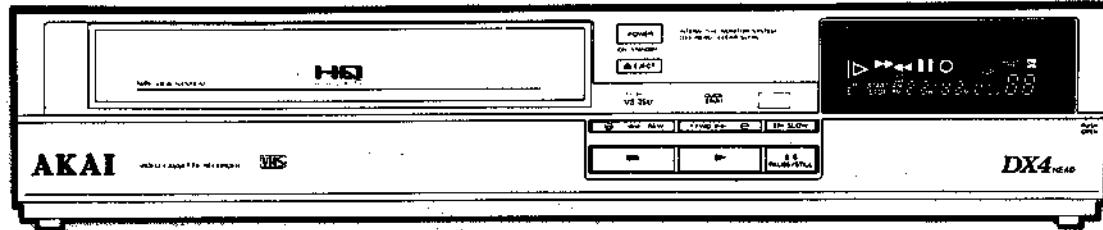


V04934

# AKAI SERVICE MANUAL



## VIDEO CASSETTE RECORDER

### MODEL VS-35U MODEL VS-33U/UM

## SPECIFICATIONS

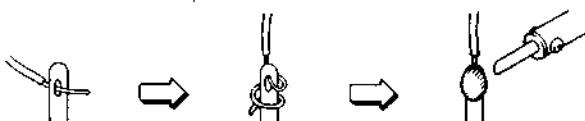
Format . . . . .	VHS standard	Tape speed	
Video recording system . . .	Rotary, slant azimuth two-head helical scan system	SP mode . . . . .	33.35 mm/sec. (1-5/16 i.p.s.)
Rotary heads . . . . .	4 video heads	LP mode . . . . .	16.68 mm/sec. (PB only) (21/32 i.p.s.)
RF input . . . . .	System M VHF ch 2 – 6, 7 – 13 UHF ch 14 – 83 CABLE ch A-1, A-2, A – I, J – W	EP mode . . . . .	11.12 mm/sec. (7/16 i.p.s.)
RF output . . . . .	System M type modulation VHF ch 3, 4 switchable (preset ch 4)	Quick finder	approx. 7 times normal speed
Recording (line input) . . .	525/60, NTSC	SP mode . . . . .	approx. 9 times normal speed
Playback (line output) . . .	525/60, NTSC	EP mode . . . . .	approx. 5 min. with T-120 cassette
Video		FF, REW time . . . . .	
Line input level . . . . .	0.5 – 2.0 Vp-p/75 ohms, unbalanced	Timer	
Line output level . . . . .	1.0 Vp-p/75 ohms, unbalanced	Program VS-35 . . . . .	8 program/1 month and QUICK TIMER
S/N ratio . . . . .	more than 45 dB	VS-33 . . . . .	4 program/1 month and QUICK TIMER
Horizontal resolution . . .	more than 240 lines (SP mode)	Clock reference . . . . .	Quartz crystal
Audio		Display . . . . .	TV screen & FL (Tape counter, Timer etc.)
Line input level . . . . .	-8 dBm/50 K ohms, unbalanced	Power requirements . . . . .	120 V AC, 60 Hz (VS-33U, VS-35U) 110/220 V AC, 50/60 Hz (VS-33UM)
Line output level . . . . .	-6 dBm/ 1 K ohms, unbalanced	Power consumption . . . . .	U: 25W, UM: 21W
S/N ratio . . . . .	more than 40 dB	Operating temperature . . . . .	5°C – 40°C
Frequency response . . . .	70 – 10,000 Hz (SP mode)	Dimensions . . . . .	16.5 (W) x 3.3 (H) x 13.4 (D) inches (425 x 84 x 340 mm)
Recording/playback time . .	160 min. with T-160 cassette on SP mode 480 min. with T-160 cassette on EP mode	Weight . . . . .	12.1 lbs (5.5 Kg)

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

# ★SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the  $\Delta$  symbol parts 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.).

## ★INFORMATION

### Quick Start function

This VCR contains the Quick Start function.

This means that when a cassette tape is inserted into the VCR or the Power is turned on with a cassette tape in the VCR, the tape will be loaded automatically, and at the same time QUICK START indicator will be turned on and the Drum Motor will be started to rotate.

\* If the VCR is neglected in stop mode for several minutes, the Quick Start function will be automatically canceled. Accordingly, QUICK START indicator will be turned off and the Drum Motor will be stopped with the tape loaded. When the Power is turned off with a cassette tape in the VCR, the tape will be unloaded and remain in the VCR.

### Auto functions

This VCR contains the following Auto functions.

1. If a cassette tape is inserted when the POWER is off, the POWER will be automatically turned on.
2. If a cassette tape without its recording safety tab is inserted, the VCR will automatically begin to playback the tape.
3. While a cassette tape without its recording safety tab is in the VCR, if the REC button is pressed, the cassette tape will be ejected automatically.
4. Even if the POWER is OFF, the cassette tape can be ejected by pressing the EJECT button.
5. Between the hours of 23:00 and 6:00, if the VCR is not in use, the front panel display is automatically dimmed to a lower light level.

## **EDIT switch**

The EDIT switch is used only when you want to record from this VCR to another VCR. When recording on another VCR, you may not want to record the Monitor Displays as they appear on this VCR (for example, the PLAY ▶ indicator, STOP ■ indicator etc.), onto the new tape. In that case, set the EDIT switch to ON. Now when you press a tape transport button, the indicator appears only on the VCR's front panel display, not on the TV screen or the new tape.

## **Safety Lock system (Remote control only)**

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

To lock: With the VCR POWER ON, depress and hold the remote control's STOP button for about 8 seconds. An "L" will appear on the front panel display. Tape play will not function until the VCR is unlocked.

To unlock: Depress and hold the remote control's PLAY button for about 8 seconds.

Even if the POWER is turned off, the VCR PLAY mode will remain locked until released. Other modes will remain operable.

## **INDEX SEARCH system (Remote control only)**

This VCR is equipped with the INDEX SEARCH system which allows you to directly locate the beginning of any recorded segment on a tape, within 9 segments of your starting point, in either forward or reverse direction, provided the recording was made on this VCR, or providing the recording is equipped with control signals. Each time a recording is made on this VCR, i.e each time the REC button is pressed, a control signal is automatically recorded along with the program. This means that even while a recording is being made, if you press the REC button again, a new control signal is added to the tape at that point. This feature is very convenient for marking any important point on a tape.

**NOTE:** When you press the REC button to begin recording from the recording standby mode (PAUSE/STILL button), new control signals will not be added.

**Example 1:** To search 4th program

1. Insert a recorded tape.
2. Let's say you are at the beginning of the tape and you want to view the 4th program on the tape. Press the right side of the INDEX SEARCH button 4 times. The VCR display shows the number of programs being searched, 4 in this case, along with the fast forward indicator and the **[S]** indicator. The TV display will also say Index 4. Both displays will count down as the VCR gets closer to the correct program, and then playback of segment 4 will begin automatically.

**Example 2:** To search 11th program then search 5th one from the beginning

1. Imagine that you have recorded 12 individual segments on a tape (Music videos for example). Let's say you want to view segment 11. Press the right side of the INDEX SEARCH button 9 times (the maximum). The VCR will fast forward to the beginning of segment 9 and begin playback.
2. Now press the right side of the INDEX SEARCH button 2 more times and the VCR fast forwards to segment 11 and begins playback.
3. Let's say segment 11 is finished and you want to go back and view segment 5. Since 11 is already finished, press the left side of the INDEX SEARCH button 7 times. The VCR will rewind all the way back to the beginning of segment 5 and begin playback.

## **INTRO SCAN system (Remote control only)**

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

This system also 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. The VCR will immediately fast forward the tape to the beginning of the program and play about the first 8 seconds. Then, the VCR will again fast forward the tape to the beginning of the next recorded segment and again playback the first 8 seconds of the program.

This operation continues until the tape is finished or until you selected another mode (such as PLAY or STOP). While INTRO SCAN is searching, the F.FWD indicator lights and the PLAY indicator flashes. When INTRO SCAN is in playback, the F.FWD indicator flashes and the PLAY indicator lights. The **[S]** indicator lights all the time that INTRO SCAN is working.

## **Double speed playback (Remote control only)**

This VCR can play back a tape at twice its normal speed. (Only a tape recorded at SP speed) Press the **x2** button on the remote control while the tape is in play. No sound will be heard in this mode. Press PLAY to resume normal speed.

# I. DISASSEMBLY

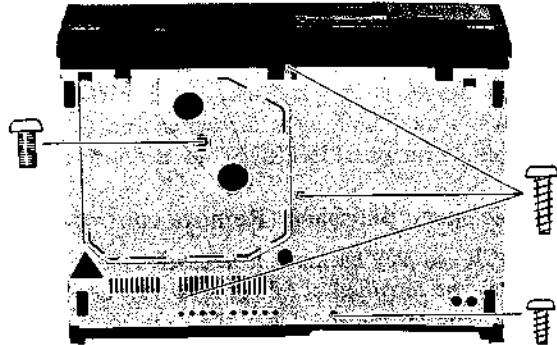
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

\* Photographs employed here are of model VS-35EK.

## 1 Removal of Upper Cover

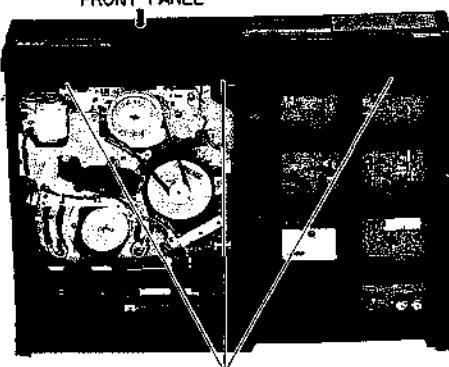


## 2 Removal of Bottom Cover



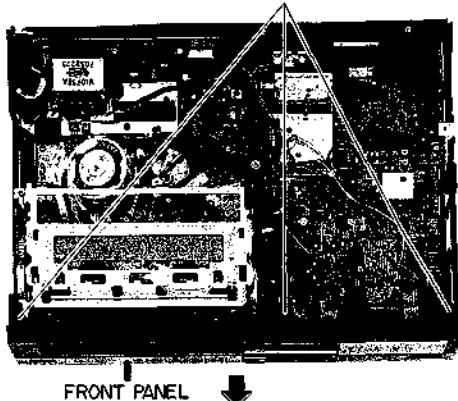
## 3 Removal of Front Panel

FRONT PANEL

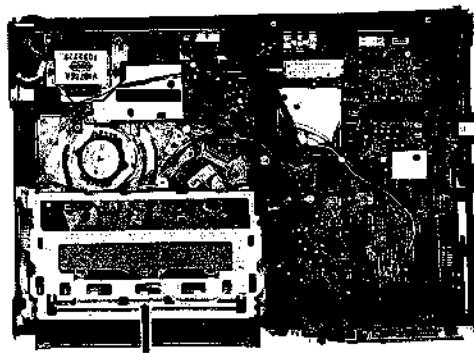


## 4

UNFASTEN THE STOPPERS



## 5



\* Please refer to "4-1-1 REMOVING THE EJECTOR BLK"

## II. CONTROLS

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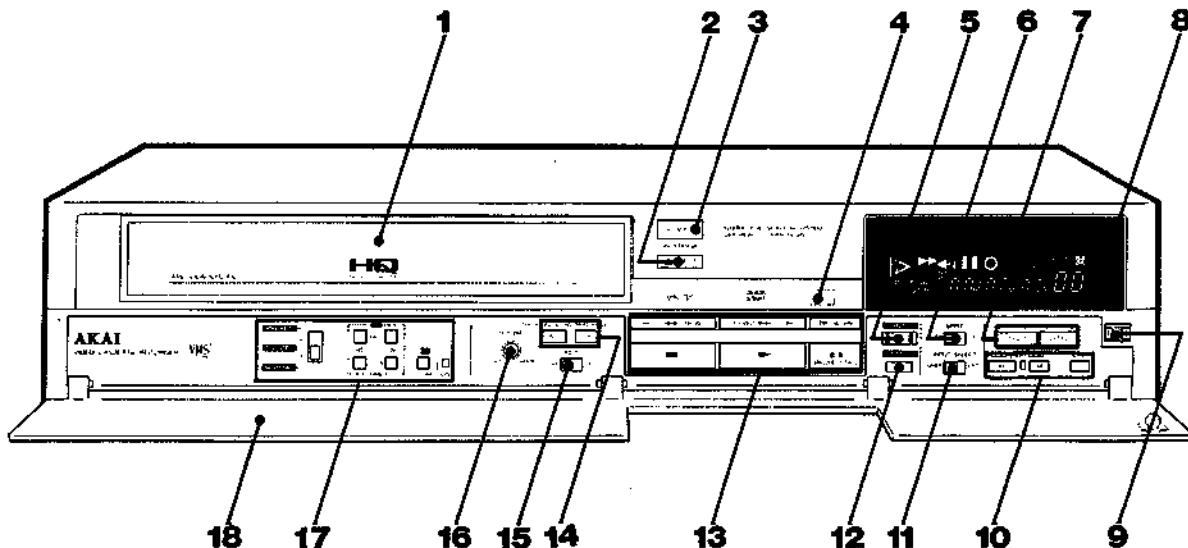


Fig. 2-1 Front View

1. Load the video cassette tape here.
2. EJECT button.  
To eject the video cassette tape.
3. POWER button.  
To turn on and off the Akai VCR.
4. To receive the remote control signal from the Akai Wireless Remote Control Unit.  
\* Keep this window clean for remote control operation.
5. REC (Recording) button.
6. Tape SPEED selector.  
To set the tape speed for recording.
7. CHANNEL selector.  
To select a preset channel with the built-in tuner of the VCR.
8. VCR FL (Fluorescence) display.  
Tells you what the VCR is doing.
9. Sub-panel door latch.
10. QUICK TIMER buttons.  
To preset recording end time or quick programme recording.
11. INPUT SELECTOR switch.  
To switch between internal tuner and external input.
12. TIMER button.  
To stand by for automatic recording.
13. Tape transport buttons.  
To run the tape for recording or playback.
14. TRACKING/SLOW TRACKING control.  
To fine tune the play back picture.
15. EDIT switch.  
For removing the on-screen characters when making a tape on another VCR.
16. SHARP/SOFT PICTURE control.  
To soften or sharpen the video picture.
17. Tuning controls.  
To tune in preset channels.
18. Sub-panel door.

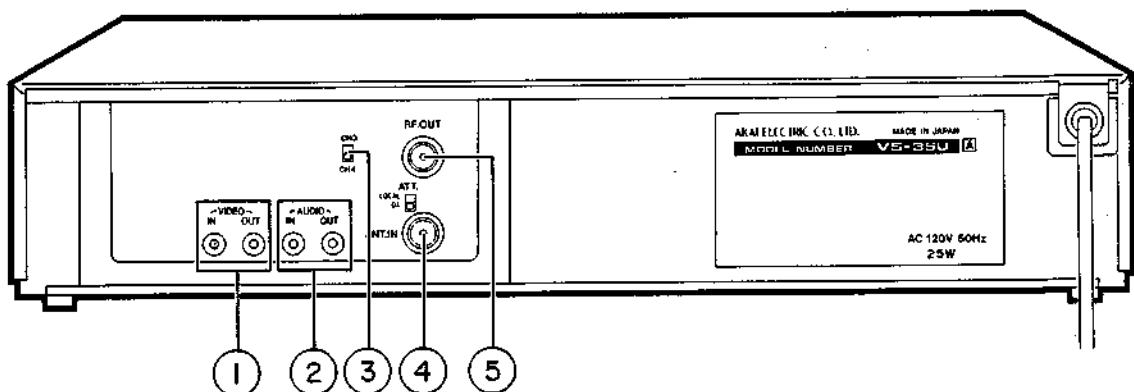


Fig. 2-2 Rear View

1. VIDEO IN/OUT JACKS
2. AUDIO IN/OUT JACKS
3. RF OUT CH. ADJ.
4. ANT. IN JACK
5. RF OUT TERMINAL

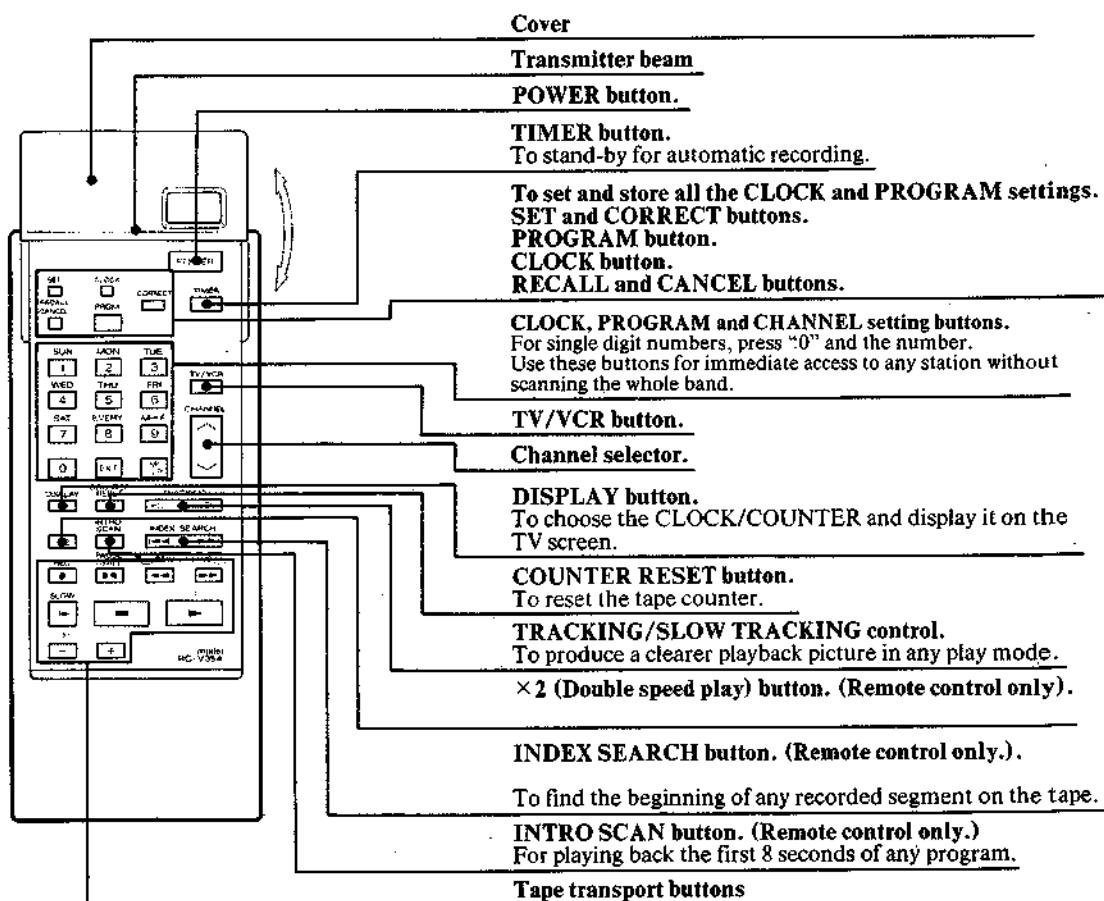


Fig. 2-3 Remote Control Unit

- \* The remote control contains operation buttons which are used the same way as the operation buttons on the front panel of the Akai VCR, and many which appear on the remote control only. The remote control can be used from a distance of up to 5 meters.

### III. PRINCIPAL PARTS LOCATION

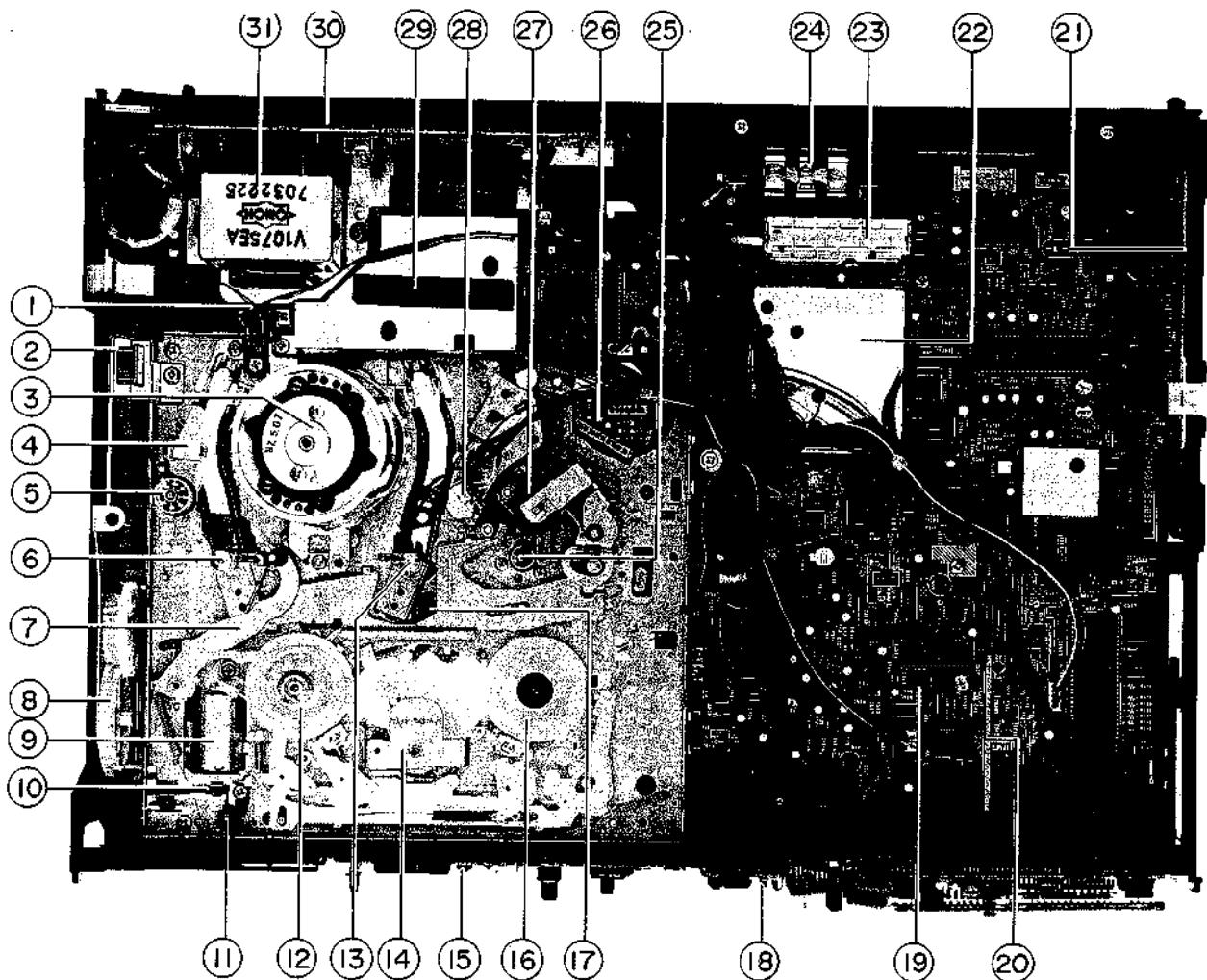


Fig. 3-1 Top View

- |                                 |                        |
|---------------------------------|------------------------|
| 1. TR PCB                       | 17. SENSOR LED         |
| 2. DIODE PCB                    | 18. OPERATION PCB      |
| 3. HEAD DRUM BLK                | 19. MAIN PCB           |
| 4. FULL TRACK ERASE HEAD        | 20. SUB PCB            |
| 5. SUPPLY TAPE GUIDE            | 21. CHROMA PCB         |
| 6. S. LOADING LEADER (LEFT)     | 22. VIF UNIT           |
| 7. TENSION ARM                  | 23. TUNER UNIT         |
| 8. LOADING MECH. BLK.           | 24. RF CONVERTOR UNIT  |
| 9. LOADING MOTOR                | 25. CAPSTAN SHAFT      |
| 10. LOADING BELT                | 26. CAPSTAN MOTOR PCB  |
| 11. REC SAFETY SWITCH           | 27. PINCH ROLLER       |
| 12. SUPPLY REEL TABLE           | 28. AUDIO/CONTROL HEAD |
| 13. T.U. LOADING LEADER (RIGHT) | 29. PRE AMP PCB        |
| 14. CLUTCH BLK                  | 30. POWER SUPPLY PCB   |
| 15. PRESET PCB                  | 31. POWER TRANSFORMER  |
| 16. TAKE-UP REEL TABLE          |                        |

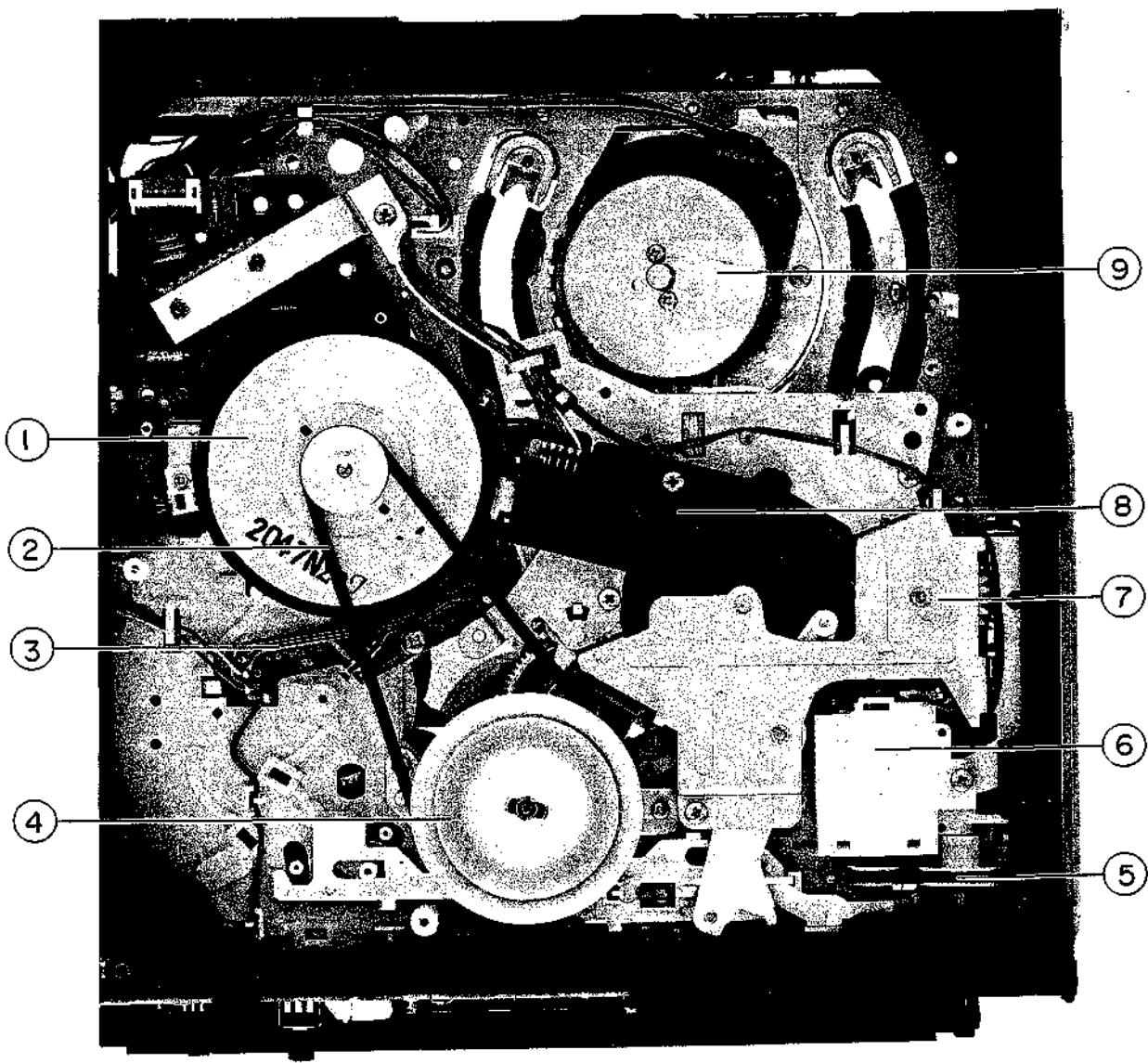


Fig. 3-2 Bottom View

- |                      |                      |
|----------------------|----------------------|
| 1. CAPSTAN MOTOR BLK | 6. LOADING DRIVE BLK |
| 2. IDLER BELT        | 7. LOADING MECH. BLK |
| 3. SENSOR PCB        | 8. MODE SELECTOR     |
| 4. CLUTCH BLK        | 9. DRUM MOTOR BLK    |
| 5. LOADING BELT      |                      |

## IV. MAIN COMPONENTS REPLACEMENT

### 4-1. EJECTOR BLOCK

#### 4-1-1. REMOVING THE EJECTOR BLOCK

- 1) Depress the POWER button to turn ON the VCR and insert the Cassette tape into the VCR. The unit get to PLAY mode itself.
- 2) Depress the POWER button again to turn OFF the VCR. Disconnect AC power cord after confirm that completely tape is unloaded.
- 3) Take off two screws Ⓐ and disconnect J504 from MAIN P.C. Board.
- 4) Remove the Ejector Block.

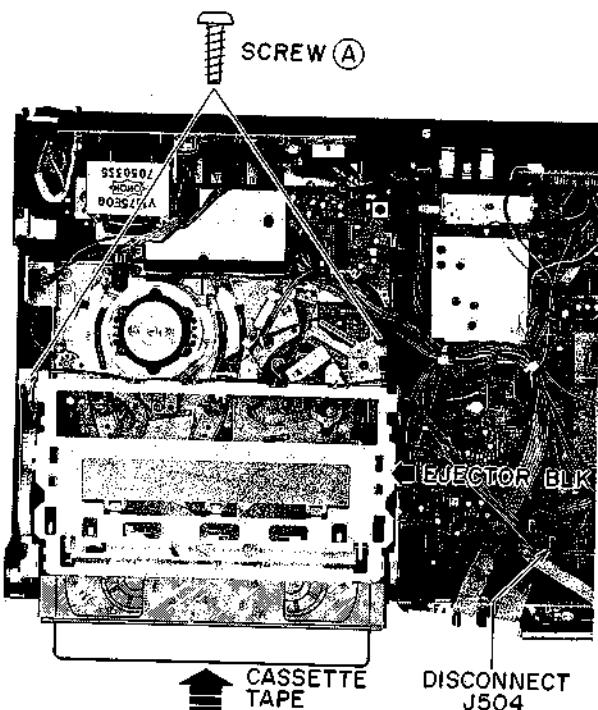


Fig. 4-1

#### 4-1-2. INSTALLATION OF THE EJECTOR BLOCK

- 1) Install the Ejector Block on the MECHA. chassis as shown in Fig. 4-2.
- 2) Tighten two screws Ⓐ and connect J504.
- 3) Plug in AC POWER CORD and Depress the POWER button to turn ON the VCR.
- 4) Confirm that unit will function correctly.

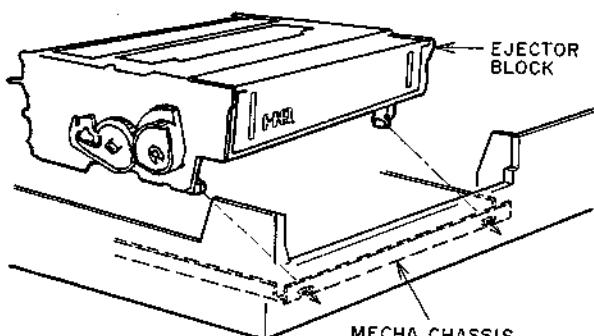


Fig. 4-2

### 4-2. LOADING MECHANISM BLOCK

#### 4-2-1. REMOVAL OF MECHANISM BLOCK

- 1) Remove the Ejector Block. (Refer to 4-1-1. EJECTOR REPLACEMENT.)
- 2) Take out two screws Ⓑ and remove the Transistor and the Diode.
- 3) Disconnect P700, P701 and P800 from the PRE-AMP P.C. Board.
- 4) Take out two screws Ⓒ and remove the PRE-AMP P.C. Board.

