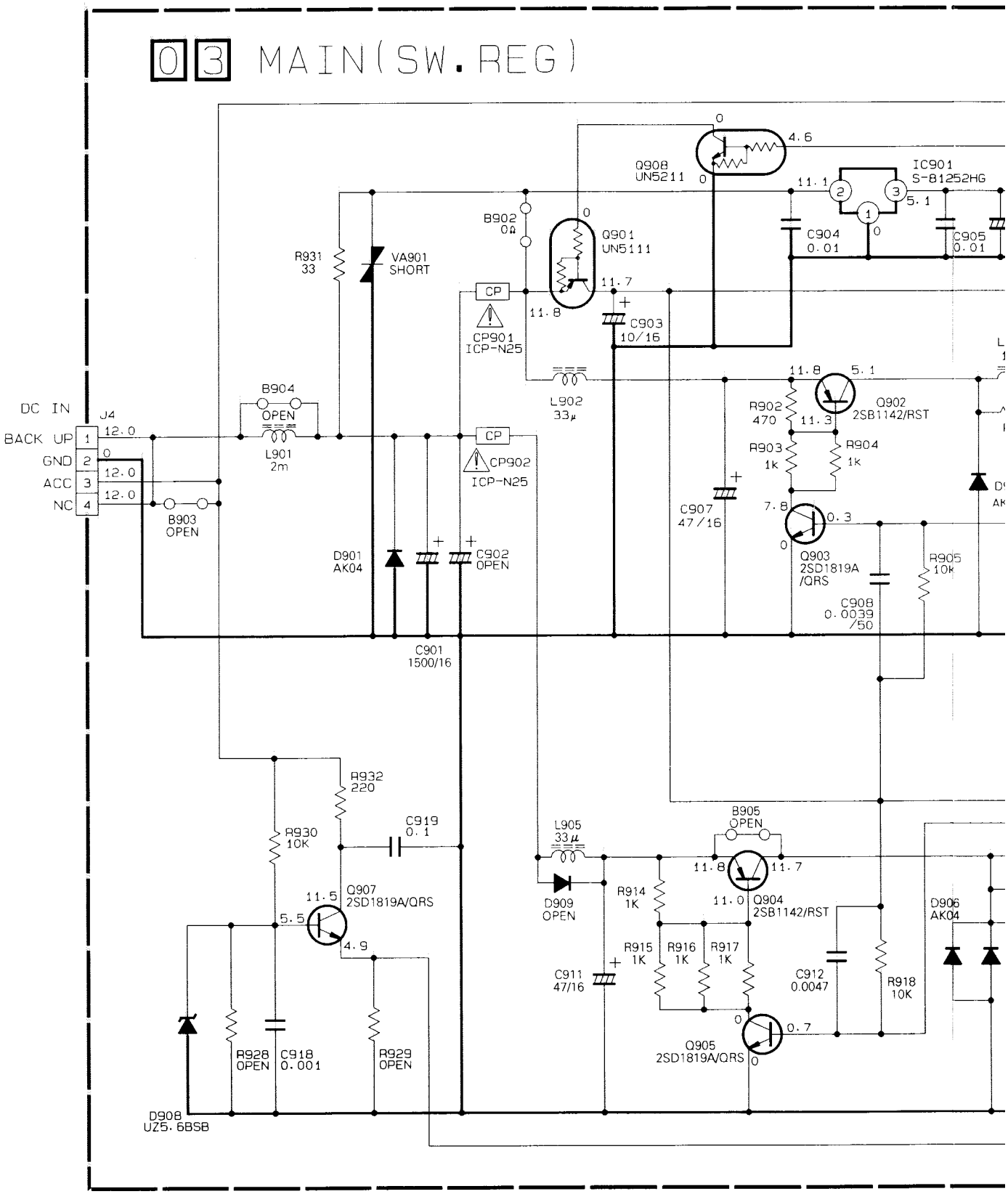

C435 OPEN
C434 OPEN
R415 OPEN
R438 OPEN
C414 0.22/50
C413 0.01
TP553 A.PB FM
WF7
WF2
R414 OPEN
C412 0.01
R437 OPEN
C415 OPEN
R436 OPEN
D401 SHORT
R508 1k
C501 0.01
R501 1k
R502 OPEN
C514 OPEN
R503 22k
C502 0.1
R504 OPEN
WF5
R505 OPEN
C503 0.01
C504 0.1
REC ST[L]
REC[H]
PB
AGC
REC
DET
CH1
CH2
VCC
NC
C512 0.01
C511 0.001
C510 0.01
C509 0.001
C508 220p
R507 680
C507 0.056
L501 2.2μ
R506 1.5k
C506 0.1
C505 100/6.3
WF6
IC501
LA7257
Q402 UN511E
Q403 UN521E
TO SW.REG (Page 4-18)
SW5V
GND
SW11V
TO VIDEO/N.AUDIO (Page 4-12)
FMA_CH1
FMA_COM
FMA_CH2
TO SYSCON (Page 4-16)
H. REC_ST[L]
SP[L]
REC[H]
A. ENV/ND[L]
I2C_DATA
I2C_CLK
A. FF
A. MUTE[H]

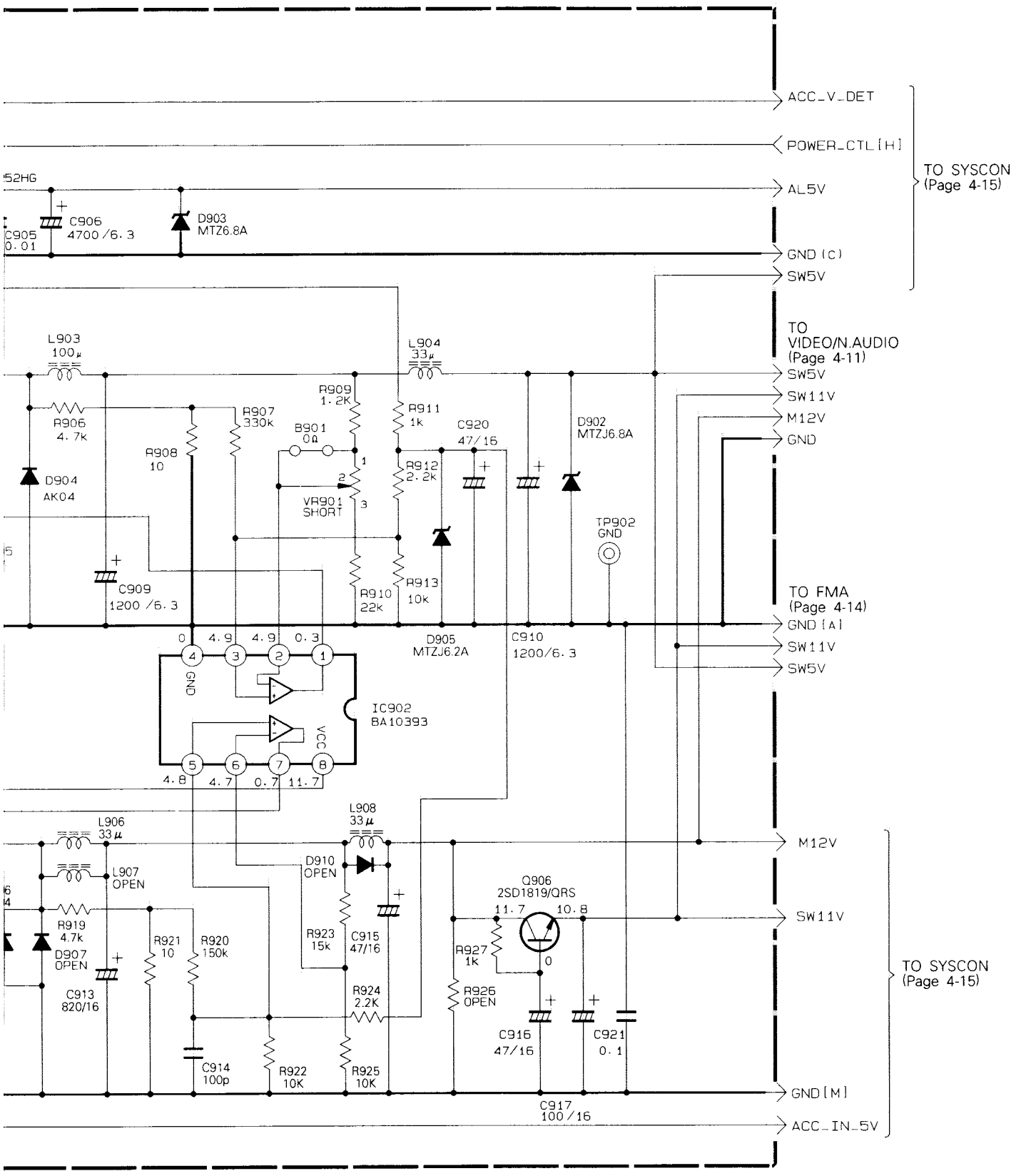
4.7 SYSCON SCHEMATIC DIAGRAM

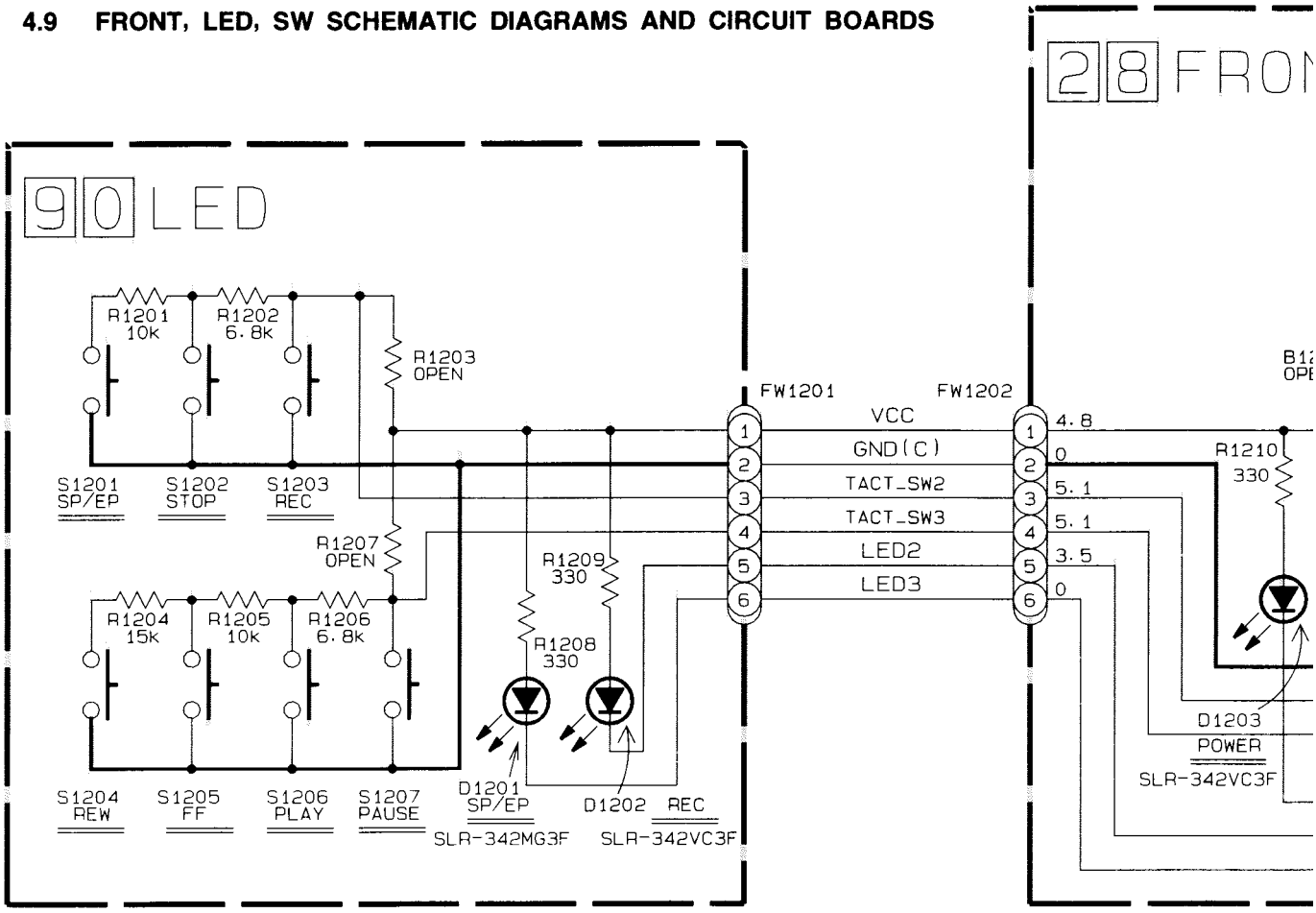


NOTE: For SYSCON waveforms, please reter to page4-24.

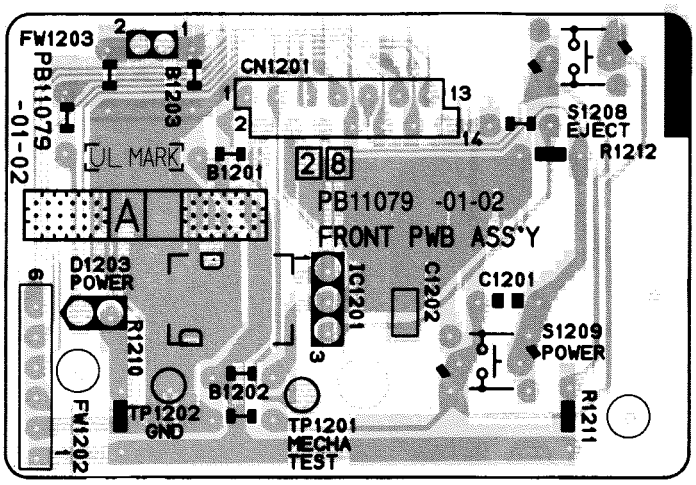

TO FMA
(Page 4-14)
H.REC.ST[L]
A.FF
A.MUTE[H]
SP[L]
REC[H]
I2C_CLK
I2C_DATA
A.ENV/NOI[L]
TO DEW SENSOR CN802
DEW_SENSOR
GND
TO VIDEO /N AUDIO (Page 4-12)
SP[L]
GND
A.MUTE[H]
N.REC[L]
REC_ST[H]
S_CLK
S_DATA
SSB_CLK
SSB_DATA
VIDEO_ENV
C_SYNC
CTL[-]
CTL[+]
OSD_CS
P.MUTE[L]
REC[H]
D.FF
V.PULSE
ENV_COMP
COL_ROT
HEAD_SEL
A/M/S
COMB OFF[H]
EE[L]
AV_CTL6
AV_CTL4
RC_OUT


