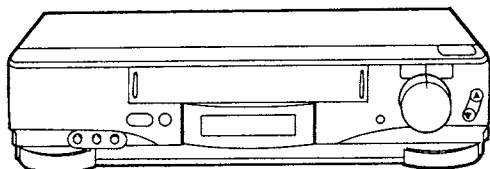


# HITACHI

## SERVICE MANUAL Wartungsanleitung



V17847

### SHOWVIEW

**VHS**

This video deck is a VHS type video recorder. For proper operation, only the VHS type cassette must be used.

**VHS**

Dieser Video-Recorder entspricht dem VHS-Format. Für richtigen Betrieb müssen daher VHS-Magnetband-Cassetten verwendet werden.

TK

No. 4606E,G

**VT-F550E(NAV)/(UKN)  
VT-F550E(NA)/(VPS)**

**US MECHANISM**

This service manual does not include information on the US Mechanism used in this model. Use this manual together with the following manuals.

#### Manuals related to the VT-F550E

Name of Manual	Manual No.	Chapters Included
US Mechanism	4527E	—
VT-F550E(NA)/(VPS) Parts List	4606E-1	—

Diese Wartungsanleitung enthält keine Informationen über das in diesem Modell verwendete US-Bandlaufwerk. Diese Anleitung gemeinsam mit den folgenden Anleitungen verwenden.

#### Anleitungen, die das Modelle VT-F550E betreffen:

Name der Anleitung	Anleitung-Nr.	Enthaltene Kapitel
US-Bandlaufwerk	4527G	—
VT-F550E(NA)/(VPS) Ersatzteilliste	4606G-1	—

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT  
Änderungen der Technischen Daten und Teile im Sinne ständiger Verbesserung vorbehalten.

## VIDEO CASSETTE RECORDER Video-Cassettenrecorder

April 1996 Image & Information Media Systems Division, Tokai

**TIPS FOR SERVICING**

**TROUBLE DISPLAY FUNCTION**

This VCR has a function which displays mechanism malfunctions, etc. in the LCD display. Use this function to analyze the cause when the power is shut off due to a malfunction, etc. in the mechanism.

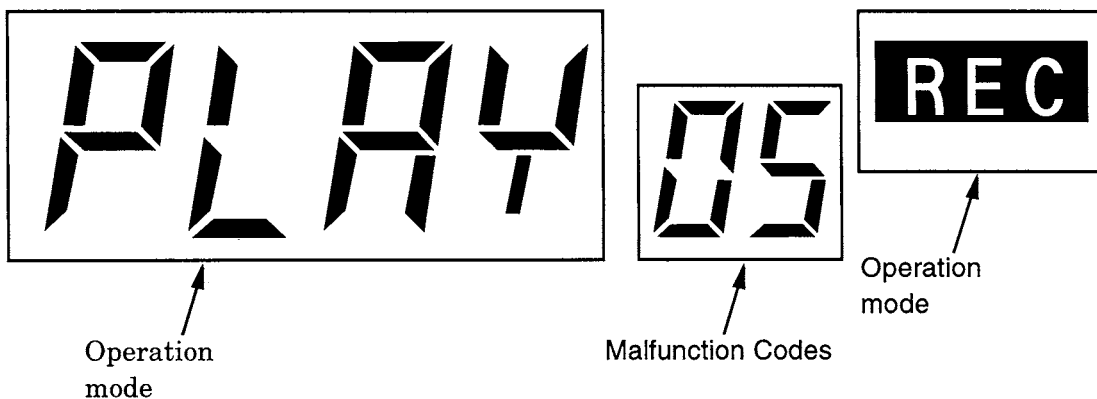
Two types of information are displayed, 1) The operation mode when the malfunction occurred, 2) Malfunction Codes.

The details of the malfunction are displayed as follows.

**PROCEDURE TO DISPLAY A MALFUNCTION**

Press the (CH▼) button on the VCR when the power is turned off and hold it ; the malfunction code is displayed while the button is held depressed.

LCD DISPLAY



**[Display of details of malfunction]**

Displayed No.	Item	Details
" 0 0 "	No malfunction	
" 0 1 "	FL mechanism lock	Malfunction in insertion/ejection of cassette
" 0 2 "	Capstan lock	Malfunction of capstan motor drive during tape unloading
" 0 4 "	Reel lock	Reel rotation trouble when tape is running
" 0 5 "	Cylinder lock	Cylinder rotation malfunction
" 0 7 "	Loading mechanism lock	Malfunction in shifting mechanism mode
" 1 6 "	Servo lock	Shrting of 5V detected

**[Mode Display when Malfunction Has Occurred]**

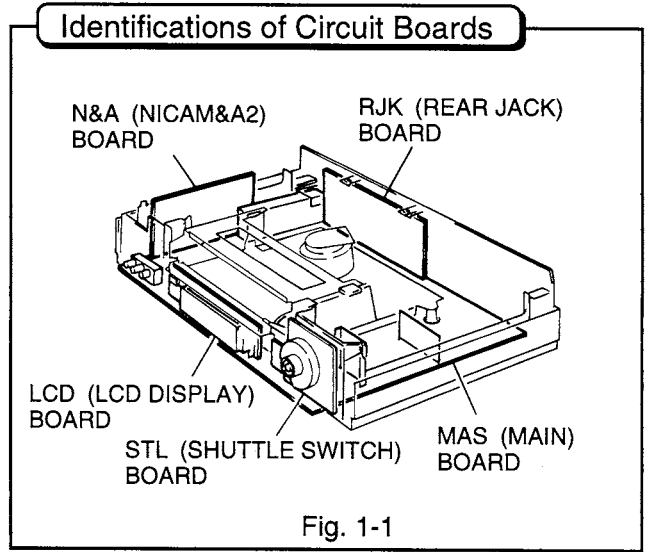
Mode	Display	Mode	Display
Stop	No Display	Playback	<b>PLAY</b>
Fast forward	<b>FF</b>	Reverse playback	<b>-PLAY</b>
Rewind	<b>REW</b>	Forward search	<b>SRCH</b>
High speed fast forward	<b>S:FF</b>	Reverse search	<b>-SRCH</b>
High speed rewind	<b>S:REW</b>	Slow motion play	<b>SLOW</b>
Recording	<b>REC</b>	Reverse motion slow play	<b>-SLOW</b>
Recording pause	<b>REC</b> (flashes)	Still motion play	<b>STILL</b>

No symbols are displayed if the malfunction occurred when a cassette was inserted or ejected, or the power was switched on from off, and off from on.

# CHAPTER 2 DISASSEMBLY

## 1. Before Starting Disassembly

- 1) Unplug the power cord from the AC outlet.
- 2) [Removal procedure]  
If a special procedure is required when dismantling any component, it is indicated using numbers. Follow the numbers ((1) , (2) , (3) ...) shown in the illustrations.  
[Reinstallation procedure]  
Reinstall each component in the reverse order to removal when otherwise not specified.
- 3) Insert card connectors securely all the way as they are of the direct insertion type.



## 2. Disassembly Method

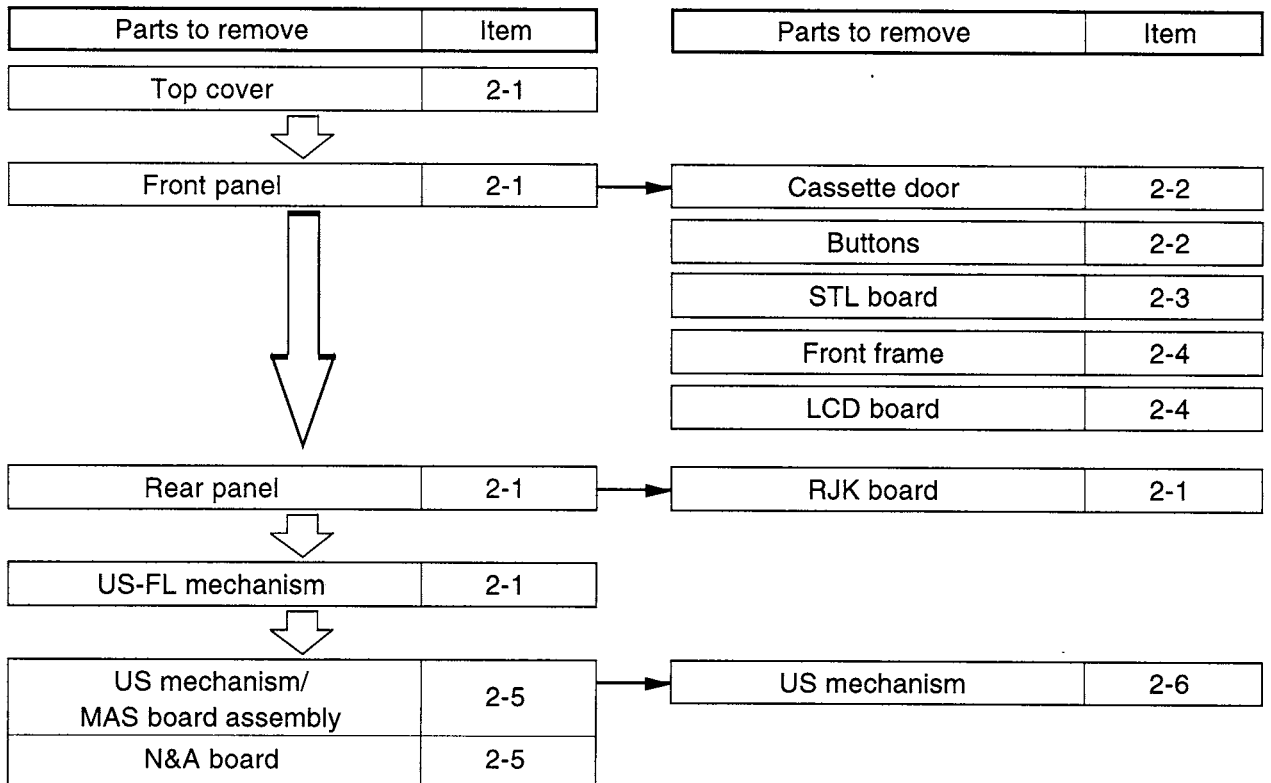
When replacing defective parts, first refer to the "Parts hierarchy chart" shown below. This chart shows the procedure for parts removal when replacing defective parts.

[How to use the parts hierarchy chart]

- (1) Locate the part to be replaced.
- (2) Check the parts in the ranks above the part to be replaced and start dismantling.
- (3) Replace the defective part and reinstall the parts in the reverse order to that shown in the parts hierarchy chart.

### Parts Hierarchy Chart

Note : Dismantle parts in the eject state.



Disassembly Procedure Diagrams

Item	Parts to remove
2-1	Top cover, front panel, rear panel, RJK board and US-FL mechanism

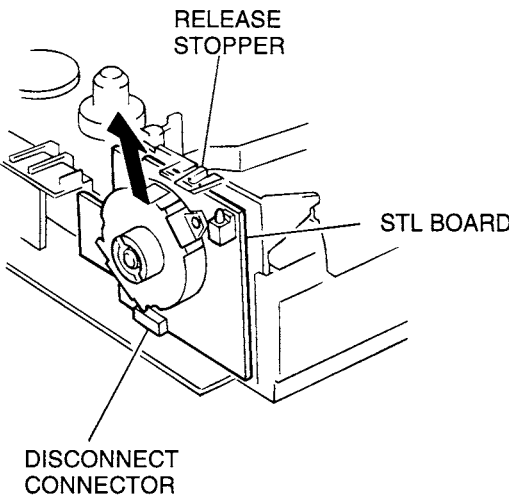
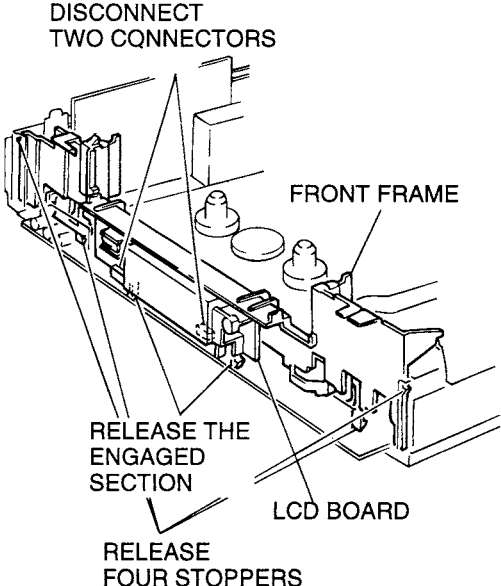
**◆ Caution when reinstalling the US-FL mechanism**  
 Reinstall the US-FL mechanism in the state that the cassette holder is pulled forward.  
 (Otherwise, the switch arm could damage the FL switch on the MAS board.)

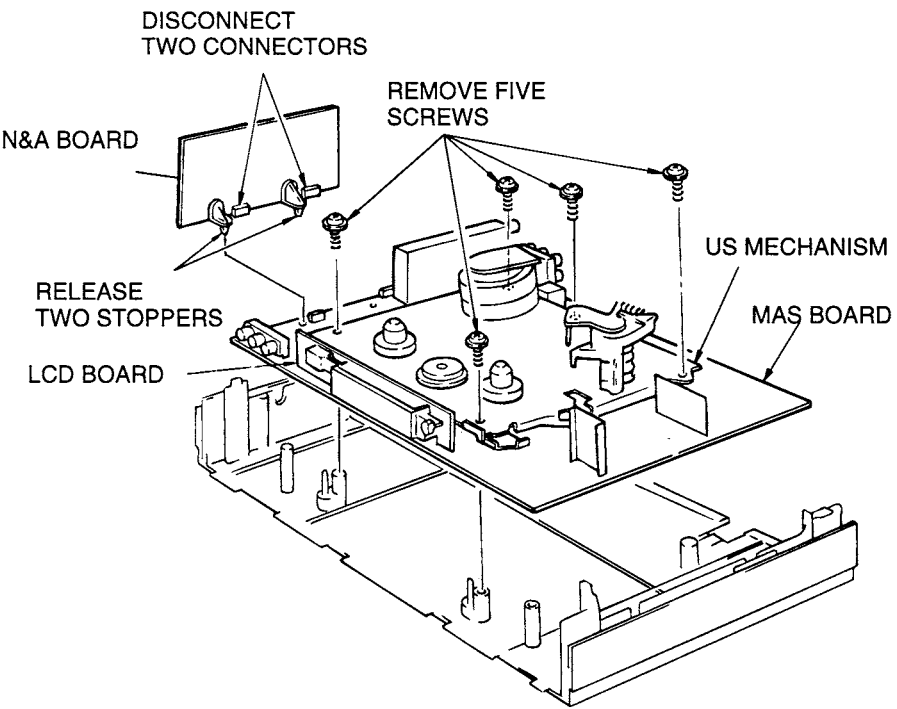
Fig. 2-1

2-2	Cassette door and buttons
-----	---------------------------

**◆ Caution when reinstalling the front panel**  
 Reinstall the front panel in the state the cassette door is pushed so the boss of the door arm comes to the front of the boss support of the cassette door.

Fig. 2-2

Item	Parts to remove	
2-3	STL board	2-4 Front frame and LCD board
 <p>RELEASE STOPPER</p> <p>STL BOARD</p> <p>DISCONNECT CONNECTOR</p> <p>Fig. 2-3</p>		 <p>DISCONNECT TWO CONNECTORS</p> <p>FRONT FRAME</p> <p>RELEASE THE ENGAGED SECTION</p> <p>LCD BOARD</p> <p>RELEASE FOUR STOPPERS</p> <p>Fig. 2-4</p>

2-5	US mechanism/MAS board assembly and N&A board	
 <p>DISCONNECT TWO CONNECTORS</p> <p>N&amp;A BOARD</p> <p>REMOVE FIVE SCREWS</p> <p>US MECHANISM</p> <p>MAS BOARD</p> <p>RELEASE TWO STOPPERS</p> <p>LCD BOARD</p> <p>Fig. 2-5</p>		

Item	Parts to remove
2-6	Separation of MAS board from US mechanism

DISCONNECT [Rear of the mechanism] FOUR CONNECTORS REMOVE SCREW

REMOVE TWO SCREWS

MAS BOARD

US MECHANISM

Fig. 2-6

**Procedure to remove only the US mechanism**

With this VCR the US mechanism can be removed without removing the MAS board. This is done by a different method from the normal disassembly method.

Parts to remove	Item
Top cover	2-1
↓	
Front Panel	2-1
↓	
US-FL mechanism	2-1
↓	
Remove two screws on the bottom of the VCR.	2-7
↓	
Remove five screws holding the US mechanism.	2-7

2-7	Procedure to remove only the US mechanism
-----	-------------------------------------------

REMOVE FIVE SCREWS


REMOVE TWO SCREWS

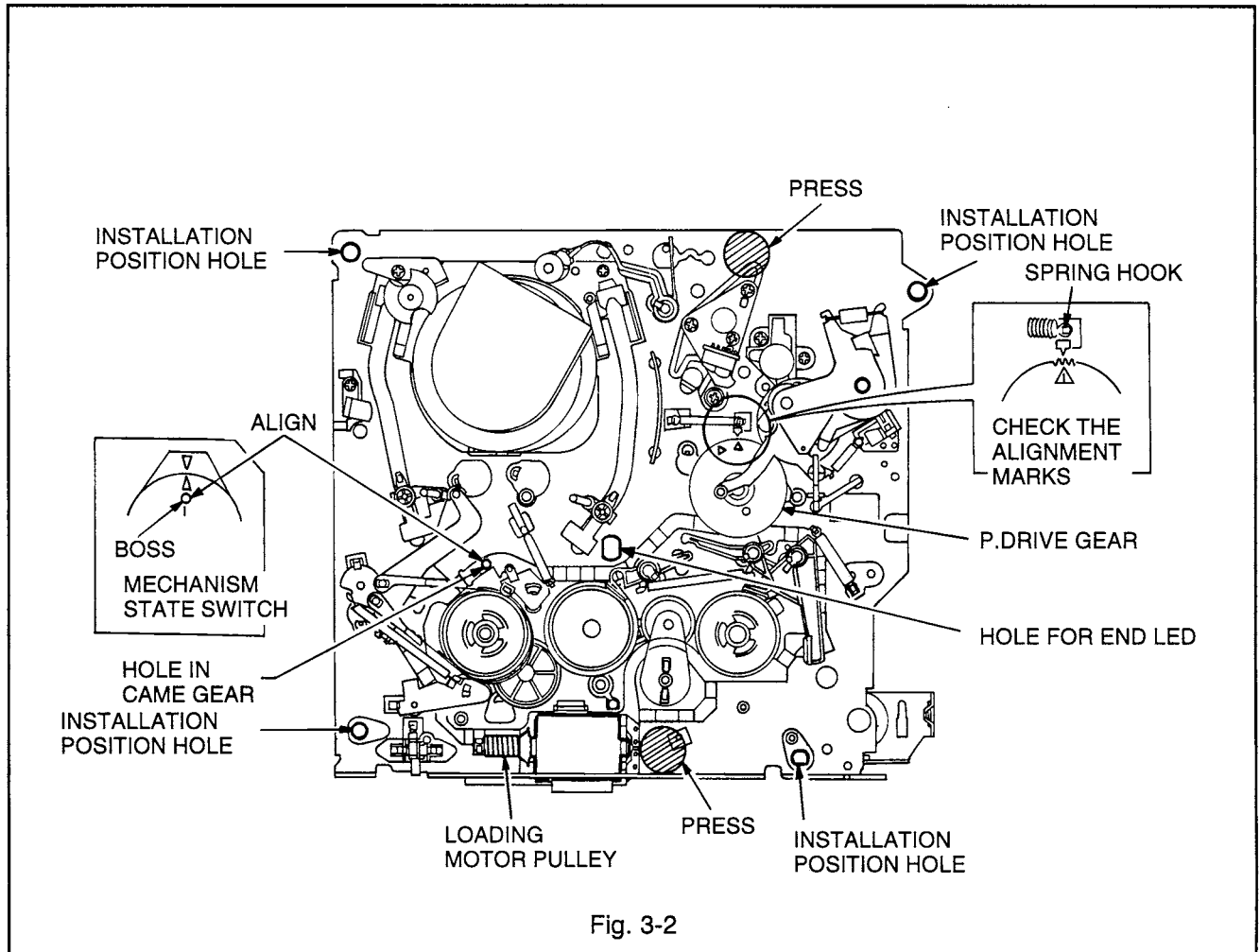
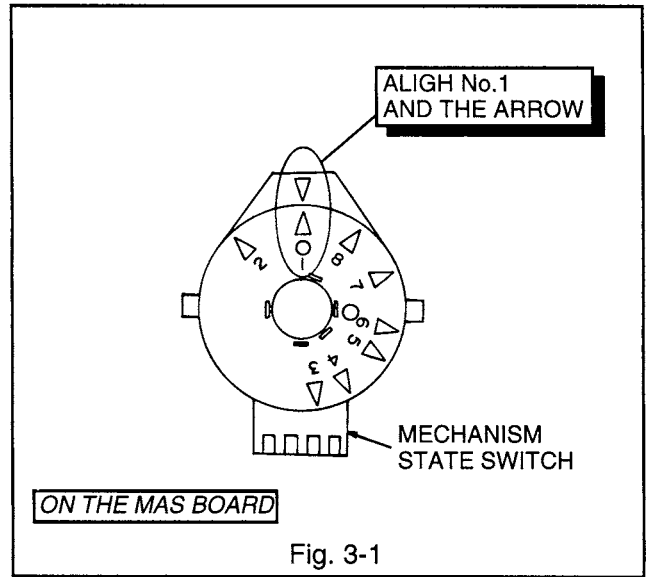
MAS BOARD

Fig. 2-7

### 3. Cautions When Reinstalling the US Mechanism

This VCR has mechanism sensors on the MAS board and the capstan and loading motors are connected via direct connectors. Therefore, when reinstalling the US mechanism, observe the following cautions.

- 1) Align the  $\nabla$  mark and mode no. 1 of the mechanism state switch on the MAS board. (Mode no. 1 of the mechanism state switch has a click position.)
- 2) Check that mode no. 1 on the P drive gear in the mechanism and the  $\nabla$  mark of the spring hook are aligned. If they are not aligned, turn the loading motor pulley to align them.
- 3) Pass the end LED through the hole in the mechanism and install the mechanism from immediately above using the installation position holes as reference. Check that the boss of the mechanism state switch and the hole in the cam gear are aligned.
- 4) Push the terminal sections (shaded sections ) of the capstan and loading motors and check that they are inserted securely.



**CHAPTER 3**

**ELECTRIC CIRCUIT ADJUSTMENT, TROUBLE DISPLAY AND MICROPROCESSOR PIN FUNCTION TABLES**

**Service Positions**

**1. Servicing position during electrical adjustment**

Perform adjustment after removing the top cover, front panel and rear panel.

*When the shield cover of the connector between the cylinder motor and MAS circuit boards is removed, noise appears in the played back picture. Attach the shield cover when checking the picture on the screen.*

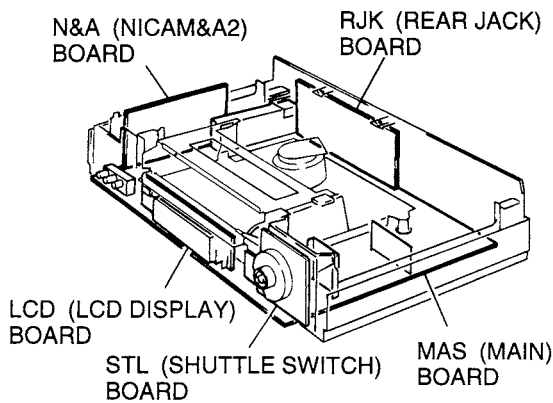


Fig. 1

**2. Servicing positions when repairing and checking circuits**

**2-1. Procedure to set the STL and LCD boards to the servicing positions (Fig. 2)**

- 1) Remove the top cover and front panel.
- 2) Remove the US-FL mechanism.
- 3) Remove the STL and LCD boards and front frame, then reattach the STL and LCD boards.

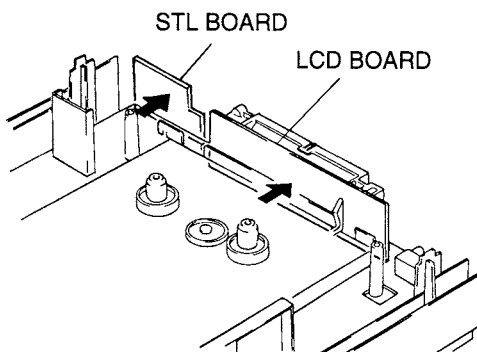


Fig. 2

**2-2. Procedure to set the MAS board to the servicing position (Fig. 3)**

- 1) Remove the top cover, front panel and rear panel.
- 2) Remove the US-FL mechanism and front frame.
- 3) Remove the MAS board, with the LCD, STL, N&A and RJK boards and US mechanism assembled from the frame.
- 4) Turn over the MAS board and perform checks from the pattern side indicated by the arrow.  
Be careful of the following at this time.
  - Lay out an insulation sheet under the boards.
  - Attach the shield cover at the rear of the cylinder.
 Attach the US-FL mechanism when loading the tape.

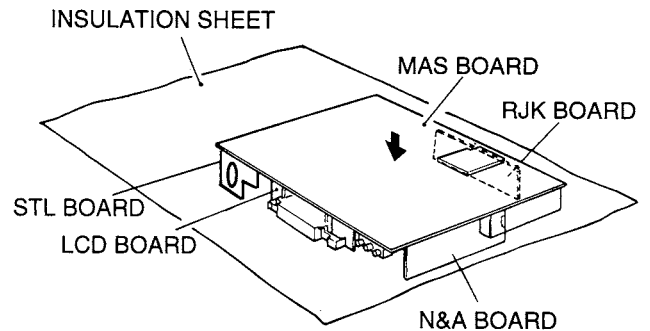


Fig. 3

**3. Be careful of electric shocks**

The power supply block on the right of the VCR has a heat sink which generates a high voltage. "HIGH VOLTAGE" is printed on the heat sink. Take great care when handling this heat sink when the power is turned on during servicing.