DISCONNECT P700,  
P701 and P800

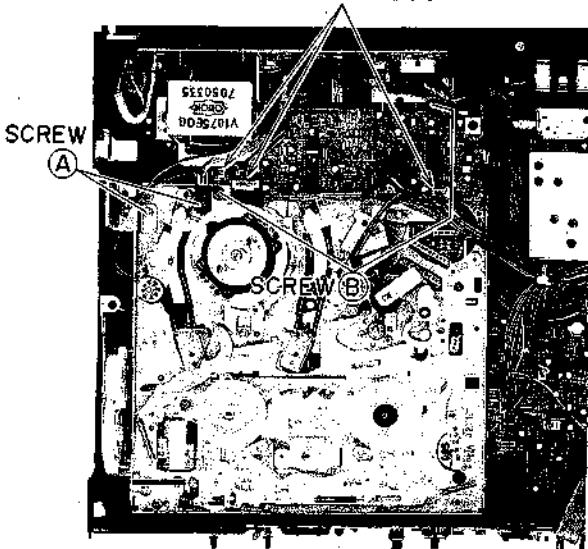


Fig. 4-3

5) Disconnect P502 from the DRUM MOTOR P.C. Board on the bottom of VCR.

6) Take out three screws Ⓓ and remove the MECHA. BLK.

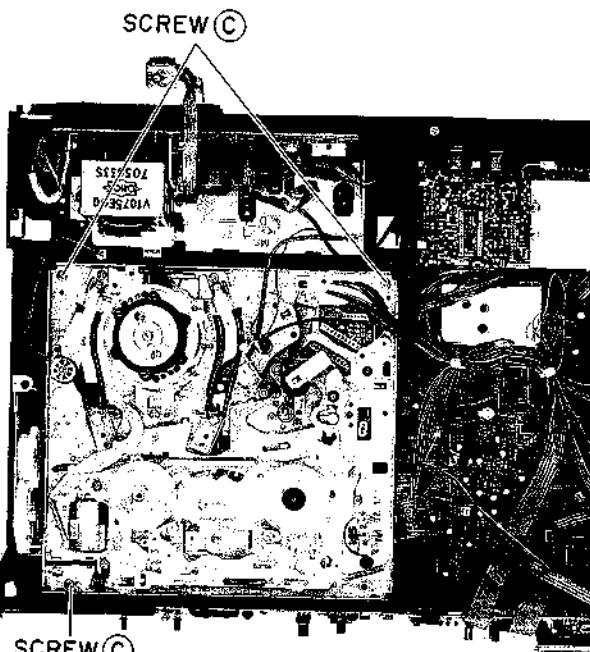


Fig. 4-4

#### 4-2-2. REASSEMBLE OF THE LOADING MECHANISM BLOCK

1) Attach the GEAR FL DRIVE to chassis CAM GEAR PART.

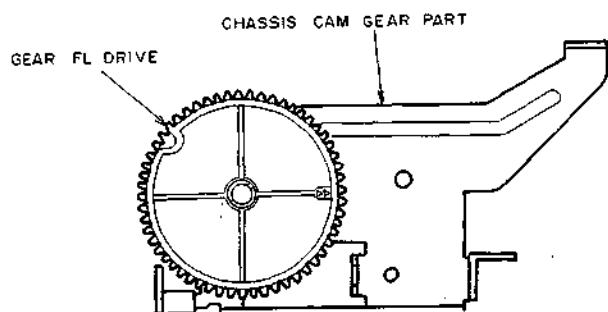


Fig. 4-5

4) Attach the LEVER CAM SLIDER as shown in Fig. 4-8.

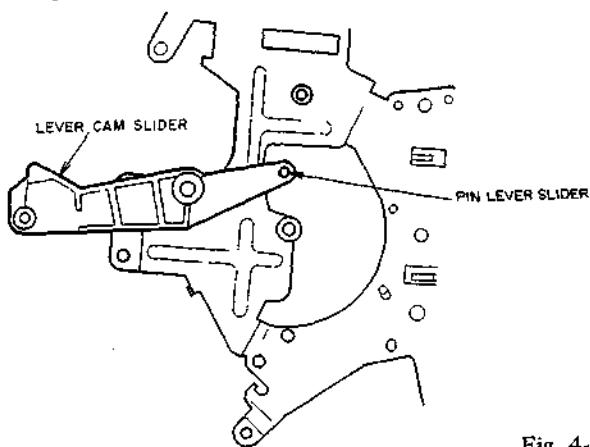


Fig. 4-8

2) Install the GEAR WARM PART as shown in Fig. 4-6.

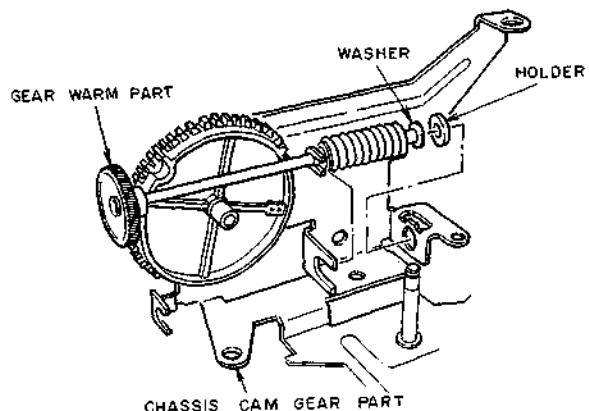


Fig. 4-6

5) Attach the GEAR CAM CENTER so that pin lever slider head is appeared from the hall  $\textcircled{A}$  of the GEAR CAM CENTER.

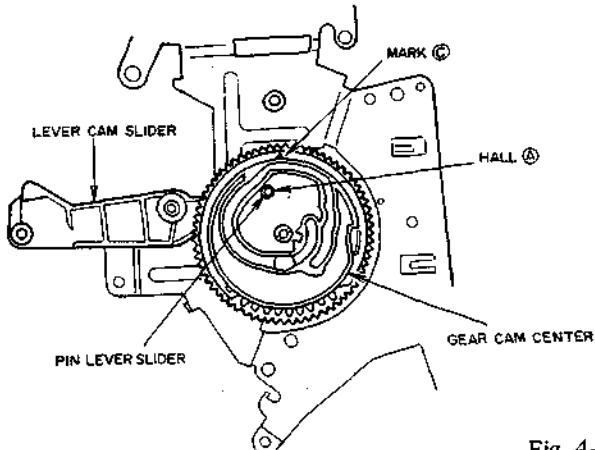


Fig. 4-9

3) Attach the GEAR WHEEL to CHASSIS CAM GEAR PART so that the GEAR FL DRIVE mark  $\textcircled{a}$  meets the GEAR WHEEL mark  $\textcircled{b-1}$ , and fasten the GEAR WHEEL with slit washer.

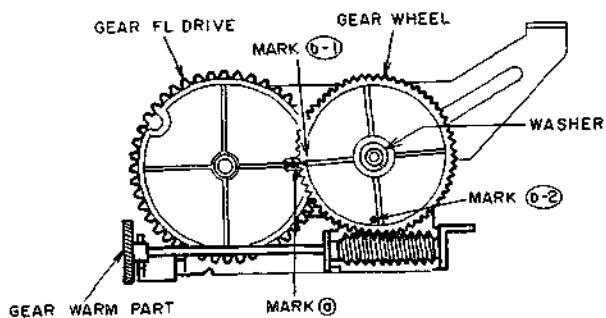


Fig. 4-7

6) Attach the GEAR CAM TENSION so that the GEAR CAM TENSION mark  $\textcircled{d-1}$  meets the GEAR WHEEL mark  $\textcircled{b-2}$ , and moreover the GEAR CAM CENTER mark  $\textcircled{C}$  should be located between the marks  $\textcircled{d-2}$  of the GEAR CAM TENSION.

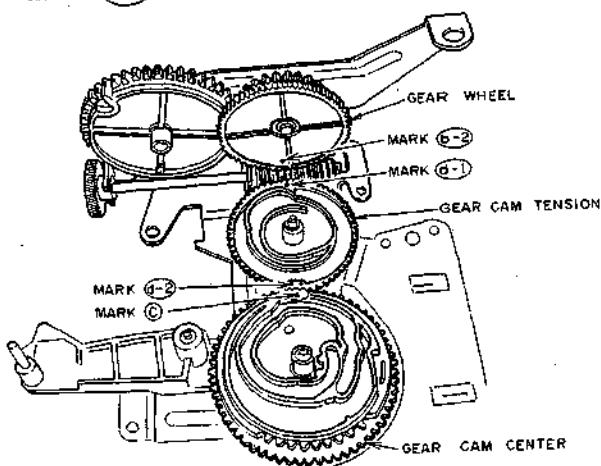


Fig. 4-10

- 7) Attach the ARM FWD BRAKE and Spring as shown in Fig. 4-11.

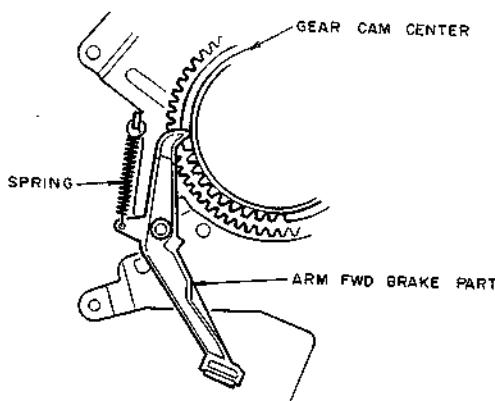


Fig. 4-11

- 10) Meet the marks of MODE SELECT SW and attach the MODE SELECT SW BLK onto the LOADING MECHA BLK as shown in Fig. 4-14. Tighten the MODE SELECT SW BLK with a screw ④.

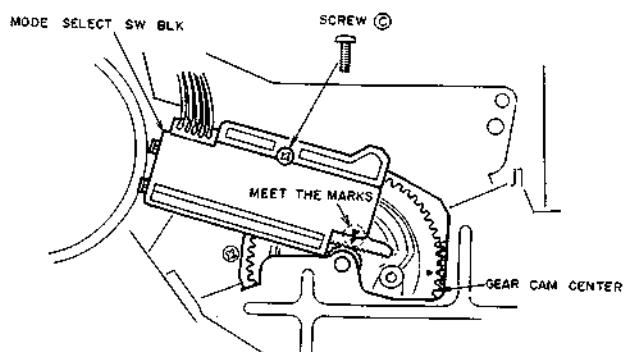


Fig. 4-14

- 8) Set the GEAR TOGGLE (TU) and (S) to the unloaded position with your fingers. At this time meet the marks of the GEAR TOGGLE (TU) and (S) as shown in Fig. 4-12.

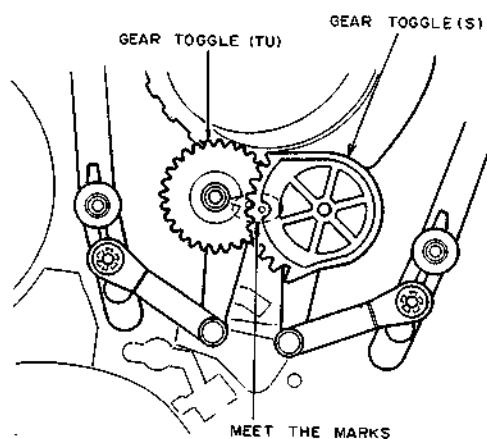


Fig. 4-12

- 11) Attach the BELT IDLER as shown in Fig. 4-15.

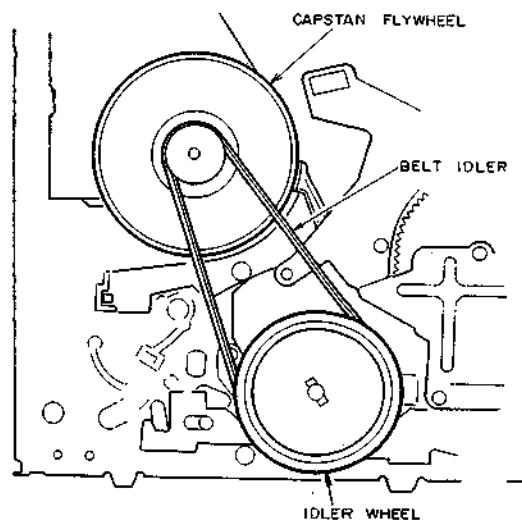


Fig. 4-15

- 9) Attach the LOADING MECHA. BLK with holding the GEAR TOGGLE (TU) in the direction of the arrow as shown in Fig. 4-13. Tighten the LOADING MECHA BLK with four screws Ⓐ and Ⓑ.

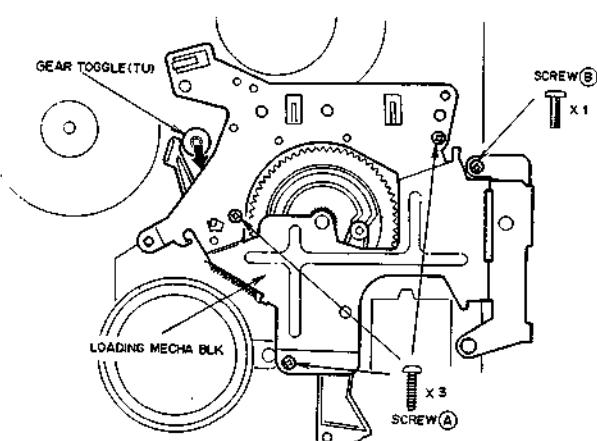


Fig. 4-13

- 12) Attach the LOADING DRIVE BLK and tighten with a screw ④.

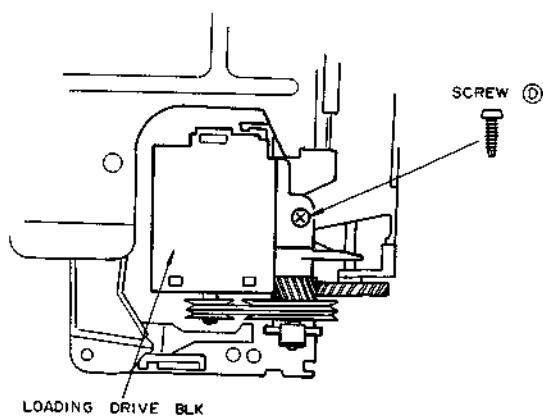


Fig. 4-16

## 4-3. UPPER DRUM (HEAD DRUM REPLACEMENT)

### 4-3-1. REMOVAL OF UPPER DRUM

- 1) Unsolder the eight relay leads and remove two Upper Drum fixing screws.
- 2) Gently lift and remove the Upper Drum.

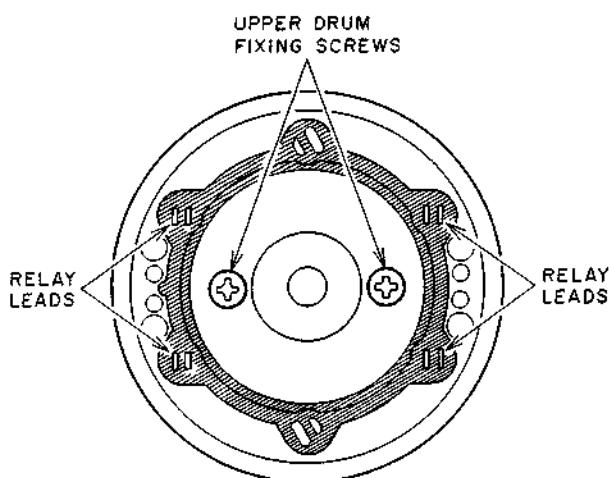


Fig. 4-17

### 4-3-2. INSTALLATION OF UPPER DRUM

- 1) Install the Upper Drum to the Lower Drum so that Upper Drum convex **(A)** and Lower Drum concave **(B)** become same direction.

**NOTE:** Height precision is required for the proper performance, and the head tips are fragile, so the following points should be noted when replacing the Upper Drum Block.

- (a) Do not loosen the set screw on the collar pre-load.
- (b) Before fixing, clean both surfaces where the upper drum and the rotary transformer part meet with alcohol.
- (c) When installation of the Upper Drum, if it does not go on to the shaft easily, clean the hole in the Upper Drum with alcohol and put a little oil on the shaft.
- (d) 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.
- (e) Tighten the two Upper drum fixing screws alternately and gradually. Tighten them at 6kg·cm torque.

### 4-3-3. AFTER REPLACEMENT

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

- 1) Control head phase adjustment. (Tape transport adj. 5-2-4)
- 2) PB switching point adjustment. (Electrical adj. Step 2)
- 3) Video Rec current adjustment. (Electrical adj. Step 9)

## 4-4. DRUM MOTOR REPLACEMENT

- 1) Disconnect the connector P502 from the Drum Motor P.C. Board.
- 2) Take out two screws **(A)** and remove the Rotary plate.

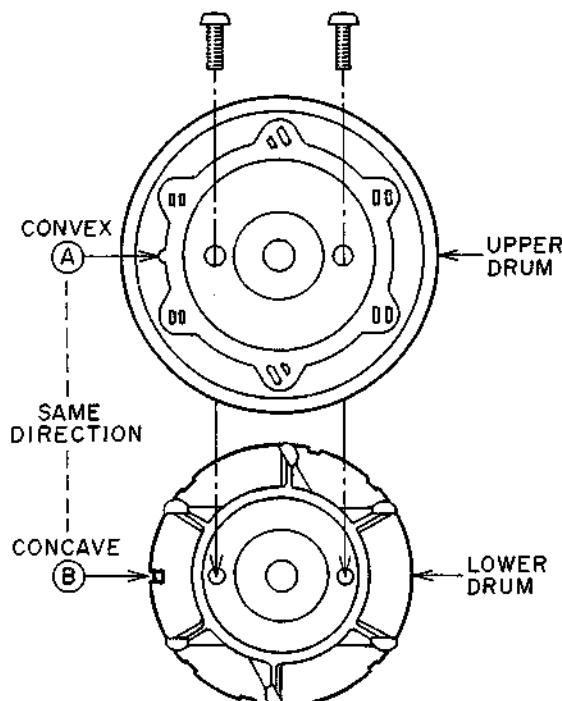


Fig. 4-18

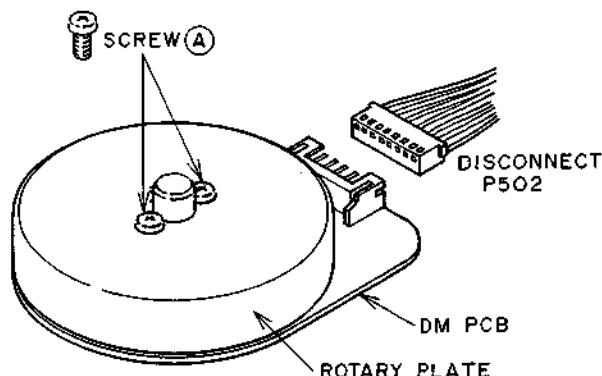


Fig. 4-19

- 3) Take out three screws ⑧ and replace the drum Motor.

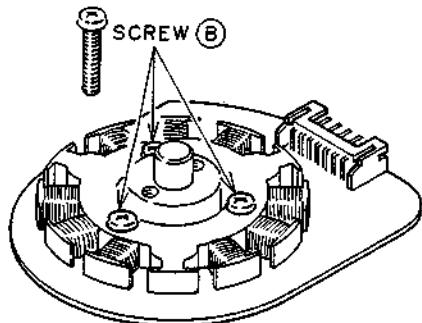


Fig. 4-20

- 4) Attach the Rotary plate to the Drum Motor so that the Rotary plate hall ⑨ and Collar preload hall ⑩ become a same direction.

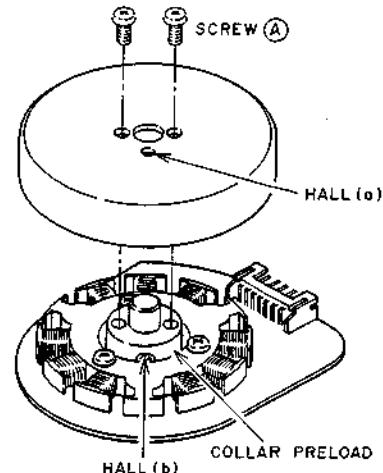


Fig. 4-21

## V. MECHANICAL ADJUSTMENT

### 5-1. BACK TENSION ADJUSTMENT

- 1) Remove the Ejector Block. (Refer to 4-1-1. EJECTOR BLOCK REPLACEMENT.)
- 2) Depress the POWER button to turn ON the VCR, the VCR will get to the tape loaded mode without cassette tape.
- 3) In the Play mode, loosen the screw ④ and set the Tension Arm position to the correct position as shown in Fig. 5-1 by the Tension Band Holder position, then tighten the screw ④.

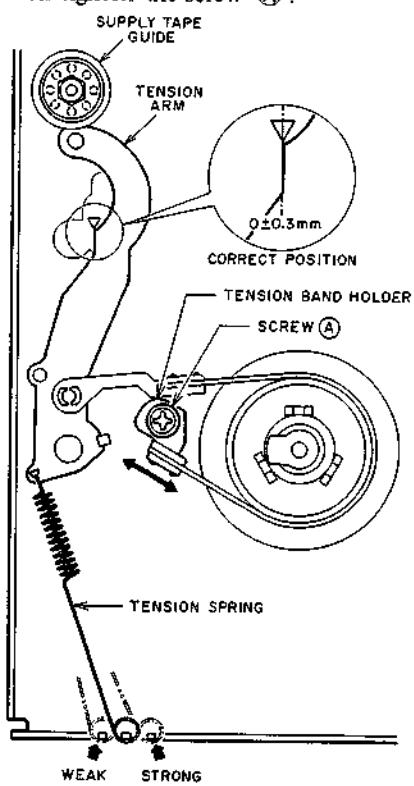


Fig. 5-1

- 4) Depress the Power button to Turn OFF.
- 5) Set the Reference Tape TF-542CBS (AT-751365) and put some weight on the Reference tape as a stabilizer.
- 6) Depress the POWER button and PLAY button.
- 7) Observe the TV screen and adjust V-HOLD for TV so that switching point appears on the TV screen as shown in Fig. 5-2.
- 8) Select the hook position of the Tension spring where the smallest skew should be obtained.

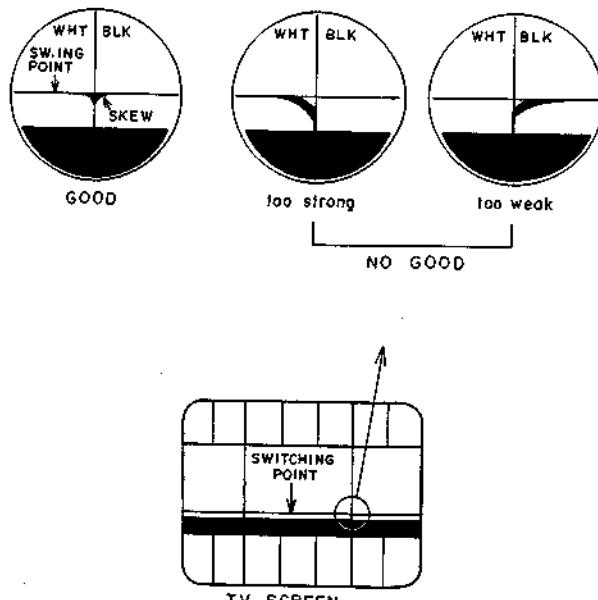


Fig. 5-2

## 5-2. TAPE TRANSPORT ADJUSTMENTS

### 5-2-1. TAPE CURL ADJUSTMENT AT THE TAKE-UP TAPE GUIDE

- 1) Playback the Reference tape TF-540RFS (AT-751363).
- 2) Turn the screw ④ 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.

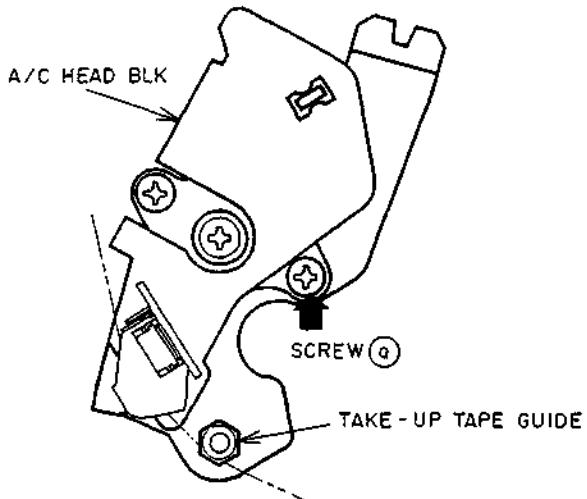


Fig. 5-3

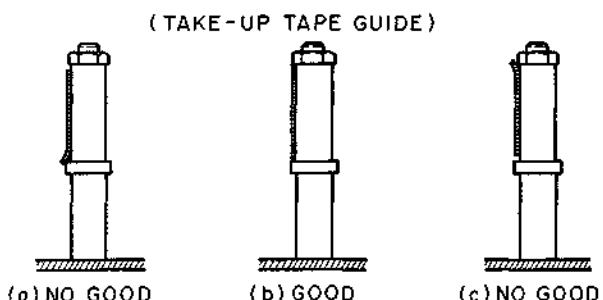


Fig. 5-4

### 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.



Fig. 5-5

### 5-2-3. AUDIO HEAD AZIMUTH ADJUSTMENT (SP)

- 1) Connect an AC volt meter or an oscilloscope to AUDIO OUT jack on the Rear panel.
- 2) Playback the Reference tape TF-540RFS (AT-751363).
- 3) Adjust the screw ⑤ to obtain the maximum audio output.

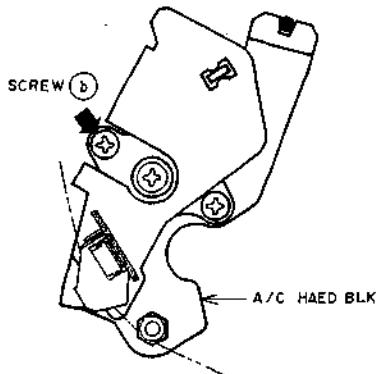


Fig. 5-6

### 5-2-4. CONTROL HEAD PHASE ADJUSTMENT

- 1) Connect an Oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
- 2) Playback the Reference tape TF-540RFS (AT-751363).
- 3) Depress the TRACKING button < or > on the Front panel until "T" mark can be seen in the center position as shown in Fig. 5-7.
- 4) Insert a sharpness screwdriver into A/C HEAD base and hall ⑥ as shown in Fig. 5-8.
- 5) Move the A/C HEAD base by moving a screwdriver in the directions of the arrow as shown in Fig. 5-8 to obtain the maximum RF envelope.

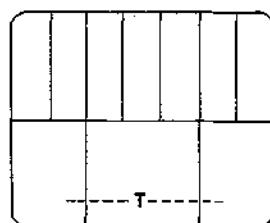


Fig. 5-7 On the TV screen

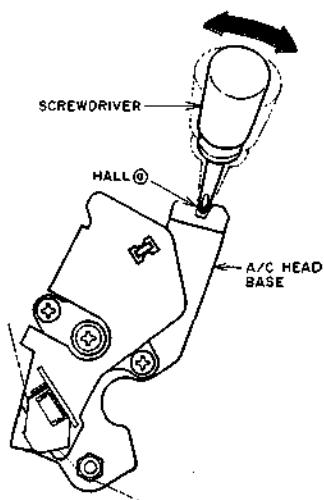


Fig. 5-8

### 5-2-5. ARM REVIEW HEIGHT ADJUSTMENT

- 1) Playback the beginning part of T-120 tape and set the unit in Review mode with depressing REW button.
- 2) Turn the ARM REVIEW height nut **Ⓐ** so that the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle between TAKE-UP TAPE GUIDE and CAPSTAN SHAFT.

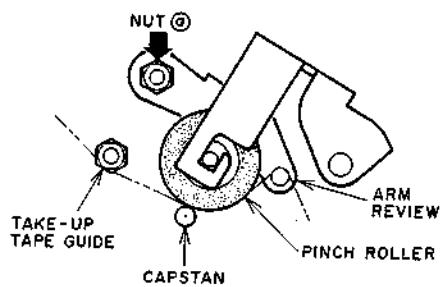


Fig. 5-9

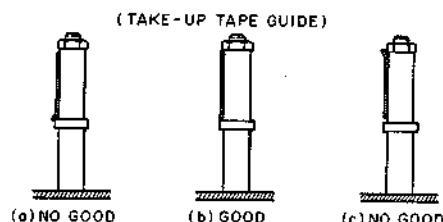


Fig. 5-10

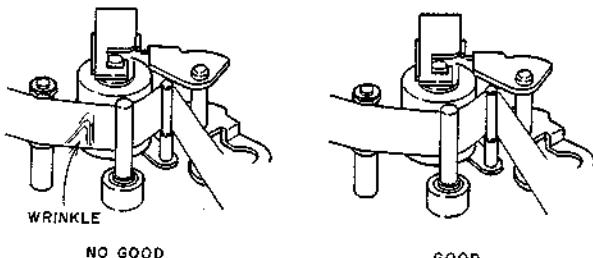


Fig. 5-11

### 5-2-6. LOADING LEADER HEIGHT ADJUSTMENTS

- 1) Slightly loosen the set screw at lower part of the LOADING LEADERS (L), (R) so that LOADING LEADERS can be adjusted with reasonable tightness. (Refer to Fig. 5-12.)
- 2) Playback the Reference tape TF-540RFS (AT-751363).
- 3) Connect an Oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
- 4) Turn the LOADING LEADER Heads with a screwdriver to obtain flat RF envelope as Ideal Envelope shown in Fig. 5-13.
- 5) After the adjustments, tighten the LOADING LEADER set screws.

