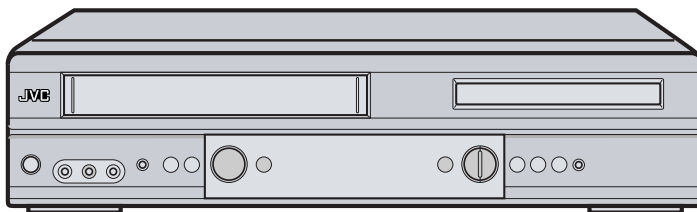


# JVC

## SERVICE MANUAL

DVD/CD PLAYER Hi-Fi STEREO VIDEO CASSETTE RECORDER

### HR-XVC1U



VHS **SQP B**  
4 HEAD  
19µm HEAD

Hi-Fi



### SPECIFICATIONS

#### GENERAL

Power supply: AC 120V 60Hz  
Power consumption: Operation: 20W  
Stand by: 3W  
Weight: 9.9lbs (4.5 kg)  
Dimensions: Width : 16-15/16 inches (430 mm)  
Height: 3-7/8 inches (99 mm)  
Depth : 12-1/4 inches (311 mm)  
Inputs/Outputs:  
Video: In: 1Vp-p/75 ohm  
Out: 1Vp-p/75 ohm  
Audio: In: -8 dBm/50K ohm  
Out: -8 dBm/1K ohm  
Antenna: UHF/VHF IN/OUT: 75 ohm coaxial  
Hi-Fi Frequency Response: 20Hz to 20,000Hz  
Hi-Fi Dynamic Range: More than 90dB

#### VCR section

Video Head: 4 Rotary Heads  
Audio Track: Hi-Fi Sound - 2 Tracks / MONO Sound - 1 Track  
Tuner: 181 Channel Freq. Synthesized  
VHF 2-13  
UHF 14-69  
CATV 14-36 (A)-(W)  
37-59 (AA)-(WW)  
60-85 (AAA)-(ZZZ)  
86-94 (86)-(94)  
95-99 (A-5)-(A-1)  
100-125 (100)-(125)  
01 (5A)

RF Channel Output: Channel 3 or 4, Switchable  
F.FWD/REW Time: Approx. 1minutes and 48 seconds (with T-120 Cassette Tape) (at+25 C)

#### DVD section

Signal system: NTSC  
Applicable disc: DVD (12cm, 8cm), CD (12cm, 8cm)  
Audio characteristics: DVD: 4Hz - 22KHz  
CD: 4Hz - 20KHz  
Frequency response: 90dB  
S/N Ratio: 0.01%  
Harmonic distortion: Below Measurable Level  
Wow and flutter: 90dB  
Dynamic range: 90dB  
Output: Video : (RCA) 1 Vp-p/75ohm  
Audio : (RCA) -8 dBm/1Kohm  
Digital Audio : 0.5Vp-p 75 ohm  
Pickup: CD : Wavelength: 775 - 805 nm  
Maximum output power: 0.5 mW  
DVD : Wavelength: 640 - 660 nm  
Maximum output power: 1.0 mW

#### ACCESSORIES:

Remote control x 1  
Batteries (2 x AA)  
75 ohm Coaxial Cable x 1  
AUDIO/VIDEO Cable x 1



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The following table lists the differing points between Models (HR-XVC1U and HR-XVC1U(C)) in this series.

ITEM	MODEL	HR-XVC1U	HR-XVC1U(C)
INSTRUCTION LANGUAGE		ENGLISH	ENGLISH, FRENCH
REGISTRATION CARD		USED	NOT USED
GUARANTEE CARD		NOT USED	USED
SERVICE STATION LIST		NOT USED	USED

# Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

## ● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the  $\triangle$  symbol and shaded (■) parts are critical for safety.  
Replace only with specified part numbers.  
**Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.**

3. Fuse replacement caution notice.  
Caution for continued protection against fire hazard.  
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:  
1) Wires covered with PVC tubing  
2) Double insulated wires  
3) High voltage leads

5. Use specified insulating materials for hazardous live parts.  
Note especially:  
1) Insulation Tape      3) Spacers      5) Barrier  
2) PVC tubing          4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

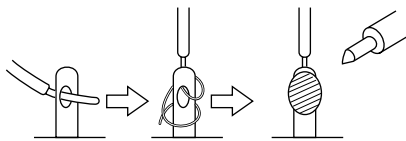


Fig.1

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

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

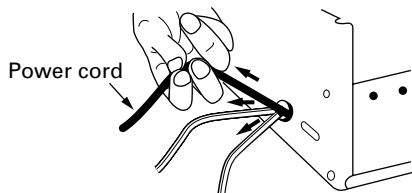


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)  
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector

In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001

2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.

3) **Replacement procedure**

(1) Remove the old connector by cutting the wires at a point close to the connector.

Important : Do not reuse a connector (discard it).

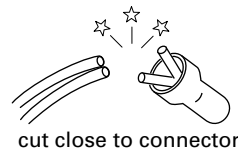


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

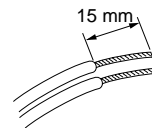


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

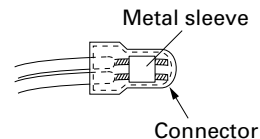


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.



Fig.6

(5) Check the four points noted in Fig.7.

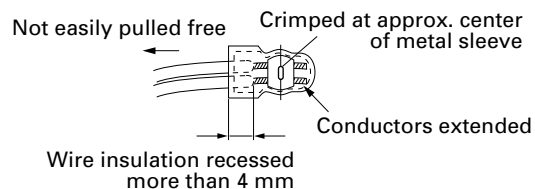


Fig.7

## ● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

### 1. Insulation resistance test

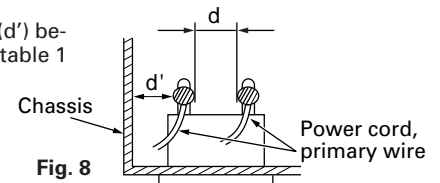
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

### 2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

### 3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

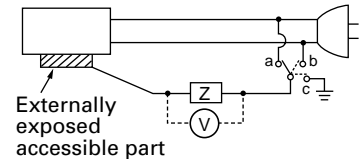


### 4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

**Measuring Method :** (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

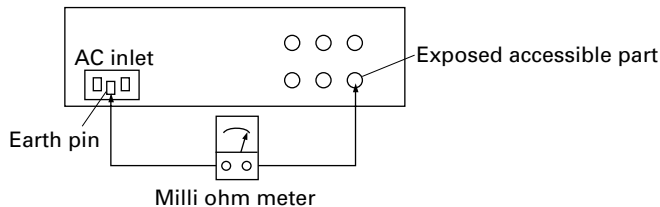


### 5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

**Measuring Method:**

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.



#### Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V 200 to 240 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	$d \geq 4 \text{ mm}$ $d' \geq 8 \text{ mm}$ (Power cord) $d' \geq 6 \text{ mm}$ (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
		50 kΩ	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

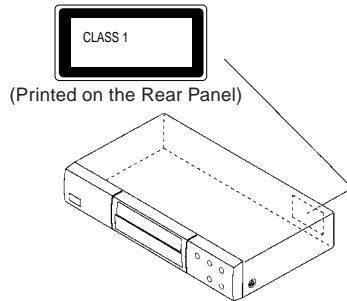
**Note:** These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

## IMPORTANT WARNING

### CAUTION:

DVD PLAYER IS A CLASS 1 LASER PRODUCT. HOWEVER THIS PLAYER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE PLAYER.



WHEN THIS PLAYER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS PLAYER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

## SERVICING NOTICES ON CHECKING

LASER PRODUCT

### 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. 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.

### 3. 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.

### 4. 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.

# DISASSEMBLY INSTRUCTIONS

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

### 1-1: TOP CABINET AND FRONT CABINET (Refer to Fig. 2-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP651).
4. Unlock the 7 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 3 screws ③.
7. Remove the Operation PCB in the direction of arrow (C).

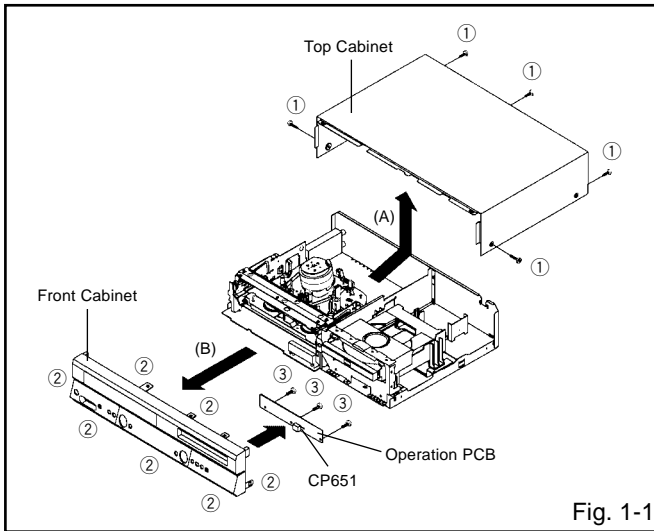


Fig. 1-1

### 1-2: FLAP (Refer to Fig. 1-2)

1. Open Flap to 90° and flex in direction of arrow (A), at the same time slide in direction of arrow (B).
2. Then lift in direction of arrow (C).

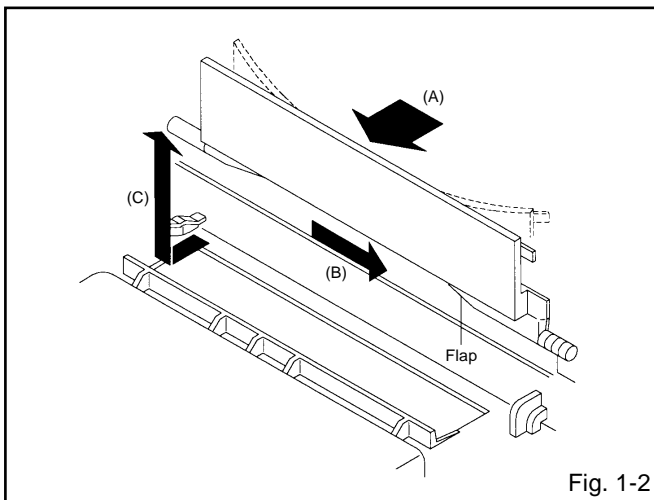


Fig. 1-2

### 1-3: VCR DECK (Refer to Fig. 1-3)

1. Unlock the 2 supports ① and remove the Top Holder.
2. Remove the 3 screws ②.
3. Disconnect the following connectors: (CP101, CP102, CP103 and CP3001).
4. Remove the AC Head Cover and VCR Deck in the direction of arrow.

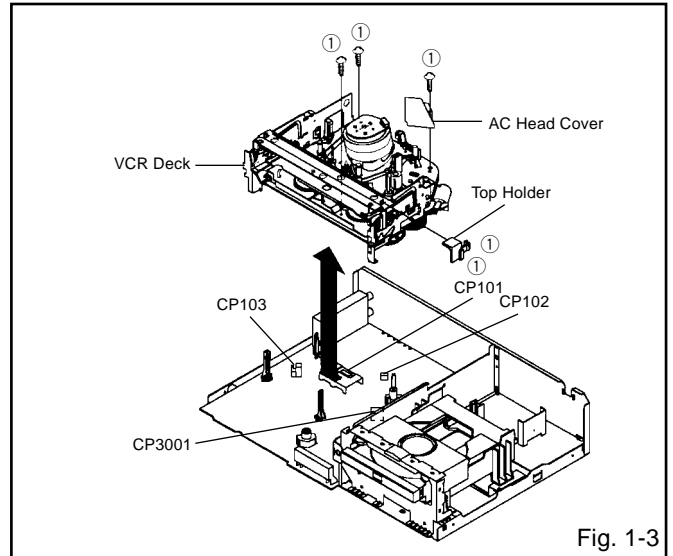


Fig. 1-3

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

1. Remove the screw ①.
2. Remove the 7 screws ②.
3. Disconnect the following connectors: (CP1701, CP8001 and CP8002).
4. Remove the VCR MT PCB in the direction of arrow.

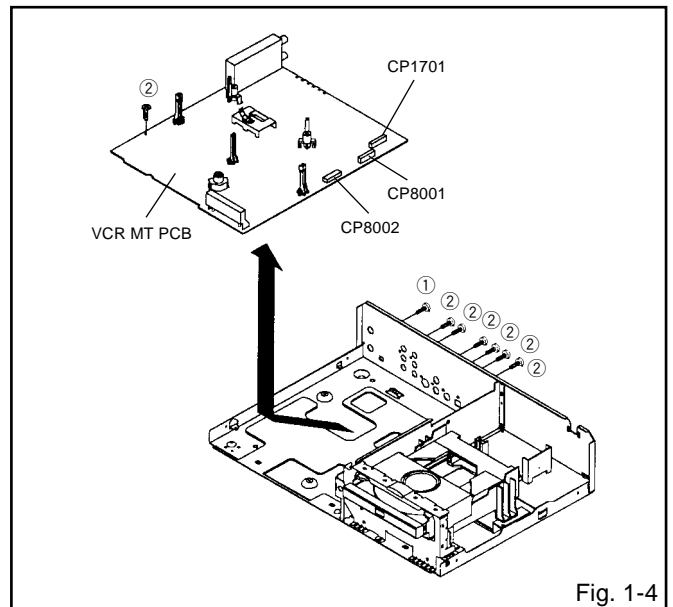


Fig. 1-4

# DISASSEMBLY INSTRUCTIONS

## 1-5: DECK CD AND MPEG MT PCB (Refer to Fig. 1-5)

1. Disconnect the following connector: (CP503).
2. Remove the 2 screws ①.
3. Remove the 2 screws ②.
4. Remove the Deck Angle 1/2 in the direction of arrow (A).
5. Remove the 2 screws ③.
6. Remove the Front Shield in the direction of arrow (B).
7. Disconnect the following connectors: (CP4001 and CP4002).
8. Remove the 4 screws ④.
9. Remove the Deck CD in the direction of arrow (C).
10. Remove the 4 screws ⑤.
11. Remove the MPEG Shield in the direction of arrow (D).
12. Remove the MPEG MT PCB in the direction of arrow (E).

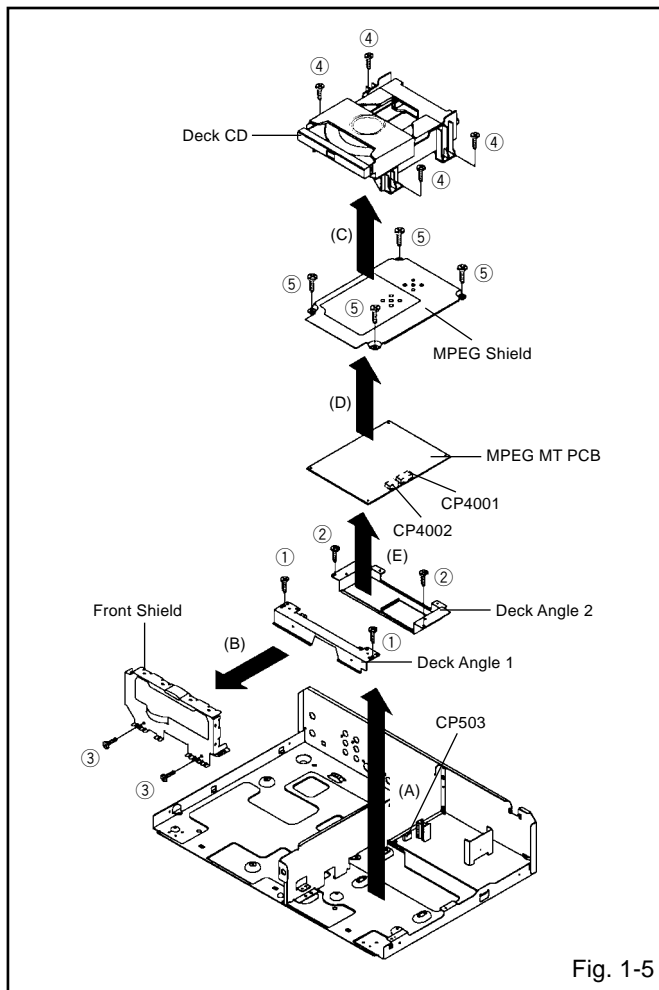


Fig. 1-5

## 1-6: POWER PCB (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Remove the Power PCB in the direction of arrow.

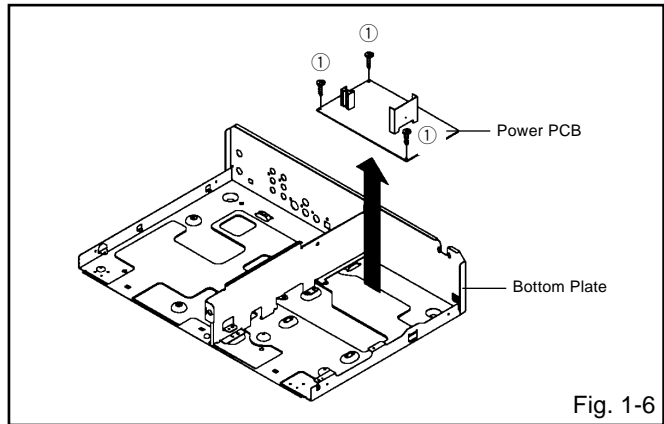


Fig. 1-6



# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF VCR DECK PARTS

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

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

#### NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

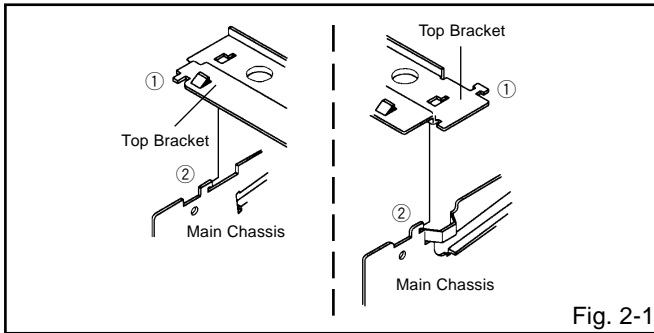


Fig. 2-1

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

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.

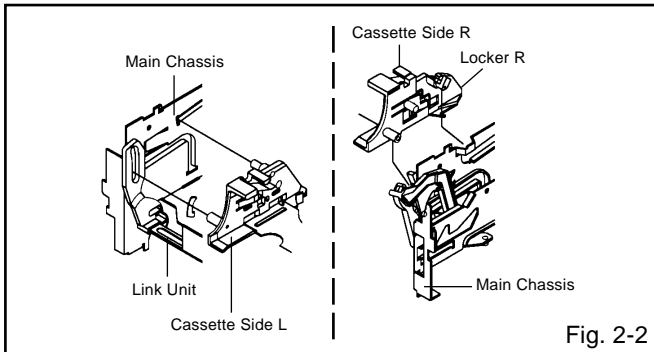


Fig. 2-2

### 2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

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

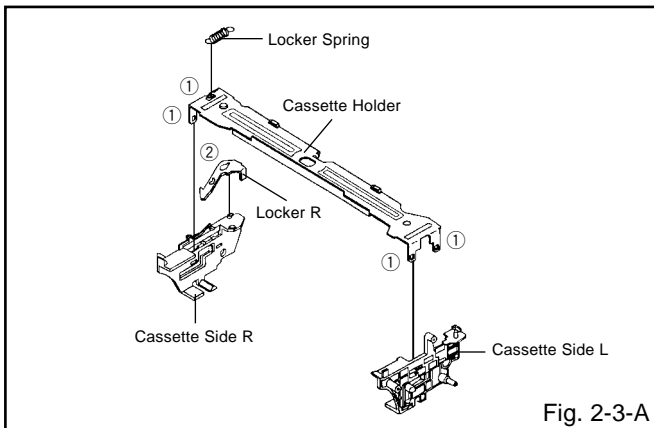


Fig. 2-3-A

#### NOTE

1. In case of the Locker R installation, check if the two positions of Fig. 2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

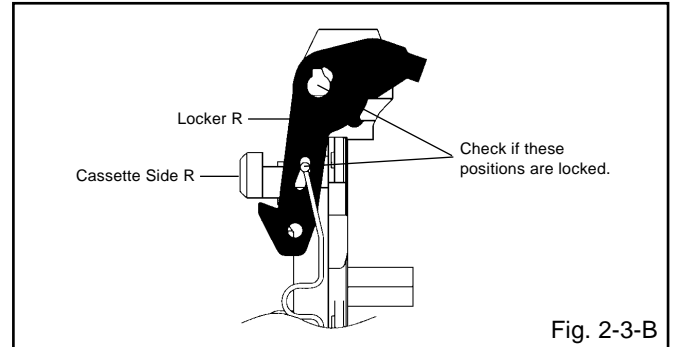


Fig. 2-3-B

### 2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

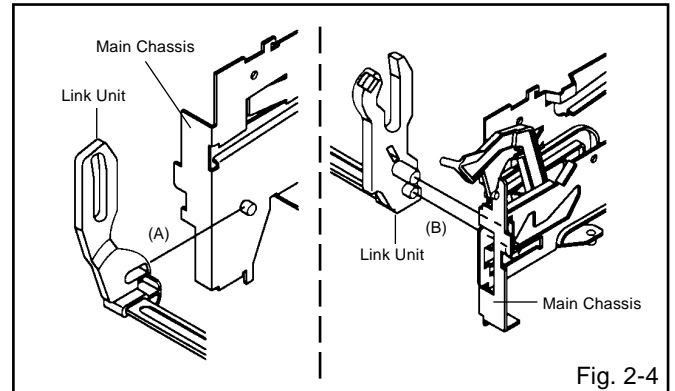


Fig. 2-4

### 2-5: LINK LEVER/FLAP LEVER (Refer to Fig. 2-5)

1. Extend the support ①.
2. Remove the Link Lever.
3. Remove the Flap Lever.

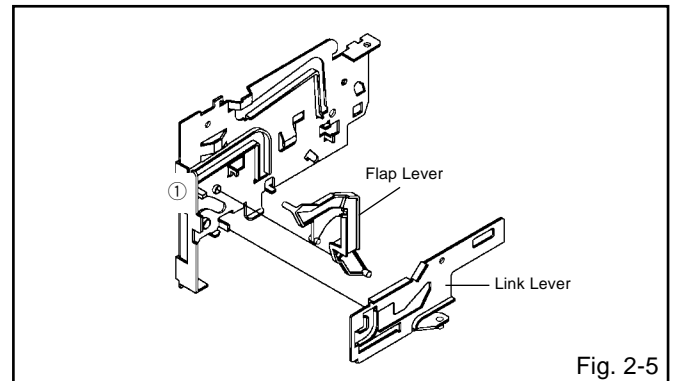
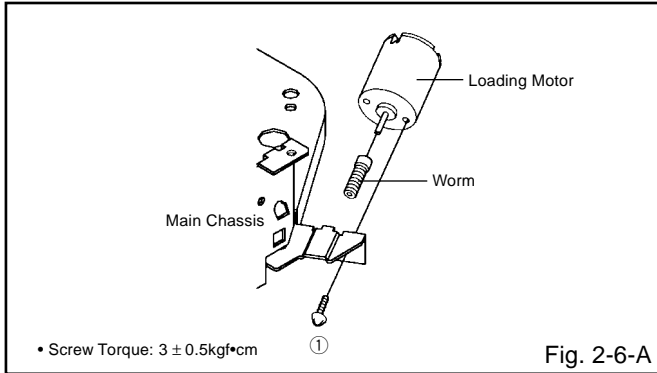


Fig. 2-5

# DISASSEMBLY INSTRUCTIONS

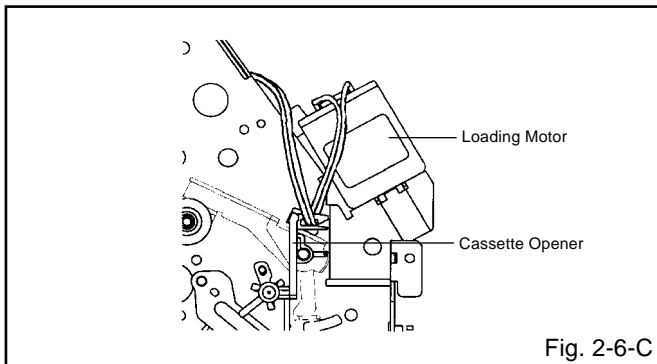
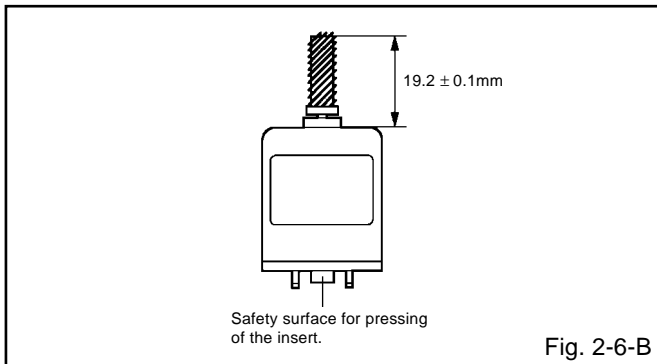
## 2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.



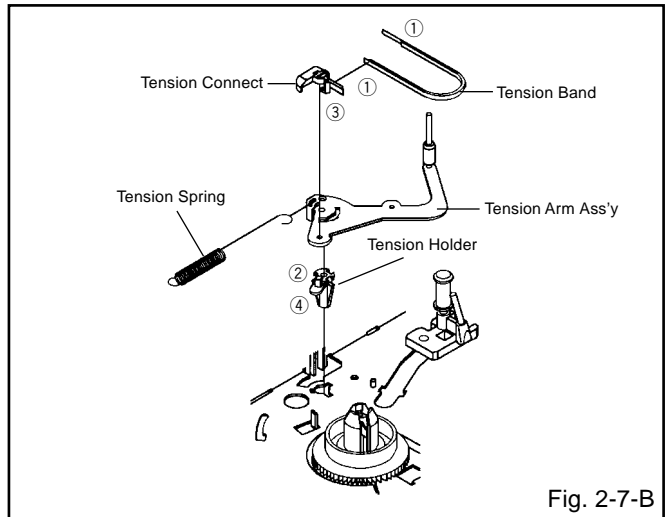
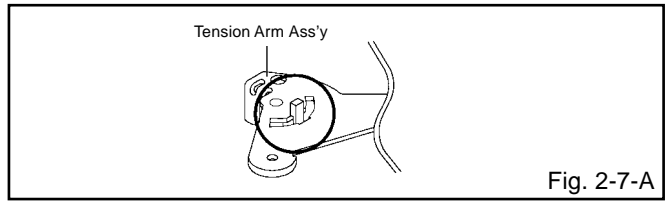
### NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.



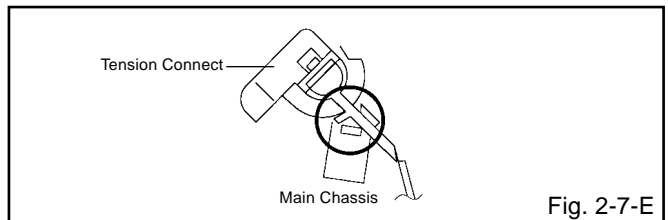
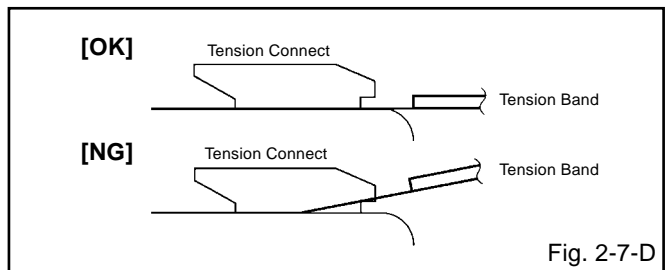
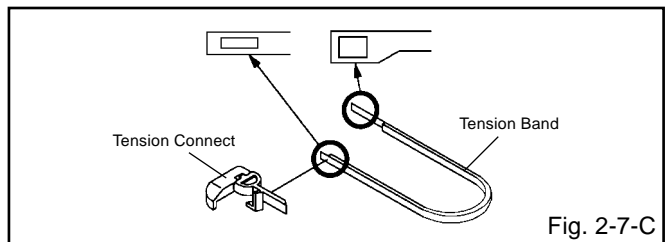
## 2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.



### NOTE

1. In case of the Tension Band installation, note the direction of the installation. (Refer to Fig. 2-7-C)
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.



# DISASSEMBLY INSTRUCTIONS

## 2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

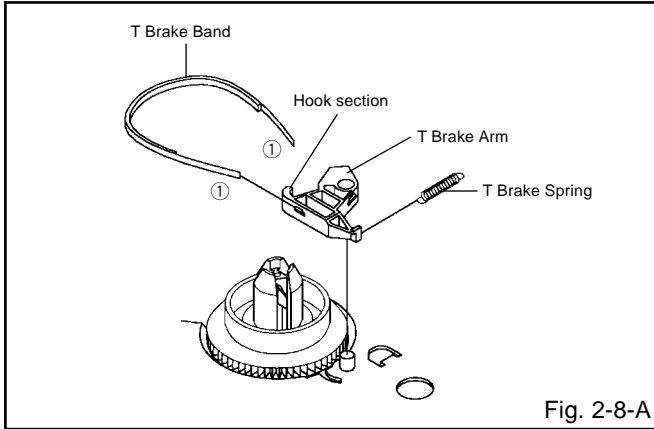


Fig. 2-8-A

### NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

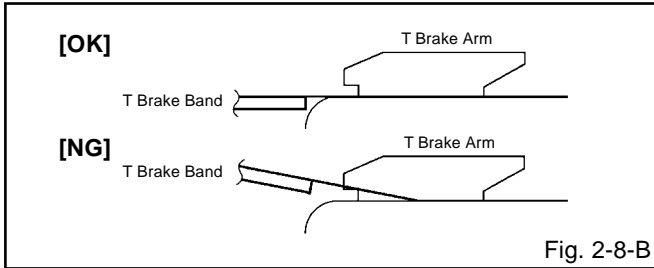


Fig. 2-8-B

## 2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

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

### NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
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. (Use gloves.) (Refer to Fig. 2-9-A) Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (FG-84M). (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. (Refer to MECHANICAL ADJUSTMENT)

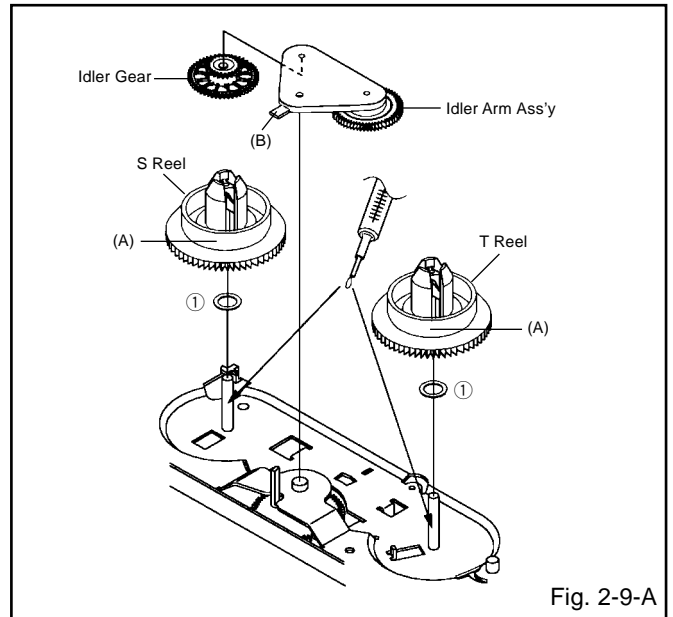


Fig. 2-9-A

### NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. (Refer to Fig. 2-9-B)
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

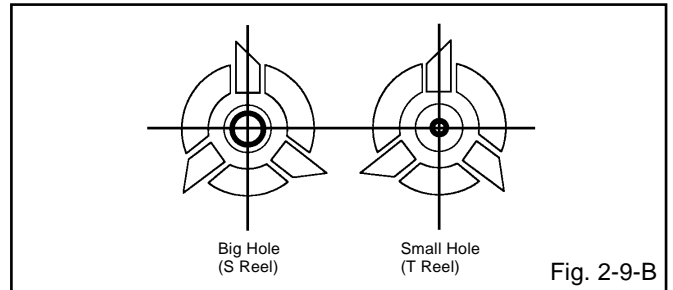


Fig. 2-9-B

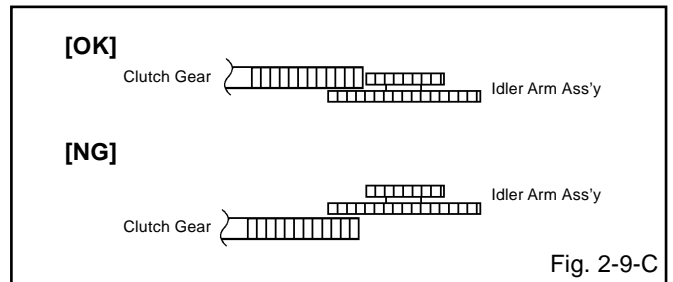
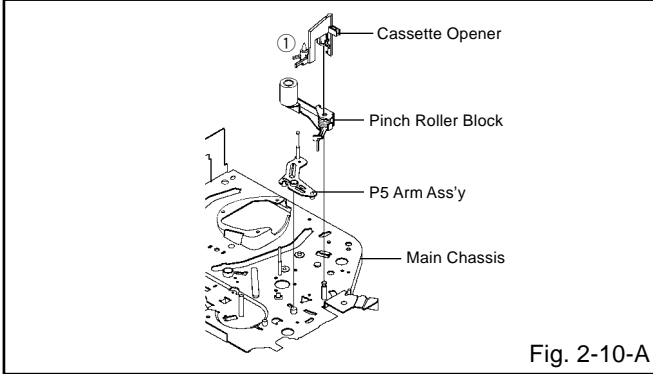


Fig. 2-9-C

# DISASSEMBLY INSTRUCTIONS

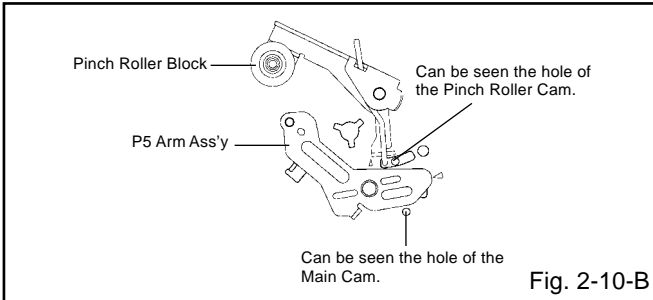
## 2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.



### NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

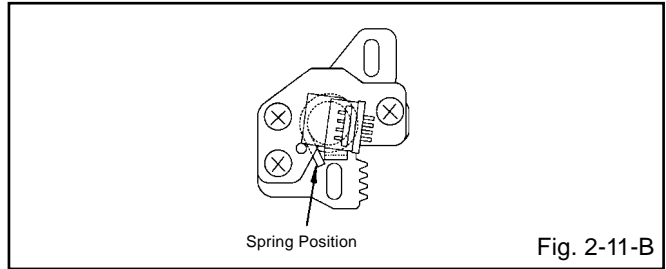
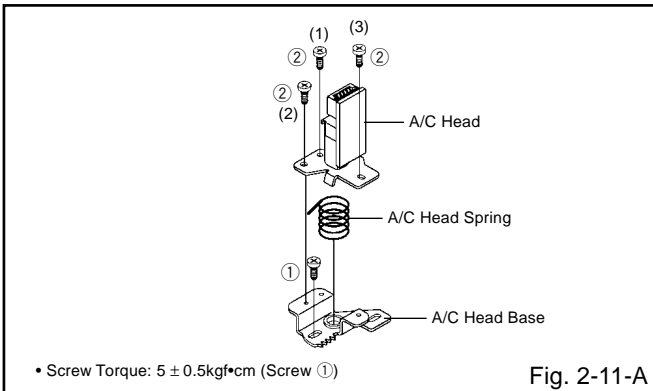


## 2-11: A/C HEAD (Refer to Fig. 2-11-A)

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.

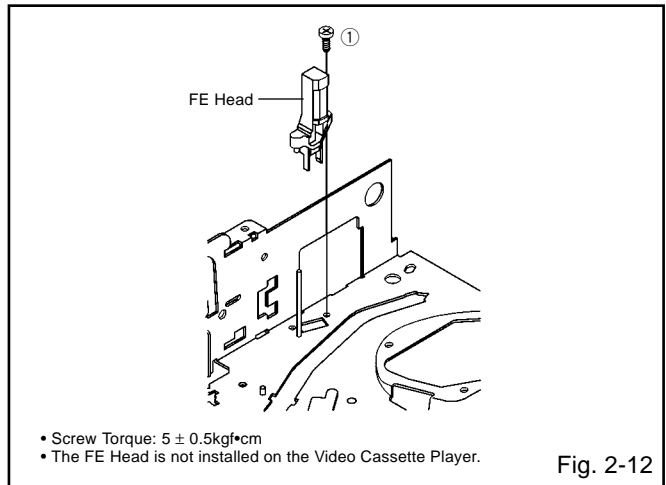
### NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).



## 2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

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

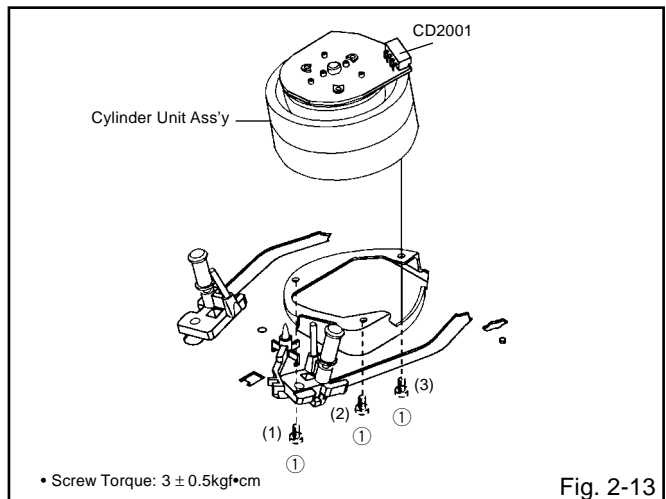


## 2-13: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Disconnect the following connector: (CD2001)
2. Remove the 3 screws ①.
3. Remove the Cylinder Unit Ass'y.

### NOTE

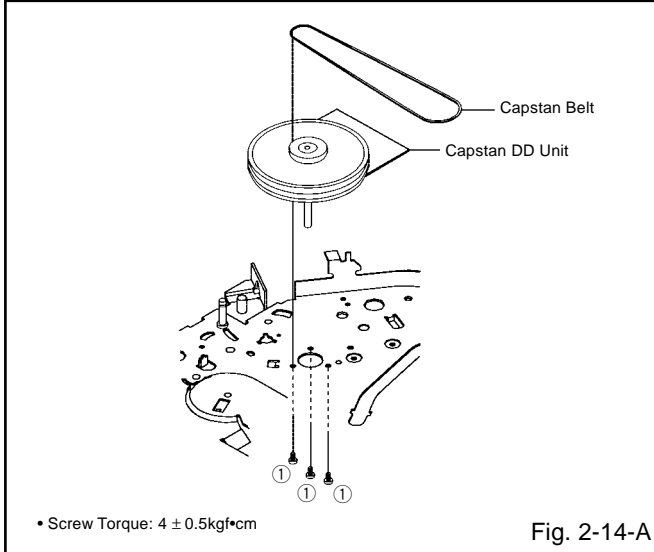
1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



# DISASSEMBLY INSTRUCTIONS

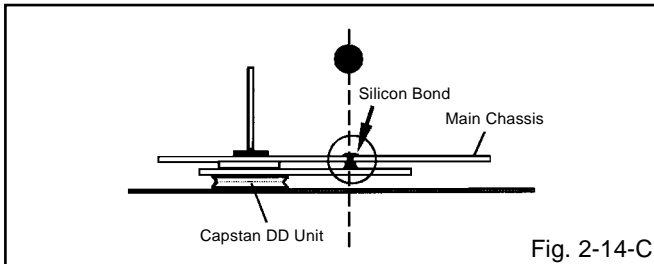
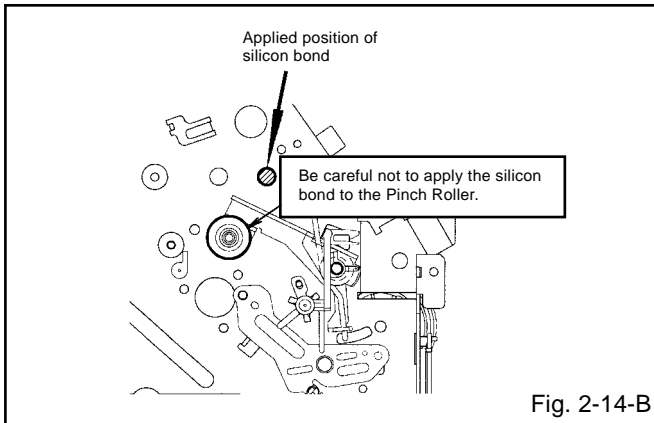
## 2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

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



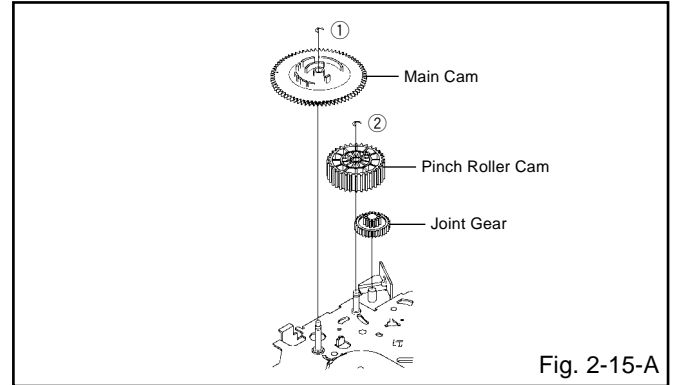
### NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.)  
(Refer to Fig. 2-14-B, C)



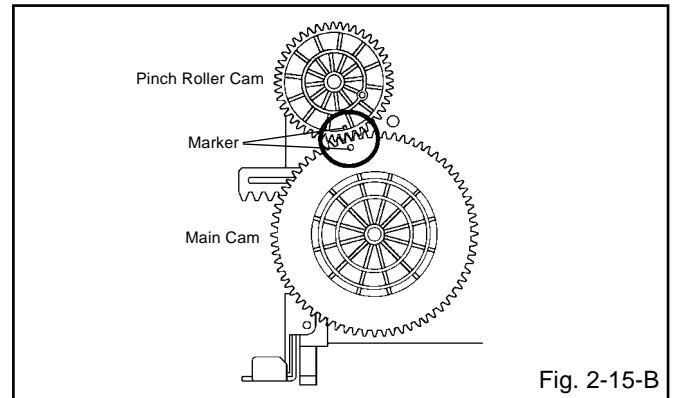
## 2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.



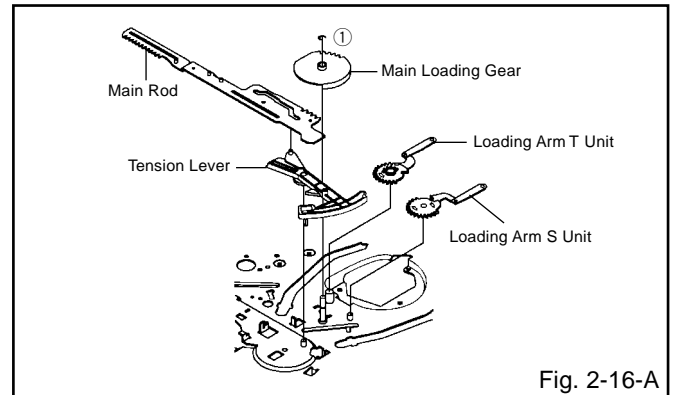
### NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers be met. (Refer to Fig. 2-15-B) And also can be seen the Main Chassis hole through the Main Cam maker hole.



## 2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

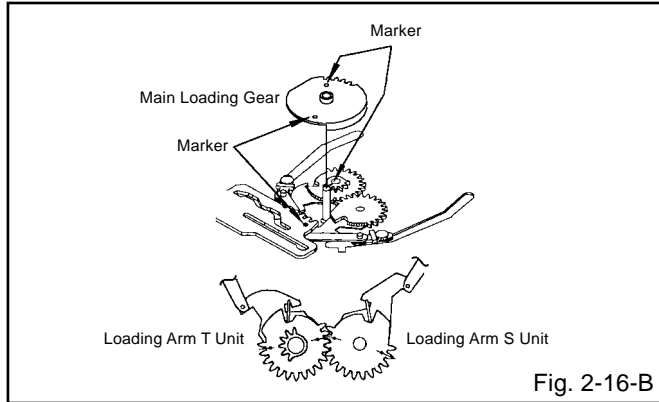
1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.



# DISASSEMBLY INSTRUCTIONS

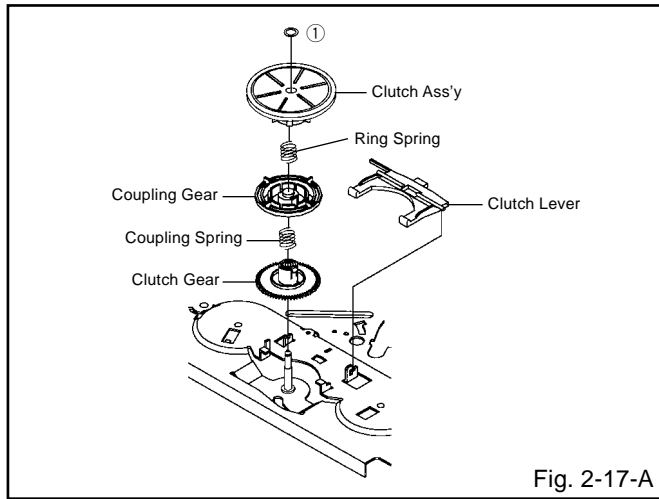
## NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. (Refer to Fig. 2-16-B)



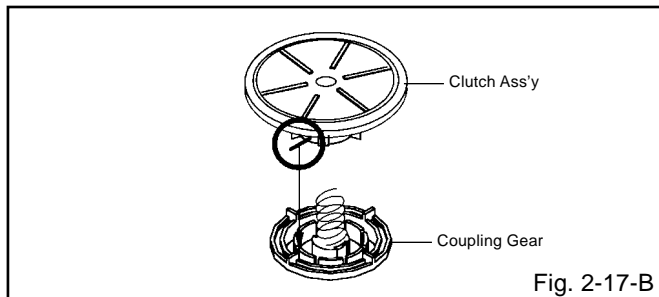
## 2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

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



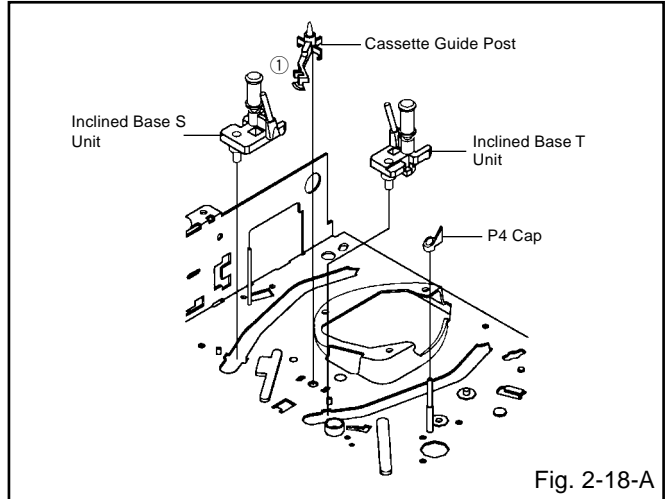
## NOTE

1. In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. (Refer to Fig. 2-17-B)



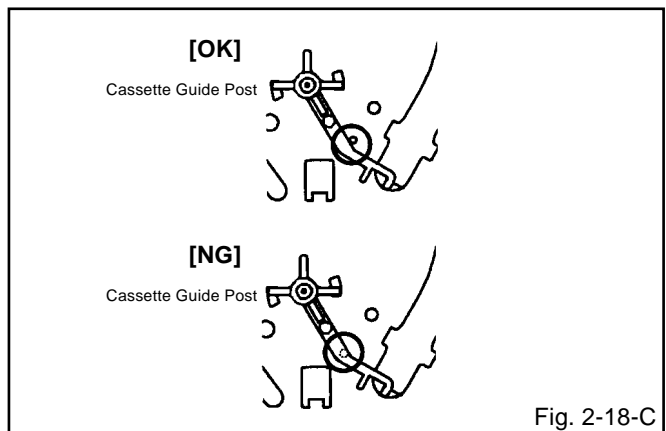
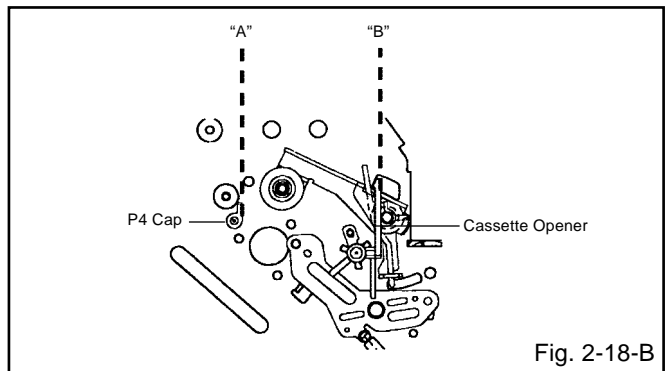
## 2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S Unit and Inclined Base T Unit.



## NOTE

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.



# DISASSEMBLY INSTRUCTIONS

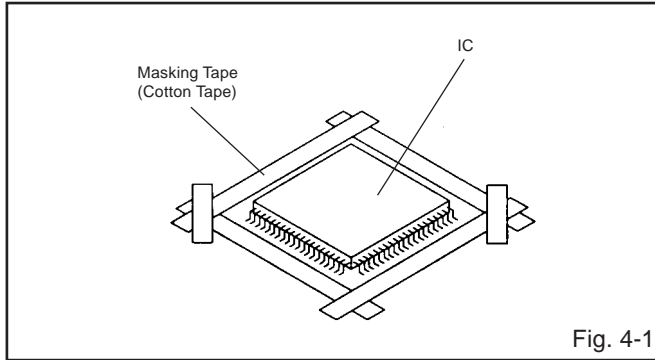
## 3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

### REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 4-1.)

#### NOTE

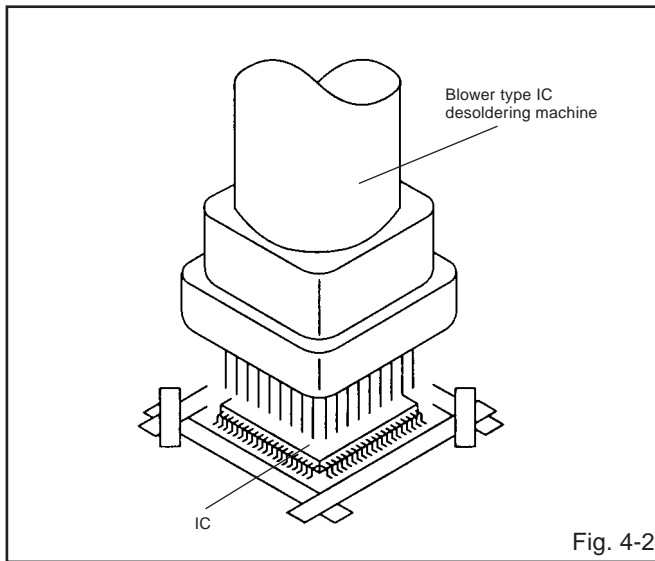
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 4-2.)

#### NOTE

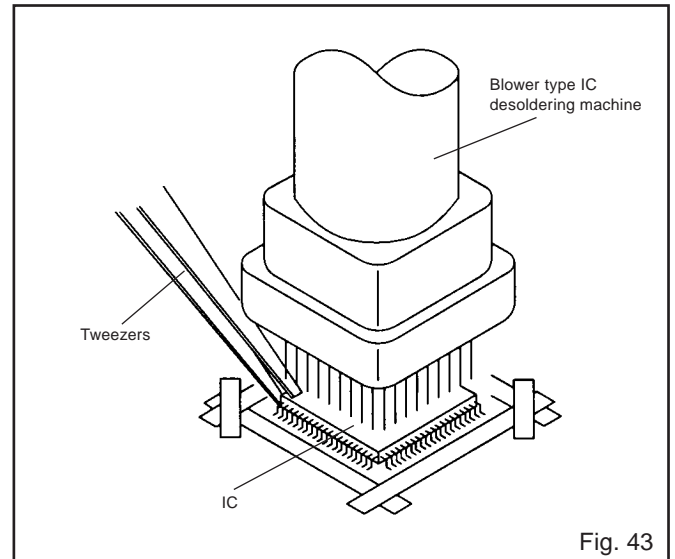
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 4-3.)

#### NOTE

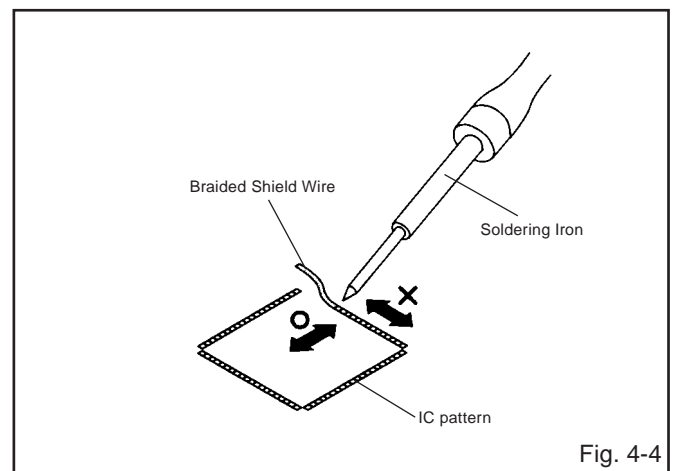
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 4-4.)

#### NOTE

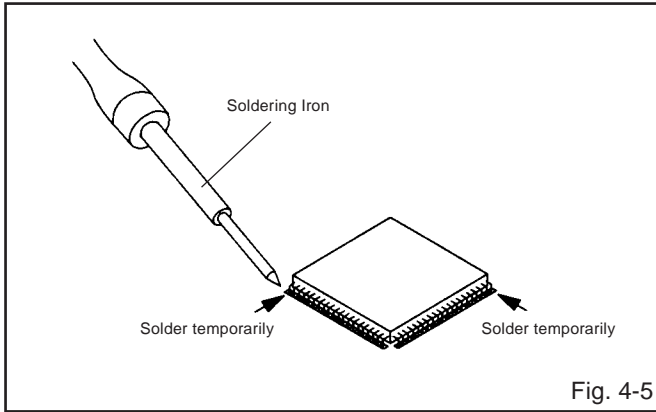
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



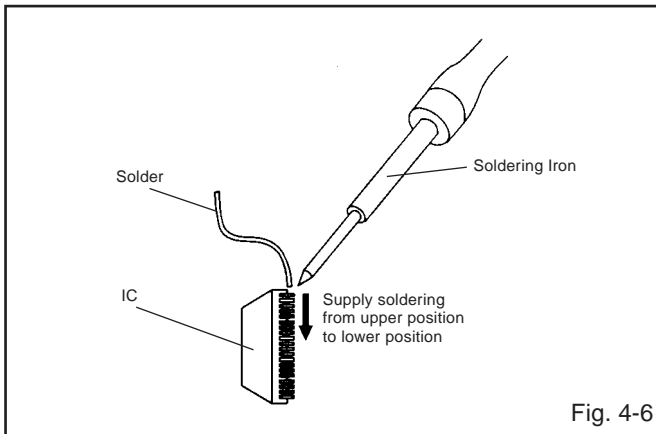
# DISASSEMBLY INSTRUCTIONS

## INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 4-5.)



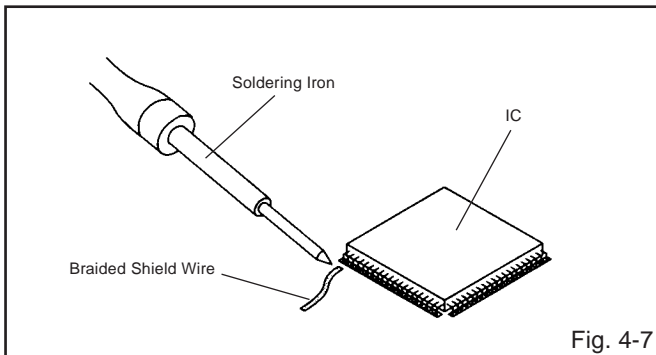
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 4-6.)



