SLV-825/B/NC/NP/UB/VC

RMT-V127

SERVICE MANUAL

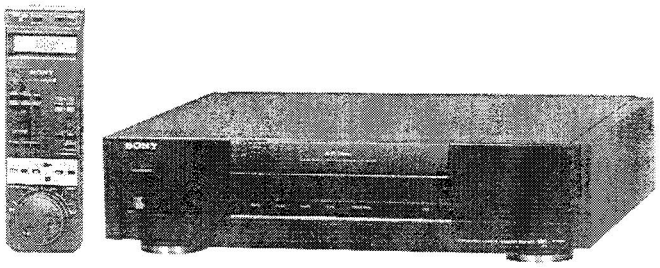


Photo:SLV-825

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

AEP Model
SLV-825
French Model
SLV-825B
E Model
North European Model
SLV-825NC
Spanish Model
SLV-825NP
UK Model
SLV-825UB
Germany Model
Swiss Model
SLV-825VC

VHS PAL Hi-Fi

SPECIFICATIONS

Channel coverage
VHF channels E2-E12
(A to H only for Italy)
CATV channels S01-S03
CATV channels S1-S20
HYPER S21-S41
UHF channels E21-E69
SLV-825/825VC/825NC/825NP
UHF channels B21-B68
SLV-825UB
System B/G
VHF channels E2-E12
CATV S3-S20
UHF channels E21-E69
System L
VHF channels F2-F10
CATV S01-S23
HYPER S24-S44
UHF F21-F69
SLV-825B

Usable video cassettes
VHS video format cassettes
NTSC cassette recorded in SP mode can be played back on a PAL system television set

Inputs and Outputs

Video inputs
LINE IN 2: phono jack
EURO-AV (LINE 1):
21-pin (pin 20)
SLV-825/825UB/825NC/825NP
EURO-AV (LINE3):
21-pin (pin 20)
SLV-825 VC
EURO-AV (LINE 3) PAY-TV
DECODER : CANAL PLUS
21-pin (pin 20)
SLV-825B

Audio inputs
LINE IN 2: phono jack
EURO-AV (LINE 1):
21-pin (pins 2 and 6)
SLV-825/825UB/825NC/825NP
EURO-AV (LINE 3):
21-pin (pins 2 and 6)
SLV-825VC
EURO-AV (LINE 3) PAY-TV
DECODER : CANAL PLUS
21-pin (pins 2 and 6)
SLV-825B

Video output
LINE OUT : phono jack
EURO-AV (LINE 1):
21-pin (pin 19)

Audio output
LINE OUT: phono jack
EURO-AV (LINE 1):
21-pin (pins 1 and 3)

CONTROL L
Stereo mini-minijack (1)

CONTROL S IN/OUT
Minijack (2)

Microphone input
Minijack

Headphone output
Stereo minijack

General

Power requirements
240 V AC, 50 Hz (SLV-825UB)
220-230V AC, 50 Hz
(SLV-825/825VC/825NC/825NP/825B)

Power consumption
33 W

Operating temperature
5°C to 40°C (41°F to 104°F)

Storage temperature
-20°C to 60°C (-4°F to 140°F)

Dimensions
Approx. 466 X 115X 395 mm (w/h/d)
(18 3/8 X 4 5/8 X 15 5/8 inches)
including projecting parts and controls.

Weight
SLV-825/825VC
7.9 kg (17 lb 7oz)
SLV-825UB/825NC/825NP/825B
8.1 kg (17 lb 14 oz)

Accessories Supplied
See page 5.

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

Remote commander RMT-V127 is supplied as a unit for service. Don't supply individual parts except for the timer cover and the battery cover.

VHS PAL VIDEO CASSETTE RECORDER

SONY®

MICROFILM

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

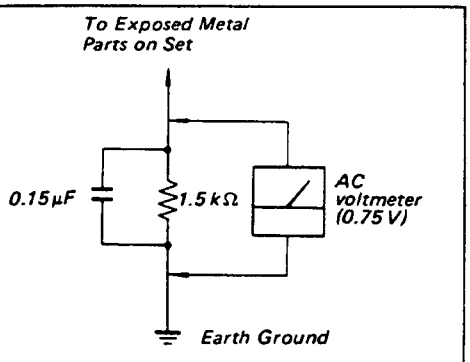


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

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

TABLE OF CONTENTS

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

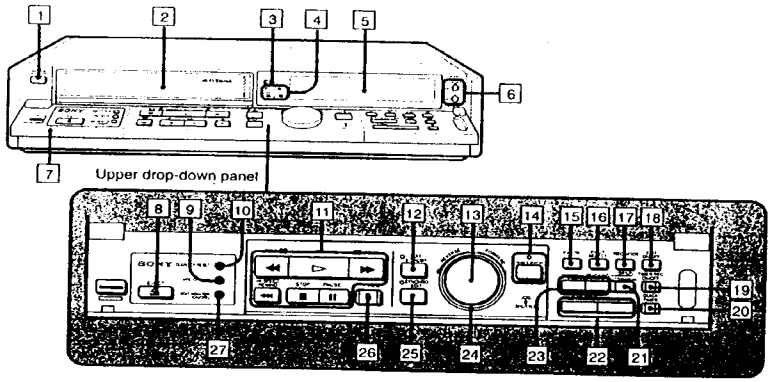
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SONY
SLV835

Service Manual

TABLE OF CONTENTS

Identifying the Parts and Controls



Front Panel

See the indicated pages.

[1] ON/STANDBY switch and indicator 7,14
The indicator lights up in green when the VCR is turned on, and in red when the VCR is in standby mode.
[2] Cassette compartment 15

[3] Remote Sensor

[4] Indicators
AUTO TRACKING 19
EDIT MONITOR 59
AUDIO INSERT 62
VIDEO INSERT 62

[5] VCR Display panel 67

[6] REC LEVEL controls 48

[7] Upper drop-down panel

[8] ≙ EJECT button 15

[9] VPS (ON/OFF) button 28
(This button is provided on the SLV-825VC models only)
[10] COUNTER RESET button 17,61

[11] Tape transport buttons
◀◀ REW (rewind) button
▶ PLAY button
▶▶ FF (fast forward) button
◀◀◀HI-SPEED REWIND
■ STOP button
II PAUSE button

[12] EDIT STANDBY button and indicator 59

[13] JOG dial 9, 13, 20, 21, 29, 33, 34, 51, 60, 61

[14] LANC REMOTE button and indicator 60

[15] TV/VTR button 7, 14

[16] INPUT SELECT button 7, 14, 24, 34, 54, 59

[17] REC MODE (SP/LP) button 4, 24, 48, 54, 59

[18] EDIT ON/OFF button 55, 61

[19] TIMER REC ON/OFF button 23, 24, 25, 27

[20] QUICK TIMER button 24

[21] TRACKING AUTO/MANUAL button 19, 33

[22] PROGRAM +/– buttons 10, 13, 21, 29, 30, 34, 51

[23] TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲ buttons 19, 33

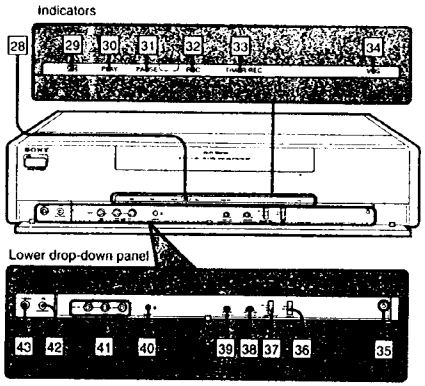
[24] SHUTTLE ring 33, 60, 61

[25] SYNCHRO EDIT button and indicator 60

[26] ● REC (record) button 20, 21, 51

[27] EDIT MONITOR (ON/OFF) button 61, 62

Front Panel



[28] Remote Sensor

[29] 📼 (cassette) lamp

[30] PLAY lamp

[31] PAUSE lamp

[32] REC lamp

[33] TIMER REC lamp

[34] VPS lamp
(This indicator is provided on the SLV-825VC models only)

[35] CL (clear) button 69

[36] NTSC PB ON PAL TV (ON/OFF) switch 16, 17

[37] COMMAND MODE VTR1/2/3 selector 8

[38] SHARPNESS SOFT/SHARP control 16

[39] PHONE LEVEL MIN/MAX control

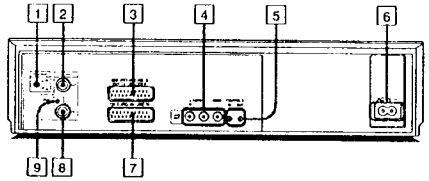
[40] CONTROL L ↕ jack 56

[41] LINE IN 2 VIDEO/AUDIO jacks 48, 49, 53, 56

[42] MIC (microphone) jack 62

[43] PHONES (headphones)jack

Rear panel



[1] RF CHANNEL screw (30-39) 14

[2] AERIAL OUT socket 6, 28

[3] EURO-AV (LINE 3) (21-pin) socket (SLV-825/825UB/825NC) 53, 57
EURO-AV (LINE 3) PAY-TV DECODER (21-pin) socket (SLV-825VC models only) 28, 53, 57

[4] LINE OUT AUDIO/VIDEO jacks 6, 55

[5] CONTROL S IN/OUT jacks 57

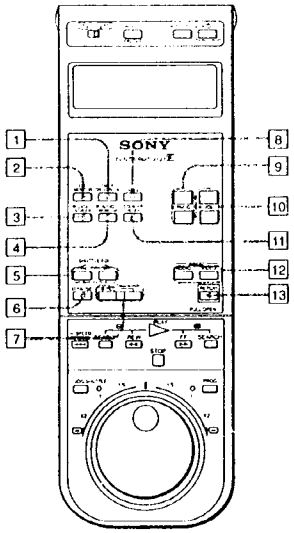
[6] AC IN inlet

[7] EURO-AV (LINE 1) (21-pin) socket 6, 28, 53

[8] AERIAL IN socket 6

[9] LOCAL/DX switch 14

Remote Control (with flap closed)



The buttons on the Remote Control with the same name or mark as those on the unit have the same function. The buttons with an orange dot can be used to remotely control Sony TVs having the ● mark when the TV/VTR selector is set to TV. The TV/VTR button and/or the -/-- (10's digit) button cannot operate certain Sony TVs.

[1] TIMER ON SCREEN button 25

[2] EDIT MONITOR button 61, 62

[3] DATA SCREEN button 17, 19, 43, 44

[4] AUDIO MONITOR button 18, 45, 47

[5] SHUTTLE EDIT buttons 51, 61

[6] II PAUSE button 16, 21, 32, 50, 51

[7] ● REC (recording) buttons 20, 21, 51

[8] INDEX button 43, 44

[9] PROG (programme) +/– buttons 10, 13, 21, 29, 30, 34, 51

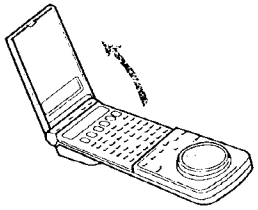
[10] VOL (TV volume) +/– buttons
Press to control the volume of the TV.
Effective only for Sony TVs with the ● mark.

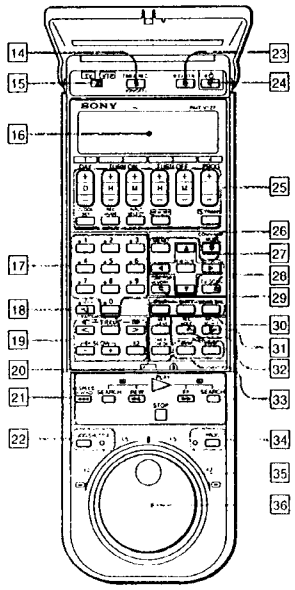
[11] COUNTER RESET button 17, 61

[12] AUDIO/VIDEO INSERT buttons 62

[13] REPLAY button 32

Remote Control (with flap opened)





[14] TIMER REC (ON/OFF) button 23, 24, 25, 27

[15] TV/VTR remote control selector 8, 20

[16] Remote display 67

[17] Programme position number buttons 13

[18] -/-- (10's digit) button 13

[19] Various speed playback buttons 32, 33

[20] TIMER CHECK/TIMER CLEAR buttons 26

[21] Tape transport buttons 16, 20, 30, 32, 39, 43, 44, 51, 62
⏪/⏩ SEARCH (reverse/forward)
◀◀ REW (rewind)
▶ PLAY
▶▶ FF (fast forward)
■ STOP
◀◀◀ HI-SPEED REWIND

[22] JOG/SHUTTLE function button and indicator 33, 51, 61

[23] TV/VTR button 12, 20, 29, 30, 31, 35

[24] ⏻ (on/standby)button 16, 27

[25] Timer recording/clock set buttons 11, 22, 23, 26, 27

[26] COMMAND MODE button 8

[27] Menu operation buttons 9, 10, 12, 13, 18, 29, 31, 37-40, 46, 49, 58

[28] TV SCAN button 34

[29] FUNCTION MEMORY button 38

[30] P in P (picture in picture) buttons 34, 35
P in P, SHIFT, DIGITAL OFF

[31] INPUT SELECT button 23, 29, 35, 49, 51

[32] REC MODE select button 20, 21

[33] INDEX MARK and ERASE buttons 42, 44

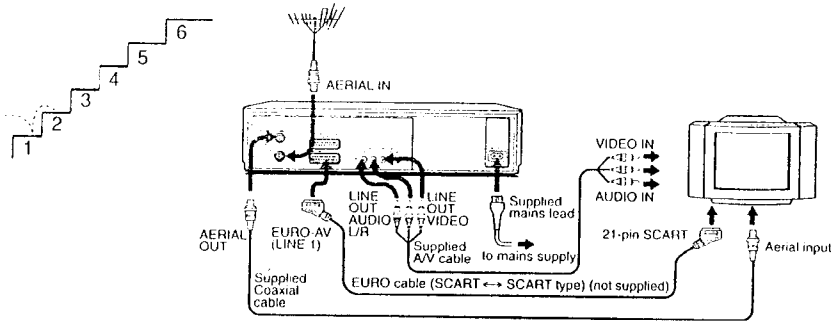
[34] PROG (programme) function button and indicator 9, 13, 20, 21, 29, 34, 35, 51, 54, 61

[35] SHUTTLE ring 13, 29

[36] JOG dial 9, 13

Note on the TV/VTR remote control selector
When you set the TV/VTR remote control selector on the Remote control to TV, the TV/VTR button cannot operate some Sony TV's.

Step 2 Connecting the VCR



1 Turn the VCR round so you can see the rear panel.

2 Disconnect the aerial input lead from your TV and connect it to the socket marked "AERIAL IN" on the rear of the VCR.

3 Connect the coaxial cable (supplied with the VCR) to the socket marked "AERIAL OUT" on the VCR and then plug it into the aerial input socket on your TV.

4 Check all connections and ensure they are firm.

5 Take the mains lead and plug it into the socket on the back of the VCR marked "AC IN". Then plug the other end into the mains supply.

Additional Connections

The hookup using the supplied coaxial cable shows the basic hookup to watch and record TV programmes. If your TV has a SCART connector, or the phono type audio/video input jacks, make additional connections. Additional connections can improve playback picture quality.

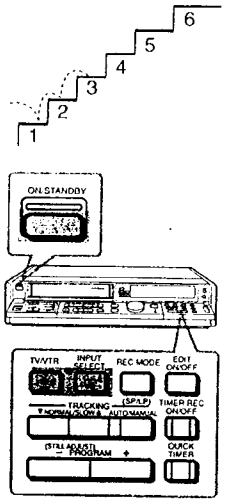
If your TV has a SCART connector: connect the EURO-AV connector of this VCR and 21-pin SCART connector on your TV, using the VMC-2121CE cable (SCART connector, not supplied).

If your TV has the phono type audio/video input jacks: connect the LINE OUT AUDIO/VIDEO jacks of this VCR and the AUDIO/VIDEO IN jacks of your TV, using the AV cable (supplied).

If you have made the VCR-TV connection using the LINE OUT AUDIO/VIDEO jacks, you can't use the on-screen information display.

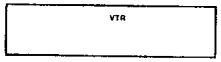
Important
If you have made the VCR-TV connection using the EURO-AV connector, open the main MENU, move the arrow to "RF MODULATOR" and select "OFF". See "Customizing Your VCR" on page 40 for details.

Step 3 Tuning the VCR to Your TV

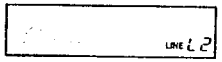


1 Having completed **Step 2**, press ON/STANDBY on the front of the VCR so that the green light above the button lights up. If you have made additional connections, skip **step 3**.

2 Press TV/VTR several times until "VTR" appears in the VCR display panel on the inside surface of the upper drop-down panel.



3 Press INPUT SELECT (on the inside surface of the upper drop-down panel of the VCR). Each time you press this, part of the display on the VCR will change. Keep pressing until "LINE L2" shows.



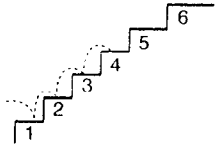
4 Turn on your TV and select a programme position that is not used to receive a TV station (in the UK, 0 or 9 perhaps).

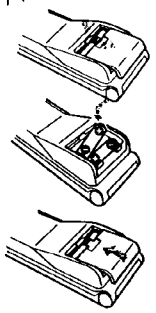
5 Tune the TV so that a blue screen with tape counter (0:00:00) is clearly displayed on the TV screen. (If you have difficulty, please refer to the instructions for tuning your TV.)

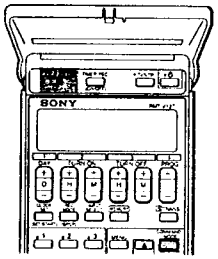
6 Press INPUT SELECT again, and keep pressing it until "TUNER" shows in the VCR display panel.

You have now tuned your TV to the VCR. Whenever you wish to receive the VCR's playback picture on the TV, turn to the TV programme position you have set for the VCR, switch on the VCR and press TV/VTR.

Step 4 Preparing the Remote Control





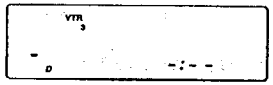


1 Take the remote control and turn it over so that the remote display cannot be seen.

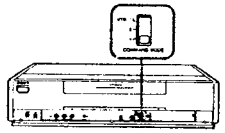
2 Slide and remove the cover.

3 Insert two R6 batteries.

4 Close the cover. Now you have "-D VTR 3 -:- -" in the remote display. If you don't, check the battery polarities and position the batteries correctly. Also check that "VTR 3" is shown in the remote display. If not, lift the flap of the remote control and press COMMAND MODE several times until the command mode display "VTR 3" is shown in the remote display.



5 Check that the COMMAND MODE 1/2/3 selector (inside the lower drop-down panel of the VCR) is positioned at "VTR 3." If not, slide the selector so that it is positioned at "VTR 3."



6 Set the TV/VTR remote control selector to "VTR."

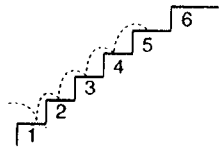
Notes on batteries

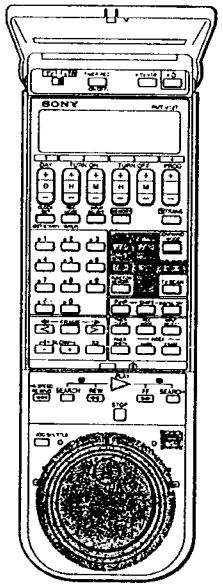
- Under normal operation, batteries last for about three months. If the remote control however, is not to be used for a long period, remove the batteries from the compartment to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one.
- Do not use different types of batteries.

Note

When you insert the batteries into the remote control, the indication "VTR3" appears in the remote display. That tells you that the command mode setting of the remote control is set to "VTR3."

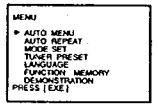
Step 5 Tuning the VCR to the Required Stations





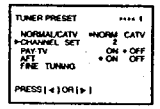
Now that you have the blue screen on your TV, you can tune the individual channels on your VCR to receive the required stations.

1 Lift the flap on the remote control, point the remote control at the VCR and press MENU. The following menu comes up.



If you want to use the different language that is now displayed on the screen, see page 12.

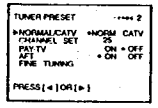
2 Using ▲ or ▼ of the cursor keys on the remote control, move the cursor (►) on the TV screen down to "TUNER PRESET", and then press EXE on the remote control. The menu shown at the right will appear on the TV screen:*



The screen display differs depending on the model.

- To SLV-825UB users: "NORMAL/CATV" does not appear on the TV screen of your model. Therefore, skip steps 3 and 4 below.
- "PAY-TV" appears on SLV-825VC models only.

3 **All except SLV-825UB models:** using ▲ or ▼ of the cursor keys on the remote control, move the cursor (►) on the TV screen up to "NORMAL/CATV." Then, move the dot to NORM using the left cursor key.

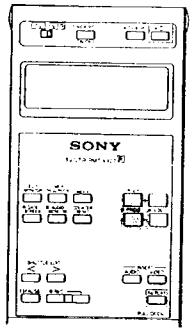


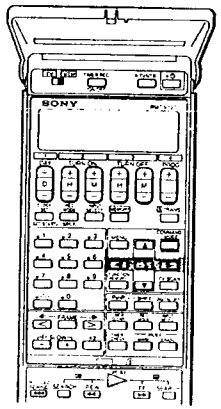
4 **All except SLV-825UB models:** using ▲ or ▼ of the cursor keys on the remote control, move the cursor (►) on the TV screen down to "CHANNEL SET."

5 Close the flap and press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.**
The programme number will change in the VCR display panel and on the TV screen.

Another way to select the programme position is:
Press the PROG function button on the remote control to light the indicator beside the button and turn the jog dial clockwise for higher numbered programme position or counterclockwise for lower numbered programme positions.

(Continued)





If the received picture is unclear
Press ◄ or ► of the cursor keys on the remote control until you get a clearer picture.

6 Once you have selected the programme position, open the flap and tune to the channel required using ◄ and ► of the cursor keys on the remote control.
The channel number automatically increases with ► and decreases with ◄. (In Italy, channel numbers 13 to 20 correspond to channels A to H.)
The number stops changing when the first broadcast programme received is displayed; the programme will be displayed briefly before the screen turns blue again.

7 If this is the broadcast programme required*, press EXE to store it. If it is not, keep searching, i.e. go back to step 6.

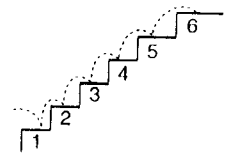
8 Now that you have stored a channel against your chosen programme number, go back to step 1 and repeat storing all the channels required against the different programme numbers.

*A faster way to store broadcast channels (say, if your area has a lot of broadcast channels) is to do the following alternative steps 7 and 8:

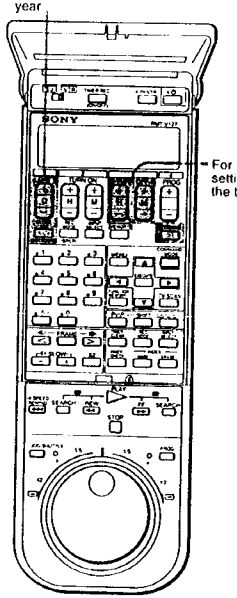
7 If this is the broadcast programme required, press PROG+ once (on the remote control) to automatically store it. To store the next broadcast channel, return to step 5.

8 Having stored all the broadcast channels against your chosen programme numbers, press EXE.

Step 6 Setting the Clock



For setting the day, month and year



For setting the time

When -:-- lights up in the VCR display panel
Any time power is interrupted for more than one hour, you will see -:-- lighted when power is restored. You will have to re-set the date and clock again.

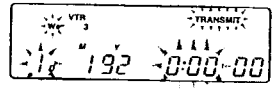
When a short beep sounds repeatedly
The VCR is in timer recording or quick timer recording or standby mode for timer recording, and the setting cannot be transmitted.

To correct the preset date and time
Open the remote control flap, repeat steps 2 to 7.

The last thing you need to do in Getting Started is set the clock on the remote control.

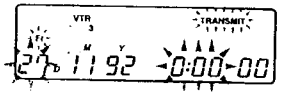
1 To do this, lift the remote control flap.

2 The items in the remote display flash to tell you that the remote control is ready to receive your clock setting data.



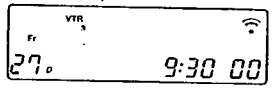
3 Press CLOCK SET.

4 Press the button marked "D" (top to go forward and bottom to go backwards) until today's day, date, month and year are indicated. Keep pressing the "D" button going through the dates, months and years until the correct data is set.
If you keep the "D" button pressed, the display will change more rapidly.



5 Press the H and M rocker buttons under the flashing "0:00" on the remote display. Use these buttons to set the correct time. Once done the correct date, month, year and time are all shown on the remote display.

6 When you are satisfied that all the information is correct, point the remote at the VCR and press TRANS at the exact time corresponding with a time signal from the accurate clock, radio, telephone and so on.
The clock will start at 00 second.
The correct time should appear in the display on the front of the VCR when the VCR is off.

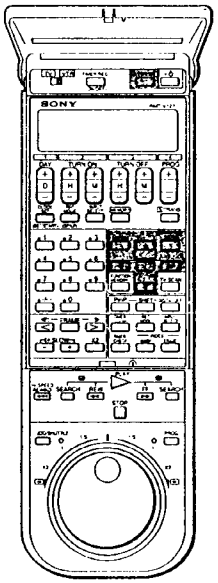


7 Close the remote control flap.

The following section "Additional Presetting Functions" describes various functions concerning setting up your VCR. Read through the section briefly to get to know the functions.

Now that you have finished all the things you should do in "Getting Started", you should proceed to "Basic Operations" to enjoy real home video life.

Additional Presetting Functions



Controlling Other Sony VCRs with This Remote Control

If the equipment has a command selector
Set the command mode selector to other position than "VTR 3", and press COMMAND MODE several times until the same command mode display as you have selected for the equipment is shown in the remote display.

If the equipment doesn't have a command selector
The command mode of this remote control should correspond to the settings listed below.

- If other equipment is a Sony Betamax infrared remote control VCR, select VTR 1.
- If other equipment is a Sony 8 mm format VCR, select VTR 2.
- If other equipment is a VHS format VCR, select a command mode position other than "VTR 3," which is selected for this VCR.

Selecting the Language on the MENU

Most of the operations are done using the on-screen display (MENU). You can also select the language you want to display on the TV screen. Once you have selected the language, you can use the on-screen display in your language.

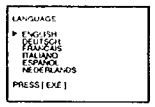
1 Turn on the TV and VCR.

2 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel. (If you have made only an aerial connection, turn to the video channel you set the VCR to in **Step 3**.)

3 Lift the remote control flap.

4 Press MENU.
The main MENU appears on the TV screen.

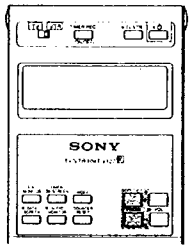
5 Move the cursor (▶) to "LANGUAGE".

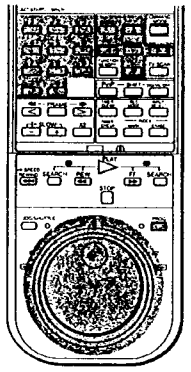


6 Press EXE.
The LANGUAGE menu appears.

7 Select the language which you want to use for the on-screen display, using ▲ or ▼ of the cursor keys on the remote control.

8 Press EXE when you have finished selecting your option.





On FINE TUNING indicator
This indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the centre position or one space right or left of the centre position. However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

Allocating the Channels Directly

Enter the desired programme numbers using the programme position number buttons. To enter one's digits, press the desired number. To enter two digits numbers, press the -/- - (10's digit) button, then press the ten's digit number and the one's digit number.

Disabling Unwanted Channels

If you want to let only desired programme positions appear when you select the programme position for normal recording, quick timer recording or timer-activated recording, you can do this by following the procedure below.

1 Press MENU, move the cursor (▶) down to "TUNER PRESET" and press EXE.

2 Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR until the programme position you want to disable appears in the PROG field of the TUNER PRESET menu.
You can also use the jog dial to select the programme position.
To use this, press PROG function button to light the indicator beside the button.

3 Press programme position number button 0 twice or keep pressing the left and right cursor keys until "0" is displayed in the CHANNEL SET field.

4 Repeat steps 2 and 3 to disable other programme positions.

5 Press EXE.

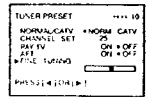
If You Can't Get a Clearer Picture –Fine -Tuning

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

1 Select the programme position in which the picture is distorted using PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR.
You can also select the programme position by pressing the PROG function button on the remote control to light the indicator beside the button and turn the jog dial clockwise or counterclockwise.

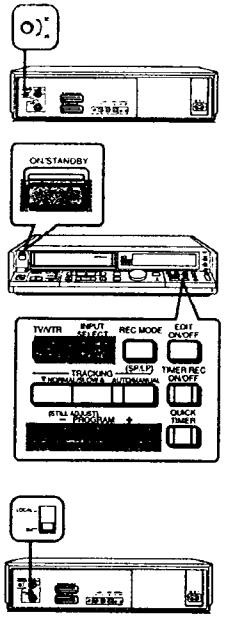
2 Press MENU, move the the cursor (▶) down to "TUNER PRESET" and press EXE.

3 Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to FINE TUNING.
The FINE TUNING indicator is displayed in the TUNER PRESET menu.



4 Press ▲ or ▼ of the cursor keys to get a clearer picture.
The AFT function switches off automatically.

5 If you can't get a better picture, press ▲ to move the cursor (▶) up to "AFT," select "ON" and press EXE.
The TV screen returns to the original screen.



If You Have Failed in Tuning the VCR to Your TV

1 Find a UHF channel between 30 and 39 where there is no picture and you can hear a steady rustling sound or no sound at all.

2 Press INPUT SELECT several times until "LINE L2" appears in the VCR display panel.

3 Press TV/VTR several times until "VTR" appears in the VCR display panel.

4 With the supplied plastic adjuster, turn the RF CHANNEL screw (at the rear of the VCR) to a channel where your TV clearly displays a blue screen with the tape counter.

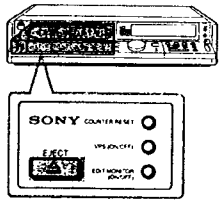
5 Press INPUT SELECT several times until "TUNER" appears in the VCR display panel.

6 Press PROGRAM +/– to see if the TV screen changes to a different channel.

If the TV Signal is too Strong

You can strengthen or attenuate the reception signals using the LOCAL /DX switch at the rear of the VCR.
Normally set this switch to the DX position. If the reception signals are very strong, set it to the LOCAL position.

Playback



This section shows you how to play back a video cassette.

Inserting a Video Cassette

1 Open the upper-drop down panel.

2 Insert a video cassette.

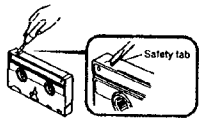
3 Gently press the centre of the front side of a cassette with the arrow indication facing upwards until the mechanism draws it into the compartment.
When the cassette has been loaded, the cassette indicator lights in the VCR display panel and the VCR turns on automatically.
If you insert a cassette with its safety tab removed, playback starts automatically.

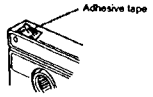
Ejecting the Cassette

Press ≜ EJECT on the VCR.

You can eject the cassette even if the power is off.
When you press ≜ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Note
You cannot eject a cassette during recording or recording pause mode.

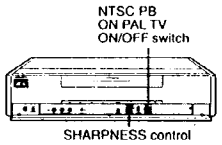




Protecting your cassette against accidental erasure

The cassette is provided with a safety tab to protect against accidentally erasing a previous recording. Break off the safety tab with a screw driver or a similar tool as shown on the illustration at left . If the safety tab is removed, the VCR ejects the cassette when you try to record on the cassette.

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



Playing Back a Cassette

The VCR automatically detects the tape speed (SP or LP) with which a cassette was recorded. If you insert a cassette with its safety tab removed, playback starts automatically.

1 Insert a cassette.
The VCR turns on automatically.

2 Press TV/VTR several times to light up the VTR indication in the display window of the VCR.

3 Turn on the TV.
If you have made only an aerial connection, turn to the programme position you set the VCR to in "**Step 3** Tuning the VCR to your TV" on page 7.

4 Set the NTSC PB ON PAL TV ON/OFF switch to "ON" if you play back an NTSC-recorded tape.

5 Press ► PLAY.
When the tape reaches the end, it automatically rewinds.

To stop playback
Press ■ STOP.

To stop play back for a moment
Press II PAUSE.
Press II PAUSE again or press ► PLAY to resume playback.

To advance the tape rapidly
Press ■ STOP, then ►► FF.

To rewind the tape.
Press ■ STOP, then ◄◄ REW.

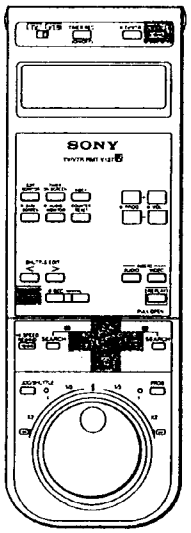
To rewind the tape at a higher speed
Press ◄◄◄ HI-SPEED REWIND.

To start playback automatically after rewinding a cassette (AUTO PLAY)
This feature works only from the VCR.
Press ► PLAY while holding ◄◄.
The "►" indication flashes while the tape is being rewound.

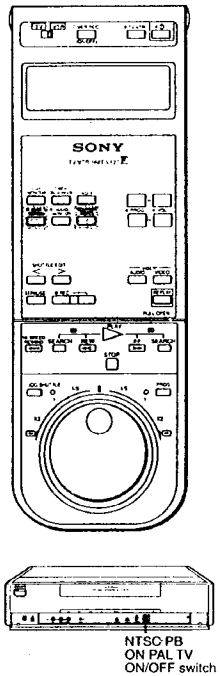
To view the picture during fast forward mode or rewind mode
Keep pressing ►► during fast forward, and keep pressing ◄◄ during rewind.
Release the button to return to fast forward or rewind.

To turn the VCR on or off
Press ON/STANDBY on the VCR or I on the remote control.

Adjusting the sharpness of the picture
Turn the SHARPNESS control inside the lower down-panel of the VCR.
Turn to SHARP to get a sharper picture, and to SOFT to get a softer picture.



Never unplug the power cord while the tape is in motion
This may cause the tape to be jammed in the VCR. When you need to unplug the mains lead, be sure to remove the cassette or turn off the power of the VCR.



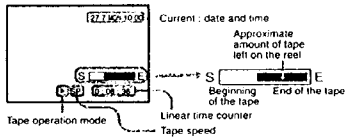
When the data screen does not appear on the TV screen
Check to see that the LINE OUT jacks are connected to the line input jacks of the TV. If this is the case, the data screen doesn't appear.

Notes on counter reading
- The counter does not work on the portions on which no recording has been made.
- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically returns to "0H00M00S."

Using the Data Screen

The data screen may appear on your TV screen when you first turn on the VCR. If the data screen does not appear, press DATA SCREEN on the remote control. The data screen does not appear when the NTSC PB ON PAL TV switch is set to ON.

The Data Screen with Tape Counter Display



To turn off the data screen
Press DATA SCREEN.

Indexing Tape Contents

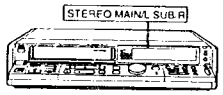
You can use the tape counter as a reference to locate a desired scene by rewinding the tape.
Press COUNTER RESET on the remote control or on the VCR to set the counter to "0H00M00S" (counter zero position) before you play back or record.
To view a desired scene after playback or recording, rewind the tape to the counter zero position.

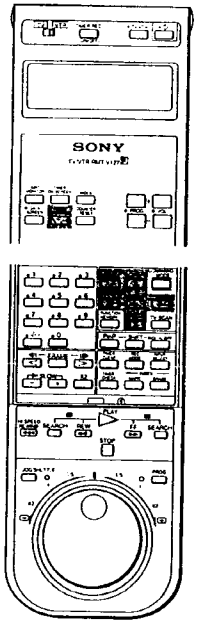
NTSC-recorded Tapes

You can play back a cassette recorded in NTSC video system using the SP mode (NTSC-recorded tape) on a PAL system television set. If the tape is recorded in the Hi-Fi system, the Hi-Fi sound can be reproduced.

Slide the NTSC PB ON PAL TV ON/OFF switch to "ON" every time you watch an NTSC recorded tape.
When you watch a PAL recorded tape, return the NTSC PB ON PAL TV switch to OFF. And if you are using a TV equipped with the COLOUR SYSTEM selector switch, set the COLOUR SYSTEM selector switch to "PAL."

The following will occur during playback of an NTSC-recorded tape
- The time/tape-counter display will not appear even if you press DATA SCREEN.
- Depending on the TV you are using, the following phenomena may occur separately or in combination:
  -the picture becomes black and white
  -the picture shakes
  -no picture appears on the screen
  -black streaks appear horizontally on the screen
  -the colour density increases or decreases
  -the audio becomes normal audio and noise appears in LP and EP mode
- If a tape has portions recorded in PAL and NTSC video systems, the tape counter reading is not correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- You may not use the digital functions for an NTSC-recorded tape. For details see page 34.
- You canndt edit the NTSC-recorded tape onto another VCR.





You cannot select the monitor sound in the following cases

- When a monaural tape (a tape which has no recording on its Hi-Fi track) is played back.
- When AUDIO MIX ON is selected in the MODE SET menu.

Selecting the Monitor Sound

You can select the sound you want to hear when you play back a stereo or bilingual tape, or when you want to play back a tape on which sounds were mixedly recorded on the Hi-Fi audio track and the normal audio track.

Listening to a Stereo or Bilingual Tape

Press AUDIO MONITOR to select the sound to hear.
With each press, you change from stereo (left and right channel sounds), to left-channel sound, to right-channel sound or to the sound on the normal audio track. The selected sound type appears in the display window of the VCR.

Display	Sound heard	
	Stereo tape	Bilingual tape
STEREO	Stereo	Left and right channels
MAIN/L	Left channel	Left channel
SUB/R	Right channel	Right channel
No indication	Monaural (on normal audio track)	Sound on normal audio track

Listening to Mixed Sounds

You can hear the sounds recorded on the Hi-Fi audio track and the normal audio track at the same time. This function is useful when you listen to an audio-inserted tape. (For details on the audio insert function, see page 61.)

1 Press MENU.
The main MENU appears.

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

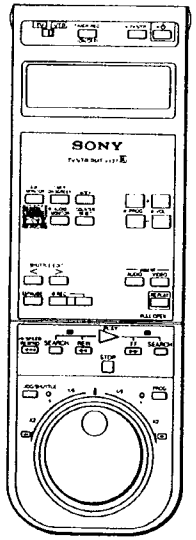
3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE," then press EXE.
The MODE SET [PAGE 2] menu appears.

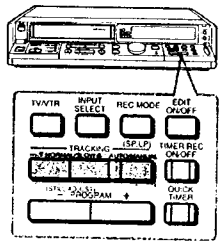
4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "AUDIO MIX."

5 Select ON or OFF using ◀ or ▶ of the cursor keys.
ON: to make the AUDIO MONITOR button inoperative so that the sounds of the Hi-Fi video and normal audio tracks are always output.
OFF: to make the AUDIO MONITOR button operative so that you can select the sound to hear.

6 Press EXE to store the setting.
The TV screen returns to the original screen.

When you have finished the playback of a particular tape such as an audio inserted tape, reset the AUDIO MIX setting to OFF.





When the sound on the Hi-Fi audio track is not clear, adjust it with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲. When the recording condition is poor, you can't adjust.

Removing Picture Distortion

Usually, the tracking control function removes picture distortion automatically. However, occasionally, streaks or "snow" may appear on the screen when you play a video tape. When this happens, you can adjust the tracking manually.

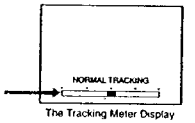
Automatic Tracking Adjustment

"AUTO TRACKING" flashes while the VCR is searching for the best tracking condition and lights steadily when it finds the best possible tracking. If the VCR cannot find the best tracking condition, adjust the tracking manually.

Manual Tracking Adjustment

1 Press DATA SCREEN to display the tape counter on screen.

2 Press ▼/▲ on the TRACKING NORMAL/SLOW (STILL/ADJUST) buttons to get the best picture.
The tracking meter appears on the screen.
The distortion should disappear as you press one of the two buttons.
The tracking meter does not appear when the NTSC ON PAL TV switch is set to ON.

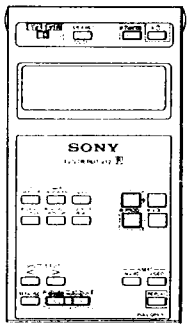


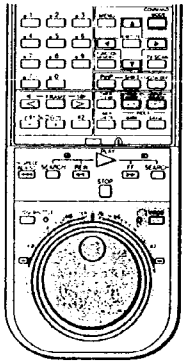
The Tracking Meter Display

When you cannot get a better picture even if you have made manual tracking, press AUTO/MANUAL to return automatic tracking adjustment mode.

To return to the tracking meter to its normal position
Simultaneously press ▼/▲ on the TRACKING NORMAL/SLOW (STILL/ADJUST) buttons.

Recording TV Programmes





If the tape is ejected when the REC buttons are pressed
The tab on the cassette is out. Use another cassette with its safety tab intact.

If you are using a Sony TV
You can use the remote control of this VCR to operate the TV. When doing this, slide the [TV]/[VTR] remote control selector at the top of the remote control to "TV". To operate the VCR, return the [TV]/[VTR] remote control selector to "VTR."

You can record TV programmes in one of three ways:
-While you are watching the programme (this page)
-While you are watching another programme (See page 21.)
-While you are not watching the TV at all (See page 21.)

Before you begin

- Make sure that the connections have been made correctly (see "**Step 2** Connecting the VCR" on page 6.)
- Check that "TUNER" lights up in the VCR display panel.

Recording While Watching the TV Programme

1 Insert a cassette. (Its safety tab must be in place.)
The VCR turns on automatically (Auto power on).

2 Turn on the TV.

3 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel. (If you have made only an aerial connection, turn to the video channel you set the VCR to in "**Step 3** Tuning the VCR to Your TV" on page 7.)

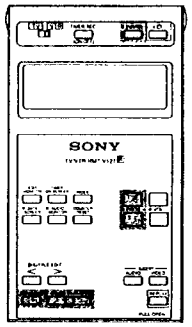
4 Select SP or LP with REC MODE (SP/LP).
In the LP mode, you can record twice as long as in the SP mode.

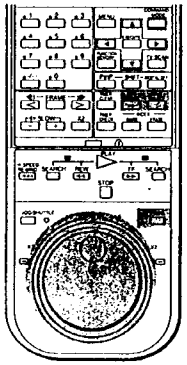
5 Press PROG+/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light indicator beside the button. Turn the jog dial clockwise for higher numbered programme positions or counterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

6 Press the two ●REC buttons on the remote control at the same time, or the REC button on the VCR.
The REC (recording) indication lights up in the VCR display panel.

To stop recording
Press ■STOP.

When the cassette reaches the end
The cassette rewinds to the beginning automatically and the power remains on.





Pausing
You can stop recording an unwanted scene and resume recording smoothly.

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

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

When the recording pause mode lasts for approximately 5 minutes, the VCR enters stop mode.

Recording with the TV Off

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

Recording While Watching Another Programme

The recording procedure differs depending on the type of TV-VCR connection you have made.

1 Record the programme following the steps 1 to 6 on page 20.

2 Do one of the following depending on the type of connection your VCR has:

If you have made a EURO-AV connection:

1 Press TV/VTR until "VTR" disappears from the VCR display panel.

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

If you have made an aerial connection only:

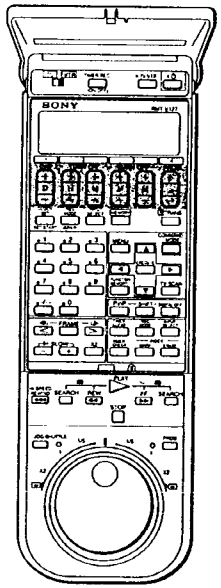
Select the programme you want to watch on the TV.

If you have made a LINE OUT VIDEO/AUDIO connection:

1 Select the tuner input on the TV.

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

Timer-Activated Recording



The timer recording function lets you preset your VCR to record up to eight programmes within a one-month period. Perform this procedure on the remote control and transmit the preset data to the VCR.

Before you begin

- Make sure that the time and date clock is set correctly (see **"Step 6** Setting the Clock" on page 11.)
- Check to see that the cassette is long enough to record all the programmes.
- Make sure that the safety tab of the cassette has not been removed. If you insert a cassette without a safety tab and try to set the timer, a short beep sound will be heard repeatedly and the cassette automatically ejects from the VCR.

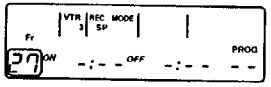
Setting the Timer

Example
Here is how to record a broadcast on programme position 8 from 20:00 to 20:50 on Friday, 27th November 1992, in SP mode.

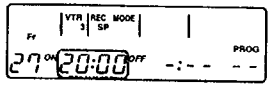
1 Open the flap of the remote control.
The remote control enters timer preset mode.

Note:
Never close the flap until you finish transmitting the programme data to the VCR.

2 Press D (DAY) until 27 appears.
The day of the week (Friday) is automatically set.

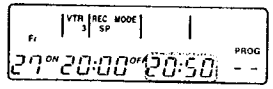


3 Press H under the TURN ON section until 20 appears.

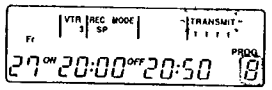


4 Press M under the TURN ON section until 00 appears.

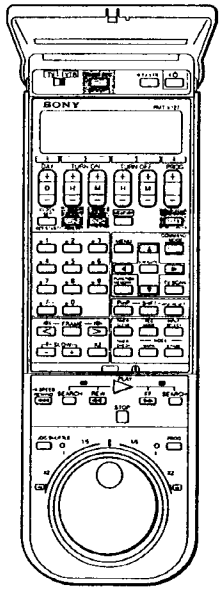
5 Press H and M under the TURN OFF section until 20:50 appears.



6 Press PROG+/– until 8 appears.



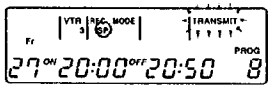
You can use the following buttons during timer-recording
- TIMER REC (ON/OFF) to stop recording
- COUNTER RESET (See page 17)
- TV/VTR (See page 21)
- TIMER CHECK (See page 26)
- DATA SCREEN (See page 17)
- TIMER ON SCREEN (See page 25)



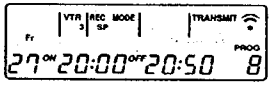
If power interruption occurs during timer recording
Recording will stop and your VCR will turn off. If power is restored within one hour, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than one hour, any presettings will be erased and you'll need to reset the time and date for your programmes. Note that the tape counter will return to "0H00M00S."

To record a satellite programme from a satellite tuner connected to EURO-AV (LINE 3) connector
Press INPUT SELECT to display "LINE L3" in the remote display. You need a commercially available timer to turn on/off the satellite tuner at the preset time. The programme position to be recorded must be preset on the satellite tuner.

7 Set the recording speed, SP or LP, with REC MODE (SP/LP).
The TRANSMIT indicator flashes to tell you that all of the items have been entered.



8 Point the remote control to the VCR and press TRANS. Press TRANS within five minutes after you have entered all the items.
A beep sound will tell you that the preset data have been transmitted to the VCR, and the VCR enters recording standby mode.
The TIMER REC indicator lights up in the VCR display panel and the contents of the timer setting you've just transmitted to the VCR also appears in the VCR display panel.
The PROGRAM LIST appears on the TV screen for a few seconds if the VCR is turned on.



To set another programme, repeat steps 2 to 8.

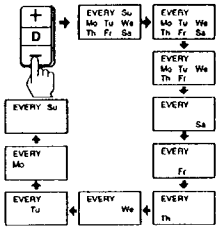
9 Close the flap of the remote control so that the present time appears on the remote display.
The VCR turns on automatically and starts recording at the preset time, then turns off after recording ends.

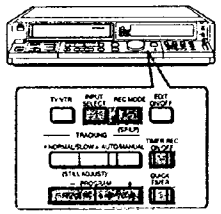
To stop timer-recording
To stop timer-recording while a programme is being recorded, press TIMER REC (ON/OFF).

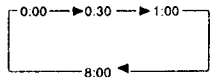
To rewind the tape after timer recording is over
Use the TIMER REC-REW function (for details, see page 41).

To record video source from the EURO-AV (LINE1) connector, EURO-AV (LINE3) connector or LINE IN 2 AUDIO/VIDEO jacks
Press INPUT SELECT any time in steps 1 to 6 to change the indication from PROG-- to LINE L1 (for the EURO-AV (LINE 1) connector), LINE L2 (for the LINE IN 2 AUDIO/VIDEO jacks), or LINE L3 (for the EURO-AV (LINE3) connector).

To record a TV programme and audio signals from equipment connected to the EURO-AV (LINE 1) connector or LINE IN 2 AUDIO simultaneously.
For selecting the audio input terminal, see item "SIMUL AUDIO IN" on page 40.
Set the desired programme position and press INPUT SELECT to indicate SIMUL in step 6.







If your cassette ends during quick-timer recording
Recording stops and the VCR turns off. The cassette will not rewind automatically.

If a power interruption occurs during quick-timer recording
Recording will stop and the VCR will turn off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from the time the power is restored.

For the buttons you can use during quick-timer recording
See page 22.

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording.

Daily recording records the same programme every day of the week, while weekly recording records the same programme on the same day, every week.

In step 2 of the "Setting the Timer" section (page 22), press the –(minus)-side of the D button to change the indication in the remote display to one of the choices. (See the diagram at left.) When you set and transmit your preset data to the VCR, the corresponding indicator lights up in the VCR display panel.

Quick-Timer Recording

This function is convenient for recording programmes without going through the entire timer setting procedure. Note, however, that it provides only an approximate setting for the programme you wish to record.
If you're currently recording, skip to step 7.

1 Insert a cassette into your VCR.

2 Press INPUT SELECT to select TUNER.

3 Select the desired recording speed (SP or LP) by pressing REC MODE on the inside surface of the upper drop-down panel.

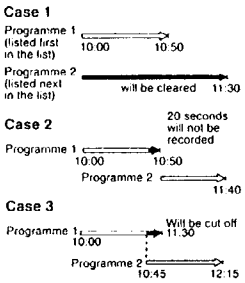
4 Press QUICK TIMER on the VCR.
If you insert a cassette with the safety tab removed, your VCR will eject the cassette.

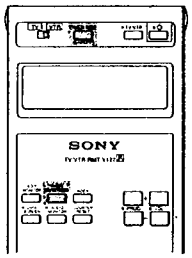
5 Select the programme position you wish to record using PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR. The programme position can be changed while the programme position indicator is flashing (for about 30 seconds).

6 Press QUICK TIMER again to start recording.
Unless you press QUICK TIMER within 30 seconds, the power will be turned off.

7 Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window.
Each time you press QUICK TIMER, the recording duration increases by 30 minutes (up to 8 hours).
Once recording has finished, your VCR will turn off automatically.
During quick-timer recording, the recording time can be changed by pressing the QUICK TIMER button. During recording, the time displayed will count down in units of one minute.

To stop quick-timer recording
To stop quick-timer recording while a programme is being recorded, press TIMER REC (ON/OFF).





Notes
- If you set a programme to record only one time, that setting is erased from the PROGRAM LIST display when the recording has finished.
- To check the timer settings during timer recording, press TIMER ON SCREEN.

Overlapping Timer Recordings

If you have made a "mistake" when presetting multiple programmes, the VCR will interpret your settings as described in the following cases.

Case 1: If you preset two programmes to record at the same time...

The programme listed first on the PROGRAM LIST display has priority over the other programmes. The timer settings for lower priority programmes will be deleted from the PROGRAM LIST display when recording begins for the first programme.

Case 2: If you set programme 2 to record at the same time you set programme 1 to finish recording...

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

Case 3: If you set programme 2 to record before programme 1has finished recording...

Programme 2 will begin recording before programme 1 has finished.

Checking the Timer Settings

Here's how to display your timer settings to confirm the programmes you wish to record.

1 Press TIMER REC (ON/OFF) to release timer recording standby mode.
The TIMER REC (recording) indicator turns off in the VCR display panel.

2 Press ⏻ to turn on the VCR.

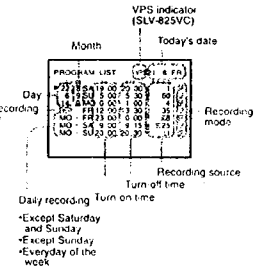
3 Press TV/VTR so that the VTR indicator lights up in the VCR display panel.

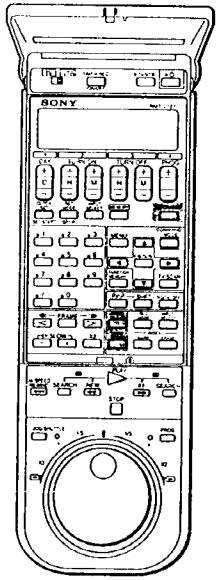
4 Turn on the TV.
If you have made only an aerial connection, turn to the video channel you set the VCR to in "Step 3 Tuning the VCR to Your TV" on page 7.

5 Press TIMER ON SCREEN.
The PROGRAM LIST appears on the TV screen for you to check.

6 After you have checked the settings, press TIMER ON SCREEN again.
The original TV screen appears.

7 Press TIMER REC (ON/OFF) to return to timer recording standby mode.
The TIMER REC (recording) indicator turns on in the VCR display panel.





Changing or Cancelling the Timer Settings

Here's how to change or cancel any timer settings on the PROGRAM LIST display.

1 Display the PROGRAM LIST display on the TV screen.
Follow steps 1 through 5 of the "Checking the Timer Settings" (page 25) section.

2 Press TIMER CHECK to display the cursor (▶).

3 Press TIMER CHECK to move the cursor (▶) to the setting you want to change or cancel.

4 **To change the setting**
Re-enter all the items and transmit it to the VCR. (See "Setting the Timer" on page 22.)
The VCR returns to timer recording standby.

To cancel the setting
Press TIMER CLEAR.

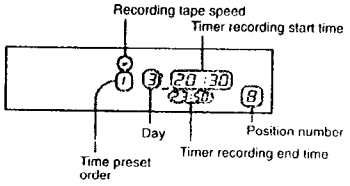
To change or cancel timer settings without using the PROGRAM LIST display

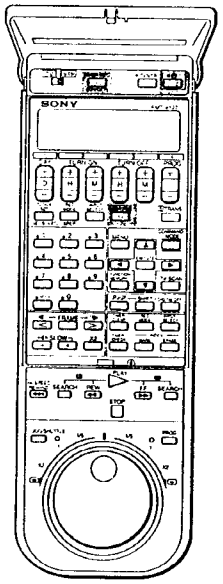
Using this method, you can change or cancel the timer settings without releasing the timer recording standby mode.

1 Press TIMER CHECK repeatedly until the programme you want to change or cancel appears in the VCR display panel.

2 **To change the timer setting,** change the settings and press TRANS to transmit it to the VCR.

To cancel the setting, press TIMER CLEAR.
The timer setting of the selected programme is cancelled.





Using the VCR Before Timer Recording Starts

1 Press TIMER REC (ON/OFF).
The TIMER REC (recording) indicator in the VCR display panel turns off and the VCR leaves the timer recording standby mode.

2 Press ⏻.
The VCR is ready to use.
A short beep sound will be heard and the message will appear on the TV screen five minutes prior to a preset timer start time.

3 After using the VCR, press TIMER REC (ON/OFF).
The VCR returns to the timer recording standby mode.

Storing the Timer Settings

Once a one-time programme has been recorded, the setting is cancelled, and if you wish to record at that time again, you need to reenter the settings. Daily /Weekly recordings are of course kept in memory and repeated until you change them. However, if you store the timer settings into the remote control's memory, you can recall the timer settings whenever you want. You can store up to four settings into the remote control's memory. Each setting is stored into one of four positions (A, B,C and D). Moreover, the recording date shifts automatically to the next week after the recording is completed. Thus, you can have easy access to the most frequently used settings, especially your favourite weekly programme.

1 Press MEMORY so that MEMORY A appears in the remote display.

2 Set all items for timer-activated recording.
(See "Setting the Timer" on pages 22 and 23.)
The setting is stored in MEMORY A.

3 If you want to store other settings, press MEMORY several times until the positions you want to store settings (B, C, or D) appears, then repeat step 2.

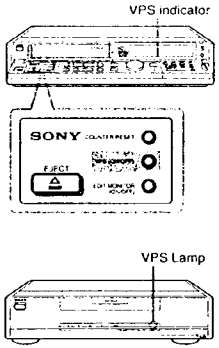
The settings are kept in memory even if you close the flap of the remote control.

Recalling and re-entering the settings

1 Press MEMORY several times until the indication (A, B, C or D) you want to recall/change appears.

2 Make whatever changes you want.

3 Press TRANS.
The VCR enters timer-activated recording standby mode.



Notes on VPS Recording

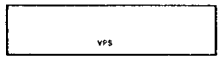
- If recording times overlap due to a VPS time shift, the programme that was broadcast first has priority. The second programme will begin to record only when the first programme has finished.
- The VPS button is effective only when TIMER REC does not light up in the VCR display panel.
- If the VPS cannot receive a VPS signal because the signal is too weak or because the station failed to transmit VPS signals, the VCR will record the programme without the VPS function regardless of the VPS indication in the VCR display panel.

VPS Recording (SLV-825VC models only)

The German broadcasting system transmits VPS (Video Programme System) signals with its TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording will stop. As soon as the interrupted programme resumes, recording starts again.

1 Make sure the "TIMER REC " indicator is not lit in the VCR display panel.

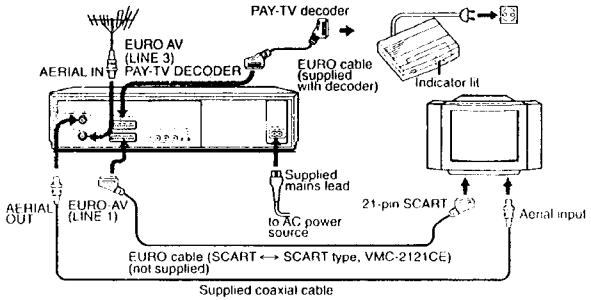
2 Before setting the timer to record, press VPS (ON/OFF) on the inside surface of the upper drop-down panel so that the "VPS" indicator lights in the VCR display panel.

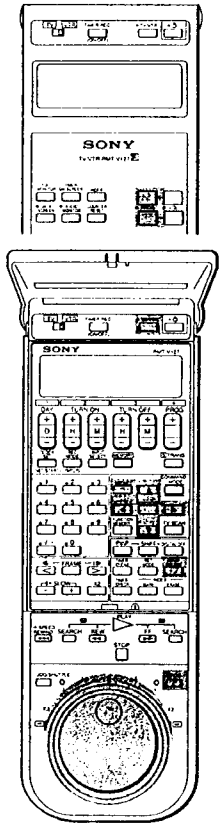


3 Set the timer following the steps of "Timer-Activated Recording" (page 22). The VCR will enter standby mode for VPS recording well before the turn-on time so as to be ready if there is a change in the start time.
The VPS lamp on the front panel lights up when the signal with VPS label is received by the VCR. The VPS indicator in the VCR display panel lights up when you press the VPS (ON/OFF) button on the inside surface of the upper drop-down panel.

PAY-TV Programme Recording (SLV-825VC models only)

You can watch or record a PAY-TV programme if you connect the decoder (not supplied) to the VCR. (See the connection below.)





Notes

- So long as the decoder is connected to the VCR, make sure to keep the mains lead of the decoder connected to an AC outlet.
- If you want to store normal television programmes, make sure that the PAY TV in the TUNER PRESET menu is set to "OFF."

Presetting PAY-TV programme Broadcasts

Before watching or recording a PAY-TV programme, you should preset PAY-TV programme broadcasts to store them into the VCR.

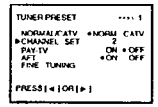
1 Turn on the VCR and TV.

2 Press INPUT SELECT so that "TUNER" appears in the front panel display.

3 Turn on the TV.

4 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel.

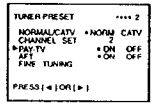
5 Call up the TUNER PRESET menu. (See "**Step 5** Tuning the VCR to the Required Stations" on page 9.)



6 Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light the indicator beside the button. Turn the jog dial clockwise for higher numbered programme positions or counterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

7 Press ▲ or ▼ of the cursor keys to move the cursor (►) to "CHANNEL SET" and tune in PAY-TV channels.

8 Press ▲ or ▼ of the cursor keys to move the cursor (►) to "PAY-TV" and select "ON." Then press EXE.

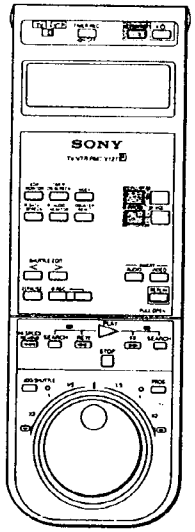


Important

Once you have preset a single TV programme with the PAY-TV setting ON, the upper EURO-AV connector on the rear of the VCR can't be used as an external connector (LINE 3), but can only be used as the connector which is connected with the PAY-TV decoder. Because of this, "LINE 3" will not appear even if you press the INPUT SELECT button. The input mode indication will then change as:

TUNER → SIMUL → LINE 1 → LINE 2 → TUNER

If all the TV programmes are preset again with the PAY-TV setting OFF, the upper EURO-AV connector can be used as a LINE 3 input terminal and LINE 3 becomes effective when you connect any other equipment except the PAY-TV decoder to this connector.



Recording a PAY-TV programme

Turn on the power of the decoder first.
For the steps other than described below, refer to "Recording TV Programmes" on page 20.

To record a PAY-TV programme while watching it
Select a PAY-TV programme using PROG +/– on the flap of the remote control.

To watch a normal TV programme while recording a PAY-TV programme
Press TV/VTR so that "VTR" goes off, then select a normal television programme you want to watch on the TV.

To watch a PAY-TV programme while recording a normal television programme
Press TV/VTR to turn off "VTR", then select a PAY-TV programme you want to watch on the TV.

The following table will show you which indicators are lit during the watching and recording of a PAY-TV programme.

VTR indicator	To watch	To record
Lit	PAY-TV programme	PAY-TV programme
Unlit	Normal television	PAY-TV programme
Unlit	PAY-TV programme	Normal television

Recording a PAY-TV programme using the timer-activated recording function

Select a PAY-TV programme in step 6 of "Setting the Timer " on page 22. The other steps are the same as the normal timer-activated recording. The PAY-TV decoder must be kept turned on.

Watching a PAY-TV programme with the VCR turned off

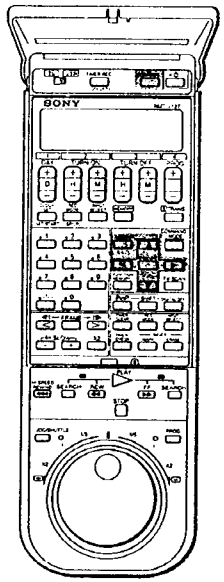
Select a PAY-TV programme you want to watch on the TV.

Subtitle superimposing

Put the subtitle ON/OFF switch of the decoder to ON. Note that you cannot record the subtitle on the VCR.

Notes

- If the VCR records a PAY-TV programme which has been preset in the VCR's memory, this PAY-TV programme is not decoded on your TV even if you tune in this programme on your TV.
- You cannot use the subtitle superimposing function unless the 21-pin EURO-AV cables which are compatible with the RGB signals, are used for both the decoder-VCR and VCR-TV connections.



Temporarily using the EURO-AV (LINE 3) PAY-TV DECODER Connector as LINE 3 Input Terminal

Once you have done PAY-TV presetting, the upper EURO-AV connector on the rear of the VCR becomes the connector exclusively for a PAY-TV decoder. If you want to temporarily use this connector as a LINE 3 input connector for dubbing the tape, do the following.

1 Turn on the VCR and TV.

2 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel.

3 Press MENU.
The main MENU appears.

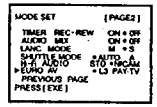
4 Press ▲ or ▼ of the cursor keys to move the cursor (►) to "MODE SET."

5 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (►) to "NEXT PAGE", then press EXE.
The MODE SET [PAGE 2] menu appears.

6 Press ▲ or ▼ of the cursor keys to move the cursor (►) to "EURO AV."

7 Select "L3" using ◄ or ► of the cursor keys.

8 Press EXE.



Now you can use the upper EURO-AV connector as LINE 3 input terminal (if you connect a PAY-TV decoder to this connector, a PAY-TV programme is not decoded.)

To use the upper EURO-AV connector exclusively for the PAY-TV decoder again, perform steps 1 to 6, select "PAY-TV," then press EXE.
You don't need to preset PAY-TV programmes again to watch and record. The programmes you have preset in the VCR's memory as PAY-TV programmes will still be effective.

Notes

- Depending on the equipment you connect to the EURO-AV (LINE 3) connector, the selector equivalent to the TV/VTR switching selector is not always set to the "TV" position. In this case you always have the output of this equipment on the TV. When you don't need to watch, turn off the power of this equipment.
- The line-through function does not support the RGB signals. Accordingly, if the connected equipment outputs superimpose signals, you can't watch them.

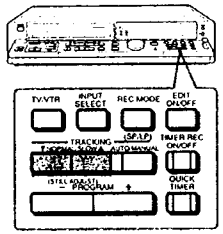
Line-through

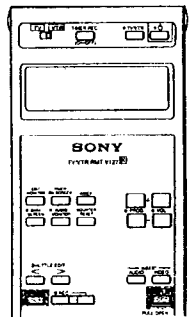
With the line-through function, you can watch a picture coming from a source connected to your VCR through the EURO-AV (LINE 3) connector even though your VCR is turned off.
For this function to work, you need the following conditions:

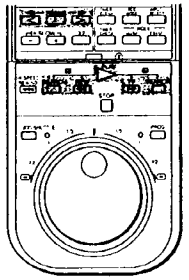
- The source equipment should be connected to the VCR's upper 21-pin EURO-AV (LINE 3) connector with a 21-pin EURO-AV cable.
- The source equipment needs to have a TV/VTR, TV/DISC, TV/SAT or equivalent selector switch, which you set to the non-TV position. (The VTR indicator should not be lit in the VCR display panel.)
- The VCR's lower EURO-AV (LINE 1) connector and your TV are connected with a 21-pin EURO-AV cable.

To watch a TV programme rather than the picture from the source connected to the VCR, simply set the TV/VTR switch of the connected equipment (which may be called TV/DISC, TV/SAT, or an equivalent) to the "TV" position.

Variable Speed Playback







Note
During variable speed playback, "streaks" or "snow" may appear on the picture, the picture may flicker and the colour may not be reproduced properly depending on the speed or the direction.

The following section explains the advanced playback functions available on your VCR. No sound is heard during these operations.

Replay

During playback and playback pause, press REPLAY.
The VCR replays in slow-motion the last two seconds of the scene just played back. After replay is over, the VCR resumes normal playback (or playback pause).
If you continue to press REPLAY, the tape will rewind as long as the button is held down. However, slow playback continues for about more than one minute, the VCR resumes normal playback automatically.

Still Picture

During playback, press II PAUSE to hold the picture in one place.

To resume normal playback, press either ▶ PLAY or II PAUSE.

If you leave your VCR in pause mode, normal playback resumes after approximately 5 minutes.

To reduce the bands on the top or bottom of the screen in still mode
Change to the slow motion play mode and adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲.
To reduce the picture shaking during still mode
Adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲.

Picture Search (During Playback)

Press ▶▶ FF or ◀◀ REW during playback.

When you release the button, normal playback will resume.

Locked Picture Search

This feature works only from the remote control.

Press ⇔ or ⇔ SEARCH on the remote control in the playback mode.
For the reverse direction, press the left ⇔ SEARCH button. For the forward direction, press the right ⇔ SEARCH button.

To resume normal playback, press ▶ PLAY.

Frame-by-Frame Picture

This feature works only from the remote control.

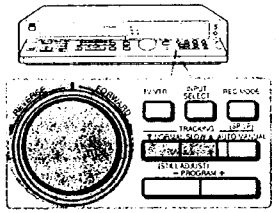
During playback pause, press II▶ on the remote control to advance the picture one frame or ◀II to go back one frame.

To resume normal playback, press ▶ PLAY.

Reversing the Normal Playback

This feature works only from the remote control.

Press ◀II (<) during normal playback.



Slow Motion Playback

This feature works only from the remote control.

Press II▶ SLOW +/– to start slow motion playback during playback.

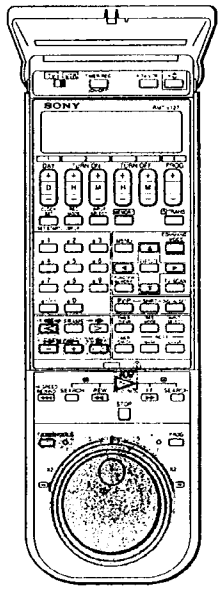
You can change the playback speed of slow motion playback from 1/5 to 1/30 times the normal speed.
Press II▶ SLOW + to increase the playback speed.
Press II▶ SLOW – to decrease the playback speed.

To resume normal playback, press ▶ PLAY.

To play back in the reverse direction
Press ◀II (<).

To resume normal playback, press ▶ PLAY.

To reduce streaks or "snow" during slow motion playback
Adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲ on the inside surface of the upper drop-down panel of the VCR.



X2 Double Speed Playback

This feature works only from the remote control.

Press X2 on the remote control.

To playback in the reverse direction
Press ◀II (<).

To resume normal playback, press ▶ PLAY.

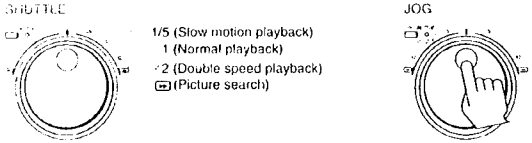
JOG/SHUTTLE Operation

Using the JOG dial and SHUTTLE ring on the VCR or the remote control during playback or playback pause, you can play back cassettes at a variety of speeds, in either forward or reverse direction.

Using the SHUTTLE ring
1* Press the JOG/SHUTTLE function button.
The indicator beside the button lights up.
2 Turn the ring and hold it.
Playback speed is selected according to the turning angle as illustrated. The same speeds are available in the reverse direction.

Using the JOG dial
1* Press JOG/SHUTTLE function button.
The indicator beside the button lights up.
2 Turn the dial.
Playback speed varies according to the speed at which you turn the dial (frame-by-frame, slow, x1). The same speeds are available in the reverse direction.

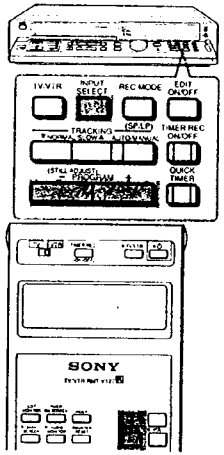
Note
It takes about two or three seconds to reverse the direction in slow motion playback or frame-by-frame picture.

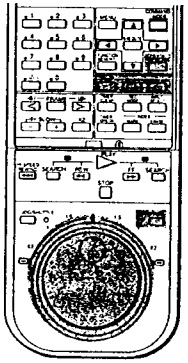


remote control only

Releasing JOG/SHUTTLE produces a still picture.
To resume normal playback, press ▶ PLAY.

Watching Multiple Picture





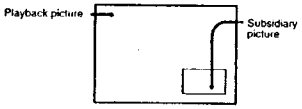
Notes

- When you use P in P during the playback of an NTSC-recorded tape, the lower part of a subsidiary picture may not appear and/or noise will appear in the lower part of a subsidiary picture. The lack of the picture and noise are due to the difference of the video systems.
- If all preset programmes are scanned during TV SCAN operation, TV SCAN stops scanning the preset programmes.

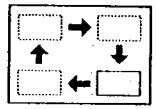
Using the digital memory built in this VCR, you can enjoy a couple of digital operations.

Using P in P (Picture in Picture)

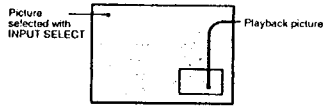
If you want to insert a small picture, press P in P.
The subsidiary picture selected using INPUT SELECT will appear on the TV screen.



To change the position of the subsidiary picture
Press SHIFT repeatedly until the desired position is reached.



To swap pictures
Press P in P again.
The sound is also switched.

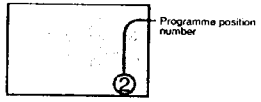


To turn off the subsidiary picture
Press DIGITAL OFF.

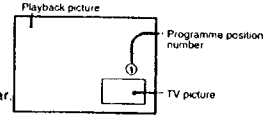
Using TV Scan

You can watch all preset TV programmes in succession while you are watching a TV programme or during playback.

During watching a TV programme
Press TV SCAN.
After all preset programmes are scanned, the first programme will appear again.

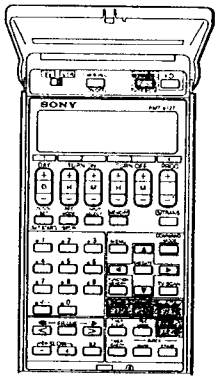


During playback
Press TV SCAN.
Each preset programme will be displayed on the subsidiary screen for a few seconds in order of programme position numbers. After all the preset programmes are scanned, the first programme will appear.



To stop scanning at the programme position you want to watch
Select the programme position you want to watch using the programme position number buttons on the remote control. Or you can use PROG +/– on the remote control or PROGRAM +/– on the VCR or you can press the PROG function button so that the indicator beside the button lights up and turn the JOG dial on the remote control.

To turn off the subsidiary picture
Press DIGITAL OFF.



Notes on the PAY-TV programmes (SLV-825VC models only)

- If the PAY-TV programme is not preset on the VCR, the PAY-TV programme will not appear either on the main screen or the subsidiary screen.
- If you have made VCR-TV connection using the EURO-AV connection, the decoded picture of the PAY-TV programme will appear either on the main screen or on the subsidiary screen, and not appear on both screens at the same time. When you select TUNER or SIMUL using INPUT SELECT, the picture of the PAY-TV programme will appear as follows:

– When the PAY-TV programme is preset to ON, it will appear only on the main screen.
– When the PAY-TV programme is not preset (PAY-TV setting is OFF), it will appear only on the subsidiary screen.
When you select LINE L1, L2 or L3, however, the PAY-TV programme will not appear on the main screen.

Using TV in TV

If you want to watch two TV programmes at the same time, you can tune one with the TV and the other with the VCR. Using the P in P function one will appear in the subsidiary screen, and one will appear on the main screen. The TV and the VCR must be connected with the EURO-AV cable.

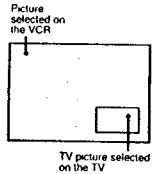
1 Press INPUT SELECT to display "TUNER" in the VCR display panel.

2 Press TV/VTR to turn on the VTR indicator.
The programme selected on the VCR appears on the screen.

3 Press P in P.
The programme selected on the TV appears on the subsidiary screen.

To change the position of the subsidiary picture
Press SHIFT repeatedly until the desired position is reached.

To turn off the subsidiary picture
Press DIGITAL OFF.



How to select the main picture and the subsidiary picture

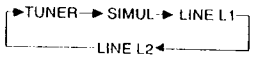
If you press INPUT SELECT, the picture on the main screen and the subsidiary screen changes as follows. The audible sound is determined according to the input mode selected with INPUT SELECT.

INPUT SELECT position	Main picture	Subsidiary picture
TUNER	The programme selected on the VCR	TV programme selected on the TV
SIMUL	TV programme selected on the VCR	TV programme selected on the TV
LINE L1	TV programme selected on the TV	TV programme selected on the VCR
LINE L2	Picture of the equipment connected to LINE IN 2 VIDEO	TV programme selected on the VCR
LINE L3	Picture of the equipment connected to LINE 3 (EURO-AV)	TV programme selected on the VCR

Notes

- You cannot change the programme position of the VCR if it appears on the subsidiary screen.
- If you have preset "PAY-TV" to "ON" in the TUNER PRESET menu, you can't select "LINE 3."

The input mode indicator changes cyclically as follows:



Using the On-Screen Menus

When you make a specific setting or select a series of tape operations while using yous VCR, you sometimes need to open the MENU screen. The following table shows you when and why you need to select the menu options.

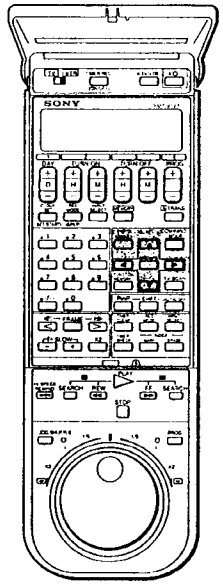
AUTO MENU	Select this item to perform certain operations in sequence. See page 37 for details.
AUTO REPEAT	Select this item to repeat certain portions of a tape. See page 39.
MODE SET	Select this item to customize your VCR. See page 40.
TUNER PRESET	See page 9.
LANGUAGE	Select this item to display the menu in your language (ENGLISH, DEUTSCH, FRANÇAIS, ITALIANO, ESPAÑOL, NEDERLANDS) . See page 12.
FUNCTION MEMORY	Select this item to keep a certain operation in memory. See page 38.
DEMON-STRATION	Select this item to get an overview of the on-screen menus. While the VCR is showing a sequence of the DEMONSTRATION menu, you can stop at the desired screen by pressing EXE. Press EXE again to start again. To quit the demonstration, press any button except for EXE.

Before you begin

- Use ▲ or ▼ to move the cursor (▶).
- Use ◀ or ▶ to select items.
- To quit setting in the middle of the procedure, press MENU.

Assigning a Desired Operation-AUTO MENU/ FUNCTION MEMORY

You can get the VCR to perform certain functions in sequence automatically. The AUTO MENU guides you to your desired sequence of operations. You can choose from the eight AUTO MENU choices. Moreover, one of the AUTO MENU choices you selected can be assigned to the FUNCTION MEMORY button on the remote control.



Note on AUTO MENU operation
AUTO MENU cannot be operated if there is no cassette installed or if the tape is being transported. A short beep alerts you if the AUTO MENU is not operable.

Note on "GO TO REC START-PLAY"
The recording start point data will be erased from the memory after the following operations, and "GO TO REC START-PLAY" will not be operable.
- When COUNTER RESET is pressed.
- When cassette is ejected and re-inserted.
- When HI-SPEED REWIND is pressed.

AUTO MENU Setting

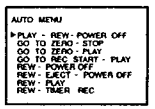
1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to AUTO MENU.

3 Press EXE.
The display changes to the "AUTO MENU" display.

4 Press ▲ or ▼ of the cursor keys to select the menu choice you want. For menu choices, see below.

5 Press EXE to return to the original screen.
The selected operation will begin. The menu choice you selected will be superimposed on the TV screen for a few seconds.
The AUTO indicator will light up in the VCR display panel during AUTO MENU operation.



Menu choices

■ PLAY-REW-POWER OFF
Plays back the tape, rewinds the tape when it reaches the end, and turns off the power.

■ GO TO ZERO-STOP
Searches for the counter zero point and stops.

■ GO TO ZERO-PLAY
Searches for the counter zero point and starts playback.

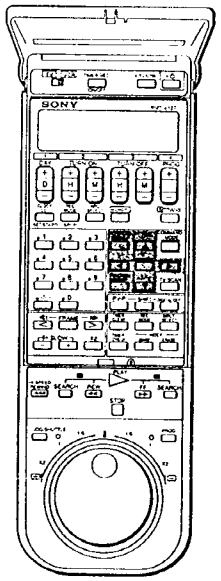
■ GO TO REC START -PLAY
Searches for the recording start point and starts playback.

■ REW-POWER OFF
Rewinds the tape to the beginning and turns off the power.

■ REW-EJECT-POWER OFF
Rewinds the tape to the beginning, ejects the cassette, and turns off the power.

■ REW-PLAY
Rewinds the tape to the beginning and starts playback.

■ REW-TIMER REC
Rewinds the tape to the beginning and puts the VCR in timer recording standby mode when the timer is preset.

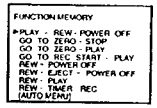


FUNCTION MEMORY

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to FUNCTION MEMORY.

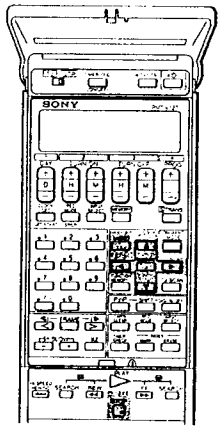
3 Press EXE.
The FUNCTION MEMORY menu appears.



4 Move the cursor (▶) to the menu choice you want and press EXE.

If you have selected [AUTO MENU], you can directly go to the AUTO MENU simply by pressing FUNCTION MEMORY, without displaying the main MENU. This is a short cut to the AUTO MENU.

For the menu choices, see the previous page.
The menu choice you selected will be activated every time you press FUNCTION MEMORY when the VCR is in stop mode.



Repeating Playback Automatically —AUTO REPEAT

You can make the VCR repeat playback of a certain portion of the tape automatically.

1 Press MENU while the VCR is in the stop mode.
The main MENU appears.

2 Press ▲ or ▼ of the cusor keys to move the cursor (▶) to AUTO REPEAT and press EXE.
The AUTO REPEAT menu appears.

3 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to the menu choice you want and press EXE.
The VCR will rewind or advance the tape rapidly to the start point of the selected repeat portion and start playback. Playback of that portion will be repeated five times and then the VCR will rewind the tape to the start point. The AUTO indicator will light in the VCR display panel during AUTO REPEAT operation.

To stop playback

Press ■ STOP on the VCR or on the remote control.

Menu choices

■ **TAPE START-TAPE END**
Repeats playback from the beginning to the end of the tape.

■ **TAPE START-VIDEO END**
Repeats playback from the beginning of the tape to the end of the recorded portion.

■ **TAPE START-COUNTER 0***
Repeats playback from the beginning of the tape to the counter zero point.

■ **COUNTER 0*-TAPE END**
Repeats playback from the counter zero point to the end of the tape.

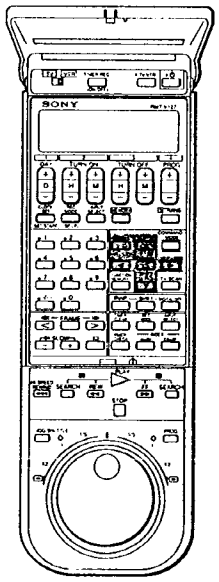
■ **COUNTER 0*-VIDEO END**
Repeats playback from the counter zero point to the end of the record portion of the tape.

* Before activating AUTO REPEAT, you must press COUNTER RESET on the VCR or on the remote control to set the tape counter to 0H00M00S at the desired point.

Notes on AUTO REPEAT operation
- If you press any tape operation button during repeat playback, AUTO REPEAT will be released.
- AUTO REPEAT cannot be operated if there is no cassette installed or if the VCR is in modes other than stop mode. A short beep alerts you if the AUTO REPEAT is not operable.

Note on "VIDEO END"
The VCR normally detects a blank of about 10 seconds on the tape as "VIDEO END."
However, for about 30 seconds from the beginning of the tape, the VCR does not do this.

AUTO REPEAT will not work correctly in the following cases
- When there is a blank of more than 10 seconds in the assigned repeat portion (more than 40 seconds at the beginning).
- When there is a blank of less than 10 seconds after the recorded portion to be played back repeatedly.
- When the tape is recorded to its end. (Select the menu choice including "TAPE END.")



Customizing Your VCR—MODE SET

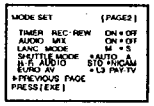
You can customize your VCR using the MODE SET menu.

1 Press MENU.
The main MENU appears.

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

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.
The MODE SET [PAGE 2] menu appears.

[PAGE 1] menu



[PAGE 2] menu

4 Press ▲ or ▼ of the cursor keys to move the cursor to the menu choice you want, then press ◄ or ► of the cursor keys to move the dot (•) to select the item.
For the menu choices, see below.

5 Press EXE to store the setting.

Menu choices

■ **CLOCK DISPLAY**
Select "ON" to display the current date and time in the data screen, and select "OFF" to turn off the current date and time in the data screen.

■ **DIMMER**
Select "ON" to make the display window dimmer and select "OFF" to make the display window brighter.

■ **SIMUL AUDIO IN**
Select "L1" to select the audio source from the LINE IN 1 connector during simul recording and select "L2" to select the audio source from the LINE IN 2 jacks during simul recording.

■ **RF MODULATOR**
Select "ON" if you have made the VCR-TV connection via the aerial socket only.
Select "OFF" if you have made the VCR-TV connection via the EURO-AV connector.
If interference occurs when you use the aerial socket, make the EURO-AV connection and set the RF MODULATOR to "OFF."

Important
Do not set RF MODULATOR to "OFF" when you have made the VCR-TV connection via the AERIAL IN socket only.
If the RF MODULATOR is set to "OFF", no picture will appear on the TV screen. In this case, press the CL button inside the lower drop-down panel with a pointed object. Since this will clear all stored information (e.g., the clock and any preset information), you must set them once again.

Note
The position of the cursor remains the same as long as the mains lead is connected.

■ **BACK COLOUR**
Select the background colour you want : BL (blue), GR (green) or PK (pink).

■ **TIMER REC-REW**
Select "ON" to automatically rewind the tape after timer recording is over and select "OFF" to cancel this setting.

■ **AUDIO MIX**
Select "ON" to make the AUDIO MONITOR button inoperative so that the sounds of the hi-fi video and normal audio tracks are always output and select "OFF" to make the AUDIO MONITOR button operative so that you can select the sound to hear (for details, see page 47).

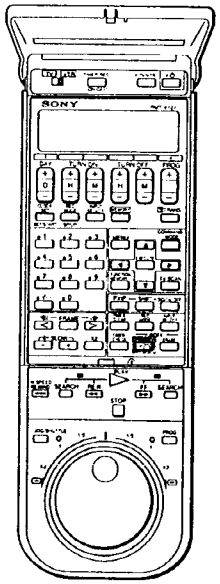
■ **LANC MODE**
Select "M" to control the other VCR using the synchronized editing function of this VCR and select "S" in any other cases (for details, see page 58).

■ **SHUTTLE MODE**
Normally set to "AUTO." The VCR detects automatically whether the other VCR has a reverse slow-motion playback function or not. If the other VCR doesn't perform tape movement as you operated, select "A."
When you select "A", the tape will come to move only in the forward direction, and the JOG dial doesn't work (for details, see page 58).

■ **Hi-Fi AUDIO (SLV-825UB and SLV-825NC models only)**
Select "NICAM" to record a NICAM broadcast on a Hi-Fi audio track and select "STD" to record only standard sound on a Hi-Fi audio track (for details see page 46).

■ **EURO AV (SLV-825VC models only)**
Select "PAY-TV" to use the EURO-AV (LINE 3) PAY -TV DECODER connector to connect a PAY-TV decoder only after the PAY-TV presetting has been done. Select "L3" to use this connector as a LINE 3 connector temporarily (for details, see page 31).

Index Function



You can find specific scenes easily using the markings (index points) recorded on a cassette. This function is called the Index Function.
You can mark an index anywhere on a tape, so that you can easily find the specific point later on. Index works as a divider between scenes, and is not numbered. So, when you specify the index mark later, you have to specify the relative position from the current position. (The first index, the second index....from the current position.)
You can mark and erase index signals during playback, but while recording, you cannot erase them.

Marking Index Signals

Where you mark an index, the INDEX indicator flashes in the VCR display panel and the INDEX MARK indicator appears on your TV screen.

Automatic Index Mark

An index signal is automatically recorded at the beginning of a scene when you start recording.

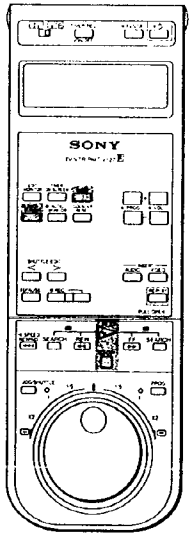
Manual Index Mark

When recording or playing a cassette, you can manually mark an index signal by pressing INDEX MARK.

When you mark an index signal during playback, the recorded sound may be interrupted but the audio signal will not be erased.

Notes on marking indexes

- Leave an interval of at least 2 minutes between indexes so that the VCR can detect the signals correctly.
- You cannot mark an index signal in the following cases:
  - On a cassette whose safety tab has been removed
  - On an unrecorded portion of a tape
  - Immediately before a point on the cassette where the tape speed (SP or LP) changes.



Playing Back from the Index Point—Index Scan

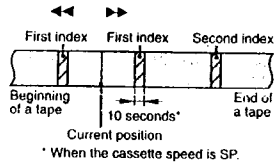
Here's how to find and play a programme you've marked with an index signal.

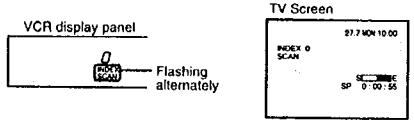
1 Insert an indexed cassette into your VCR

2 Press DATA SCREEN to display the data screen.

3 Press INDEX once.
The INDEX and SCAN indicators flash alternately in the VCR display panel and the INDEX SCAN indicator appears on the TV screen.

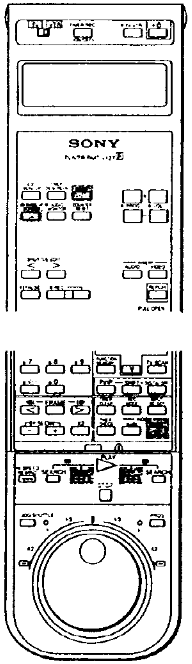
4 Press ◀◀ to find the previous programme or ▶▶ to find the next programme.
The index scan locates the next index signal and plays about 10 seconds of tape prior to the signal (10-second preview). The VCR then rewinds or advances to the next index signal.
Every time the VCR finds an index signal, 10-second preview begins.





5 When you find the programme you want, press ▶ PLAY during the 10-second preview. Playback starts from that point.

To stop index scan underway
Press ▶ PLAY or ■ STOP.

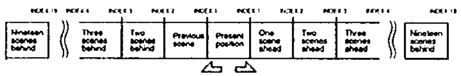


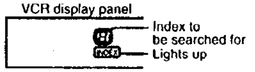
Locating an index— Index Search

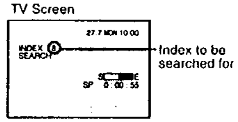
Locate an index by indicating how many index signals ahead or behind the scene is from the tape's current position. You can specify up to the 19th index point either ahead or behind the current position.

1 Press DATA SCREEN to display the data screen.

2 Press INDEX until the index number you want appears.







3 Press ►► FF to find an upcoming index signal or ◄◄ REW to find a prior index signal.
The cassette advances or rewinds to find the signal.
Each time an index signal is detected, the index number decreases.
When the index number reaches 0, it means you've located the specified scene and your VCR will begin to play.

Erasing Index Signals

To remove any unwanted index signals, follow these steps:

1 Press INDEX once during playback or stop mode.

2 Press ►► FF to find the next scene or ◄◄ REW to find the previous scene. Each time an index is detected, the VCR plays back the indexed scene for approximately 10 seconds. It then rewinds or advances to the next index signal. This 10 second preview lets you decide whether you've located the index mark you want to erase.

3 Press INDEX ERASE during 10 seconds preview.
"INDEX ERASE" is displayed on the TV screen. The VCR automatically rewinds the tape to a position before that index, and erase the index. After one index is erased, the next index is located.

Note
You cannot erase an index signal at the beginning of the tape.

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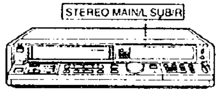
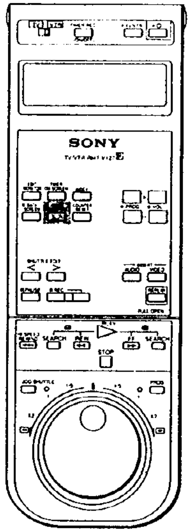
Recording Stereo/Bilingual Programmes

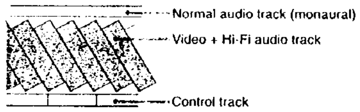




SLV-825/825VC/825NC Models

The SLV-825/825VC/825NC can receive and record stereo/bilingual programmes based on the "Zweiton" system adopted in Germany. Recording of the Zweiton system programmes is automatically done. A stereo or bilingual programme is recorded on the Hi-Fi audio track and normal audio track as shown below.

Hi-Fi recording pattern on a tape



Where the sound is recorded

Stereo programme
When a stereo programme is received, "STEREO" appears in the VCR display panel and the sound is recorded as follows:
Left channel: on the left channel of the Hi-Fi audio track
Right channel: on the right channel of the Hi-Fi audio track
Mixed of the left and right channels (monaural): on the normal audio track

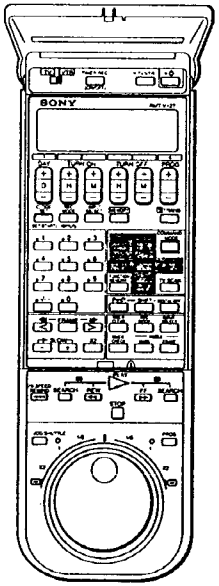
Bilingual programme
When a bilingual programme is received, "MAIN/L" appears in the VCR display panel and the sound is recorded as follows.
Main: on the left channel of the Hi-Fi audio track and on the normal audio track
Sub: on the right channel of the Hi-Fi audio track

How to select the sound you hear

Stereo programme
The AUDIO MONITOR button does not function for the stereo programmes of the Zweiton system.

Bilingual programme
When the VCR receives a bilingual programme, "MAIN/L" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR several times until you can hear the sound you want.
With each press, the sound is cyclically changed in the following order.

Display	Sound heard
MAIN/L	Main sound
SUB/R	Sub sound
MAIN/L SUB/R	Main sound on the left channel Sub sound on the right channel



SLV-825UB/825NC Models

The SLV-825UB/825NC can receive and record stereo/bilingual programmes based on the "NICAM" system adopted in the United Kingdom and Nordic countries. NICAM broadcasting has two-channel digital sound called NICAM L and R channels in addition to the standard sound. The NICAM L and R are assigned to the stereo left and right channels or the main and sub sounds of a bilingual programme. The standard sound of most NICAM broadcasts is the mixed sound of the left and right channels for a stereo programme, and the main sound for a bilingual programme.

Recording NICAM broadcasts

You need to select "NICAM" of "HI-FI AUDIO" in the MODE SET [PAGE 2] menu.

1 Before recording a NICAM broadcast, press MENU.
The main MENU appears.

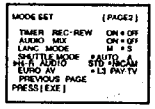
2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to MODE SET.

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to Hi-Fi AUDIO.

5 Select NICAM using ◀ or ▶ of the cursor keys.

6 Press EXE to store the setting.



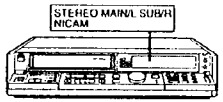
With NICAM setting, NICAM broadcasts will be recorded as shown in the following table.

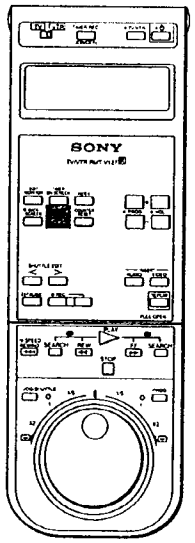
Track	Sound heard	
	Stereo	Bilingual
Hi-Fi audio left channel	Left channel	Main
Hi-Fi audio right channel	Right channel	Sub
Normal audio	Standard	Standard

Note
When there is no NICAM broadcast, the standard sound will be recorded on both the Hi-Fi video track and the normal audio track.

To record the standard sound only

Follow the operation above and set Hi-Fi AUDIO to STD in step 5.
The standard sound will be recorded on the left and right channels of the Hi-Fi video track and the normal audio track.





How to select the sound you hear

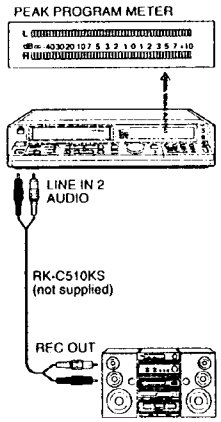
Stereo programme
When a stereo programme is received, "STEREO" and "NICAM" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR.
With each press, the STEREO (NICAM L and R channels) or the standard sound is selected alternately.

Display panel	Sound heard
STEREO	Left channel sound on the left channel and right channel sound on the right channel
No indication	Standard sound

Bilingual programme
When a bilingual programme is received, "NICAM" and "MAIN/L" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR several times until you can hear the sound you want.
With each press, the sound is cyclically changed in the following order.

Display panel	Sound heard
MAIN/L	Main sound
SUB/R	Sub sound
MAIN/L, SUB/R	Main sound on the left channel and sub sound on the right channel
No indication	Standard sound

Audio Recording



The Hi-Fi recording system of this VCR allows recording of high quality stereo sound from an FM tuner, audio system, or other audio equipment.

Before you begin

- Connect your audio system to the LINE IN 2 AUDIO jacks using the RK-C510KS audio connecting cable (not supplied).
- Set INPUT SELECT to LINE L2.
- Select REC MODE, SP or LP.

Adjusting the Audio Recording Level

Play the recording source. While observing the PEAK PROGRAM METER on the VCR, adjust the REC LEVEL controls as follows.

When recording from records: Adjust the level so that the right-most element (+10) lights up sometimes.

When recording from CDs or using a PCM processor: Adjust the level so that the right most element (+10) lights up only when the signal is input at its maximum level.

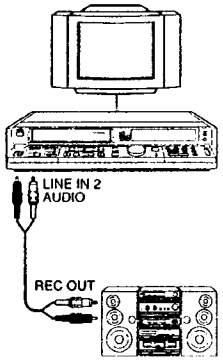
Recording

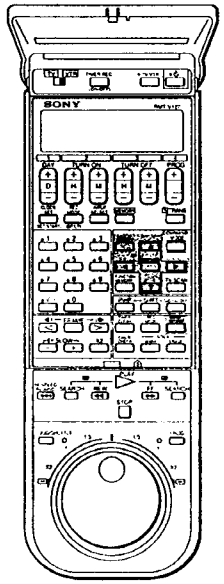
The recording procedure is the same as "Recording While Watching the TV Programme" on page 20.

PCM Recording and Playback

You can perform PCM recording and playback on the video track by connecting a PCM digital audio processor to the LINE IN and OUT VIDEO jacks on this VCR. For details, refer to the instruction manual of the PCM digital audio processor.

Caution
To avoid damaging the speakers due to a wide dynamic range of a Hi-Fi recorded tape/disc, turn down the volume of the TV before playing back a Hi-Fi recorded tape/disc.





Simulcast Recording

You can record a TV programme and the sound from other equipment such as an FM tuner, simultaneously. The audio signals from the TV receiver are recorded on the normal audio track and those from the connected equipment on the Hi-Fi track.

Before you begin

- Connect your audio equipment to the EURO-AV (LINE 1) connector or the LINE IN 2 AUDIO jacks.
  The EURO-AV (LINE 3) (EURO-AV (LINE 3) PAY-TV DECODER for the SLV-825VC Model) connector cannot be used for a simulcast.
- Press INPUT SELECT on this VCR to indicate "SIMUL" in the VCR display panel.
- Other settings are the same as "Audio Recording" on the previous page.

Selecting the audio input

1 Press MENU.
The main MENU appears.

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

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 2]menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "PREVIOUS PAGE", then press EXE.
The MODE SET [PAGE 1] menu appears.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to SIMUL AUDIO IN.

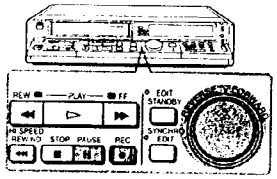
5 Move the dot using ◀ or ▶ of the cursor keys to L1 or L2 whichever your audio equipment is connected to.
Select L1 when your audio equipment is connected to the EURO-AV (LINE 1) connector, and select L2 when your audio equipment is connected to the LINE IN 2 AUDIO jacks.

6 Press EXE to store the setting and return to the original screen.

Recording

The recording procedure is the same as "Recording While Watching the TV Programme" on page 20.

Cutting out the Unwanted Scenes— SHUTTLE EDIT

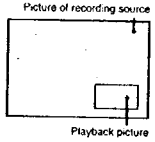


During Recording

If you wish to cut out scenes such as TV commercials, you can pause recording and play back the tape in the reverse direction until the beginning of an unwanted scene is reached. Then, record over it. This feature only works from the VCR.
During timer-activated recording, you cannot use this function.
The VCR enters the P in P mode so that you can check the pictures to be edited on the screen.

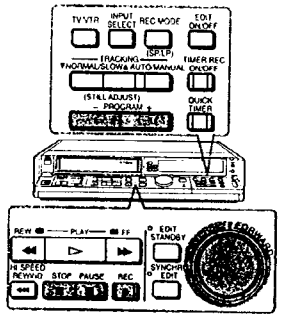
1 Press II PAUSE during recording.
The VCR enters recording pause mode.

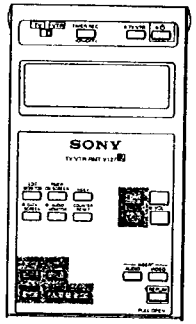
2 Turn the JOG dial and the SHUTTLE ring on the VCR counterclockwise to rewind the tape until the unwanted scene appears.
The VCR will enter P in P mode and the playback picture will appear on the subsidiary screen.

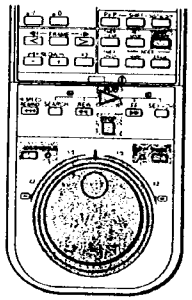


If you turn the JOG dial, you can select the playback speed by how fast you turn it, and if you turn the SHUTTLE ring, you can select the playback speed by how far you turn it .
When you release the dial or ring, the VCR enters recording pause mode and the subsidiary screen disappears from the TV screen.

3 Press II PAUSE when a wanted scene appears on the screen.
Recording starts.







Note
The picture may be distorted a moment at the cut-out point (recording end point).

During Playback

You can re-record onto an unwanted portion of a pre-recorded cassette.
Use the JOG dial and the SHUTTLE ring on the VCR or on the remote control.

1 Press II PAUSE at the end of the unwanted scene during playback.
The VCR enters playback pause mode.

2 Turn the dial or ring until the beginning of the unwanted scene appears on the screen.
If you turn the JOG dial, you can select the playback speed by how fast you turn it, and if you turn the SHUTTLE ring, you can select the playback speed by how far you turn it .
When you release the ring, the VCR enters playback pause mode.
You can also use the SHUTTLE EDIT buttons on the remote control to find the scene.

3 Press ●REC on the VCR or ●RECs on the remote control.
The VCR enters recording pause mode.

4 Select a new programme for re-recording.
Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light the indicator beside the button. Turn the jog dail clockwise for higher numbered programme positions or couterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

5 Press II PAUSE when the scene to be recorded begins to appear on the screen.
Recording begins.

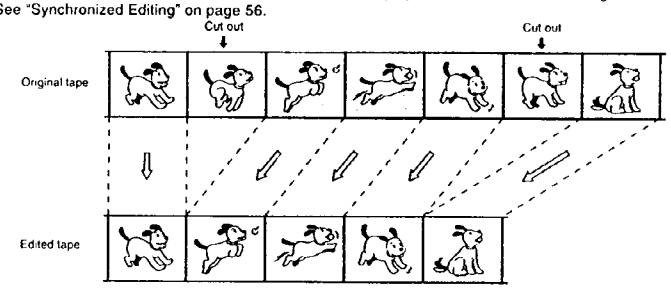
To stop recording, press ■ STOP.

Overview of the Editing Functions

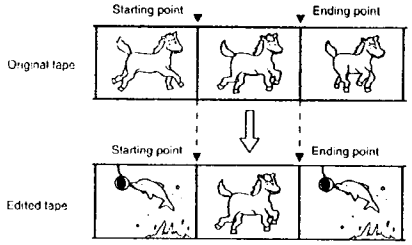
Using a second VCR, you can record programmes from one VCR to the other.
The following are the tape editing functions available on the VCR. You can perform these editings using the synchronized editing function or manually (not using the synchronized editing). In this section, the editing using the synchronized editing function will be mainly explained.

- **To make a copy of a tape.**
  — See "Tape Dubbing" on page 53.

- **To edit out unwanted scenes using the synchronized editing function (Synchronized Assemble Editing)**
  You can use the synchronized editing function to perform assemble editing and insert editing if your other VCR has a control L connector. Using this function controls both the playback VCR and the recording VCR simultaneously.
  — See "Synchronized Editing" on page 56.



- **To insert a new picture and/or sound onto a previously recorded tape**
  — See "Insert Editing" on page 61.



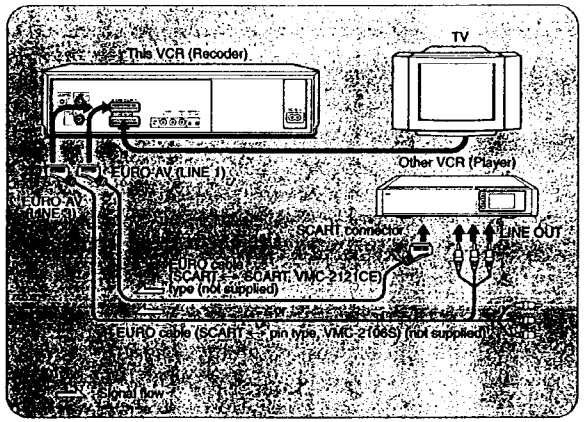
Tape Dubbing

Editing from the Other VCR

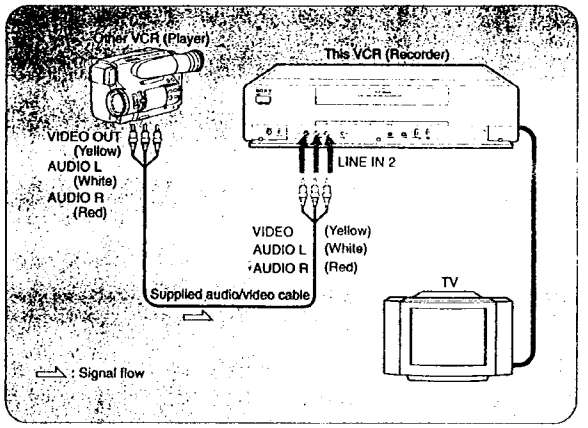
Here's how to edit from the other VCR (such as an 8mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording.
You can use the video/audio jacks on the front panel, or the 21-pin EURO-AV connector on the rear panel to perform this operation.

Connections

When using the 21-pin EURO-AV connector

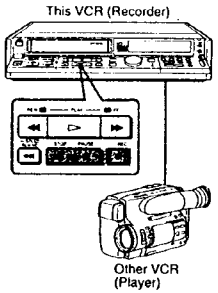


When using the front panel video/audio jacks



Notes

- If the other VCR is a monaural type, connect the white plug to LINE IN 2 AUDIO L and leave the red plug unconnected. This enables the sound to be separated into the right and left channels. If the other VCR is a stereo type, make connections with both the red and white plugs.
- Press INPUT SELECT on this VCR to indicate LINE L1, LINE L2 or LINE L3 in the VCR display panel to match the jack to which you have connected the other VCR.



Before you begin

- Select the tape speed (SP or LP) with REC MODE.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.
  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).
  L1 or L2 appears in the VCR display panel.
- If your playback VCR has an editing function, select it to reduce static and improve reception.
- Adjust the REC LEVEL control (see "Audio Recording" on page 48).

Operation

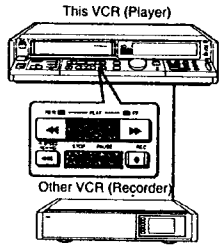
1 Insert a blank cassette into this VCR (recorder).

2 Turn on the other VCR (player) and insert a source cassette.

3 Locate the playback starting point and select the playback pause mode on the other VCR (player).

4 Locate the recording starting point and select the recording pause mode on this VCR (recorder).

5 Press ❚❚PAUSE on both VCRs.
For best result, press ❚❚PAUSE on the other VCR (player) just before pressing ❚❚PAUSE on this VCR (recorder).
When you've finished editing, press ■ STOP on both VCRs.

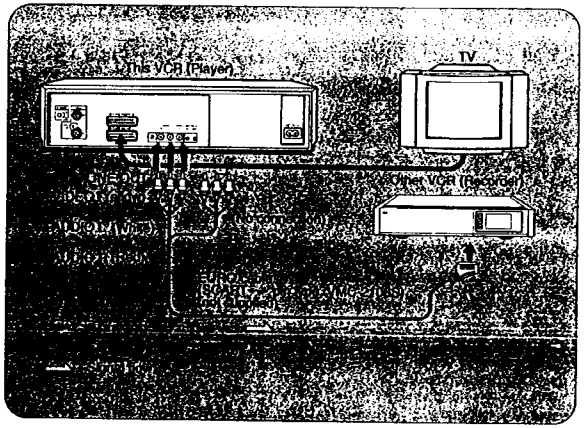


Notes
- If your recording VCR is a monaural type, make connections using the VCM-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCR simultaneously. Doing so may cause a humming noise.

Editing onto the Other VCR

Here's how to use this VCR as the playback VCR and the other VCR as the recording VCR.

Connections



Before you begin

- Press the EDIT button so that the EDIT indicator lights up in the VCR display panel.
  If your recording VCR has an editing function, it should also be selected to improve reception.
- Press AUDIO MONITOR on the remote control to select the sound to be recorded.

Operation

1 Turn on the other VCR (recorder) and insert a blank cassette.

2 Insert a source cassette into this VCR (player).

3 Locate the playback start point and select the playback pause mode on this VCR (player).

4 Locate the recording start point and select the recording pause mode on the other VCR (recorder).

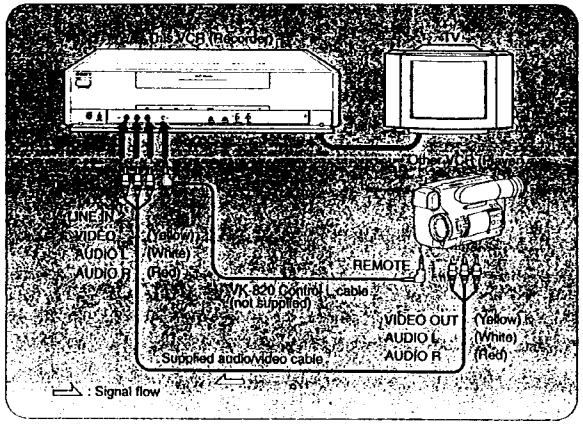
5 Press ❚❚PAUSE on both VCRs.
For best results, press ❚❚PAUSE on this VCR (player) just before pressing ❚❚PAUSE on the other VCR (recorder).
When you've finished editing, press ■STOP on both VCRs.

Synchronized Editing

If your other VCR has a control L connector, and/or CONTROL S IN connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when the SYNCHRO EDIT button is pressed. To use this function, you must connect the control cable in addition to the connections of the audio and video cables. There are two types of control cables: control L (LANC or REMOTE) cable or control S cable. Which cable you need to use depends on the connectors that your other VCR has.

Connecting Video Equipment with the LANC connector

When using the front panel jacks



Important

After you have made the connections, make sure you set the LANC mode (see page 58).

About the ⇳ (LANC)

LANC stands for Local Application Control System.
The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it.
This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

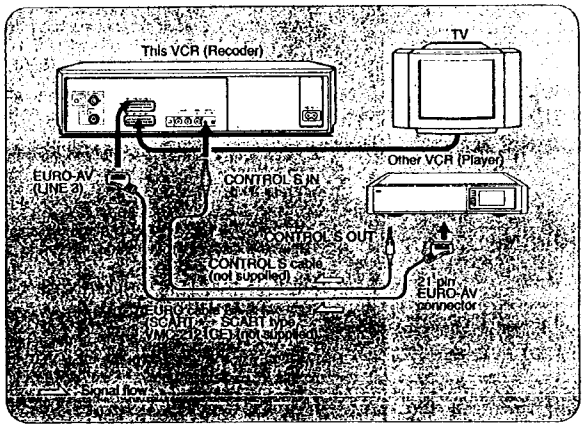
Notes

- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- When the REMOTE connector of the other VCR is a stereo mini-mini plug, use the VK-820 control L cable (not supplied). If it is a 5-pin DIN connector, use the VK-810 control L cable (not supplied).
- If your playback VCR is a monaural type, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR.
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

Note

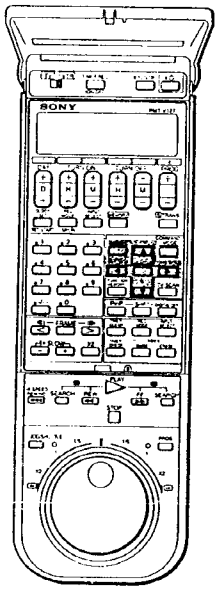
When connecting the other VCR to LINE IN 2 on the front, use the supplied video/audio connecting cable. If the other VCR is a monaural type, connect to LINE IN 2 AUDIO L using the white plugs. This enables the sound to be separated into the right and left channels. Leave the red plugs unconnected.

Connecting Video Equipment with the CONTROL S connector



When using the CONTROL S cable

Set the commander mode of this VCR and the other video equipment to the same position.
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on other equipment.
Comparing to the synchronized editing using the LANC connector, the synchronized editing using the CONTROL S connector only enables you to pause both VCRs and release the pause mode of both VCRs.



Setting the LANC MODE and SHUTTLE MODE

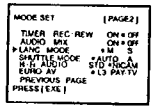
After you have made the control L cable connection on page 56, you must choose the LANC MODE and SHUTTLE MODE setting. The LANC MODE setting decides which VCR controls which. Use the MODE SET [PAGE 2] for this setting. Here's how to do this setting.

1 Press MENU to display the main MENU.

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

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "LANC MODE."



5 Select "M" or "S" using ◀ or ▶ of the cursor keys.
When you want to control the other VCR from this VCR, select "M."
When you want to control this VCR from the other VCR, select "S."

6 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "SHUTTLE MODE."

7 Select "AUTO" or "A" using ◀ or ▶ of the cursor keys.
Normally set to "AUTO." The VCR detects automatically whether the other VCR has a reverse slow-motion playback function or not. If the other VCR doesn't perform tape movement as you operated, select "A."
When you select "A", the tape will come to move only in the forward direction, and the JOG dial doesn't work (for details, see page 41).

8 Press EXE to store the setting.
The TV screen returns to the original screen.

Synchronized Assemble Editing

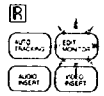
You can display both the picture of the playback VCR and recording VCR simultaneously on the TV screen. This allows you to perform editing while previewing editing scenes.

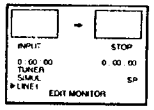
Before you begin

- Press the REC MODE button on the VCR or on the remote control to select the tape speed (SP or LP).
- Check the SHUTTLE MODE setting (see page 58).

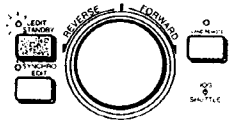
1 Insert a recorded cassette into the other VCR and insert a cassette for recording into this VCR.

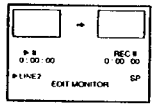
2 Press EDIT MONITOR.
The EDIT MONITOR screen appears on the TV screen.



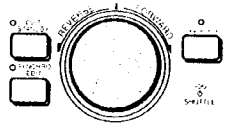


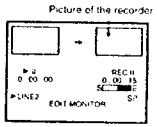
3 Press EDIT STANDBY.
This VCR (recorder) will enter recording pause mode, the other VCR (player) enters playback pause mode.
The EDIT STANDBY indicator on the front panel of this VCR lights up.
The LINE IN 2 input is automatically selected. If other VCR (player) is connected to the rear panel, press the INPUT SELECT button to select LINE IN 1 or LINE 3.
The LANC MODE setting is automatically set to "M."





4 Locate the starting point where you want to begin recording, using the JOG dial and the SHUTTLE ring.

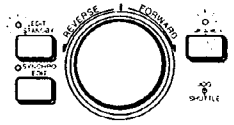


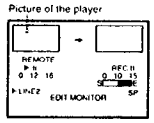


(Continued)

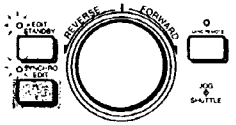
☆ Now you should determine the starting point where the player begins playback.

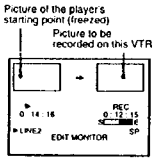
5 Press LANC REMOTE.
The LANC REMOTE indicator lights up and locate the playback starting point, using the JOG dial and the SHUTTLE ring.



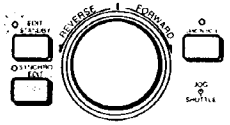


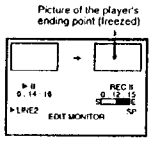
6 Press SYNCHRO EDIT.
The SYNCHRO EDIT indicator lights up.
The pause mode of the playback VCR and the recording VCR are released, and the recording starts.