03 MAIN(SW.REG)
DC IN
J4
BACK UP 1 12.0
GND 2 0
ACC 3 12.0
NC 4 12.0
B903 OPEN
B904 OPEN
L901 2m
R931 33
VA901 SHORT
B902 0Ω
Q901 UN5111
CP
CP901 ICP-N25
CP902 ICP-N25
C903 10/16
Q908 UN5211
IC901 S-81252HG
C904 0.01
C905 0.01
L902 33μ
R902 470
Q902 2SB1142/RST
R903 1k
R904 1k
C907 47/16
Q903 2SD1819A /QRS
R905 10k
C908 0.0039 /50
D901 AK04
C902 OPEN
C901 1500/16
R932 220
R930 10K
C919 0.1
Q907 2SD1819A/QRS
L905 33μ
B905 OPEN
D909 OPEN
R914 1K
Q904 2SB1142/RST
R915 1K
R916 1K
R917 1K
C911 47/16
C912 0.0047
R918 10K
D906 AK04
Q905 2SD1819A/QRS
R928 OPEN
C918 0.001
R929 OPEN
D908 UZ5.6BSB

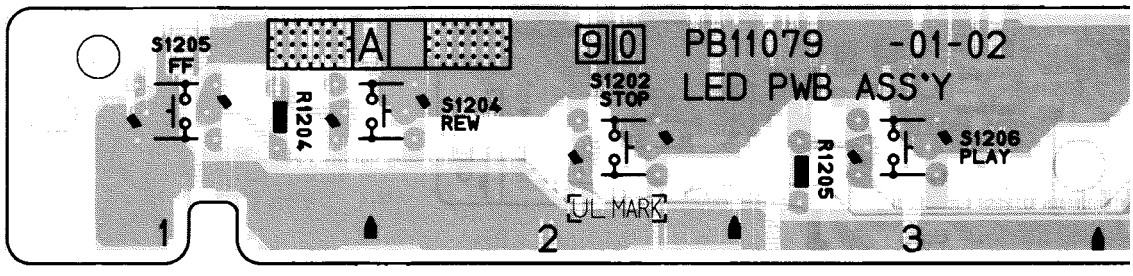

ACC_V_DET
POWER_CTL[H]
AL5V
GND(C)
SW5V
TO SYSCON (Page 4-15)
52HG
C905 0.01
C906 4700/6.3
D903 MTZ6.8A
L903 100μ
L904 33μ
TO VIDEO/N.AUDIO (Page 4-11)
SW5V
SW11V
M12V
GND
R906 4.7k
R907 330k
R908 10
R909 1.2K
B901 0Ω
R911 1k
C920 47/16
D902 MTZJ6.8A
R912 2.2k
D904 AK04
VR901 SHORT
TP902 GND
C909 1200/6.3
R910 22k
R913 10k
TO FMA (Page 4-14)
GND[A]
SW11V
SW5V
D905 MTZJ6.2A
C910 1200/6.3
IC902 BA10393
GND
VCC
0
4.9
4.9
0.3
4.8
4.7
0.7
11.7
L906 33μ
L907 OPEN
L908 33μ
M12V
D910 OPEN
Q906 2SD1819/QRS
11.7
10.8
SW11V
R919 4.7k
D907 OPEN
R921 10
R920 150k
R923 15k
C915 47/16
R927 1k
R926 OPEN
R924 2.2K
C913 820/16
C914 100p
R922 10K
R925 10K
C916 47/16
C921 0.1
TO SYSCON (Page 4-15)
GND[M]
C917 100/16
ACC_IN_5V

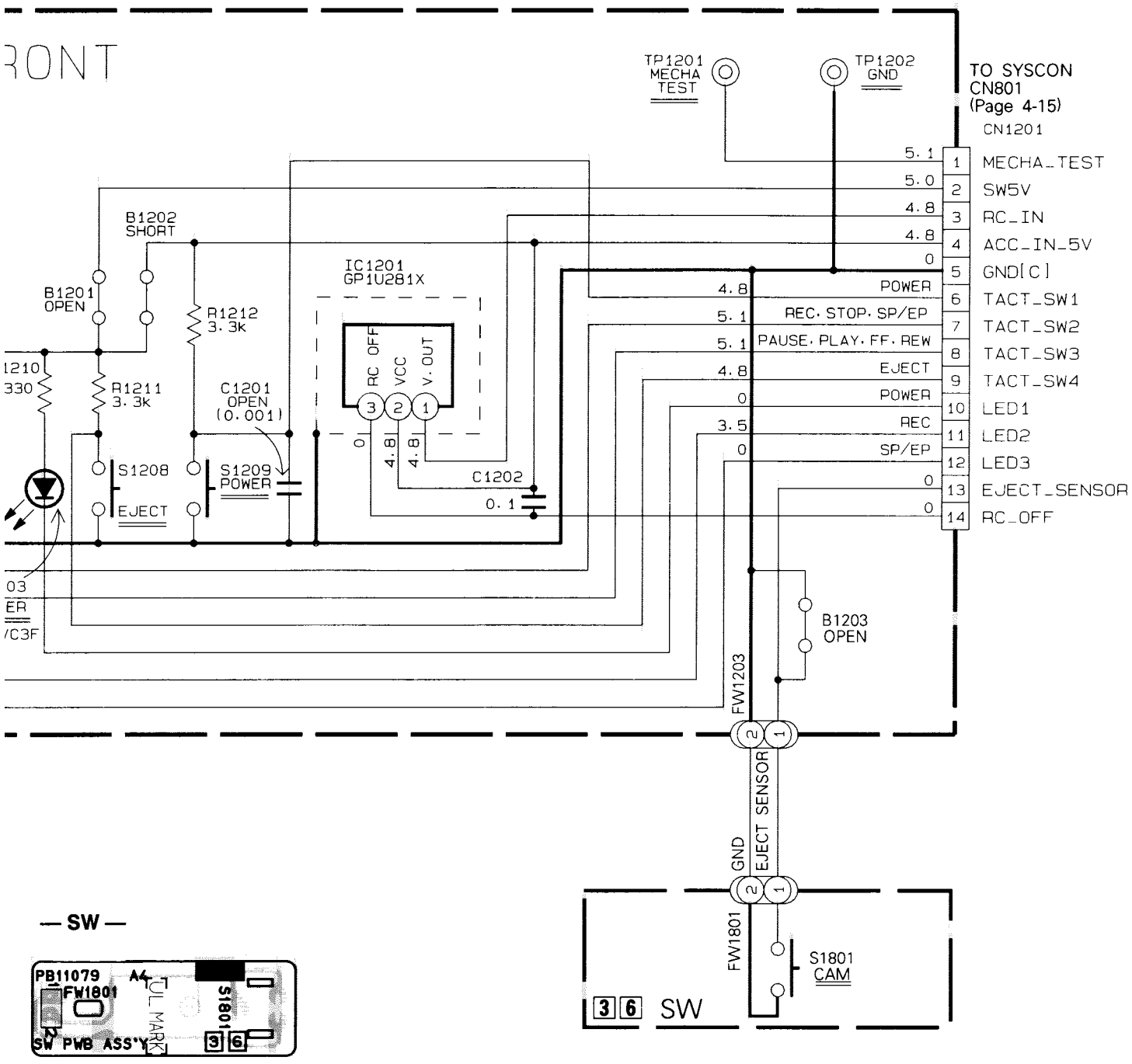

28 FRON
90 LED
R1201 10k
R1202 6.8k
R1203 OPEN
R1204 15k
R1205 10k
R1206 6.8k
R1207 OPEN
R1208 330
R1209 330
S1201 SP/EP
S1202 STOP
S1203 REC
S1204 REW
S1205 FF
S1206 PLAY
S1207 PAUSE
D1201 SP/EP
SLR-342MG3F
D1202 REC
SLR-342VC3F
FW1201
FW1202
VCC
GND(C)
TACT_SW2
TACT_SW3
LED2
LED3
4.8
0
5.1
5.1
3.5
0
R1210 330
D1203 POWER
SLR-342VC3F

— FRONT —


FW1203
PB11079 -01-02
B1203
CN1201
S1208 EJECT
R1212
UL MARK
B1201
28
PB11079 -01-02
FRONT PWB ASS'Y
D1203 POWER
IC1201
C1202
C1201
S1209 POWER
R1210
B1202
TP1202 GND
TP1201 MECHA TEST
R1211
FW1202

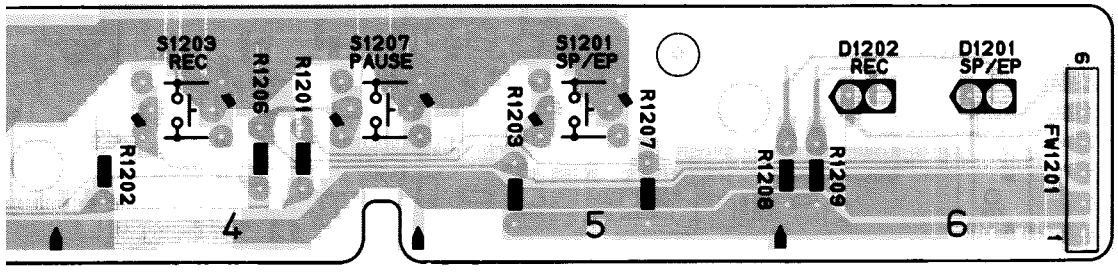
— LED —


S1205 FF
R1204
S1204 REW
90 PB11079 -01-02
S1202 STOP
LED PWB ASS'Y
S1206 PLAY
R1205
UL MARK
1
2
3

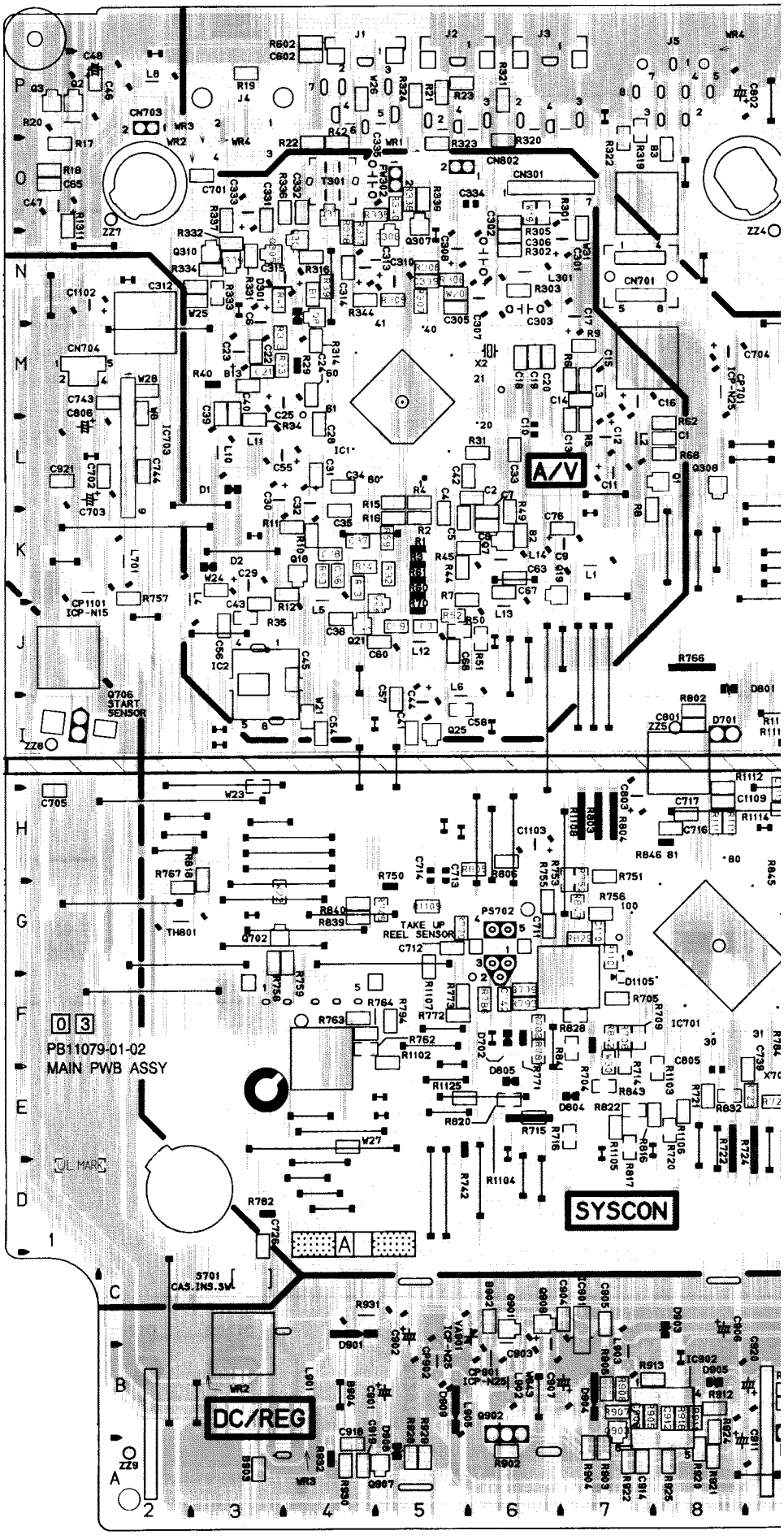

RONT
TP1201 MECHA TEST
TP1202 GND
TO SYSCON CN801 (Page 4-15)
CN1201
5.1 1 MECHA_TEST
5.0 2 SW5V
4.8 3 RC_IN
4.8 4 ACC_IN_5V
0 5 GND[C]
4.8 POWER 6 TACT_SW1
5.1 REC. STOP. SP/EP 7 TACT_SW2
5.1 PAUSE. PLAY. FF. REW 8 TACT_SW3
4.8 EJECT 9 TACT_SW4
0 POWER 10 LED1
3.5 REC 11 LED2
0 SP/EP 12 LED3
0 13 EJECT_SENSOR
0 14 RC_OFF
B1202 SHORT
B1201 OPEN
R1212 3.3k
R1211 3.3k
C1201 OPEN (0.001)
IC1201 GP1U281X
RC OFF
VCC
V. OUT
C1202 0.1
S1208
EJECT
S1209 POWER
B1203 OPEN
FW1203
GND
EJECT SENSOR
FW1801
S1801 CAM
3 6 SW