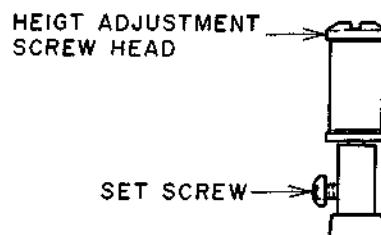


Fig. 5-12

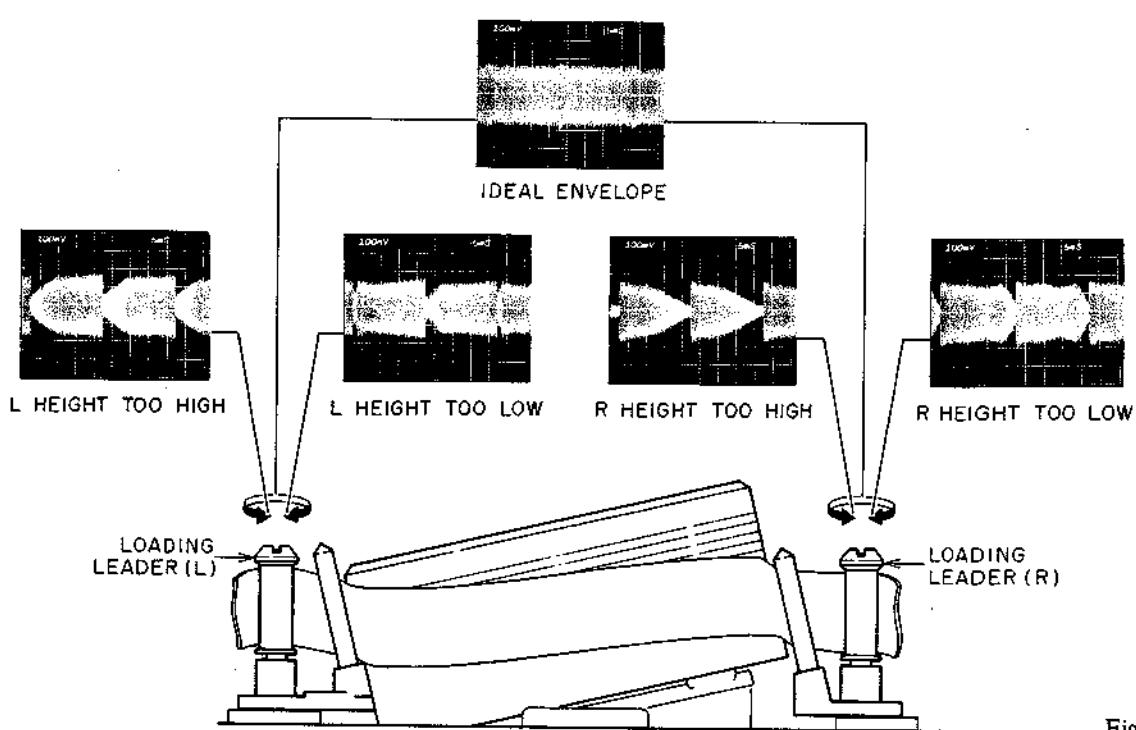


Fig. 5-13

### 5-2-7. A/C HEAD HEIGHT ADJUSTMENTS

- 1) Playback the Test tape TF-526HH (AT-751788).
- 2) Connect the Oscilloscope CH-1 to Audio output and CH2 to TP500.
- 3) Turn the hexagon screw to obtain 1/2 of the output level of either CH1 or CH2 whichever has output signal.

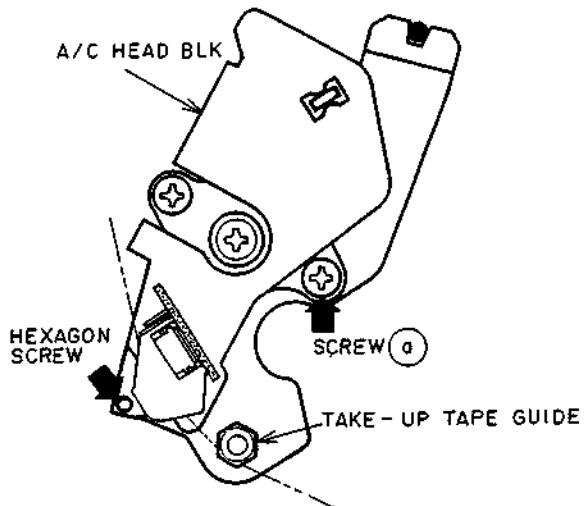


Fig. 5-14

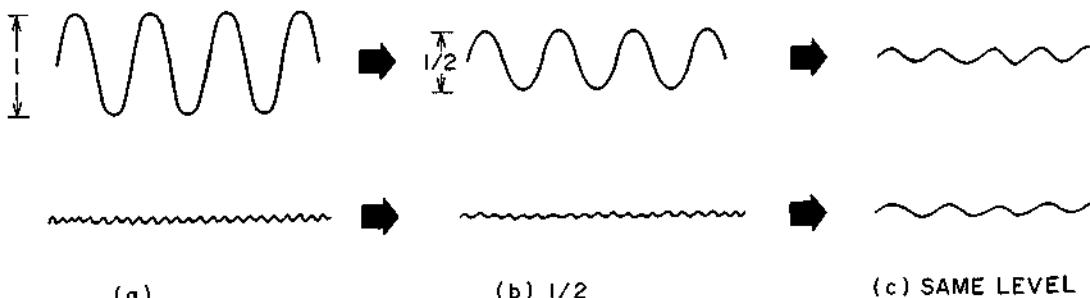


Fig. 5-15

- 4) Slightly turn the screw ④ until the tape edge barely touches the lower part of the Take-up Tape Guide without any curl as shown in Fig. 5-4.
- 5) Confirm that both signals of CH1 and CH2 are nearly same level. Repeat the adjustments 3), 4). If it is not nearly same level.

### 5-2-8. AUDIO HEAD AZIMUTH ADJUSTMENT (EP)

- 1) Connect an AC volt meter or an oscilloscope to AUDIO OUT jack on the Rear panel.
- 2) Playback the Reference tape TF-541RFL (AT-751364).
- 3) Adjust the screw ⑤ to obtain the maximum audio output.

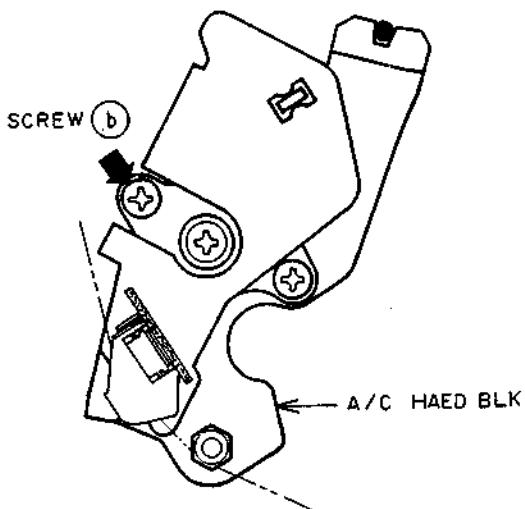
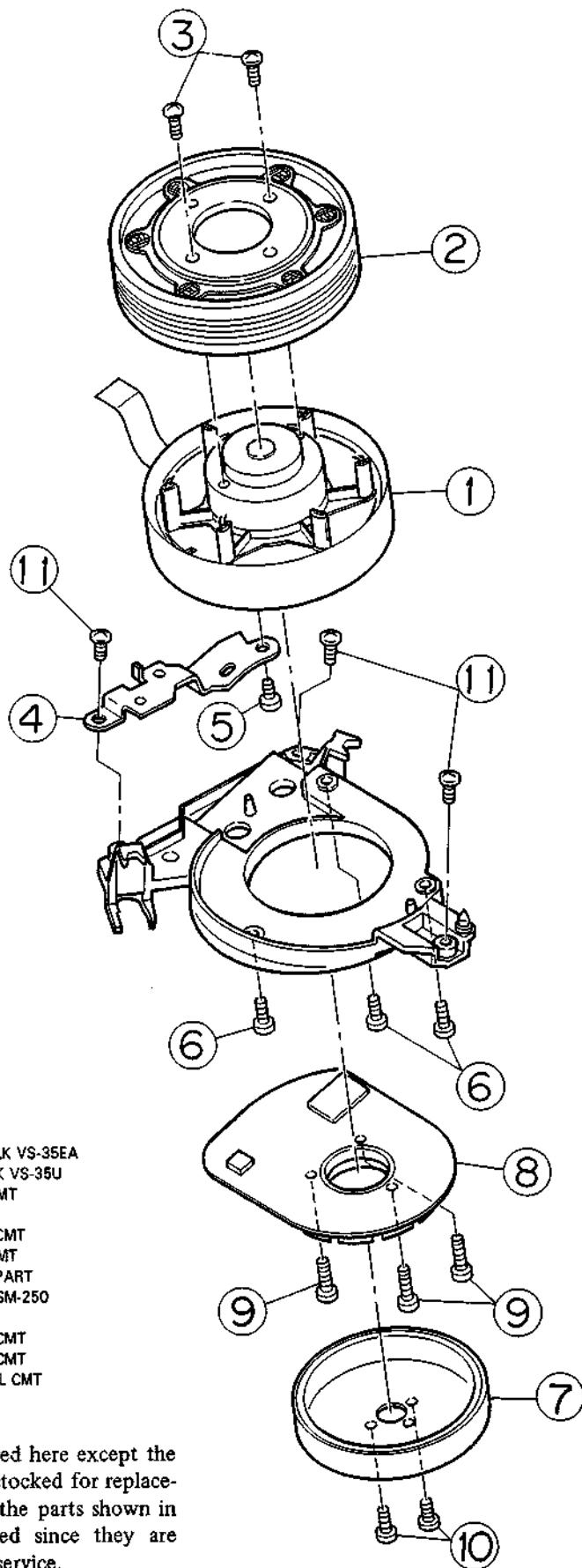


Fig. 5-16

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Ref. No.	Part No.	Description
123	MB-373096	BELT LOADING
124	ML-373075	ARM LOADING BRAKE
125	ML-367614	ARM MAIN BRAKE(S)PART
126	ML-367616	ARM MAIN BRAKE(TU)PART
127	ML-367617	ARM REVIEW BRAKE PART
128	ML-373043	CLUTCH BLK
129	ML-500881	LEVER TENSION BAND PART
130	MZ-500717T	GEAR CAM CENTER (TW)
131	MZ-368797T	GEAR CAM JOINT (TW)
132	MZ-500707T	GEAR CAM TENSION (TW)
133	MZ-500715T	GEAR FL DRIVE (TW)
134	MZ-V1075A080A	GEAR TOGGLE (S) BLK VS-35EA
135	MZ-V1075A100A	GEAR TOGGLE (TU) BLK VS-35EA
136	MZ-500716T	GEAR WHEEL (TW)
137	MZ-367628	GEAR WORM PART
138	MZ-368794T	GEAR(S) (TW)
139	MZ-368795T	GEAR(T) (TW)
140	TR-373025	TR 2SD1944 J.K
141	VT-367622	GUIDE ROLLER PART

## HEAD DRUM BLOCK

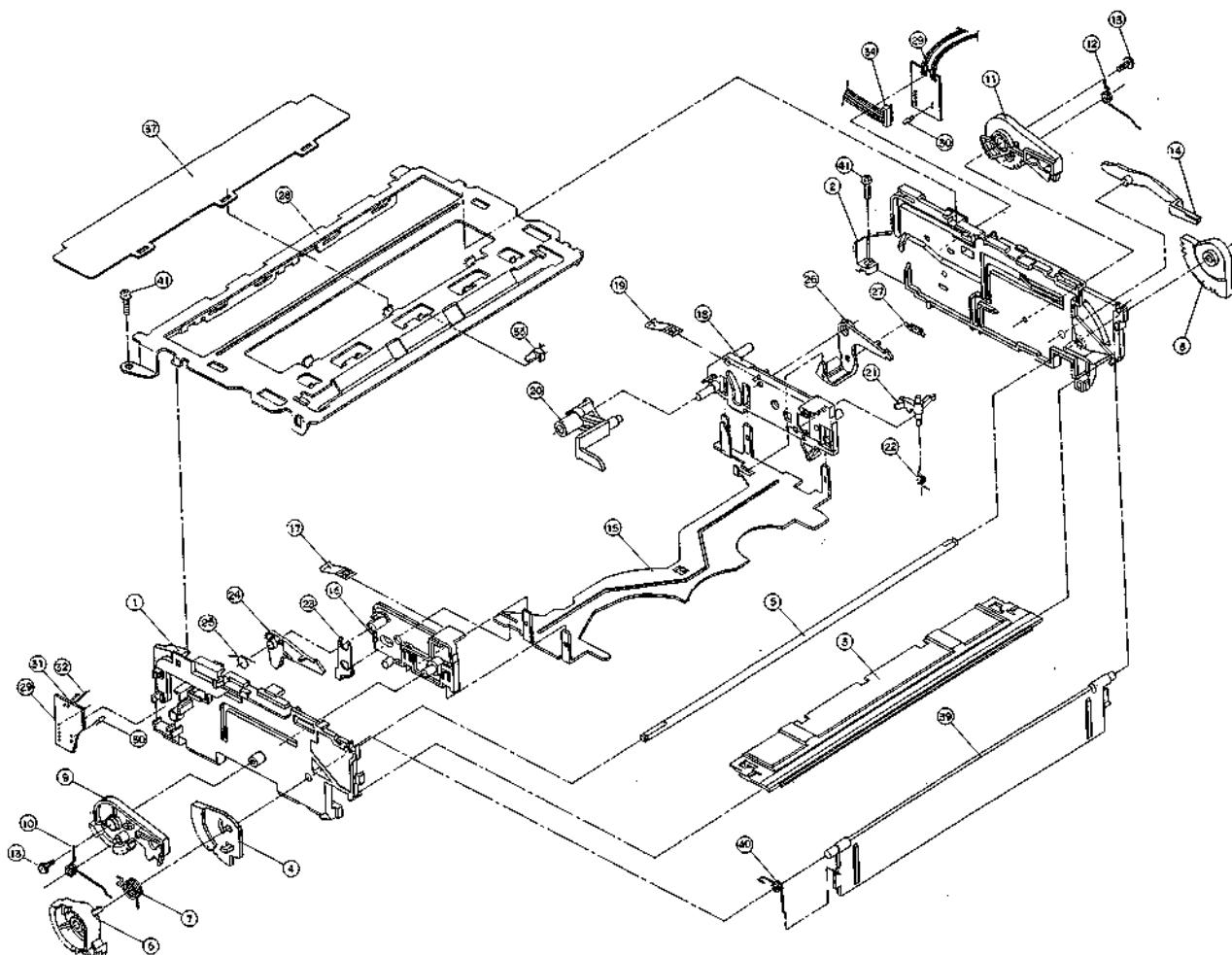


### 2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	BV-V1075A410A	LOWER DRUM BLK VS-35EA
2	BV-V1075A420A	UPPER DRUM BLK VS-35U
3	ZS-321298	BID30X08STL CMT
4	VT-373884	PLATE EARTH
5	ZS-479474	PAN26X05STL CMT
6	ZS-563444	BID26X08STL CMT
7	BV-B373848	YODE MAGNET PART
8	BM-M3225A020A	PC MOTOR BLK SM-250 [DRUM MOTOR]
9	ZS-467796	PAN26X12STL CMT
10	ZS-479474	PAN26X05STL CMT
11	ZS-370047	DT BID30X12STL CMT

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

## EJECTOR BLOCK



## 5. EJECTOR BLOCK

Ref. No.	Part No.	Description	(TW)
1	MZ-368790T	HOUSING(S)	(TW)
2	MZ-368791T	HOUSING(T)	(TW)
3	SZ-375956T	GUD F	(TW)
4	MZ-368794T	GEAR(S)	(TW)
5	MS-368798T	SHAFT LOADING	(TW)
6	MZ-368797T	GEAR CAM JOINT	(TW)
7	ZG-375953T	SP TORSION JOINT	(TW)
8	MZ-368795T	GEAR(T)	(TW)
9	ML-368792T	ARM LOADING(S)	(TW)
10	ZG-375954T	SP TORSION LOADING(S)	(TW)
11	ML-368793T	ARM LOADING(T)	(TW)
12	ZG-375955T	SP TORSION LOADING(T)	(TW)
13	ZS-368524	PLX BID26X10STL CMT C072	
14	ML-500730T	ARM LID OPENER	(TW)
17	ZG-500735T	SP GUIDE CASSETTE	(TW)
19	ZG-500735T	SP GUIDE CASSETTE	(TW)
22	ZG-375959T	SP TORSION RELEASE	(TW)
25	ZG-375957T	SP TORSION DAMPER	(TW)
27	ZG-375958T	SP PULL DAMPER	(TW)
28	MA-388799T	CHASSIS UPPER	(TW)
30	ET-361490	TR PHOTO PN268 R.S	
33	EL-373102T	PL CORD LCX	(TW) [PL1]

Ref. No.	Part No.	Description	(TW)
37A	SE-368476T	PLATE MIRROR U	(TW) [U(A),U(C)]
37B	SE-374026	PLATE MIRROR	[UM(U)]
39A	SE-500932T	MASK CASSETTE ENGLISH	(TW) [VS-33U/UM]
39B	SE-500934T	MASK CASSETTE ENGLISH V	(TW) [VS-35U]
40	ZG-500767	SP TORSION MASK	
41	ZS-378341	PLX BID30X12STL CMT	
42	BV-V1075A240A	TW HOLDER CASSETTE BLK -35EA	/TW [INCL. 15 TO 27]
43	BV-V1075A205A	TW EJECTOR (2) BLK VS-35EA	/TW [INCL. 1 TO 34]

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

## 6. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1A	BA-V1077A600A	PC( #) MAIN(NTSC) BLK VS-33U [VS-33U/UM]
1B	BA-V1077A600B	PC( #) MAIN(NTSC) BLK VS-35U [VS-35U]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.

- MAIN P.C BOARD
- CHROMA P.C BOARD
- AUDIO & PRE-AMP P.C BOARD
- OPERATION P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARD.

- POWER SUPPLY P.C BOARD
- TR P.C BOARD
- DIODE P.C BOARD
- SW POWER P.C BOARD

Ref. No.	Part No.	Description
IC1	EI-368809	IC M51496P
IC3	EI-337530	IC UPC574J
IC200	EI-373964	IC AN3230
IC201	EI-200573	IC TC4053BP
IC202	EI-373965	IC MSM6964
IC500	EI-360316	IC BA6305
IC501	EI-373980	IC BA15218N
IC502	EI-354095	IC BA718
IC503	EI-373978	IC BU2734 NTSC CUSTOM
IC504	EI-353421	IC BA6229
IC505	EI-373981	IC BA6993N
IC506	EI-368182	IC M888525-186G LCXSYN1 CUSTOM
IC507	EI-373980	IC BA15218N
L1	EO-368178	COIL FIX 1 EL0606SKI R47M
L2	EO-376856	COIL FIX 1 LF-5.0S F05 1R0M
L3	EO-345865	COIL FIX 1 EL0606SKI 100J
L4	EO-368893	COIL VARI 1 134-5060-04
L5	EO-368894	COIL TUN 1 LLD 134-5056-04
L6	EO-345876	COIL FIX 1 EL0606SKI 470J
L8	EO-345872	COIL FIX 1 EL0606SKI 220J
L9	EO-368895	COIL TUN 2 AFT 111-5042-14
L10	EO-376614	COIL FIX 1 LF-5.0S F05 220K
L11	EO-345865	COIL FIX 1 EL0606SKI 100J
L200	EO-376607	COIL FIX 1 LF-5.0S F05 181K
L201	EO-376602	COIL FIX 1 LF-5.0S F05 121K
L202	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L203	EO-376609	COIL FIX 1 LF-5.0S F05 270K
L204	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L205	EO-345866	COIL FIX 1 EL0606SKI 120J
L206	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L207	EO-345885	COIL FIX 1 EL0606SKI 181J
L208	EO-376612	COIL FIX 1 LF-5.0S F05 680K
L209	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L210	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L211	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L212	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L213	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L500	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
P200	EJ-373971	PIN J JPJ0881-010 BLACK 2P [AUDIO]
P201	EJ-373970	PIN J JPJ0811-040 YELLOW 2P [VIDEO]
TR1	ET-375777	TR 2SC2926S P,Q
TR2	ET-360067	TR 2SC3330 T,U F05
TR3	ET-360067	TR 2SC3330 T,U F05
TR4	ET-360067	TR 2SC3330 T,U F05
TR5	ET-375777	TR 2SC2926S P,Q
TR6	ET-360067	TR 2SC3330 T,U F05
TR7	ET-360067	TR 2SC3330 T,U F05
TR8	ET-354414	TR DTC144ES
TR9	ET-353899	TR 2SA1317 S,T,U
TR10	ET-321644	TR 2SC1213 C
TR11	ET-353899	TR 2SA1317 S,T,U
TR13	ET-356224	TR 2SA1286 G,H,J F05
TR16	ET-353899	TR 2SA1317 S,T,U
TR17	ET-353899	TR 2SA1317 S,T,U
TR18	ET-353899	TR 2SA1317 S,T,U
TR19	ET-356224	TR 2SA1286 G,H,J F05
TR200	ET-353899	TR 2SA1317 S,T,U
TR201	ET-360067	TR 2SC3330 T,U F05
TR202	ET-354414	TR DTC144ES
TR205	ET-363953	TR DTA114TS
TR206	ET-360067	TR 2SC3330 T,U F05
TR207	ET-353897	TR DTC114ES
TR208	ET-360067	TR 2SC3330 T,U F05
TR209	ET-354414	TR DTC144ES
TR210	ET-356224	TR 2SA1286 G,H,J F05
TR211	ET-360067	TR 2SC3330 T,U F05
TR212	ET-353899	TR 2SA1317 S,T,U
TR213	ET-360067	TR 2SC3330 T,U F05
TR214	ET-354414	TR DTC144ES
TR215	ET-353899	TR 2SA1317 S,T,U
TR500	ET-354415	TR DTA144ES
TR501	ET-360067	TR 2SC3330 T,U F05
TR502	ET-373985	TR DTA144TS
TR503	ET-354414	TR DTC144ES
TR504	ET-354414	TR DTC144ES
TR505	ET-354414	TR DTC144ES

## PARTS LIST

Ref. No.	Part No.	Description
TR507	ET-373985	TR DTA144TS
TR508	ET-354371	TR DTC124ES
TR511	ET-356224	TR 2SA1286 G,H,J F05
TR512	ET-373985	TR DTA144TS
TR513	ET-360067	TR 2SC3330 T,U F05
TR514	ET-373985	TR DTA144TS
TR515	ET-353899	TR 2SA1317 S,T,U
TR516	ET-353899	TR 2SA1317 S,T,U
TR517	ET-354365	TR DTC114YS
TR518	ET-354371	TR DTC124ES
TR520	ET-354414	TR DTC144ES
TR521	ET-353899	TR 2SA1317 S,T,U
TR522	ET-375983	TR DTA124TS
VR1	EV-368135	R S-FIX H KVSF637A 0.01W 474
VR2	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR3	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR200	EV-358829	R S-FIX H RH0615C 0.10W 223
VR201	EV-358829	R S-FIX H RH0615C 0.10W 223
VR202	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR203	EV-356324	R S-FIX H KVSF637A 0.10W 103
VR204	EV-358829	R S-FIX H RH0615C 0.10W 223
VR205	EV-358829	R S-FIX H RH0615C 0.10W 223
VR206	EV-356579	R S-FIX H RH0615C 0.10W 102
VR207	EV-356583	R S-FIX H RH0615C 0.10W 332
VR208	EV-356583	R S-FIX H RH0615C 0.10W 332
VR209	EV-374014	R S-FIX EVTK-8C 0.20W 104
VR210	EV-374014	R S-FIX EVTK-8C 0.20W 104
VR501	EV-378325	R S-FIX H KVSF687A 0.30W 473
X500	EI-347981	OSC CE CSA6.000MS 8MHZ
1	EE-373926	TV TUNER TEMH1-023A US
2	BV-373934	RF CONVERTER YAA21-0279 US
3	SP-500680T	PANEL REAR JACK U (TW)
4	ZS-362378	PLX BID30X10STL CMT

## 8. CHROMA P.C BOARD

Ref. No.	Part No.	Description
D400	ED-307572	D SILICON H 1SS131
D401	ED-307572	D SILICON H 1SS131
DL400	EH-370413	DL ADL-FN2135Q-B03
FL400	EH-370615	FILTER LC FF-71N
IC400	EI-373023	IC TA8632N
IC401	EI-367904	IC M50455-057SP CUSTOM
L401	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L402	EO-376599	COIL FIX 1 LF-5.0S F05 100K
L403	EO-376606	COIL FIX 1 LF-5.0S F05 180K
L404	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L405	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L406	EO-376600	COIL FIX 1 LF-5.0S F05 101K
L408	EO-345887	COIL FIX 1 ELO606SKI 221J
L409	EO-345889	COIL FIX 1 ELO606SKI 331J
L410	ED-376600	COIL FIX 1 LF-5.0S F05 101K
L411	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L412	ED-376610	COIL FIX 1 LF-5.0S F05 330K
TR400	ET-360067	TR 2SC3330 T,U F05
TR401	ET-360067	TR 2SC3330 T,U F05
TR402	ET-353899	TR 2SA1317 S,T,U
TR403	ET-360067	TR 2SC3330 T,U F05
TR404	ET-368084	TR 2SC3315 D
TR405	ET-360067	TR 2SC3330 T,U F05
TR406	ET-360067	TR 2SC3330 T,U F05
TR407	ET-360067	TR 2SC3330 T,U F05
TR409	ET-353899	TR 2SA1317 S,T,U
TR410	ET-360067	TR 2SC3330 T,U F05
VR400	EV-368340	R S-FIX H KVSF687A 0.30W 104
X400	EI-318384	OSC X'TAL NR-18 3.579545MHZ

## 9. AUDIO & PRE-AMP P.C BOARD

Ref. No.	Part No.	Description
D700	ED-307572	D SILICON H 1SS131
D701	ED-307572	D SILICON H 1SS131
D800	ED-307572	D SILICON H 1SS131
FL700	EO-375471	COIL OSC 1 5033344
IC700	EI-373946	IC LA7292
IC800	EI-367909	IC HA118019NT
L700	EO-370639	COIL FIX 1 L-8 272J
L701	EO-370638	COIL FIX 1 L-8 123J
L800	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L801	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L802	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L803	EO-376600	COIL FIX 1 LF-5.0S F05 101K
L804	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L805	EO-376599	COIL FIX 1 LF-5.0S F05 100K
L806	EO-376861	COIL FIX 1 LF-5.0S F05 390K
L807	EO-345889	COIL FIX 1 ELO606SKI 331J
TR700	ET-360067	TR 2SC3330 T,U F05
TR800	ET-354414	TR DTC144ES
TR801	ET-353899	TR 2SA1317 S,T,U
TR802	ET-360067	TR 2SC3330 T,U F05
TR804	ET-360067	TR 2SC3330 T,U F05
TR806	ET-353899	TR 2SA1317 S,T,U
VR700	EV-356577	R S-FIX H RH0615C 0.10W 103
VR701	EV-356582	R S-FIX H RH0615C 0.10W 473

## 10. OPERATION P.C BOARD

Ref. No.	Part No.	Description
D900	ED-307572	D SILICON H 1SS131
D901	ED-307572	D SILICON H 1SS131
D902	ED-307572	D SILICON H 1SS131
D903	ED-307572	D SILICON H 1SS131
D904	ED-307572	D SILICON H 1SS131
D905	ED-307572	D SILICON H 1SS131
D906	ED-307572	D SILICON H 1SS131
D907	ED-307572	D SILICON H 1SS131
D908	ED-307572	D SILICON H 1SS131 [VS-33U/UM]
D911	ED-307572	D SILICON H 1SS131
D912	ED-307572	D SILICON H 1SS131
D913	ED-307572	D SILICON H 1SS131
D914	ED-307572	D SILICON H 1SS131
D915	ED-307572	D SILICON H 1SS131
D916	ED-348543	D ZENER H HZ9L C1
D917	ED-356424	D LED BG5525S GREEN
D918	ED-356424	D LED BG5525S GREEN
D919	ED-351419	D ZENER H HZ7L B3
D920	ED-360409	D PHOTO PN323B
D921	ED-307572	D SILICON H 1SS131
FL900	EM-373956	IND FL FLV132
I900	EH-368109	COMP R RKC3BS 473J
I901	EH-374010	COMP R RKC5BS 473J
IC901	EI-373952	IC UPD7520BCW-121 LCXOPU2 CUSTOM
IC902	EI-373955	IC S8053ALR
IC903	EI-373954	IC CXK1006L
IC904	EI-367271	IC UPC1490HA
L900	EO-376600	COIL FIX 1 LF-5.0S F05 101K
L901	EO-376616	COIL FIX 1 LF-5.0S F05 221K
L902	EO-376600	COIL FIX 1 LF-5.0S F05 101K
SW900	ES-349474	SW TACT SKHHAM004A
SW901	ES-349474	SW TACT SKHHAM004A
SW902	ES-349474	SW TACT SKHHAM004A
SW903	ES-349474	SW TACT SKHHAM004A
SW904	ES-349474	SW TACT SKHHAM004A
SW905	ES-349474	SW TACT SKHHAM004A
SW906	ES-349474	SW TACT SKHHAM004A
SW907	ES-349474	SW TACT SKHHAM004A
SW908	ES-349474	SW TACT SKHHAM004A
SW909	ES-349474	SW TACT SKHHAM004A
SW910	ES-349474	SW TACT SKHHAM004A
SW911	ES-349474	SW TACT SKHHAM004A
SW912	ES-349474	SW TACT SKHHAM004A
SW913	ES-349474	SW TACT SKHHAM004A
SW914	ES-349474	SW TACT SKHHAM004A
SW915	ES-349474	SW TACT SKHHAM004A
SW916	ES-349474	SW TACT SKHHAM004A
SW917	ES-375736	SW SLIDE ESD1112251 2-02-02N [SPEED]
SW918	ES-375736	SW SLIDE ESD1112251 2-02-02N [INPUT SELECTOR]
SW919	ES-375736	SW SLIDE ESD1112251 2-02-02N [EDIT]
TR900	ET-354414	TR DTC144ES
TR901	ET-354414	TR DTC144ES
TR902	ET-354414	TR DTC144ES
TR903	ET-354414	TR DTC144ES
TR904	ET-368836	TR DTA143TA
TR906	ET-354414	TR DTC144ES
TR907	ET-354364	TR DTC143TS
TR908	ET-354364	TR DTC143TS
TR909	ET-354364	TR DTC143TS
VR900	EV-373958	VR ROTARY RK09K1130 B203 [PICTURE]
X900	EI-373957	OSC CE CST4.19MG 4.194 MHZ
X901	EI-368825	OSC X'TAL MX-38T 32.768KHZ

## 11. PRE-SET P.C BOARD

Ref. No.	Part No.	Description
D950	ED-368826	D LED BG3402S GREEN
D951	ED-307572	D SILICON H 1SS131
D952	ED-307572	D SILICON H 1SS131
D953	ED-307572	D SILICON H 1SS131
D954	ED-307572	D SILICON H 1SS131
D955	ED-307572	D SILICON H 1SS131
SW951	ES-349474	SW TACT SKHHAM004A
SW952	ES-349474	SW TACT SKHHAM004A
SW953	ES-349474	SW TACT SKHHAM004A
SW954	ES-349474	SW TACT SKHHAM004A
SW955	ES-349474	SW TACT SKHHAM004A
SW956	ES-349474	SW TACT SKHHAM004A
SW957	ES-375737	SW SLIDE ESD1111351 2-01-03N [PRE-SET]

## 12. POWER SUPPLY P.C BOARD

Ref. No.	Part No.	Description
C1	*EC-361942	C CE V DNS1032V V 103Z 400AC
D3	*ED-367202	D SILICON S5566B F12 [UM[U]]
D4	*ED-367202	D SILICON S5566B F12 [UM[U]]
D5	ED-307572	D SILICON H 1SS131
D7	*ED-367693	D SILICON S5566G(LC-7)F12
D8	*ED-367693	D SILICON S5566G(LC-7)F12
D9	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131
D11	ED-376598	D ZENER H HZS36J B3 F05
D12	ED-348525	D ZENER H HZ6I A3
D13	*ED-379041	D SILICON S5566B 100/1.0A
FR1	*ER-318400	R CB H S10 FS RDS 1/4W 680J
IC1	*EI-367571	IC LA6358T
R1	*ER-356573	R SD ANTI-STATIC 1/2W 225K [U[A],U[C]]
TR1	*ET-353899	TR 2SA1317 S.T.U
TR2	*ET-355669	TR 2SC3246 G.H.J F05
TR3	TR-373025	TR 2SD1944 J.K
TR4	TR-373025	TR 2SD1944 J.K
TR5	*ET-360067	TR 2SC3330 T.U F05
TR6	*ET-360067	TR 2SC3330 T.U F05
TR7	*ET-360067	TR 2SC3330 T.U F05
TR9	*ET-376818	TR 2SC3247 H.J.K
TR10	*ET-366677	TR 2SD1761 E.F
TR11	*ET-364093	TR 2SA1283 E.F F05
T1A	*BT-373993	TRANS POW V1077U [U[A],U[C]]
T1B	*BT-373994	TRANS POW V1077UM [UM[U]]
VR1	EV-376139	R S-FIX H KVSF687A 0.30W 472
F1A	*EF-309391	FUSE TSC 125V 800MA [U[A],U[C]]
F1B	*EF-258344	FUSE SEMKO T 250V 800MA [UM[U]]
F2A	*EF-306956	FUSE TSC 125V 2.50A [U[A],U[C]]
F2B	*EF-601301	FUSE SEMKO T 250V 2.00A [UM[U]]