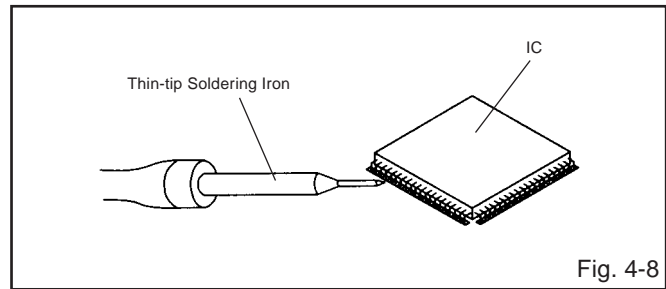
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 4-7.)

### NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. (Refer to Fig. 4-8.)



5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

### NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.



## 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 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 KIL</b>	:	Killer
	<b>AMP</b>	:	Amplifier	<b>L 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 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 NC</b>	:	Non Connection
	<b>CAP</b>	:	Capstan	<b>NR</b>	:	Noise Reduction
	<b>CARR</b>	:	Carrier	<b>O OSC</b>	:	Oscillator
	<b>CH</b>	:	Channel	<b>OPE</b>	:	Operation
	<b>CLK</b>	:	Clock	<b>P 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 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 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 to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit or on the main unit and on the remote control for more than a standard time (second).

Set Key	Set Key	Standard Time (seconds)	Operations
CH UP	FF	2	PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED).  Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "NOTE FOR THE REPLACING OF MEMORY IC".
CH UP	STOP	2	Adjust the SWITCHING POINT automatically. Refer to the "ELECTRICAL ADJUSTMENT" (SWITCHING POINT).
CH UP	PLAY	2	Initialization of the factory on VCR. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, and PLAY/REC total hours.

Set Key	Remocon Key	Standard Time (seconds)	Operations
REC	5	2	Initialization of the factory on DVD. NOTE: The function will only work without the setting of DVD disc at DVD mode. Do not use this for the normal servicing.
REC	6	2	DVD Write mode. Refer to the "UP-DATE FOR THE FIRMWARE". NOTE: The function will only work at the DVD stop mode. Do not use this for the normal servicing.
STOP	1	3	Check for the firmware version. Refer to the "CHECK FOR THE FIRMWARE VERSION". NOTE: The function will only work at the DVD stop mode. Do not use this for the normal servicing.
STOP	7	3	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL". NOTE: The function will only work without the setting of DVD disc at DVD mode.

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" (SWITCHING POINT).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape. Refer to the "PREPARATION FOR SERVICING"

## WHEN REPLACING EEPROM (MEMORY) IC

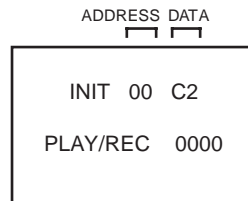
If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

**NOTE: No need setting for after INI 2D.**

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	0A	A0	CA	10	64	64	4A	86	0B	2F	86	2F	0A	08	0A	0F
10	AF	97	95	8A	40	55	31	04	24	A5	9F	3A	00	10	BF	00
20	29	01	15	77	61	31	29	04	00	00	00	00	A2	B0	---	---

**Table 1**

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.  
ADDRESS and DATA will appear on TV Monitor as Fig 1.



**Fig. 1**

4. ADDRESS is now selected and should "blink". Using the SET + or - button 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 - button 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.

## PARENTAL CONTROL - RATING LEVEL 4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Ensure the DVD Set is connected to the TV.
2. Turn Unit ON.
3. Confirm that no disc on the disc tray.
4. Press and hold the '7' key on the remote control unit.
5. Simultaneously press and hold the 'STOP' key on the front panel.
6. Hold both keys for more than 3 seconds.
7. The On Screen Display message 'INITIALIZED' will appear.
8. The 4 digit password has now been cleared.

**NB:** The above procedure will reset ALL of the player's settings to the default factory state.

## PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.

Parts replacing time does not mean the life span for individual parts.

Also, long term storage or misuse may cause transformation and aging of rubber parts.

The following list means standard hours, so the checking hours depends on the conditions.

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		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

■ : Clean

● : Check it and if necessary, replace it.

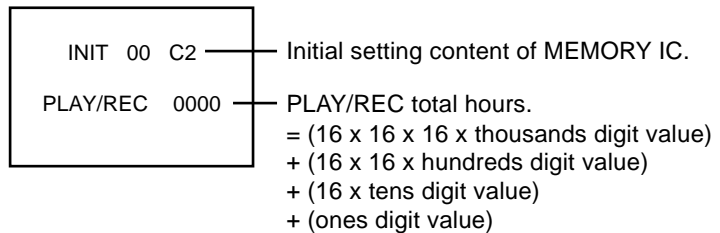
### CONFIRMATION OF HOURS USED

PLAY/REC total hours can be checked on the screen.

Total hours are displayed in 16 system of notation.

**NOTE: If you set a factory initialization, the total hours is reset to "0".**

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
4. After the confirmation of using hours, turn off the power.



# PREVENTIVE CHECKS AND SERVICE INTERVALS

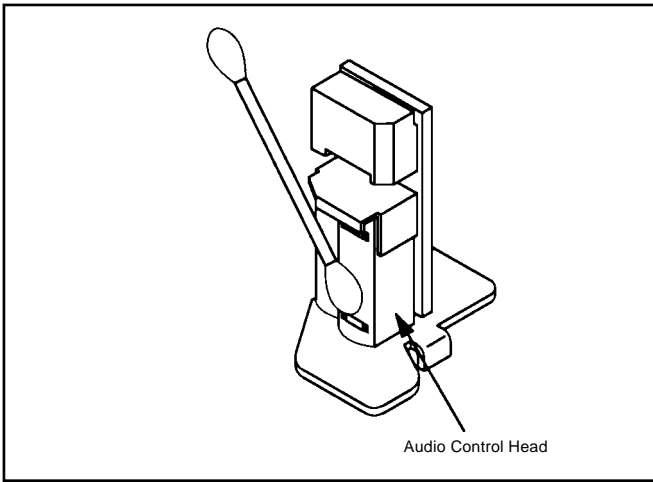
## CLEANING

### 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

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



### 2. TAPE RUNNING SYSTEM

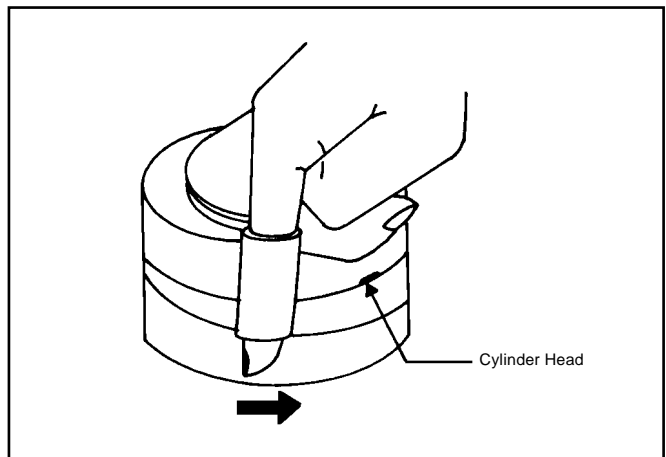
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

### 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.



# PECULIAR SERVICE

## 1. DVD SECTION

### DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet and Front Cabinet.  
**(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the white gear of Deck CD section in the direction of the arrow by hand, remove the disc from Deck CD.  
(Refer to Fig. 3-1)

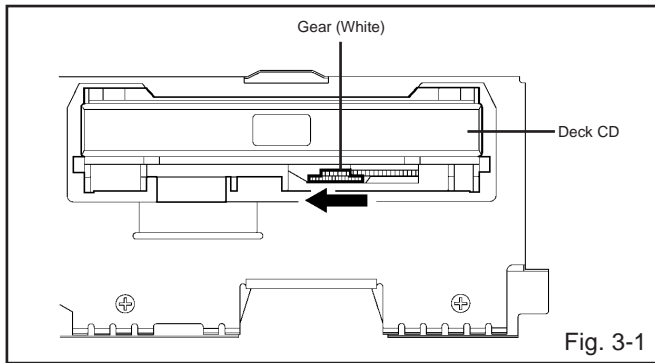
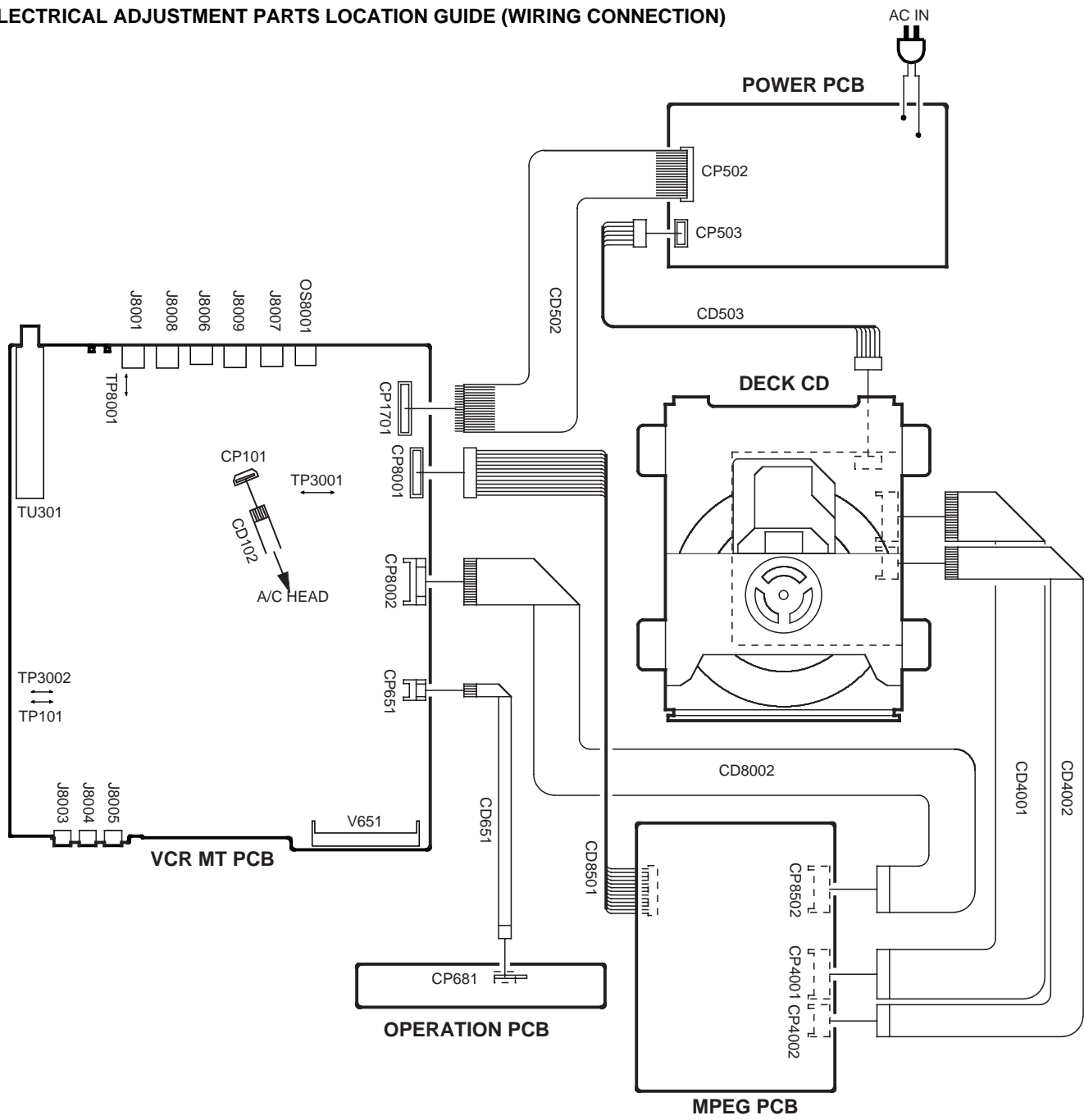


Fig. 3-1

**ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)**

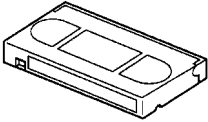
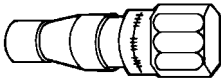

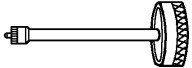
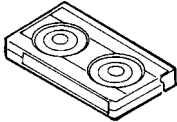
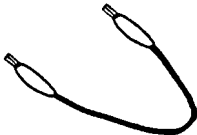




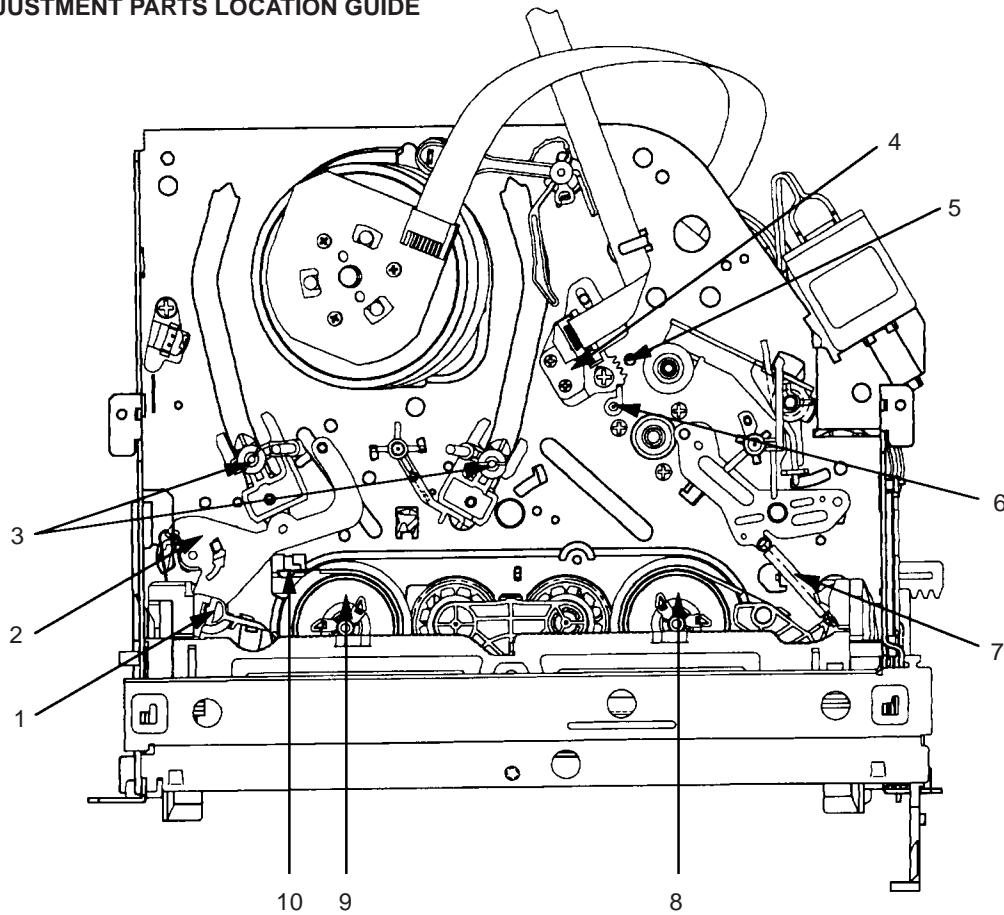
# PECULIAR SERVICE

## 2. VHS SECTION

### SERVICING FIXTURES AND TOOLS

<p>VHS Alignment Tape MHP &amp; MHP-L</p> 	<p>Torque Gauge PUJ48075-2</p> 	<p>Roller Driver PTU94002-2</p> 	<p>X-JG153 X Value Adjustment Screwdriver</p> 
<p>Torque Tape</p> 	<p>Short Jumper</p> 		

### MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



- |                                   |  |
|-----------------------------------|--|
| 1. Tension Connect                | 6. P4 Post   |
| 2. Tension Arm                    | 7. T Brake Spring                                  |
| 3. Guide Roller                   | 8. T Reel  |
| 4. Audio/Control Head             | 9. S Reel  |
| 5. X value adjustment driver hole | 10. Adjusting section for the Tension Arm position |

# MECHANICAL ADJUSTMENTS

## TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet, Front Cabinet, DVD Block, Power PCB and Center Angle and the Fig. A below can be seen. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Remove the screw ① of the VCR Deck and remove the Loading Motor. **(Refer to Fig. B)**
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.
4. Rotate the Clutch Ass'y either of the derections to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.

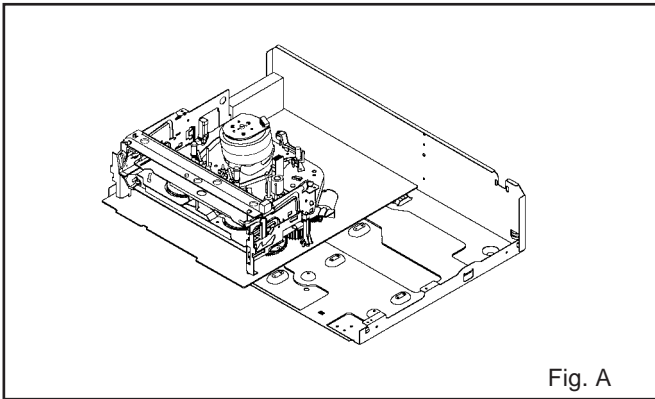


Fig. A

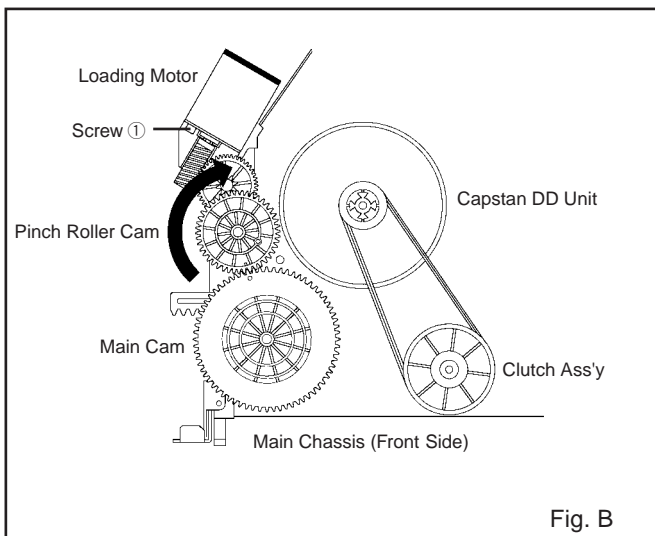


Fig. B

## 1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- 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.)

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

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

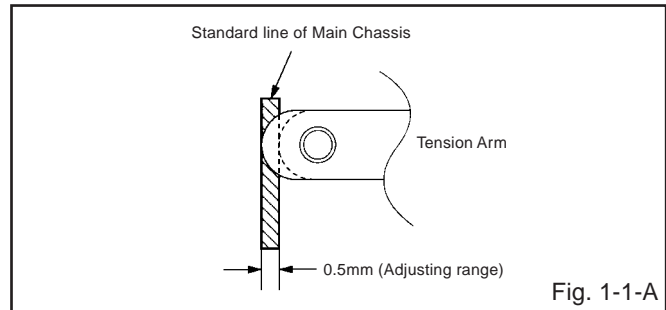


Fig. 1-1-A

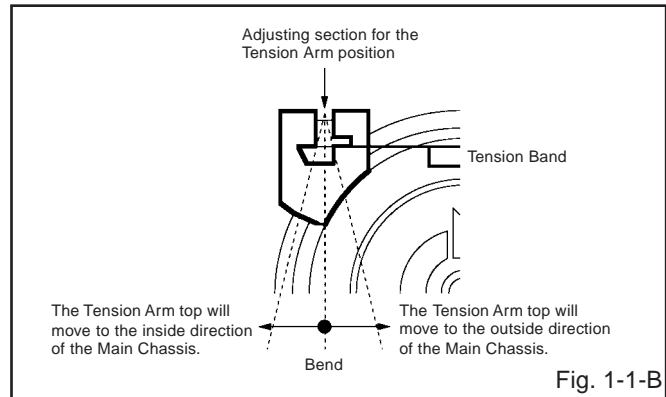


Fig. 1-1-B

### 1-2: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

### 1-3: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4-B)**
2. 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.

# MECHANICAL ADJUSTMENTS

## 1-4: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge on the S Reel. Turn the Torque Gauge clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge on the T reel. Turn the Torque Gauge counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

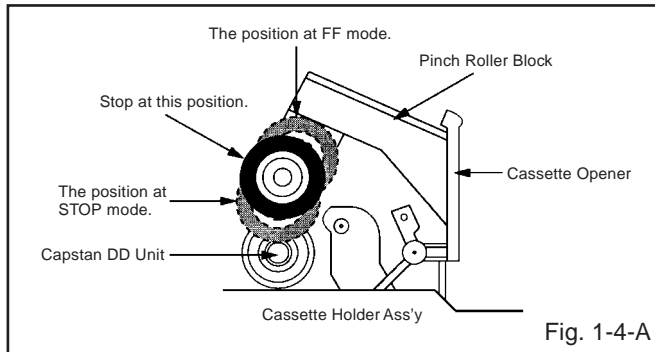


Fig. 1-4-A

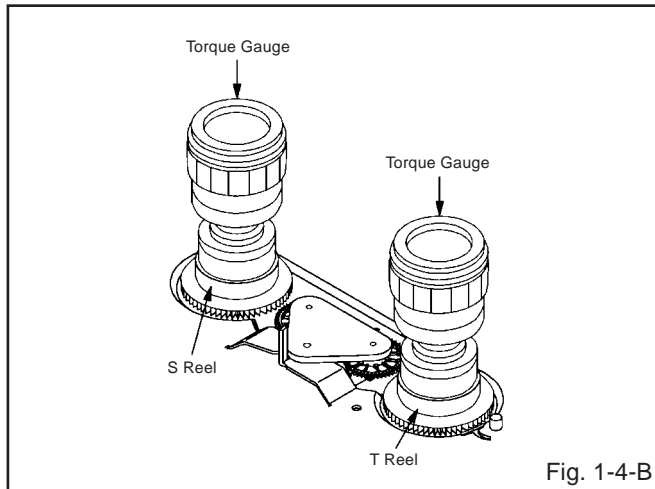


Fig. 1-4-B

### NOTE

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

Check item	Replacement Part
1-3	Idler Ass'y/Clutch Ass'y
1-4	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

## 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 (MHP).
2. Connect CH-1 of the oscilloscope to TP101 (Envelope) and CH-2 to TP3002 (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 Roller Driver (PTU94002) slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much. (Refer to Fig. 2-1-B)
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in Fig. 2-1-C, even if you press the Tracking Button to move the envelope (The envelope waveform will begin 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)

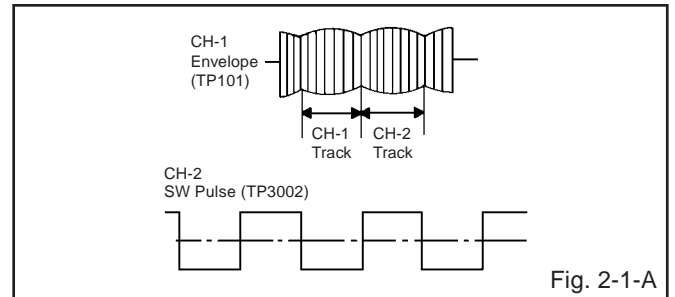


Fig. 2-1-A

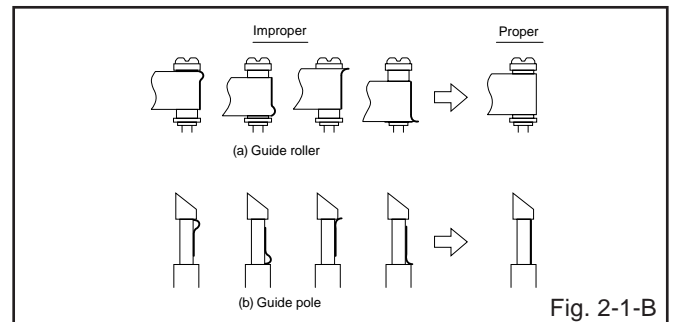


Fig. 2-1-B

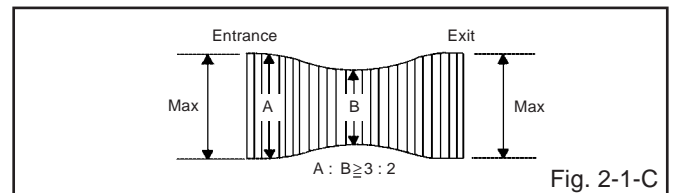


Fig. 2-1-C

## 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 (**MHP**).
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.

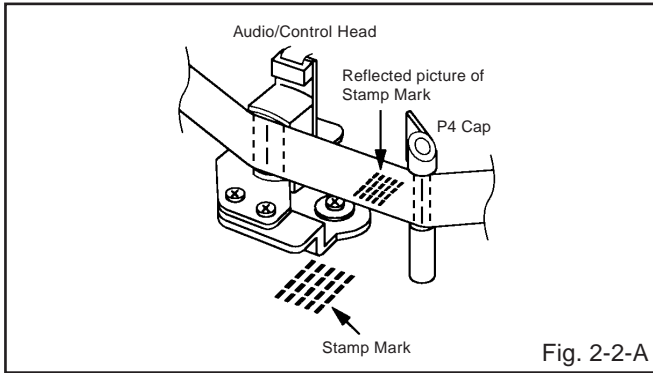


Fig. 2-2-A

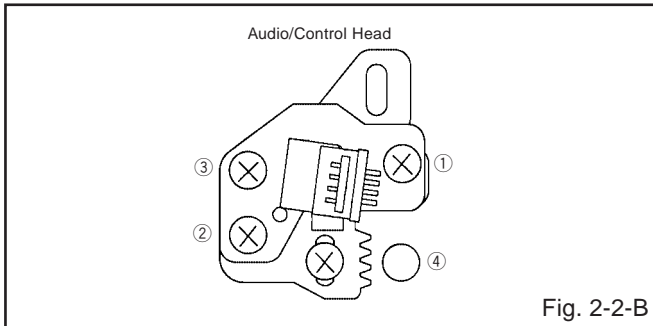


Fig. 2-2-B

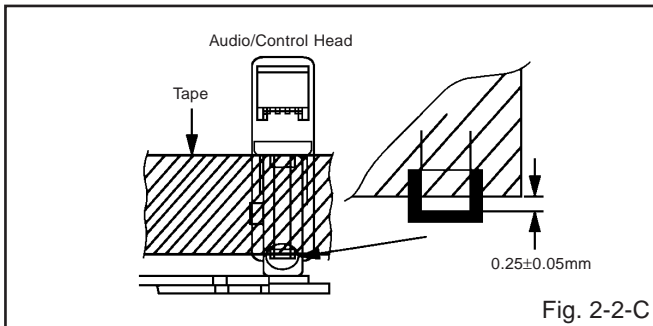


Fig. 2-2-C

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

1. Confirm and adjust the position of the Tension Post. (**Refer to item 1-1**)
2. Adjust the Guide Roller. (**Refer to item 2-1**)
3. Confirm and adjust the Audio/Control Head. (**Refer to item 2-2**)
4. Connect CH-1 of the oscilloscope to **TP3002**, CH-2 to **TP101** and CH-3 to **HOT side of Audio Out Jack**.
5. Playback the VHS Alignment Tape (**MHP**).
6. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
7. Set the X Value adjustment driver (**X-JG153**) to the ④ of **Fig. 2-2-B**. At first, turn the Audio/Control Head position fully toward the capstan side. Then adjust X Value to turn it back gradually toward the cylinder side and stop on the second peak point position of the envelope.

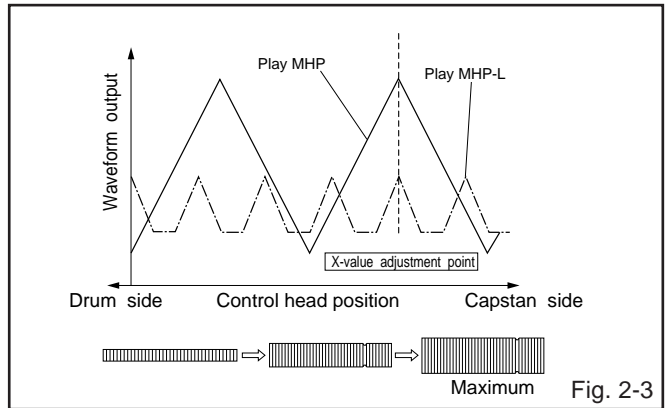


Fig. 2-3

8. Perform tracking operation and confirm the envelope is maximum on the tracking center position.
9. Playback the VHS Alignment Tape (**MHP-L**).
10. Perform tracking operation and confirm the envelope is maximum on the tracking center position. If envelop is not maximum, should be fine-tune the X-VALUE.

# ELECTRICAL ADJUSTMENTS

Read and perform this adjustment when repairing the circuits or replacing electrical parts or PCB assemblies.

## 1. BASIC ADJUSTMENT

### 1-1: SWITCHING POINT

#### CONDITIONS

MODE-PLAYBACK  
Input Signal-Alignment Tape (MHP)

#### INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP3002** and CH-2 to **TP8001**.
2. Playback the alignment tape. (MHP)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.

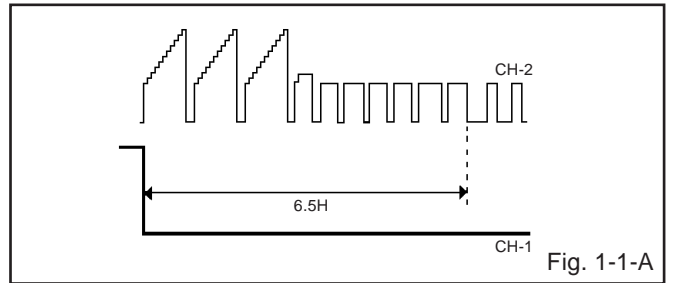


Fig. 1-1-A

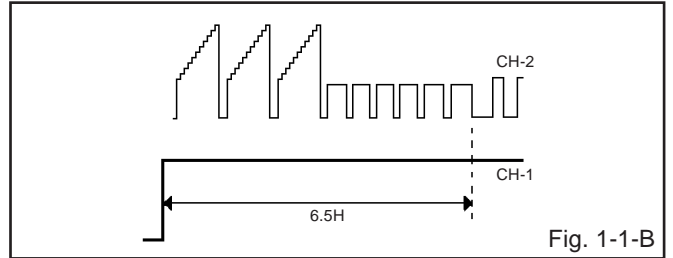
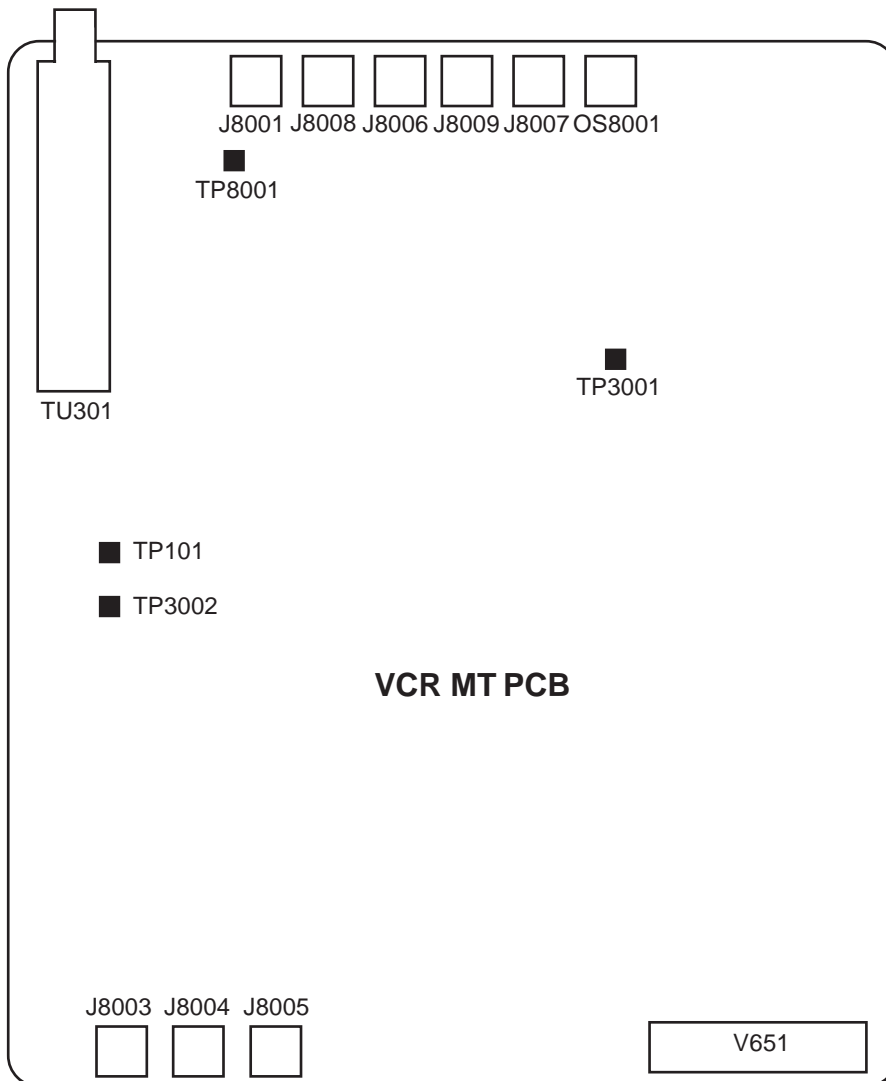


Fig. 1-1-B

## ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE



TP101 : Envelope  
TP3001 : Service Mode  
TP3002 : Switching Pulse  
TP8001 : Switching Point

## IC DESCRIPTIONS

### SYSCON PCB OEC0110A (IC3001)

No.	PORT	PIN NAME	I/O	DESCRIPTION
1	SVSS	SVSS	-	Ground.
2	CTL_REF	CTL_REF		Output terminal for CTL amp REF (1/2 SVCC)
3	CTL-H(+)	CTL-H(+)		Input and output terminal of Control Head.
4	CTL-H(-)	CTL-H(-)		Input terminal of Control Head.
5	CTL_BIAS	CTL_BIAS		Output terminal for bias.
6	CTL_FB	CTL_FB		Input terminal for CTL feedback
7	CTL_AMP(O)	CTL_AMP(O)		Output terminal for amp out.
8	CTL_AMP(I)	CTL_AMP(I)		Input terminal for CTL shumit amp .
9	CFG	CFG		Input terminal for CAPSTAN FG signal detection.
10	SVCC	SVCC		+ 5V (Servo)
11	AFC_PC	AFC_PC		AFC oscilator (external circuit).
12	AFC_OSC	AFC_OSC		AFC oscilator (external circuit).
13	AFC_LPF	AFC_LPF		LPF connection for AFC OSC.
14	CSYN/HSYN	CSYNC	OUT	Output terminal for composite SYNC.
15	VLPF/VSYN	VSYNC	IN	Input terminal for composite SYNC.(from 14pin)
16	CV_IN2	CV_IN2	IN	Composite Video input terminal.(for data slicer)
17	CV_IN1	CV_IN1	IN	Composite Video input terminal.(for OSD)
18	OSD VCC	OSDVCC	-	+ 5V
19	CV_OUT	CV_OUT	OUT	Composite Video output.(with OSD)
20	OSD_VSS	OSD_VSS	-	Ground.
21	4/2 FSC_OUT	4/2 FSC_OUT	OUT	2 FSC pulse.
22	4/2 FSC_IN	4/2 FSC_IN	IN	2 FSC pulse.
23	AVSS	AVSS	-	Ground.
24	AN-B	VIDEO_ENV	IN	Input terminal of video RF envelope.
25	AN-A	BOT-H	IN	Tape start sensor input signal.
26	AN-9	EOT-H	IN	Tape end sensor input signal.
27	AN8	MS_SEN-B	IN	Input terminal of mecha state sensor.
28	P07/AN7	MS_SEN-A	IN	
29	P06/AN6	KEY-B	IN	Main unit key input.
30	P05/AN5	KEY-A	IN	
31	P04/AN4	STEREO_SEL	IN	
32	P03/AN3	HI-FI_ENV	IN	Input terminal of HiFi RF envelope.
33	P02/AN2	AFT-S_CURVE	IN	AFT S CURVE input for tuner.
34	P01/AN1	SERVICE	IN	Input terminal for Service Mode.
35	P00/AN0	TAB SW	IN	Input terminal for judge the tape if it has TAB or not.
36	AVCC	AVCC	-	ON/OFF control Micon AD section.
37	P10/IRQ0	POWER_FAIL	IN	Input terminal of Power fail signal.
38	P11/IRQ1	CFG IN2	IN	Input terminal for CAPSTAN FG signal detection.
39	P12/IRQ2	NC	IN	Not used.(for FZTAT)

## IC DESCRIPTIONS

### SYSCON PCB OEC0110A (IC3001)

No.	PORT	PIN NAME	I/O	DESCRIPTION
40	P13/IRQ3	VIDEO_MUTE	OUT	H for at AUTO_CLOCK in POWER OFF. L for except above case.
41	P14/IRQ4	POWER_ON_L	OUT	For control the user power switch ON/OFF.
42	P15/IRQ5	POWER_ON-H	OUT	For control the user power switch ON/OFF.
43	P16/IC	REM_IN	IN	Receive the remote control signal.
44	P17/TMOW	DVD RESET	OUT	For control the DVD RESET.
45	P67/RP7/TMB	NC	OUT	Not used.
46	P66/RP6/ADTRG	DVD LED	OUT	The DVD LED light-up/put-off control output.
47	P65/RP5	VCR LED	OUT	The VCR LED light-up/put-off control output.
48	P64/RP4	GRID1	OUT	LEM(LED Module) control terminal.
49	P63/RP3	GRID2	OUT	LEM(LED Module) control terminal.
50	P62/RP2	GRID3	OUT	LEM(LED Module) control terminal.
51	P61/RP1	GRID4	OUT	LEM(LED Module) control terminal.
52	P60/RP0	GRID5	OUT	LEM(LED Module) control terminal.
53	P37/TM0	Y/C CLOCK	OUT	Control terminal for Y/C. (CLOCK).
54	P36/BUZZ	Y/C DATA	OUT	Control terminal for Y/C.(DATA).
55	P35	SEG1	OUT/IN	LEM(LED Module) control terminal.
56	VCC	VCC	-	Power of CPU.
57	VSS	VSS	-	Ground.
58	P27	SEG2	OUT	LEM(LED Module) control terminal.
59	P26	SEG3	OUT	LEM(LED Module) control terminal.
60	P25	SEG4	OUT	LEM(LED Module) control terminal.
61	P24/SCL1	IIC CLK	OUT	CLOCK terminal for IIC BUS communication.
62	P23/SDA1	IIC DATA	OUT/IN	DATA terminal for IIC BUS communication.
63	P22/SCK1	SEG5	OUT	LEM(LED Module) control terminal.
64	P21/SO1	TX	OUT	Input terminal for DVD communication.(asynchronous)
65	P20/SI1	RX	IN	Output terminal for DVD communication.(asynchronous)
66	P47/RPTRG	SEG6	OUT	LEM(LED Module) control terminal.
67	P46/FTOB	SEG7	OUT	LEM(LED Module) control terminal.
68	P45/FTOA	SEG8	OUT	LEM(LED Module) control terminal.
69	P44/FTID	REEL-S	IN	Input terminal of reel sensor supply.
70	P43/FTIC	REEL-T	IN	Input terminal of reel sensor take up.
71	P42/FTIB	SEG9	OUT	LEM(LED Module) control terminal.
72	P41/FTIA	JUST_CLOCK	IN	not used.
73	P40/PWM14	SEG10	OUT	LEM(LED Module) control terminal.
74	FEW	FEW	IN	FZTAT Write protect.
75	X2	X2	OUT	Subclock pulse(32.768KHz)
76	X1	X1	IN	
77	/RESET	/RESET	IN	RESET will be done when the voltage goes to HIGH after the reset signal.

## IC DESCRIPTIONS

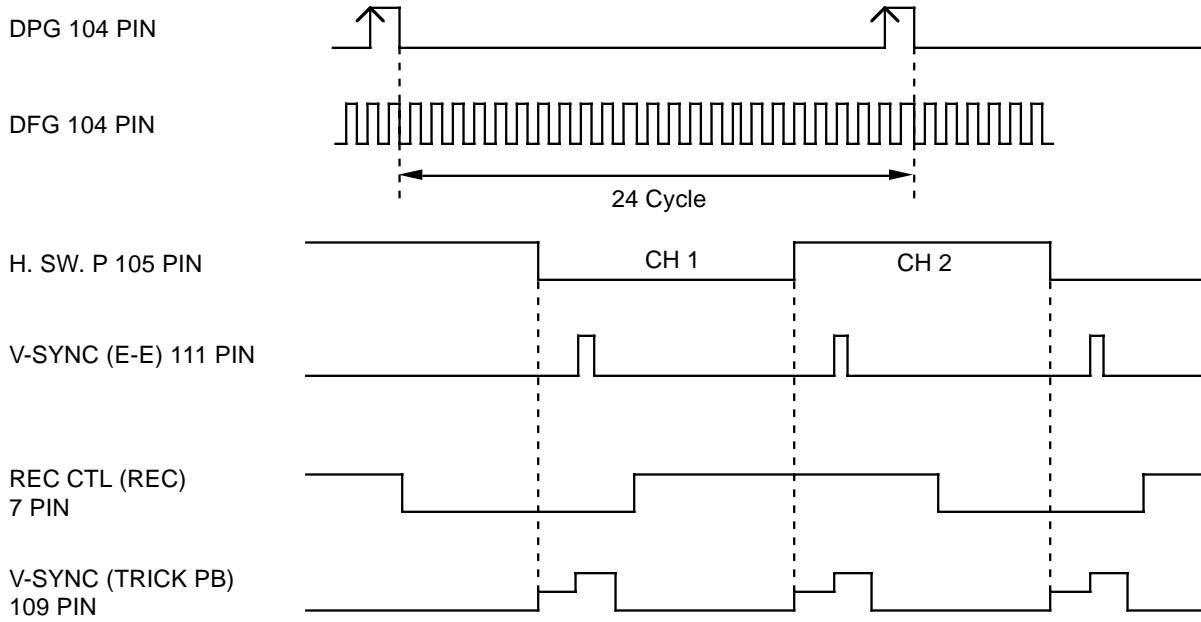
### SYSCON PCB OEC0110A (IC3001)

No.	PORT	PIN NAME	I/O	DESCRIPTION
78	OSC1	OSC1	IN	Connect the main crystal(10MHz)
79	DVSS	VSS	-	Ground.
80	OSC2	OSC2	OUT	Connect the main crystal(10MHz)
81	VCL	VCL	IN	Connect the capacitor
82	MD0	MD0	IN	FZTAT Write MODE.
83	P34/PWM2	NC	OUT	not used.
84	P33/PWM1	CAP_LIMIT	OUT	Switch the maximum output current of the Capstan Motor.
85	P32/PWM0	T.AUDIO_MUTE	OUT	H for at PLAY in VCR MODE. L for except above case.
86	P31/SV2	TV/VCR	OUT	H for at RF modulator ON. L for except above case.
87	P30/SV1	POWER_MUTE	OUT	audio mute at POWER ON/OFF.
88	P70/PPG0	SURROUND_ON	OUT	Control the surround IC.
89	P71/PPG1	NC	OUT	Not used.
90	P72/PPG2	NC	OUT	Not used.
91	P73/PPG3	AV SW_2	OUT	Control rear/front video signal.(at AV X 2)
92	P74/PPG4/RP8	AV SW_1	OUT	Control DVD/VCR video/audio signal.
93	P74/PPG5/RP9	Y/C CS	OUT	Control terminal for Y/C. (CHIP SELECT).
94	P76/PPG6/RPA	CENTER LED	OUT	The CENTER LED light-up/put-off control output.
95	P77/RPG7/RPB	AUDIO_OUT_MUTE	OUT	H for at AUDIO MUTE . L for except above case.
96	P80/YCO	V_REC_ST-H	OUT	On control of A/V recording(Whole width erase) circuit.
97	P81/EXCAP/YBO	LDM CTL	OUT	Loading motor control terminal.
98	P82/EXCTL	CAP_FWD-H	OUT	Capstan forward and backward command.
99	P83/C,ROT/R	C.ROTARY	OUT	Color Rotary Control output.
100	P84/H.AMP/G	H.AMP.SW	OUT	Switching output of Head Amp SW.
101	P85/COMP/B	COMP	IN	Comparison results input of Playback Envelope level on SP/LP heads (4 heads).
102	P86/EZTTRG	CAP_FULL	OUT	Output the HIGH during the acceleration force of capstan motor at SLOW mode.
103	P87/DPG	CYL_SPEED_UP	OUT	Output terminal for correct cylinder during SLOW.
104	DFG	D FG/PG	IN	Input terminal for DRUM FG signal detection.
105	VIDEO_FF	H.SW	OUT	Output terminal of Video Head SW.
106	AUDIO_FF	HI-FI H.SW	OUT	Output terminal of HI-FI Head SW.
107	DRUM_PWM	DRUM_PWM	OUT	PWM output of Cylinder control.
108	CAP_PWM	CAP_PWM	OUT	PWM output of Capastan control.
109	V-PULSE	DUMMY_V-SYNC	OUT	Virtual V Pulse output.
110	SV VSS	SV VSS	-	Ground.
111	C.SYNC_IN	SYNC	IN	Input terminal for composite SYNC.
112	VCC	VCC(SV)	-	+ 5V



# SERVO TIMING CHART

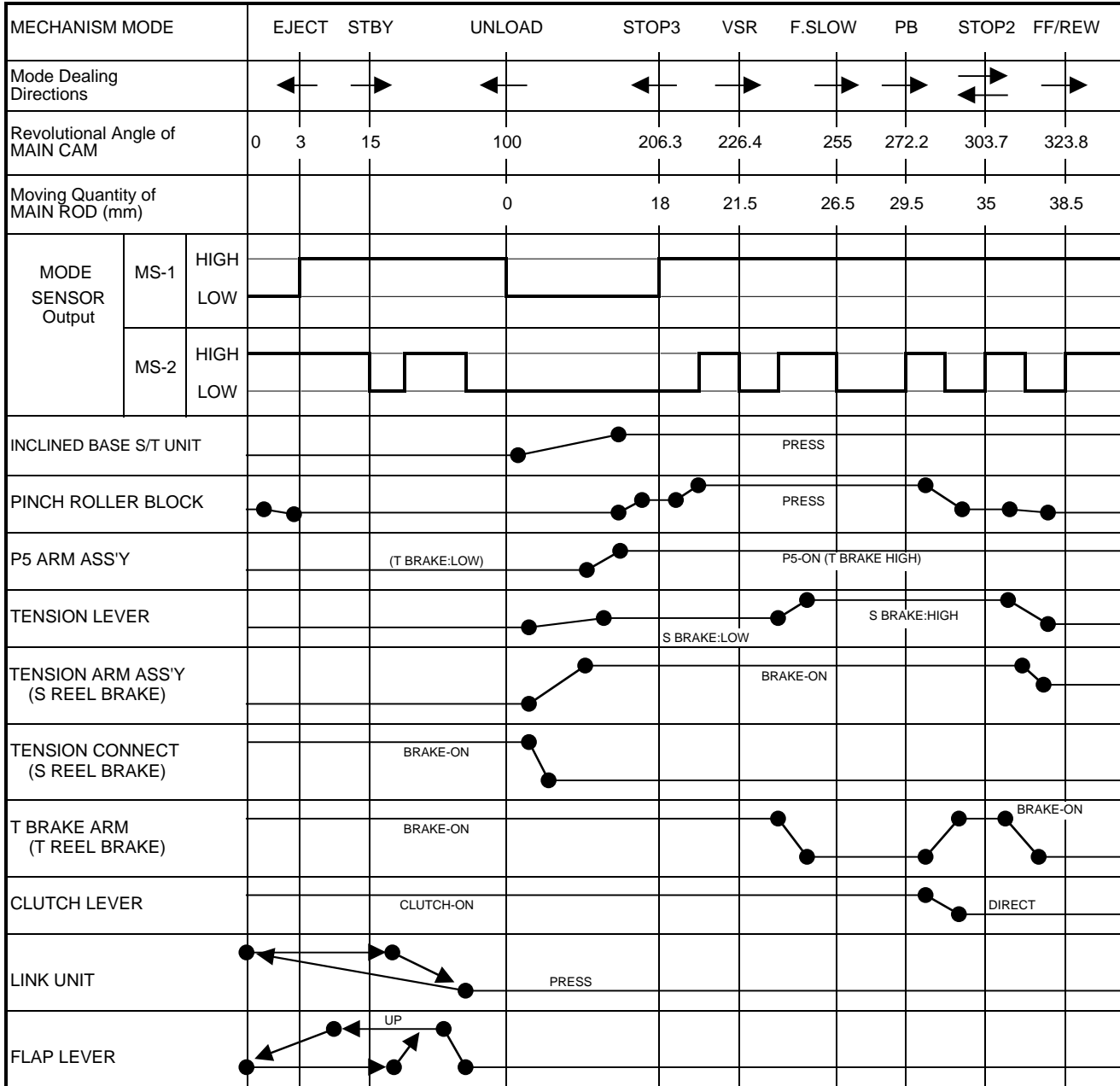
VCR MT PCB IC3001 (OEC0110A)



• WAVEFORM CHANGES DEPENDED ON THE TAPE SPEED

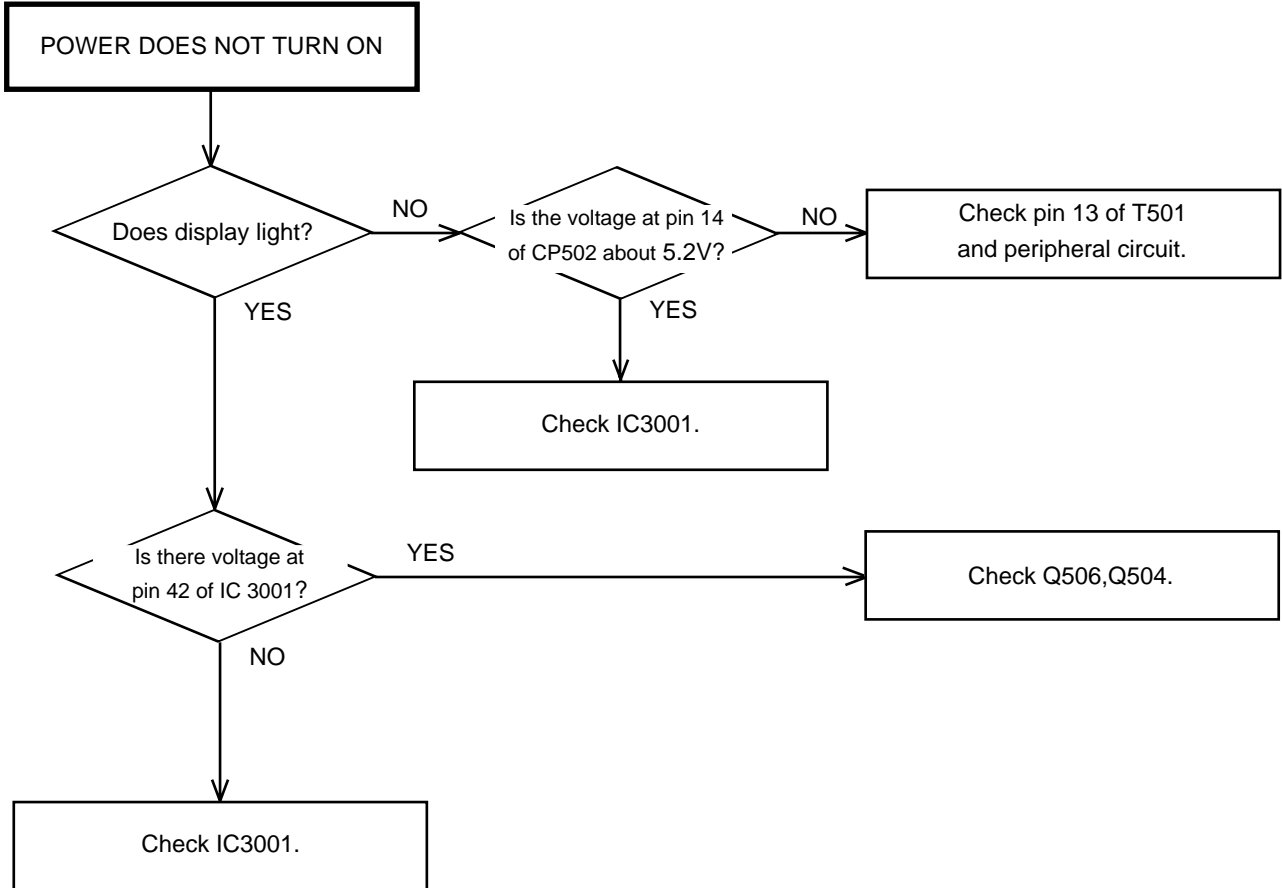
# MECHANISM TIMING CHART

Please see the list below for the operational timing and the mode sensor output of the main parts on each mechanism modes.

