

# SERVICE MANUAL

INTEGRATED COLOR TV/VIDEO  
CASSETTE RECORDER

BASIC TAPE MECHANISM : OVD-6

## SPECIFICATIONS

### GENERAL

POWER REQUIREMENTS ..... 120V AC, 60Hz  
 POWER CONSUMPTION ..... 80W  
 WEIGHT ..... 13.5 kg (29.7 lbs.)  
 DIMENSIONS ..... 435 mm (W) x 365 mm (D) x  
 384.5 mm (H)  
 (17 1/4 x 14 3/8 x 15 1/4 in.)

### TV SECTION

PICTURE TUBE ..... 208 mm (W) x 211 mm (H)  
 (8 1/4 x 8 3/8 in.)  
 335 mm (diagonal) (13 1/4 in.)  
 TUNER SYSTEM ..... Frequency synthesized tuner  
 CHANNEL COVERAGE ..... VHF: 2 to 13  
 UHF: 14 to 69  
 CATV: 5A, A-1 to A-5, A to W,  
 W+1 to W+84  
 TV SYSTEM ..... M  
 HORIZONTAL RESOLUTION ..... 230 lines  
 ANTENNA INPUT ..... 75 ohms, unbalanced

### VCR SECTION

OPERATING TEMPERATURE ..... 5°C to 40°C  
 VIDEO RECORDING SYSTEM ..... Rotary 2 head helical  
 scanning system

VIDEO SIGNAL SYSTEM ..... NTSC color system, 525 lines,  
 60 fields  
 VIDEO HEAD ..... Azimuth 2 head  
 USABLE CASSETTES ..... VHS video cassette  
 TAPE SPEED ..... SP: 33.35 mm/sec  
 LP: 16.67 mm/sec  
 SLP: 11.12 mm/sec  
 RECORDING/PLAYBACK TIME ..... SP: 3 hours with T-180 tape  
 LP: 6 hours with T-180 tape  
 SLP: 9 hours with T-180 tape  
 VIDEO INPUT ..... 1.0Vp-p, 75 ohm, unbalanced  
 VIDEO OUTPUT ..... 1.0Vp-p, 75 ohm, unbalanced  
 VIDEO S/N ..... 53dB (nominal)  
 AUDIO INPUT ..... -3.8dBs, 50K ohm  
 AUDIO OUTPUT ..... -3.8dBs, less than 50K ohm  
 AUDIO TRACK ..... 3 tracks (Hi-Fi sound 2 tracks,  
 Normal sound 1 track)  
 FAST-FORWARD TIME ..... Approx. 2 minutes 15 seconds  
 with T-120 tape  
 REWIND TIME ..... Approx. 1 minutes 48 seconds  
 with T-120 tape

● Design and specifications are subject to change without notice.

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# SERVICING NOTICES ON CHECKING

## 1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

## 2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

## 3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  $\triangle$  mark, the designated parts must be used.

## 4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

## 5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

## 6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.

Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.

Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

## 7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

### (INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the external exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

### **[Note 1]**

If you have not the 500V insulation resistance meter, use a Tester.

### **[Note 2]**

External exposure metal: Antenna terminal  
Earphone jack

## VCR TEST TAPE INTERCHANGEABILITY TABLE

There are two types of the new alignment tape CH-1B (for NTSC) and CH-2 (for PAL). On each tape four signals (1) - (4) are recorded for the times and in the order shown below.

(1) : 8min. ---> (2) : 2min. ---> (3) : 5min. ---> (4) : 5min.

The TTV-MP1 (for M-PAL), TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) alignment tapes have the same contents as the previous tapes.

Method	Now in use TYPE		New TYPE		Application
	Model	Contents*1	Model	Contents*1	
NTSC	TTV-N1	NTSC, Color, 1kHz, SP	CH-1B(2)	NTSC, Stairsteps, 1kHz, SP	PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-N1E	NTSC, Color, 1kHz, EP	CH-1B(4) *2	NTSC, Color, 1kHz, EP	Switching position ADJ.
	TTV-N2	NTSC, Stairsteps, 7kHz, SP	CH-1B(1)	NTSC, Stairsteps, 7kHz, SP	Head ACE Azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC, Color, 1kHz, SP	CH-1B(4)	NTSC, Color, 1kHz, EP	FM envelope ADJ. X-Value ADJ.
	TTV-N7A	NTSC, Stairsteps, 1kHz, SP, HiFi 400Hz	CH-1B(3)	NTSC, Color, No sound SP, HiFi 400Hz	HiFi Audio PB Level ADJ.
PAL	TTV-P1	PAL, Color, 1kHz, SP	CH-2(2) *3	PAL, Stairsteps, 1kHz, SP	Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL, Color, 1kHz, LP	CH-2(4)	PAL, Color, 1kHz, LP	Switching position. (LP Model) FM Envelope ADJ. (LP Model) X-Value ADJ. (LP Model)
	TTV-P2	PAL, Stairsteps, 6kHz, SP	CH-2(1)	PAL, Stairsteps, 6kHz, SP	Head ACE Azimuth ADJ. FM Envelope ADJ. (SP Model) X-Value ADJ. (SP Model)
	TTV-P7	PAL, Stairsteps, 1kHz, SP, HiFi, 1kHz	CH-2(3)	PAL, Color, No sound SP, HiFi 400Hz	HiFi Audio PB Level ADJ.
	TTV-P16	PAL, Color, 400Hz, SP, HiFi 1kHz	No Changed.		FM Filter ADJ.

\*1. Described in the order of color format. Video signal. Linear audio. Tape speed and Hi-Fi audio.

\*2. Use CH-1B (1) - (3) with models used exclusively in the SP mode.

\*3. Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

# DISASSEMBLY INSTRUCTIONS

## 1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

### 1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 2 screws ①.
2. Remove the 2 screws ②.
3. Remove the 2 screws ③ which are used for holding the Back Cabinet.
4. Remove the AC cord from the AC cord hook ④.
5. Remove the Back Cabinet in the direction of arrow.

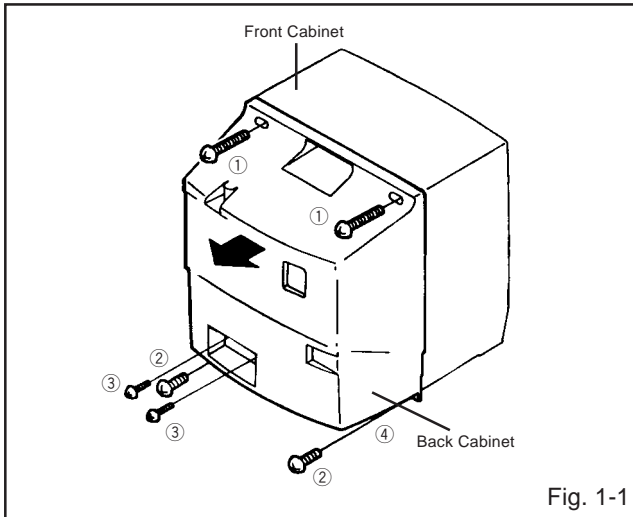


Fig. 1-1

### 1-2: CRT PCB (Refer to Fig. 1-2)

**CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.**

1. Remove the Anode Cap.  
(Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors:  
(CP801 and CP850).
3. Remove the CRT PCB in the direction of arrow.

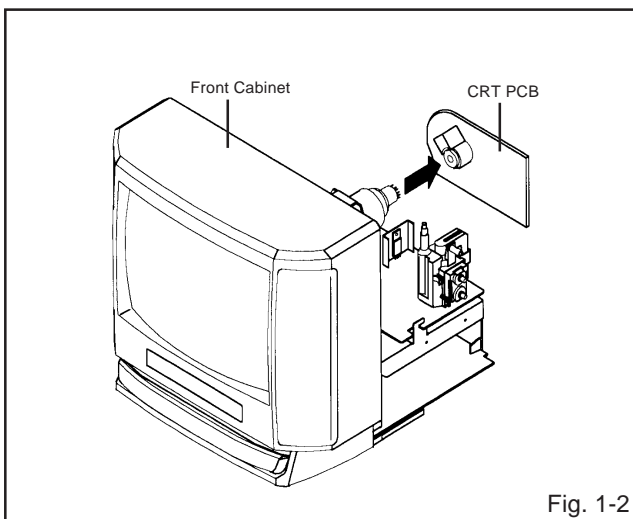


Fig. 1-2

### 1-3: TV/VCR BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors:  
(CP4201, CP4202, CP303, CP501, CP502 and CP401).
3. Unlock the support ②.
4. Remove the TV/VCR Block in the direction of arrow.

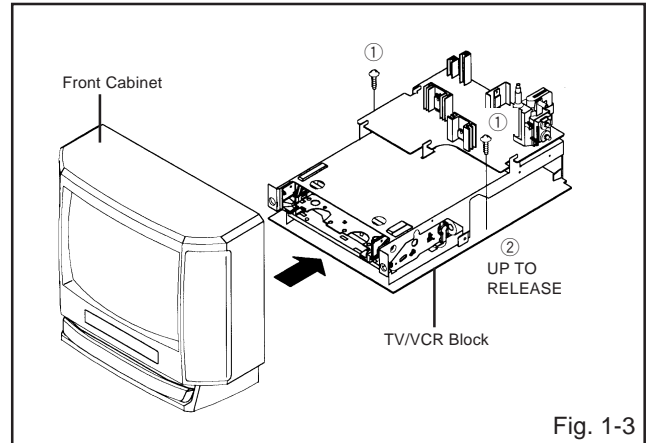


Fig. 1-3

### 1-4: MAIN PCB (Refer to Fig. 1-4)

1. Remove the screw ①.
2. Remove the Main PCB Holder.
3. Remove the 2 screws ②.
4. Remove the 3 screws ③.
5. Disconnect the following connectors:  
(CP810, CP820, CP804 and CD401).
6. Remove the Main PCB in the direction of arrow.

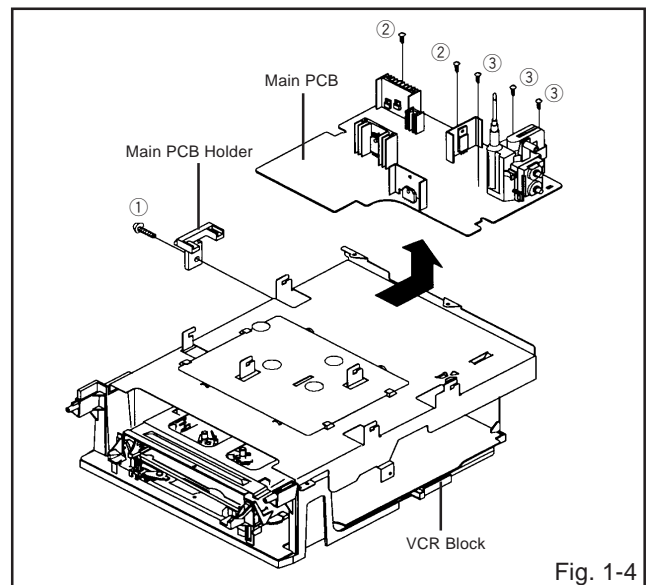
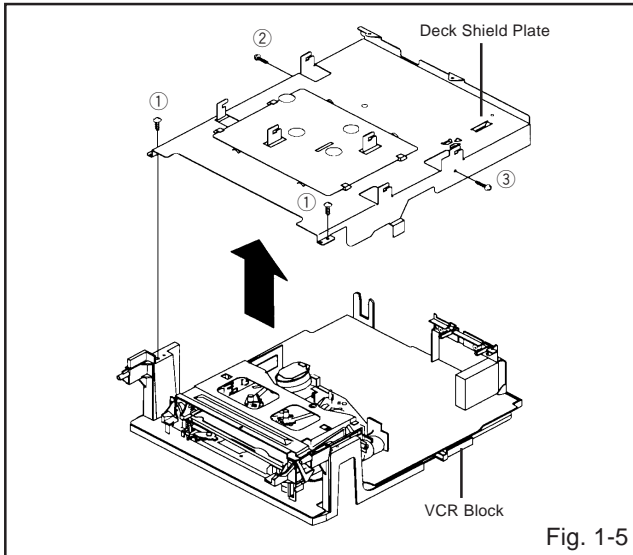


Fig. 1-4

## DISASSEMBLY INSTRUCTIONS

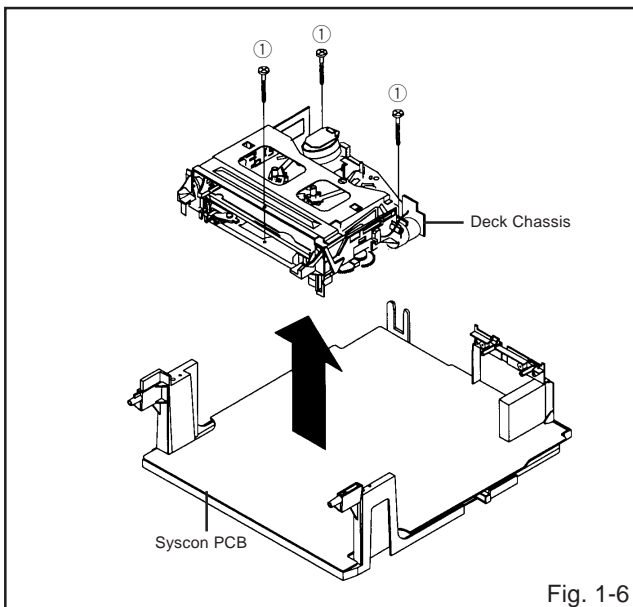
### 1-5: DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Remove the screw ②.
3. Remove the screw ③.
4. Remove the Deck Shield Plate in the direction of arrow.



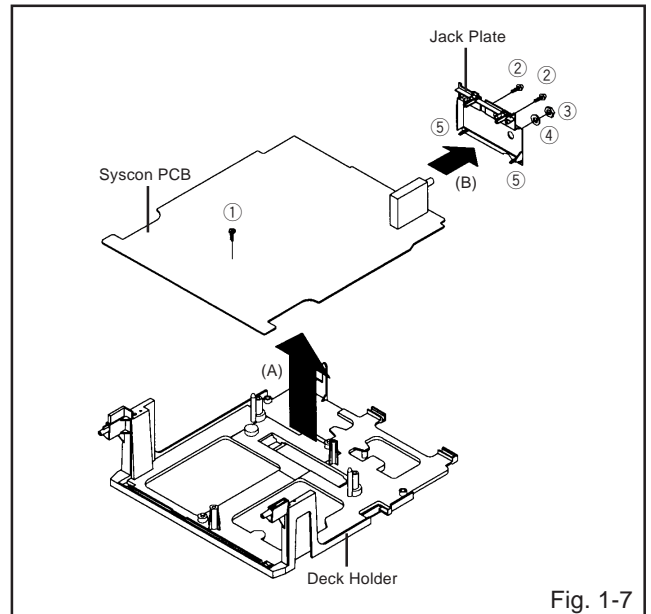
### 1-6: DECK CHASSIS (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Disconnect the following connectors: (CP1002, CP1005, CP1006, CP4001, CP4004 and CP4005).
3. Remove the Deck Chassis in the direction of arrow.



### 1-7: JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the nut ③.
5. Remove the washer ④.
6. Unlock the 2 supports ⑤.
7. Remove the Jack Plate in the direction of arrow (B).



# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF DECK PARTS

### 2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Remove the 2 screws ①.
2. Slide the 2 supports ② and remove the Top Bracket.

#### NOTE

When you install the Top Bracket, install the screw (1) first, then install the screw (2).

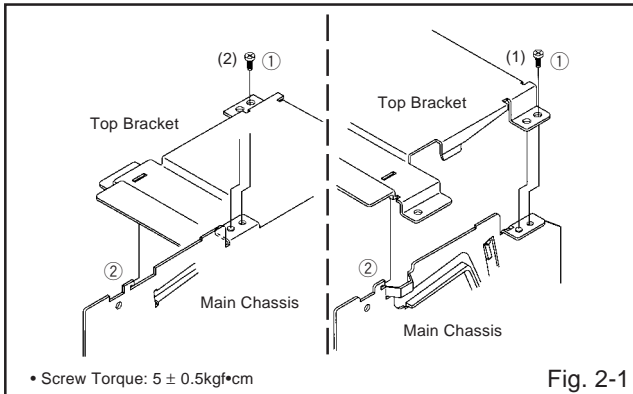


Fig. 2-1

### 2-2: DECK COVER/FLAP LEVER/TAPE GUIDE R (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the back side.
2. Unlock the support ① and remove the Deck Cover.
3. Remove the Polyslider Washer ②.
4. Unlock the support ③ and remove the Flap Lever.
5. Unlock the 3 supports ④ and remove the Tape Guide R.

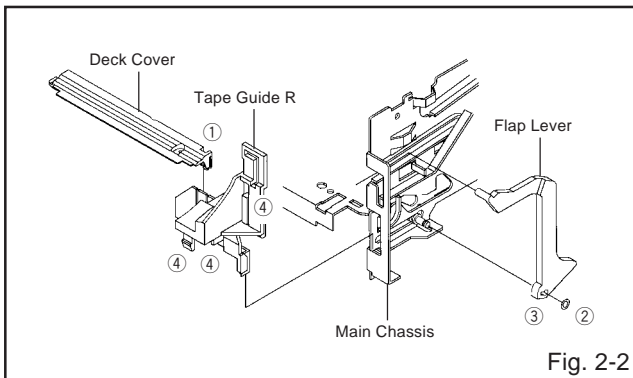


Fig. 2-2

### 2-3: TAPE GUIDE L (Refer to Fig. 2-3-A)

1. Move the Cassette Holder Ass'y to the back side.
2. Unlock the 2 supports ① and remove the Tape Guide L.
3. Remove the REC Lever. (Recorder only)

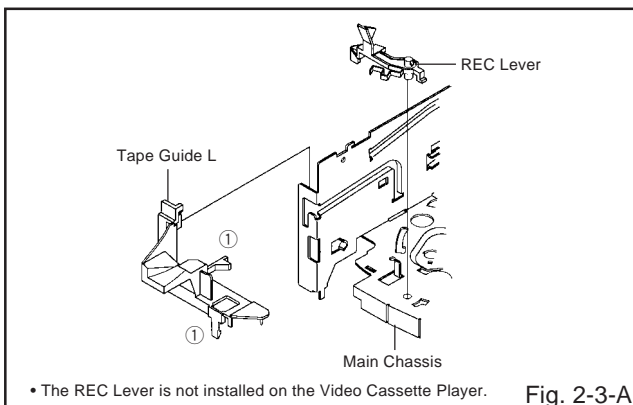


Fig. 2-3-A

#### NOTE

When you install the Tape Guide L, install as shown in the circle of Fig. 2-3-B. (Refer to Fig. 2-3-B)

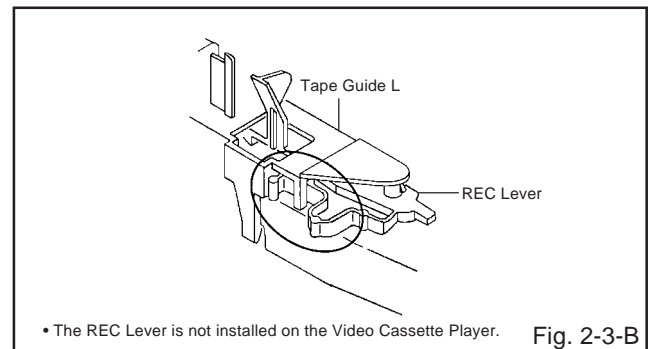


Fig. 2-3-B

### 2-4: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-4)

1. Move the Cassette Holder Ass'y to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

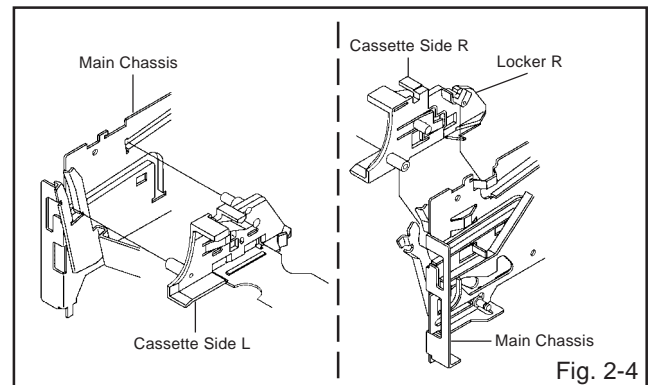


Fig. 2-4

### 2-5: CASSETTE SIDE L/R (Refer to Fig. 2-5)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.

#### NOTE

When you install the Cassette Side L/R, be sure to move the Locker L/R after installing.

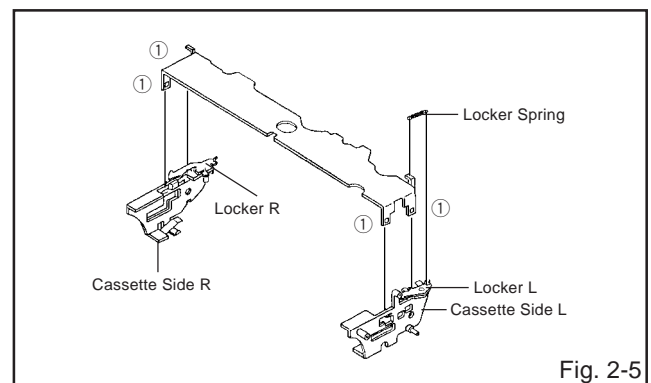
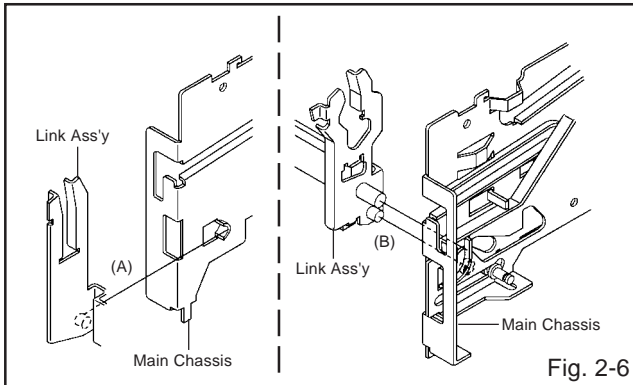


Fig. 2-5

# DISASSEMBLY INSTRUCTIONS

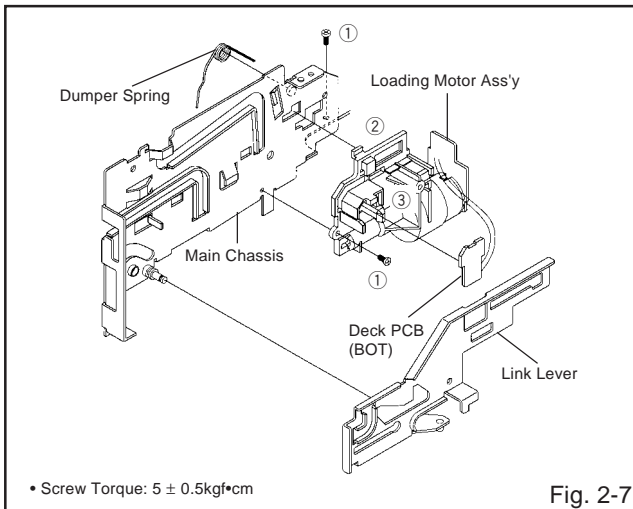
## 2-6: LINK ASS'Y (Refer to Fig. 2-6)

1. Set the Link Ass'y to the Eject position.
2. Remove the (A) side of the Link Ass'y first, then remove the (B) side.



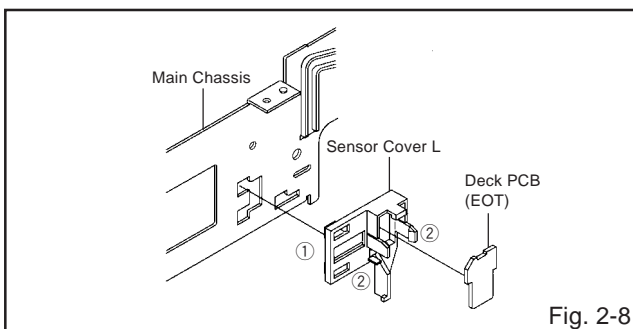
## 2-7: LOADING MOTOR ASS'Y (Refer to Fig. 2-7)

1. Remove the Link Lever.
2. Remove the Dumper Spring.
3. Remove the 2 screws ①.
4. Unlock the support ② and remove the Loading Motor Ass'y.
5. Unlock the 2 supports ③ and remove the Deck PCB (BOT).



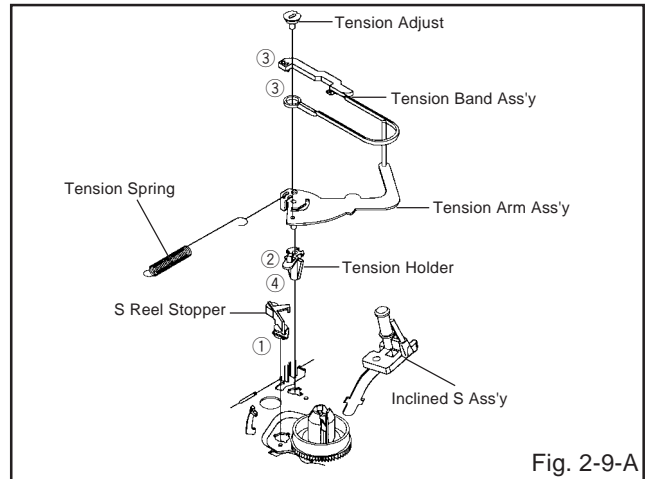
## 2-8: SENSOR COVER L (Refer to Fig. 2-8)

1. Unlock the support ① and remove the Sensor Cover L.
2. Unlock the 2 supports ② and remove the Deck PCB (EOT).



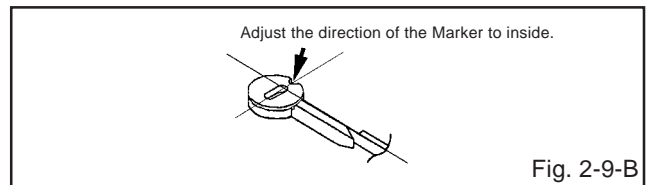
## 2-9: TENSION ASS'Y (Refer to Fig. 2-9-A)

1. Move the Inclined S Ass'y to the back side.
2. Unlock the support ① and remove the S Reel Stopper.
3. Remove the Tension Spring.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Remove the Tension Adjust.
6. Unlock the 2 supports ③ and remove the Tension Band Ass'y.
7. Unlock the support ④ and remove the Tension Holder.



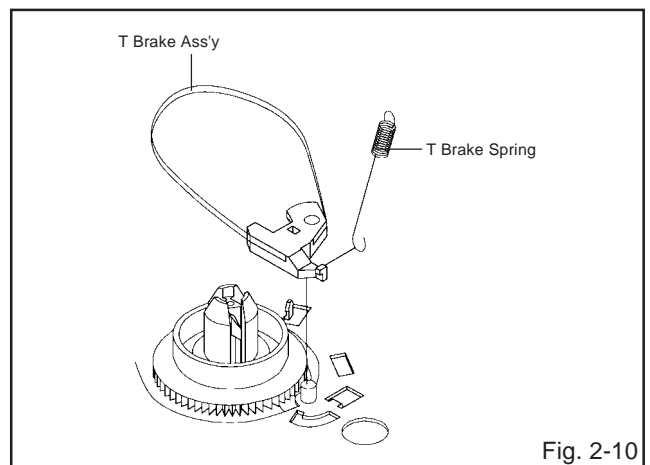
### NOTE

When you install the Tension Adjust, install as shown in Fig. 2-9-B. (Refer to Fig. 2-9-B)



## 2-10: T BRAKE ASS'Y (Refer to Fig. 2-10)

1. Remove the T Brake Spring.
2. Remove the T Brake Ass'y.





# DISASSEMBLY INSTRUCTIONS

## 2-11: S REEL/T REEL ASS'Y (Refer to Fig. 2-11)

1. Remove the Idler Ass'y.
2. Remove the S Reel and T Reel Ass'y.
3. Remove the 2 Polyslider Washers ①.

### NOTE

1. Take care not to damage the gears of the S Reel, T Reel Ass'y and Idler Ass'y.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel Ass'y. (Use gloves.) **(Refer to Fig. 2-11)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and oil it (KYODO OIL Slidas #150). (If you do not oil, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

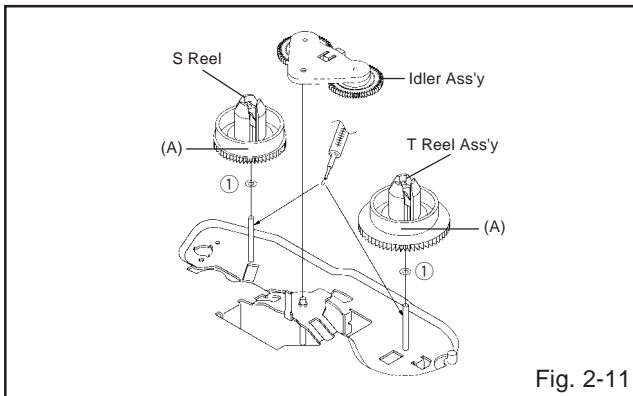


Fig. 2-11

## 2-12: PINCH ROLLER ASS'Y/P5 ARM ASS'Y (Refer to Fig. 2-12-A)

1. Remove the P5 Spring.
2. Remove the screw ①.
3. Unlock the 2 supports ② and remove the Cassette Opener.
4. Remove the Pinch Roller Ass'y, Pinch Roller Lever and P5 Arm Ass'y.

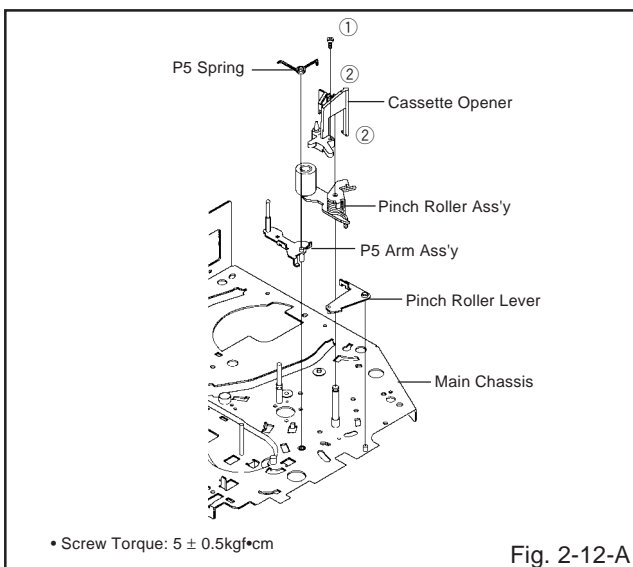


Fig. 2-12-A

### NOTE

1. Do not touch the Pinch Roller Ass'y. (Use gloves.)
2. When you install the Pinch Roller Ass'y, install as shown in the circle. **(Refer to Fig. 2-12-B)**

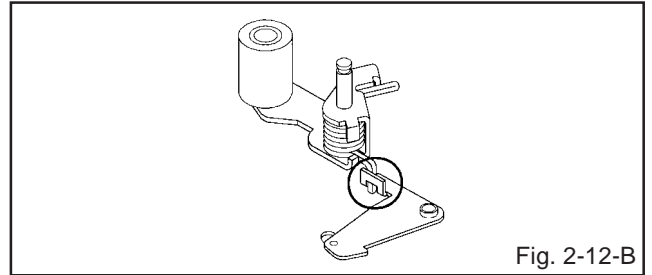


Fig. 2-12-B

## 2-13: A/C HEAD (Refer to Fig. 2-13-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

### NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-13-B. **(Refer to Fig. 2-13-B)**
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).

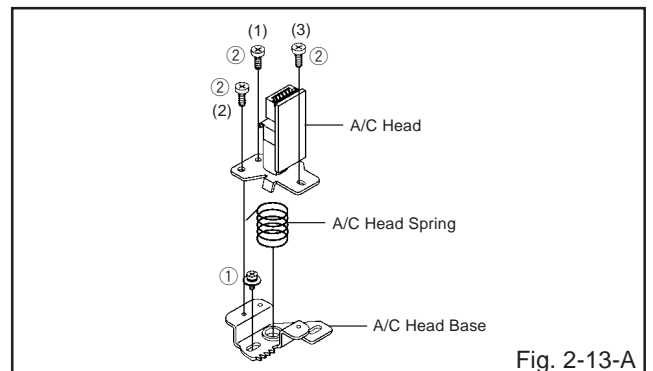


Fig. 2-13-A

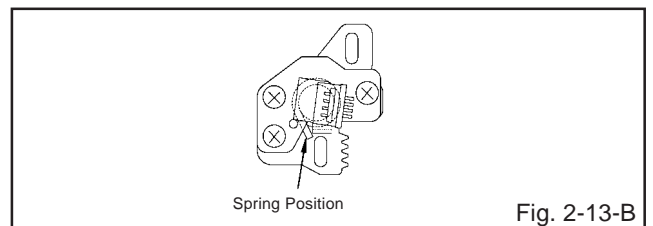


Fig. 2-13-B

## 2-14: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-14)

1. Remove the screw ①.
2. Remove the FE Head.

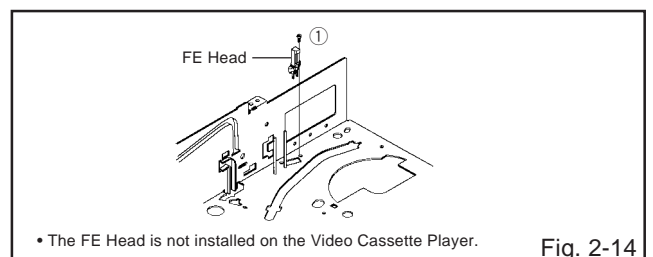


Fig. 2-14

# DISASSEMBLY INSTRUCTIONS

## 2-15: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-15)

1. Unlock the support ① and remove the AHC Ass'y.
2. Remove the 3 screws ②.
3. Remove the Cylinder Unit Ass'y.

### NOTE

When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.

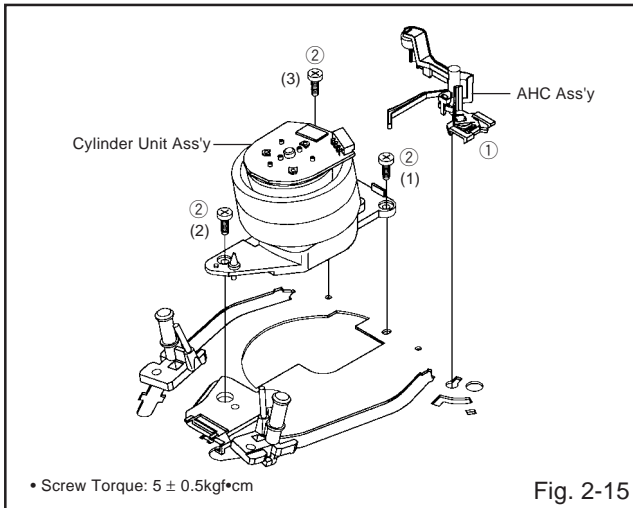


Fig. 2-15

## 2-16: CAPSTAN DD UNIT (Refer to Fig. 2-16)

1. Remove the Capstan Belt.
2. Remove the 3 screws ①.
3. Remove the Capstan DD Unit.

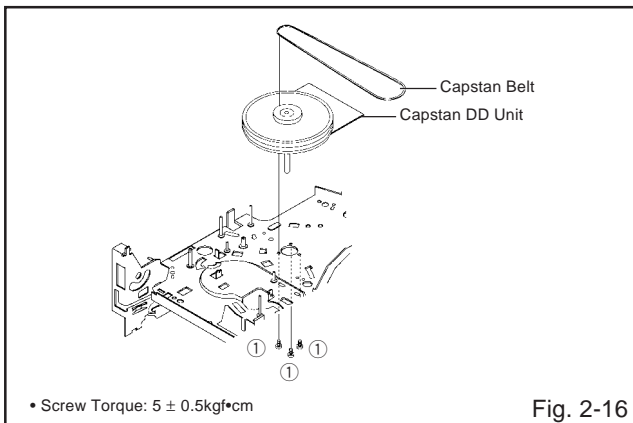


Fig. 2-16

## 2-17: MIDDLE GEAR/MAIN CAM (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①, then remove the Middle Gear.
2. Remove the E-Ring, then remove the Main Cam, Link Lever Spacer and P5 Cam.
3. Remove the Polyslider Washer ②, then remove the Pinch Roller Cam.
4. Remove the Polyslider Washer ③, then remove the Joint Gear.

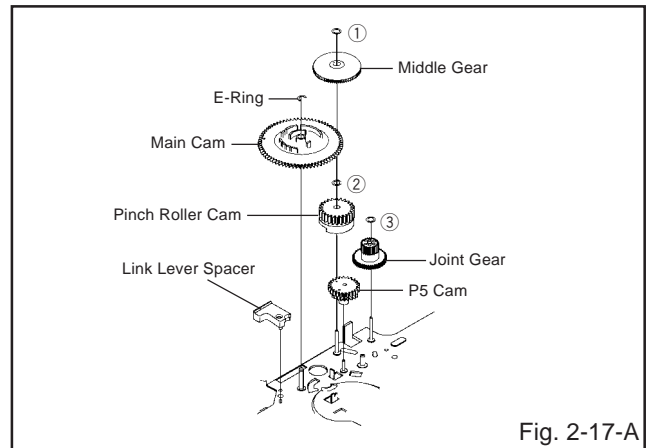


Fig. 2-17-A

### NOTE

When you install the Pinch Roller Cam, P5 Cam and Main Cam, align each marker. (Refer to Fig. 2-17-B)

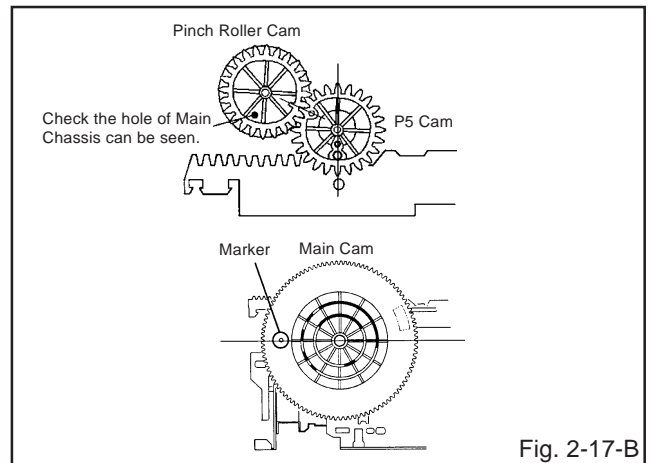


Fig. 2-17-B

## 2-18: CLUTCH ASS'Y (Refer to Fig. 2-18)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y, Ring Spring, Ring Clutch, Gear Clutch and Polyslider Washer ②.

### NOTE

When you install the Clutch Ass'y, oil the shaft (KYODO OIL Slidas #150).

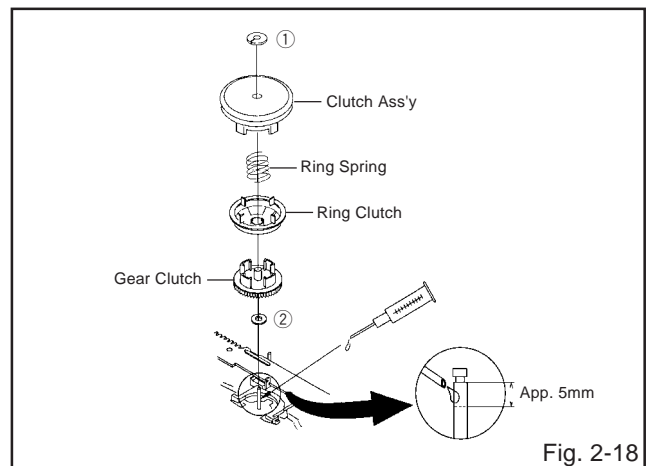


Fig. 2-18

# DISASSEMBLY INSTRUCTIONS

## 2-19: LOADING GEAR S/T ASS'Y (Refer to Fig. 2-19-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Capstan Brake Spring.
3. Slide the Main Rod and remove the Capstan Brake Arm Ass'y.
4. Remove the Main Rod.
5. Remove the Tension Lever.
6. Unlock the 2 supports ② and remove the Clutch Lever.
7. Remove the screw ③ and washer ④.
8. Remove the LED Reflector.
9. Remove the Loading Arm S Ass'y and Loading Arm T Ass'y.
10. Remove the Loading Gear S and Loading Gear T.
11. Remove the Loading Gear Spring.

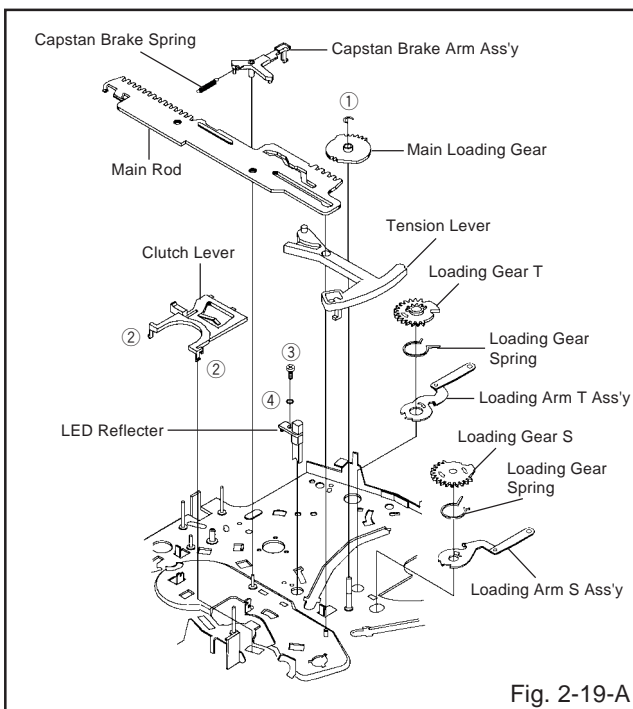


Fig. 2-19-A

### NOTE

When you install the Loading Arm S Ass'y, Loading Arm T Ass'y and Main Loading Gear, align each marker. (Refer to Fig. 2-19-B)

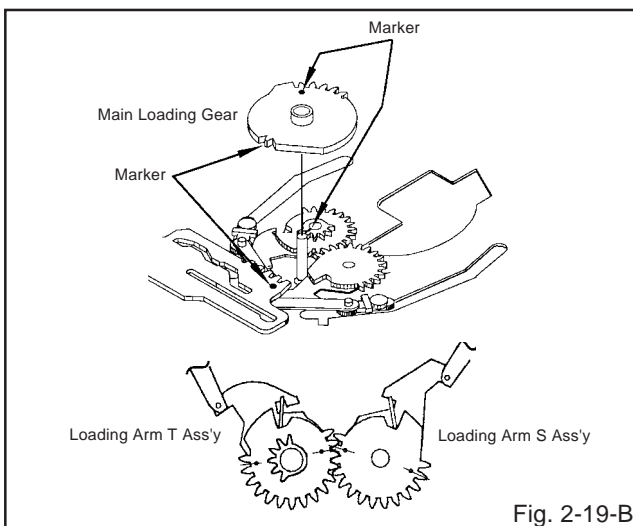


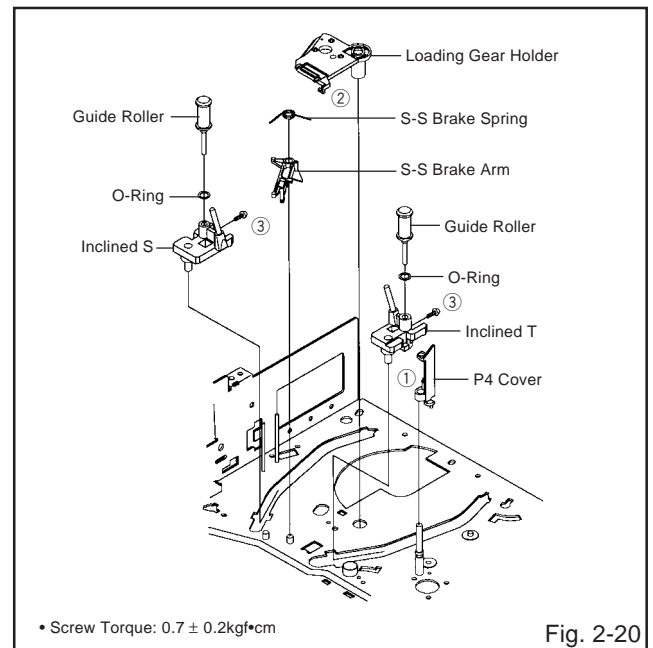
Fig. 2-19-B

## 2-20: INCLINED S/T ASS'Y (Refer to Fig. 2-20)

1. Unlock the support ① and remove the P4 Cover.
2. Remove the S-S Brake Spring.
3. Unlock the support ② and remove the Loading Gear Holder.
4. Remove the S-S Brake Arm.
5. Remove the Inclined S.
6. Remove the Inclined T.
7. Remove the 2 screws ③, then remove the Guide Roller and O-Ring.

### NOTE

Do not touch the roller of Guide Roller.



• Screw Torque:  $0.7 \pm 0.2 \text{ kgf}\cdot\text{cm}$

Fig. 2-20

# DISASSEMBLY INSTRUCTIONS

## 3. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

- \* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
- \* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

### REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**

Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground. While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.

A cracking noise will be heard as the voltage is discharged.

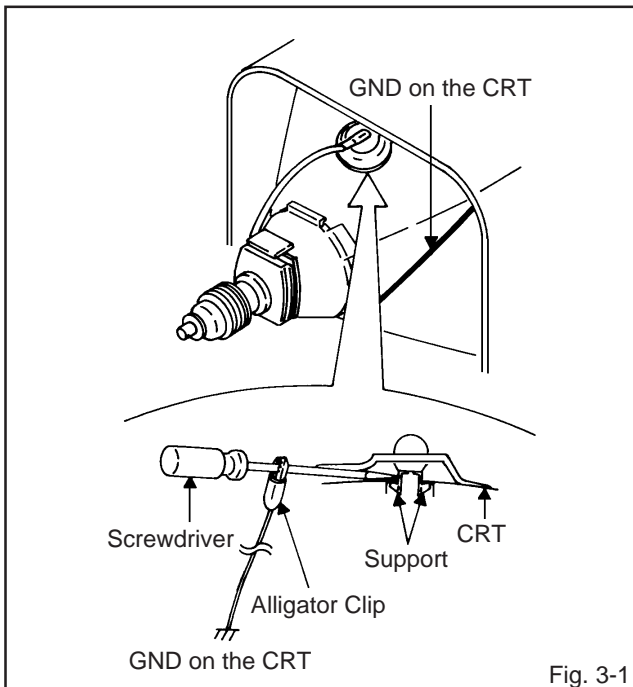


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

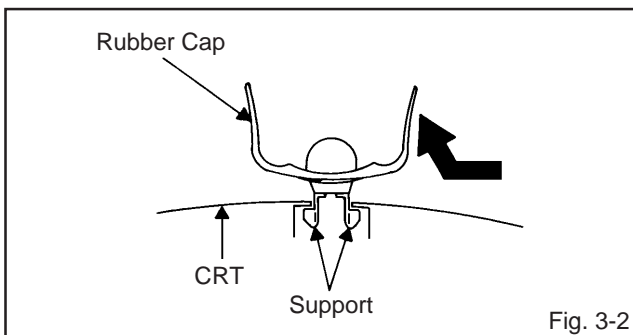


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

### NOTE

Take care not to damage the Rubber Cap.

### INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

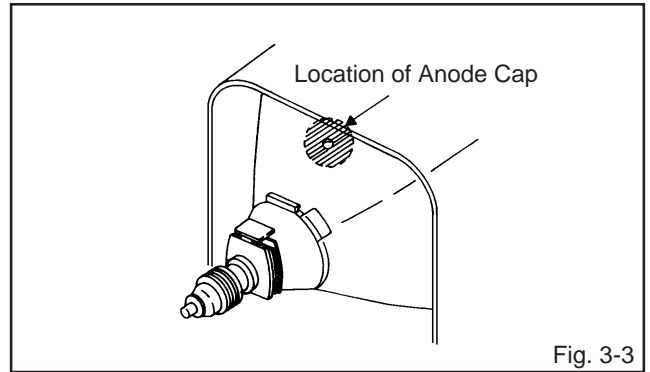


Fig. 3-3

### NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

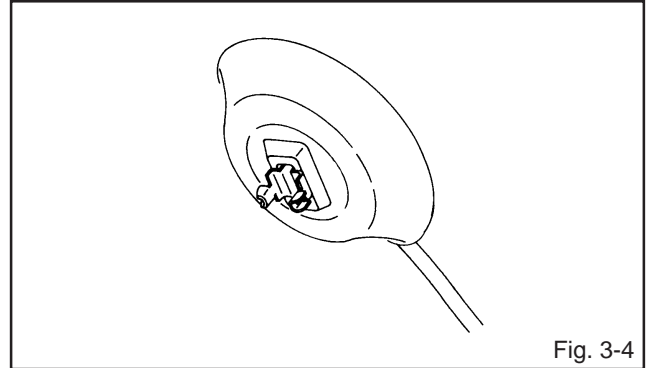


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in Fig. 3-5.

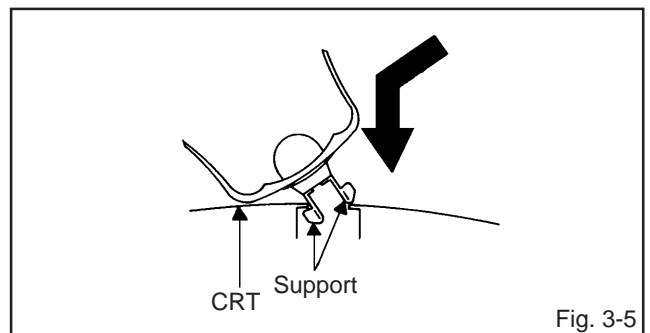


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

## KEY TO ABBREVIATIONS

<b>A</b>	<b>A/C</b>	: Audio/Control	<b>H.SW</b>	: Head Switch	
	<b>ACC</b>	: Automatic Color Control	<b>Hz</b>	: Hertz	
	<b>AE</b>	: Audio Erase	<b>I</b>	<b>IC</b>	: Integrated Circuit
	<b>AFC</b>	: Automatic Frequency Control		<b>IF</b>	: Intermediate Frequency
	<b>AFT</b>	: Automatic Fine Tuning		<b>IND</b>	: Indicator
	<b>AFT DET</b>	: Automatic Fine Tuning Detect		<b>INV</b>	: Inverter
	<b>AGC</b>	: Automatic Gain Control	<b>K</b>	<b>KIL</b>	: Killer
	<b>AMP</b>	: Amplifier	<b>L</b>	<b>L</b>	: Left
	<b>ANT</b>	: Antenna		<b>LED</b>	: Light Emitting Diode
	<b>A.PB</b>	: Audio Playback		<b>LIMIT AMP</b>	: Limiter Amplifier
	<b>APC</b>	: Automatic Phase Control		<b>LM, LDM</b>	: Loading Motor
	<b>ASS'Y</b>	: Assembly		<b>LP</b>	: Long Play
	<b>AT</b>	: All Time		<b>L.P.F</b>	: Low Pass Filter
	<b>AUTO</b>	: Automatic		<b>LUMI.</b>	: Luminance
	<b>A/V</b>	: Audio/Video	<b>M</b>	<b>M</b>	: Motor
<b>B</b>	<b>BGP</b>	: Burst Gate Pulse		<b>MAX</b>	: Maximum
	<b>BOT</b>	: Beginning of Tape		<b>MINI</b>	: Minimum
	<b>BPF</b>	: Bandpass Filter		<b>MIX</b>	: Mixer, mixing
	<b>BRAKE SOL</b>	: Brake Solenoid		<b>MM</b>	: Monostable Multivibrator
	<b>BUFF</b>	: Buffer		<b>MOD</b>	: Modulator, Modulation
	<b>B/W</b>	: Black and White		<b>MPX</b>	: Multiplexer, Multiplex
<b>C</b>	<b>C</b>	: Capacitance, Collector		<b>MS SW</b>	: Mecha State Switch
	<b>CASE</b>	: Cassette	<b>N</b>	<b>NC</b>	: Non Connection
	<b>CAP</b>	: Capstan		<b>NR</b>	: Noise Reduction
	<b>CARR</b>	: Carrier	<b>O</b>	<b>OSC</b>	: Oscillator
	<b>CH</b>	: Channel		<b>OPE</b>	: Operation
	<b>CLK</b>	: Clock	<b>P</b>	<b>PB</b>	: Playback
	<b>CLOCK (SY-SE)</b>	: Clock (Syscon to Servo)		<b>PB CTL</b>	: Playback Control
	<b>COMB</b>	: Combination, Comb Filter		<b>PB-C</b>	: Playback-Chrominance
	<b>CONV</b>	: Converter		<b>PB-Y</b>	: Playback-Luminance
	<b>CPM</b>	: Capstan Motor		<b>PCB</b>	: Printed Circuit Board
	<b>CTL</b>	: Control		<b>P. CON</b>	: Power Control
	<b>CYL</b>	: Cylinder		<b>PD</b>	: Phase Detector
	<b>CYL-M</b>	: Cylinder-Motor		<b>PG</b>	: Pulse Generator
	<b>CYL SENS</b>	: Cylinder-Sensor		<b>P-P</b>	: Peak-to Peak
<b>D</b>	<b>DATA (SY-CE)</b>	: Data (Syscon to Servo)	<b>R</b>	<b>R</b>	: Right
	<b>dB</b>	: Decibel		<b>REC</b>	: Recording
	<b>DC</b>	: Direct Current		<b>REC-C</b>	: Recording-Chrominance
	<b>DD Unit</b>	: Direct Drive Motor Unit		<b>REC-Y</b>	: Recording-Luminance
	<b>DEMODO</b>	: Demodulator		<b>REEL BRK</b>	: Reel Brake
	<b>DET</b>	: Detector		<b>REEL S</b>	: Reel Sensor
	<b>DEV</b>	: Deviation		<b>REF</b>	: Reference
<b>E</b>	<b>E</b>	: Emitter		<b>REG</b>	: Regulated, Regulator
	<b>EF</b>	: Emitter Follower		<b>REW</b>	: Rewind
	<b>EMPH</b>	: Emphasis		<b>REV, RVS</b>	: Reverse
	<b>ENC</b>	: Encoder		<b>RF</b>	: Radio Frequency
	<b>ENV</b>	: Envelope		<b>RMC</b>	: Remote Control
	<b>EOT</b>	: End of Tape		<b>RY</b>	: Relay
	<b>EQ</b>	: Equalizer	<b>S</b>	<b>S. CLK</b>	: Serial Clock
	<b>EXT</b>	: External		<b>S. COM</b>	: Sensor Common
<b>F</b>	<b>F</b>	: Fuse		<b>S. DATA</b>	: Serial Data
	<b>FBC</b>	: Feed Back Clamp		<b>SEG</b>	: Segment
	<b>FE</b>	: Full Erase		<b>SEL</b>	: Select, Selector
	<b>FF</b>	: Fast Forward, Flipflop		<b>SENS</b>	: Sensor
	<b>FG</b>	: Frequency Generator		<b>SER</b>	: Search Mode
	<b>FL SW</b>	: Front Loading Switch		<b>SI</b>	: Serial Input
	<b>FM</b>	: Frequency Modulation		<b>SIF</b>	: Sound Intermediate Frequency
	<b>FSC</b>	: Frequency Sub Carrier		<b>SO</b>	: Serial Output
	<b>FWD</b>	: Forward		<b>SOL</b>	: Solenoid
<b>G</b>	<b>GEN</b>	: Generator		<b>SP</b>	: Standard Play
	<b>GND</b>	: Ground		<b>STB</b>	: Serial Strobe
<b>H</b>	<b>H.P.F</b>	: High Pass Filter		<b>SW</b>	: Switch

## KEY TO ABBREVIATIONS

<b>S</b>	<b>SYNC</b>	:	Synchronization
	<b>SYNC SEP</b>	:	Sync Separator, Separation
<b>T</b>	<b>TR</b>	:	Transistor
	<b>TRAC</b>	:	Tracking
	<b>TRICK PB</b>	:	Trick Playback
	<b>TP</b>	:	Test Point
<b>U</b>	<b>UNREG</b>	:	Unregulated
<b>V</b>	<b>V</b>	:	Volt
	<b>VCO</b>	:	Voltage Controlled Oscillator
	<b>VIF</b>	:	Video Intermediate Frequency
	<b>VP</b>	:	Vertical Pulse, Voltage Display
	<b>V.PB</b>	:	Video Playback
	<b>VR</b>	:	Variable Resistor
	<b>V.REC</b>	:	Video Recording
	<b>VSF</b>	:	Visual Search Fast Forward
	<b>VSR</b>	:	Visual Search Rewind
	<b>VSS</b>	:	Voltage Super Source
	<b>V-SYNC</b>	:	Vertical-Synchronization
	<b>VT</b>	:	Voltage Tuning
<b>X</b>	<b>X'TAL</b>	:	Crystal
<b>Y</b>	<b>Y/C</b>	:	Luminance/Chrominance

## SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter SERVICE MODE, Unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key simultaneously.

The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more tan 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF USING HOURS).  Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF MEMORY IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The EOT/BOT/Reel sensor do not work at this moment. Refer to the "PREPARATION FOR SERVICING"

## PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or misuse may cause transformation and aging of rubber parts.

Time Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Audio Control Head	■	■	■	■	■	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	■	■	
Capstan Belt			■	■	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	■	■	■	■ ●	
Capstan DD Unit					●	
Loading Motor					●	
Tension Band					●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	■	■	■	●	Clean the Head

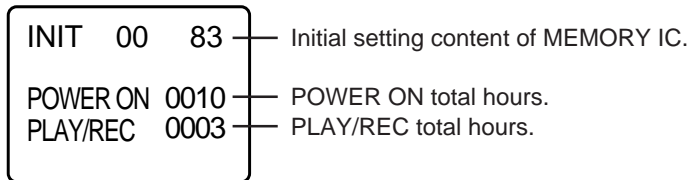
- : Clean
- : Replace

### CONFIRMATION OF USING HOURS

POWER ON total hours and PLAY/REC total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

**NOTE: The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.**

1. Set the VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously.
3. After the confirmation of using hours, turn off the power.



(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)



# PREVENTIVE CHECKS AND SERVICE INTERVALS

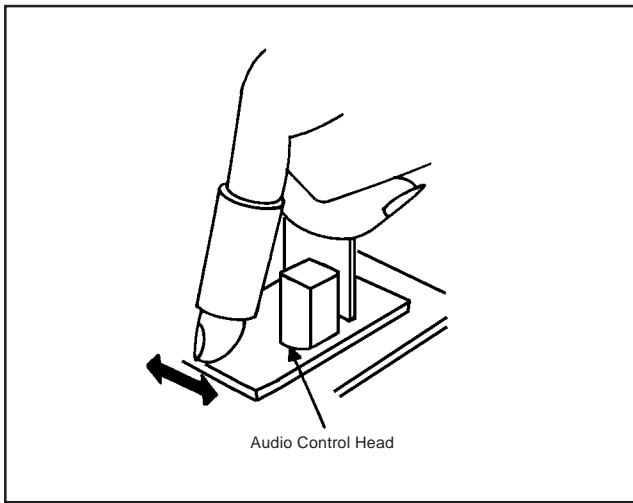
## CLEANING

### NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

### 1. AUDIO CONTROL HEAD

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol and clean the audio control head by wiping it horizontally. Clean the full erase head in the same manner. **(Refer to the figure below.)**



### 2. TAPE RUNNING SYSTEM

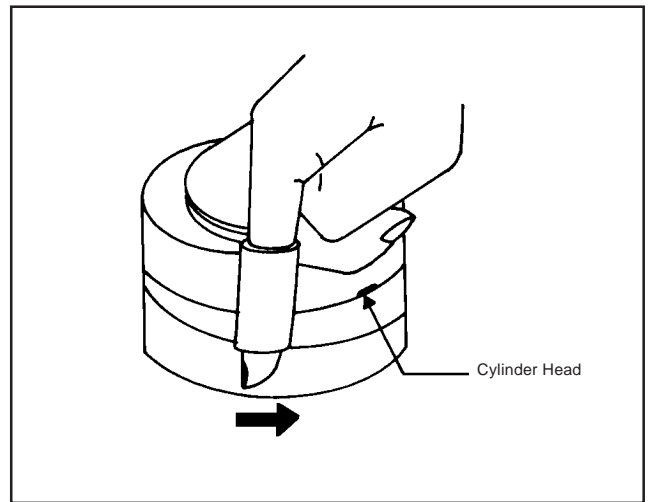
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

### 3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

### NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head. Use the chamois one by one.



## NOTE FOR THE REPLACING OF MEMORY IC

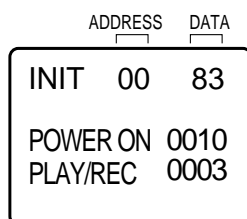
If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

**NOTE: Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.**

ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA	ADDRESS	DATA
00	80	0A	2B	14	0C	1E	44
01	6D	0B	17	15	A0	1F	05
02	21	0C	C0	16	63	20	88
03	00	0D	FF	17	44	21	08
04	00	0E	FF	18	A8	22	3A
05	00	0F	FF	19	0F	23	00
06	A4	10	6C	1A	04	24	39
07	EB	11	2B	1B	CA	25	01
08	31	12	21	1C	5F	26	00
09	90	13	15	1D	01	27	3A

**Table 1**

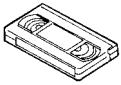
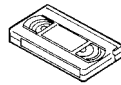
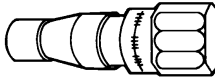
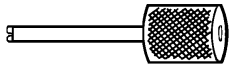
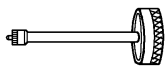
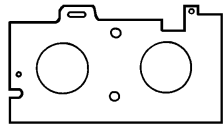
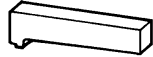
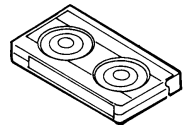
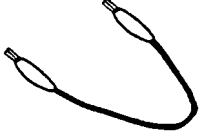
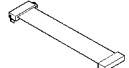
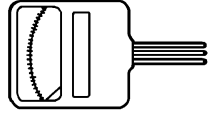
1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously.
3. ADDRESS and DATA should appear as FIG 1.



**Fig. 1**

4. ADDRESS is now selected and should "blink". Using the SET + or - keys on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using SET + or - until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. The unit will now have the correct DATA for the new MEMORY IC.

## SERVICING FIXTURES AND TOOLS

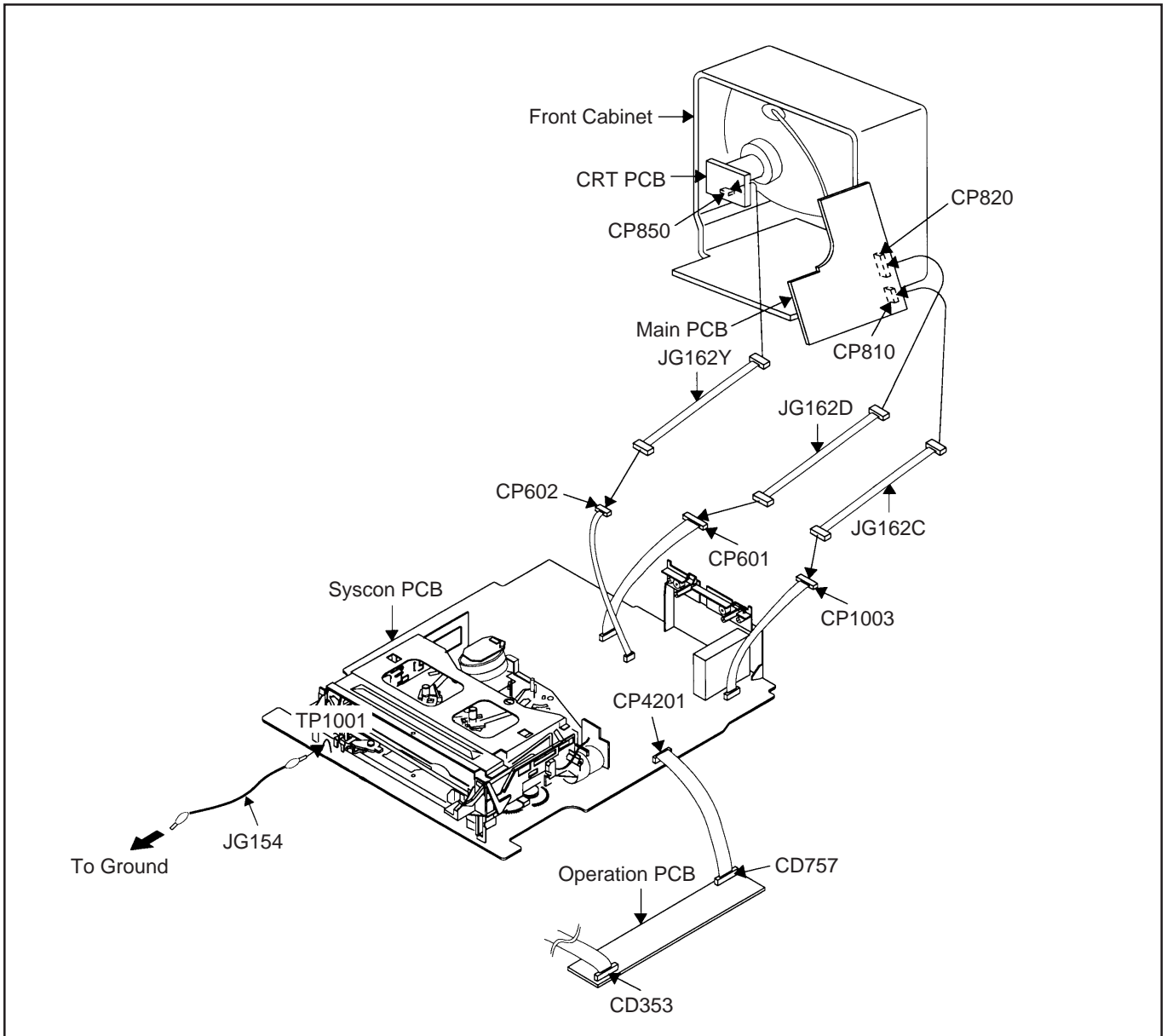
<p><b>(For 2 heads model)</b>  VHS Alignment Tape  JG001 (TTV-N2)  JG001A (TTV-N12)  JG001T (VN<sub>2</sub>S-X6<sup>3</sup>)</p> 	<p><b>(For 4 heads model)</b>  VHS Alignment Tape  JG001B (TTV-N2)  JG001I (TTV-N12)  JG001S (VN<sub>1</sub>S-X6<sup>3</sup>)</p> 	<p>JG002B Adapter  JG002E Dial Torque Gauge  (10~90gf•cm)  JG002F (60~600gf•cm)</p> 	<p>JG005 Post Adjustment  Screwdriver  Part No. SV-TG0-030-000  <small>(small)</small></p> 
<p>JG153 X Value Adjustment  Screwdriver</p> 	<p>JG022 Master Plane</p> 	<p>JG024A Reel Disk Height  Adjustment Jig</p> 	<p>JG100A Torque Tape  (VHT-063)</p> 
<p>JG154 Cable  Parts No. SJ-G15-400-000</p> 	<p>JG162C Cable (10 Pins)  Parts No. SJ-G16-2C0-000  JG162D Cable (11 Pins)  Parts No. SJ-G16-2D0-000  JG162Y Cable (5 Pins)  Parts No. SJ-G16-2Y0-000</p> 	<p>Tentelometer</p> 	

Part No.	Remarks
JG001	Stair Steps, 7KHz <b>(For 2 heads model)</b>
JG001A	Color Bar, 1KHz <b>(For 2 heads model)</b>
JG001T	X Value Adjustment <b>(For 2 heads model)</b>
JG001B	Stair Steps, 7KHz <b>(For 4 heads model)</b>
JG001I	Color Bar, 1KHz <b>(For 4 heads model)</b>
JG001S	X Value Adjustment <b>(For 4 heads model)</b>
JG002B	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	Brake Torque (T Reel Ass'y)
JG002F	VSR Torque, Brake Torque (S Reel)
JG005	Guide Roller Adjustment
JG153	X Value Adjustment
JG022/JG024A	Reel Disk Height Adjustment
JG100A	Playback Torque, Back Tension Torque During Playback
JG154	Used to connect the test point of SERVICE and GROUND
JG162C/JG162D	Used to connect the Syscon PCB and Main PCB
JG162Y	Used to connect the Syscon PCB and CRT PCB

## PREPARATION FOR SERVICING

### Basic Servicing Position (In case of needing to check on all blocks)

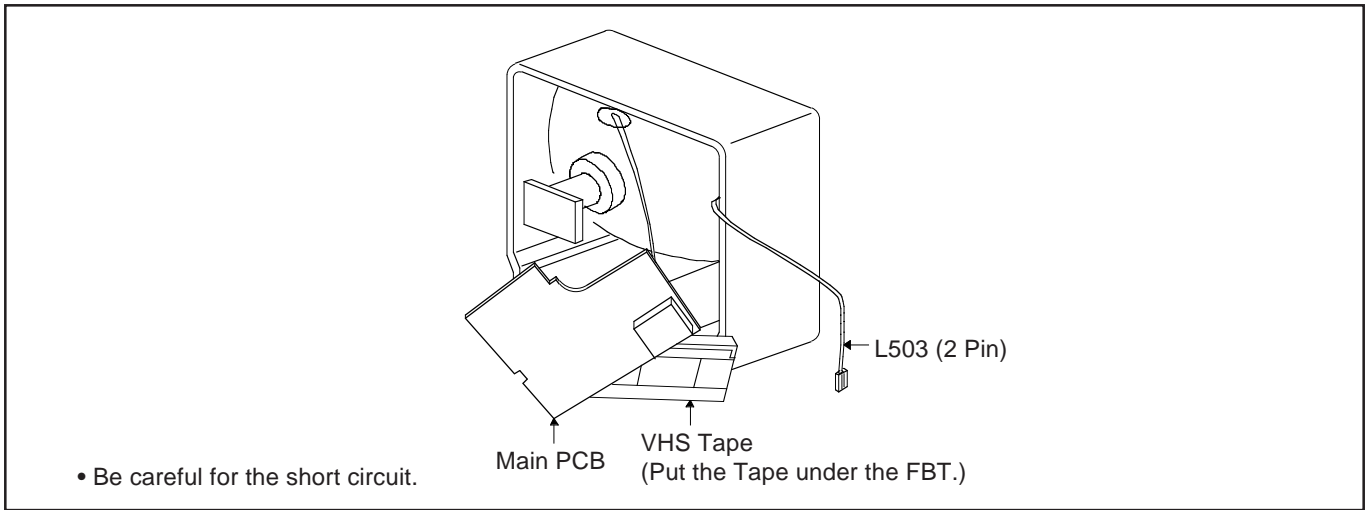
1. Unplug the connector CP4201, CP4202, CP303 and CP502, then remove the TV/VCR Block from the set.
  2. Unplug the connector CP810, CP820, CP850, CP804 and CD401, then remove the Main PCB from the VCR Block.
  3. Connect as shown in the below figure using the Service Fixture.
    - Connect the Syscon PCB to the Main PCB with the cable JG162C and JG162D.
    - Connect the Syscon PCB to the CRT PCB with the cable JG162Y.
  4. Remove the Operation PCB from the set, then connect it with the Syscon PCB.  
If necessary, connect CD353 (Front A/V Jack Input Terminal)
  5. Short circuit between TP1001 and Ground with the cable JG154.
- (Refer to MAJOR COMPONENTS LOCATION GUIDE)**  
The EOT, BOT and Reel Sensor do not work at this moment.
6. At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.



## PREPARATION FOR SERVICING

### Servicing Position for Main PCB (In case of needing to check on Main PCB)

- It's possible to get the Servicing Position without the extension Jig if you arrange the unit as shown below.  
(But L503 connection can not be done, Degause circuit will not operate.)



# MECHANICAL ADJUSTMENTS

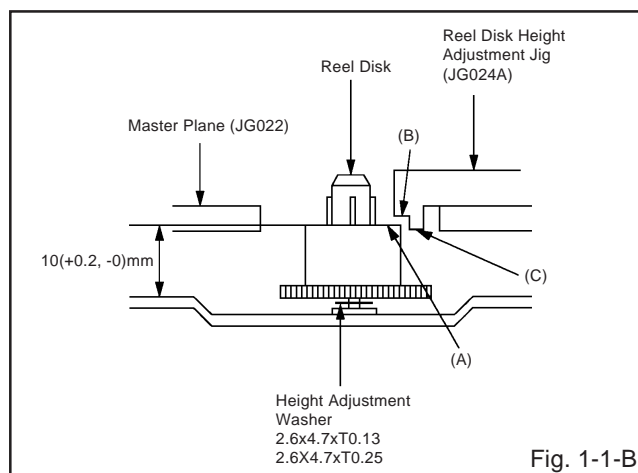
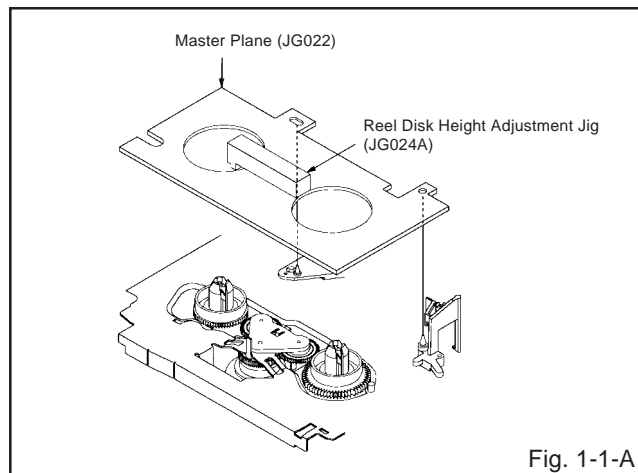
## 1. CONFIRMATION AND ADJUSTMENT

Read the following NOTE before starting works.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND**. (Refer to **ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE**) In this condition the BOT/EOT/Reel Sensor will not function.

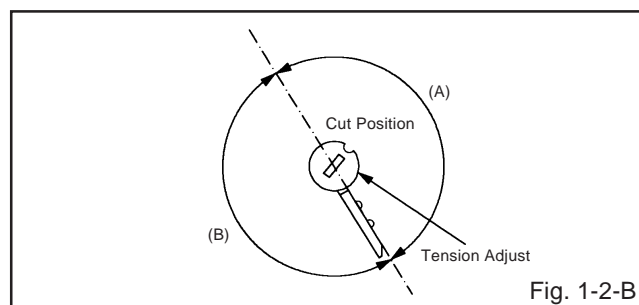
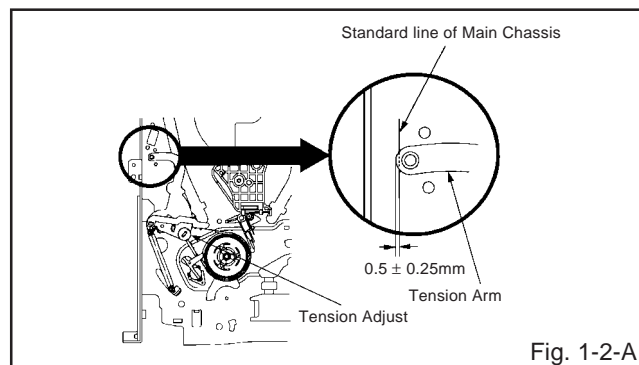
### 1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (**JG022**) and reel disk height adjustment jig (**JG024A**) on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. Confirm that "A" of the reel disk is lower than "B" of the reel disk height adjustment jig (**JG024A**), and is higher than "C". If it is not enough height, adjust to  $10(+0.2, -0)$  mm with the height adjustment washer.
4. Adjust the other reel in the same way.



### 1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the Tension Adjust until the length from the edge of the Tension Arm to the standard line of the Main Chassis is  $0.5 \pm 0.25$ mm. After this adjustment, confirm that the cut position is located in "A" area as shown in **Fig. 1-2-B**. If it is located in "B" area, adjust again.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

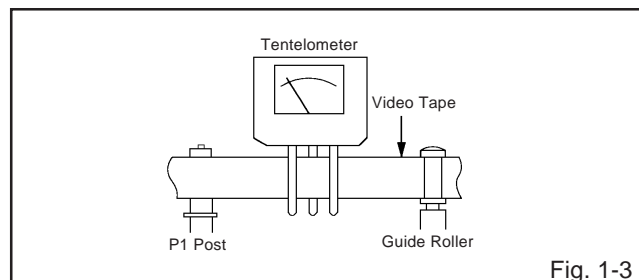


### 1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm that the meter indicates  $20 \pm 2$ gf in the beginning of playback.

#### • USING A CASSETTE TYPE TORQUE TAPE (**JG100A**)

1. After confirmation and adjustment of Tension Post position (Refer to item 1-2), load the cassette type torque tape (**JG100A**) and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates  $70 \sim 130$ gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates  $25 \sim 40$ gf•cm during playback in SP mode.



## MECHANICAL ADJUSTMENTS

### 1-4: CONFIRMATION OF VSR TORQUE

1. Operate within 4~5 seconds after the reel disk begins to turn.
2. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Set to the Rewind mode. (Refer to Fig.1-4)
3. Then, confirm that it indicates 120~180gf•cm.

#### NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

### 1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) (Refer to Fig. 1-4)

1. Set to the STOP mode.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Turn the Torque Gauge (JG002F) clockwise.
4. Then, confirm that it indicates 70~100gf•cm.

(T Reel Brake) (Refer to Fig. 1-4)

1. Set to the STOP mode.
2. Move the Idler Ass'y from the T Reel Ass'y.
3. Install the Torque Gauge (JG002E) and Adapter (JG002B) on the T reel. Turn the Torque Gauge (JG002E) counterclockwise.
4. Then, confirm that it indicates 35~60gf•cm.

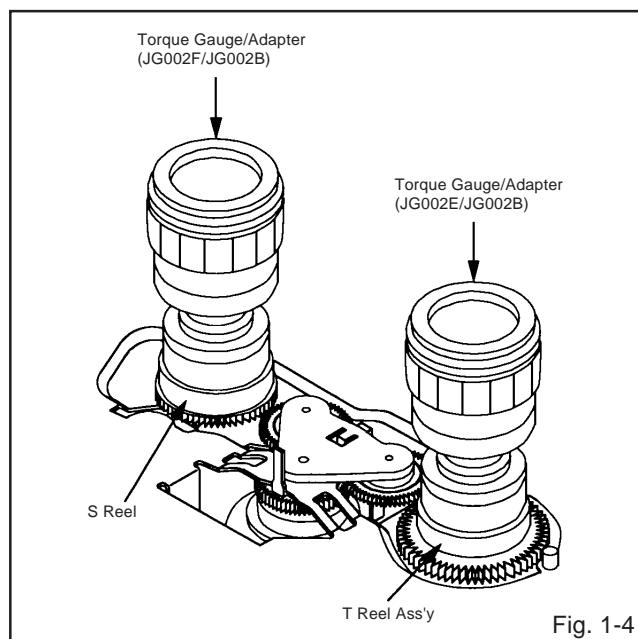


Fig. 1-4

#### NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	T Brake Spring/Tension Spring

## 2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

### 2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape (JG001 or JG001B). (Refer to SERVICING FIXTURE AND TOOLS)
2. Connect CH-1 of the oscilloscope to TP4001 (Envelope) and CH-2 to TP1002 (SW Pulse).
3. Press and hold the TRACKING-AUTO button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. (Refer to Fig. 2-1-A)
5. When observing the envelope, adjust the Adjusting Driver (JG005) slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in Fig. 2-1-B, even if you press the Tracking Button to move the envelope (The envelope waveform will begins to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. (Refer to the ELECTRICAL ADJUSTMENTS)

#### NOTE

After adjustment, confirm and adjust A/C head. (Refer to item 2-2)

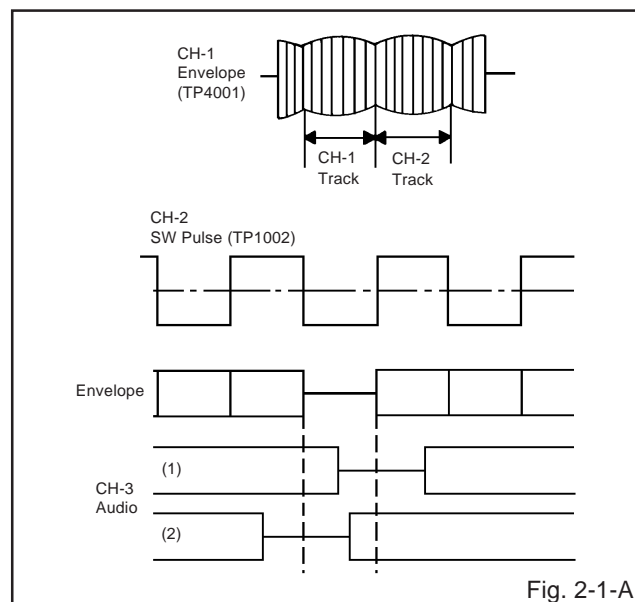


Fig. 2-1-A

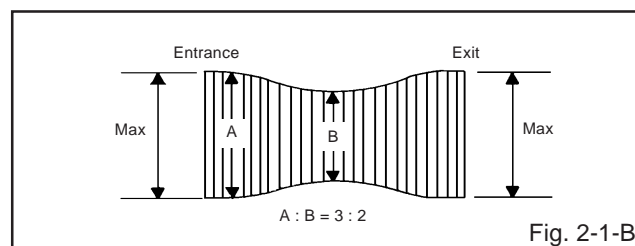


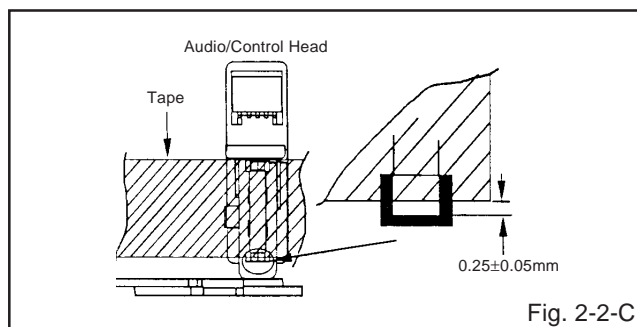
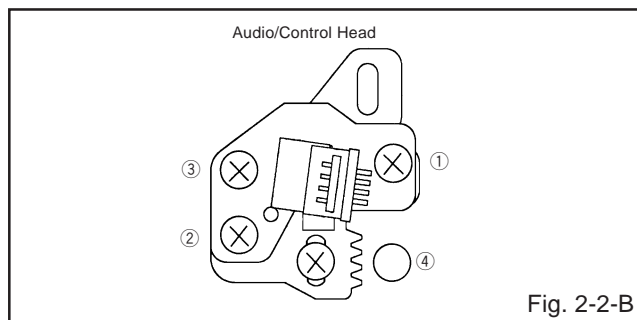
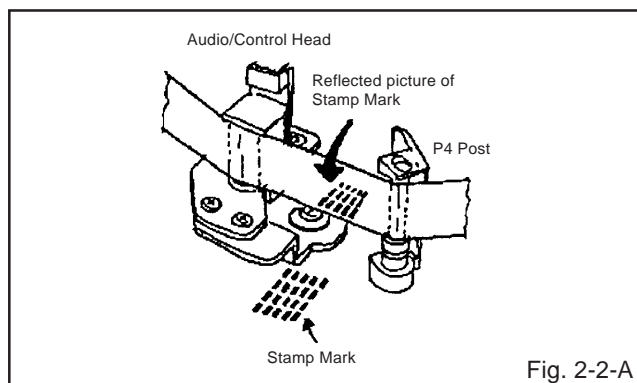
Fig. 2-1-B

## MECHANICAL ADJUSTMENTS

### 2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape (JG001 or JG001B). (Refer to **SERVICING FIXTURE AND TOOLS**)
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A**.
  - a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
  - b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C**.
  - c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.



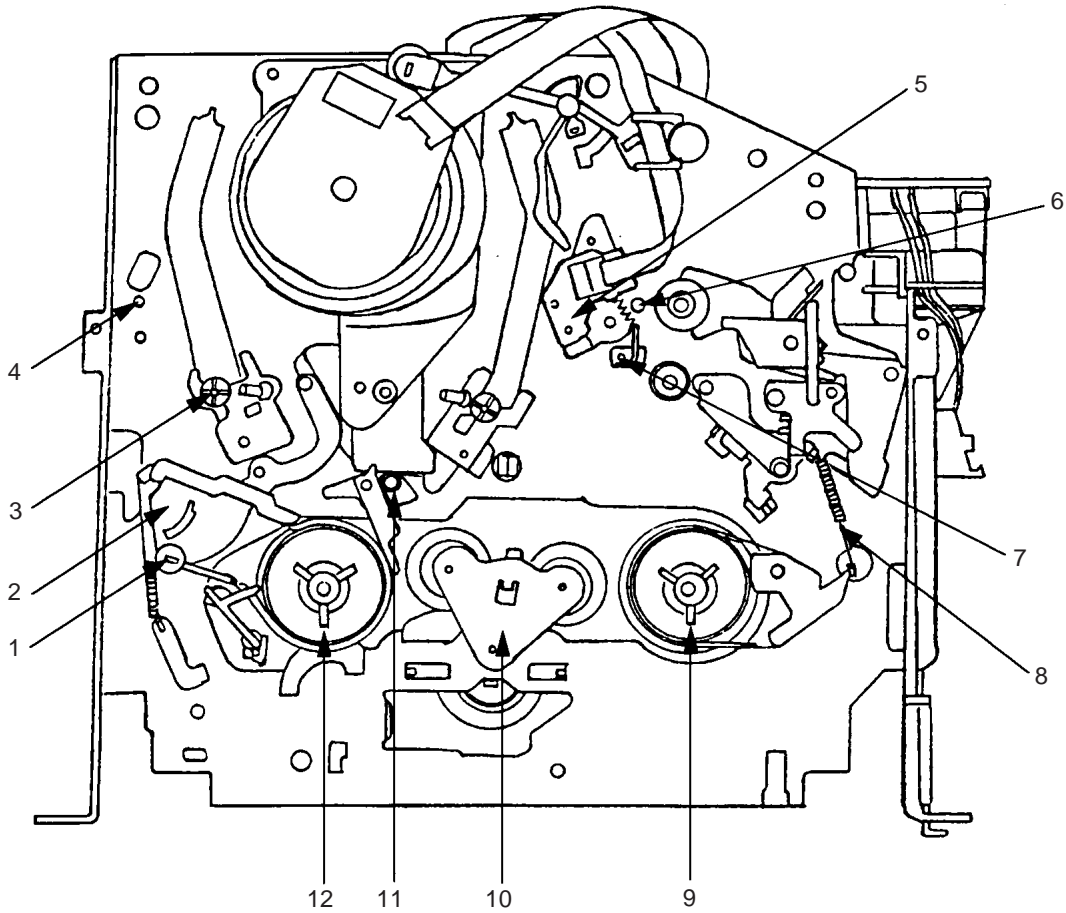
### 2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. (Refer to **item 1-1**)
2. Confirm and adjust the position of the Tension Post. (Refer to **item 1-2**)
3. Adjust the Guide Roller. (Refer to **item 2-1**)
4. Confirm and adjust the Audio/Control Head. (Refer to **item 2-2**)
5. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape (JG001S or JG001T). (Refer to **SERVICING FIXTURE AND TOOLS**)
7. Press and hold the TRACKING-AUTO button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver (JG153) to the ④ of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-1-A**.



# MECHANICAL ADJUSTMENTS

## 3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



- |                                   |                      |
|-----------------------------------|----------------------|
| 1. Tension Adjust                 | 7. P4 Post           |
| 2. Tension Arm                    | 8. T Brake Spring    |
| 3. Guide Roller                   | 9. T Reel Ass'y      |
| 4. P1 Post                        | 10. Idler Ass'y      |
| 5. Audio/Control Head             | 11. S-S Brake Spring |
| 6. X value adjustment driver hole | 12. S Reel           |



# ELECTRICAL ADJUSTMENTS

## (TV SECTION)

### 2-5: CONSTANT VOLTAGE

1. Using the remote control, set the brightness and contrast to normal position.
2. Connect the digital voltmeter to **TP401**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR502** until the DC voltage is  $135 \pm 0.5V$ .

### 2-6: CUT OFF

1. Place the set with Aging Test for more than 15 minutes.
2. Set condition is AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(5)** on the remote control. The **Fig. 2-2** appears on the display.
5. Press the channel button **(5)** on the remote control.
6. Adjust the **Screen Volume** until a dim raster is obtained.

### 2-7: FOCUS

1. Using the remote control, set the brightness and contrast to normal position.
2. Receive the monoscope pattern.
3. Turn the Focus Volume fully counterclockwise once.
4. Adjust the **Focus Volume** until picture is distinct.

### 2-8: SUB BRIGHTNESS (TV)

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.

1. BRIGHT
2. CONTRAST
3. COLOR
4. TINT
5. SHARPNESS
6. OSD CONT
- 7.
8. 0. RETURN

"The adjustment items 2, 5 and 6 are not used for this model."

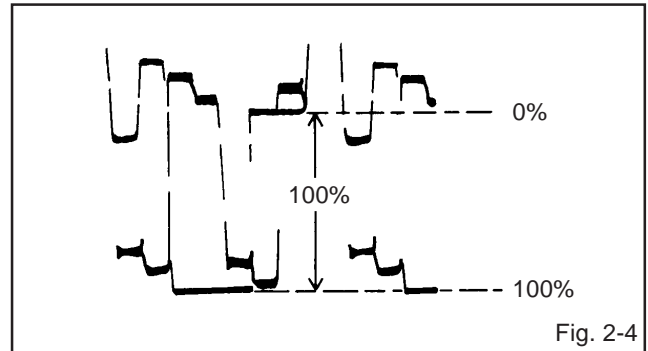
Fig. 2-3

### 2-9: SUB BRIGHTNESS (AV)

1. Receive the monoscope pattern. (Audio Video Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the white 10% is starting to be visible.

### 2-10: SUB COLOR (TV)

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP801**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(3)** on the remote control.
6. Adjust the VOLTS RANGE VARIABLE knob of the synchro scope until the range between white 100% and 0% is set to 5 scales on the screen of the synchro scope.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% of the white level. (Refer to **Fig. 2-4**)



### 2-11: SUB COLOR (AV)

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the synchro scope to **TP801**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(3)** on the remote control.
6. Adjust the VOLTS RANGE VARIABLE knob of the synchro scope until the range between white 100% and 0% is set to 5 scales on the screen of the synchro scope.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 100% of the white level. (Refer to **Fig. 2-4**)

### 2-12: SUB TINT (TV)

1. Receive the color bar pattern. (RF Input)
2. Connect the synchro scope to **TP803**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(4)** on the remote control.
6. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. (Refer to **Fig. 2-5**)

# ELECTRICAL ADJUSTMENTS

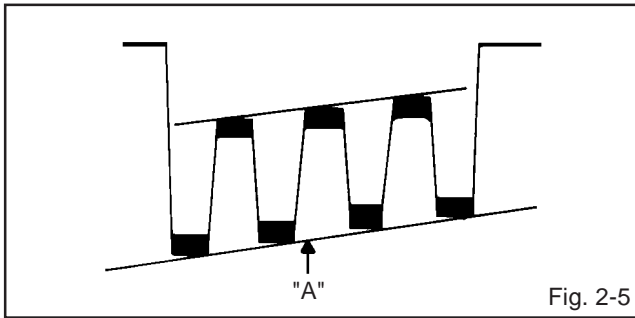


Fig. 2-5

## 2-13: SUB TINT (AV)

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the synchro scope to **TP803**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(4)** on the remote control. The **Fig. 2-3** appears on the display.
5. Press the channel button **(4)** on the remote control.
6. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. (Refer to **Fig. 2-5**)

## 2-14: HORIZONTAL PHASE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(1)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

1. H. PHASE
2. H. BLK
3. V. SIZE
4. V. POSI
5. V. LIN
6. V. SC
7. V. COMP
8. (H FREQ)      0. RETURN

"The adjustment items 2, 6, 7 and 8 are not used for this model."

Fig. 2-6

## 2-15: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(3)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the horizontal over scan is equal to the vertical over scan.

## 2-16: VERTICAL LINEALITY

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(5)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

## 2-17: VERTICAL POSITION

1. Receive the color bar pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(1)** on the remote control. The **Fig. 2-6** appears on the display.
4. Press the channel button **(4)** on the remote control.
5. Press the VOL. UP/DOWN button on the remote control until the horizontal line of the color bar comes to approximate center of the CRT.