## PARTS LIST

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**13. TR P.C BOARD**

Ref. No.	Part No.	Description
TR8	*ET-366677	TR 2SD1761 E,F

**14. DIODE P.C BOARD**

Ref. No.	Part No.	Description
D1	*ED-379298	D SILICON BA20B

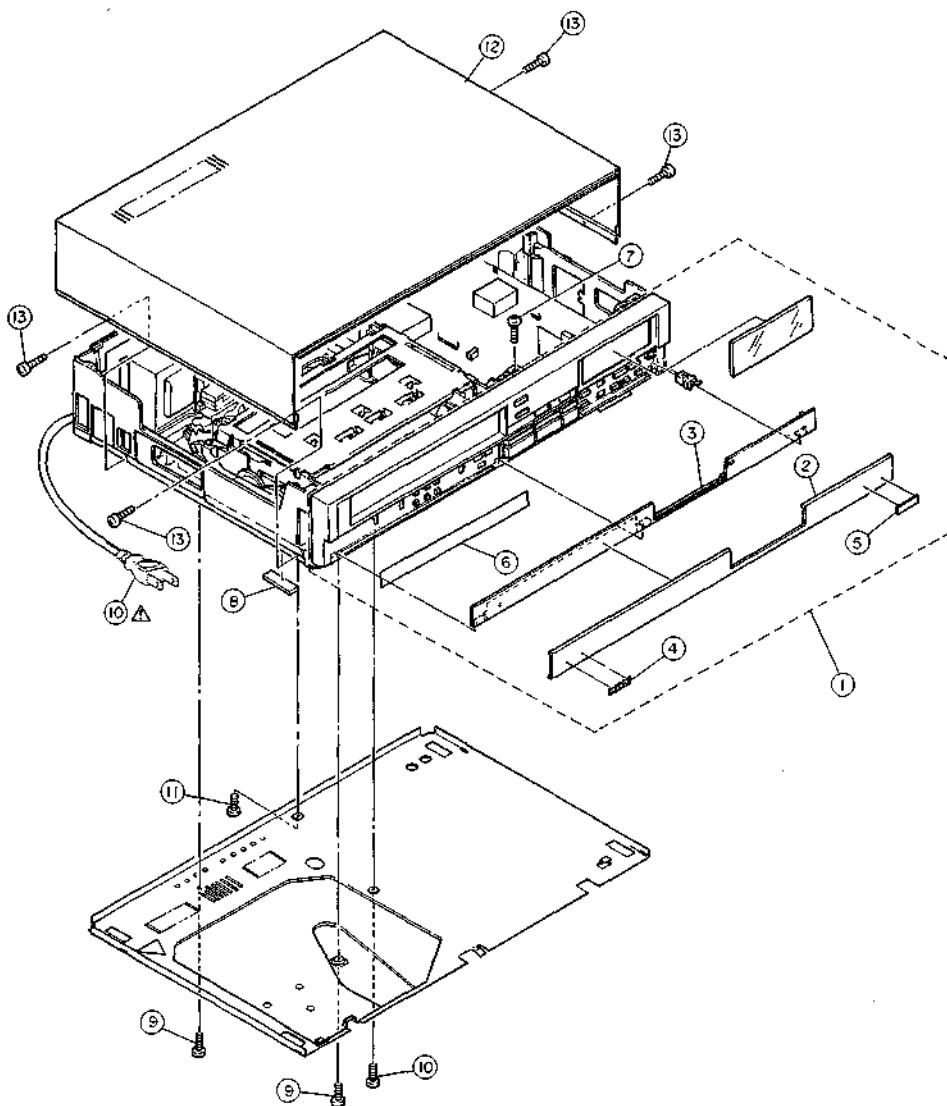
**16. SUB P.C BOARD**

Ref. No.	Part No.	Description
D524	ED-307572	D SILICON H 1SS131
D525	ED-307572	D SILICON H 1SS131
D526	ED-307572	D SILICON H 1SS131
D527	ED-307572	D SILICON H 1SS131
IC509	EI-337625	IC BA236
TR524	ET-370310	TR DTC144TS
TR525	ET-375986	TR DTC124TS
TR526	ET-373985	TR DTA144TS
TR527	ET-354415	TR DTA144ES

**15. SW POWER P.C BOARD (VS-33UM ONLY)**

Ref. No.	Part No.	Description
C25	EC-378327	C EC V SM 2R2M 450DC [UM[U]]
D15	ED-371512	D SILICON ERA22-04Y F05 [UM[U]]
D16	ED-371512	D SILICON ERA22-04Y F05 [UM[U]]
D20	ED-371512	D SILICON ERA22-04Y F05 [UM[U]]
D21	ED-376838	D SILICON DSA12G UB1 600/1.2A [UM[U]]
IC2	*EI-376794	IC BA6993 [UM[U]]
IC3	EI-368152	IC BA707 [UM[U]]
RL1	*EQ-376837	RELAY POW VB-100TBU-5 2TR 100V [UM[U]]
R26	*ER-378385	R CB H S12 FS RDS 1/2W 474J [UM[U]]
TR13	ET-376663	TR 2SC3868 [UM[U]]
TR14	ET-376663	TR 2SC3868 [UM[U]]

## FINAL ASSEMBLY BLOCK



## 17. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1A	BD-V1077B300A	PANEL FRONT BLK VS-35U-B [INCL. 2 TO 6]
1B	BD-V1077B300B	PANEL FRONT BLK VS-33U-B [INCL. 2 TO 6]
1C	BD-V1077B300C	PANEL FRONT BLK VS-33UM-B [INCL. 2 TO 6]
2	SP-500867T	DOOR FRONT(1)ENGLISH B (TW)
3	SP-500870T	DOOR FRONT(2) B (TW)
4	SM-500675T	NAME PLATE AKA(3) (TW)
5	SM-500676T	NAME PLATE DX4 (TW)
6	ZZ-388635	LABEL PRESET ENGLISH
7	ZS-362378	PLX BID30X10STL CMT
8	SA-353927B	FOOT(2)
9	ZS-364545	DT BID30X08STL CMT
10	ZS-362378	PLX BID30X10STL CMT
11	ZS-368547	PLX BID30X06STL CMT
12	SP-500772	COVER UPPER B
13	ZS-374023	DT BID26X08STL 8M
14A	*EW-371934	AC CORD 20 KP8WSPT2H B100 A UC [U[A],U[C]]
14B	*EW-364369	AC CORD 2CORES VM-0129 HVFF-CB [UM[U]]

## 18. ACCESSORY

Ref. No.	Part No.	Description
1	EW-356449	CORD UL 1.5M
2A	AX-N4001B010A	LCX REMOCON BLK RC-V33A-EB [VS-33U/UM]
2B	AX-N4001B010B	LCX REMOCON BLK RC-V35A-EB [VS-35U]

## 19. REMOTE CONTROL UNIT RC-V33A/V35A

Ref. No.	Part No.	Description
D1	ED-376111	D LED SE303AC INFRARED
D2	ED-344280	D SILICON H GMA-01-FY2 F05
D3	ED-344280	D SILICON H GMA-01-FY2 F05
D4	ED-344280	D SILICON H GMA-01-FY2 F05
I1	EI-376112	IC UPD6122G
TR1	ET-302502	TR 2SC2001 K
X1	EI-376113	OSC CE CSB455EB
1	SC-375525A	COVER BATTERY(B)

## PARTS LIST





# ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	LM STP	Loading Motor SToP
ACC	Auto Color Control	LP	Long Play
A/C	Audio and Control	LPF	Low Pass Filter
ADJ	ADJust(ment)	LSW	Loading SWitch
AFC	Auto Frequency Control	ME-SECAM	Middle East SECAM
AFI	Auto Fine Tuning	MI-COM	Micro COMputer
AGC	Auto Gain Control	MM	Mono-stable Multi
AH(P)	Audio Head (Play Back)	MRS	Motor ReVerSe
AH(R)	Audio Head (Record)	NG	Noise Gate
AL	ALways	NON-LIN	NON-LINEar
AL	Auto Level Control	N.T.S.C.	National Television System Committee
A-SW-P	Audio-SWitching Pulse	O MUTE	Output MUTE
A-MUTE	Audio-MUTE	OSC	OSCillator
AUT/MAN	AUTO/MANual	PAL	Phase Alternation Line
ANT	ANTenna	PB	Play Back
APC	Automatic Phase Control	P-COM	Phase-COMparator
ASSY	ASSEMBLY	PDN	Power DowN
BAL	BAlance	PG	Pulse Generator
B/C	Buzz and Charactor	PL, PLG	PLunger (PLunGer)
B DOWN	Break DOWN	POS	POSition
BGP	Burst Gate Pulse	PRG	PRogram
BLK	BLack or BLock	P & S	Power supply & System control
BM	Balanced Modulator	PU	Pick Up (head, pulse)
BPF	Band Pass Filter	PWR	PoWeR
BS	Band Select	Q	Quality factor
BS (SB)	Brake Supply (Supply Brake)	RC	Rotary Control
BT (TB)	Brake Takeup (Takeup Brake)	REC	REcord
BU	Back Up	REF	REference
B/W	Black and White	REF-V	REference Vertical signal
CCIR	Comité Consultatif International des Radio Communications	REG	REGulator
CH (Ch.)	CHannel (Channel)	REV (REVW)	REView (REVieW)
CK	Color Killer	REW	REWind
CLK	CLock	RFB	Radio Frequency Booster
CLP	CLIP	RM	Reel Motor
CM	Capstan Motor	RM PWR	Reel Motor PoWeR
CN	CoNnector	R-S SW	Record-Safety SWitch
COMP	COMParator	RST (RES)	ReSeT (RESet)
Comp	Comparison	RVS	ReVerSe
C or R	Cue or Review	S	Sensor, Shield
CR I	Cue Review I (high)	SC	SimulCast
CSW	Cassette SWitch	S CLK	Serial CLock
CTL	ConTroL	S & A	Servo & Audio
CUE	CUE	SECAM	Séquentiel à Memoire
CW	Carrier Wave	SEP (SEPA)	SEParator (SEParator)
DAC	Digital to Analog Converter	SFP	Sync Front Pulse
DC	Direct Current	S & H	Sample and Hold
DEMOD	DEMOdulator	SLP	Super Long Play
DET	DETECTor (DETECTor)	SP	Standard Play
DL	Delay Line	SPD	SPeeD
DM	Drum Motor	SRP	Supply Reel Pulse
DOC	Drop Out Compensator	SRV	SeRVo
D-P-E	Drum-Phase-Error	SOW	Sync On Word
D-PG	Drum-Pulse Generator	STBY	STandBY
D-Tpz	Drum-TraPeZoid	SW	SWitch
EE	Electron to Electronic	SW'NG	SWitchiNG
EF	Emitter Follower	SWP	SWitching Pulse
EM	Eject Motor	SYNC	SYNChronize
EMPHA	EMPHAsis	T-AUDIO	Tuner AUDIO
ENVIN	ENVelope INput	TA-MUTE	Tuner Audio MUTE
ESW	Eject SWitch	TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
EQ	EQualizer	TRK	TRacking
FE	Full track Erase	TRP	Take up Reel Pulse
FF	Flip-Flop	T/U	Take Up
FG	Frequency Generator	TV	TeleVision
Fig.	Figure	UHF	Ultra High Frequency
FM	Frequency Modulation	UNR	UNRegulated
Fo	resonance Frequency	V	Vertical
FREQ	FREQuency	VCO	Voltage Controlled Oscillator
FSI	Field Start Inhibit	VD	Vertical Drive
GND	GrouND	VF	Voltage for Fine tuning
H	Horizontal	VHF	Very High Frequency
HP	Horizontal (sync) Pulse	VHS	Video Home System
HPF	High Pass Filter	VID	VIDeo
HT	HeaTer	VIDEO-J	VIDEO Judge
IC	Integrated Circuit	VIF	Video Intermediate Frequency
ID	IDentification	VJ	Video Judge
IDL	IDLE (Voltage)	VM	Voltage for Memory
INS	INsert	VOB	Video On Blank
INV	INVerter	VOW	Video On Word
L-CTL	Lamp-ConTroL	VP	Vertical (sync) Pulse
LED	Light Emitting Diode	VT	Voltage for Tuning
LDI	LoaD Input	WHT	White
LM	Loading Motor	2H	2 Hour (SP)
		6H	6 Hour (SLP)

VS-33U/UM

# AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan

TEL: Tokyo (742) 5111 CABLE: HIFIAKAI TOKYO TELEX: J26261

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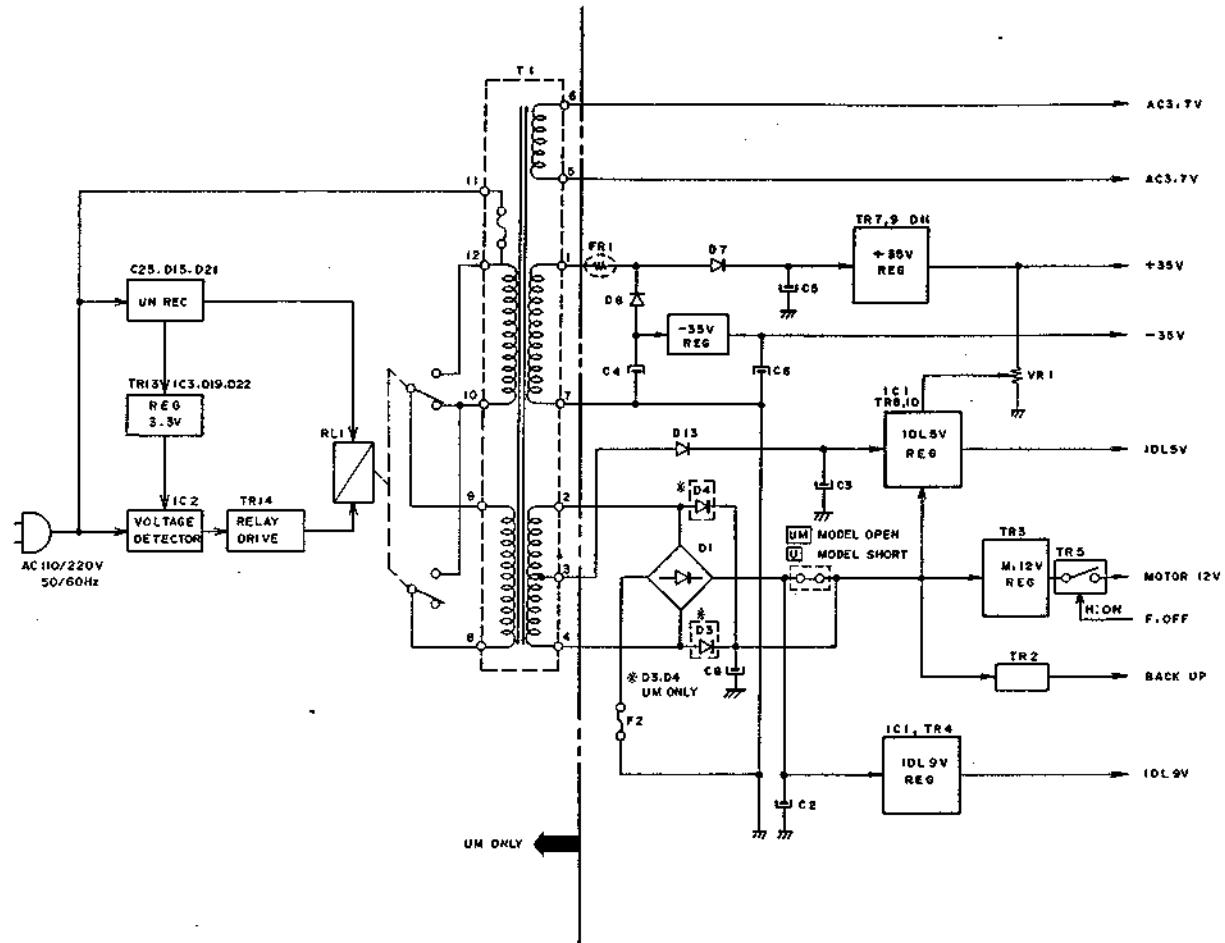
# **AKAI**

## **MODEL VS-35U MODEL VS-33U/UM**

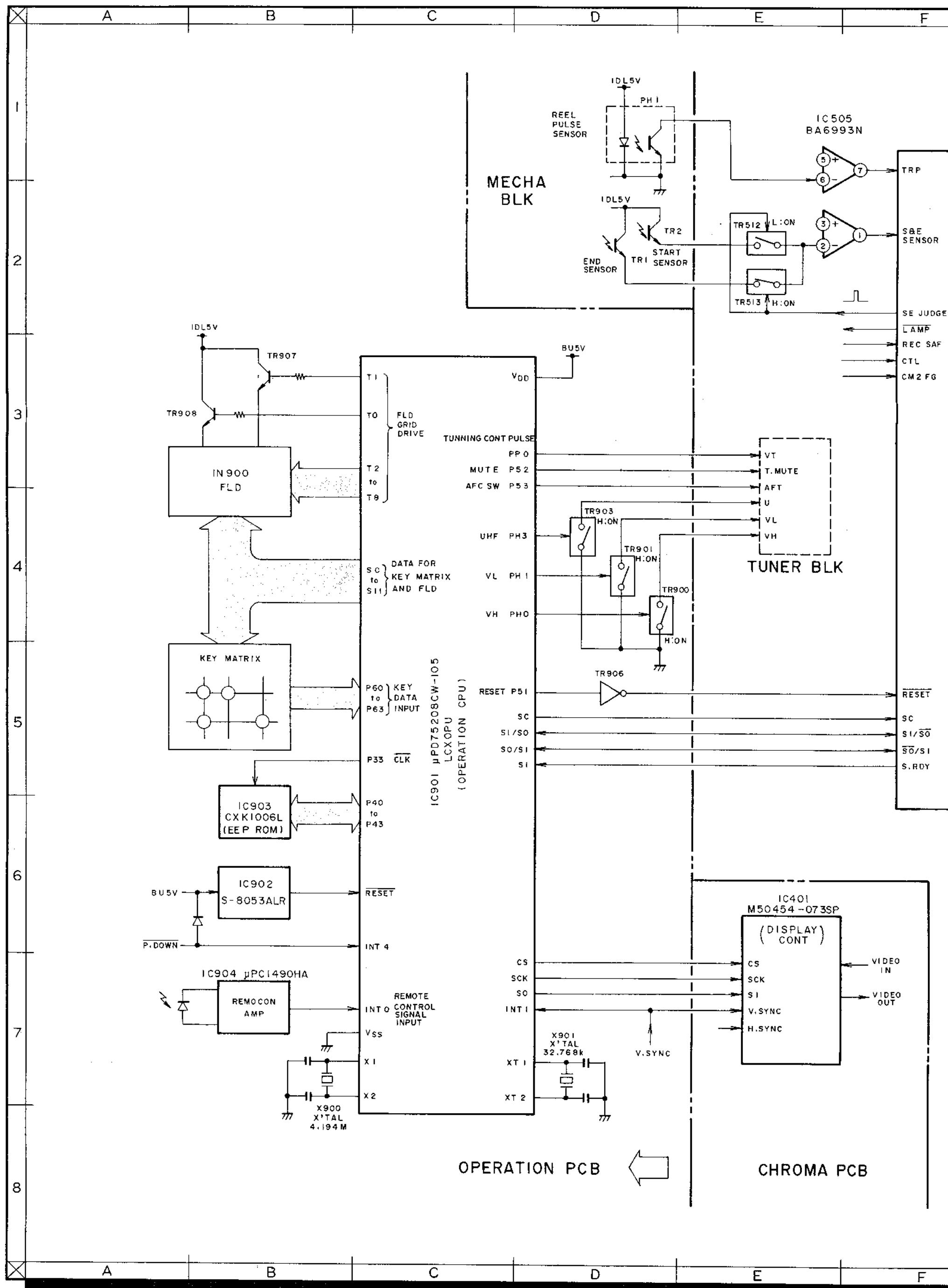
### **SCHEMATIC DIAGRAM AND PC BOARDS**

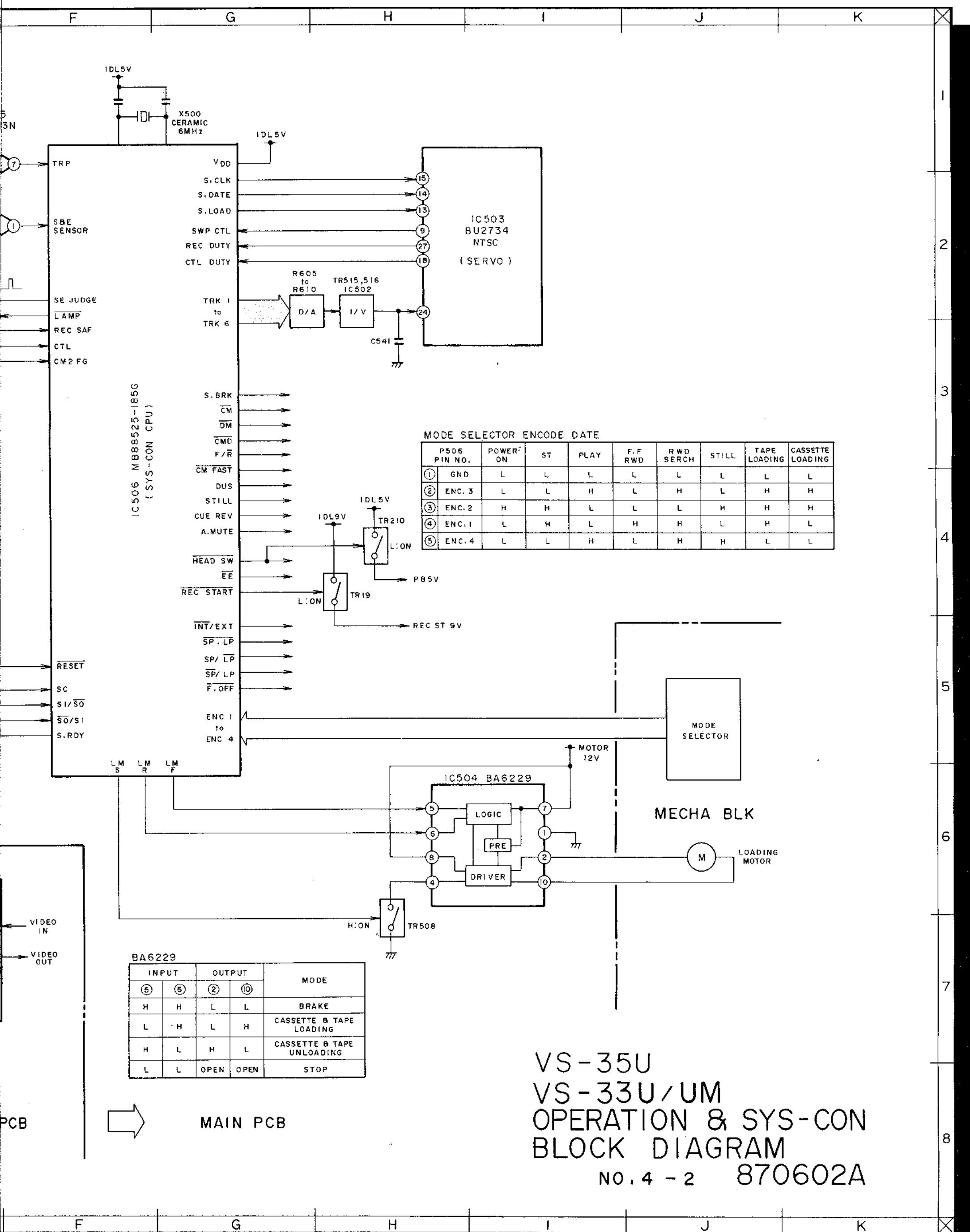
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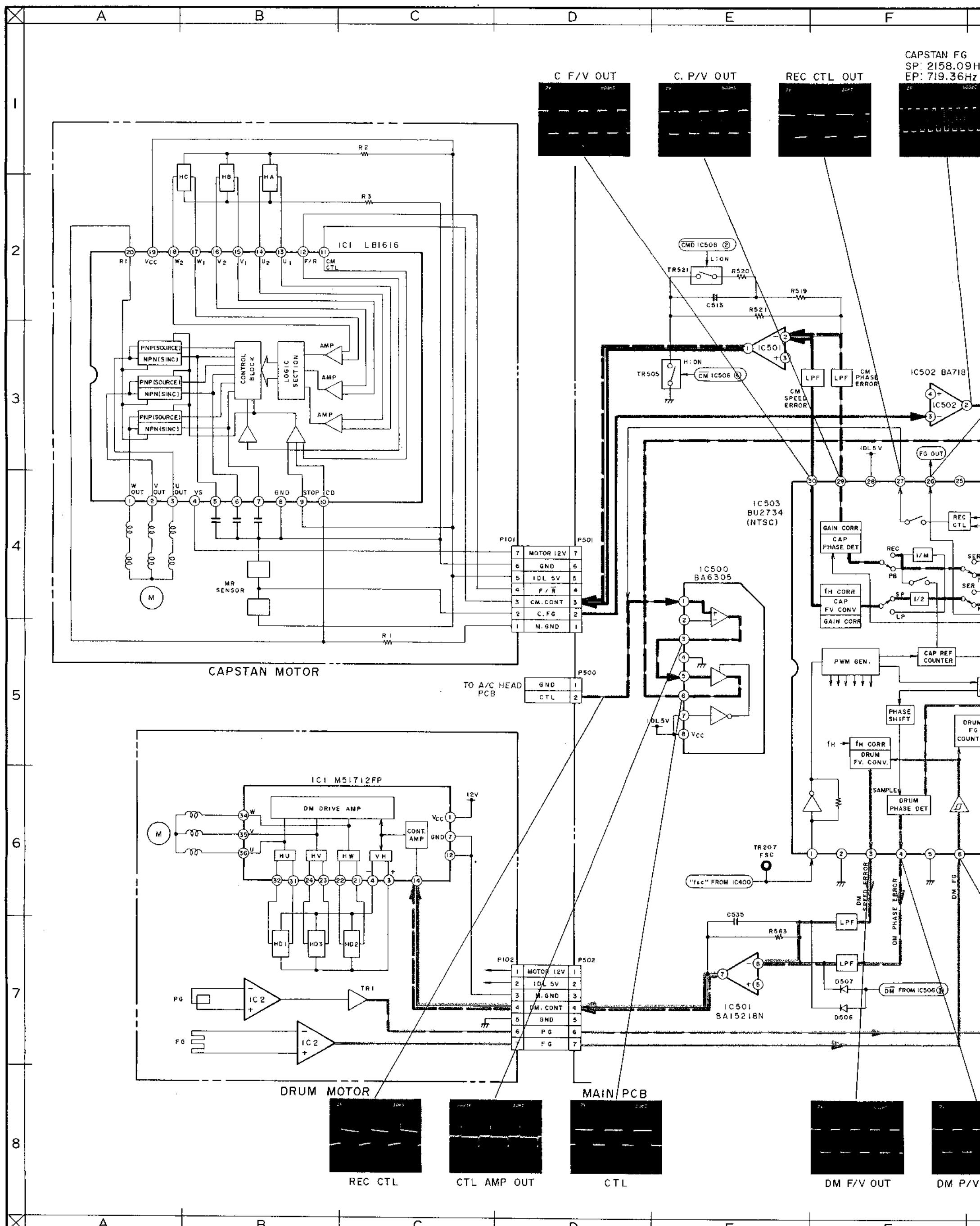
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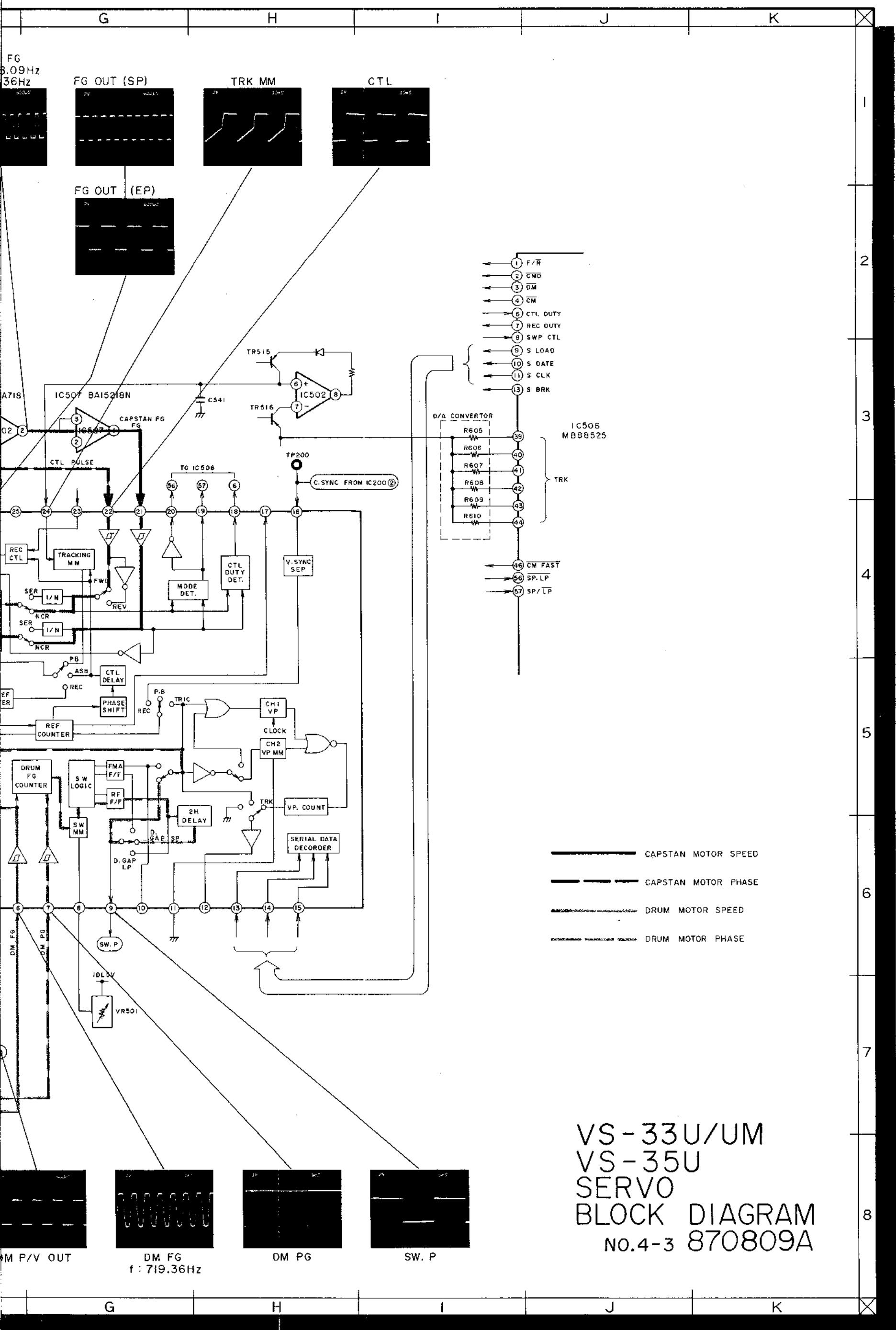


