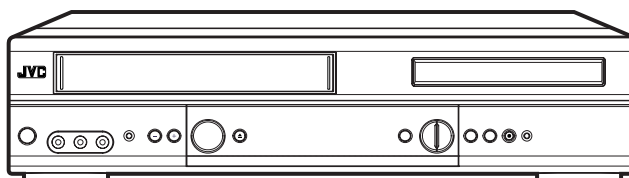
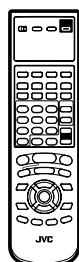


# JVC

## SERVICE MANUAL

### DVD-плеер Hi-Fi кассетный видеомагнитофон

## HR-XV1EU-R



### Характеристики

#### Общие

Источник питания: переменного тока, 230 В 50 Гц  
Потребляемая мощность: в рабочем режиме: 22 Вт  
в режиме ожидания: 5 Вт  
Масса: 4,5 кг  
Габариты: ширина: 430 мм  
высота: 99 мм  
глубина: 310,5 мм  
Уровень входа: разъем скарт: ВИДЕО: 1 В от пика до пика при 75 Ом  
АУДИО: 500 мВт, 50 кОм  
гнездо аудио входа: 500 мВт, 50 кОм  
Уровень выхода: разъем скарт: ВИДЕО: 1 В от пика до пика при 75 Ом  
АУДИО: 500 мВт, 1 кОм  
гнездо аудио выхода: 500 мВт, 1 кОм  
Частотная характеристика Hi-Fi: от 20 Гц до 20 000 Гц  
Динамический диапазон Hi-Fi: более 75 дБ

**Видеомагнитофон**  
**Телевизионные системы:** PAL/MESECAM, BG/DK/I  
воспроизведение NTSC в формате PAL TV  
Видео головки: 4 вращающиеся видео головки  
Аудио дорожка: звучание Hi-Fi – 2 дорожки / звучание MOHO – 1 дорожка  
Каналы: 2-12, X-Z+2, S1-S41, 21-69  
Видео канал RF Output: канал UHF 36 (с 23 до 69)  
Время быстр. перемотки вперед/назад при 25эС: около 1 минуты и 48 секунд (на видеокассете E-180)

#### DVD-плеер

Формат сигнала: PAL  
Пригодные диски: DVD (12 см, 8 см), CD (12 см, 8 см)  
Частотные характеристики: DVD: 4 Гц – 22 кГц  
CD: 4 Гц – 20 кГц  
Отношение «сигнал/помеха»: 90 дБ  
Гармоническое искажение: 0,1%  
Коэффициент детонации: ниже измеримого уровня  
Динамический диапазон: 90 дБ  
Мощность: аудио: (RCA) 500 мВт, 1 кОм  
цифровое аудио: 0,5 В от пика до пика / 75 Ом  
Звукосниматель: CD: длина волны: 775-805 нм  
максимальная выходная мощность: 0,5 мВт  
DVD: длина волны: 640-660 нм  
максимальная выходная мощность: 1,0 мВт

#### ПРИНАДЛЕЖНОСТИ:

пульт дистанционного управления x 1  
коаксиальный кабель 75 Ом x 1  
батареи (R6) x 2

HR-XV1EU-R V14PV1

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# 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.

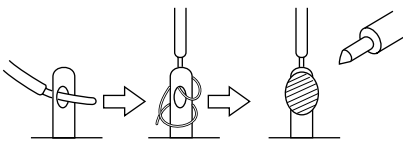


Fig.1

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.

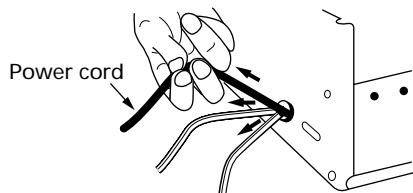


Fig.2

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).

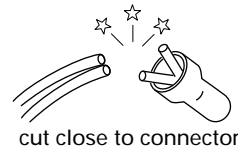


Fig.3

- (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.

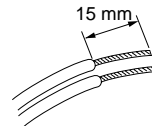


Fig.4

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

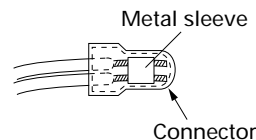


Fig.5

- (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.