## 2-18: OSD HORIZONTAL

1. Receive the color bar pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(5)** on the remote control. The **Fig. 2-2** appears on the display.
4. Press the channel button **(4)** on the remote control.
5. Press the VOL. UP/DOWN on the remote control until the difference of A and B becomes minimum. (Refer to **Fig. 2-7**)

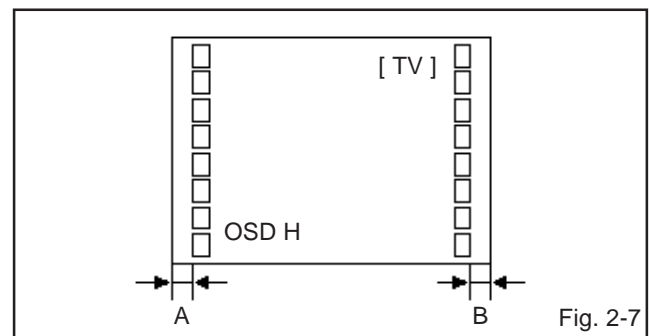
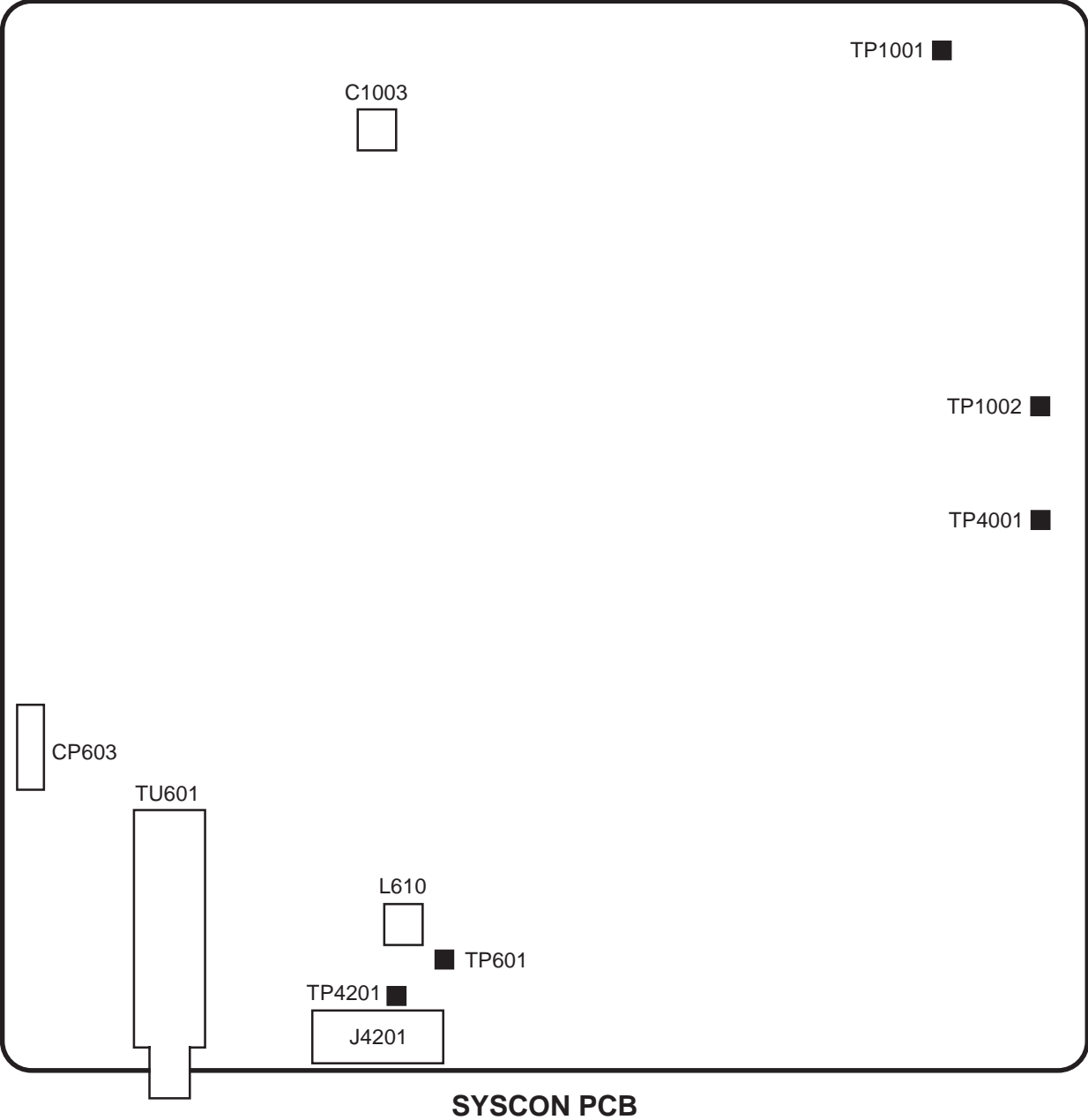


Fig. 2-7

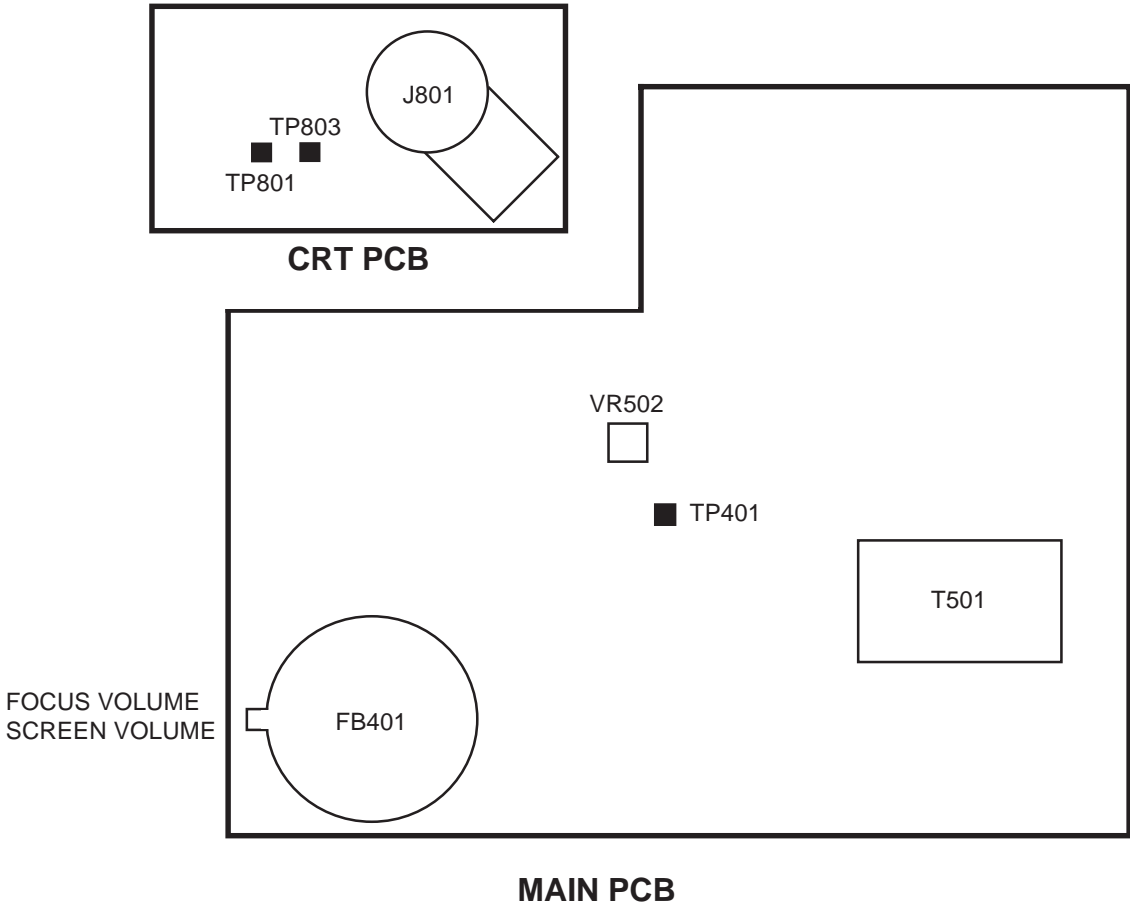
# ELECTRICAL ADJUSTMENTS

## 3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (VCR SECTION)



# ELECTRICAL ADJUSTMENTS

(TV SECTION)



# ELECTRICAL ADJUSTMENTS

## 4. PURITY AND CONVERGENCE ADJUSTMENTS

### NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

### 4-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 4-1)**  
If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnelside of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

### 4-2: PURITY

#### NOTE

Adjust after performing adjustments in section 4-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.  
Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

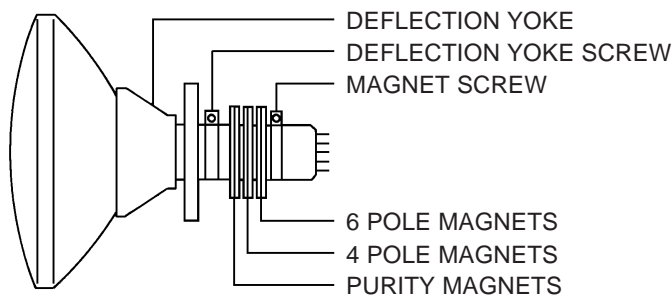


Fig. 4-1

### 4-3: STATIC CONVERGENCE

#### NOTE

Adjust after performing adjustments in section 4-2.

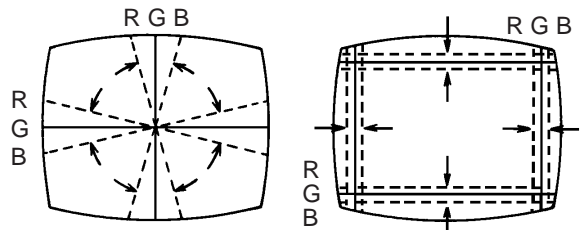
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

### 4-4: DYNAMIC CONVERGENCE

#### NOTE

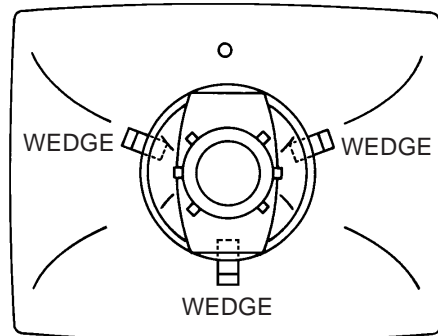
Adjust after performing adjustments in section 4-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 4-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 4-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

Fig. 4-2-a

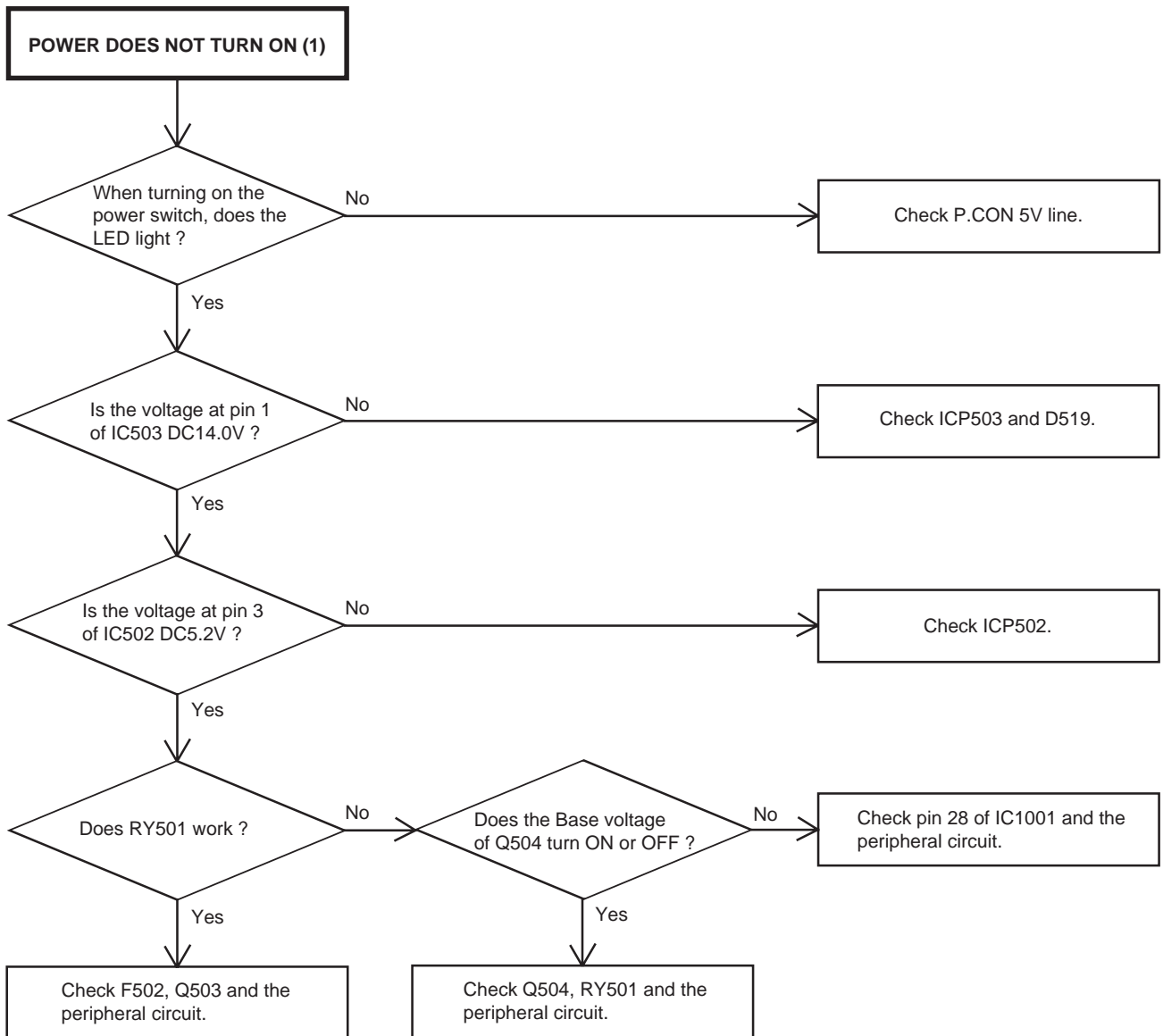


WEDGE POSITION

Fig. 4-2-b

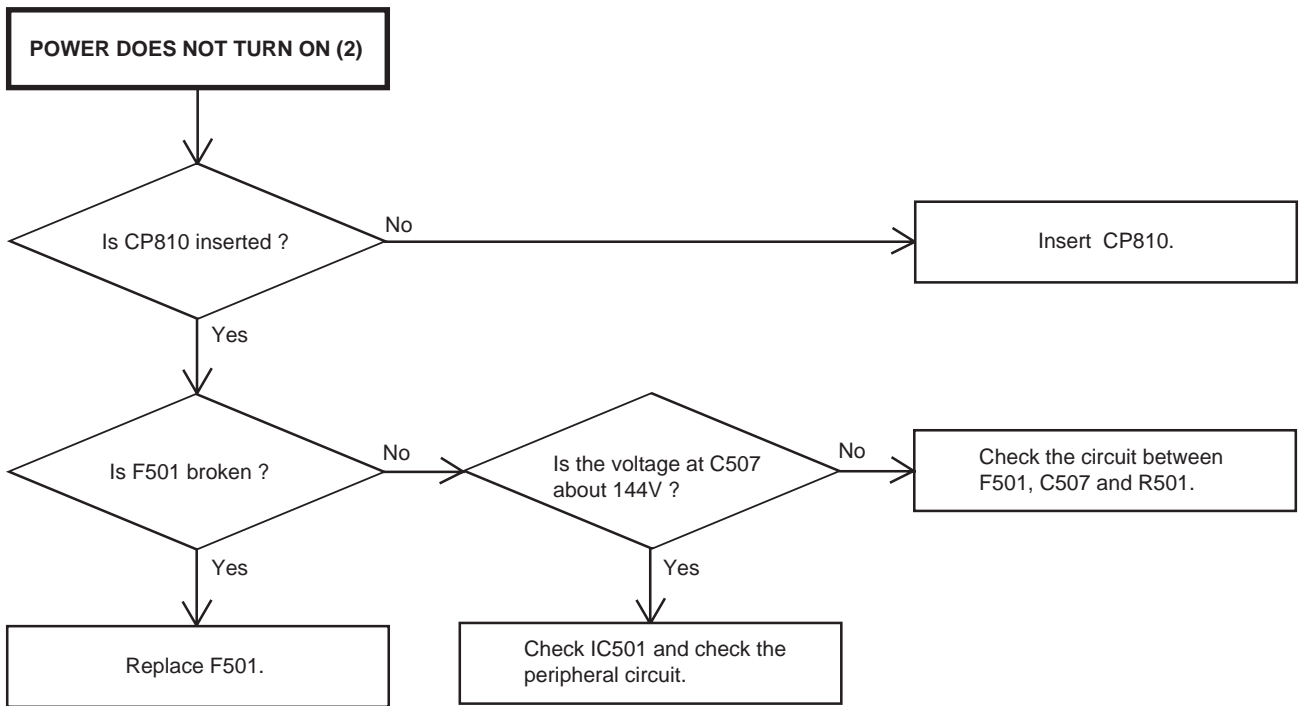
# TROUBLESHOOTING GUIDE

## (TV SECTION)

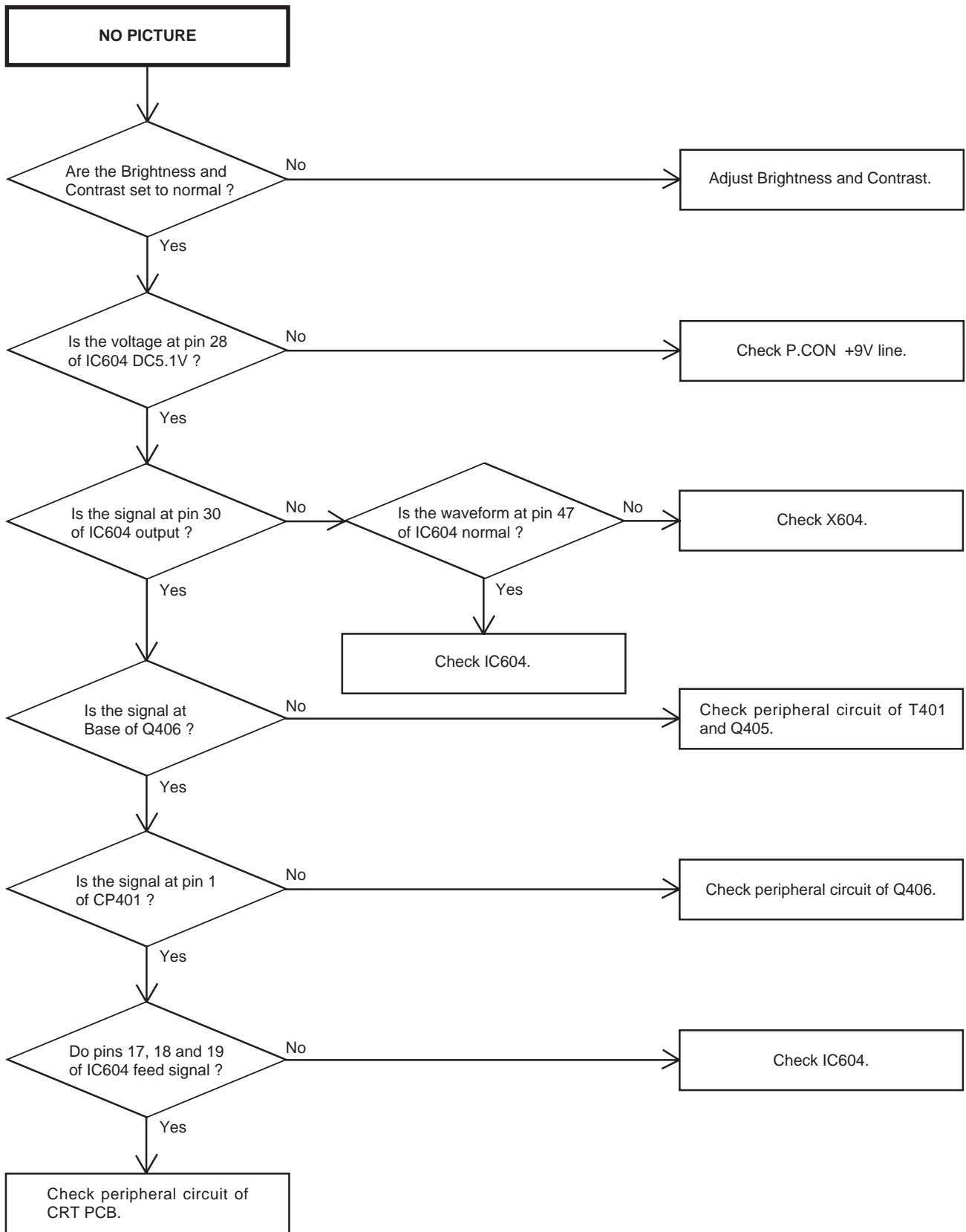




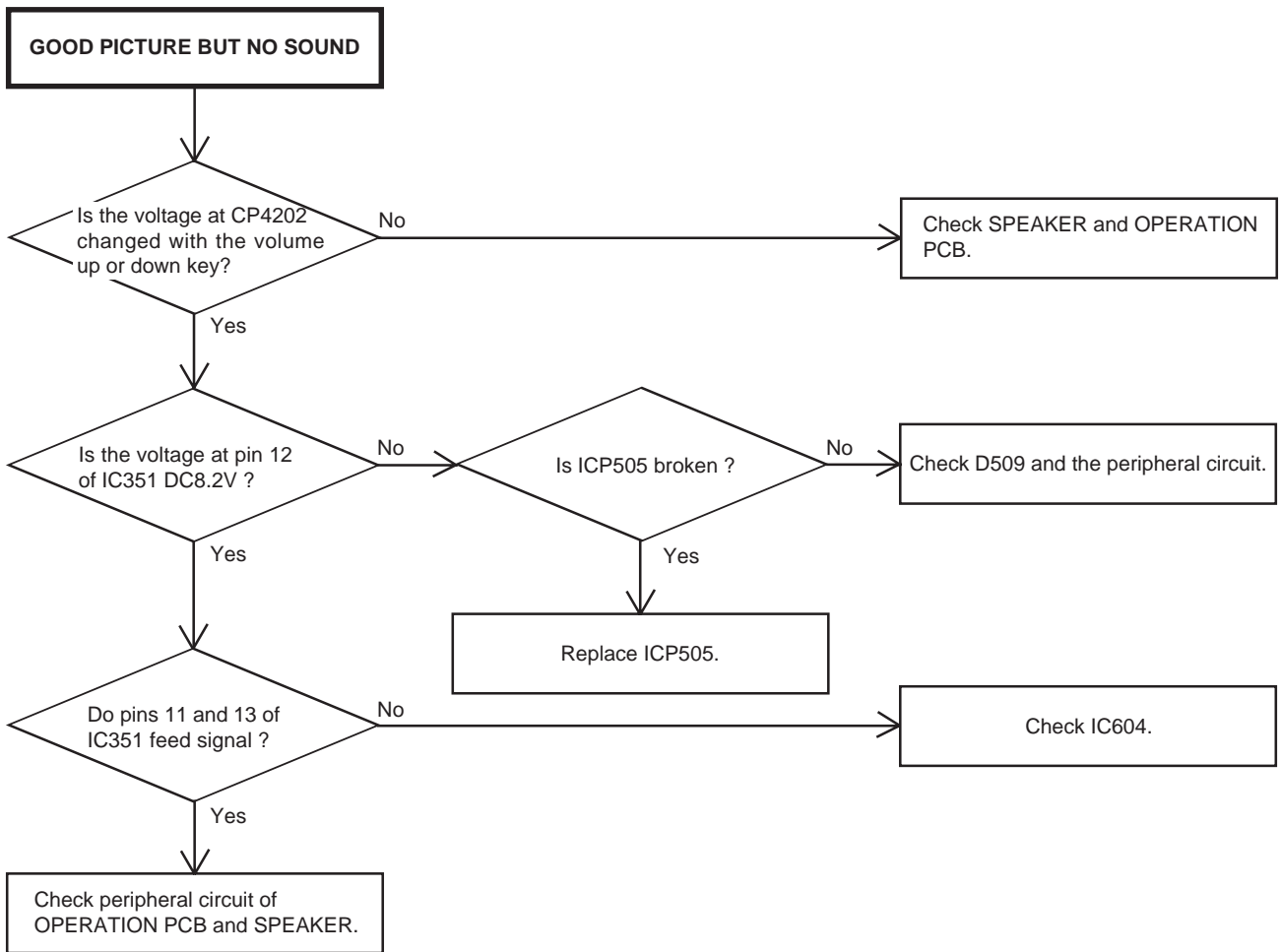
# TROUBLESHOOTING GUIDE



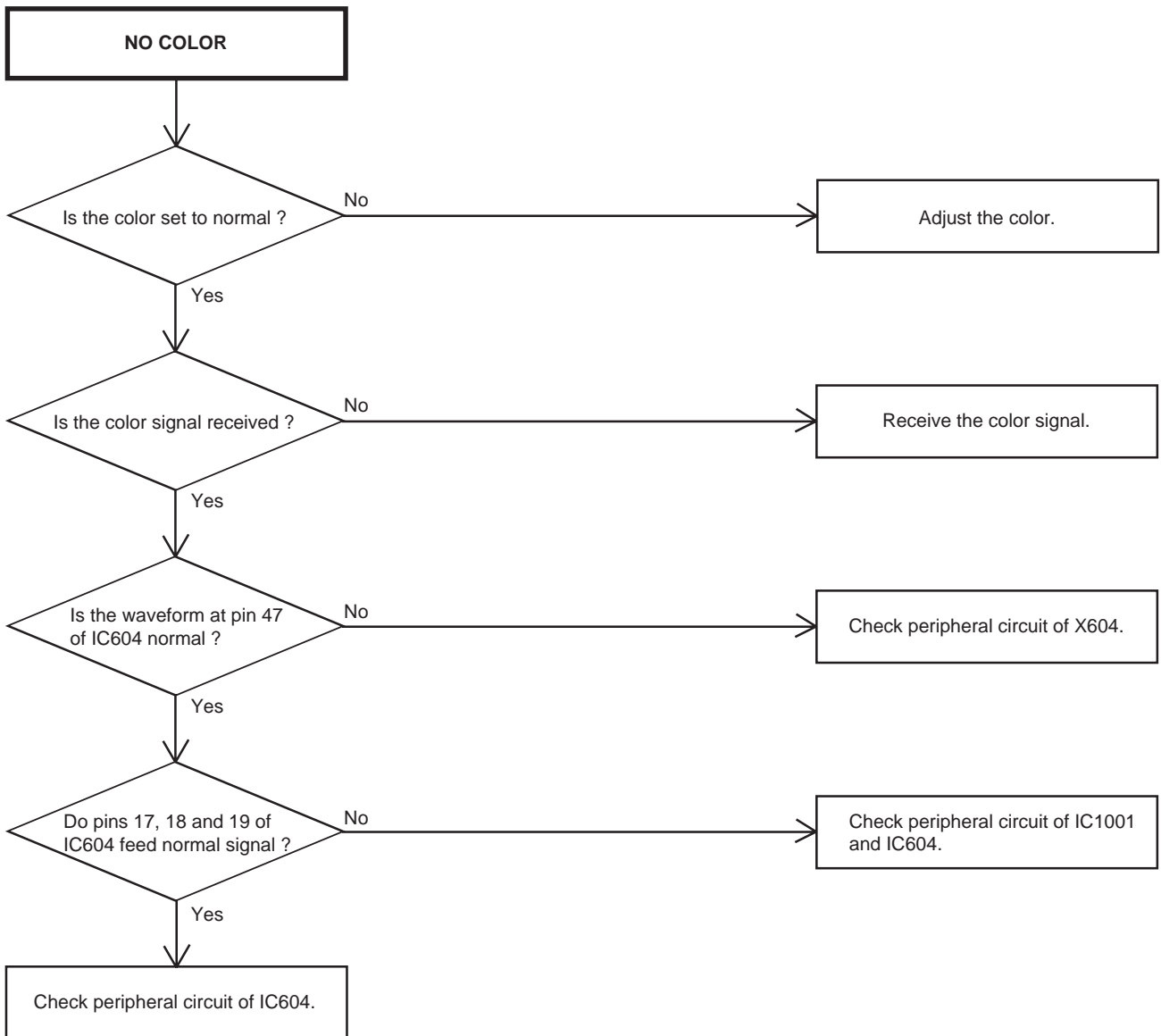
# TROUBLESHOOTING GUIDE



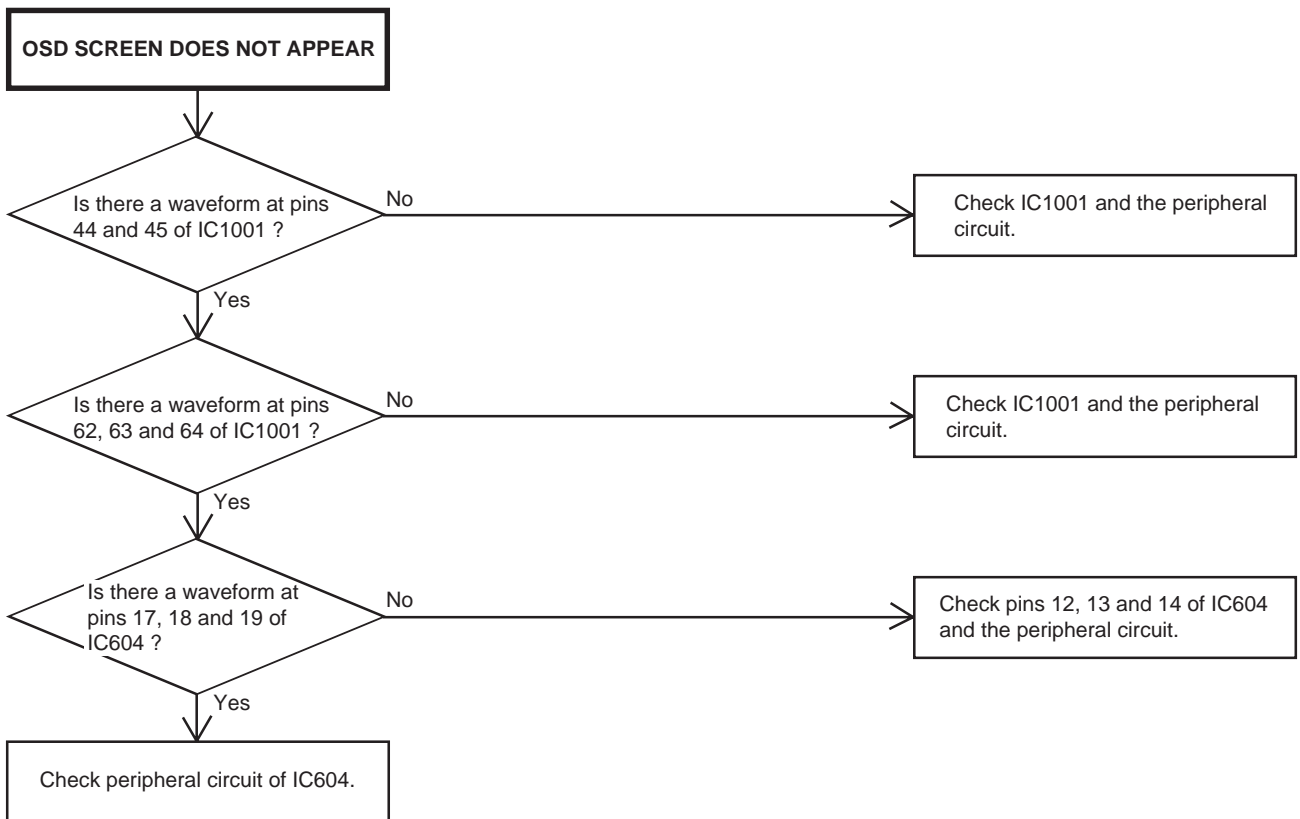
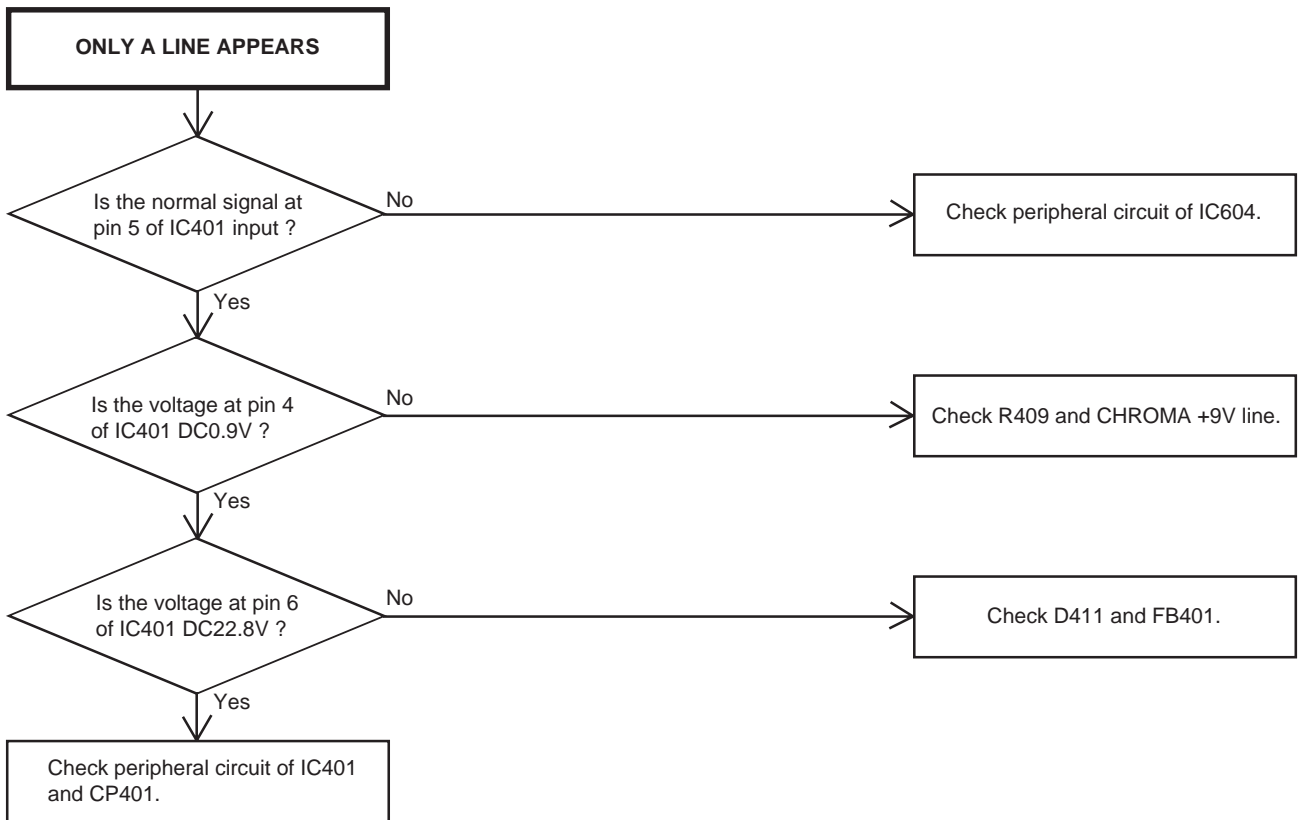
# TROUBLESHOOTING GUIDE



## TROUBLESHOOTING GUIDE

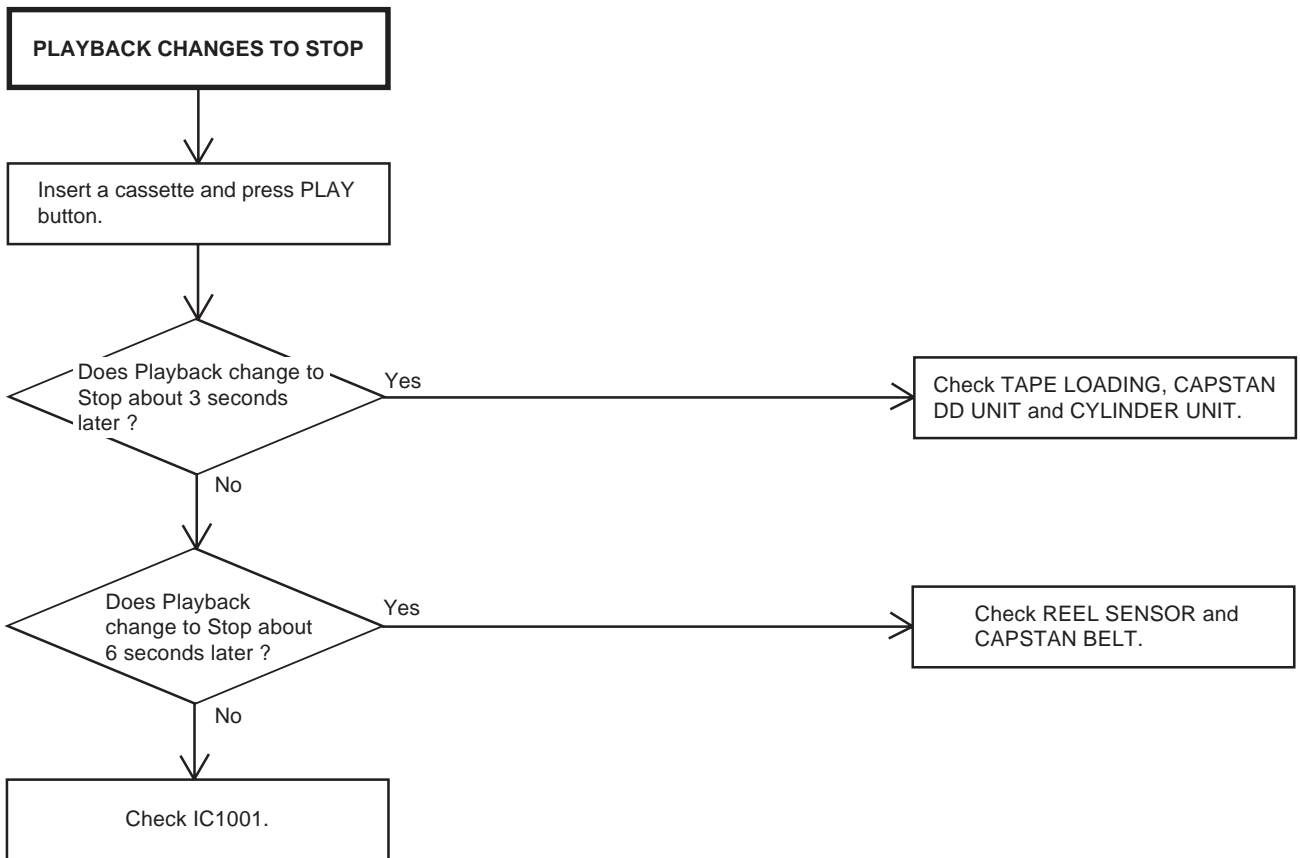


## TROUBLESHOOTING GUIDE

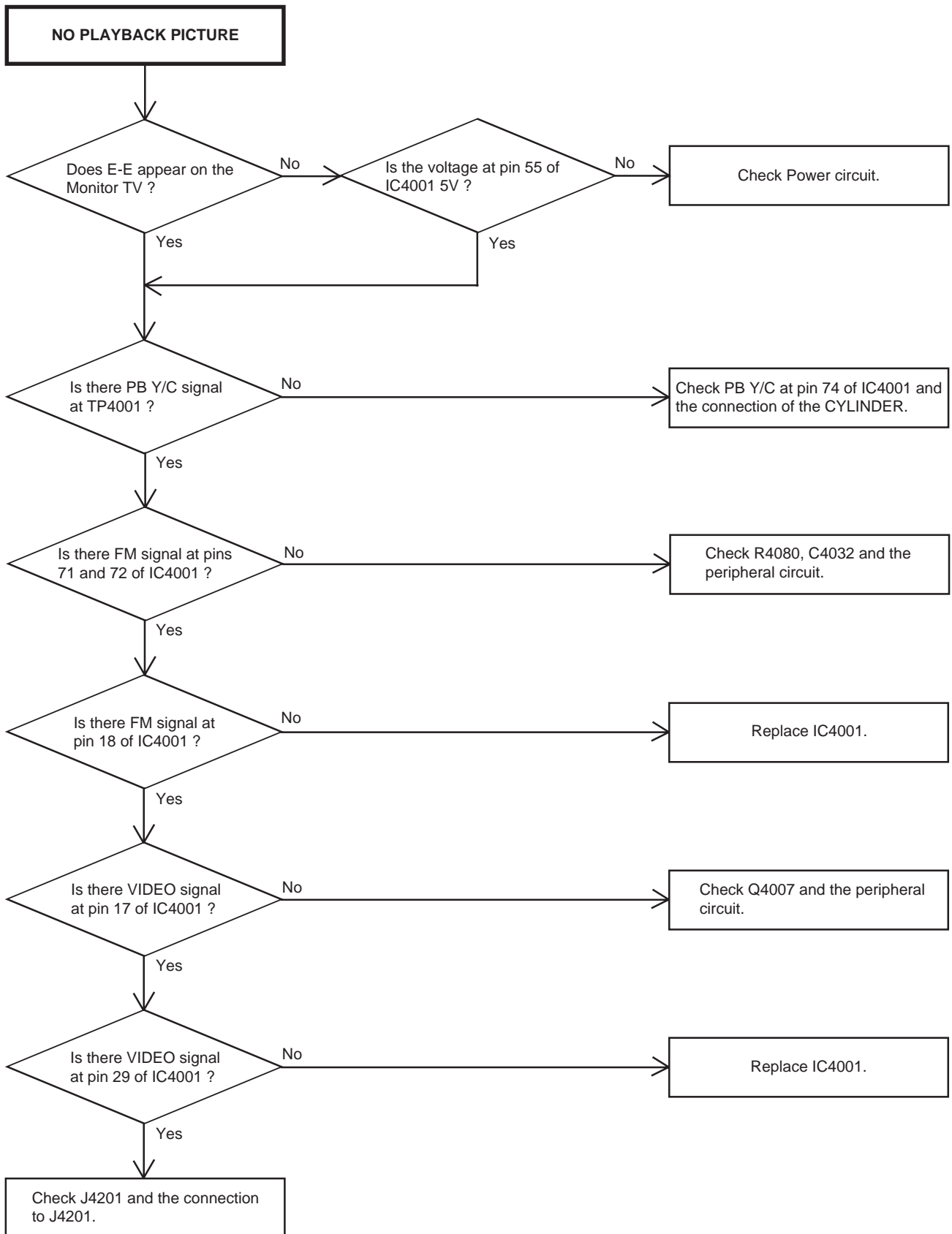


# TROUBLESHOOTING GUIDE

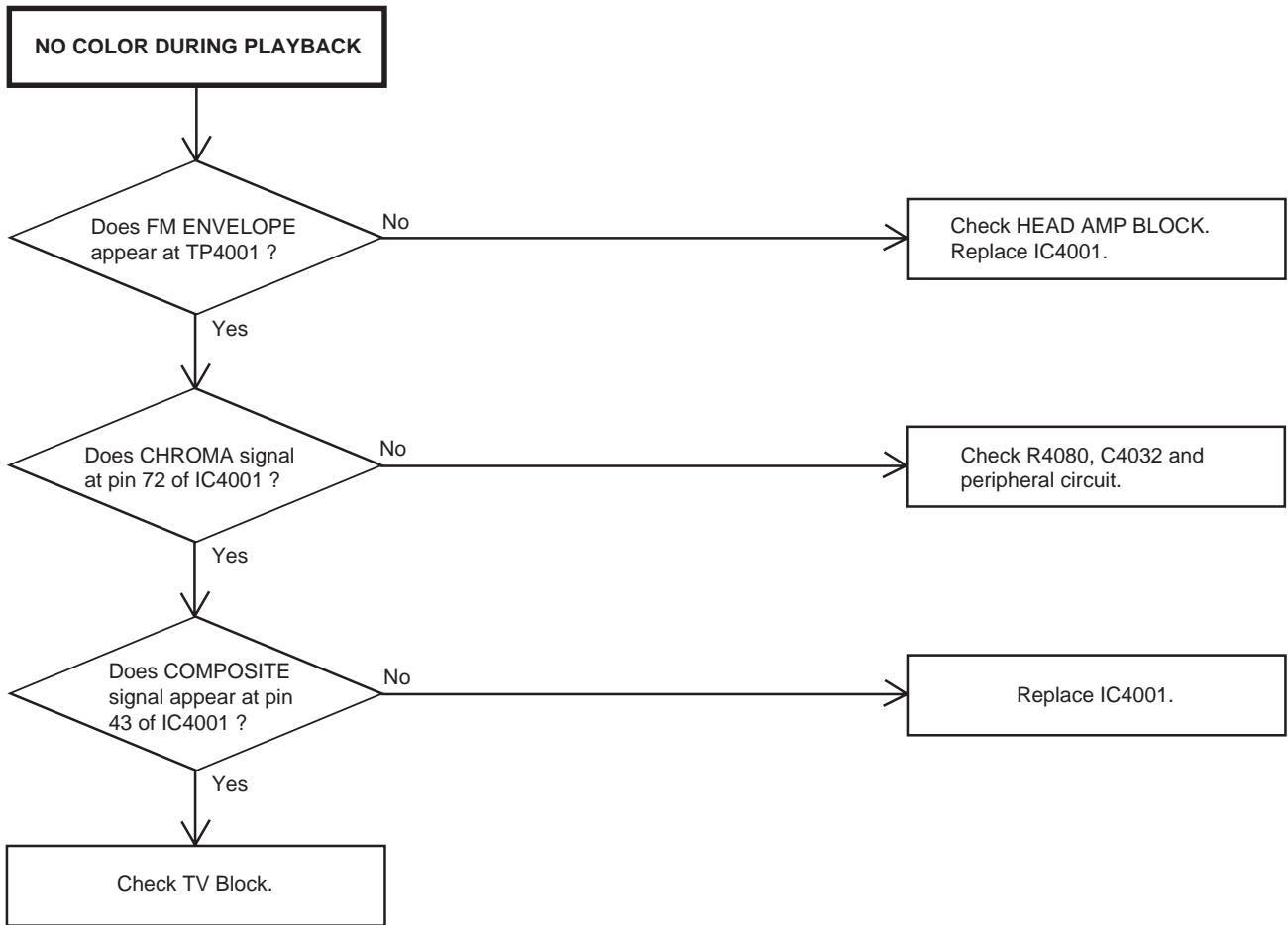
## (VCR SECTION)



