

## General Information

**TV/VCR Combination Unit**  
**Chassis MC-48A**  
**Also Covers: KY-20V30**

## Matrix

Item	See Model	Book
Deck Mech Alignment .....	D-17 Mech	Video 4
Deck Mech Adjustment .....	D-17 Mech	Video 4

## Recommended Safety Parts

Item	Part No.	Description
C801	181-017A	C,MPP AC250V 0.1UF M
C802	181-017A	C,MPP AC250V 0.1UF M
C812	181-120G	CAPACITOR ACT 4KV E 472M FL10
C813	181-120G	CAPACITOR ACT 4KV E 472M FL10
F801	131-098B	FUSE 4A/250V HBC TIME DELAY 5X20
F851	131-096E	FUSE MICRO 125V 4.0A
IC1801	0ISK670700B	IC,SANKEN STR/S6707(LF.953) 9P (R5,R6)
L503	0LA0392K119	INDUCTOR 39UH K
L802	150-F06K	COIL LINE FILTER SQE2930 60MH
T801	151-A10C	TRANSFORMER SMPS COIL EER4445 STR-S6707 W
FR702	0RF0470H609	R,FUSIBLE 0.47 1/2W 5
FR703	0RF0101J607	R,FUSIBLE 1 1W 5%
FR704(14")	0RF0201K607	R,FUSIRLE 2 2W 5%
FR704(20")	0RF0121K607	R,FUSIBLE 1.20 2W 5%
FR705	0RF0470J607	R,FUSIBLE 0.47 1W 5%
FR706	0RF0470H609	R,FUSIBLE 0.47 1/2W 5
FR852	0RF0470J607	R,FUSIBLE 0.47 1W 5%
FR854	0RF0470J607	R,FUSIBLE 0.47 1W 5%
R813	180-C01C	RESISTOR RC 1/2W 8.2M K TA52
SW801	140-289A	SWITCH SDDF3PASP013(GS-ALPS) TV8

## Adjustments

### Alignment Procedures

- It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
- Never disconnect leads while the TV receiver is on.
- Don't short any portion of circuits while power is on.
- The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
- Unless otherwise noted, set the line voltage to 220V  $\pm 10\%$ , 50/60Hz.

### Test Equipment required

- Color signal generator: PAL/SECAM
- Digital multi-meter
- White balance meter

### RF AGC adjustment (at the MAIN PCB of VCR)

Test point : TP AGC (W718)  
 Adjust : VR771

The RF AGC control (VR771) was aligned at the

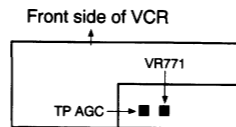
time of manufacture for optimum performance over a wide range conditions. Readjust of VR771 should not be necessary unless unusual local conditions exist, such as;

- Channel interference in a CATV system.
- Picture bending and / or color beats, which are unusually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system where the RF signal has been amplified. In this case the input signal should be attenuated (with a pad or filter) to a satisfactory level.
- Picture noise caused by "broadcast noise" or weak signal. If the broadcast is "clean" and the RF signal is at least 1mV (60dBu) the picture will be noise free in any area.

Adjusting the VR771(RF AGC) control to one end of rotation will usually caused a relatively poor signal to noise ratio; Adjusting to the other end of rotation will usually cause a degradation of overload capabilities resulting in color beats or adjacent channel reference.

For best results, adjust the VR771 control while performing on all other local channels, or the voltage at TP AGC (W718) will be 5.5 $\pm$ 0.1VDC.

**Note:** TP AGC (W718) VR771 are located inside VCR unit. Refer to below fig A.



**Fig. A**  
**Focus adjustment**

Test point : Observe Display  
 Adjust : Focus control of FBT

- Set color to minimum, brightness and contrast to maximum.
- Tune the TV set to an inactive channel station.
- Adjust the focus control for best overall focus.

### Screen & white balance (colour temperature) adjustment

**Note:** The colour bias controls (VR901, VR902, VR903) affect the low light (dark) area of the picture while the color drive controls (VR904, VR905) affect the high light (white) areas.

- Tune the standard white signal, set the colour and brightness, contrast to the normal position.
- Turn the screen VR counter-clockwise and set it to the minimum position.
- Set the VR901, 902, 903, 904, 905 on the CPT Board to the mechanical center position.
- Press CUTOFF button on service remote controller. (That is to obtain a horizontal line)
- Turn the screen VR clockwise slowly to obtain a first horizontal line on screen.
- Adjust Two Bias VR (two of three, VR901, 902, 903) so that the horizontal line on screen may become white.
- Turn the screen VR adjust horizontal line on screen just disappear point.
- Press again CUTOFF button on service remote controller, then TV screen returns normal status.
- Receive the adjust pattern white and black signal.
- Adjust VR904 (RED Drive) and VR905 (Blue Drive) high light on screen may become white.
- By using color analyzer (white balance checker), adjust X position equals to 281 $\pm$ 2 and Y position equals to 288 $\pm$ 2, it means color temperature is 10000 $\pm$ 800 $\pm$ K at low light (4.5ft.L) at high light (over 45ft.L)
- Adjust Contrast and Brightness and then conform whether you have a considerable adjustment in a high and low light screen, otherwise, re-adjust above item 4)-11).

### Vertical size adjustment

- Tune the TV set to receive a digital test pattern.
- Adjust VR301 so that the circle of a digital pattern may be located within the effective screen of CPT.

### Vertical/Horizontal/SECAM Adjustment

**NOTE:** These adjustments are already aligned at the time of manufacture for optimum performance. Readjust of them should not be necessary unless IC503(EEPROM) is defective. Because all the information of these adjustment are memorized in that IC.

### Adjustment procedures

- Tune the TV set to receive a digital pattern unless otherwise noted.

- Press SVC button on service remote controller then you can find On Screen Display. Refer to the following fig. B.
- Press PR+ or PR- button for desirous function adjustment.
- Press VOL + or VOL- button for correct picture.

LINE SVC 1		PR1
H-CENT	14	
V-CENT	04	
SUB BRIGHT	00	
SUB CONTRAST	00	
SECAM BELL	04	
SECAM R-Y	08	
SECAM B-Y	08	
SECAM AMP	03	

**Fig. B**

### Horizontal centre adjustment

Adjust so that the horizontal center line of digital pattern is in accord with gemetric horizontal center of the CPT.

### Vertical centre adjustment

Adjust so that the vertical center line of digital pattern is in accord with geometric center of the CPT.

### SECAM BELL filter adjustment

- Tune the TV set to receive a SECAM digital pattern.
- Adjust so that the color on the 3.8MHz pattern is minimized.

### SECAM B-Y/R-Y adjustment

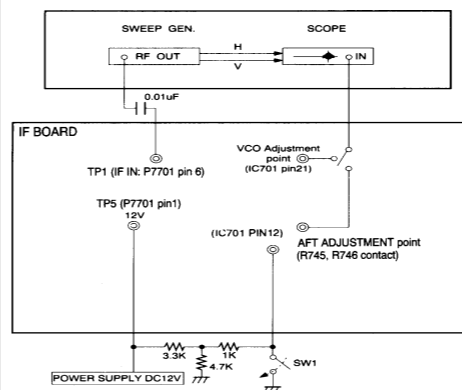
- Tune the TV set to receive a SECAM digital pattern.
- Adjust so that the background color is equal to the PAL background color.

### SECAM AMP adjustment

- Tune the TV set to receive a SECAM digital pattern.
- Adjust so that the level of SECAM color is equal to the level of PAL color.

## Adjustments (VCR)

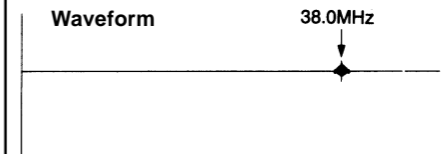
- VCO (Voltage controlled oscillator) Adjustment.  
 a. Connect the measuring equipments to the set as shown Fig 1.



**Fig. 1**

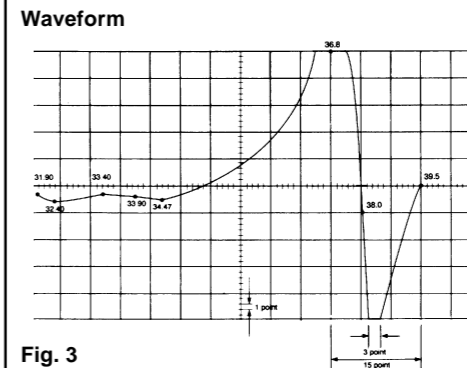
- Adjust T702 so that the level of picture carrier (38.0MHz) marker point may be the oscillation position as shown on Fig 2.

**NOTE:** SW1 - Vco Adjustment: ON  
 - AFT Adjustment: OFF



**Fig. 2**  
**2. AFT Adjustment**

- Connect the measuring equipments to the set as shown Fig 1.
- Adjust T703 so that the level of picture carrier (38.0MHz) marker point may be the center position as shown Fig 3.

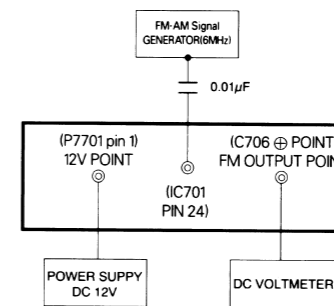


**Fig. 3**

### 3. SIF Adjustment

Measurement Point TPSIF  
 Adjustment Point T701  
 Specification 5.5V $\pm$  0.2V

- Connect the measuring equipments to the shwon Fig 4. b. Adjust T701 so that the DC voltage 5.5V  $\pm$  0.2V



**Fig. 4**

### 4. RF AGC Adjustment

Measurement Point TP AGC (W799)  
 Adjustment Point VR771  
 Specification DC 5.5V $\pm$  0.1V

- Receive the VHF Band 11CH(175.25MHz) ; 60dBu $\pm$  1dBu.
- Connect the Digital Multimeter to TP AGC (W799).
- Adjust VR771 so that may be DC5.3V $\pm$  0.1V.

