3420

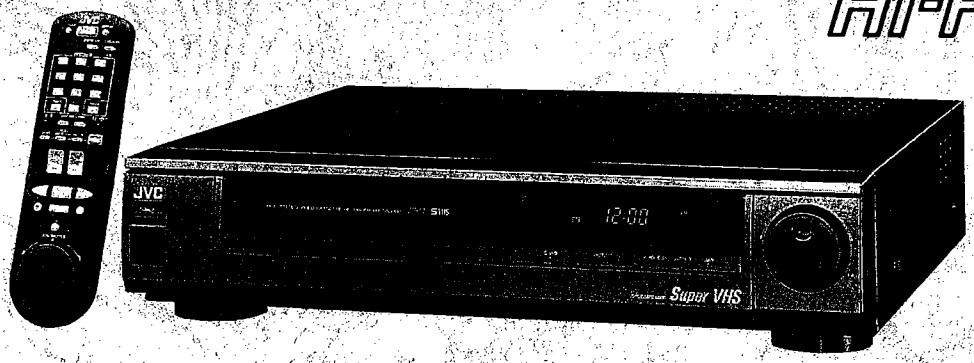
JVC

SERVICE MANUAL

STEREO VIDEO CASSETTE RECORDER

HR-S6800U

Hi-Fi S-VHS



SPECIFICATIONS

GENERAL

Power requirement	:	AC 120 V~, 60 Hz
Power consumption	:	34 W
Temperature		
Operating	:	5°C to 40°C (41°F to 104°F)
Storage	:	–20°C to 60°C (–4°F to 140°F)
Humidity		
Operating	:	35% to 80%
Storage	:	5% to 80%
Operating position	:	Horizontal only
Dimensions (WxHxD)	:	435 x 105 x 395 mm (17-3/16" x 4-3/16" x 15-9/16")
Weight	:	6.7 kg (14.8 lbs)
Format	:	S-VHS/VHS NTSC standard with Hi-Fi audio
Tape width	:	12.65 mm
Tape speed (SP)	:	33.35 mm/sec (1-5/16 ips)
(EP)	:	11.12 mm/sec (7/16 ips)
Maximum recording time (SP)	:	160 min. with T-160 video cassette
(EP)	:	480 min. with T-160 video cassette

VIDEO

Signal system	:	NTSC-type color signal and EIA monochrome signal, 525 lines/60 fields
Recording system	:	Rotary two-head helical scan system with slant double-azimuth combination video heads
Input	:	0.5 to 2.0 Vp-p, 75 ohms, unbalanced
Output	:	1.0 Vp-p, 75 ohms, unbalanced
Signal-to-noise ratio	:	45 dB (Rohde & Schwarz noise meter) with PICTURE CONTROL set to OFF
Horizontal resolution	:	400 lines (S-VHS) 240 lines (VHS) with PICTURE CONTROL set to OFF

AUDIO

Input	:	–8 dBs, more than 50 k-ohms, unbalanced
Output	:	–8 dBs, less than 1 k-ohm, unbalanced (100 k-ohms, load)

NORMAL AUDIO

Recording system	:	Longitudinal track
No. of channels	:	1 normal audio channel
Frequency response	:	70 Hz to 10,000 Hz

Hi-Fi AUDIO

Recording system	:	Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of channels	:	2 Hi-Fi audio channels
Frequency response	:	20 Hz to 20,000 Hz
Dynamic range	:	More than 90 dB
Wow and flutter	:	Less than 0.005% WRMS

TUNER

Tuning system	:	Frequency synthesized tuner
Channel coverage		
(VHF)	:	Channels 2–13
(UHF)	:	Channels 14–69
(CATV)	:	113 Channels
RF output	:	Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

TIMER

Clock reference	:	Quartz-crystal
Program capacity	:	1-year programmable timer/ 8-programs

ACCESSORIES

Provided accessories	:	RF cable (F-type), Infrared remote control unit, "AA" battery x 2, S-Video cable (4-pin), Video cable, Audio cable, Mini-plug cable

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

No. 82305
MAY 1992

NOTE: For a technical description, please refer to Technical Guide VTG82075 HR-S6800 NTSC.

TABLE OF CONTENTS

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

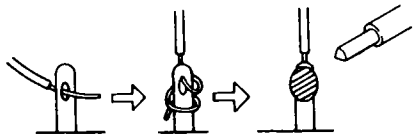


Fig. 1

7. Observe that wires do not contact heat producing parts (heat-sinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosen it.

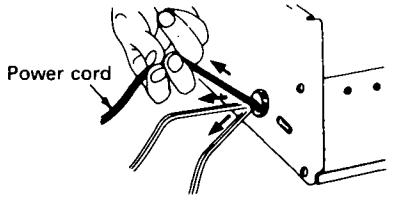


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number**: E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

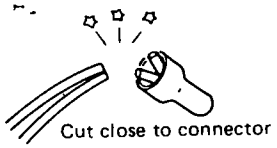


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

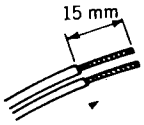


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

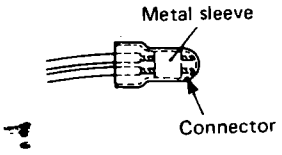


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

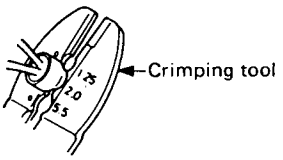


Fig. 6

(5) Check the four points noted in Fig. 7.

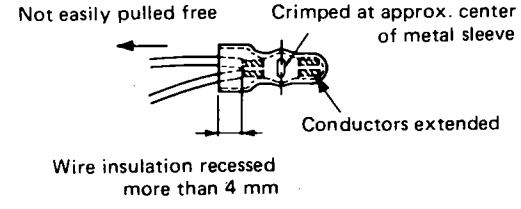


Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

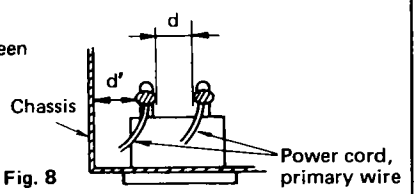


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

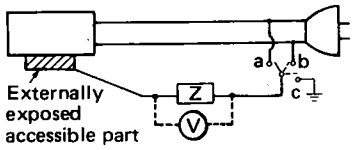


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

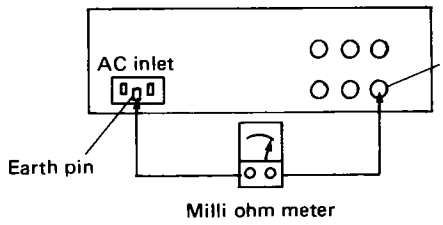


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Safety Precautions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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

This video cassette recorder should be used with AC 120V~, 60 Hz only.
CAUTION:
To prevent electric shocks and fire hazards, do NOT use any other power source.

S-VHS

- Cassettes marked "S-VHS" and "VHS" can be used with this video cassette recorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS".

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

CAUTION:
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION:
POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

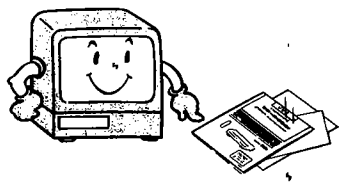
NOTE:
The rating plate and the safety caution are on the side and rear of the unit.

CAUTION:
Changes or modifications not approved by JVC could void user's authority to operate the equipment.

IMPORTANT:
Please read the "Precautions" section of this instruction manual and the "Video Products Safety Guide" enclosed with this manual before installing or operating the VCR.

Contents

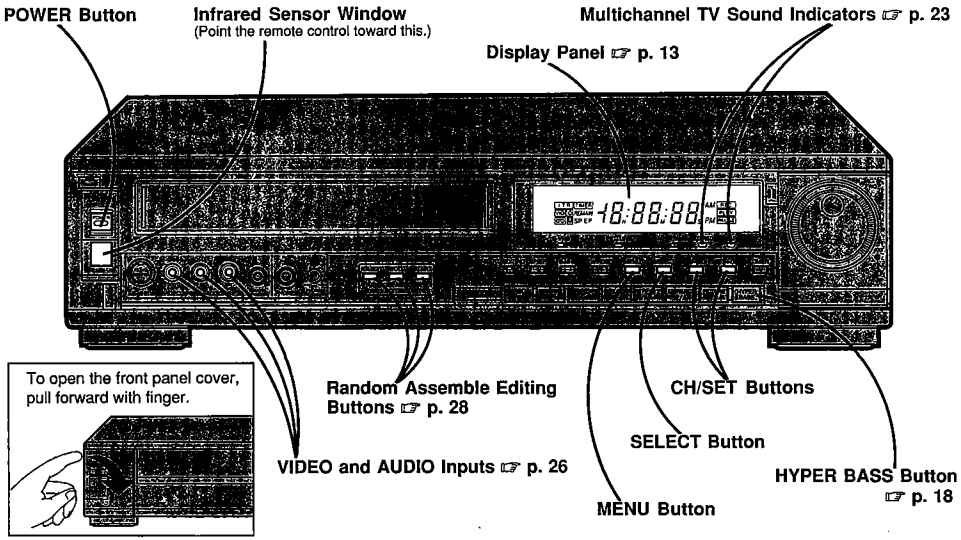
How To Use This Instruction Manual
This instruction manual has been designed with both new and experienced users in mind. The first half offers detailed, step-by-step instructions for setting up your VCR, and on using its basic functions. The second half provides instructions on the many other functions available on your VCR. So just by following the instructions in the "Getting Started" and "Basic Operation" sections of this manual, you can master all of your VCR's basic functions, including timer-recording. Once you're sufficiently familiar with basic operation, or if you're already an experienced video user, you can move on to the more advanced functions introduced on the following pages. Also, towards the end of this instruction manual, there are sections offering supplemental information which you should find helpful in the course of operating your VCR.
Related features have all been clustered together for easy reference, and their categories (playback, recording, timer, etc.) are easily recognizable by the symbol appearing in the page header. If you ever need to refer to another page for instructions or information, you will be told so by a ☞ mark pointing to the page number. Unless otherwise specified, operation buttons mentioned in the instructions refer to those located on the remote control, not those duplicated on the VCR.
Remember, you must use your VCR correctly to fully enjoy it. Please use this manual effectively. It's the surest and quickest way to unlock the full potential of your new JVC VCR.



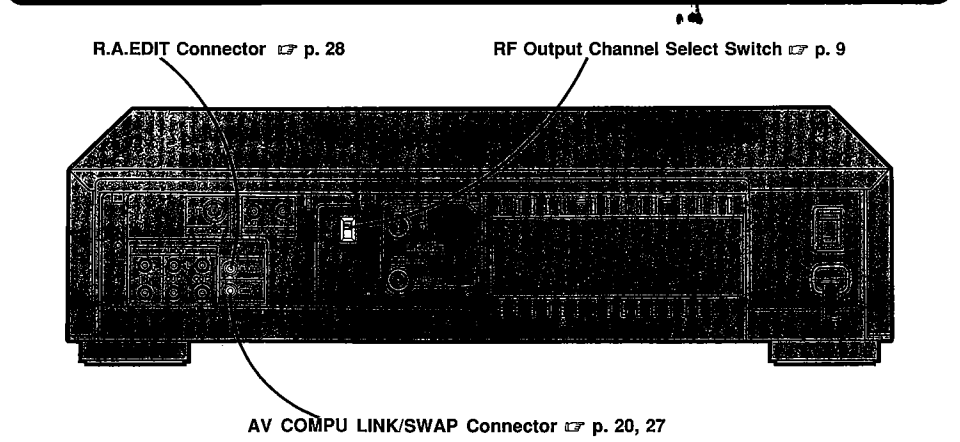
Keep It Nearby For Easy Reference
This instruction manual, and the other reference materials enclosed with it, contain important information on VCR operation and proper usage. Please keep them near your VCR in a place where you can easily access them for reference.

Controls, Indicators, And Connectors

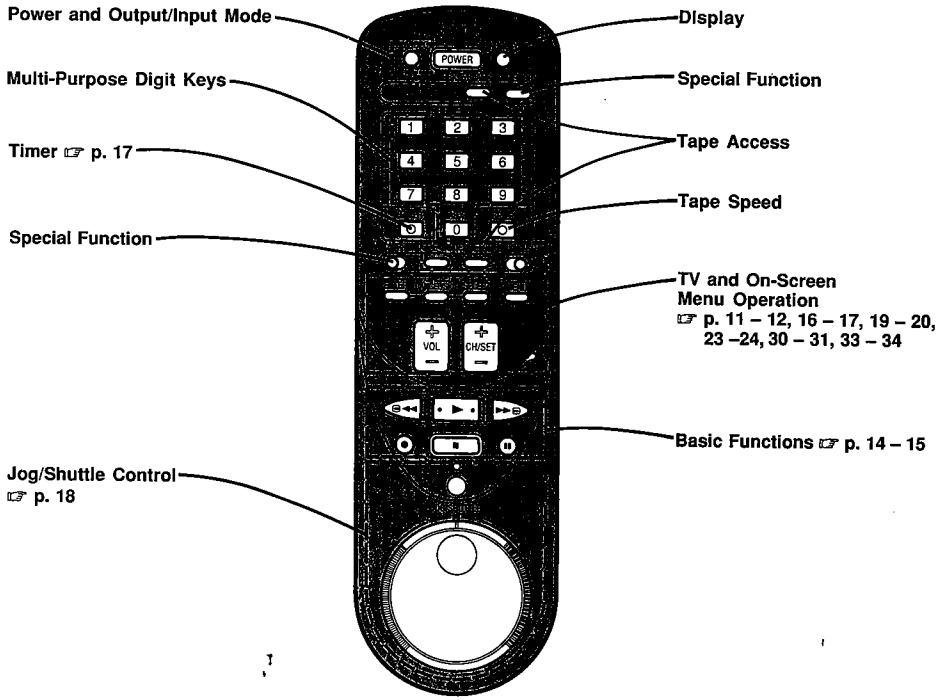
Front Panel

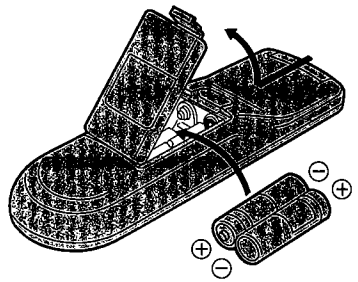


Back Panel



Wireless Remote Control





Installing Batteries

1. Slide the battery compartment cover in the direction of the arrow.
2. Insert 2 "AA"-size batteries (provided) in the correct directions.
3. Replace the cover.

How To Use

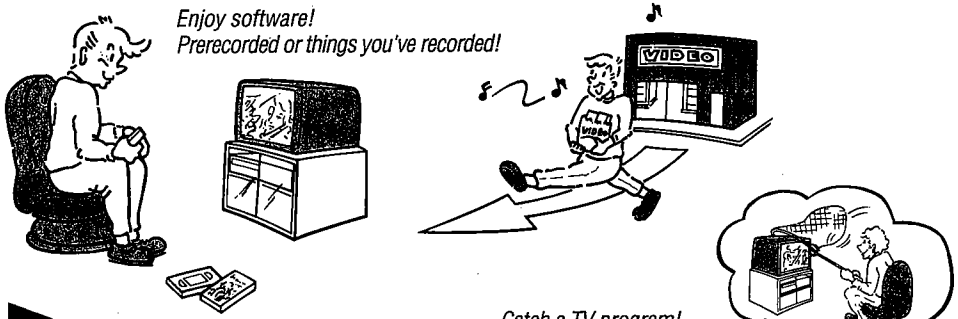
This remote control can operate most of your VCR's functions.

1. Point the remote control toward the VCR's sensor window.
2. Press the appropriate operation button.
   - The maximum operating distance of the remote control is about 8 m (26 ft).

This remote control can also operate TVs of various brands. For instructions, ☞ p. 31.

Getting To Know Your VCR

The 3 Basic Ways Of Using Your VCR



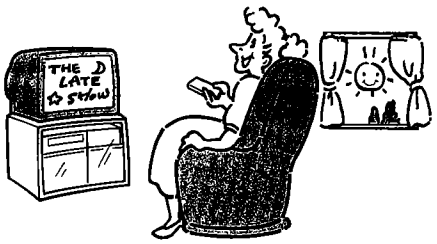
Enjoy software!
Prerecorded or things you've recorded!

Catch a TV program!
With push-button ease!

Playback

With this VCR properly hooked-up to your TV set, you'll be able to watch an enormous variety of video software. Enjoy the VHS tapes you already have, and treat yourself to the terrific picture quality of Super VHS tapes. And, thanks to this VCR's Hi-Fi capability, you'll also be able to fully enjoy the powerful Hi-Fi soundtracks available on most prerecorded VHS software.

Watch TV programs when you want.
Record TV programs while you're away.



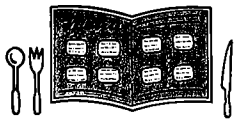
Recording

This VCR offers you a choice of recording in either VHS or S-VHS. Thanks to S-VHS's high resolution, you'll be able to record TV programs without any loss of the original picture quality. S-VHS is economical too, because you can record in the longer EP mode and still get excellent picture quality. And any time you need to record in VHS — no problem. Just insert a VHS cassette and you're ready to go.

Timer-Recording

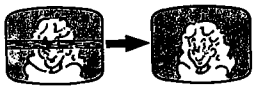
By using the built-in timer, you can set your VCR to record TV programs for you while you're asleep, while you're away, or while you're doing something else. Then you can watch those programs later, whenever it's convenient, whenever you want. This is what's called "timeshifting", and now you can do it the JVC way.

Some Important Functions On Your VCR



On-Screen Menu System

Do everything from tuner set up to timer-programming while watching bright, easy to see, easy to understand on-screen menus. In English, French or Spanish, accessible via remote control or at the VCR.

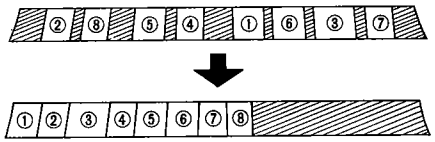


Digital Tracking

Automatically controls video tracking to maintain the best video picture, even with tapes with excessive tracking variations. A must for rental software viewing.

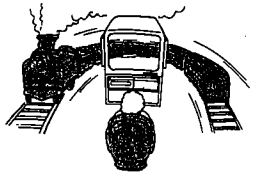
Picture Control

One-touch control over the type of video picture you want. Make it clearer, make it better for dubbing, make it softer, make it sharper — do it all with Picture Control.



Random Assemble Editing

Lets you create complete, edited videos at the touch of a button. Just specify up to 8 cuts, in any order, and the VCR does the rest.

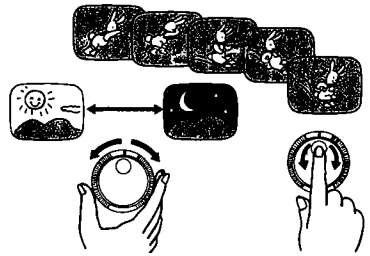


Hi-Fi Stereo Sound

Enjoy films with Hi-Fi stereo soundtracks just as you would in theaters. Use the built-in MTS (Multichannel TV Sound) decoder to record stereo programs in stereo, or to record SAP programs.

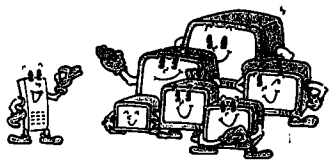
Hyper Bass

Boosts the soundtrack's low frequencies (bass sound) at the touch of a button, for increased enjoyment of action movies, music videos, etc.



Jog/Shuttle Controls

Fast, accurate visual search from slow motion to fast motion, or frame-by-frame search. Useful in editing or playback.



Multi-Brand TV-Compatible Remote Control

Compatible with most major brands of televisions for basic control functions. Put an end to two-handed remote control.

Making The Right Connections

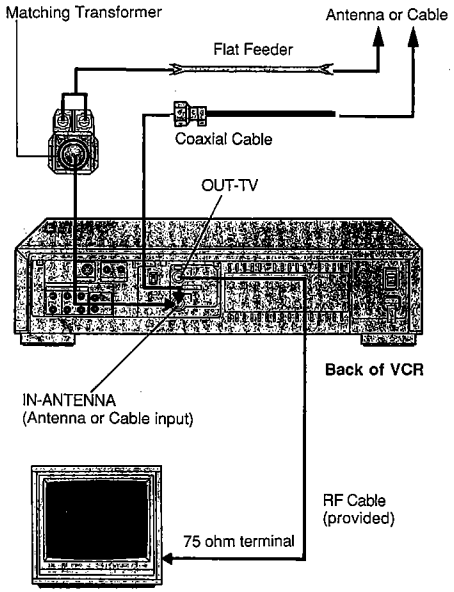
It's essential that your VCR be properly hooked up for proper results. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VCR OPERATION CAN BE PERFORMED.

A VCR-TO-TV CONNECTION

RF CONNECTION

For standard TV sets:

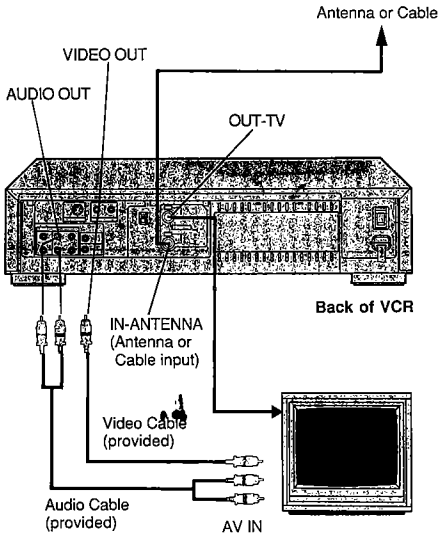
1. Disconnect the TV antenna from the TV.
2. Connect the TV antenna to the VCR.
3. Connect the VCR to the TV's antenna terminal using the provided RF Cable.



AV CONNECTION

For TV sets with AV input terminals:

1. Connect the antenna, VCR and TV as per "RF CONNECTION".
2. Connect the VCR to the TV's AV-IN terminals.

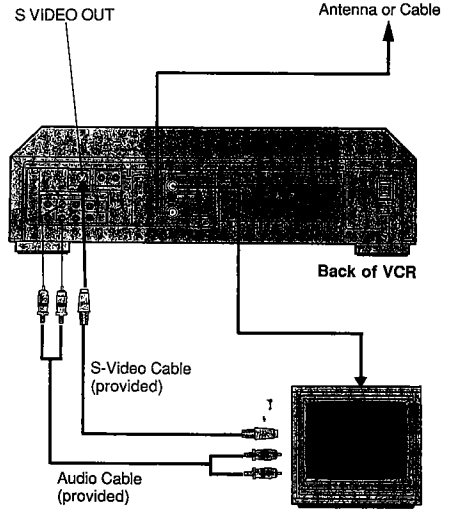


NOTE:
Either pair of AUDIO OUT (1 or 2) can be used to connect to the television. Use the other pair to connect to an audio amplifier.

S-VIDEO CONNECTION

For sets with S-VIDEO input terminal:

1. Connect the antenna, VCR and TV as per "RF CONNECTION".
2. Connect the VCR's S VIDEO OUT terminal to the TV's S VIDEO IN terminal.
3. Connect the VCR's AUDIO OUT terminals to the TV's AUDIO IN terminals.

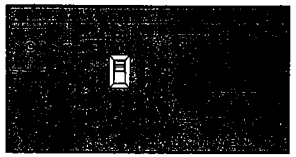


NOTES:

- To make the most of Super VHS picture performance, we recommend you use the S-VIDEO connection.
- To operate the VCR with your TV using the S VIDEO connection, set your TV to the AV mode.

See the "Basic Guide For VCR Connections" sheet enclosed with this instruction manual for more information and other possible connections.
The VCR rear panel illustration in the "Basic Guide For VCR Connections" differs from your VCR. Terminals are labeled and positioned differently. The lower IN-ANTENNA terminal of your VCR corresponds to the upper ANT. IN terminal of the "Basic Guide", and the upper OUT-TV terminal of your VCR corresponds to the lower RF OUT terminal of the "Basic Guide".

B SELECT VCR CHANNEL



With RF Connection

Set this switch to either CH3 or CH4 (the channel not used for broadcasting in your area).

- The OUT-TV terminal sends picture and sound signals to your TV on channel 3 or 4. The sound signal is monaural.
- To operate the VCR via RF connection, set the VCR to the VIDEO mode and your TV's channel to the one you set the VCR to in this step.
- For ordinary TV viewing, set the VCR to the TV mode.

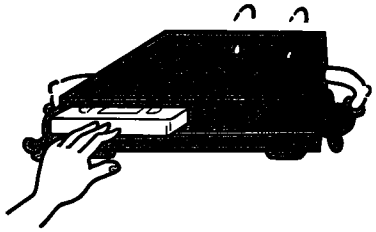
With AV or S-VIDEO Connection

- To operate the VCR via AV or S-VIDEO connection, set your TV to the AV mode.

Handling Video Cassettes

A LOADING A CASSETTE

1. Pull the front panel cover open.
2. Insert a cassette with its label side facing you.
   - If the cassette is not loaded firmly, it will be ejected.



B UNLOADING A CASSETTE

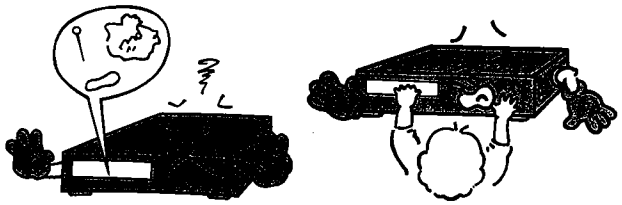
1. Press STOP/EJECT.
   - If the cassette will not eject, check to see if the VCR's TIMER indicator is lit. If it is, press the TIMER button to turn it off.

NOTES:

- Be sure to insert the cassette firmly into the slot; otherwise it will be automatically ejected.
- The automatic loading mechanism will operate only when the cassette is inserted correctly.

WARNING

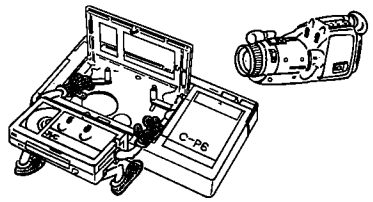
- Do not insert fingers or foreign objects into the cassette loading slot since this could lead to injury or damage to the mechanism. Be especially careful with children.
- Do not try to pull out a cassette once automatic loading has started. This could cause injury or damage the mechanism.



Usable Cassettes

Full-Size VHS
T-30 (ST-30**)
T-60 (ST-60**)
T-90
T-120
T-160 (ST-160**)

Compact VHS*
TC-20 (ST-C20**)
TC-30 (ST-C30**)

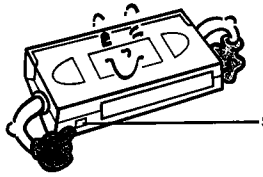


* Compact VHS camcorder recordings can be played on this video recorder. Simply place the recorder cassette into a C-P6 Cassette Adapter and it can be used just like any full-sized VHS cassette.

** This video recorder can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

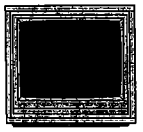
Accidental Erasure Prevention

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

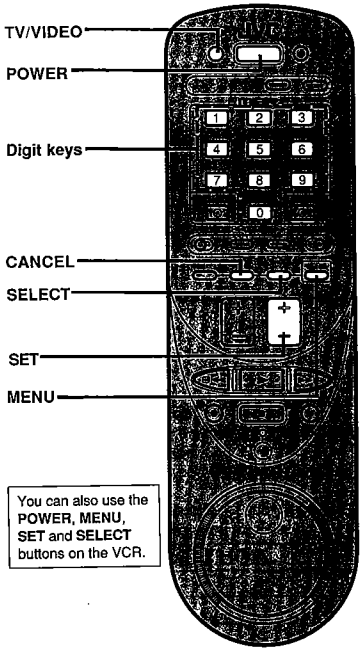


Setting The Clock

Since your VCR bases all of its timer recording start and stop "decisions" on the time kept by its built-in clock, accurate setting of this clock is crucial for proper timer-recording results.



POWER ON;
SELECT CHANNEL
3 OR 4 (OR AV MODE)



You can also use the **POWER, MENU, SET** and **SELECT** buttons on the VCR.

ATTENTION:

On-screen menus and messages can be displayed in French or Spanish. For instructions on changing the on-screen language ☞ p.30.

A TURN ON THE VCR

1. Press POWER.
2. Press TV/VIDEO to select the VIDEO mode.
   - The VCR's VIDEO indicator should be lit.

B ACCESS THE ON-SCREEN MENU

3. Press MENU.
4. Press the 3 key. (VCR Set Up)
5. Press the 2 key. (Clock Set)

C INPUT THE MONTH/DAY/YEAR

6. Press the appropriate digit keys.
   - Example: For August 6, 1992, press 0 8 0 6 9 2.
   - Always enter "0" before single-digit entries.
7. Press SELECT.
   - The day of the week will automatically appear.

D INPUT THE TIME

8. Press the appropriate digit keys.
   - Example: For 2:30 press 0 2 3 0.
9. Press SET to choose AM or PM.

E START THE CLOCK

10. Press SELECT.
    - Screen turns green to let you know the clock has started.

F RETURN TO THE TV SCREEN

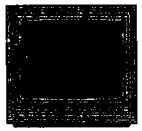
11. Press MENU.

TO MAKE CORRECTIONS

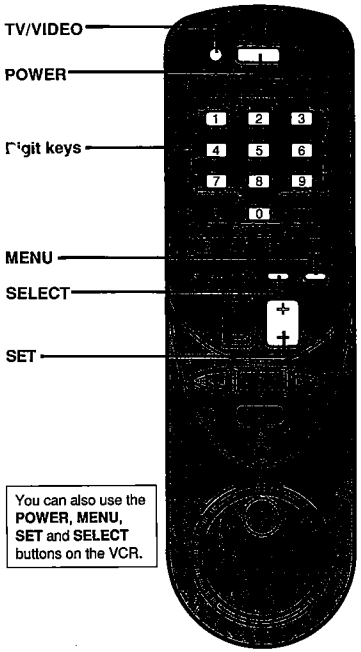
Press CANCEL (repeatedly if needed) during steps C–D to move back to an item you want to change.

Setting The Tuner

The Auto Set feature introduced here automatically assigns receivable channels in your area to the CHANNEL UP/DOWN button and skips the others so you won't have to go through any "blank" channels to get to the one you want.



POWER ON;
SELECT CHANNEL
3 OR 4 (OR AV MODE)



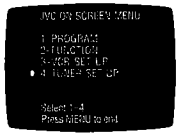
You can also use the **POWER, MENU, SET** and **SELECT** buttons on the VCR.

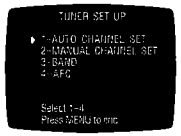
A TURN ON THE VCR

1. Press POWER.
2. Press TV/VIDEO to select the VIDEO mode.
   - The VCR's VIDEO indicator should be lit.

B ACCESS THE ON-SCREEN MENU

3. Press MENU.
4. Press the 4 key. (Tuner Set Up)
5. Press the 1 key. (Auto Channel Set)





C START AUTO SET

6. Press SET.
   - Screen turns green and "Scanning..." is displayed while auto set is in progress.
   - After completion of auto set, the total number of set channels is displayed.

D RETURN TO THE TV SCREEN

7. Press MENU three times.

TO ADD/DELETE CHANNELS MANUALLY

☞ p.33, 34.

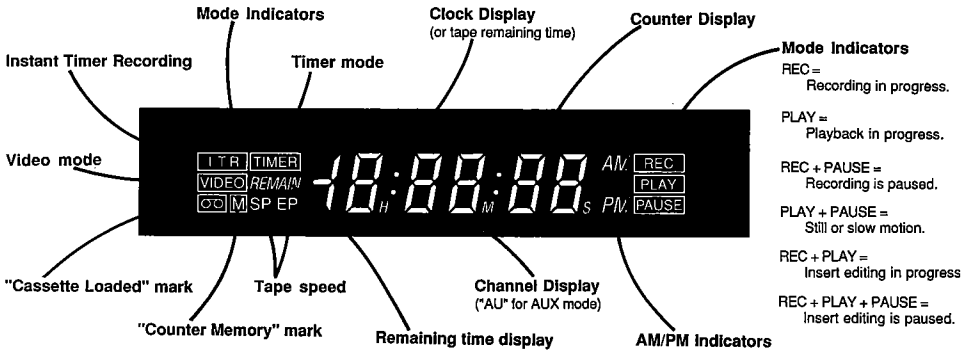
ATTENTION:

All On-Screen Menu selections can be chosen by pressing the corresponding digit key, or by pressing SET to move the cursor arrow to the correct position and then pressing SELECT.

MODE Mode Displays — What They Mean

Display Panel

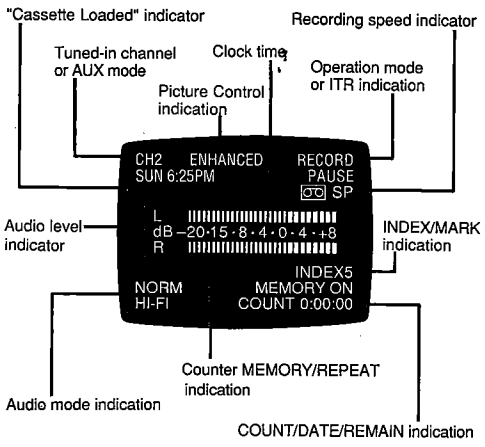
Your VCR's multi-function FDP (fluorescent display panel) offers important operation information at a glance.



■ **Pressing DISPLAY lets you change the type of display: Counter, Channel, Clock or Remain.**

On-Screen Display

Operation modes are displayed on the TV screen unless the "On-Screen" function is set to "OFF". ☞p.30.



AUTOMATIC INDICATION

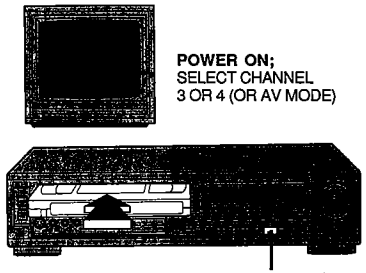
- **Channel**
  When the channel is changed, the new channel is displayed on the screen for 5 seconds.
- **Operation mode**
  When the operation mode is changed, the new mode is displayed — RECORD (5 sec.), PLAY (5 sec.), FF/REW (5 sec., when engaged from Stop mode), and RECORD PAUSE (for as long as Pause is engaged).
- **"Cassette Loaded" mark**
  When a cassette is loaded the mark is displayed for 5 seconds. It blinks when EJECT is pushed.

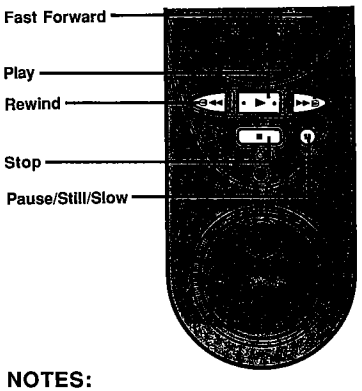
MANUAL RECALL

1. Press ENTER.
   - All indications corresponding to the current status are displayed for 5 seconds, leaving the counter information (COUNT, DATE or REMAIN) on the screen.
   - To check only the counter information, press DISPLAY.
2. Press ENTER again to clear the display.

Playback

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





A LOAD A CASSETTE

1 Insert a cassette.
- The VCR power will come on automatically.
- If the safety tab on the cassette is removed, playback will start automatically.

B TO START PLAYBACK

2 Press ► (Play).
- The VCR mode is automatically set and the VIDEO indicator will light.

C TO STOP PLAYBACK

3 Press ■ (Stop).

D TO REWIND OR FAST-FORWARD

4 Press ◄◄ to rewind the tape.
5 Press ►► to fast-forward the tape.
- Press ■ to stop the tape.

E TO EJECT THE TAPE

6 Press the VCR's STOP/EJECT button.

High-Speed Forward And Reverse Search

During Playback:

1 Press ►► for high-speed forward search.
2 Press ◄◄ for high-speed reverse search.
3 Press ► to resume normal playback.
- For short searches, keep ◄◄ or ►► pressed for more than 2 seconds. When released, normal playback will continue.

Still Playback And Frame Advance

During Playback:

1 Press ❚❚ (Pause/Still/Slow) to view a still picture.
2 Press again to advance the picture frame by frame.
3 Press ► to resume normal playback.

Slow Motion

You can view pictures in slow motion in the forward direction using the ❚❚ button.

During Playback:

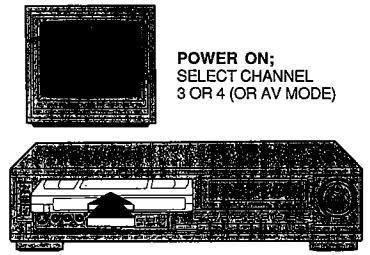
1 Press ❚❚ for two seconds. Tape will play back in slow motion.
- Press ❚❚ again for a still picture.
- Press ► to resume normal playback.

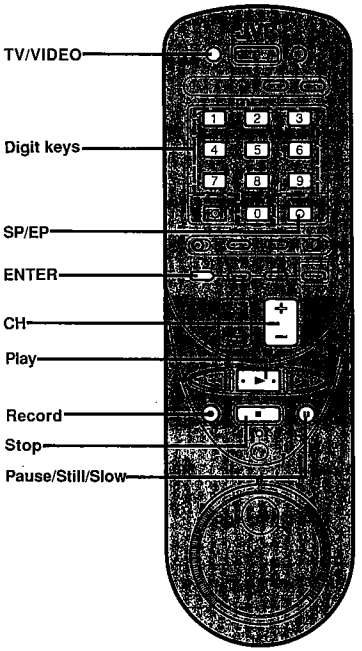
NOTES:

- Tapes with monaural soundtracks (normal audio) are automatically played back in the NORM mode. When playing back tapes with Hi-Fi stereo soundtracks, ☞p.20.
- If the end of the tape is reached during play or search, it is automatically rewound to the beginning and stops.
- The VCR automatically stops when still continues for more than 5 minutes.
- If the still picture is unstable, use the VCR's CH –/+ buttons to correct the picture.
- During search playback, some noise bars will appear.
- If noise bars appear during playback, correct using manual tracking. ☞ p.19.
- There is no audio during search, slow, still, or frame-by-frame playback.
- Picture loss will occur when search, still, or frame-by-frame is attempted with LP-mode recorded tapes. Press ► to return to normal playback and restore the picture.

Recording

TV signals being received by the VCR's built-in tuner can be recorded onto a video tape. This is realtime video recording.





A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The VCR power will come on automatically. Be sure that the VIDEO indicator is lit; if not, press TV/VIDEO so that it lights.

B CHOOSE A PROGRAM

2 Press CH (CHANNEL) +/–, or the digit keys followed by ENTER,to select the channel you wish to record.
- Even if you don't press ENTER, the channel will automatically be changed in about 2 seconds.

C SET THE TAPE SPEED

3 Press SP/EP.

D TO START RECORDING

4 Press ● (Record) and ► simultaneously.

E TO PAUSE RECORDING

5 Press ❚❚.
6 Press ► to resume recording.

F TO STOP RECORDING

7 Press ■.

To Watch Another Program While Recording

During Recording:

1 Press TV/VIDEO. The VCR's VIDEO indicator, and the TV broadcast being recorded will disappear.
2 Use the channel controls on the TV to select the other channel you wish to view.
- The program selected with the TV channel controls will appear on the TV screen while the one selected with the VCR channel controls will be recorded on the tape.

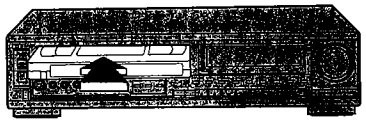
NOTES:

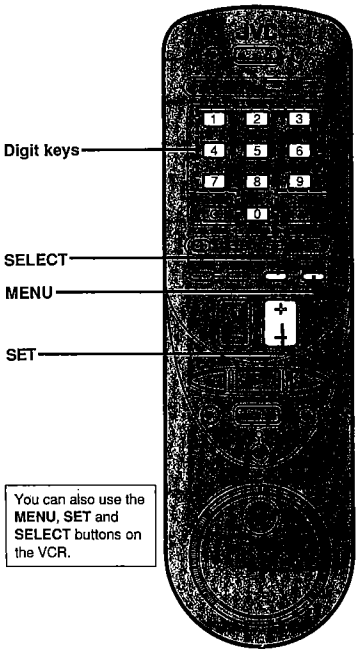
- To start recording with the VCR's REC button, press it once on its own. Pressing REC more than once activates the Off-Timer. ☞ p.22.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The VCR automatically stops when record-pause continues for more than 5 minutes.
- If the end of the tape is reached while recording, it is automatically rewound to the beginning and stops.
- If the ● (Record) button does not work, check to see if the cassette's safety tab has been removed.
- The channel cannot be changed while recording is in progress. To change the channel, press ❚❚, then change the channel.
- For SAP recording, ☞ p.23.

Timer-Recording

The on-screen timer programming method introduced here is the most comprehensive and versatile of those possible with your VCR. You can program up to 8 recordings over a 1 year period. TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.

POWER ON;
SELECT CHANNEL
3 OR 4 (OR AV MODE)





You can also use the **MENU**, **SET** and **SELECT** buttons on the VCR.

A LOAD A CASSETTE

1 Insert a cassette with the safety tab in place.
- The VCR power will come on automatically. Be sure that the VIDEO indicator is lit; if not, press TV/VIDEO so that it lights.

B ACCESS THE ON-SCREEN MENU

2 Press MENU.
3 Press the 1 key. (Program)
4 Press the 2 key. (Single Program)

C INPUT THE PROGRAM'S DATE

5 Press the appropriate digit keys.
- Example: For August 26, press 0 8 2 6.
  Always enter "0" before single-digit entries.

6 Press SELECT.
- The day of the week will automatically appear.

D INPUT THE REC START TIME

7 Press the appropriate digit keys.
- Example: For 8:00, press 0 8 0 0.

8 Press SET to choose AM or PM.
9 Press SELECT.

E INPUT THE REC STOP TIME

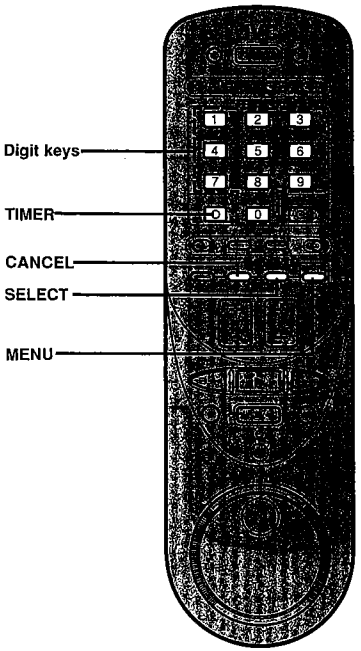
10 Press the appropriate digit keys.
- Example: For 10:00, press 1 0 0 0.

11 Press SET to choose AM or PM.
12 Press SELECT.

"ERROR" WARNING

If the start time you input has already passed (i.e. is prior to the present date and time), the VCR will flash "ERROR" on the Program Set screen.

Check if you've input the correct time and date. Remember: late night shows beginning at midnight or later must have the next day's date.



TO DISENGAGE THE TIMER

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

F INPUT THE CHANNEL NUMBER

13 Press the appropriate digit keys.
- Example: For channel 5, press 5.

14 Press SELECT.

G SELECT THE TAPE SPEED

15 Press the 1 key for SP, 2 for EP.
16 Press SELECT.
- Screen turns green to let you know that programming is completed.

H RETURN TO THE TV SCREEN

17 Press MENU three times.

I SET TO TIMER MODE

18 Press TIMER.
- The VCR will enter the timer mode and power will go off.

TO MAKE CORRECTIONS

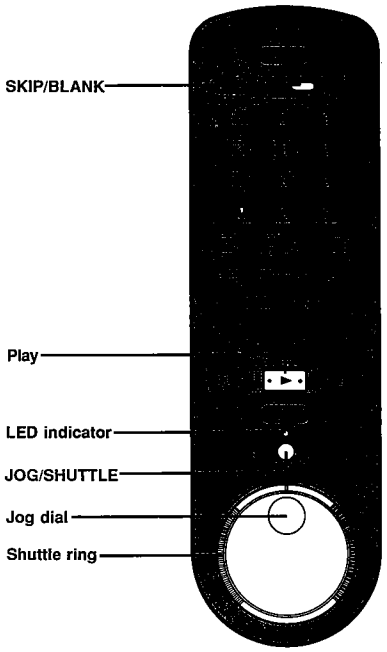
Press CANCEL (repeatedly if needed) during steps C–F to move back to an item you want to change.

For other timer programming methods ☞ p.24.
Any questions? ☞ p.25.

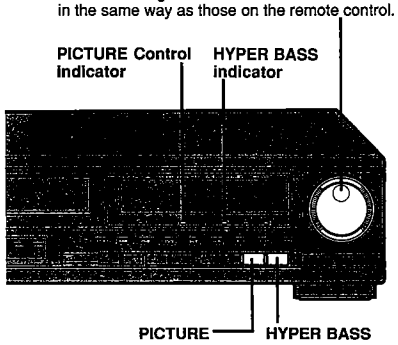
NOTE:

- To timer-record cable channels received through the Converter Box, input the Converter Box's output channel (e.g. 3) in step 13. Select the channel you wish to record at the Converter Box and keep the Converter Box set to ON.

For Playback



The VCR's Jog/Shuttle controls function in the same way as those on the remote control.



NOTE:

- Although the HYPER BASS indicator lights when the button is pressed, its effects cannot be heard when playing monaural tapes or when Audio Monitor is set to NORM. ☞ p.20.

Variable-Speed Search, Slow Motion, And Jog Control

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

During Still or Play:

1. Press JOG/SHUTTLE.
   - The LED indicator will light.
2. Turn the outer ring (Shuttle) in either direction. The farther the ring is turned, the faster the search speed. Releasing the ring stops the search and provides a still picture.

During Still or Play:

1. Make sure that the LED indicator is lit.
   - If not, press JOG/SHUTTLE.
2. Rotate the inner dial (Jog) in either direction for jog control. The tape moves forward or backward frame-by-frame at the speed with which the dial is rotated.

To resume normal playback, press the PLAY button.

NOTE:

- During variable-speed search, some noise bars will appear.

Skip Search

Your VCR offers a simple way of skipping over unwanted sections of recorded TV programs.

During Playback:

1. Press SKIP/BLANK from 1 to 4 times.
   This fast-motions through 30-sec. to 2-min. of tape.
   - Playback resumes automatically.
   - Press ► to cancel a Skip Search midway.

Picture Control

Your VCR has a built-in video processor that lets you choose the type of playback picture that's best for any given application. The VCR's PICTURE Control indicator lights when this function is activated.

During Playback:

1. Press the VCR's PICTURE button as many times as required to reach the desired setting.

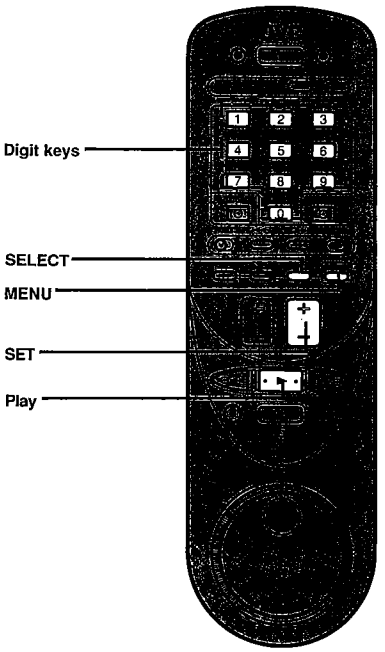
On-Screen Display	When To Use
ENHANCED	When viewing tapes with noise due to repeated playback, such as rental videos.
TAPE DUB	When editing to another VCR.
SOFT PIX	When you want a soft picture.
SHARP PIX	When you want a sharp picture.
OFF	When no modification is required.

Hyper Bass

Lower frequencies (bass sound) can be boosted instantly. You can make Hi-Fi VHS movie software, etc. sound more dynamic.

During Playback or Stop:

1. Press the HYPER BASS button on the VCR.
   - The HYPER BASS indicator will light.
   - To turn it off, press HYPER BASS again.



Manual Tracking

Your VCR is equipped with video/Hi-Fi audio automatic tracking control. If you wish to adjust tracking manually, you can override this function.

During Playback or Stop:

1. Press MENU.
2. Press the 2 key. (Function)
3. Press the 1 key. (Auto Tracking)
4. Press SET to choose OFF.
5. Press MENU to end.
6. Press SET (– or +) to adjust tracking when required during playback.
   - Reset Auto Tracking to ON when you wish to re-engage automatic tracking.

During Slow:

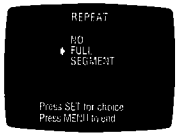
1. Press SET (– or +) to adjust tracking.
   - Since automatic tracking is not effective during slow motion, there is no need to set Auto Tracking to OFF.

Repeat Playback

Your VCR can automatically play back the whole tape or an index-marked portion 5 times repeatedly.

During Stop:

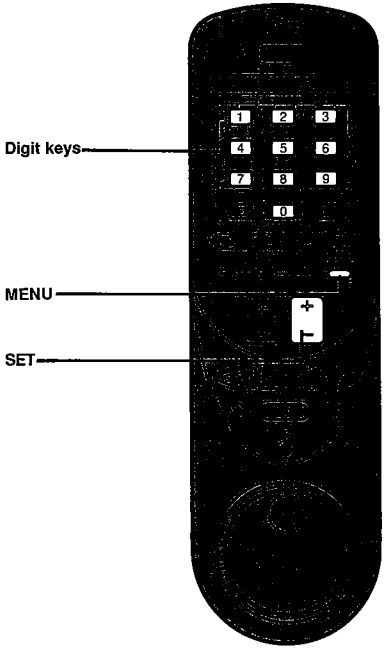
1. Press MENU.
2. Press the 2 key. (Function)
3. Press the 2 key. (Repeat)
4. Press SET to choose NO, FULL, or SEGMENT repeat.
5. Press MENU to end.
6. Press ►. Repeated playback will start. After playback 5 times consecutively, playback will stop.
   - Be sure to reset Repeat to NO before pressing ► again because this will re-start repeat playback.



NOTE:

- The settings for all on-screen accessed functions (Auto Tracking, Repeat, Dimmer, 2nd Audio, Audio Monitor, Level Indicator) remain unchanged unless deliberately changed by the user; settings do not reset automatically when VCR power is turned off and turned on again.

For Playback (cont'd)



Soundtrack Selection

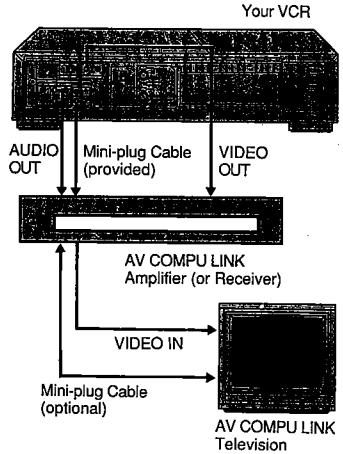
Your VCR is capable of recording two soundtracks (Hi-Fi and NORMAL) simultaneously, and playing back the selected soundtrack or two together.

During Playback or Stop:

1 Press MENU.
2 Press the 2 key. (Function)
3 Press the 5 key. (Audio Monitor)
4 Press SET to choose HI-FI, NORM, or MIX.
- HI-FI to listen to the Hi-Fi soundtrack.
- NORM to listen to the normal soundtrack.
- MIX to listen to both soundtracks combined. Select this setting when playing back edited tapes with insert edits or dubbed audio made on an appropriately equipped VCR.

5 Press MENU to end.

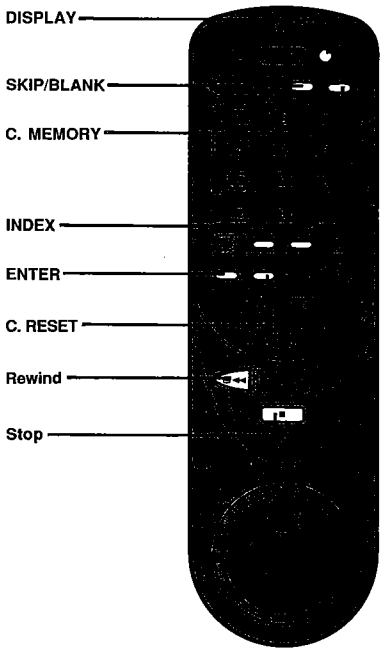
NOTES:
- You do not have to set to NORM when playing back tapes with normal soundtrack only.
- When MIX is selected, both "HI-FI" and "NORM" appear on the TV screen when the ENTER button is pressed.



AV COMPU LINK Playback

Your VCR is compatible with JVC's AV COMPU LINK components which include amplifiers (or receivers) and televisions.
Connect your VCR to an AV COMPU LINK amplifier and an AV COMPU LINK television as illustrated. AV COMPU LINK video playback is as easy as this:
- Simply load a cassette in your VCR and press PLAY. (If the cassette's safety tab has been removed, even this "touch" is not necessary.) The amplifier and TV turn on automatically and the TV's mode is automatically set to VIDEO; you're already watching!

For Tape Access



Index Search

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

During Playback or Stop:

1 Press INDEX ▶▶| or |◀◀. "INDEX 1" or "INDEX –1" will be displayed and search will begin in the corresponding direction.
2 If you wish to access index codes 2 through 9, press INDEX repeatedly until the correct index number is displayed.
- When the specified index code is found, playback will start automatically.

Blank Search

This function lets you quickly locate the blank portion of a partially recorded tape.

During Stop:

1 Press SKIP/BLANK.
- The VCR automatically fast-forwards or rewinds to the end of the recorded portion of tape, and stops.
- Pressing DISPLAY repeatedly changes the VCR's displayed indication (Counter → Channel → Clock time → Remaining time).

Realtime Tape Counter

Your VCR's tape counter displays the hours, minutes, and seconds of a taped program. As long as a tape is loaded, your VCR's display panel will show a counter reading unless you change it using the DISPLAY button. To reset the counter to "0H 00M 00S" at any time, press C. RESET. Also, the counter is automatically reset whenever you load a new cassette.
- Pressing DISPLAY repeatedly changes the VCR's displayed indication. (Counter → Channel → Clock time → Remaining time).

Counter Memory

During Playback:

1 Press C. RESET at a point you wish to locate later.
- The counter will read "0H 00M 00S".

2 Press C. MEMORY.
- Counter Memory " M " mark is displayed.

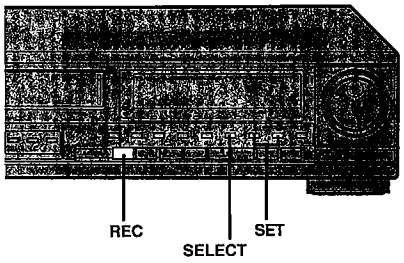
3 When you wish to return to that point, press ■ and then press ◀◀.
- The tape will rewind and stop at about "0H 00M 00S" automatically.

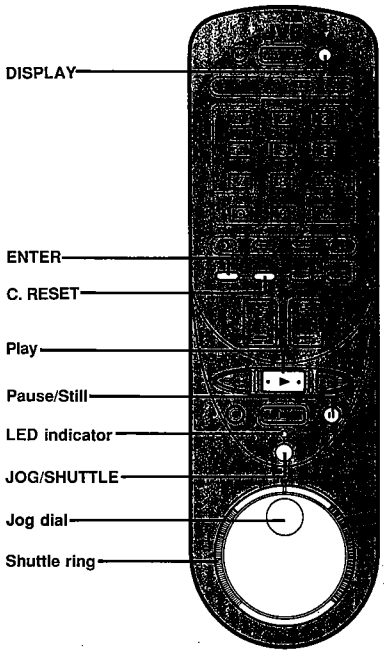
4 To cancel the Counter Memory mode, press C. MEMORY.

NOTES:

- Press ▶ or ■ to cancel Index Search or Blank Search.
- If the end of the tape is reached during Index Search, the mode is cancelled and the tape is rewound to the beginning.
- If the end of the tape is reached during Blank Search, the tape stops and "REMAIN 0:00" is displayed.
- When a fully recorded tape is used for re-recording new material, Blank Search can be used to detect the end of the new material.

For Recording





Instant Timer Recording (Off Timer)

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

During Recording:

1. Press the REC button on the VCR. A "0:30" indication appears, advising that power will switch off after 30 minutes.
2. Press REC again to delay the off-time by 30-minute increments (up to 9 hours).
   - For a more precise setting, use the SELECT/SET buttons to set the exact time required (possible up to 9 hours and 59 minutes).
   - This function is available only using the REC button on the VCR.

Retake

You can cut out unwanted parts of a TV program while you're recording it.