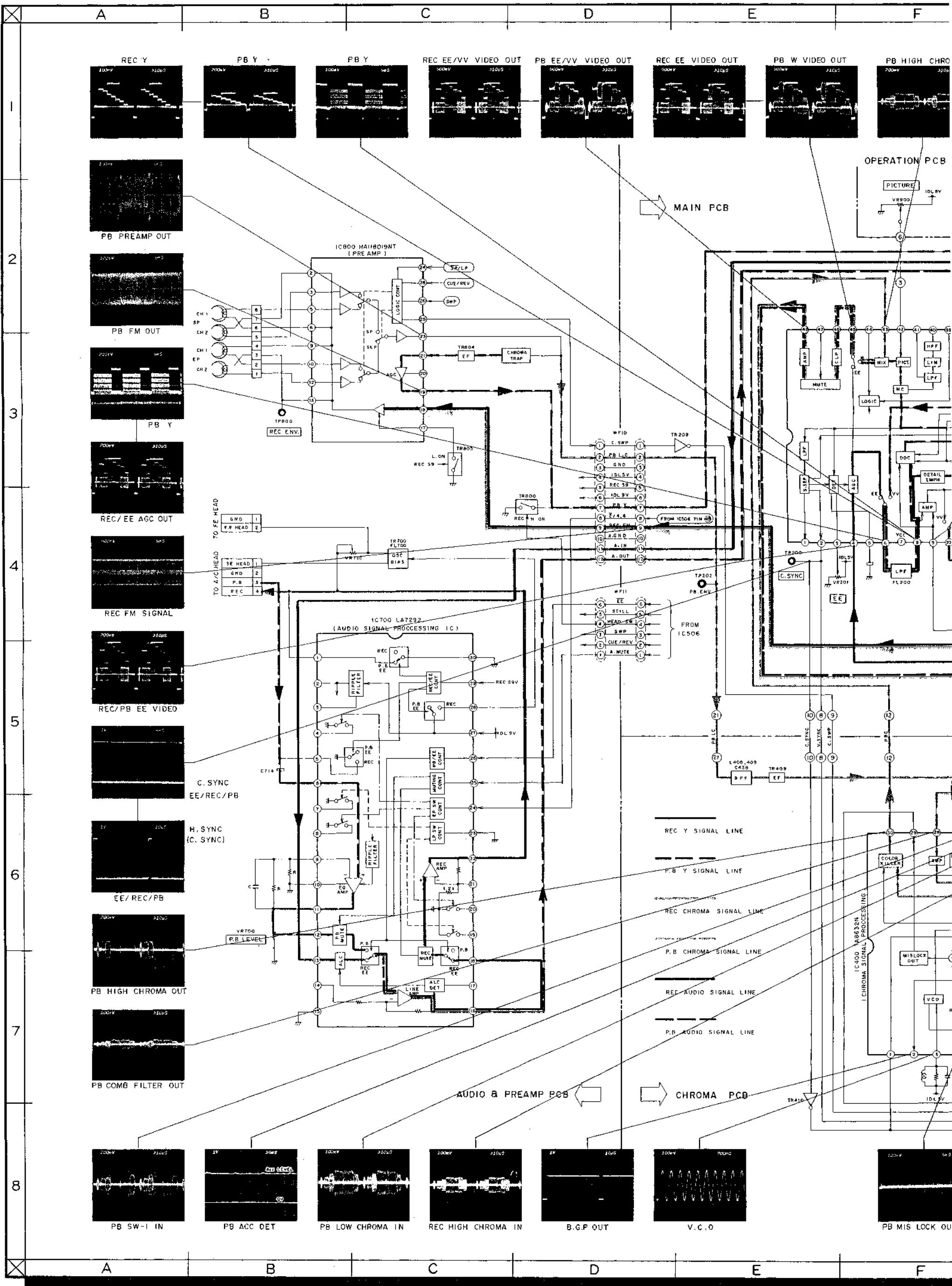
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VS-35U  
POWER SUPPLY  
BLOCK DIAGRAM  
NO.4-1 870807A

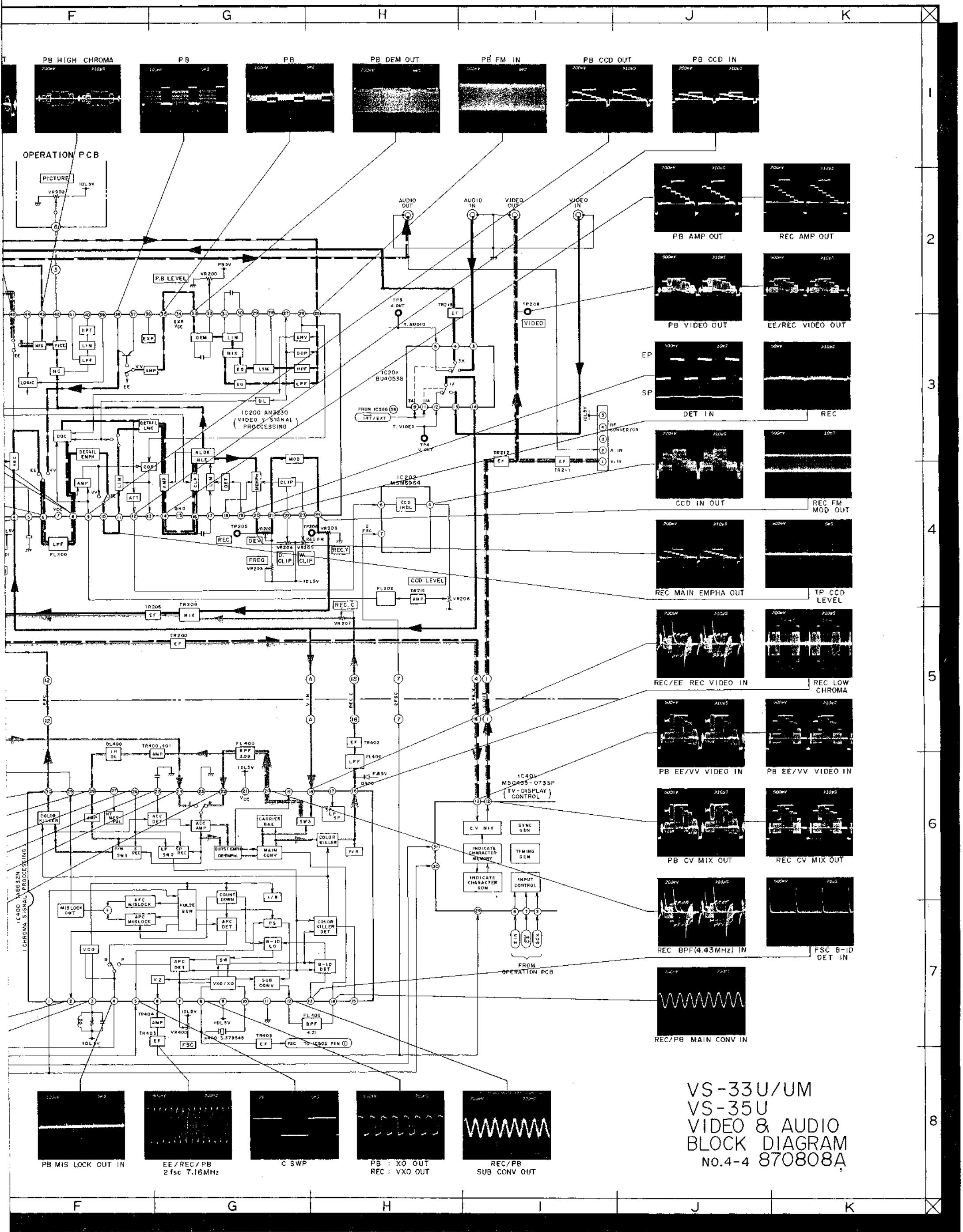


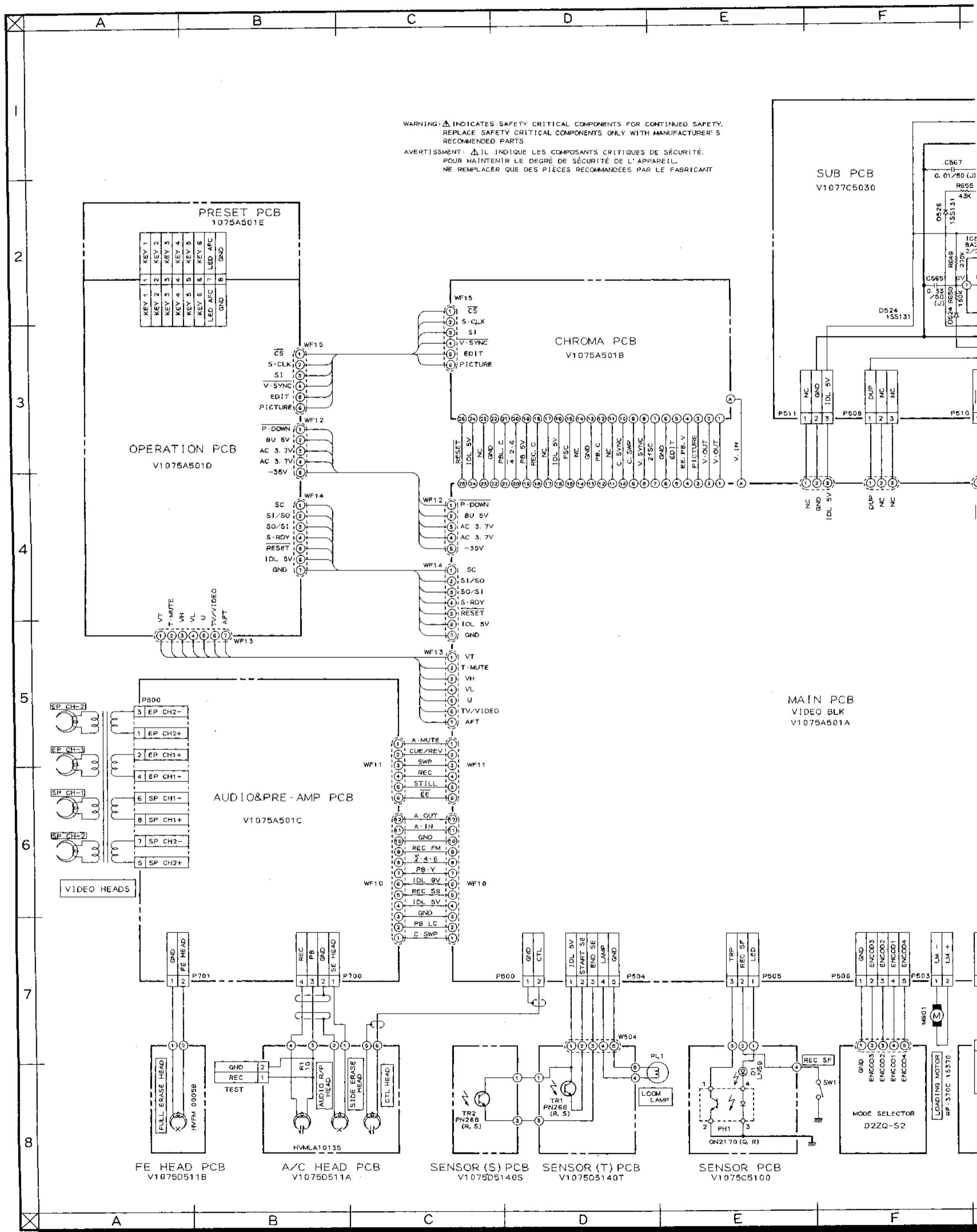


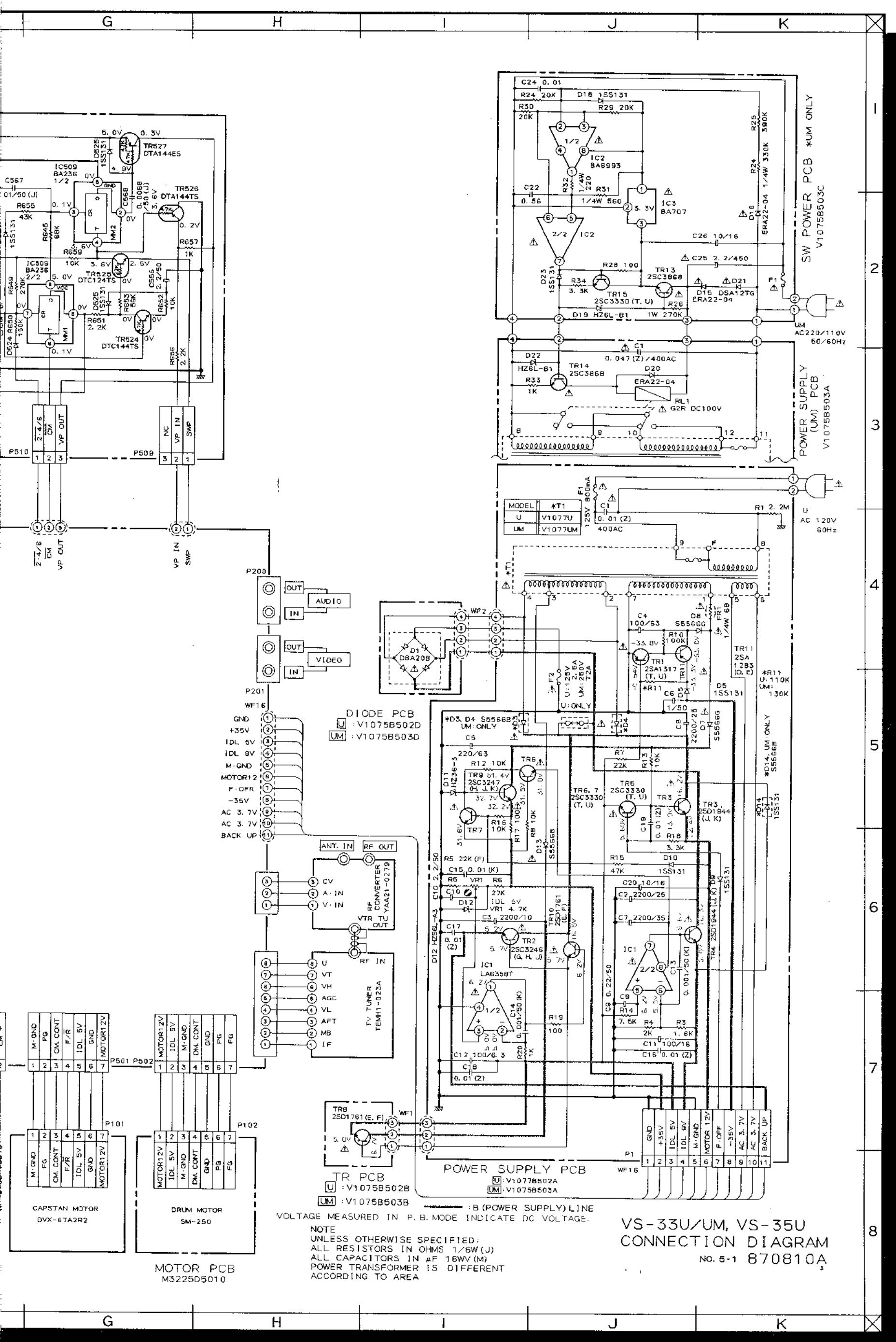




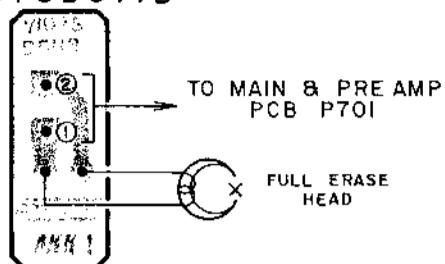




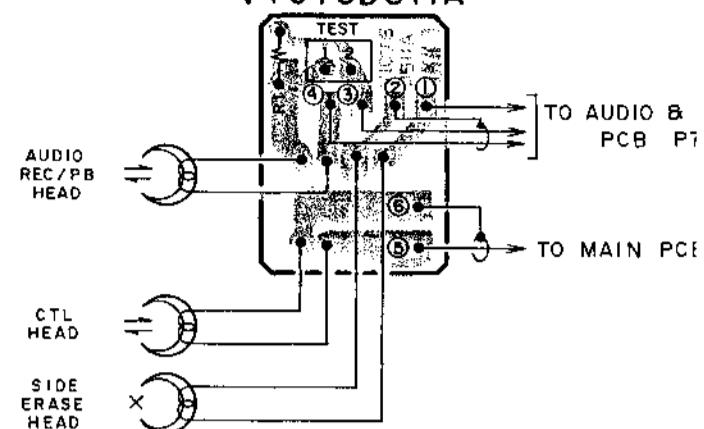




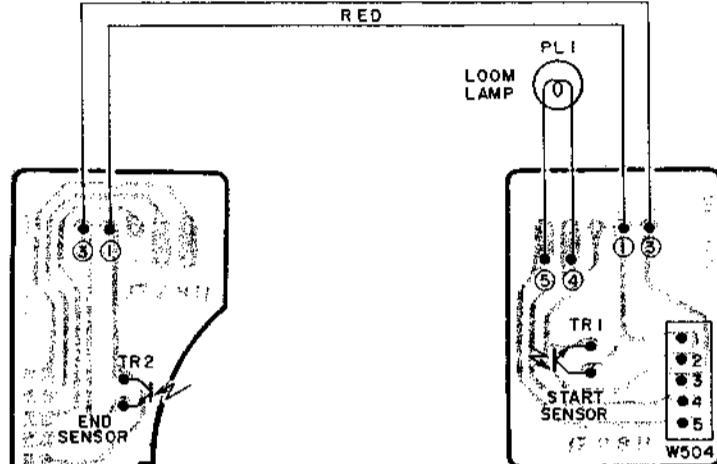
FULL ERASE HEAD PCB  
V1075D511B



A/C HEAD PCB  
V1075D511A



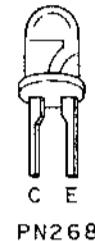
BLK  
RED



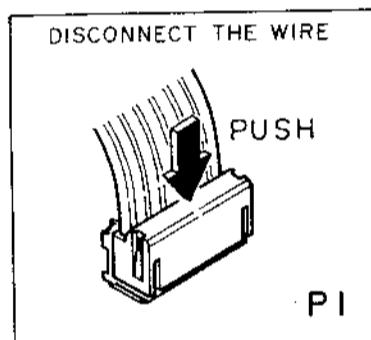
SENSOR(S) PCB  
V1075D5140S

SENSOR(T) PCB  
V1075D5140T

TO  
MAIN PCB  
P504

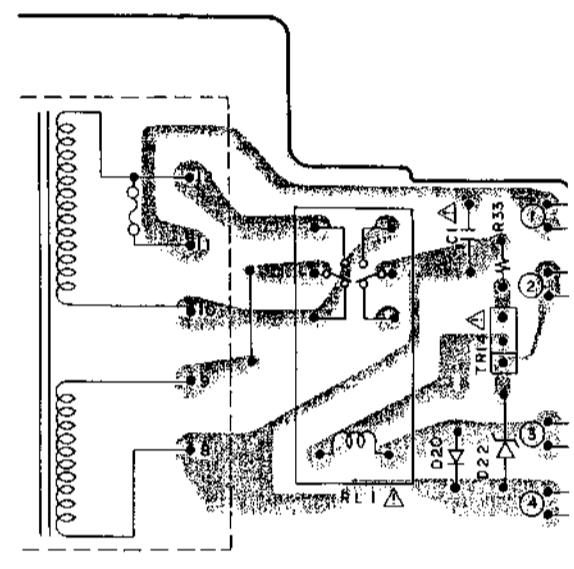


PN268

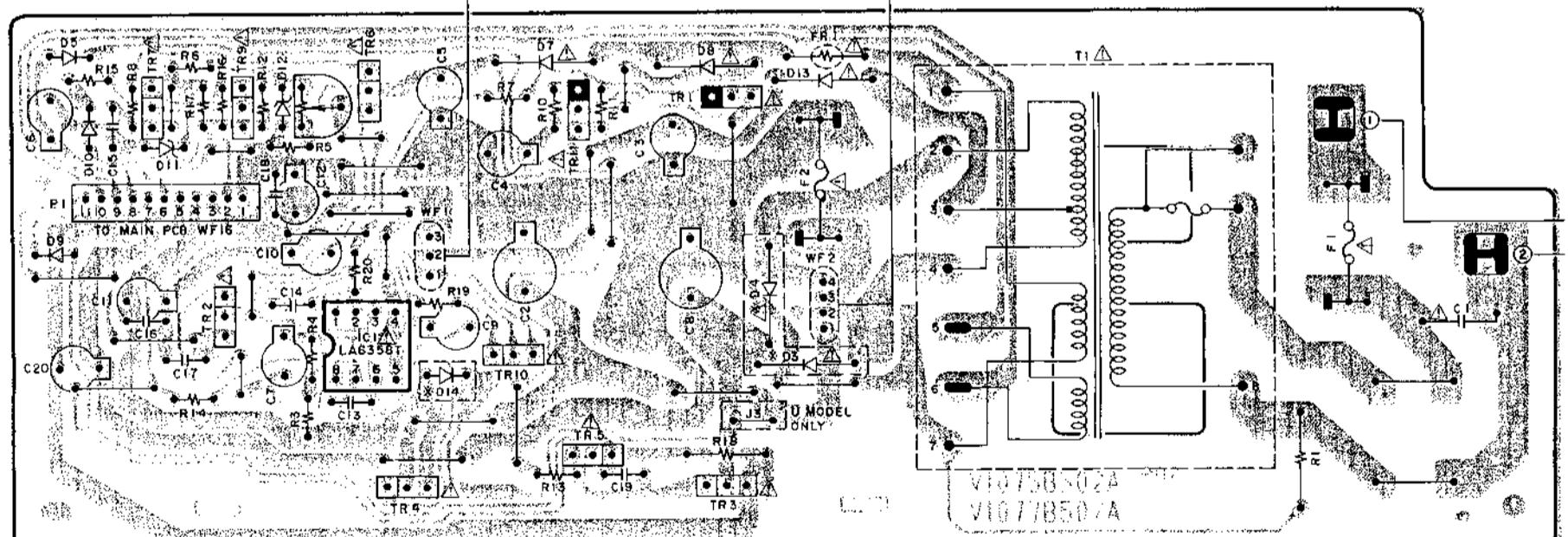


TR PCB  
V1075B502B

DIODE PCB  
V1075B502D



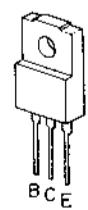
POWER SUPPLY(UM) PCB  
V1075B503A



POWER SUPPLY PCB V1077B502A(-A)-(U) \*D3, D4, D14 UM ONLY  
V1075B503A ----(UM)

[ ] = NPN TRANSISTOR

[ ] = PNP TRANSISTOR



2SD1761  
2SD1944



2SA1317  
2SC3330



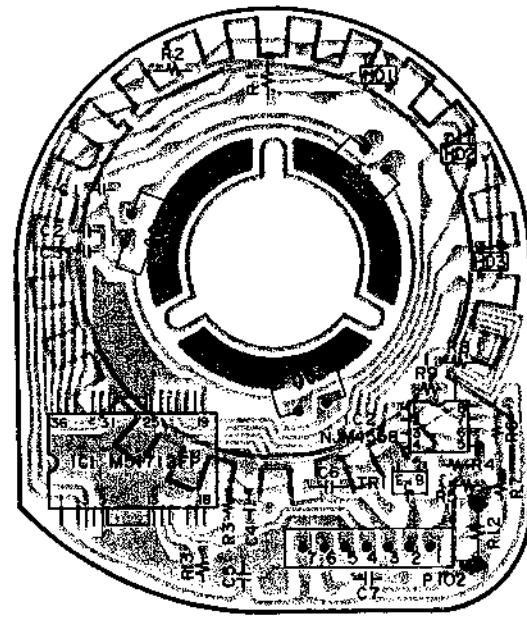
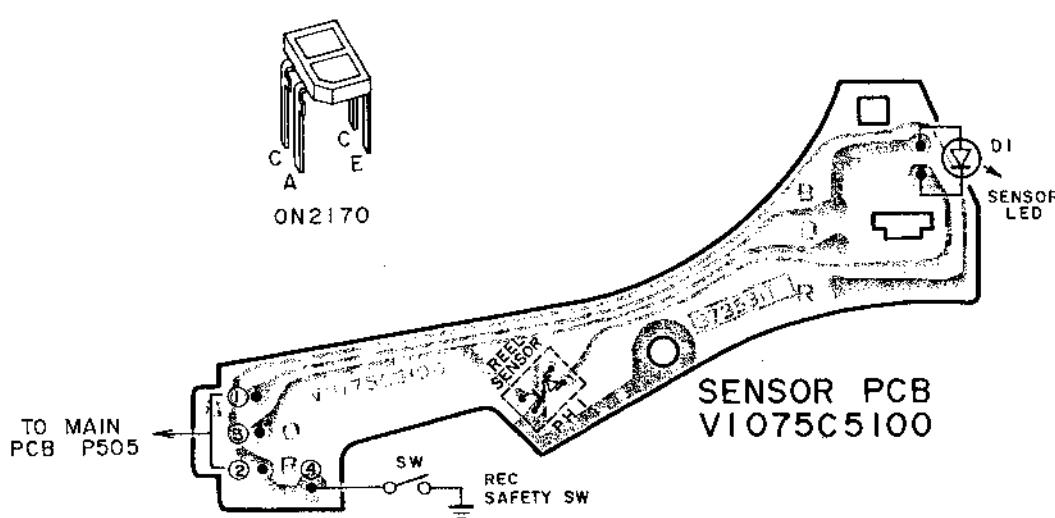
2SA1283  
2SC3247

WARNING △ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.  
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S  
RECOMMENDED PARTS.

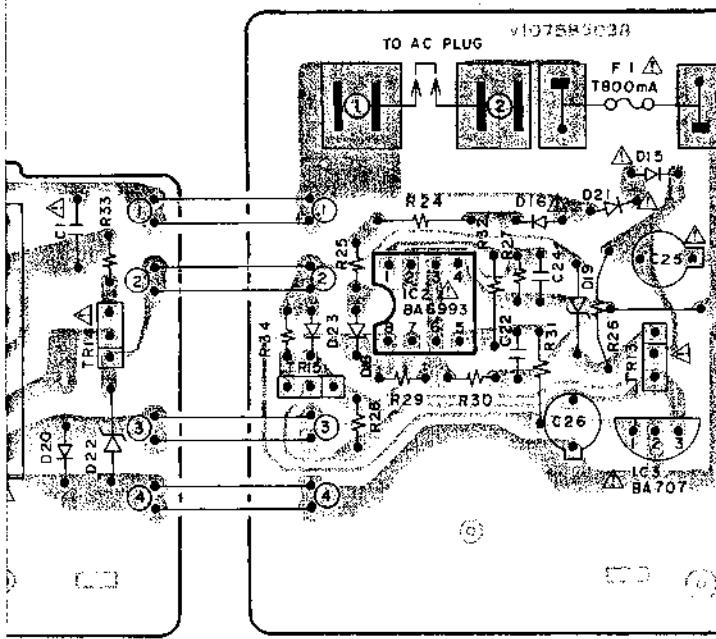
AVERTISSEMENT: △ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.  
POUR MAINTENIR LE DÉGRÉ DE SÉCURITÉ DE L'APPAREIL,  
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

TO AUDIO & PRE AMP  
PCB P700

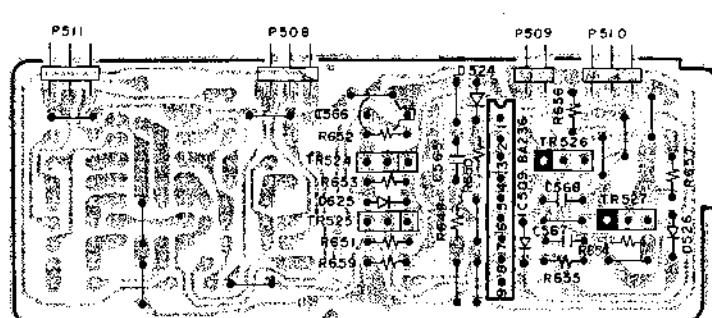
TO MAIN PCB P500



MOTOR PCB M3225D5010 (SM-250)