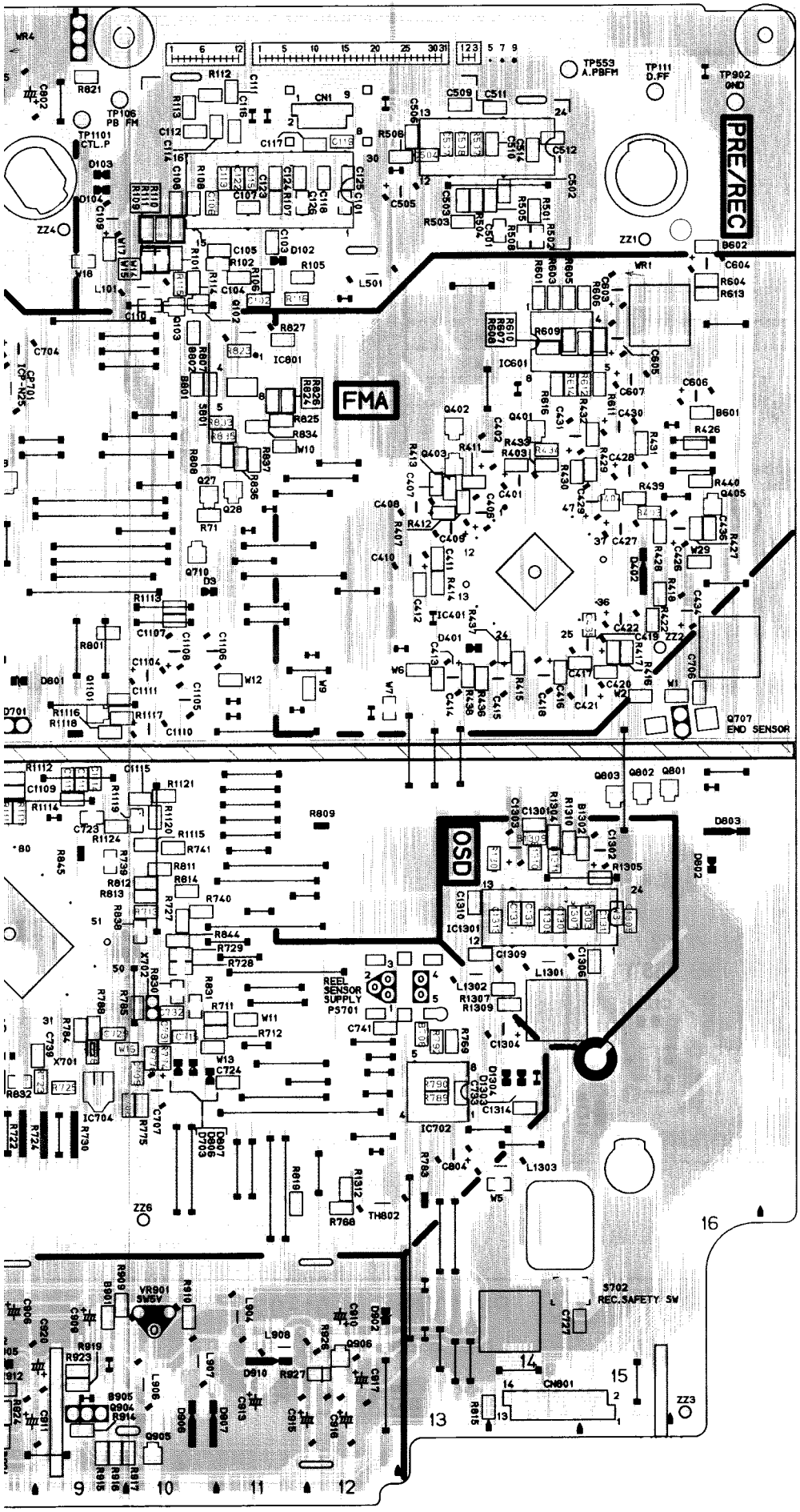
— SW —

PB11079
FW1801
A4
UL MARK
S1801
SW PWB ASS'Y
3 6

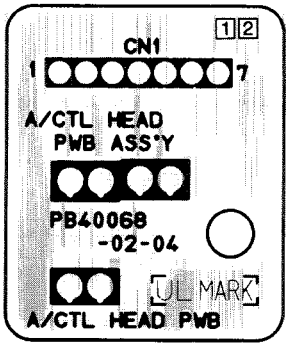

S1203 REC
R1206
R1201
S1207 PAUSE
S1201 SP/EP
R1203
R1207
D1202 REC
D1201 SP/EP
R1202
R1208
R1209
FW1201
6
1
4
5
6

4.10 MAIN AND A/C HEAD CIRCUIT BOARDS




PRE/REC
FMA
OSD
TP553 A.PBFH
TP111 D.FF
TP902 GND
TP106 PB FM
TP1101 CTL.P
CN1
IC801
IC601
IC401
IC1301
IC704
IC702
Q707 END SENSOR
REEL SENSOR SUPPLY P5701
S702 REC.SAFETY SW
CN601
VR901 5W5V
ZZ1
ZZ2
ZZ3
ZZ4
ZZ6
WR1
WR4

— A/C HEAD —


CN1
1 2
1
7
A/CTL HEAD PWB ASS'Y
PB40068 -02-04
UL MARK
A/CTL HEAD PWB

COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	8L
C2	B	C	6L
C3	B	C	5J
C4	B	C	5K
C5	B	C	5K
C6	A	D	3N
C7	B	C	6K
C8	B	C	6K
C9	A	D	6K
C10	A	D	6L
C11	A	D	7L
C12	A	D	7L
C13	B	C	7L
C14	B	C	7M
C15	B	C	7M
C16	A	D	7M
C17	A	D	7M
C18	B	C	6M
C19	B	C	6M
C20	B	C	6M
C21	B	C	3M
C22	B	C	3M
C23	A	D	3M
C24	B	C	4M
C25	A	D	3M
C28	B	C	4L
C29	A	D	3K
C30	A	D	3L
C31	B	C	4L
C32	A	D	4L
C33	B	C	6L
C34	B	C	4L
C35	B	C	4K
C36	B	C	4K
C37	B	C	4K
C38	B	C	4J
C39	B	C	3M
C40	B	C	3M
C41	B	C	5I
C42	B	C	6L
C43	B	C	3J
C44	A	D	5I
C45	B	C	4J
C46	B	C	1P
C47	A	D	1O
C48	A	D	1P
C54	B	C	4I
C55	A	D	4L
C56	B	C	3J
C57	B	C	5I
C58	B	C	5I
C59	B	C	5J
C60	B	C	5J
C63	B	C	6K
C65	B	C	1O
C67	B	C	6K
C68	B	C	5J
C76	B	C	7K
C78	B	C	4K
C101	B	C	12O
C102	B	C	11N
C103	B	C	11N
C104	B	C	11N
C105	B	C	11N
C106	B	C	10O
C107	B	C	11O
C108	B	C	10O
C109	A	D	9O
C110	B	C	10N
C111	B	C	11P
C112	B	C	10P
C113	B	C	11O
C114	B	C	11P
C115	B	C	11O
C116	B	C	11P
C117	B	C	12O
C118	B	C	12O
C119	B	C	12O
C122	B	C	11O
C123	B	C	11O
C124	B	C	11O
C125	B	C	12O
C126	B	C	11O
C301	A	D	7N
C302	A	D	6N
C303	A	D	6N
C305	B	C	5N
C306	B	C	6N
C307	A	D	6N
C308	A	D	5N
C309	B	C	5N

REF.NO.	LOCATION		
C310	A	D	5N
C312	B	C	3N
C313	A	D	4N
C314	B	C	4N
C315	A	D	4N
C331	B	C	3O
C332	B	C	4O
C333	A	D	3O
C334	A	D	6O
C335	A	D	4O
C401	A	D	14L
C402	A	D	14L
C406	A	D	13K
C407	B	C	13L
C408	A	D	13K
C409	A	D	13K
C410	A	D	13K
C411	B	C	13K
C412	B	C	13K
C413	B	C	13J
C414	A	D	13J
C415	A	D	14J
C416	B	C	14J
C417	B	C	15J
C418	A	D	14J
C419	A	D	15J
C420	B	C	15J
C421	A	D	15I
C422	A	D	15J
C426	A	D	16K
C427	A	D	15K
C428	A	D	15L
C429	A	D	15K
C430	A	D	15L
C431	A	D	14L
C434	A	D	16J
C435	B	C	15J
C436	B	C	16K
C501	B	C	14N
C502	B	C	14O
C503	B	C	13O
C504	B	C	13O
C505	A	D	12O
C506	B	C	13O
C507	B	C	13O
C508	B	C	13O
C509	B	C	13P
C510	B	C	14O
C511	B	C	14P
C512	B	C	14O
C514	B	C	14O
C602	B	C	4P
C603	A	D	15N
C604	A	D	16N
C605	A	D	15M
C606	A	D	16M
C607	A	D	15M
C701	B	C	3O
C702	B	C	2L
C703	A	D	2L
C704	A	D	8M
C705	B	C	1H
C706	B	C	16I
C707	A	D	10E
C708	B	C	10E
C709	B	C	10E
C711	B	C	6G
C712	B	C	5G
C713	A	D	5G
C714	A	D	5G
C715	B	C	10F
C716	B	C	8H
C717	B	C	8H
C723	B	C	9H
C724	B	C	11E
C726	B	C	3D
C727	B	C	15C
C728	B	C	9E
C729	B	C	9F
C731	B	C	10F
C732	B	C	10F
C733	B	C	13E
C739	B	C	9E
C741	B	C	12F
C742	B	C	6F
C743	B	C	2M
C744	B	C	2L
C801	B	C	8I
C802	A	D	8P
C803	A	D	7H
C804	A	D	13D
C805	A	D	8E
C806	A	D	2L

REF.NO.	LOCATION		
C901	A	D	5B
C902	A	D	5C
C903	A	D	6B
C904	B	C	7C
C905	B	C	7C
C906	A	D	8C
C907	A	D	7B
C908	B	C	7B
C909	A	D	9C
C910	A	D	12B
C911	A	D	8B
C912	B	C	8B
C913	A	D	11B
C914	B	C	7A
C915	A	D	12B
C916	A	D	12B
C917	A	D	12B
C918	B	C	4A
C919	B	C	4A
C920	A	D	9B
C921	B	C	1L
C1101	B	C	7G
C1102	A	D	2N
C1103	A	D	6H
C1104	A	D	10J
C1105	A	D	10I
C1106	A	D	10J
C1107	B	C	10J
C1108	A	D	10J
C1109	B	C	8H
C1110	A	D	10I
C1111	B	C	9I
C1112	B	C	9H
C1113	B	C	9H
C1114	B	C	9H
C1115	B	C	10H
C1301	B	C	14H
C1302	A	D	15H
C1303	A	D	14H
C1304	A	D	14F
C1305	B	C	15G
C1306	B	C	15F
C1307	B	C	14G
C1308	B	C	14G
C1309	B	C	13G
C1310	B	C	13G
C1311	B	C	14G
C1312	B	C	15G
C1313	B	C	14G
C1314	B	C	14E
C1315	B	C	14G
CONNECTOR			
CN1	A	D	12P
CN301	A	D	6O
CN701	A	D	7N
CN702	A	D	4F
CN703	A	D	2P
CN704	A	D	1M
CN801	A	D	15B
CN802	A	D	6O
CIRCUIT PROTECTOR			
CP701	A	D	8M
CP901	A	D	6C
CP902	A	D	5B
CP1101	A	D	2K
DIODE			
D1	A	D	3L
D2	A	D	3K
D3	A	D	10K
D102	A	D	11N
D103	A	D	9O
D104	A	D	9O
D301	A	D	4M
D401	A	D	13J
D402	A	D	15J
D701	A	D	8I
D702	A	D	6F
D703	A	D	10E
D801	A	D	9J
D802	A	D	16H
D803	A	D	16H
D804	A	D	7E
D805	A	D	6E
D806	A	D	10E
D807	A	D	10E
D901	A	D	4C
D902	A	D	12C
D903	A	D	8B
D904	A	D	7B
D905	A	D	8B
D906	A	D	10A

REF.NO.	LOCATION		
D907	A	D	10A
D908	A	D	5B
D909	A	D	5B
D910	A	D	11B
D1105	B	C	7F
D1303	A	D	14E
D1304	A	D	14E
IC			
IC1	B	C	5M
IC2	B	C	3J
IC101	A	D	12O
IC401	B	C	14K
IC501	A	D	14O
IC601	A	D	14M
IC701	B	C	8G
IC702	A	D	13E
IC703	A	D	2M
IC704	B	C	9E
IC801	B	C	11M
IC901	A	D	7B
IC902	A	D	7B
IC1301	A	D	15G
JACK			
J1	A	D	4Q
J2	A	D	5Q
J3	A	D	6Q
J4	A	D	3P
J5	A	D	8Q
COIL			
L1	A	D	7K
L2	A	D	7L
L3	A	D	7M
L4	A	D	3J
L5	A	D	4K
L6	A	D	6I
L8	A	D	2P
L10	A	D	3L
L11	A	D	3L
L12	A	D	5J
L13	A	D	6J
L14	A	D	6K
L101	A	D	10N
L301	A	D	6N
L501	A	D	12N
L701	A	D	2K
L901	A	D	4B
L902	A	D	6B
L903	A	D	7B
L904	A	D	11B
L905	A	D	5B
L906	A	D	10B
L907	A	D	10B
L908	A	D	11B
L1301	A	D	14F
L1302	A	D	13F
L1303	A	D	14D
TRANSISTOR			
Q1	B	C	8L
Q2	B	C	1P
Q3	B	C	1P
Q7	B	C	6K
Q8	B	C	4N
Q18	B	C	4K
Q19	B	C	6K
Q21	B	C	4J
Q22	B	C	5J
Q25	B	C	5I
Q27	B	C	10L
Q28	B	C	11L
Q102	B	C	10N
Q103	B	C	10N
Q304	B	C	4N
Q305	B	C	3N
Q306	B	C	5N
Q307	B	C	5O
Q308	B	C	8L
Q309	B	C	3N
Q310	B	C	3N
Q311	B	C	4O
Q401	B	C	14L
Q402	B	C	13L
Q403	B	C	13L
Q404	B	C	15K
Q405	B	C	16K
Q702	B	C	3G
Q706	A	D	1I
Q707	A	D	16I
Q710	B	C	10K
Q801	B	C	16H
Q802	B	C	15H

REF.NO.	LOCATION		
Q803	B	C	15H
Q901	B	C	6C
Q902	A	D	6B
Q903	B	C	7B
Q904	A	D	9B
Q905	B	C	10A
Q906	B	C	12B
Q907	B	C	5A
Q908	B	C	6C
Q1101	B	C	9I
RESISTOR			
R1	A	D	5K
R2	B	C	5K
R3	A	D	5K
R4	B	C	5L
R5	B	C	7L
R6	B	C	7M
R7	B	C	6K
R8	B	C	8K
R9	B	C	7M
R10	B	C	4K
R11	B	C	4K
R12	B	C	4K
R13	B	C	4K
R14	B	C	4K
R15	B	C	5L
R16	B	C	5K
R17	B	C	1O
R18	B	C	1O
R19	B	C	3P
R20	A	D	1P
R21	B	C	5P
R22	B	C	4O
R23	B	C	5P
R29	A	D	4M
R31	B	C	6L
R32	B	C	5K
R33	B	C	4M
R34	B	C	3L
R35	B	C	3J
R39	B	C	4N
R40	A	D	3M
R41	B	C	3N
R42	B	C	4O
R44	B	C	5K
R45	B	C	6K
R49	B	C	6K
R50	B	C	5J
R51	B	C	6J
R52	B	C	5J
R53	B	C	4K
R59	B	C	5K
R60	A	D	5K
R61	A	D	5K
R62	B	C	8L
R68	B	C	8L
R70	A	D	5J
R71	B	C	10K
R101	B	C	10N
R102	B	C	11N
R105	B	C	11N
R106	B	C	11N
R107	B	C	11O
R108	B	C	10O
R109	B	C	10N
R110	B	C	10N
R111	B	C	10N
R112	B	C	10P
R113	B	C	10P
R114	B	C	10N
R115	B	C	10N
R116	B	C	11N
R301	B	C	6O
R302	B	C	6N
R303	B	C	6N
R305	B	C	6O
R306	B	C	5N
R307	B	C	5N
R308	B	C	5N
R309	B	C	5N
R313	B	C	3M
R314	B	C	4M
R316	B	C	4N
R317	B	C	4N
R318	B	C	4N
R319	B	C	7P
R320	B	C	6O
R321	B	C	6P
R322	B	C	7O
R323	B	C	5O
R324	B	C	5P
R331	B	C	3N