7 Press SYNCHRO EDIT at the scene where you want to stop recording.
The playback VCR and recording VCR enter pause mode.





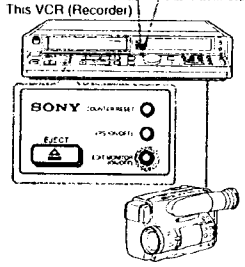
To edit another scene
Repeat steps 4 through 7.

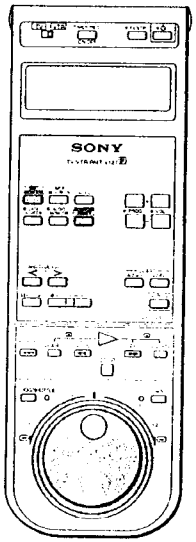
To stop editing
Press EDIT STANDBY.
Both the playback VCR and the recording VCR stop.

"Advanced Synchro Edit"
When you connect this VCR with a video camera recorder (camcorder) or another VCR which responds to the advanced synchro edit function (such as CCD-V800E, CCD-F550E, and CCD-TR805E, etc), you can take advantage of this precise editing function.

Convenient use of the LANC REMOTE button
If you connect your video camera recorder (camcorder) to your TV using an audio/video cable and to this VCR using the LANC cable, you can control the tape operation of your video camera recorder (camcorder) from this VCR.
If your video camera recorder (camcorder) has a reverse playback function such as –slow playback, –X2 speed playback and –X1 playback, you can control the reverse operation using the JOG dial and the SHUTTLE ring (for details, see page 41).

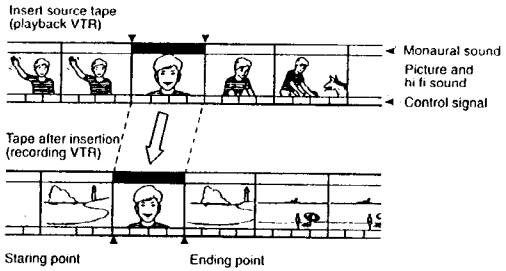
Insert Editing





Inserting a New Picture and/or Sound

You can easily insert a new picture and/or sound onto a pre-recorded tape. This editing is useful to replace an unnecessary scene (or sound) with another scene (or sound).



Before You Begin

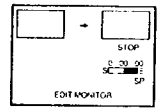
- For connection, see page 56 or 57.(The CONTROL L or CONTROL S connection is not necessary).
- Select the insert source from the equipment connected to EURO-AV (LINE 1), LINE 2 and EURO-AV (LINE 3).

Operation

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

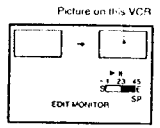
2 Press EDIT ON/OFF.
If the playback VCR is equipped with the EDIT switch, set it to ON.

3 Press EDIT MONITOR on the VCR or on the remote control.



4 On this VCR, locate the ending point and press COUNTER RESET.
The counter will show "0H00M00S" and the ending point will be memorized.

5 On this VCR, locate the starting point and set the VCR to the playback pause mode. JOG/SHUTTLE or SHUTTLE EDIT are useful for this operation.
When you use the JOG/SHUTTLE on the remote control, press the JOG/SHUTTLE button to light the indicator beside the button first.



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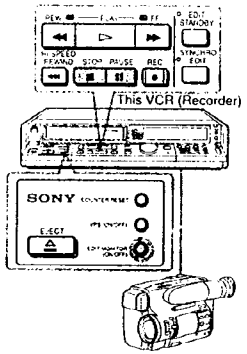
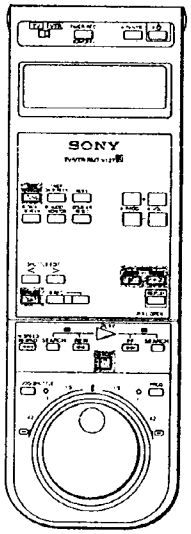
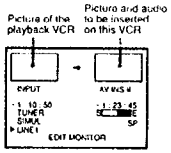




Note
The MIC jack of this VCR is adaptable to the use of a monaural mini plug. If you connect a stereo microphone, the audio will be recorded in monaural.

6 Press AUDIO/VIDEO INSERT.



When the VIDEO INSERT button is pressed
The picture and the sound on the Hi-Fi audio track will be inserted. (The sound on the normal audio track will be retained.)

When the AUDIO INSERT button is pressed
The sound on the normal audio track will be inserted. (The picture and the sound on the Hi-Fi audio track will be retained.)

When the VIDEO and AUDIO INSERT buttons are pressed (AV INSERT)
The picture, sound on the Hi-Fi audio track, and the sound on the normal audio track will be inserted.

The indicator corresponding to the button pressed will light up.
At the ending point (0H00M00S), the insertion will stop automatically.

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

8 Press II PAUSE on both VCRs to start the insertion. At the ending point (0H00M00S), the insertion will stop automatically.

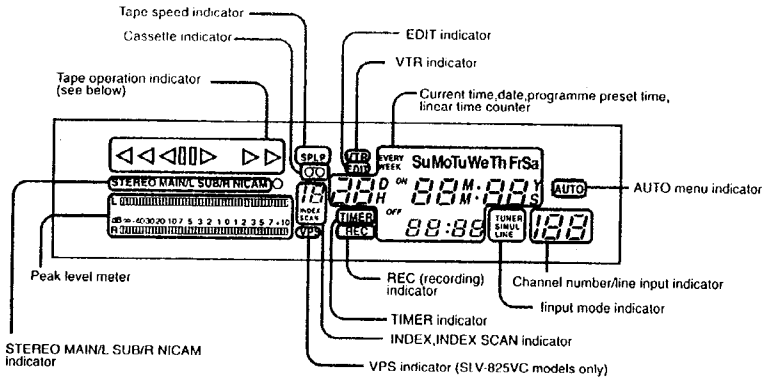
To stop the insertion temporarily
Press II PAUSE.

To stop on-going insertion
Press ■ STOP.

To turn off the EDIT MONITOR display
Press EDIT MONITOR.

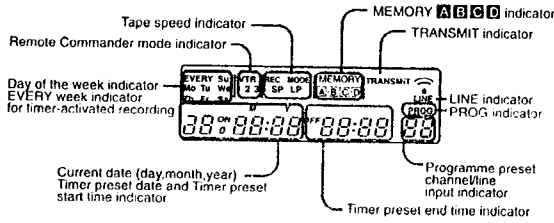
When the sound from the microphone is inserted
When the microphone is connected to the MIC jack, the sound from the microphone is automatically selected and it is recorded on the normal track.
To record the sound from the microphone, select AUDIO or AV INSERT.

VCR Display Panel



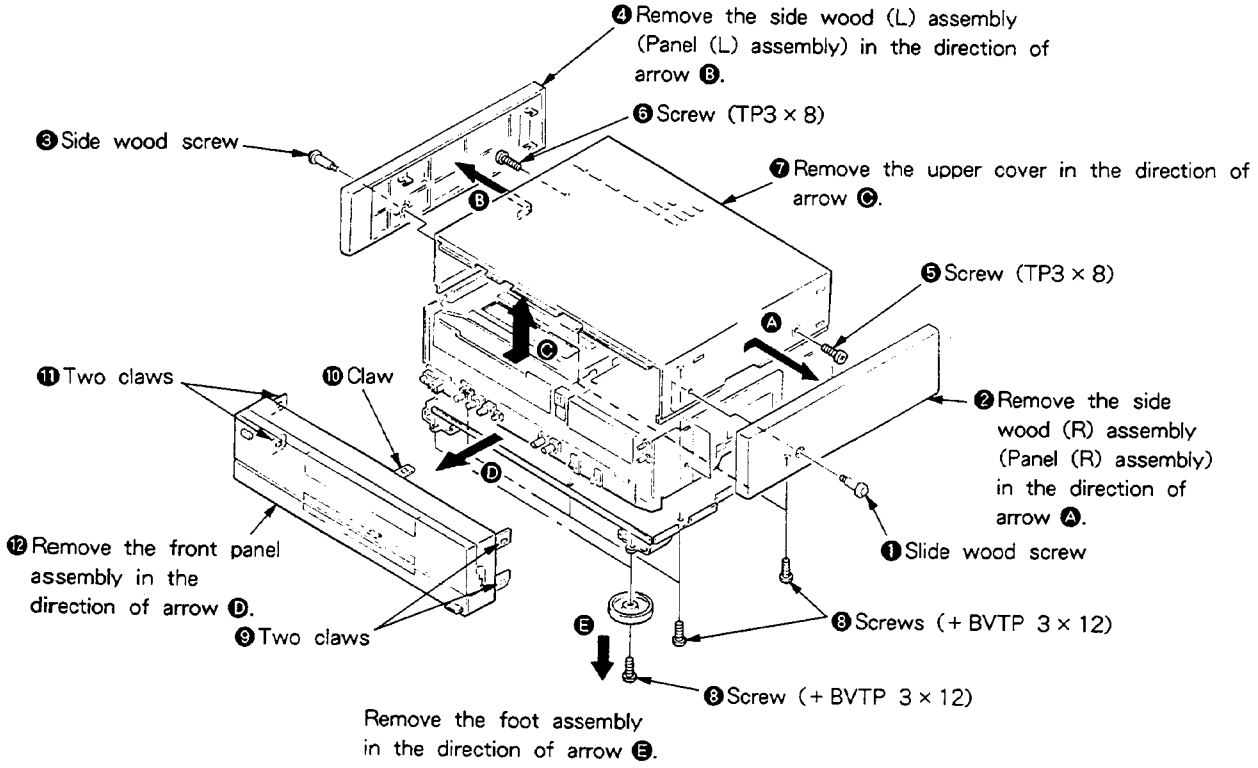
REC	Recording	◀‖	Slow playback, (reverse)	▶ ▶▶	Picture search, locked picture search (forward)
REC+II	Recording pause	II ▶	Play pause (forward)	◀◀ ▶	Picture search, locked picture search (reverse)
▶	Playback, double speed playback (forward)	◀ II	Play pause (reverse)	◀◀ ▶▶ AUTO	Auto play (REW-PLAY)
◀	Playback, double speed playback (reverse)	▶▶	Fast forward		
‖▶	Slow playback, (forward)	◀◀	Rewind	◀◀◀	High speed rewind

Remote Display

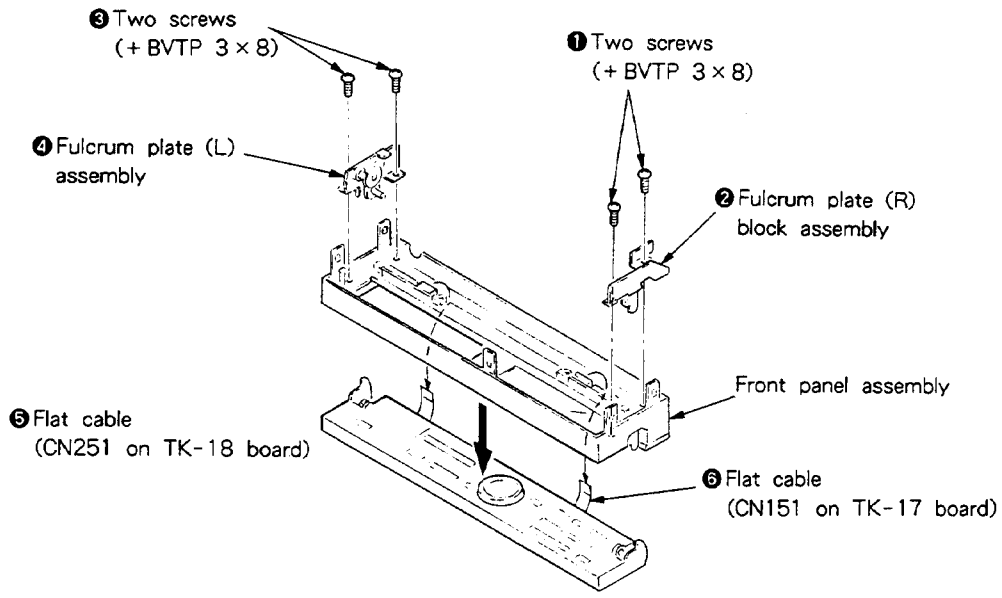


SECTION 2
DISASSEMBLY

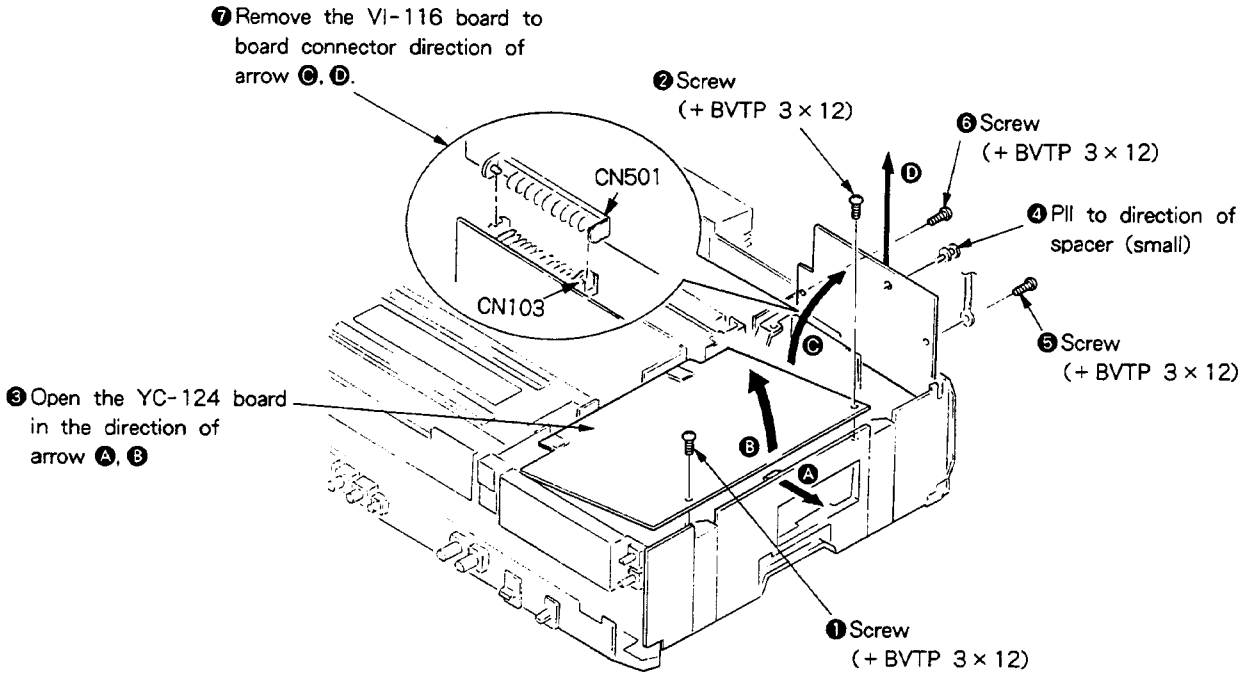
2-1. REMOVAL OF FRONT PANEL AND CABINET ASSEMBLIES



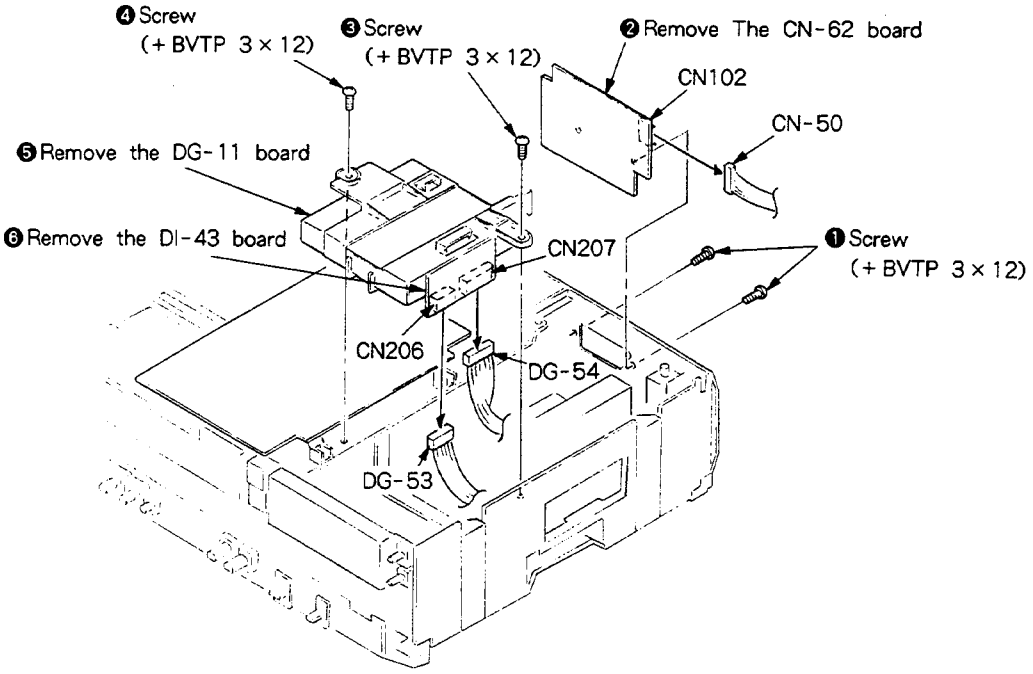
2-2. REMOVAL OF CONTROL SWITCH BLOCK



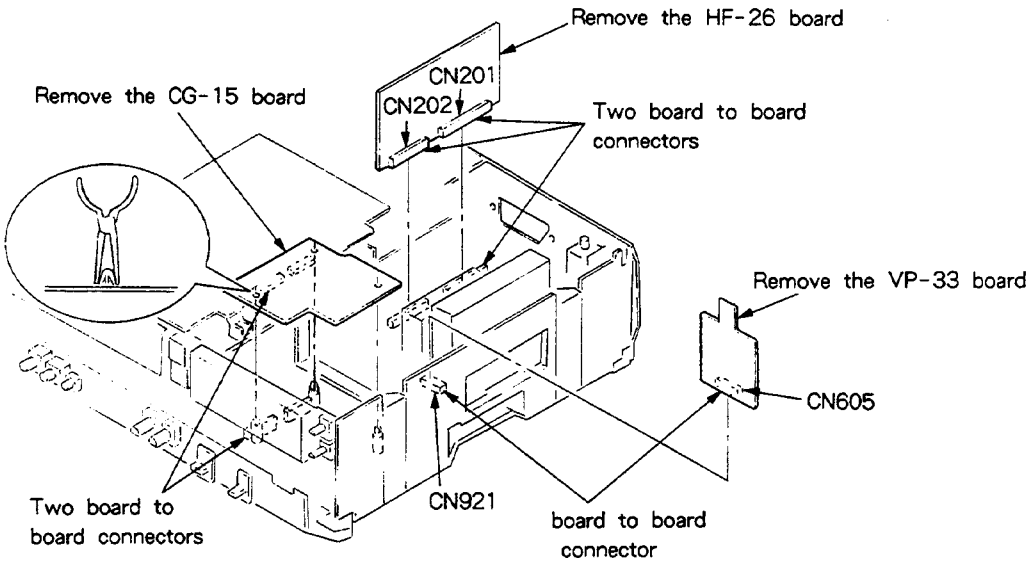
2-3. OPENING OF YC-124 BOARD AND VI-116 BOARD



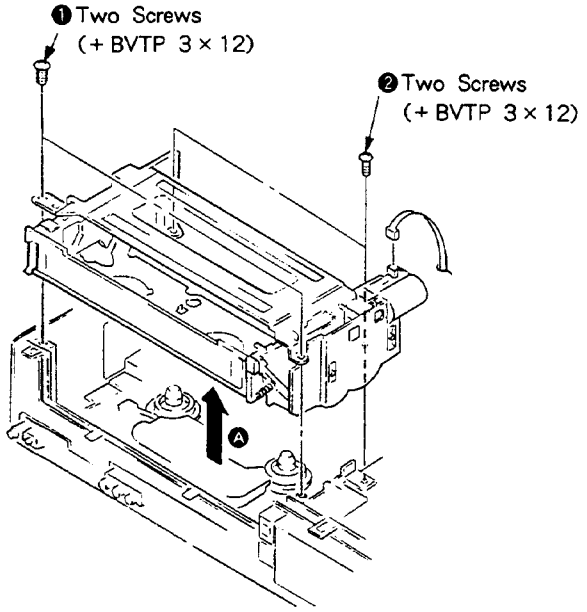
2-4. REMOVE OF DG-11, DI-43, AND CN-62 BOARD



2-5. REMOVE OF HF-26, VP-33, CG-15 BOARD

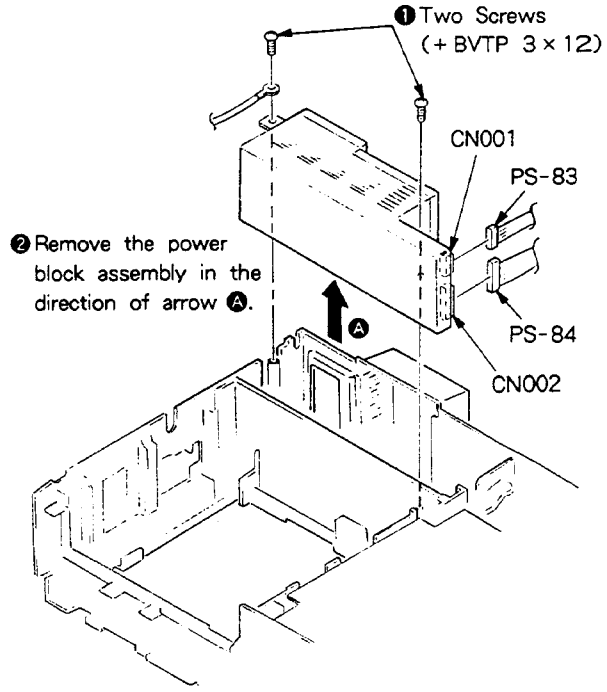


2-6. REMOVE OF FL CASSETTE COMPARMENT ASSEMBLY

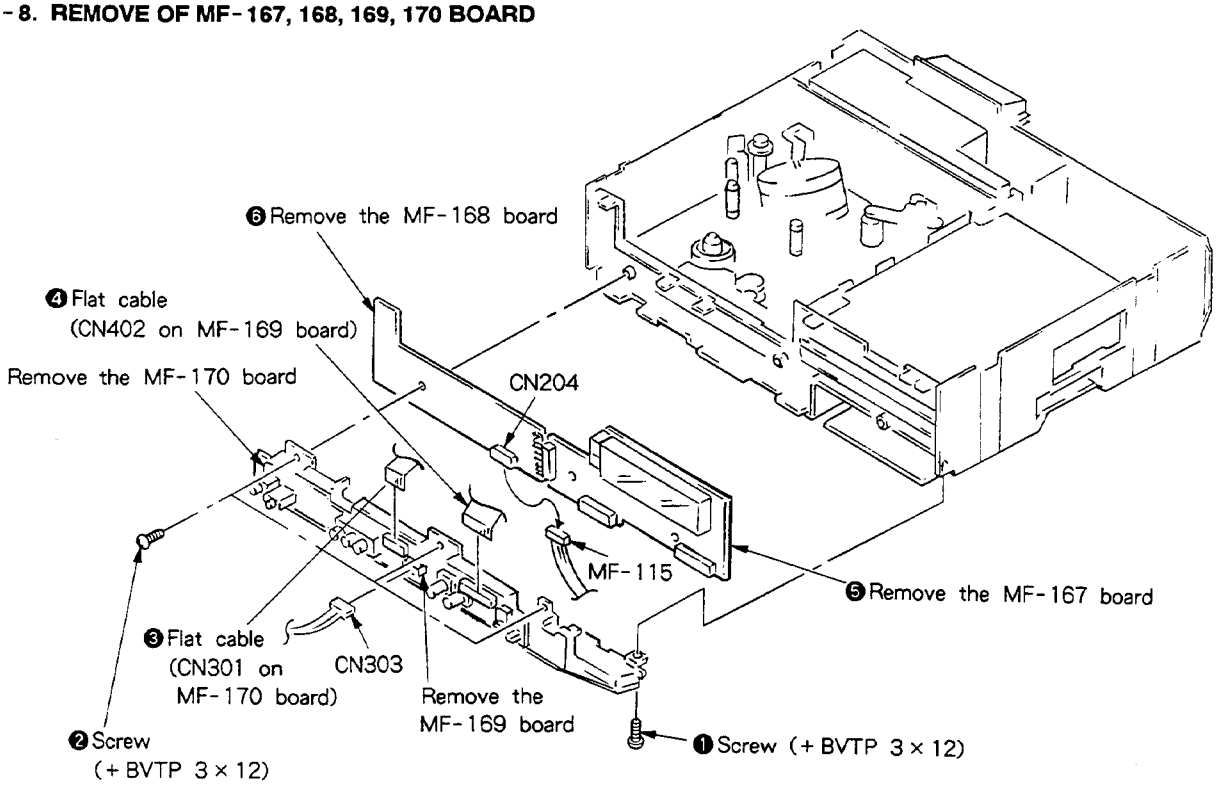


❸Remove the FL cassette comparment assembly in the direction of arrow Ⓐ.

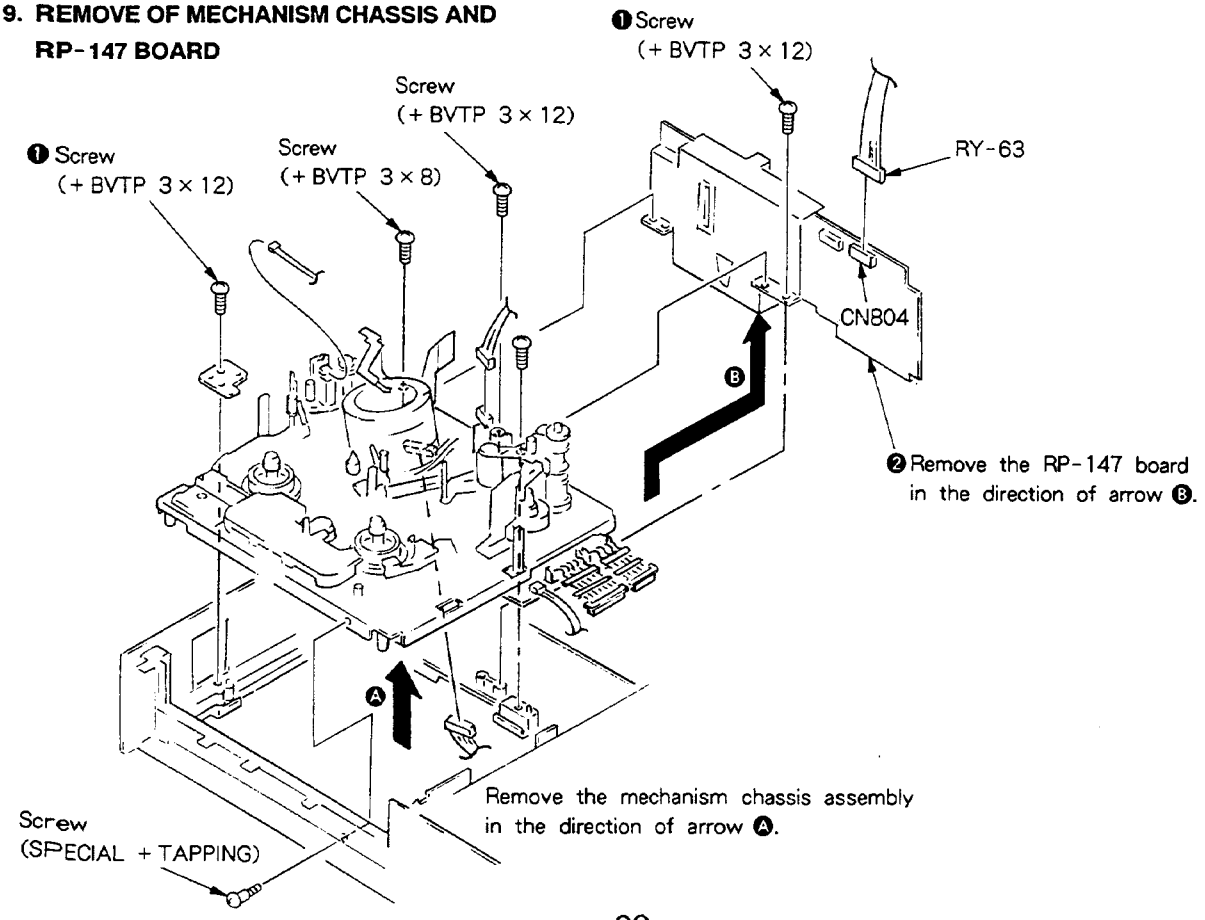
2-7. REMOVE OF POWER BLOCK ASSEMBLY



2-8. REMOVE OF MF-167, 168, 169, 170 BOARD

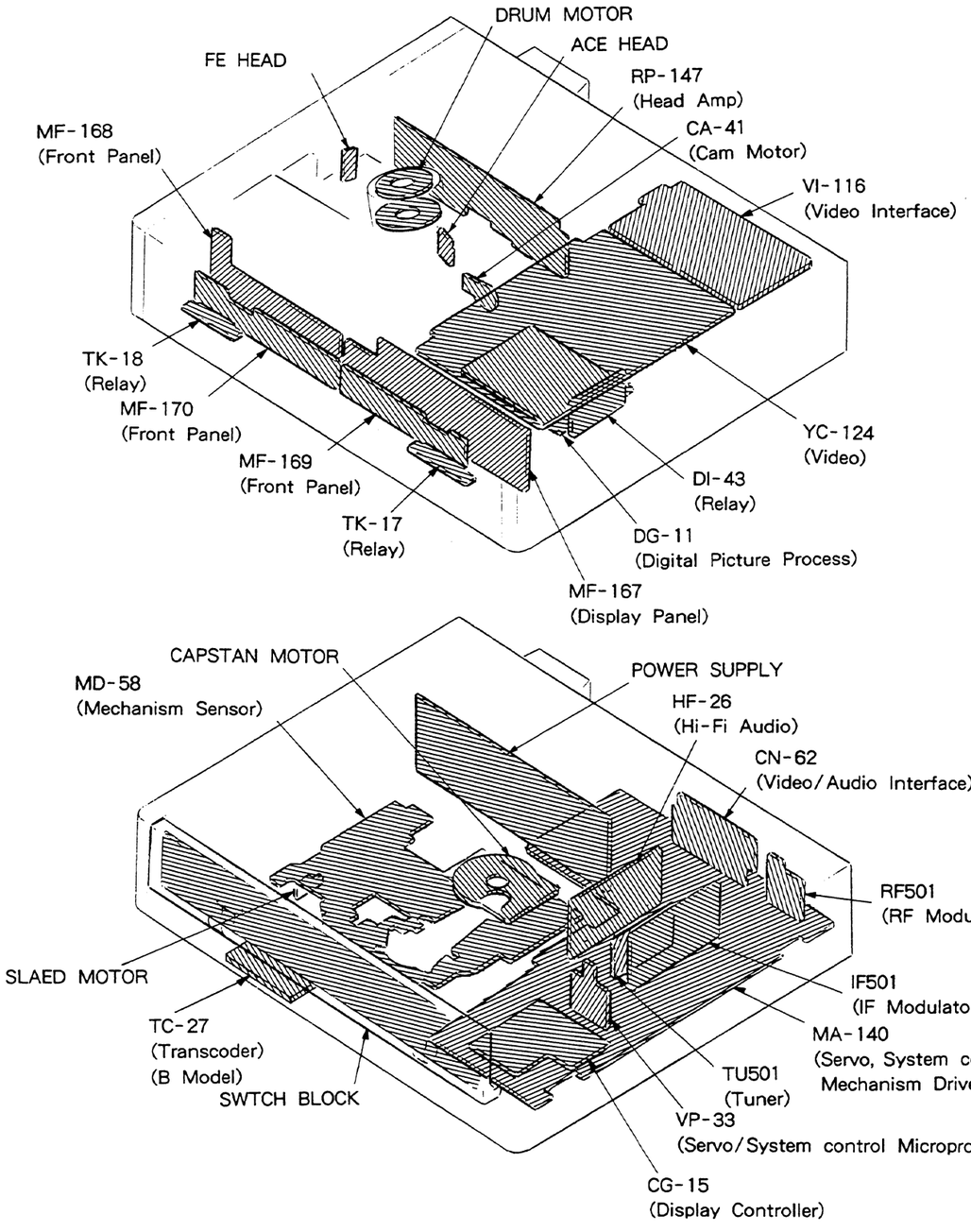


2-9. REMOVE OF MECHANISM CHASSIS AND RP-147 BOARD

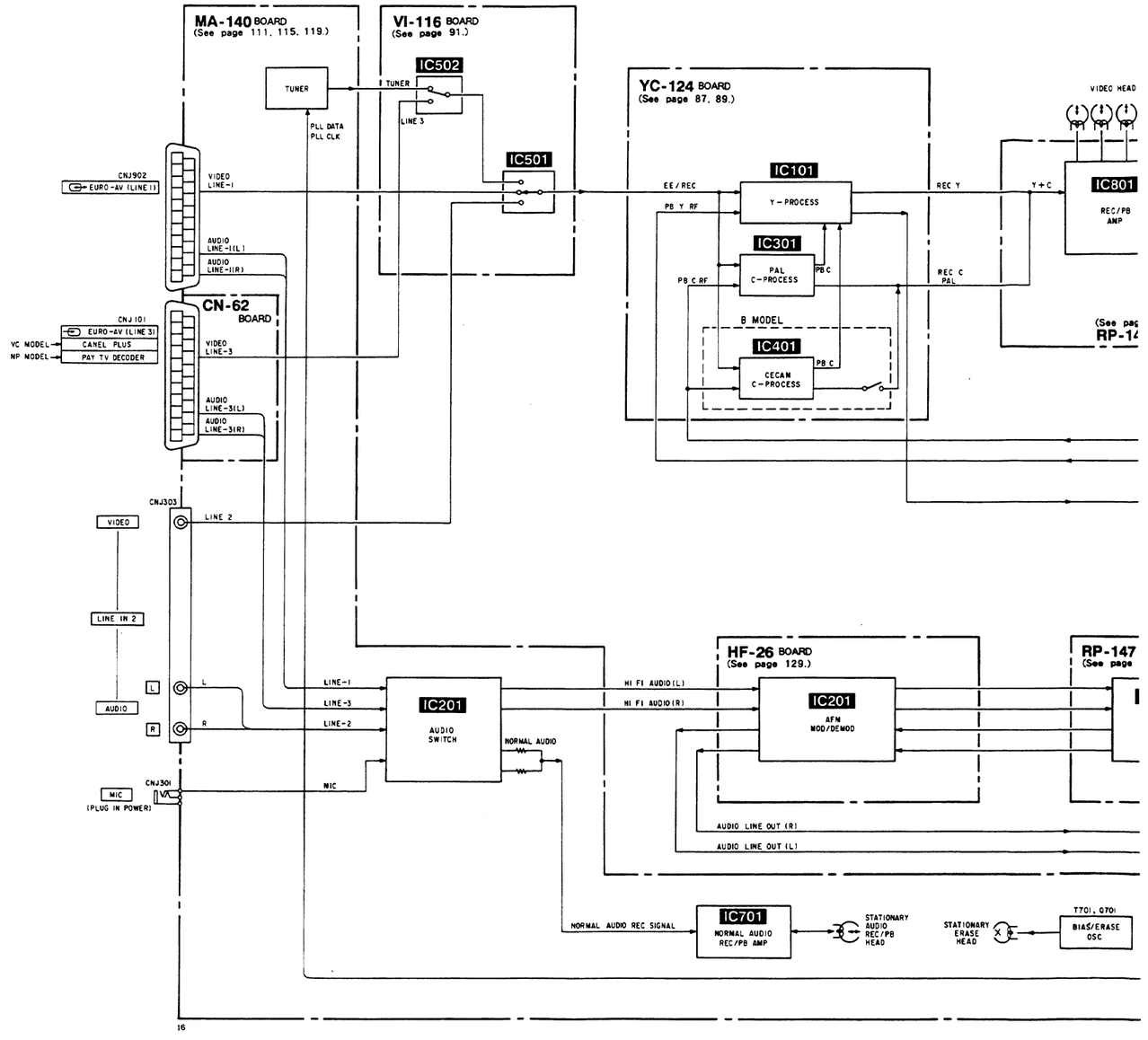


SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION



3-2. OVER ALL BLOCK DIAGRAM



VIDEO HEAD
REC Y
Y+C
IC801
REC/PB AMP
PB Y RF
PB C RF
REC C PAL
(See page 78.)
RP-147 BOARD

CG-15 BOARD
(See page 99.)
IC601
OSD IN
ON SCREEN DISPLAY
OSD OUT

DG-11 BOARD
(See page 105.)
IC101
DIGITAL PICTURE CONTROL
P-IN-P SW

RF MODULATOR
MONITOR OUT
L-CH OUT
R-CH OUT
CNJ902 EURO-AV (LINE 1)
CNJ901
VIDEO OUT
VIDEO OUT
VIDEO
LINE OUT
L
R
AUDIO

TC-27 BOARD
(See page 142.)
IC102
TRANSCODER
B MODEL

RP-147 BOARD
(See page 78.)
IC260
FM AUDIO REC/PB AMP
AUDIO REC
PB
PB AUDIO
ROTARY HEAD REC/PB
FM AUDIO CH-1
FM AUDIO CH-2

MF-170 BOARD (2/2)
(See page 132.)
(L)
(R)
CNJ302
PHONES

STATIONARY ERASE HEAD
T701, Q701
BIAS/ERASE OSC

IC401
SERVO/ SYSTEM CONTROL
DRUM PG
DRUM FG
DRUM MOTOR
DRIVER
IC402
CTL HEAD CONTROL
CTL HEAD
CAPSTAN FG
CAPSTAN MOTOR
DRIVER
SUPPLY END SENSOR
TAKE-UP END SENSOR
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
CASSETTE UP/DOWN
REC PROOF
CAM ROTARY ENCODER
IC404
DRIVER
CAM MOTOR
LOADING MOTOR

POWER SUPPLY BLOCK
POWER SUPPLY
DC +35V
UNSW +12V
SW 9V
UNSW 6V
SW 5V
MTR 12V
MTR 12V
SW 5V
UNSW 6V
DC -30V
DC 6V
DC 0V
POWER ON
AC IN

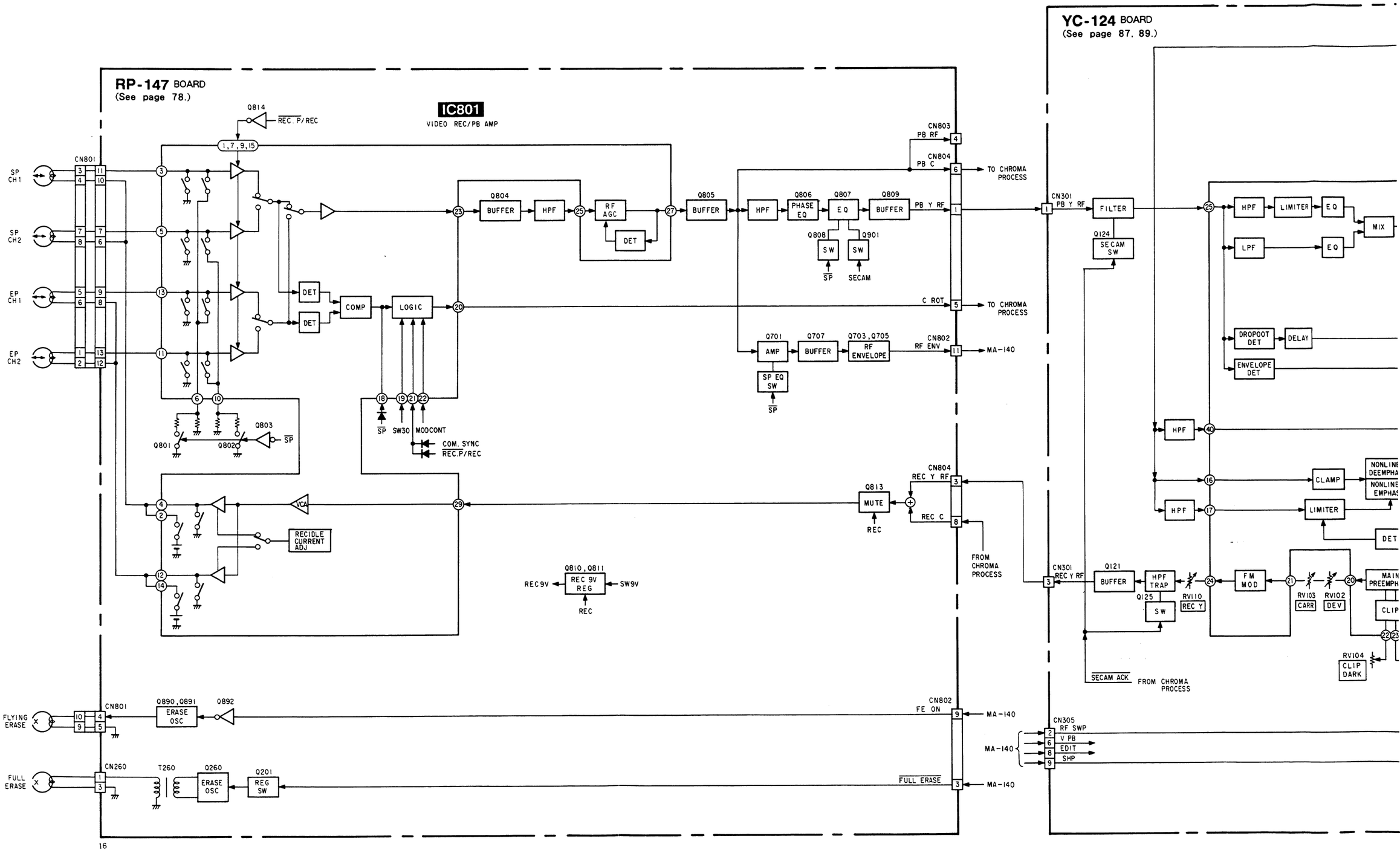
MF-167 BOARD
(See page 139.)
IC605
IC601
POWER ON
SIRCS
S0 BUS
S1 BUS
VPS CS
AD0~AD3
AD4~AD6
PLL DATA
PLL CLK
TIMER/ TUNER MODE CONTROL
I/O
BUZZER
DISPLAY

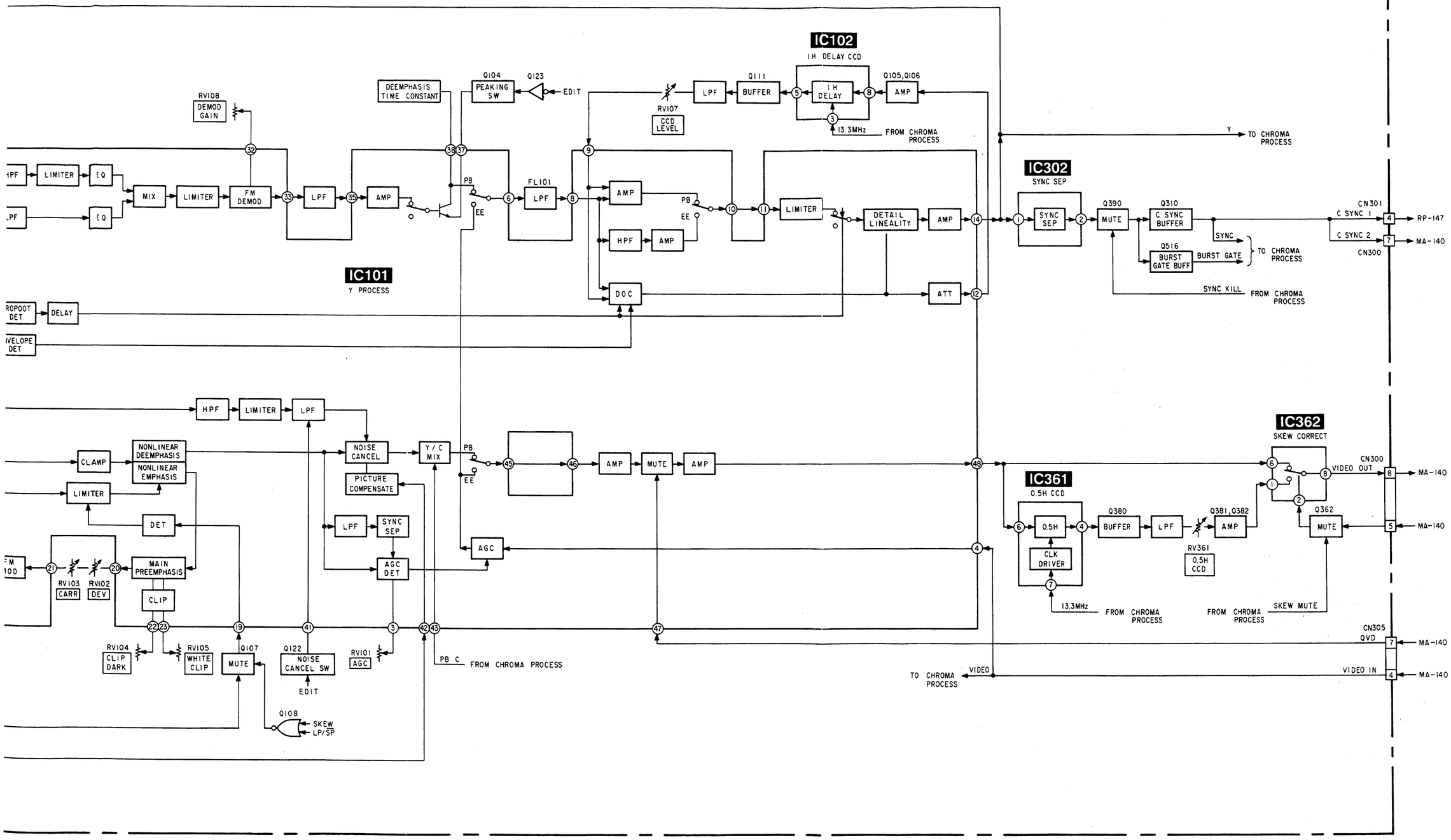
SWITCH BLOCK
IC1
KEY MATRIX
SHUTTLE JOG
LAMP

MF-169 BOARD
(See page 132.)
MODE SWITCH

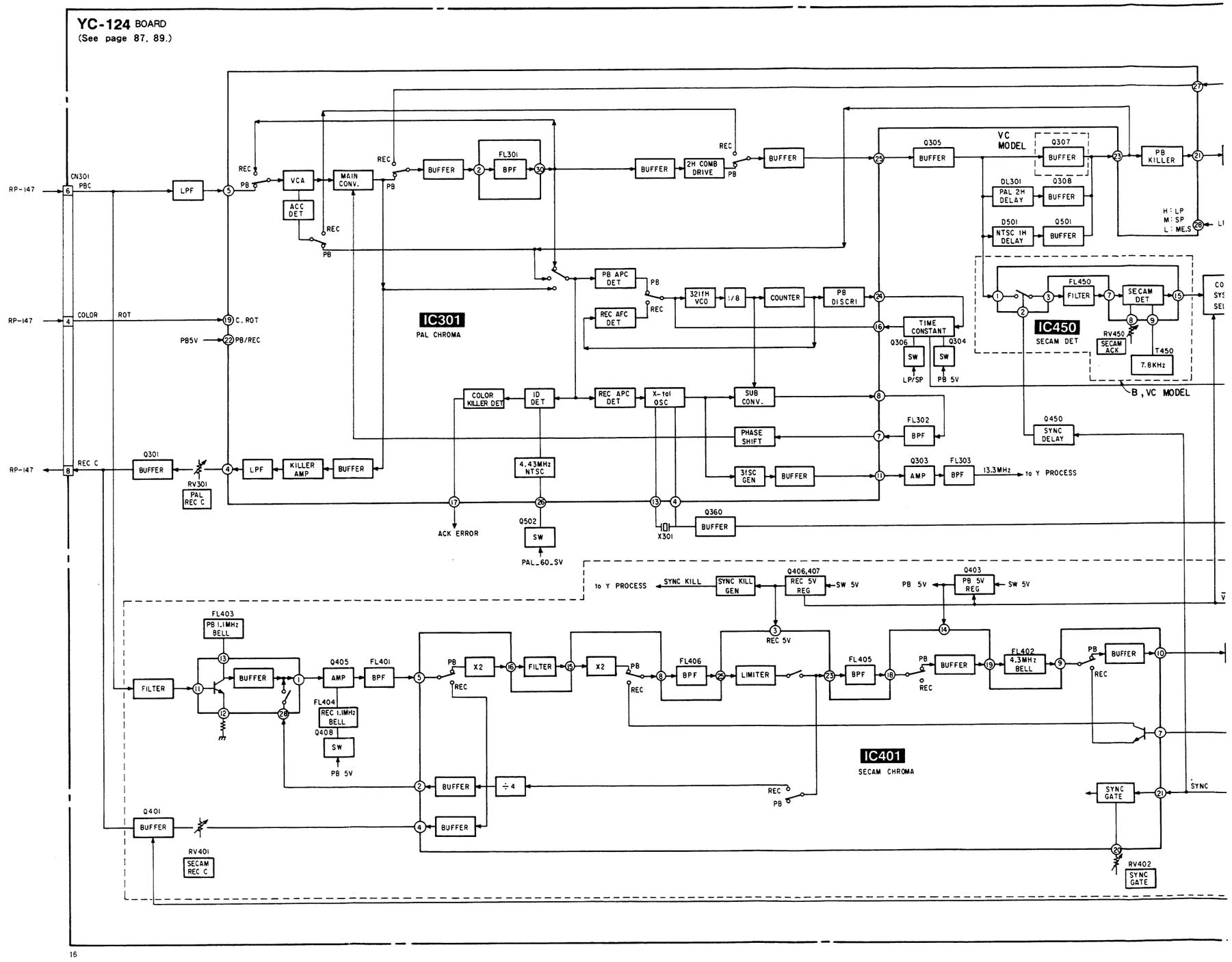
MF-170
BOARD (1/2)
(See page 132.)
CNJ304
CONTROL L

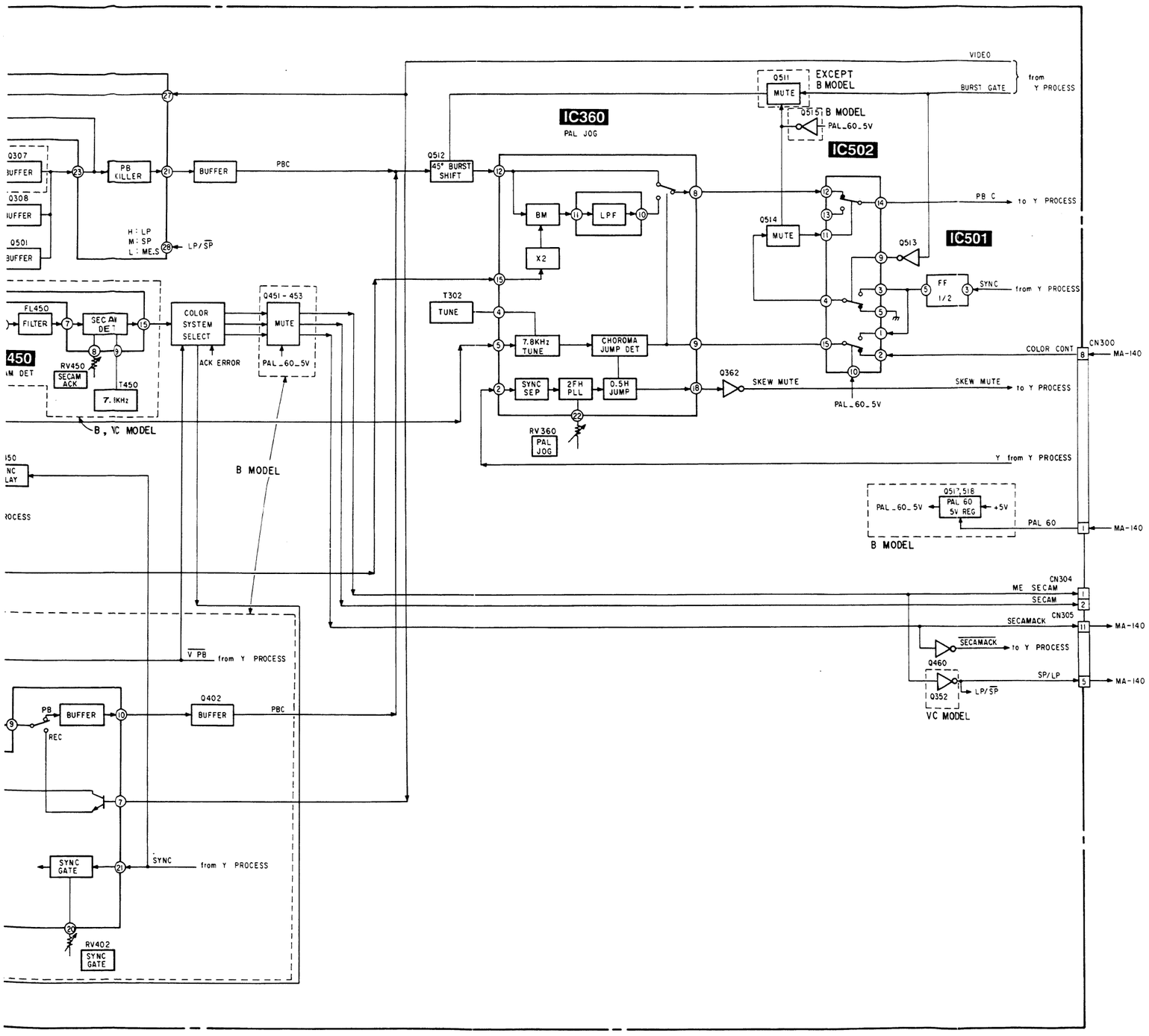
3-3. VIDEO (1) BLOCK DIAGRAM



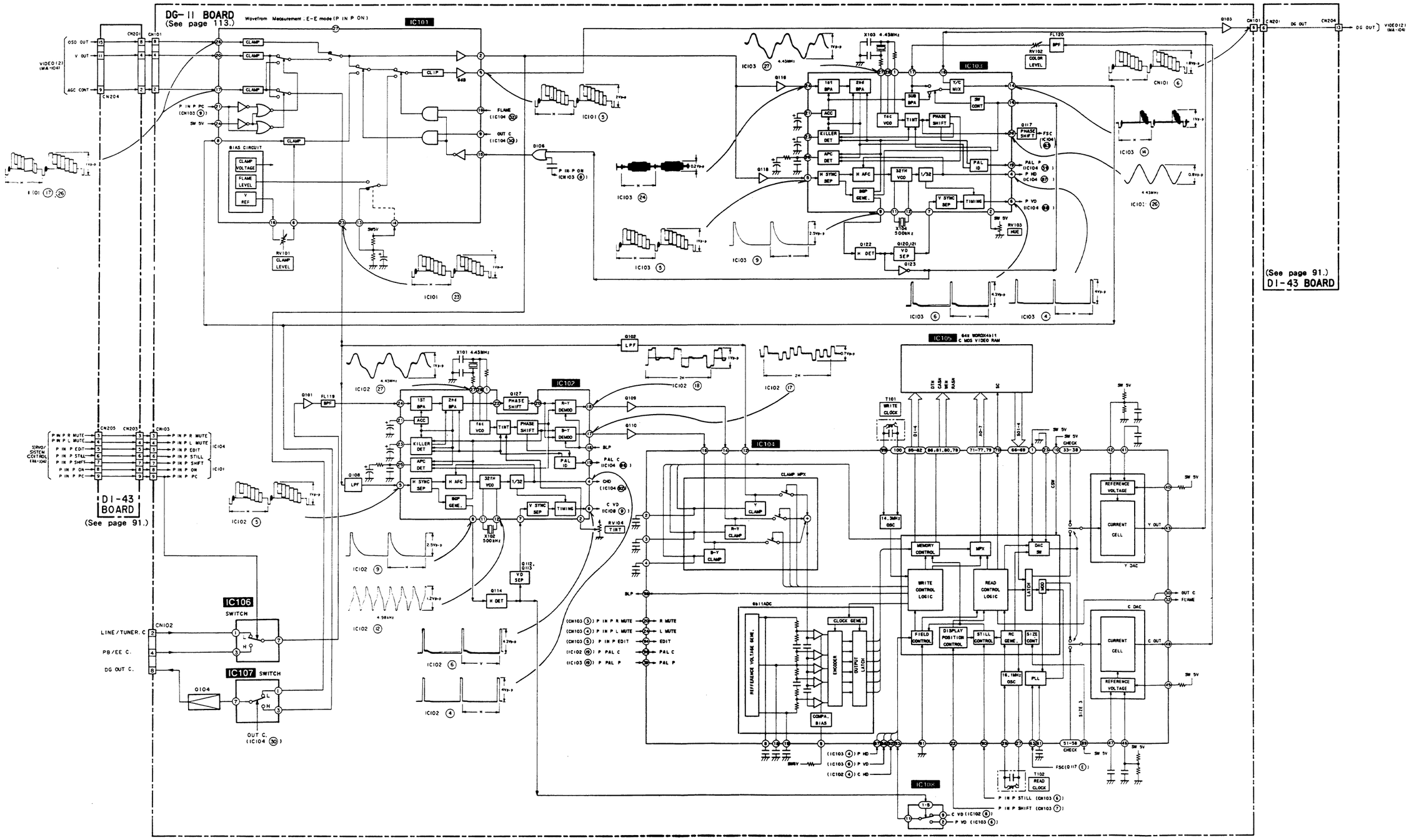

IC102
1H DELAY CCD
RV108
DEMOD GAIN
DEEMPHASIS TIME CONSTANT
Q104
PEAKING SW
Q123
EDIT
RV107
CCD LEVEL
LPF
Q111
BUFFER
1H DELAY
Q105,Q106
AMP
13.3MHz
FROM CHROMA PROCESS
Y
TO CHROMA PROCESS
IC302
SYNC SEP
Q390
MUTE
Q310
C SYNC BUFFER
Q516
BURST GATE BUFF
SYNC
BURST GATE
TO CHROMA PROCESS
SYNC KILL
FROM CHROMA PROCESS
CN301
C SYNC 1
C SYNC 2
CN300
RP-147
MA-140
IC101
Y PROCESS
HPF
LIMITER
EQ
MIX
FM DEMOD
LPF
AMP
PB
EE
FL101
LPF
AMP
HPF
AMP
DOC
PB
EE
LIMITER
DETAIL LINEALITY
AMP
ATT
DELAY
HPF
LIMITER
LPF
CLAMP
NONLINEAR DEEMPHASIS
NONLINEAR EMPHASIS
LIMITER
DET
MAIN PREEMPHASIS
CLIP
RV103
CARR
RV102
DEV
RV104
CLIP DARK
RV105
WHITE CLIP
Q107
MUTE
Q122
NOISE CANCEL SW
EDIT
RV101
AGC
Q108
SKEW
LP/SP
NOISE CANCEL
PICTURE COMPENSATE
Y/C MIX
PB
EE
LPF
SYNC SEP
AGC DET
AGC
PB C
FROM CHROMA PROCESS
AMP
MUTE
AMP
IC361
0.5H CCD
0.5H
CLK DRIVER
13.3MHz
FROM CHROMA PROCESS
Q380
BUFFER
LPF
Q381,Q382
AMP
RV361
0.5H CCD
FROM CHROMA PROCESS
SKEW MUTE
IC362
SKEW CORRECT
Q362
MUTE
CN300
VIDEO OUT
MA-140
MA-140
CN305
QVD
MA-140
VIDEO IN
MA-140
TO CHROMA PROCESS
VIDEO

3- 4. VIDEO (2) BLOCK DIAGRAM



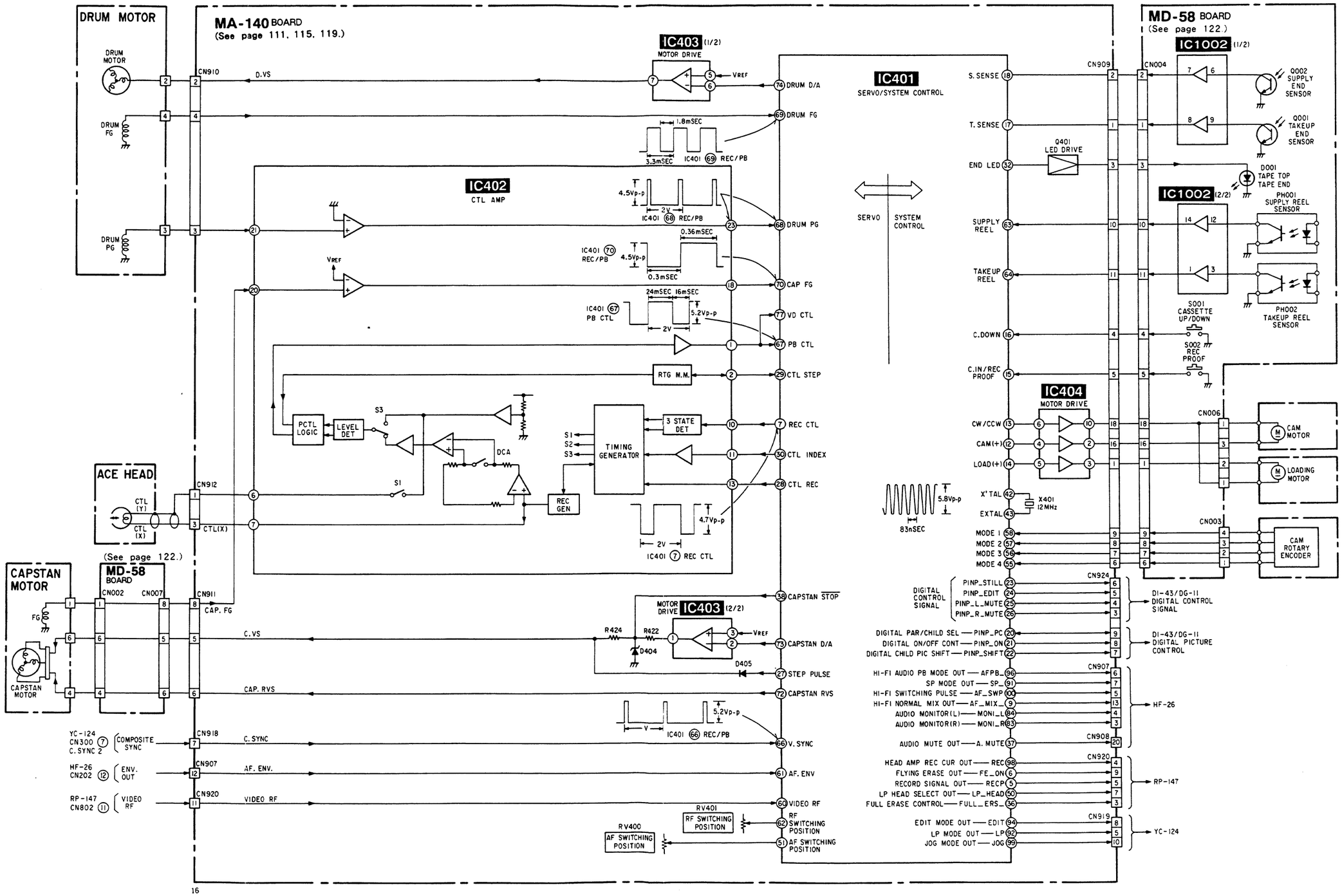

VIDEO
Q511
EXCEPT B MODEL
MUTE
BURST GATE
from Y PROCESS
Q515 B MODEL
PAL_60_5V
IC360
PAL JOG
IC502
Q512
45° BURST SHIFT
PBC
PB KILLER
BUFFER
H : LP
M : SP
L : ME.S
LP/SP
BM
LPF
X2
PB C
to Y PROCESS
Q514
MUTE
IC501
Q513
FF 1/2
SYNC
from Y PROCESS
T302
TUNE
7.8KHz TUNE
CHROMA JUMP DET
COLOR CONT
CN300
MA-140
SYNC SEP
2FH PLL
0.5H JUMP
Q362
SKEW MUTE
SKEW MUTE
to Y PROCESS
PAL_60_5V
RV360
PAL JOG
Y from Y PROCESS
FL450
FILTER
SEC AM DET
RV450
SECAM ACK
T450
7.8KHz
COLOR SYSTEM SELECT
ACK ERROR
Q451 - 453
MUTE
PAL_60_5V
B, VC MODEL
B MODEL
Q517,518
PAL_60_5V
PAL 60 5V REG
+5V
PAL 60
MA-140
B MODEL
CN304
ME SECAM
SECAM
CN305
SECAMACK
MA-140
SECAMACK
to Y PROCESS
Q460
SP/LP
MA-140
Q352
LP/SP
VC MODEL
V PB
from Y PROCESS
Q402
PB
BUFFER
BUFFER
PBC
REC
SYNC GATE
SYNC
from Y PROCESS
RV402
SYNC GATE

3-5. DIGITAL PICTURE BLOCK DIAGRAM



3-6. SERVO SYSTEM CONTROL BLOCK DIAGRAM

VIDEO (2)
(MA-104)



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3-7. SYSTEM CONTROL MICROCOMPUTER PORT FUNCTIONS DESCRIPTION

• IC401 CXP80724-040Q

Signal	I/O	Pin No.	Description
RF_SWP	O	1	RF switching pulse
QVD	O	2	Quasi VD
QHD_ENBLE	O	3	Quasi HD voltage level control
AF_RECP_	O	4	Hi-fi record control
RECP	O	5	Record signal
FE_ON	O	6	Flying erase
REC_CTL	I/O	7	REC. CTL
SYNC_PLS	O	8	Pulse for V sync communication
AF_MIX_	O	9	Hi-fi/normal mix
NA_RECP_	O	10	Normal audio recording signal
NAP B	O	11	Normal audio playback mode
CAM	O	12	Cam motor selection
CW	O	13	Motor rotation direction control
LOAD	O	14	Loading motor selection
C_IN/REC_PRF	I	15	Cassette-IN. Claw broken detect switch input
C_DOWN_	I	16	Cassette compartment down switch input
T_SENS	I	17	Tape-top sensor input
S_SENS	I	18	Tape-end sensor input
COLOR_CONT	O	19	PAL jog control
PINP_PC	*I/O	20	Digital child/parent select (*INITIAL mode input port)
PINP_ON	O	21	Digital ON/OFF_ control
PINP_SHIFT	O	22	Digital child picture move control
PINP_STILL	O	23	Digital control signal
PINP_EDIT	O	24	Digital control signal
PINP_L_MUTE	O	25	Digital control signal
PINP_R_MUTE	O	26	Digital control signal
STEP_PLS_	O	27	Step pulse
CTL_REC	O	28	CTL amp record inhibit
CTL_STEP	O	29	CTL amp step control
CTL_INDEX	O	30	CTL amp index control
AV_CTRL	O	31	(C+) TV/video select
END_LED	O	32	Top end sensor detect lamp
CAP_TRQ2	O	33	Capstan current limiter-2
CAP_TRQ1	O	34	Capstan current limiter-1
NA_MUTE	O	35	Normal audio mute
FULL_ERS_	O	36	Full erase control
A_MUTE	O	37	Audio mute
CAPSTOP_	O	38	Capstan motor stop
METER_L	I	48	Level meter L-ch input
METER_R	I	49	Level meter R-ch input
LP_HEAD	O	50	LP head selection
AFSW_POS	I	51	Hi-fi switching position adj.
MODE4	I	55	Cam encoder data-4
MODE3	I	56	Cam encoder data-3
MODE2	I	57	Cam encoder data-2
MODE1	I	58	Cam encoder data-1
NC	I	59	

Signal	I/O	Pin No.	Description
RF_ENV	I	60	Video playback signal envelope
AF_ENV	I	61	Hi-fi audio playback signal envelope
SW_POS	I	62	Head switching position adj.
SREEL_FG	I	63	S-side reel FG input
TREEL_FG	I	64	T-side reel FG input
NC	I	65	
V_SYNC	I	66	Composite sync input
PB_CTL	I	67	Servo CTL input
DRM_PG	I	68	Drum PG input
DRM_FG	I	69	Drum FG input
CAP_FG	I	70	Capstan FG input
TA_MUTE	O	71	Tuner audio mute
CAPRVS	O	72	Capstan reverse control
CAP_DA	O	73	Capstan D/A output
DRUM_DA	O	74	Drum D/A output
SKEW_ON	O	75	PAL jog control
SC_ON	O	76	Simultaneous Cast mode
VD_CTL	I	77	CTL counter input
MIC_SW_	I	78	Mic SW input (LOW active)
NORM_CONT1	O	79	Normal audio select function-1
NORM_CONT2	O	80	Normal audio select function-2
LINE1	O	81	Audio input selection-1
LINE2	O	82	Audio input selection-2
MONI_R	O	83	Audio monitor-R
MONI_L	O	84	Audio monitor-L
HEAD_CONT	I/O	85	Head amp control
SP_	O	91	SP mode (LOW active)
LP	O	92	LP mode
V_LINE1	O	93	Video input control-1
EDIT	O	94	Edit mode
VPB_	O	95	Video system playback mode
AFPB_	O	96	Hi-fi audio playback mode
V_LINE2	O	97	Video input control-2
REC	O	98	Head amp record current
JOG	O	99	Jog mode
AF_SWP	O	100	Hi-fi switching pulse

3- 8 **SYSTEM CONTROL** —SERVO PERIPHERAL CIRCUIT INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	STOP	FF	REW	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC-PAUSE	PB INDEX WRT/ERS
RIC CTL	7	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
CAP STOP	38	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	27	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTC REC	28	O	L	L	L	L	L	L	L	L	L	L	L	H	H	H
NDEX	30	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	67	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
VD CTL	77	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
DRUM PG	68	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
DRUM FG	69	I	*4	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	
CAP FG	70	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	
CAP RVS	72	O	H/L	L	H	L	H	L	L	*2	L	L	H	L	L	
CAP DA	73	O	*10	*10	*10	*10	*10	*11	*10	*10	*11	*11	*11	*11	*10	
DRUM DA	74	O	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	
CTL STEP	29	O	L	L	L	L	L	L	L	*13	L	L	L	L	L	

*1. 30Hz pulse.
*2. Tape running pulse.
*3. Inverted logic pulse of STEP PLS
*4. During drum stop "L"
*5. Non periodical pulse.
*6. Cycle pulse proportional to tape speed.
*7. 30Hz pulse.
*8. 360Hz pulse.
*9. Tape running pluse.
*10. Approx. 2 msec cycle "H" or "L" pulse.
*11. Approx. 1.5 msec cycle "H" or "L" pulse.
*12. Approx. 3 msec cycle "H" or "L" pulse.
*13. "H" in FWD direction, during STEP drive mode.

3-9. SYSTEM CONTROL —MECHANISM BLOCK INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW
CAM *1	12	O	L	L	L	L	H	H	L	L	L
LOAD	14	O	L	L	H	H	L	L	L	L	L
CW/CCW	13	O			H	L	H	L			
MODE 1	58	I	H	L	L	L	H	H	L	H	H
MODE 2	57	I	L	H	H	H	H	H	L	L	L
MODE 3	56	I	H	H	H	H	L	L	L	L	L
MODE 4	55	I	H	H	H	H	H	H	L	H	H
REC PRF	15	I	*2	L	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	16	I	L	H	H→L	L→H	L	L	L	L	L
T REEL	64	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3
S REEL	63	O	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3
END LED	32	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	33	O (O.D)	*1							*1	*1
CAP TRQ 2	34	O (O.D)								*1	*1
CAP STOP	38	O (O.D)	H	L	L	L	H	H	L	H	H
CAP RVS	72	O	H	H			L	H	H/L	L	H
CAP DA *8	73	O									
T SENS	17	I	*7	*4	*4	*4	*7	*7	*7	*7	*7
S SENS	18	I	*7	*4	*4	*4	*7	*7	*7	*7	*7

*1. "H" : when mechanical mode shifted.
*2. "L" : when erasure protection tab is removed,
"H" : When not removed.
*3. Cycle pulse proportional to reel rotation speed.
*4. Approx. 2 msec cycle "H" pulse.
*6. During tape run, "L" only when CAP I
*7. "L" : normally. 2 msec cycle "H" pulse top or end is detected.
*8. Tape running pulse.

3-10. SYSTEM CONTROL —SERVO PERIPHERAL CIRCUIT INTERFACE—

• IC401 on MA-140 board.

Signal	I/O	Pin No.	Input/output level
$\overline{\text{COSMO • RESET}}$	I	40	"H" : normally. "L" : when power failure detected or power failure restored
$\overline{\text{COSMO • CS}}$	I	44	Chip select signal from timer micro computer. V cycle "L" pulse.
SI • BUS	I	45	Serial communication data from timer micro computer. V cycle "L" pulse.
SO • BUS	O	46	Serial communication data to timer micro computer. V cycle "L" pulse.
S CLK	I	47	Serial communication clock with timer micro computer. V cycle "L" pulse.

:VIEW	REC	REC-PAUSE	PB INDEX WRT/ERS
*1	*1	*1	
HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
L	L	L	
L	H	H	H
L	L	L	H
*6	*1	H	
*6	*1	H	
*7	*7	*7	
*8	*8	*8	
*6	*6	H/L	
H	L	L	
*11	*11	*10	
*12	*12	*12	
L	L	L	

node.

3-9. SYSTEM CONTROL —MECHANISM BLOCK INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
CAM *1	12	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	14	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	13	O			H	L	H	L											
MODE 1	58	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	57	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	56	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	55	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	15	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	16	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	64	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL	63	O	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
END LED	32	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	33	O (O.D)	*1							*1	*1			*6		*1	*1		
CAP TRQ 2	34	O (O.D)								*1	*1								
CAP STOP	38	O (O.D)	H	L	L	L	H	H	L	H	H	H	L	*8	H	H	H	H	L
CAP RVS	72	O	H	H			L	H	H/L	L	H	L	L	L/*8	L	L	H	L	L
CAP DA *8	73	O																	
T SENS	17	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	18	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "H" : when mechanical mode shifted.
*2. "L" : when erasure protection tab is removed,
"H" : When not removed.
*3. Cycle pulse proportional to reel rotation speed.
*4. Approx. 2 msec cycle "H" pulse.
*6. During tape run, "L" only when CAP RVS is "H".
*7. "L" : normally. 2 msec cycle "H" pulse : when tape top or end is detected.
*8. Tape running pulse.

3-10. SYSTEM CONTROL —SERVO PERIPHERAL CIRCUIT INTERFACE—

• IC401 on MA-140 board.

Signal	I/O	Pin No.	Input/output level
$\overline{\text{COSMO • RESET}}$	I	40	"H" : normally. "L" : when power failure detected or power failure restored.
$\overline{\text{COSMO • CS}}$	I	44	Chip select signal from timer micro computer. V cycle "L" pulse.
SI • BUS	I	45	Serial communication data from timer micro computer. V cycle "L" pulse.
SO • BUS	O	46	Serial communication data to timer micro computer. V cycle "L" pulse.
S CLK	I	47	Serial communication clock with timer micro computer. V cycle "L" pulse.

3-11. SYSTEM CONTROL —VIDEO BLOCK INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	STOP/FF/REW	TAPE/THREADING	TAPE UNTHREADING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC-PAUSE
$\overline{V \cdot PB}$	95	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	85	O	L	L	L	L	HI-Z (2.5V)	*1	*9	*5	*5	L	L
RF SW P (SW30)	1	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	2	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
$\overline{SP}$	91	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
SP • 2	92	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
LP	93	O	L	L	L	*7	*7	*7	*7	*7	*7	L	L
REC • P	5	O	L	L	L	L	L	L	L	L	L	L	H
REC	98	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	66	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
V LINE 1	93	O	} *11										
V LINE 2	97	O											

*1. In forward direction slow mode :
during tape stop "HI-Z (2.5V)" during tape run (for about 40ms) "L".
In reverse direction slow mode :
during tape stop "HI-Z (2.5V)" during tape run (for about 40ms).
SP mode "H"
EP mode "L"

*2. Sync with drum revolution. 30 Hz 50% DUTY pulse.

*3. "L"normaly. "H" : when CTL signal is not played back.

*4. V cycle "H" pulse.

*5. According to SP/EP selector. "H" : SP mode, "L" : EP mode.

*6. According to SP/EP selector. "L" : SP mode, "H" : EP mode.

*7. According to tape REC mode.

Signal \ Mode	LINE1	LINE2	EP
$\overline{SP}$ (Pin pin)	L	H	H
EP (Pin pin)	L	L	H

*8. Composite sync signal (positive polarity).

*9. Accroding to SP/EP selector. "H" : SP mode, "HI-Z (2.5V)" : EP mode.

*11. According to Input selector mode.

Signal \ Mode	LINE1	LINE2	TUNER LINE3/CTSC
V LINE 1 (Pin pin)	H	L	H
V LINE 2 (Pin pin)	L	L	H

3-12. SYSTEM CONTROL —AUDIO BLOCK INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	STOP/FF/REW	TAPE LOADING	TAPE UNLOADING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
$\overline{AF\ PB}$	96	O	H	H	H	H	L	L	L	L	L	L	H
MONI (L)	84	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	83	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	61	I	AF RF envelope signal input pin for auto tracking										
NA PB	11	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	37	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
$\overline{SP}$	91	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
NA REC • $\overline{P}$	10	O	L	L	L	L	L	L	L	L	L	H	L
AF REC$\overline{P}$	4	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	100	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	51	I	input pin for AF switching position adj.										
SC – ON	76	O	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
MICSW	78	I	mic. input switch (low when input)										
AF MIX	9	O (O.D)	L	L	L	*9	*9	*9	*9	*9	*9	L	L
METER (L)	48	I	input pin for audio level meter (left) display										
METER (R)	49	I	input pin for audio level meter (right) display										
$\overline{FULL\ ERS}$	36	O (O.D)	H	H	H	H	H	H	H	H	H	L	H
NOR A MUTE	35	O	L	L	L	*4	H	H	H	H	H	L	L
NOR CONT 1	79	O	} *10. normal audio control signal										
NOR CONT 2	80	O											

*1. Depending upon audio monitor

signal \ audio monitor	stereo or main/sub left/right	main left	sub right	(normal)
MONI (L)	H	H	L	L
MONI (R)	H	L	H	L

*2. Depending upon SP/EP selector. SP mode "L", EP mode "H".

*3. Depending upon recording mode on tape . SP mode "L", EP mode "H".

*4. "H" when CTL signal is not played back.

*5. 30Hz, 50% duty pulse after about 5 msec delayed from RF SW P.

*6. "H" during simul-cast ON.

*9. "H" when HIFI/NORMAL MIX ON.

*10.

signal \ input	bilingual send/receive	others
NOR CONT 1⑲	L	H
NOR CONT 2⑳	H	H

3-12. SYSTEM CONTROL —AUDIO BLOCK INTERFACE—

• IC401 on MA-140 board.

SIGNAL	PIN NO.	I/O	STOP/FF/REW	TAPE LOADING	TAPE UNLOADING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
$\overline{\text{AF PB}}$	96	O	H	H	H	H	L	L	L	L	L	L	H
MONI (L)	84	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	83	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	61	I	AF RF envelope signal input pin for auto tracking										
NA PB	11	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	37	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
$\overline{\text{SP}}$	91	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
NA REC • $\overline{\text{P}}$	10	O	L	L	L	L	L	L	L	L	L	H	L
AF REC$\overline{\text{P}}$	4	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	100	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	51	I	input pin for AF switching position adj.										
SC – ON	76	O	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
MICSW	78	I	mic. input switch (low when input)										
AF MIX	9	O (O.D)	L	L	L	*9	*9	*9	*9	*9	*9	L	L
METER (L)	48	I	input pin for audic level meter (left) display										
METER (R)	49	I	input pin for audio level meter (right) display										
$\overline{\text{FULL ERS}}$	36	O (O.D)	H	H	H	H	H	H	H	H	H	L	H
NOR A MUTE	35	O	L	L	L	*4	H	H	H	H	H	L	L
NOR CONT 1	79	O	} *10. normal audio control signal										
NOR CONT 2	80	O											

*1. Depending upon audio monitor

signal \ audio monitor	stereo or main/sub left/right	main left	sub right	(normal)
MONI (L)	H	H	L	L
MONI (R)	H	L	H	L

*2. Depending upon SP/EP selector. SP mode "L", EP mode "H".

*3. Depending upon recording mode on tape . SP mode "L", EP mode "H".

*4. "H" when CTL signal is not played back.

*5. 30Hz, 50 % duty pulse after about 5 msec delayed from RF SW P.

*6. "H" during simul-cast ON.

*9. "H" when HIFI/NORMAL MIX ON.

*10.

signal \ input	bilingual send/receive	others
NOR CONT 1⑦⑨	L	H
NOR CONT 2⑧⑩	H	H

3-13. SYSTEM CONTROL —TUNER BLOCK INTERFACE—

• IC401 on MA-140 board.

Signal	I/O	Pin No.	Input/output level
$\overline{\text{STEREO}}$	I	21	Tuner audio input pin. "L" in stereo
$\overline{\text{BILING}}$	I	22	Tuner audio input pin. "L" in bilingual
TAMUTE	O	71	Tuner audio mute output. "H" during tuning operation or during tuned to blank channel.
$\overline{\text{F MONO}}$	O (O.D)	31	Tuner audio mute output. "L" during auto stereo OFF.

3-14. SYSTEM CONTROL —RF MODULATION/INPUT SELECTOR BLOCK INTERFACE—

• IC401 on MA-140 board.

Signal	I/O	Pin No.	Input/output level
TV/VTR	I	31	"L" when RF modulator is through mode.
LINE 1	I	81	} *1 input select control signal
LINE 2	I	82	

*1.

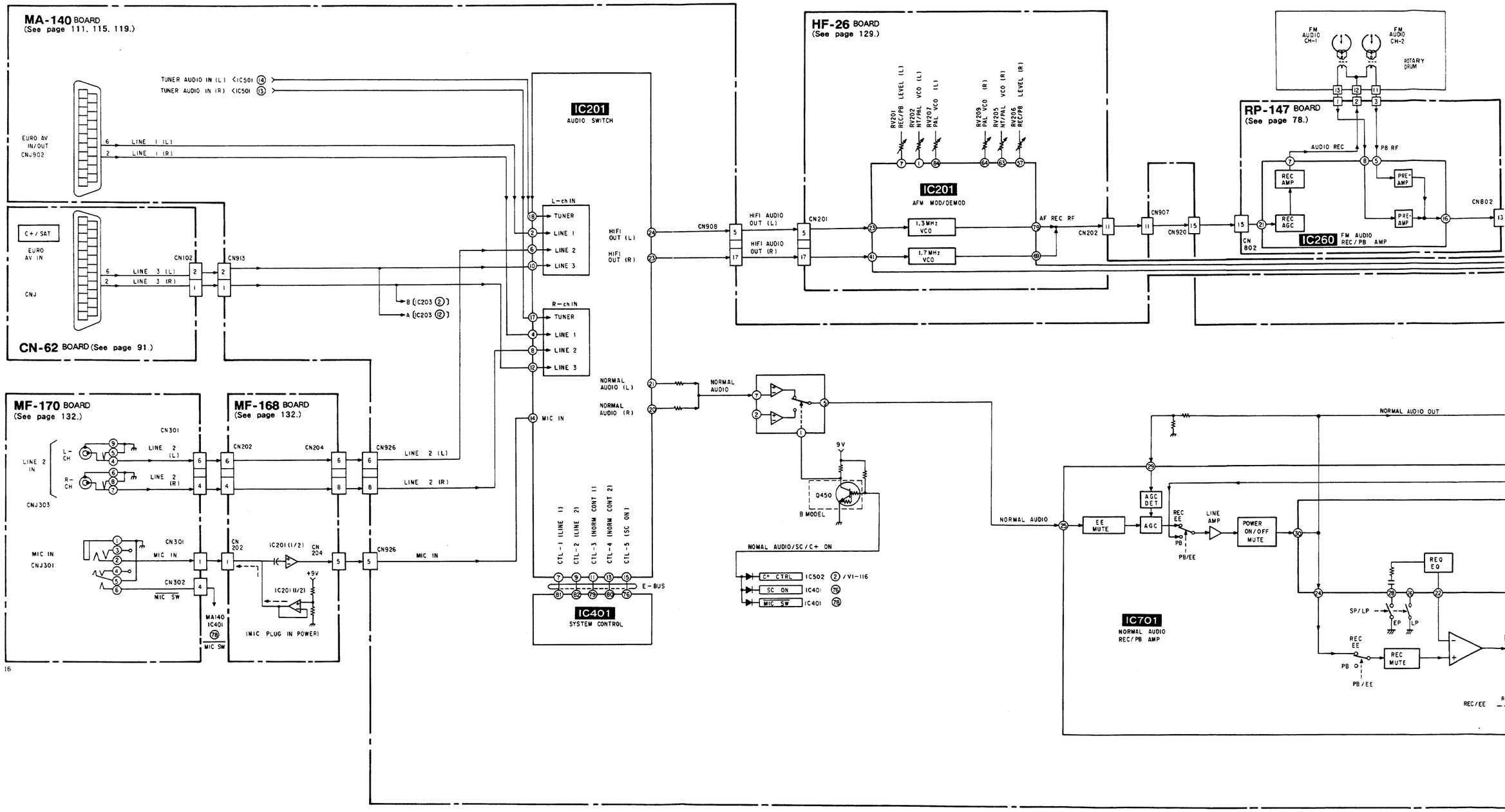
Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1	L	H	L
LINE 2	L	L	H

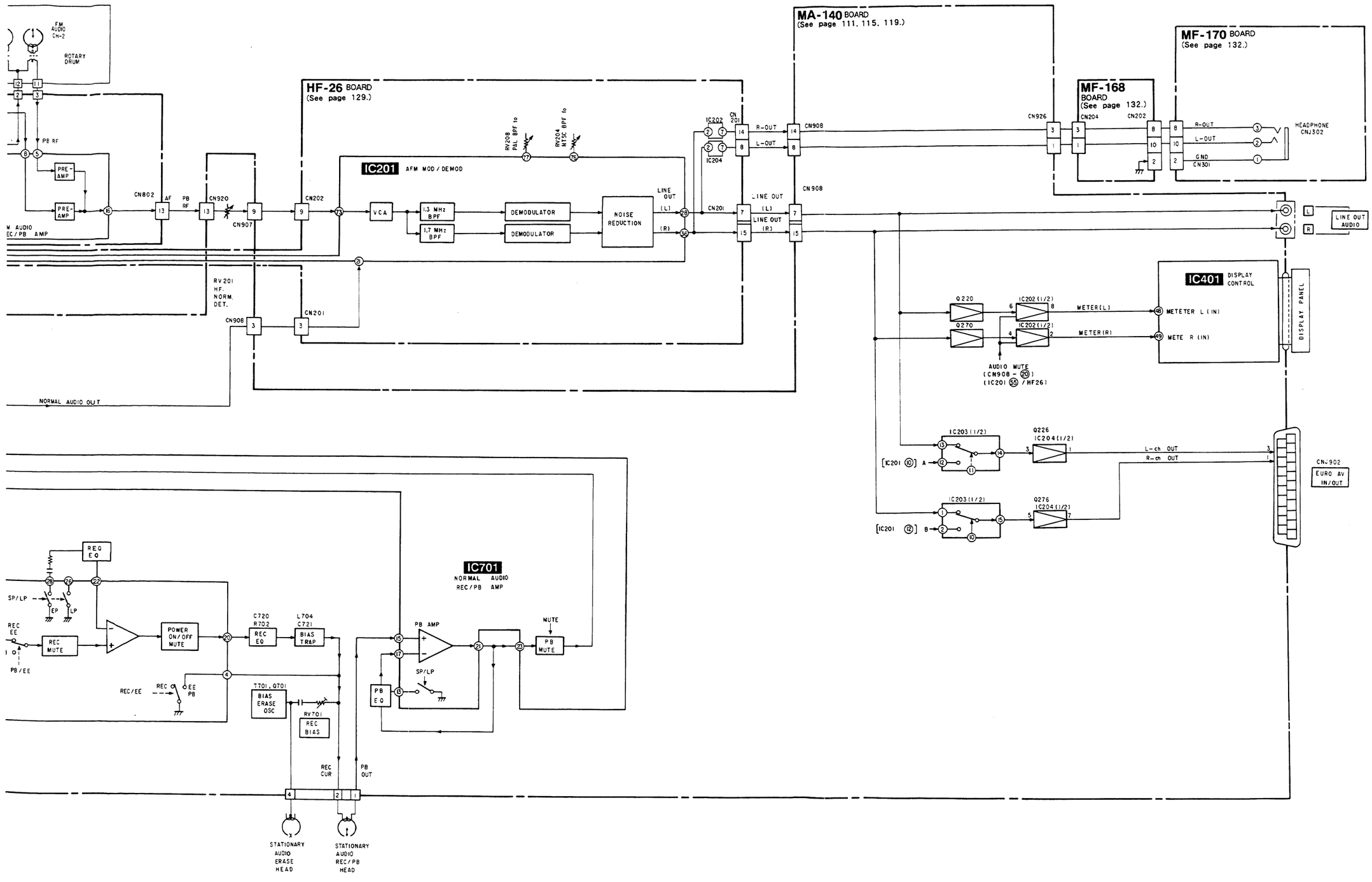
3-15. SYSTEM CONTROL —DIGITAL CONTROL BLOCK INTERFACE—

• IC401 on MA-140 board.

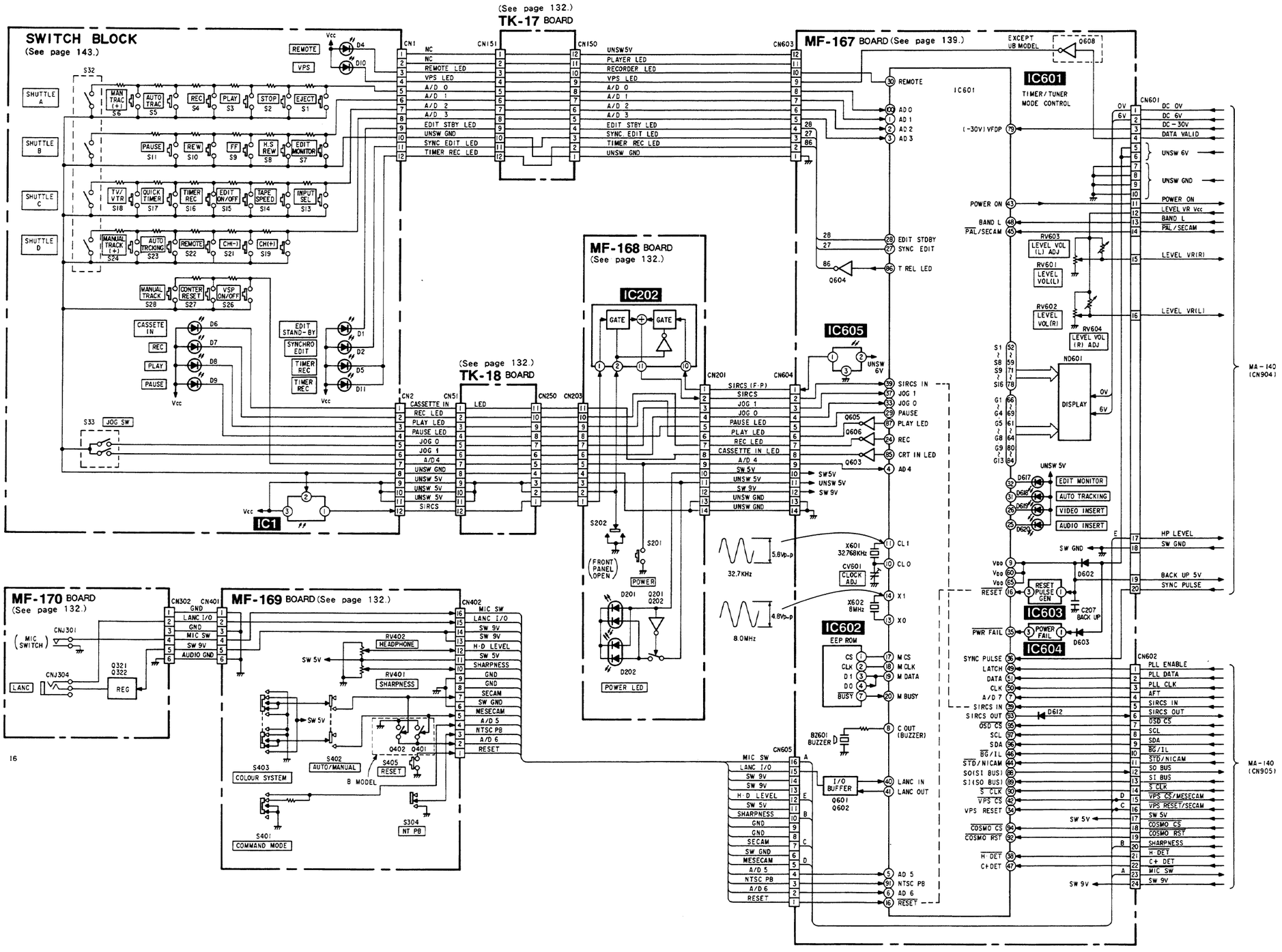
Signal	Pin No.	Input/output level
Pin P ON	21	"H" during digital ON
Pin P PC	20	"H" when when parent picture : EE , child picture : PB with PINP.
Pin P SHIFT	22	H pulse during child picture shifting
Pin P Edit	24	"H" during edit monitor
Pin P Mute	26	"H" when right side picture mute during edit monitor mode
Pin L Mute	25	"H" when left side picture mute during edit monitor mode
Pin Still	23	"H" when right side picture is still picture during edit monitor mode.

3 -16. AUDIO BLOCK DIAGRAM

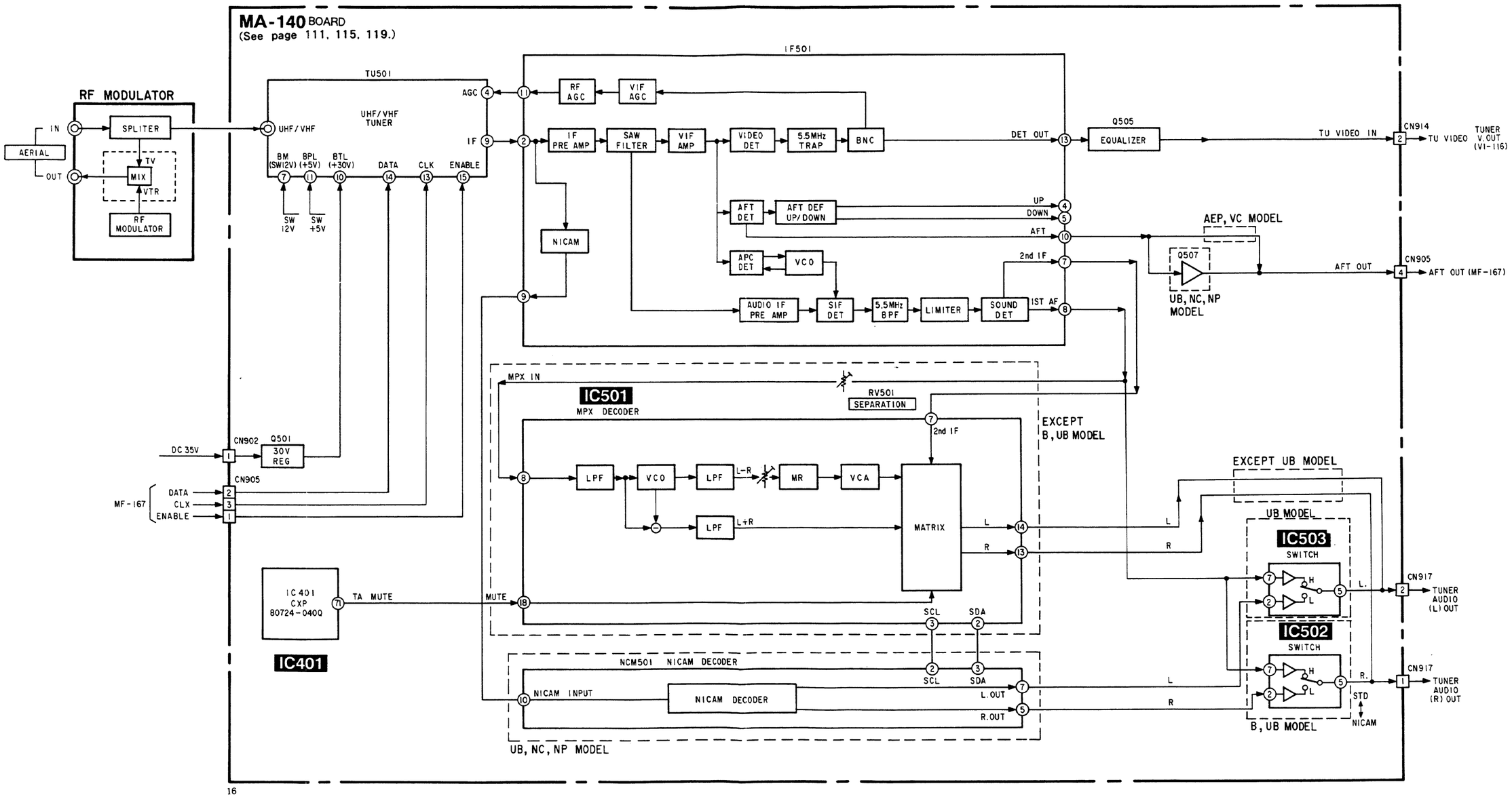



FM AUDIO CH-2
ROTARY DRUM
PB RF
PRE-AMP
PRE-AMP
M AUDIO
EC/PB AMP
CN802
AF
PB RF
CN920
CN907
CN202
HF-26 BOARD
(See page 129.)
IC201 AFM MOD/DEMOD
RV208 PAL BPF fo
RV204 NTSC BPF fo
VCA
1.3 MHz BPF
1.7 MHz BPF
DEMODULATOR
DEMODULATOR
NOISE REDUCTION
LINE OUT (L)
(R)
IC202
IC204
CN201
R-OUT
L-OUT
MA-140 BOARD
(See page 111, 115, 119.)
CN908
CN926
MF-168 BOARD
(See page 132.)
CN204
CN202
MF-170 BOARD
(See page 132.)
HEADPHONE CNJ302
GND
CN301
LINE OUT AUDIO
RV201 HF. NORM. DET.
CN908
CN201
NORMAL AUDIO OUT
IC401 DISPLAY CONTROL
DISPLAY PANEL
Q220
Q270
IC202(1/2)
METER(L)
METER(R)
METETER L (IN)
METE R (IN)
AUDIO MUTE
(CN908 - 20)
(IC201 55 /HF26)
IC203(1/2)
Q226
IC204(1/2)
Q276
[IC201 10] A
[IC201 12] B
L-ch OUT
R-ch OUT
CNJ902
EURO AV IN/OUT
IC701
NORMAL AUDIO REC/PB AMP
REQ EQ
SP/LP
EP
LP
REC EE
REC MUTE
PB/EE
POWER ON/OFF MUTE
C720 R702
REC EQ
L704 C721
BIAS TRAP
PB AMP
MUTE
PB MUTE
SP/LP
PB EQ
REC/EE
REC
EE PB
T701, Q701
BIAS ERASE OSC
RV701
REC BIAS
REC CUR
PB OUT
STATIONARY AUDIO ERASE HEAD
STATIONARY AUDIO REC/PB HEAD

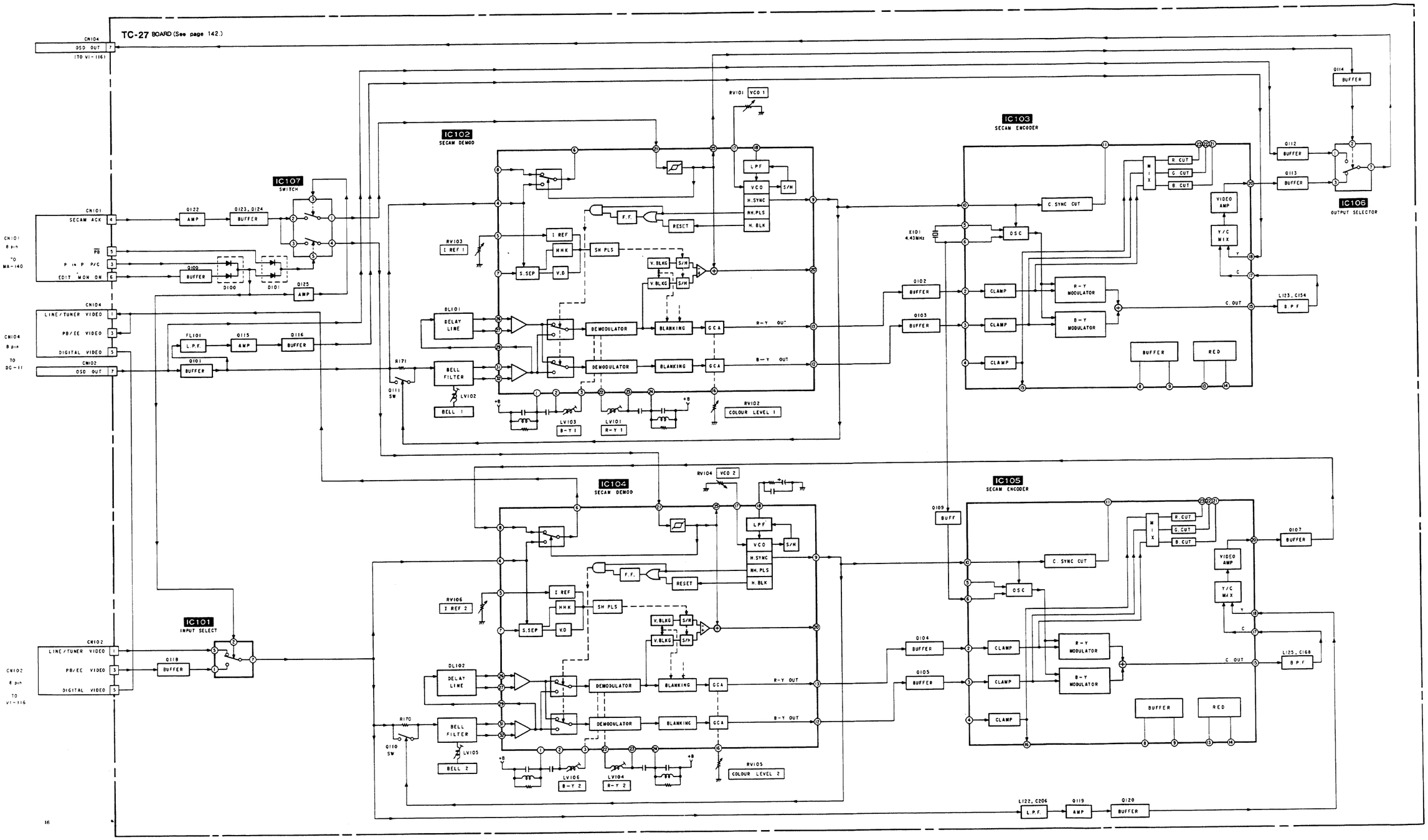
3-17. TIMER TUNER, MODE CONTROL BLOCK DIAGRAM



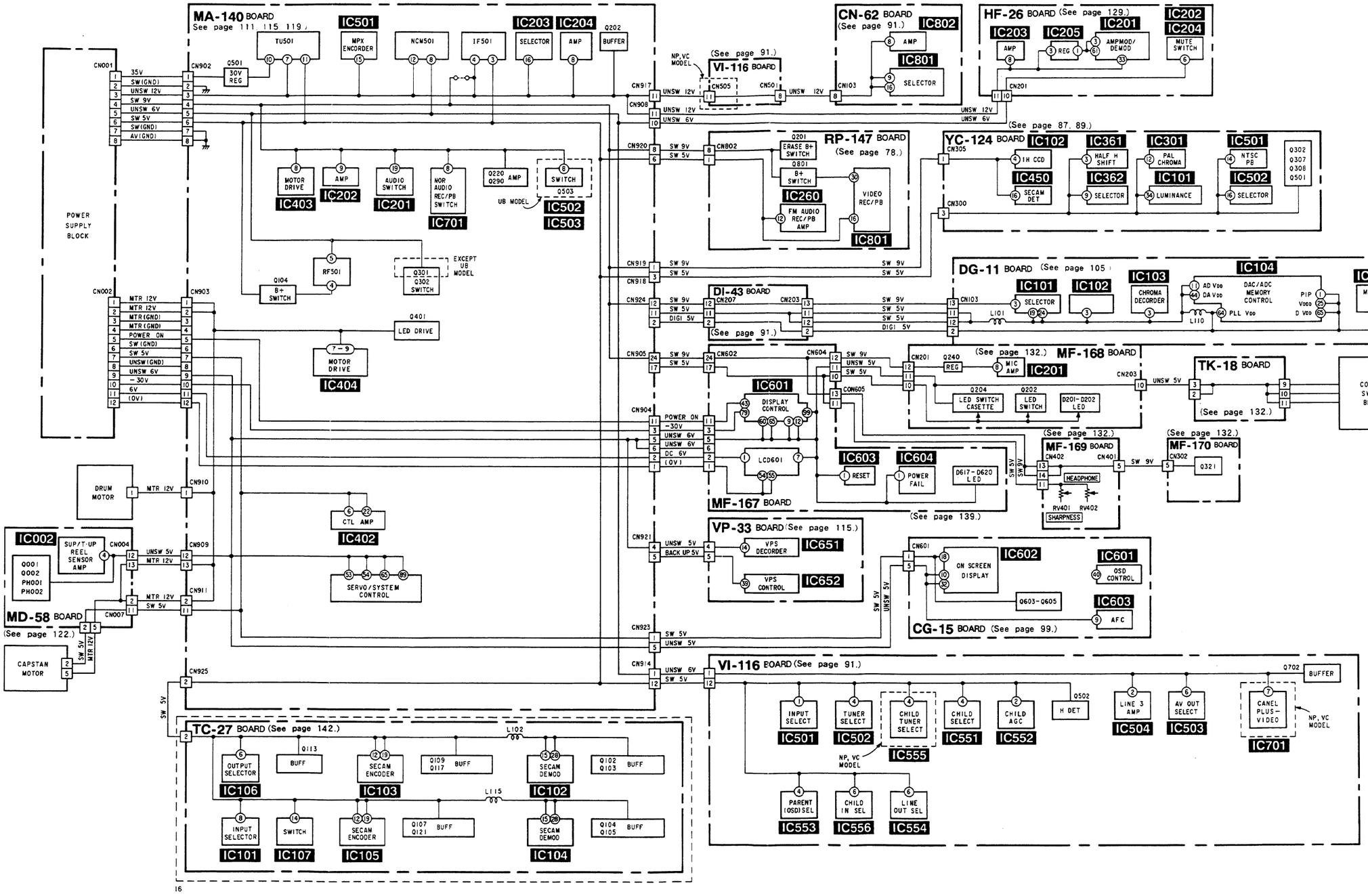
3-18. TUNER NICAM BLOCK DIAGRAM



3-19. TRANSCODER BLOCK DIAGRAM (B Model)

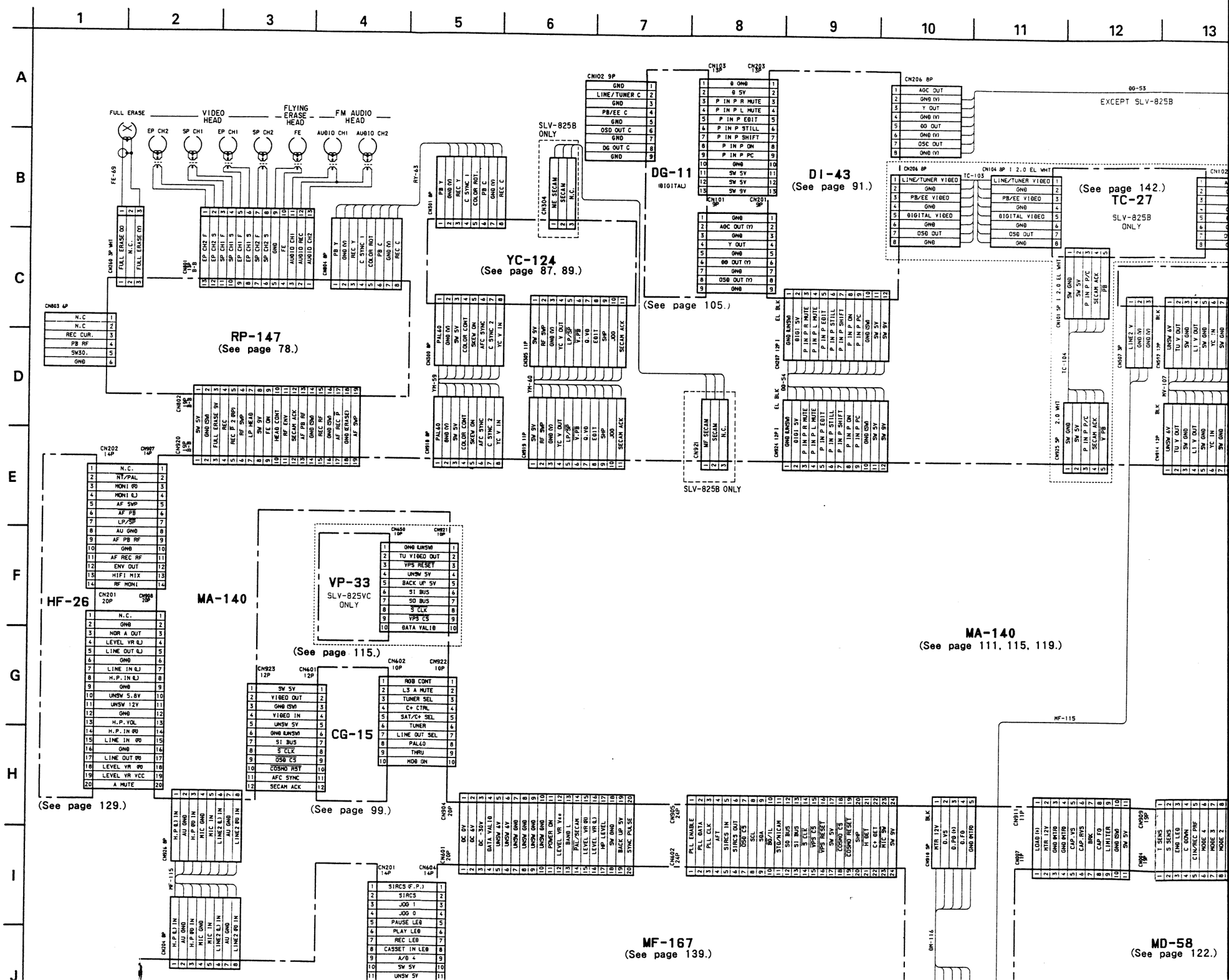


3-20. POWER SUPPLY BLOCK DIAGRAM



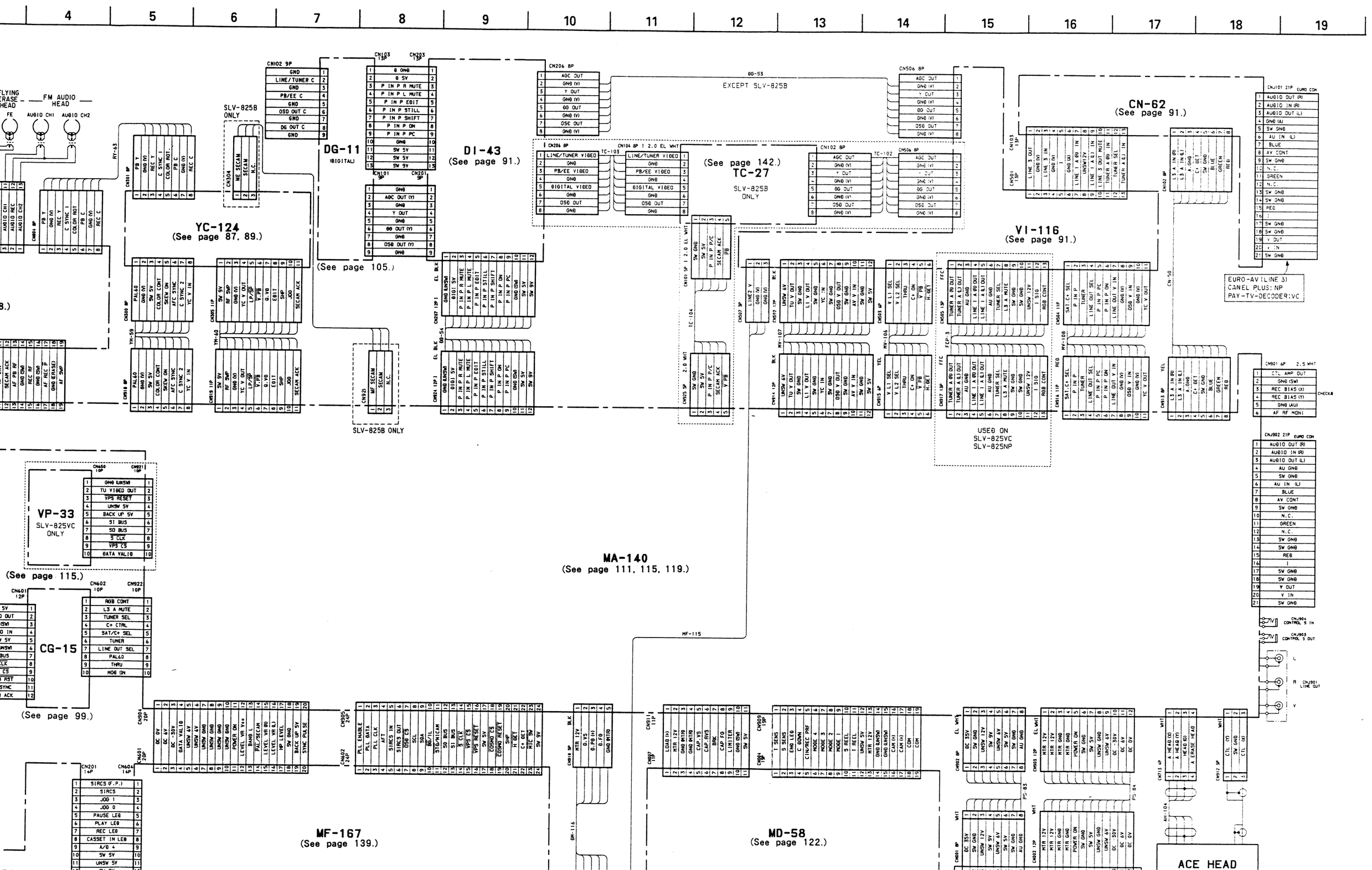
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

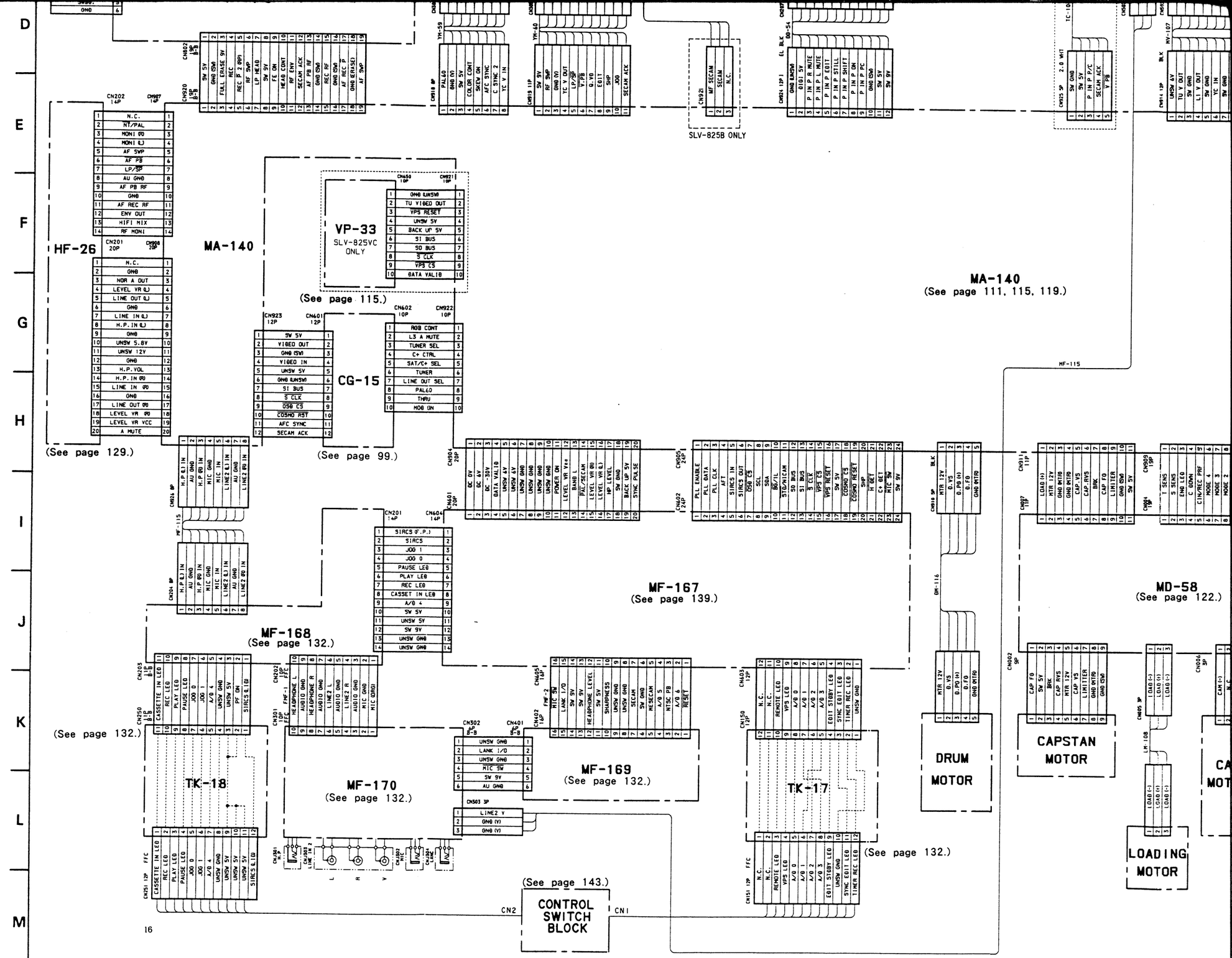
4-1. FRAME SCHEMATIC DIAGRAM



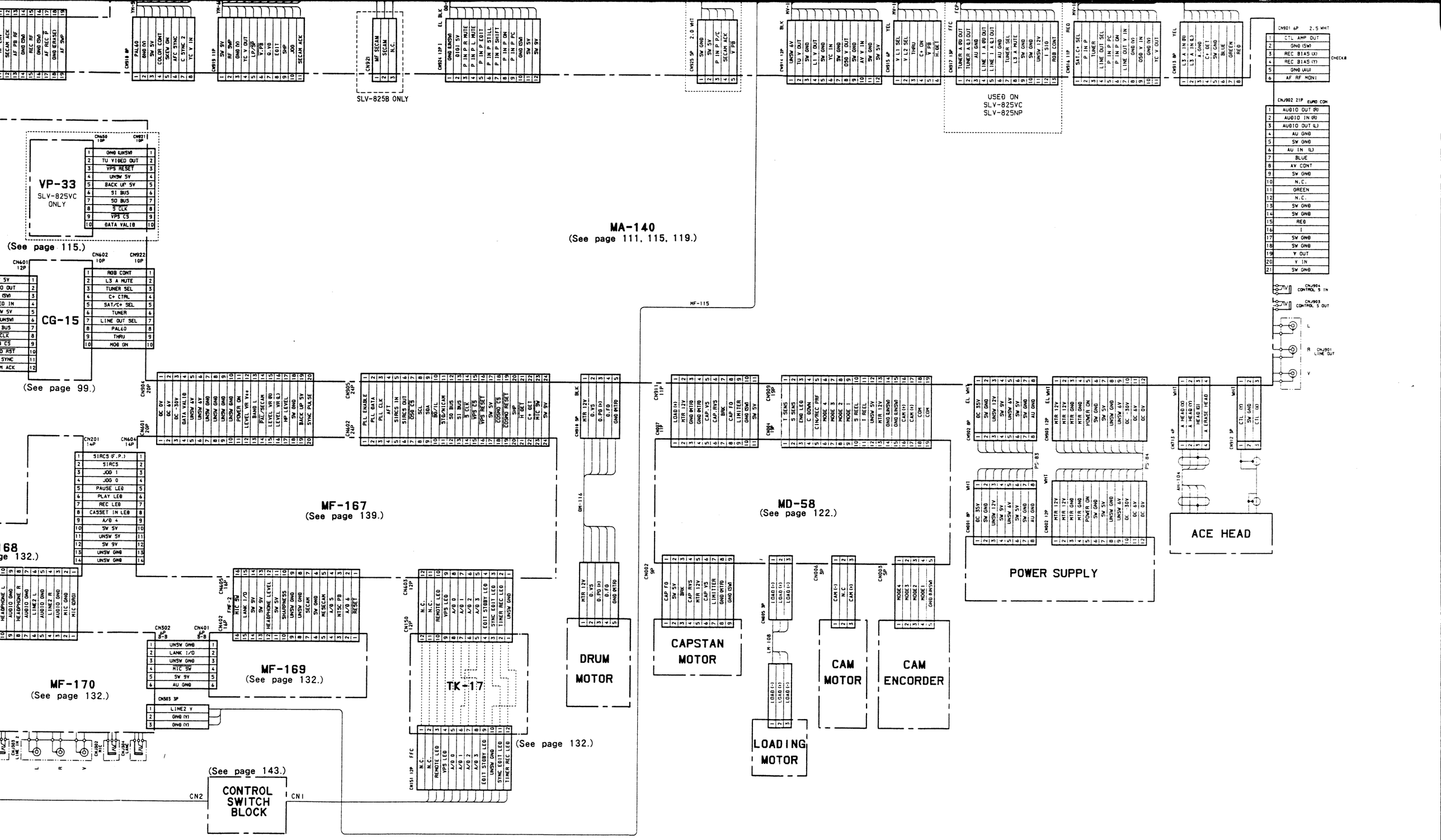
N 4

D SCHEMATIC DIAGRAMS




HF-26
MA-140
VP-33
SLV-825VC ONLY
(See page 115.)
(See page 129.)
(See page 99.)
CG-15
MF-115
MF-167
(See page 139.)
MF-168
(See page 132.)
MF-170
(See page 132.)
MF-169
(See page 132.)
TK-18
TK-17
(See page 132.)
(See page 143.)
CONTROL SWITCH BLOCK
CN2
CN1
SLV-825B ONLY
MA-140
(See page 111, 115, 119.)
MD-58
(See page 122.)
DRUM MOTOR
CAPSTAN MOTOR
LOADING MOTOR
16

FRAME FRAME


VP-33
SLV-825VC ONLY
(See page 115.)
CG-15
(See page 99.)
MA-140
(See page 111, 115, 119.)
MF-115
MF-167
(See page 139.)
MF-170
(See page 132.)
MF-169
(See page 132.)
TK-17
(See page 132.)
DRUM MOTOR
CAPSTAN MOTOR
LOADING MOTOR
CAM MOTOR
CAM ENCORDER
MD-58
(See page 122.)
POWER SUPPLY
ACE HEAD
USED ON
SLV-825VC
SLV-825NP
SLV-825B ONLY
(See page 143.)
CONTROL SWITCH BLOCK
CN2
CN1
CN901 6P 2.5 WHT
CNJ902 21P EURO CON
CNJ904 CONTROL S IN
CNJ903 CONTROL S OUT
L
R CNJ901 LINE OUT
V

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

RP-147 (HEAD AMP) SCHEMATIC DIAGRAM

– Ref. No. RP-147 BOARD : 1,000 Series –

RP-147 BOARD

IC801 VIDEO REC/PB AMP

IC801 HA118162NT

( ) : REC
< > : PB

B MODEL

TO YC-124 BOARD CN301 (See page 88.)