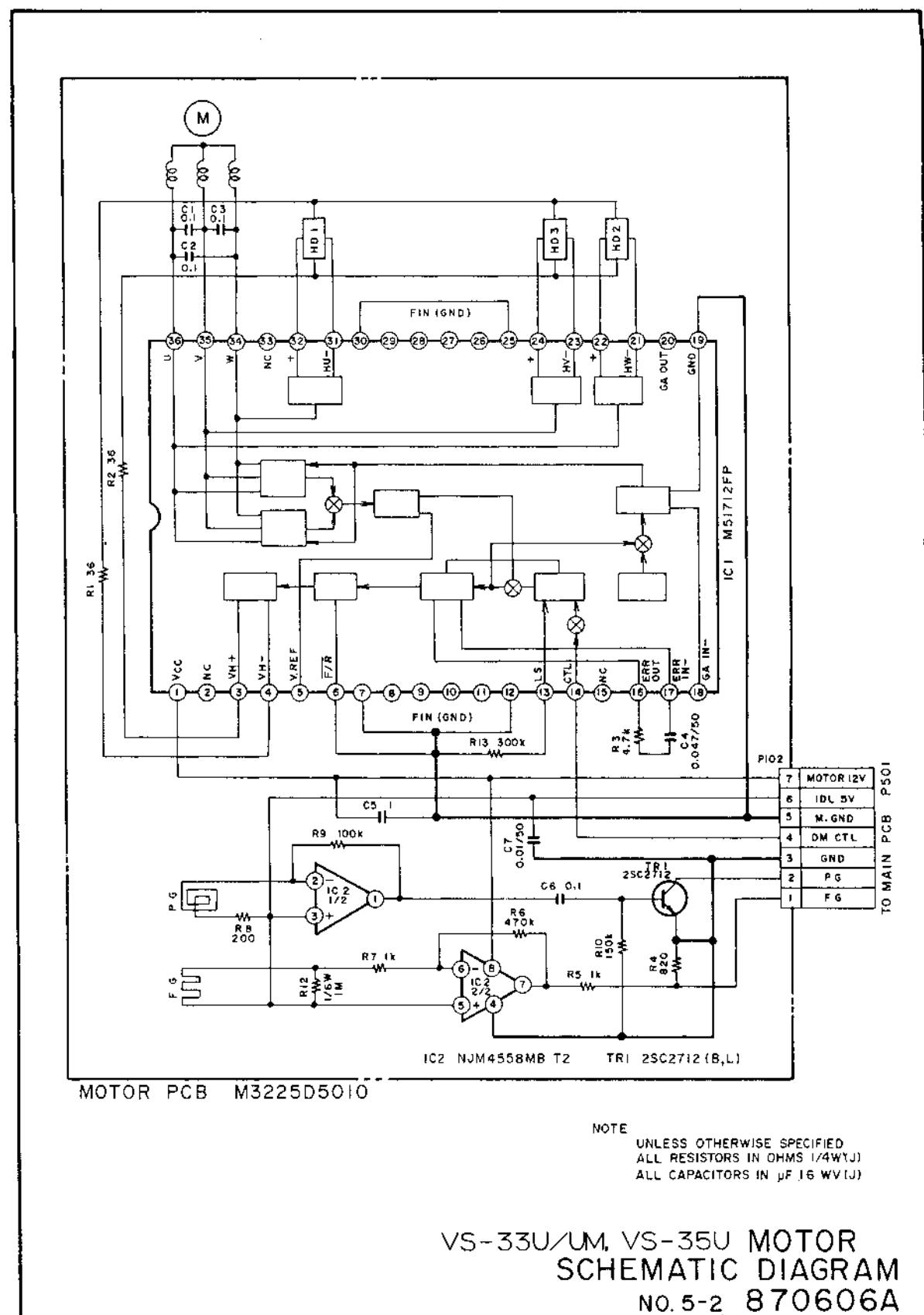


B

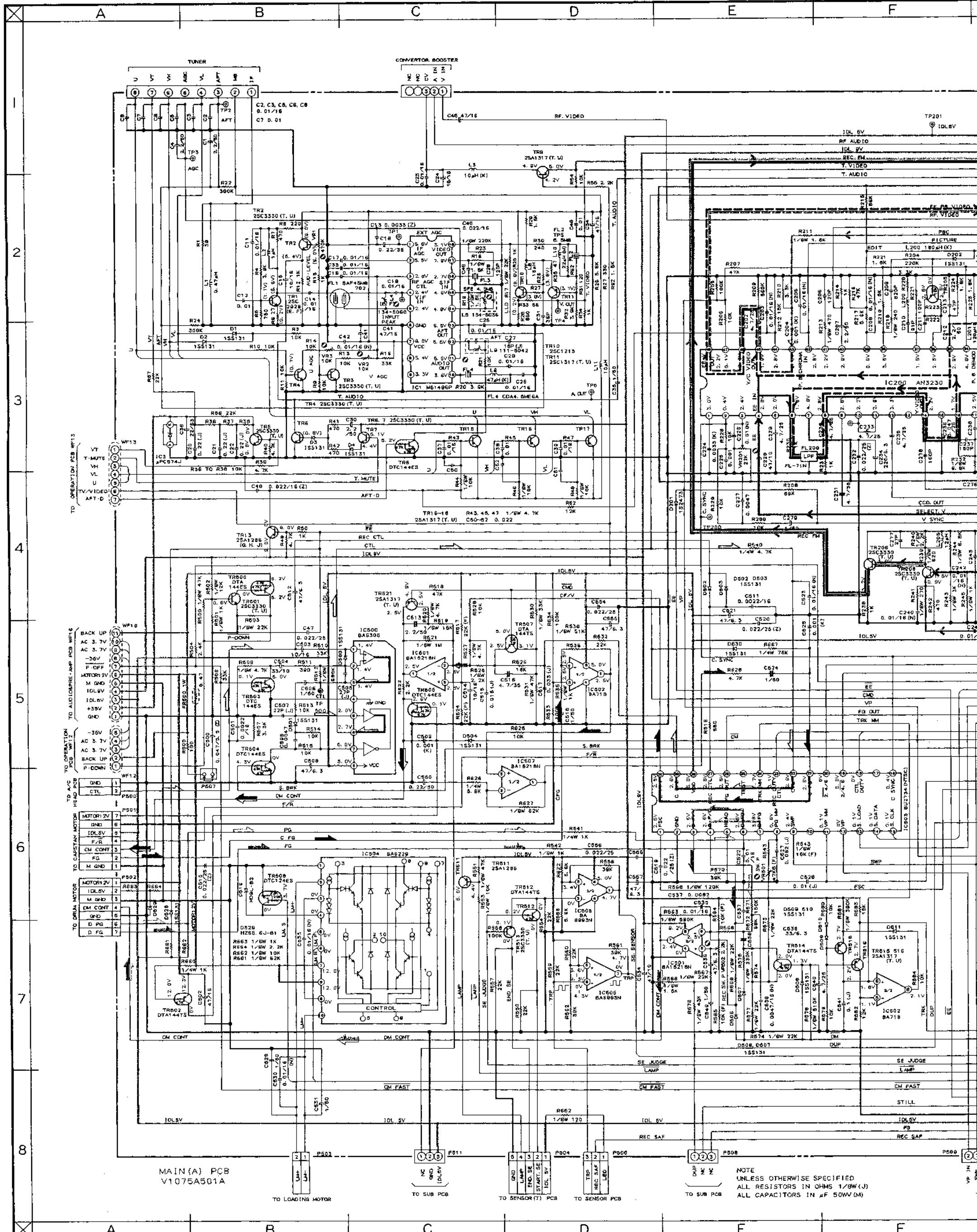


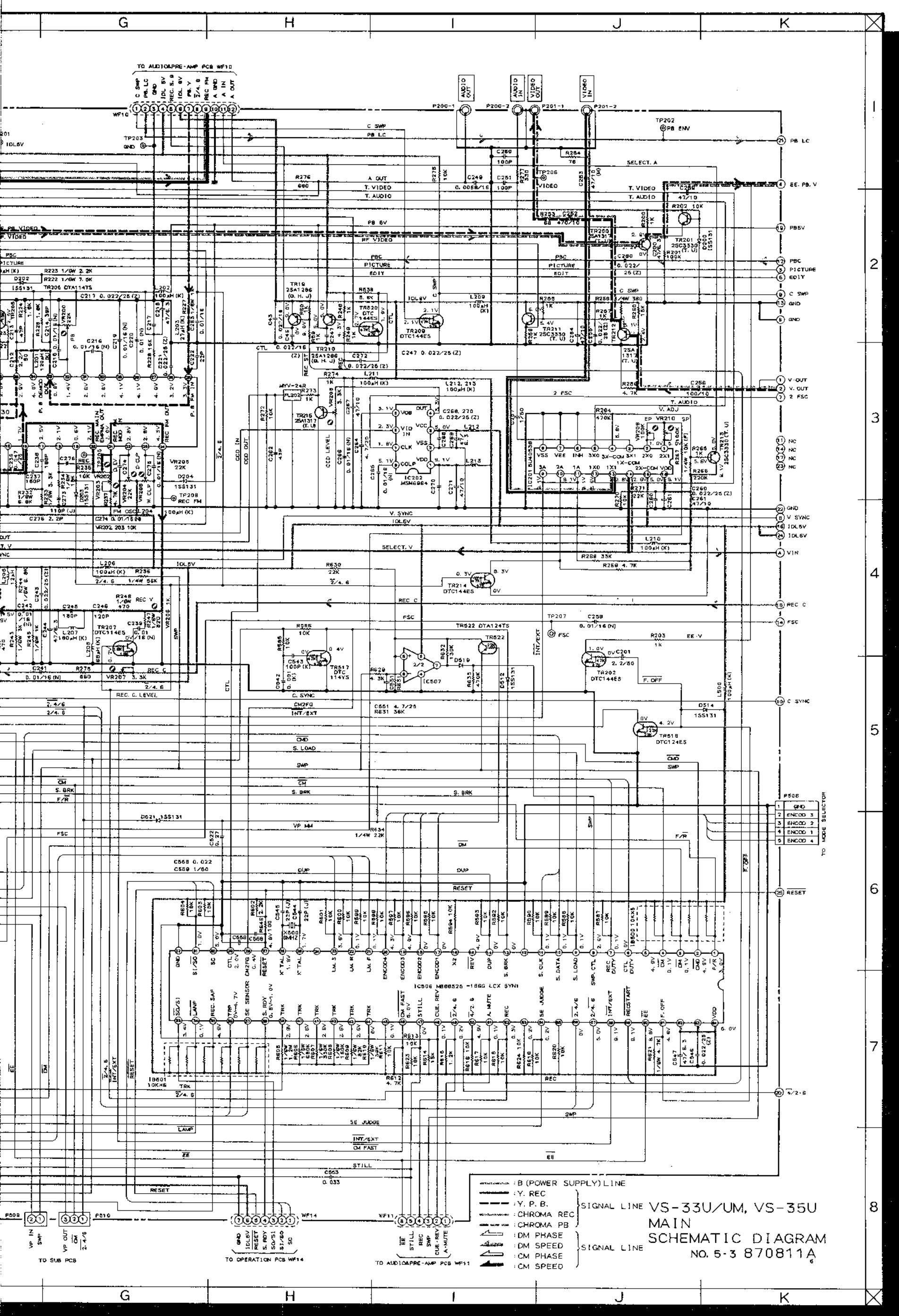
CONTINUED SAFETY,  
MANUFACTURER'S

SÉCURITÉ.  
REL.  
PAR LE FABRICANT



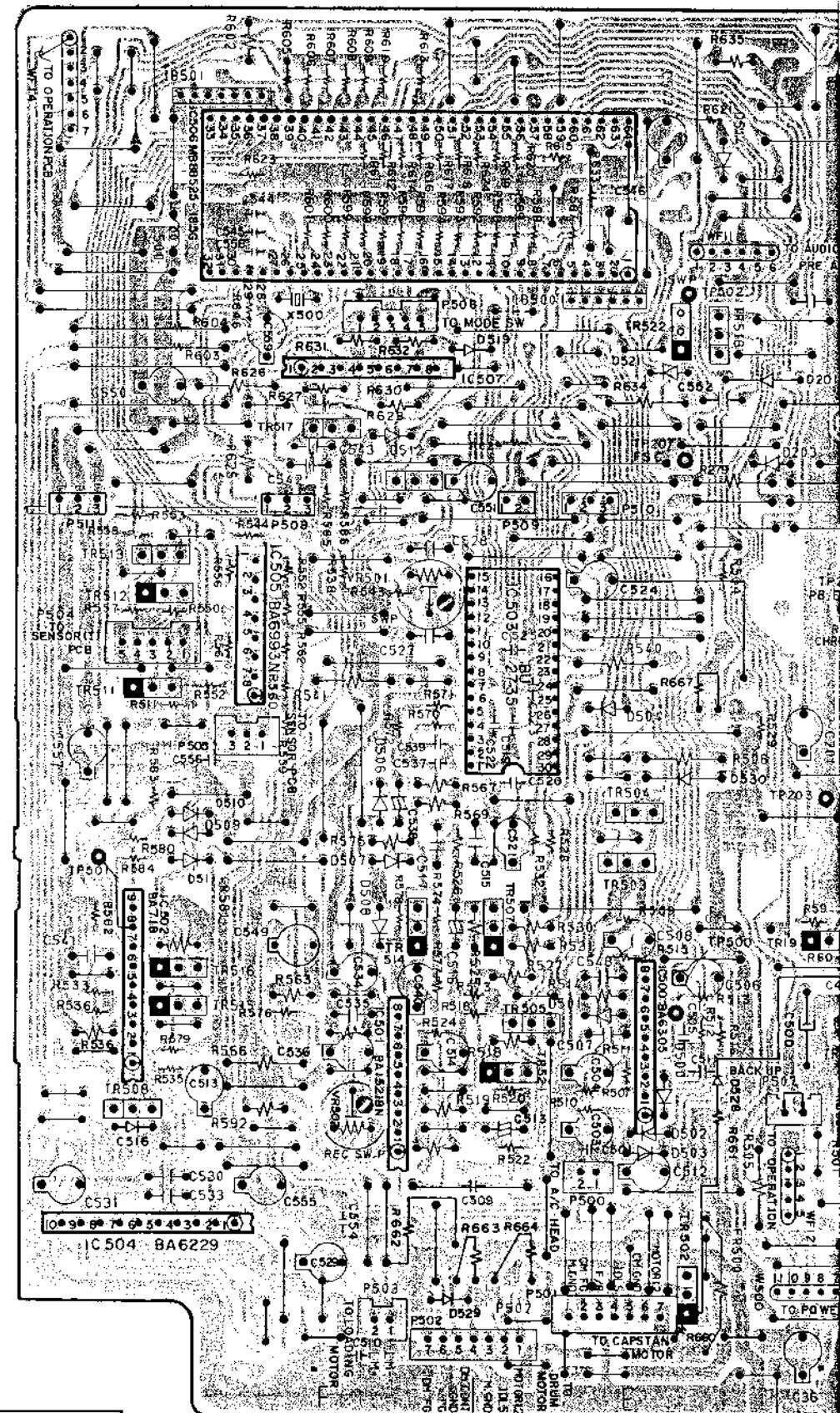
VS-33U/UM, VS-35U MOTOR  
SCHEMATIC DIAGRAM  
NO. 5-2 870606A



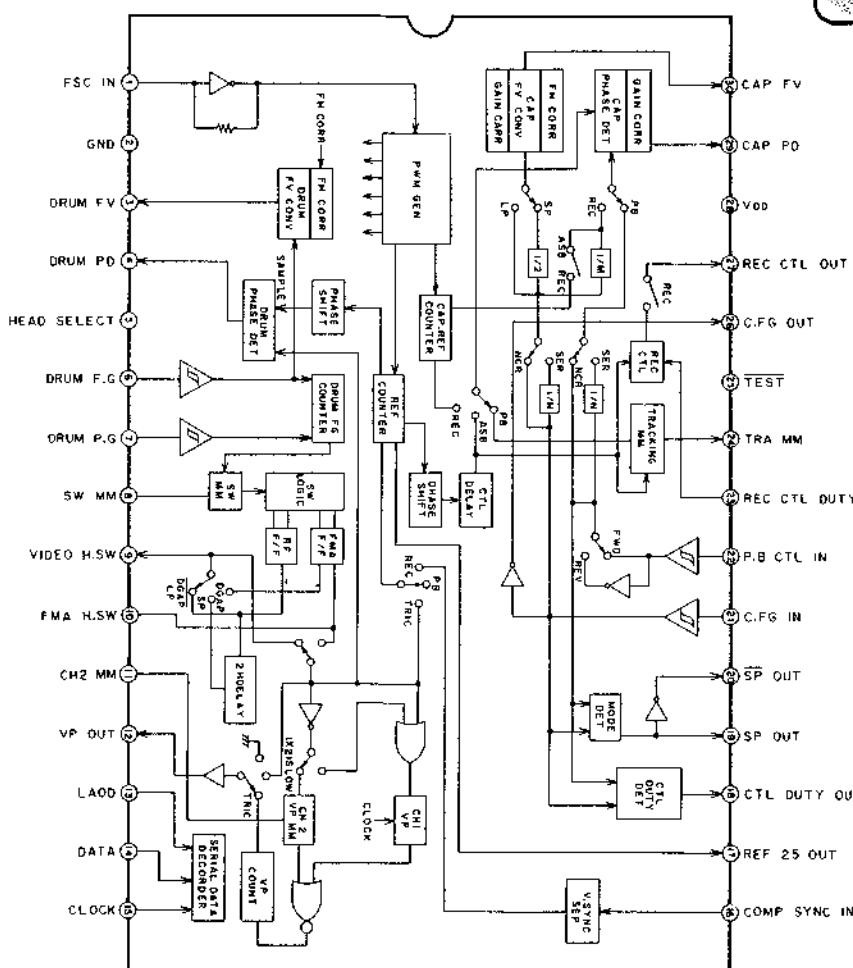


**PRINCIPAL PARTS LOCATION**

ICs	TRANSISTORS
IC1.....BC6	
IC3.....BC6	TR1.....B5
IC200...B3, 4	TR2.....C5
IC201...A3, 4	TR3.....B6
IC202...D3	TR4.....B6
IC500...E5, 6	TR5.....B6
IC501...F5, 6	TR6.....C6
IC502...F5	TR7.....C6
IC503...E4	TR8.....C6
IC504...F6	TR9.....A6
IC505...F4	TR10....C5
IC506...EF2, 3	TR11....C5
IC506...EF2, 3	TR13....D5
IC507...F3	TR16....C6
CONNECTORS, WIRES	TR17....C6
P500....E6	TR18....D6
P501....E6	TR19....D5
P502....EF6	TR200...B4
P503....F6	TR201...B4
P504....F4	TR202...B4
P505....F4	TR205...B3
P506....F3	TR206...D4
P507....D6	TR207...D4
P508....E4	TR208...D4
P509....E4	TR209...D2
P510....E4	TR210...D2
PS11....F4	TR211...A3
WF10....D5	TR212...A2
WF11....E3	TR213...A4
WF12....D6	TR214...B4
WF13....CD6	TR215...C3
WF14....F2	TR500...D6
W16....D6	TR501...D6
	TR502...E6
	TR503...E5
	TR504...E5
	TR505...E5
	TR507...F4
	TR508...F6
	TR511...F4
	TR512...F4
	TR513...F4
	TR514...F5
	TR515...F5
	TR516...F5
	TR517...F3
	TR518...E3
	TR520...E5
	TR521...E5, 6
	TR522...E3

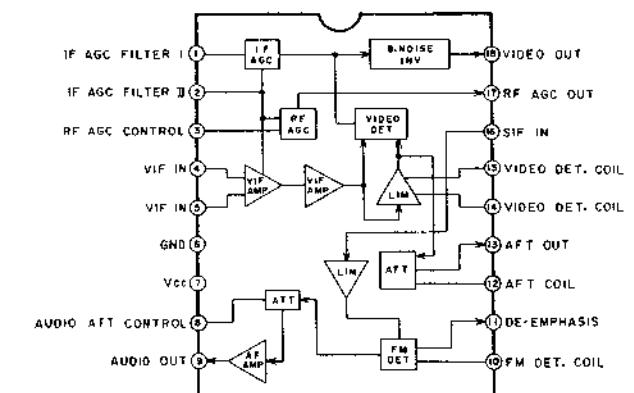


**BU2734 (DIGITAL SERVO)**

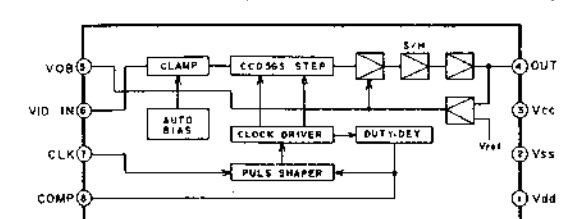


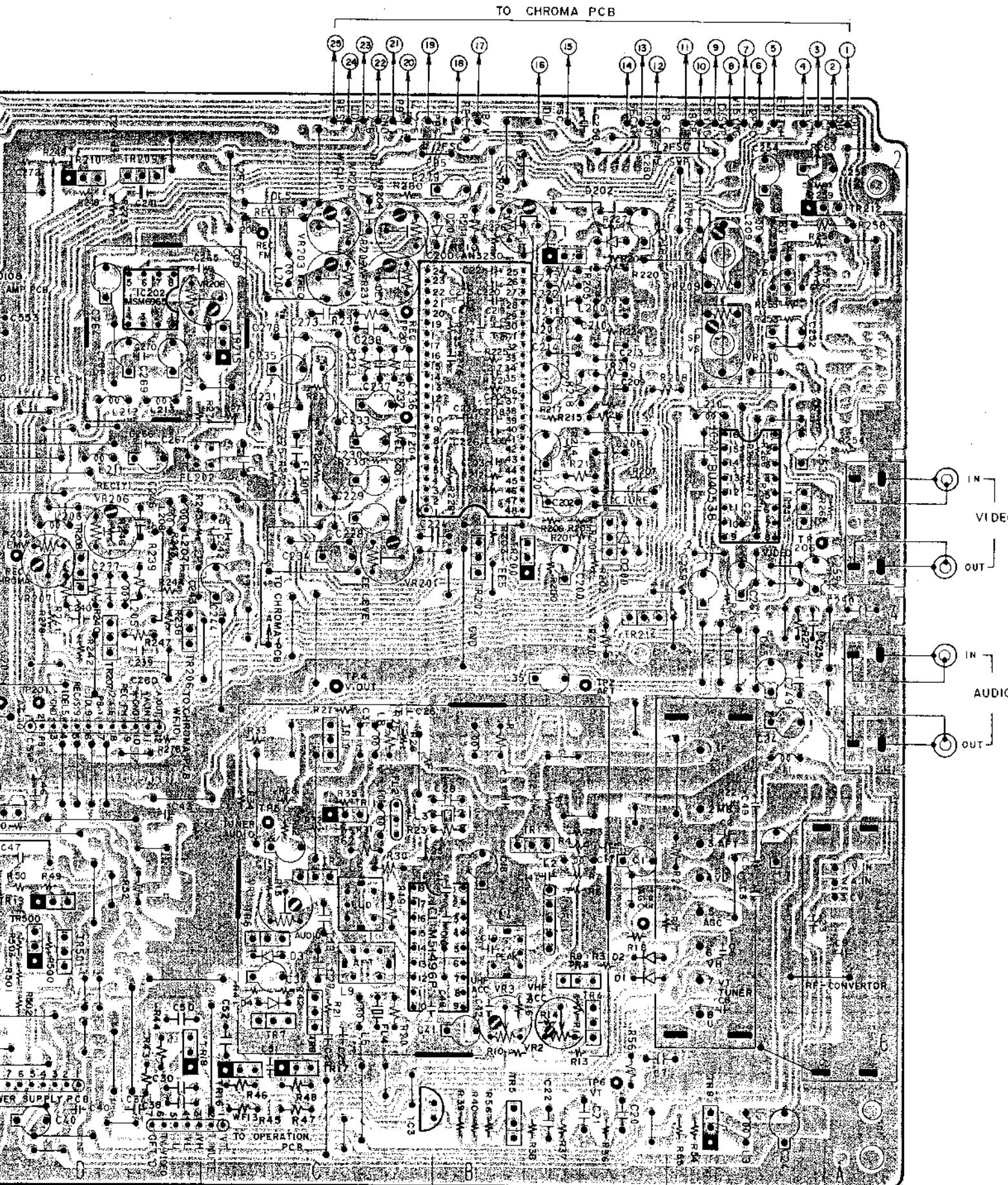
**MAIN PCB VI075A501A**

**M51496P (VIF+SIF AMP IC)**



**MSM6964-3RS (IH CCD DELAY LINE)**

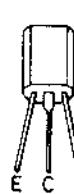




2SA1317  
2SC1317  
2SC2926  
2SC3330  
DTA114TS  
DTA144ES  
DTA144 TS  
DTC114 ES  
DTC114 YS  
DTC124ES  
DTC144ES



2SC1213



2SA1286

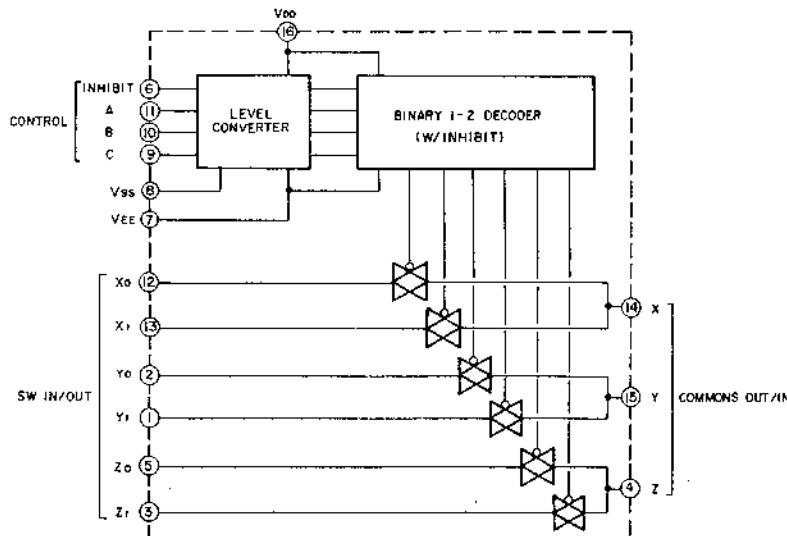
[ ] = NPN TRANSISTOR

[ ] = PNP TRANSISTOR

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

AVERTISSEMENT: IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.  
POUR MAINTENIR LE DÉGRÉ DE SÉCURITÉ DE L'APPAREIL,  
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

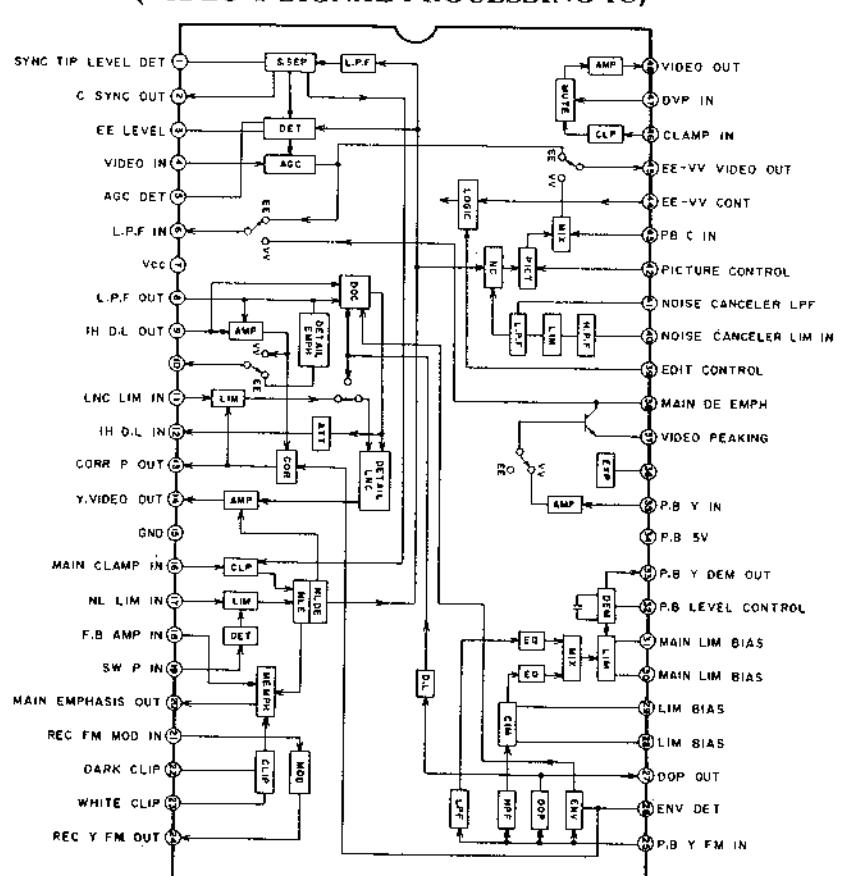
### BU4053B (TRIPLE 2CH. MULTIPLEXER/DEMULTIPLEXER)

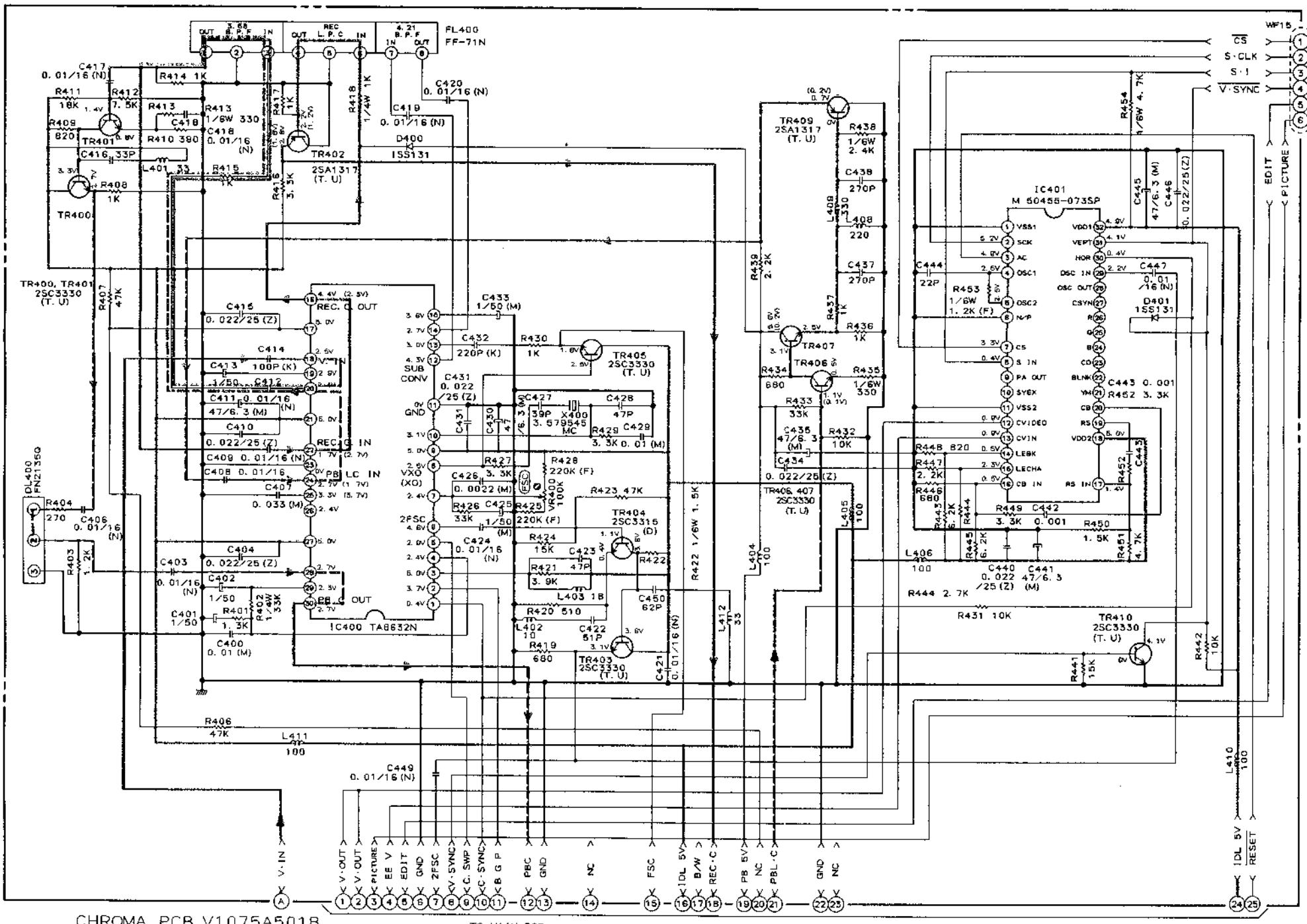


TRUTH TABLE

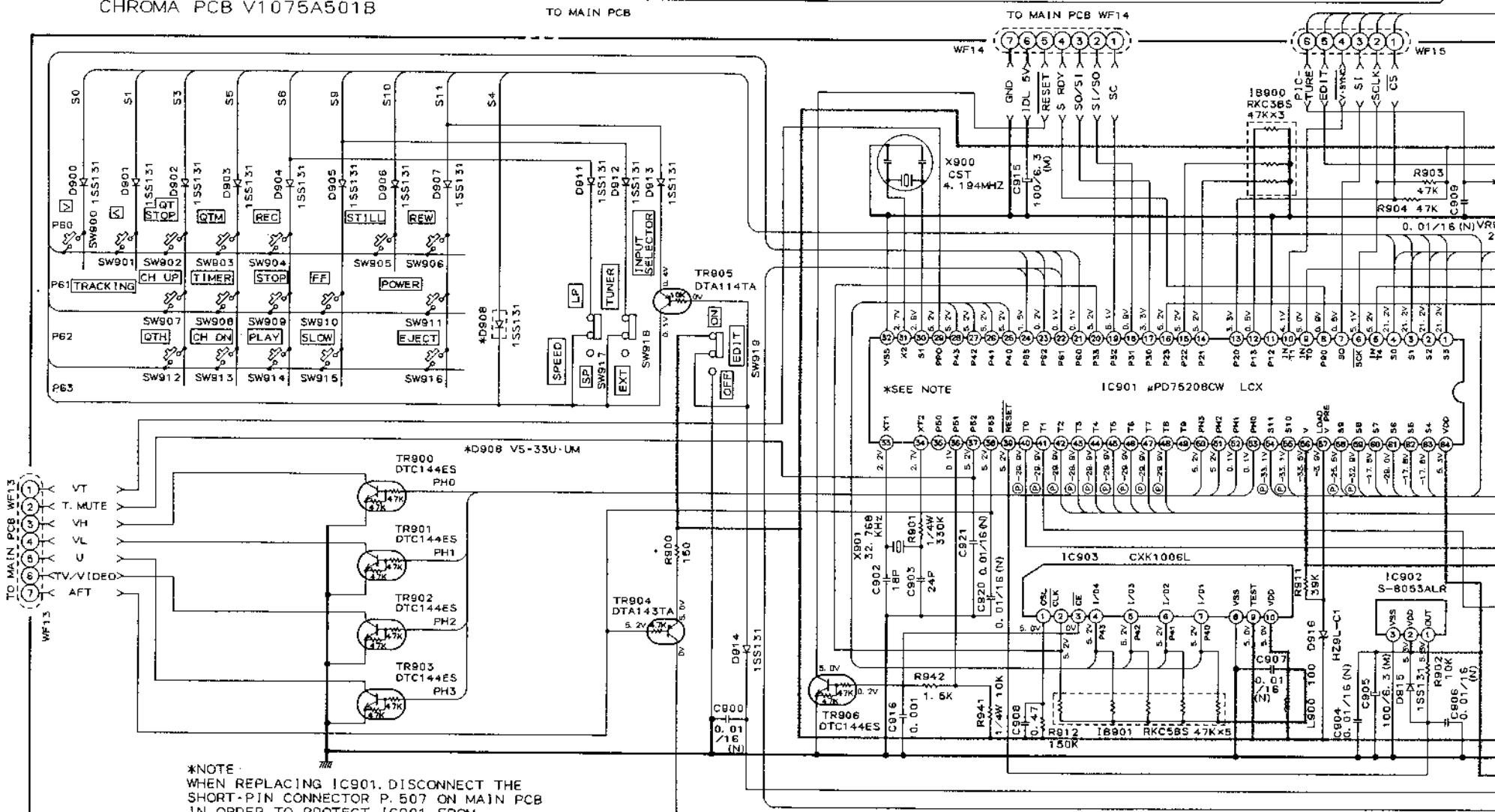
CONTROL DATE	"ON" CHANNEL						
	INH	A	B	C	X	Y	Z
L	L	L	L	L	X <sub>0</sub>	Y <sub>0</sub>	Z <sub>0</sub>
L	L	L	L	H	X <sub>0</sub>	Y <sub>0</sub>	Z <sub>1</sub>
L	L	H	L	L	X <sub>0</sub>	Y <sub>1</sub>	Z <sub>0</sub>
L	L	H	H	H	X <sub>0</sub>	Y <sub>1</sub>	Z <sub>1</sub>
L	H	L	L	L	X <sub>1</sub>	Y <sub>0</sub>	Z <sub>0</sub>
L	H	L	H	H	X <sub>1</sub>	Y <sub>0</sub>	Z <sub>1</sub>
L	H	H	L	L	X <sub>1</sub>	Y <sub>1</sub>	Z <sub>0</sub>
L	H	H	H	H	X <sub>1</sub>	Y <sub>1</sub>	Z <sub>1</sub>
H	*	*	*	*	NONE	NONE	NONE