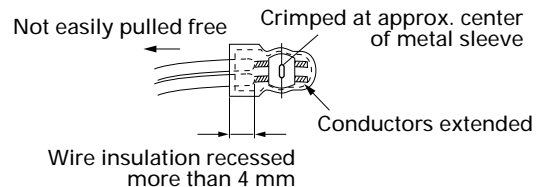


Fig.7

## ● 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

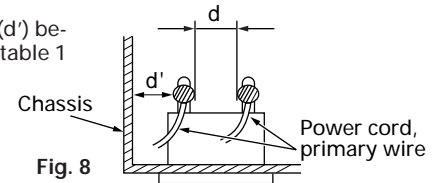
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

### 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.

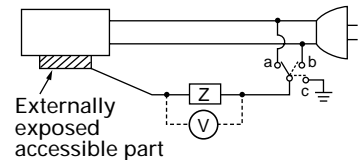


### 4. Leakage current test

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.

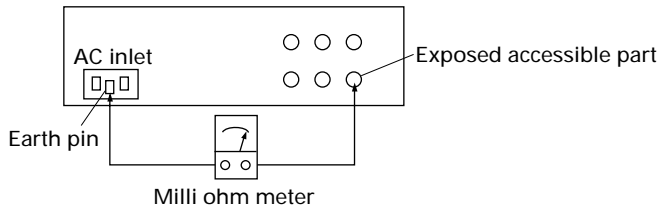


### 5. Grounding (Class I model only)

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	$Z \leq 0.5 \text{ ohm}$

Fig. 10

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	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II)	$d \geq 4 \text{ mm}$
200 to 240 V			AC 1.5 kV 1 minute (Class I)	$d' \geq 8 \text{ mm}$ (Power cord) $d' \geq 6 \text{ mm}$ (Primary wire)

Table 1 Specifications for each region

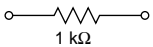
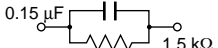
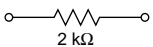
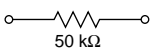
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan		$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada		$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia		$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$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

# 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: (CP681).
4. Unlock the 8 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).