TO MA-140 BOARD CN920 (See page 112.)

CN803 6P: N.C, N.C, REC CUR., PB RF, SW30., GND

CN804 8P: PB Y RF, GND (SW), REC Y RF, SYNC, C ROT, PB C, GND (SW), REC C

CN802 19P: SW 5V, GND (V), FULL ERASE, REC, REC P (RP), RF SWP, 3P, SW 9V, FE ON, HEAD CONT, RF ENV, SECAM, PB RF, GND (AU), REC RF, GND (AU), AF REC P, GND (ERASE), AF AMP

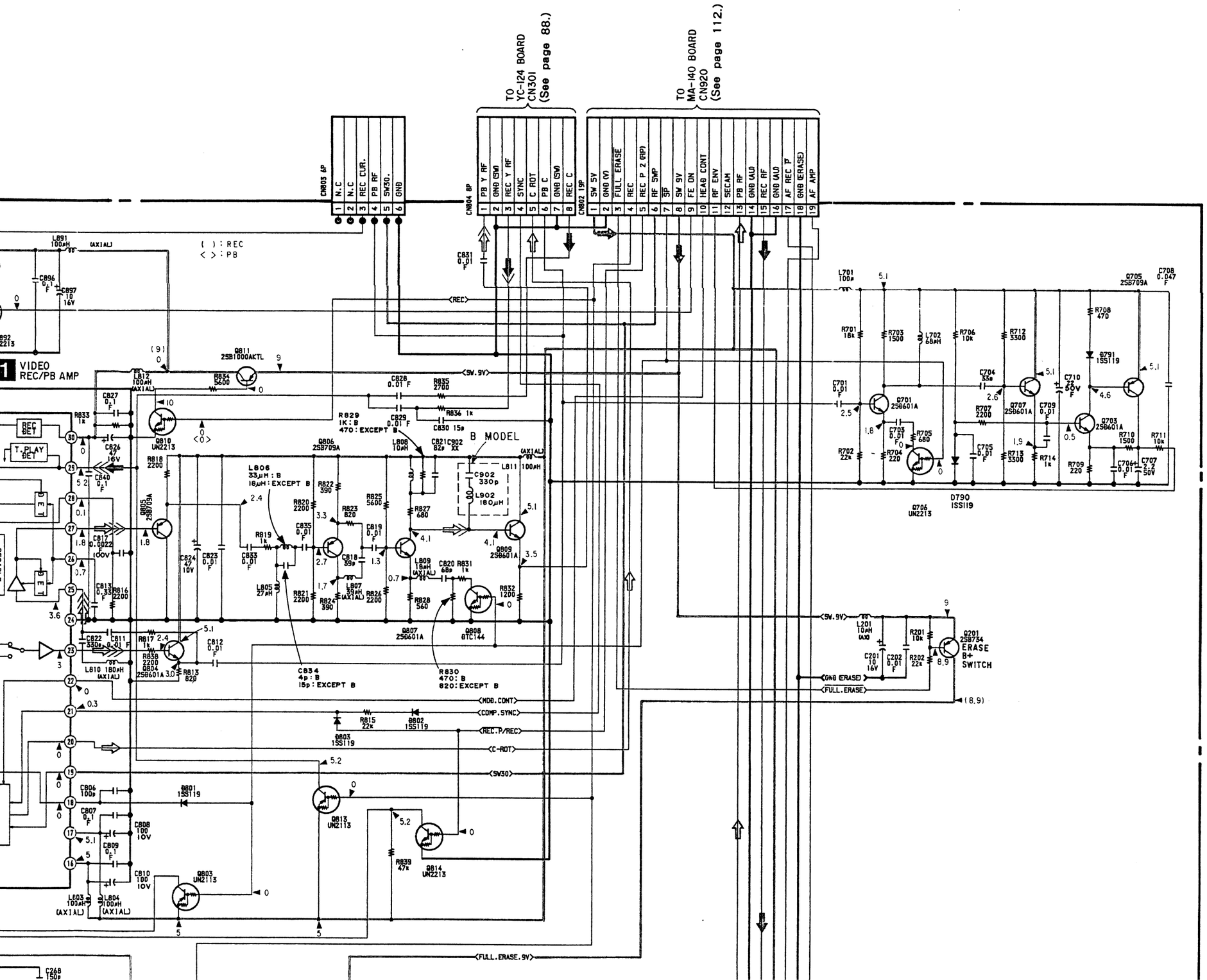
CN801 13P

1	EP CH2 F	13
2	EP CH2 S	12
3	SP CH1 F	11
4	SP CH1 S	10
5	EP CH1 F	9
6	EP CH1 S	8
7	SP CH2 F	7
8	SP CH2 S	6
9	GND	5
10	FE	4
11	AUDIO CH1	3
12	AUDIO REC	2
13	AUDIO CH2	1

VIDEO HEAD: EP CH2, SP CH1, EP CH1, SP CH2
FLYING ERASE HEAD: FE
FM AUDIO HEAD: AUDIO CH1, AUDIO CH2
150P

B MODEL
L806 33μH : B
16μH : EXCEPT B
R829 1K : B
470 : EXCEPT B
C834 4p : B
15p : EXCEPT B
R830 470 : B
820 : EXCEPT B

<REC>
<5V.9V>
<MOD.CONT>
<COMP.SYNC>
<REC.P/REC>
<C-ROT>
<SW30>
<FULL.ERASE.9V>
<GND (ERASE)>
<FULL.ERASE>


7
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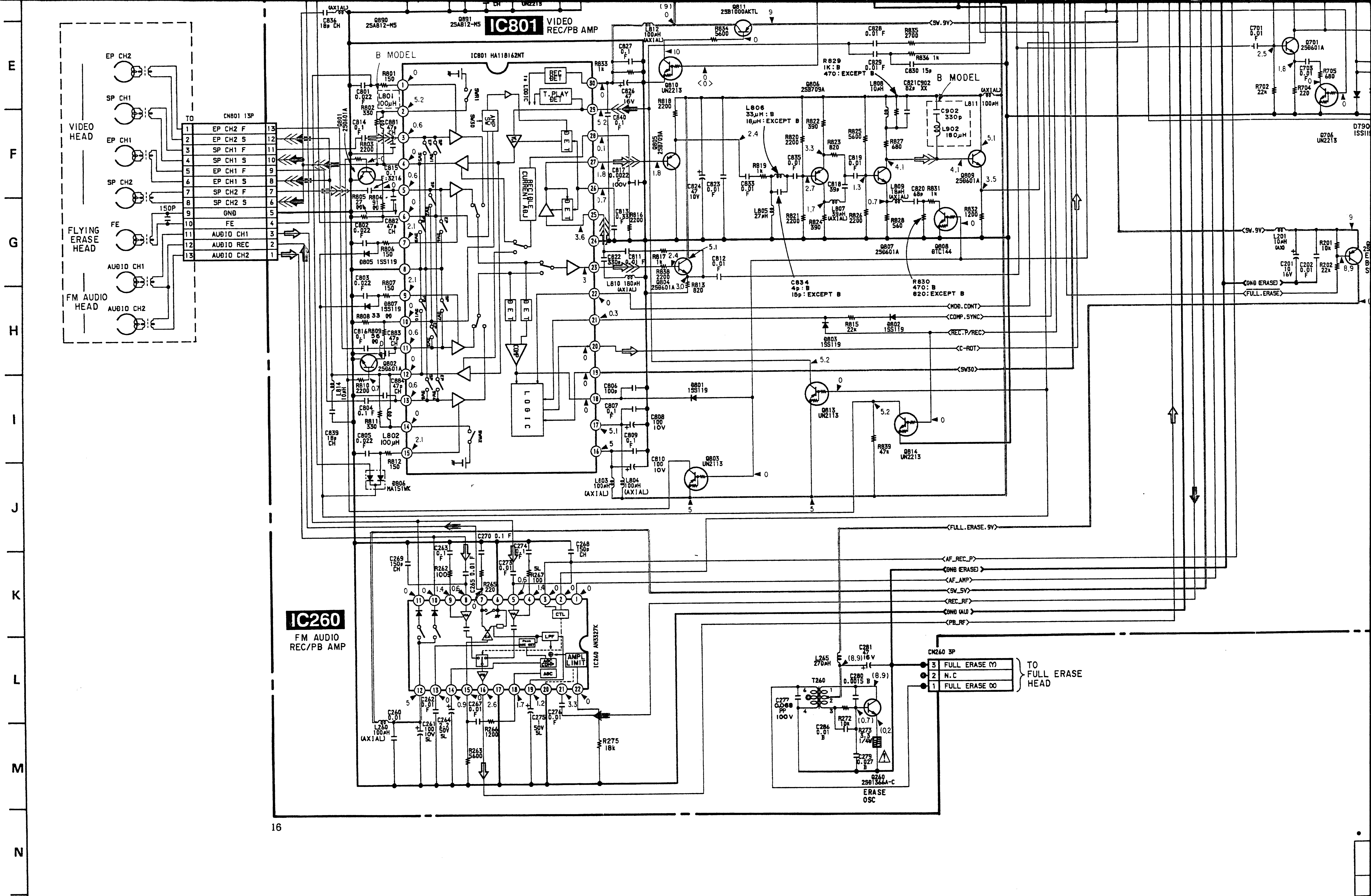
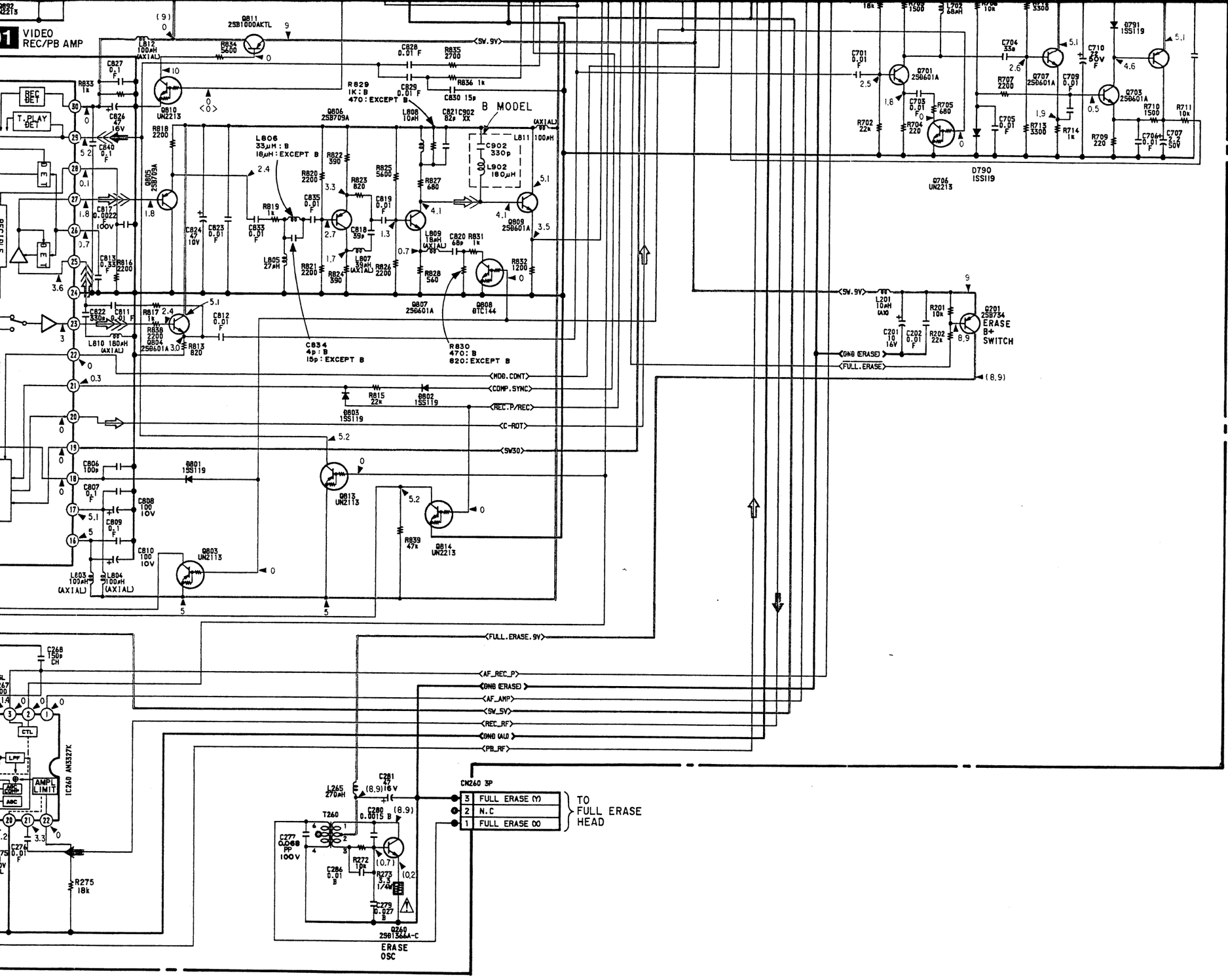
TO YC-124 BOARD CN301 (See page 88.)
TO MA-140 BOARD CN920 (See page 112.)
CN805 6P
CN804 8P
CN802 19P
1 VIDEO REC/PB AMP
( ) : REC
< > : PB
B MODEL
D790 ISS119
THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)
For printed wiring boards:
: indicated a lead wire mounted on the component side.
: indicated a lead wire mounted on the conductor side.
: Through hole.
: Parts mounted on the conductor side.
: Pattern from the side which enables seeing.
: Pattern of the rear side.
Circled numbers refer to waveforms.
Caution :
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side) Parts on the parts face side seen from the parts face are indicated.
For schematic diagram:
Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
All resistors are in ohms, 1/4 W unless otherwise noted.
Chip resistors: 1/10 W unless otherwise noted.
kΩ : 1000 Ω , MΩ : 1000kΩ .
All capacitors are in μF unless otherwise noted. pF: μμF.
50V or less are not indicated except for electrolytics and tantalums.
All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
: nonflammable resistor.
: fusible resistor.



IC801
VIDEO
REC/PB AMP
IC801 HA118162NT
B MODEL
VIDEO
HEAD
FLYING
ERASE
HEAD
FM AUDIO
HEAD
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
IC260
FM AUDIO
REC/PB AMP
IC260 AN3327K
CN260 3P
FULL ERASE (Y)
N.C
FULL ERASE (X)
TO
FULL ERASE
HEAD
ERASE
OSC

16



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

For printed wiring boards:

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

Caution :	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W unless otherwise noted.
  Chip resistors: 1/10 W unless otherwise noted.
  kΩ : 1000 Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ——— : B + Line.
- — — — : B − Line.
- ⇨ : IN/OUT direction of B line (+, −).
- Circled numbers refer to waveforms.
- Voltage are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10 MΩ).
- Voltage are taken with a VOM (input impedance 10 MΩ).
- Voltage variations may be noted due to normal production tolerances.

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

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

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

- **Signal palth**

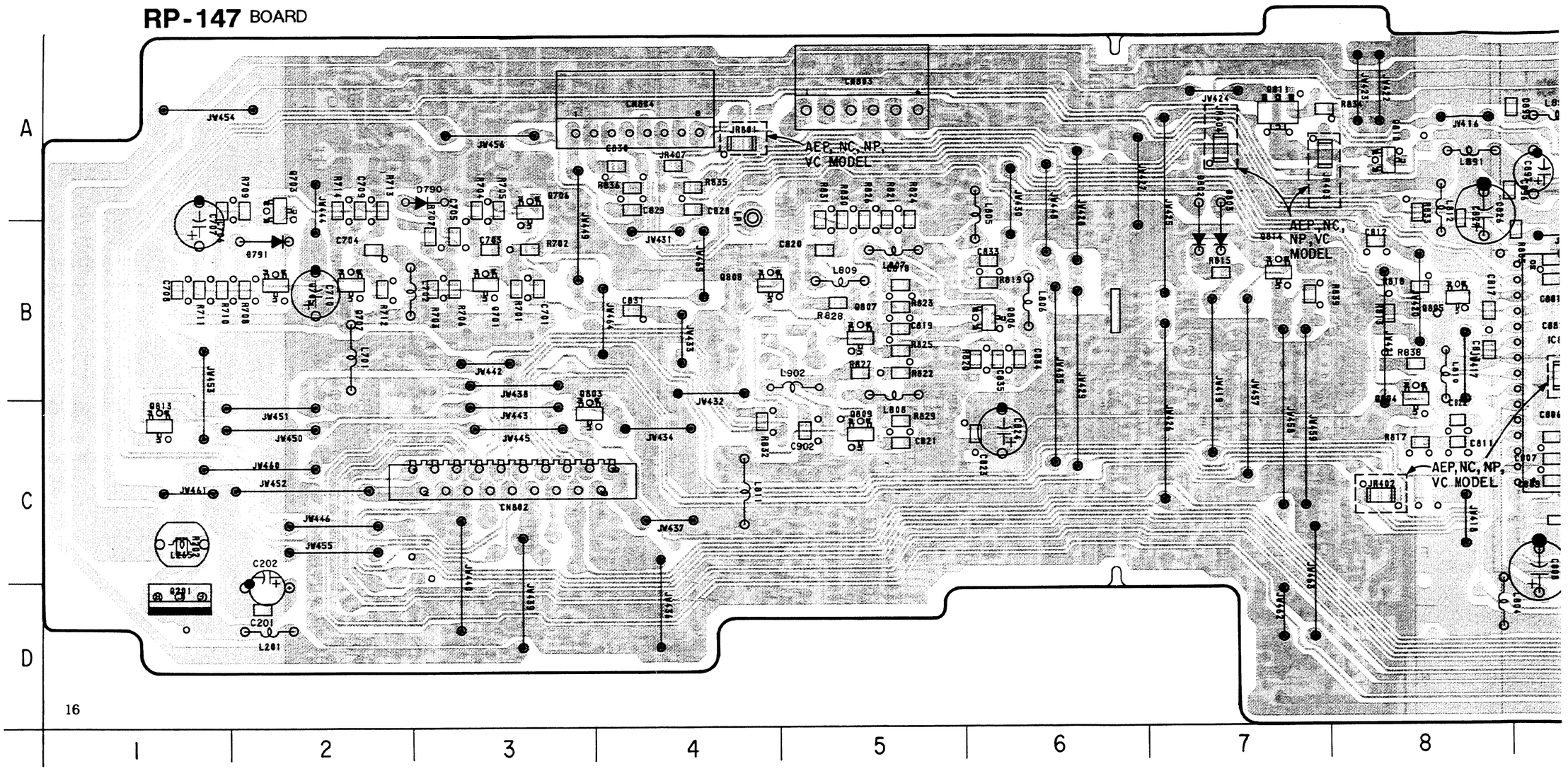
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

RP-147 (HEAD AMP) PRINTED WIRING BOARD

– Ref. No. RP-147 BOARD : 1,000 Series –

RP-147 BOARD

D790	A-3
D791	B-2
D801	D-9
D802	B-7
D803	B-7
D805	D-10
D806	C-10
D807	C-10
IC260	B-11
IC801	B-9
Q201	D-1
Q701	B-3
Q703	A-2
Q705	B-2
Q706	A-3
Q707	B-2
Q801	C-10
Q802	C-10
Q803	C-3
Q804	C-8
Q805	B-8
Q806	B-6
Q807	B-5
Q808	B-4
Q809	C-5
Q810	A-8
Q811	A-7
Q813	C-1
Q814	B-7
Q890	A-10
Q891	A-9
Q892	A-9

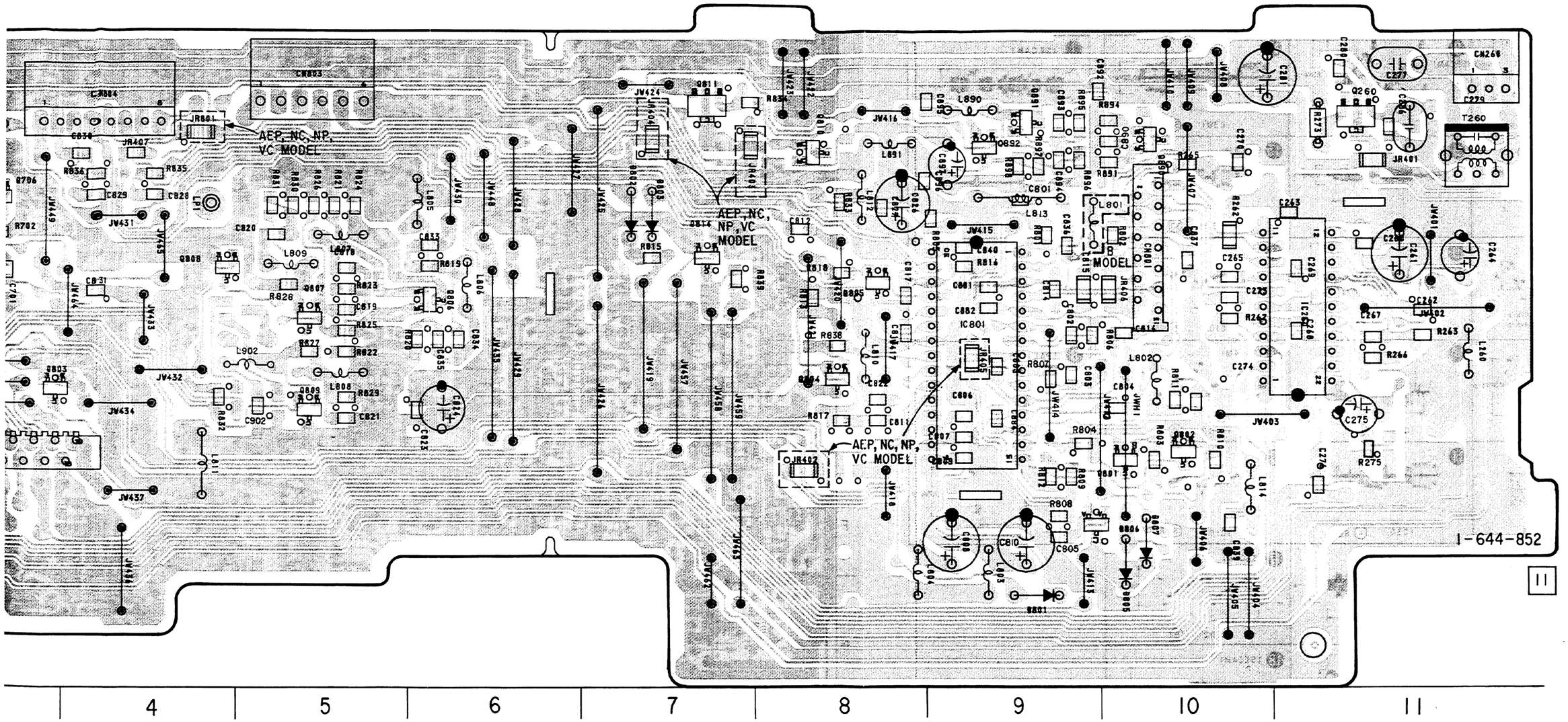


DIODE

D806	8-719-400-18	MA152WK

TRANSISTOR

Q260	8-729-103-72	2SD1005-BV
Q701	8-729-422-28	2SD601A-R
Q703	8-729-422-28	2SD601A-R
Q705	8-729-422-37	2SB709A-R
Q706	8-729-421-19	UN2213
Q707	8-729-422-28	2SD601A-R
Q801	8-729-422-28	2SD601A-R
Q802	8-729-422-28	2SD601A-R
Q803	8-729-424-18	UN2113
Q804	8-729-422-28	2SD601A-R
Q805	8-729-422-37	2SB709A-R
Q806	8-729-422-37	2SB709A-R
Q807	8-729-422-28	2SD601A-R
Q808	8-729-901-01	DTC144EK
Q809	8-729-422-28	2SD601A-R
Q810	8-729-901-47	DTA143EK
Q811	8-729-301-98	2SB1000A-L
Q813	8-729-424-18	UN2113
Q814	8-729-421-19	UN2213
Q890	8-729-216-22	2SA1162
Q891	8-729-216-22	2SA1162
Q892	8-729-421-19	UN2213



28	2SD601A-R	Q805	8-729-422-37	2SB709A-R	Q810	8-729-901-47	DTA143EK	Q891	8-729-216-22	2SA1162
28	2SD601A-R	Q806	8-729-422-37	2SB709A-R	Q811	8-729-301-98	2SB1000A-L	Q892	8-729-421-19	UN2213
28	2SD601A-R	Q807	8-729-422-28	2SD601A-R	Q813	8-729-424-18	UN2113			
18	UN2113	Q808	8-729-901-01	DTC144EK	Q814	8-729-421-19	UN2213			
28	2SD601A-R	Q809	8-729-422-28	2SD601A-R	Q890	8-729-216-22	2SA1162			

YC-124 BOARD (1/2)

❶ 5Vp-p — IC101 ② REC/PB

❷ 1.1Vp-p — IC101 ⑥ REC; IC101 ㊺ PB/REC

❷ (SECAM) 0.95Vp-p — IC101 ⑥

❸ A — IC101 ⑥ PB (A: ⑧ 1.0Vp-p, ⑨ 0.4Vp-p); IC101 ③ REC/PB

❸ (SECAM) 0.37Vp-p — IC101 ⑥

❹ V : 0.2V/div, H : 0.1 μsec/div — IC101 ㉕ PB

❺ 0.9Vp-p — IC101 ㊲ PB

❻ 0.24Vp-p — IC101 ㊵ REC/PB

❻ (SECAM) 0.2Vp-p — IC101 ㊵

❼ 0.28Vp-p — IC101 ㊸ PB

❽ 2Vp-p — IC101 ㊽ (REC/PB)

❽ (SECAM) 2.3Vp-p — IC101 ㊽

❾ 0.8Vp-p — IC301 ② PB

❾ (SECAM) 0.9Vp-p — IC301 ②

❿ 0.7Vp-p — IC301 ②

⓫ 0.4Vp-p — IC301 ④ REC

⓫ (SECAM) 1.2Vp-p — IC301 ④

⓬ 0.6Vp-p, 4.43MHz — IC301 ⑭ REC

⓬ (SECAM) 0.55Vp-p, 230msec — IC301 ⑭

⓭ 4.5Vp-p, 2V — IC301 ⑲ REC/PB

⓮ A — IC301 ㉑ PB (㉑ 0.4Vp-p, ㉓ 1.3Vp-p); IC301 ㉕ PB

⓯ 0.22Vp-p — IC301 ㉚ REC

⓯ (SECAM) 0.13Vp-p — IC301 ㉚

⓰ 1.2Vp-p — IC102 ⑤ REC/PB

⓰ (SECAM) 1.2Vp-p — IC102 ⑤

⓱ 1.1Vp-p — IC102 ⑧ REC/PB

⓱ (SECAM) 1.3Vp-p — IC102 ⑧

⓲ (SECAM) 0.95Vp-p — IC101 ⑭

⓳ (SECAM) 0.95Vp-p — IC101 ④

YC-124 BOARD (2/2)

❶ (PAL) 1.2Vp-p — IC450 ①

❶ (SECAM) 1.2Vp-p — IC450 ①

❷ (PAL) 0.33Vp-p — IC450 ③

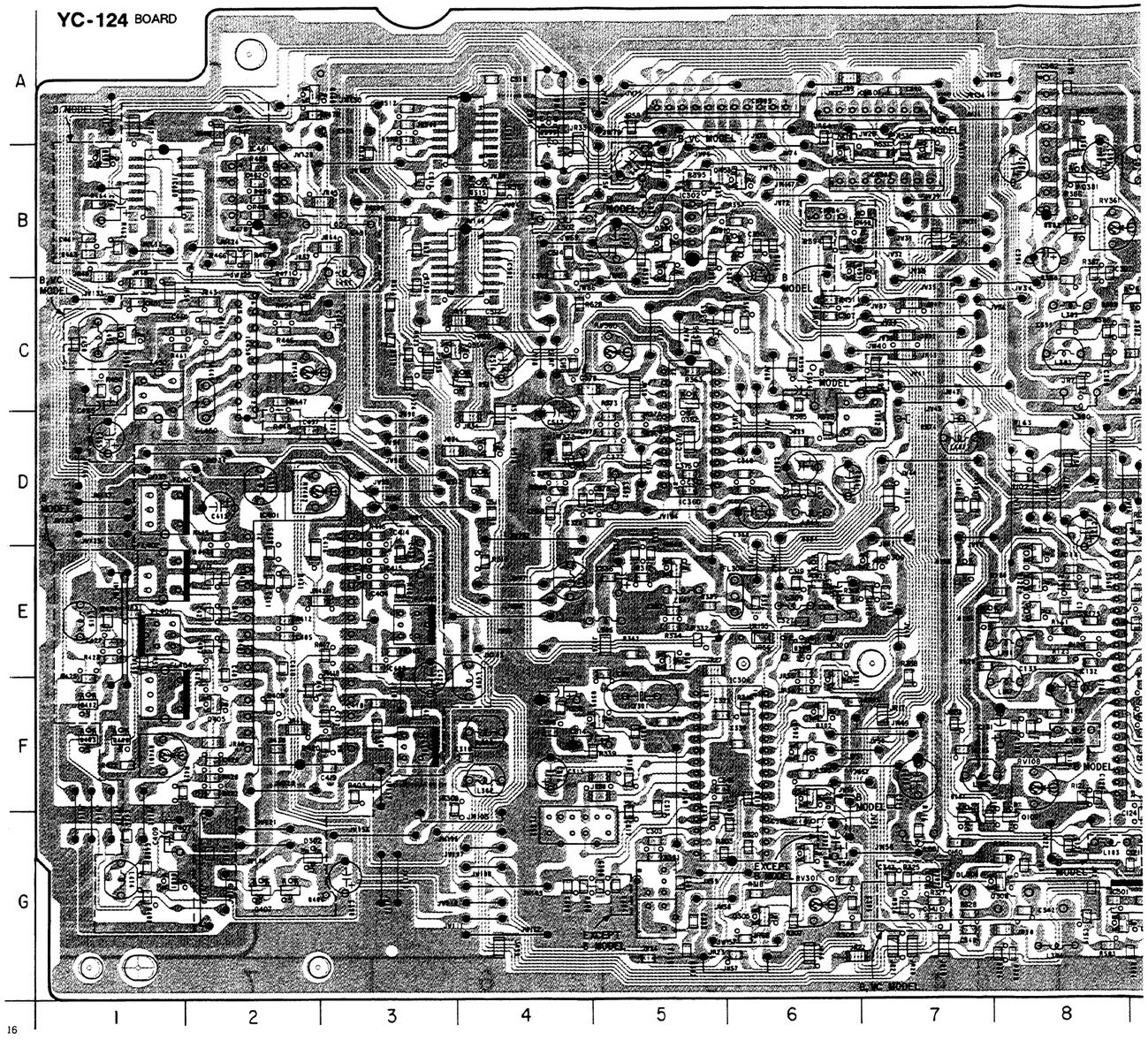
❷ (SECAM) 0.44Vp-p — IC450 ③

❸ (PAL) 1.8Vp-p — IC450 ⑦

❸ (SECAM) 1.7Vp-p — IC450 ⑦

YC-124 (VIDEO) PRINTED WIRING BOARD

– Ref. No. YC-124 BOARD : 2,000 Series –



DIODE

D101	8-719-400-18	MA152WK
D105	8-719-400-18	MA152WK
D301	8-719-400-18	MA152WK
D302	8-719-400-18	MA152WK (B)
D401	8-719-400-18	MA152WK (B)

IC

IC460	8-759-927-46	SN74HC00ANS (B)
IC501	8-759-925-90	SN74HC74ANS
IC502	8-759-300-71	TC4053BF

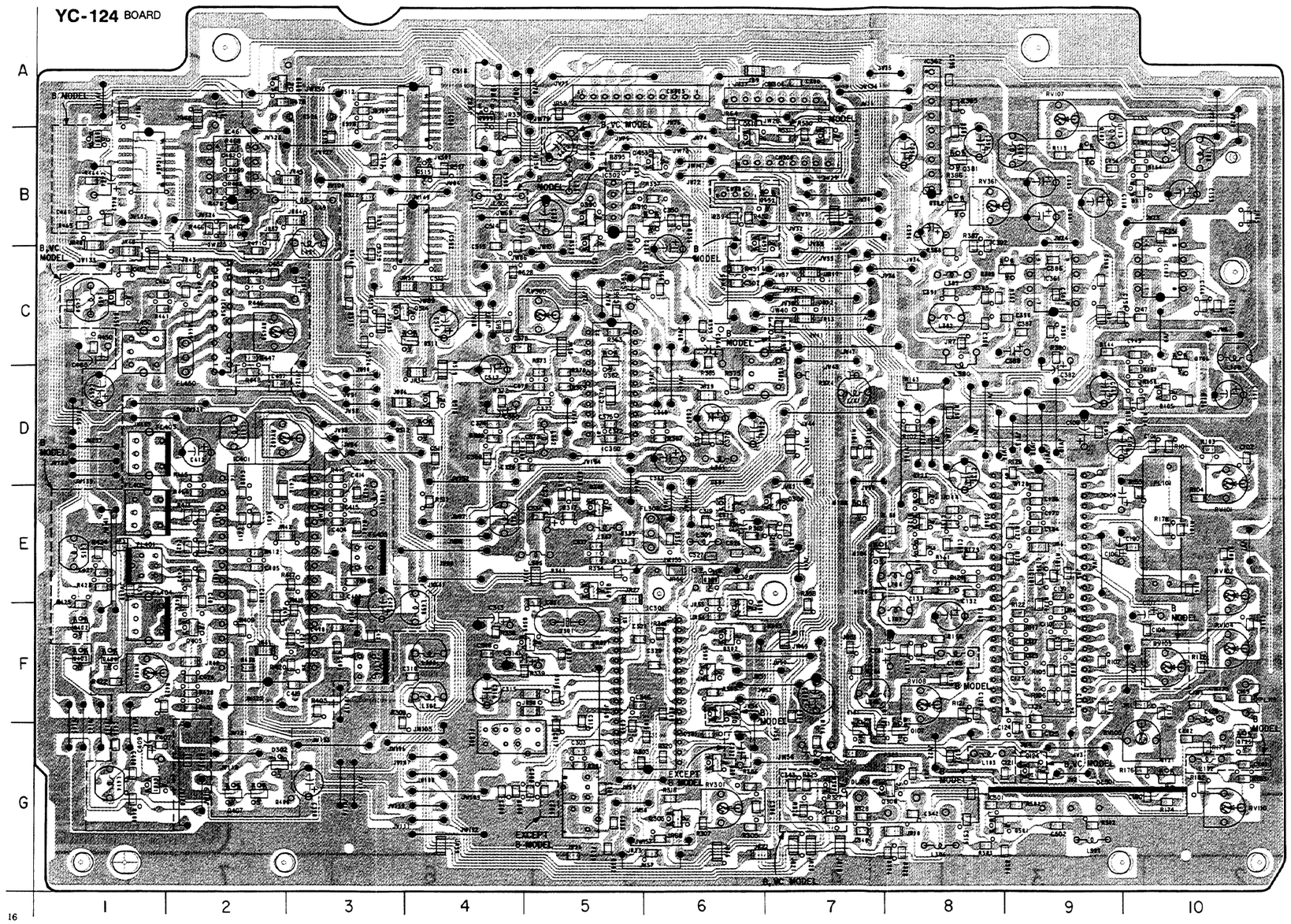
TRANSISTOR

Q102	8-729-216-22	2SA1162
Q104	8-729-901-01	DTC144EK
Q105	8-729-920-74	2SC2412K-QR
Q106	8-729-216-22	2SA1162
Q111	8-729-216-22	2SA1162
Q114	8-729-901-01	DTC144EK (EXCEPT B)
Q121	8-729-920-74	2SC2412K-QR
Q122	8-729-901-01	DTC144EK
Q123	8-729-901-01	DTC144EK
Q124	8-729-901-01	DTC144EK
Q125	8-729-901-01	DTC144EK
Q301	8-729-920-74	2SC2412K-QR
Q302	8-729-920-74	2SC2412K-QR
Q303	8-729-920-74	2SC2412K-QR
Q304	8-729-900-53	DTC114EK
Q305	8-729-216-22	2SA1162
Q306	8-729-901-01	DTC144EK
Q307	8-729-920-74	2SC2412K-QR (VC)
Q308	8-729-920-74	2SC2412K-QR
Q309	8-729-920-74	2SC2412K-QR
Q310	8-729-901-04	DTA114EK
Q352	8-729-901-01	DTC144EK (VC)
Q360	8-729-809-77	2SC3142-J4
Q362	8-729-901-01	DTC144EK
Q380	8-729-920-74	2SC2412K-QR
Q381	8-729-920-74	2SC2412K-QR
Q382	8-729-216-22	2SA1162
Q383	8-729-920-74	2SC2412K-QR (EXCEPT B)
Q390	8-729-901-01	DTC144EK (B)
Q401	8-729-920-74	2SC2412K-QR (B)
Q402	8-729-920-74	2SC2412K-QR (B)
Q403	8-729-901-47	DTA143EK (B)
Q405	8-729-920-74	2SC2412K-QR (B)
Q406	8-729-901-47	DTA143EK (B)
Q407	8-729-901-01	DTC144EK (B)
Q408	8-729-901-01	DTC144EK (B)
Q450	8-729-920-74	2SC2412K-QR
Q451	8-729-901-01	DTC144EK (B)
Q452	8-729-901-01	DTC144EK (B)
Q453	8-729-901-01	DTC144EK (B)

VIDEO VIDEO

Y C-124 (VIDEO) PRINTED WIRING BOARD

– Ref. No. YC-124 BOARD : 2,000 Series –



YC-124 BOARD

D101	G-7
D105	E-8
D301	E-6
D302	G-2
D401	B-1
IC101	E-9
IC102	C-10
IC301	F-6
IC302	B-5
IC360	C-5
IC361	C-9
IC362	B-8
IC401	E-2
IC450	C-2
IC460	B-1
IC461	B-2
IC501	B-4
IC502	B-4
Q102	B-9
Q104	E-7
Q105	D-10
Q106	D-10
Q111	B-10
Q121	G-10
Q122	E-8
Q123	E-8
Q124	G-9
Q125	G-10
Q301	G-6
Q302	F-6
Q303	E-5
Q304	E-6
Q305	G-6
Q306	E-7
Q307	G-7
Q308	G-8
Q309	F-5
Q310	B-6
Q352	F-6
Q360	E-5
Q362	C-5
Q380	C-9
Q381	B-8
Q382	B-8
Q383	B-5
Q390	E-6
Q401	G-1
Q402	F-1
Q403	F-1
Q405	F-2
Q406	G-2
Q407	G-2
Q408	F-1
Q450	C-1
Q451	C-7
Q452	B-7
Q453	B-6
Q460	A-2
Q501	G-8
Q502	F-6
Q511	C-3
Q512	D-3
Q513	D-4
Q513	C-3
Q514	B-4
Q515	B-5
Q516	B-7
Q517	B-7
Q518	A-4

TRANSISTOR

Q102	8-729-216-22 2SA1162	Q125	8-729-901-01 DTC144EK
Q104	8-729-901-01 DTC144EK	Q301	8-729-920-74 2SC2412K-QR
Q105	8-729-920-74 2SC2412K-QR	Q302	8-729-920-74 2SC2412K-QR
Q106	8-729-216-22 2SA1162	Q303	8-729-920-74 2SC2412K-QR
Q111	8-729-216-22 2SA1162	Q304	8-729-900-53 DTC114EK
Q114	8-729-901-01 DTC144EK (EXCEPT B)	Q305	8-729-216-22 2SA1162
Q121	8-729-920-74 2SC2412K-QR	Q306	8-729-901-01 DTC144EK
Q122	8-729-901-01 DTC144EK	Q307	8-729-920-74 2SC2412K-QR (VC)
Q123	8-729-901-01 DTC144EK	Q308	8-729-920-74 2SC2412K-QR
Q124	8-729-901-01 DTC144EK	Q309	8-729-920-74 2SC2412K-QR

Q310	8-729-901-04 DTA114EK	Q402	8-729-920-74 2SC2412K-QR (B)
Q352	8-729-901-01 DTC144EK (VC)	Q403	8-729-901-47 DTA143EK (B)
Q360	8-729-809-77 2SC3142-J4	Q405	8-729-920-74 2SC2412K-QR (B)
Q362	8-729-901-01 DTC144EK	Q406	8-729-901-47 DTA143EK (B)
Q380	8-729-920-74 2SC2412K-QR	Q407	8-729-901-01 DTC144EK (B)
Q381	8-729-920-74 2SC2412K-QR	Q408	8-729-901-01 DTC144EK (B)
Q382	8-729-216-22 2SA1162	Q450	8-729-920-74 2SC2412K-QR
Q383	8-729-920-74 2SC2412K-QR (EXCEPT B)	Q451	8-729-901-01 DTC144EK (B)
Q390	8-729-901-01 DTC144EK (B)	Q452	8-729-901-01 DTC144EK (B)
Q401	8-729-920-74 2SC2412K-QR (B)	Q453	8-729-901-01 DTC144EK (B)

Q460	8-729-901-01 DTC144EK	(B)
Q501	8-729-920-74 2SC2412K-QR	
Q502	8-729-901-01 DTC144EK	
Q511	8-729-920-74 2SC2412K-QR (EXCEPT B)	
Q512	8-729-920-74 2SC2412K-QR	
Q513	8-729-901-01 DTC144EK (EXCEPT B)	
Q513	8-729-920-74 2SC2412K-QR (B)	
Q514	8-729-901-01 DTC144EK	
Q515	8-729-901-01 DTC144EK	(B)
Q516	8-729-901-04 DTA114EK	(B)

Q517	8-729-901-47 DTA143EK	(B)
Q518	8-729-901-01 DTC144EK	(B)

1 2 3 4 5 6 7 8 9 10 11 12 13

– Ref. No. YC-124 BOARD : 2,000 Series –

A B C D E F G H I J

YC-124 BOARD (1/2)

NTSC PB

IC502

IC501

NTSC DELAY LINE

PAL DELAY LINE

IC361 HALF H SHIFT IC362

PAL JOG

IC360

IC302 SYNC

SYNC 1

3FSC OSC

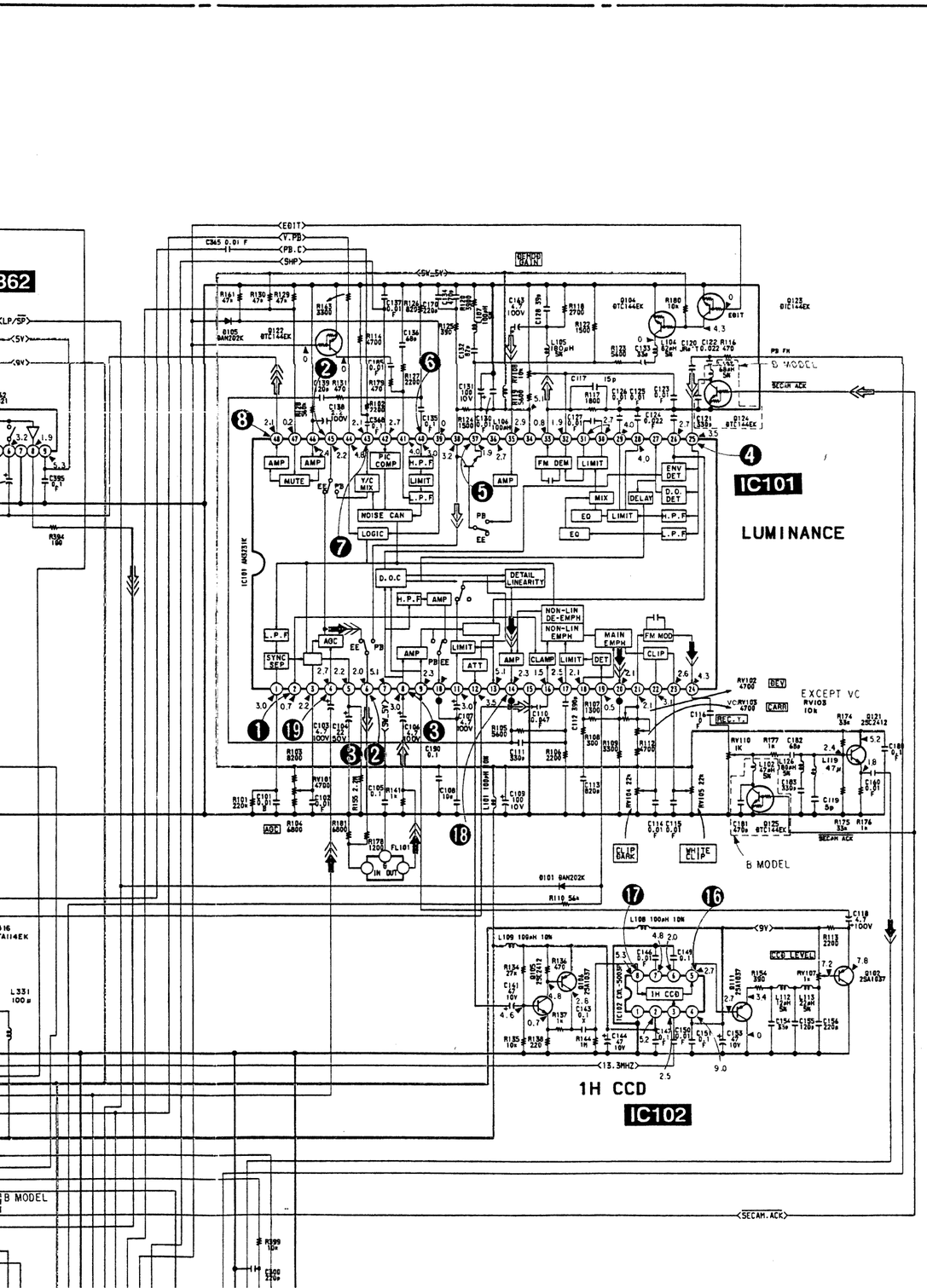
PAL CHROMA

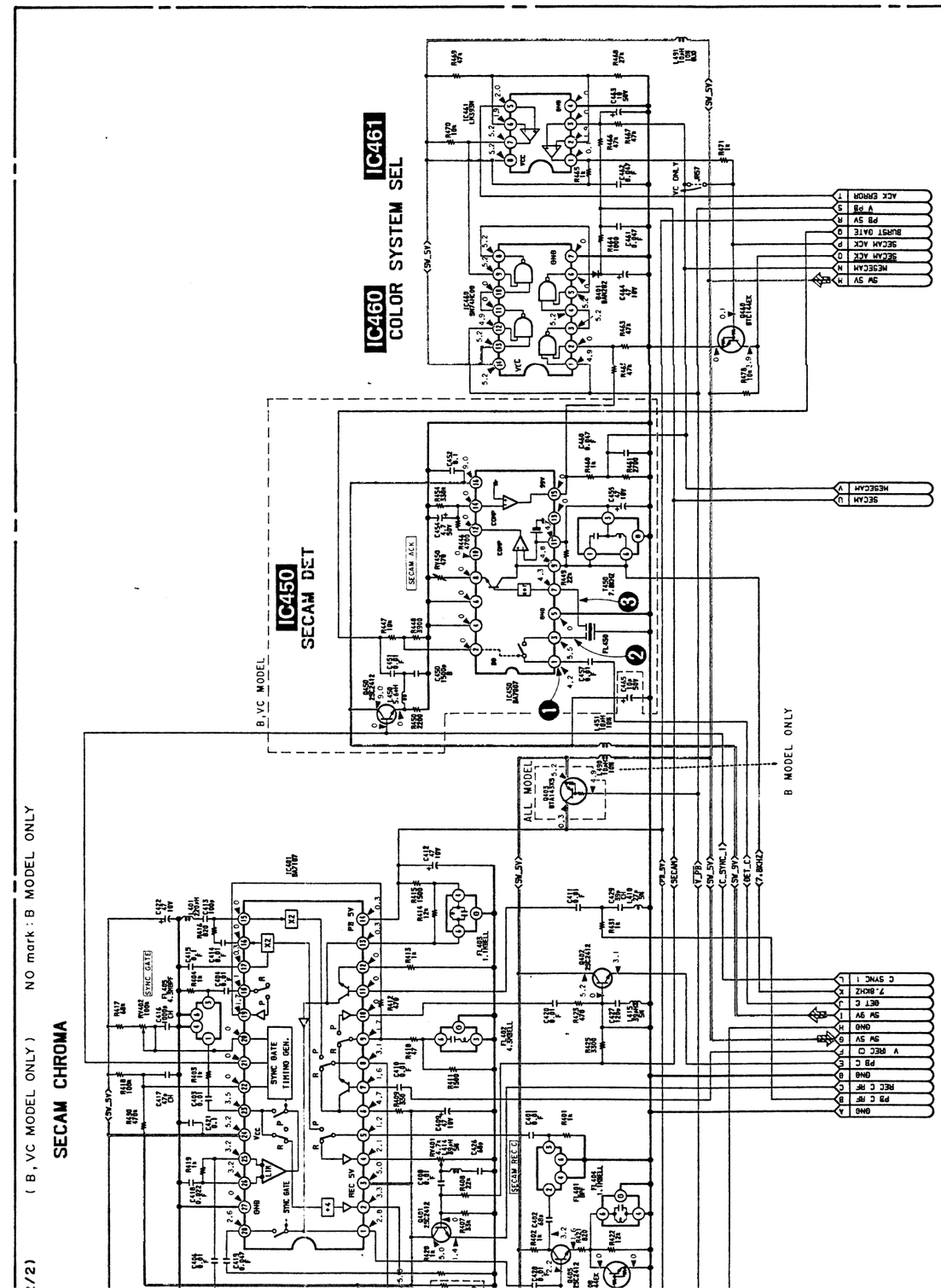
IC301

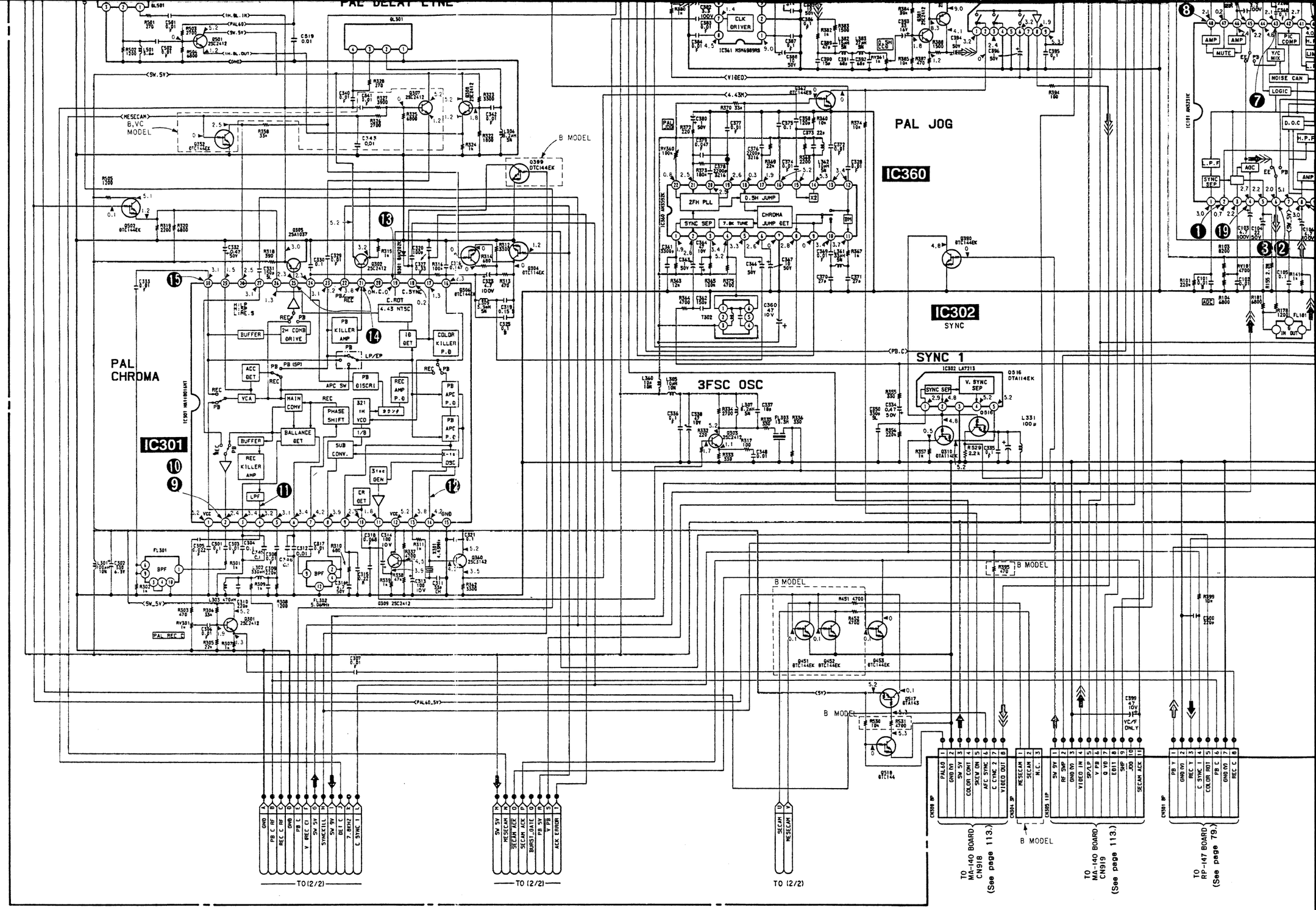
B MODEL

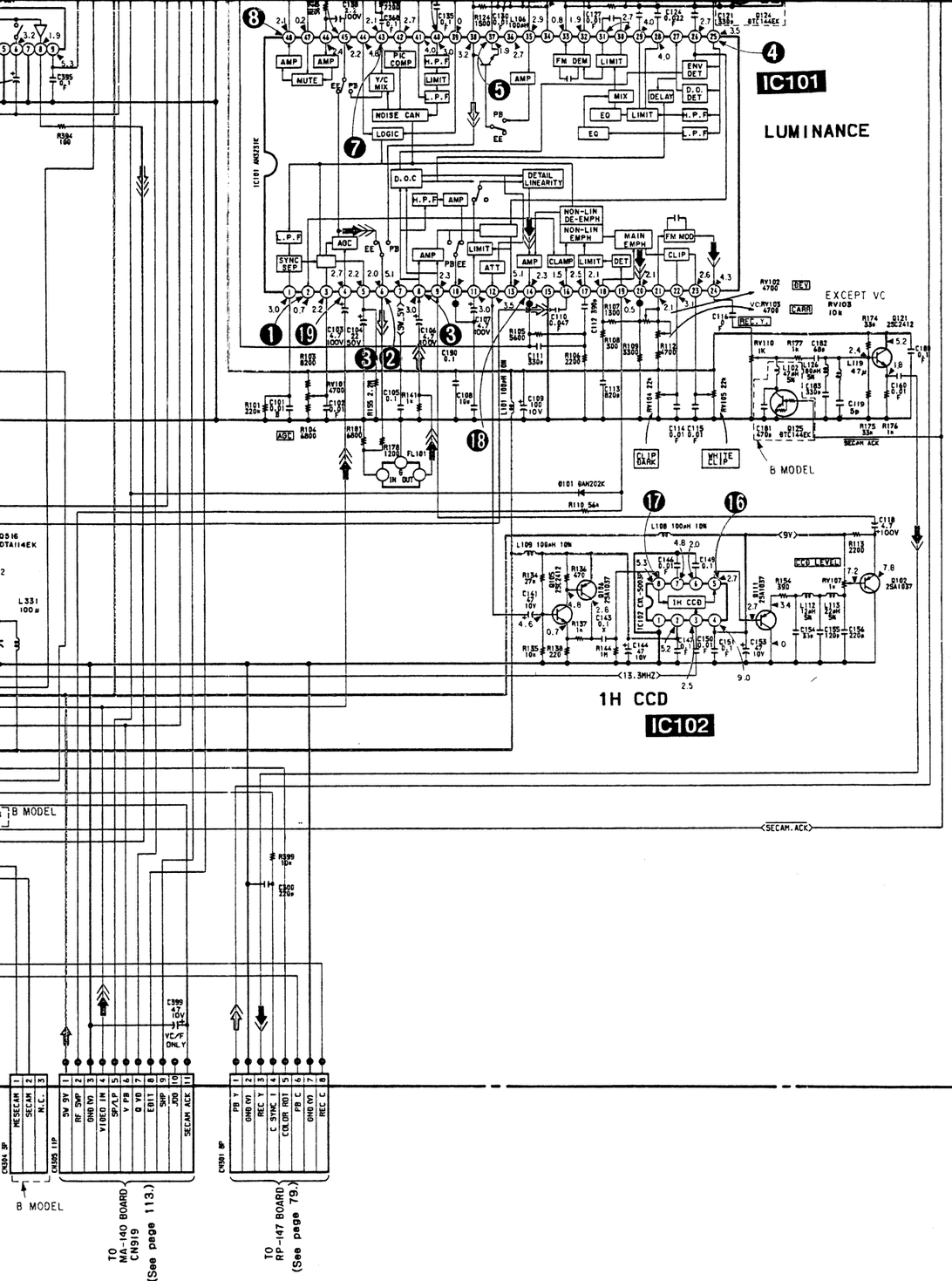
MESECAM B,VC MODEL

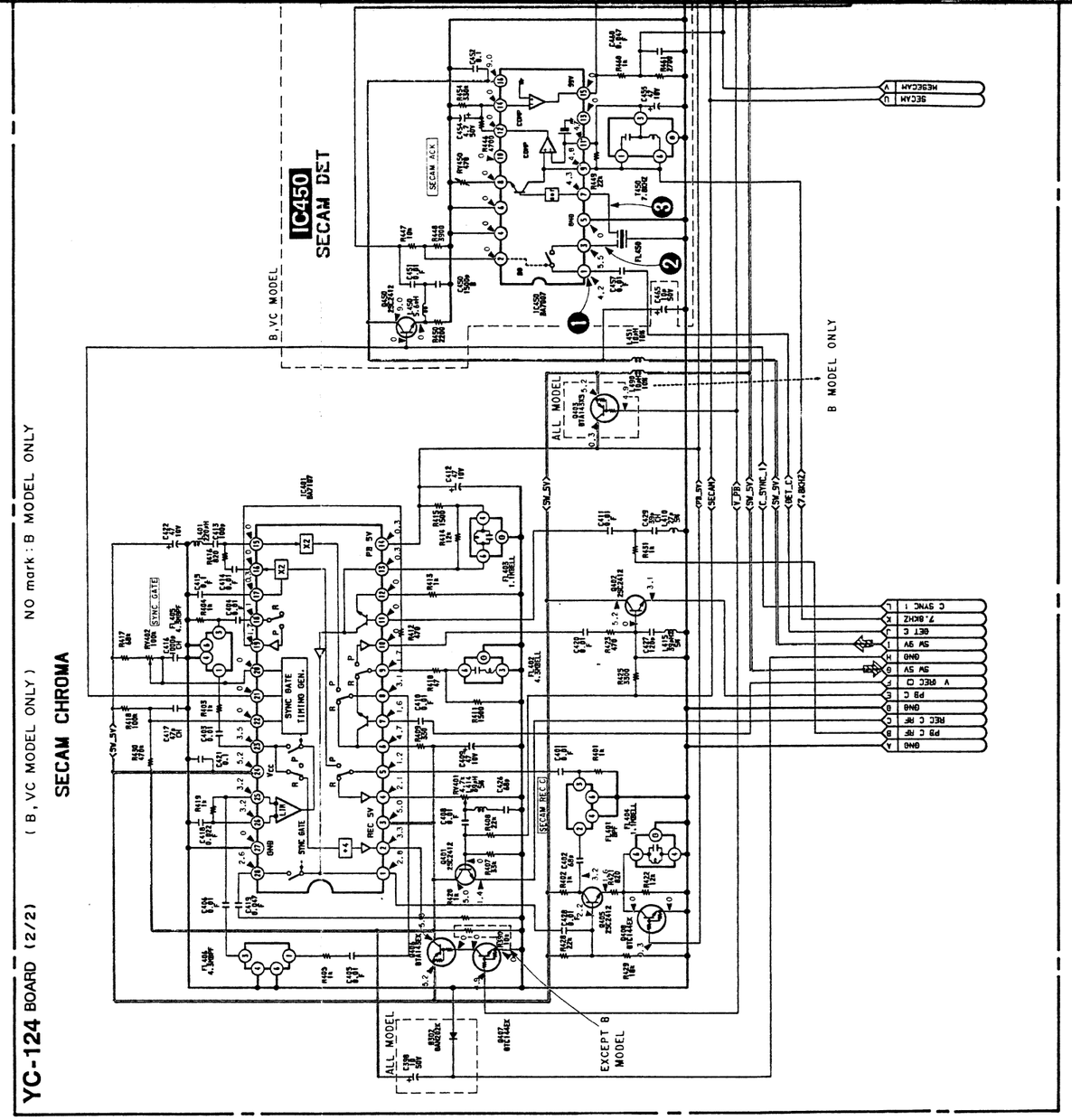
12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27






PAL DELAY LINE
PAL CHROMA
IC301
IC360
PAL JOG
IC302
SYNC
SYNC 1
3FSC OSC
B MODEL
(MESECAM)
B,VC MODEL
PAL REC
TO (2/2)
TO MA-140 BOARD CN918 (See page 113.)
TO MA-140 BOARD CN919 (See page 113.)
TO RP-147 BOARD (See page 79.)





- **Signal palth**

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

VI-116 (VIDEO INTERFACE) , CN-62(VIDEO/AUDIO INTERFACE), DI-43(RELAY) SCHEMATIC DIAGRAMS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E F G H I J K

– Ref. No. VI-116 BOARD : 3,000 Series, CN-62 BOARD : 4,000 Series, DI-43 BOARD : 5,000 Series –

CN-62 BOARD

IC801 TC4053 SELECTOR

IC802 BA4558F AMP

B, NP, VC MODEL

EURO-AV (LINE 3)
CANEL PLUS: NP
PAY-TV-DECODER: VC

CNJ101 21P EURO CON

A OUT (R)	1	
A IN (R)	2	
A OUT (L)	3	
GND (AUDIO)	4	
GND (B)	5	
A IN (L)	6	
BLUE	7	
CONTROL	8	
GND (G)	9	
	10	
GREEN	11	
	12	
GND (R)	13	
GND (I)	14	
RED	15	
I	16	
GND (V)	17	
GND (V)	18	
V OUT	19	
V IN	20	
GND (V)	21	

V1 (TO FRAME)

CN103 13P B-B

1	LINE3 OUT	TO VI-116 BOARD CN501 (See page 91.)
2	GND (V)	
3	LINE3 IN	
4	GND (V)	
5	I	
6	GND (A)	
7	LINE1 A (R) IN	
8	UNSW 12V	
9	LINE1 A (L) IN	
10	LINE3 OUT MUTE	
11	TUNER A (R) IN	
12	TUNER SEL	
13	TUNER A (L) IN	

CN102 8P

1	LINE3 A (R) IN	TO MA-140 BOARD CN913 (See page 114.)
2	LINE3 A (L) IN	
3	GND (A)	
4	C+ DET	
5	GND (V)	
6	R	
7	G	
8	B	

VI-116 BOARD

CN507 3P

LINE2 IN	1	TO MF-170 BOARD CN303 (See page 133.)
GND (V)	2	
GND (V)	3	

CN502 12P

UNSW 6V	1	TO MA-140 BOARD CN914 (See page 113.)
TUNER	2	
GND (V)	3	
LINE1 IN	4	
GND (V)	5	
YC IN	6	
GND (V)	7	
OSD OUT	8	
GND (V)	9	
AV OUT	10	
GND (V)	11	
SW 5V	12	

CN503 6P

L1 SEL	1	TO MA-140 BOARD CN915 (See page 113.)
L2 SEL	2	
THRU	3	
C+ CONT	4	
VPB	5	
H. DET	6	

B, NP, VC MODEL

CN505 13P

TUNER A (R) IN	1	TO MA-140 BOARD CN917 825VC/NP ONLY (See page 114.)
TUNER A (L) IN	2	
GND (A)	3	
LINE1 A (R) IN	4	
LINE1 A (L) IN	5	
GND (A)	6	
TUNER SEL	7	
LINE3 OUT MUTE	8	
GND (V)	9	
GND (V)	10	
UNSW 12V	11	
I	12	
RGB CONT	13	

CN504 11P

SAT.C+ SEL	1	TO MA-140 BOARD CN916 (See page 113.)
P IN P	2	
CHILD SEL	3	
LINE OUT SEL	4	
P.C ALT	5	
DIGITAL DN	6	
LINE OUT	7	
GND (V)	8	
OSD IN	9	
GND (V)	10	
YC OUT	11	

EXCEPT B MODEL

CN506 8P

AGC OUT	1	TO DI-43 BOARD CN206 (See page 94.) / TC-27 BOARD CN102 (See page 142.) B MODEL
GND (V)	2	
Y OUT	3	
GND (V)	4	
00 OUT	5	
GND (V)	6	
OSD OUT	7	
GND (V)	8	

DI-43 BOARD

CN203 13P

Ø GND	1	TO DG-11 BOARD CN103 (See page 105.)
Ø 5V	2	
PinP R MUTE	3	
PinP L MUTE	4	
PinP EDIT	5	
PinP STILL	6	
PinP SHIFT	7	
PinP ON	8	
PinP PC	9	
GND	10	
SW 5V	11	
SW 5V	12	

14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28

VI-116 BOARD

INPUT SELECT

TUNER SELECT

LINE3 AMP

AV OUT SELECT

IC501

IC502

IC504

IC503

B MODEL

EXCEPT B MODEL

CHILD TUNER SELECT
(CANAL PLUS MODELS ONLY)

CHILD SELECT

CHILD AGC

IC555

IC551

IC552

B,NP,VC MODEL

EXCEPT B MODEL

H DET

PARENT (OSD) SEL

CHILD IN SEL
(NON DUAL MODELS ONLY)

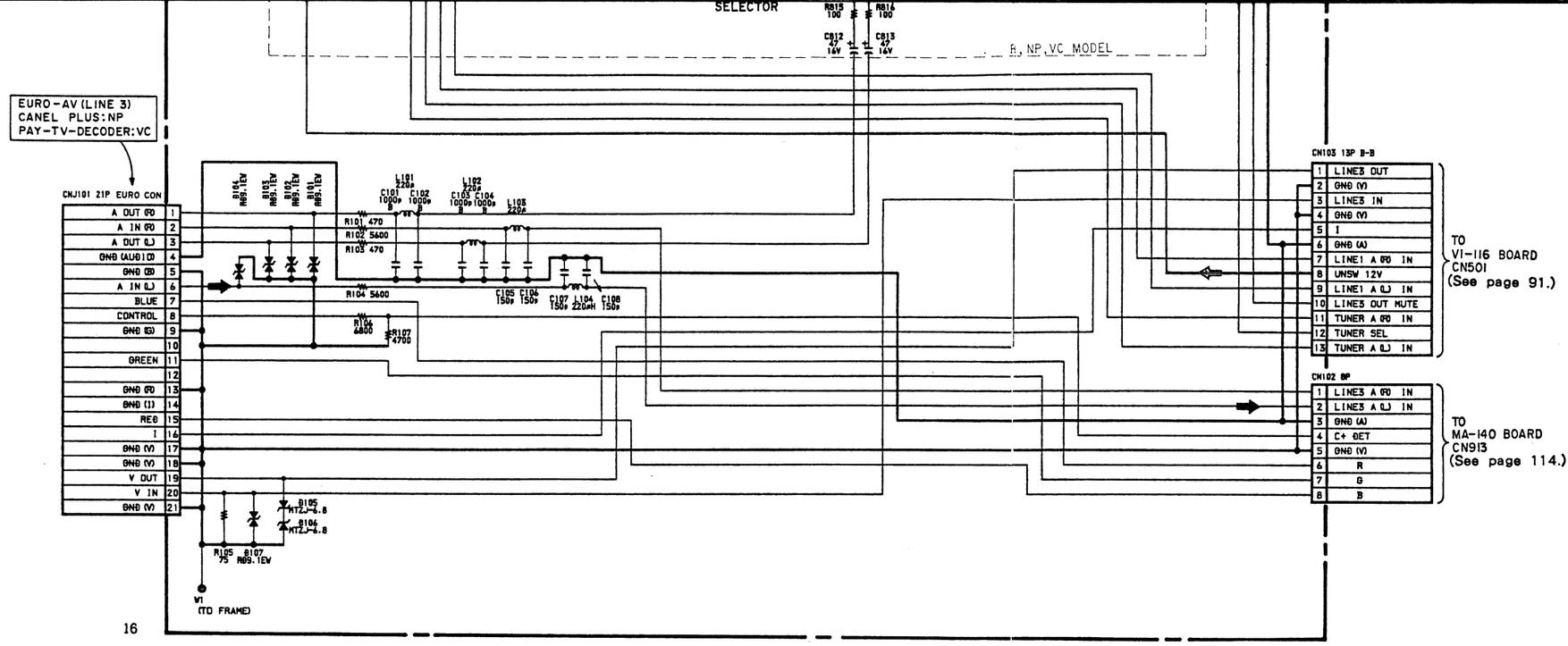
LINE OUT SEL

IC553

IC556

IC554

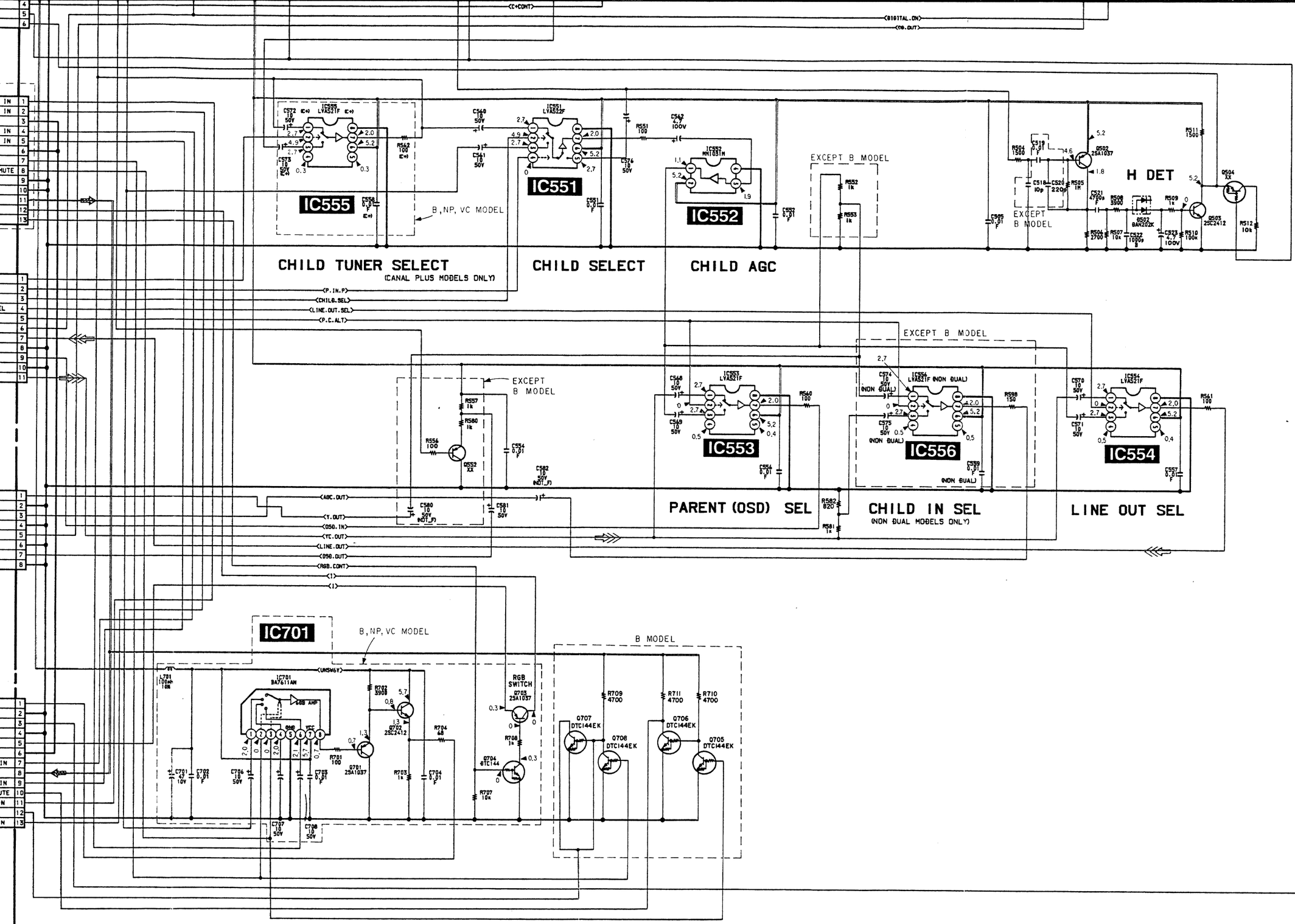
(NON DUAL)



- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡⋙	➡
PB			⇨⋙	

INTERFACE INTERFACE


IC555
B,NP,VC MODEL
CHILD TUNER SELECT
(CANAL PLUS MODELS ONLY)
IC551
CHILD SELECT
IC552
CHILD AGC
EXCEPT B MODEL
H DET
EXCEPT B MODEL
IC553
PARENT (OSD) SEL
IC556
(NON DUAL)
CHILD IN SEL
(NON DUAL MODELS ONLY)
IC554
LINE OUT SEL
IC701
B,NP,VC MODEL
B MODEL
CANAL PLUS-VIDEO
CANAL PLUS-RGB

VI-116 (VIDEO INTERFACE) , CN-62(VIDEO/AUDIO INTERFACE), DI-43(RELAY) PRINTED WIRING BOARDS

—Ref. No. VI-116 BOARD : 3,000 Series, CN-62 BOARD : 4,000 Series, DI-43 BOARD : 5,000 Series —

VI-116 BOARD

D511	C-3
D512	A-4
D513	D-5
D514	D-5
D515	D-5
IC001	D-4
IC002	D-3
IC003	C-1
IC004	D-2
IC051	C-6
IC052	C-6
IC053	B-7
IC054	B-7
IC055	C-7
IC056	B-6
IC101	A-2
Q511	C-5
Q512	B-4
Q513	A-4
Q514	B-3
Q516	D-5
Q517	D-5
Q518	C-4
Q552	A-5
Q701	A-1
Q702	A-1
Q703	A-2
Q704	A-2
Q705	B-2
Q706	B-3
Q707	B-3
Q708	B-2

DIODE

D501	8-719-911-19	1SS119
D502	8-719-911-19	1SS119
D503	8-719-911-19	1SS119 (B)
D504	8-719-911-19	1SS119 (B)
D505	8-719-911-19	1SS119 (B)

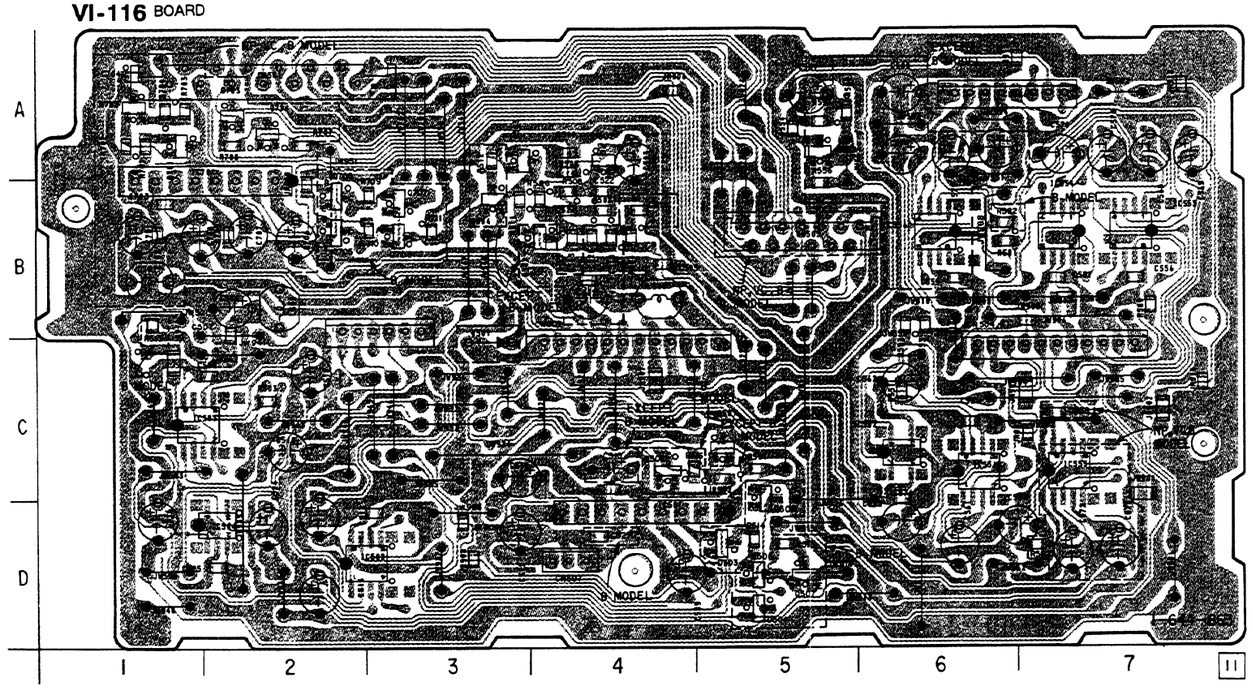
IC

IC502	8-759-048-09	MM1148XFF
IC503	8-759-501-21	MM1149XF
IC551	8-759-501-21	MM1149XF
IC553	8-759-048-09	MM1148XFF
IC554	8-759-048-09	MM1148XFF
IC555	8-759-048-09	MM1148XFF (NP/VC)
IC556	8-759-048-09	MM1148XFF

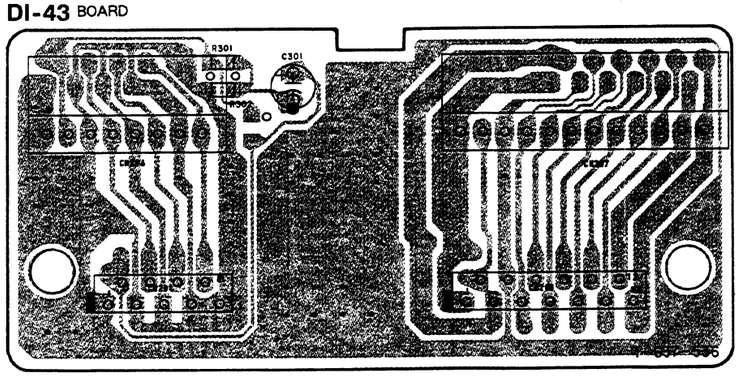
TRANSISTOR

Q501	8-729-120-28	2SC1623-L5L6
Q502	8-729-216-22	2SA1162
Q503	8-729-120-28	2SC1623-L5L6
Q504	8-729-900-53	DTC114EK
Q506	8-729-901-06	DTA144EK (B)

VI-116 BOARD



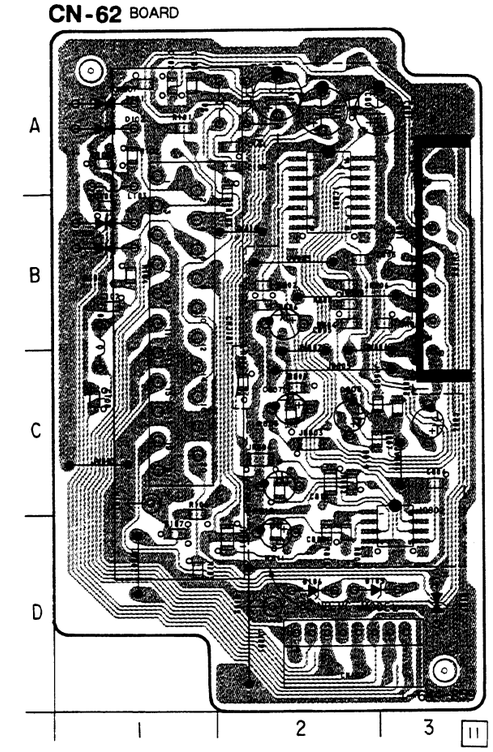
DI-43 BOARD



Q507	8-729-901-01	DTC144EK (B)
Q508	8-729-901-01	DTC144EK (B)
Q552	8-729-216-22	2SA1162
Q701	8-729-216-22	2SA1162 (NP/VC)
Q702	8-729-120-28	2SC1623-L5L6 (NP/VC)
Q703	8-729-216-22	2SA1162 (NP/VC)
Q704	8-729-901-01	DTC144EK (NP/VC)
Q705	8-729-901-01	DTA144EK (B)
Q706	8-729-901-01	DTA144EK (B)
Q707	8-729-901-01	DTA144EK (B)
Q708	8-729-901-01	DTA144EK (B)

16

CN-62 BOARD



CNJ101

EURO AV (LINE 3)	
CANAL PLUS	→VC MODEL
PAY TV DECODER	→NP MODEL

CN-62 BOARD

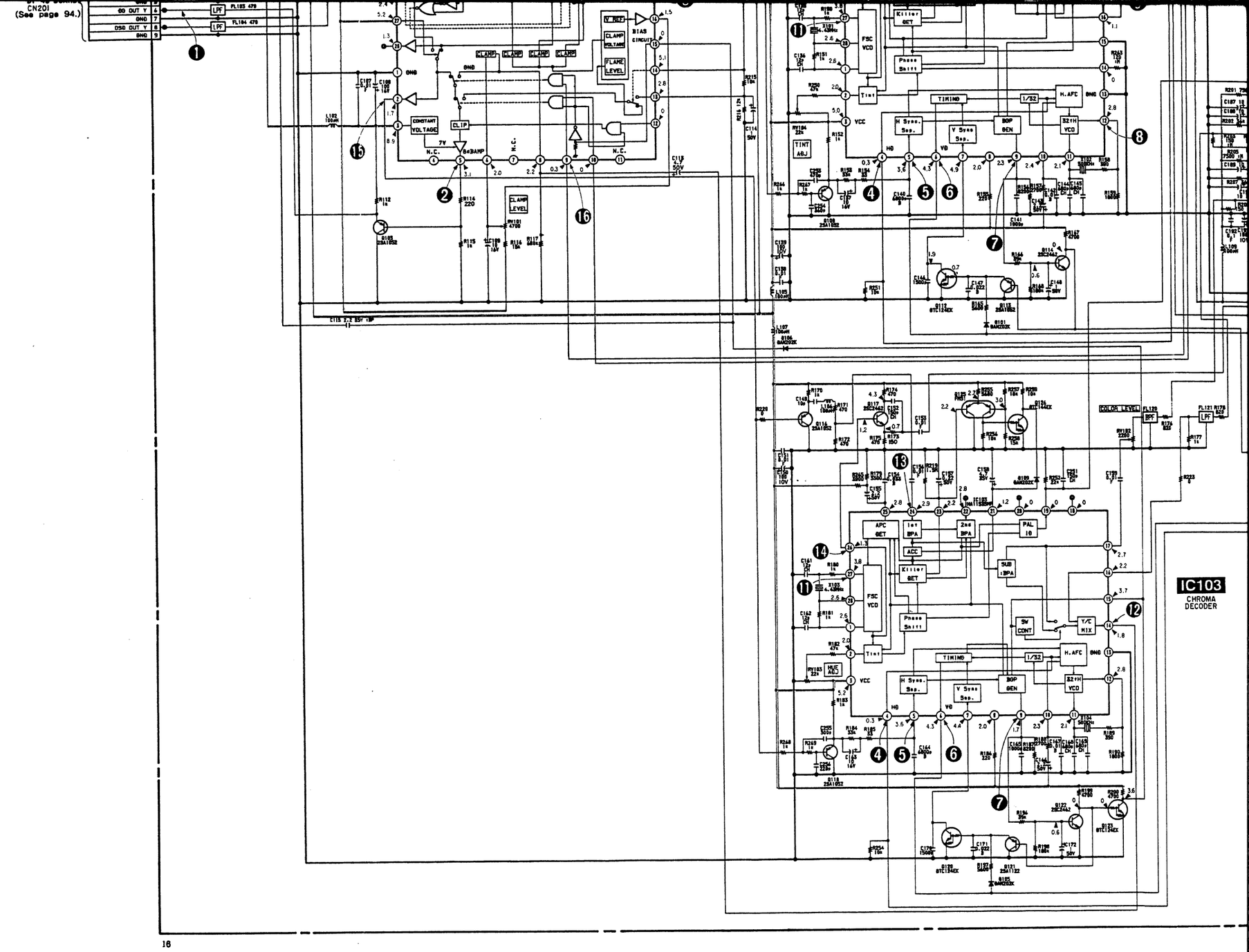
D101	A-1
D102	A-1
D103	B-1
D104	B-1
D105	D-2
D106	D-2
D107	D-3
IC801	B-2
IC802	C-3

IC

IC802	8-759-909-71	BA4558F (NP/VC)

DG-11 BOARD

❶ 1.8Vp-p H CN101 ⑥	❽ 1.2Vp-p 4.98kHz IC102 ⑫
❷ (PAL) 2Vp-p H IC101 ⑤	❾ 0.7Vp-p 2H IC102 ⑰
❷ (SECAM) 2.8Vp-p H IC101 ⑤	❿ 1Vp-p 2H IC102 ⑱
❸ (PAL) 1Vp-p H IC101 ⑰ ㉓ ㉖	⓫ 1Vp-p 4.43MHz IC102 ㉗ IC103 ㉗
❸ (SECAM) 1.2Vp-p H IC101 ㉖	⓬ 1Vp-p H IC103 ⑭
❹ 4Vp-p H IC102 ④ IC103 ④	⓭ 0.2Vp-p H IC103 ㉔
❺ 1Vp-p H IC102 ⑤ IC103 ⑤	⓮ 0.8Vp-p 4.43MHz IC103 ㉖
❻ 4.3Vp-p V IC102 ⑥ IC103 ⑥	⓯ (SECAM) 1Vp-p H IC101 ②
❼ 2.5Vp-p H IC102 ⑨ IC103 ⑨	⓰ (SECAM) 5.2Vp-p H IC101 ⑨



CG-15 (DISPLAY CONTROLLER) PRINTED WIRING BOARD

– Ref. No. CG-15 BOARD : 6,000 Series –

CG-15 BOARD

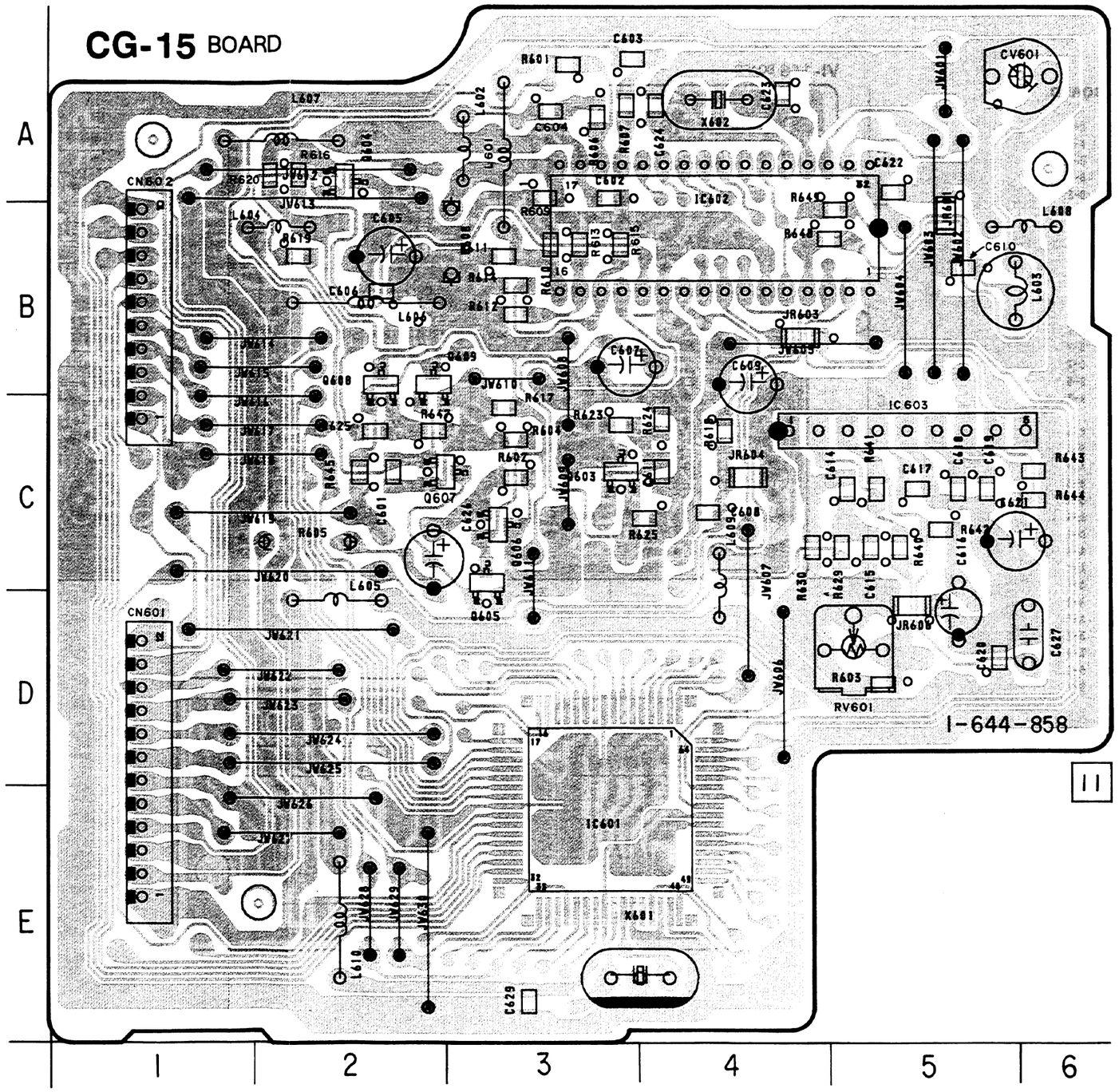
IC601	E-3
IC602	B-4
IC603	C-5
Q603	C-3
Q604	A-2
Q605	D-3
Q606	C-3
Q607	C-2
Q608	B-2
Q609	B-3

IC

IC601 8-759-078-01 uPD78013GC-VSX1760

TRANSISTOR

Q603	8-729-422-28	2SD601A-R
Q604	8-729-422-37	2SB709A-R
Q605	8-729-424-18	UN2113
Q606	8-729-422-28	2SD601A-R
Q607	8-729-421-19	UN2213
Q608	8-729-422-28	2SD601A-R (VC)
Q609	8-729-421-19	UN2213 (VC)



SS) SCHEMATIC DIAGRAM

3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

00 Series –

11 BOARD

IC101
SELECTOR

IC102

IC104
DAC/ADC
MEMORY CONTROL

IC108
VD/P. VD
SELECTOR

IC105
MEMORY RAM

IC103
CHROMA
DECODER

CG-15 (DISPLAY CONTROLLER) SCHEMATIC DIAGRAM

– Ref. No. CG-15 BOARD : 6,000 Series –

CG-15 BOARD

CN601 12P 2.0 B TO B

SW 5V	1	
VIDEO IN	2	
GND (SW)	3	
VIDEO OUT	4	
UNSW 5V	5	
GND (UNSW)	6	
SI BUS	7	
S CLK	8	
OSD CS	9	
COSMO RST	10	
AFC SYNC	11	
SECAM ACK	12	

TO MA-140

TO MA-140 BOARD CN923 (See page 112.)

CN602 10P 2.0 B TO B

RGB CONT	1	C1
L3 A MUTE	2	C2
TUNER SEL	3	C3
C+ CONT	4	C4
SAT/C+ SEL	5	C5
TUNER	6	C7
LINE OUT SEL	7	C8
PAL 60	8	B3
THRU	9	B4
MOD ON	10	B5

TO MA-140

TO MA-140 BOARD CN922 (See page 112.)