# TROUBLESHOOTING GUIDE

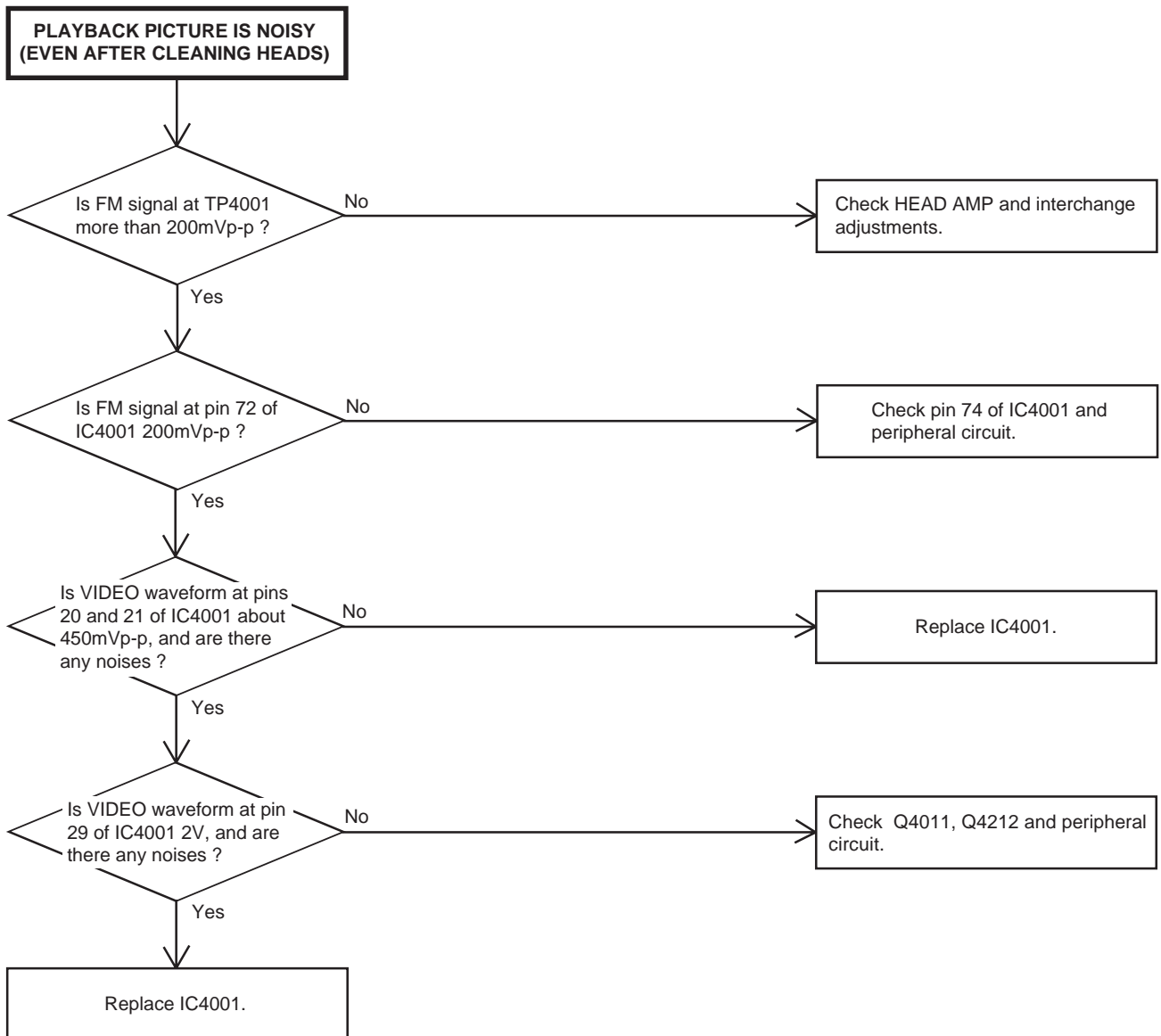


# TROUBLESHOOTING GUIDE

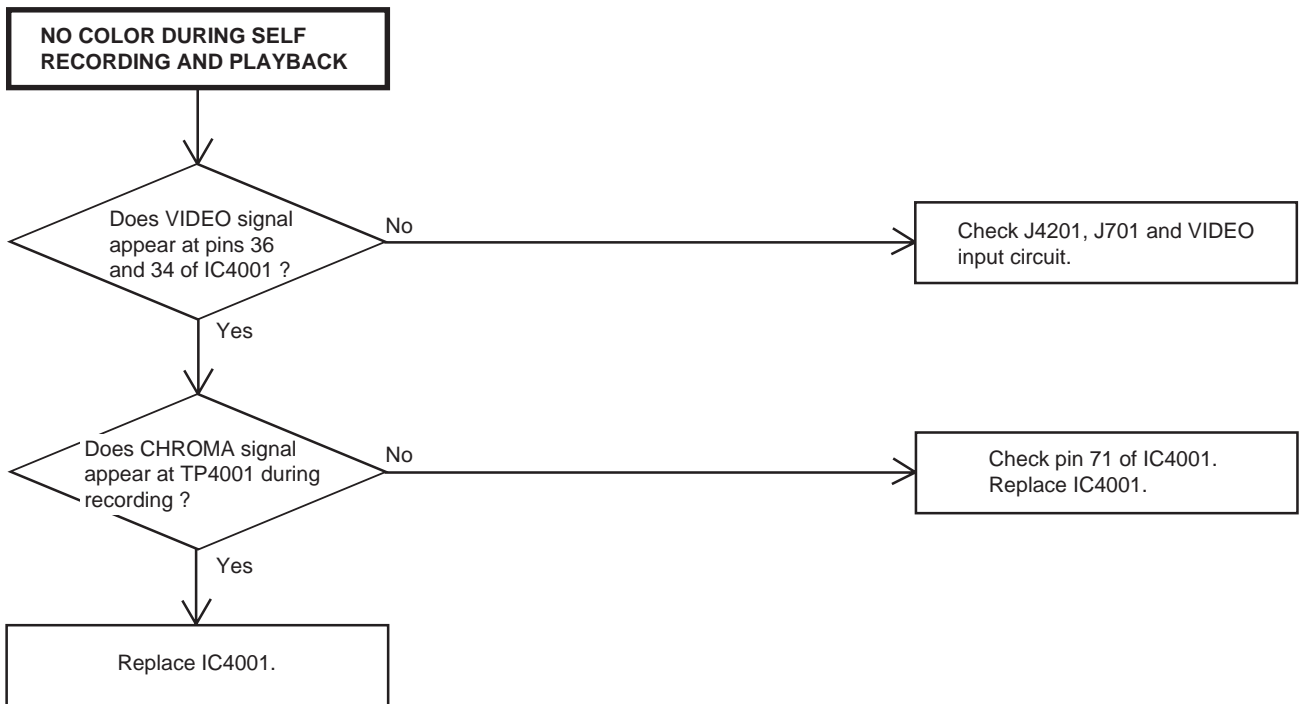




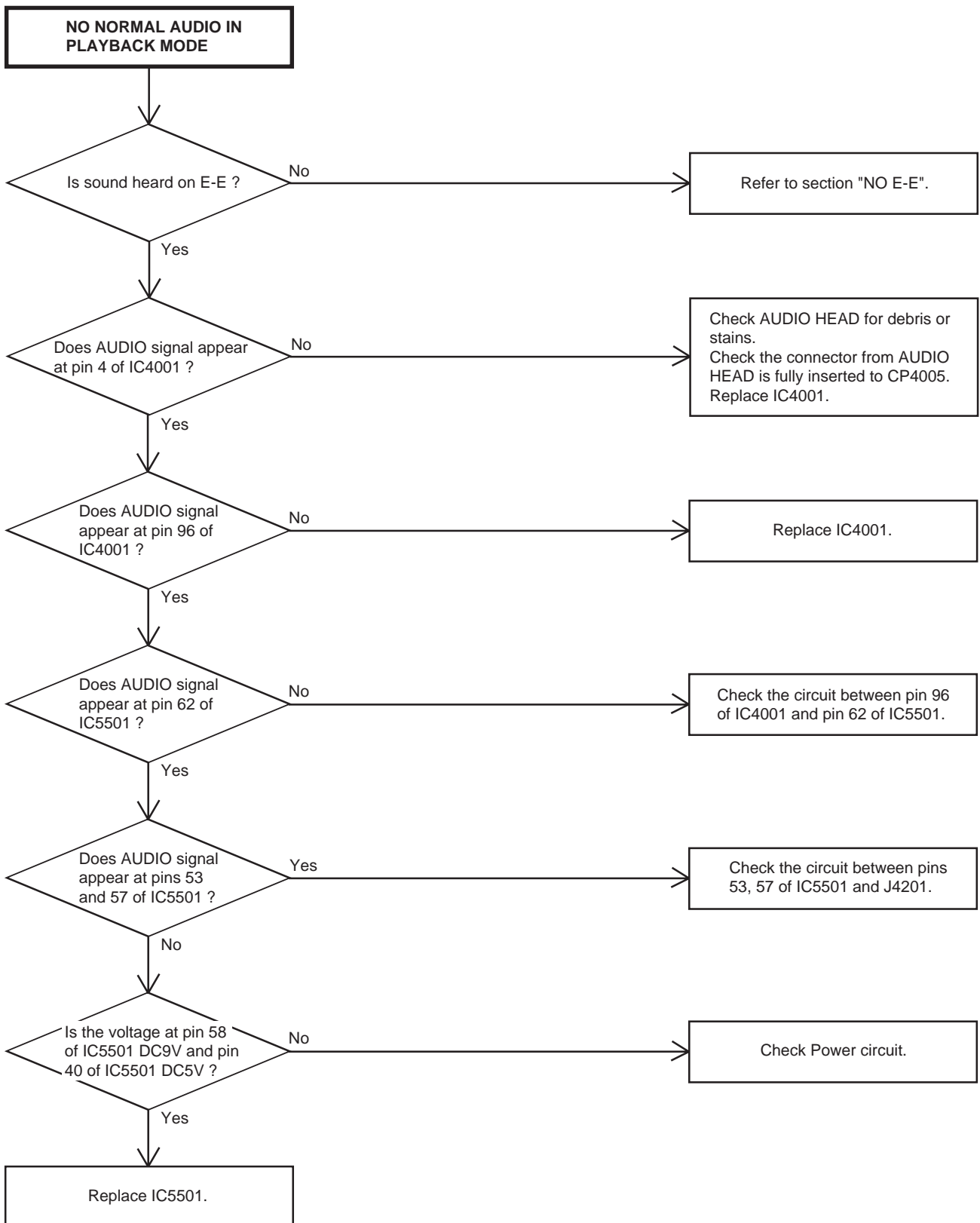
# TROUBLESHOOTING GUIDE



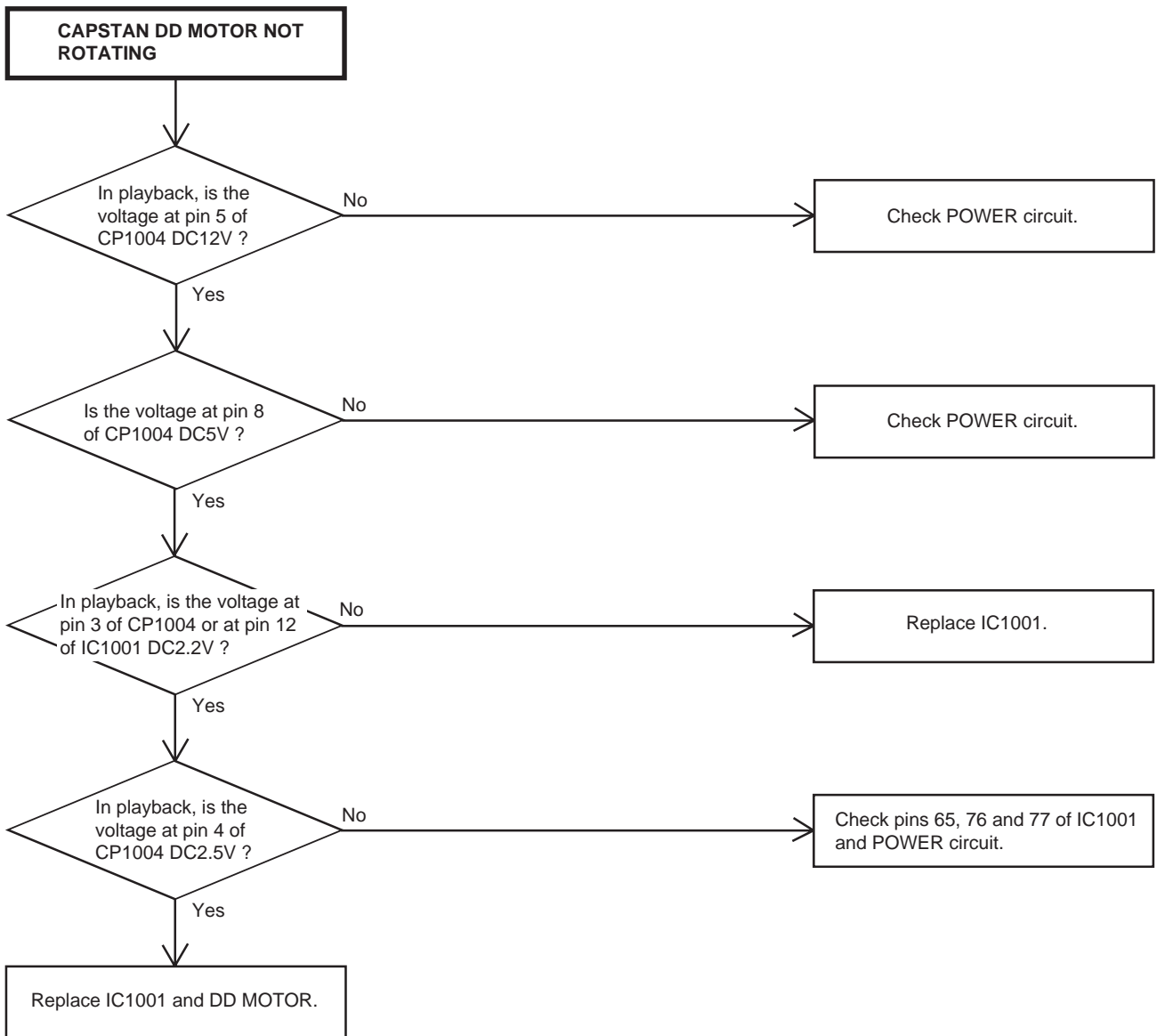
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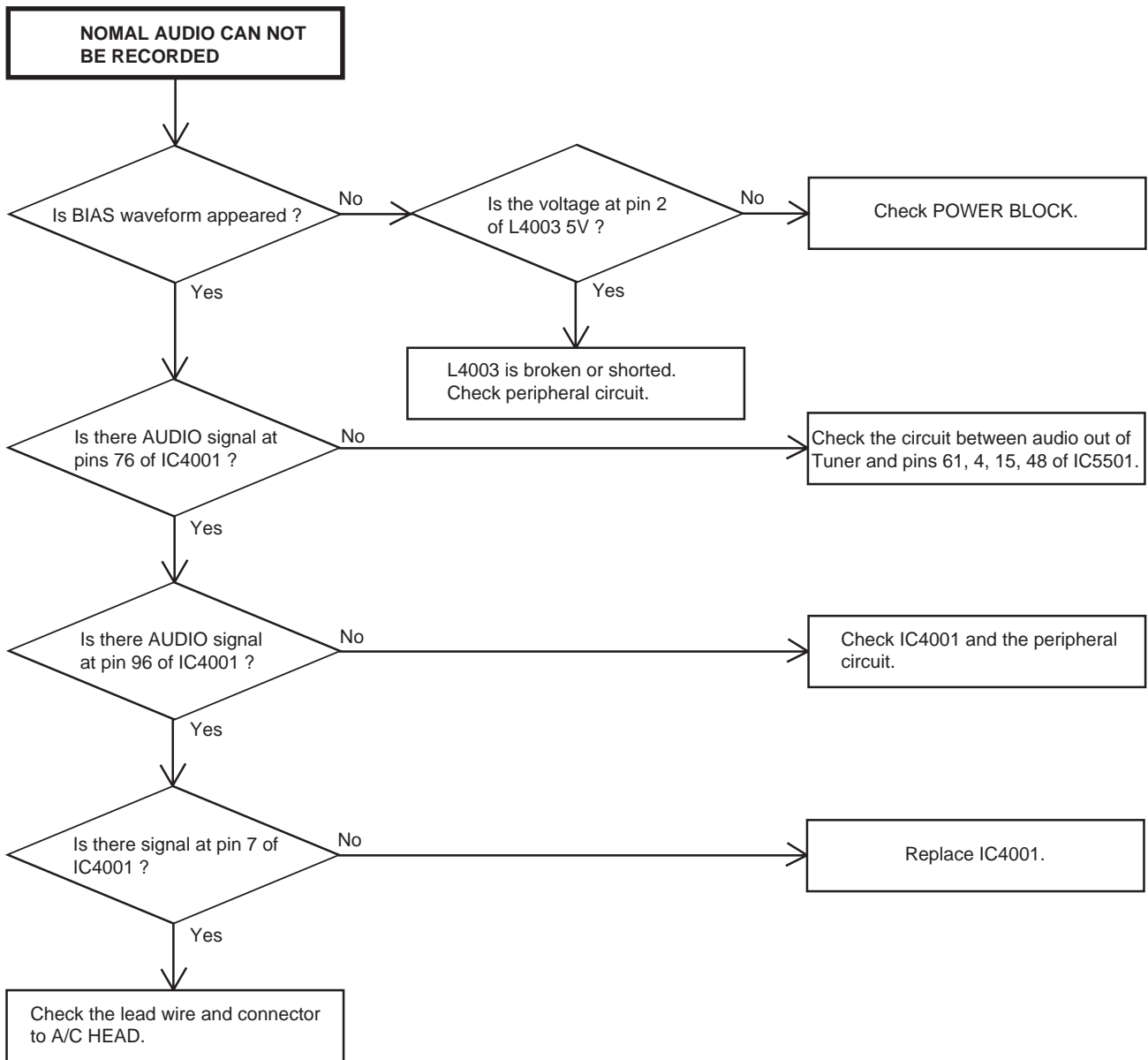
## TROUBLESHOOTING GUIDE



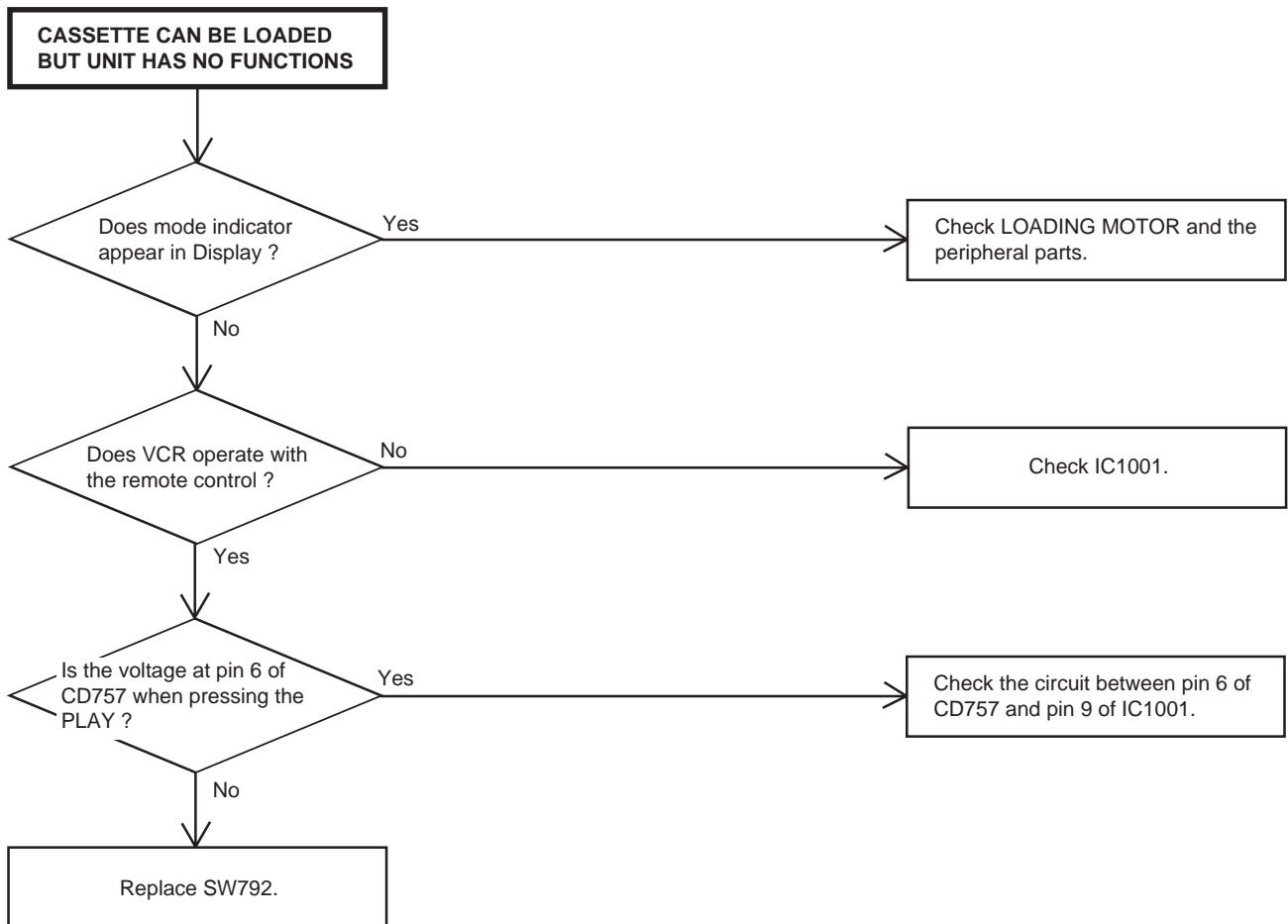
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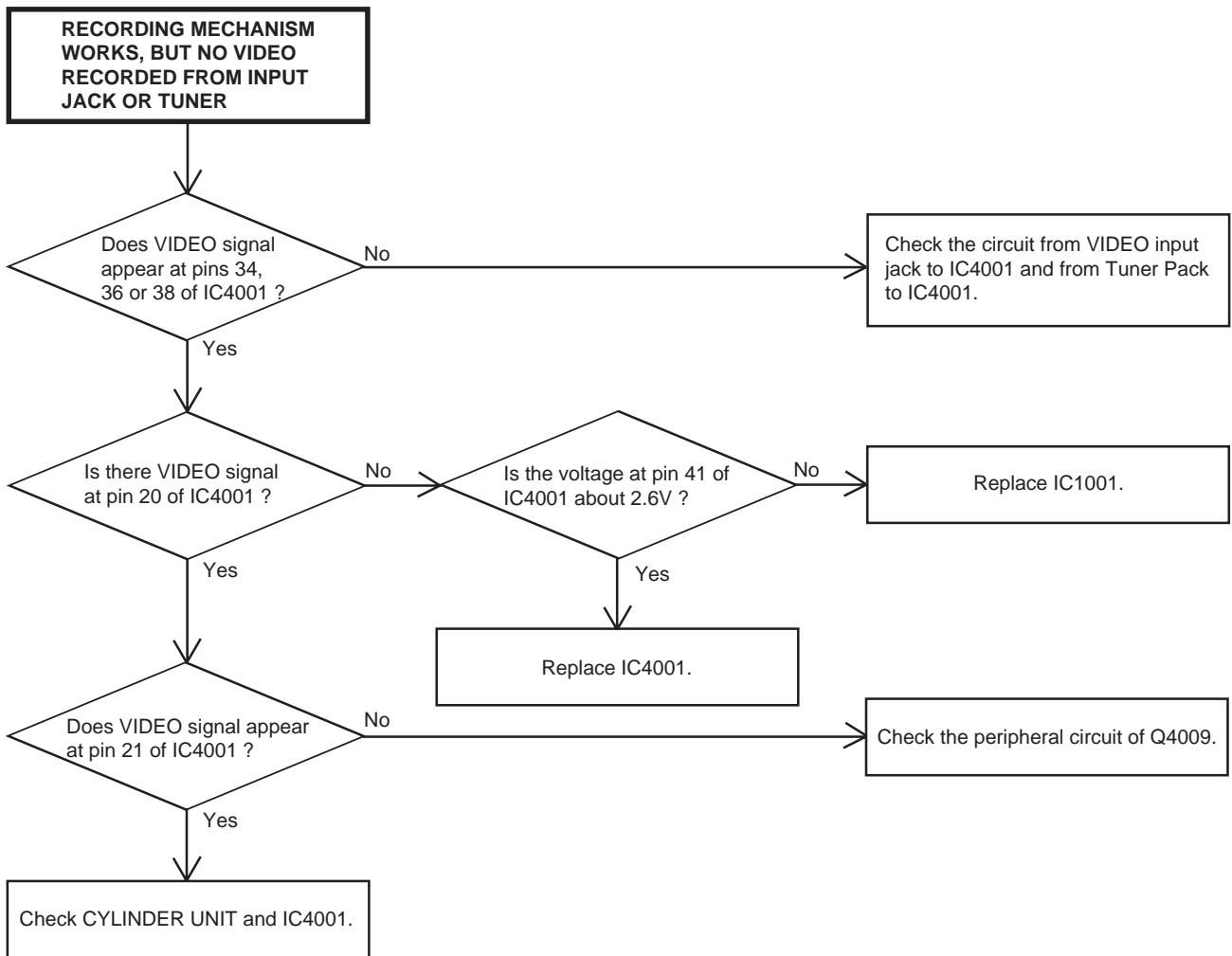
# TROUBLESHOOTING GUIDE



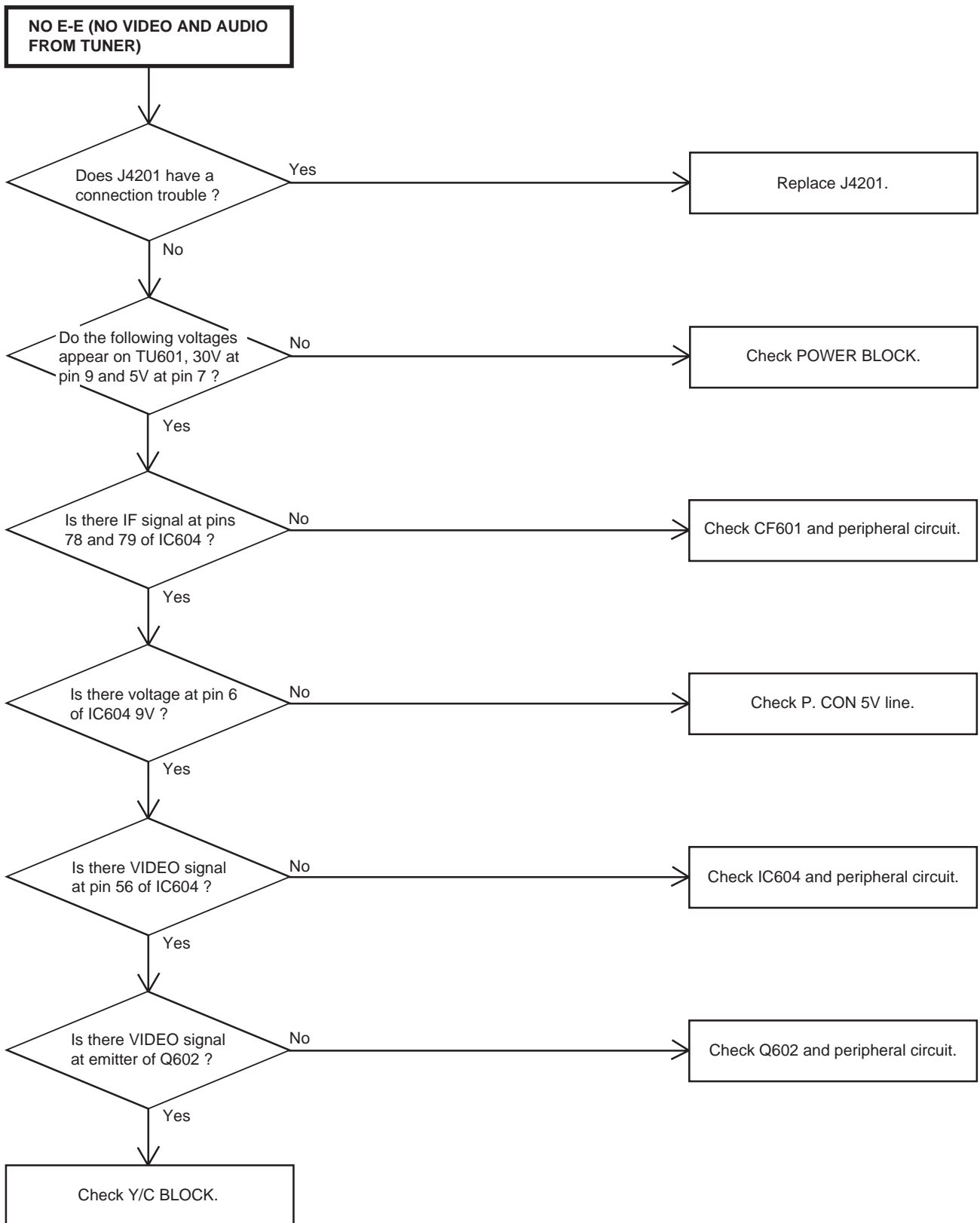
## TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE

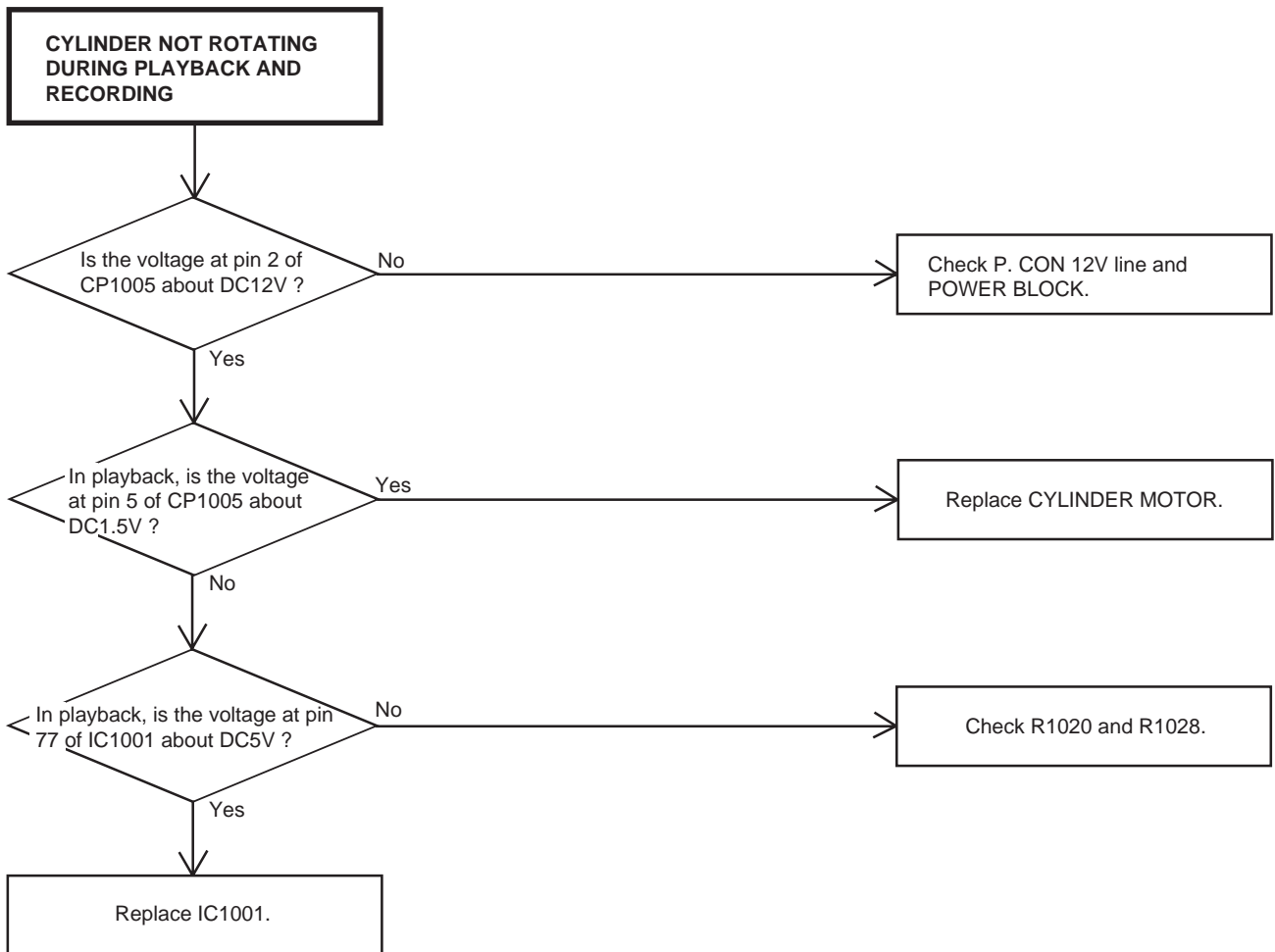


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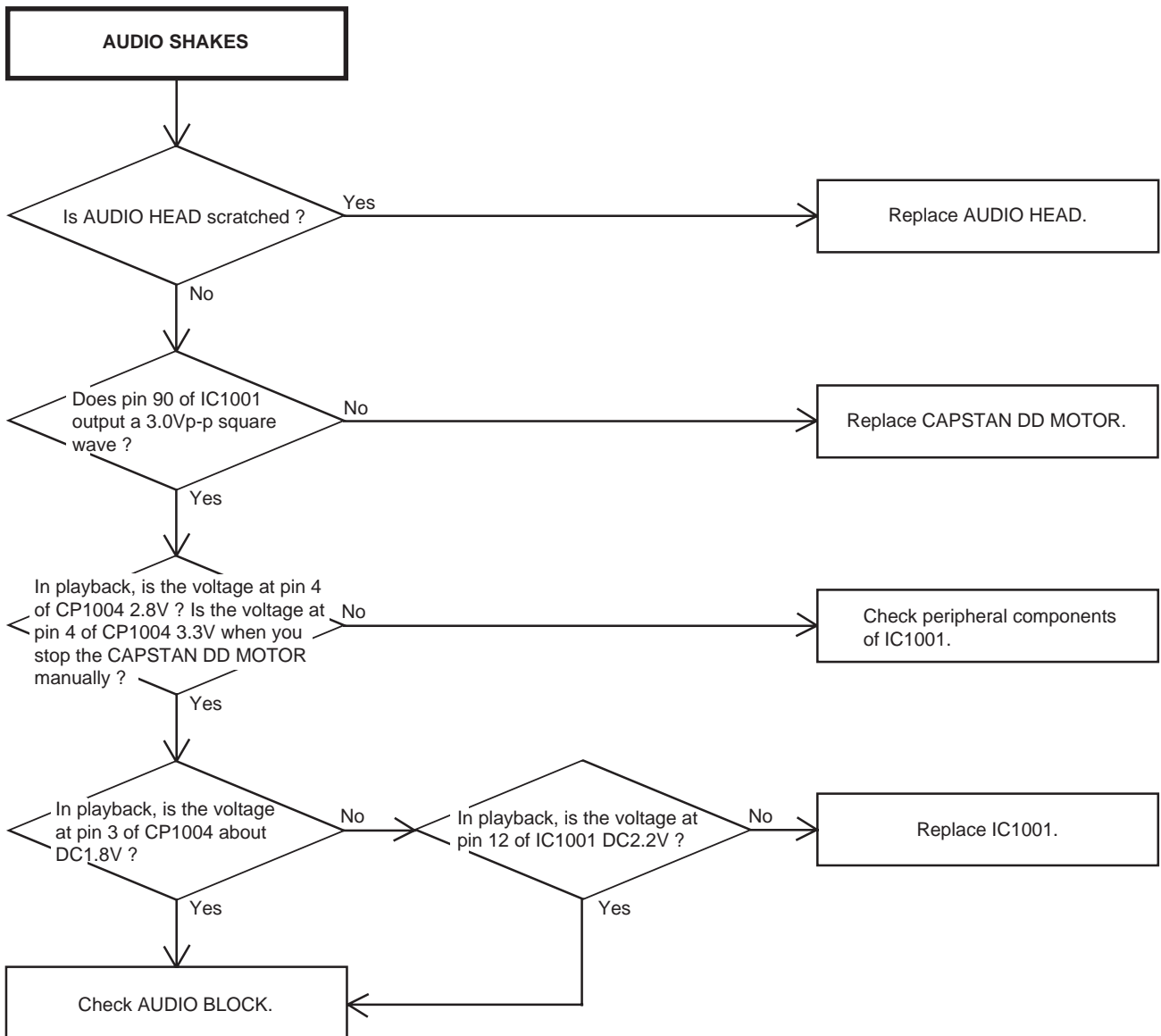




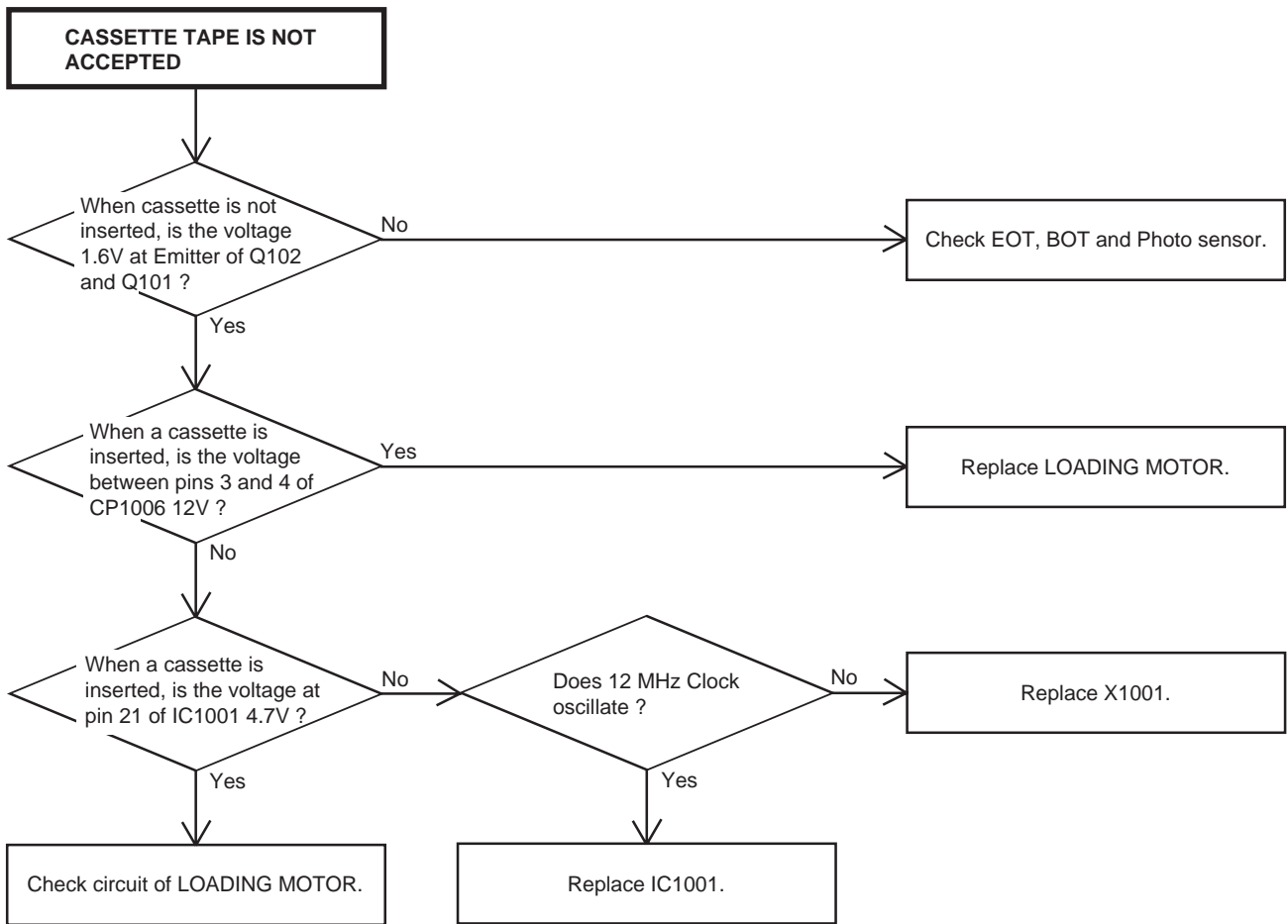
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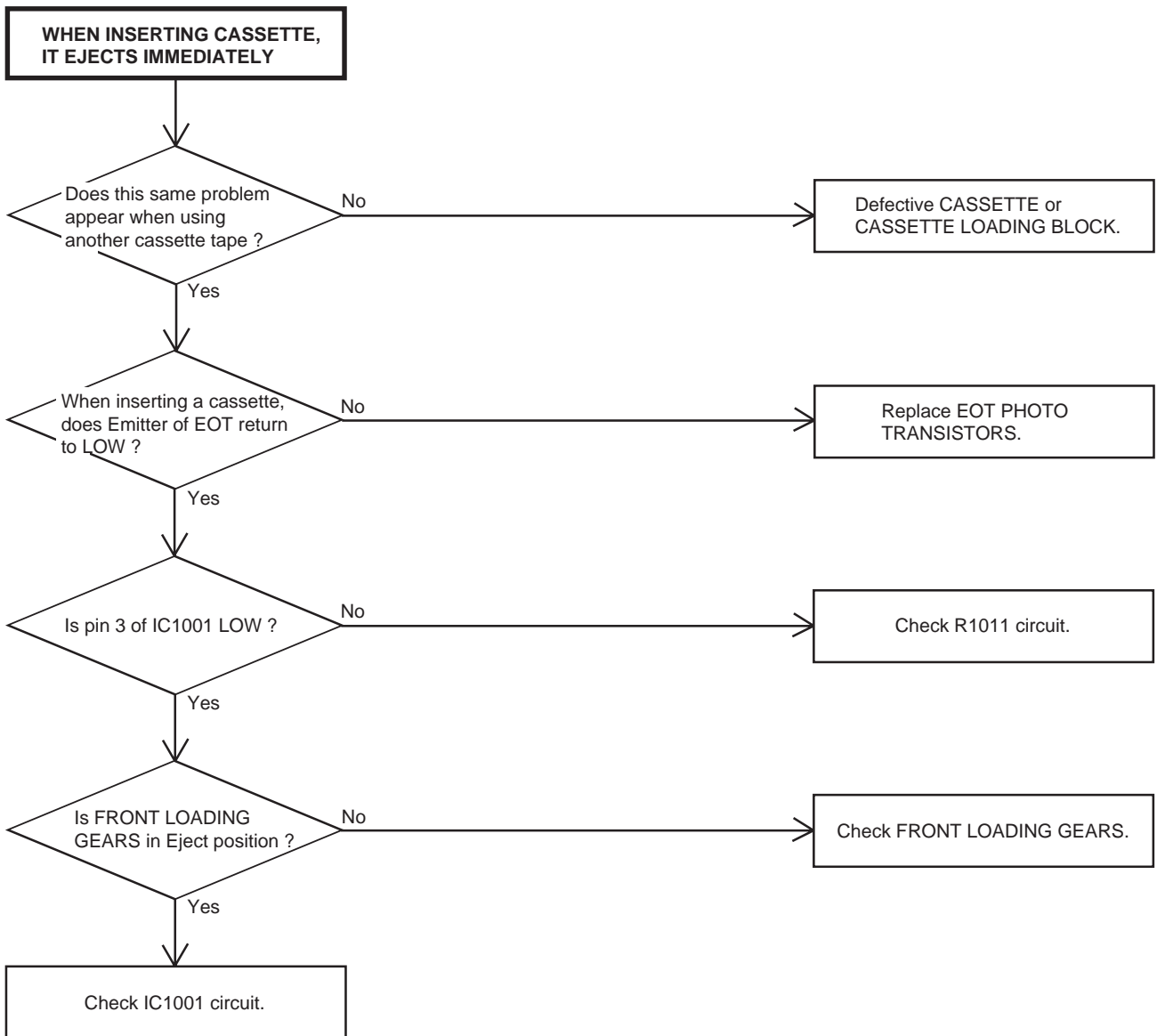
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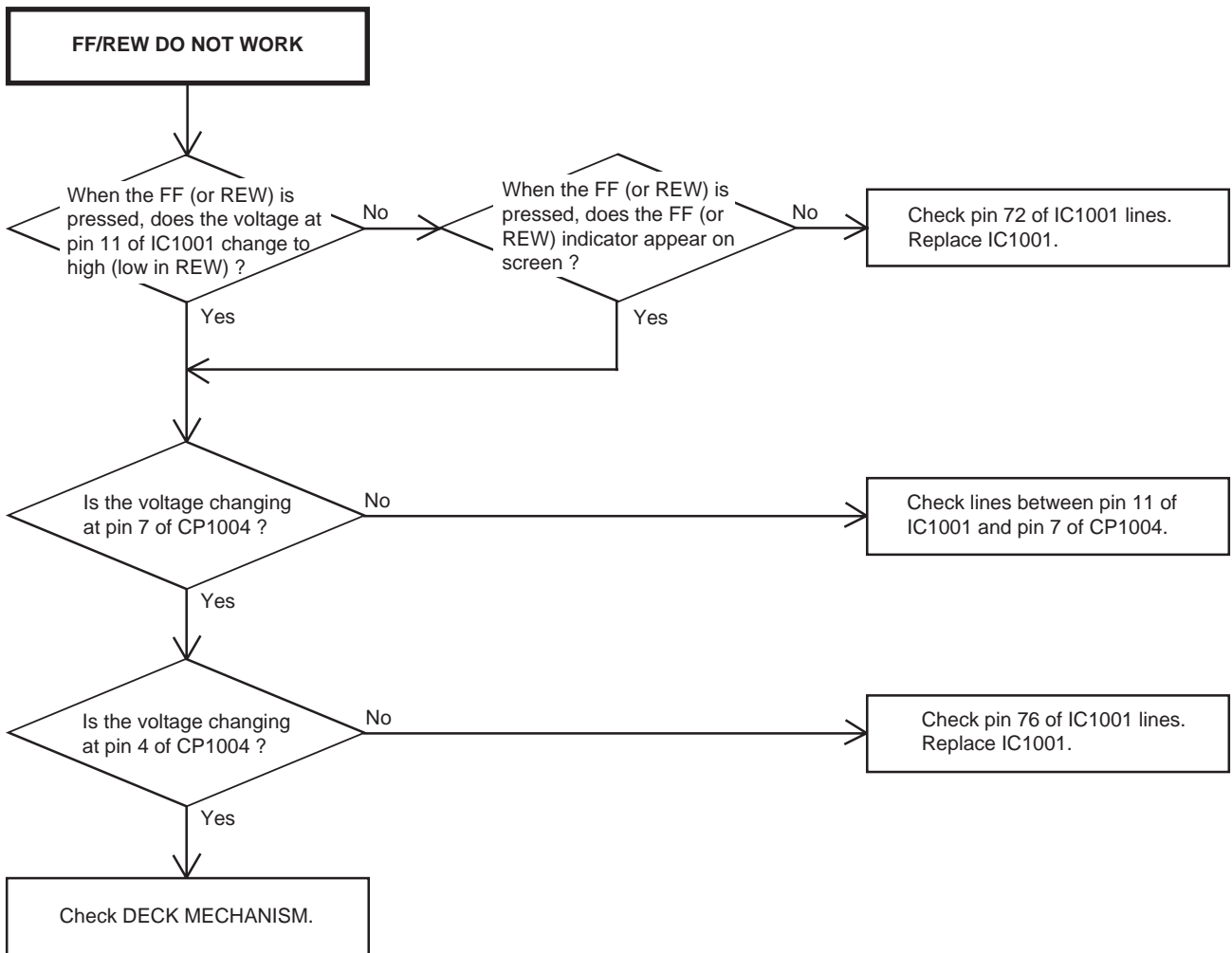
# TROUBLESHOOTING GUIDE