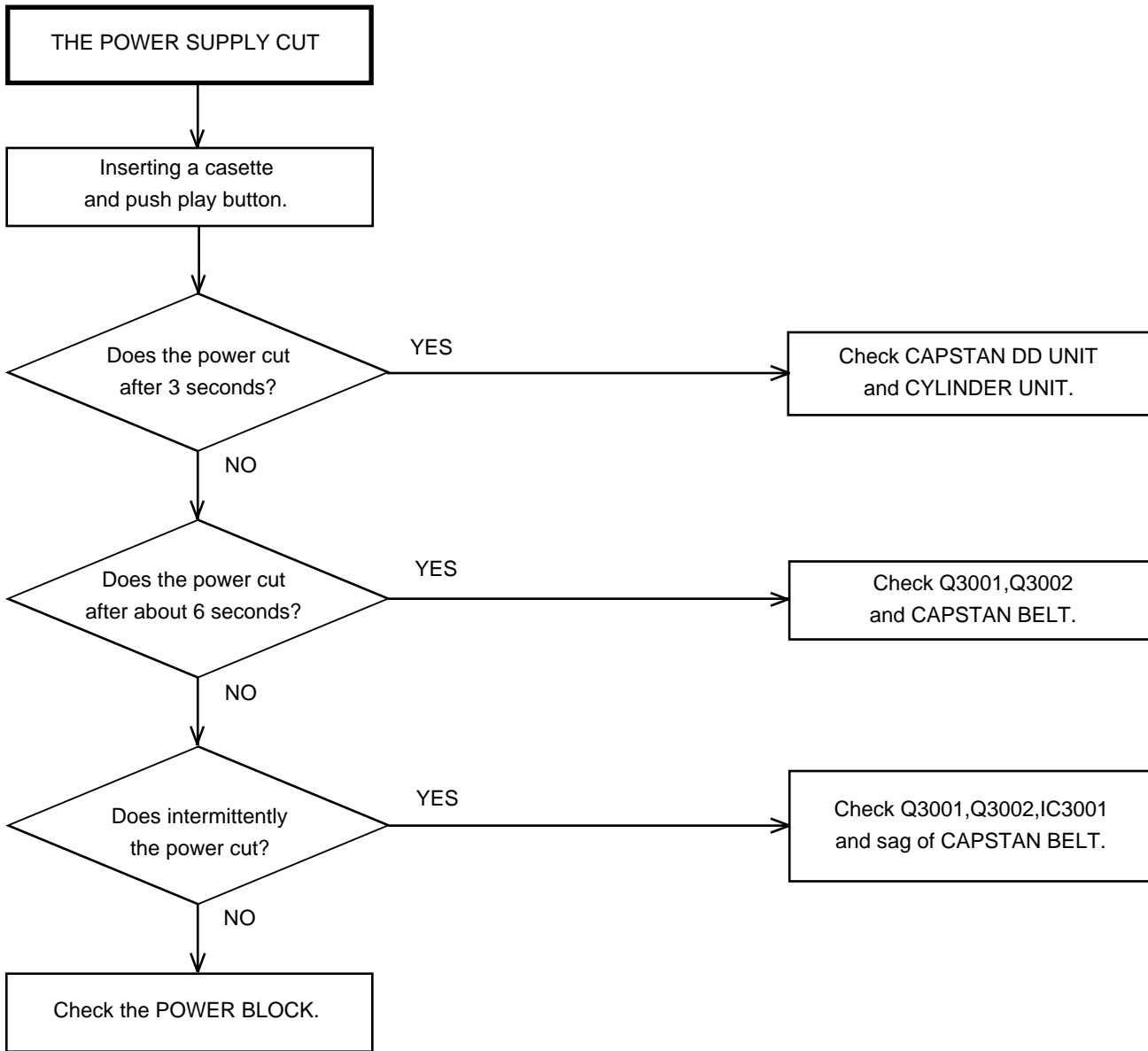


# TROUBLESHOOTING GUIDE

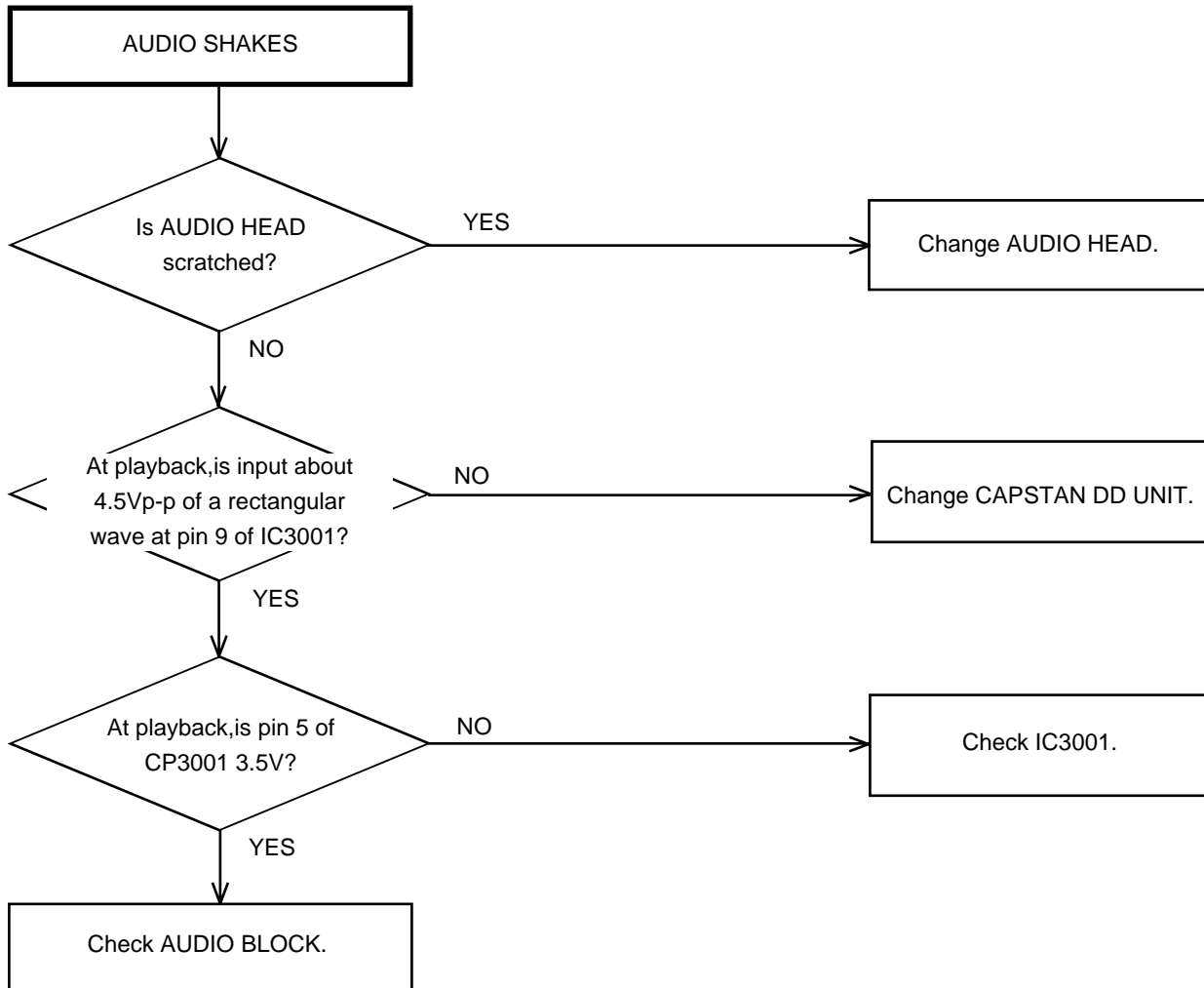
## (VCR SECTION)



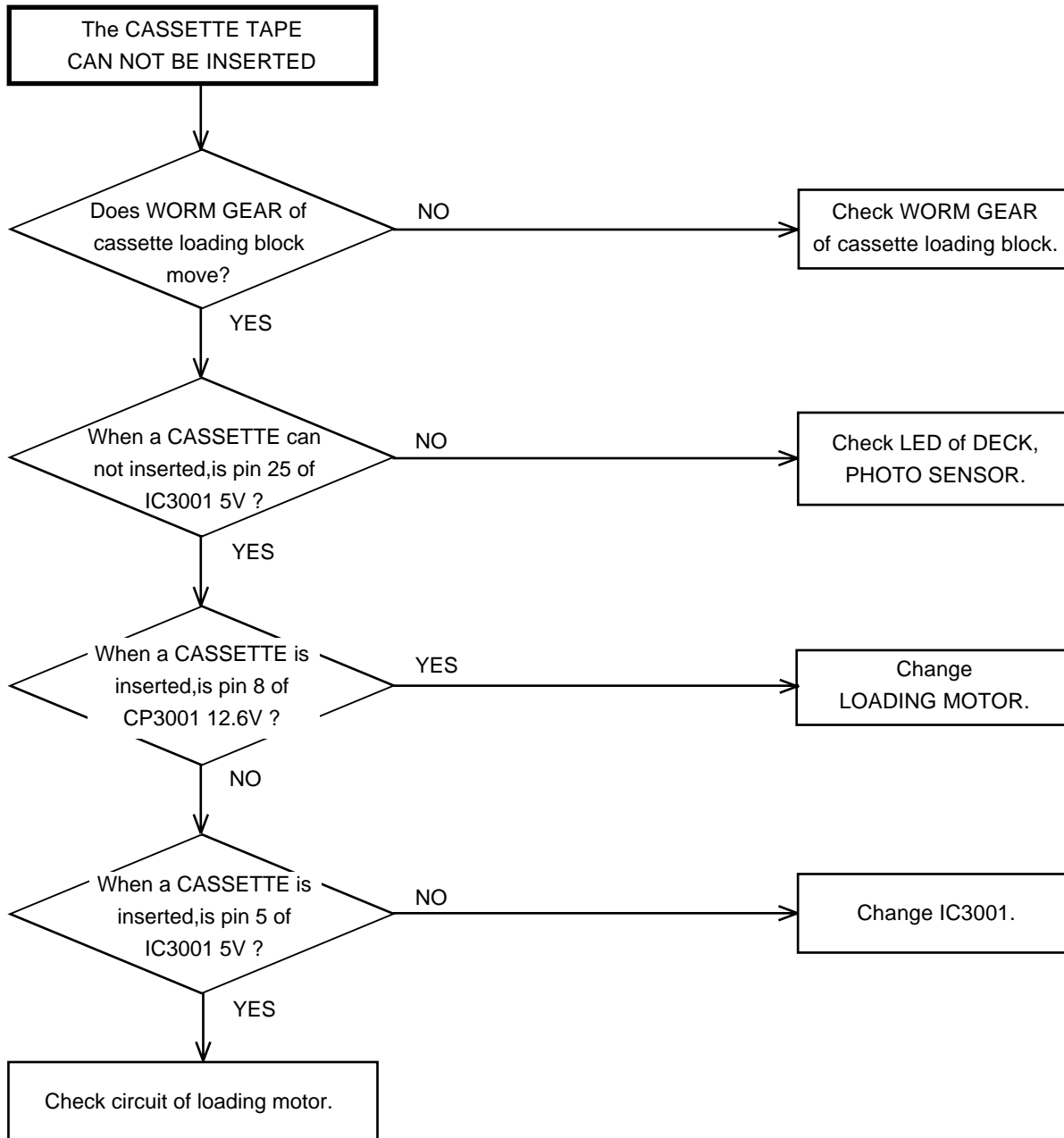
## TROUBLESHOOTING GUIDE



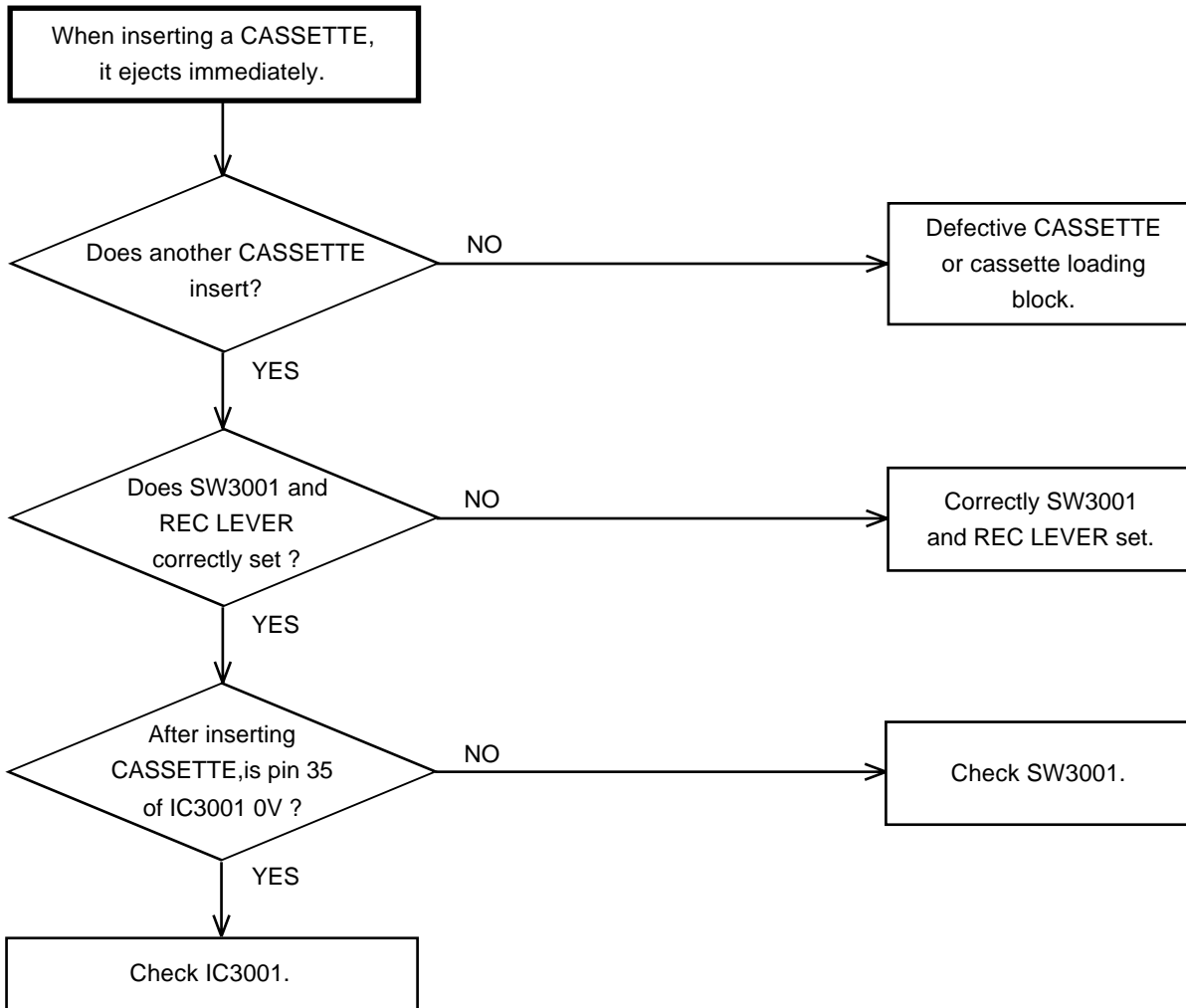
# TROUBLESHOOTING GUIDE



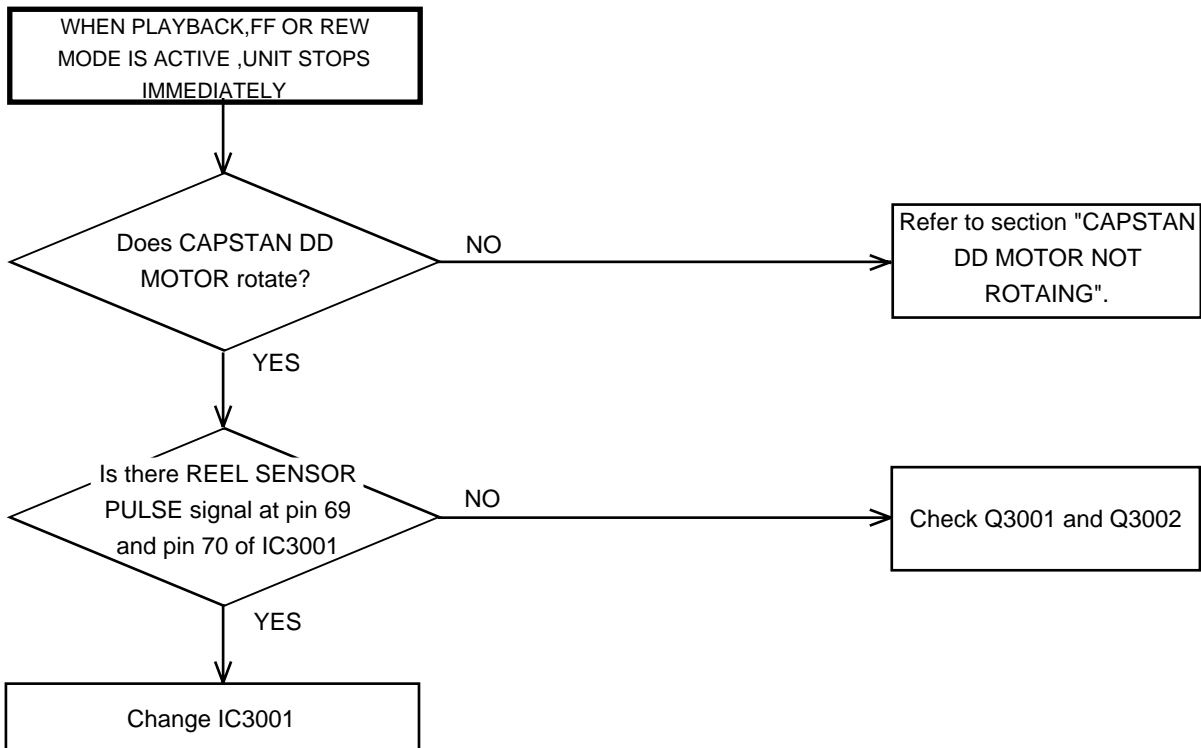
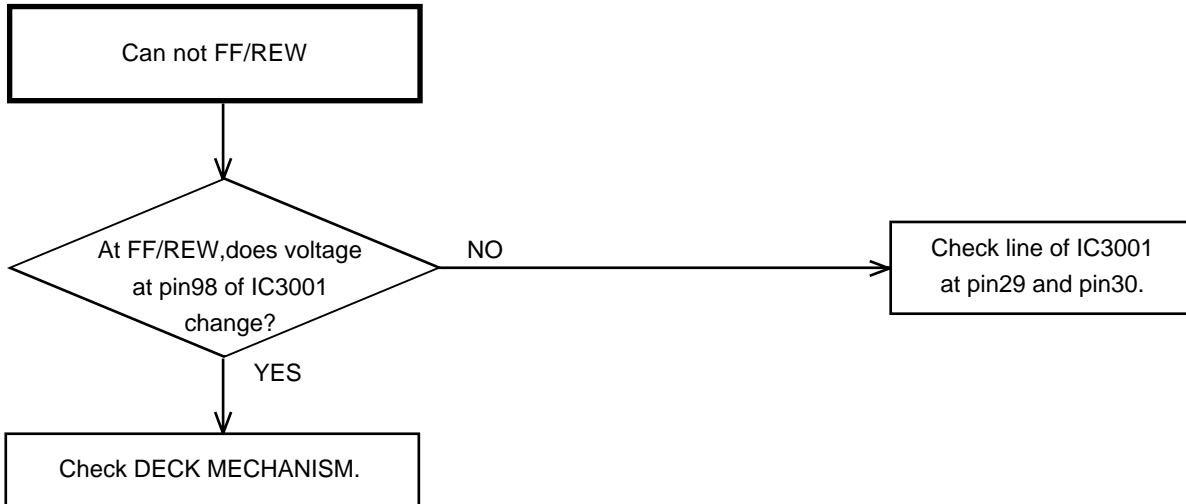
# TROUBLESHOOTING GUIDE



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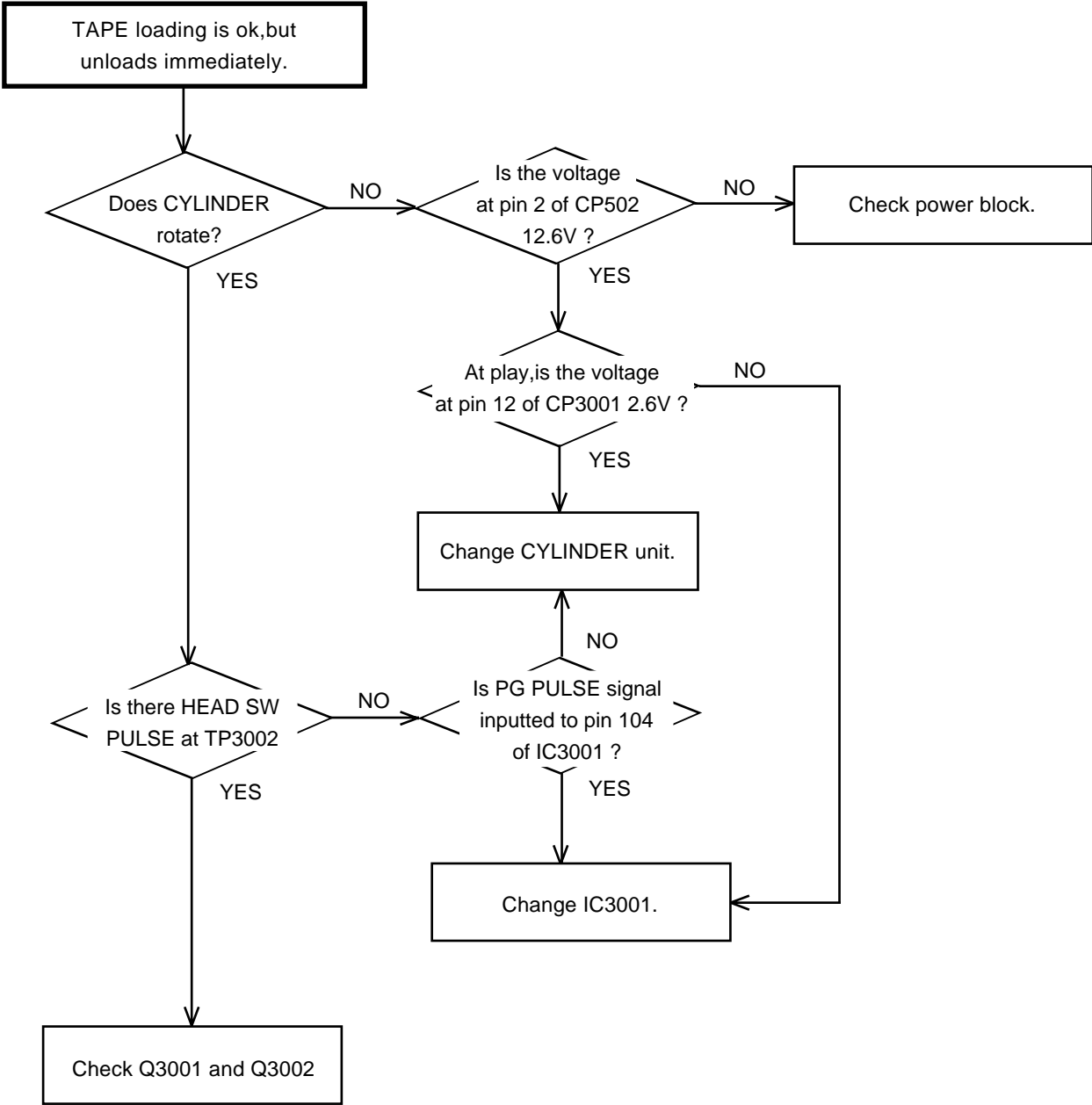


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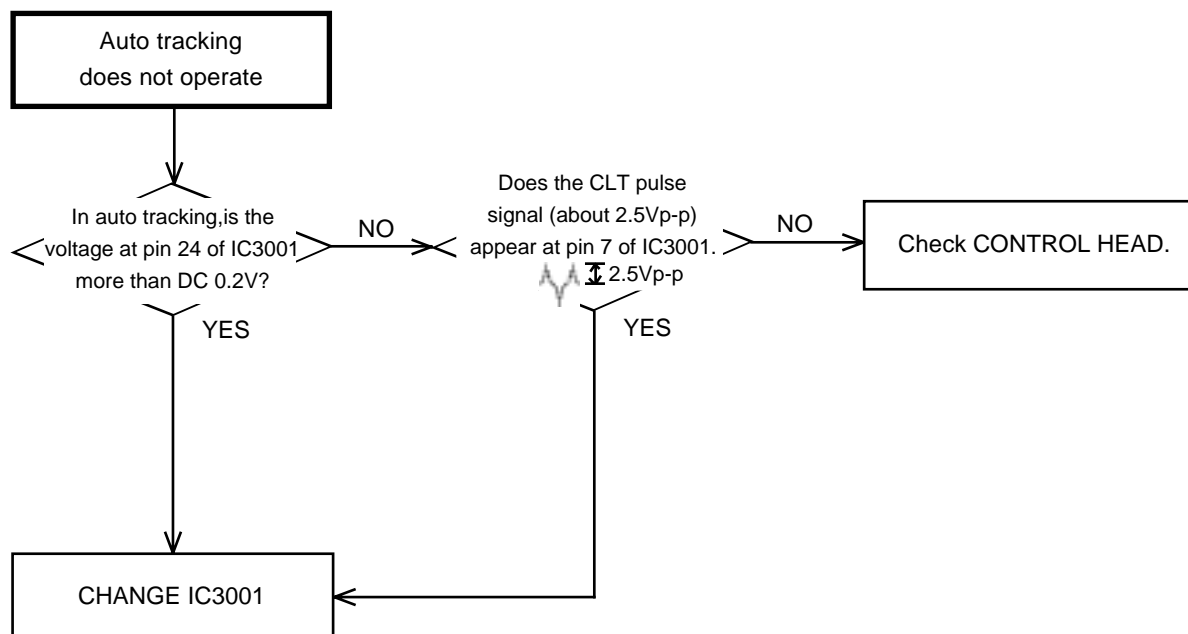
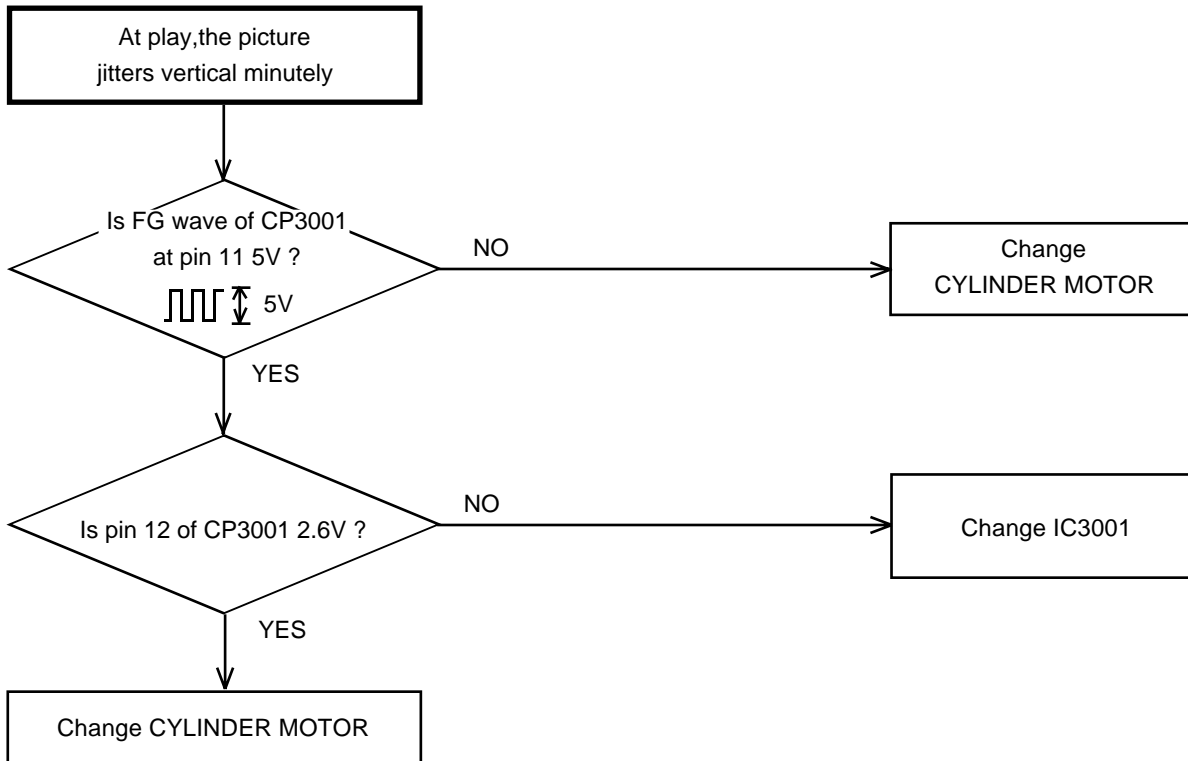




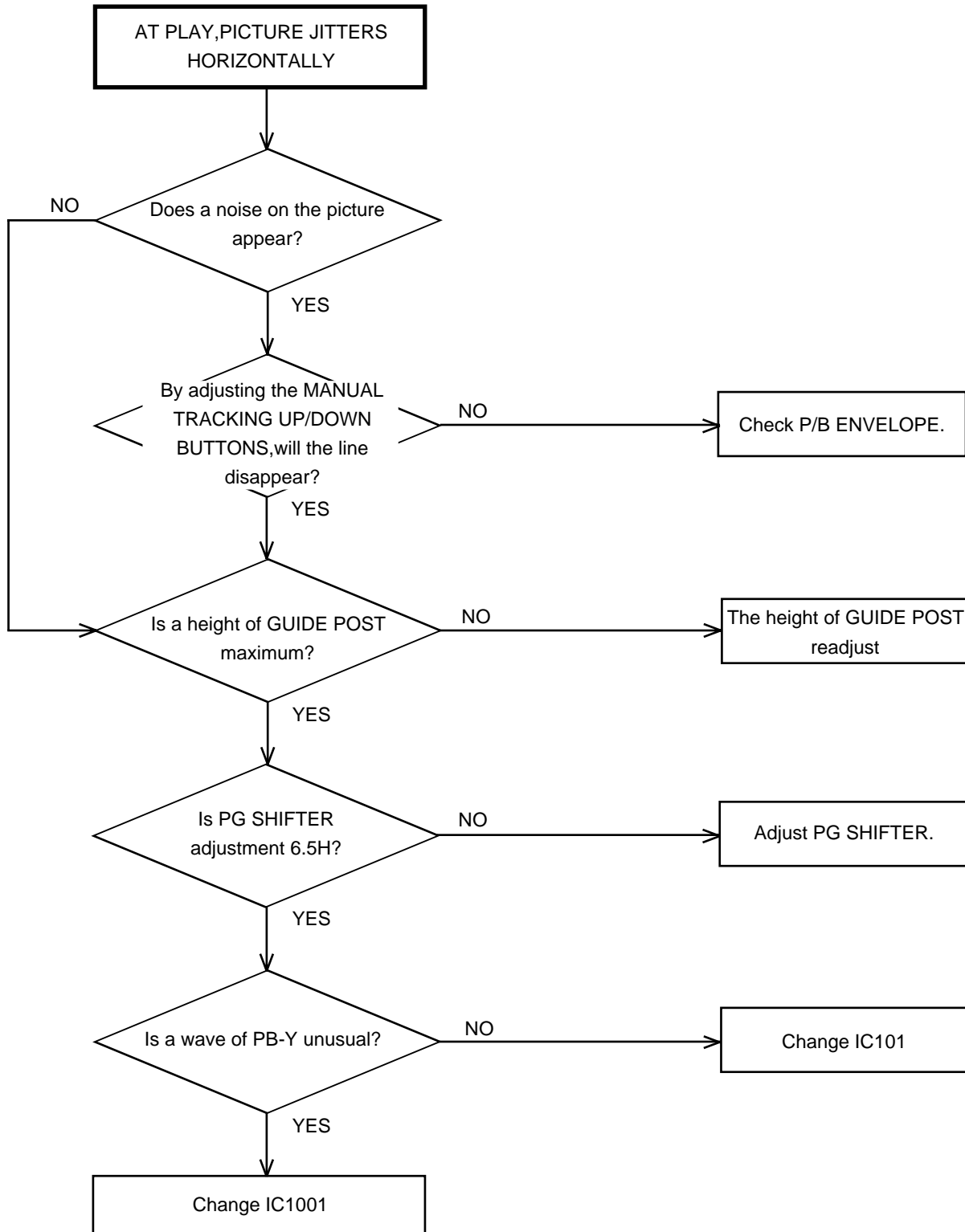
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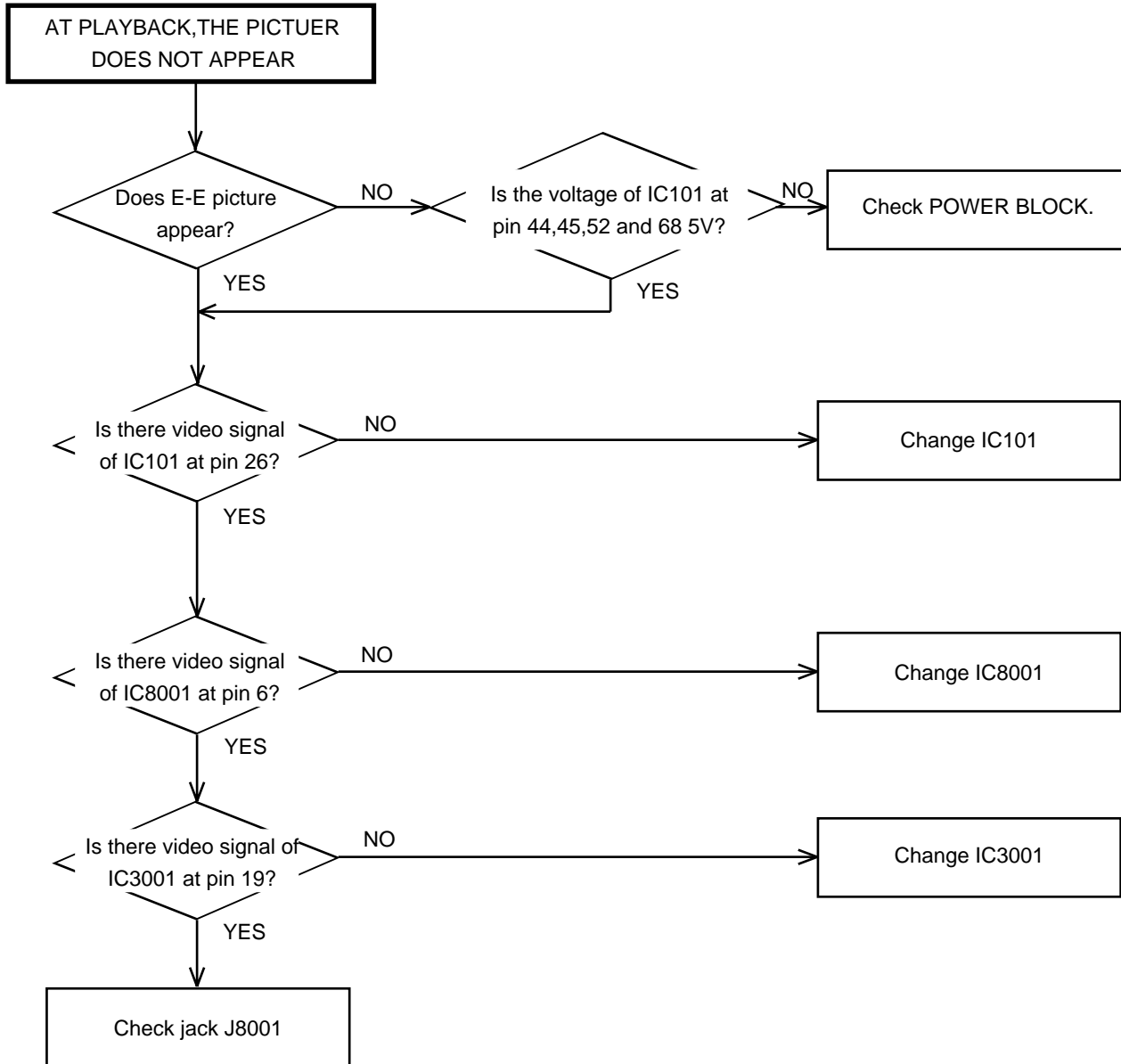
## TROUBLESHOOTING GUIDE



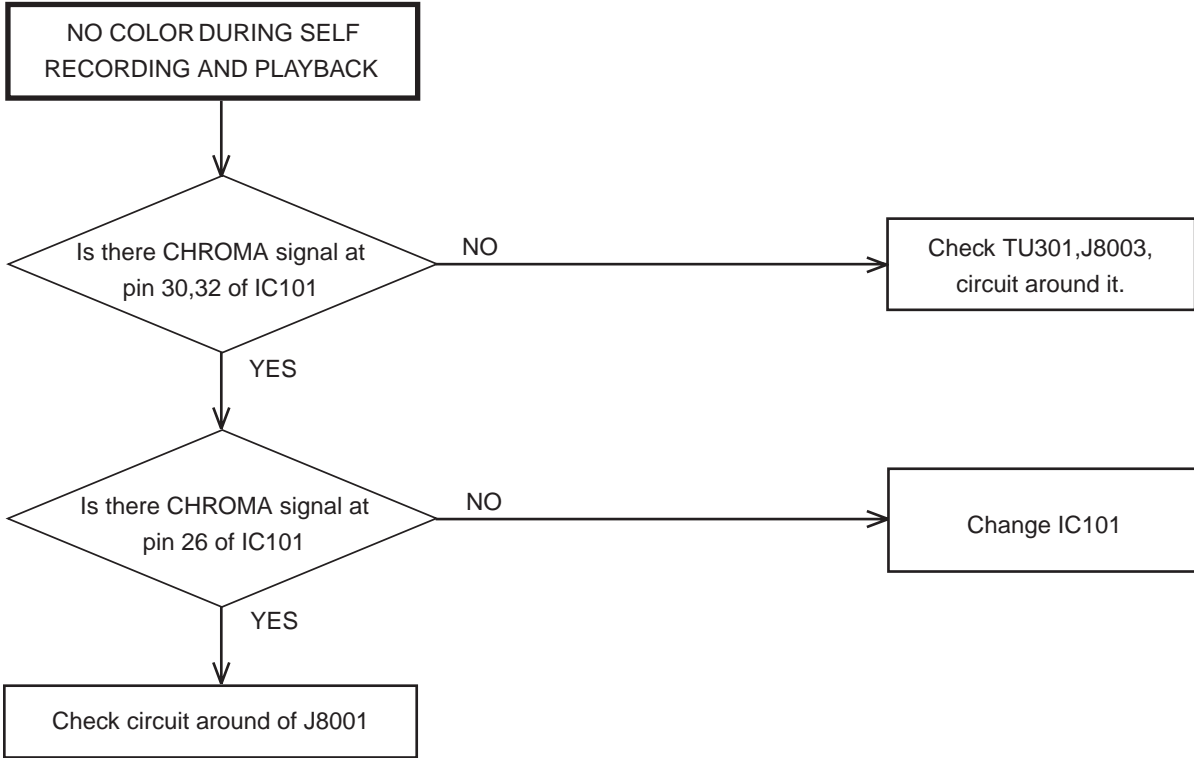
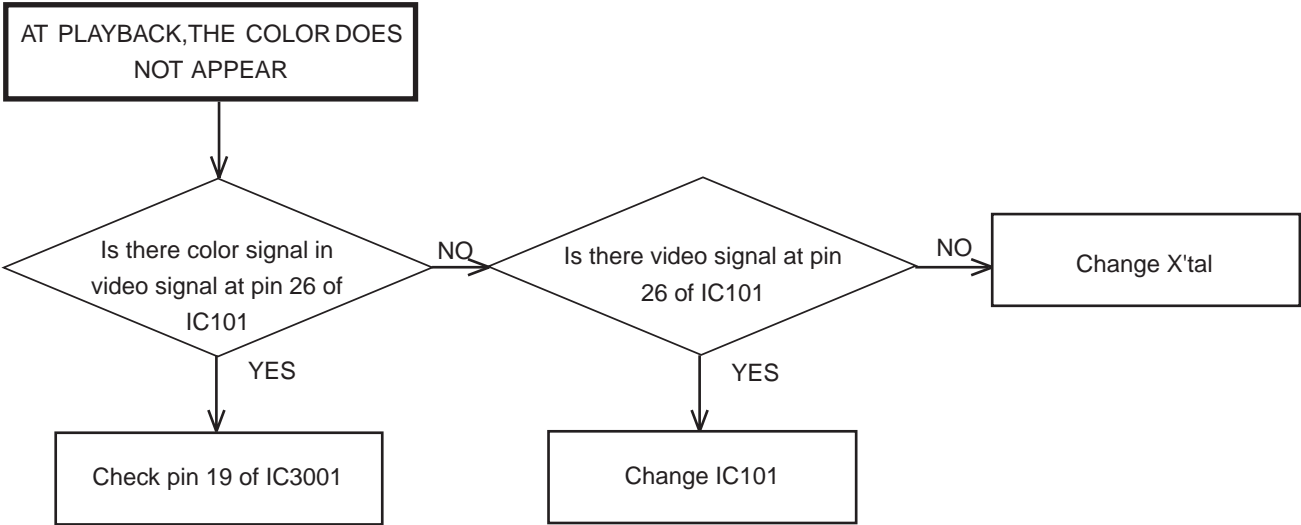
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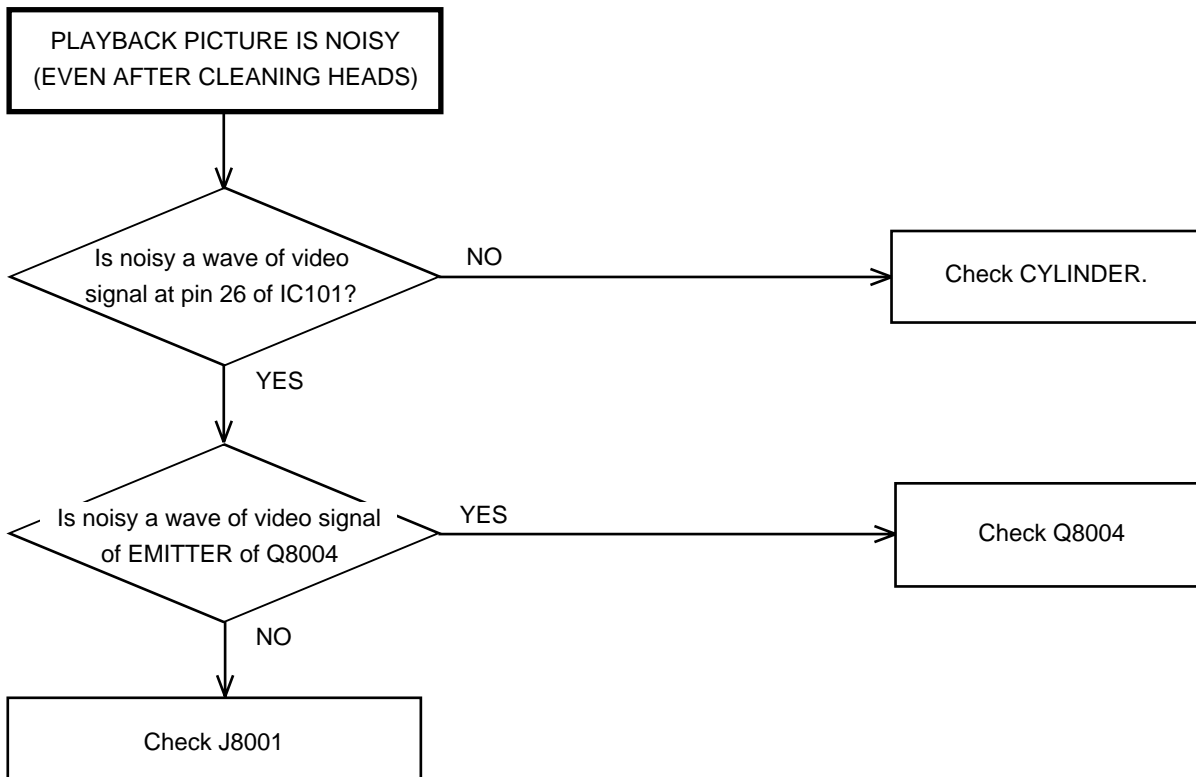
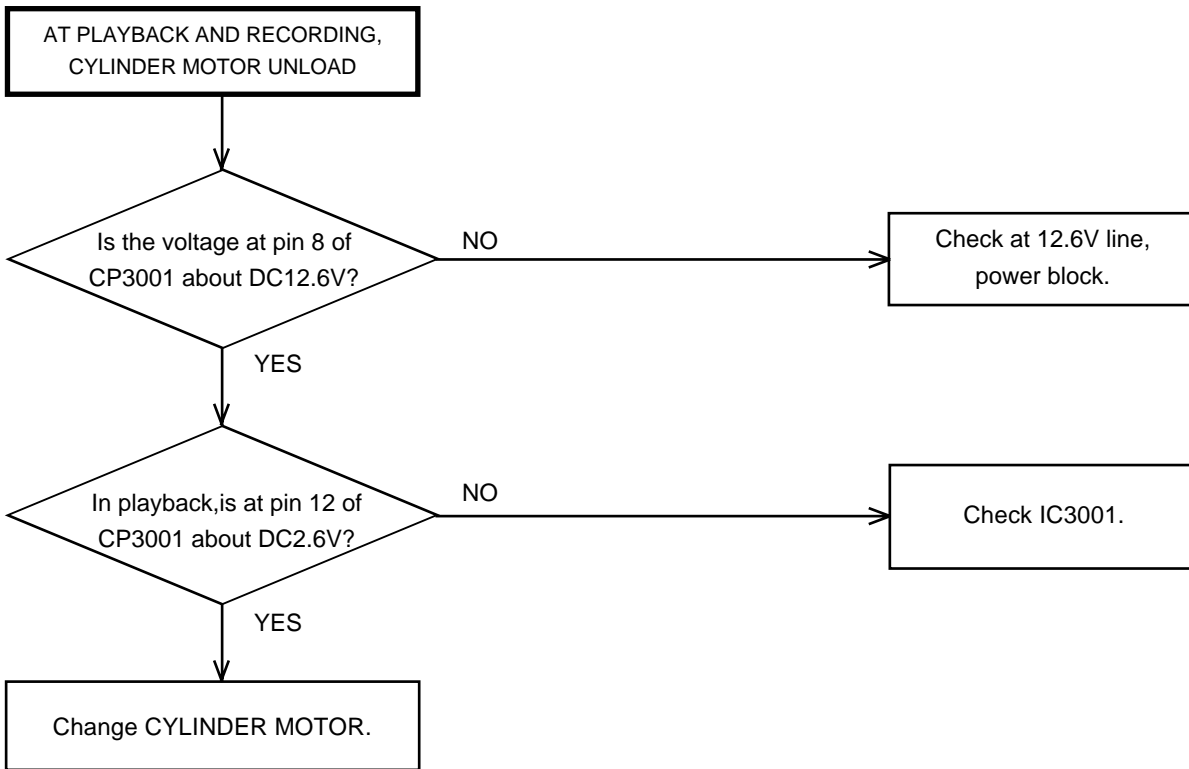
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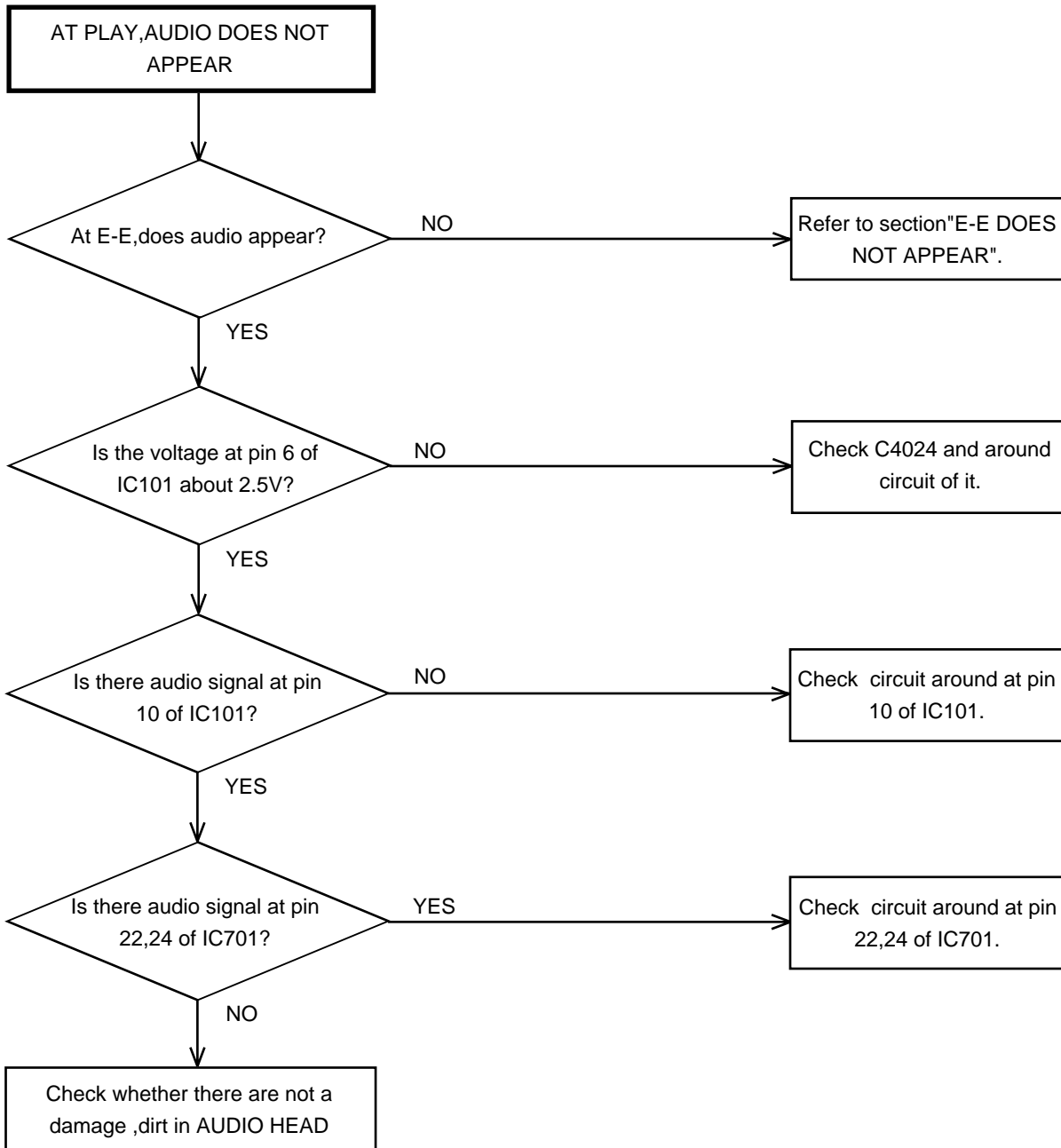
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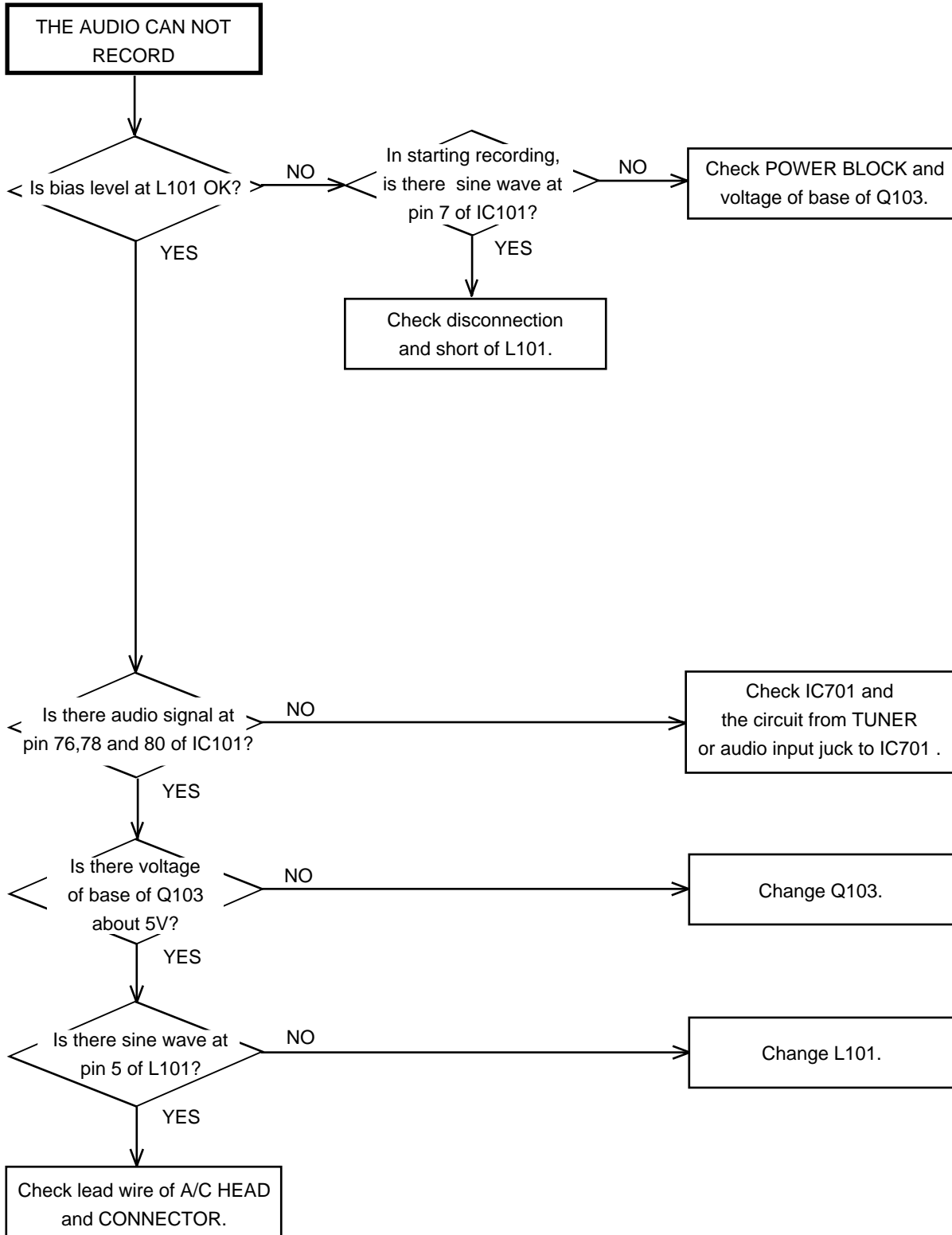
# TROUBLESHOOTING GUIDE