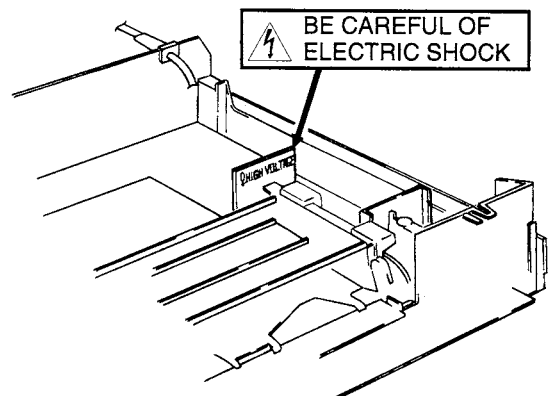


Fig. 4



## Electrical Circuit Adjustment

### 1. Test equipment/jigs necessary for adjustment

- 1) Dual-trace oscilloscope
- 2) Colour bar generator
- 3) Voltmeter
- 4) Monitor TV (with A/V jacks)
- 5) Alignment tapes :  
 MH-2 : Part No. 7099052  
 24HMAF-2 : Part No. 7099175  
 (Hi-Fi alignment tape)
- 6) Blank tape
- 7) C/R oscillator

### 2. Cautions on adjustment

- 1) The following conditions apply when otherwise not specified.  
 Probe of oscilloscope : 10 : 1  
 Synchronization of oscilloscope : Internal sync  
 Ground of test equipment : PG2508 pin 6  
 (on MAS board)
- 2) When performing more than one adjustment, follow the specified order.

### 3. Tips for adjustment

#### 3-1. Procedure to reset the main microprocessor

The main microprocessor is not reset even when the power cord is unplugged from the AC outlet because its power is backed up by a backup circuit. Press S708 on the MAS board to reset the entire microprocessor. Do not press the reset switch with the power cord unplugged from the AC outlet as the slow tracking preset value could drift. If the preset value drifts, plug the power cord into an AC outlet and press the reset switch again with the power turned on. It is recommended that you press the reset switch after reinstalling the front panel.

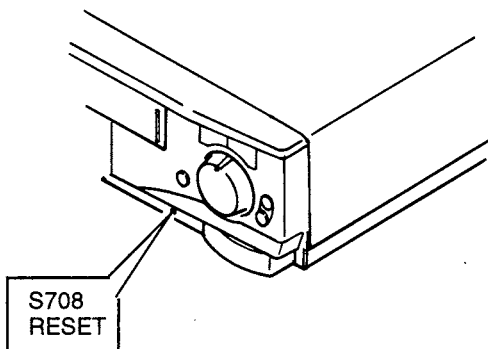


Fig. 5

#### 3-2. Procedure to switch off the blue background function

- 1) Press the "GUIDE" button of the remote control to display the menu on the monitor TV screen.
- 2) Press 2 to select the VCR setup screen.
- 3) Press 1 to specify blue background off.

#### 3-3. Procedure to obtain the LP head playback mode (X-value adjustment test mode)

Press the TRACKING UP (▲) and DOWN (▼) buttons of the remote control provided simultaneously when an alignment tape is being played and hold them, then press the "CHANNEL ▽" button on the VCR; The VCR enters the LP head playback mode (X-value adjustment test mode) .

### 4. Connections of test equipment

Connect the test equipment as follows when otherwise not specified.

- 1) Connect a colour bar generator to the video input jack of the VCR.
- 2) Connect a monitor TV to the Euro Socket of the VCR.
- 3) Connect an antenna to the antenna jack and receive a TV broadcast (only for sound multiplex adjustment) .

Test Points and Adjustment Points

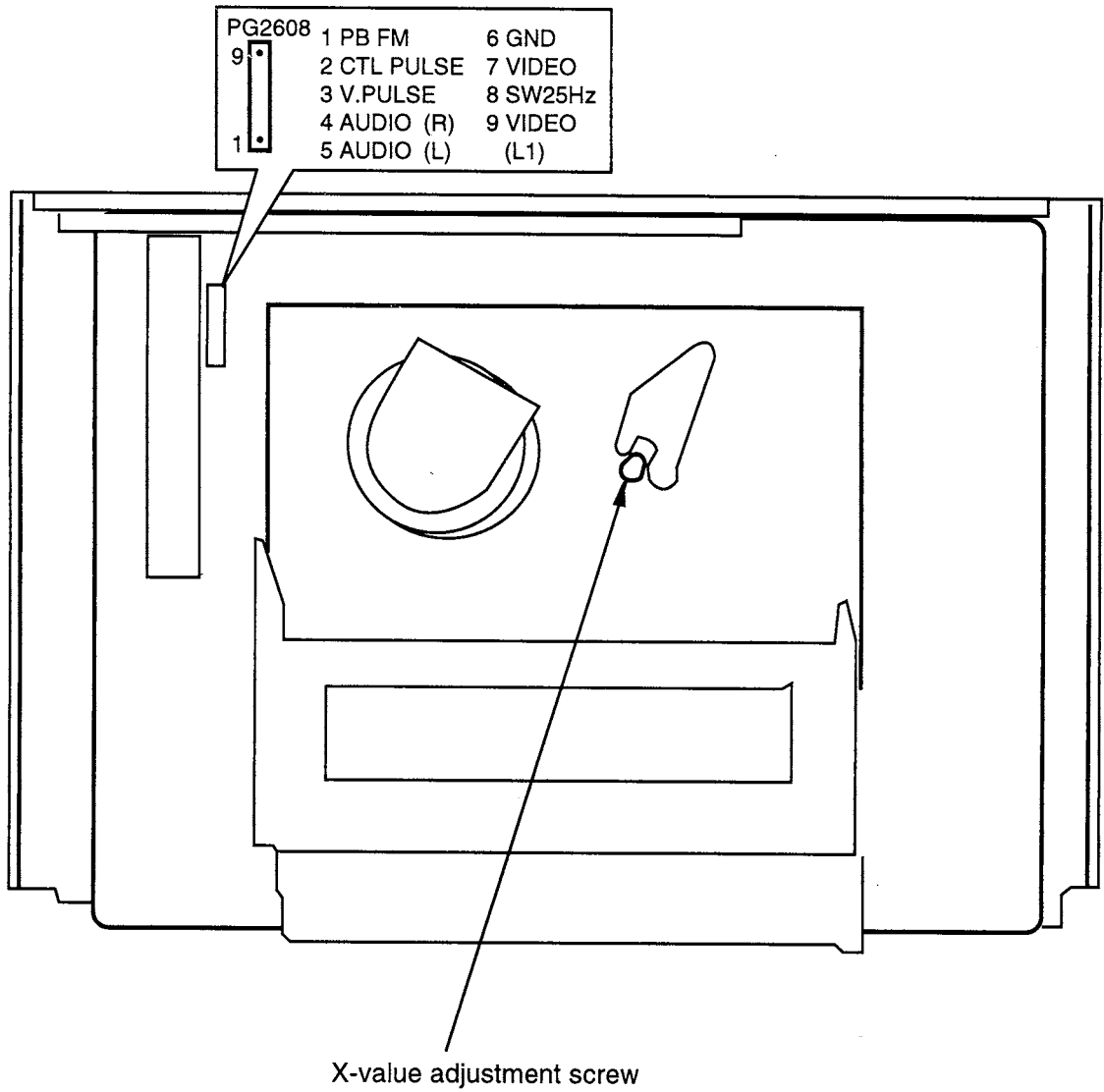


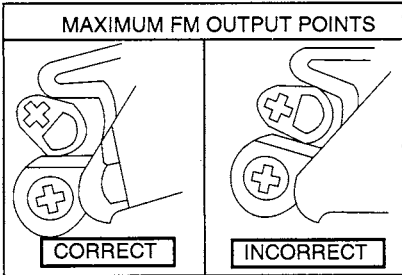
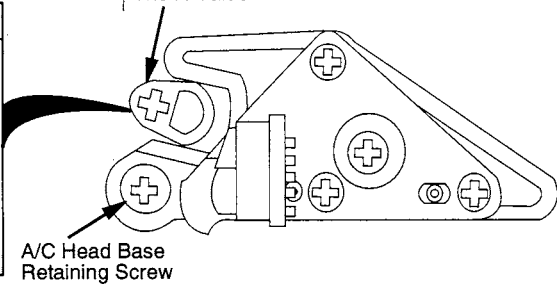
Fig.6 MAS (Main) Circuit Board [Components Side]

5. Servo Circuit Adjustments

5-1. Switching point adjustment (Fig. 6)

Purpose : To set the switching point of the video heads during playback to the center where the CH-1 and CH-2 envelopes overlap each other.		Fault due to incomplete adjustment : · Vertical sync signal is degraded and vertical jitter occurs. · Switching noise appears across the bottom of the screen.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Oscilloscope	CH-1 : Video out jack CH-2 : PG2508-8 (SW25Hz)	1) Play the alignment tape 2) Set to the X-value adjustment test mode.	· F.FWD button (S702) · REW button (S703)
Alignment tape (MH-2)			
Adjustment Procedure 1) Play the alignment tape. 2) Press the tracking up (▲) and down (▼) buttons of the remote control provided simultaneously and hold them, then press the "CHANNEL ▽" (S707) button of the VCR to set the VCR to the test mode. (SP is switched to LP in the display.) 3) Press the "F.FWD" and "REW" buttons of the remote control so the phase from the vertical sync to the trailing edge (trigger position) of the SW25Hz pulse is set to $6.5H \pm 0.5H$ . 4) Press the STOP button to release the test mode. -Conditions of oscilloscope- Trigger with CH-2. Set the sync slope to "-".		Waveforms  PG2508-8 SW25Hz (5V/div., 50 μS/DIV.)  VIDEO OUT (500mV/div.)  TRIGGER POINT  VERTICAL SYNC  $6.5 \pm 0.5H$	

5-2. X-value adjustment (Fig. 6)

Purpose : To ensure compatibility with other VCRs.		Fault due to incomplete adjustment : When a tape recorded by another VCR is played back, the tracking is not optimized and noise appears on the screen.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Oscilloscope	CH-1 : PG2508-1 (PB FM) CH-2 : PG2508-8 (SW25Hz)	1) Play the alignment tape. 2) Set to the X-value adjustment test mode.	Groove for the djustment X-value
Alignment tape (MH-2)			
Adjustment Procedure 1) Play the alignment tape. 2) Press the tracking up (▲) and down (▼) buttons of the remote control provided simultaneously and hold them, then press the "CHANNEL ▽" (S707) button of the VCR to set the VCR to the test mode. (SP is switched to LP in the display.) 3) Loosen the screw holding the A/C head base (do not loosen it excessively) . 4) Insert a screwdriver into the groove for adjusting the X-value and adjust so the FM output is maximum. There are two maximum FM output points when the groove for adjusting the X-value is turned. Adjust the FM output to a maximum when the groove is at the correct position as shown in the figure below. 5) Press the STOP button to release the test mode.		Waveforms PG2508-1 (PB FM)  FM output maximum  (50mV/div., 20 μs/div.)  Groove For Adjustment The X-Value	
			

5-3. Vertical jitter adjustment

Purpose : To suppress vertical jitter during slow and still play.		Fault due to incomplete adjustment : Vertical jitter appears in the picture during slow and still play.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Monitor TV Colour bar generator Blank tape	Video output jack Video input jack	Record a colour bar signal and play it using the same VCR.	<ul style="list-style-type: none"> <li>• Tracking up (▲)</li> <li>• Tracking down (▼)</li> </ul>
Adjustment Procedure <LP vertical jitter correction> : Record in the LP mode and play it back using the same VCR. 1) Press the PAUSE button to set the VCR to the still play mode. 2) Use the tracking up or down buttons of the remote control to suppress vertical jitter of the picture.		<SP vertical jitter correction> : Record in the SP mode and play it back using the same VCR. 1) Press the PAUSE button to set the VCR to the still play mode. 2) Use the tracking up or down buttons of the remote control to suppress vertical jitter in the picture.	

5-4. Forward slow tracking preset adjustment

Purpose : To adjust the timing with which the brake pulse of the capstan motor is generated during slow play so that noise is minimum.		Fault due to incomplete adjustment : Noise appears during slow play and the picture is not clear.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Monitor TV Colour bar generator Blank tape (E-180)	Video output jack Video input jack	Slow tracking : Unplug the power cord to set the slow tracking to the center.	<ul style="list-style-type: none"> <li>• Tracking up (▲)</li> <li>• Tracking down (▼)</li> </ul>
Adjustment Procedure 1) Record a signal on the middle of a E-180 blank tape in the LP mode and play it back using the same VCR. 2) Press the tracking up and down buttons of the remote control (provided) simultaneously during playback and hold them, then press the "PLAY" button (S701) to set the VCR to the forward test slow mode. 3) Press the tracking up or down buttons so the slow feed noise appears across the bottom of the monitor screen and then it is driven out from the bottom of the screen.		4) Check that no noise appears on the monitor screen. 5) Press the "PLAY" button to return the VCR to the playback mode (the preset data is written to the EEPROM) . 6) Perform the same procedure to perform slow tracking preset adjustment in the SP mode. Do not press the reset switch after adjustment when the power is not turned on as the preset value could drift. If the preset value drifts, turn the power on and press the reset switch again for recovery.	

5-5. Reverse slow tracking preset adjustment

Purpose : To adjust the timing with which the brake pulse of the capstan motor is generated during reverse slow play so that noise is minimum.		Fault due to incomplete adjustment : Noise appears during reverse slow play and the picture is not clear.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Monitor TV Colour bar generator Blank tape (E-180)	Video output jack Video input jack	Slow tracking : Unplug the power cord to set the slow tracking to the center.	<ul style="list-style-type: none"> <li>• Tracking up (▲)</li> <li>• Tracking down (▼)</li> </ul>
Adjustment Procedure 1) Record a signal on the middle of a E-180 blank tape in the LP mode and play it back using the same VCR. 2) Press the tracking up and down buttons of the remote control (provided) simultaneously during still and hold them, then press the "PLAY" button (S701) to set the VCR to the forward test slow mode. 3) Press the tracking up or down buttons so the slow feed noise appears across the bottom of the monitor screen and then it is driven out from the bottom of the screen.		4) Check that no noise appears on the monitor screen. 5) Press the "PLAY" button to return the VCR to the playback mode (the preset data is written to the EEPROM) . 6) Perform the same procedure to perform slow tracking preset adjustment in the SP mode. Do not press the reset switch after adjustment when the power is not turned on as the preset value could drift. If the preset value drifts, turn the power on and press the reset switch again for recovery.	

**6. Audio Circuit Adjustment**

**6-1. Hi-Fi audio playback level check**

Purpose : To set the playback level of the Hi-Fi audio signal to the specified value.		Fault due to incomplete adjustment : The appropriate volume cannot be obtained during playback.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
Voltmeter Hi-Fi Alignment tape (24HMAF-2)	When checking R-CH : PG2508-4 When checking L-CH : PG2508-5	Play Hi-Fi alignment tape.	_____
Adjustment Procedure Use the same checking procedure for both the L and R channels. Check that the voltmeter reads $-7.8\text{dB} \pm 3.0\text{dB}$ . If it cannot be confirmed, check the playback signal system.			

**6-2. E-E audio level check**

Purpose : To check the audio level in the E-E mode.		Fault due to incomplete adjustment : The sound is abnormal in the E-E mode.	
Test Equipment/Jigs	Connection Points	State of VCR	Adjustment Point
C/R oscillator Voltmeter	Audio in 1 jack (L-CH) Audio in 1 jack (R-CH) Audio out jack (L-CH) Audio out jack (R-CH)	E-E mode	_____
Adjustment Procedure 1) Apply a 1kHz, $-7.8\text{dB}$ sinewave signal to the audio input 1 (L-CH and R-CH) jacks. 2) Check that the voltmeter reads $-6.8\text{dB} \pm 2.0\text{dB}$ . 3) If the above cannot be confirmed, check the E-E audio line.			

### List of Data in EEPROM and Initial Settings

The table below lists the data stored in ROM. It also shows the data set by shipment mode initialization, when the trouble display is cleared.

Information	Data memory ROMs		List of initial data	Remarks
	IC903 EEPROM	Shipment mode initial data	Clearing of trouble display	
Channel memory	○	○		
VCR mode select data	○	○		
Trouble display data	○	○	○	
Slow tracking data	○	× (set by adj.)		
Artificial V sync data	○	× (set by adj.)		
Switching point data	○	× (set by adj.)		
SAT data	○	○		

### List of Hidden Commands

The following tables list the mode setting commands during adjustment and EEPROM initial setting commands.

#### 1. Mode setting commands during adjustment

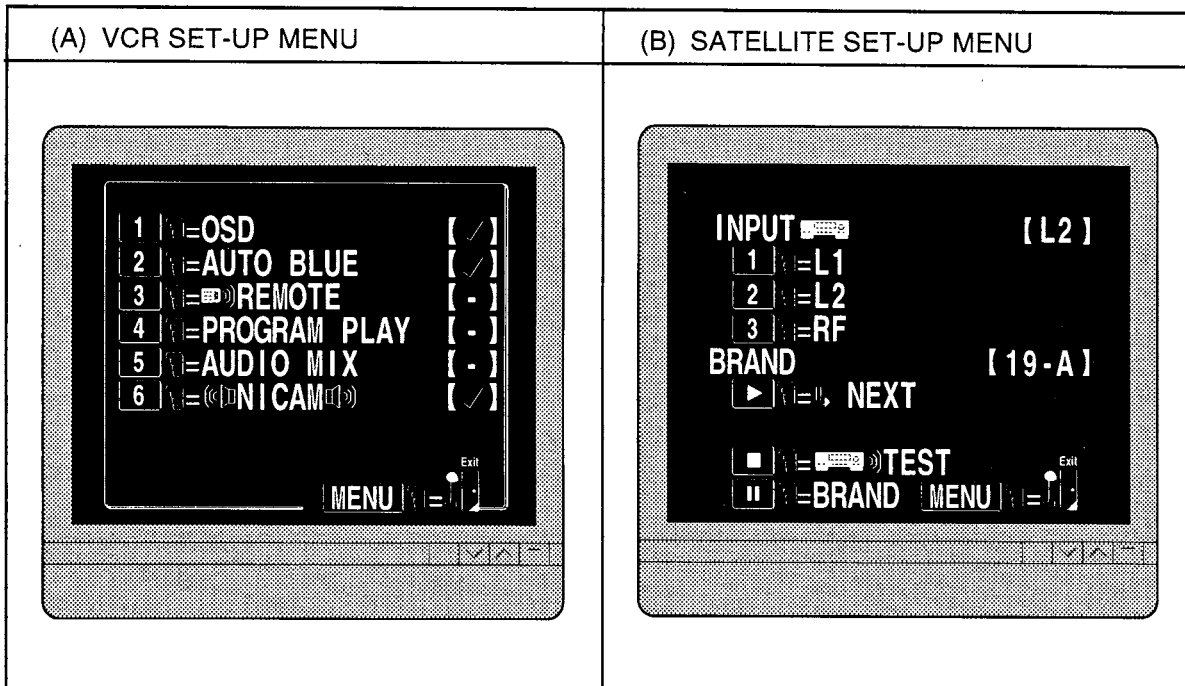
Item	Mode in which command is accepted	Operation	Remarks
Tracking center	Play	Press the tracking up(▲) and down(▼) buttons of the remote control simultaneously.	
X-value adjustment test mode	Play	Press the tracking up(▲) and down(▼) buttons of the remote control simultaneously and press the "CHANNEL ▽" button on the VCR.	
Forward test slow mode	Play	Press the tracking up(▲) and down(▼) buttons of the remote control simultaneously and press the "PLAY" button on the VCR.	
Reverse test slow mode	Still play	Press the tracking up(▲) and down(▼) buttons of the remote control simultaneously and press the "PLAY" button on the VCR.	

#### 2. EEPROM initialization commands

Item	Mode in which command is accepted	Operation	Remarks
Shipment mode initial setting	EJECT	Press the "REC" buttons on the VCR and hold it, then press the "RESET" button used to initialize the microprocessor.	Hold the "REC" button depressed and release it after the display lights.
Clearing of trouble display	_____	Press the "PLAY" button on the VCR and hold it, then press the "RESET" button used to initialize the microprocessor.	Hold the "PLAY" button depressed and release it after the display lights.

### Initial Settings of IC903 (EEPROM)

The following shows the on-screen display and modes of switches when IC903 (EEPROM) is initialized.



### Caution When Replacing IC903 (EEPROM)

After replacing IC903 (EEPROM) , execute the VCR initial settings and then perform the following adjustments.

	Adjustment	Page
1	Switching point adjustment	P3-4
2	Vertical jitter adjustment	P3-5
3	Forward slow tracking adjustment	P3-5
4	Reverse slow tracking adjustment	P3-5

**TROUBLE DISPLAY FUNCTION**

This VCR has a function which displays mechanism malfunctions, etc. in the LCD display. Use this function to analyze the cause when the power is shut off due to a malfunction, etc. in the mechanism.

Two types of information are displayed, 1) The operation mode when the malfunction occurred, 2) Malfunction Codes.

The details of the malfunction are displayed as follows.

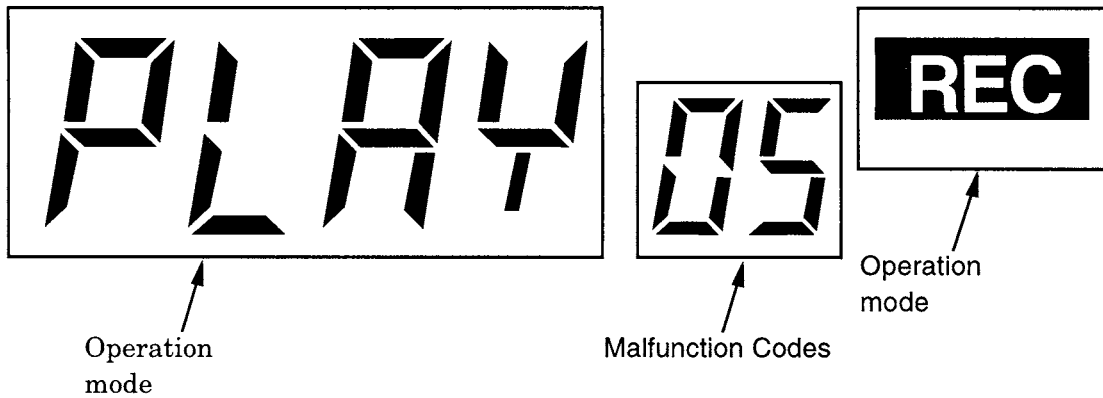
**Procedure to display a malfunction**

Press the (CH ▼) button on the VCR when the power is turned off and hold it ; the malfunction code is displayed while the button is held depressed.

**Procedure to clear the malfunction display**

Press the "PLAY" button on the VCR and hold it, then press the microprocessor "RESET" button to initialize the trouble display.