### 5. Servo Circuit Adjustment

#### 1. Necessary Instrunents and Components

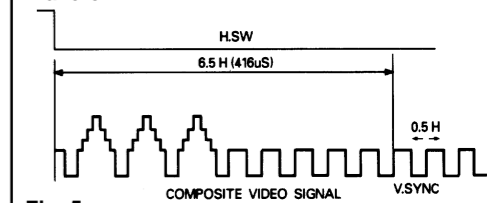
- Oscilloscope: IEA
- PAL Test Tape (sp): IEA

### 2. $\pm$ PG Adjustment

Adjustment Point VR201  
 Measurement Point H.SW VIDEO OUT (W403)  
 Specification 416  $\pm$  10usec

- Playback a PAL-SP Test Tape.
- Connect CH-1 of oscilloscope to W250 and CH-2 to Video Out.
- Trigger H.SW of CH-1 to composite video signal.
- Adjust VR 201 so that the time difference of between A (B) Head part to H.SW signal and vertical synchronizing signal may be 6.5(H) (416 S, 1H=64 S)
- Using Polarity Invert Knob, change A/B Head sw signal.

### Waveform



**Fig. 5**

### 6. Y/C Circuit Adjustment

#### 1. Necessary Instruments and Components

- Dual Type of SECAM/L and PAL B/G
- Oscilloscope (above 10MHz, 2mV)
- Video Signal Generator (Dual Type of SECAM and PAL)
- Standard Play Back Tape (Color Bar of 100% White) SECAM or PAL
- Recording Tape
- Blank Tape

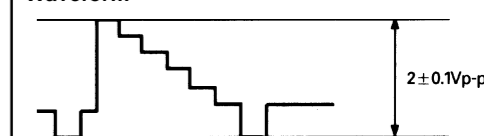
### 2. Adjustment

#### 1) EE Level Adjustment

Mode STOP  
 Measurement Point VIDEO OUT (W403)  
 Adjustment Point VR305 EE LEVEL  
 Specification 2 $\pm$ 0.1Vp-p

- Connect CH-1 of oscilloscope to VIDEO OUT.
- Input the Video Signal of 100% white to Video Input Jack.
- Adjust VR305 so that the value of between Syn. terminal and 100% white may be 2 $\pm$ 0.1 Vp-p.

### Waveform



**Fig. 6**

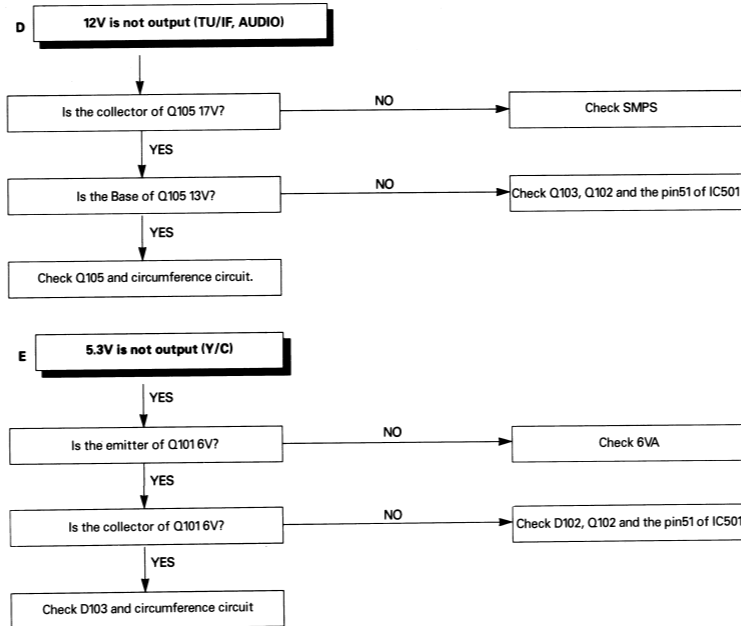
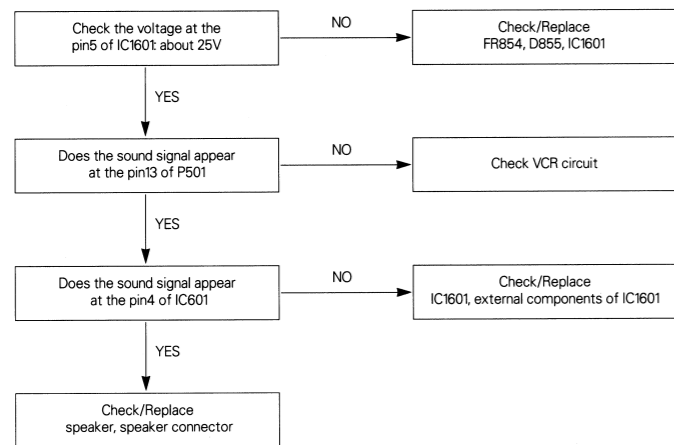
#### 2) FM Carrier Frequency Adjustment

MODE REC  
 Measurement Point C306(REC-FM)  
 Adjustment Point VR304  
 Specification White Peak 4.8 $\pm$ 0.05MHz  
 Sync Tip 3.8 $\pm$  0.05MHz