REF.NO.	LOCATION		
R332	B	C	3N
R333	B	C	3N
R334	B	C	3N
R335	B	C	5O
R336	B	C	4O
R337	B	C	3O
R338	B	C	5O
R339	B	C	5O
R340	B	C	5O
R344	B	C	4N
R403	B	C	14L
R407	B	C	13K
R411	B	C	13L
R412	B	C	13K
R413	B	C	13L
R414	B	C	13K
R415	B	C	14J
R416	B	C	15J
R417	B	C	15J
R418	B	C	15J
R422	B	C	15J
R426	B	C	16L
R427	B	C	16K
R428	B	C	15K
R429	B	C	15L
R430	B	C	14L
R431	B	C	15L
R432	B	C	15L
R433	B	C	14L
R434	B	C	14L
R436	B	C	13J
R437	B	C	14J
R438	B	C	13J
R439	B	C	15L
R440	B	C	16L
R501	B	C	14O
R502	B	C	14N
R503	B	C	13O
R504	B	C	13O
R505	B	C	14O
R506	B	C	13O
R507	B	C	13O
R508	B	C	14N
R601	B	C	14N
R602	B	C	4Q
R603	B	C	14N
R604	B	C	16N
R605	B	C	14N
R606	B	C	15N
R607	B	C	15M
R608	B	C	14M
R609	B	C	14M
R610	B	C	15M
R611	B	C	15M
R612	B	C	15M
R613	B	C	16N
R614	B	C	14M
R616	B	C	14M
R703	B	C	6F
R704	A	D	7F
R705	B	C	7F
R708	B	C	7F
R709	B	C	7F
R711	B	C	11F
R712	B	C	11F
R713	B	C	10G
R714	B	C	7F
R715	B	C	6E
R716	B	C	7E
R720	B	C	8E
R721	B	C	8E
R722	A	D	8D
R723	B	C	9E
R724	A	D	9D
R725	B	C	9E
R727	B	C	10G
R728	B	C	10F
R729	B	C	10G
R730	A	D	9E
R739	B	C	9H
R740	B	C	10G
R741	B	C	10H
R742	A	D	5D
R745	B	C	5G
R750	A	D	5G
R751	B	C	7H
R752	B	C	7G
R753	B	C	7G
R755	B	C	6G
R756	B	C	7G
R757	B	C	2K
R758	B	C	3G
R759	B	C	4G

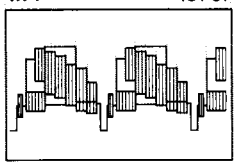
REF.NO.	LOCATION		
R762	B	C	4F
R763	B	C	4F
R764	B	C	4F
R766	A	D	8J
R767	B	C	2G
R768	B	C	12D
R769	B	C	13F
R770	B	C	5G
R771	A	D	6F
R772	B	C	5F
R773	B	C	5F
R774	B	C	10E
R775	B	C	10E
R776	B	C	10E
R782	A	D	4D
R783	A	D	13D
R784	B	C	9F
R785	B	C	10F
R786	B	C	6F
R787	B	C	6F
R788	B	C	9F
R789	B	C	13E
R790	B	C	13E
R792	B	C	13F
R793	B	C	6F
R794	B	C	5F
R801	B	C	9J
R802	B	C	8I
R803	A	D	7H
R804	A	D	7H
R805	B	C	6H
R806	B	C	6H
R807	B	C	10M
R808	B	C	11L
R809	A	D	12H
R811	B	C	10G
R812	B	C	10G
R813	B	C	10G
R814	B	C	10G
R815	B	C	14B
R816	B	C	8E
R817	B	C	7E
R818	B	C	3H
R819	B	C	11D
R820	B	C	6E
R821	B	C	9P
R822	B	C	7E
R823	B	C	11M
R824	B	C	11M
R825	B	C	11L
R826	B	C	11M
R827	B	C	11M
R828	B	C	7F
R829	B	C	7G
R830	B	C	10F
R831	B	C	10F
R832	B	C	8E
R833	B	C	11L
R834	B	C	11L
R835	B	C	11L
R836	B	C	11L
R837	B	C	11L
R838	B	C	10G
R839	B	C	4G
R840	B	C	4G
R841	B	C	7F
R842	B	C	7F
R843	B	C	7E
R844	B	C	10G
R845	A	D	9G
R846	A	D	8H
R847	B	C	7G
R902	B	C	6A
R903	B	C	7A
R904	B	C	7A
R905	B	C	7B
R906	B	C	7B
R907	B	C	7B
R908	B	C	7B
R909	B	C	9C
R910	B	C	10C
R911	B	C	8B
R912	B	C	8B
R913	B	C	8B
R914	B	C	9A
R915	B	C	9A
R916	B	C	9A
R917	B	C	10A
R918	B	C	8B
R919	B	C	9B
R920	B	C	8A
R921	B	C	8A
R922	B	C	7A

REF.NO.	LOCATION		
R923	B	C	9B
R924	B	C	8B
R925	B	C	8A
R926	A	D	12B
R927	B	C	12B
R928	B	C	5A
R929	B	C	5A
R930	B	C	4A
R931	A	D	5C
R932	A	D	4A
R1101	B	C	7G
R1102	B	C	5F
R1103	B	C	8E
R1104	A	D	7E
R1105	B	C	7E
R1106	B	C	8E
R1107	B	C	5G
R1108	A	D	7I
R1109	B	C	5G
R1110	B	C	8H
R1111	B	C	8H
R1112	B	C	8H
R1113	B	C	10J
R1114	B	C	9H
R1115	B	C	10H
R1116	B	C	9I
R1117	B	C	9I
R1118	A	D	9I
R1119	B	C	10H
R1120	B	C	10H
R1121	B	C	10H
R1124	B	C	9H
R1125	B	C	5E
R1301	B	C	14H
R1304	B	C	14H
R1305	B	C	15G
R1307	B	C	14F
R1309	B	C	14F
R1310	B	C	14H
R1311	B	C	1O
R1312	B	C	12D
SWITCH			
S701	A	D	3C
S702	A	D	14C
S801	A	D	10L
TEST POINT			
TP106	A	D	9P
TP111	A	D	15P
TP553	A	D	14P
TP902	A	D	16P
TP1101	A	D	9P
OTHERS			
FW302	A	D	5O
PS701	A	D	13F
PS702	A	D	6G
T301	A	D	4O
TH801	A	D	3G
TH802	A	D	13D
TH803	A	D	11M
VA901	A	D	6B
VR901	A	D	10C
WR1	A	D	15N
WR2	A	D	3B
WR3	A	D	4A
WR4	A	D	3O
X2	A	D	6M
X701	A	D	9F
X702	A	D	10F

WAVEFORMS

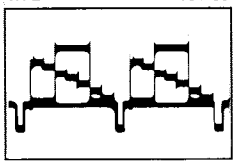
— VIDEO/N.AUDIO —

WF1 IC1-61



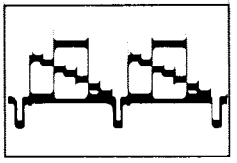
REC 1.0Vp-p
50mV/20μsec/DIV

WF2 IC1-66



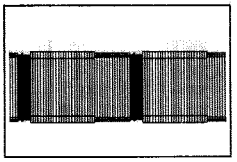
REC/PB 0.51Vp-p
20mV/20μsec/DIV

WF3 IC1-70



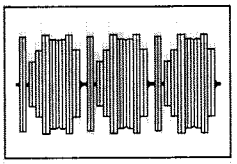
REC/PB 0.51Vp-p
20mV/20μsec/DIV

WF4 IC1-6



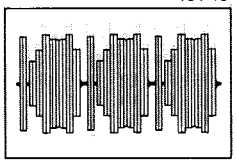
REC 0.35Vp-p
20mV/5μsec/DIV

WF5 IC1-13



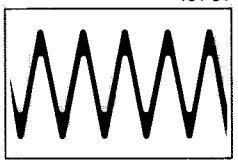
PB 0.5Vp-p
20mV/20μsec/DIV

WF6 IC1-15



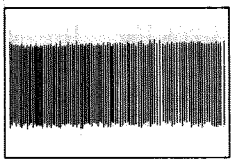
REC 0.35Vp-p
20mV/20μsec/DIV

WF7 IC1-34



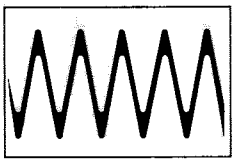
REC 2.0Vp-p
50V/1msec/DIV

WF8 IC1-38



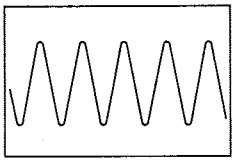
PB 0.01Vp-p
0.5mV/5msec/DIV

WF9 IC1-43



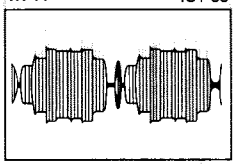
REC 0.3Vp-p
10mV/1msec/DIV

WF10 IC1-46



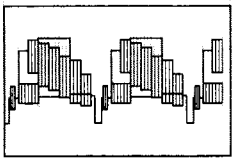
PB 1.1Vp-p
50mV/1msec/DIV

WF11 IC1-55



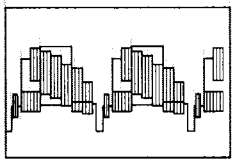
PB 0.5Vp-p
20mV/20μsec/DIV

WF12 IC1-57



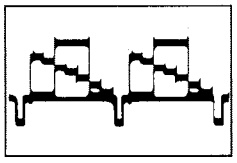
REC/PB 2.1Vp-p
0.1V/20μsec/DIV

WF13 IC1301-13



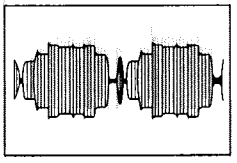
REC/PB 2.1Vp-p
0.1V/20μsec/DIV

WF14 IC2-5



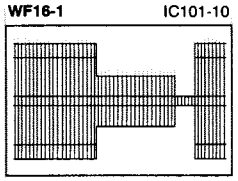
REC/PB 0.42Vp-p
20mV/20μsec/DIV

WF15 IC2-8



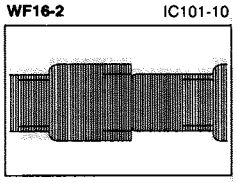
PB 0.31Vp-p
20mV/20μsec/DIV

WF16-1 IC101-10



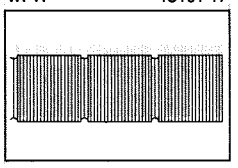
REC 0.3Vp-p
20mV/5msec/DIV

WF16-2 IC101-10



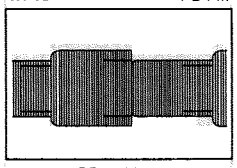
PB 0.3Vp-p
20mV/5msec/DIV

WF17 IC101-17



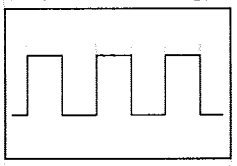
REC 2.5Vp-p
0.1V/5msec/DIV

WF18 TP106 PB FM



PB 0.4Vp-p
20mV/5msec/DIV

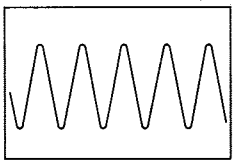
WF19 TP111 D.FF



REC/PB 5.6Vp-p
0.2V/10msec/DIV

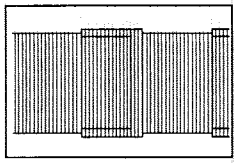
— FMA —

WF1 IC401-7



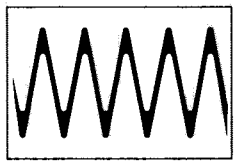
REC 0.25Vp-p
10mV/1msec/DIV

WF2 IC401-15



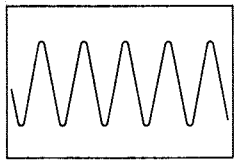
REC 0.25Vp-p
10mV/1msec/DIV

WF3 IC401-38



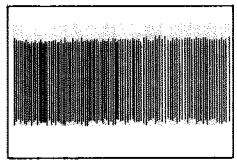
REC 0.28Vp-p
10mV/1msec/DIV

WF4 IC401-46



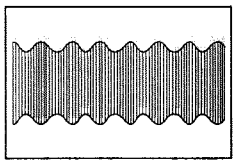
REC/PB 1.5Vp-p
50mV/1msec/DIV

WF5 IC501-9



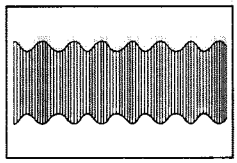
REC 0.2Vp-p
20mV/1msec/DIV

WF6 IC501-16



REC 1.5Vp-p
0.1mV/1msec/DIV

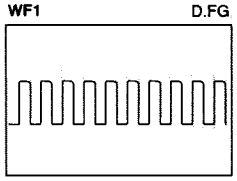
WF7 TP553 A.PB FM



PB 0.6Vp-p
20mV/5msec/DIV

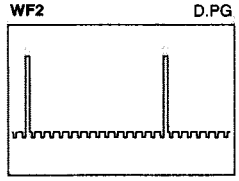
— SYSCON —

WF1 CN704-2 D.FG



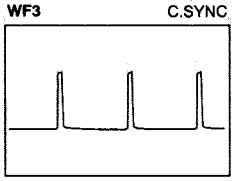
REC/PB 4.1Vp-p
0.2V/1msec/DIV

WF2 CN704-4 D.PG



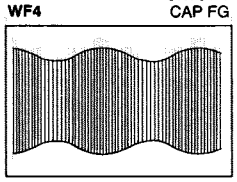
REC/PB 4.3Vp-p
0.2V/5msec/DIV

WF3 IC701-93 C.SYNC



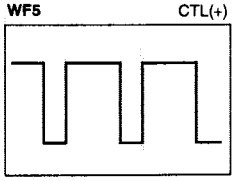
REC 4.8Vp-p
0.2V/20μsec/DIV

WF4 CN701-1 CAP FG



REC/PB 2.1Vp-p
0.1V/10msec/DIV

WF5 IC701-77 CTL(+)

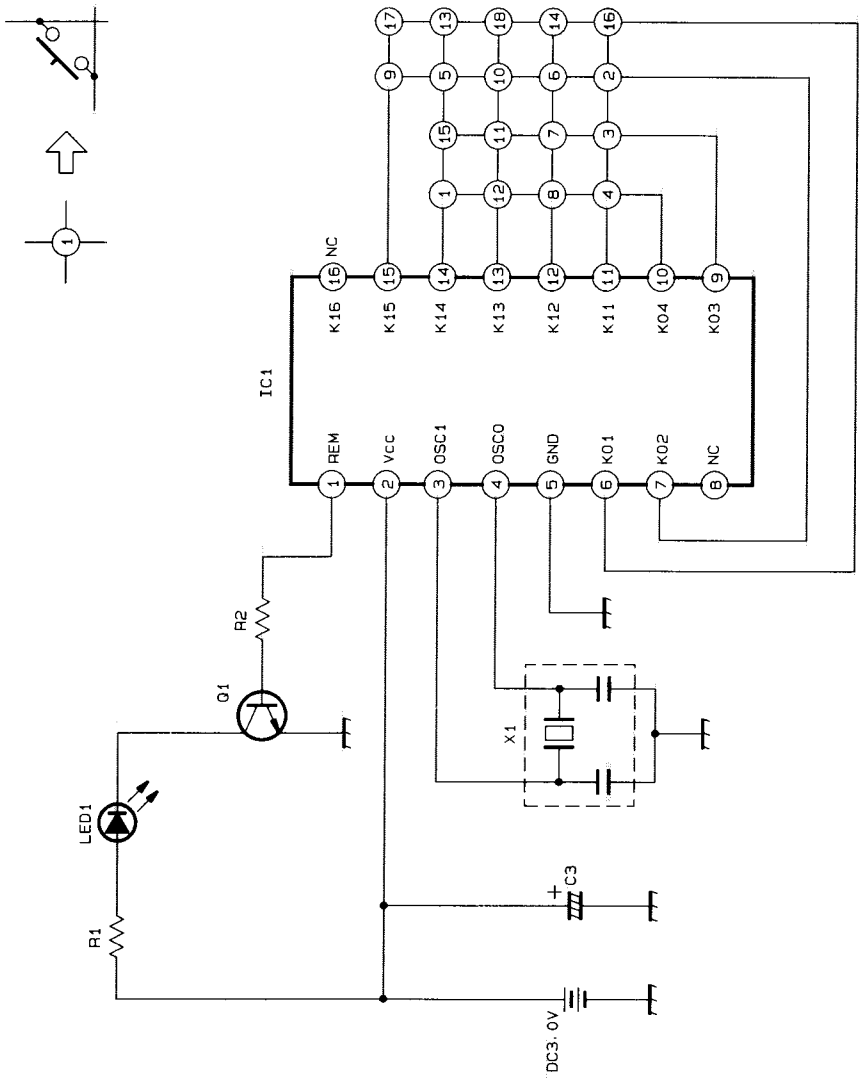


REC 5.6Vp-p
0.2V/10msec/DIV

4.11 REMOTE CONTROL SCHEMATIC DIAGRAM

NOTE:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   replace the entire unit only.