**LCD DISPLAY**



**[Display of details of malfunction]**

Displayed No.	Item	Details
" 0 0 "	No malfunction	
" 0 1 "	FL mechanism lock	Malfunction in insertion/ejection of cassette
" 0 2 "	Capstan lock	Malfunction of capstan motor drive during tape unloading
" 0 4 "	Reel lock	Reel rotation trouble when tape is running
" 0 5 "	Cylinder lock	Cylinder rotation malfunction
" 0 7 "	Loading mechanism lock	Malfunction in shifting mechanism mode
" 1 6 "	Servo lock	Shrting of 5V detected

**[Mode Display when Malfunction Has Occurred]**

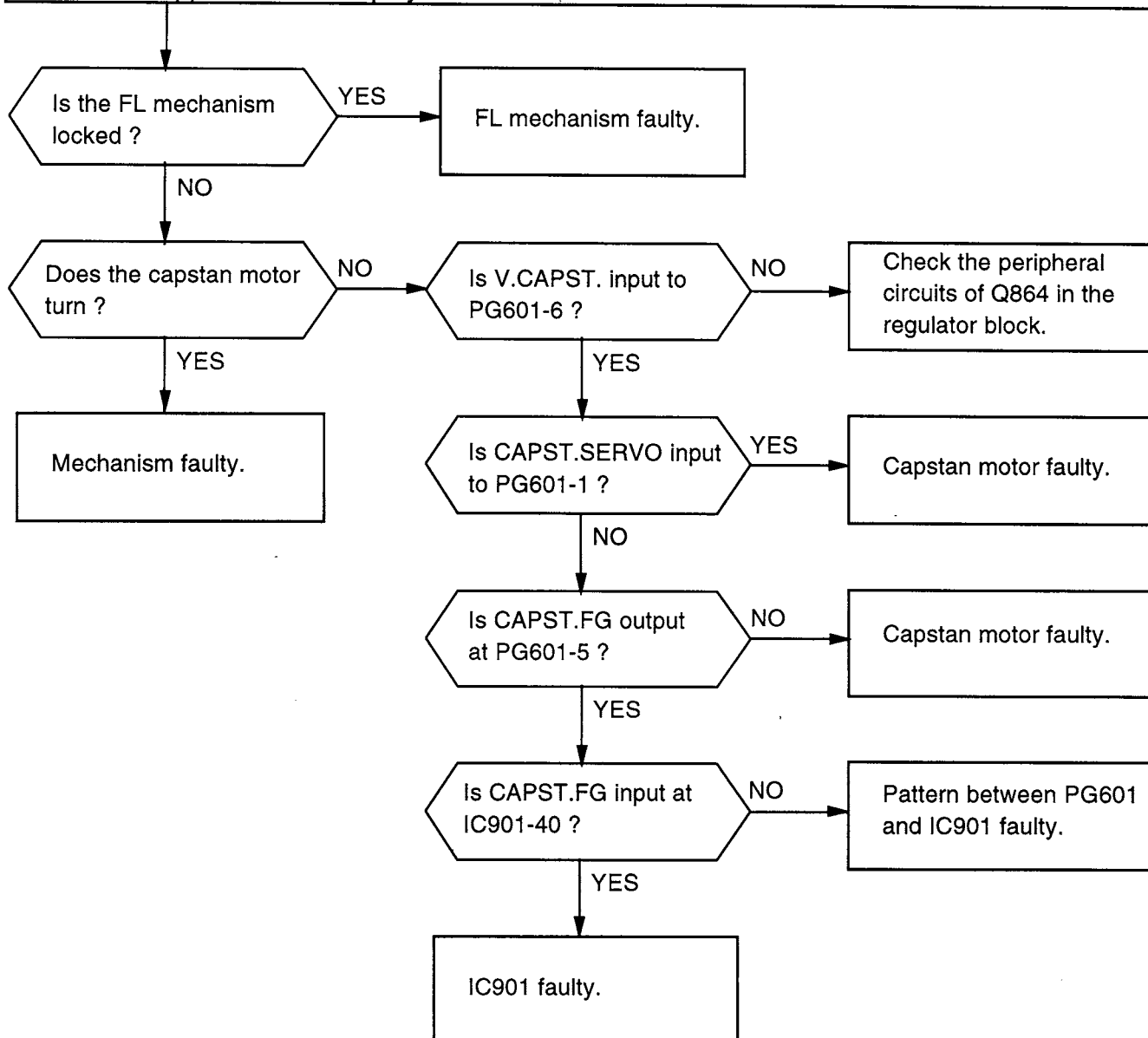
Mode	Display	Mode	Display
Stop	No Display	Playback	<b>PLAY</b>
Fast forward	<b>FF</b>	Reverse playback	<b>-PLAY</b>
Rewind	<b>REW</b>	Forward search	<b>SRCH</b>
Hight speed fast forward	<b>S : FF</b>	Reverse search	<b>-SRCH</b>
Hight speed rewind	<b>S : REW</b>	Slow motion play	<b>SLOW</b>
Recording	<b>REC</b>	Reverse motion slow play	<b>-SLOW</b>
Recording pause	<b>REC</b> (flashes)	Still motion play	<b>STILL</b>

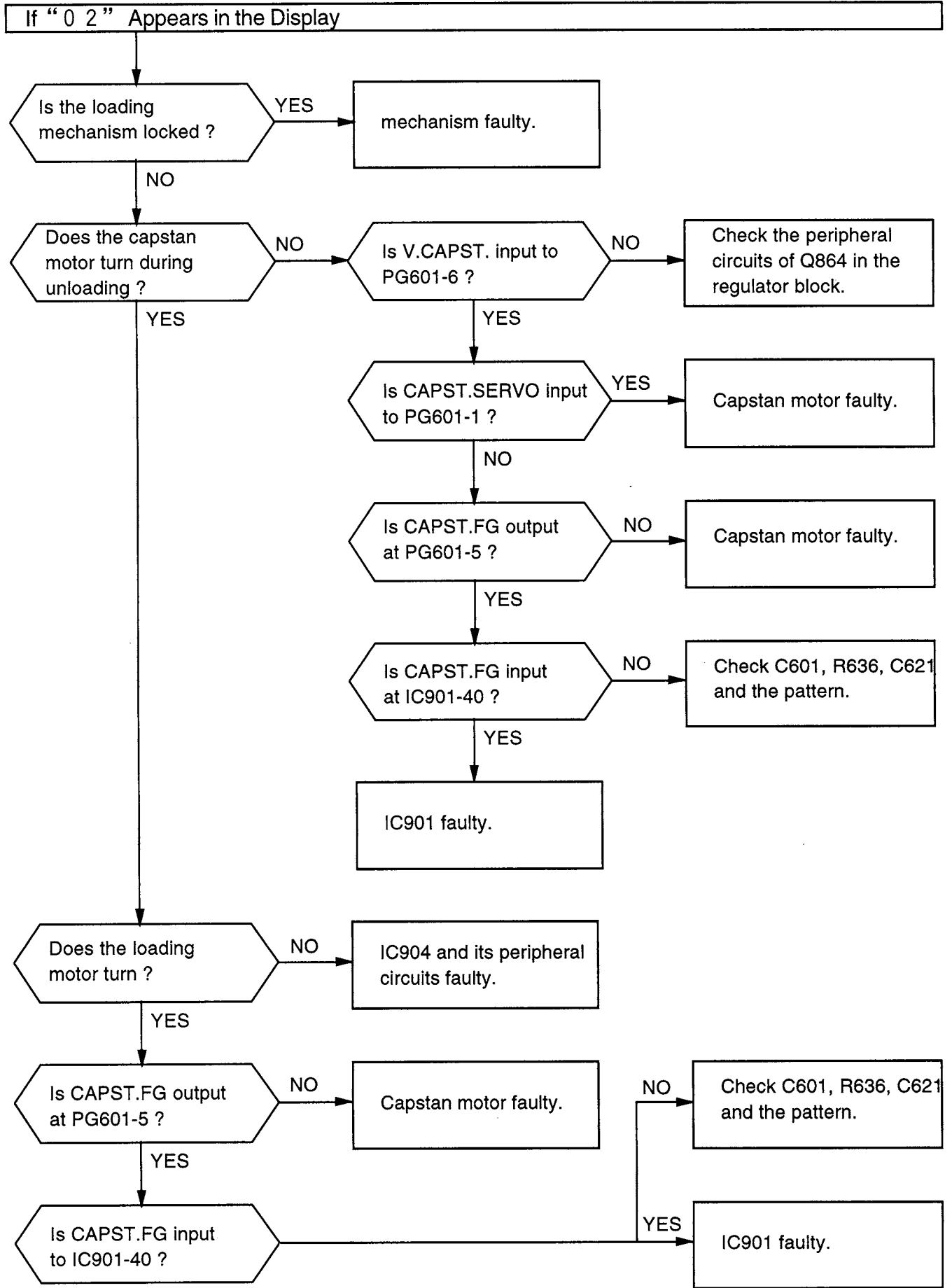
No symbols are displayed if the malfunction occurred when a cassette was inserted or ejected, or the power was switched on from off, and off from on.

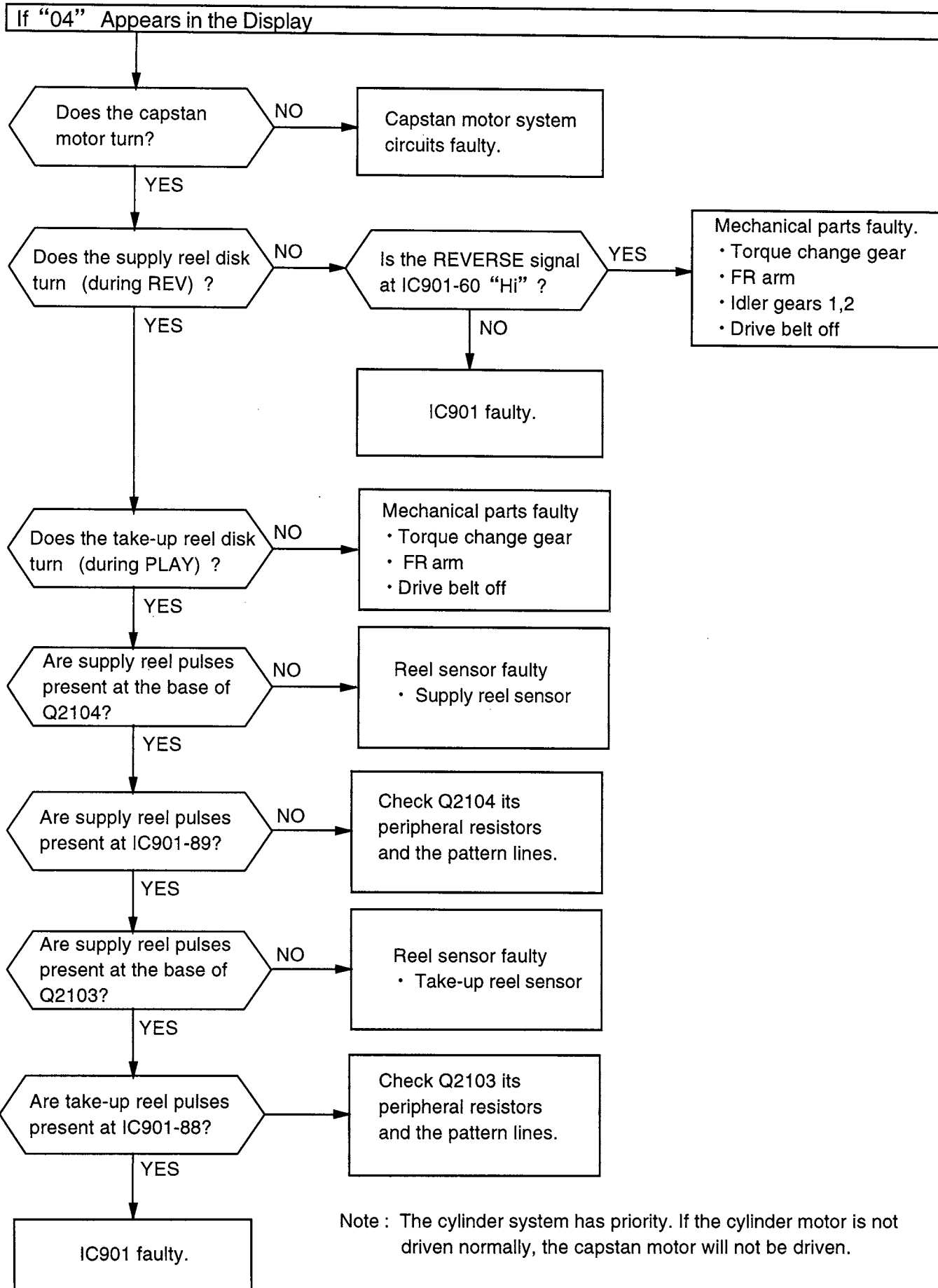


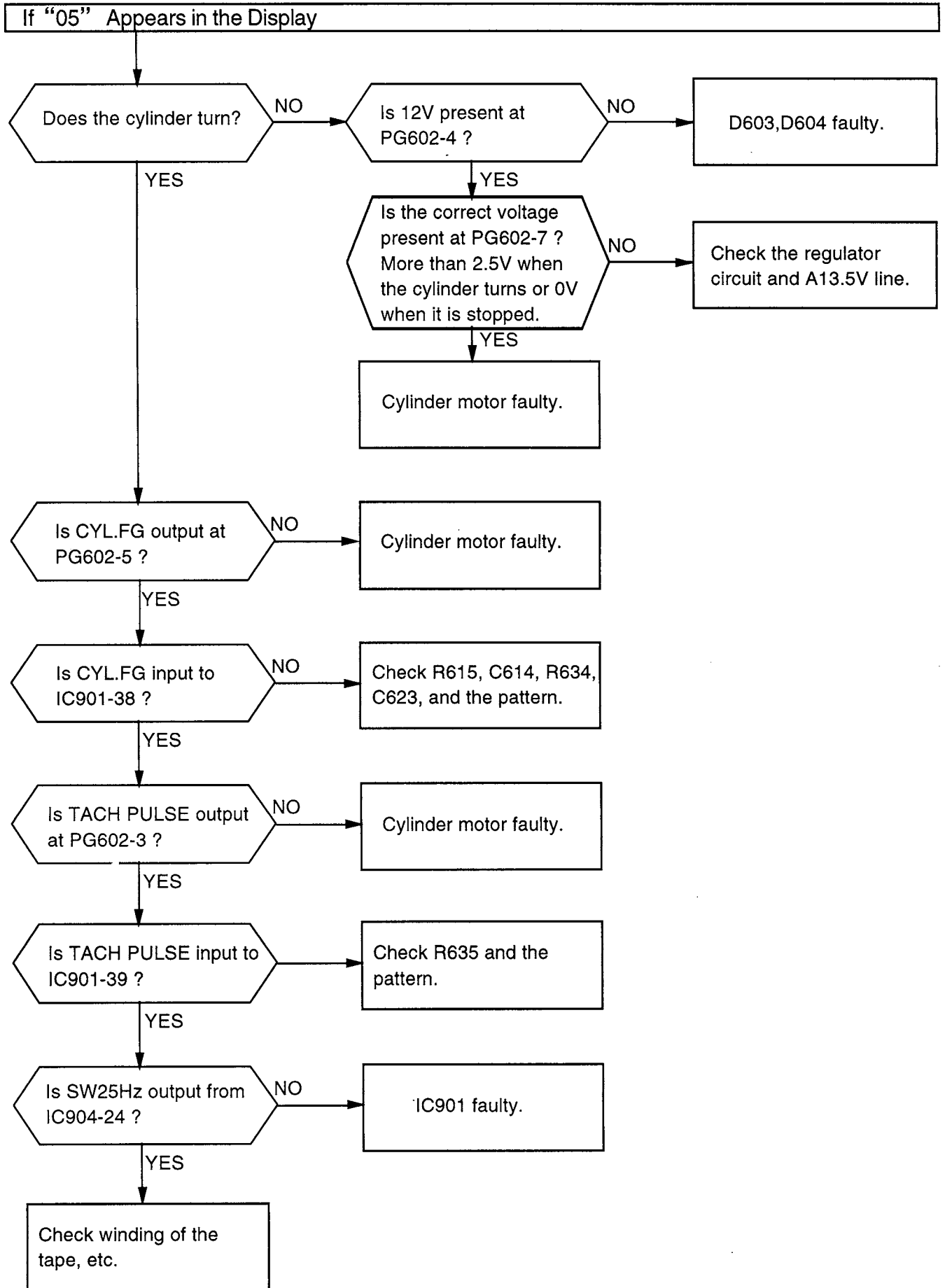
Troubleshooting According to Malfunction Display

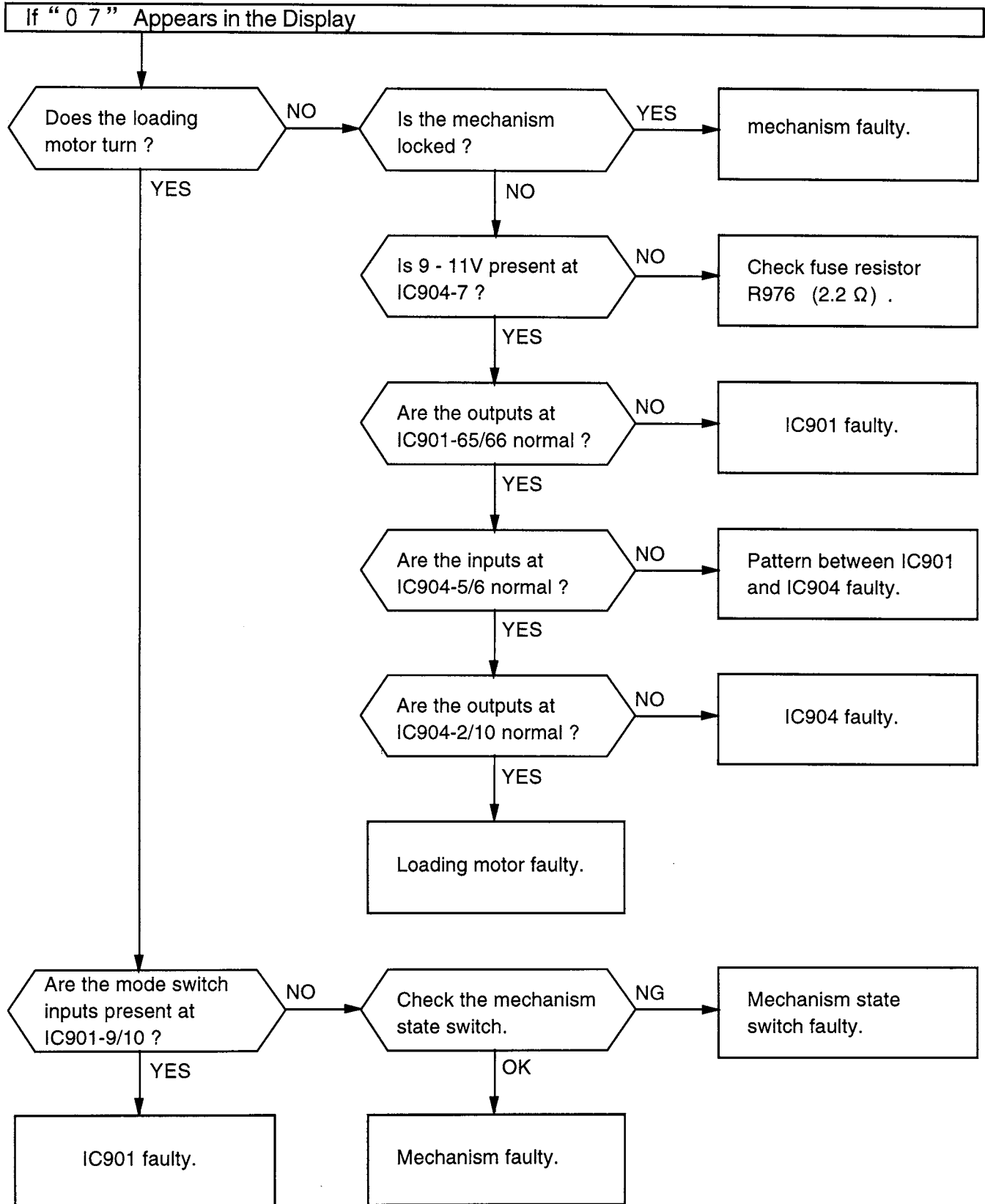
If "0 1" Appears in the Display

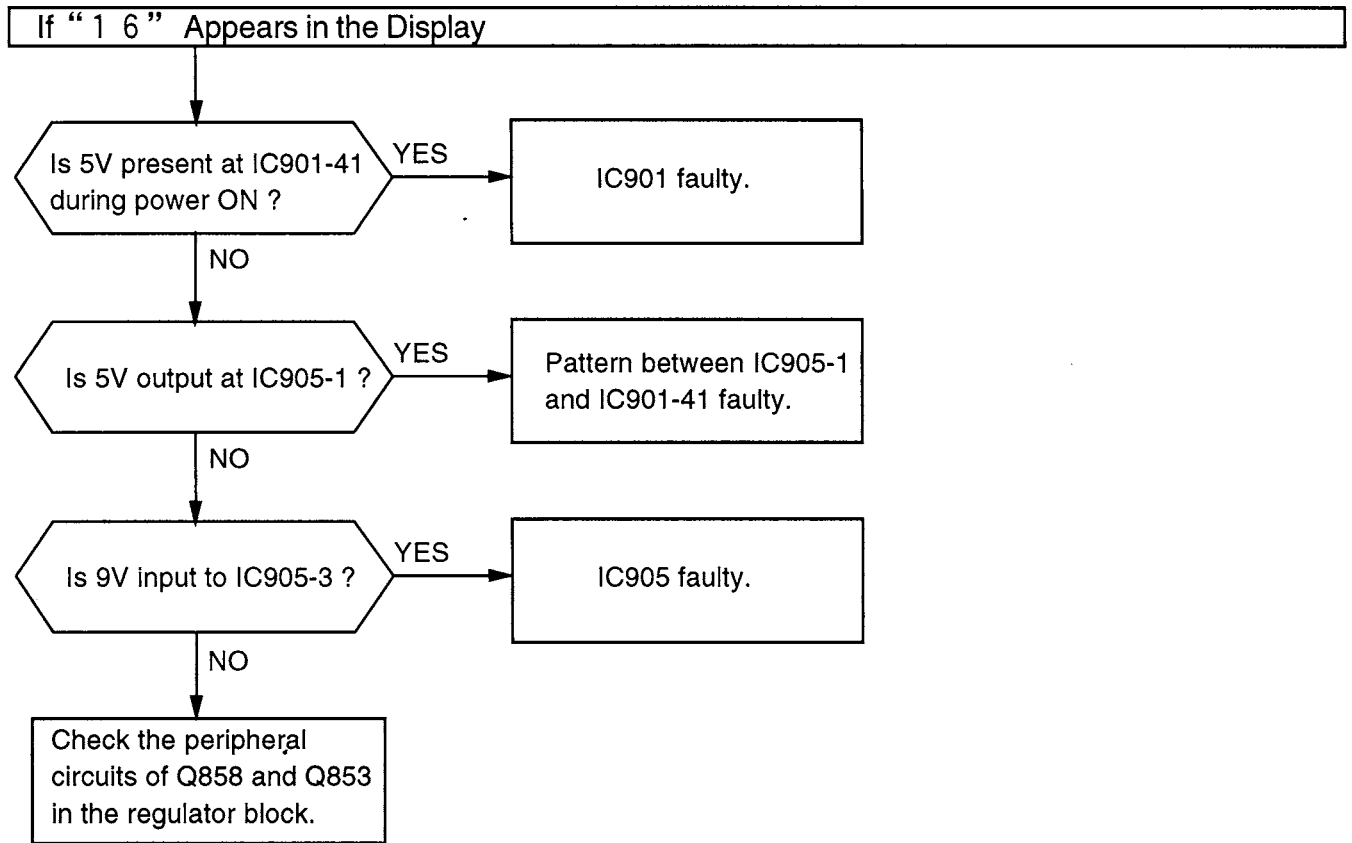












## MICROPROCESSOR PIN FUNCTION TABLES

LCD DRIVER  $\mu$ P (IC1701)

Pin No.	I/O	Active Level	Abbreviation	Function
1	-	-	SEGMENT(1)	Not used.
2	-	-	SEGMENT(2)	
:	:	:	:	
:	:	:	:	
5	-	-	SEGMENT(5)	
6	O	Pulse	SEGMENT(6)	LCD segment control outputs.
7		Pulse	SEGMENT(7)	
:	:	:	:	
:	:	:	:	
31	O	Pulse	SEGMENT(31)	
32	O	Pulse	SEGMENT(32)	
33	O	Pulse	COM1	LCD common (COM) control outputs.
34	O	Pulse	COM2	
35	O	Pulse	COM3	
36	I	Lo	RESET(L)	Initializes the LCD- $\mu$ P when power supplied.
37	I	Hi	VDD	A5V power Input.
38	I	-	VDD1	LCD drive bias.
39	I	-	VDD2	LCD drive bias.
40	I	Lo	VSS	Ground.
41	I/O	-	OSC	Generates a 32KHz signal for key scanning.
42	I	Lo	LCD LOAD	LOAD signal between the LCD- $\mu$ P and M- $\mu$ P. "Lo" input enables chip select.
43	I	Pulse	CLOCK (M-LCD)	The data is transferred from the M- $\mu$ P, synchronized with the clock signal.
44	I	Pulse	DATA (M-LCD)	

MAIN  $\mu$ P (IC901)

Pin No.	I/O	Active Level	Abbreviation	Function																											
1	O	Hi	BACKLIGHT	LCD backlight switching signal.																											
2	-	-	GND	Ground.																											
3	I	A/D	SHUTTLE 2	Inputs from the shuttle dial switches. The shuttle speed and direction are determined.																											
4	I	A/D	SHUTTLE 1																												
5	I	A/D	KEY IN	Key matrix input.																											
6	I	A/D	FL/TAB	Cassette position/erase prevention tab detection input. Hi:TAB SW OFF (with tab), Mid:TAB SW ON (without tab), Lo:When cassette is being inserted /ejected. When a cassette without its erase prevention tab is Inserted, recording is inhibited, and when the timer is programmed, it is ejected automatically.																											
7	I	Lo	POWER STOP	When A5V voltage drops and "Lo" is input, the M- $\mu$ P detects that a power failure has occurred.																											
8	I	Hi	S-CURVE	Detects the AFT (S-CURVE) signal from the IF unit to fine tune to a station.																											
9	I	A/D	M.STATE 3/4	The signals which detect the mechanism state are input to control the loading motor.																											
10	I	A/D	M.STATE 1/2																												
				<table border="1"> <thead> <tr> <th>Pin</th> <th>EJECT</th> <th>UNLOAD</th> <th>REV.</th> <th>R.SLOW</th> <th>SLOW</th> <th>R/P</th> <th>STOP2</th> <th>FF/REW</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>0</td> <td>2.5</td> <td>1.8</td> <td>2.5</td> <td>3.05</td> <td>3.05</td> <td>2.5</td> <td>0</td> </tr> <tr> <td>10</td> <td>1.8</td> <td>3.05</td> <td>0</td> <td>0</td> <td>0</td> <td>1.8</td> <td>2.5</td> <td>3.05</td> </tr> </tbody> </table>	Pin	EJECT	UNLOAD	REV.	R.SLOW	SLOW	R/P	STOP2	FF/REW	9	0	2.5	1.8	2.5	3.05	3.05	2.5	0	10	1.8	3.05	0	0	0	1.8	2.5	3.05
Pin	EJECT	UNLOAD	REV.	R.SLOW	SLOW	R/P	STOP2	FF/REW																							
9	0	2.5	1.8	2.5	3.05	3.05	2.5	0																							
10	1.8	3.05	0	0	0	1.8	2.5	3.05																							
11	I	A/D	ENV.(VIDEO)	Audio and video envelope level inputs for autotracking.																											
12	I	A/D	ENV.(AUDIO)																												
13	I	A/D	MODEL SW	Model switching control.																											
14	I	A/D	DEC. CONT	Decoder control signal.																											
15	I	-	A5V	Connected to A5V.																											
16	I	Lo	RESET(L)	Initializes the M- $\mu$ P when power is supplied.																											
17		-	NC																												
18	O	Hi	TUNER LOAD	A data line is provided between the M- $\mu$ P and RF/Tuner and the $\mu$ P sets the LOAD pin to "Hi" when transferring data and holds it until transfer is completed.																											
19	O	Hi/Lo	L3/L3(L)	FRONT/REAR Jack switching control signal output.																											
20		-	NC																												
21	I	Hi/Lo	MESECAM DET	Mode selection input. Hi: MESECAM																											
22	I	-	B5V	Connected to B5V.																											
23	O	Pulse	SW25Hz-A	Head switching pulse output for audio circuits.																											
24	O	Pulse	SW25Hz	Head switching pulse output.																											
25	O	PWM	CAPST.PWM	Cylinder and capstan motor servo control outputs.																											
26	O	PWM	CYL.PWM																												
27	O	Hi	V.PULSE	Artificial V sync signal for trick play.																											
28	O	Pulse	C.ROTARY	Chroma rotation control signal.																											
29	O	Hi/Lo	H.AMP SW	SP/LP head switching control signal (pulse during trick play).																											
30	I	Hi/Lo	COMP	SP/LP head switching control signal (pulse during trick play).																											
31	I/O	Pulse	CTL(+)	CTL signal input/output.																											
32	I/O	Pulse	CTL(-)																												
33	-	-	GND	Ground.																											
34	I	Pulse	CTL AMP 1	CTL amp inputs.																											
35	I	Pulse	CTL AMP 2																												
36	I	Pulse	CTL AMP 3																												
37	O	Pulse	CTL AMP(O)	CTL amp output.																											
38	I	Pulse	CYL.FG	Cylinder FG (CYL.FG) pulse input. Controls the cylinder speed during recording and playback.																											
39	I	Pulse	TACH PULSE	Tach pulse input. Comparison (feedback) signal which controls the recording cylinder phase.																											