## TROUBLESHOOTING GUIDE

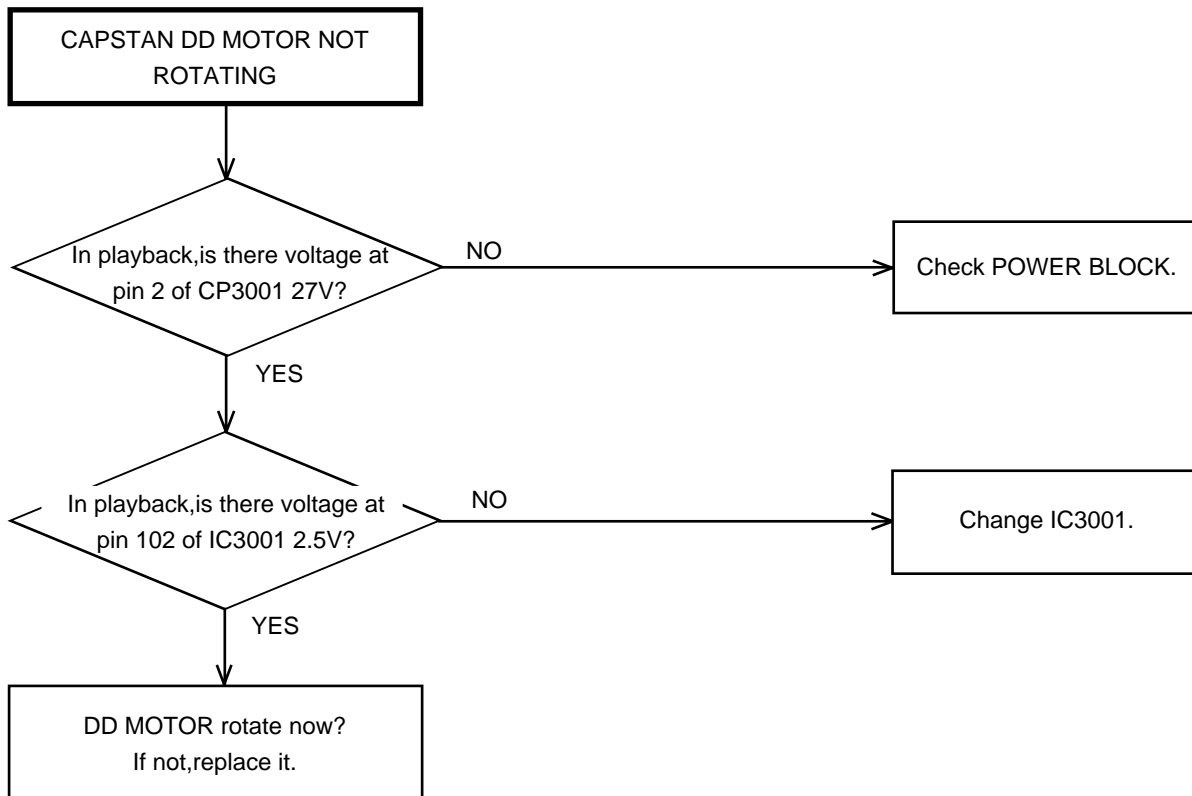
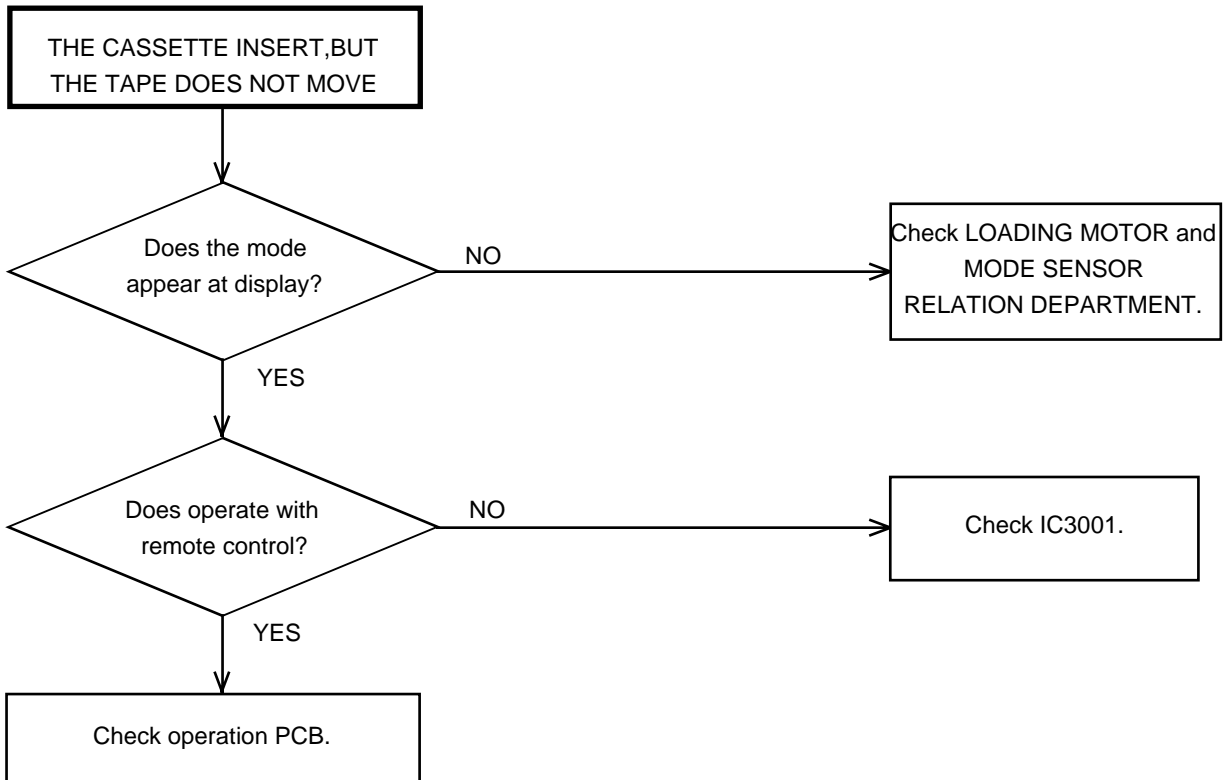


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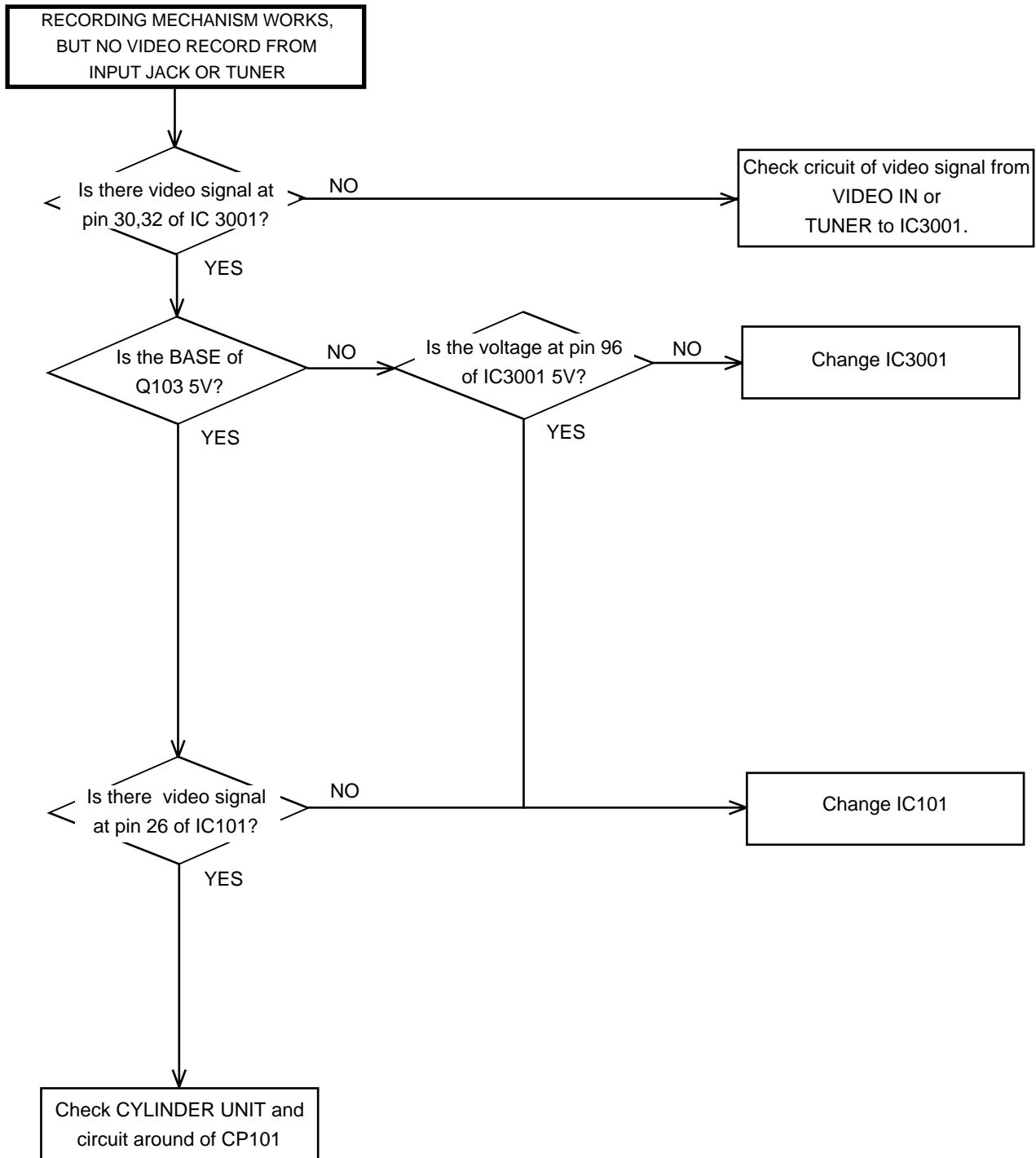




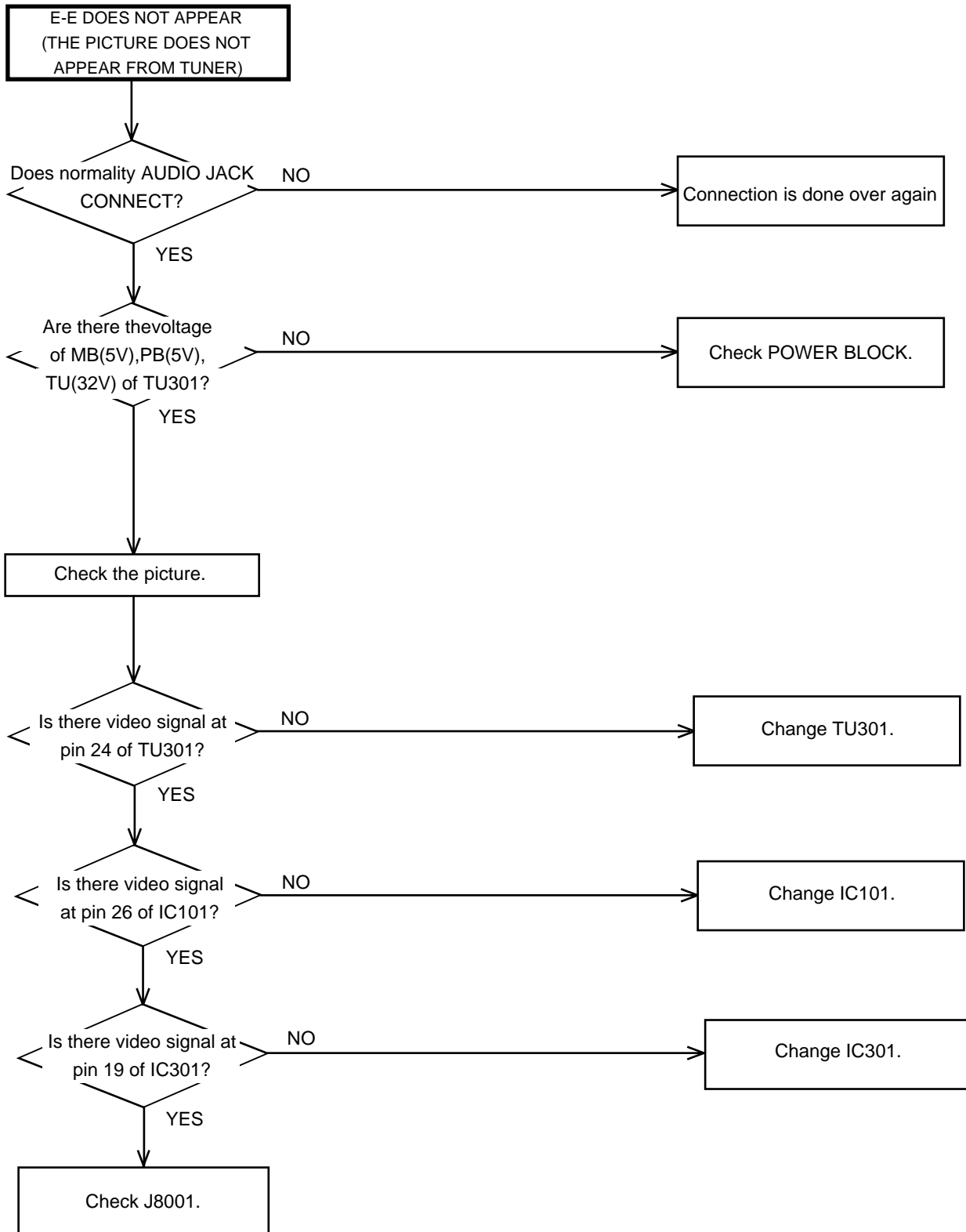
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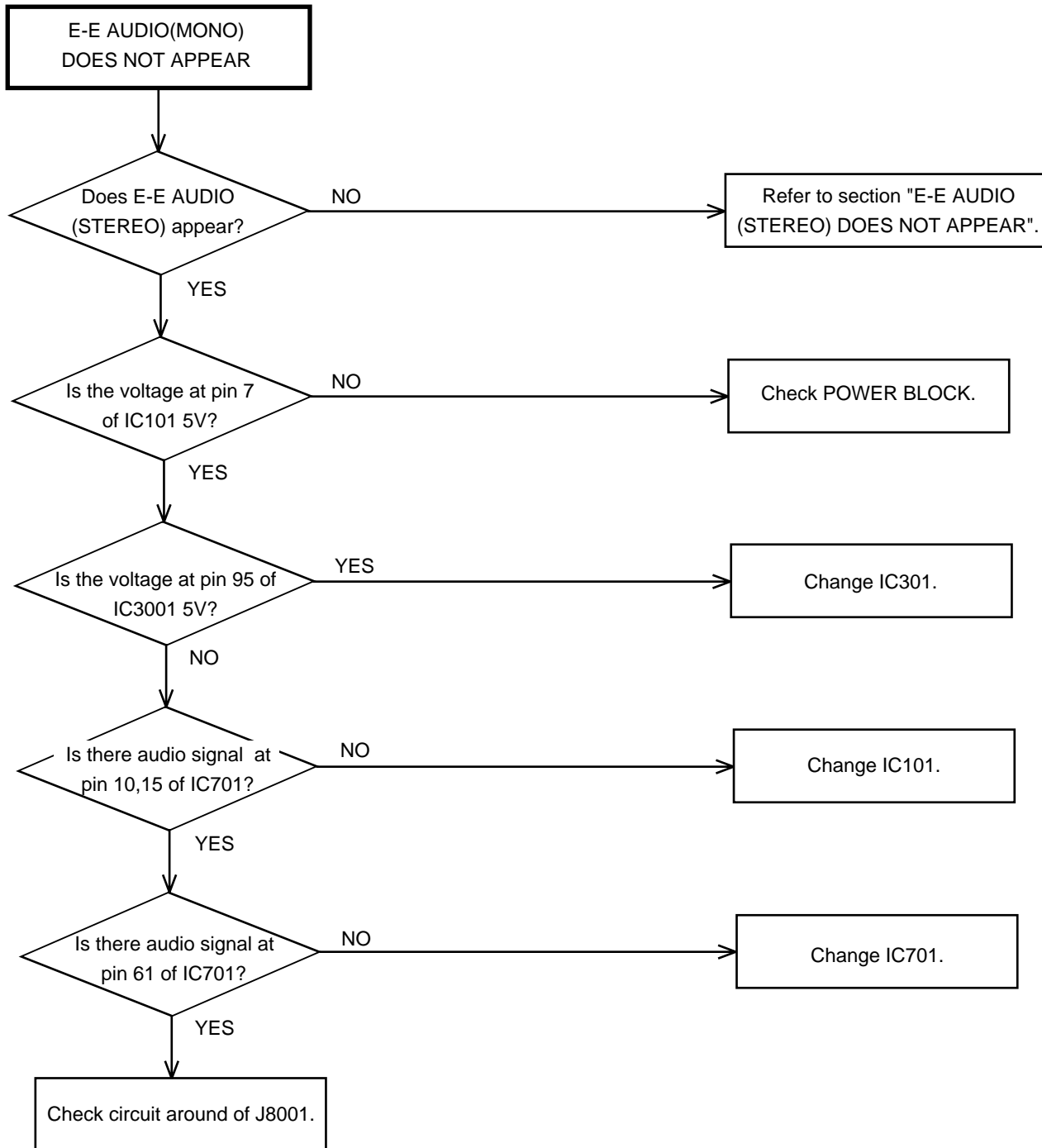
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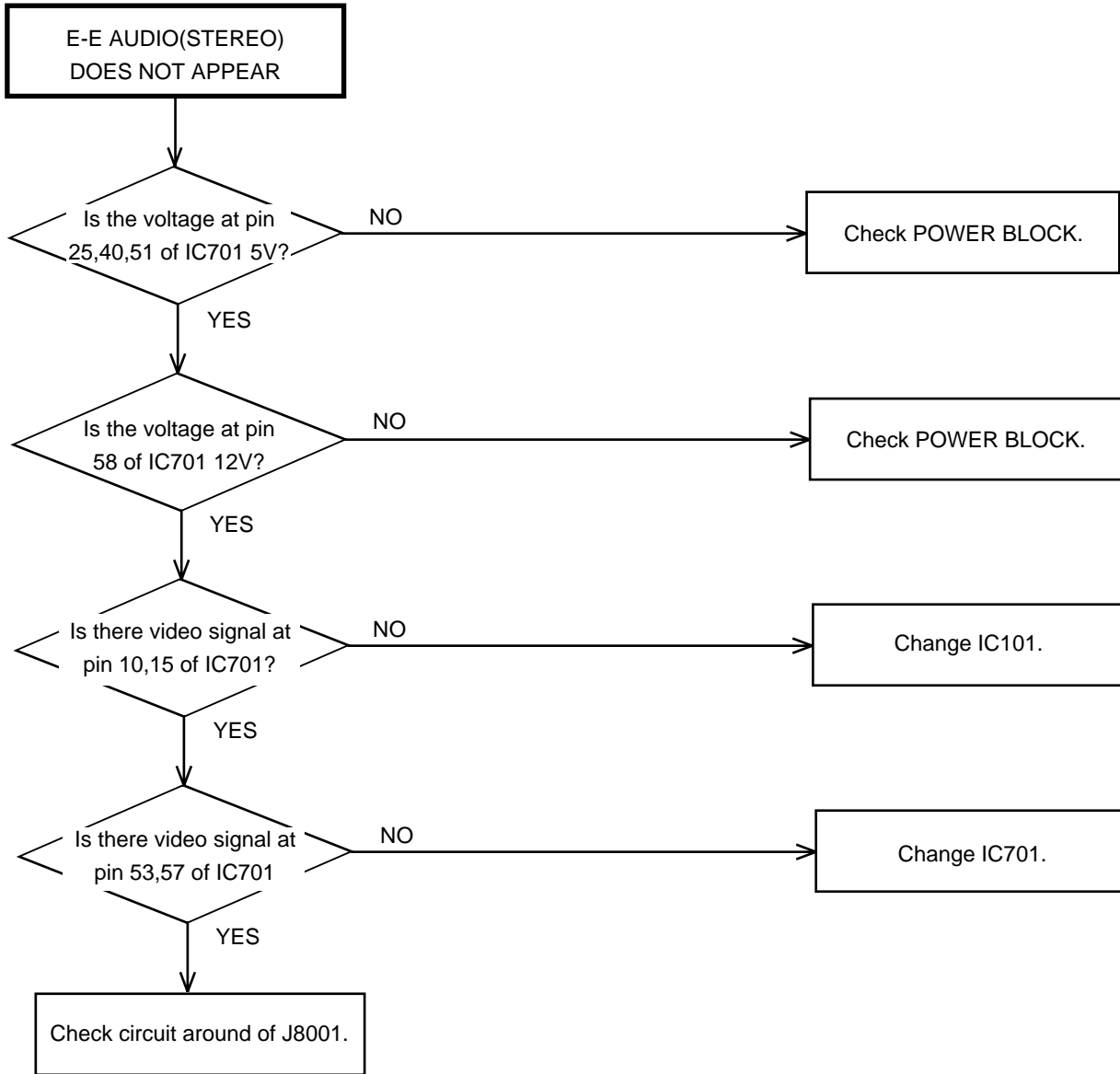
# TROUBLESHOOTING GUIDE



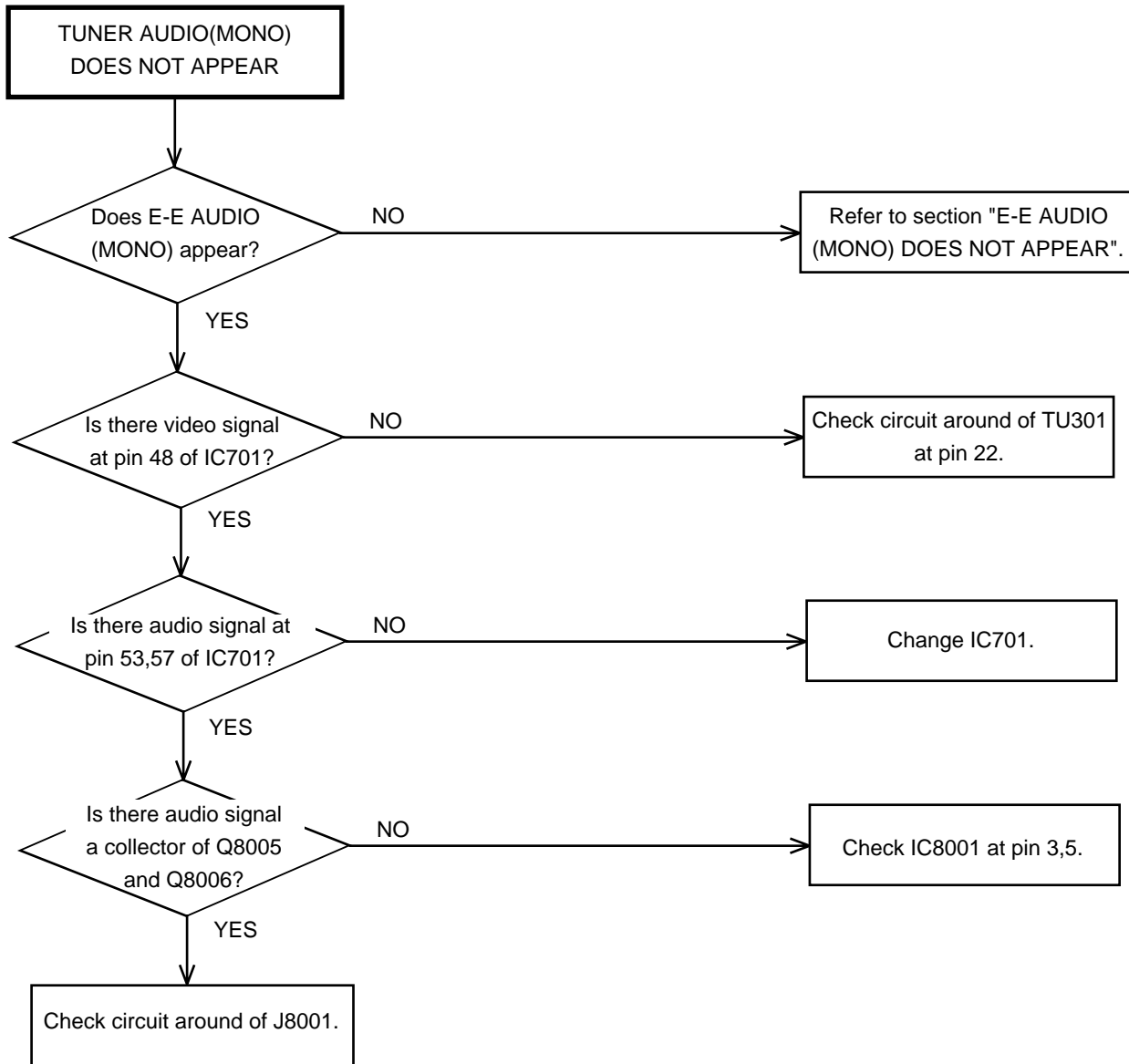
## TROUBLESHOOTING GUIDE



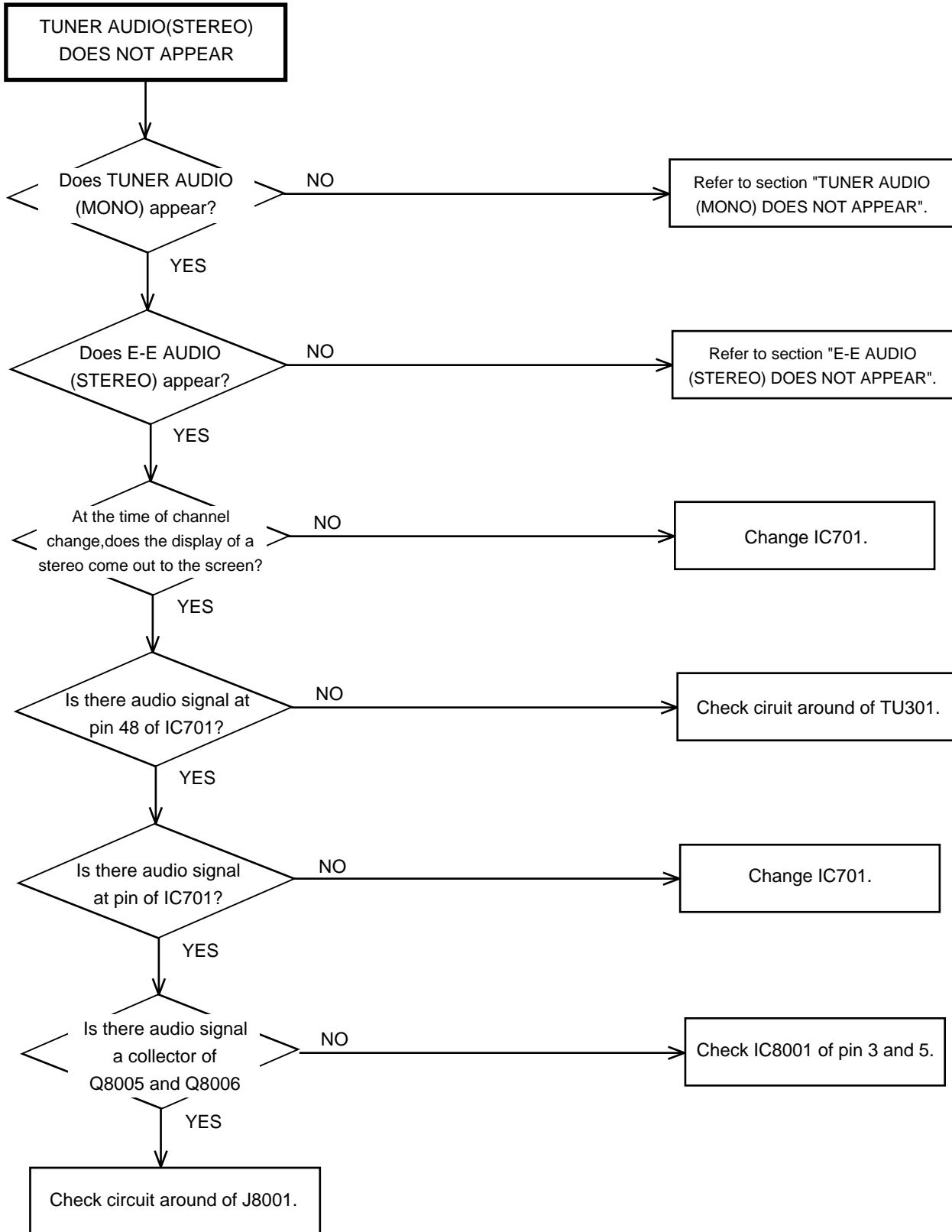
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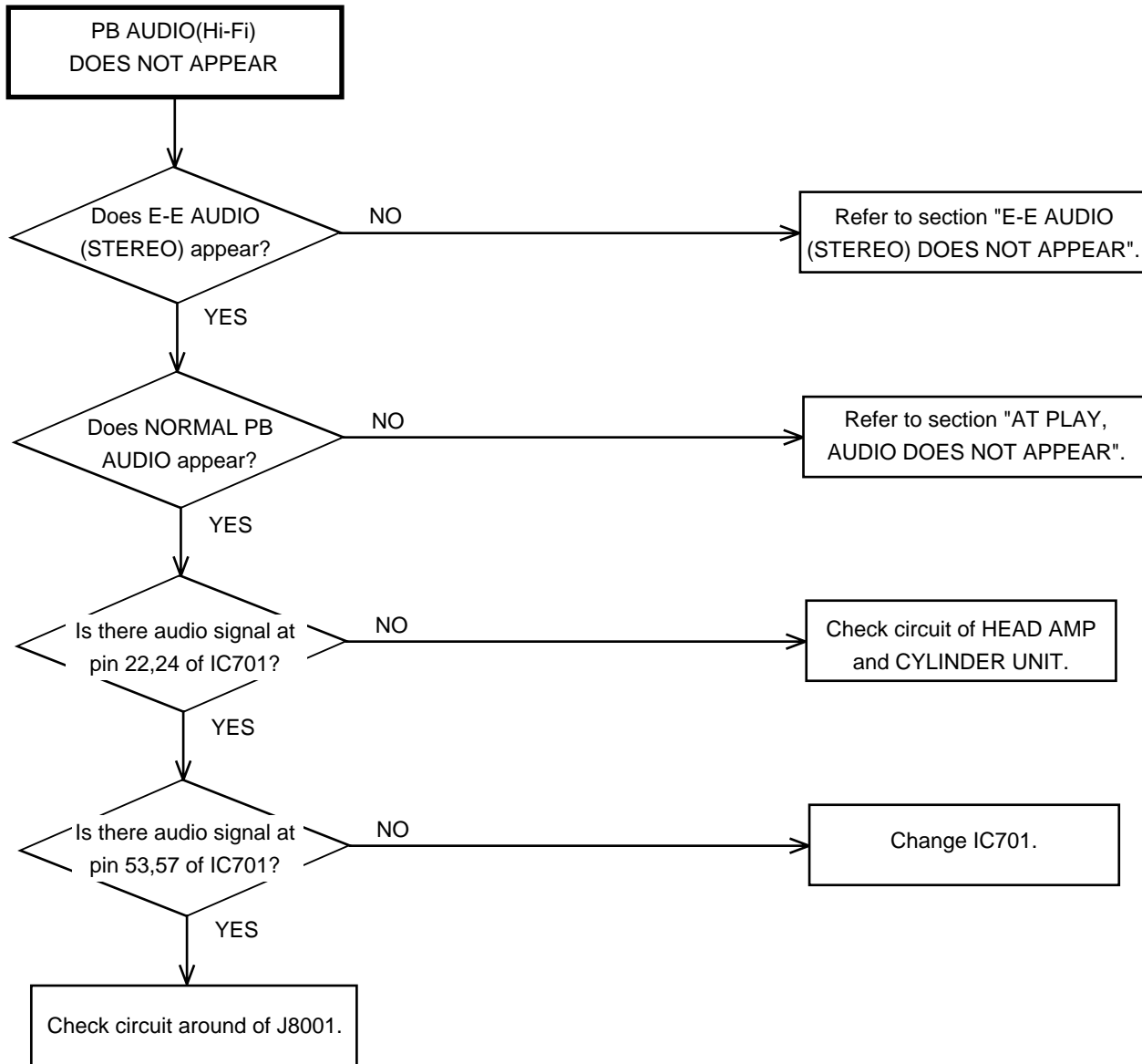
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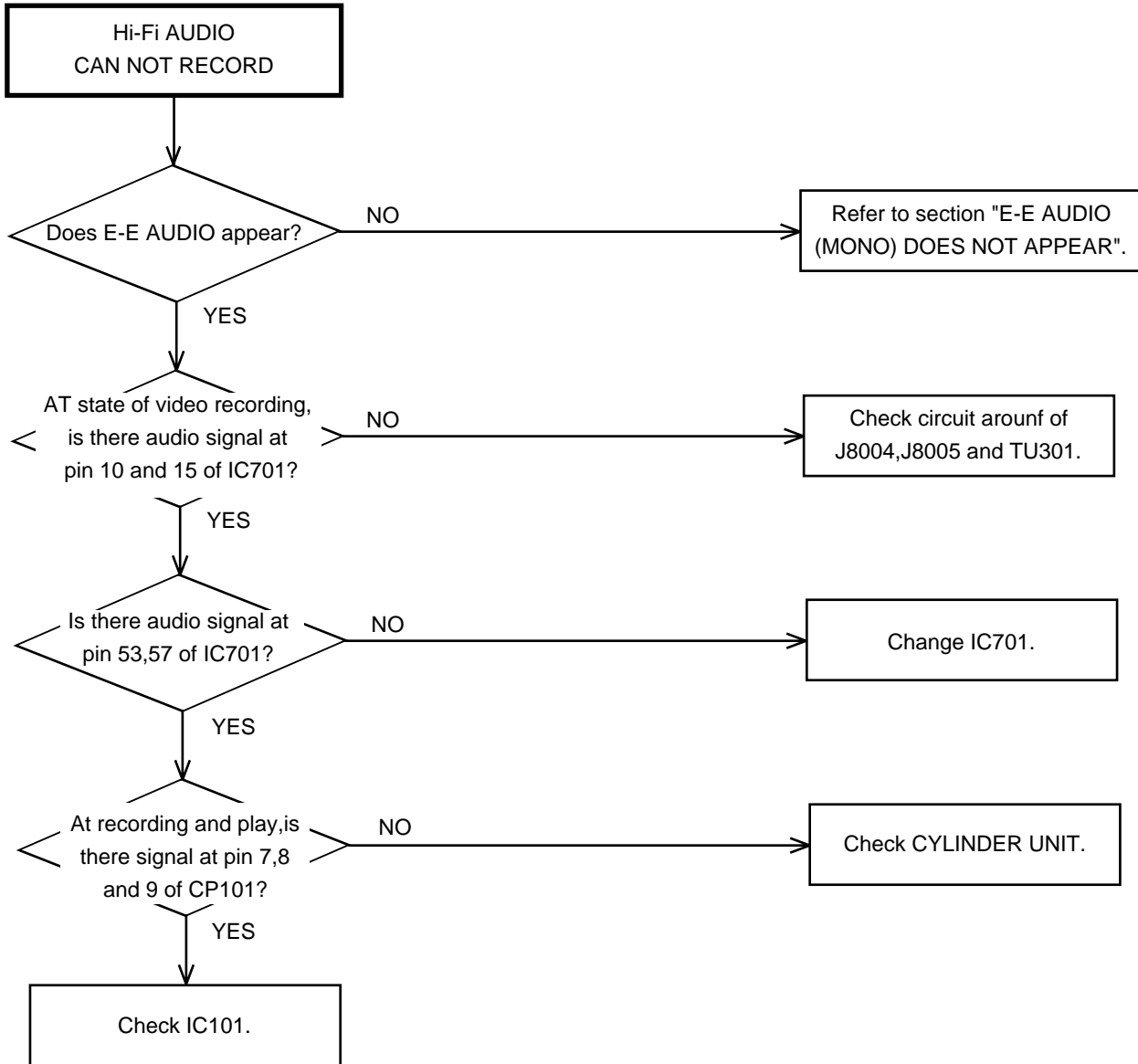


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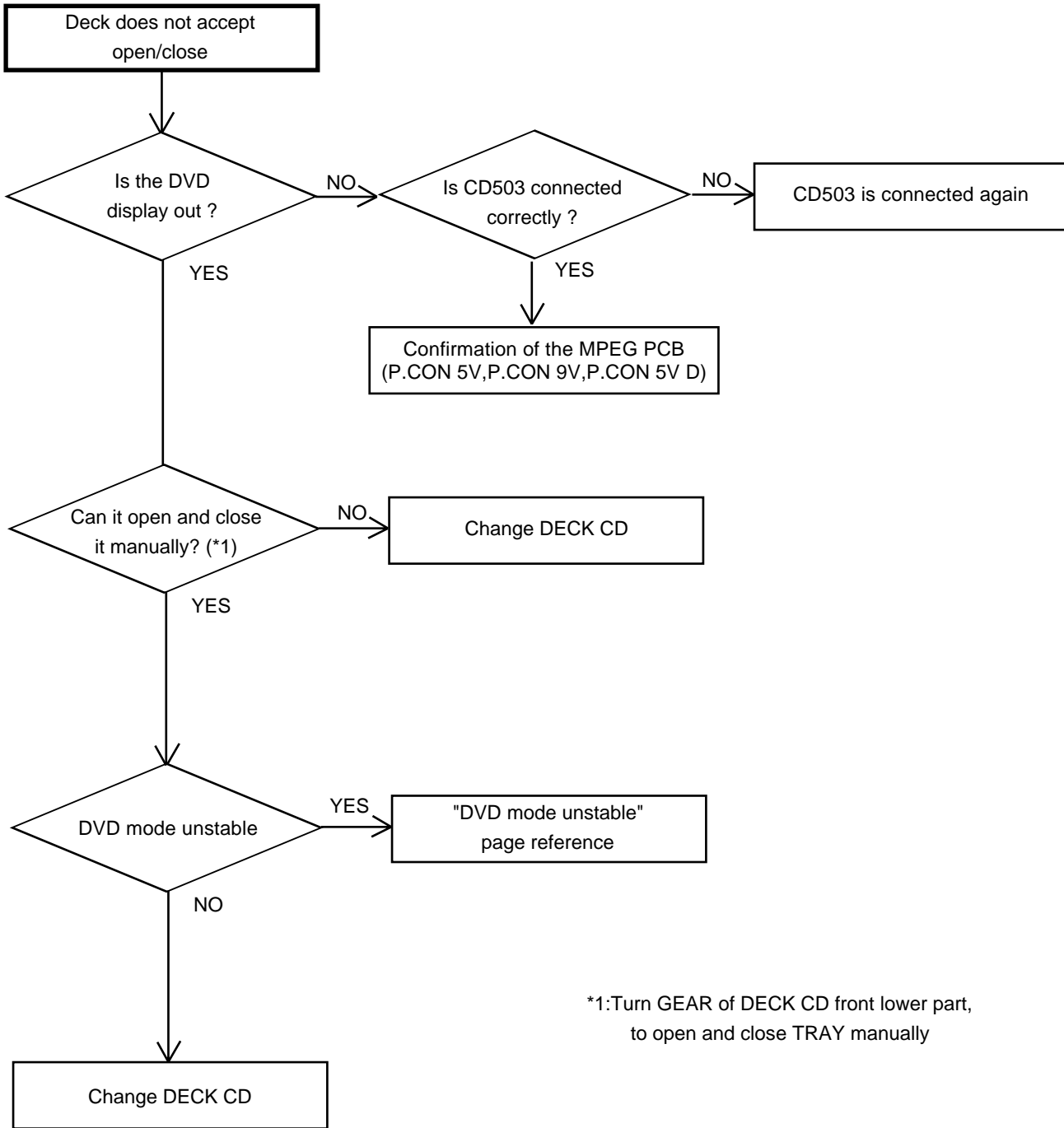


# TROUBLESHOOTING GUIDE



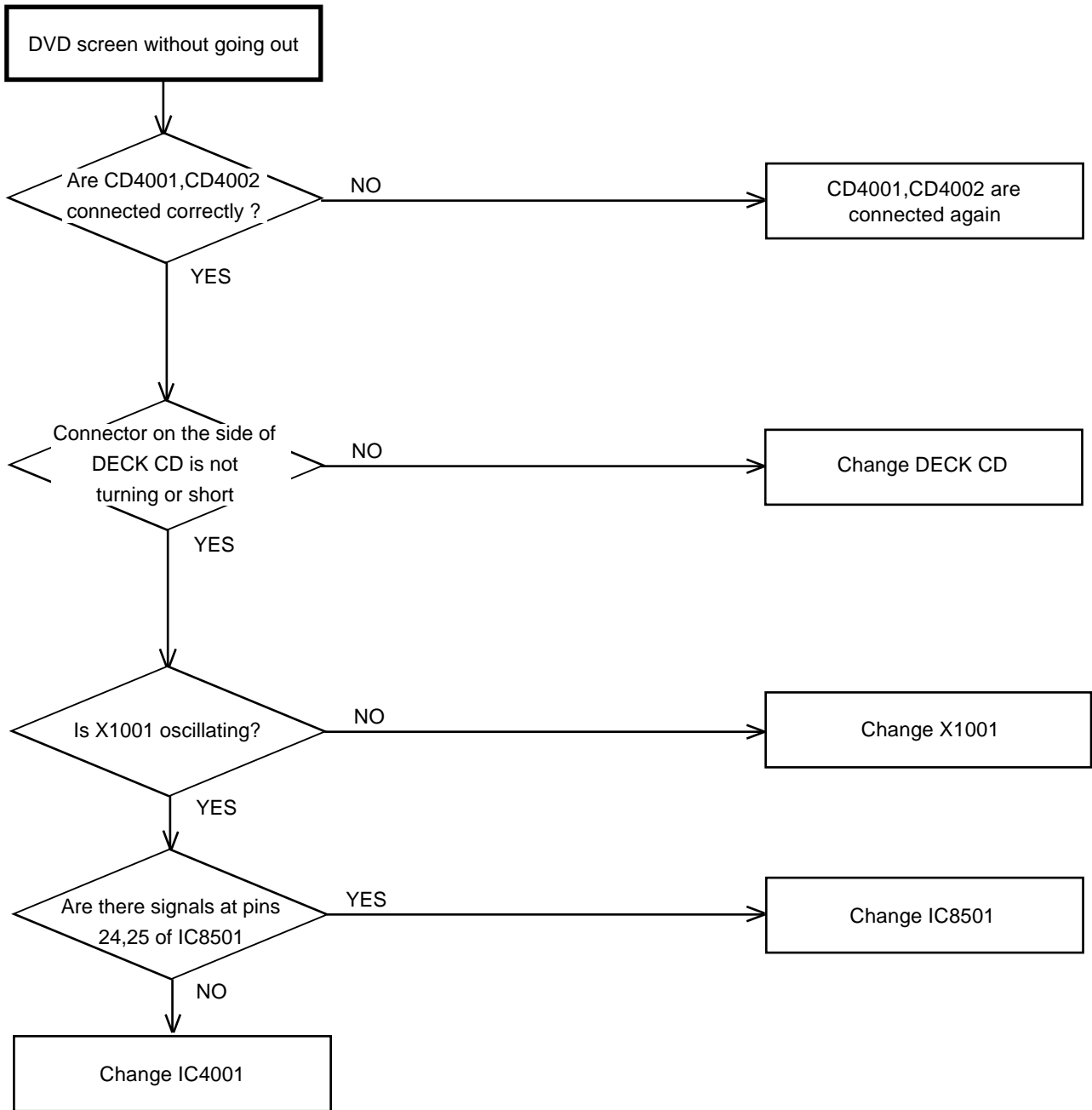
# TROUBLESHOOTING GUIDE

## (DVD SECTION)

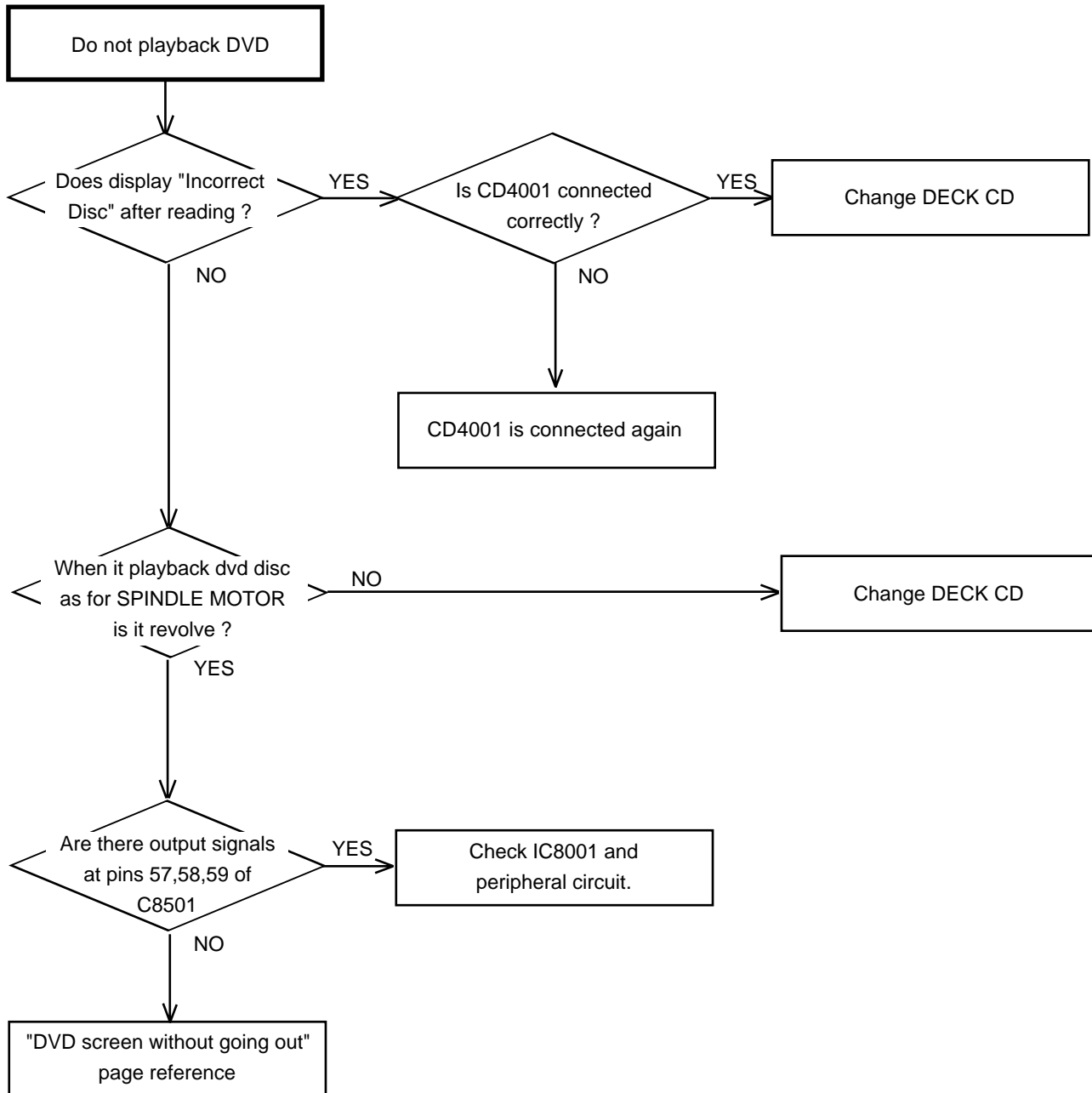


\*1: Turn GEAR of DECK CD front lower part, to open and close TRAY manually

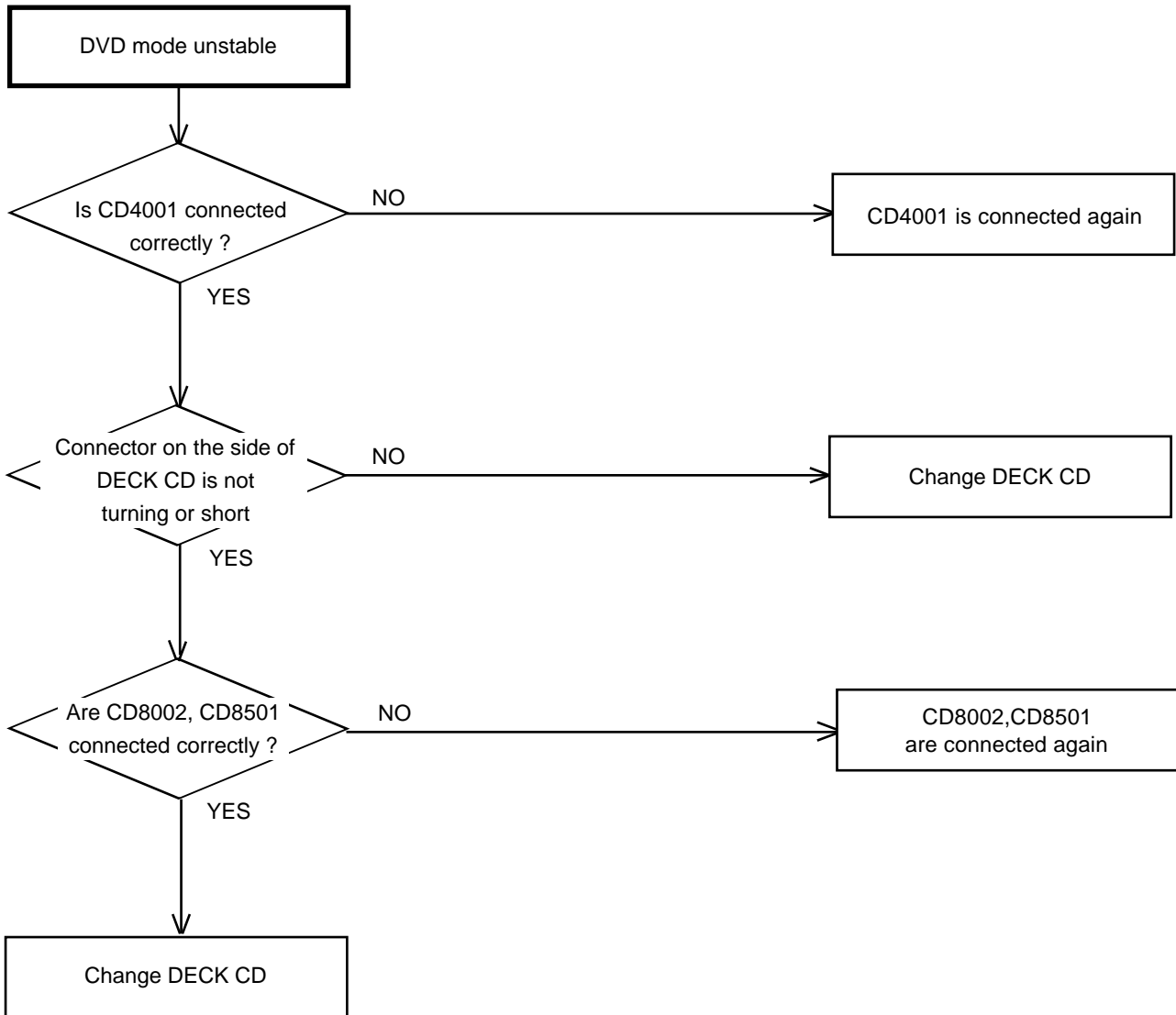
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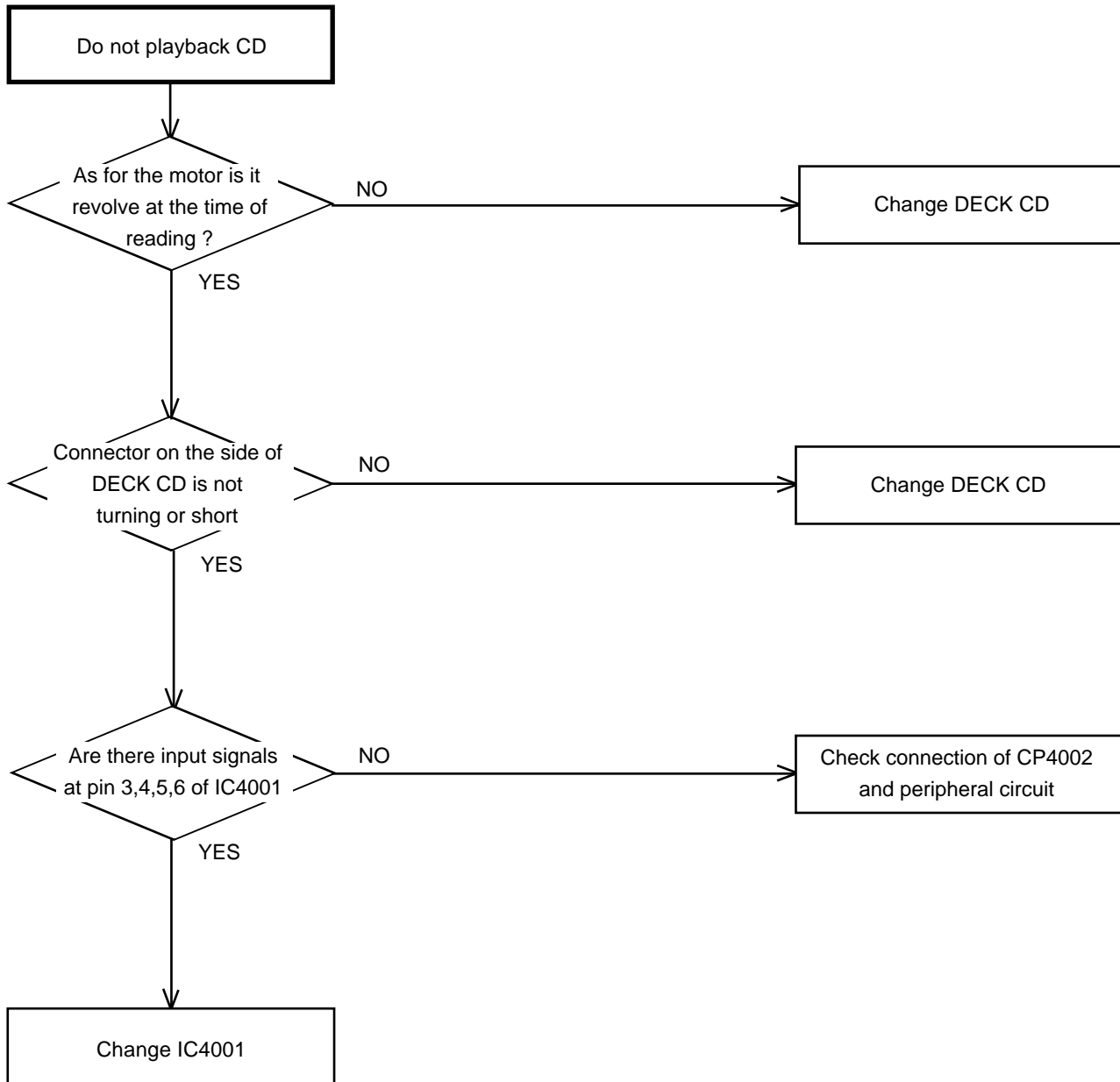
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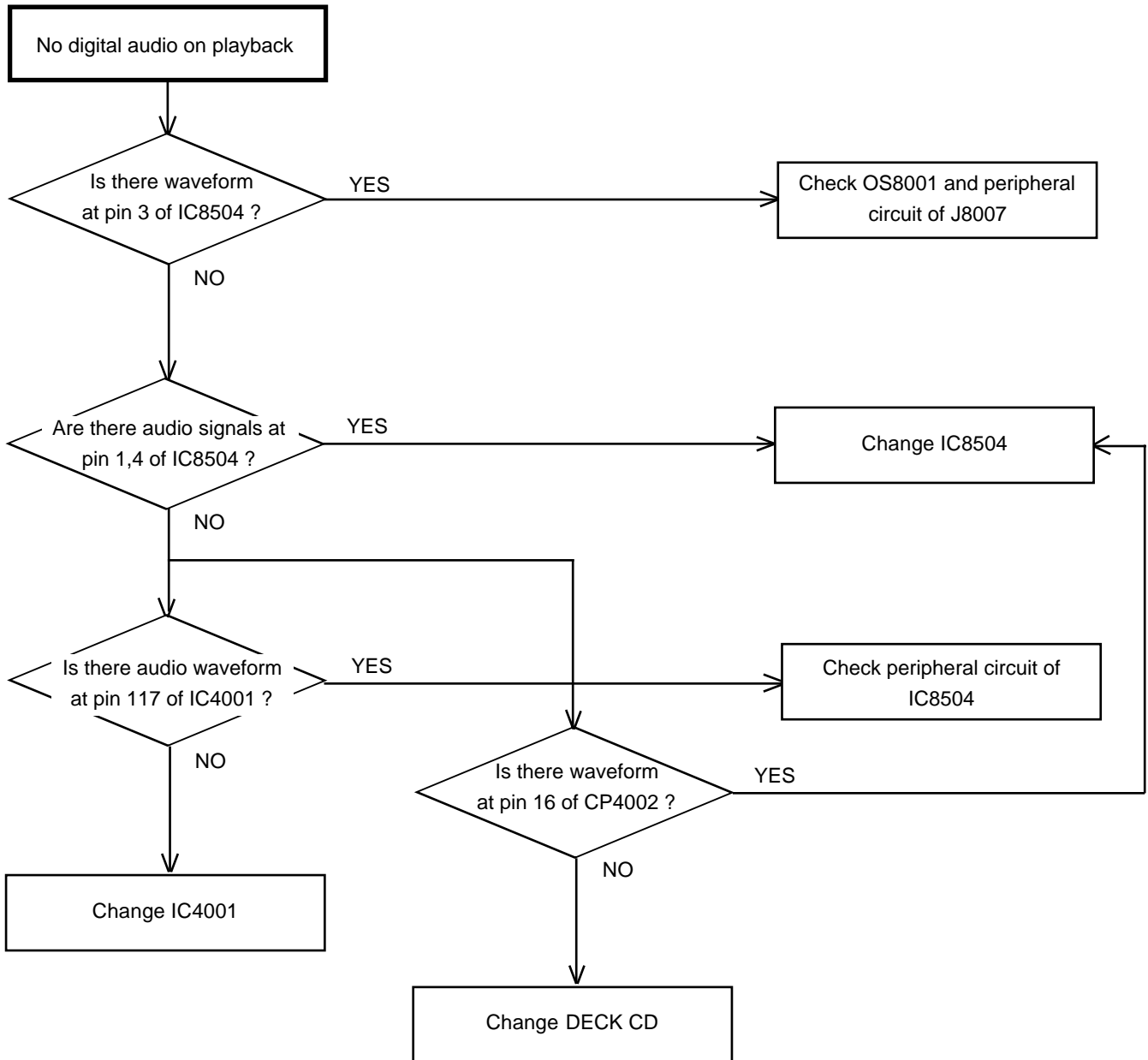
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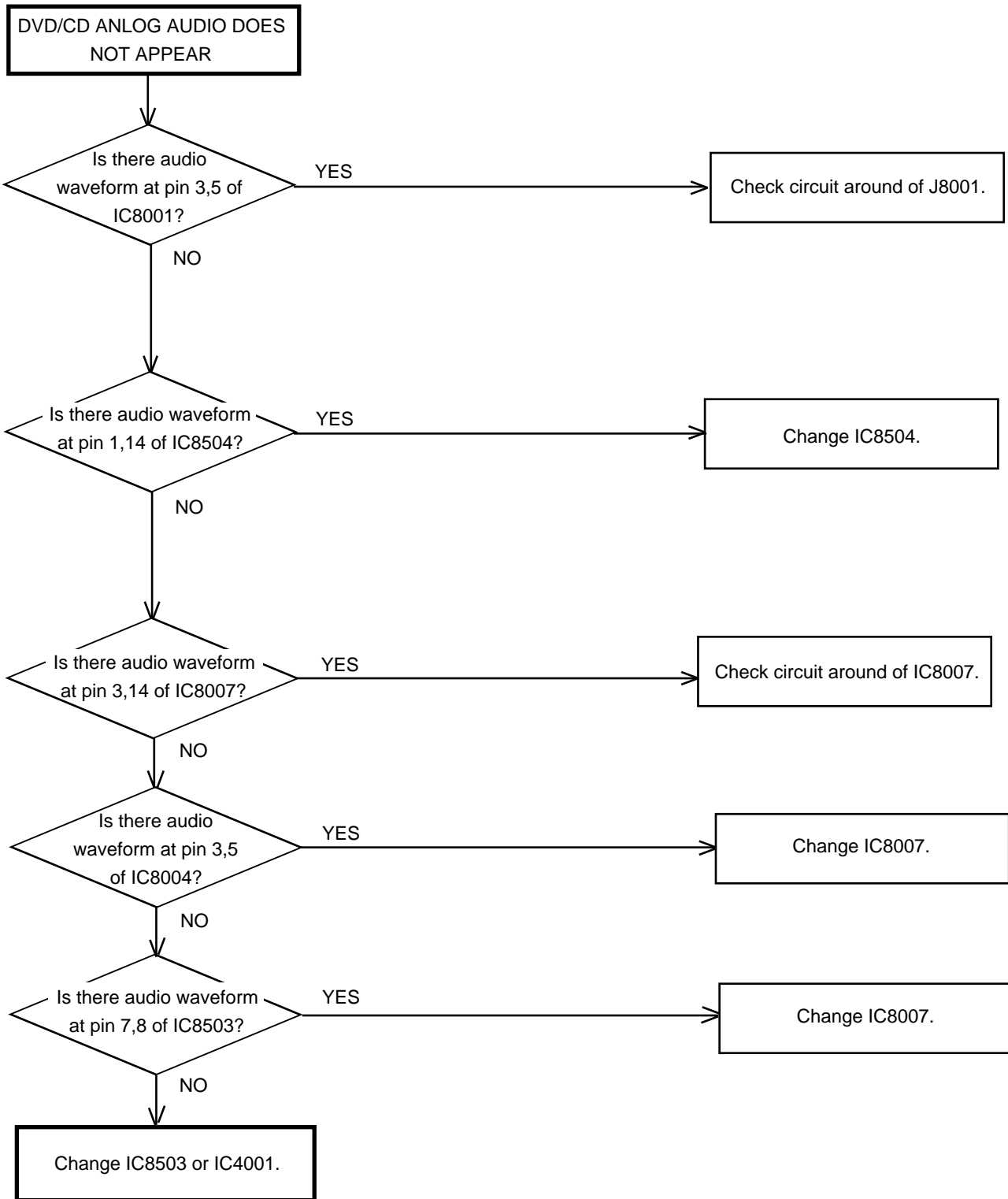
## TROUBLESHOOTING GUIDE