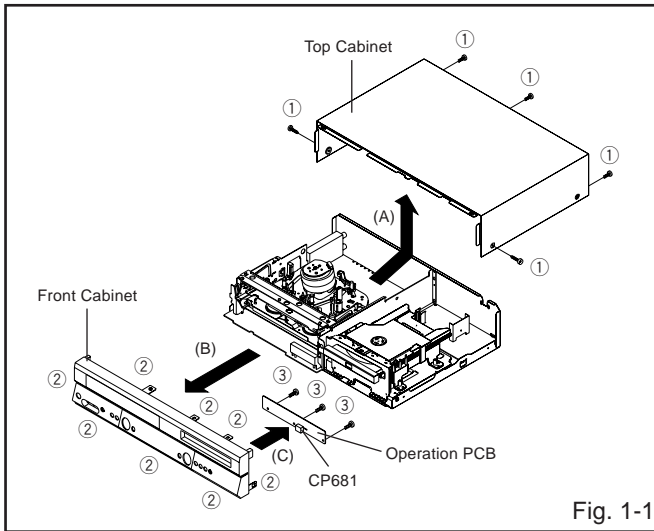


Fig. 1-1

### 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).

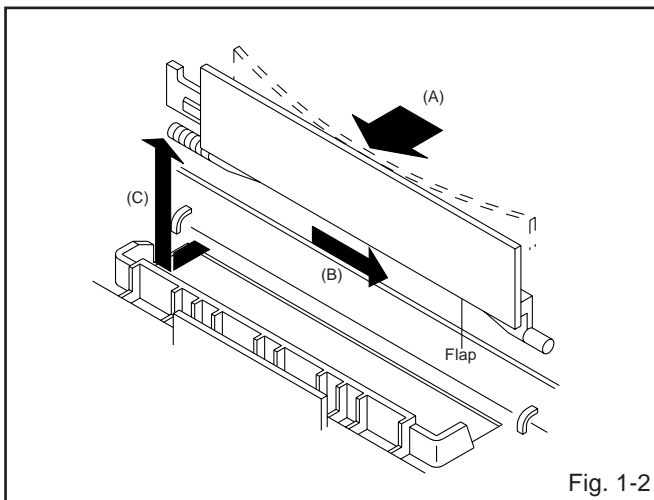


Fig. 1-2

### 1-3: DECK CD AND DVD PCB (Refer to Fig. 1-3)

1. Make the short circuit on the position as shown Fig. 1-3 using a soldering. If you remove the Deck CD with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (CP503, CP8001 and CP8002).
3. Remove the 4 screws ①.
4. Remove the Deck Angle in the direction of arrow (A).
5. Remove the 2 screws ②.
6. Remove the Front-DVD Shield in the direction of arrow (B).
7. Remove the 4 screws ③.
8. Disconnect the following connectors: (CP2601, CP2602 and CP2603).
9. Remove the Deck CD in the direction of arrow (C).
10. Remove the 4 screws ④.
11. Remove the DVD PCB in the direction of arrow (D).

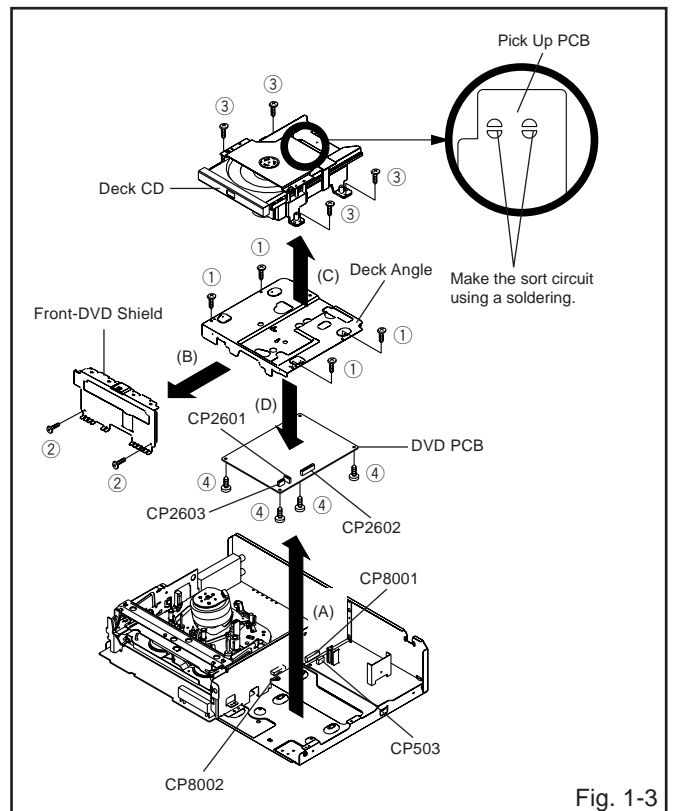


Fig. 1-3

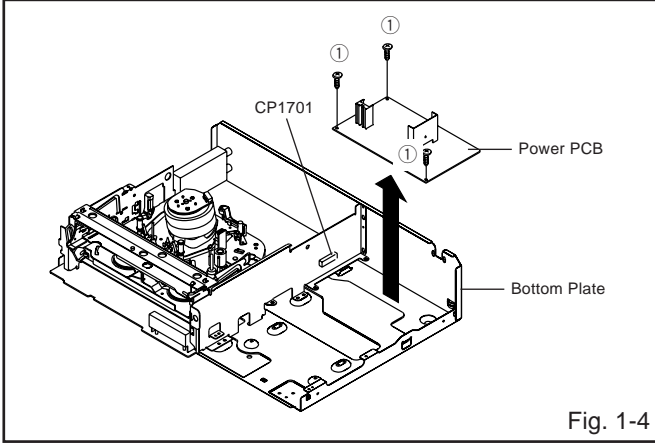
### NOTE

When the installation of the Deck CD, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

# DISASSEMBLY INSTRUCTIONS

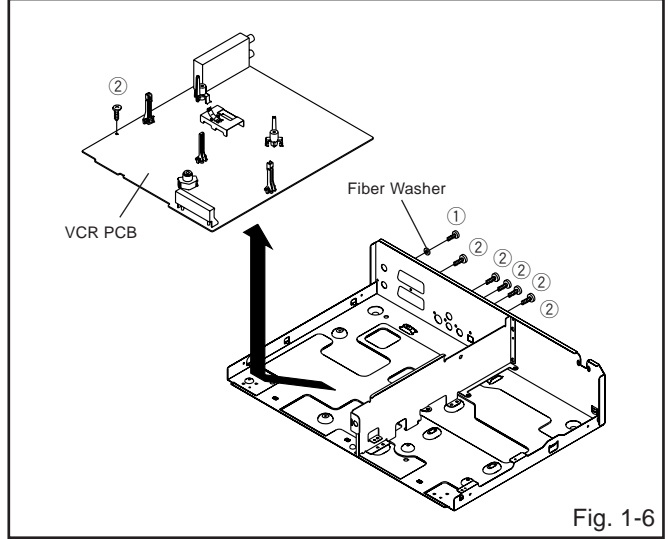
## 1-4: POWER PCB (Refer to Fig. 1-4)