During Recording:

1. Press ❚❚.
2. Turn the JOG dial or SHUTTLE ring in either direction.
   - When using the remote control unit, first press the JOG/SHUTTLE button so that the LED indicator lights.
   - Release the dial or ring to return to the Record-Pause mode.
3. Press ► when you wish to resume recording.

Elapsed Recording Time Indication

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

1. Press C. RESET before starting recording.
   - The counter will be reset to "0H 00M 00S", and will show the exact elapsed time as the tape runs.
2. Press ENTER at any time to check the elapsed time on the TV screen.
3. Press ENTER again to clear it from the screen.

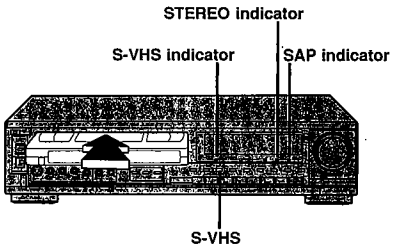
Remaining Tape Time Indication

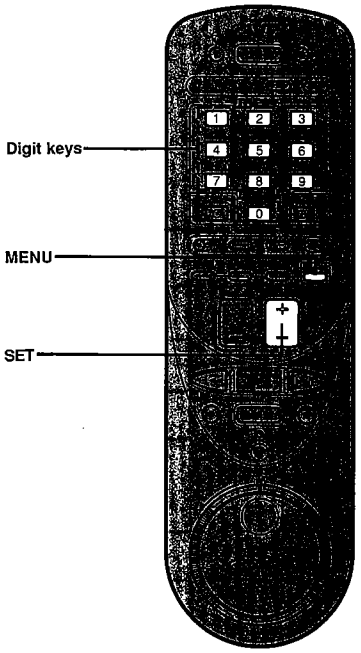
When you need to know the tape's remaining time.

1. Press DISPLAY until "REMAIN" appears. Approximate remaining tape time appears on the VCR display panel.
   - Pressing DISPLAY repeatedly changes the VCR's displayed indication (Counter → Channel → Clock time → Remaining time).

NOTES:

- If the end of the tape is reached during Instant Timer Recording, the cassette is automatically ejected and VCR power is switched off. MAKE SURE THERE ARE NO OBSTRUCTIONS PREVENTING THE FRONT PANEL COVER FROM OPENING since this may damage the mechanism.
- With Retake, rainbow noise may occur in the rewound and re-recorded section.
- The Remaining Tape Time is calculated based on the tape speed (SP or EP) being used. The indicated remaining time is only approximate.





S-VHS (Super VHS) And VHS

Your VCR can record in either S-VHS or VHS.

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

Stereo And SAP (Second Audio Program)

Your VCR is equipped with an MTS decoder for reception of Multichannel TV Sound broadcasts.

- When a stereo program is being received, the STEREO indicator lights.
- When an SAP program (such as a bilingual broadcast) is being received, the SAP indicator lights.
- When a stereo program is accompanied by SAP audio, both indicators light.

To Record Stereo Programs

Stereo programs are automatically recorded in stereo on the Hi-Fi audio track. No special operation is required. Simply follow the basic recording procedure.

- To listen to the stereo soundtrack while recording, set the on-screen AUDIO MONITOR to "HI-FI". ☞p.20

To Record SAP Programs

1. Press MENU.
2. Press the 2 key. (Function)
3. Press the 4 key. (2nd Audio)
4. Press SET to choose ON.
5. Press MENU to end.

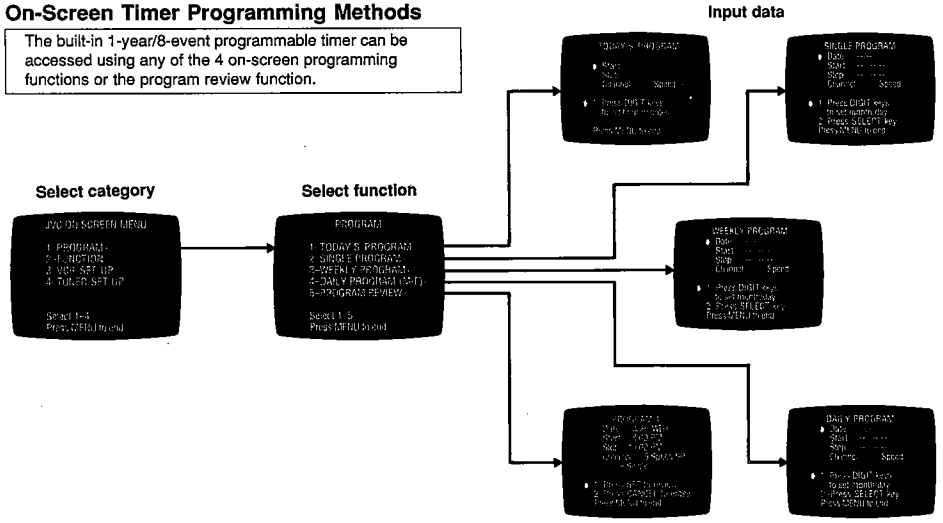
Then follow the basic recording procedure.

- If an SAP program is received, the SAP audio will be recorded on both the Hi-Fi and the normal audio tracks. The main audio program will not be recorded.
- If a regular program (non-SAP) is received, the main audio will be recorded on both the Hi-Fi and the normal audio tracks.

For Timer-Recording

On-Screen Timer Programming Methods

The built-in 1-year/8-event programmable timer can be accessed using any of the 4 on-screen programming functions or the program review function.



Today's Program

This function offers an easier way to program the VCR to timer-record a TV program that begins within 24 hours.

1. Press MENU.
2. Press the 1 key. (Program)
3. Press the 1 key. (Today's Program)
   - Subsequent steps are the same as steps D - H of "Single Program". ☞ p.16–17.

Weekly Program

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

1. Press MENU.
2. Press the 1 key. (Program)
3. Press the 3 key. (Weekly Program)
   - Subsequent steps are the same as steps C - H of "Single Program". ☞ p.16–17.

Daily Program

This function lets you set the VCR to timer-record at the same time everyday, Monday through Friday. Use it record daily serials (like soaps), news, etc.

1. Press MENU.
2. Press the 1 key. (Program)
3. Press the 4 key. (Daily Program)
   - Subsequent steps are the same as steps C - H of "Single Program". ☞ p.16–17.

Program Review

You can check the contents of the VCR's timer memory using this function. Executed programs are automatically cleared from memory (except those for daily and weekly serials). If the entire 8-event memory is full, check the preset programs and cancel one or more to make room for the new program(s) you wish to input.
Make sure the timer mode is disengaged first. Then . . .

1. Press MENU.
2. Press the 1 key. (Program)
3. Press the 5 key. (Program Review)
4. Press SET to review preset programs.
5. Press CANCEL to erase the program displayed on the screen from memory.
   - Repeat steps 4 and 5 as necessary.
6. Press MENU to end.

Things You Should Know

Timer-recording is one of the most useful functions of your VCR, and, if you don't understand it, it can be one of the most complicated too. Although JVC's on-screen programming is designed to make timer programming easier to understand and easier to do, please read the following to get a clear idea about why things work the way they work, and what you should do when things don't work as expected.

Error Indications

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

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

Other Indications

INDICATION	WHY
"TIMER" steady lit (with clock display).	The VCR is in the timer mode. This is the normal display you should see when you press the TIMER button.
"REC" and "TIMER" on the display panel.	Normal display while timer-recording is in progress.
The cassette is ejected, power is shut off and "TIMER" and "📼" are blinking.	This means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.
"12:00 AM" is blinking.	This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the VCR's power plug was pulled from the AC outlet. To set the clock. ☞p.11. If power was interrupted, it's also likely that all preset timer programming data has been erased. Please check and re-program as necessary.

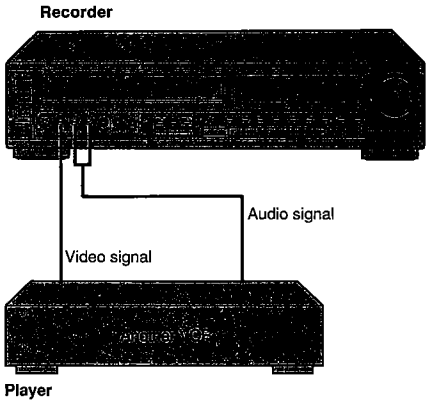
Some Facts On Timer Operation

- When timer-recording is successfully completed, the VCR power is automatically switched off.
- Since the timer starts and stops recording based on the time being kept by the VCR's built-in clock, the clock's time must be accurate for correct timer-recording results.
- When you program the timer while viewing a program or a tape, the TV screen will show the on-screen menu but the audio will continue to be heard.
- You can also program the timer while the VCR is recording; the on-screen menu will not be recorded on tape.

CAUTION:
Since the VCR ejects the cassette whenever the tape's end is reached before timer-recording is completed, MAKE SURE THERE ARE NO OBSTRUCTIONS THAT WOULD PREVENT THE FRONT PANEL COVER FROM OPENING.

For Editing

Your VCR can be used as either the recording deck or the source player when editing tapes.



Editing From Another VCR

When used as the recording deck, you can use either the rear VIDEO IN and AUDIO IN connectors, or the front input connectors. The front connectors also include an S-VHS connector. For permanent connection, we recommend you use the rear panel connectors so that the front panel connectors are open for occasional connection to other components such as a camcorder.

- Front panel connections have priority.
- If connections are made to both the front VIDEO and S-VHS connectors, the S-VHS connection has priority.

PREPARATION

1. Connect the player's VIDEO OUT and AUDIO OUT connectors to your VCR's VIDEO IN (or S-VHS IN) and AUDIO IN connectors.
   - With monaural players, use your VCR's AUDIO L (MONO) connector.
2. Set the VCR's input mode to AUX by pressing digit key "0"."AU" will appear instead of a channel number.

FOR ASSEMBLE EDITING

Assemble editing adds one recorded scene to another in succession.

3. Load the source tape in the player, and the recording tape in your VCR.
4. Select the recording speed (SP or EP).
5. Put your VCR in the Record-Pause mode.
6. Play back the source tape to search for a scene to be edited.
7. Press the recorder's PLAY button where you want to start editing.
8. Press the recorder's PAUSE button to stop editing.
9. Repeat steps 6 through 8 to continue editing.

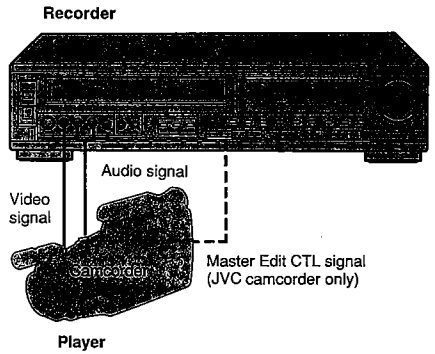
FOR INSERT EDITING

Insert editing replaces part of the recorded scene with new material. Both the picture and Hi-Fi audio soundtrack are replaced with new ones, while the normal audio soundtrack remains unchanged.

3. Load the source tape in the player, and the recording tape in your VCR.
4. Play back the recording tape and engage the Still mode at the edit-in point (the beginning of the segment to be replaced).
5. Press INSERT.
   - Your VCR enters the Insert-Pause mode. (REC, PLAY and PAUSE are displayed on the FDP.)
   - The TV screen changes from the still picture to the input signal you are going to record.
6. Play back the segment of the source tape to be inserted.
7. Press PLAY.
   - Insert editing will start. (REC and PLAY are displayed on the FDP.)
8. Press PAUSE to stop insert editing.
   - Do not press STOP to stop insert editing, otherwise the picture will be distorted at the switching point between the newly inserted and previously recorded pictures.

NOTES:

- Insert editing is not possible with cassettes whose safety tab has been removed.
- Insert editing cannot be started from a non-recorded segment.
- In insert editing, the recording speed (SP/EP) is determined by the previous recording to be replaced. If the previous recording's speed changes within a single edit, the inserted picture will be distorted at the switching point.
- To stop insert editing automatically, first determine the edit-out point on the recording tape (the end of the segment to be replaced) and press the remote control's COUNTER RESET button. Then follow steps 4 through 7 in "Insert Editing"; insert editing will stop automatically at the counter reading of 0: 00: 00.



Editing To Another VCR

When used as the source player in combination with another video deck which is preroll-capable and equipped with a Pause Control Output terminal, your VCR's front REMOTE PAUSE terminal can be used for synchronized preroll editing. For more information refer to the instruction manual of the relevant model.

NOTES:

- When using your VCR as a playback deck, select the TAPE DUB mode with the PICTURE button. ☞ p.18
- If you do not want to record on-screen messages on the edited tape, cancel the on-screen display. ☞ p.30

Swap Editing

Your VCR is equipped with a SWAP terminal. When combined with a swap-control-capable VCR such as the JVC HR-S10000U, editing will be made easier. For more information about swap connection and swap control, refer to the instruction manual of the swap-control-capable VCR.

Editing From A Camcorder

Tape-to-tape editing is also possible using a camcorder (equipped with playback facility) as the player and your VCR as the recorder. In this case, the VCR's REMOTE PAUSE terminal can be used to accept Master Edit Control commands from the camcorder.

PREPARATION

1. Connect the camcorder's AV OUT connector to the VCR's front panel VIDEO IN and AUDIO IN connectors.
   - With a Super VHS camcorder, connect its S-OUT connector to the VCR's S-VHS connector.
   - If connections are made to both the VIDEO and S-VHS connectors, the S-VHS connection has priority.
   - With monaural camcorders, use your VCR's AUDIO L (MONO) connector.
2. Connect the AV output cable's mini-plug to the REMOTE PAUSE terminal of the VCR.

- If the camcorder is equipped with the Master Edit Control system, you can control the VCR using the camcorder's controls. See camcorder's instruction manual for operating procedures.
- With this connection, you can also use the camcorder as a video camera for direct recording onto the VCR's tape. Put the VCR in Record-Pause and use the camcorder's start/stop trigger to start and pause recording. (For direct recording with a separate video camera, a camera adapter is necessary.)

OPERATION

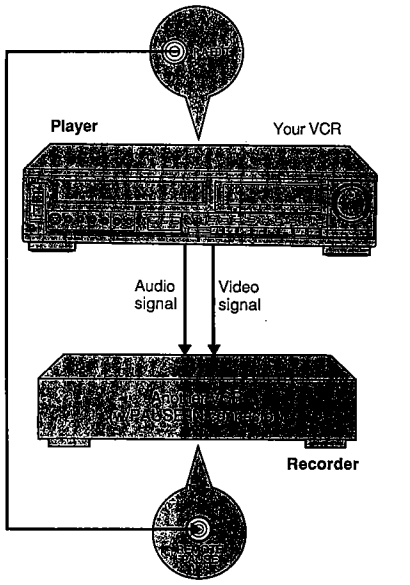
3. Set the VCR's input mode to AUX by pressing digit key "0". "AU" will appear instead of a channel number.
4. Put the camcorder in the Play mode.
5. Put the VCR in the Record mode.

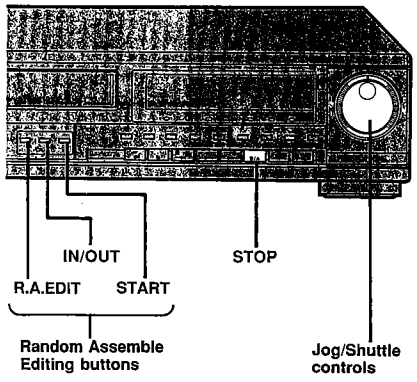
Advantages Of S-VHS VCRs

You can edit from VHS to S-VHS, S-VHS to VHS, or, needless to say, from S-VHS to S-VHS.

- From VHS to S-VHS (VIDEO-VIDEO connection): Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to VHS (VIDEO-VIDEO connection): Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to S-VHS (S-VIDEO connection): All signals will be transferred without degradation.

For Editing (cont'd)





Random Assemble Editing

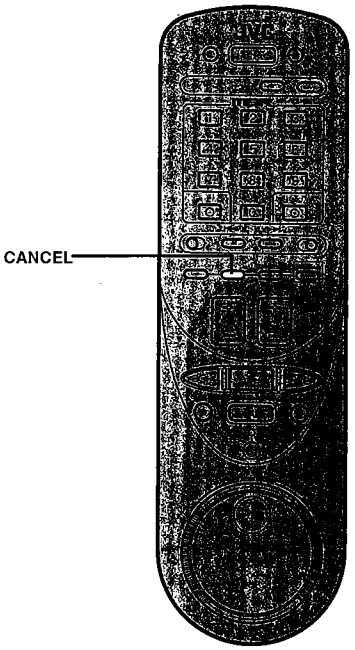
This function makes it easier to create edited videos when your VCR is used as the source player in combination with another video deck which is equipped with a PAUSE (i.e. remote PAUSE IN) terminal. You can pre-program up to 8 scenes or "cuts" for automatic editing in the sequence you have specified. (☞p.29 "memory capacity".)

PREPARATION

1. Connect your VCR's VIDEO OUT and AUDIO OUT connectors to the recording deck's VIDEO IN and AUDIO IN connectors.
2. Connect your VCR's R.A.EDIT connector to the recording deck's PAUSE connector.
3. Turn both units on.

OPERATION

4. Insert a recorded cassette into your VCR, and insert a cassette (with safety tab intact) into the recording deck.
5. Play back the tape in your VCR.
6. Press the R.A.EDIT button.
   - On-screen display is superimposed on the video playback.
7. Use the Jog/Shuttle to search for the point where you want an edited scene to start, and press IN/OUT.
   - The cut-in point is registered in memory.
8. Use the Jog/Shuttle to search for the point where you want the scene to end, and press IN/OUT.
   - The cut-out point is registered in memory.
   - The "TOTAL" reading displays the total running time of the edited scenes.
9. Specify additional scenes by repeating steps 7 – 8.
10. Put the recording deck in the Record-Pause mode.
11. Press START.
    - The function begins automatic editing; all the specified scenes are copied to the recording deck in sequential order.
    - The on-screen display remains superimposed while your VCR searches for each scene (the blinking cursor points to the scene number presently being searched), and is not displayed while the scenes are being edited.
    - While a scene is being searched, the recording deck automatically enters the Record-Pause mode.
    - When Random Assemble Editing is finished, your VCR enters the Still mode, the recording deck enters the Record-Pause mode, and the cursor blinks at the next available scene number.
12. Press R.A.EDIT again.
    - The on-screen display disappears.
13. Press STOP on both decks to end Random Assemble Editing.



TO MAKE CORRECTIONS

During step 7 or 8, you can correct a cut-in or cut-out point using the remote control. Each time the CANCEL button is pressed, the immediately preceding point is cleared and can be re-set.

- Example: Here, the cut-out point for "2" can be changed by pressing CANCEL once (to clear it) and re-setting it.By pressing CANCEL more times, you can back up to previous points for re-setting, but all points in between will be cleared in the process. (e.g. To reafch the cut-out point for "1", the cut-in and -out points for "2" will be cleared.)

MEMORY CAPACITY

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

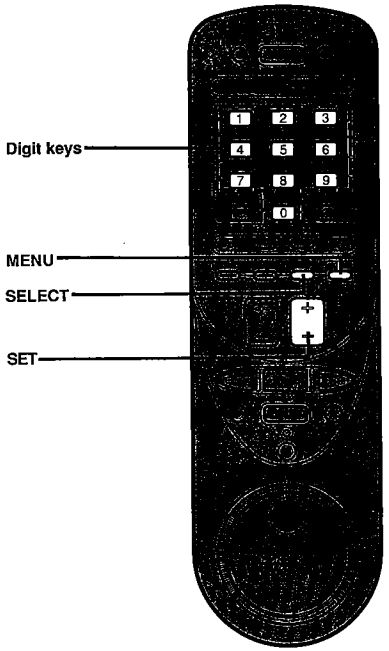
- Example: Only sequences 1 - 5 are available because three programs are stored in the timer memory.

- Example: The "PROGRAM FULL" screen appears when the timer memory is full (all 8 programs are used). To cancel a program, ☞p.24.

NOTES:

- When editing, there may be a discrepancy of about 2 seconds on the playback tape between the locations you chose as cut-in/out points and the locations the VCR recognizes as those points.
- For any scene, the cut-out point must have a counter reading that is at least 1 second after the cut-in point. A cut-out point with a counter reading less than or the same as the cut-in point will not be registered.
- Since the playback deck prerolls during Random Assemble Editing, there must be at least 15 seconds worth of recorded material prior to any cut-in point on the playback tape.
- If the search time for a cut-in point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.

For Convenience



Language Select

Although the pre-set on-screen language is English, you can set the VCR to display on-screen menus and messages in French or Spanish.

1 Press MENU.
2 Press the 3 key. (VCR Set Up)
3 Press the 1 key. (Language Select)
4 Press SET to choose the language you want.
5 Press MENU to end.

Clock Set

Always re-set the clock after a power outage, or whenever your time zone changes to or from Daylight Saving Time.
For instructions ☞ p.11.

On-Screen (On/Off)

You can choose whether or not to display VCR mode indications on the TV screen. Pre-set to "ON", on-screen messages can be turned "OFF". A convenient function when dubbing to another recorder.

1 Press MENU.
2 Press the 3 key. (VCR Set Up)
3 Press the 3 key. (On-Screen)
4 Press SET to choose OFF.
5 Press MENU to end.
■ Reset On-Screen to ON when you want to restore on-screen indications.

Blue Back (On/Off)

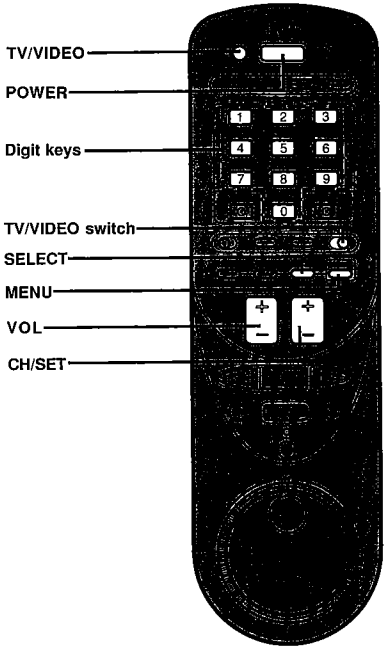
Your VCR is set to display a blue background on your TV screen whenever a broadcast signal is not received or is very weak. You can cancel this function if you wish to receive extremely weak signals.

1 Press MENU.
2 Press the 3 key. (VCR Set Up)
3 Press the 4 key. (Blue Back)
4 Press SET to choose OFF.
5 Press MENU to end.
■ Reset Blue Back to ON when you want to restore the blue background.

Dimmer (On/Off)

This function lets you make the VCR's display panel less bright.

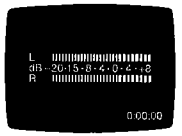
1 Press MENU.
2 Press the 2 key. (Function)
3 Press the 3 key. (Dimmer)
4 Press SET to choose ON.
5 Press MENU to end.
■ Reset Dimmer to OFF when you wish to release the dimmer function.



Audio Level Indicator (On/Off)

When set to "ON", this function lets you check the audio level by displaying it on the TV screen.

1 Press MENU.
2 Press the 2 key. (Function)
3 Press the 6 key. (Level Indicator)
4 Press SET to choose ON.
5 Press MENU to end.
Now, simply press ENTER at any time to display the audio level indicator on the TV screen.
■ Press ENTER again to clear it from the screen.
■ Reset Level Indicator to "OFF" when the audio level indication is no longer needed.



TV Code Setting

Your remote control can operate the basic functions of your TV set. In addition to JVC televisions, other manufacturers' televisions listed below can also be controlled by setting the remote control to "TV". If your television is a JVC (Code 1), you don't have to set the TV code in step 2.

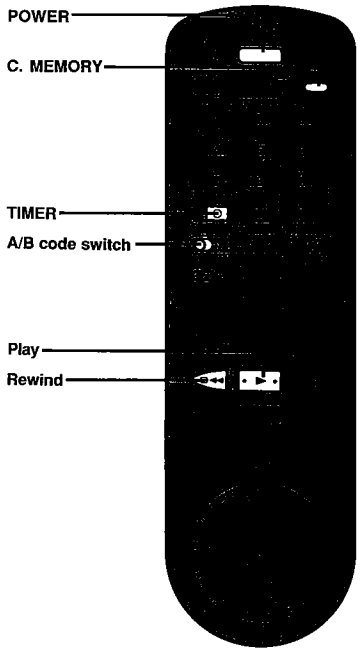
1 Set the TV/VIDEO switch to "TV".
2 While holding down the POWER button, press the digit keys corresponding to the code number for your TV's brand.
■ Now the following buttons on your remote control can be used to operate your TV set: POWER, VOL(VOLUME), CH(CHANNEL), TV/VIDEO, and the Digit keys.
3 To operate your VCR, set the TV/VIDEO switch back to "VIDEO".

TV BRAND NAME	CODE
JVC	1
MAGNAVOX	2
MITSUBISHI	3
PANASONIC	4
RCA	5
SHARP	6
SONY	7
TOSHIBA	8
ZENITH	9
HITACHI	0

NOTES:

■ Whenever you replace batteries in the remote control, it is necessary to re-set the TV code if your television is not a JVC TV.
■ With some televisions, the TV/VIDEO button functions only to switch the TV to the VIDEO(AV) mode.

For Convenience (cont'd)



A/B Code Switching

The A/B CODE switch is preset to the "A" position because your VCR is initially set to respond to A code signals. You can easily modify your VCR to respond to B code signals.

1. Unplug the VCR's power cord from the AC outlet.
2. Set the A/B CODE switch to "B".
3. Plug the VCR's power cord back into the AC outlet. Do not use other remote controls at this stage.
4. Turn the VCR power on using the remote control's POWER button. The VCR will now respond only to B code signals.

NOTE:

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

Next Function Memory

For automatic start of playback after the tape is rewound:

1. Press ◄◄.
2. Press ► within 2 seconds.

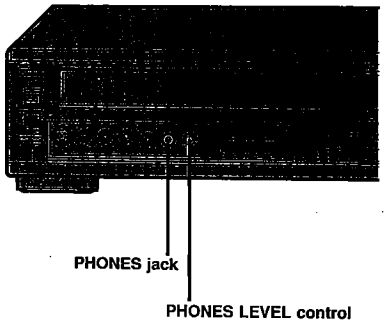
For automatic power off after the tape is rewound:

1. Press ◄◄.
2. Press POWER within 2 seconds.

For automatic timer standby after the tape is rewound:

1. Press ◄◄.
2. Press TIMER within 2 seconds.

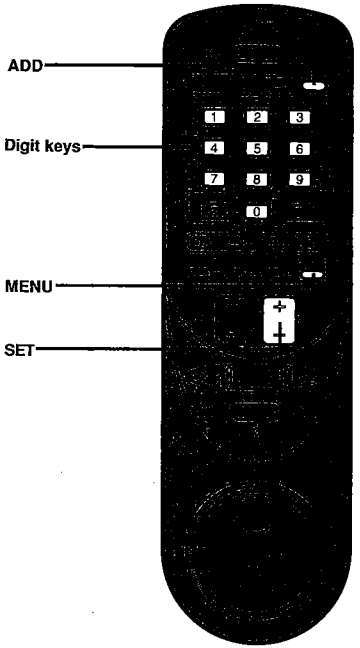
- If you want the "next function" to automatically start when the counter reads "0H 00M 00S" (instead of at the beginning of the tape), press C. MEMORY so that the counter memory "M" mark appears before pressing ◄◄.



Headphone Jack With Volume Control

Your VCR has a headphone jack on the front panel so you can easily plug in headphones for monitoring or private listening. Turn the PHONES LEVEL control clockwise to increase the volume; counterclockwise to decrease the volume.

For Reception



Auto Channel Set

Since receivable channels differ by locale, it will be necessary to re-set your VCR's channels when you move to another location. Auto Channel Set is the easiest way to do this. For instructions ☞ p.12.

Manual Channel Set

After Auto Channel Setting, you way wish to modify your VCR's receivable channels (add channels that were skipped, delete channels you don't want to receive).

TO ADD A "SKIPPED" CHANNEL

A CHANGE AFC SETTING

1. Press MENU.
2. Press the 4 key. (Tuner Set Up)
3. Press the 4 key. (AFC)
4. Press SET to choose SPCL.
5. Press MENU.

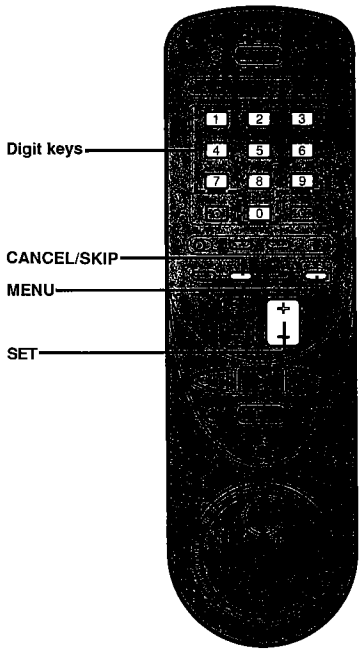
B SELECT THE TV BAND

6. Press the 3 key. (Band)
7. Press SET to choose TV.
8. Press MENU.

C ADD THE CHANNEL

9. Press the 2 key. (Manual Channel Set)
10. Press the appropriate digit keys to input the channel number.
    - Example: For channel 38, press 3 8.
11. Press ADD.
    - Display should change from "skip" to "add".
12. Press MENU to end.

For Reception (cont'd)



TO DELETE AN UNWANTED CHANNEL

A SELECT THE BAND

1. Press MENU.
2. Press the 4 key. (Tuner Set Up)
3. Press the 3 key. (Band)
4. Press SET to choose the appropriate band.
5. Press MENU.

B SKIP THE CHANNEL

6. Press the 2 key. (Manual Channel Set)
7. Press the appropriate digit keys to input the channel number.
8. Press CANCEL/SKIP.
   - Display should change from "add" to "skip".
9. Press MENU to end.

NOTES:

- The BAND select feature has 4 settings (TV, CATV, HRC, and ICC). Set to TV if your antenna provides only UHF and VHF channels. Set to CATV if your antenna system is a cable TV line with or without a cable converter/decoder box. Set to HRC or ICC if this matches your particular cable system; check with your cable supplier to determine your type of system.

Helpful Terms And Information

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

AFC (Automatic Frequency Control): Internal circuit that automatically maintains tuning.

NORM:
Normally, keep AFC at this setting.

SPCL:
If a station you want was "skipped" or reception is unsatisfactory with NORM, try this setting.

Auto Channel Set: Part of the "TUNER SET UP" function. When used, the VCR runs through (scans) all the channels on the VCR, automatically placing all channels receivable in your area into the VCR's memory.

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

AV Connection: Type of VCR-to-TV connection in which the VCR's AUDIO OUT and VIDEO OUT terminals are connected to the TV's AV IN terminals. Audio and video signals are sent separately and directly to the TV without having to modulate them into RF signals.

Bands: Four settings are available on the VCR so you can receive TV programming from just about any broadcaster.

TV:
Use this setting to receive VHF (Very High Frequency) and UHF (Ultra High Frequency) channels only. These are received by the tuner on channels 2 thru 13, and 14 thru 69, respectively.

CATV:
Short for Community Antenna TV, and commonly referred to as simply "Cable TV". Use this setting to receive channels on cable.

HRC:
Use this setting if your particular cable system is HRC (Harmonically Related Carrier).

ICC:
Use this setting if your particular cable system is ICC (Incremental Coherent Carrier).

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

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

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

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

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

Hi-Fi VHS Stereo Sound: Achieves high-quality sound by using rotary FM-audio heads which scan the tape helically with a high writing speed — just like video heads — in both recording and playback.

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

Index Code: An electronic code "written" on the tape's control track when recording is started. Index codes can be used to facilitate program search, and have absolutely no effect on recorded pictures or sound.

Master Edit Control System: A properly-equipped VideoMovie camcorder sends a control signal to the VCR via the REMOTE PAUSE terminal, "telling" the VCR to release the Pause mode.

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

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

On-Screen Menu System: VCR functions are easier to operate because they can be chosen, and required data can be input, while viewing special screens displayed on your TV.

Preroll: The VCR backtracks the tape slightly from its original position in Pause or Still so that when Pause/Still is released, the VCR is able to "roll" the tape and get it up to its most stable speed by the time Record or Play is resumed.

Preroll Editing: When two properly-equipped VCRs are used in editing, the recording deck sends a control signal to the playback deck via the REMOTE PAUSE terminal, "telling" it to release the Still mode after the recording deck has completed preroll.

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

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

RF Connection: Type of VCR-to-TV connection in which the VCR's RF (Radio Frequency) OUT terminal is connected to the TV's ANTENNA terminal. The VCR essentially "broadcasts" the program to your TV on channel 3 or 4.

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

Super VHS: A version of the VHS format which was developed to provide pictures with over 400 lines of horizontal resolution. This VCR can handle both standard VHS and Super VHS (S-VHS) signals.

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

SP (Standard Play):
Fast tape speed. Provides recording time of about 2 hrs. per T-120 cassette, and 2 hrs. 40 mins. per T-160 cassette. Most prerecorded VHS software is recorded in SP.

EP (Extended Play):
Slow tape speed. Provides recording time of about 6 hrs. per T-120 cassette, and 8 hrs. per T-160 cassette. Useful for multiple-program recording on a single cassette.
Some manufacturers sell VCRs with an intermediate LP (Long Play) speed, which is not officially recognized as a VHS standard. This JVC VCR can play back LP-recorded tapes, but will not record in that tape speed.

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

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

Tuner: The part of the VCR that receives TV signals off the air and via cable. The Frequency Synthesized Tuner of this VCR is highly accurate, and is capable of receiving up to 181 channels.

VCR: Short for Video Cassette Recorder.

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

Precautions

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

Avoid extreme heat and direct sunlight

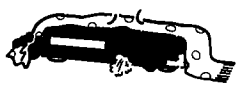
Avoid extreme cold

Avoid extreme humidity

Avoid dust

Avoid places subject to vibrations

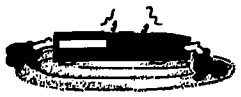
Avoid strong magnetic fields



Do not block the VCR's ventilation openings

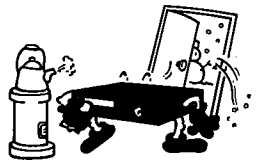
Do not place anything heavy on the VCR or remote control

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



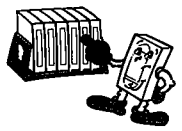
Do not place the VCR on cushions, pillows, or thick carpeting

Use the VCR in a stable, horizontal position only



Beware of 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.

When transporting
- Be sure to remove cassette from VCR before packing
- Avoid violent shocks to the VCR during packing and transport



Place cassettes in cassette cases and store vertically

In Case Of Difficulties

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the VCR.	• Is the power cord disconnected? — Connect it.
Remote control does not operate the VCR.	• Did you load batteries? — Make sure they're loaded in the correct directions. • Are the batteries discharged? — Replace with fresh batteries. • Is the TV/VIDEO switch set to "TV"? — Set it to "VIDEO". • Is the A/B Code switch set correctly? — Set it to the correct position.
Clock is functioning properly, but the VCR cannot be powered.	• Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display.
Tape stops during rewind or fast-forward.	• Is the C. MEMORY button pressed? — Press again to make "M" disappear from the counter display.
Tape will not rewind or fast-forward.	• Is the tape already fully rewound or fast-forwarded? — Check the cassette.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	• Is a cassette loaded? • Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape (☞ p. 10)
TV broadcasts cannot be recorded.	• Has "AUX" been selected by mistake? — Set to the desired channel.
Tape-to-tape editing is not possible.	• Is the camcorder or VCR correctly connected? • Are all necessary power switches turned ON? • Has "AUX" been selected? — Set to "AUX". — If using a rear panel input connection, make sure nothing is connected to the front panel connectors. (☞ p. 26)
Camera recording is not possible.	• Is the camcorder correctly connected? • Has "AUX" been selected? — Set to "AUX".
Timer recording is not possible.	• Have you set the clock correctly and programmed the timer correctly? — Check once again. • Is the TIMER indicator displayed on the display panel? — If not, press the TIMER button to display the TIMER indicator.

PLAYBACK PROBLEMS

Symptoms	Check points
Playback picture does not appear while the tape is running.	• If you are using RF OUT connection, is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel (3 or 4). (☞p.9) • If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Noise appears during visual search.	• This is normal.
Noise appears during normal playback.	• Is the automatic tracking mode engaged? — Try manual tracking. (☞p.19)
Noise appears during slow playback.	— Try manual tracking. (☞ p.19)
Playback picture is blurred or interrupted while TV broadcasts are clear.	• Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer (☞ p.39).
Playback is repeated.	• Is "REPEAT" on the VCR SET UP menu set to either "FULL" or "SEGMENT"? — Set it to "NO".

Hi-Fi AUDIO PROBLEMS

Symptoms	Check points
Breaks are noticeable in Hi-Fi audio reproduction.	• Is the automatic tracking mode engaged? — Try manual tracking. (☞p.19)
Hi-Fi soundtrack cannot be reproduced.	• Is "AUDIO MONITOR" on the FUNCTION menu set to "NORM"? — Set it to "HI-FI".

OTHERS

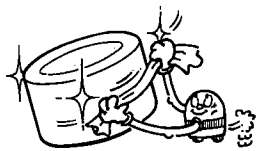
Symptoms	Check points
Clock setting is not possible.	• Is the TIMER indicator displayed on the display panel? — Press the TIMER button to turn the indicator off.
Some channels are skipped over when scanning channels.	• Those channels are preset to be skipped over. If you need them, restore them. (☞p.33)
During Auto Channel Set, the sound of the channel being scanned can be heard momentarily.	• This is normal.
Channel cannot be switched.	• Is recording in progress? — Press the PAUSE button, change the channel, and press the PLAY button.
Snowy picture on screen when viewing TV programs while recording another program.	• Is the VIDEO indicator lit? — Press the TV/VIDEO button so that the indicator extinguishes.
Index Search does not function properly.	• Adjacent index codes may be too close to each other.

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

Special Note On Head Cleaning

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Although this model is equipped with a built-in head cleaner which automatically cleans the heads, reducing the likelihood of dirty heads, if such troubles are encountered please consult the nearest JVC dealer.

Auto Head Cleaner



A built-in head cleaner automatically cleans the video heads and head drum whenever a tape is loaded or unloaded to reduce head clogging.

SECTION 1
DISASSEMBLY AND MECHANISM ADJUSTMENT

1.1 DISASSEMBLY

1.1.1 Top cover

1. Take out 4 screws Ⓐ .
2. To remove the top cover, slide in direction of arrow and lift away.

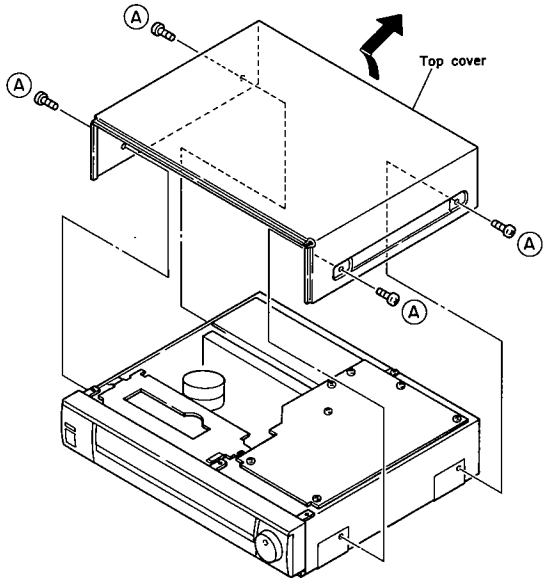


Fig. 1-1-1 Top cover

1.1.2 Front panel assembly

1. Remove the top cover.
2. Carefully disengage 3 tabs ⓐ of the front panel assembly from the upper side of chassis.
3. Pull the front panel assembly forward you to disengage 3 tabs ⓑ of the front panel assembly from the bottom of the chassis.

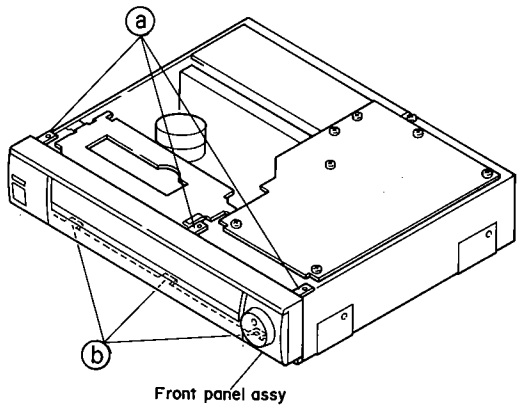


Fig. 1-1-2 Front panel assembly -1

4. Take out 11 screws Ⓑ , and disconnect connector Ⓒ from the Display board assembly.

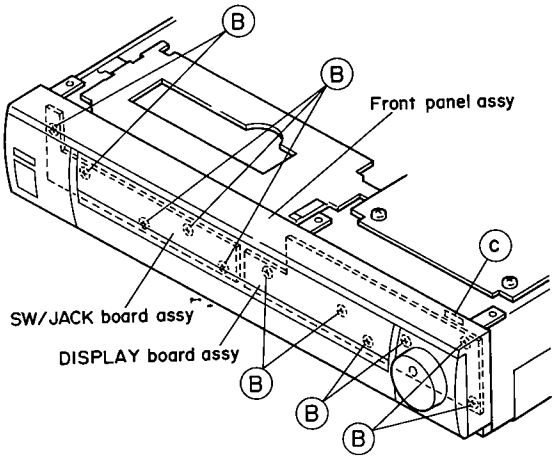


Fig. 1-1-3 Front panel assembly -2

1.1.3 Bottom cover

1. Take out 9 screws Ⓒ .

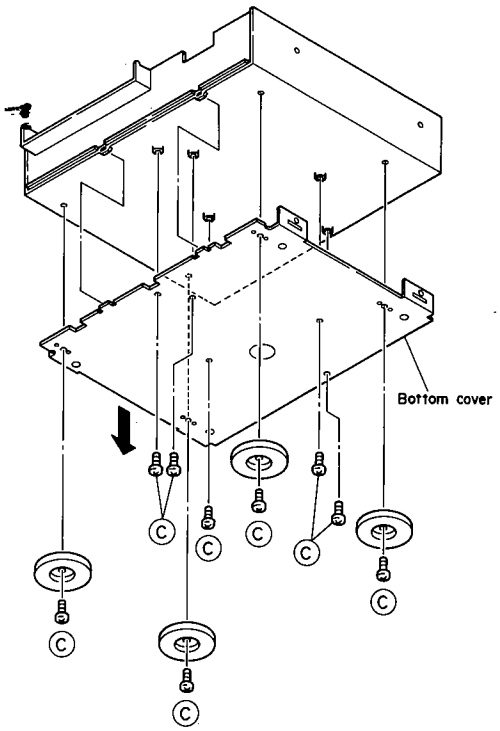


Fig. 1-1-4 Bottom cover

1.1.4 Main board assembly

1. Remove the top cover.
2. Take out 7 screws Ⓓ and 3 screws Ⓔ.
3. Remove the main board assembly in the direction of arrow.

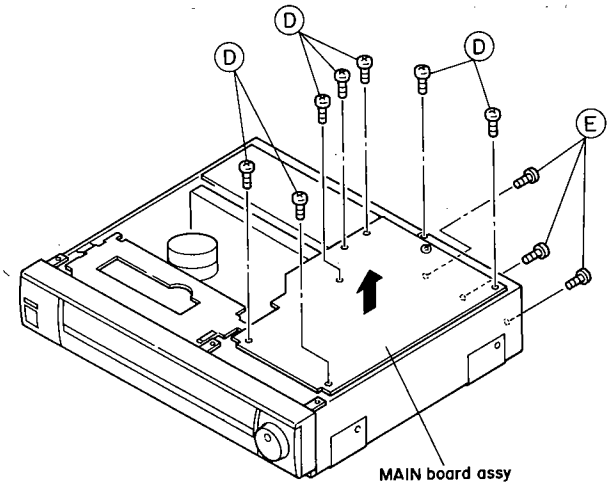


Fig. 1-1-5 Main board assembly

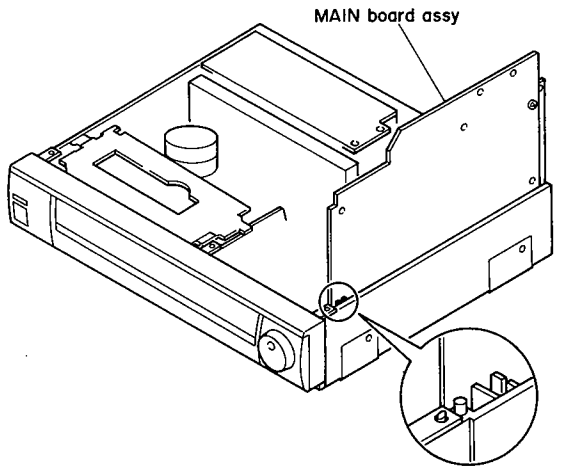


Fig. 1-1-6 Service portion

1.1.5 Cassette housing assembly

1. Remove the top cover and main board assembly.
2. Carefully disengage 3 tabs ⓐ of the front panel assembly from the upper side of the chassis.
3. Pull the front panel assembly forward you to disengage 3 tabs ⓑ of the front panel assembly from the bottom of the chassis.
4. Take out 4 screws Ⓕ.
5. Remove the cassette housing assembly in direction of arrow.

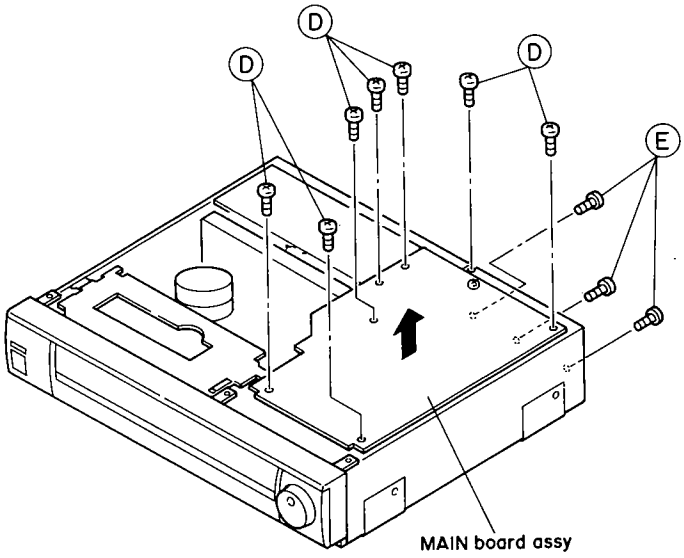


Fig. 1-1-7 Cassette housing assembly

1.1.6 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 marks of the control cam and pinch roller cam are aligned. If necessary, turn the worm clutch by hand to adjust the position.

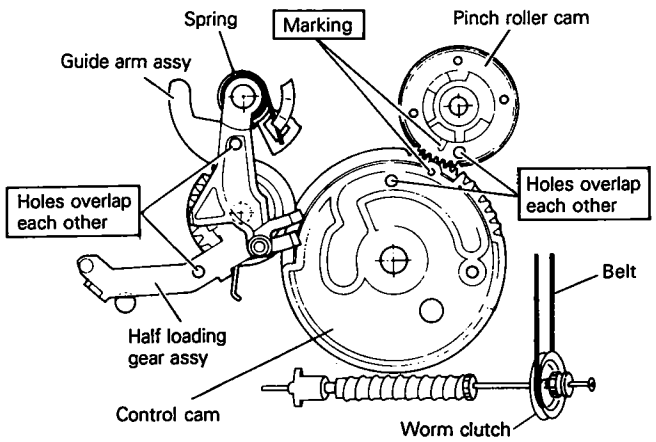


Fig. 1-1-8 Control cam and pinch roller cam position

2. Confirm that the clutch of the worm clutch assembly is locked. If necessary, engage the locked.

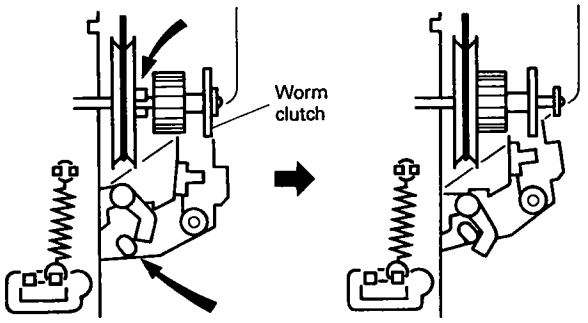


Fig. 1-1-9(a) Not locked **Fig. 1-1-9(b)** Lock engaged

3. Install the front panel as shown in Fig. 1-1-10 and reengage the tabs. Supply power and use a spare cassette to check for normal loading and eject operations

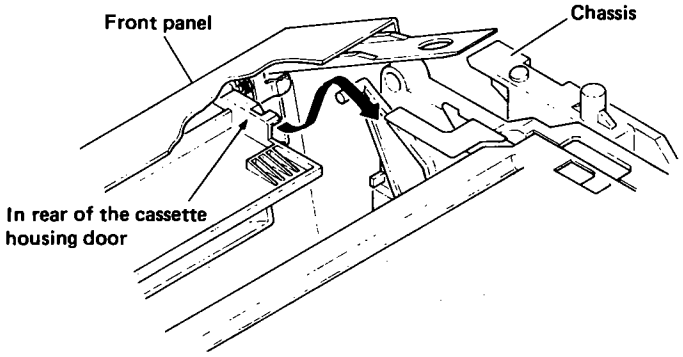


Fig. 1-1-10 Cassette housing door

1.1.7 Switching regulator assembly

1. Remove the top cover and main board assembly.
2. Take out 2 screws Ⓓ .
3. Disconnect 5 connectors ⓓ from the switching regulator board assembly.
4. Remove the switching regulator board assembly in direction of arrow.

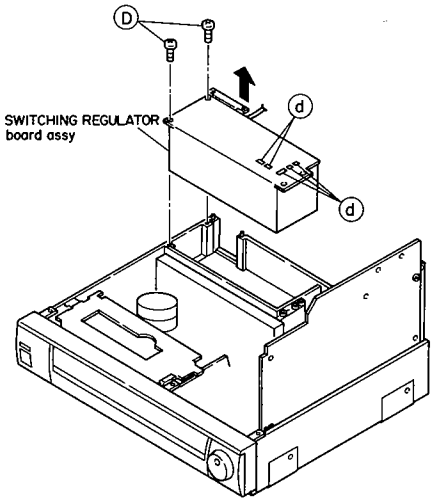


Fig. 1-1-11 Switching regulator assembly

1.1.8 Pre amp board assembly

1. Remove the top cover and main board assembly.
2. Disconnect 9 connectors ⓔ from the pre amp board assembly and remove the shield cover in direction of arrow.
3. Take out 2 screws Ⓖ and remove the pre amp board assembly in direction of arrow.

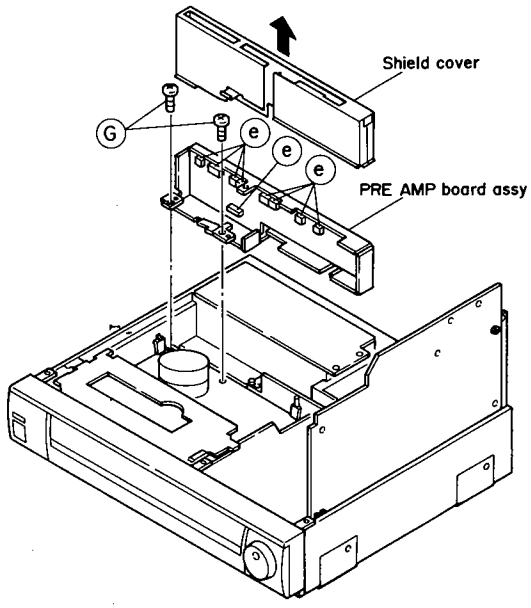


Fig. 1-1-12 Pre amp board assembly

1.1.9 Main deck assembly

1. Remove the top cover, front panel, main board assembly and cassette housing assembly.
2. Take out 3 screw Ⓗ and disengage 2 claws ⓕ from the chassis.
3. Remove the main deck assembly in direction of arrow.

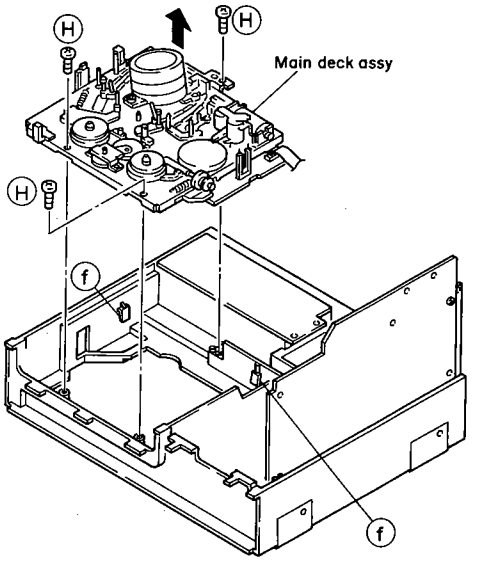


Fig. 1-1-13 Main deck assembly

1.2 MECHANISM ADJUSTMENTS

1.2.1 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 Eject or Stop mode position. In the Eject mode, the internal holder of the housing is fully raised. This is fully lowered in the Stop mode.
6. When installing the front panel assembly, be sure to engage the housing door with the door lever of the cassette housing assembly. If this is omitted, the door will not open at Eject and the cassette cannot be removed.

1.2.2 Check without cassette housing

Mechanism operations can be observed easily by removing the cassette housing assembly. Note the following.

1. Disable the photo transistor sensor (END SENSOR) on the main-deck by applying an opaque cover.
2. Connect pins 2 and 3 of A/S/M board connector CN601.
3. Select the desired modes with the operation buttons. However, notice that without tape, setting for the reverse direction modes produces the Stop mode after a few seconds due to absence of the reel sensor output.

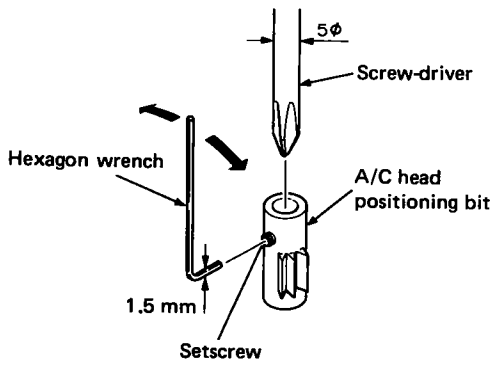


Fig. 1-2-1 A/C head positioning tool

1.2.3 Manually removing cassette tape

In event of electrical system failure that prevents the tape from being unloaded, the tape can be removed manually by the following procedure. Refer to Figs. 1-3-1, 1-3-2 and 1-3-3.

1. Disconnect power cord from AC outlet.
2. Turn the loading motor by hand so that the control cam rotates clockwise. This retracts the pole base assembly to the unloading position.
3. Continue turning to where the guide arm and half loading gear assemblies shift to beneath the cassette.
4. Turn the clutch assembly at the rear of the deck to absorb slack tape within the cassette.
5. Again turn the loading motor in the same direction to raise the cassette and remove it.

1.2.4 Test equipment

The following special tools and fixtures are required for mechanism adjustment.

1. Alignment tapes : MH-1 and MH-1L
   Stairstep signal is employed for interchangeability checks and adjustments.
2. Torque gauge : PUJ48075-2
   Measures tape take-up torque.
3. Back tension cassette gauge : PUJ48076-2
   Measures tape tension at the supply side.
4. A/C head positioning bit : PTU94010
   - Shifts the head base for adjusting the control head position.
   - **The installation of a A/C head positioning bit on the screw-driver.**
     Refer to Fig. 1-2-1. Set screw-driver into the A/C head positioning bit where it does not interfere with adjusting the A/C head adjusting boss (position the screw-driver point 6 ± 2 mm from point of the A/C head positioning bit). Slightly tighten the setscrew by hexagon-wrench (1.5 mm).
5. Roller driver : PTU94002
   Turns the guide roller for adjusting FM linearity.
6. Presetting unit: PTU94008
   Use for EP auto tracking preset adjustment.

