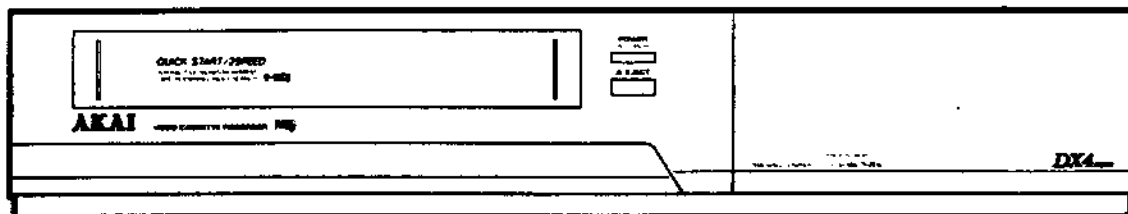


# AKAI SERVICE MANUAL



MODEL VS-765EK

## VIDEO CASSETTE RECORDER

MODEL **VS-765** EA/EK/EM/  
EO/EOH/ES

MODEL **VS-767** EK/EOG/EOG-V

## SPECIFICATIONS

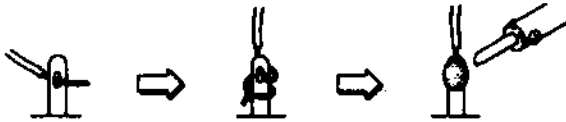
<b>Format</b>	EA/EK/ES ..... VHS standard	<b>Video</b>	Line input level ..... 0.5 - 2.0 Vp-p/75 ohms, unbalanced
EM/EO/EOG/EOG-V/EOH ..... VHS standard(PAL, MESECAM)		Line output level ..... 1.0 Vp-p/75 ohms, unbalanced	SN ratio ..... More than 45dB
<b>Video recording system</b> ..... Rotary, slant azimuth two-head helical scan system		Horizontal resolution ..... More than 250 lines	
<b>Rotary heads</b> ..... 4 video heads		<b>Audio</b>	Line input level ..... -6 dBm/50 k ohms, unbalanced
<b>RF input</b>		Line output level ..... -6 dBm/ 1 k ohms, unbalanced	S/N ratio ..... More than 40 dB
EA ..... System B, G VHF ch 0 - 5, 5A, 6 - 11 UHF ch 21 - 69		Frequency response	EXCEPT EOG/ EOG-V ..... 70 - 10,000 Hz
EK ..... System I UHF ch 21 - 69		EOG/EOG-V ..... 80 - 10,000 Hz	
EM ..... System B, G (PAL, SECAM)		<b>Recording/playback time</b> ..... 240 min. with E-240 cassette in SP mode	480 min. with E-240 cassette in LP mode
Middle East ..... VHF ch 2 - 12, UHF ch 21 - 69		<b>Tape speed</b>	SP mode ..... 23.39 mm/sec.
EO ..... System B, G (PAL, SECAM)		LP mode ..... 11.695 mm/sec	
VHF ch 2 - 4, 5 - 12		<b>Quick finder</b>	SP mode ..... Approx. 5 or 15 times normal speed
Cable ch S1' - S3', S1 - S21		LP mode ..... Approx. 3 or 7 times normal speed	
EOG/EOG-V ..... System B, G (PAL, SECAM)		<b>FF, REW time</b> ..... Approx. 5 min. with E-180 cassette	
VHF ch 2 - 4, 5 - 12		<b>Timer</b>	Program ..... 8 program / 1 year and QUICK TIMER
UHF ch 21 - 69		Clock reference ..... Quartz crystal	
Cable ch S1' - S3', S1 - S20		Display ..... TV screen & FL(Tape counter, Timer etc.)	
EOH ..... System B, G (PAL, SECAM)		<b>Power requirements</b>	EA/EK ..... 240 V AC, 50 Hz
VHF ch 2 - 4, 5 - 12		EM ..... 110-127/220-240 V AC, 50/60 Hz	EO/EOG/EOG-V/ EOH ..... 220 V AC, 50 Hz
UHF ch 21 - 69		ES ..... 200 - 220V AC, 50 Hz	
Cable ch S1' - S3', S1 - S41		<b>Power consumption</b>	EA/EK/EM/ES ..... 36 W
ES ..... System I		EO/EOH ..... 37 W	EOG/EOG-V ..... 38 W
VHF ch A - J (Ireland) ch 4 - 13 (South Africa)		<b>Operating temperature</b> ..... 5°C - 40°C	
UHF ch 21 - 69		<b>Dimensions</b> ..... 425(W) x 82(H) x 310(D) mm	
<b>RF output</b>		<b>Weight</b> ..... 5.0 kg	
EA ..... System B type modulation		<b>Standard accessories</b>	(VS-765 model) (VS-767 model)
VHF ch 0, 1 switchable(preset ch 1)		Connection cord	1 1
EK/ES ..... System I type modulation		Remote control unit	1 1
UHF ch 30 - 39 adjustable(preset ch 36)		Batteries for remote control	2 4
EM ..... System B type modulation		Function decal sheet	- 1
VHF ch 3, 4 switchable(preset ch 4)		Operator's manual	1 1
EO/EOH/ EOG/EOG-V ..... System G type modulation			
UHF ch 30 - 39 adjustable(preset ch 36)			
<b>Recording(line input)</b>			
EA/EK/ES ..... PAL			
EM/EO/EOG/EOG-V/ EOH ..... PAL, SECAM(recorded as MESECAM)			
<b>Playback(line output)</b>			
EA/EK/ES ..... PAL			
EM/EO/EOG/EOG-V/ EOH ..... PAL, SECAM(MESECAM Tape)			

\* For improvement purposes, specifications and design are subject to change without notice.

# ★ SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the  $\Delta$  (\*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.  
These must also be replaced only with specified replacements.  
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
  - 1) Wires covered with PVC tubing
  - 2) Double insulated wires
  - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
  - 1) Insulation tape
  - 2) PVC tubing
  - 3) Spacers (insulating barriers)
  - 4) Insulation sheets for transistors
  - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15  $\mu$ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

## ★ INFORMATION

### SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

Symbol indicates the destination of the units as listed below.

Symbol	Classification	Principal Destination	System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B, G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B, G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	W. Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

#### Quick start function

This VCR contains the quick start function.

When a video tape is inserted into this VCR, the QUICK START indicator will automatically light on the front panel. This indicates that the VCR is in the quick start mode and that any function button pressed will operate immediately. If a function button is not pressed within 5 minutes, the indicator will disappear and the VCR will be released from the quick start mode. If the play or record button is pressed after the indicator has disappeared, there will be a short time before the VCR responds.

#### Automatic functions

This VCR contains the following auto functions.

##### 1. Auto power on

The VCR power is automatically turned on when the tape is inserted.

##### 2. Auto play

If the video tape's recording defeat tab has been removed, playback will begin automatically when the tape is inserted into the VCR.

##### 3. Auto tape reject

If a video tape with its recording defeat tab removed is loaded, the VCR will automatically eject it when the REC or TIMER button is pressed.

##### 4. Power off eject

Even when the VCR's power is off, pressing the EJECT button will turn the power on and eject the tape. Once ejected the power will be turned off automatically.

##### 5. Auto counter display

When the display mode is on, the tape counter will be displayed on the TV screen automatically during fast forward or rewind.

##### 6. Auto rewind

The video tape is automatically rewound when the end of the tape is reached during the play, recording or quick finder forward mode. (Auto rewind will not function during the next mode when it has been set after the timer recording, fast forward or recording mode.)


##### 7. Auto dimmer display

Between the hours of 23:00 and 6:00, if the VCR is not in use, the FL display is automatically dimmed to a lower light level.

### Safety lock system (Remote control only)

This VCR's PLAY button can be locked to prevent access by small children.

This feature can be operated by the remote control only.

To lock: With the VCR POWER ON, press and hold the remote control's stop button for approx. 8 seconds. The safety lock indicator  will appear on the FL display to indicate that the VCR is locked.

To unlock: Press and hold the remote control's play button for approx. 8 seconds. The safety lock indicator will flash and disappear from the display.

### Multi-language display

The language of your choice can be selected for the on-screen display. You can choose any one of the following languages: English, German, Spanish, French, Italian,

STOP is chosen. During the INTRO SCAN mode, the index number will be displayed on the TV screen and

flash on the FL display. This number will advance each time an index code is found. The INDX indicator will light on the FL display during the intro scan mode.

While intro scan is searching for the beginning of the program, the fast forward (or rewind) indicator lights and the play indicator flashes. During the 8 seconds of playback, the play indicator lights and the fast forward (or the rewind) indicator flashes.

### INDEX SEARCH System (Remote control only)

Use the index search mode to jump directly to the beginning of any recorded segment, within 99 segments of your starting point, in either the forward or reverse direction.

Using the index code (automatically added when tapes are recorded on this VCR) as a guide, the VCR forwards or rewinds the video tape to the segment you have chosen and begins playback automatically. Because the index search feature uses the index code that is added to the tape when programmes are originally recorded, this feature will only operate with tapes that include this index code.

Press the INDEX SEARCH forward or reverse button the number of index codes you wish to skip on the remote control.

The tape will be fast forwarded or quickly rewound to the desired segment and playback will begin automatically.

During the index search mode the index number will be displayed on the TV screen and flash on the FL display.

This number will decrease each time an index code is found.

### INTRO SCAN system (Remote control only)

This VCR is capable of quickly fast forwarding (or rewinding) to the beginning of each recorded segment on a tape, briefly playing back that segment, and then fast forwarding (or rewinding) to the next segment.

This system works in combination with the control signal which is recorded at the beginning of each recorded segment.

Press the INTRO SCAN button on the remote control during the "play", "stop", "fast forward" or "rewind" mode. The VCR will immediately fast forward (or rewind) the tape to the beginning of the program and play back about the first 8 seconds. The VCR will then again fast forward (or rewind) the tape to the beginning of the next recorded segment and again play back the first 8 seconds of the program.

This operation continues until the end of the tape (or the beginning of the tape) or another mode (such as PLAY or Dutch, Finnish or Swedish). If a language is not selected, the VCR will select English automatically.

- 1) Press the AUTO/OFF button on the remote control unit. The language list will be displayed on the TV screen.
- 2) Select the desired number with the multi-function buttons.

### Variable speed playback (Remote control only)

The VARIABLE SPEED +, - buttons make play speed increase or decrease possible with the remote control.

The tape speed can be increased up to 1.5 times the normal playback speed in the forward or reverse direction. In the forward direction, the speed can also be decreased to 1/12 of the normal playback speed.

Press the remote control's VARIABLE SPEED + button repeatedly during playback until you reach the desired speed.

During this mode, no sound will be heard.

### Playback picture sharpness adjustment (Remote control only)

Playback picture sharpness adjustment is now possible with the remote control.

Press the PICTURE SHARPNESS + button repeatedly to sharpen the picture or press the - button to soften the picture.

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## TEST MODE

To set the VCR to the TEST MODE, press and hold both the "POWER" and "EJECT" buttons on the front panel, then plug in the AC power cord. The TEST MODE can also be set by pressing the SYSTEM RESET button while pressing both the "POWER" and "EJECT" buttons.

When the TEST MODE has been engaged, the QUICK START indicator turns on even when the POWER is turned OFF.

The TEST MODE can be cancelled by disconnecting the AC power cord or simply by pressing the SYSTEM RESET button.

### 1) TRACKING POSITION DISPLAY

In the SP play mode, pressing the manual TRACKING buttons during playback or when the auto tracking system is operating displays tracking position data. Data is displayed in 64 steps (in hexadecimal numbers from "00" to "3F") in the channel number indicator segment on the FL display.

Pressing the PICTURE SHARPNESS + button sets tracking to the maximum "3F" tracking position directly during playback and pressing the - button sets it to the minimum "00" position.

Pressing the PLAY button during playback sets tracking to the center position automatically.

Pressing the MEMO button will change the FL display's tracking indication to the center of the tracking range. (This tracking data will be kept in EP-ROM IC even when the TEST MODE has been reset. Therefore, do not forget to return to the original center position "1F". Press the manual TRACKING buttons to set the indication to "1F", then press the MEMO button.)

### 2) FL DISPLAY CONFIRMATION

By pressing the QUICK TIMER "M" button on the front panel, all indicator segments in the FL display will light up.

### 3) TIMER FUNCTION CONFIRMATION

During the TEST MODE, the clock's minute display will advance by one every second to facilitate quick timer function confirmation.

### 4) SUSPENSION OF THE TAPE PROTECTION SYSTEM

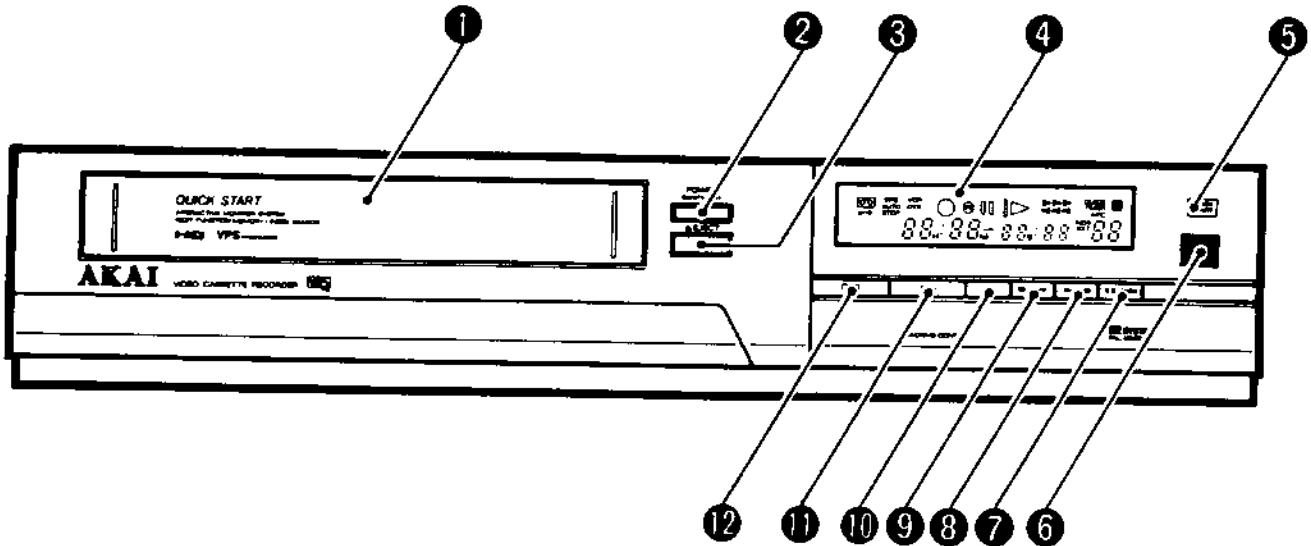
When the VCR is not in the TEST MODE, the REC PAUSE mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the TEST MODE however, the tape protection system will not operate.

### 5) AUTO PRESETTING OF THE TV STATIONS

Once you have pressed the "PRESET" and "AUTO SCAN" buttons during the TEST MODE, TV stations will be memorized automatically when the system finds TV stations.

# I. CONTROLS

## I-1. FRONT PANEL (EXCEPT VS-462EOH)



**1** **Cassette loading slot**

Load the VHS video tape here.

**2** **POWER ON/STANDBY button**

To turn the VCR on or off (standby mode).

**3** **EJECT button**

To eject the video tape. The tape can be ejected even when the VCR's power is off.

**4** **FL (Fluorescent) display**

Provides visual reference of the VCR's operating modes.

**5** **QUICK START indicator**

Lights when the VCR is in the quick start mode.

**6** **Remote sensor window**

For reception of the remote control's signal.

**7** **Pause/still button**

To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.

**8** **Fast forward button**

To fast forward the video tape. Also to start quick finder forward during playback.

**9** **Rewind button**

To rewind the video tape. Also to start quick finder reverse during playback.

**10** **SLOW button**

To start slow motion playback.

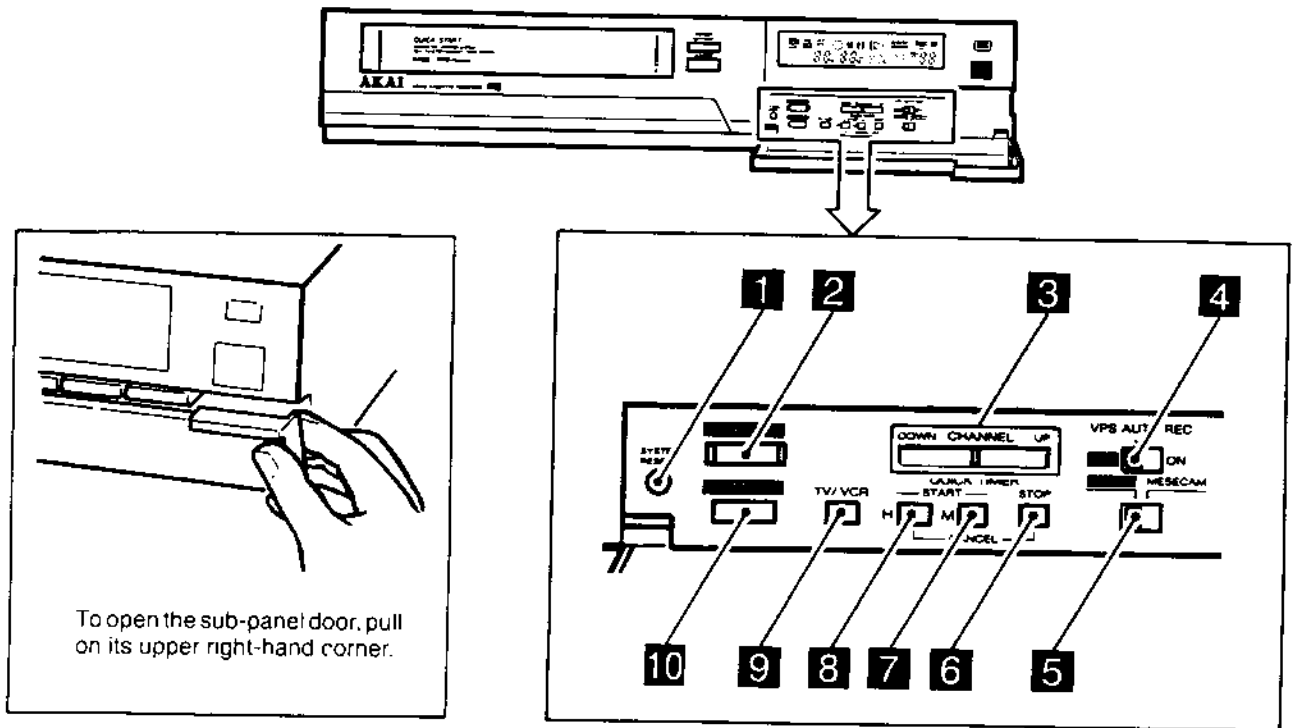
**11** **Play button**

To start video tape playback.

**12** **Stop button**

To stop the video tape.

## 1-2. SUB PANEL(EXCEPT VS-462EOH)



### 1 SYSTEM RESET button

To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.

### 2 REC (Record) button

To start recording.

### 3 CHANNEL buttons

To select channels.

### 4 VPS AUTO REC switch (EOH ONLY)

To set the VPS video programme system on or off. (This feature is optional and requires a VPS adapter available from your video dealer.)

### 5 Video mode switch (EOH ONLY)

To select the type of signal to be played back or recorded. PAL: Set to this position for PAL color system playback or recording. (This switch should normally be set to this position).

MESECAM: Set to this position for MESECAM color system playback or recording. (MESECAM: Middle East SECAM system B/G.)

### 6 QUICK TIMER STOP button

To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.

### 7 QUICK TIMER M (Minute) button

To set the start time minutes for quick timer recording.

### 8 QUICK TIMER H (Hour) button

To set the start time hour for quick timer recording. Also used to cancel programmes preset for quick timer recording.

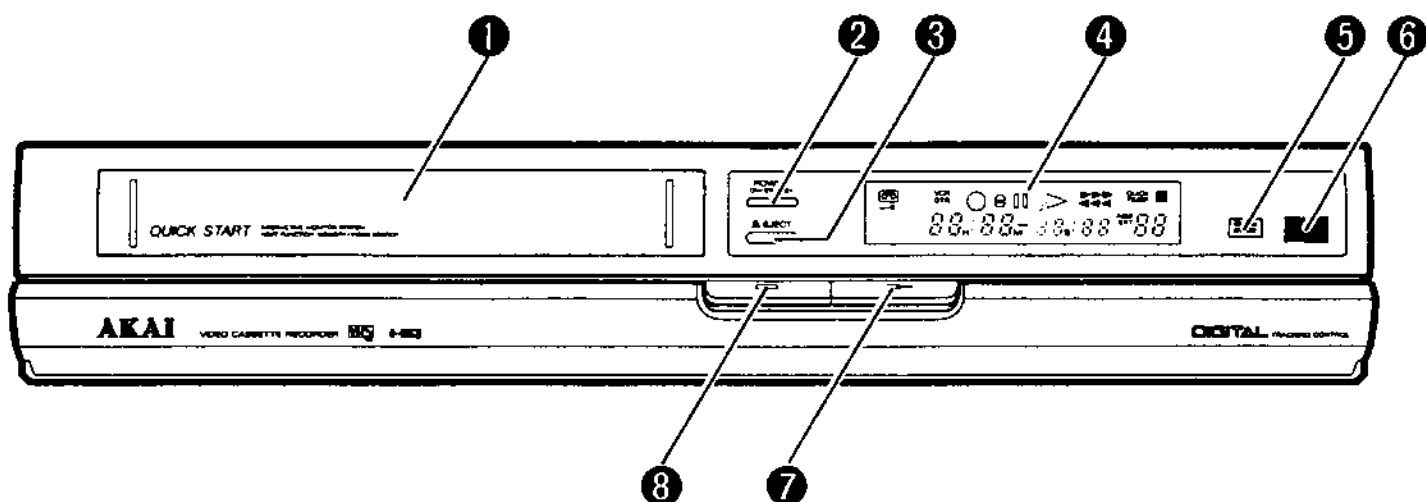
### 9 TV/VCR button

To watch a programme on a different TV channel than the one you are recording.

### 10 TIMER button

To set or cancel the timer recording mode.

### 1-3. FRONT PANEL(VS-462EOH ONLY)



**1 Cassette loading slot**

Load the VHS video tape here.

**2 POWER ON/STANDBY button**

To turn the VCR on or off (standby mode).

**3 ▲ EJECT button**

To eject the video tape. The tape can be ejected even when the VCR's power is off.

**4 FL (Fluorescent) display**

Provides visual reference of the VCR's operating modes.

**5 QUICK START indicator**

Lights when the VCR is in the quick start mode.

**6 Remote sensor window**

For reception of the remote control's signal.

**7  Play button**

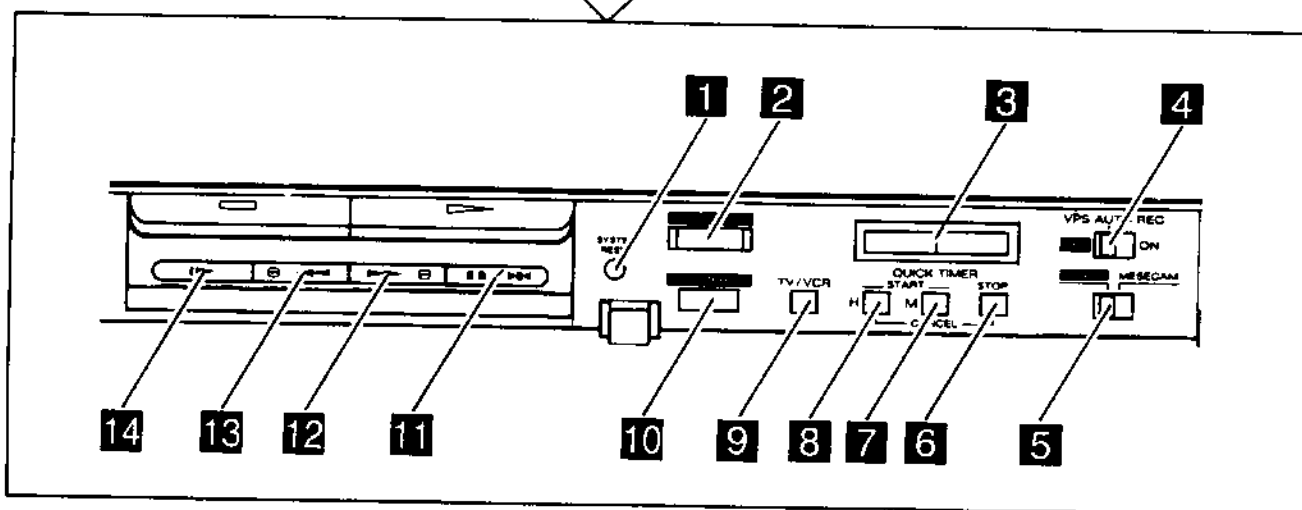
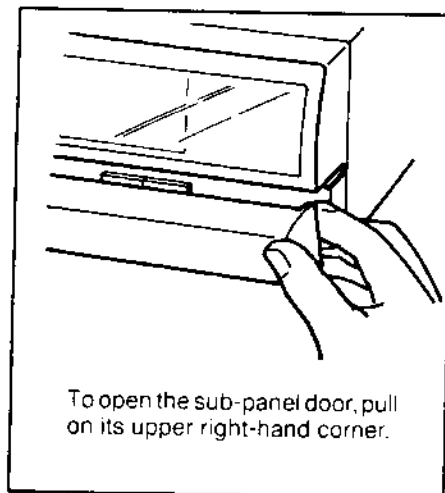
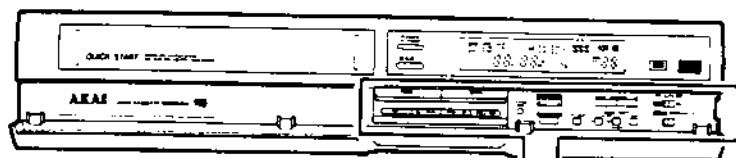
To start video tape playback.





**8  Stop button**

To stop the video tape.

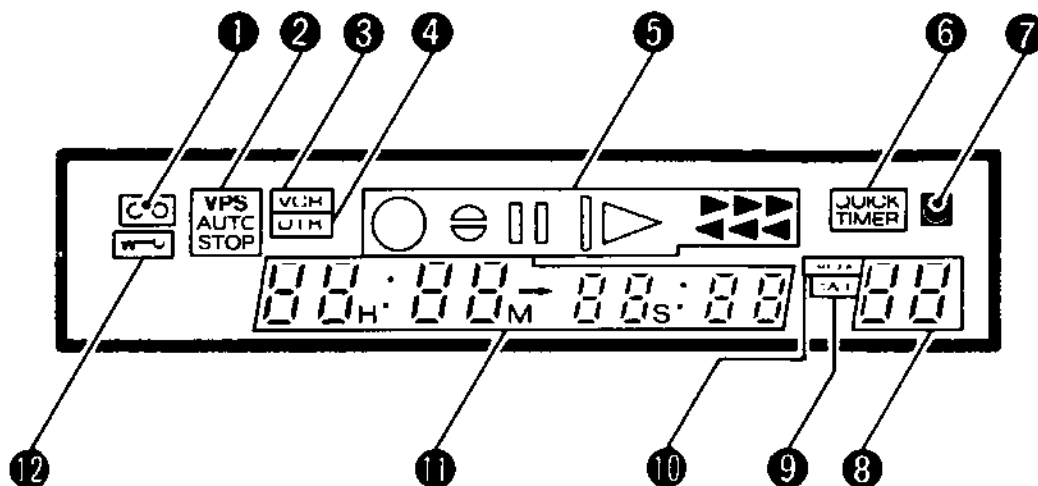


## 1-4. SUB PANEL(VS-462EOH ONLY)



- 1 SYSTEM RESET button**  
To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.
- 2 REC (Record) button**  
To start recording.
- 3 CHANNEL buttons**  
To select channels.
- 4 VPS AUTO REC switch**  
To set the VPS video programme system on or off. (This feature is optional and requires a VPS adapter available from your video dealer.)
- 5 Video mode switch**  
To select the type of signal to be played back or recorded. PAL: Set to this position for PAL color system playback or recording. (This switch should normally be set to this position). MESECAM: Set to this position for MESECAM color system playback or recording. (MESECAM: Middle East SECAM system B/G.)
- 6 QUICK TIMER STOP button**  
To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.
- 7 QUICK TIMER M (Minute) button**  
To set the start time minutes for quick timer recording.
- 8 QUICK TIMER H (Hour) button**  
To set the start time hour for quick timer recording. Also used to cancel programmes preset for quick timer recording.
- 9 TV/VCR button**  
To watch a programme on a different TV channel than the one you are recording.
- 10 TIMER button**  
To set or cancel the timer recording mode.
- 11  Pause/still button**  
To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.
- 12  Fast forward button**  
To fast forward the video tape. Also to start quick finder forward during playback.
- 13  Rewind button**  
To rewind the video tape. Also to start quick finder reverse during playback.
- 14  Slow button**  
To start slow motion playback.

## 1-5. FL DISPLAY



### 1 Tape load indicator

Lights when the video tape has been loaded.

### 2 VPS AUTO STOP indicator (EOH ONLY)

VPS lights when the VPS AUTO REC switch is ON and a VPS signal is received. AUTO STOP lights during the VPS auto stop mode. (This feature is optional and requires a VPS adapter available from your video dealer.)

### 3 VCR mode indicator

Lights when the TV/VCR button is set to VCR.

### 4 DTR (Digital Tracking) indicator

Lights when digital auto tracking is operating.

### 5 Tape mode indicators

Indicate what operation mode the video tape is in.

### 6 QUICK TIMER indicator

Lights when the VCR is in the quick timer mode.

### 7 Timer indicator

Lights when the VCR is in the timer recording mode.

### 8 Channel indicator

Indicates the selected channel number. Also indicates the index number during index search, and programme number during intro scan.

### 9 EXT (External) indicator

Indicates that the VCR is set for external input.

### 10 INDX (Index) indicator

Lights during index search, intro scan and when index codes are added to the tape during recording.

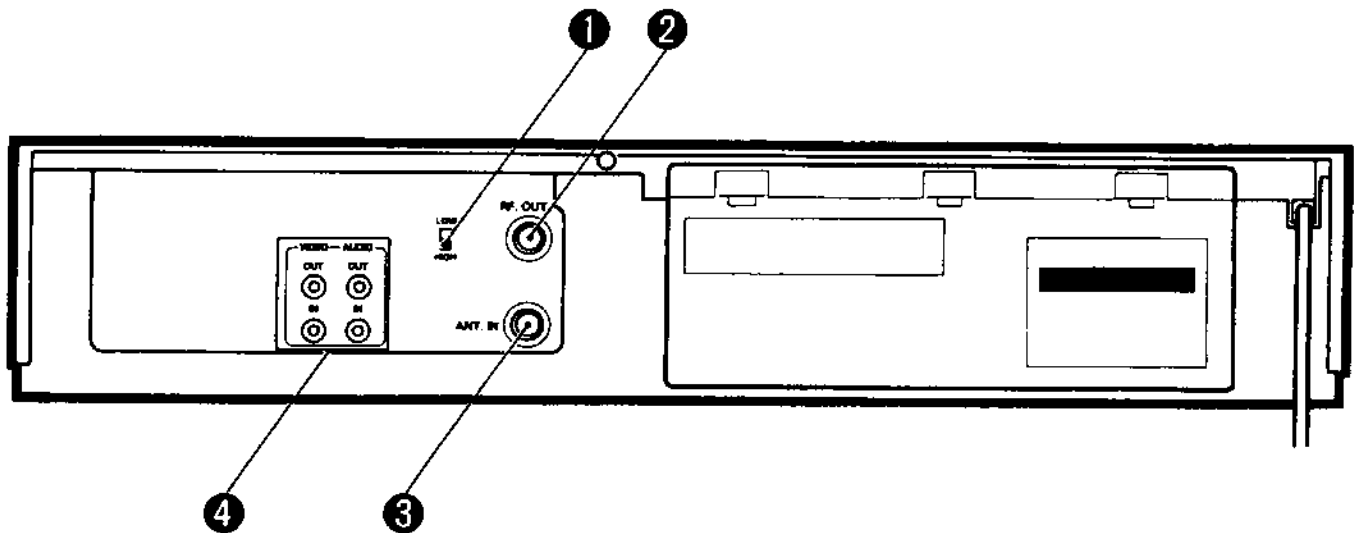
### 11 Time/counter display

Indicates the time and real time counter. Also indicates the tuning position during station tuning.

### 12 Safety lock indicator

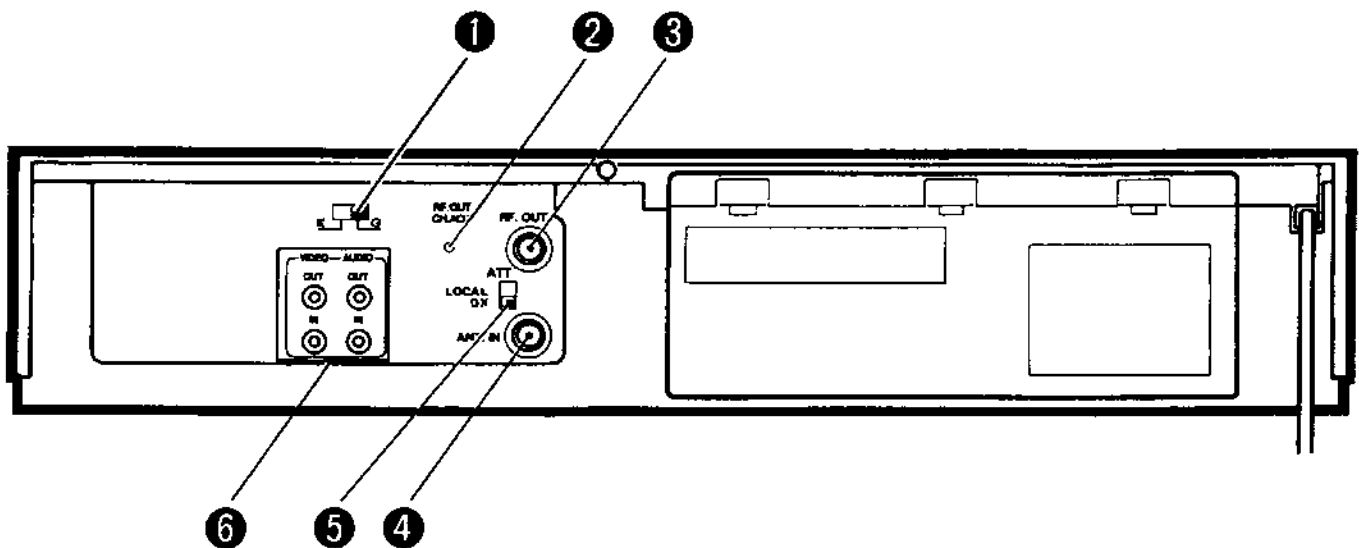
Lights when the VCR's play button has been locked.

### 1-6. REAR PANEL(EA, EM MODELS)



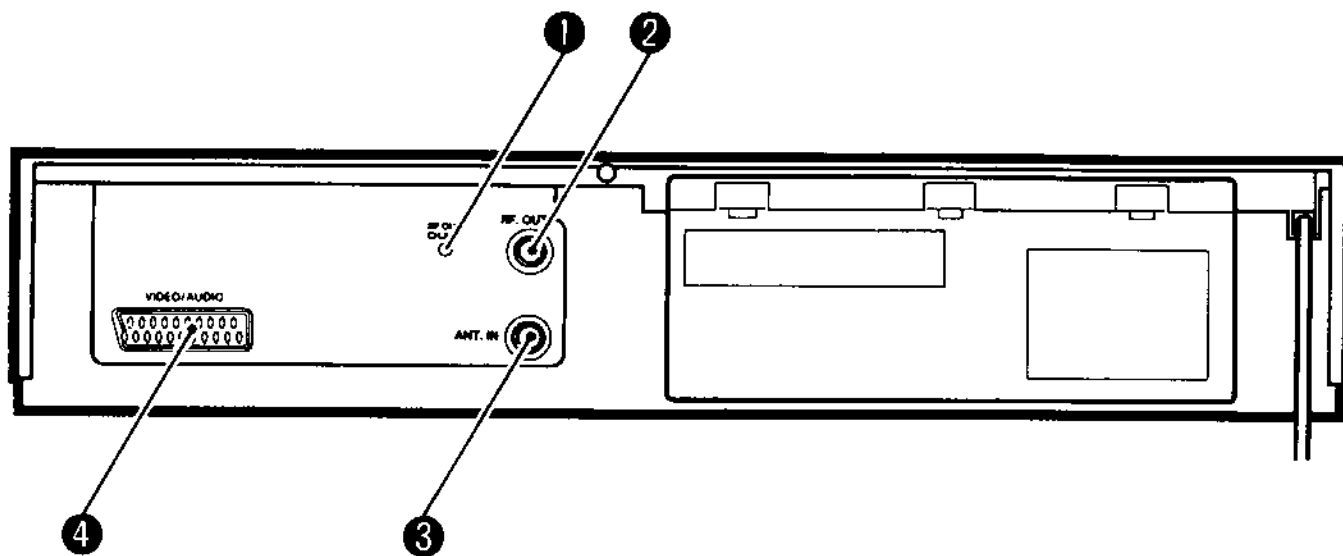
- 1 RF out switch**  
To select the output channel of the VCR.
- 2 RF. OUT terminal**  
To connect the VCR to the TV's ANTENNA IN terminal.
- 3 ANT. IN terminal**  
For TV antenna connection.
- 4 VIDEO/AUDIO IN/OUT terminals**  
For connection of a TV or second VCR.

### 1-7. REAR PANEL(EDG, ES MODELS)



- 1 RF. OUT switch (EDG ONLY)**  
To set the VCR for the TV system used in your country.
- 2 RF. OUT CH. ADJ (Channel adjustment) screw**  
To adjust the output channel of the VCR.
- 3 RF. OUT terminal**  
To connect the VCR to the TV's ANTENNA IN terminal.
- 4 ANT. IN terminal**  
For TV antenna connection.
- 5 LOCAL/DX ATT. (Attenuator) switch (ES ONLY)**  
The LOCAL/DX ATT. switch is used to adjust the signal reception of the tuner section.
- 6 VIDEO/AUDIO IN/OUT terminals**  
For connection of a TV or second VCR.

## 1-8. REAR PANEL (EOH MODEL ONLY)



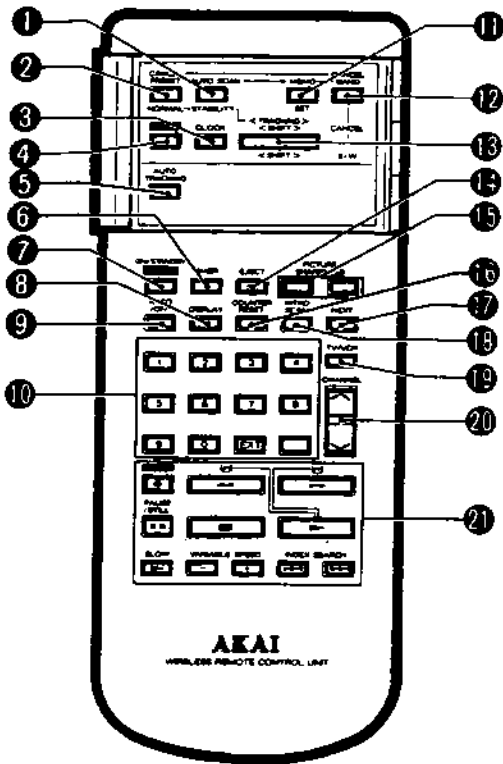
**1 RF out CH. ADJ (Channel adjustment) screw**  
To adjust the output channel of the VCR.