1. Disconnect the following connector: (CP1701).
2. Remove the 3 screws ①.
3. Remove the Power PCB in the direction of arrow.



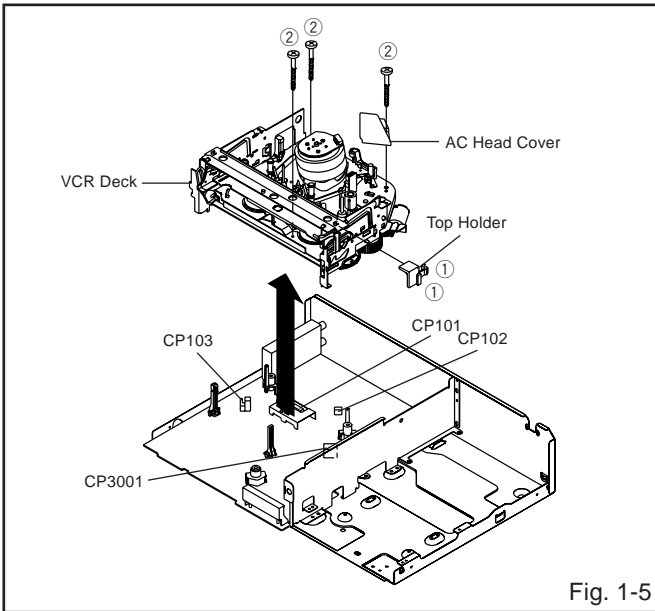
## 1-6: VCR PCB (Refer to Fig. 1-6)

1. Remove the screw ① and Fiber Washer.
2. Remove the 6 screws ②.
3. Remove the VCR PCB in the direction of arrow.



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

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.





# 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.

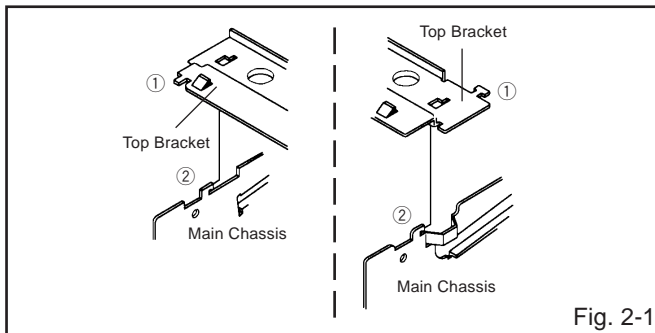


Fig. 2-1

### 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.

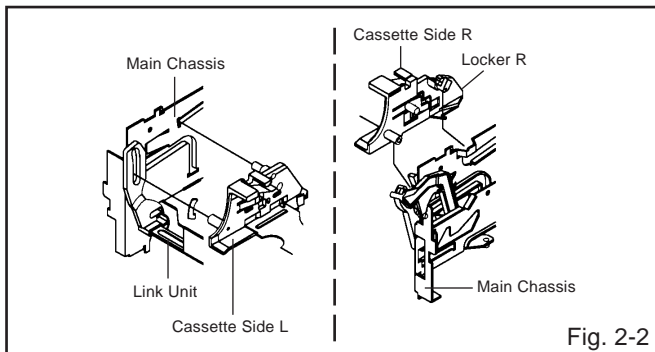


Fig. 2-2

### 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.

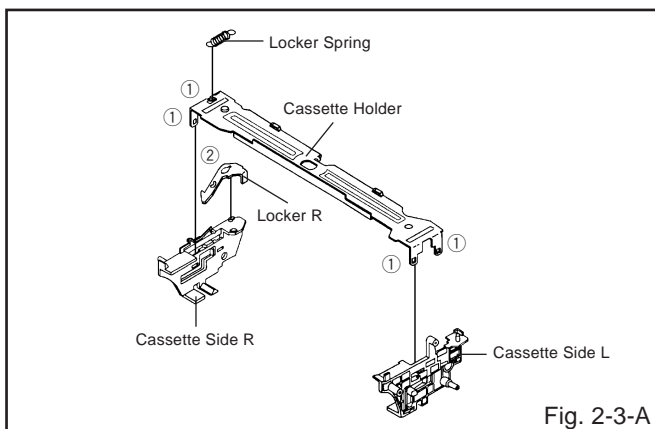


Fig. 2-3-A

#### NOTE

1. In case of the Locker R installation, check if the one position 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.