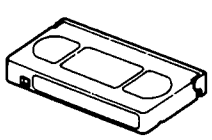
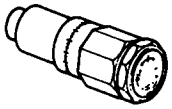
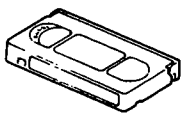
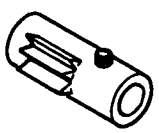
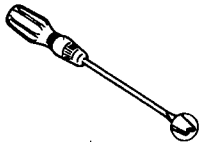
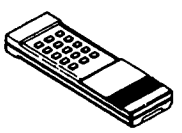
1 Alignment tapes	2 Torque gauge	3 Back tension cassette gauge	4 A/C head positioning bit	5 Roller driver	6 Presetting unit
					

Fig. 1-2-2 Test equipment

1.3 MAIN MECHANISM PARTS

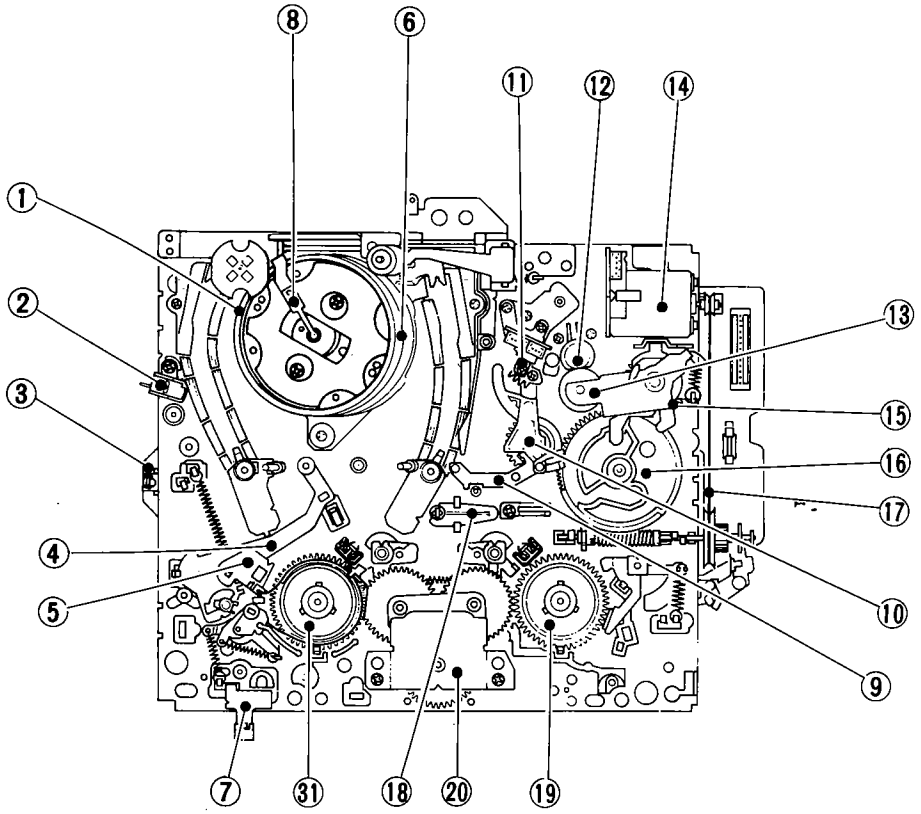


Fig. 1-3-1 Top view of main-deck

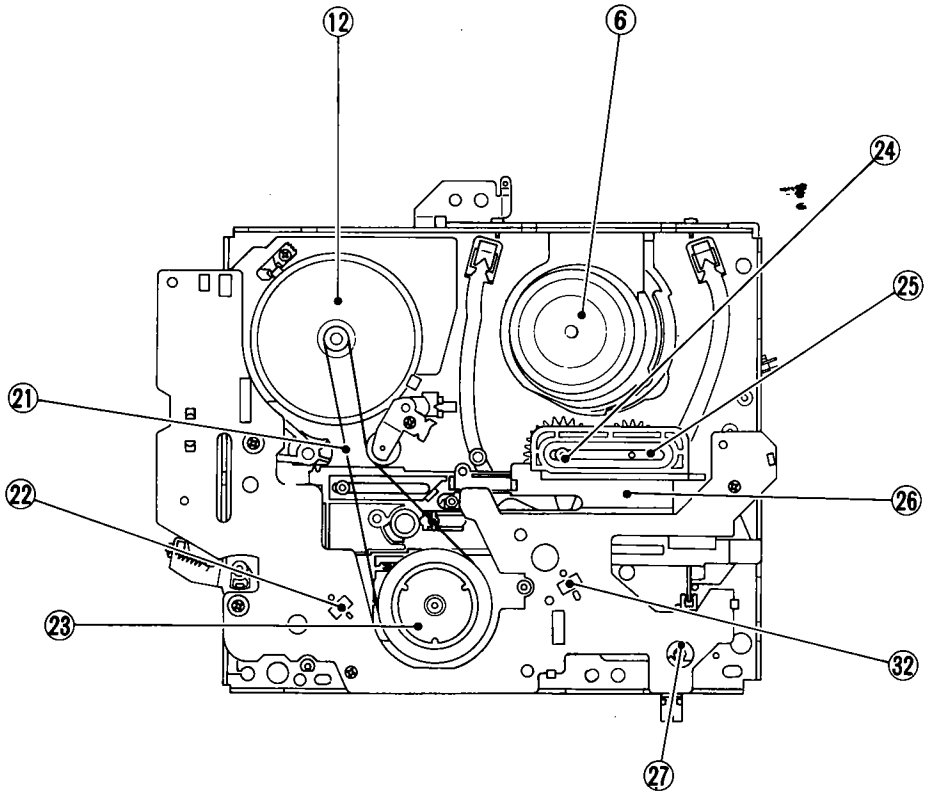


Fig. 1-3-2 Bottom view of main-deck

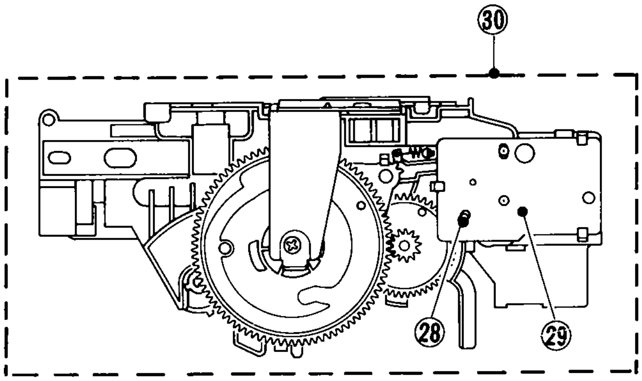


Fig. 1-3-3 Side view of cassette housing

A. Cleaning

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

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

B. Lubrication

Oil and grease do not normally require periodic replenshing. Apply only when replacing lubricated parts (also clean and replace lubrication of mating parts if soiled).

For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly.

Before oiling, clean with alcohol.
Apply one or two drops of oil. Avoid excess oil.

1. Table 1-3-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents:

Category	Part No.
Oil	COSMO-HV56
Grease	KANTO-G-31KAV

Table1-3-1

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

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

C. Main mechanical parts

See Fig.s 1-3-1, 1-3-2 and 1-3-3.

No.	Symbol	Parts Name	See Section
1	M32A	Upper drum assy	1.5.1
2	M44	Full erase head	
3	51Q1	End sensor	
4	M41	Tension arm assy	1.5.4
5	M42	Tension band assy	1.5.4
6	M32C	Lower drum motor assy	1.5.2
7	M461	REC safety switch	
8	M32D	Brush assy	
9	M449	Half loading gear assy	1.5.5
10	M447	Guide arm assy	1.5.5
11	M48	A/C head	1.5.3
12	M422	Capstan motor	
13	M442	Pinch roller arm assy	
14	M434	Loading (Mode) motor assy	
15	M446	Pinch roller cam	1.5.5
16	M438	Control cam	1.5.5
17	M437	Loading belt	
18	M460	LED holder (D1)	
19	M430	Reel disk (take-up)	
20	M424	Idler gear unit	
21	M429	Timing belt	
22	51PS1	Take up reel sensor (PHS1)	
23	M426	Clutch unit	1.5.6
24	M433	Take up loading arm assy	1.5.7
25	M432	Supply loading arm assy	1.5.7
26	M439	Plate assy	1.5.7
27	M462	Slide encoder (S3)	
28	56PHS3	Cassette sensor (PHS3)	
29	56Q2	Start sensor (Q2)	
30	M36	Cassette housing assy	
31	M470	Reel disk (supply)	

- Symbol interpretation example

M32A: M32 — Exploded view symbol; A — Ref. No.

56 Q2: 56 — Board No.; Q2 — Ref. No.

1.4 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 at when required.

1.4.1 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.

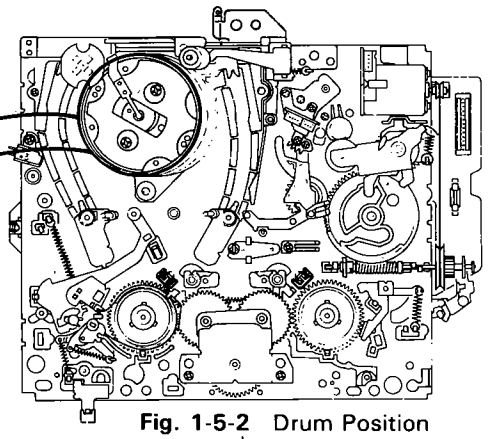
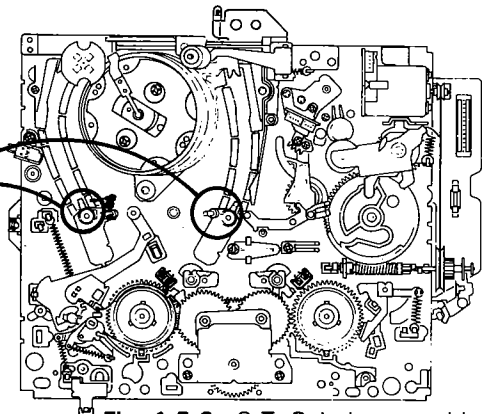
System	No.	Parts Name	Symbol No.	Periodic servicing schedule (operation hours)							
				250	500	750	1000	1250	1500	1750	2000
Tape Transport	1	Upper drum assy	M32A	★	★	☆	○	○	○	○	○
	11	A/C head	M48	★	★	★	○	○	○	○	○
	13	Pinch roller arm assy	M442	★	★	★	○	○	○	○	○
	2	Full erase head	M44	★	★	★	○	○	○	○	○
	4	Tension arm assy	M41								
	6	Lower drum motor assy	M32C				○	○	○	○	○
	12	Capstan motor	M422	★	★	★	★	★	★	★	★
	9	Half loading gear assy	M449								
	10	Guide arm assy	M447								
Drive	12	**Capstan motor**	M422				○	○	○	○	○
	17	**Loading Belt**	M437				○	○	○	○	○
	21	Timing Belt	M429				○	○	○	○	○
	19	**Take-up reel disk**	M430				○	○	○	○	○
	31	**Supply reel disk**	M470				○	○	○	○	○
	23	Clutch unit assy	M426								○
	14	Loading motor assy	M434				○	○	○	○	○
		Worm clutch assy	M436								△
	26	**Plate assy**	M439								△
Others	5	Tension band assy	M42				○				○
	8	Brush assy	M32D				○				○

★ : Cleaning
☆ : Cleaning (or Replacement if necessary)
△ : Lubrication
No: Refer to Main mechanical parts

▲ : Lubrication (or Replacement if necessary)
○ : Inspection or Replacement if necessary

Table 1-4-1 Approximate maintenance schedule

1.5 MAIN PARTS REMOVAL AND REPLACEMENT

No.	Item	Checkpoints	Adjustment and Checks
1	Upper drum assembly •Symptoms: FM signal absent, intermittent or weak on one channel; large difference in channel output levels •Cause: Worn or damaged video heads, poor response, etc.	 **Fig. 1-5-2** Drum Position	
		Mounting direction See Fig. 1-5-1. (Symptom: no picture)	After replacing, observe that upper drum hole A is opposite the motor axis from lower drum hole B.
		Axis wobble See Fig. 1-5-2. (Symptom: jitter, poor FM linearity) PB FM: PRE/REC board TP53 FF: A/S/M board TP411	Record and playback in EP mode. Confirm absence of large difference between channels. (Fig. 1-5-3)  **Fig. 1-5-3** Axis wobble
		FM linearity check See Fig. 1-5-5. (Symptom: vertical sync absent, picture noise) PB FM: PRE/REC board TP53 FF: A/S/M board TP411	 **Fig. 1-5-6** S.T. Pole base position 1) Play stairstep signal of the MH-1 Alignment Tape. Confirm absence of obvious FM waveform loss and that operating the Tracking yields the optimum point. 2) Refer to Fig. 1-5-4, adjust for loss at the left edge (drum entry) of the FM waveform by turning the guide roller of the supply pole base. Similarly, adjust for loss at the right edge (drum exit) by turning the guide roller of the take-up pole base. **Note:** ***If FM loss occurs on both channels and cannot be corrected by adjusting the guide rollers, the lower drum needs replacement.***

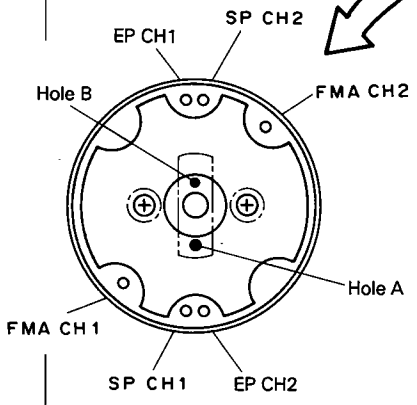


Fig. 1-5-1
DRUM TOP VIEW

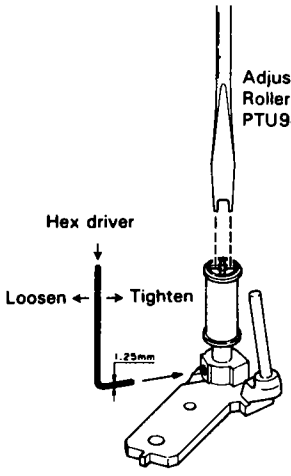


Fig. 1-5-4 S.T. Pole base

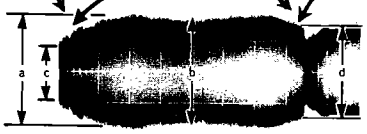
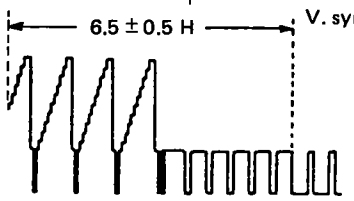
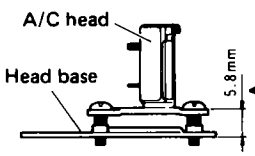
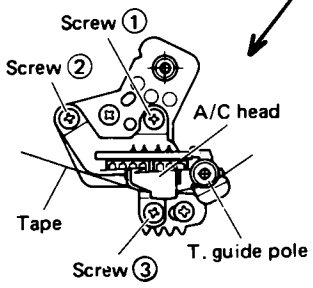


Fig. 1-5-5 FM linearity

$\frac{b}{a} \geqq 0.7$, $\frac{c}{a} \geqq 0.65$, $\frac{d}{a} \geqq 0.65$

No.	Item	Checkpoints	Adjustment and Checks
	PB switching point •Symptom: switching noise at picture bottom.	VIDEO OUT or TP10 (VIDEO board)	1) Connect VCR to AC. Turn power on. 2) Connect an oscilloscope to VIDEO OUT or TP 10. 3) Insert the MH-1 alignment tape to the cassette housing. Play back the stairstep segment of MH-1 alignment tape. 4) Trigger the oscilloscope externally (– slope) with the signal from TP411 (DRUM FF) of the A/S/M board. 5) Adjust R427 to position the trigger point 6.5 H ±0.5 H from V. sync as shown in Fig. 1-5-7.
	 **Fig. 1-5-7** PB Switching Point		
2	Lower drum assembly •Symptoms: Poor FM linearity, noisy rotation, jitter •Cause: Lead and bearing wear	Check FM linearity and switching point.	See above upper drum assembly items.
		Check control head phase (X value) Symptom: tracking error PB FM: PRE/REC board TP53 FF: VIDEO I board TP411	1) Play stairstep signals of MH-1 and MH-1L Alignment Tapes. Engage the Tracking Preset mode by pressing the + and – buttons simultaneously in the onscreen mode. Confirm that the same maximum FM waveform level is obtained as when the tracking is adjusted manually. 2) Refer to the A/C head adjustments.
3	**A/C head**  **Fig. 1-5-8** Temporary height		
	 **Fig. 1-5-9** Inclination/Azimuth/ Height adj.		
		Temporarily set height as indicated in Fig. 1-5-8.	Set the height as indicated in Fig. 1-5-8 to facilitate tape transport checks and adjustments.
		Tilt (forward inclination) See Fig. 1-5-9. (Symptom: audio level varies greatly.)	1) Run tape, turn screw ① counterclockwise to where slight curling of the tape occurs at the lower flange of the take-up guide roller. 2) Then slowly turn the screw clockwise to where the curling ceases.
		Azimuth See Fig. 1-5-9. (Symptoms: audio low level or noisy) Audio output: AUDIO OUT	1) Set front panel AUDIO MONITOR selector to Normal and play stairstep signal (with audio 7 kHz) of the MH-1 Alignment Tape. Observe audio output signal with oscilloscope. 2) Turn screw ② and adjust for maximum audio output level.

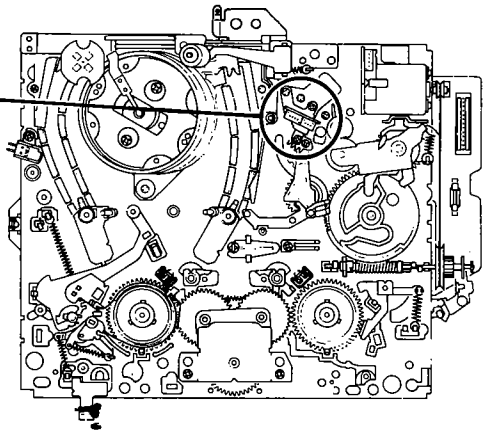
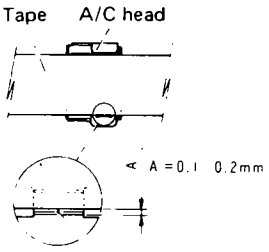
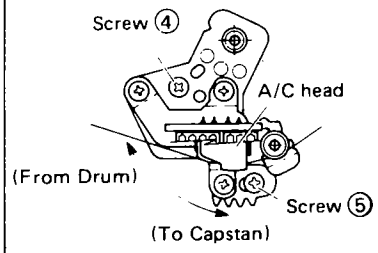
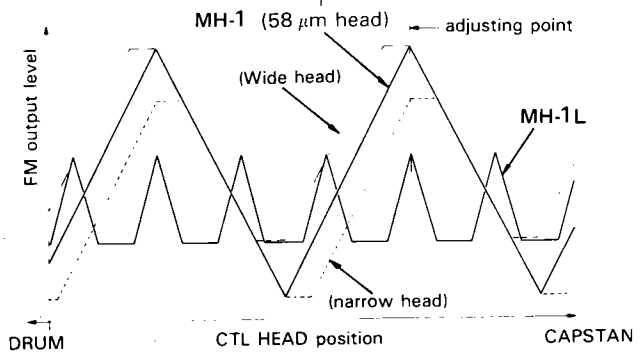


Fig. 1-5-10 A/C HEAD position

No.	Item	Checkpoints	Adjustment and Checks
	 Head core **Fig. 1-5-11** Height Adj	Height See Figs. 1-5-9 and 1-5-11. (Symptom: low audio and control signal levels)	1) Run tape and observe the control head area. 2) Turn screws ①, ② and ③ by small and equal amounts until 0.1 to 0.2 mm of the head core bottom can be seen. **Note:** ***If difficult to observe, play stairstep signal of MH-1 Alignment Tape and adjust for maximum audio output and control pulse level.***
		FM linearity	Refer to upper drum assembly items. If adjustment is major, again check the azimuth.
	 **Fig. 1-5-12** CTL head phase	Control head phase See Fig. 1-5-12 PB FM: PRE/REC board TP53 FF: A/S/M TP411	1) Play stairstep signal of MH-1 Alignment Tape and observe the FM waveform. Set for Tracking Preset by pressing the + and − buttons simultaneously in the onscreen mode. 2) Loosen screws ④ and ⑤. Set the A/C head positioning tool on screw ④, with the stud inserted into the nearby oblong hole. 3) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig. 1-5-13. 4) Tighten screw ⑤ . Remove the tool and tighten screw ④. 5) Play stairstep signal of MH-1L Alignment Tape and confirm maximum FM waveform output level as shown in Fig. 1-5-13. 6) If not maximum, slightly loosen screws ④ and ⑤. Use the tool and adjust the head position for the nearest maximum point. Then tighten screws ④ and ⑤.
	 **Fig. 1-5-13** CTL head phase **Note:** ***Trigger the oscilloscope externally signal from TP411 (DRUM FF). Use (+) trigger for MH-1 and MH-1L alignment tape. Narrow head is employed for this model.***		
		EP auto tracking adjustment	1) Terminate the video output at 75 ohms with a monitor-TV and connect oscilloscope to PB FM (TP53). 2) Set MH-1L Alignment Tape into the cassette housing and play the stairstep signal. 3) Confirm that the A/V digital tracking LED changes from flashing to lighted. 4) Press button "D" of the preset unit (PTU 94008) to extinguish the A/V digital tracking LED. 5) Again press button "D" to enter the EP interchangeability adjust mode. Confirm that the A/V digital tracking LED changes from flashing to extinguished. Press the stop button. **Note:** ***If the Alignment Tape ejects automatically, repeat the control head phase adjustment.***

No.	Item	Checkpoints	Adjustment and Checks
4	Tension arm assembly Tension band assembly	Tension pole position See Fig. 1-5-14. (Symptom: poor FM waveform response)	1) Remove video cassette tape and set for the playback mode as following steps. 2) Disconnect VCR from AC. Slightly rotates the loading motor counterclockwise by hand, then press the lock level portion Ⓐ of the cassette housing by hand as shown in Fig. 1-5-16. 3) Move the raised portion of the cassette housing slide plate to fully forward by hand with loading motor. At this time, again press the lock level portion Ⓑ of the cassette housing slide plate to lower the cassette housing (internal holder of the cassette housing is locked in lowered position). 4) Cover the cassette LED with opaque material (insulated tape with black). 5) Connect VCR to AC. Press the power button on the Front panel and set for the playback mode. 6) Turn the eccentric adjust pin to align the edge of the chassis with the tension arm tip as shown in Fig. 1-5-14.
		Back tension (Symptom: skew)	**1) When the tension pole position is correctly adjusted, the back tension will assume the correct value.** **2) Use the Back Tension Cassette Gauge and set for the playback mode. Confirm reading** of 35 to 48 g·cm. **3) Changing the tension pole position in order to vary the back tension will cause adverse effects elsewhere.**

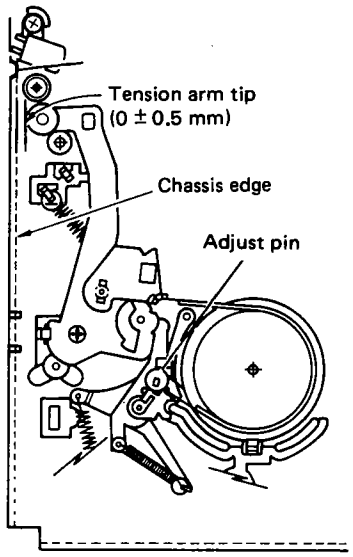


Fig. 1-5-14
Tension arm assy

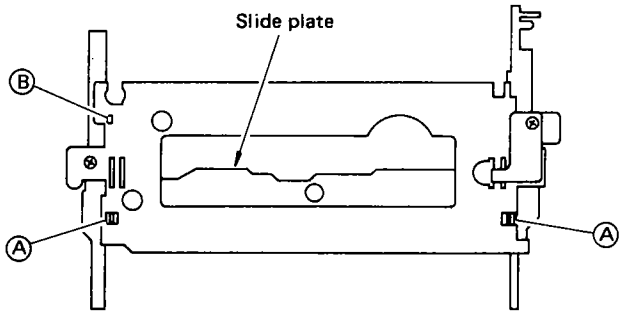


Fig. 1-5-16 Cassette housing

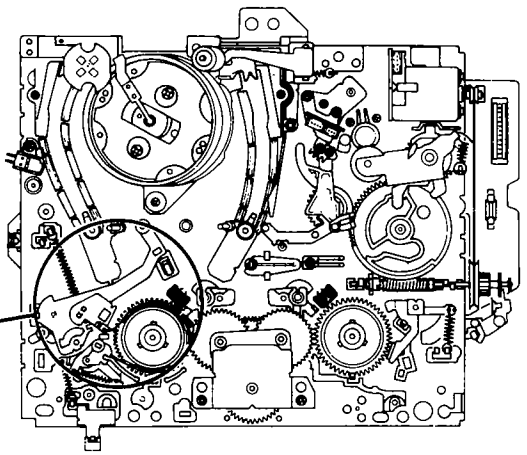
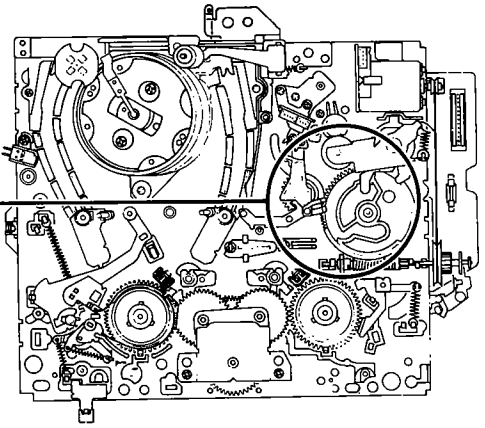


Fig. 1-5-15 Tension arm position

No.	Item	Checkpoints	Adjustment and Checks
5	Pinch roller cam Control cam Half loading gear assembly Guide arm assembly		Set mechanism to Eject mode internal holder of the cassette housing is locked in raised) position.
			 Fig. 1-5-18 Control cam position
		Important: Do not remove or disturb parts other than those mentioned. See Fig. 1-5-17.	1) When installing the pinch roller cam, overlap the largest hole of the gear portion with the hole of the deck. 2) Set the control cam on the deck with the hole of the groove overlapped with the hole of the deck. Observe that the small hole of the control cam and the ridge of the pinch roller cam are aligned. (If the control cam does not fit readily, shift the rear plate assembly within the range of play.) 3) Install the half loading gear assembly with the hole overlapped with the hole of the deck. Secure with E-ring. 4) Install the guide assembly over the spring and with the hole overlapping that of the deck. Engage the spring correctly.
		Cassette housing assembly	Install the cassette housing assembly with the mechanism in the Eject mode. Also observe that the inner holder of the housing is raised and locked.
6	Clutch assembly	Take-up torque (Symptom: inadequate take-up torque)	1) Remove cassette housing and set for play-back mode (see Section 1.2). 2) Set torque gauge on the take-up reel disk. Gradually relax your grip on the gauge and read the needle indication at the point the gauge begins to rotate with the disk. Confirm indication of 60 to 100 g·cm.

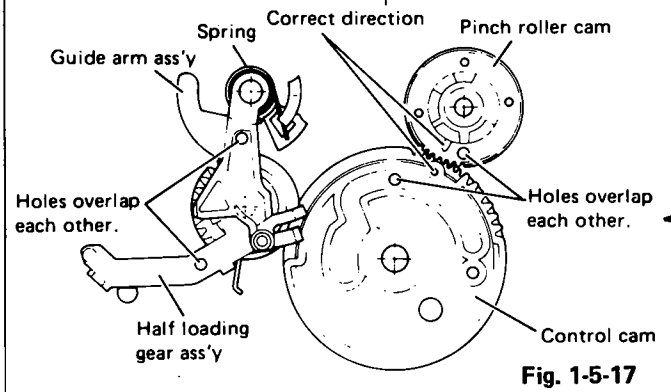


Fig. 1-5-17
Control/Pinch roller cam

No.	Item	Checkpoints	Adjustment and Checks
7	Take-up loading arm assembly Supply loading arm assembly Plate assembly		Note: • *Set mechanism to the Eject or Stop mode before removing these parts.* • *The flange of the plastic rivet securing the loading arm assembly and the pole base assembly can be damaged by attempting to remove it directly. Press the loading arm assembly firmly to prevent motion. Then use a narrow-shafted tool to press the rivet from the shaft end to remove it.*
		Mounting position alignment • Remove the tension arm assembly to facilitate operation. See Fig. 1-5-19.	1) Set the supply and take-up loading arm assemblies so that the holes of the gear portions are aligned, then secure to the pole base assemblies with rivets. 2) Shift the plate assembly and install with the holes of the upper and lower components overlapped.
		Slide switch See Fig. 1-5-19.	Be sure to engage the slide switch slider with the edge of the plate assembly.

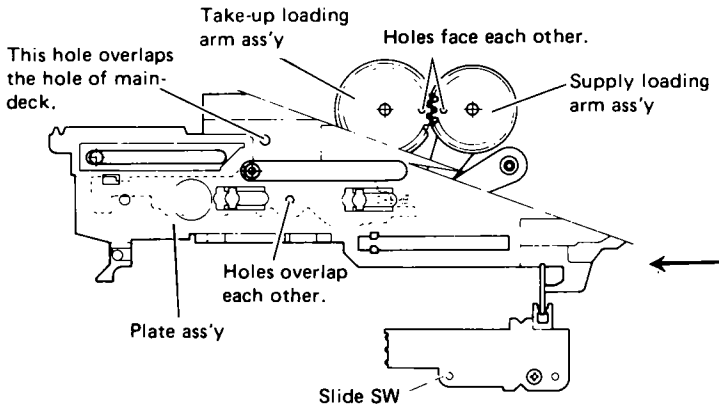


Fig. 1-5-19

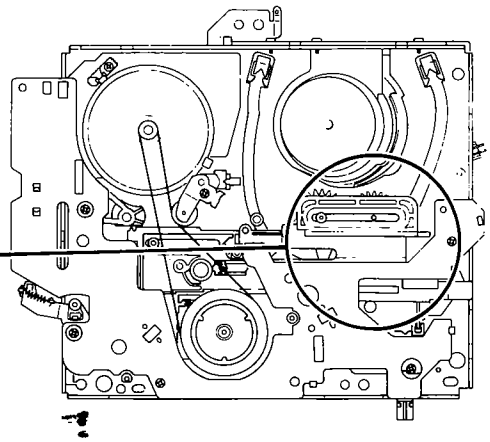


Fig. 1-5-20
T.S. Loading arm position

1.6 DIGITAL TRACKING OFF/ON SETTING

Set the tracking of the Front panel of the digital tracking off/on position by simultaneously pressing the "+" and "–" channel (tracking) buttons during playback mode.
Observe the display on a monitor-TV and adjust for optimum noise condition (best tracking) by depressing "+" or "–" channel buttons during playback mode for digital tracking off.

SECTION 2
ELECTRICAL ADJUSTMENTS

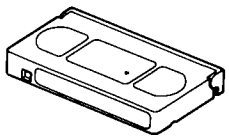
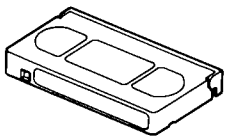
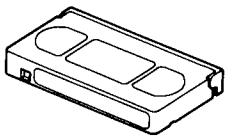
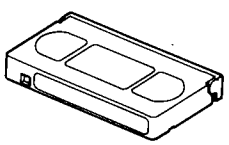
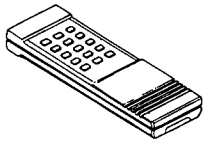
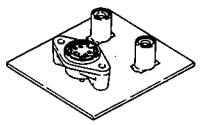
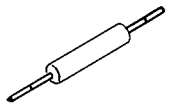
2.1 PREPARATION

Electrical adjustments 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 equipment is available.

2.1.1 Required test equipment

1. Color television or monitor.
2. Osciloscope: wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Audio oscillator
5. Audio voltmeter
6. Digital voltmeter
7. Signal generator: RF/IF sweep/marker
8. Signal generator: NTSC color bar,stairstep
9. Distortion meter
10. Recording tape

2.1.2 Required adjustment tools

Alignment tape MH-1	Alignment tape MH-1L
	
Alignment tape MH-1H	Alignment tape MH-F1
	
Presetting unit PTU94008	RCA-S Adapter PTU93001A
	
Adjustment driver YTU93004-2	*SMC replacement tools YTU94038B
	

*NOTE: *It is convenient for replacing chip parts.*

2.1.3 Color bar signal and pattern

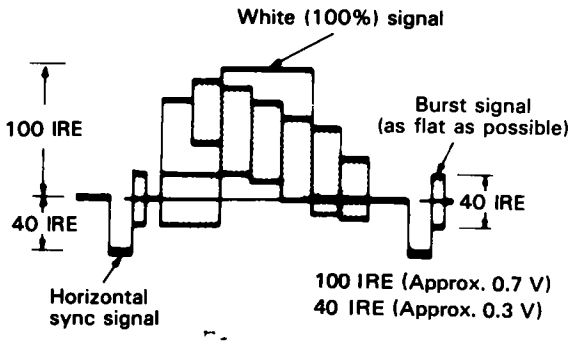


Fig. 2-1-1 Color bar signal of pattern generator

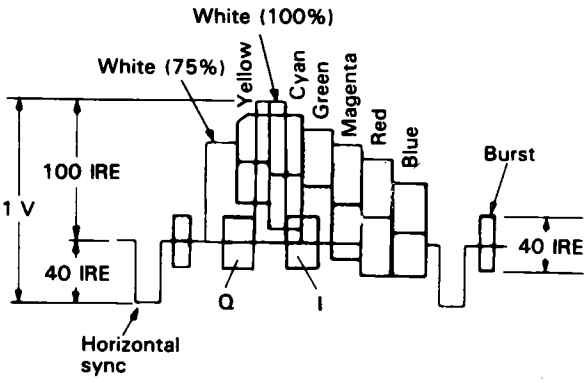


Fig. 2-1-2 Color bar signal waveform

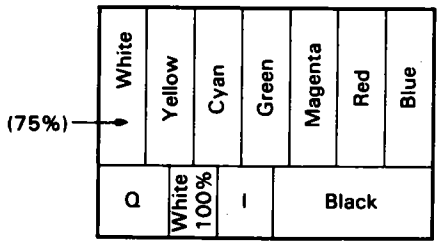


Fig. 2-1-3 Color bar pattern

2.1.4. Way to refer to adjustment procedure table

Check and adjustment procedure of the electrical circuit is explained in tables by item. Pefer to the table as explained below.

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
①	②	③	④	⑤	⑥	⑦

① No. : Number of inspection or/and adjustment item. It is advised to proceed in this numerical order.
② Item : Name of check/adjustment particlularily termed for servicing
③ Mode : Setting mode of the VTR for the check/adjustment
- EE : Electric-to-Electric mode (Stop state with power on)
- REC : Recording mode
- PB : Playback mode
- REC → PB(or another) : Perform recording first, then deal with the recorded portion in playback (or another) mode

④ Signal & Setting : Input signal and something required for the check/adjustment
- AUX color ber : Color bar signal input in AUX IN mode
- AUX no signal : No input signal in AUX IN mode
- Tuner : Tuner receiving mode (RF input)
- Alignment tape color bar : Playback of alignment tape's color bar signal
- Alignment tape stairstep : Playback of alignment tape's stairstep signal
- Alignment tape 1kHz : Playback of alignment tape's 1kHz signal
- SP : Standard play mode
- EP : Extended play (x3) mode
- Digital tracking ON : Digital tracking set to ON
- Digital tracking OFF : Digital tracking set to OFF (for manual tracking)

⑤ Measurement Point: Measuring point such as test point (TP) on P.C. board and pin of IC to connect measurement device for measurement/observation of waveform, voltage, frequency, etc.
⑥ Adjustment Parts : Symbol No. of variable components such as variable resistors, trimmer capacitors, etc. for adjustment
⑦ Adjustment Procedure : Preparation, order, manner, attentive matter, etc. to proceed check and adjustment

2.1.5 Confirmation

Before adjustment, use the MENU button function to set the CLOCK SET and TUNER SET.

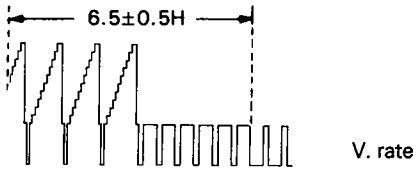
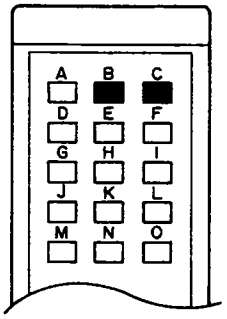
2.2 REGULATOR CIRCUIT

Note: ***Unless otherwise specified, all measurement points and adjustment parts are located on the [0] [2] REGULATOR***

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	5V DC output	• REC	• TUNER • SP	• CN5 pin 1 (SWD 5V) • CN5 pin 2 (GND)	• R36 (SWD 5V)	1) Connect a digital voltmeter between CN5 pin 1 and CN5 pin 2. 2) Adjust R36 for 5.40 ±0.05V DC.

2.3 SERVO CIRCUIT

Note: ***Unless otherwise specified, all measurement points and adjustment parts are Located on the [0] [4] A/S/M board.***

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	SP PB switching point	• PB	• Alignment tape stairstep (MH-1) • SP • Trigger slope (-)	• TP10 (VIDEO OUT) [0] [5] VIDEO • TP411 (DRUM FF) (Ext : trigger)	• R427 (SWITCHING POINT)	1) Connect an oscilloscope to TP10. 2) Play back the stairstep signal of the alignment tape. 3) Adjust R427 to position the trigger point 6.5H ± 0.5 H from V. sync.
			 **Fig. 2-3-1** PB switching point			
2	Slow tracking preset	• REC ↓ PB (slow)	• SP • Auto tracking: OFF	• TV monitor	• Presetting unit (PTU-94008)	**Note:** ***Set VCR to the mode A by remoto controller.*** 1) Receive a color broadcast on a VHF-HI channel or supply a color bar signal to VIDEO IN. 2) Record a color broadcast or color bar signal in the SP mode. 3) Use the MENU button function to set the AUTO TRACKING OFF setting. 4) Play back recorded signal on the FWD slow mode with variable SERCH button on the remote controller and set the tracking control of the FRONT panel to the center position by simultaneously pressing the "+CH" and "-CH" channel (tracking) buttons. 5) Observe the display on a monitor-TV and adjust for optimum noise condition (best tracking) by depressing "B(-)" or "C(+)" buttons of presetting unit as required. 6) Depress the STOP button. 7) Confirm that the bar noise is not visible on the monitor in the slow mode. 8) Repeat steps 4)~6) in REV slow mode. 9) Record a color broadcast or color bar signal in the EP mode. 10) Repeat steps 3) to 8).
			 **Note:** ***Use only buttons "B" and "C". Depressing other buttons during adjustments may cause adjustment errors.*** **Fig. 2-3-2** Presetting unit			
		• REC ↓ PB (slow)	• EP			

2.4 VIDEO CIRCUIT

2.4.1 Normal VHS video circuit

Note: ***Unless otherwise specified, playback and recording modes are normal VHS mode, and all measurement points and adjustment parts are located on the [0][5] VIDEO board.***

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	EE Y level	• EE	• AUX color bar	• TP10 (VIDEO OUT)	• R212 (EE Y LEVEL)	1) Connect an oscilloscope to TP10. 2) Adjust R212 for 1.0 ± 0.1Vp-p.
2	PB Y level	• REC ↓ PB	• S-IN color bar • SP	• TP10 (VIDEO OUT)	• R456 (N PB Y LEVEL)	1) Input color bar signal as in Fig. 2-4-2. 2) Connect an oscilloscope to TP10. 3) Record and play back a Y signal. 4) Adjust R456 for 1.0 ± 0.1 Vp-p.
3	Y NR NC balance	• PB	• Alignment tape EP color bar (MH-1L)	• TP602	• R416 (YNC BALANCE)	1) Connect an oscilloscope to TP602. 2) Play back the color bar signal of the alignment tape. 3) Adjust R416 for minimum DC step difference.

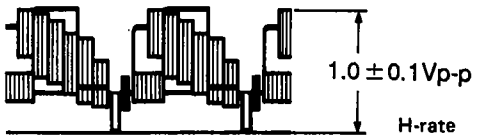


Fig. 2-4-1 VIDEO OUT

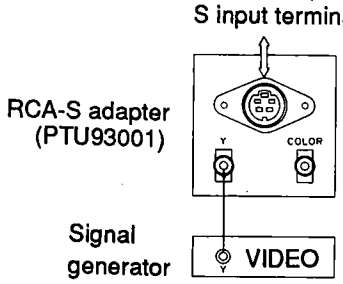


Fig. 2-4-2 S-IN

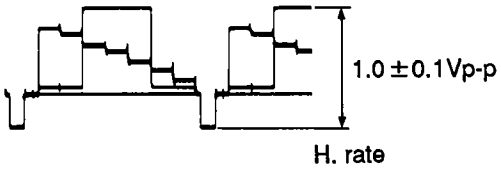


Fig. 2-4-3 PB Y LEVEL

Fig. 2-4-4 YNR NC balance

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
4	CNR NC balance	• PB	• Alignment tape SP color bar (MH-1)	• TP604 (CNR NC)	• R402 (CNR NC BAL-1) • R646 (CNR NC BAL-2)	1) Connect an oscilloscope to TP604. 2) Play back the color bar signal of the alignment tape. 3) Adjust R402 and R646 alternately for minimum carrier level.

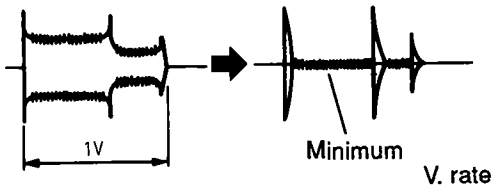


Fig. 2-4-5 CNR NC balance

2.4.2 S-VHS video circuit

Note: *Unless otherwise specified, play back and recording modes are S-VHS mode, and all measurement points and adjustment parts are located on the* [0] [5] *VIDEO board.*

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	AGC level	• EE	• S-IN color bar	• TP10 (VIDEO OUT) • TP900 • TP503	• R956 (AGC LEVEL-1) • R32 (AGC LEVEL-2) • R428 (AGC LEVEL-3)	1) Input color bar signal as in Fig. 2-4-2. 2) Connect an oscilloscope to TP10. 3) Rotate R956 fully clockwise on foil side. 4) Connect jump wire between TP900 and TP GND. 5) Adjust R32 for 1.0 ± 0.1Vp-p. 6) Connect an oscilloscope to TP503. 7) Adjust R428 for 400 ± 10mVp-p. 8) Disconnect jump wire. 9) Adjust R956 for 390 ± 10mVp-p.

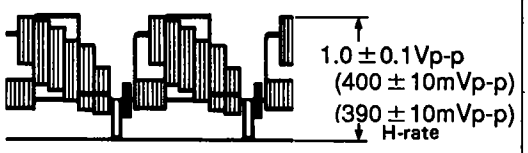


Fig. 2-4-6 AGC level-1

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
2	Y comb	• EE	• AUX Color bar	• TP504 (Y COMB) • TP10 (VIDEO OUT) (Ext. trigger)	• R261 (Y COMB GAIN-1) • R270 (Y COMB GAIN-2)	1) Connect an oscilloscope to TP504. 2) Use the controls of the oscilloscope to expand portion mazenta of the waveform. 3) Adjust R261 and R270 alternately for minimum carrier level.
3	PB Y level	• REC ↓ PB	• S-IN color bar • SP	• TP10 (VIDEO OUT)	• R454 (S PB Y LEVEL)	1) Input color bar signal as in Fig. 2-4-2. 2) Connect an oscilloscope to TP10. 3) Record and playback a Y signal in S-VHS mode. 4) Adjust R454 for 1.0 ± 0.1 Vp-p. **Note:** ***Picture noise appears in TV monitor, but there is no effect for the adjustment.***
4	Frequency responce	• REC ↓ PB	• S-IN Video Sweep • SP	• TP10 (VIDEO OUT)	• R56 (S SP FREQUENCY) 4 3PRE/REC	1) Input video sweep signal as in Fig. 2-4-9. 2) Connect an oscilloscope to TP10. 3) Record and play back the video sweep signal in S-VHS SP mode. 4) If the sweeper's 100KHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R56 so that 3.58MHz marker level becomes 3.2 scale divisions.

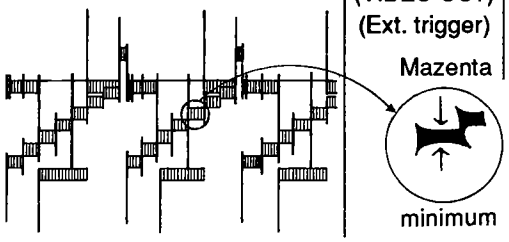
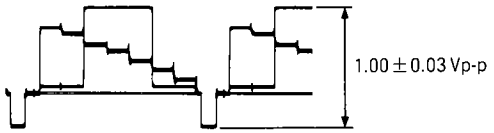


Fig. 2-4-7 Y comb H. rate



H. rate

Fig. 2-4-8 PB Y level

S input terminal

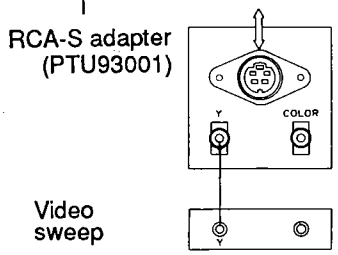


Fig. 2-4-9

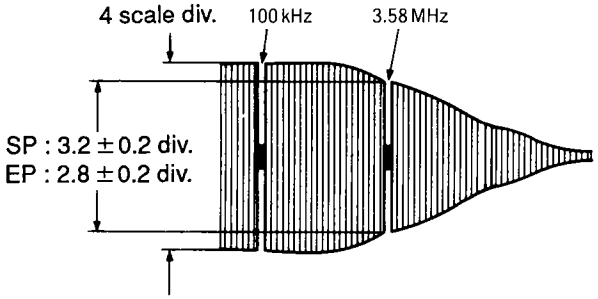


Fig. 2-4-10 S-IN V. rate

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
			• EP		• R58 (S EP FREQUENCY) 4 3 PRE/REC	5) Record and play back the video sweep signal in S-VHS EP mode. 6) Adjust R58 so that 3.58MHz marker level becomes 2.8 scale divisions.
		• REC ↓ PB	• SP	• TV monitor	• R56 (S SP FREQUENCY) 4 3 PRE/REC	Alternate method 1) Record the color bar signal in S SP mode and play it baek to obsereve the picture and adjust R56 for the best resolution, without impaired S/N. 2) So after adjustment, confirm black or white spot.
			• EP		• R58 (S EP FREQUENCY) 4 3 PRE/REC	3) Record the color bar signal in S EP mode and play it back to observe the picture and adjust R58 for the best resolution, without impaired S/N. 4) So after adjustmemt, confirm black or white spot.
5	0H-1H Color comb	• EE	• AUX multiburst	• TP36 (COLOR COMB) • TP32 • TP SW5V	• R229 (COLOR COMB GAIN-1) • R264 (COLOR COMB PHASE-1)	1) Connect an oscilloscope to TP36. 2) Connect jump wire between TP32 and TP SW5V. 3) Adjust R229 and R264 alternatly for minimum carrier level.

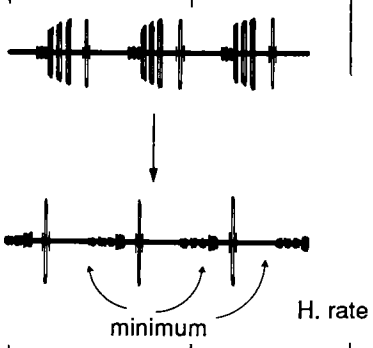


Fig. 2-4-11 0H-1H color comb

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
6	1H-2H Color Comb	• EE	• AUX multiburst	• TP36 (COLOR COMB)	• R243 (COLOR COMB GAIN-2) • R265 (COLOR COMB PASE-2)	1) Connect an oscilloscope to TP36. 2) Connect jump wire between TP32 and TP SW5V. 3) Adjust R243 and R265 alternatly for minimum carrier level. 4) Disconnect jump wire between TP32 and TP SW5V. 5) Re-adjust R243 and R265 alternatly for minimum carrier level.
7	Color comb	• EE	• AUX color bar	• TP601 (COLOR COMB-3) • TP603	• R621 (COLOR COMB GAIN-3)	1) Connect an oscilloscope to TP601. 2) Make a note of the color level as " Ⓐ ". 3) Connect jump wire between TP603 and TP GND. 4) Adjust R621 so that color level is " Ⓐ ".
8	Color comb phase	• PB	• Alin ment tape SP color bar (MH-1)	• TP602 (NC IN) • IC401 pin 45 (AUDIO FF)	• L601 (COLOR COMB PHASE-3)	1) Connect a capacitor (0.01 μ F) between IC401 pin 45 and TP602. 2) Playback the color bar signal of the alingnal tape. 3) Observe a color bar on the TV monitor. 4) Adjust L601 to obtain mazenta color bar picture get same color, especially applied impulse area.

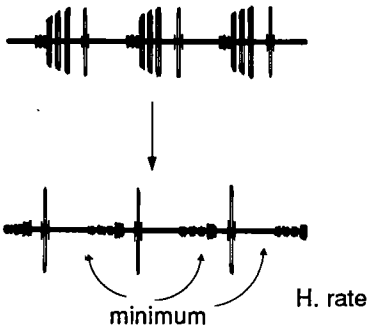


Fig. 2-4-12 1H-2H color comb

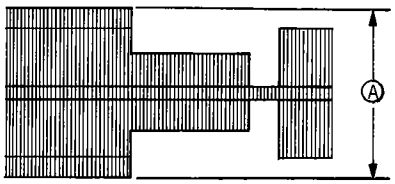


Fig. 2-4-13 color comb

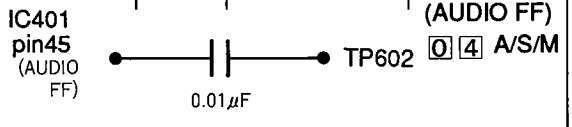


Fig. 2-4-14 capacitor

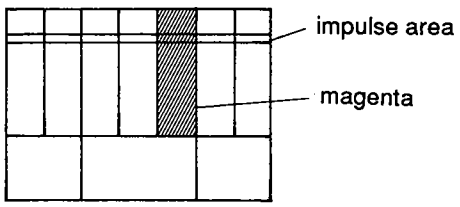


Fig. 2-4-15 TV monitor

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
9	REC color level	• REC	• AUX color bar	• TP5 (REC COLOR) 4 3PRE/REC	• R44 (S SP REC COLOR) 4 3PRE/REC	1) Connect an oscilloscope to TP5. 2) Record the color bar signal in S SP mode. 3) Adjust R44 for 130 ± 10mVp-p.
					• R45 (S EP REC COLOR) 4 3PRE/REC	4) Record the color bar signal in S EP mode. 5) Adjust R45 for 140 ± 10mVp-p.

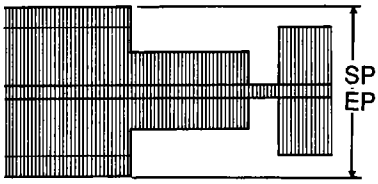


Fig. 2-4-16 REC color level

2.5 AUDIO CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the* [0] [4] *V/S/M board.*

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	Audio bias level	• REC	• AUX no signal • EP • SP	• TP31 (BIAS[+1]) • TP32 (BIAS[-1])	• R239 (BIAS LEVEL)	1) Connect a millivoltmeter between TP31 and TP32. 2) Record no signal in EP mode. 3) Adjust R239 for 3.0 mVrms. 4) Record no signal in SP mode. 5) Adjust R239 for 2.8 ±0.2mVrms.
2	Carrier frequency	• EE	• AUX no signal	• TP51 (L CARRIER OUT) • TP52 (R CARRIER OUT)	• R54 (L CARRIER) • R65 (R CARRIER)	1) Connect a frequency counter to TP51. 2) Adjust R54 for 1.3MHz ±20KHz. 3) Connect a frequency counter to TP52. 4) Adjust R65 for 1.7MHz ±20KHz.
3	PB audio level	• PB	• Alignment tape (MH-F1) • Digital tracking: OFF	• Audio OUT (L CH) • Audio OUT (R CH)	• R49 (L PB LEVEL) • R70 (R PB LEVEL)	1) Connect an audio tester to audio out (left channel). 2) Playback the Hi-Fi 1KHz of the alignment tape. 3) Adjust R49 for -8 dB (0.9 Vp-p, 0.32 Vrms). 4) Connect an audio tester to audio out (right channel). 5) Playback the Hi-Fi 1KHz of the alignment tape. 6) Adjust R70 for -8 dB (0.9Vp-p, 0.32 Vrms).

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
4	Audio REC FM level	• REC ↓ • PB	• AUX no signal • S-VHS • EP	• TP54 (A REC FM) 4 3 PRE/REC • IC401 pin45 (AUDIO FF) (Ext. trigger)	• R216 (A REC FM LEVEL) 4 3 PRE/REC	1) Connect an oscilloscope to TP54. 2) Record no signal in S EP mode and playback it. 3) Adjust R216 so that the higher channel level is 130 ± 10mVp-p.

2.6 ON SCREEN CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the* 0 5 *VIDEO board.*
: *For the following adjustments, use 1 : 1 probe with input capacitance less than 100pF.*

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	DOT clock	• EE	• AUX no signal	• TP901 (COT CLOCK)	• C921 (DOT CLOCK)	1) Connect a frequency counter to TP901. 2) Short IC902 pin 3 to TP GND and pin 30 to TP SW5V. 3) Adjust C921 for 7.70 ± 0.05MHz.
2	Sub carrier	• EE	• AUX no signal	• TP902 (COLOR BURST)	• C913 (COLOR BURST)	1) Connect a frequency counter to TP902. 2) Adjust C913 for 14.31818±0.00015MHz.

2.7 TIMER CIRCUIT

Note: *Unless otherwise specified, all test points and adjustments are located* 2 0 *TIMER board.*
: *For the following adjustment, use 10 : 1 probe.*

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	Timer clock	• EE	• AUX no signal	• IC101 pin37	• C112 (Timer clock)	1) Connect a frequency counter to IC101 pin 37. 2) Short IC101 pin 18 to TP GND. 3) Short the lead's of capacitor C102 once in order to reset IC101. 4) Adjust C112 for 488.2813 ± 0.0005 μ sec (2048.000±0.002Hz).

2.8 TUNER/IF CIRCUIT

Note: ***Unless otherwise specified, all measurement points and adjustment parts are located on the [0] [8] TUNER UNIT board.***

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
						Equipment required; 1. Oscilloscope 2. IF sweep signal generator with suitable markers (PIF, SIF, etc.) 3. Sweeper probe (sweep signal supply cable) as shown in Fig. 2-8-1

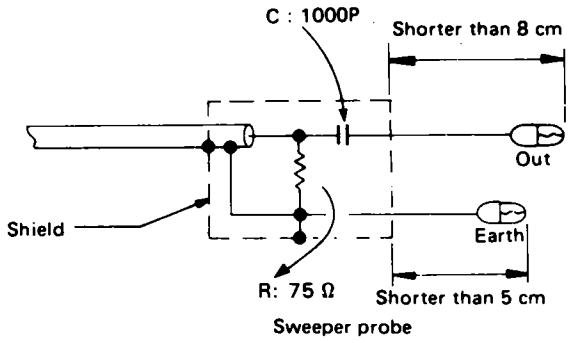


Fig. 2-8-1 Sweeper probe

1	VCO	• EE	• Tuner	• IC1-17	• T3 (VCO)	1) Use a sweeper probe as shown in Fig. 2-8-1 and connect the sweep signal generator output to pin 1 of IC1. 2) Short IC1 pin 13 to GND. 3) Adjust the sweep gain so that the waveform dose not distort as observed with the oscilloscope. 4) Connect the oscilloscope to pin 17 of IC1 (VIDEO DET OUT) and adjust T3 to align the waveform with the frequency marker as shown in Fig 2-7-2.
			• Tuner • TV broadcast	• TV monitor	• T3 (VCO)	Alternate method: 1) Receive a color broadcast on a VHF-HI channel (7 to 13). 2) Adjust T3 to obtain a fine picture on the monitor.