**2 RF. OUT terminal**  
To connect the VCR to the TV's ANTENNA IN terminal.

**3 ANT. IN terminal**  
For TV antenna connection.

**4 VIDEO/AUDIO connector**  
For connection of a TV or second VCR when using a video/audio connection cord.

## 1-9. REMOTE CONTROL (RC- V425A/V426A)


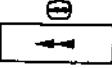





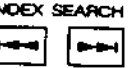



- 1 AUTO SCAN, STABILITY button**  
To start automatic station scan when presetting TV stations. Also used to correct vertical picture shake.
- 2 CANCEL, PRESET, NORMAL button**  
To set the VCR to the station presetting mode. Also used to set the cancel mode for preset stations.
- 3 CLOCK button**  
To set the VCR to the clock setting mode.
- 4 PRGM (Programme) button**  
To display the programme, clock screen on the TV screen.
- 5 AUTO TRACKING button**  
To correct tracking automatically.
- 6 TIMER button**  
To set or reset the timer recording mode.
- 7 POWER ON/STANDBY button**  
To turn the VCR's power on or off (standby mode).
- 8 DISPLAY button**  
To display the clock and tape counter on the TV screen.
- 9 AUTO/OFF button**  
To turn the language list screen on or off.

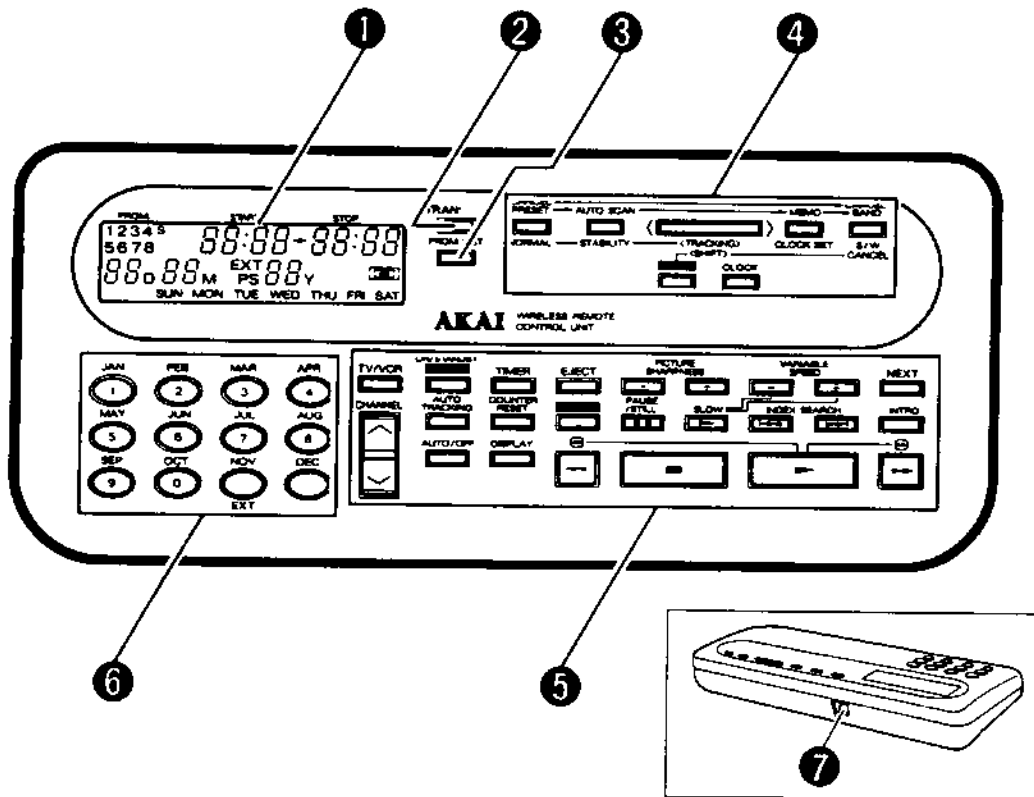
- 10 Multi-function buttons**  
Used for clock and programme setting. Also used to select channels.
- 11 MEMO, SET button**  
To memorize clock data during clock setting. Also used to memorize stations during station presetting.
- 12 CANCEL, BAND button**  
To cancel preset timer programmes or TV stations.
- 13 TRACKING, SHIFT button**  
To correct preset data during clock or programme setting. Also used to adjust tracking manually during playback.
- 14 EJECT button**  
To eject a video tape from the VCR.
- 15 PICTURE SHARPNESS buttons**  
To sharpen or soften the playback picture.
- 16 COUNTER RESET button**  
To reset the tape counter.
- 17 NEXT button**  
To display the next-mode patterns.
- 18 INTRO SCAN button**  
To set the VCR to the intro scan mode.
- 19 TV/VCR button**  
To watch a programme on a different TV channel than the one you are recording.

- 20 CHANNEL button**  
To select channels.

### 21 Tape transport buttons

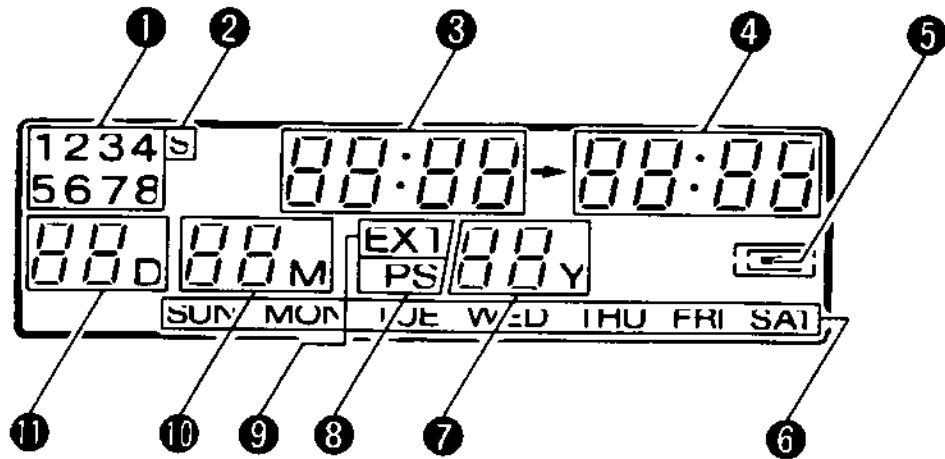
-  Record button
-  Rewind button
-  Fast forward button
-  PAUSE/STILL button
-  Stop button
-  Play button
-  SLOW button
-  VARIABLE SPEED buttons
-  INDEX SEARCH reverse, forward buttons

## 1-10. REMOTE CONTROL (RC-V466A)



- 1 Liquid crystal display**  
Displays clock and programme data.
- 2 TRANSMIT button**  
Used to transmit clock and programme data to the VCR.
- 3 PRGM (programme) LIST button**  
Used to display the programme, clock screen on the TV screen.
- 4 VCR set buttons**  
Used for station presetting, picture and tracking adjustment, clock setting and timer recording.
- 5 VCR control buttons**  
Used for operation of the VCR.
- 6 Multi-function buttons**  
Used to enter programme and clock data into the remote control's memory. Also used to select channels.
- 7 Transmitter**  
Emits infrared rays for control of the VCR or for transmission of programme or clock data from the remote control to the VCR.

## LC(Liquid Crystal) display

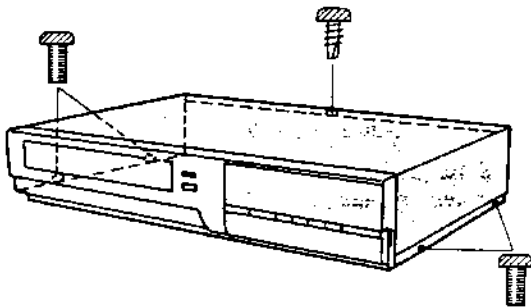


- 1 Programme number indicator**  
Indicates the programme number.
- 2 S (Daylight saving time) indicator**  
Indicates that the clock's time is set to the daylight saving time.
- 3 Clock, Start time indicator**  
Indicates the present time or start time of a programme set for timer recording.
- 4 Stop time indicator**  
Indicates the stop time of a programme set for timer recording.
- 5 Transmit indicator**  
Lights when data in the remote control is transmitted to the VCR or ready to be transmitted.
- 6 Weekday indicator**  
Indicates the weekday.
- 7 Year indicator**  
Indicates the year.
- 8 PS (Preset station) indicator**  
Indicates the preset channel number.
- 9 EXT (External) indicator**  
Indicates that the VCR is set to the external mode.
- 10 Month indicator**  
Indicates the month.
- 11 Date indicator**  
Indicates the date.

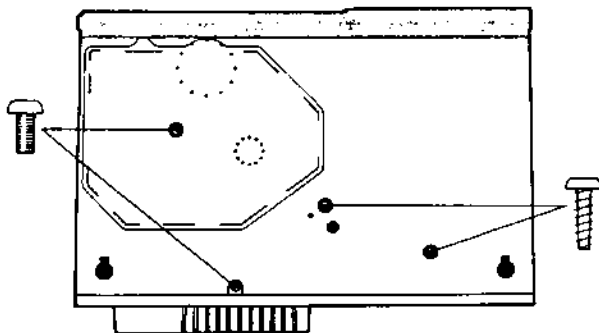
## II. DISASSEMBLY

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order. When re-attaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

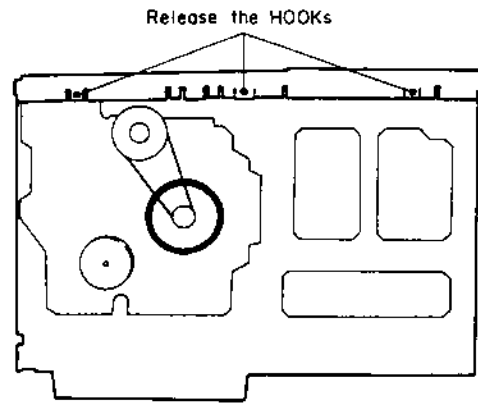
### 1. Removal of UPPER COVER



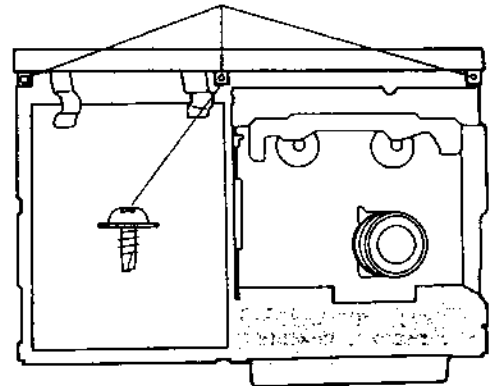
### 2. Removal of BOTTOM COVER



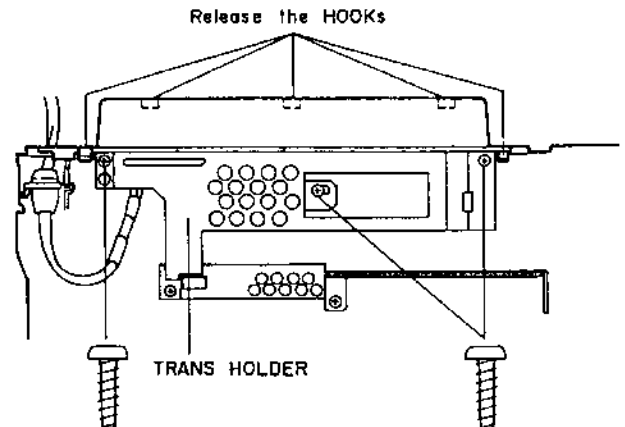
### 3. Removal of FRONT PANEL



### 4. Removal of TRANS COVER



### 4. Removal of TRANS COVER



※ The TRANS HOLDER is not used in EA, EDG models.



### III. PRINCIPAL PARTS LOCATION

※ Photograph employed on this page is of model VS-425EV

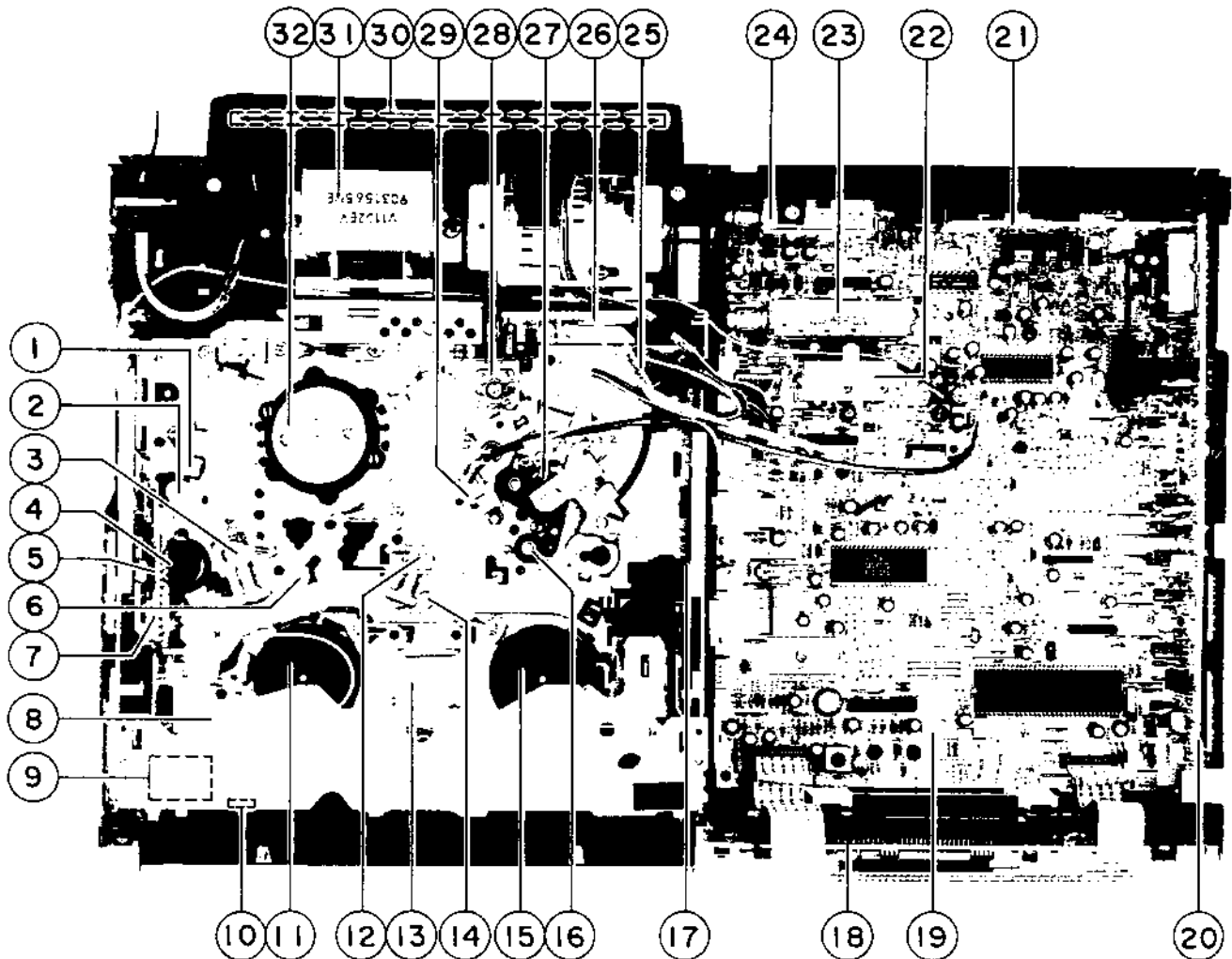


Fig.3-1 Top view

- |                                |  |
|--------------------------------|--|
| 1. FULL TRACK ERASE HEAD       | 18. OPERATION (A) PCB (VS-462EOH ONLY) |
| 2. SUPPLY TAPE GUIDE           | OPERATION (B) PCB (EXCEPT VS-462EOH)   |
| 3. SUPPLY LOADING LEADER       | 19. MAIN PCB                           |
| 4. FRONT LOADING GEAR          | 20. VIDEO PCB                          |
| 5. SENSOR (S) PCB (END SENSOR) | 21. P/S AUTO PCB (VS-465EDG, EM ONLY)  |
| 6. TENSION ARM                 | 22. VIF UNIT                           |
| 7. FRONT LOADING SLIDER        | 23. TUNER UNIT                         |
| 8. CASSETTE LOAD BLK           | 24. RF CONVERTOR UNIT                  |
| 9. LOADING MOTOR               | 25. JUNCTION PCB                       |
| 10. REC SAFETY SWITCH          | 26. PRE AMP PCB                        |
| 11. SUPPLY REEL TABLE          | 27. PINCH ROLLER                       |
| 12. TAKE UP LOADING LEADER     | 28. DIODE PCB                          |
| 13. IDLER PART                 | 29. AUDIO/CONTROL/S.ERASE HEAD         |
| 14. SENSOR LED                 | 30. POWER PCB                          |
| 15. TAKE UP REEL TABLE         | 31. POWER TRANSFORMER                  |
| 16. CAPSTAN MOTOR              | 32. VIDEO HEAD DRUM BLOCK              |
| 17. SENSOR (T) (START SENSOR)  |  |

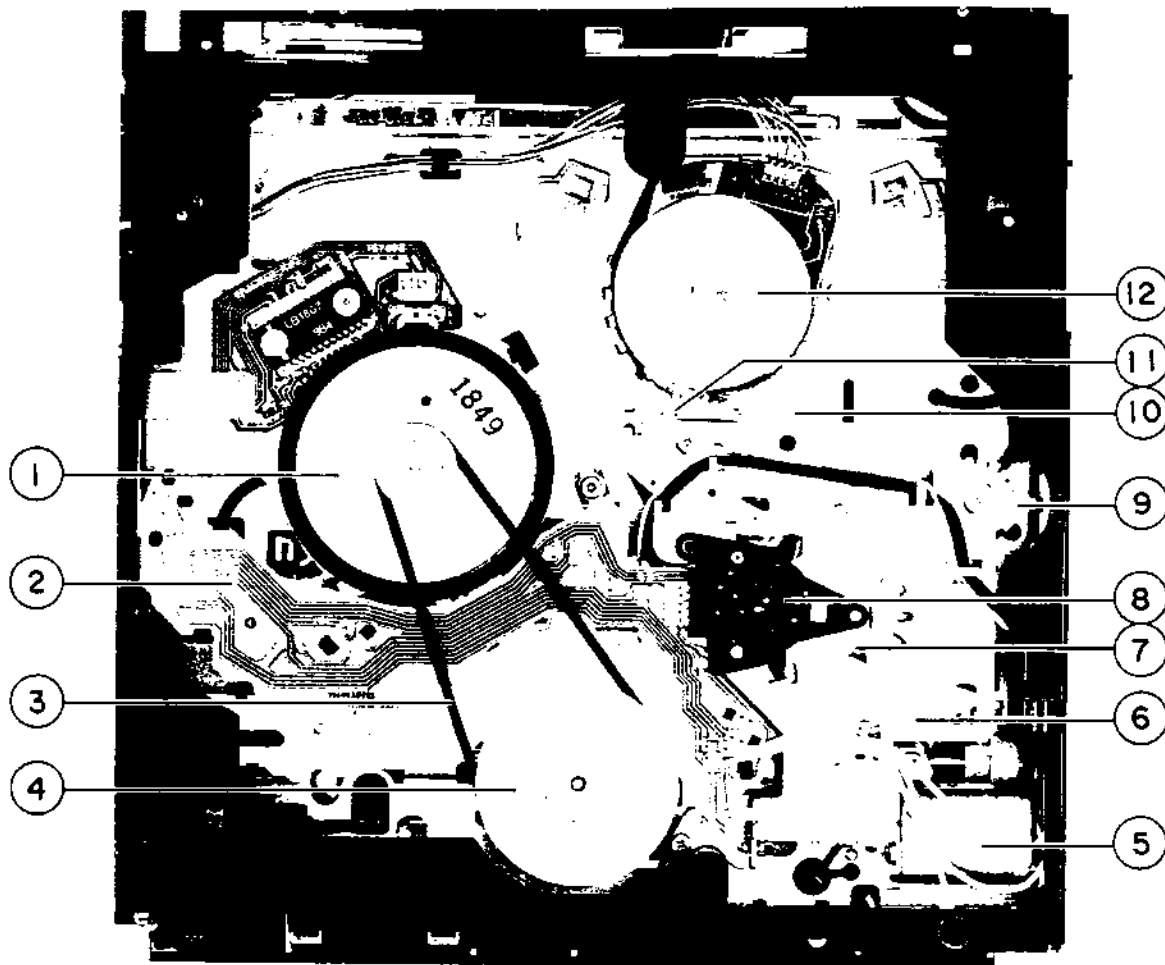


Fig.3-2 Bottom view

- 1. CAPSTAN MOTOR BLOCK
- 2. SENSOR PCB
- 3. CAPSTAN BELT
- 4. CLUTCH DISK PART
- 5. LOADING MOTOR
- 6. LOADING DRIVE BLOCK

- 7. CAM SLIDER GEAR
- 8. MODE SELECT SWITCH
- 9. FRONT LOADING GEAR
- 10. TOGGLE (S) GEAR BLOCK
- 11. TOGGLE (T) GEAR BLOCK
- 12. DRUM MOTOR BLOCK

## IV. MAIN COMPONENTS REPLACEMENT

### 4-1. REMOVAL OF THE EJECTOR BLOCK

\*Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

#### 4-1-1. Removal of the CASSETTE LOAD BLK

- 1) Remove the two (A) screws on the UPPER PLATE as shown in Fig.4-1 then remove the UPPER PLATE.
- 2) Lift up the FRONT GUIDE while pushing the CASSETTE LOAD BLK backward, then remove the FRONT GUIDE.
- 3) Lift up the front side of the CASSETTE LOAD BLK gently then remove it. To avoid damaging the pins of the CASSETTE LOAD BLK and the groove of the MECHA.FRAME, do not add excessive force to the CASSETTE LOAD BLK when removing it.

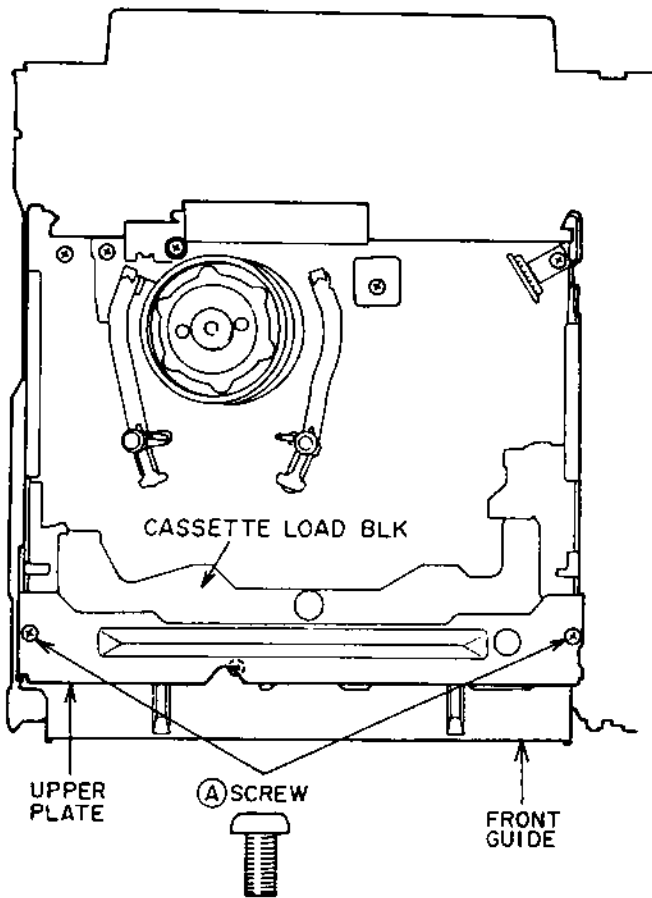


Fig. 4-1

#### 4-1-2. Removal of the LOADING ARM BLK

- 1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (Refer Fig.4-2) by pressing the stopper tab with a flat head (→) screwdriver. Then remove the shaft's right end from the bracket.

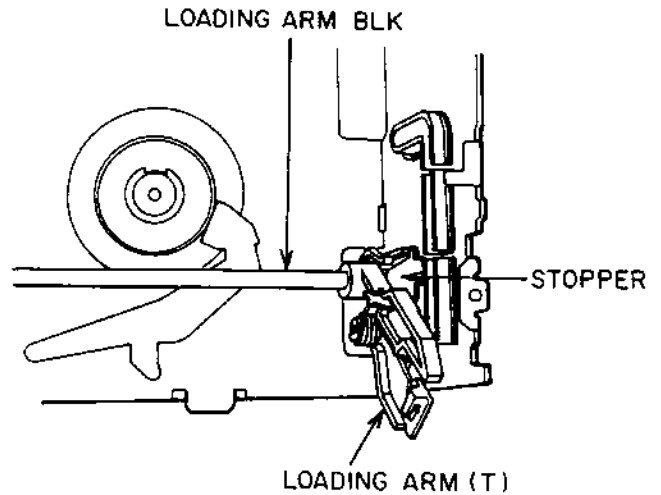


Fig. 4-2

- 2) Hold the LOADING ARM (T) and turn it 30 degrees clockwise, then pull out the shaft's left end from the bracket. To avoid damaging the JOINT GEAR and EJECT GEAR, take special care when removing. (Refer Fig.4-3)

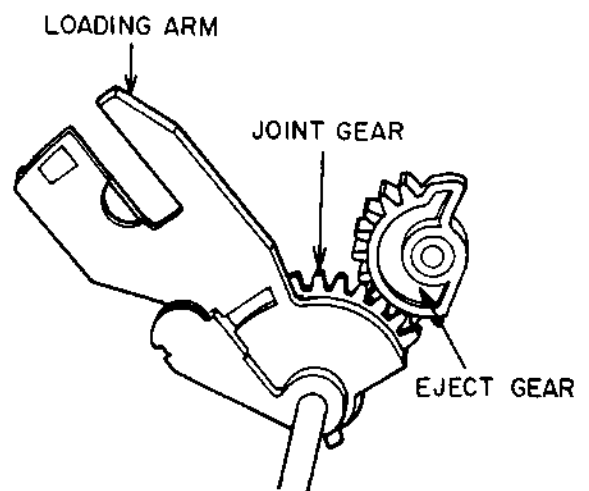


Fig. 4-3

## 4-2. REMOVAL OF THE SENSOR PC BOARD

Before proceeding with removal of the SENSOR PCB the loading mechanism must be set to the "unloaded" position (the position where the CAM SLIDER GEAR's groove mark is visible through the hole of the MODE SELECT SW.) as shown in Fig.4-4.

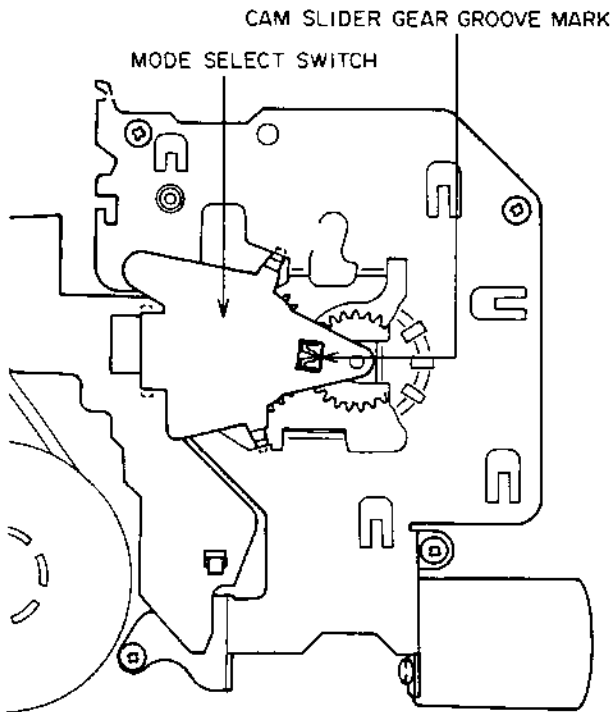


Fig. 4-4

To set the loading mechanism to the "unloaded" position, proceed with one of the following (1) or (2) procedures.

(1) Insert a video cassette tape which you no longer need.

Once the tape has been loaded or entered "play" mode, press the POWER button to turn the power off. Disconnect the AC power plug from the AC socket after the cassette tape has been unloaded.

(2) Remove the UPPER PLATE, FRONT GUIDE and CASSETTE LOAD BLK. (Refer to 4-1-1. Removal of the CASSETTE LOAD BLK.)

Plug in the AC power cord. The LOADING ARM BLK will move backward (the cassette load BLK will be in the down position) and forward (the cassette load BLK will be in the eject position) continuously.

With your fingers, cover and hold both SENSOR (S) and SENSOR (T) at the same time when the LOADING ARM BLK is in the backward position. The unit will enter the "play" mode without the cassette tape. While covering both sensors, press the "POWER" button. The unit will now enter the "tape unloaded" position. Release your fingers from the sensors, and disconnect the AC power plug from the AC power socket.

### 4-2-1. Removal of the MODE SELECT SWITCH

1) Release the two (A) stoppers as shown in Fig.4-5.

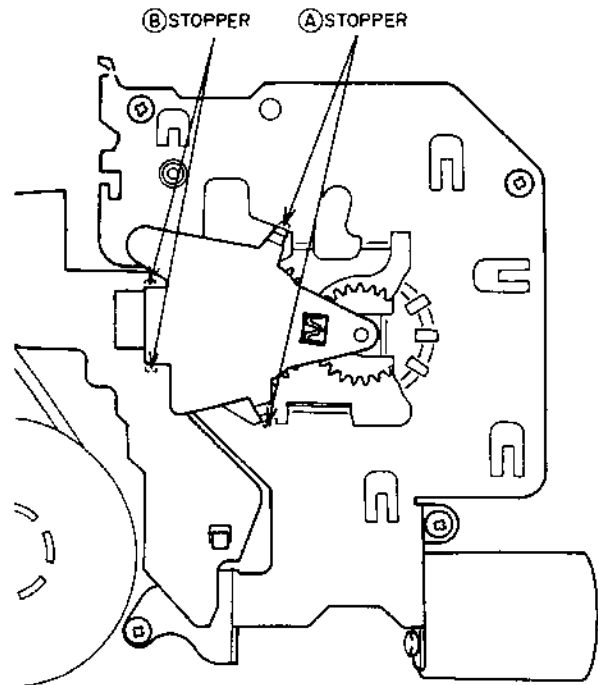


Fig. 4-5

2) Release the two (B) stoppers carefully while pulling up the MODE SELECT SWITCH. Then remove the MODE SELECT SWITCH. (Do not damage the pins of the MODE SELECT SWITCH or the connector P1 on the SENSOR PCB)

### 4-2-2. Removal of the SENSOR PC Board

1) Disconnect the connector P409 on the MAIN PCB.

2) Remove the capstan belt.

3) Release the (A), (B), and (C) stoppers as shown in Fig.4-6. Then remove the SENSOR PCB.

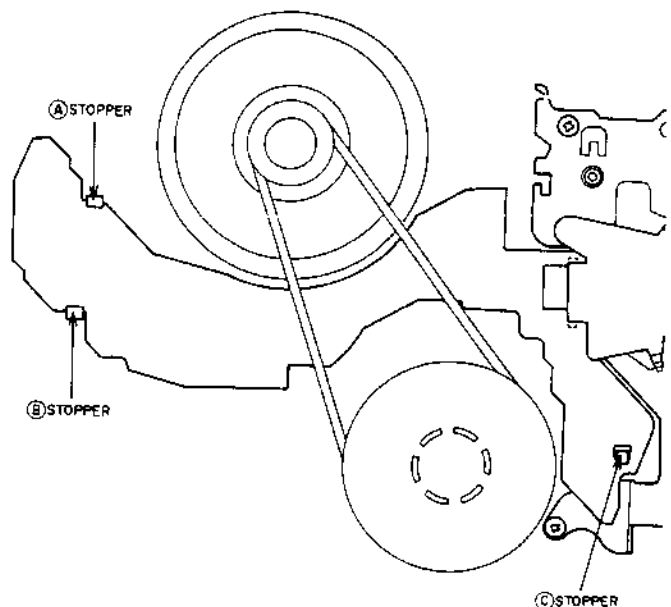


Fig. 4-6

### 4-3. REMOVAL OF THE LOADING DRIVE BLK

Set the loading mechanism at the "unloaded" position as well as 4-2 (REMOVAL OF THE SENSOR PC BOARD). However this time, to avoid damaging the tape and mechanical parts, refer to 4-2, \*(2) only.

- 1) Remove the MODE SELECT SWITCH in the same manner as 4-2-1 (Removal of the MODE SELECT SWITCH).
- 2) Unhook the five wires from each tab. Two wires from the SENSOR(S), two wires from the LOADING MOTOR and one wire from the REC SAFETY SWITCH.
- 3) Remove the (A), (B), (C), and (D) screws, then remove the LOADING DRIVE BLK as shown in Fig.4-7.

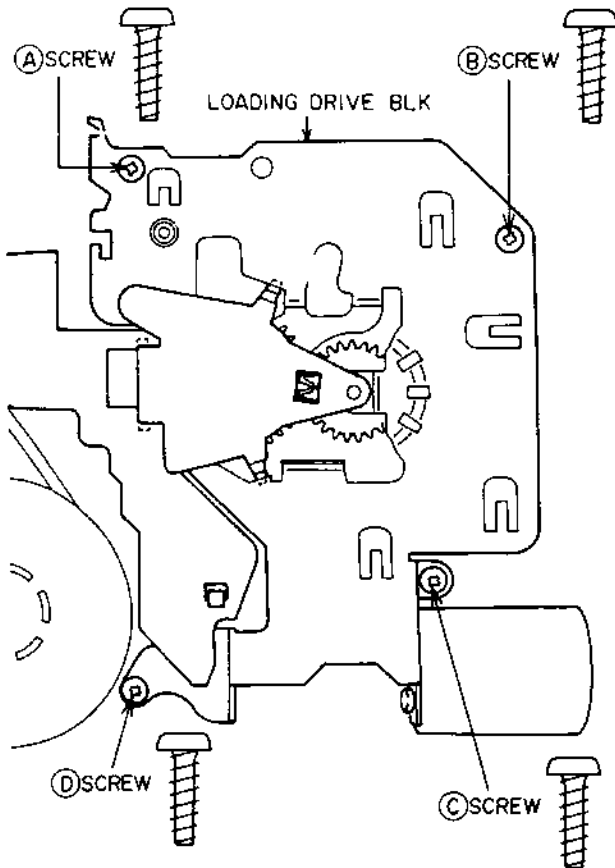


Fig. 4-7

### 4-4. REPLACEMENT OF THE PINCH HOLDER PART

- 1) Release the stopper of the PINCH ARM and remove the PINCH ARM BLK as shown in Fig 4-8.

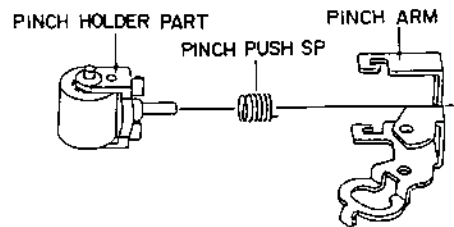
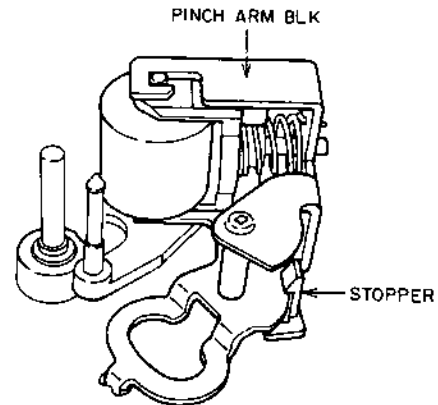


Fig. 4-8

- 2) Turn the PINCH HOLDER PART 30 degrees clockwise while pushing it backward and remove the PINCH HOLDER PART from the PINCH ARM.
- 3) Reassemble the PINCH ROLLER ARM BLK in the reverse order of 1) to 2).

### 4-5. REPLACEMENT OF THE IDLER PART AND REVIEW BRAKE PART

- 1) Remove the CASSETTE LOAD BLK & ARM LOADING BLK. (Refer to 4-1, REMOVAL OF THE EJECTOR BLK.)
- 2) Release the stopper of the IDLER PART as shown in Fig.4-9, then remove it.

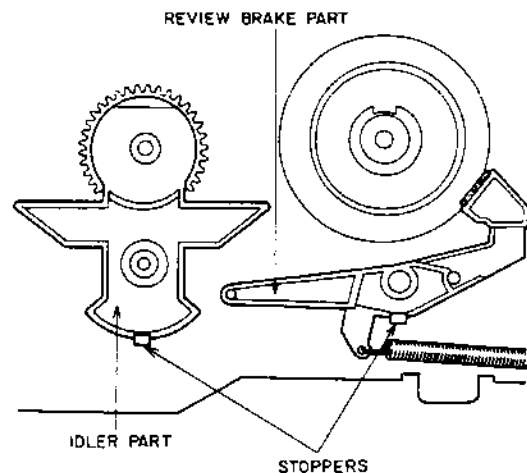


Fig. 4-9

- 3) Take off the review brake part spring, then release the stopper of the REVIEW BRAKE PART and remove it.
- 4) Reassemble these parts in the reverse order of 1) to 3).

#### 4-6. REASSEMBLY OF THE LOADING MECHANISM BLK

##### 4-6-1. Position of the TOGGLE GEARS (T) and (S)

- 1) Set the TOGGLE GEAR (T) and TOGGLE GEAR (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig.4-10.

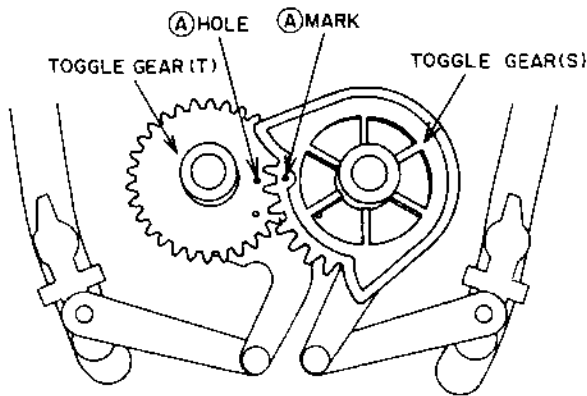


Fig. 4-10

##### 4-6-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

- 1) Attach the WORM WHEEL GEAR as shown in Fig.4-11.