Key No.	Key Name
1	AUDIO
2	SP/EP
3	POWER
4	AUTO
5	TRACKING+
6	TRACKING-
7	DISPLAY
8	VISS
9	VISS
10	RETARN
11	SKIP SEARCH
12	TV/VCR
13	REW
14	PLAY
15	FF
16	REC
17	STOP
18	PAUSE
K16+K14	REC START
K16+K18	REC PAUSE



REMOTE CONTROLLER

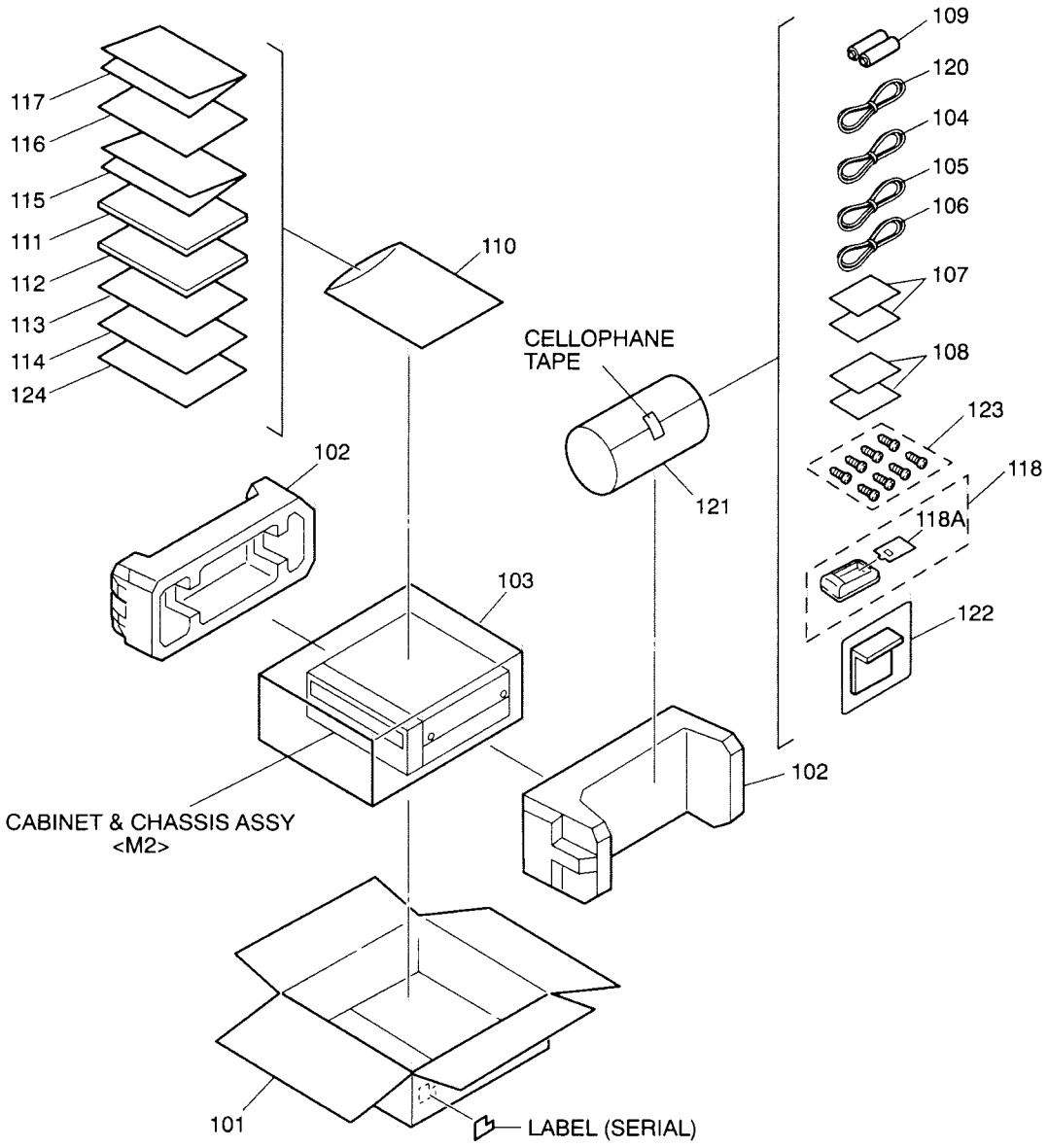
SECTION 5
PARTS LIST

SAFETY PRECAUTION

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

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

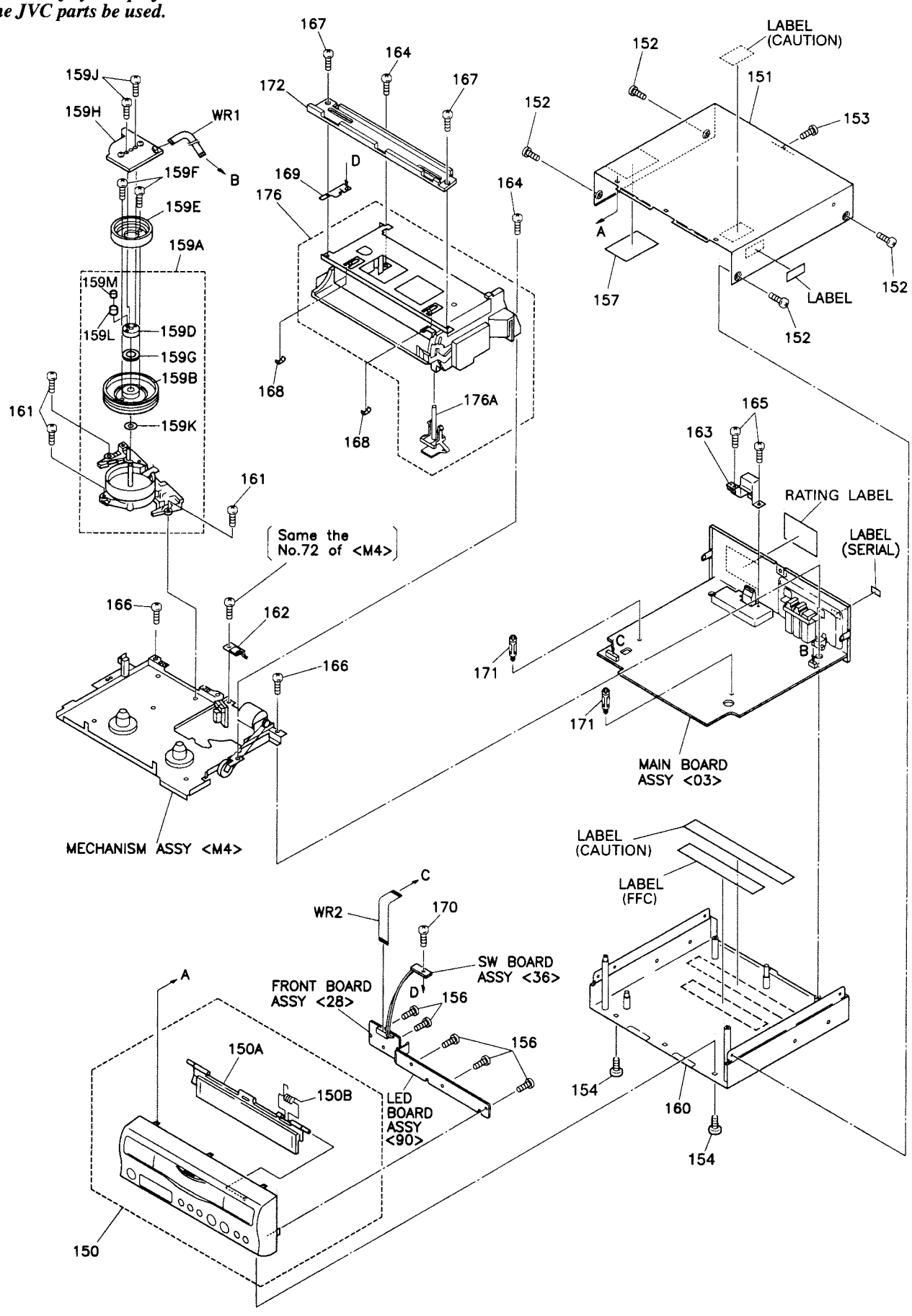
PACKING AND ACCESSORY ASSEMBLY <M1>

	101	LP30421-001A	PACKING CASE
	102	LP30422-001A	CUSHION ASSY
	103	PQM30021-102	POLY BAG
	104	QAM0101-001	CAR CABLE
	105	QAM0113-001	RM CABLE
	106	LV40177-001A	IR RECEIVER
	107	LP40176-001A	SHEET(A),X2
	108	LP40177-001A	SHEET(B),X2
	109	R6PRPA-2ST	BATTERY,X2
	110	QPC02503530P	POLY BAG
⚠	111	VNN3802-631	INST BOOK
⚠	112	VNN3802-T631	INST BOOK(CONNECTION MANUAL)
	113	BT-20071B	SER.NET CARD
	114	VNA1001-030	USERS CARD
	115	BT-20137	TOLL FREE CARD
	116	BT-51009-3	WARRANTY CARD(USA ONLY)
		BT-52001-4	WARRANTY CARD(CANADA ONLY)
⚠	117	LPT0040-002A	INST BOOK(CAUTION)
	118	LP30180-003B	REMOTE CONTROLLER
	118A	LP40068-001A	BATTERY CASE
	120	QAM0097-001	CABLE ASSY(AUDIO/VIDEO)
	121	QPC02202230P	POLY BAG
	122	LP30137-001B	BRACKET,X2
	123	LP40183-001A	SCREW ASSY
	124	LPT0040-003A	CAUTION