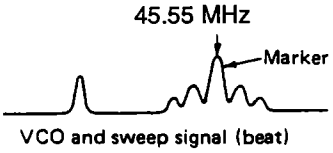


Fig. 2-8-2 VCO

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
	• Before the following adjustment: 1. Connect a cable to ANT IN and terminate TV OUT at 75Ω. 2. Set a TV channel signal generator as follows. Video : 70 dBμ/75Ω, color bar 87.5% modulation Audio : 62 dBμ/75Ω, 1kHz 25kHz deviation					
2	RF AGC	• EE	• Tuner • TV broadcast	• Front end	• R6 (RF AGC)	1) Connect the oscilloscope to IF terminal of U/V Tuner (Front end). Adjust R6 for maximum level, then again adjust R6 for-7 dB again.
				• TV monitor		**Alternate method:** **Note:** ***Adjust R6 (RF AGC) to correct for excess noise in the picture or when streaky cross interference occurs due to strong electrical fields.*** 1) Adjsut R6 to minimize noise or streaks on the TV screen. 2) Check for absence of abnormality on all channels.
3	SOUND DET.	• EE	• Tuner • TV broadcast	• IC1 pin 1	• T1 (SOUND DET)	1) Use a adjustment circuit as shown if Fig. 2-8-3, and connect a distortion meter as shown in Fig. 2-8-3. 2) Receive a color broadcast on a VHF 6ch. 3) Adjust T1 for minimum distortion (less than 0.5%).
				• IC1 pin 1		**Alternate method:** 1) Receive a color broadcast on a VHF-HI channel (7 to 13). Connect an oscilloscope to IC1 pin 1. 2) Adjust T1 for maximum level at audio sound.
4	AFC	• EE	• Tuner • TV broadcast	• CN2 pin 2	• T2 (AFC)	1) Receive a color bradcast on a VHF-HI channel (7 to 13). 2) Connect an oscilloscope to CN2 pin 2. 3) Set the oscilloscope to DC mode and adjust T2 to set the lower edge of the ripple waveform to 2.2±0.2VDC.

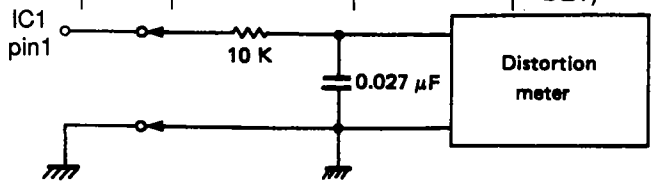


Fig. 2-8-3 Adjustment circuit

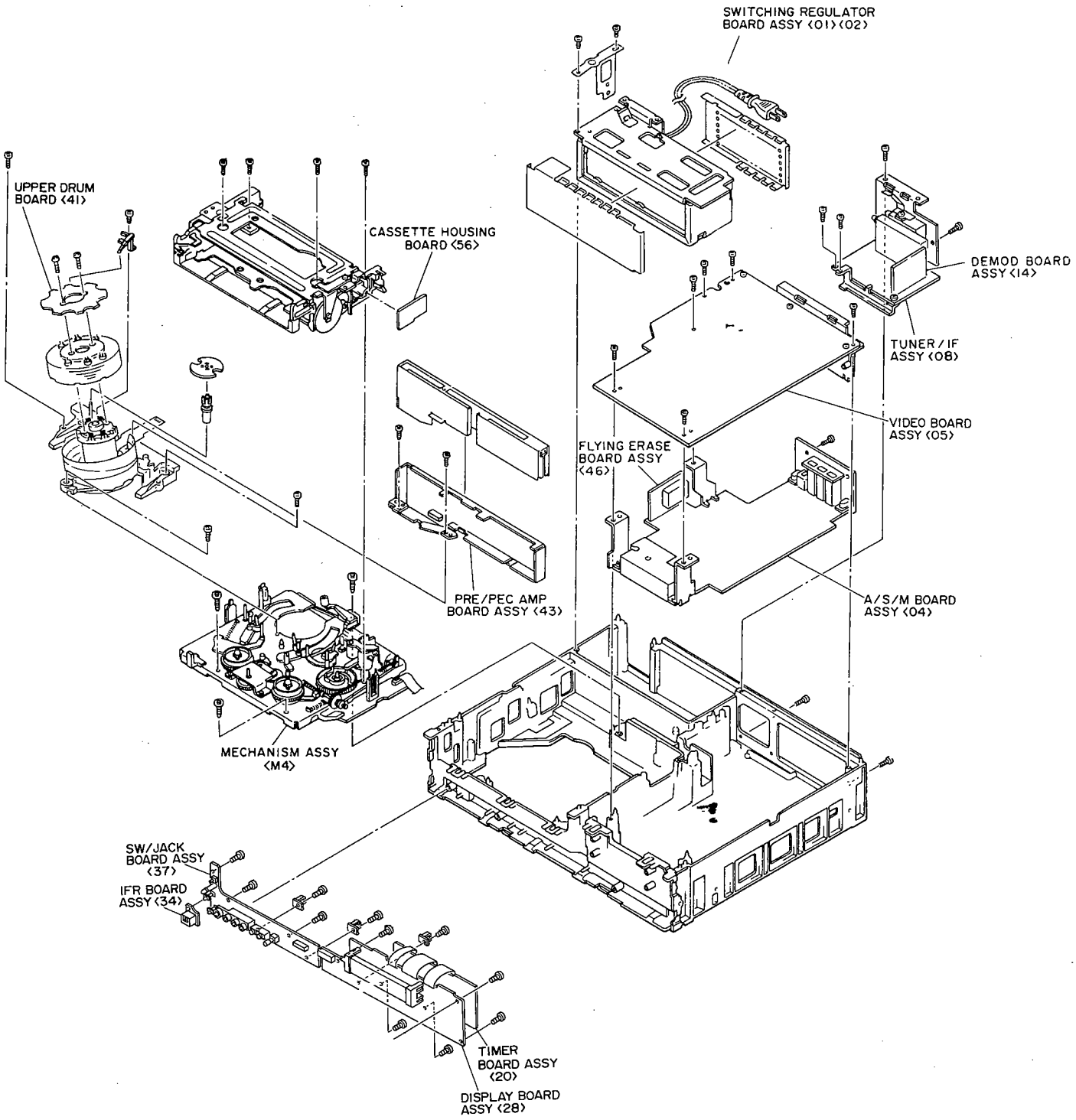
2.9 DEMODULATOR CIRCUIT

Note: ***Unless otherwise specified, all measurement points and adjustment parts are located on the 1 4 DEMODLATOR board.***

No.	Item	Mode	Signal & Setting	Measurement point	Adjustment parts	Adjustment Procedure
1	STEREO VCO	• EE	• Tuner no signal	• IC201 pin36	• R204 (STEREO VCO)	1) Connect the 100KΩ resistor between pin 10 of IC201 and pin 12 of IC201. 2) Connect a frequency counter to IC201 pin 36. 3) Adjust R204 for 15.73 KHz.
2	LOW PASS FILTER	• EE	• Tuner no signal	• IC201 pin 17	• R201 (FILTER)	1) Connect an oscilloscope to pin 17 of IC201. 2) Adjust R201 for minimum waveform.
3	STEREO SEPARATION	• EE	• Tuner (96 dBμ, 1 kHz)	• IC201 pin 28	• R202 (SEPA-1) • R203 (SEPA-2)	1) Use a sweeper probe as shown in Fig. 2-8-1. 2) Supply 300 Hz L-only modulated IF signal to IF terminal of U/V tuner (front end). 3) Connect an oscilloscope to pin 28 of IC201. 4) Adjust R202 for minimum output level. 5) Supply 5 kHz L-only modulated IF signal to IF terminal of U/V tuner (front end). 6) Connect an oscilloscope to pin 28 of IC201. 7) Adjust R203 for minimum output level.

SECTION 3
CHARTS AND DIAGRAMS

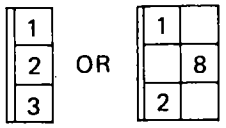
3.1 CIRCUIT BOARD LOCATION



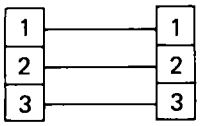
3.2 GENERAL INFOMATION

3.2.1 Connections

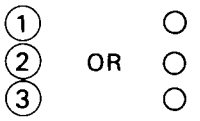
Note:
Unless otherwise specified, only signal input flow is indicated.
Connection arrows indicate only signal outputs.



: Connectors



: Board in connectors



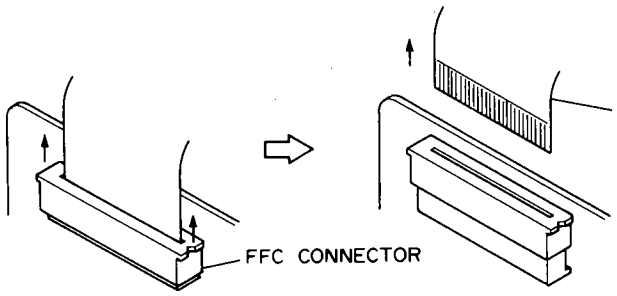
: Direct connections

: Connected pattern in the board.
Abbreviations
V : Video M : Mechacon
S : Servo A : Audio

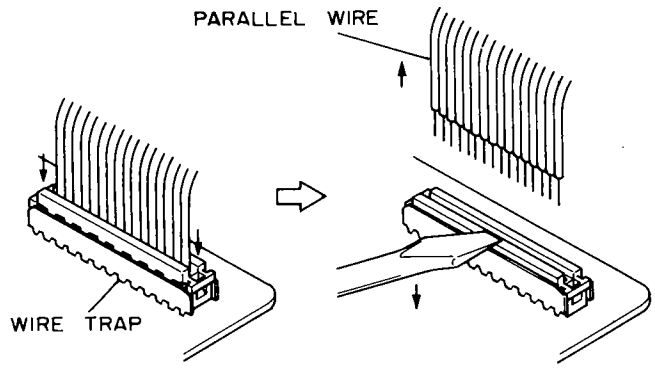
VS : Signal flow from video to servo.

3.2.2 Disconnecting the flatwire

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

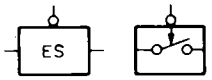


2. Depress the connector structure downward to release the clamp when removing or inserting the flat wire cable, as indicated below.



3.2.3 Indications

AUX : Active only at high.
$\overline{AUX}$: Active only at low.
$A\overline{U}X$: Active only at middle.
$A\overline{UX}$: Active only at open.



: Active only at low for electronic switch.

: Active only at high for electronic switch.


: Low pass filter.


: High pass filter.


: Band pass filter.


: Limiter.


: Detector


: Amplifier.


: Mixer stage.

3.2.4 Schematic diagram values

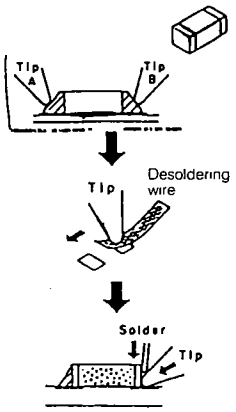
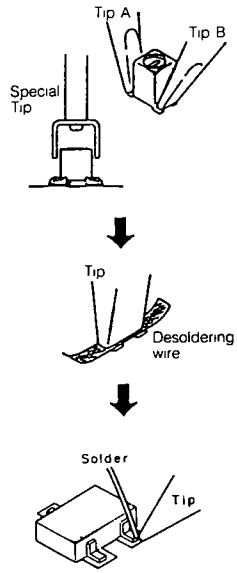
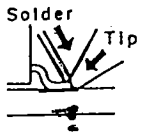
Unless otherwise specified.
1. All resistance values are in ohms, 1/6 W or 1/8 W (refer to parts list).
2. All capacitance values are in μF, (P; PF).
3. All inductance values are in μH, (m; mH).
4. All diodes are 1SS133 or MA165, (refer to parts list).
5. Voltages are DC-measured (reference to ground) with a digital voltmeter during recording (SP mode) and playback (SP mode) with alignment tape. Where voltages differ between recording and playback, the voltage during playback is shown in parenthesis.
6. Waveforms (VIDEO System) are measured (reference to ground) with a color bar during recording (SP mode) and playback (SP mode) with alignment tape.
7. Waveforms (AUDIO System) are measured (reference to ground) with 1 kHz (−8 dBs) during recording and playback with alignment tape (1 kHz).
8. Shaded (▒▒) parts are critical for safety. Replace only with specified part numbers.

3.2.5 Signal flow in the schematic

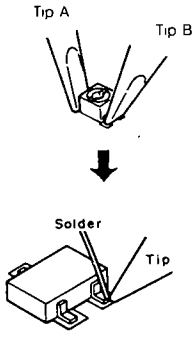
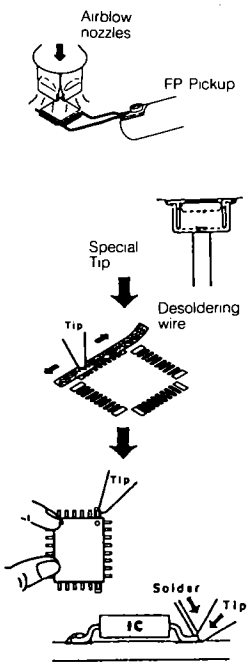
Recording signal path
Playback signal path
REC/PB signal path

3.2.6 Basic knowledge of SMC* parts replacement

Note: *For details, refer to "VIDEO SERVICE GUIDE" (VTS81001).*

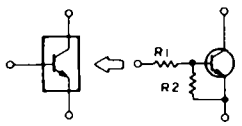
Products	Appearance	Replacement technology	Removal method	Installation method	Soldering tip types	Cautions
Thick Film Chip Resistors Carbon Film Chip Resitors Metal Film Chip Resistors Chip Ceramic Capacitors Chip Triming Resistors			• **Use 2 soldering irons** 1. Use thin tip soldering irons. 2. Use soldering tip temperature of about 280°C. 3. Simultaneously heat both ends of the part. 4. While heating, grasp the part with the tips of the soldering irons and remove it. 5. Use desoldering wire to completely remove the old solder from the part location of the board. 6. A clean pattern for installing the new part is very important.	1. Clean the area where the new part is to be moundted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Bring the soldering iron tip close to the part contact without actually touching it. Melt thin (0.3 mm) solder between the tip and part so that it flows into the part contact. 5. Check work quality with a magnifier.	Thin tip type  Small flat-blade tip type 	Some parts can be damaged by sudden heating. Preheat the part at about 100°C for several minutes before installing it. Do not touch the part body with the soldering iron. The thin (0.3 mm) solder for miniature parts does not contain adequate flux. Supplementary flux is thus needed in most cases. Set the position carefully and secure the part. A defective trimming resistor cannot be adjusted externally. Replace with an ordinary variable resistor.
Chip Inductors Chip Resistor Networks Chip Tantalum Capacitors Chip Tantalum Electrolytic Capacitors Chip Aluminum Electrolytic Capacitors Chip Transformers Chip Filters			• **Special desoldering iron** 1. Select soldering tip according to part size. 2. Bring the tip into contact with the soldered points. 3. When the solder melts, remove the part. 4. Remove the old solder with desoldering wire. • **2 soldering irons** 1. Use small flat-blade tips. 2. Heat both ends of the part simultaneously. 3. When the solder melts, grasp and remove the part with the soldering iron tips. 4. Remove the old solder with desoldering wire.	1. Clean the area where the new part is to be mounted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.  5. Check work quality with a magnifier.	Special Soldering tip  Small flat-blade tip type  Thin tip type 	Use care not to damage plastic components when soldering. Position the part carefully. This will also affect the soldering operation. Use care regarding soldering iron tip and avoid rapidly heating parts. For larger parts, use a slightly higher temperature (about 300°C). Check after installing (cold solder joints, etc.). Use care not to damage the circuit pattern, especially when removing.

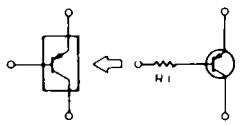
* SMC: Surface Mounted Component

Products	Appear-ance	Replacement technology	Removal method	Installation method	Soldering tip types	Cautions
Chip VRs Chip Trimmer Capacitors Diodes Transistors			• **2 soldering irons** 1. Use small flat-blade tips. 2. Heat the leads of the part simultaneously. 3. When the solder melts, grasp and remove the part with the soldering iron tips. 4. Remove the old solder with desoldering wire.	1. Clean the area where the new part is to be moundted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.	Thin tip type.  Small flat-blade tip type 	Use care not to damage the part when soldering. Check for solder joints, expecially miniature parts with small leads.
IC (SOP) (Small Outline Package) IC (SSOP) (Shrink Small Outline Package) IC (VSOP) (Very Small Outline Package) IC (QFP) (Quad Flat Package) IC (VQFP) (Very Small Quad Flat Package) IC (PLCC) (Plastic Leaded Chip Carrier) IC (TSOP) (Thin Small Outline Package)			• **Special desoldering iron** 1. Select the tip according to the size and shape of the IC. 2. "Tin" the tip with a small amount of solder. 3. Set the tip squarely over the IC leads. 4. When the solder melts, carefully twist the iron. 5. Raise and remove the IC. • **Shaped airblower unit** 1. Select the correct nozzle. 2. Select the temperature and airblow (suggested: temp. 7, airblow 4). 3. Engage the IC removing tool. 4. Use the airblow to preheat the IC for about 5 seconds, then heat with the nozzle until the IC remover lifts the part from the board.	1. Use desoldering wire to remove the previous solder. 2. Clean the location with alcohol. 3. Apply flux. 4. Position the IC and solder two pins at opposite sides. 5. Use a sharp tipped soldering iron and carefully solder each pin. (After gaining experience, a thicker tip can be used for better work efficiency.) 6. Remove any solder bridges with desoldering wire. 7. Inspect the work with a magnifier.	Special soldering tips.  Airblow nozzles 	Do not reuse removed parts. Use care to avoid solder bridges. Remove any that occurs. Remove the old IC carefully so as not to damage the circuit pattern. Because of the many pins, cleanliness of the pattern is extremely important after removing the IC. Be very precise in positioning the IC. Soldering opposite pins first holds the IC in place and makes soldering the other pins easier. It is important to inspect the work with a magnifier. ICs (especially TSOP) are easily damaged by heat. Do not touch directly with the soldering iron.

3.2.7 Semiconductors

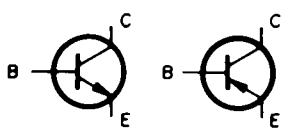
1. Digital transistor

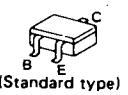




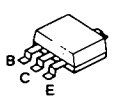
DTA114T
T mark only

2. Chip transistor



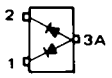


(Standard type)

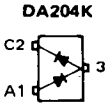


3. Chip diode

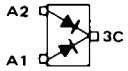
DAN202U
MA151WA
MA141WA



DA204K



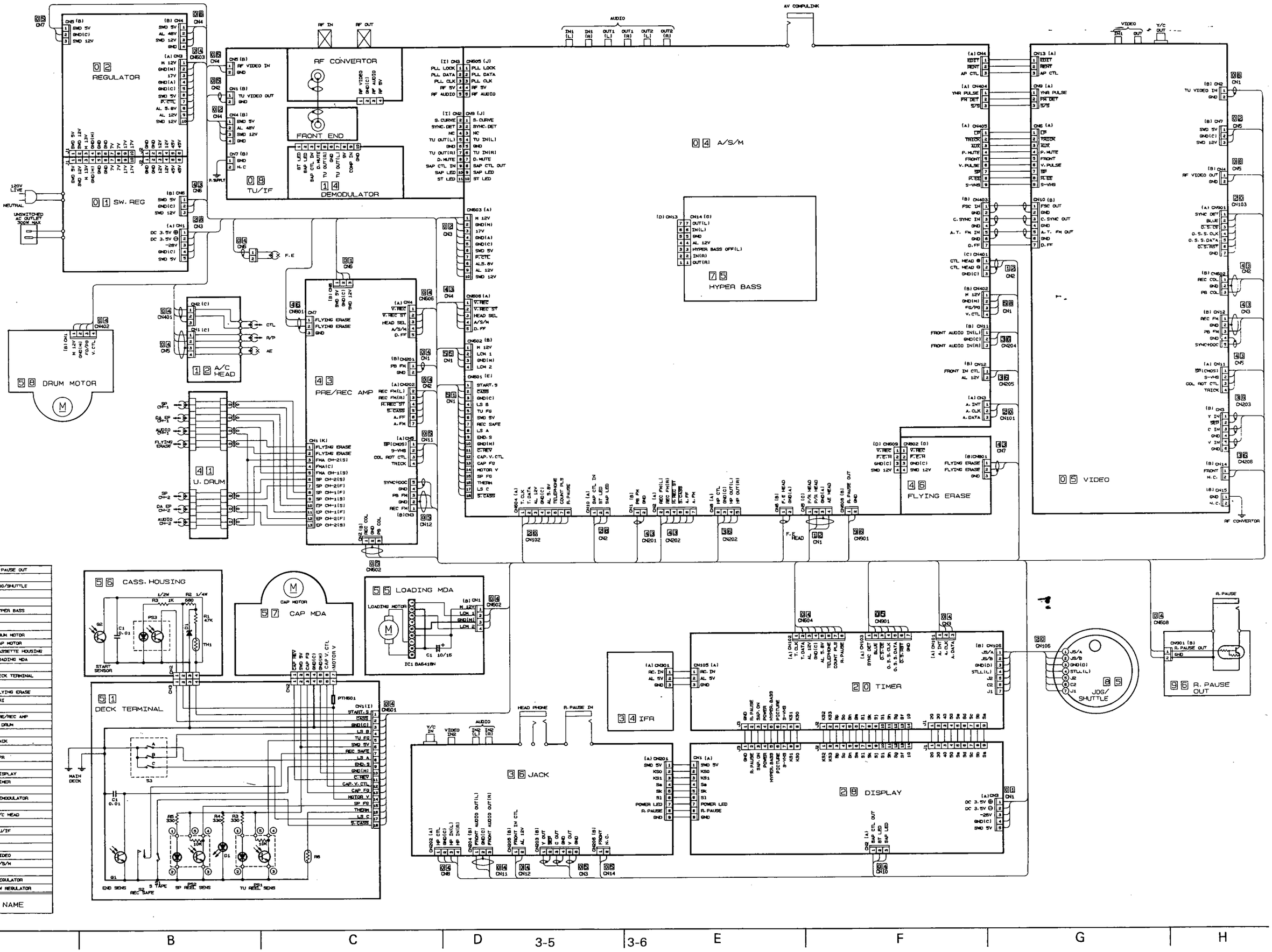
MA141WK
MA151WK
DAN202K



Note: The digital transistor includes built in resistors. It features small size and high reliability. Both PNP and NPN types are available.

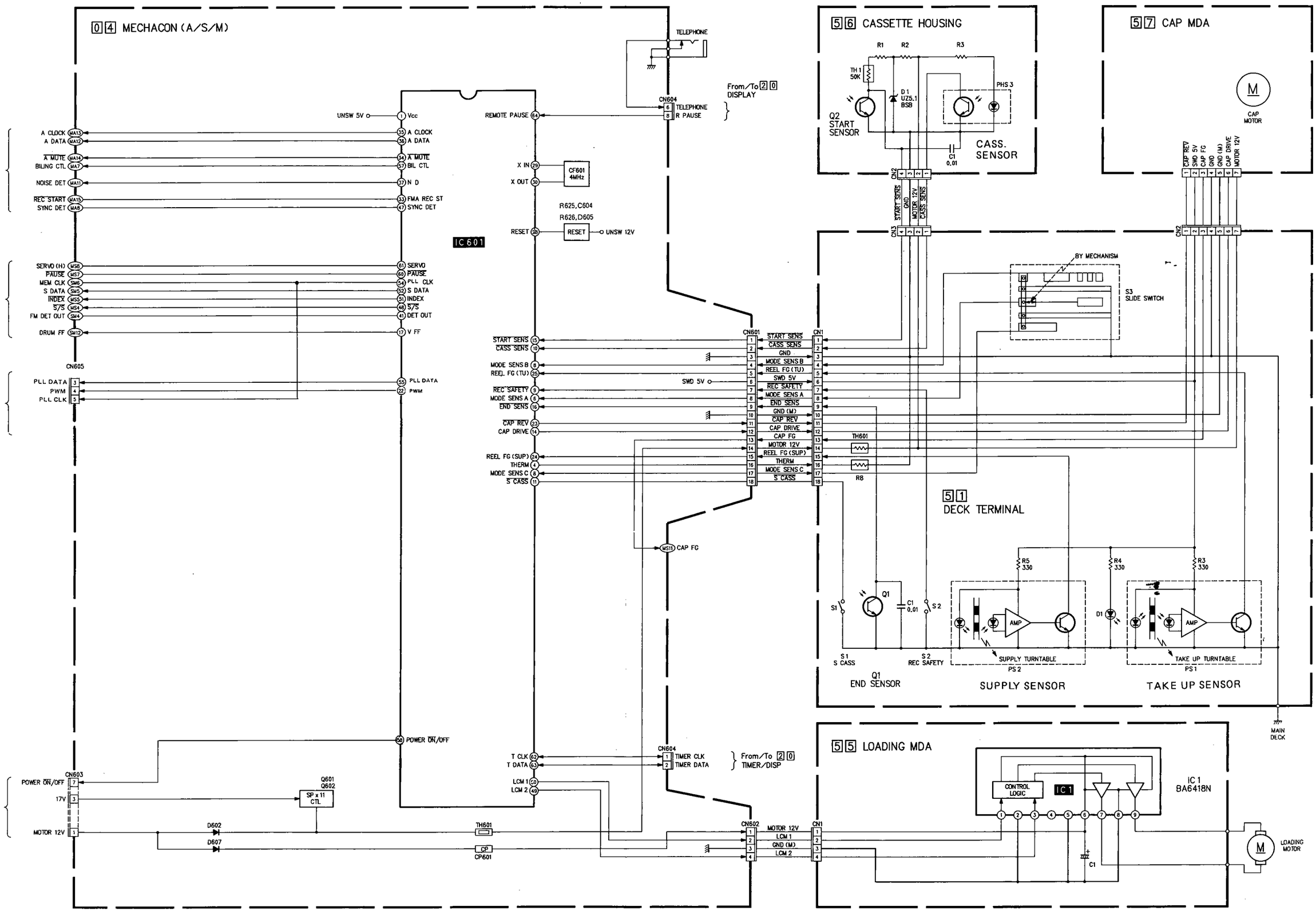
Uses: Inverter, interface, driver circuits.

3.3 BOARD INTERCONNECTIONS



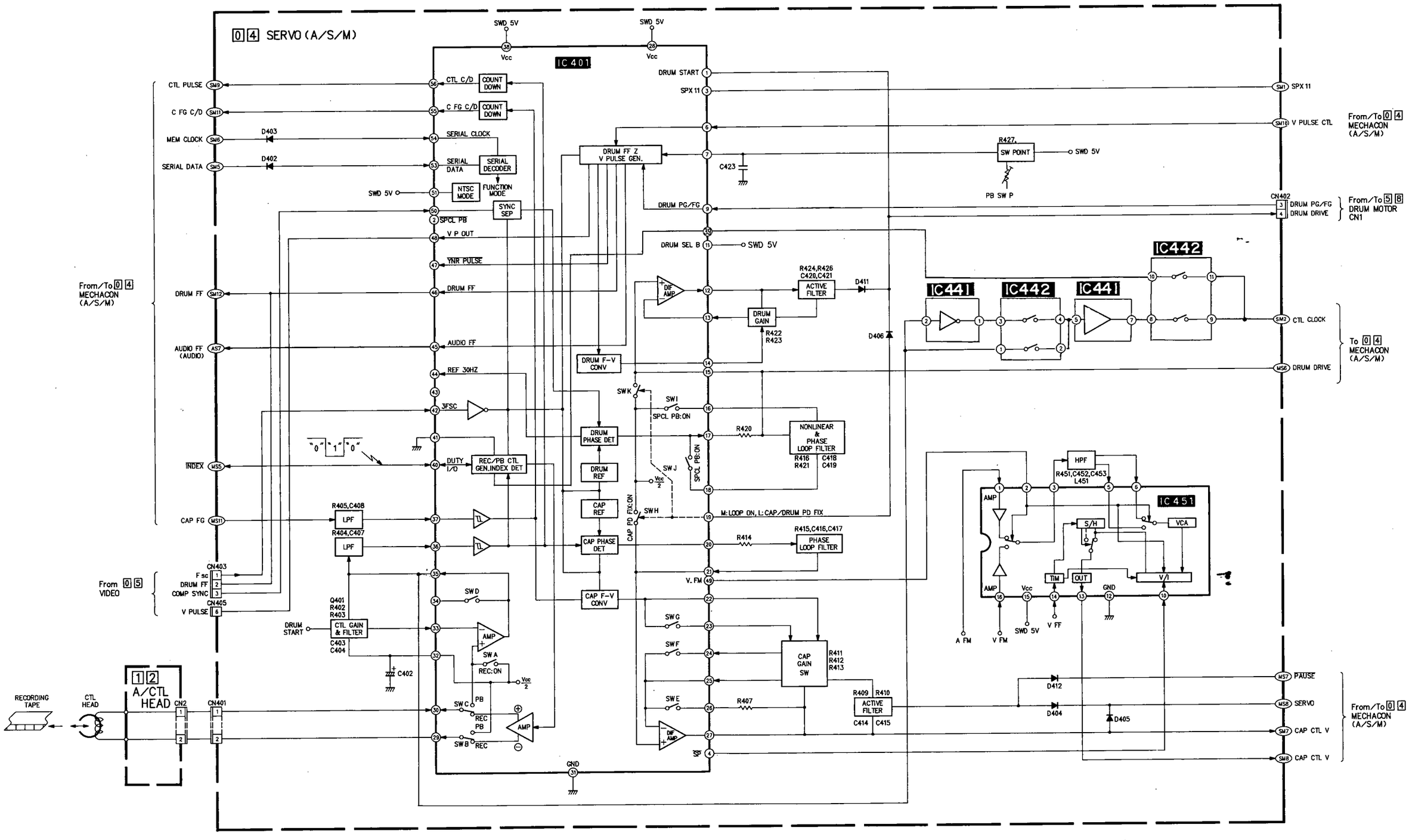
NO	NAME
96	R. PAUSE OUT
85	JOG/SHUTTLE
75	HYPER BASS
58	DRUM MOTOR
57	CAP MOTOR
56	CASSETTE HOUSING
55	LOADING MDA
51	DECK TERMINAL
46	FLYING ERASE
44	CRI
43	PRE/REC AMP
41	U. DRUM
36	JACK
34	IFR
28	DISPLAY
20	TIMER
14	DEMODULATOR
12	A/C HEAD
08	TU/IF
05	VIDEO
04	A/S/M
02	REGULATOR
01	SW REGULATOR

.4 MECHANISM CONTROL BLOCK DIAGRAM

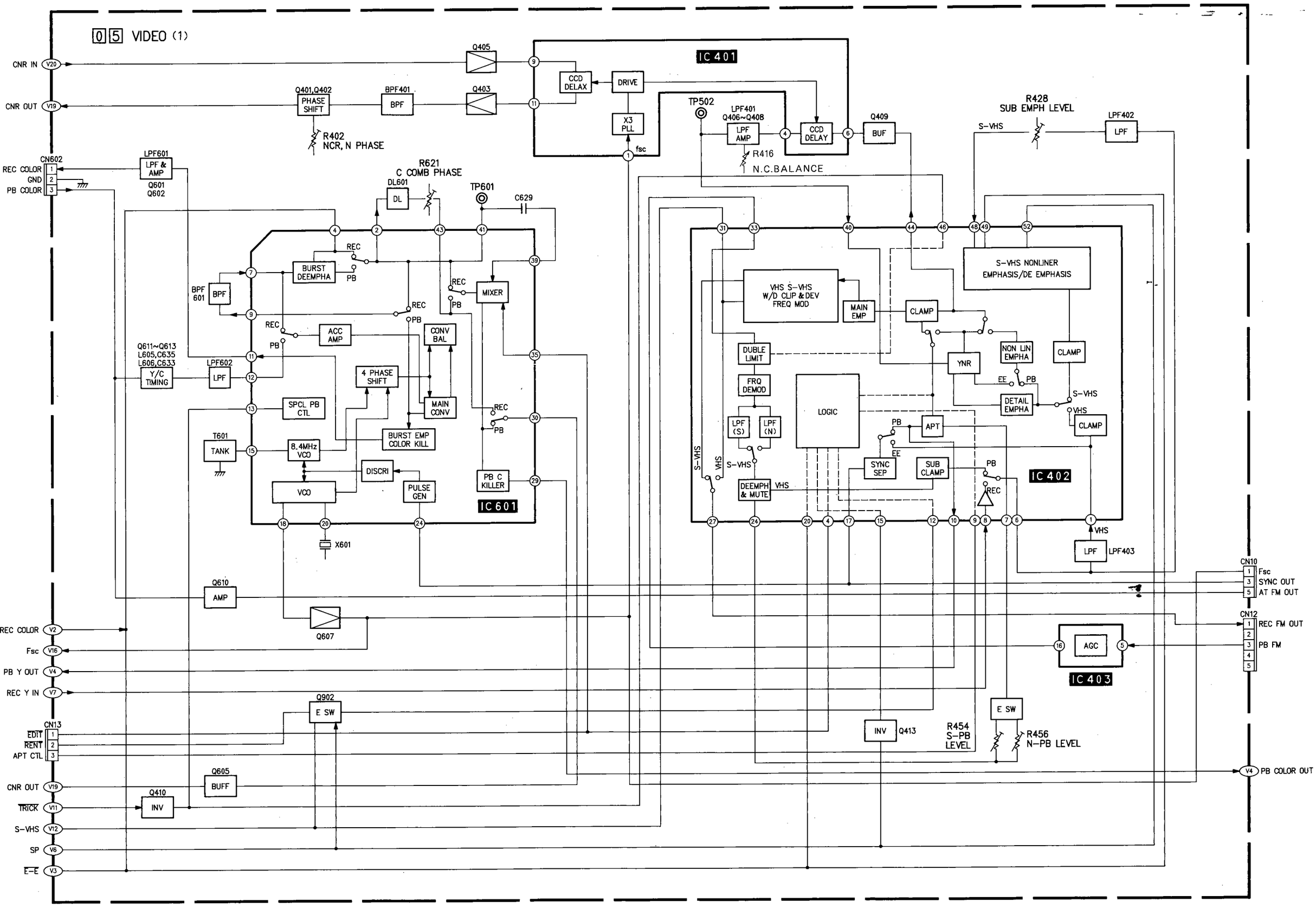


A B C D E F G H

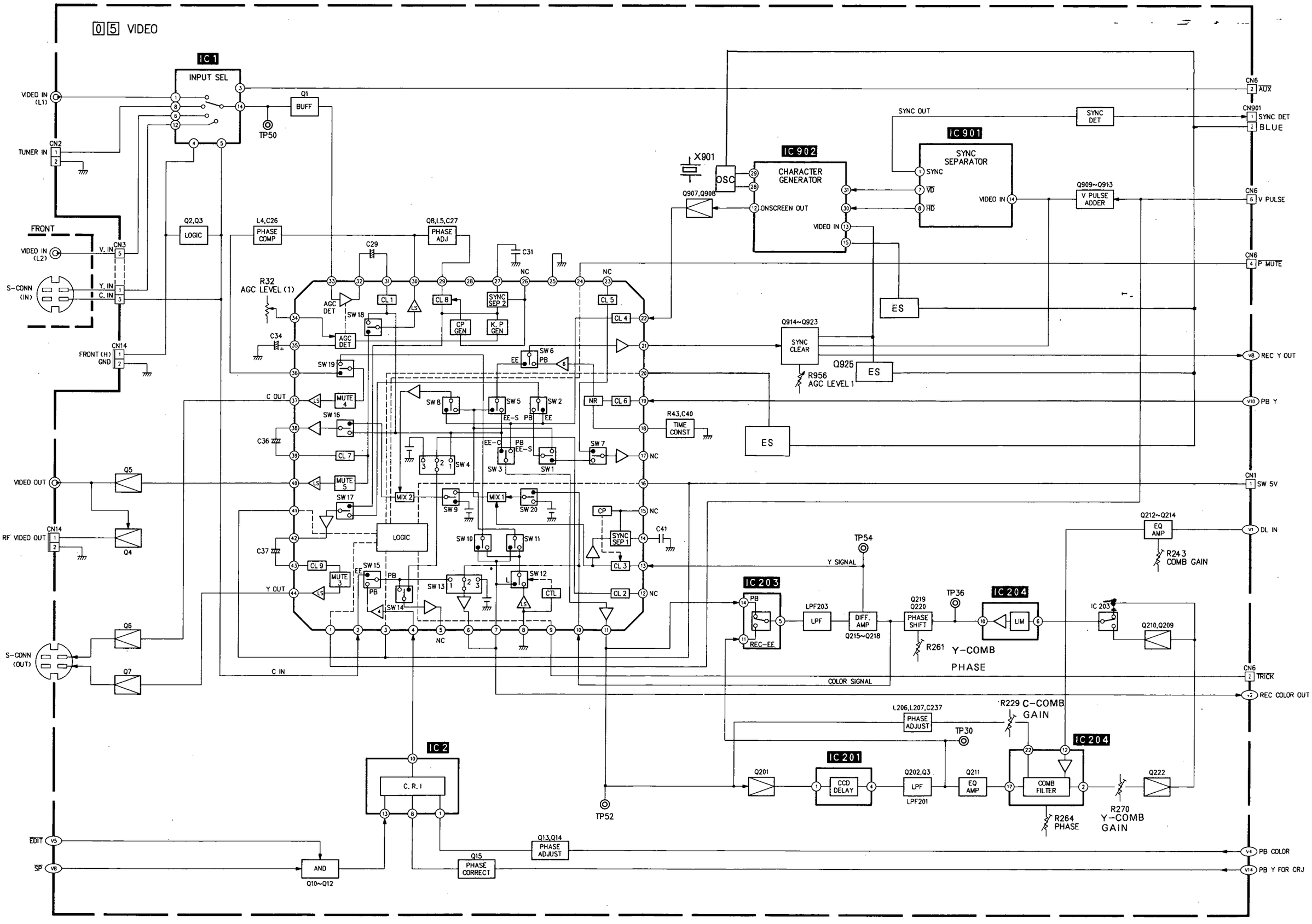
3.5 SERVO BLOCK DIAGRAM



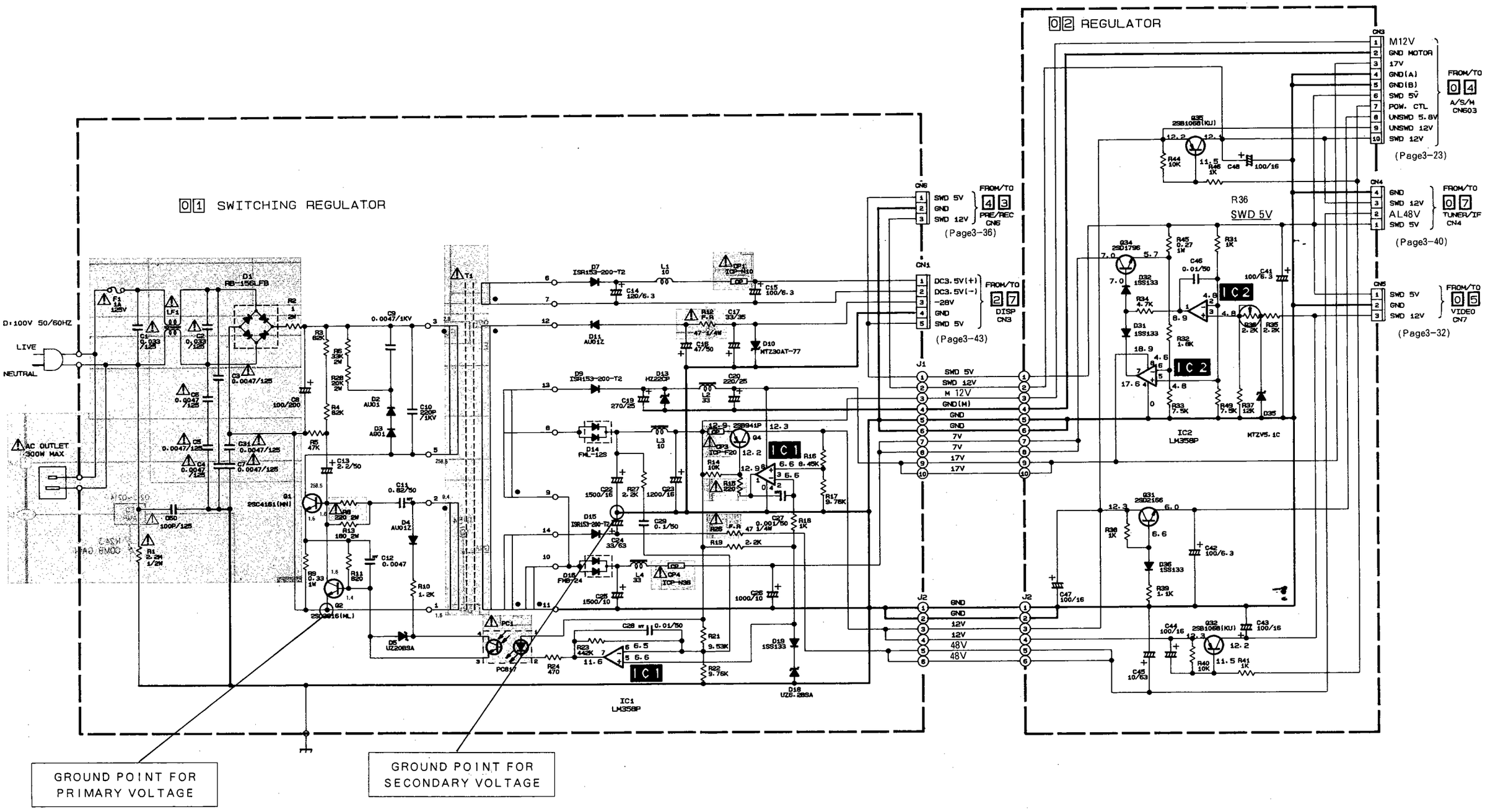
.6 VIDEO (1) BLOCK DIAGRAM



3.7 VIDEO (2) BLOCK DIAGRAM

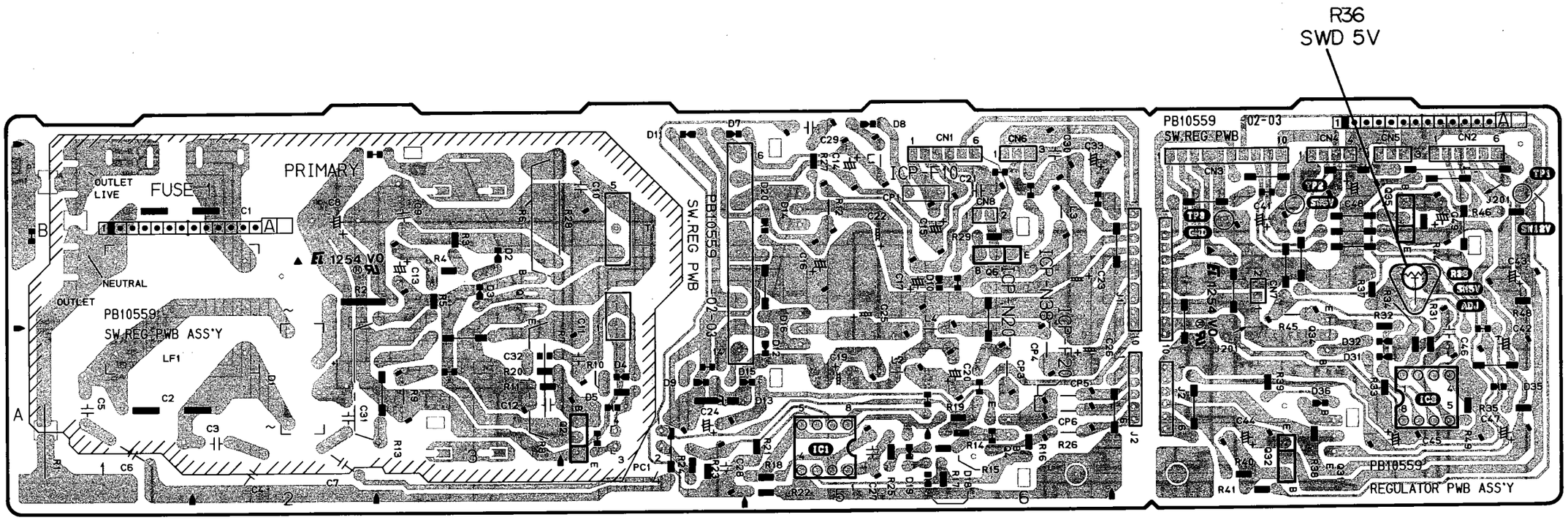


8 SWITCHING REGULATOR SCHEMATIC DIAGRAM

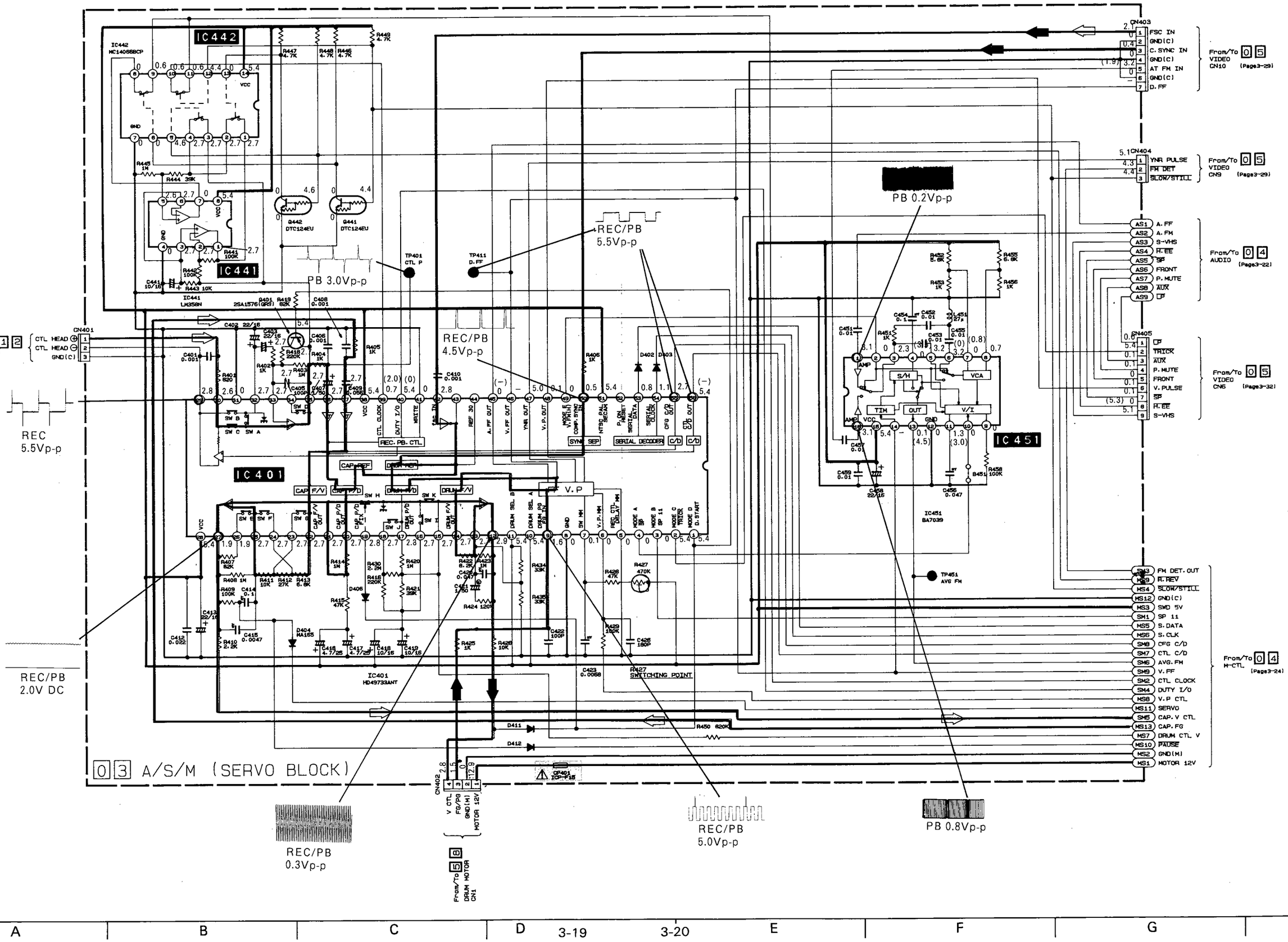


A	B	C	D	3-15	3-16	E	F	G	H

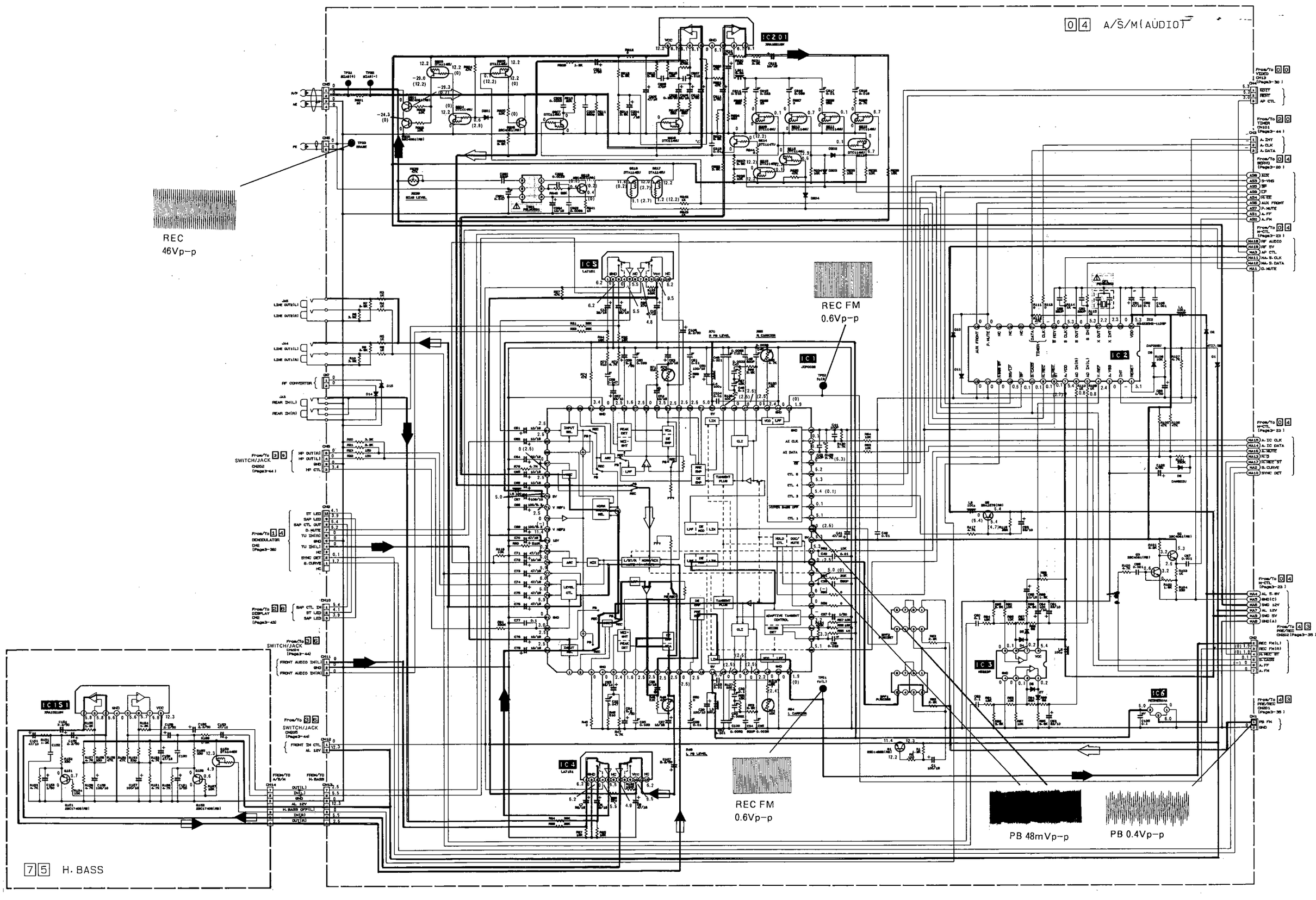
3.9 SWITCHING REGULATOR CIRCUIT BOARD



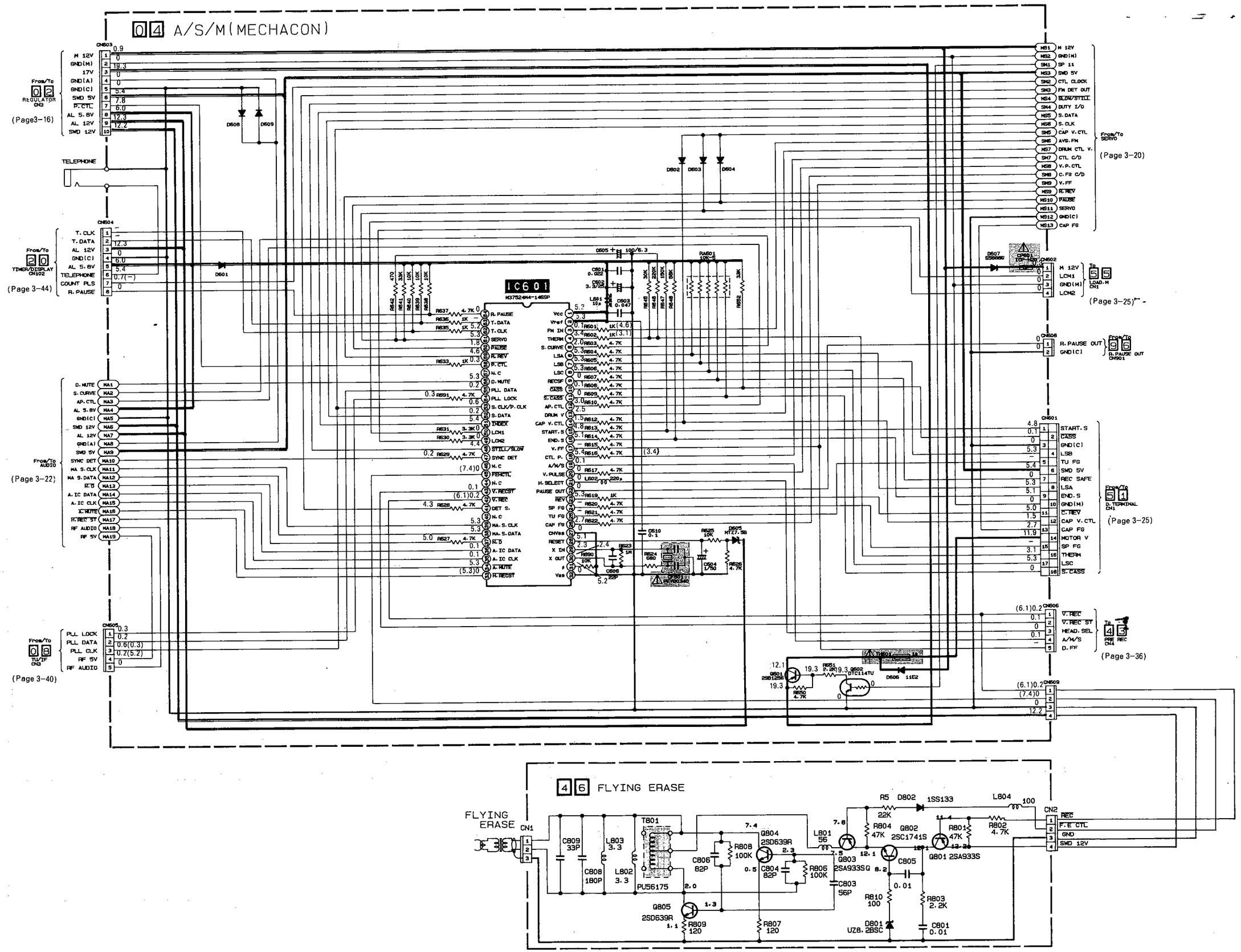
.10 SERVO SCHEMATIC DIAGRAM



3.11 AUDIO AND HYPER BASS SCHEMATIC DIAGRAMS

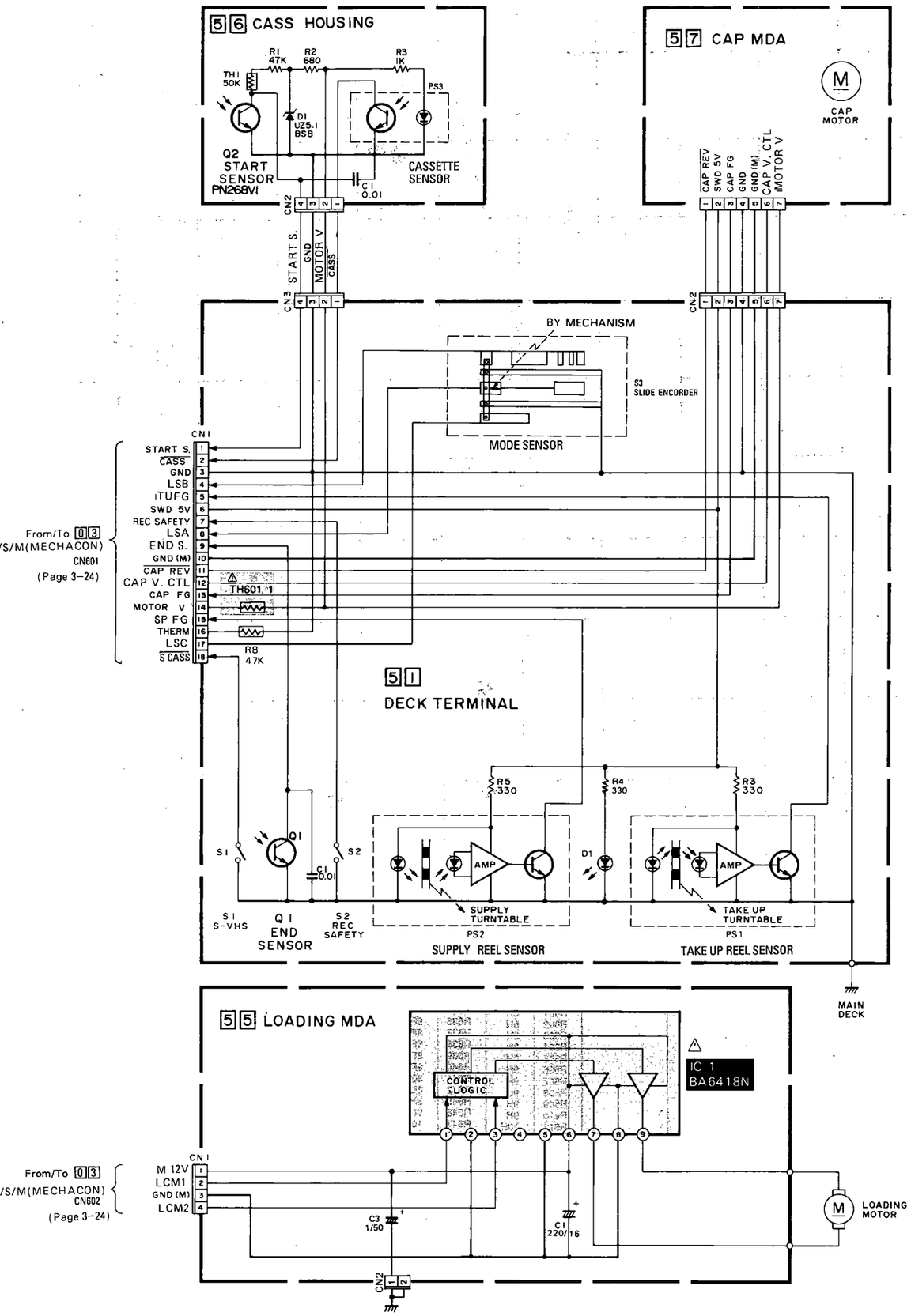


.12 MECHANISM CONTROL AND FLYING ERASE SCHEMATIC DIAGRAMS

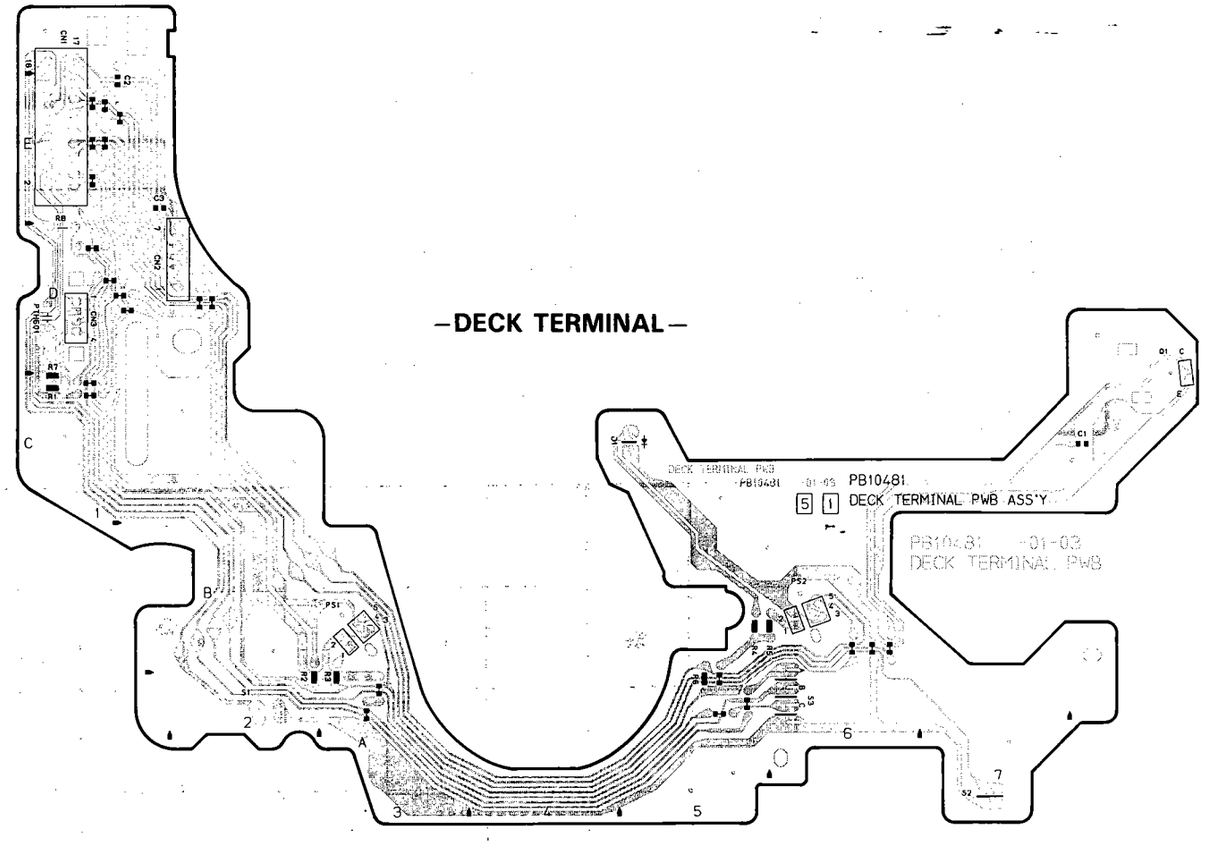


A	B	C	D	3-23	3-24	E	F	G	H

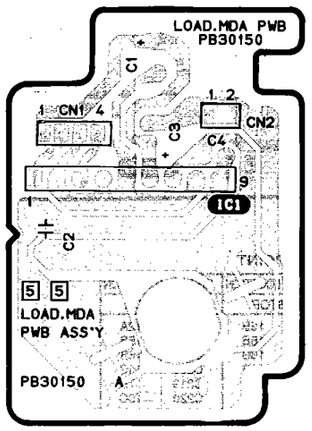
3.13 DECK TERMINAL, LOADING MDA CAPSTAN MDA, AND CASS HOUSING SCHEMATIC DIAGRAMS