Pin No.	I/O	Active Level	Abbreviation	Function
40	I	Pulse	CAPST.FG	Capstan FG (CAPST.FG) pulse input. Used to control the capstan motor.
41	I	-	5V	Connected to 5V.
42	I	-	5V	Connected to 5V.
43	I	-	C.VIDEO	Video signal input.
44	O	-	V.REF	Reference bias/clamp bias voltage.
45	O	-	C.VIDEO OUT	Video signal output.
46	-	-	CHARA.BIAS	Not used.
47	-	-	AFC LPF	An LPF is attached externally for AFC.
48	-	-	AFC OSC	Oscillator for AFC.
49	-	-	GND	Ground.
50	I	Pulse	DOSC IN	OSD dot clock oscillator.
51	O	Pulse	DOSC OUT	
52	O	-	4fsc (17.7MHz)	These generate a 17.7MHz signal as the clock signal for the OSD and servo circuits.
53	I	-	4fsc (17.7MHz)	
54	I	Pulse	C.SYNC	Composite sync signal input. Controls the cylinder speed during recording.
55	O	Hi	BLUE BACK	Blue background control signal output.
56	O	Hi	HIFI MUTE	Hi-Fi audio muting control output during recording.
57	O	Pulse	DATA (M-YC/LA)	Common communication lines with VIDEO/LINEAR AUD.ICs; data is transferred, synchronized with the clock signal.
58	O	Pulse	CLOCK (M-YC/LA)	
59	O	Lo	PB (L)	Sets the video/audio circuits to the play back mode.
60	O	Hi	REVERSE	Sets the drive direction of the capstan motor to reverse.
61	O	Hi	REC (AUDIO)	Sets the audio circuit to the recording mode.
62	O	Pulse	CTL RESET	Applies reset pulses to the CTL amp during slow and reverse slow play.
63	O	Lo	A.DUB MUTE	
64	O	Pulse	IR OUT	Signal output to the cable box control circuit.
65	O	Hi	UNLOAD	Loading motor drive signals which set the mechanism to the commanded mode.
66	O	Hi	LOAD	
67	I	Hi/Lo	CK DET OUT	
68	-	-	TEST	Ground.
69	I	-	X2 (32kHz)	These generate a 32.768kHz signal as the clock signal for the VCR's clock.
70	O	-	X1 (32kHz)	
71	-	-	GND	Ground.
72	I	-	OSC 1 (10MHz)	These generate a 10MHz signal as the system clock signal in modes other than back-up.
73	O	-	OSC 2 (10MHz)	
74	O	Hi	LINE MUTE	Audio output muting control.
75	O	Hi/Lo	CAPST.Q.R	Cylinder and capstan motor phase control outputs.
76	O	Hi/Lo	CYL.Q.R	
77	O	Hi	POWER CONT	Power on/off control. When the power switch is operated, a cassette is inserted or a power failure is detected, the internal power supply is switched to be on/off.
78	O	Lo	SP (L)	Tape speed output.
79	I	Hi	V.REC MUTE	Video signal record muting control. Prevents the signal from being supplied to the video heads.
80	O	Hi	LM CONT.	Flying erase control (not used) /signal to control the voltage applied to the loading motor when forward slow is switched to reverse slow vice versa.
81	O	Hi	TUN. MUTE	Tuner audio muting control Receives the remote control code from the infrared
82	I	Pulse	IR PULSE	Receives the remote control code from the infrared receiver and sets the VCR to the specified mode. AV BUS data input.
83	O	Hi	H.CONT	Linear audio head control signal.
84	O	Hi	REC	Sets the video and audio head amp circuits to the recording mode.

Pin No.	I/O	Active Level	Abbreviation	Function
85	O	Hi	POWER SAVE	Power save signal during power off.
86	I	Lo	REW END (L)	When "Lo" is input from the mechanism sensor, the current mode is released. Two sensors detect the two ends of tape. When "Lo" is input from both sensors, the M- $\mu$ P detects that a cassette is not loaded in the VCR.
87	I	Lo	FWD END (L)	
88	I	Pulse	T.REEL	Calculates the period of the take-up reel pulse to detect whether or not slack tape is taken up on the reel. If slack tape is not taken up, the M- $\mu$ P stops the mechanism. The supply reel pulses are used with the take-up reel pulses to calculate the tape remaining time.
89	I	Pulse	S.REEL	
90	I	Lo	CHECK	Checks short-circuits in the 5V/9V power supplies. (This pin goes "Lo" normally when power is off.)
91		-	NC	
92	I/O	Pulse	DATA(M-ROM/HA)	Common communication lines with the ROM/Hi-Fi AUD; data is communicated, synchronized with the clock signal.
93	O	Pulse	CLOCK (M-ROM/HA)	
94	O	Hi/Mid/Lo	V.CAPST.CONT.	This is output in the slow, still, playback, recording, fast forward and rewind modes to control the voltage applied to the capstan motor. Lo:13.5V, Mid:9.5V, Hi:7.5V.
95	O	Pulse	CLOCK(M-TU)	Communication lines with the RF/TUNER; data is transferred, synchronized with the clock signal.
97	O	Pulse	DATA(M-TU)	
96	O	Hi/Lo	PAL/NTSC(L)	OSD X'tal select signal. Hi:PAL Lo:NTSC
98	O	Pulse	CLOCK(M-LCD)	Communication lines with the LCD DRIVER; data is transferred, synchronized with the clock signal.
100	O	Pulse	DATA(M-LCD)	
99	O	Hi	LCD LOAD	LOAD signal between the M- $\mu$ P and LCD-DRIVER.

**CHAPTER 6 SCHEMATIC AND CIRCUIT BOARD DIAGRAMS**

**MODEL : VT-F550E (UKN) / (NA)  
VT-F550E (NAV) / (VPS)**

**Cautions when using schematic diagrams**

**Caution for safety**  
The parts marked  $\triangle$  are critical for safety. Be sure to use the specified parts to ensure safety when replacing them.

**1.Values in schematic diagrams**

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indication ..... $\Omega$ K..... k $\Omega$ M ..... M $\Omega$
Tolerance	No indication ..... $\pm 5\%$ (All tolerances other than $\pm 5\%$ are indicated in the schematic diagrams)
Power capacitance	No indication ..... 1/8W (1/16W for leadless resistors without indication) All capacitances other than the above are indicated in the schematic diagrams.

[Capacitors]

Item	Indication
Value	No indication ..... $\mu F$ P..... pF
Dielectric strength	No indication ..... 50V (All dielectric strengths other than 50V are indicated in the schematic diagrams.)

[Coils]

Item	Indication
Value	$\mu$ ..... $\mu H$ m ..... mH

**2.Markings in schematic diagrams**

- (1) Parts marked "■" with circuit numbers in the schematic diagrams are discrete parts.
- (2) Parts marked "●" with circuit numbers in the schematic diagrams are leadless parts.

**Cautions when using circuit board diagrams**

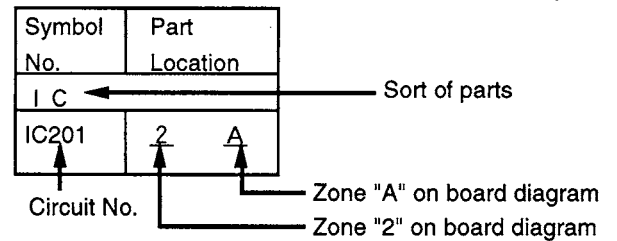
**1.Identifications of sides A/B in circuit board diagrams**

- (1) Board having a pattern on one side and parts on both sides.  
Side A : Shows discrete parts, viewed from the pattern side.  
Side B : Shows leadless parts, viewed from the pattern side.
- (2) Board having patterns on both sides and parts on both sides.  
Side A : Shows parts and patterns which can be seen when the case is opened.  
Side B : Shows parts and the pattern on the back of side A.

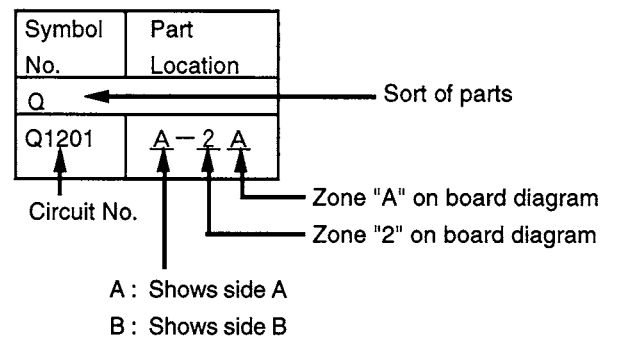
**2.Table for indexing locations of parts**

This table shows locations of each part on the circuit board diagrams. The locations are indicated using the guide scales on the external lines of diagrams.

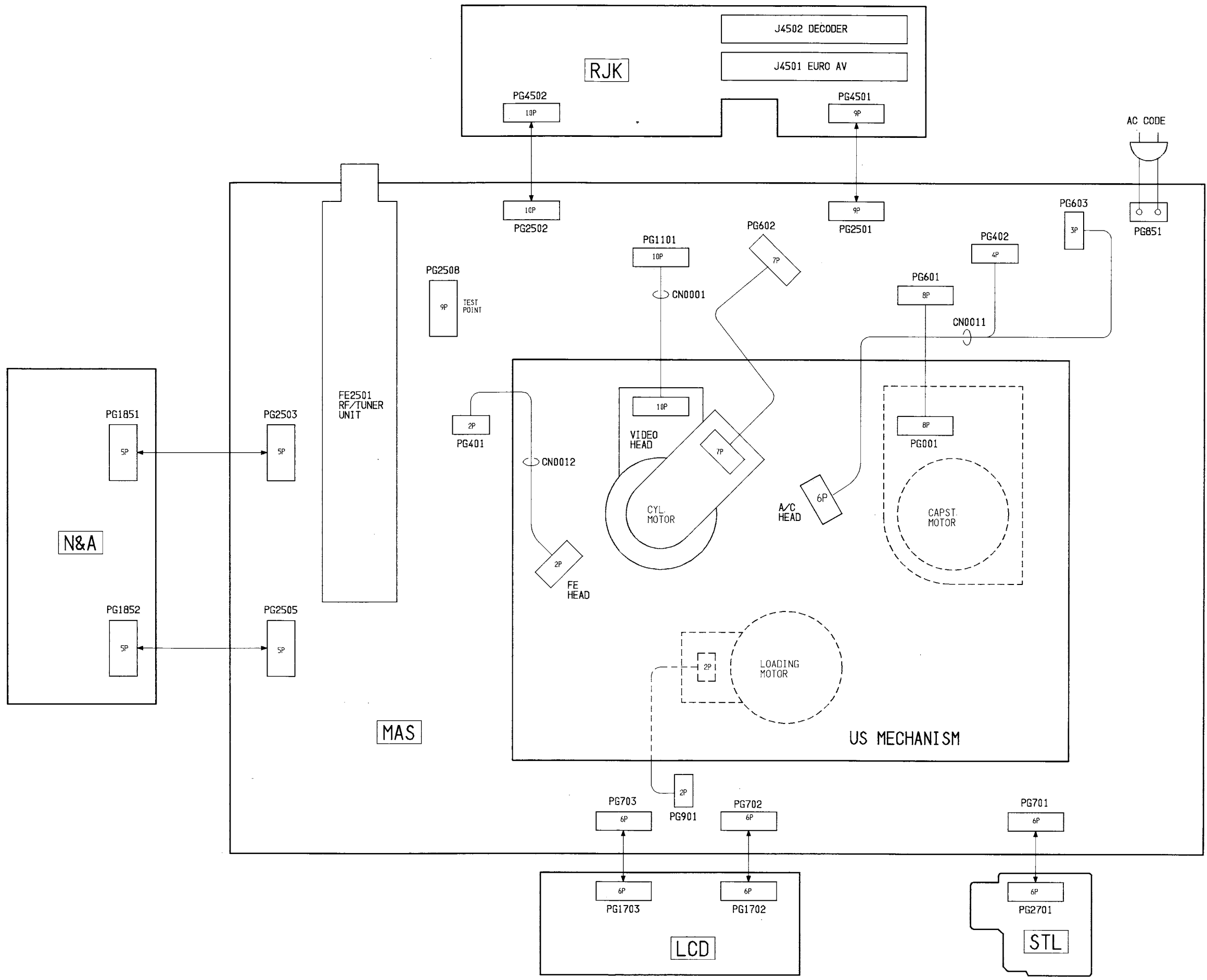
**(1) In case of one-layer board**



**(2) In case of side A/B indication board**



CONNECTION DIAGRAM



# INTERNAL WIRING DIAGRAM

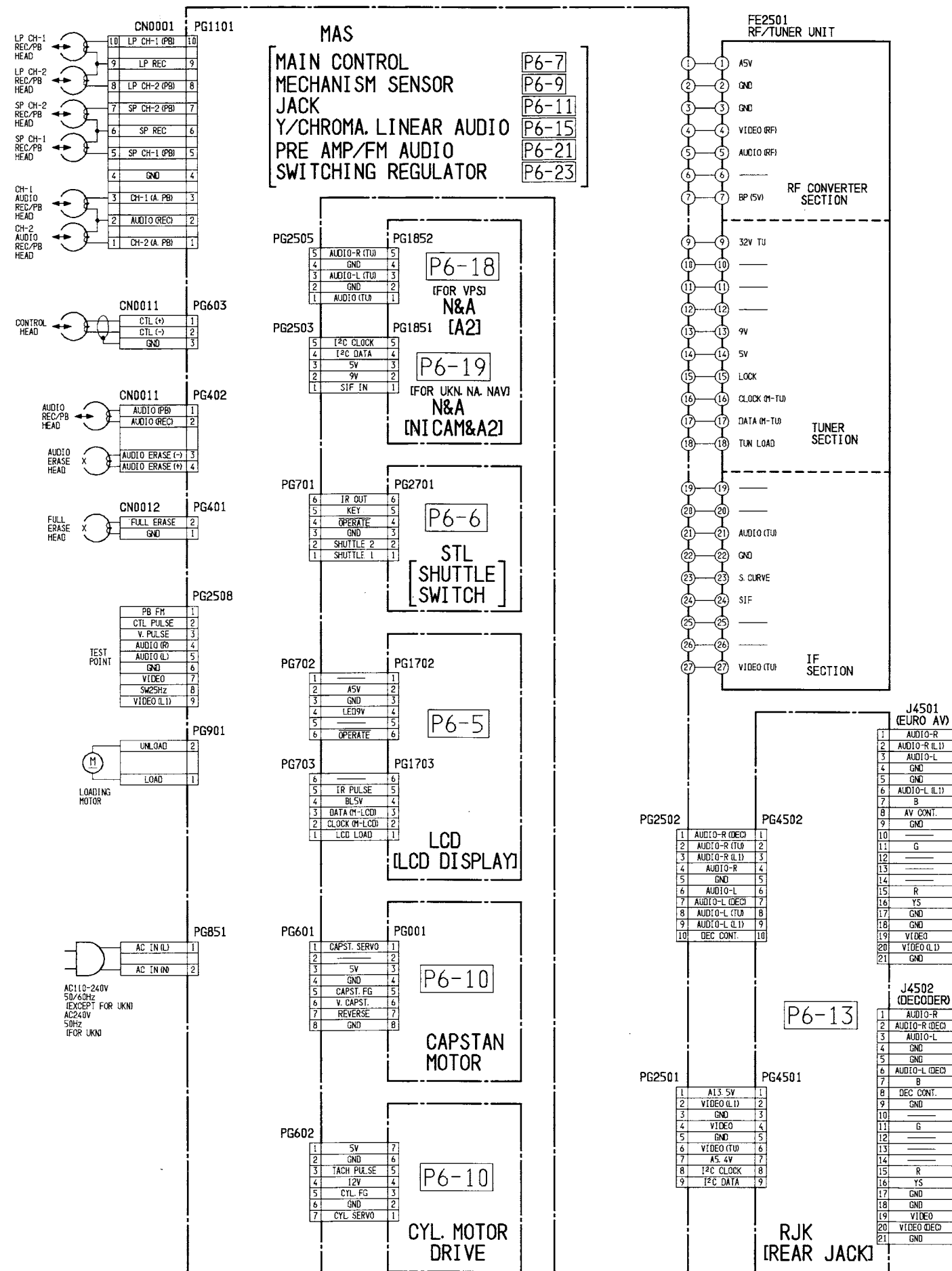
E

D

C

B

A



1

2

3

4

5

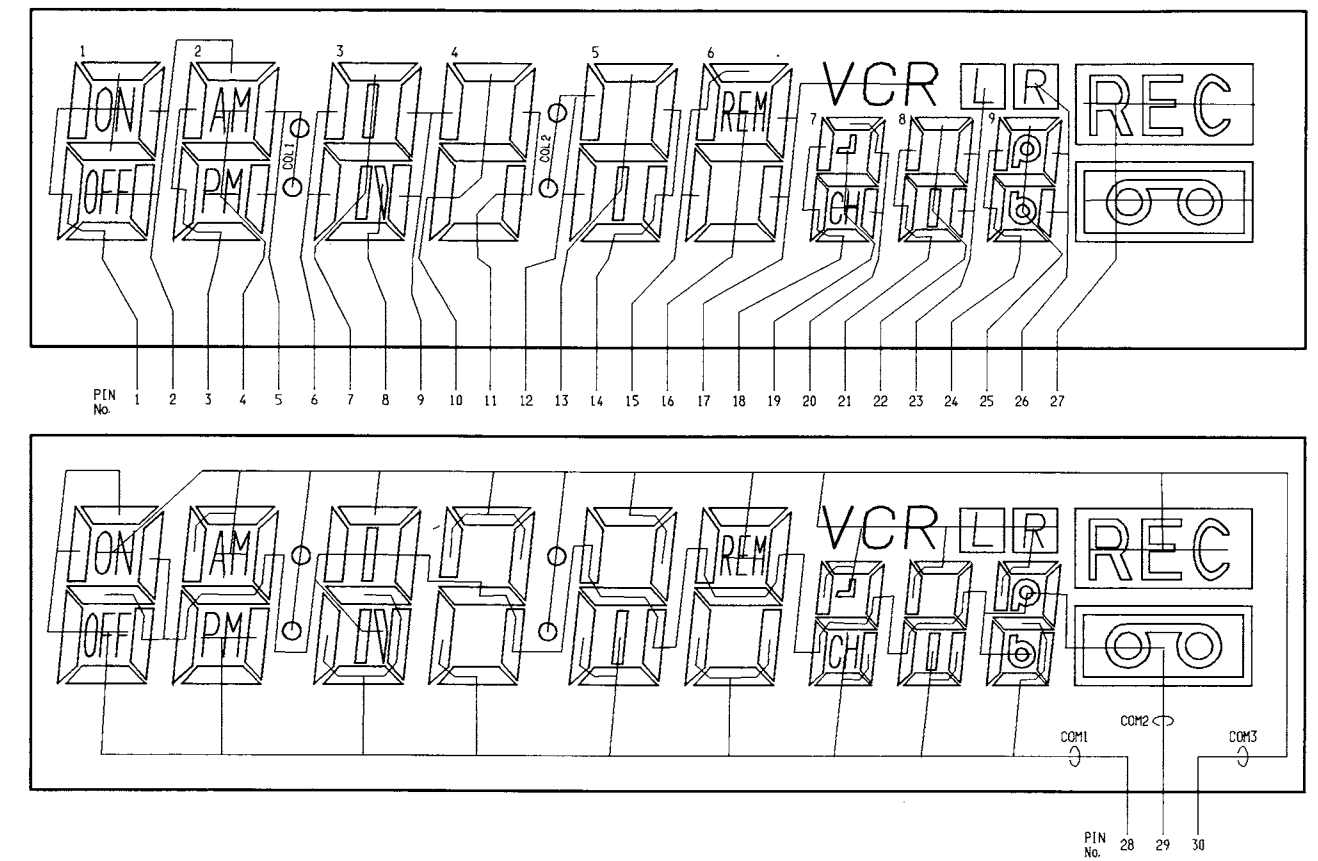
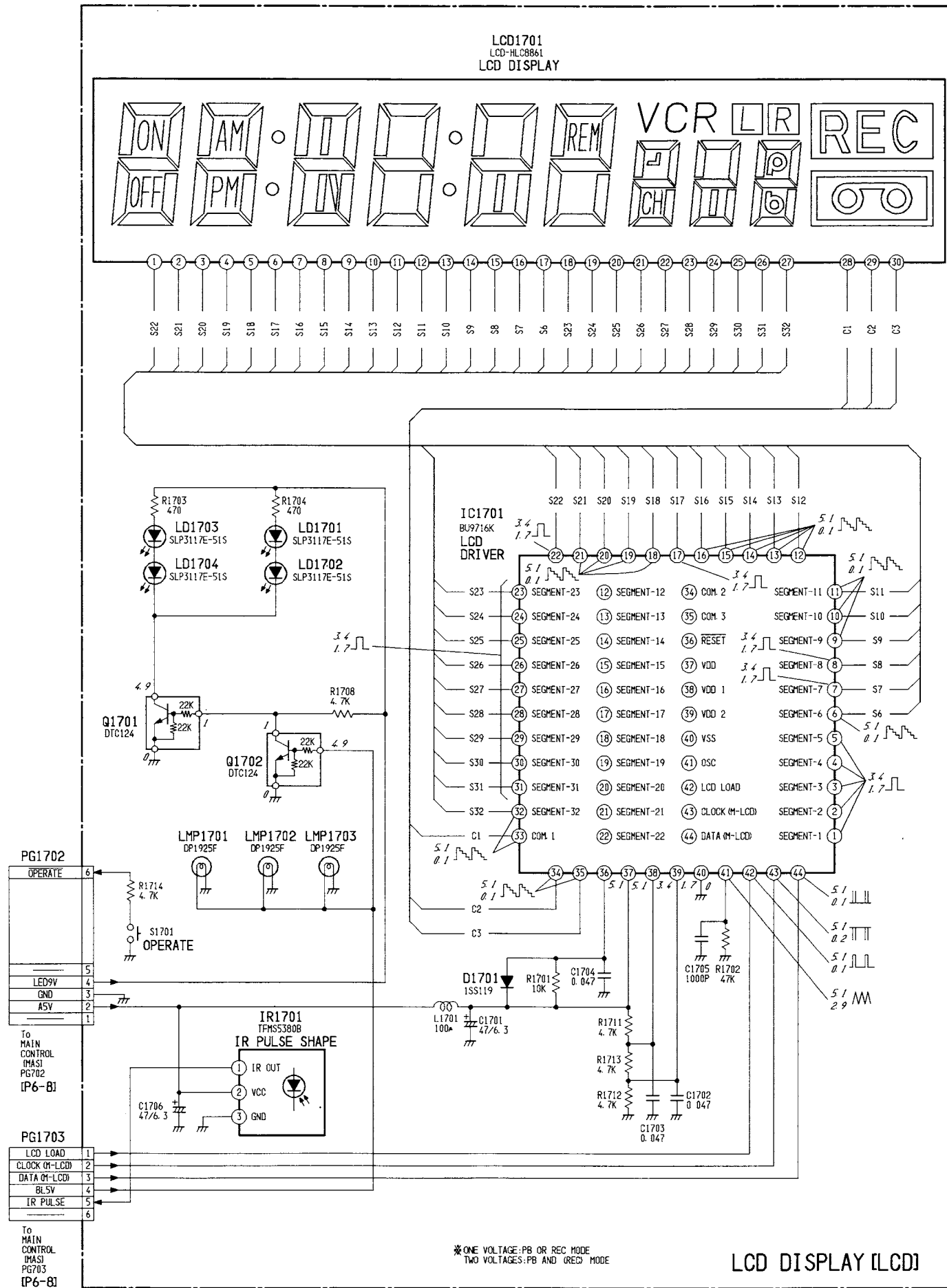
6