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

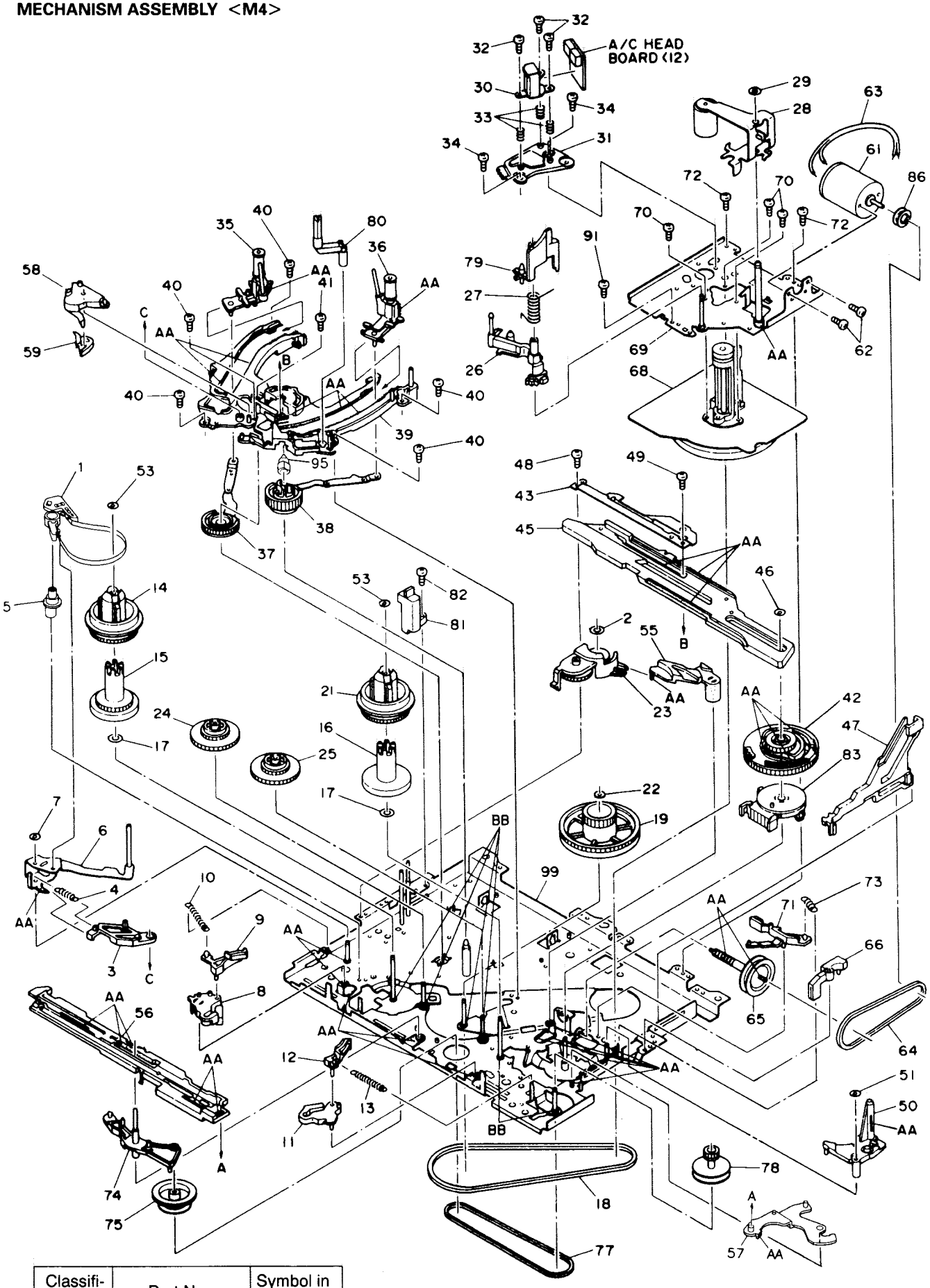
****

CABINET AND CHASSIS ASSEMBLY <M2>

	150	LP20101-001H	FRONT PANEL ASSY
	150A	LP20156-001C	CASSETTE DOOR
	150B	PQ46448	TORSION SPRING
⚠	151	LP10040-001C	TOP COVER
	152	SDST3008M	SCREW,X4 TOP COVER(SIDE)
	153	SDST3008M	SCREW,TOP COVER(REAR)
	154	LP40173-001A	SPECIAL SCREW,X2 TOP/BOTTOM
	156	SDSF2608Z	SCREW,X5 FRONT/LED BOARD
	157	LP30002-017A	SPACER,TOP COVER
	159A	LP20053-001A	DRUM SUB ASSEMBLY
	159B	LP20030-001A	UPPER DRUM ASSEMBLY
	159D	LP40028-001A	COLLAR ASSEMBLY
	159E	QAR0002-001	ROTOR ASSEMBLY
	159F	QYSPSP3006Z	SCREW,X2
	159G	PDM4439	CAP
	159H	QAR0003-005	STATOR ASSEMBLY
	159J	QYSPSP2606Z	SCREW,X2
	159K	PDM4444-19-2	WASHER
	159L	LP40323-001A	CONTACT
	159M	LP30004-005A	COMPRES.SPRING
⚠	160	LP10038-001D	BOTTOM CHASSIS ASSY
	161	SPST2608Z	SCREW,X3 DRUM
	162	PESC1422	DEW SENSOR
	163	PQ35385-1-2	SHIELD COVER,PRE
	164	SPST2606Z	SCREW,X2 CASS.HOUSING
	165	SDST2606Z	SCREW,X2 PRE
	166	SDST4010Z	SCREW,X2 MECHANISM
	167	SDST3008Z	SCREW,X2 CASSETTE HOUSING
	168	LP40154-001A	SPRING COVER,X2 CASS.HOUSING
	169	LP40079-001A	SWITCH BRACKET
	170	SDSP2003Z	SCREW,SWITCH BRACKET
	171	PEME0947-01-01	SPACER,X2
	172	LP30470-001A	STAY,CASSETTE HOUSING
	176	PUS29724E	CASSETTE HOUSING ASSY
	176A	PQ46359-1-2	CASSETTE SWITCH PIN
	WR1	PW30803-0524	FFC WIRE,DRUM
	WR2	PW30802-1412	FFC WIRE,FRONT BOARD

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

5.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

MECHANISM ASSEMBLY <M4>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		1	LP40006-001C	TENSION BAND ASSEMBLY
		2	PQM30017-34	SLIT WASHER
		3	PQ35012-1-5	TENSION ARM LEVER
		4	PQM30001-385109	TENSION SPRING
		5	LP30103-001B	ADJUST PIN
		6	PQ46303A-8	TENSION ARM ASSEMBLY
		7	PQM30017-47	SLIT WASHER
		8	PQ46305B-3	MAIN BRAKE ASSEMBLY (SUPPLY)
		9	PQ46306A-6	SUB BRAKE ASSEMBLY (SUPPLY)
		10	PQM30001-393	TENSION SPRING
		11	PQ46308A-5	MAIN BRAKE ASSEMBLY (TAKE UP)
		12	PQ46309A-4	SUB BRAKE ASSEMBLY (TAKE UP)
		13	PQM30001-389102	TENSION SPRING
		14	PQ46551B	REEL DISK ASSEMBLY (SUPPLY)
		15	PQ35436	SLIT DISK (SUPPLY)
		16	PQ35437	SLIT DISK (TAKE UP)
		17	PQM30018-79	SPACER,X2
		18	PQM30003-38	BELT (CAPSTAN)
		19	PQ46497B-2	PULLEY ASSY
		21	PQ46562B	REEL ASSEMBLY (TAKE UP)
		22	PQM30018-69	SPACER
		23	PQ46312C-15	IDLER ARM ASSEMBLY
		24	PQ46316C-6	CLUTCH UNIT (SUPPLY)
		25	PQ46323A-1	CLUTCH UNIT (TAKE UP)
		26	PQ46325C-9	GUIDE ARM ASSEMBLY
		27	PQ46326-2	TORSION SPRING
		28	PQ46327A-4	PINCH ROLLER ARM ASSEMBLY
		29	PQM30017-24	SLIT WASHER,P LEVER
		30	PEHE0182	AUDIO CONTROL HEAD
		31	PQ35206-1-3	HEAD BASE
		32	PQ43687A	SCREW,X3
		33	PQM30002-192	COMPRESSION SPRING,X3
		34	SDSP2604Z	SCREW,X2
		35	PQ46595B-5	POLE BASE ASSEMBLY (SUPPLY)
		36	PQ46331C	POLE BASE ASSEMBLY (TAKE UP)
		37	PQ46332B-3	LOADING ARM ASSEMBLY (SUPPLY)
		38	PQ46337C	LOADING ARM ASSEMBLY (TAKE UP
		39	PQ11657-1-9	GUIDE RAIL
		40	SPST2608Z	SCREW,X5
		41	SDST2612Z	SCREW
		42	LP20003-001A	CONTROL CAM
		43	PQ35138-1-2	CONTROL BRACKET
		45	LP10004-001C	CONTROL PLATE
		46	PQM30017-8	SLIT WASHER
		47	PQ21685-2-10	PINCH PLATE
		48	SPST2606Z	SCREW
		49	SPSF2608M	SCREW
		50	PQ46342D-10	LEVER ASSEMBLY
		51	PQM30017-8	SLIT WASHER
		53	PQM30017-47	SLIT WASHER,X2
		55	PQ35026-1-7	IDLER LEVER
		56	PQ11659-1-14	SLIDE PLATE
		57	LP40014-001A	CHANGE LEVER ASSEMBLY
		58	PQ21686-1-3	TAKE UP LEVER
		59	PQ46345-1-2	TAKE UP HEAD
	⚠	61	PU60628-3-2	LOADING MOTOR
		62	SPSP3003Z	SCREW,X2
		63	PW30101-80AJ632	WIRE ASSY
		64	LP30005-002A	BELT
		65	PQ46395B	WORM GEAR ASSEMBLY
		66	PQ21699-1-2	WORM BEARING
	⚠	68	PU61487-2-3	CAPSTAN MOTOR
		69	PQ46347D-17	SUB DECK ASSEMBLY
		70	SPSG2608Z	SCREW,X3
		71	PQ46356C-4	CAPSTAN BRAKE ASSEMBLY
		72	SPST2606Z	SCREW,X2
		73	PQM30001-384101	TENSION SPRING,CAPSTAN BRAKE
		74	PQ46353A-2	CHANGE ARM ASSEMBLY
		75	PQ46354	CHANGE GEAR
		77	PQM30003-40	BELT
		78	LP40008-001B	CASSETTE GEAR
		79	PQ35030-1-5	LID GUIDE
		80	LP20032-001A	LED PRISM
		81	PEHE0237	FULL ERASE HEAD
		82	SDST2610Z	SCREW
		83	PU61432-1-1	ROTARY ENCODER
		86	PQ43546-1-2	MOTOR PULLEY
		91	SDSP2604Z	SCREW
		95	PQ46767-1-2	GUIDE CAP
		99	PQ21680L-23	MAIN DECK ASSEMBLY