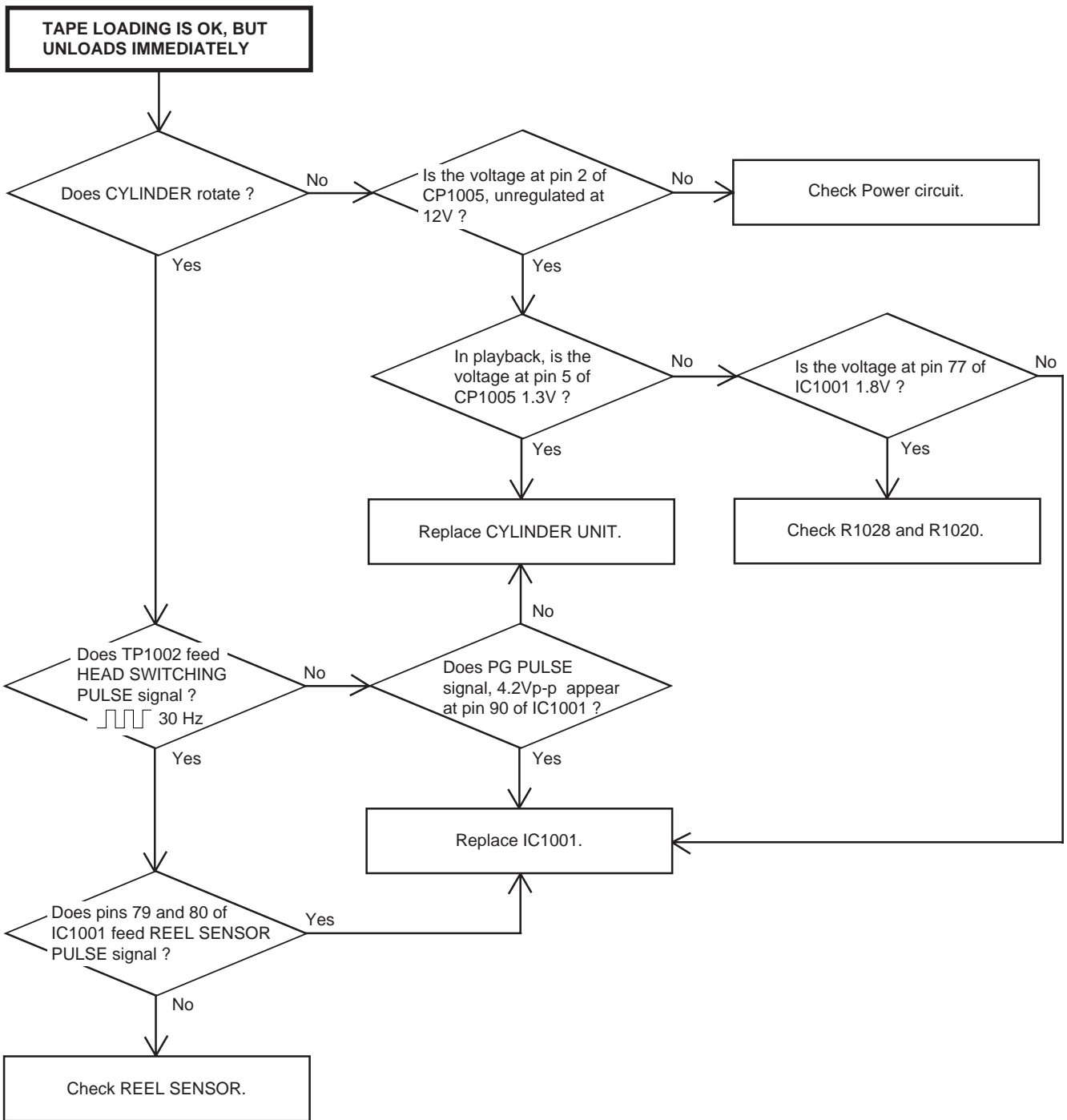
# TROUBLESHOOTING GUIDE



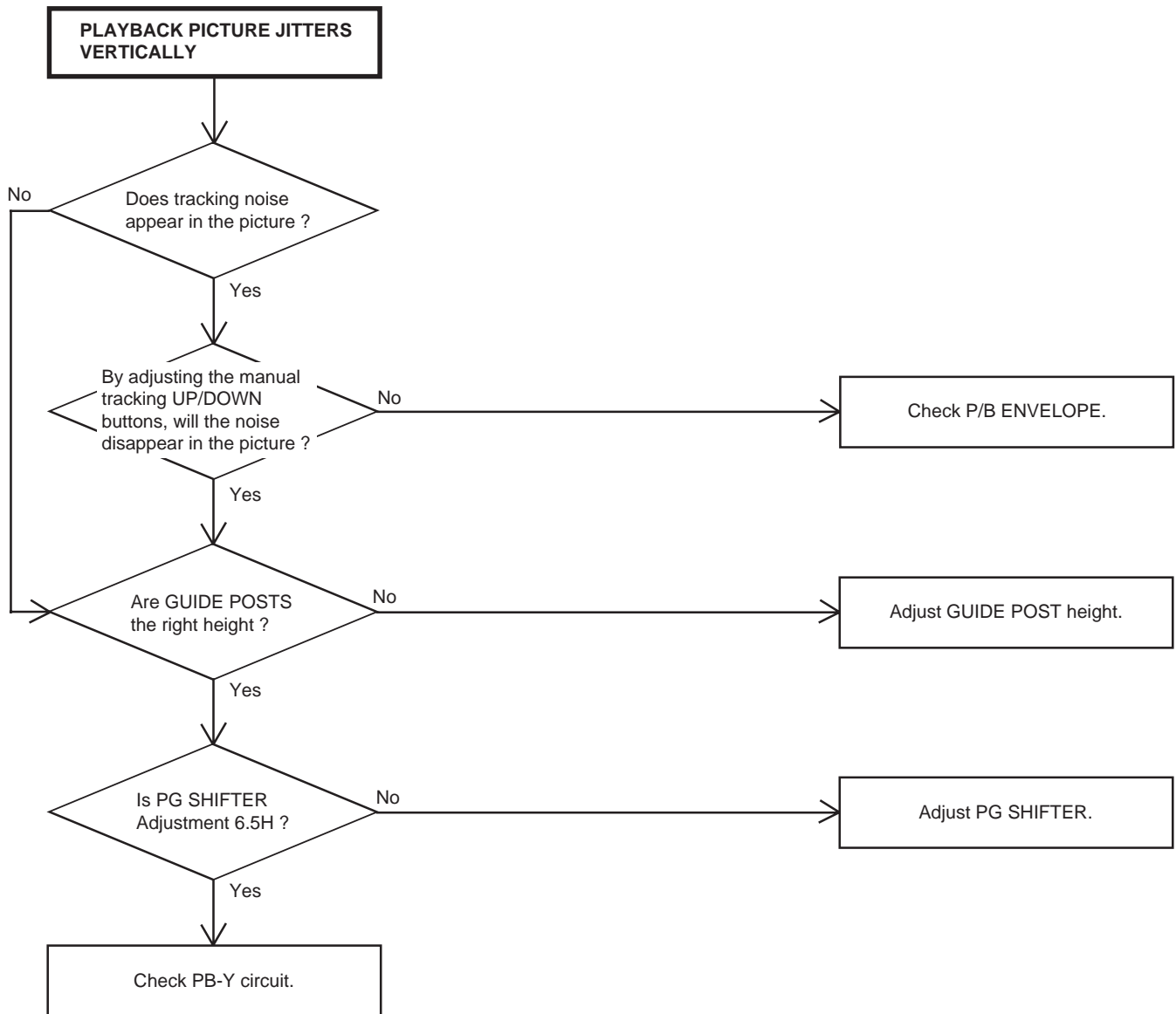
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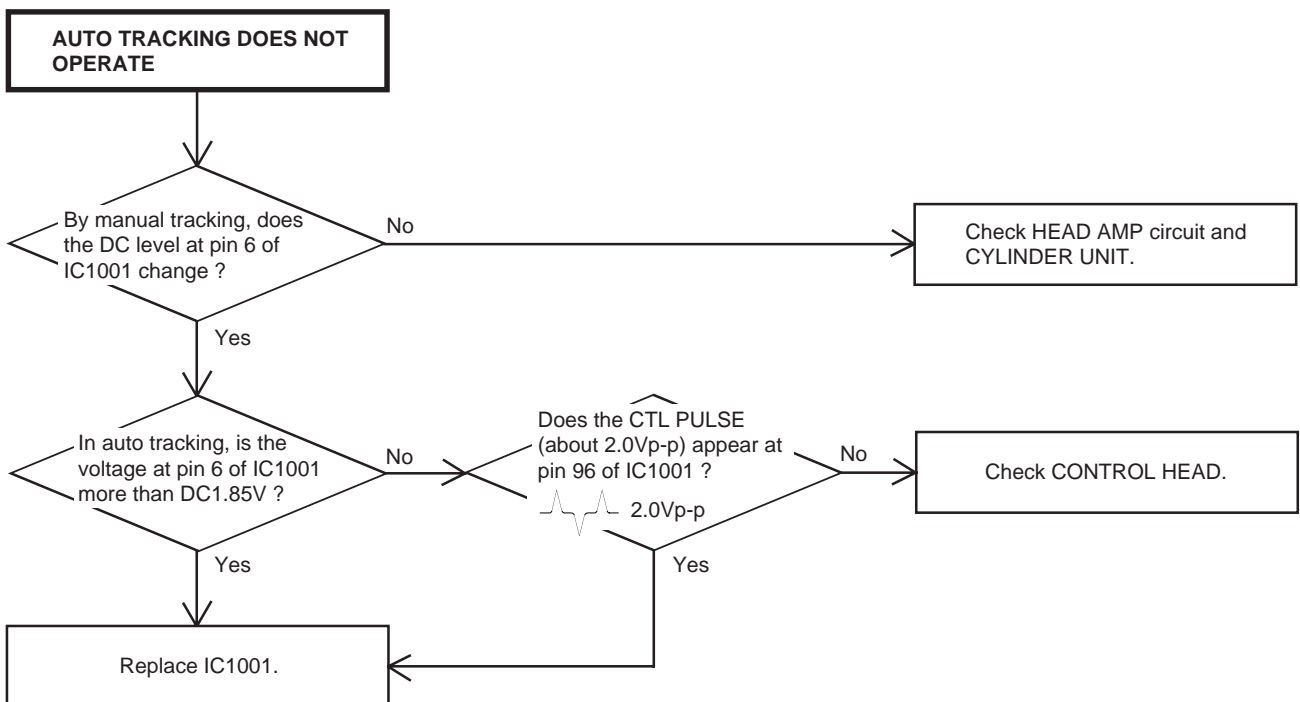
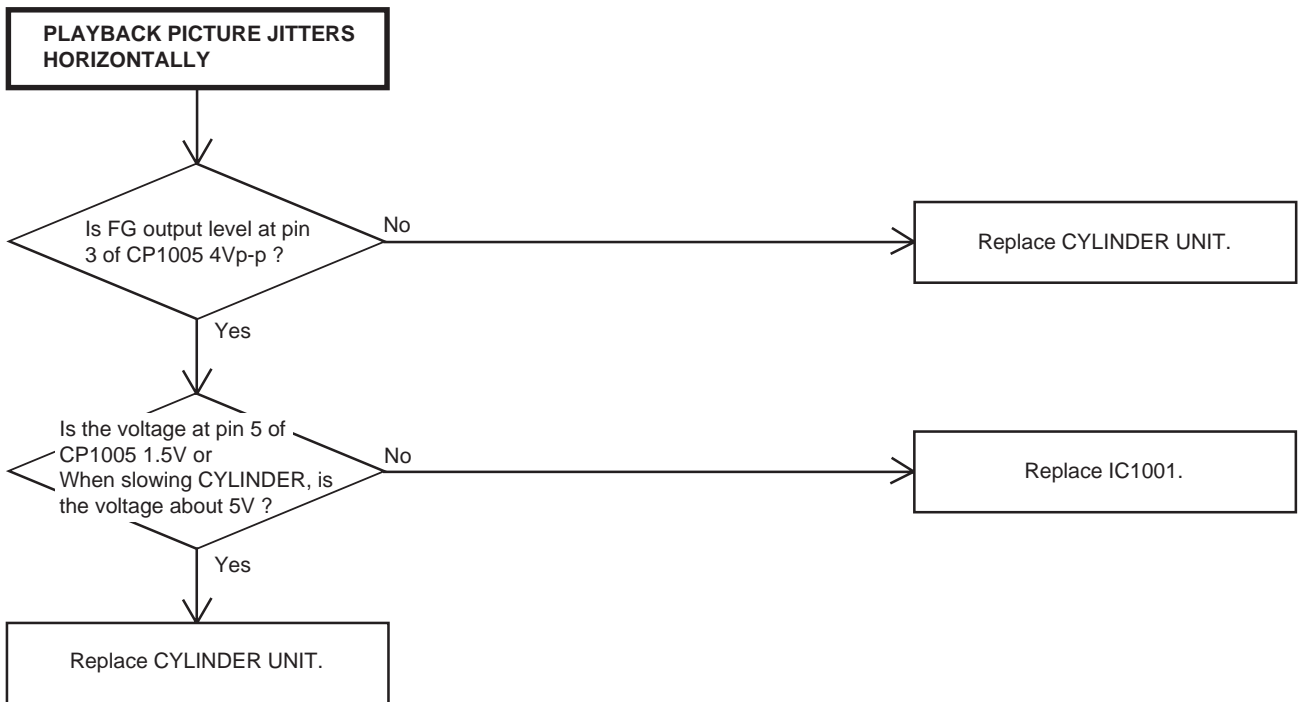
# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE

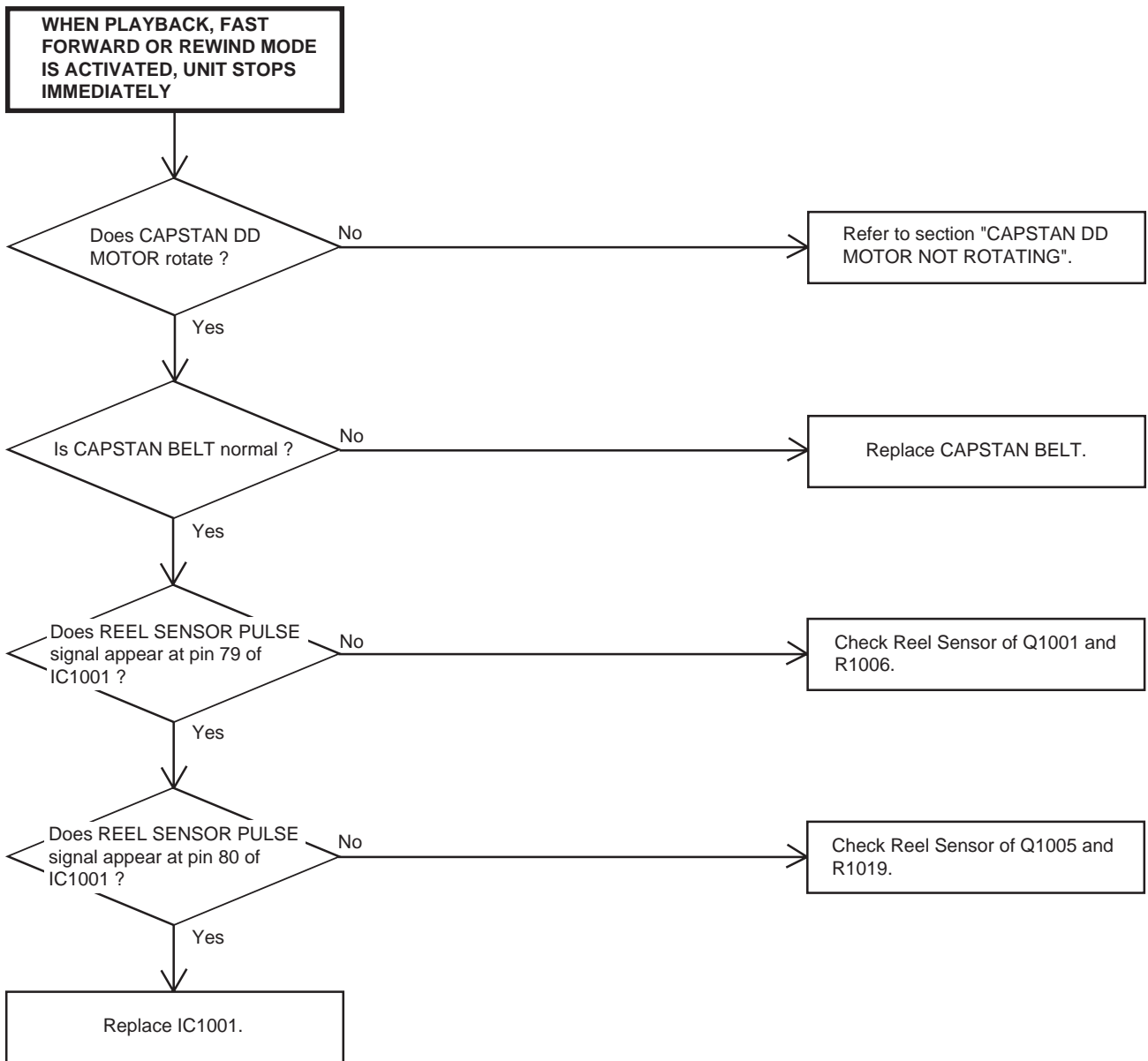


## TROUBLESHOOTING GUIDE

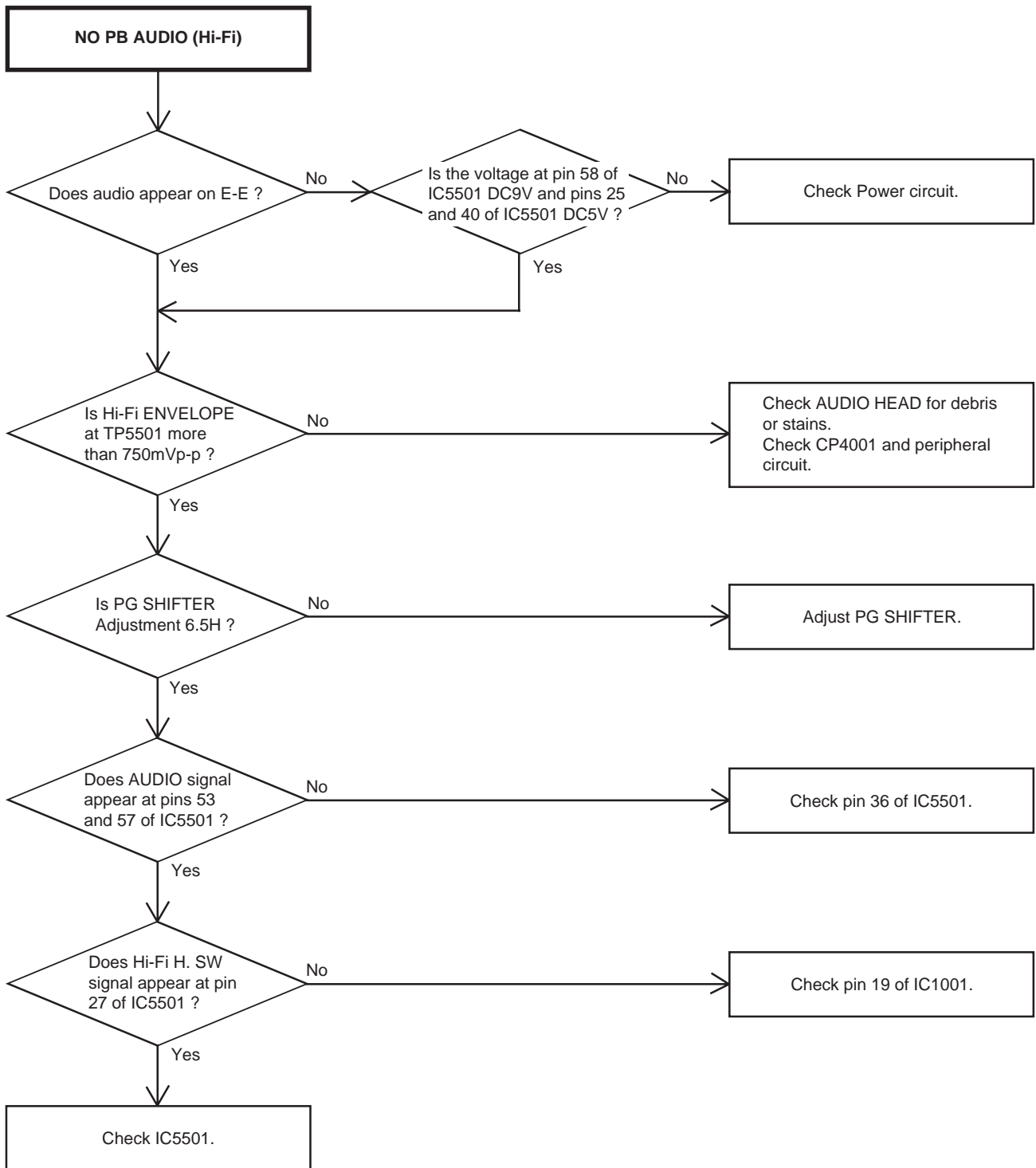




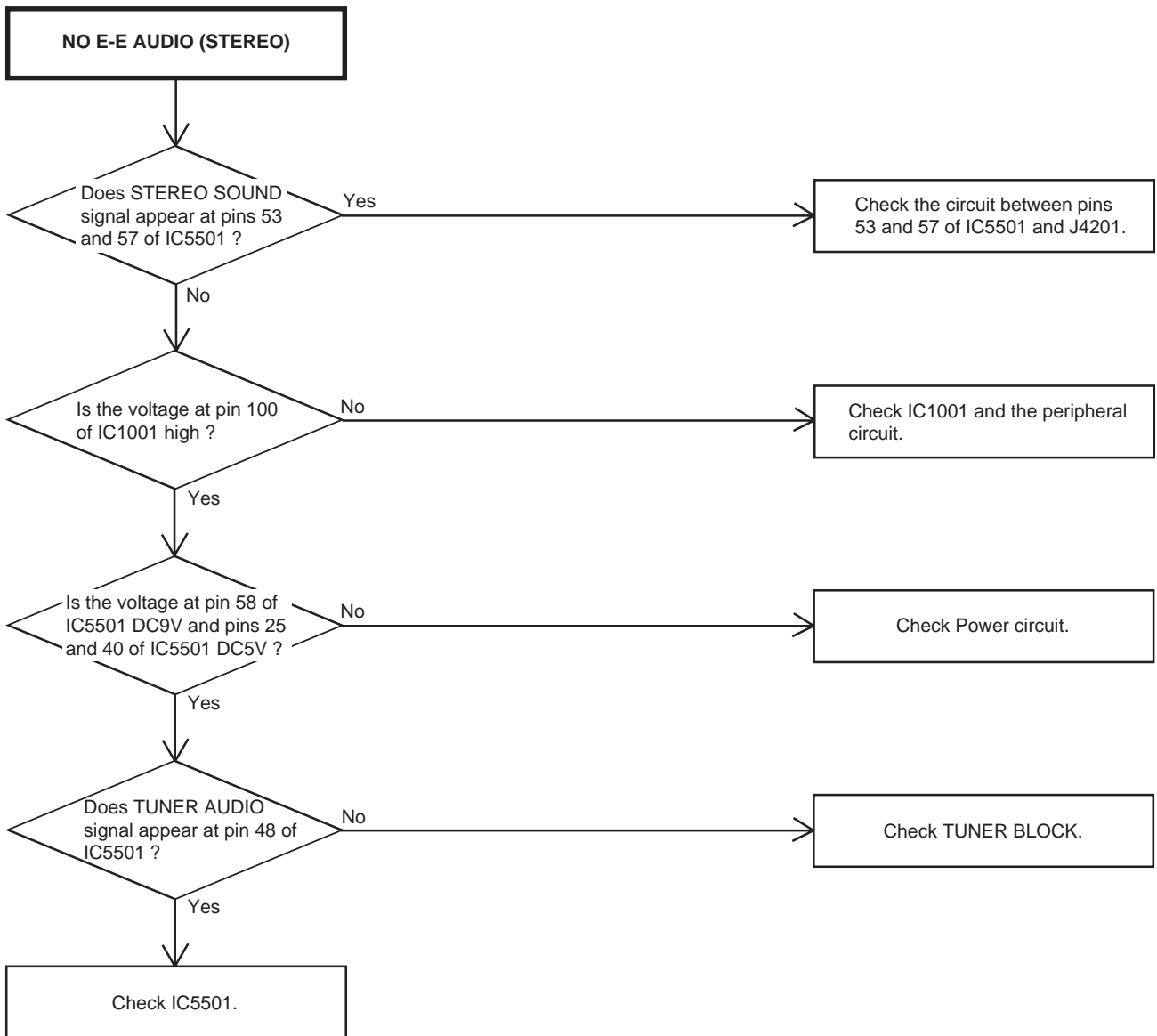
# TROUBLESHOOTING GUIDE



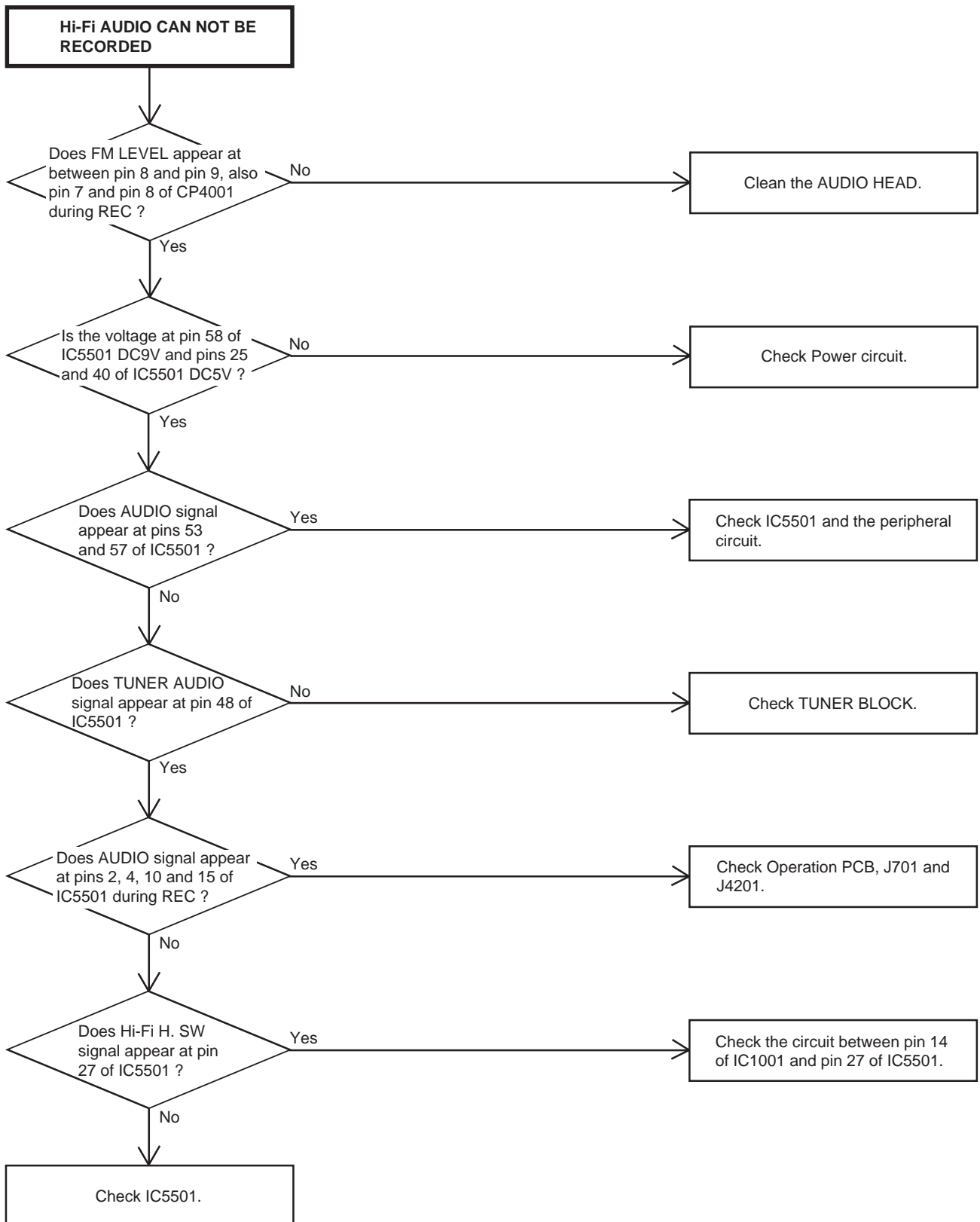
# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE



## TROUBLESHOOTING GUIDE



## IC DESCRIPTION

OEC7034A

Pin No.	Pin Name	I/O	DESCRIPTION
1	MSEN-A	I	Input terminal of mecha state sensor.
2	MSEN-B	I	
3	EOT	I	Tape end sensor input signal.
4	BOT	I	Tape start sensor input signal.
5	HI-FI-ENV	I	Input terminal of HiFi RF envelope.
6	VIDEO-ENV	I	Input terminal of video RF envelope.
7	AFT(MONI)	I	Input terminal of AFT.
8	AFT(REC)	I	Not used.
9	KEY A	I	Main unit key input.
10	KEY B	I	
11	CAP-FWD	O	Capstan forward and backward command.(forward "L" output)
12	CAP-LIMIT	O	Switch the maximum output current of the Capstan Motor.
13	DUMMY-V.SYNC	O	Virtual V Pulse output.
14	REMOCON-IN	I	Receive the remote control signal.
15	COLOR ROTARY	O	Color Rotary Control output.
16	HEAD.AMP.SW	O	Switching output of Head Amp SW on 4 heads.
17	ENV-CMP-IN	I	Comparison results input of Playback Envelope level ON SP/LP heads(4heads).
18	VIDEO-H.SW	O	Output terminal of Head SW to Y/C/A and Head Amp.
19	HI-FI-H.SW	O	Output terminal of audio Head SW to Y/C/A and Head Amp.
20	LDM-RVS	O	Output signal to control the rotation direction of the loading motor.
21	LDM-FWD	O	
22	TRICK-PB-H	O	Special effect playback.(CUE/REVIEW/STILL/SLOW etc)
23	SENS LED	O	MSEN sensor LED.
24	CAP-HI H	O	Power of Capstan Motor select.
25	CAP-MID H	O	
26	EXT-MUTE	O	Mute signal of external video mute.
27	VCR-POWER	O	VCR power output.
28	TV-POWER	O	TV power output.
29	T-REC LED	O	T-REC indication LED output.
30	REC LED	O	REC indication LED output.
31	ON-TIMER LED	O	ON-TIMER indication LED output.
32	OTPB LED	O	OTPB indication LED output.
33	AKB CTL	O	"H" is output at the time of AKB white adjustment.
34	RESET-L	I	RESET will be done when the voltage goes to HIGH after the reset signal.
35	XC_IN(32kHz)	I	Subclock pulse.(32kHz)
36	XC_OUT(32kHz)	O	
37	VCC	-	5V
38	X-IN(12MHz)	I	Connect the main crystal.(10MHz)
39	X-OUT(12MHz)	O	
40	VSS	-	Ground.
41	AV1	O	Not used.
42	AV2	O	Not used.
43	CLKSEL	I	5V
44	OSC-IN2	I	Condenser connection for OSC-IN2.

## IC DESCRIPTION

OEC7034A

Pin No.	Pin Name	I/O	DESCRIPTION
45	OSC-OUT2	O	Condenser connection for OSC-OUT2.
46	NUB	-	Ground.
47	CM_ADV_VIDEO	I/O	Not used.
48	CM_ADV_AUDIO	I	Not used.
49	OSD-VSS	-	Ground.
50	TAB SW	I	Input terminal for judge the tape if it has TAB or not.
51	SERVICE	I	Input terminal for Service Mode.
52	SD-IN(MONI)	I	Not used.
53	OSD-VCC	-	5V
54	HLF	-	Condenser connection for HLF.
55	VHOLD	-	Condenser connection for VHOLD.
56	CVIN	I	Composite Video input terminal.
57	NUA	-	Ground.
58	H/C-SYNC	I	Input terminal for H-SYNC.
59	V-SYNC	I	Input terminal for V-SYNC.
60	OSD OUT1	O	Blanking output terminal of OSD.
61	CENTER LED	O	Tape end sensor LED.
62	B	O	Color signal blue output.
63	G	O	Color signal green output.
64	R	O	Color signal red output.
65	CAP FULL	O	Output the HIGH during the acceleration force of capstan motor at SLOW mode.
66	V-REC-ST-H	O	On control of A/V recording (Whole width erase) circuit.
67	IIC-CLK3	O	CLOCK terminal for I2C BUS communication.
68	IIC-DATA3	I/O	DATA terminal for I2C BUS communication.
69	SP-H	O	Output "H" terminal of Playback/Recording SP mode.
70	IIC-DATA2	I/O	DATA terminal for I2C BUS communication.
71	IIC-CLK1	O	CLOCK terminal for I2C BUS communication.
72	IIC-DATA1	I/O	DATA terminal for I2C BUS communication.
73	IIC-OFF	I	When input "L" the I2CBUS communication is stopped.
74	JUST CLOCK	I	Not used.
75	AGC(REC)	O	Not used.
76	CAP-PWM	O	PWM putput of Capstan control.
77	DRUM-PWM	O	PWM putput of Cylinder control.
78	E/V_MASK	I	Not used.
79	REEL-S	I	Input terminal of reel sensor supply.
80	REEL-T	I	Input terminal of reel sensor take up.
81	VCR_A_MUTE	O	Mute signal of audio mute.(VCR)
82	TV_A_MUTE	O	Mute signal of audio mute.(TV)
83	FF/REW-L	O	The output terminal of to that switches the frequency characteristic of CTL by the circuit bill outside.
84	CA/MA_SEL	O	Not used.
85	POWER_FAIL_L	I	Input for the detection of power interruption.
86	CFG AMP-OUT	O	Not used.
87	CAP-FG	I	Input terminal for capstan rotation signal detection.

## IC DESCRIPTION

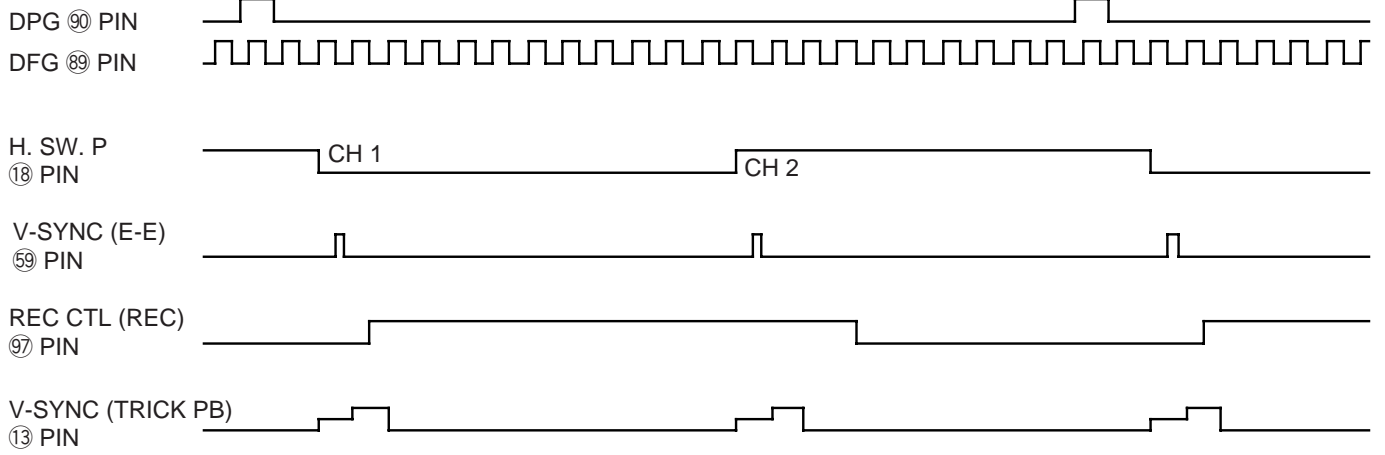
OEC7034A

Pin No.	Pin Name	I/O	DESCRIPTION
88	AMP-VSS	-	Ground.
89	DRUM-FG	I	Input terminal for drum rotation signal detection.
90	DRUM-PG	I	Input terminal for DRUM PG signal detection.
91	AMP-VREFOUT	O	Condenser connection for AMP-VREFOUT.
92	AMP-VREFIN	I	Condenser connection for AMP-VREFIN.
93	C	I	Condenser connection for C.
94	CTL-	I/O	Input and output terminal of Control Head.
95	CTL+	I/O	Input terminal of Control Head.
96	AMP C	-	Condenser connection for AMP C.
97	CTL AMP-OUT	O	Output terminal for amp out.
98	AMP-VCC	-	5V
99	ANALOG VCC	-	5V
100	DEW(mono)	I	Input terminal for the detection with the dew of the cylinder.
100	STEREO SEL(HiFi)	I	Input terminal for the judgement of voice reception condition.

- The assignment for Pin 100 is varies according to the SET which is MONO or Hi-Fi.  
It is used for DEW terminal in MONO and STEREO SEL terminal in Hi-Fi.

# SERVO TIMING CHART

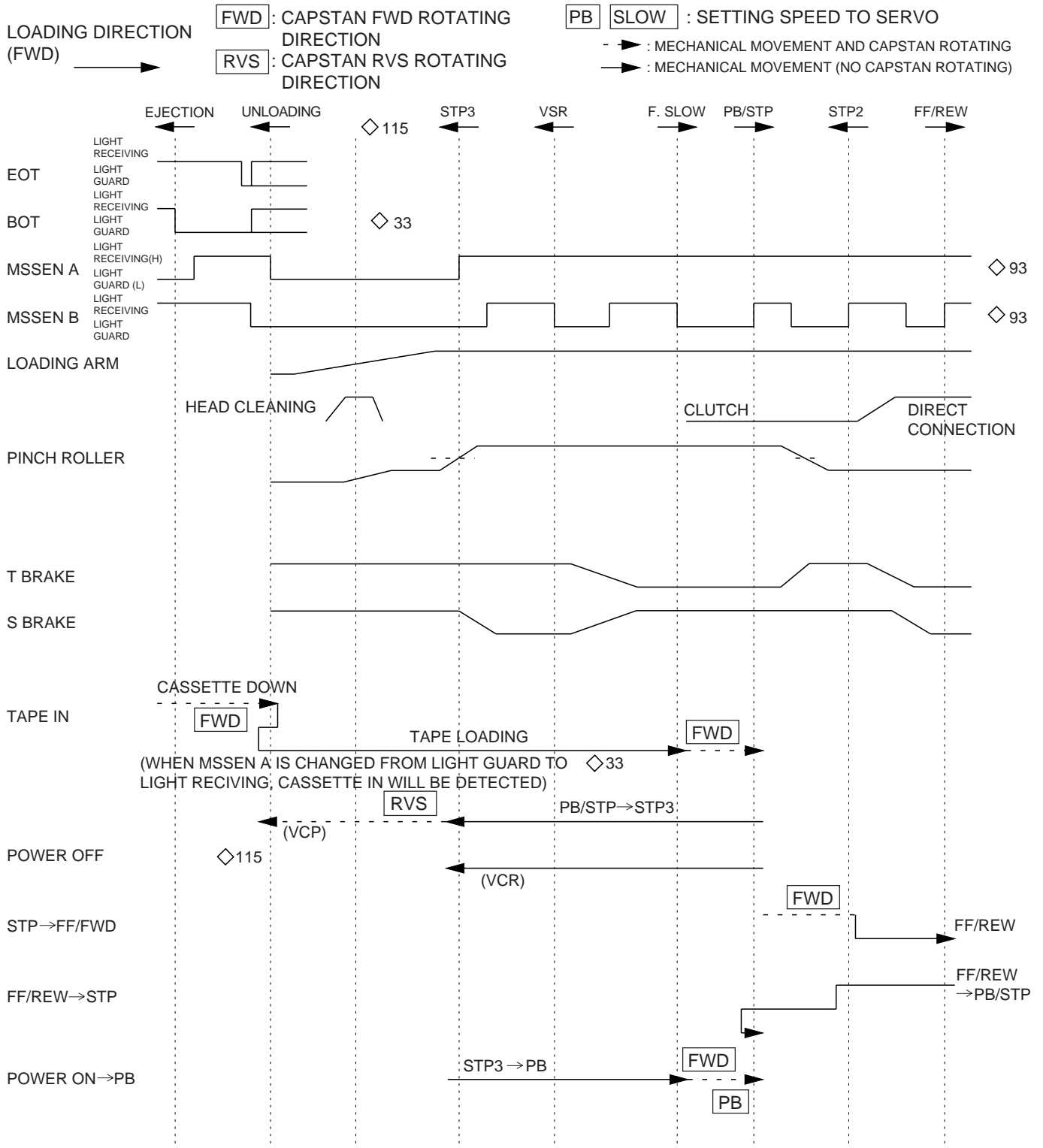
IC1001 (OEC7034A)



• WAVEFORM CHANGES DEPENDED ON THE TAPE SPEED



# SYSTEM SWITCH MODE



# SEMICONDUCTOR BASE CONNECTIONS

## DIODE



1SS133T-77  
HZ11B3L TD  
HZ27-1L TD  
HZ30-1L TD  
HZ6A3L TD  
MTZJ5.1B T-77  
MTZJ5.6B T-77  
MTZJ6.2B T-77  
MTZJ6.8B T-77  
MTZJ9.1B T-72  
SB10-03A3



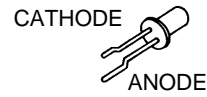
11E1N-TA1B2  
11ES1N-TA1B2  
1N4005E-G23  
GP15M-G23  
RD12FB-T7



10ELS2N-TA1B2  
10ELS6TA1B2  
21DQ09N-TA2B1  
RU2AM V1

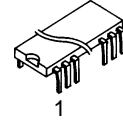


SID1050CM

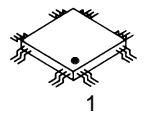


EM-553-F1T  
SLZ-936C-07-S-T1

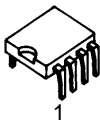
## IC



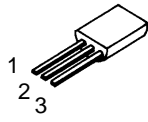
**20PIN**  
M62420SP



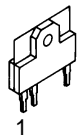
**100PIN**  
LA71170M-MPB  
OEC7034A  
**64PIN**  
AN3662FBP



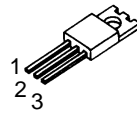
**8PIN**  
M24C04-BN6



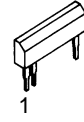
**3PIN**  
PST600H



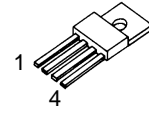
**7PIN**  
LA7840



**3PIN**  
NJM7805FD  
NJM7812FA



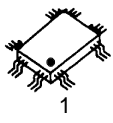
**8PIN**  
BA6955AN



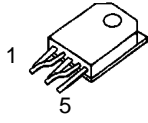
**4PIN**  
PQ09RD08



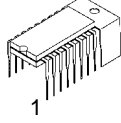
**4PIN**  
ON3171R



**80PIN**  
LA76814BM-MPB

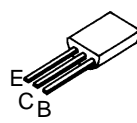


**5PIN**  
STR-F6612

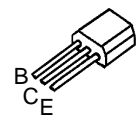


**16PIN**  
AN7510

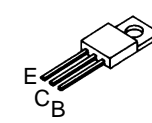
## TRANSISTOR



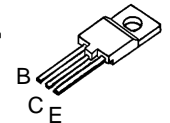
2SA1318(S,T)-AA  
2SA1371(D,E)-AE  
2SA733(C)-T\_Q  
2SA984K-AA  
2SB892(S,T)-AE  
2SC1317(Q,R,S)-T  
2SC2001(C)-T\_L  
2SC2271(D,E)-AE  
2SC2274-AA  
2SC2909(S,T)-AA  
2SC945(C)-T(P,Q)



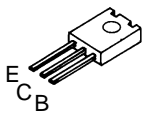
DTC114TSTP



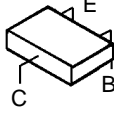
2SD2396(J,K)