7

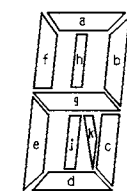
8

# LCD DISPLAY [LCD] SCHEMATIC DIAGRAM

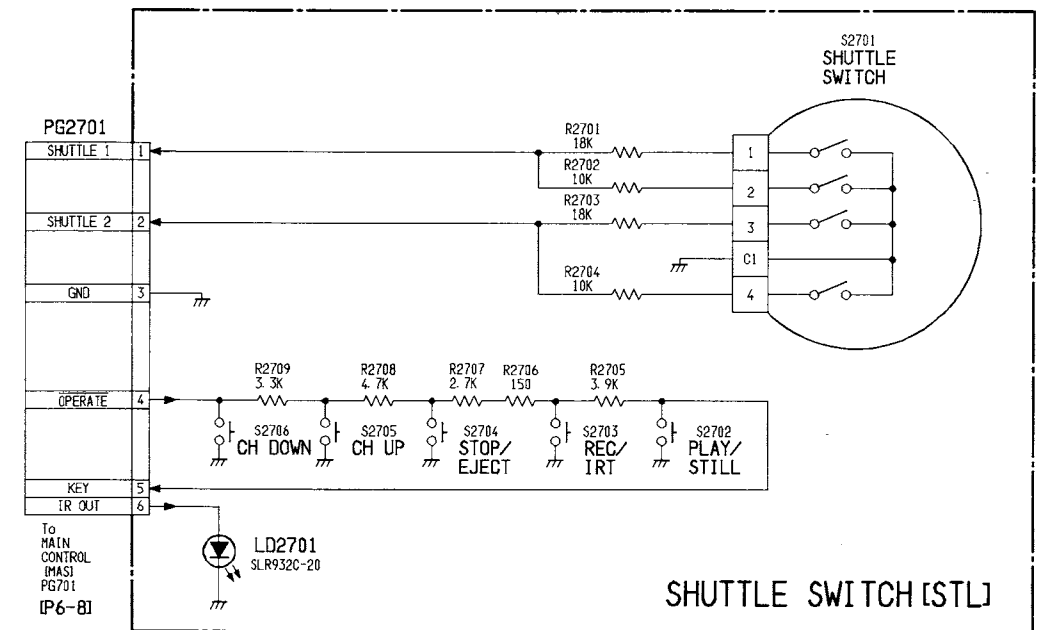
# LCD GRID TABLE



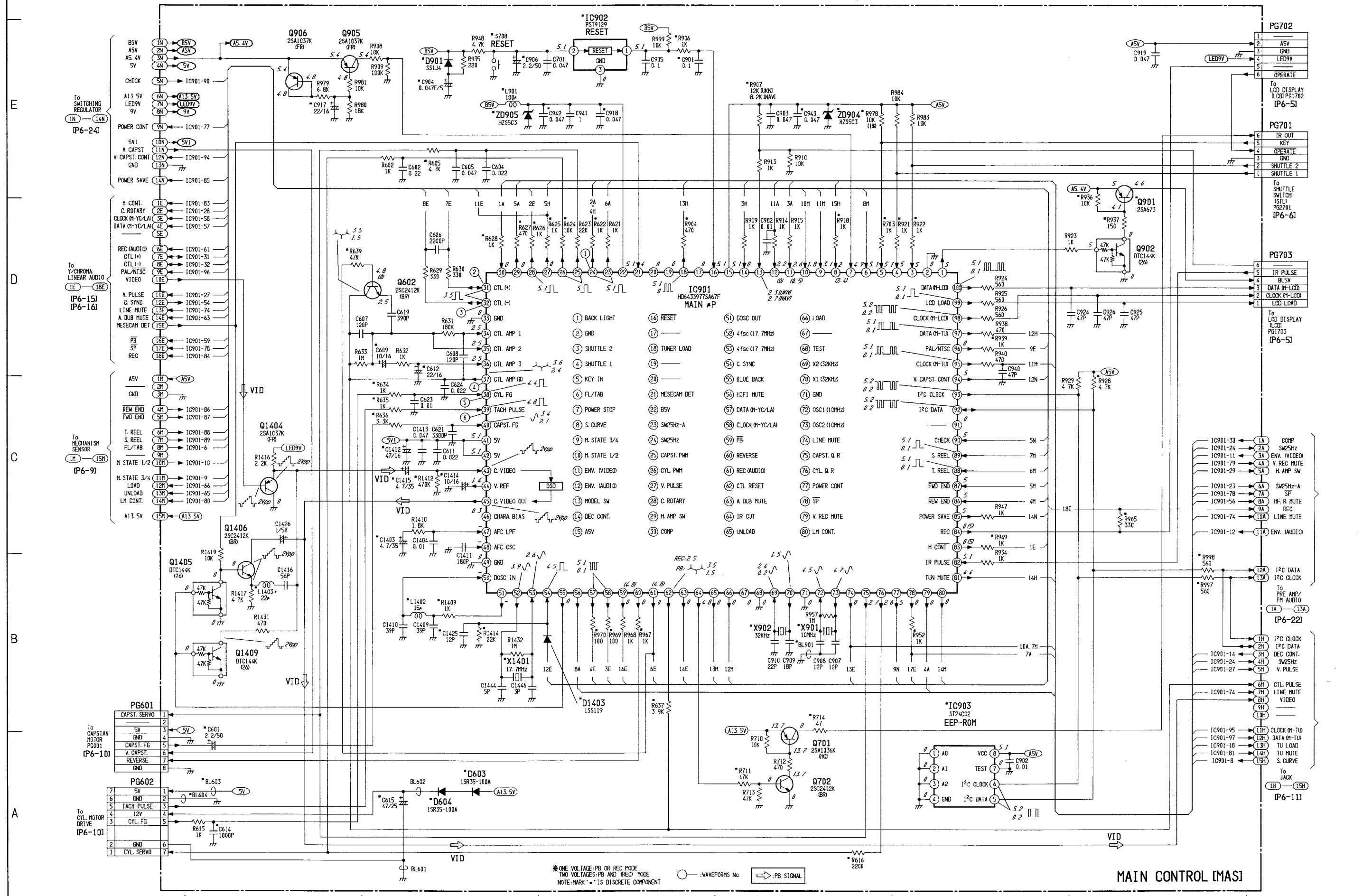
PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
COM1	1ade	OFF	2d	PM	2c	3e	3a	3d	3c	4e	4d	5e	5i	5d	6e	6d	6c	7d	CH	7c	8d	8j	8c	9d	9a	9c	COM	---	---	
COM2	1g	1bc	2e	2g	2b	3f	3h	3k	3b	4g	4c	5f	5g	5c	6f	6g	6b	7e	7g	7b	8e	8g	8b	9e	9b	9e	COM	---	---	
COM3	ON	2a	2f	AM	COL1	---	3a	---	4f	4a	4b	COL2	5a	5b	6a	REM	VCR	7f	7j	7a	8f	8a	L	9f	9a	R	REC	---	COM	



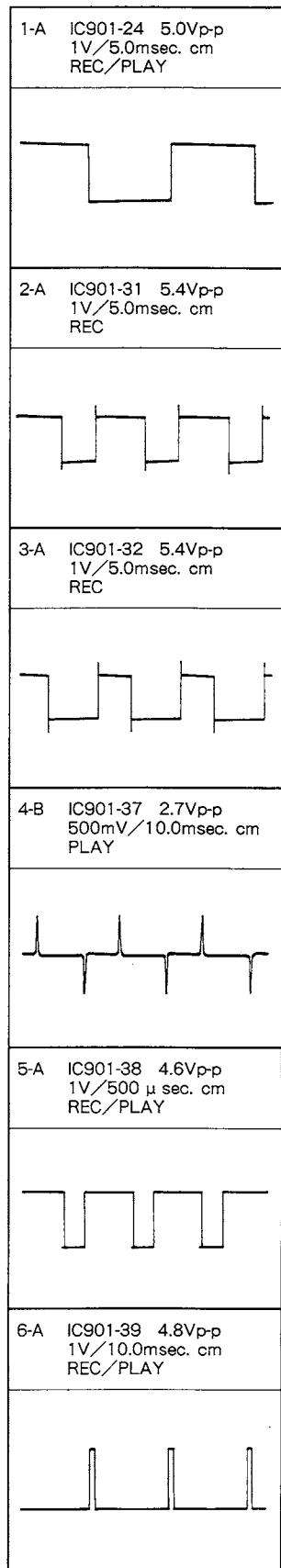
# SHUTTLE SWITCH [STL] SCHEMATIC DIAGRAM



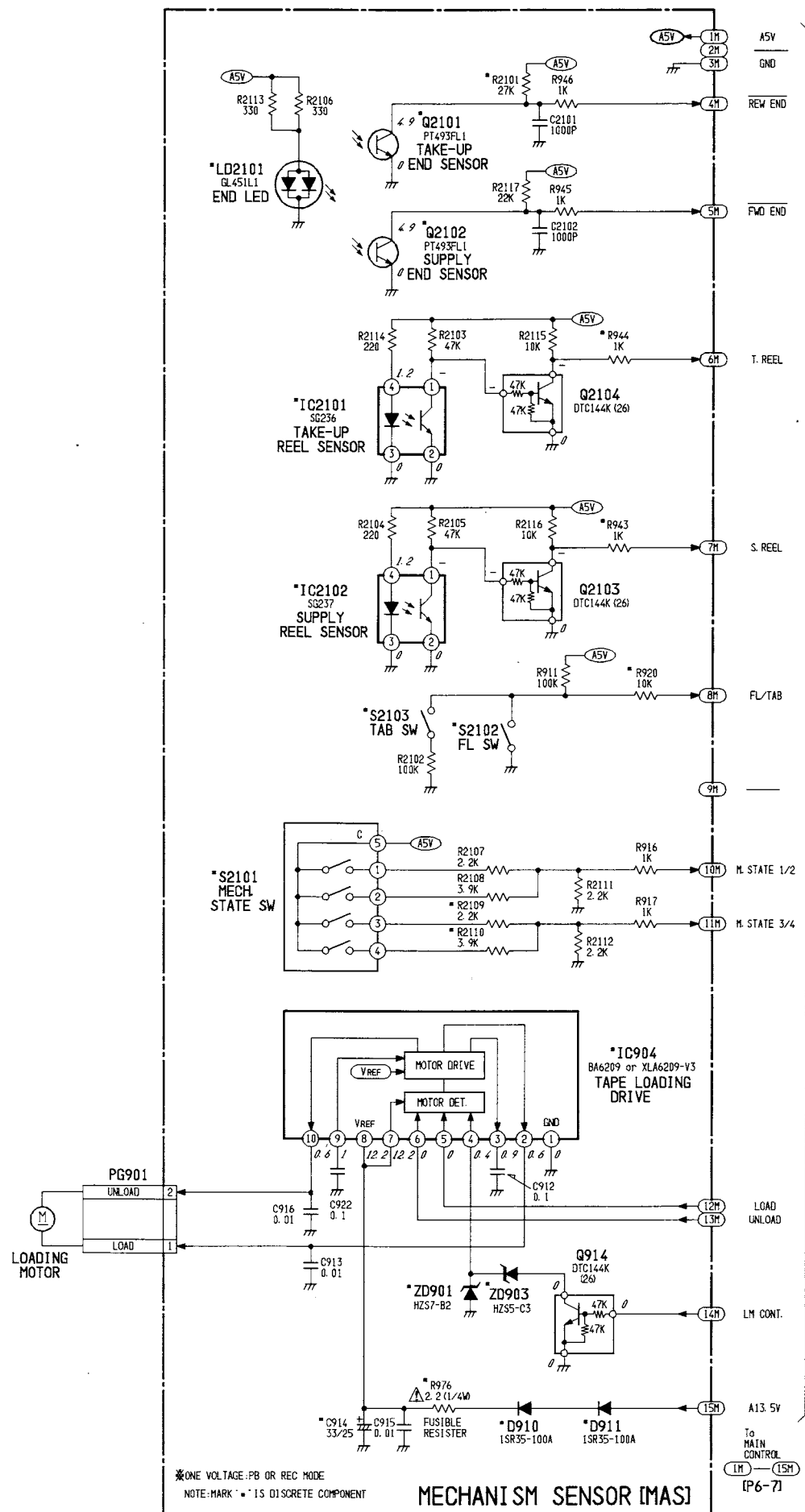
# MAIN CONTROL (MAS) SCHEMATIC DIAGRAM



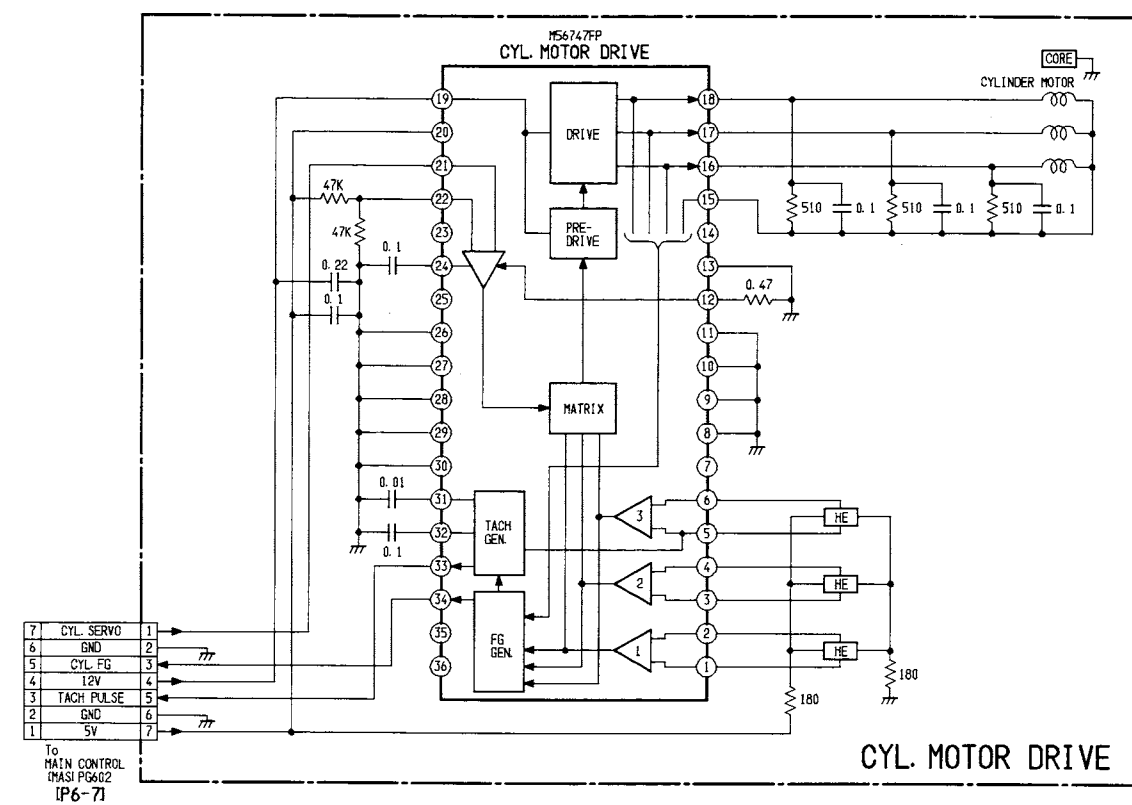
# SERVO WAVEFORMS



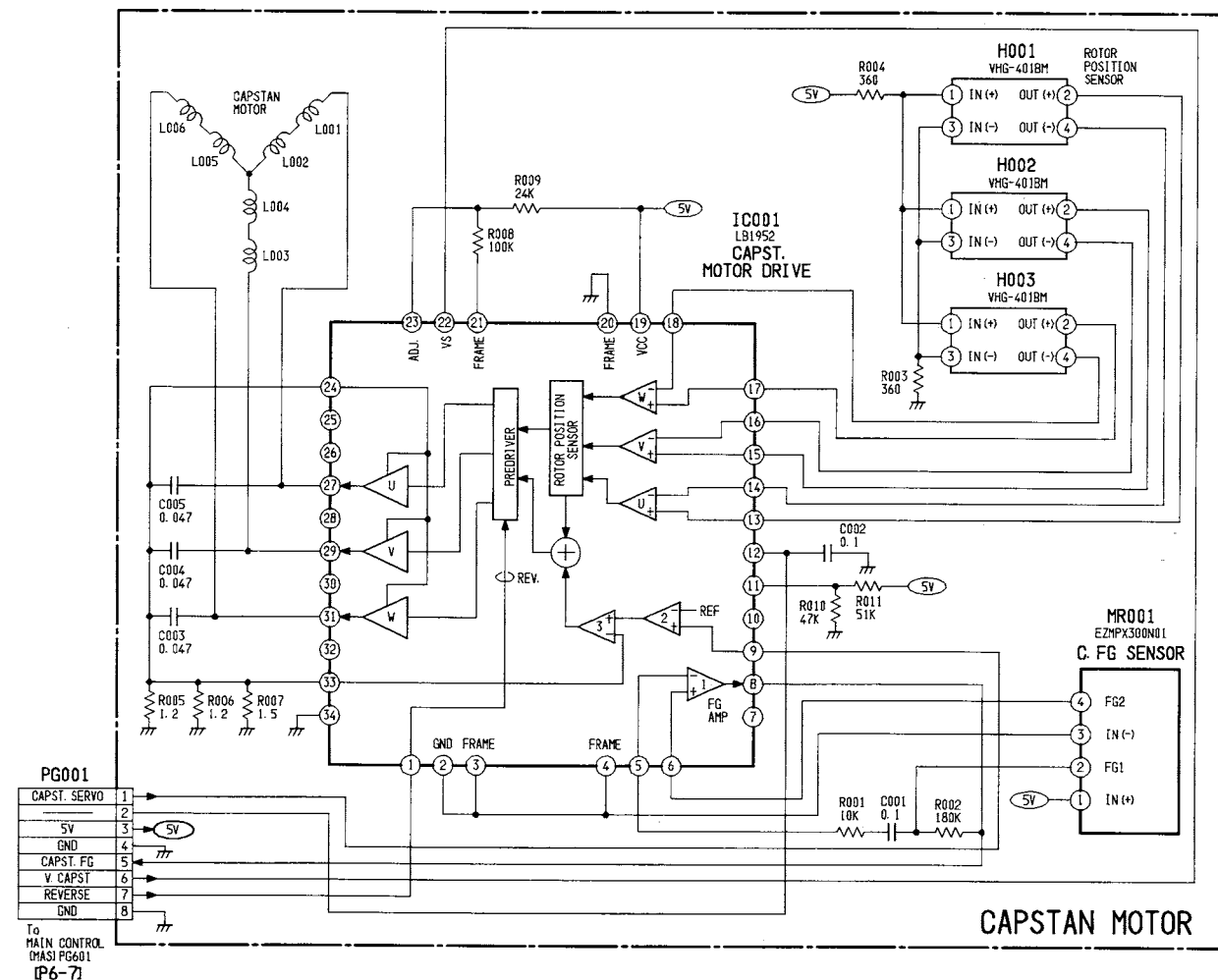
# MECHANISM SENSOR (MAS) SCHEMATIC DIAGRAM