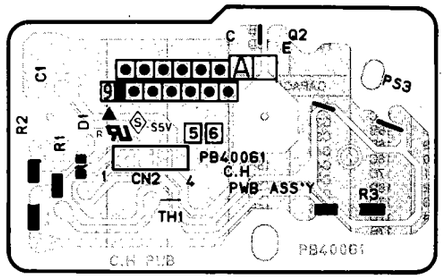
3.14 DECK TERMINAL, LOADING MDA, CASS HOUSING AND A/CTL HEAD CIRCUIT BOARDS



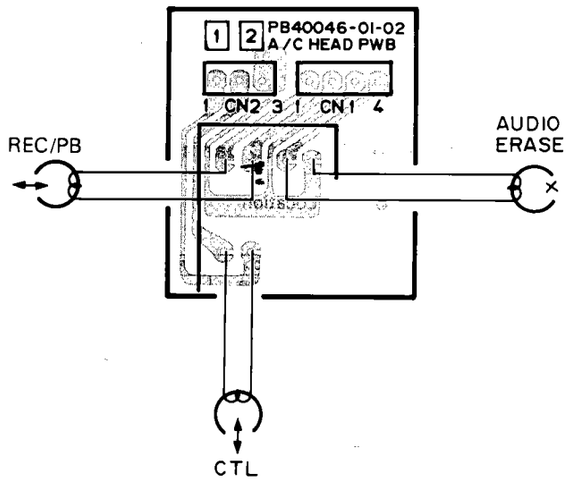
– LOADING MDA –



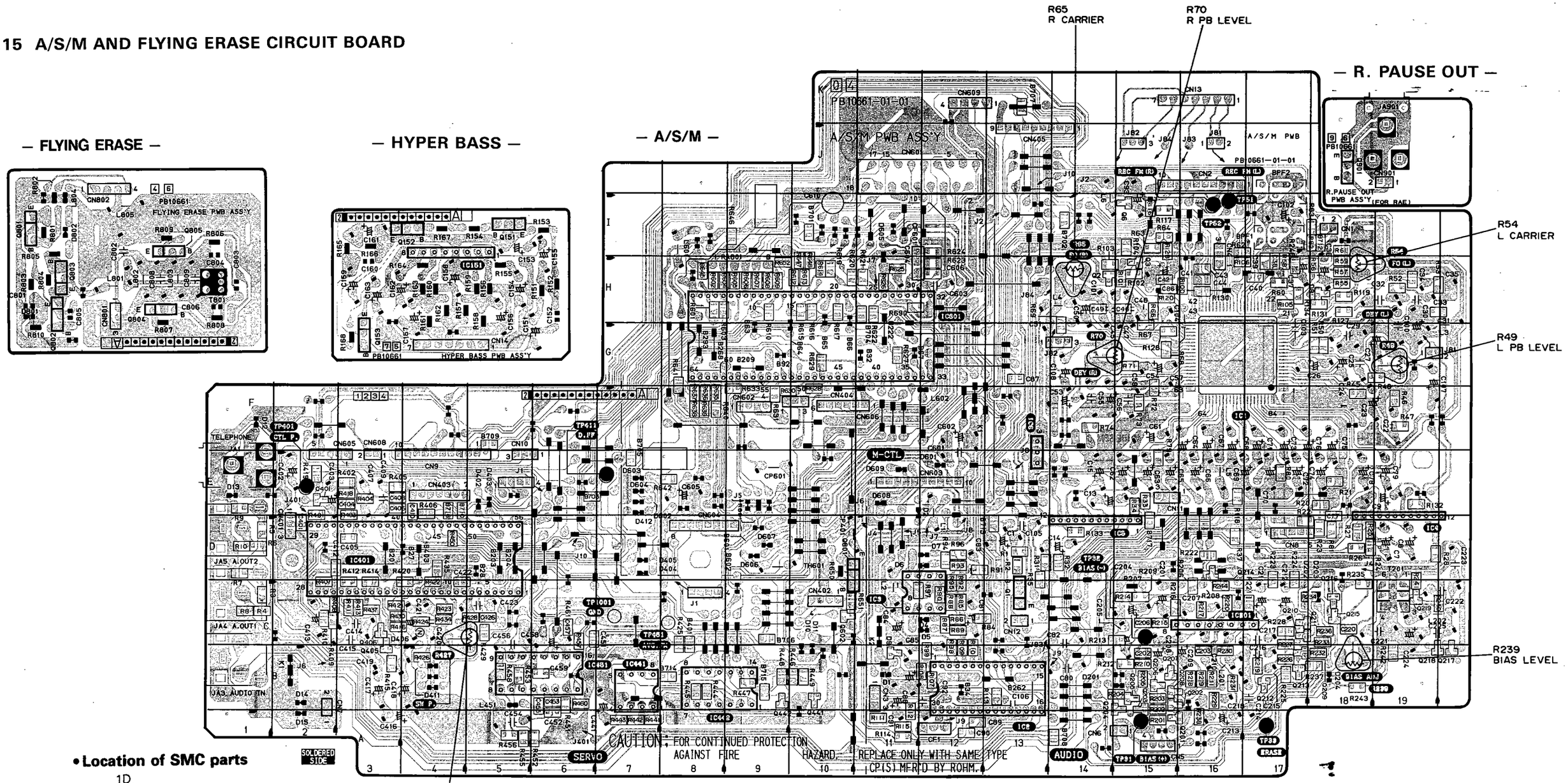
– CASSETTE HOUSING –



–A/CTL HEAD–



3.15 A/S/M AND FLYING ERASE CIRCUIT BOARD



• **Location of SMC parts**

1D
└ Location

AUDIO SECTION

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR	
Q2	14H	R1	13D	R53	19H	R93	12D	R130	16H	R229	16B	C90	12A
Q3	15H	R2	13D	R55	18H	R94	12D	R131	18H	R230	16B	C202	15B
Q6	15I	R3	1C	R56	18H	R95	12D	R132	19E	R231	16B	C203	16B
Q201	15A	R4	1C	R57	18H	R96	12D	R133	14D	R232	18B	C206	15C
Q202	15B	R5	1D	R58	17I	R97	12C	R134	17H	R233	18C	C219	17B
Q203	15B	R6	1D	R60	17H	R98	12C	R201	15A	R234	18C	C220	18C
Q204	15B	R7	1D	R61	18I	R99	12B	R202	15B	R235	18D		
Q205	15B	R8	1C	R62	16H	R100	16H	R203	15B	R236	18C		
Q206	15B	R9	1E	R63	15I	R101	15H	R204	15B	R237	18B		
Q207	15B	R10	1D	R64	15I	R102	15H	R205	15B	R238	16A		
Q208	15B	R20	18E	R66	15H	R103	14H	R206	16C	R240	19C		
Q209	17B	R21	18E	R67	15G	R104	15I	R209	15C	R241	19D		
Q210	17C	R22	17D	R69	14H	R105	17H	R210	15B	R242	19B		
Q211	17C	R23	18D	R71	15G	R106	16H	R211	16B	R243	18B		
Q212	17B	R24	18D	R72	15F	R107	12B	R212	15B	R244	16D		
Q213	17B	R25	18D	R73	15F	R108	12B	R213	15C				
Q214	16D	R26	18D	R74	14D	R109	12C	R214	15C	CAPACITOR			
Q215	18C	R27	18D	R79	15E	R110	12C	R215	15C	C31	19H		
Q216	18C	R28	19D	R80	17E	R111	11A	R216	15C	C34	19H		
Q217	20B	R31	13D	R81	18D	R112	11A	R217	16C	C39	17I		
Q218	19B	R32	14D	R82	18I	R113	13B	R218	16B	C40	17H		
Q219	19C	R33	15E	R83	18I	R114	11A	R219	16B	C42	15H		
		R34	15E	R84	12C	R115	11A	R220	16C	C43	16H		
		R35	13D	R85	12C	R116	15I	R221	17C	C44	16H		
		R37	16D	R86	12C	R117	15I	R222	16D	C46	15H		
		R45	18F	R87	12C	R118	16D	R223	17D	C49	14H		
DIODE		R46	19F	R88	12C	R119	18H	R224	17D	C77	18E		
D8	18H	R47	19F	R89	12C	R120	15H	R225	17B	C86	15H		
D9	11B	R48	19G	R90	12C	R127	18H	R226	17B	C87	13G		
		R50	18G	R91	12D	R128	15G	R227	17C	C89	12A		
		R52	19H	R92	12D	R129	15I	R228	17C				

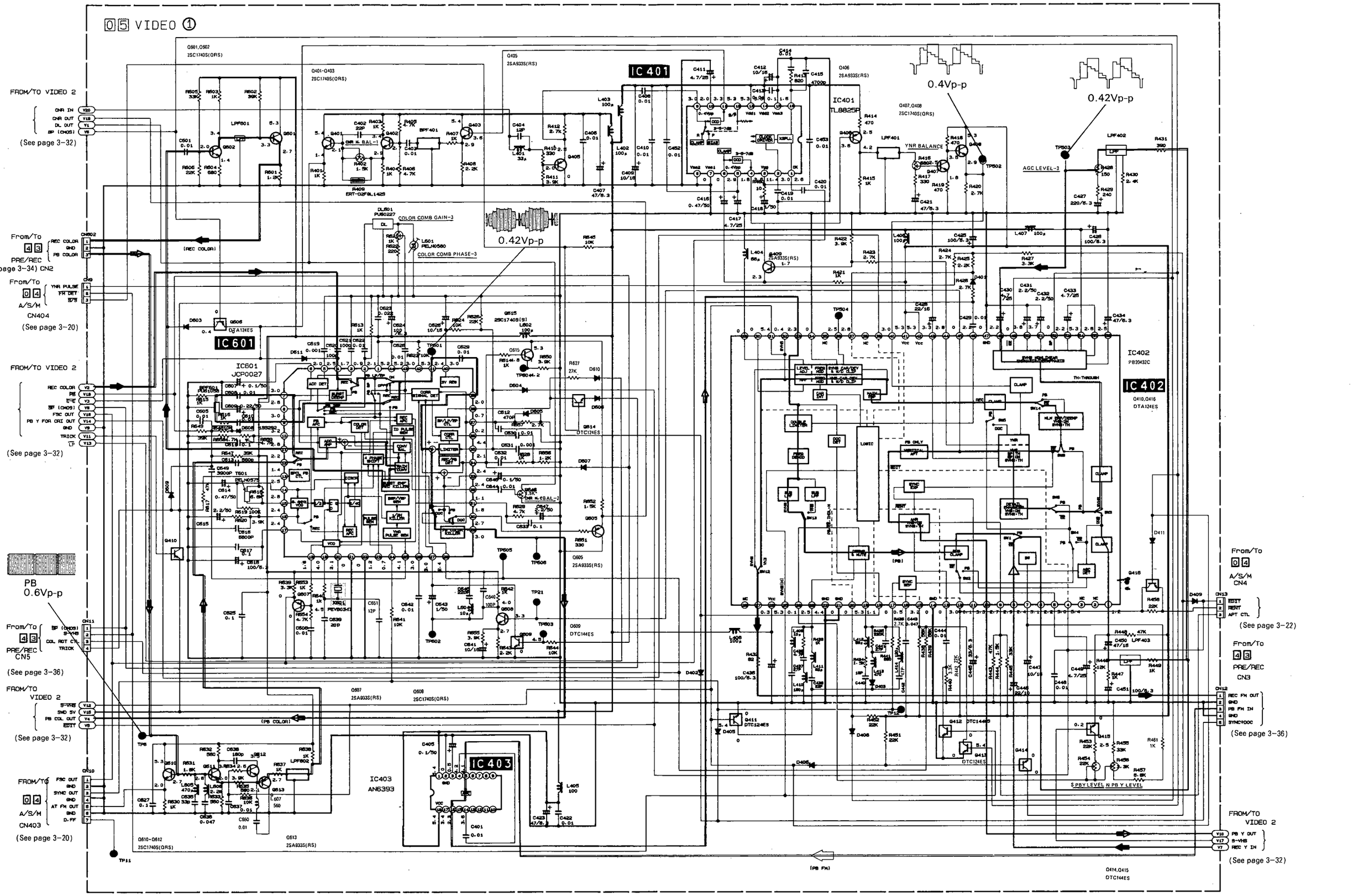
SERVO SECTION

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
TRANSISTOR		RESISTOR		CAPACITOR	
Q401	2E	R428	5C	C401	2D
Q441	10B	R429	5C	C405	3D
Q442	9B	R430	3C	C406	3E
		R434	4C	C408	3E
RESISTOR		R435	4D	C410	5E
R401	2E	R441	7A	C412	3D
R402	3E	R442	7A	C422	4D
R403	3E	R443	7A	C426	5C
R404	3E	R444	8B	C451	6C
R405	3E	R445	8B	C452	6A
R406	5E	R446	10B	C453	6B
R407	2C	R447	9B	C455	6B
R408	2C	R448	9B	C457	6C
R409	2C	R449	10B	C459	6B
R410	2C	R450	4D		
R411	3C	R451	6B		
R412	3D	R452	6A		
R413	3C	R453	5B		
R414	3D	R455	5A		
R415	3B	R456	5A		
R416	3C	R458	5B		
R418	3E				
R419	2E				
R420	4D				
R421	3C				
R422	4D				
R423	4C				
R424	4C				
R425	8C				
R426	4B				

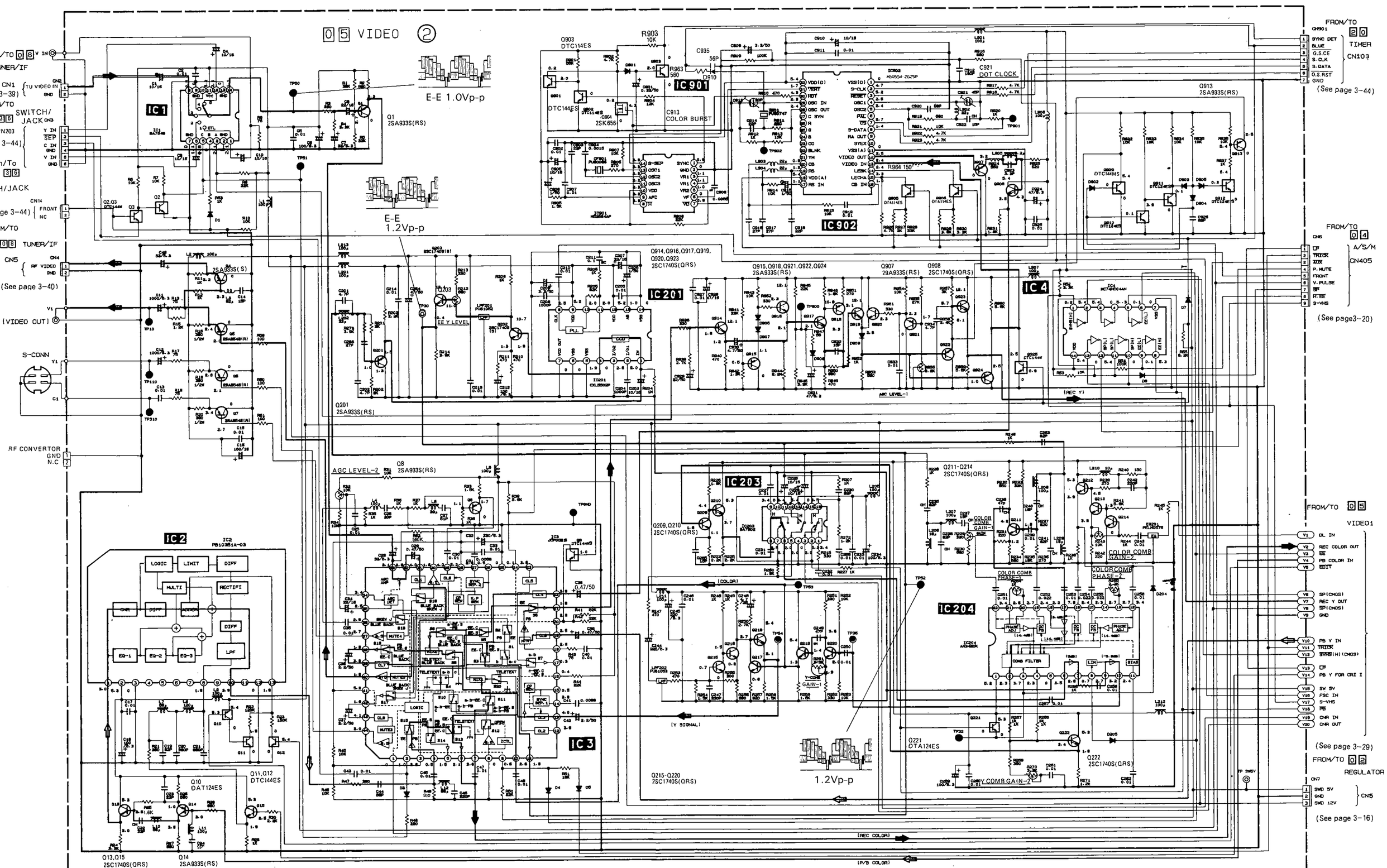
MECHACON SECTION

REF. No.	LOCATION	REF. No.	LOCATION
TRANSISTOR		RESISTOR	
Q602	10C	R629	10G
		R630	9F
RESISTOR		R631	9F
R601	8H	R633	9F
R602	8H	R635	8F
R603	8H	R636	8F
R604	8H	R637	8F
R605	9H	R638	8F
R606	9H	R639	8F
R607	9H	R640	8F
R608	9H	R641	8G
R609	9H	R642	8E
R610	9H	R645	8H
R612	10H	R646	9I
R613	10H	R647	10I
R614	10H	R648	10I
R615	10H	R651	10C
R616	10H	R652	9H
R617	10H	R690	11H
R619	10H		
R620	10H	CAPACITOR	
R621	11H	C606	12H
R622	11H		
R623	12H		
R624	12I		
R625	11H		
R626	11H		
R627	11G		
R628	10F		

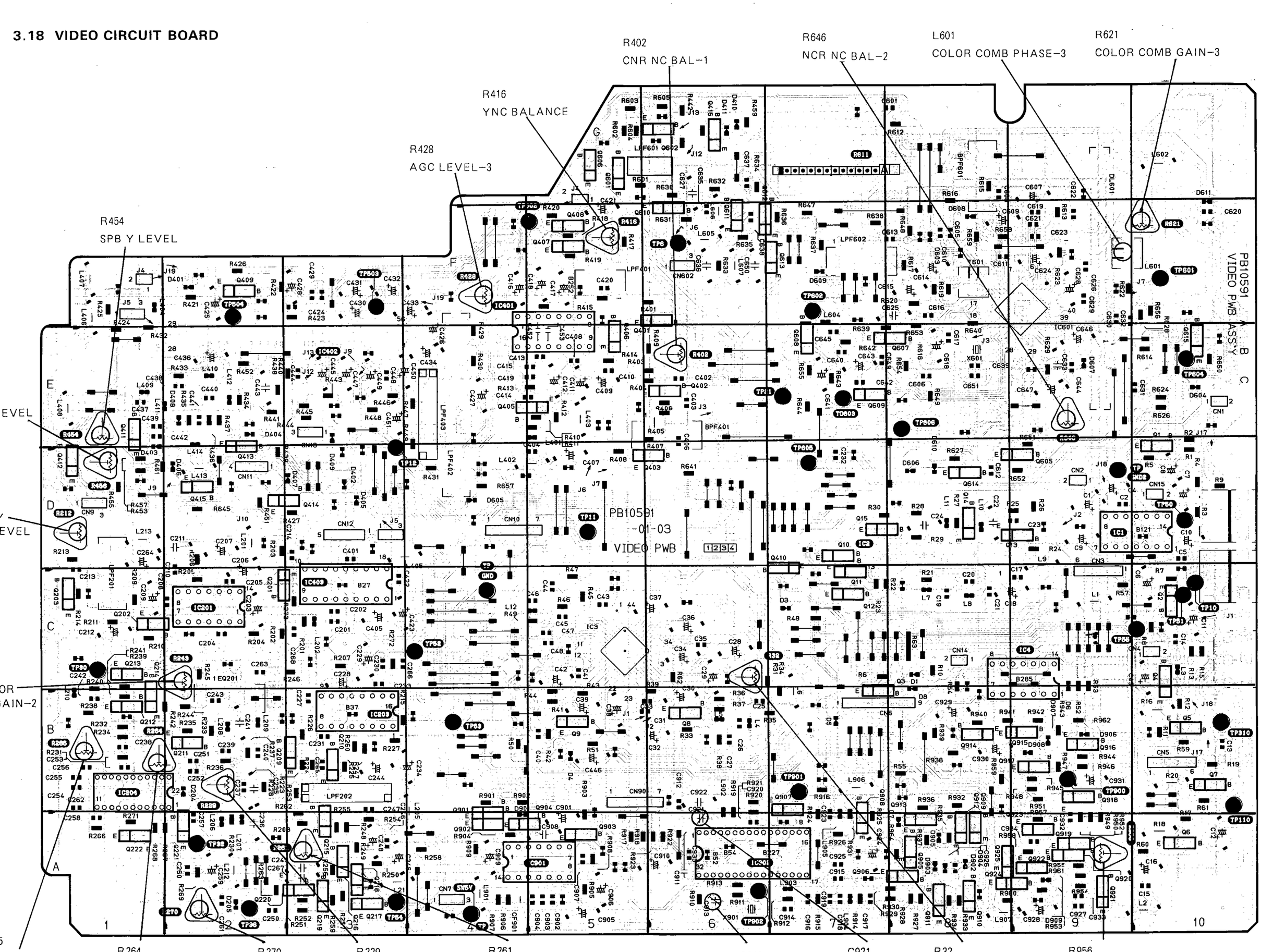
3.16 VIDEO (1) SCHEMATIC DIAGRAM



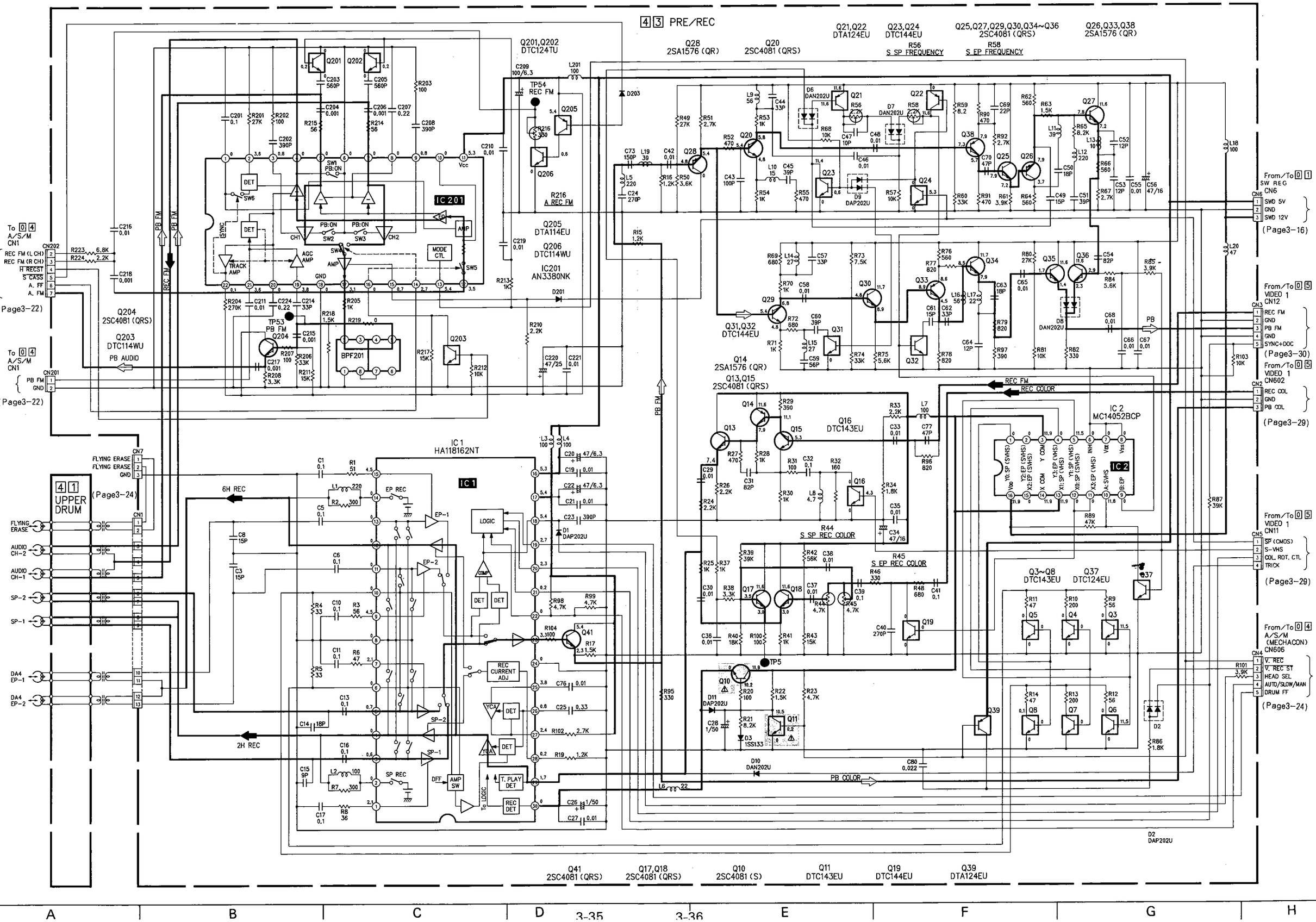
3.17 VIDEO(2) SCHEMATIC DIAGRAM



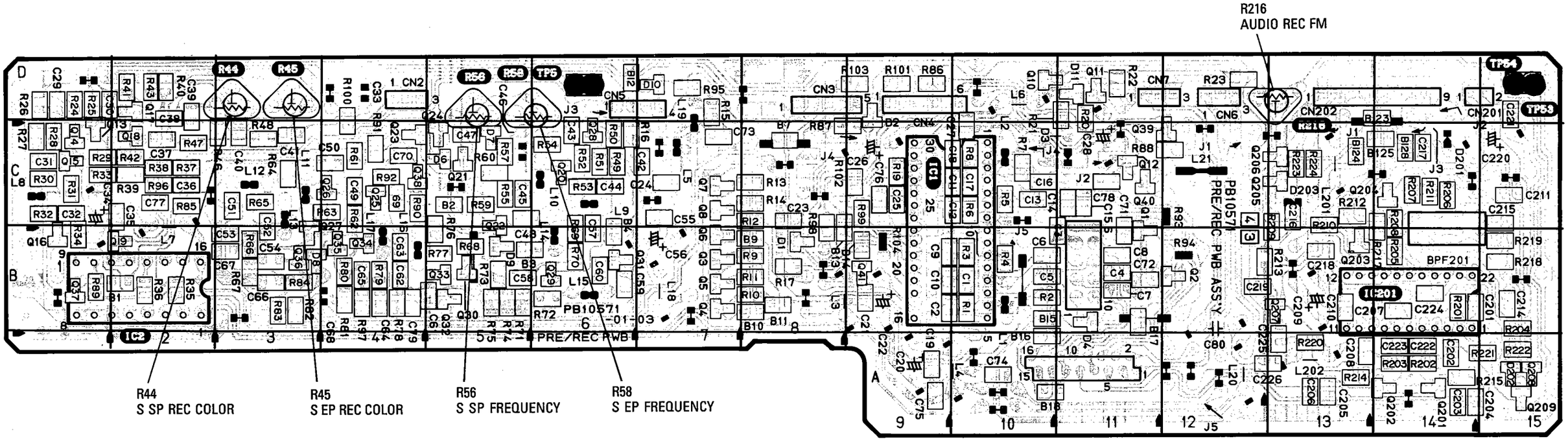
3.18 VIDEO CIRCUIT BOARD



.19 PRE/REC SCHEMATIC DIAGRM



3.20 PRE/REC CIRCUIT BOARD

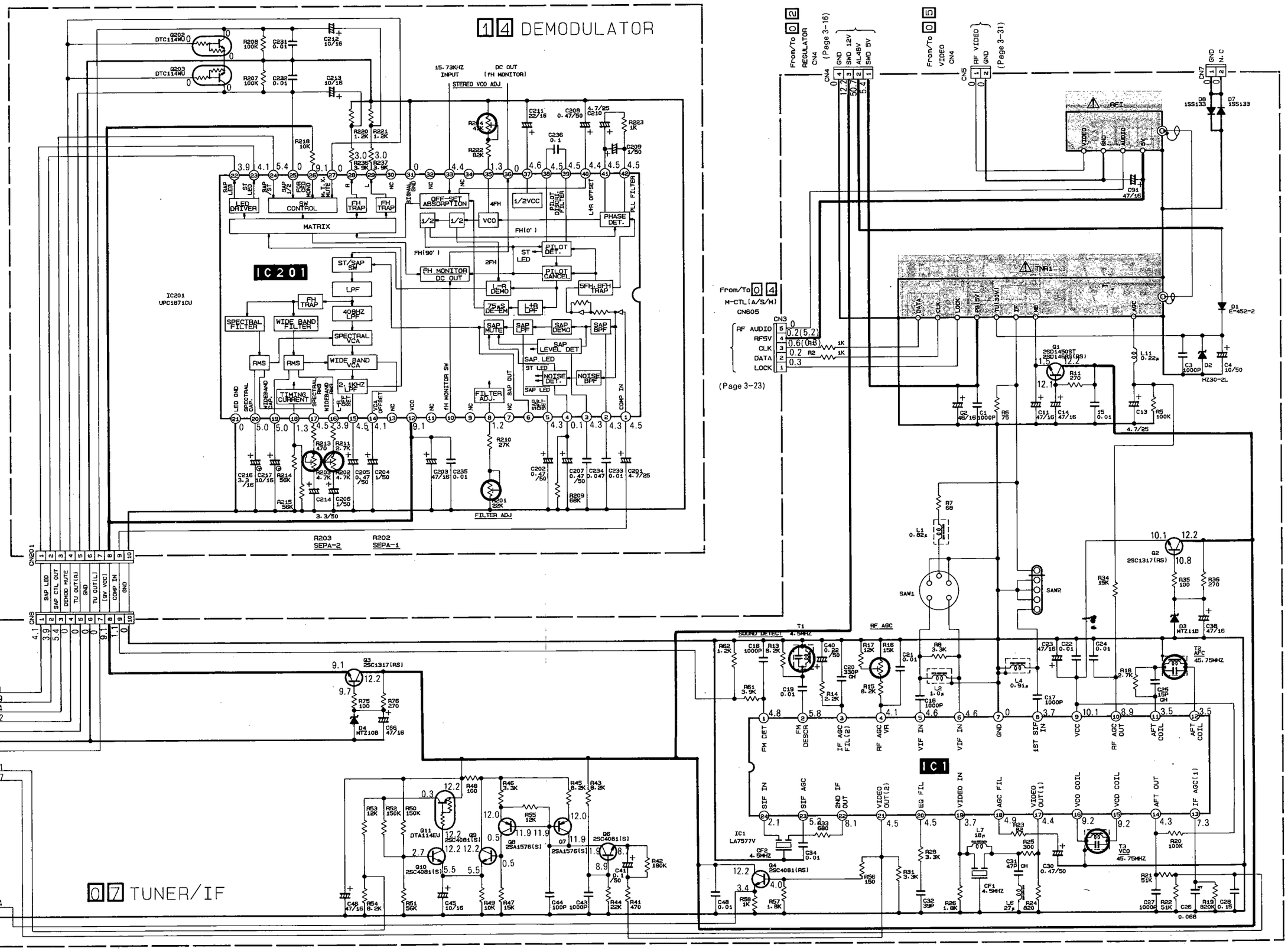


• Location of SMC parts

1D
└── Location

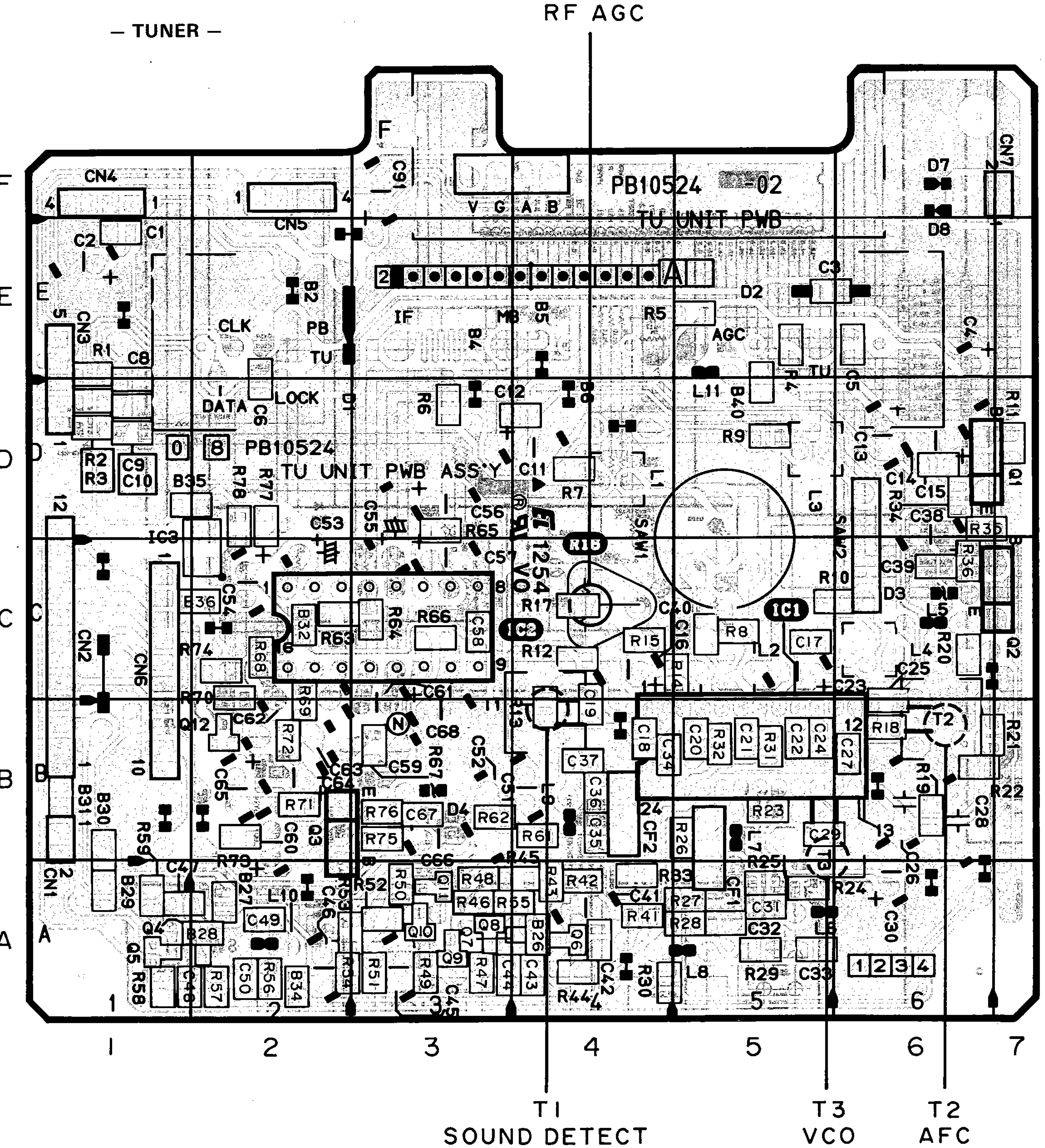
REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
TRANSISTOR		TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR		CAPACITOR		CAPACITOR	
Q1	11B	Q35	4B	R1	10B	R34	1B	R73	5B	R205	14B	C1	10B	C43	6C	C203	14A
Q3	7B	Q36	3B	R2	10B	R37	2C	R74	5B	R206	14C	C3	11B	C44	6C	C204	15A
Q4	7B	Q37	1B	R3	10B	R38	2C	R75	5B	R207	14C	C4	11B	C45	5C	C205	13A
Q5	7B	Q38	4C	R4	10B	R39	2C	R76	5B	R208	14B	C5	10B	C47	5C	C206	13A
Q6	7B	Q39	11C	R5	10C	R40	2D	R77	5B	R210	13B	C6	10B	C48	5B	C207	13B
Q7	7C	Q40	11C	R6	10C	R41	2D	R78	4B	R211	14C	C7	11B	C49	4C	C208	13A
Q8	7C	Q41	9B	R7	10C	R42	2C	R79	4B	R212	13C	C8	11B	C50	4C	C210	13B
Q10	10D	Q201	14A	R8	10C	R43	2D	R80	4B	R213	13B	C10	9B	C51	3C	C211	15C
Q11	11D	Q202	14A	R9	8B	R46	3C	R81	4B	R214	13A	C11	10C	C52	3B	C214	15B
Q12	11C	Q203	13B	R10	8B	R48	3C	R82	3B	R215	15A	C13	10C	C53	3B	C215	15C
Q13	1D	Q204	13C	R11	8B	R49	6C	R84	3B	R217	14B	C14	11C	C54	3B	C216	13C
Q14	1C	Q205	12C	R12	8B	R50	6C	R85	2C	R218	15B	C15	11C	C55	7C	C217	14C
Q15	1C	Q206	12C	R13	8C	R51	6C	R86	9D	R219	15B	C16	10C	C57	6B	C218	13B
Q16	1B	Q207	13B	R14	8C	R52	6C	R87	8C	R220	13A	C17	10C	C58	5B	C219	12B
Q17	2D			R15	7D	R53	6C	R88	11C	R223	13C	C19	9A	C59	7B	C221	15D
Q18	2C			R16	7C	R54	6C	R89	1B	R224	13C	C21	9B	C60	6B	C224	14B
Q19	2B			R17	8B	R55	5C	R90	4C			C23	8C	C61	5B	C225	13A
Q20	6C			R19	9C	R57	5C	R91	4C			C24	7C	C62	4B		
Q21	5C			R20	11D	R59	5C	R92	4C			C25	9C	C63	4B		
Q22	5B	DIODE		R21	10C	R60	5C	R95	7D			C27	10C	C64	4B		
Q23	4C			R22	11D	R61	4C	R96	2C			C29	1D	C65	4B		
Q24	5D	D1	8B	R23	12D	R62	4C	R97	4B			C30	1D	C66	3B		
Q25	4C	D2	9C	R24	1D	R63	4C	R98	8B			C31	1C	C67	3B		
Q26	4C	D4	11A	R25	1D	R64	3C	R99	9C			C32	1C	C69	4C		
Q27	4B	D6	5C	R26	1D	R65	3C	R100	4D			C35	2C	C70	4C		
Q28	6C	D7	5C	R27	1C	R66	3B	R101	9D			C36	2C	C71	11C		
Q29	6B	D8	3B	R28	1C	R67	3B	R102	8C			C37	2C	C73	8C		
Q30	5B	D9	5B	R29	1C	R68	5B	R103	9D			C38	2D	C76	9C		
Q31	7B	D10	7D	R30	1C	R69	6B	R201	14B			C39	2D	C77	2C		
Q32	5B	D11	11D	R31	1C	R70	6B	R202	14A			C40	3C	C78	11C		
Q33	5B			R32	1C	R71	5B	R203	14A			C41	3C	C201	15B		
Q34	4B			R33	1C	R72	6B	R204	15A			C42	7C	C202	14A		

.21 TUNER/IF AND DEMODULAR SCHEMATIC DIAGRAMS



3.22 TUNER/IF AND DEMODULAR CIRCUIT BOARDS

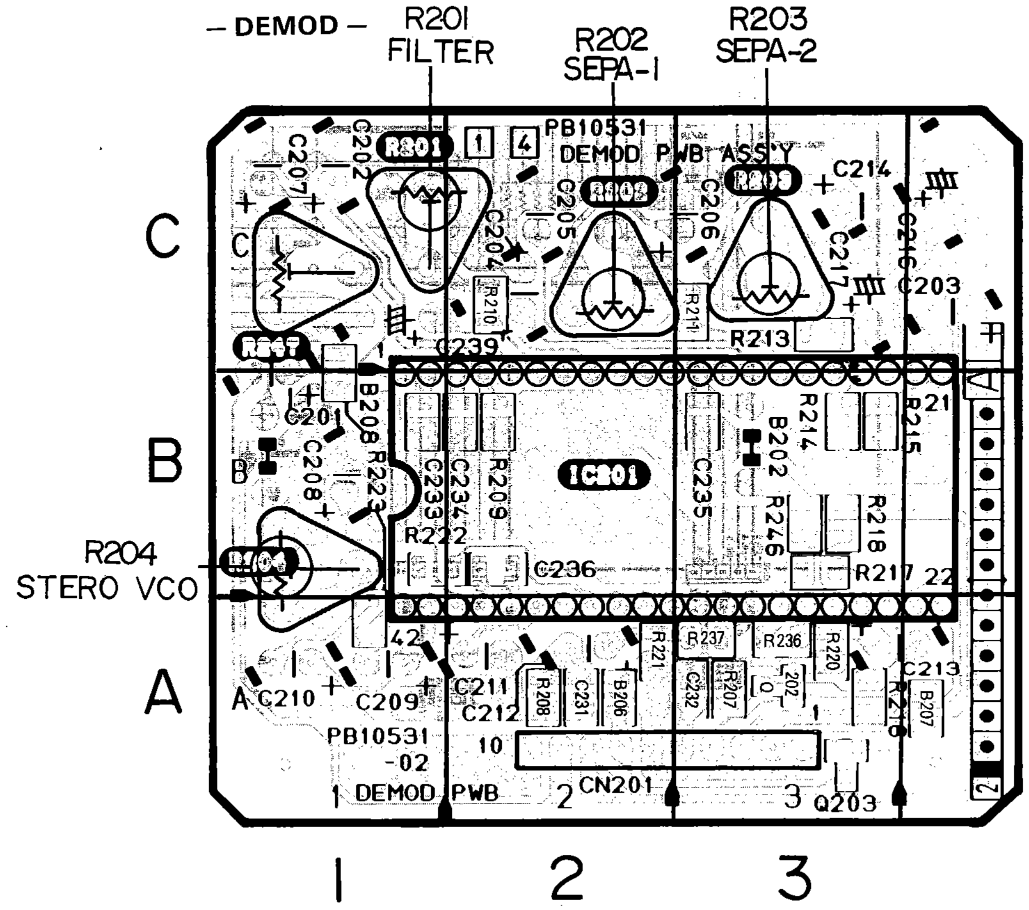
– TUNER –



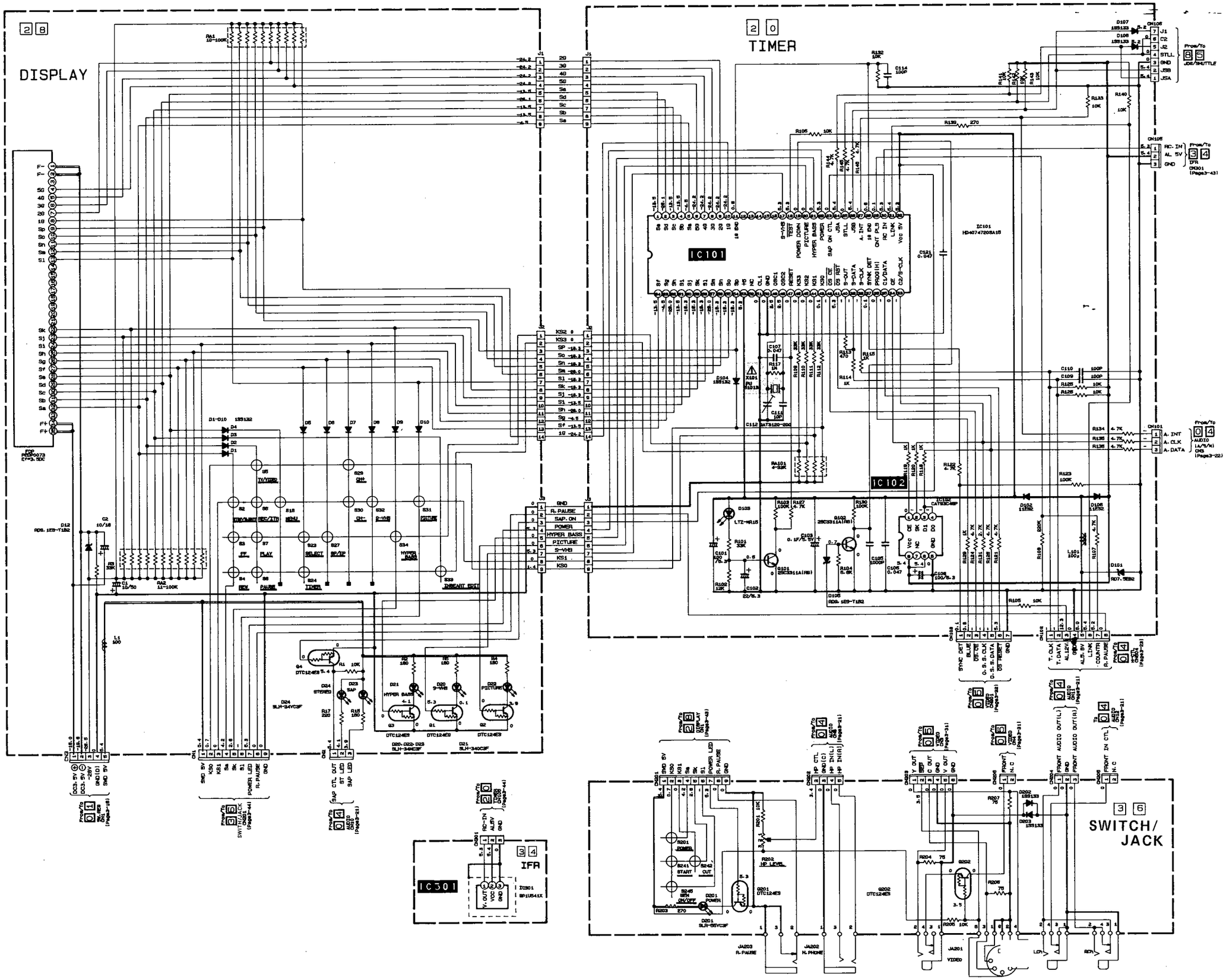
TUNER/IF CIRCUIT BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR	
Q4	2A	R1	1E	R26	5B	R53	2A	C1	1E
Q6	4A	R2	1D	R28	5A	R54	2A	C3	5E
Q7	4A	R5	5E	R31	5B	R55	4A	C15	6D
Q8	3A	R6	3D	R33	4A	R56	2A	C16	5C
Q9	3A	R7	4D	R34	6D	R57	2A	C17	5C
Q10	3A	R8	5C	R35	6D	R58	1A	C18	4B
Q11	3A	R11	7D	R36	6C	R61	4B	C19	4B
		R13	4B	R41	4A	R62	3B	C20	5B
		R14	5C	R42	4A	R75	3B	C21	5B
		R15	4C	R43	4A	R76	3B	C22	5B
		R17	4C	R44	4A			C24	5B
		R18	6B	R45	4A			C25	6B
		R19	6B	R46	3A			C27	6B
		R20	6C	R47	3A			C31	5A
		R21	6B	R48	3A			C32	5A
		R22	6B	R49	3A			C34	4B
		R23	5B	R50	3A			C43	4A
		R24	5A	R51	3A			C44	3A
		R25	5A	R52	3A			C48	1A