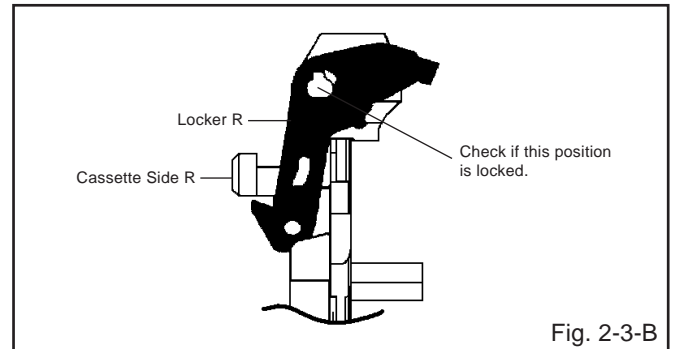


Fig. 2-3-B

### 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.

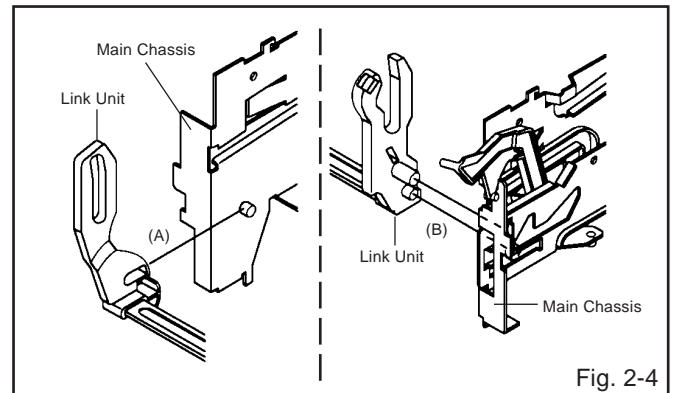


Fig. 2-4

### 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.

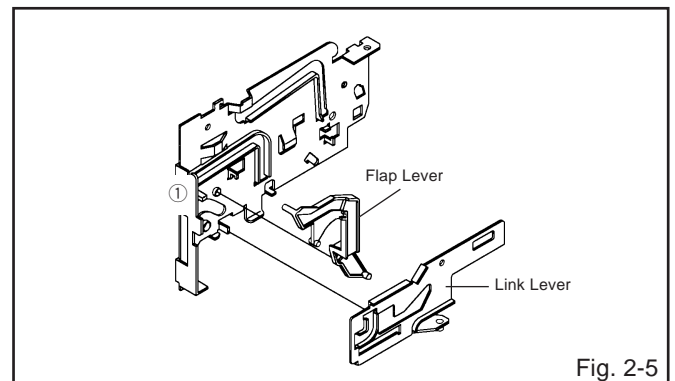
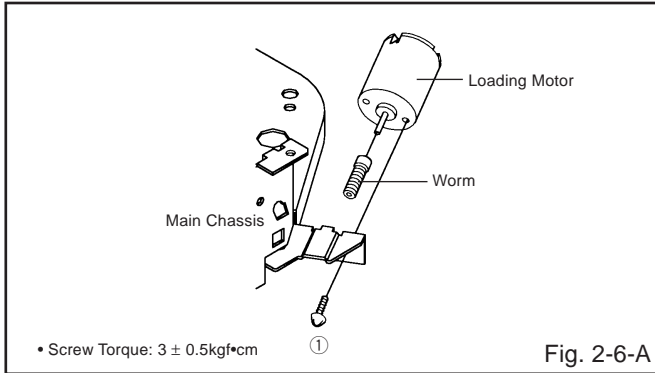