### AN3230 (VIDEO Y SIGNAL PROCESSING IC)

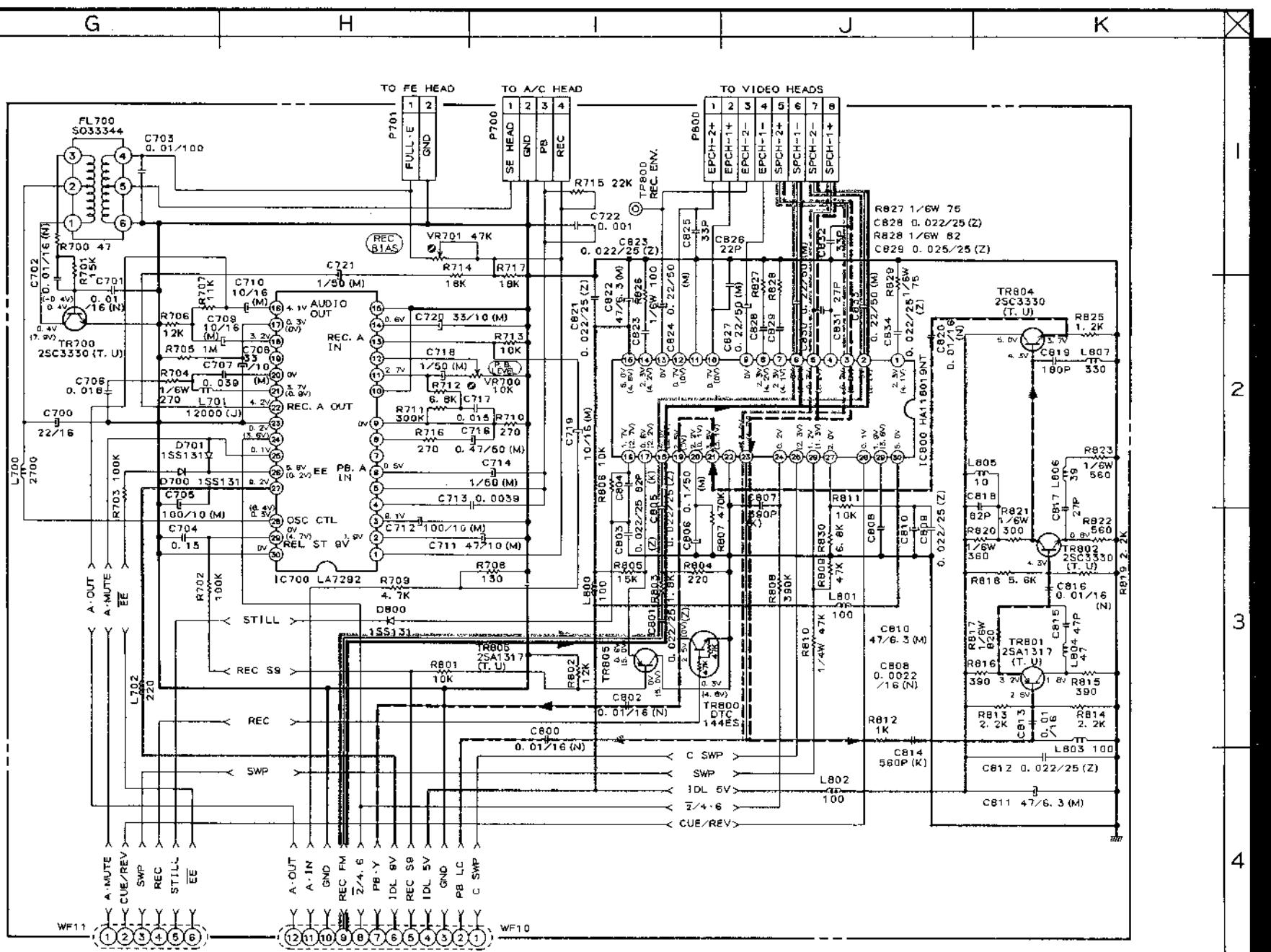




CHROMA PCB V1075A501B

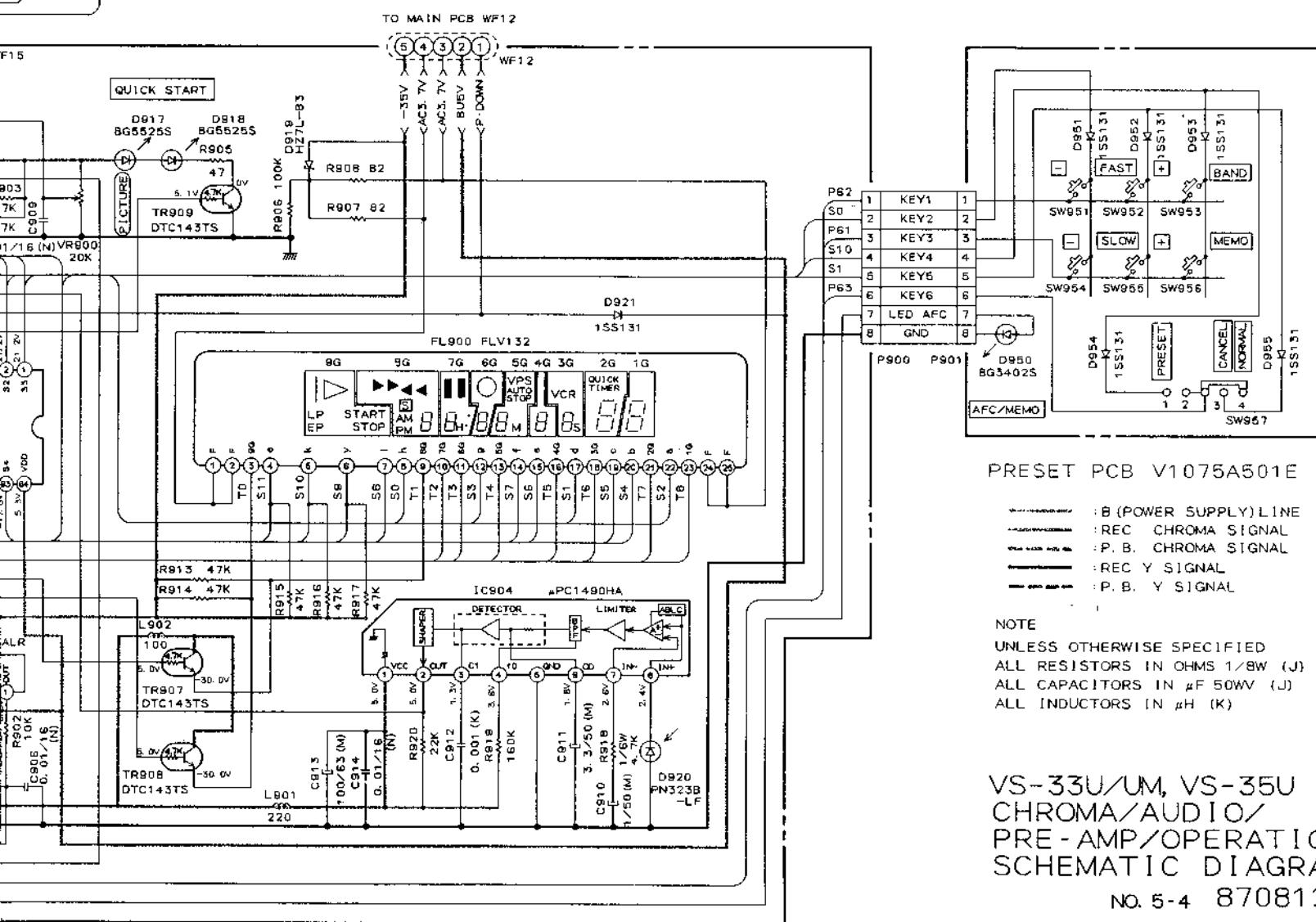


OPERATION PCB V1075A501D



PRE-AMP&AUDIO PCB V1075A501C

(INDICATED VOLTAGE MEASURED ON P. B. MODE  
( ) : REC MODE



PRESET PCB V1075A501E

- B (POWER SUPPLY) LINE
- REC CHROMA SIGNAL
- P. B. CHROMA SIGNAL
- REC Y SIGNAL
- P. B. Y SIGNAL

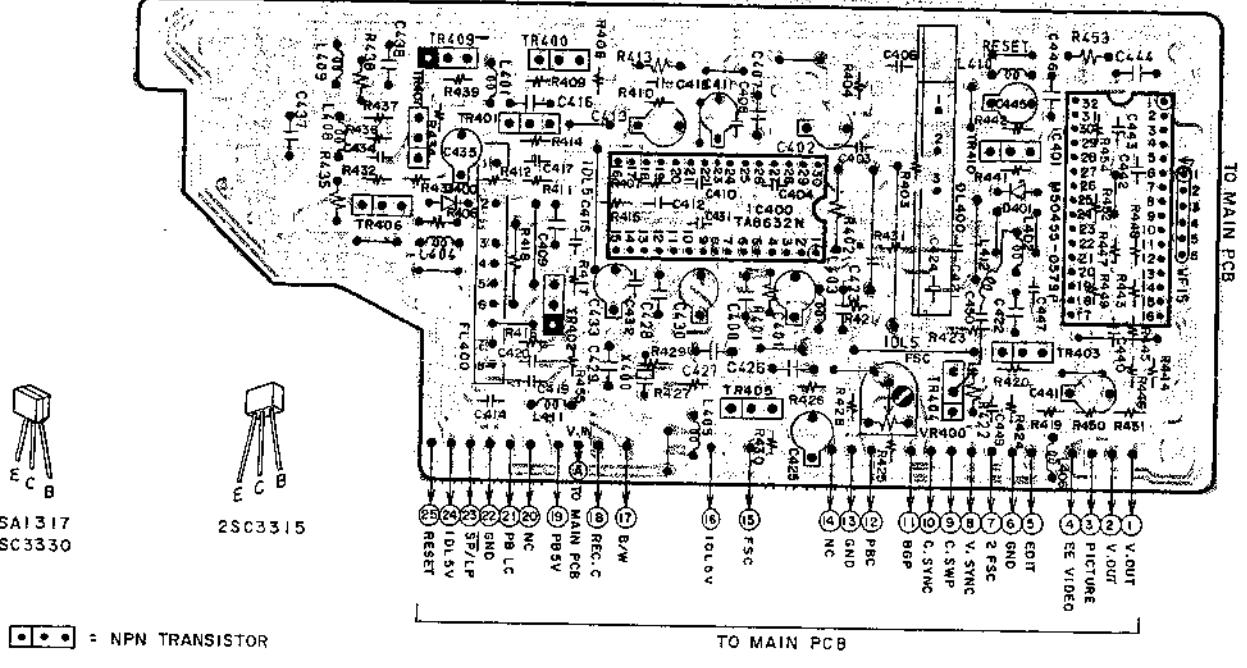
NOTE

UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS 1/8W (J)  
ALL CAPACITORS IN  $\mu$ F 50VW (J)  
ALL INDUCTORS IN  $\mu$ H (K)

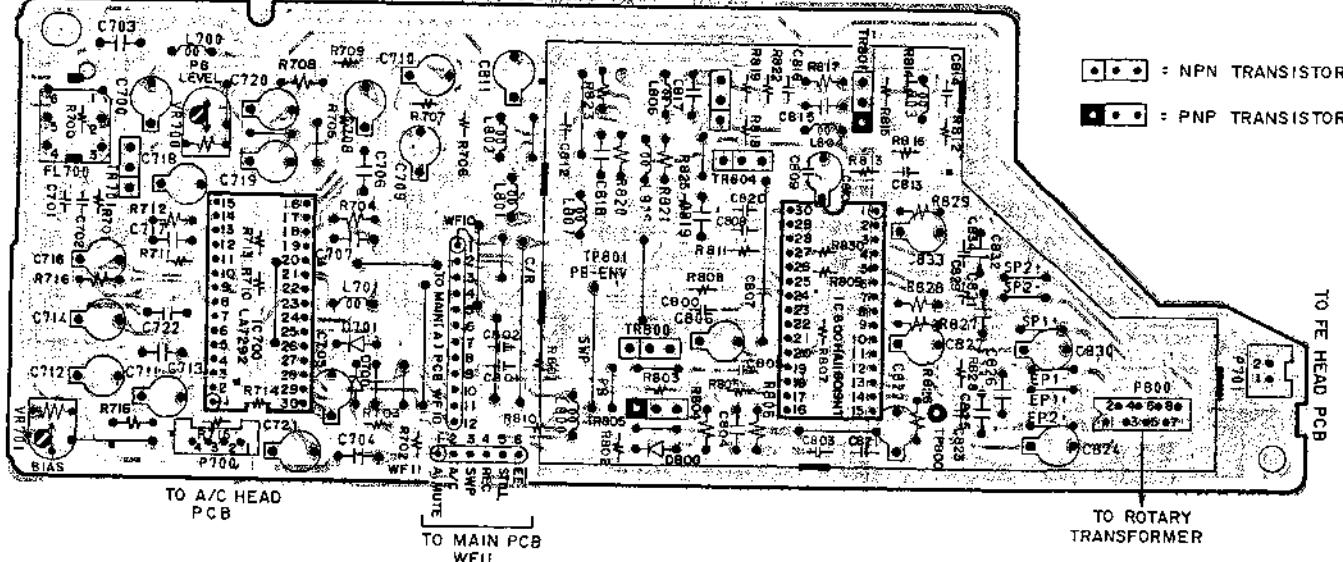
VS-33U/UM, VS-35U  
CHROMA/AUDIO/  
PRE-AMP/OPERATION  
SCHEMATIC DIAGRAM

NO. 5-4 870812A

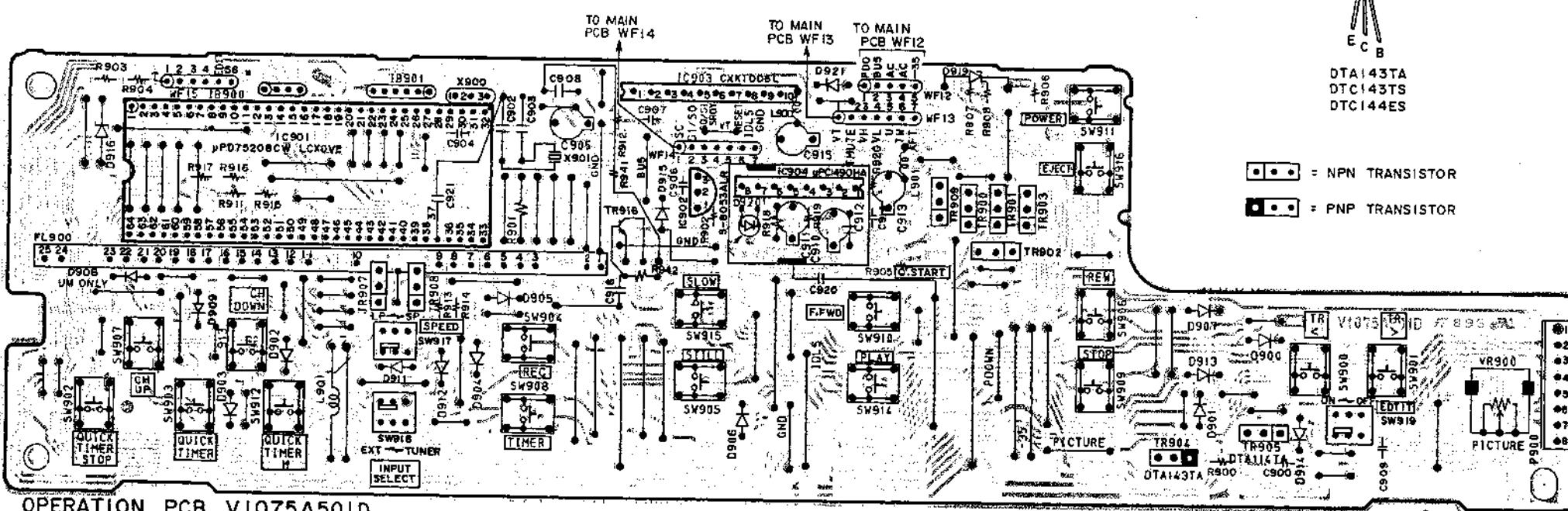
CHROMA PCB V1075A501B



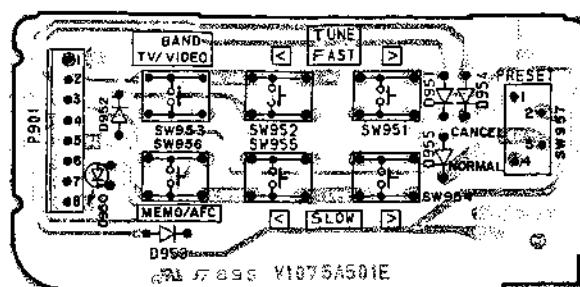
PRE AMP & AUDIO PCB V1075A501C



2SA1317  
2SC3330  
DTC144ES



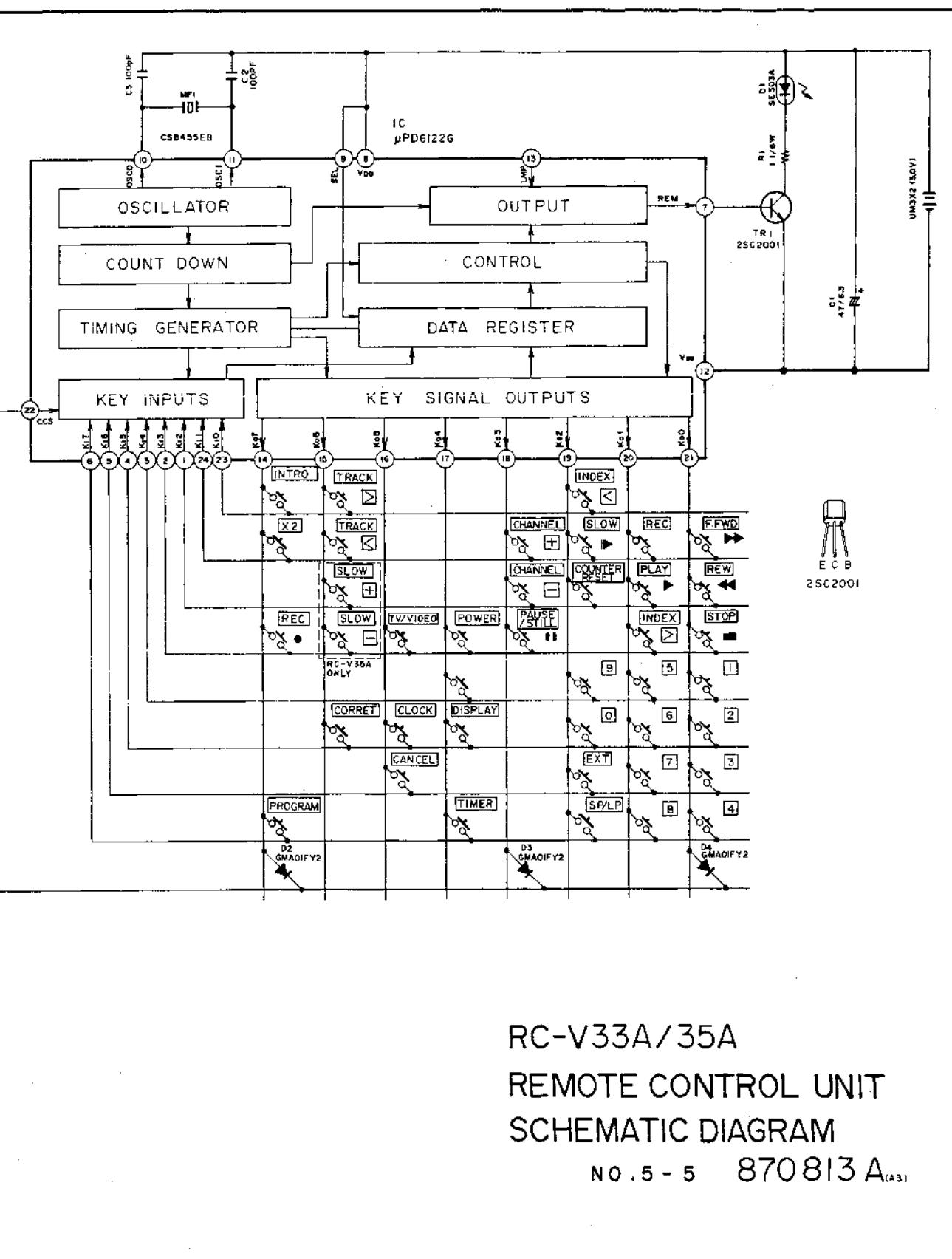
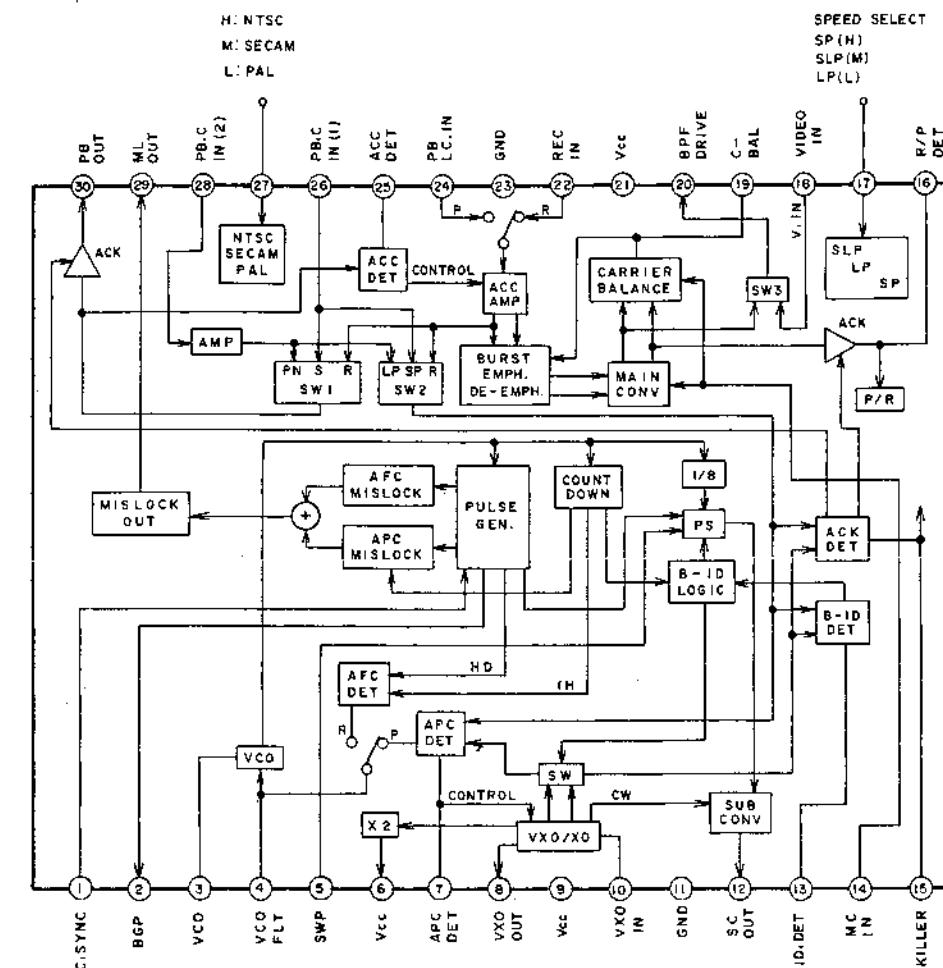
DTA143TA  
DTC143TS  
DTC144ES



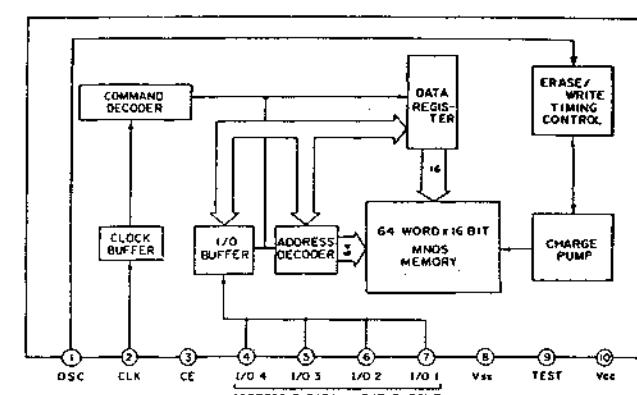
OPERATION PCB V1075A501D

PRESET PCB V1075A501E

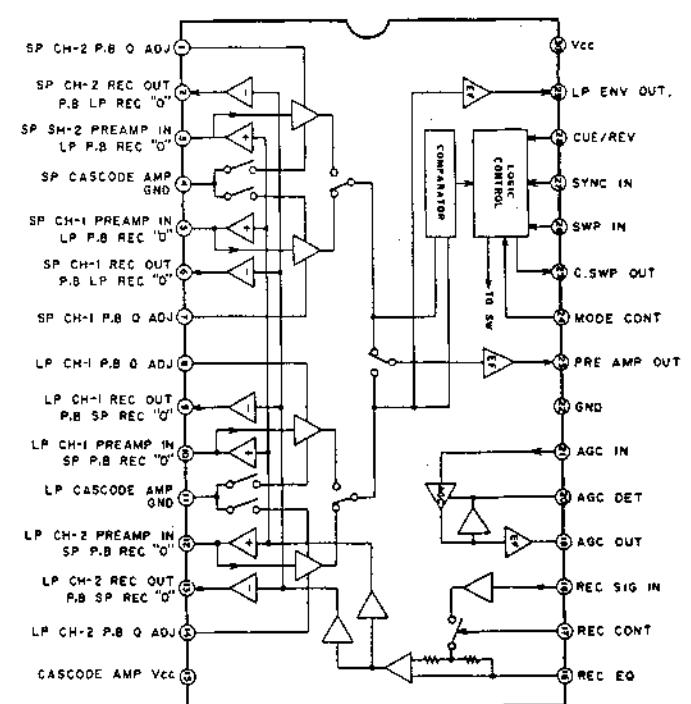
### TA8632 (VIDEO C-SIGNAL PROCESSING)



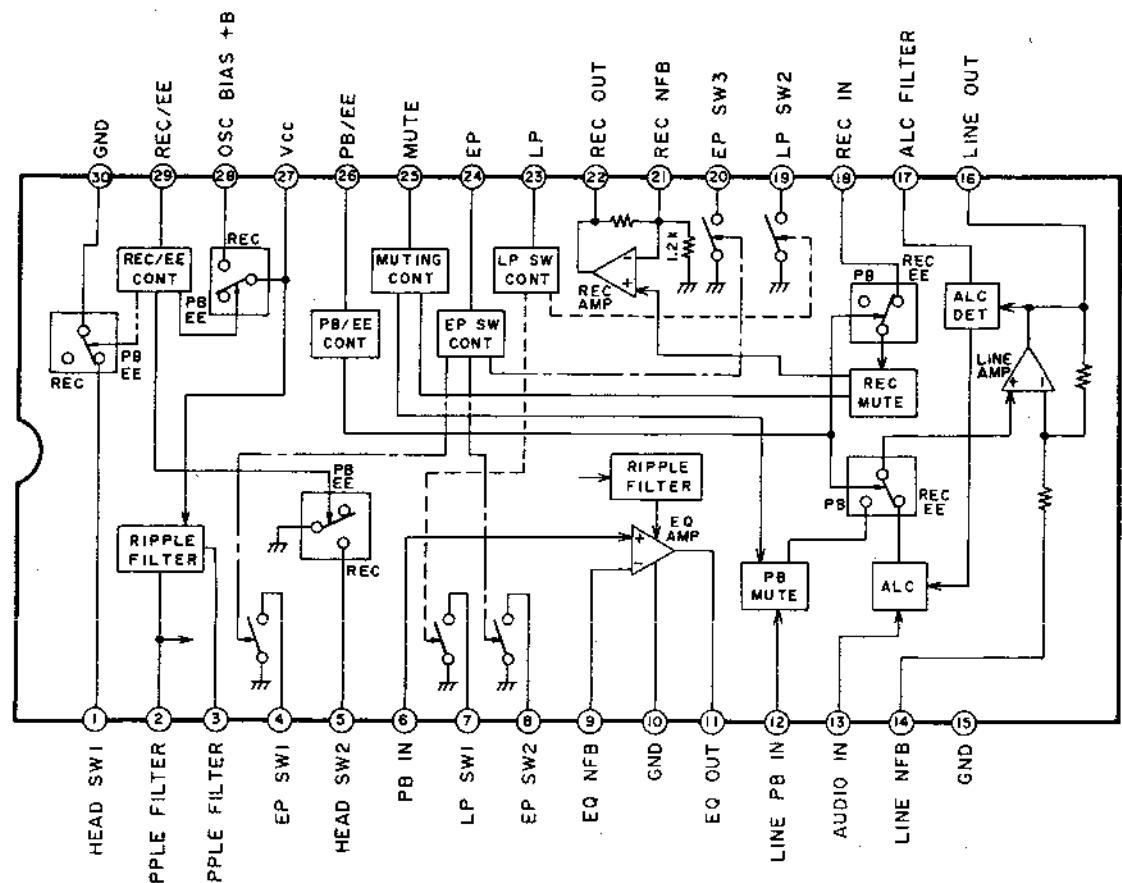
### CXK1006 (NON VOLATILE RAM)