– DEMOD –

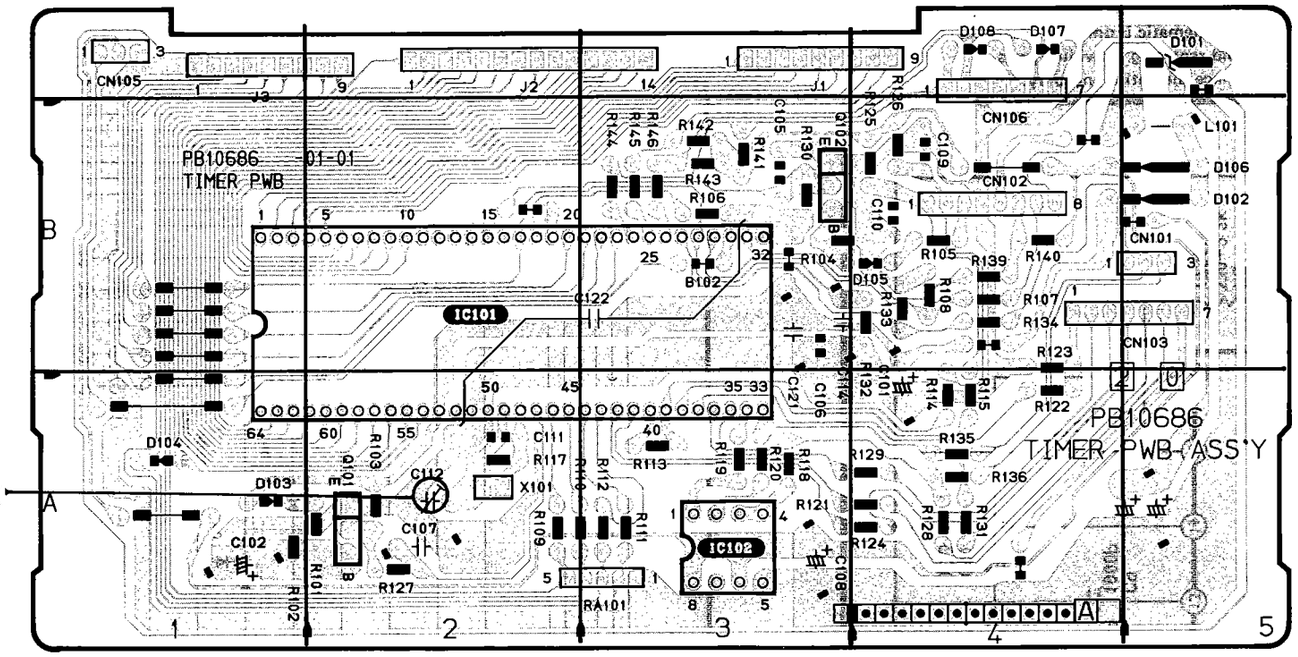


.23 TIMER, DISPLAY, SWITCH/JACK AND IFR SCHEMATIC DIAGRAMS

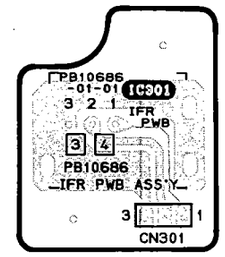


3.24 TIMER, DISPLAY, SWITCH/JACK AND IFR CIRCUIT BOARDS

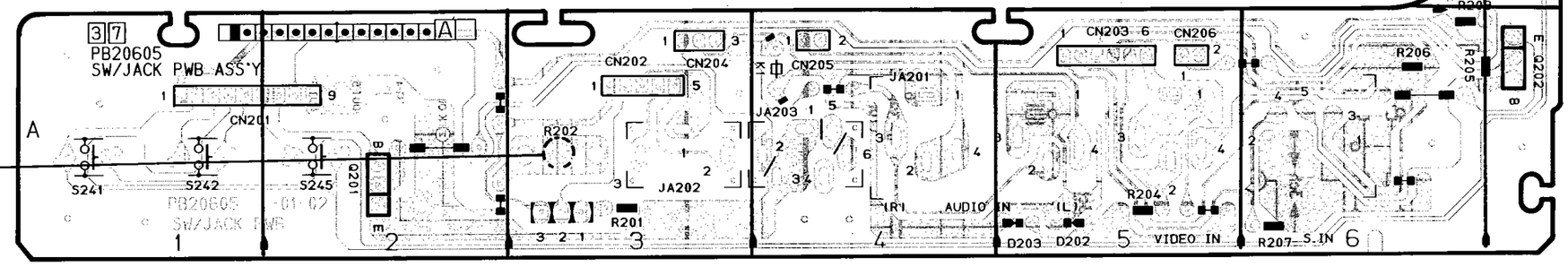
– TIMER –



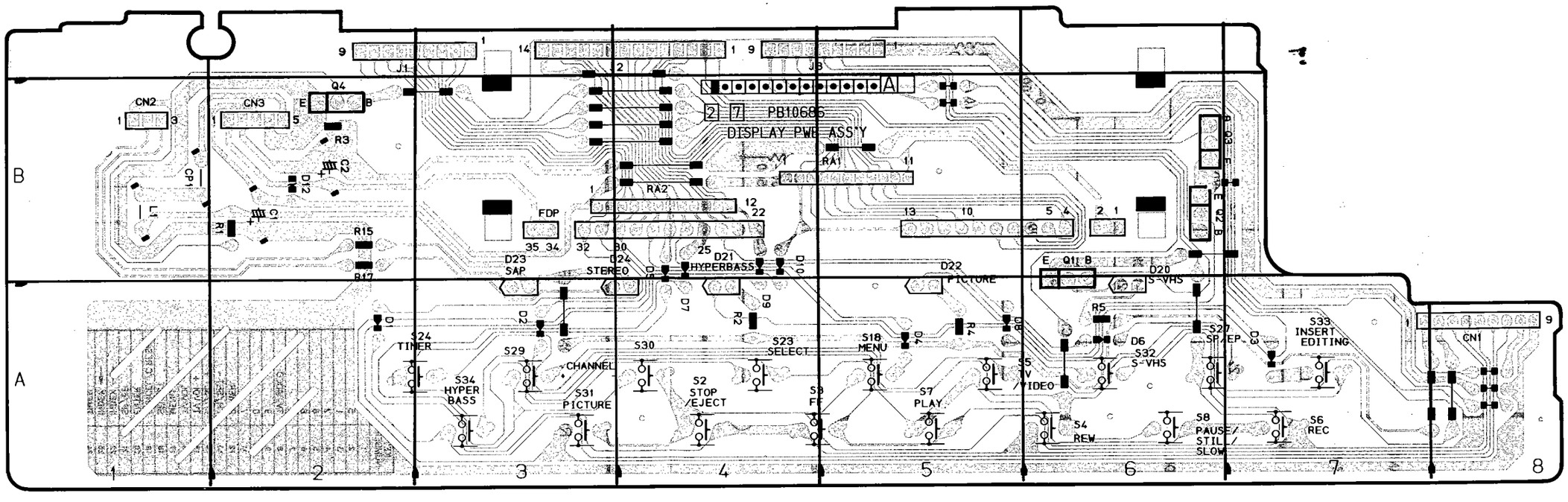
– IFR –



– SWITCH/JACK –

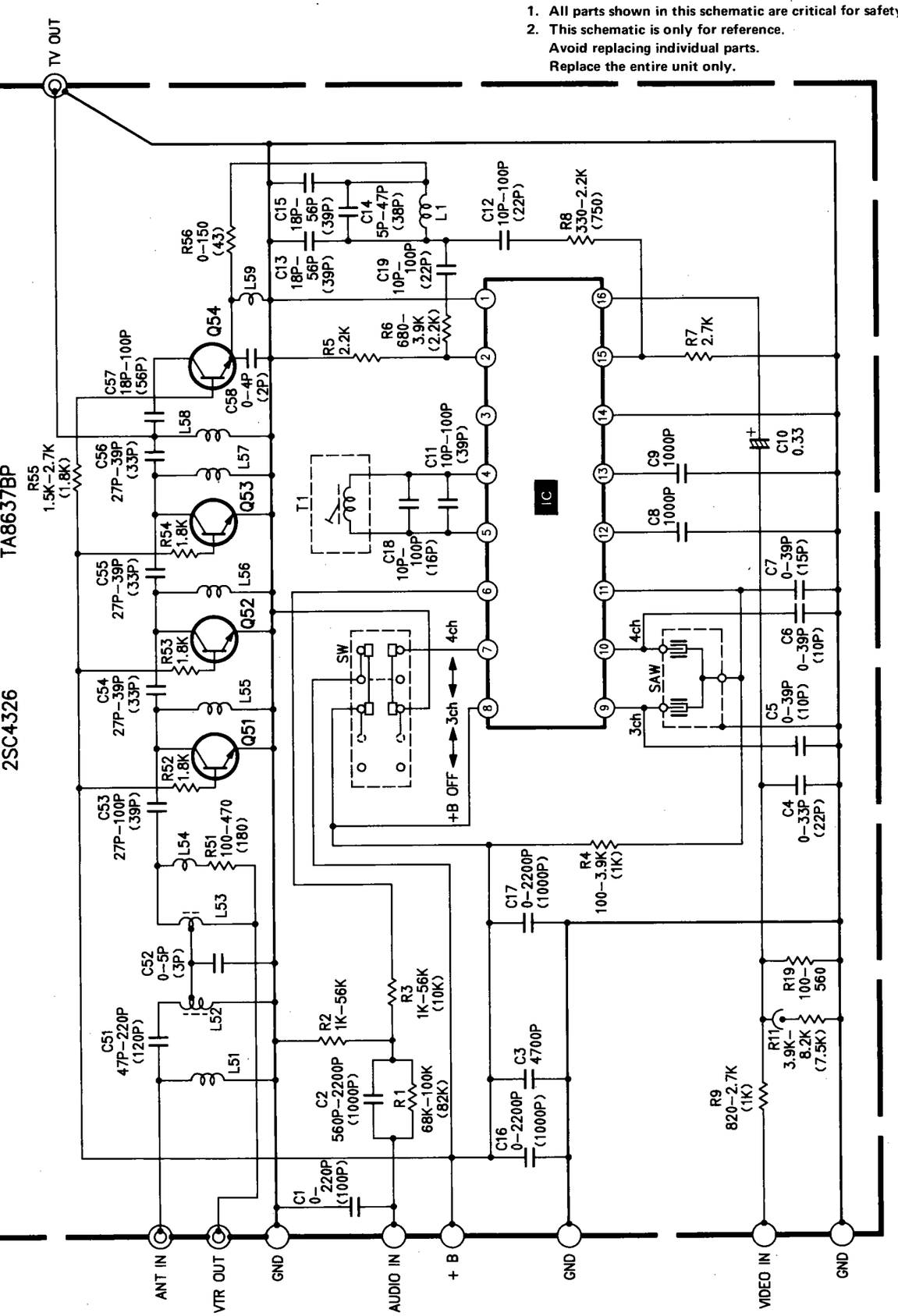


– DISPLAY –



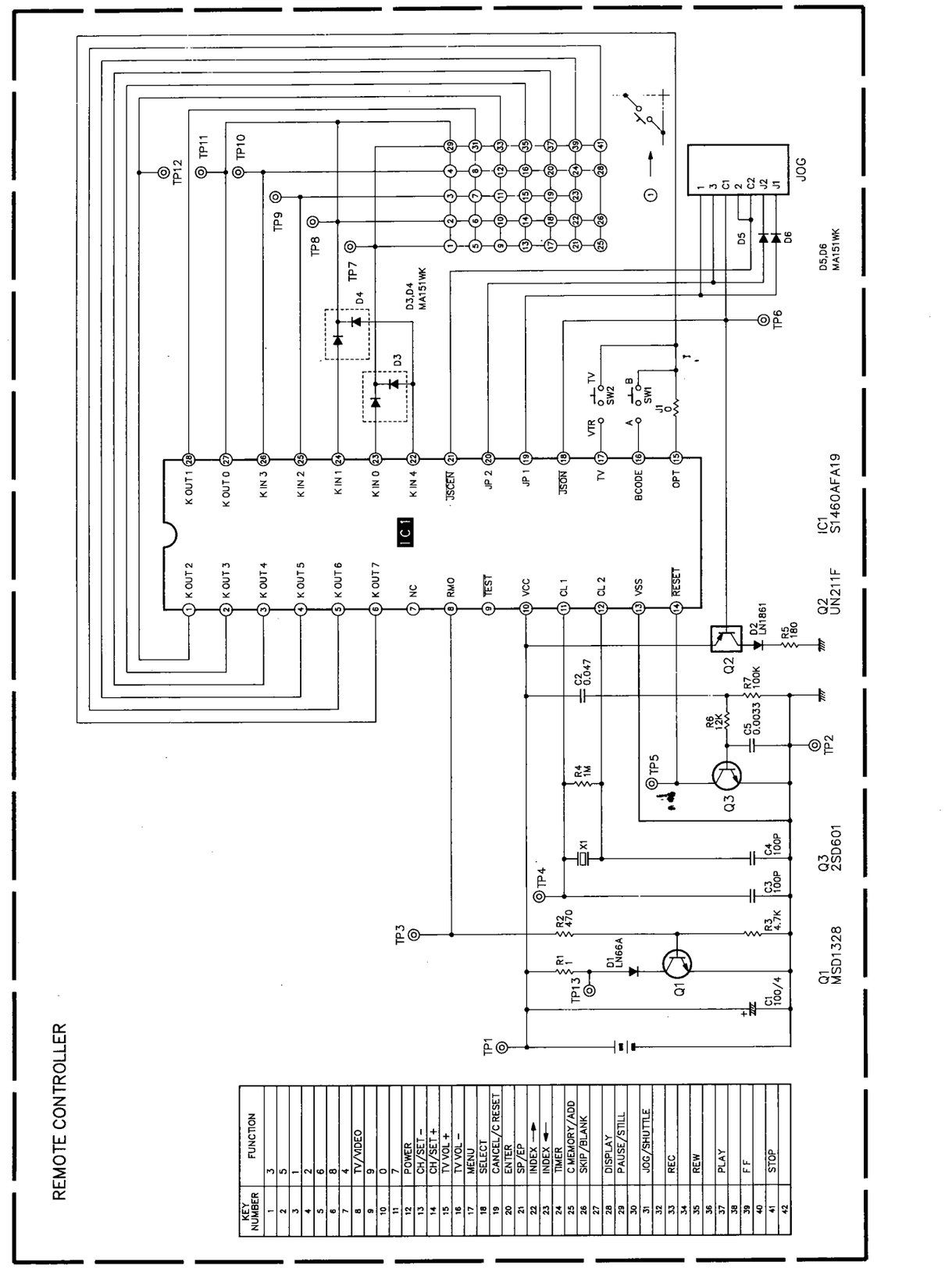
3.25 RF CONVERTER SCHEMATIC DIAGRAM

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.



3.26 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.

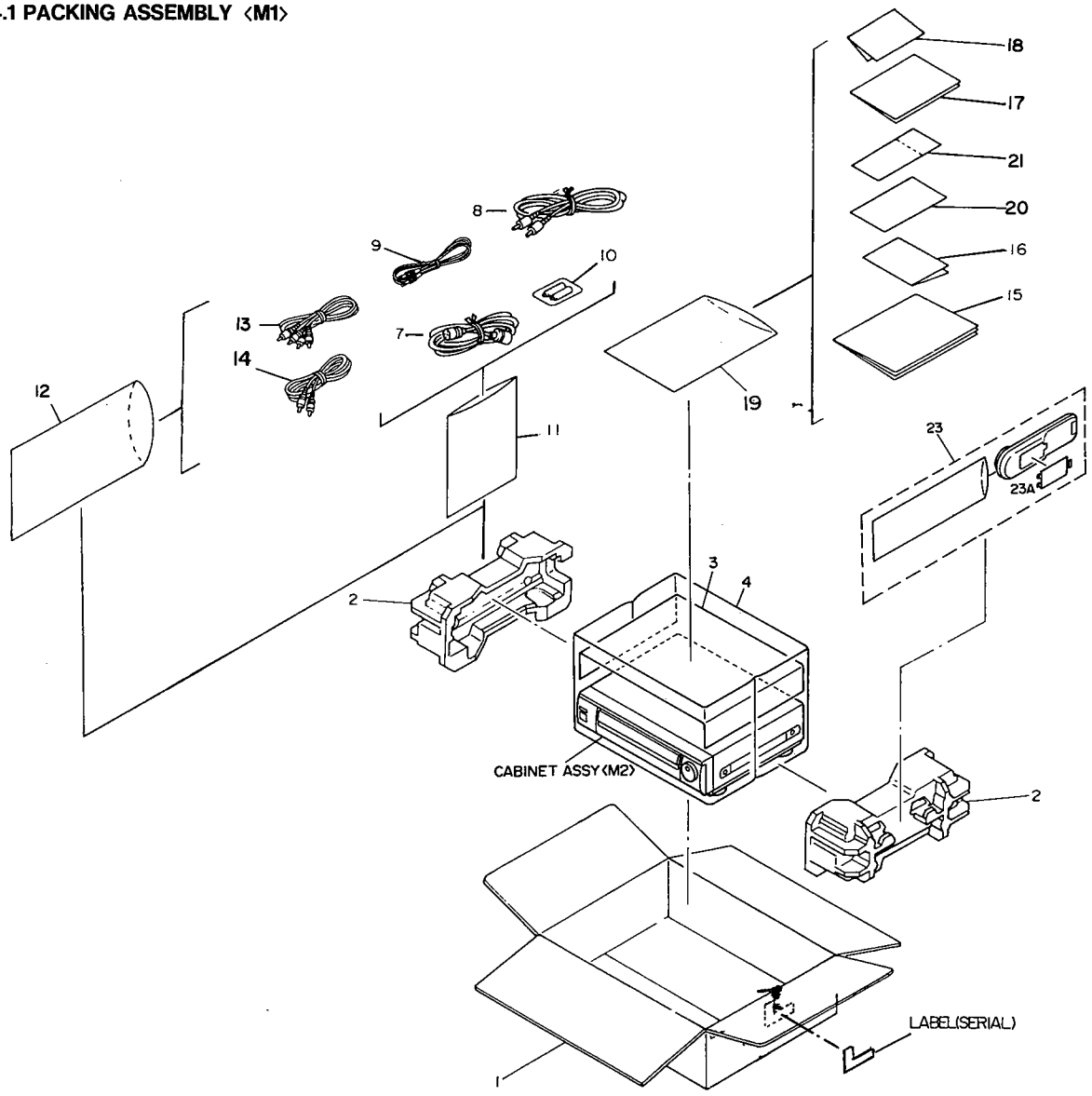


SECTION 4
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

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

4.1 PACKING ASSEMBLY <M1>

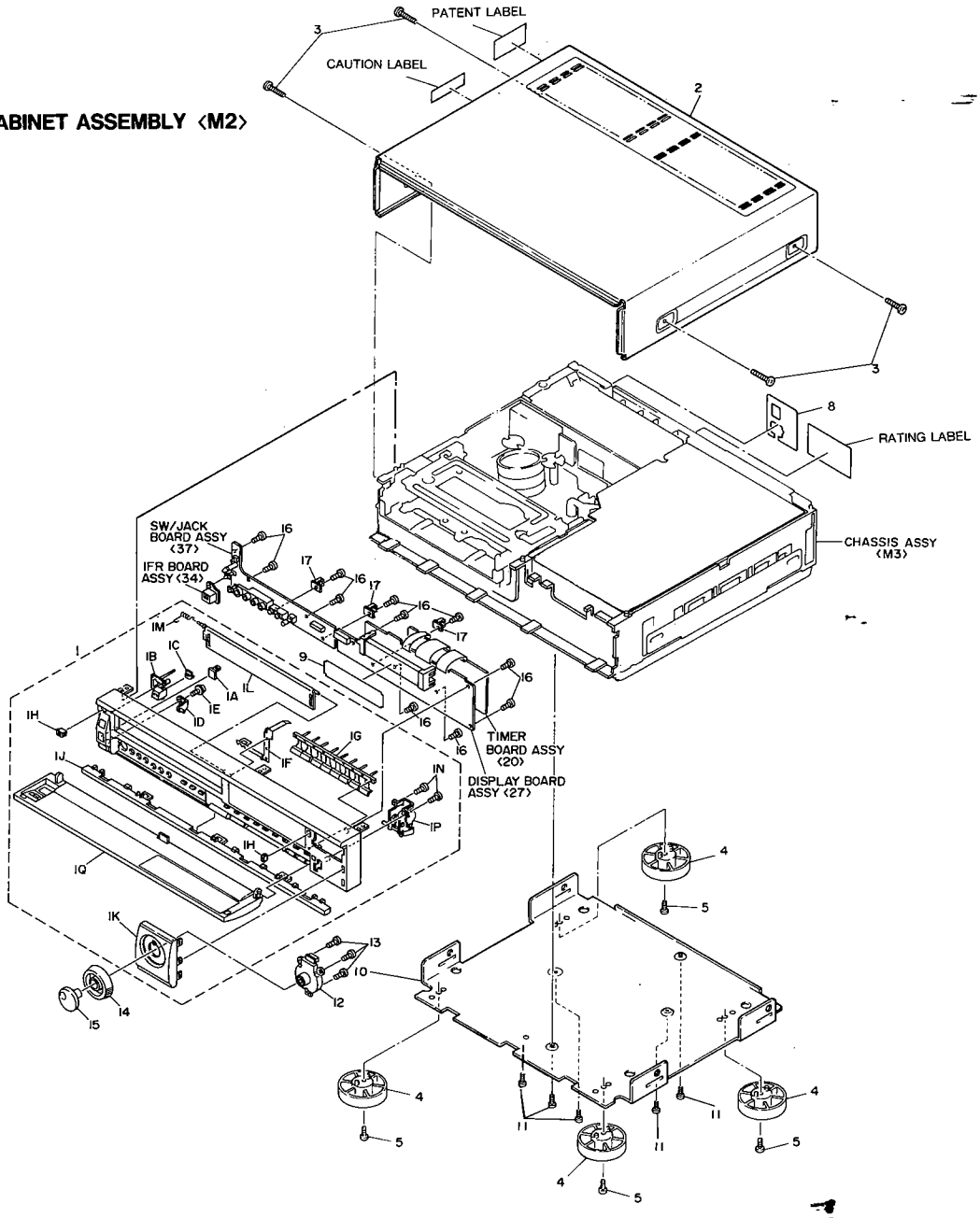


#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

PACKING ASSEMBLY <M1>

	1	PQ34528	PACKING CASE
	2	PQ34503A	CUSHION ASSY
	3	PQ41026-21	PROTECT SHEET
	4	PQM30021-82	POLY BAG
	7	PU59168-2	RF CABLE
		or PU59167-2	RF CABLE
	8	PU60111	DIN CORD
		or PU61113	MINI DIN CABLE
	9	PEAC0135	PIN CORD
	10	R6PRPA-2ST	BATTERY
	11	QPGA020-02005	POLY BAG
	12	QPGA010-02505	POLY BAG
	13	PU56142-3	PIN CORD ASSY
		or PU56142-5	PIN CORD ASSY
	14	PU59205-3	PIN JACK CABLE
		or PU59205-4	PIN JACK CABLE
⚠	15	PU30425-1313	INSTRUCTIONS
	16	TCU-3492	TAPE CATALOG
	17	BT-20062C	WARRANTY CARD
	18	BT-20046E	TOLL FREE CARD
	19	QPGA025-03505	POLY BAG
⚠	20	PU33941-3-3	SAFETY CAUTION
	21	PU36560	CONECTION SHEET
⚠	23	PQ11374B	REMOTE CONTROLLER
	23A	PQ34388	CAP(BATTERY)

4.2 CABINET ASSEMBLY <M2>



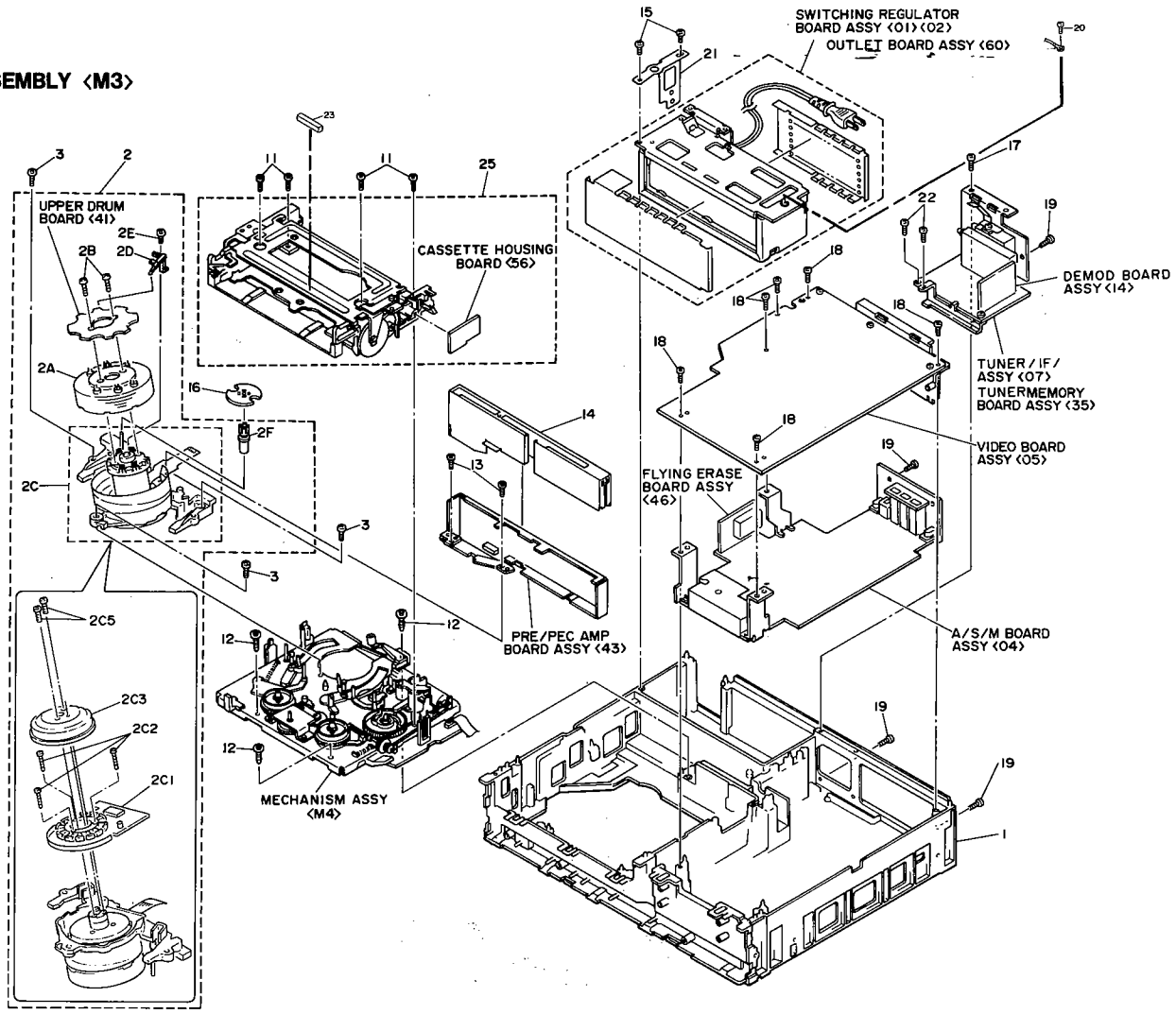
#⚠ REF No.	PART No.	PART NAME, DESCRIPTION

****

CABINET ASSEMBLY <M2>

1	PQ11392A	FRONT PANEL ASSY
1A	PQ45763	WINDOW(IR)
1B	PQ34403	BUTTON(POWER)
1C	PQ45762	INDICATOR(POWER
1D	PQ45838A	SHAFT ASSY
1E	SDSF2608Z	SCREW,FOR SHAFT
1F	PQ34409-1-1	PLATE(EARTH)
1G	PQ21416-1-1	BUTTON
1H	PU59891-2	MAGNET ASSY,X2
1J	PQ21165-7	COVER(FRONT)
1K	PQ21415-1-1	COVER
1L	PQ21414-1-1	CASSETTE DOOR
1M	PQ45704	TORSION SPRING
1N	SDSF2005Z	SCREW,X2 FOR DAMPER
1P	PQ34436A	DAMPER UNIT ASSY
1Q	PQ11423A	DOOR ASSY
⚠ 2	PQ11011-2-3	TOP COVER
3	PQ43827	SPECIAL SCREW, X4 FOR TOP COVER
4	PQ43749F-3	FOOT ASSY, X4
5	SDSF3010Z	SCREW, X4 FOR FOOT
⚠ 8	PQ33384-7	SHEET(OUTLET)
9	PQ45194-2	FILTER (FDP)
⚠ 10	PQ11025-1-5	BOTTOM COVER
11	SDSG3008Z	SCREW, X5 FOR BOTTOM COVER
12	PEME0886	JOG SHUTTLE ASSY
13	SDSF2605Z	SCREW, X3 FOR JOG SHUTTLE
14	PQ34405-1-1	KNOB (SHUTTLE)
15	PQ34406-1-1	KNOB (JOG)
16	SDSF2608Z	SCREW, X11 FOR T/D/S/J BOARD
17	YU40328-2	WIRE CLAMP X3

4.3 CHASSIS ASSEMBLY <M3>



BEWARE OF BOGUS PARTS

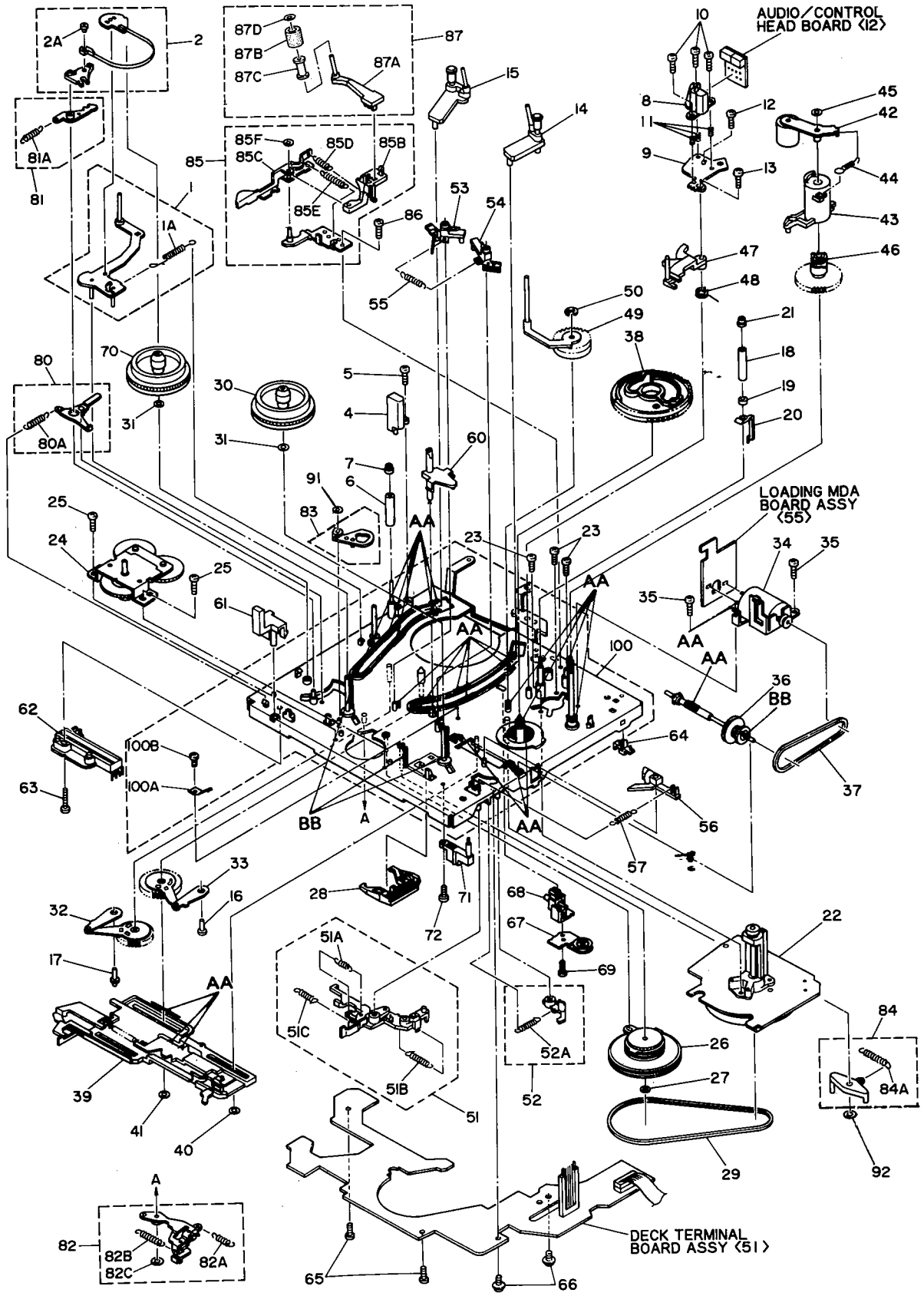
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

CHASSIS ASSEMBLY <M3>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	1	PQ10995-4	BOTTOM CHASSIS
	2	PDV2258A	DRUM ASSY
	2A	PDM2083J	UPPER DRUM ASSY
	2B	PDM4165A	DRUM SCREW ASSY, X2
	2C	PDM2138AG	LOWER DRUM MOTOR ASSY
⚠	2C1	PDZ0097	STATOR ASSY
	2C2	SPSH1712Z	MINI SCREW, X3
	2C3	PDZ0097-3	ROTOR ASSY
	2C4	SPSP2608N	SCREW, X2
	2D	PDM4229A-1	BRUSH ASSY
	2E	SPSG2606Z	SCREW
	2F	PDM4226A	ROLLER ASSY

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	3	SDST2610Z	SCREW, X3 FOR DRUM ASSY
	11	SDST2608Z	SCREW, X4 FOR CSSETTE HOUSING
	12	PQ43831	SPECIAL SCREW, X3 FOR MAIN DECK
	13	SDSG2606Z	SCREW, X2 FOR PRE/REC
	14	PQ21272-1-2	SHIELD CASE,FOR PRE/REC
	15	SDSF3010Z	SCREW, X2 FOR SW REGULATOR
	16	PQ44230	INERTIA PLATE
	17	SDSF3010Z	SCREW, FOR TERMINAL
	18	SDSF3010Z	SCREW, X6 FOR VIDEO BOARD
	19	SDSF3010M	SCREW, X4 FOR REAR
	20	SDST3006Z	SCREW, FOR EARTH
	21	PQ44940-1-1	PLATE(EARTH)
	22	SDSF3010Z	SCREW, X2 FOR TUNER
	23	PQM30029-127	SPACER
	25	PUS29499D	CASSETTE HOUSING ASSY

4.4 MECHANISAM ASSENBLY <M4>



Category	Part number	MARK
Grease	KANTO-G-31KAV	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	PQ43497E-11	TENSION ARM ASSY
	1A	PQ43500	TENSION SPRING
	2	PQ44734A-7	TENSION BAND ASSY
	2A	PQ45456	ADJUST PIN
	4	PU60616	FULL ERASE HEAD
	5	SDSF2614Z	SCREW
	6	PQ43505-1-1	ROLLER
	7	PQ43506	GUIDE POLE CAP
	8	PU61002	AUDIO/CONTROL HEAD
	9	PQ43509	HEAD BASE
	10	PQ43687A	SPECIAL SCREW, X3
	11	PQM30002-192	COMPRESSION SPRING, X3
	12	SPSF2608M	SCREW
	13	SPSP2606Z	SCREW
	14	PU61103-2-7	POLE BASE (TAKE-UP) ASSY
	15	PU61151-2-6	POLE BASE (SUPPLY) ASSY
	16	PQ45895	STOPPER (T)
	17	PQ45894	STOPPER (S)
	18	PQ43526-1-3	TAPE GUIDE
	19	PQ43670-1-1	GUIDE FLANGE
	20	PQ43675	TAPE GUARD
	21	PQ43506	GUIDE POLE CAP
⚠	22	PU61003-1-2	CAPSTAN MOTOR
	23	SPSG2608Z	SCREW, X3
	24	PU61246	IDLER GEAR UNIT
	25	SPST2606Z	SCREW, X2
	26	PU61245-1-1	CLUTCH UNIT
		or PQ34212A	CLUCTH UNIT
	27	PQM30017-8	SLIT WASHER
	28	PQ43532B	CHANGE LEVER ASSY
	29	PU61006	TIMING BELT
	30	PU60858-1-4	REEL DISK (TAKE-UP)
		or PQ45617A	REEL DISK (TAKE-UP)
	31	PQM30018-54	SPACER, X2
	32	PQ43537A	LOADING ARM ASSY (SUPPLY)
	33	PQ43542B	LOADING ARM ASSY (TAKE-UP)
⚠	34	PQ43676B-5	MODE MOTOR ASSY
		or PQ43676C-7	MODE MOTOR ASSY
	35	SPST2606Z	SCREW, X2
	36	PQ43548A-3	WORM CLUTCH ASSY
	37	PQM30003-23	LOADING BELT
	38	PQ20822-2-7	CONTROL CAM
	39	PQ44581A-6	PLATE ASSY
	40	PQM30017-12	SLIT WASHER
	41	PQM30017-8	SLIT WASHER
	42	PQ43558A-5	PINCH ROLLER ARM ASSY
		or PQ43558B	PINCH ROLLER ARM ASSY
	43	PQ32415	PINCH ROLLER PRESS LEVER
	44	PQM30001-233	TENSION SPRING
	45	PQM30017-12	SLIT WASHER
	45	PQM30017-12	SLIT WASHER
	46	PQ32416-2	PINCH ROLLER CAM
	47	PQ43567A-13	GUIDE ARM ASSY
	48	PQ43569-1-3	TORSION SPRING
	49	PQ43570A-2	HALF LOADING GEAR ASSY
	50	PQM30017-12	SLIT WASHER
	51	PQ43575A-5	CANCEL LEVER ASSY
	51A	PQM30001-273	TENSION SPRING
	51B	PQM30001-237	TENSION SPRING
	51C	PQM30001-274	TENSION SPRING
	52	PQ43578A-2	HOOK ASSY
	52A	PQM30001-238	TENSION SPRING
	53	PQ43581C	MAIN BRAKE(SUPPLY) ASSY
	54	PQ43582B	MAIN BRAKE(TAKE-UP) ASSY
	55	PQM30001-251	TENSION SPRING
	56	PQ43583A-3	SUB BRAKE ASSY (TAKE-UP)
	57	PQM30001-346	TENSION SPRING
	60	PU60621-1-2	LED HOLDER,(INCL.D1)
	61	PU60624-1-4	REC SAFETY SWITCH
	62	PU61247-1-1	SLIDE ENCORDER,(S3)
	63	SDSF2614Z	SCREW
	64	PQ32516	PWB HOLDER
	65	SDST2616Z	SCREW,X2
	66	GPSF2608Z	SCREW,X2
	67	PQ43912A-7	PULLEY ARM ASSY
	68	PQ33249	PULLEY BASE
	69	PQ45121A	SCREW
	70	PU60859-1-4	REEL DISK (SUPPLY)
		or PQ45622A	REEL DISK (SUPPLY)
	71	PU61008	CASSETTE SWITCH
	72	SDST2608Z	SCREW
	80	PQ44739A-1	LOCK LEVER 1 ASSY
	80A	PQM30001-278-46	TENSION SPRING
	81	PQ44741A-3	LOCK LEVER 2 ASSY
	81A	PQM30001-279-52	TENSION SPRING
	82	PQ44743A-8	IDLER LEVER ASSY
	82A	PQM30001-344	TENSION SPRING
	82B	PQM30001-301	TENSION SPRING
	82C	PQM30017-5	SLIT WASHER
	83	PQ44746A-2	OFF LEVER ASSY
	84	PQ44585A-8	CAPSTAN BRAKE ASSY
	84A	PQM30001-282-52	SPRING
	85	PQ44748A-3	ARM BASE ASSY
	85B	PQ33511-1-2	CLEANER ARM
	85C	PQ44841-1-4	CANCEL LEVER
	85D	PQM30001-299	TENSION SPRING
	85E	PQM30001-300	TENSION SPRING
	85F	PQM30017-5	SLIT WASHER
	86	SPST2606Z	SCREW
	87	PQ44840B	CLEANER BASE ASSY
	87A	PQ44844A	CLEANER BASE SUB ASSY
	87B	PQ44837	CLEANER
	87C	PQ45689	CLEANER HOLDER
	87D	PQM30017-38	SLIT WASHER
	91	PQM30017-5	SLIT WASHER
	92	PQM30017-8	SLIT WASHER
	100	PQ20994B-5	MAIN DECK ASSY
		or PQ21232B-1	MAIN DECK ASSY
	100A	PQ43849	EARTH PLATE
	100B	SPST2604Z	SCREW

SECTION 5
ELECTRICAL PARTS LIST

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

SWITCHING REGULATOR BOARD ASSEMBLY <01>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	PB10559D1	SWITCHING REGULATOR BOARD ASSY	
	IC1	LM358P	IC	
		or XRA10358	IC	
		or BA10358	IC	
		or LM358N	IC	
	Q1	2SC4161(MN)	TRANSISTOR	
	Q2	2SC3616(ML)	TRANSISTOR	
	Q4	2SB941P	TRANSISTOR	
		or 2SA1488	TRANSISTOR	
	D1	RB-156LFB	DIODE	
	D2	AU01	FR DIODE	
		or 1SR153-400-T2	FR DIODE	
	D3	AG01	FR DIODE	
	D4	AU01Z	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or 1SR153-200-T2	FR DIODE	
	D5	UZ20BSA	ZENER DIODE	
		or RD20ES-T1B1	ZENER DIODE	
	D7	1SR153-200-T2	FR DIODE	
	D9	1SR153-200-T2	FR DIODE	
	D10	MTZ30AT-77	ZENER DIODE	
		or RD30ES-T1B1	ZENER DIODE	
		or UZ30BSA	ZENER DIODE	
	D11	AU01Z	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or 1SR153-200-T2	FR DIODE	
	D13	HZ22CP	ZENER DIODE	
	D14	FML-12S	FR DIODE	
		or MA644	FR DIODE	
		or 5DL2CZ41A	FR DIODE	
		or FCF06A20	FR DIODE	
	D15	1SR153-200-T2	FR DIODE	
	D16	FMB-24	BARRIER DIODE	
		or F5KQ40B	BARRIER DIODE	
		or 5GWJ2CZ42	SB DIODE	
	D18	UZ6.2BSA	ZENER DIODE	
		or MTZV6.2A	ZENER DIODE	
		or RD6.2ES-T1B1	ZENER DIODE	
	D19	1SS133	DIODE	
		or MA165	DIODE	
⚠	R1	QRC122K-225E	RESISTOR	2.2MΩ,1/2W
	R2	QRM025K-1R0	MP RESISTOR	1Ω,2W
	R3	QRD161J-823	RESISTOR	82KΩ,1/6W
	R4	QRD161J-823	RESISTOR	82KΩ,1/6W
	R5	QRD161J-473	RESISTOR	47KΩ,1/6W
	R6	QRG029J-333G	OMF RESISTOR	33KΩ,2W
⚠	R8	QRG029J-221G	OMF RESISTOR	220Ω,2W
	R9	QRX014J-R33Z	MF RESISTOR	0.33Ω,1W
	R10	QRD161J-122	RESISTOR	1.2KΩ,1/6W
	R11	QRD161J-681	RESISTOR	680Ω,1/6W
⚠	R12	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4W
	R13	QRG029J-181G	OMF RESISTOR	180Ω,2W
	R14	QRD161J-103	RESISTOR	10KΩ,1/6W
⚠	R15	QRD161J-221	RESISTOR	220Ω,1/6W
	R16	QRV144F-8451AY	CMF RESISTOR	8.45KΩ,1/4W
	R17	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4W
	R18	QRD161J-102	RESISTOR	1KΩ,1/6W
	R19	QRD161J-222	RESISTOR	2.2KΩ,1/6W
	R21	QRV144F-9531AY	CMF RESISTOR	9.53KΩ,1/4W
	R22	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4W
	R23	QRV144F-4423AY	CMF RESISTOR	442KΩ,1/4W
	R24	QRD161J-471	RESISTOR	470Ω,1/6W
⚠	R26	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4W
	R27	QRD161J-222	RESISTOR	2.2KΩ,1/6W
	R28	QRG029J-203A	OMF RESISTOR	20KΩ,2W
⚠	C1	QFZ9022-333	MM CAPACITOR	0.033μF,125V
⚠		or QFZ9025-333	MM CAPACITOR	0.033μF,125V
⚠	C2	QFZ9022-333	MM CAPACITOR	0.033μF,125V
⚠		or QFZ9025-333	MM CAPACITOR	0.033μF,125V
⚠	C3	QCZ9016-472M	CAPACITOR	0.0047μF,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047μF,125V
⚠	C4	QCZ9016-472M	CAPACITOR	0.0047μF,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047μF,125V
⚠	C5	QCZ9016-472M	CAPACITOR	0.0047μF,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047μF,125V
⚠	C6	QCZ9016-472M	CAPACITOR	0.0047μF,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047μF,125V
⚠	C7	QCZ9016-472M	CAPACITOR	0.0047μF,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047μF,125V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C8	PU61024-107	E CAPACITOR	100 μ F,200V
		or PECA0782-107	E CAPACITOR	100 μ F,200V
	C9	QCZ0212-472	CAPACITOR	0.0047 μ F,1KV
		or QCY53AK-472	CAPACITOR	0.0047 μ F,1KV
	C10	QCZ0213-221Z	CAPACITOR	220PF,1KV
		or QCZ0212-221	CAPACITOR	220PF,1KV
	C1	QFV41HJ-824	TF CAPACITOR	0.82 μ F,50V
	C12	QFLA1HJ-472Z	M CAPACITOR	0.0047 μ F,50V
	C13	QETC1HM-225	E CAPACITOR	2.2 μ F,50V
	C14	QEZ0156-127Z	E CAPACITOR	120 μ F,6.3V
		or QEZ0135-127Z	E CAPACITOR	120 μ F,6.3V
	C15	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
	C16	QETC1HM-476	E CAPACITOR	47 μ F,50V
	C17	QETC1VM-336	E CAPACITOR	33 μ F,35V
	C19	QEZ0138-277	E CAPACITOR	270 μ F,25V
	C20	QETC1EM-227	E CAPACITOR	220 μ F,25V
	C22	QEMB1CM-158	E CAPACITOR	1500 μ F,16V
	C23	QEZ0105-128	E CAPACITOR	1200 μ F,16V
		or QEZ0137-128	E CAPACITOR	1200 μ F,16V
	C24	QETC1JM-336	E CAPACITOR	33 μ F,63V
	C25	QEZ0106-158	E CAPACITOR	1500 μ F,10V
		or QEZ0136-158	E CAPACITOR	1500 μ F,10V
	C26	QETB1AM-108	E CAPACITOR	1000 μ F,10V
	C27	QFN31HJ-102	M CAPACITOR	0.001 μ F,50V
		or QFLA1HJ-102Z	M CAPACITOR	0.001 μ F,50V
	C28	QFN31HJ-103	M CAPACITOR	0.01 μ F,50V
		or QFLA1HJ-103Z	M CAPACITOR	0.01 μ F,50V
	C29	QFV11HJ-104	MM CAPACITOR	0.1 μ F,50V
		or PECA0780-104Z	M CAPACITOR	0.1 μ F,50V
⚠	C31	QCZ9016-472M	CAPACITOR	0.0047 μ F,125V
⚠		or QCZ9048-472	CAPACITOR	0.0047 μ F,125V
⚠	C50	QCZ9052-101K	CAPACITOR	100PF,125V
	L1	PU48530-100K	COIL	10 μ H
	L2	PELN0270-330K	COIL	33 μ H
		or PELN0490-330K	COIL	33 μ H
		or PU60943-330K	COIL	33 μ H
	L3	PELN0270-100M	COIL	10 μ H
		or PU60943-100M	COIL	10 μ H
	L4	PELN0270-330K	COIL	33 μ H
		or PELN0490-330K	COIL	33 μ H
		or PU60943-330K	COIL	33 μ H
⚠	PC1	PC817	PHOTO COUPLER	
⚠		or PS2501-1	PHOTO COUPLER	
⚠	POC1	QMP14B0-200TG	POWER CORD	
⚠		or QMP14B0-200TGJ5	POWER CORD	
⚠	T1	PELN0318	SW TRANS	
⚠	AO1	QMC0242-007	AC OUTLET	
	BKT1	PQ21026-2-3	BRACKET (1)	
	BKT2	PQ21027-4-3	BRACKET (2)	
⚠	BKT3	PQ33381	BRACKET(POWER)	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	EHT1	PQ44695	EARTH PLATE	
	ETH2	PQ44613	EARTH PLATE	
⚠	HD1	QHS3771-108	STRAIN RELIEF	
⚠	HD2	PU57505	FUSE CLIP	
⚠	HS1	PQ44773-1-1	HEAT SINK	
⚠	HS2	PQ45238	HEAT SINK (3)	
⚠	HS3	PQ45237	HEAT SINK (2)	
	J1	PEMC0742-010	CONNECTOR (BOARD TO BOARD)	
	J2	PEMC0742-006	CONNECTOR (BOARD TO BOARD)	
⚠	LF1	PU61092	LINE FILTER	
⚠		or PU60401	LINE FILTER	
	SCW1	SDST3006Z	SCREW, X5	
	SCW2	SDSG3008Z	SCREW	
	SCW3	SDSG3008Z	SCREW	
	SCW4	DPSP3005Z	SCREW	
	SCW5	DPSP3008Z	SCREW, X2	
	SLD1	PQ33382	SHIELD COVER (1)	
	SLD2	PQ33383	SHIELD COVER (2)	
	CN1	PU60417-105	CONNECTOR	
	CN6	PU59555-103	CONNECTOR	
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR	
⚠	CP3	ICP-N20	CIRCUIT PROTECTOR	
⚠	CP4	ICP-N38	CIRCUIT PROTECTOR	
⚠	F1	QMF51N2-1R0J1	FUSE	T1.0A

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REGULATOR BOARD ASSEMBLY <02>

	PWBA	PB10559C2-01	REGULATOR BOARD ASSEMBLY
	IC2	LM358P	IC
		or XRA10358	IC
		or BA10358	IC
		or LM358N	IC
	Q31	2SD2166	TRANSISTOR
	Q32	2SB1068 (KU)	TRANSISTOR
	Q34	2SD1796	TRANSISTOR
		or 2SD1856	TRANSISTOR
		or 2SD1326	TRANSISTOR
	Q35	2SB1068 (KU)	TRANSISTOR
	D31	1SS133	DIODE
		or MA165	DIODE
	D32	1SS133	DIODE
		or MA165	DIODE
	D35	MTZV5.1C	ZENER DIODE
		or RD5.1ES-T1B3	ZENER DIODE
		or UZ5.1BSC	ZENER DIODE
	D36	1SS133	DIODE
		or MA165	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R31	QRD161J-102	RESISTOR	1KΩ,1/6W
R32	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R33	QRD161J-752	RESISTOR	7.5KΩ,1/6W
R34	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R35	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R36	QVZ3521-222Z	V RESISTOR, SWD 5V	2.2Ω
or	QVZ3521-222	V RESISTOR, SWD 5V	2.2Ω
R37	QRD161J-123	RESISTOR	12KΩ,1/6W
R38	QRV144F-1001A	CMF RESISTOR	1KΩ,1/4W
R39	QRV144F-1101AY	RESISTOR	1,1KΩ,1/4W
R40	QRD161J-103	RESISTOR	10KΩ,1/6W
R41	QRD161J-102	RESISTOR	1KΩ,1/6W
R44	QRD161J-103	RESISTOR	10KΩ,1/6W
R45	QRX014J-R27Z	MF RESISTOR	0.27Ω,1W
R46	QRD161J-102	RESISTOR	1KΩ,1/6W
R49	QRD161J-752	RESISTOR	7.5KΩ,1/6W
C41	QETC0JM-107	E CAPACITOR	100μF,6.3V
C42	QETC0JM-107	E CAPACITOR	100μF,6.3V
C43	QETC1CM-107	E CAPACITOR	100μF,16V
C44	QETC1CM-107	E CAPACITOR	100μF,16V
C45	QETC1JM-106	E CAPACITOR	10μF,63V
C46	QFN31HJ-103	M CAPACITOR	0.01μF,50V
or	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
C47	QETC1CM-107	E CAPACITOR	100μF,16V
C48	QETC1CM-107	E CAPACITOR	100μF,16V
SCW1	SDSG3008Z	SCREW, X2	
CN3	PU60417-110	CONNECTOR	
CN4	PU59555-104	CONNECTOR	
CN5	PU59555-103	CONNECTOR	

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A/S/M BOARD ASSEMBLY <04>

PWBA	PB10661A-01	A/S/M BOARD ASSY	
BKT1	PQ44693-1-1	BRACKET(1), X2	
BKT2	PQ44694-1-2	BRACKET(2)	
CL1	PEME0802	CLAMP, X2	
JA1	PU61012	MINI JACK,AV COMPULINK	
JA3	PEMC0761	PIN JACK (SW), AUDIO IN	
JA4	PEMC0760	PIN JACK, AUDIO OUT 1	
JA5	PEMC0760	PIN JACK, AUDIO OUT 2	
SCW1	SDSF2608Z	SCREW	
SCW2	SDSG2606Z	SCREW, X3	
SLD1	PQ33985	SHIELD COVER	
⚠ TB1	PQ21444-1-3	TERMINAL BOARD (2)	