IC601
OSD CONTROL
IC601 μPD780136C
24K ROM
OSD CONTROL UCOM

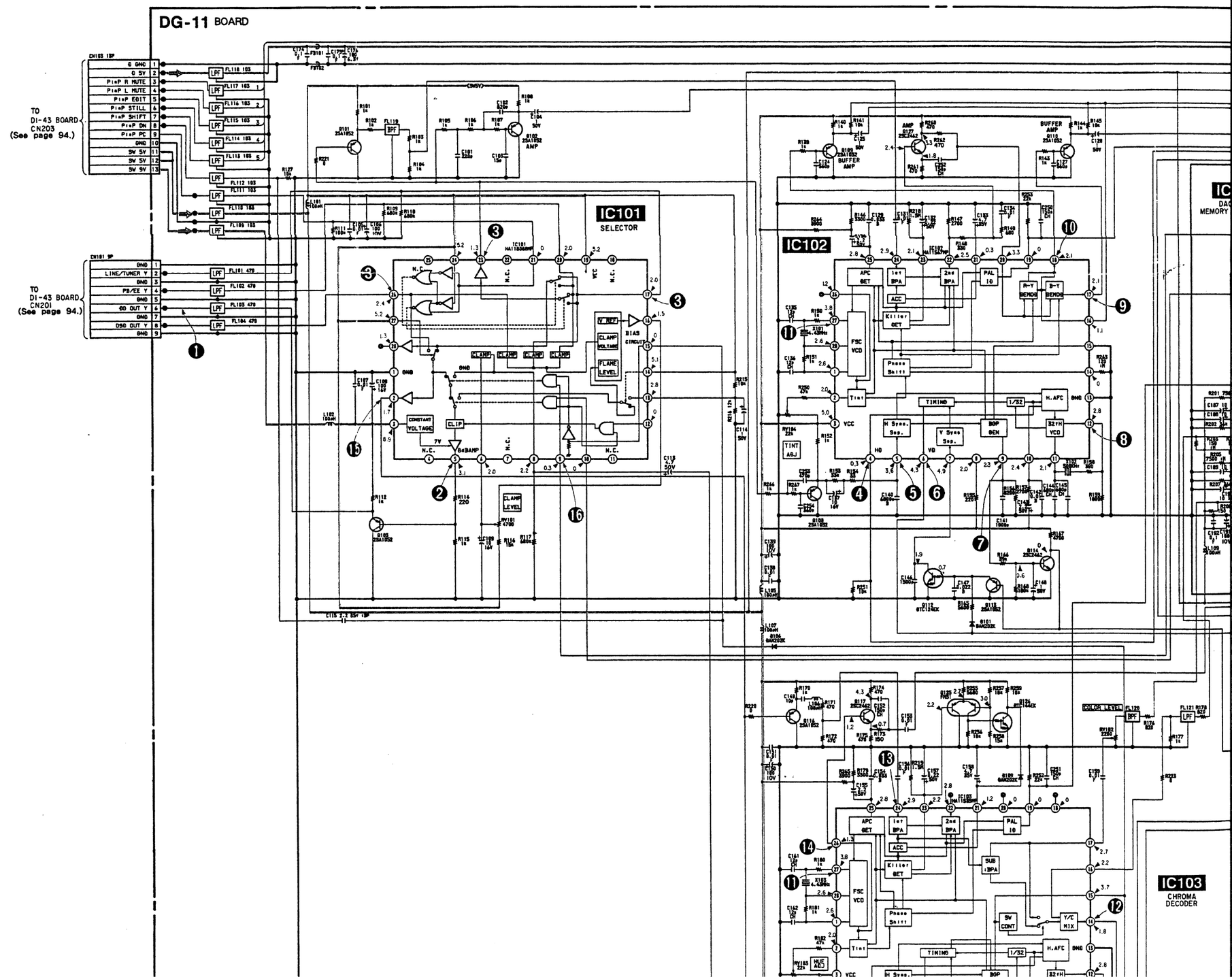
IC602
ON SCREEN DISPLAY
IC602 M50555-VSX1760

IC603
AFC
IC603 LVA519S

AFC ADJ

DG-11 (DIGITAL PICTURE PROCESS) SCHEMATIC DIAGRAM

– Ref. No. DG-11 BOARD : 7,000 Series –



DG-11 BOARD

❶ 1.8Vp-p, H — CN101 ⑥	❽ 1.2Vp-p, 4.98kHz — IC102 ⑫
❷ (PAL) 2Vp-p, H — IC101 ⑤	❾ 0.7Vp-p, 2H — IC102 ⑰
❷ (SECAM) 2.8Vp-p, H — IC101 ⑤	❿ 1Vp-p, 2H — IC102 ⑱
❸ (PAL) 1Vp-p, H — IC101 ⑰ ㉓ ㉖	⓫ 1Vp-p, 4.43MHz — IC102 ㉗, IC103 ㉗
❸ (SECAM) 1.2Vp-p, H — IC101 ㉖	⓬ 1Vp-p, H — IC103 ⑭
❹	⓭

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

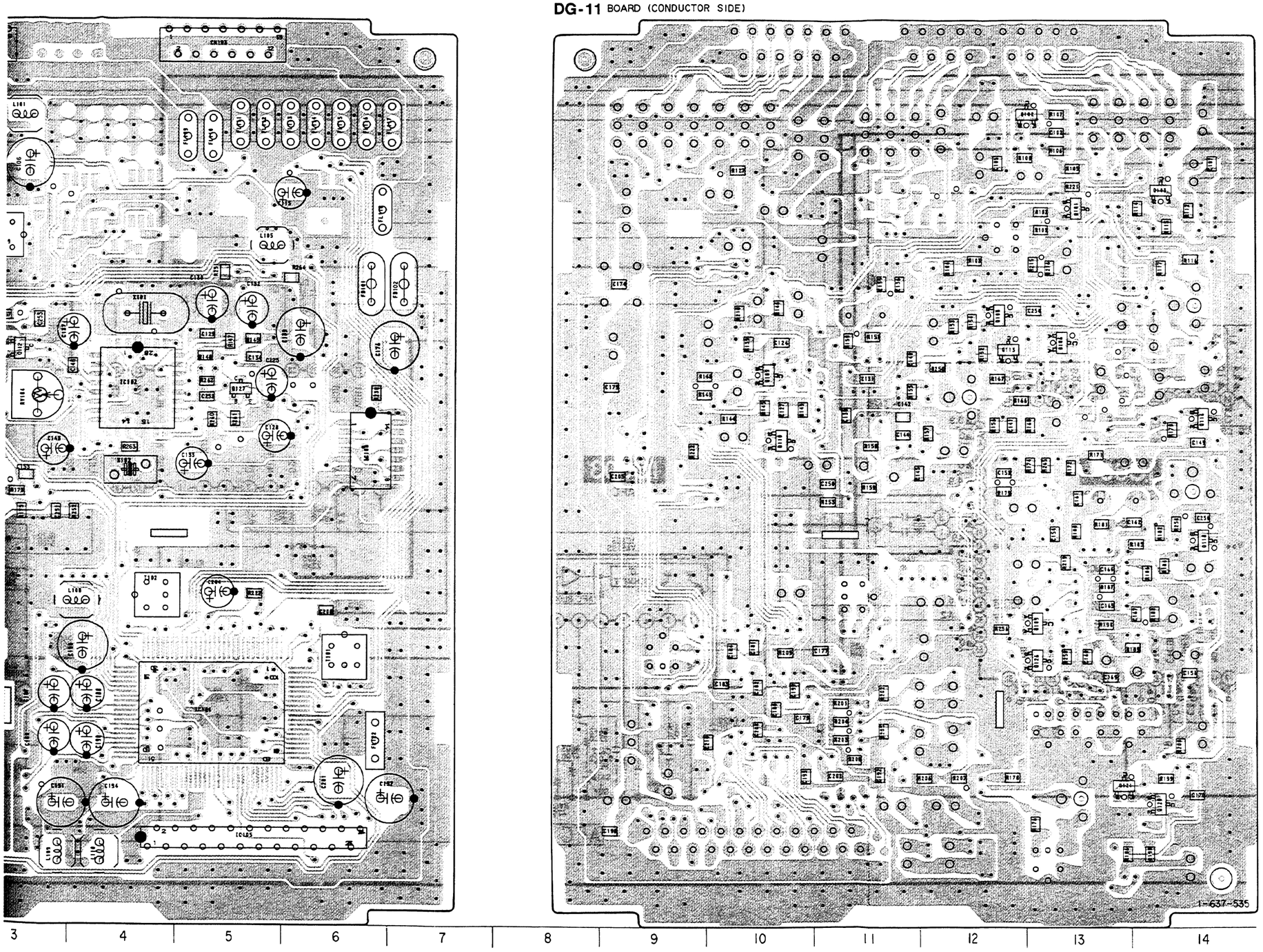
IC602
ON SCREEN DISPLAY

IC603
AFC

IC603
LVA519S

AFC ADJ

DG-11 BOARD (CONDUCTOR SIDE)



DG-11 BOARD

D101	C-2
D105	H-2
D106	D-13
D109	F-13
IC101	B-2
IC102	D-4
IC103	F-2
IC104	G-5
IC105	H-5
IC108	E-6
Q101	B-13
Q102	A-13
Q103	B-14
Q108	C-12
Q109	D-10
Q110	E-10
Q112	D-3
Q113	D-12
Q114	D-3
Q116	D-14
Q117	E-3
Q118	E-14
Q120	H-14
Q121	H-13
Q122	H-2
Q123	H-1
Q125	F-3
Q126	F-13
Q127	D-5

DIODE

D101	8-719-400-18	MA152WK
D105	8-719-400-18	MA152WK
D106	8-719-400-18	MA152WK
D109	8-719-400-18	MA152WK

IC

IC104	8-759-322-68	HD49410
IC108	8-759-008-74	MC14001BF

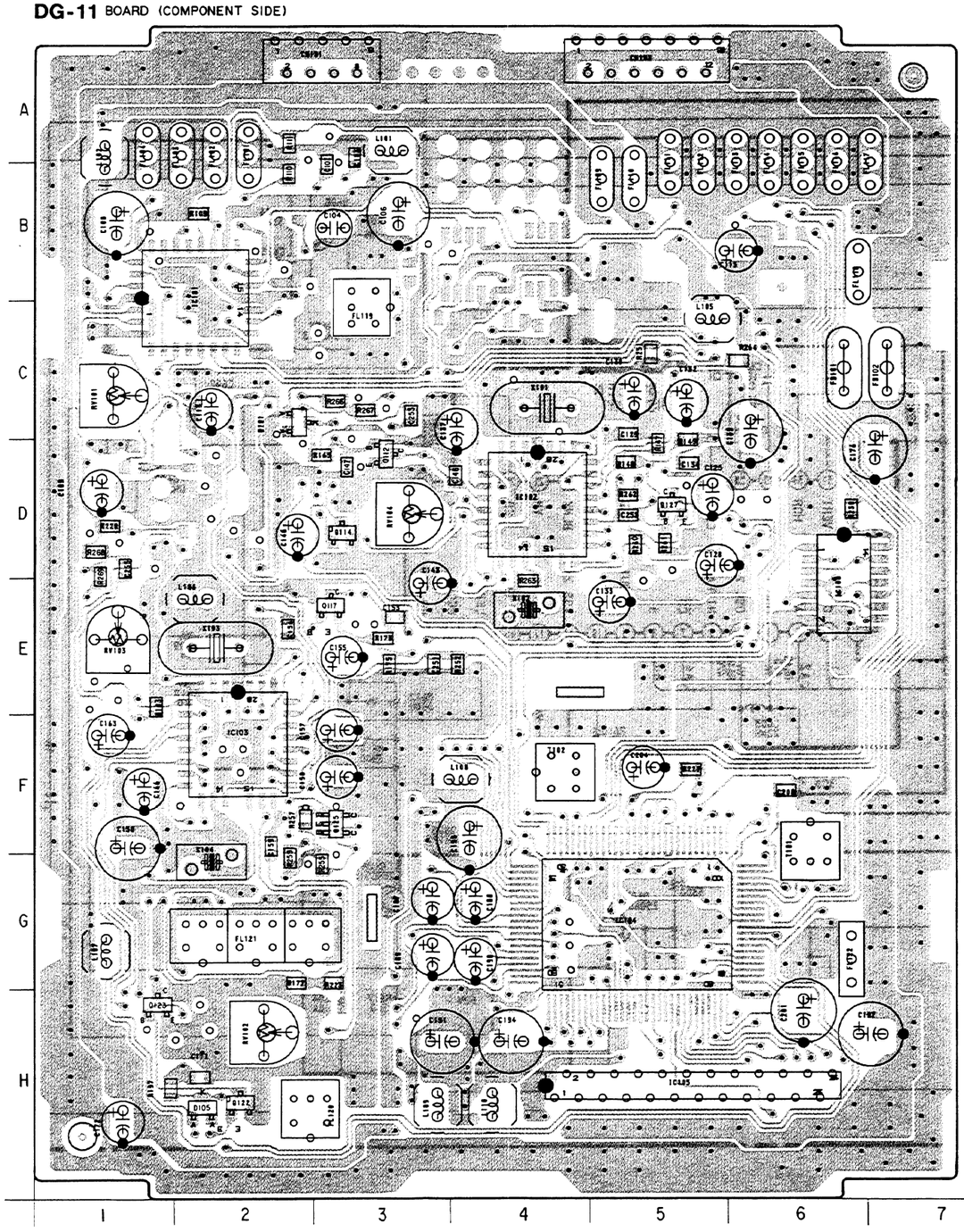
TRANSISTOR

Q101	8-729-305-25	2SA1052-C
Q102	8-729-305-25	2SA1052-C
Q103	8-729-305-25	2SA1052-C
Q108	8-729-305-25	2SA1052-C
Q109	8-729-305-25	2SA1052-C
Q110	8-729-305-25	2SA1052-C
Q112	8-729-901-00	DTC124EK
Q113	8-729-305-25	2SA1052-C
Q114	8-729-230-49	2SC2712-G
Q116	8-729-305-25	2SA1052-C
Q117	8-729-230-49	2SC2712-G
Q118	8-729-305-25	2SA1052-C
Q120	8-729-901-00	DTC124EK
Q121	8-729-305-25	2SA1052-C
Q122	8-729-230-49	2SC2712-G
Q123	8-729-901-00	DTC124EK
Q125	8-729-902-96	FMS1
Q126	8-729-901-01	DTC144EK
Q127	8-729-230-49	2SC2712-G

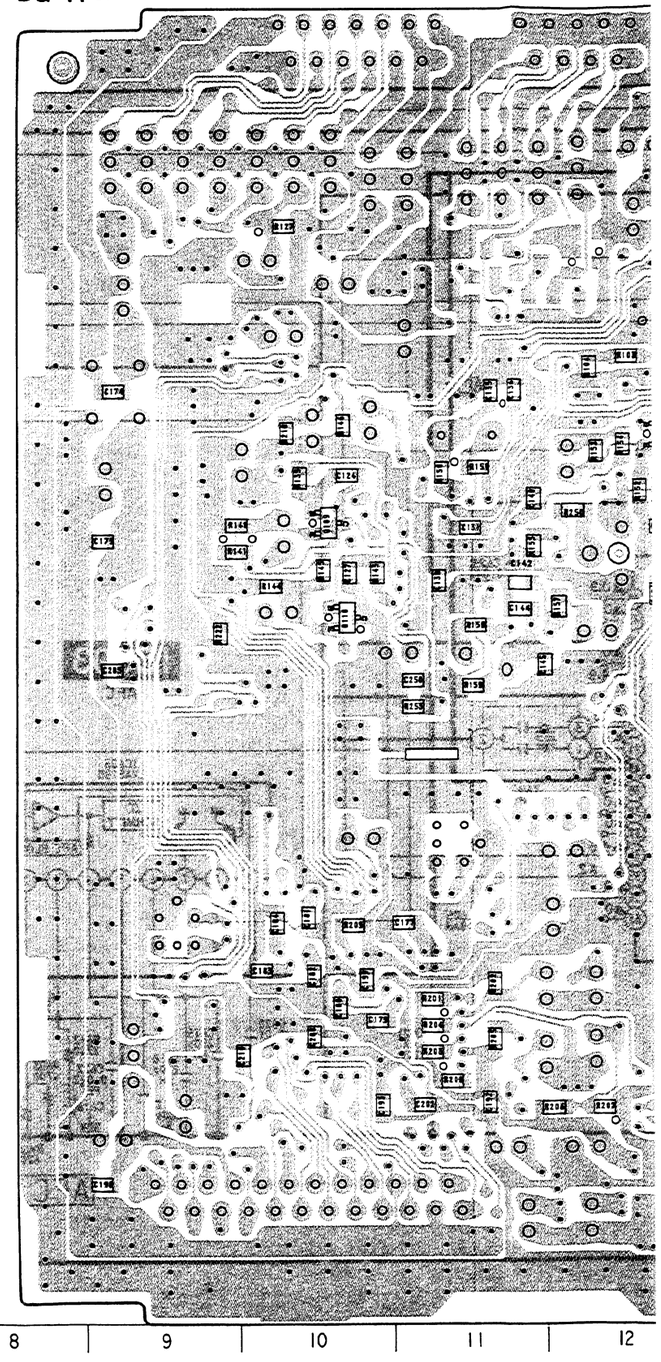
DG-11 (DIGITAL PICTURE PROCESS) PRINTED WIRING BOARD

– Ref. No. DG-11 BOARD : 7,000 Series –

DG-11 BOARD (COMPONENT SIDE)



DG-11 BOARD (CONDUCTOR SIDE)



IC108
VD/P. VD
SELECTOR

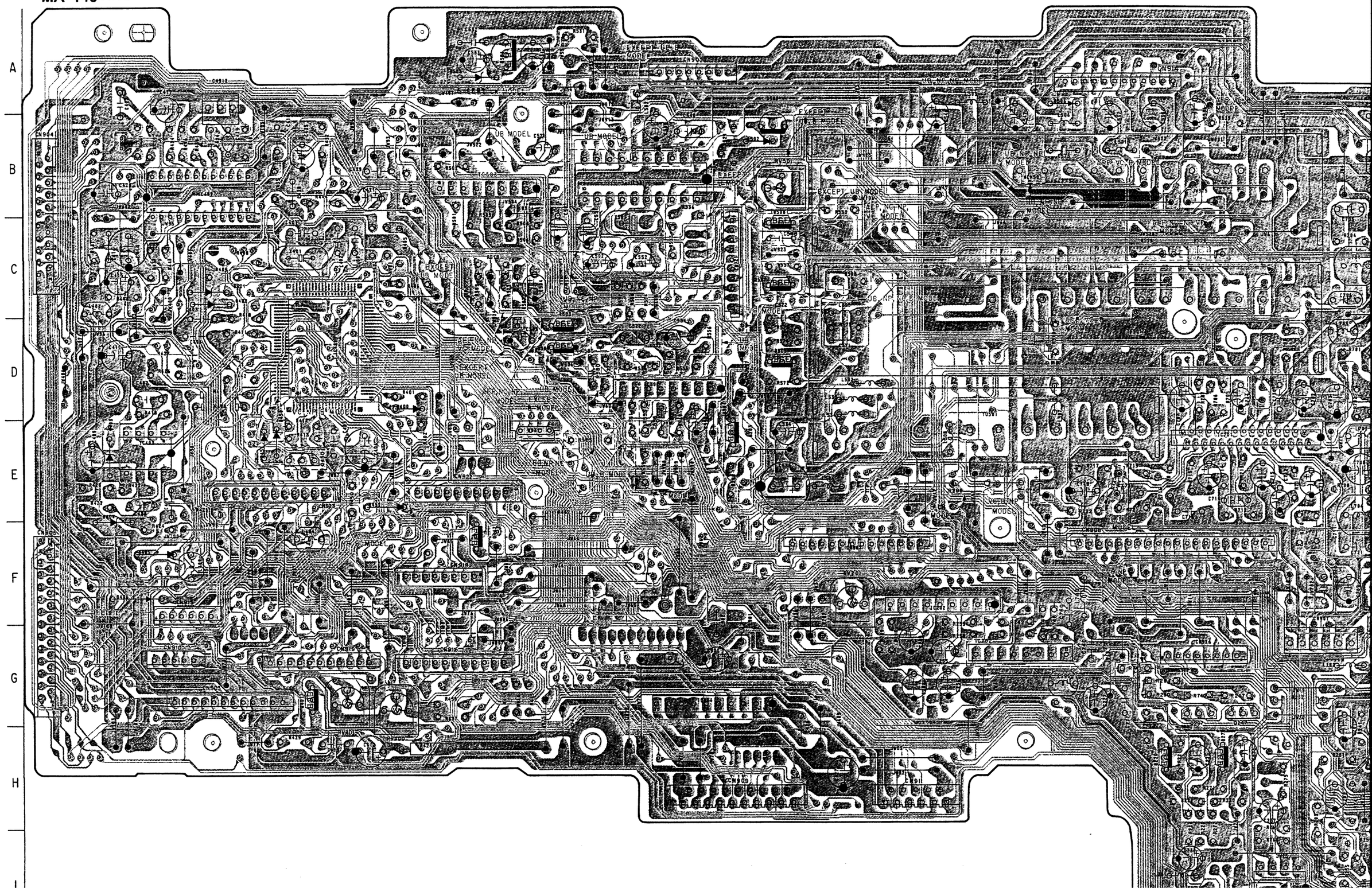
IC105
MEMORY RAM

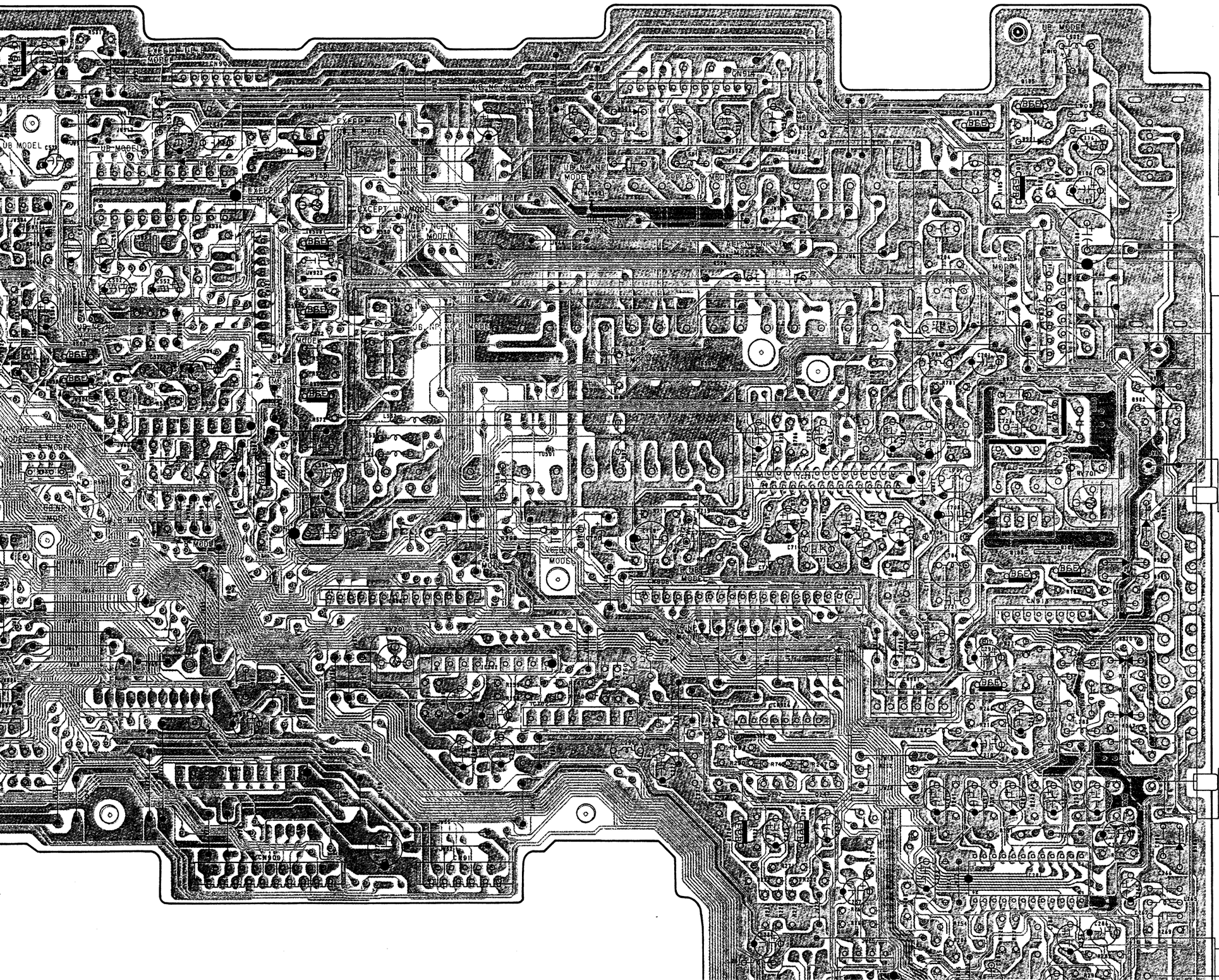
IC103
CHROMA
DECODER

MA-140 (SERVO, SYSTEM CONTROL, MECHANISM DRIVE, AMP), VP-33(SERVO/SYSTEM CONTROL MICROPROCESSOR) PRINTED WIRING BOARDS

– Ref. No. MA-140 BOARD : 8,000 Series, VP-33 BOARD : 9,000 Series –

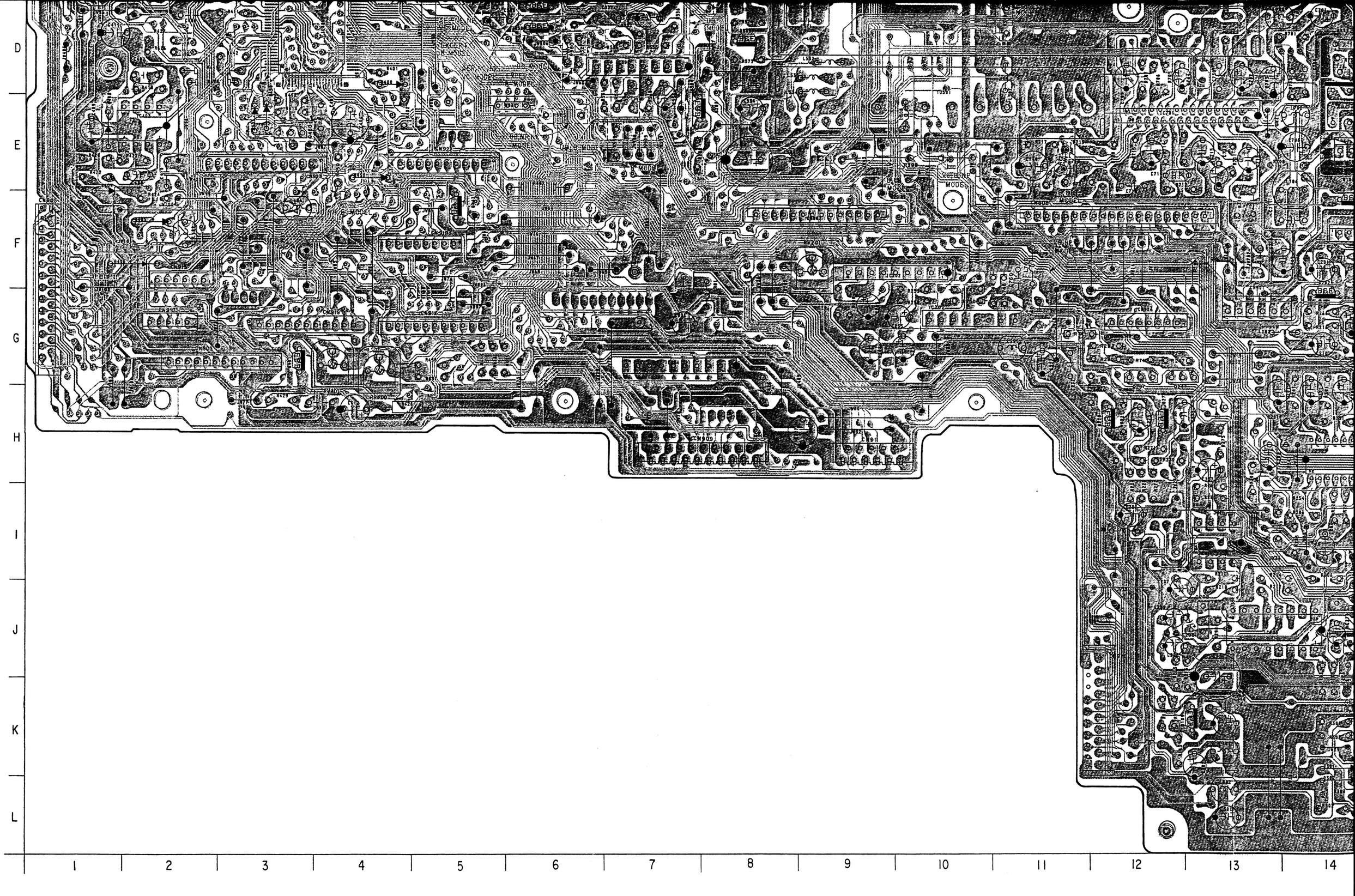
MA-140 BOARD





MA-140 BOARD

D301	K-14	Q101	B-14
D302	K-14	Q102	E-15
D304	K-15	Q103	E-14
D400	D-4	Q104	B-14
D401	C-3	Q105	A-14
D402	C-3	Q109	K-12
D403	E-1	Q202	F-14
D404	E-1	Q203	E-8
D405	F-2	Q220	H-12
D406	F-2	Q247	G-12
D450	D-3	Q270	H-12
D451	E-3	Q297	G-13
D452	E-4	Q301	K-15
D502	B-8	Q302	L-15
D505	A-5	Q303	K-15
D506	A-11	Q304	L-15
D901	B-14	Q305	K-15
D902	D-15	Q306	K-15
D903	E-15	Q401	G-3
D904	E-15	Q447	F-5
D905	F-15	Q450	E-3
D906	H-15	Q501	A-5
D907	K-15	Q502	A-8
D910	F-15	Q503	D-6
D911	G-15	Q504	D-6
D912	J-15	Q505	D-8
D913	D-15	Q507	C-8
		Q508	B-8
IC201	H-14	Q701	D-15
IC202	F-10		


D
E
F
G
H
I
J
K
L
1
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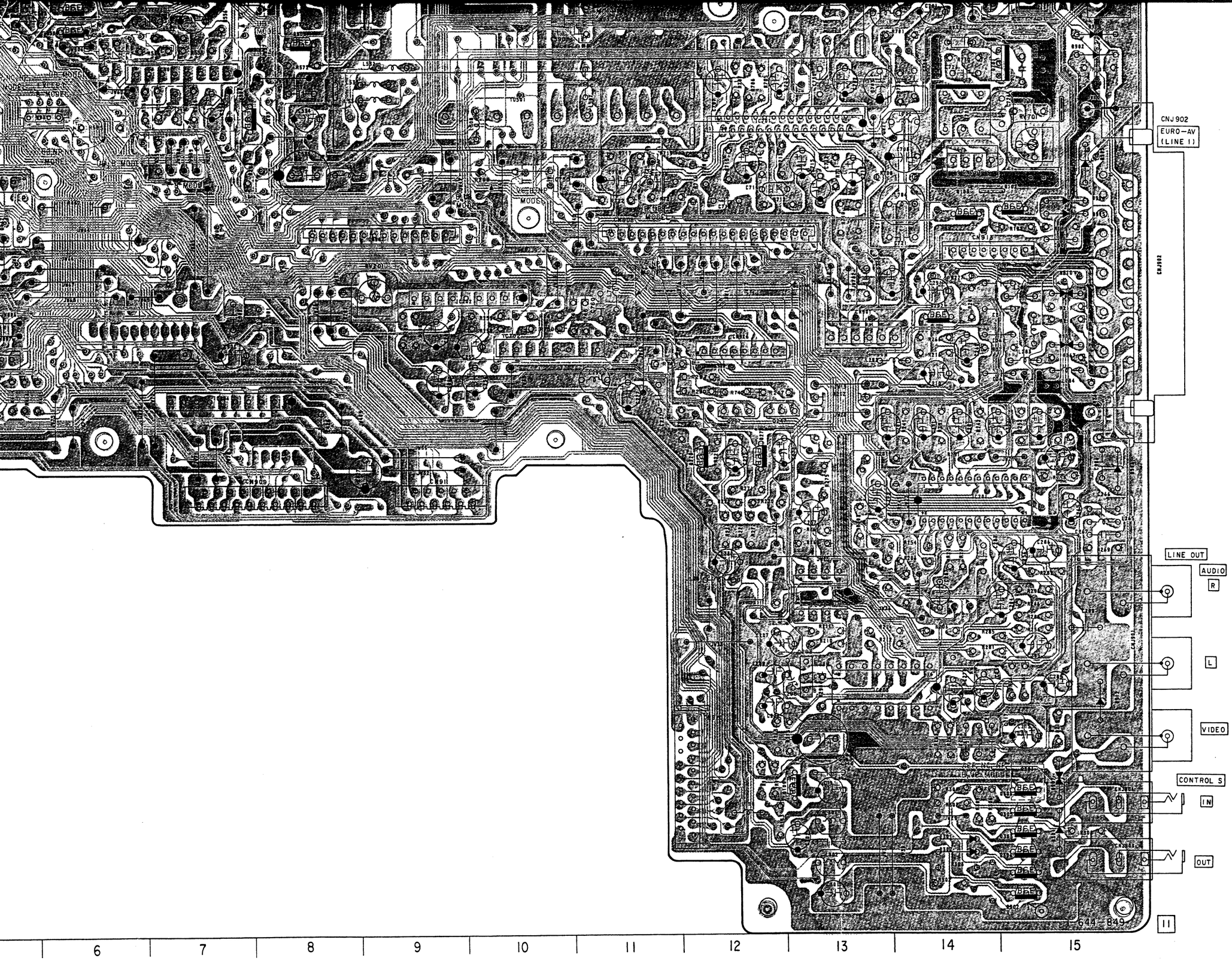
16



MA-140 BOARD

D301	K-14	Q101	B-14
D302	K-14	Q102	E-15
D304	K-15	Q103	E-14
D400	D-4	Q104	B-14
D401	C-3	Q105	A-14
D402	C-3	Q109	K-12
D403	E-1	Q202	F-14
D404	E-1	Q203	E-8
D405	F-2	Q220	H-12
D406	F-2	Q247	G-12
D450	D-3	Q270	H-12
D451	E-3	Q297	G-13
D452	E-4	Q301	K-15
D502	B-8	Q302	L-15
D505	A-5	Q303	K-15
D506	A-11	Q304	L-15
D901	B-14	Q305	K-15
D902	D-15	Q306	K-15
D903	E-15	Q401	G-3
D904	E-15	Q447	F-5
D905	F-15	Q450	E-3
D906	H-15	Q501	A-5
D907	K-15	Q502	A-8
D910	F-15	Q503	D-6
D911	G-15	Q504	D-6
D912	J-15	Q505	D-8
D913	D-15	Q507	C-8
		Q508	B-8
IC201	H-14	Q701	D-15
IC202	F-10		
IC203	J-13		
IC204	I-13		
IC401	D-4		
IC402	B-2		
IC403	E-2		
IC404	G-7		
IC501	B-7		
IC502	D-7		
IC503	B-5		
IC701	E-12		
IC702	F-11		

IC

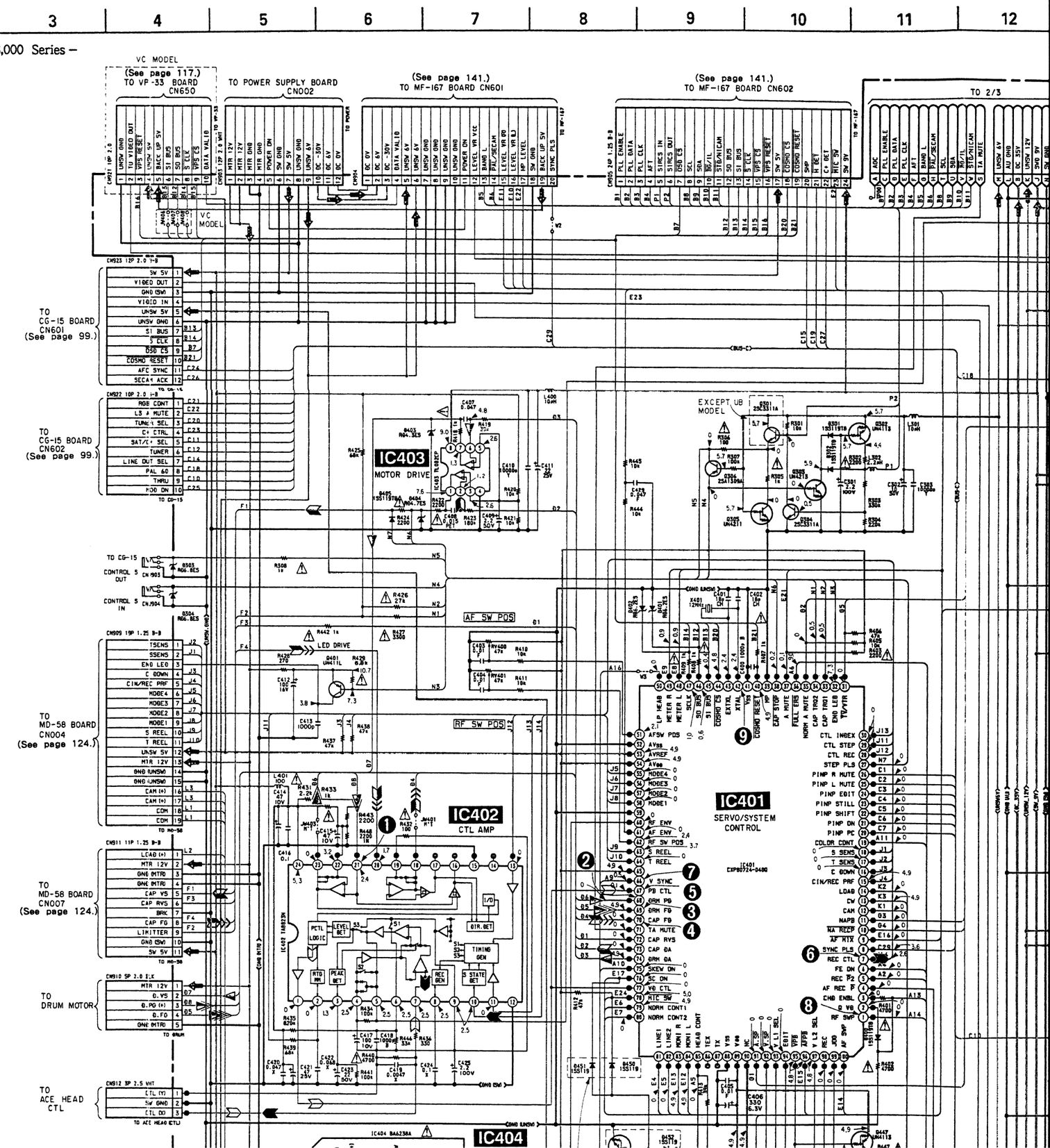
IC401 8-752-836-00 CXP80724-040Q

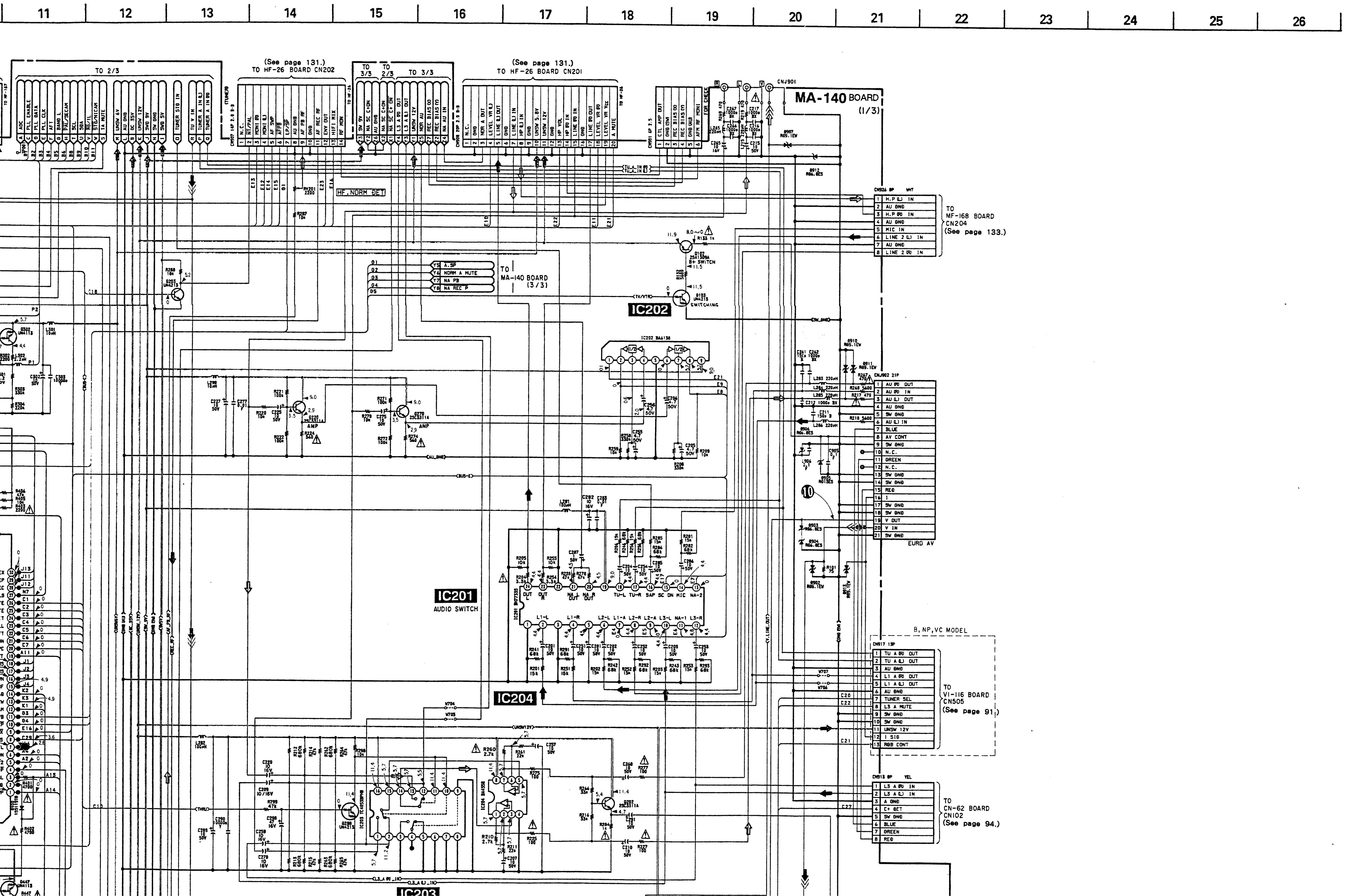
MA-140 (SERVO, SYSTEM CONTROL, MECHANISM DRIVE) SCHEMATIC DIAGRAM

– Ref. No. MA-140 BOARD : 8,000 Series –

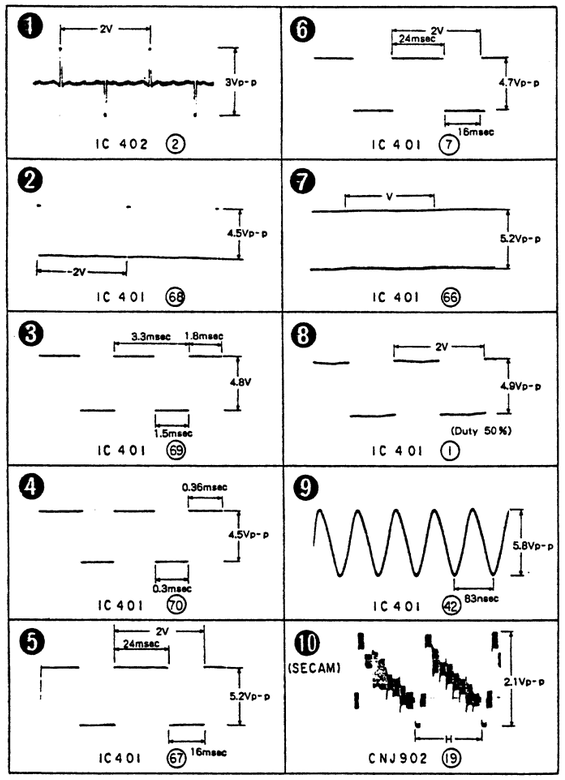
MA-140 BOARD (1/3)

❶ 2V, 3Vp-p IC 402 (2)	❻ 2V, 24msec, 4.7Vp-p, 16msec IC 401 (7)
❷ 4.5Vp-p, -2V IC 401 (68)	❼ V, 5.2Vp-p IC 401 (66)
❸ 3.3msec, 1.8msec, 4.8V, 1.5msec IC 401 (69)	❽ 2V, 4.9Vp-p, (Duty 50 %) IC 401 (1)
❹ 0.36msec, 4.5Vp-p, 0.3msec IC 401 (70)	❾ 5.8Vp-p, 83nsec IC 401 (42)
❺ 2V, 24msec, 5.2Vp-p, 16msec IC 401 (67)	❿ (SECAM) 2.1Vp-p, H CNJ902 (19)




11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
TO 2/3
(See page 131.)
TO HF-26 BOARD CN202
TO 3/3
TO 2/3
(See page 131.)
TO HF-26 BOARD CN201
MA-140 BOARD
(1/3)
TO
MF-168 BOARD
CN204
(See page 133.)
TO
MA-140 BOARD
(3/3)
IC202
IC201
AUDIO SWITCH
IC204
IC203
EURO AV
B, NP, VC MODEL
TO
VI-116 BOARD
CN505
(See page 91.)
TO
CN-62 BOARD
CN102
(See page 94.)
HF.NORM DET
AMP

MA-140 BOARD (1/3)

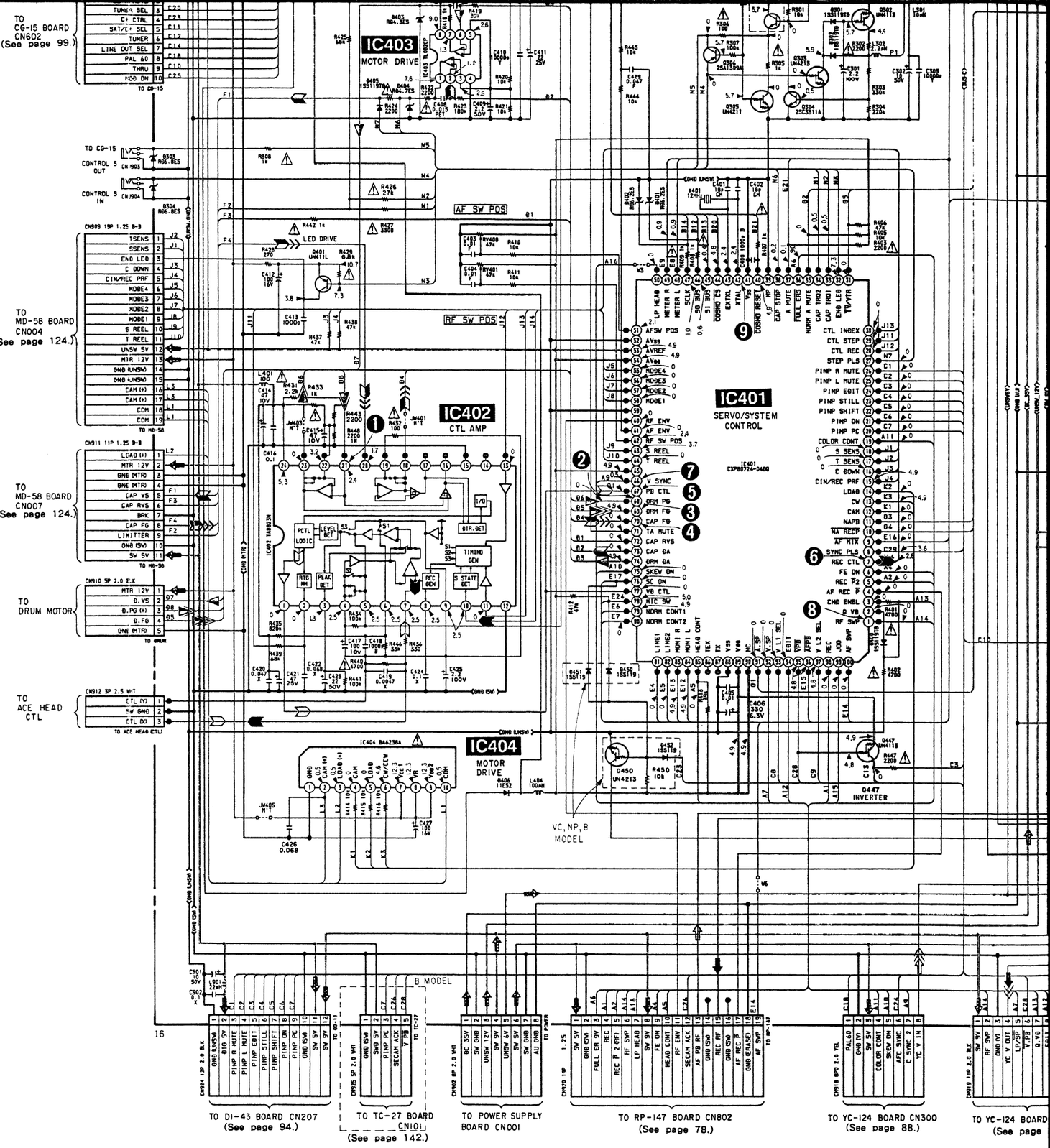


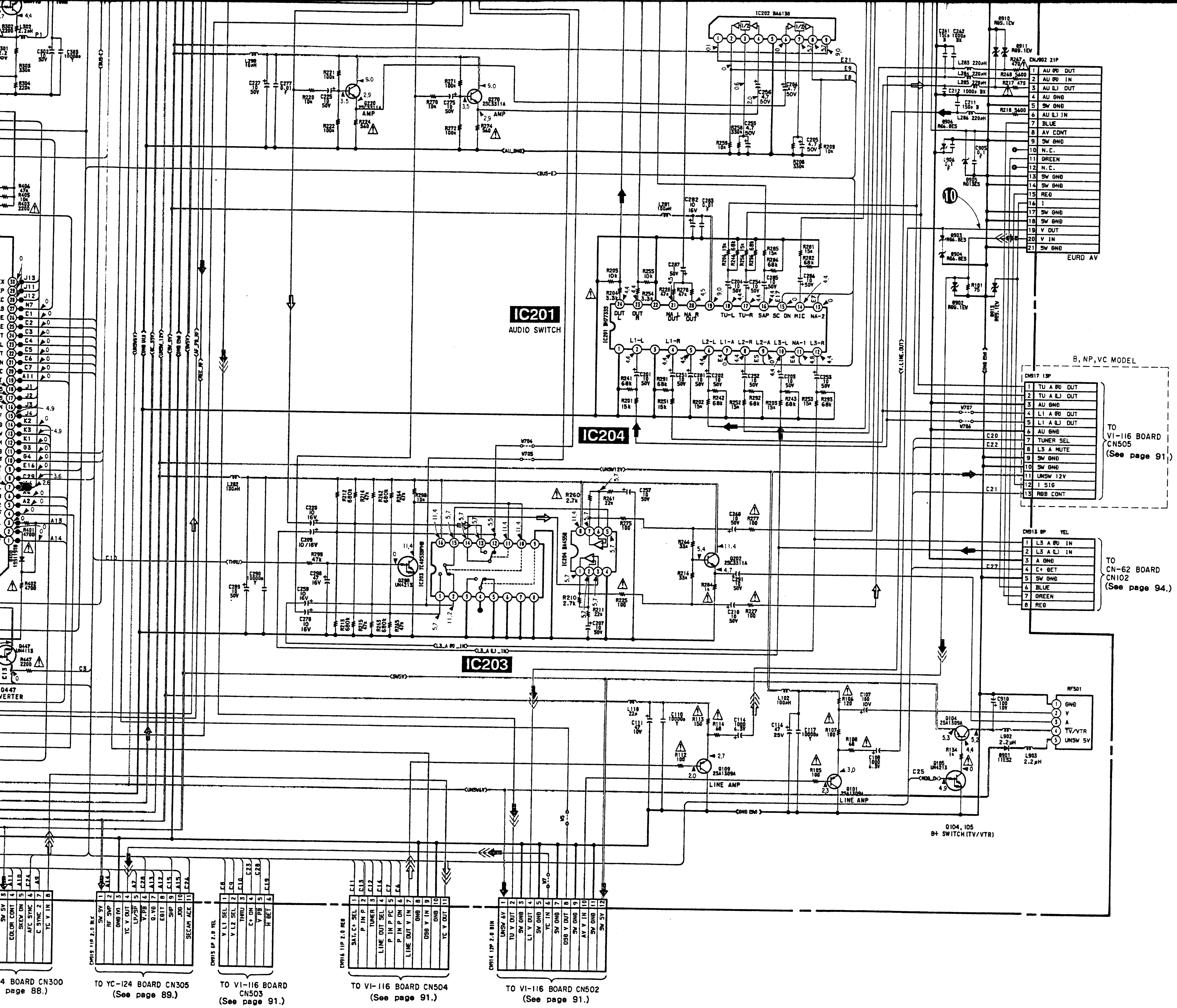
- **Signal palth**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡⋙	➡
PB			⇨⋙	⇨

- **Signal palth**

	REC	REC/PB	PB
Drum speed servo		▻	
Drum phase servo		▻▻	
Drum servo (speed and phase)		▻⋙	
Capstan speed servo		⇁	
Capstan servo (speed and phase)		⇁⋙	
Ref. signal	➡		⇨




IC201
AUDIO SWITCH
IC204
IC203
IC202 BA6138
EURO AV
B, NP, VC MODEL
TO VI-116 BOARD CN505 (See page 91.)
TO CN-62 BOARD CN102 (See page 94.)
LINE AMP
Q104, 105 B+ SWITCH (TV/VTR)
4 BOARD CN300 page 88.)
TO YC-124 BOARD CN305 (See page 89.)
TO VI-116 BOARD CN503 (See page 91.)
TO VI-116 BOARD CN504 (See page 91.)
TO VI-116 BOARD CN502 (See page 91.)

MA-140 (NORMAL AUDIO REC/PB AMP), VP-33(SERVO/SYSTEM CONTROL MICROPROCESSOR) SCHEMATIC DIAGRAMS/ PRINTED WIRING BOARD

– Ref. No. MA-140 BOARD : 8,000 Series, VP-33 BOARD : 9,000 Series –

VP-33 BOARD (825VC ONLY)

CN650 10P

GND (UNSW)	1
TU VIDEO IN	2
VPS RESET	3
UNSW 5V	4
BACK UP 5V	5
SI BUS	6
SO BUS	7
S CLK	8
VPS CS	9
DATA VALID	10

TO MA-140 BOARD CN921 (See page 112.)

2.7 — C651 150P — C652 0.033 B — R651 2200

R663 150K — R652 1M — Q651 UN2213 — C658 10µ

16

MA-140 BOARD (3/3)

TO (1/3)

A.SP Y5
NORM A MUTE Y6
NA PB Y7
NA REC P Y8

TO ACE HEAD

CN713 4P 2.5 WHT

1	A HEAD (X)
2	A HEAD (Y)
3	A HEAD (G)
4	A ERASE HEAD

Z7 REC BIAS (X)
Z2 REC BIAS (Y)
Z3 SW 9V
Z4 NA OUT (TO HF)

TO (1/3)

IC701

NORMAL AUDIO REC/PB AMP

C701 1 50V — C702 47 10V — L703 100µH — R703 10k — R701 10k — L704 22µH — C720 1200P B — C721 220P — R702 10k — C730 0.01 F — C703 47 10V — R705 2.2k — R704 150 — C705 0.027 PET — C706 0.056 — R706 820Ω — R707 270 — C704 1 50V — L701 8.2mH — C707 4.7 50V — R716 22k

REC/EE CONT. — RIPPLE FILTER — PB/EE CONT. — MUTING CONT. — ø SW CONT. — POWER ON/OFF MUTE — EE REC — PB — LP — EP

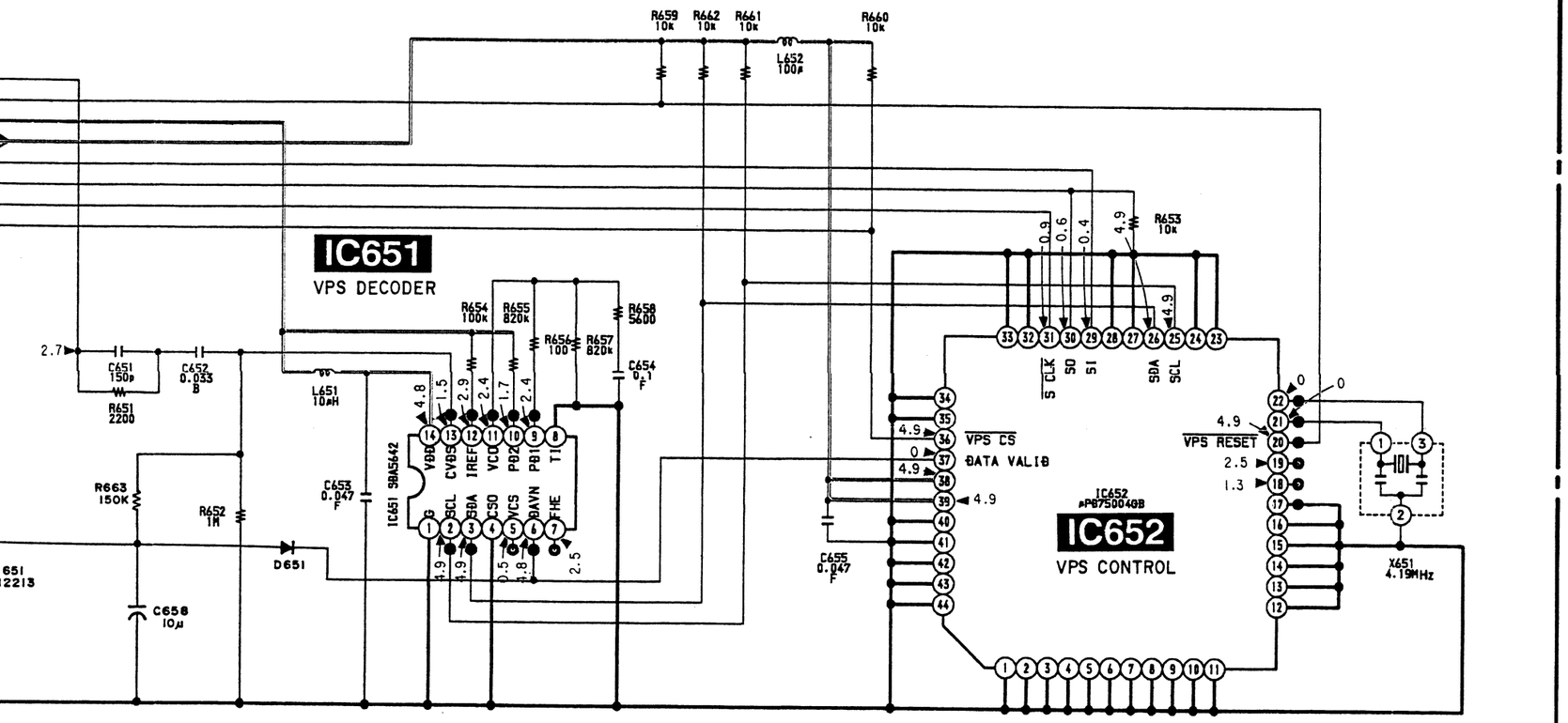
RV701 220k REC BIAS — R729 560Ω — C724 0.0068 100V

VC, NP, B MODEL

IC702 M5201L

15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27

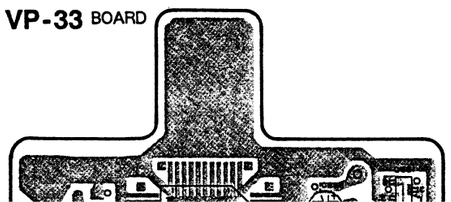
BOARD (825VC ONLY)



TO (1/3)

VC MODEL ONLY

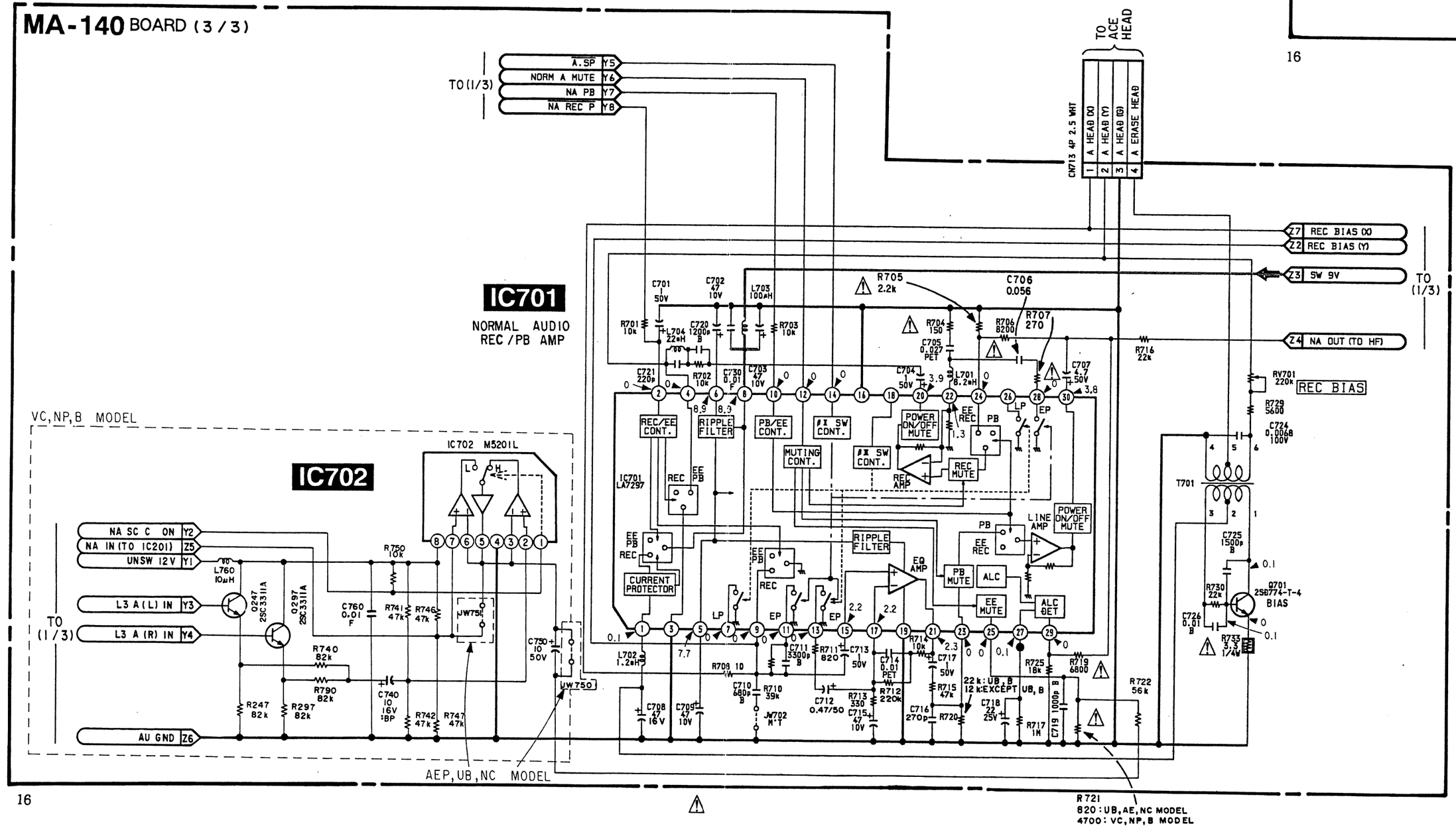
VP-33 BOARD



VP-33 BOARD

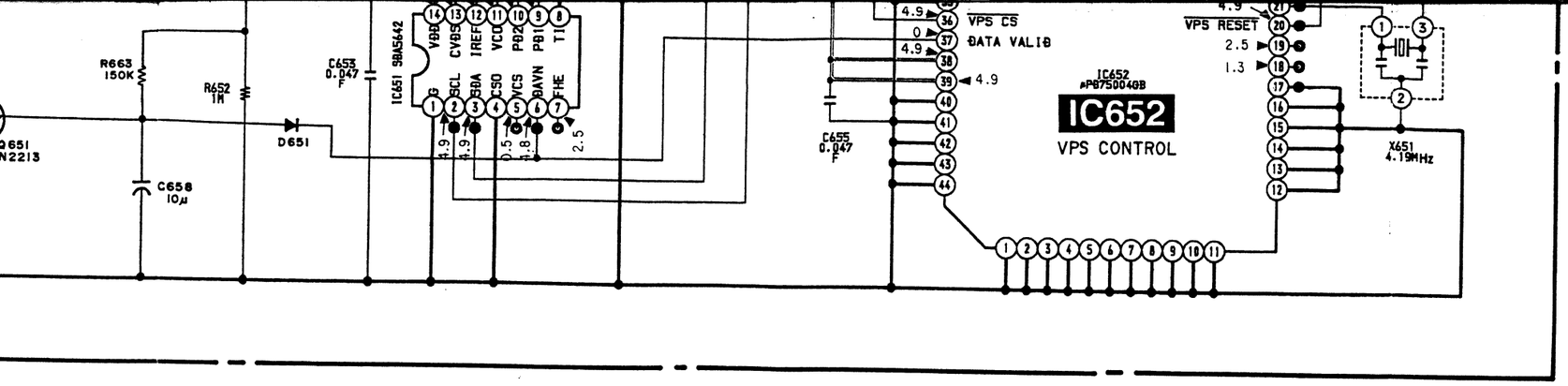
IC651	K-3
IC652	J-3

MA-140 BOARD (3/3)

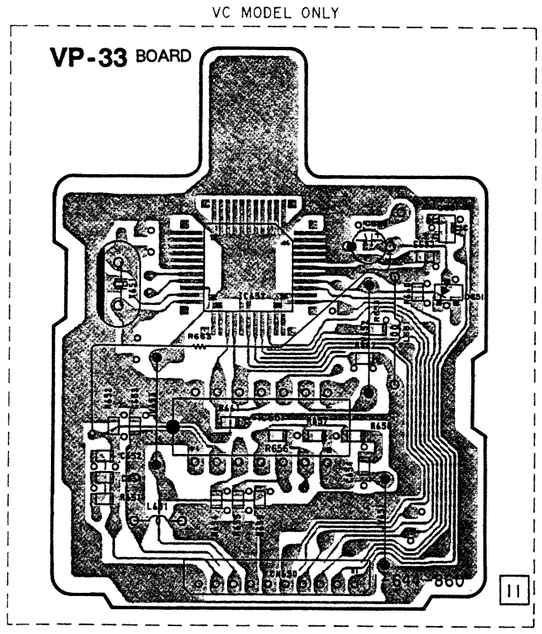


16

16



VC MODEL ONLY



VP-33 BOARD

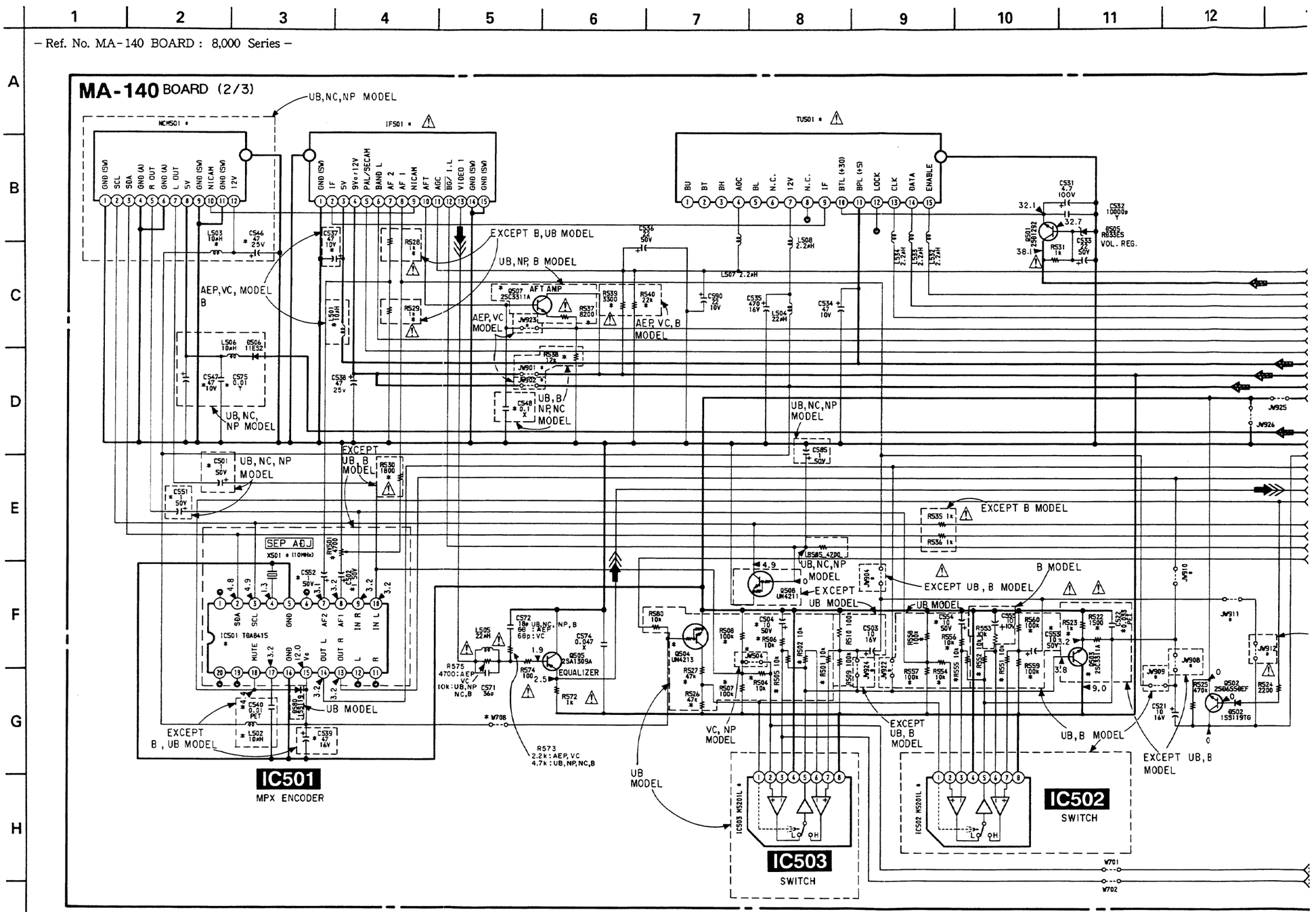
IC651	K-3
IC652	J-3

IC

IC652 8-759-147-30 uPD75004GB-VSX182 (VC)

MA-140 (TUNER, IF STAGE AMP) SCHEMATIC DIAGRAM

– Ref. No. MA-140 BOARD : 8,000 Series –



16

AGRAM

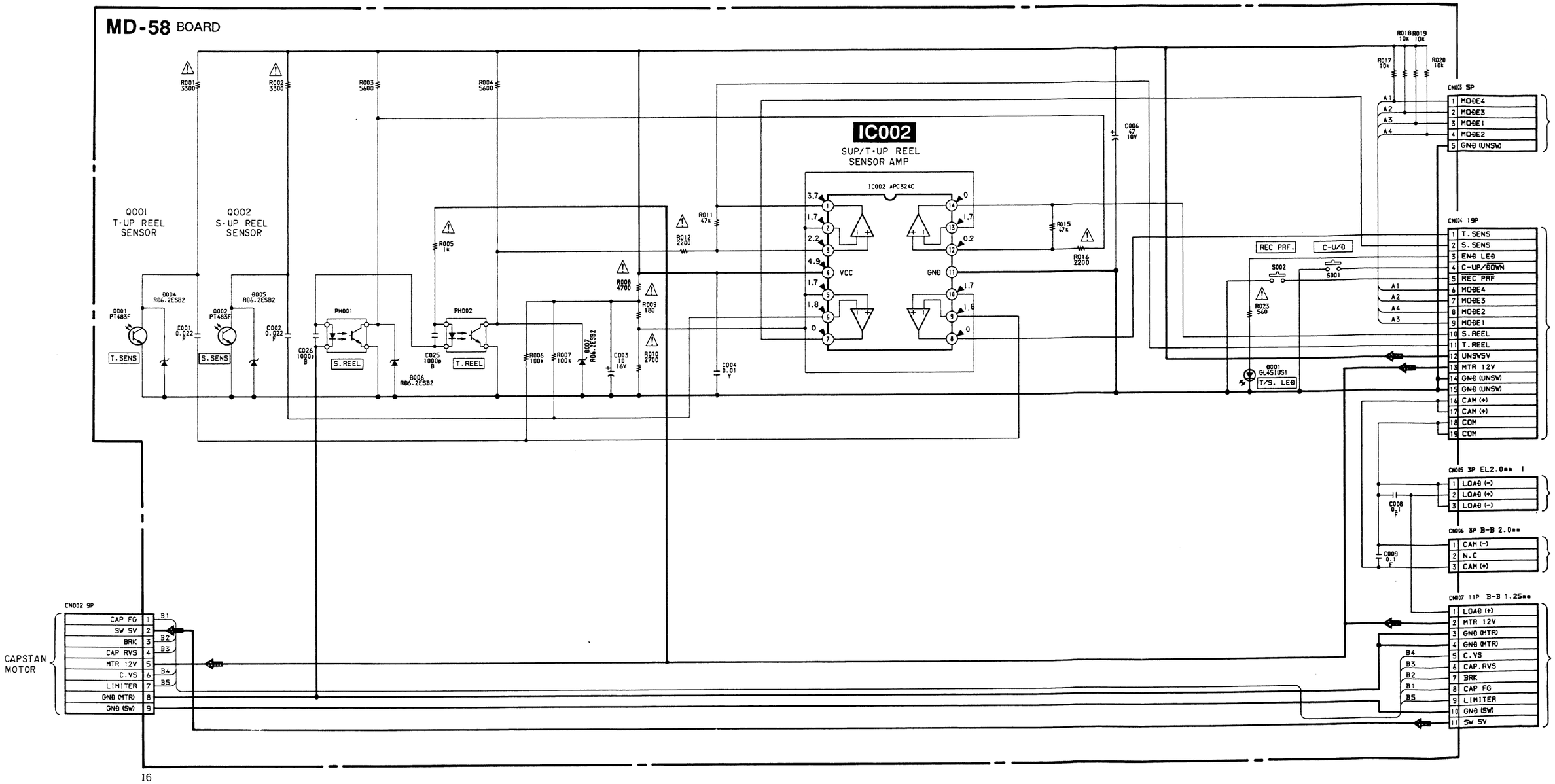
4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

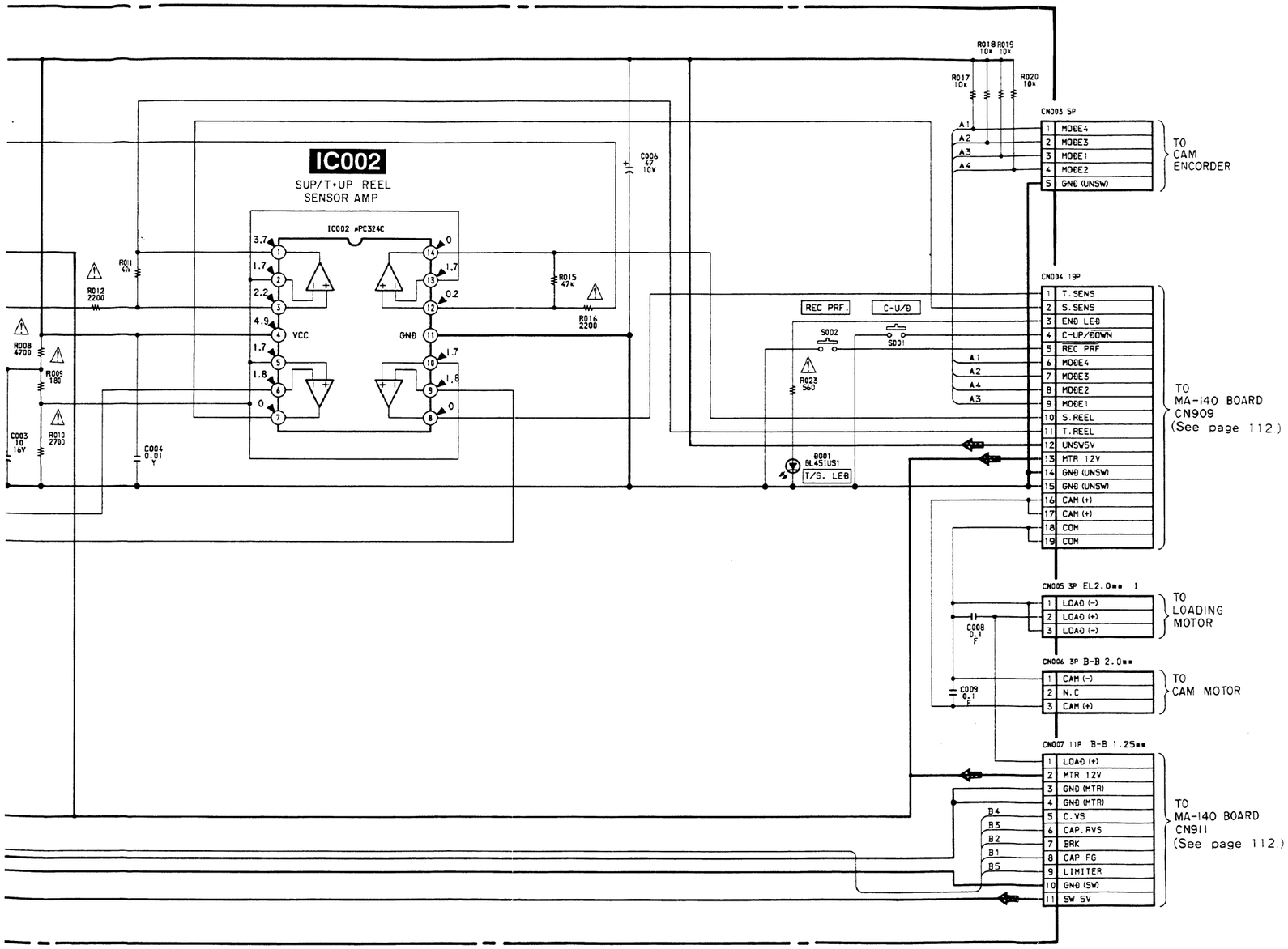
- **Signal palth**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇒>>	
PB				

MD-58 (MECHANISM SENSOR) SCHEMATIC DIAGRAM

- Ref. No. MD-58 BOARD : 10,000 Series -




IC002
SUP/T-UP REEL
SENSOR AMP
IC002 μPC324C
VCC
GND
R001 47k
R012 220Ω
R015 47k
R016 220Ω
R008 470Ω
R009 180
R010 270Ω
C003 10 16V
C004 0.01
C006 47 10V
R018 10k
R019 10k
R017 10k
R020 10k
CN003 5P
MODE4
MODE3
MODE1
MODE2
GND (UNSW)
TO CAM ENCORDER
CN004 19P
T.SENS
S.SENS
END LED
C-UP/DOWN
REC PRF
MODE4
MODE3
MODE2
MODE1
S.REEL
T.REEL
UNSW5V
MTR 12V
GND (UNSW)
GND (UNSW)
CAM (+)
CAM (+)
COM
COM
TO MA-140 BOARD CN909
(See page 112.)
REC PRF.
C-U/D
S002
S001
R023 560
BD01 BL451US1
T/S. LED
CN005 3P EL2.0mm I
LOAD (-)
LOAD (+)
LOAD (-)
TO LOADING MOTOR
C008 0.1 F
CN006 3P B-B 2.0mm
CAM (-)
N.C
CAM (+)
TO CAM MOTOR
C009 0.1 F
CN007 11P B-B 1.25mm
LOAD (+)
MTR 12V
GND (MTR)
GND (MTR)
C.VS
CAP.RVS
BRK
CAP FG
LIMITER
GND (SW)
SW 5V
TO MA-140 BOARD CN911
(See page 112.)
B4
B3
B2
B1
B5

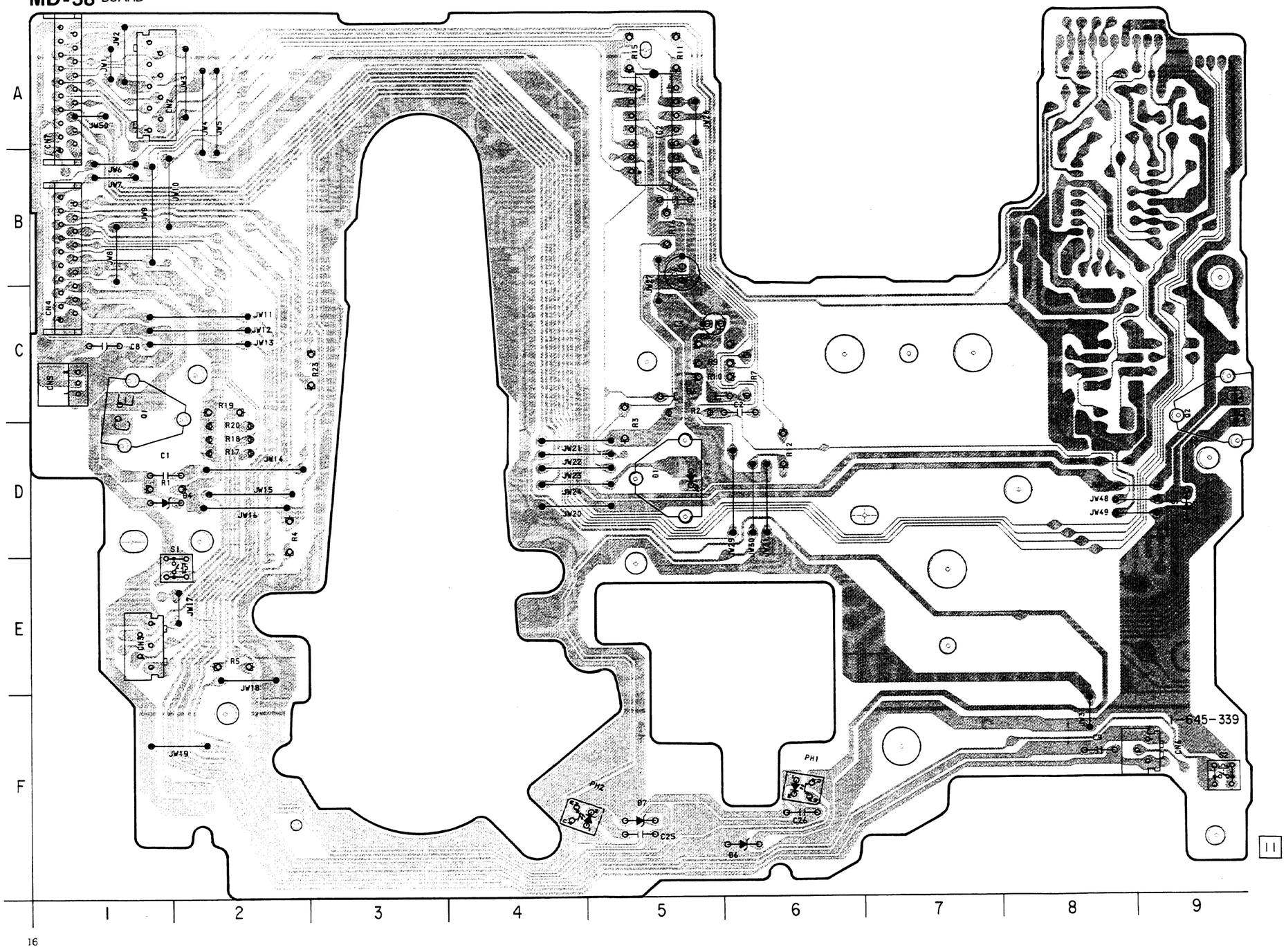
MD-58 (MECHANISM SENSOR) PRINTED WIRING BOARD

– Ref. No. MD-58 BOARD : 10,000 Series –

MD-58 BOARD

D001	D-5
D004	D-2
D005	D-9
D006	F-6
D007	F-5
IC002	A-5
PH001	F-6
PH002	F-5
Q001	C-1
Q002	C-9

MD-58 BOARD



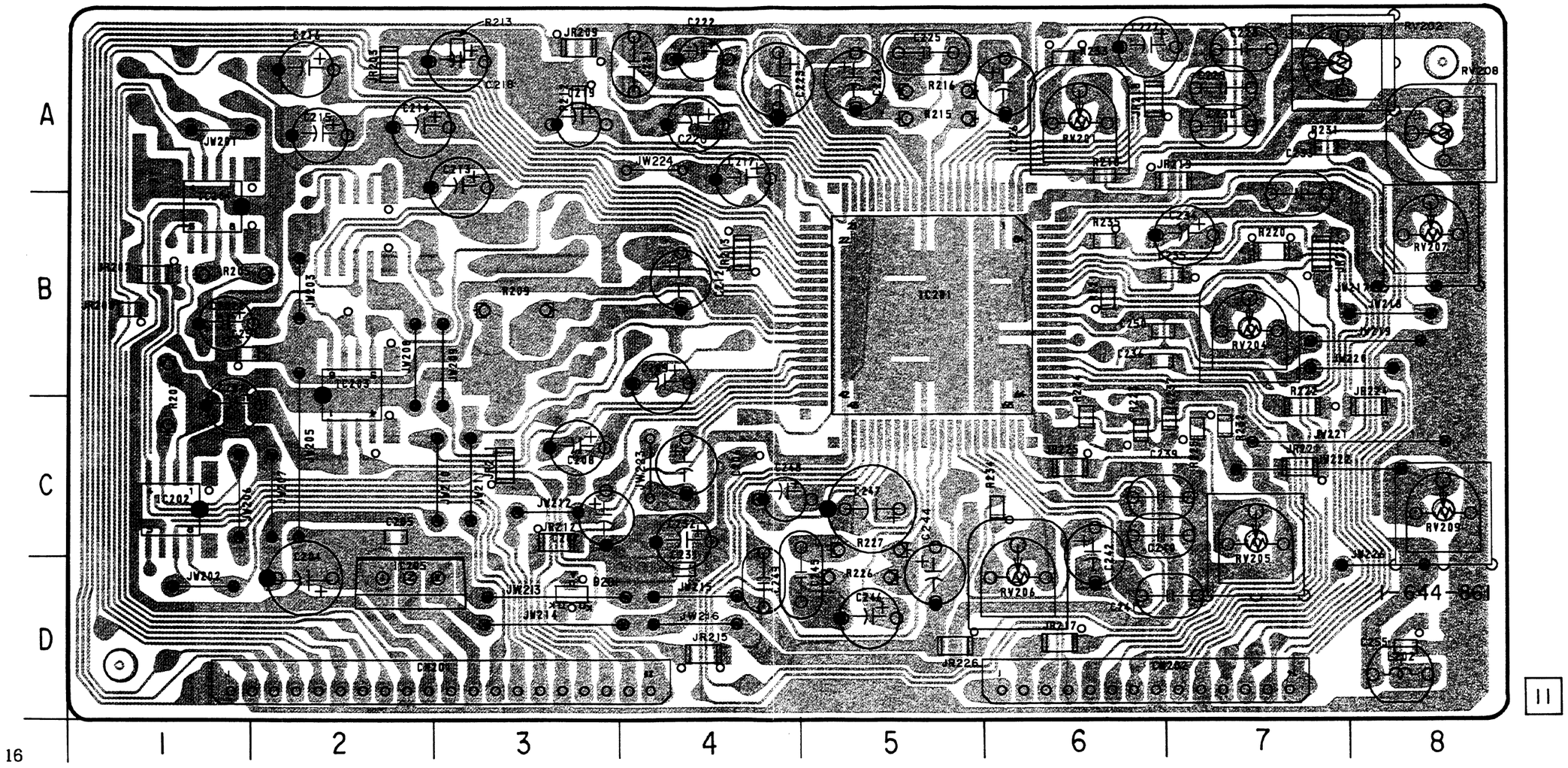
HF-26 (HI-FI AUDIO) PRINTED WIRING BOARD

– Ref. No. HF-26 BOARD : 17,000 Series –

HF-26 BOARD

D201	D-3
IC201	B-5
IC202	C-1
IC203	B-2
IC204	B-1
IC205	D-2

HF-26 BOARD



DIODE

D201	8-719-104-34	1S2836

IC

IC201	8-759-057-63	AN3937NFBP
IC202	8-759-946-44	TK15120M
IC203	8-759-924-46	BA4560F
IC204	8-759-946-44	TK15120M

– Ref. No. HF-26 BOARD : 17,000 Series –

HF-26 BOARD

R-CH

IC201
AN3937NFBP

IC201
AMF MOD/DEMOD

VCO
M.M
×2
÷
÷00
R.F LPF
BPF (R)
BPF (L)
0dB / -6dB
BPF CONTROL
FM LIN
ENVE OUT
P.C
RF LIM.
LPF
AL
SW NR
VCO
OUTPUT
VREF H
H.P.CONT
CONT.
DET.
V REG.
9V
4.5V
24dB/OCT
LPF
12dB/OCT
L.S
LPF
CCA
RF AGC
6dB/OCT
L.P.F.
E VOL
OS-2
OS-1
E VOL
NT/PAL.VCO R
REC.PRLEVEL R
PAL.VCO R
NTSC.PBF
PAL.BPF
PAL.VCO L
NT/PAL.VCO L
REC/PB LEVEL L
L202 180μH
C255 27P CH
RV205 470Ω
R225 12k 0.5%
C239 2200p :PET
C240 2200p :PET
C241 1500p :PET
C242 22 16V
R234 1k
RV206 220Ω
C245 0.022 :PET
R226 10k
C244 10 35V
R227 1k
C244 2.2 100V
C247 220 10V
C248 4.7 100V
C249 0.01 :PET
R274 27k
R232 12k 0.5%
RV209 470Ω
C237 470p :CH
R223 270Ω
R222 220Ω
C236 0.01 :B
C250 0.01 :B
RV204 10k
R221 1k
RV208 10k
R220 11k
C235 0.01 :B
C234 1 50V
R235 180Ω
C233 0.0033 :PET
RV207 10k
R231 15k 0.5%
R218 15k 0.5%
RV202 10k
C232 100 10V
C231 0.01 :F
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
R233 1k
C227 22 16V
RV201 220Ω
R216 1k
R215 10k
C226 10 35V
C225 0.022 :PET
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
R213 470k
R212 1k
C206 2.2 100V
C207 47 10V
C208 4.7 100V
R206 JWM'T
C209 10 50V
R209 330k
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
R210 JWM'T
C216 4.7 100V
C217 2.2 100V
JR203
JW224
R203 180Ω
C201 100 10V
JW223
IC
MUTE

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

IC202
MUTE SWITCH

IC201
AMF MOD/DEMOD

IC201
AN3937NFBP

IC203
AMP

IC204
MUTE SWITCH

IC205
REG.

R-CH

VCO
M.M
×2
÷
ØOØ
R.F LPF
BPF (R)
BPF (L)
0dB -4dB
BPF CONTROL
R.F LPF
FM LIN
ENVE OUT
VCO
P.C
RF LIM.
LPF
AL
SW NR
24dB/OCT LPF
120dB/OCT L.S
LPF
CCA
RF AGC
6dB/OCT L.P.F.
E VOL
OS-2
OS-1
E VOL
H.P.CONT
CONT.
ØET.
V REG.
9V
4.5V
OUTPUT
VREF H
NT/PAL.VCO R
NT/PAL.VCO L
REC.PB LEVEL R
REC/PB LEVEL L
RV205 4700
R225 12k 0.5%
RV206 220Ø
RV201 220Ø
RV202 10k
R234 1k
R233 1k
R218 15k 0.5%
R224 27k
R235 180Ø
R226 10k
R227 1k
R215 10k
R216 1k
R213 470k
R212 1k
R203 180
R204 JWM'T
R209 330k
R210 JWM'T
R205 180
C239 2200p :PET
C240 2200p :PET
C241 1500p :PET
C242 22 16V
C244 10 35V
C245 0.022 :PET
C246 2.2 100V
C247 220 10V
C248 4.7 100V
C249 0.01 :PET
C250 0.01 :B
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
C227 22 16V
C232 100 10V
C231 0.01 :F
C225 0.022 :PET
C226 10 35V
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
C206 2.2 100V
C207 47 10V
C208 4.7 100V
C209 10 50V
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
C216 4.7 100V
C217 2.2 100V
C201 100 10V
C202 100 10V
C251 0.1 :F
JW223
JW224
JR203
D201 1S2835
1.8MHz
1.4MHz

CN201 20P

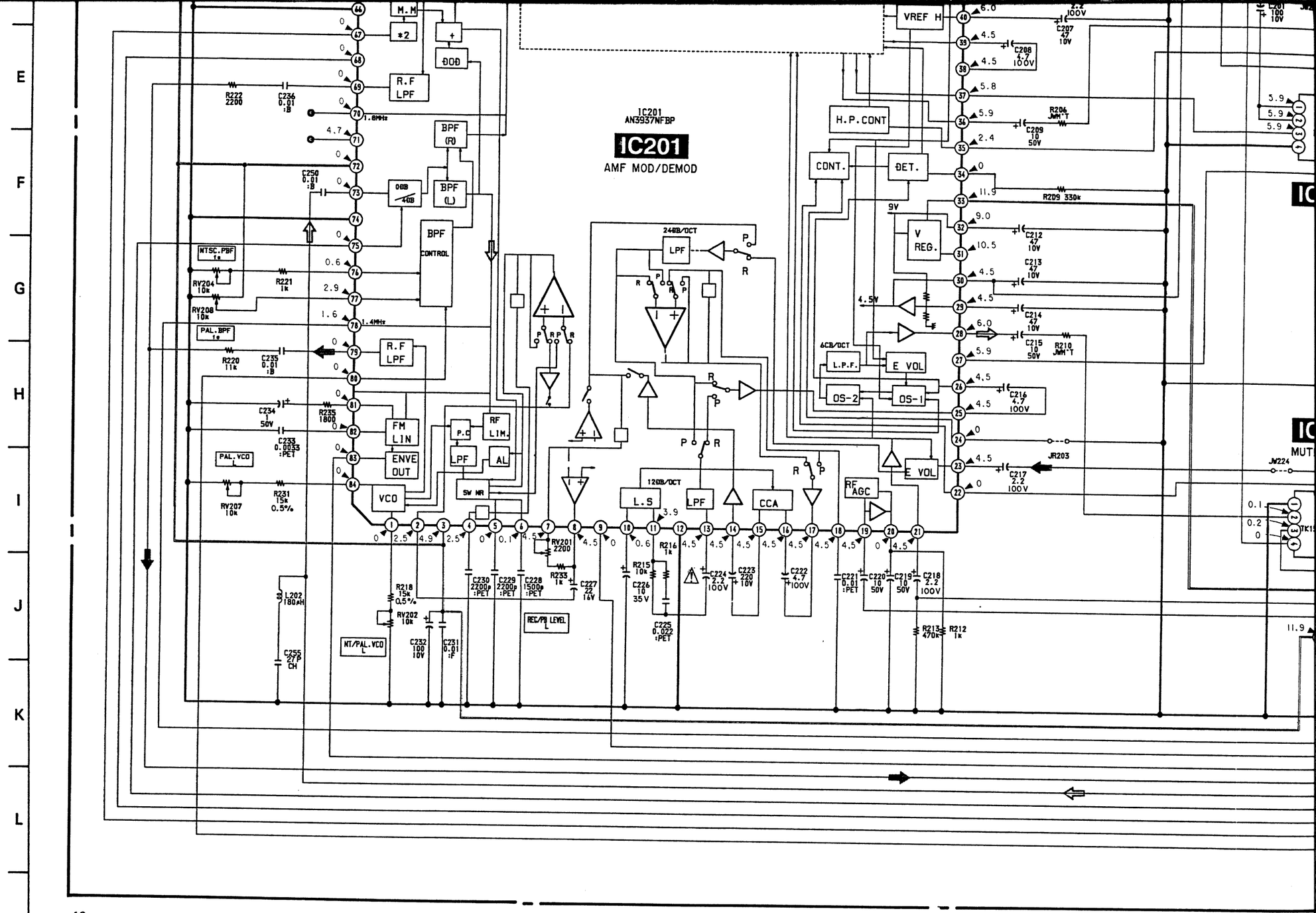
1	MOD A OUT
2	GND (AU)
3	NOR A OUT
4	LEVEL VR (L)
5	LINE IN (L)
6	GND (AU)
7	LINE OUT (L)
8	H.P. OUT (L)
9	GND (AU)
10	UNSW 5.8V
11	SW 12V
12	GND (AU)
13	H.P. VR
14	H.P. OUT (R)
15	LINE OUT (R)
16	GND (AU)
17	LINE IN (R)
18	LEVEL VR (R)
19	LEVEL VR V CC
20	A MUTE

TO MA-140 BOARD CN908 (See page 113.)

CN202 14P

1	N.C
2	PAL60
3	MONI (R)
4	MONI (L)
5	AF SW PLS
6	AF PB
7	SP
8	GND
9	AF PB RF
10	GND
11	AF REC RF
12	AF ENV

TO MA-140 BOARD CN907 (See page 113.)



16

- **Signal palth**

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

IC201
AN3937NFBP

IC201
AMF MOD/DEMOD

M.M
×2
÷
ÐOÐ
R.F LPF
BPF (R)
BPF (L)
0dB / -4dB
BPF CONTROL
R.F LPF
FM LIN
ENVE OUT
VCO
P.C
LPF
RF LIM.
AL
SW NR
24dB/OCT
LPF
6dB/OCT
L.P.F.
E VOL
OS-2
OS-1
E VOL
120dB/OCT
L.S
LPF
CCA
RF AGC
H.P.CONT
CONT.
ÐET.
VREF H
V REG.
9V
4.5V
1.6MHz
1.4MHz
R235 180Ω
R218 15k 0.5%
RV202 10k
NT/PAL.VCO
REC/PB LEVEL
RV201 2200
R233 1k
R215 10k
R216 1k
R213 470k
R212 1k
R209 330k
R204 JWM"T
R210 JWM"T
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
C227 22 16V
C226 10 35V
C225 0.022 :PET
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
C232 100 10V
C231 0.01 :F
C208 2.2 100V
C207 47 10V
C208 4.7 100V
C209 10 50V
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
C216 4.7 100V
C217 2.2 100V
JR203

IC203
AMP
IC203 BA4560F
C201 100 10V
C202 100 10V
Jw223

IC204
MUTE SWITCH
Jw224
IC204 TK15120M-T2
R205 180
C251 0.1 :F

IC205
REG.
IC205 BA178M05
C205 0.01 B
C204 100 16V

CN908
9	GNÐ (AU)
10	UNSW 5.8V
11	SW 12V
12	GNÐ (AU)
13	H.P. VR
14	H.P. OUT (R)
15	LINE OUT (R)
16	GNÐ (AU)
17	LINE IN (R)
18	LEVEL VR (R)
19	LEVEL VR V CC
20	A MUTE

TO MA-140 BOARD CN908 (See page 113.)

CN202 14P
1	N.C
2	PAL60
3	MONI (R)
4	MONI (L)
5	AF SW PLS
6	AF PB
7	SP
8	GNÐ
9	AF PB RF
10	GNÐ
11	AF REC RF
12	AF ENV
13	AF MIX
14	RF MONI

TO MA-140 BOARD CN907 (See page 113.)

MF-168/MF-169/MF-170 (FRONT PANEL), TK-17/TK-18 (RELAY) SCHEMATIC DIAGRAMS

– Ref. No. MF-168 BOARD : 11,000 Series, MF-169 BOARD : 12,000 Series, MF-170 BOARD : 13,000 Series, TK-17 BOARD : 14,000 Series, TK-18 BOARD : 15,000 Series –

MF-168 BOARD

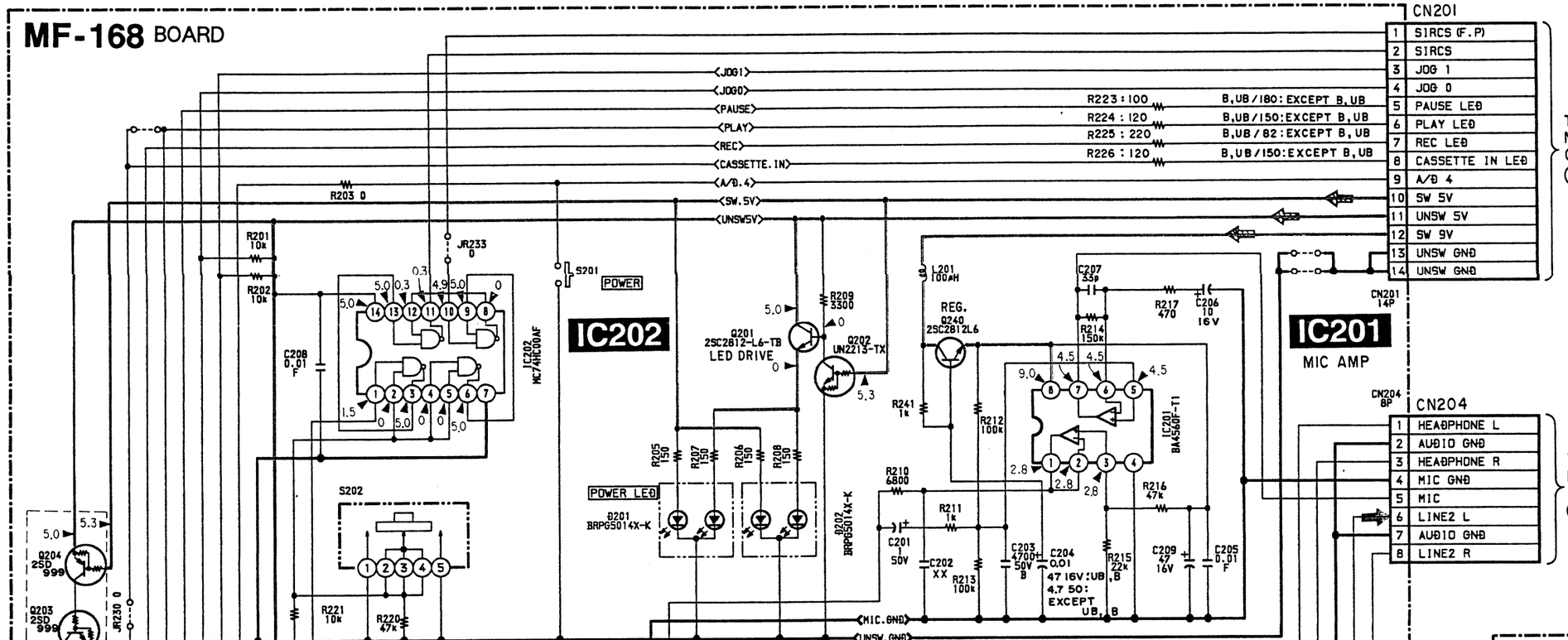
CN201
1 SIRCS (F.P)
2 SIRCS
3 JOG 1
4 JOG 0
5 PAUSE LED
6 PLAY LED
7 REC LED
8 CASSETTE IN LED
9 A/D 4
10 SW 5V
11 UNSW 5V
12 SW 9V
13 UNSW GND
14 UNSW GND
TO MF-167 BOARD CN604 (See page 139.)

TO CONROL SWITCH BLOCK CN1 (See page 144.)
REMOTE
VPS
EDIT STBY
UNSW
SYNC.EDIT
TIMER REC

CN204
1 HEADPHONE L
2 AUDIO GND
3 HEADPHONE R
4 MIC GND
5 MIC
6 LINE2 L
7 AUDIO GND
8 LINE2 R
TO MA-140 BOARD CN926 (See page 114.)

TO MF-167 BOARD CN605 (See page 139.)

R223 : 100 B,UB/180:EXCEPT B,UB
R224 : 120 B,UB/150:EXCEPT B,UB
R225 : 220 B,UB/82:EXCEPT B,UB
R226 : 120 B,UB/150:EXCEPT B,UB



CN203 11P
11 CASSETTE IN LED
10 REC LED
9 PLAY LED
8 PAUSE LED
7 JOG 0
6 JOG 1
5 A/D 4
4 UNSW GND
3 UNSW 5V
2 FP ON
1 SIRCS (LED)

CN202
10 HEADPHONE L
9 AUDIO GND
8 HEADPHONE R
7 AUDIO GND
6 LINE2 L
5 AUDIO GND
4 LINE2 R
3 AUDIO GND
2 MIC GND
1 MIC (ORG)

MF-170 BOARD

CN302
1 UNSW GND
2 LANC I/O
3 UNSW GND
4 MIC SW
5 SW 9V
6 AUDIO GND

CN303
1 LINE2 V
2 N.C
3 SW GND
TO VI-116 BOARD CN507 (See page 91.)

CN401
UNSW GND 1
LANC I/O 2
UNSW GND 3
MIC SW 4
SW 9V 5
AUDIO GND 6

CN402
16 MIC SW
15 LANC I/O
14 SW 9V
13 SW 9V
12 HEADPHONE LEVEL
11 SW 5V
10 SHARPNESS
9 UNSW GND
8 UNSW GND
7 SECAM

TK-18 BOARD

CN750 11P
11 CASSETTE IN LED
10 REC LED
9 PLAY LED
8 PAUSE LED
7 JOG 0
6 JOG 1
5 A/D 4
4 UNSW GND
3 UNSW 5V
2 FP ON
1 SIRCS (LED)

Series,

TK-17 BOARD

CN151 12P / CN150 12P

N.C	1	12	N.C
N.C	2	11	N.C
REMOTE LED	3	10	REMOTE LED
VPS LED	4	9	VPS LED
A/D 0	5	8	A/D 0
A/D 1	6	7	A/D 1
A/D 2	7	6	A/D 2
A/D 3	8	5	A/D 3
EDIT STBY LED	9	4	EDIT STBY LED
UNSW GND	10	3	SYNC.EDIT LED
SYNC.EDIT LED	11	2	TIMER REC LED
TIMER REC LED	12	1	UNSW GND

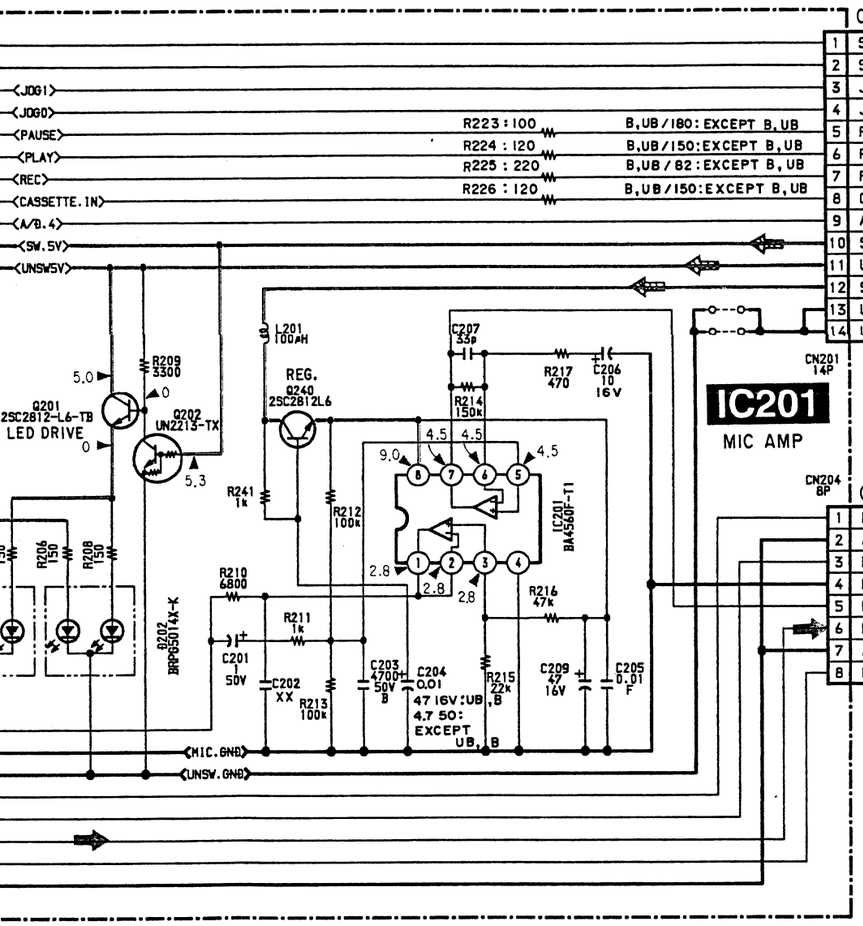
TO CONROL SWITCH BLOCK CN1 (See page 144.)

TO MF-167 BOARD CN603 (See page 141.)

CN201

1	SIRCS (F.P)
2	SIRCS
3	JOG 1
4	JOG 0
5	PAUSE LED
6	PLAY LED
7	REC LED
8	CASSETTE IN LED
9	A/D 4
10	SW 5V
11	UNSW 5V
12	SW 9V
13	UNSW GND
14	UNSW GND

TO MF-167 BOARD CN604 (See page 139.)



CN204

1	HEADPHONE L
2	AUDIO GND
3	HEADPHONE R
4	MIC GND
5	MIC
6	LINE2 L
7	AUDIO GND
8	LINE2 R

TO MA-140 BOARD CN926 (See page 114.)

TO MF-167 BOARD CN605 (See page 139.)

MIC SW	LANC I/O	SW 9V	SW 9V	HEADPHONE LEVEL	SW 5V	SHARPNESS	UNSW GND	UNSW GND	SECAM	SW GND	MESECAM	A/D 5	NTSC PB	A/D 6	RESET
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CN402

MF-169 BOARD

S405 RESET

MF-170 BOARD

CN302

1	UNSW GND
2	LANC I/O
3	UNSW GND
4	MIC SW
5	SW 9V
6	AUDIO GND

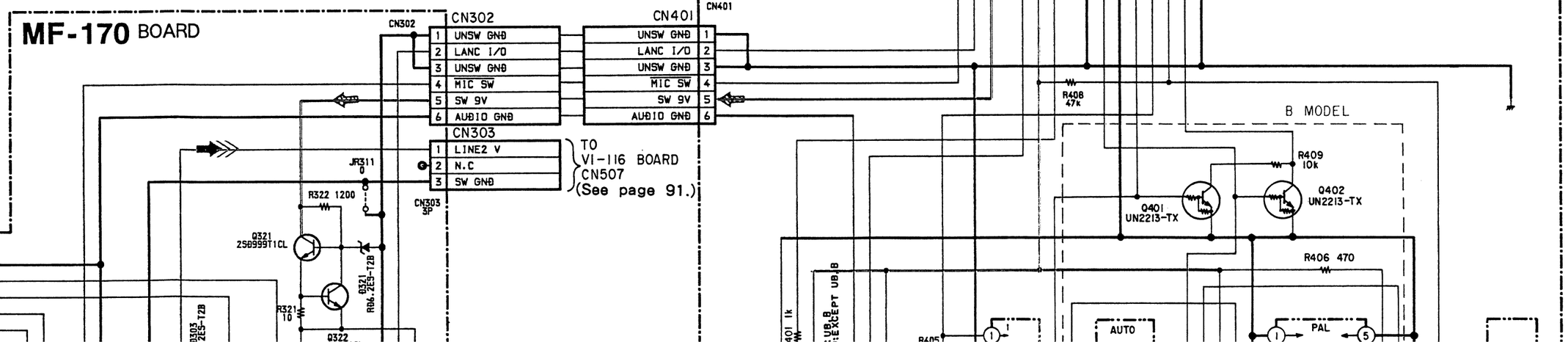
CN401

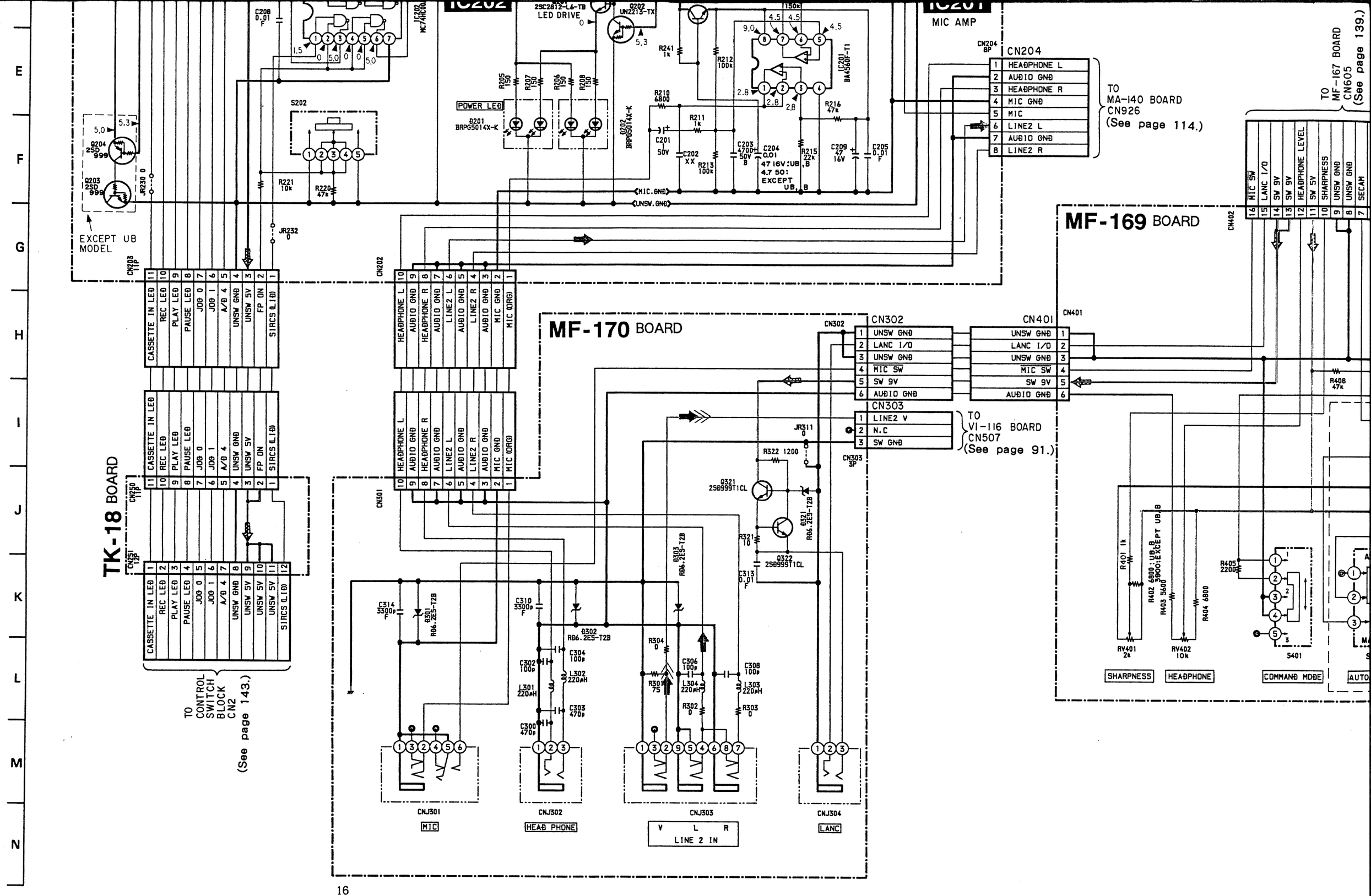
UNSW GND	1
LANC I/O	2
UNSW GND	3
MIC SW	4
SW 9V	5
AUDIO GND	6

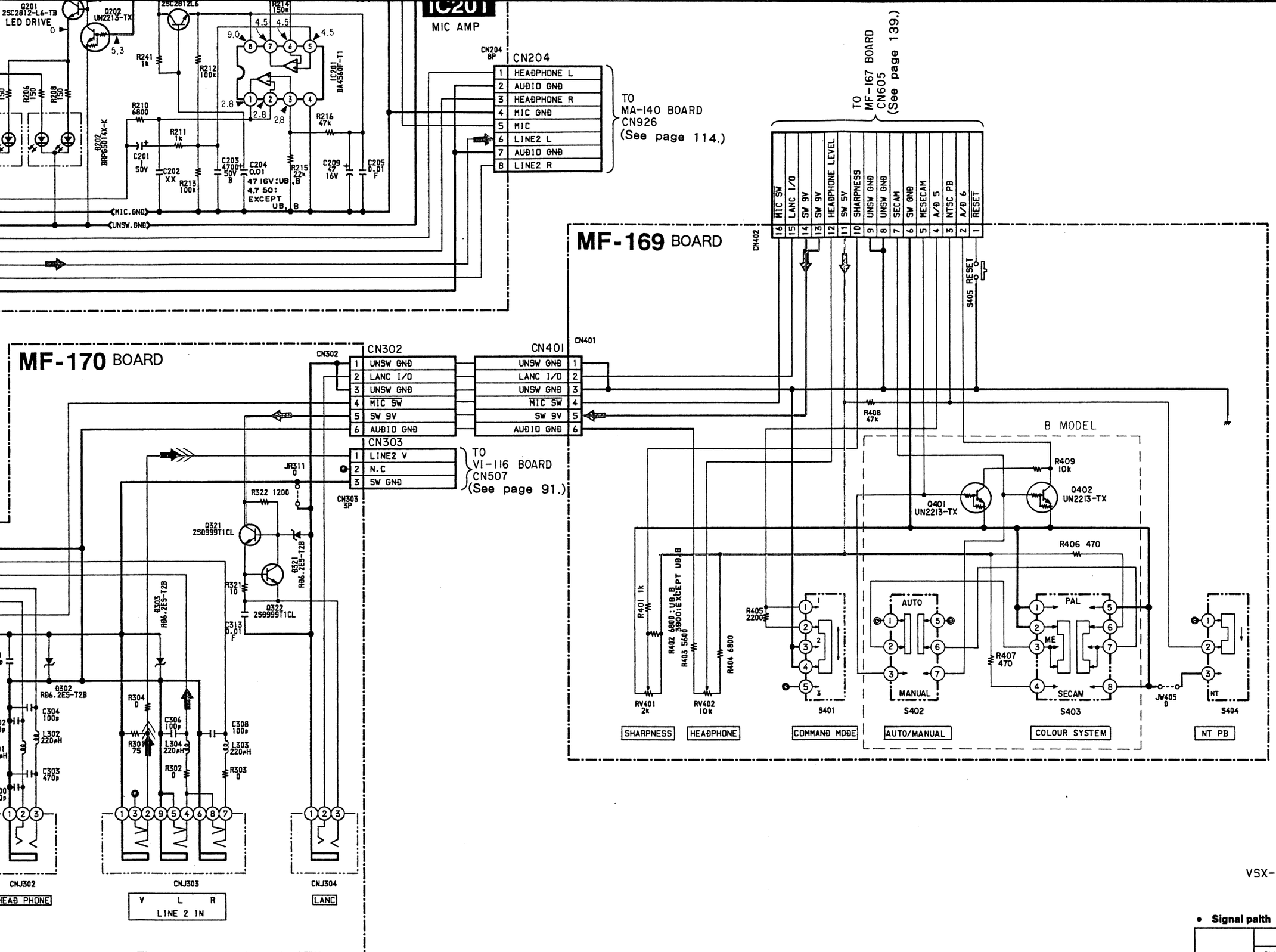
CN303

1	LINE2 V
2	N.C
3	SW GND

TO VI-116 BOARD CN507 (See page 91.)




TK-18 BOARD
MF-169 BOARD
MF-170 BOARD
IC202
IC201
MIC AMP
LED DRIVE
POWER LED
EXCEPT UB MODEL
CN204
HEADPHONE L
AUDIO GND
HEADPHONE R
LINE2 L
LINE2 R
MIC SW
LANC I/O
SW 9V
SHARPNESS
HEADPHONE LEVEL
SW 5V
UNSW GND
SECAM
CASSETTE IN LED
REC LED
PLAY LED
PAUSE LED
JOG 0
JOG 1
A/D 4
UNSW 5V
FP ON
SIRCS (LID)
MIC GND
MIC (ORG)
CN302
CN303
CN401
LINE2 V
N.C
SW GND
LANC I/O
UNSW GND
TO MA-140 BOARD CN926 (See page 114.)
TO MF-167 BOARD CN605 (See page 139.)
TO VI-116 BOARD CN507 (See page 91.)
TO CONTROL SWITCH BLOCK CN2 (See page 143.)
CNJ301 MIC
CNJ302 HEAD PHONE
CNJ303 V L R LINE 2 IN
CNJ304 LANC
SHARPNESS
HEADPHONE
COMMAND MODE
S401
RV401 2k
RV402 10k



VSX-1761

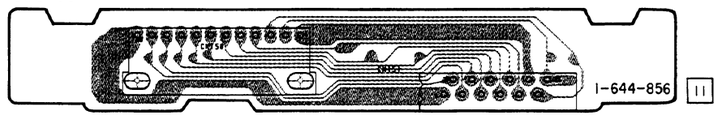
- **Signal palth**

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

MF-168/MF-169/MF-170 (FRONT PANEL), TK-17/TK-18 (RELAY) PRINTED WIRING BOARDS

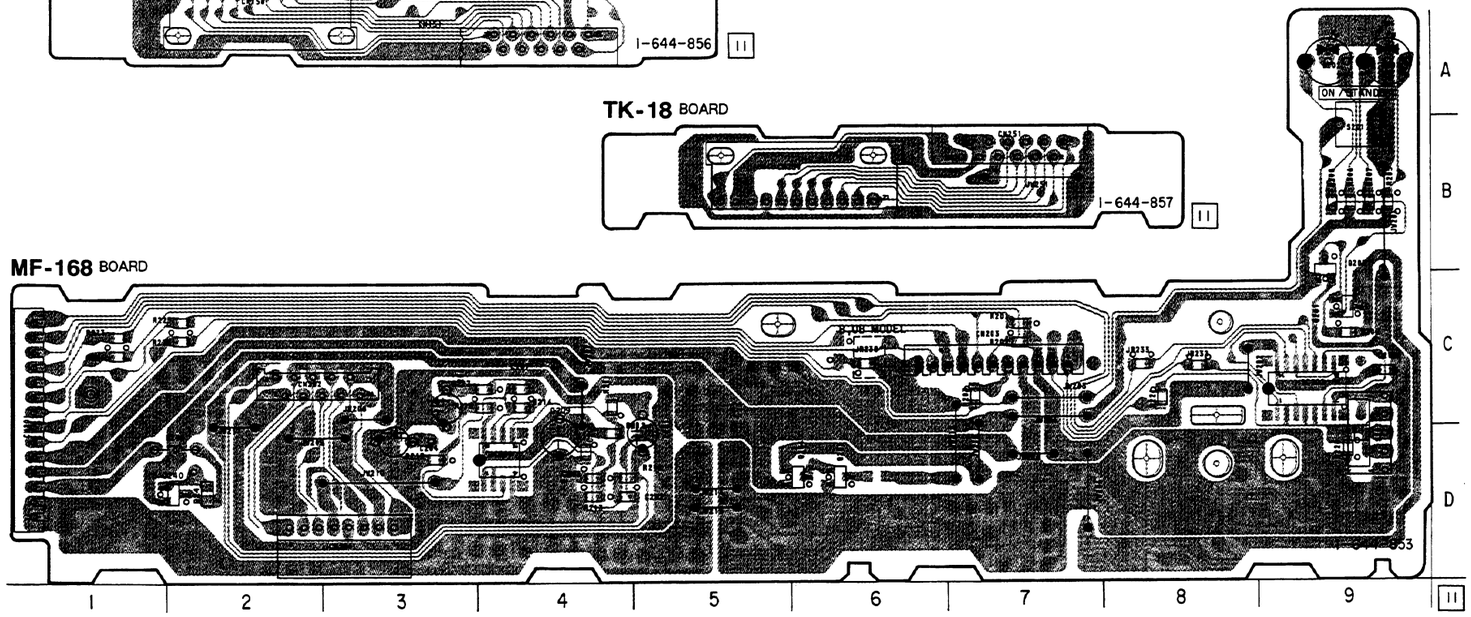
- Ref. No. MF-168 BOARD : 11,000 Series, MF-169 BOARD : 12,000 Series, MF-170 BOARD : 13,000 Series, TK-17 BOARD : 14,000 Series, TK-18 BOARD : 15,000 Series –

TK-17 BOARD



TK-18 BOARD

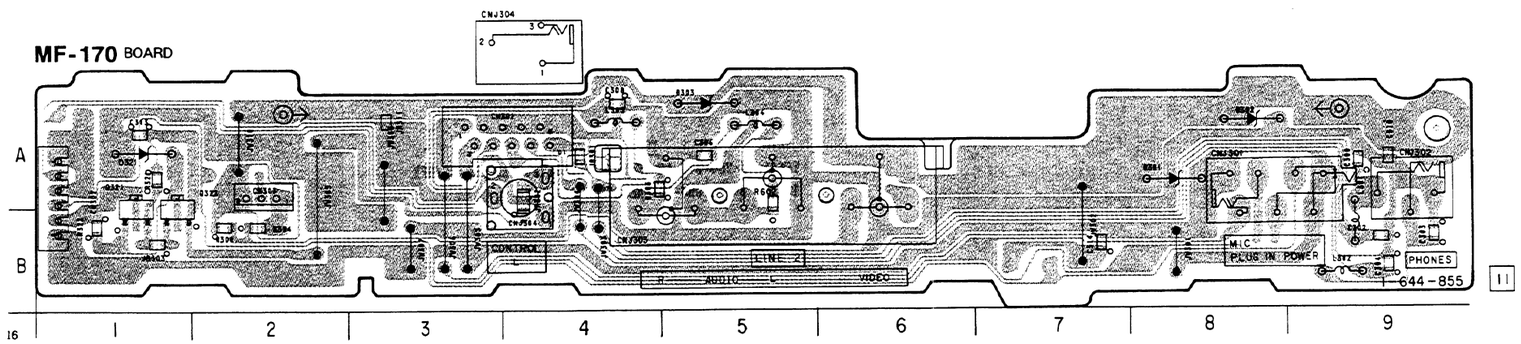
MF-168 BOARD



MF-168 BOARD

D101	A-9
D102	A-9
IC201	D-3
IC202	C-9
Q101	C-9
Q102	B-9
Q103	D-6
Q104	D-6
Q240	D-2

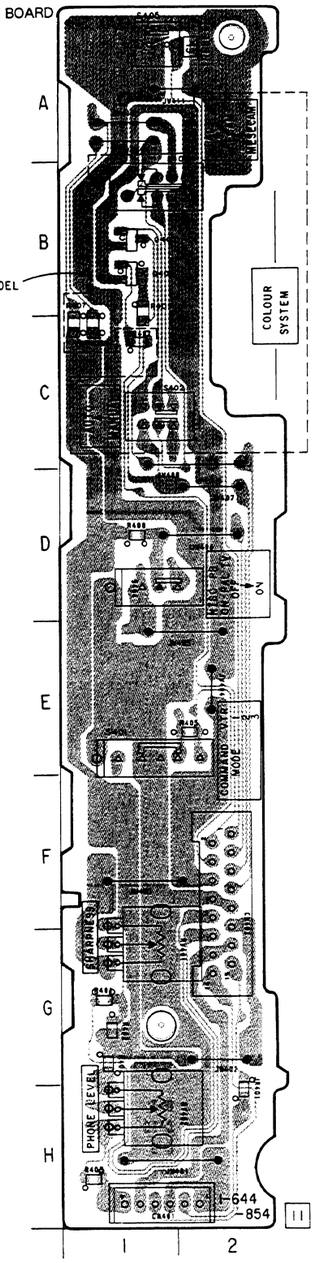
MF-170 BOARD



MF-170 BOARD

D301	A-8
D302	A-8
D303	A-5
D321	A-1
Q322	A-2

MF-169 BOARD



MF-169 BOARD

Q401	B-1	
Q402	B-1	

IC

IC201	8-759-923-90	BA4560 (EXCEPT UB)
IC201	8-759-924-46	BA4560F (UK)
IC202	8-759-032-32	MC74HC132AF

TRANSISTOR

Q201	8-729-230-49	2SC2712-G (UB)
Q202	8-729-421-19	UN2213 (UB)
Q203	8-729-140-75	2SD999-CLCK (EXCEPT UB)
Q204	8-729-140-75	2SD999-CLCK (EXCEPT UB)
Q240	8-729-230-49	2SC2712-G (UB)

TRANSISTOR

Q321	8-729-140-75	2SD999-CLCK (UB)
Q322	8-729-140-75	2SD999-CLCK (UB)

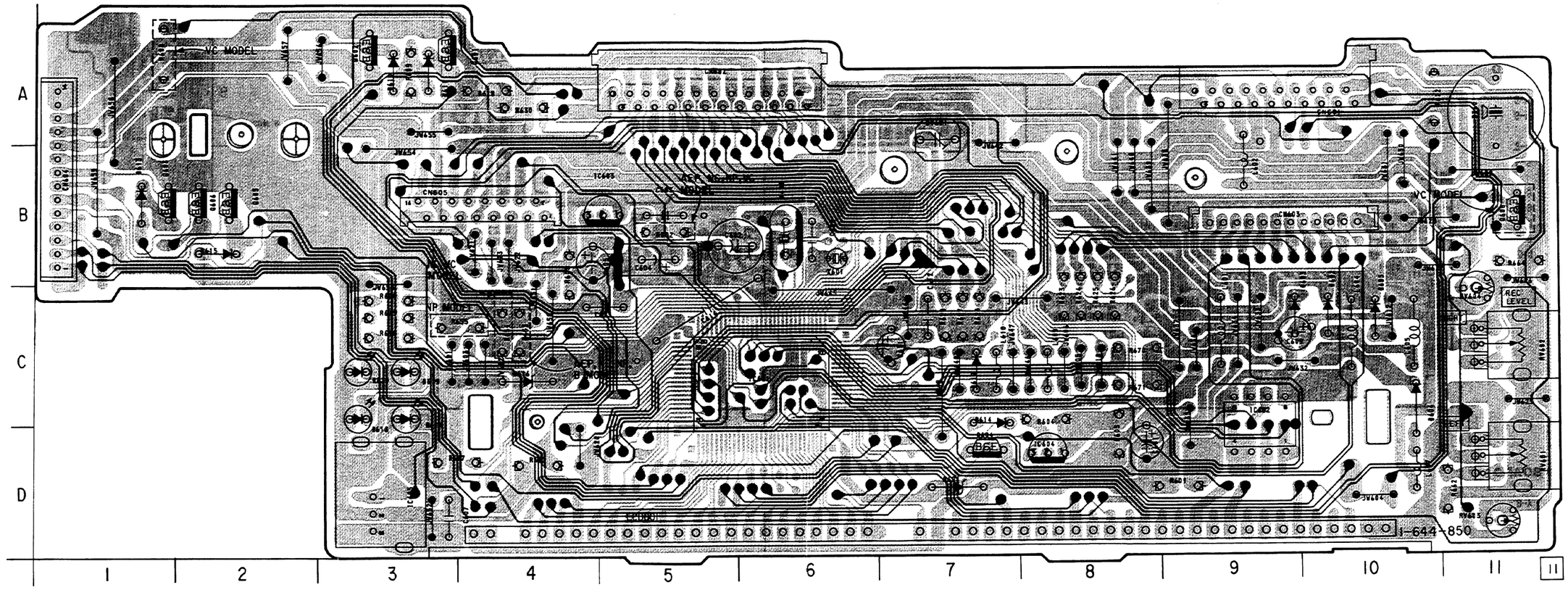
TRANSISTER

Q401	8-729-421-19	UN2213-TX(B)
Q402	8-729-421-19	UN2213-TX(B)

MF-167 (DISPLAY PANEL) PRINTED WIRING BOARD

– Ref. No. MF-167 BOARD : 16,000 Series –

MF-167 BOARD



MF-167 BOARD

D601	D-7	IC601	C-5
D602	C-10	IC602	D-9
D603	C-9	IC603	B-5
D604	C-10	IC604	D-8
D605	C-10	IC605	D-3
D610	A-3		
D611	A-3	Q601	A-4
D612	C-7	Q602	A-3
D613	B-1	Q603	B-1
D614	D-7	Q604	D-7
D615	B-2	Q605	B-2
D616	C-4	Q606	B-2
D617	C-3	Q608	B-11
D618	C-3		
D619	C-3		
D620	C-3		

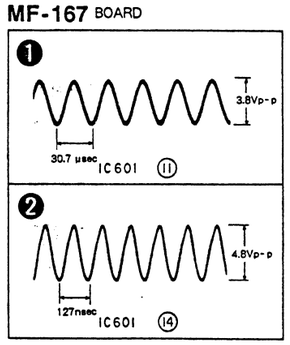
IC

IC601 8-759-078-00 MB89796B-VSX1760 (AEP/UB/NC/NP)
IC601 8-759-094-10 MB89796B-104 (VC)

MF-167 (DISPLAY PANEL) SCHEMATIC DIAGRAM

– Ref. No. MF-167 BOARD : 16,000 Series –

MF-167 BOARD



MF-167 BOARD

LCD601

IC603 RESET

IC604 POWER FAIL

IC601 DISPLAY CONTROL/ SWITCH INTERFACE

IC601 MB89796B-VSX1760

IC602 ROM

I/O BUFFER

CN604 14P

SIRCS (F.P)	1
SIRCS	2
JOG 1	3
JOG 0	4
PAUSE LED	5
PLAY LED	6
REC LED	7
CASSETTE IN LED	8
A/B 4	9
SW 5V	10
UNSW 5V	11
SW 9V	12
UNSW GND	13
UNSW GND	14

TO MF-168 BOARD CN201 (See page 133.)