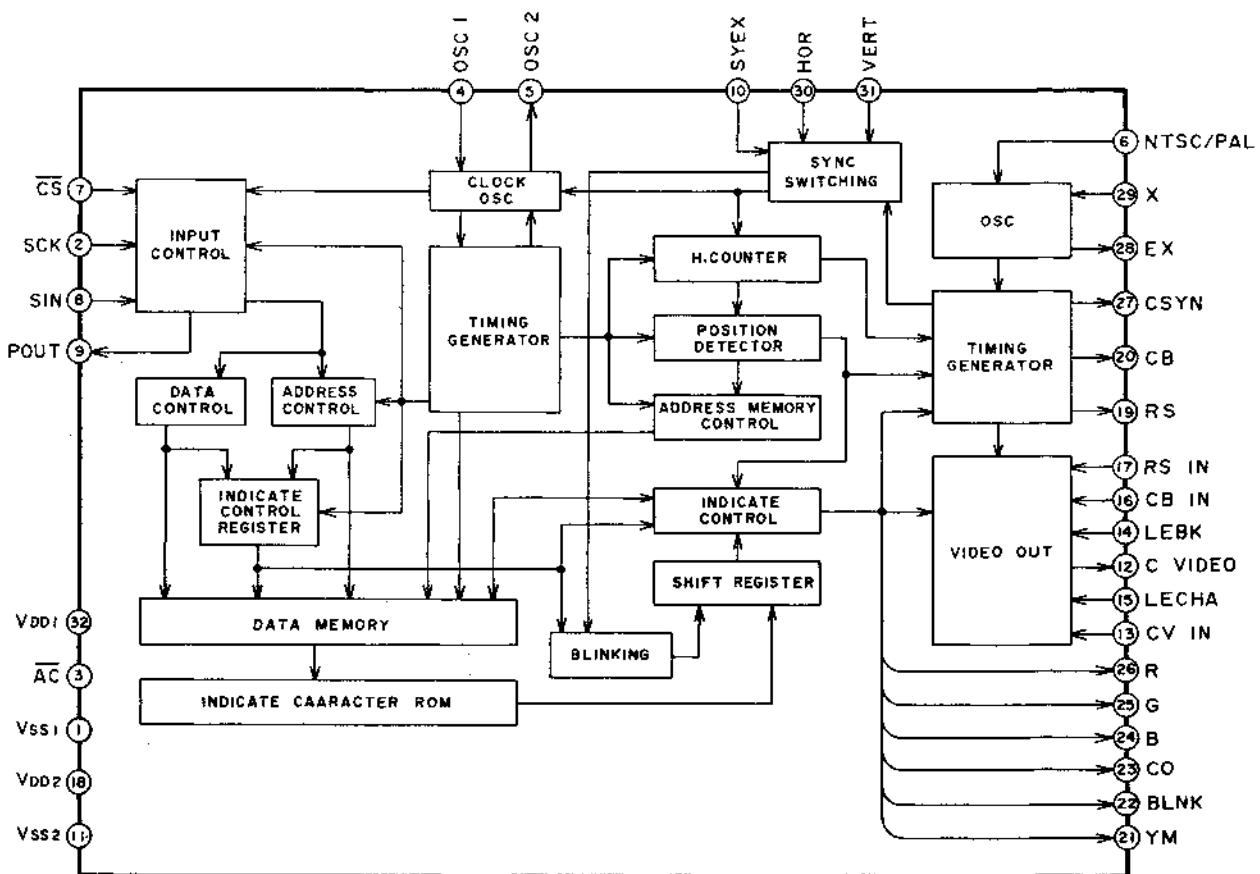
### HA118019 NT (PRE-AMP)



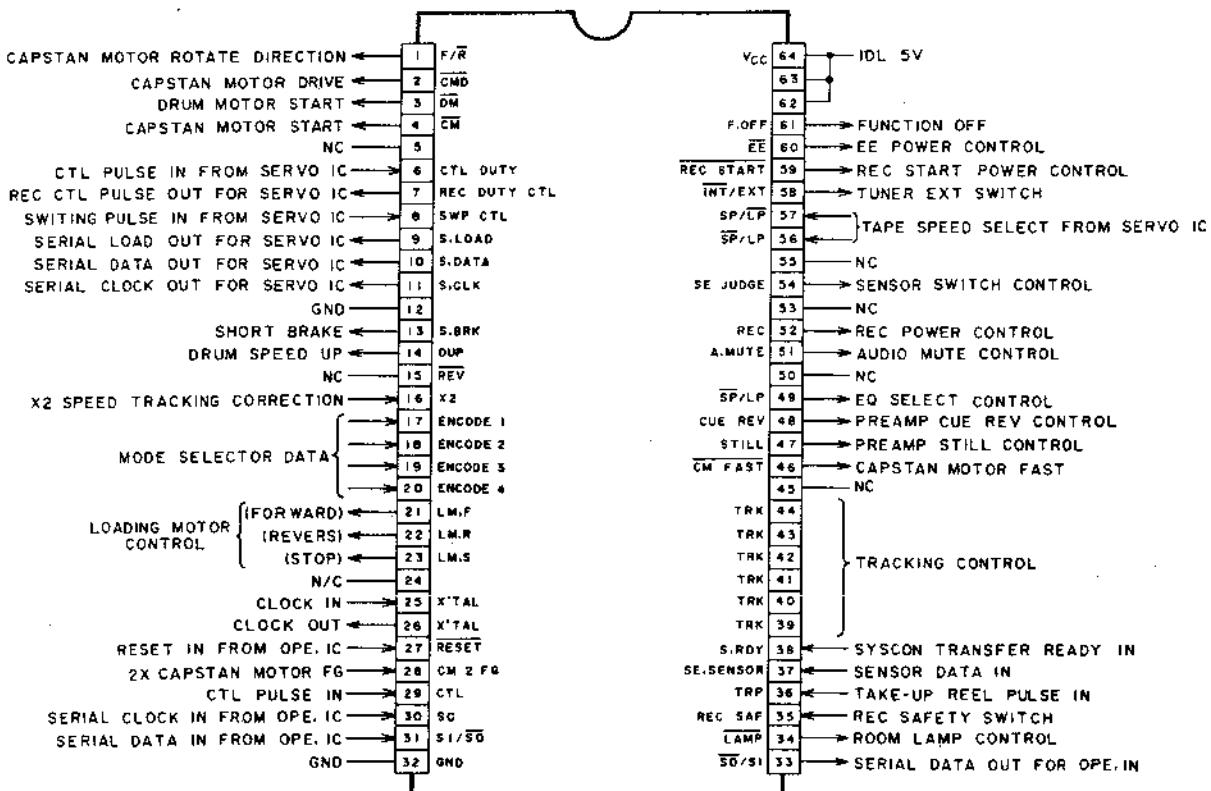
## LA7292 (AUDIO SIGNAL REC/P.B AMPLIFIER)



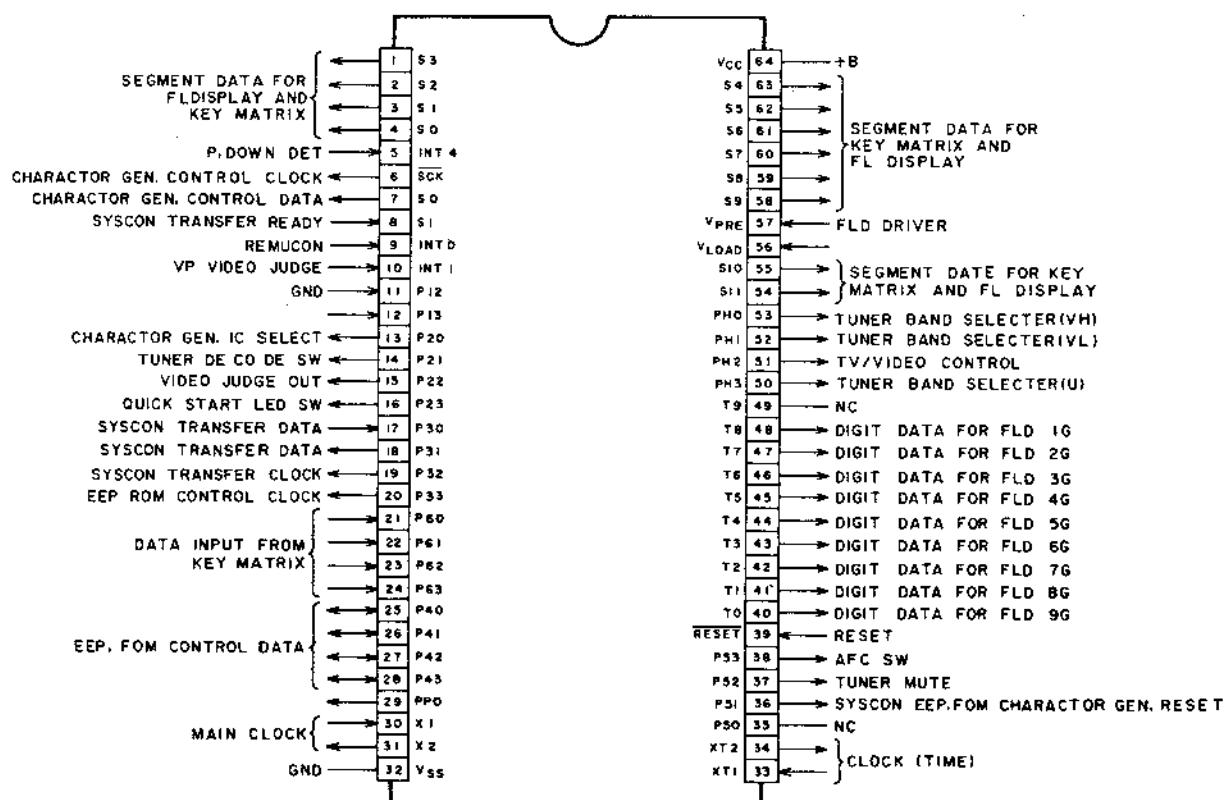
## M50455-073SP (CHARACTOR GENERATOR)



## MB88525-186G LCXSYN1 (SYSTEM CONTROL)



## μPD75208 CW-LCXOPU (OPERATION)

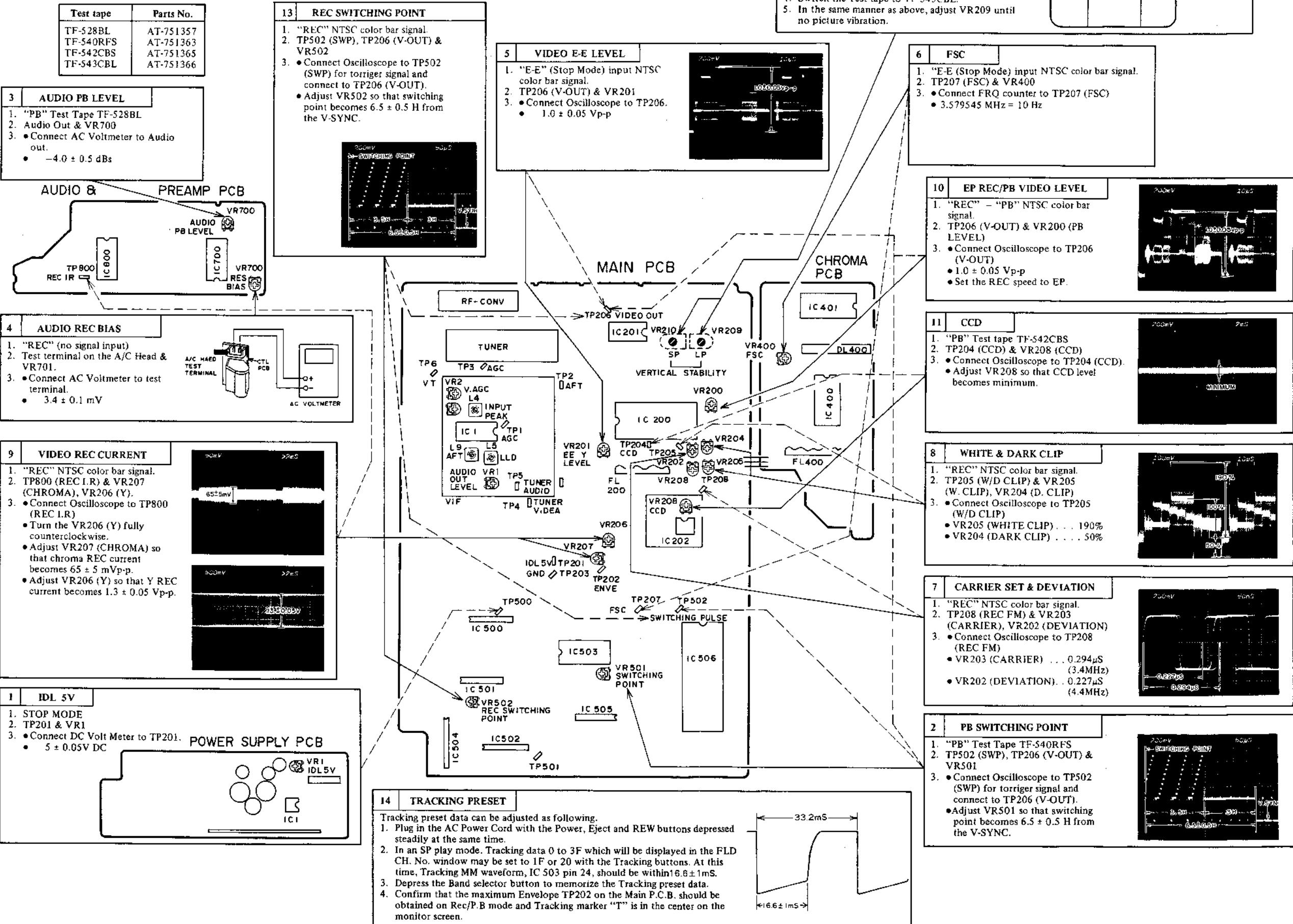


## VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments

- The color bar generator output should be 1.0 Vp-p.
- Video output terminal should be terminated with 75 ohms (dummy or load).

Required following Test tapes.



## VII. PARTS LIST

### ATTENTION

- 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.
- Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
- 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

- 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.
- The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
- Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
- How to read the Parts List.

#### a) Mechanism Block

#### 2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification  
A small "x" indicates that this part is not shown in the Photo or Illustration.  
This number corresponds with the individual parts index number in that figure.  
This number corresponds with the Figure Number.

#### b) PC Board

#### 6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-S64M
6-C1A	EC-338399	C MMV V 223M 250AC [U,E,B,S]
6-C1B	EC-350949	C MMV V 223M 250DC [J]
6-C1C	EC-338397	C MMV V 223M 125AC [C,A]
6-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(Universal Area)  
[C]: CSA(Canada) [V]: VDE(W. Germany)  
[E]: CEE(Europe) [Y]: Custom Version  
[J]: JPN(Japan)

SP (Service Parts) Classification  
These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

- 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 DÉGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

### 1. RECOMMENDED SPARE PARTS

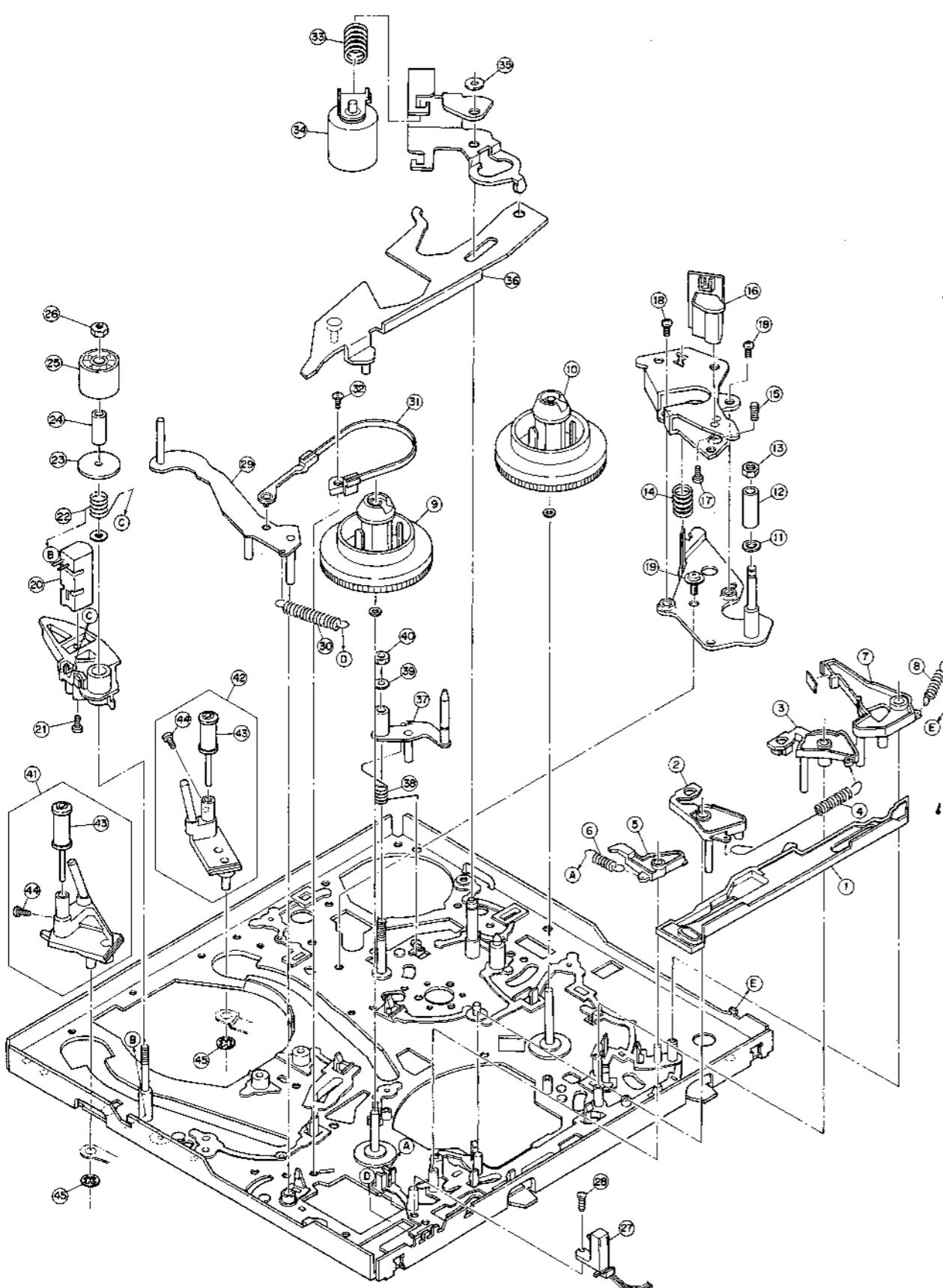
We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
57	EI-380316	IC BA6305
58	*EI-376794	IC BA6993 [UM[U]]
59	EI-373981	IC BA6993N
60	EI-354095	IC BA718
61	EI-373978	IC BU2734 NTSC CUSTOM
62	EI-373954	IC CXK1006L
63	EI-367909	IC HA118019NT
64	*EI-367571	IC LA6358T
65	EI-373946	IC LA7292
66	EI-368182	IC MB88525-186G LCXSYN1 CUSTOM
67	EI-373965	IC MSM8984
68	EI-367904	IC M50455-057SP CUSTOM
69	EI-368809	IC M51496P
70	EI-373955	IC S8053ALR
71	EI-373023	IC TA8632N
72	EI-200673	IC TC4053BP
73	EI-367271	IC UPC1490HA
74	EI-337530	IC UPC574J
75	EI-376112	IC UPD6122G
76	EI-373952	IC UPD75208CW-121 LCXOPU2 CUSTOM
77	EI-347991	OSC CE CSA6.00MS 6MHZ
78	EI-376113	OSC CE CSB455EB
79	EI-373957	OSC CE CST4.19MG 4.194 MHZ
80	EI-368825	OSC X'TAL MX-3BT 32.768KHZ
81	EI-318384	OSC X'TAL NR-18 3.579545MHZ
82	EM-373956	IND FL FLV132
83	EO-375471	COIL OSC 1 S033344
84	*EO-376837	RELAY POW VB-100TB-5 2TR 100V [UM[U]]
85	*ER-318400	R CB H S10 FS RDS 1/4W 680J
86	*ER-378414	R OMF H S12 FS 1W R47J
87	*ER-356573	R SD ANTI-STATIC 1/2W 225K [U[A]U[C]]
88	ES-373099	SW LEAF MTS10110MPCT [REC SAFTY SW][SW1]
89	ES-373100	SW MODE SELECTOR D2ZQ-S2 [MODE SELECTOR]
90	ES-375737	SW SLIDE ESD1111351 2-01-03N [PRE-SET]
91	ES-375736	SW SLIDE ESD1112251 2-02-02N [SPEED]
92	ES-349474	SW TACT SKHHAM004A DETECTOR ON2170 Q.R
93	ET-361463	[SENSOR PCB PH1]
94	ET-363953	TR DTA114TS
95	ET-375983	TR DTA124TS
96	ET-368836	TR DTA143TA
97	ET-354415	TR DTA144ES
98	ET-373985	TR DTA144TS
99	ET-353897	TR DTC114ES
100	ET-354365	TR DTC114YS
101	ET-354371	TR DTC124ES
102	ET-375986	TR DTC124TS
103	ET-354364	TR DTC143TS
104	ET-354414	TR DTC144ES
105	ET-370310	TR DTC144TS
106	ET-361490	TR PHOTO PN268 R,S
107	*ET-364093	TR 2SA1283 E,F F05
108	ET-356224	TR 2SA1286 G,H,J F05
109	*ET-353899	TR 2SA1317 S,T,U
110	ET-321644	TR 2SC2113 C
111	ET-302502	TR 2SC2001 K
112	ET-375777	TR 2SC2926S P,Q
113	*ET-355669	TR 2SC3246 G,H,J F05
114	*ET-376818	TR 2SC3247 H,J,K
115	ET-368084	TR 2SC3315 D
116	ET-360067	TR 2SC3330 T,U F05
117	ET-376663	TR 2SC3868 [UM[U]]
118	*ET-366677	TR 2SD1781 E,F
119	EV-373958	VR ROTARY RK09K11 30 B203 [PICTURE]
120	HC-374197	HEAD COMBO HVMLA 10135 [AUDIO/CONTROL HEAD]
121	HE-361456	HEAD E HVFMDO005B [FULL ERASE HEAD]
122	MB-373080	BELT IDLER

### PARTS LIST

### PARTS LIST

### MECHA BLOCK (1)



### 3. MECHA BLOCK (1)

Ref. No.	Part No.	Description
1	MZ-373079	SLIDER BRAKE
2	ML-367614	ARM MAIN BRAKE(S)PART
3	ML-367616	ARM MAIN BRAKE(TU)PART
4	ZG-373548	SP PULL MAIN BRAKE
5	ML-373075	ARM LOADING BRAKE
6	ZG-373534	SP PULL LOAD BRAKE
7	ML-367617	ARM REVIEW BRAKE PART
8	ZG-373535	SP PULL REVW BRAKE
9	BR-367618	DISK(S)PART
10	BR-367619	DISK(T)PART
11	MS-373095	GUIDE TAPE LCX
12	MS-372186	GUIDE TAPE (6)
13	ZW-516993	N30STL CMT 1
14	ZG-500792	SP PUSH A/C
15	ZG-373900	6SET30X080SCM PKR CP
16	HC-374197	HEAD COMBO HVMLA10135 [AUDIO/CONTROL HEAD]
17	ZS-373899	PAN20X2.5STL BDY PS1
18	ZS-321298	BID30X08STL CMT
19	ZS-373896	DT BID30X08STL CMT PW080
20	HE-361456	HEAD E HVFMDD0005B [FULL ERASE HEAD]
21	ZS-464703	BID20X04STL CMT
22	ZG-374022	SP TORSION ARM FE
23	ZW-373088	FLANGE Z
24	ZW-373089	SPACER
25	MR-373087	ROLLER Z
26	ZW-350839	N30 NYLON
27	ES-373099	SW LEAF MTS10110MPC1 [REC SAFTY SW][SW1]
28	ZS-364545	DT BID30X08STL CMT
29	BL-367620-A	ARM TENSION PART
30	ZG-373539	SP PULL TENSION
31	ML-500881	LEVER TENSION BAND PART
32	ZS-373532	DT BID30X08STL CMT C080
33	ZG-500794	SP PUSH PINCH ROLLER
34	BL-V1075A130A	PINCH ROLLER BLK VS-35EA
35	ZW-373898	SLIT W31X070X050PSL
36	BL-500879T	PLATE P SLIDER PART (TW)
37	BL-368475	ARM REVIEW GUIDE PART
38	ZG-373530	SP TORSION REVIEW ARM
39	ZW-324417	PW31X060X050PSL
40	ZW-350839	N30 NYLON
41	BV-V1075A070A	SLOADING LEADER BLK VS-35EA
42	BV-V1075A080A	T.U LOADING LEADER BLK VS-35EA
43	VT-367622	GUIDE ROLLER PART
44	ZS-201464	PAN20X03BRS NI3
45	ZW-332843	RETAINING RING GRIP 380STL ACP

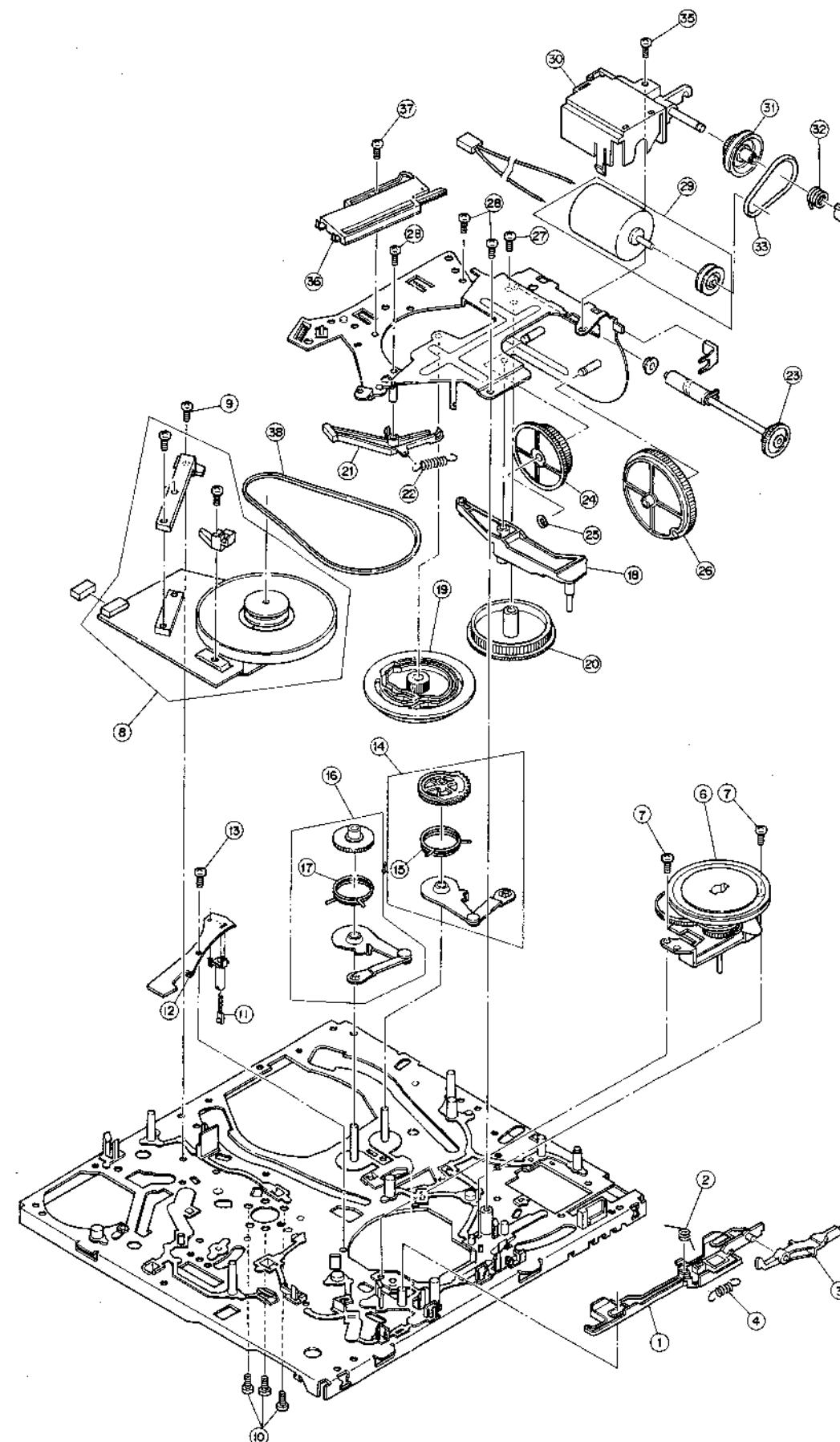
NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

#### 4. MECHA BLOCK (2)

**MECHA BLOCK (2)**

Ref. No.	Part No.	Description
1	ML-373038	SLIDER FR
2	ZG-373894	SP TORSION SLIDER
3	ML-373036	LEVER F/R HOOK
4	ZG-373536	SP PULL HOOK
5	ZW-324417	PW31X060X050PSL
6	ML-373043	CLUTCH BLK
7	ZS-373895	DT BID26X08STL CMT
8	BM-373098	MOTOR DVX-67A2R2 [CAPSTAN MOTOR]
9	ZS-373895	DT BID26X08STL CMT
10	ZS-419782	BID26X05STL CMT
11	ED-373101	D LED LN59 INFRARED [SENSOR PCB D1]
12	ET-361483	DETECTOR ON2170 Q.R [SENSOR PCB PH1]
13	ZS-368173	DT BID30X08STL CMT TW
14	MZ-V1075A090A	GEAR TOGGLE (S) BLK VS-35EA
15	ZG-373542	SP TORSION GEAR TOGGLE(S)
16	MZ-V1075A100A	GEAR TOGGLE (T) BLK VS-35EA
17	ZG-373541	SP TORSION GEAR TOGGLE(T)
18	ML-367625	LEVER CAM SLIDER PART
19	MZ-500717T	GEAR CAM CENTER (TW)
20	MZ-500707T	GEAR CAM TENSION (TW)
21	BL-367627	ARM FW BRAKE PART
22	ZG-373546	SP PULL FW BRAKE
23	MZ-367628	GEAR WORM PART
24	MZ-500716T	GEAR WHEEL (TW)
25	ZW-373898	SLIT W31X070X050PSL
26	MZ-500715T	GEAR FL DRIVE (TW)
27	ZS-373895	DT BID26X08STL CMT
28	ZS-373895	DT BID26X08STL CMT
29	BM-367631	MOTOR PART [LOADING MOTOR]M901)
30	SP-500887T-A	HOUSING MOTOR PART (TW)
31	MR-373045	FULLY BELT LOADING
32	ZG-373046	SP TORSION TRIGGER
33	MB-373096	BELT LOADING
34	ZW-373901	SLIT W22X080X050PSL
35	ZS-373897	PLX BID26X10STL CMT
36	ES-373100	SW MODE SELECTOR D2ZQ-S2 [MODE SELECTOR]
37	ZS-373895	DT BID26X08STL CMT
38	MB-373080	BELT IDLER

**NOTE:** The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.



**PARTS LIST**