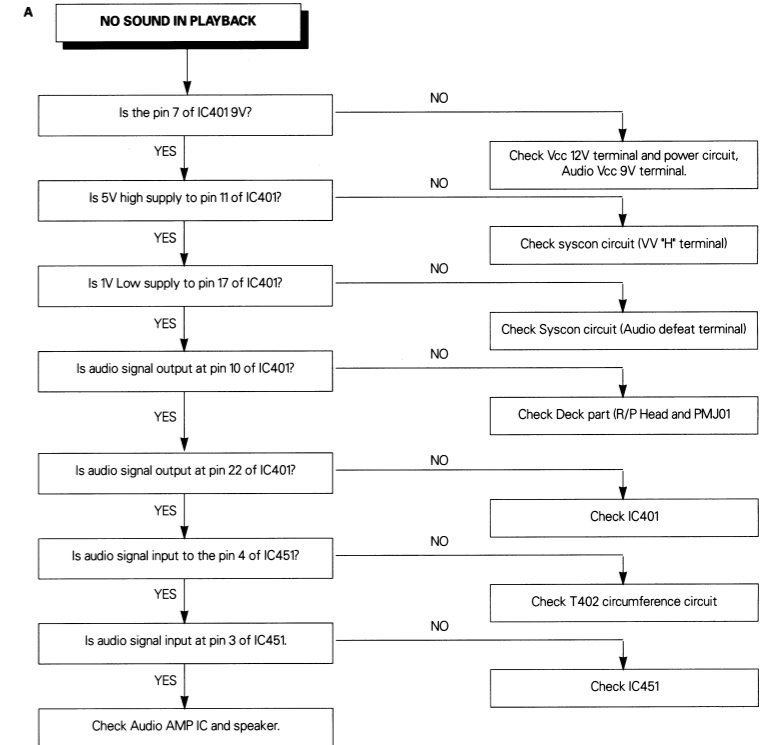


### Troubleshooting Guides (TV) Cont'd

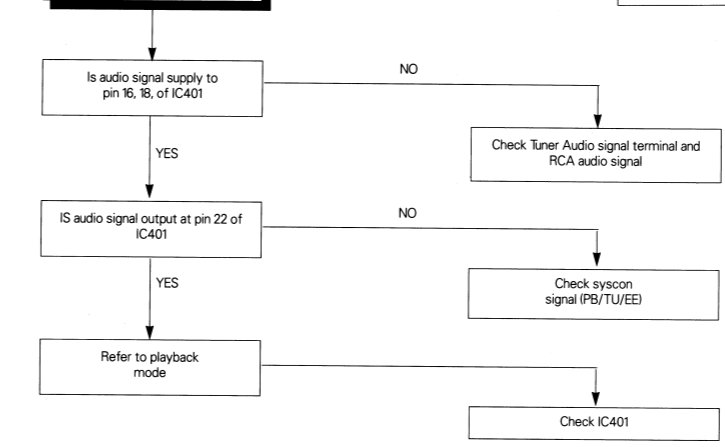
#### 5. NO SOUND



#### 3. AUDIO CIRCUIT

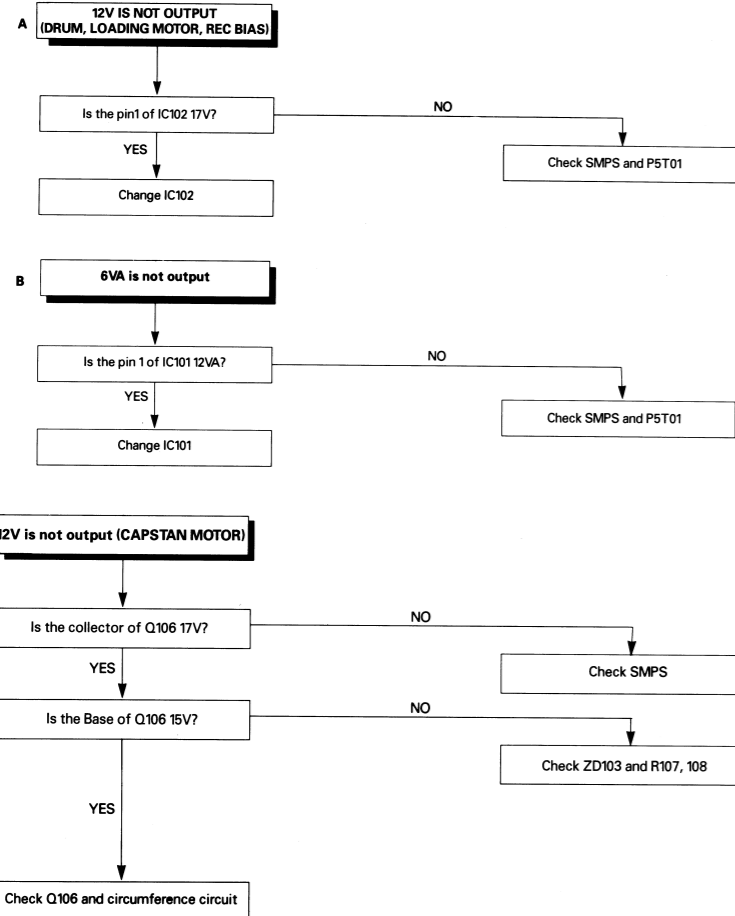


#### B. NO SOUND IN EE

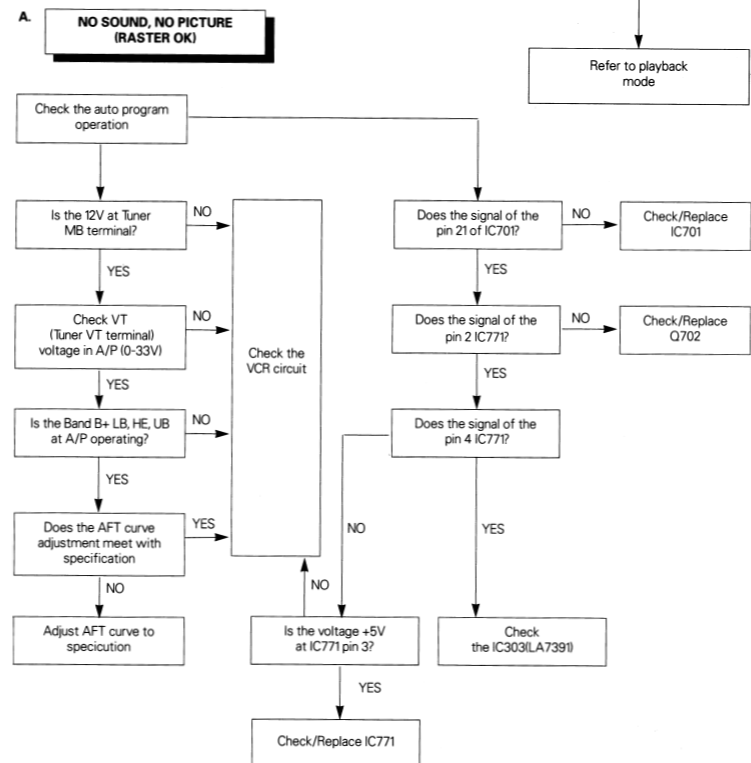


### Troubleshooting Guides (VCR)

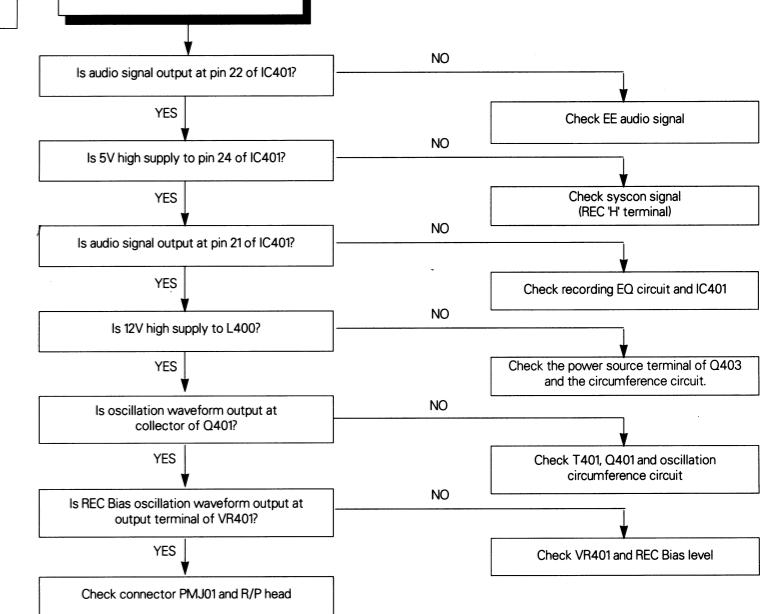