2SD2599



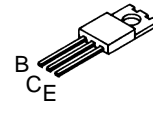
2SC4217(D,E)-RAC



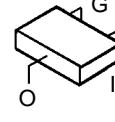
2SA1037AKT146R,S  
2SC2412KT146 R,S



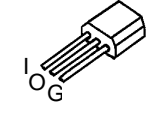
GP1S94L



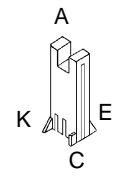
2SC4160-OEC-YAC11



DTA124EKAT146  
DTC114EKAT146  
DTC124EKAT146  
DTC143EKAT146



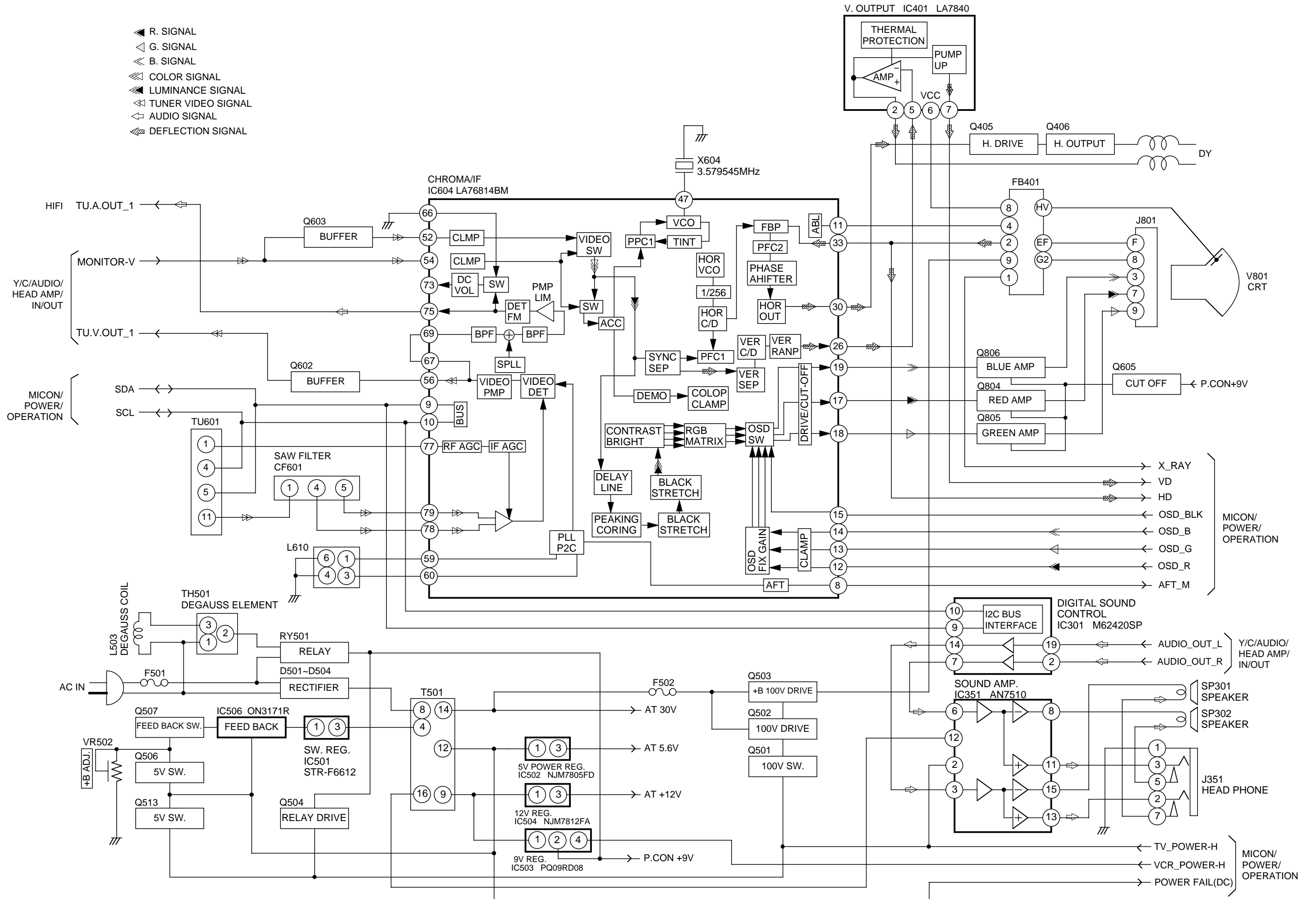
DTC114ESTP



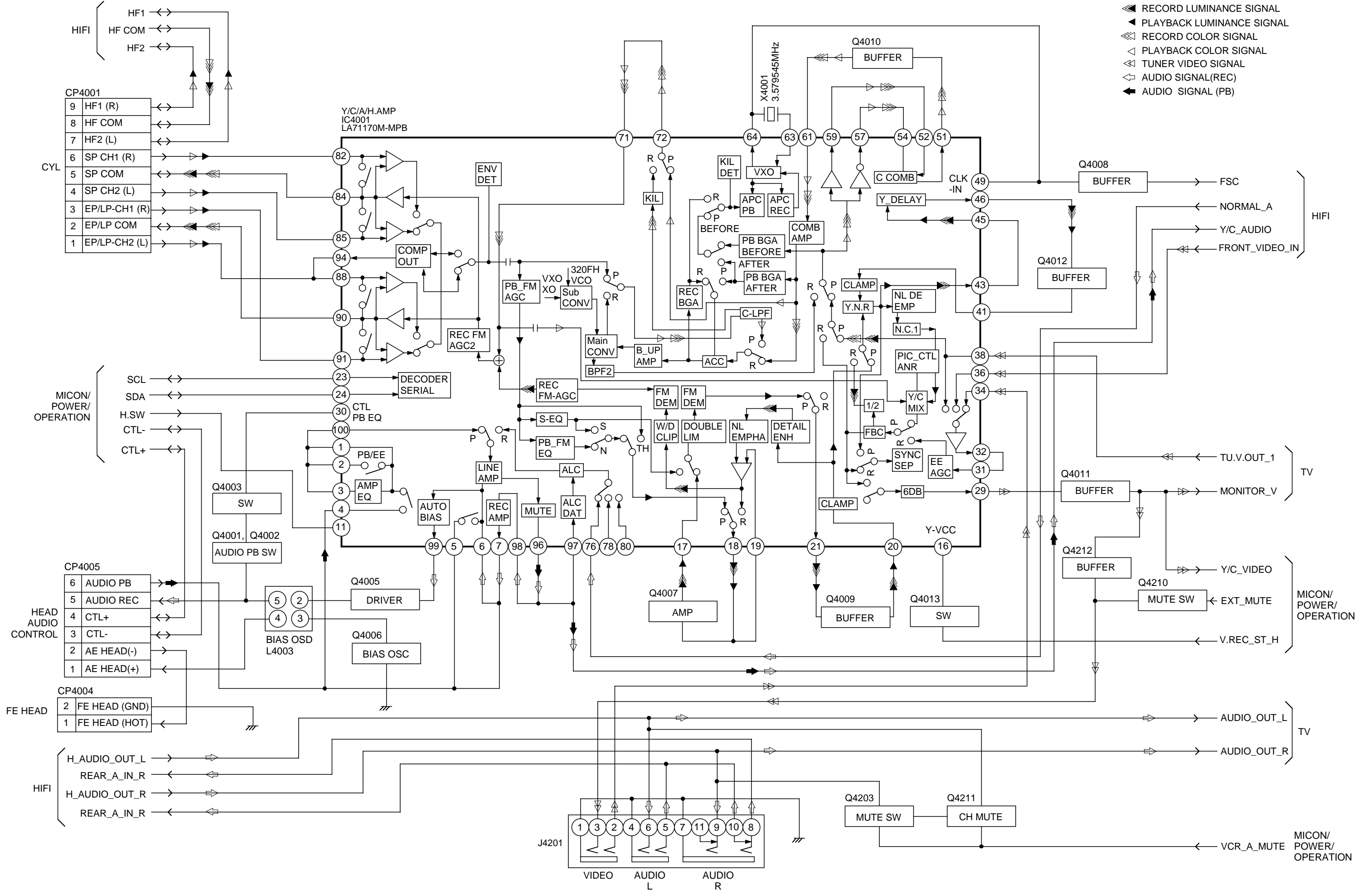
GP1S566

# TV BLOCK DIAGRAM

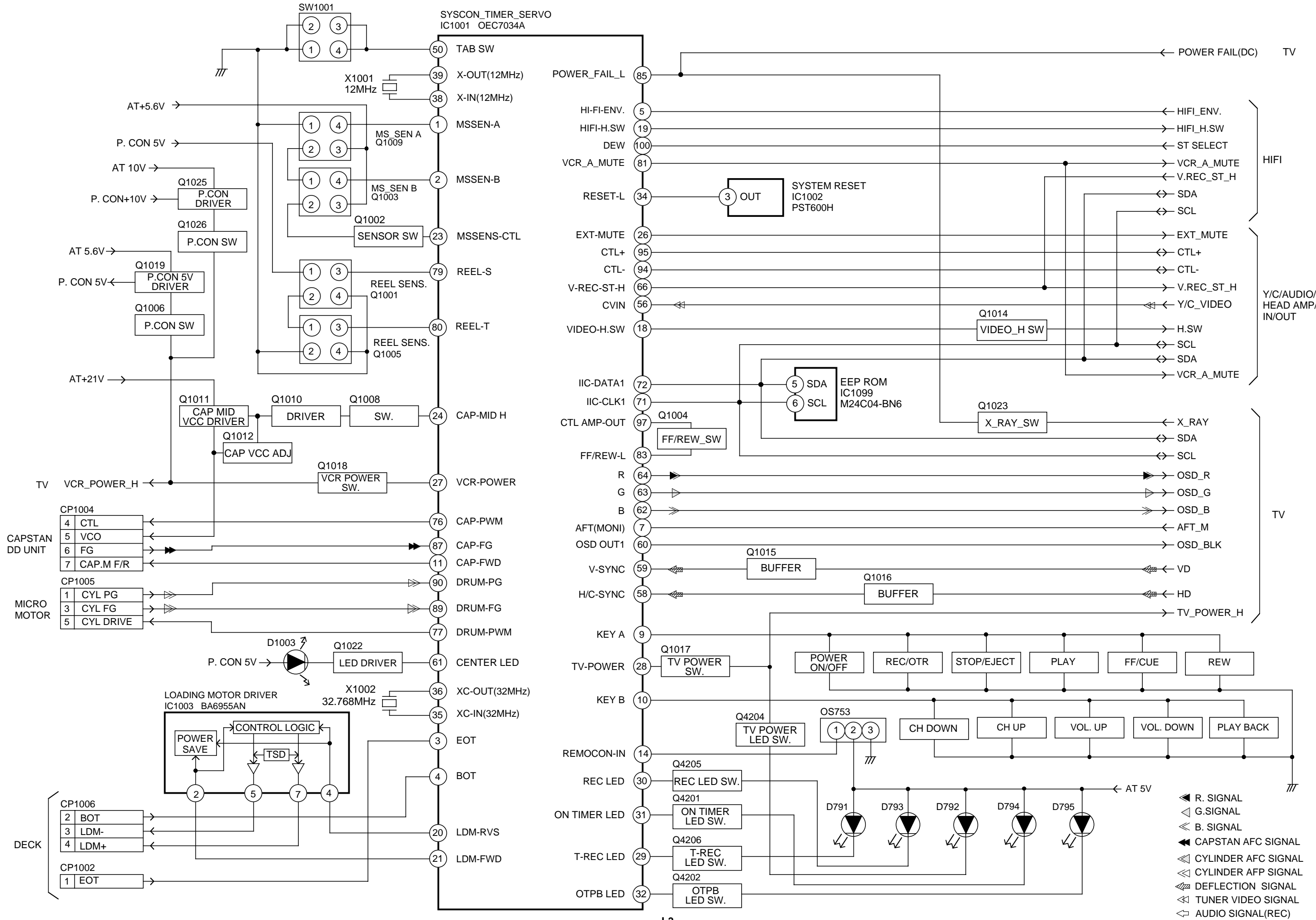
- ◀ R. SIGNAL
- ◀ G. SIGNAL
- ◀ B. SIGNAL
- ◀ COLOR SIGNAL
- ◀ LUMINANCE SIGNAL
- ◀ TUNER VIDEO SIGNAL
- ◀ AUDIO SIGNAL
- ◀ DEFLECTION SIGNAL



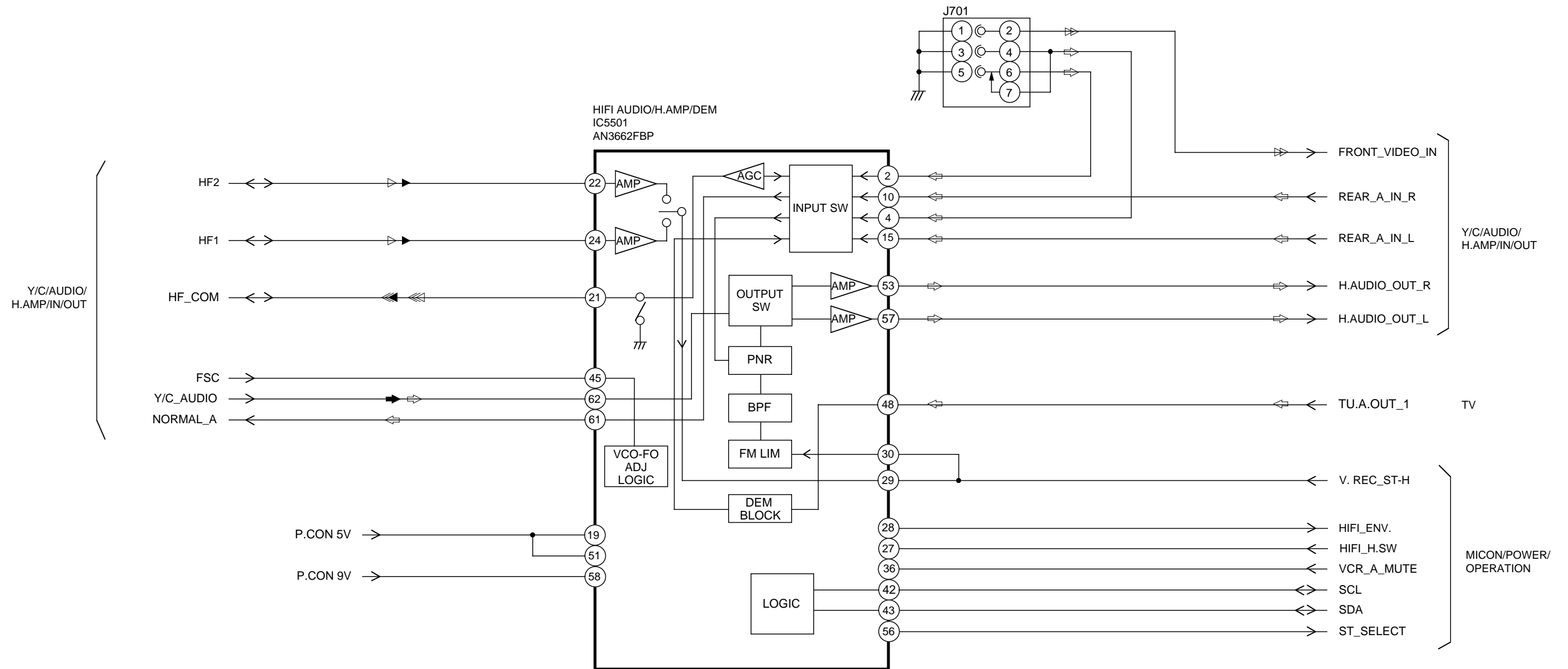
# Y/C/AUDIO/HEAD AMP/IN/OUT BLOCK DIAGRAM



# MICON/POWER/OPERATION BLOCK DIAGRAM



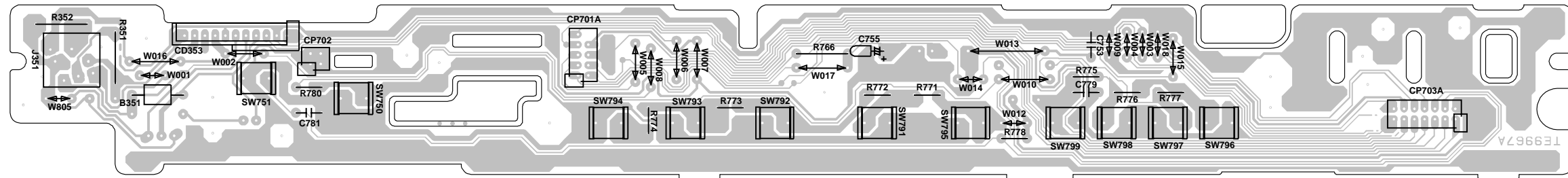
# HIFI BLOCK DIAGRAM



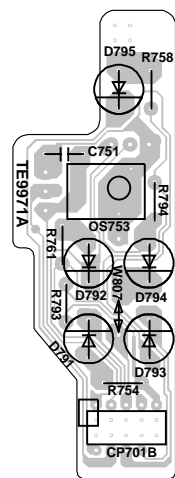
- ◄ RECORD LUMINANCE SIGNAL
- ▶ PLAYBACK LUMINANCE SIGNAL
- ◄ RECORD COLOR SIGNAL
- ▶ PLAYBACK COLOR SIGNAL
- ◄ TUNER VIDEO SIGNAL
- ◄ AUDIO SIGNAL(REC)
- ▶ AUDIO SIGNAL (PB)

# PRINTED CIRCUIT BOARDS

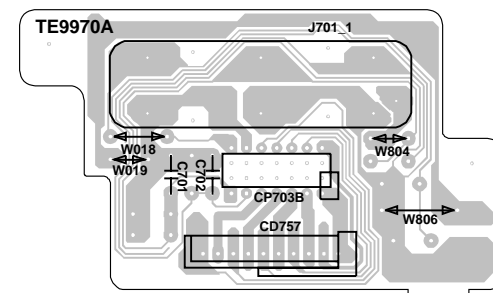
## OPERATION



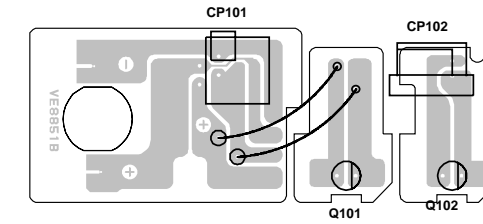
## LED



## AV

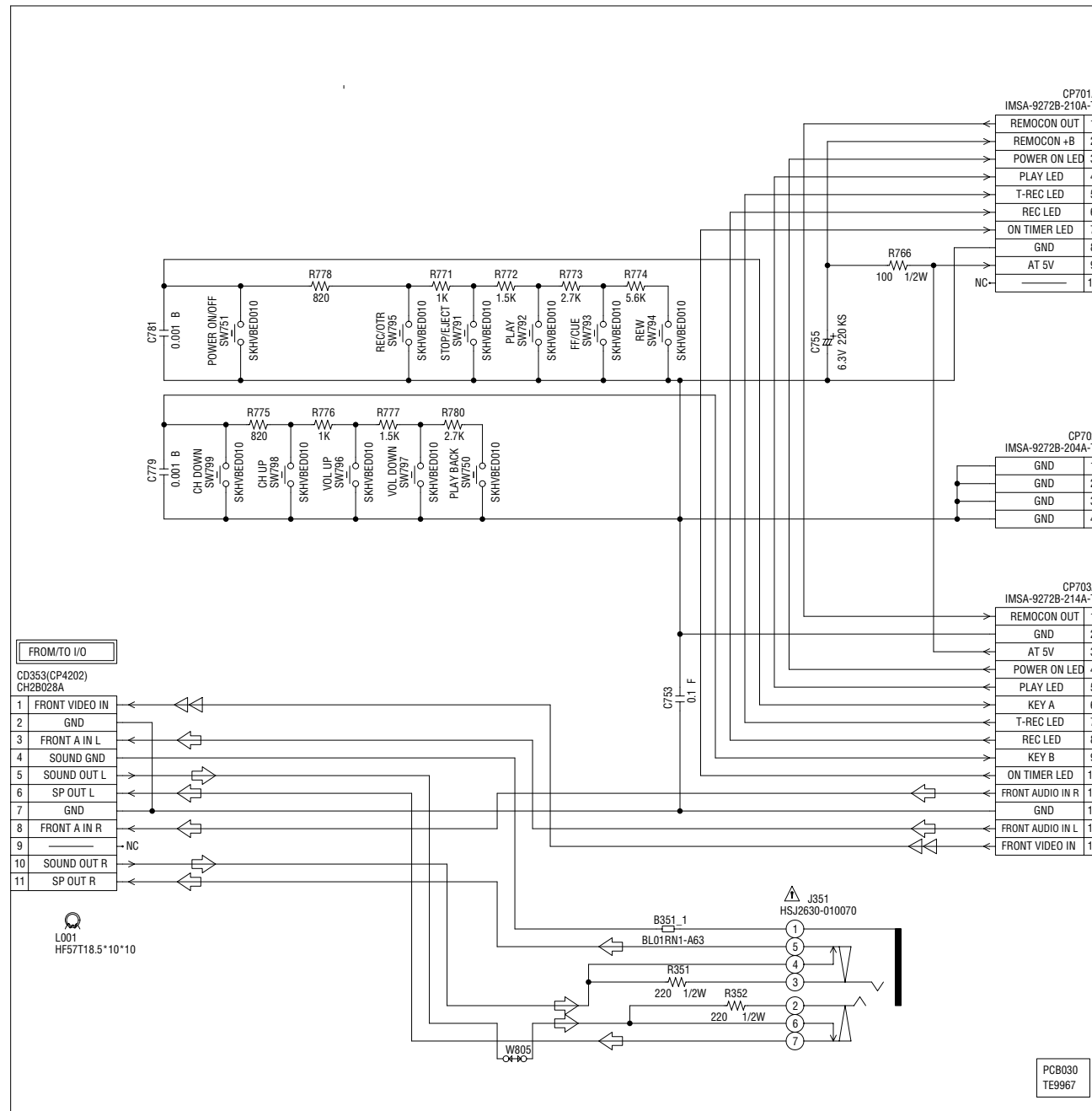


## DECK



# OPERATION SCHEMATIC DIAGRAM

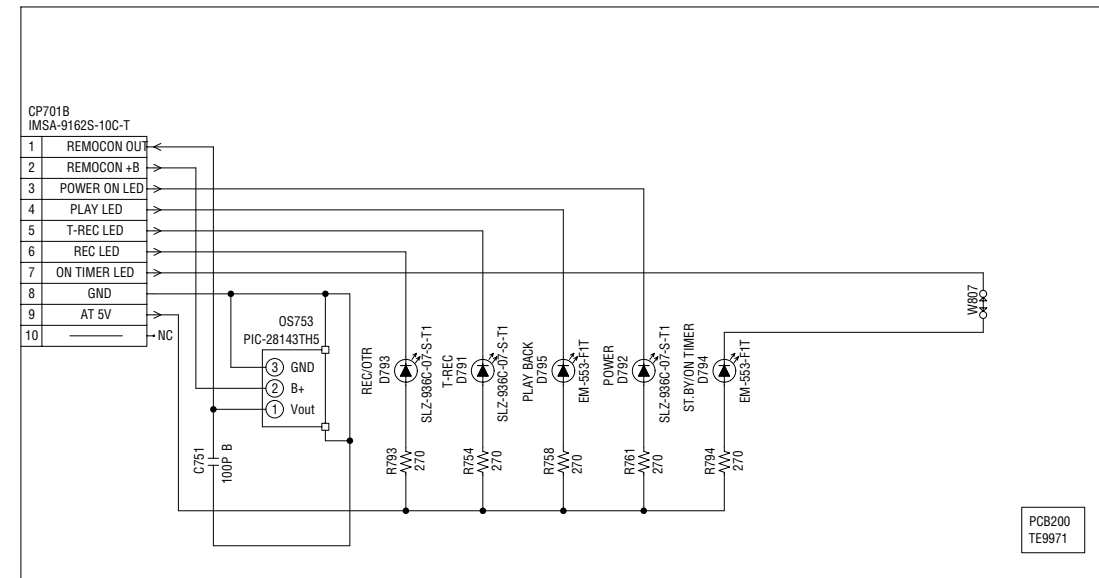
(OPERATION PCB)



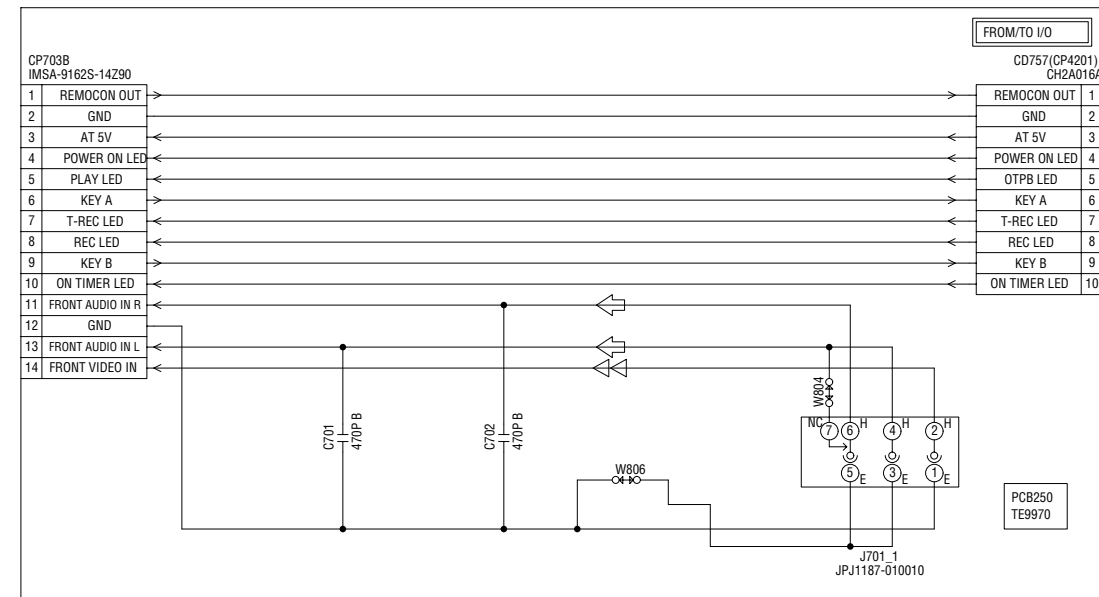
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY  $\Delta$  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

(LED PCB)



(AV PCB)

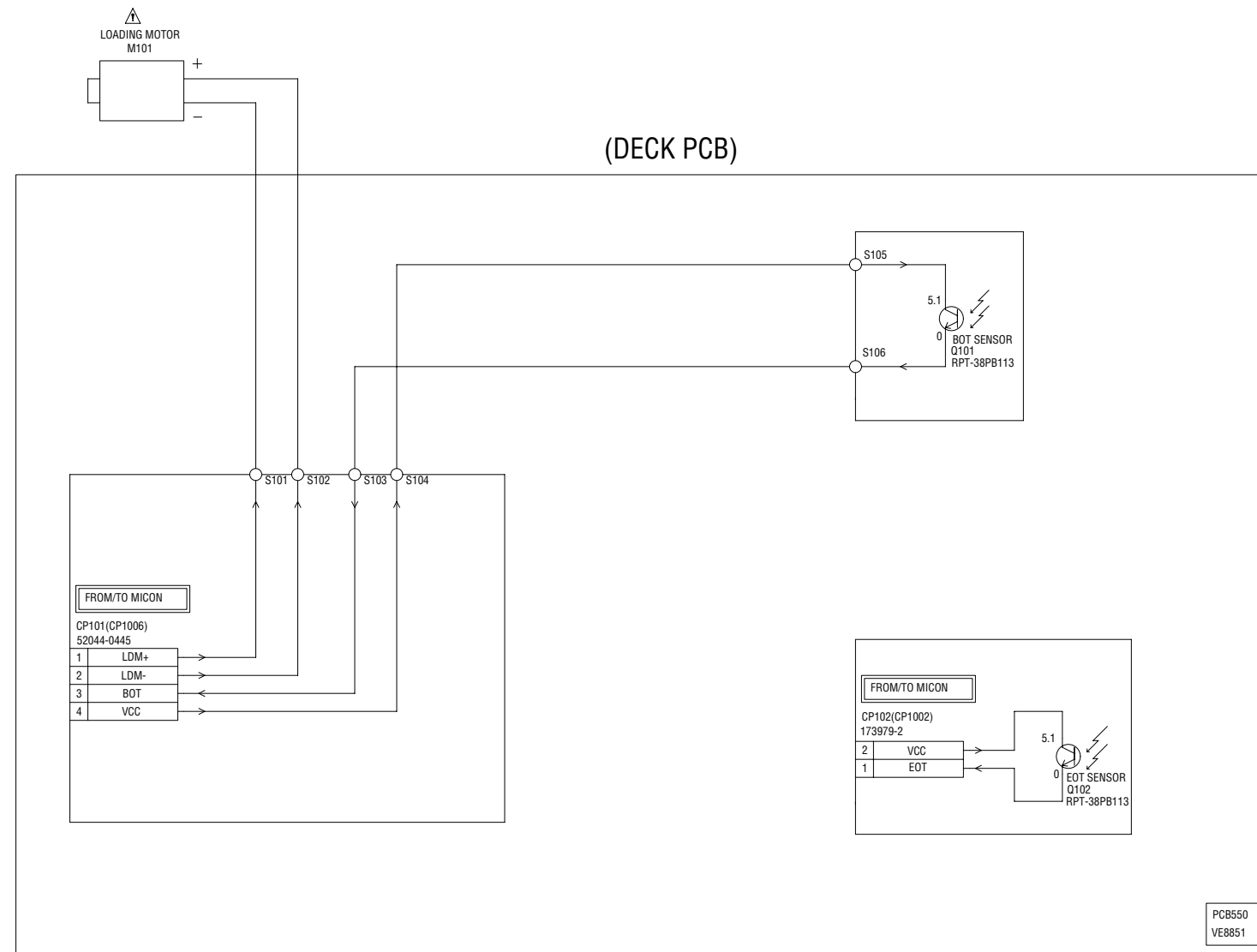


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

$\triangleleft$  TUNER VIDEO SIGNAL  
 $\rightarrow$  AUDIO SIGNAL



# DECK SCHEMATIC DIAGRAM



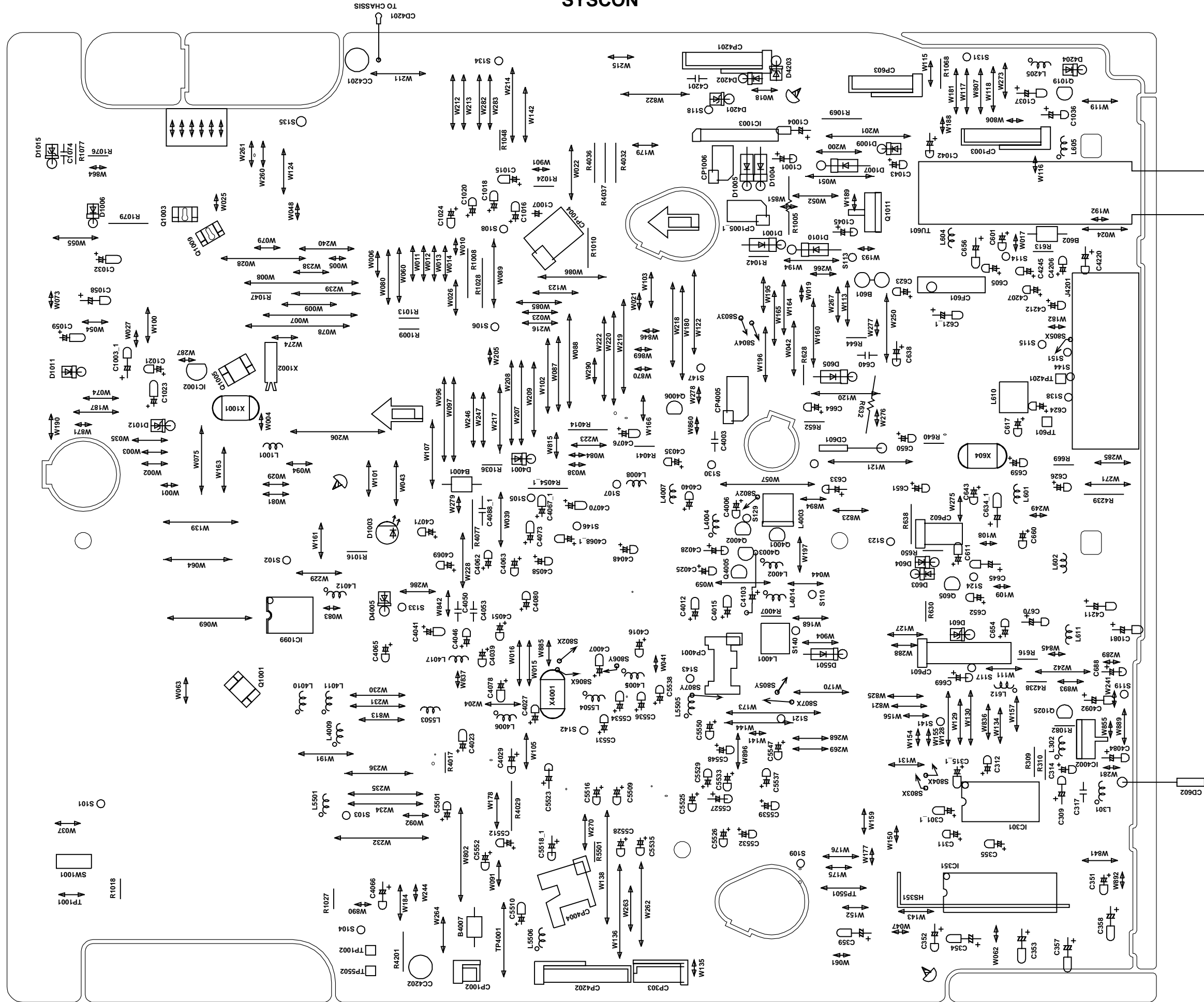
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

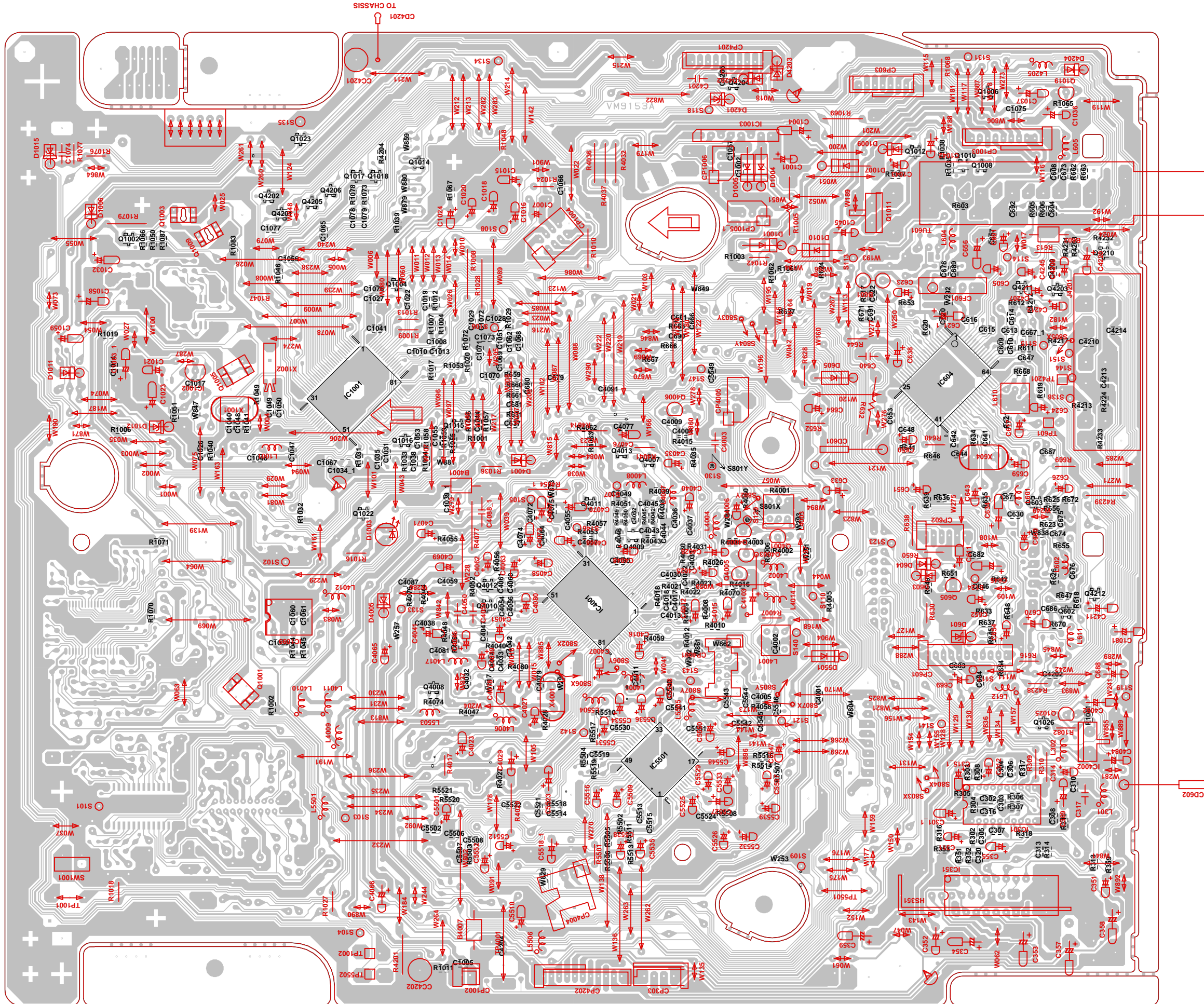


# PRINTED CIRCUIT BOARDS SYSCON

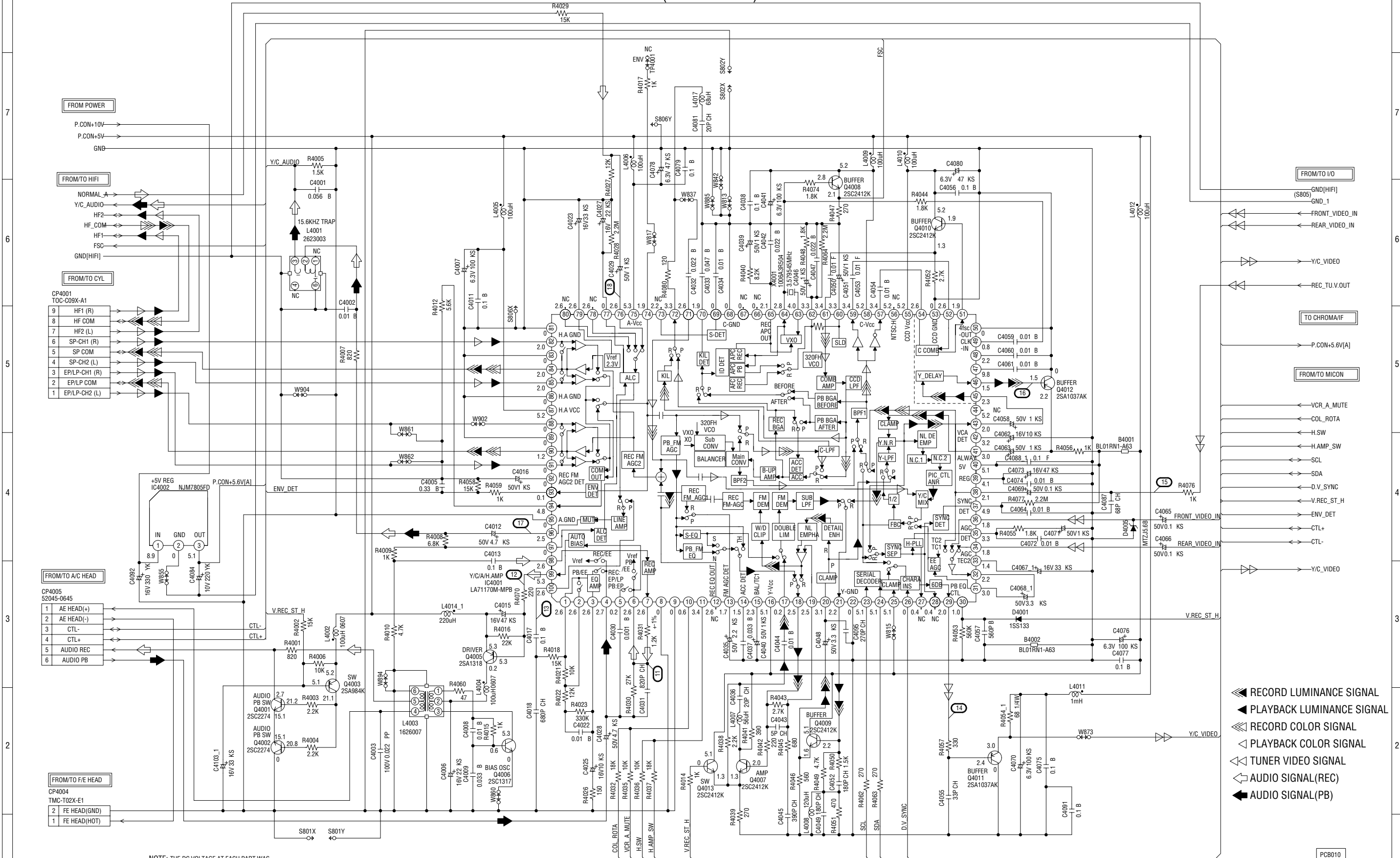




# PRINTED CIRCUIT BOARDS SYSCON



# Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM (SYSCON PCB)

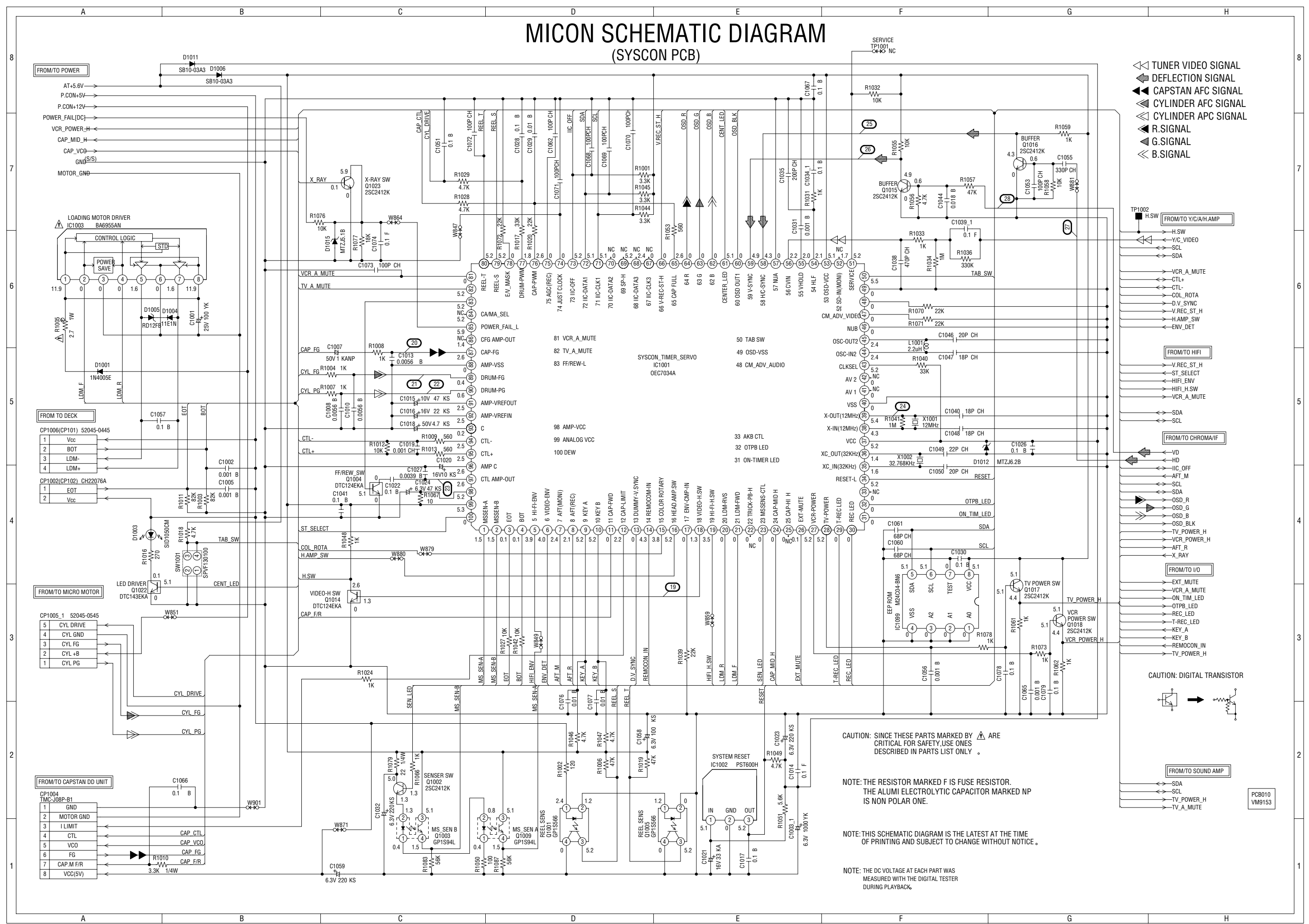


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PC8010  
VM9153

# MICON SCHEMATIC DIAGRAM (SYSCON PCB)

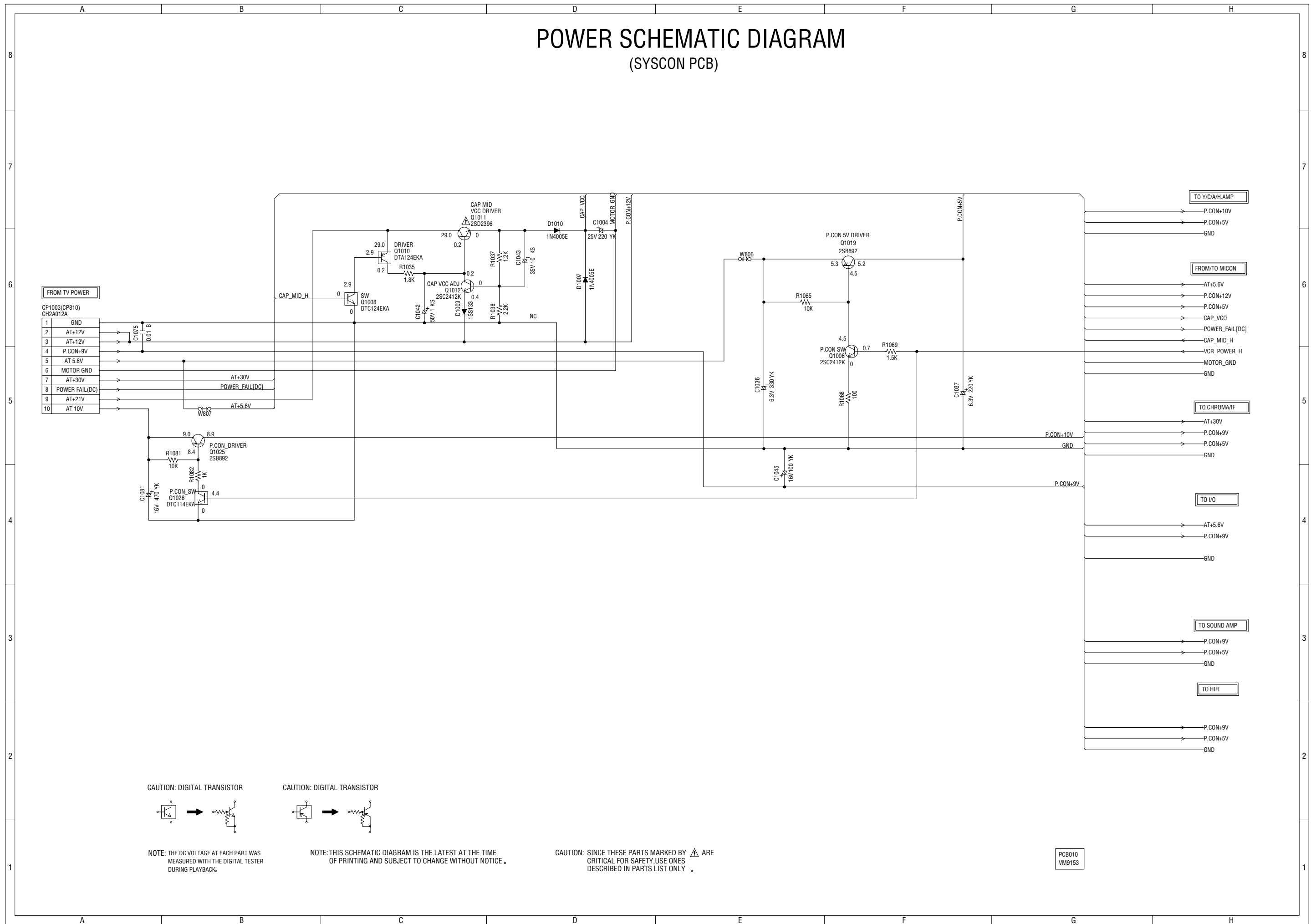


- ◁ TUNER VIDEO SIGNAL
- ◁ DEFLECTION SIGNAL
- ◁ CAPSTAN AFC SIGNAL
- ◁ CYLINDER AFC SIGNAL
- ◁ CYLINDER APC SIGNAL
- ◁ R.SIGNAL
- ◁ G.SIGNAL
- ◁ B.SIGNAL

- FROM/TO Y/C/A/H.AMP
  - H.SW
  - Y/C.VIDEO
  - SCL
  - SDA
  - VCR\_A\_MUTE
  - CTL+
  - CTL-
  - COL\_ROT
  - D.V\_SYNC
  - V\_REC\_ST\_H
  - H.AMP\_SW
  - ENV\_DET
- FROM/TO HI-FI
  - V\_REC\_ST\_H
  - ST\_SELECT
  - HI-FI\_ENV
  - HI-FI\_H\_SW
  - VCR\_A\_MUTE
  - SDA
  - SCL
- FROM/TO CHROMA/IF
  - VD
  - HD
  - IIC\_OFF
  - AFT\_M
  - SCL
  - SDA
  - OSD\_R
  - OSD\_G
  - OSD\_B
  - OSD\_BLK
  - TV\_POWER\_H
  - VCR\_POWER\_H
  - AFT\_R
  - X\_RAY
- FROM/TO I/O
  - EXT\_MUTE
  - VCR\_A\_MUTE
  - ON\_TIM\_LED
  - OTPB\_LED
  - REC\_LED
  - T\_REC\_LED
  - KEY\_A
  - KEY\_B
  - REMOCON\_IN
  - TV\_POWER\_H
- FROM/TO SOUND AMP
  - SDA
  - SCL
  - TV\_POWER\_H
  - TV\_A\_MUTE

PCB010  
VM9153

# POWER SCHEMATIC DIAGRAM (SYSCON PCB)



**FROM TV POWER**

1	GND
2	AT+12V
3	AT+12V
4	P.CON+9V
5	AT 5.6V
6	MOTOR GND
7	AT+30V
8	POWER FAIL(DC)
9	AT+21V
10	AT 10V

**TO Y/C/A/H AMP**

**FROM/TO MICON**

**TO CHROMA/IF**

**TO I/O**

**TO SOUND AMP**

**TO HIFI**

CAUTION: DIGITAL TRANSISTOR



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

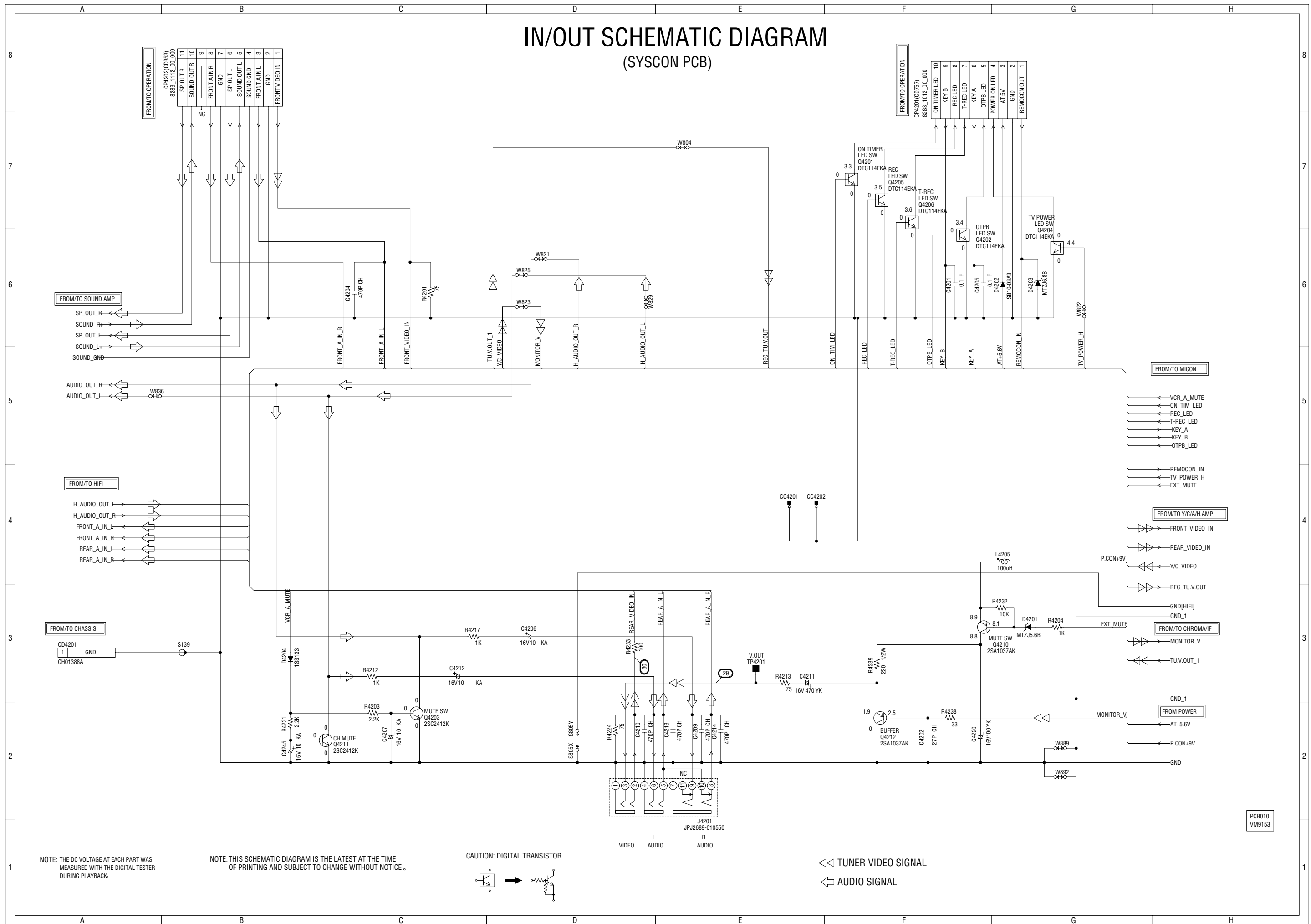


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY  $\Delta$  ARE CRITICAL FOR SAFETY USE ONES DESCRIBED IN PARTS LIST ONLY.