Fig. 2-5

# DISASSEMBLY INSTRUCTIONS

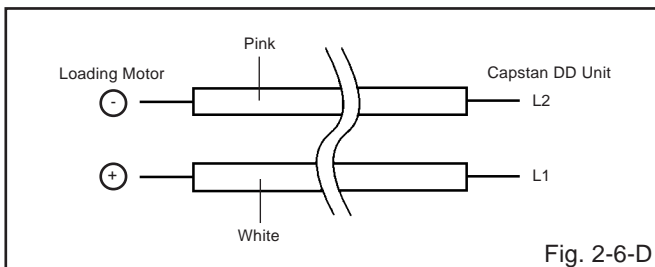
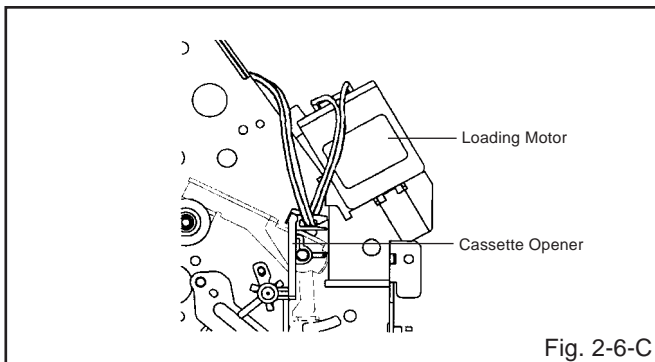
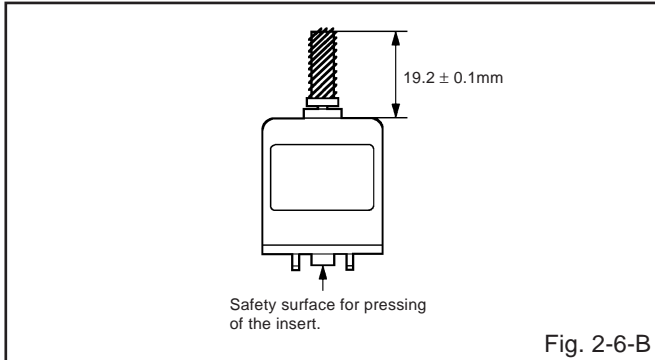
## 2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

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



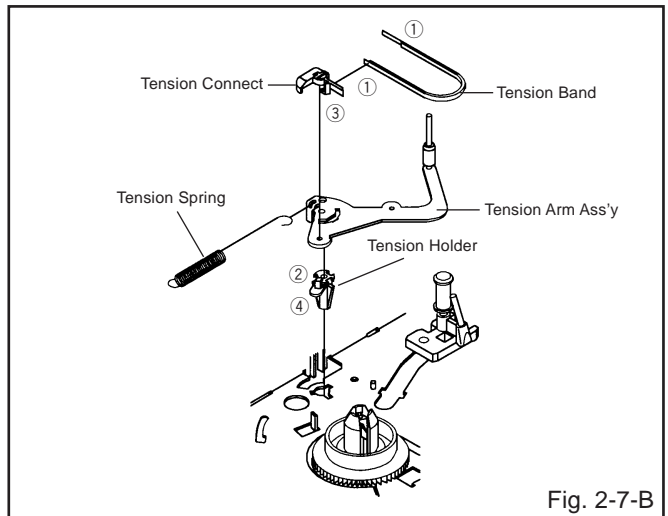
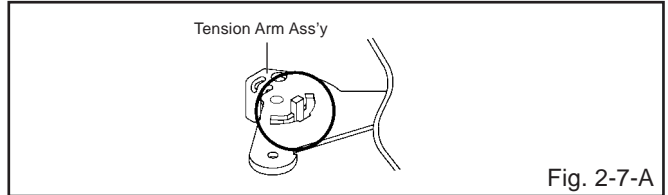
### NOTE

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.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.



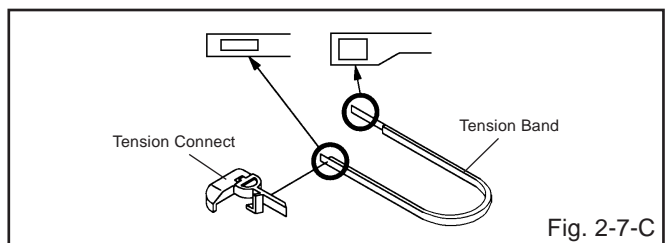
## 2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

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.