#### 1. POWER CIRCUIT



#### 2. IF CIRCUIT



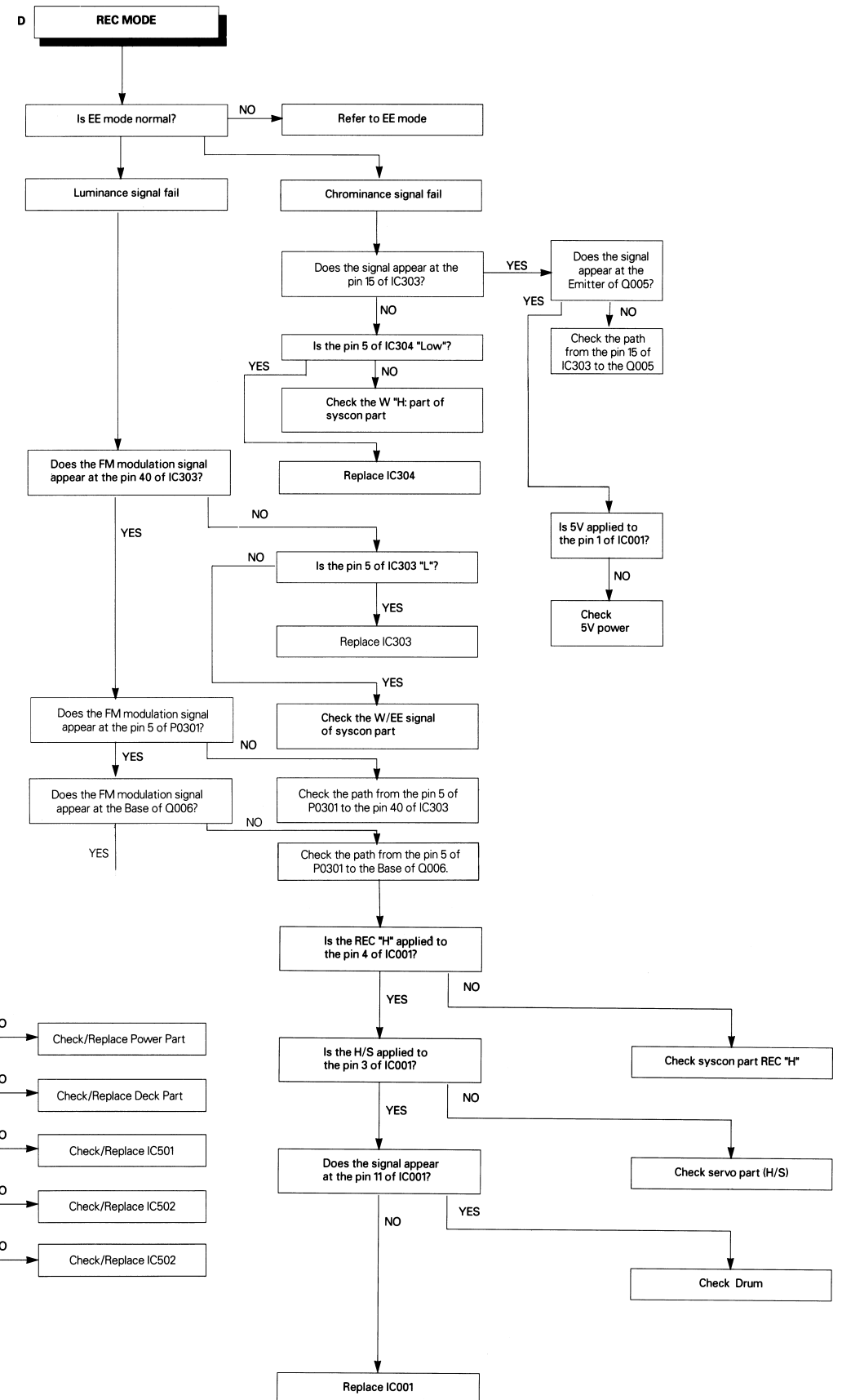
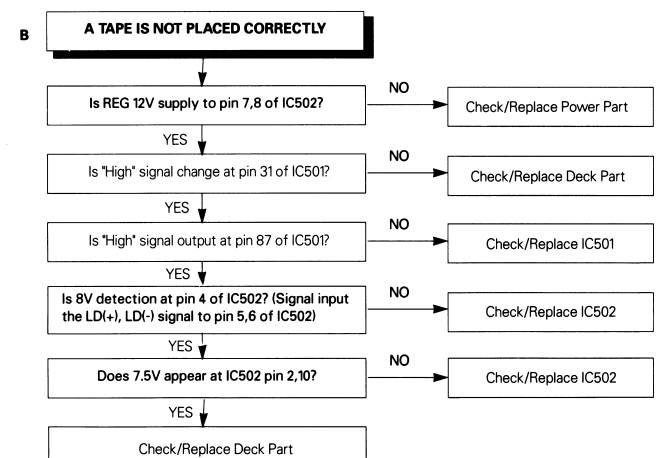
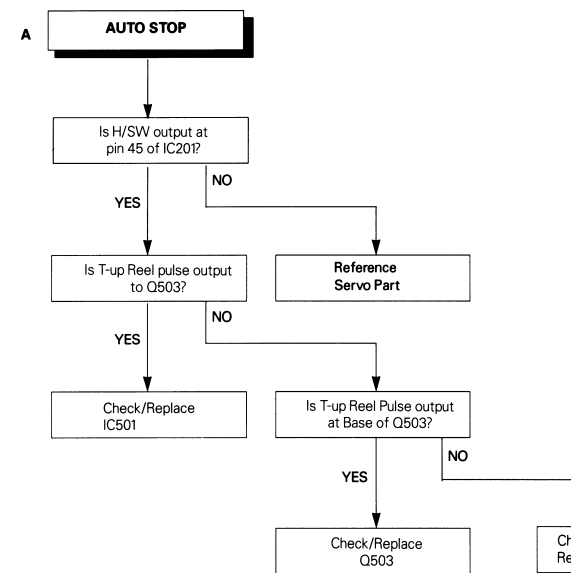
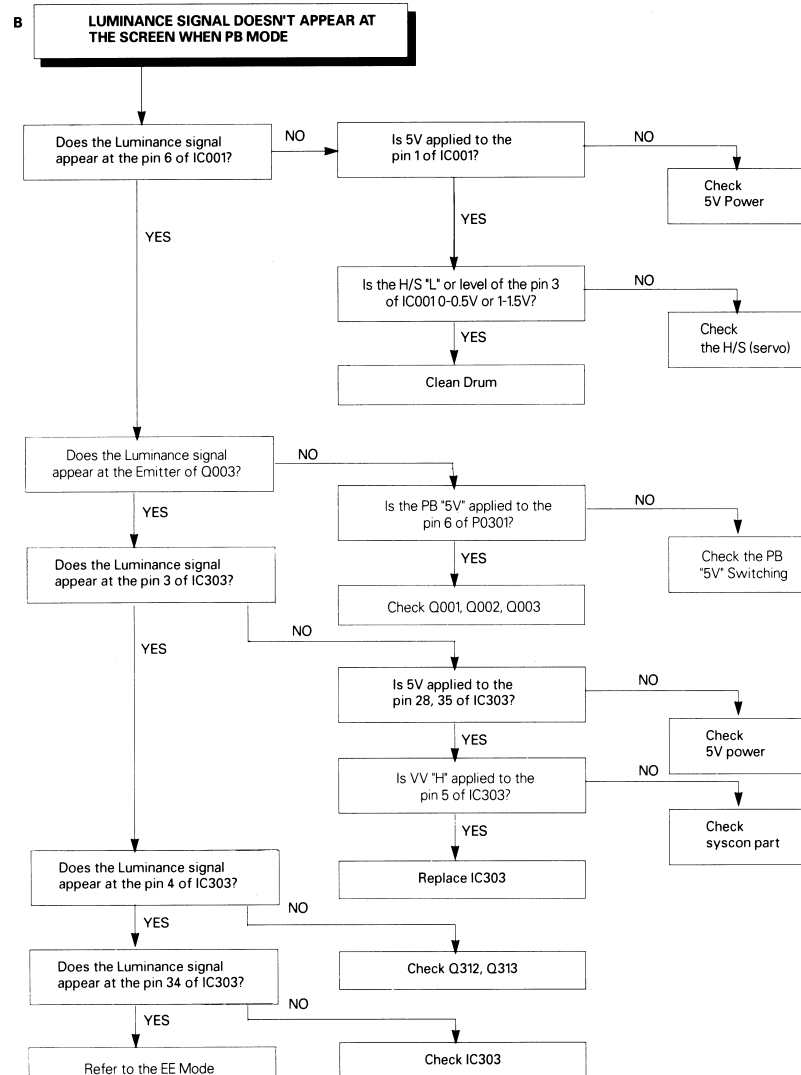
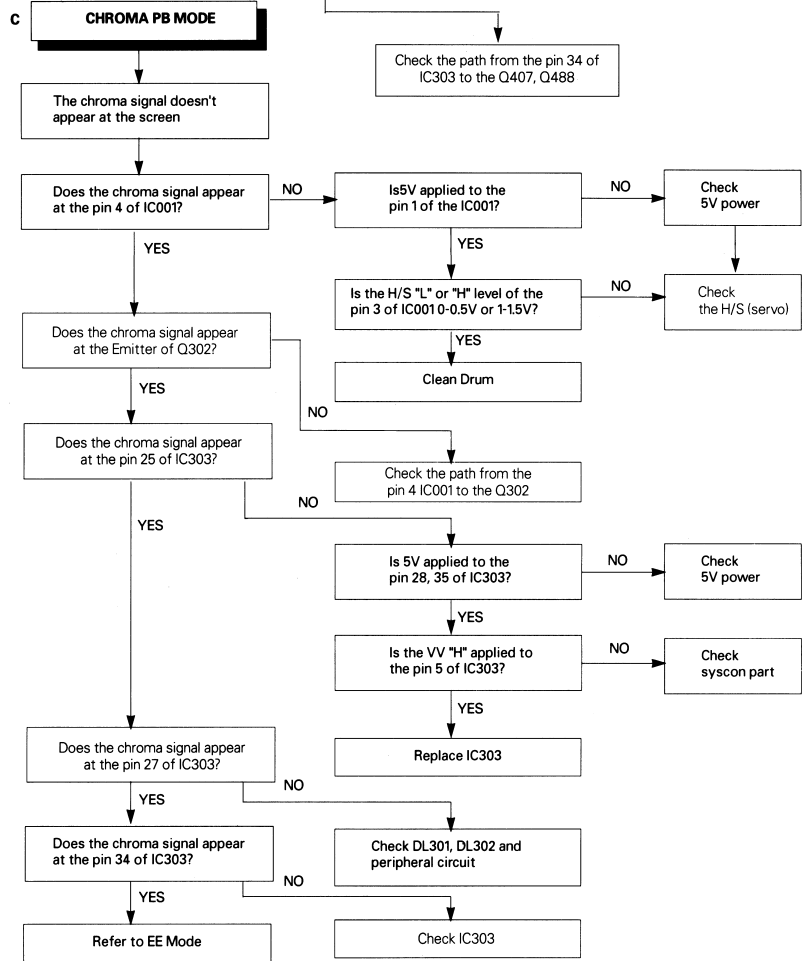
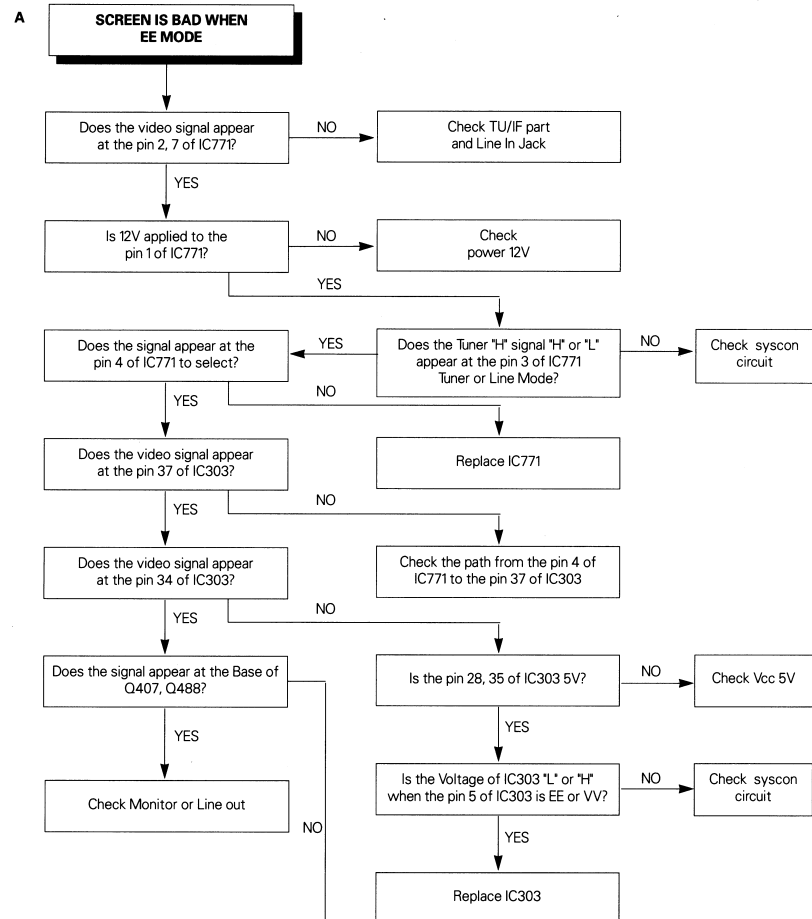
#### C. RECORDING PLAYBACK IS NOT POSSIBLE