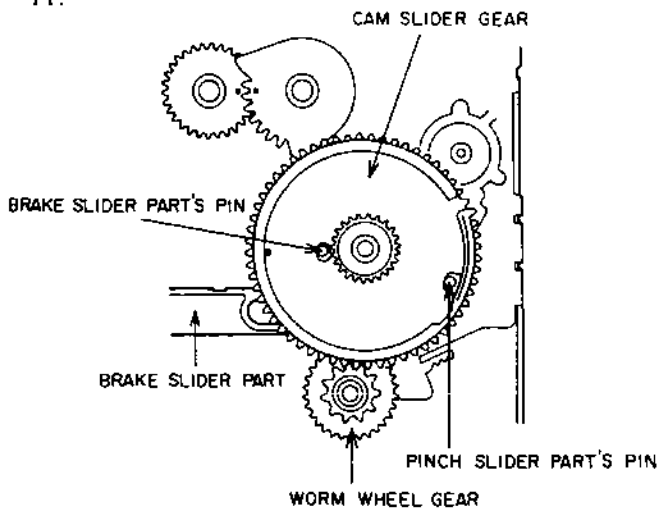


Fig 4-11

- 2) Set the CAM SLIDER GEAR. At this time, adjust the position of the BRAKE SLIDER PART and PINCH SLIDER PART so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig.4-11.

- 3) Attach the FRONT LOADING GEAR as shown in Fig.4-12. At this time, align the Ⓑ mark on the FRONT LOADING GEAR with the Ⓑ hole of the FRONT LOADING SLIDER as shown in Fig.4-13.

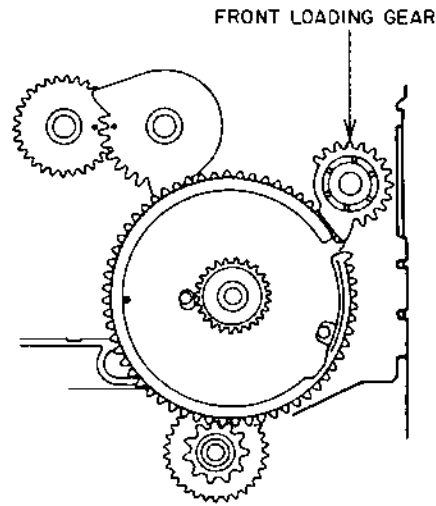


Fig. 4-12

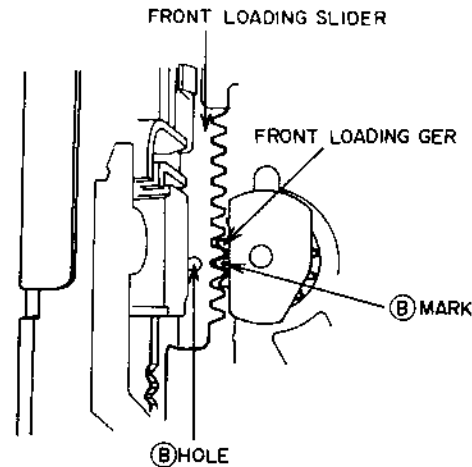


Fig. 4-13

##### 4-6-3. Confirmation of the position of the EJECT GEAR

- 1) Confirm that the EJECT GEAR is in the correct position as shown in Fig.4-14.

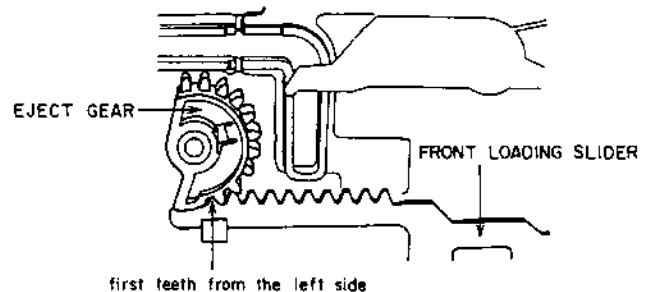


Fig. 4-14

- 2) Install the **LOADING DRIVE BLK** as shown in Fig.4-15.

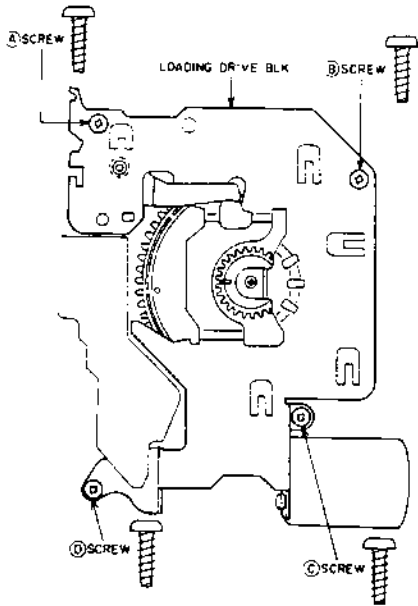


Fig. 4-15

#### 4-6-4. Installation of the **MODE SELECT SWITCH**

- 1) Set the **MODE SELECT SWITCH**'s gear so that the © mark is in the center of the © hole as shown in Fig.4-16.

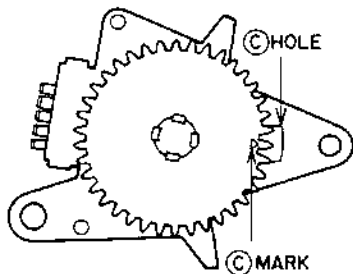


Fig. 4-16

- 2) Attach the **MODE SELECT SWITCH** to the **LOADING DRIVE BLK**. At this time, align the hollow of the gear's tooth (reverse side of the © mark ) with the © groove of the **CAM SLIDER GEAR** as shown in Fig.4-17.

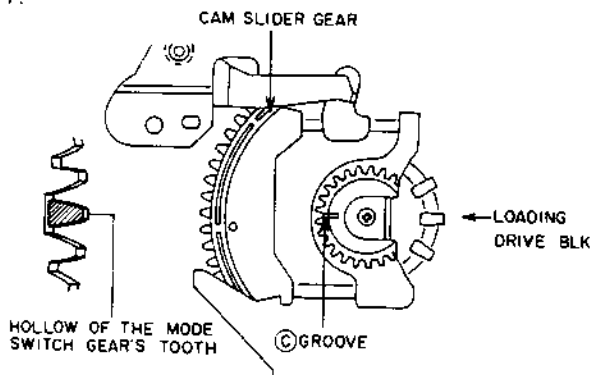


Fig. 4-17

#### 4-6-5. Installation of the **LOADING ARM BLK**

- 1) While covering the **SENSOR (S)** with your fingers, connect the **AC power plug** to the **AC socket**. The **FRONT LOADING SLIDER** will reach the "EJECT" position. Then disconnect the **AC power plug** from the **AC socket** before you release your fingers from the **SENSOR (S)**.
- 2) Install the **LOADING ARM BLK** in the reverse order of 4-1-2 (Removal of the **LOADING ARM BLK**). Set the position between both the **EJECT GEAR** and the **JOINT GEAR** as shown in Fig.4-18.

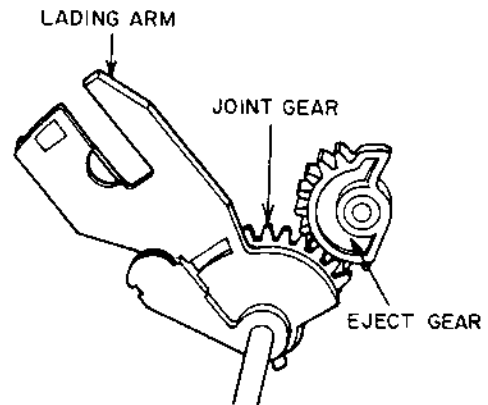


Fig. 4-18

#### 4-6-6. Installation of the **CASSETTE LOAD BLK, FRONT GUIDE** and **UPPER PLATE**

- 1) Attach the **CASSETTE LOAD BLK, FRONT GUIDE** and **UPPER PLATE** in the reverse order of 4-1-1 (Removal of the **CASSETTE LOAD BLK**).
- 2) Insert a video cassette tape and confirm that the loading mechanism will operate properly.

#### 4-7. REPLACEMENT OF THE **UPPER DRUM**

##### 4-7-1. Removal of the **UPPER DRUM**

- 1) Unsolder the six relay leads and remove the two upper drum fixing screws as shown in Fig.4-19.
- 2) Gently lift and remove the **UPPER DRUM**.

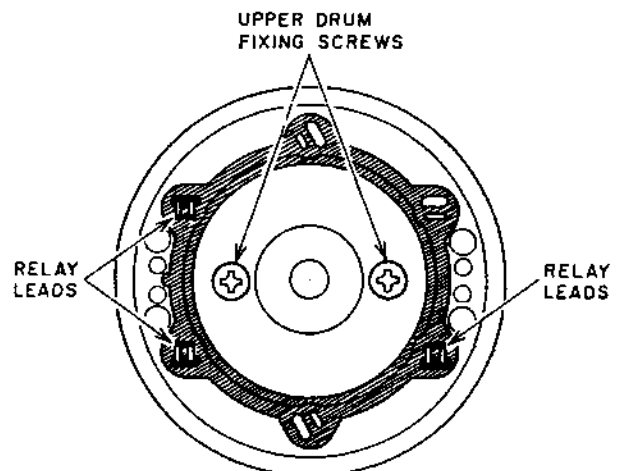


Fig. 4-19

## 7-2. Installation of the UPPER DRUM

Attach the UPPER DRUM to the LOWER DRUM MOTOR so that upper drum convex (A) and lower drum motor's white mark are in the same direction as shown in Fig. 4-20.

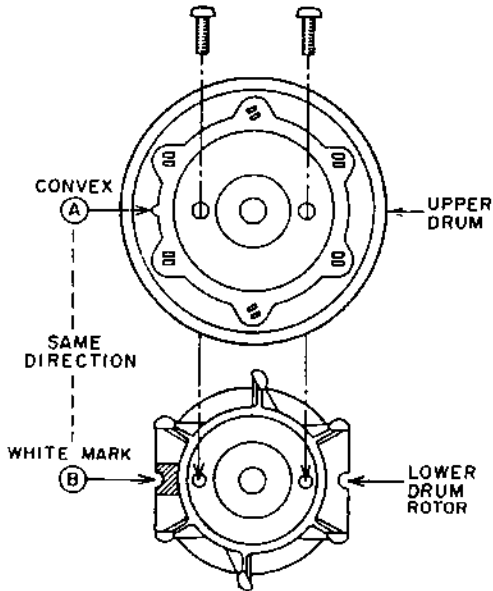


Fig. 4-20

(NOTE: Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

- Do not loosen the set screw on the collar preload.
- Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
- If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
- Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
- Tighten the two upper drum fixing screws alternately and gradually.

### 7-3. After replacement

After replacement, the following adjustments are necessary for proper performance.

- Control head phase adjustment. (Tape transport adj. 5-3-3)
- PB switching point adjustment. (Electrical adj. Step 1)
- Video head REC current adjustment. (Electrical adj. Step 7)

## 4-8. DRUM MOTOR PC BOARD REPLACEMENT

- Remove the two (A) screws then remove the ROTARY PLATE.

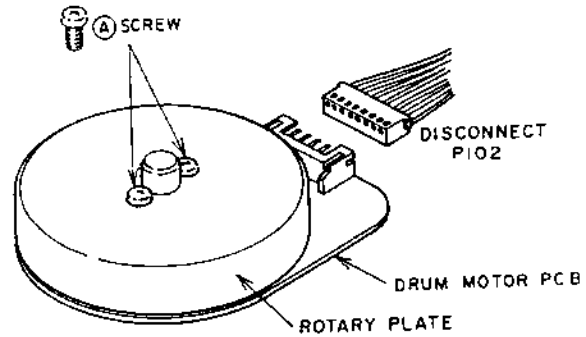


Fig. 4-21

- Remove the three (B) screws and disconnect the connector P102 from the DRUM MOTOR PCB. Then replace the DRUM MOTOR PCB.

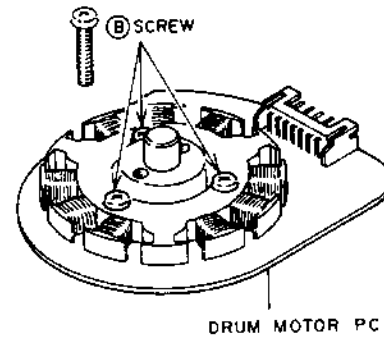


Fig. 4-22

- Attach the ROTARY PLATE to the collar preload so that the rotary plate (a) hole and collar preload (b) hole are in the same direction.

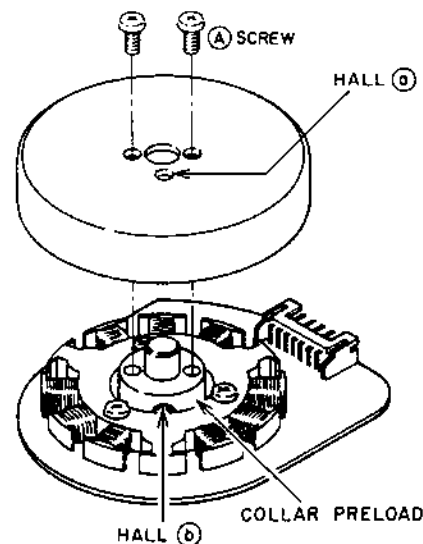


Fig. 4-23



## 4-9. REMOVAL OF THE MECHANISM BLOCK

### 4-9-1. Removal of the PRE AMP PC Board

- 1) Remove the two (A) screws then pull up the PRE AMP PCB as shown in Fig.4-24.

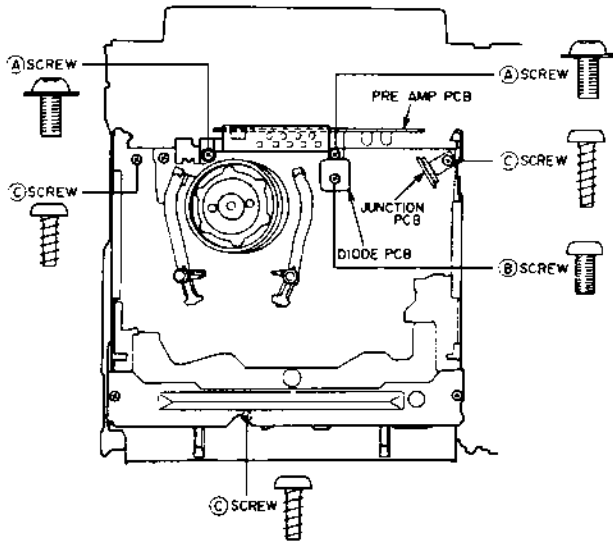


Fig. 4-24

### 4-9-2. Removal of the MECHANISM BLK (MECHA. FRAME)

- 1) Disconnect the connectors P302, P401, P408, P409 on the MAIN PCB and P1 on the A/C HEAD PCB.
- 2) Remove the (B) screw on the DIODE PCB and remove the DIODE PCB.
- 3) Remove the three (C) screws from the MECHA. FRAME as shown in Fig.4-24.
- 4) Hold the rear side of the MECHA. FRAME then remove by pulling up backward.
- 5) Reassemble in the reverse order for installation.

## V. MECHANICAL ADJUSTMENT

### 5-1. BACK TENSION ADJUSTMENT

- 1) Set the color bar test tape TF-532CBS (AT-751360) in the VCR and play it back.
- 2) Observe the TV screen and adjust the V-HOLD for TV so that the switching point appears on the TV screen in Fig. 5-1.

- 3) Check the skew near the switching point on the TV screen and if the back tension is too much or too weak, eject the tape and select the hook position of the TENSION SPRING where the smallest skew should be obtained.

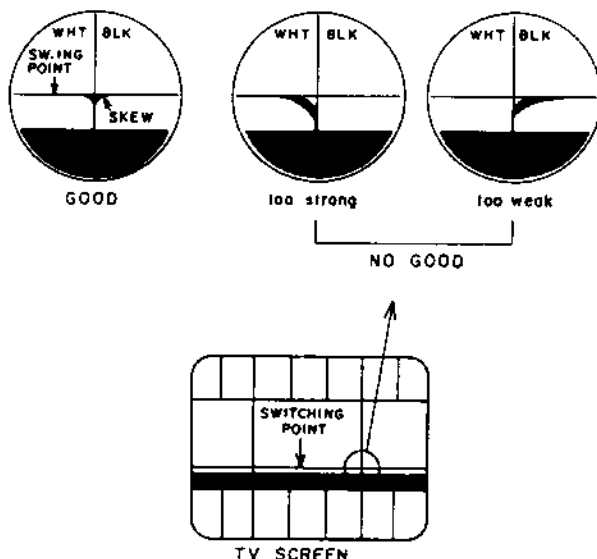


Fig. 5-1

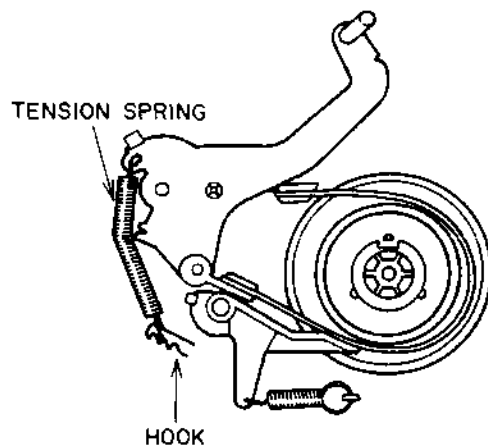


Fig. 5-2

## 5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found since these adjustment are performed precisely at the factory.

### 5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

- 1) Play back a recorded tape which is no longer need.
- 2) Turn the ① screw on the A/C HEAD BLK until the edge of the tape barely touches the lower part of TAKE UP TAPE GUIDE without any curl or wrinkle.
- 3) Once the ① screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 5-3. A/C HEAD POSITION ADJUSTMENT)

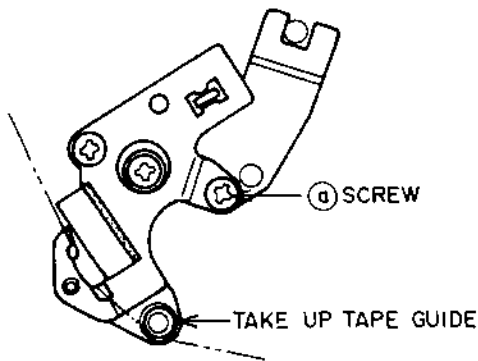


Fig. 5-3

### 5-2-3. REVIEW ARM height adjustment

- 1) Play back the beginning part of an E-180 tape and set the unit in the review mode by pressing the REW button.
- 2) Turn the REVIEW ARM height nut ② so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig.5-6 to Fig.5-8.

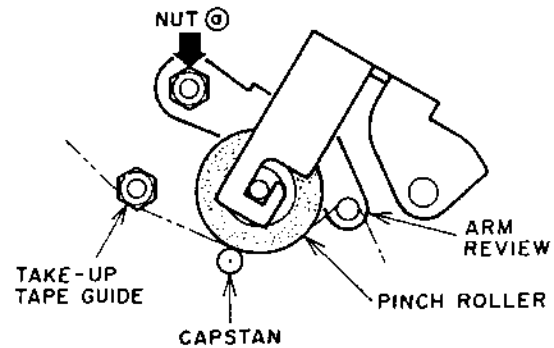


Fig. 5-6

(TAKE-UP TAPE GUIDE)

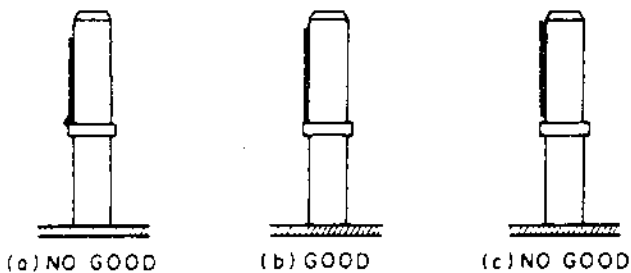


Fig. 5-4

(TAKE-UP TAPE GUIDE)

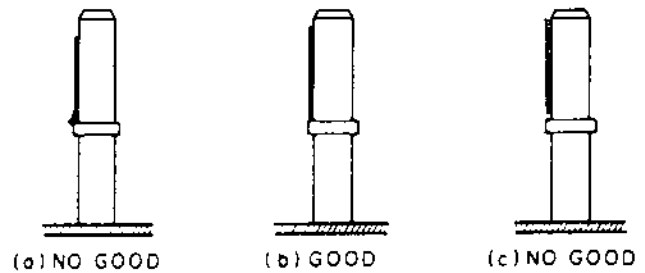


Fig. 5-7

### 5-2-2. Confirmation of tape curl at the SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle as shown in Fig.5-5.

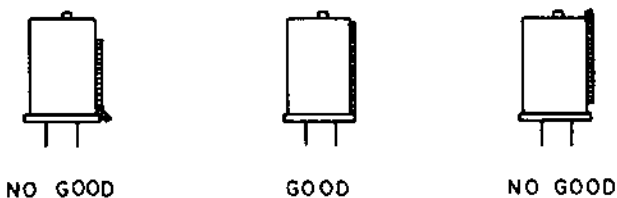


Fig. 5-5

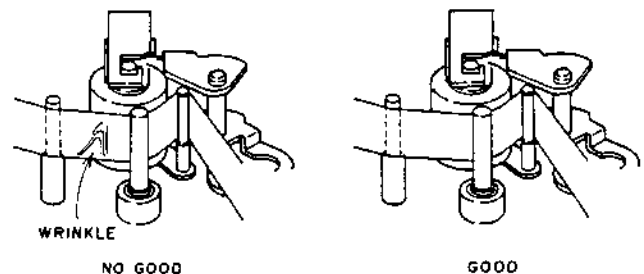


Fig. 5-8

### 5-2-4. LOADING LEADER height adjustments

- 1) Slightly loosen the set screw at the lower part of the LOADING LEADERS (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer Fig.5-9)
- 2) Play back the reference tape TF-530RFS (AT-751775).

- 3) Connect an oscilloscope to TP606 (ENVE) on the VIDEO PCB.
- 4) Turn the LOADING LEADER heads with a flat head (—) screw driver to obtain flat RF envelope as ideal envelope as shown in Fig.5-10.
- 5) After the adjustment is completed, tighten the loading leader set screws.

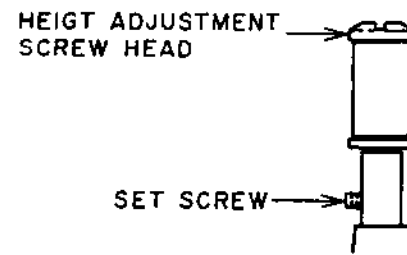


Fig. 5-9

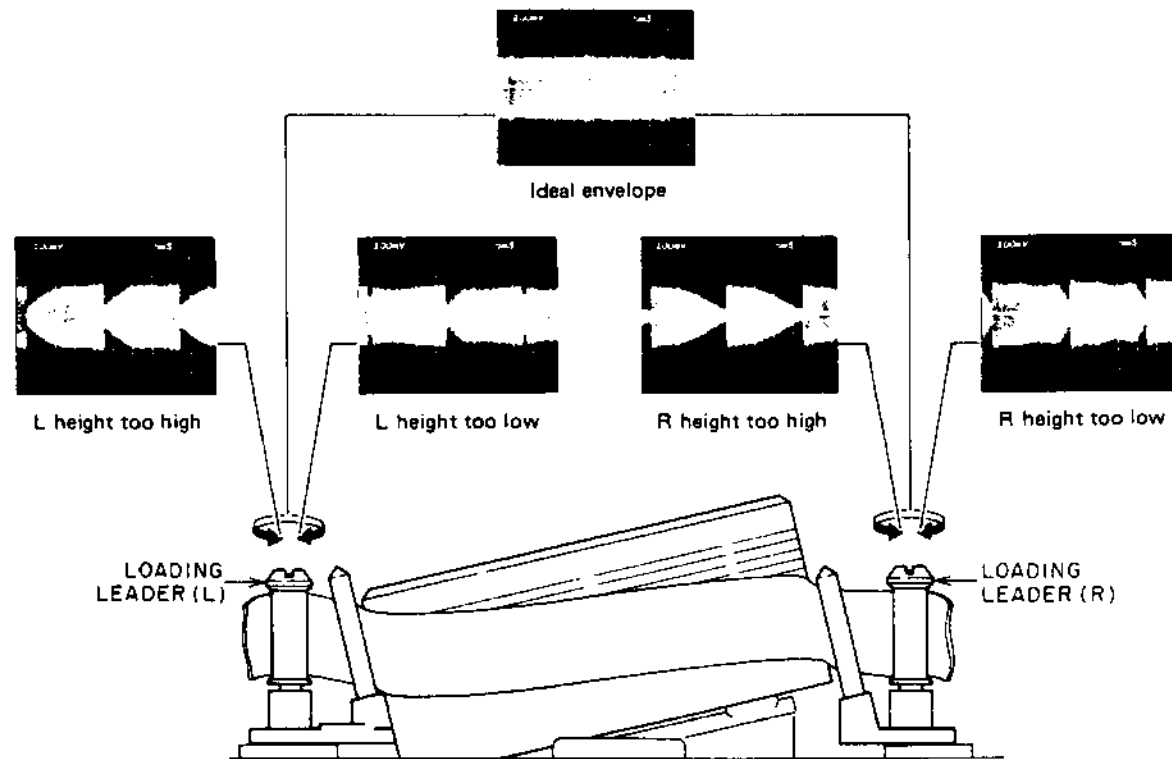


Fig. 5-10

### 5-3. A/C HEAD POSITION ADJUSTMENT

#### 5-3-1. Azimuth adjustment

- 1) Connect an AC volt meter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
- 2) Play back the reference tape TF-530RFS (AT-751775).
- 3) Adjust the (b) screw to obtain the maximum audio output.

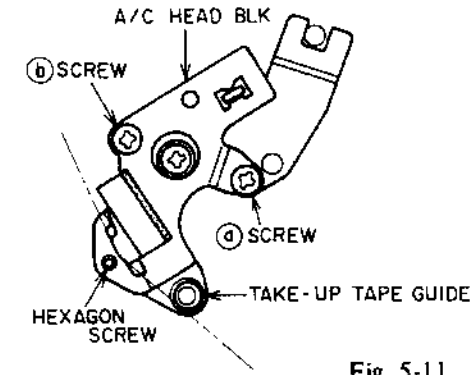


Fig. 5-11

#### 5-3-2. Height adjustment

- 1) Play back the test tape TF-526HH (AT-751788).
- 2) Connect an oscilloscope CH-1 to the AUDIO OUT terminal on the rear panel and CH-2 to TP-CTL CHK on the MAIN PCB.
- 3) Turn the hexagon screw to obtain 1/2 of the output level of either CH-1 or CH-2 whichever has an output signal as shown in Fig.5-12.
- 4) Slightly turn the (a) screw until the tape edge barely touches the lower part of the TAKE UP TAPE GUIDE without any curl or wrinkle as shown in Fig.5-4.
- 5) Adjust the head azimuth again. (Turning the hexagon screw or (a) screw will cause head azimuth mis-alignment. Refer 5-3-1. Azimuth adjustment.)
- 6) Confirm that both signals of CH-1 and CH-2 are nearly the same level. Repeat the adjustments 3) to 5) if necessary.

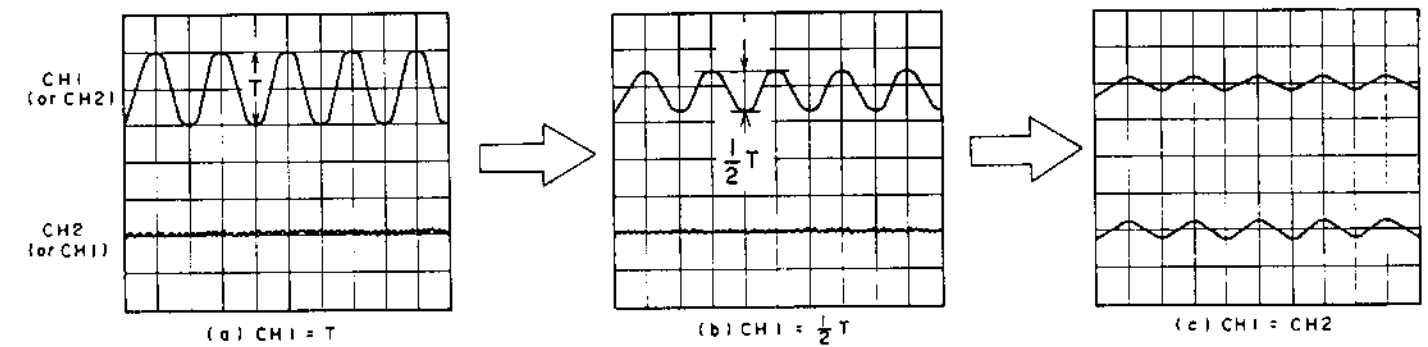


Fig. 5-12

#### 5-3-3. Phase adjustment

- 1) Connect an oscilloscope to TP606 (ENVE) on the VIDEO PCB.
- 2) Play back the reference tape TF-530RFS (AT-851775).
- 3) Press one of the TRACKING buttons on the remote control until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig.5-13.

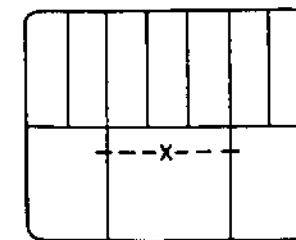


Fig. 5-13

- 4) Loosen the (c) screw slightly so that the A/C HEAD PLATE can be moved with reasonable tightness.
- 5) Insert a sharp flat head (—) screwdriver into the A/C HEAD BASE and (a) hole as shown in Fig.5-15.
- 6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig.5-15 to obtain the maximum RF output, then tighten the (c) screw.

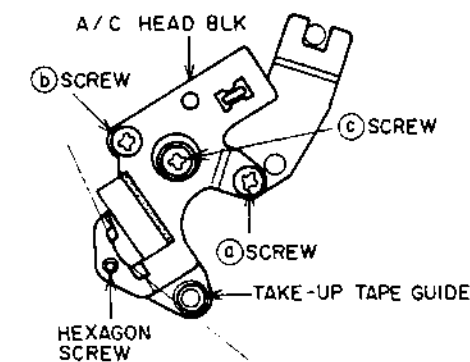


Fig. 5-14

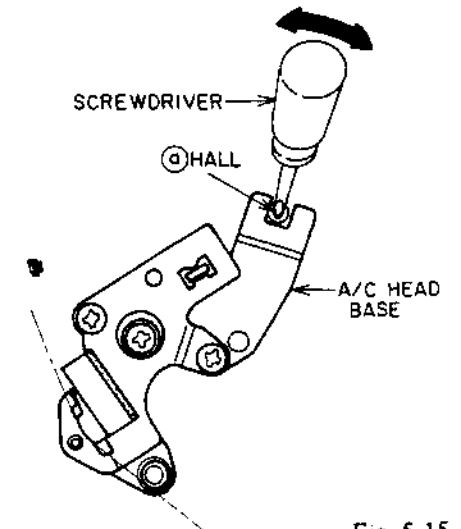


Fig. 5-15

# VI. ELECTRICAL ADJUSTMENT

## Precautionary items prior to adjustments

1. The color bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).

## Required following test tapes.

Test tape	Parts No.
TF-527BL	AT-711880
TF-530RFS	AT-751775
TF-532CBS	AT-751360

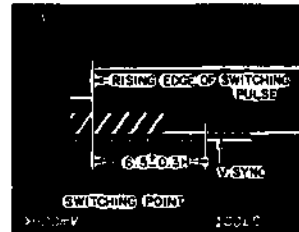
## STEP ADJUSTMENT ITEM

1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ part
3. RESULT & REMARKS

ADJ. part  
Test point

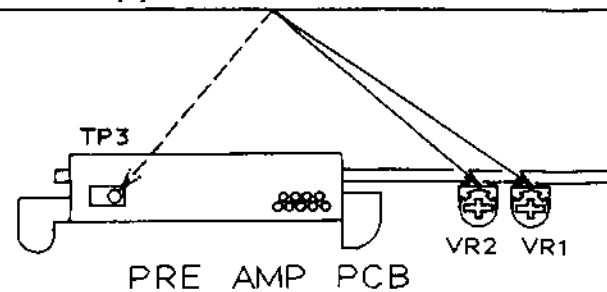
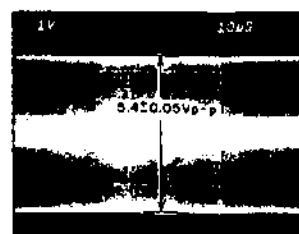
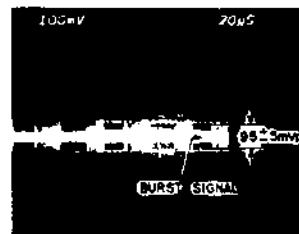
## 1 PB SWITCHING POINT

1. "PB", test tape TF-530RFS
2. TP-SWP, VIDEO OUT & VR401 (SW. POINT)
3. \* Connect an oscilloscope's CH-1 to TP-SWP for triggering and CH-2 to VIDEO OUT  
\* Adjust VR401 so that the switching point is positioned  $6.5 \pm 0.3$  H from the V-SYNC left edge as shown.



## 7 VIDEO REC CURRENT

1. "REC", PAL color bar signal
2. TP3 (REC.CURR), JW217(C.SYNC) & VR1(REC·CHROMA), VR2(REC·Y)
3. \* Connect an oscilloscope's CH-1 to TP3 (REC.CURR), CH-2 to JW217 (C.SYNC) for triggering and ground to PRE AMP P.C.B.  
\* Turn the VR2 (REC·Y) fully counterclockwise.  
\* Adjust VR1 (REC·CHROMA) so that the chroma REC current becomes  $95 \pm 5$  mVp-p at burst signal area.  
\* Disconnect the input signal, then adjust VR2 (REC·Y) so that Y REC current becomes  $5.4 \pm 0.05$  Vp-p.



## 3 AUDIO REC BIAS

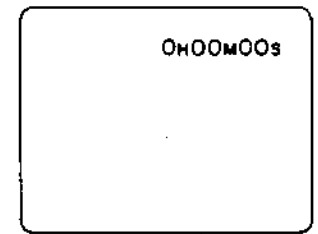
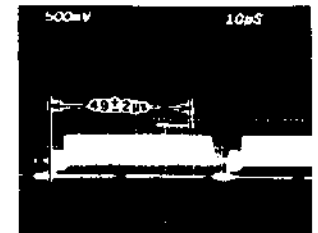
1. "REC" (no signal input)
2. P306 pin & VR302
3. \* Connect AC voltmeter to P306 pin.  
\* Adjust VR302 so that the reading on the AC voltmeter becomes  $2.7 \text{ mV} \pm 0.1 \text{ mV}$

## 2 AUDIO PB LEVEL

1. "PB", test tape TF-527BL
2. AUDIO OUT & VR301
3. \* Connect AC voltmeter to AUDIO OUT  
\*  $-4 \pm 1$  dBs

## 10 CHARACTER POSITION

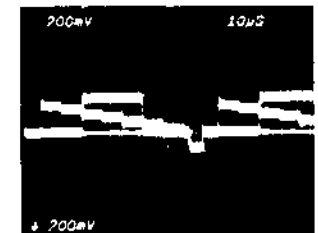
1. "E-E" (stop mode), (No signal input)
2. VIDEO OUT, TV screen & VR101(IMS)
3. \* Press "DISPLAY" button once on the remote control to display elapsed tape counter.  
\* Connect an oscilloscope to VIDEO OUT  
\* Adjust VR101(IMS) so that right end of the IMS signal becomes  $49 \pm 2 \mu\text{s}$  from the H-SYNC as shown.



ON THE SCREEN

## 8 CCD

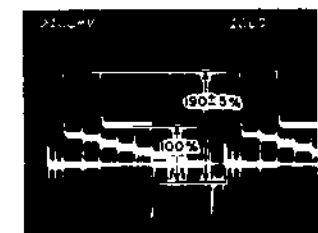
1. "PB", test tape TF-532CBS
2. TP601(CCD), TP602(CCD) & VR601 (CCD LEVEL)
3. \* Set an oscilloscope to "ADD" mode and CH-2's polarity to "INVERTED".  
\* Connect CH-1 to TP601(CCD) and CH-2 to TP602(CCD).  
\* Adjust VR601 so that waveform level on the oscilloscope becomes minimum.



GOOD

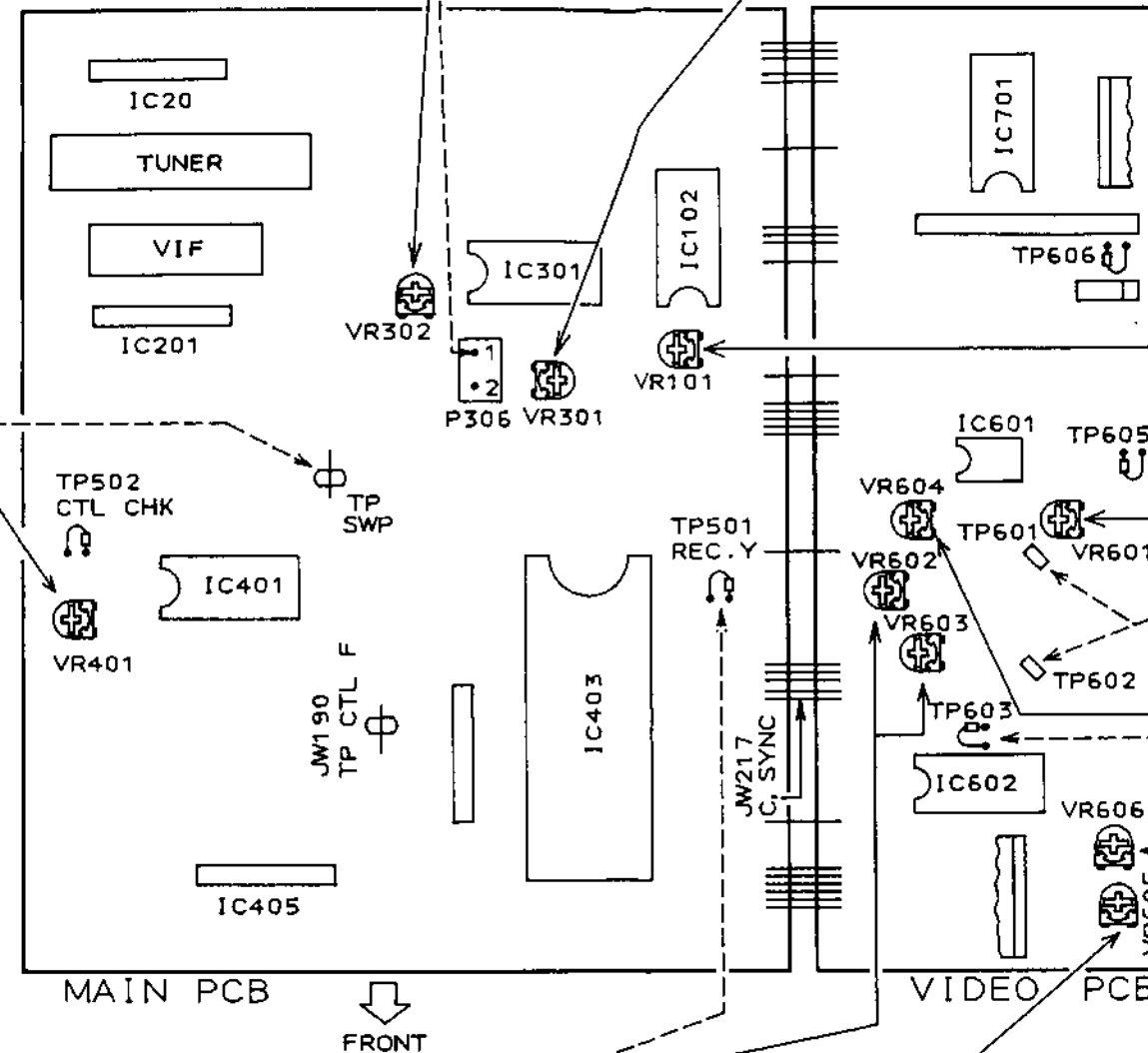
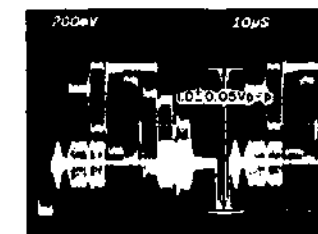
## 5 WHITE CLIP

1. "E-E" (stop mode), PAL color bar signal
2. TP603(W.CLIP) & VR604(W.CLIP)
3. \* Connect an oscilloscope to TP603(W.CLIP)  
\* Adjust VR604(W.CLIP) so that white clip level becomes  $190 \pm 5\%$  as shown.