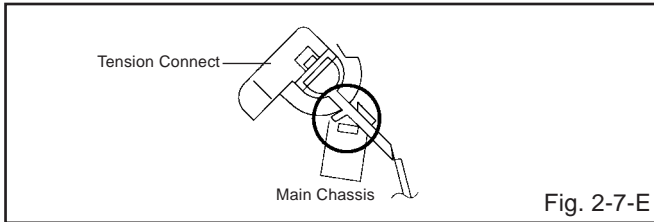
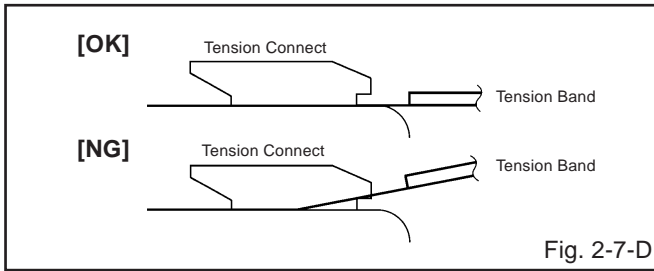
### NOTE

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.



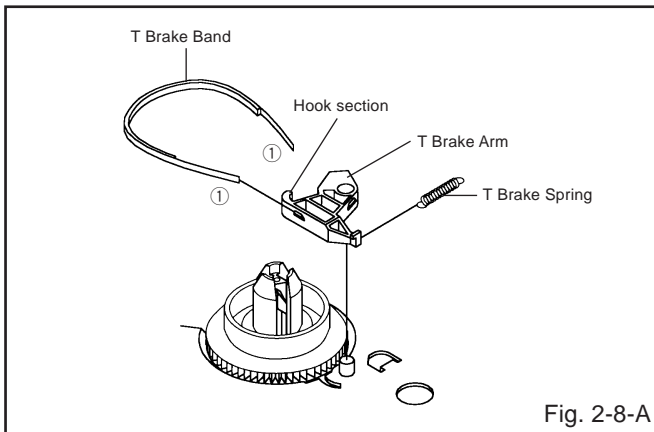


# DISASSEMBLY INSTRUCTIONS



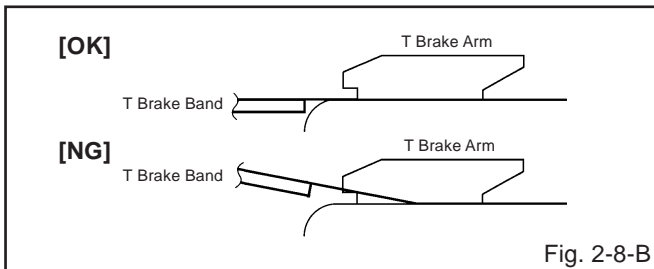
## 2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

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.



### NOTE

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

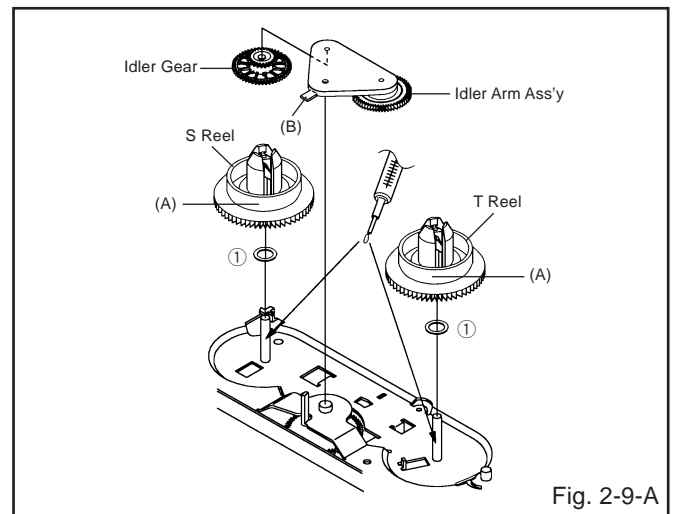


## 2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

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.