CN605

MIC SW	16
LANC I/O	15
SW 9V	14
SW 9V	13
HEADPHONE LEVEL	12
SW 5V	11
SHARPNESS	10
UNSW GND	9
UNSW GND	8
SECAM	7
SW GND	6
MESECAM	5
A/B 5	4

TO MF-169 BOARD CN402 (See page 134.)

AGRAM

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

7 BOARD

LCD601

IC603 RESET

IC604 POWER FAIL

IC605 SIRCS

CN601

1	DC 9V
2	DC 6V
3	DC -30V
4	DATA VALID
5	UNSW 6V
6	UNSW 6V
7	UNSW GND
8	UNSW GND
9	UNSW GND
10	UNSW GND
11	POWER ON
12	LEVEL VR Vcc
13	BAND L
14	PAL/SECAM
15	LEVEL VR (R)
16	LEVEL VR (L)
17	HP LEVEL
18	SW GND
19	BACK UP 5V
20	SYNC PULSE

TO MA-140 BOARD CN904 (See page 112)

IC601
DISPLAY CONTROL/ SWITCH INTERFACE
IC601 MB89796B-VSX1760

IC602 ROM

I/O BUFFER

VC MODEL

VC MODEL LED DRIVE

CN602 24P

1	PLL ENABLE
2	PLL DATA
3	PLL CLK
4	AFT
5	SIRCS IN
6	SIRCS OUT
7	DSO CS
8	SCL
9	SDA
10	BD/IL
11	STD/NICAM
12	SD BUS
13	SI BUS
14	S CLK
15	VPS CS/MESECAM
16	VPS RESET/SECAM
17	SW 5V
18	COSMO CS
19	COSMO RST
20	SHARPNESS
21	H DET
22	C+DET
23	MIC SW
24	SW 9V

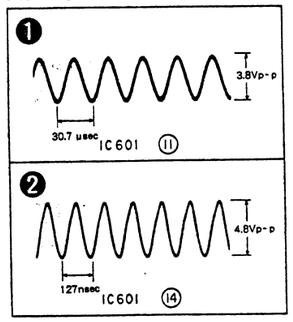
TO MA-140 BOARD CN905 (See page 112)

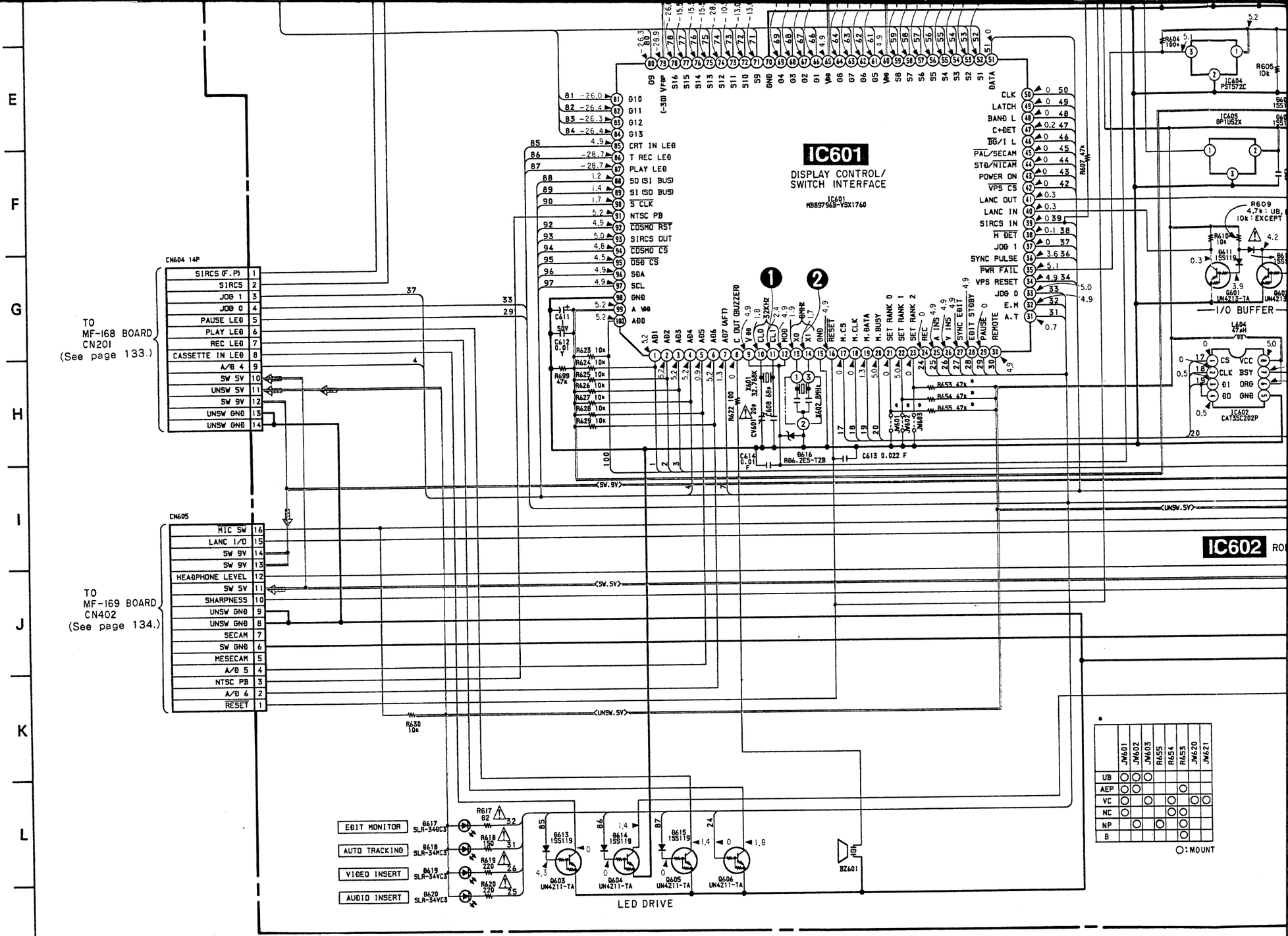
CN603 12P

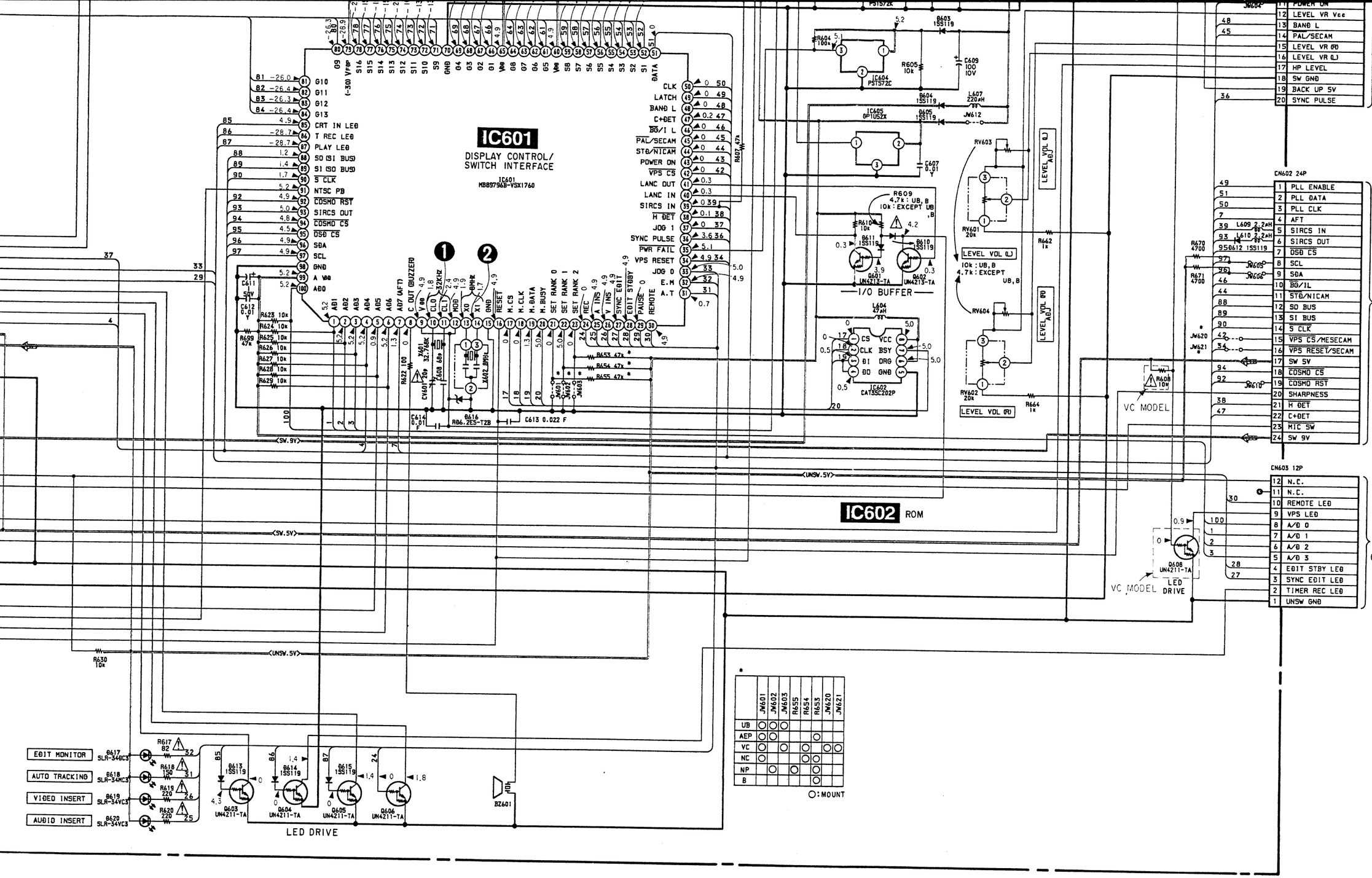
12	N.C.
11	N.C.
10	REMOTE LED
9	VPS LED
8	A/D 0
7	A/D 1
6	A/D 2
5	A/D 3
4	EDIT STBY LED
3	SYNC EDIT LED
2	TIMER REC LED
1	UNSW GND

TO TK-17 BOARD CN150 (See page 134.)

MF-167 BOARD


1
3.8Vp-p
30.7 µsec
IC601 (11)
2
4.8Vp-p
127nsec
IC601 (14)


IC601
DISPLAY CONTROL/
SWITCH INTERFACE
IC601
MB89796B-VSX1760
IC602
I/O BUFFER
CN604 14P
SIRCS (F.P) 1
SIRCS 2
JOG 1 3
JOG 0 4
PAUSE LED 5
PLAY LED 6
REC LED 7
CASSETTE IN LED 8
A/B 4 9
SW 5V 10
UNSW 5V 11
SW 9V 12
UNSW GND 13
UNSW GND 14
TO
MF-168 BOARD
CN201
(See page 133.)
CN605
MIC SW 16
LANC I/O 15
SW 9V 14
SW 9V 13
HEADPHONE LEVEL 12
SW 5V 11
SHARPNESS 10
UNSW GND 9
UNSW GND 8
SECAM 7
SW GND 6
MESECAM 5
A/B 5 4
NTSC PB 3
A/B 6 2
RESET 1
TO
MF-169 BOARD
CN402
(See page 134.)
EDIT MONITOR
AUTO TRACKING
VIDEO INSERT
AUDIO INSERT
LED DRIVE
BZ601
JW601
JW602
JW603
R655
R654
R653
JW620
JW621
UB
AEP
VC
NC
NP
B
○: MOUNT


IC601
DISPLAY CONTROL/
SWITCH INTERFACE
IC601
MB89756B-VSX1760
I/O BUFFER
IC602 ROM
IC602
CAT35C202P
IC604
PST572Z
IC605
GP1US2x
CN602 24P
1 PLL ENABLE
2 PLL DATA
3 PLL CLK
4 AFT
5 SIRCS IN
6 SIRCS OUT
7 050 CS
8 SCL
9 SDA
10 BG/IL
11 STD/NICAM
12 SD BUS
13 SI BUS
14 S CLK
15 VPS CS/MESECAM
16 VPS RESET/SECAM
17 SW 5V
18 COSMO CS
19 COSMO RST
20 SHARPNESS
21 H DET
22 C+DET
23 MIC SW
24 SW 9V
TO
MA-140 BOARD
CN905
(See page 112)
CN603 12P
12 N.C.
11 N.C.
10 REMOTE LED
9 VPS LED
8 A/D 0
7 A/D 1
6 A/D 2
5 A/D 3
4 EDIT STBY LED
3 SYNC EDIT LED
2 TIMER REC LED
1 UNSW GND
TO
TK-17 BOARD
CN150
(See page 134.)
LEVEL VOL (L)
LEVEL VOL (R)
VC MODEL
LED DRIVE
EDIT MONITOR
AUTO TRACKING
VIDEO INSERT
AUDIO INSERT
BZ601
UB
AEP
VC
NC
NP
B
O: MOUNT

TC-27 (TRANSCODER) SCHEMATIC DIAGRAM (B Model)

– Ref. No. TC-27 BOARD : 18,000 Series –

TC-27 BOARD

IC106 OUTPUT SELECTOR

IC102 SECAM DEMOD

IC101 INPUT SWITCH

IC104 SECAM DEMOD

CN101 6P I 2.0 EL RED
- A GND 1
- SW 5V 2
- P in P P/C 3
- SECAM ACK 4
- PB 5
- EDIT MON ON 6

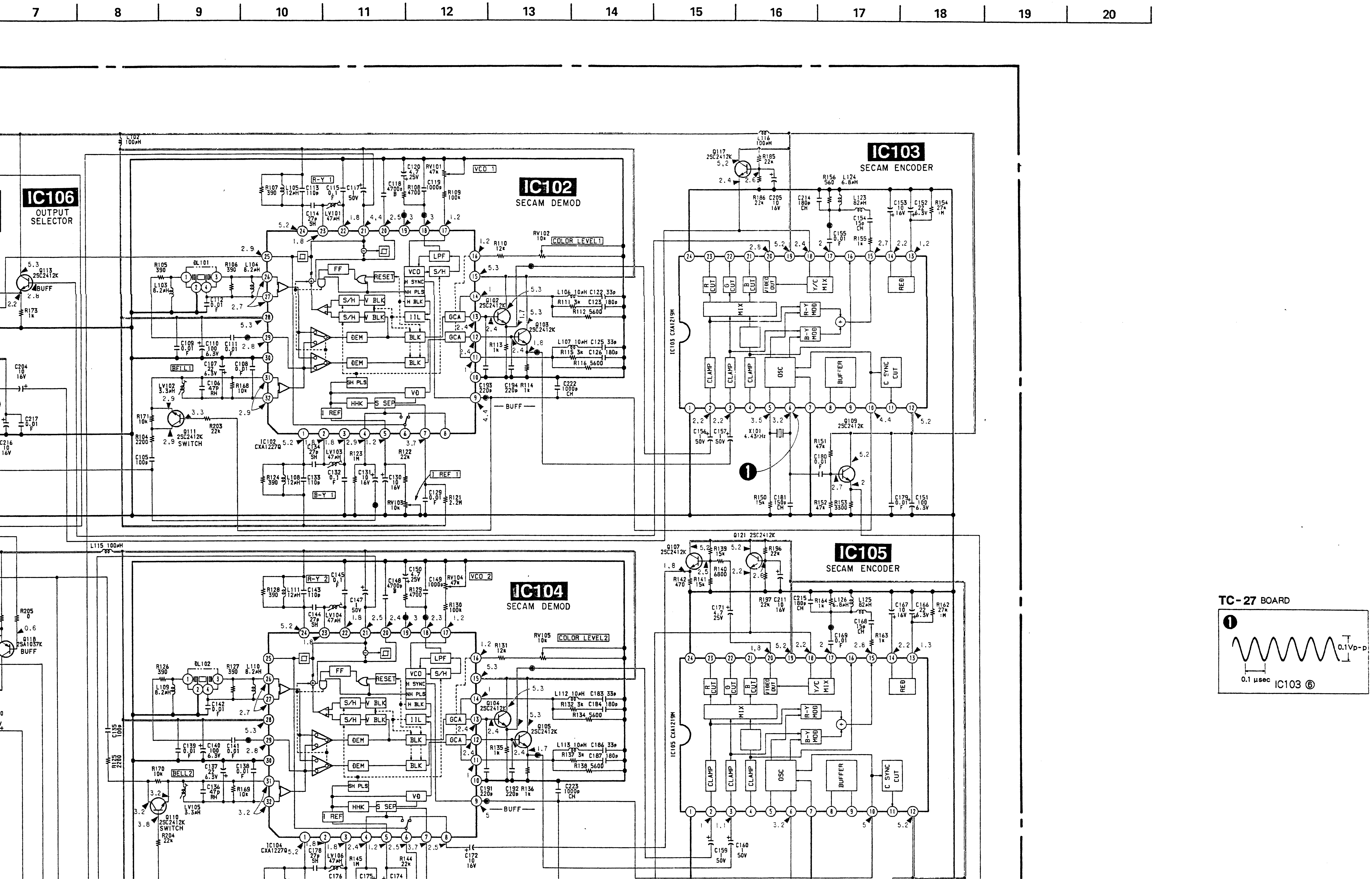
TO MA-140 BOARD CN925 (See page 112.)

CN102 8P I 2.0 EL RED
- LINE/TUNER VIDEO 1
- GND 2
- PB/EE VIDEO 3
- GND 4
- DIGITAL VIDEO 5
- GND 6
- OSD OUT 7
- GND 8

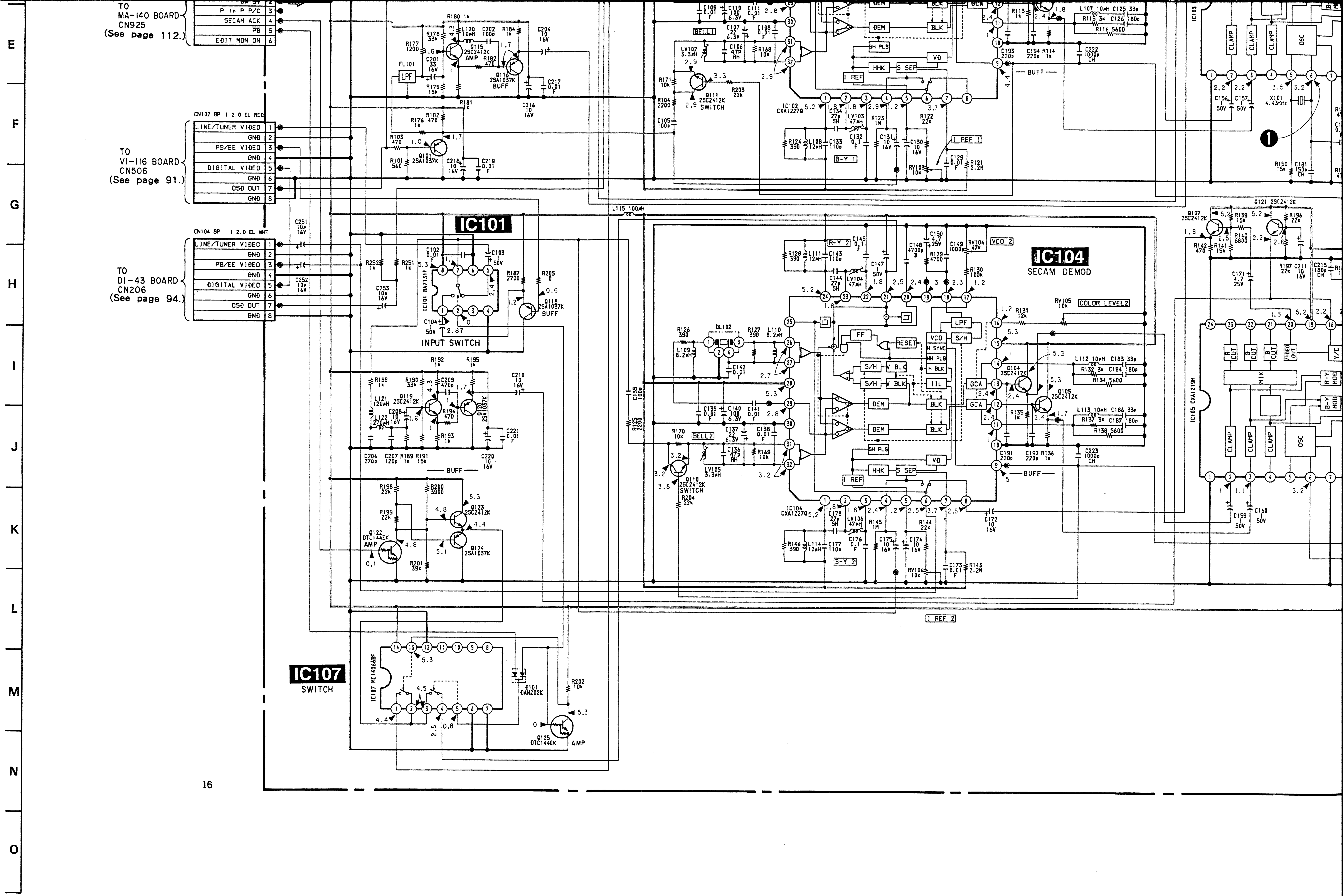
TO VI-116 BOARD CN506 (See page 91.)

CN104 8P I 2.0 EL WHT
- LINE/TUNER VIDEO 1
- GND 2
- PB/EE VIDEO 3
- GND 4
- DIGITAL VIDEO 5
- GND 6
- OSD OUT 7
- GND 8

TO DI-43 BOARD CN206 (See page 94.)



7
8
9
10
11
12
13
14
15
16
17
18
19
20
IC106
OUTPUT SELECTOR
IC102
SECAM DEMOD
IC103
SECAM ENCODER
IC104
SECAM DEMOD
IC105
SECAM ENCODER
IC102 CXA1227Q
IC104 CXA1227Q
IC103 CXA1219M
IC105 CXA1219M
VCO 1
VCO 2
COLOR LEVEL1
COLOR LEVEL2
R-Y 1
B-Y 1
R-Y 2
BELL1
BELL2
I REF 1
BUFF
SWITCH
Q113 2SC2412K
Q111 2SC2412K
Q118 2SA1037K
Q110 2SC2412K
Q102 2SC2412K
Q103 2SC2412K
Q104 2SC2412K
Q105 2SC2412K
Q117 2SC2412K
Q109 2SC2412K
Q107 2SC2412K
Q121 2SC2412K
X101 4.43MHz
TC-27 BOARD
0.1Vp-p
0.1 μsec
IC103 ⑥



TO MA-140 BOARD CN925 (See page 112.)
P in P P/C
SECAM ACK
PB
EDIT MON ON
CN102 8P
LINE/TUNER VIDEO
GND
PB/EE VIDEO
DIGITAL VIDEO
OSD OUT
TO VI-116 BOARD CN506 (See page 91.)
CN104 8P
TO DI-43 BOARD CN206 (See page 94.)
IC101
INPUT SWITCH
IC104
SECAM DEMOD
IC107
SWITCH
BUFF
AMP
COLOR LEVEL2
VCO 2
R-Y 2
B-Y 1
B-Y 2
I REF 1
I REF 2
BELL1
BELL2
CLAMP
OSC
MIX
16

R 210	1-215-425-00	1.5K	
RR 211	FOR ADJUSTMENT		
R 212	〃		
R 213	〃		
R 214	1-249-429-11	10K 1/4W	
R 215	1-219-149-11	FUSE RESISTOR 1 Ω 1/4W	
R 216	1-219-112-11	〃 10 Ω 1/4W	
R 217	〃	〃	
D 101	8-719-510-06	S1WA60	
D 102	8-719-304-63	RM11C	(ORIGINAL ERA15-06)
D 103	8-719-948-45	ERA22-08	
D 104	8-719-200-02	10E-2	
D 105	8-719-912-20	ISS120	(ORIGINAL MA165)
D 106	8-719-109-63	RD3.0ES-B2	
Q 101	8-729-204-94	2SC3559	(ORIGINAL 2SC4231)
Q 102	8-729-265-52	2SC2655	(〃 2SC3377)
PC 101	9-903-923-01	CN3171	
Q 201	8-729-140-93	2SB733-34	
D 201	8-719-313-16	AU02A	(ORIGINAL ERA18-02)
D 202	8-719-114-82	RD16JSB1	
D 203	8-719-920-67	ERC91-02	
D 204	〃	〃	
D 205	8-719-981-00	ERC81-004	
D 206	〃	〃	
D 207	8-719-313-16	AU02A	
D 208	8-719-980-78	ERA83-006	(ORIGINAL ERA83-004)
D 209	8-719-110-88	RD39ES-B	(〃 MA4390)
SCR 201	8-719-104-17	2P5M	(ORIGINAL 2P4M 500V →600V)
IC 201	NOTHING	PQ12RF13	(PQ12RF11 9-902-066-01)
IC 202	8-759-682-07	M5237L	
IC 203	9-902-066-01	PQ12RF11	
IC 204	8-749-920-43	SI-8050CA	(SI-3050CA)
IC 205	8-759-420-19	AN1431T	(ORIGANAL HA17431P)
L 181	1-421-915-11	CHALK COIL	
L 201	9-998-937-01	〃 10μF	
AC INLET	1-540-054-11	AC INLET	
T 101	NO SUBSTITUTION (SWITCHING TRANSF)		

IC104
SECAM DEMOD

IC105
SECAM ENCODER

IC103 CXA1215M

IC104 CXA1227Q

IC102 CXA1227Q

Q111 2SC2412K SWITCH

Q110 2SC2412K SWITCH

Q118 2SA1037K BUFF

Q125 DTC144EK AMP

D101 DAN202K

Q103 2SC2412K

Q104 2SC2412K

Q105 2SC2412K

Q107 2SC2412K

Q109 2SC2412K

Q121 2SC2412K

X101 4.43MHz

VCO 2

COLOR LEVEL2

RV105 10k

RV103 10k

RV106 10k

BELL2

REFL1

I REF

I REF 1

I REF 2

B-Y 1

B-Y 2

BUFF

SH PLS

VD

HHK

S SEP

VCO

LPF

FF

RESET

S/H

V BLK

H BLK

H SYNC

NH PLS

1IL

GCA

ØEM

BLK

CLAMP

OSC

BUFFER

C SYNC CUT

R-Y MOD

B-Y MOD

M1X

Y/C M1X

R CUT

G CUT

B CUT

VIDEO OUT

RED

TC-27 BOARD

1

0.1Vp-p

0.1 µsec

IC103 ⑥

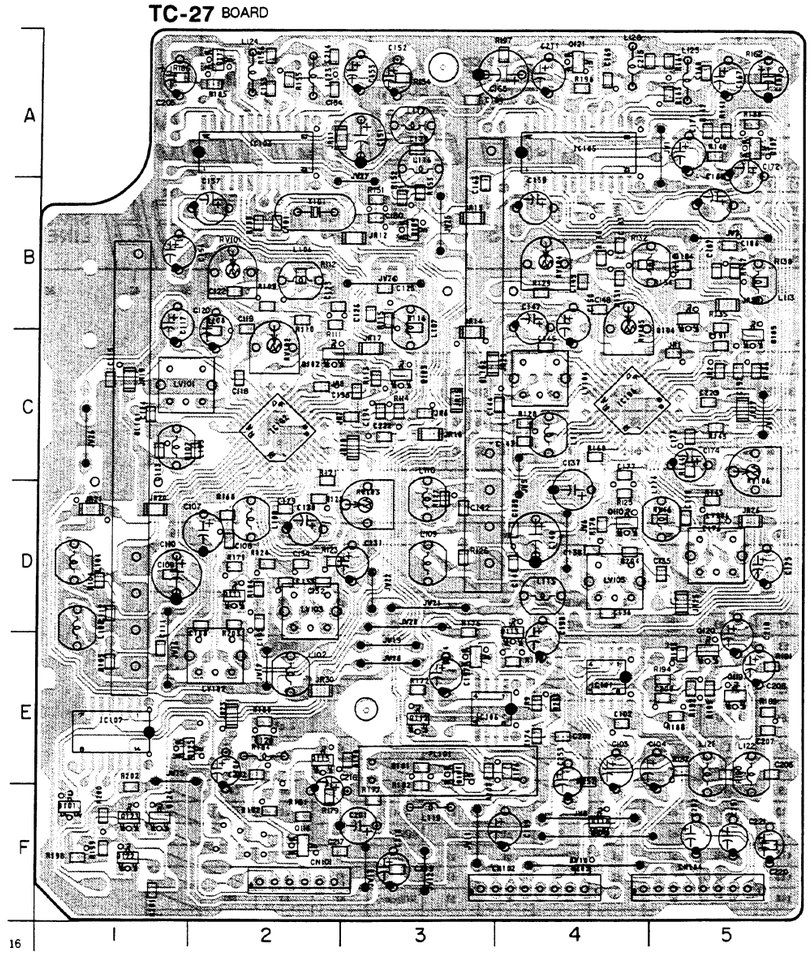
TC-27 (TRANSCODER) PRINTED WIRING BOARD (B Model)

— Ref. No. TC-27 BOARD : 18,000 Series –

TC-27 BOARD

D101	F-1
IC101	E-4
IC102	C-2
IC103	A-2
IC104	C-4
IC105	B-4
IC106	E-4
IC107	E-1
Q101	F-3
Q102	C-2
Q103	C-3
Q104	B-5
Q105	B-5
Q107	A-5
Q109	B-3
Q110	D-4
Q111	D-2
Q112	E-3
Q113	E-4
Q114	E-3
Q115	E-2
Q116	F-2
Q117	A-2
Q118	F-4
Q119	E-5
Q120	E-5
Q121	A-4
Q122	F-1
Q123	F-1
Q124	F-1
Q125	E-2

TC-27 BOARD



DIODE

D101	8-719-400-18	MA152WK

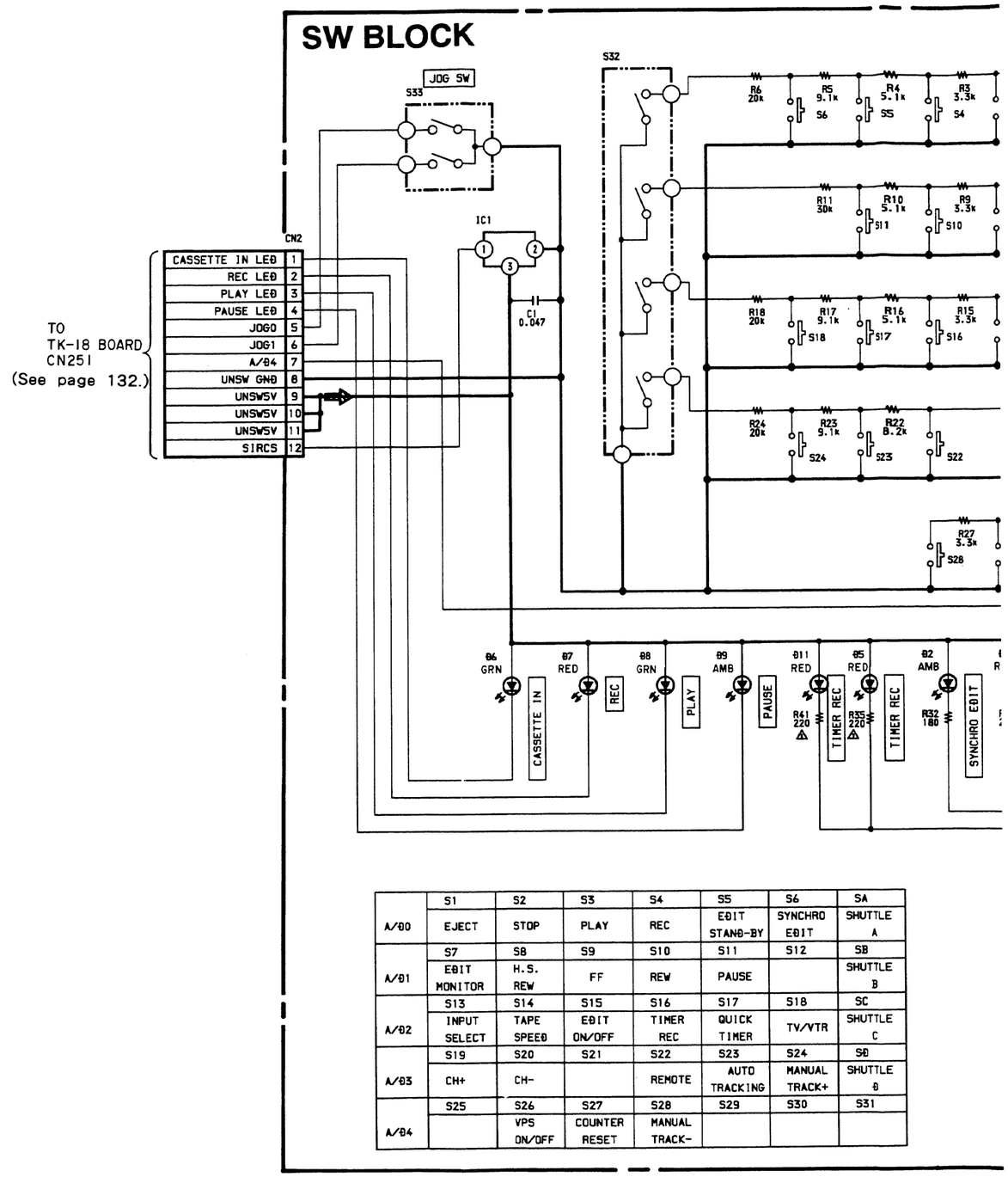
IC

IC101	8-759-941-68	BA7131F
IC102	8-752-035-00	CXA1227Q
IC103	8-752-034-04	CXA1219M
IC104	8-752-035-00	CXA1227Q
IC105	8-752-034-04	CXA1219M
IC106	8-759-710-29	NJM2235M
IC107	8-759-008-67	MC14066BF

TRANSISTOR

Q101	8-729-216-22	2SA1162
Q102	8-729-920-74	2SC2412K-QR
Q103	8-729-920-74	2SC2412K-QR
Q104	8-729-920-74	2SC2412K-QR
Q105	8-729-920-74	2SC2412K-QR
Q107	8-729-920-74	2SC2412K-QR
Q109	8-729-920-74	2SC2412K-QR
Q110	8-729-920-74	2SC2412K-QR
Q111	8-729-920-74	2SC2412K-QR
Q112	8-729-920-74	2SC2412K-QR
Q113	8-729-920-74	2SC2412K-QR
Q114	8-729-920-74	2SC2412K-QR
Q115	8-729-920-74	2SC2412K-QR
Q116	8-729-216-22	2SA1162
Q117	8-729-920-74	2SC2412K-QR
Q118	8-729-216-22	2SA1162
Q119	8-729-920-74	2SC2412K-QR
Q120	8-729-216-22	2SA1162
Q121	8-729-920-74	2SC2412K-QR
Q122	8-729-901-01	DTC144EK
Q123	8-729-920-74	2SC2412K-QR
Q124	8-729-216-22	2SA1162
Q125	8-729-901-01	DTC144EK

SWITCH BLOCK



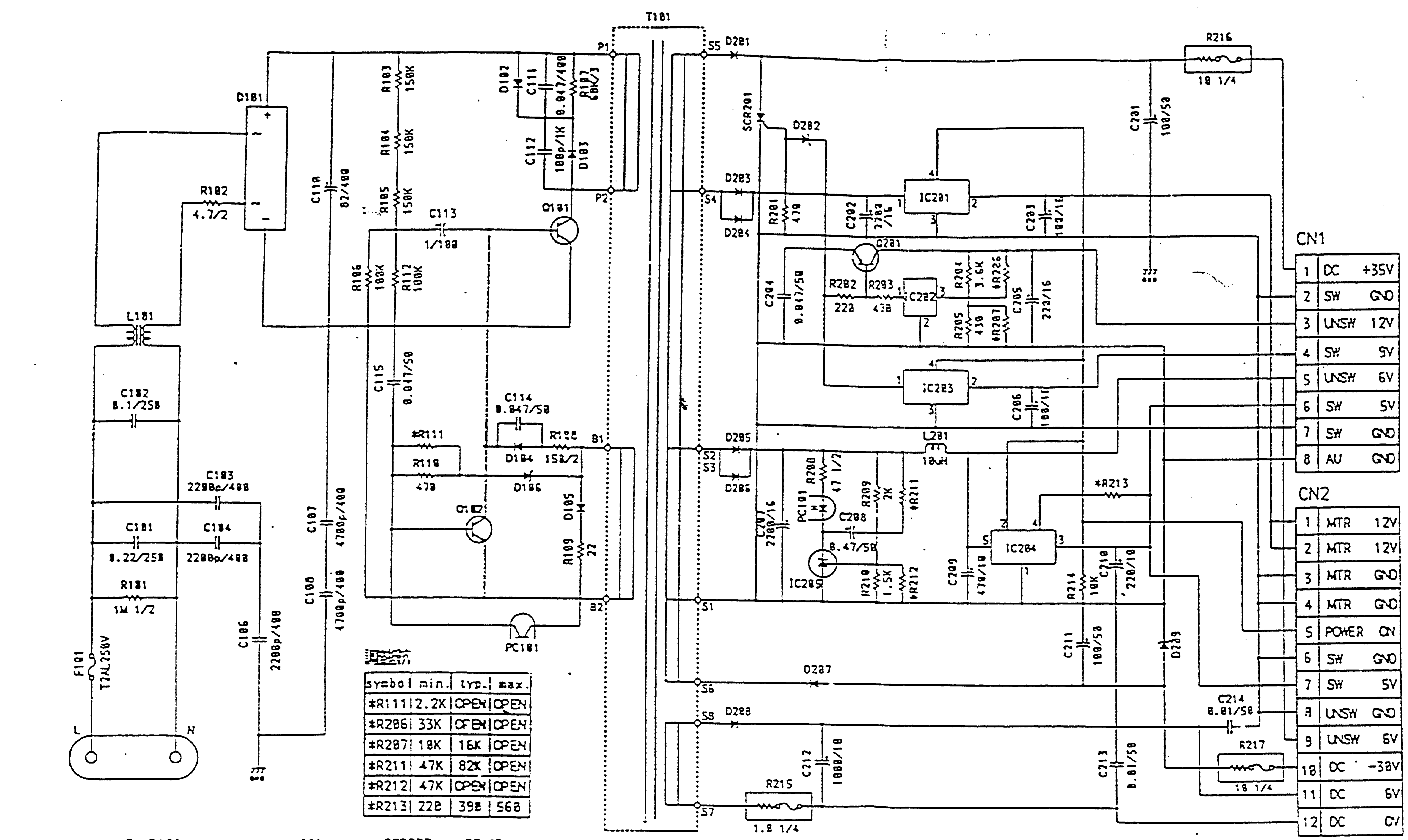
A/00	S1	S2	S3	S4	S5	S6	SA
	EJECT	STOP	PLAY	REC	EDIT STAND-BY	SYNCHRO EDIT	SHUTTLE A
A/01	S7	S8	S9	S10	S11	S12	SB
	EDIT MONITOR	H.S. REW	FF	REW	PAUSE		SHUTTLE B
A/02	S13	S14	S15	S16	S17	S18	SC
	INPUT SELECT	TAPE SPEED	EDIT ON/OFF	TIMER REC	QUICK TIMER	TV/VTR	SHUTTLE C
A/03	S19	S20	S21	S22	S23	S24	SD
	CH+	CH-		REMOTE	AUTO TRACKING	MANUAL TRACK+	SHUTTLE D
A/04	S25	S26	S27	S28	S29	S30	S31
		VPS ON/OFF	COUNTER RESET	MANUAL TRACK-			

16

SWITCH SW

SLV-725VC/835VC

SONY



symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101 S1WBA60
D102 ERA15-06 or AM01A
D103 ERA22-08 or EG01C
D104 ERA15-02 or 11ES2
D105 MA165
D106 RD3.0ES or MA4030
Q101 2SC4231
Q102 2SC3377
PC101 ON3171

Q201 2SB733 or 2SA534 or 2SB1434
D201, 207 AU02Z or ERA15-02
D202 RD15JSB or MA4150
D203, 204 S3L20U or ERC91-02 or RL4Z
D205, 206 D3S4M or RK44 or ERC81-004
D208 AK04 or ERAE3-004
D209 RD39ES or MA4390

SCR201 2P4M
IC201 PQ12RF13
IC202 M5237L
IC203 PQ09RF11
IC204 SI-3052CA
IC205 HA17431 or AN1431T

単位	抵抗	Ω/W （指定なきは 1/4W）
	コンデンサ	μF/V （p 表示は pF）

ORIGINAL MODEL VSX-1762

SR-427 回路図

MODEL VSX-1762

PART NO 0-479-513-01

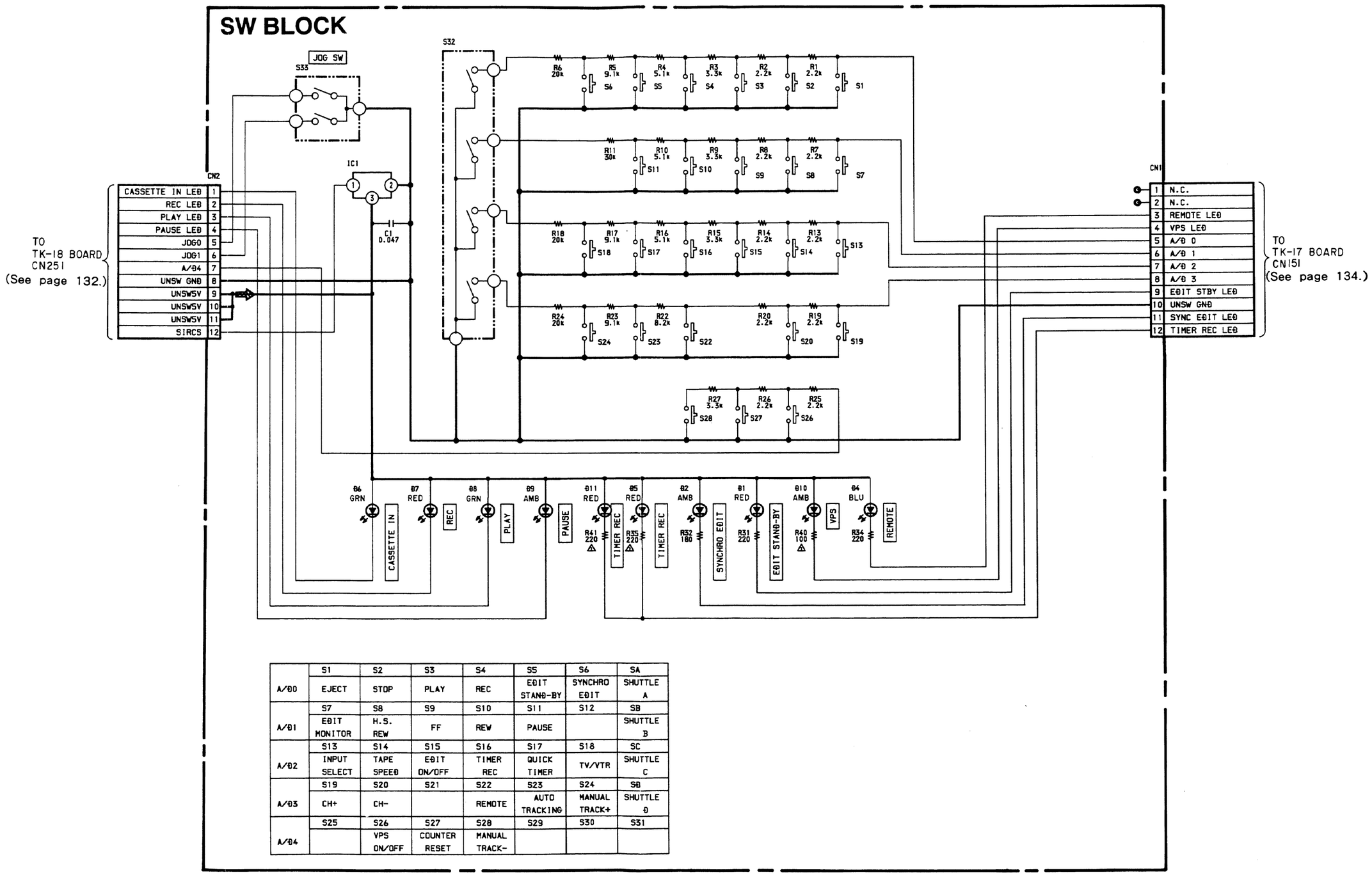
PART NO. SB-D1595

1-413-758-11

SHEET 10

KPL POWER BLOCK

SWITCH BLOCK

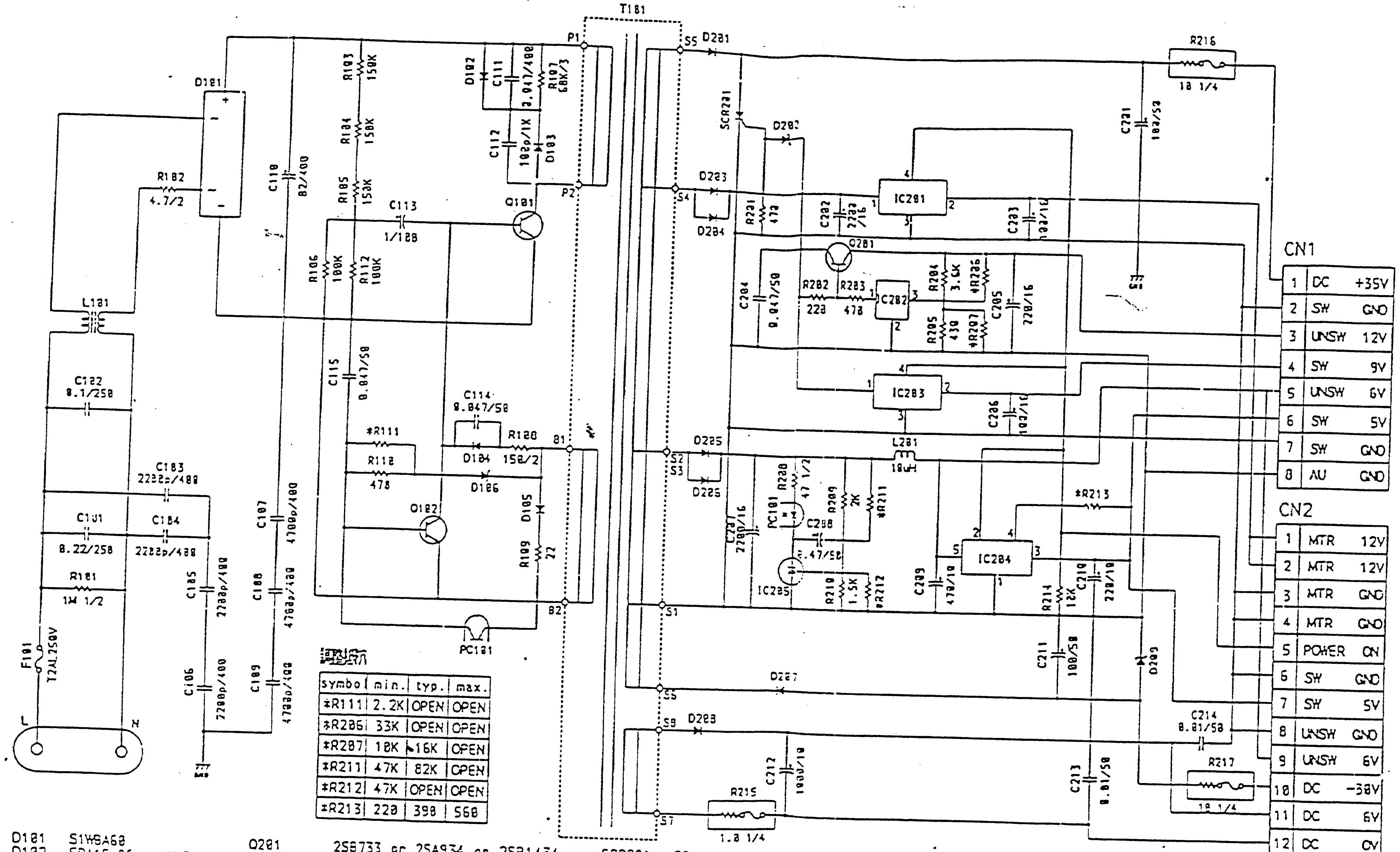


	S1	S2	S3	S4	S5	S6	S7
A/D0	EJECT	STOP	PLAY	REC	EDIT STAND-BY	SYNCHRO EDIT	SHUTTLE A
A/D1	S7	S8	S9	S10	S11	S12	SB
	EDIT MONITOR	H.S. REW	FF	REW	PAUSE		SHUTTLE B
A/D2	S13	S14	S15	S16	S17	S18	SC
	INPUT SELECT	TAPE SPEED	EDIT ON/OFF	TIMER REC	QUICK TIMER	TV/VTR	SHUTTLE C
A/D3	S19	S20	S21	S22	S23	S24	SD
	CH+	CH-		REMOTE	AUTO TRACKING	MANUAL TRACK+	SHUTTLE D
A/D4	S25	S26	S27	S28	S29	S30	S31
		VPS ON/OFF	COUNTER RESET	MANUAL TRACK-			

16

SLV-835 UY / UK2　SLV-825 UB

SONY



symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	PS2561

Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390

SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3052CA
IC205	HA17431 or AN1431T

REVISION

DRAWN BY / PLANNED BY / CHECKED BY / APPROVED BY

UNIT mm　TOLERANCE　USED ON

SCALE

ORIGINAL MODEL VSX-1760

MATERIAL (COLOR)　FINISH (COLOR)

DESCRIPTION

SR-426 回路図

MODEL VSX-1760

PART NO. SB-D1914

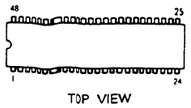
0-479-512-01　1-413-757-11

SHEET 10

ISSUED　REVISED

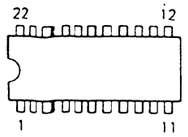
A3

AN3231K



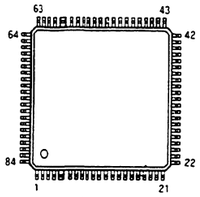
TOP VIEW

AN3327K



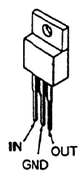
(Top view)

AN3937NFBP

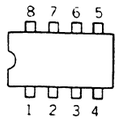


(TOP VIEW)

BA178M05

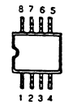


BA4560
CXL5003P
CAT35C202P
MSM6989RS
RC4558P
TL082ACP



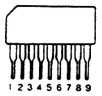
(Top view)

BA4560F
BA4558F
MM1148XFF
MM1149XF
TK15120M

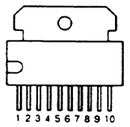


TOP VIEW

BA6138
BA7021
LVA519S
MM1053XS

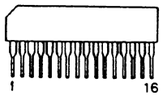


BA6238A

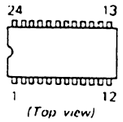


Making side view

BA7007

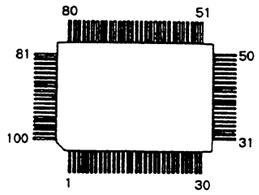


BH7733S
TA8823N

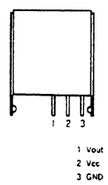


(Top view)

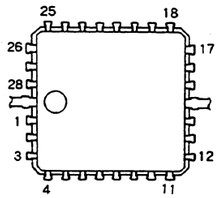
CXP80724-040Q
HD49410
MB89796B-VSX1760
MB89796B-104



GP1U52X



HA11535MP
HA11567MP
HA118088MP



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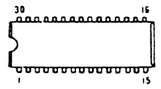
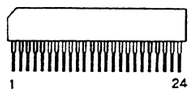
HA118016NT

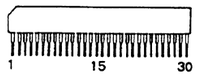


(Top view)

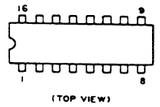
HM53461ZP-12



LA7297

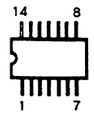


MC14053BCP
TC4053BF



(TOP VIEW)

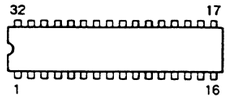
MC14001BF
MC74HC132AF
SN74HC74ANS



TOP VIEW

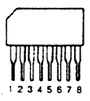
AN3916
MM1031XMR

M50555-VSX1760

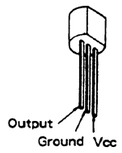


TOP VIEW

BA7611AN
M5201L



PST572C
PST572H
PST572K-T



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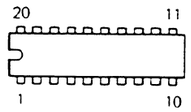
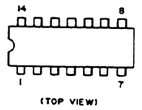


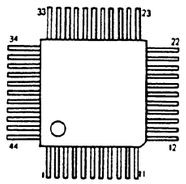
(Top view)

SDA5642
uPC324C



(TOP VIEW)

uPD75004GB-VSX182



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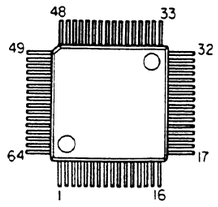
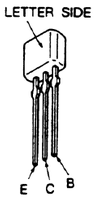


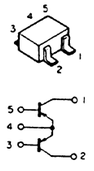
DTA114EK
DTA143EK
DTC114EK
DTC124EK
DTC144EK
UN2113
UN2213
2SA1052-C
2SA1162
2SB709A-R
2SC1623-L5L6
2SC2412K-QR
2SC2712-G
2SC3142-J4
2SD601A-R

DTA144ES
DTC114ES

DTC144ES
UN411L
2SA1309A-R
2SC2785-HFE

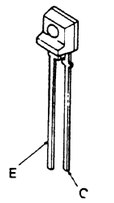


FMS1



KSA708
KSC1008

PT483F1S



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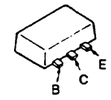
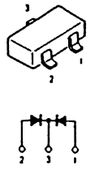
2SD655-E

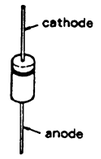
2SB1000A-L
2SD999-CLCK
2SD1005-BV



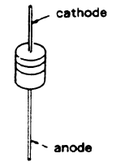
MA152WK



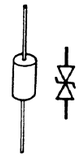
RD13ES-B2



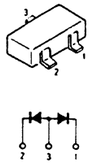
RD33ES-B2
RD33ES-T2B
RD4.3ES-T2B
RD4.7ES-T2B
RD6.2ES-B2
RD6.8ES-B2
RD8.2ES-B2
11ES2
1SS119



RD9.1E-W



1S2836



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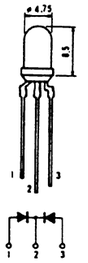
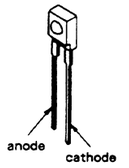


GL451VS1



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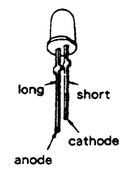

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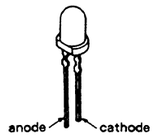
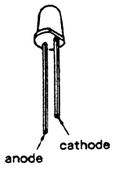
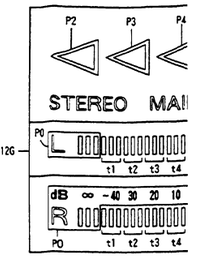
SLR-34UC3



SLR34MC3
SLR34VC3





• Interconnection of elect

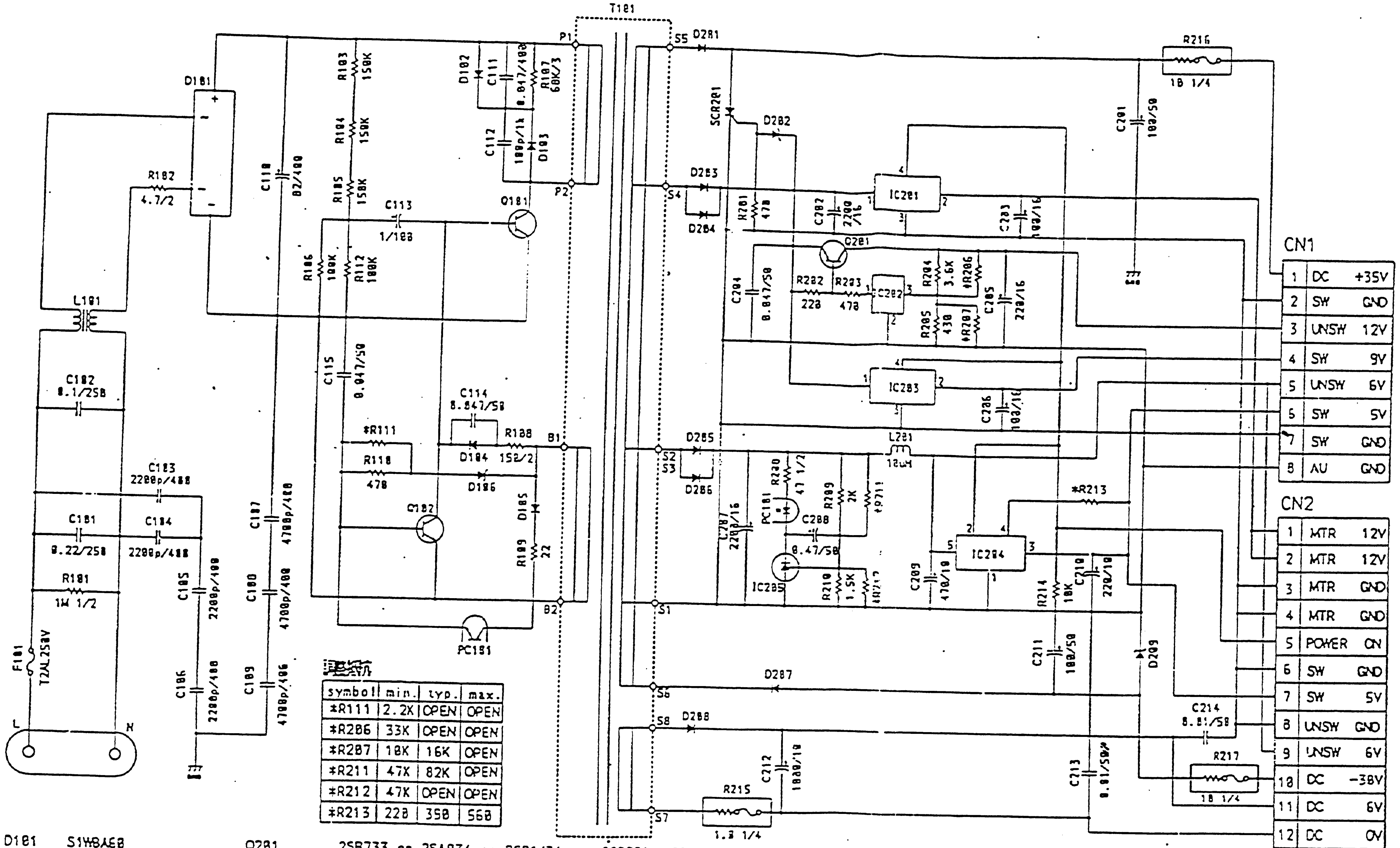
Lead No.	1	2
Interconnected electrodes	F (+)	F (+)
Lead No.	28	29
Interconnected electrodes	NP	NC

• Anode connection

	13G
S0	dB∞ ~+10 RIII
S1	t1
S2	t2
S3	t3
S4	t4
S5	t5
S6	t6
S7	t7
S8	t8
S9	t9
S10	t10
S11	t11
S12	t12
S13	t13
S14	t14
S15	t15
S16	t16

SLV-725 AEP/B/NC

SONY



symbol	min.	typ.	max.
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*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	ON3171
Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390
SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3050CA
IC205	HA17431 or AN1431T

注	抵抗	Ω/W (指定なき時1/4W)
	コンデンサ	μF/V (p 表示はpF)

REVISION

DRAWN BY	PLANNED BY	CHECKED BY	APPROVED BY	TENTATIVE	MODEL VSX-1761	PART NO. 0-479-456-01

UNIT mm · ANGLE 3rd · SCALE · TOLERANCE · USED ON · RANK · FAMILY

ORIGINAL MODEL VSX-1761

MATERIAL (COLOR) · FINISH (COLOR)

DESCRIPTION SR-425 回路図

PART NO. SB-D1594 1-413-756-11

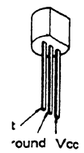
SHEET 10

ISSUED · REVISED

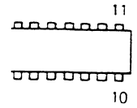
A3

UPC POWER BLOCK

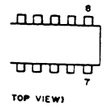
PST572C
PST572H
PST572K-T



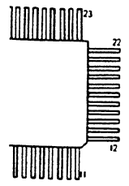
TDA8415



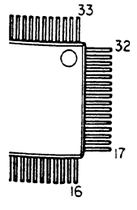
DA5642
PC324C



04GB-VSX182



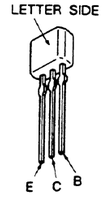
3GC-VSX1760



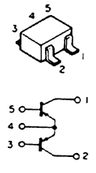
DTA114EK
DTA143EK
DTC114EK
DTC124EK
DTC144EK
UN2113
UN2213
2SA1052-C
2SA1162
2SB709A-R
2SC1623-L5L6
2SC2412K-QR
2SC2712-G
2SC3142-J4
2SD601A-R

DTA144ES
DTC114ES

DTC144ES
UN411L
2SA1309A-R
2SC2785-HFE

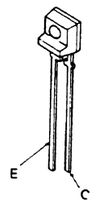


FMS1



KSA708
KSC1008

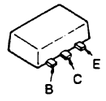
PT483F1S



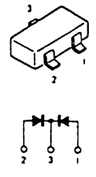
2SC1509

2SD655-E

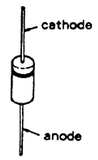
2SB1000A-L
2SD999-CLCK
2SD1005-BV



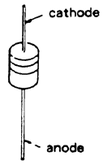
MA152WK



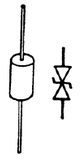
RD13ES-B2



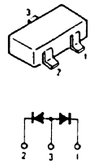
RD33ES-B2
RD33ES-T2B
RD4.3ES-T2B
RD4.7ES-T2B
RD6.2ES-B2
RD6.8ES-B2
RD8.2ES-B2
11ES2
1SS119



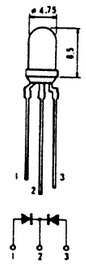
RD9.1E-W



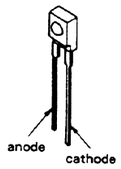
1S2836



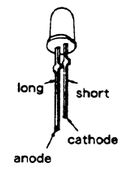
BRPG5014X-K



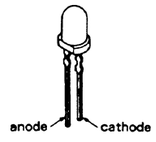
GL451VS1



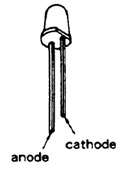
PY5504S-1



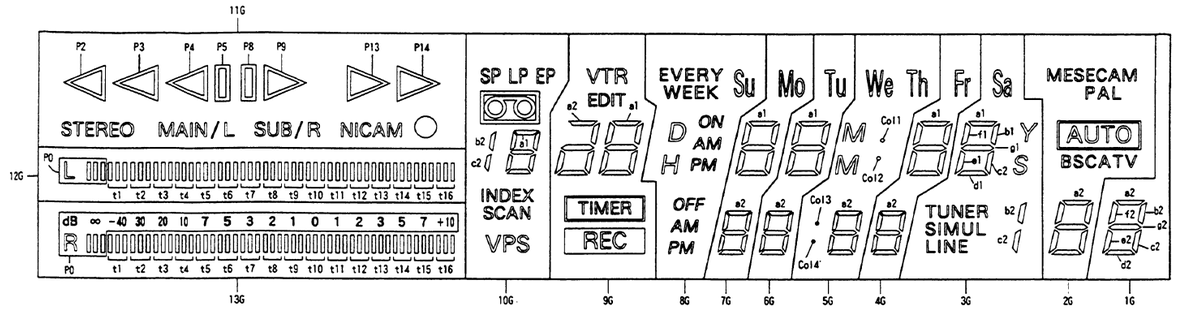
SLR34DC3
SLR-34UC3



SLR34MC3
SLR34VC3



4-4. INDICATOR TUBE, FLUORESCENT DESCRIPTION



• Interconnection of electrodes

Lead No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Interconnected electrodes	F (+)	F (+)	NP	13G	12G	11G	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	10G	NP	NP	9G
Lead No.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Interconnected electrodes	NP	NC	NC	NC	8G	NC	NC	NC	7G	NC	6G	NC	5G	NC	NC	4G	NC	3G	NC	NC	NC	2G	NC	NC	1G	F (-)	F (-)

• Anode connection

	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S0	dB∞ →+10 RBI	L III											
S1	t1	t1	STEREO	LP	EDIT	PM(Bottom)	d2	d2	d2	d2	LINE	d2	d2
S2	t2	t2	◁(Left)	Ib2 Ic2	a2	AM(Bottom)	e2	e2	e2	a2	SIMUL	a2	e2
S3	t3	t3	◁(Center)	VPS	c2	OFF	c2	c2	c2	c2	TUNER	c2	c2
S4	t4	t4	◁(Right)	SCAN	REC		g2	g2	g2	g2		g2	g2
S5	t5	t5	□(Left)	INDEX	TIMER		f2	f2	f2	f2		f2	f2
S6	t6	t6t	MAIN/	SP	b2		b2	b2	b2	b2	I b2 I c2	b2	b2
S7	t7	t7	L	⊂⊃	g2		a2	a2	a2	a2	S	a2	a2
S8	t8	t8	□(Right)		a2, d2						Y	BS	
S9	t9	t9	▷(Left)	d1	d1		d1	d1	col 4	d1	d1	CATV	
S10	t10	t10	SUB/	e1	e1	PM(Upper)	e1	e1	col 3	e1	e1	AUTO	
S11	t11	t11	R	c1	c1	H	c1	c1	M(Bottom)	c1	c1		
S12	t12	t12	NICAM	g1	g1	AM(Upper)	g1	g1	col 2	g1	g1		
S13	t13	t13	▷(Center)	f1	f1	ON	f1	f1	col 1	f1	f1		
S14	t14	t14	▷(Right)	b1	b1	D	b1	b1	M(Upper)	b1	b1	PAL	
S15	t15	t15	○	a1	a1	Su	a1	a1	Th	a1	a1	SECAM	
S16	t16	t16		EP	VTR	EVERY WEEK	Mo	Tu	We	Fr	Sa	ME	

SECTION 5
EXPLODED VIEWS

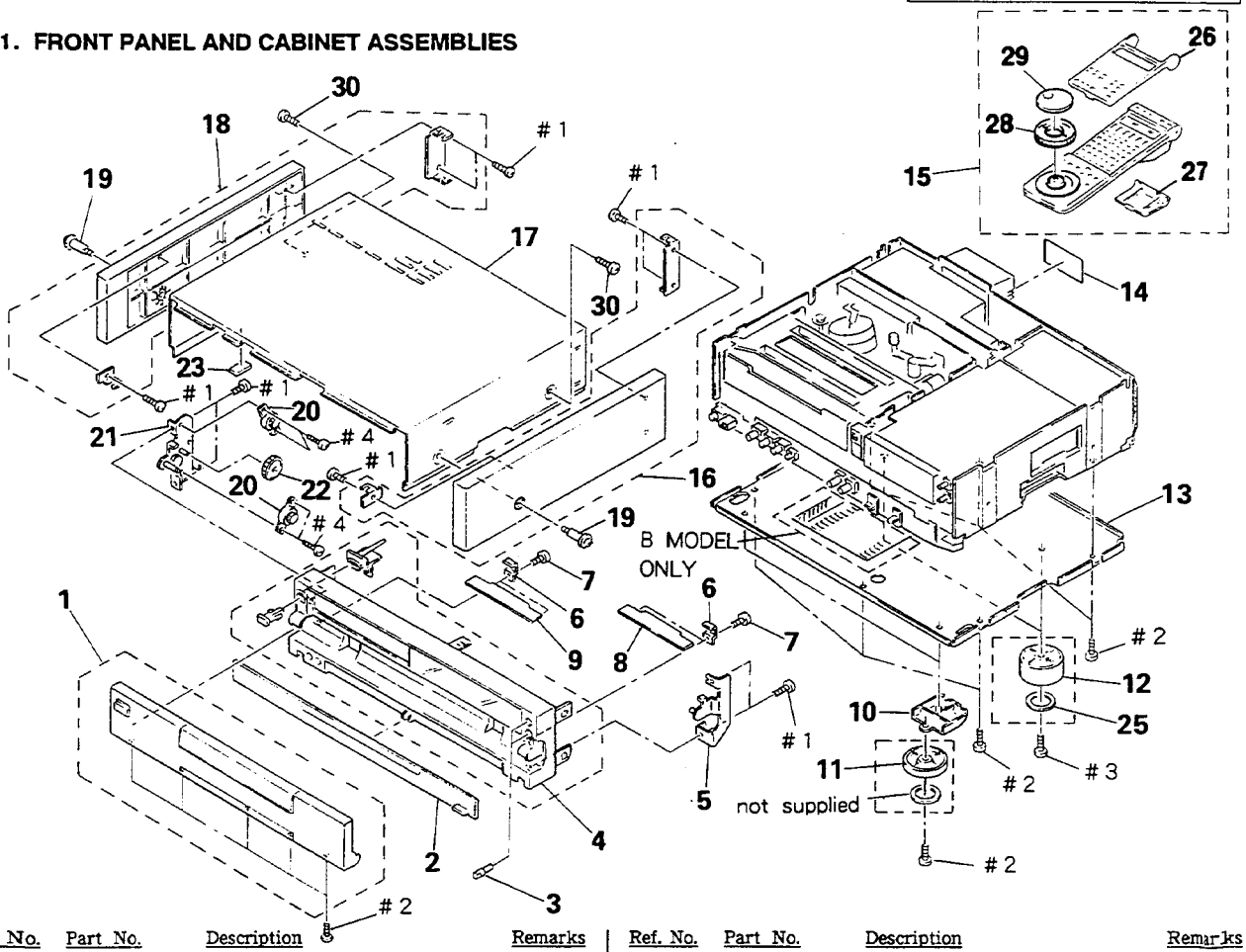
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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

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

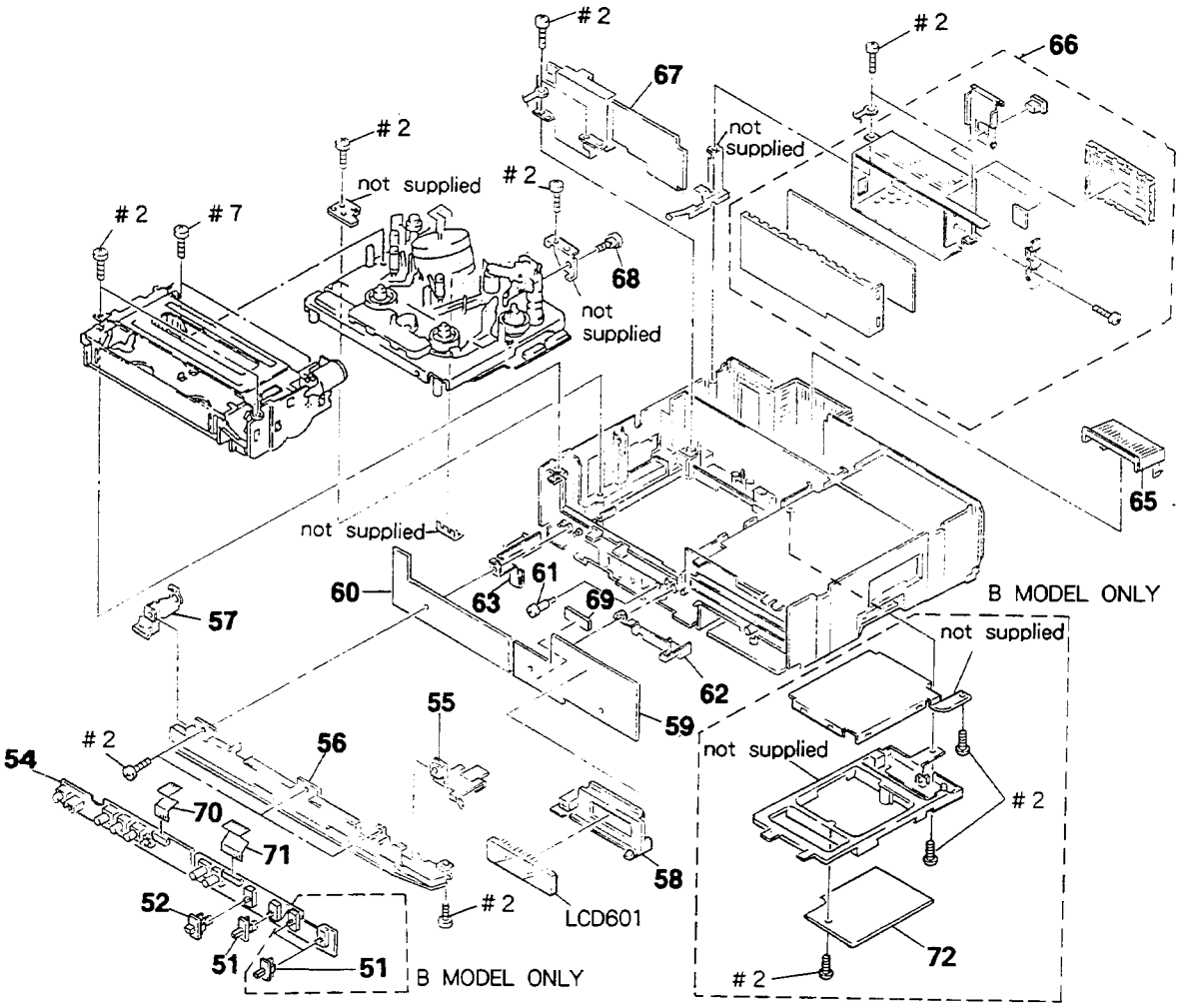
5-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref. No.	Part No.	Description	Remarks
1	1-466-749-11	SWITCH BLOCK, CONTROL(AEP/B/NC/NP)	
1	1-466-749-21	SWITCH BLOCK, CONTROL(VC)	
1	1-466-749-51	SWITCH BLOCK, CONTROL(UB)	
2	X-3941-675-1	DOOR ASSY (AEP/VC:BLACK)	
2	X-3941-732-1	DOOR ASSY (NC/NP)	
2	X-3942-187-1	DOOR ASSY (VC:GOLD)	
2	X-3941-886-1	DOOR ASSY (B)	
2	X-3941-966-1	DOOR ASSY (UB)	
3	3-948-155-01	KNOB, REC VOL (VC:BLACK)	
3	3-948-155-11	KNOB, REC VOL (VC:GOLD)	
4	X-3941-674-1	PANEL ASSY, FRONT (AEP/VC:BLACK)	
4	X-3941-731-1	PANEL ASSY, FRONT (NC/NP)	
4	X-3941-965-1	PANEL ASSY, FRONT (UB)	
4	X-3942-186-1	PANEL ASSY, FRONT (VC:GOLD)	
4	X-3941-733-1	PANEL ASSY, FRONT (B)	
5	X-3941-677-1	PLATE (R) ASSY, FULCRUM	
* 6	3-743-640-01	RETAINER, PC BOARD	
7	4-921-277-11	SCREW (B2.6X8), TAPPING, BIND	
* 8	1-644-856-11	TK-17 BOARD	
* 9	1-644-857-11	TK-18 BOARD	
10	3-948-122-01	FOOT (BASE)	
11	X-3941-672-1	FOOT ASSY (FRONT) (AEP/B/NC/NP/VC:BLACK)	
11	X-3941-967-1	FOOT ASSY (FRONT) (UB/VC:GOLD)	
12	X-4924-422-1	FOOT ASSY	
* 13	3-944-552-01	PLATE, BOTTOM	
* 13	X-3942-063-1	PLATE ASSY, BOTTOM (B)	

Ref. No.	Part No.	Description	Remarks
* 14	3-948-032-01	LABEL, MODEL NUMBER (NO.2)	(AEP)
* 14	3-948-035-01	LABEL, MODEL NUMBER (NO.2)	(B)
* 14	3-948-033-01	LABEL, MODEL NUMBER (NO.2)	(UB)
* 14	3-948-034-01	LABEL, MODEL NUMBER (NO.2)	(VC)
* 14	3-948-036-01	LABEL, MODEL NUMBER (NO.2)	(NC)
* 14	3-948-037-01	LABEL, MODEL NUMBER (NO.2)	(NP)
15	1-693-178-11	REMOTE COMMANDER (RMT-V127)	
16	X-3942-161-1	WOOD (R) ASSY, SIDE (VC:GOLD)	
16	X-3941-671-1	PANEL (R) ASSY, SIDE (EXCEPT VC:GOLD)	
* 17	3-944-553-21	COVER, UPPER (VC:GOLD)	
17	3-944-553-01	COVER, UPPER (UB)	
17	3-944-553-11	COVER, UPPER (AEP/B/NC/NP/VC:BLACK)	
18	X-3942-162-1	WOOD (L) ASSY, SIDE (VC:GOLD)	
18	X-3941-673-1	PANEL (L) ASSY, SIDE (EXCEPT VC:GOLD)	
19	3-743-601-01	SCREW, SIDE WOOD	
20	3-712-786-21	DUMPER, OIL	
21	X-3941-676-1	PLATE (L) ASSY, FULCRUM	
22	3-948-151-01	GEAR (B), MIDWAY	
* 23	4-911-047-01	VIBRATION CONTROL (D)	
25	4-923-836-11	CUSHION	
26	3-951-155-01	DOOR	
27	3-744-080-01	COVER, BATTERY	
28	3-744-078-01	RING, SHUTTLE	
29	3-744-077-01	KNOB, SHUTTLE	
30	3-710-901-11	SCREW, TAPPING	

5-2. POWER SUPPLY BLOCK ASSEMBLY



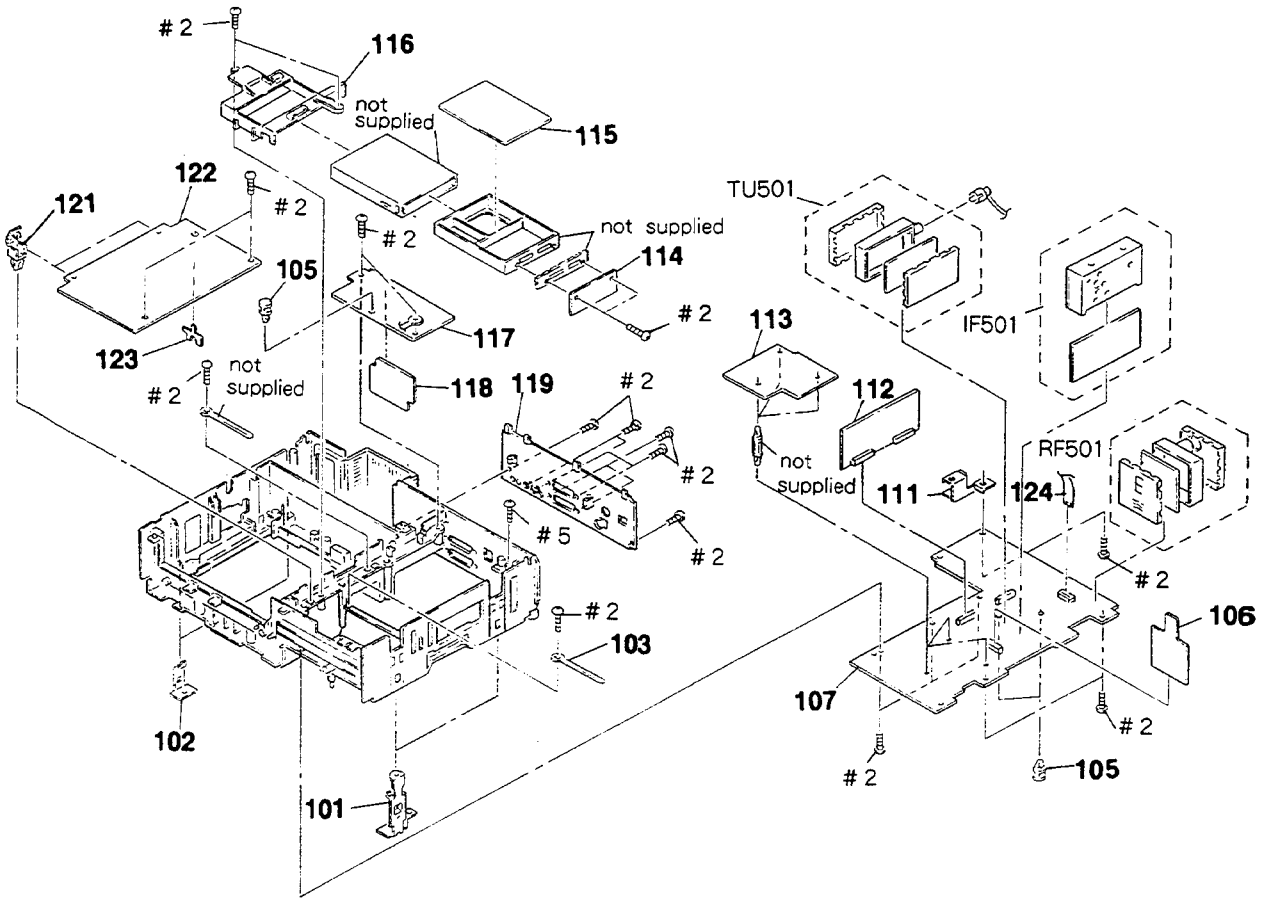
Ref. No.	Part No.	Description	Remarks
51	3-948-152-01	KNOB, SLIDE (NTSC PB ON PAL TV)	
52	3-743-636-21	KNOB, SLIDE (COMMAND MODE)	
* 53	A-6755-463-A	MF-169 BOARD, COMPLETE (AEP/NC/NP/VC)	
* 53	A-6755-667-A	MF-169 BOARD, COMPLETE (UB)	
* 53	A-6755-811-A	MF-169 BOARD, COMPLETE (B)	
* 54	A-6755-467-A	MF-170 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 54	A-6755-668-A	MF-170 BOARD, COMPLETE (UB)	
* 55	3-948-133-01	BRACKET (R), GROUND	
* 56	3-948-156-01	HOLDER, PWB	
* 57	3-948-134-01	BRACKET (L), GROUND	
* 58	3-948-157-01	HOLDER, FL	
* 59	A-6721-466-A	MF-167 BOARD, COMPLETE (AEP)	
* 59	A-6721-476-A	MF-167 BOARD, COMPLETE (NC)	
* 59	A-6721-477-A	MF-167 BOARD, COMPLETE (NP)	
* 59	A-6721-479-A	MF-167 BOARD, COMPLETE (VC)	
* 59	A-6721-499-A	MF-167 BOARD, COMPLETE (UB)	
* 59	A-6721-513-A	MF-167 BOARD, COMPLETE (B)	
* 60	A-6755-466-A	MF-168 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 60	A-6755-660-A	MF-168 BOARD, COMPLETE (UB)	
61	3-741-948-11	SCREW (3), SPECIAL (+) TAPPING	

Ref. No.	Part No.	Description	Remarks
* 62	3-944-614-01	PLATE, GROUND, JK	
* 63	3-944-613-01	PLATE, GROUND, MF	
* 65	3-946-136-11	COVER (S), REAR	
⚠66	1-413-756-11	POWER BLOCK (SR-425) (AEP/B/E/NC/NP)	
⚠66	1-413-757-11	POWER BLOCK (SR-426) (UB)	
⚠66	1-413-758-11	POWER BLOCK (SR-427) (VC)	
* 67	A-6727-417-A	RP-147 BOARD, COMPLETE (AEP/NC/NP/VC)	
* 67	A-6727-459-A	RP-147 BOARD, COMPLETE (UB)	
* 67	A-6727-467-A	RP-147 BOARD, COMPLETE (B)	
68	3-736-055-01	SCREW (3X8), TAPPING	
* 69	3-350-683-01	CUSHION (LED), RUBBER	
70	1-696-439-11	WIRE, FLAT TYPE (10 CORE)	
71	1-696-440-11	WIRE, FLAT TYPE (16 CORE)	
* 72	A-6721-515-A	TC-27 BOARD COMPLETE (B)	
LCD601	1-519-507-41	INDICATOR TUBE, FLUORESCENT	

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

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

5-3. MAIN BOARDS ASSEMBLY



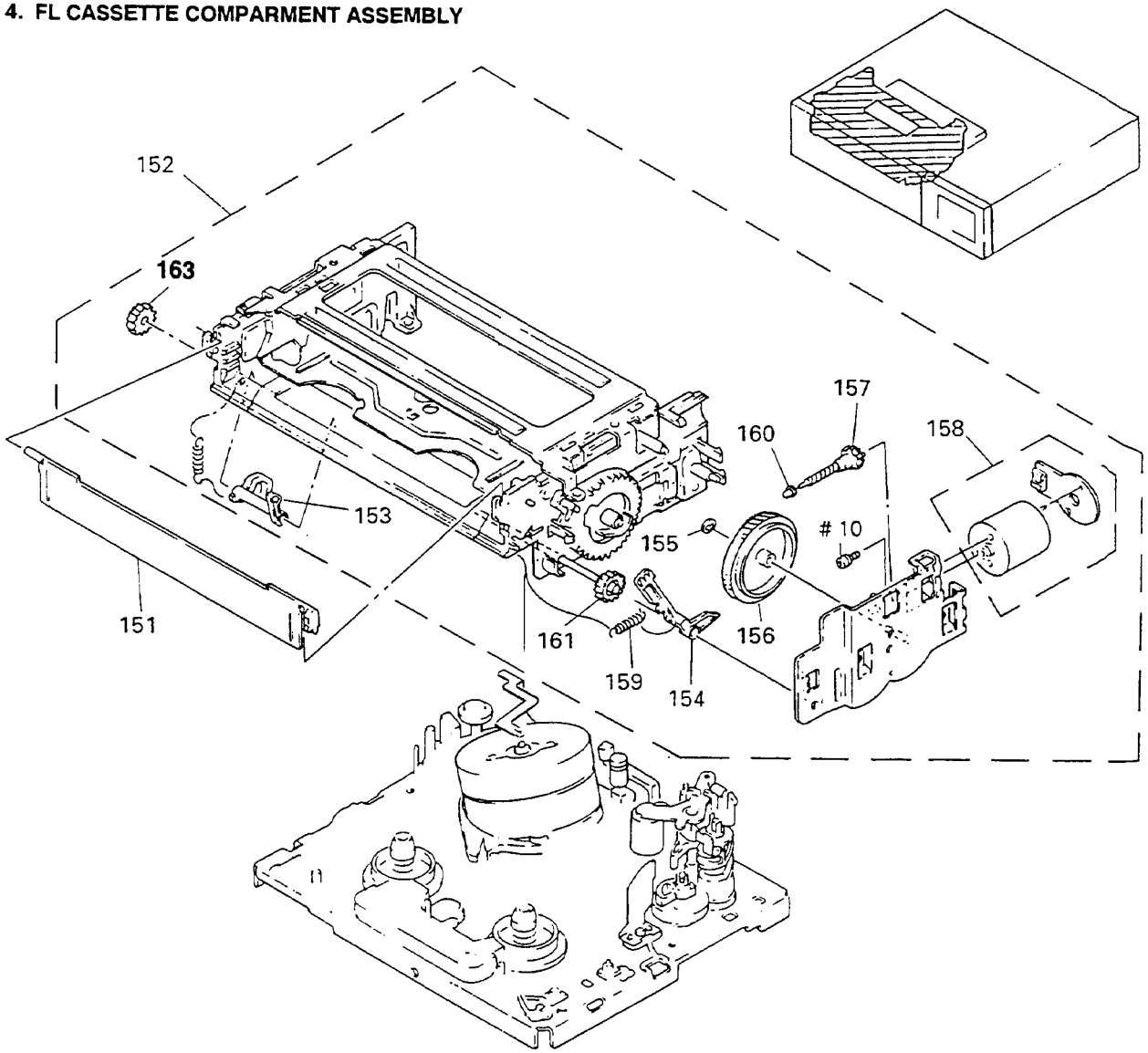
Ref. No.	Part No.	Description	Remarks
* 101	3-945-137-01	STOPPER (L), UPPER COVER	
* 102	3-741-992-01	STOPPER, UPPER CASE	
103	3-703-150-11	STOPPER, WIRING	
105	3-682-057-11	SPACER (SMALL)	
* 106	A-6755-563-A	VP-33 BOARD, COMPLETE (VC)	
* 106	A-6755-799-A	VP-33 BOARD, COMPLETE (B/NC/E)	
* 107	A-6756-465-A	MA-140 BOARD, COMPLETE (AEP)	
* 107	A-6756-560-A	MA-140 BOARD, COMPLETE (NC/E)	
* 107	A-6756-561-A	MA-140 BOARD, COMPLETE (NP)	
* 107	A-6756-564-A	MA-140 BOARD, COMPLETE (VC)	
* 107	A-6756-661-A	MA-140 BOARD, COMPLETE (UB)	
* 107	A-6756-813-A	MA-140 BOARD, COMPLETE (B)	
* 111	3-741-962-01	PLATE, GROUND, JMP	
* 112	A-6721-475-A	HF-26 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 112	A-6721-502-A	HF-26 BOARD, COMPLETE (UB)	
* 113	A-6721-481-A	CG-15 BOARD, COMPLETE (B/VC)	
* 113	A-6756-559-A	CG-15 BOARD, COMPLETE (AEP/NC/NP/E)	
* 113	A-6756-671-A	CG-15 BOARD, COMPLETE (UB)	
* 114	1-637-536-21	DI-43 BOARD	
* 115	A-6727-419-A	DG-11 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 115	A-6727-458-A	DG-11 BOARD, COMPLETE (UB)	
* 116	3-948-126-01	HOLDER, DG	
* 117	A-6755-469-A	VI-116 BOARD, COMPLETE (AEP/NC/E)	
* 117	A-6755-569-A	VI-116 BOARD, COMPLETE (NP/VC)	
* 117	A-6755-670-A	VI-116 BOARD, COMPLETE (UB)	

Ref. No.	Part No.	Description	Remarks
* 117	A-6755-812-A	VI-116 BOARD, COMPLETE (B)	
* 118	A-6755-468-A	CN-62 BOARD, COMPLETE (AEP/NC/E)	
* 118	A-6755-568-A	CN-62 BOARD, COMPLETE (B/NP/VC)	
* 118	A-6755-669-A	CN-62 BOARD, COMPLETE (UB)	
* 119	3-948-132-01	PLATE, ORNAMENTAL, JACK (AEP/UK/NC/E)	
119	3-948-132-31	PLATE, ORNAMENTAL, JACK (B)	
119	3-948-132-11	PLATE, ORNAMENTAL, JACK (VC)	
119	3-948-132-21	PLATE, ORNAMENTAL, JACK (NP)	
121	3-736-704-01	HINGE, PC BOARD	
* 122	A-6727-418-A	YC-124 BOARD, COMPLETE (AEP/NC/NP)	
* 122	A-6727-465-A	YC-124 BOARD, COMPLETE (B)	
* 122	A-6727-442-A	YC-124 BOARD, COMPLETE (VC)	
* 122	A-6727-456-A	YC-124 BOARD, COMPLETE (UB)	
* 123	3-948-127-01	HOLDER, HF	
124	1-696-438-11	WIRE, FLAT TYPE (13 CORE) (B/NP/VC)	
⚠IF501	1-466-539-11	IF BLOCK (IFZ-389ST) (AEP/VC)	
⚠IF501	1-466-540-11	IF BLOCK (IFZ-389FE) (B)	
⚠IF501	1-466-541-11	IF BLOCK (IFZ-395NC) (UB)	
⚠IF501	1-466-538-11	IF BLOCK (IFZ-389NC) (NC/NP/E)	
⚠RF501	1-466-328-11	MODULATOR, RF (RFU-2017) (AEP/NC/NP/VC)	
⚠RF501	1-466-347-11	MODULATOR, RF (RFU-2024) (UB)	
⚠RF501	1-466-348-11	MODULATOR, RF (RFU-2023) (B)	
⚠TU501	1-465-260-11	TUNER, ET (BTP-2C401) (AEP/NC/NP/VC)	
⚠TU501	1-465-262-11	TUNER, ET (UB)	

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

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

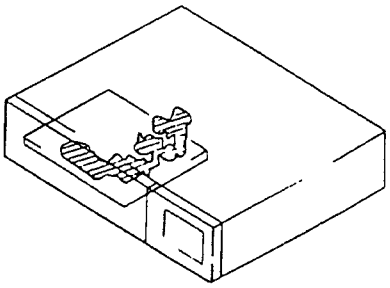
5-4. FL CASSETTE COMPARMENT ASSEMBLY

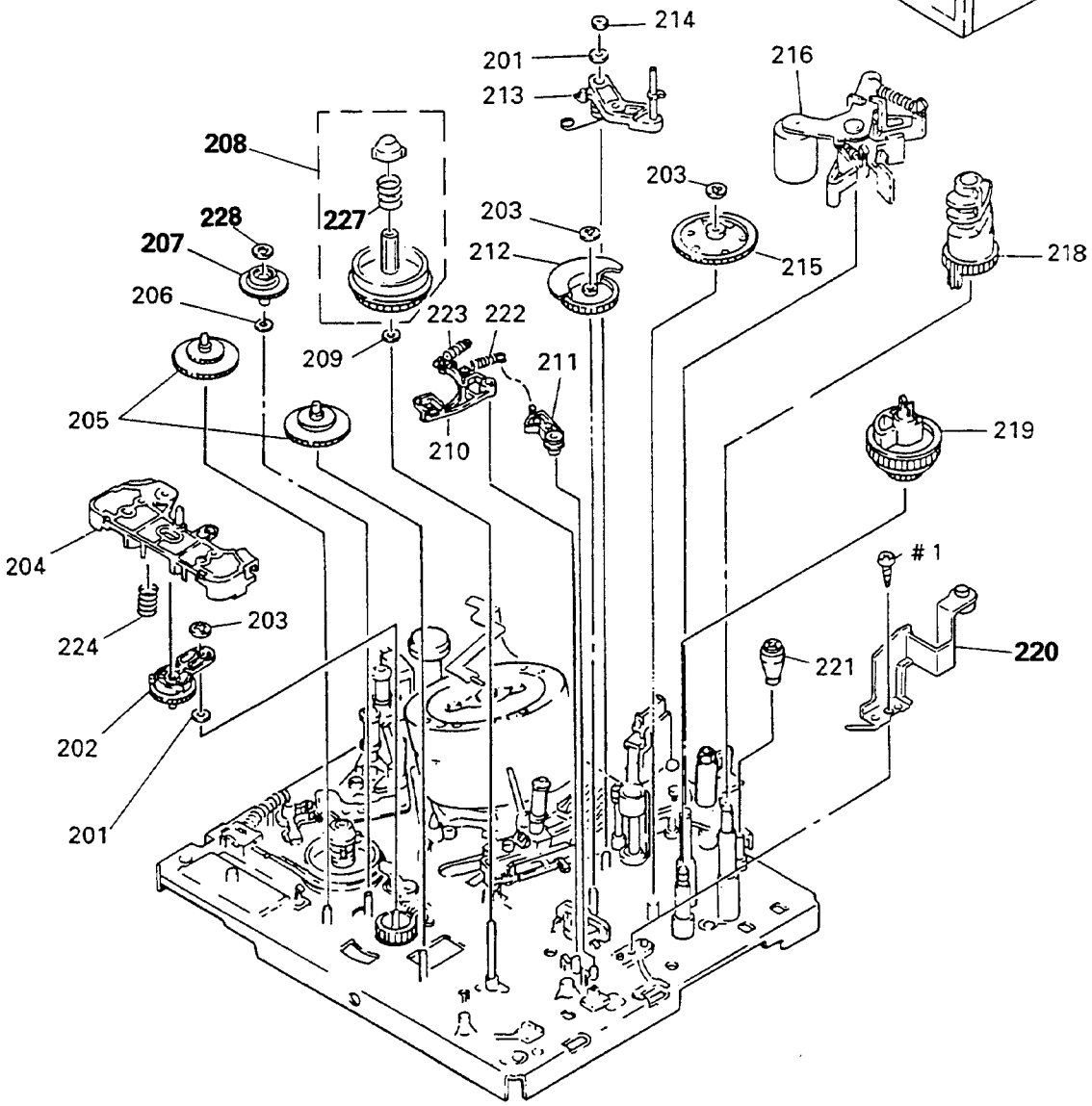


Ref. No.	Part No.	Description	Remarks
151	3-945-199-11	DOOR, FL (BLACK)	
151	3-945-199-41	DOOR, FL (VC:GOLD)	
152	A-6751-453-A	FL BLOCK ASSY	
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	3-736-167-01	ARM, DOOR SWITCHING	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	

Ref. No.	Part No.	Description	Remarks
157	3-736-100-01	GEAR (FL), WORM	
158	X-3727-784-1	MOTOR ASSY (M904)	
159	3-738-285-01	SPRING, TENSION	
160	3-716-144-02	RETAINER, WORM	
161	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
163	3-736-044-02	GEAR (LEFT), MIDWAY	

5-5. MECHANISM CHASSIS ASSEMBLY (1)

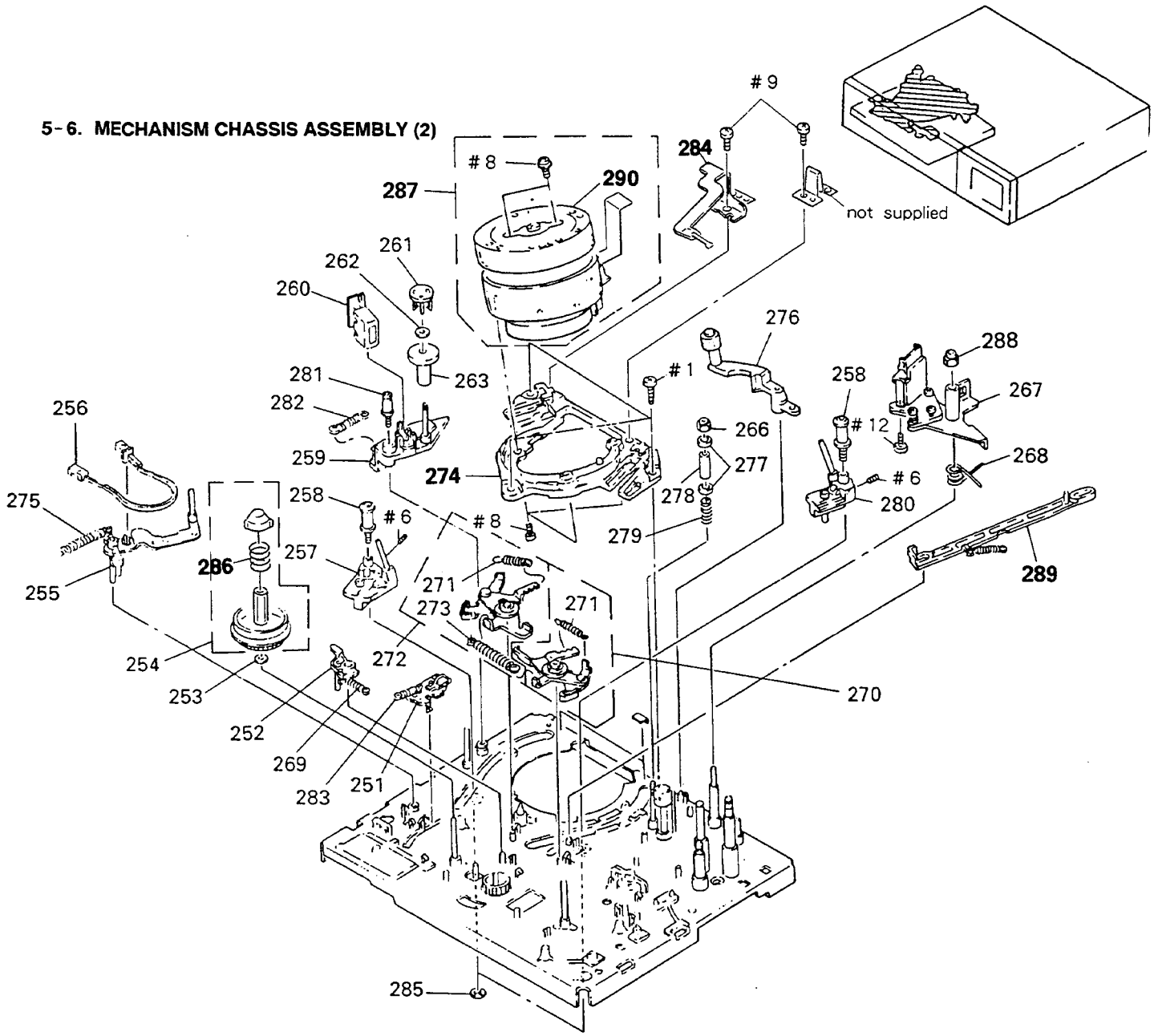




Ref. No.	Part No.	Description	Remarks
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL (T)	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	

Ref. No.	Part No.	Description	Remarks
213	X-3942-218-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
218	3-736-136-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR (LO), PRESS CAM	
220	3-942-828-01	OPENNER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
227	3-739-621-01	SPRING, COMPRESSION	
228	3-736-069-01	RETAINER	

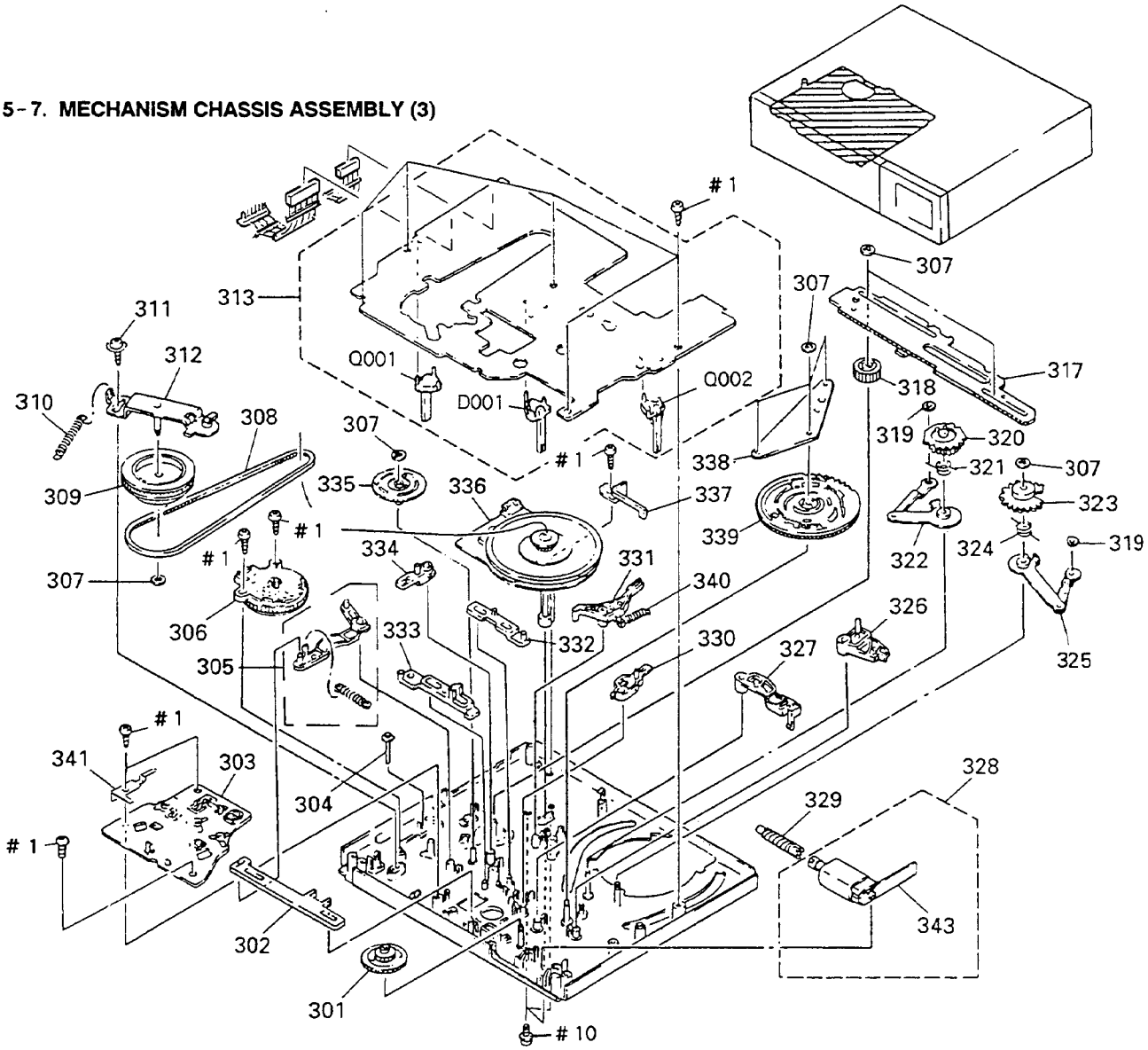
5-6. MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remarks
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
266	3-942-866-01	NUT (M3) (3X0.5), NYLON	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3-736-735-03	SPRING, TENSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	

Ref. No.	Part No.	Description	Remarks
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3727-791-2	BASE ASSY, DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-944-033-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3733-304-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	3-739-621-01	SPRING, COMPRESSION	
287	1-550-786-11	DRUM ASSY (DZH-52AR)	
288	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
289	X-3743-517-1	LEVER(S), RELEASE	
290	1-550-536-11	DRUM ASSY, ROTARY UPPER (DZR-17)	

5-7. MECHANISM CHASSIS ASSEMBLY (3)



Ref. No.	Part No.	Description	Remarks
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-084-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	1-692-062-11	SWITCH, ROTARY	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
* 313	A-6754-435-A	MD-58 BOARD, COMPLETE	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	

Ref. No.	Part No.	Description	Remarks
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	X-3733-302-1	MOTOR ASSY, CAM	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	8-835-489-01	MOTOR, DC U-26K	
337	3-736-744-01	RETAINER, ROTOR	
338	3-733-396-01	HOLDER, CAM GEAR	
339	3-736-176-01	GEAR, CAM	
340	3-738-237-01	SPRING (CAP BRAKE), TENSION	
341	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
* 343	1-633-460-11	PC BOAD, CA-41	
D001	8-719-985-00	DIODE GL451VS1	
Q001	8-729-926-31	TRANSISTOR PT483F1S	
Q002	8-729-926-31	TRANSISTOR PT483F1S	

CG-15

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

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

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- −XX, −X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL : metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA... : μA... , uPA... , μPA... , uPB... , μPB... , uPC... , μPC... , uPD..., μPD...
- CAPACITORS :
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remarks
*	A-6756-559-A	CG-15 BOARD, COMPLETE (AEP/NC/NP)			
		**********			
*	A-6756-671-A	CG-15 BOARD, COMPLETE (UB)			
		**********			
*	A-6721-481-A	CG-15 BOARD, COMPLETE (B/VC)			
		**********			
				(Ref. No. 6000 Series)	
		< CAPACITOR >			
C601	1-163-036-00	CERAMIC CHIP	0.068uF	50V	
C602	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C603	1-163-229-11	CERAMIC CHIP	12PF 5%	50V	
C604	1-163-227-11	CERAMIC CHIP	10PF 5%	50V	
C605	1-124-589-11	ELECT	47uF 20%	16V	
C606	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C607	1-124-903-11	ELECT	1uF 20%	50V	
C608	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C609	1-124-443-00	ELECT	100uF 20%	10V	
C610	1-163-237-11	CERAMIC CHIP	27PF 5%	50V	
C611	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C614	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C615	1-163-006-11	CERAMIC CHIP	560PF 10%	50V	
C616	1-126-301-11	ELECT	1uF 20%	50V	
C617	1-163-007-11	CERAMIC CHIP	680PF 10%	50V	
C618	1-163-127-00	CERAMIC CHIP	270PF 5%	50V	
C619	1-163-127-00	CERAMIC CHIP	270PF 5%	50V	
C620	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C621	1-124-126-00	ELECT	47uF 20%	10V	
C622	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C623	1-163-099-00	CERAMIC CHIP	18PF 5%	50V	
C624	1-163-097-00	CERAMIC CHIP	15PF 5%	50V	
C625	1-163-105-00	CERAMIC CHIP	33PF 5%	50V	
C626	1-126-157-11	ELECT	10uF 20%	16V	
C627	1-130-487-00	MYLAR	0.022uF 5%	50V	
C629	1-163-035-00	CERAMIC CHIP	0.047uF	50V	

Ref. No.	Part No.	Description				Remarks
		< CONNECTOR >				
* CN601	1-563-312-11	CONNECTOR, BOARD TO BOARD 12P				
CN602	1-563-311-11	CONNECTOR, BOARD TO BOARD 10P				
		< VARIABLE CAPACITOR >				
CV601	1-141-245-00	CAP, TRIMMER 30PF				
		< IC >				
IC601	8-759-078-01	IC uPD78013GC-VSX1760				
IC602	8-759-078-02	IC M50555-VSX1760				
IC603	8-759-996-03	IC LVA519S				
		< JUMPER RESISTOR >				
JR601	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR603	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR604	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR606	1-216-296-00	METAL CHIP	0	5%	1/8W	
		< COIL >				
L601	1-410-521-11	INDUCTOR	100uH			
L602	1-410-521-11	INDUCTOR	100uH			
L603	1-412-470-21	INDUCTOR	22uH			
L604	1-410-515-11	INDUCTOR	33uH			
L605	1-410-509-11	INDUCTOR	10uH			
L606	1-410-521-11	INDUCTOR	100uH			
L607	1-410-521-11	INDUCTOR	100uH			
L608	1-410-316-11	INDUCTOR	1uH			
L609	1-410-521-11	INDUCTOR	100uH			
L610	1-410-521-11	INDUCTOR	100uH			

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q603	8-729-422-28	TRANSISTOR	2SD601A-R		
Q604	8-729-422-37	TRANSISTOR	2SB709A-R		
Q605	8-729-424-18	TRANSISTOR	UN2113		
Q606	8-729-422-28	TRANSISTOR	2SD601A-R		
Q607	8-729-421-19	TRANSISTOR	UN2213		
Q608	8-729-422-28	TRANSISTOR	2SD601A-R		
Q609	8-729-421-19	TRANSISTOR	UN2213		
		< RESISTOR >			
R601	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R602	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R603	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R604	1-216-097-00	METAL CHIP	100K	5% 1/10W	
⚠R605	1-249-413-11	CARBON	470	5% 1/4W F	
R606	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R607	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
⚠R608	1-249-422-11	CARBON	2.7K	5% 1/4W F	
R609	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R610	1-216-041-00	METAL CHIP	470	5% 1/10W	
R611	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R612	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R613	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R614	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R615	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R616	1-216-041-00	METAL CHIP	470	5% 1/10W	
R617	1-216-043-00	METAL CHIP	560	5% 1/10W	
R618	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R619	1-216-041-00	METAL CHIP	470	5% 1/10W	
R620	1-216-295-00	METAL CHIP	0	5% 1/10W	
R623	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R624	1-216-043-00	METAL CHIP	560	5% 1/10W	
R625	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R629	1-216-043-00	METAL CHIP	560	5% 1/10W	
R630	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R640	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R641	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R642	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R643	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R644	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R645	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R647	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R648	1-216-041-00	METAL CHIP	470	5% 1/10W	
R649	1-216-041-00	METAL CHIP	470	5% 1/10W	
		< VARIABLE RESISTOR >			
RV601	1-241-079-11	RES, ADJ, CARBON 4.7K (AEP/UB/NC/NP)			
RV601	1-241-629-11	RES, ADJ, CARBON 4.7K (B/VC)			

Ref. No.	Part No.	Description			Remarks
		< VIBRATOR >			
X601	1-577-157-11	VIBRATOR, CERAMIC 8MHz			
X602	1-577-289-11	VIBRATOR, CRYSTAL 17.7MHZ			
**********					
*	A-6755-468-A	CN-62 BOARD, COMPLETE (AEP/NC)			
		**********			
*	A-6755-669-A	CN-62 BOARD, COMPLETE (UB)			
		**********			
*	A-6755-568-A	CN-62 BOARD, COMPLETE (B/NP/VC)			
		**********			
		(Ref. No. 4000 Series)			
		< CAPACITOR >			
C101	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C105	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C106	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C107	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C108	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C801	1-124-589-11	ELECT	47uF	20% 16V (B/NP/VC)	
C802	1-163-031-11	CERAMIC CHIP	0.01uF	50V (B/NP/VC)	
C803	1-163-031-11	CERAMIC CHIP	0.01uF	50V (B/NP/VC)	
C804	1-163-031-11	CERAMIC CHIP	0.01uF	50V (B/NP/VC)	
C805	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C806	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C807	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C808	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C809	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C810	1-126-157-11	ELECT	10uF	20% 16V (B/NP/VC)	
C812	1-124-589-11	ELECT	47uF	20% 16V (B/NP/VC)	
C813	1-124-589-11	ELECT	47uF	20% 16V (B/NP/VC)	
		< CONNECTOR >			
* CN102	1-573-735-41	PIN, CONNECTOR 8P			
CN103	1-691-277-11	CONNECTOR, BOARD TO BOARD 13P			
		< JACK >			
CNJ101	1-561-534-41	SOCKET 21P (EURO-AV(LINE 3))			
		< DIODE >			
D101	8-719-109-97	DIODE	RD6.8ES-B2		
D102	8-719-109-97	DIODE	RD6.8ES-B2		
D103	8-719-109-97	DIODE	RD6.8ES-B2		
D104	8-719-109-97	DIODE	RD6.8ES-B2		
D105	8-719-109-97	DIODE	RD6.8ES-B2		

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

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

CN-62 DG-11

Ref. No.	Part No.	Description			Remarks
D106	8-719-109-97	DIODE RD6.8ES-B2			
D107	8-719-108-12	DIODE RD9.1E-W			
		< IC >			
IC801	8-759-300-71	IC TC4053BF (B/NP/VC)			
IC802	8-759-909-71	IC BA4558F (B/NP/VC)			
		< COIL >			
L101	1-408-425-00	INDUCTOR 220uH			
L102	1-408-425-00	INDUCTOR 220uH			
L103	1-408-425-00	INDUCTOR 220uH			
L104	1-408-425-00	INDUCTOR 220uH			
L801	1-410-521-11	INDUCTOR 100uH (NP/VC)			
		< RESISTOR >			
R101	1-216-041-00	METAL CHIP	470	5%	1/10W
R102	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R103	1-216-041-00	METAL CHIP	470	5%	1/10W
R104	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R105	1-216-022-00	METAL CHIP	75	5%	1/10W
R106	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R107	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R801	1-216-097-00	METAL CHIP	100K	5%	1/10W (B/NP/VC)
R802	1-216-097-00	METAL CHIP	100K	5%	1/10W (B/NP/VC)
R803	1-216-097-00	METAL CHIP	100K	5%	1/10W (B/NP/VC)
R804	1-216-097-00	METAL CHIP	100K	5%	1/10W (B/NP/VC)
R805	1-216-113-00	METAL CHIP	470K	5%	1/10W (B/NP/VC)
R806	1-216-113-00	METAL CHIP	470K	5%	1/10W (B/NP/VC)
R807	1-216-113-00	METAL CHIP	470K	5%	1/10W (B/NP/VC)
R808	1-216-113-00	METAL CHIP	470K	5%	1/10W (B/NP/VC)
R809	1-216-049-00	METAL CHIP	1K	5%	1/10W (B/NP/VC)
R810	1-216-049-00	METAL CHIP	1K	5%	1/10W (B/NP/VC)
R811	1-216-081-00	METAL CHIP	22K	5%	1/10W (B/NP/VC)
R812	1-216-081-00	METAL CHIP	22K	5%	1/10W (B/NP/VC)
R815	1-216-025-00	METAL CHIP	100	5%	1/10W (B/NP/VC)
R816	1-216-025-00	METAL CHIP	100	5%	1/10W (B/NP/VC)