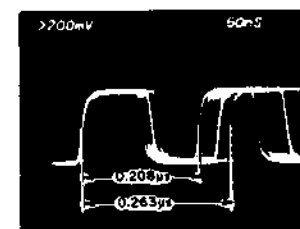
## 9 VIDEO PB LEVEL

1. "REC"- "PB", PAL color bar signal
2. VIDEO OUT & VR606(PB LEVEL)
3. \* Connect an oscilloscope to VIDEO OUT  
\* Make some recording on the tape then play it back  
\* Adjust VR606 so that PB level becomes  $1.0 \pm 0.05$  Vp-p



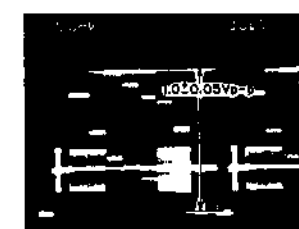
## 6 CARRIER SET & DEVIATION

1. "REC", PAL color bar signal
2. TP501(REC.Y) & VR603(CARRIER), VR602(DEVIATION)
3. \* Connect an oscilloscope to TP501 (REC.Y)  
\* VR603(CARRIER),  $0.263 \mu\text{s}$  (3.8 MHz)  
\* VR602(DEVIATION),  $0.208 \mu\text{s}$  (4.8 MHz)



## 4 VIDEO E-E LEVEL

1. "E-E" (stop mode), PAL color bar signal
2. VIDEO OUT & VR605(E-E LEVEL)
3. \* Connect an oscilloscope to VIDEO OUT.  
\*  $1.0 \pm 0.05$  Vp-p



## VII. PARTS LIST

### ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.  
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

### HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

b) PC Board

#### 2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R P PR4-8FL C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

#### 6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U.E.B.S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C.A]
X1	EI-318384	OSC X'TAL. NC-18C

Symbols for primary destination

[A]: AAL (U.S.A) [S]: SAA (Australia)  
 [B]: BEAB (England) [U]: U/T (Universa Area)  
 [C]: CSA (Canada) [V]: VDE (W. Germany)  
 [J]: JPN (Japan) [Y]: Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

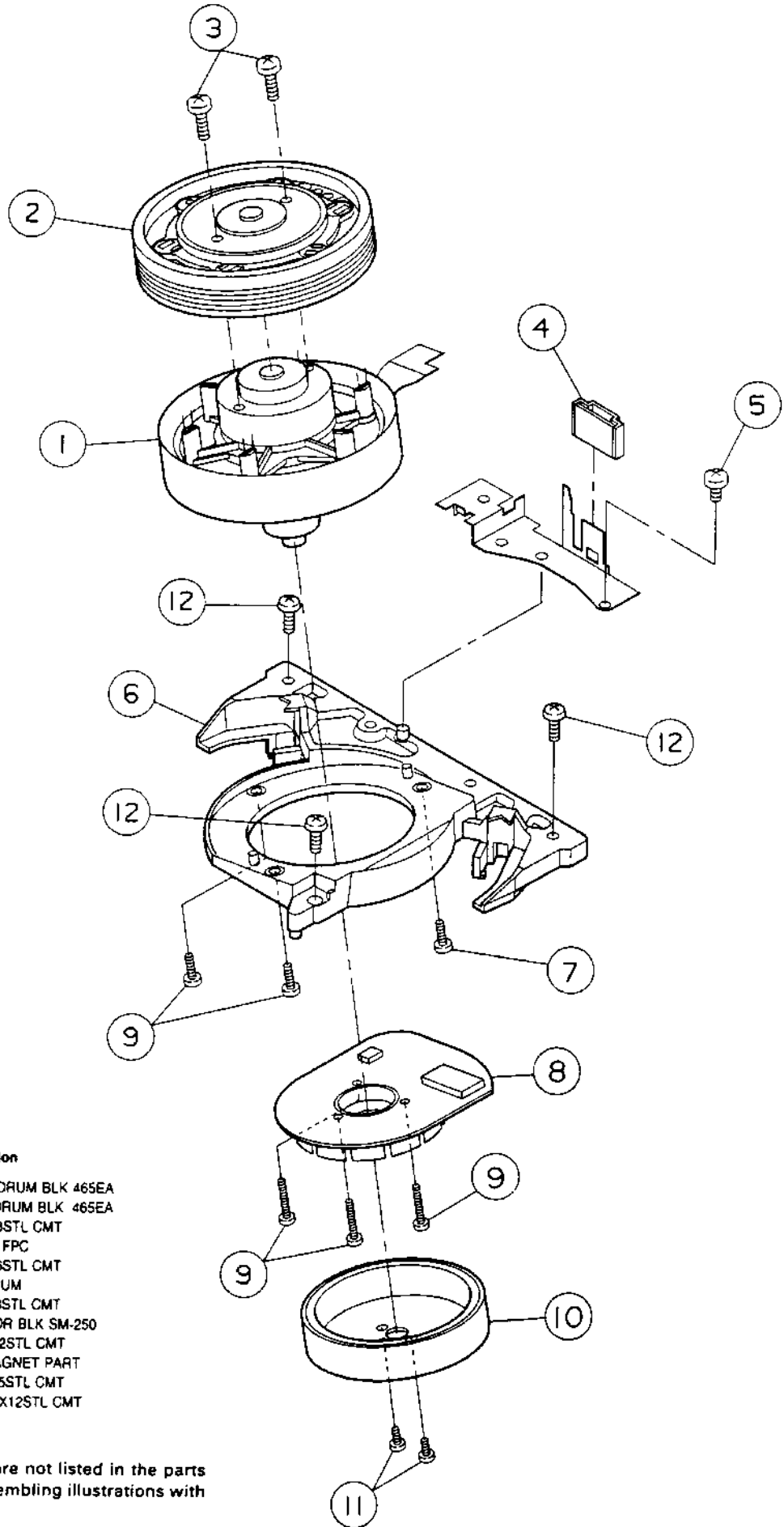
### WARNING

△(\*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

### AVERTISSEMENT

△(\*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

# HEAD DRUM BLOCK



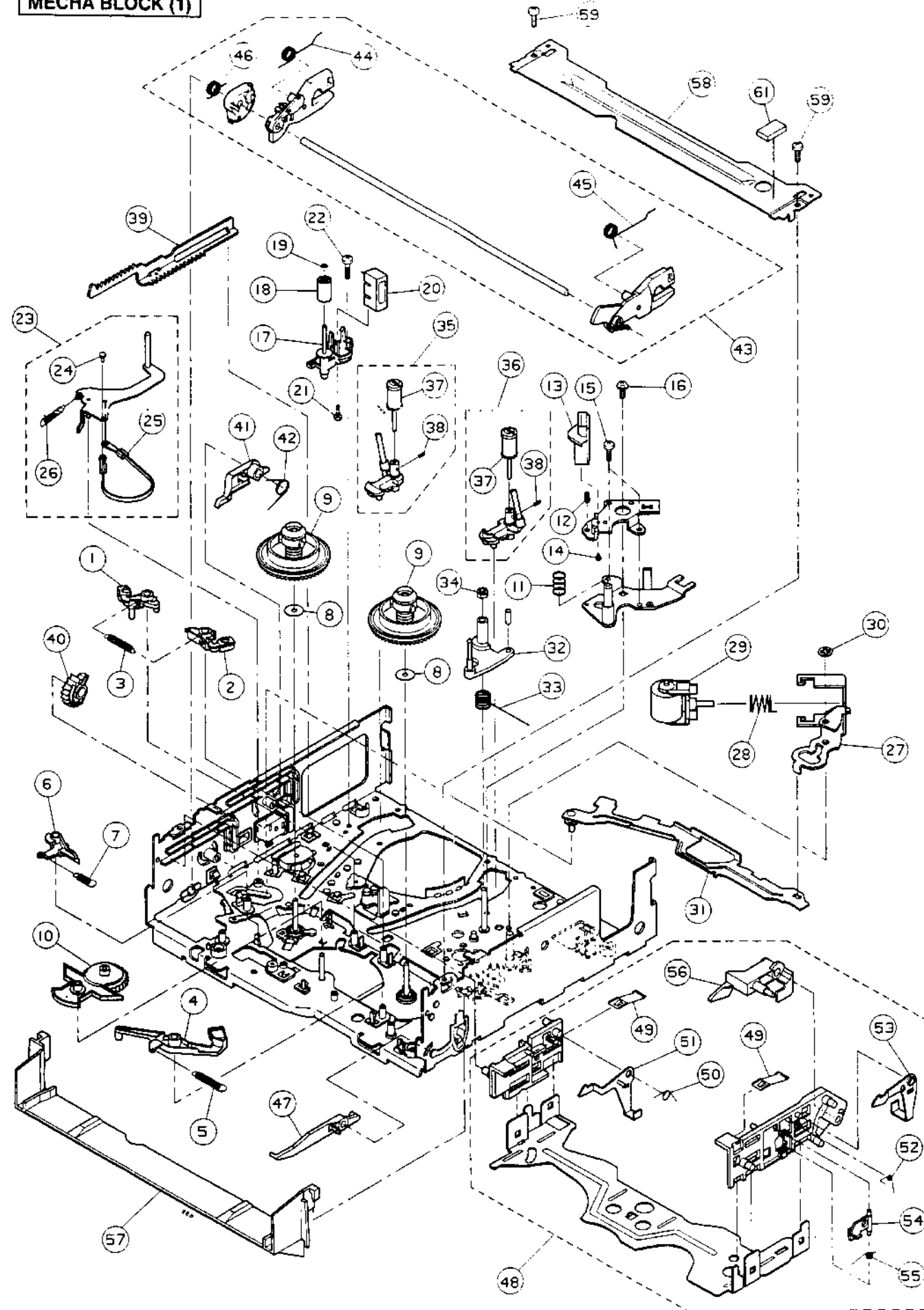
## 2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	BV-V1102A410B	LOWER DRUM BLK 465EA
2	BV-V1102A420C	UPPER DRUM BLK 465EA
3	ZS-321298	BID30X08STL CMT
4	SZ-387388J	HOLDER FPC
5	ZS-379405	BID00X06STL CMT
6	MA-387474J	BASE DRUM
7	ZS-563444	BID26X08STL CMT
8	BM-M3225A020A	PC MOTOR BLK SM-250
9	ZS-467796	PAN26X12STL CMT
10	BV-B373848	YOKE MAGNET PART
11	ZS-479474	PAN26X05STL CMT
12	ZS-370047	DT BID30X12STL CMT

### NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

**MECHA BLOCK (1)**



**3. MECHA BLOCK (1)**

Ref. No.	Part No.	Description
1	ML-387316J	MAIN BRAKE(S) PART
2	ML-387318J	MAIN BRAKE(T) PART
3	ZG-387320J	SP PULL MAIN BRAKE
4	ML-387321J	REVIEW BRAKE PART
5	ZG-387323J	SP PULL REVIEW BRAKE
6	ML-387423J	ARM LOADING BRAKE
7	ZG-387467J	SP PULL LOADING BRAKE
8	ZW-389814J	PW31X110X050PSL
9	MT-390954J1	DISK (2)PART
10	MI-387294J	IDLER PART
11	ZG-387438J	SP PUSH A/C
12	ZG-373900	6SET30X080SCM PKR CP
13	HR-390015J	HEAD COMBO HVMZA1045C
14	ZS-373899	PAN20X2.5STL BDY PS1
15	ZS-321298	BID30X08STL CMT
16	ZS-389853J	DT BID30X06STL CMT C080
17	MZ-387495J	HOLDER FE HEAD PART
18	MR-387286J	ROLLER IMPEDANCE
19	ZW-374445	SLIT W17X032X025PSL
20	HE-361456	HEAD E HVFMD0015B
21	ZS-477876	PAN20X03STL CMT
22	ZS-370047	DT BID30X12STL CMT
23	BL-V1102A050A	TENSION ARM BLK 425EA
24	SZ-387263J	HOLDER LEVER TENSION
25	ML-390768J	TENSION BAND PART
26	ZG-387272J	SP PULL TENSION
27	ML-387433J2	ARM PINCH
28	ZG-387276J	SP PUSH PINCH
29	BL-387501J	HOLDER PINCH PART
30	ZW-332843	RETAINING RING GRIP 380STL ACP
31	ML-387431J	SLIDER PINCH PART
32	ML-387277J	ARM REVIEW PART
33	ZG-387282J	SP TORSION REVIEW
34	ZW-350839	N30 NYLON
35	BV-V1102A070A	LEADER S BLK 425EA
36	BV-V1102A080A	LEADER T BLK 425EA
37	VT-387394J	GUIDE ROLLER D8 PART
38	ZS-374458	6SET20X030SCM PKR FP
39	ML-387428J	SLIDER FRONT LOADING
40	MZ-387335J	GEAR EJECT
41	ML-391745J1	ARM DAMPER
42	ZG-391744J	SP TORSION ARM DAMPER
43	BL-V1102A140A	ARM LOADING BLK 425EA
44	ZG-387417J	SP TORSION LOAD(S)
45	ZG-387418J	SP TORSION LOAD(T)
46	ZG-392831J	SP TORSION JOINT(2)
47	ML-387350J1	ARM LID OPENER
48	BV-V1102A150A	CASSETTE LOAD BLK 425EA
49	ZG-387348J	SP PLATE HOLDER
50	ZG-387421J	SP TORSION DAMPER(S)
51	ML-387345J	LEVER DAMPER(S)
52	ZG-388290J	SP TORSION DAMPER(T)
53	ML-387346J	LEVER DAMPER(T)
54	ML-387344J	LEVER LOCK RELEASE
55	ZG-387420J	SP TORSION RELEASE
56	ML-387349J	ARM SHUTTER
57	SE-387343J	GUIDE FRONT
58	MZ-387351J	PLATE UPPER
59	ZS-364543	DT BID30X06STL CMT
60	BB-V1102A020A	MECHA DECK BLK 425EA
61	SZ-391866J1	CUSHION COVER

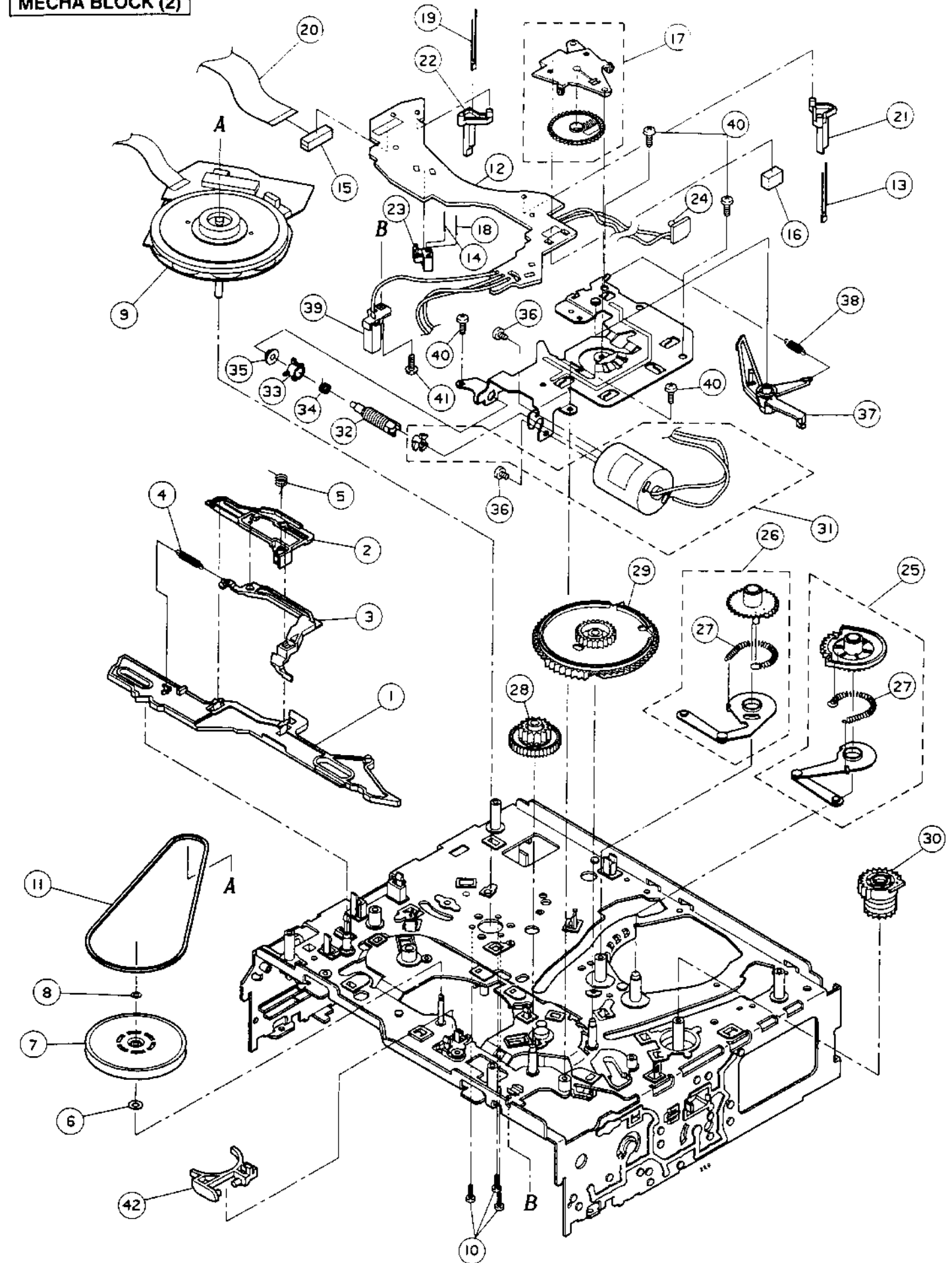
**NOTE :**  
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

#### 4. MECHA BLOCK (2)

Ref. No.	Part No.	Description
1	ML-387324J	SLIDER BRAKE PART
2	ML-387327J	SLIDER TRIGGER
3	ML-387402J	LEVER TRIGGER
4	ZG-387468J	SP PULL SLIDER
5	ZG-387403J	SP TORSION COUPLING
6	ZW-389923J	PW26X060X050PSL
7	MZ-387298J1	DISK CLUTCH PART
8	ZW-387492J	SLIT W21X040X050PSL
9	BM-387464J	MOTOR DFX-67B3VWA
10	ZS-365149	PT BID26X06STL CMT
11	MB-387289J	BELT CAPSTAN
12	EA-387496J	PC( #)SENSOR
13	ED-390011J	D LED GL451 INFRARED [D1]
14	ED-390012J	D LED GL4800 INFRARED [D2]
15	EJ-387497J	SOCKET HOUSING 5062-30-10-13
16	EJ-381837J	SOCKET 174074-5 5P
17	ES-387465J	SW MODE SELECT MMS00070ZLBO
18	ET-390010J	TR PHOTO PT4800 [PTR2]
19	ET-390009J	TR PHOTO PT493F [PTR4]
20	EW-389313J	CORD FFC P1.25 L=120 13P
21	MZ-387430J	HOLDER D-LED
22	MZ-387445J	HOLDER S SENSOR
23	MZ-387446J	HOLDER PHOTO SENSOR
24	ET-361490	TR PHOTO PN268 R.S [PTR1]
25	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
26	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
27	ZG-387413J	SP PULL TOGGLE
28	MZ-387332J	GEAR WORM WHEEL
29	MZ-387331J	GEAR CAM SLIDER
30	MZ-387333J	GEAR FRONT LOADING
31	BM-387503J	MOTOR PART
32	MZ-387330J	GEAR WORM PART
33	MR-391968J	PULLEY TRIGGER(2)
34	ZG-387443J	SP TRIGGER
35	MR-387406J	HOLDER THRUST WORM
36	ZS-432674	PAN30X03STL CMT
37	BL-387458J1	CAPSTAN BRAKE PART
38	ZG-387502J	SP PULL CAPSTAN BRAKE
39	ES-373099	SW LEAF MTS10110MPC1
40	ZS-389950J	PT BID26X10STL CMT
41	ZS-364543	DT BID30X06STL CMT
42	ML-387311J	ARM COUPLING

NOTE:  
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

#### MECHA BLOCK (2)





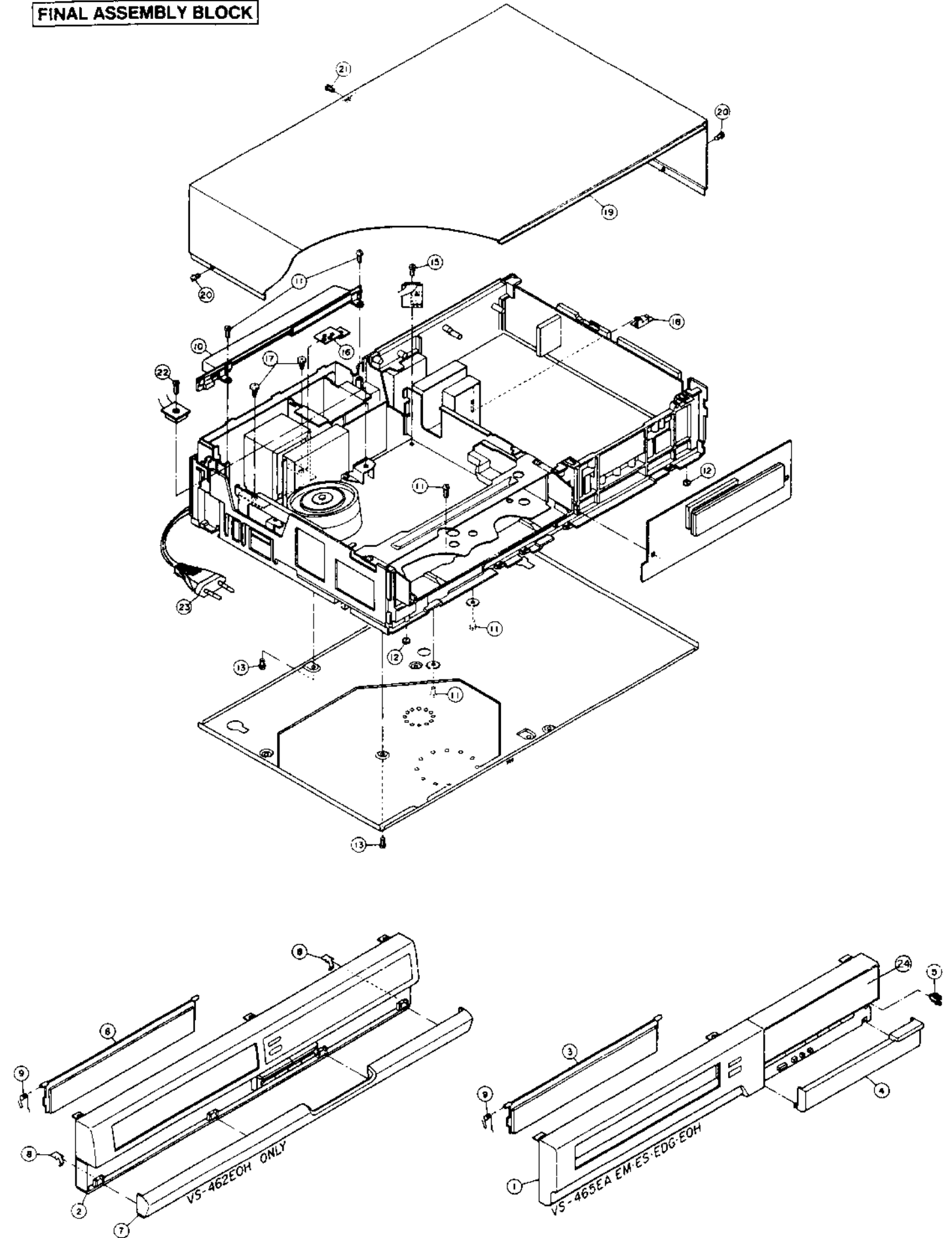
18. P/S AUTO P.C BOARD (EM/EDG ONLY)

Ref. No.	Part No.	Description
D101	ED-307572	D SILICON H 1SS131
D102	ED-307572	D SILICON H 1SS131
L101	EQ-376179	COIL FIX 1 ALF-7.5F F05 101K
IC101	EI-388342J	IC LA7311
TR101	ET-360137	TR 2SC3330 U,V F05
TR102	ET-353897	TR DTC114ES
TR103	ET-356336	TR DTA114ES
TR104	ET-360137	TR 2SC3330 U,V F05

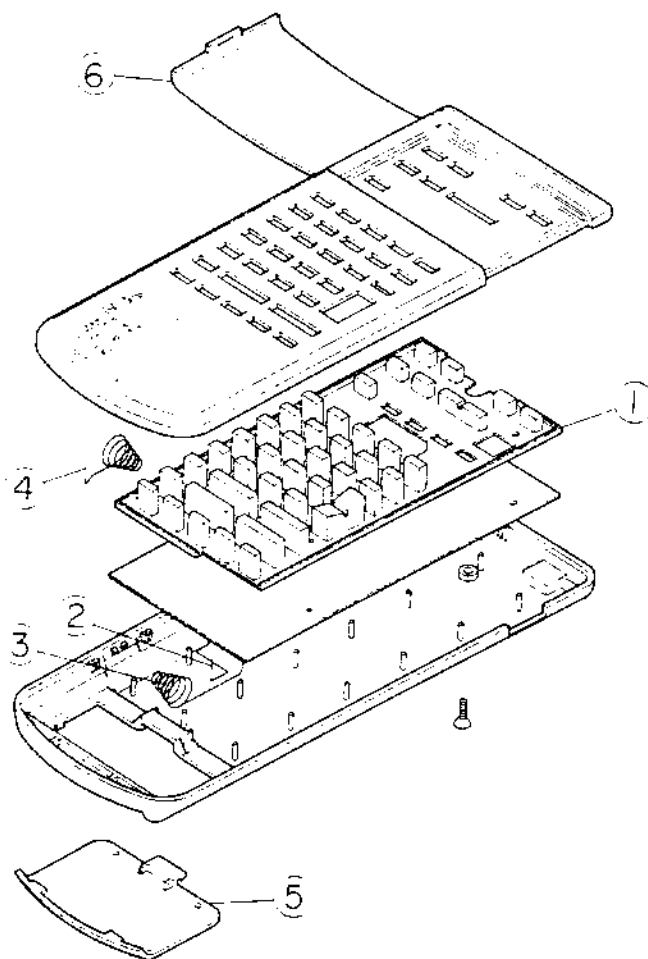
19. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1A	BD-389785J	PANEL FRONT-465EA-B PART [VS-465EA]
1B	BD-389788J	PANEL FRONT-465EM-B PART [VS-465EM]
1C	BD-389789J	PANEL FRONT-465ES-B PART [VS-465ES]
1D	BD-389786J	PANEL FRONT-465EDG-B PART [VS-465EDG]
1E	BD-389791J	PANEL FRONT-465EOH-B PART [VS-465EOH]
2	BD-391018J	PANEL FRONT-462EOH PART [VS-462EOH]
3A	SE-387368J	MASK CASSETTE(D)-E1 [VS-465EA/ES/EM/EDG]
3B	SE-389741J	MASK CASSETTE(D)-E2 [VS-465EOH]
4A	SP-389744J	DOOR FRONT(D)-E1 DX3 [VS-465EA/ES/EDG]
4B	SP-389745J	DOOR FRONT(D)-E2 DX3 [VS-465EM/EOH]
5	SZ-390032J	LATCH DOOR 3550-1 [VS-465EA/ES/EM/EDG/EOH]
6	SE-391794J	MASK CASSETTE(A)E3 [VS-462EOH]
7	SP-387384J	DOOR(B)E1-B [VS-462EOH]
8	ZG-386833J1	SP PLATE DOOR(D) [VS-462EOH]
9	ZG-387370J	SP MASK
10	SC-387353J	COVER TRANS
11	ZS-362378	PLX BID30X10STL CMT
12	SA-387507J	FOOT SX
13	ZS-364543	DT BID30X06STL CMT
15	ZS-378341	PLX BID30X12STL CMT
16	ZG-387505J	PLATE EARTH
17	ZS-373962	PLX BID40X10STL CMT
18	ZG-387354J	PLATE EARTH(2)
19	SP-387386J1	COVER UPPER B
20	ZS-385611J	DT BID26X06STL BNI
21	ZS-389965J	PLX BID26X08STL BNI
22	ZS-357946	PLX PAN30X10STL CMT C080
23A	*EW-385901M	AC CORD 200 SA-2 LDF B130 A S [EA]
23B	*EW-385900M	AC CORD 200 SE-1H03VV B130 A E [ES,EOH-E,EDG,EM-E]
24	SE-389730J	WINDOW FLD(D)-465EM [EM-E]

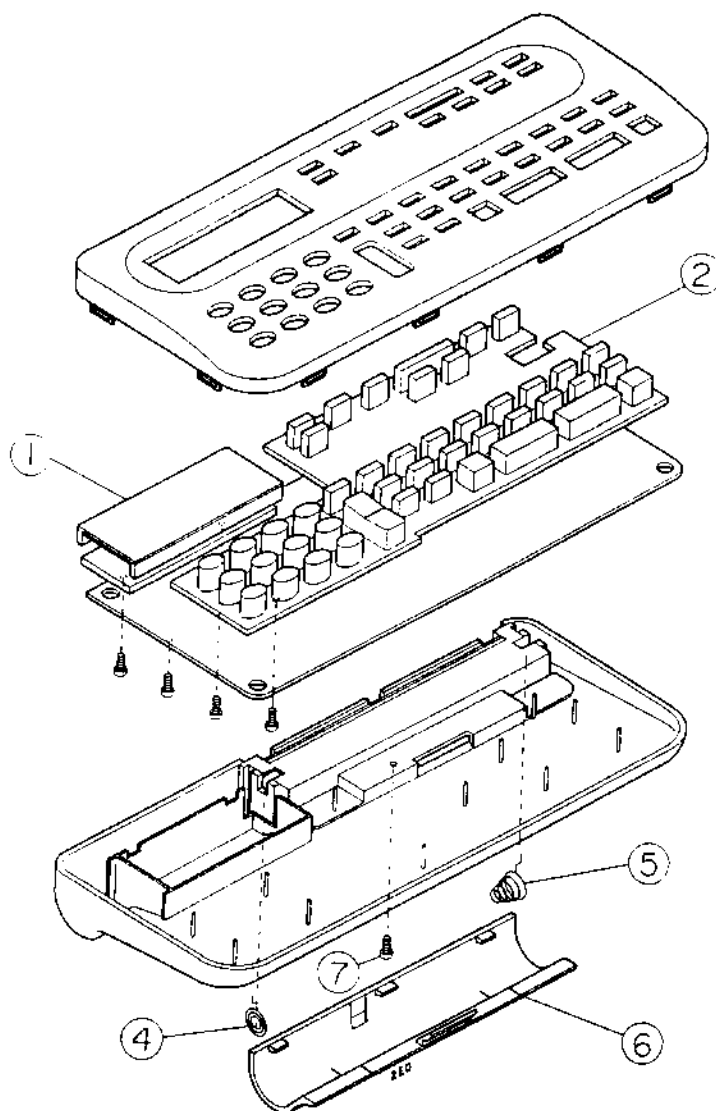
FINAL ASSEMBLY BLOCK



## REMOCON UNIT RC-V425A-EB



## REMOCON UNIT RC-V465A-EB



### 20. ACCESSARY

Ref. No.	Part No.	Description
1	EW-348414	CORD PAL
2A	AV-N4008B010A	REMOCON BLK RC-V425A-EB [VS-465EA/EM/ES/EDG]
2B	AV-N4009B010C	REMOCON BLK RC-V466A-EB [VS-465EOH]
2C	AV-N4008B010C	REMOCON BLK RC-V426A-EB [VS-462EOH]

### 21. REMOCON UNIT RC-V425A/V426A-EB

Ref. No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
IC1	EI-376112	IC UPD6122G
TR1	ET-302502	TR 2SC2001 K
X1	EI-390667J	OSC CE CSU455PL 455KHZ
1	MB-390673J	KEY RUBBER(N)
2	ZG-390683J	TERMINAL BATTERY(A)
3	ZG-390684J	TERMINAL BATTERY(B)
4	ZG-390676J	TERMINAL BATTERY(C)
5	SC-390678J	COVER BATTERY(N)
6	SP-390681J	DOOR PANEL(N)

### 22. REMOCON UNIT RC-V466A-EB

Ref. No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
IC1	EI-390822J	IC UPD75304G-057-3B9 SXREMA1
IC2	EI-390825J	IC S-8052ANB-NE T1
TR1	ET-390826J	TR.CHIP 2SD1619 T.U TC T08
X1	EI-389972J	OSC CE W/C FCR2.2MC3 2.2MHZ
X2	EI-366825	OSC X'TAL MX-38T 32.768KHZ
1	EM-390786J	IND LCD LF5293G ENGLISH
2	MB-391417J	KEY RUBBER(A)
3	ZS-374389	PT BID20X06STL BNI
4	ZG-385136J	TERMINAL BATTERY B
5	ZG-391411J	TERMINAL BATTERY(1)
6	SC-391422J	COVER BATTERY

# AKAI

MODEL **VS-765**<sup>EA/EK/EM/</sup><sub>EO/EOH/ES</sub>

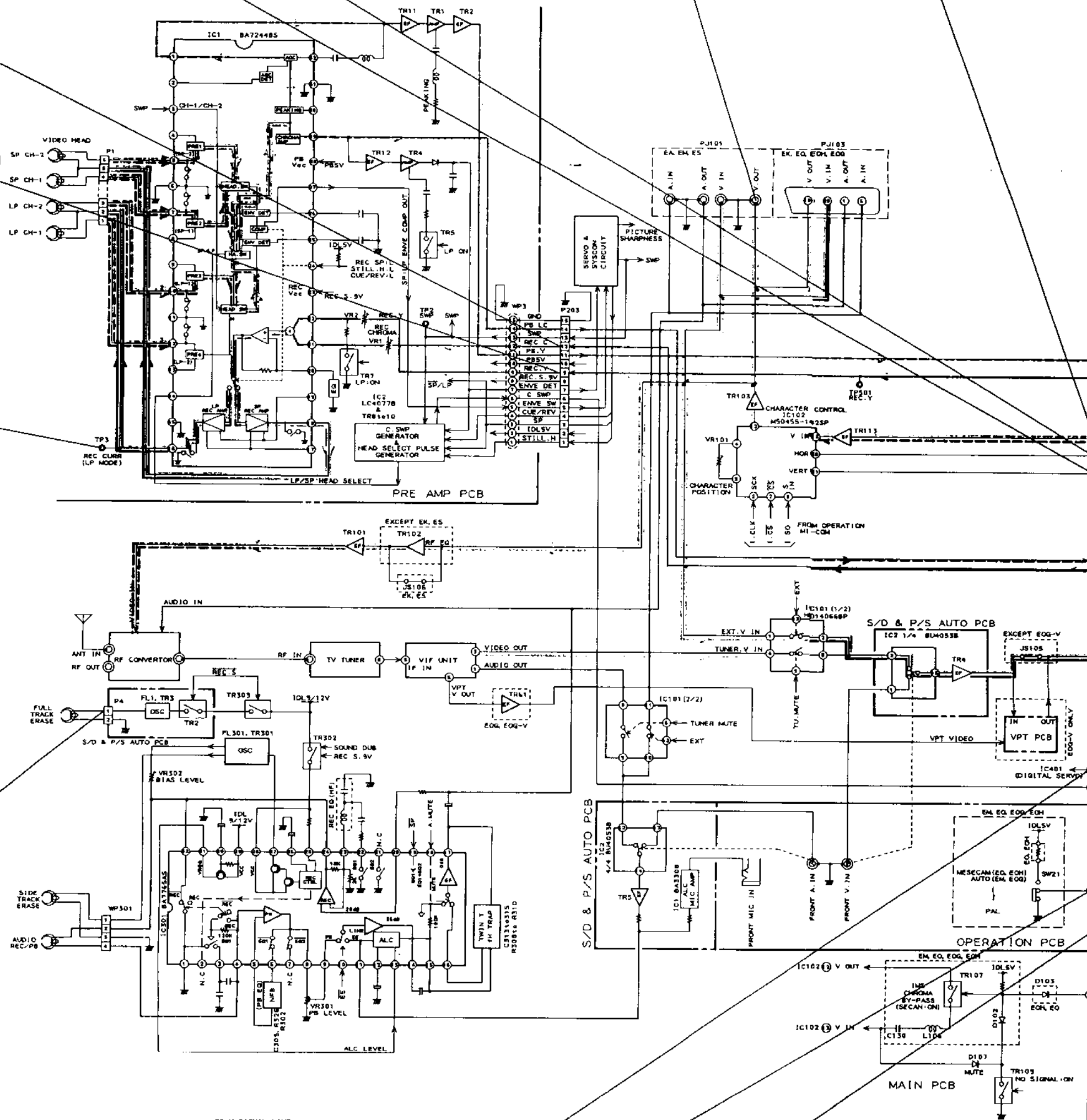
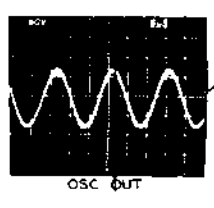
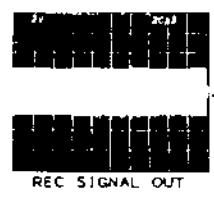
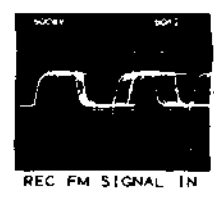
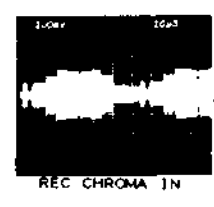
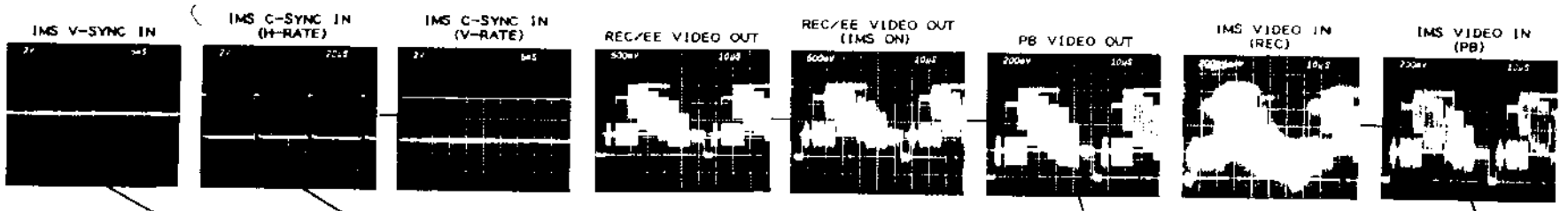
MODEL **VS-767**<sup>EK/EOG/EOG-V</sup>