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

— AUDIO SECTION —

IC1	JCP0038	IC
IC2	M34225M2-110SP	IC
IC3	M5223P	IC
IC4	LA7151	IC
IC5	LA7151	IC
IC6	RE5RE50AA	IC
IC201	XRA15218N	IC
or	BA15218N	IC
Q1	2SD1468S(RS)	TRANSISTOR
Q2	2SC4081(RS)	TRANSISTOR
Q3	2SC4081(RS)	TRANSISTOR
Q6	2SA1576(RS)	TRANSISTOR
Q201	2SC4081(RS)	TRANSISTOR
Q202	2SC4081(RS)	TRANSISTOR
Q203	DTA114EU	TRANSISTOR
Q204	DTC114WU	TRANSISTOR
Q205	DTA114EU	TRANSISTOR
Q206	2SC4081(RS)	TRANSISTOR
Q207	DTC114WU	TRANSISTOR
Q208	DTC114WU	TRANSISTOR
Q209	DTC114WU	TRANSISTOR
Q210	DTC114WU	TRANSISTOR
Q211	DTC114WU	TRANSISTOR
Q212	DTC114WU	TRANSISTOR
Q213	DTC114WU	TRANSISTOR
Q214	DTC114TU	TRANSISTOR
Q215	DTA114EU	TRANSISTOR
Q216	DTC114WU	TRANSISTOR
Q217	DTA114EU	TRANSISTOR
Q218	DTA114EU	TRANSISTOR
Q219	2SC4097(RS)	TRANSISTOR
D1	MTZ7.5B	ZENER DIODE
D2	1SS133	DIODE
or	MA165	DIODE
D4	1SS133	DIODE
or	MA165	DIODE
D5	1SS133	DIODE
or	MA165	DIODE
D6	1SS133	DIODE
or	MA165	DIODE
D7	1SS133	DIODE
or	MA165	DIODE
D8	DAN202U	DIODE
D9	DAP202U	DIODE
D10	1SS133	DIODE
or	MA165	DIODE
D11	1SS133	DIODE
or	MA165	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D14	1SS133	DIODE	
	or MA165	DIODE	
D15	1SS133	DIODE	
	or MA165	DIODE	
D201	1SS133	DIODE	
	or MA165	DIODE	
D202	1SS133	DIODE	
	or MA165	DIODE	
D203	1SS133	DIODE	
	or MA165	DIODE	
D204	1SS133	DIODE	
	or MA165	DIODE	
R1	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R2	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R3	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R4	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R5	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R6	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R7	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R8	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R9	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R10	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R20	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R21	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R22	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R23	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R24	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R25	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R26	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R27	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R28	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R31	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R32	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R33	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R34	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R35	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R37	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R45	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R46	QRSA08J-511YN	RESISTOR	510Ω,1/10W
R47	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R48	QRSA08J-513YN	RESISTOR	51KΩ,1/10W
R49	QVZ3523-473A	V RESISTOR, L PB LEVEL	47KΩ
R50	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R52	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R53	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R54	QVZ3523-103AZ	V RESISTOR, L CARRIER	10KΩ
R55	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R56	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R57	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R58	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R60	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R61	QRSA08J-303YN	RESISTOR	30KΩ,1/10W
R62	QRSA08J-103YN	RESISTOR	10KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R63	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R64	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R65	QVZ3523-472A	V RESISTOR,R CARRIER	4.7KΩ
R66	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R67	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R69	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R70	QVZ3523-473A	V RESISTOR,R PB LEVEL	47KΩ
R71	QRSA08J-513YN	RESISTOR	51KΩ,1/10W
R72	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R73	QRSA08J-511YN	RESISTOR	510Ω,1/10W
R74	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R79	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R80	QRSA08J-514YN	RESISTOR	510KΩ,1/10W
R81	QRSA08J-334YN	RESISTOR	330KΩ,1/10W
R82	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R83	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R84	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R85	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R86	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R87	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R88	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R89	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R90	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R91	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R92	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R93	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R94	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R95	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R96	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R97	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R98	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R99	QRSA08J-132YN	RESISTOR	1.3KΩ,1/10W
R100	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R101	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R102	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R103	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R104	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R105	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R106	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R107	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R108	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R109	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R110	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R111	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R112	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R113	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R114	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R115	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R116	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R117	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R118	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R119	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R120	QRSA08J-123YN	RESISTOR	12KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R127	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R128	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R129	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R130	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R131	QRSA08J-334YN	RESISTOR	330KΩ,1/10W
R132	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R133	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R134	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R201	QRSA08J-100YN	RESISTOR	10Ω,1/10W
R202	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R203	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R204	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R205	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R206	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R209	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R210	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
R211	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R212	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R213	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R214	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R215	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R216	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R217	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R218	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R219	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R220	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R221	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R222	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R223	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R224	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R225	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R226	QRSA08J-330YN	RESISTOR	33Ω,1/10W
R227	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R228	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R229	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R230	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R231	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R232	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R233	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R234	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R235	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R236	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R237	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R238	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R239	QVZ3518-473A	V RESISTOR,BIAS LEVEL	47KΩ
R240	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R241	QRSA08J-100YN	RESISTOR	10Ω,1/10W
R242	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R243	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R244	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
C1	QETC1CM-107	E CAPACITOR	100μF,16V
C7	QETC1CM-226	E CAPACITOR	22μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C8	QETC1GM-226	E CAPACITOR	22μF,16V
C9	QETC1CM-476	E CAPACITOR	47μF,16V
C13	QETC1CM-226	E CAPACITOR	22μF,16V
C14	QETC1CM-226	E CAPACITOR	22μF,16V
C15	QETC1CM-476	E CAPACITOR	47μF,16V
C22	QFLA1HJ-473Z	M CAPACITOR	0.047μF,50V
C23	QETC1AM-336	E CAPACITOR	33μF,10V
C24	QETC1HM-225	E CAPACITOR	2.2μF,50V
C25	QFLA1HJ-333Z	M CAPACITOR	0.033μF,50V
C26	QENC1CM-106	NP E CAPACITOR	10μF,16V
C27	QETC1CM-106	E CAPACITOR	10μF,16V
C29	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
C30	QETC1AM-107	E CAPACITOR	100μF,10V
C31	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C32	QFLA1HJ-104Z	M CAPACITOR	0.1μF,50V
C33	QFLA1HJ-222Z	M CAPACITOR	0.0022μF,50V
C34	QCSA1HJ-821	CAPACITOR	820PF,50V
C35	QFLA1HJ-392Z	M CAPACITOR	0.0039μF,50V
C36	QFLA1HJ-333Z	M CAPACITOR	0.033μF,50V
C37	QETC1HM-105	E CAPACITOR	1μF,50V
C39	QCSA1HJ-561	CAPACITOR	560PF,50v
C40	QCYA1HK-103	CAPACITOR	0.01μF,50V
C41	QETC1AM-476	E CAPACITOR	47μF,10V
C42	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C43	QCSA1HJ-101	CAPACITOR	100PF,50V
C44	QCSA1HJ-101	CAPACITOR	100PF,50V
C45	QFLA1HJ-392Z	M CAPACITOR	0.0039μF,50V
C46	QCSA1HJ-821	CAPACITOR	820PF,50V
C47	QFLA1HJ-222Z	M CAPACITOR	0.0022μF,50V
C48	QFLA1HJ-104Z	M CAPACITOR	0.1μF,50V
C49	QCSA1HJ-102	CAPACITOR	0.001μF,50V
C50	QETC1AM-107	E CAPACITOR	100μF,10V
C51	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
C53	QETC1CM-106	E CAPACITOR	10μF,16V
C54	QENC1CM-106	E CAPACITOR	10μF,16V
C55	QFLA1HJ-333Z	M CAPACITOR	0.033μF,50V
C56	QETC1HM-225	E CAPACITOR	2.2μF,50V
C57	QETC1AM-336	E CAPACITOR	33μF,10V
C58	QFLA1HJ-473Z	M CAPACITOR	0.047μF,50V
C61	QETC1CM-106	E CAPACITOR	10μF,16V
C62	QETC1CM-106	E CAPACITOR	10μF,16V
C64	QETC1CM-226	E CAPACITOR	22μF,16V
C65	QETC1CM-106	E CAPACITOR	10μF,16V
C66	QETC1CM-106	E CAPACITOR	10μF,16V
C67	QETC1AM-107	E CAPACITOR	100μF,10V
C68	QETC0JM-107	E CAPACITOR	100μF,6.3V
C69	QETC0JM-107	E CAPACITOR	100μF,6.3V
C70	QETC1CM-476	E CAPACITOR	47μF,16V
C71	QETC1AM-476	E CAPACITOR	47μF,10V
C72	QETC1CM-106	E CAPACITOR	10μF,16V
C73	QETC1CM-476	E CAPACITOR	47μF,16V
C74	QETC1CM-476	E CAPACITOR	47μF,16V
C75	QETC1CM-476	E CAPACITOR	47μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C76	QETC1CM-476	E CAPACITOR	47 μF,16V
C77	QCFA1HZ-104	CAPACITOR	0.1 μF,50V
C78	QETC1CM-106	E CAPACITOR	10 μF,16V
C79	QETC1CM-106	E CAPACITOR	10 μF,16V
C80	QCC11EJ-104	CAPACITOR	0.1 μF,25V
C81	QETC1AM-336	E CAPACITOR	33 μF,10V
C82	QCC11EJ-104	CAPACITOR	0.1 μF,25V
C83	QETC1AM-336	E CAPACITOR	33 μF,10V
C84	QETC1AM-107	E CAPACITOR	100 μF,10V
C85	QETC1CM-106	E CAPACITOR	10 μF,16V
C86	QCSA1HJ-102	CAPACITOR	0.001 μF,50V
C87	QCSA1HJ-102	CAPACITOR	0.001 μF,50V
C88	QETC1HM-105	E CAPACITOR	1 μF,50V
C89	QCYA1HK-221	CAPACITOR	220PF,50V
C90	QCYA1HK-221	CAPACITOR	220PF,50V
C91	QETC1AM-476	E CAPACITOR	47 μF,10V
C92	QCC11EJ-104	CAPACITOR	0.1 μF,25V
C93	QETC1AM-336	E CAPACITOR	33 μF,10V
C100	QFLA1HJ-822Z	M CAPACITOR	0.0082 μF,50V
C101	QFLA1HJ-822Z	M CAPACITOR	0.0082 μF,50V
C102	QEK61HM-105	E CAPACITOR	1 μF,50V
C103	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C104	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C105	QFV11HJ-104	MM CAPACITOR	0.1 μF,50V
C106	QCBB1HJ-102	CAPACITOR	0.001 μF,50V
C107	QETC1HM-225	E CAPACITOR	2.2 μF,50V
C108	QETC1HM-225	E CAPACITOR	2.2 μF,50V
C201	QETC1HM-105	E CAPACITOR	1 μF,50V
C202	QCYA1HK-332	CAPACITOR	0.0033 μF,50V
C203	QCSA1HJ-821	CAPACITOR	820PF,50V
C204	QETC1CM-107	E CAPACITOR	100 μF,16V
C205	QETC1CM-476	E CAPACITOR	47 μF,16V
C206	QCSA1HJ-471	CAPACITOR	470PF,50V
C207	QFLA1HJ-123Z	M CAPACITOR	0.012 μF,50V
C208	QETC1HM-224	E CAPACITOR	0.22 μF,50V
C209	QETC1CM-226	E CAPACITOR	22 μF,16V
C210	PU60550-105	E CAPACITOR	1 μF,50V
C211	QETC1HM-105	E CAPACITOR	1 μF,50V
C212	QETC1CM-106	E CAPACITOR	10 μF,16V
C213	QETC1CM-106	E CAPACITOR	10 μF,16V
C214	QFLA1HJ-153Z	M CAPACITOR	0.015 μF,50V
C215	QFV71HJ-333	TF CAPACITOR	0.033 μF,50V
C216	QFLA1HJ-393Z	M CAPACITOR	0.039 μF,50V
C217	QFLA1HJ-103Z	M CAPACITOR	0.01 μF,50V
C218	QFLA1HJ-183Z	M CAPACITOR	0.018 μF,50V
C219	QCFA1HZ-103	CAPACITOR	0.01 μF,50V
C220	QCSA1HJ-331	CAPACITOR	330PF,50V
C221	QFLA1HJ-473Z	M CAPACITOR	0.047 μF,50V
C222	QCC11EJ-332	CAPACITOR	0.0033 μF,25V
C223	QCC11EJ-682	CAPACITOR	0.0068 μF,25V
C224	QETC1CM-106	E CAPACITOR	10 μF,16V
L1	PU59153-101K	COIL	100 μH

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L2	PELN0530-101J	COIL	100 μH
L3	PELN0530-101J	COIL	100 μH
L4	PELN0530-101J	COIL	100 μH
L5	PELN0530-101J	COIL	100 μH
L6	PELN0530-101J	COIL	100 μH
L201	PU58308-682J	COIL	6.8mH
BPF1	PU60396	BAND PASS FILTER	
BPF2	PU60397	BAND PASS FILTER	
⚠ CF1	PEVB0352	RESONATOR	
K2	PU60281-5	FERRATE BEADS	
K3	PU60281-5	FERRATE BEADS	
⚠ T201	PELN0531	OSC TRANSFORMER	
TP1	PU55774	TEST PIN, X2	
TP2	PU55774	TEST PIN, X3	
CN1	PU59555-2	CONNECTOR	
CN2	PU60417-6	CONNECTOR	
CN3	PU60417-3	CONNECTOR	
CN4	PU60417-3	CONNECTOR	
CN5	PU58844-4	CONNECTOR	
CN6	PU59555-2	CONNECTOR	
CN7	PU59555-2	CONNECTOR	
CN8	PU60417-4	CONNECTOR	
CN9	PEMC0723-010	CONNECTOR(BOARD TO BOARD)	
CN10	PU60417-3	CONNECTOR	
CN11	PU59555-3	CONNECTOR	
CN12	PU59555-2	CONNECTOR	
CN13	PEMC0714-007	CONNECTOR	

— SERVO SECTION —

IC401	HD49733ANT	IC
IC441	LM358N	IC
or	LM358P	IC
or	UPC358C	IC
IC442	MC14066BCP	IC
or	BU4066B	IC
or	CD4066BE	IC
IC451	BA7039	IC
or	XRA7039	IC
Q401	2SA1576(QRS)	TRANSISTOR
Q441	DTC124EU	TRANSISTOR
Q442	DTC124EU	TRANSISTOR
D402	1SS133	DIODE
or	MA165	DIODE
D403	1SS133	DIODE
or	MA165	DIODE
D404	1SS133	DIODE
or	MA165	DIODE

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D406	1SS133	DIODE	
	or MA165	DIODE	
D411	1SS133	DIODE	
	or MA165	DIODE	
D412	1SS133	DIODE	
	or MA165	DIODE	
R401	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R402	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R403	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R404	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R405	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R406	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R407	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R408	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R409	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R410	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R411	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R412	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R413	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R414	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R415	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R416	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
R418	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
R419	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R420	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R421	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R422	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R423	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R424	QRSA08J-124YN	RESISTOR	120KΩ,1/10W
R425	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R426	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R427	QVZ3518-474A	V RESISTOR,SWITCHING POINT	470KΩ
R428	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R429	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R430	QRSA08J-225YN	RESISTOR	2.2MΩ,1/10W
R434	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R435	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R441	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R442	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R443	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R444	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R445	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R446	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R447	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R448	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R449	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R450	QRSA08J-824YN	RESISTOR	820KΩ,1/10W
R451	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R452	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R453	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R455	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R456	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R458	QRSA08J-104YN	RESISTOR	100KΩ,1/10W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C401	QCYA1HK-102	CAPACITOR	0.001μF,50V
C402	QETC1CM-226	E CAPACITOR	22μF,16V
C403	QETC1CM-226	E CAPACITOR	22μF,16V
C405	QCTA1CH-101	CAPACITOR	100PF,16V
C406	QCYA1HK-102	CAPACITOR	0.001μF,50V
C407	QETC1HM-105	E CAPACITOR	1μF,50V
C408	QCYA1HK-102	CAPACITOR	0.001μF,50V
C409	QCC31CK-563	CAPACITOR	0.056μF,16V
C410	QCYA1HK-102	CAPACITOR	0.001μF,50V
C412	QCYA1EK-223	CAPACITOR	0.022μF,25V
C413	QETC1CM-226	E CAPACITOR	22μF,16V
C414	QFV71HJ-104	TF CAPACITOR	0.1μF,50V
	or QFN31HJ-104	M CAPACITOR	0.1μF,50V
C415	QFLC1HJ-472Z	M CAPACITOR	0.0047μF,50V
	or QFN31HJ-472	M CAPACITOR	0.0047μF,50V
C416	QETC1EM-475	E CAPACITOR	4.7μF,25V
C417	QETC1EM-475	E CAPACITOR	4.7μF,25V
C418	QETC1CM-106	E CAPACITOR	10μF,16V
C419	QETC1CM-106	E CAPACITOR	10μF,16V
C420	QFV71HJ-473	TF CAPACITOR	0.047μF,50V
	or QFN31HJ-473	M CAPACITOR	0.047μF,50V
C421	QENC1HM-105	NP E CAPACITOR	1μF,50V
C422	QCTA1CH-101	CAPACITOR	100PF,16V
C423	QFN31HJ-682	M CAPACITOR	0.0068μF,50V
C426	QCTA1CH-181	CAPACITOR	180PF,16V
C441	QEK61CM-106	E CAPACITOR	10μF,16V
	or QETC1CM-106	E CAPACITOR	10μF,16V
C451	QCYA1EK-103	CAPACITOR	0.01μF,25V
C452	QCYA1EK-103	CAPACITOR	0.01μF,25V
C453	QCYA1EK-103	CAPACITOR	0.01μF,25V
C454	QCC31CK-104	CAPACITOR	0.1μF,16V
C455	QCYA1EK-103	CAPACITOR	0.01μF,25V
C456	QFV71HJ-473	TF CAPACITOR	0.047μF,50V
C457	QCYA1EK-103	CAPACITOR	0.01μF,25V
C458	QETC1CM-226	E CAPACITOR	22μF,16V
C459	QCYA1EK-103	CAPACITOR	0.01μF,25V
L451	PU59152-270J	COIL	27μH
TP401	PU55774	TEST PIN	
CN401	PU58844-3	CONNECTOR	
CN402	PU59555-4	CONNECTOR	
CN403	PU59555-7	CONNECTOR	
CN404	PU60417-3	CONNECTOR	
CN405	PU60417-9	CONNECTOR	
⚠ CP401	ICP-N15	CIRCUIT PROTECTOR	

— MECHACON SECTION —

IC601	M37524M4-146SP	IC	
Q601	2SB1256	TRANSISTOR	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q602	DTC114TU	TRANSISTOR	
D601	1SS133	DIODE	
	or MA165	DIODE	
D602	1SS133	DIODE	
	or MA165	DIODE	
D603	1SS133	DIODE	
	or MA165	DIODE	
D604	1SS133	DIODE	
	or MA165	DIODE	
D605	MTZ7.5B	ZENER DIODE	
	or HZS7.5EB2	ZENER DIODE	
D606	11E2	DIODE	
	or 11ES2	DIODE	
D607	S5688G	DIODE	
	or 1SR139-200	DIODE	
	or 11ES2	DIODE	
	or ERA15-02	DIODE	
D608	1SS133	DIODE	
D609	1SS133	DIODE	
R601	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R602	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R603	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R604	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R605	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R606	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R607	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R608	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R609	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R610	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R612	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R613	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R614	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R615	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R616	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R617	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R619	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R620	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R621	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R622	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R623	QRSA08J-105YN	RESISTOR	1.0MΩ,1/10W
R624	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R625	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R626	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R627	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R628	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R629	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R630	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R631	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R633	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R635	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R636	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R637	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R638	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R639	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R640	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R641	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R642	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R645	QRSA08J-303YN	RESISTOR	30KΩ,1/10W
R646	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
R647	QRSA08J-154YN	RESISTOR	150KΩ,1/10W
R648	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R650	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R651	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R652	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R690	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R691	QRD161J-472	RESISTOR	4.7KΩ,1/6W
RA601	QRB055J-103M	RESISTOR ARRAY	
	or QRB055J-103F	RESISTOR ARRAY	
C601	QCC11EK-223	CAPACITOR	0.022μF,25V
C602	QEK61EM-335	E CAPACITOR	3.3μF,25V
C603	QCC11EK-473	CAPACITOR	0.047μF,25V
C604	QEK61HM-105	E CAPACITOR	1μF,50V
C605	QETC0JM-107	E CAPACITOR	100μF,6.3V
C606	QCTA1CH-220	CAPACITOR	22PF,16V
C610	QCC11EK-104	CAPACITOR	0.1μF,25V
L601	PU59152-100J	COIL	10μH
L602	PU59988-221J	COIL	220μH
⚠ CF601	PEVB0340	RESONATOR	
K1	PU60281-5	FERRATE BEADS	
⚠ TH601	PESC1041	POSI THERMISTOR	
⚠	or PESC1089	POSI THERMISTOR	
CN601	PEMC0722-018	WIRE TRAP	
	or PEMC0753-018	WIRE TRAP	
CN602	PU59555-4	CONNECTOR	
CN603	PU60417-10	CONNECTOR	
CN604	PU60417-8	CONNECTOR	
CN605	PEMC0723-005	CONNECTOR (BOARD TO BOARD)	
CN606	PU60417-5	CONNECTOR	
CN608	PU59555-2	CONNECTOR	
CN609	PEMC0714-004	CONNECTOR	
⚠ CP601	ICP-N20	CIRCUIT PROTECTOR	

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VIDEO BOARD ASSEMBLY <05>

PWBA	PB10591C-01	VIDEO UNIT BOARD ASSEMBLY
IC1	BA7649	IC
	or BA7649A	IC
IC2	PB10351A-03	CRI MODULE ASSY

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
IC3	JCP0021	IC
IC4	MC74HC04AN	IC
	or TC74HC04AP	IC
IC201	CXL5502P	IC
IC203	BA7602	IC
IC204	AN3480K	IC
IC401	TL8825P	IC
IC402	PB20432C	Y MODULE ASSY
IC403	AN6393	IC
IC601	JCP0027	IC
IC901	M52684AP	IC
IC902	M50554-262SP	IC
Q1	2SA933S (RS)	TRANSISTOR
Q2	DTC144WS	TRANSISTOR
Q3	DTC144WS	TRANSISTOR
Q4	2SA933S (S)	TRANSISTOR
Q5	2SA854S (R)	TRANSISTOR
Q6	2SA854S (R)	TRANSISTOR
Q7	2SA854S (R)	TRANSISTOR
Q8	2SA933S (RS)	TRANSISTOR
Q9	DTC144WS	TRANSISTOR
Q10	DTA124ES	TRANSISTOR
Q11	DTC144ES	TRANSISTOR
Q12	DTC144ES	TRANSISTOR
Q13	2SC1740S (QRS)	TRANSISTOR
Q14	2SA933S (RS)	TRANSISTOR
Q15	2SC1740S (QRS)	TRANSISTOR
Q201	2SA933S (RS)	TRANSISTOR
Q202	2SC1740S (S)	TRANSISTOR
Q203	2SC1740S (S)	TRANSISTOR
Q209	2SC1740S (QRS)	TRANSISTOR
Q210	2SC1740S (QRS)	TRANSISTOR
Q211	2SC1740S (QRS)	TRANSISTOR
Q212	2SC1740S (QRS)	TRANSISTOR
Q213	2SC1740S (QRS)	TRANSISTOR
Q214	2SC1740S (QRS)	TRANSISTOR
Q215	2SC1740S (QRS)	TRANSISTOR
Q216	2SC1740S (QRS)	TRANSISTOR
Q217	2SC1740S (QRS)	TRANSISTOR
Q218	2SC1740S (QRS)	TRANSISTOR
Q219	2SC1740S (QRS)	TRANSISTOR
Q220	2SC1740S (QRS)	TRANSISTOR
Q221	DTA124ES	TRANSISTOR
Q222	2SC1740S (QRS)	TRANSISTOR
Q401	2SC1740S (QRS)	TRANSISTOR
Q402	2SC1740S (QRS)	TRANSISTOR
Q403	2SC1740S (QRS)	TRANSISTOR
Q405	2SA933S (RS)	TRANSISTOR
Q406	2SA933S (RS)	TRANSISTOR
Q407	2SC1740S (QRS)	TRANSISTOR
Q408	2SC1740S (QRS)	TRANSISTOR
Q409	2SA933S (RS)	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
Q410	DTA124ES	TRANSISTOR
Q411	DTC124ES	TRANSISTOR
Q412	DTC144WS	TRANSISTOR
Q413	DTC124ES	TRANSISTOR
Q414	DTC144ES	TRANSISTOR
Q415	DTC144ES	TRANSISTOR
Q416	DTC124ES	TRANSISTOR
Q601	2SC1740S (QRS)	TRANSISTOR
Q602	2SC1740S (QRS)	TRANSISTOR
Q605	2SA933S (RS)	TRANSISTOR
Q606	DTA124ES	TRANSISTOR
Q607	2SA933S (RS)	TRANSISTOR
Q608	2SC1740S (QRS)	TRANSISTOR
Q609	DTC144ES	TRANSISTOR
Q610	2SC1740S (QRS)	TRANSISTOR
Q611	2SC1740S (QRS)	TRANSISTOR
Q612	2SC1740S (QRS)	TRANSISTOR
Q613	2SA933S (RS)	TRANSISTOR
Q614	DTC124ES	TRANSISTOR
Q615	2SC1740S (S)	TRANSISTOR
Q901	DTC144ES	TRANSISTOR
Q902	DTC114ES	TRANSISTOR
Q903	DTC144ES	TRANSISTOR
Q904	2SK656	FE TRANSISTOR
Q905	DTA114ES	TRANSISTOR
Q906	DTA114ES	TRANSISTOR
Q907	2SA933S (RS)	TRANSISTOR
Q908	2SC1740S (QRS)	TRANSISTOR
Q909	DTC144WS	TRANSISTOR
Q910	DTC124ES	TRANSISTOR
Q911	DTC124ES	TRANSISTOR
Q912	DTC124ES	TRANSISTOR
Q913	2SA933S (RS)	TRANSISTOR
Q914	2SC1740S (QRS)	TRANSISTOR
Q915	2SA933S (RS)	TRANSISTOR
Q916	2SC1740S (QRS)	TRANSISTOR
Q917	2SC1740S (QRS)	TRANSISTOR
Q918	2SA933S (RS)	TRANSISTOR
Q919	2SC1740S (QRS)	TRANSISTOR
Q920	2SC1740S (QRS)	TRANSISTOR
Q921	2SA933S (RS)	TRANSISTOR
Q922	2SA933S (RS)	TRANSISTOR
Q923	2SC1740S (QRS)	TRANSISTOR
Q924	2SA933S (RS)	TRANSISTOR
Q925	DTC144WS	TRANSISTOR
D1	1SS133	DIODE
	or MA165	DIODE
D3	1SS133	DIODE
	or MA165	DIODE
D4	1SS133	DIODE
	or MA165	DIODE
D5	1SS133	DIODE
	or MA165	DIODE
	or MA165	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
D7	1SS133	DIODE
	or MA165	DIODE
D8	1SS133	DIODE
	or MA165	DIODE
D204	1SS133	DIODE
	or MA165	DIODE
D205	1SS133	DIODE
	or MA165	DIODE
D401	1SS133	DIODE
	or MA165	DIODE
D402	1SS133	DIODE
	or MA165	DIODE
D403	1SS133	DIODE
	or MA165	DIODE
D405	1SS133	DIODE
	or MA165	DIODE
D406	1SS133	DIODE
	or MA165	DIODE
D408	1SS133	DIODE
	or MA165	DIODE
D409	1SS133	DIODE
	or MA165	DIODE
D411	1SS133	DIODE
	or MA165	DIODE
D603	1SS133	DIODE
	or MA165	DIODE
D604	1SS133	DIODE
	or MA165	DIODE
D605	1SS133	DIODE
	or MA165	DIODE
D606	1SS133	DIODE
	or MA165	DIODE
D607	1SS133	DIODE
	or MA165	DIODE
D608	1SS292Y	DIODE
D609	1SS133	DIODE
	or MA165	DIODE
D610	1SS133	DIODE
	or MA165	DIODE
D611	1SS133	DIODE
	or MA165	DIODE
D901	1SS133	DIODE
	or MA165	DIODE
D902	1SS133	DIODE
	or MA165	DIODE
D903	1SS133	DIODE
	or MA165	DIODE
D904	1SS133	DIODE
	or MA165	DIODE
D905	1SS133	DIODE
	or MA165	DIODE
D906	1SS133	DIODE
	or MA165	DIODE
D907	1SS133	DIODE
	or MA165	DIODE
D908	1SS133	DIODE
	or MA165	DIODE
D909	1SS133	DIODE
	or MA165	DIODE
D910	1SS133	DIODE
R1	QRD161J-393	RESISTOR 39KΩ,1/6W
R2	QRD161J-561	RESISTOR 560Ω,1/6W
R3	QRD161J-331	RESISTOR 330Ω,1/6W
R4	QRD161J-332	RESISTOR 3.3KΩ,1/6W
R5	QRD161J-333	RESISTOR 33KΩ,1/6W
R6	QRD161J-103	RESISTOR 10KΩ,1/6W
R7	QRD161J-103	RESISTOR 10KΩ,1/6W
R8	QRD161J-223	RESISTOR 22KΩ,1/6W
R9	QRD161J-750	RESISTOR 75Ω,1/6W
R10	QRD161J-103	RESISTOR 10KΩ,1/6W
R11	QRD161J-102	RESISTOR 1KΩ,1/6W
R12	QRD161J-102	RESISTOR 1KΩ,1/6W
R13	QRD161J-750	RESISTOR 75Ω,1/6W
R15	QRD161J-122	RESISTOR 1.2KΩ,1/6W
R16	QRD123J-391SX	RESISTOR 390Ω,1/2W
R17	QRD161J-750	RESISTOR 75Ω,1/6W
R18	QRD123J-391SX	RESISTOR 390Ω,1/2W
R19	QRD161J-750	RESISTOR 75Ω,1/6W
R20	QRD123J-391SX	RESISTOR 390Ω,1/2W
R21	QRD161J-391	RESISTOR 390Ω,1/6W
R22	QRD161J-124	RESISTOR 120KΩ,1/6W
R23	QRD161J-154	RESISTOR 150KΩ,1/6W
R24	QRD161J-332	RESISTOR 3.3KΩ,1/6W
R25	QRD161J-162	RESISTOR 1.6KΩ,1/6W
R26	QRD161J-561	RESISTOR 560Ω,1/6W
R27	QRD161J-561	RESISTOR 560Ω,1/6W
R28	QRD161J-681	RESISTOR 680Ω,1/6W
R29	QRD161J-102	RESISTOR 1KΩ,1/6W
R30	QRD161J-222	RESISTOR 2.2KΩ,1/6W
R31	QRD161J-103	RESISTOR 10KΩ,1/6W
R32	QVZ3518-103AZ	V RESISTOR, AGC LEVEL-2 10KΩ
R33	QRD161J-152	RESISTOR 1.5KΩ,1/6W
R34	QRD161J-103	RESISTOR 10KΩ,1/6W
R35	QRD161J-102	RESISTOR 1KΩ,1/6W
R36	QRD161J-102	RESISTOR 1KΩ,1/6W
R37	QRD161J-102	RESISTOR 1KΩ,1/6W
R38	QRD161J-102	RESISTOR 1KΩ,1/6W
R39	QRD161J-562	RESISTOR 5.6KΩ,1/6W
R41	QRD161J-223	RESISTOR 22KΩ,1/6W
R42	QRD161J-223	RESISTOR 22KΩ,1/6W
R43	QRD161J-750	RESISTOR 75Ω,1/6W
R44	QRD161J-223	RESISTOR 22KΩ,1/6W
R45	QRD161J-103	RESISTOR 10KΩ,1/6W
R46	QRD161J-103	RESISTOR 10KΩ,1/6W
R47	QRD161J-391	RESISTOR 390Ω,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R48	QRD161J-221	RESISTOR	220Ω,1/6W
R49	QRD161J-911	RESISTOR	910Ω,1/6W
R50	QRD161J-223	RESISTOR	22KΩ,1/6W
R51	QRD161J-183	RESISTOR	18KΩ,1/6W
R52	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R53	QRD161J-103	RESISTOR	10KΩ,1/6W
R54	QRD161J-104	RESISTOR	100KΩ,1/6W
R55	QRD161J-822	RESISTOR	8.2KΩ,1/6W
R59	QRD161J-101	RESISTOR	100Ω,1/6W
R60	QRD161J-101	RESISTOR	100Ω,1/6W
R61	QRD161J-101	RESISTOR	100Ω,1/6W
R62	QRD161J-564	RESISTOR	560KΩ,1/6W
R63	QRD161J-102	RESISTOR	1KΩ,1/6W
R201	QRD161J-202	RESISTOR	2KΩ,1/6W
R202	QRD161J-202	RESISTOR	2KΩ,1/6W
R203	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R204	QRD161J-105	RESISTOR	1.0MΩ,1/6W
R205	QRD161J-823	RESISTOR	82KΩ,1/6W
R206	QRD161J-102	RESISTOR	1KΩ,1/6W
R207	QRD161J-102	RESISTOR	1KΩ,1/6W
R209	QRD161J-102	RESISTOR	1KΩ,1/6W
R210	QRD161J-471	RESISTOR	470Ω,1/6W
R211	QRD161J-471	RESISTOR	470Ω,1/6W
R212	QVZ3518-681AZ	V RESISTOR, EE Y LEVEL	680Ω
R213	QRD161J-331	RESISTOR	330Ω,1/6W
R214	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R215	QRD161J-331	RESISTOR	330Ω,1/6W
R223	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R225	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R226	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R227	QRD161J-102	RESISTOR	1KΩ,1/6W
R228	QRD161J-102	RESISTOR	1KΩ,1/6W
R229	QVZ3518-331AZ	V RESISTOR, COLOR COMB GAIN-1	330Ω
R230	QRD161J-681	RESISTOR	680Ω,1/6W
R231	QRD161J-221	RESISTOR	220Ω,1/6W
R232	QRD161J-561	RESISTOR	560Ω,1/6W
R233	QRD161J-333	RESISTOR	33KΩ,1/6W
R234	QRD161J-561	RESISTOR	560Ω,1/6W
R235	QRD161J-183	RESISTOR	18KΩ,1/6W
R236	QRD161J-271	RESISTOR	270Ω,1/6W
R237	QRD161J-821	RESISTOR	820Ω,1/6W
R238	QRD161J-102	RESISTOR	1KΩ,1/6W
R239	QRD161J-271	RESISTOR	270Ω,1/6W
R240	QRD161J-151	RESISTOR	150Ω,1/6W
R241	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R242	QRD161J-221	RESISTOR	220Ω,1/6W
R243	QVZ3518-103AZ	V RESISTOR,COLOR COMB GAIN-2	10KΩ
R244	QRD161J-102	RESISTOR	1KΩ,1/6W
R245	QRD161J-102	RESISTOR	1KΩ,1/6W
R246	QRD161J-102	RESISTOR	1KΩ,1/6W
R247	QRD161J-471	RESISTOR	470Ω,1/6W
R248	QRD161J-102	RESISTOR	1KΩ,1/6W
R249	QRD161J-102	RESISTOR	1KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R250	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R251	QRD161J-331	RESISTOR	330Ω,1/6W
R252	QRD161J-103	RESISTOR	10KΩ,1/6W
R253	QRD161J-471	RESISTOR	470Ω,1/6W
R254	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R255	QRD161J-301	RESISTOR	300Ω,1/6W
R256	QRD161J-681	RESISTOR	680Ω,1/6W
R257	QRD161J-621	RESISTOR	620Ω,1/6W
R258	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R259	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R260	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R261	QVZ3518-332AZ	V RESISTOR, Y COMB GAIN-1	3.3KΩ
R262	QRD161J-331	RESISTOR	330Ω,1/6W
R263	QRD161J-103	RESISTOR	10KΩ,1/6W
R264	QVZ3518-102AZ	V RESISTOR, COLOR COMB PHASE-1	1KΩ
R265	QVZ3518-222AZ	V RESISTOR, COLOR COMB PHASE-2	2.2KΩ
R266	QRD161J-102	RESISTOR	1KΩ,1/6W
R267	QRV144F-1001A	CMF RESISTOR	1KΩ,1/4W
R268	QRV144F-1001A	CMF RESISTOR	1KΩ,1/4W
R269	QRD161J-391	RESISTOR	390Ω,1/6W
R270	QVZ3518-332AZ	V RESISTOR, Y COMB GAIN-2	3.3KΩ
R271	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R272	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R273	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R401	QRD161J-102	RESISTOR	1KΩ,1/6W
R402	QVZ3518-152AZ	V RESISTOR, CNR NC BAL-1	1.5KΩ
R403	QRD161J-102	RESISTOR	1KΩ,1/6W
R404	QRD161J-102	RESISTOR	1KΩ,1/6W
R405	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R406	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R407	QRD161J-102	RESISTOR	1KΩ,1/6W
R408	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R409	ERT-D2FGL142S	THERMISTOR	
R410	QRD161J-331	RESISTOR	330Ω,1/6W
R411	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R412	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R413	QRD161J-821	RESISTOR	820Ω,1/6W
R414	QRD161J-471	RESISTOR	470Ω,1/6W
R415	QRD161J-102	RESISTOR	1KΩ,1/6W
R416	QVZ3518-681AZ	V RESISTOR,Y NC BALANCE	680Ω
R417	QRD161J-331	RESISTOR	330Ω,1/6W
R418	QRD161J-471	RESISTOR	470Ω,1/6W
R419	QRD161J-471	RESISTOR	470Ω,1/6W
R420	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R421	QRD161J-102	RESISTOR	1KΩ,1/6W
R422	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R423	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R424	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R425	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R426	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R427	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R428	QVZ3518-151A	V RESISTOR, AGC LEVEL-3	150Ω

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R429	QRD161J-241	RESISTOR	240Ω,1/6W
R430	QRD161J-242	RESISTOR	2.4KΩ,1/6W
R431	QRD161J-391	RESISTOR	390Ω,1/6W
R432	QRD161J-820	RESISTOR	82Ω,1/6W
R433	QRD161J-102	RESISTOR	1KΩ,1/6W
R434	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R435	QRD161J-224	RESISTOR	220KΩ,1/6W
R436	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R438	QRD161J-563	RESISTOR	56KΩ,1/6W
R439	QRD161J-563	RESISTOR	56KΩ,1/6W
R440	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R441	QRD161J-561	RESISTOR	560Ω,1/6W
R442	QRD161J-223	RESISTOR	22KΩ,1/6W
R443	QRD161J-473	RESISTOR	47KΩ,1/6W
R444	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R445	QRD161J-333	RESISTOR	33KΩ,1/6W
R446	QRD161J-123	RESISTOR	12KΩ,1/6W
R447	QRD161J-102	RESISTOR	1KΩ,1/6W
R448	QRD161J-473	RESISTOR	47KΩ,1/6W
R449	QRD161J-102	RESISTOR	1KΩ,1/6W
R451	QRD161J-223	RESISTOR	22KΩ,1/6W
R452	QRD161J-223	RESISTOR	22KΩ,1/6W
R453	QRD161J-223	RESISTOR	22KΩ,1/6W
R454	QVZ3518-223A	V RESISTOR, S PB Y LEVEL	22KΩ
R455	QRD161J-333	RESISTOR	33KΩ,1/6W
R456	QVZ3518-332AZ	V RESISTOR, N PB Y LEVEL	3.3KΩ
R457	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R458	QRD161J-223	RESISTOR	22KΩ,1/6W
R460	QRD161J-100	RESISTOR	10Ω,1/6W
R461	ERSA39J-102	RESISTOR	1KΩ,1/6W
R601	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R602	QRD161J-393	RESISTOR	39KΩ,1/6W
R603	QRD161J-102	RESISTOR	1KΩ,1/6W
R604	QRD161J-681	RESISTOR	680Ω,1/6W
R60	QRD161J-333	RESISTOR	33KΩ,1/6W
R606	QRD161J-223	RESISTOR	22KΩ,1/6W
R613	QRD161J-102	RESISTOR	1KΩ,1/6W
R614	QRD161J-102	RESISTOR	1KΩ,1/6W
R615	QRD161J-102	RESISTOR	1KΩ,1/6W
R616	QRD161J-102	RESISTOR	1KΩ,1/6W
R617	QRD161J-473	RESISTOR	47KΩ,1/6W
R618	QRD161J-682	RESISTOR	6.8KΩ,1/6W
R619	QRD161J-104	RESISTOR	100KΩ,1/6W
R620	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R621	QVZ3518-102AZ	V RESISTOR, COLOR COMB GAIN-3	1KΩ
R622	QRD161J-221	RESISTOR	220Ω,1/6W
R623	QRD161J-103	RESISTOR	10KΩ,1/6W
R624	QRD161J-103	RESISTOR	10KΩ,1/6W
R626	QRD161J-223	RESISTOR	22KΩ,1/6W
R627	QRD161J-273	RESISTOR	27KΩ,1/6W
R628	QRD161J-102	RESISTOR	1KΩ,1/6W
R629	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R630	QRD161J-102	RESISTOR	1KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R631	QRD161J-182	RESISTOR	1.8KΩ,1/6W
R632	QRD161J-561	RESISTOR	560Ω,1/6W
R633	QRD161J-561	RESISTOR	560Ω,1/6W
R634	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R635	QRD161J-561	RESISTOR	560Ω,1/6W
R636	QRD161J-103	RESISTOR	10KΩ,1/6W
R637	QRD161J-102	RESISTOR	1KΩ,1/6W
R638	QRD161J-102	RESISTOR	1KΩ,1/6W
R639	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R640	QRD161J-102	RESISTOR	1KΩ,1/6W
R641	QRD161J-103	RESISTOR	10KΩ,1/6W
R642	QRD161J-102	RESISTOR	1KΩ,1/6W
R643	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R644	QRD161J-103	RESISTOR	10KΩ,1/6W
R645	QRD161J-103	RESISTOR	10KΩ,1/6W
R646	QVZ3518-152AZ	V RESISTOR, CNR NC BAL-2	1.5KΩ
R647	QRD161J-393	RESISTOR	39KΩ,1/6W
R648	QRD161J-103	RESISTOR	10KΩ,1/6W
R649	QRD161J-393	RESISTOR	39KΩ,1/6W
R650	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R651	QRD161J-331	RESISTOR	330Ω,1/6W
R652	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R653	QRD161J-102	RESISTOR	1KΩ,1/6W
R654	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R655	QRD161J-392	RESISTOR	3.9KΩ,1/6W
R656	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R657	QRD161J-272	RESISTOR	2.7KΩ,1/6W
R658	QRD161J-475	RESISTOR	4.7MΩ,1/6W
R659	QRD161J-475	RESISTOR	4.7MΩ,1/6W
R901	QRD161J-563	RESISTOR	56KΩ,1/6W
R902	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R903	QRD161J-103	RESISTOR	10KΩ,1/6W
R904	QRD161J-123	RESISTOR	12KΩ,1/6W
R905	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R906	QRD161J-271	RESISTOR	270Ω,1/6W
R907	QRD161J-103	RESISTOR	10KΩ,1/6W
R908	QRD161J-223	RESISTOR	22KΩ,1/6W
R909	QRD161J-104	RESISTOR	100KΩ,1/6W
R910	QRD161J-471	RESISTOR	470Ω,1/6W
R911	QRD161J-221	RESISTOR	220Ω,1/6W
R912	QRD161J-102	RESISTOR	1KΩ,1/6W
R913	QRD161J-103	RESISTOR	10KΩ,1/6W
R914	QRD161J-103	RESISTOR	10KΩ,1/6W
R915	QRD161J-103	RESISTOR	10KΩ,1/6W
R916	QRD161J-681	RESISTOR	680Ω,1/6W
R917	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R918	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R919	QRD161J-681	RESISTOR	680Ω,1/6W
R920	QRD161J-102	RESISTOR	1KΩ,1/6W
R921	QRD161J-103	RESISTOR	10KΩ,1/6W
R922	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R923	QRD161J-472	RESISTOR	4.7KΩ,1/6W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R924	QRD161J-561	RESISTOR	560Ω,1/6W
	R925	QRD161J-621	RESISTOR	620Ω,1/6W
	R926	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R927	QRD161J-202	RESISTOR	2KΩ,1/6W
	R928	QRD161J-333	RESISTOR	33KΩ,1/6W
	R929	QRD161J-362	RESISTOR	3.6KΩ,1/6W
	R930	QRD161J-332	RESISTOR	3.3KΩ,1/6W
	R931	QRD161J-182	RESISTOR	1.8KΩ,1/6W
	R932	QRD161J-103	RESISTOR	10KΩ,1/6W
	R933	QRD161J-103	RESISTOR	10KΩ,1/6W
	R934	QRD161J-103	RESISTOR	10KΩ,1/6W
	R935	QRD161J-103	RESISTOR	10KΩ,1/6W
	R936	QRD161J-103	RESISTOR	10KΩ,1/6W
	R937	QRD161J-102	RESISTOR	1KΩ,1/6W
	R938	QRD161J-331	RESISTOR	330Ω,1/6W
	R939	QRD161J-272	RESISTOR	2.7KΩ,1/6W
	R940	QRD161J-471	RESISTOR	470Ω,1/6W
	R941	QRD161J-333	RESISTOR	33KΩ,1/6W
	R942	QRD161J-132	RESISTOR	1.3KΩ,1/6W
	R943	QRD161J-103	RESISTOR	10KΩ,1/6W
	R944	QRD161J-225	RESISTOR	2.2MΩ,1/6W
	R945	QRD161J-223	RESISTOR	22KΩ,1/6W
	R946	QRD161J-392	RESISTOR	3.9KΩ,1/6W
	R947	QRD161J-560	RESISTOR	56Ω,1/6W
	R948	QRD161J-182	RESISTOR	1.8KΩ,1/6W
	R949	QRD161J-471	RESISTOR	470Ω,1/6W
	R950	QRD161J-681	RESISTOR	680Ω,1/6W
	R951	QRD161J-271	RESISTOR	270Ω,1/6W
	R952	QRD161J-102	RESISTOR	1KΩ,1/6W
	R953	QRD161J-561	RESISTOR	560Ω,1/6W
	R954	QRD161J-103	RESISTOR	10KΩ,1/6W
	R955	QRD161J-273	RESISTOR	27KΩ,1/6W
	R956	QVZ3518-682A	V RESISTOR, AGC LEVEL-1	6.8KΩ
	R957	QRD161J-302	RESISTOR	3KΩ,1/6W
	R958	QRD161J-242	RESISTOR	2.4KΩ,1/6W
	R959	QRD161J-562	RESISTOR	5.6KΩ,1/6W
	R960	QRD161J-562	RESISTOR	5.6KΩ,1/6W
	R961	QRD161J-331	RESISTOR	330Ω,1/6W
	R962	QRD161J-331	RESISTOR	330Ω,1/6W
	R963	QRD161J-561	RESISTOR	560Ω,1/6W
	R964	QRD161J-151	RESISTOR	150Ω,1/6W
	C1	QEN61CM-106	NP E CAPACITOR	10μF,16V
	C2	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C4	QETC1CM-106	E CAPACITOR	10μF,16V
	C5	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C6	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C7	QETC0JM-336	E CAPACITOR	33μF,6.3V
	C8	QETC1CM-226	E CAPACITOR	22μF,16V
	C9	QETC1CM-106	E CAPACITOR	10μF,16V
	C10	QETC1CM-106	E CAPACITOR	10μF,16V
	C11	QETC0JM-108	E CAPACITOR	1000μF,6.3V
	C12	QETC0JM-108	E CAPACITOR	1000μF,6.3V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C13	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C14	QCSB1HJ-150	CAPACITOR	15PF,50V
	C15	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C16	QETC1CM-107	E CAPACITOR	100μF,16V
	C17	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C18	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C19	QCBB1HJ-820	CAPACITOR	82PF,50V
	C20	QCBB1HJ-391	CAPACITOR	390PF,50V
	C21	QCBB1HJ-681	CAPACITOR	680PF,50V
	C22	QCT25CH-330	CAPACITOR	33PF,50V
	C23	QCSB1HJ-220	CAPACITOR	22PF,50V
	C24	QCS31HJ-9R0	CAPACITOR	9PF,50V
	C25	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C26	QCSB1HJ-200	CAPACITOR	20PF,50V
	C27	QCSB1HJ-510	CAPACITOR	51PF,50V
	C28	QETB0JM-336	E CAPACITOR	33μF,6.3V
	C29	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C30	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C31	QCXB1CN-682	CAPACITOR	0.0068μF,16V
	C32	QETC0JM-337	E CAPACITOR	330μF,6.3V
	C33	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C34	QETC1CM-226	E CAPACITOR	22μF,16V
	C35	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C36	QETC1HM-225	E CAPACITOR	2.2μF,50V
	C37	QETC1HM-225	E CAPACITOR	2.2μF,50V
	C38	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C39	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C40	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C41	QCXB1CN-682	CAPACITOR	0.0068μF,16V
	C42	QETC1HM-225	E CAPACITOR	2.2μF,50V
	C43	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C44	QCSB1HJ-560	CAPACITOR	56PF,50V
	C45	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C46	QCBB1HJ-221	CAPACITOR	220PF,50V
	C47	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C48	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C49	QETC0JM-336	E CAPACITOR	33μF,6.3V
	C201	QCSB1HK-4R7	CAPACITOR	4.7PF,50V
	C202	QCSB1HK-4R7	CAPACITOR	4.7PF,50V
	C203	QETC1CM-106	E CAPACITOR	10μF,16V
	C204	QCBB1HJ-102	CAPACITOR	0.001μF,50V
	C205	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C206	QETC1HM-105	E CAPACITOR	1μF,50V
	C207	QETC1CM-336	E CAPACITOR	33μF,16V
	C208	QCBB1HJ-102	CAPACITOR	0.001μF,50V
	C209	QETC1HM-335	E CAPACITOR	3.3μF,50V
	C210	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C211	QCC11CJ-104	CAPACITOR	0.1μF,16V
	C212	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C213	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C214	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C227	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C228	QETC1CM-106	E CAPACITOR	10μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C229	QETC1CM-106	E CAPACITOR	10μF,16V
C230	QCBB1HJ-820	CAPACITOR	82PF,50V
C231	QCVB1CN-103	CAPACITOR	0.01μF,16V
C232	QCVB1CN-103	CAPACITOR	0.01μF,16V
C233	QCVB1CN-103	CAPACITOR	0.01μF,16V
C234	QETC0JM-107	E CAPACITOR	100μF,6.3V
C235	QCT25CH-820	CAPACITOR	82PF,50V
C236	QCT25CH-820	CAPACITOR	82PF,50V
C237	QCT05CH-180	CAPACITOR	18PF,50V
	or QCT25CH-180	CAPACITOR	18PF,50V
C238	QCT05CH-470	CAPACITOR	47PF,50V
	or QCT25CH-470	CAPACITOR	47PF,50V
C239	QCVB1CN-103	CAPACITOR	0.01μF,16V
C240	QCT05CH-180	CAPACITOR	18PF,50V
	or QCT25CH-180	CAPACITOR	18PF,50V
C241	QCT25CH-820	CAPACITOR	82PF,50V
C242	QCBB1HJ-221	CAPACITOR	220PF,50V
C243	QCVB1CN-103	CAPACITOR	0.01μF,16V
C244	QETC0JM-227	E CAPACITOR	220μF,6.3V
C245	QETC0JM-227	E CAPACITOR	220μF,6.3V
C246	QCVB1CN-103	CAPACITOR	0.01μF,16V
C247	QCBB1HJ-331	CAPACITOR	330PF,50V
C248	QETC1EM-475	E CAPACITOR	4.7μF,25V
C249	QCT05CH-470	CAPACITOR	47PF,50V
	or QCT25CH-470	CAPACITOR	47PF,50V
C250	QCVB1CN-103	CAPACITOR	0.01μF,16V
C251	QCVB1CN-103	CAPACITOR	0.01μF,16V
C252	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C253	QCVB1CN-103	CAPACITOR	0.01μF,16V
C254	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C255	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C256	QCVB1CN-103	CAPACITOR	0.01μF,16V
C257	QCVB1CN-103	CAPACITOR	0.01μF,16V
C258	QCVB1CN-103	CAPACITOR	0.01μF,16V
C259	QETC0JM-107	E CAPACITOR	100μF,6.3V
C260	QCVB1CN-103	CAPACITOR	0.01μF,16V
C261	QCVB1CN-103	CAPACITOR	0.01μF,16V
C262	QCVB1CN-103	CAPACITOR	0.01μF,16V
C263	QCBB1HJ-820	CAPACITOR	82PF,50V
C264	QETC1HM-476	E CAPACITOR	47μF,50V
C265	QCSB1HJ-150	CAPACITOR	15PF,50V
C266	QCVB1CN-103	CAPACITOR	0.01μF,16V
C268	QCSB1HJ-270	CAPACITOR	27PF,50V
C401	QCVB1CN-103	CAPACITOR	0.01μF,16V
C402	QCSB1HJ-220	CAPACITOR	22PF,50V
C403	QCVB1CN-103	CAPACITOR	0.01μF,16V
C404	QCSB1HJ-120	CAPACITOR	12PF,50V
C405	QETC1HM-104	E CAPACITOR	0.1μF,50V
C406	QCVB1CN-103	CAPACITOR	0.01μF,16V
C407	QETC0JM-476	E CAPACITOR	47μF,6.3V
C408	QCVB1CN-103	CAPACITOR	0.01μF,16V
C409	QETC1CM-106	E CAPACITOR	10μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C410	QCVB1CN-103	CAPACITOR	0.01μF,16V
C411	QETC1EM-475	E CAPACITOR	4.7μF,25V
C412	QETC1CM-106	E CAPACITOR	10μF,16V
C413	QCVB1CN-103	CAPACITOR	0.01μF,16V
C414	QCVB1CN-103	CAPACITOR	0.01μF,16V
C415	QCXB1CN-472	CAPACITOR	0.0047μF,16V
C416	QETC1HM-474	E CAPACITOR	0.47μF,50V
C417	QETC1EM-475	E CAPACITOR	4.7μF,25V
C418	QETB1HM-105	E CAPACITOR	1μF,50V
C419	QCVB1CN-103	CAPACITOR	0.01μF,16V
C420	QCVB1CN-103	CAPACITOR	0.01μF,16V
C421	QETC0JM-476	E CAPACITOR	47μF,6.3V
C422	QCVB1CN-103	CAPACITOR	0.01μF,16V
C423	QETC0JM-476	E CAPACITOR	47μF,6.3V
C425	QETC0JM-107	E CAPACITOR	100μF,6.3V
C426	QETC0JM-107	E CAPACITOR	100μF,6.3V
C427	QETC0JM-227	E CAPACITOR	220μF,6.3V
C428	QETC1CM-226	E CAPACITOR	22μF,16V
C429	QCVB1CN-103	CAPACITOR	0.01μF,16V
C430	QETC1EM-475	E CAPACITOR	4.7μF,25V
C431	QETC1HM-225	E CAPACITOR	2.2μF,50V
C432	QETC1HM-225	E CAPACITOR	2.2μF,50V
C433	QETC1EM-475	E CAPACITOR	4.7μF,25V
C434	QETC0JM-476	E CAPACITOR	47μF,6.3V
C436	QETC0JM-107	E CAPACITOR	100μF,6.3V
C437	QCSB1HJ-270	CAPACITOR	27PF,50V
C438	QCSB1HK-4R7	CAPACITOR	4.7PF,50V
C439	QCSB1HJ-220	CAPACITOR	22PF,50V
C440	QCSB1HJ-160	CAPACITOR	16PF,50V
C441	QCSB1HJ-270	CAPACITOR	27PF,50V
C442	QCSB1HJ-470	CAPACITOR	47PF,50V
C443	QCC31CJ-473	CAPACITOR	0.047μF,16V
C444	QCVB1CN-103	CAPACITOR	0.01μF,16V
C445	QETC0JM-336	E CAPACITOR	33μF,6.3V
C446	QENC1AM-226	NP E CAPACITOR	22μF,10V
C447	QETC1CM-106	E CAPACITOR	10μF,16V
C448	QCVB1CN-103	CAPACITOR	0.01μF,16V
C449	QETC1EM-475	E CAPACITOR	4.7μF,25V
C450	QETC1CM-476	E CAPACITOR	47μF,16V
C451	QETC0JM-107	E CAPACITOR	100μF,6.3V
C452	QCVB1CN-103	CAPACITOR	0.01μF,16V
C453	QCVB1CN-103	CAPACITOR	0.01μF,16V
C601	QCVB1CN-103	CAPACITOR	0.01μF,16V
C605	QCVB1CN-103	CAPACITOR	0.01μF,16V
C606	QCVB1CN-103	CAPACITOR	0.01μF,16V
C607	QETC1HM-104	E CAPACITOR	0.1μF,50V
C608	QCVB1CN-103	CAPACITOR	0.01μF,16V
C609	QETC1HM-224	E CAPACITOR	0.22μF,50V
C610	QCVB1CN-103	CAPACITOR	0.01μF,16V
C611	QCC11CJ-104	CAPACITOR	0.1μF,16V
C612	QCBB1HJ-471	CAPACITOR	470PF,50V
C613	QCBB1HJ-561	CAPACITOR	560PF,50V
C614	QETC1HM-474	E CAPACITOR	0.47μF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C615	QETC1HM-225	E CAPACITOR	2.2 μF,50V
C616	QCXB1CM-682	CAPACITOR	0.0068 μF,16V
C617	QCC11CJ-104	CAPACITOR	0.1 μF,16V
C618	QETC0JM-107	E CAPACITOR	100 μF,6.3V
C619	QCBB1HJ-102	CAPACITOR	0.001 μF,50V
C620	QCBB1HJ-101	CAPACITOR	100PF,50V
C621	QCBB1HJ-101	CAPACITOR	100PF,50V
C622	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C623	QCFB1EZ-223	CAPACITOR	0.022 μF,25V
C624	QETC0JM-107	E CAPACITOR	100 μF,6.3V
C625	QCC31EJ-104	CAPACITOR	0.1 μF,25V
C626	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C627	QCC31EJ-104	CAPACITOR	0.1 μF,25V
C628	QETC1CM-106	E CAPACITOR	10 μF,16V
C629	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C630	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C631	QCBB1HJ-102	CAPACITOR	0.001 μF,50V
C632	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C633	QCC31CJ-104	CAPACITOR	0.1 μF,16V
C635	QCSB1HJ-330	CAPACITOR	33PF,50V
C636	QCC31CJ-473	CAPACITOR	0.047 μF,16V
C637	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C638	QCBB1HJ-181	CAPACITOR	180PF,50V
C639	QCT30CH-200	CAPACITOR	20PF,50V
C640	QCBB1HJ-101	CAPACITOR	100PF,50V
C641	QETC1CM-106	E CAPACITOR	10 μF,16V
C642	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C643	QETC1HM-105	E CAPACITOR	1 μF,50V
C644	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C645	QCBB1HJ-221	CAPACITOR	220PF,50V
C646	QETC1HM-104	E CAPACITOR	0.1 μF,50V
C647	QETC1HM-225	E CAPACITOR	2.2 μF,50V
C649	QCXB1CM-392	CAPACITOR	0.0039 μF,16V
C650	QFN31HJ-103	M CAPACITOR	0.01 μF,50V
C651	QCT30CH-120	CAPACITOR	12PF,50V
C901	QETC1HM-334	E CAPACITOR	0.33 μF,50V
C902	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C903	QCSB1HJ-220	CAPACITOR	22PF,50V
C904	QCXB1CN-152	CAPACITOR	0.0015 μF,16V
C905	QETC1CM-106	E CAPACITOR	10 μF,16V
C906	QETC1HM-105	E CAPACITOR	1 μF,50V
C907	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C908	QFN31HJ-562	M CAPACITOR	0.0056 μF,50V
C909	QETC1HM-335	E CAPACITOR	3.3 μF,50V
C910	QETC1CM-106	E CAPACITOR	10 μF,16V
C911	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C912	QCBB1HJ-181	CAPACITOR	180PF,50V
C913	QAT3123-300	TRIMMER CAPACITOR, COLOR BURST	30PF
C914	QCSB1HJ-220	CAPACITOR	22PF,50V
C915	QEP41HM-105	NP E CAPACITOR	1 μF,50V
C916	QCSB1HJ-270	CAPACITOR	27PF,50V
C917	QCSB1HJ-270	CAPACITOR	27PF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C918	QCSB1HJ-220	CAPACITOR	22PF,50V
C919	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C920	QCSB1HJ-680	CAPACITOR	68PF,50V
C921	QAT3123-450	TRIMMER CAPACITOR, DOT CLOCK	45PF
C922	QCT30CH-150	CAPACITOR	15PF,50V
C923	QCSB1HK-3R3	CAPACITOR	3.3PF,50V
C924	QETC0JM-476	E CAPACITOR	47 μF,6.3V
C925	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C926	QCSB1HJ-680	CAPACITOR	68PF,50V
C927	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C928	QETC1CM-476	E CAPACITOR	47 μF,16V
C929	QETC1HM-226	E CAPACITOR	22 μF,50V
C930	QETC1HM-475	E CAPACITOR	4.7 μF,50V
C931	QETC0JM-476	E CAPACITOR	47 μF,6.3V
C932	QCSB1HJ-150	CAPACITOR	15PF,50V
C933	QCVB1CN-103	CAPACITOR	0.01 μF,16V
C934	QCSB1HK-4R7	CAPACITOR	4.7PF,50V
C935	QCSB1HJ-560	CAPACITOR	56PF,50V
L1	PU48530-101K	COIL	100 μH
L2	PU48530-101K	COIL	100 μH
L3	PU59988-820J	COIL	82 μH
L4	PU59988-101J	COIL	100 μH
L5	PU59988-390J	COIL	39 μH
L6	PU48530-101K	COIL	100 μH
L7	PU59988-560J	COIL	56 μH
L8	PU59988-121J	COIL	120 μH
L9	PU48530-101K	COIL	100 μH
L10	PU59988-560J	COIL	56 μH
L11	PU59988-101J	COIL	100 μH
L12	PU59988-680J	COIL	68 μH
L201	PU59152-101J	COIL	100 μH
L202	PU59988-330J	COIL	33 μH
L205	PU48530-101K	COIL	100 μH
L206	PU59988-180J	COIL	18 μH
L207	PU59988-101J	COIL	100 μH
L208	PU59988-101J	COIL	100 μH
L209	PU59988-180J	COIL	18 μH
L210	PU59988-100J	COIL	10 μH
L211	PU48530-101K	COIL	100 μH
L212	PU48530-101K	COIL	100 μH
L213	PU48530-101K	COIL	100 μH
L401	PU59988-330J	COIL	
L402	PU48530-101K	COIL	100 μH
L403	PU48530-101K	COIL	100 μH
L404	PU59988-680J	COIL	68 μH
L405	PU48530-101K	COIL	100 μH
L406	PU59153-101K	COIL	100 μH
L407	PU48530-101K	COIL	100 μH
L408	PU48530-101K	COIL	100 μH
L409	PU59988-100J	COIL	10 μH
L410	PU59988-181J	COIL	180 μH
L411	PU59988-820J	COIL	82 μH
L412	PU59988-680J	COIL	68 μH