# CYL. MOTOR DRIVE SCHEMATIC DIAGRAM

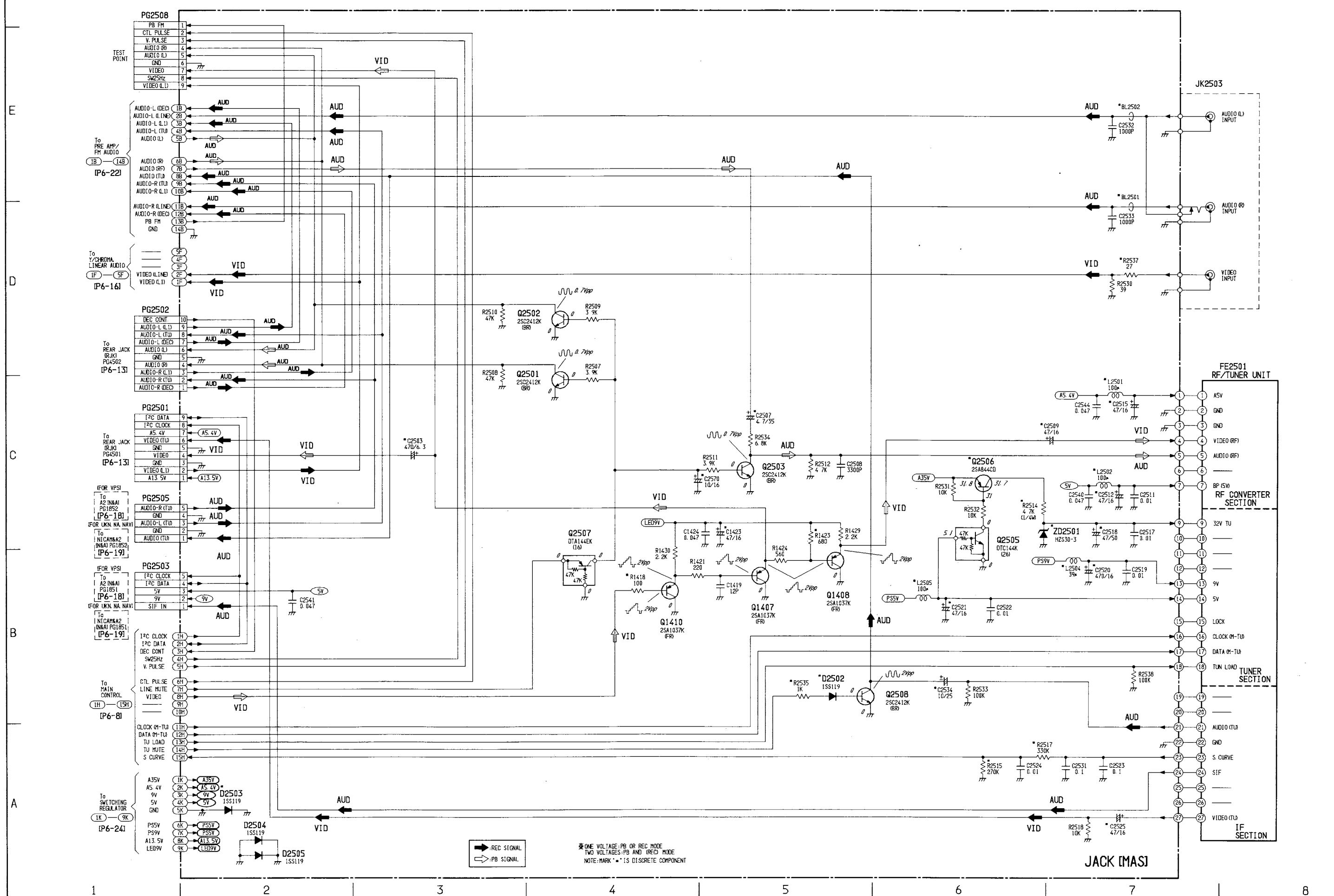


# CAPSTAN MOTOR SCHEMATIC DIAGRAM

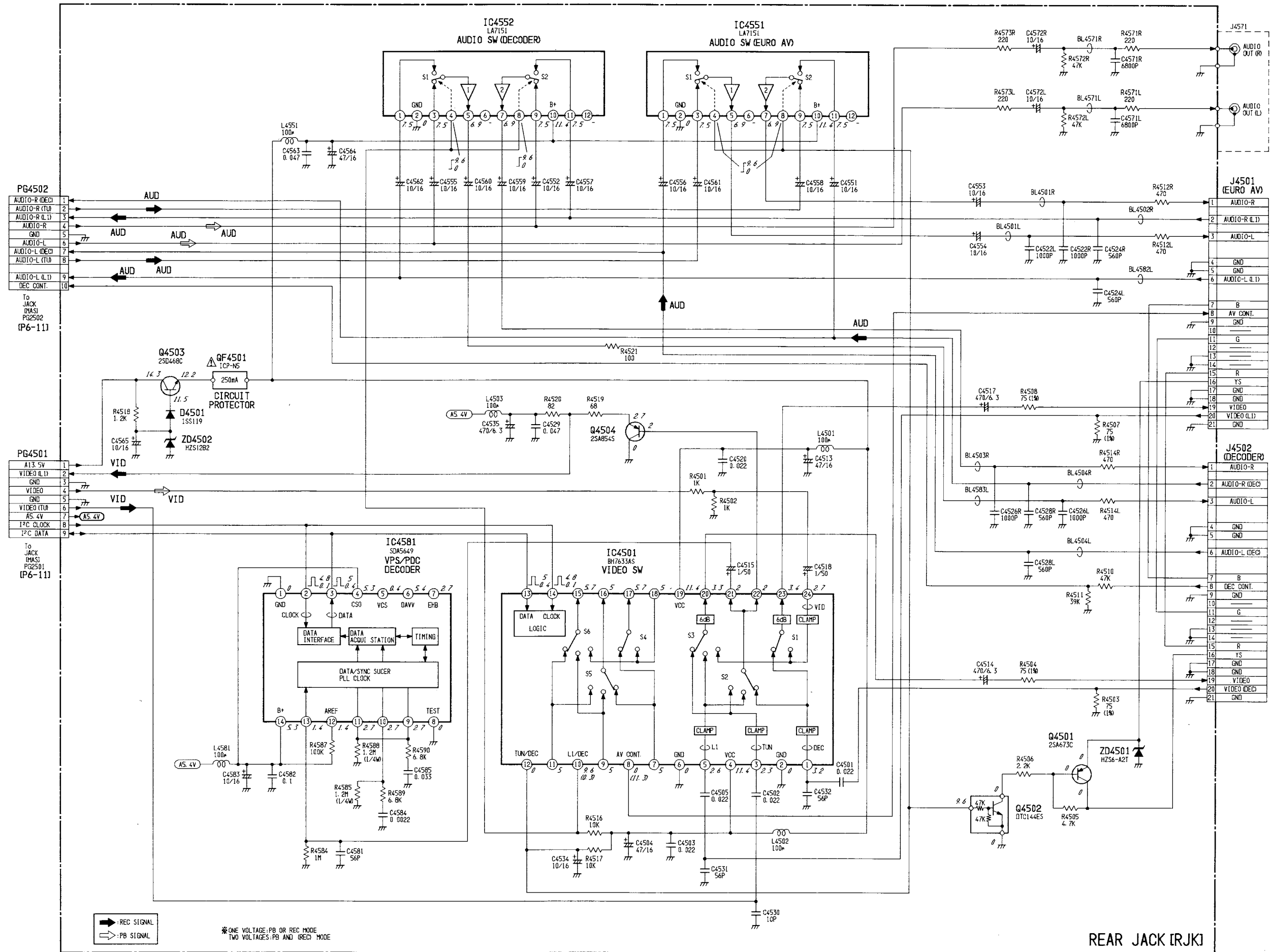




# JACK [MAS] SCHEMATIC DIAGRAM



# REAR JACK (RJ) SCHEMATIC DIAGRAM



1 2 3 4 5 6 7 8

REAR JACK 6-13

6-14 REAR JACK

E

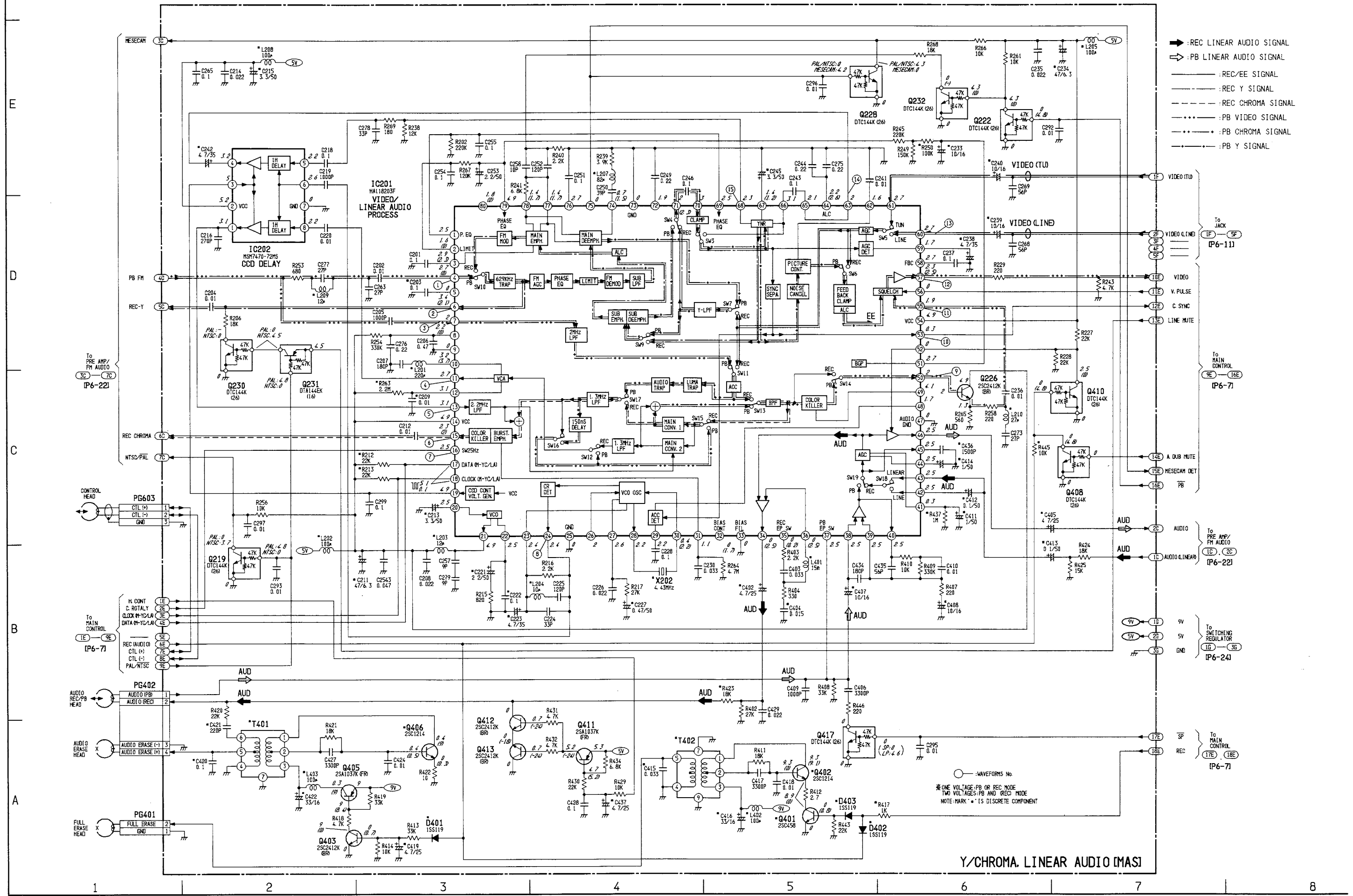
D

C

B

A

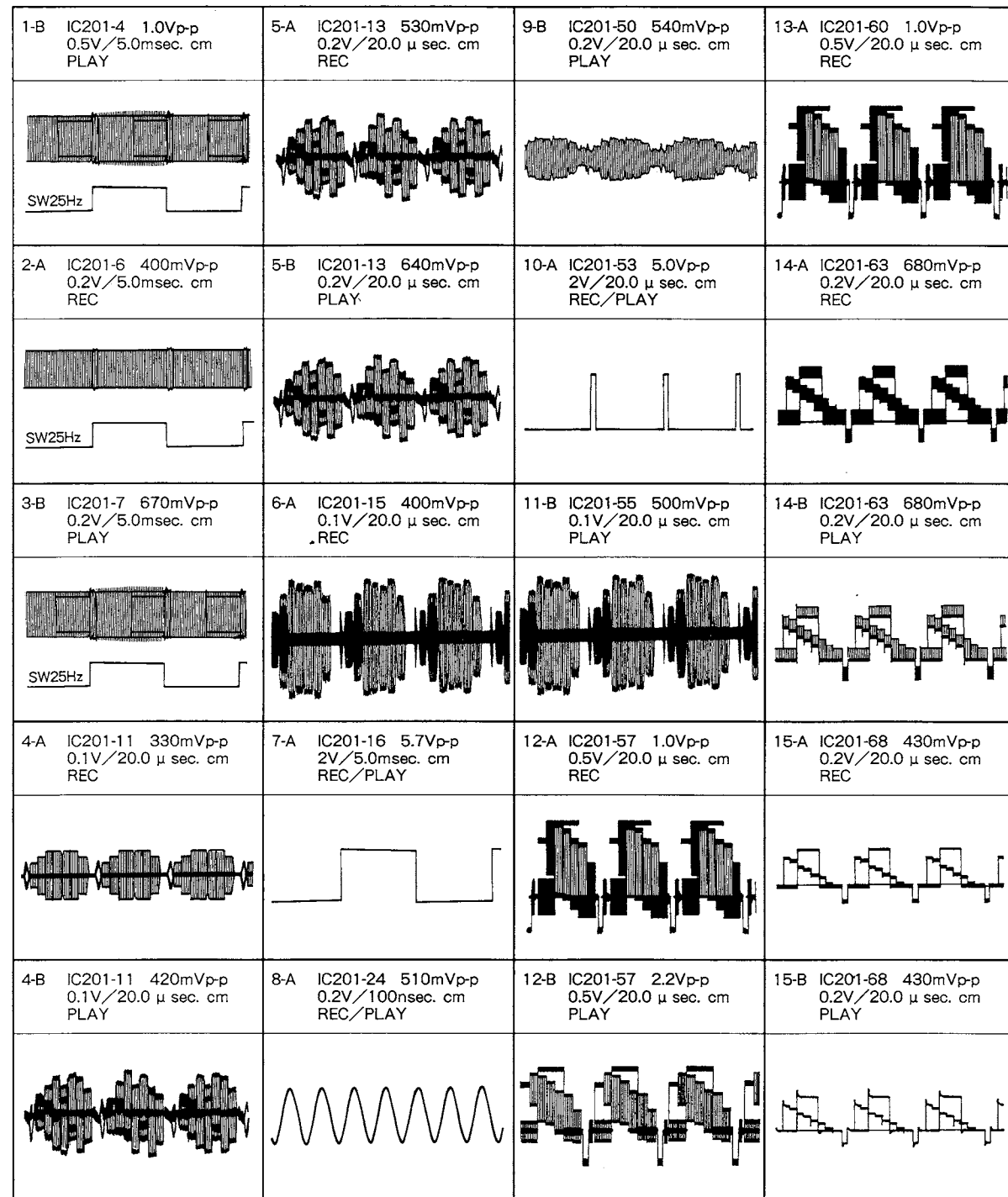
# Y/CHROMA. LINEAR AUDIO (MAS) SCHEMATIC DIAGRAMS



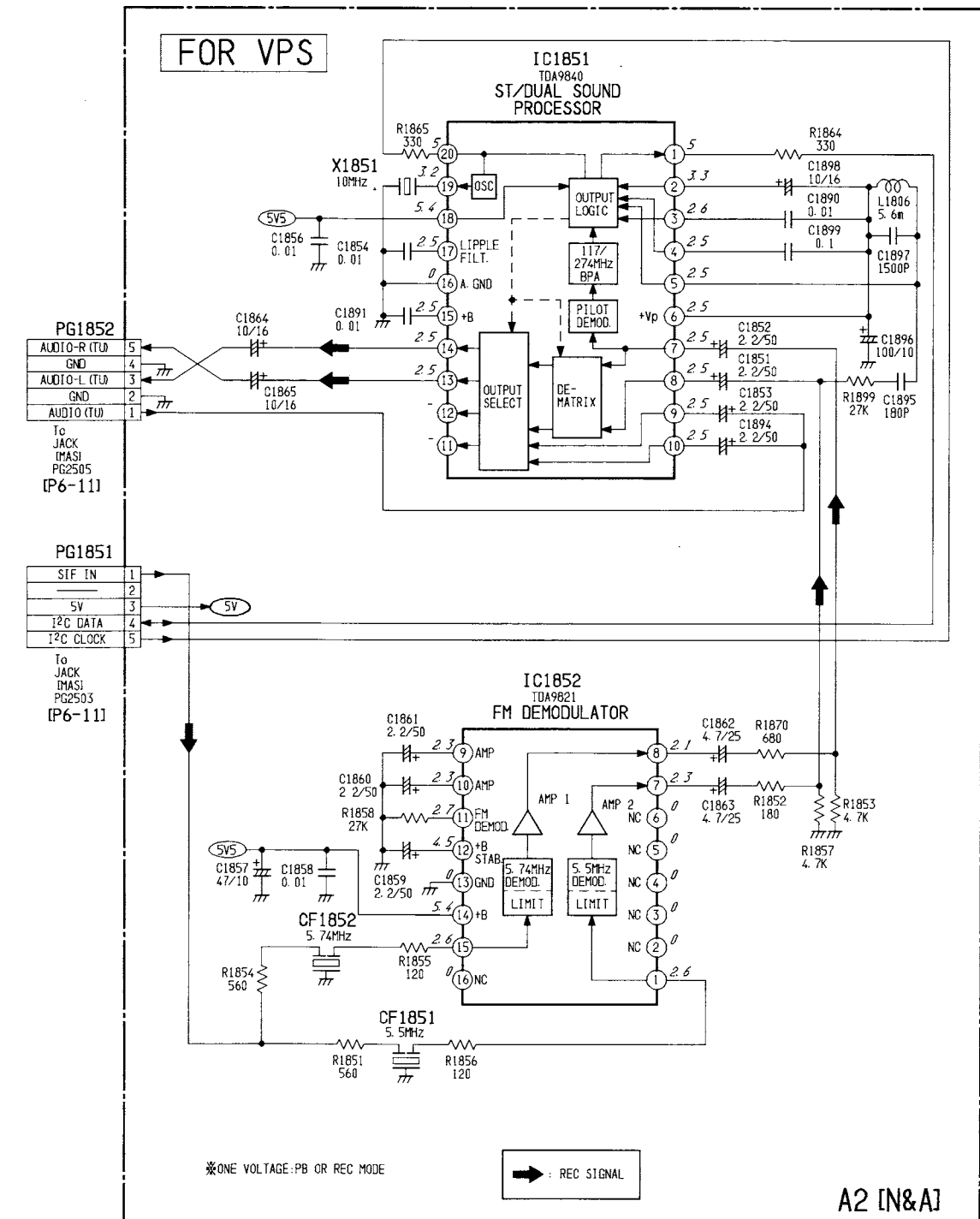
- ➔ :REC LINEAR AUDIO SIGNAL
- ➔ :PB LINEAR AUDIO SIGNAL
- :REC/EE SIGNAL
- :REC Y SIGNAL
- :REC CHROMA SIGNAL
- :PB VIDEO SIGNAL
- :PB CHROMA SIGNAL
- :PB Y SIGNAL

Y/CHROMA. LINEAR AUDIO (MAS)

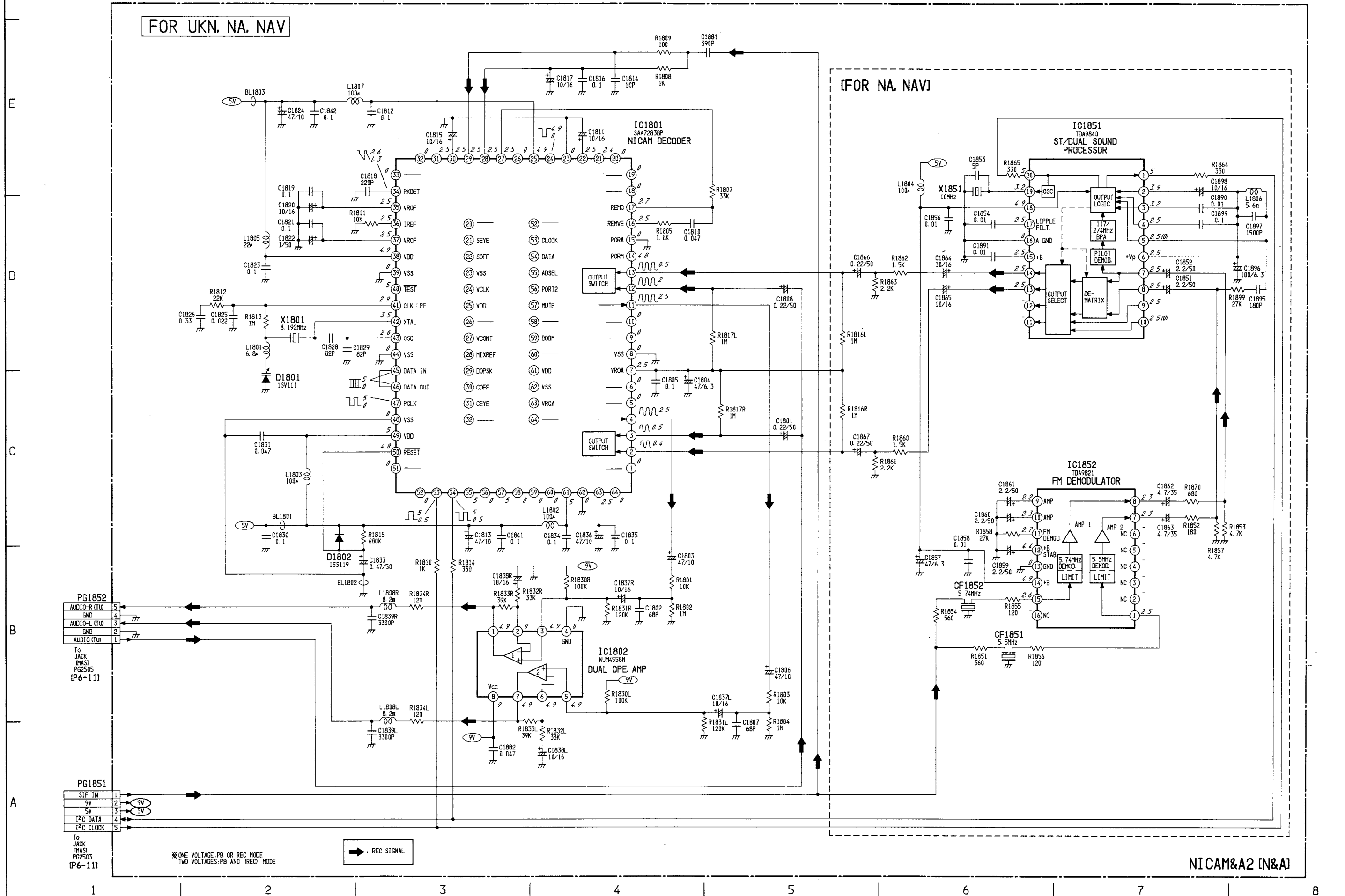
Y/CHROMA WAVEFORMS



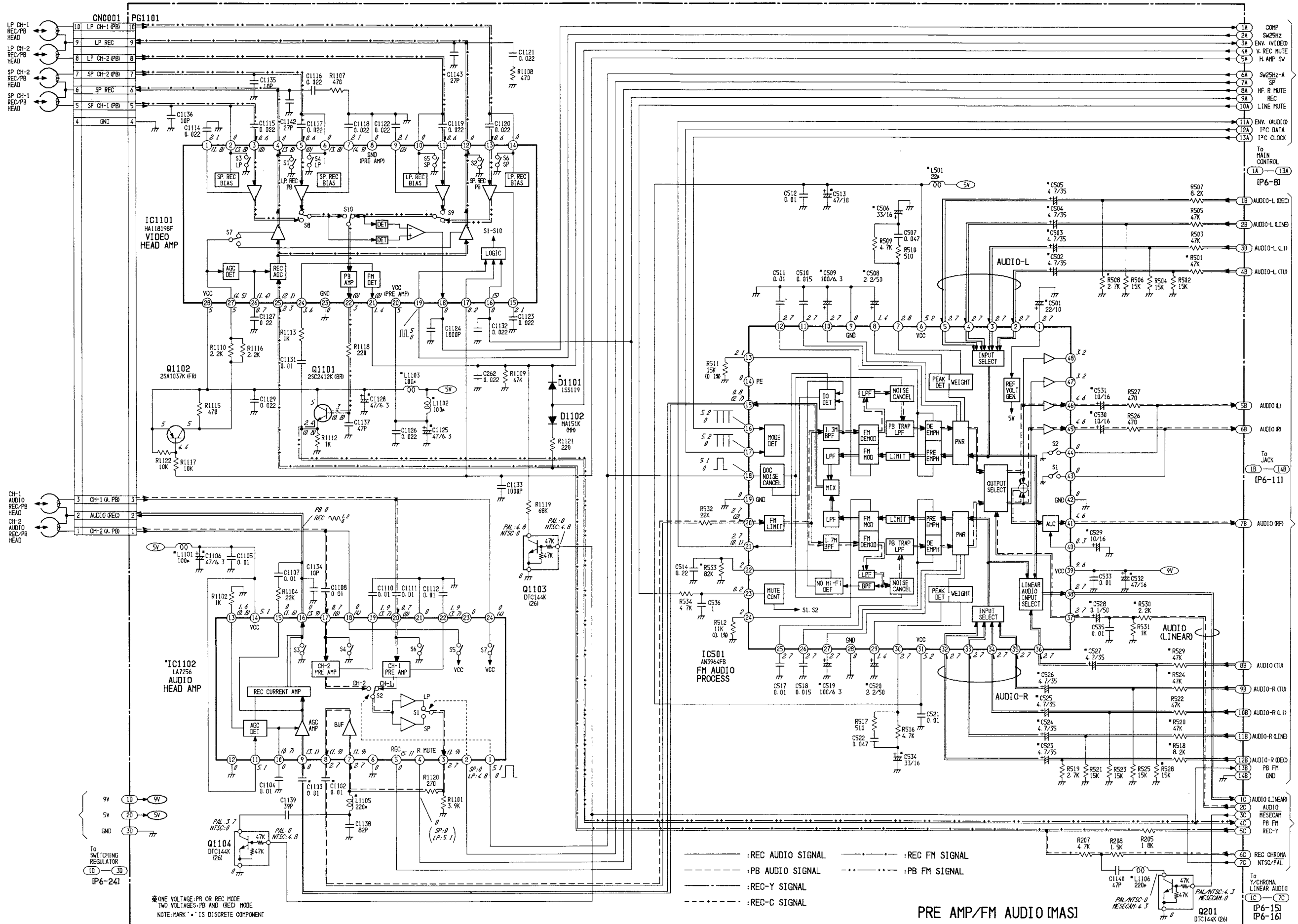
A2 [N&A] SCHEMATIC DIAGRAM (FOR VPS)



NICAM&A2 [N&A] SCHEMATIC DIAGRAM (FOR UKN. NA. NAV)



# PRE AMP/FM AUDIO [MAS] SCHEMATIC DIAGRAM

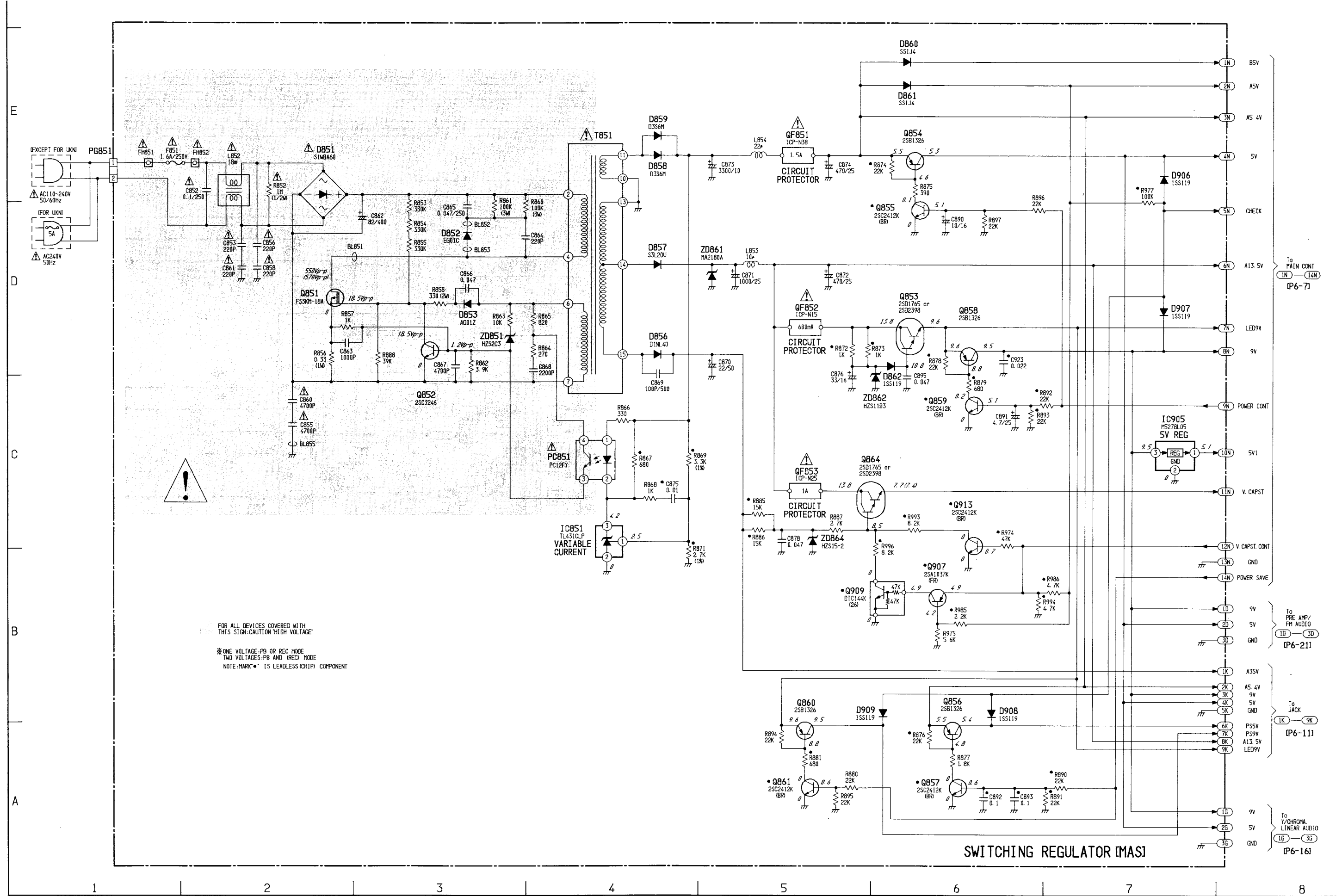


ONE VOLTAGE: PB OR REC MODE  
TWO VOLTAGES: PB AND (REC) MODE  
NOTE: MARK \* IS DISCRETE COMPONENT

— : REC AUDIO SIGNAL      - - - : REC FM SIGNAL  
- - - : PB AUDIO SIGNAL      - - - : PB FM SIGNAL  
- - - : REC-Y SIGNAL  
- - - : REC-C SIGNAL

PRE AMP/FM AUDIO [MAS]

# SWITCHING REGULATOR [MAS] SCHEMATIC DIAGRAM



# IDENTIFICATION OF PARTS LOCATION

## STL [SHUTTLE]

Symbol No.	Parts Location
<b>LD</b>	
LD2701	1B
<b>PG</b>	
PG2701	2A
<b>R</b>	
R2701	2A
R2702	2A
R2703	2A
R2704	2A
R2705	2B
R2706	2A
R2707	1A
R2708	1B
R2709	1B
<b>S</b>	
S2701	2B
S2702	1B
S2703	2A
S2704	1A
S2705	1B
S2706	2B

## LCD [LCD DISPLAY]

Symbol No.	Parts Location
<b>C</b>	
C1701	4A
C1702	4A
C1703	4A
C1704	4A
C1705	4A
C1706	4A
<b>D</b>	
D1701	4A
<b>IC</b>	
IC1701	4A
<b>IR</b>	
IR1701	4A
<b>JP</b>	
JP1701	2A
JP1704	1A
<b>L</b>	
L1701	3A
<b>LCD</b>	
LCD1701	3A
<b>LD</b>	
LD1701	3A
LD1702	3A
LD1703	2A
LD1704	1A
<b>LMP</b>	
LMP1701	3A
LMP1702	2A
LMP1703	2A
<b>PG</b>	
PG1702	2A
PG1703	4A
<b>Q</b>	
Q1701	2A
Q1702	3A
<b>R</b>	
R1701	4A
R1702	4A
R1703	2A
R1704	3A
R1708	1A
R1711	4A
R1712	4A
R1713	4A
R1714	1A
<b>S</b>	
S1701	4A

## N & A [NICAM & A2]

Symbol No.	Parts Location
<b>BL</b>	
BL1801	3A
BL1802	3A
BL1803	2A
<b>C</b>	
C1801	2B
C1802	2B
C1803	2B
C1804	2B
C1805	2B
C1806	2B
C1807	2B
C1808	2A
C1810	2B
C1811	2A
C1812	2A
C1813	3B
C1814	2A
C1815	2A
C1816	2A
C1817	2A
C1818	2A
C1819	3A
C1820	3A
C1821	3A
C1822	3A
C1823	3A
C1824	2A
C1825	3A
C1826	3A
C1828	3A
C1829	3A
C1830	2A
C1831	3A
C1833	3A
C1834	3B
C1835	3B
C1836	3B
C1837L	2B
C1837R	2B
C1838L	3B
C1838R	3B
C1839L	3B
C1839R	3B
C1841	3B
C1842	2A
C1851	1B
C1852	1B
C1853	1B
C1854	1B
C1856	1B
C1857	1A
C1858	1A
C1859	1A
C1860	1A
C1861	1A
C1862	1A
<b>BL</b>	
BL1863	1A
BL1864	1B
BL1865	1B
BL1866	2A
BL1867	2B
BL1881	2A
BL1882	2A
BL1890	1B
BL1891	1B
BL1895	1B
BL1896	1B
BL1897	1B
BL1898	1B
BL1899	1B
<b>CF</b>	
CF1851	1A
CF1852	1A
<b>D</b>	
D1801	3A
D1802	3A
<b>IC</b>	
IC1801	3A
IC1802	3B
IC1851	1B
IC1852	1A
<b>L</b>	
L1801	3A
L1802	3B
L1803	3B
L1804	2A
L1805	3A
L1806	1B
L1807	2A
L1808L	3B
L1808R	3B
<b>PG</b>	
PG1851	1A
PG1852	2A
<b>R</b>	
R1801	2B
R1802	2B
R1803	2B
R1804	2B
R1805	2B
R1807	2A
R1808	2A
R1809	2A
R1810	3B
R1811	3A
R1812	3A
R1813	3A
R1814	2B
R1815	3A
R1816L	2B
R1816R	3B
R1817L	2B
R1817R	3B