## SCHEMATIC DIAGRAMS AND PC BOARDS

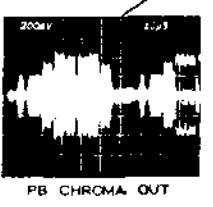
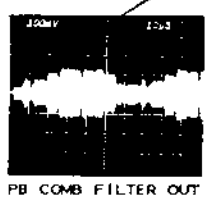
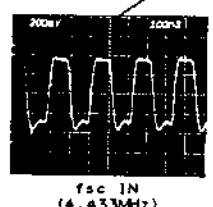
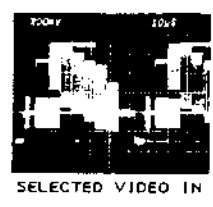
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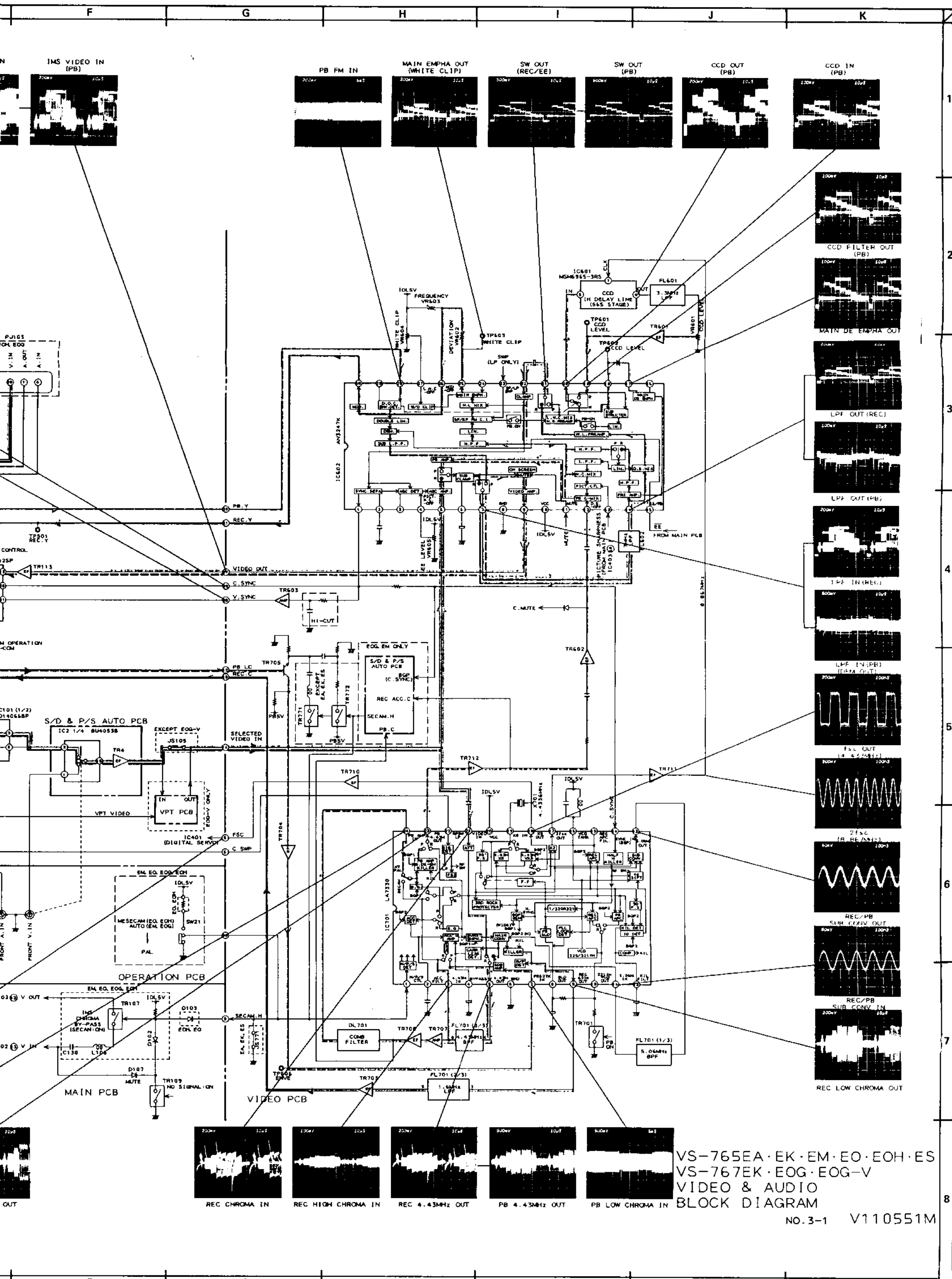
A B C D E F



- PB Y SIGNAL LINE
- REC Y SIGNAL LINE
- PB CHROMA SIGNAL LINE
- REC CHROMA SIGNAL LINE
- PB AUDIO SIGNAL LINE
- REC AUDIO SIGNAL LINE

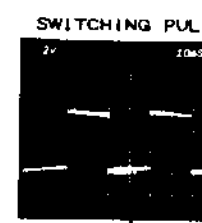
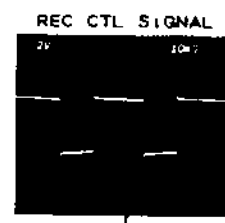
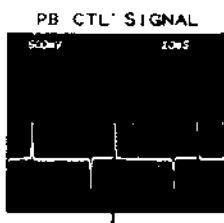
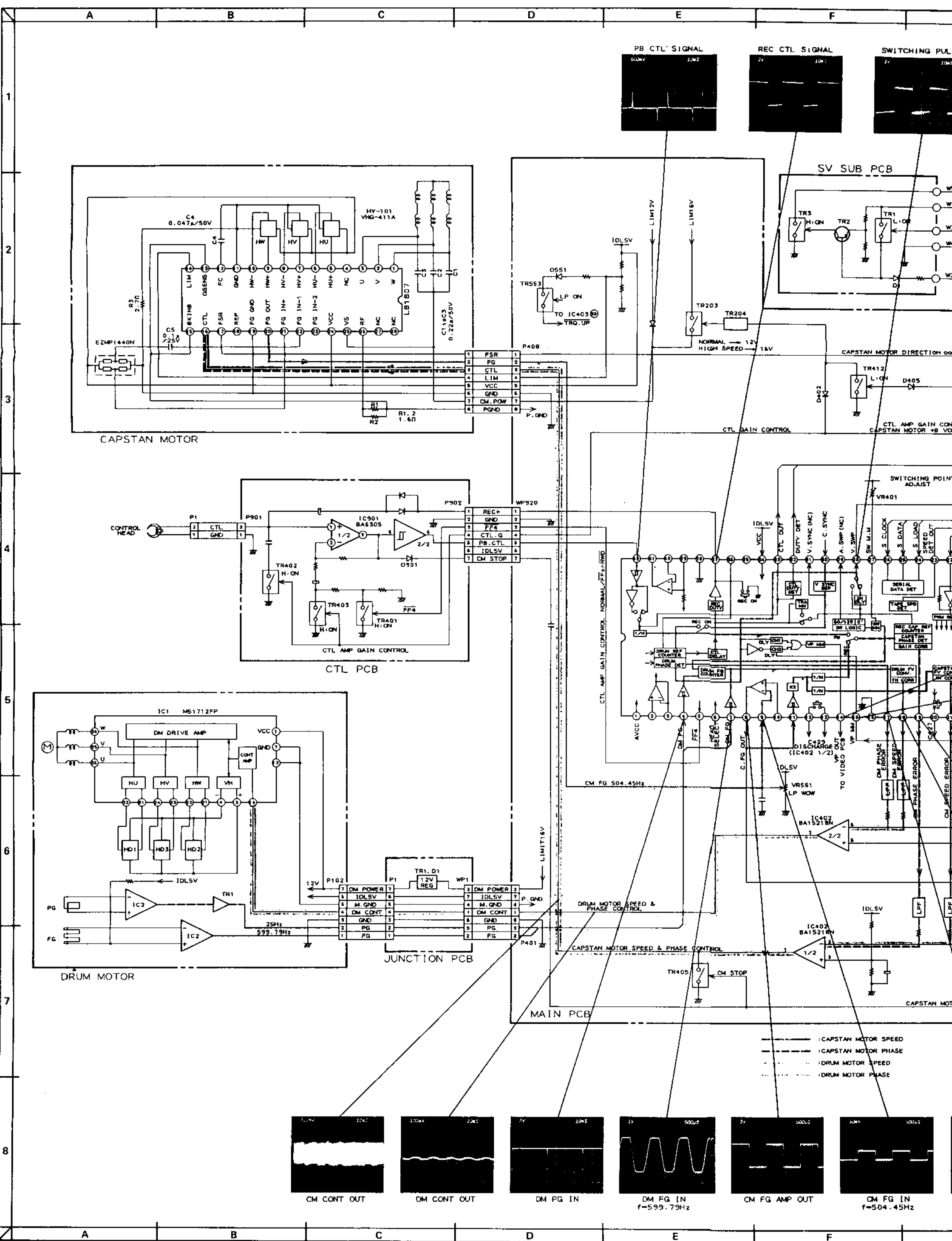


A B C D E F

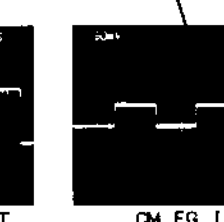
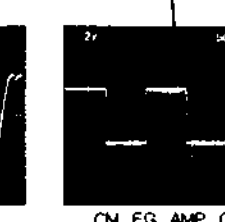
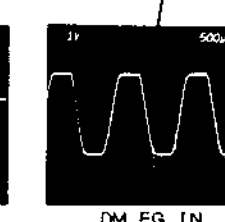
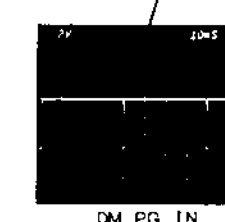
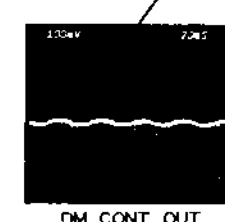


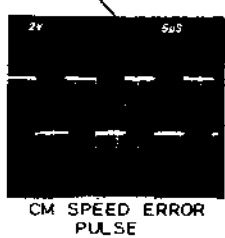
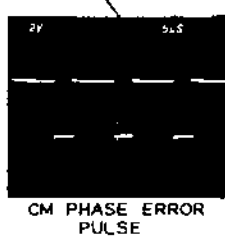
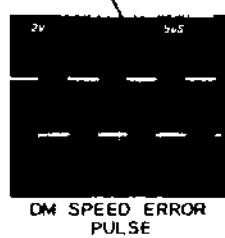
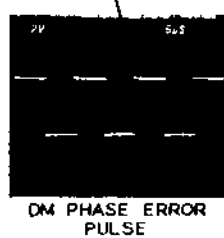
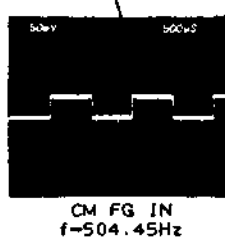
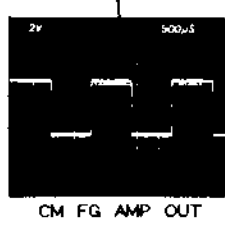
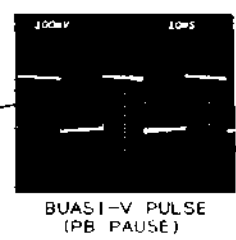
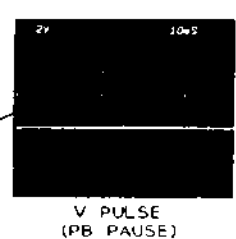
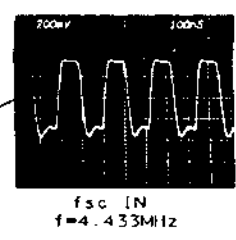
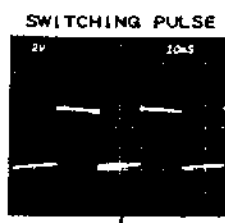
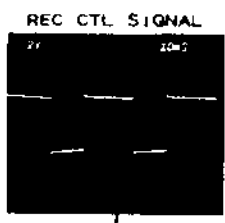
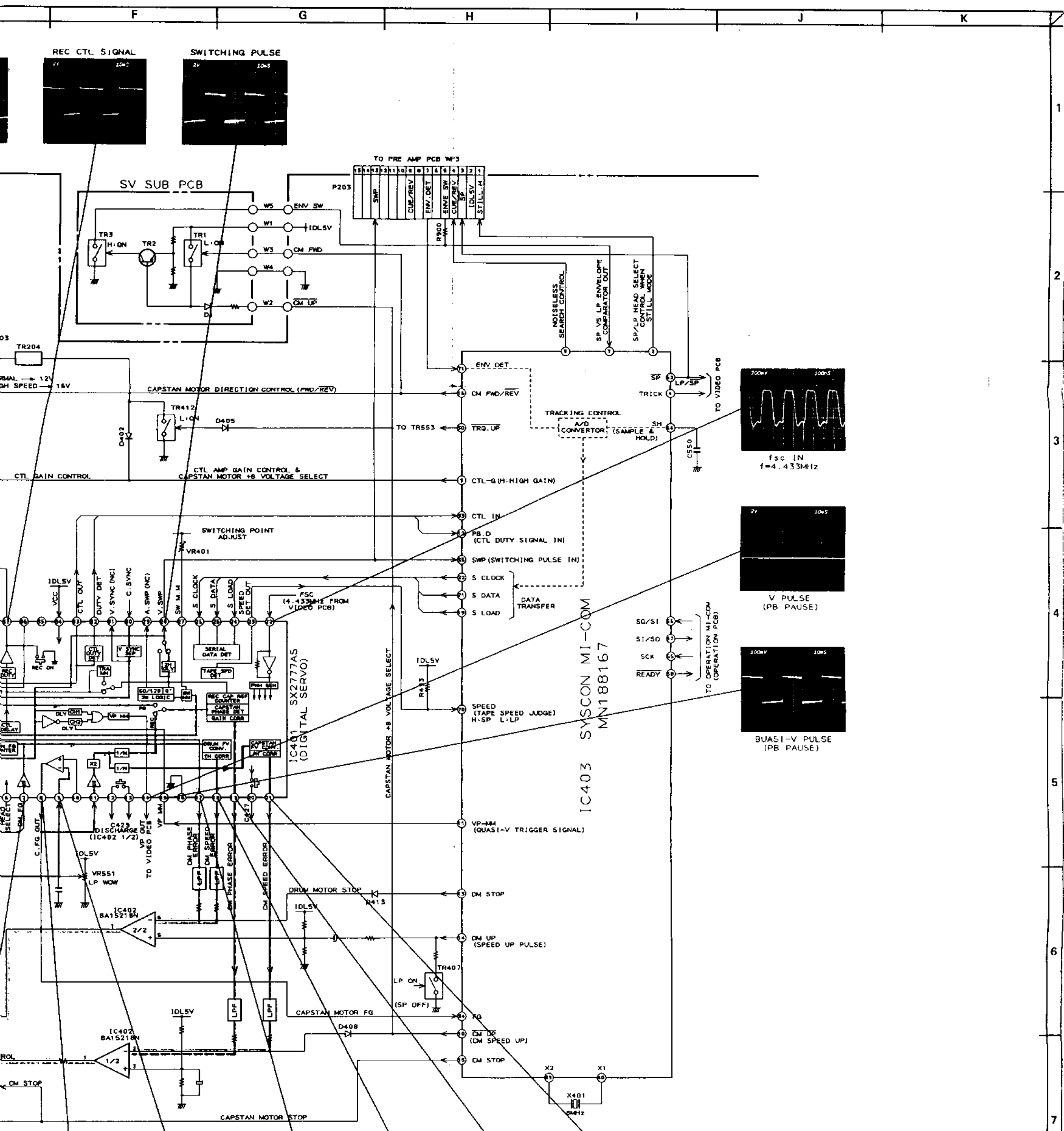
VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 VIDEO & AUDIO  
 BLOCK DIAGRAM

NO. 3-1 V110551M

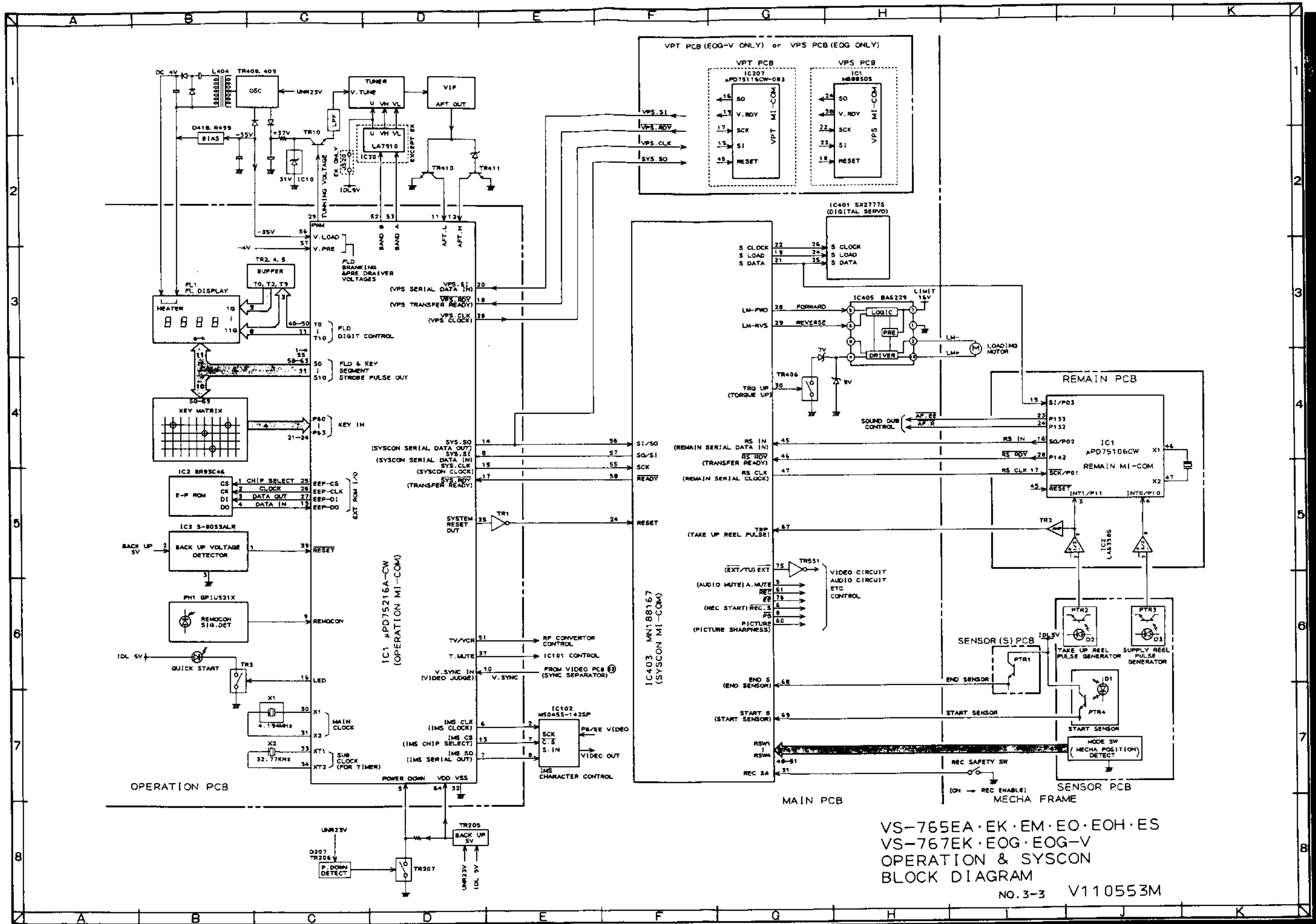


- CAPSTAN MOTOR SPEED
- CAPSTAN MOTOR PHASE
- DRUM MOTOR SPEED
- DRUM MOTOR PHASE

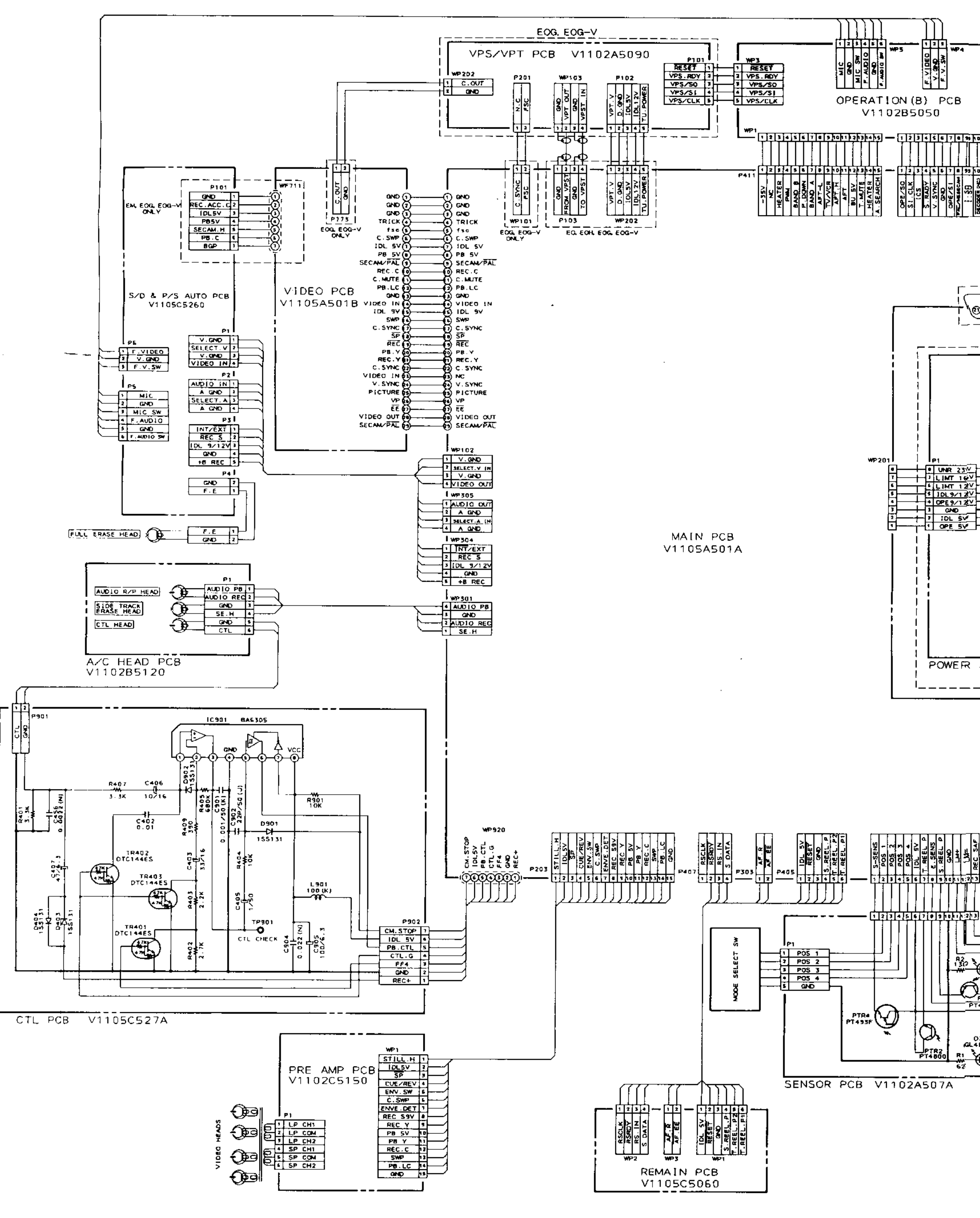


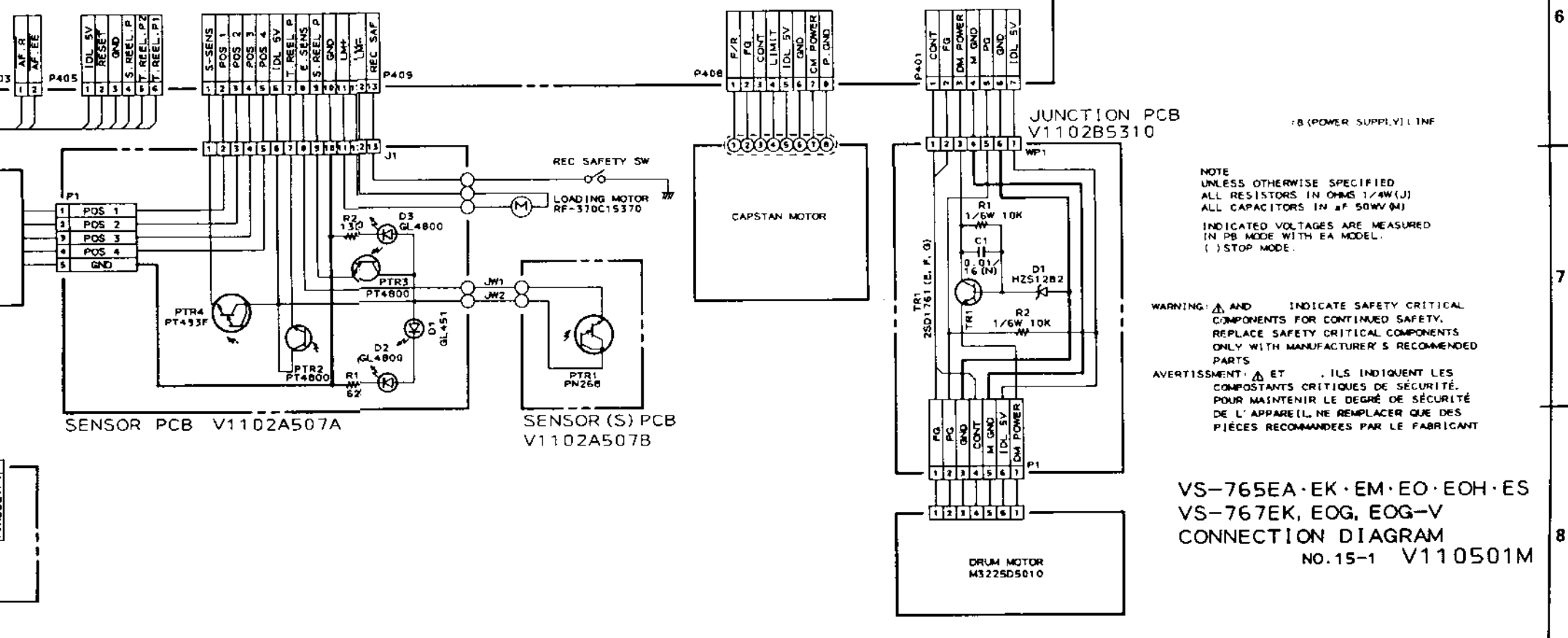
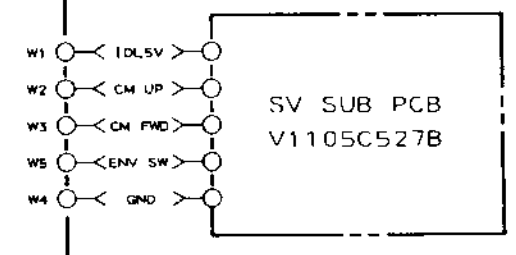
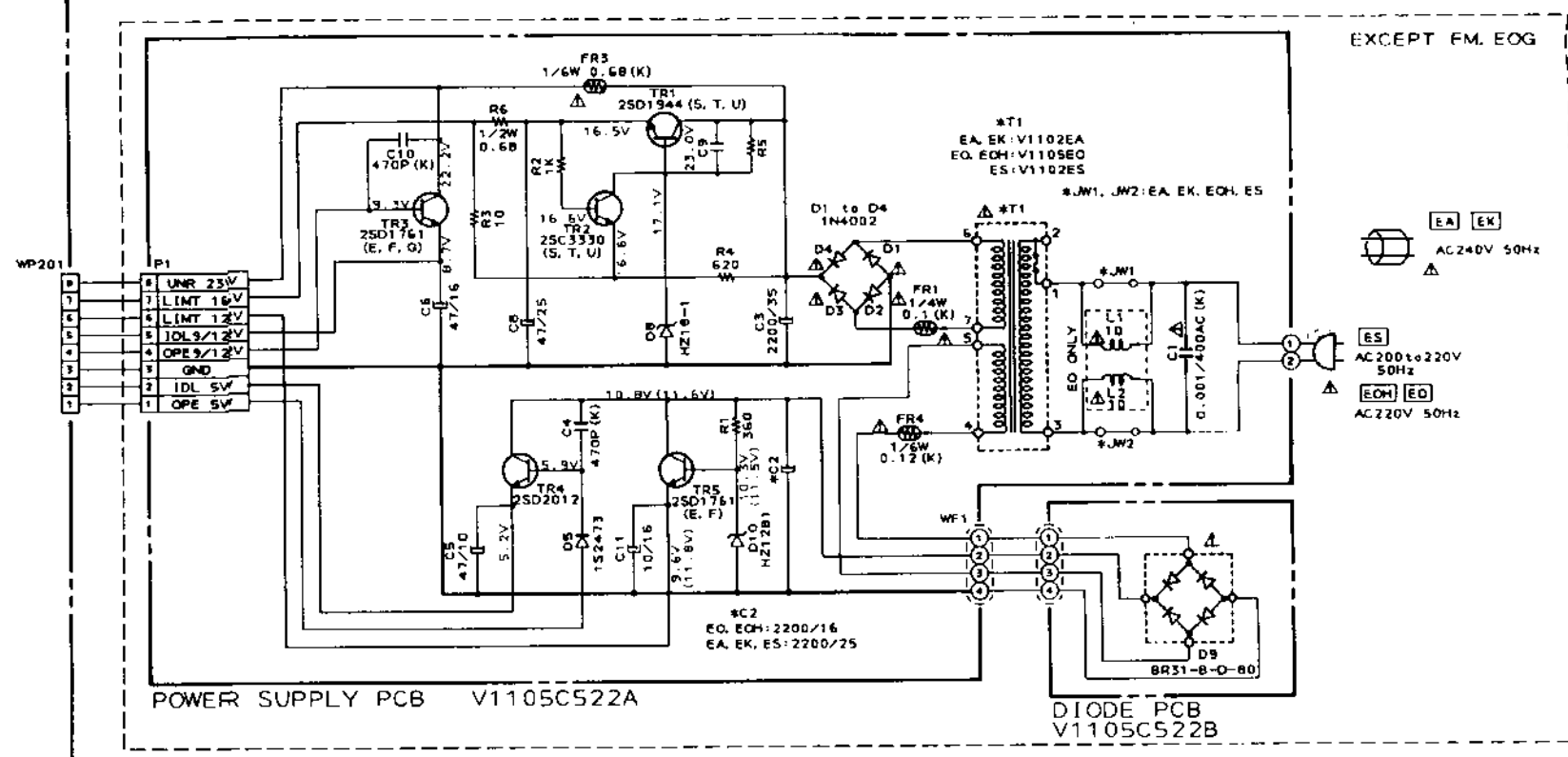
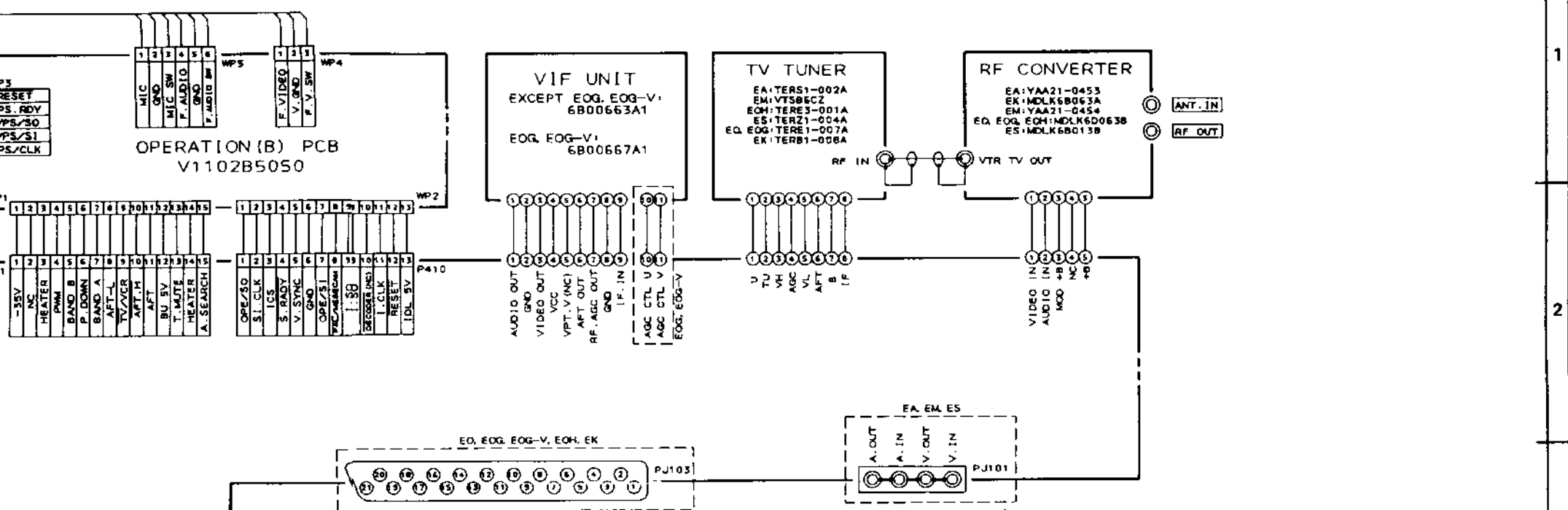


VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 SERVO  
 BLOCK DIAGRAM  
 NO. 3-2 V11052M







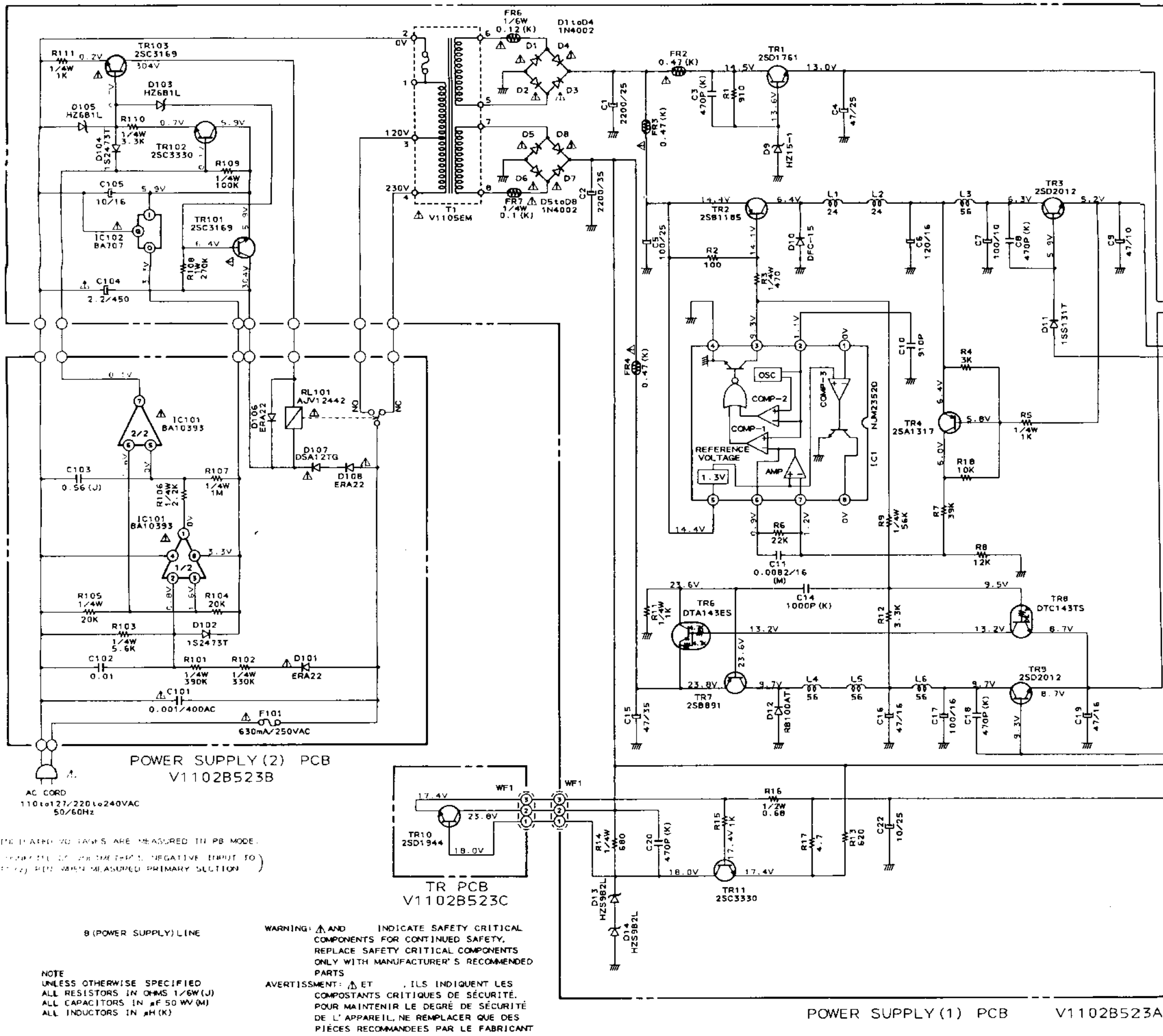


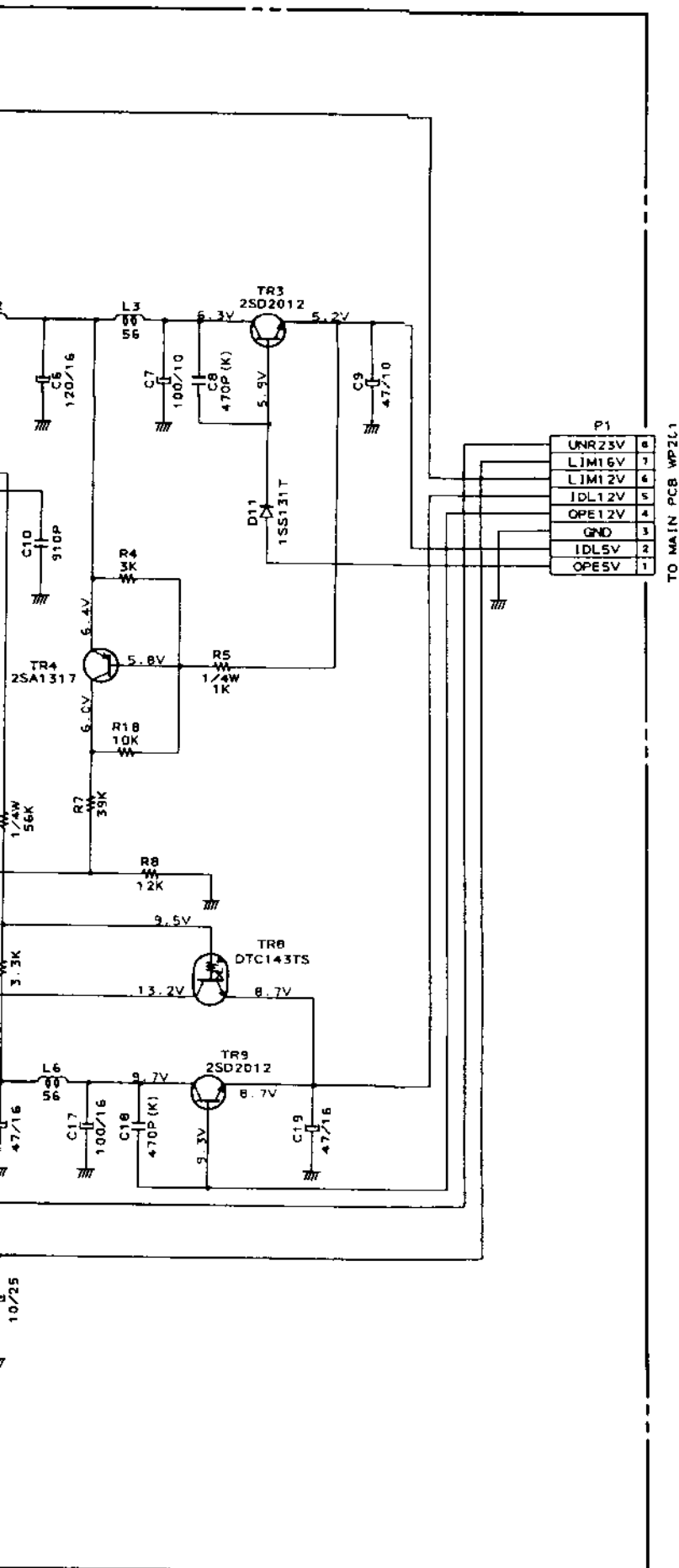
NOTE: UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS (1/4W (J)), ALL CAPACITORS IN μF (50V (M)). INDICATED VOLTAGES ARE MEASURED IN PB MODE WITH EA MODEL. ( ) STOP MODE.