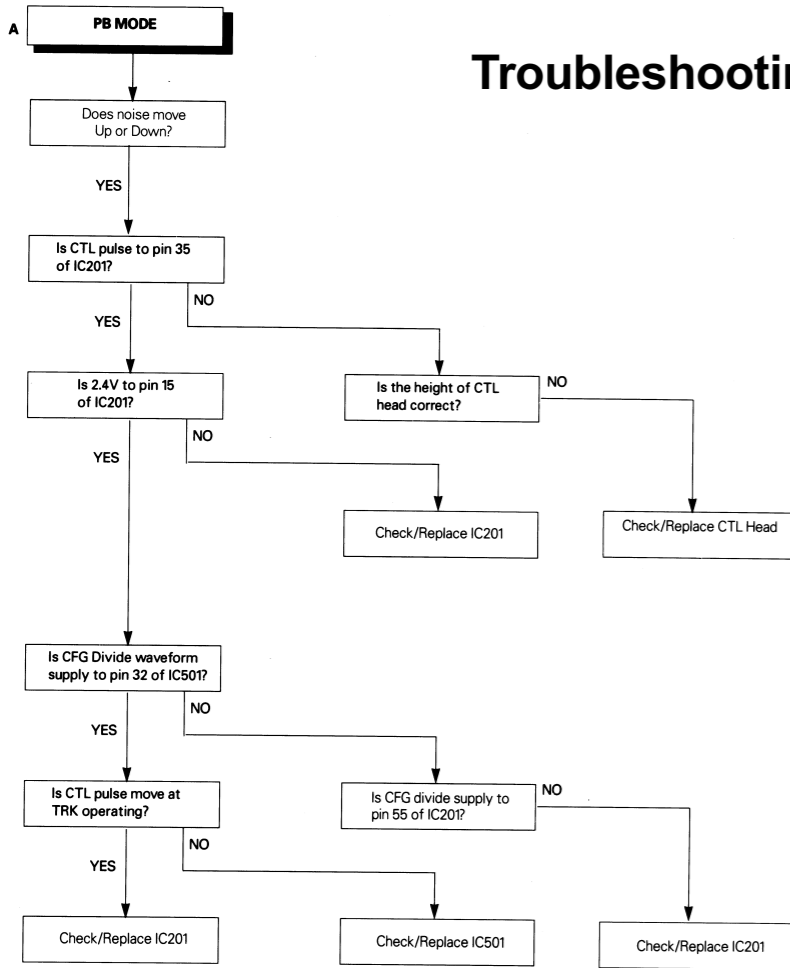
Troubleshooting Guides (VCR) Cont'd

4. Y/C CIRCUIT

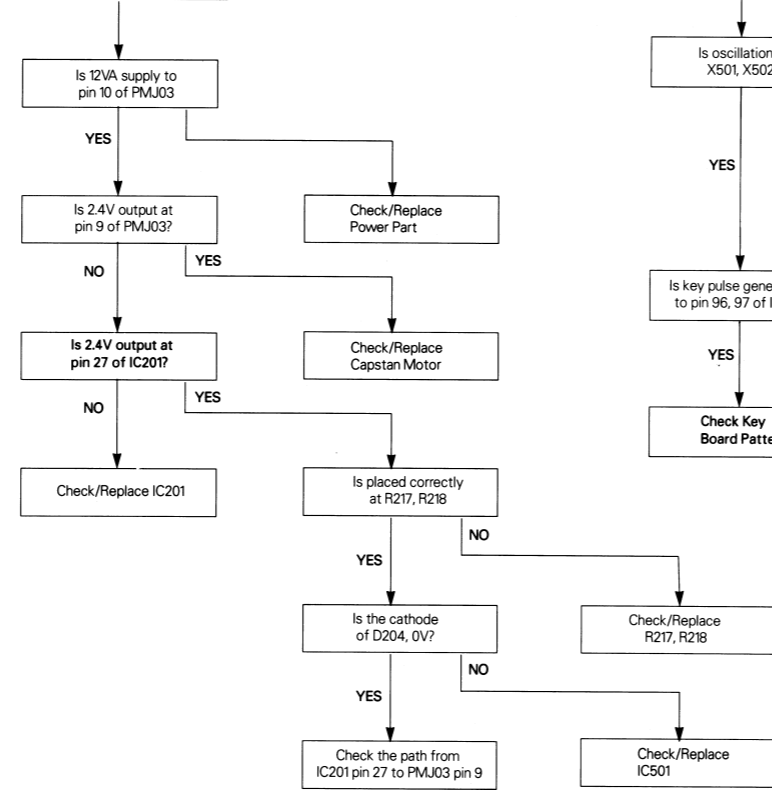


Troubleshooting Guides (VCR) Cont'd

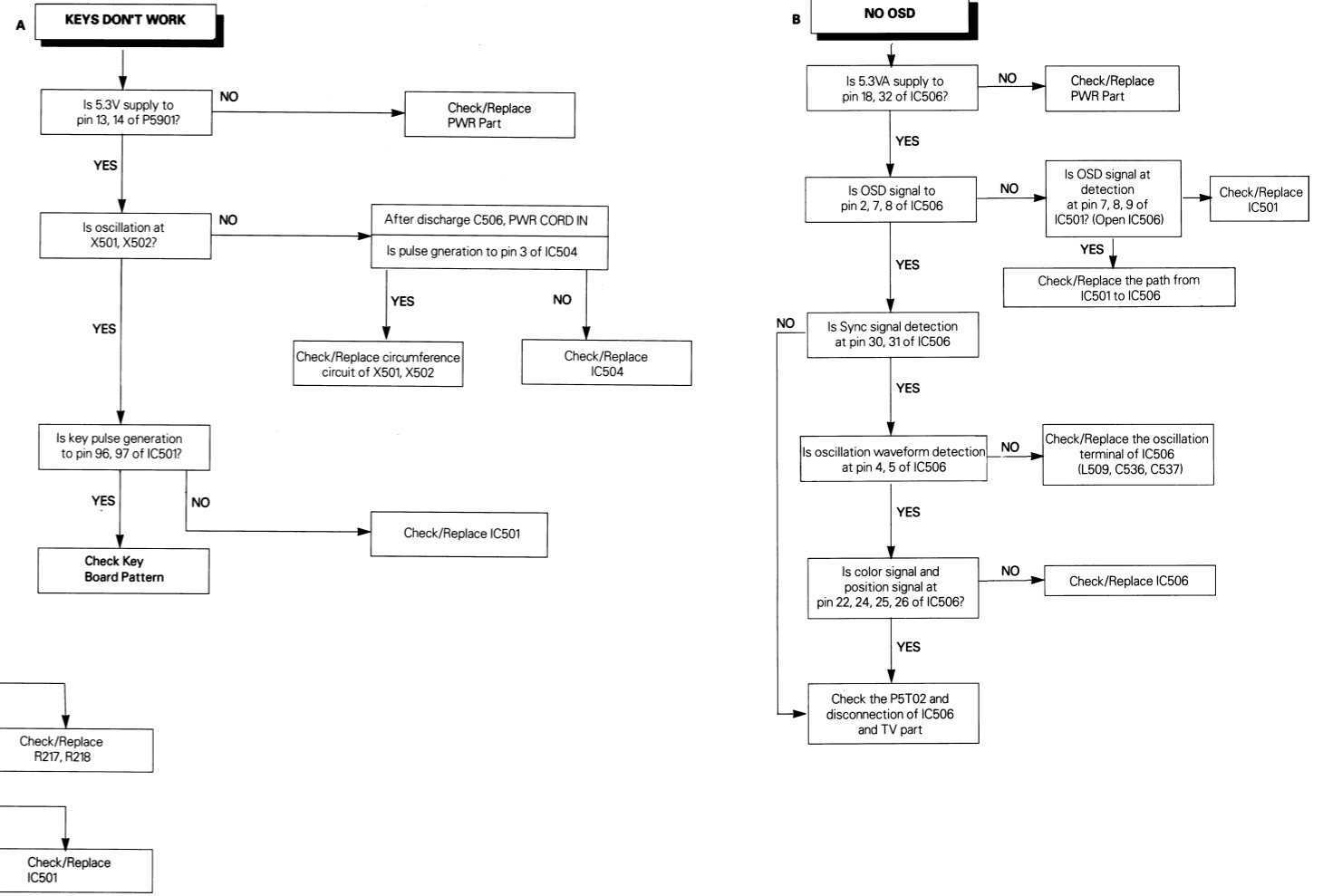
6. SERVO CIRCUIT