****

* A-6727-419-A DG-11 BOARD, COMPLETE (EXCEPT UB)

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* A-6727-458-A DG-11 BOARD, COMPLETE (UB)

****

(Ref.No.7000 Series)

< CAPACITOR >

C101	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C102	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C103	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C104	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V
C105	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C106	1-126-177-11	ELECT	100uF	20%	10V
C107	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C108	1-126-101-11	ELECT	100uF	20%	16V
C109	1-126-157-11	ELECT	10uF	20%	16V
C113	1-126-163-11	ELECT	4.7uF	20%	50V
C114	1-126-301-11	ELECT	1uF	20%	50V
C115	1-126-099-11	ELECT	2.2uF	20%	35V
C124	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C125	1-126-301-11	ELECT	1uF	20%	50V
C127	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C128	1-126-301-11	ELECT	1uF	20%	50V
C129	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C130	1-124-257-00	ELECT	2.2uF	20%	50V
C131	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C132	1-124-464-11	ELECT	0.22uF	20%	50V
C133	1-126-163-11	ELECT	4.7uF	20%	50V
C134	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C135	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C136	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C137	1-126-157-11	ELECT	10uF	20%	16V
C138	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C139	1-126-177-11	ELECT	100uF	20%	10V
C140	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C141	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C142	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C143	1-124-257-00	ELECT	2.2uF	20%	50V
C144	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C145	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C146	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C147	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C148	1-126-301-11	ELECT	1uF	20%	50V
C149	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C150	1-126-177-11	ELECT	100uF	20%	10V
C151	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C152	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C153	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C154	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C155	1-124-257-00	ELECT	2.2uF	20%	50V
C156	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C157	1-124-464-11	ELECT	0.22uF	20%	50V
C158	1-126-163-11	ELECT	4.7uF	20%	50V
C159	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C161	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C162	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C163	1-126-157-11	ELECT	10uF	20%	16V
C164	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C165	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C166	1-124-257-00	ELECT	2.2uF	20%	50V
C167	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C168	1-163-137-00	CERAMIC CHIP	680PF	5%	50V

Ref. No.	Part No.	Description			Remarks
C169	1-163-137-00	CERAMIC CHIP	680PF	5% 50V	
C170	1-163-145-00	CERAMIC CHIP	0.0015uF	5% 50V	
C171	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C172	1-126-301-11	ELECT	1uF	20% 50V	
C174	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C175	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C176	1-126-177-11	ELECT	100uF	20% 10V	
C177	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C179	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C180	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C181	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C182	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C183	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C184	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C187	1-126-157-11	ELECT	10uF	20% 16V	
C188	1-126-157-11	ELECT	10uF	20% 16V	
C189	1-126-157-11	ELECT	10uF	20% 16V	
C190	1-126-157-11	ELECT	10uF	20% 16V	
C191	1-126-177-11	ELECT	100uF	20% 10V	
C192	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C193	1-164-234-11	CERAMIC CHIP	1uF	10V	
C194	1-124-442-00	ELECT	330uF	20% 6.3V	
C196	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C197	1-126-177-11	ELECT	100uF	20% 10V	
C198	1-126-177-11	ELECT	100uF	20% 10V	
C199	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C200	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C201	1-126-177-11	ELECT	100uF	20% 10V	
C202	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C204	1-126-301-11	ELECT	1uF	20% 50V	
C205	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C208	1-163-245-11	CERAMIC CHIP	56PF	5% 50V	
C210	1-163-109-00	CERAMIC CHIP	47PF	5% 50V	
C250	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C251	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C252	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C253	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C254	1-163-130-00	CERAMIC CHIP	360PF	5% 50V	
C255	1-163-128-00	CERAMIC CHIP	300PF	5% 50V	
C256	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
		< CONNECTOR >			
CN101	1-569-772-21	CONNECTOR, BOARD TO BOARD 9P			
CN103	1-568-152-21	CONNECTOR, BOARD TO BOARD 13P			
		< DIODE >			
D101	8-719-400-18	DIODE	MA152WK		
D105	8-719-400-18	DIODE	MA152WK		
D106	8-719-400-18	DIODE	MA152WK		
D109	8-719-400-18	DIODE	MA152WK		

Ref. No.	Part No.	Description	Remarks
		< FERRITE BEAD >	
FB101	1-410-397-21	FERRITE BEAD INDUCTOR	
FB102	1-410-397-21	FERRITE BEAD INDUCTOR	
		< FILTER >	
FL101	1-236-101-11	ENCAPSULATED COMPONENT	
FL102	1-236-101-11	ENCAPSULATED COMPONENT	
FL103	1-236-101-11	ENCAPSULATED COMPONENT	
FL104	1-236-101-11	ENCAPSULATED COMPONENT	
FL109	1-236-071-11	ENCAPSULATED COMPONENT	
FL109	1-236-593-11	FILTER, LOW PASS	
FL110	1-236-071-11	ENCAPSULATED COMPONENT	
FL110	1-236-593-11	FILTER, LOW PASS	
FL111	1-424-228-11	FILTER, NOISE	
FL111	1-424-415-11	FILTER, NOISE	
FL112	1-424-228-11	FILTER, NOISE	
FL112	1-424-415-11	FILTER, NOISE	
FL113	1-424-228-11	FILTER, NOISE	
FL113	1-424-415-11	FILTER, NOISE	
FL114	1-424-228-11	FILTER, NOISE	
FL114	1-424-415-11	FILTER, NOISE	
FL115	1-424-228-11	FILTER, NOISE	
FL115	1-424-415-11	FILTER, NOISE	
FL116	1-424-228-11	FILTER, NOISE	
FL116	1-424-415-11	FILTER, NOISE	
FL117	1-424-228-11	FILTER, NOISE	
FL117	1-424-415-11	FILTER, NOISE	
FL118	1-236-071-11	ENCAPSULATED COMPONENT	
FL118	1-236-593-11	FILTER, LOW PASS	
FL119	1-236-986-11	FILTER, BAND PASS	
FL120	1-239-449-11	FILTER, BAND PASS	
FL121	1-236-844-11	FILTER, LOW PASS	
FL122	1-236-071-11	ENCAPSULATED COMPONENT	
FL122	1-236-593-11	FILTER, LOW PASS	
		< IC >	
IC101	8-759-322-29	IC	HA118088MP
IC102	8-759-323-11	IC	HA11567MP
IC103	8-759-322-34	IC	HA11535MP
IC104	8-759-322-68	IC	HD49410
IC105	8-759-322-32	IC	HM53461ZP-12
IC108	8-759-008-74	IC	MC14001BF
		< COIL >	
L101	1-407-169-XX	INDUCTOR	100uH
L102	1-407-169-XX	INDUCTOR	100uH
L105	1-407-169-XX	INDUCTOR	100uH
L106	1-407-169-XX	INDUCTOR	100uH
L107	1-407-169-XX	INDUCTOR	100uH

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Ref. No.	Part No.	Description				Remarks
L108	1-407-169-XX	INDUCTOR	100uH			
L109	1-407-169-XX	INDUCTOR	100uH			
L110	1-407-169-XX	INDUCTOR	100uH			
		< TRANSISTOR >				
Q101	8-729-305-25	TRANSISTOR	2SA1052-C			
Q102	8-729-305-25	TRANSISTOR	2SA1052-C			
Q103	8-729-305-25	TRANSISTOR	2SA1052-C			
Q108	8-729-305-25	TRANSISTOR	2SA1052-C			
Q109	8-729-305-25	TRANSISTOR	2SA1052-C			
Q110	8-729-305-25	TRANSISTOR	2SA1052-C			
Q112	8-729-901-00	TRANSISTOR	DTC124EK			
Q113	8-729-305-25	TRANSISTOR	2SA1052-C			
Q114	8-729-230-49	TRANSISTOR	2SC2712-G			
Q116	8-729-305-25	TRANSISTOR	2SA1052-C			
Q117	8-729-230-49	TRANSISTOR	2SC2712-G			
Q118	8-729-305-25	TRANSISTOR	2SA1052-C			
Q120	8-729-901-00	TRANSISTOR	DTC124EK			
Q121	8-729-305-25	TRANSISTOR	2SA1052-C			
Q122	8-729-230-49	TRANSISTOR	2SC2712-G			
Q123	8-729-901-00	TRANSISTOR	DTC124EK			
Q125	8-729-902-96	TRANSISTOR	FMS1			
Q126	8-729-901-01	TRANSISTOR	DTC144EK			
Q127	8-729-230-49	TRANSISTOR	2SC2712-G			
		< RESISTOR >				
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R102	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R103	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R104	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R106	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R107	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R108	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R109	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R110	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R111	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R112	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R114	1-216-033-00	METAL CHIP	220	5%	1/10W	
R115	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R116	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R117	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R139	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R140	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R143	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R144	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R146	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R147	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	

Ref. No.	Part No.	Description				Remarks
R148	1-216-037-00	METAL CHIP	330	5%	1/10W	
R149	1-216-045-00	METAL CHIP	680	5%	1/10W	
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R151	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R152	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R154	1-216-013-00	METAL CHIP	33	5%	1/10W	
R155	1-216-033-00	METAL CHIP	220	5%	1/10W	
R156	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R157	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R158	1-216-039-00	METAL CHIP	390	5%	1/10W	
R159	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R165	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R166	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R167	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R168	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R170	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-041-00	METAL CHIP	470	5%	1/10W	
R172	1-216-041-00	METAL CHIP	470	5%	1/10W	
R173	1-216-029-00	METAL CHIP	150	5%	1/10W	
R174	1-216-041-00	METAL CHIP	470	5%	1/10W	
R175	1-216-041-00	METAL CHIP	470	5%	1/10W	
R176	1-216-047-00	METAL CHIP	820	5%	1/10W	
R177	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R178	1-216-047-00	METAL CHIP	820	5%	1/10W	
R179	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R180	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R181	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R182	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R183	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R184	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R185	1-216-013-00	METAL CHIP	33	5%	1/10W	
R186	1-216-033-00	METAL CHIP	220	5%	1/10W	
R187	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R188	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R189	1-216-039-00	METAL CHIP	390	5%	1/10W	
R190	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R196	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R197	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R198	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R199	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R200	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R201	1-216-672-11	METAL CHIP	7.5K	0.5%	1/10W	
R202	1-216-688-11	METAL CHIP	36K	0.5%	1/10W	
R203	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R204	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R205	1-216-672-11	METAL CHIP	7.5K	0.5%	1/10W	
R206	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R207	1-216-688-11	METAL CHIP	36K	0.5%	1/10W	
R208	1-216-631-11	METAL CHIP	150	0.5%	1/10W	

Ref. No.	Part No.	Description			Remarks
R209	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R215	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R216	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R218	1-216-125-00	METAL CHIP	1.5M	5% 1/10W	
R219	1-216-125-00	METAL CHIP	1.5M	5% 1/10W	
R220	1-216-295-00	METAL CHIP	0	5% 1/10W	
R221	1-216-295-00	METAL CHIP	0	5% 1/10W	
R222	1-216-109-00	METAL CHIP	330K	5% 1/10W	
R223	1-216-295-00	METAL CHIP	0	5% 1/10W	
R227	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R230	1-216-295-00	METAL CHIP	0	5% 1/10W	
R250	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R251	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R252	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R253	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R254	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R255	1-216-067-00	METAL CHIP	5.6K	5% 1/10W	
R256	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R257	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R258	1-216-077-00	METAL CHIP	15K	5% 1/10W	
R259	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R260	1-216-041-00	METAL CHIP	470	5% 1/10W	
R261	1-216-041-00	METAL CHIP	470	5% 1/10W	
R262	1-216-041-00	METAL CHIP	470	5% 1/10W	
R263	1-216-629-11	METAL CHIP	120	0.5% 1/10W	
R264	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R265	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R266	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R267	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R268	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R269	1-216-049-00	METAL CHIP	1K	5% 1/10W	
		< VARIABLE RESISTOR >			
RV101	1-241-079-11	RES, ADJ, CARBON 4.7K			
RV102	1-241-077-11	RES, ADJ, CARBON 2.2K			
RV103	1-241-081-11	RES, ADJ, CARBON 22K			
RV104	1-241-081-11	RES, ADJ, CARBON 22K			
		< TRANSFORMER >			
T101	1-402-700-11	COIL, PEAKING 14.3MHz			
T102	1-411-119-11	COIL, PEAKING 16.1MHz			
		< VIBRATOR >			
X101	1-579-222-11	OSCILLATOR, CRYSTAL 4.43MHz			
X102	1-577-611-11	OSCILLATOR, CERAMIC 500kHz			
X103	1-579-222-11	OSCILLATOR, CRYSTAL 4.43MHz			
X104	1-577-611-11	OSCILLATOR, CERAMIC 500kHz			

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Ref. No.	Part No.	Description			Remarks
*	1-637-536-21	DI-43 BOARD			
		**********			
					(Ref. No. 5000 Series)
		< CAPACITOR >			
C301	1-126-157-11	ELECT	10uF	20% 16V	
		< CONNECTOR >			
CN201	1-569-678-21	CONNECTOR, BOARD TO BOARD 9P			
CN203	1-568-104-21	CONNECTOR, BOARD TO BOARD 13P			
* CN206	1-573-735-11	PIN, CONNECTOR 8P			
* CN207	1-573-739-21	PIN, CONNECTOR 12P			
		< RESISTOR >			
R301	1-216-041-00	METAL CHIP	470	5% 1/10W	
R302	1-216-041-00	METAL CHIP	470	5% 1/10W	

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*	A-6721-475-A	HF-26 BOARD, COMPLETE (EXCEPT B/UB)			
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*	A-6721-502-A	HF-26 BOARD, COMPLETE (B/UB)			
		**********			
					(Ref. No. 17000 Series)
		< CAPACITOR >			
C201	1-124-443-00	ELECT	100uF	20% 10V	
C202	1-124-443-00	ELECT	100uF	20% 10V	
C204	1-126-101-11	ELECT	100uF	20% 16V	
C205	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C206	1-124-925-11	ELECT	2.2uF	20% 100V	
C207	1-124-126-00	ELECT	47uF	20% 10V	
C208	1-124-927-11	ELECT	4.7uF	20% 100V	
C209	1-124-907-11	ELECT	10uF	20% 50V	
C212	1-124-126-00	ELECT	47uF	20% 10V	
C213	1-124-126-00	ELECT	47uF	20% 10V	
C214	1-124-126-00	ELECT	47uF	20% 10V	
C215	1-124-907-11	ELECT	10uF	20% 50V	
C216	1-124-927-11	ELECT	4.7uF	20% 100V	
C217	1-124-925-11	ELECT	2.2uF	20% 100V	
C218	1-124-925-11	ELECT	2.2uF	20% 100V	
C219	1-124-907-11	ELECT	10uF	20% 50V	
C220	1-124-907-11	ELECT	10uF	20% 50V	
C221	1-130-483-00	MYLAR	0.01uF	5% 50V	
C222	1-124-927-11	ELECT	4.7uF	20% 100V	
C223	1-126-176-11	ELECT	220uF	20% 10V	
C224	1-124-925-11	ELECT	2.2uF	20% 100V	
C225	1-130-487-00	MYLAR	0.022uF	5% 50V	
C226	1-126-096-11	ELECT	10uF	20% 35V	
C227	1-124-234-00	ELECT	22uF	20% 16V	
C228	1-130-473-00	MYLAR	0.0015uF	5% 50V	

Ref. No.	Part No.	Description			Remarks
C229	1-130-475-00	MYLAR	0.0022uF	5% 50V	
C230	1-130-475-00	MYLAR	0.0022uF	5% 50V	
C231	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C232	1-124-443-00	ELECT	100uF	20% 10V	
C233	1-130-477-00	MYLAR	0.0033uF	5% 50V	
C234	1-124-903-11	ELECT	1uF	20% 50V	
C235	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C236	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C237	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C239	1-130-475-00	MYLAR	0.0022uF	5% 50V	
C240	1-130-475-00	MYLAR	0.0022uF	5% 50V	
C241	1-130-473-00	MYLAR	0.0015uF	5% 50V	
C242	1-124-234-00	ELECT	22uF	20% 16V	
C244	1-126-096-11	ELECT	10uF	20% 35V	
C245	1-130-487-00	MYLAR	0.022uF	5% 50V	
C246	1-124-925-11	ELECT	2.2uF	20% 100V	
C247	1-126-176-11	ELECT	220uF	20% 10V	
C248	1-124-927-11	ELECT	4.7uF	20% 100V	
C249	1-130-483-00	MYLAR	0.01uF	5% 50V	
C250	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C251	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C255	1-163-237-11	CERAMIC CHIP	27PF	5% 50V	
		< CONNECTOR >			
CN201	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P			
CN202	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P			
		< DIODE >			
D201	8-719-104-34	DIODE 1S2836			
		< IC >			
IC201	8-759-057-63	IC AN3937NFBP			
IC202	8-759-946-44	IC TK15120M			
IC203	8-759-924-46	IC BA4560F			
IC204	8-759-946-44	IC TK15120M			
IC205	8-759-938-15	IC BA178M05			
		< JUMPER RESISTOR >			
JR203	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR207	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR208	1-216-295-00	METAL CHIP	0	5% 1/10W	
JR209	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR211	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR212	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR213	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR215	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR217	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR218	1-216-296-00	METAL CHIP	0	5% 1/8W	

Ref. No.	Part No.	Description			Remarks
JR219	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR221	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR222	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR224	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR225	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR226	1-216-296-00	METAL CHIP	0	5% 1/8W	
		< COIL >			
L202	1-408-424-00	INDUCTOR	180uH		
		< RESISTOR >			
⚠R203	1-249-408-11	CARBON	180	5% 1/4W F	
⚠R205	1-249-408-11	CARBON	180	5% 1/4W F	
R209	1-247-891-00	CARBON	330K	5% 1/4W	
R212	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R213	1-216-113-00	METAL CHIP	470K	5% 1/10W	
R215	1-249-429-11	CARBON	10K	5% 1/4W	
⚠R216	1-249-417-11	CARBON	1K	5% 1/4W F	
R218	1-216-679-11	METAL CHIP	15K	0.5% 1/10W	
R220	1-216-223-00	METAL GLAZE	11K	5% 1/8W	
R221	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R222	1-216-206-00	METAL GLAZE	2.2K	5% 1/8W	
R223	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R224	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R225	1-216-677-11	METAL CHIP	12K	0.5% 1/10W	
R226	1-249-429-11	CARBON	10K	5% 1/4W	
⚠R227	1-249-417-11	CARBON	1K	5% 1/4W F	
R231	1-216-679-11	METAL CHIP	15K	0.5% 1/10W	
R232	1-216-677-11	METAL CHIP	12K	0.5% 1/10W	
R233	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R234	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R235	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
		< VARIABLE RESISTOR >			
RV201	1-241-077-11	RES, ADJ, CARBON 2.2K			
RV202	1-241-764-11	RES, ADJ, CERMET 10K			
RV204	1-241-080-11	RES, ADJ, CARBON 10K			
RV205	1-241-763-11	RES, ADJ, CERMET 4.7K			
RV206	1-241-077-11	RES, ADJ, CARBON 2.2K			
RV207	1-241-764-11	RES, ADJ, CERMET 10K			
RV208	1-241-080-11	RES, ADJ, CARBON 10K			
RV209	1-241-763-11	RES, ADJ, CERMET 4.7K			

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

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

Ref. No.	Part No.	Description			Remarks
*	A-6756-465-A	MA-140 BOARD, COMPLETE (AEP)			
		**********			
*	A-6756-661-A	MA-140 BOARD, COMPLETE (UB)			
		**********			
*	A-6756-560-A	MA-140 BOARD, COMPLETE (NC)			
		**********			
*	A-6756-561-A	MA-140 BOARD, COMPLETE (NP)			
		**********			
*	A-6756-564-A	MA-140 BOARD, COMPLETE (VC)			
		**********			
*	A-6756-813-A	MA-140 BOARD, COMPLETE (B)			
		**********			
					(Ref. No. 8000 Series)
	1-555-110-00	CABLE, PIN			
	3-831-441-XX	CUSHION			
		< CAPACITOR >			
C107	1-124-443-00	ELECT	100uF	20%	10V
C108	1-124-471-00	ELECT	1000uF	20%	6.3V
C110	1-162-306-11	CERAMIC	0.01uF	20%	16V
C111	1-124-126-00	ELECT	47uF	20%	10V
C114	1-124-471-00	ELECT	1000uF	20%	6.3V
C116	1-124-477-11	ELECT	47uF	20%	25V
C117	1-162-306-11	CERAMIC	0.01uF	20%	16V
C201	1-124-907-11	ELECT	10uF	20%	50V
C202	1-124-907-11	ELECT	10uF	20%	50V
C203	1-124-907-11	ELECT	10uF	20%	50V
C204	1-124-907-11	ELECT	10uF	20%	50V
C205	1-124-927-11	ELECT	4.7uF	20%	100V
C206	1-124-927-11	ELECT	4.7uF	20%	100V
C207	1-124-907-11	ELECT	10uF	20%	50V
C209	1-124-907-11	ELECT	10uF	20%	50V(EXCEPT B/UB)
C209	1-126-157-11	ELECT	10uF	20%	16V (B/UB)
C210	1-124-907-11	ELECT	10uF	20%	50V
C211	1-162-284-31	CERAMIC	150PF	10%	50V
C212	1-162-294-31	CERAMIC	0.001uF	10%	50V
C215	1-124-907-11	ELECT	10uF	20%	50V
C216	1-162-294-31	CERAMIC	0.001uF	10%	50V
C217	1-162-294-31	CERAMIC	0.001uF	10%	50V
C220	1-124-907-11	ELECT	10uF	20%	50V(EXCEPT B/UB)
C220	1-126-157-11	ELECT	10uF	20%	16V (B/UB)
C225	1-124-907-11	ELECT	10uF	20%	50V
C227	1-124-907-11	ELECT	10uF	20%	50V
C251	1-124-907-11	ELECT	10uF	20%	50V
C252	1-124-907-11	ELECT	10uF	20%	50V
C253	1-124-907-11	ELECT	10uF	20%	50V
C254	1-124-907-11	ELECT	10uF	20%	50V
C255	1-126-163-11	ELECT	4.7uF	20%	50V
C256	1-126-163-11	ELECT	4.7uF	20%	50V
C257	1-124-907-11	ELECT	10uF	20%	50V
C259	1-126-157-11	ELECT	10uF	20%	16V
C260	1-124-907-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C261	1-162-284-31	CERAMIC	150PF	10%	50V
C262	1-162-294-31	CERAMIC	0.001uF	10%	50V
C265	1-126-157-11	ELECT	10uF	20%	16V
C266	1-162-294-31	CERAMIC	0.001uF	10%	50V
C267	1-162-294-31	CERAMIC	0.001uF	10%	50V
C270	1-126-157-11	ELECT	10uF	20%	16V
C275	1-124-907-11	ELECT	10uF	20%	50V
C277	1-164-096-11	CERAMIC	0.01uF		50V
C281	1-124-907-11	ELECT	10uF	20%	50V
C282	1-126-157-11	ELECT	10uF	20%	16V
C283	1-164-096-11	CERAMIC	0.01uF		50V
C285	1-124-907-11	ELECT	10uF	20%	50V
C286	1-124-907-11	ELECT	10uF	20%	50V
C287	1-124-903-11	ELECT	1uF	20%	50V (EXCEPT B/UB/VC)
C287	1-124-499-11	ELECT, NONPOLAR R	1uF	20%	50V (B/UB/VC)
C289	1-124-907-11	ELECT	10uF	20%	50V
C290	1-162-306-11	CERAMIC	0.01uF	20%	16V
C291	1-124-907-11	ELECT	10uF	20%	50V
C298	1-124-477-11	ELECT	47uF	20%	25V
C301	1-124-925-11	ELECT	2.2uF	20%	100V
C302	1-124-907-11	ELECT	10uF	20%	50V
C303	1-162-306-11	CERAMIC	0.01uF	20%	16V
C400	1-164-085-11	CERAMIC	0.001uF	10%	50V
C401	1-164-052-11	CERAMIC	18PF	5%	50V
C402	1-164-052-11	CERAMIC	18PF	5%	50V
C403	1-164-096-11	CERAMIC	0.01uF		50V
C404	1-164-096-11	CERAMIC	0.01uF		50V
C405	1-164-096-11	CERAMIC	0.01uF		50V
C406	1-126-245-11	ELECT	330uF	20%	6.3V
C407	1-136-161-00	MYLAR	0.047uF	10%	50V
C408	1-130-485-00	MYLAR	0.015uF	5%	50V
C409	1-124-925-11	ELECT	2.2uF	20%	100V
C410	1-162-306-11	CERAMIC	0.01uF	20%	16V
C411	1-124-598-11	ELECT	22uF	20%	25V
C412	1-126-101-11	ELECT	100uF	20%	16V
C413	1-164-085-11	CERAMIC	0.001uF	10%	50V
C414	1-124-472-11	ELECT	470uF	20%	10V
C415	1-124-126-00	ELECT	47uF	20%	10V
C416	1-164-159-11	CERAMIC	0.1uF		50V
C417	1-124-443-00	ELECT	100uF	20%	10V (EXCEPT B/UB)
C417	1-126-177-11	ELECT	100uF	20%	10V (B/UB)
C418	1-164-085-11	CERAMIC	0.001uF	10%	50V
C419	1-162-835-11	CERAMIC	0.0047uF	10%	16V
C420	1-162-847-11	CERAMIC	0.047uF	10%	16V
C421	1-124-477-11	ELECT	47uF	20%	25V
C422	1-162-849-11	CERAMIC	0.068uF	10%	16V
C423	1-126-233-11	ELECT	22uF	20%	50V
C424	1-162-851-11	CERAMIC	0.1uF	10%	16V
C425	1-124-925-11	ELECT	2.2uF	20%	100V

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Ref. No.	Part No.	Description			Remarks
C426	1-162-849-11	CERAMIC	0.068uF	10%	16V
C427	1-124-455-00	ELECT	100uF	20%	16V (B/UB)
C427	1-126-101-11	ELECT	100uF	20%	16V (EXCEPT B/UB)
C429	1-136-161-00	MYLAR	0.047uF	10%	50V (AEP/NC)
C429	1-164-098-11	CERAMIC	0.047uF		12V (B/UB/NP/VC)
C501	1-126-160-11	ELECT	1uF	20%	50V (UB)
C501	1-124-903-11	ELECT	1uF	20%	50V (NC/NP)
C502	1-124-903-11	ELECT	1uF	20%	50V (EXCEPT B/UB)
C503	1-126-157-11	ELECT	10uF	20%	16V (EXCEPT UB)
C504	1-124-907-11	ELECT	10uF	20%	50V (UB)
C521	1-126-157-11	ELECT	10uF	20%	16V
C522	1-136-159-00	MYLAR	0.033uF	10%	50V (EXCEPT B/UB)
C531	1-124-927-11	ELECT	4.7uF	20%	100V
C532	1-162-306-11	CERAMIC	0.01uF	20%	16V
C533	1-126-233-11	ELECT	22uF	20%	50V
C534	1-124-126-00	ELECT	47uF	20%	10V
C535	1-126-103-11	ELECT	470uF	20%	16V
C536	1-126-233-11	ELECT	22uF	20%	50V
C537	1-124-126-00	ELECT	47uF	20%	10V (AEP/B/VC)
C538	1-124-477-11	ELECT	47uF	20%	25V
C539	1-124-477-11	ELECT	47uF	20%	25V (EXCEPT B/UB)
C540	1-130-483-00	MYLAR	0.01uF	5%	50V (AEP/NC/VC)
C540	1-136-153-00	FILM	0.01uF	5%	50V (NP)
C546	1-124-477-11	ELECT	47uF	20%	25V (UB/NC/NP)
C547	1-124-126-00	ELECT	47uF	20%	10V (UB/NC/NP)
C548	1-162-851-11	CERAMIC	0.1uF	10%	16V (UB/NP/B)
C548	1-164-159-11	CERAMIC	0.1uF		50V (NC)
C551	1-126-160-11	ELECT	1uF	20%	50V (UB)
C551	1-124-903-11	ELECT	1uF	20%	50V (NC/NP)
C552	1-124-903-11	ELECT	1uF	20%	50V (EXCEPT B/UB)
C553	1-124-907-11	ELECT	10uF	20%	50V (B/UB)
C554	1-124-907-11	ELECT	10uF	20%	50V (UB)
C555	1-124-907-11	ELECT	10uF	20%	50V (B)
C571	1-162-212-31	CERAMIC	36PF	5%	50V
C572	1-162-205-31	CERAMIC	18PF	5%	50V (B/UB/NC/NP)
C572	1-162-219-11	CERAMIC	68uF	5%	50V (AEP)
C572	1-162-889-11	CERAMIC	68PF	5%	50V (VC)
C574	1-162-847-11	CERAMIC	0.047uF	10%	16V
C575	1-162-306-11	CERAMIC	0.01uF	20%	16V (UB/NC/NP)
C585	1-126-160-11	ELECT	1uF	20%	50V (UB/NC/NP)
C590	1-124-234-00	ELECT	22uF	20%	16V
C701	1-124-903-11	ELECT	1uF	20%	50V (EXCEPT B/UB)
C701	1-126-160-11	ELECT	1uF	20%	50V (B/UB)
C702	1-124-126-00	ELECT	47uF	20%	10V
C703	1-124-589-11	ELECT	47uF	20%	16V
C704	1-126-301-11	ELECT	1uF	20%	50V
C705	1-130-488-00	MYLAR	0.027uF	5%	50V
C706	1-130-492-11	MYLAR	0.056uF	5%	50V
C707	1-126-163-11	ELECT	4.7uF	20%	50V
C708	1-124-589-11	ELECT	47uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C709	1-124-126-00	ELECT	47uF	20%	10V
C710	1-164-083-11	CERAMIC	680PF	10%	50V
C711	1-164-092-11	CERAMIC	0.0033uF	10%	25V
C712	1-124-465-00	ELECT	0.47uF	20%	50V
C713	1-124-903-11	ELECT	1uF	20%	50V
C714	1-130-483-00	MYLAR	0.01uF	5%	50V
C715	1-124-126-00	ELECT	47uF	20%	10V
C716	1-164-078-11	CERAMIC	270PF	10%	50V
C717	1-124-903-11	ELECT	1uF	20%	50V
C718	1-124-598-11	ELECT	22uF	20%	25V
C719	1-164-085-11	CERAMIC	0.001uF	10%	50V
C720	1-164-086-11	CERAMIC	0.0012uF	10%	50V
C721	1-164-077-11	CERAMIC	220PF	10%	50V
C724	1-137-612-11	FILM	0.0068uF	5%	100V
C725	1-164-087-11	CERAMIC	0.0015uF	10%	50V
C726	1-164-095-11	CERAMIC	0.01uF	10%	16V
C730	1-164-096-11	CERAMIC	0.01uF		50V
C740	1-126-320-11	ELECT	10uF	20%	16V (VC/NP/B)
C750	1-124-907-11	ELECT	10uF	20%	50V (VC/NP/B)
C760	1-164-096-11	CERAMIC	0.01uF		50V (VC/NP/B)
C901	1-124-907-11	ELECT	10uF	20%	50V
C902	1-162-851-11	CERAMIC	0.1uF	10%	16V
C905	1-164-159-11	CERAMIC	0.1uF		50V
C906	1-164-159-11	CERAMIC	0.1uF		50V
C910	1-124-584-00	ELECT	100uF	20%	10V

< CONNECTOR >

*	CN713	1-508-797-00 PIN, CONNECTOR 4P
*	CN901	1-560-894-00 PIN, CONNECTOR 6P
	CN902	1-506-473-11 PIN, CONNECTOR 8P
*	CN903	1-568-789-11 PIN, CONNECTOR 12P
	CN904	1-568-095-11 CONNECTOR (PLUG) 24P (EXCEPT B/UB)
	CN904	1-691-702-11 CONNECTOR, BOARD TO BOARD 20P (B/UB)
	CN905	1-691-703-11 CONNECTOR, BOARD TO BOARD 24P (B/UB)
	CN905	1-568-095-11 CONNECTOR (PLUG) 24P (EXCEPT B/UB)
	CN907	1-573-846-11 CONNECTOR, BOARD TO BOARD 14P
	CN908	1-573-852-11 CONNECTOR, BOARD TO BOARD 20P
	CN909	1-569-338-11 CONNECTOR, BOARD TO BOARD 19P
*	CN910	1-573-128-11 PIN, CONNECTOR 5P
	CN911	1-569-337-11 CONNECTOR, BOARD TO BOARD 11P
*	CN912	1-508-742-00 PIN, CONNECTOR 3P
*	CN913	1-573-131-41 PIN, CONNECTOR 8P
*	CN914	1-568-789-11 PIN, CONNECTOR 12P
*	CN915	1-573-129-31 PIN, CONNECTOR 6P
*	CN916	1-568-788-21 PIN, CONNECTOR 11P
	CN917	1-563-590-11 CONNECTOR, FLEXIBLE 13P (B/NP/VC)
	CN918	1-506-473-11 PIN, CONNECTOR 8P
*	CN919	1-573-134-41 PIN, CONNECTOR 11P
	CN920	1-569-341-11 CONNECTOR, BOARD TO BOARD 19P
	CN921	1-573-842-11 CONNECTOR, BOARD TO BOARD 10P (VC)
	CN922	1-566-128-11 CONNECTOR, BOARD TO BOARD 10P

Ref. No.	Part No.	Description	Remarks
‡ CN923	1-506-775-11	CONNECTOR, BOARD TO BOARD 12P	
‡ CN925	1-573-128-31	PIN, CONNECTOR 5P (B)	
CN926	1-506-473-11	PIN, CONNECTOR 8P	
		< JACK >	
CNJ901	1-565-351-41	JACK, PIN 3P (LINE OUT)	
CNJ902	1-561-534-00	SOCKET 21P (EURO-AV(LINE1))	
CNJ903	1-507-562-00	JACK (OUT)	
CNJ904	1-507-562-00	JACK (CONTROL S)	
		< DIODE >	
D301	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	
D303	8-719-109-97	DIODE RD6.8ES-B2	
D304	8-719-109-97	DIODE RD6.8ES-B2	
D400	8-719-911-19	DIODE 1SS119	
D401	8-719-109-93	DIODE RD6.2ES-B2	
D402	8-719-109-93	DIODE RD6.2ES-B2	
D403	8-719-111-67	DIODE RD4.3ES-T2B	
D404	8-719-111-75	DIODE RD4.7ES-T2B	
D405	8-719-911-19	DIODE 1SS119	
D406	8-719-200-82	DIODE 11ES2	
D450	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D451	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D452	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D502	8-719-911-19	DIODE 1SS119	
D505	8-719-113-96	DIODE RD33ES-T2B (EXCEPT B/NC/UK)	
D505	8-719-110-78	DIODE RD33ES-B2 (B/NC/UK)	
D506	8-719-200-82	DIODE 11ES2 (UB/NP/NC)	
D580	8-719-911-19	DIODE 1SS119 (UB)	
D901	8-719-200-82	DIODE 11ES2	
D902	8-719-108-12	DIODE RD9.1E-W	
D903	8-719-109-97	DIODE RD6.8ES-B2	
D904	8-719-109-97	DIODE RD6.8ES-B2	
D905	8-719-110-36	DIODE RD13ES-B2	
D906	8-719-109-97	DIODE RD6.8ES-B2	
D907	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT B/UB)	
D907	8-719-108-12	DIODE RD9.1E-W (B/UB)	
D910	8-719-108-12	DIODE RD9.1E-W	
D911	8-719-108-12	DIODE RD9.1E-W	
D912	8-719-109-97	DIODE RD6.8ES-B2	
D913	8-719-108-12	DIODE RD9.1E-W	
		< IC >	
IC201	8-759-520-50	IC BH7733S	
IC202	8-759-961-38	IC BA6138	
IC203	8-759-140-53	IC MC14053BCP	
IC204	8-759-945-58	IC RC4558P	
IC401	8-752-836-00	IC CXP80724-040Q	
IC402	8-759-246-14	IC TA8823N	
IC403	8-759-503-91	IC TL082ACP	
⚠IC404	8-759-983-45	IC BA6238A	
IC501	8-759-512-95	IC TDA8415 (EXCEPT B/UB)	
IC502	8-759-602-48	IC M5201L (B/UB)	
IC503	8-759-602-48	IC M5201L (UB)	
IC701	8-759-805-20	IC LA7297	
IC702	8-759-602-48	IC M5201L (VC/NP/B)	
		< IF BLOCK >	
⚠IF501	1-466-539-11	IF BLOCK (IFZ-389ST) (AEP/VC)	
⚠IF501	1-466-541-11	IF BLOCK (IFZ-395NC) (UB)	
⚠IF501	1-466-538-11	IF BLOCK (IFZ-389NC) (NC/NP)	
⚠IF501	1-466-540-11	IF BLOCK (IFZ-389FE) (B)	
		< COIL >	
L102	1-408-421-00	INDUCTOR 100uH	
L110	1-410-513-11	INDUCTOR 22uH	
L215	1-410-336-11	INDUCTOR 220uH	
L265	1-410-336-11	INDUCTOR 220uH	
L281	1-410-521-11	INDUCTOR 100uH	
L282	1-410-521-11	INDUCTOR 100uH	
L283	1-410-336-11	INDUCTOR 220uH	
L284	1-410-336-11	INDUCTOR 220uH	
L285	1-410-336-11	INDUCTOR 220uH	
L286	1-410-336-11	INDUCTOR 220uH	
L290	1-408-409-00	INDUCTOR 10uH	
L301	1-408-409-00	INDUCTOR 10uH	
L302	1-408-401-00	INDUCTOR 2.2uH	
L400	1-408-409-00	INDUCTOR 10uH	
L401	1-408-421-00	INDUCTOR 100uH	
L404	1-408-421-00	INDUCTOR 100uH	
L501	1-410-509-11	INDUCTOR 10uH (AEP/B/VC)	
L502	1-410-509-11	INDUCTOR 10uH (EXCEPT UB/B)	
L503	1-410-509-11	INDUCTOR 10uH (UB/NC/NP)	
L504	1-410-513-11	INDUCTOR 22uH	
L505	1-410-513-11	INDUCTOR 22uH	
L506	1-410-509-11	INDUCTOR 10uH (UB/NC/NP)	
L507	1-410-501-11	INDUCTOR 2.2uH	
L508	1-410-501-11	INDUCTOR 2.2uH	
L532	1-410-501-11	INDUCTOR 2.2uH	
L533	1-410-501-11	INDUCTOR 2.2uH	
L534	1-410-501-11	INDUCTOR 2.2uH	
L701	1-412-451-21	INDUCTOR 8.2mH	
L702	1-410-120-11	INDUCTOR 1.2mH	
L703	1-408-421-00	INDUCTOR 100uH	
L704	1-410-091-31	INDUCTOR 22mH	
L760	1-410-509-11	INDUCTOR 10uH (VC/NP/B)	
L901	1-408-413-00	INDUCTOR 22uH (EXCEPT B/UB)	
L901	1-410-513-11	INDUCTOR 22uH (B/UB)	
L902	1-410-501-11	INDUCTOR 2.2uH	

Note:
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MA-140

Ref. No.	Part No.	Description	Remarks
L903	1-410-501-11	INDUCTOR 2.2uH	
		< DECORDER BLOCK >	
NCM501	1-466-543-11	DECORDER BLOCK (NCA-395) (UB)	
NCM501	1-466-542-11	DECORDER BLOCK (NCA-389) (NC/NP)	
		< TRANSISTOR >	
Q101	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q102	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q103	8-729-900-89	TRANSISTOR DTC144ES	
Q104	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q105	8-729-900-89	TRANSISTOR DTC144ES	
Q109	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE (EXCEPT B/UB)	
Q203	8-729-900-89	TRANSISTOR DTC144ES (B/UB)	
Q220	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q247	8-729-119-78	TRANSISTOR 2SC2785-HFE (VC/NP/B)	
Q270	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q297	8-729-119-78	TRANSISTOR 2SC2785-HFE (VC/NP/B)	
Q298	8-729-900-89	TRANSISTOR DTC144ES	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE (EXCEPT UB)	
Q302	8-729-900-65	TRANSISTOR DTA144ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q305	8-729-900-80	TRANSISTOR DTC114ES	
Q306	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q401	8-729-423-42	TRANSISTOR 2SA1309A-R (AEP)	
Q401	8-729-422-71	TRANSISTOR UN411L (EXCEPT AEP)	
Q447	8-729-900-65	TRANSISTOR DTA144ES	
Q450	8-729-900-89	TRANSISTOR DTC144ES (VC/NP/B)	
Q501	8-729-111-55	TRANSISTOR 2SC1509	
Q502	8-729-303-37	TRANSISTOR 2SD655-E	
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE (EXCEPT B/UB)	
Q504	8-729-900-89	TRANSISTOR DTC144ES (UB)	
Q505	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE (UB/NP/NC/B)	
Q508	8-729-900-80	TRANSISTOR DTC114ES (EXCEPT UB)	
Q701	8-729-140-96	TRANSISTOR KSC1008	
		< RESISTOR >	
R101	1-247-804-11	CARBON 75 5% 1/4W	
⚠R105	1-249-405-11	CARBON 100 5% 1/4W F	
⚠R106	1-249-406-11	CARBON 120 5% 1/4W F	
⚠R107	1-249-405-11	CARBON 100 5% 1/4W F	
⚠R108	1-249-403-11	CARBON 68 5% 1/4W F	
⚠R112	1-249-405-11	CARBON 100 5% 1/4W F	
⚠R113	1-249-407-11	CARBON 150 5% 1/4W F	

Ref. No.	Part No.	Description	Remarks
⚠R114	1-249-403-11	CARBON 68 5% 1/4W F	
R132	1-249-426-11	CARBON 5.6K 5% 1/4W	
⚠R133	1-249-417-11	CARBON 1K 5% 1/4W F	
⚠R134	1-249-417-11	CARBON 1K 5% 1/4W F	
R201	1-249-431-11	CARBON 15K 5% 1/4W	
R202	1-249-431-11	CARBON 15K 5% 1/4W	
R203	1-249-431-11	CARBON 15K 5% 1/4W	
⚠R204	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R205	1-249-429-11	CARBON 10K 5% 1/4W	
R206	1-249-431-11	CARBON 15K 5% 1/4W	
R208	1-247-891-00	CARBON 330K 5% 1/4W	
R209	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R210	1-249-422-11	CARBON 2.7K 5% 1/4W F	
R211	1-249-433-11	CARBON 22K 5% 1/4W	
R212	1-249-437-11	CARBON 47K 5% 1/4W (EXCEPT B/UB)	
R212	1-247-899-11	CARBON 680K 5% 1/4W (B/UB)	
R213	1-247-899-11	CARBON 680K 5% 1/4W (B/UB)	
R213	1-249-437-11	CARBON 47K 5% 1/4W (EXCEPT B/UB)	
R214	1-249-437-11	CARBON 47K 5% 1/4W	
R215	1-249-437-11	CARBON 47K 5% 1/4W	
R216	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R217	1-249-413-11	CARBON 470 5% 1/4W F	
R218	1-249-426-11	CARBON 5.6K 5% 1/4W	
⚠R219	1-249-413-11	CARBON 470 5% 1/4W F	
R220	1-249-429-11	CARBON 10K 5% 1/4W	
R221	1-249-441-11	CARBON 100K 5% 1/4W	
R222	1-249-441-11	CARBON 100K 5% 1/4W	
⚠R224	1-249-414-11	CARBON 560 5% 1/4W F	
⚠R225	1-249-405-11	CARBON 100 5% 1/4W F	
⚠R227	1-249-405-11	CARBON 100 5% 1/4W F	
R228	1-249-437-11	CARBON 47K 5% 1/4W	
R241	1-249-439-11	CARBON 68K 5% 1/4W	
R242	1-249-439-11	CARBON 68K 5% 1/4W (B/UB)	
R242	1-249-438-11	CARBON 56K 5% 1/4W (EXCEPT B/UB)	
R243	1-249-438-11	CARBON 56K 5% 1/4W (EXCEPT B/UB)	
R243	1-249-439-11	CARBON 68K 5% 1/4W (B/UB)	
R246	1-249-438-11	CARBON 56K 5% 1/4W (EXCEPT B/UB)	
R246	1-249-439-11	CARBON 68K 5% 1/4W (B/UB)	
R247	1-249-440-11	CARBON 82K 5% 1/4W (VC/NP/B)	
R251	1-249-431-11	CARBON 15K 5% 1/4W	
R252	1-249-431-11	CARBON 15K 5% 1/4W	
R253	1-249-431-11	CARBON 15K 5% 1/4W	
R254	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R255	1-249-429-11	CARBON 10K 5% 1/4W	
R256	1-249-431-11	CARBON 15K 5% 1/4W	
R258	1-247-891-00	CARBON 330K 5% 1/4W	
R259	1-249-429-11	CARBON 10K 5% 1/4W	

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Ref. No.	Part No.	Description			Remarks
⚠R260	1-249-422-11	CARBON 2.7K	5%	1/4W	F
R261	1-249-433-11	CARBON 22K	5%	1/4W	
R262	1-249-437-11	CARBON 47K	5%	1/4W	(EXCEPT B/UB)
R262	1-247-899-11	CARBON 680K	5%	1/4W	(B/UB)
R263	1-247-899-11	CARBON 680K	5%	1/4W	(B/UB)
R263	1-249-437-11	CARBON 47K	5%	1/4W	(EXCEPT B/UB)
R264	1-249-437-11	CARBON 47K	5%	1/4W	
R265	1-249-437-11	CARBON 47K	5%	1/4W	
R266	1-249-435-11	CARBON 33K	5%	1/4W	
⚠R267	1-249-413-11	CARBON 470	5%	1/4W	F
R268	1-249-426-11	CARBON 5.6K	5%	1/4W	
⚠R269	1-249-413-11	CARBON 470	5%	1/4W	F
R270	1-249-429-11	CARBON 10K	5%	1/4W	
R271	1-249-441-11	CARBON 100K	5%	1/4W	
R272	1-249-441-11	CARBON 100K	5%	1/4W	
⚠R274	1-249-414-11	CARBON 560	5%	1/4W	F
⚠R275	1-249-405-11	CARBON 100	5%	1/4W	F
⚠R277	1-249-405-11	CARBON 100	5%	1/4W	F
R278	1-249-437-11	CARBON 47K	5%	1/4W	
R281	1-249-431-11	CARBON 15K	5%	1/4W	
R282	1-249-438-11	CARBON 56K	5%	1/4W	(EXCEPT B/UB)
R282	1-249-439-11	CARBON 68K	5%	1/4W	(B/UB)
⚠R284	1-249-417-11	CARBON 1K	5%	1/4W	F
R285	1-249-431-11	CARBON 15K	5%	1/4W	
R286	1-249-438-11	CARBON 56K	5%	1/4W	(EXCEPT B/UB)
R286	1-249-439-11	CARBON 68K	5%	1/4W	(B/UB)
R287	1-249-429-11	CARBON 10K	5%	1/4W	
R288	1-249-429-11	CARBON 10K	5%	1/4W	
R291	1-249-439-11	CARBON 68K	5%	1/4W	
R292	1-249-439-11	CARBON 68K	5%	1/4W	(B/UB)
R292	1-249-438-11	CARBON 56K	5%	1/4W	(EXCEPT B/UB)
R293	1-249-438-11	CARBON 56K	5%	1/4W	(EXCEPT B/UB)
R293	1-249-439-11	CARBON 68K	5%	1/4W	(B/UB)
R296	1-249-438-11	CARBON 56K	5%	1/4W	(EXCEPT B/UB)
R296	1-249-439-11	CARBON 68K	5%	1/4W	(B/UB)
R297	1-249-440-11	CARBON 82K	5%	1/4W	(VC/NP/B)
R298	1-249-429-11	CARBON 10K	5%	1/4W	
R299	1-249-437-11	CARBON 47K	5%	1/4W	
R301	1-249-429-11	CARBON 10K	5%	1/4W	
⚠R302	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R303	1-247-891-00	CARBON 330K	5%	1/4W	
R304	1-247-887-00	CARBON 220K	5%	1/4W	
⚠R305	1-249-417-11	CARBON 1K	5%	1/4W	F
⚠R306	1-249-405-11	CARBON 100	5%	1/4W	F
R307	1-249-441-11	CARBON 100K	5%	1/4W	
⚠R308	1-249-417-11	CARBON 1K	5%	1/4W	F
⚠R401	1-249-425-11	CARBON 4.7K	5%	1/4W	F
⚠R402	1-249-425-11	CARBON 4.7K	5%	1/4W	F
⚠R403	1-249-421-11	CARBON 2.2K	5%	1/4W	F

Ref. No.	Part No.	Description			Remarks
R405	1-249-429-11	CARBON 10K	5%	1/4W	
R406	1-249-437-11	CARBON 47K	5%	1/4W	
⚠R407	1-249-417-11	CARBON 1K	5%	1/4W	F
⚠R408	1-249-417-11	CARBON 1K	5%	1/4W	F
⚠R409	1-249-417-11	CARBON 1K	5%	1/4W	F
R410	1-249-429-11	CARBON 10K	5%	1/4W	
R411	1-249-429-11	CARBON 10K	5%	1/4W	
R412	1-249-437-11	CARBON 47K	5%	1/4W	
R413	1-249-436-11	CARBON 39K	5%	1/4W	
R414	1-249-429-11	CARBON 10K	5%	1/4W	
R415	1-249-429-11	CARBON 10K	5%	1/4W	
R416	1-249-429-11	CARBON 10K	5%	1/4W	
⚠R418	1-249-417-11	CARBON 1K	5%	1/4W	F
R419	1-249-436-11	CARBON 39K	5%	1/4W	
R420	1-249-429-11	CARBON 10K	5%	1/4W	
R421	1-249-429-11	CARBON 10K	5%	1/4W	
⚠R422	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R423	1-247-885-00	CARBON 180K	5%	1/4W	
⚠R424	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R425	1-249-439-11	CARBON 68K	5%	1/4W	
R426	1-249-434-11	CARBON 27K	5%	1/4W	
⚠R427	1-249-423-11	CARBON 3.3K	5%	1/4W	F
R428	1-247-705-11	CARBON 270	5%	1/4W	
⚠R429	1-249-427-11	CARBON 6.8K	5%	1/4W	F
⚠R431	1-249-421-11	CARBON 2.2K	5%	1/4W	F
⚠R432	1-249-405-11	CARBON 100	5%	1/4W	F
⚠R433	1-249-417-11	CARBON 1K	5%	1/4W	F
R434	1-249-441-11	CARBON 100K	5%	1/4W	
R435	1-247-901-11	CARBON 820K	5%	1/4W	
R436	1-249-411-11	CARBON 330	5%	1/4W	
R437	1-249-437-11	CARBON 47K	5%	1/4W	
R438	1-249-437-11	CARBON 47K	5%	1/4W	
R439	1-249-439-11	CARBON 68K	5%	1/4W	
⚠R440	1-249-425-11	CARBON 4.7K	5%	1/4W	F
R441	1-249-441-11	CARBON 100K	5%	1/4W	
⚠R442	1-249-417-11	CARBON 1K	5%	1/4W	F
R443	1-215-429-00	METAL 2.2K	1%	1/6W	
R444	1-249-429-11	CARBON 10K	5%	1/4W	
R445	1-249-429-11	CARBON 10K	5%	1/4W	
R446	1-249-435-11	CARBON 33K	5%	1/4W	
⚠R447	1-249-421-11	CARBON 2.2K	5%	1/4W	F
R448	1-215-429-00	METAL 2.2K	1%	1/6W	
R450	1-249-429-11	CARBON 10K	5%	1/4W	(VC/NP/B)
R501	1-249-429-11	CARBON 10K	5%	1/4W	(UB)
R502	1-249-429-11	CARBON 10K	5%	1/4W	(UB)
R504	1-249-429-11	CARBON 10K	5%	1/4W	(UB)
R505	1-249-429-11	CARBON 10K	5%	1/4W	(UB)
R506	1-249-429-11	CARBON 10K	5%	1/4W	(UB)
R507	1-249-441-11	CARBON 100K	5%	1/4W	(UB)
R508	1-249-441-11	CARBON 100K	5%	1/4W	(UB)

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Ref. No.	Part No.	Description			Remarks
R509	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT UB)
R510	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT UB)
⚠R522	1-249-419-11	CARBON	1.5K	5%	1/4W F(EXCEPT B/UB)
⚠R523	1-249-417-11	CARBON	1K	5%	1/4W F(EXCEPT B/UB)
⚠R524	1-249-421-11	CARBON	2.2K	5%	1/4W F
R525	1-247-895-00	CARBON	470K	5%	1/4W
R526	1-249-437-11	CARBON	47K	5%	1/4W (UB)
R527	1-249-437-11	CARBON	47K	5%	1/4W (B/UB)
⚠R528	1-249-417-11	CARBON	1K	5%	1/4W F(EXCEPT B/UB)
⚠R529	1-249-417-11	CARBON	1K	5%	1/4W F(EXCEPT B/UB)
⚠R530	1-249-420-11	CARBON	1.8K	5%	1/4W F(EXCEPT B/UB)
⚠R531	1-249-417-11	CARBON	1K	5%	1/4W F
⚠R535	1-249-417-11	CARBON	1K	5%	1/4W F(EXCEPT B)
⚠R536	1-249-417-11	CARBON	1K	5%	1/4W F(EXCEPT B)
⚠R537	1-249-428-11	CARBON	8.2K	5%	1/4W F(UB/NP/NC/B)
R538	1-249-430-11	CARBON	12K	5%	1/4W (UB/NP/NC/B)
⚠R539	1-249-423-11	CARBON	3.3K	5%	1/4W F (AEP/B/VC)
R540	1-249-433-11	CARBON	22K	5%	1/4W (AEP/B/VC)
R551	1-249-429-11	CARBON	10K	5%	1/4W (B/UB)
R552	1-249-429-11	CARBON	10K	5%	1/4W (B/UB)
R553	1-249-429-11	CARBON	10K	5%	1/4W (B)
R554	1-249-429-11	CARBON	10K	5%	1/4W (UB)
R555	1-249-429-11	CARBON	10K	5%	1/4W (UB)
R556	1-249-429-11	CARBON	10K	5%	1/4W (UB)
R557	1-249-441-11	CARBON	100K	5%	1/4W (UB)
R558	1-249-441-11	CARBON	100K	5%	1/4W (UB)
R559	1-249-441-11	CARBON	100K	5%	1/4W (B/UB)
R560	1-249-441-11	CARBON	100K	5%	1/4W (B/UB)
⚠R572	1-249-417-11	CARBON	1K	5%	1/4W F
⚠R573	1-249-425-11	CARBON	4.7K	5%	1/4W F(B/UB/NP/NC)
R573	1-249-421-11	CARBON	2.2K	5%	1/4W (AEP/VC)
⚠R574	1-249-405-11	CARBON	100	5%	1/4W F
R575	1-249-429-11	CARBON	10K	5%	1/4W (B/UB/NP/NC)
⚠R575	1-249-425-11	CARBON	4.7K	5%	1/4W F(AEP/VC)
R580	1-249-429-11	CARBON	10K	5%	1/4W (UB)
R585	1-249-425-11	CARBON	4.7K	5%	1/4W F(UB/NP/NC)
R701	1-249-429-11	CARBON	10K	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-249-429-11	CARBON	10K	5%	1/4W
⚠R704	1-249-407-11	CARBON	150	5%	1/4W F
⚠R705	1-249-421-11	CARBON	2.2K	5%	1/4W F
⚠R706	1-249-428-11	CARBON	8.2K	5%	1/4W F
R707	1-249-410-11	CARBON	270	5%	1/4W F
⚠R708	1-249-393-11	CARBON	10	5%	1/4W F
R710	1-249-436-11	CARBON	39K	5%	1/4W
⚠R711	1-249-416-11	CARBON	820	5%	1/4W F
R712	1-247-887-00	CARBON	220K	5%	1/4W
R713	1-249-411-11	CARBON	330	5%	1/4W
R714	1-249-429-11	CARBON	10K	5%	1/4W
R715	1-249-437-11	CARBON	47K	5%	1/4W

Ref. No.	Part No.	Description			Remarks
R716	1-249-433-11	CARBON	22K	5%	1/4W
R717	1-247-903-00	CARBON	1M	5%	1/4W
⚠R719	1-249-427-11	CARBON	6.8K	5%	1/4W F
R720	1-249-430-11	CARBON	12K	5%	1/4W (EXCEPT B/UB)
R720	1-249-433-11	CARBON	22K	5%	1/4W (B/UB)
⚠R721	1-249-425-11	CARBON	4.7K	5%	1/4W F(VC/NP/B)
⚠R721	1-249-416-11	CARBON	820	5%	1/4W F(AE/NC/UB)
R722	1-249-438-11	CARBON	56K	5%	1/4W
R725	1-249-432-11	CARBON	18K	5%	1/4W
R729	1-249-426-11	CARBON	5.6K	5%	1/4W
R730	1-249-433-11	CARBON	22K	5%	1/4W
⚠R733	1-249-387-11	CARBON	3.3	5%	1/4W F
R740	1-249-440-11	CARBON	82K	5%	1/4W (VC/NP/B)
R741	1-249-437-11	CARBON	47K	5%	1/4W (VC/NP/B)
R742	1-249-437-11	CARBON	47K	5%	1/4W (VC/NP/B)
R746	1-249-437-11	CARBON	47K	5%	1/4W (VC/NP/B)
R747	1-249-437-11	CARBON	47K	5%	1/4W (VC/NP/B)
R750	1-249-429-11	CARBON	10K	5%	1/4W (VC/NP/B)
R790	1-249-440-11	CARBON	82K	5%	1/4W (B)

< RF MODULATOR >

⚠RF501	1-466-328-11	MODULATOR, RF (RFU-2017) (EXCEPT B/UB) (RF CHANNEL)
⚠RF501	1-466-347-11	MODULATOR, RF (RFU-2024) (UB) (RF CHANNEL)
⚠RF501	1-466-348-11	MODULATOR, RF (RFU-2023) (B) (RF CHANNEL)

< VARIABLE RESISTOR >

RV201	1-241-077-11	RES, ADJ, CARBON 2.2K
RV400	1-241-083-11	RES, ADJ, CARBON 47K
RV401	1-241-083-11	RES, ADJ, CARBON 47K
RV501	1-241-079-11	RES, ADJ, CARBON 4.7K (EXCEPT B/UB)
RV701	1-241-085-11	RES, ADJ, CARBON 220K

< TRANSFORMER >

T701	1-433-352-11	TRANSFORMER, BIAS OSCILLATION

< TUNER >

⚠TU501	1-465-260-11	TUNER, ET (BTP-2C401) (EXCEPT B/UB)
⚠TU501	1-465-262-11	TUNER, ET (UB/B)

< VIBRATOR >

X401	1-578-774-11	VIBRATOR, CRYSTAL 12MHz
X501	1-567-925-11	VIBRATOR, CRYSTAL 10MHz (EXCEPT B/UB)

****

Note:
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Replace only with part number specified.

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

Ref. No.	Part No.	Description			Remarks
*	A-6754-435-A	MD-58 BOARD, COMPLETE			
		**********			
					(Ref. No. 10000 Series)
		< CAPACITOR >			
C001	1-161-494-00	CERAMIC	0.022uF	25V	
C002	1-161-494-00	CERAMIC	0.022uF	25V	
C003	1-126-157-11	ELECT	10uF 20%	16V	
C004	1-161-379-00	CERAMIC	0.01uF 20%	25V	
C006	1-124-589-11	ELECT	47uF 20%	16V	
C008	1-164-159-11	CERAMIC	0.1uF	50V	
C009	1-164-159-11	CERAMIC	0.1uF	50V	
C025	1-162-294-31	CERAMIC	0.001uF 10%	50V	
C026	1-162-294-31	CERAMIC	0.001uF 10%	50V	
		< CONNECTOR >			
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P			
CN003	1-691-643-11	CONNECTOR, BOARD TO BOARD 5P			
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
CN005	1-506-482-11	PIN, CONNECTOR 3P			
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P			
CN007	1-569-340-11	CONNECTOR, BOARD TO BOARD 11P			
		< DIODE >			
D001	8-719-985-00	DIODE GL451VS1			
D004	8-719-109-93	DIODE RD6.2ES-B2			
D005	8-719-109-93	DIODE RD6.2ES-B2			
D006	8-719-109-93	DIODE RD6.2ES-B2			
D007	8-719-109-93	DIODE RD6.2ES-B2			
		< IC >			
IC002	8-759-912-77	IC uPC324C			
		< PHOTO INTERUPTER >			
PH001	8-759-144-33	IC PS6002			
PH002	8-759-144-33	IC PS6002			
		< TRANSISTOR >			
Q001	8-729-926-31	TRANSISTOR PT483F1S			
Q002	8-729-926-31	TRANSISTOR PT483F1S			
		< RESISTOR >			
⚠R001	1-249-423-11	CARBON	3.3K 5%	1/4W	F
⚠R002	1-249-423-11	CARBON	3.3K 5%	1/4W	F
R003	1-249-426-11	CARBON	5.6K 5%	1/4W	
R004	1-249-426-11	CARBON	5.6K 5%	1/4W	
⚠R005	1-249-417-11	CARBON	1K 5%	1/4W	F
R006	1-249-441-11	CARBON	100K 5%	1/4W	
R007	1-249-441-11	CARBON	100K 5%	1/4W	
⚠R008	1-249-425-11	CARBON	4.7K 5%	1/4W	F
⚠R009	1-249-408-11	CARBON	180 5%	1/4W	F
⚠R010	1-249-422-11	CARBON	2.7K 5%	1/4W	F
R011	1-249-437-11	CARBON	47K 5%	1/4W	
⚠R012	1-249-421-11	CARBON	2.2K 5%	1/4W	F
R015	1-249-437-11	CARBON	47K 5%	1/4W	
⚠R016	1-249-421-11	CARBON	2.2K 5%	1/4W	F
R017	1-249-429-11	CARBON	10K 5%	1/4W	
R018	1-249-429-11	CARBON	10K 5%	1/4W	
R019	1-249-429-11	CARBON	10K 5%	1/4W	
R020	1-249-429-11	CARBON	10K 5%	1/4W	
⚠R023	1-249-414-11	CARBON	560 5%	1/4W	F
		< SWITCH >			
S001	1-570-953-11	SWITCH, PUSH (1 KEY)			
S002	1-570-953-11	SWITCH, PUSH (1 KEY)			
**********					
*	A-6721-466-A	MF-167 BOARD, COMPLETE (AEP)			
		**********			
*	A-6721-499-A	MF-167 BOARD, COMPLETE (UB)			
		**********			
*	A-6721-476-A	MF-167 BOARD, COMPLETE (NC)			
		**********			
*	A-6721-477-A	MF-167 BOARD, COMPLETE (NP)			
		**********			
*	A-6721-479-A	MF-167 BOARD, COMPLETE (VC)			
		**********			
*	A-6721-513-A	MF-167 BOARD, COMPLETE (B)			
		**********			
					(Ref. No. 16000 Series)
	3-738-216-01	COVER, VOLUME			
*	3-948-157-01	HOLDER, FL			
		< BUZZER >			
BZ601	1-529-080-11	BUZZER, PIEZOELECTRIC			
		< CAPACITOR >			
C601	1-126-096-11	ELECT	10uF 20%	35V	
C602	1-124-472-11	ELECT	470uF 20%	10V	
C603	1-161-379-00	CERAMIC	0.01uF 20%	25V	
C604	1-125-705-11	CAP, DOUBLE LAYEYERS			0.22F
C605	1-126-096-11	ELECT	10uF 20%	35V	
C607	1-161-379-00	CERAMIC	0.01uF 20%	25V	
C608	1-162-219-31	CERAMIC	68PF 5%	50V	
C609	1-124-584-00	ELECT	100uF 20%	10V	
C611	1-126-160-11	ELECT	1uF 20%	50V	
C612	1-161-379-00	CERAMIC	0.01uF 30%	25V	

Note:
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Replace only with part number specified.

Note:
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MF-167

Ref. No.	Part No.	Description	Remarks
C613	1-161-494-00	CERAMIC 0.022uF 25V	
C614	1-162-306-11	CERAMIC 0.01uF 20% 16V	
		< CONNECTOR >	
CN601	1-568-081-11	CONNECTOR (RECEPTALE) 24P	(EXCEPT B/UB/VC)
CN601	1-568-079-11	CONNECTOR (RECEPTALE) 20P	(B/UB/VC)
CN602	1-568-081-11	CONNECTOR (RECEPTALE) 24P	
* CN603	1-573-387-11	CONNECTOR, BOARD TO BOARD 12P	
CN604	1-568-673-11	CONNECTOR, BOARD TO BOARD 14P	
CN605	1-563-597-11	CONNECTOR, FLEXIBLE 20P	(EXCEPT B/UB/VC)
CN605	1-563-593-11	CONNECTOR, FLEXIBLE 16P	(B/UB/VC)
		< VARIABLE CAPACITOR >	
CV601	1-141-291-11	CAP, TRIMMER	(EXCEPT B/UB/VC)
CV601	1-141-227-00	CAP, TRIMMER 20PF	(B/UB/VC)
		< DIODE >	
D601	8-719-110-08	DIODE RD8.2ES-B2	
D602	8-719-911-19	DIODE 1SS119	(EXCEPT B/UB/VC)
D602	8-719-200-82	DIODE 11ES2	(B/UB/VC)
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	(EXCEPT B/UB/VC)
D605	8-719-200-82	DIODE 11ES2	(B/UB/VC)
D610	8-719-911-19	DIODE 1SS119	
D611	8-719-911-19	DIODE 1SS119	
D612	8-719-911-19	DIODE 1SS119	
D613	8-719-911-19	DIODE 1SS119	
D614	8-719-911-19	DIODE 1SS119	
D615	8-719-911-19	DIODE 1SS119	
D616	8-719-109-93	DIODE RD6.2ES-B2	
D617	8-719-940-88	DIODE SLR-34UC3	(EXCEPT B/UB/VC)
D617	8-719-946-30	DIODE SLR34DC3	(B/UB/VC)
D618	8-719-940-82	DIODE SLR34MC3	
D619	8-719-940-99	DIODE SLR34VC3	
D620	8-719-940-99	DIODE SLR34VC3	
		< IC >	
IC601	8-759-078-00	IC MB89796B-VSX1760	(AEP/UB/NC/NP)
IC601	8-759-094-10	IC MB89796B-104	(B/VC)
IC602	8-759-748-54	IC CAT35C202P	
IC603	8-759-515-58	IC PST572H	(EXCEPT B/UB)
IC603	8-759-520-98	IC PST572K-T	(B/UB)
IC604	8-759-510-43	IC PST572C	
IC605	1-466-131-21	IC GP1U52X	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L601	1-410-361-21	INDUCTOR 12uH	
L602	1-410-501-11	INDUCTOR 2.2uH	(EXCEPT B/UB/VC)
L602	1-408-401-00	INDUCTOR 2.2uH	(B/UB/VC)
L604	1-410-517-11	INDUCTOR 47uH	
L605	1-410-501-11	INDUCTOR 2.2uH	
L607	1-410-336-11	INDUCTOR 220uH	
L609	1-410-501-11	INDUCTOR 2.2uH	
L610	1-410-501-11	INDUCTOR 2.2uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD601	1-519-507-41	INDICATOR TUBE, FLUORESCENT	
		< TRANSISTOR >	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q602	8-729-900-89	TRANSISTOR DTC144ES	
Q603	8-729-900-80	TRANSISTOR DTC114ES	
Q604	8-729-900-80	TRANSISTOR DTC114ES	
Q605	8-729-900-80	TRANSISTOR DTC114ES	
Q606	8-729-900-80	TRANSISTOR DTC114ES	
Q608	8-729-900-80	TRANSISTOR DTC114ES	(VC)
		< RESISTOR >	
R601	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R602	1-249-393-11	CARBON 10 5% 1/4W	F
R603	1-249-440-11	CARBON 82K 5% 1/4W	
R604	1-249-441-11	CARBON 100K 5% 1/4W	
R605	1-249-429-11	CARBON 10K 5% 1/4W	
R607	1-249-437-11	CARBON 47K 5% 1/4W	
⚠R608	1-249-425-11	CARBON 4.7K 5% 1/4W	F (VC)
R609	1-249-429-11	CARBON 10K 5% 1/4W	(EXCEPT B/UB)
⚠R609	1-249-425-11	CARBON 4.7K 5% 1/4W	F(B/UB)
R610	1-249-429-11	CARBON 10K 5% 1/4W	
R617	1-249-404-00	CARBON 82 5% 1/4W	
⚠R618	1-249-407-11	CARBON 150 5% 1/4W	F
⚠R619	1-249-409-11	CARBON 220 5% 1/4W	F
⚠R620	1-249-409-11	CARBON 220 5% 1/4W	F
⚠R622	1-249-405-11	CARBON 100 5% 1/4W	F
R623	1-249-429-11	CARBON 10K 5% 1/4W	
R624	1-249-429-11	CARBON 10K 5% 1/4W	
R625	1-249-429-11	CARBON 10K 5% 1/4W	
R626	1-249-429-11	CARBON 10K 5% 1/4W	
R627	1-249-429-11	CARBON 10K 5% 1/4W	
R628	1-249-429-11	CARBON 10K 5% 1/4W	
R629	1-249-429-11	CARBON 10K 5% 1/4W	
R630	1-249-429-11	CARBON 10K 5% 1/4W	
R653	1-249-437-11	CARBON 47K 5% 1/4W	(AEP/B/NC/NP)
R654	1-249-437-11	CARBON 47K 5% 1/4W	(NC/VC)

Note:
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Replace only with part number specified.

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

Ref. No.	Part No.	Description			Remarks
R655	1-249-437-11	CARBON	47K	5% 1/4W (NP)	
R662	1-249-417-11	CARBON	1K	5% 1/4W F	
R664	1-249-417-11	CARBON	1K	5% 1/4W F	
R670	1-249-425-11	CARBON	4.7K	5% 1/4W F	
R671	1-249-425-11	CARBON	4.7K	5% 1/4W F	
R698	1-249-433-11	CARBON	22K	5% 1/4W (B)	
R699	1-249-437-11	CARBON	47K	5% 1/4W	
		< VARIABLE RESISTOR >			
RV601	1-241-358-11	RES, VAR, CARBON 20K (LEFT)			
RV602	1-241-358-11	RES, VAR, CARBON 20K (RIGHT)			
RV603	1-230-522-11	RES, ADJ, METAL 4.7K (EXCEPT B/UB)			
RV603	1-230-523-11	RES, ADJ, METAL 10K (B/UB)			
RV604	1-230-523-11	RES, ADJ, METAL 10K (B/UB)			
RV604	1-230-522-11	RES, ADJ, METAL 4.7K (EXCEPT B/UB)			
		< VIBRATOR >			
X601	1-567-098-00	OSCILLATOR, CRYSTAL 32.768kHz			
X602	1-577-157-11	VIBRATOR, CERAMIC		(EXCEPT B/UB)	
X602	1-579-125-11	VIBRATOR, CERAMIC		(B/UB)	
**********					
*	A-6755-466-A	MF-168 BOARD, COMPLETE (EXCEPT UB)			
		**********			
*	A-6755-660-A	MF-168 BOARD, COMPLETE (UB)			
		**********			
					(Ref.No.11000 Series)
	4-352-844-01	PIN, LEAD, COATING (UB)			
	3-950-546-01	HOLDER, LED			
		< CAPACITOR >			
C201	1-126-160-11	ELECT	1uF	20% 50V	
C202	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C203	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C204	1-126-163-11	ELECT	4.7uF	20% 50V (EXCEPT B/UB)	
C204	1-124-589-11	ELECT	47uF	20% 16V (B/UB)	
C205	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C206	1-126-157-11	ELECT	10uF	20% 16V	
C207	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C208	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C209	1-124-589-11	ELECT	47uF	20% 16V	
		< CONNECTOR >			
CN201	1-568-667-11	CONNECTOR, BOARD TO BOARD 14P			
CN202	1-563-584-11	CONNECTOR, FLEXIBLE 7P (EXCEPT B/UB)			
CN202	1-563-587-11	CONNECTOR, FLEXIBLE 10P (B/UB)			
CN203	1-695-309-11	CONNECTOR, BOARD TO BOARD 11P			
CN204	1-506-487-11	PIN, CONNECTOR 8P			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D201	8-719-955-04	LED		PY5504S-1 (EXCEPT B/UB)	
D201	8-719-988-92	LED		BRPG5014X-K (B/UB)	
D202	8-719-988-92	LED		BRPG5014X-K (B/UB)	
D202	8-719-955-04	LED		PY5504S-1 (EXCEPT B/UB)	
		< IC >			
IC201	8-759-923-90	IC	BA4560	(EXCEPT B/UB)	
IC201	8-759-924-46	IC	BA4560F	(B/UB)	
IC202	8-759-032-32	IC	MC74HC132AF		
		< JUMPER RESISTOR >			
JR201	1-216-295-00	METAL CHIP	0	5% 1/10W (EXCEPT UB)	
JR202	1-216-295-00	METAL CHIP	0	5% 1/10W (EXCEPT UB)	
JR230	1-216-295-00	METAL CHIP	0	5% 1/10W (B/UB)	
JR232	1-216-295-00	METAL CHIP	0	5% 1/10W	
JR233	1-216-295-00	METAL CHIP	0	5% 1/10W	
		< COIL >			
L201	1-410-521-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q201	8-729-230-49	TRANSISTOR	2SC2712-G		
Q202	8-729-421-19	TRANSISTOR	UN2213		
Q203	8-729-140-75	TRANSISTOR	2SD999-CLCK		
Q204	8-729-140-75	TRANSISTOR	2SD999-CLCK		
Q240	8-729-230-49	TRANSISTOR	2SC2712-G		
		< RESISTOR >			
R201	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R202	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R203	1-216-295-00	METAL CHIP	0	5% 1/10W	
R205	1-216-029-00	METAL CHIP	150	5% 1/10W	
R206	1-216-029-00	METAL CHIP	150	5% 1/10W	
R207	1-216-029-00	METAL CHIP	150	5% 1/10W	
R208	1-216-029-00	METAL CHIP	150	5% 1/10W	
R209	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R210	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R211	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R212	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R213	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R214	1-216-101-00	METAL CHIP	150K	5% 1/10W	
R215	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R216	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R217	1-216-041-00	METAL CHIP	470	5% 1/10W	
R218	1-216-001-00	METAL CHIP	10	5% 1/10W (EXCEPT UB)	
R219	1-216-057-00	METAL CHIP	2.2K	5% 1/10W (EXCEPT UB)	
R220	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R221	1-216-073-00	METAL CHIP	10K	5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R223	1-216-031-00	METAL CHIP	180	5%	1/10W (EXCEPT B/UB)
R223	1-216-025-00	METAL CHIP	100	5%	1/10W (B/UB)
R224	1-216-027-00	METAL CHIP	120	5%	1/10W (B/UB)
R224	1-216-029-00	METAL CHIP	150	5%	1/10W (EXCEPT B/UB)
R225	1-216-023-00	METAL CHIP	82	5%	1/10W (EXCEPT B/UB)
R225	1-216-033-00	METAL CHIP	220	5%	1/10W (B/UB)
R226	1-216-027-00	METAL CHIP	120	5%	1/10W (B/UB)
R226	1-216-029-00	METAL CHIP	150	5%	1/10W (EXCEPT B/UB)
R241	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S201	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)			
S202	1-571-300-21	SWITCH, ROTARY			
**********					
*	A-6755-463-A	MF-169 BOARD, COMPLETE (EXCEPT B/UB)			
		**********			
*	A-6755-667-A	MF-169 BOARD, COMPLETE (UB)			
		**********			
*	A-6755-811-A	MF-169 BOARD, COMPLETE (B)			
		**********			
					(Ref.No.12000 Series)
		< CONNECTOR >			
CN401	1-568-671-11	CONNECTOR, BOARD TO BOARD 11P(EXCEPT B/UB)			
CN401	1-568-668-11	CONNECTOR, BOARD TO BOARD 6P (B/UB)			
CN402	1-563-619-21	CONNECTOR, FLEXIBLE 16P (B/UB)			
CN402	1-563-623-11	CONNECTOR, FLEXIBLE 20P (EXCEPT B/UB)			
		< JUMPER RESISTOR >			
JR401	1-216-295-00	METAL CHIP	0	5%	1/10W
JR402	1-216-296-00	METAL CHIP	0	5%	1/8W
JR403	1-216-296-00	METAL CHIP	0	5%	1/8W
JR404	1-216-296-00	METAL CHIP	0	5%	1/8W
JR405	1-216-296-00	METAL CHIP	0	5%	1/8W
JR406	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
JR409	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
JW004	1-216-296-00	METAL CHIP	0	5%	1/8W (EXCEPT UB)
JW013	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
JW085	1-216-296-00	METAL CHIP	0	5%	1/8W (EXCEPT UB)
JW087	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
JW088	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
JW089	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT UB)
		< RESISTOR >			
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (B/UB)
R402	1-216-063-00	METAL CHIP	3.9K	5%	1/10W (EXCEPT B/UB)
R403	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R404	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R405	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R406	1-216-041-00	METAL CHIP	470	5%	1/10W
R407	1-216-041-00	METAL CHIP	470	5%	1/10W
R408	1-216-089-00	METAL CHIP	47K	5%	1/10W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W (B)
		< TRANSISTOR >			
Q401	8-729-421-19	TRANSISTOR UN2213-TX (B)			
Q402	8-729-421-19	TRANSISTOR UN2213-TX (B)			
		< VARIABLE RESISTOR >			
RV401	1-241-061-11	RES, VAR, CARBON 2K (SHARPNESS)			
RV402	1-238-420-11	RES, VAR, CARBON 10K (PHONE LEVEL)			
		< SWITCH >			
S401	1-572-907-11	SWITCH, SLIDE (COMMAND MODE)			
S402	1-570-847-11	SWITCH, SLIDE (B)			
S403	1-570-836-11	SWITCH, SLIDE (B)			
S404	1-572-908-11	SWITCH, SLIDE (NTSC PB ON PAL TV)			
S405	1-571-977-11	SWITCH, TACTIL (CL)			
**********					
*	A-6755-467-A	MF-170 BOARD, COMPLETE (EXCEPT UB)			
		**********			
*	A-6755-668-A	MF-170 BOARD, COMPLETE (UB)			
		**********			
					(Ref.No.13000 Series)
		< CAPACITOR >			
C300	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C302	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C303	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C304	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C308	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C310	1-136-015-00	CERAMIC CHIP	0.0033uF		50V
C311	1-136-015-00	CERAMIC CHIP	0.0033uF		50V
C313	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C314	1-136-015-00	CERAMIC CHIP	0.0033uF		50V
		< CONNECTOR >			
CN301	1-563-610-11	CONNECTOR, FLEXIBLE 7P (EXCEPT B/UB)			
CN301	1-563-613-21	CONNECTOR, FLEXIBLE 10P (B/UB)			
CN302	1-568-662-11	CONNECTOR, BOARD TO BOARD 6P (B/UB)			
CN302	1-568-665-11	CONNECTOR, BOARD TO BOARD 11P(EXCEPT B/UB)			
CN303	1-506-468-11	PIN, CONNECTOR 3P (B/UB)			

Ref. No.	Part No.	Description			Remarks
		< JACK >			
CNJ301	0-479-451-00	JACK (MIC) (EXCEPT B/UB)			
CNJ301	1-695-312-11	JACK (SMALL TYPE)(MONO)(MIC) (B/UB)			
CNJ302	1-565-735-21	JACK, PIN 3P (PHONES)			
CNJ303	1-565-669-21	JACK, SMALL TYPE (LINE-2)			
CNJ304	1-568-800-11	JACK, ULTRA SMALL (CONTROL L)			
		< DIODE >			
D301	8-719-109-93	DIODE RD6.2ES-B2			
D302	8-719-109-93	DIODE RD6.2ES-B2			
D303	8-719-109-93	DIODE RD6.2ES-B2			
D321	8-719-109-93	DIODE RD6.2ES-B2			
		< JUMPER RESISTOR >			
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W
JR302	1-216-296-00	METAL CHIP	0	5%	1/8W
JR303	1-216-295-00	METAL CHIP	0	5%	1/10W
JR311	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L301	1-410-336-11	INDUCTOR	220uH		
L302	1-410-336-11	INDUCTOR	220uH		
L303	1-410-336-11	INDUCTOR	220uH		
L304	1-410-336-11	INDUCTOR	220uH		
		< TRANSISTOR >			
Q321	8-729-140-75	TRANSISTOR	2SD999-CLCK		
Q322	8-729-140-75	TRANSISTOR	2SD999-CLCK		
		< RESISTOR >			
R301	1-216-022-00	METAL CHIP	75	5%	1/10W
R302	1-216-295-00	METAL CHIP	0	5%	1/10W
R303	1-216-295-00	METAL CHIP	0	5%	1/10W
R304	1-216-295-00	METAL CHIP	0	5%	1/10W
R321	1-216-001-00	METAL CHIP	10	5%	1/10W
R322	1-216-051-00	METAL CHIP	1.2K	5%	1/10W

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Ref. No.	Part No.	Description			Remarks
*	A-6727-417-A	RP-147 BOARD, COMPLETE (EXCEPT UB)			
		**********			
*	A-6727-459-A	RP-147 BOARD, COMPLETE (UB)			
		**********			
*	A-6727-467-A	RP-147 BOARD, COMPLETE (B)			
		**********			
		(Ref.No.1000 Series)			
		< CAPACITOR >			
C201	1-126-157-11	ELECT	10uF	20%	16V
C202	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C260	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C261	1-124-584-00	ELECT	100uF	20%	10V
C262	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C263	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C264	1-124-257-00	ELECT	2.2uF	20%	50V
C265	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C267	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C268	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C269	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C270	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C274	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C275	1-126-160-11	ELECT	1uF	20%	50V
C276	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C277	1-137-398-91	FILM	0.068uF	5%	100V
C279	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C280	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C281	1-124-589-11	ELECT	47uF	20%	16V
C286	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C701	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C703	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C704	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C705	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C706	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C707	1-124-257-00	ELECT	2.2uF	20%	50V
C708	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C709	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C710	1-126-233-11	ELECT	22uF	20%	50V
C801	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C802	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C803	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C804	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C805	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C806	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C807	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C808	1-124-584-00	ELECT	100uF	20%	10V
C809	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C810	1-124-584-00	ELECT	100uF	20%	10V

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Ref. No.	Part No.	Description			Remarks
C811	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C812	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C813	1-164-336-11	CERAMIC CHIP	0.33uF	25V	
C814	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C815	1-163-077-00	CERAMIC CHIP	0.1uF 10%	25V	
C816	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C817	1-164-161-11	CERAMIC CHIP	0.0022uF 10%	100V	
C818	1-163-107-00	CERAMIC CHIP	39PF 5%	50V	
C819	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C820	1-163-113-00	CERAMIC CHIP	68PF 5%	50V	
C821	1-163-115-00	CERAMIC CHIP	82PF 5%	50V	
C822	1-163-129-00	CERAMIC CHIP	330PF 5%	50V	
C823	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C824	1-124-126-00	ELECT	47uF 20%	10V	
C826	1-124-589-11	ELECT	47uF 20%	16V	
C827	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C828	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C829	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C830	1-163-097-00	CERAMIC CHIP	15PF 5%	50V	
C831	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C833	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C834	1-163-087-00	CERAMIC CHIP	4PF	50V (B)	
C834	1-163-097-00	CERAMIC CHIP	15PF 5%	50V (EXCEPT B)	
C835	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C836	1-163-099-00	CERAMIC CHIP	18PF 5%	50V	
C839	1-163-099-00	CERAMIC CHIP	18PF 5%	50V	
C840	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C881	1-163-243-11	CERAMIC CHIP	47PF 5%	50V	
C882	1-163-243-11	CERAMIC CHIP	47PF 5%	50V	
C883	1-163-243-11	CERAMIC CHIP	47PF 5%	50V	
C884	1-163-243-11	CERAMIC CHIP	47PF 5%	50V	
C890	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C892	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C893	1-163-251-11	CERAMIC CHIP	100PF 5%	50V	
C894	1-163-121-00	CERAMIC CHIP	150PF 5%	50V	
C895	1-163-245-11	CERAMIC CHIP	56PF 5%	50V	
C896	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C897	1-126-157-11	ELECT	10uF 20%	16V	
C902	1-163-129-00	CERAMIC CHIP	330PF 5%	50V (B)	
		< CONNECTOR >			
CN260	1-506-482-11	PIN, CONNECTOR 3P			
* CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P			
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P			
* CN803	1-564-031-00	PIN, CONNECTOR 6P			
* CN804	1-564-018-51	PIN, CONNECTOR 8P			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D790	8-719-911-19	DIODE	1SS119		
D791	8-719-911-19	DIODE	1SS119		
D801	8-719-911-19	DIODE	1SS119		
D802	8-719-911-19	DIODE	1SS119		
D803	8-719-911-19	DIODE	1SS119		
D805	8-719-911-19	DIODE	1SS119		
D806	8-719-400-18	DIODE	MA152WK		
D807	8-719-911-19	DIODE	1SS119		
D899	8-719-911-19	DIODE	1SS119		
		< IC >			
IC260	8-759-055-49	IC	AN3327K		
IC801	8-759-046-75	IC	HA118162NT		
		< JUMPER RESISTOR >			
JR067	1-216-295-00	METAL CHIP	0	5% 1/10W	
JR401	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR402	1-216-296-00	METAL CHIP	0	5% 1/8W (EXCEPT UB)	
JR403	1-216-296-00	METAL CHIP	0	5% 1/8W (EXCEPT UB)	
JR404	1-216-296-00	METAL CHIP	0	5% 1/8W (EXCEPT UB)	
JR405	1-216-296-00	METAL CHIP	0	5% 1/8W (EXCEPT UB)	
JR406	1-216-296-00	METAL CHIP	0	5% 1/8W	
JR407	1-216-295-00	METAL CHIP	0	5% 1/10W	
JR801	1-216-296-00	METAL CHIP	0	5% 1/8W (EXCEPT UB)	
		< COIL >			
L201	1-410-509-11	INDUCTOR	10uH		
L260	1-410-521-11	INDUCTOR	100uH		
L265	1-408-426-00	INDUCTOR	270uH		
L701	1-410-521-11	INDUCTOR	100uH		
L702	1-410-519-11	INDUCTOR	68uH		
L801	1-410-521-11	INDUCTOR	100uH (B)		
L802	1-410-521-11	INDUCTOR	100uH		
L803	1-410-521-11	INDUCTOR	100uH		
L804	1-410-521-11	INDUCTOR	100uH		
L805	1-410-514-11	INDUCTOR	27uH		
L806	1-410-515-11	INDUCTOR	33uH (B)		
L806	1-410-512-11	INDUCTOR	18uH (EXCEPT B)		
L807	1-410-516-11	INDUCTOR	39uH		
L808	1-410-509-11	INDUCTOR	10uH		
L809	1-410-512-11	INDUCTOR	18uH		
L810	1-410-524-41	INDUCTOR	180uH		
L811	1-410-521-11	INDUCTOR	100uH		
L812	1-410-521-11	INDUCTOR	100uH		
L813	1-410-509-11	INDUCTOR	10uH		
L814	1-410-509-11	INDUCTOR	10uH		
L890	1-410-507-11	INDUCTOR	6.8uH		
L891	1-410-521-11	INDUCTOR	100uH		
L902	1-410-524-41	INDUCTOT	180uH (B)		

Ref. No.	Part No.	Description				Remarks
		< TRANSISTOR >				
Q201	8-729-140-97	TRANSISTOR	2SB734-34			
Q260	8-729-103-72	TRANSISTOR	2SD1005-BV			
Q701	8-729-422-28	TRANSISTOR	2SD601A-R			
Q703	8-729-422-28	TRANSISTOR	2SD601A-R			
Q705	8-729-422-37	TRANSISTOR	2SB709A-R			
Q706	8-729-421-19	TRANSISTOR	UN2213			
Q707	8-729-422-28	TRANSISTOR	2SD601A-R			
Q801	8-729-422-28	TRANSISTOR	2SD601A-R			
Q802	8-729-422-28	TRANSISTOR	2SD601A-R			
Q803	8-729-424-18	TRANSISTOR	UN2113			
Q804	8-729-422-28	TRANSISTOR	2SD601A-R			
Q805	8-729-422-37	TRANSISTOR	2SB709A-R			
Q806	8-729-422-37	TRANSISTOR	2SB709A-R			
Q807	8-729-422-28	TRANSISTOR	2SD601A-R			
Q808	8-729-901-01	TRANSISTOR	DTC144EK			
Q809	8-729-422-28	TRANSISTOR	2SD601A-R			
Q810	8-729-901-47	TRANSISTOR	DTA143EK			
Q811	8-729-301-98	TRANSISTOR	2SB1000A-L			
Q813	8-729-424-18	TRANSISTOR	UN2113			
Q814	8-729-421-19	TRANSISTOR	UN2213			
Q890	8-729-216-22	TRANSISTOR	2SA1162			
Q891	8-729-216-22	TRANSISTOR	2SA1162			
Q892	8-729-421-19	TRANSISTOR	UN2213			
		< RESISTOR >				
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R262	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R263	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R265	1-216-033-00	METAL CHIP	220	5%	1/10W	
R266	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R267	1-216-025-00	METAL CHIP	100	5%	1/10W	
R272	1-216-073-00	METAL CHIP	10K	5%	1/10W	
⚠R273	1-249-387-11	CARBON	3.3	5%	1/4W F	
R275	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R701	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R702	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R703	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R704	1-216-033-00	METAL CHIP	220	5%	1/10W	
R705	1-216-045-00	METAL CHIP	680	5%	1/10W	
R706	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R707	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R708	1-216-041-00	METAL CHIP	470	5%	1/10W	
R709	1-216-033-00	METAL CHIP	220	5%	1/10W	
R710	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	

Ref. No.	Part No.	Description				Remarks
R711	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R712	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R713	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R714	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R801	1-216-029-00	METAL CHIP	150	5%	1/10W	
R802	1-216-037-00	METAL CHIP	330	5%	1/10W	
R803	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R804	1-216-626-11	METAL CHIP	91	1%	1/10W	
R805	1-216-613-11	METAL CHIP	27	0.5%	1/10W	
R806	1-216-029-00	METAL CHIP	150	5%	1/10W	
R807	1-216-029-00	METAL CHIP	150	5%	1/10W	
R808	1-216-615-11	METAL CHIP	33	0.5%	1/10W	
R809	1-216-621-11	METAL CHIP	56	0.50%	1/10W	
R810	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R811	1-216-037-00	METAL CHIP	330	5%	1/10W	
R812	1-216-029-00	METAL CHIP	150	5%	1/10W	
R813	1-216-047-00	METAL CHIP	820	5%	1/10W	
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R816	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R817	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R818	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R819	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R820	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R821	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R822	1-216-039-00	METAL CHIP	390	5%	1/10W	
R823	1-216-047-00	METAL CHIP	820	5%	1/10W	
R824	1-216-039-00	METAL CHIP	390	5%	1/10W	
R825	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R826	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R827	1-216-045-00	METAL CHIP	680	5%	1/10W	
R828	1-216-043-00	METAL CHIP	560	5%	1/10W	
R829	1-216-049-00	METAL CHIP	1K	5%	1/10W	(B)
R829	1-216-041-00	METAL CHIP	470	5%	1/10W	(EXCEPT B)
R830	1-216-047-00	METAL CHIP	820	5%	1/10W	(EXCEPT B)
R830	1-216-041-00	METAL CHIP	470	5%	1/10W	(B)
R831	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R832	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R833	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R834	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R835	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R836	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R838	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R839	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R891	1-216-011-00	METAL CHIP	27	5%	1/10W	
R894	1-216-041-00	METAL CHIP	470	5%	1/10W	
R895	1-216-054-00	METAL CHIP	1.6K	5%	1/10W	
R896	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R897	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R898	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R899	1-249-433-11	CARBON	22K	5%	1/4W	

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

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

RP-147 TK-17 TK-18 VI-116

Ref. No.	Part No.	Description			Remarks
		< TRANSFORMER >			
T260	1-406-349-11	TRANSFORMER, OSCILLATION			
**********					
*	1-644-856-14	TK-17 BOARD COMPLETE			
		**********			
					(Ref. No. 14000 Series)
		< CONNECTOR >			
* CN150	1-573-386-11	CONNECTOR, BOARD TO BOARD 12P			
* CN151	1-562-882-11	SOCKET, CONNECTOR 12P			
**********					
		TK-18 BOARD, COMPLETE			
		**********			
					(Ref. No. 15000 Series)
*	1-644-857-11	TK-18 BOARD			
		< CONNECTOR >			
CN250	1-695-310-11	CONNECTOR, BOARD TO BOARD 11P			
* CN251	1-562-882-11	SOCKET, CONNECTOR 12P			
**********					
*	A-6755-469-A	VI-116 BOARD, COMPLETE (AEP/NC)			
		**********			
*	A-6755-670-A	VI-116 BOARD, COMPLETE (UB)			
		**********			
*	A-6755-569-A	VI-116 BOARD, COMPLETE (NP/VC)			
		**********			
*	A-6755-812-A	VI-116 BOARD, COMPLETE (B)			
		**********			
					(Ref. No. 3000 Series)
		< CAPACITOR >			
C501	1-124-126-00	ELECT	47uF	20%	10V
C502	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C503	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C504	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C505	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C506	1-124-126-00	ELECT	47uF	20%	10V
C507	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C508	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C509	1-124-907-11	ELECT	10uF	20%	50V
C510	1-124-907-11	ELECT	10uF	20%	50V (EXCEPT B)
C511	1-124-907-11	ELECT	10uF	20%	50V
C512	1-124-907-11	ELECT	10uF	20%	50V
C513	1-124-907-11	ELECT	10uF	20%	50V
C514	1-124-907-11	ELECT	10uF	20%	50V
C515	1-124-907-11	ELECT	10uF	20%	50V
C516	1-124-907-11	ELECT	10uF	20%	50V
C517	1-124-907-11	ELECT	10uF	20%	50V
C518	1-163-093-00	CERAMIC CHIP	10PF	5%	50V (EXCEPT B)
C519	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT B)
C520	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (EXCEPT B)
C521	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C522	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C523	1-124-927-11	ELECT	4.7uF	20%	100V
C524	1-124-907-11	ELECT	10uF	20%	50V
C525	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C527	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C551	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C552	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C554	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C556	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C557	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C558	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/NP/VC)
C559	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT B)
C560	1-124-907-11	ELECT	10uF	20%	50V
C561	1-124-907-11	ELECT	10uF	20%	50V
C562	1-124-927-11	ELECT	4.7uF	20%	100V
C568	1-124-907-11	ELECT	10uF	20%	50V
C569	1-124-907-11	ELECT	10uF	20%	50V
C570	1-124-907-11	ELECT	10uF	20%	50V
C571	1-124-907-11	ELECT	10uF	20%	50V
C572	1-124-907-11	ELECT	10uF	20%	50V (B/NP/VC)
C573	1-124-907-11	ELECT	10uF	20%	50V (B/NP/VC)
C574	1-124-907-11	ELECT	10uF	20%	50V (EXCEPT B)
C575	1-124-907-11	ELECT	10uF	20%	50V (EXCEPT B)
C576	1-124-907-11	ELECT	10uF	20%	50V
C580	1-124-907-11	ELECT	10uF	20%	50V (EXCEPT B)
C581	1-124-907-11	ELECT	10uF	20%	50V
C582	1-124-907-11	ELECT	10uF	20%	50V (EXCEPT B)
C701	1-124-126-00	ELECT	47uF	20%	10V (B/NP/VC)
C702	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/NP/VC)
C703	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/NP/VC)
C704	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/NP/VC)
C706	1-124-907-11	ELECT	10uF	20%	50V (B/NP/VC)
C707	1-124-907-11	ELECT	10uF	20%	50V (B/NP/VC)
C708	1-124-907-11	ELECT	10uF	20%	50V (B/NP/VC)

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN501	1-691-276-11	CONNECTOR, BOARD TO BOARD 13P	
* CN502	1-568-788-21	PIN, CONNECTOR 11P (EXCEPT B)	
* CN502	1-568-789-11	PIN, CONNECTOR 12P (B)	
* CN503	1-573-129-31	PIN, CONNECTOR 6P	
* CN504	1-568-788-21	PIN, CONNECTOR 11P	
CN505	1-563-590-11	CONNECTOR, FLEXIBLE 13P (B/NP/VC)	
* CN506	1-573-131-11	PIN, CONNECTOR 8P	
CN507	1-506-468-11	PIN, CONNECTOR 3P	
		< DIODE >	
D501	8-719-911-19	DIODE 1SS119 (EXCEPT B)	
D502	8-719-911-19	DIODE 1SS119	
D503	8-719-911-19	DIODE 1SS119 (B)	
D504	8-719-911-19	DIODE 1SS119 (B)	
D505	8-719-911-19	DIODE 1SS119 (B)	
		< IC >	
IC501	8-759-503-52	IC MM1053XS	
IC502	8-759-048-09	IC MM1148XFF	
IC503	8-759-501-21	IC MM1149XF	
IC504	8-759-504-44	IC MM1031XMR	
IC551	8-759-501-21	IC MM1149XF	
IC552	8-759-420-62	IC AN3916 (EXCEPT B)	
IC552	8-759-504-44	IC MM1031XMR (B)	
IC553	8-759-048-09	IC MM1148XFF	
IC554	8-759-048-09	IC MM1148XFF	
IC555	8-759-048-09	IC MM1148XFF (B/NP/VC)	
IC556	8-759-048-09	IC MM1148XFF (EXCEPT B)	
IC701	8-759-056-91	IC BA7611AN (B/NP/VC)	
		< JUMPER RESISTOR >	
JR502	1-216-295-00	METAL CHIP 0 5% 1/10W (EXCEPT B)	
JR503	1-216-295-00	METAL CHIP 0 5% 1/10W (EXCEPT B)	
JR552	1-216-295-00	METAL CHIP 0 5% 1/10W (AEP/UB/NC)	
JR901	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR902	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR903	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR904	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR905	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR906	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR907	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR908	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR909	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR910	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR911	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR912	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR913	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR914	1-216-295-00	METAL CHIP 0 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L501	1-410-521-11	INDUCTOR 100uH	
L502	1-410-521-11	INDUCTOR 100uH	
L701	1-410-521-11	INDUCTOR 100uH (B/NP/VC)	
		< TRANSISTOR >	
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-216-22	TRANSISTOR 2SA1162	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q504	8-729-900-53	TRANSISTOR DTC114EK (EXCEPT B)	
Q506	8-729-901-06	TRANSISTOR DTA144EK (B)	
Q507	8-729-901-01	TRANSISTOR DTC144EK (B)	
Q508	8-729-901-01	TRANSISTOR DTC144EK (B)	
Q552	8-729-216-22	TRANSISTOR 2SA1162 (EXCEPT B)	
Q701	8-729-216-22	TRANSISTOR 2SA1162 (B/NP/VC)	
Q702	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (B/NP/VC)	
Q703	8-729-216-22	TRANSISTOR 2SA1162 (B/NP/VC)	
Q704	8-729-901-01	TRANSISTOR DTC144EK (B/NP/VC)	
Q705	8-729-901-01	TRANSISTOR DTC144EK (B)	
Q706	8-729-901-01	TRANSISTOR DTC144EK (B)	
Q707	8-729-901-01	TRANSISTOR DTC144EK (B)	
Q708	8-729-901-01	TRANSISTOR DTC144EK (B)	
		< RESISTOR >	
R501	1-216-025-00	METAL CHIP 100 5% 1/10W	
R502	1-216-049-00	METAL CHIP 1K 5% 1/10W (EXCEPT B)	
R502	1-216-097-00	METAL CHIP 100K 5% 1/10W (B)	
R503	1-216-025-00	METAL CHIP 100 5% 1/10W	
R504	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R505	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R506	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R507	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R508	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R509	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R510	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R511	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R512	1-216-073-00	METAL CHIP 10K 5% 1/10W (EXCEPT B)	
R513	1-216-065-00	METAL CHIP 4.7K 5% 1/10W (B)	
R514	1-216-073-00	METAL CHIP 10K 5% 1/10W (B)	
R515	1-216-037-00	METAL CHIP 330 5% 1/10W (B)	
R516	1-216-049-00	METAL CHIP 1K 5% 1/10W (B)	
R551	1-216-025-00	METAL CHIP 100 5% 1/10W	
R552	1-216-049-00	METAL CHIP 1K 5% 1/10W (EXCEPT B)	
R553	1-216-049-00	METAL CHIP 1K 5% 1/10W (EXCEPT B)	
R556	1-216-025-00	METAL CHIP 100 5% 1/10W (EXCEPT B)	
R557	1-216-049-00	METAL CHIP 1K 5% 1/10W (EXCEPT B)	
R560	1-216-025-00	METAL CHIP 100 5% 1/10W	
R561	1-216-025-00	METAL CHIP 100 5% 1/10W	
R562	1-216-025-00	METAL CHIP 100 5% 1/10W (B/NP/VC)	

Ref. No.	Part No.	Description			Remarks
R580	1-216-049-00	METAL CHIP	1K	5%	1/10W (EXCEPT B)
R581	1-216-049-00	METAL CHIP	1K	5%	1/10W
R582	1-216-047-00	METAL CHIP	820	5%	1/10W (B)
R598	1-249-407-11	CARBON	150		1/4W (EXCEPT B)
R701	1-216-025-00	METAL CHIP	100	5%	1/10W (NP/VC)
R702	1-216-063-00	METAL CHIP	3.9K	5%	1/10W (NP/VC)
R703	1-216-049-00	METAL CHIP	1K	5%	1/10W (B/NP/VC)
R704	1-216-021-00	METAL CHIP	68	5%	1/10W (B/NP/VC)
R705	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (B/NP/VC)
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (B/NP/VC)
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W (NP/VC)
R708	1-216-049-00	METAL CHIP	1K	5%	1/10W (NP/VC)
R709	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (B)
R710	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (B)
R711	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (B)
		< VARIABLE RESISTOR >			
RV551	1-241-083-11	RES, ADJ, CARBON 47K (AEP/UB/NC)			
RV551	1-241-632-11	RES, ADJ, CARBON 47K (NP/VC)			

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* A-6755-563-A VP-33 BOARD, COMPLETE (VC)
****
* A-6755-799-A VP-33 BOARD, COMPLETE (B)
****

(Ref. No. 9000 Series)

		< CAPACITOR >			
C651	1-163-121-00	CERAMIC CHIP	150PF	5%	50V (VC)
C652	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V (VC)
C653	1-163-035-00	CERAMIC CHIP	0.047uF		50V (VC)
C654	1-163-038-00	CERAMIC CHIP	0.1uF		25V (VC)
C655	1-163-035-00	CERAMIC CHIP	0.047uF		50V (VC)
C658	1-126-157-11	ELECT	10uF	20%	16V (VC)
		< CONNECTOR >			
CN650	1-573-824-11	CONNECTOR, BOARD TO BOARD 10P (VC)			
		< DIODE >			
D651	8-719-104-34	DIODE 1S2835 (VC)			
		< IC >			
IC651	8-759-030-60	IC SDA5642 (VC)			
IC652	8-759-147-30	IC uPD75004GB-VSX182 (VC)			
		< COIL >			
L651	1-410-509-11	INDUCTOR	10uH (VC)		

Ref. No.	Part No.	Description			Remarks
		< TRANSISTOR >			
Q651	8-729-421-19	TRANSISTOR UN2213 (VC)			
		< RESISTOR >			
R651	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (VC)
R652	1-216-121-00	METAL CHIP	1M	5%	1/10W (VC)
R653	1-249-429-11	CARBON	10K	5%	1/4W (VC)
R654	1-216-097-00	METAL CHIP	100K	5%	1/10W (VC)
R655	1-216-119-00	METAL CHIP	820K	5%	1/10W (VC)
R656	1-216-025-00	METAL CHIP	100	5%	1/10W (VC)
R657	1-216-119-00	METAL CHIP	820K	5%	1/10W (VC)
R658	1-249-426-11	CARBON	5.6K	5%	1/4W (VC)
R659	1-216-073-00	METAL CHIP	10K	5%	1/10W (VC)
R660	1-216-073-00	METAL CHIP	10K	5%	1/10W (VC)
R661	1-216-073-00	METAL CHIP	10K	5%	1/10W (VC)
R662	1-216-073-00	METAL CHIP	10K	5%	1/10W (VC)
R663	1-216-101-00	METAL CHIP	150K	5%	1/10W (VC)
		< VIBRATOR >			
X651	1-577-291-11	OSCILLATOR, CERAMIC(WITH C) 4.19MHz (VC)			

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* A-6727-418-A YC-124 BOARD, COMPLETE (AEP/NC/NP)
****
* A-6727-456-A YC-124 BOARD, COMPLETE (UB)
****
* A-6727-442-A YC-124 BOARD, COMPLETE (VC)
****
* A-6727-465-A YC-124 BOARD, COMPLETE (B)
****

(Ref. No. 2000 Series)

* 3-948-127-01 HOLDER, HF

		< CAPACITOR >			
C101	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C102	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C103	1-124-927-11	ELECT	4.7uF	20%	100V
C104	1-126-233-11	ELECT	22uF	20%	50V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-124-927-11	ELECT	4.7uF	20%	100V
C107	1-124-927-11	ELECT	4.7uF	20%	100V
C108	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C109	1-124-584-00	ELECT	100uF	20%	10V
C110	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C111	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C112	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C113	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C114	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C115	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remarks
C116	1-216-295-00	METAL CHIP	0	5%	1/10W
C117	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C118	1-124-927-11	ELECT	4.7uF	20%	100V
C119	1-163-088-00	CERAMIC CHIP	5PF		50V
C120	1-216-295-00	METAL CHIP	0	5%	1/10W
C121	1-163-129-00	CERAMIC CHIP	330PF	5%	50V (B)
C122	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C123	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C124	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C125	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C127	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C128	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C130	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C131	1-124-584-00	ELECT	100uF	20%	10V
C132	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C133	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C134	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C135	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C136	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C137	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C138	1-124-925-11	ELECT	2.2uF	20%	100V
C139	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C141	1-124-126-00	ELECT	47uF	20%	10V
C143	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C144	1-124-126-00	ELECT	47uF	20%	10V
C146	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C147	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C149	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C150	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C151	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C153	1-124-126-00	ELECT	47uF	20%	10V
C154	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C155	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C156	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C160	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C163	1-124-927-11	ELECT	4.7uF	20%	100V
C170	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C172	1-163-033-00	CERAMIC CHIP	0.022uF		50V (B)
C180	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-163-133-00	CERAMIC CHIP	470PF	5%	50V (B)
C182	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C183	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C185	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C190	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C300	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-124-442-00	ELECT	330uF	20%	6.3V
C303	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V (EXCEPT B)

Ref. No.	Part No.	Description			Remarks
C305	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C306	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C307	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C308	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C309	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C313	1-124-584-00	ELECT	100uF	20%	10V
C314	1-124-584-00	ELECT	100uF	20%	10V
C315	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C316	1-126-163-11	ELECT	4.7uF	20%	50V
C317	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C318	1-163-036-00	CERAMIC CHIP	0.068uF		50V
C319	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C320	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C321	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C323	1-124-927-11	ELECT	4.7uF	20%	100V
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C326	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C327	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C328	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C329	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C330	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C331	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C332	1-124-903-11	ELECT	1uF	20%	50V (EXCEPT B)
C332	1-124-902-00	ELECT	0.47uF	20%	50V (B)
C333	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C334	1-124-902-00	ELECT	0.47uF	20%	50V
C335	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C336	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C337	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C338	1-124-126-00	ELECT	47uF	20%	10V
C339	1-124-589-11	ELECT	47uF	20%	16V
C340	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C341	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/VC)
C342	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C343	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/VC)
C345	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C346	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C348	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C350	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C358	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C360	1-124-126-00	ELECT	47uF	20%	10V
C361	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C362	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C363	1-124-903-11	ELECT	1uF	20%	50V
C364	1-124-126-00	ELECT	47uF	20%	10V
C365	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C366	1-124-903-11	ELECT	1uF	20%	50V

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Ref. No.	Part No.	Description			Remarks
C367	1-124-907-11	ELECT	10uF	20%	50V
C368	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C369	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C370	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C371	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C372	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C373	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C374	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C375	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C376	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C377	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C378	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C379	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C380	1-124-903-11	ELECT	1uF	20%	50V
C381	1-124-907-11	ELECT	10uF	20%	50V
C382	1-123-382-00	ELECT	3.3uF	20%	100V
C383	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C384	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C385	1-124-907-11	ELECT	10uF	20%	50V
C386	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C387	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C388	1-124-907-11	ELECT	10uF	20%	50V
C389	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C390	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C391	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C392	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C393	1-124-034-51	ELECT	33uF	20%	16V
C394	1-126-160-11	ELECT	1uF	20%	50V
C395	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C396	1-124-903-11	ELECT	1uF	20%	50V
C398	1-124-907-11	ELECT	10uF	20%	50V
C399	1-124-126-00	ELECT	47uF	20%	10V (B/VC)
C401	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C402	1-163-113-00	CERAMIC CHIP	68PF	5%	50V (B)
C403	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C404	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C405	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C406	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C408	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C409	1-124-126-00	ELECT	47uF	20%	10V (B)
C410	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C411	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C412	1-124-126-00	ELECT	47uF	20%	10V (B)
C413	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (B)
C414	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C415	1-163-038-00	CERAMIC CHIP	0.1uF		25V (B)
C416	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V (B)
C417	1-163-243-11	CERAMIC CHIP	47PF	5%	50V (B)
C418	1-163-033-00	CERAMIC CHIP	0.022uF		50V (B)
C419	1-163-035-00	CERAMIC CHIP	0.047uF		50V (B)

Ref. No.	Part No.	Description			Remarks
C420	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C421	1-163-038-00	CERAMIC CHIP	0.1uF		25V (B)
C422	1-124-126-00	ELECT	47uF	20%	10V (B)
C426	1-163-113-00	CERAMIC CHIP	68PF	5%	50V (B)
C427	1-163-119-00	CERAMIC CHIP	120PF	5%	50V (B)
C428	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B)
C429	1-163-241-11	CERAMIC CHIP	39PF	5%	50V (B)
C450	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V (B/VC)
C451	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/VC)
C452	1-163-038-00	CERAMIC CHIP	0.1uF		25V (B/VC)
C454	1-124-927-11	ELECT	4.7uF	20%	100V (B/VC)
C455	1-124-126-00	ELECT	47uF	20%	10V (B/VC)
C457	1-163-031-11	CERAMIC CHIP	0.01uF		50V (B/VC)
C460	1-163-035-00	CERAMIC CHIP	0.047uF		50V (B/VC)
C461	1-163-035-00	CERAMIC CHIP	0.047uF		50V (B)
C462	1-163-035-00	CERAMIC CHIP	0.047uF		50V (B)
C463	1-124-907-11	ELECT	10uF	20%	50V (B)
C464	1-124-126-00	ELECT	47uF	20%	10V (B)
C465	1-124-907-11	ELECT	10uF	20%	50V
C501	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C502	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C511	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C512	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C513	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C514	1-216-295-00	METAL CHIP	0	5%	1/10W
C515	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C516	1-124-927-11	ELECT	4.7uF	20%	100V
C517	1-124-126-00	ELECT	47uF	20%	10V
C518	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C519	1-163-031-11	CERAMIC CHIP	0.01		50V
		< CONNECTOR >			
CN300	1-506-473-11	PIN, CONNECTOR	8P		
CN301	1-506-473-11	PIN, CONNECTOR	8P		
CN304	1-506-468-11	PIN, CONNECTOR	3P (B)		
* CN305	1-573-134-41	PIN, CONNECTOR	11P		
		< DIODE >			
D101	8-719-400-18	DIODE	MA152WK		
D105	8-719-400-18	DIODE	MA152WK		
D301	8-719-400-18	DIODE	MA152WK		
D302	8-719-400-18	DIODE	MA152WK		
D401	8-719-400-18	DIODE	MA152WK (B)		
		< DELAY LINE >			
DL301	1-415-602-11	DELAY LINE, GLASS			
DL501	1-415-856-11	DELAY LINE, ULTRASONIC GLASS			

Ref. No.	Part No.	Description	Remarks
		< FILTER >	
FL101	1-236-312-11	FILTER, BAND PASS	
FL301	1-239-915-11	FILTER, BAND PASS	
FL302	1-236-311-11	FILTER, BAND PASS 5.06MHz	
FL303	1-527-849-00	FILTER, CERAMIC13.3MHz	
FL401	1-236-584-11	BPF (B)	
FL402	1-236-582-11	BPF 4.3MHz (B)	
FL403	1-236-920-11	FILTER, LOW PASS 1.1MHz (B)	
FL404	1-236-920-11	FILTER, LOW PASS 1.1MHz (B)	
FL405	1-236-585-11	BPF 4.3MHz (B)	
FL406	1-236-585-11	BPF 4.3MHz (B)	
FL450	1-527-943-00	FILTER, CERAMIC (B/VC)	
		< IC >	
IC101	8-759-420-07	IC AN3231K	
IC102	8-752-321-89	IC CXL5003P	
IC301	8-759-320-78	IC HA118016NT	
IC302	8-759-822-05	IC LA7213	
IC360	8-759-420-53	IC AN3592K	
IC361	8-759-991-54	IC MSM6989RS	
IC362	8-759-927-56	IC BA7021	
IC363	8-759-822-05	IC LA7213 (EXCEPT B)	
IC401	8-759-991-55	IC BA7107 (B)	
IC450	8-759-904-95	IC BA7007 (B/VC)	
IC460	8-759-927-46	IC SN74HC00ANS (B)	
IC461	8-759-987-16	IC LM393P (B)	
IC501	8-759-925-90	IC SN74HC74ANS	
IC502	8-759-300-71	IC TC4053BF	
		< JUMPER CHIP >	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR004	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR006	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR009	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR010	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR017	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR036	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR038	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description	Remarks
JR039	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR040	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR041	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR042	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR043	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR044	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR045	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR046	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR047	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR048	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR049	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR050	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR051	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR052	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR053	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR054	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR055	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR056	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR057	1-216-295-00	METAL CHIP 0 5% 1/10W	(VC)
JR058	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR064	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR065	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR066	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR068	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR500	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L101	1-408-421-00	INDUCTOR 100uH	
L102	1-408-417-00	INDUCTOR 47uH	(B)
L103	1-408-419-00	INDUCTOR 68uH	(B)
L104	1-408-420-00	INDUCTOR 82uH	
L105	1-408-422-00	INDUCTOR 120uH	
L105	1-408-424-00	INDUCTOR 180uH	(EXCEPT B)
L106	1-408-421-00	INDUCTOR 100uH	
L107	1-408-421-00	INDUCTOR 100uH	
L108	1-408-421-00	INDUCTOR 100uH	
L109	1-408-421-00	INDUCTOR 100uH	
L112	1-408-410-00	INDUCTOR 12uH	
L113	1-408-413-00	INDUCTOR 22uH	
L119	1-408-417-00	INDUCTOR 47uH	
L126	1-408-424-00	INDUCTOR 180uH	
L301	1-408-421-00	INDUCTOR 100uH	
L302	1-408-427-00	INDUCTOR 330uH	
L303	1-408-429-00	INDUCTOR 470uH	
L305	1-408-409-00	INDUCTOR 10uH	
L306	1-408-408-00	INDUCTOR 8.2uH	
L307	1-408-408-00	INDUCTOR 8.2uH	