PCB010  
VM9153

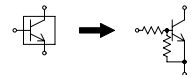
# IN/OUT SCHEMATIC DIAGRAM (SYSCON PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



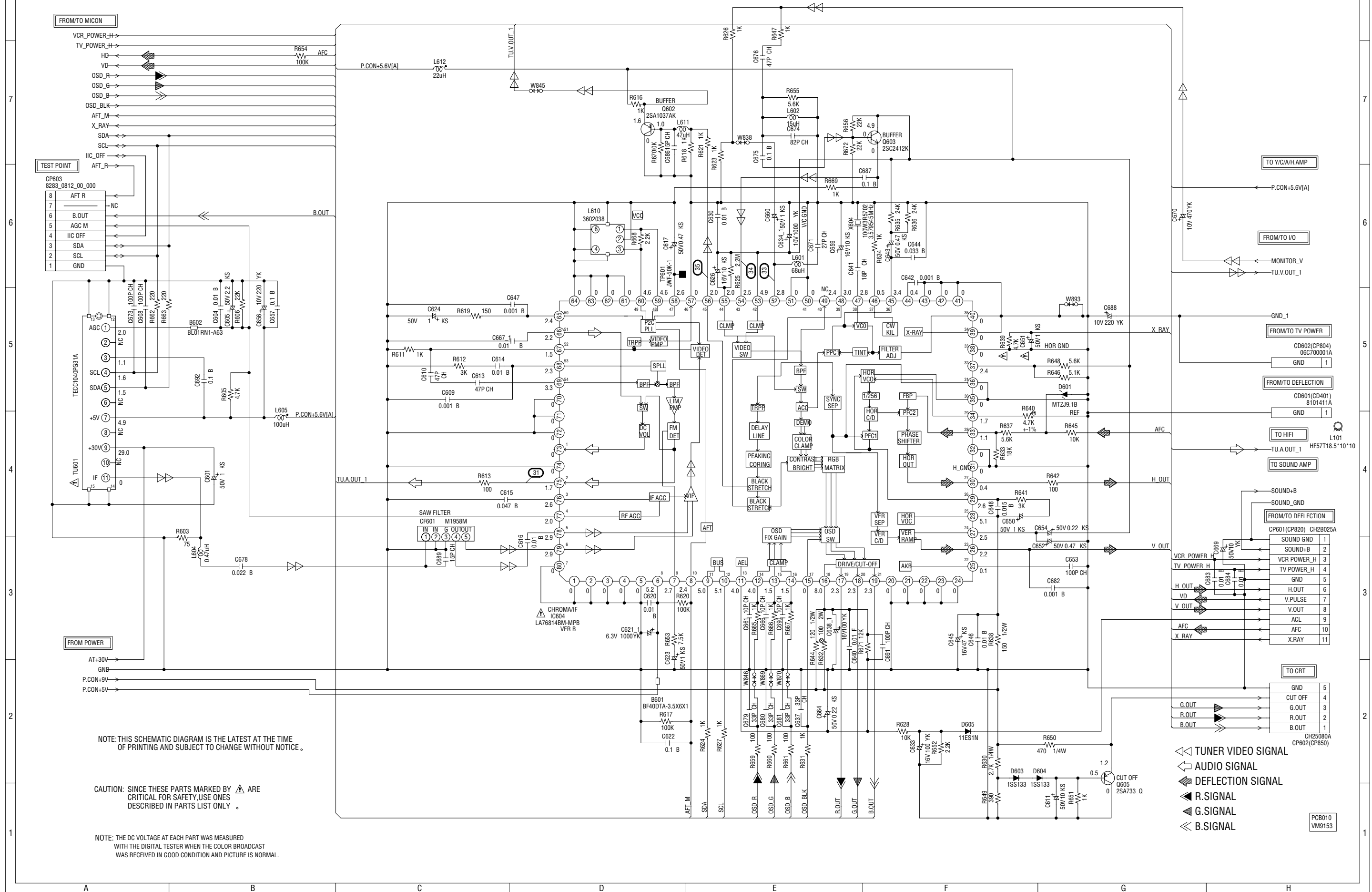
◁ TUNER VIDEO SIGNAL

⇐ AUDIO SIGNAL

PCB010  
VM9153



# CHROMA/IF SCHEMATIC DIAGRAM (SYSCON PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY  $\triangle$  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

- $\triangle$  TUNER VIDEO SIGNAL
- $\square$  AUDIO SIGNAL
- $\blacktriangle$  DEFLECTION SIGNAL
- $\blacktriangle$  R.SIGNAL
- $\blacktriangle$  G.SIGNAL
- $\blacktriangle$  B.SIGNAL

CP603	8283_0812_00_000
8	AFT R
7	NC
6	B.OUT
5	AGC M
4	IIC OFF
3	SDA
2	SCL
1	GND

CD602(CP804)	06C700001A
GND	1
CD601(CD401)	8101411A
GND	1

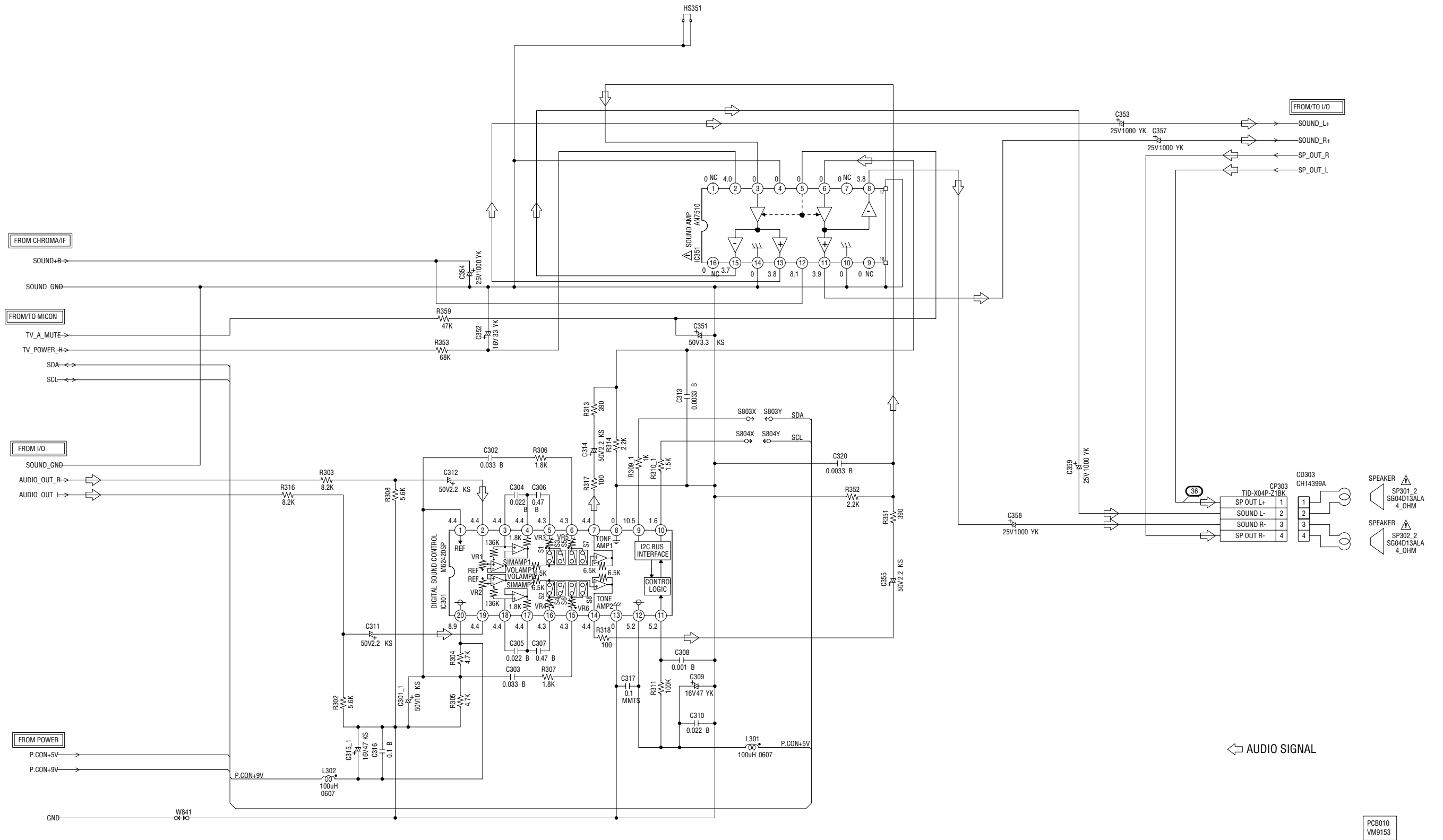
HF57T18.5"10"110	L101
TO SOUND AMP	

CP601(CP820)	CH28025A
1	SOUND GND
2	SOUND+B
3	VCR POWER_H
4	TV POWER_H
5	GND
6	H.OUT
7	V.PULSE
8	V.OUT
9	ACL
10	AFC
11	X.RAY

CH25080A	CP602(CP850)
5	GND
4	CUT OFF
3	G.OUT
2	R.OUT
1	B.OUT

PCB010  
VM9153

# SOUND AMP SCHEMATIC DIAGRAM (SYSCON PCB)



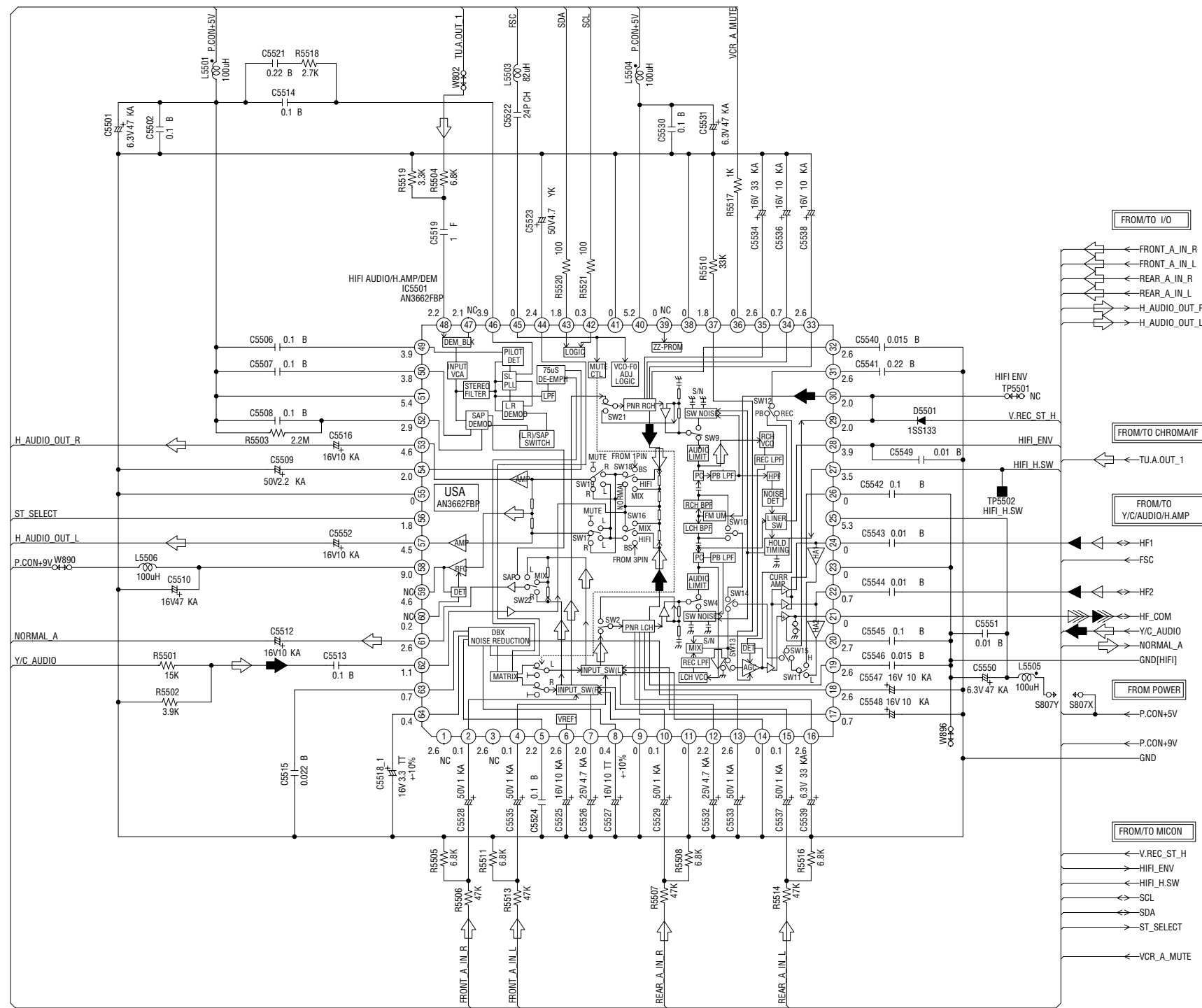
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

# HIFI SCHEMATIC DIAGRAM

## (SYSCON PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

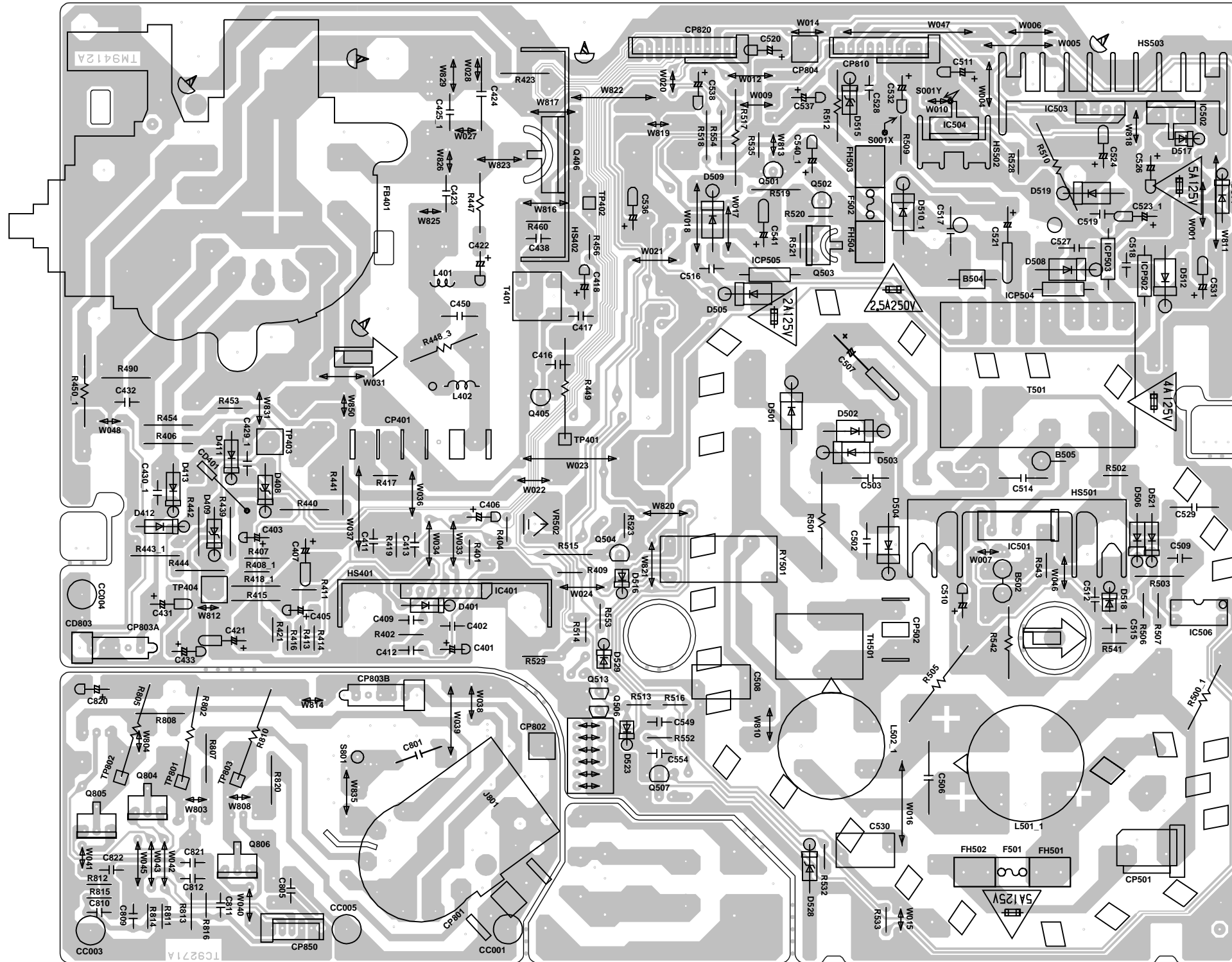
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

- ◁ AUDIO SIGNAL (REC)
- ▶ AUDIO SIGNAL (PB)
- ◀ RECORD LUMINANCE SIGNAL
- ▶ PLAYBACK LUMINANCE SIGNAL
- ◀ RECORD COLOR SIGNAL
- ▶ PLAYBACK COLOR SIGNAL

PCB010  
VM9153

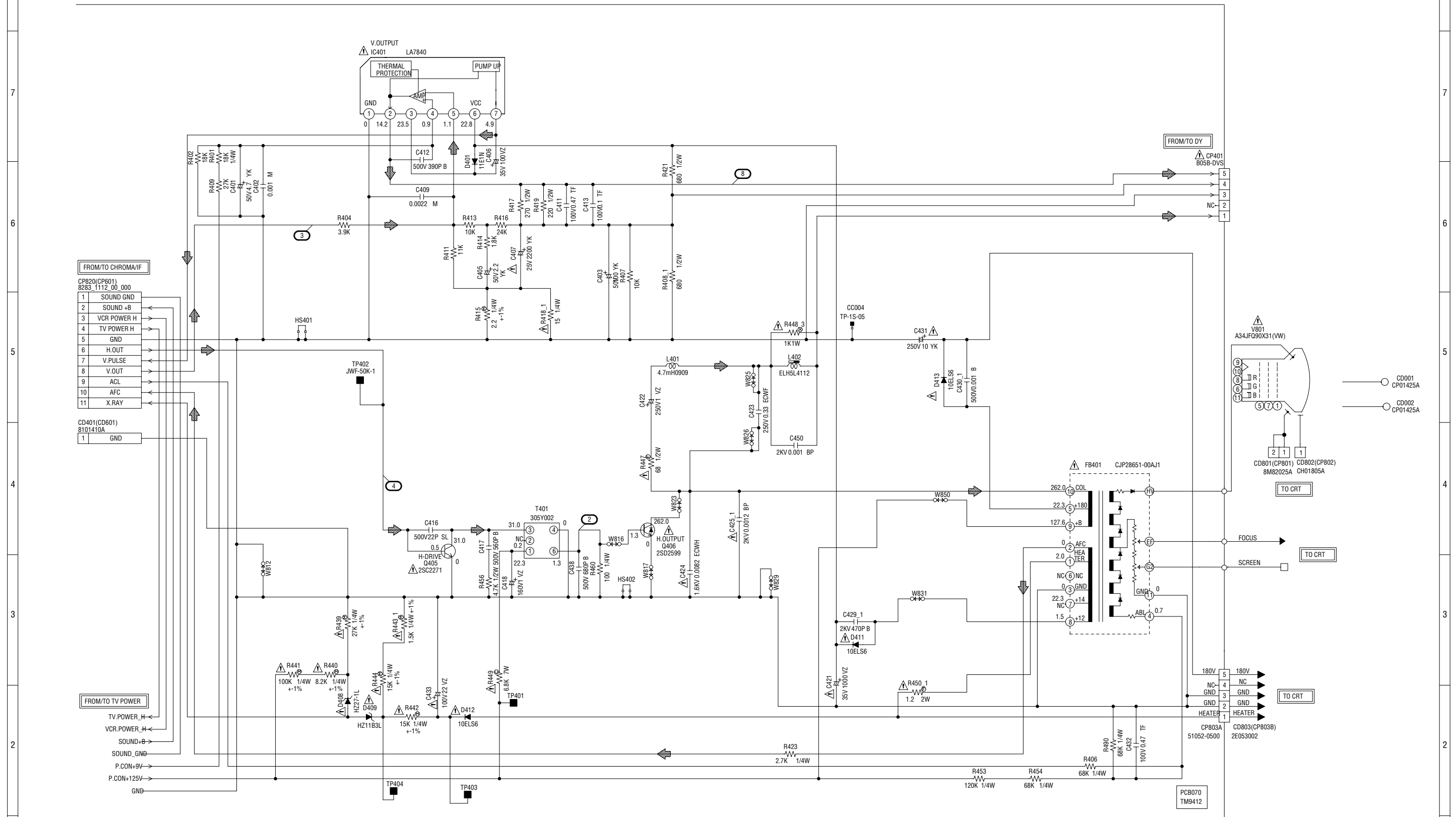
# PRINTED CIRCUIT BOARDS

## MAIN/CRT



# DEFLECTION SCHEMATIC DIAGRAM

(MAIN PCB)



FROM/TO CHROMA/IF

1	SOUND GND
2	SOUND +B
3	VCR POWER H
4	TV POWER H
5	GND
6	H.OUT
7	V.PULSE
8	V.OUT
9	ACL
10	AFC
11	X.RAY

CD401(CD601)  
8101410A

1	GND
---	-----

FROM/TO TV POWER

1	TV.POWER_H
2	VCR.POWER_H
3	SOUND+B
4	SOUND_GND
5	P.CON+9V
6	P.CON+125V
7	GND

FROM/TO DY

5	CP401
4	B05B-DVS
3	NC
2	NC
1	NC

TO CRT

1	CD801(CP801)
2	8M82025A
3	CD802(CP802)
4	CH01805A

TO CRT

5	180V
4	NC
3	GND
2	GND
1	HEATER

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY  $\Delta$  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

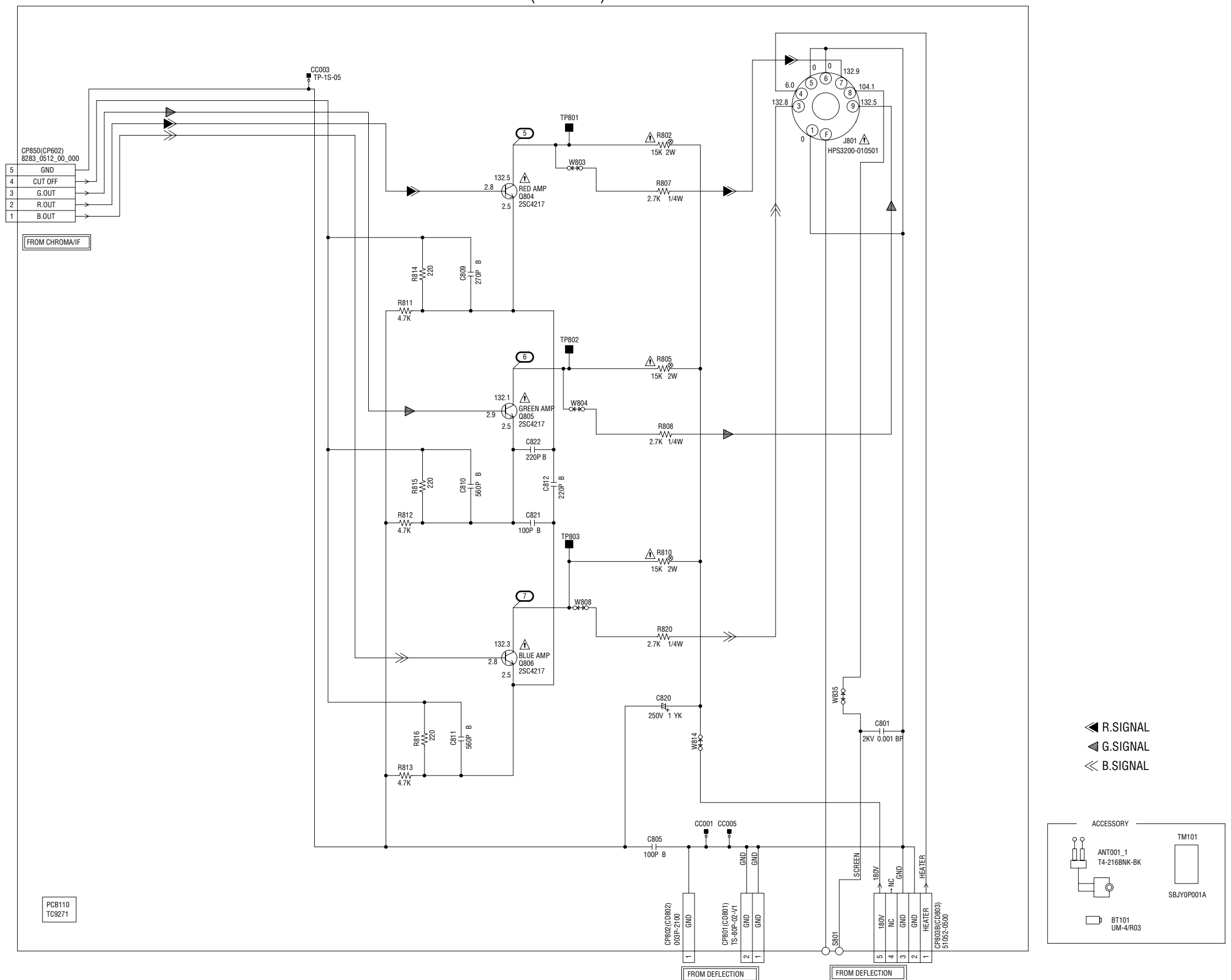
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

DEFLECTION SIGNAL



# CRT SCHEMATIC DIAGRAM

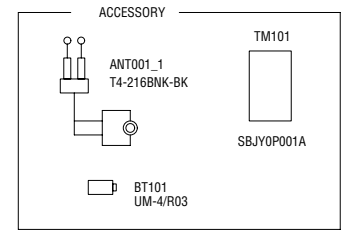
## (CRT PCB)



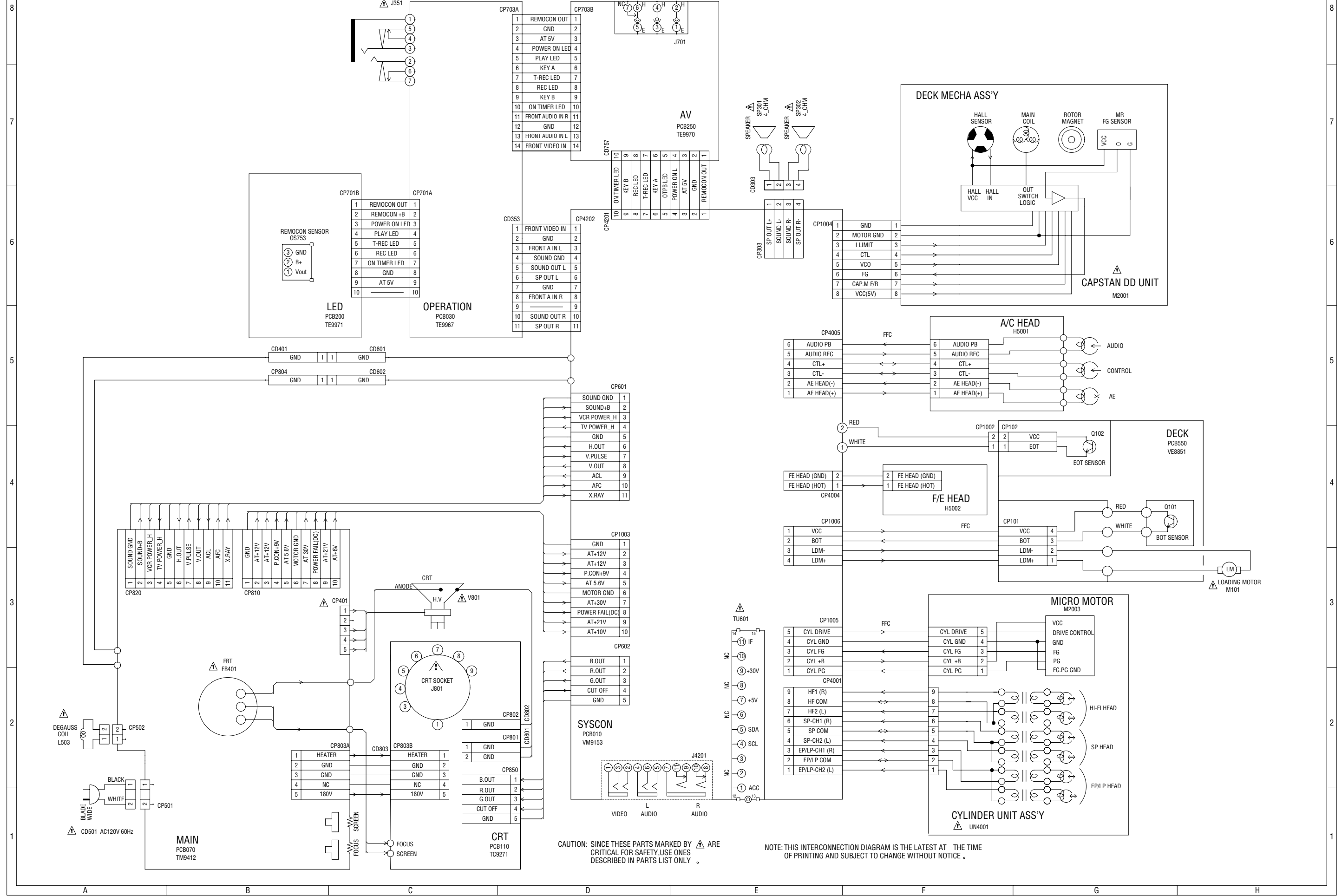
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.



# INTERCONNECTION DIAGRAM



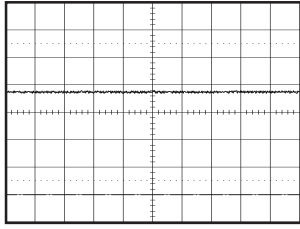
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

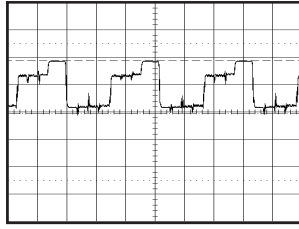


## WAVEFORMS

### TV POWER

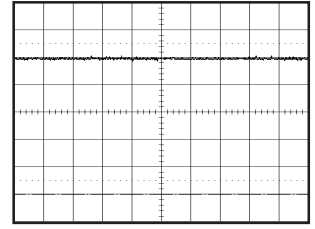


① 5.0V 0.1ms/div



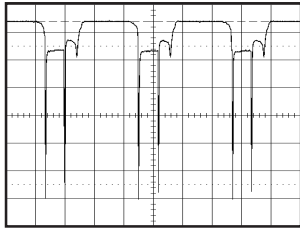
⑥ 50.0V 20μs/div

### Y/C/AUDIO/HEAD AMP

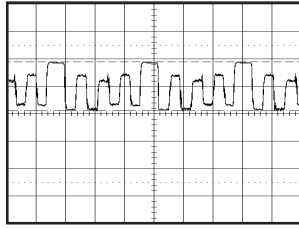


⑪ PB  
0.5V 0.5ms/div

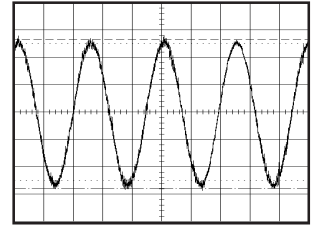
### DEFLECTION



② 2.0V 20μs/div

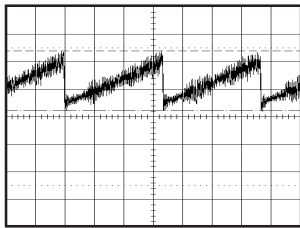


⑦ 50.0V 20μs/div

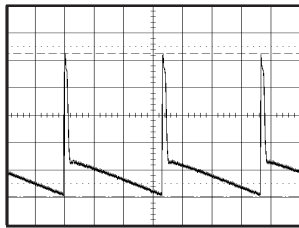


⑫ PB  
100mV 1ms/div

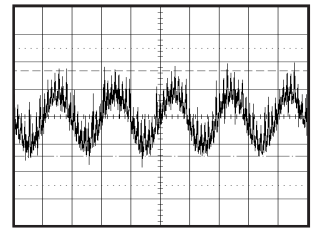
### DEFLECTION



③ 0.5V 5ms/div

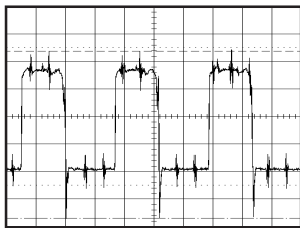


⑧ 10.0V 5ms/div

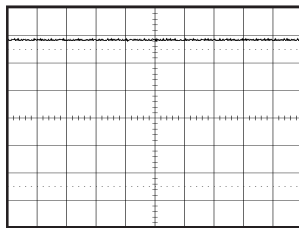


⑬ PB  
50mV 0.5ms/div

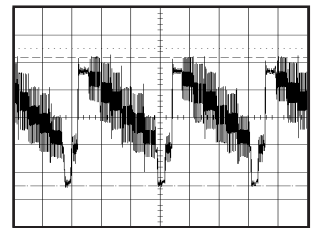
### TV POWER



④ 200mV 20μs/div

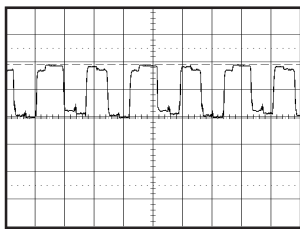


⑨ 20.0V 0.1ms/div

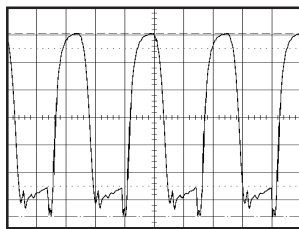


⑭ PB  
0.5V 20μs/div

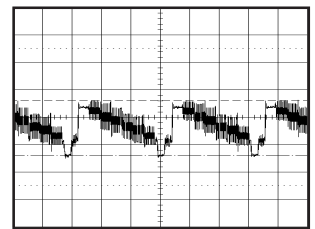
### CRT



⑤ 50.0V 20μs/div



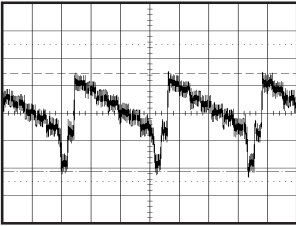
⑩ 0.5V 5μs/div



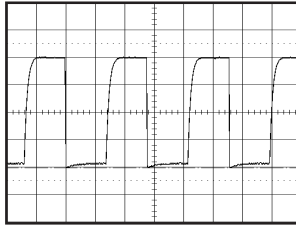
⑮ POWER ON  
0.5V 20μs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

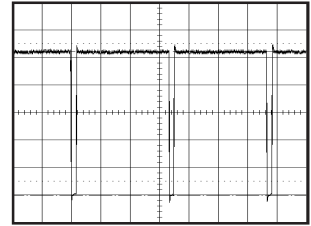
## WAVEFORMS



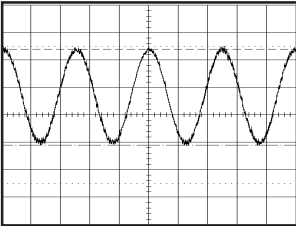
①⑥ REC  
100mV 20 $\mu$ s/div



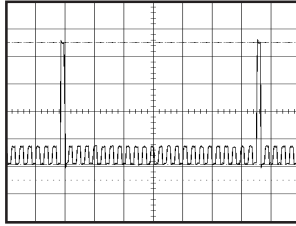
②① PB  
1.0V 0.5ms/div



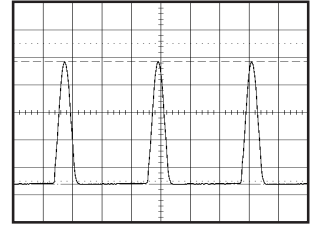
②⑥ POWER ON  
0.5V 10ms/div



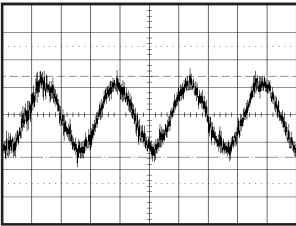
①⑦ POWER ON  
0.5V 1ms/div



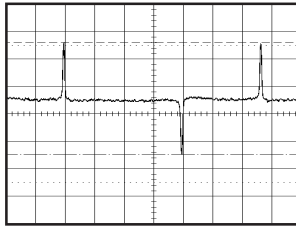
②② PB  
1.0V 5ms/div



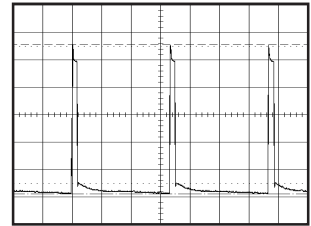
②⑦ POWER ON  
20.0V 20 $\mu$ s/div



①⑧ POWER ON  
50mV 1ms/div

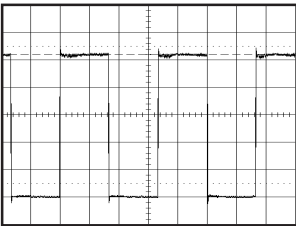


②③ PB  
1.0V 5ms/div

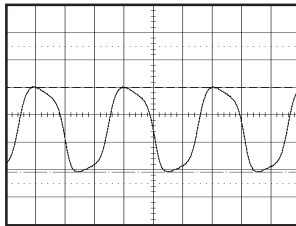


②⑧ POWER ON  
5.0V 5ms/div

### MICON

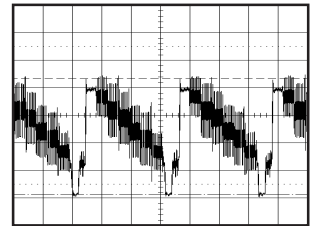


①⑨ PB  
1.0V 10ms/div

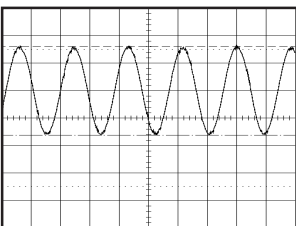


②④ POWER ON  
1.0V 10 $\mu$ s/div

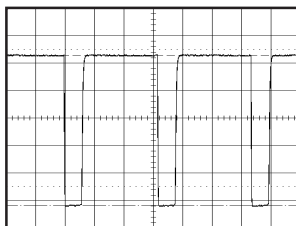
### IN/OUT



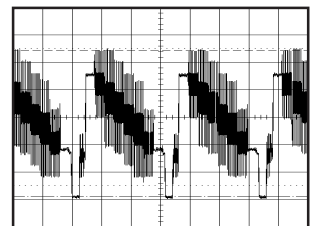
②⑨ POWER ON  
0.5V 20 $\mu$ s/div



②⑩ PB  
0.5V 0.5ms/div



②⑤ POWER ON  
1.0V 20 $\mu$ s/div

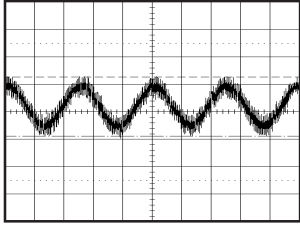


③⑩ POWER ON  
200mV 20 $\mu$ s/div

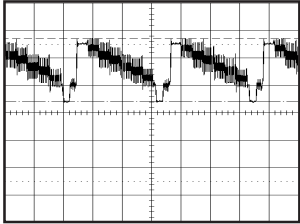
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

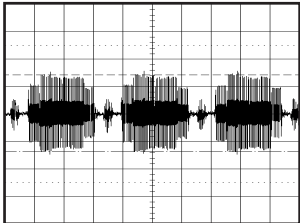
## CHROMA/IF



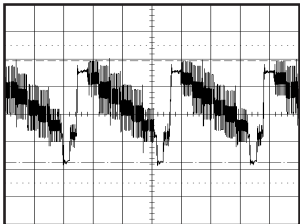
③① POWER ON  
0.5V 1ms/div



③③ POWER ON  
0.5V 20 $\mu$ s/div

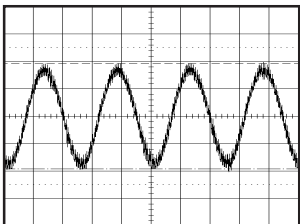


③④ POWER ON  
200mV 20 $\mu$ s/div



③⑤ POWER ON  
10.5V 20 $\mu$ s/div

## SOUND AMP

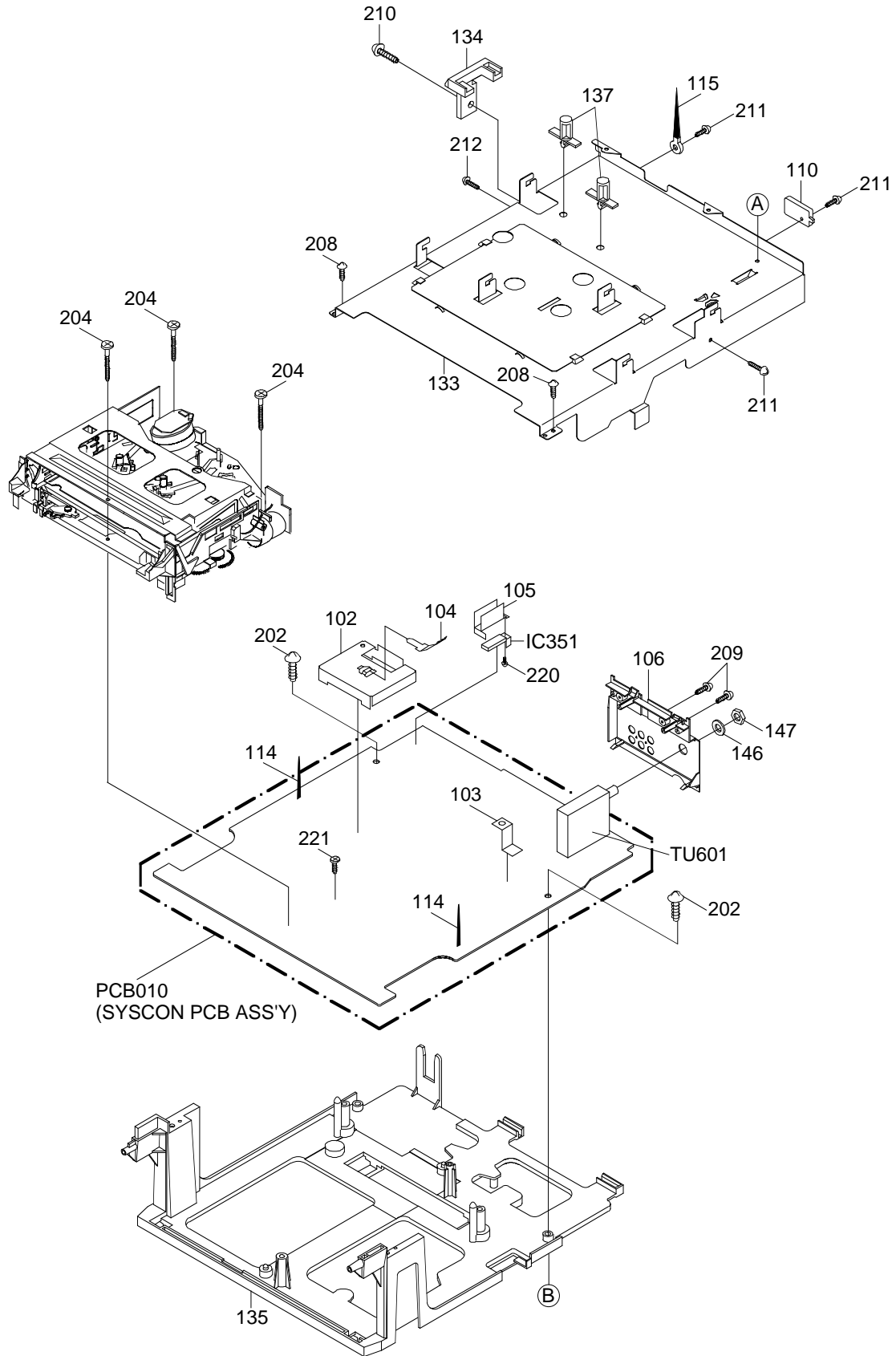


③⑥ POWER ON  
200mV 1ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.