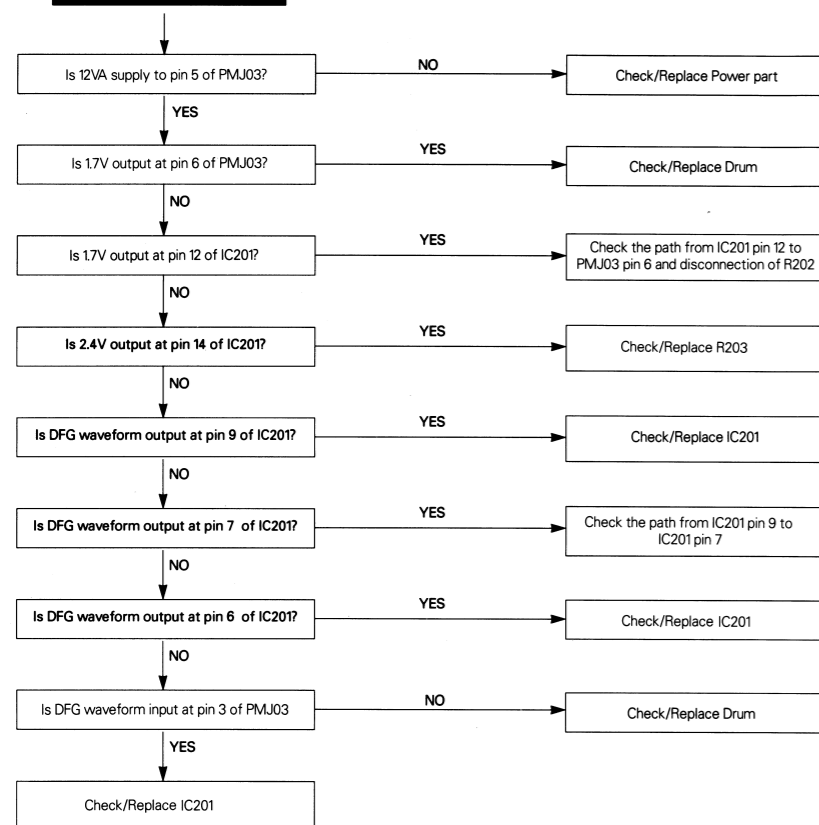
C. CAPSTAN MOTOR STOP



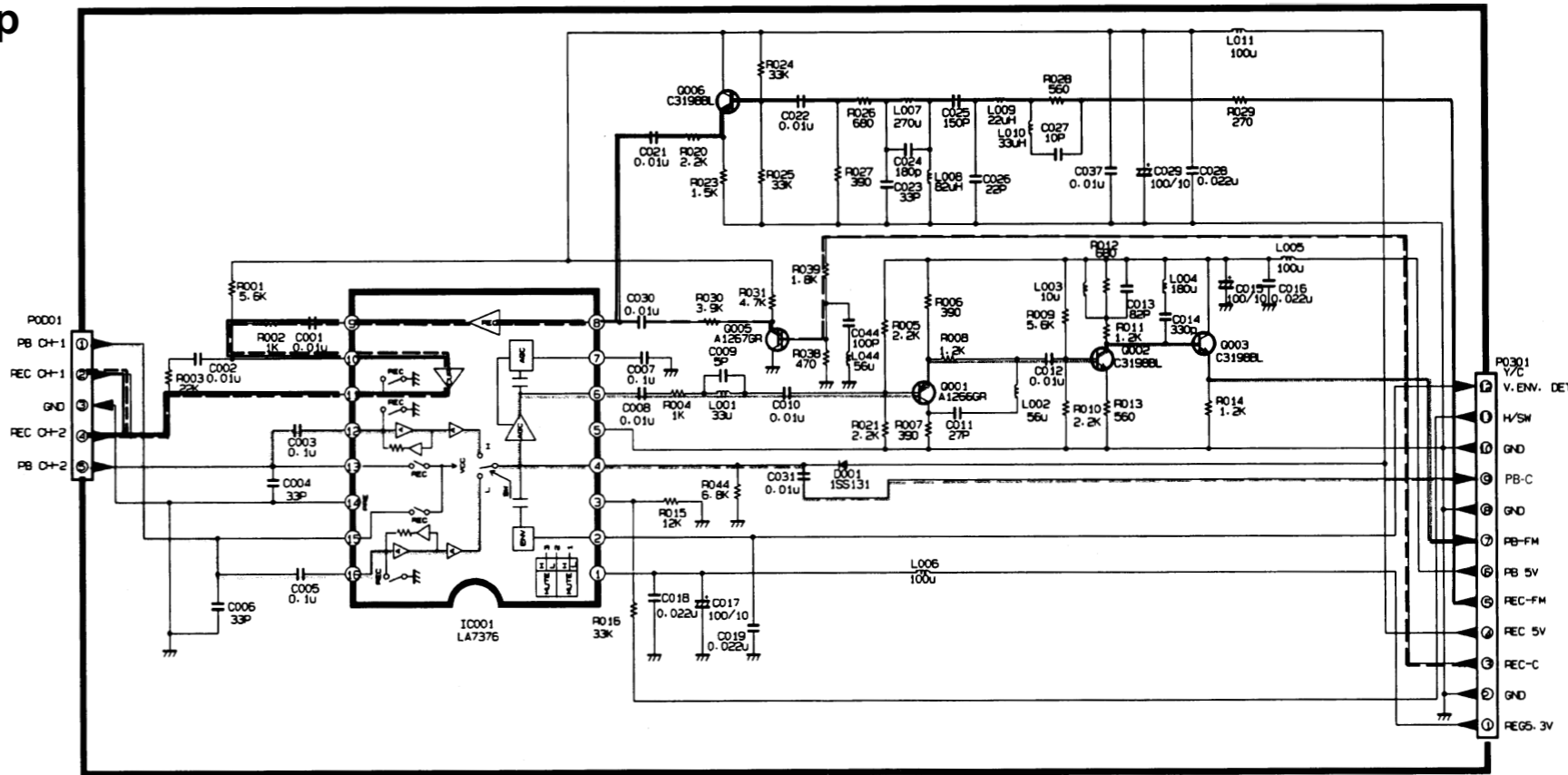
7. TIMER CIRCUIT



B. DRUM MOTOR STOP



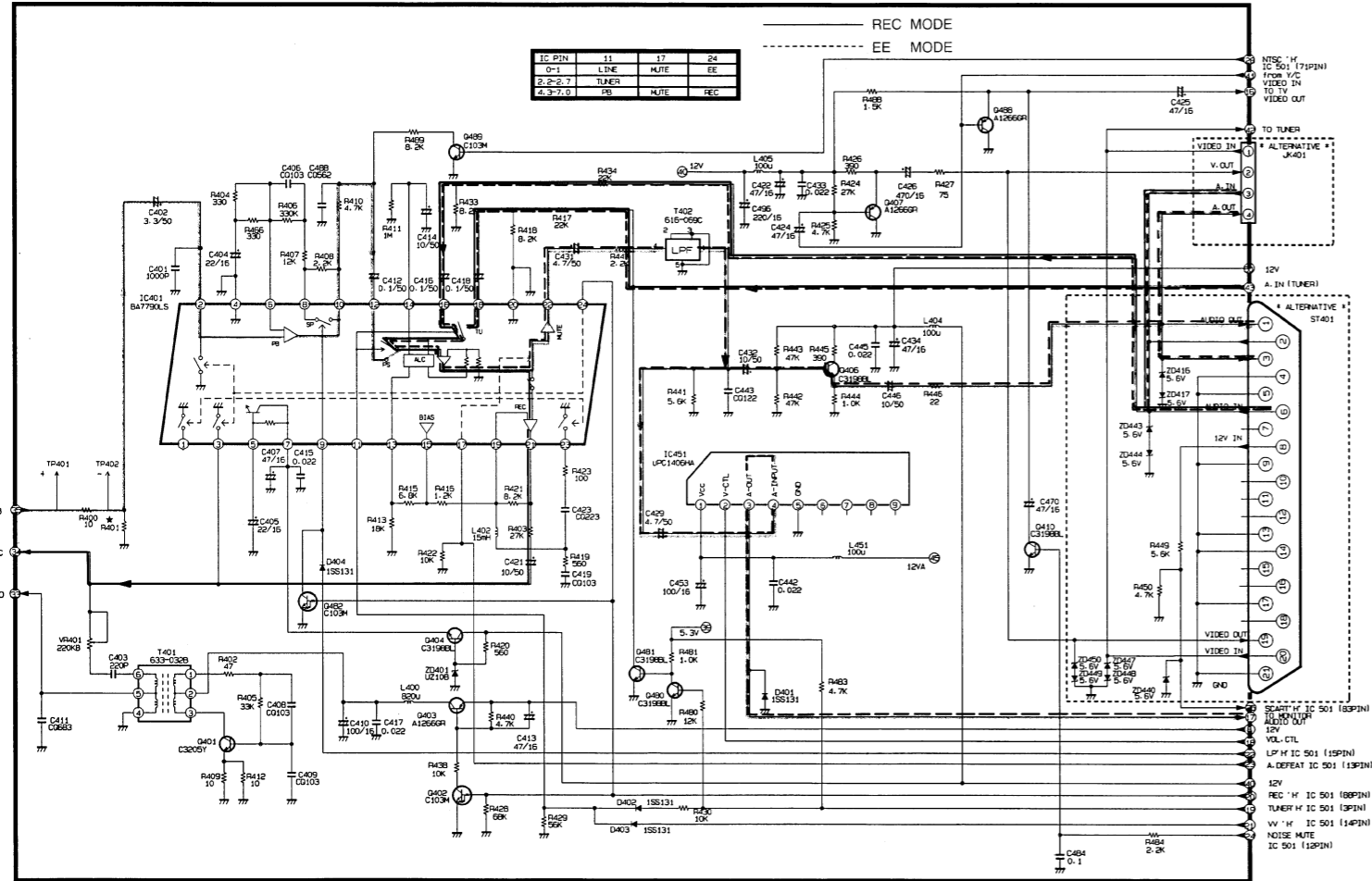
Head Amp Diagram



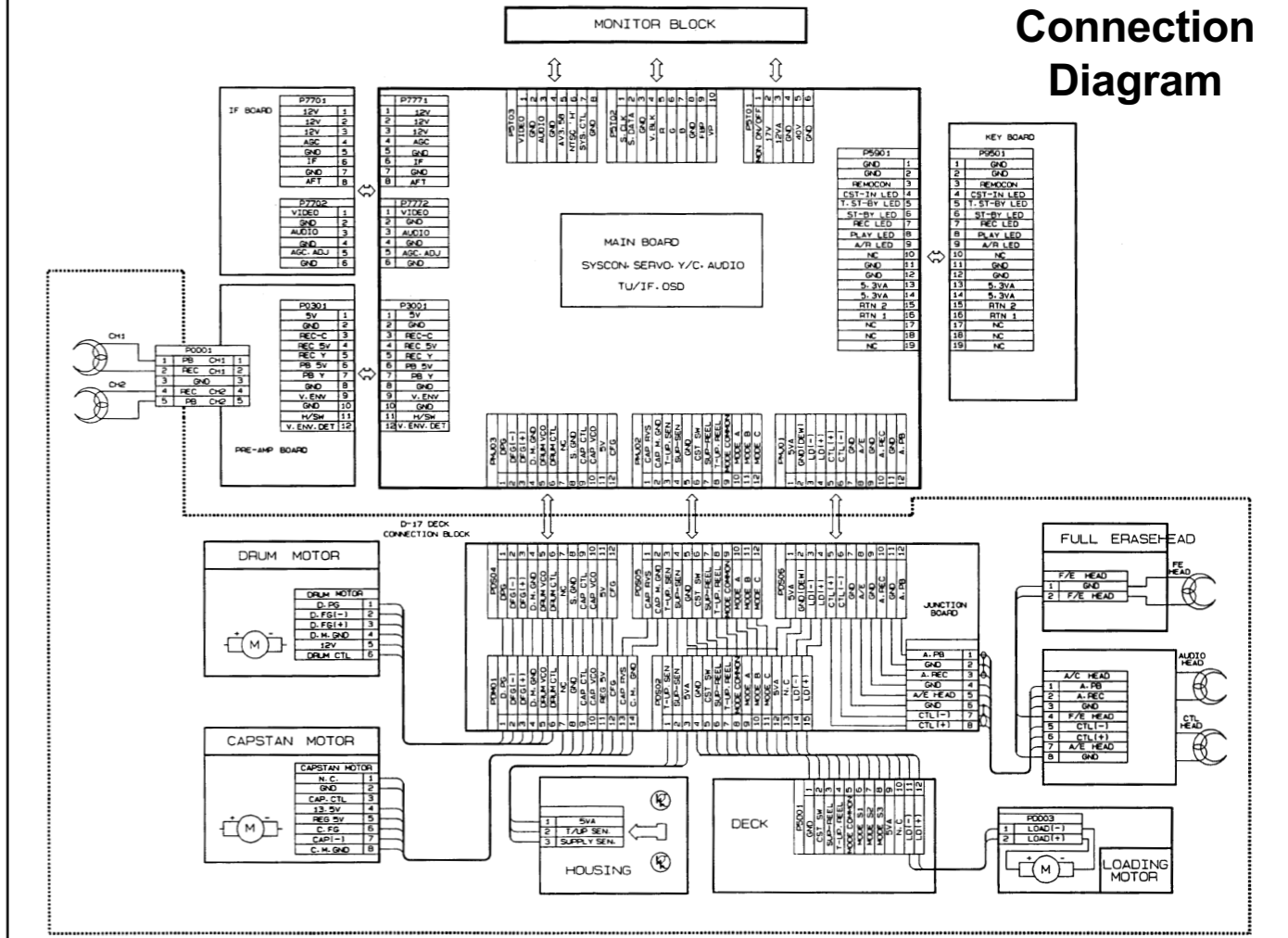