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Ref. No.	Part No.	Description		Remarks
L309	1-407-499-00	INDUCTOR	3.9mH	
L331	1-408-509-11	INDUCTOR	10uH	
L360	1-408-409-00	INDUCTOR	10uH	
L361	1-408-415-00	INDUCTOR	33uH	
L362	1-408-409-00	INDUCTOR	10uH	
L380	1-408-421-00	INDUCTOR	100uH	
L381	1-408-421-00	INDUCTOR	100uH	
L382	1-408-411-00	INDUCTOR	15uH	
L383	1-408-414-00	INDUCTOR	27uH	
L401	1-408-425-00	INDUCTOR	220uH (B)	
L410	1-408-414-00	INDUCTOR	27uH (B)	
L414	1-408-416-00	INDUCTOR	39uH (B)	
L415	1-408-416-00	INDUCTOR	39uH (B)	
L450	1-410-068-11	INDUCTOR	5.6mH (B/VC)	
L451	1-408-409-00	INDUCTOR	10uH (B)	
L490	1-410-509-11	INDUCTOR	10uH (B)	
L491	1-410-509-11	INDUCTOR	10uH (B)	
L501	1-408-406-00	INDUCTOR	5.6uH	
L502	1-410-521-11	INDUCTOR	100uH (B)	
		< TRANSISTOR >		
Q102	8-729-216-22	TRANSISTOR	2SA1162	
Q104	8-729-901-01	TRANSISTOR	DTC144EK	
Q105	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q106	8-729-216-22	TRANSISTOR	2SA1162	
Q111	8-729-216-22	TRANSISTOR	2SA1162	
Q114	8-729-901-01	TRANSISTOR	DTC144EK (EXCEPT B)	
Q121	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q122	8-729-901-01	TRANSISTOR	DTC144EK	
Q123	8-729-901-01	TRANSISTOR	DTC144EK	
Q124	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q125	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q301	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q302	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q303	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q304	8-729-900-53	TRANSISTOR	DTC114EK	
Q305	8-729-216-22	TRANSISTOR	2SA1162	
Q306	8-729-901-01	TRANSISTOR	DTC144EK	
Q307	8-729-920-74	TRANSISTOR	2SC2412K-QR (B/VC)	
Q308	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q309	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q310	8-729-901-04	TRANSISTOR	DTA114EK	
Q352	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q360	8-729-809-77	TRANSISTOR	2SC3142-J4	
Q362	8-729-901-01	TRANSISTOR	DTC144EK	
Q380	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q381	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q382	8-729-216-22	TRANSISTOR	2SA1162	
Q390	8-729-901-01	TRANSISTOR	DTC144EK	
Q399	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q401	8-729-920-74	TRANSISTOR	2SC2412K-QR (B)	
Q402	8-729-920-74	TRANSISTOR	2SC2412K-QR (B)	
Q403	8-729-901-47	TRANSISTOR	DTA143EK	
Q405	8-729-920-74	TRANSISTOR	2SC2412K-QR (B)	
Q406	8-729-901-47	TRANSISTOR	DTA143EK (B)	
Q407	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q408	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q450	8-729-920-74	TRANSISTOR	2SC2412K-QR (B/VC)	
Q451	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q452	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q453	8-729-901-01	TRANSISTOR	DTC144EK	
Q460	8-729-901-01	TRANSISTOR	DTC144EK (B)	
Q501	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q502	8-729-901-01	TRANSISTOR	DTC144EK	
Q511	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q512	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q513	8-729-920-74	TRANSISTOR	2SC2412K-QR (B)	
Q514	8-729-901-01	TRANSISTOR	DTC144EK	
Q515	8-729-901-01	TRANSISTOR	DTC144EK	
Q516	8-729-901-04	TRANSISTOR	DTA114EK	
Q517	8-729-901-47	TRANSISTOR	DTA143EK	
Q518	8-729-901-01	TRANSISTOR	DTC144EK	
Q599	8-729-900-65	TRANSISTOR	DTA144EK	
		< RESISTOR >		
R101	1-216-105-00	METAL CHIP	220K 5% 1/10W	
R102	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R103	1-216-071-00	METAL CHIP	8.2K 5% 1/10W	
R104	1-216-069-00	METAL CHIP	6.8K 5% 1/10W	
R105	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	
R106	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R107	1-216-052-00	METAL CHIP	1.3K 5% 1/10W	
R108	1-216-036-00	METAL CHIP	300 5% 1/10W	
R109	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	
R110	1-216-091-00	METAL CHIP	56K 5% 1/10W	
R112	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	
R113	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R114	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	
R116	1-216-041-00	METAL CHIP	470 5% 1/10W	
R117	1-216-055-00	METAL CHIP	1.8K 5% 1/10W	
R118	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	
R119	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	
R120	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	
R122	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	
R123	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	
R124	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	
R125	1-216-039-00	METAL CHIP	390 5% 1/10W	
R126	1-216-047-00	METAL CHIP	820 5% 1/10W	
R127	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R128	1-216-115-00	METAL CHIP	560K 5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R129	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R130	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R131	1-216-041-00	METAL CHIP	470	5% 1/10W	
R134	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R135	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R136	1-216-041-00	METAL CHIP	470	5% 1/10W	
R137	1-216-049-00	METAL CHIP	1K	5% 1/10W	(EXCEPT B/UB)
R138	1-216-033-00	METAL CHIP	220	5% 1/10W	
R141	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R144	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R154	1-216-039-00	METAL CHIP	390	5% 1/10W	
R155	1-216-129-00	METAL CHIP	2.2M	5% 1/10W	
R161	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R163	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R174	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R175	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R176	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R177	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R178	1-216-051-00	METAL CHIP	1.2K	5% 1/10W	
R179	1-216-041-00	METAL CHIP	470	5% 1/10W	
R180	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R181	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R301	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R302	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R303	1-216-041-00	METAL CHIP	470	5% 1/10W	
R305	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R306	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R307	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R308	1-216-051-00	METAL CHIP	1.2K	5% 1/10W	
R309	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R310	1-216-045-00	METAL CHIP	680	5% 1/10W	
R311	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R312	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R313	1-216-041-00	METAL CHIP	470	5% 1/10W	
R314	1-216-045-00	METAL CHIP	680	5% 1/10W	
R315	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R316	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R317	1-216-025-00	METAL CHIP	100	5% 1/10W	
R318	1-216-039-00	METAL CHIP	390	5% 1/10W	
R319	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R320	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R322	1-216-055-00	METAL CHIP	1.8K	5% 1/10W	
R323	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R324	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R325	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	(B/VC)
R326	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	(B/VC)
R327	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	(B/VC)
R328	1-216-035-00	METAL CHIP	270	5% 1/10W	
R332	1-216-033-00	METAL CHIP	220	5% 1/10W	
R333	1-216-037-00	METAL CHIP	330	5% 1/10W	

Ref. No.	Part No.	Description			Remarks
R334	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R335	1-216-037-00	METAL CHIP	330	5% 1/10W	
R336	1-216-037-00	METAL CHIP	330	5% 1/10W	
R337	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R338	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R339	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R355	1-216-037-00	METAL CHIP	330	5% 1/10W	
R356	1-216-105-00	METAL CHIP	220K	5% 1/10W	
R357	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R358	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R360	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R362	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R363	1-216-075-00	METAL CHIP	12K	5% 1/10W	
R364	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R365	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R367	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R368	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R369	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R370	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R372	1-216-033-00	METAL CHIP	220	5% 1/10W	
R373	1-216-103-00	METAL CHIP	180K	5% 1/10W	
R374	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R375	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R380	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R381	1-216-037-00	METAL CHIP	330	5% 1/10W	
R382	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R383	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R384	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R385	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R386	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R387	1-216-041-00	METAL CHIP	470	5% 1/10W	
R388	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R390	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R394	1-216-025-00	METAL CHIP	100	5% 1/10W	
R395	1-216-041-00	METAL CHIP	470	5% 1/10W	
R399	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R401	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R402	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R403	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R404	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R405	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R407	1-216-085-00	METAL CHIP	33K	5% 1/10W	(B)
R408	1-216-081-00	METAL CHIP	22K	5% 1/10W	(B)
R409	1-216-037-00	METAL CHIP	330	5% 1/10W	(B)
R410	1-216-017-00	METAL CHIP	47	5% 1/10W	(B)
R411	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	(B)
R412	1-216-041-00	METAL CHIP	470	5% 1/10W	(B)
R413	1-216-049-00	METAL CHIP	1K	5% 1/10W	(B)
R414	1-216-075-00	METAL CHIP	12K	5% 1/10W	(B)
R415	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	(B)

Ref. No.	Part No.	Description			Remarks
R416	1-216-047-00	METAL CHIP	820	5% 1/10W (B)	
R417	1-216-093-00	METAL CHIP	68K	5% 1/10W (B)	
R418	1-216-097-00	METAL CHIP	100K	5% 1/10W (B)	
R419	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R420	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R421	1-216-047-00	METAL CHIP	820	5% 1/10W (B)	
R422	1-216-075-00	METAL CHIP	12K	5% 1/10W (B)	
R423	1-216-041-00	METAL CHIP	470	5% 1/10W (B)	
R425	1-216-061-00	METAL CHIP	3.3K	5% 1/10W (B)	
R428	1-216-081-00	METAL CHIP	22K	5% 1/10W (B)	
R429	1-216-079-00	METAL CHIP	18K	5% 1/10W (B)	
R430	1-216-113-00	METAL CHIP	470K	5% 1/10W (B)	
R431	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R446	1-216-065-00	METAL CHIP	4.7K	5% 1/10W (B/VC)	
R447	1-216-073-00	METAL CHIP	10K	5% 1/10W (B/VC)	
R448	1-216-063-00	METAL CHIP	3.9K	5% 1/10W (B)	
R449	1-216-081-00	METAL CHIP	22K	5% 1/10W (B/VC)	
R450	1-216-057-00	METAL CHIP	2.2K	5% 1/10W (B/VC)	
R451	1-216-065-00	METAL CHIP	4.7K	5% 1/10W (B)	
R452	1-216-065-00	METAL CHIP	4.7K	5% 1/10W (B)	
R454	1-216-109-00	METAL CHIP	330K	5% 1/10W (B/VC)	
R460	1-216-049-00	METAL CHIP	1K	5% 1/10W (B/VC)	
R461	1-216-059-00	METAL CHIP	2.7K	5% 1/10W (B/VC)	
R462	1-216-089-00	METAL CHIP	47K	5% 1/10W (B)	
R463	1-216-089-00	METAL CHIP	47K	5% 1/10W (B)	
R464	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R465	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R466	1-216-089-00	METAL CHIP	47K	5% 1/10W (B)	
R467	1-216-089-00	METAL CHIP	47K	5% 1/10W (B)	
R468	1-216-083-00	METAL CHIP	27K	5% 1/10W (B)	
R469	1-216-089-00	METAL CHIP	47K	5% 1/10W (B)	
R470	1-216-073-00	METAL CHIP	10K	5% 1/10W (B)	
R471	1-216-049-00	METAL CHIP	1K	5% 1/10W (B)	
R478	1-216-073-00	METAL CHIP	10K	5% 1/10W (B)	
R501	1-216-035-00	METAL CHIP	270	5% 1/10W	
R502	1-216-051-00	METAL CHIP	1.2K	5% 1/10W	
R503	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R504	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R505	1-216-051-00	METAL CHIP	1.2K	5% 1/10W	
R511	1-216-045-00	METAL CHIP	680	5% 1/10W	
R512	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R513	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R514	1-216-059-00	METAL CHIP	2.7K	5% 1/10W (B)	
R515	1-216-057-00	METAL CHIP	2.2K	5% 1/10W (B)	
R518	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R519	1-216-222-00	METAL GLAZE	10K	5% 1/8W	
R520	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R521	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R522	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R523	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R524	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R527	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R528	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R529	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R530	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R531	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R599	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	

< VARIABLE RESISTOR >

RV101	1-241-079-11	RES, ADJ, CARBON 4.7K
RV102	1-241-079-11	RES, ADJ, CARBON 4.7K
RV103	1-241-080-11	RES, ADJ, CARBON 10K (EXCEPT VC)
RV103	1-241-079-11	RES, ADJ, CARBON 4.7K (VC)
RV104	1-241-081-11	RES, ADJ, CARBON 22K
RV105	1-241-081-11	RES, ADJ, CARBON 22K
RV107	1-241-076-11	RES, ADJ, CARBON 1K
RV108	1-241-080-11	RES, ADJ, CARBON 10K
RV110	1-241-076-11	RES, ADJ, CARBON 1K
RV301	1-241-076-11	RES, ADJ, CARBON 1K
RV360	1-237-521-21	RES, ADJ, CARBON 100K
RV361	1-241-076-11	RES, ADJ, CARBON 1K
RV401	1-241-079-11	RES, ADJ, CARBON 4.7K (B)
RV402	1-237-521-21	RES, ADJ, CARBON 100K (B)
RV450	1-241-075-11	RES, ADJ, CARBON 470 (B/VC)

< TRANSFORMER >

T302	1-409-467-11	COIL (TRAP 7.8K)
T450	1-409-467-11	COIL (TRAP 7.8K) (B/VC)

< VIBRATOR >

X301	1-577-651-11	VIBRATOR, CRYSTAL 4.43MHz

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* A-6721-515-A TC-27 BOARD, COMPLETE (B MODEL)

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(Ref.No.18000 Series)

< CAPACITOR >

C102	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C103	1-126-301-11	ELECT	1uF	20%	50V
C104	1-126-301-11	ELECT	1uF	20%	50V
C105	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C106	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C107	1-124-638-11	ELECT	22uF	20%	10V
C108	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C109	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C110	1-126-177-11	ELECT	100uF	20%	10V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remarks
C112	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C113	1-163-118-00	CERAMIC CHIP	110PF	5% 50V	
C114	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	
C115	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C117	1-126-301-11	ELECT	1uF	20% 50V	
C118	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C119	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C120	1-126-163-11	ELECT	4.7uF	20% 50V	
C122	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C123	1-163-123-00	CERAMIC CHIP	180PF	5% 50V	
C125	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C126	1-163-123-00	CERAMIC CHIP	180PF	5% 50V	
C129	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C130	1-126-157-11	ELECT	10uF	20% 16V	
C131	1-126-157-11	ELECT	10uF	20% 16V	
C132	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C133	1-163-118-00	CERAMIC CHIP	110PF	5% 50V	
C134	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	
C135	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C136	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C137	1-124-638-11	ELECT	22uF	20% 10V	
C138	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C139	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C140	1-126-177-11	ELECT	100uF	20% 10V	
C141	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C142	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C143	1-163-118-00	CERAMIC CHIP	110PF	5% 50V	
C144	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	
C145	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C147	1-126-301-11	ELECT	1uF	20% 50V	
C148	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C149	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C150	1-126-163-11	ELECT	4.7uF	20% 50V	
C151	1-126-177-11	ELECT	100uF	20% 10V	
C152	1-124-638-11	ELECT	22uF	20% 10V	
C153	1-126-157-11	ELECT	10uF	20% 16V	
C154	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C155	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C156	1-126-301-11	ELECT	1uF	20% 50V	
C157	1-126-301-11	ELECT	1uF	20% 50V	
C159	1-126-301-11	ELECT	1uF	20% 50V	
C160	1-126-301-11	ELECT	1uF	20% 50V	
C163	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C164	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C165	1-126-177-11	ELECT	100uF	20% 10V	
C166	1-124-638-11	ELECT	22uF	20% 10V	
C167	1-126-157-11	ELECT	10uF	20% 16V	
C168	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C169	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C171	1-126-163-11	ELECT	4.7uF	20% 50V	

Ref. No.	Part No.	Description			Remarks
C172	1-126-157-11	ELECT	10uF	20% 16V	
C173	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C174	1-126-157-11	ELECT	10uF	20% 16V	
C175	1-126-157-11	ELECT	10uF	20% 16V	
C176	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C177	1-163-118-00	CERAMIC CHIP	110PF	5% 50V	
C178	1-163-103-00	CERAMIC CHIP	27PF	5% 50V	
C179	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C180	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C181	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	
C183	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C184	1-163-123-00	CERAMIC CHIP	180PF	5% 50V	
C186	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C187	1-163-123-00	CERAMIC CHIP	180PF	5% 50V	
C191	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C192	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C193	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C194	1-163-125-00	CERAMIC CHIP	220PF	5% 50V	
C197	1-126-157-11	ELECT	10uF	20% 16V	
C198	1-126-157-11	ELECT	10uF	20% 16V	
C199	1-126-157-11	ELECT	10uF	20% 16V	
C200	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C201	1-124-229-00	ELECT	33uF	20% 10V	
C202	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C204	1-126-157-11	ELECT	10uF	20% 16V	
C205	1-126-157-11	ELECT	10uF	20% 16V	
C206	1-163-127-00	CERAMIC CHIP	270PF	5% 50V	
C207	1-163-119-00	CERAMIC CHIP	120PF	5% 50V	
C208	1-126-157-11	ELECT	10uF	20% 16V	
C209	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C210	1-126-157-11	ELECT	10uF	20% 16V	
C211	1-126-157-11	ELECT	10uF	20% 16V	
C214	1-163-257-11	CERAMIC CHIP	180PF	5% 50V	
C215	1-163-257-11	CERAMIC CHIP	180PF	5% 50V	
C216	1-126-157-11	ELECT	10uF	20% 16V	
C217	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C218	1-126-157-11	ELECT	10uF	20% 16V	
C219	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C220	1-126-157-11	ELECT	10uF	20% 16V	
C221	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C222	1-163-275-11	CERAMIC CHIP	0.001uF	5% 50V	
C223	1-163-275-11	CERAMIC CHIP	0.001uF	5% 50V	
C251	1-126-157-11	ELECT	10uF	20% 16V	
C252	1-126-157-11	ELECT	10uF	20% 16V	
C253	1-126-157-11	ELECT	10uF	20% 16V	
		< CONNECTOR >			
CN101	1-506-470-11	PIN, CONNECTOR	5P		
CN102	1-506-473-11	PIN, CONNECTOR	8P		
CN104	1-506-473-11	PIN, CONNECTOR	8P		

TC-27

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D101	8-719-400-18	DIODE MA152WK	
		< DELAY LINE >	
DL101	1-415-313-00	DELAY LINE (1H)	
DL102	1-415-313-00	DELAY LINE (1H)	
		< FILTER >	
FL101	1-236-312-11	FILTER, BAND PASS	
		< IC >	
IC101	8-759-941-68	IC BA7131F	
IC102	8-752-035-00	IC CXA1227Q	
IC103	8-752-034-04	IC CXA1219M	
IC104	8-752-035-00	IC CXA1227Q	
IC105	8-752-034-04	IC CXA1219M	
IC106	8-759-710-29	IC NJM2235M	
IC107	8-759-008-67	IC MC14066BF	
		< JUMPER RESISTOR >	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR004	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR006	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR009	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR015	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR016	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR017	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR021	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR022	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR024	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR025	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR027	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR028	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR029	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR030	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L102	1-408-421-00	INDUCTOR 100uH	
L103	1-408-408-00	INDUCTOR 8.2uH	
L104	1-408-408-00	INDUCTOR 8.2uH	
L105	1-408-410-00	INDUCTOR 12uH	
L106	1-408-409-00	INDUCTOR 10uH	
L107	1-408-409-00	INDUCTOR 10uH	
L108	1-408-410-00	INDUCTOR 12uH	
L109	1-408-408-00	INDUCTOR 8.2uH	
L110	1-408-408-00	INDUCTOR 8.2uH	
L111	1-408-410-00	INDUCTOR 12uH	
L112	1-408-409-00	INDUCTOR 10uH	
L113	1-408-409-00	INDUCTOR 10uH	
L114	1-408-410-00	INDUCTOR 12uH	
L115	1-408-421-00	INDUCTOR 100uH	
L116	1-408-421-00	INDUCTOR 100uH	
L117	1-408-421-00	INDUCTOR 100uH	
L119	1-410-509-11	INDUCTOR 10uH	
L120	1-410-509-11	INDUCTOR 10uH	
L121	1-408-422-00	INDUCTOR 120uH	
L122	1-408-426-00	INDUCTOR 270uH	
L123	1-410-520-11	INDUCTOR 82uH	
L124	1-410-507-11	INDUCTOR 6.8uH	
L125	1-410-520-11	INDUCTOR 82uH	
L126	1-410-507-11	INDUCTOR 6.8uH	
		< VARIABLE COIL >	
LV101	1-408-532-00	COIL, VARIABLE	
LV102	1-408-530-00	COIL, VARIABLE	
LV103	1-408-532-00	COIL, VARIABLE	
LV104	1-408-532-00	COIL, VARIABLE	
LV105	1-408-530-00	COIL, VARIABLE	
LV106	1-408-532-00	COIL, VARIABLE	
		< TRANSISTOR >	
Q101	8-729-216-22	TRANSISTOR 2SA1162	
Q102	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q103	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q104	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q105	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q107	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q109	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q110	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q111	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q112	8-729-920-74	TRANSISTOR 2SC2412K-QR	

Ref. No.	Part No.	Description	Remarks
Q113	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q114	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q115	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q116	8-729-216-22	TRANSISTOR 2SA1162	
Q117	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q118	8-729-216-22	TRANSISTOR 2SA1162	
Q119	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q120	8-729-216-22	TRANSISTOR 2SA1162	
Q121	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q122	8-729-901-01	TRANSISTOR DTC144EK	
Q123	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q124	8-729-216-22	TRANSISTOR 2SA1162	
Q125	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R101	1-216-043-00	METAL CHIP 560 5% 1/10W	
R102	1-216-041-00	METAL CHIP 470 5% 1/10W	
R103	1-216-041-00	METAL CHIP 470 5% 1/10W	
R104	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R105	1-216-039-00	METAL CHIP 390 5% 1/10W	
R106	1-216-039-00	METAL CHIP 390 5% 1/10W	
R107	1-216-039-00	METAL CHIP 390 5% 1/10W	
R108	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R109	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R110	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R111	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R112	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R113	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R114	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R115	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R116	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R121	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R122	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R123	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R124	1-216-039-00	METAL CHIP 390 5% 1/10W	
R125	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R126	1-216-039-00	METAL CHIP 390 5% 1/10W	
R127	1-216-039-00	METAL CHIP 390 5% 1/10W	
R128	1-216-039-00	METAL CHIP 390 5% 1/10W	
R129	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R130	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R131	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R132	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R134	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R135	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R136	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R137	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R138	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R139	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R140	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R141	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R142	1-216-041-00	METAL CHIP 470 5% 1/10W	
R143	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R144	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R145	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R146	1-216-039-00	METAL CHIP 390 5% 1/10W	
R150	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R151	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R152	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R153	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R154	1-216-685-11	METAL CHIP 27K 0.5% 1/10W	
R155	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R156	1-216-043-00	METAL CHIP 560 5% 1/10W	
R162	1-216-685-11	METAL CHIP 27K 0.5% 1/10W	
R163	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R164	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R168	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R169	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R170	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R171	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R172	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R173	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R174	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R175	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R176	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R177	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R178	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R179	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R180	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R181	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R182	1-216-041-00	METAL CHIP 470 5% 1/10W	
R184	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R185	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R186	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R187	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R188	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R189	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R190	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R191	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R192	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R193	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R194	1-216-041-00	METAL CHIP 470 5% 1/10W	
R195	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R196	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R197	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R198	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R199	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R200	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R201	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description				Remarks
R203	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R204	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R205	1-216-295-00	METAL CHIP	0	5%	1/10W	
R251	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R252	1-216-049-00	METAL CHIP	1K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV101	1-241-083-11	RES, ADJ, CARBON 47K				
RV102	1-241-080-11	RES, ADJ, CARBON 10K				
RV103	1-241-080-11	RES, ADJ, CARBON 10K				
RV104	1-241-083-11	RES, ADJ, CARBON 47K				
RV105	1-241-080-11	RES, ADJ, CARBON 10K				
RV106	1-241-080-11	RES, ADJ, CARBON 10K				
		< VIBRATOR >				
X101	1-577-117-21	OSCILLATOR, CRYSTAL 4.433619MHz				

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MISCELLANEOUS

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1	1-466-749-11	SWITCH BLOCK, CONTROL (AEP/B/E/NC/NP)
1	1-466-749-21	SWITCH BLOCK, CONTROL (VC)
1	1-466-749-51	SWITCH BLOCK, CONTROL (UB)
⚠66	1-413-756-11	POWER BLOCK (SR-425) (AEP/B/E/NC/NP)
⚠66	1-413-757-11	POWER BLOCK (SR-426) (UB)
⚠66	1-413-758-11	POWER BLOCK (SR-427) (VC)
70	1-696-439-11	WIRE, FLAT TYPE (10 CORE)
71	1-696-440-11	WIRE, FLAT TYPE (16 CORE)
124	1-696-438-11	WIRE, FLAT TYPE (13 CORE) (NP/VC)
260	1-543-647-11	HEAD, FE
264	1-550-785-11	DRUM ASSY (DZH-52AR)
306	1-692-062-11	SWITCH, ROTARY
336	8-835-489-01	MOTOR, DC U-26K
* 343	1-633-460-11	PC BOAD, CA-41

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Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-693-178-11	REMOTE COMMANDER (RMT-V127)	
*	3-948-135-01	CUSHION (UPPER)	
*	3-948-136-01	CUSHION (LOWER)	
*	3-948-142-01	INDIVIDUAL CARTON (EXCEPT B)	
*	3-948-142-11	INDIVIDUAL CARTON (B)	
	1-551-513-00	CORD, CONNECTION (PAL)	
⚠	1-574-056-11	CORD, POWER (VC)	
⚠	1-575-131-11	CORD, POWER (AEP/B/E/NC/NP)	
	1-575-334-11	CORD, CONNECTION (A/V)	
⚠	1-590-866-21	CORD, POWER (UB)	
*	3-738-213-01	CASE, ACCESSORY	
	3-755-135-11	MANUAL, INSTRUCTION (ENGLISH) (UB/E)	
	3-755-135-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN) (AEP)	
	3-755-135-51	MANUAL, INSTRUCTION (FRENCH, GERMANY, ITALIAN) (VC)	
	3-755-135-61	MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE, DANISH)	(NC)
	3-755-135-71	MANUAL, INSTRUCTION (DUTCH, FRENCH, GERMAN) (NC)	
	3-755-135-81	MANUAL, INSTRUCTION (SPANISH) (NP)	
	3-755-135-91	MANUAL, INSTRUCTION (FRENCH) (B)	

****

****

HARDWARE LIST

****

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3
#3	7-682-547-04	SCREW +BVTT 3X6 (S)
#4	7-621-255-25	SCREW +PTT 2X4 (S)
#5	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3
#6	7-621-732-08	SCREW
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#8	7-682-548-04	SCREW +P 3X8
#9	7-682-546-04	SCREW +P 3X5
#10	7-628-254-00	SCREW +PS 2.6X5
#11	7-624-102-04	STOP RING 1.5, TYPE-E
#12	7-627-552-08	SCREW, PRECISION +P 1.7X2.5

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

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

MEMO

MEMO

SECTION 7
ELECTRICAL ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram relevant to the adjustment on page 210.

7-1. PRE-ADJUSTMENT PREPARATIONS

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

7-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 15 MHz, delay mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL pattern generator
5) SECAM pattern generator (SLV-815B only)
6) Digital voltmeter
7) Audio level meter
8) Audio generator
9) Attenuator
10) Distortion factor meter
11) Voice multiple signal generator
12) Alignment tape
    Part code: H7099052H (MH-2)
13) HiFi alignment tape

7-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

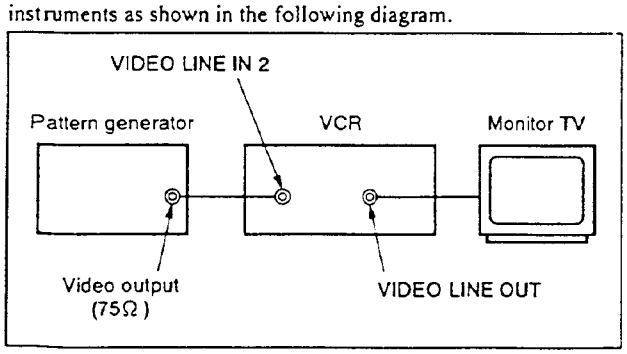


Fig. 7-1.

7-1-3. Setup for Adjustment

In this adjustment, PAL pattern generator is connected with LINE 2 input signal terminal.When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30:0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the video section.

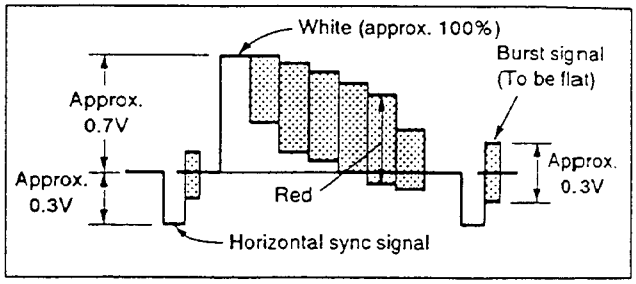


Fig. 7-2.

7-1-4. Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 min	Stair-step	6 kHz
2	5 min	———	3 kHz
3	10 min	Color bar	1 kHz
4	3 min	RF sweep	———

Table 7-1.

7-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	LINE IN: phono jacks
	EURO-AV: 21-pin (Pin ⑳) 1 Vp-p, 75Ω, unbalanced, sync negative
Audio inputs	LINE IN: phono jacks
	47 kΩ, −7.5 dBs (0 dBs=0.775 Vrms)
	EURO-AV: 21-pin (Pin ② and ⑥)
	More than 10 kΩ, −4 dBs
Video outputs	LINE OUT: phono jack
	EURO-AV: 21-pin (Pin ⑲) 1 Vp-p, 75Ω, unbalanced sync negative
Audio outputs	LINE OUT: phono jack
	−7.5 dBs at load
	impedance 47 kΩ
	Output impedance: less than 10 kΩ
	EURO-AV: 21-pin (Pins ① and ③)
	Output impedance: less than 1 kΩ
	−4 dBs with 10 kΩ load

7-1-6. Operating Method When the Front Panel Removed

When adjust with the front panel (SW BLOCK, JOG/SHUTTLE, TK-17 board and TK-18 board) removed, connect the resisters as shown below and operate with the remote commander.

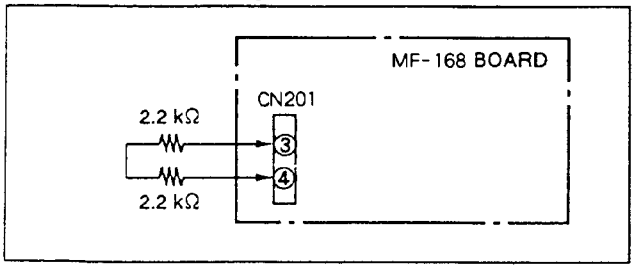
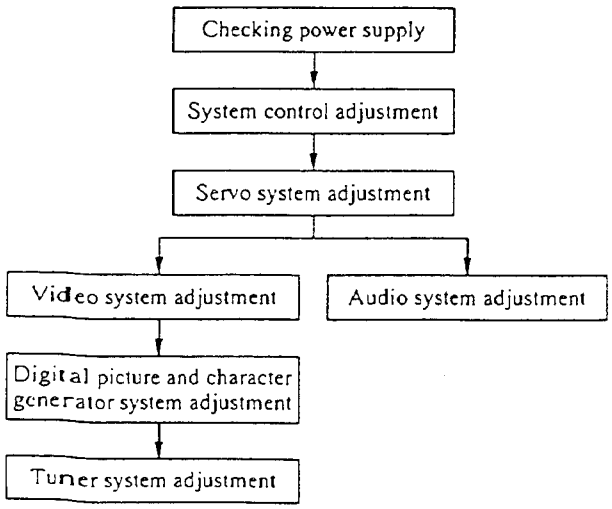


Fig. 7-3.

7-1-7. Adjusting Sequence

Make the electrical adjustment in the following sequence.



7-2. POWER SUPPLY CHECK (POWER BLOCK)

Mode	E-E
Measuring instrument	Digital voltmeter
UNSW 6V check	
Measurement point	Pin⑤of CN1
Specified value	6 ± 0.25Vdc
UNSW − 30V check	
Measurement point	Pin⑩of CN2
Specified value	− 30.0 ± 2.5Vdc
UNSW 6V check	
Measurement point	Pin⑪of CN2
Specified value	6.0 ± 0.6Vdc
SW 5V check	
Measurement point	Pin⑥of CN1
Specified value	$5.00 \pm^{0.15}_{0.10}$Vdc
SW 9V check	
Measurement point	Pin④of CN1
Specified value	9.0 ± 0.3Vdc
UNSW 12V check	
Measurement point	Pin③of CN1
Specified value	12.0 ± 0.1Vdc
MTR 12V check	
Measurement point	Pin①of CN2
Specified value	12.0 ± 0.3Vdc
UNSW 35V check	
Measurement point	Pin①of CN1
Specified value	35V ± 3.0Vdc

Checking method:

1) Confirm that each voltage meets its specified value.

POWER BLOCK (Conductor side)

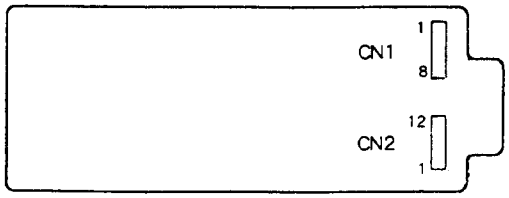


Fig. 7-4.

7-3. SYSTEM CONTROL ADJUSTMENT

7-3-1. Clock Adjustment (MF-167 BOARD)

Measurement point	Pin⑧of IC601
Measuring Instrument	Interval counter
Adjusting Element	CV601
Specified Value	0.1249995 ± 0.0000005 sec

Connection:

1) Make the circuit below and supply the generated voltage to IC601 pin④.

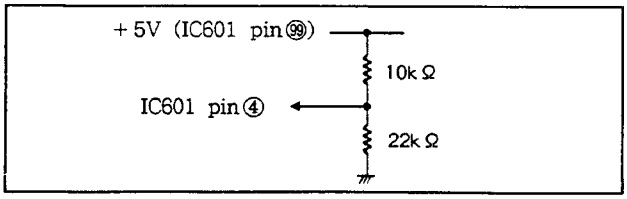


Fig. 7-5-1.

Adjusting method:

1) Pass a 9-state binary counter through Pin ⑧ of IC601 to divide the 4096 Hz frequency nine times and transform to 8 Hz. Measure the cycle.
2) Adjust CV601 so that an 8 Hz cycle equals 0.1249995 ± 0.0000005 sec.

Note: Do not adjust CV601 except when replacing microcomputers.

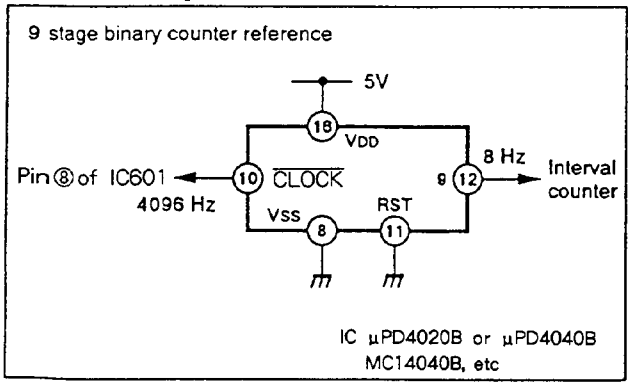


Fig. 7-5-2.

7-4. SERVO SYSTEM ADJUSTMENT

7-4-1. Switching Position Adjustment (MA-140 Board)

Mode	PB
Signal	Alignment tape: SP stair-step section
Measurement point	CH1 : VIDEO OUT (LINE OUT) CH2:Pin②of CN919(RF SWP)/MA-140
Measuring Instrument	Oscilloscope
Adjusting Element	RV401
Specified Value	6.5 ± 0.5H (416 ± 32 μsec)

Adjusting method:

1) Once set to STOP mode, then to PB mode.
2) Check that the switching position is 6.5 ± 0.5H. (416 ± 32 μsec)
   If not meet the specified value, turn RV401 and repeat steps 1) to 2).

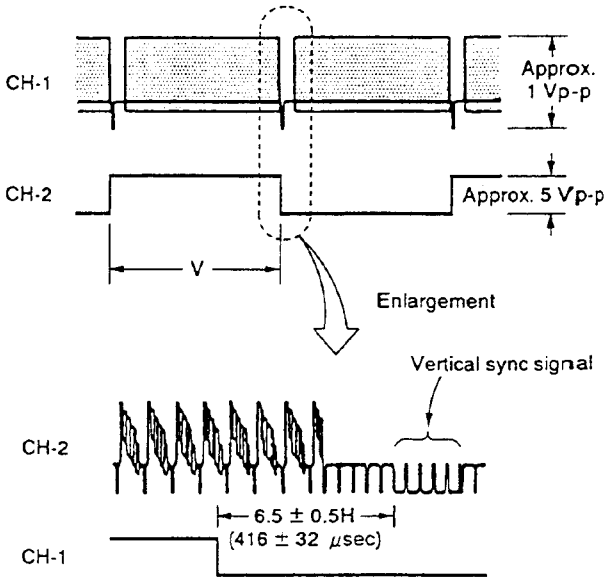


Fig. 7-6.

7-5. VIDEO SYSTEM ADJUSTMENT

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

[Adjusting sequence]

7-5-1. Playback Y Signal Level Adjustment
7-5-2. Y Signal NR Level Adjustment
7-5-3. Sync AGC Adjustment
7-5-4. Sync Tip Carrier Set and Deviation Adjustment
7-5-5. White Clip, Dark Clip Adjustment
7-5-6. Recording Y Signal Level Adjustment
7-5-7. Recording Chroma Level Adjustment
7-5-8. PAL JOG AFC Adjustment
7-5-9. 0.5H CCD Level Adjustment
7-5-10. SECAM Discrimination Adjustment

7-5-1. Playback Y Signal Level Adjustment (YC-124 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Oscilloscope
Adjusting Element	RV108
Specified Value	1.00 ± 0.05 Vp-p

Note: 1) Make this adjustment with the EDIT ON/OFF button set to off.
2) VIDEO LINE OUT terminal must be terminated at 75Ω ± 1%.

Adjusting method:
1) With RV108, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

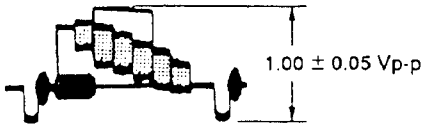


Fig. 7-7.

7-5-2. Y Signal NR Level Adjustment (YC-124 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	Pin ⑩ of IC101
Measuring Instrument	Oscilloscope
Adjusting Element	RV107
Specified Value	Less than 30mVp-p or minimum

Adjusting method:
1) Adjust to eliminate level differences for each H step with RV107.

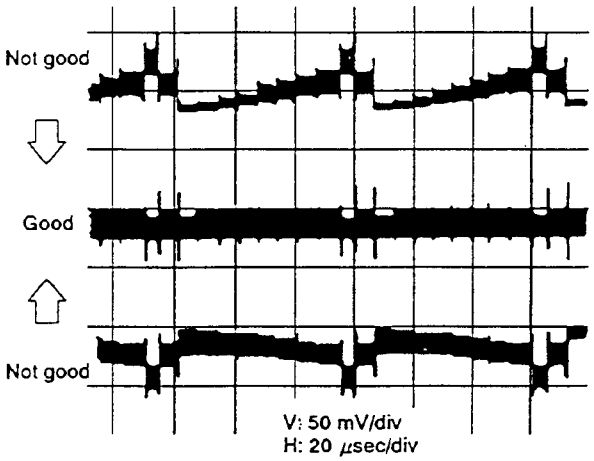


Fig. 7-8.

7-5-3. Sync AGC Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Oscilloscope
Adjusting Element	RV101
Specified Value	1.00 ± 0.05 Vp-p

Note: VIDEO LINE OUT terminal must be terminates at 75Ω .

Adjusting method:
1) With RV101, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

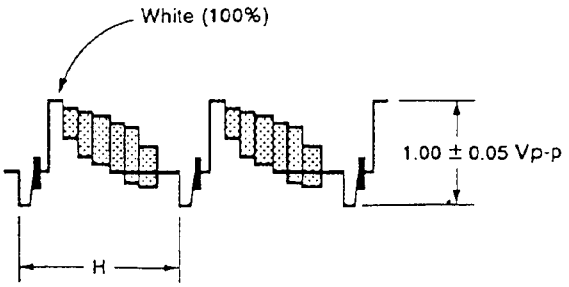


Fig. 7-9. SYNC AGC adjustment

7-5-4. Sync Tip Carrier Set and Deviation Adjustment (YC-124 Board)

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

Sync tip carrier set	
Mode	E-E
Signal	No signal (Note 2)
Measurement Point	Pin㉔of IC101
Measuring Instrument	Frequency counter
Adjusting Element	RV103
Speified Value	3.80 ± 0.05MHz
Deviation adjustment	
Mode	REC and PB
Signal	Colour bars
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Osilloscope
Adjusting Element	RV102
Speified Value	1.00 ± 0.05Vp-p

Note 1) VIDEO LINE OUT terminal must be terminated at 75Ω .
2) To make no signal input, insert a shorting plug into VIDEO LINE IN 2 terminal.

Adjusting method:

1) Make a no signal state and select the E-E made.
2) Connect the frequency counter to the Pin ㉔ of IC101 and adjust to 3.80 ± 0.05MHz with RV103.
3) Input the color bar signal to make recording.
4) Playback the recorded tape portion and check that the playback Y signal level is 1.00 ± 0.05 Vp-p.

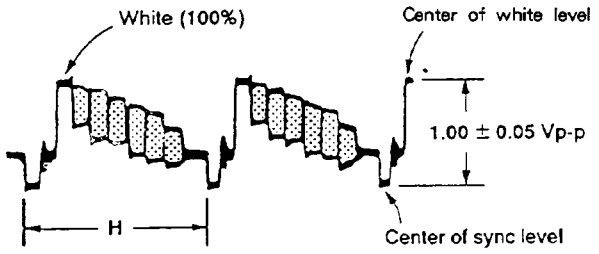


Fig. 7-10. Deviation adjustment

5) When the specified value is not met, input the color bar signal to select the E-E mode. Adjust RV102 to correct a playback Y signal level error, and then, repeat the steps 1) through 4) above.

7-5-5. White Clip, Dark Clip Adjustments (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ⑳ of IC101
Measuring Instument	Oscilloscope
Adjusting Element	White clip : RV105 Dark clip : RV104
Specified Value	White clip : 180 ± 10 % Dark clip : 40 ± 10 %

Adjusting method:

1) With RV105, adjust the white clip level to 180 ± 10 % of the white level (100 %)
2) With RV104, adjust the dark clip level to 40 ± 10 % of the white level (100 %)

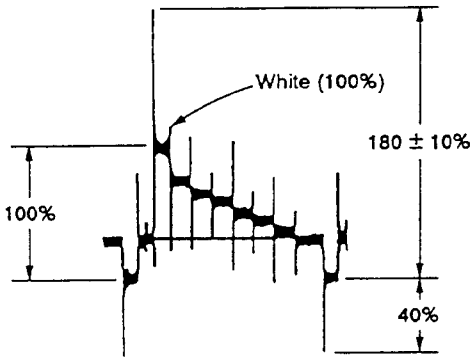


Fig. 7-11.

7-5-6. Recording Y Signal Level Adjustment (YC-124 Board)

Mode	REC
Signal	No signal
Measurement Point	Pin③of CN301 (YC-124)
Measuring Instument	Oscilloscope
Adjusting Element	RV110 (YC-124 board)
Specified Value	300 ± 10 mV

Adjusting method:

1) With RV110, adjust the Y REC RF signal level to 300 ± 10mV

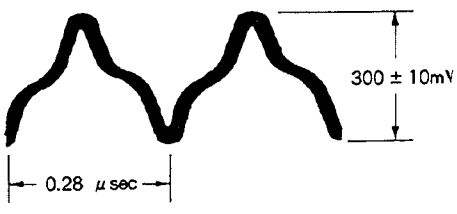


Fig. 7-12.

7-5-7. Recording Chroma Level Adjustment (YC-124 Board)

Mode	E-E
Signal	Color ber
Measurement Point	Pin⑧of CN301
Measuring Instument	Oscilloscope
Adjusting Element	RV301
Specified Value	120 ± 10 mVp-p

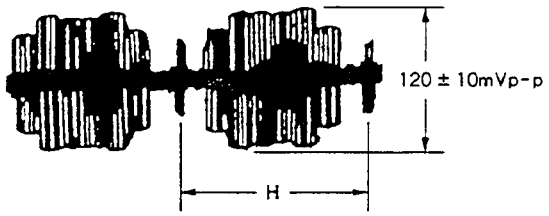


Fig. 7-13.

7-5-8. PAL JOG AFC Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin⑲of IC360
Measuring Instument	Digital voltmeter
Adjusting Element	RV360
Specified Value	2.65 ± 0.05 Vdc

Adjusting method :

1) Adjust RV360 so that the voltage at Pin ⑲ of IC360 become 2.65 ± 0.05Vde.
   At this time confirm that the cycle of delta wave at Pin ㉑of IC360 is 32 μsec.

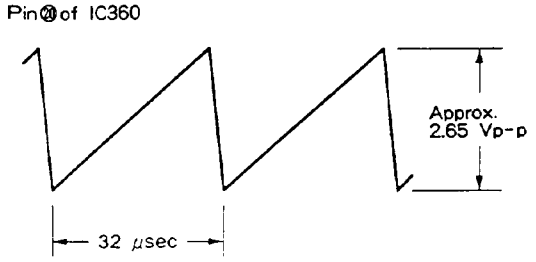


Fig. 7-14.

7-5-9. 0.5H CCD Level Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin①of IC362
Measuring Instument	Oscilloscope
Adjusting Element	RV361
Specified Value	Same signal level with Pin ⑥ of IC362.

Adjusting method :

1) Measure the signal level at Pin⑥of IC362. (Approx. 2 Vp-p)
2) Adjust RV361 so that the signal levels at Pins①and⑥ of IC362 become same.

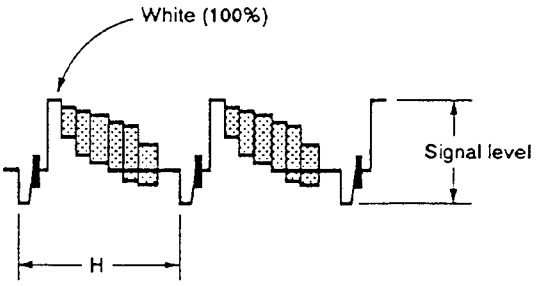


Fig. 7-15.

7-5-10. SECAM Discrimination Adjustment (YC-124 Board) (SLV-825B Only)

Mode	E-E
Signal	SECAM Color bar
Measurement Point	Pin⑨of IC450
Measuring Instument	Oscilloscope
Adjusting Element	RV450
Specified Value	4.5 ± 0.1 Vp-p

Adjusting method :

1) Adjust RV450 so that the amplitude of 1/2 fH waveform becomes 4.5 ± 0.1 Vp-p.

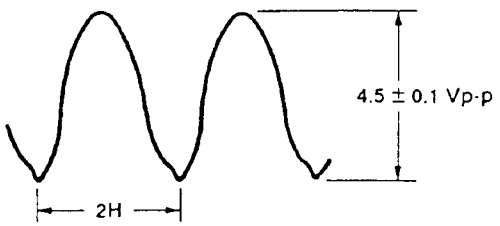


Fig. 7-16.

7-5-11. SECAM Sync. Gate Timing Adjustment (YC-124 Board)

Mode	E-E
Signal	SECAM Colour bars
Measurement Point	CH1 : VIDEO OUTPUT CH2 : CN301 Pin⑧ (YC-124 board)
Measuring Instrument	Osilloscope
Adjusting Element	RV402
Speified Value	T2 = 0 ± 0.3 μsec

Adjusting method :

1) Adjust with RV402 so that the color bar signal on VIDEO OUTPUT terminal becomes to the specified value.

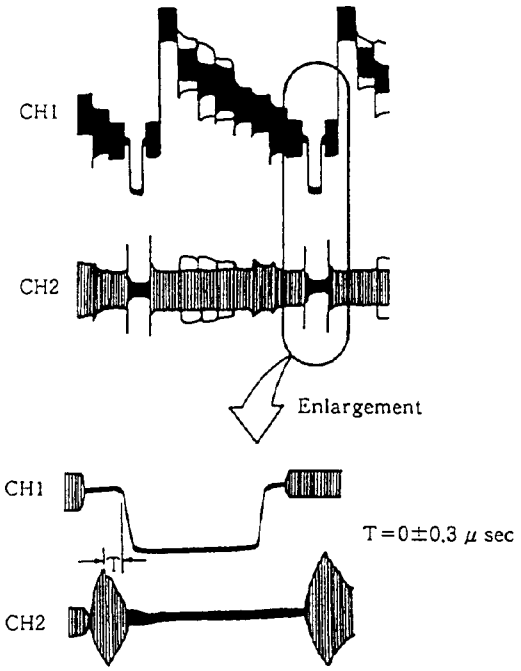


Fig. 7-17.

7-5-12. SECAM Bell Filter Adjustment (YC-124 Board)

Mode	PB
Signal	SECAM Colour bars
Measurement Point	IC401㉕
Measuring Instrument	Osilloscope
Adjusting Element	FL402
Speified Value	Same level of colour bars

Adjusting method :

1) Adjust FL402 so that levels of colour bars become the same.

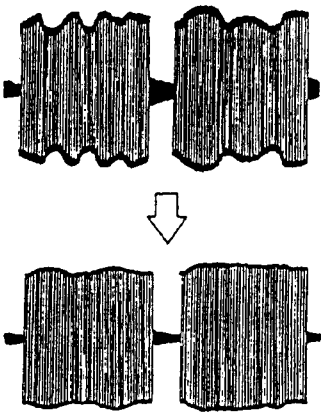


Fig. 7-18.

7-5-13. SECAM Recording Chroma Level Adjustment (YC-124 Board)

Mode	E-E
Signal	SECAM Colour bars
Measurement Point	CN301 ⑧
Measuring Instrument	Osilloscope
Adjusting Element	RV401
Speified Value	100 ± 10mVp-p

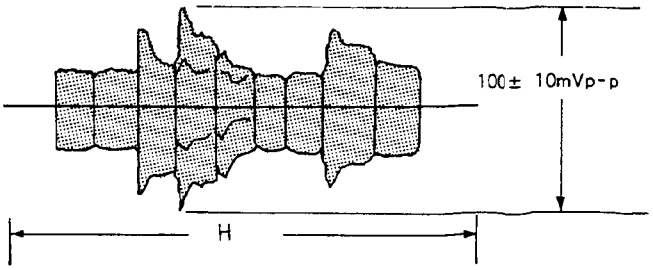


Fig. 7-19.

7-6. DIGITAL PICTURE AND CHARACTER GENERATOR SYSTEM ADJUSTMENTS

• Connect the monitor TV to EURO-AV connector (Pin ⑲ of CNJ902 on MA-140 board), then perform the adjustment.

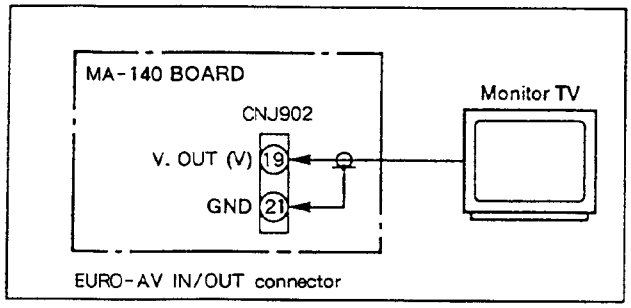


Fig. 7-20.

7-6-1. Read Clock Adjustment (DG-11 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	T102
Specified Value	A=B

Adjusting method:

1) Adjust T102 so that the child pictures are positioned symmetrically.
   Note: Adjust the character position following the steps in "Character Position Adjustment".

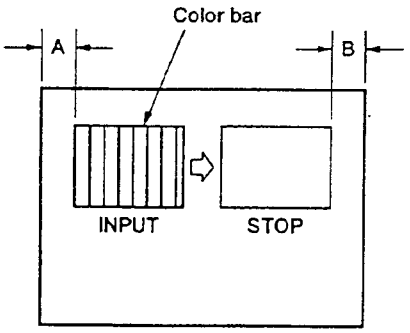


Fig. 7-21.

7-6-2. Write Clock Adjustment (DG-11 Board)

Mode	E-E
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	T101
Specified Value	A=B

Adjusting method:

1) Adjust T101 so that the image center of the child picture in INPUT side matches with the child picture frame center.

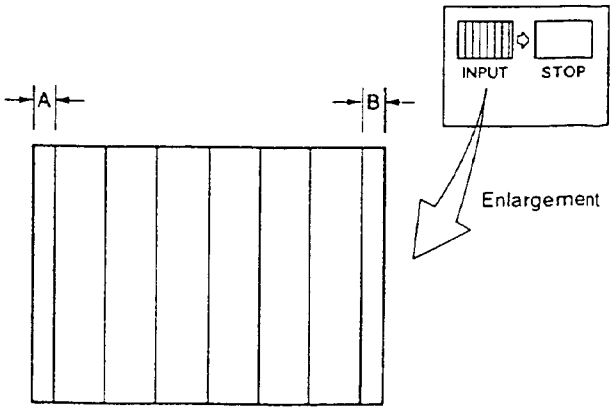


Fig. 7-22.

7-6-3. TINT Adjustment (DG-11 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	Pin ⑰ of IC102
Measuring Instrument	Oscilloscope
Adjusting Element	RV104
Specified Value	A=B

Adjusting method:

1) Adjust RV104 so that the level A and level B become same.

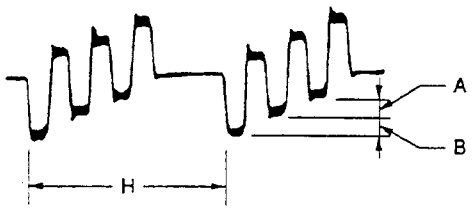


Fig. 7-23.

7-6-4. Clamp Level Adjustment (DG-11 Board)

Mode	PB (P in P)
Signal	Color bar
Measurement Point	Pin ⑥ of CN101
Measuring Instrument	Oscilloscope
Adjusting Element	RV101
Specified Value	A=0V

Adjusting method:

1) Adjust RV101 so that the pedestal levels of parent picture match with the levels of child picture.

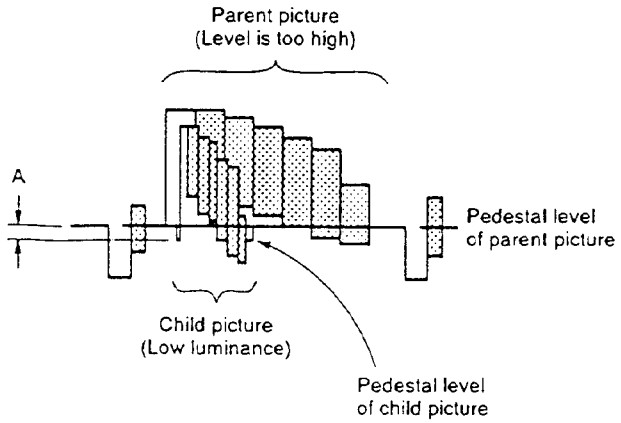


Fig. 7-24.

7-6-5. Hue and Color Level Adjustment (DG-11 Board)

Mode	E-E (P in P)
Signal	Color ber
Measurement Point	EURO AV IN/OUT connector
Measuring Instument	Vectorscope
Adjusting Element	Hue : RV103 Color Level : RV102
Specified Value	The chroma luminance points in parent and child pictures should be overlapped.

Adjusting method:

1) Turn RV102 and RV103 alternately and match the chroma luminance point (higher luminance) of parent picture with the chroma luminance point (lower luminance) of child picture.

7-6-6. Character Generator Clock Check (CG-15 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ㉘ of IC602
Measuring Instument	Frequency counter
Specified Value	17.734476MHz ± 100Hz

Note: Attach 10 kΩ register to tip of the probe.

Checking method:

1) Confirm that the clock oscillation frequency is 17.734476 MHz ± 100 Hz.

7-6-7. AFC Adjustment (CG-15 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ⑧ of IC603
Measuring Instument	Oscilloscope
Adjusting Element	RV601
Specified Value	15625 ± 50Hz

Connection :

1) Connect Pins ① and ⑨ of IC603 with 1k Ω resistance.

Adjusting method :

1) Adjust RV601 so that the oscillation frequency is 15625 ± 50Hz.

7-6-8. Character Position Adjustment (CG-15 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	CV601
Specified Value	A=B

Note: Perform this adjustment after "Write Clock Adjustment".

Adjusting method :

1) Adjust CV601 so that the arrow mark is positioned at the center between the child pictures.

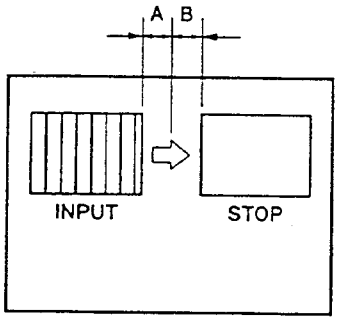


Fig. 7-25.

7-7. AUDIO SYSTEM ADJUSTMENTS

- Adjust the audio system in the LP mode, unless otherwise specified.
  Use the alignment tape.
- Adjust both Lch and Rch.
- Audio system adjustments consist of section 7-7-1. Hi-Fi Audio adjustment and 7-7-2. Normal Audio Adjustment.

[Connection]

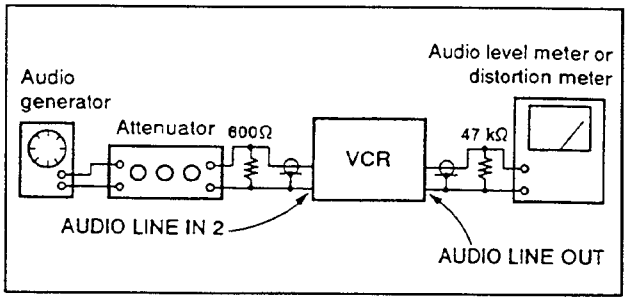


Fig. 7-26.

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

- Set Switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch···· LINE 2
  REC LEVEL knob····· Set to −21 dBs.

- When the tuner block is obstructive for adjustment, remove it.

[Adjusting sequence]

1. NTSC VCO fo adjustment
2. PAL VCO fo adjustment
3. NTSC BPF fo adjustment
4. PAL BPF fo adjustment
5. AF Switching Position adjustment
6. Hi-Fi/Normal Detect adjustment
7. Playback Level adjustment
8. Record VR (Left channel) Control adjustment
9. Record VR (Right channel) Control adjustment

1. NTSC VCO f_0 adjustment (HF-26 board)

Mode	Recording, NTSC mode
Signal	No signal (HF-26 CN202 Pin ②: L)
Measuring instrument	Frequency counter
LEFT channel (1.3 MHz) Adjustment	
Measurement point	IC201 Pin ⑰/HF-26
Adjusting element	RV202
Specified value	1.300 MHz ± 1 KHZ
RIGHT channel (1.7 MHz) Adjustment	
Measurement point	IC201 Pin ⑯/HF-26
Adjusting element	RV205
Specified value	1.700 MHz ± 1 kHz

Note : Connect the frequency counter through a probe of high input impedance (more than 10 MΩ) and low capacity (10 pF or less).

Checking method :

1) Connect the frequency counter to each measurement point.
2) Confirm that each frequency meet its specified value.

2. PAL VCO f_0 adjustment (HF-26 board)

Mode	Recording, PAL mode
Signal	No signal (HF-26 CN202 Pin ②: H)
Measuring instrument	Frequency counter
LEFT channel (1.4 MHz) Adjustment	
Measurement point	IC201, Pin ⑰/HF-26
Adjusting element	RV207
Specified value	1.400 MHz ± 1 kHz
RIGHT channel (1.8 MHz) Adjustment	
Measurement point	IC201, Pin ⑯
Adjusting element	RV209
Specified value	1.800 MHz ± 1 kHz

Note : Connect the frequency counter through a probe of high input impedance (more than 10 MΩ) and low capacity (10 pF or less).

Checking method :

1) Connect the frequency counter to each measurement point.
2) Confirm that each frequency meet its specified value.

3. NTSC BPF f_0 adjustment (HF-26 board)

Mode	NTSC, PB mode
Signal	1.720 MHz sine wave
Measuring instrument	Oscilloscope
Measurement point	HF-26, IC201, Pin ⑱
Adjusting element	RV204
Specified value	Minimum amplitude as shown

Adjusting method :

1) Set the NTSC PB switch to ON.
2) Input the sine wave signal of 1.720 MHz, 70 mV to CN202 Pin ⑨ from signal generator. (no modulated signal)
3) Adjust RV204 for the minimum amplitude.

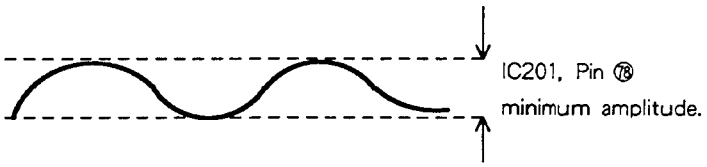


Fig. 7-27.

4. PAL BPF f_0 adjustment (HF-26 board)

Mode	PAL, PB mode
Signal	1.840 MHz sine wave
Measuring instrument	Oscilloscope
Measurement point	HF-26, IC201, Pin ⑱
Adjusting element	RV208
Specified value	Minimum amplitude as shown

Adjusting method :

1) Input the sine wave signal of 1.840 MHz, 70 mV CN202 Pin ⑨ from signal generator. (no modulated signal)
2) Adjust RV208 for the minimum amplitude.

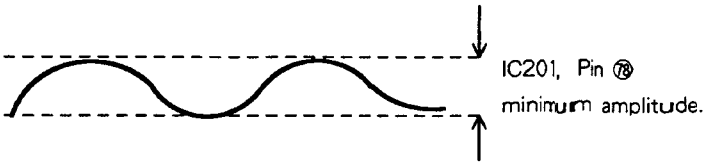


Fig. 7-28.

5. AF Switching Position adjustment (MA-140 board)

Mode	PB
Signal	Alignment tape (MH-2)
Measuring instrument	Oscilloscope
Measurement point	MA-140, CN901, Pin ⑥
Adjusting element	RV400
Specified value	Minimum amplitude

Adjusting method :

1) Playback the alignment tape (MH-2).
2) Press MANUAL of TRACKING button. Press both [+] and [−] keys of TRACKING simultaneously to obtain the center position of TRACKING.
3) Trigger oscilloscope by RP-147, CN803 Pin ⑤ (RF SW'G pulse).
4) Adjust RV400 to minimize A.

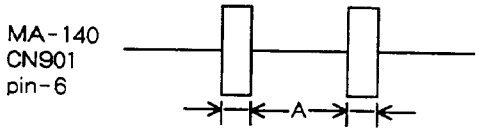


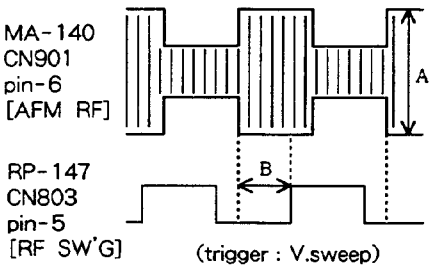
Fig. 7-29.

6. Hi-Fi/Normal Detect adjustment (MA-140 board)

Mode	PB
Signal	Alignment tape (HiFi 400 Hz)
Measuring instrument	Oscilloscope
Measurement point	MA-140, CN901, Pin ⑥
Adjusting element	RV201
Specified value	300 mV ± 10 mVp-p

Adjusting method :

1) Press MANUAL of TRACKING button. Obtain the maximum AFM RF level by adjusting TRACKING control.
2) Connect oscilloscope to MA-140, CN901 Pin ⑥, and is triggered by RP-147, CN803 Pin⑤ (RF SW'G pulse).
3) Adjust RV201/MA-140 for 300 mV ± 10 mVp-p, in the side B.



A = 300mV ± 10mV (p-p)

Fig. 7-30.

7. Playback Level adjustment (HF-26 board)

Mode	PB
Signal	Alignment tape (HiFi 400 Hz)
Measurement point	Lch : AUDIO LINE OUT L Rch : AUDIO LINE OUT R
Measuring instrument	Audio level meter
Adjusting element	Lch : RV201 Rch : RV206
Specified value	− 7.5 ± 0.1 dBs

Adjusting method :

1) Adjust a playback level to -7.5 ± 0.1 dBs for both L and R channels with RV201 and RV206 respectively.

8. Record VR (Left channel) Control adjustment (MF-167 board)

Mode	Recording
Signal	No signal
Measuring instrument	Digital voltmeter
Measurement point	MF-167, CN601, Pin ⑯
Adjusting element	RV603
Specified value	(voltage at CN601, Pin ⑫) × ½ ± 0.05 V

Adjusting method :

1) Set the RECORD VR (RV601) into the mechanical center [click] position.
2) Adjust RV603 to obtain that Pin ⑯= [voltage at CN601 Pin ⑫= LEVEL VR Vcc] × ½ ± 0.05 V

9. Record VR (Right channel) Control adjustment (MF-167 board)

Mode	Recording
Signal	No signal
Measuring instrument	Digital voltmeter
Measurement point	MF-167, CN601, Pin ⑮
Adjusting element	RV604
Specified value	(voltage at CN601, Pin ⑫) × ½ ± 0.05 V

Adjusting method :

1) Set the RECORD VR (RV602) into the mechanical center [click] position.
2) Adjust RV604 so that Pin ⑮= [voltage at CN601 Pin ⑫ = LEVEL VR Vcc] × ½ ± 0.05 V

7-7-2. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Make adjustment with the switches set to the following positions.
  INPUT SELECT·····LINE 2
- Set the AUDIO MONITOR mode to NORMAL on the menu screen.

[Adjusting sequence]

1. ACE head adjustment···See Mechanism Block Adjustment
2. Recording bias adjustment

1. ACE head adjustment

See "Mechanism Block Adjustment".

2. Recording bias adjustment (MA-140 board)

Mode	REC and PB
Signal	333 Hz, −27.5 dBz / 7 kHz, −27.5 dBs } at AUDIO INPUT, LINE 2
Measuring point	AUDIO LINE OUT L or R
Measuring instrument	Audio level meter
Adjusting element	RV701
Specified value	0 ± 1 dB (1 ± 1dB for B model)

Adjusting method :

1) Supply a signal of 333 Hz, −27.5 dBs to Audio.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio input level is −27.5 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded position, and measure output levels at 333 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output levels within a range of the 333 Hz playback output level 0 ± 1 dB. When beyond this range, adjust RV701 and repeat the steps 1) through 7) above. (1 ± 1dB for B model)

7-8. TUNER SYSTEM ADJUSTMENTS

7-8-1. RF AGC Adjustment (IF501)

Signal	Broadcast TV signal
Adjusting element	VR of IF unit (Fig. 7-31.)

Adjusting method :

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

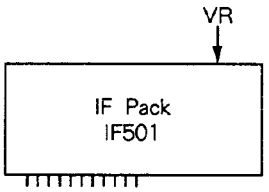


Fig. 7-31.

7-8-2. Receive Separation Adjustment (MA-140 board) (except UB model)

Signal	Stereo: Lch : 400 Hz, 100% modulation / Rch : No modulation
Connect point	AUDIO LINE OUT R
Measuring instrument	Oscilloscope
Adjusting element	RV501

Adjusting method :

1) Set the sound multiplex signal generator in the Stereo mode, and set only Lch to 400 Hz, 100% modulation.
2) Connect the oscilloscope to the Rch of Audio Line Output.
3) Adjust RV501 to minimize Rch output.
   When this is done, do not fully turn RV501. (The "STEREO" indication must be illuminated).

7-9. TRANSCODER (TC-27 Board) ADJUSTMENT

[SECAM Digital Picture Mode Chroma Adjustment]
(SL-825B model only)

- Connect the monitor TV to EURO-AV connector (pin⑲ of CNJ902 on MA-140 board), then perform the adjustment.

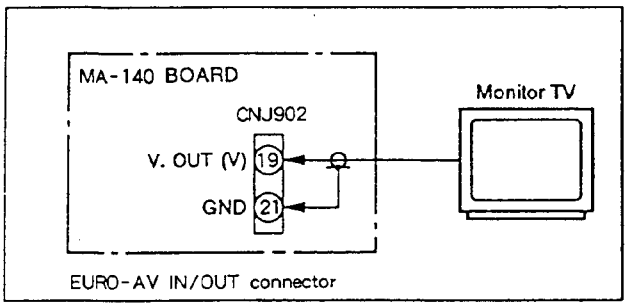


Fig. 7-32.

[Adjusting sequence]

7-9-1. VCO-1 adjustment
7-9-2. VCO-2 adjustment
7-9-3. I-REF-1 adjustment
7-9-4. I-REF-2 adjustment
7-9-5. BELL-1 Filter adjustment
7-9-6. BELL-2 Filter adjustment
7-9-7. B-Y f_o adjustment
7-9-8. R-Y f_o adjustment
7-9-9. Colour Output Level adjustment

7-9-1. VCO-1 Adjustment (TC-27 Board)

Mode	E-E
Signal	no input signal
Measuring instrument	frequency counter
Measurement point	IC102, Pin ⑨
Adjusting element	RV101
Specified value	15,625 Hz ± 10 Hz

Adjusting method :

1) Connect frequency counter to IC102, Pin ⑨.
2) Adjust RV101 for 15,625 Hz ± 10Hz

7-9-2. VCO-2 Adjustment (TC-27 Board)

Mode	E-E
Signal	no input signal
Measuring instrument	frequency counter
Measurement point	IC104, Pin ⑨
Adjusting element	RV104
Specified value	15,625 Hz ± 10 Hz

Adjusting method :

1) Connect freqyency counter to IC104, Pin ⑨.
2) Adjust RV104 for 15,625 Hz ± 10Hz

7-9-3. I-REF-1 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	CH-1 : IC102, Pin ④ CH-2 : IC102, Pin ⑨
Adjusting element	RV103
Specified value	T = 4.2 ± 0.1 μsec

Adjusting method :

1) Adjust RV103 so that T is 4.2 ± 0.1 μsec.

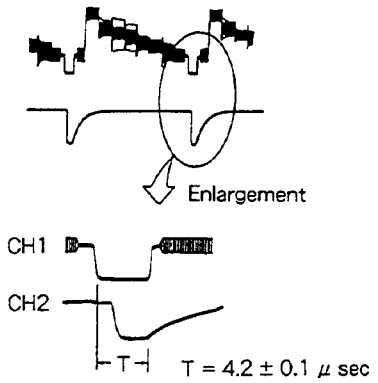


Fig. 7-33.

7-9-4. I-REF-2 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	CH-1 : IC104, Pin ④ CH-2 : IC104, Pin ⑨
Adjusting element	RV106
Specified value	T = 4.2 ± 0.1 μsec

Adjusting method :

1) Adjust RV106 so that T is 4.2 ± 0.1 μsec.

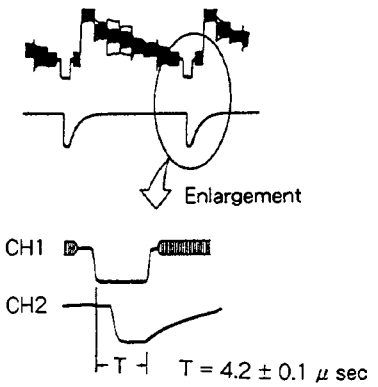


Fig. 7-34.

7-9-5. BELL-1 Filter Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	IC102, Pin ㉛
Adjusting element	LV102
Specified value	Same colour bars level

Adjusting method :

1) Adjust LV102 so that levels of colour bars have the same level.

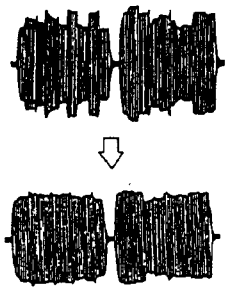


Fig. 7-35.

7-9-6. BELL-2 Filter Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	IC104, Pin ㉛
Adjusting element	LV105
Specified value	Same colour bars level

Adjusting method :

1) Adjust LV105 so that levels of colour bars have the same level.

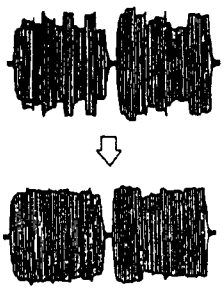


Fig. 7-36.

7-9-7. B-Y fo Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	B-Y 1 : IC103 Pin ③ LV103
	B-Y 2 : IC105 Pin ③ LV106
Specified value	within 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.

2) Adjust LV103 and LV106 for the level within 0.05Vp-p.

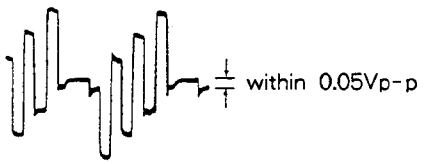


Fig. 7-37.

7-9-8. R-Y fo Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	R-Y 1 : IC103 Pin ② LV101
	R-Y 2 : IC105 Pin ② LV104
Specified value	within 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.

2) Adjust LV101 and LV104 for the level within 0.05Vp-p.

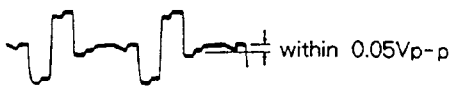


Fig. 7-38.

7-9-9. Colour Output Level Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	COLOR LEVEL 1 : IC103 Pin ③/RV102
	COLOR LEVEL 2 : IC105 Pin ③/RV105
Specified value	within 0.75 ± 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.

2) Adjust RV102 and RV105 for 0.75 ± 0.05Vp-p.

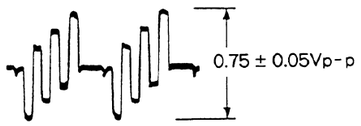
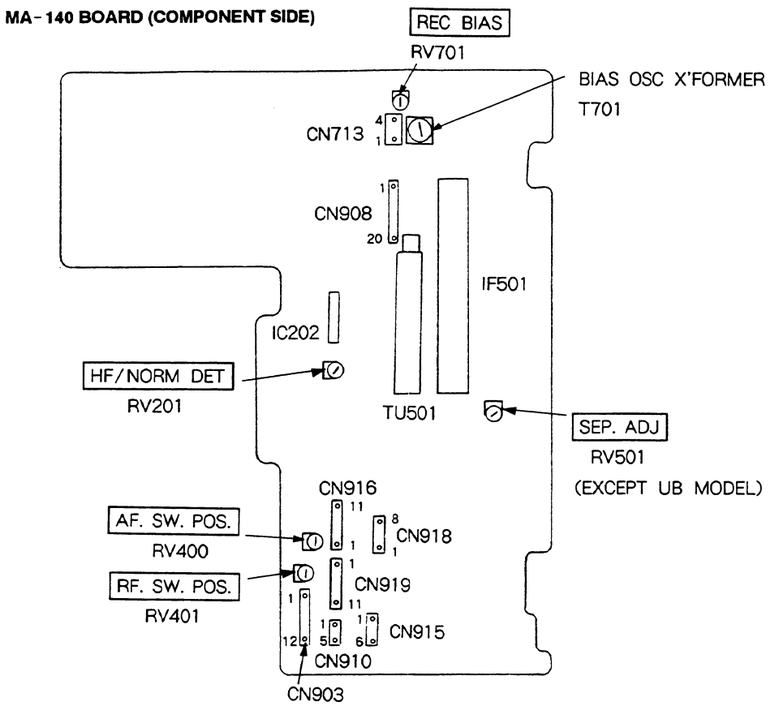


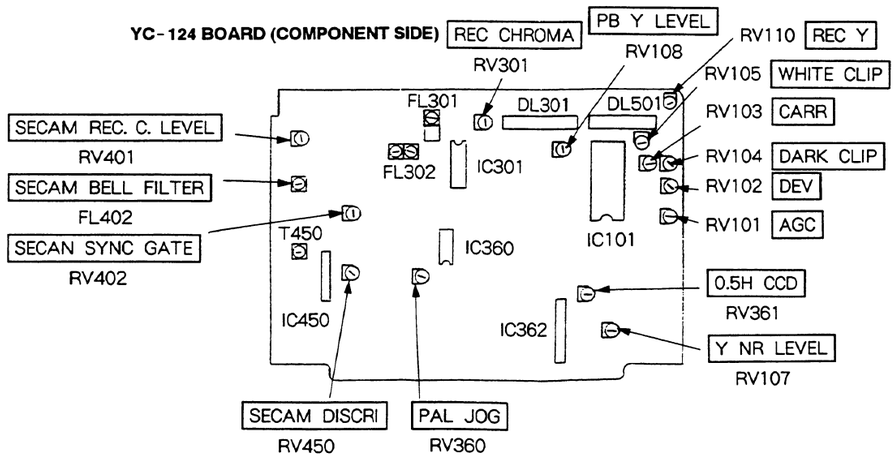
Fig. 7-39.

7-10. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM

MA-140 BOARD (COMPONENT SIDE)

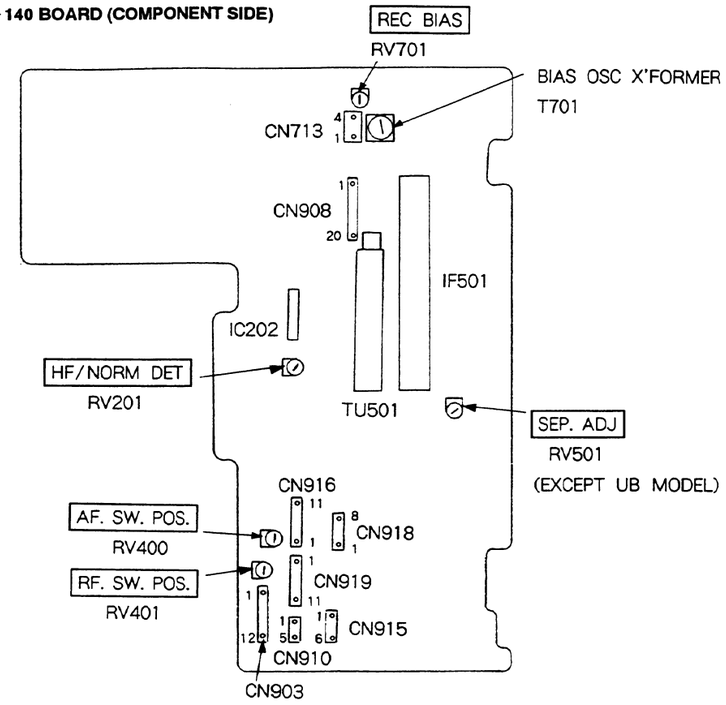


YC-124 BOARD (COMPONENT SIDE)

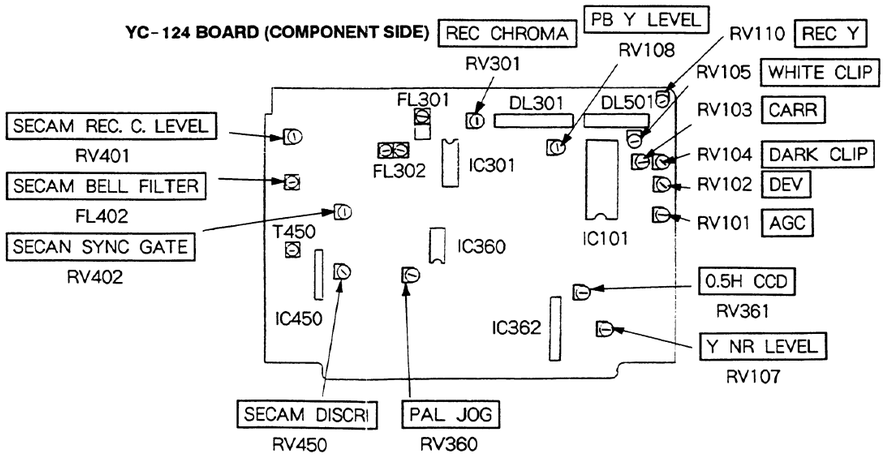


7-10. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM

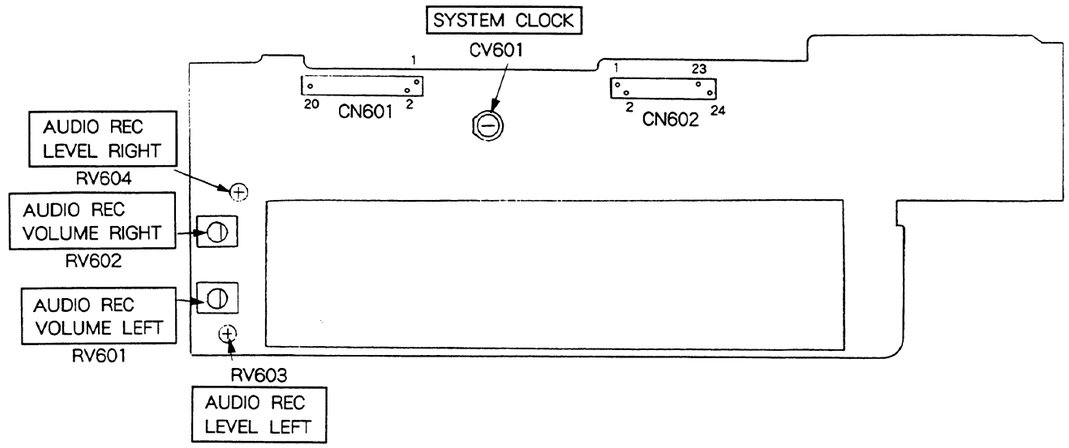
MA-140 BOARD (COMPONENT SIDE)



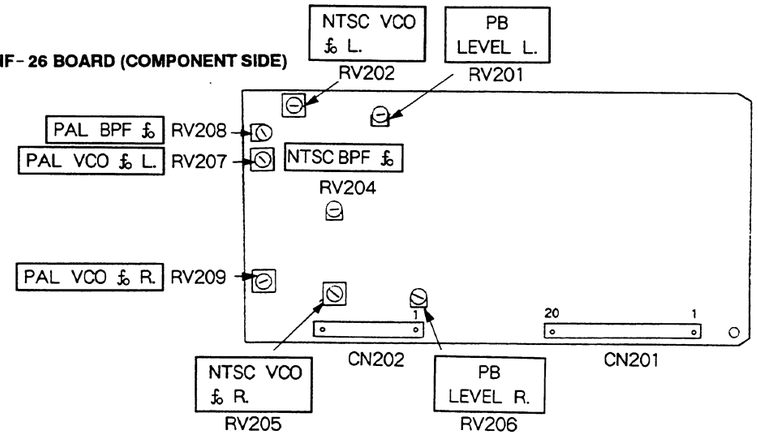
YC-124 BOARD (COMPONENT SIDE)



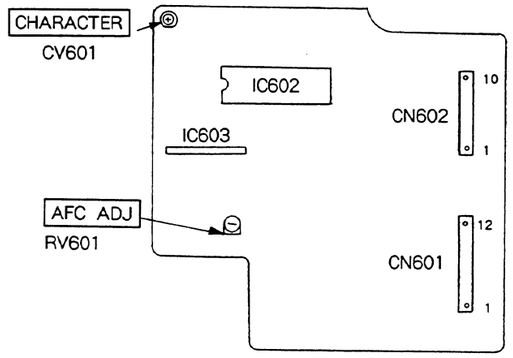
MF-167 BOARD (COMPONENT SIDE)



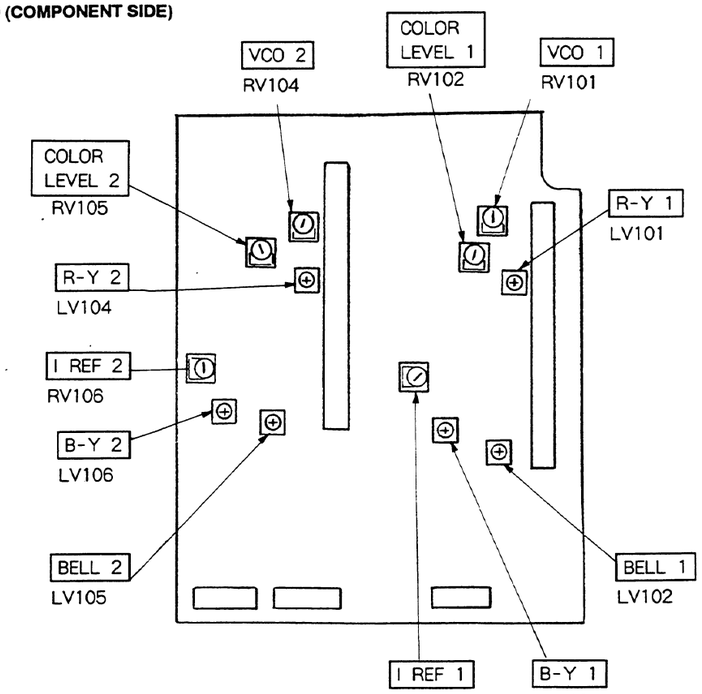
HF-26 BOARD (COMPONENT SIDE)



CG-15 BOARD(COMPONENT SIDE)

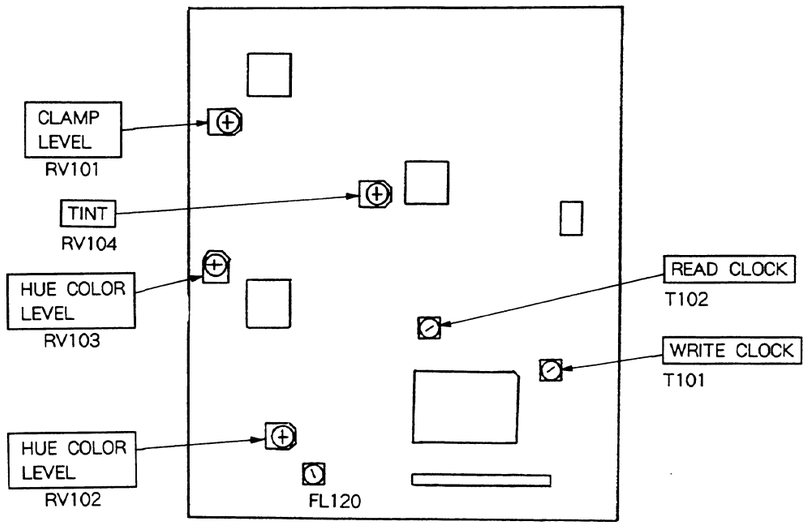


TC-27 BOARD (COMPONENT SIDE)



RV103 LV103

DG-11 BOARD (COMPONENT SIDE)



9-973-254-12

Sony Corporation
Home Video Group

English
9211671-1
Printed in Japan

Published by Customer Relations and Service Group

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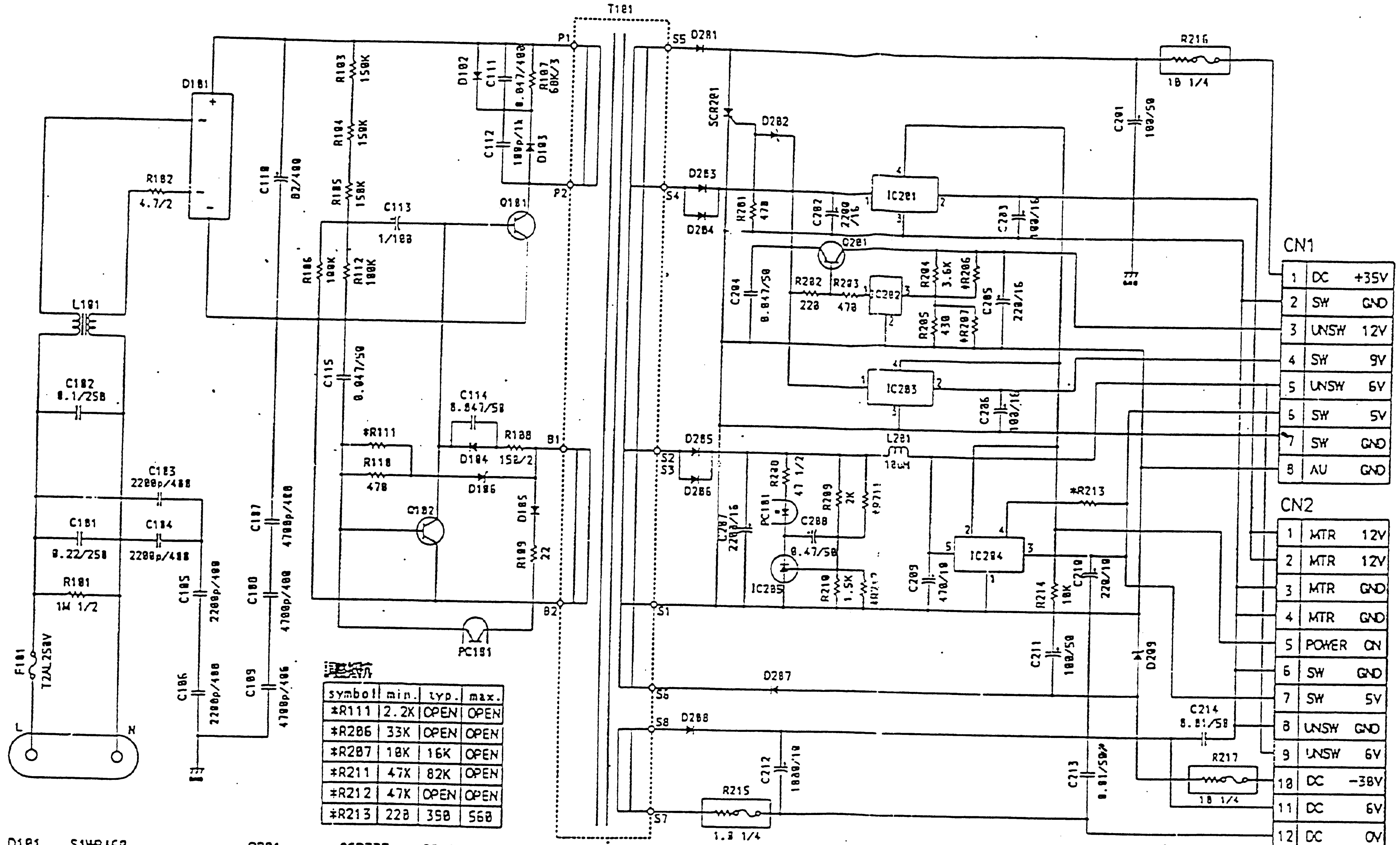


選別

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	350	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	ON3171
Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390
SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3050CA
IC205	HA17431 or AN1431T

注	抵抗	Ω/W (指定なき1/4W)
	コンデンサ	μF/V (p 指定pF)

A3

UNIT	mm
ORIGINAL MODEL	VSX-1761
MODEL	VSX-1761
PART NO.	0-479-456-01
DESCRIPTION	SR-425 回路図
PART NO.	SB-D1594
	1-413-756-11
SHEET	10

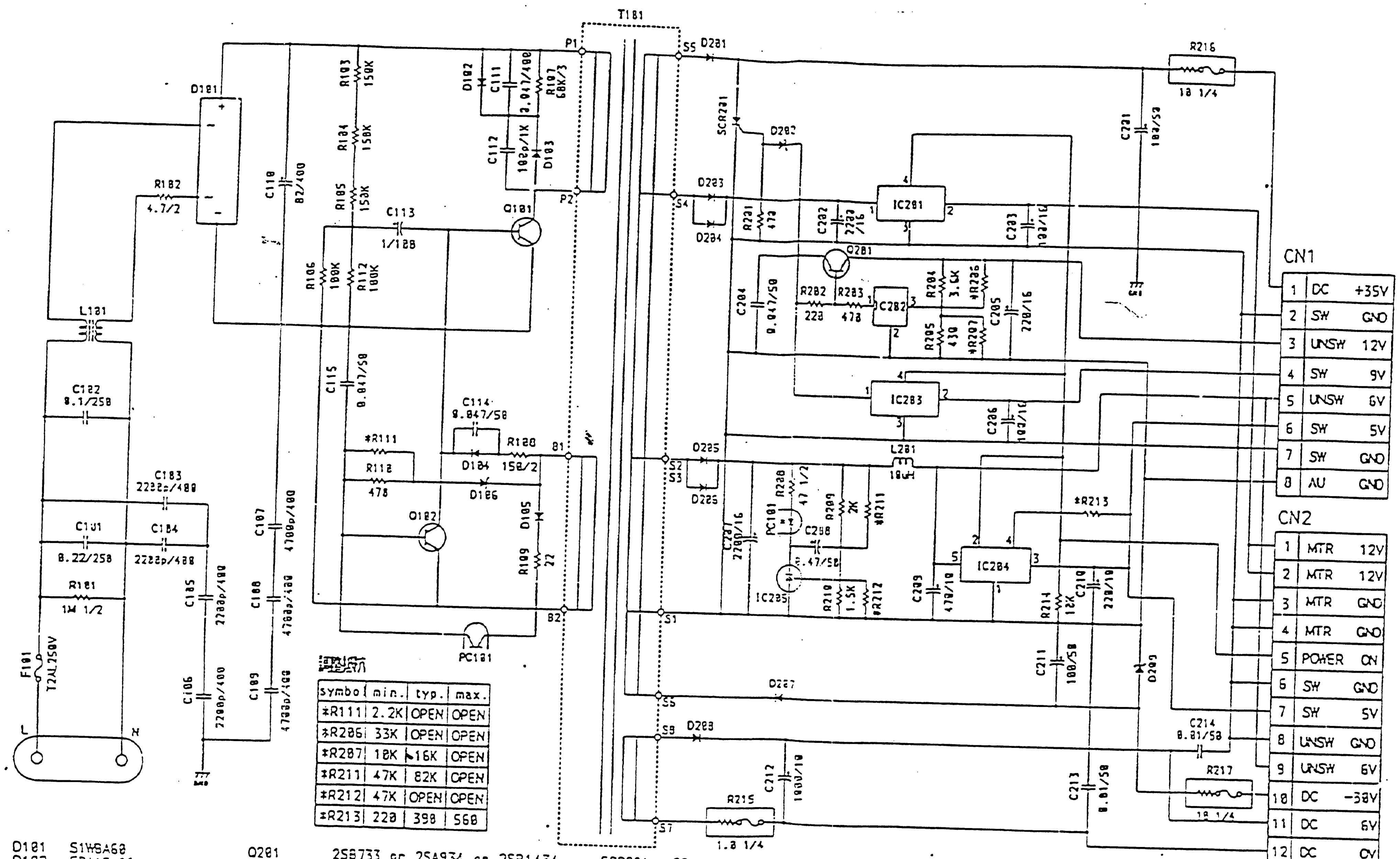
REVISION — DRAWN BY — PLANNED BY — CHECKED BY — APPROVED BY — SIGN.

ISSUED — REVISED

UPC POWER BLOCK

SLV-835 UY / UK2   SLV-825 UB

SONY



調整値

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101 S1WBA60
D102 ERA15-06 or AM01A
D103 ERA22-08 or EG01C
D104 ERA15-02 or 11ES2
D105 MA165
D106 RD3.0ES or MA4030
Q101 2SC4231
Q102 2SC3377
PC101 PS2561

Q201 2SB733 or 2SA934 or 2SB1434
D201, 207 AU02Z or ERA18-02
D202 RD16JSB or MA4160
D203, 204 S3L20U or ERC91-02 or RL4Z
D205, 206 D3S4M or RK44 or ERC81-004
D208 AK04 or ERA83-004
D209 RD39ES or MA4390

SCR201 2P4M
IC201 PQ12RF13
IC202 M5237L
IC203 PQ09RF11
IC204 SI-3052CA
IC205 HA17431 or AN1431T

単位	Ω/W	(指定なき場合 1/4W)
	コンデンサ μF/V	(p 表示 pF)

HISTORY | SUFFIX | ECN | REVISION | SIGN.

UNIT mm | TOLERANCE | USED ON
ANGLE 3÷4
SCALE
ORIGINAL MODEL VSX-1760
MATERIAL (COLOR) | FINISH (COLOR)
DESCRIPTION
SR-426 回路図
SB-D1914

DRAWN BY | PLANNED BY | CHECKED BY | APPROVED BY | TENTATIVE
MODEL VSX-1760
PART NO. 0-479-512-01
PART NO. 1-413-757-11
SHEET 10

ISSUED ____ REVISED ____

A3

SCV-725VC/825VC

SONY

Symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R286	33K	OPEN	OPEN
*R287	18K	18K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D181	S1WBA60	
D182	ERA15-06 or MA81A	
D183	ERA22-08 or EG81C	
D184	ERA15-02 or 11ES2	
D185	MA165	
D186	RD3.6ES or MA4036	
Q181	2SC4231	
Q182	2SC3377	
PC181	CN3171	
D281	2SB733 or 2SA634 or 2SB1434	
D281, 287	AUB2Z or ERA15-02	
D282	RD15JSB or MA4168	
D283, 284	S3L2BU or ERC91-02 or RL4Z	
D285, 286	D3S4M or RK44 or ERC81-004	
D288	AK84 or ERA83-004	
D289	RD33ES or MA4390	
SCR281	2P4M	
IC281	PQ12RF13	
IC282	M5237L	
IC283	PQ09RF11	
IC284	S1-3852CA	
IC285	HA17431 or AN1431T	

CN1	1	DC +35V
	2	SW GND
	3	UNSW 12V
	4	SW 9V
	5	UNSW 6V
	6	SW 5V
	7	SW GND
	8	AU GND
CN2	1	MTR 12V
	2	MTR 12V
	3	MTR GND
	4	MTR GND
	5	POWER ON
	6	SW GND
	7	SW 5V
	8	UNSW GND
	9	UNSW 6V
	10	DC -38V
	11	DC 6V
	12	DC 9V

抵抗	Ω/W	(炭素皮膜 1/4W)
コンデンサ	μF/V	(ρ表示はpF)

UNIT: mm | ANGLE: 3rd | SCALE | TOLERANCE | USED ON | RANK | FAMILY | ORIGINAL MODEL: VSX-1762

MATERIAL (COLOR) | FINISH (COLOR)

DESCRIPTION

(J) SR-427 回路図

PART NO. SB-D1595

1-413-758-11

SHEET 10

DRAWN BY | PLANNED BY | CHECKED BY | APPROVED BY

MODEL: VSX-1762

PART NO: 0-479-513-01 (TENTATIVE)

HISTORY | SUFFIX | ECM-NO | REVISION | SIGN.

ISSUED ____ REVISED ____

KPL POWER BLOCK

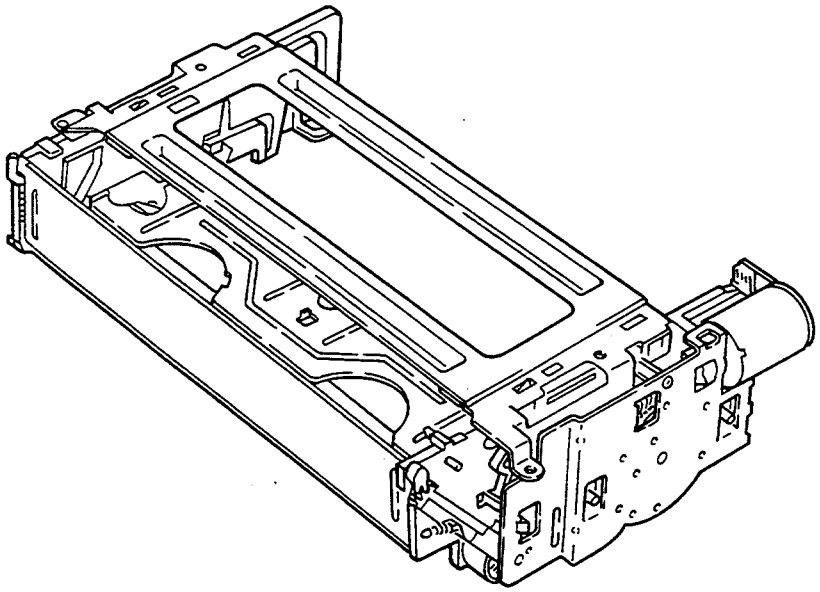
A3

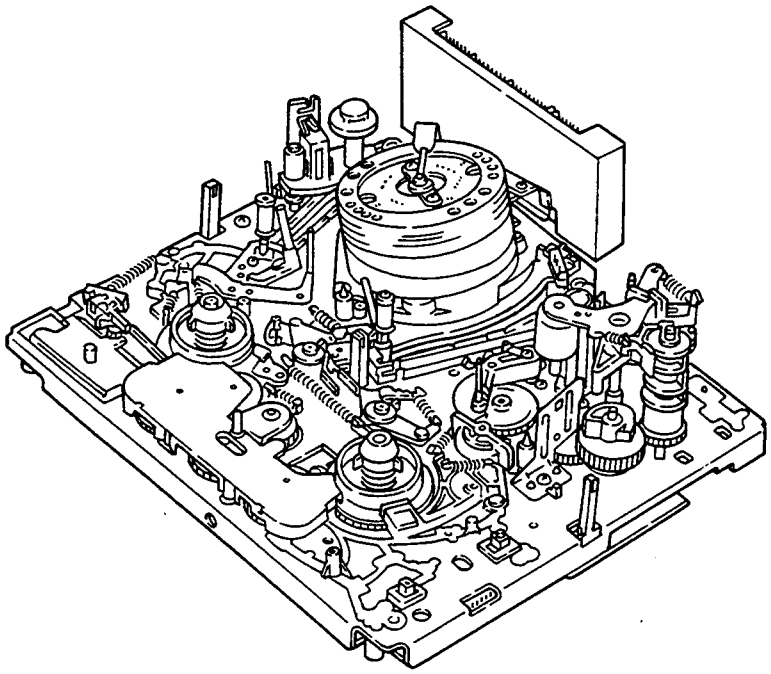
REF NO.	P/N	REMARKS
F 181	1-532-203-00	2A 250V
C 101	1-130-711-00	0.22 μF/250V
C 102	1-130-710-00	0.1 μF/250V
C 103	1-161-742-00	CERAMIC 2200PF/400V
C 104	1-161-742-00	〃
C 105	〃	〃
C 106	〃	〃
C 107	1-162-599-12	CERAMIC 4700PF/400V
C 108	〃	〃
C 109	〃	〃
C 110	1-125-497-11	100 μF/400V (ORIGINAL 82 μF/400V)
C 111	1-136-207-11	0.047 μF/630V (〃 400V)
C 112	1-162-558-11	100PF/2KV
C 113	1-126-772-11	1 μF/100V
C 114	1-137-420-11	MAILAR 0.047 μF/100V
C 115	〃	〃
C 201	1-124-122-11	100 μF/50V (85 DEG TYPE)
C 202	1-128-320-11	2200 μF/16V (105 DEG TYPE)
C 203	1-126-933-11	100 μF/16V (85 DEG TYPE)
C 204	1-137-420-11	MAILAR 0.047 μF/100V
C 205	1-126-934-11	220 μF/16V
C 206	1-126-933-11	100 μF/16V
C 207	1-128-320-11	2200 μF/16V (105 DEG TYPE)
C 208	1-124-902-11	0.47 μF/50V
C 209	1-126-947-11	470 μF/16V (85 DEG TYPE)
C 210	1-126-934-11	220 μF/16V (〃)
C 211	1-124-122-11	100 μF/50V (〃)
C 212	1-124-557-11	1000 μF/25V (〃)
C 213	1-137-370-11	MAILAR 0.01 μF/50V
C 214	〃	〃
R 101	1-214-937-00	1M 1/2W
R 102	1-216-377-11	4.7Ω/2W (ORIGINAL 4.7Ω/2W CEMENT)
R 103	1-247-883-00	150K 1/4W
R 104	〃	〃
R 105	〃	〃
R 106	1-249-441-11	100K 1/4W
R 107	1-215-928-11	68K/3W
R 108	1-215-887-11	150Ω/2W
R 109	1-249-397-11	22 Ω 1/4W
R 110	1-249-413-11	470 1/4W
R 111	FOR ADJUSTMENT	
R 112	1-249-441-11	100K 1/4W
R 201	1-249-413-11	470 1/4W
R 202	1-249-409-11	220 1/4W
R 203	1-249-413-11	470 1/4W
R 204	1-247-844-11	3.6K 1/4W
R 205	1-247-822-11	430 1/4W
R 206	FOR ADJUSTMENT	
R 207	〃	
R 208	1-260-348-11	47 1/2W
R 209	1-247-838-00	2K

R 210	1-215-425-00	1.5K	
R 211	FOR ADJUSTMENT		
R 212	〃		
R 213	〃		
R 214	1-249-429-11	10K 1/4W	
R 215	1-219-149-11	FUSE RESISTOR 1 Ω 1/4W	
R 216	1-219-112-11	〃 10 Ω 1/4W	
R 217	〃	〃	
D 101	8-719-510-06	S1WA60	
D 102	8-719-304-63	RM11C	(ORIGINAL ERA15-06)
D 103	8-719-948-45	ERA22-08	
D 104	8-719-200-02	10E-2	
D 105	8-719-912-20	ISS120	(ORIGINAL MA165)
D 106	8-719-109-63	RD3.0ES-B2	
Q 101	8-729-204-94	2SC3559	(ORIGINAL 2SC4231)
Q 102	8-729-265-52	2SC2655	(〃 2SC3377)
PC 101	9-903-923-01	CN3171	
Q 201	8-729-140-93	2SB733-34	
D 201	8-719-313-16	AU02A	(ORIGINAL ERA18-02)
D 202	8-719-114-82	RD16JSB1	
D 203	8-719-920-67	ERC91-02	
D 204	〃	〃	
D 205	8-719-981-00	ERC81-004	
D 206	〃	〃	
D 207	8-719-313-16	AU02A	
D 208	8-719-980-78	ERA83-006	(ORIGINAL ERA83-004)
D 209	8-719-110-88	RD39ES-B	(〃 MA4390)
SCR 201	8-719-104-17	2P5M	(ORIGINAL 2P4M 500V →600V)
IC 201	NOTHING	PQ12RF13	(PQ12RF11 9-902-066-01)
IC 202	8-759-632-07	M5237L	
IC 203	9-902-066-01	PQ12RF11	
IC 204	8-749-920-43	SI3050CA	(SI-3050CA)
IC 205	8-759-420-19	AN1431T	(ORIGANAL HA17431P)
L 181	1-421-915-11	CHALK COIL	
L 201	9-998-937-01	〃 10μF	
AC INLET	1-540-054-11	AC INLET	
T 101	NO SUBSTITUTION (SWITCHING TRANSF)		

VHS MECHANICAL ADJUSTMENT MANUAL II

- Please use in conjunction with the SERVICE MANUAL.
- This VHS MECHANICAL ADJUSTMENT MANUAL II can be used for NTSC system and PAL system.





MICROFILM

VHS VIDEO RECORDER

SONY®

TABLE OF CONTENTS

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

Note : Refer to "Replacement Method" in the Service Guide for instructions on replacing the cabinet and PC boards. DO not perform cassette loading or threading with the VCR positioned upside-down.

1-1. LOADING AND UNLOADING VIDEO CASSETTES WITH THE POWER OFF. (Fig. 1-1.)

1-1-1. Manual loading and unloading

1) Rotate the loading motor in the direction of arrow Ⓐ until loading is compleated.
(When unloading, rotate the loading motor in the direction of arrowⒷ.)

1-1-2. Loading and unloading using a separate power source.

1) Cassette loading is performed by applying approx. 10V (300 mA) to the power terminal of the loading motor using a stabilized DC power source.
(When unloading, apply the same voltage to the opposite polarity of the power terminal.)

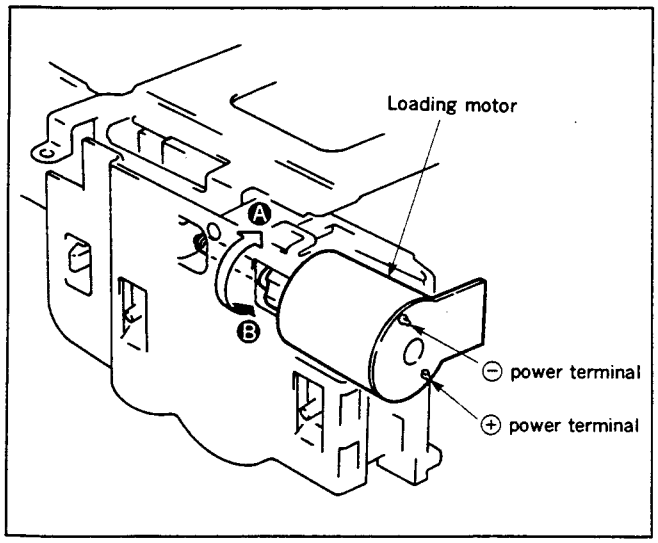


Fig. 1-1.

1-2. THREADING AND UNTHREADING WITH THE POWER OFF. (Fig. 1-2)

1-2-1. Manual threading and unthreading

1) Rotate the cam motor ❶ in the direction of arrow Ⓐ until threading is completed.
(When unthreading, rotate the cam motor ❶ in the direction of arrowⒷ.)

1-2-2. Threading and unthreading using a separate power source.

1) Threading is performed by applying approx. 10V (500 mA) to the power terminal for the cam motor ❶ using a DC stabilized power source.
(When unthreading, apply the same voltage to the opposite polarity of the power terminal.)

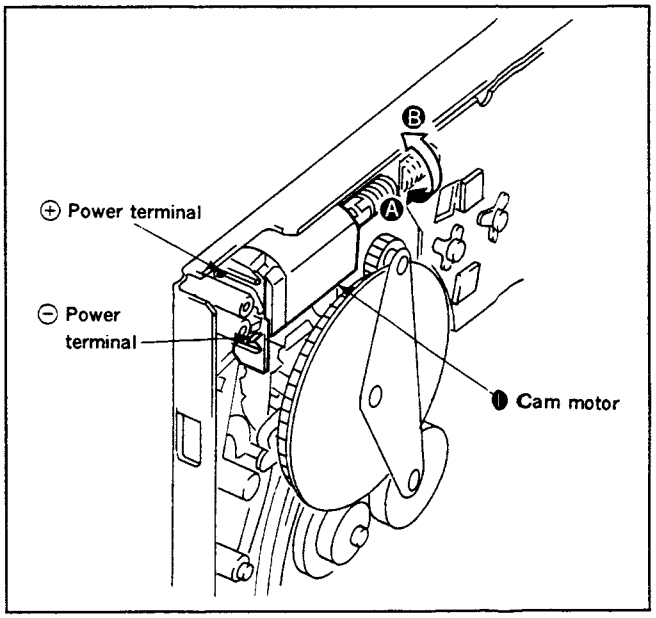


Fig. 1-2.

1-3. TO COMPLETE THREADING WITH THE FL CASSETTE CONTROLLER REMOVED. (Fig. 1-3)

1) Unplug the AC power cord from the power outlet.
2) Shield the supply, take-up sensors and the LED with black-masking tape.
3) Hold the cassatte down switch depressed by taping it, etc.
4) Plug the AC power cord into a power outlet.
   (At this time, the power should turn on and the tape rewinds for approx. 10 seconds, and the power turns off.)
5) Turn the power switch ON so that the mechanism is ready for loading.

Note : In this condition, the VTR is ready to operate in the different operating modes, including the record mode. At this time, rewind the tape for at least 15 seconds, then perform fast forward (FF).

Note : Following the above, be sure to reset the mechanism to the previous state as outlined below.

1) Remove the black-masking tape shielding the supply and take-up sensors, the LED and the tape holding cassette down switch.
2) Unplug the AC power cord from the power outlet to reset the system control microprocessor.

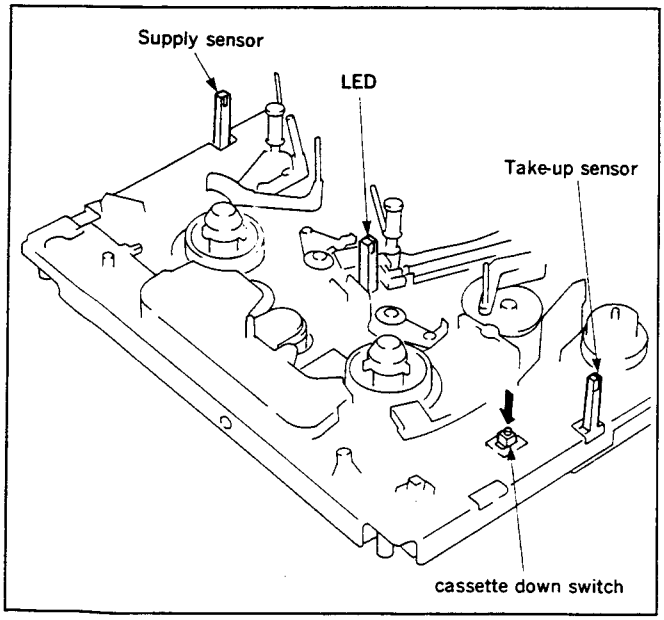


Fig. 1-3.

2. PERIODICAL INSPECTION AND REPLACEMENT

We recommend performing the following periodical inspections and maintenance in order to ensure that the unit operates in top condition and offers full performance, as well as realizes a long life of the mechanism and tapes.

* Be sure to perform the following maintenance procedures after the unit is repaired (regardless how long the unit has been used.)

2-1. CLEANING THE ROTARY HEAD DISC ASS'Y

1) Press Attach a deer skin cloth (Jig. Ref. No. J-7) soaked in cleaning solution (Jig. Ref. No. J-5) lightly to the rotary drum ass'y, then turn the rotary head disc slowly by hand to clean the surface of the rotary drum ass'y. (At this time, do not turn on the power motor to rotate the rotary head disc for cleaning.)
2) Also, do not wipe the drum ass'y by moving the deer skin cloth vertically across the head as this could damage of the tip of the head.

2-2. CLEANING THE TAPE TRANSPORT SYSTEM

1) Clean the tape transport surfaces (tape guide, a drum ass'y surfaces, capstan, pinch roller, etc.) with a deer skin cloth soaked in an approved in the recommended cleaning solution.

2-3. CLEANING THE DRIVE SYSTEM

1) Wipe the drive mechanism with an ordinary cloth soaked in an approved cleaning solution.

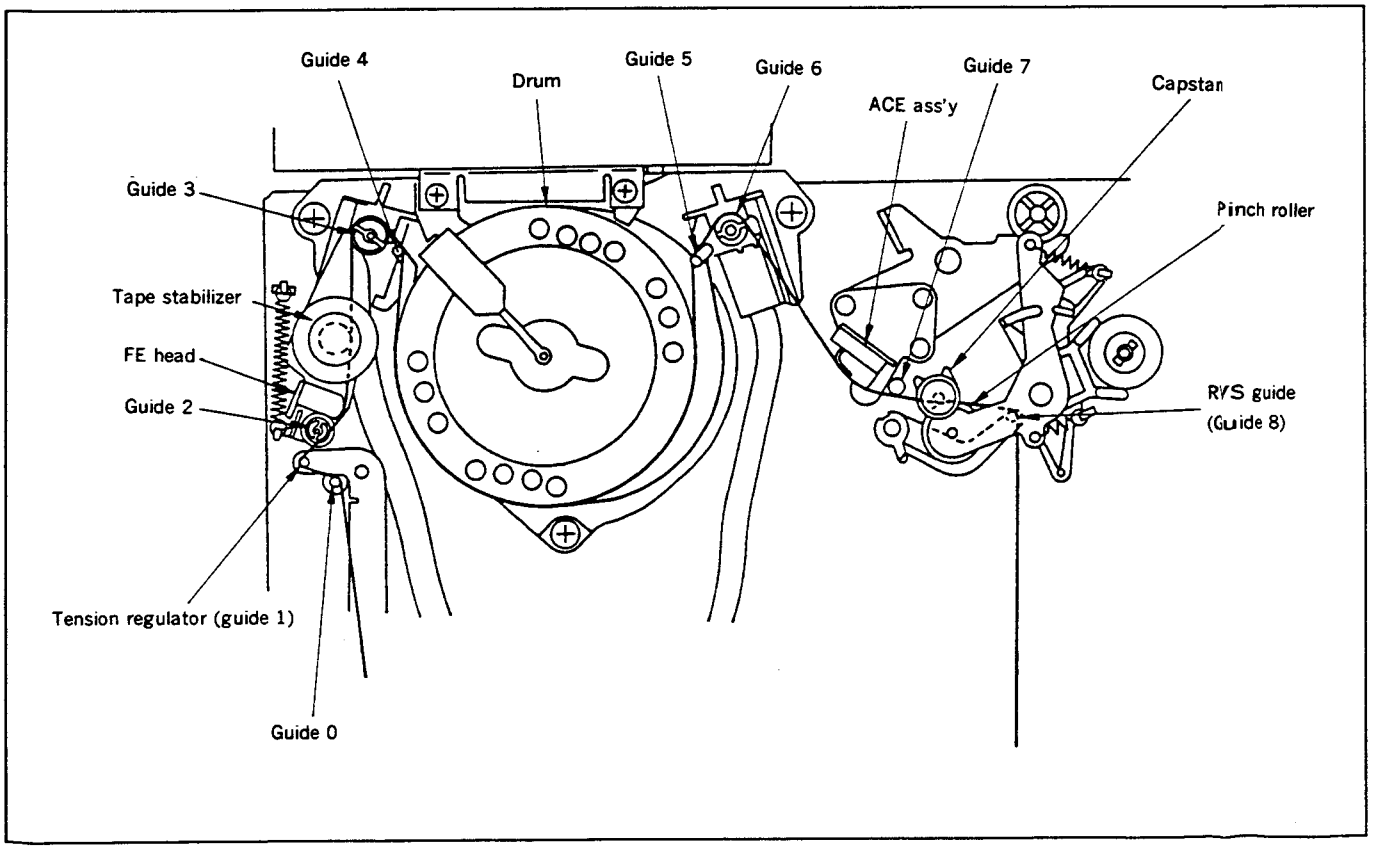


Fig. 2-1.