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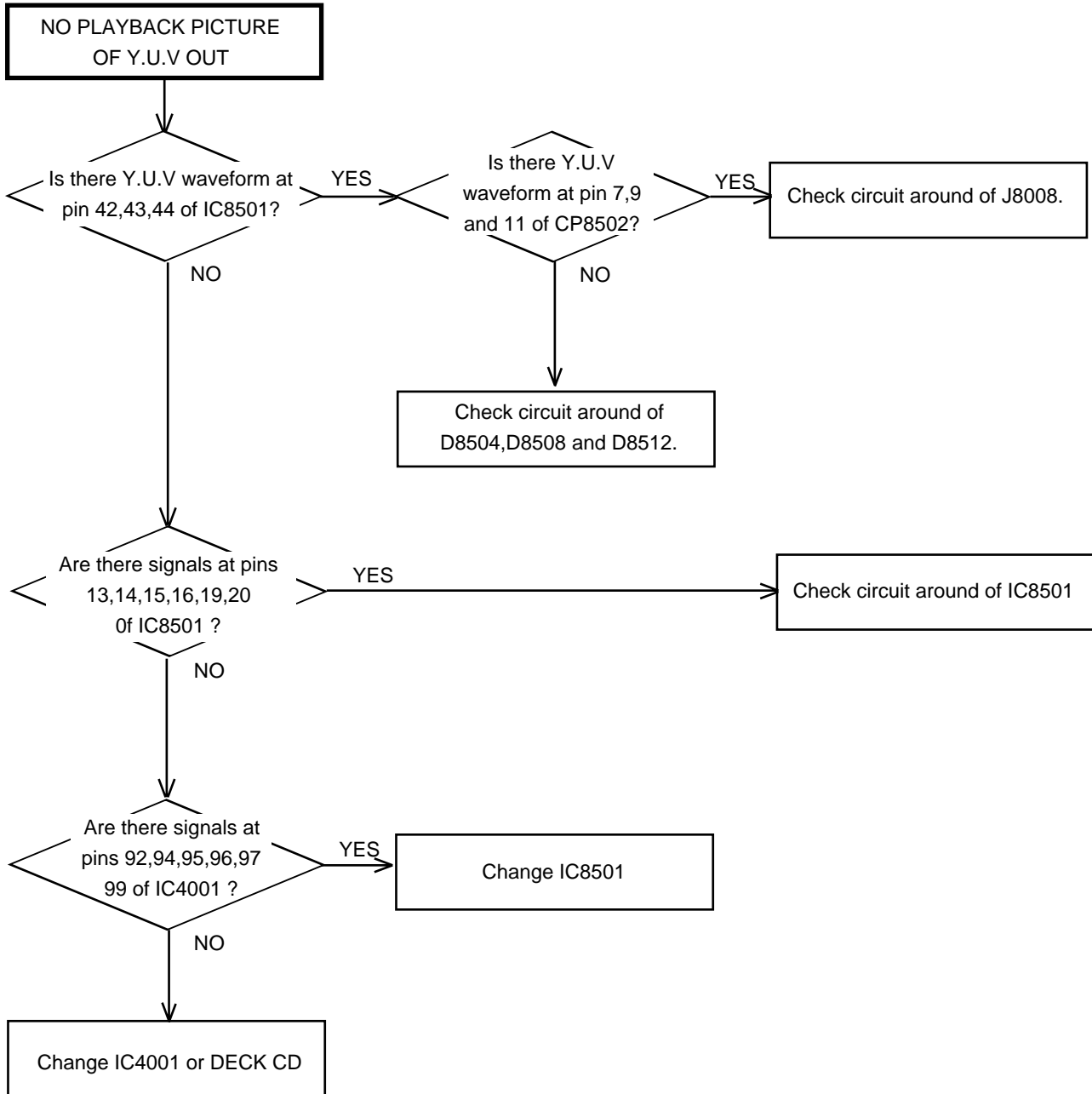


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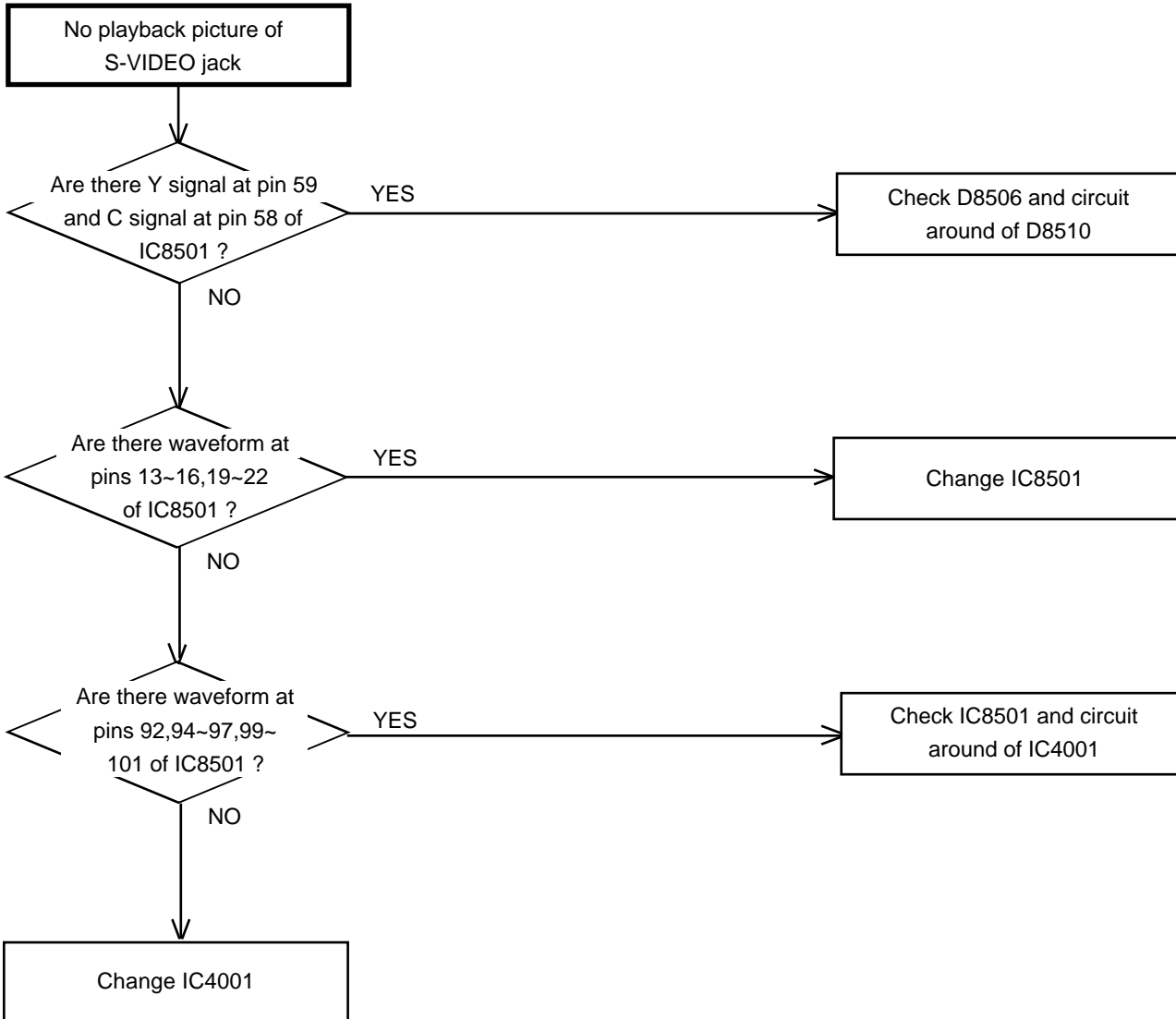




# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE



## GENERAL SPECIFICATIONS [HR-XVC1U]

<b>G-1</b>	<b>Outline of the product</b>		DVD VIDEO PLAYER & VHS Player / Recorder	
<b>G-2</b>	<b>DVD System</b>	Color System	NTSC	
		Disc	DVD, CD-DA, CD-R/RW, VIDEO CD	
		Disc Diameter	120 mm , 80 mm	
		Deck	Disc Loading System	Front Disc Loding
			Motor	3 Motors
		Pick up		1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer	135min (4.7GB)
			DVD 2-Layer	245min (8.5GB)
			CD	74min
			VIDEO CD	74min
		Search speed		Fwd 2-20 times / 4 step (DVD, VIDEO CD)
			Actual	6-16 times / 2 step (CD)
				2-45 times (DVD, VIDEO CD)
		4-40 times (CD)		
	Actual	Rev 2-20 times / 4 step (DVD, VIDEO CD)		
		6-16 times / 2 step (CD)		
		2-45 times (DVD, VIDEO CD)		
		4-40 times (CD)		
Slow speed		Fwd 1/7-1/2 times		
	Actual	--		
		Rev --		
	Actual	--		
<b>G-3</b>	<b>VCR System</b>	System	VHS Player / Recorder	
		Video System	NTSC	
		Hi-Fi STEREO	Yes	
		NTSC PB(PAL60Hz)	No	
		Deck	DECK	OVD-7
			Loading System	Front
			Motor	3
		Heads	Video Head	4Head
			FM Audio Head	2Head
			Audio /Control	Mono/Yes
			Erase(Full Track Erase)	Yes
		Tape	Rec	PAL
		Speed		NTSC
	Play	PAL		
		NTSC		
Fast Forward / Rewind Time (Approx.)		FF:1'48"/REW:1'48"		
	with Cassette	T-120		
Forward/Reverse	NTSC or PAL-M	SP/SLP(EP) = 3x,5x / 9x,15x		
Picture Search	PAL or SECAM	-		
Frame Advance		1/10		
Slow Speed		1/10		
<b>G-4</b>	<b>Tuning System</b>	Broadcasting System	US System M	
		Tuner and	System	
		Receive CH	Destination	
			Tuning System	
			Input Impedance	
			CH Coverage	
		Intermediate	Picture(FP)	45.75 MHz
		Frequency	Sound(FS)	41.25 MHz
			FP-FS	4.50 MHz
		Preset CH		-
		RF Converter Output		Yes
			Channel	3 or 4 ch
			Level/Impedance	66 dBu / 75 Ohm
	Sound Selector	No		
Stereo/Dual TV Sound		US-ST		
Tuner Sound Muting		Yes		
<b>G-5</b>	<b>Power</b>	Power Source	AC	
			DC	
		Power Consumption	20 W at 120V 60Hz	
			3 W at 120V 60Hz	
	Stand by	-- W		
	Per Year			
Protector	Power Fuse	Yes		
<b>G-6</b>	<b>Regulation</b>	Safety	UL/CSA	
		Radiation	FCC/IC	
		Laser	DHHS	

## GENERAL SPECIFICATIONS [HR-XVC1U]

G-7	Temperature	Operation	5C - 40C	
		Storage	-20C - 60C	
G-8	Operating Humidity		Less then 80% RH	
G-9	Signal	Video Signal	Output Level	1 V p-p/75 ohm (DVD,VCR)
			S/N Ratio (Weighted)	65 dB(DVD) 50 dB(VCR)
			Horizontal Resolution	500 Lines (DVD) 230 Lines(VCR Mode)
		RGB Signal	Output Level	-
			Audio Signal	-
		(0dB=0.775Vrms)	Input Level Microphone	-
			Input Level Line	-8 dBm/ 50k ohm(VCR)
			Output Level Line	-8 dBm/ 1k ohm(DVD,VCR)
			Digital Output Level	0.5 V p-p / 75 ohm(DVD)
			S/N Ratio at (Weighted)	90dB(DVD), 42dB(VCR at SP)
			Harmonic Distortion :	0.01% (1KHz) (DVD,VCR)
			Frequency Response : DVD Mode at DVD	4 Hz - 22 KHz
		DVD Mode at VIDEO CD	4 Hz - 20 KHz	
		DVD Mode at CD	4 Hz - 20 KHz	
		VCR Mode at SP	100Hz - 10 KHz	
		VCR Mode at LP	-	
		VCR Mode at SLP	100Hz - 4 KHz	
	Hi-Fi Audio Signal	Dynamic Range : More than	90dB	
		Frequency Response	20Hz ~20kHz	
		Wow And Flutter : Less than	0.01 %Wrms	
		Channel Separation : More than	60 dB	
		Harmonic Distortion : Less than	0.01	
G-10	On Screen Display(DVD)	Menu	Yes	
		Menu Type	Character	
		Rating Level	Yes	
		Audio	Yes	
		Sub Title	Yes	
		TV Screen Size	Yes	
		OSD Display On/Off	Yes	
		Menu Language	Yes	
		Audio Output	No	
		Video Output RGB/Composite	No	
		Set Up Language	Yes	
		Password Lock/Unlock	Yes	
		Open	Yes	
		Close	Yes	
		No disc	Yes	
		Reading	Yes	
		Play	Yes	
		Still/Pause	Yes	
		Stop	Yes	
		Prohibit Mark	Yes	
		Step	Yes	
		Next	Yes	
		Back	Yes	
		Random	Yes (CD, VIDEO CD )	
		Repeat	Yes	
		Slow+ ##	Yes	
		Slow- ##	No	
		Search+ ##	Yes	
		Search- ##	Yes	
		Jump	Yes	
		Resume	Yes	
		Title No.	Yes	
		Chapter No.	Yes	
		Track No.	Yes	
		Time	Yes	
		Sub Title No.	Yes	
		Angle No.	Yes	
		Vocal On/Off	Yes	
		Audio No.	Yes	
		Audio Stereo L/R	Yes (VIDEO CD )	
		Zoom	Yes	
		Marker No.	Yes	
		Program Play Back	Yes (CD, VIDEO CD )	
		MP3	File Name	Yes
			File No	Yes
			Time	Yes
			Track No	Yes

## GENERAL SPECIFICATIONS [HR-XVC1U]

	<b>On Screen Display(VCR)</b>	Menu	Yes
		Menu Type	Character
		Timer Rec Set	Yes
		Auto Repeat On/Off	Yes
		SAP On/Off	Yes
		Surround On/Off	Yes
		CH Set-Up	Yes
		TV/CATV	Yes
		Auto CH Memory	Yes
		Add/Delete	Yes
		System Set Up	Yes
		Clock Set	Yes (Calendar 12H)
		Language	Yes
		No Noise Back Ground	Yes
		Auto Clock	Yes
		Standard Time	Yes
		Daylight Saving Time	Yes
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry	No
		Stereo,Audio Output,SAP	Yes
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)	Yes
		CH/AV	Yes
		Clock	Yes
		Repeat	Yes
		Pin Code	No
		Tape Counter	Yes
Index	Yes		
Hotel Lock	No		
Tape Speed	Yes		
ATR / Manual Tracking	Yes		
Hi-Fi	Yes		
<b>G-11</b>	<b>OSD Language</b>	DVD OSD	Eng Fre Spa
		VCR OSD	Eng Fre Spa
		OSD Language Setting	English
<b>G-12</b>	<b>Clock,Timer and Timer Back-up</b>	Calendar	1990/1/1 ~ 2081/12/31
		Timer Events	8 Program/ 1 Month
		One Touch Recording Max Time	5 Hours(30,60,90,120,180,240,300)
		OTPB Valid Time	No
		Timer Back-up (at Power Off Mode)	5 sec
<b>G-13</b>	<b>Display</b>	DISPLAY	Yes
		DISPLAY type	LED Module (Amber, "Rec" &Timer symbol = Red)
		Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR,Eject	No
		VCR	Yes
		DVD	Yes
		CD	Yes
		Clock	Yes (12h)
		AM	No
		PM	Yes
		Counter VCR	Yes (hour:min)
		DVD	Yes (hour:min)
		CD	Yes (min:sec)
		Eject	Yes
		Counter Remain	No
		Play	Yes
		Stop	No
		Rec	Yes
		FF / Cue	No
		REW /Review	No
		Pause/Still	Yes
		OTR	No
		T-Rec	Yes
		Chapter	No
		TITLE	No
		TRACK	Yes
		Repeat	No
		Hi-Fi	No
		SP	No
		LP	No
		SLP	No
		CH	Yes
		RF Output CH	No
		Tape In	Yes

## GENERAL SPECIFICATIONS [HR-XVC1U]

<b>G-14</b>	<b>Remote Control</b>	Unit	RC-FB	
		Glow in Dark Remocon	Yes	
		Format	JVC	
		Custom Code	43,53(DVD,VCR), 03(TV)	
		Power Source	Voltage(D.C) UM size x pcs	3V UM-3 x 2 pcs
		Total Keys		50 Key
		Keys	Power	Yes
			DISPLAY/CALL	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Input Select	No
			UP/CH+	Yes
			DOWN/CH-	Yes
			LEFT/ SET- / TRACKING-	Yes
			RIGHT/ SET+ / TRACKING+	Yes
			TV	No
			VCR	Yes
			DVD	Yes
			VCR/DVD	No
			TV/VCR	Yes
			DVD MENU	Yes
			TITLE	Yes
			SET UP / VCR MENU	Yes
			SELECT/ENTER	Yes
			CLEAR/CANCEL	Yes
			RETURN	Yes
			PLAY	Yes
			STOP	Yes
			PAUSE/STILL	Yes
			FF(Cue)/SEARCH+	Yes
			REW(Review)/SEARCH-	Yes
			REC/OTR	Yes
			SKIP+ / INDEX+	Yes
			SKIP- / INDEX-	Yes
			AUDIO / AUDIO SELECT	Yes
			ANGLE/COUNTER RESET	Yes
			SUB TITLE/ATR	Yes
			PLAY MODE/SPEED	Yes
			T-REC	Yes
			CLOCK / COUNTER	Yes
			JUMP / ZERO RETURN	Yes
			ZOOM	Yes
	REPEAT A-B	Yes		
	SLOW(Forward)	Yes		
	SLOW+	No		
	SLOW-	No		
	MARKER	Yes		
	OPEN/CLOSE	Yes		
	EJECT	No		
	TV POWER	Yes		
	TV INPUT	Yes		
	TV VOL+	Yes		
	TV VOL-	Yes		
	CM SKIP	Yes		
	Srude SW	TV / VCR&DVD Select		
		Yes		

## GENERAL SPECIFICATIONS [HR-XVC1U]

<b>G-15</b>	<b>Features (DVD)</b>	Auto Power Off		No	
		Parental Lock	Yes		
		Echo		No	
		Mic Mixing		No	
		Video CD Playback	Yes		
		MP3 Playback	Yes		
		Digital Out	Dolby Digital	Yes	
			PCM	Yes	
			DTS	Yes	
		Down Mix Out	(Dolby Digital)	Yes	
		Self Diagnostic			No
		<b>Features (VCR)</b>	Auto Head Cleaning		No
			Auto Tracking	Yes	
	HQ (VHS Standard High Quality)		Yes		
	Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes		
	Auto Power Off			No	
	Forward/Reverse Picture Search		Yes		
	VIDEO PLUS+(SHOWVIEW,G-CODE)			No	
	One Touch Playback			No	
	Auto CH Memory		Yes		
	AREA CODE			No	
	Auto Clock Set		Yes		
	Index Search		Yes		
	SQPB (Option)		Yes		
	CATV	Yes			
	Energy Star		No		
MTS(SAP)	Yes				
CM Skip(30sec x 6 Times)	Yes				
Surround	Yes				
<b>G-16</b>	<b>Accessories</b>	Owner's Manual	Language	English French (U(C)only)	
			w/Guarantee Card	Yes	
		Remote Control Unit		Yes	
		Guarantee Card		No	
		Product Registration Card		Yes	
		Warning Sheet		No	
		Service Station List		No	
		Important Tag		No	
		AC Plug Adapter		No	
		Quick Set-up Sheet		No	
		Battery		Yes	
			UM size x pcs	UM-3 x 2 pcs	
		AC Cord		No	
		AV Cord		Yes (1.2m)	
		75 Ohm Coaxial Cable		Yes	
		S-Video Cable		No	
		21pin cable		No	
		800 No Sticker		No	
		Toll Free Insert Sheet		No	
		Safety Tip		No	

## GENERAL SPECIFICATIONS [HR-XVC1U]

<b>G-17</b>	<b>Interface</b>	Switch	Front	Power	Yes	
				Play	Yes	
				Eject (VCR)	Yes	
				Stop	Yes	
				Rec/OTR	Yes	
				Open/Close (DVD)	Yes	
				CH +	Yes	
				CH -	Yes	
				FF/ Search(>>)	Yes	
				Rew/Search(<<)	Yes	
				Still/Pause	No	
				Shuttle(Search/REV/FWD)	No	
				DVD/VCR	Yes	
				Main Power SW	No	
				Rear	Attenuator	No
					Video/RGB Selector	No
		RF Out(Slide SW)	Yes (3ch/4ch)			
		Main Power SW	No			
		Volume	Phones Volume	No		
			Mic Volume	No		
			Echo Volume	No		
			Rec/OTR	No		
		Terminals	Front	Video In	RCA x 1 (Black)	
				Audio In	RCA x 2(Stereo,Black)	
			Rear	Video Output	RCA x1(Yellow) S-Video x 1(DVD Signal Only) Component x1 (RCA 3pin,DVD Signal Only)	
				Audio Output	RCA x 4(Stereo, White/Red) Coaxial x 1 (Digital Audio,DVD Signal Only)	
				Optical Out (Option)	Yes (Digital Audio,DVD Signal Only)	
				Video Input (Option)	No	
			Audio Input (Option)	No		
			RF Input / Output	Yes		
			Euro Scart	No		
			AC Inlet	No		
Indicator	LED		Power	No		
			Rec	No		
			T-Rec	No		
			TV/VCR	No		
			DVD	Yes (GREEN)		
			VCR	Yes (GREEN)		
		Surround	No			
		Level Meter	No			
<b>G-18</b>	<b>Set Size</b>	Approx. W x D x H (mm)		430 x 310.5 x 99		
<b>G-19</b>	<b>Weight</b>	Net (Approx.)		4.5 kg( 9.9 lbs)		
		Gross (Approx.)		5.5 kg( 12.1 lbs)		
<b>G-20</b>	<b>Carton</b>	Master Carton		No		
		Content		--- Sets		
		Material		--- / ---		
		Dimensions W x D x H(mm)		---		
		Description of Origin		---		
		Gift Box		Yes		
		Material		Single/White		
		W/Color Photo Label		No		
		Dimensions W x D x H(mm)		500 x 430 x 180		
		Design		As Per BUYER 's		
		Description of Origin		Yes		
		Drop Test	Natural Dropping At		1 Corner / 3 Edges / 6 Surfaces	
Height (cm)			80 cm			
<b>G-21</b>	<b>Cabinet Material</b>	Cabinet Front		PS 94V2 or More / DECABROM		
		Container Stuffing		1,595 Sets/40' container		





# JVC SERVICE & ENGINEERING COMPANY OF AMERICA DIVISION OF JVC AMERICAS CORP.

<b>Head office</b>	: 1700 Valley Road Wayne, New Jersey 07470-9976	(973)317-5000
<b>East Coast</b>	: 10 New Maple Avenue Pine Brook, New Jersey 07058-9641	(973)396-1000
<b>Midwest</b>	: 705 Enterprise Street Aurora, Illinois 60504-8149	(630)851-7855
<b>West Coast</b>	: 5665 Corporate Avenue Cypress, California 90630-0024	(714)229-8011
<b>Atlanta</b>	: 1500 Lakes Parkway Lawrenceville, Georgia 30043-5857	(770)339-2582
<b>Hawaii</b>	: 2969 Mapunapuna Place Honolulu, Hawaii 96819-2040	(808)833-5828

## JVC CANADA INC.

<b>Head office</b>	: 21 Finchdene Square Scarborough, Ontario M1X 1A7	(416)293-1311
<b>Montreal</b>	: 16800 Rte Trans-Canadienne, Kirkland, Quebec H9H 5G7	(514)871-1311
<b>Vancouver</b>	: 13040 Worster Court Richmond, B.C. V6V 2B3	(604)270-1311

# JVC

S40895-04

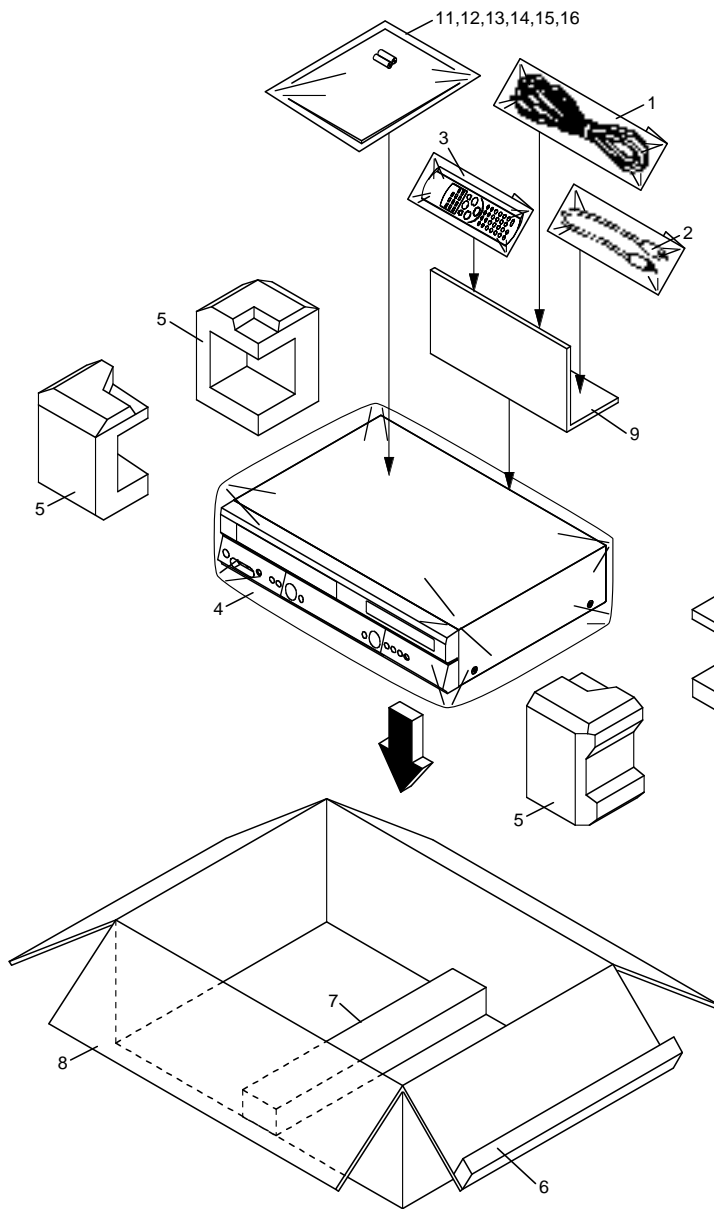
# PARTS LIST

## SAFETY PRECAUTION

Parts identified by the  $\triangle$  symbol are critical for safety. Replace only with specified part numbers.

### 3.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



#  $\triangle$  REF No. PART No. PART NAME, DESCRIPTION  
 \*\*\*\*\*

### PACKING AND ACCESSORY ASSEMBLY <M1>

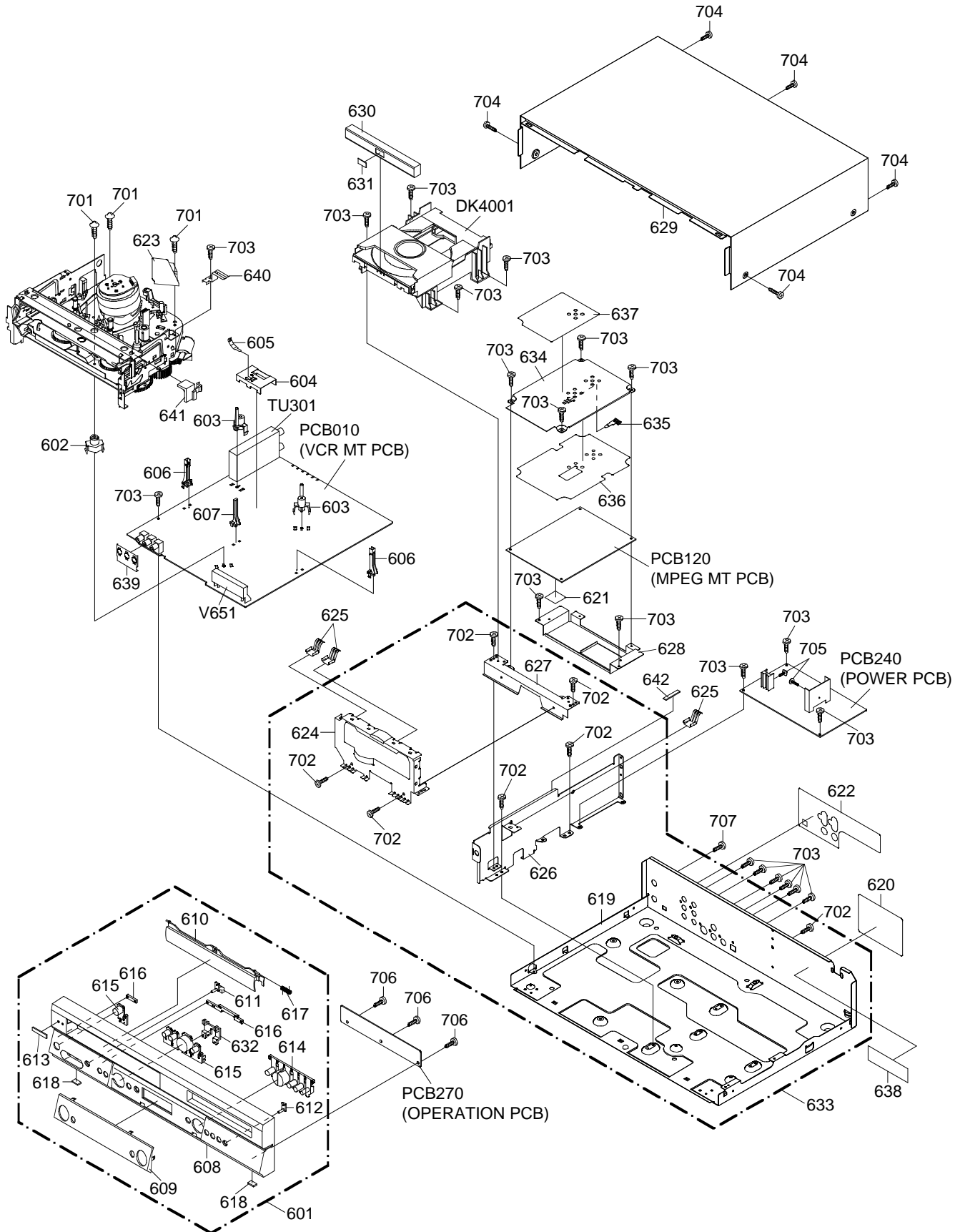
1	PEAC0294-03	CABLE
2	QAM0174-001	CORD,RCA PIN
3	X-076D0FB010	TRANSMITTER
4	X-791WHA0100	GIFT SHEET
5	X-792WHA0344	PACKAGE
6	X-792WHA0345	PACKAGE,PAD TOP
7	X-792WHA0346	PACKAGE,PAD UNDER

# $\triangle$	REF No.	PART No.	PART NAME, DESCRIPTION
8	X-793WCD1390		GIFT BOX,HR-XVC1U
	X-793WCD11410		GIFT BOX,HR-XVC1U(C)
9	X-795WCA0661		PAD,DVD/VR
11	X-JB5KD200		POLY BAG
12	X-J2A30201		INSTRUCTION BOOK
	X-J2A30401		INSTRUCTION BOOK,HR-XVC1U(C)
13	X-J5500117		REGISTRATION CARD,HR-XVC1U
14	X-J5500112		GUARANTEE CARD,HR-XVC1U(C)
15	X-J5500115		SERVICE STATION LIST,HR-XVC1U(C)
16	—		BATTERY,X2

### 3.2 FINAL ASSEMBLY <M2>

#### BEWARE OF BOGUS PARTS

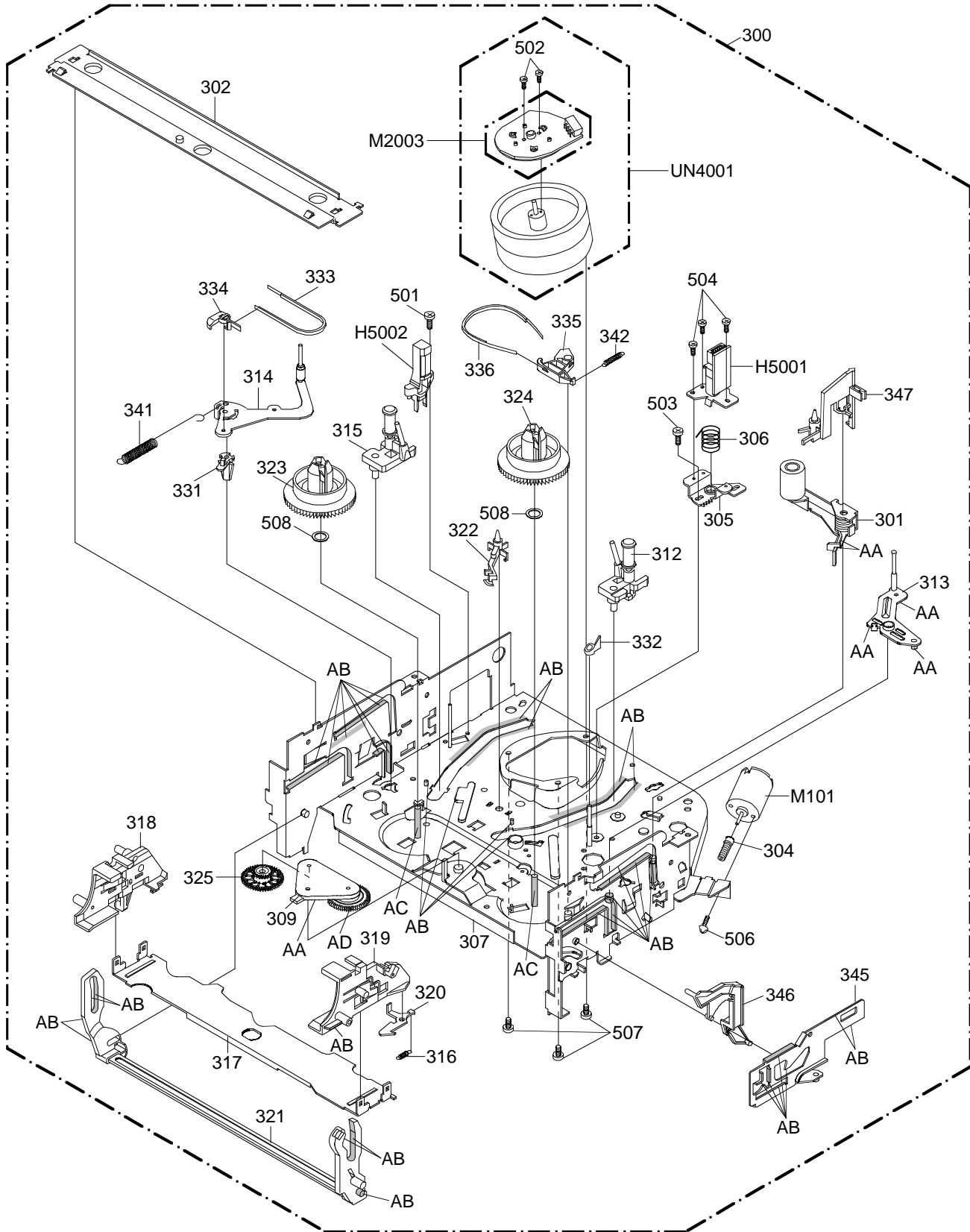
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
*****							
<b>FINAL ASSEMBLY &lt;M2&gt;</b>							
601		X-A2A302A720	CABINET,FRONT ASSY				
602		X-701WPA0686	HOLDER,DECK				
603		X-701WPA0751	HOLDER,DECK				
604		X-752WSA0230	SHIELD,CASE HEAD AMP				
605		X-753WUAA006	SPRING,EARTH HEAD AMP				
606		X-85OP700036	HOLDER,EOT SENSOR				
607		X-85OP700037	HOLDER,LED				
608		X-701WPJ1107	CABINET,FRONT				
609		X-711WPD0611	PLATE,DISPLAY				
610		X-712WPJ0758	FLAP				
611		X-713WPA0191	GLASS,LED-VCR				
612		X-713WPA0192	GLASS,LED-DVD				
613		X-7235380009	BADGE,BRAND				
614		X-735WPJ0207	BUTTON,FRAME-DVD				
615		X-735WPJ0208	BUTTON,FRAME-VCR				
616		X-738WPA0034	BUTTON,HOLDER				
617		X-743WKA0038	SPRING,FLAP				
618		X-800WFA0051	CUSHION,LEG				
619		X-702WSA0109	PLATE,BOTTOM				
620		X-7225380015	SHEET,RATING				
621		X-7230007414	SHEET,IC				
622		X-7230007399	SHEET,JACK				
623		X-752WSA0275	COVER,AC HEAD				
624		X-753WSA0148	SHIELD,FRONT				
625		X-753WUA0060	SPRING,EARTH				
626		X-761WSA0082	ANGLE,CENTER				
627		X-761WSA0085	ANGLE,DECK1				
628		X-761WSA0086	ANGLE,DECK2				
629		X-702WSB0065	CABINET,TOP				
630		X-712WPJ0759	PLATE,TRAY-FRONT				
631		X-7235630001	SHEET,DVD				
632		X-738WPA0033	BUTTON,HOLDER2				
633		X-A2A302A730	CABINET,BOTTOM ASSY				
634		X-752WSA0279	SHIELD,M-PEG				
635		X-753WUA0061	SPRING,EARTH				
636		X-755WNA0015	SHEET,PVC				
637		X-755WNA0016	SHEET,PVC				
638		X-7260000332	SHEET,CAUTION				
639		X-752WSA0280	SHIELD,3-PIN				
640		X-753WUA0062	SPRING,EARTH-TOP				
641		X-701WPA0781	HOLDER,TOP				
642		X-800WFA0055	CUSHION			20x5xT1	
701		X-8109130B94	SCREW,TAP TITE(B) R PAN			3x29	
702		X-8109230704	SCREW,TAP TITE(B) R BIND			3x7	
703		X-8109230804	SCREW,TAP TITE(B) BIND			3x8	
704		X-8109K30601	SCREW,TAP TITE(B) BIND(3D)			3x6	
705		X-8109I30A04	SCREW,TAP TITE(B) WH7			3x10	
706		X-8110226804	SCREW,TAP TITE(P) BIND			2.6x8	
△	DK4001	X-169G00009A	DECK CD DVDROM-DRIVE				
△	CD503	X-X06CU262201	CORD,CONNECTOR				

3.3 MECHANISM ASSEMBLY <M4>

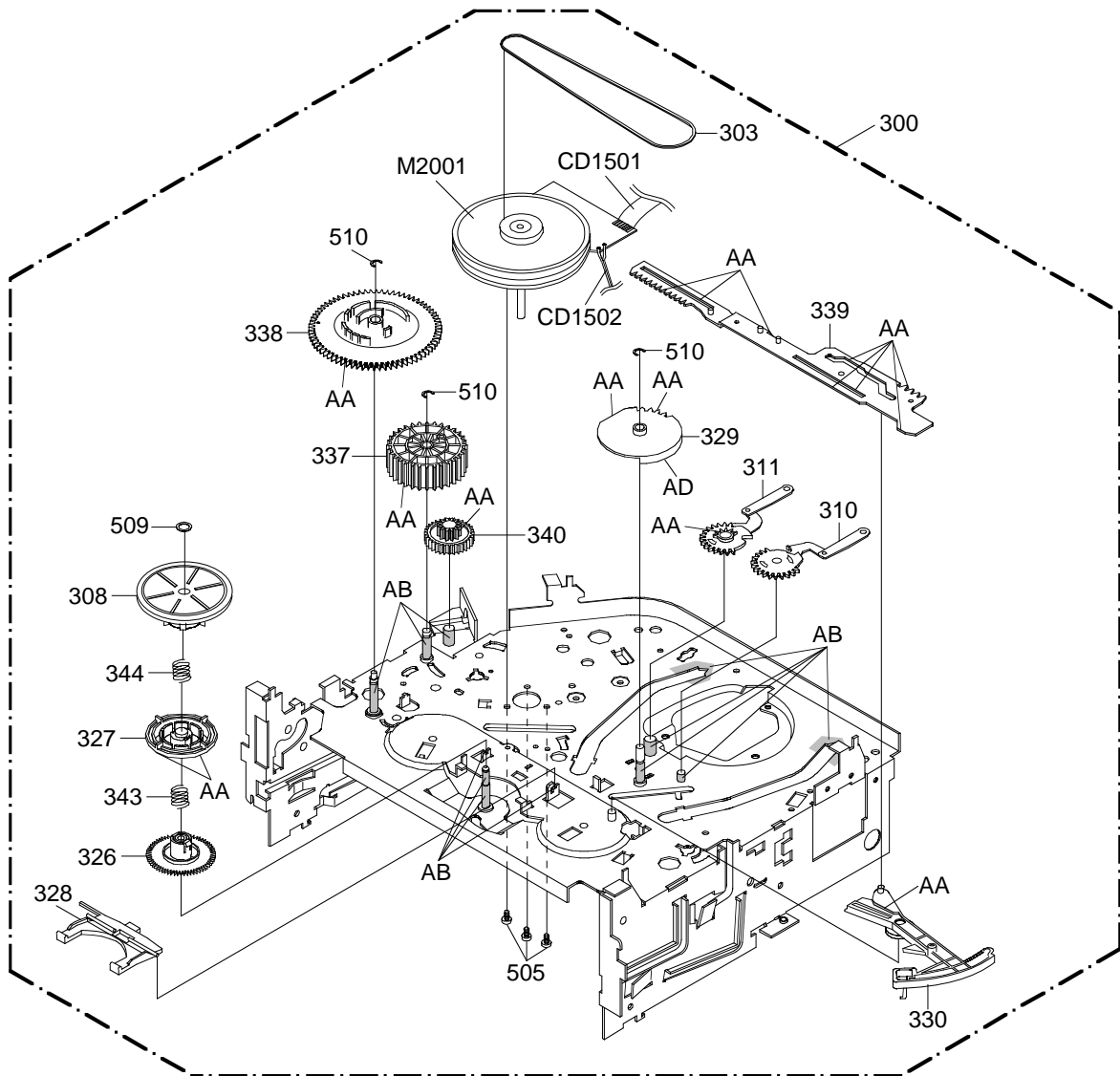
[ TOP VIEW ]



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

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

[ BOTTOM VIEW ]



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

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

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
*****			
<b>MECHANISM ASSEMBLY &lt;M4&gt;</b>			
300		X-A2A302A420A	DECK ASSY
301		X-85OA400234	PINCH ROLLER BLOCK
302		X-85OP900746	BRACKET, TOP 3V
303		X-85OP200290	BELT, CAPSTAN (S)
304		X-85OP600581	WORM
305		X-85OP500083	BASE, AC HEAD
306		X-85OP800324	SPRING, AC HEAD
307		X-85OA000459	MAIN CHASSIS ASS'Y
308		X-85OA200089	CLUTCH ASS'Y
309		X-85OA200090	ARM IDLER ASS'Y
310		X-85OA300065	LOADING ARM S UNIT
311		X-85OA300066	LOADING ARM T UNIT
312		X-85OA400223	INCLINED BASE T UNIT 3S
313		X-85OA400232	P5 ARM ASS'Y 2
314		X-85OA400233	TENSION ARM ASS'Y (WT)
315		X-85OA400231	INCLINED BASE S UNIT
316		X-85OP800358	SPRING, LOCKER
317		X-85OP900736	CASS, HOLDER
318		X-85OP900748	CASS, SIDE L
319		X-85OP900749	CASS, SIDE R
320		X-85OP900739	LOCKER, R
321		X-85OA900228	LINK UNIT
322		X-85OP000496	POST, CASS GUIDE
323		X-85OP200316	REEL, S (S)
324		X-85OP200317	REEL, T (S)
325		X-85OP200308	GEAR, IDLER
326		X-85OP200311	GEAR, CLUTCH
327		X-85OP200312	GEAR, COUPLING
328		X-85OP200313	LEVER, CLUTCH
329		X-85OP300194	GEAR, MAIN LOADING
330		X-85OP400490	LEVER, TENSION
331		X-85OP400492	HOLDER, TENSION
332		X-85OP400520	CAP, P4
333		X-85OP400539	BAND, TENSION
334		X-85OP400533	CONNECT, TENSION
335		X-85OP600573	ARM, BRAKE T
336		X-85OP600583	BAND, BRAKE T
337		X-85OP600577	CAM, PINCH ROLLER
338		X-85OP600578	CAM, MAIN
339		X-85OP600579	ROD, MAIN
340		X-85OP600582	GEAR, JOINT
341		X-85OP800322	SPRING, TENSION
342		X-85OP800360	SPRING, BRAKE T
343		X-85OP800355	SPRING, COUPLING
344		X-85OP800356	SPRING, RING
345		X-85OP900750	LEVER, LINK 2
346		X-85OP900744	LEVER, FLAP
347		X-85OP900745	CASS, OPENER
501		X-8107226804	SCREW, TAP TITE(S) BIND 2.6x8
502		X-8107226504	SCREW, TAP TITE(S) BIND 2.6x5
503		X-8107226404	SCREW, TAP TITE(S) BIND 2.6x4
504		X-8102120604	SCREW, PAN M2x6
505		X-8109126604	SCREW, TAP TITE(B) PAN 2.6x6
506		X-810A130404	SCREW/WASHER(A) M3x4
507		X-810A126504	SCREW/WASHER(A) M2.6x5
508		X-82Q264713N	POLYSLIDER WASHER 2.6x4.7xT0.13

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
509		X-82P184505N	POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5
510		X-83ETW30000	E-RING 3
CD1501		X-122H071603	CORD JUMPER
CD1502		X-122Y021902	CORD JUMPER
H5001		X-1523D91034	HEAD (AUDIO CONTROL)
H5002		X-1543D02013	HEAD (FULL ERASE)
△ M101		X-1596P98001	MOTOR (LOADING)
△ M2001		X-1510S98036	CAPSTAN DD UNIT
△ M2003		X-1589S11015	MICRO MOTOR
△ UN4001		X-A4F216A500	CYLINDER UNIT ASS'Y