WARNING: AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

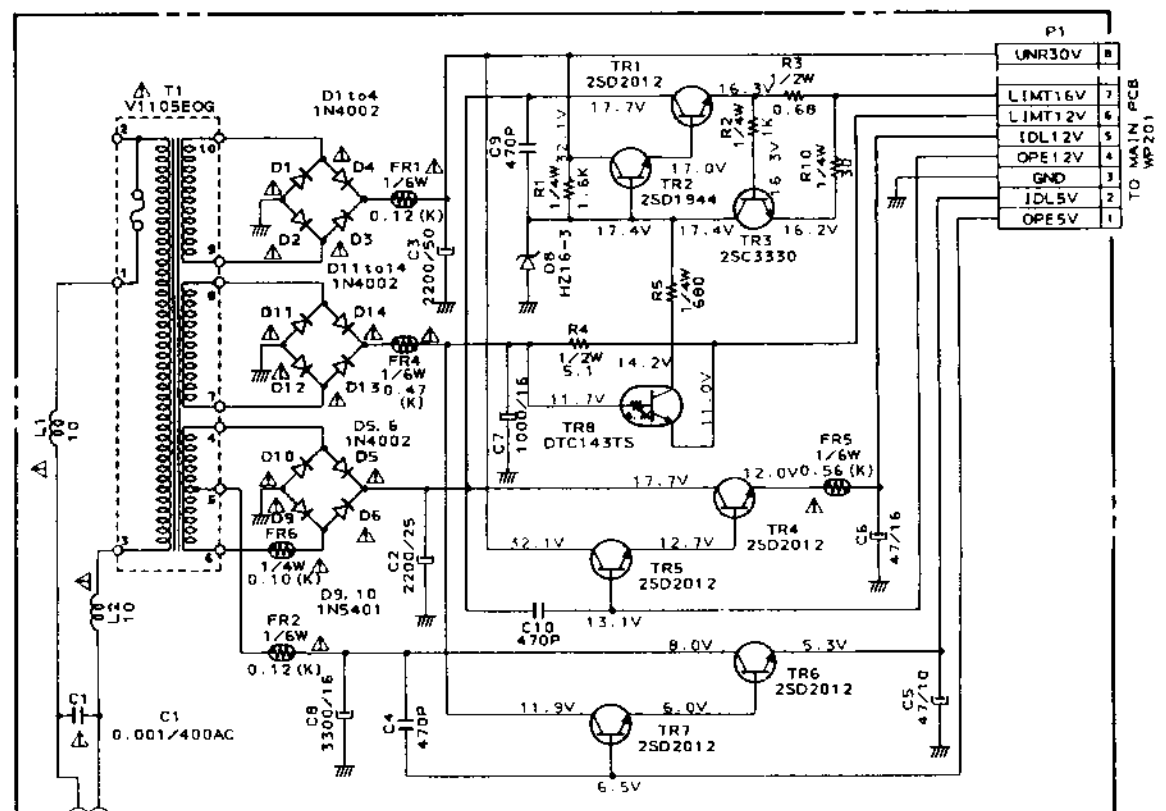
AVERTISSEMENT: ET ILS INDICENT LES COMPOSANTS CRITIQUES DE SECURITE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL, NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT.

VS-765EA·EK·EM·EO·EOH·ES  
VS-767EK, EOG, EOG-V  
CONNECTION DIAGRAM  
NO.15-1 V110501M



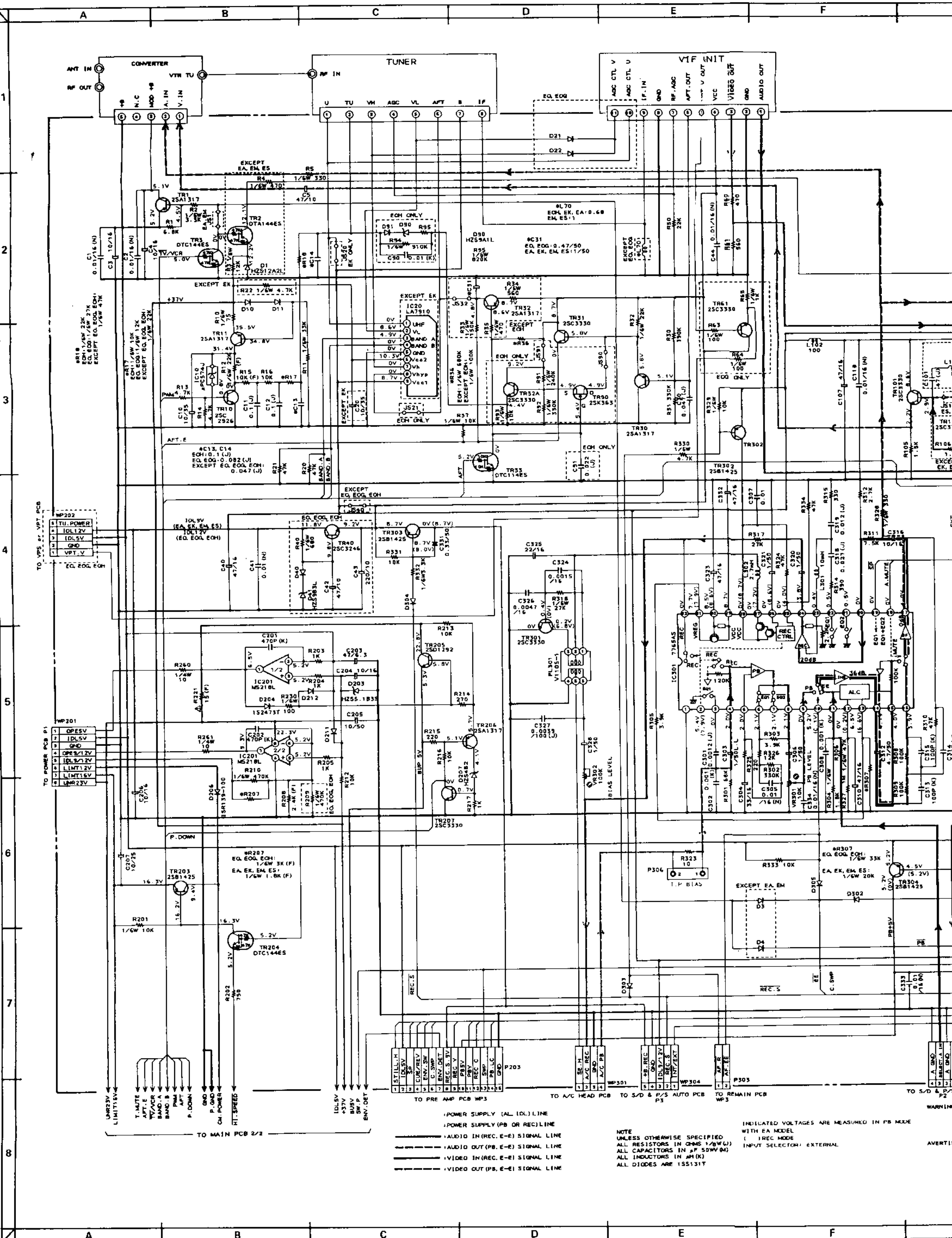


PLY (1) PCB V1102B523A



POWER SUPPLY (EOG) PCB V1105C521A  
(VS-767EOG, EOG-V)

VS-765EM  
VS-767EOG·EOG-V  
POWER SUPPLY PCB  
SCHEMATIC DIAGRAM  
NO.15-2 V110507M



TO VPS, ET, VPT, PCB

1	TTL POWER
2	IDLSV
3	QND
4	VPT-V

TO POWER PCB P1

1	OPESV
2	IDLSV
3	QND
4	OPESV/2V
5	IDLSV/2V
6	LIMIT1.2V
7	LIMIT1.5V
8	LNR23V

TO MAIN PCB 2/2

1	LIMIT1.5V
2	T.MUTE
3	AFT-E
4	TV/VCR
5	BAND-A
6	BAND-B
7	P.M
8	AFT
9	P.DOWN
10	QND
11	P.OND
12	CH.POWER
13	HT.SPEED

TO PRE AMP PCB WP3

1	STILL-H
2	IDLSV
3	CUR.REV
4	ENV.SWP
5	C.SWP
6	ENV.DET
7	REC.S.V
8	REC.Y
9	PBSV
10	REC.C
11	REC.V
12	SWP
13	PB.LC
14	QND

TO A/C HEAD PCB

1	BE.H
2	A/C REC
3	QND
4	A/C PB

TO S/D & P/S AUTO PCB P3

1	PB.REC
2	QND
3	IDLSV
4	REC.S
5	INT/EXT

TO REMAIN PCB WP3

1	A.P.R
2	A.P.EE

TO S/D & P/S P2

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P1

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P4

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P5

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P6

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P7

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P8

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P9

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P10

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P11

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P12

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P13

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P14

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P15

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P16

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P17

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P18

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P19

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P20

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P21

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P22

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P23

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P24

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P25

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P26

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P27

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P28

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P29

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P30

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P31

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P32

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P33

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P34

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P35

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P36

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P37

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P38

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P39

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P40

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P41

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P42

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P43

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P44

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P45

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P46

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P47

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P48

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P49

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P50

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P51

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P52

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P53

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P54

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P55

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P56

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P57

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P58

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P59

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P60

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P61

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P62

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P63

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P64

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P65

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P66

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P67

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P68

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P69

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P70

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P71

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P72

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P73

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P74

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P75

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P76

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P77

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P78

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P79

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P80

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P81

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P82

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P83

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P84

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P85

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P86

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P87

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P88

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P89

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P90

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P91

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P92

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P93

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P94

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P95

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P96

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P97

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P98

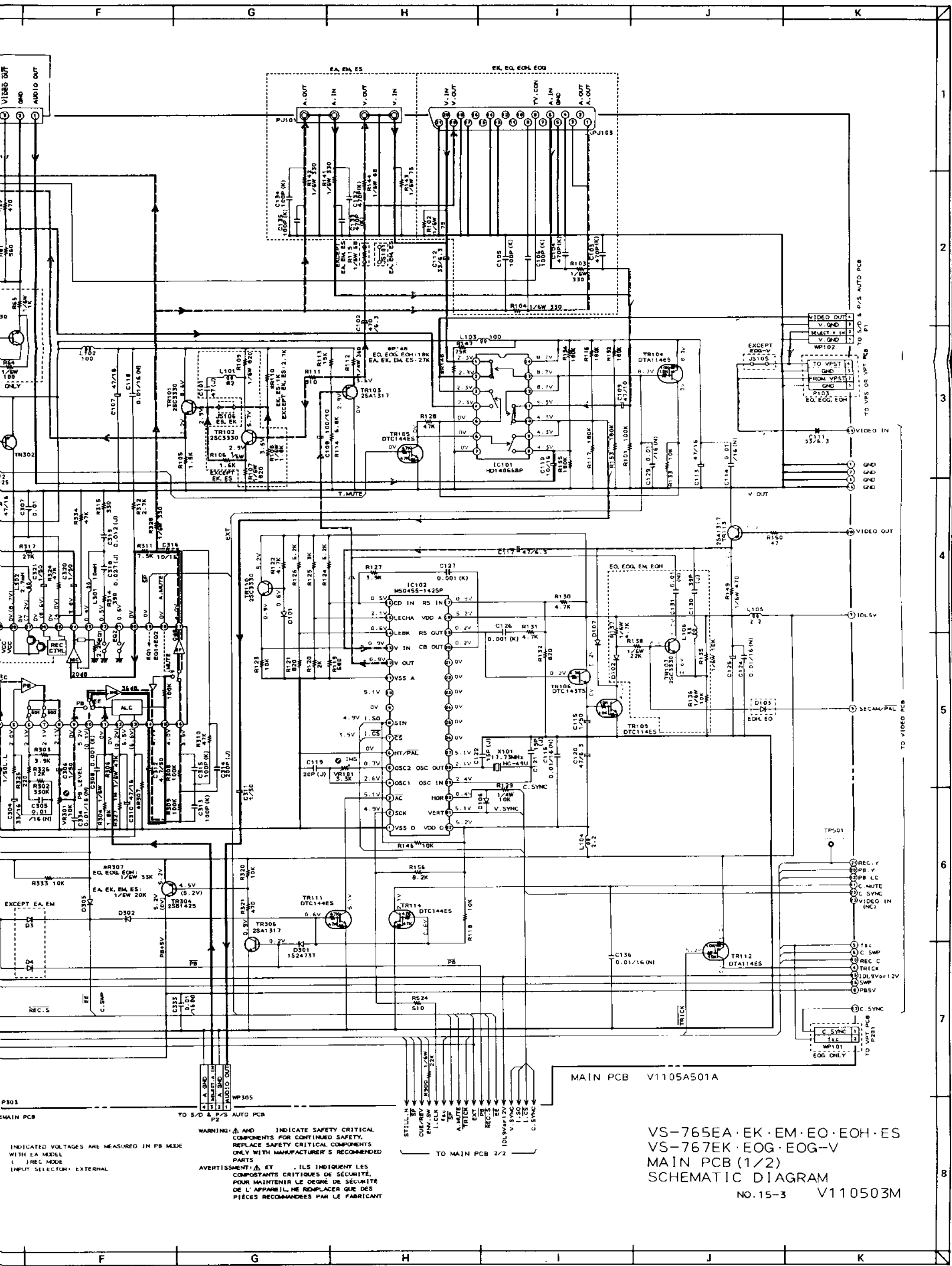
1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P99

1	A.GND
2	A.D
3	A.GND

TO S/D & P/S P100

1	A.GND
---	-------



MAIN PCB V1105A501A

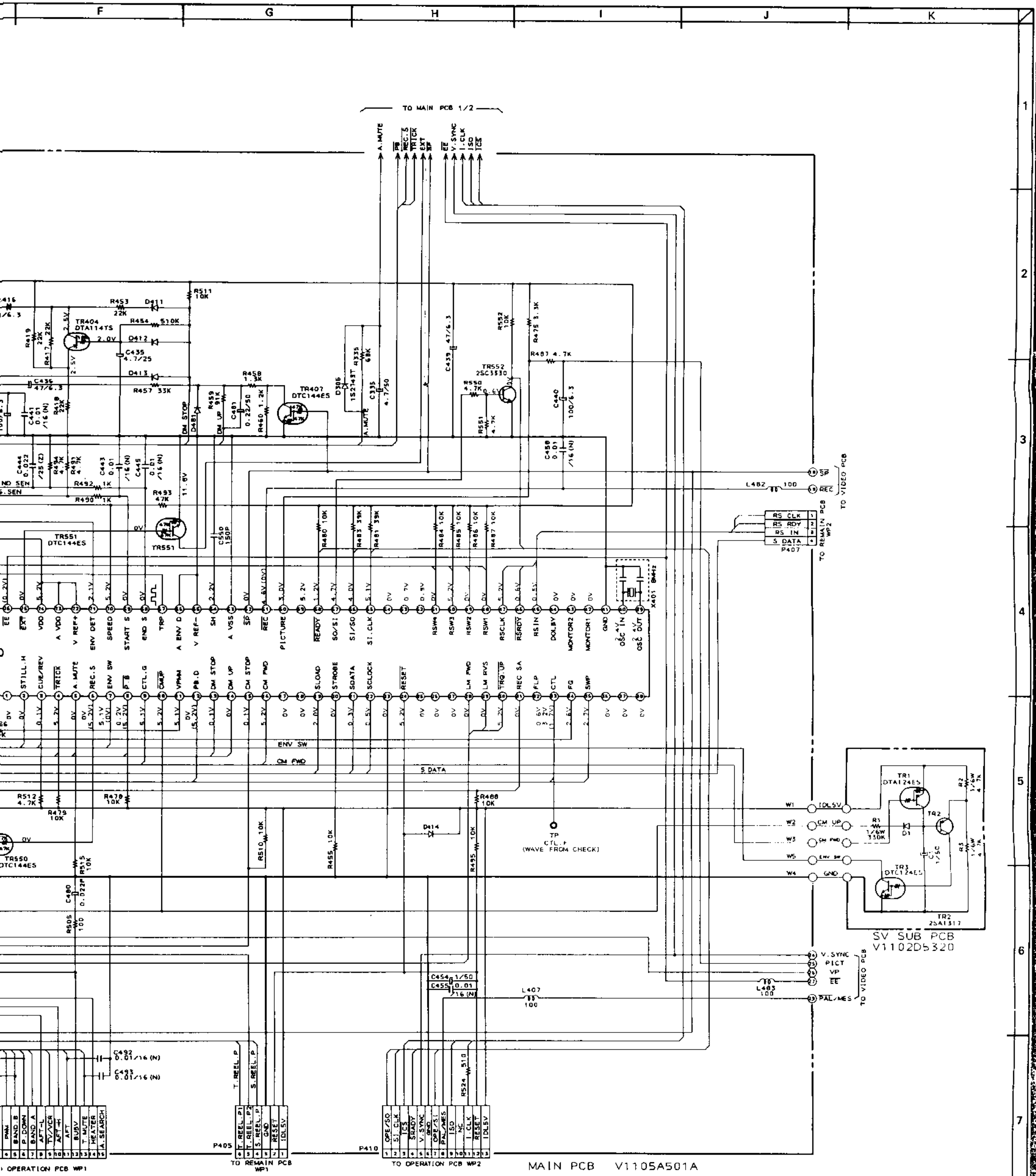
VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 MAIN PCB (1/2)  
 SCHEMATIC DIAGRAM  
 NO. 15-3 V110503M

INDICATED VOLTAGES ARE MEASURED IN PB MODE WITH EA MODEL ( ) REC MODE INPUT SELECTOR EXTERNAL

WARNING: AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS  
 AVERTISSEMENT: ET ILS INDICENT LES COMPOSANTS CRITIQUES DE SECURITE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL. NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

TO MAIN PCB 2/2





WARNING: AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

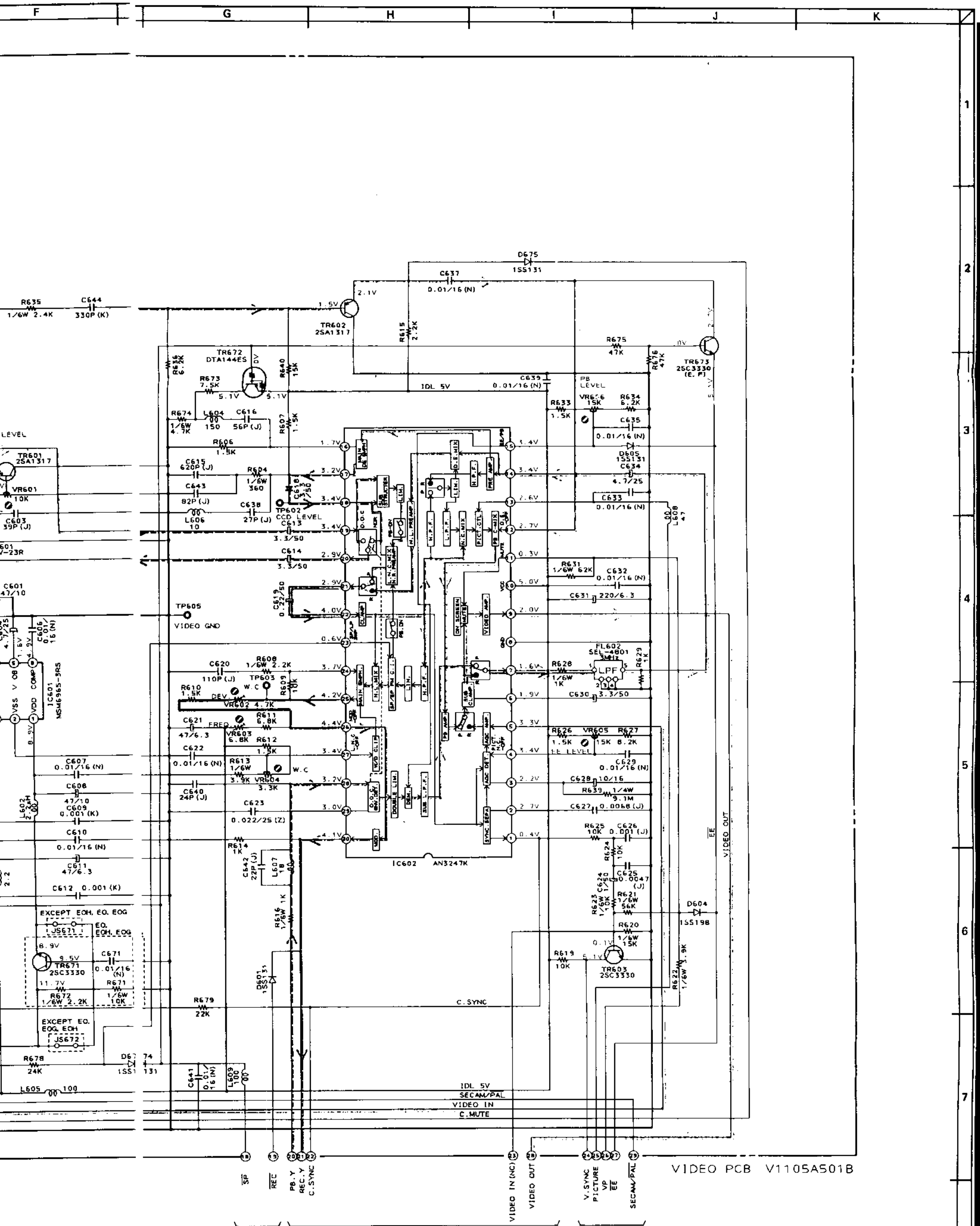
AVERTISSEMENT: ET ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

NOTE: UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS (Ω), 1/10W (1/10), ALL CAPACITORS IN μF (50WV (M)), ALL DIODES ARE 1S5131T, ALL INDUCTORS IN μH (K).

VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 MAIN PCB (2/2)  
 SERVO/SYSCON  
 SCHEMATIC DIAGRAM  
 NO. 15-4 V110504M







TO MAIN PCB (2/2)      TO MAIN PCB (1/2)      TO MAIN PCB (2/2)

NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS (1/8W (J))  
 ALL CAPACITORS IN pF (50V (M))  
 ALL INDUCTORS IN μH (K)

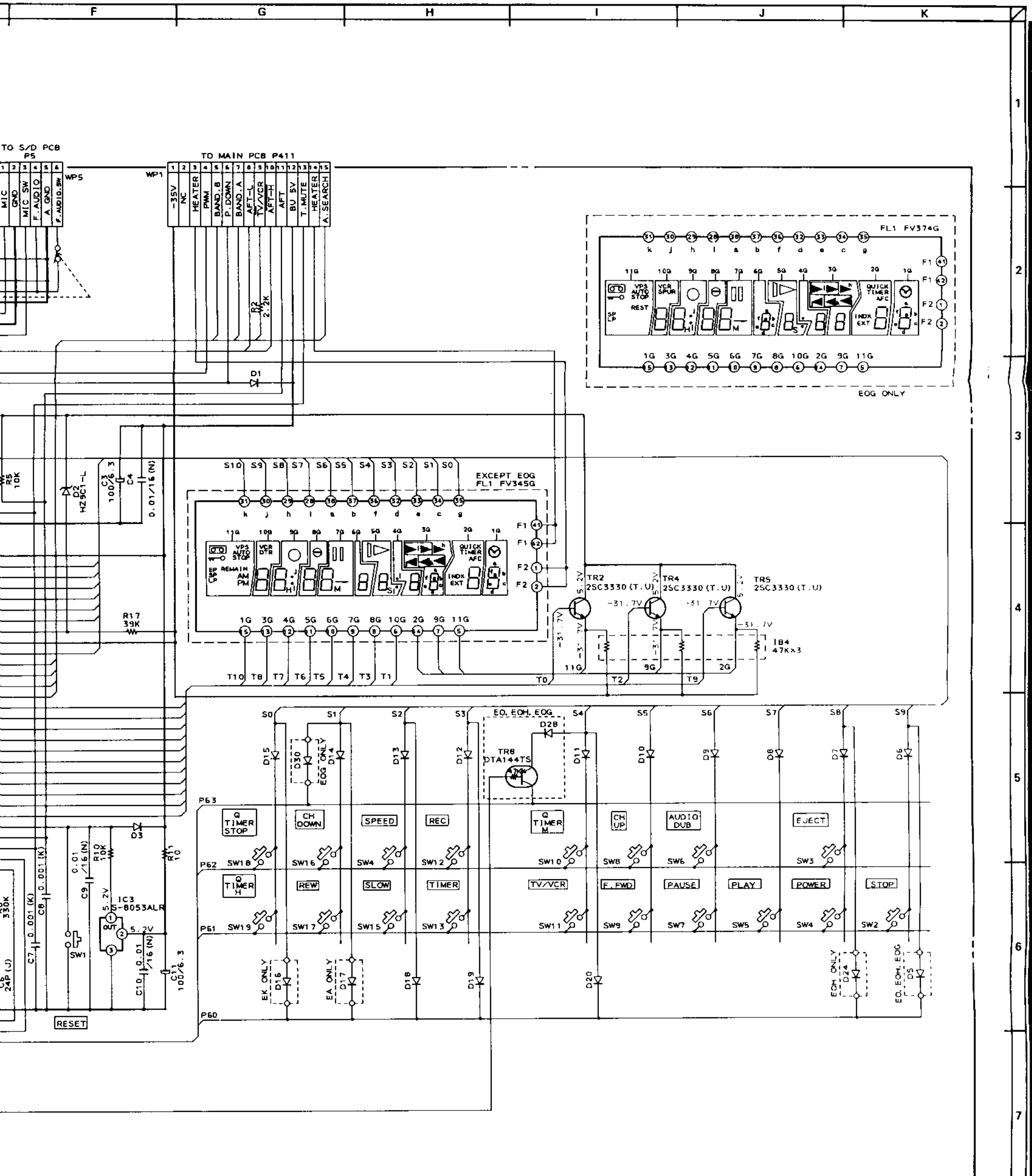
INDICATED VOLTAGES ARE MEASURED IN  
 PB MODE. (TAPE SPEED: SP)

POWER SUPPLY (AL, IDL) LINE  
 POWER SUPPLY (PB or REC) LINE  
 REC Y SIGNAL LINE  
 PB Y SIGNAL LINE  
 REC CHROMA SIGNAL LINE  
 PB CHROMA SIGNAL LINE

VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 VIDEO PCB  
 SCHEMATIC DIAGRAM  
 NO. 15-5 V110505M

1  
2  
3  
4  
5  
6  
7  
8





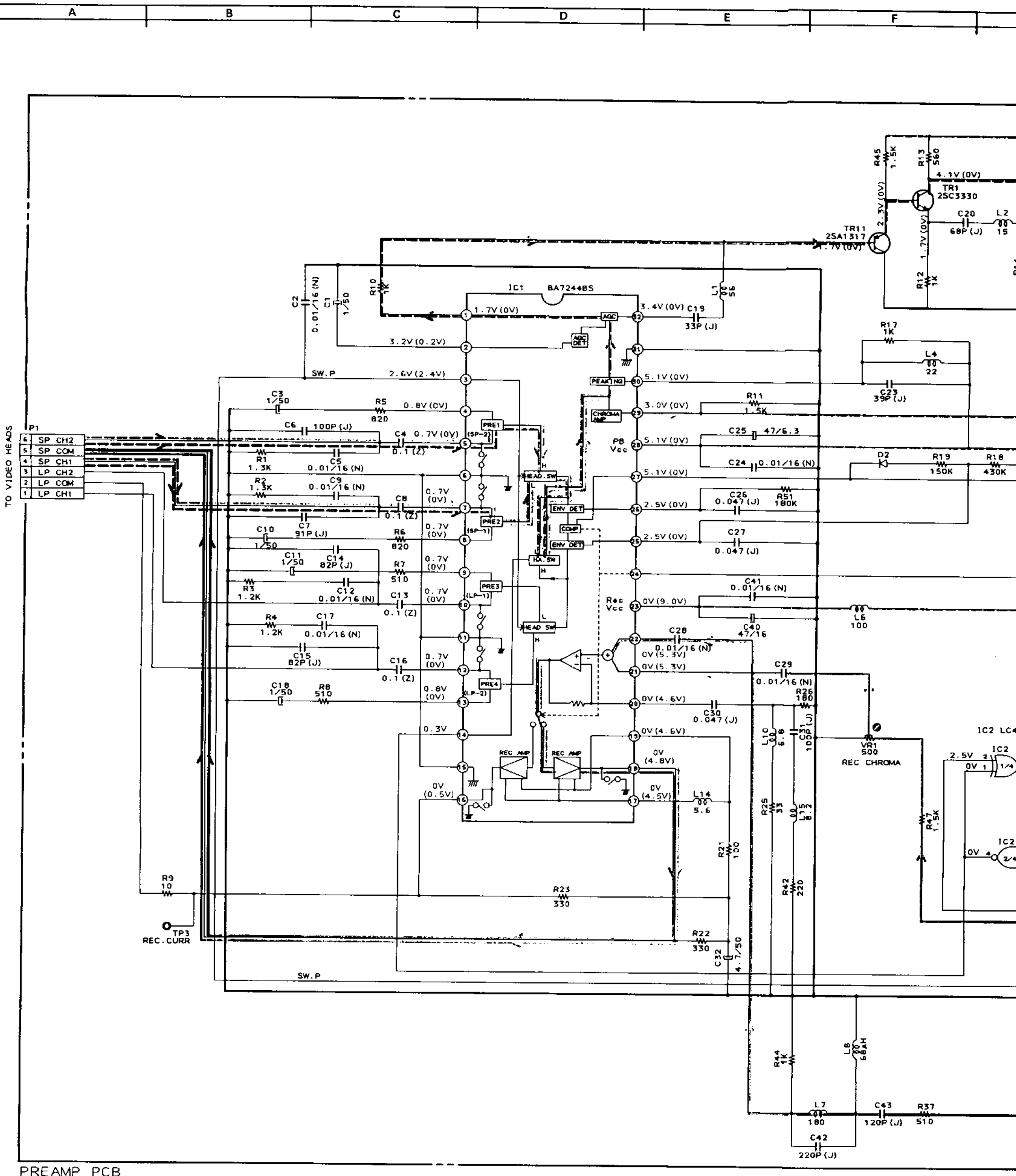
NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/6W(J)  
 ALL CAPACITORS IN  $\mu$ F 50 WV(D)  
 ALL INDUCTORS IN  $\mu$ H(K)  
 ALL DIODES ARE 1SS131T

:B (POWER SUPPLY) LINE

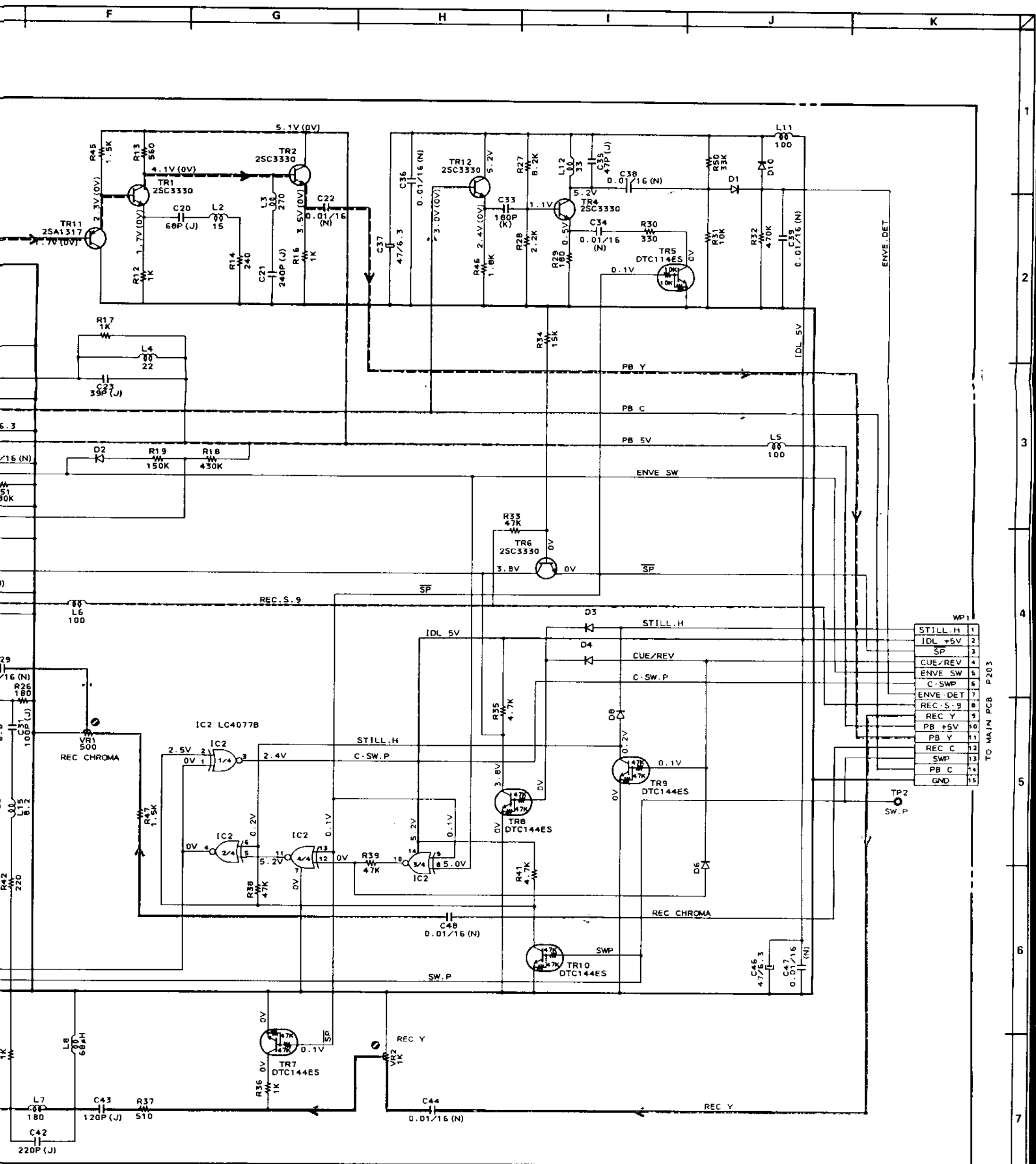
INDICATED VOLTAGES ARE MEASURED  
 IN STOP (E-E) MODE, WITH TAPE LOADED.

VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 OPERATION (B) PCB  
 SCHEMATIC DIAGRAM  
 NO. 15-6 V110506M

1  
2  
3  
4  
5  
6  
7  
8



- POWER SUPPLY LINE (AL, IDL)
- POWER SUPPLY LINE (PB, REC)
- PB Y SIGNAL LINE
- REC Y SIGNAL LINE
- PB CHROMA SIGNAL LINE
- REC CHROMA SIGNAL LINE



WP1

1	STILL.H
2	IDL +5V
3	SP
4	CUE/REV
5	ENVE SW
6	C-SWP
7	ENVE DET
8	REC.S.9
9	REC Y
10	PB +5V
11	PB Y
12	REC C
13	SWP
14	PB C
15	GND

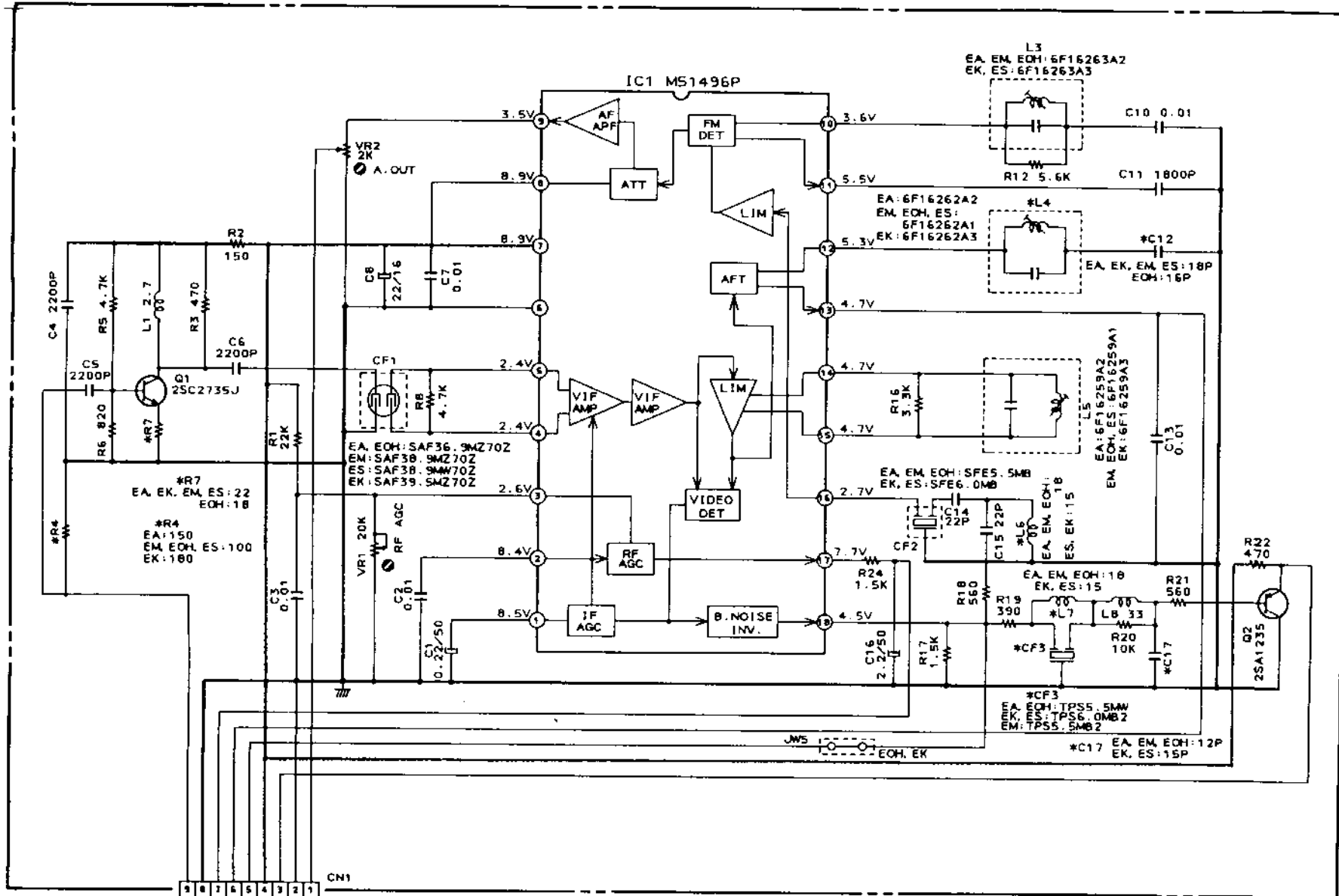
TO MAIN PCB P203

POWER SUPPLY LINE (AL, IDL)  
 POWER SUPPLY LINE (PB, REC)  
 PB Y SIGNAL LINE  
 REC Y SIGNAL LINE  
 PB CHROMA SIGNAL LINE  
 REC CHROMA SIGNAL LINE

NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/6W(J)  
 ALL CAPACITORS IN pF 50WV(M)  
 ALL INDUCTORS IN mH(K)  
 ALL DIODES ARE 1SS131T  
 INDICATED VOLTAGES ARE MEASURED  
 IN PB (SP) MODE.  
 ( ) REC MODE.

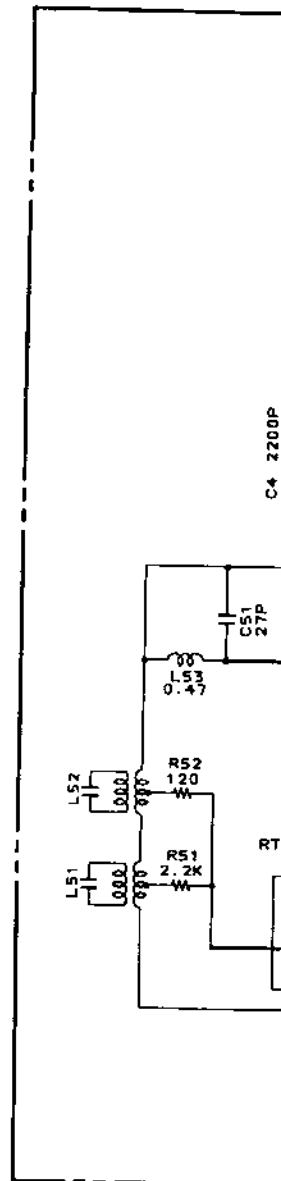
VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 PRE AMP PCB  
 SCHEMATIC DIAGRAM  
 NO.15-7 V110502M

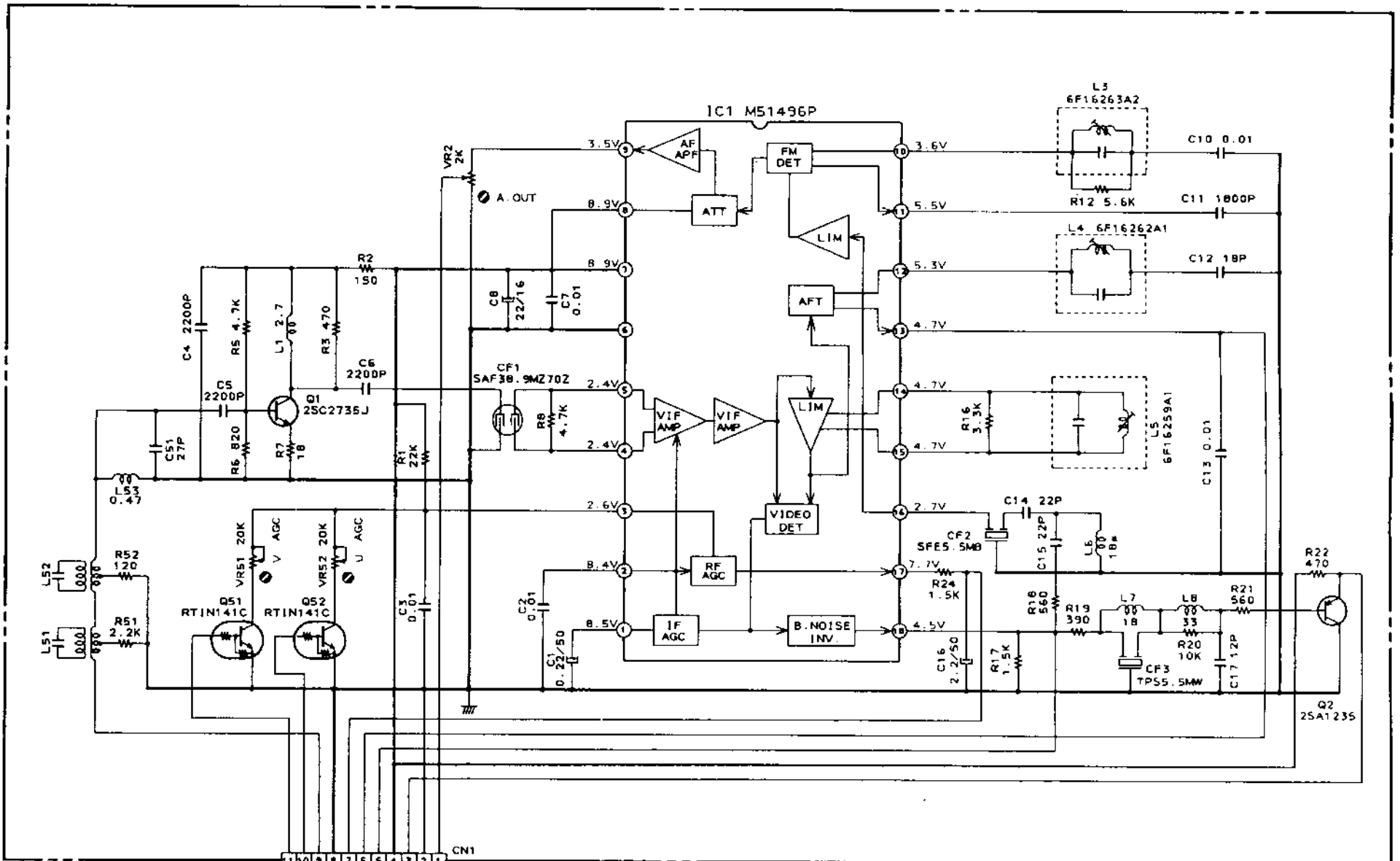
1  
2  
3  
4  
5  
6  
7  
8



VIF UNIT 6B00663A1

(VS-765EA, EK, EM, EOH, ES)  
 (VS-767EK)





10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
 AGC CTL V  
 AGC CTL U  
 IF IN  
 GND  
 RF AGC OUT  
 AFT OUT  
 VPV VIDEO OUT  
 VCC (+9V)  
 VIDEO OUT  
 GND  
 AUDIO OUT

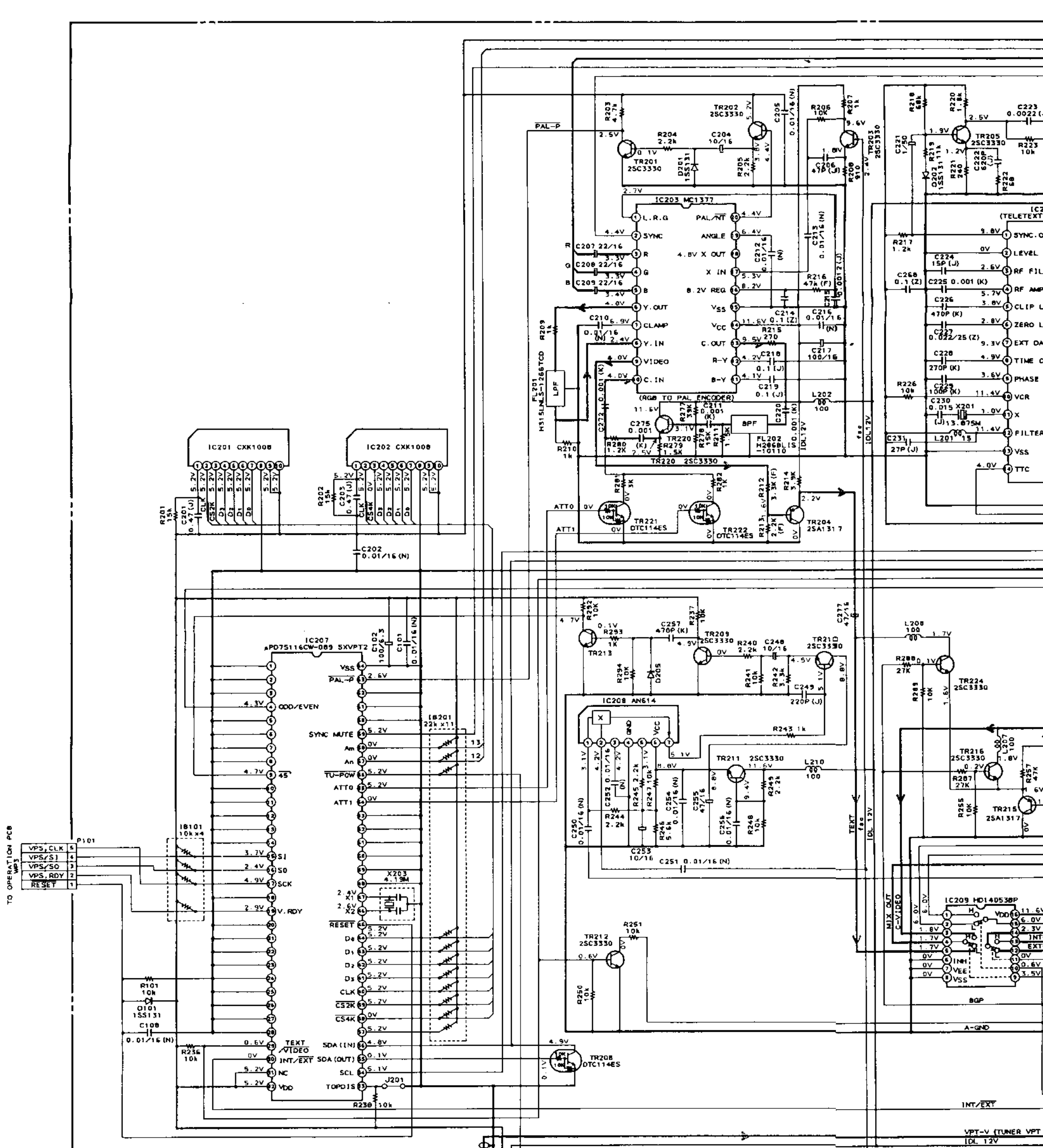
VIF UNIT 6B00667A1

(VS-765EO)  
(VS-767EOG, EOG-V)

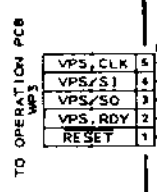
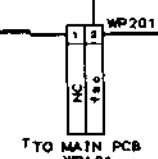
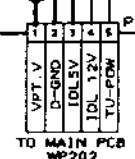
B (POWER SUPPLY) LINE  
 NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/10W(J)  
 ALL CAPACITORS IN pF 50 WV(J)  
 ALL INDUCTORS IN μH(K)

VS-765EA · EK · EM · EO · EOH · ES  
 VS-767EK · EOG · EOG-V  
 VIF UNIT  
 SCHEMATIC DIAGRAM  
 NO. 15-B V110512M

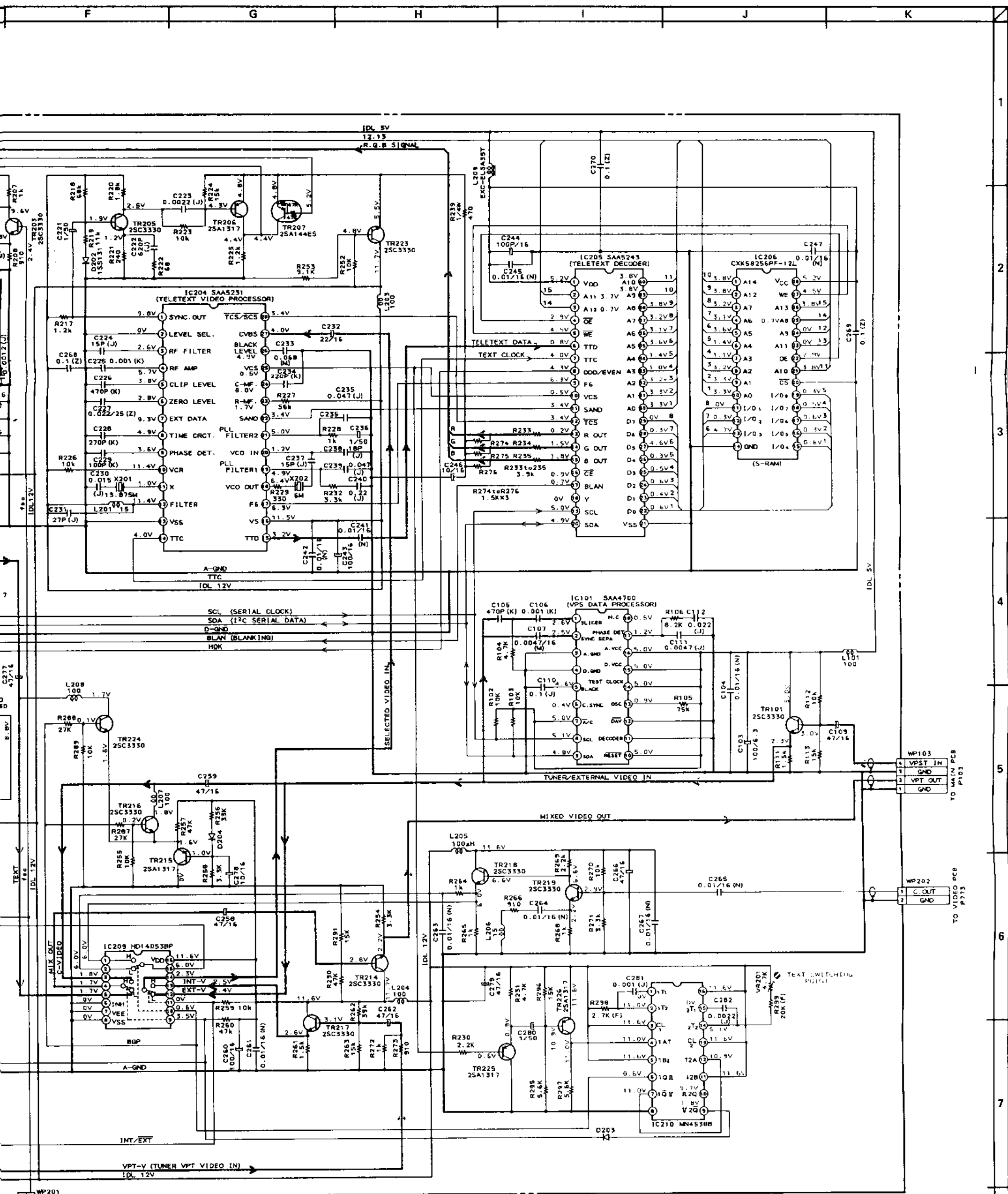




VPT PCB V1102A5090



1  
2  
3  
4  
5  
6  
7  
8



NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/6W(J)  
 ALL CAPACITORS IN  $\mu$ F 50V(M)  
 ALL INDUCTORS IN  $\mu$ H(K)  
 INDICATED VOLTAGES ARE MEASURED  
 IN STOP MODE.  
 (VPT:STATION NAME SETTING MODE.)

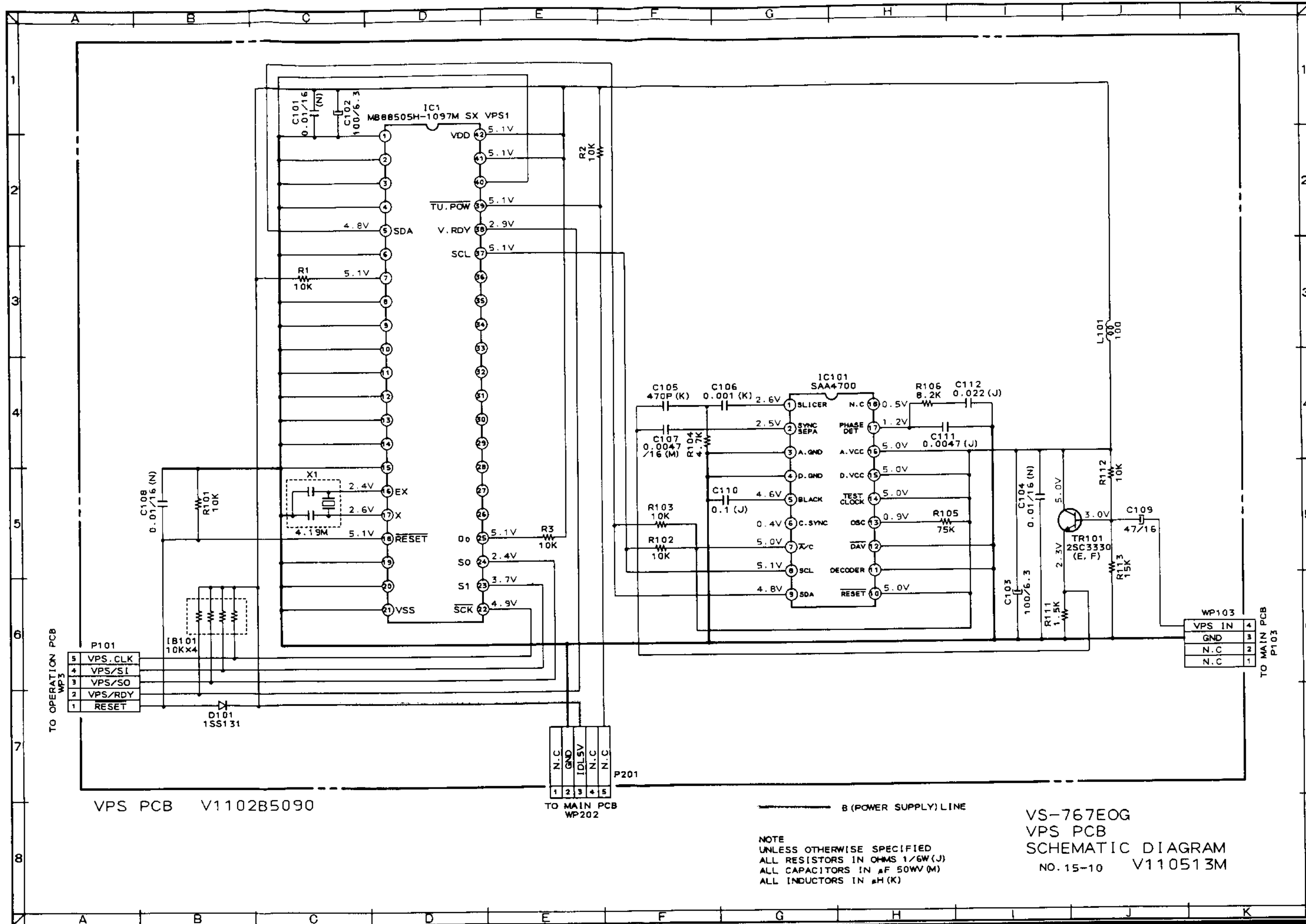
VS-767EOG-V  
 VPT PCB  
 SCHEMATIC DIAGRAM  
 NO. 15-9 V110511M

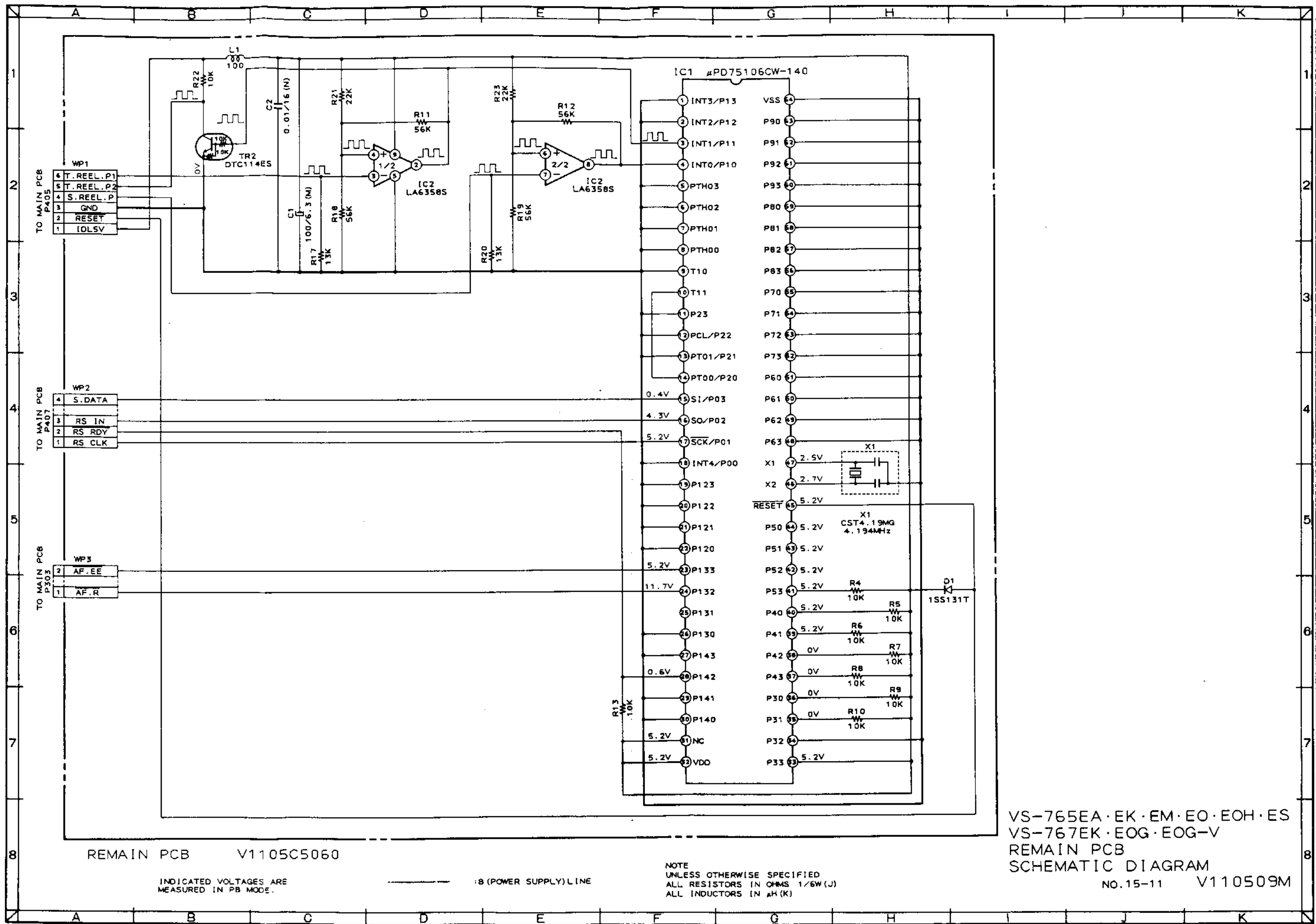
--- (POWER SUPPLY) LINE  
 --- (VIDEO SIGNAL OR TELETEXT DATA) LINE

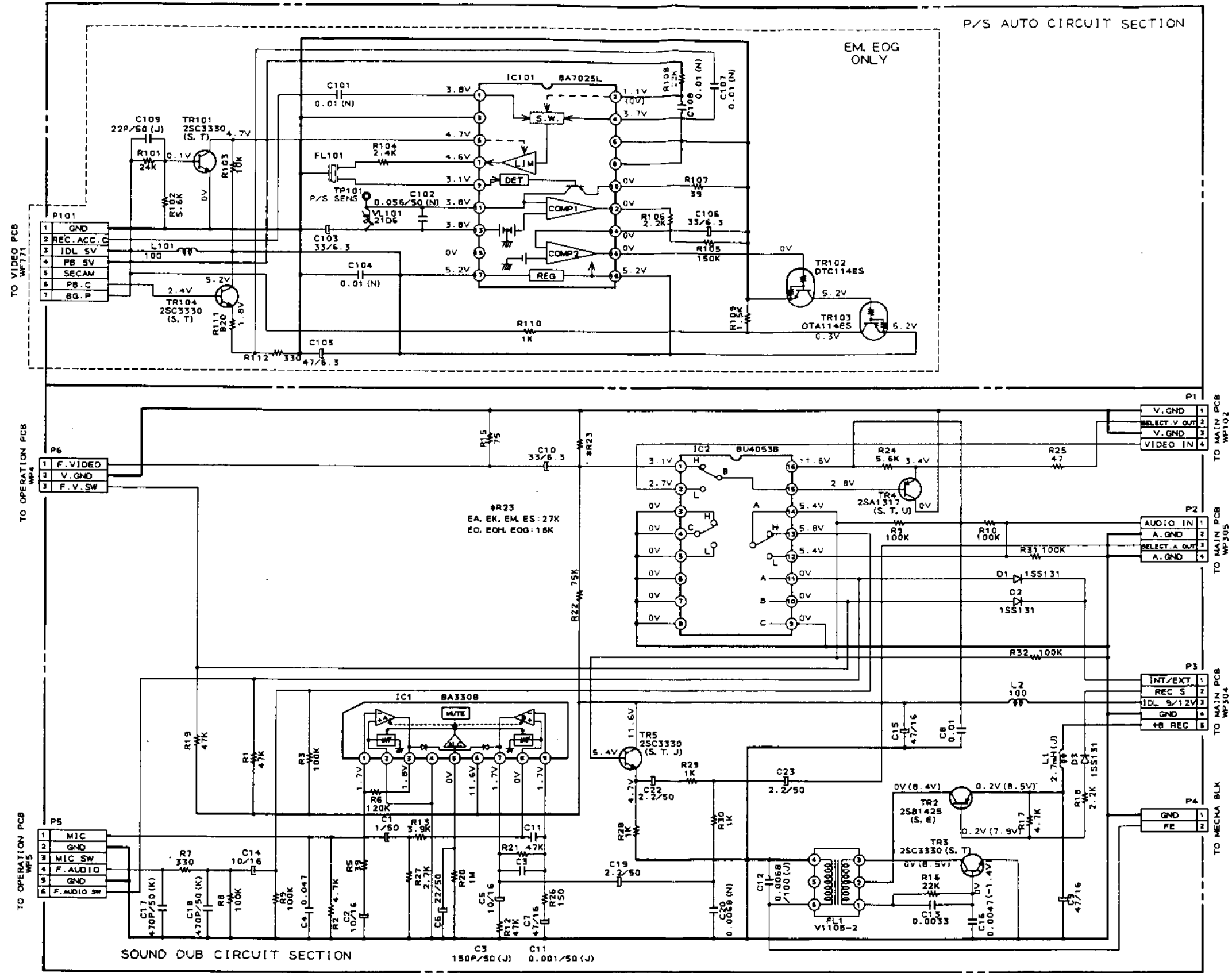
TO MAIN PCB WP101

TO MAIN PCB P103

TO VIDEO PCB P775







S/D & P/S AUTO V1105C5260

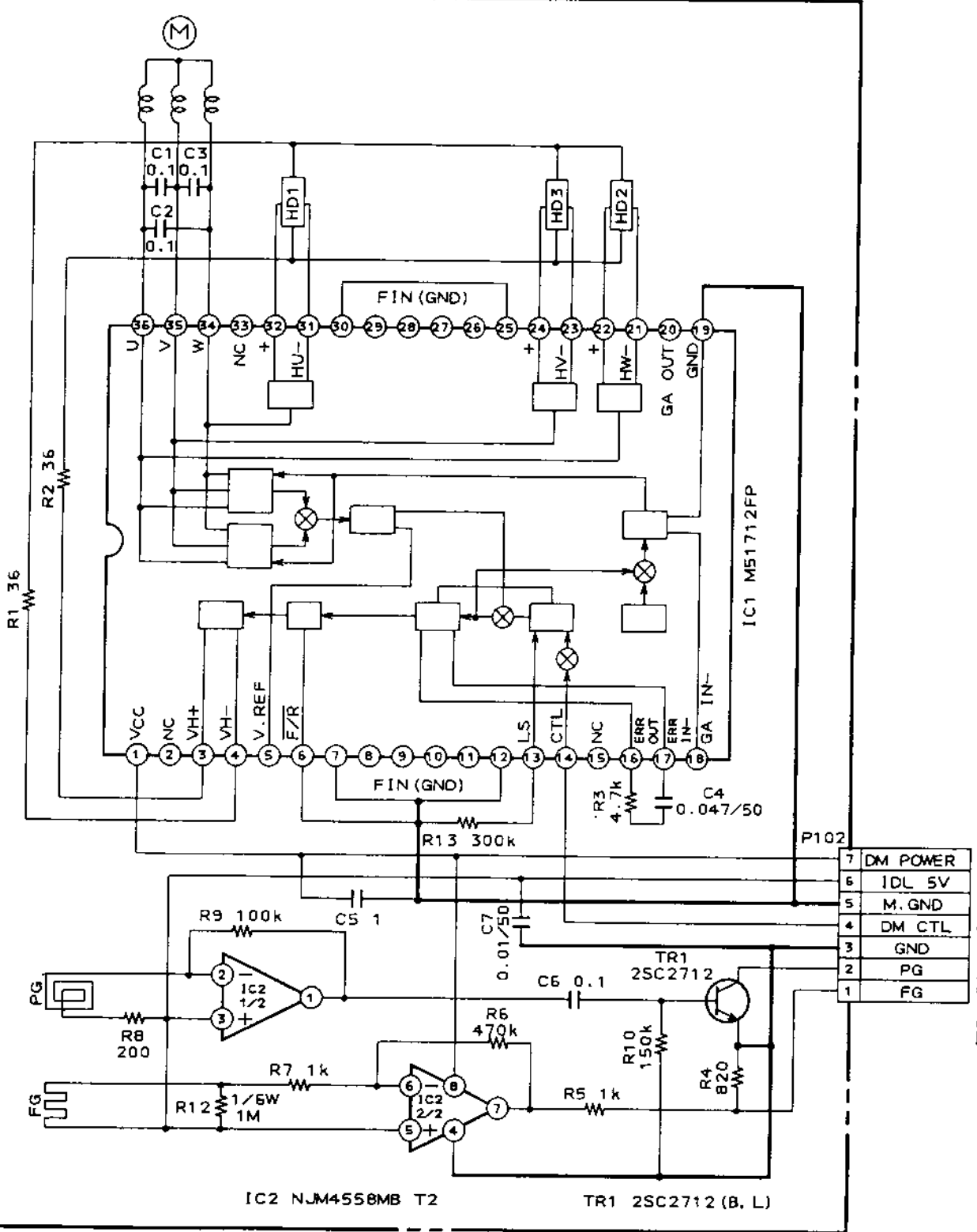
INDICATED VOLTAGES ARE MEASURED IN  
PB MODE (PLAYING BACK PAL RECORDED TAPE).  
( ) REC MODE.

— (POWER SUPPLY) LINE (AL IDL)  
— (POWER SUPPLY) LINE (PB or REC)

NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS 1/6W(J)  
ALL CAPACITORS IN μF 16V(W)  
ALL INDUCTORS IN μH(K)

VS-765EA·EK·EM·EO·EOH·ES  
VS-767EK·EOG·EOG-V  
SOUND DUB & P/S AUTO PCB  
SCHEMATIC DIAGRAM

NO.15-12 V110510M



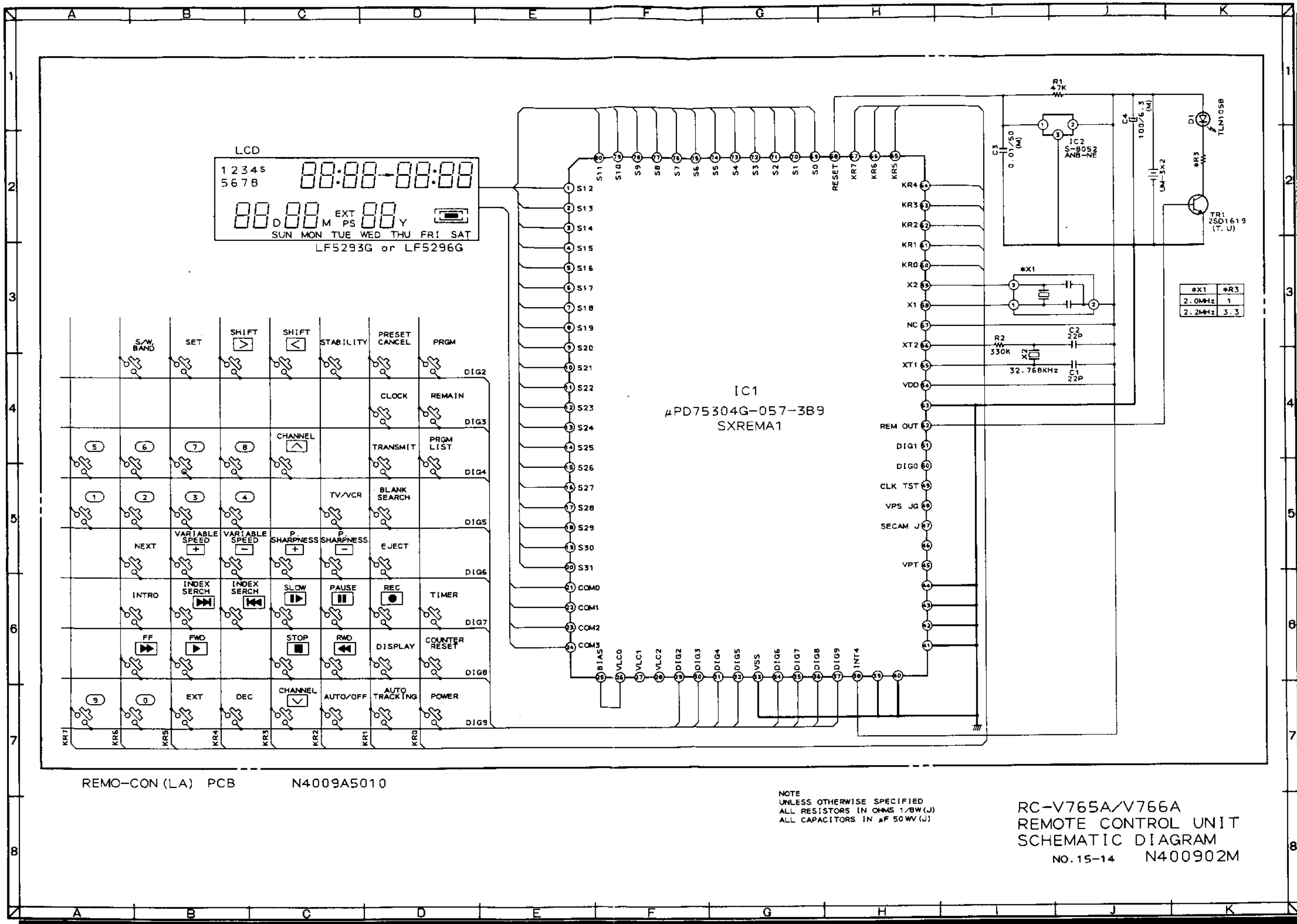
MOTOR PCB M3225D5010

7	DM POWER
6	IDL 5V
5	M. GND
4	DM CTL
3	GND
2	PG
1	FG

TO JUNCTION PCB P1

NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS 1/4W(J)  
 ALL CAPACITORS IN μF 16WV(J)