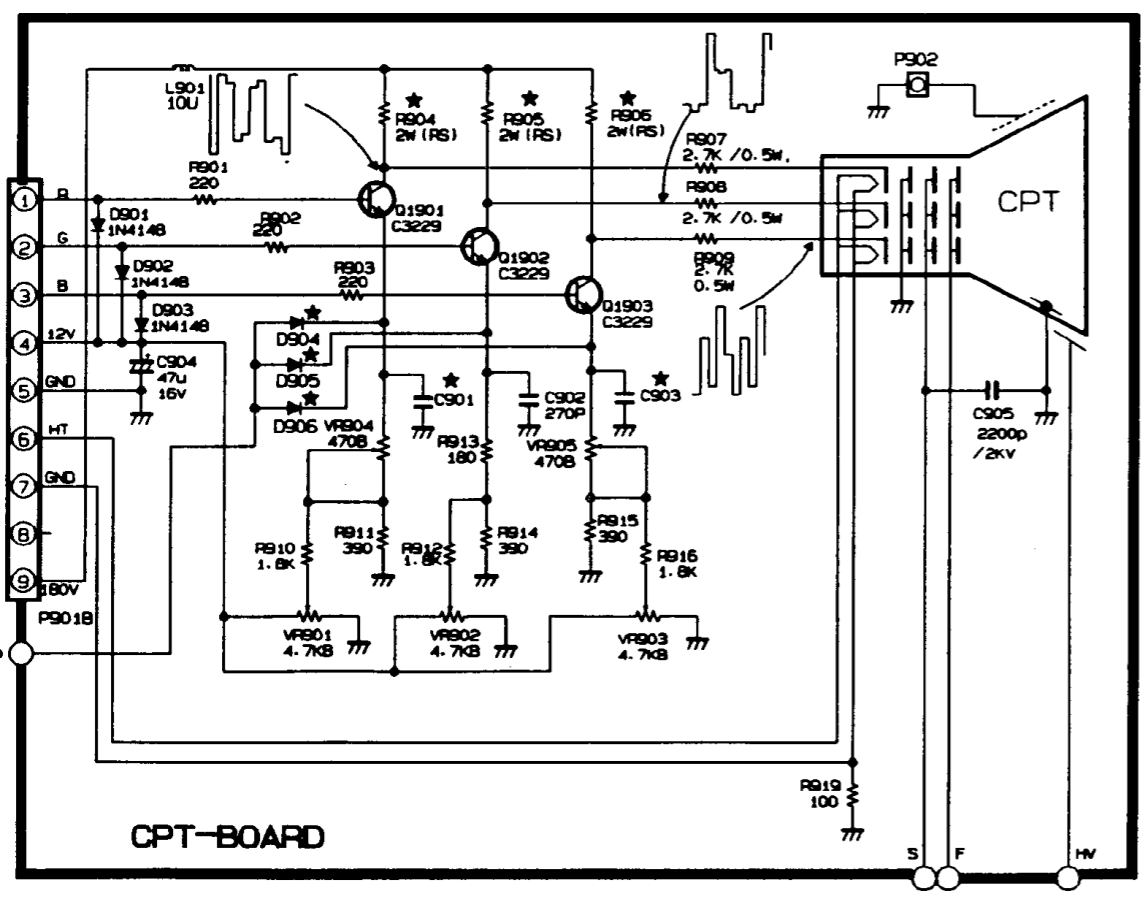
Audio (VCR) Diagram



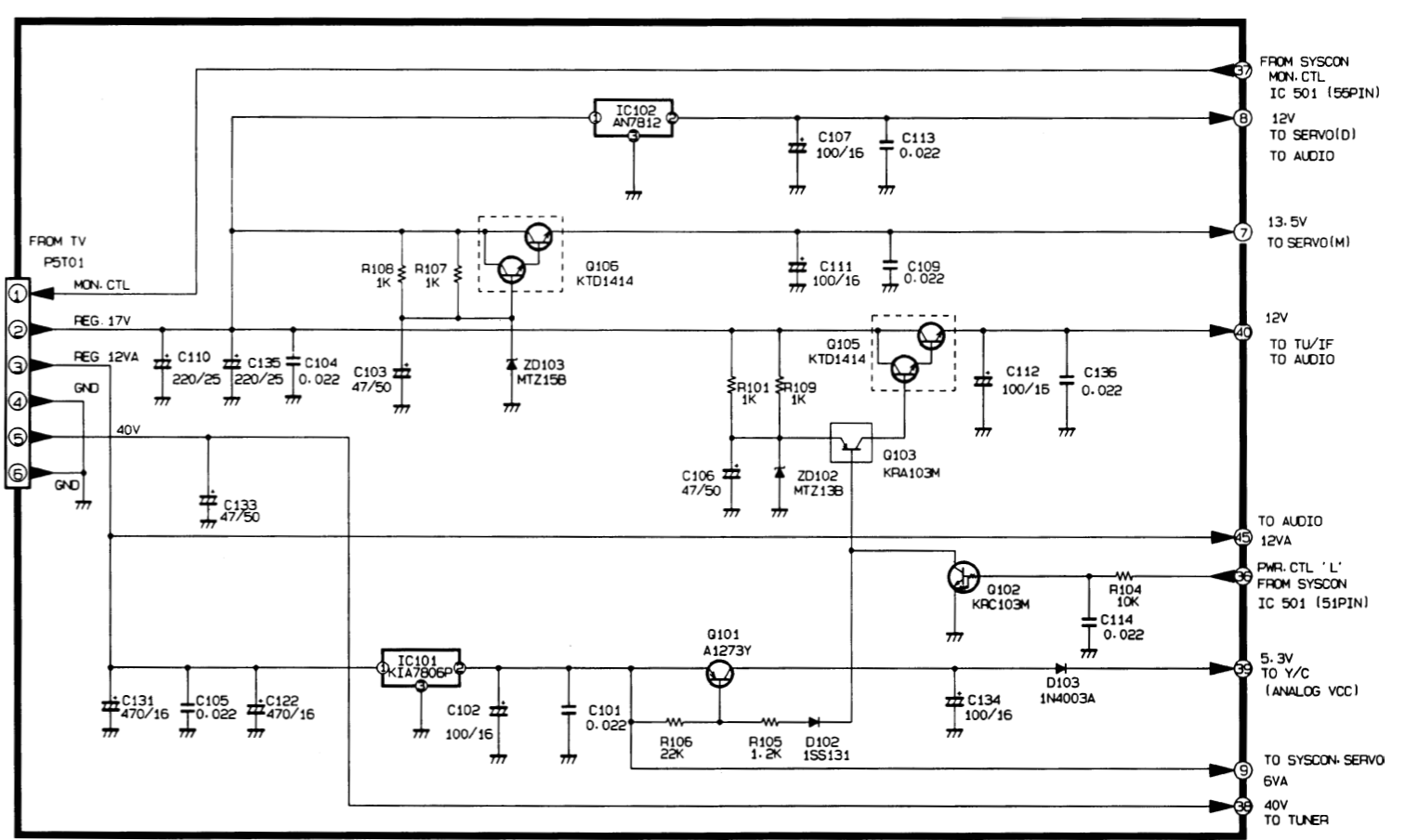
Connection Diagram



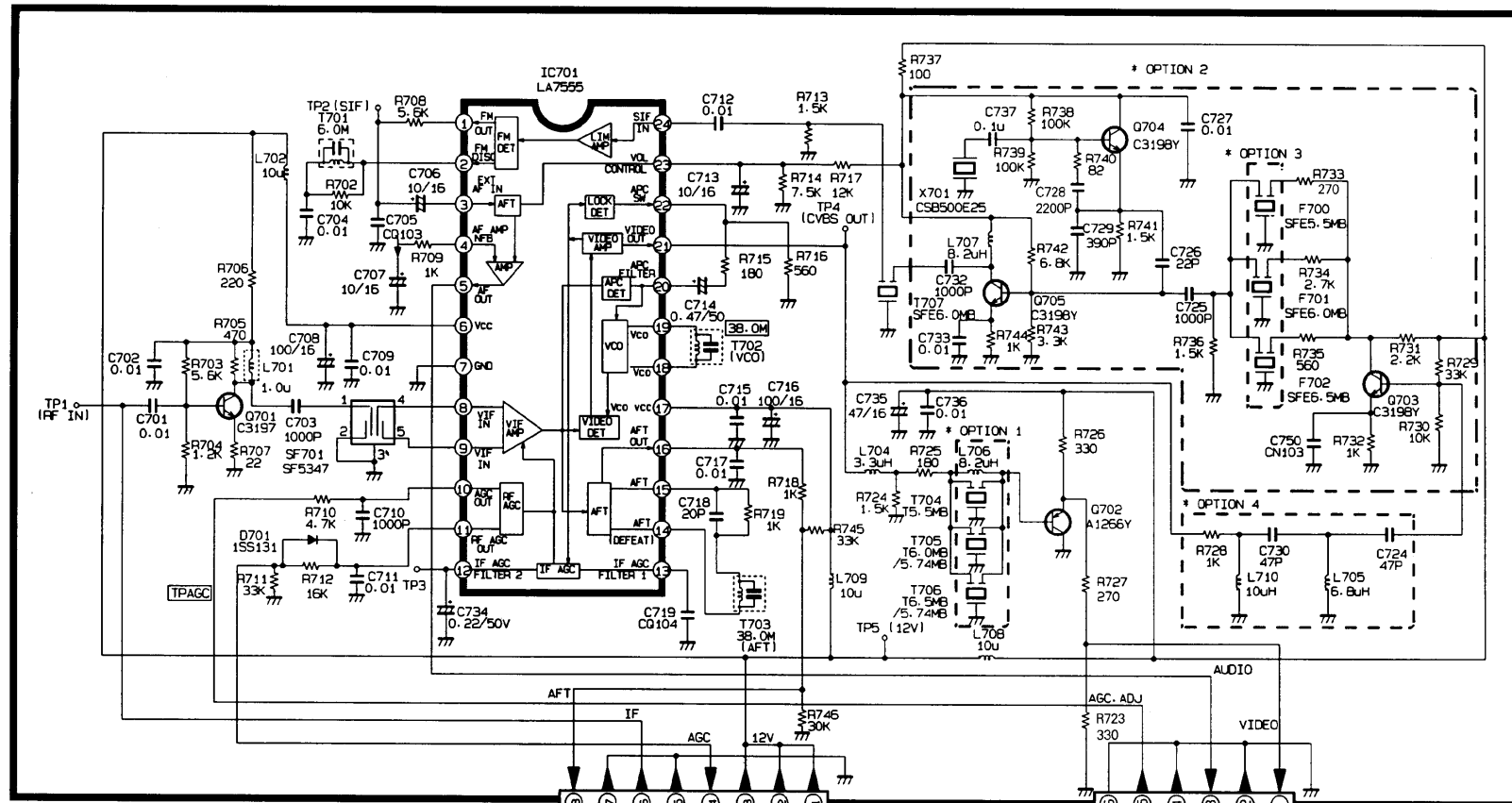
CRT Diagram



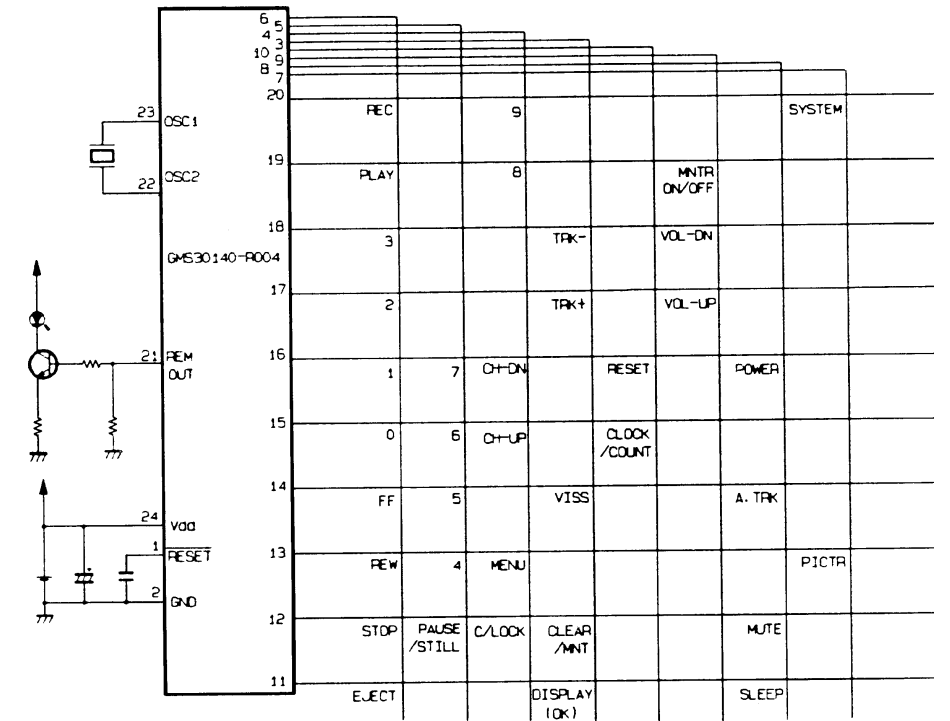