### 3.4 ELECTRICAL PARTS LIST

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION
*****							
<b>VCR MT PCB ASSEMBLY &lt;03&gt;</b>							
PCB010	X-A2A302A010	PCB ASSY		R675	NRSA02J-821X	MG RESISTOR	820Ω,1/10W
R101	NRSA02J-561X	MG RESISTOR	560Ω,1/10W	R701	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R102	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W	R702	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R103	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W	R703	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W
R104	X-R002T46R8J	RESISTOR	6.8Ω,1/4W	R704	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W
R105	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W	R707	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R106	NRSA02J-682X	MG RESISTOR	6.8KΩ,1/10W	R708	NRSA02J-682X	MG RESISTOR	6.8KΩ,1/10W
R107	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W	R711	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R108	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W	R712	NRSA02J-682X	MG RESISTOR	6.8KΩ,1/10W
R110	NRSA02J-822X	MG RESISTOR	8.2KΩ,1/10W	R714	NRSA02J-273X	MG RESISTOR	27Ω,1/10W
R111	NRSA02J-822X	MG RESISTOR	8.2KΩ,1/10W	R716	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W
R112	NRSA02J-334X	MG RESISTOR	330KΩ,1/10W	R717	NRSA02J-225X	MG RESISTOR	2.2MΩ,1/10W
R113	NRSA02J-221X	MG RESISTOR	220Ω,1/10W	R718	NRSA02J-102X	MG RESISTOR	1KΩ,1/10W
R114	NRSA02J-183X	MG RESISTOR	18KΩ,1/10W	R719	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R115	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R720	QRE141J-682Y	RESISTOR	6.8KΩ,1/4W
R116	NRSA02J-153X	MG RESISTOR	15KΩ,1/10W	R1701	QRE141J-221Y	RESISTOR	220Ω,1/4W
R117	NRSA02J-682X	MG RESISTOR	6.8KΩ,1/10W	R1702	QRE141J-103Y	RESISTOR	10KΩ,1/4W
R119	NRSA02J-222X	MG RESISTOR	2.2KΩ,1/10W	R1703	X-R002T2221J	RESISTOR	220Ω,1/2W
R120	NRSA02J-221X	MG RESISTOR	220Ω,1/10W	R1706	QRE141J-392Y	RESISTOR	3.9KΩ,1/4W
R121	QRE141J-102Y	RESISTOR	1KΩ,1/4W	R1708	NRSA02J-222X	MG RESISTOR	2.2KΩ,1/10W
R122	NRSA02J-104X	MG RESISTOR	100KΩ,1/10W	R1709	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
R123	QRE141J-222Y	RESISTOR	2.2KΩ,1/4W	R1710	NRSA02J-820X	MG RESISTOR	82Ω,1/10W
R124	NRSA02J-823X	MG RESISTOR	82KΩ,1/10W	R1711	NRSA02F-821X	MG RESISTOR	820Ω,1/10W
R127	NRSA02J-684X	MG RESISTOR	680KΩ,1/10W	R1713	NRSA02F-122X	MG RESISTOR	1.2KΩ,1/10W
R129	QRE141J-182Y	RESISTOR	1.8KΩ,1/4W	R1714	QRE141J-391Y	RESISTOR	390Ω,1/4W
R131	NRSA02J-152X	MG RESISTOR	1.5KΩ,1/10W	R1715	QRE141J-561Y	RESISTOR	560Ω,1/4W
R132	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W	R1716	QRE141J-222Y	RESISTOR	2.2KΩ,1/4W
R133	NRSA02J-822X	MG RESISTOR	8.2KΩ,1/10W	R1720	QRE141J-102Y	RESISTOR	1KΩ,1/4W
R136	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W	R3001	NRSA02J-562X	MG RESISTOR	5.6KΩ,1/10W
R137	QRE141J-123Y	RESISTOR	12KΩ,1/4W	R3002	QRE141J-121Y	RESISTOR	120Ω,1/4W
R138	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W	R3003	NRSA02J-332X	MG RESISTOR	3.3KΩ,1/10W
R139	NRSA02J-123X	MG RESISTOR	12KΩ,1/10W	R3004	NRSA02J-822X	MG RESISTOR	8.2KΩ,1/10W
R142	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R3006	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R301	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W	R3007	NRSA02J-682X	MG RESISTOR	6.8KΩ,1/10W
R302	NRSA02J-102X	MG RESISTOR	1KΩ,1/10W	R3008	NRSA02J-102X	MG RESISTOR	1KΩ,1/10W
R304	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W	R3009	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
R651	NRSA02J-101X	MG RESISTOR	100Ω,1/4W	R3010	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W
R653	NRSA02J-331X	MG RESISTOR	330Ω,1/10W	R3011	QRE141J-473Y	RESISTOR	47KΩ,1/4W
R657	NRSA02J-272X	MG RESISTOR	2.7KΩ,1/10W	R3012	NRSA02J-563X	MG RESISTOR	56KΩ,1/10W
R658	NRSA02J-182X	MG RESISTOR	1.8KΩ,1/10W	R3013	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R659	NRSA02J-152X	MG RESISTOR	1.5KΩ,1/10W	R3014	NRSA02J-563X	MG RESISTOR	56KΩ,1/10W
R661	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R3015	QRE141J-473Y	RESISTOR	47KΩ,1/4W
R662	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3017	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R663	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3019	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R664	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R3020	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R665	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3022	NRSA02J-154X	MG RESISTOR	150KΩ,1/10W
R666	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3024	NRSA02J-153X	MG RESISTOR	15KΩ,1/10W
R667	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3025	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R668	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3026	NRSA02J-822X	MG RESISTOR	8.2KΩ,1/10W
R669	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R3027	NRSA02J-153X	MG RESISTOR	15KΩ,1/10W
R670	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3028	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R671	NRSA02J-821X	MG RESISTOR	820Ω,1/10W	R3029	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
R672	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3030	NRSA02J-562X	MG RESISTOR	5.6KΩ,1/10W
R673	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3031	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
R674	NRSA02J-181X	MG RESISTOR	180Ω,1/10W	R3032	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W
				R3033	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W
				R3034	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
				R3037	NRSA02J-473X	MG RESISTOR	47KΩ,1/10W
				R3038	QRE141J-223Y	RESISTOR	22KΩ,1/4W
				R3039	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W
				R3041	NRSA02J-271X	MG RESISTOR	270Ω,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R3043		NRSA02J-474X	MG RESISTOR 470KΩ,1/10W	R8067		NRSA02J-471X	MG RESISTOR 470Ω,1/10W
R3044		NRSA02J-332X	MG RESISTOR 3.3KΩ,1/10W	R8068		NRSA02J-474X	MG RESISTOR 470KΩ,1/10W
R3045		NRSA02J-332X	MG RESISTOR 3.3KΩ,1/10W	R8069		NRSA02J-472X	MG RESISTOR 4.7KΩ,1/10W
R3046		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	R8072		NRSA02J-470X	MG RESISTOR 47Ω,1/10W
R3047		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	R8073		NRSA02J-470X	MG RESISTOR 47Ω,1/10W
R3049		NRSA02J-473X	MG RESISTOR 47KΩ,1/10W	R8082		NRSA02J-332X	MG RESISTOR 3.3KΩ,1/10W
R3050		NRSA02J-101X	MG RESISTOR 100Ω,1/4W	C101		X-P235W1223J	MF CAPACITOR 0.022μF,100V MKT
R3051		NRSA02J-183X	MG RESISTOR 18KΩ,1/10W	C103		X-E524U0220D	E CAPACITOR 22μF,6.3V
R3053		NRSA02J-474X	MG RESISTOR 470KΩ,1/10W	C104		QETN0JM-227Z	E CAPACITOR 220μF 6.3V
R3055		QRE141J-223Y	RESISTOR 22KΩ,1/4W	C105		X-E524U0220D	E CAPACITOR 22μF,6.3V
R3056		QRE141J-102Y	RESISTOR 1KΩ,1/4W	C106		NCB21HK-103X	CAPACITOR 0.01μF,50V
R3057		NRSA02J-223X	MG RESISTOR 22KΩ,1/10W	C107		NCB21HK-153X	CAPACITOR 0.015μF,50V
R3062		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C109		NCB21EK-104X	CAPACITOR 0.1μF,25V
R3063		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C110		QETN1CM-476Z	E CAPACITOR 47μF,16V
R3083		NRSA02J-333X	MG RESISTOR 33KΩ,1/10W	C112		QETN0JM-227Z	E CAPACITOR 220μF 6.3V
R3087		NRSA02J-333X	MG RESISTOR 33KΩ,1/10W	C114		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8002		NRSA02J-100X	MG RESISTOR 10Ω,1/10W	C115		QETN1EM-336Z	E CAPACITOR 33μF,25V
R8003		NRSA02J-680X	MG RESISTOR 68Ω,1/10W	C116		NCF21HZ-104X	CAPACITOR 0.1μF,50V
R8004		NRSA02J-121X	MG RESISTOR 120Ω,1/10W	C118		NCB21HK-103X	CAPACITOR 0.01μF,50V
R8005		NRSA02J-100X	MG RESISTOR 10Ω,1/10W	C119		QETN1HM-106Z	E CAPACITOR 10μF,50V
R8006		NRSA02J-100X	MG RESISTOR 10Ω,1/10W	C120		QEKJ1HM-105Z	E CAPACITOR 1μF,50V
R8007		NRSA02J-100X	MG RESISTOR 10Ω,1/10W	C121		NCB21HK-272X	CAPACITOR 0.0027μF,50V
R8008		NRSA02J-150X	MG RESISTOR 15Ω,1/10W	C122		NCB21HK-122X	CAPACITOR 0.0012μF,50V
R8009		X-R002T2471J	RESISTOR 470Ω,1/2W	C123		X-E02LU54R7M	E CAPACITOR 4.7μF,50V
R8010		NRSA02J-750X	MG RESISTOR 75Ω,1/10W	C124		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8011		NRSA02J-101X	MG RESISTOR 100Ω,1/10W	C125		NCB21HK-391X	CAPACITOR 390pF,50V
R8014		NRSA02J-391X	MG RESISTOR 390Ω,1/10W	C126		NCF21HZ-104X	CAPACITOR 0.1μF,50V
R8015		QRE141J-391Y	RESISTOR 390Ω,1/4W	C127		X-CS0RCH4E2J	CAPACITOR 150pF,50V
R8016		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C128		NDC21HJ-390X	CAPACITOR 39pF,50V
R8017		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C129		NDC21HJ-220X	CAPACITOR 22pF, 50V
R8019		NRSA02J-750X	MG RESISTOR 75Ω,1/10W	C130		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8020		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C131		QETN0JM-107Z	E CAPACITOR 100μF 6.3V
R8021		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C132		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8022		QRE141J-100Y	RESISTOR 10Ω,1/4W	C133		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8023		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C134		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8024		X-R002T4104J	RESISTOR 100KΩ,1/4W	C135		X-E02LU5R22M	E CAPACITOR 0.22μF,50V
R8025		NRSA02J-104X	MG RESISTOR 100KΩ,1/10W	C136		QETN1VM-226Z	E CAPACITOR 22μF,35V
R8026		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C137		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8027		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C138		QETN1HM-105Z	E CAPACITOR 1μF,50V
R8028		NRSA02J-150X	MG RESISTOR 15Ω,1/10W	C139		NCF21HZ-104X	CAPACITOR 0.1μF,50V
R8029		NRSA02J-150X	MG RESISTOR 15Ω,1/10W	C140		QEKJ1HM-475Z	E CAPACITOR 4.7μF,50V
R8030		NRSA02J-150X	MG RESISTOR 15Ω,1/10W	C141		NCB21HK-103X	CAPACITOR 0.01μF,50V
R8031		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C142		QETN1CM-476Z	E CAPACITOR 47μF,16V
R8032		QRE141J-471Y	RESISTOR 470Ω,1/4W	C143		NCF21HZ-104X	CAPACITOR 0.1μF,50V
R8033		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C144		NCB21HK-103X	CAPACITOR 0.01μF,50V
R8034		QRE141J-471Y	RESISTOR 470Ω,1/4W	C145		NCB21HK-223X	CAPACITOR 0.022μF,50V
R8044		NRSA02J-123X	MG RESISTOR 12KΩ,1/10W	C146		QEKJ1HM-105Z	E CAPACITOR 1μF,50V
R8045		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C147		NCB21HK-223X	CAPACITOR 0.022μF,50V
R8046		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C148		QEKJ1HM-105Z	E CAPACITOR 1μF,50V
R8047		NRSA02J-102X	MG RESISTOR 1KΩ,1/10W	C151		QEKJ1HM-105Z	E CAPACITOR 1μF,50V
R8048		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C152		QETN1CM-476Z	E CAPACITOR 47μF,16V
R8049		NRSA02J-103X	MG RESISTOR 10KΩ,1/10W	C154		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8050		NRSA02J-123X	MG RESISTOR 12KΩ,1/10W	C155		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8051		NRSA02J-123X	MG RESISTOR 12KΩ,1/10W	C156		NCF21HZ-104X	CAPACITOR 0.1μF,50V
R8052		NRSA02J-822X	MG RESISTOR 8.2KΩ,1/10W	C158		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8053		NRSA02J-272X	MG RESISTOR 2.7KΩ,1/10W	C162		NCB21EK-104X	CAPACITOR 0.1μF,25V
R8054		NRSA02J-822X	MG RESISTOR 8.2KΩ,1/10W	C163		X-E524U0470D	E CAPACITOR 47μF,6.3V
R8056		NRSA02J-272X	MG RESISTOR 2.7KΩ,1/10W	C165		NCF21HZ-473X	CAPACITOR 0.047μF,50V
R8057		QRE141J-121Y	RESISTOR 120Ω,1/4W	C166		NCB21HK-683X	CAPACITOR 0.068μF,50V
R8058		QRE141J-121Y	RESISTOR 120Ω,1/4W	C169		NCF21HZ-473X	CAPACITOR 0.047μF,50V
R8065		NRSA02J-471X	MG RESISTOR 470Ω,1/10W	C172		NDC21HJ-220X	CAPACITOR 22pF, 50V

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	#	△	REF No.	PART No.	PART NAME, DESCRIPTION
C303			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C763			NDC21HJ-681X	CAPACITOR 680pF,50V
C304			NCF21HZ-103X	CAPACITOR 0.01μF,50V	C764			X-E02LU52R2M	E CAPACITOR 2.2μF,50V
C308			QETN0JM-227Z	E CAPACITOR 220μF 6.3V	C1702			QETN1HM-105Z	E CAPACITOR 1μF,50V
C309			QETN0JM-227Z	E CAPACITOR 220μF 6.3V	C1703			QETN1HM-106Z	E CAPACITOR 10μF,50V
C313			QEKJ1CM-106Z	E CAPACITOR 10μF,16V	C1706			QETN1VM-226Z	E CAPACITOR 22μF,35V
C316			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C1708			QETN0JM-477Z	E CAPACITOR 470μF,6.3V
C652			QETN0JM-107Z	E CAPACITOR 100μF 6.3V	C1713			QETN0JM-477Z	E CAPACITOR 470μF,6.3V
C701			NCB21HK-223X	CAPACITOR 0.022μF,50V	C3001			X-CS0RB0216K	CAPACITOR 1μF,16V
C702			X-E02LU53R3M	E CAPACITOR 3.3μF,50V	C3003			QEKJ1CM-106Z	E CAPACITOR 10μF,16V
C703			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3004			NCB21HK-223X	CAPACITOR 0.022μF,50V
C704			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3007			NCB21EK-104X	CAPACITOR 0.1μF,25V
C705			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3008			NCB21HK-472X	CAPACITOR 0.0047μF,50V
C706			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3009			NCB21EK-104X	CAPACITOR 0.1μF,25V
C707			NCB21EK-104X	CAPACITOR 0.1μF,25V	C3010			NCB21HK-102X	CAPACITOR 0.001μF,50V
C708			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3013			QEKJ0JM-226Z	E CAPACITOR 22μF,6.3V
C709			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3014			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C711			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3015			NDC21HJ-821X	CAPACITOR 820pF,50V
C713			QEKJ1CM-106Z	E CAPACITOR 10μF,16V	C3016			QEKJ0JM-476Z	E CAPACITOR 47μF,6.3V
C714			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3017			NDC21HJ-120X	CAPACITOR 12pF,50V
C715			NDC21HJ-681X	CAPACITOR 680pF,50V	C3018			X-CS0RCH4E2J	CAPACITOR 150pF,50V
C716			X-E524U5010D	E CAPACITOR 1μF,50V	C3019			NCB21EK-104X	CAPACITOR 0.1μF,25V
C719			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3020			NCB21HK-223X	CAPACITOR 0.022μF,50V
C720			X-E524U0330D	E CAPACITOR 33μF,6.3V	C3021			QEKJ1CM-106Z	E CAPACITOR 10μF,16V
C721			NDC21HJ-681X	CAPACITOR 680pF,50V	C3022			NDC21HJ-471X	CAPACITOR 470pF,50V
C722			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C3023			QETN0JM-227Z	E CAPACITOR 220μF 6.3V
C723			NCF21HZ-103X	CAPACITOR 0.01μF,50V	C3024			NDC21HJ-180X	CAPACITOR 18pF,50V
C724			NCF21HZ-103X	CAPACITOR 0.01μF,50V	C3025			NDC21HJ-180X	CAPACITOR 18pF,50V
C725			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C3027			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C726			NCB21HK-153X	CAPACITOR 0.015μF,50V	C3029			QEKJ0JM-476Z	E CAPACITOR 47μF,6.3V
C727			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3030			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C728			X-E524U2100D	E CAPACITOR 10μF,16V	C3031			NCB21HK-152X	CAPACITOR 0.0015μF,50V
C729			NCB21HK-103X	CAPACITOR 0.01μF,50V	C3032			QEKJ1HM-225Z	E CAPACITOR 2.2μF,50V
C730			NCB21HK-153X	CAPACITOR 0.015μF,50V	C3033			QETN1VM-337Z	E CAPACITOR 330μF,35V
C731			X-E02LU5R22M	E CAPACITOR 0.22μF,50V	C3034			NCF21EZ-105X	CAPACITOR 1μF,25V
C732			NCF21HZ-103X	CAPACITOR 0.01μF,50V	C3036			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C734			X-CS0RB0315K	CAPACITOR 0.1μF,25V	C3038			NCF21EZ-105X	CAPACITOR 1μF,25V
C735			X-E02LU54R7M	E CAPACITOR 4.7μF,50V	C3039			NDC21HJ-120X	CAPACITOR 12pF,50V
C736			NCB21HK-102X	CAPACITOR 0.001μF,50V	C3041			X-CQGTB04Q3K	CAPACITOR 0.0047μF,50V
C737			QEKJ1HM-475Z	E CAPACITOR 4.7μF,50V	C3044			NDC21HJ-120X	CAPACITOR 12pF,50V
C738			NCF21HZ-103X	CAPACITOR 0.01μF,50V	C3045			QEKJ1HM-474Z	E CAPACITOR 0.47μF,50V
C739			QEKJ0JM-476Z	E CAPACITOR 47μF,6.3V	C3046			NDC21HJ-150X	CAPACITOR 15pF,50V
C740			QEKJ0JM-336Z	E CAPACITOR 33μF,6.3V	C3047			NDC21HJ-150X	CAPACITOR 15pF,50V
C741			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3049			NDC21HJ-101X	CAPACITOR 100pF,50V
C742			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3050			NCB21HK-103X	CAPACITOR 0.01μF,50V
C743			X-E02LU5R22M	E CAPACITOR 0.22μF,50V	C3052			QEKJ0JM-226Z	E CAPACITOR 22μF,6.3V
C744			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C3053			NCB21EK-104X	CAPACITOR 0.1μF,25V
C746			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C3061			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C747			QETN1HM-106Z	E CAPACITOR 10μF,50V	C3065			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C748			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C8008			NDC21HJ-101X	CAPACITOR 100pF,50V
C749			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C8009			QETN0JM-477Z	E CAPACITOR 470μF,6.3V
C751			NCF21HZ-104X	CAPACITOR 0.1μF,50V	C8010			NCF21HZ-104X	CAPACITOR 0.1μF,50V
C752			QETN1VM-226Z	E CAPACITOR 22μF,35V	C8011			NDC21HJ-101X	CAPACITOR 100pF,50V
C754			QETN1CM-476Z	E CAPACITOR 47μF,16V	C8012			NCB21EK-104X	CAPACITOR 0.1μF,25V
C755			NCB21HK-223X	CAPACITOR 0.022μF,50V	C8013			QETN1HM-106Z	E CAPACITOR 10μF,50V
C756			QETN1HM-106Z	E CAPACITOR 10μF,50V	C8015			QETN0JM-477Z	E CAPACITOR 470μF,6.3V
C757			QETN1HM-106Z	E CAPACITOR 10μF,50V	C8019			QEKJ1CM-106Z	E CAPACITOR 10μF,16V
C758			QETN1VM-226Z	E CAPACITOR 22μF,35V	C8020			QEKJ1CM-106Z	E CAPACITOR 10μF,16V
C759			QETN1VM-226Z	E CAPACITOR 22μF,35V	C8021			QEKJ1CM-106Z	E CAPACITOR 10μF,16V
C760			QEKJ1HM-105Z	E CAPACITOR 1μF,50V	C8022			X-E62KU52R2M	E CAPACITOR 2.2μF,50V
C761			X-E524U0470D	E CAPACITOR 47μF,6.3V	C8023			X-E62KU52R2M	E CAPACITOR 2.2μF,50V
C762			NDC21HJ-681X	CAPACITOR 680pF,50V	C8024			QEKJ1CM-106Z	E CAPACITOR 10μF,16V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C8025		NDC21HJ-821X	CAPACITOR 820pF,50V	Q3002		X-0002700690	PHOTO COUPLER RPI-303
C8026		NCF21HZ-103X	CAPACITOR 0.01μF,50V	Q3004		X-0002700680	PHOTO COUPLER RPI-352C40N
C8027		QETN1CM-227Z	E CAPACITOR 220μF,16V	Q3005		X-0002700680	PHOTO COUPLER RPI-352C40N
C8028		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	Q3006		X-0000100380	PHOTO TRANSISTOR PNA2604M010R
C8029		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	Q3008		X-0000100380	PHOTO TRANSISTOR PNA2604M010R
C8030		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	IC101		X-I03F3205M0	IC LA71205M-MPB
C8031		QEKJ1HM-475Z	E CAPACITOR 4.7μF,50V	IC701		AN3663FBP	IC
C8032		QEKJ1HM-475Z	E CAPACITOR 4.7μF,50V	IC3001		X-I54F50110A	IC OEC0110A
C8033		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	IC3003		X-I9UF032310	IC PST3231NR
C8037		QETNOJM-477Z	E CAPACITOR 470μF,6.3V	IC3099		X-A2A302A015	IC S-24C02BDP-1A
C8038		QETNOJM-477Z	E CAPACITOR 470μF,6.3V	IC8001		X-I0QF02283V	IC NJM2283V
C8039		QETNOJM-477Z	E CAPACITOR 470μF,6.3V	IC8004		X-I0QF045800	IC NJM4580M
C8043		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	IC8007		X-I01F07399A	IC AN7399S-E1
C8048		QETNOJM-477Z	E CAPACITOR 470μF,6.3V	Q101		X-TCATC31980	TRANSISTOR KTC3198-AT(Y,GR)
C8050		NCB21EK-563X	CAPACITOR 0.056μF,25V	Q102		X-TCATC31980	TRANSISTOR KTC3198-AT(Y,GR)
C8051		NCB21EK-104X	CAPACITOR 0.1μF,25V	Q103		X-TPAAC05002	TRANSISTOR KRA103SRTK
C8052		QEKJ1HM-475Z	E CAPACITOR 4.7μF,50V	Q104		X-TCAT032034	TRANSISTOR KTC3203_Y-AT
C8064		NDC21HJ-821X	CAPACITOR 820pF,50V	Q105		X-TAATA12660	TRANSISTOR KTA1266-AT(Y,GR)
C8065		QEKJ1AM-336Z	E CAPACITOR 33μF,10V	Q106		2SA1037AK/RS/-X	TRANSISTOR
C8066		QETN1AM-107Z	E CAPACITOR 100μ,10V	Q107		2SA1037AK/RS/-X	TRANSISTOR
C8069		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	Q109		2SC2412AK/RS/-X	TRANSISTOR
C8070		NCB21HK-152X	CAPACITOR 0.0015μF,50V	Q303		KRC103S-X	TRANSISTOR
C8077		NCB21HK-152X	CAPACITOR 0.0015μF,50V	Q651		2SA1037AK/RS/-X	TRANSISTOR
C8079		NDC21HJ-101X	CAPACITOR 100pF,50V	Q652		KRC103S-X	TRANSISTOR
C8081		NDC21HJ-101X	CAPACITOR 100pF,50V	Q653		KRC103S-X	TRANSISTOR
C8083		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	Q654		2SA1037AK/RS/-X	TRANSISTOR
C8086		QEKJ1CM-106Z	E CAPACITOR 10μF,16V	Q655		KRC103S-X	TRANSISTOR
C8090		NCF21HZ-104X	CAPACITOR 0.1μF,50V	Q656		KRC103S-X	TRANSISTOR
C8094		QEKJ0JM-476Z	E CAPACITOR 47μF,6.3V	Q657		KRC103S-X	TRANSISTOR
C8095		NCB21HK-223X	CAPACITOR 0.022μF,50V	Q658		KRC103S-X	TRANSISTOR
C8096		NCF21HZ-104X	CAPACITOR 0.1μF,50V	Q659		2SA1037AK/RS/-X	TRANSISTOR
C8097		QEKJ0JM-476Z	E CAPACITOR 47μF,6.3V	Q660		KRC103S-X	TRANSISTOR
C8098		NCF21HZ-104X	CAPACITOR 0.1μF,50V	Q661		2SA1037AK/RS/-X	TRANSISTOR
C8099		NDC21HJ-471X	CAPACITOR 470pF,50V	Q662		KRC103S-X	TRANSISTOR
C8100		NDC21HJ-471X	CAPACITOR 470pF,50V	Q663		KRC103S-X	TRANSISTOR
C8102		QEKJ1HM-225Z	E CAPACITOR 2.2μF,50V	Q664		KRC103S-X	TRANSISTOR
C8103		QETN1CM-477Z	E CAPACITOR 470μF,16V	Q665		2SA1037AK/RS/-X	TRANSISTOR
C8104		QEKJ1CM-226Z	E CAPACITOR 22μF,16V	Q666		X-TPAAC05002	TRANSISTOR KRA103SRTK
C8105		QEKJ1CM-226Z	E CAPACITOR 22μF,16V	△ Q1701		X-TCAT032034	TRANSISTOR KTC3203_Y-AT
C8106		QEKJ1HM-225Z	E CAPACITOR 2.2μF,50V	△ Q1702		X-TCAT03209Y	TRANSISTOR KTC3209_Y-AT
C8117		NCB21HK-472X	CAPACITOR 0.0047μF,50V	△ Q1703		X-TCAT03209Y	TRANSISTOR KTC3209_Y-AT
C8118		NCB21HK-472X	CAPACITOR 0.0047μF,50V	Q1704		KRC103S-X	TRANSISTOR
D651		X-0021E5Q210	LED LTL-1CHGE-002A	△ Q1705		X-TCAT032034	TRANSISTOR KTC3203_Y-AT
D656		X-D2WXN40050	DIODE 1N4005-EIC	△ Q1706		X-TB3T011310	TRANSISTOR 2SB1131(S,T)-AE
D701		1SS133-T2	DIODE	Q1707		2SC2412AK/RS/-X	TRANSISTOR
D1701		MTZJ13B-T2	ZENER	Q1708		2SC2412AK/RS/-X	TRANSISTOR
D1702		1SS133-T2	DIODE	△ Q1713		X-TAAT012714	TRANSISTOR KTA1271_Y-AT
D1706		MTZJ10B-T2	ZENER	Q1714		KRC103S-X	TRANSISTOR
D1709		X-D2WXN40050	DIODE 1N4005-EIC	Q3007		KRC103S-X	TRANSISTOR
D3001		X-0010100320	INFRARED LED LNA2702L010R	Q8001		2SA1037AK/RS/-X	TRANSISTOR
D3007		1SS133-T2	DIODE	Q8002		2SC2412AK/RS/-X	TRANSISTOR
D3009		1SS133-T2	DIODE	Q8003		KRC103S-X	TRANSISTOR
D8002		MTZJ6.8B-T2	ZENER	Q8004		X-TAATA12660	TRANSISTOR KTA1266-AT(Y,GR)
D8004		1SS133-T2	DIODE	Q8005		2SC2412AK/RS/-X	TRANSISTOR
D8010		1SS133-T2	DIODE	Q8006		2SC2412AK/RS/-X	TRANSISTOR
D8011		MTZJ5.6B-T2	ZENER	Q8007		X-TPAAC05002	TRANSISTOR KRA103SRTK
D8012		MTZJ5.6B-T2	ZENER	Q8010		2SC2412AK/RS/-X	TRANSISTOR
D8013		MTZJ5.6B-T2	ZENER	Q8011		X-TNAAD05001	TRANSISTOR KRC104SRTK
D8014		MTZJ5.6B-T2	ZENER	Q8012		KRC103S-X	TRANSISTOR
D8015		MTZJ5.6B-T2	ZENER	Q8013		X-TPAAA05001	TRANSISTOR KRA101SRTK
Q3001		X-0002700690	PHOTO COUPLER RPI-303	Q8014		2SC2412AK/RS/-X	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
		Q8015	2SC2412AK/RS/-X	TRANSISTOR
		B8001	X-024HT03564	CORE,BEADS W4BRH3.5X6X1
		L101	X-031626009R	COIL,BIAS OSC
		L102	QQL29BJ-101Z	COIL 100μH
		L104	QQL29BJ-220Z	COIL 22μH
		L105	QQL29BJ-220Z	COIL 22μH
		L106	QQL29BJ-220Z	COIL 22μH
		L107	QQL29BJ-220Z	COIL 22μH
		L301	X-021673101K	COIL 100μH
		L302	QQL29BJ-220Z	COIL 22μH
		L701	QQL29BJ-220Z	COIL 22μH
		L702	QQL29BJ-220Z	COIL 22μH
		L703	QQL071J-101Y	COIL 100μH
		L704	QQL29BJ-220Z	COIL 22μH
		L3003	X-021LA6120K	COIL 12μH
		L8001	X-021LA6R27M	COIL 0.27μH
		L8002	QQL071J-101Y	COIL 100μH
		L8003	X-021LA6R27M	COIL 0.27μH
		L8007	QQL071J-101Y	COIL 100μH
		L8012	QQL071J-101Y	COIL 100μH
		L8013	QQL071J-101Y	COIL 100μH
		J8001	X-060J411018	RCA JACK
		J8003	X-060J401087	RCA JACK
		J8004	X-060J401087	RCA JACK
		J8005	X-060J421025	RCA JACK
		J8006	X-063D700005	JACK
		J8007	X-060J401082	RCA JACK
		J8008	X-060J411024	RCA JACK
		J8009	X-060J411020	RCA JACK
		SW301	X-0510S21041	SWITCH,SLIDE
		SW651	QSW0456-001Z	TACT SWITCH
		SW652	QSW0456-001Z	TACT SWITCH
		SW653	QSW0456-001Z	TACT SWITCH
		SW654	QSW0456-001Z	TACT SWITCH
		SW655	QSW0456-001Z	TACT SWITCH
		SW3001	X-0508A11001	SWITCH(LEAF)
		CP101	X-0697290620	CONNECTOR PCB SIDE
		CP102	X-069J760029	CONNECTOR PCB SIDE
		CP103	X-0697120320	CONNECTOR PCB SIDE
		CP651	X-069J750019	CONNECTOR PCB SIDE
		CP1701	X-069R2E0589	CONNECTOR PCB SIDE
		CP3001	X-06972C0010	CONNECTOR PCB SIDE
		CP8001	X-069S2D0629	CONNECTOR PCB SIDE
		CP8002	X-069J710019	CONNECTOR PCB SIDE
		CD102	X-122F061501	CORD,JUMPER
		CD651	X-122H052402	CORD,JUMPER
		CD8002	X-122S012001	CORD,JUMPER
		X101	NAX0102-001X	CRYSTAL 3.57954MHz
		X3001	QAX0528-001	CRYSTAL 10MHz
		X3002	QAX0236-001	CRYSTAL 32.768KHz
		X3003	QAX0698-001	CRYSTAL 14.31818MHz
	△	TU301	X-0162K00027	RF UNIT
		CUS011	X-800WFAA008	CUSHION C
		OS651	X-077Q037001	REMOTE RECEIVER PIC-37043LO
		OS8001	X-07A9000004	OPTICAL DEVICE GP1FA550TZ
		V651	X-0040F94005	LED DISPLAY

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
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**MPEG MT PCB ASSEMBLY <50>**

**Note**

When replacing parts in repair, use chip parts although Melf parts may be used at the time of factory shipment.

	PCB120	X-A2A303A120	PCB ASSY	
	R1001	NRSA63J-103X	MG RESISTOR	10KΩ, 1/16W
	R1002	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1003	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1004	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1005	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1006	NRSA63J-103X	MG RESISTOR	10KΩ, 1/16W
	R1007	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1008	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1009	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1010	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1011	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1012	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1013	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1014	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1015	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1016	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1017	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1018	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1019	NRSA63J-100X	MG RESISTOR	10Ω, 1/16W
	R1020	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1021	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1023	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1024	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1027	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1028	NRSA63J-102X	MG RESISTOR	1KΩ, 1/16W
	R1033	NRSA63J-100X	MG RESISTOR	10Ω, 1/16W
	R1034	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1035	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1036	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1037	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R1038	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4001	NRSA63J-2R2X	MG RESISTOR	2.2Ω, 1/16W
	R4002	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4003	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4004	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4005	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4006	NRSA63J-101X	MG RESISTOR	100Ω, 1/16W
	R4007	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4008	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4009	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4010	NRSA63J-101X	MG RESISTOR	100Ω, 1/16W
	R4011	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4012	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4013	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4014	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4015	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4016	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4017	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4018	NRSA63J-181X	MG RESISTOR	180Ω, 1/16W
	R4020	NRSA63J-472X	MG RESISTOR	4.7KΩ, 1/16W
	R4021	NRSA63J-105X	MG RESISTOR	1MΩ, 1/16W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R4024		NRSA63J-102X	MG RESISTOR 1KΩ,1/16W	C8501		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R4025		NRSA63J-101X	MG RESISTOR 100Ω,1/16W	C8502		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R4027		NRSA63J-101X	MG RESISTOR 100Ω,1/16W	C8503		X-E524U2100D	E CAPACITOR 10μF,16V
R4028		NRSA63J-101X	MG RESISTOR 100Ω,1/16W	C8504		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R4029		NRSA63J-101X	MG RESISTOR 100Ω,1/16W	C8505		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8501		NRSA63F-151X	MG RESISTOR 150Ω,1/16W ±1%	C8506		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8502		NRSA63F-151X	MG RESISTOR 150Ω,1/16W ±1%	C8507		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8503		NRSA63J-103X	MG RESISTOR 10KΩ,1/16W	C8508		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8504		NRSA63F-151X	MG RESISTOR 150Ω,1/16W ±1%	C8509		X-E524U2470D	E CAPACITOR 47μF,16V
R8505		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8510		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8506		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8511		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8507		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8512		X-CS0RB0216K	CAPACITOR 1μF,16V
R8508		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8514		X-E524U2470D	E CAPACITOR 47μF,16V
R8509		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8515		X-CS0PCH4H1J	CAPACITOR 22pF,50V
R8510		NRSA63F-750X	MG RESISTOR 75Ω,1/16W ±1%	C8517		X-CS0PCH4H1J	CAPACITOR 22pF,50V
R8513		NRSA63J-102X	MG RESISTOR 1KΩ,1/16W	C8518		X-CS0PCH4H1J	CAPACITOR 22pF,50V
R8514		NRSA63J-102X	MG RESISTOR 1KΩ,1/16W	C8519		NDC31HJ-151X	CAPACITOR 150pF,50V
R8515		NRSA63J-103X	MG RESISTOR 10KΩ,1/16W	C8520		X-CS0PCH4K2J	CAPACITOR 270pF,50V
R8516		NRSA63F-151X	MG RESISTOR 150Ω,1/16W ±1%	C8521		X-CS0PCH4L2J	CAPACITOR 330pF,50V
R8517		NRSA63J-221X	MG RESISTOR 220Ω,1/16W	C8522		X-CS0PCH4L2J	CAPACITOR 330pF,50V
R8518		NRSA63F-182X	MG RESISTOR 1.8KΩ,1/16W ±1%	C8523		X-E524U0470D	E CAPACITOR 47μF,6.3V
R8519		NRSA63F-103X	MG RESISTOR 10KΩ,1/16W ±1%	C8524		NCB31EZ-104X	CAPACITOR 0.1μF,25V
R8520		NRSA63J-102X	MG RESISTOR 1KΩ,1/16W	C8525		X-CS0PCH4H1J	CAPACITOR 22pF,50V
R8521		NRSA63J-271X	MG RESISTOR 270Ω,1/16W	C8526		X-CS0PCH4H1J	CAPACITOR 22pF,50V
R8522		NRSA63J-103X	MG RESISTOR 10KΩ,1/16W	C8527		X-CS0PCH4K2J	CAPACITOR 270pF,50V
R8523		NRSA63J-103X	MG RESISTOR 10KΩ,1/16W	C8528		X-CS0PCH4K2J	CAPACITOR 270pF,50V
R8524		NRSA63J-102X	MG RESISTOR 1KΩ,1/16W	C8529		X-CS0PCH4L2J	CAPACITOR 330pF,50V
C1001		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8530		X-CS0PCH4L2J	CAPACITOR 330pF,50V
C1002		X-CS0PCH4G1J	CAPACITOR 18pF,50V	C8531		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C1003		X-CS0PCH4G1J	CAPACITOR 18pF,50V	C8532		X-CS0PCH4K2J	CAPACITOR 270pF,50V
C1004		X-E524U1221D	E CAPACITOR 220μF,10V	C8533		X-CS0PCH4H1J	CAPACITOR 22pF,50V
C1005		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8534		X-E524U0470D	E CAPACITOR 47μF,6.3V
C1006		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8535		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C1007		X-E524U1221D	E CAPACITOR 220μF,10V	C8536		X-E524U0220D	E CAPACITOR 22μF,6.3V
C1008		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8537		X-E524U0220D	E CAPACITOR 22μF,6.3V
C1009		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8538		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C1010		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8539		X-CS0PCH4K2J	CAPACITOR 270pF,50V
C1011		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8548		X-CS0PCH4L2J	CAPACITOR 330pF,50V
C1012		NCB31CK-104X	CAPACITOR 0.1μF,16V	C8549		X-CS0PCH4L2J	CAPACITOR 330pF,50V
C1014		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8551		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C4001		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8552		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C4002		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8553		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C4003		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8554		NCB31EZ-104X	CAPACITOR 0.1μF,25V
C4004		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8555		X-E524U1221D	E CAPACITOR 220μF,10V
C4005		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8556		X-E524U0220D	E CAPACITOR 22μF,6.3V
C4006		NCB31EZ-104X	CAPACITOR 0.1μF,25V	C8557		X-E524U54R7D	E CAPACITOR 4.7μF,50V
C4007		NCB31HK-102X	CAPACITOR 0.001μF,50V	D1002		1SS355	DIODE
C4008		X-E524U1221D	E CAPACITOR 220μF,10V	D1003		1SS355	DIODE
C4009		NCB31CK-473X	CAPACITOR 0.047μF,16V	D1004		1SS355	DIODE
C4010		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8501		1SS355	DIODE
C4012		X-CS0PCH450C	CAPACITOR 5pF,50V	D8502		1SS355	DIODE
C4014		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8503		1SS355	DIODE
C4015		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8504		1SS355	DIODE
C4016		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8505		1SS355	DIODE
C4017		X-E524U1221D	E CAPACITOR 220μF,10V	D8506		1SS355	DIODE
C4018		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8507		1SS355	DIODE
C4019		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8508		1SS355	DIODE
C4020		X-E524U0470D	E CAPACITOR 47μF,6.3V	D8509		1SS355	DIODE
C4021		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8510		1SS355	DIODE
C4022		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8511		1SS355	DIODE
C4025		NCB31EZ-104X	CAPACITOR 0.1μF,25V	D8512		1SS355	DIODE

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			IC1001	X-ICQF067031	IC ZR36703BF
			IC1006	X-I57F04C01W	IC BR24C01AF-WE2
			IC4001	X-ICQF067101	IC ZR36710
			IC4002	X-ICLJ0610DB	IC HY57V161610DTC-8
			IC8501	X-I5VF0861K0	IC BT861KRF
			IC8503	X-I17F017480	IC PCM1748E
			IC8504	X-I5CF040520	IC SN74LV4052APW
			Q8501	2SC2412AK/RS/-X	TRANSISTOR
			Q8502	2SC2412AK/RS/-X	TRANSISTOR
			Q8503	2SA1037AK/RS/-X	TRANSISTOR
			B1001	X-024HC36001	CORE,BEADS
			B4001	X-024HC36001	CORE,BEADS
			B4002	X-024HC36001	CORE,BEADS
			B4003	X-024HC36001	CORE,BEADS
			B8501	X-024HC36001	CORE,BEADS
			B8502	X-024HC36001	CORE,BEADS
			B8503	X-024HC36001	CORE,BEADS
			B8505	X-024HC36001	CORE,BEADS
			L8501	X-02167F1R8K	COIL 1.8μH
			L8502	X-02167F1R8K	COIL 1.8μH
			L8503	X-02167F1R8K	COIL 1.8μH
			L8504	X-02167F1R8K	COIL 1.8μH
			L8505	X-02167F1R8K	COIL 1.8μH
			L8506	X-02167F1R8K	COIL 1.8μH
			L8507	X-X-02AHB9A972	CORE,FERRITE W5T29X7.5X19
			CD4001	X-122S0Q0901	CORD,JUMPER
			CD4002	X-122S0G0901	CORD,JUMPER
			CP4001	X-069JVQ0180	CONNECTOR PCB SIDE
			CP4002	X-069JVG0180	CONNECTOR PCB SIDE
			CP8502	X-069J7I0019	CONNECTOR PCB SIDE
			X1001	X-100CT01210	CRYSTAL 12.5MHz
			X4001	X-100WT02706	CRYSTAL 27MHz
			CD8501	X-06CU2D2501	CORD,CONNECTOR CU2D2501

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**POWER PCB ASSEMBLY <01>**

**Note**

When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			PCB240	X-A2A302A240	PCB ASSY
			△ R501	X-R0G3K2335K	RESISTOR 3.3MΩ, 1/2W
			△ R502	X-R3X181R39J	OMF RESISTOR 0.39Ω, 1W
			△ R504	X-R3X181561J	OMF RESISTOR 560Ω, 1W
			R506	X-R002T2105J	RESISTOR 1MΩ, 1/2W
			R507	QRE141J-103Y	RESISTOR 10KΩ, 1/4W
			R508	QRE141J-471Y	RESISTOR 470Ω, 1/4W
			R509	QRE141J-103Y	RESISTOR 10KΩ, 1/4W
			R510	X-R002T2471J	RESISTOR 470Ω, 1/2W
			△ R512	X-R3X181273J	OMF RESISTOR 27KΩ, 1W
			R513	QRE141J-391Y	RESISTOR 390Ω, 1/4W
			△ R516	X-R63581R22J	FUSE RESISTOR 0.22Ω, 1W
			△ R517	X-R002T2102J	RESISTOR 3.3MΩ, 1/2W
			R518	QRE141J-151Y	RESISTOR 150Ω, 1/4W
			R519	QRE141J-102Y	RESISTOR 1KΩ, 1/4W
			R520	X-R4X5T6332F	RESISTOR 3.3KΩ, 1/6W

#	△	REF No.	PART No.	PART NAME, DESCRIPTION	
			R521	QRE141J-271Y	RESISTOR 270Ω, 1/4W
			R522	X-R4X5T6332F	RESISTOR 3.3KΩ, 1/6W
			R524	QRE141J-821Y	RESISTOR 820Ω, 1/4W
			R525	QRE141J-103Y	RESISTOR 10KΩ, 1/4W
			R536	QRE141J-102Y	RESISTOR 1KΩ, 1/4W
			△ C501	X-E5EZF3222M	E CAPACITOR 2200μF, 25V
			△ C502	X-P2472B104M	MF CAPACITOR 0.1μF, 275V
			△ C505	X-E5EZX2221M	E CAPACITOR 220μF, 16V
			△ C507	X-C0JTB05H3K	CAPACITOR 0.0022μF, 500V
			C508	X-P1S3T0822J	F CAPACITOR 0.0082μF, 50V
			C509	X-P1S3T0183J	F CAPACITOR 0.018μF, 50V
			C510	X-E5EZX3471M	E CAPACITOR 470μF, 25V
			△ C511	X-E62NFC221M	E CAPACITOR 220μF, 200V
			C513	QCB32HK-221Z	CAPACITOR 220pF, 500V
			C514	X-E5EZX1331M	E CAPACITOR 330μF, 10V
			C515	X-C0JFE0514M	CAPACITOR 0.01μF, 500V
			△ C516	QCZ9079-472	CAPACITOR 0.0047μF, 250V
			C517	X-E5EZX102M	E CAPACITOR 1000μF, 6.3V
			△ C518	X-E5EZX1222M	E CAPACITOR 2200μF, 10V
			△ C519	X-E5EZX1222M	E CAPACITOR 2200μF, 10V
			C520	QCFB1HZ-104Y	CAPACITOR 0.1μF, 50V
			△ C522	X-E5EZX5100M	E CAPACITOR 10μF, 50V
			C524	QCB1HK-104Y	CAPACITOR 0.1μF, 50V
			C525	QCZ0131-681	CAPACITOR 680pF, 2KV
			C527	X-E5EZX2101M	E CAPACITOR 100μF, 16V
			C528	X-E02LU2101M	E CAPACITOR 100μF, 16V
			△ C529	X-E5EZX102M	E CAPACITOR 1000μF, 6.3V
			C530	QETN0JM-227Z	E CAPACITOR 220μF 6.3V
			△ D502	X-D2WTRM11C0	DIODE RM11C-EIC
			△ D503	X-D2WTRM11C0	DIODE RM11C-EIC
			△ D505	X-D2WTRM11C0	DIODE RM11C-EIC
			△ D506	X-D2WTRM11C0	DIODE RM11C-EIC
			△ D507	X-D2WXB290S0	DIODE SB290S
			D509	X-D2WXP10J0	FR DIODE RGP10J-EIC
			D510	X-D97U03001B	ZENER MTZJ30B T-77
			△ D512	X-D2LKB340L0	SCHOTTKY SB340L-6737
			D515	X-D2LKB340L0	SCHOTTKY SB340L-6737
			△ D518	1SS133-T2	DIODE
			△ D522	X-D28TELS6N6	RECTIFIER 10ELS6N-TA1B2
			D523	MTZJ33B-T2	ZENER
			D524	1SS133-T2	DIODE
			D525	X-D2WXN40050	DIODE 1N4005-EIC
			△ D529	X-D2WXB290S0	DIODE SB290S
			D530	X-D28TELS6N6	RECTIFIER 10ELS6N-TA1B2
			D531	X-D97U01801B	ZENER MTZJ18B T-77
			△ IC503	X-0002E00610	PHOTO COUPLER LTV-817M-VB
			△ IC501	X-I1KJ9A4310	IC KIA431
			△ IC502	X-I1KA97809A	IC KIA7809API
			△ Q501	X-TJXG5NC500	FET STP5NC50FP
			△ Q502	X-TC5T021204	TRANSISTOR 2SC2120Y(TPE2)
			△ Q504	X-TB3T011310	TRANSISTOR
			△ Q505	X-TCAT03209Y	TRANSISTOR
			Q506	X-TNATA03002	TRANSISTOR KRC101MAT
			B501	X-024HT03563	CORE,BEADS W4BRH3.5X6X1.0X2
			B503	X-024HT03564	CORE,BEADS W4BRH3.5X6X1
			△ L501	X-029T0000A1	COIL,LINE FILTER
			L502	X-02AHB0A0A4	CORE,FERRITE W5T_20*10*10A
			△ L503	X-02167E220K	COIL 22μH
			L505	X-02167F470J	COIL 47μH
			L506	X-02167E220K	COIL 22μH
			L507	X-02167E220K	COIL 22μH

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
△	T501	X-0481290814	TRANSFORMER,SWITCHING
	CD502	X-122Y0E1701	CORD,JUMPER
	CP503	X-069S260629	CONNECTOR PCB SIDE
	CP502	X-067U014019	WIRE HOLDER
△	F501	X-081PC04004	FUSE
	FH501	X-06710T0006	HOLDER,FUSE
	FH502	X-06710T0006	HOLDER,FUSE
△	CD501	X-120R419905	CORD,AC BUSH

#	△ REF No.	PART No.	PART NAME, DESCRIPTION
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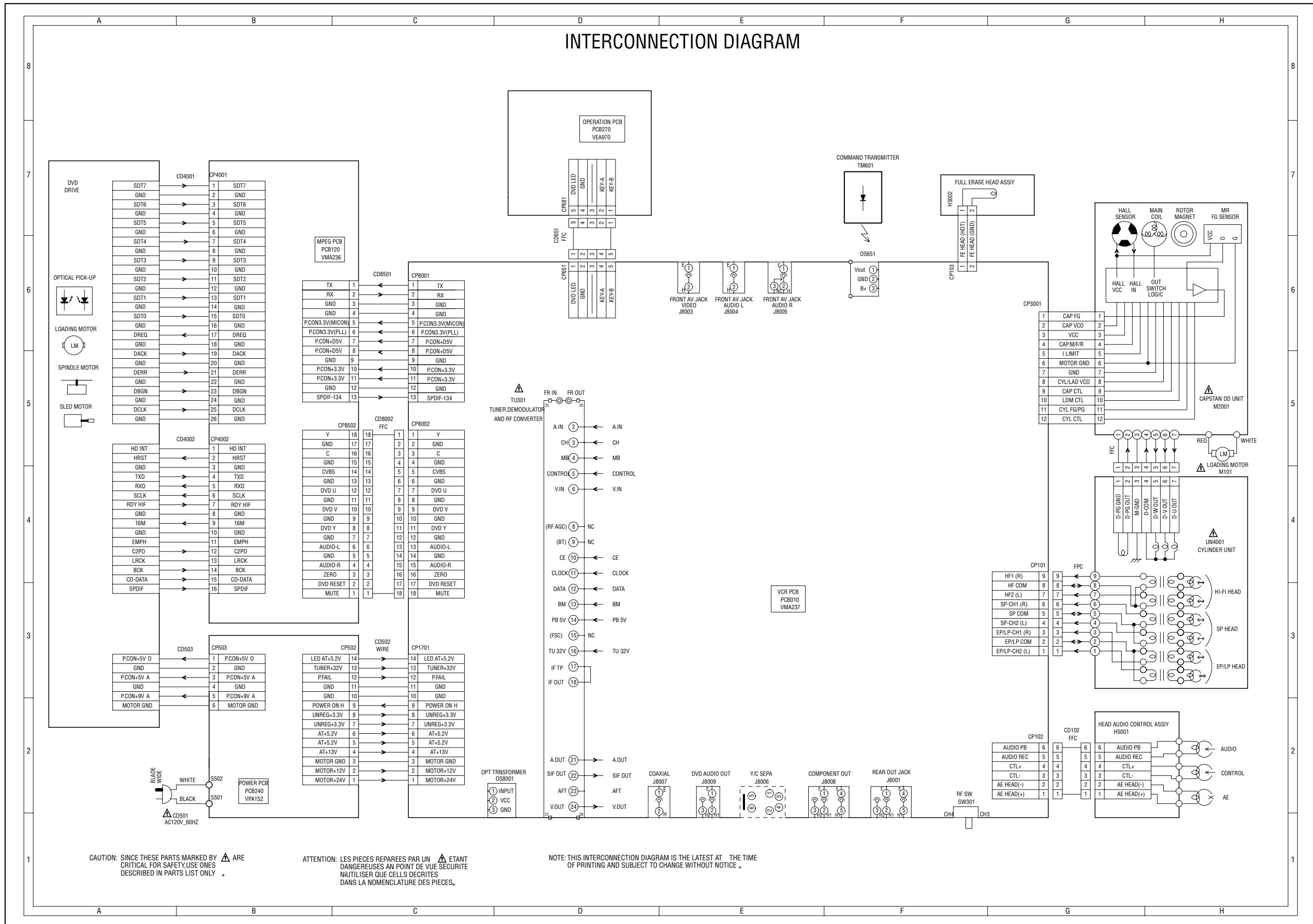
**OPERATION PCB ASSEMBLY <28>**

PCB270	X-A2A302A270	PCB ASSY	
R681	QRE141J-133Y	RESISTOR	13KΩ,1/4W
R683	QRE141J-682Y	RESISTOR	6.8KΩ,1/4W
R685	QRE141J-392Y	RESISTOR	3.9KΩ,1/4W
R687	QRE141J-272Y	RESISTOR	2.7KΩ,1/4W
R688	QRE141J-332Y	RESISTOR	3.3KΩ,1/4W
R689	QRE141J-103Y	RESISTOR	10KΩ,1/4W
R690	QRE141J-561Y	RESISTOR	560Ω,1/4W
D681	X-0021E5Q210	LED	LTL-1CHGE-002A
SW681	X-0504201T32	TACT SWITCH	SKQNAED010
SW682	X-0504201T32	TACT SWITCH	SKQNAED010
SW684	X-0504201T32	TACT SWITCH	SKQNAED010
SW686	X-0504201T32	TACT SWITCH	SKQNAED010
SW688	X-0504201T32	TACT SWITCH	SKQNAED010
SW689	X-0504201T32	TACT SWITCH	SKQNAED010
CP681	X-069R750499	CONNECTOR PCB SIDE	

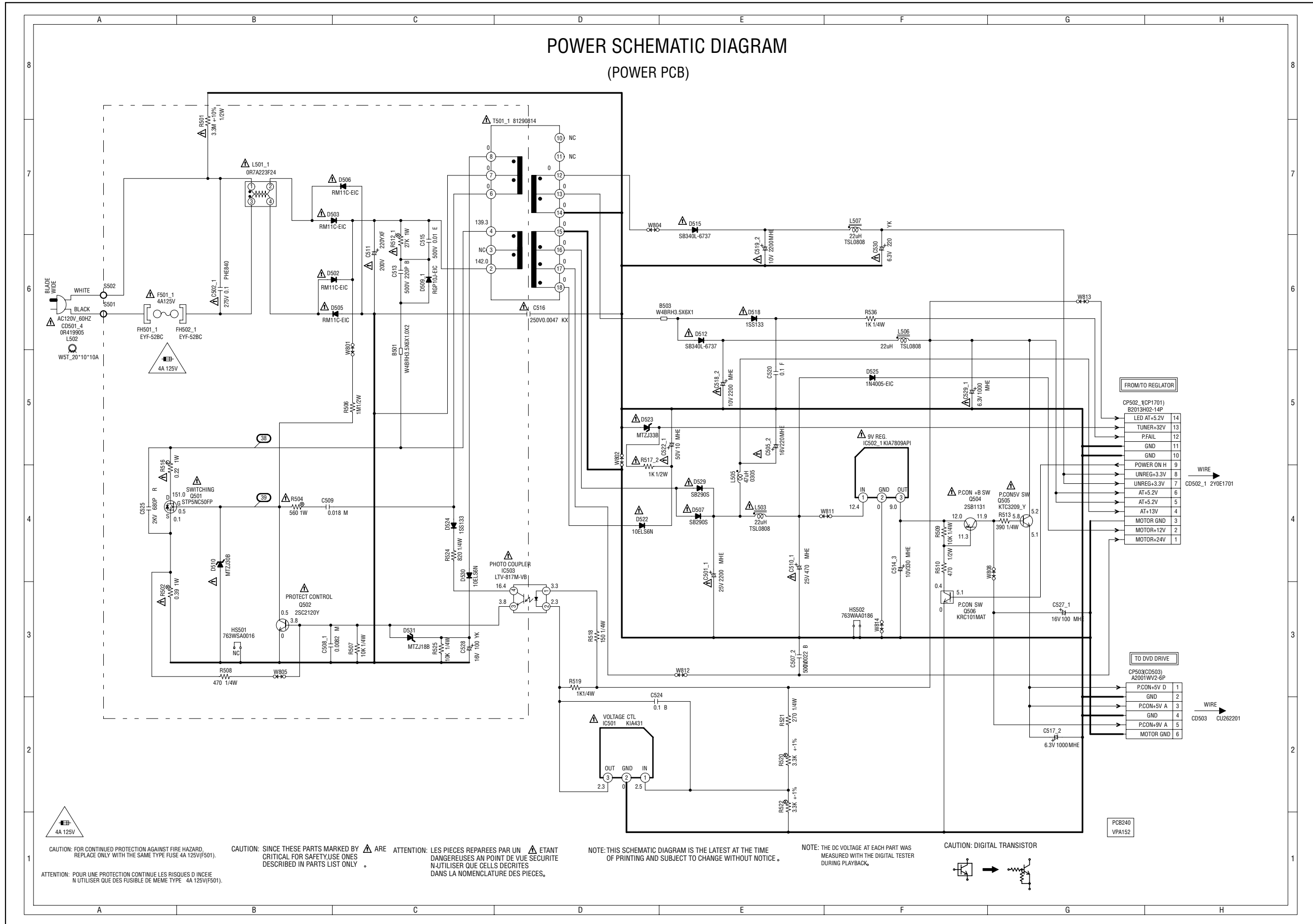


## SECTION 2 CHARTS AND DIAGRAMS

### INTERCONNECTION DIAGRAM



# POWER SCHEMATIC DIAGRAM (POWER PCB)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 125V(F501).  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MEME TYPE 4A 125V(F501).