# MECHANICAL EXPLODED VIEW



## MECHANICAL REPLACEMENT PARTS LIST

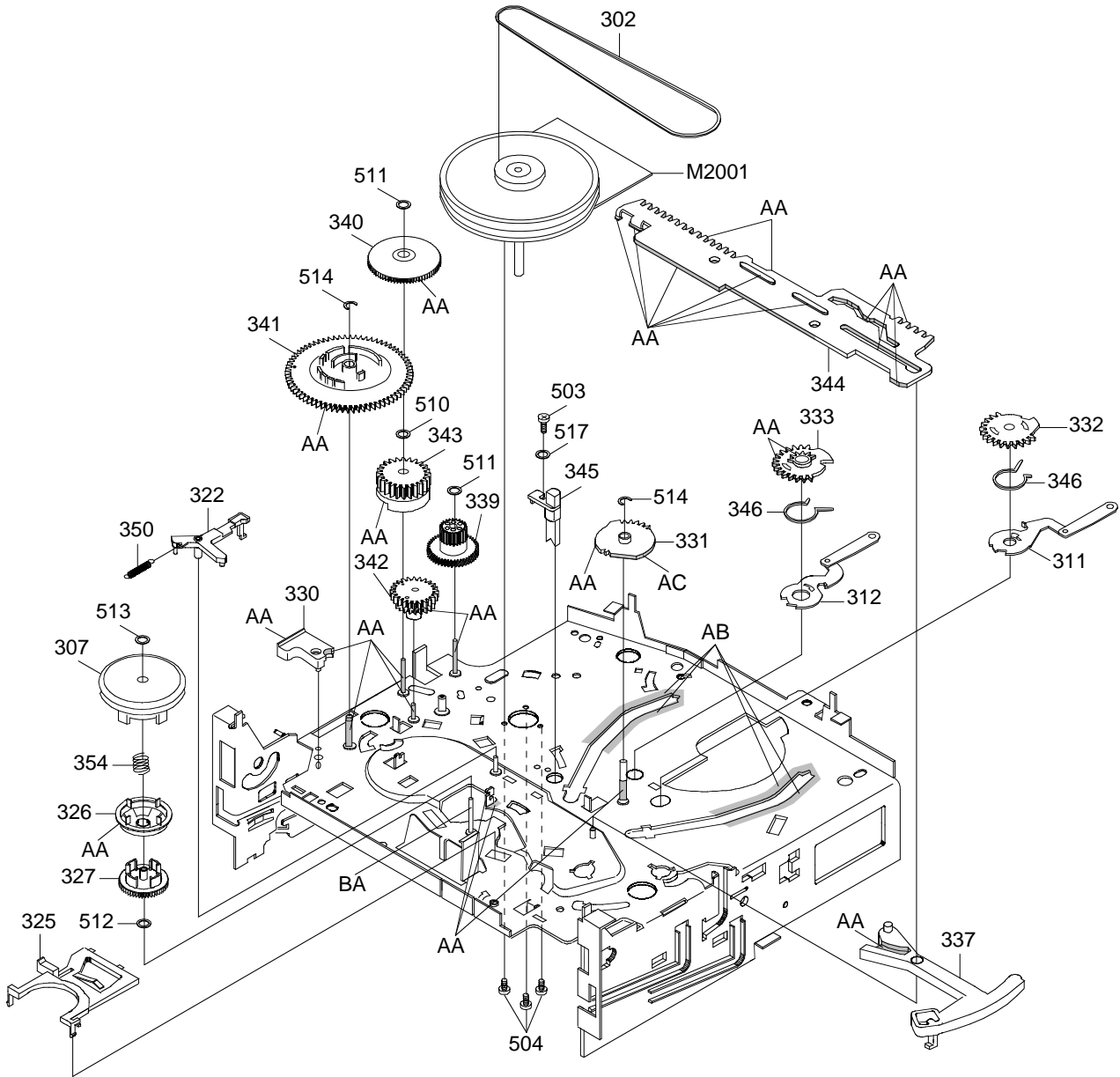
REF. NO.	PART NO.	DESCRIPTION	Q'TY	REF. NO.	PART NO.	DESCRIPTION	Q'TY
101	S5-480-1Q7-200	CABI,FRONT ASS'Y	1	136	S6-9WS-A00-030	WASHER,CRT	4
102	-----	SHIELD,CASE HEAD AMP	1	137	S9-0PS-701-000	PUSH SPACER	2
103	-----	PLATE,EARTH-SYSCON	1	138	-----	SHEET,RATING	1
104	-----	SPRING,EARTH HEAD AMP	1	139	-----	LABEL,POP	1
105	-----	HEAT SINK	1				
106	S7-1WP-A02-310	PLATE,JACK	1	140	-----	CUSHION	2
107	-----	HEAT SINK	1	141	-----	SHEET,CRT SERVICEMAN	1
108	-----	HEAT SINK	1	142	S4-1WU-A00-120	SPRING,EARTH	2
109	-----	HEAT SINK	1	143	-----	SHEET,CRT SUPPORT (A)	4
				144	S6-1WP-A01-450	HOLDER,FBT	1
110	S6-1WP-A01-610	HOLDER,BACK	1	145	-----	SHEET,CRT SUPPORT (D)	4
111	-----	HEAT SINK	2	146	S2-A97-A40-770	WASHER 9.7x14xT0.7	1
112	-----	METAL SPACER	3	147	S3-004-952-070	NUT,(VOLUME NUT 3/8 INCH)	1
113	-----	RUBBER,SILCON	2	148	S5-480-1Q7-400	CABI,BACK ASSY	1
114	-----	COATING CLIP	6				
115	-----	CORD CLIP UL CO.	3	201	S1-172-40C-540	SCREW,TAPPING(B0) BIND 4x35	2
116	-----	CABI,FRONT	1	202	S1-175-40B-040	SCREW,TAP(B0)TRUSS 4-20	2
117	S1-2WP-J05-990	PLATE,FRONT	1	203	S1-175-40A-640	TAP(B0)4-16	2
118	S1-2WP-J06-000	FLAP	1	204	S1-171-40A-240	TAP(B0)V+4-12	3
119	S1-3WP-A00-740	GLASS,LED	1	205	87-761-097-410	SCREW/WASHER(B) M3x10	1
				206	S1-106-30A-240	SCREW,TAP(P)3-12	9
120	S1-3WP-A00-750	GUIDE,REMOCON	1	207	S1-106-30A-040	UIT+3-10	5
121	S1-4WS-B00-080	GRILL,SPEAKER	1	208	S1-106-308-040	TAP(P)3-8	10
122	S1-4WS-B00-090	GRILL,SPEAKER(R)	1	209	S1-102-30A-020	VT2+3-10	2
123	S2-344-900-070	BADGE,BRAND	1				
124	S3-5WP-D05-430	BUTTON,OTPB	1	210	S1-076-308-040	SCREW,TAP	1
125	S3-5WP-J01-040	BUTTON,FRAME	1	211	S1-076-306-040	BVTT+3-6	3
126	S3-5WP-J01-050	BUTTON,REC/OTR	1	212	87-743-073-010	VT2+2.6-6	1
127	S4-3WK-A00-320	SPR,FLAP	1	213	87-753-095-410	SCREW,TT(B)BRAZIER 3-8	6
128	S5-3WS-A01-230	PLATE,SPEAKER	2	214	S1-0A1-30B-040	SCREW,WASHER(A) M3x20	3
129	S0-2WP-A05-770	CABI,BACK	1	215	87-761-095-410	SCREW/WASHER(B) M3x8	2
				216	S1-0A1-30A-040	SCREW,WASHER(A) M3x10	3
130	-----	FELT SHEET	2	217	S1-0A1-308-040	WASHER(A)M3-8	1
131	-----	FELT SHEET	1	218	S1-0A1-306-040	SCREW,WASHER(A)M3-6	2
132	-----	FELT SHEET	1	219	S1-11J-50D-040	SCREW TAP(A)5-40	4
133	-----	PLATE,DECK SHIELD	1				
134	S6-1WP-A01-510	HOLDER,M/PCB	1	220	87-751-035-410	SCREW,PAN M2x6	1
135	S6-1WP-A01-570	HOLDER,DECK	1	221	87-751-095-410	SCREW,TAP TITE(P) FLAT 3x8	1

## ACCESSORY REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'TY
1	S2-5C1-080-270	ANTENNA,ROD	1
2	S7-660-CK0-100	TRANSMITTER	1
3	S5-480-101-000	INSTRUC,BOOK	1



# CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	G-488M	AB
	FL-721	AC
OIL	KYODO OIL SLIDAS No. 150	BA

**NOTE:** Applying positions AA, AB, AC and BA for the grease or oil are displayed for this section. Check if the correct grease or oil is applied for each position.



# CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REF. NO.	PART NO.	DESCRIPTION	Q'TY
301	S5-OA5-000-220	AHC ASS'Y	1	360	S5-OP9-006-860	TAPE GUIDE R	1
302	S5-OP2-002-700	BELT,CAPSTAN	1	361	S5-OP9-006-870	COVER,SENSOR L	1
303	S5-OP9-006-890	LEVER,REC	1	362	S5-OP9-006-880	LEVER,FLAP	1
304	S5-OP5-000-830	BASE,AC HEAD	1	363	S5-OP9-006-900	CASS HOLDER	1
305	S5-OP8-003-240	SPRING,AC HEAD	1	364	S5-OP9-006-910	LOCKER,L	1
306	S5-OA0-002-970	MAIN CHASSIS ASS'Y	1	365	S5-OP9-006-920	LOCKER,R	1
307	S5-OA2-000-810	CLUTCH ASS'Y X	1	366	S5-OP9-006-940	SPRING,PACK	2
308	S5-OA2-000-730	ARM,IDLER ASS'Y	1	367	S5-OP9-006-950	BRACKET,TOP	1
309	S5-OP6-005-530	ARM,S-S BRAKE	1	368	-----	SPRING,CASS EARTH	1
				369	S5-OP6-005-400	DRIVER,WORM	1
310	S5-OA2-000-760	T REEL ASS'Y	1				
311	S5-OA3-000-610	LOADING ARM S ASS'Y	1	370	S5-OP4-004-850	O-RING	2
312	S5-OA3-000-620	LOADING ARM T ASS'Y	1	371	S5-OP6-005-410	WORM	1
313	S5-OA4-001-020	G-ROLLER ASS'Y	2	372	S5-OP6-005-420	BRACKET,MOTOR	1
314	S5-OA4-001-710	BASE,INCL S ASS'Y	1	373	-----	SHIELD,DRUM MOTOR3	1
315	S5-OA4-001-720	BASE,INCL T ASS'Y	1	374	S5-OPA-A03-330	COLLAR SHIELD	1
316	S5-OA4-001-850	P5-2 ARM ASS'Y	1	375	S5-OP0-004-670	COVER,DECK	1
317	S5-OA4-001-740	PINCH ROLLER BLOCK	1				
318	S5-OA4-001-750	TENSION ARM ASS'Y	1	501	87-654-075-410	SCREW,TAP 2.6-10	1
319	S5-OA4-001-760	TENSION BAND ASS'Y	1	502	S1-072-268-040	VT2+2.6-8	3
				503	87-743-073-010	VT2+2.6-6	3
320	S5-OA4-001-780	PINCH ROLLER LEVER ASS'Y	1	504	87-743-073-410	SCREW,TAP 2.6-6	3
321	S5-OA6-001-820	BRAKE T ASS'Y	1	505	S1-0A1-268-040	SCREW/WASHER(A)M2.6-8	3
322	S5-OA6-001-830	CAP BRAKE ARM ASS'Y	1	506	S1-0B1-264-040	SCREW/WASHER(B)M2.6-4	1
323	S5-OA9-002-130	LINK ASS'Y	1	507	87-261-035-410	SCREW,PAN M2-6	3
324	S5-OA9-002-160	LINK LEVER ASS'Y	1	508	87-261-032-410	SCREW,PAN M2-3	2
325	S5-OP2-002-610	LEVER,CLUTCH	1	509	87-258-091-010	U+M3-3	2
326	S5-OP2-002-620	RING,CLUTCH	1				
327	S5-OP2-002-630	GEAR,CLUTCH	1	510	S2-Q31-54C-5N0	POLY WASHER 3.1-5.4-0.25	1
328	S5-OP2-002-710	REEL,S	1	511	S2-P26-600-5N0	POLY,W(CUT)2.6-6-0.5	3
329	S5-OP2-002-730	STOPPER,REEL S	1	512	S2-Q26-471-3N0	POLY,W 2.6-4.7-0.13	3
				513	S2-P18-450-5N0	POLY,WASHER(CUT)1.8-4.5-0.5	1
330	S5-OP2-002-740	SPACER,LINK LEVER	1	514	S3-ETW-300-000	E-RING 3	2
331	S5-OP3-001-780	GEAR,MAIN LOADING	1	515	S1-0A1-235-040	SEMS A M2.3-5	1
332	S5-OP3-001-790	GEAR,LOADING S	1	516	S1-0A1-23A-040	SCREW/WASHER(A)M2.3-10	1
333	S5-OP3-001-800	GEAR,LOADING T	1	517	S2-A26-750-510	WASHER 2.6x7.5xT0.5	1
334	S5-OP3-001-850	HOLDER,LOADING GEAR	1				
335	S5-OP4-004-720	ADJUST,TENSION	1	CP101	-----	CONN,PCB SIDE	1
336	S5-OP4-004-920	HOLDER,TENSION	1	CP102	-----	CONN,PCB SIDE 173979-2	1
337	S5-OP4-004-740	LEVER,TENSION	1				
338	S5-OP4-004-750	COVER,P4	1	H5001	S5-23D-910-340	HEAD(AUDIO CONTROL)	1
339	S5-OP6-005-430	GEAR,JOINT	1	H5002	S5-43D-020-130	HEAD(FULL ERASE)	1
340	S5-OP6-005-440	GEAR,MIDDLE	1	⚠ M101	S5-96P-780-010	MOTOR(LOADING)	1
341	S5-OP6-005-450	CAM,MAIN	1	⚠ M2001	S5-94J-980-070	CAPSTAN DD UNIT	1
342	S5-OP6-005-460	CAM,P5	1	M2003	S5-89V-110-060	MICRO MOTOR	1
343	S5-OP6-005-470	CAM,PINCH ROLLER	1				
344	S5-OP6-005-480	ROD,MAIN	1	PCB550	-----	DECK PCB ASS'Y	1
345	S5-OP7-000-350	REFLECTOR,LED	1				
346	S5-OP8-003-180	SPRING,LOADING GEAR	2	Q101	S0-007-003-200	PHOTO,TR RPT-38PB113	1
347	S5-OP8-003-190	SPRING,P5	1	Q102	S0-007-003-200	PHOTO,TR RPT-38PB113	1
348	S5-OP8-003-210	SPRING,BRAKE T	1				
349	S5-OP8-003-220	SPRING,TENSION	1	⚠ UN4001	S5-480-1B5-000	CYLINDER UNIT ASS'Y	1
350	S5-OP8-003-230	SPRING,CAP BRAKE	1				
351	S5-OP8-003-250	SPRING,LOCKER	2				
352	S5-OP8-003-260	SPRING,LINK	1				
353	S5-OP8-003-280	SPRING,DAMPER	1				
354	S5-OP8-003-300	SPRING,RING	1				
355	S5-OP8-003-320	SPRING,S-S BRAKE	1				
356	S5-OP9-006-800	OPENER,CASS	1				
357	S5-OP9-006-830	CASS SIDE L	1				
358	S5-OP9-006-840	CASS SIDE R	1				
359	S5-OP9-007-020	TAPE GUIDE L(P,R)	1				

# ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
		<b>SYSCON PCB ASS'Y</b>			<b>*** CAPACITORS ***</b>
		*** RESISTORS ***			
R632	S3-X28-A10-1J0	RES,M/O 100-2W	C4012	87-010-404-080	CAP,E 4.7-50V
R640	S4-X5T-647-2F0	RES,MF 4.7K-1/6W	C4015	87-010-380-080	CAP,E 47-16V
△ R1005	S6-150-12R-7J0	RES,FUSE 2.7-1W	C4016	87-010-401-080	CAP,E 1-50V
		*** CAPACITORS ***	C4023	87-010-265-080	CAP,E 33-16V
			C4025	87-010-378-080	CAP,E 10-16V
			C4027	87-010-379-080	CAP,E 22-16V
			C4028	87-010-404-080	CAP,E 4.7-50V
			C4029	87-010-401-080	CAP,E 1-50V
			C4035	87-016-634-080	CAP,E 2.2-50V
			C4039	87-010-401-080	CAP,E 1-50V
			C4040	87-010-401-080	CAP,E 1-50V
			C4041	87-015-677-080	CAP,E 100-6.3V
			C4046	87-010-401-080	CAP,E 1-50V
			C4048	87-010-403-080	CAP,E 3.3-50V
			C4051	87-010-401-080	CAP,E 1-50V
			C4058	87-010-401-080	CAP,E 1-50V
			C4062	87-010-378-080	CAP,E 10-16V
			C4063	87-010-401-080	CAP,E 1-50V
			C4065	87-010-067-010	CAP,E E 0.1-50V
			C4066	87-010-067-080	CAP,E 0.1-50V
			C4067	87-010-265-080	CAP,E 33-16V
			C4068	87-010-403-080	CAP,E 3.3-50V
			C4069	87-010-067-010	CAP,E 0.1-50V
			C4070	87-015-677-080	CAP,E 100-6.3V
			C4071	87-010-401-080	CAP,E 1-50V
			C4073	87-010-380-080	CAP,E 47-16V
			C4076	87-015-677-080	CAP,E 100-6.3V
			C4078	87-010-549-010	CAP,E 47-6.3V
			C4080	87-010-549-010	CAP,E 47-6.3V
			C4084	87-A10-189-040	CAP,E 220-10V
			C4092	87-016-576-080	CAP,E 330-16V
			C4103	87-016-626-080	CAP,E 33-16V
			C4206	87-015-075-040	CAP,E 10-16V
			C4207	87-015-075-040	CAP,E 10-16V
			C4211	87-010-235-080	CAP,E 470-16V
			C4212	87-015-075-040	CAP,E 10-16V
			C4220	87-010-112-080	CAP,E 100-16V
			C4245	87-015-075-040	CAP,E 10-16V
			C5501	87-010-549-010	CAP,E 47-6.3V
			C5509	87-010-402-080	CAP,E 2.2-50V
			C5510	87-010-380-080	CAP,E 47-16V
			C5512	87-015-075-040	CAP,E 10-16V
			C5516	87-015-075-040	CAP,E 10-16V
			C5518	87-016-301-080	CAP,TANTAL 3.3-16V
			C5523	87-016-636-080	CAP,E 4.7-50V
			C5525	87-015-075-040	CAP,E 10-16V
			C5526	87-016-334-080	CAP,E 4.7-25V
			C5527	87-016-302-080	CAP,TANTAL 10-16V
			C5528	87-015-695-080	CAP,E 1-50V
			C5529	87-015-695-080	CAP,E 1-50V
			C5531	87-010-549-010	CAP,E 47-6.3V
			C5532	87-016-334-080	CAP,E 4.7-25V
			C5533	87-015-695-080	CAP,E 1-50V
			C5534	87-015-683-080	CAP,E 33-16V
			C5535	87-015-695-080	CAP,E 1-50V
			C5536	87-015-075-040	CAP,E 10-16V
			C5537	87-015-695-080	CAP,E 1-50V
			C5538	87-015-075-040	CAP,E 10-16V
			C5539	S0-E7T-033-0M0	CAP,E 33-6.3V
			C5547	87-015-075-040	CAP,E 10-16V
			C5548	87-015-075-040	CAP,E 10-16V
			C5550	87-010-549-010	CAP,E 47-6.3V
			C5552	87-015-075-040	CAP,E 10-16V
					*** DIODES ***
			D601	87-A40-523-080	ZENER,MTZJ9.1B T-72
			D603	87-020-465-010	DIODE,1SS133T

# ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
*** DIODES ***			*** TRANSISTORS ***		
D604	87-020-465-010	DIODE,1SS133T	Q4010	89-324-122-080	TR,2SC2412KT
D605	S2-8T1-1ES-N10	DIODE,11ES1N-TA1B2	Q4011	89-110-372-080	TR,2SA1037AK
D1001	S2-LXE-658-000	DIODE,1N4005E-G23	Q4012	89-110-372-080	TR,2SA1037AK
D1003	S0-106-000-600	LED,SID1050CM	Q4013	89-324-122-080	TR,2SC2412KT
D1004	S2-8T1-1E1-N10	DIODE,11E1N-TA1B2	Q4201	87-026-235-010	TR,DTC114EK
D1005	S9-2T1-120-B00	ZENER,RD12FB-T7	Q4202	87-026-235-010	TR,DTC114EK
D1006	S2-3U1-003-A30	DIODE,SB10-03A3	Q4203	89-324-122-080	TR,2SC2412KT
D1007	S2-LXE-658-000	DIODE,1N4005E-G23	Q4204	87-026-235-010	TR,DTC114EK
D1009	87-020-465-010	DIODE,1SS133T	Q4205	87-026-235-010	TR,DTC114EK
D1010	S2-LXE-658-000	DIODE,1N4005E-G23	Q4206	87-026-235-010	TR,DTC114EK
D1011	S2-3U1-003-A30	DIODE,SB10-03A3	Q4210	89-110-372-080	TR,2SA1037AK
D1012	S9-7U0-6R2-1B0	ZENER,MTZJ6.2B T-77	Q4211	89-324-122-080	TR,2SC2412KT
D1015	87-070-136-080	ZENER,MTZJ5.1B T-77	Q4212	89-110-372-080	TR,2SA1037AK
D4001	87-020-465-010	DIODE,1SS133T			
D4005	87-017-931-010	ZENER,MTZJ5.6B			*** COILS ***
D4201	87-017-931-010	ZENER,MTZJ5.6B	B601	S2-46T-035-840	CORE,BEADS BF40DTA-3.5X6X1
D4202	S2-3U1-003-A30	DIODE,SB10-03A3	B602	S2-4AT-036-550	CORE,BEADS BL01RN1-A63T6
D4203	S9-7U0-6R8-1B0	ZENER,MTZJ6.8B T-77	B4001	S2-4AT-036-550	CORE,BEADS BL01RN1-A63T6
D4204	87-020-465-080	DIODE,1SS133T-77	B4002	S2-4AT-036-550	CORE,BEADS BL01RN1-A63T6
D5501	87-020-465-010	DIODE,1SS133T			
*** ICS ***			L101	S2-A6A-8A0-A10	CORE,FERRITE HF57T18.5-10-10
IC301	87-A20-312-010	IC,M62420SP	L301	S2-167-D10-1K0	COIL,100UH
△ IC351	S0-FDP-751-000	IC,AN7510	L302	S2-167-D10-1K0	COIL,100UH
△ IC604	S0-3FE-814-B00	IC,LA76814BM-MPB	L601	87-003-150-010	COIL,68UH
IC1001	S5-6F5-703-4A0	IC,OEC7034A	L602	87-003-146-010	COIL,15UH
IC1002	S9-UJ0-T60-OH0	IC,PST600H	L604	87-005-165-010	COIL,0.47UH
△ IC1003	S0-7SQ-955-AN0	IC,BA6955AN	L605	87-003-152-010	COIL,100UH
IC1099	S5-3D0-04B-N60	IC,M24C04-BN6	L610	S3-360-203-880	COIL,VIDEO IFT 3602038
IC4001	S0-3F3-711-700	IC,LA71170M-MPB	L611	87-003-149-080	COIL,47UH
IC4002	S0-Q09-780-500	IC,NJM7805FD	L612	87-005-688-080	COIL,22UH
IC5501	S0-1F6-2FB-P00	IC,AN3662FBP	L1001	87-A50-040-010	COIL,2.2UH
			L4001	S3-262-300-380	COIL,TRAP 2623003
			L4002	S2-167-D10-1K0	COIL,100UH
			L4003	S3-162-600-7S0	COIL,BIAS OSC
			L4004	S2-167-D10-1K0	COIL,100UH
			L4005	87-005-096-010	COIL,100UH
			L4006	87-005-096-010	COIL,100UH
			L4007	87-003-286-010	COIL,56UH
			L4008	S2-1LA-612-1K0	COIL,120UH
			L4009	87-005-096-010	COIL,100UH
			L4010	87-005-096-010	COIL,100UH
			L4011	87-003-112-010	COIL,1MH
			L4012	87-003-152-010	COIL,100UH
			L4014	87-003-154-010	COIL,220UH
			L4017	87-003-150-010	COIL,68UH
			L4205	87-003-152-010	COIL,100UH
			L5501	87-003-152-010	COIL,100UH
			L5503	87-003-151-010	COIL,82UH
			L5504	87-003-152-010	COIL,100UH
			L5505	87-003-152-010	COIL,100UH
			L5506	87-003-152-010	COIL,100UH
					*** SWITCH ***
Q602	89-110-372-080	TR,2SA1037AK	SW1001	S5-082-210-010	SWITCH(LEAF) SPVF130100
Q603	89-324-122-080	TR,2SC2412KT146 R,S			
Q605	84-LB2-698-080	TR,2SA733(C)-T			
Q1001	8Z-JU1-603-010	PHOTO COUPLER GP1S566			
Q1002	89-324-122-080	TR,2SC2412KT			
Q1003	S0-02G-004-900	PHOTO COUPLER GP1S94L			
Q1004	87-026-236-080	TR,DTC124EK			
Q1005	8Z-JU1-603-010	PHOTO COUPLER GP1S566			
Q1006	89-324-122-080	TR,2SC2412KT			
Q1008	87-026-236-080	TR,DTC124EK			
Q1009	S0-02G-004-900	PHOTO COUPLER GP1S94L			
Q1010	87-026-228-080	TR,DTA124EK			
△ Q1011	SD-70D-239-600	TR,2SD2396(J,K)			
Q1012	89-324-122-080	TR,2SC2412KT			
Q1014	87-026-236-080	TR,DTC124EK			
Q1015	89-324-122-080	TR,2SC2412KT			
Q1016	89-324-122-080	TR,2SC2412KT			
Q1017	89-324-122-080	TR,2SC2412KT			
Q1018	89-324-122-080	TR,2SC2412KT			
Q1019	SB-3T0-089-200	TR,2SB892			
Q1022	87-026-287-080	TR,DTC143EKAT146			
Q1023	89-324-122-080	TR,2SC2412KT			
Q1025	89-208-922-380	TR,2SB892(S,T)-AE			
Q1026	87-026-235-080	TR,DTC114EKAT146			
Q4001	89-322-746-010	TR,2SC2274	CD601	S6-810-141-1A0	CORD,CONN 8101411A
Q4002	89-322-746-010	TR,2SC2274	CP303	S6-9W1-4T2-900	CONN,PCB SIDE TID-X04P-Z1BK
Q4003	SA-3T0-984-K00	TR,2SA984K(E,F)	CP1004	S6-972-805-900	CONN,PCB SIDE TMC-J08P-B1
Q4005	89-113-187-080	TR,2SA1318(S,T)	CP1005	S6-9R7-500-280	CONN,PCB SIDE 52045-0545
Q4006	89-313-172-010	TR,2SC1317	CP1006	S6-9R7-400-280	CONN,PCB SIDE 52045-0445
Q4007	89-324-122-080	TR,2SC2412KT	CP4001	S6-972-906-200	CONN,PCB SIDE TOC-C09X-A1
Q4008	89-324-122-080	TR,2SC2412KT	CP4004	S6-971-203-200	CONN,PCB SIDE TMC-T02X-E1
Q4009	89-324-122-080	TR,2SC2412KT	CP4201	S6-9E2-A01-290	CONN,PCB SIDE 8283_1012_00_000
			CP4202	S6-9E2-B01-290	CONN,PCB SIDE 8283_1112_00_000

# ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
		*** FILTER ***			*** RESISTORS ***
CF601	S0-2E2-45R-710	FILTER,SAW M1958M	△ R441	87-025-571-080	RES,M/F 100K-1/4W
		*** CRYSTAL & CERAMIC OSCILLATORS ***	△ R442	87-025-459-080	RES,M/F 15K-1/4W
X604	S0-0W3-R57-020	X'TAL,HC-49/U 3.579545MHZ	△ R443	S4-X5T-415-2F0	RES,MF 1.5K-1/4W
X1001	S0-0CA-012-030	X'TAL,12MHZ	△ R444	87-025-459-080	RES,M/F 15K-1/4W
X1002	S0-0D3-2R8-010	X'TAL,32.768K	△ R447	87-A00-100-060	RES,FUSE 68-1/2W
X4001	S0-06A-3R5-040	X'TAL,3.579545MHZ	△ R448	SF-F01-02J-B10	RES,METAL 1K-1W
		*** TUNER ***	△ R449	S5-Y2C-E68-2J0	RES,CEM 6.8K-7W
△ TU601	S1-45K-000-500	TUNER UHF-VHF TECC1040PG31A	△ R450	S6-558-A1R-2J0	RES,FUSE 1.2-2W
		*** OTHERS ***	△ R501	S5-K2C-E2R-2J0	RES,CEM 2.2-7W
CD602	S6-C70-000-1A0	CORD CONN 06C700001A	△ R505	S3-X28-B47-3J0	RES,M/O 47K-3W
CP601	S6-CH2-B02-5A0	CORD,CONN CH2B025A	△ R510	S3-U28-B1R-2J0	RES,MF 1.2-3W
CP602	S6-CH2-508-0A0	CORD CONN CH25080A	△ R512	S3-X18-127-3J0	RES,M/O 27K-1W
CD4201	S6-CH0-138-8A0	CORD CONN CH01388A	△ R517	S3-X18-AR8-2J0	RES,MF 0.82-2W
CP1002	S6-CH2-207-6A0	CORD,CONNECTOR CH22076A	R529	S4-X5T-627-2F0	RES,MF 2.7K-1/6W
CP1003	S6-CH2-A01-2A0	CORD,CONNECTOR CH2A012A	△ R542	87-A00-091-080	RES,M/O 0.15-1W
		<b>OPERATION PCB ASS'Y</b>			*** CAPACITORS ***
		*** CAPACITOR ***	C401	87-016-636-080	CAP,E 4.7-50V
C755	87-015-975-080	CAP,E 220-6.3V	C403	87-010-047-010	CAP,E 100-50V
		*** COILS ***	C406	87-010-393-010	CAP,E 100-35V
B351	S2-4AT-036-550	CORE,BEADS BL01RN1-A63T6	△ C407	87-016-588-080	CAP,E 2200-25V
L001	S2-A6A-8A0-A10	CORE,FERRITE HF57T18.5-10-10	C411	S1-220-512-000	CMP,L 0.47-100V
		*** JACK ***	C412	S0-JTB-05N-2K0	CAP,CER 390PF-500V B
△ J351	S6-021-310-120	JACK,RCA,3.5 HSJ2630-0100	C413	S6-11T-110-4J0	CMP,L 0.1-100V T
		*** SWITCHES ***	C417	S0-JTB-05S-2K0	CAP,CER 560PF-500V
SW750	S5-042-01T-310	SW,TACT SKHVBED010	C418	S0-E7T-B01-0M0	CAP,E 1-160V
SW751	S5-042-01T-310	SW,TACT SKHVBED010	△ C421	87-010-397-010	CAP,E 1000-35V
SW791	S5-042-01T-310	SW,TACT SKHVBED010	C422	87-016-322-010	CAP,E 1-250V
SW792	S5-042-01T-310	SW,TACT SKHVBED010	C423	S4-11F-333-4J0	CMP,P 0.33-250V
SW793	S5-042-01T-310	SW,TACT SKHVBED010	△ C424	SA-LR8-22J-010	CMP,P 0.0082-1.6KV
SW794	S5-042-01T-310	SW,TACT SKHVBED010	△ C425	S0-34B-N7B-3K0	CAP,0.0012-2KV BP
SW795	S5-042-01T-310	SW,TACT SKHVBED010	C429	87-012-386-080	CAP,CER 470PF-2KV
SW796	S5-042-01T-310	SW,TACT SKHVBED010	△ C431	87-016-373-080	CAP,E 10-250V
SW797	S5-042-01T-310	SW,TACT SKHVBED010	C432	S1-220-512-000	CMP,L 0.47-100V
SW798	S5-042-01T-310	SW,TACT SKHVBED010	△ C433	87-016-300-080	CAP,E 22-100V
SW799	S5-042-01T-310	SW,TACT SKHVBED010	C438	87-010-977-010	CAP,CER 680PF-500V
		*** CONNECTORS ***	C450	S0-34B-N71-3K0	CAP,CER 0.001-2KV BP
CP702	S6-9J2-405-390	CONN,IMSA-9272B-204A-T	△ C506	S2-122-B22-4M0	CMP,0.22-250V E
CP703A	S6-9J2-E05-590	CONN,IMSA-9272B-214A-T	△ C507	87-016-371-010	CAP,E 470-200V
		*** OTHER ***	△ C510	87-010-393-010	CAP,E 100-35V
CD353	S6-CH2-B02-8A0	CORD,CONN CH2B028A	△ C511	87-010-235-910	CAP,E 470-16V V
		<b>MAIN PCB ASS'Y</b>	C514	S0-1BB-P7K-3K0	CAP,CER 0.0027-2KV
		*** RESISTORS ***	C516	87-012-376-010	CAP,CER 470PF-500V
R415	S4-X5T-42R-2F0	RES,MF 2.2-1/4W	C517	S0-34B-N7W-2K0	CAP,CER 820PF-2KV BP
△ R439	87-025-525-080	RES,M/F 27K-1/4W	C518	87-012-376-010	CAP,CER 470PF-500V
△ R440	S4-X5T-482-2F0	RES,MF 8.2K-1/4W	C519	87-012-376-010	CAP,CER 470PF-500V
			C520	87-016-577-080	CAP,E 470-16V
			△ C521	S5-3J0-B22-1M0	CAP,E 220-160V
			C523	87-016-593-080	CAP,E 470-35V
			△ C524	87-070-387-040	CAP,E 470-25V V
			△ C526	87-016-459-040	CAP,E 470-10V
			C527	87-012-378-080	CAP,470PF-2KV BP
			△ C531	87-010-271-010	CAP,E 1000-16V
			△ C532	87-010-235-910	CAP,E 470-16V V
			C536	87-016-579-080	CAP,E 2200-16V
			△ C537	87-015-694-080	CAP,E 0.47-50V
			C538	87-016-577-080	CAP,E 470-16V
			△ C540	87-010-964-010	CAP,E 10-160V
			△ C541	87-016-647-080	CAP,E 47UF-160V
					*** DIODES ***
			D401	S2-8T1-1E1-N10	DIODE,11E1N-TA1B2
			△ D408	87-020-407-010	ZENER,HZ27-1L TD
			△ D409	87-027-556-080	ZENER,HZ11B3L TD
			△ D411	S2-8T1-0EL-S60	DIODE,10ELS6TA1
			△ D412	S2-8T1-0EL-S60	DIODE,10ELS6TA1

# ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
*** DIODES ***			*** CONNECTORS ***		
△ D413	S2-8T1-0EL-S60	DIODE,10ELS6TA1	CD401	S6-810-141-0A0	CORD,CONN 8101410A
△ D501	SG-P15-ML0-000	DIODE,GP15M-G23	△ CP401	S6-9X4-500-290	CONN,PCB SIDE B05B-DVS
△ D502	SG-P15-ML0-000	DIODE,GP15M-G23	CP501	S6-973-200-390	CORD,UX CONNECTOR THL-P03P-B1
△ D503	SG-P15-ML0-000	DIODE,GP15M-G23	CP804	S6-9W0-100-1A0	CONN PWB SIDE 003P-2100
△ D504	SG-P15-ML0-000	DIODE,GP15M-G23	CP810	S6-9E2-A01-290	CONN,PCB SIDE 8283_1012_00_000
△ D505	S2-8T2-1DQ-N90	DIODE,21DQ09N-TA2B	CP820	S6-9E2-B01-290	CONN,PCB SIDE 8283_1112_00_000
D506	S2-8T1-0EL-S60	DIODE,10ELS6TA1	*** FUSES ***		
△ D508	S2-8T2-1DQ-N90	DIODE,21DQ09N-TA2B1	CP803A S6-7R1-050-190 WIRE HOLDER 51052-0500		
△ D509	S2-8T2-1DQ-N90	DIODE,21DQ09N-TA2B	△ F501 S8-1PA-050-030 FUSE,233005-MB000		
△ D510	S2-BTR-U2A-M00	DIODE,RU2AM V1	△ F502 S8-0PA-2R5-010 FUSE,23302.5-MB000		
△ D511	S2-8T1-0EL-S20	DIODE,10ELS2N-TA1	FH501 S6-710-T00-060 HOLDER,FUSE EYF-52BC		
△ D512	S2-8T2-1DQ-N90	DIODE,21DQ09N-TA2B	FH502 S6-710-T00-060 HOLDER,FUSE EYF-52BC		
△ D515	87-027-661-010	ZENER,HZ30-1L TD	FH503 S6-710-T00-060 HOLDER,FUSE EYF-52BC		
D516	87-020-465-010	DIODE,1SS133T	FH504 S6-710-T00-060 HOLDER,FUSE EYF-52BC		
D517	87-020-465-010	DIODE,1SS133T	*** RELAY ***		
D518	87-020-465-010	DIODE,1SS133T	△ RY501 S5-60Q-101-140 RELAY SDT-SS-109DM		
△ D519	S2-8T2-1DQ-N90	DIODE,21DQ09N-TA2B	*** OTHERS ***		
D521	87-020-465-010	DIODE,1SS133T	△ ICP502 S8-3PC-040-020 MICRO FUSE 251004		
D523	87-020-465-010	DIODE,1SS133T	△ ICP503 S8-3PC-050-020 MICRO FUSE,251005		
D528	S9-4TA-6RA-130	ZENER,HZ6A3L TD	△ ICP504 S8-3PC-050-020 MICRO FUSE 251005		
D529	87-020-465-010	DIODE,1SS133T	△ ICP505 S8-3PC-020-020 MICRO FUSE,251002		
△ TH501	SF-20G-3R0-Q00	DEGAUSS PTH451C460BG3R0Q140T	<b>CRT PCB ASS'Y</b>		
*** ICS ***			*** RESISTORS ***		
△ IC401	87-A20-128-010	IC,LA7840	△ R802 87-025-590-060 R,M/O 15K-2W		
△ IC501	S2-BT0-661-200	IC,STR-F6612	△ R805 87-025-590-060 R,M/O 15K-2W		
△ IC502	S0-Q09-780-500	IC,NJM7805FD	△ R810 87-025-590-060 R,M/O 15K-2W		
△ IC503	S0-GA9-09R-D00	IC,PQ09RD08	*** CAPACITORS ***		
△ IC504	87-001-576-010	IC,NJM7812FA	C801 S0-34B-N71-3K0 CAP,0.001UF-2KV BP		
△ IC506	S0-021-000-1R0	PHOTO COUPLER,ON3171R	C820 87-016-322-080 CAP,E 1-250V		
*** TRANSISTORS ***			*** TRANSISTORS ***		
△ Q405	SC-3T0-227-100	TR,2SC2271(D,E)-AE	△ Q804 SC-3F0-421-700 TR,2SC4217(D,E)		
△ Q406	SD-UQ0-259-900	TR,2SD2599	△ Q805 SC-3F0-421-700 TR,2SC4217(D,E)		
△ Q501	SC-3T0-290-900	TR,2SC2909	△ Q806 SC-3F0-421-700 TR,2SC4217(D,E)		
△ Q502	SA-3T1-371-A00	TR,2SA1371	*** CONNECTORS ***		
△ Q503	SC-300-416-000	TR,2SC4160-OEC-YAC11	CP802 S6-9W0-100-1A0 CONN PWB SIDE 003P-2100		
△ Q504	89-320-011-210	TR,2SC2001(C)-T	CP850 S6-9E2-501-290 CONN,PCB SIDE 8283_0512_00_000		
Q506	87-026-464-080	TR,DTC114TS	*** FUSE ***		
Q507	89-309-458-010	TR,2SC945(C)	CP803B S6-7R1-050-190 WIRE HOLDER 51052-0500		
Q513	SN-YTB-030-010	TR,DTC114E	*** CRT SOCKET ***		
*** COILS ***			*** LED PCB ASS'Y ***		
B502	S2-4AT-034-820	CORE,BEADS BL02RN2-R62T4	*** DIODE ***		
B504	S2-4AT-036-550	CORE BEADS BL01RN1-A63T6	D791 S0-213-2Q1-300 LED,SLZ-936C-07-S-T1		
B505	S2-4DT-035-810	CORE BEADS LFP3A-M3R2TA	*** VARIABLE RESISTOR ***		
L401	87-003-143-010	COIL,4.7MH	*** TRANSFORMERS ***		
L402	S2-210-000-130	COIL,LINEARITY ELH5L4112	△ FB401 S4-321-301-1R0 TRANSFORMER,FLYBAC KCJP28651-00AJ1		
△ L501	S2-9K0-000-740	COIL,LINE,FILTER 9-000074	△ J801 S6-6X1-200-140 SOCKET,CRT HPS3200-010501		
△ L502	S2-9X0-000-650	LINE FILTER SU16V-20030	<b>LED PCB ASS'Y</b>		
*** TRANSFORMERS ***			*** DIODE ***		
△ FB401	S4-321-301-1R0	TRANSFORMER,FLYBAC KCJP28651-00AJ1	*** DIODE ***		
T401	S3-305-Y00-2S0	TRANS,H DRIVE 305Y002S	*** DIODE ***		
△ T501	S4-813-503-1W0	TRANSFORMER,SWITCHING 8135031W	*** DIODE ***		
*** VARIABLE RESISTOR ***			*** DIODE ***		
VR502	S1-263-L2B-TC0	SFR,RH063MCN2R07	*** DIODE ***		

# ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
		*** DIODES ***
D792	S0-213-2Q1-300	LED,SLZ-936C-07-S-T1
D793	S0-213-2Q1-300	LED,SLZ-936C-07-S-T1
D794	S0-21M-5Q1-500	LED,EM-553-F1T
D795	S0-21M-5Q1-500	LED,EM-553-F1T
		*** CONNECTOR ***
CP701B	S6-9J2-A05-490	CONN,IMSA-9162S-10Z901
		*** OTHER ***
OS753	S7-7Q0-000-170	REMOTE RECEIVER PIC-28143TH5
		<b>AV PCB ASS'Y</b>
		*** JACK ***
J701	S6-024-310-130	RCA JACK JPJ1187-010010
		*** CONNECTOR ***
CP703B	S6-9J2-E05-690	CONN,PCB SIDE IMSA-9162S-14Z901
		*** OTHER ***
CD757	S6-CH2-A01-6A0	CORD,CONN CH2A016A
		<b>AND OTHERS</b>
		*** CONNECTORS ***
CD801	S6-8M8-202-5A0	CORD,CONN 8M82025A
CD802	S6-CH0-180-5A0	CORD CONN CH01805A
		*** COIL ***
△ L503	S2-8F1-400-260	COIL,DEGAUSS 8F140026
		*** AC CORD ***
△ CD501	S2-0R6-149-090	CORD,AC 0R614909
		*** OTHERS ***
CD001	S6-CP0-142-5A0	CORD CONN CP01425A
CD002	S6-CP0-142-5A0	CORD CONN CP01425A
CD303	S6-CH1-439-9A0	CORD CONN CH14399A
△ SP301	S7-0C5-330-090	SPEAKER,SG04D13ALA
△ SP302	S7-0C5-330-090	SPEAKER,SG04D13ALA
△ V801	S9-8R1-404-980	CRT W/DY A34JFQ90X31(VW)



サービス技術ニュース	
番号	連絡内容
G- -	
G- -	
G- -	

**アイワ株式会社** 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111