Power Supply (VCR) Diagram



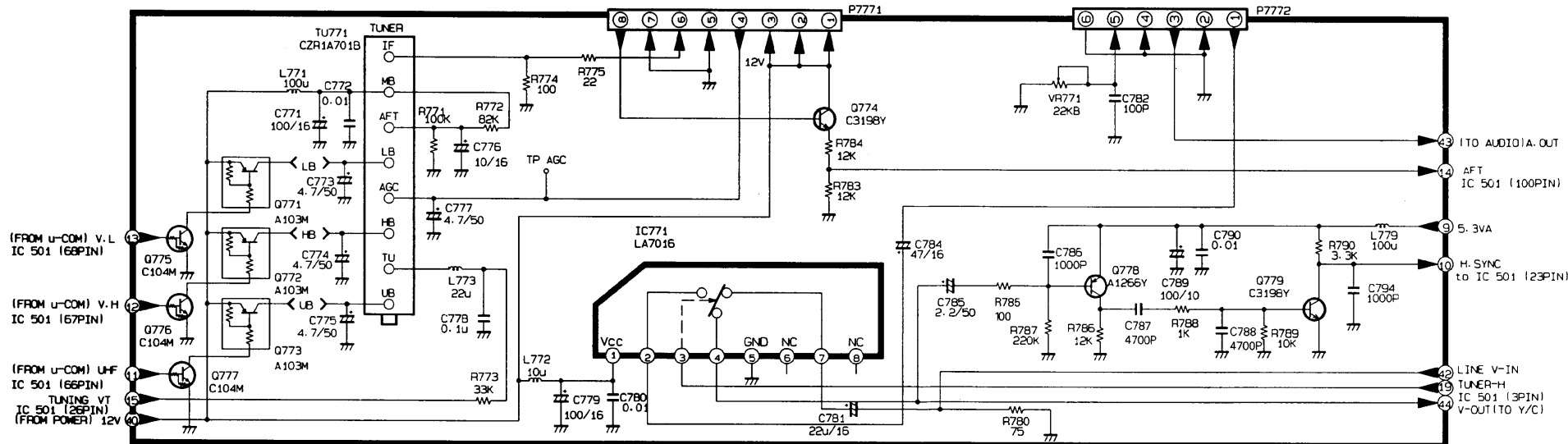
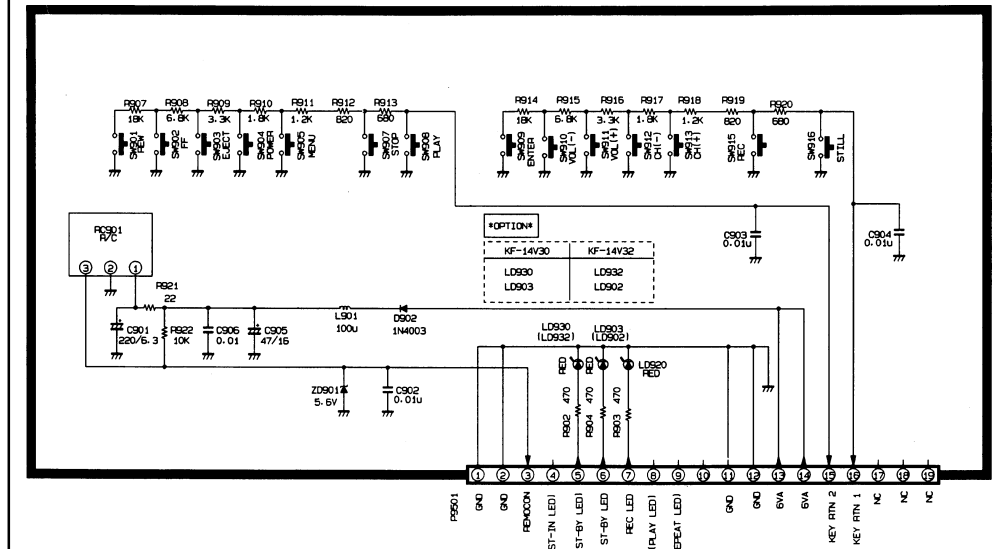
Tuner IF Diagram



Remote Handset Diagram

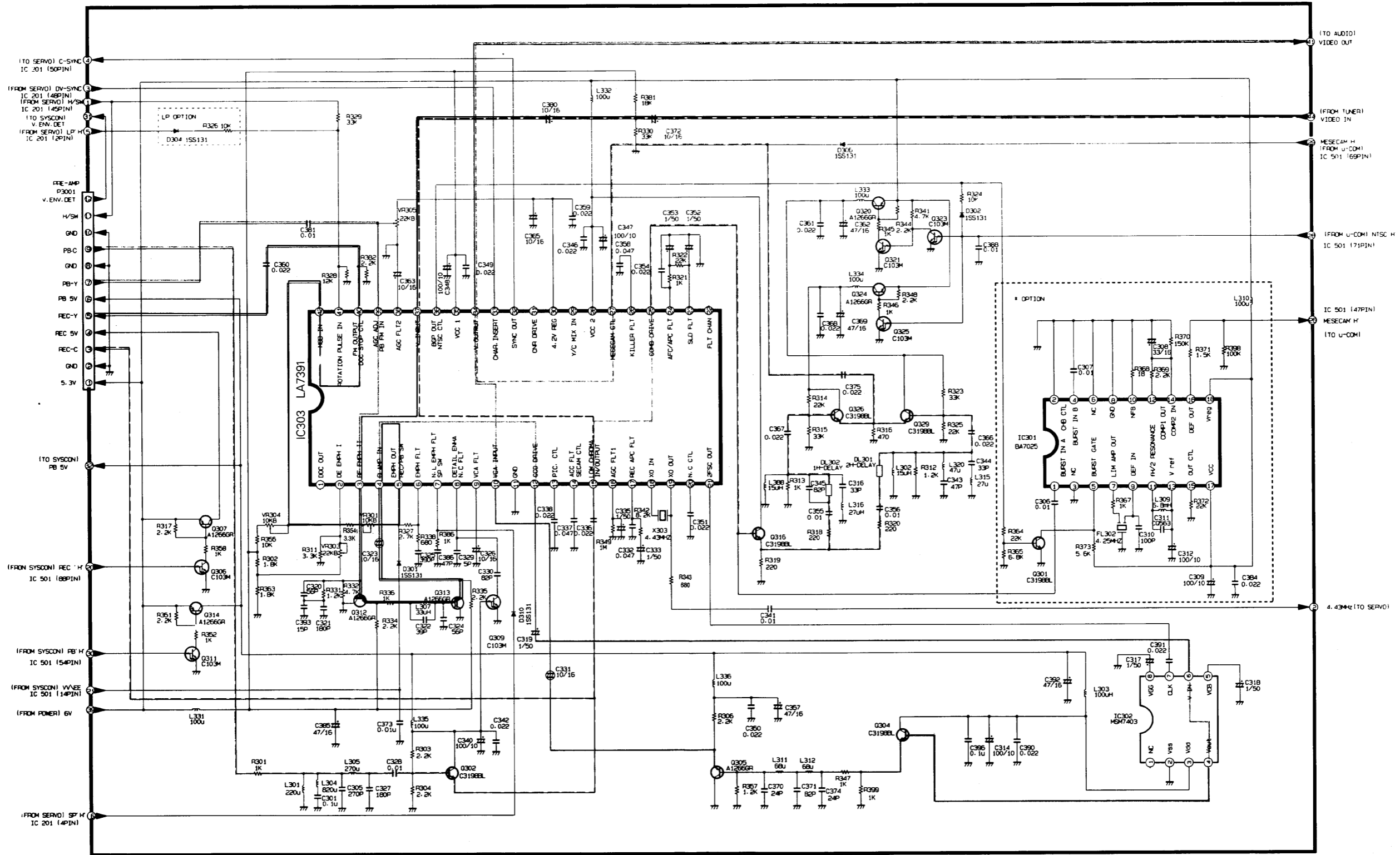


Key PCB Diagram





Y/C Diagram



# Servo Diagram