2-4. PERIODIC MAINTENANCE

Location of Maintenance and Check		User Hours / Replacement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Performance Check	Clean tape running surfaces	——	○	○	○	○	○	○	○	○	○	○	Always perform after repair.
	Clean, degauss ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Clean, degauss video disc ass'y	——	○	○	○	○	○	○	○	○	○	○	Head life is greatly affected by environment and method of use.
Driving System	Reel belt	3-736-013-01	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
Tape Running System	Abnormal noise	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace source of abnormal noise.
	Back tension measurement	——	–	☆	–	☆	–	☆	–	☆	–	☆	Check according to 4-1-1. Spec : 24 — 34g/cm (Measured with torque cassette)
	Brake system check	——	–	☆	–	☆	–	☆	–	☆	–	☆	
	REC/PB function check	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
	Forward torque measurement		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Spec : 80 — 140 g•cm

○ Cleaning ☆ Check

Note : Refer to the above items for part replacement when performing an overhaul.

2-5. SERVICE TOOLS AND JIGS

Ref. No.	Description	Part No.	Printing on jig	Remarks
J-1	Master plane	H-7099-279-H		
J-2	Reel disc height jig	H-7099-038-H		
J-3	Torque gauge adapter	H-7099-035-H		
J-4	Torque gauge	H-7099-039-H		
J-5	0.93mm Allen wrench	H-7099-202-H		
J-6	NTSC torque cassette VHT-063S PAL torque cassette	J-6082-011-A J-6082-066-A		For rewind torque and back tension
	NTSC torque cassette VHT-404S PAL torque cassette	J-6082-012-A J-6082-067-A		For cue/review
J-7	NTSC alignment tape JVC-MH-1 PAL alignment tape JVC-MH-2	H-7099-046-H H-7099-052-H		
	NTSC Hi-Fi alignment tape PAL Hi-Fi alignment tape	H-7099-153-H H-7099-175-H		
J-8	Cleaning fluid	Y-2031-001-0	———	
J-9	Chamois cloth	2-034-697-00	———	Cleaning
J-10	Head degausser	Widely available	———	Video, audio head degaussing
J-11	Small adjustment mirror (with handle) Small adjustment mirror (mirror only)	J-6080-029-A J-6080-030-1	SL-5052	For tape path and tape running adjustment and check

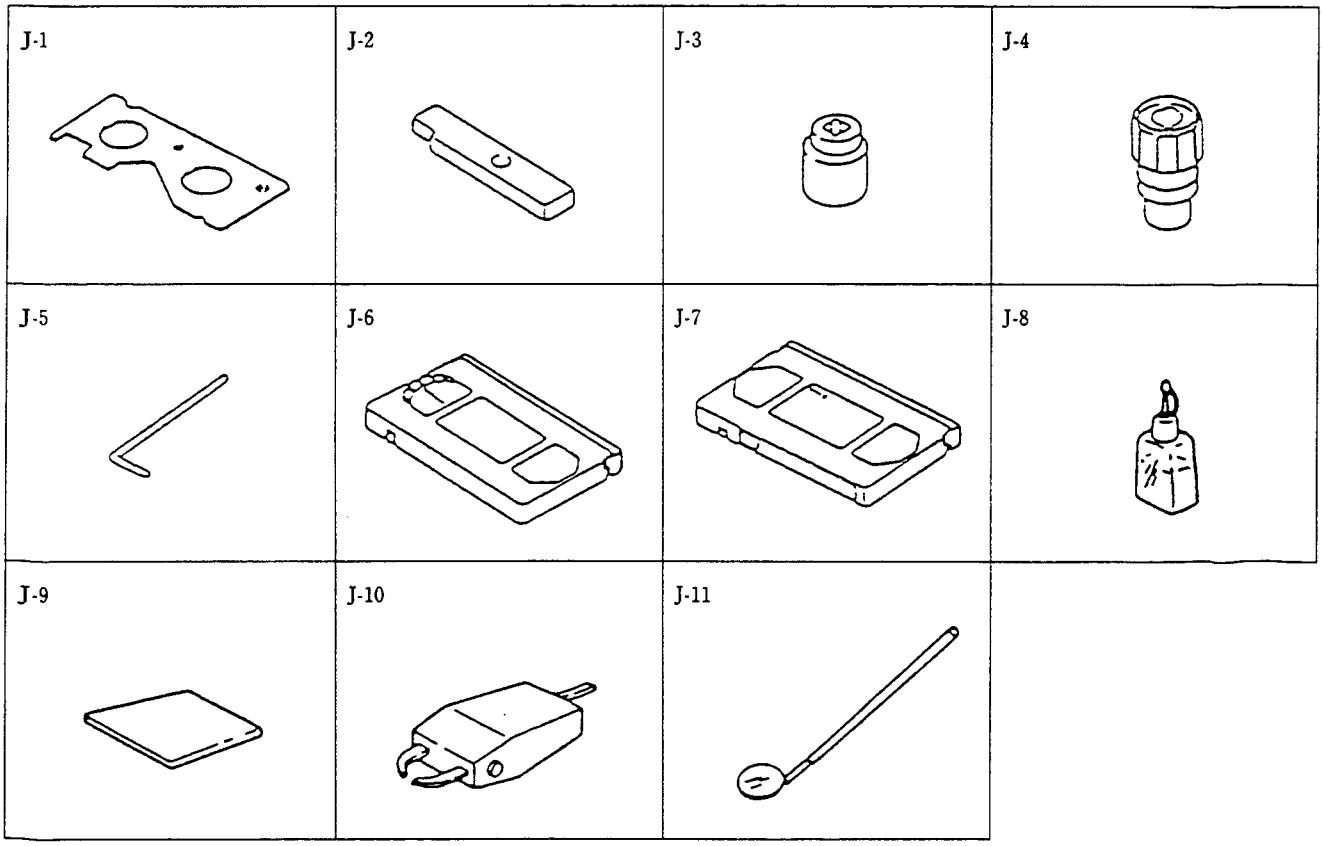


Fig. 2-2. Service tools and jigs

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

Note : ○ Refer to "Replacement Method" in the Service Guide for replacing the cabinet and PC boards.
○ When mounting parts, reverse the replacement procedure while referring to "Precautions on Mounting Parts".

3-1. FL MECHANISM

3-1-1. FL door (Fig. 3-1.)

1) Press the claw ❶ in the direction of arrow Ⓐ, then remove the FL door ❷ in the direction of arrow Ⓑ.

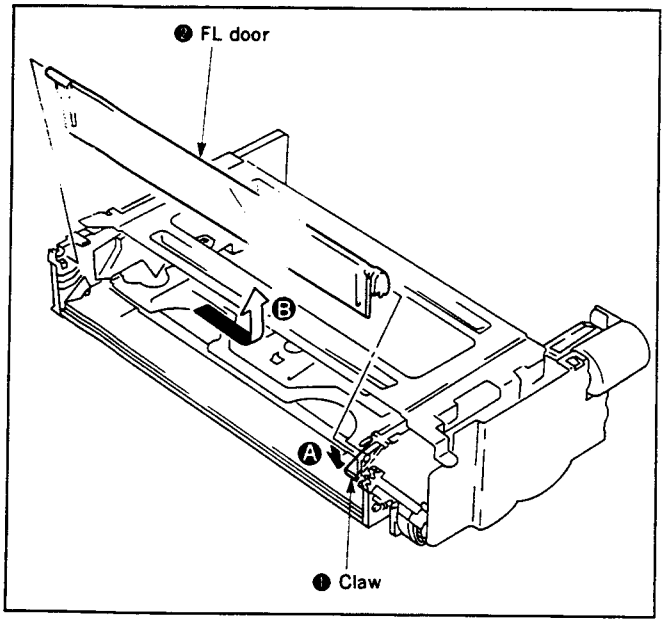


Fig. 3-1.

3-1-2. Erasure protection lever (Fig. 3-2)

1) Remove the spring ❶.
2) Disengage the claw ❷, then slide the erasure protection lever ❸ in the direction of arrow Ⓐ.
3) Disengage the erasure protection lever ❸ in the direction of arrow Ⓑ.

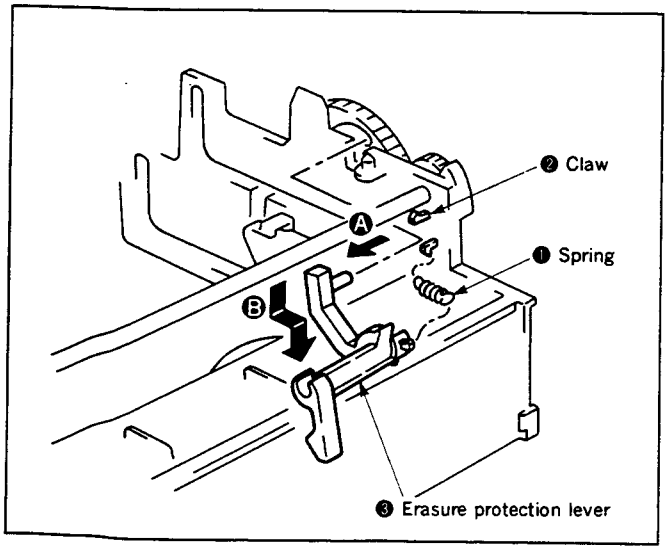


Fig. 3-2.

○ After grease coated parts such as gears are replaced, re-grease the replaced part.
○ Do not touch the guides (taped surface) and brake shoe directly with your fingers or grease them, etc.
○ Gears must be mounted so that they mesh with each other.

3-1-3. Gear cover ass'y (Fig. 3-3)

1) Disengage the four claws ❶, then remove the gear cover ass'y ❷.

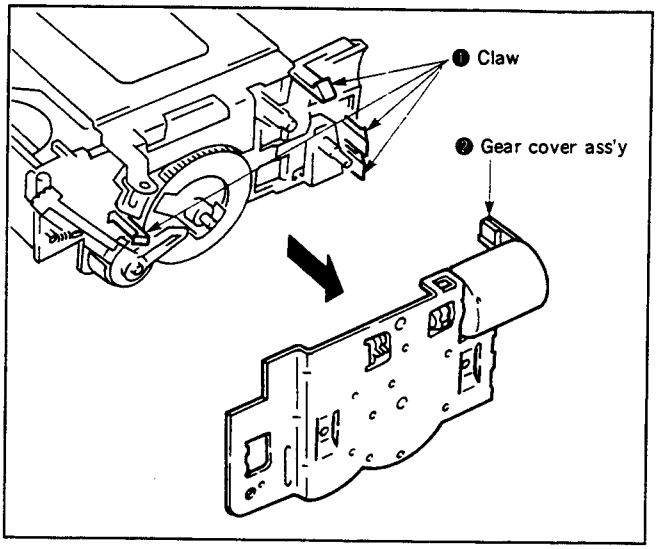


Fig. 3-3.

3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing (Fig. 3-4)

1) Remove washer 3 ❶, then pull out the worm wheel (FL) ❷.
2) Remove the two screws ❸, then remove the loading motor ❹.
3) Remove the worm gear (FL) ❺ and worm bearing ❻.

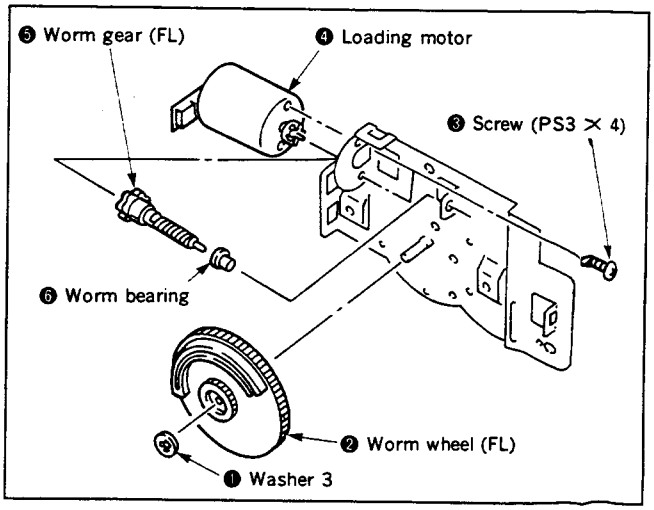


Fig. 3-4.

3-1-5. Door OPEN/CLOSE arm (Fig. 3-5)

1) Remove the spring ❶.
2) Pull out the door OPEN/CLOSE arm ❷.

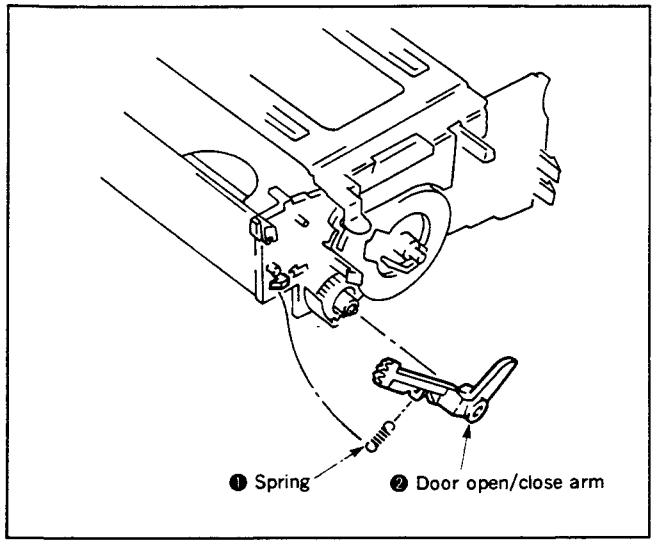


Fig. 3-5.

[Precautions on remounting] (Figs. 3-6 and 3-7.)

- When mounting the gear cover ass'y, match up the two holes on the gear cover ass'y with the two holes on the worm wheel (FL) and then with the hole on the right drive arm ass'y.
- Mesh the FL door and the door OPEN/CLOSE arm together as shown in Ⓐ section in the figure below.
- The erasure protection lever shaft must fit into the groove on the left drive arm ass'y.

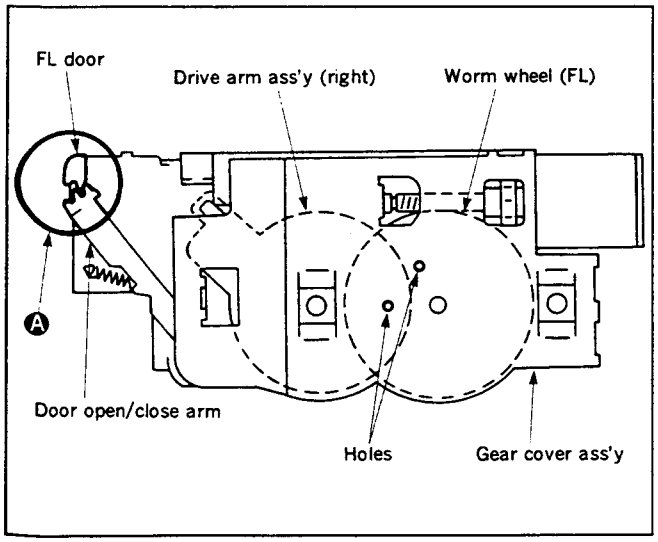


Fig. 3-6.

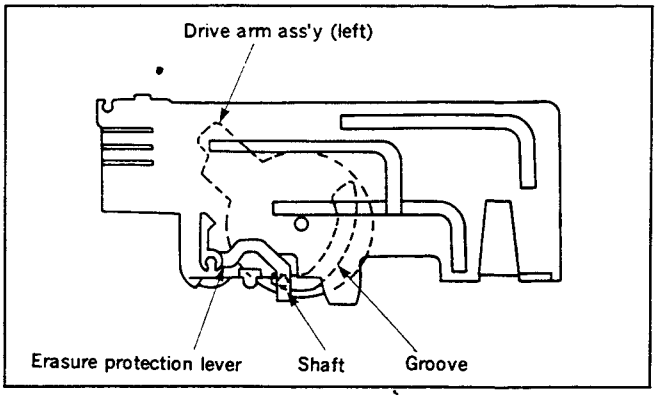


Fig. 3-7.

3-2. TS ASS'Y AND GUIDE ROLLER ASS'Y No. 2 (Fig. 3-8)

1) Remove the spring ❶.
2) Remove the TS ass'y ❷ in the direction of arrow Ⓐ.
3) Turn guide roller ass'y No. 2 ❸ in the direction of arrow Ⓑ and pull it out.

[Precautions on remounting]

- Clean the surface of guide roller No. 2 ❸ where the tape is attached.
- Apply lubricant over the section shown in Figure A below.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

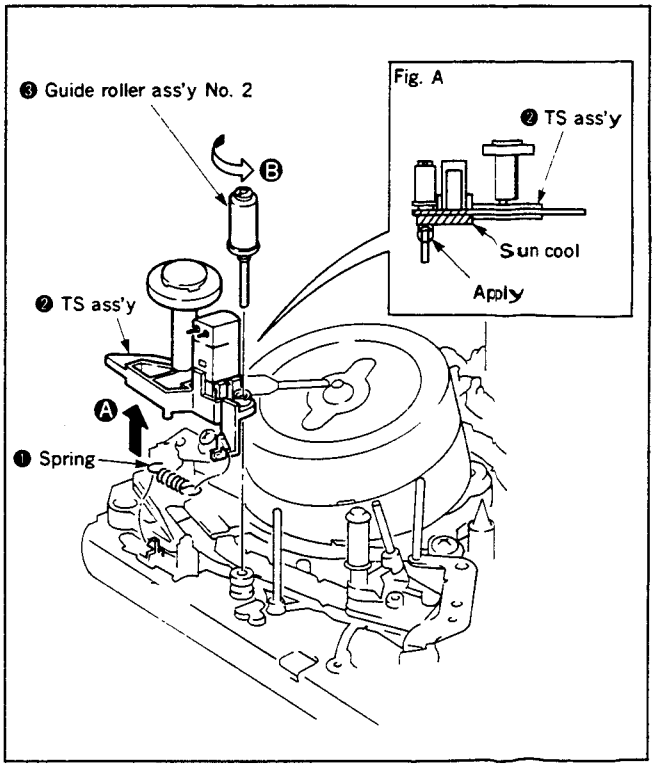


Fig. 3-8.

3-3. ACE ASS'Y (Fig. 3-9)

1) Slide the torsion coil spring ❶ in the direction of the arrow.
2) Remove the nylon nut N3 ❷, then pull out the ACE ass'y ❸.
3) Remove the ACE adjuster screw ❹.

[Precautions on remounting]

- Clean the surface of the ACE ass'y ❸ where the tape is attached.
- Hook both ends of the torsion coil spring ❶ to the ass'y as shown in Figure A below.
- Adjust the ACE adjuster screw ❹ to the height shown in Figure A.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

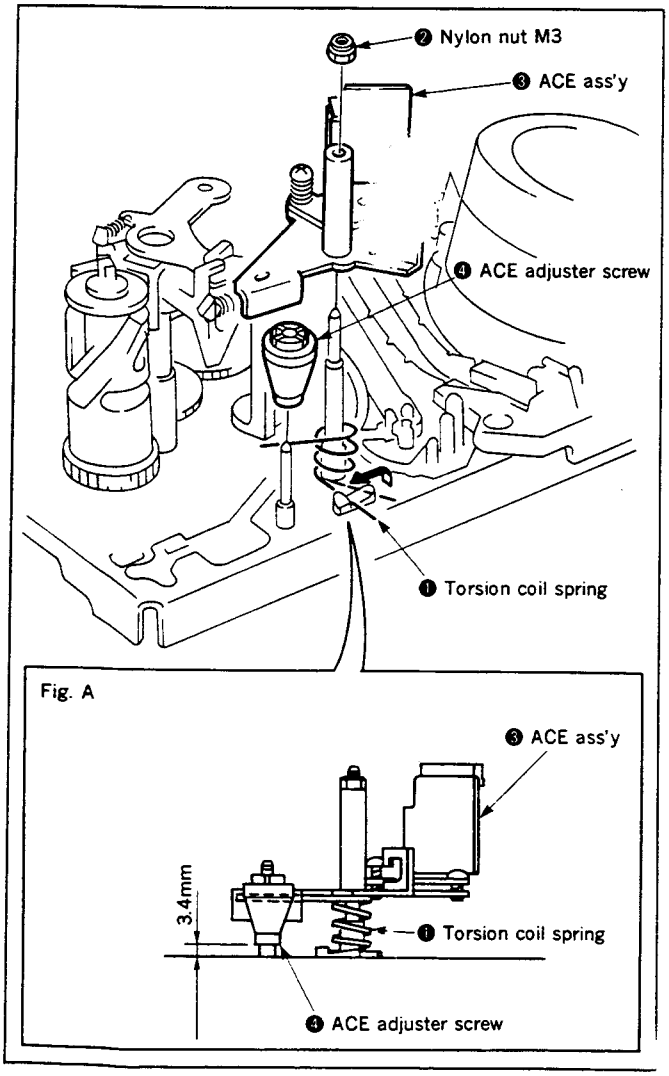


Fig. 3-9.

3-4. DRUM ASS'Y (Fig. 3-10)

1) Remove the three screws ❶, then remove the drum ass'y ❷.

[Precautions on remounting]

- Do not touch the head tips ❸ and the ground plate ❹ directly with your fingers or tools.
- Clean the surface of the drum ass'y ❷ where a tape is attached.
- The stopper ❺ must be attached at the point shown in the figure below
- Screws must be fastened with a 6kg•cm (±1kg•cm) screw fastening torque. (The screws can be mounted in any order.)

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

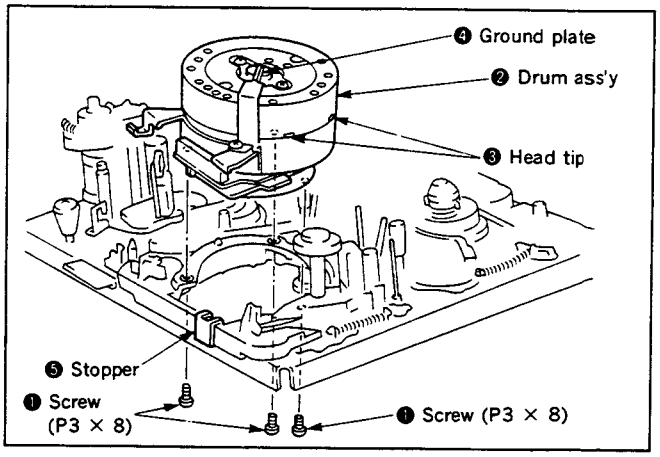


Fig. 3-10.

3-5. DRUM BASE ASS'Y (Fig. 3-11)

1) Remove the drum. (Refer to 3-4.)
2) Remove the three screws ❶, then remove the drum base ass'y ❷.

[Precautions on remounting]

- The spacer ❸ for the drum base must be mounted in its previous position as shown in the figure below. (Note that some units do not feature the spacer ❸.)
- Fastening torque must be 10kg•cm (±1kg•cm)
- The screws must be mounted in order of (a),(b) and (c).

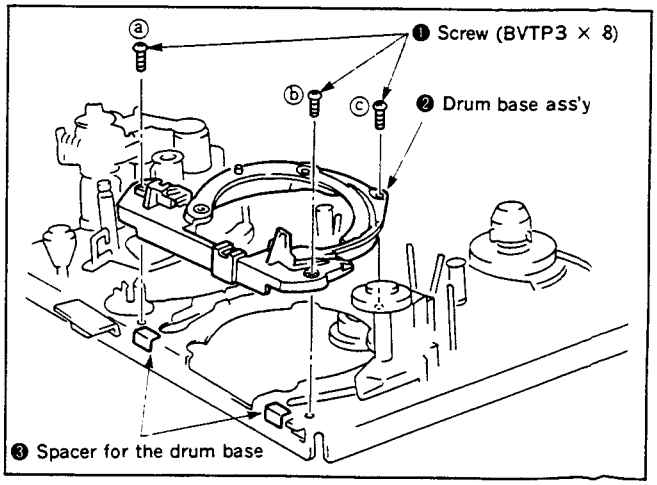


Fig. 3-11.

3-6. PINCH ROLLER ASS'Y AND ELEVATOR CAM (Fig. 3-12)

1) Remove the two claws ❶, then pull out the stopper ❷.
2) Pull out the pinch roller ass'y ❸.
3) Pull out the elevator cam ❹.

[Precautions on remounting]

○ Clean the surface of the pinch roller ass'y ❸ where the tape is attached.
○ Match up the ▯ marks on the elevator cam ❹ and cam gear, press ❺.

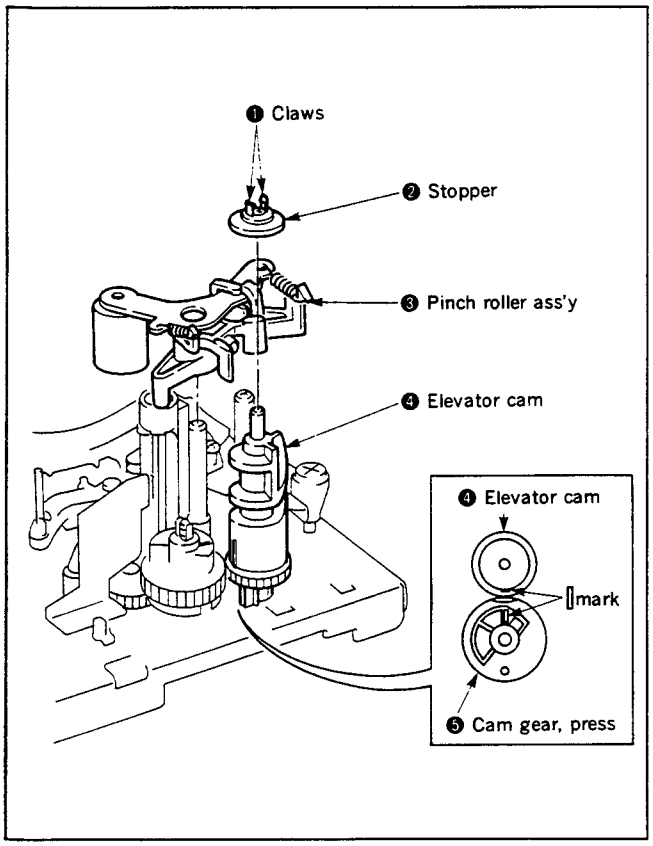


Fig. 3-12.

3-7. CAM GEAR, PRESS AND TRANSMISSION GEAR (Fig. 3-13)

1) Remove the pinch roller ass'y. (Refer to 3-6.)
2) Remove the screw ❶, then remove the lid release plate ❷.
3) Remove the two claws ❸, then pull out the cam gear, press ❹.
4) Remove the washer 2 ❺, then pull out the transmission gear ❻.

[Precautions on remounting]

○ Check the top and bottom of the transmission gear ❻.
○ Match up the hole ❼ on the chassis with the hole ❼ on the cam gear, press ❹.
○ Match up the ▯ mark on the cam gear, press ❹ with the ▯ mark on the alleviator cam ❽.

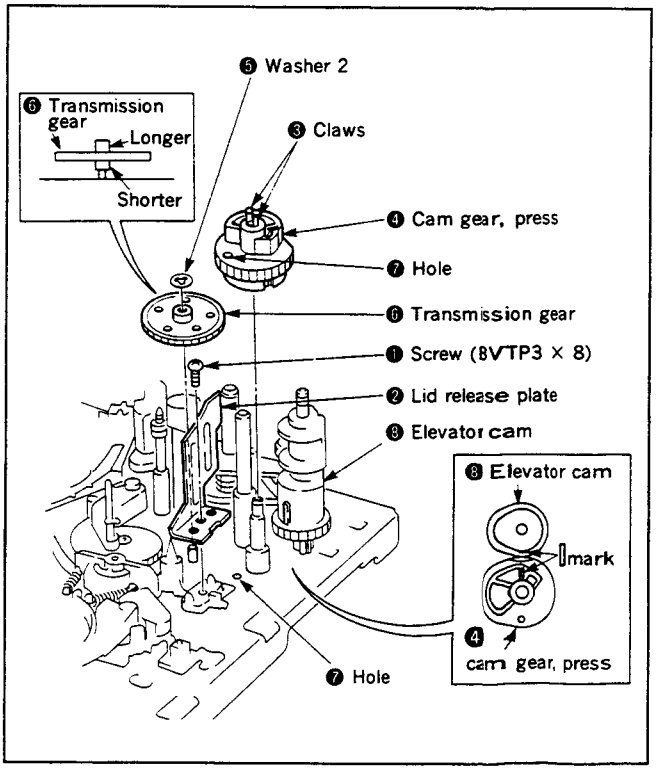


Fig. 3-13.

3-8. RVS ARM ASS'Y AND RVS CAM GEAR (Fig. 3-14)

1) Remove the nylon nut M2 ❶ and plastic washer ❷.
2) Disengage the claw ❸, then pull out the RVS arm ass'y ❹.
3) Remove washer 2 ❺, then pull out the RVS cam gear ❻.

[Precautions on remounting]

- The holes ❼ in the chassis and in the RVS cam gear ❻ must match up. Also, make sure to match up the holes ❾ on the cam gear, press ❽ and the chassis.
- The spring ❿ must be hooked as shown in Fig. A below.
- Clean the surface of the RVS arm ass'y ❹ where a tape is attached.
- Apply 1/2 drop of lubricant to the shaft ⓫.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

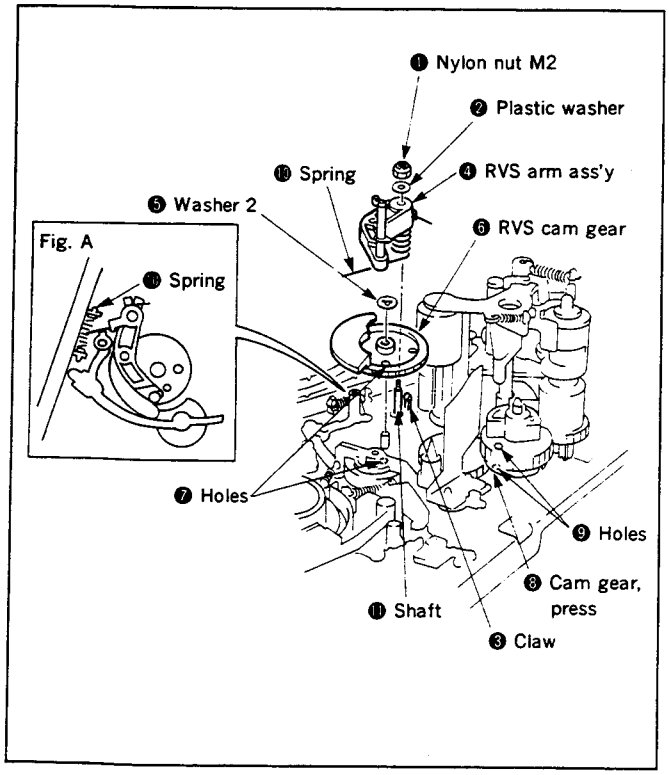


Fig. 3-14.

3-9. GUIDE No. 7 (Fig. 3-15)

1) Remove the nylon nut M3 ❶.
2) Pull out guide flange No. 7 ❷, guide sleeve No. 7 ❸, guide flange No. 7 ❹ and compression coil spring ❺ in the given order.

[Precautions on remounting]

- Clean the surface of the guide sleeve No. 7 ❸ where the tape is attached.
- Adjust the height of guide No. 7 to the height shown in Fig. A below.

[Adjustment after replacement]

- Perform tape path adjustments as described in 4-1.

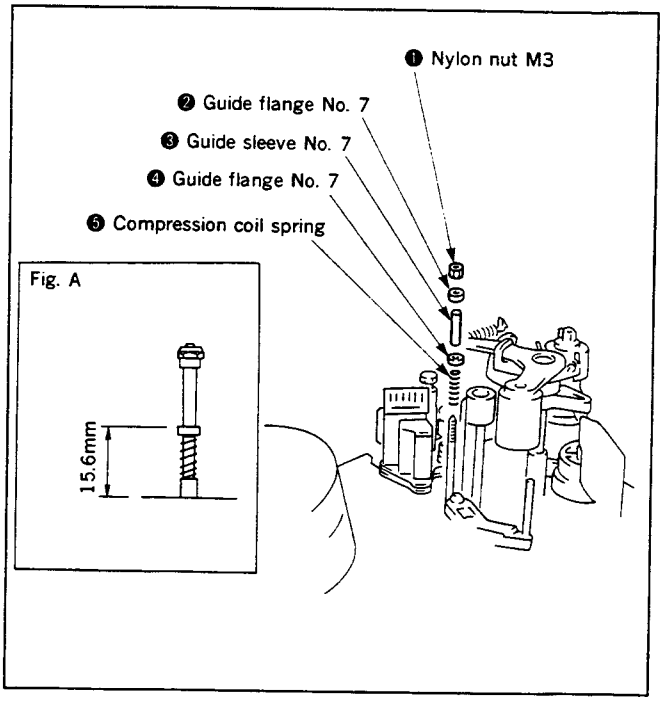


Fig. 3-15.

3-10. S-BRAKE ASS'Y, T-BRAKE ASS'Y (Fig. 3-16)

1) Remove the spring ❶.
2) Disengage the claw ❷, then pull out the S-brake ass'y ❸.
3) Disengage the claw ❹, then pull out the T-brake ass'y ❺.

[Precautions on remounting]

- ○ Do not touch the brake shoes for the respective S-brake ❸ and T-brake ❺ assy's directly with your fingers.
- ○ Do not hold on to the S-brake ❸ and T-brake ❺ assy's by the arms when inserting them.
- ○ The T-brake ass'y ❺ must be positioned above the S-brake ass'y ❸ as shown in Fig. A below.

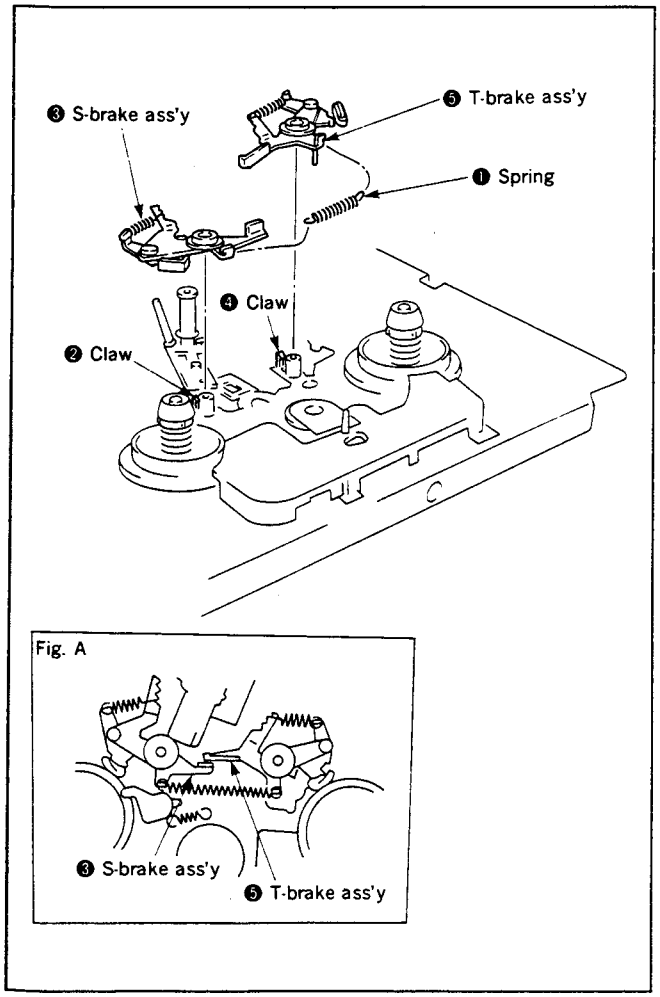


Fig. 3-16.

3-11. T-SOFT BRAKE ASS'Y REV BRAKE ARM (Fig. 3-17)

1) Remove the end of the spring ❶ from the REV brake arm ❷.
2) Remove the end of the spring ❸ from the chassis.
3) Disengage the claw ❹, then pull out the T-soft brake ass'y ❺.
4) Disengage the claw ❻, then pull out the REV brake arm ❷.

[Precautions on remounting]

- ○ Do not touch the brake shoe of the T-soft brake ass'y ❺ directly with your fingers.

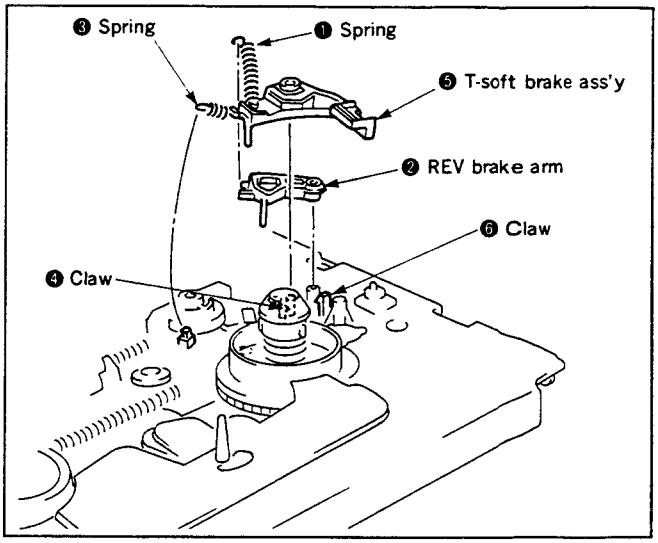


Fig. 3-17.

3-12. S-SOFT BRAKE ARM ASS'Y (Fig. 3-18)

1) Unhook the end of the spring ❶ from the chassis.
2) Disengage the claw ❷, then pull out the S-soft brake arm ass'y ❸.

[Precautions on remounting]

- ○ The S-soft brake arm ass'y must not clamp down the tension regulator band ass'y ❹ nor be positioned below the tension regulator band ❹.

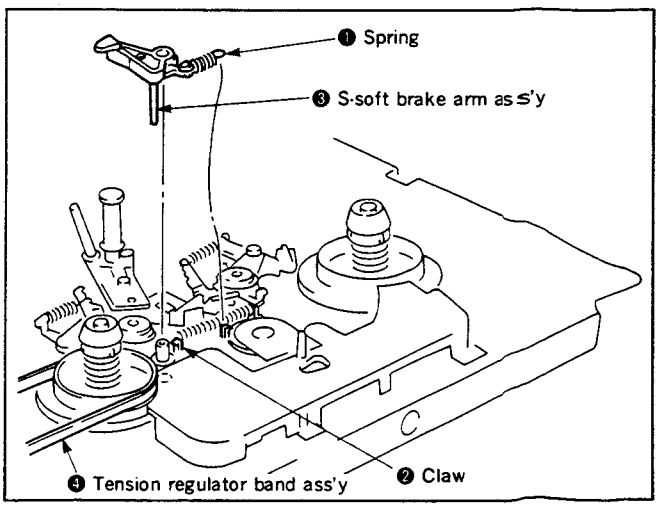


Fig. 3-18.

3-13. S-GUIDE AND T-GUIDE ROLLER ASSY'S (Fig. 3-19)

1) Loosen the setscrew ❶, then remove the S-guide roller ass'y ❷ by turning it in the direction of the arrow Ⓐ.
2) Loosen the setscrew ❸, then remove the T-guide roller ass'y ❹ by turning it in the direction of arrow Ⓑ.

[Precautions on remounting]

○ Clean the surfaces of the S-guide roller ❷ and T-guide roller assy's ❹ where a tape is attached.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

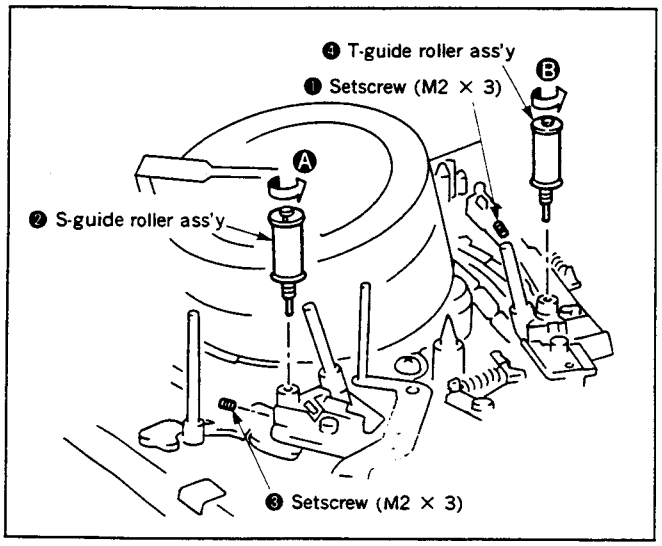


Fig. 3-19.

3-14. REEL LOCK RELEASE AND REW GEAR (Fig. 3-20)

1) Disengage the two claws ❶, then remove the reel lock release ❷ along with the spring ❸ (while the spring is still attached).
2) Next, pull out the REW gear ❹ with the spring bearing ❺ still attached).

[Precautions on remounting]

○ Make sure that the small thrust bearing ❻ remains attached.
○ Make sure that the two claws ❶ lock the real lock release ❷ in place.
○ Apply 1/2 drop of lubricant to the shaft ❼.
○ Make sure that the spring ❸ adheres to the reel lock release ❷ and that it fits inside the rib of the REW gear ❹.
○ Mount the REW gear ❹ by meshing it with gear ❽.

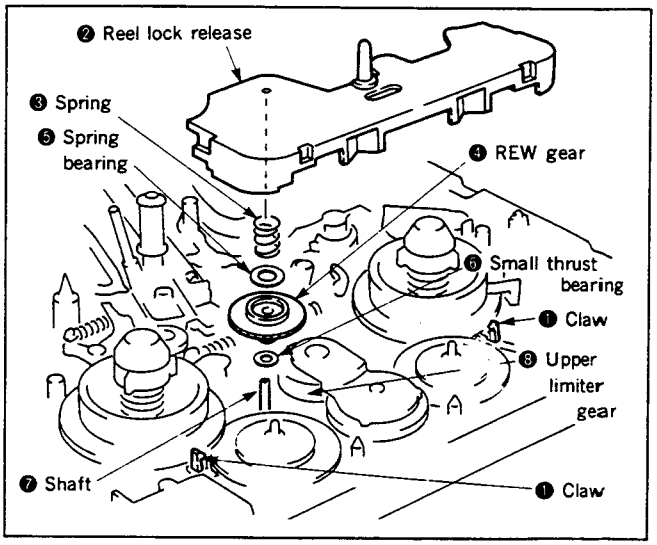


Fig. 3-20.

3-15. TENSION REGULATOR ARM ASS'Y, TENSION REGULATOR BAND ASS'Y (Fig. 3-21)

1) Remove the reel lock release ass'y. (Refer to Fig. 3-14.)
2) Disengage the three claws marked ❶ and the claw marked ❷, then remove the tension regulator band ass'y ❸.
3) Unhook the end of the spring ❹ from the chassis.
4) Disengage the claw ❺, then pull out the tension regulator arm ass'y ❻.

[Precautions on remounting]

- ○ Roll up the tension regulator band ❸ on the S-reel by turning the S-soft brake arm ass'y ❼ in the direction of the arrow.
- ○ Hook the spring ❹ at the center of the spring hook ❽.
- ○ Do not touch the brake shoe of the tension regulator band ass'y ❸ directly with your fingers.
- ○ Mount the tension regulator arm ass'y ❻ at the position shown in Fig. A below.

[Adjustment after replacement]

- ○ Check the back tension. (Refer to 4-1-1.)
- ○ Perform tape path adjustments as described in 4-1.

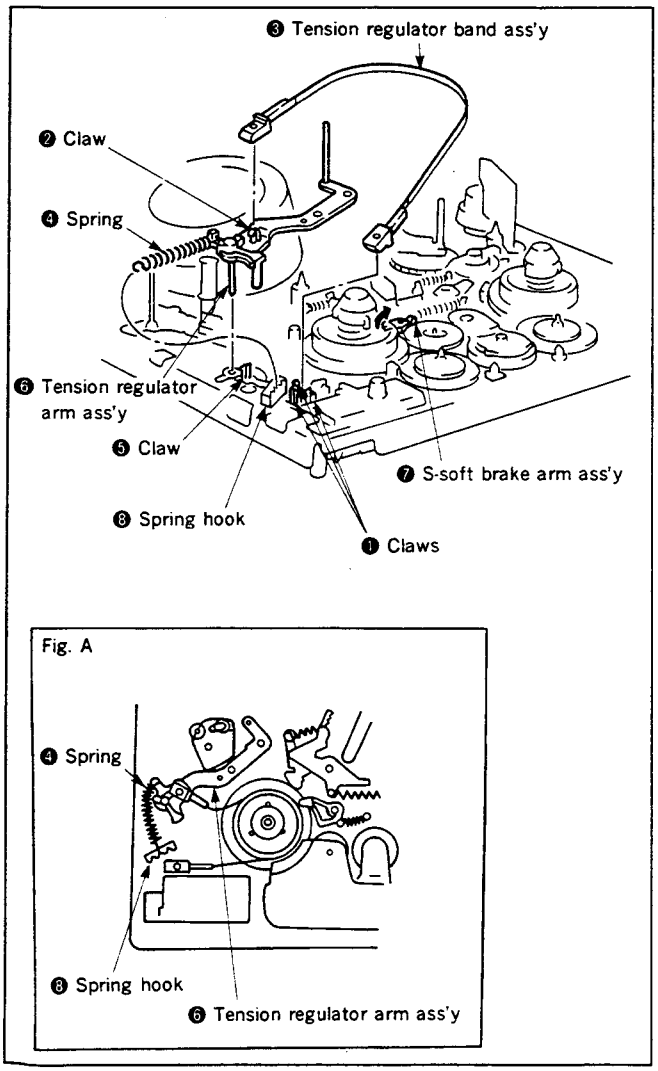


Fig. 3-21.

3-16. S TAKE-UP ASS'Y (Fig. 3-22)

1) Remove the tension regulator arm ass'y and the tension regulator band ass'y. (Refer to 3-15.)
2) Unhook the end of the spring ❶ from the S take-up arm ❷.
3) Disengage the two claws ❸, then remove the S take-up ass'y ❹.

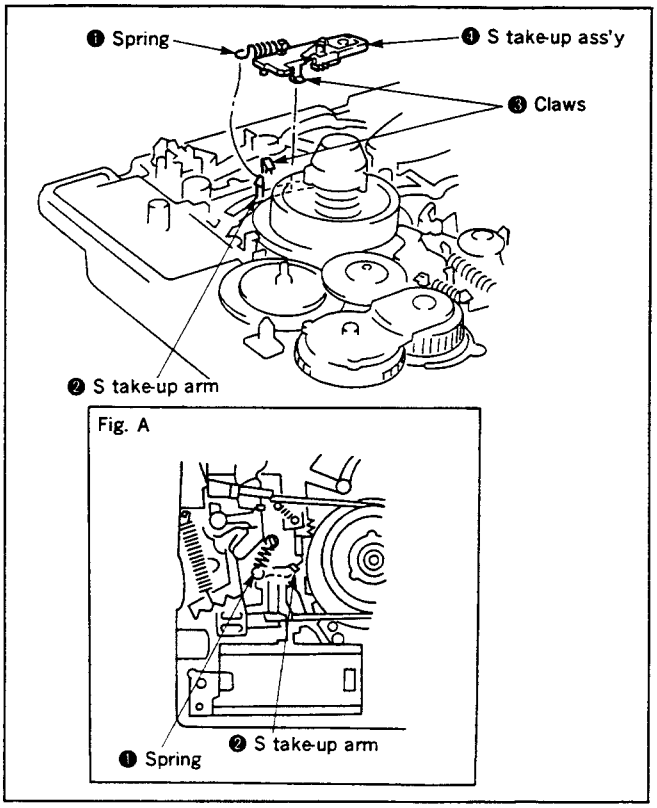


Fig. 3-22.

3-17. S-REEL ASS'Y (Fig. 3-23)

1) Remove the S-soft brake arm ass'y. (Refer to 3-12.)
2) Remove the reel lock release. (Refer to 3-14.)
3) Remove the tension regulator band ass'y. (Refer to 3- 15.)
4) Turn the S-brake ass'y ❶ in the direction of the arrow.
5) Pull out the S-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the S-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant over the shaft ❹.
- ○ Mount the S-reel ass'y ❷ while meshing it with the relay gear ❺.

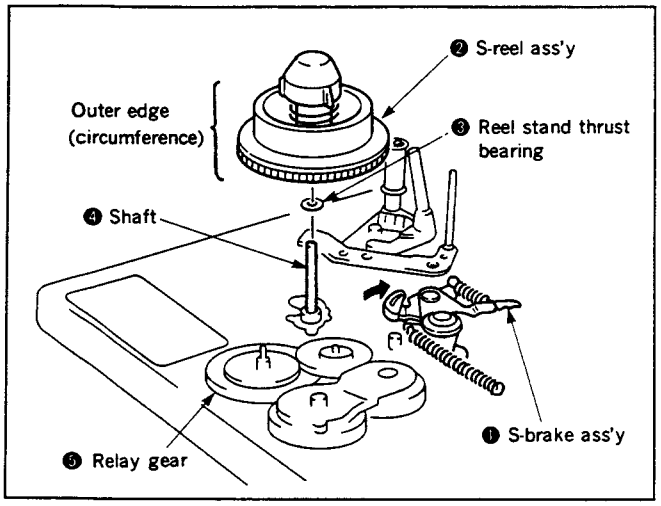


Fig. 3-23.

3-18. T-REEL ASS'Y (Fig. 3-24)

1) Remove the T-soft brake ass'y. (Refer to 3-11.)
2) Remove the reel lock release ass'y. (Refer to 3-14.)
3) Turn the T-brake ass'y ❶ in the direction of the arrow.
4) Pull out the T-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the T-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant on the shaft ❹.
- ○ Mount the T-reel ass'y ❷ while meshing it with the relay gear ❺.

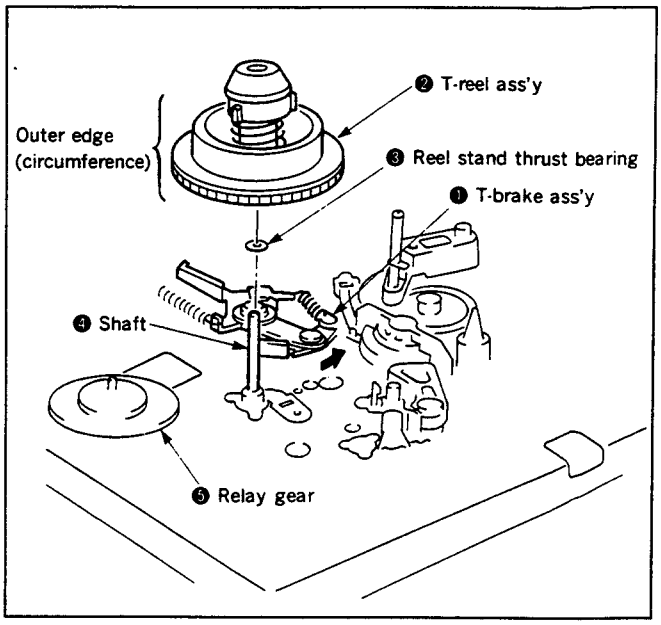


Fig. 3-24.

3-19. PENDULUM ARM ASS'Y (Fig. 3-25)

1) Remove the reel lock release ass'y. (Refer to 3-14.)
2) Remove the washer 2 ❶, then pull out the pendulum arm ass'y ❷.

[Precautions on remounting]

- ○ Fit the boss on the pendulum cap ❸ into the gap in the pendulum slide plate ❹.
- ○ The plastic slider ❺ must be attzched.
- ○ Apply 1/2 drop of lubricant on the shaft ❻.
- ○ Mount the pendulum arm ass'y ❷ by meshing it with the upper limiter gear ❼.

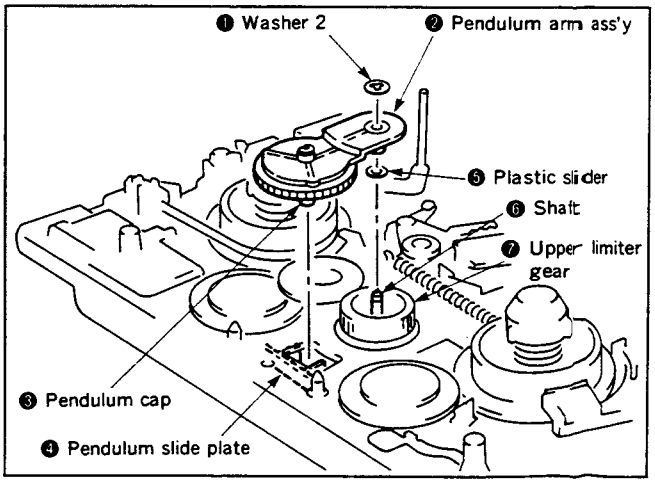


Fig. 3-25.

3-20. RELAY GEAR (Fig. 3-26)

1) Remove the reel lock release and REW gear. (Refer to 3-14.)
2) Remove the S-reel ass'y. (Refer to 3-17.)
3) Remove the T-reel ass'y. (Refer to 3-18).
4) Pull out the two relay gears ❶.

[Precautions on remounting]

○ The relay gears ❶ must rotate smoothly after remounting.
○ Apply 1/2 drop of lubricant to the respective shafts ❷.

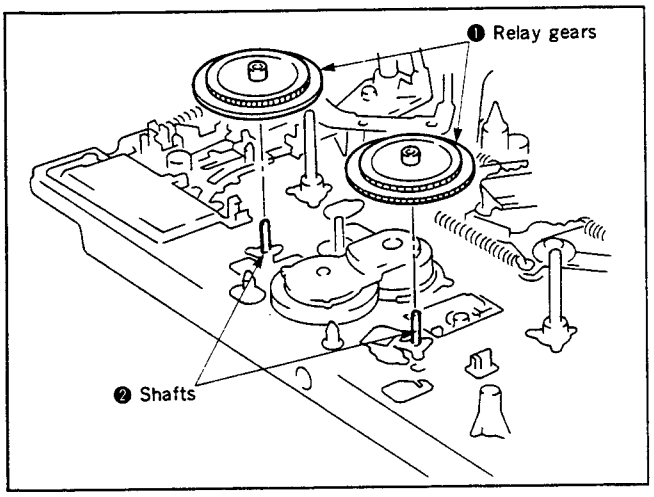


Fig. 3-26.

3-21. ADJUSTER ARM ASS'Y (Fig. 3-27)

1) Remove screw ❶.
2) Remove washer ❻.
3) Remove the end of the spring ❷ hooked to the chassis.
4) Remove the end of the timing belt ❸ from the capstan motor arm ass'y.
5) Disengage the claw ❹, then remove the adjuster arm ass'y.

[Precautions on remounting]

○ First mount the adjuster arm ass'y ❺, timing belt ❸ and spring ❷, then attach the washer ❻ and fasten the screw ❶.
○ The screw fastening torque must be within 5kg•cm (±1kg•cm).

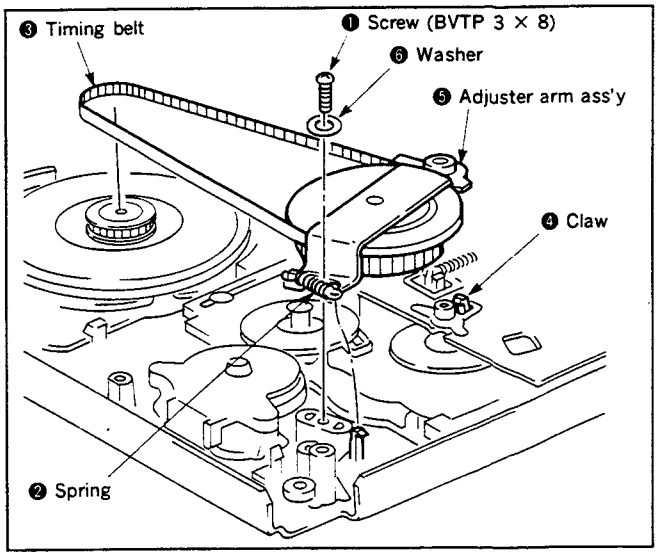


Fig. 3-27.

3-22. CAP BRAKE ASS'Y (Fig. 3-28)

1) Loosen the screw ❶, then push the timing belt ❷ in the direction of the arrow.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage claw ❹, then pull out CAP brake ass'y ❺.

[Precautions on remounting]

○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

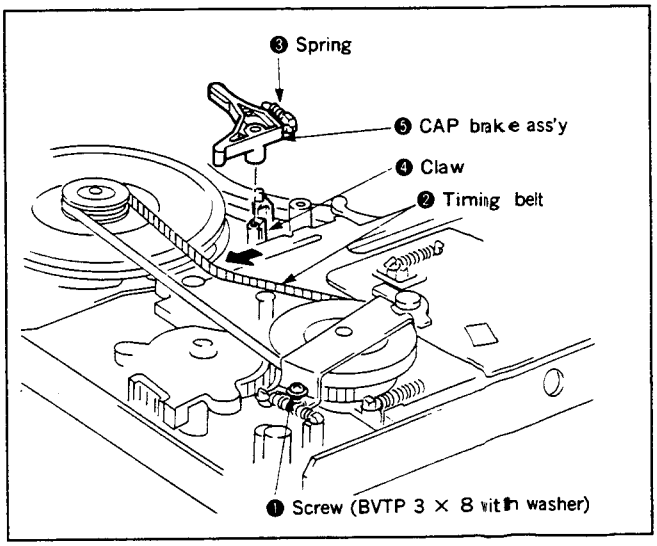


Fig. 3-28.

3-23. CAPSTAN MOTOR (Fig. 3-29)

1) Turn the ACE ass'y ❶ in the direction of arrow Ⓐ as shown in Fig. A below, then remove three screws ❷.
2) Remove screw ❸, then remove the rotor clamp ❹.
3) Turn the CAP brake ass'y ❺ in the direction of arrow Ⓑ, then pull out the capstan motor ❻.

[Precautions on remounting]

- ○ Clean the section of the capstan motor ❻ where the tape is attached.
- ○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.
- ○ Of the three screws ❷, first fasten screw A temporarily, then fasten screws B and C firmly, followed by screw A.
- ○ The screw fastening torque must be within 3kg•cm ± 1kg•cm.

[Adjustments after mounting]

- ○ Perform tape path adjustments as described in 4-1.

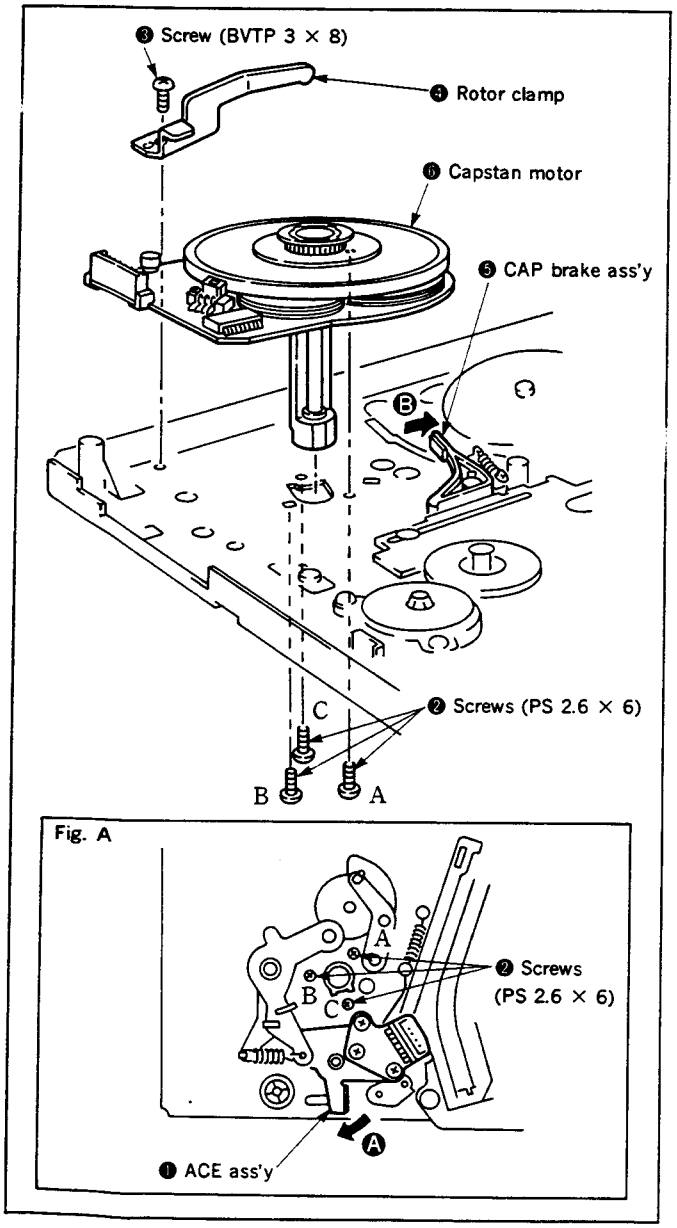


Fig. 3-29.

3-24. ROTARY SWITCH (Fig. 3-30)

1) Remove the adjuster arm ass'y. (Refer to 3-21.)
2) Remove the screws ❶ and ❷, then pull out the rotary switch ❸.

[Precautions on remounting]

- ○ Match up the ● mark on the rotary switch ❸ with the ▲ mark on the RKB cam gear ❹ as shown in Fig. A.
- ○ Match up holes ❻ on the pendulum arm ❺ and the chassis.

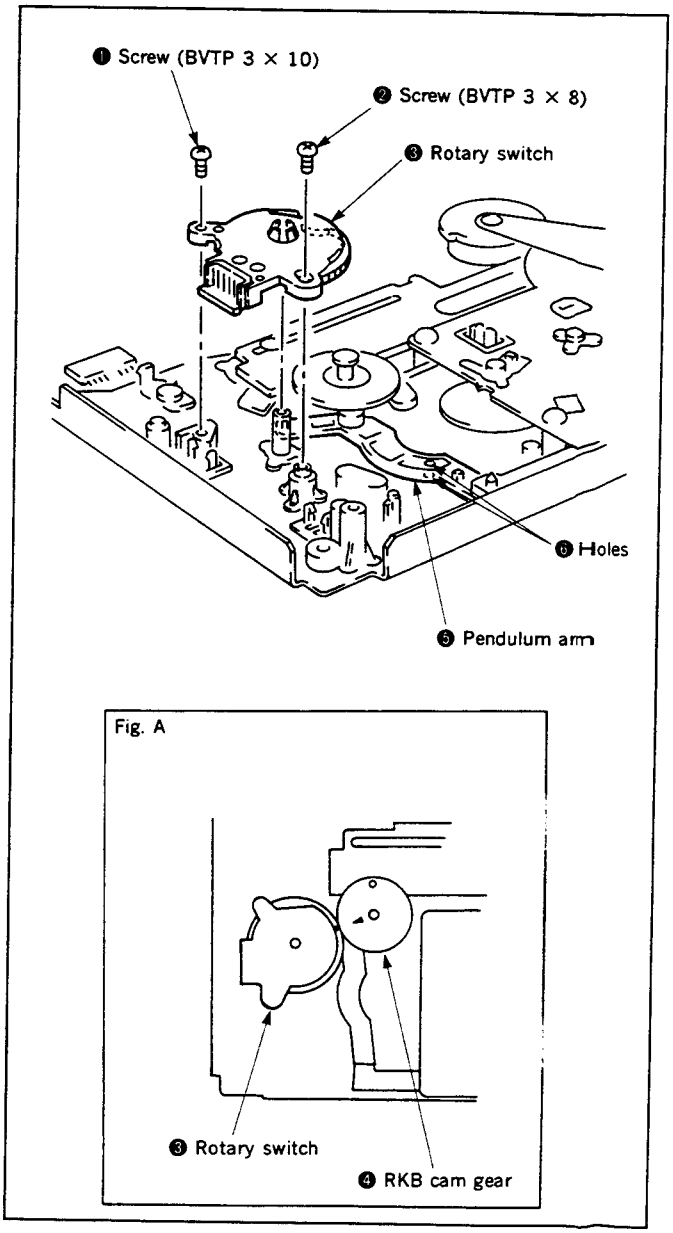


Fig. 3-30.

3-25. RKB CAM GEAR (Fig. 3-31)

1) Remove the adjuster arm ass'y. (Refer to 3-22.)
2) Remove washer 2 ❶, then pull out the RKB cam gear ❷.

[Precautions on remounting]

- ○ When the limiter arm ❸ is pushed in the direction of the arrow, the pin must fit into the notch on the RKB cam gear ❷.
- ○ The ■ mark on rotary switch ❺ must match up with the ◀ mark on the RKB cam gear ❷ as shown in Fig. A.
- ○ Apply 1/2 drop of lubricant to shaft ❻.
- ○ Match up the holes ❹ on the RKB cam gear ❷ and the mode slide plate.

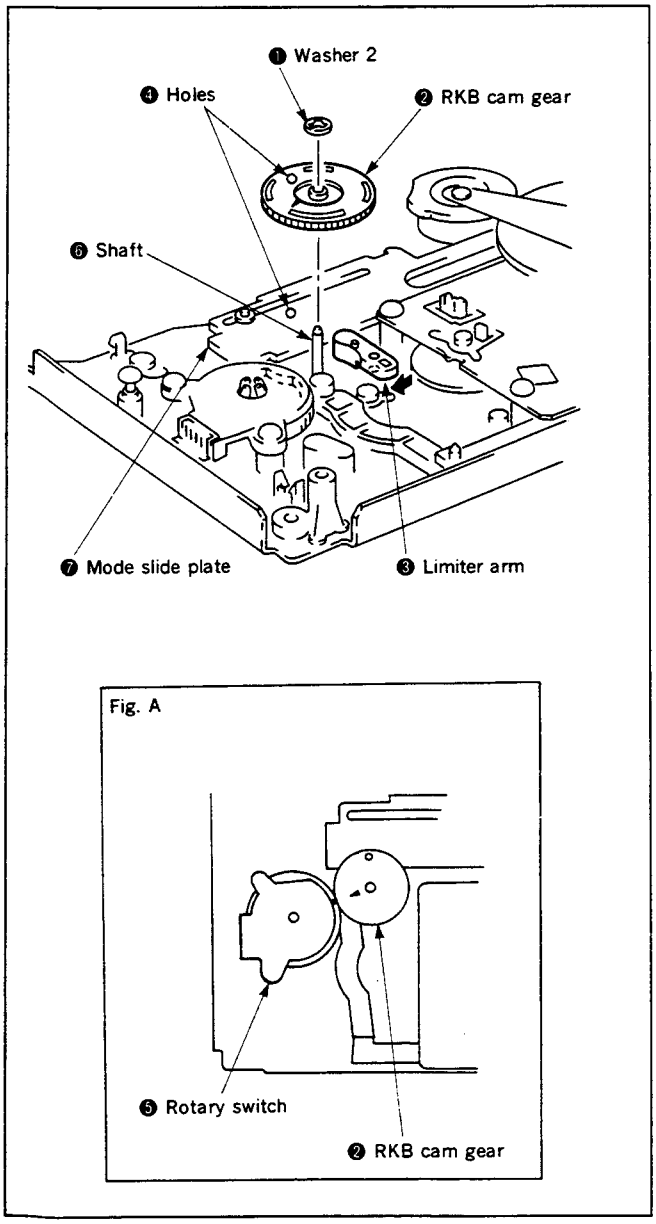


Fig. 3-31.

3-26. SUB-CHASSIS ASS'Y (Fig. 3-32)

1) Remove the reel lock release arm and REW gear. (Refer to 3-15.)
2) Remove the pendulum arm ass'y. (Refer to 3-19.)
3) Remove the adjuster arm ass'y. (Refer to 3-22.)
4) Remove the three screws ❶, then remove sub-chassis ass'y ❷.

[Precautions on remounting]

- ○ The switching arm ❸ must be switched in the direction of the arrow.
- ○ The screws must be fastened in order of a, b and c.
- ○ Mount the sub-chassis carefully so as not to damage the gear.
- ○ The corner edge of the lug terminal ❹ must fit into the gap between the chassis ass'y ❷ and mechanism chassis.

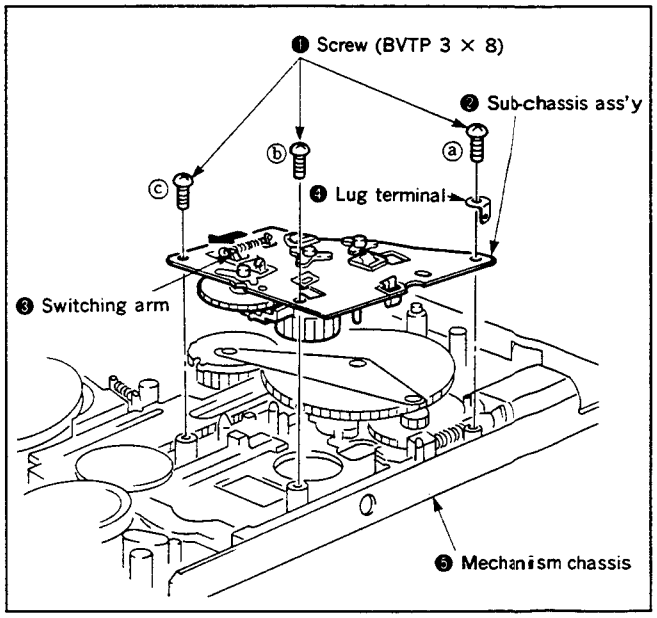


Fig. 3-32.

3-27. PENDULUM SLIDE PLATE, PENDULUM ARM (Fig. 3-33)

1) Remove the rotary switch. (Refer to 3-24.)
2) Remove the RKB cam gear. (Refer to 3-25.)
3) Remove the sub-chassis ass'y. (Refer to 3-26.)
4) Disengage the two claws ❶, then pull out the pendulum slide plate ❷.
5) Unhook the spring ❸.
6) Disengage the claw ❹, then pull out pendulum arm ❺.

[Precautions on remounting]

○ The shaft ❻ must fit into hole ❼.

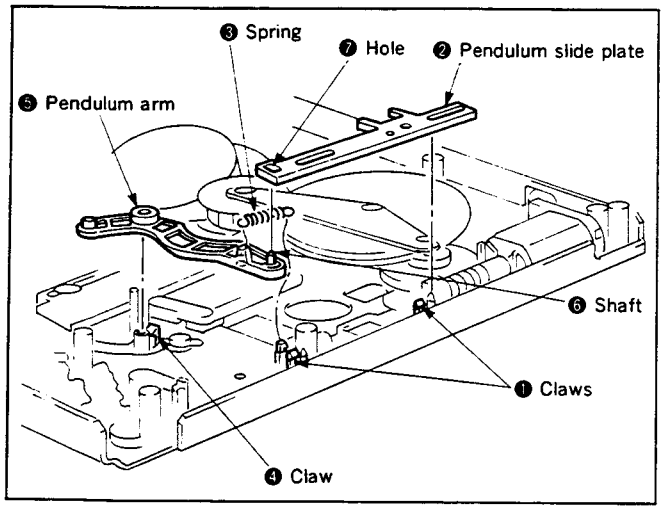


Fig. 3-33.

3-28. THE LIMITER ARM AND LIMITER SLIDE PLATE (Fig, 3-24)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the sub-chassis. (Refer to Fig. 3-26.)
3) Disengage the claw ❶, then pull out the limiter arm ❷.
4) Disengage the two claws ❸, then pull out the limiter slide plate ❹.

[Precautions on remounting]

○ The shaft ❺ must fit into the hole ❻.

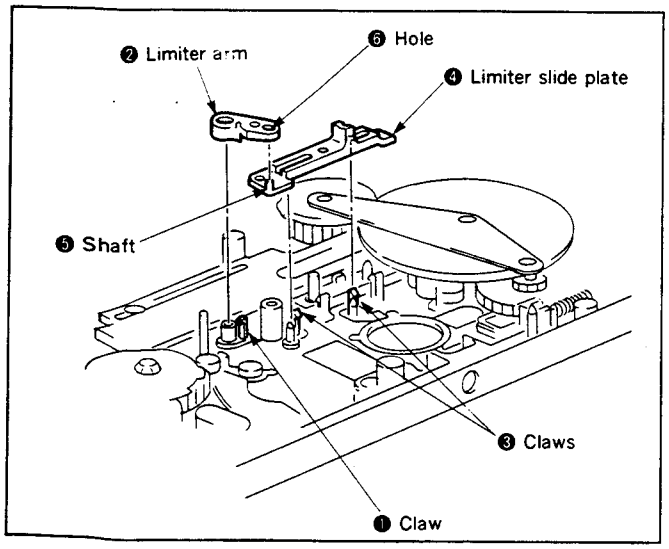


Fig. 3-34.

3-29. CAM MOTOR (Fig. 3-35)

1) Remove the sub- chassis ass'y. (Refer to 3-26.)
2) Disengage the six claws ❶, then remove the cam motor ❷ and worm gear ❸.

[Precautions on remounting]

○ Check the meshing of cam motor ❷ and worm gear ❸.

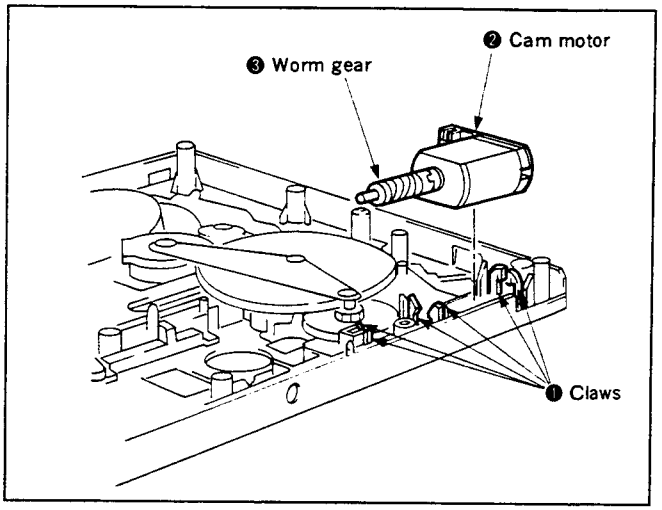


Fig. 3-35.

3-30. CAM GEAR (Fig. 3-36)

1) Remove the three washers 2 ❶, then pull out the cam gear holder ❷.
2) Pull out the cam gear ❸.

[Precautions on remounting]

○ Match up the right loading gear ass'y, the tension regulator arm, the S take-up arm, the work wheel, the brake arm and the mode slide plate with respective holes ❹ to ❾ on the chassis in that order.
○ Match up the hole ❿ on the mode slide plate with the hole ❿ in cam gear ❸.
○ Apply 1/2 drop of lubricant to the shaft ⓫.

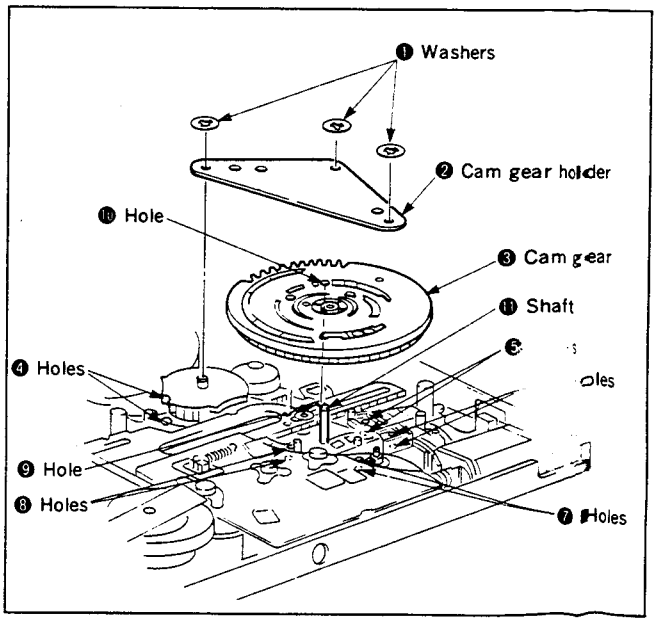


Fig. 3-36.

3-31. TENSION REGULATOR ARM, S TAKE-UP ARM (Fig. 3-37)

1) Remove the cam gear. (Refer to 3-30)
2) Disengage the claw ❶, then remove the tension regulator arm ❷.
3) Remove the end of the spring ❸ from the S take-up arm ❹.
4) Disengage the claw ❺, then pull out S take-up arm ❹.

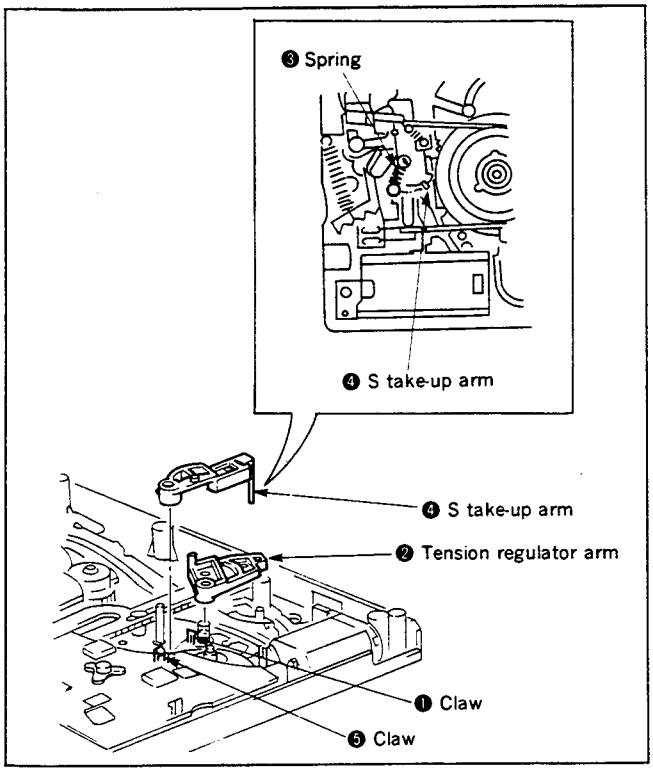


Fig. 3-37.

3-32. MODE SLIDE PLATE, RVS RELAY GEAR (Fig. 3-38)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the cam gear. (Refer to 3-30.)
3) Remove the two washers 2 ❶.
4) Turn the CAP brake ❷ in the direction of the arrow, then pull out mode slide plate ❸.
5) Pull out the RVS relay gear ❹.

[Precautions on remounting]

- ○ Match up the hole ❺ on the RVS relay gear ❹ with hole ❺ in the chassis.
- ○ Match up the holes ❻ on the mode slide plate ❸ with holes ❻ in the chassis.
- ○ Apply 1/2 drop of lubricant to the shaft ❼.

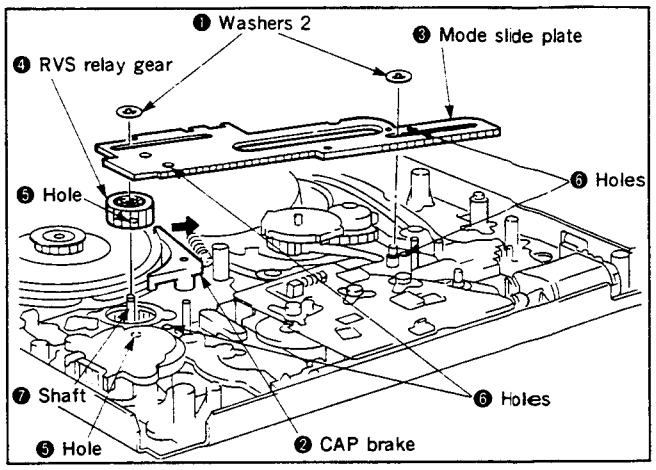


Fig. 3-38.

3-33. BRAKE ARM, BRAKE SLIDE PLATE (Fig. 3-39)

1) Remove the sub-chassis. (Refer to 3-26.)
2) Remove the cam gear. (Refer to 3-30.)
3) Disengage the claw ❶, then pull out the brake arm ❷.
4) Disengage the two claws ❸, then pull out the brake slide plate ❹.

[Precautions on remounting]

- ○ Insert the shaft ❺ into hole ❻.

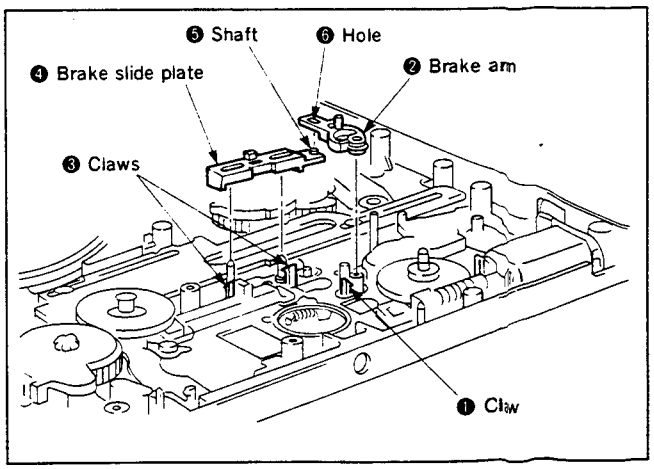


Fig. 3-39.

3-34. RIGHT SHUTTLE, RIGHT LOADING GEAR ASSY'S (Fig. 3-40)

1) Remove the mode slide plate. (Refer to 3-32.)
2) Remove the plastic slider ❶, then pull out the right shuttle ass'y ❷.
3) Pull out the right loading gear ass'y ❸.

[Precautions on remounting]

- ○ Match up the ▲ mark on the right loading gear ass'y ❸ with the ▲ mark on the left loading gear ass'y ❹ as shown in Fig. A below.
- ○ Apply 1/2 drop of lubricant to the shaft ❺.
- ○ Do not hold on to the arm when pressing on the right loading gear ❸.
- ○ Clean the section of the right shuttle ass'y ❷ where the tape is attached.

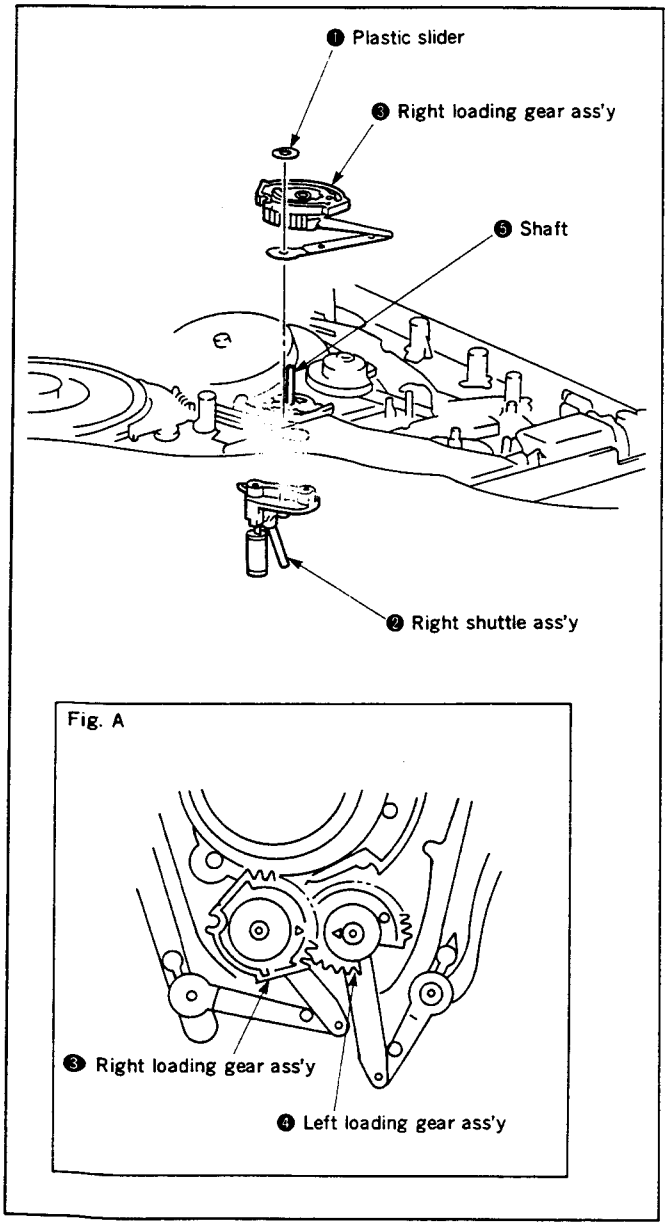


Fig. 3-40.

3-35. LEFT SHUTTLE ASS'Y, LEFT LOADING GEAR ASS'Y (Fig. 3-41)

1) Remove the right shuttle ass'y and right loading gear ass'y. (Refer to 3-34.)
2) Remove the plastic slider ❶, then pull out the left shuttle ass'y ❷.
3) Remove washer 2 ❸, then pull out the left loading gear ass'y ❹.

[Precautions on remounting]

- ○ Apply 1/2 drop of lubricant to shaft ❺.
- ○ The tension regulator arm ass'y ❻ and left shuttle ass'y ❷ must be positioned as shown in Fig. A below.
- ○ Do not hold on to the arm of the left loading gear ass'y ❹ when the left loading gear ass'y ❹ is pressed.
- ○ Clean the section of the felt shuttle ass'y ❷ where the tape is attached.

[Adjustments after replacement]

- ○ Perform tape path adjustments as described in 4-1.

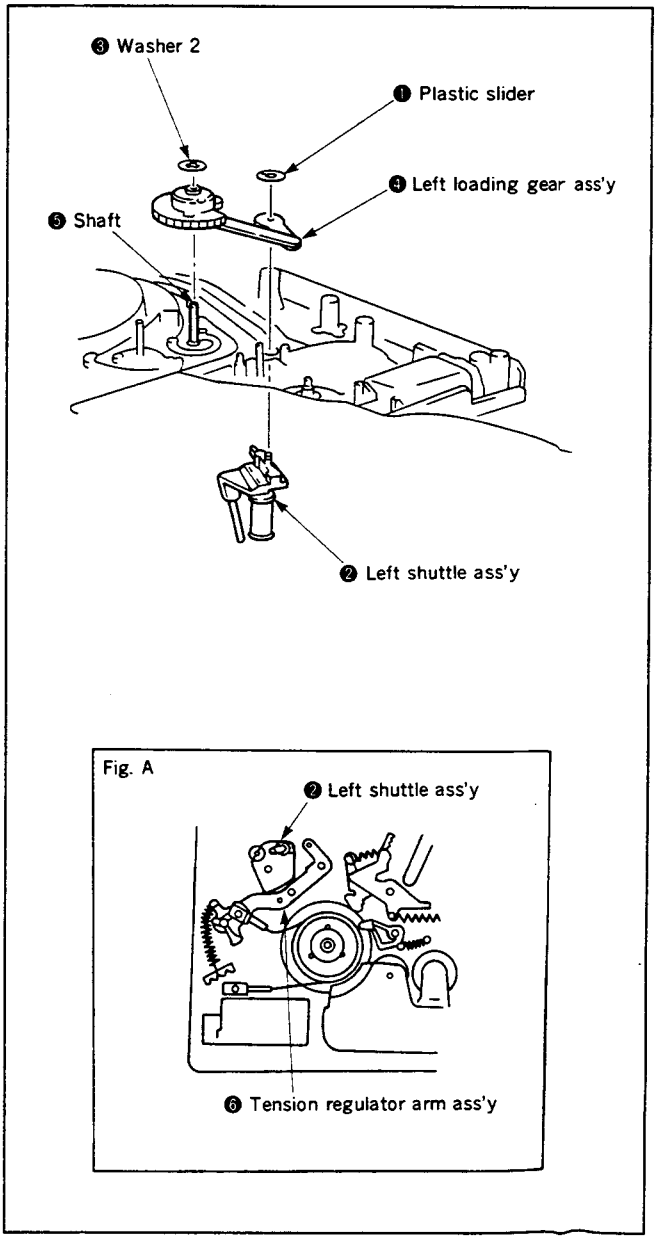


Fig. 3-41.

3-36. C-ROLLER ARM ASS'Y, C-ROLLER RELEASE LEVER (Fig. 3-42)

1) Disengage the claw ❶, then pull out the C-roller arm ass'y ❷.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage the two claws ❹, then pull out the C-roller release lever ❺.

[Precautions on remounting]

○ Mount C-roller arm ass'y ❷ so that the hole ❻ on the C-roller arm ass'y ❷ fits into the boss ❼ on the C-roller release lever ❺.

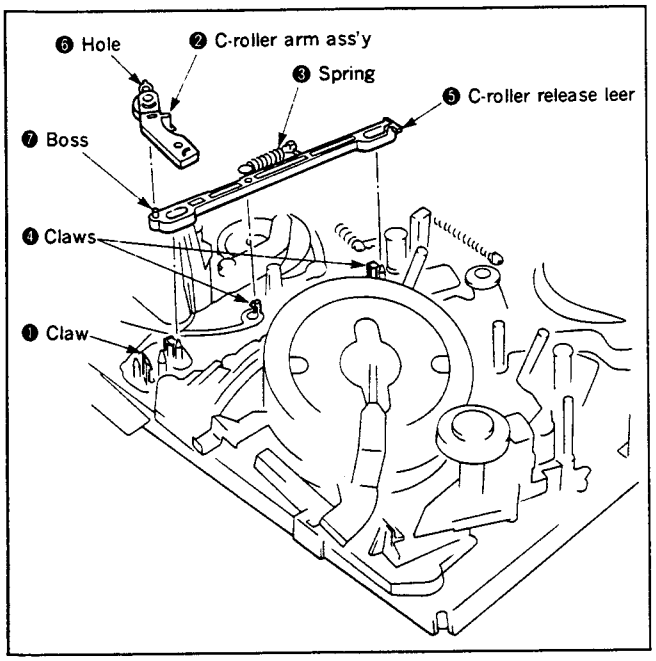


Fig. 3-42.

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads. Each component part of the tape transport system, particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted. when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. Tension regulator position/tension adjustment (Fig. 4-1.)

Purpose: Stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

- **Position adjustment**

Mode	Threading is completed without a cassette loaded. (Refer to section 1-2.)
Adjustment locations	Tension band holder

[Adjustment method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the VTR unit to playback, then turn the tension band adjuster lever so that the gap between guide No. 0 and tension arm is within 4.5±0.4mm. *(Set the unit to playback without a cassette loaded.)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

- **Tension adjustment**

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specification	28 to 34 g•cm

[Adjustment method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

Note: Move the spring to the tension spring hook position and recheck the tension arm position. If the arm position is misaligned, adjust the position and tension of the tension arm.

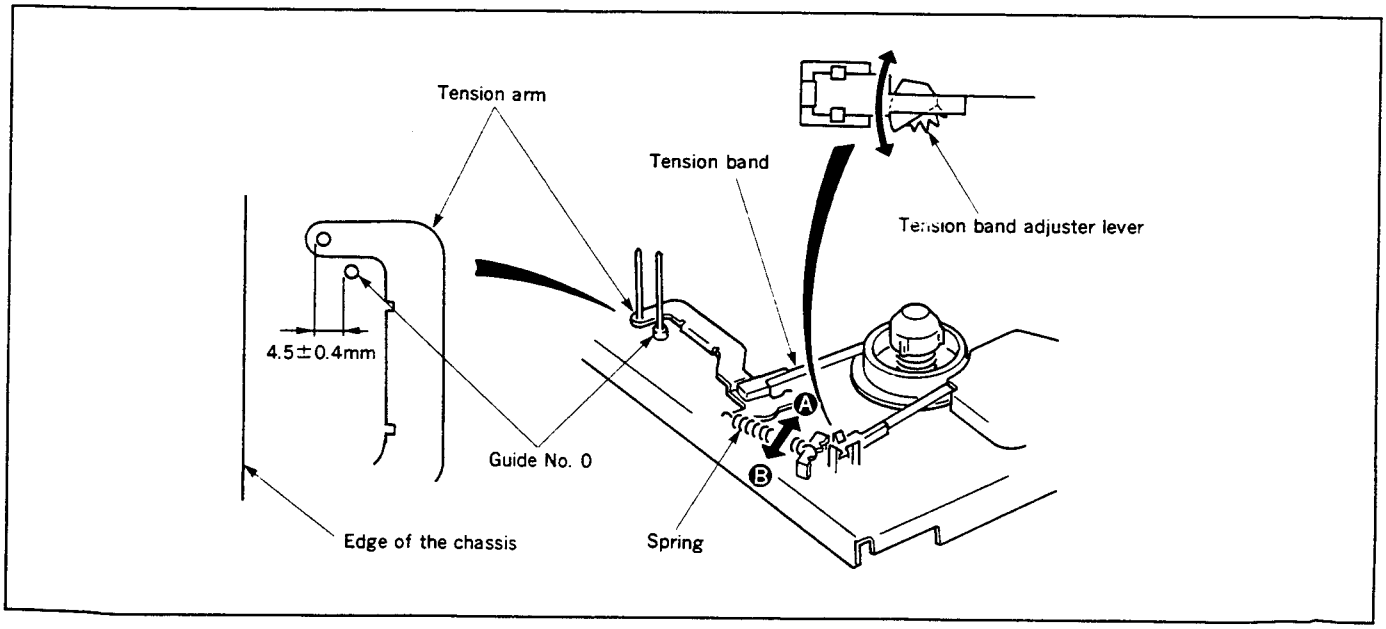


Fig. 4-1.

4-1-2. Height adjustment of the guide roller No. 2 (Fig. 4-2)

Mode	Playback
Tool	Blank tape
Adjustment locations	Guide roller height adjuster screw

[Adjustment method]

1) Load a new tape in the unit, then play it back.
2) Make sure that the lower flange of guide roller No. 2 does not curl up.
3) When the tape curls up: Turn the guide roller adjuster screw clockwise.
   When the tape does not fit into the lower flange: Turn the guide roller adjuster screw counter-clockwise.
4) After the above check, separate the tension arm from the tape, then re-attach it slowly. At this time, check if the tape curls up at the lower flange of the guide roller No. 2 and if the curl disappears within 2 seconds.
5) If curl does not disappear in two seconds: Turn the adjuster screw clockwise.
   If the tape does not curl up: Turn the adjuster screw counter-clockwise.

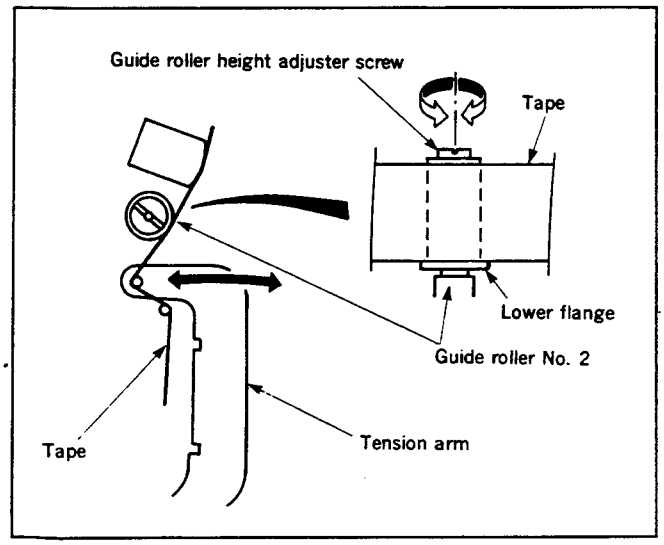


Fig. 4-2.

4-1-3. Height adjustment of guide roller No. 7 and the RVS arm (Fig. 4-3.)

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut

[Adjustment method]

1) Load the tape into the VTR and play it back, then adjust the height of the guide roller No. 7 so that the tape runs along the lower flange of guide roller No. 7.
2) If the guide roller is too low: Turn the height adjuster nut counter-clockwise.
   If the guide roller is too high: Turn the height adjuster nut clockwise.
3) Run the tape in REV, then adjust the height of the RVS arm so that the tape runs along guide roller No. 7.
4) If the tape gets caught in the upper flange of guide roller No. 7: Turn the RVS arm height adjuster nut clockwise.
5) If the tape catches on the lower flange of guide roller No. 7 : Turn the RVS arm height adjuster nut counter-clockwise.

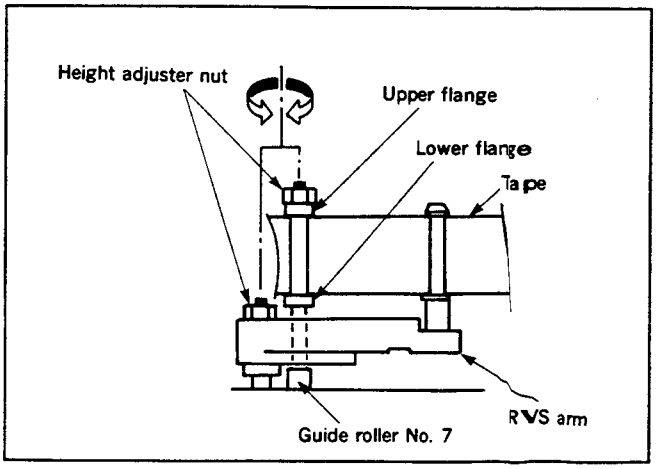


Fig. 4-3.

4-1-4. Height adjustment of guide rollers No. 3 and No. 6 (Fig. 4-4)

Mode	Playback
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw.

[Adjustment method]

1) Tracking (playback) : Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
   (If adjustment is made after the drum is replaced, the tracking must be set at the max. Rf output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

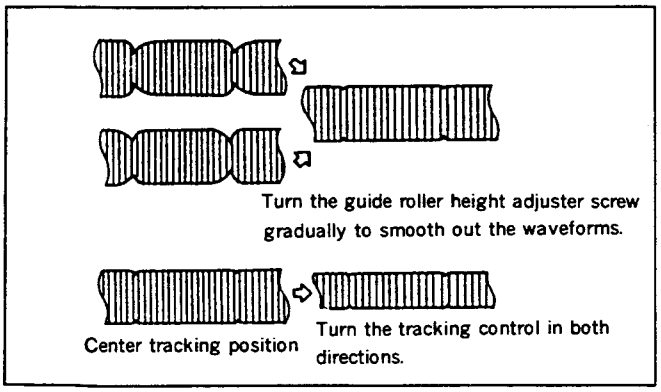


Fig. 4-4.

4-1-5. ACE head ass'y adjustment (rough adjustment) (Figs. 4-5 and 4-6)

Purpose : Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, tilt adjuster screw

[Adjustment method]

1) Mount the ACE head ass'y. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or raise up noticeably near the ACE head.
4) If the yape curls up or rarises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
   (The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

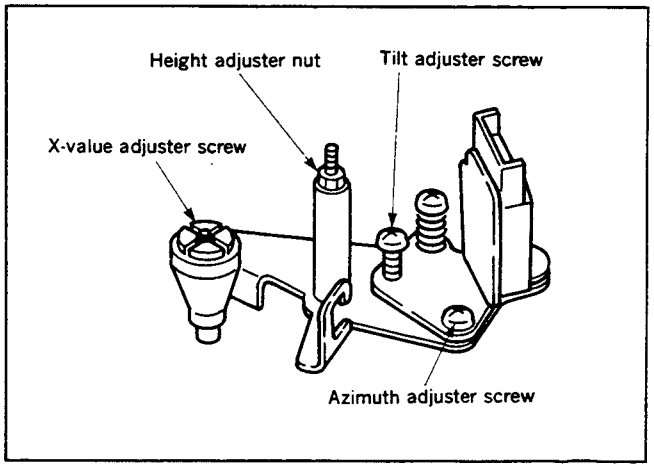


Fig. 4-5.

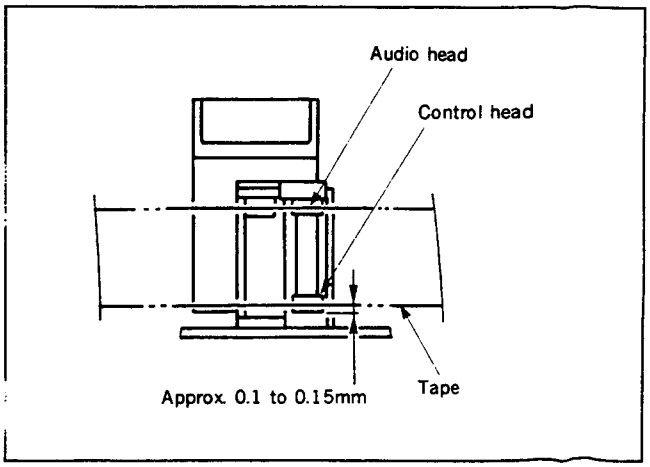


Fig. 4-6.

4-1-6. ACE head assembly adjustment (precision adjustment)

Mode	Playback
Signal	Alignment tape (JVC-MH-1 1KHz)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw Height adjuster nut Tilt adjuster screw

[Adjustment method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or raise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

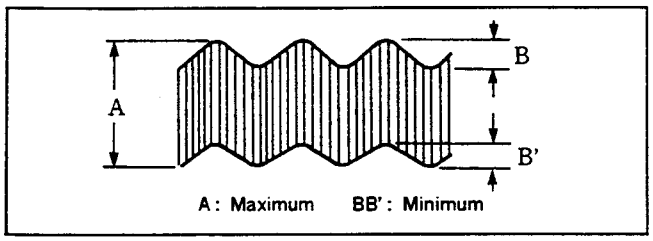


Fig. 4-7.

4-1-7. X-value adjustment

Purpose: To obtain compatibility with other VTR.

Precaution: Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playbadk
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz), alignment tape (JVC-MH-1)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check. (Check with the CHA head)
Adjustment locations	X-value adjuster screw

[Adjustment method]

- **Adjustment by Hi-Fi alignment tape**
  When the tracking is set at the center position (by pressing the [▽] and [△] keys simultaneously), adjust the RF output to maximum.

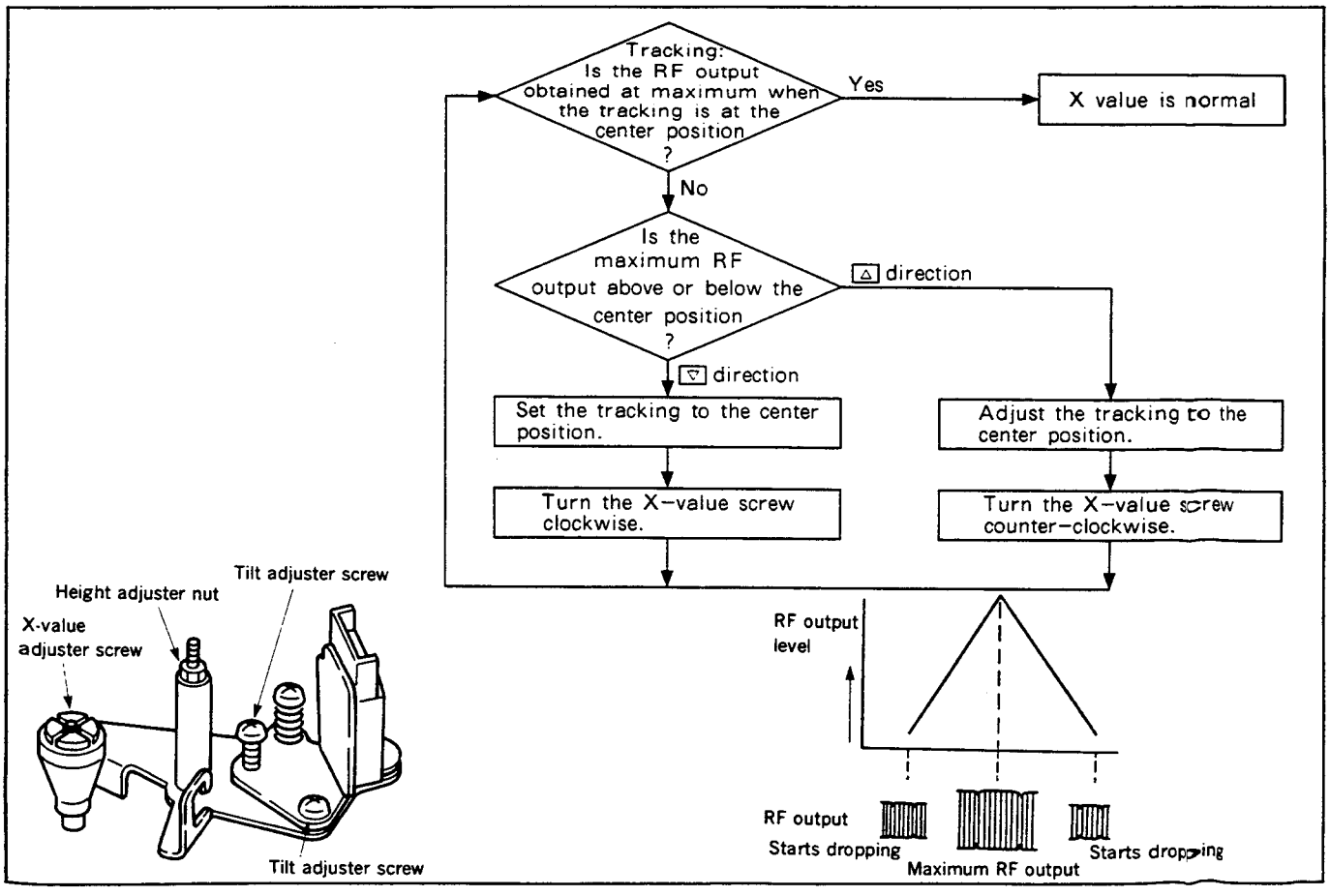


Fig. 4-8.

- **Adjustment by Alignment tape (JVC-MH-1)**
  Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective [▽] and [△] buttons while the tracking is set at the center position.

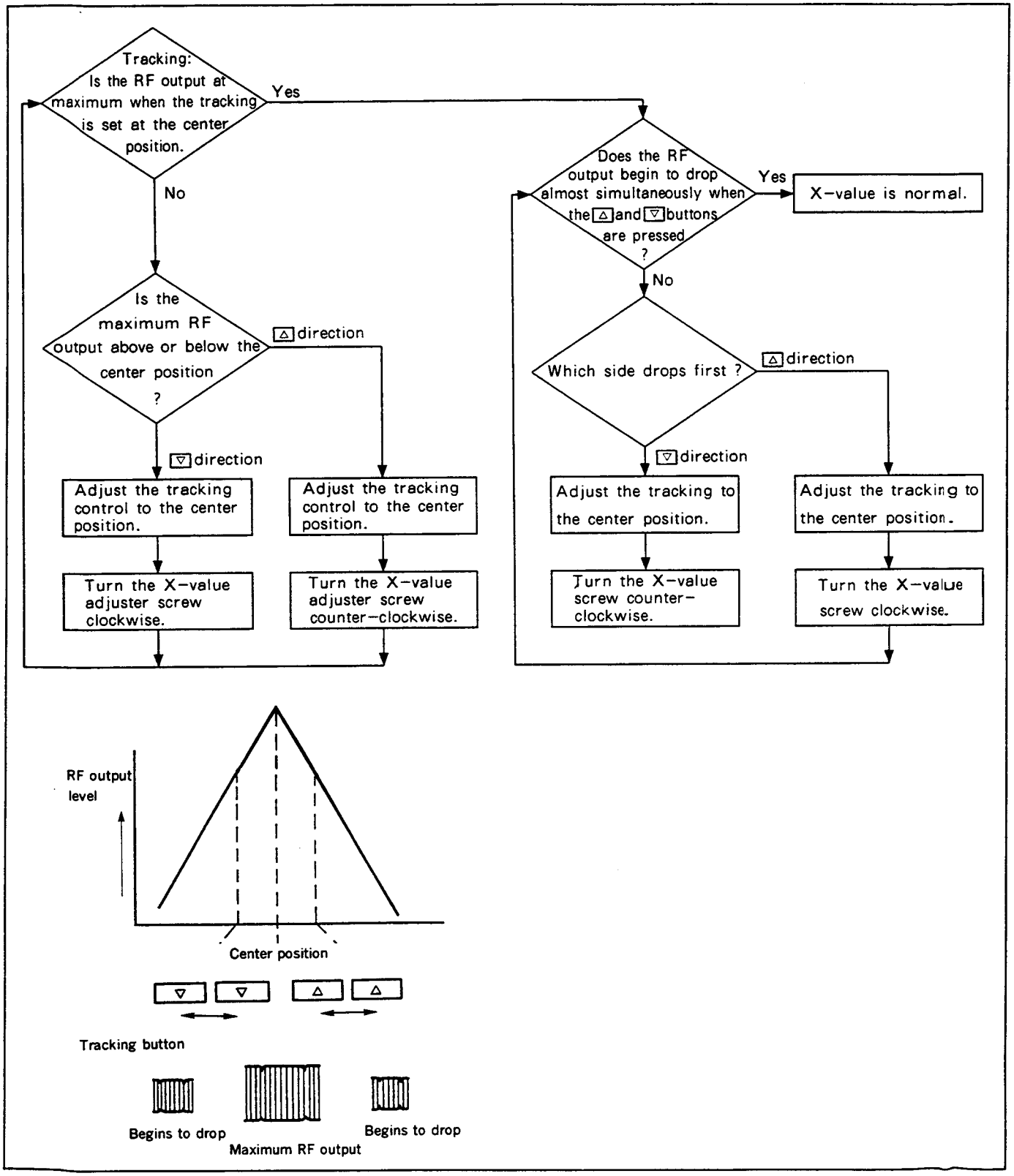


Fig. 4-9.

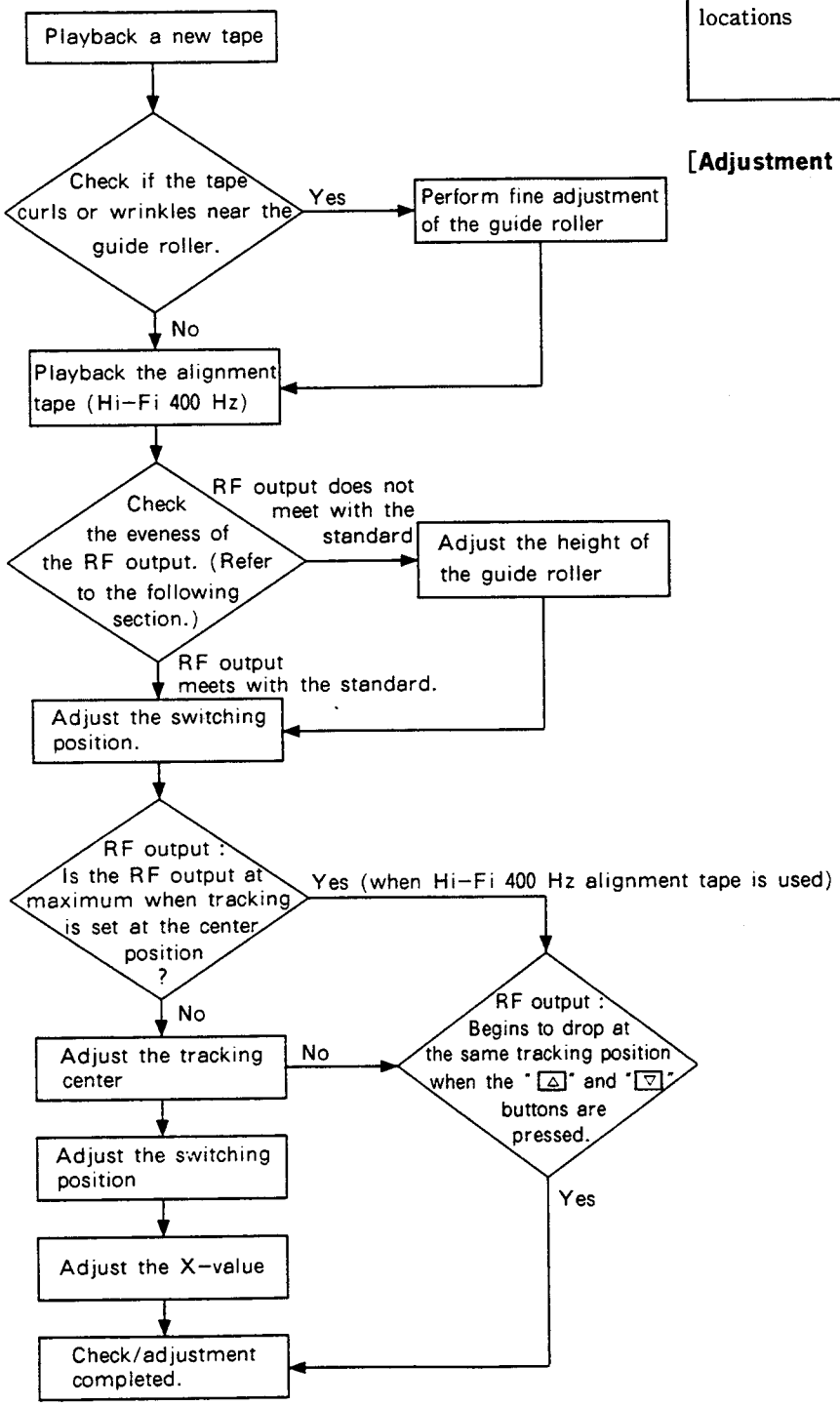
4-1-8. Adjustments after replacing the drum (video head)

Purpose : Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution : Turn off the auto tracking and set the manual tracking mode.

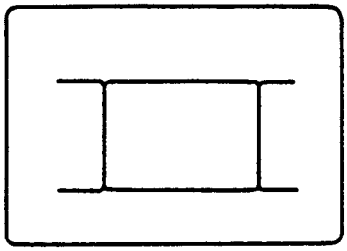
Mode	Playback
Signal	Alignment tape (JVC-MH-1), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-5.) Switching position, Tracking preset, SP delay mono-multi, X-value (refer to 4-1-8) } (Refer to the Service Guide)

[Adjustment method]

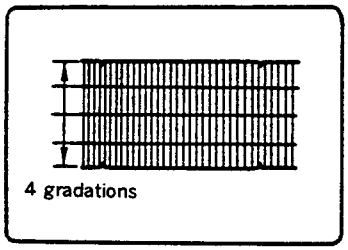


[Checking the eveness and fluctuation of the RF output]

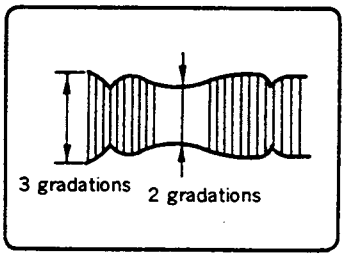
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-9. Checking the tension and torque

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adapter

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170g•cm or more
Review torque	Review	Supply reel	180±30g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	80 to 140g•cm (using torque cassette)
Back tension torque	Rewind	Take-up reel	4 to 25 g•cm

[Check method]
Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

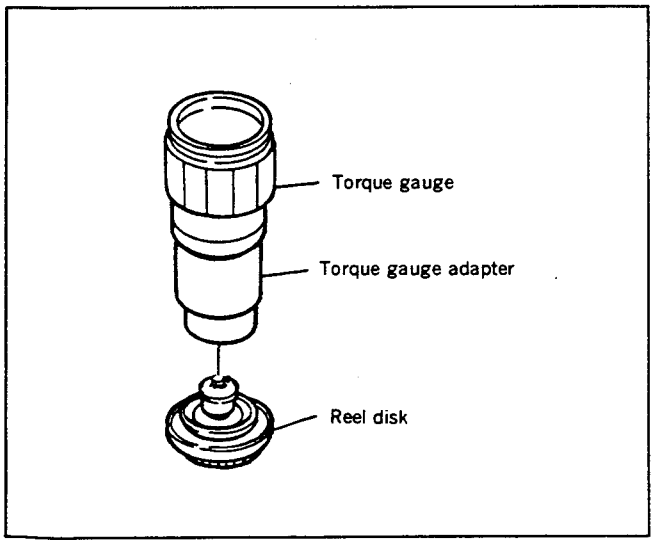


Fig. 4-13.

9-972-816-11

Sony Corporation
Home Video Group

English
89H0489-1
Printed in Japan

Published by A/V Engineering Service Dept.