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

MAIN BOARD ASSEMBLY <03>

		PW1	PB11079D1 MAIN BOARD ASSY
		IC1	HA118204F IC
			or HA118214F IC
		IC2	MSM7476-76MS-XE IC
		IC101	LA7416 IC
		IC401	AN3664NFB IC
		IC501	LA7257 IC
		IC601	BA15218 IC
		IC701	M37774M9H266GP IC
			or M37774E9A266GP IC
		IC702	X24C04P IC
			or 24LC04B/P IC
			or AT24C04-10PC IC
			or XL24C04P IC
		IC703	TA7291S IC
		IC704	S-80742AN-D6-X IC
		IC801	BA10393F IC
		IC901	S-81252HG IC
		IC902	BA10393 IC
			or M5233P IC
			or UPC393C IC
		IC1301	LC74783-9179 IC (OSD)
		Q1	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q2	2SB1218A/QRS/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QRS/-X TRANSISTOR
		Q3	2SB1218A/QRS/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QRS/-X TRANSISTOR
		Q18	UN521E TRANSISTOR
			or DTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
		Q27	UN511E TRANSISTOR
			or RN2309 TRANSISTOR
			or DTA144WU TRANSISTOR
		Q28	UN511E TRANSISTOR
			or RN2309 TRANSISTOR
			or DTA144WU TRANSISTOR
		Q103	UN521E TRANSISTOR
			or RN1309 TRANSISTOR
			or DTC144WU TRANSISTOR
		Q304	UN511E TRANSISTOR
			or RN2309 TRANSISTOR
			or DTA144WU TRANSISTOR
		Q305	UN5111 TRANSISTOR
			or RN2302 TRANSISTOR
			or DTA114EU TRANSISTOR
		Q306	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q307	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q308	DTC114EU TRANSISTOR
			or UN5211 TRANSISTOR
			or RN1302 TRANSISTOR
		Q309	2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
		Q310	2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
		Q311	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q401	UN5215 TRANSISTOR
			or DTC114TU TRANSISTOR
		Q402	UN511E TRANSISTOR
			or RN2309 TRANSISTOR
			or DTA144WU TRANSISTOR
		Q403	UN521E TRANSISTOR
			or RN1309 TRANSISTOR
			or DTC144WU TRANSISTOR
		Q404	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
		Q405	DTC114EU TRANSISTOR
			or UN5211 TRANSISTOR
			or RN1302 TRANSISTOR
		Q702	2SD1819A/QRS/-X TRANSISTOR
		Q706	LP40038-001A TAPE SENSOR
		Q707	LP40038-001A TAPE SENSOR
		Q710	UN5211 TRANSISTOR
			or RN1302 TRANSISTOR
			or DTC114EU TRANSISTOR
		Q801	DTC114EU TRANSISTOR
			or RN1302 TRANSISTOR
			or UN5211 TRANSISTOR
		Q802	DTC114EU TRANSISTOR
			or RN1302 TRANSISTOR
			or UN5211 TRANSISTOR
		Q803	DTC114EU TRANSISTOR
			or RN1302 TRANSISTOR
			or UN5211 TRANSISTOR
		Q901	UN5111 TRANSISTOR
			or RN2302 TRANSISTOR
			or DTA114EU TRANSISTOR
		Q902	2SB1142/RST/ TRANSISTOR
		Q903	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q904	2SB1142/RST/ TRANSISTOR
		Q905	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q906	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q907	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q908	UN5211 TRANSISTOR
			or RN1302 TRANSISTOR
			or DTC114EU TRANSISTOR
		D1	1N4148M DIODE
			or 1SS133 DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		D2	1N4148M	DIODE	
			or 1SS133	DIODE	
		D301	1N4148M	DIODE	
			or 1SS133	DIODE	
		D402	11ES2	DIODE	
		D701	SIR-381SB3FM	LE DIODE	
			or SIR-381SB3FX1M	LE DIODE	
		D702	1N4148M	DIODE	
			or 1SS133	DIODE	
		D802	1N4148M	DIODE	
			or 1SS133	DIODE	
		D803	1N4148M	DIODE	
			or 1SS133	DIODE	
		D901	AK04	DIODE	
		D902	MTZJ6.8A	ZENER DIODE	
			or RD6.8ES/B1/-T2	ZENER DIODE	
			or UZ6.8BSA	ZENER DIODE	
		D903	MTZJ6.8A	ZENER DIODE	
			or RD6.8ES/B1/-T2	ZENER DIODE	
			or UZ6.8BSA	ZENER DIODE	
		D904	AK04	DIODE	
		D905	MTZJ6.2A	ZENER DIODE	
			or RD6.2ES/B1/-T2	ZENER DIODE	
			or UZ6.2BSA	ZENER DIODE	
		D906	AK04	DIODE	
		D908	UZ5.6BSB	ZENER DIODE	
			or MTZJ5.6B	ZENER DIODE	
			or RD5.6ES/B2/-T2	ZENER DIODE	
		D1105	1SS355	DIODE	
		D1303	1N4148M	DIODE	
			or 1SS133	DIODE	
		D1304	1N4148M	DIODE	
			or 1SS133	DIODE	
		R1	QRE141J-123Y	RESISTOR	12kΩ,1/4W
		R2	NRSA02J-203X	RESISTOR	20kΩ,1/10W
		R3	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R4	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R5	NRSA02J-561X	RESISTOR	560Ω,1/10W
		R6	NRSA02J-821X	RESISTOR	820Ω,1/10W
		R7	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R8	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R9	NRSA02J-273X	RESISTOR	27kΩ,1/10W
		R10	NRSA02J-223X	RESISTOR	22kΩ,1/10W
		R11	NRSA02J-153X	RESISTOR	15kΩ,1/10W
		R12	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R13	NRSA02J-152X	RESISTOR	1.5kΩ,1/10W
		R14	NRSA02J-682X	RESISTOR	6.8kΩ,1/10W
		R15	NRSA02J-682X	RESISTOR	6.8kΩ,1/10W
		R16	NRSA02J-393X	RESISTOR	39kΩ,1/10W
		R17	NRSA02J-153X	RESISTOR	15kΩ,1/10W
		R18	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R19	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R20	QRE123J-331X	RESISTOR	330Ω,1/2W
		R21	NRSA02J-750X	RESISTOR	75Ω,1/10W
		R22	NRSA02J-750X	RESISTOR	75Ω,1/10W
		R23	NRSA02J-750X	RESISTOR	75Ω,1/10W
		R31	NRSA02J-155X	RESISTOR	1.5MΩ,1/10W
		R33	NRSA02J-223X	RESISTOR	22kΩ,1/10W
		R34	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R35	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R39	NRSA02J-182X	RESISTOR	1.8kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R40	QRE141J-271Y	RESISTOR	270Ω,1/4W
		R42	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R44	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R45	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R50	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R53	NRSA02J-562X	RESISTOR	5.6kΩ,1/10W
		R68	NRSA02J-224X	RESISTOR	220kΩ,1/10W
		R71	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R101	NRSA02J-562X	RESISTOR	5.6kΩ,1/10W
		R102	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R105	NRSA02J-823X	RESISTOR	82kΩ,1/10W
		R106	NRSA02J-273X	RESISTOR	27kΩ,1/10W
		R107	NRSA02J-822X	RESISTOR	8.2kΩ,1/10W
		R110	NRSA02J-152X	RESISTOR	1.5kΩ,1/10W
		R111	NRSA02J-273X	RESISTOR	27kΩ,1/10W
		R115	NRSA02J-224X	RESISTOR	220kΩ,1/10W
		R116	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R301	NRSA02J-153X	RESISTOR	15kΩ,1/10W
		R302	NRSA02J-471X	RESISTOR	470Ω,1/10W
		R303	NRSA02J-121X	RESISTOR	120Ω,1/10W
		R305	NRSA02J-223X	RESISTOR	22kΩ,1/10W
		R306	NRSA02J-181X	RESISTOR	180Ω,1/10W
		R307	NRSA02J-682X	RESISTOR	6.8kΩ,1/10W
		R308	NRSA02J-224X	RESISTOR	220kΩ,1/10W
		R313	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R314	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R316	NRSA02J-153X	RESISTOR	15kΩ,1/10W
		R317	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R318	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R319	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R320	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R322	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R323	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R331	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R332	NRSA02J-473X	RESISTOR	47kΩ,1/10W
		R333	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R334	NRSA02J-473X	RESISTOR	47kΩ,1/10W
		R335	NRSA02J-3R3X	RESISTOR	3.3Ω,1/10W
		R336	NRSA02J-123X	RESISTOR	12kΩ,1/10W
		R337	NRSA02J-820X	RESISTOR	82Ω,1/10W
		R338	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R403	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R407	NRSA02J-393X	RESISTOR	39kΩ,1/10W
		R411	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R412	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R413	NRSA02J-511X	RESISTOR	510Ω,1/10W
		R416	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R417	NRSA02J-511X	RESISTOR	510Ω,1/10W
		R418	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R422	NRSA02J-393X	RESISTOR	39kΩ,1/10W
		R426	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R427	NRSA02J-271X	RESISTOR	270Ω,1/10W
		R428	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R429	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R430	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R431	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R432	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R439	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R440	NRSA02J-473X	RESISTOR	47kΩ,1/10W
		R501	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R503	NRSA02J-223X	RESISTOR	22kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R506	NRSA02J-152X	RESISTOR	1.5kΩ,1/10W
		R507	NRSA02J-681X	RESISTOR	680Ω,1/10W
		R508	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R601	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R602	NRSA02J-471X	RESISTOR	470Ω,1/10W
		R603	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R604	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R605	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R606	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R607	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R608	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R609	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R610	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R611	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R612	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R613	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R614	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R616	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R703	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R704	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R705	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R708	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R709	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R711	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R712	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R713	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R714	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R715	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R716	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R720	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R722	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R723	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R724	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R725	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R727	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R728	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R729	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R730	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R739	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R740	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R741	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R742	QRE141J-562Y	RESISTOR	5.6kΩ,1/4W
		R745	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R750	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R751	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R752	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R753	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R755	NRSA02J-471X	RESISTOR	470Ω,1/10W
		R756	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R757	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R758	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R759	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R762	NRSA02J-333X	RESISTOR	33kΩ,1/10W
		R763	NRSA02J-333X	RESISTOR	33kΩ,1/10W
		R764	NRSA02J-333X	RESISTOR	33kΩ,1/10W
		R766	QRE141J-750Y	RESISTOR	75Ω,1/4W
		R769	NRSA02J-181X	RESISTOR	180Ω,1/10W
		R770	NRSA02J-181X	RESISTOR	180Ω,1/10W
		R771	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R772	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R774	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R776	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R782	QRE141J-333Y	RESISTOR	33kΩ,1/4W
		R783	QRE141J-333Y	RESISTOR	33kΩ,1/4W
		R784	NRSA02J-105X	RESISTOR	1MΩ,1/10W
		R785	NRSA02J-475X	RESISTOR	4.7MΩ,1/10W
		R787	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R788	NRSA02J-101X	RESISTOR	100Ω,1/10W
		R789	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R790	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R792	NRSA02J-273X	RESISTOR	27kΩ,1/10W
		R793	NRSA02J-273X	RESISTOR	27kΩ,1/10W
		R794	NRSA02J-392X	RESISTOR	3.9kΩ,1/10W
		R801	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R802	NRSA02J-272X	RESISTOR	2.7kΩ,1/10W
		R803	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R804	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R805	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R806	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R808	NRSA02J-474X	RESISTOR	470kΩ,1/10W
		R809	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R811	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R812	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R813	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R814	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R815	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R816	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R817	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R818	NRSA02J-822X	RESISTOR	8.2kΩ,1/10W
		R819	NRSA02J-822X	RESISTOR	8.2kΩ,1/10W
		R820	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R821	NRSA02J-221X	RESISTOR	220Ω,1/10W
		R823	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R824	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R825	NRSA02J-223X	RESISTOR	22kΩ,1/10W
		R826	NRSA02J-331X	RESISTOR	330Ω,1/10W
		R827	NRSA02J-0R0X	RESISTOR	0Ω,1/10W
		R829	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R831	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R833	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R834	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R835	NRSA02J-104X	RESISTOR	100kΩ,1/10W
		R836	NRSA02J-474X	RESISTOR	470kΩ,1/10W
		R837	NRSA02J-183X	RESISTOR	18kΩ,1/10W
		R839	NRSA02J-333X	RESISTOR	33kΩ,1/10W
		R840	NRSA02J-333X	RESISTOR	33kΩ,1/10W
		R841	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R842	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R843	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R844	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R845	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R846	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R847	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R902	NRSA02J-471X	RESISTOR	470Ω,1/10W
		R903	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R904	NRSA02J-102X	RESISTOR	1kΩ,1/10W
		R905	NRSA02J-103X	RESISTOR	10kΩ,1/10W
		R906	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
		R907	NRSA02J-334X	RESISTOR	330kΩ,1/10W
		R908	NRSA02J-100X	RESISTOR	10Ω,1/10W
		R909	NRSA02J-122X	RESISTOR	1.2kΩ,1/10W
		R910	NRSA02J-223X	RESISTOR	22kΩ,1/10W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION *	
R911	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R912	NRSA02J-222X	RESISTOR	2.2kΩ,1/10W
R913	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R914	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R915	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R916	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R917	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R918	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R919	NRSA02J-472X	RESISTOR	4.7kΩ,1/10W
R920	NRSA02J-154X	RESISTOR	150kΩ,1/10W
R921	NRSA02J-100X	RESISTOR	10Ω,1/10W
R922	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R923	NRSA02J-153X	RESISTOR	15kΩ,1/10W
R924	NRSA02J-222X	RESISTOR	2.2kΩ,1/10W
R925	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R927	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R930	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R931	QRZ9005-330X	FUSIBLE RESISTOR	33Ω,1/4W
R932	QRE141J-221Y	RESISTOR	220Ω,1/4W
R1101	NRSA02J-222X	RESISTOR	2.2kΩ,1/10W
R1102	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R1104	QRE141J-102Y	RESISTOR	1kΩ,1/4W
R1105	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1106	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1107	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1108	QRE141J-102Y	RESISTOR	1kΩ,1/4W
R1109	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1110	NRSA02J-471X	RESISTOR	470Ω,1/10W
R1111	NRSA02J-471X	RESISTOR	470Ω,1/10W
R1112	NRSA02J-153X	RESISTOR	15kΩ,1/10W
R1113	NRSA02J-471X	RESISTOR	470Ω,1/10W
R1115	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1116	NRSA02J-104X	RESISTOR	100kΩ,1/10W
R1117	NRSA02J-104X	RESISTOR	100kΩ,1/10W
R1118	QRE141J-102Y	RESISTOR	1kΩ,1/4W
R1119	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1120	NRSA02J-102X	RESISTOR	1kΩ,1/10W
R1121	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R1125	NRSA02J-222X	RESISTOR	2.2kΩ,1/10W
R1301	NRSA02J-222X	RESISTOR	2.2kΩ,1/10W
R1305	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R1307	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R1309	NRSA02J-103X	RESISTOR	10kΩ,1/10W
R1311	NRSA02J-151X	RESISTOR	150Ω,1/10W
R1312	NRSA02J-562X	RESISTOR	5.6kΩ,1/10W
C1	NCB21HK-103X	CAPACITOR	0.01μF,50V
C3	NCB21EK-104X	CAPACITOR	0.1μF,25V
C4	NCB21HK-103X	CAPACITOR	0.01μF,50V
C5	NCB21HK-103X	CAPACITOR	0.01μF,50V
C6	QEKJ1CM-106	E CAPACITOR	10μF,16V
C7	NCB21HK-103X	CAPACITOR	0.01μF,50V
C8	NDC21HJ-331X	CAPACITOR	330pF,50V
C9	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C10	QDYB1CM-103Y	CAPACITOR	0.01μF,16V
C11	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
C12	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
C13	NCB21HK-472X	CAPACITOR	0.0047μF,50V
C14	NCB21HK-271X	CAPACITOR	270pF,50V
C15	NDC21HJ-820X	CAPACITOR	82pF,50V
C16	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
C17	QEKJ1HM-474	E CAPACITOR	0.47μF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C18	NCB21EK-223X	CAPACITOR	0.022μF,25V
C19	NCB21EK-683X	CAPACITOR	0.068μF,25V
C20	NCB21EK-333X	CAPACITOR	0.033μF,25V
C21	NCB21HK-103X	CAPACITOR	0.01μF,50V
C22	NCB21EK-104X	CAPACITOR	0.1μF,25V
C23	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C24	NCB21EK-104X	CAPACITOR	0.1μF,25V
C25	QEKJ1HM-105	E CAPACITOR	1μF,50V
C28	NCB21HK-103X	CAPACITOR	0.01μF,50V
C29	QEKJ1CM-106	E CAPACITOR	10μF,16V
C30	QEKJ1HM-104	E CAPACITOR	0.1μF,50V
C31	NCB21EK-104X	CAPACITOR	0.1μF,25V
C32	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
C33	NCB21HK-103X	CAPACITOR	0.01μF,50V
C34	NCB21EK-104X	CAPACITOR	0.1μF,25V
C35	NCB21CK-224X	CAPACITOR	0.22μF,16V
C36	NDC21HJ-330X	CAPACITOR	33pF,50V
C37	NCB21EK-104X	CAPACITOR	0.1μF,25V
C38	NDC21HJ-151X	CAPACITOR	150pF,50V
C39	NDC21HJ-150X	CAPACITOR	15pF,50V
C41	NCB21HK-103X	CAPACITOR	0.01μF,50V
C42	NDC21HJ-390X	CAPACITOR	39pF,50V
C43	NCB21EK-104X	CAPACITOR	0.1μF,25V
C44	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C45	NCB21HK-103X	CAPACITOR	0.01μF,50V
C46	NCB21HK-103X	CAPACITOR	0.01μF,50V
C47	QEKJ1CM-476	E CAPACITOR	47μF,16V
C48	QETC0JM-477	E CAPACITOR	470μF,6.3V
C54	NCB21HK-103X	CAPACITOR	0.01μF,50V
C55	QEKJ1CM-106	E CAPACITOR	10μF,16V
C56	NDC21HJ-101X	CAPACITOR	100pF,50V
C60	NDC21HJ-120X	CAPACITOR	12pF,50V
C63	NCB21HK-822X	CAPACITOR	0.0082μF,50V
C65	NDC21HJ-221X	CAPACITOR	220pF,50V
C78	NDC21HJ-151X	CAPACITOR	150pF,50V
C101	NCB21HK-103X	CAPACITOR	0.01μF,50V
C103	NCB21HK-103X	CAPACITOR	0.01μF,50V
C104	NCB21HK-222X	CAPACITOR	0.0022μF,50V
C105	NCB21HK-103X	CAPACITOR	0.01μF,50V
C106	NCB21HK-103X	CAPACITOR	0.01μF,50V
C107	NCB21HK-103X	CAPACITOR	0.01μF,50V
C109	QEKJ1CM-476	E CAPACITOR	47μF,16V
C113	NCB21HK-103X	CAPACITOR	0.01μF,50V
C114	NCB21EK-104X	CAPACITOR	0.1μF,25V
C115	NCB21HK-103X	CAPACITOR	0.01μF,50V
C116	NCB21EK-104X	CAPACITOR	0.1μF,25V
C117	NCB21EK-104X	CAPACITOR	0.1μF,25V
C118	NCB21HK-103X	CAPACITOR	0.01μF,50V
C119	NCB21EK-104X	CAPACITOR	0.1μF,25V
C301	QEKJ1HM-105	E CAPACITOR	1μF,50V
C302	QFV91HJ-123	F CAPACITOR	0.012μF,50V
C303	QFV91HJ-473	F CAPACITOR	0.047μF,50V
C306	NCB21HK-182X	CAPACITOR	0.0018μF,50V
C307	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C308	QEKJ1AM-226	E CAPACITOR	22μF,10V
C309	NCB21HK-153X	CAPACITOR	0.015μF,50V
C310	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C312	NCB21EK-683X	CAPACITOR	0.068μF,25V
C313	QEKJ1HM-105	E CAPACITOR	1μF,50V
C314	NCB21HK-152X	CAPACITOR	0.0015μF,50V
C315	QEKJ1EM-475	E CAPACITOR	4.7μF,25V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C331	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C332	NCB21HK-472X	CAPACITOR	0.0047μF,50V
		C333	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C334	QCBB1HJ-331	CAPACITOR	330pF,50V
		C335	QFV91HJ-823	F CAPACITOR	0.082μF,50V
		C402	QEKJ1AM-226	E CAPACITOR	22μF,10V
		C406	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C407	NCB21EK-473X	CAPACITOR	0.047μF,25V
		C408	QEKJ1CM-336	E CAPACITOR	33μF,16V
		C409	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C410	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C411	NCB21HK-153X	CAPACITOR	0.015μF,50V
		C412	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C413	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C414	QEKJ1HM-224	E CAPACITOR	0.22μF,50V
		C416	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C417	NCB21HK-153X	CAPACITOR	0.015μF,50V
		C418	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C419	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C420	NCB21EK-473X	CAPACITOR	0.047μF,25V
		C421	QEKJ1CM-336	E CAPACITOR	33μF,16V
		C422	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C426	QEKJ1HM-224	E CAPACITOR	0.22μF,50V
		C427	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C429	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C430	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C431	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C436	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C501	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C502	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C503	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C504	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C505	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
		C506	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C507	NCB21HK-563X	CAPACITOR	0.056μF,50V
		C508	NCB21HK-221X	CAPACITOR	220pF,50V
		C509	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C510	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C511	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C512	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C602	NCB21CK-104X	CAPACITOR	0.1μF,16V
		C603	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C604	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C605	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C606	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C607	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C702	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C703	QETC1CM-106	E CAPACITOR	10μF,16V
		C707	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C709	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C711	NDC21HJ-100X	CAPACITOR	10pF,50V
		C712	NDC21HJ-100X	CAPACITOR	10pF,50V
		C713	QCBB1HJ-101	CAPACITOR	100pF,50V
		C714	QCBB1HJ-101	CAPACITOR	100pF,50V
		C715	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C716	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C717	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C723	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C724	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C728	NDC21HJ-270X	CAPACITOR	27pF,50V
		C729	NDC21HJ-270X	CAPACITOR	27pF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C731	NDC21HJ-330X	CAPACITOR	33pF,50V
		C732	NDC21HJ-330X	CAPACITOR	33pF,50V
		C733	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C743	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C744	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C801	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C802	QEKC1CM-106	E CAPACITOR	10μF,16V
		C803	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C804	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C805	QDYB1CN-103Y	CAPACITOR	0.01μF,16V
		C901	QEMT1CM-158	E CAPACITOR	1500μF,16V
		C903	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C904	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C905	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C906	QETL0JM-478	E CAPACITOR	4700μF,6.3V
		C907	QETC1CM-476	E CAPACITOR	47μF,16V
		C908	NCB21HK-392X	CAPACITOR	0.0039μF,50V
		C909	QEMT0JM-128	E CAPACITOR	1200μF,6.3V
		C910	QEMT0JM-128	E CAPACITOR	1200μF,6.3V
		C911	QETC1CM-476	E CAPACITOR	47μF,16V
		C912	NCB21HK-472X	CAPACITOR	0.0047μF,50V
		C913	QEMT1CM-827	E CAPACITOR	820μF,16V
		C914	NDC21HJ-101X	CAPACITOR	100pF,50V
		C915	QETC1CM-476	E CAPACITOR	47μF,16V
		C916	QETC1CM-476	E CAPACITOR	47μF,16V
		C917	QETC1CM-107	E CAPACITOR	100μF,16V
		C918	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C919	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C920	QETC1CM-476	E CAPACITOR	47μF,16V
		C921	NCF21EZ-104X	CAPACITOR	0.1μF,25V
		C1101	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C1102	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C1104	QEKJ1CM-226	E CAPACITOR	22μF,16V
		C1105	QEPF1HM-105	NP E CAPACITOR	1μF,50V
		C1106	QEPF1HM-105	NP E CAPACITOR	1μF,50V
		C1107	NCB21HK-273X	CAPACITOR	0.027μF,50V
		C1109	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C1112	NCB21EK-563X	CAPACITOR	0.056μF,25V
		C1113	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C1114	NDC21HJ-101X	CAPACITOR	100pF,50V
		C1115	NDC21HJ-101X	CAPACITOR	100pF,50V
		C1302	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C1303	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C1304	QERF0JM-476	E CAPACITOR	47μF,6.3V
		C1305	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1306	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1307	NDC21HJ-390X	CAPACITOR	39pF,50V
		C1308	NDC21HJ-390X	CAPACITOR	39pF,50V
		C1309	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C1310	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1311	NCB21HK-103X	CAPACITOR	0.01μF,50V
		L1	QQL29BJ-2R2Z	COIL	2.2μH
		L2	QQL29BJ-150Z	COIL	15μH
		L3	QQL29BJ-6R8Z	COIL	6.8μH
		L4	QQL29BJ-101Z	COIL	100μH
		L5	QQL29BJ-101Z	COIL	100μH
		L10	QQL29BJ-680Z	COIL	68μH
		L12	QQL29BJ-150Z	COIL	15μH
		L14	QQL29BJ-471Z	COIL	470μH
		L101	QQL29BJ-101Z	COIL	100μH
		L301	QQL25CJ-123Z	COIL	12mH