## RJK [REAR JACK]

Symbol No.	Parts Location
<b>BL</b>	
BL4501L	4A
BL4501R	4A
BL4502L	4A
BL4502R	4A
BL4503L	4B
BL4503R	4B
BL4504L	4B
BL4504R	4B
BL4571L	1B
BL4571R	1B
<b>C</b>	
C4501	3B
C4502	2B
C4503	2B
C4504	2B
C4505	2B
C4513	2B
C4514	2B
C4515	3B
C4517	3B
C4518	3B
C4520	3B
C4522L	4A
C4522R	4A
C4524L	4A
C4524R	4A
C4526L	3B
C4526L	4B
C4526R	4B
C4528L	4B
C4528R	4B
C4529	3B
C4530	2A
C4531	2B
C4532	2B
C4534	2B
C4535	3B
C4551	1A
C4552	1A
C4553	2A
C4554	1A
C4555	1A
C4556	1A
C4557	1B
C4558	1B
C4559	1B
C4560	1B
C4561	1B
C4562	1B
C4563	1A
C4564	1A
C4565	4A
C4571L	1B
C4571R	1B
C4572L	1B
C4572R	1B
<b>C4581</b>	
C4581	2A
C4582	2A
C4583	2A
C4584	2A
C4584	2B
C4585	2A
<b>D</b>	
D4501	4A
<b>IC</b>	
IC4501	2B
IC4551	1A
IC4552	1B
IC4581	2A
<b>J</b>	
J4501	3A
J4502	4B
J4571	1A
<b>JP</b>	
JP4506	4A
JP4512	1B
JP4514	1A
JP4517L	1A
JP4517R	2A
JP4581	3A
JP4582	3A
<b>L</b>	
L4501	3B
L4502	2B
L4503	3A
L4551	1A
L4581	2A
<b>PG</b>	
PG4501	4A
PG4502	1A
<b>Q</b>	
Q4501	3A
Q4502	2A
Q4503	4A
Q4504	2B
<b>QF</b>	
QF4501	4A
<b>R</b>	
R4501	3B
R4502	3B
R4503	3B
R4504	3B
R4505	3A
R4506	3A
R4507	3A
R4508	3A
R4510	2A
R4511	2A
R4512L	4A
R4512R	4A
R4514L	4B
R4514R	4B
R4516	2B
<b>R4517</b>	
R4517	2B
<b>R4518</b>	
R4518	4A
<b>R4519</b>	
R4519	3B
<b>R4520</b>	
R4520	3B
<b>R4571L</b>	
R4571L	1B
<b>R4571R</b>	
R4571R	1B
<b>R4572L</b>	
R4572L	1A
<b>R4572R</b>	
R4572R	1A
<b>R4573L</b>	
R4573L	1A
<b>R4573R</b>	
R4573R	1A
<b>R4583</b>	
R4583	2A
<b>R4584</b>	
R4584	2A
<b>R4585</b>	
R4585	2A
<b>R4587</b>	
R4587	2A
<b>R4588</b>	
R4588	2A
<b>R4589</b>	
R4589	2A
<b>R4590</b>	
R4590	2A
<b>ZD</b>	
ZD4501	3B
ZD4502	4A

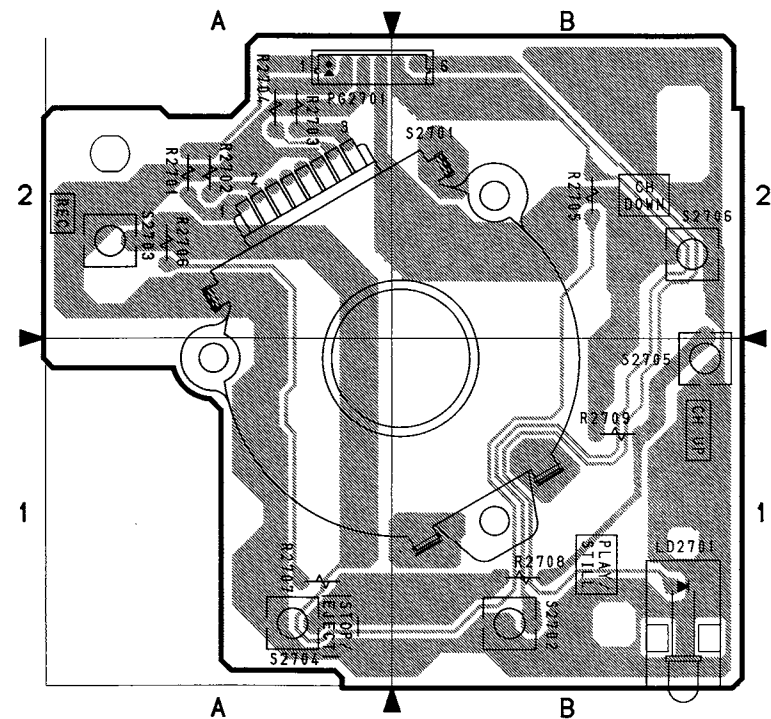


**N & A [NICAM & A2]  
DIFFERENCE TABLE**

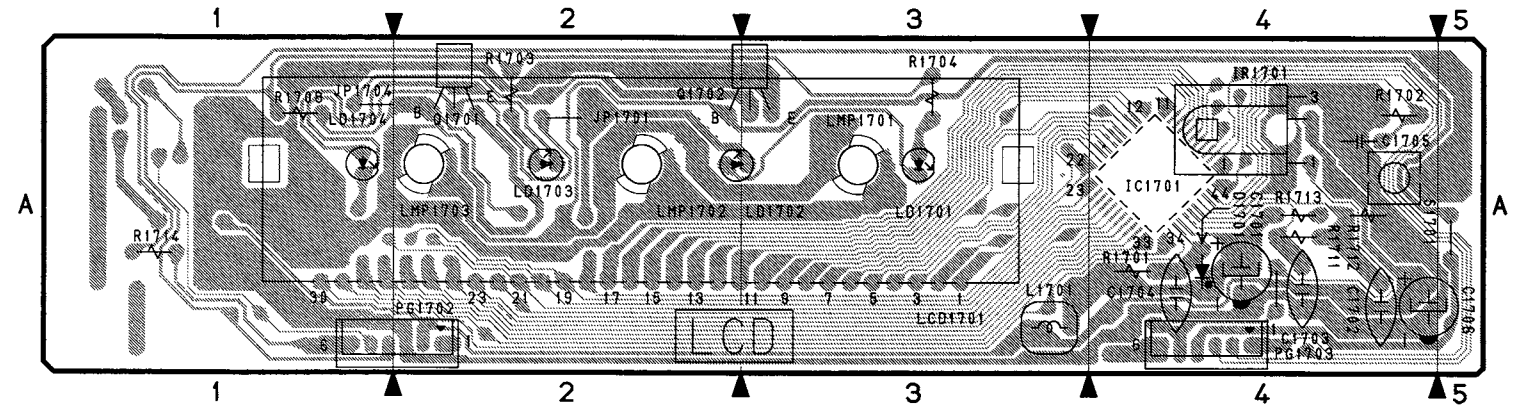
NOTE: This table lists the different components marked with asterisks (\*) in the circuit board diagrams.

SYMBOL-No.	NA, NAV	VPS	UKN
C1851	○	○	×
C1852	○	○	×
C1853	○	○	×
C1854	○	○	×
C1856	○	○	×
C1857	○	○	×
C1858	○	○	×
C1859	○	○	×
C1860	○	○	×
C1861	○	○	×
C1862	○	○	×
C1863	○	○	×
C1864	○	○	×
C1865	○	○	×
C1866	○	×	×
C1867	○	×	×
C1890	○	○	×
C1891	○	○	×
C1895	○	○	×
C1896	○	○	×
C1897	○	○	×
C1898	○	○	×
C1899	○	○	×
CF1851	○	○	×
CF1852	○	○	×
IC1851	○	○	×
IC1852	○	○	×
K002	○	○	×
K004	○	○	×
K005	○	○	×
K009	○	○	×
K013	○	○	×
K014	○	○	×
K016	○	×	×
L1804	○	○	×
L1806	○	○	×
R1816L	○	×	×
R1816R	○	×	×
R1851	○	○	×
R1852	○	○	×
R1853	○	○	×
R1854	○	○	×
R1855	○	○	×
R1856	○	○	×
R1857	○	○	×
R1858	○	○	×
R1860	○	×	×
R1861	○	×	×
R1862	○	×	×
R1863	○	×	×
R1864	○	○	×
R1865	○	○	×
R1870	○	○	×
R1899	○	○	×
X1851	○	○	×

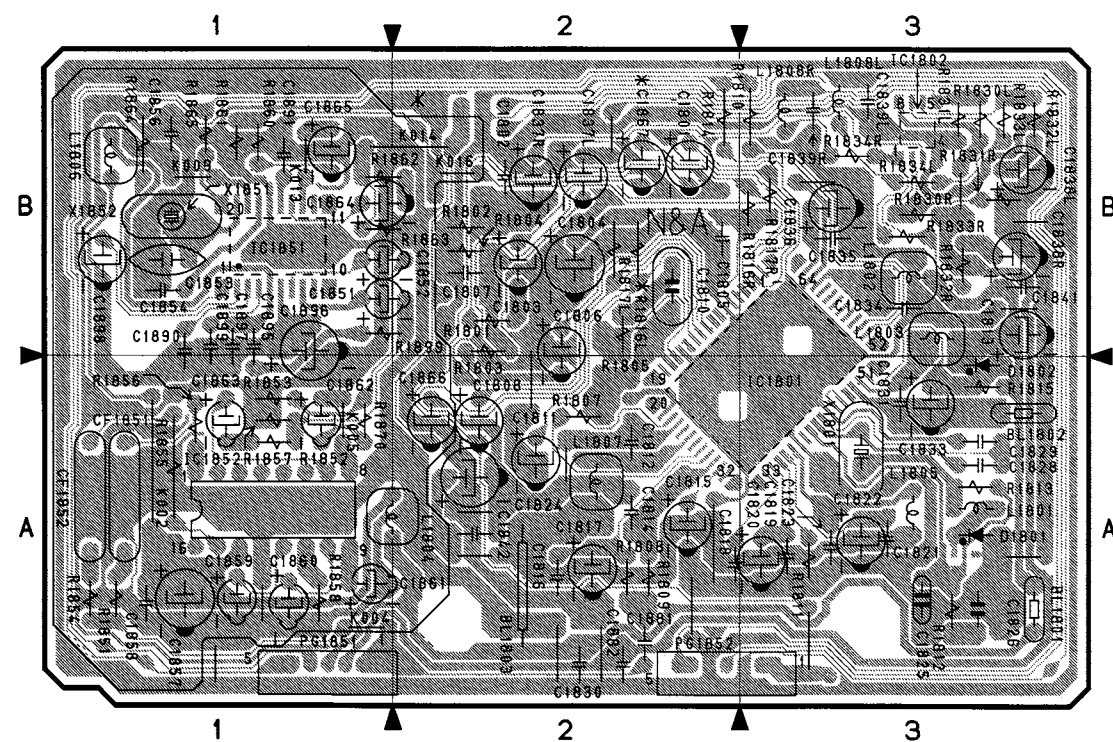
STL N&A. LCD. RJK CIRCUIT BOARDS



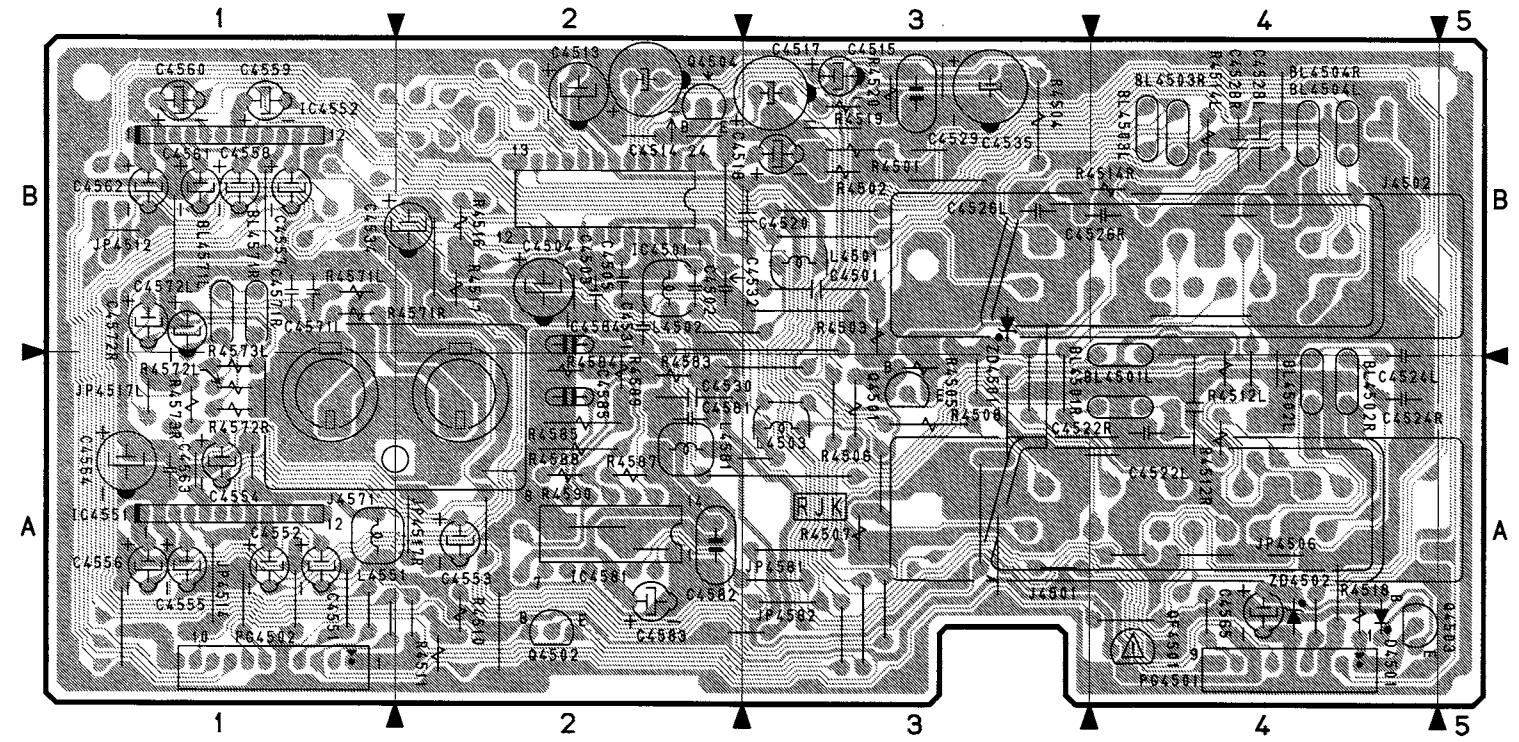
STL [SHUTTLE]  
[PATTERN No. JK1166-4]



LCD [LCD DISPLAY]  
[PATTERN No. JK1165-3]

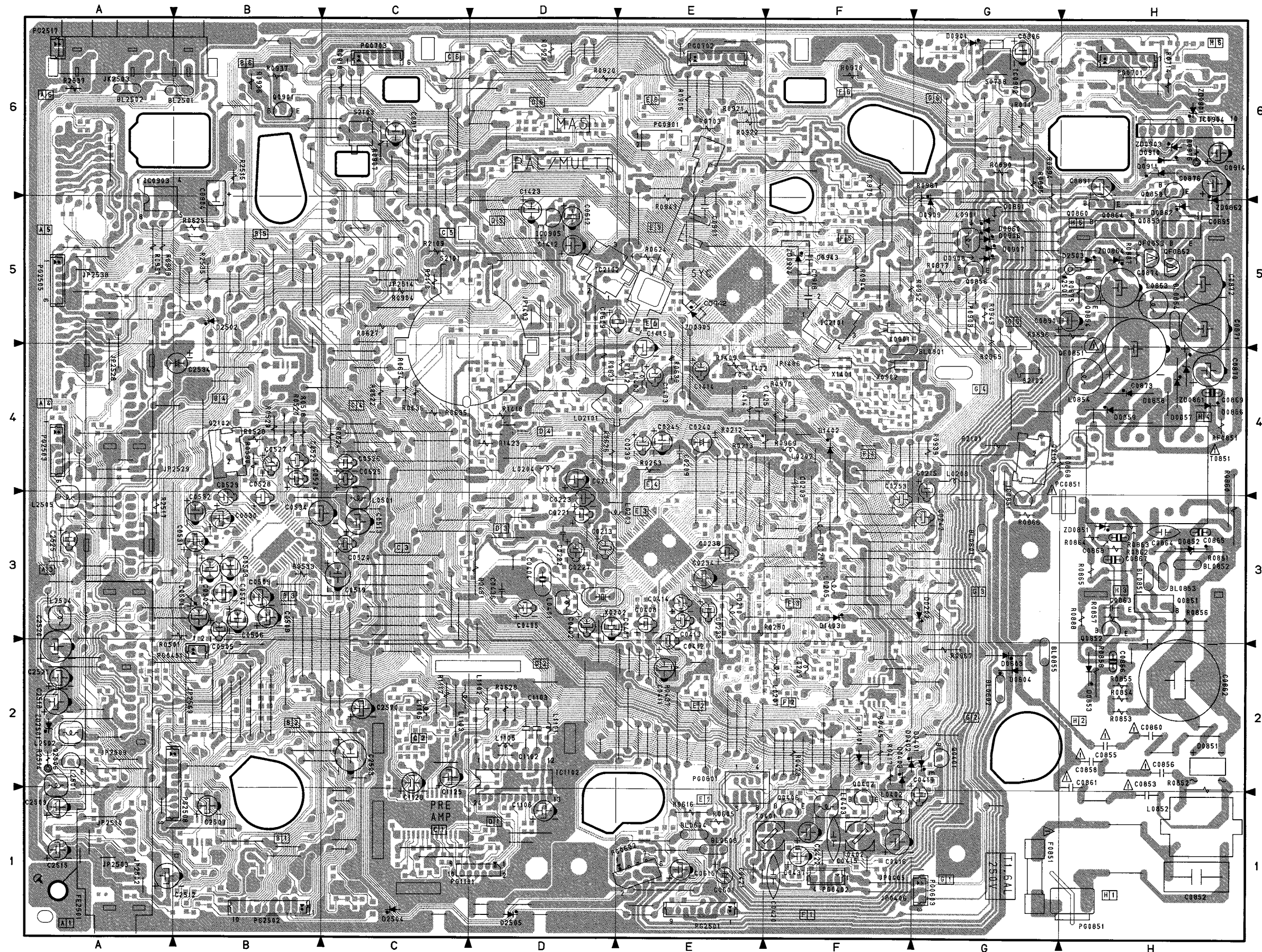


N&A [NICAM & A2]  
[PATTERN No. JK1177-4]



RJK [REAR JACK]  
[PATTERN No. JK1195-5]

MAS CIRCUIT BOARD -SIDE A- [SERIAL No:1~3000]



MAS[MAIN] -SIDE A-  
[PATTERN No.JA1266-5]