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L413	PU48530-471J	COIL	470 μH
L414	PU59988-121J	COIL	120 μH
L601	PELN0580	COIL, COLOR COMB PHASE-3	
L602	PU48530-101K	COIL	100 μH
L604	PU59988-100J	COIL	10 μH
L605	PU48530-471J	COIL	470 μH
L606	PU48530-222J	COIL	2.2mH
L607	PU48530-561J	COIL	560 μH
L901	PU48530-101K	COIL	100 μH
L902	PU58333-220J	COIL	22 μH
L903	PU59988-220J	COIL	22 μH
L904	PU59988-220J	COIL	22 μH
L905	PU59988-8R2J	COIL	8.2 μH
L906	PU48530-101K	COIL	100 μH
L907	PU48530-101K	COIL	100 μH
EQ201	PELN0576	EQUALIZER	
LPF201	PU61052	LOW PASS FILTER	
LPF202	PU61053	LOW PASS FILTER	
LPF401	PU60055	LOW PASS FILTER	
LPF402	PELN0336-01-01	LOW PASS FILTER	
LPF403	PELN0409	LOW PASS FILTER	
LPF601	PELN0574	LOW PASS FILTER	
LPF602	PU61057	LOW PASS FILTER	
BPF401	PELN0343	BAND PASS FILTER	
BPF601	PU61058	BAND PASS FILTER	
⚠ CF901	PU60086	RESONATOR	
DL601	PU60227	1H DELAY LINE	
⚠ X601	PEVB0347	CRYSTAL RESONATOR	
⚠ X901	PU60747	CRYSTAL RESONATOR	
T601	PELN0575	TANK FILTER	
SCW1	SDSF3008Z	SCREW	
⚠ TB1	PQ21280-3.	TERMINAL BOARD (1)	
TP1	PU57545	TEST PIN, X31	
JA1	PU60613	PIN JACK	
JA2	PU61048	S.CONNECT	
CN2	PU59555-2	CONNECTOR	
CN3	PU59555-6	CONNECTOR	
CN4	PU59555-2	CONNECTOR	
CN6	PU60417-9	CONNECTOR	
CN7	PU59555-3	CONNECTOR	
CN9	PU60417-3	CONNECTOR	
CN10	PU59555-7	CONNECTOR	
CN11	PU60417-4	CONNECTOR	
CN12	PU59555-5	CONNECTOR	
CN13	PU60417-3	CONNECTOR	
CN14	PU59555-2	CONNECTOR	
CN15	PU59555-2	CONNECTOR	
CN602	PU59555-3	CONNECTOR	
CN901	PU60417-6	CONNECTOR	

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TUNER/IF BOARD ASSEMBLY <08>

PWBA	PB10524B	TUNER UNIT BOARD ASSEMBLY	
⚠ RF1	PERF0064	RF CONVERTER	
⚠ TNR1	PERF0109	TUNER	
IC1	LA7577V	IC	
Q1	2SD1450S,T	TRANSISTOR	
	or 2SD1468S(RS)	TRANSISTOR	
Q2	2SC1317(RS)	TRANSISTOR	
	or 2SC1318(RS)	TRANSISTOR	
Q3	2SC1317(RS)	TRANSISTOR	
	or 2SC1318(RS)	TRANSISTOR	
Q4	2SC4081(RS)	TRANSISTOR	
Q6	2SC4081(S)	TRANSISTOR	
Q7	2SA1576(S)	TRANSISTOR	
Q8	2SA1576(S)	TRANSISTOR	
Q9	2SC4081(S)	TRANSISTOR	
Q10	2SC4081(S)	TRANSISTOR	
Q11	DTA114EU	TRANSISTOR	
D1	E-452-2	DIODE	
D2	HZ30-2L	ZENER DIODE	
D3	MTZ11B	ZENER DIODE	
D4	MTZ10B	ZENER DIODE	
D7	1SS133	DIODE	
D8	1SS133	DIODE	
R1	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R2	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R3	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R5	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R6	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R7	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R8	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R9	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R11	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R13	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R14	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R15	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R16	QVZ3518-153AZ	V RESISTOR, RF AGC	15KΩ
R17	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R18	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R19	QRSA08J-824YN	RESISTOR	820KΩ,1/10W
R20	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R21	QRSA08J-513YN	RESISTOR	51KΩ,1/10W
R22	QRSA08J-513YN	RESISTOR	51KΩ,1/10W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R23	QRSA08J-820YN	RESISTOR	82Ω,1/10W
R24	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R25	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R26	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R28	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R31	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R33	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R34	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R35	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R36	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R41	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R42	QRSA08J-184YN	RESISTOR	180KΩ,1/10W
R43	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R44	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R45	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R46	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R47	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R48	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R49	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R50	QRSA08J-154YN	RESISTOR	150KΩ,1/10W
R51	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R52	QRSA08J-154YN	RESISTOR	150KΩ,1/10W
R53	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R54	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R55	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R56	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R57	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R58	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R61	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R62	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R75	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R76	QRSA08J-271YN	RESISTOR	270Ω,1/10W
C1	QCYA1HK-102	CAPACITOR	0.001μF,50V
C2	QETF1CM-476	E CAPACITOR	47μF,16V
C3	QCYA1HK-102	CAPACITOR	0.001μF,50V
C4	QETF1HM-106	E CAPACITOR	10μF,50V
C11	QETF1CM-476	E CAPACITOR	47μF,16V
C13	QEKF1EM-475	E CAPACITOR	4.7μF,25V
C14	QETF1CM-476	E CAPACITOR	47μF,16V
C15	QCYA1HK-103	CAPACITOR	0.01μF,50V
C16	QCYA1HK-102	CAPACITOR	0.001μF,50V
C17	QCYA1HK-102	CAPACITOR	0.001μF,50V
C18	QCYA1HK-102	CAPACITOR	0.001μF,50V
C19	QCYA1HK-103	CAPACITOR	0.01μF,50V
C20	QCTA1CH-331	CAPACITOR	330PF,16V
C21	QCYA1HK-103	CAPACITOR	0.01μF,50V
C22	QCYA1HK-103	CAPACITOR	0.01μF,50V
C23	QETF1CM-476	E CAPACITOR	47μF,16V
C24	QCYA1HK-103	CAPACITOR	0.01μF,50V
C25	QCTA1CH-150	CAPACITOR	15PF,16V
C26	QFV71HJ-683	TF CAPACITOR	0.068μF,50V
C27	QCYA1HK-102	CAPACITOR	0.001μF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C28	QFV71HJ-154	TF CAPACITOR	0.15μF,50V
C30	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C31	QCTA1CH-470	CAPACITOR	47PF,16V
C32	QCTA1CH-390	CAPACITOR	39PF,16V
C34	QCYA1HK-103	CAPACITOR	0.01μF,50V
C38	QETF1CM-476	E CAPACITOR	47μF,16V
C40	QEKF1HM-224	E CAPACITOR	0.22μF,50V
C41	QEKF1HM-104	E CAPACITOR	0.1μF,50V
C43	QCYA1HK-102	CAPACITOR	0.001μF,50V
C44	QCTA1CH-101	CAPACITOR	100PF,16V
C45	QEKF1CM-106	E CAPACITOR	10μF,16V
C46	QETF1CM-476	E CAPACITOR	47μF,16V
C48	QCYA1HK-103	CAPACITOR	0.01μF,50V
C66	QETF1CM-476	E CAPACITOR	47μF,16V
C91	QETF1CM-476	E CAPACITOR	47μF,16V
L1	PU60025-R82	COIL	0.82μH
L2	PU60025-1R0	COIL	1μH
L4	PU60025-R91S	COIL	0.92μH
L6	PU59152-270J	COIL	27μH
L7	PU59152-180J	COIL	18μH
L11	PU59152-R22J	COIL	0.22μH
CF1	PU59039	CERAMIC FILTER	
CF2	PU60774	CERAMIC FILTER	
SAW1	PEVB0419	SAW FILTER	
SAW2	PEVB0420	SAW FILTER	
T1	PELN0403-02	IF TRANSFORMER, SOUND DETECT	
T2	PELN0401	IF TRANSFORMER, AFC	
T3	PELN0402	IF TRANSFORMER, VCO	
BKT1	PQ33986-1-2	BRACKET(PWB)	
ETH1	PQ45218	EARTH PLATE	
SCW1	SDST2606Z	SCREW	
SCW2	SDST3006Z	SCREW	
SCW3	SDSF2608Z	SCREW	
TB1	PQ21282-2	TERMINAL BOARD (3)	
WR1	PW30402-BB06M	COAXIAL ASSY	
CN1	PU59555-2	CONNECTOR	
CN2	PEMC0846-010	CONNECTOR (BOARD TO BOARD)	
CN3	PEMC0846-005	CONNECTOR (BOARD TO BOARD)	
CN4	PU59555-4	CONNECTOR	
CN5	PU59555-2	CONNECTOR	
CN6	PB10531B	DEMOD BOARD ASSY	
CN7	PU59555-2	CONNECTOR	

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A/C HEAD BOARD ASSEMBLY <12>

PWB1	PB40046-01-02	AUDIO/CONTROL HEAD BOARD

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
CN1	PU58844-104	CONNECTOR	
CN2	PU58844-103	CONNECTOR	

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DEMODULATOR BOARD ASSEMBLY <14>

PWBA	PB10531B	DEMOD BOARD ASSY	
IC201	UPC1871CU	IC	
Q202	DTC114WU	TRANSISTOR	
Q203	DTC114WU	TRANSISTOR	
R201	QVZ3525-223	V RESISTOR,FILTER	22KΩ
R202	QVZ3518-472	V RESISTOR,SEPA-1	4.7KΩ
R203	QVZ3518-472A	V RESISTOR,SEPA-2	4.7KΩ
R204	QVZ3525-473	V RESISTOR,STEREO VCO	47KΩ
R207	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R208	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R209	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
R210	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R211	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R213	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R214	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R215	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R216	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R217	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R218	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R220	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R221	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R222	QRSA08J-823YN	RESISTOR	82KΩ,1/10W
R223	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R236	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R237	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
C201	QEKF1EM-475	E CAPACITOR	4.7μF,25V
C202	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C203	QETF1CM-476	E CAPACITOR	47μF,16V
C204	QEKF1HM-105	E CAPACITOR	1μF,50V
C205	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C206	QEKF1HM-105	E CAPACITOR	1μF,50V
C207	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C208	QEKF1HM-474	E CAPACITOR	0.47μF,50V
C209	QEKF1HM-105	E CAPACITOR	1μF,50V
C210	QEKF1EM-475	E CAPACITOR	4.7μF,25V
C211	QETF1CM-226	E CAPACITOR	22μF,16V
C212	QEKF1CM-106	E CAPACITOR	10μF,16V
C213	QEKF1CM-106	E CAPACITOR	10μF,16V
C214	QEK41HM-335	E CAPACITOR	3.3μF,50V
C216	QEE81CJ-335	TANTAL CAPACITOR	3.3μF,16V
C217	QEE81CJ-106	TANTAL CAPACITOR	10μF,10V
C231	QCYA1HK-103	CAPACITOR	0.01μF,50V
C232	QCYA1HK-103	CAPACITOR	0.01μF,50V
C233	QCYA1HK-103	CAPACITOR	0.01μF,50V
C234	QCYA1EK-473	CAPACITOR	0.047μF,25V
C235	QCYA1HK-103	CAPACITOR	0.01μF,50V
C236	QCYA1EK-104	CAPACITOR	0.1μF,25V
CN201	PEMC0778-110	PIN HEADER	

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TIMER BOARD ASSEMBLY <20>

PWBA	PB10686A2-01	TIMER BOARD ASSEMBLY	
IC101	HD404720A24S	IC	
IC102	CAT93C46P	IC	
	or 93C46/P	IC	
Q101	2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(GB)-TJK	TRANSISTOR	
Q102	2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(FG)	TRANSISTOR	
	or 2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(GB)-TJK	TRANSISTOR	
D101	RD7.5EB2	ZENER DIODE	
D102	11ES2	DIODE	
D103	LTZ-MR15	DIODE	
D104	1SS132	DIODE	
D105	RD9.1ES-T1B2	ZENER DIODE	
	or UZ9.1BSB	ZENER DIODE	
	or HZS9.1EB2TJ	ZENER DIODE	
D106	11ES2	DIODE	
D107	1SS133	DIODE	
D108	1SS133	DIODE	
R101	QRD161J-333	RESISTOR	33KΩ,1/6W
R102	QRD161J-123	RESISTOR	12KΩ,1/6W
R103	QRD161J-104	RESISTOR	100KΩ,1/6W
R104	QRD161J-682	RESISTOR	6.8KΩ,1/6W
R105	QRD161J-103	RESISTOR	10KΩ,1/6W
R106	QRD161J-103	RESISTOR	10KΩ,1/6W
R107	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R108	QRD161J-224	RESISTOR	220KΩ,1/6W
R109	QRD161J-333	RESISTOR	33KΩ,1/6W
R110	QRD161J-333	RESISTOR	33KΩ,1/6W
R111	QRD161J-333	RESISTOR	33KΩ,1/6W
R112	QRD161J-333	RESISTOR	33KΩ,1/6W
R113	QRD161J-471	RESISTOR	470Ω,1/6W
R114	QRD161J-102	RESISTOR	1KΩ,1/6W
R115	QRD161J-102	RESISTOR	1KΩ,1/6W
R117	QRD161J-105	RESISTOR	1.0MΩ,1/6W
R118	QRD161J-102	RESISTOR	1KΩ,1/6W
R119	QRD161J-102	RESISTOR	1KΩ,1/6W
R120	QRD161J-102	RESISTOR	1KΩ,1/6W
R121	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R122	QRD161J-472	RESISTOR	4.7KΩ,1/6W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R123	QRD161J-104	RESISTOR	100KΩ,1/6W
	R124	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R125	QRD161J-103	RESISTOR	10KΩ,1/6W
	R126	QRD161J-103	RESISTOR	10KΩ,1/6W
	R127	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R128	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R129	QRD161J-102	RESISTOR	1KΩ,1/6W
	R130	QRD161J-104	RESISTOR	100KΩ,1/6W
	R131	QRD161J-272	RESISTOR	2.7KΩ,1/6W
	R132	QRD161J-103	RESISTOR	10KΩ,1/6W
	R133	QRD161J-103	RESISTOR	10KΩ,1/6W
	R134	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R135	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R136	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R139	QRD161J-271	RESISTOR	270Ω,1/6W
	R140	QRD161J-103	RESISTOR	10KΩ,1/6W
	R141	QRD161J-103	RESISTOR	10KΩ,1/6W
	R142	QRD161J-103	RESISTOR	10KΩ,1/6W
	R143	QRD161J-103	RESISTOR	10KΩ,1/6W
	R144	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R145	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R146	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	RA101	QRB047J-333	RESISTOR ARRAY	
		or QRB049J-333	RESISTOR ARRAY	
	C101	QEK60JM-107	E CAPACITOR	100μF,6.3V
	C102	QEK60JM-226	E CAPACITOR	22μF,6.3V
	C103	QEA40HZ-104	E CAPACITOR (DOUBLE)	0.1μF,5.5V
	C105	QCBB1HJ-102	CAPACITOR	0.001μF,50V
	C106	QCC11CJ-473	CAPACITOR	0.047μF,16V
	C107	QCC11CJ-473	CAPACITOR	0.047μF,16V
	C108	QEK60JM-107	E CAPACITOR	100μF,6.3V
	C109	QCBB1HJ-101	CAPACITOR	100PF,50V
	C110	QCBB1HJ-101	CAPACITOR	100PF,50V
	C111	QCT30CH-100	CAPACITOR	10PF,50V
	C112	QAT3120-200	TRIMMER CAPACITOR, TIMER CLOCK	20PF
	C114	QCBB1HJ-101	CAPACITOR	100PF,50V
	C121	QCF11HP-473	CAPACITOR	0.047μF,50V
	L101	PU48530-101J	COIL	100μH
⚠	X101	PU61013	CRYSTAL RESONATOR	
	CN101	PU60417-3	CONNECTOR	
	CN102	PU60417-8	CONNECTOR	
	CN103	PU60417-6	CONNECTOR	
	CN105	PU60417-3	CONNECTOR	
	CN106	PU59555-7	CONNECTOR	

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DISPLAY BOARD ASSEMBLY <28>

PWBA	PB10686A1-01	DISPLAY BOARD ASSEMBLY	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q1	DTC124ES	TRANSISTOR	
	Q2	DTC124ES	TRANSISTOR	
	Q3	DTC124ES	TRANSISTOR	
	Q4	DTC124ES	TRANSISTOR	
	D1	1SS132	DIODE	
	D2	1SS132	DIODE	
	D3	1SS132	DIODE	
	D4	1SS132	DIODE	
	D5	1SS132	DIODE	
	D6	1SS132	DIODE	
	D7	1SS132	DIODE	
	D8	1SS132	DIODE	
	D9	1SS132	DIODE	
	D10	1SS132	DIODE	
	D12	RD9.1ES-T1B2	ZENER DIODE	
	D20	SLH-34MC3F	LE DIODE, S-VHS	
	D21	SLH-34DC3F	LE DIODE, HYPER BASS	
	D22	SLH-34MC3F	LE DIODE, PICTURE	
	D23	SLH-34MC3F	LE DIODE, SAP	
	D24	SLH-34VC3F	LE DIODE, STEREO	
	R1	QRD161J-103	RESISTOR	10KΩ,1/6W
	R2	QRD161J-181	RESISTOR	180Ω,1/6W
	R3	QRD161J-333	RESISTOR	33KΩ,1/6W
	R4	QRD161J-181	RESISTOR	180Ω,1/6W
	R5	QRD161J-181	RESISTOR	180Ω,1/6W
	R15	QRD161J-181	RESISTOR	180Ω,1/6W
	R17	QRD161J-221	RESISTOR	220Ω,1/6W
	RA1	QRB107J-104	RESISTOR ARRAY	
		or QRB109J-104	RESISTOR ARRAY	
	RA2	QRB117J-104	RESISTOR ARRAY	
		or QRB119J-104	RESISTOR ARRAY	
	C1	QEK61HM-106	E CAPACITOR	10μF,50V
	C2	QEK61CM-106	E CAPACITOR	10μF,16V
	L1	PU48530-101J	COIL	100μH
	S2	PU60975-2Z	TACT SWITCH, STOP/EJECT	
		or ESW0525-02Z	TACT SWITCH	
		or PU60392-2-2	TACT SWITCH	
	S3	PU60975-2Z	TACT SWITCH, FF	
		or PESW0525-02Z	TACT SWITCH	
		or PU60392-2-2	TACT SWITCH	
	S4	PU60975-2Z	TACT SWITCH, REW	
		or PESW0525-02Z	TACT SWITCH	
		or PU60392-2-2	TACT SWITCH	
	S5	PU60975-2Z	TACT SWITCH, TV/VIDEO	
		or PESW0525-02Z	TACT SWITCH	
		or PU60392-2-2	TACT SWITCH	
	S6	PU60975-2Z	TACT SWITCH, REC/ITR	
		or PESW0525-02Z	TACT SWITCH	
		or PU60392-2-2	TACT SWITCH	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	S7	PU60975-2Z	TACT SWITCH, PLAY
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S8	PU60975-2Z	TACT SWITCH, PAUSE
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S18	PU60975-2Z	TACT SWITCH, MENU
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S23	PU60975-2Z	TACT SWITCH, SELECT
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S24	PU60975-2Z	TACT SWITCH, TIMER
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S27	PU60975-2Z	TACT SWITCH, SP/EP
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S29	PU60975-2Z	TACT SWITCH, CH+
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S30	PU60975-2Z	TACT SWITCH, CH-
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S31	PU60975-2Z	TACT SWITCH, PICTURE
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S32	PU60975-2Z	TACT SWITCH, S-VHS
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S33	PU60975-2Z	TACT SWITCH, INSERT/EDIT
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S34	PU60975-2Z	TACT SWITCH, HYPER BASS
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	FDP1	PEDP0073	FLUORESCENT DISPLAY PANEL
	HD1	PQ34407	FDP HOLDER (L)
	HD2	PQ34408	FDP HOLDER (R)
	CN1	PU59513-9	CONNECTOR
	CN2	PU60417-3	CONNECTOR
	CN3	PU60417-5	CONNECTOR

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IFR BOARD ASSEMBLY <34>

	PWBA	PB10686A3-01	IFR BOARD ASSEMBLY
	IC301	GP1U541X	IR DETECT UNIT
	or	GP1U801X	IR DETECT UNIT
	CN301	PU60417-3	CONNECTOR

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

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JACK BOARD ASSEMBLY <37>

	PWBA	PB20605A-02	JACK BOARD ASSEMBLY
	Q201	DTC124ES	TRANSISTOR
	Q202	DTC124ES	TRANSISTOR
	D201	SLR-55VC3F	LE DIODE,POWER
	D202	1SS133	DIODE
	D203	1SS133	DIODE
	R201	QRD161J-103	RESISTOR 10KΩ,1/6W
	R202	PU60299-2	V RESISTOR, HP LEVEL
	R203	QRD161J-221	RESISTOR 220Ω,1/6W
	R204	QRD161J-750	RESISTOR 75Ω,1/6W
	R205	QRD161J-103	RESISTOR 10KΩ,1/6W
	R206	QRD161J-750	RESISTOR 75Ω,1/6W
	R207	QRD161J-750	RESISTOR 75Ω,1/6W
	S201	PU60975-2Z	TACT SWITCH, POWER
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S241	PU60975-2Z	TACT SWITCH, START
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S242	PU60975-2Z	TACT SWITCH,CUT
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	S245	PU60975-2Z	TACT SWITCH, SEM ON/OFF
	or	PESW0525-02Z	TACT SWITCH
	or	PU60392-2-2	TACT SWITCH
	SPC1	PU59210-002	W.LOKING SPACER, X2
	HD201	PQM30038-1-2	LED HOLDER
	JA201	PEMC0886-01-01	AV JACK, A/V
	JA202	PU60664	MINI JACK, H.PHONE
	JA203	PU60664-3	MINI JACK, R.PAUSE
	CN201	PU58844-9	CONNECTOR
	CN202	PU60417-4	CONNECTOR
	CN203	PU59555-6	CONNECTOR
	CN204	PU59555-3	CONNECTOR
	CN205	PU59555-2	CONNECTOR
	CN206	PU59555-2	CONNECTOR

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UPPER DRUM BOARD ASSEMBLY <41>

	PWB1	PDM3293	UPPER DRUM BOARD

PRE/REC AMP BOARD ASSEMBLY <43>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PWBA	PB10571B	PRE/REC BOARD ASSEMBLY
IC1	HA118162NT	IC
IC2	MC14052BCP	IC
	or TC4052BP	IC
IC201	AN3380NK	IC
Q3	DTC143EU	TRANSISTOR
Q4	DTC143EU	TRANSISTOR
Q5	DTC143EU	TRANSISTOR
Q6	DTC143EU	TRANSISTOR
Q7	DTC143EU	TRANSISTOR
Q8	DTC143EU	TRANSISTOR
⚠ Q10	2SC4081(S)	TRANSISTOR
⚠ Q11	DTC143EU	TRANSISTOR
Q13	2SC4081(QRS)	TRANSISTOR
Q14	2SA1576(QR)	TRANSISTOR
Q15	2SC4081(QRS)	TRANSISTOR
Q16	DTC143EU	TRANSISTOR
Q17	2SC4081(QRS)	TRANSISTOR
Q18	2SC4081(QRS)	TRANSISTOR
Q19	DTC144EU	TRANSISTOR
Q20	2SC4081(QRS)	TRANSISTOR
Q21	DTA124EU	TRANSISTOR
Q22	DTA124EU	TRANSISTOR
Q23	DTC144EU	TRANSISTOR
Q24	DTC144EU	TRANSISTOR
Q25	2SC4081(QRS)	TRANSISTOR
Q26	2SA1576(QR)	TRANSISTOR
Q27	2SC4081(QRS)	TRANSISTOR
Q28	2SA1576(QR)	TRANSISTOR
Q29	2SC4081(QRS)	TRANSISTOR
Q30	2SC4081(QRS)	TRANSISTOR
Q31	DTC144EU	TRANSISTOR
Q32	DTC144EU	TRANSISTOR
Q33	2SA1576(QR)	TRANSISTOR
Q34	2SC4081(QRS)	TRANSISTOR
Q35	2SC4081(QRS)	TRANSISTOR
Q36	2SC4081(QRS)	TRANSISTOR
Q37	DTC124EU	TRANSISTOR
Q38	2SA1576(QR)	TRANSISTOR
Q39	DTA124EU	TRANSISTOR
Q41	2SC4081(QRS)	TRANSISTOR
Q201	DTC124TU	TRANSISTOR
Q202	DTC124TU	TRANSISTOR
Q203	DTC114WU	TRANSISTOR
Q204	2SC4081(QRS)	TRANSISTOR
Q205	DTA114EU	TRANSISTOR
Q206	DTC114WU	TRANSISTOR
D1	DAP202U	DIODE
D2	DAP202U	DIODE
D3	1SS133	DIODE
	or MA165	DIODE
D6	DAN202U	DIODE
D7	DAN202U	DIODE
D8	DAN202U	DIODE
D9	DAP202U	DIODE
D10	DAN202U	DIODE
D11	DAP202U	DIODE
D201	1SS133	DIODE
	or MA165	DIODE
D203	1SS133	DIODE
	or MA165	DIODE
R1	QRSA08J-510YN	RESISTOR 51Ω,1/10W
R2	QRSA08J-301YN	RESISTOR 300Ω,1/10W
R3	QRSA08J-560YN	RESISTOR 56Ω,1/10W
R4	NRVA62D-330N	RESISTOR 33Ω,1/16W
R5	NRVA62D-330N	RESISTOR 33Ω,1/16W
R6	QRSA08J-470YN	RESISTOR 47Ω,1/10W
R7	QRSA08J-301YN	RESISTOR 300Ω,1/10W
R8	QRSA08J-360YN	RESISTOR 36Ω,1/10W
R9	NRVA62D-560N	RESISTOR 56Ω,1/16W
R10	NRVA62D-201N	RESISTOR 200Ω,1/16W
R11	NRVA62D-470N	RESISTOR 47Ω,1/16W
R12	NRVA62D-560N	RESISTOR 56Ω,1/16W
R13	NRVA62D-201N	RESISTOR 200Ω,1/16W
R14	NRVA62D-470N	RESISTOR 47Ω,1/16W
R15	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
R16	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
R17	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R19	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
R20	QRSA08J-101YN	RESISTOR 100Ω,1/10W
R21	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W
R22	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R23	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R24	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R25	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R26	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R27	QRSA08J-471YN	RESISTOR 470Ω,1/10W
R28	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R29	QRSA08J-391YN	RESISTOR 390Ω,1/10W
R30	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R31	QRSA08J-101YN	RESISTOR 100Ω,1/10W
R32	QRSA08J-161YN	RESISTOR 160Ω,1/10W
R33	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R34	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R37	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R38	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R39	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R40	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R41	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R42	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
R43	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R44	QVPA603-472	V RESISTOR, S SP REC COLOR	4.7KΩ
R45	QVPA603-472	V RESISTOR, S EP REC COLOR	4.7KΩ
R46	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R48	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R49	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R50	QRSA08J-362YN	RESISTOR	3.6KΩ,1/10W
R51	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R52	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R53	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R54	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R55	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R56	QVPA603-222	V RESISTOR, S SP FREQENCY	2.2KΩ
R57	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R58	QVPA603-222	V RESISTOR, S EP FREQENCY	2.2KΩ
R59	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R60	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R61	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R62	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R63	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R64	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R65	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R66	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R67	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R68	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R69	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R70	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R71	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R72	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R73	QRSA08J-752YN	RESISTOR	7.5KΩ,1/10W
R74	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R75	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R76	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R77	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R78	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R79	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R80	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R81	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R82	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R84	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R85	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R86	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R87	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R89	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R90	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R91	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R92	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R95	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R96	QRSA08J-821YN	RESISTOR	820Ω,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R97	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R98	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R99	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R100	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R101	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R102	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R103	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R104	QRD161J-101	RESISTOR	100Ω,1/6W
R201	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R202	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R203	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R204	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R205	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R206	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R207	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R208	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R210	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R211	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R212	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R213	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R214	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R215	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R216	QVZ3521-331Z	V RESISTOR, A REC FM	330Ω
R217	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R218	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R219	QRSA08J-0R0Y	RESISTOR	0.0Ω,1/10W
R223	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R224	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
C1	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C3	QCSA1HJ-150	CAPACITOR	15PF,50V
C5	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C6	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C8	QCSA1HJ-150	CAPACITOR	15PF,50V
C10	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C11	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C13	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C14	QCSA1HJ-180	CAPACITOR	18PF,50V
C15	QCSA1HJ-9R0	CAPACITOR	9PF,50V
C16	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C17	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C19	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C20	QEK60JM-476	E CAPACITOR	47μF,6.3V
C21	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C22	QEK60JM-476	E CAPACITOR	47μF,6.3V
C23	QCSA1HJ-391	CAPACITOR	390PF,50V
C24	QCSA1HJ-271	CAPACITOR	270PF,50V
C25	QCFA1CZ-334	CAPACITOR	0.33μF,16V
C26	QEK61HM-105	E CAPACITOR	1μF,50V
C27	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C28	QEK61HM-105	E CAPACITOR	1μF,50V
C29	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C30	QCFA1HZ-103	CAPACITOR	0.01μF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C31	QCSA1HJ-820	CAPACITOR	82PF,50V
C32	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
C33	QCVB1CN-103	CAPACITOR	0.01 μ F,16V
C34	QEK61CM-476	E CAPACITOR	47 μ F,16V
C35	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C36	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C37	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C38	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C39	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
C40	QCSA1HJ-271	CAPACITOR	270PF,50V
C41	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
C42	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C43	QCSA1HJ-101	CAPACITOR	100PF,50V
C44	QCSA1HJ-330	CAPACITOR	33PF,50V
C45	QCSA1HJ-390	CAPACITOR	39PF,50V
C46	QCVB1CN-103	CAPACITOR	0.01 μ F,16V
C47	QCSA1HJ-100	CAPACITOR	10PF,50V
C48	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C49	QCSA1HJ-150	CAPACITOR	15PF,50V
C50	QCSA1HJ-180	CAPACITOR	18PF,50V
C51	QCSA1HJ-390	CAPACITOR	39PF,50V
C52	QCSA1HJ-120	CAPACITOR	12PF,50V
C53	QCSA1HJ-120	CAPACITOR	12PF,50V
C54	QCSA1HJ-820	CAPACITOR	82PF,50V
C55	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C56	QEK61CM-476	E CAPACITOR	47 μ F,16V
C57	QCSA1HJ-330	CAPACITOR	33PF,50V
C58	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C59	QCSA1HJ-560	CAPACITOR	56PF,50V
C60	QCSA1HJ-390	CAPACITOR	39PF,50V
C61	QCSA1HJ-150	CAPACITOR	15PF,50V
C62	QCSA1HJ-330	CAPACITOR	33PF,50V
C63	QCSA1HJ-180	CAPACITOR	18PF,50V
C64	QCSA1HJ-120	CAPACITOR	12PF,50V
C65	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C66	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C67	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C68	QCVB1CN-103	CAPACITOR	0.01 μ F,16V
C69	QCSA1HJ-220	CAPACITOR	22PF,50V
C70	QCSA1HJ-470	CAPACITOR	47PF,50V
C73	QCSA1HJ-151	CAPACITOR	150PF,50V
C76	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
C77	QCSA1HJ-470	CAPACITOR	47PF,50V
C80	QCC11CJ-223	CAPACITOR	0.022 μ F,16V
C201	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
C202	QCSA1HJ-391	CAPACITOR	390PF,50V
C203	QCSA1HJ-561	CAPACITOR	560PF,50V
C204	QCSA1HJ-102	CAPACITOR	0.001 μ F,50V
C205	QCSA1HJ-561	CAPACITOR	560PF,50V
C206	QCSA1HJ-102	CAPACITOR	0.001 μ F,50V
C207	QCFA1CZ-224	CAPACITOR	0.22 μ F,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C208	QCSA1HJ-391	CAPACITOR	390PF,50V
C209	QEK60JM-107	E CAPACITOR	100 μ F,6.3V
C210	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C211	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C214	QCSA1HJ-330	CAPACITOR	33PF,50V
C215	QCSA1HJ-102	CAPACITOR	0.001 μ F,50V
C216	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C217	QCSA1HJ-102	CAPACITOR	0.001 μ F,50V
C218	QCSA1HJ-102	CAPACITOR	0.001 μ F,50V
C219	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C220	QEK61EM-476	E CAPACITOR	47 μ F,25V
C221	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C224	QCFA1CZ-224	CAPACITOR	0.22 μ F,16V
L1	PU59988-221J	COIL	220 μ H
L2	PU59988-101J	COIL	100 μ H
L3	PU48530-101K	COIL	100 μ H
L4	PU48530-101K	COIL	100 μ H
L5	PU59988-221J	COIL	220 μ H
L6	PU48530-220J	COIL	22 μ H
L7	PU48530-101K	COIL	100 μ H
L8	PU59988-4R7J	COIL	4.7 μ H
L9	PU59988-560J	COIL	56 μ H
L10	PU59988-150J	COIL	15 μ H
L11	PU59988-390J	COIL	39 μ H
L12	PU59988-221J	COIL	220 μ H
L13	PU59988-100J	COIL	10 μ H
L14	PU59988-270J	COIL	27 μ H
L15	PU59988-270J	COIL	27 μ H
L16	PU59988-560J	COIL	56 μ H
L17	PU59988-220J	COIL	22 μ H
L18	PU48530-101K	COIL	100 μ H
L19	PU59988-390J	COIL	39 μ H
L20	PU48530-470J	COIL	47 μ H
L201	PELN0530-101J	COIL	100 μ H
BPF201	PELN0290	BAND PASS FILTER	
SLD1	PQ21271	SHIELD FRAME	
TP1	PU60142-2	CONNECTOR, TP54	
TP2	PU60142-2	CONNECTOR, TP5	
CN1	PU59974-13	CONNECTOR	
CN2	PU59555-103	CONNECTOR	
CN3	PU59555-105	CONNECTOR	
CN4	PU60417-105	CONNECTOR	
CN5	PU60417-104	CONNECTOR	
CN6	PU59555-103	CONNECTOR	
CN7	PU59555-103	CONNECTOR	
CN201	PU59555-102	CONNECTOR	
CN202	PU60417-106	CONNECTOR	

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

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FLYING ERASE BOARD ASSEMBLY <46>

PWBA	PB10661A2	FLYING ERASE BOARD ASSEMBLY	
Q801	2SA933S	TRANSISTOR	
Q802	2SC1741S(QR)	TRANSISTOR	
Q803	2SA933S(Q)	TRANSISTOR	
Q804	2SD639R	TRANSISTOR	
Q805	2SD639R	TRANSISTOR	
D801	UZ8.2BSC	ZENER DIODE	
D802	1SS133	DIODE	
	or MA165	DIODE	
R801	QRD161J-473	RESISTOR	47KΩ,1/6W
R802	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R803	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R804	QRD161J-473	RESISTOR	47KΩ,1/6W
R805	QRD161J-223	RESISTOR	22KΩ,1/6W
R806	QRD161J-104	RESISTOR	100KΩ,1/6W
R807	QRD161J-121	RESISTOR	120Ω,1/6W
R808	QRD161J-104	RESISTOR	100KΩ,1/6W
R809	QRD161J-121	RESISTOR	120Ω,1/6W
R810	QRD161J-101	RESISTOR	100Ω,1/6W
C801	QCVB1CN-103	CAPACITOR	0.01μF,16V
C802	QCC11EJ-123	CAPACITOR	0.012μF,25V
C803	QCSB1HJ-560	CAPACITOR	56PF,50V
C804	QCBB1HJ-820	CAPACITOR	82PF,50V
C805	QCVB1CN-103	CAPACITOR	0.01μF,16V
C806	QCBB1HJ-820	CAPACITOR	82PF,50V
C808	QCT25UJ-181	CAPACITOR	180PF,50V
C809	QCT25UJ-330	CAPACITOR	33PF,50V
L801	PU48530-560J	COIL	56μH
L802	PU48530-3R3K	COIL	3.3μH
L803	PU48530-3R3K	COIL	3.3μH
L804	PU59152-101J	COIL	100μH
L805	PU59152-100J	COIL	100μH
⚠ T801	PU56175	S.TRANS	
SLD801	PU61041	SHIELD CASE	
SLD802	PU61042	SHIELD COVER	
SLD803	PU61043	SHIELD PLATE	
CN801	PU59555-3	CONNECTOR	
CN802	PEMC0713-104	CONNECTOR	

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DECK TERMINAL BOARD ASSEMBLY <51>

PWBA	PB10481A-01	DECK TERMINAL BOARD ASSEMBLY	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q1	PU60625	END SENSOR	
R3	QRD161J-331	RESISTOR	330Ω,1/6W
R4	QRD161J-331	RESISTOR	330Ω,1/6W
R5	QRD161J-331	RESISTOR	330Ω,1/6W
R8	NTH5D473KB	THERMISTOR	
	or ERT-D2ZHK473S	NEGA THERMISTOR	
	or NTH5D473KA	RESISTOR	
C1	QCVB1CM-103	CAPACITOR	0.01μF,16V
PS1	PS5705HR	PH INTERRUPTER	
PS2	PS5705HR	PH INTERRUPTER	
⚠ TH601	PESC1041	POSI THERMISTOR	
CN1	PEMC0722-018	WIRE TRAP	
	or PEMC0753-018	WIRE TRAP	
CN2	PU60642	CONNECTOR(7PIN)	
CN3	PU60640	CONNECTOR(4PIN)	

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LOADING MDA BOARD ASSEMBLY <55>

PWBA	PB30150A	LOADING MDA BOARD ASSEMBLY	
⚠ IC1	BA6418N	IC	
⚠	or XRA6418N	IC	
C1	QETA1CM-227	E CAPACITOR	220μF,16V
C3	QETA1HM-105	E CAPACITOR	1μF,50V
CN1	PU59555-104	CONNECTOR	
CN2	PU58844-2	CONNECTOR	

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CASSETTE HOUSING BOARD <56>

PWB1	PB40061	CASSETTE HOUSING BOARD	
Q2	PN268VI	PHOTO TRANSISTOR	
D1	UZ5.1BSB	ZENER DIODE	
	or RD5.1ESB2	ZENER DIODE	
R1	QRD162J-473	RESISTOR	47KΩ,1/6W
R2	QRD182J-681	RESISTOR	680Ω,1/8W
R3	QRD122J-102S	RESISTOR	1KΩ,1/2W
C1	QCC11EJ-103	CAPACITOR	0.01μF,25V
PHS3	PU60629	CASSETTE SENSOR	
TH1	ERT-D2FHJ503S	THERMISTOR	
	or ERT-D2FHK503S	THERMISTOR	
	or PESC1084	NEGA THERMISTOR	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
CN2	PU60639	4PIN SOCKET	

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HYPER BASS BOARD ASSEMBLY <75>

PWBA	PB10661A3	HYPER BASS BOARD ASSEMBLY	
IC151	XRA15218N	IC	
	or A15218N	IC	
Q151	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(G)	TRANSISTOR	
Q152	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(G)	TRANSISTOR	
Q153	DTA144ES	TRANSISTOR	
R151	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R152	QRD161J-331	RESISTOR	330Ω,1/6W
R153	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R154	QRD161J-103	RESISTOR	10KΩ,1/6W
R155	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R156	QRD161J-331	RESISTOR	330Ω,1/6W
R157	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R158	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R159	QRD161J-473	RESISTOR	47KΩ,1/6W
R160	QRD161J-473	RESISTOR	47KΩ,1/6W
R161	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R162	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R163	QRD161J-331	RESISTOR	330Ω,1/6W
R164	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R165	QRD161J-331	RESISTOR	330Ω,1/6W
R166	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R167	QRD161J-103	RESISTOR	10KΩ,1/6W
R168	QRD161J-122	RESISTOR	1.2KΩ,1/6W
C151	QETC1AM-476	E CAPACITOR	47μF,10V
C153	QETC1HM-105	E CAPACITOR	1μF,50V
C154	QETC1HM-225	E CAPACITOR	2.2μF,50V
C155	QETC1HM-225	E CAPACITOR	2.2μF,50V
C156	QETC1AM-107	E CAPACITOR	100μF,10V
C157	QETC1AM-107	E CAPACITOR	100μF,10V
C158	QETC1CM-476	E CAPACITOR	47μF,16V
C159	QETC1HM-225	E CAPACITOR	2.2μF,50V
C161	QETC1HM-105	E CAPACITOR	1μF,50V
C162	QETC1HM-225	E CAPACITOR	2.2μF,50V
C163	QETC1AM-476	E CAPACITOR	47μF,10V
CN14	PEMC0713-107	CONNECTOR	

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REMOTE PAUSE BOARD ASSEMBLY <96>

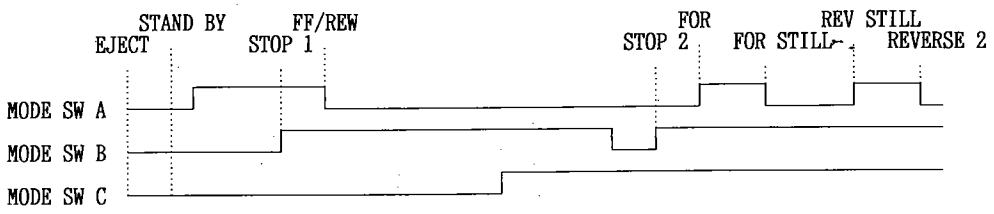
PWBA	PB10661A4	REMOTE PAUSE BOARD ASSEMBLY	
Q901	DTC114ES	TRANSISTOR	

SECTION 6
TECHNICAL INFORMATIONS

6.1 CPU PIN FUNCTION

1. Mechacon CPU pin function

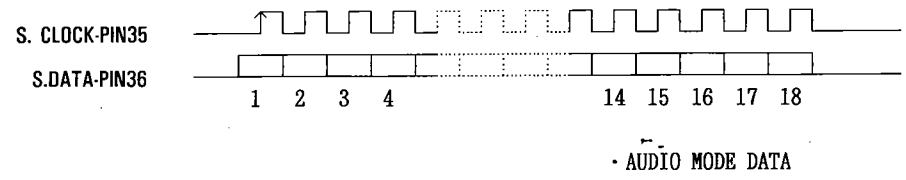
PIN NO.	LABEL	IN / OUT	NOTE
1	Vcc	IN	UNSW 5V
2	V.REF	IN	UNSW 5V
3	FM IN	IN	AUTO TRACKING DATA INPUT
4	THERM	IN	THERMIC CORRECTION (SLOW CAPSTAN BRAKE CONTROL)
5	S CURVE	IN	TUNING CHECK
6	LSA	IN	MECHANISM MODE DETECT
7	LSB	IN	
8	LSC	IN	



9	REC SAFETY SW	IN	REC SAFETY SW DETECT(ON : L)
10	CASS	IN	CASSETTE SENSOR (SENSOR ON : L)
11	S.CASS	IN	S-VHS CASSETTE SENSOR (S TAPE : L)
12	AP.CTL	OUT	PICTURE CONTROL
13	DRUM V	OUT	DRUM MOTOR CONTROL / CORRECTION
14	CAP V.CTL	OUT	CAPSTAN MOTOR CONTROL / CORRECTION
15	START SENSOR	IN	LEADER TAPE DETECT (DET ON : L)
16	END SENSOR	IN	TRAILER TAPE DETECT (DET ON : L)
17	V FF	IN	DRUM MOTOR SPEED DETECT AND TIMING CONTROL
18	CTL PULSE	IN	MODE DETECT, BLANK TAPE DETECT
19	A / M / S	OUT	HEAD SELECT (AUTO : M / MANUAL : H / SLOW : L)
20	V.PULSE	OUT	SPECIAL PB : ON
21	HEAD SELECT	OUT	SP : L, EP : H
22	PAUSE OUT	OUT	REMOTE PAUSE CONTROL
23	REV	OUT	CAPSTAN MOTOR CONTROL (FWD : H, REV : L)
24	SP FG	IN	SUPPLY REEL ROTATION DETECT, TAPE REMAINING DATA
25	TU FG	IN	TAKE-UP REEL ROTATION DETECT. TAPE REMAINING DATA
26	CAPSTAN FG	IN	MODE DETECT, TAPE REMAINING DATA
27	CN Vss	—	GND
28	RESET	IN	AC IN RESET
29	X IN	IN	MAIN SYSTEM CLOCK(4MHz)
30	X OUT	OUT	

Table 6-1-1 Mechacon CPU pin function

PIN NO.	LABEL	IN / OUT	NOTE
31	ϕ	–	NC
32	Vss	–	GND
33	HiFi REC START	OUT	HiFi REC START : L
34	AUDIO MUTE	OUT	AUDIO MUTE : H
35	A. IC CLK	OUT	AUDIO SERIAL DATA TRANSFER CLOCK (IC1)
36	A. IC DATA	OUT	AUDIO CONTROL SERIAL DATA
37	N.D.	IN	NORMAL AUDIO DETECT (NORMAL AUDIO : L)
38	MA.S.DATA	OUT	AUDIO CONTROL DATA OUTPUT (IC2)
39	MA.S.CLK	OUT	AUDIO SERIAL DATA TRANSFER CLOCK (IC2)
40	NC	–	NC
41	DET.S	IN	S-VHS PB : H. VHS PB : L
42	VIDEO REC	OUT	VIDEO REC : L
43	REC START	OUT	REC START : L
44	NC	–	NC
45	F.E CTL	OUT	FLYING ERASE CONTROL. (ON : L)
46	NC	–	NC
47	SYNC DET	IN	SYNC DETECT, BLUE BACK CONTROL
48	S / S	OUT	SLOW / STILL(L)
49	LOADING M2	OUT	FWD H L REV L H BRAKE H H STOP L L
50	LOADING M1	OUT	
51	INDEX	IN / OUT	INDEX DATA(VISS)WRITE CONTROL AND DETECT ON : L
52	S.DATA	OUT	16 BIT SERIAL DATA FOR SERVO IC



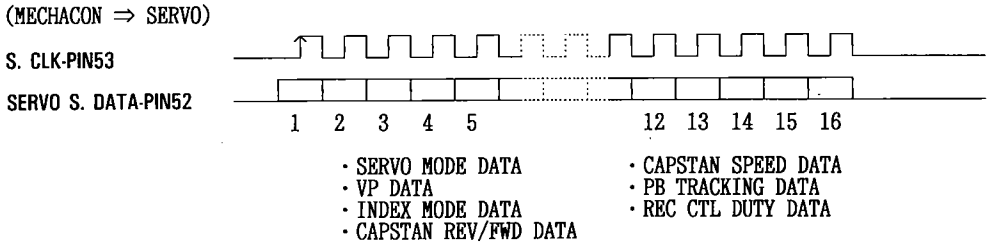


Table 6-1-2 Mechacon CPU pin function

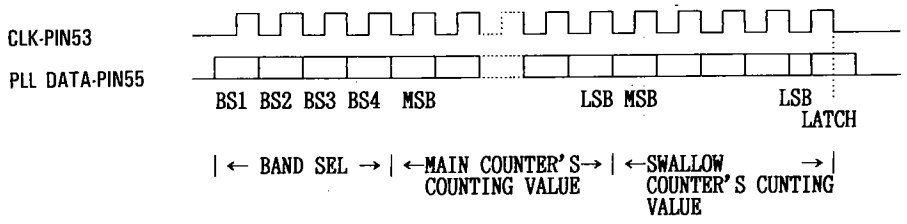
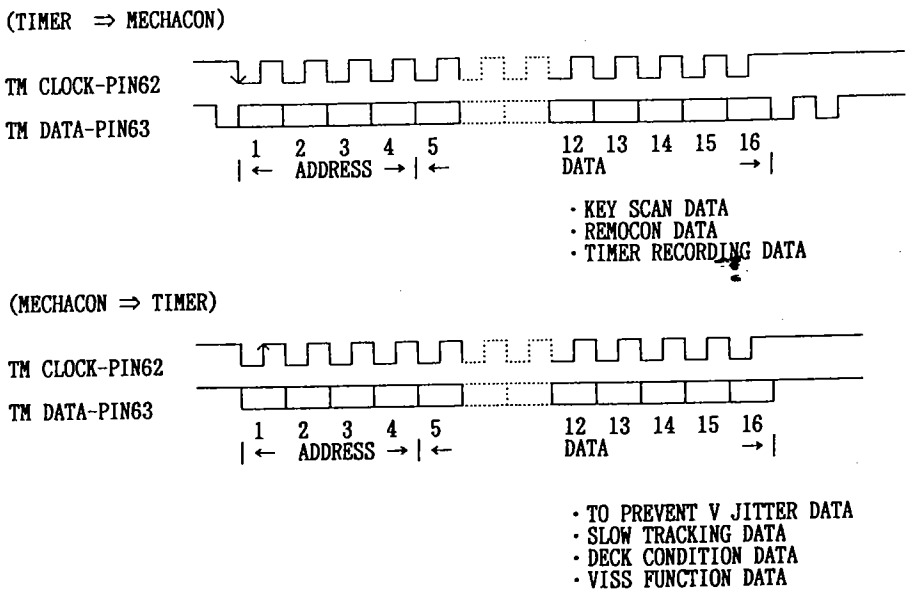
PIN NO.	LABEL	IN / OUT	NOTE
53	S.CLK / PLL CLK	OUT	DATA TRANSFER CLOCK
54	PLL LOCK	IN	TUNING CHECK DATA
55	PLL DATA	OUT	TUNING CONTROL DATA
			
56	D.MUTE	0	DEMODU MUTE CONTROL
57	NC	—	NC
58	POWER CONTROL	OUT	POWER ON : L
59	R.REV	0	REV MODE : L
60	PAUSE	OUT	CAPSTAN MOTOR CONTROL (PAUSE : L / NORMAL : H)
61	SERVO	OUT	CAPSTAN MOTOR CONTROL (SERVO : H / MECHACON : L)
62	TIMER SERIAL CLOCK	IN	TIMER / MECHACON SERIAL DATA TRANSFER CLOCK
63	TIMER DATA	IN / OUT	TIMER / MECHACON SERIAL DATA
			
64	REMOTE PAUSE	IN	REMOTE PAUSE CONTROL (ON : L)

Table 6-1-3 Mechacon CPU pin functionn

2. Timer CPU PIN FUNCTION

PIN NO.	LABEL	IN / OUT	NOTE
1	Se	OUT	KEY SCAN PULSE OUTPUT
2	Sd	OUT	
3	Sc	OUT	
4	Sb	OUT	
5	Sa	OUT	
6	5G	OUT	COLUMN DISPLAY DATA
7	4G	OUT	
8	3G	OUT	
9	2G	OUT	
10	1G	OUT	
11	1G END	IN	LIGHTING DATA OUTPUT CHECK
12	—	—	NC
13	—		
14	—		
15	—		
16	—		
17	S-VHS	OUT	S-VHS LED : H
18	TEST	IN	TEST POINT (CLOCK ADJUST / FDP CHECK)
19	POWER DOWN	IN	POWER DOWN DETECT(POWER DOWN : L)
20	PICTURE	OUT	PICTURE LED : H
21	HYPER BASS	OUT	HYPER BASS LED : H
22	POWER	OUT	POWER LED : H
23	SAP ON CTL	OUT	AUDIO SIGNAL SELECT
24	JSA	IN	JOG PULSE INPUT
25	STLL	IN	SHUTTLE SW ON : H
26	JSB	IN	JOG PULSE INPUT
27	A.INT	OUT	AUDIO CONTROL DATA
28	1G END	IN	LIGHTING DATA OUTPUT CHECK
29	CNT PLS	IN	CONTROL PULSE
30	RC IN	IN	REMOTE CONTROL DATA INPUT
31	LINK	IN	AV COMPU LINK CONTROL (DATA IN / OUT)
32	Vcc	—	UNSW 5V
33	C2 / S-CLK	OUT	DATA TRANSFER CLOCK
34	CE	OUT	CHIP ENABLE
35	C1 / DATA	IN / OUT	ON SCREEN DATA / AUDIO DATA
36	PROG	OUT	BLUE BACK MODE:H
37	SYNC DET	IN	INPUT SIGNAL DETECT
38	TIMER SERIAL CLOCK	OUT	TIMER / MECHACON SERIAL DATA TRANSFER CLOCK

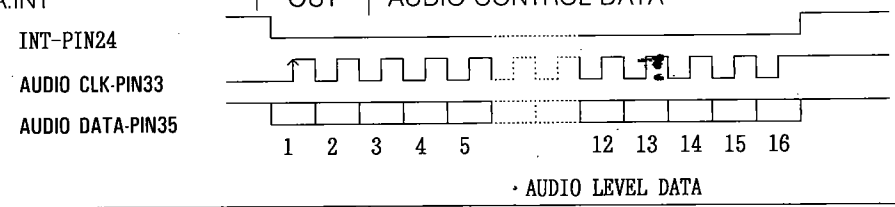


Table 6-2-1 Timer CPU pin function

PIN NO.	LABEL	IN / OUT	NOTE
39	S-DATA	IN	MECHACON SERIAL DATA
40	S-OUT	OUT	TIMER SERIAL DATA
	(MECHACON ⇒ TIMER) TM CLK-PIN38 TM DATA-PIN39 1 2 3 4 5 ← ADDRESS → | ← DATA → | 12 13 14 15 16 · TO PREVENT V JITTER DATA · DECK CONDITION DATA · SLOW TRACKING DATA · VISS FUNCTION DATA (TIMER ⇒ MECHACON) TM CLK-PIN38 TM DATA-PIN40 1 2 3 4 5 ← ADDRESS → | ← DATA → | 12 13 14 15 16 · KEY SCAN DATA · REMOCON DATA · TIMER RECORDING DATA		
41	OS RST	OUT	ON SCEEN REST
42	OS CE	OUT	ON SCREEN CHIP ENABLE
43	KS 0	IN	KEY SCAN INPUT
44	KS 1	IN	KEY SCAN INPUT
45	KS 2	IN	KEY SCAN INPUT
46	KS 3	IN	KEY SCAN INPUT
47	RESET	IN	RESET AT CONNECT VCR TO AC
48	OSC 2	OUT	MAIN SYSTEM CLOCK (4.19MHz)
49	OSC 1	IN	
50	GND	—	GND
51	CL 1	IN	NORMALLY GND CONNECTION
52	NC	—	NC
53	+5V	IN	UNSW 5V
54	Sp	OUT	
55	So	OUT	
56	Sn	OUT	
57	Sm	OUT	
58	Sl	OUT	
59	Sk	OUT	KEY SCAN PULSE OUTPUT
60	Sj	OUT	
61	Si	OUT	
62	Sh	OUT	
63	Sg	OUT	
64	Sf	OUT	

Table 6-2-2 Timer CPU pin function