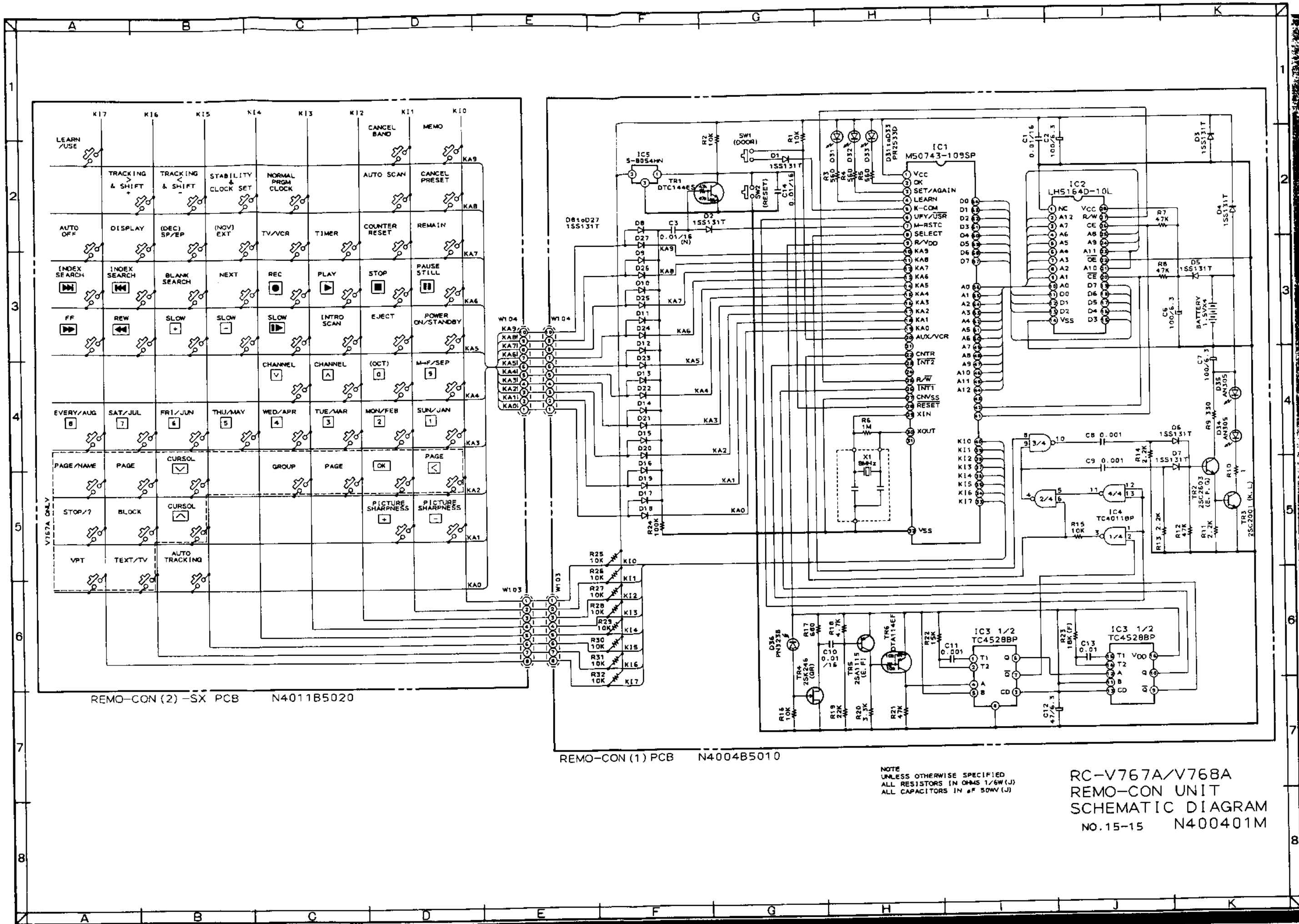
VS-765EA·EK·EM·EO·EOH·ES  
 VS-767EK·EOG·EOG-V  
 MOTOR PCB  
 SCHEMATIC DIAGRAM  
 NO.15-13 V109509F



REMO-CON (LA) PCB N4009A5010

NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS 1/8W(J)  
ALL CAPACITORS IN μF 50WV(J)

RC-V765A/V766A  
REMOTE CONTROL UNIT  
SCHEMATIC DIAGRAM  
NO. 15-14 N400902M

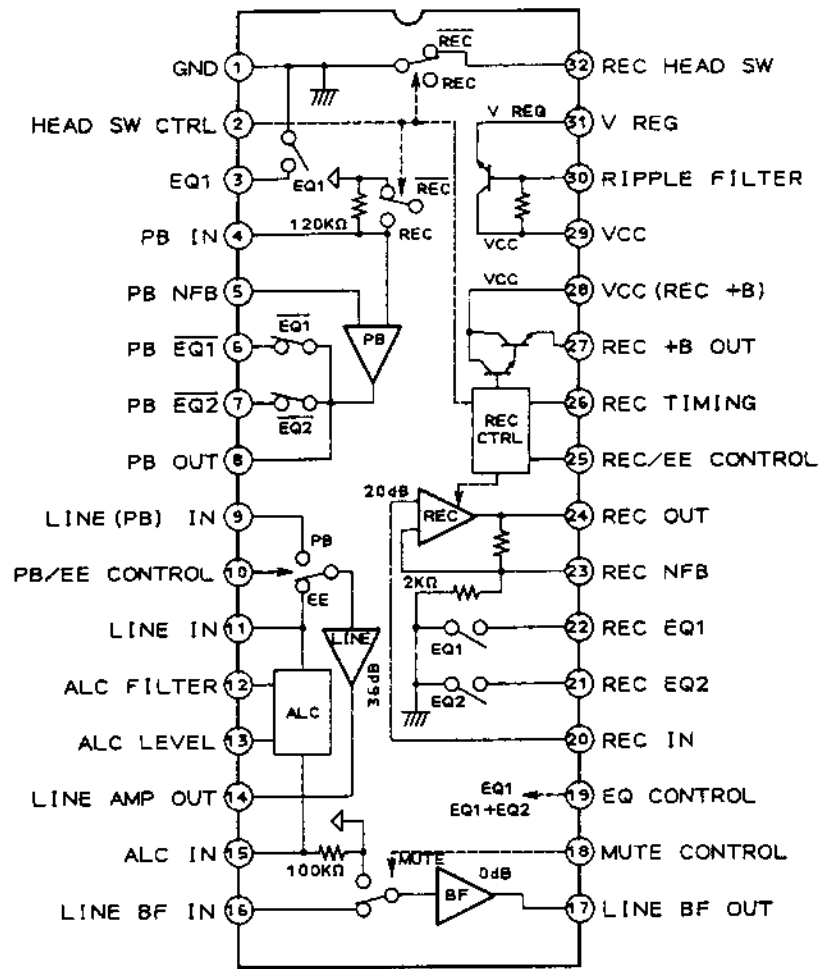


NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS 1/6W (J)  
ALL CAPACITORS IN pF 50WV (J)

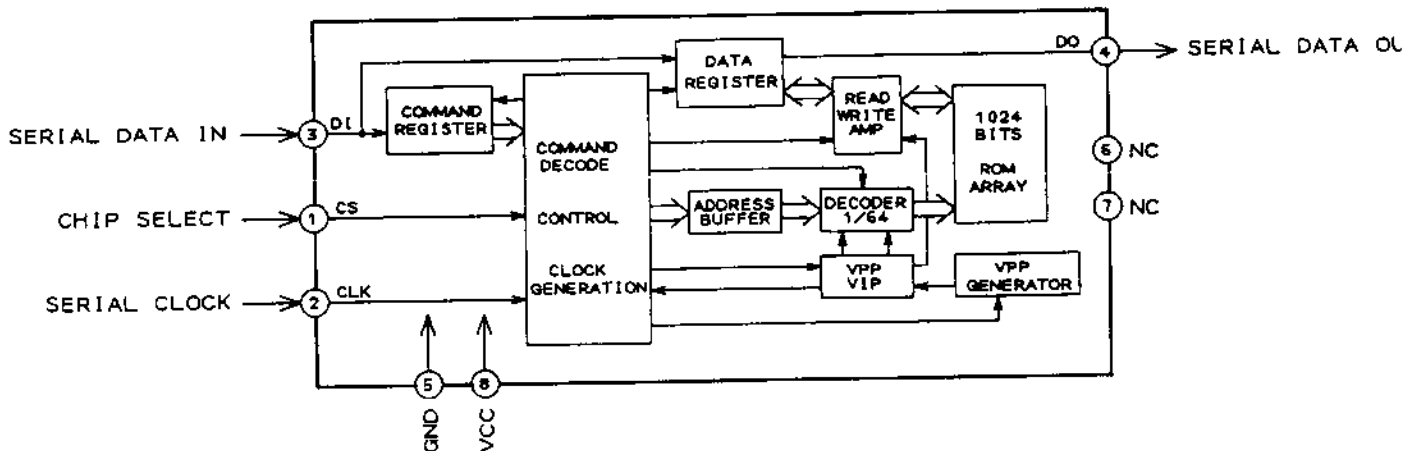
RC-V767A/V768A  
REMO-CON UNIT  
SCHEMATIC DIAGRAM  
NO.15-15 N400401M



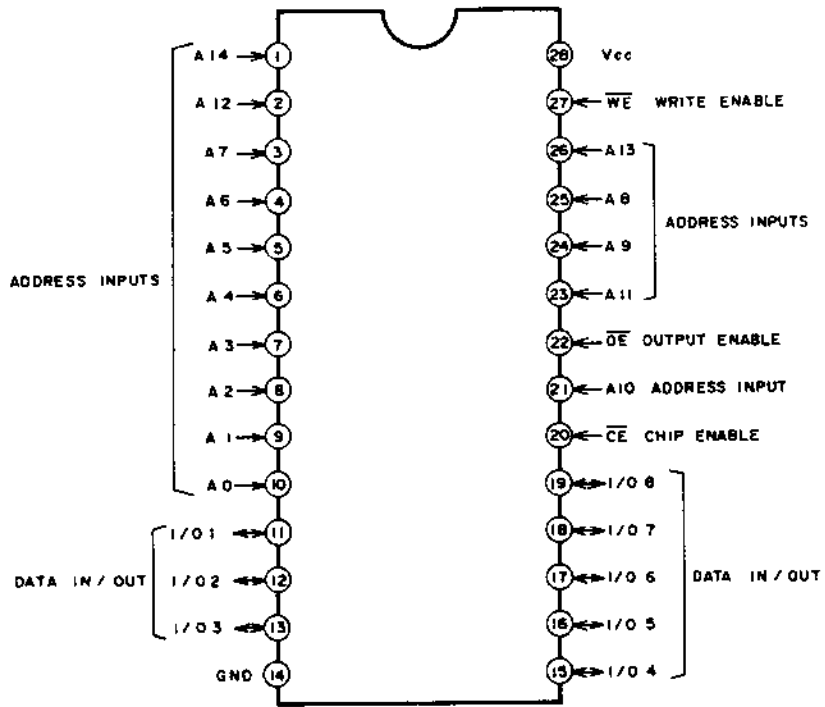
**BA7765AS (AUDIO SIGNAL REC/PB AMPLIFIER)**



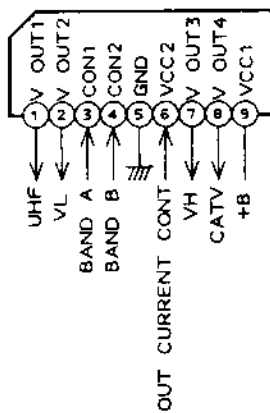
**BR93C46 (64×16BIT EEP ROM)**



CXK58256PF-12L (32768x8 BIT HI-SPEED STATIC RAM)



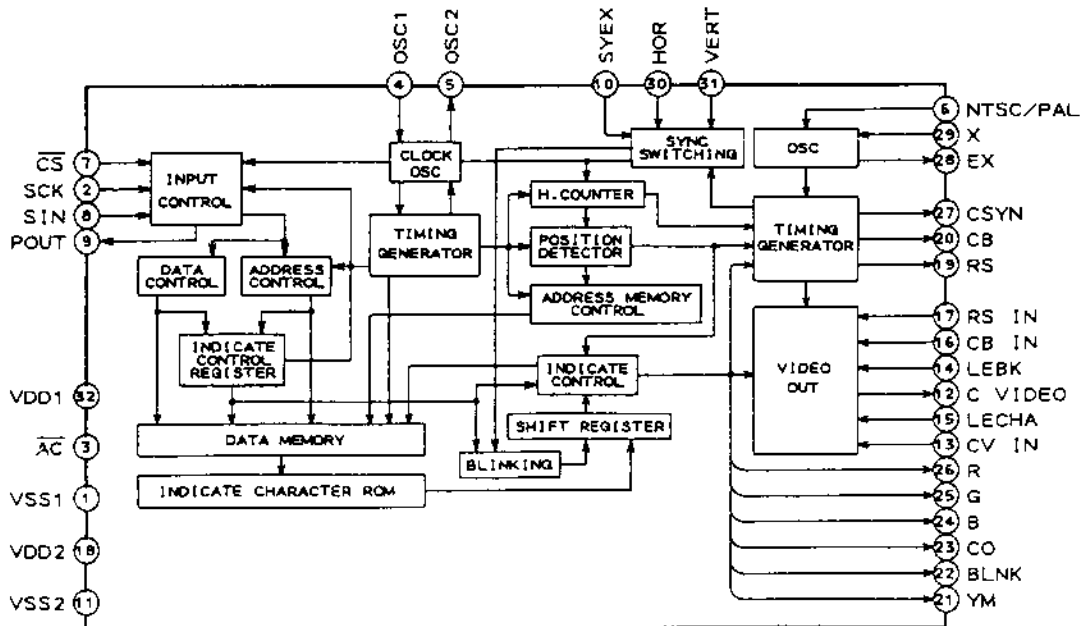
LA7910 (TUNER BAND SELECTOR)



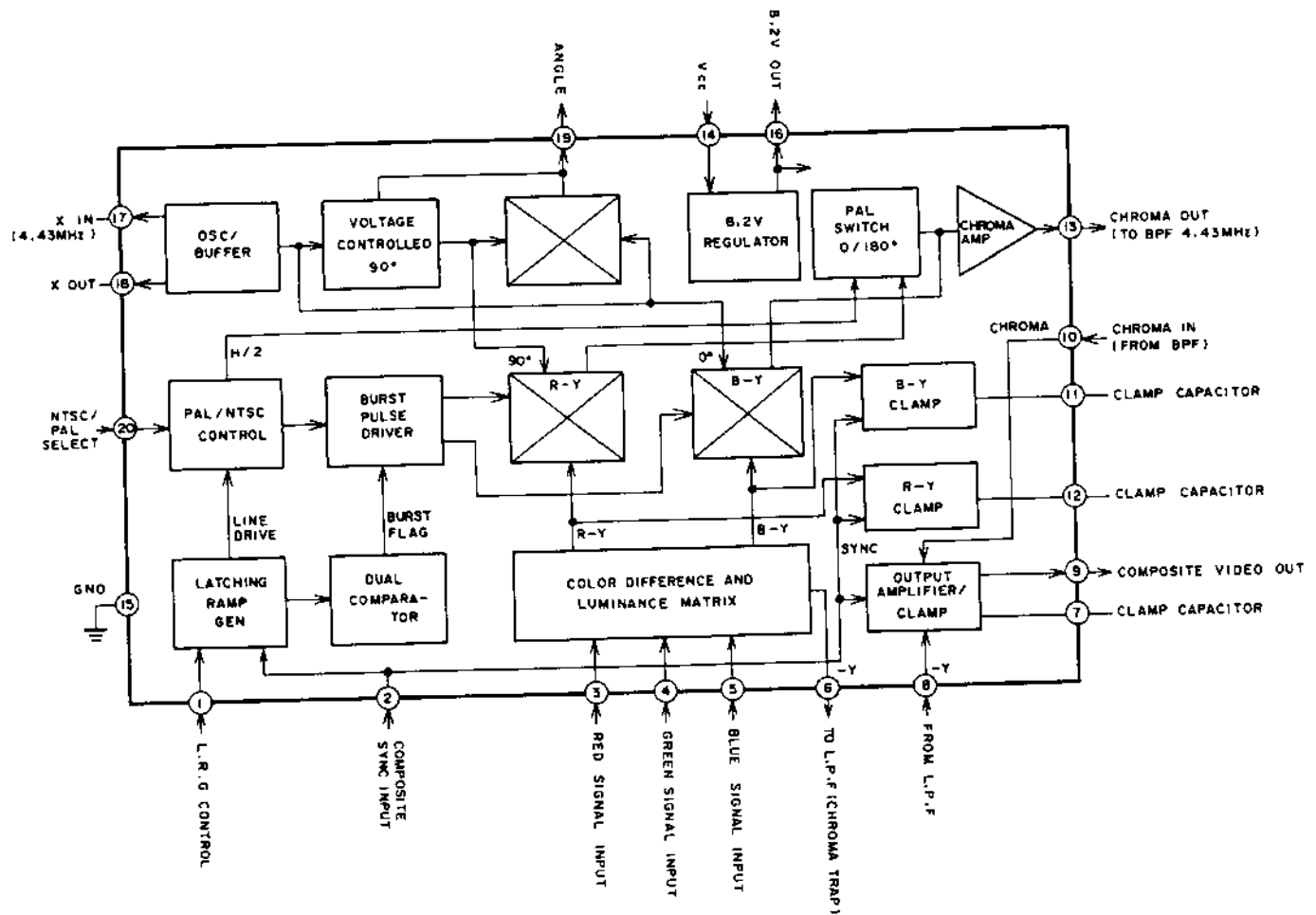
INPUT		OUTPUT			
CON1	CON2	V OUT1	V OUT2	V OUT3	V OUT4
L	L	H	Z	Z	Z
H	L	Z	H	Z	Z
L	H	Z	Z	H	Z
H	H	Z	Z	Z	H

Z: HIGH IMPEDANCE

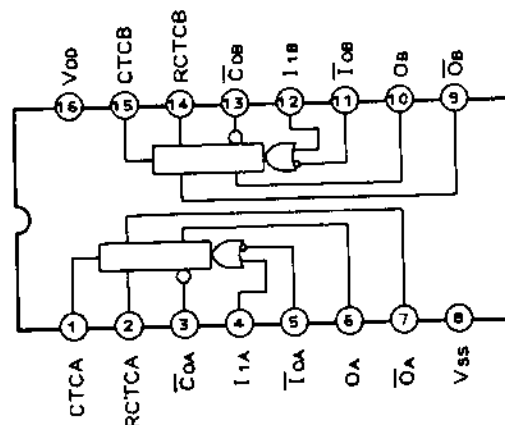
M50455-142SP (CHARACTER GENERATOR)

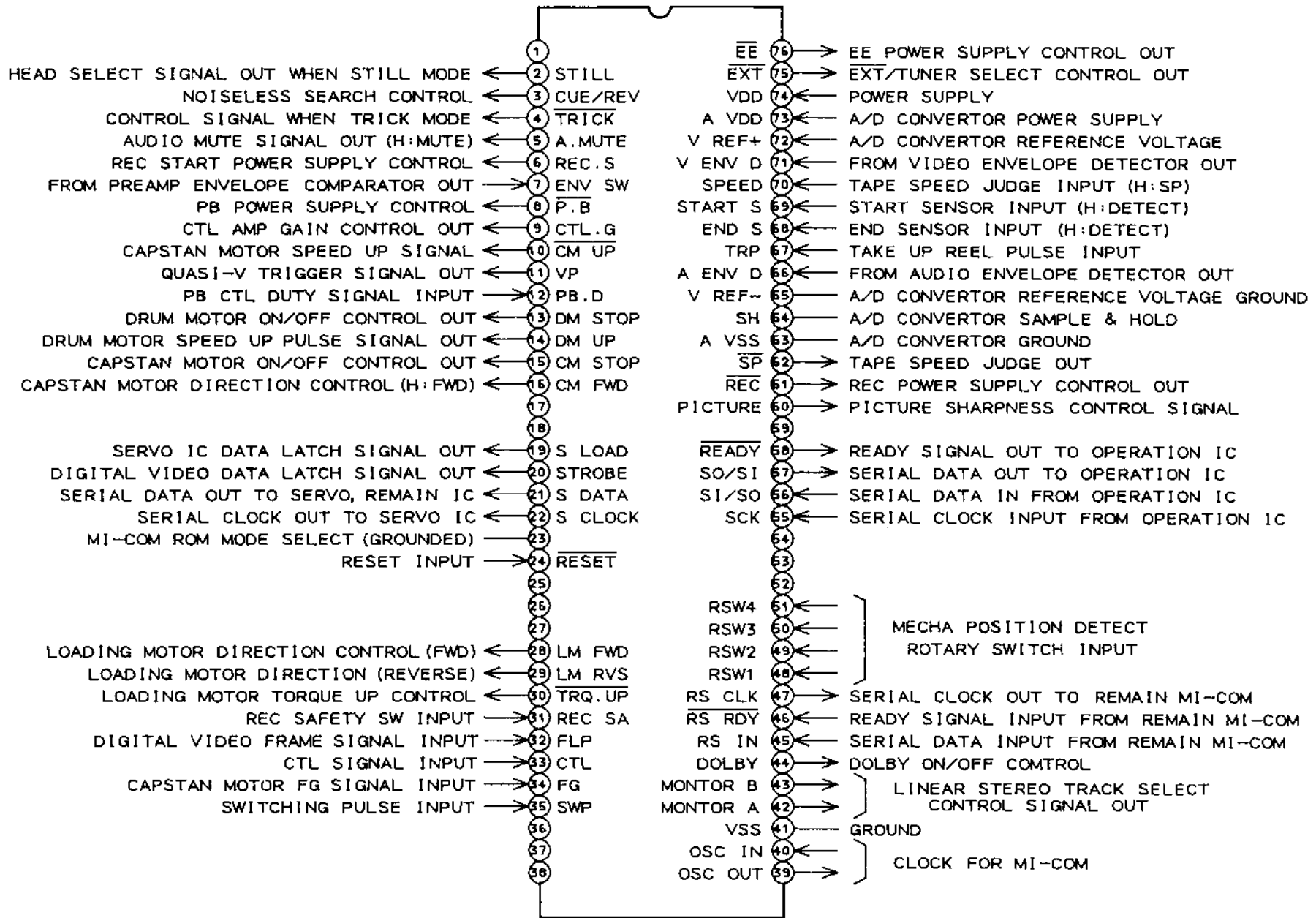


### MC1377 (COLOR TELEVISION RGB TO PAL/NTSC ENCODER)

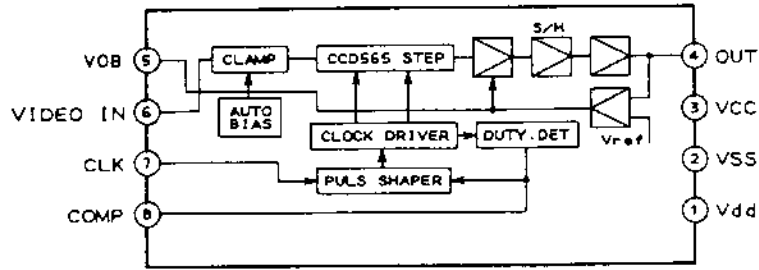


### MN4538B (RESETTABLE MONO-MULTI)

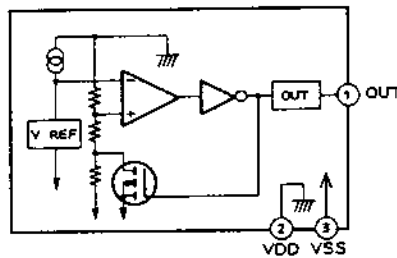




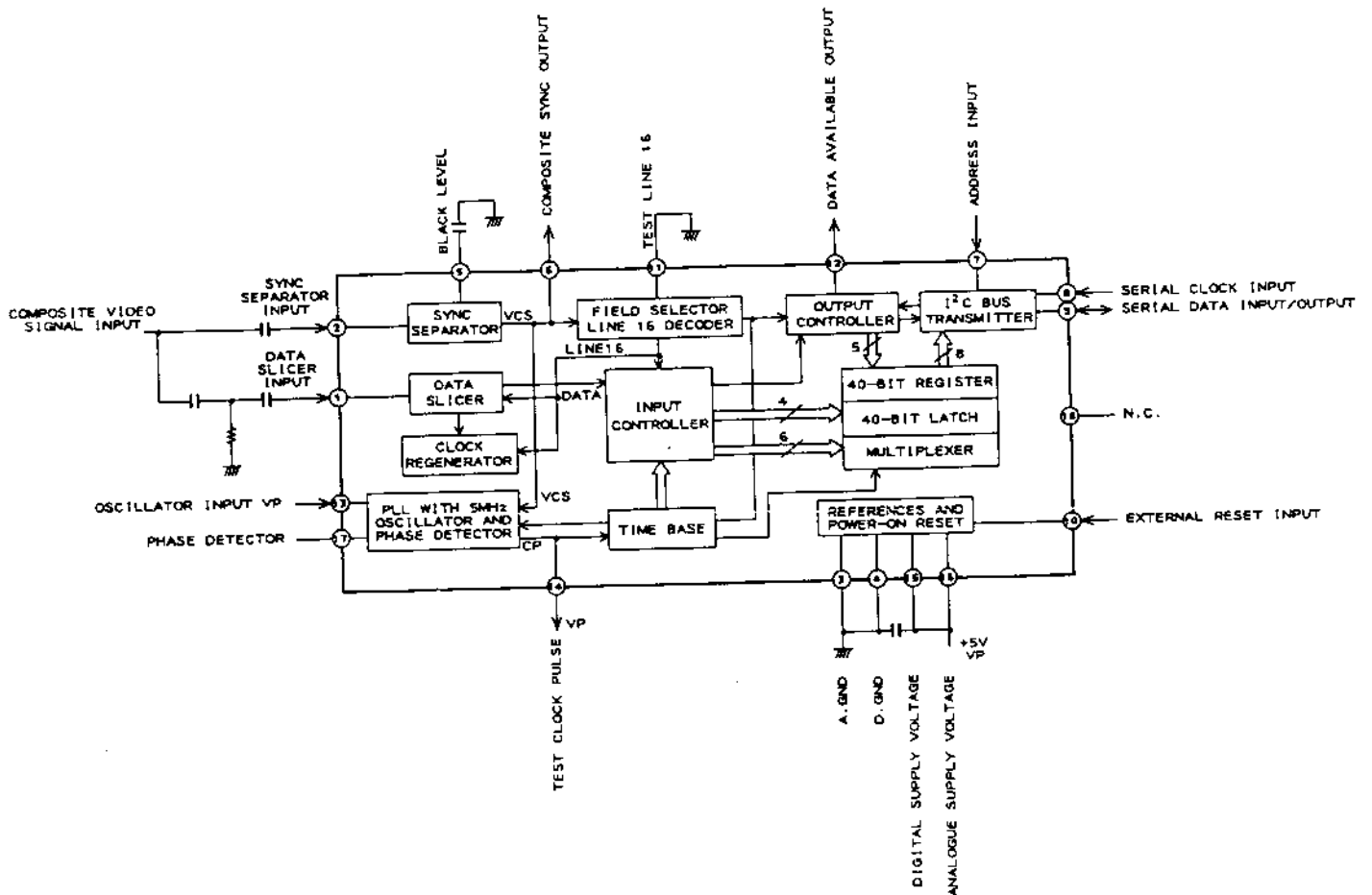
### MSM6965-3RS (IH CCD DELAY LINE)



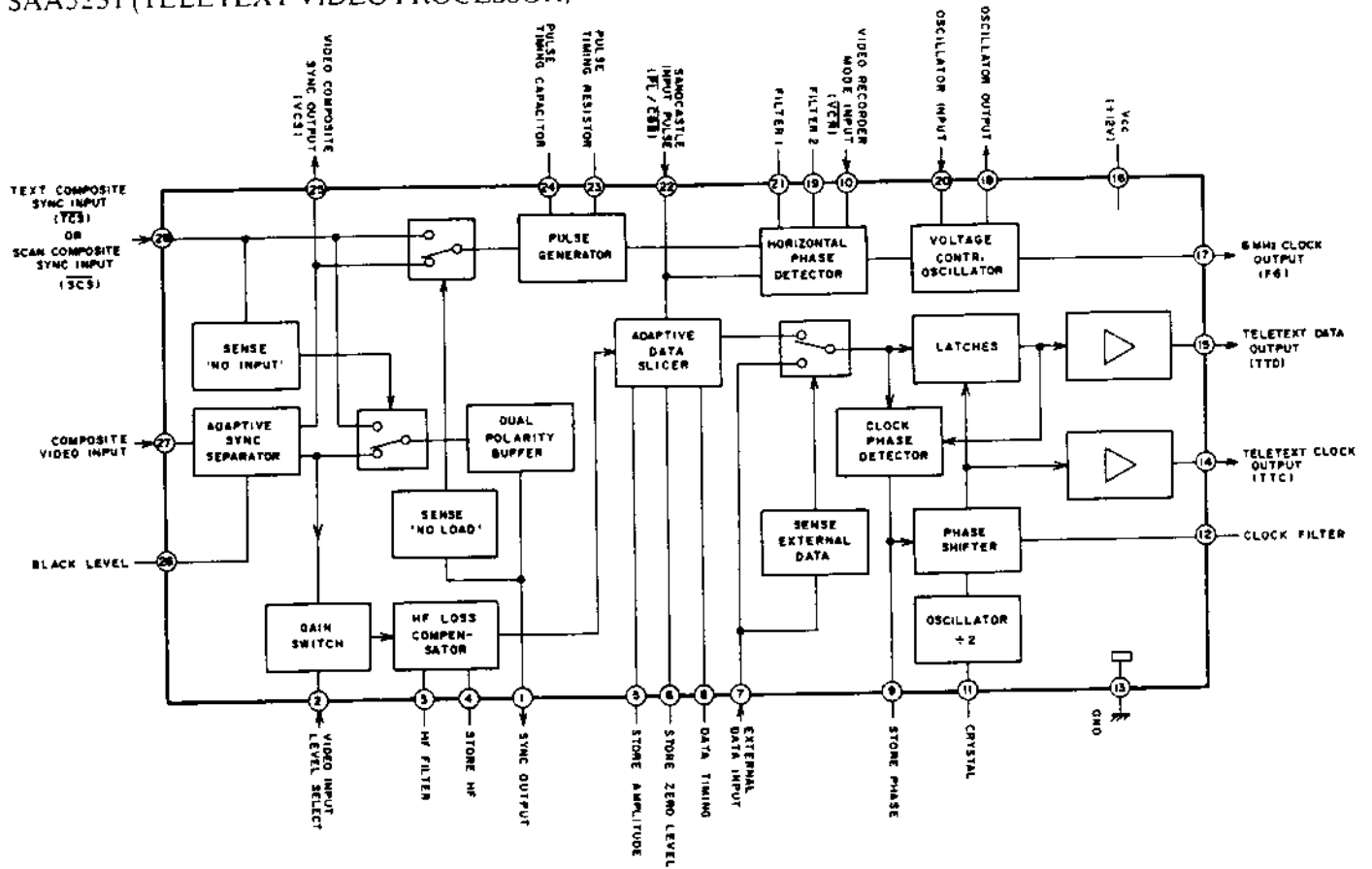
### S-8053ALR (C-MOS VOLTAGE DETECTOR)



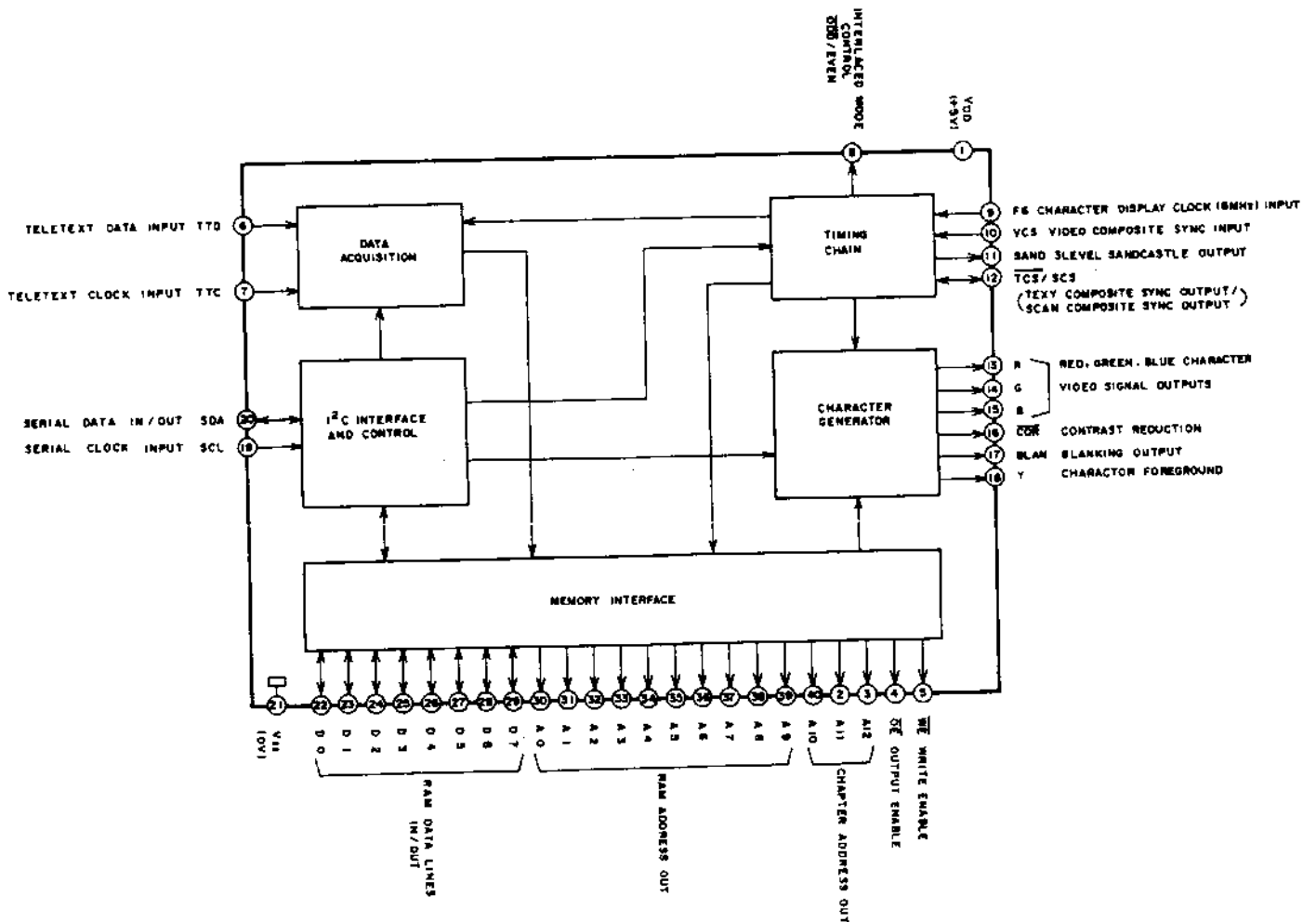
### SAA4700 (VPS DATALINE PROCESSOR)



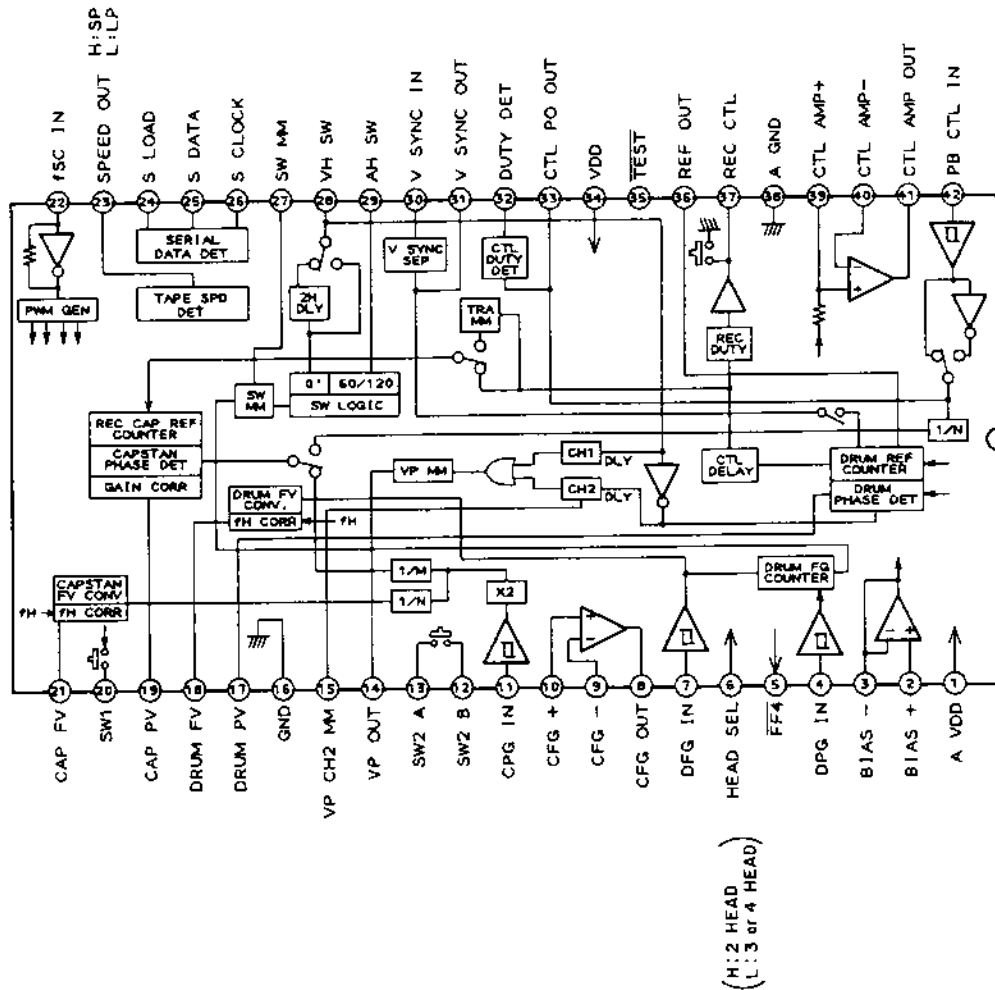
### SAA5231 (TELETEXT VIDEO PROCESSOR)



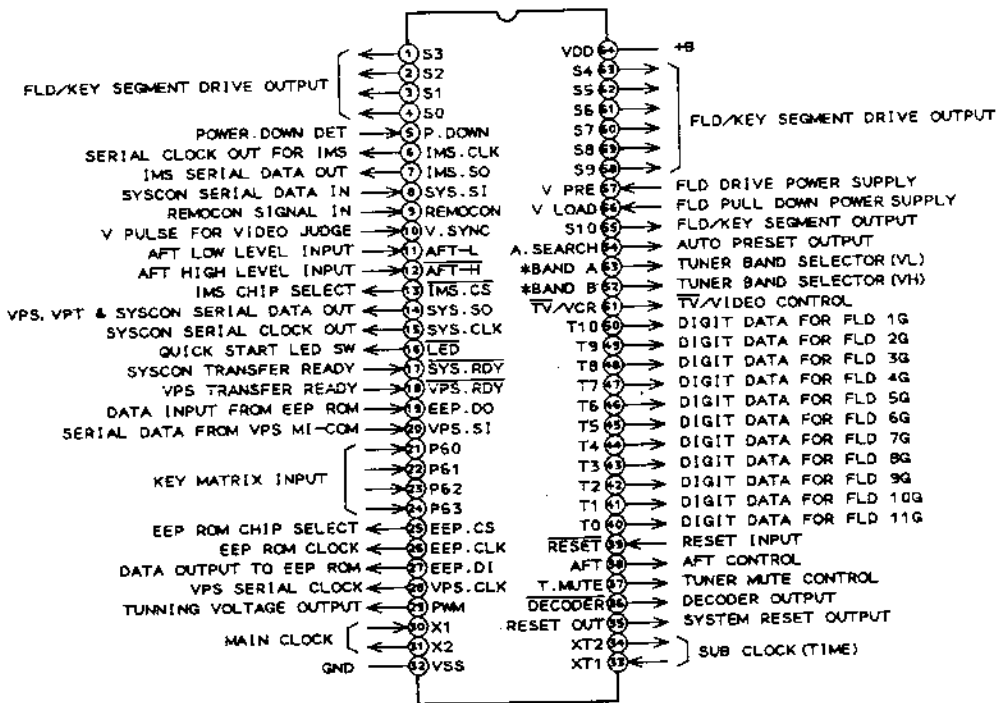
### SAA5243 (ENHANCED COMPUTER CONTROLLED TELETEXT CIRCUIT)



# SX2777AS (DIGITAL SERVO)



# μPD75216A-268 (OPERATION)



μPD75216A-268 (OPERATION)

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	A	B
VL	H	L
VH	L	H
U	L	L