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

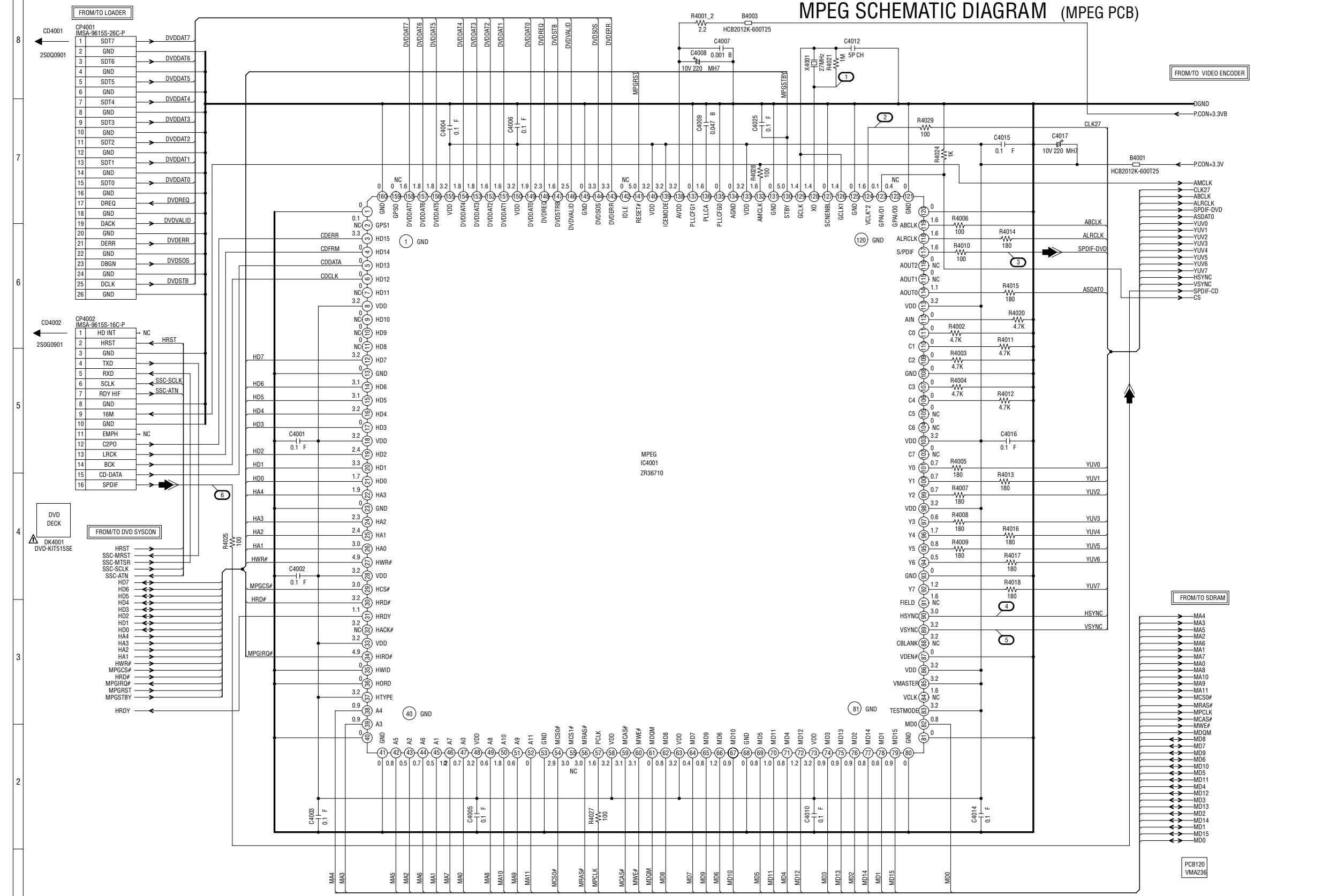
ATTENTION: LES PIECES REPARÉES PAR UN TRIANGLE ÉTANT DANGEREUSES, AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

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.

CAUTION: DIGITAL TRANSISTOR

# MPEG SCHEMATIC DIAGRAM (MPEG PCB)



ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

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.

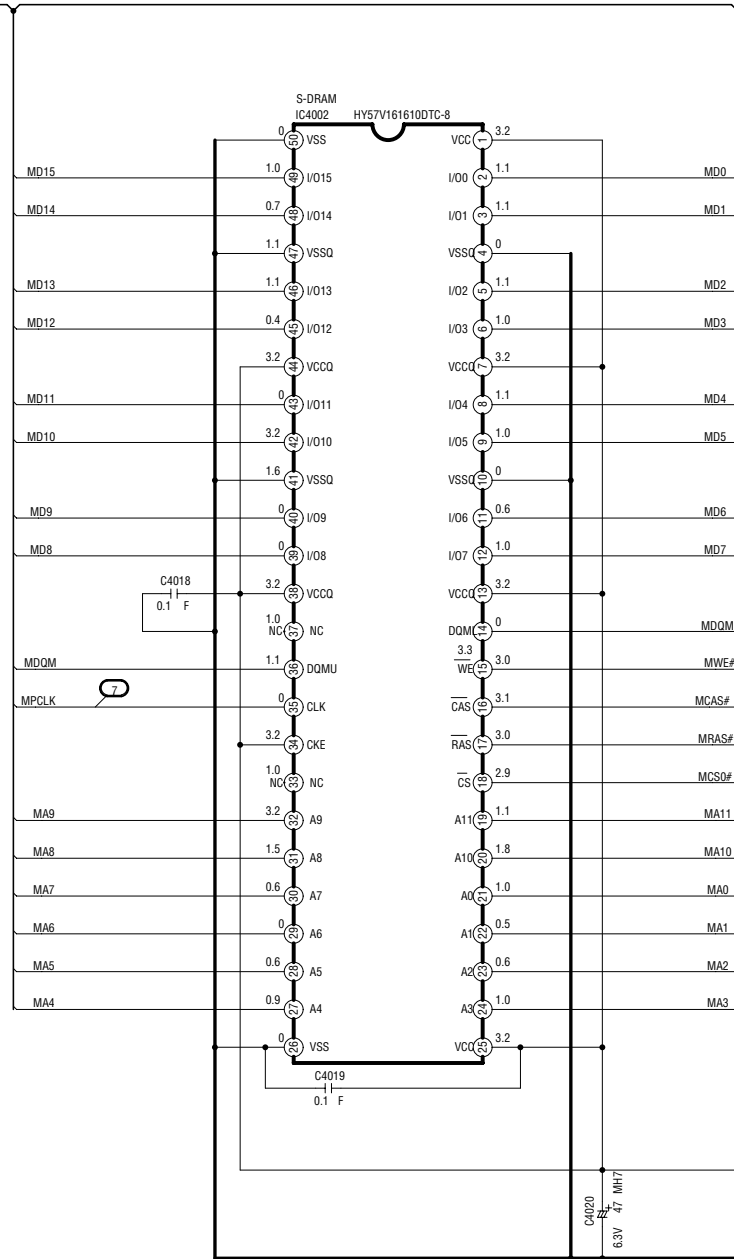
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

DIGITAL AUDIO SIGNAL (PB)

# SDRAM SCHEMATIC DIAGRAM (MPEG PCB)

FROM/TO MPEG

- MA4
- MA3
- MA5
- MA2
- MA6
- MA1
- MA7
- MA0
- MA8
- MA10
- MA9
- MA11
- MCS0#
- MRAS#
- MPCLK
- MCAS#
- MWE#
- MDQM
- MD8
- MD7
- MD9
- MD6
- MD10
- MD5
- MD11
- MD4
- MD12
- MD3
- MD13
- MD2
- MD14
- MD1
- MD15
- MD0



FROM/TO VIDEO ENCODER

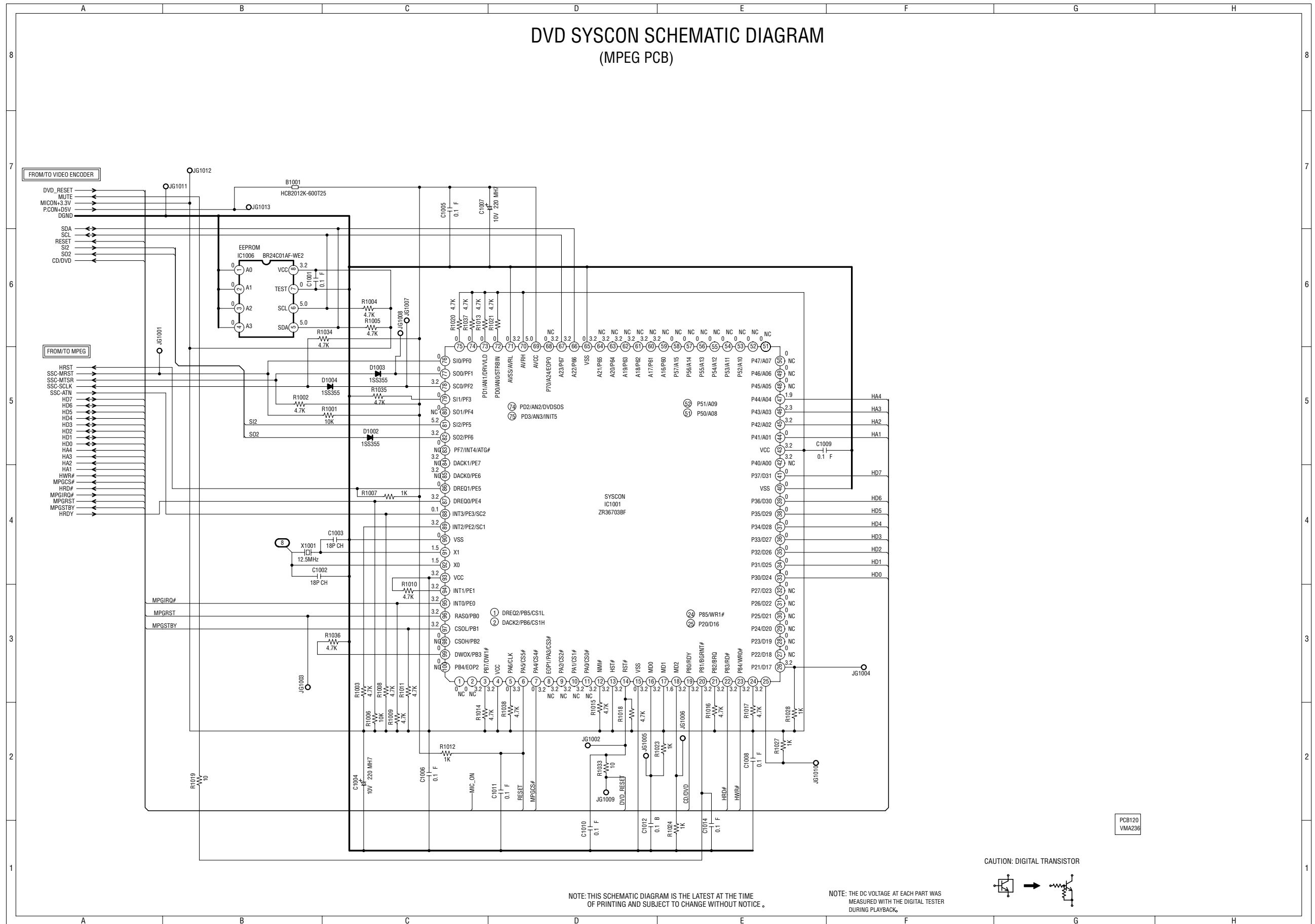
B4002 HCB2012K-600725

PCB120 VMA234

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

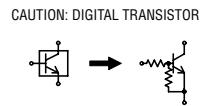
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

# DVD SYSCON SCHEMATIC DIAGRAM (MPEG PCB)



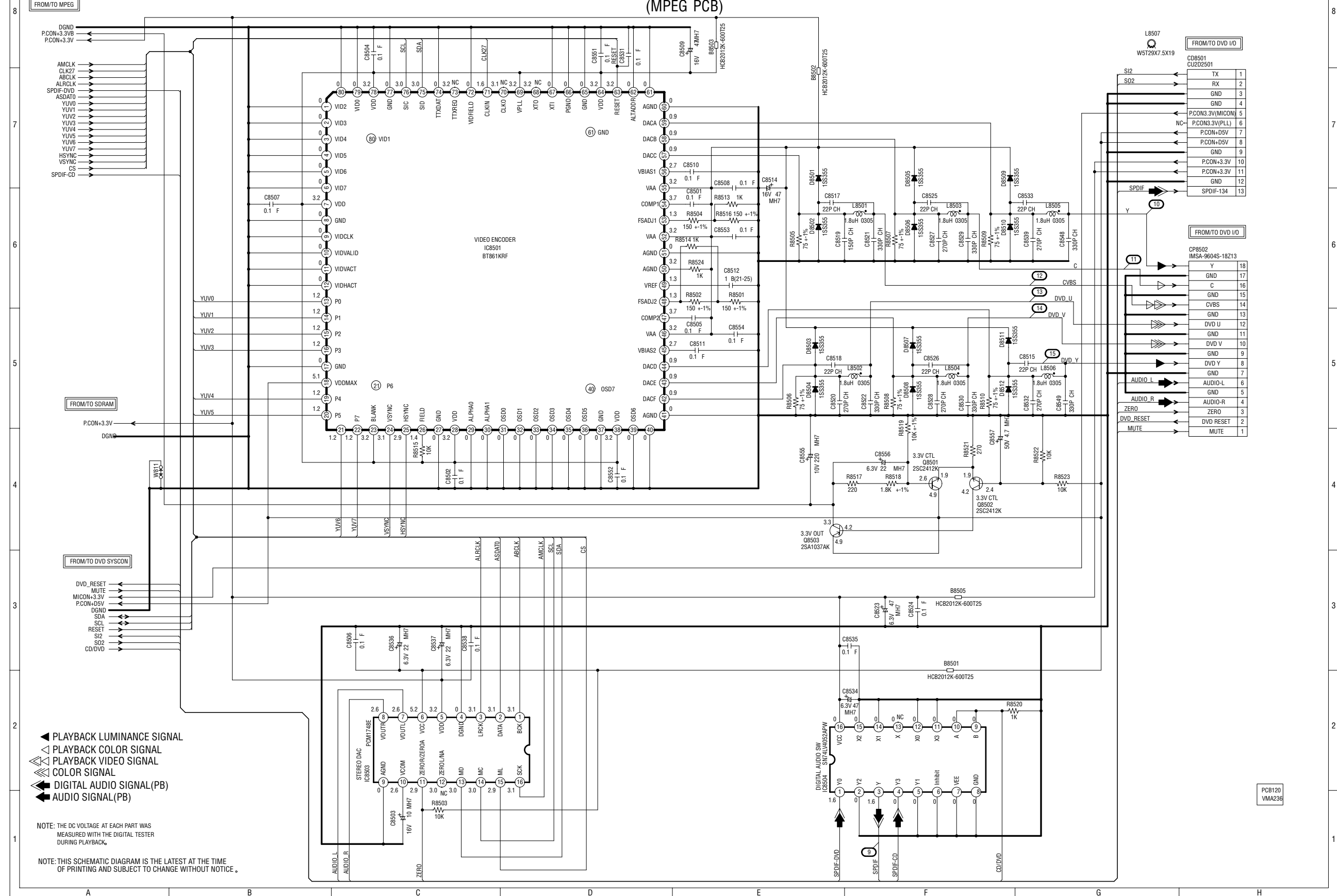
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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



PCB120  
VMA236

# VIDEO ENCODER SCHEMATIC DIAGRAM (MPEG PCB)



FROM/TO MPEG

FROM/TO DVD I/O

FROM/TO SDRAM

FROM/TO DVD SYSCON

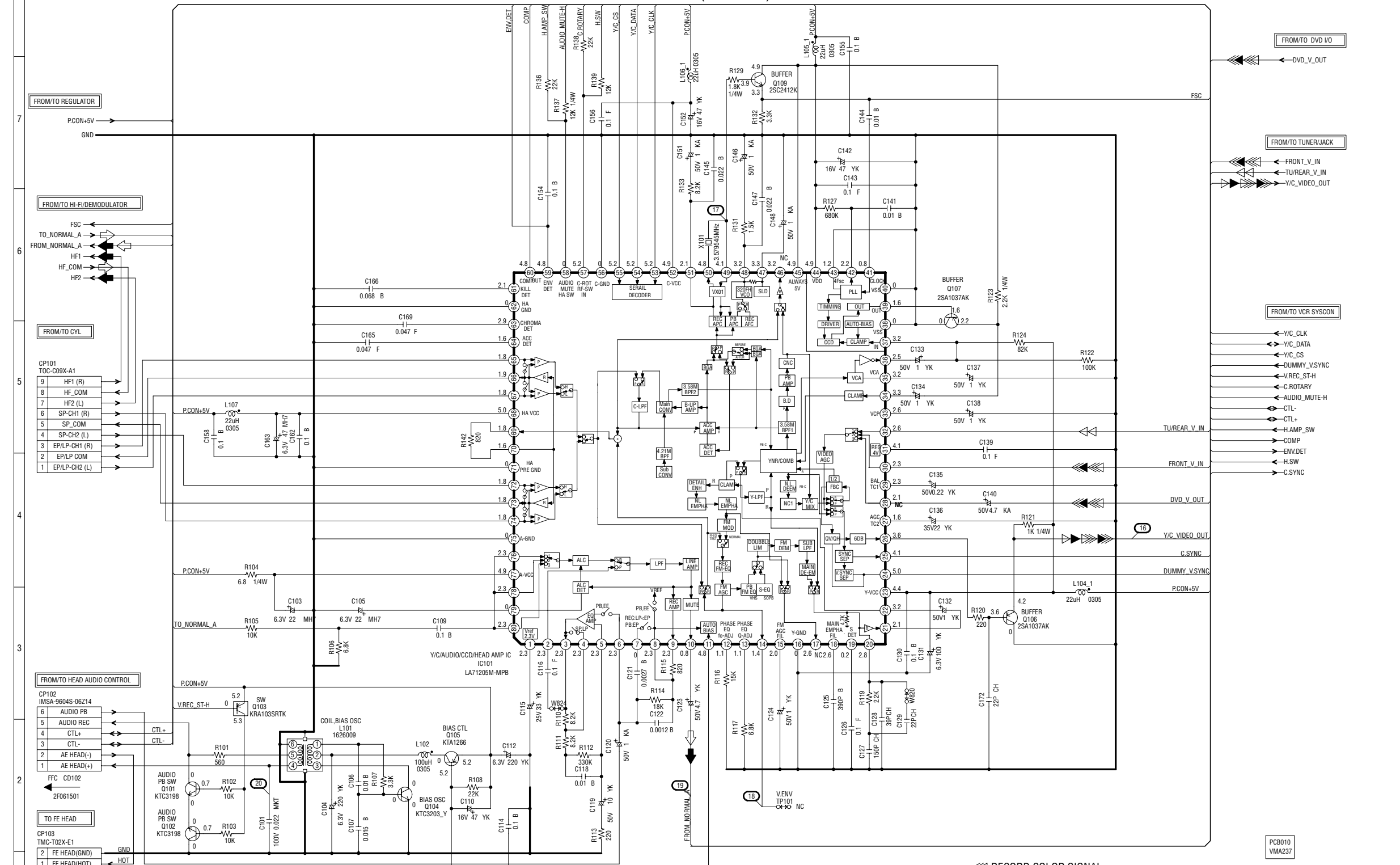
- ▶ PLAYBACK LUMINANCE SIGNAL
- ◁ PLAYBACK COLOR SIGNAL
- PLAYBACK VIDEO SIGNAL
- COLOR SIGNAL
- ▶▶ DIGITAL AUDIO SIGNAL (PB)
- ▶▶ AUDIO SIGNAL (PB)

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.

PCB120  
VMA236

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



FROM/TO REGULATOR  
PCON+5V  
GND

FROM/TO HI-FI/DEMODULATOR  
FSC  
TO\_NORMAL\_A  
FROM\_NORMAL\_A  
HF1  
HF\_COM  
HF2

FROM/TO CYL  
CP101  
TOC-C09X-A1  
9 HF1 (R)  
8 HF\_COM  
7 HF2 (L)  
6 SP-CH1 (R)  
5 SP\_COM  
4 SP-CH2 (L)  
3 EP/LP-CH1 (R)  
2 EP/LP\_COM  
1 EP/LP-CH2 (L)

FROM/TO HEAD AUDIO CONTROL  
CP102  
IMS-A-9604S-06Z14  
6 AUDIO PB  
5 AUDIO REC  
4 CTL+  
3 CTL-  
2 AE HEAD(-)  
1 AE HEAD(+)

TO FE HEAD  
CP103  
TMC-T02X-E1  
2 FE HEAD(GND)  
1 FE HEAD(HOT)

FROM/TO DVD I/O  
DVD\_V\_OUT

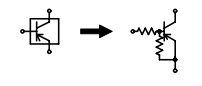
FROM/TO TUNER/JACK  
FRONT\_V\_IN  
TU/REAR\_V\_IN  
Y/C\_VIDEO\_OUT

FROM/TO VCR SYS/CON  
Y/C\_CLK  
Y/C\_DATA  
Y/C\_CS  
DUMMY\_V\_SYNC  
V\_REC\_ST-H  
C-ROTARY  
AUDIO\_MUTE-H  
CTL-  
CTL+  
TU/REAR\_V\_IN  
FRONT\_V\_IN  
DVD\_V\_OUT  
Y/C\_VIDEO\_OUT  
C\_SYNC  
DUMMY\_V\_SYNC  
PCON+5V

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.

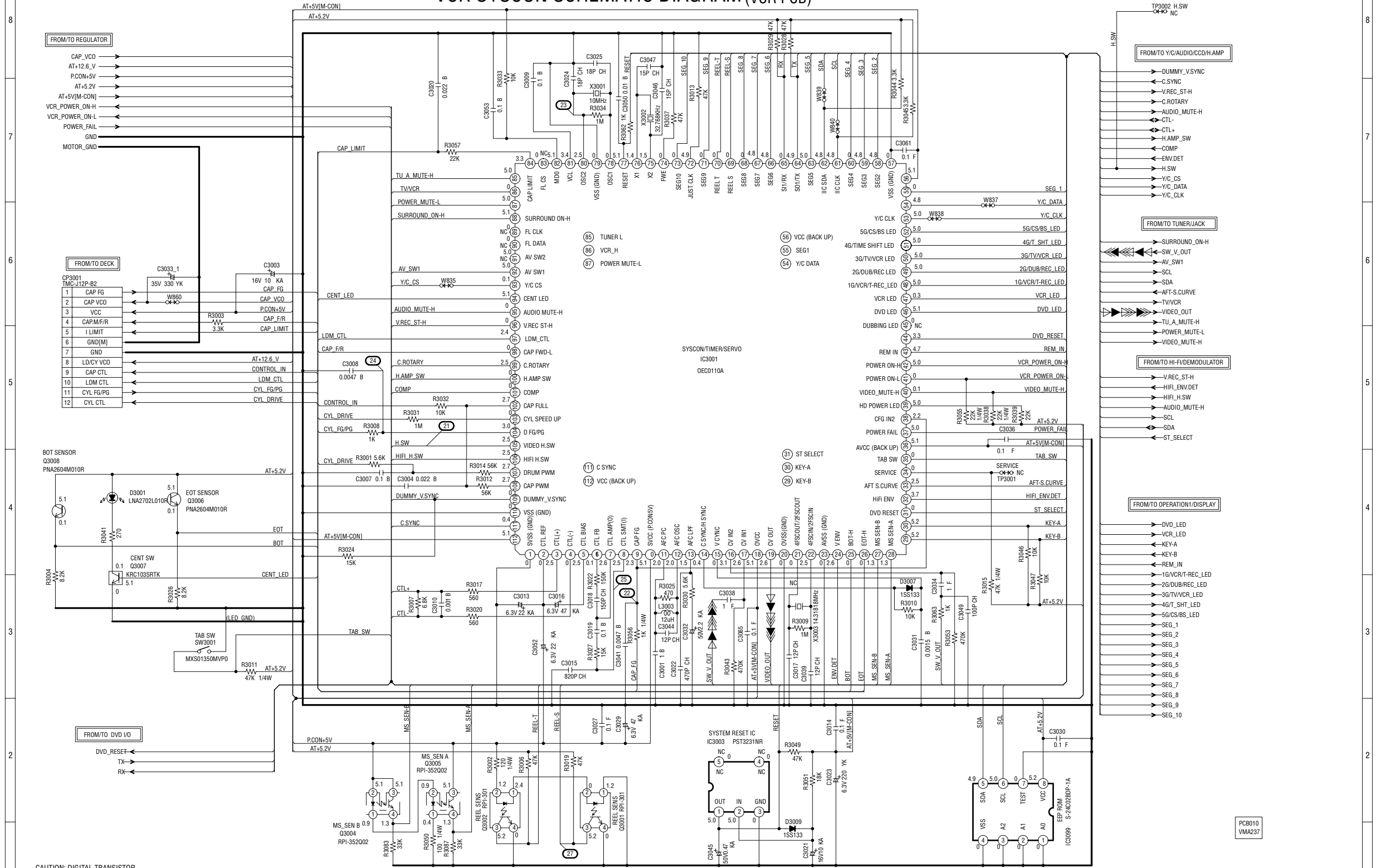
CAUTION: DIGITAL TRANSISTOR



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

PCB010  
VMA237

# VCR SYSCON SCHEMATIC DIAGRAM (VCR PCB)



FROM/TO REGULATOR  
 CAP\_VCO  
 AT+12.6\_V  
 P.CON+5V  
 AT+5.2V  
 AT+5V[M-CON]  
 VCR\_POWER\_ON-H  
 VCR\_POWER\_ON-L  
 POWER\_FAIL  
 GND  
 MOTOR\_GND

FROM/TO DECK  
 CP3001 TMC-J12P-B2  
 1 CAP FG  
 2 CAP VCO  
 3 VCC  
 4 CAP M/F/R  
 5 I LIMIT  
 6 GND[M]  
 7 GND  
 8 LD/CY VCO  
 9 CAP CTL  
 10 LDM CTL  
 11 CYL FG/PG  
 12 CYL CTL

FROM/TO TUNER/JACK  
 DUMMY\_V.SYNC  
 C.SYNC  
 V.REC\_ST-H  
 C.ROTARY  
 AUDIO\_MUTE-H  
 CTL-  
 CTL+  
 H.AMP\_SW  
 COMP  
 ENVDET  
 H.SW  
 Y/C\_CS  
 Y/C\_DATA  
 Y/C\_CLK

FROM/TO HI-FI/DEMODULATOR  
 V.REC\_ST-H  
 HIFI\_ENVDET  
 HIFI\_H.SW  
 AUDIO\_MUTE-H  
 SCL  
 SDA  
 ST\_SELECT

FROM/TO OPERATION/DISPLAY  
 DVD\_LED  
 VCR\_LED  
 KEY-A  
 KEY-B  
 REM\_IN  
 1G/VCR/T-REC\_LED  
 2G/DUB/REC\_LED  
 3G/TV/VCR\_LED  
 4G/T\_SHT\_LED  
 5G/CS/BS\_LED  
 SEG\_1  
 SEG\_2  
 SEG\_3  
 SEG\_4  
 SEG\_5  
 SEG\_6  
 SEG\_7  
 SEG\_8  
 SEG\_9

CAUTION: DIGITAL TRANSISTOR

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

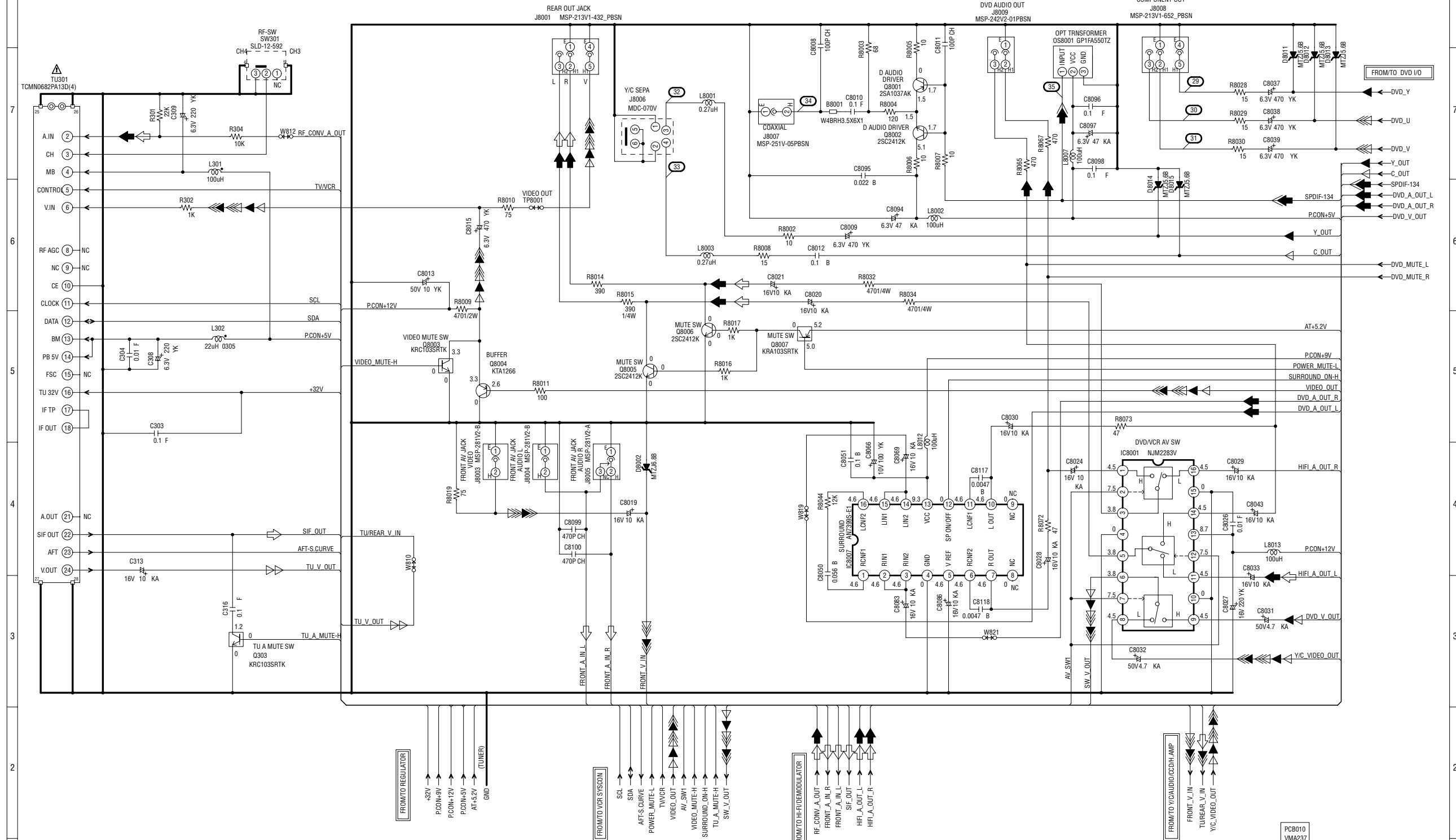
ATTENTION: LES PIECES REPARÉES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N-UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

RECORD LUMINANCE SIGNAL  
 RECORD COLOR SIGNAL  
 PLAYBACK LUMINANCE SIGNAL  
 PLAYBACK COLOR SIGNAL

PCB010  
VMA237



# TUNER/JACK SCHEMATIC DIAGRAM (VCR PCB)



- CAUTION: DIGITAL TRANSISTOR**

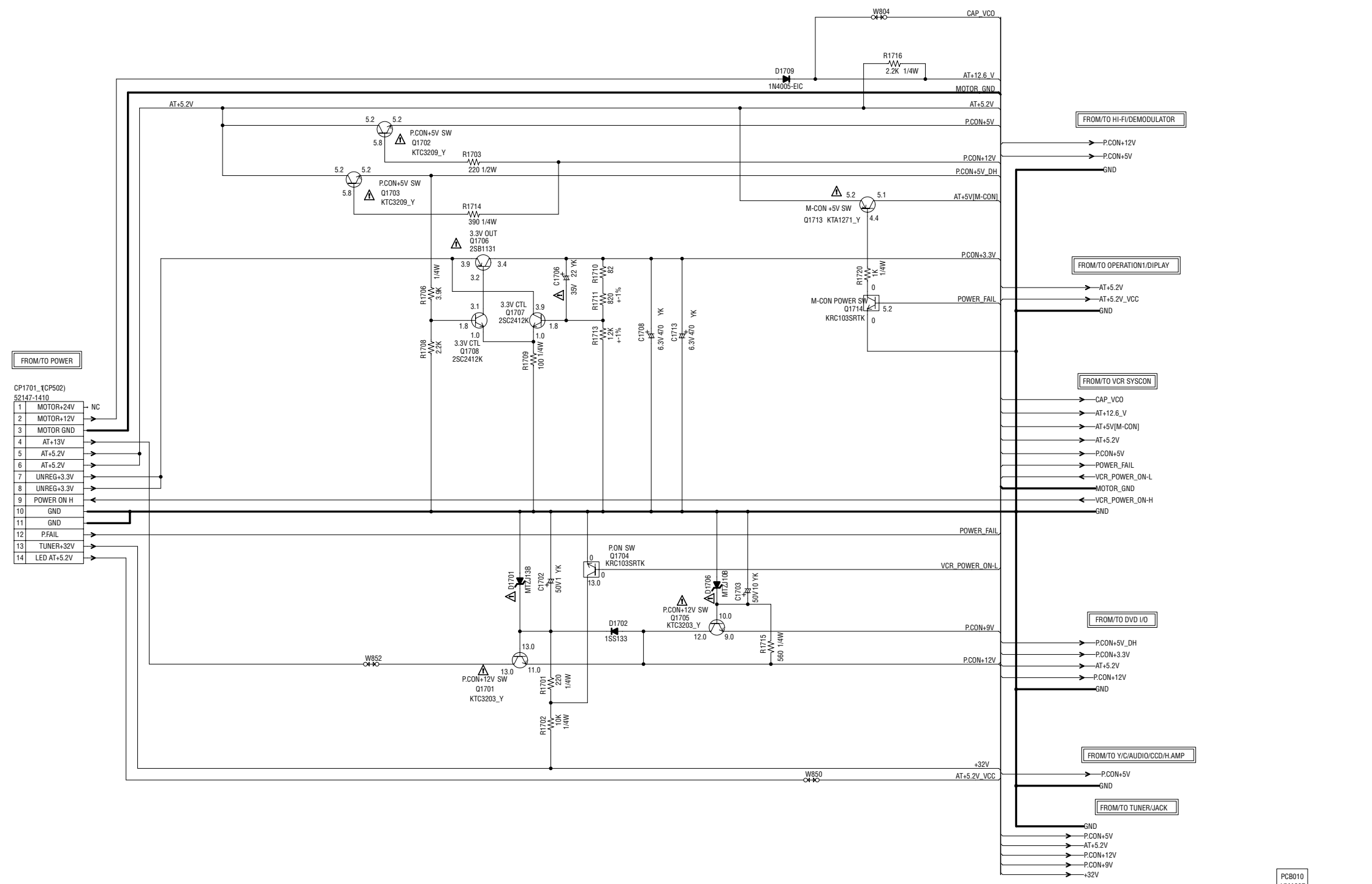
**CAUTION: DIGITAL TRANSISTOR**

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

**CAUTION: SINCE THESE PARTS MARKED WITH A TRIANGLE ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.**

**ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SÉCURITÉ N-UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.**
- TUNER VIDEO SIGNAL
  - PLAYBACK LUMINANCE SIGNAL
  - PLAYBACK COLOR SIGNAL
  - RECORD COLOR SIGNAL
  - RECORD LUMINANCE SIGNAL
  - AUDIO SIGNAL (REC)
  - AUDIO SIGNAL (PB)
  - DIGITAL AUDIO SIGNAL (PB)

# REGULATOR SCHEMATIC DIAGRAM (VCR PCB)



FROM/TO POWER

CP1701 (CP502)	NC
52147-1410	
1 MOTOR+24V	
2 MOTOR+12V	
3 MOTOR GND	
4 AT+13V	
5 AT+5.2V	
6 AT+5.2V	
7 UNREG+3.3V	
8 UNREG+3.3V	
9 POWER ON H	
10 GND	
11 GND	
12 PFAIL	
13 TUNER+32V	
14 LED AT+5.2V	

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.

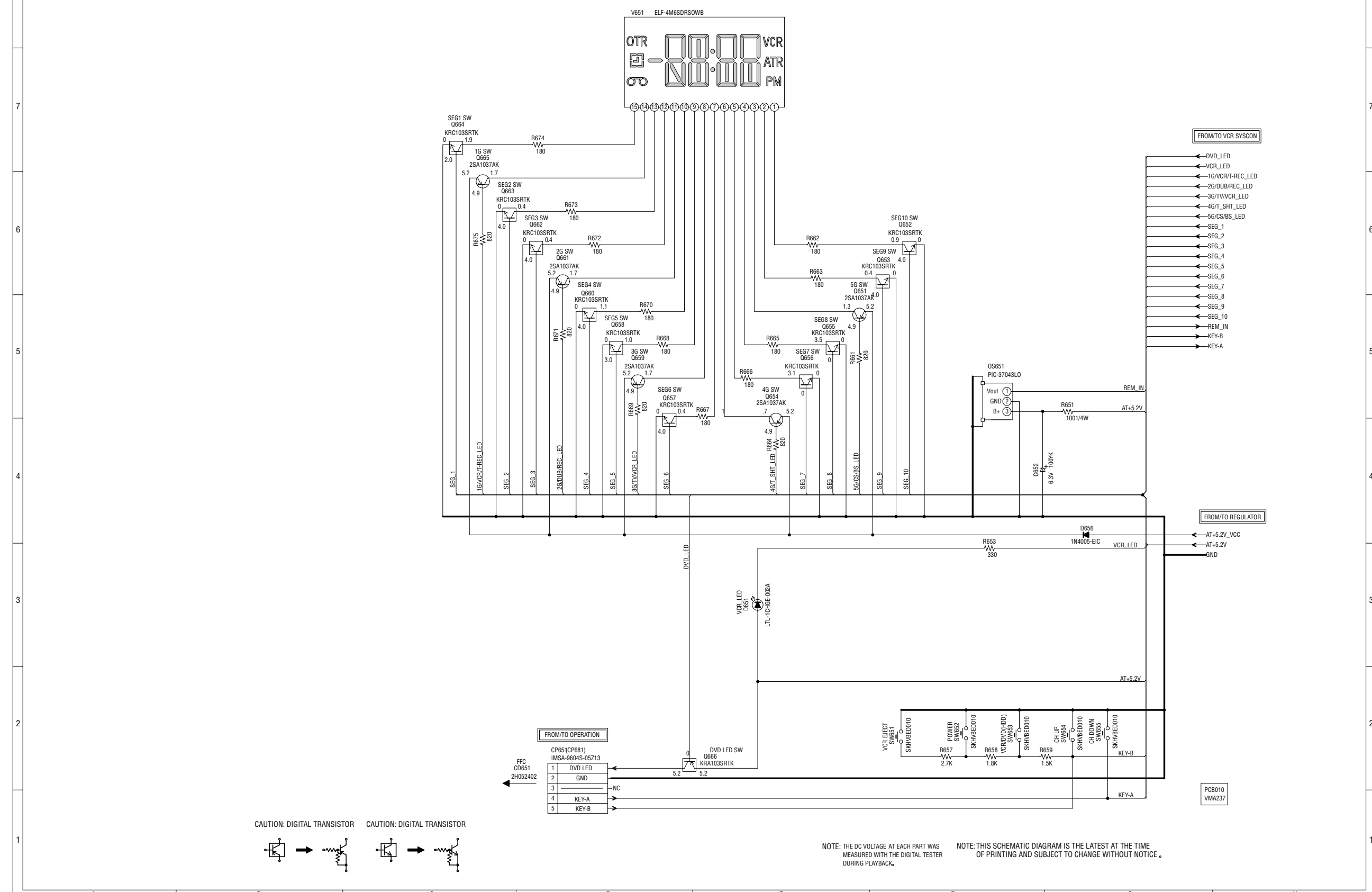
ATTENTION: LES PIÈCES RÉPARÉES PAR UN  $\Delta$  ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIÈCES.

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

CAUTION: DIGITAL TRANSISTOR

PCB010  
VMA237

# OPERATION/DISPLAY SCHEMATIC DIAGRAM (VCR PCB)

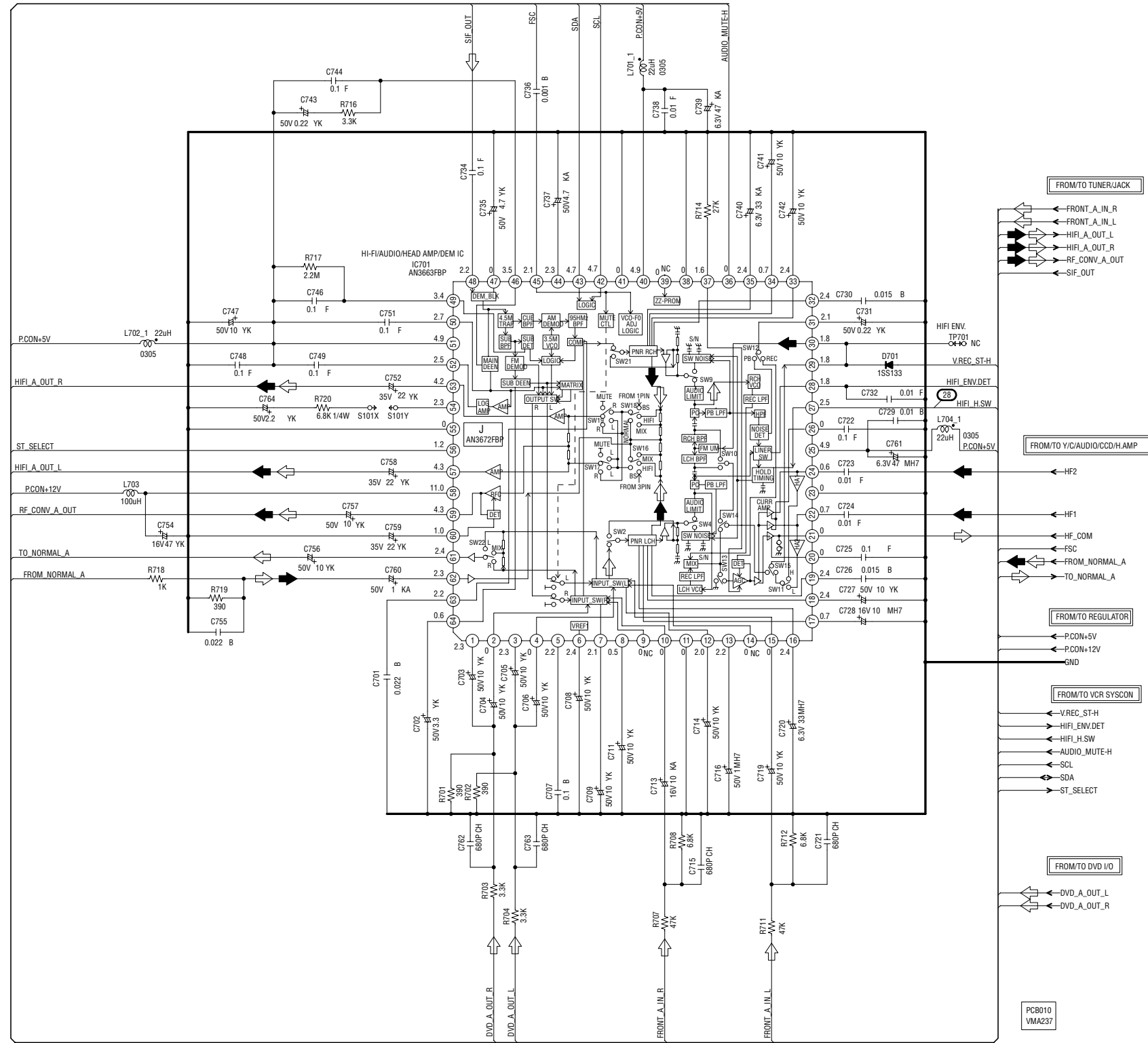


CAUTION: DIGITAL TRANSISTOR    CAUTION: DIGITAL TRANSISTOR

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.

# HI-FI/DEMODULATOR SCHEMATIC DIAGRAM (VCR PCB)

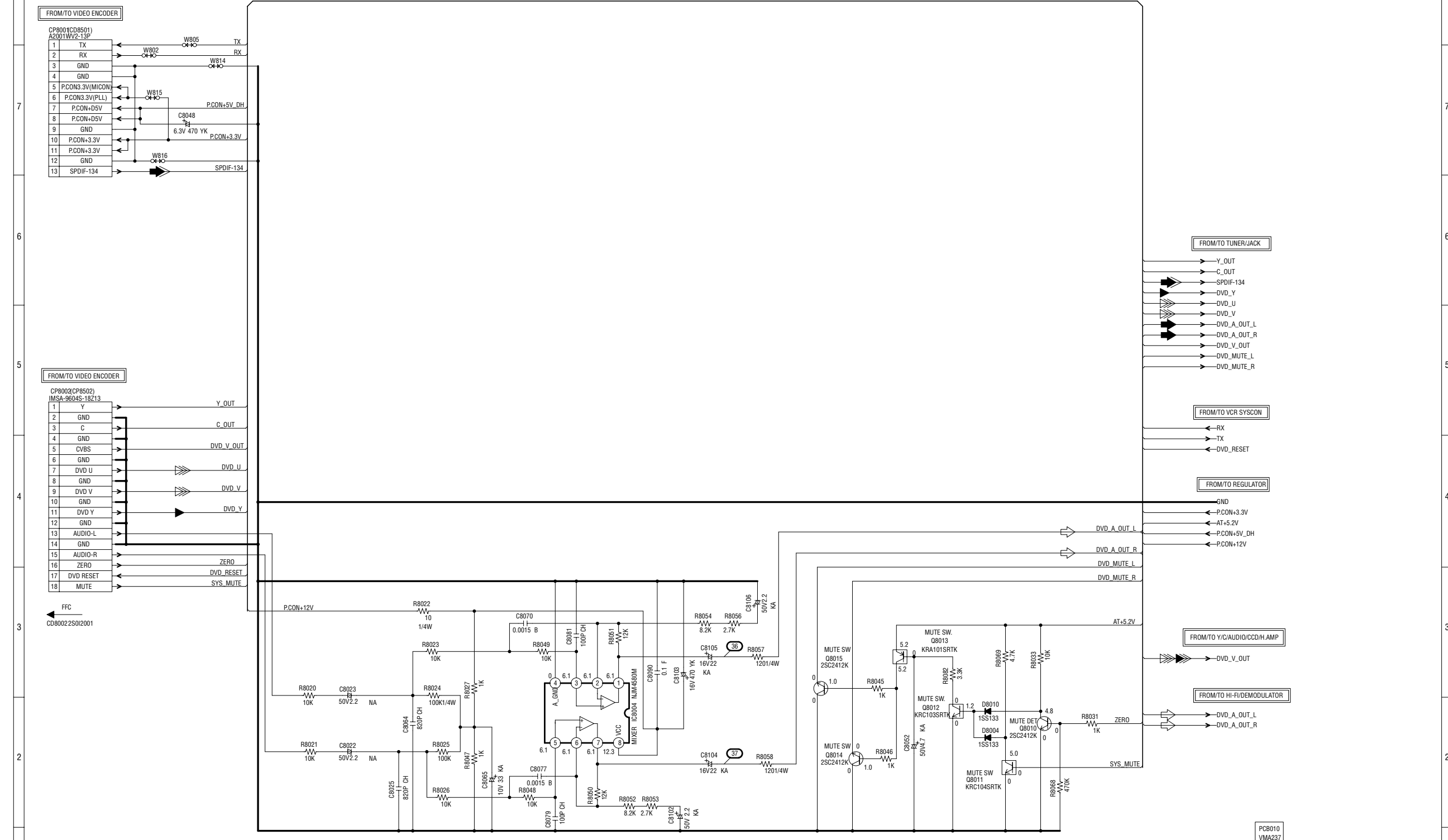


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

↷ AUDIO SIGNAL (REC)  
 ◀ AUDIO SIGNAL (PB)

# DVD IN/OUT SCHEMATIC DIAGRAM (VCR PCB)



FROM/TO VIDEO ENCODER

FROM/TO VIDEO ENCODER

FROM/TO TUNER/JACK

FROM/TO VCR SYSCON

FROM/TO REGULATOR

FROM/TO Y/C/AUDIO/CCD/H.AMP

FROM/TO HI-FI/DEMODULATOR

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.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

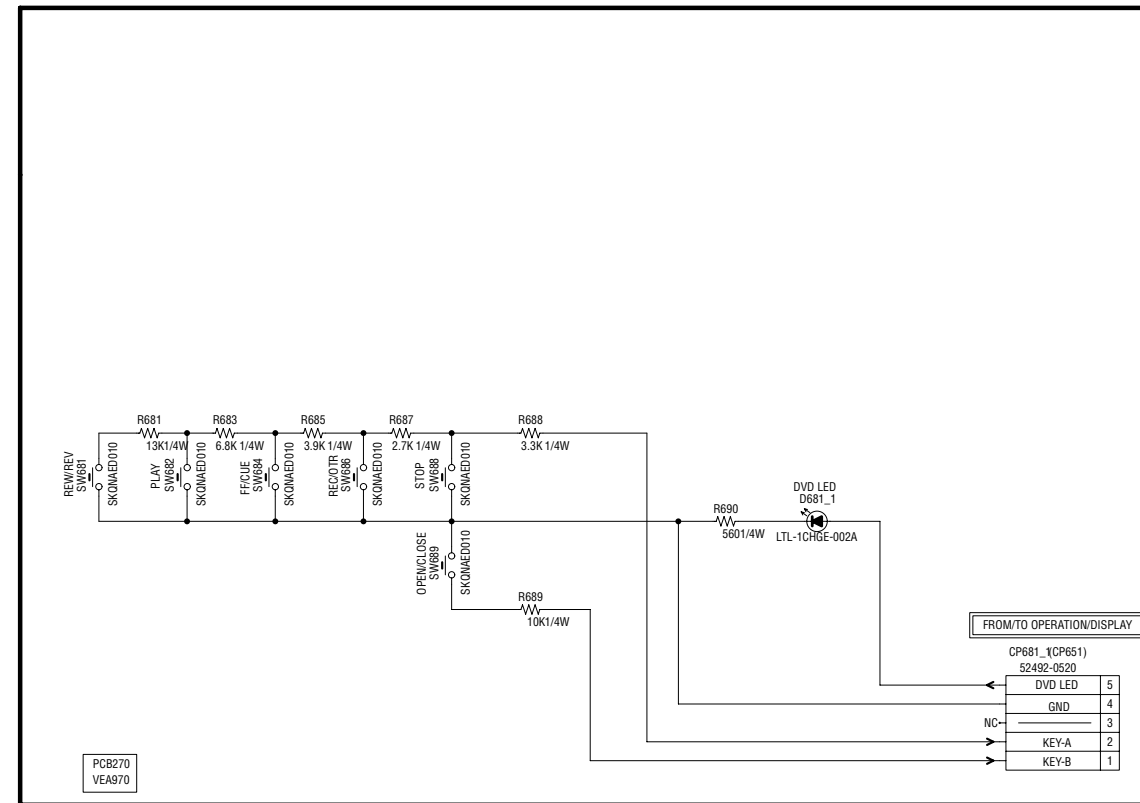
- ◀ PLAYBACK LUMINANCE SIGNAL
- ▶ AUDIO SIGNAL (PB)
- ▶ DIGITAL AUDIO SIGNAL (PB)
- ▶ RECORD COLOR SIGNAL
- ▶ RECORD LUMINANCE SIGNAL



PC8010  
VMA237

# OPERATION SCHEMATIC DIAGRAM

(OPERATION 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.