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		L501	QQL29BJ-2R2Z	COIL	2.2μH
		L701	QQL29BJ-100Z	COIL	10μH
		L901	VTC19AG-18AV	COIL	
		L902	QQL35BJ-330Z	COIL	33μH
		L903	QQL33BK-101	COIL	100μH
		L904	QQL35BJ-330Z	COIL	33μH
		L905	QQL35BJ-330Z	COIL	33μH
		L906	QQL06BK-330	COIL	33μH
		L908	QQL35BJ-330Z	COIL	33μH
		L1301	QQL29BJ-220Z	COIL	22μH
		L1302	QQL29BJ-101Z	COIL	100μH
		L1303	QQL29BJ-470Z	COIL	47μH
		X2	PEVB0678	CRYSTAL RESONATOR	
		X701	PEVB0567	CRYSTAL RESONATOR	
		X702	QAX0011-001	CRYSTAL RESONATOR	
		S701	PESW0674	PUSH SWITCH,CASSETTE SW	
		S702	PESW0589	PUSH SWITCH,REC SAFETY SW	
		S1209	QSW0522-002Z	TACT SWITCH	
		PS701	SG-246	IC(PHOTO SENSOR)	
		PS702	SG-246	IC(PHOTO SENSOR)	
		TH803	QAD0098-104	N THERMISTOR	
		T301	PELN0832	OSC TRANSFORMER	
		J1	PEMC1117	PIN JACK(SW),A/V IN	
		J2	PEMC1085	PIN JACK,A/V OUT	
		J3	QNN0087-001	PIN JACK,A/V OUT	
		J4	QGA4201F2-04	CONNECTOR,DC IN	
		J5	PEMC0750	MINI JACK,EXTRC IN	
		TB1	LP30151-001B	TERMINAL BOARD ASSY	
		OT1	SDST3008Z	SCREW,TERMINAL BOARD	
		BK1	LP40065-001B	BRACKET,TERMINAL BOARD	
		OT2	SDST3008Z	SCREW,X2 BRACKET	
		OT3	SPSF3010M	SCREW,J4	
		OT4	LP30002-009A	SPACER,X11	
		SD1	PQ35384	SHIELD CASE,PRE/REC	
		SD2	PQ46515	SHIELD PLATE,PRE/REC	
		FW302	PW30101-Q0AH4W2	WIRE,FE HEAD	
		WR301	PW30705-12AAYY	WIRE,(1-4)A/C HEAD CN301	
		WR3012	PW30702-12AAYY	WIRE,(5-7)A/C HEAD CN301	
		CN1	QGF1015C2-09	CONNECTOR,(1-9)UPPER DRUM	
		CN301	QGD2001C1-07	CONNECTOR,(1-7)A/C HEAD	
		CN701	QGB2002L1-08	CONNECTOR,(1-8)CAP MDA	
		CN702	PU61434-1-1	CONNECTOR,(1-5)ROTARY ENCODER	
		CN703	QGD2001C1-02	CONNECTOR,(1-2)LOADING MOTOR	
		CN704	QGF1207C1-05	FFC CONNECTOR,(1-5)DRUM MOTOR	
		CN801	QGF1208C1-14	FFC CONNECTOR,(1-14)FRONT	
		CN802	PU53587-2	CONNECTOR,(1-2)DEW SENSOR	
	⚠	CP701	ICP-N25	CIRCUIT PROTECTOR	
	⚠	CP901	ICP-N25	CIRCUIT PROTECTOR	
	⚠	CP902	ICP-N25	CIRCUIT PROTECTOR	
	⚠	CP1101	ICP-N15	CIRCUIT PROTECTOR	

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AUDIO CONTROL BOARD ASSEMBLY <12>

PW1	PB40068A-01	A/CTL HEAD BOARD ASSEMBLY
CN1	QGD2001F1-07	CONNECTOR,(1-7)MAIN

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

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FRONT BOARD ASSEMBLY <28>

PW2	PB11079D2	FRONT BOARD ASSY	
IC1201	GP1U281X	IR DETECT UNIT	
D1203	SLR-342VC3F	LE DIODE,POWER	
R1210	QRE141J-331Y	RESISTOR	330Ω,1/4W
R1211	QRE141J-332Y	RESISTOR	3.3kΩ,1/4W
R1212	QRE141J-332Y	RESISTOR	3.3kΩ,1/4W
C1202	NCB21EK-104X	CAPACITOR	0.1μF,25V
S1208	QSW0456-001Z	TACT SWITCH,EJECT	
S1209	QSW0456-002Z	TACT SWITCH,POWER	
HD1	PQM30038-1-2	LED HOLDER,D1203	
FW1202	PW30123-50AA446	WIRE,LED	
FW1203	PW30101-F0AA442	PARALLEL WIRE,SWITCH	
CN1201	QGF1207F1-14	FFC CONNECTOR,(1-14)MAIN	

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SW BOARD ASSEMBLY <36>

PW4	PB11079D4	SW BOARD ASSY
S1801	QSW0528-001	CAM SWITCH

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LED BOARD ASSEMBLY <90>

PW3	PB11079D3	LED BOARD ASSY	
D1201	SLR-342MG3F	LE DIODE,SP/EP	
D1202	SLR-342VC3F	LE DIODE,REC	
R1201	QRE141J-103Y	RESISTOR	10kΩ,1/4W
R1202	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
R1204	QRE141J-153Y	RESISTOR	15kΩ,1/4W
R1205	QRE141J-103Y	RESISTOR	10kΩ,1/4W
R1206	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
R1208	QRE141J-331Y	RESISTOR	330Ω,1/4W
R1209	QRE141J-331Y	RESISTOR	330Ω,1/4W
S1201	QSW0456-001Z	TACT SWITCH,SP/EP	
S1202	QSW0456-001Z	TACT SWITCH,STOP	
S1203	QSW0456-001Z	TACT SWITCH,REC	
S1204	QSW0456-001Z	TACT SWITCH,REW	
S1205	QSW0456-001Z	TACT SWITCH,FF	
S1206	QSW0456-001Z	TACT SWITCH,PLAY	
S1207	QSW0456-001Z	TACT SWITCH,PAUSE	

SECTION 6
TECHNICAL INFORMATION

6.1 SYSCON CIRCUIT

6.1.1 Syscon CPU pin function (IC701) 1/2

PIN NO.	LABEL	IN/OUT	NOTE
1	NC	–	NC
2	AUTO REW	IN	AUTO REWIND SET(OFF : L)
3	CAP CTL V	OUT	CAPSTAN MOTOR VOLTAGE DETECT
4	DRUM CTL V	OUT	DRUM MOTOR VOLTAGE DETECT
5	TU FG	IN	TAKE-UP REEL ROTATION DET/TAPE REMAIN DET
6	SP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN DET
7	EE(L)	OUT	EE MODE : L
8	NC	–	NC
9	NC	–	NC
10	A/M/S	OUT	PRE/REC IC CONTROL (AUTO: M/MANUAL: H/S & S: L)
11	RC IN	IN	REMOTE CONTROL DATA INPUT
12	PROTECT	IN	SWD 5 V/12 V DETECT
13	TEST	IN	5 V
14	NC	–	NC
15	HEAD SEL 2	–	NC
16	COL. ROT	IN	COLOR ROTATION CONTROL INPUT
17	ENV COMP	IN	PB ENVELOPE COMPARATER SIGNAL INPUT
18	V. PULSE	OUT	V. PULSE ADDTION TIMING CONTROL
19	REC ST(H)	OUT	NORMAL AUDIO REC START: H
20	RC OUT	–	NC
21	A. FF	OUT	AUDIO FF OUTPUT
22	RC IN2	IN	VIDEO SIGNAL FIELD DETECT
23	TACT SW1	IN	POWER SWITCH INPUT
24	HiFi REC ST(L)	OUT	HiFi AUDIO REC START: L
25	D FF	OUT	VIDEO PB FM (CH-1, CH-2) SWITCHING PULSE
26	AL 5 V	–	5 V
27	COMB OFF(H)	–	NC
28	NC	–	NC
29	LMC 3	OUT	LOADING MOTOR DRIVE (3)
30	CASS SW	IN	CASSETTE TAPE LOAD SWITCH (CASS IN: L)
31	REC SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON: L)
32	LS C	IN	MECHANISM MODE DETECT (C)
33	LS B	IN	MECHANISM MODE DETECT (B)
34	LS A	IN	MECHANISM MODE DETECT (A)
35	GND	–	GND
36	GND	–	GND
37	RESET	–	RESET
38	X IN	–	SYSTEM CLOCK
39	X OUT	–	SYSTEM CLOCK
40	CLK SEL	–	Hi FIXED
41	GND	–	GND
42	XC IN	–	TIMER CLOCK
43	XC OUT	–	TIMER CLOCK
44	LMC 2	OUT	LOADING MOTOR DRIVE (2)
45	LMC 1	OUT	LOADING MOTOR DRIVE (1)
46	DOCTOR	IN	DOCTOR SET
47	NC	–	NC
48	A. MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE ON: H)
49	12C DATA	OUT	EEPROM (IC702) DATA OUTPUT
50	12C CLK	OUT	EEPROM (IC702) DATA TRANSFER CLOCK)

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

6.1.2 Syscon CPU pin function (IC701) 2/2

PIN NO.	LABEL	IN/OUT	NOTE
51	P. MUTE	OUT	PICTURE MUTE CONTROL (MUTE ON: L)
52	MECHA TEST	OUT	MECHANISM TEST MODE OUTPUT
53	P. CTL	OUT	POWER ON/OFF CONTROL (POWER ON: H)
54	EJECT SENSOR	IN	EJECT SENSOR INPUT
55	TACT SW4	IN	EJECT SWITCH INPUT
56	ACC IN 5 V	–	5 V
57	LED1	OUT	POWER LED (POWER ON: L)
58	LED2	OUT	REC LED (REC ON: L)
59	LED3	OUT	SP/EP LED (EP ON: L)
60	SP (L)	OUT	SP MODE: L
61	OSD CS	OUT	ON SCREEN IC CHIP SELECT
62	HEAD SEL	OUT	19u HEAD SELECT CONTROL
63	NC	–	NC
64	REC (H)	OUT	HiFi AUDIO REC MODE: H
65	AMP VCC	–	SYSTEM POWER (for AMP)
66	D. PG IN	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
67	D. FG IN	IN	DRUM FG PULSE INPUT
68	C. FG IN	IN	CAPSTAN FG INPUT (TAPE SPEED / BACK SPACE COUNT)
69	AMP VREF OUT	OUT	CTL PULSE AMP REFERENCE VOLTAGE
70	(VCC/2)	–	2.5 V
71	CLAMPF	IN	CTL CLAMP CIRCUIT INPUT (POSITIVE PULSE)
72	CLAMPR	IN	CTL CLAMP CIRCUIT INPUT (ENGATIVE PULSE)
73	CTL AMP OUT	OUT	CTL PULSE OUTPUT
74	AMPC	–	CAPACITOR CONNECT TERMINAL for CTL AMP CIRCUIT
75	CTL AMP IN	IN	CTL PULSE INPUT
76	CTL (+) SW	OUT	CTL (+) SIGNAL OUTPUT
77	CTL (+)	IN/OUT	CTL (+) SIGNAL
78	CTL (–)	IN/OUT	CTL (–) SIGNAL
79	CTL Vss	–	Vss
80	GND	–	GND
81	AL 5 V	–	BACKUP 5 V
82	VREF	–	Vcc
83	C	–	NC
84	NC	–	NC
85	END SENSOR	IN	TRAILER TAPE DETECT (DETECT ON: L)
86	TACT SW2	IN	REC, PLAY, STOP SWITCH INPUT
87	TACT SW3	IN	PAUSE, FF, REW, SP/EP SWITCH INPUT
88	DEW SENSOR	–	CONDENSATION SENSOR INPUT
89	ACC V DET	IN	ACC VOLTAGE DETECT
90	AUDIO ENV./ND(L)	IN	AUDIO PB FM INPUT
91	VIDEO ENV.	IN	VIDEO PB FM INPUT
92	START SENSOR	IN	LEADER TAPE DETECT (DETECT ON: L)
93	C.SYNC	IN	COMPOSITE SYNC
94	SSB DATA	OUT	VIDEO AND AUDIO IC CONTROL DATA
95	CAP REV(L)	OUT	CAPSTAN MOTOR CONTROL (FWD: H / REV: L)
96	SSB CLK	OUT	VIDEO AND AUDIO IC DATA TRANSFER CLOCK
97	NC	–	NC
98	S DATA OUT	OUT	ON SCREEN CONTROL DATA OUTPUT
99	S DATA IN	IN	ON SCREEN CONTROL DATA INPUT
100	S CLK	OUT	ON SCREEN DATA TRANSFER CLOCK

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

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