# IDENTIFICATION OF PARTS LOCATION

## MAS [MAIN]

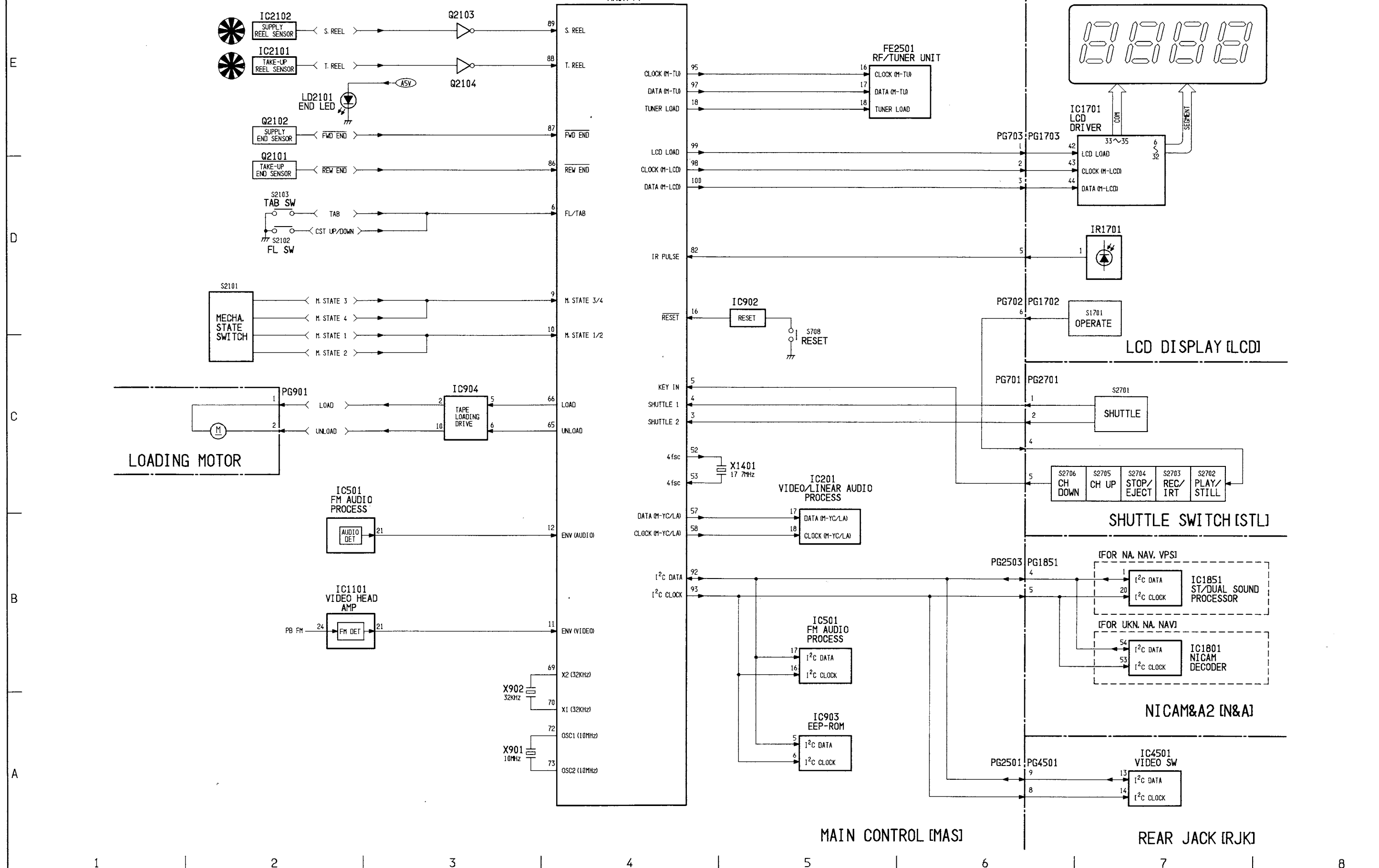
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#		C0249	B-3E	C0502	A-3B	C0863	A-3H	C1112	B-1D	C2521	A-2A	IC0903	A-5A	PG2503	A-4A	Q1410	B-4D	R0411	B-1F	R0621	B-5C	R0881	B-5G	R0974	B-5F	R2106	B-5D								
#2501	A-5H	C0250	B-2F	C0503	A-3B	C0864	A-3H	C1114	B-1C	C2522	B-2A	IC0904	A-6H	PG2505	A-5A	Q2101	A-4G	R0412	B-2F	R0622	A-4C	R0885	B-5H	R0975	A-6F	R2107	B-5C								
BL		C0251	B-3E	C0504	A-3B	C0865	A-3H	C1115	B-1C	C2523	B-3A	IC0905	A-5D	PG2508	A-1B	Q2102	A-4B	R0413	B-1G	R0623	B-5E	R0886	B-5H	R0976	A-6H	R2108	B-5C								
BL0601	A-3G	C0252	B-3F	C0505	A-3B	C0866	A-2H	C1116	B-1C	C2524	B-3A	IC1101	B-1C	PG2517	A-6A	Q2103	B-6D	R0414	B-1G	R0624	A-5E	R0887	A-5H	R0977	B-6G	R2109	A-5C								
BL0602	A-2G	C0253	A-3F	C0506	A-3B	C0867	A-3H	C1117	B-1C	C2525	A-3A	IC1102	A-2D	Q		Q2104	B-5F	R0417	A-2F	R0625	A-5B	R0888	A-3H	R0978	A-6F	R2110	A-5C								
BL0603	A-1E	C0254	B-2E	C0507	B-3B	C0868	A-3H	C1118	B-1C	C2531	B-3A	IC2101	A-5F	Q0201	B-2C	Q2501	B-1C	R0418	B-1F	R0626	A-4D	R0890	B-6F	R0979	B-6D	R2111	B-5D								
BL0604	A-1E	C0255	B-3F	C0508	A-3B	C0869	A-4H	C1119	B-1C	C2532	B-6A	IC2102	A-5D	Q0219	B-2F	Q2502	B-1B	R0419	B-1F	R0627	A-5C	R0891	B-6F	R0980	B-6D	R2112	B-5D								
BL0851	A-3H	C0257	B-3D	C0509	A-3B	C0870	A-4H	C1120	B-1C	C2533	B-6A	JK		Q0222	B-3F	Q2503	B-1B	R0420	B-1E	R0628	A-2D	R0892	B-6G	R0981	B-6D	R2113	B-5D								
BL0852	A-3H	C0258	B-3F	C0510	B-3B	C0871	A-5H	C1121	B-1C	C2534	A-4B	JK2503	A-6A	Q0226	B-3E	Q2505	B-2A	R0421	B-1F	R0629	B-5E	R0893	B-6H	R0983	B-6F	R2114	B-5F								
BL0853	A-3H	C0260	B-3F	C0511	B-3B	C0872	A-5H	C1122	B-1C	C2540	B-3C	L		Q0228	B-2F	Q2506	A-2A	R0422	B-1F	R0630	B-5E	R0894	A-6G	R0984	B-6F	R2115	B-5F								
BL0854	A-5H	C0262	B-2C	C0512	B-3C	C0873	A-4H	C1123	B-1D	C2541	B-4A	L0201	A-3F	Q0230	B-2F	Q2507	B-2C	R0423	A-2F	R0631	B-5D	R0895	A-6G	R0985	B-5F	R2116	B-6D								
BL0855	A-2G	C0263	B-2F	C0513	A-3C	C0874	A-5H	C1124	B-2D	C2543	B-4F	L0202	A-4F	Q0231	B-2F	Q2508	B-5A	R0424	B-3E	R0632	B-5D	R0896	A-5H	R0986	B-5F	R2117	B-6D								
BL0901	A-4F	C0265	B-2F	C0514	B-3C	C0875	B-4H	C1125	A-2C	C2544	B-3A	L0203	A-3E	Q0232	B-3F	QF		R0425	B-2E	R0633	B-5E	R0897	B-5H	R0987	A-6G	R2451	A-3D								
BL2501	A-6B	C0268	B-4E	C0517	B-3B	C0876	A-6H	C1126	B-2C	C2570	A-2C	L0204	A-4D	Q0401	A-2G	QF0851	A-5H	R0429	B-1F	R0634	A-4C	R0904	A-5C	R0993	B-5F	R2507	B-1C								
BL2502	A-6A	C0269	B-4E	C0518	B-3C	C0878	B-5H	C1127	B-2C	D		L0205	A-3F	Q0402	A-1F	QF0852	A-5H	R0430	B-1F	R0635	A-4C	R0906	A-6E	R0994	B-5F	R2509	B-1B								
C		C0273	B-2E	C0519	A-3C	C0890	A-5H	C1128	A-2C	D0202	A-3G	L0207	A-2F	Q0403	B-2G	QF0853	A-5H	R0431	B-1F	R0636	A-4C	R0907	A-6C	R0996	B-5F	R2510	B-1B								
C0201	B-4F	C0275	B-3E	C0520	A-3C	C0891	A-6H	C1129	B-1C	D0401	A-2G	L0208	A-2F	Q0405	A-4F	R		R0432	B-1F	R0637	A-4D	R0908	B-6D	R0997	A-5A	R2511	B-1B								
C0202	B-2F	C0276	B-2F	C0521	B-3C	C0892	B-6F	C1131	B-2C	D0402	A-2F	L0209	A-4G	Q0406	A-2F	R0202	B-3F	R0434	B-1F	R0639	A-4E	R0909	B-6D	R0998	A-5A	R2512	B-1A								
C0203	A-4F	C0277	B-2F	C0522	B-3B	C0893	B-6F	C1132	B-2D	D0403	A-2F	L0210	A-3E	Q0408	B-2F	R0205	B-2C	R0437	A-2E	R0703	A-6E	R0910	B-6D	R0999	B-6G	R2514	A-2A								
C0204	B-2D	C0278	B-2F	C0523	A-4B	C0895	A-5H	C1133	B-2D	D0603	A-2G	L0401	A-3D	Q0410	B-2E	R0206	B-2F	R0443	B-2G	R0704	B-6H	R0911	B-6C	R1101	B-2D	R2515	A-6B								
C0205	B-2F	C0279	B-3D	C0524	A-4B	C0901	A-5E	C1134	B-2D	D0604	A-2G	L0402	A-1F	Q0411	B-1F	R0207	B-2C	R0445	A-2F	R0705	B-6H	R0913	B-6D	R1102	B-1D	R2517	A-3A								
C0206	B-2F	C0292	B-4F	C0525	A-4C	C0902	B-5A	C1135	B-1D	D0851	A-2H	L0403	A-1F	Q0412	B-1F	R0208	B-2C	R0446	B-2E	R0707	B-6H	R0914	B-6D	R1104	B-1D	R2518	B-3A								
C0207	B-3F	C0293	B-3D	C0526	A-4C	C0903	B-6D	C1136	B-1D	D0852	A-3H	L0501	A-3C	Q0413	B-1F	R0212	A-4F	R0501	A-3B	R0708	B-6G	R0915	B-6D	R1107	B-1C	R2530	B-5A								
C0208	B-4D	C0295	B-2F	C0527	A-4B	C0904	A-5B	C1137	B-2C	D0853	A-2H	L0852	A-1H	Q0417	B-2E	R0213	A-4E	R0502	B-3B	R0709	B-6G	R0916	B-6D	R1108	B-1C	R2531	B-2A								
C0209	A-4E	C0296	B-2F	C0528	A-3B	C0905	B-6G	C1138	B-2D	D0856	A-4H	L0853	A-5H	Q0602	B-5E	R0215	B-3D	R0503	B-3B	R0710	B-6H	R0917	B-6D	R1109	B-2C	R2532	B-2A								
C0211	A-4D	C0297	B-2F	C0529	A-3B	C0906	A-6G	C1139	B-2D	D0857	A-4H	L0854	A-4H	Q0701	B-5E	R0216	B-4D	R0504	B-3B	R0711	A-6G	R0918	A-6C	R1110	B-2C	R2533	B-3A								
C0212	B-3F	C0299	B-4E	C0530	A-3B	C0907	B-5F	C1140	B-2C	D0858	A-4H	L0901	A-5G	Q0702	B-6H	R0217	B-3D	R0505	B-3B	R0712	B-6H	R0919	B-6D	R1112	B-2C	R2534	B-1B								
C0213	A-3D	C0402	A-3D	C0531	A-3B	C0908	B-5F	C1142	B-1C	D0859	A-4H	L1101	A-2D	Q0851	A-3H	R0227	B-3E	R0506	B-3B	R0713	B-6H	R0920	A-6D	R1113	B-2C	R2535	A-5B								
C0214	B-2F	C0403	B-3D	C0532	A-3B	C0909	B-4F	C1143	B-1D	D0860	A-5G	L1102	A-2D	Q0852	A-3H	R0228	B-2E	R0507	B-3B	R0714	A-6H	R0921	A-6E	R1115	B-2C	R2537	A-6A								
C0215	A-4G	C0404	A-3D	C0533	B-4B	C0910	B-4F	C1403	A-4E	D0861	A-5G	L1103	A-2C	Q0853	A-5H	R0229	B-4D	R0508	B-3B	R0715	B-6G	R0922	A-6E	R1116	B-2C	R2538	B-3A								
C0216	B-2F	C0405	A-3D	C0534	A-3B	C0912	B-6H	C1404	B-4E	D0862	A-5H	L1105	A-2D	Q0854	A-5H	R0238	B-2E	R0509	B-3B	R0852	A-2H	R0923	B-6E	R1117	A-2C	RF									
C0218	B-2F	C0406	B-2E	C0535	B-4B	C0913	B-6H	C1409	B-4E	D0901	A-6G	L1106	A-2C	Q0855	B-5G	R0239	B-2F	R0510	B-3B	R0853	A-2H	R0924	B-5E	R1118	B-2C	RF0851	A-4H								
C0219	B-4D	C0407	A-3D	C0536	B-3B	C0914	A-6H	C1410	B-4E	D0906	A-5G	L1402	A-4E	Q0856	A-5G	R0240	B-3F	R0511	B-3B	R0854	A-2H	R0925	B-5E	R1119	B-2F	S									
C0220	B-2F	C0408	A-3E	C0601	A-1E	C0915	B-6H	C1411	B-4E	D0907	A-5G	L1403	A-4E	Q0857	B-6F	R0241	B-3E	R0512	B-3B	R0855	A-2H	R0926	B-5E	R1120	B-2D	S0708	A-6G								
C0221	A-3D	C0409	B-3E	C0602	B-1E	C0916	B-6H	C1412	A-5D	D0908	A-5G	L1404	A-4D	Q0858	A-6H	R0243	B-3F	R0516	B-3B	R0856	A-3H	R0928	A-6D	R1121	B-2C	S2101	A-5C								
C0222	A-3D	C0410	B-3E	C0604	B-1E	C0917	A-6C	C1413	B-4D	D0909	A-5G	L2501	A-2A	Q0859	B-6H	R0245	B-4D	R0517	B-3B	R0857	A-3H	R0929	B-6D	R1122	B-2C	S2102	A-4G								
C0223	A-3D	C0411	A-2E	C0606	B-5E	C0918	A-5F	C1414	A-4E	D0910	A-6H	L2502	A-2A	Q0860	A-5H	R0249	B-2E	R0518	A-4B	R0858	A-2H	R0934	B-5F	R1409	A-4E	S2103	A-6C								
C0224	B-3D	C0412	A-2E	C0607	B-5E	C0919	B-6E	C1415	A-4E	D0911	A-6H	L2504	A-3A	Q0861	B-5G	R0250	A-3E	R0519	B-4B	R0860	A-3H	R0935	B-6G	R1410	B-4E	T									
C0225	B-3D	C0413	A-3E	C0608	B-5D	C0922	B-6H	C1416	B-4E	D1101	A-2F	L2505	A-3A	Q0864	A-5H	R0253	B-2F	R0520	A-4B	R0861	A-3H	R0936	A-6B	R1412	A-4E	T0401	A-1F								
C0226	B-3D	C0414	A-3E	C0609	A-5E	C0923	B-5D	C1419	B-4D	D1102	B-2C	LD		Q0901	A-6B	R0254	B-3F	R0521	B-4B	R0862	A-3H	R0937	A-6B	R1414	A-4E	T0402	A-1F								
C0227	A-3D	C0415	A-1F	C0611	B-5D	C0924	B-5E	C1423	A-5D	D1402	A-4F	LD2101	A-4D	Q0902	B-6B	R0256	B-3F	R0522	B-3C	R0863	A-3H	R0938	B-6E	R1416	B-4D	T0851	A-4H								
C0228	B-3D	C0416	A-1F	C0612	A-5D	C0925	B-6E	C1424	B-4C	D1403	A-3F	PC		Q0905	B-6D	R0258	B-3E	R0523	B-3C	R0864	A-3H	R0939	A-4G	R1417	B-4D	X									
C0230	B-3D	C0417	B-2F	C0614	B-1E	C0926	B-6E	C1425	A-4E	D2502	A-5B	PC0851	A-3H	Q0906	B-6D	R0261	B-3F	R0524	A-4C	R0865	A-3H	R0940	B-6E	R1418	A-4D	X0202	A-3D								
C0233	A-3E	C0418	B-1F	C0615	A-1E	C0940	B-6E	C1444	B-4F	D2503	A-5H	PG		Q0907	B-5F	R0263	A-4E	R0525	B-4C	R0866	A-3														



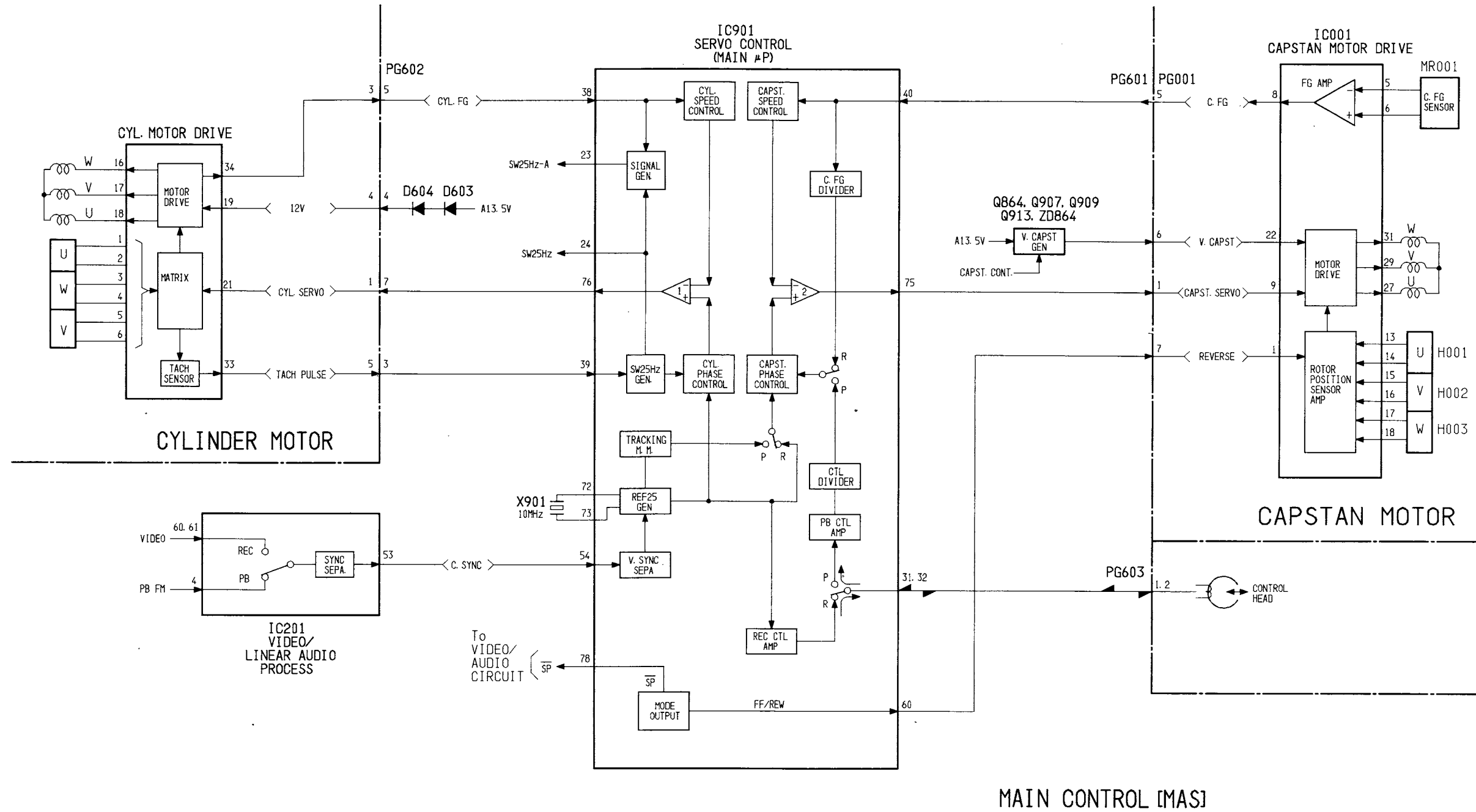


# CHAPTER 7 BLOCK DIAGRAMS

## 1. SYSTEM CONTROL

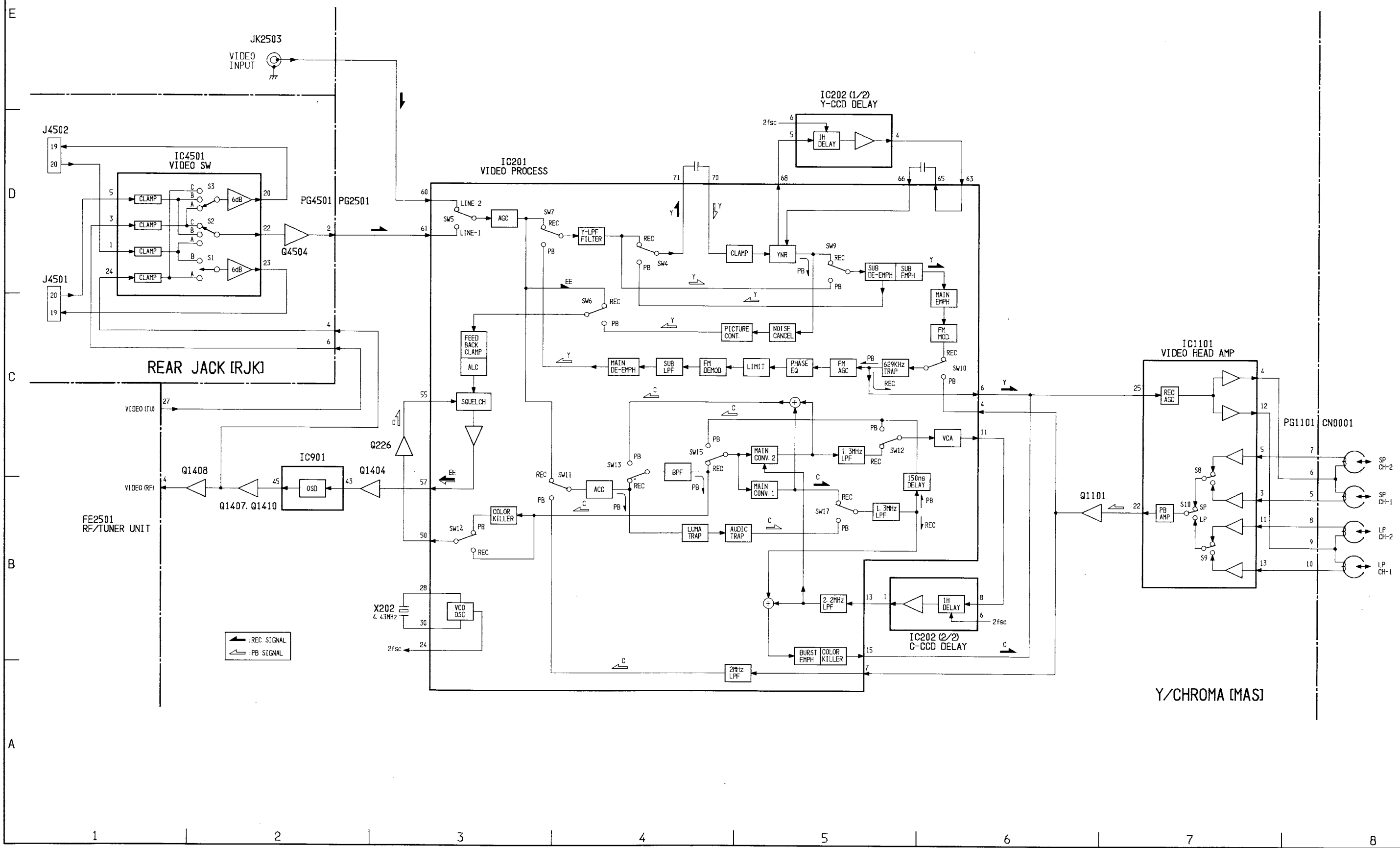


2. SERVO

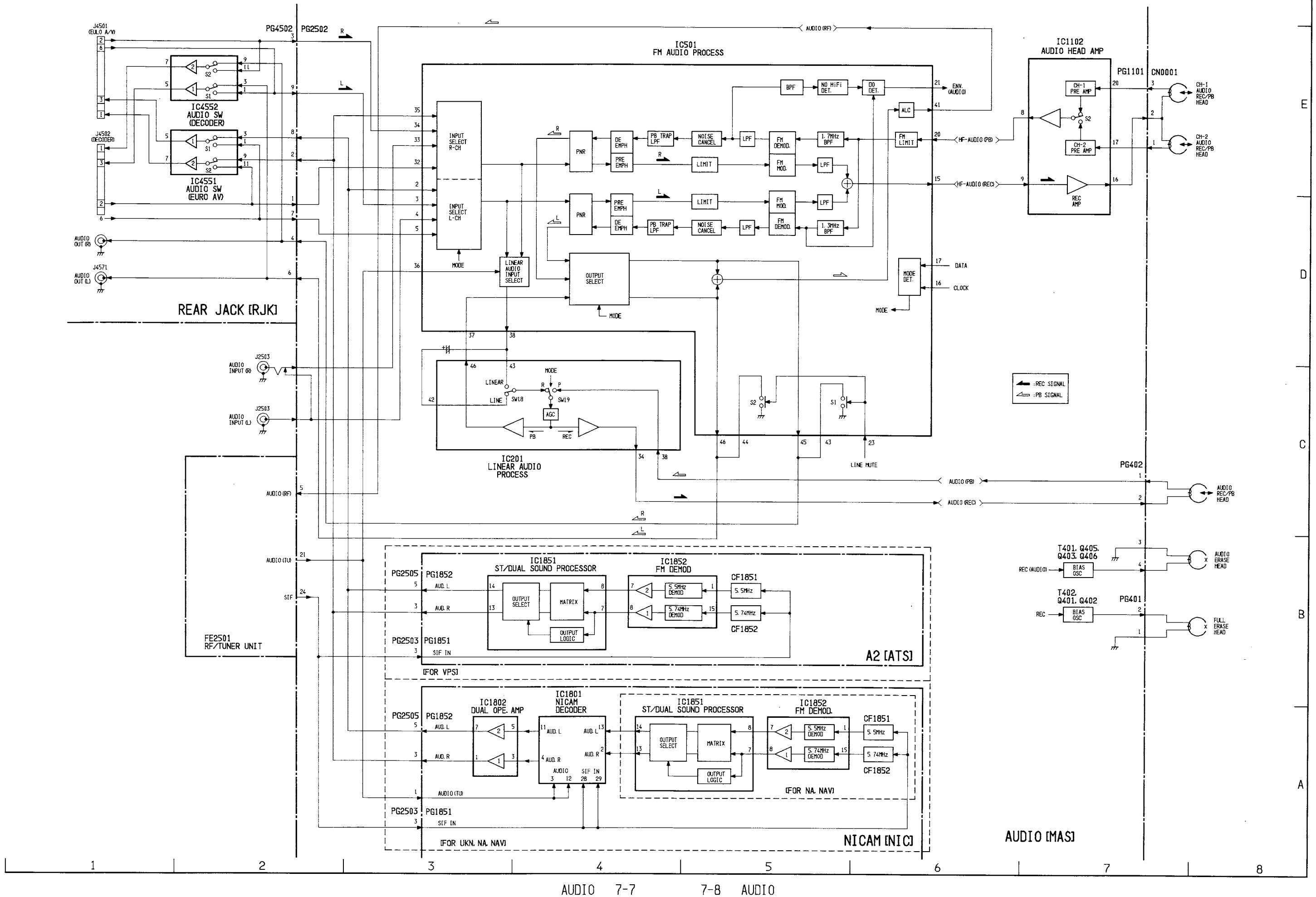




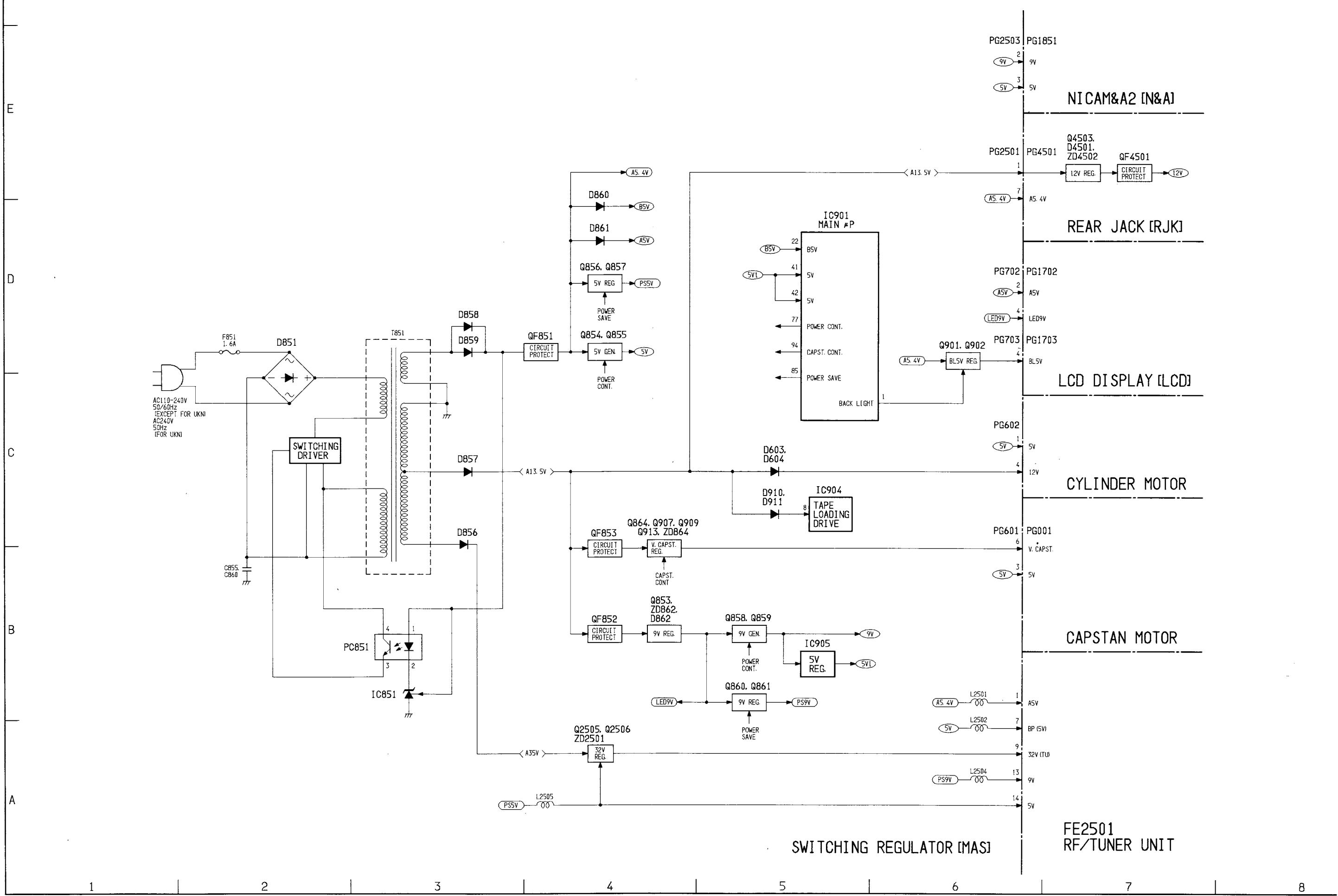
# 3. VIDEO



# 4. AUDIO



5. POWER



POWER 7-9      7-10 POWER

# HITACHI

VT-F550E(NAV)

VT-F550E(UKN)

VT-F550E(NA)

VT-F550E(VPS)

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