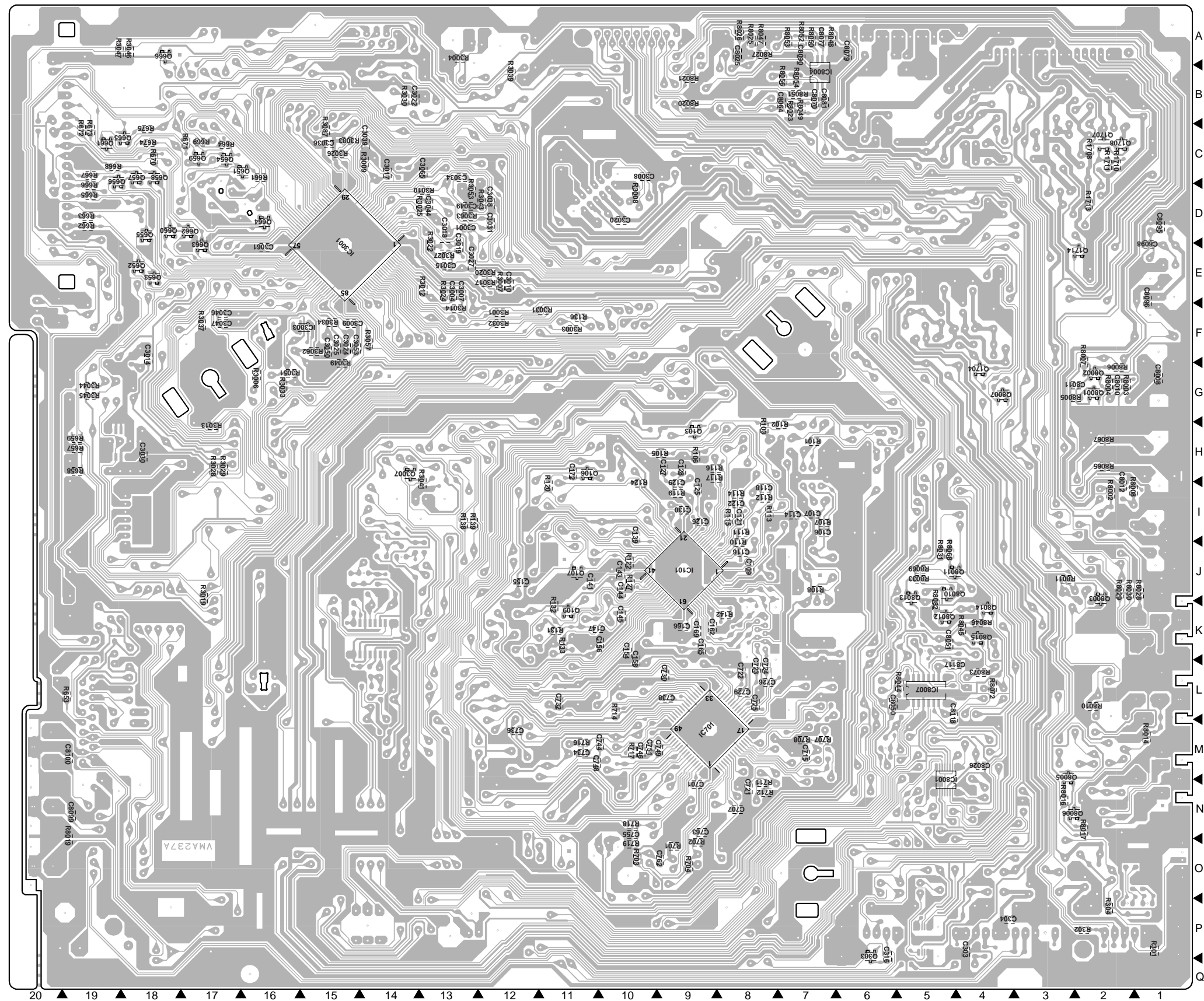




COMPONENT PARTS LOCATION GUIDE  
<VCR MT> VMA237A

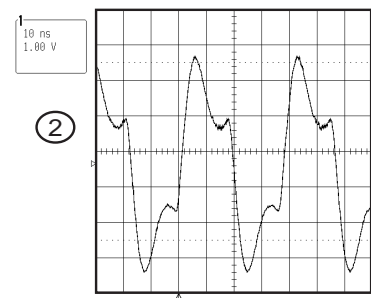
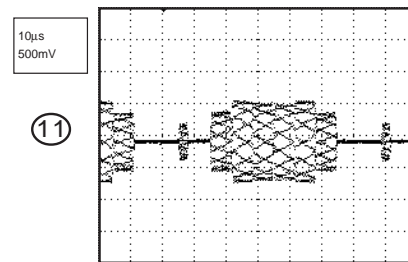
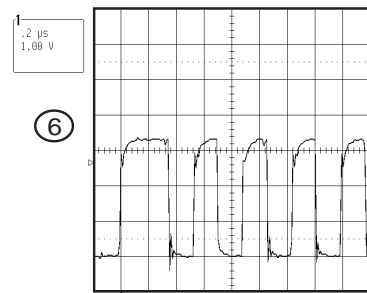
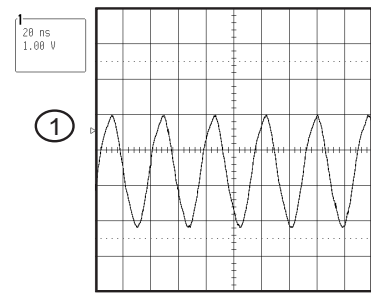
REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPASITOR</b>									
C103	8J	C713	7M	D8013	2J	R132	11K	R8016	3N
C104	7J	C714	7M	D8014	3H	R133	11K	R8017	2N
C105	8J	C716	8M	D8015	3H	R136	11F	R8019	19O
C106	7I	C719	7N	IC		R137	12J	R8020	9B
C107	7I	C720	7L	IC101	9J	R138	13I	R8021	9B
C109	8J	C721	8N	IC3001	15E	R139	13I	R8022	8B
C110	7J	C722	8L	IC3003	15F	R142	8K	R8023	7B
C112	7K	C723	8L	IC3099	18H	R1701	4F	R8024	8B
C114	7I	C724	8L	IC701	9M	R1702	4F	R8025	8A
C115	7I	C725	8L	IC8001	5N	R1703	4C	R8026	8A
C116	8J	C726	8L	IC8004	7B	R1706	2C	R8027	2J
C118	8I	C727	7L	IC8007	5L	R1708	2C	R8028	1J
C119	8I	C728	7L			R1709	1C	R8029	2J
C120	6H	C729	8L	<b>COIL</b>		R1710	2C	R8030	2J
C121	8I	C730	9L	L101	7I	R1711	2C	R8031	5J
C122	8I	C731	11L	L102	7J	R1713	2D	R8032	2M
C123	8H	C732	11L	L104_1	10H	R1714	3C	R8033	5J
C124	9I	C734	11M	L105_1	12J	R1715	5F	R8034	2M
C125	9I	C735	10M	L106_1	12K	R1716	8C	R8044	5L
C126	9I	C736	12M	L107	10K	R1720	3C	R8045	4K
C127	9H	C737	12M	L108	13D	R3001	12F	R8046	4K
C128	9H	C738	12M	L3003	13D	R3002	18J	R8047	8A
C129	9H	C739	11L	L301	3C	R3003	11F	R8048	7B
C130	9I	C740	11L	L302	4C	R3004	13A	R8049	7B
C131	10H	C741	10L	L701_1	13L	R3006	16G	R8050	7A
C132	9I	C742	10L	L702_1	12M	R3007	12E	R8051	7B
C133	11J	C743	11M	L704_1	11N	R3008	10D	R8052	7A
C134	11J	C744	10M	L8001	2I	R3009	14C	R8053	7A
C135	10I	C746	10M	L8002	1E	R301	1P	R8054	7B
C136	10I	C747	11M	L8003	1I	R3010	13D	R8056	7B
C137	11I	C748	11M	L8007	1E	R3011	18K	R8057	5J
C138	10J	C749	9M	L8012	4K	R3012	13E	R8058	5J
C139	10I	C751	10M	L8013	4L	R3013	17H	R8065	2H
C140	9G	C752	10M			R3014	13F	R8067	2H
C141	11J	C754	11N	<b>TRANSISTOR</b>		R3015	13B	R8068	5J
C142	10J	C755	10N	Q101	7H	R3017	12E	R8069	5J
C143	10J	C756	13N	Q102	8H	R3019	17J	R8072	4L
C144	10J	C757	9N	Q103	9H	R302	2P	R8073	4L
C145	10K	C758	10N	Q104	7I	R3020	12E	R8082	5K
C146	12L	C759	9N	Q105	7K	R3022	13E		
C147	10K	C760	10N	Q106	11H	R3024	13E	<b>SWITCH</b>	
C148	11K	C761	8L	Q107	11J	R3025	15D	SW3001	19N
C151	11K	C762	9O	Q109	11K	R3026	13C	SW301	1O
C152	11K	C763	9N	Q1701	4K	R3027	13E	SW651	19G
C154	10K	C764	4O	Q1702	4C	R3028	17H	SW652	19P
C155	12J	C8008	1G	Q1703	3C	R3029	17H	SW653	19H
C156	10K	C8009	2I	Q1704	4G	R3030	14B	SW654	19J
C158	10L	C8010	2G	Q1705	5F	R3031	11F	SW655	19K
C162	9K	C8011	2G	Q1706	2C	R3032	12F		
C163	9K	C8012	2I	Q1707	2C	R3033	16G	<b>TESTPOINT</b>	
C165	9K	C8013	3J	Q1708	2D	R3034	15F	TP101	15P
C166	9K	C8015	2L	Q1713	3D	R3035	16G	TP3001	6D
C169	9K	C8019	18Q	Q1714	2E	R3036	16A	TP3002	14P
C1702	4E	C8020	2M	Q3001	16L	R3037	12B	TP701	14P
C1703	5F	C8021	2M	Q3002	17F	R304	2P	TP8001	2L
C1706	2D	C8022	9B	Q3004	16D	R3041	13I		
C1708	1B	C8023	8B	Q3005	16D	R3042	12D	<b>OTHER</b>	
C1713	2B	C8024	4L	Q3006	13P	R3043	19G	CP101	8K
C172	11H	C8025	8A	Q3007	14H	R3044	19G	CP102	6H
C3001	13D	C8026	4M	Q3008	13A	R3045	19G	CP103	10O
C3003	9D	C8027	5M	Q303	6P	R3046	18A	CP1701	4A
C3004	13E	C8028	4L	Q651	16C	R3047	19A	CP3001	11D
C3007	13E	C8029	4N	Q652	18E	R3049	15G	CP651	14A
C3008	10C	C8030	4L	Q653	18E	R3050	17D	CP8001	6A
C3009	15F	C8031	5N	Q654	17C	R3051	16G	CP8002	10A
C3010	12E	C8032	5N	Q655	18D	R3052	11B	J8001	1L
C3013	14B	C8033	5N	Q656	19C	R3053	12D	J8003	20O
C3014	18F	C8037	2I	Q657	18C	R3054	14F	J8004	20N
C3015	13E	C8038	2J	Q658	18C	R3056	15F	J8005	1J
C3016	14B	C8039	2J	Q659	17C	R3062	13D	J8006	1G
C3017	14C	C8043	4N	Q660	18D	R3063	15C	J8007	1K
C3018	13E	C8048	7C	Q661	19C	R3064	15C	J8008	1H
C3019	13E	C8050	6L	Q662	17D	R3065	19E	J8009	20F
C3020	10D	C8051	5K	Q663	17E	R651	19H	OS851	1E
C3021	16G	C8052	5K	Q664	16D	R657	19H	OS8001	1P
C3022	14B	C8064	7B	Q665	18C	R658	19H	S101X	3O
C3023	18G	C8065	8B	Q666	18A	R659	19H	S101Y	10N
C3024	15F	C8066	5K	Q8001	2C	R661	16C	TU301	1P
C3025	15F	C8069	6D	Q8002	2G	R662	19D	9591	9D
C3027	13E	C8070	7B	Q8003	2J	R663	19D	X101	10K
C3029	9E	C8077	7A	Q8004	3J	R664	17C	X3001	15F
C303	4P	C8079	6A	Q8005	3M	R665	19D	X3002	17F
C3030	18H	C8081	7B	Q8006	2N	R666	19D	X3003	14C
C3031	12D	C8083	5M	Q8007	4G	R667	19C		
C3032	14B	C8086	5M	Q8010	5J	R668	19C		
C3033	11C	C8090	7A	Q8011	4J	R669	17C		
C3034	13C	C8094	1D	Q8012	5K	R670	18C		
C3036	15C	C8095	1D	Q8013	5J	R671	17C		
C3038	12D	C8096	1E	Q8014	4K	R672	19C		
C3039	14C	C8097	1D	Q8015	4K	R673	19C		
C304	4P	C8098	1E			R674	18C		
C3041	12B	C8099	19N	<b>RESISTOR</b>		R675	18C		
C3044	13D	C8100	19M	R101	7H	R676	18C		
C3045	16F	C8102	7A	R102	7H	R701	9O		
C3046	17F	C8103	8A	R103	8H	R702	9O		
C3047	17F	C8104	5I	R104	7I	R703	10O		
C3049	13D	C8105	5I	R105	9H	R704	9O		
C3050	15F	C8106	8B	R106	9H	R707	7M		
C3052	14B	C8117	4L	R107	7I	R708	7M		
C3053	15F	C8118	5L	R108	7J	R711	8N		
C3061	16E			R109	8J	R712	8N		
C3065	13C	<b>DIODE</b>		R110	8J	R714	10L		
C308	3O	D1701	4F	R111	8I	R715	11M		
C309	2O	D1702	4F	R112	8I	R717	10M		
C313	6O	D1706	5F	R113	8I	R718	10N		
C316	6P	D1709	6B	R114	8I	R719	10O		
C652	19F	D3001	13I	R115	8I	R720	4O		
C701	9N	D3007	13C	R116	9H	R8002	2I		
C702	9N	D3009	16G	R117	9H	R8003	2G		
C703	9O	D651	20L	R119	9I	R8004	2G		
C704	10O	D656	18F	R121	10H	R8005	2G		
C705	9O	D701	12H	R122	10J	R8006	2G		
C706	9N	D8002	18P	R123	12J	R8007	2G		
C707	8N	D8004	4K	R124	10I	R8008	1I		
C708	8O	D8010	4K	R127	10J	R8009	3K		
C709	8N	D8011	3H	R129	11J	R8010	2L		
C711	8M	D8012	3H	R131	11K	R8011	3J		

PRINTED CIRCUIT BOARDS  
VCR (CHIP MOUNTED PARTS)  
SOLDER SIDE

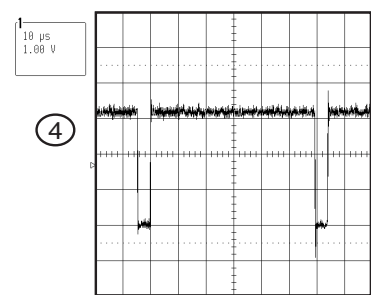
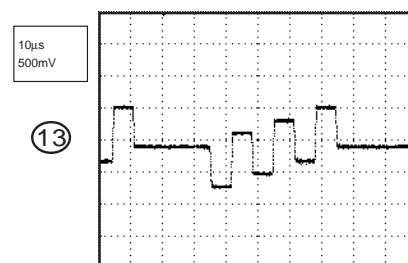
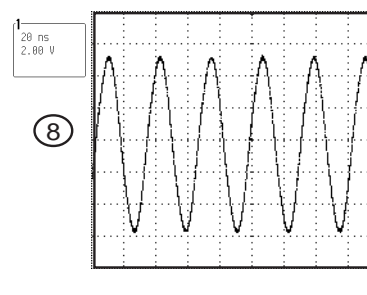
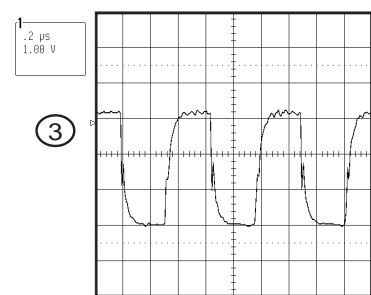
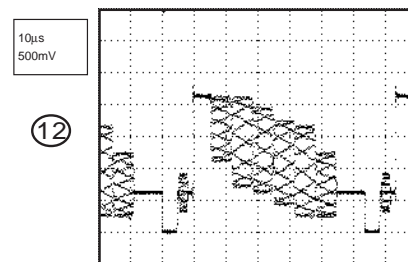
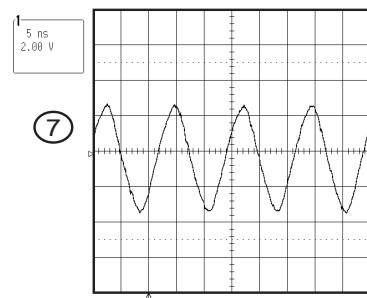


## WAVEFORMS

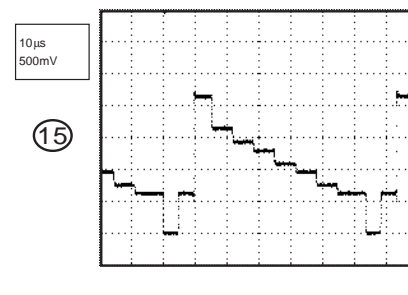
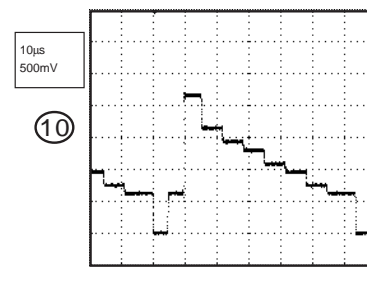
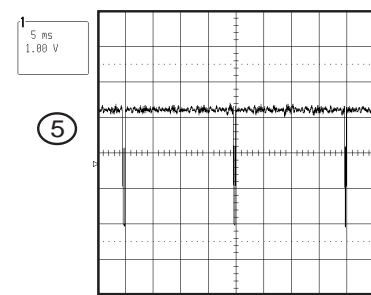
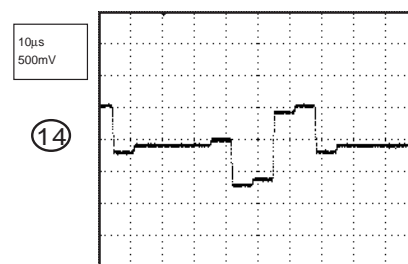
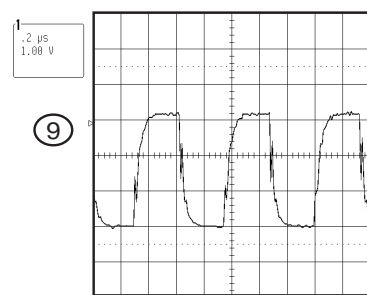
### MPEG



### SDRAM



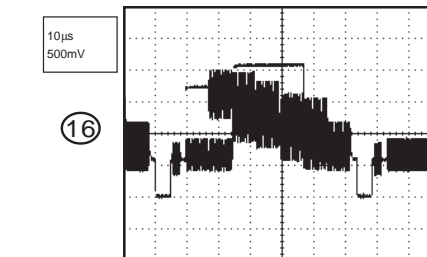
### VIDEO ENCODER



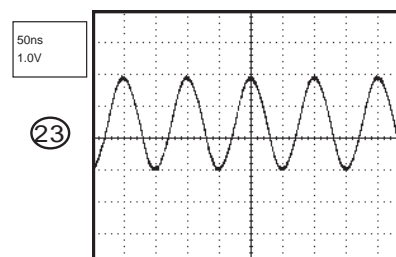
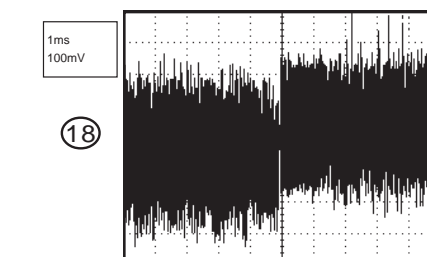
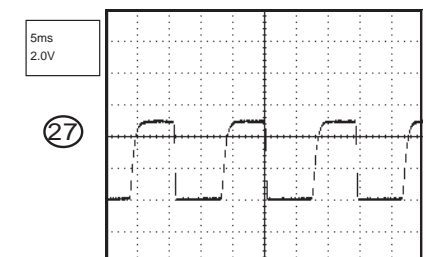
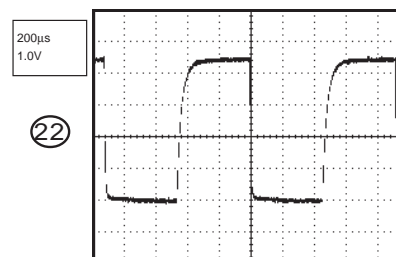
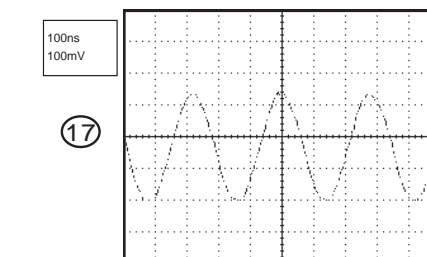
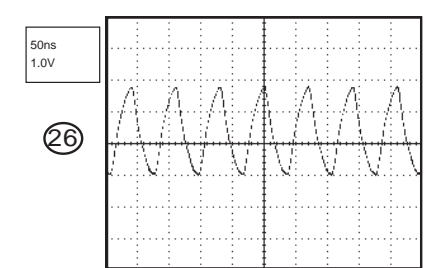
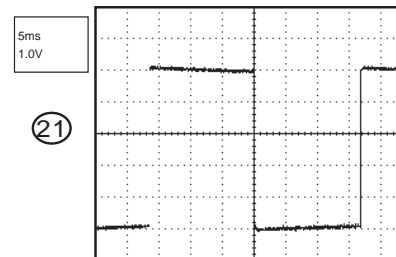
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

## WAVEFORMS

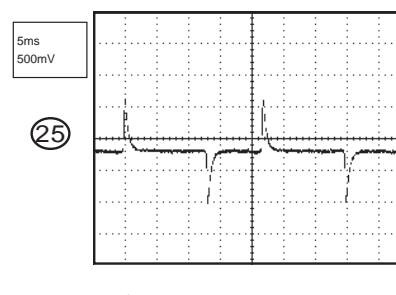
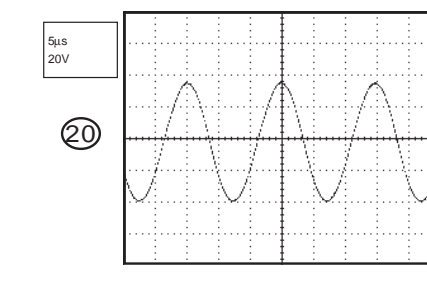
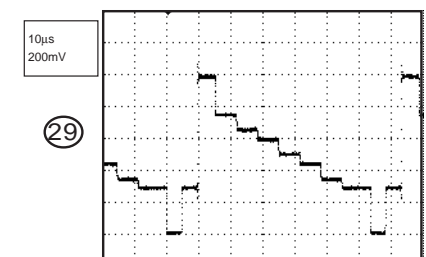
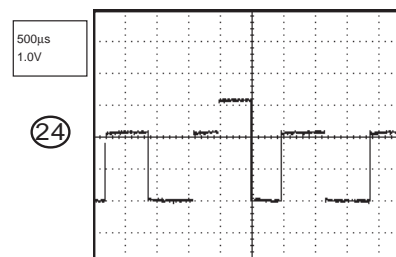
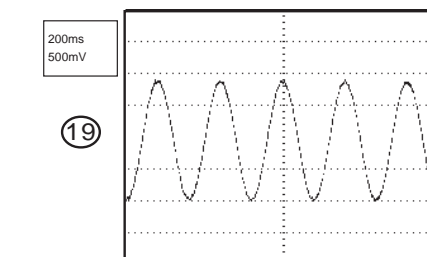
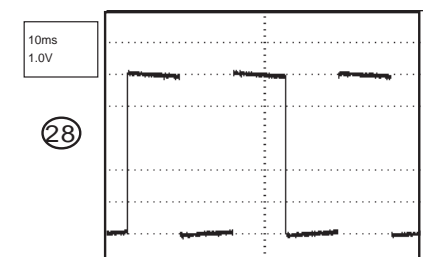
### Y/C/AUDIO/CCD/HEAD AMP



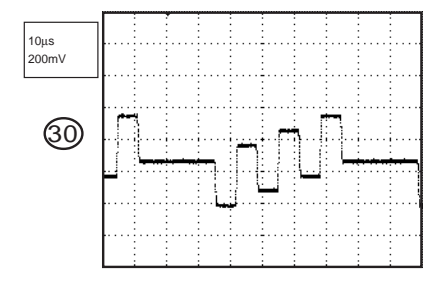
### VCR SYSCON



### HIFI/DEMODULATOR

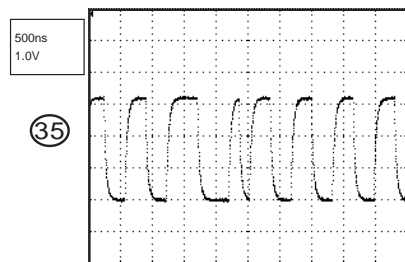
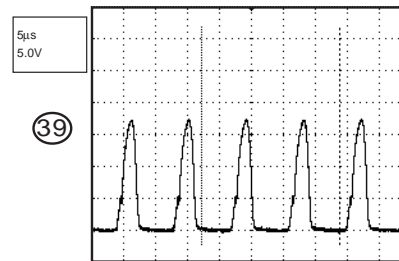
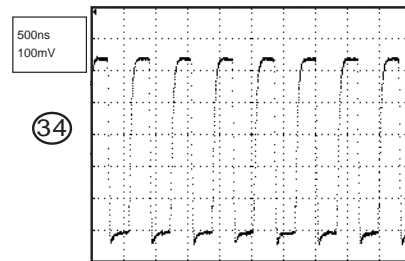
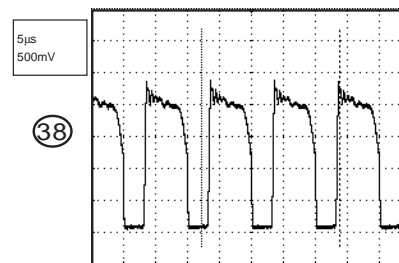
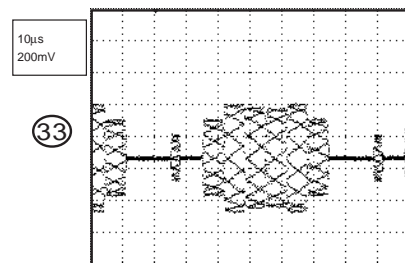
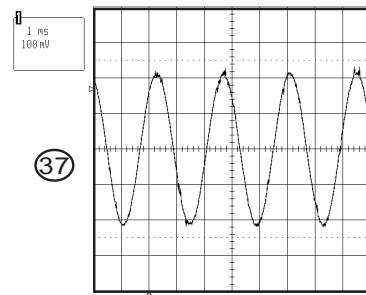
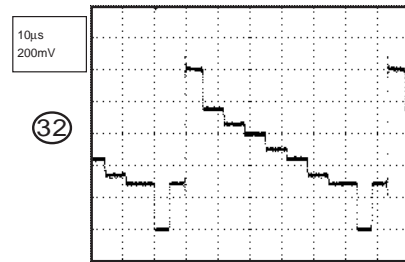
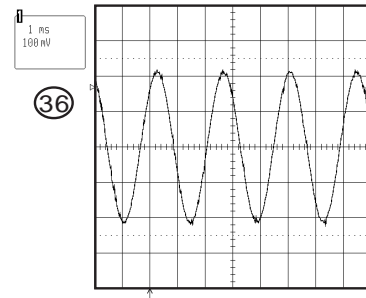
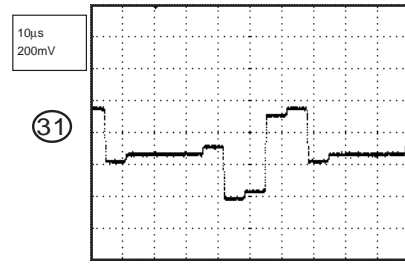


### TUNER/JACK

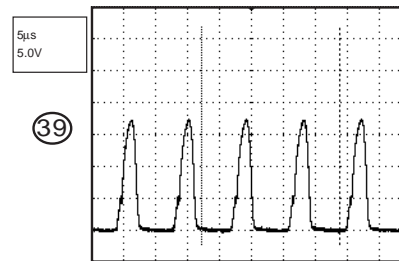
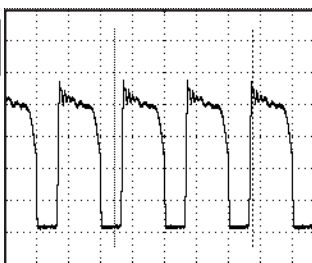


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

**WAVEFORMS**  
**SOUND AMP**

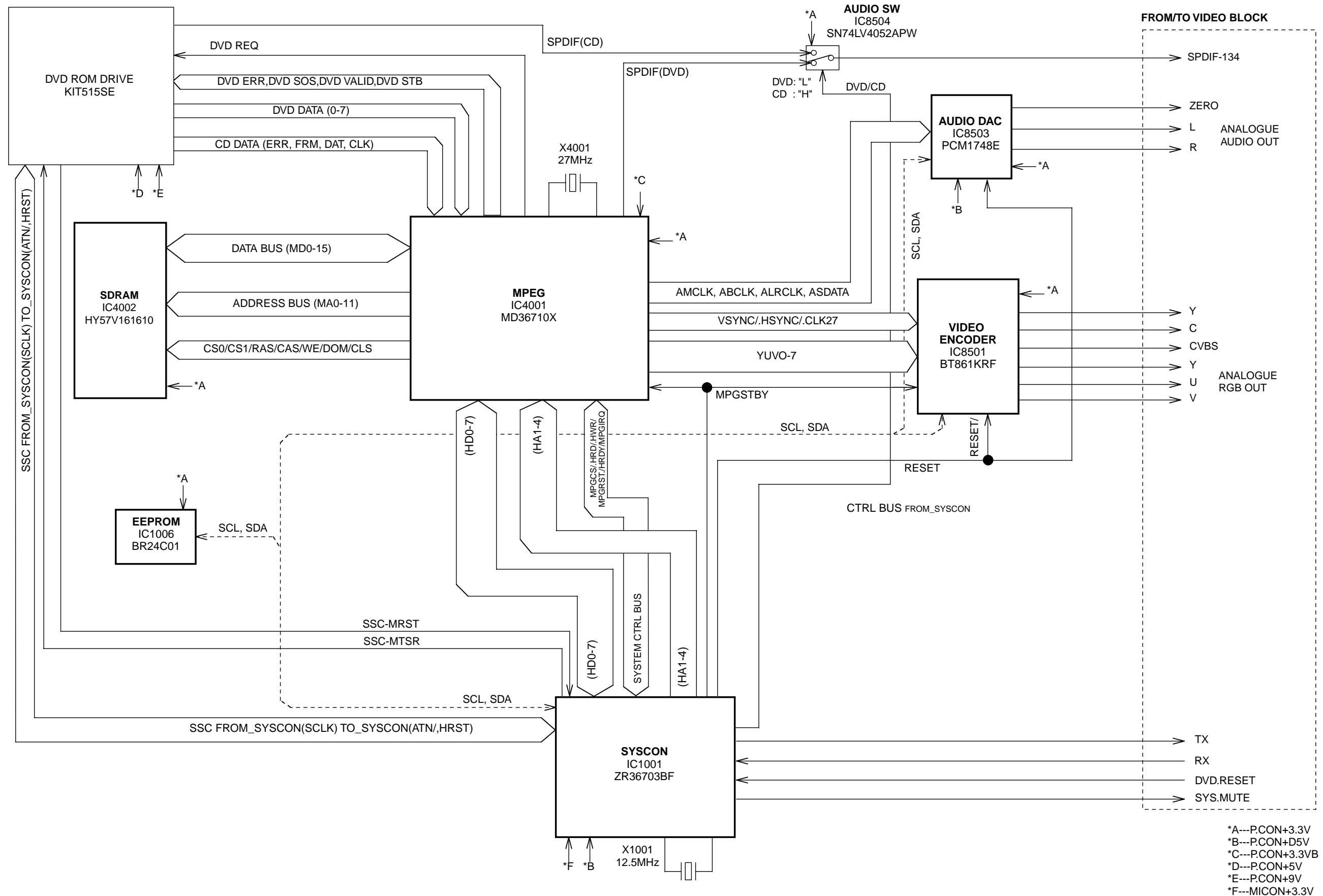


**POWER**



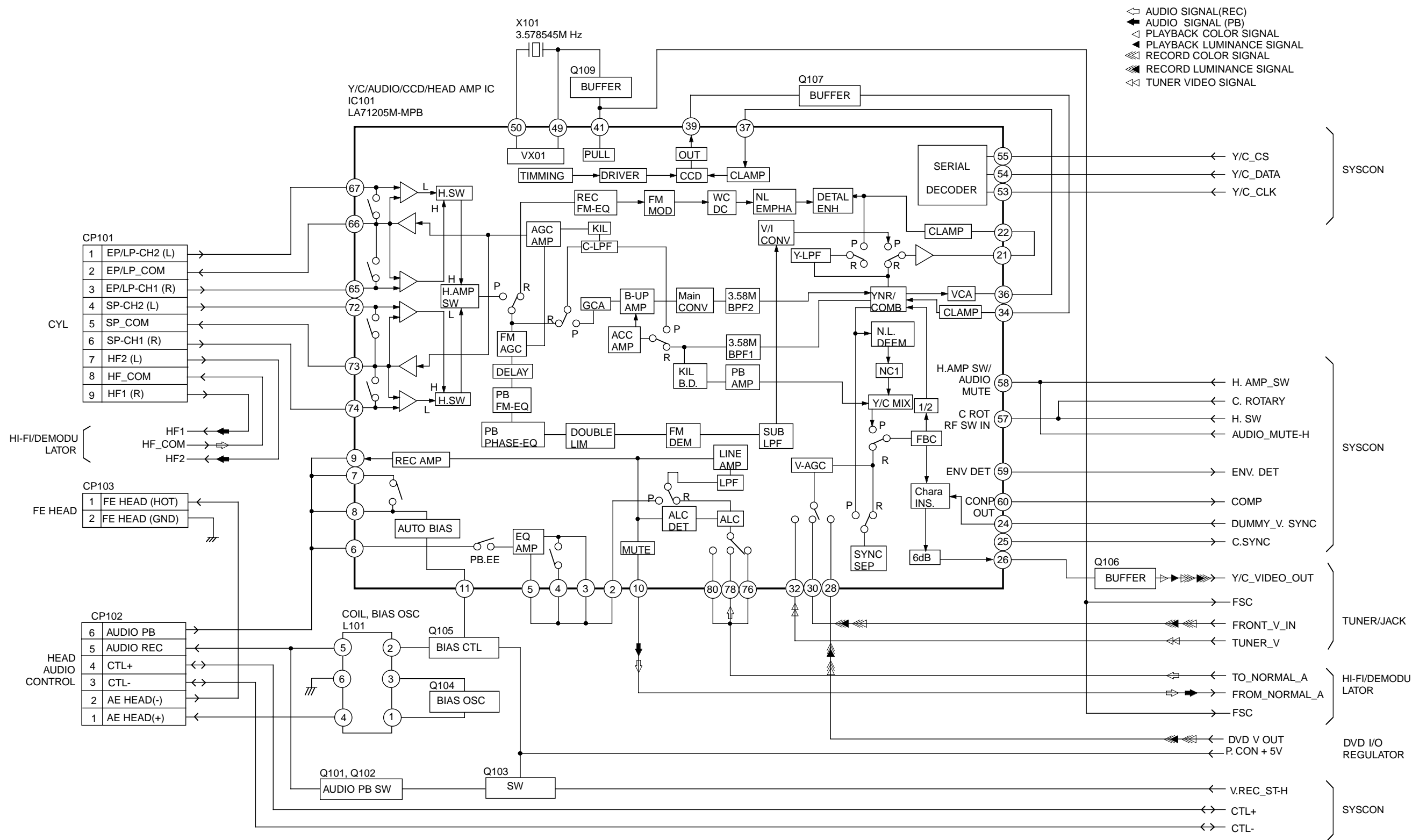
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# DVD BLOCK DIAGRAM



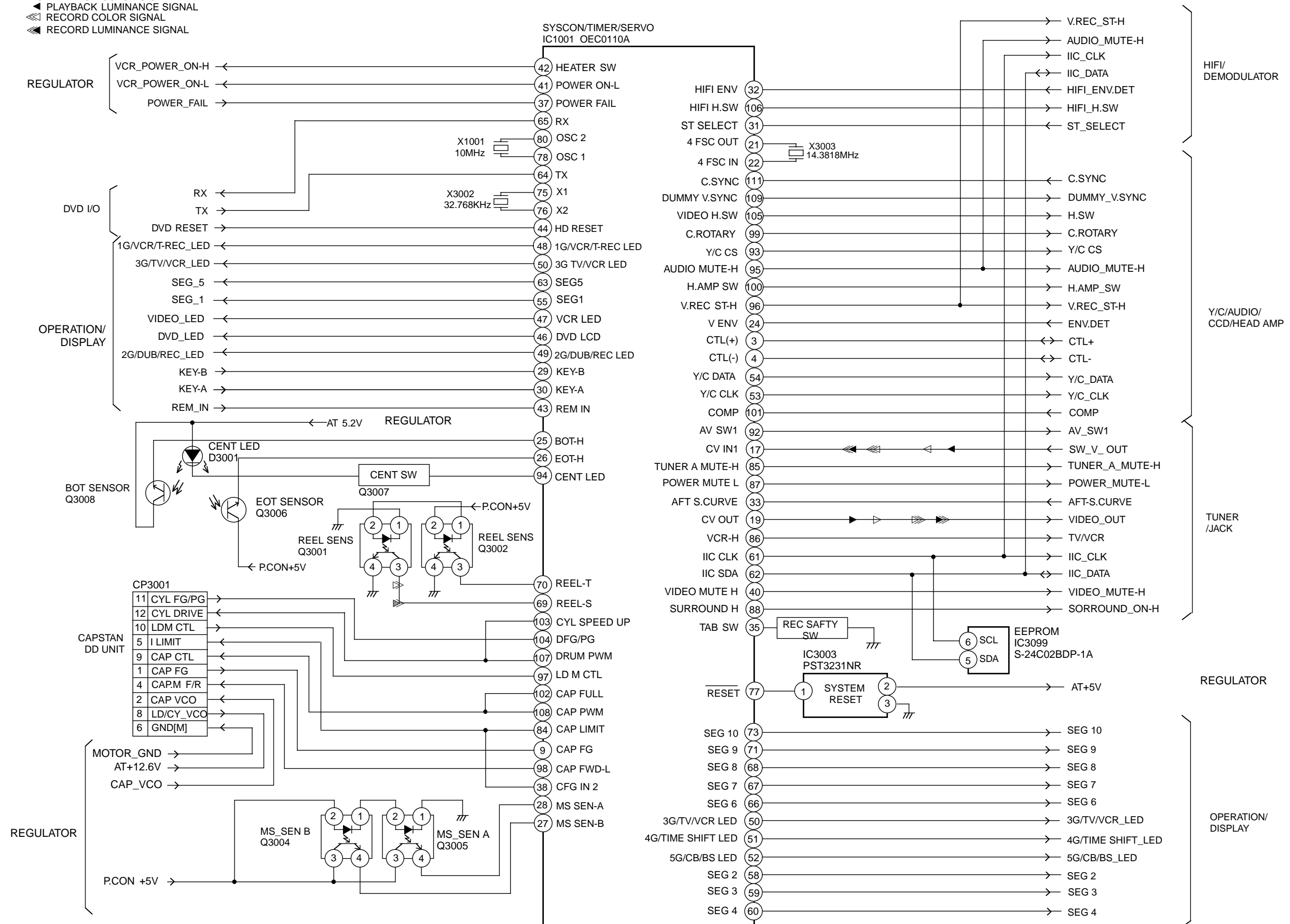
- \*A---P.CON+3.3V
- \*B---P.CON+D5V
- \*C---P.CON+3.3VB
- \*D---P.CON+5V
- \*E---P.CON+9V
- \*F---MICON+3.3V

# Y/C/AUDIO/CCD/HEAD MAP BLOCK DIAGRAM

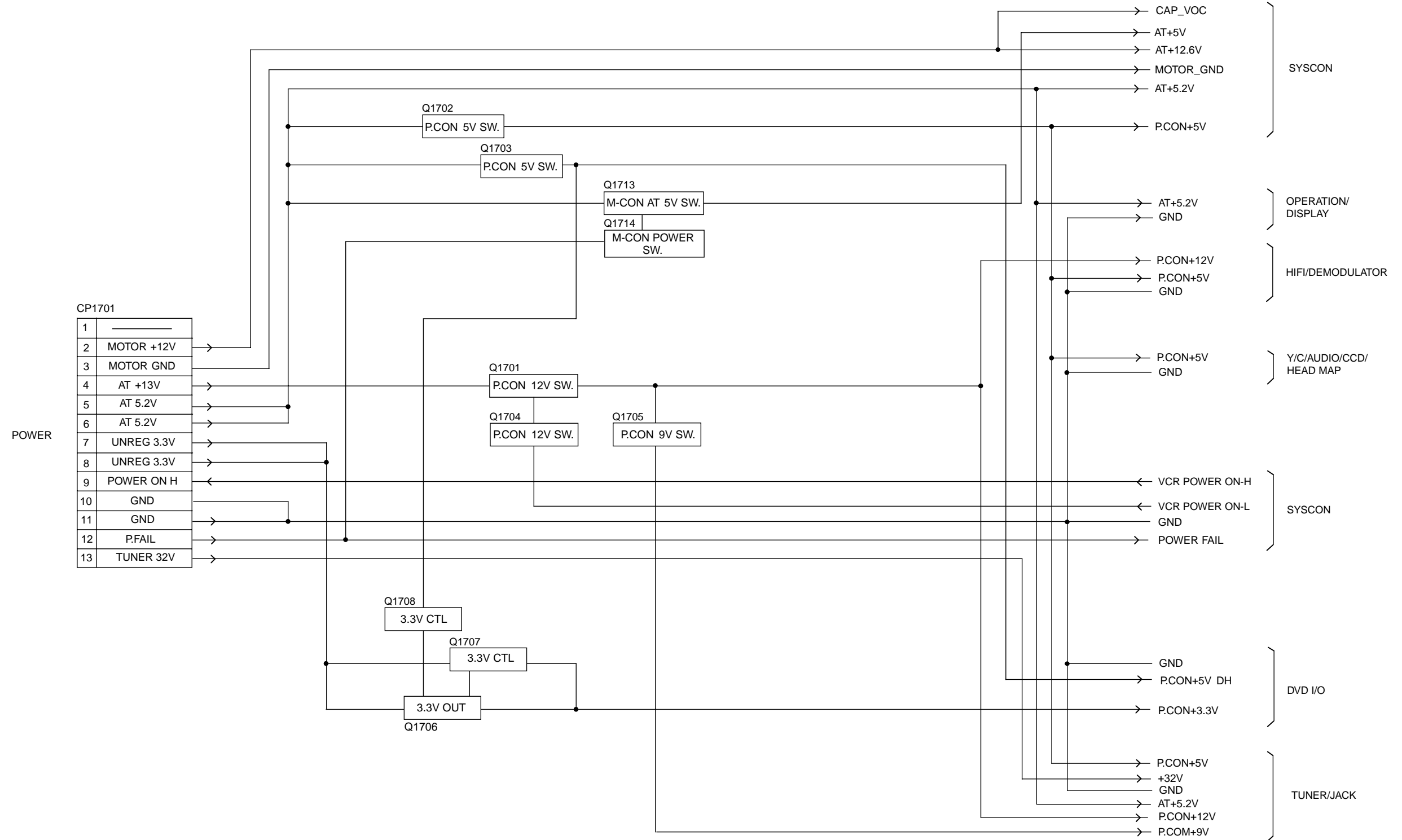


# SYSTEM CONTROL BLOCK DIAGRAM

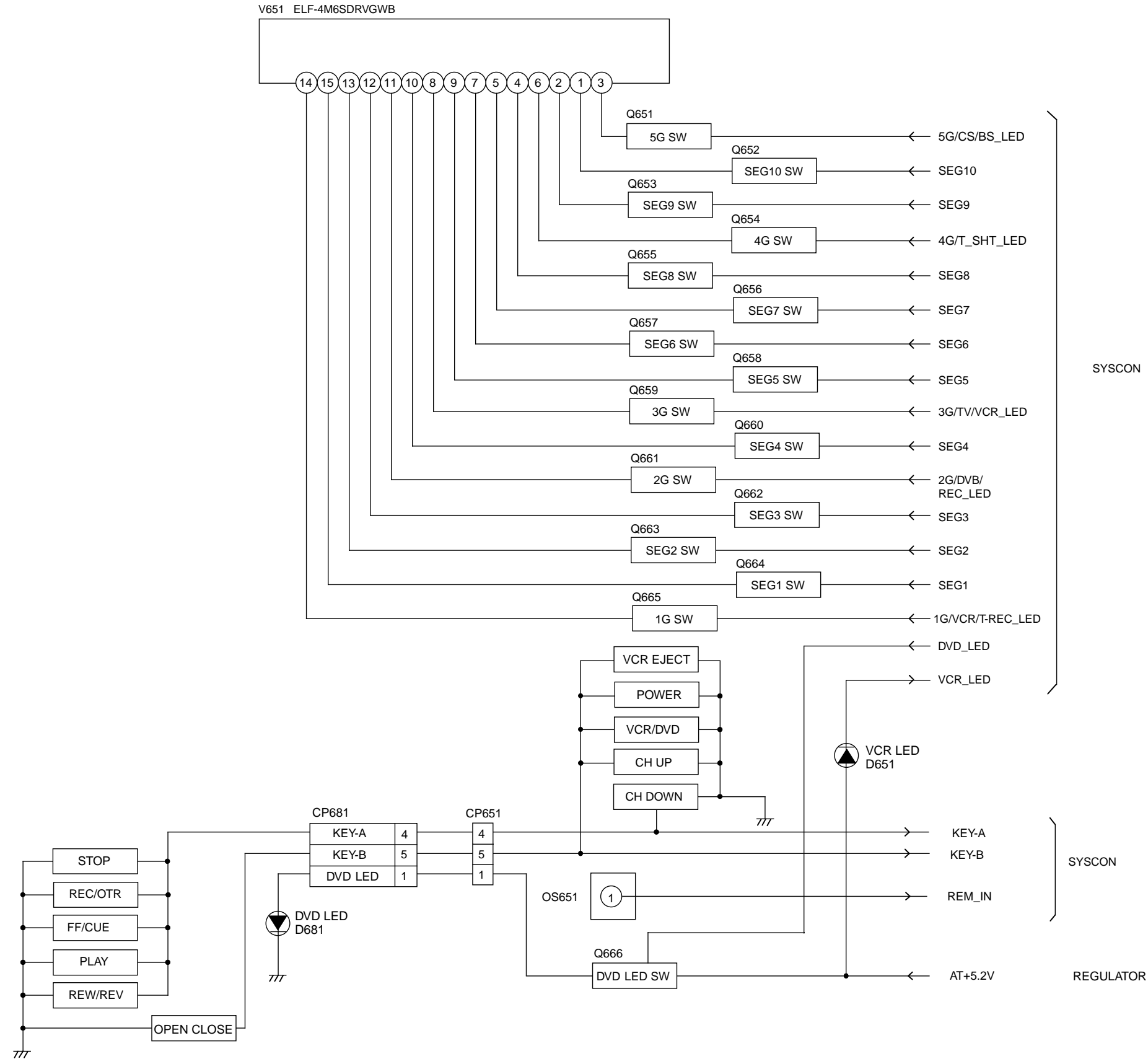
- ▷ PLAYBACK COLOR SIGNAL
- ◀ PLAYBACK LUMINANCE SIGNAL
- ◀◀ RECORD COLOR SIGNAL
- ◀◀◀ RECORD LUMINANCE SIGNAL



# REGULATOR BLOCK DIAGRAM

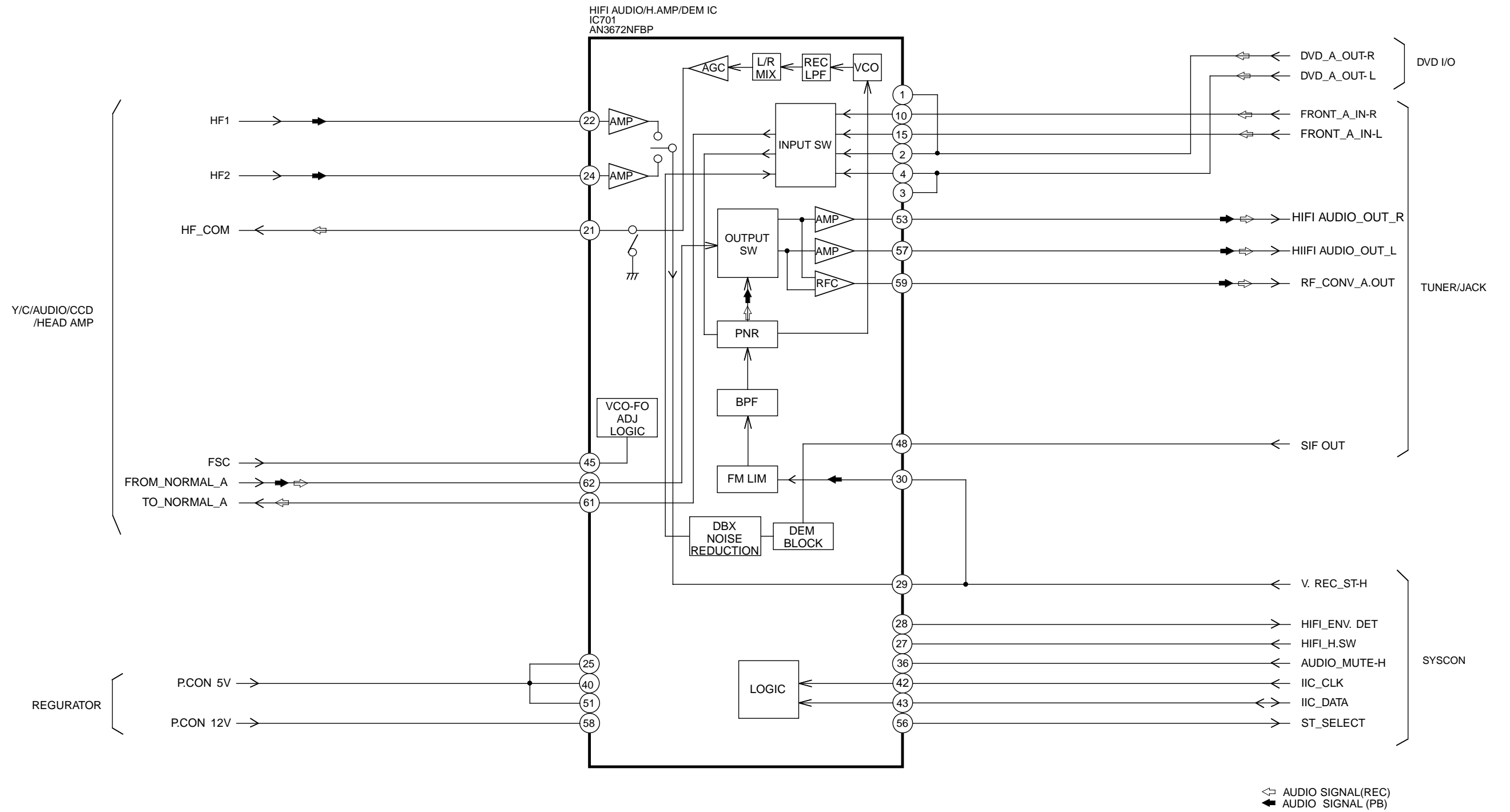


# OPERATION/DISPLAY BLOCK DIAGRAM

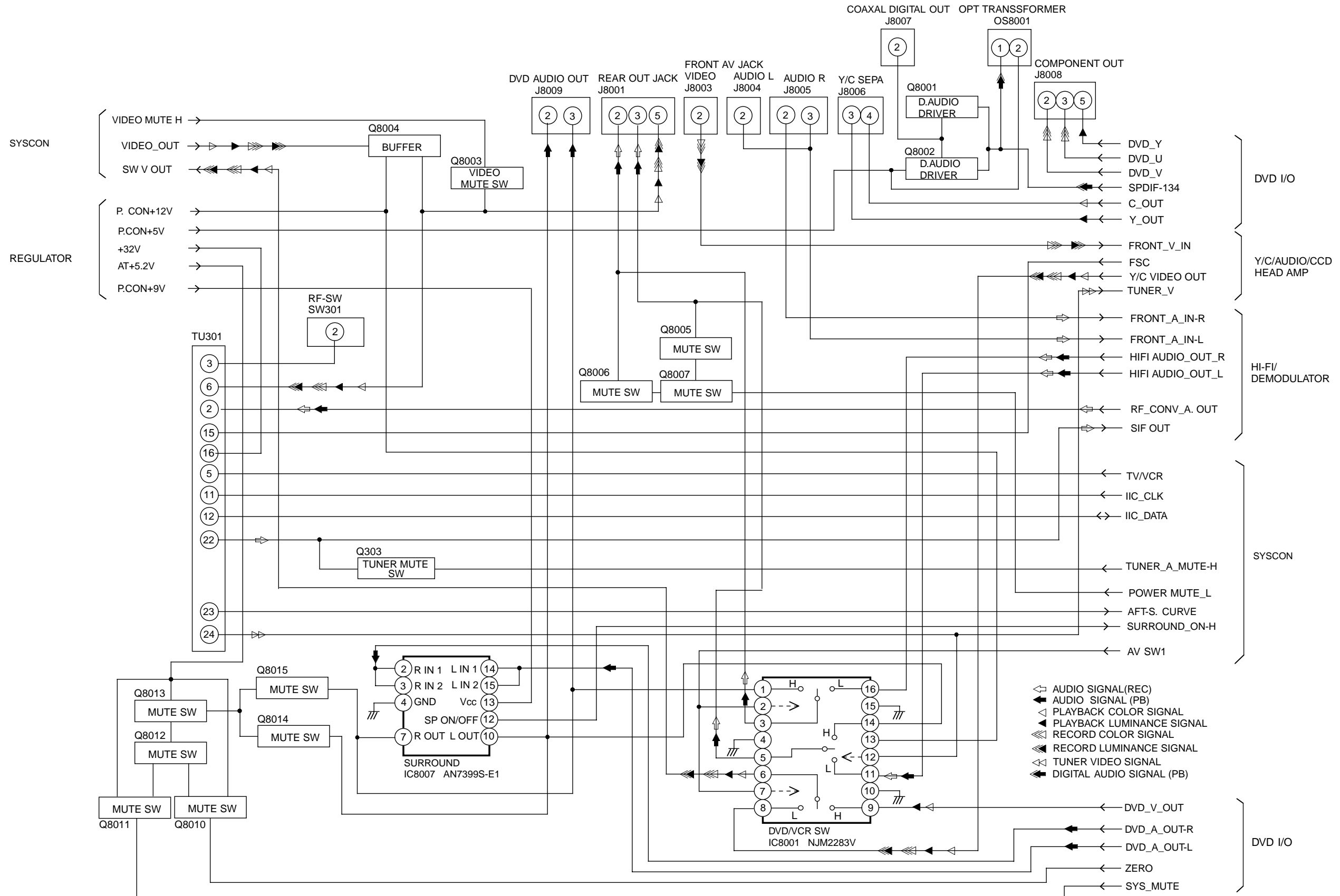




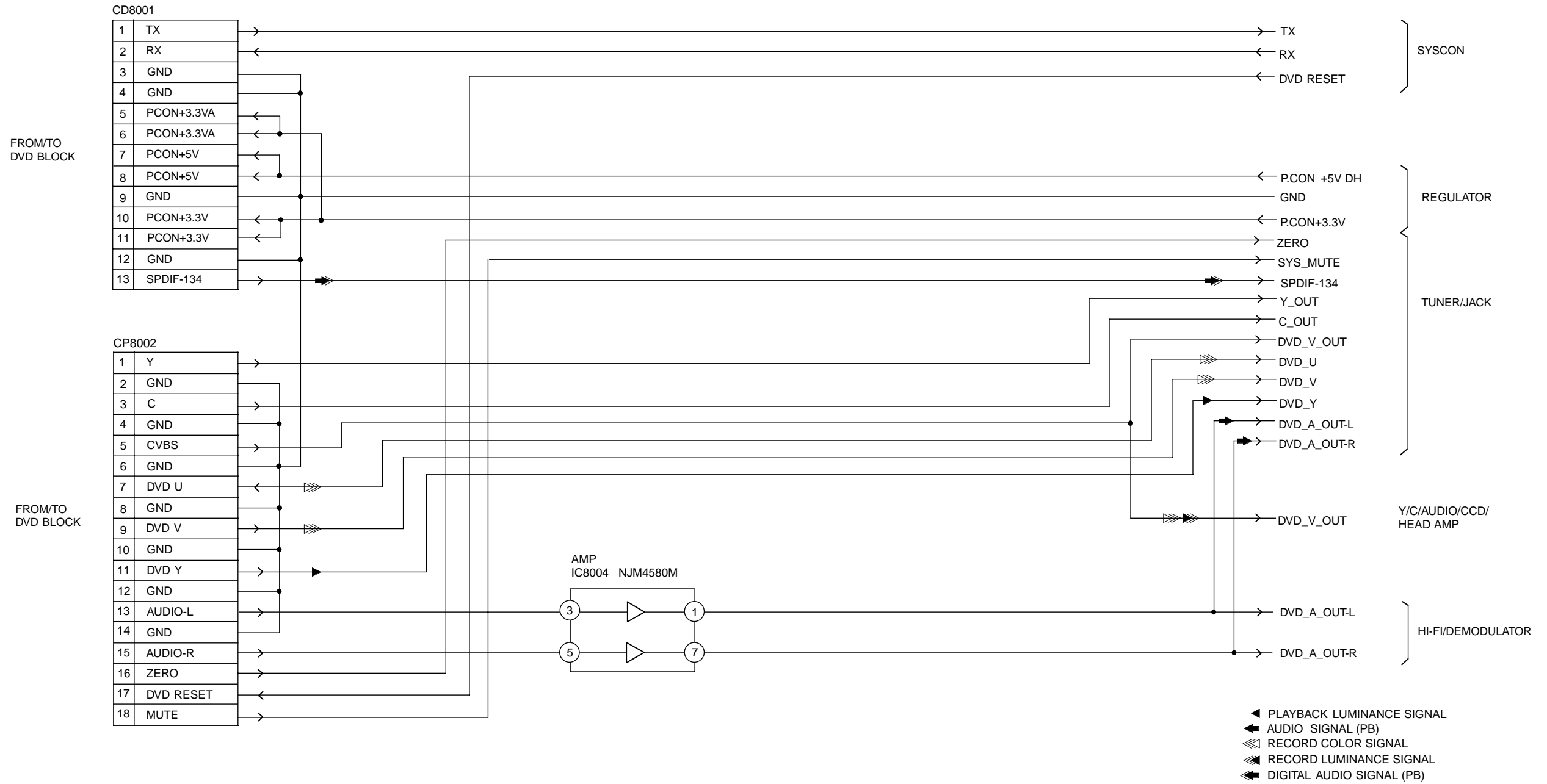
# HIFI/DEMODULATOR BLOCK DIAGRM



# TUNER/JACK BLOCK DIAGRAM



# DVD IN/OUT BLOCK DIAGRAM



# POWER BLOCK DIAGRAM