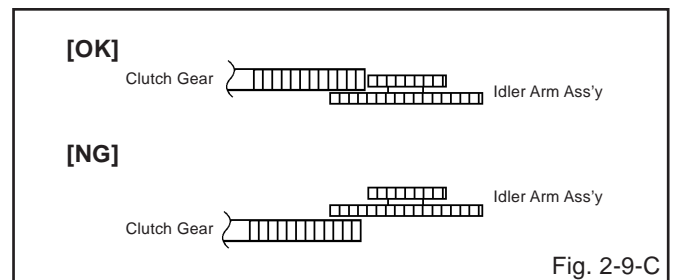
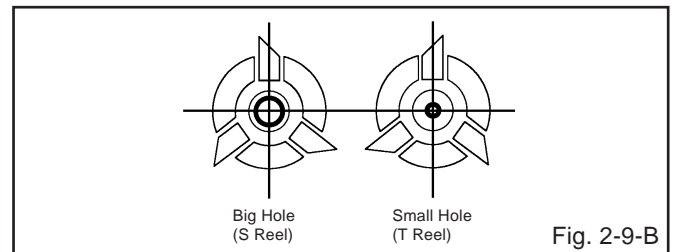
### NOTE

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**)



### NOTE

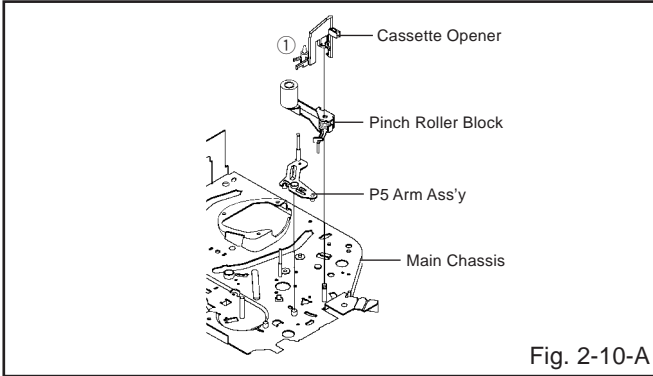
1. In case of the S Reel and T Reel installation, check if the correct parts are installed. (Refer to Fig. 2-9-B)
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.



# DISASSEMBLY INSTRUCTIONS

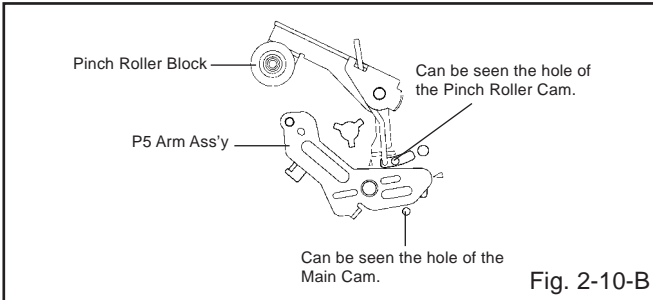
## 2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/P5 ARM ASS'Y (Refer to Fig. 2-10-A)

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.

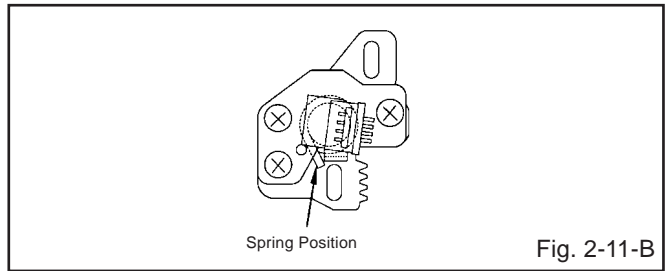
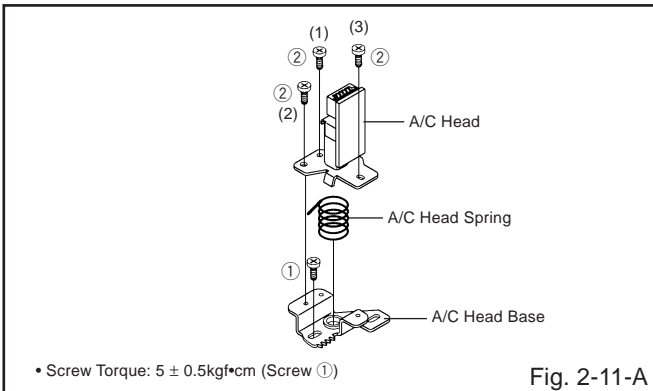


## 2-11: A/C HEAD (Refer to Fig. 2-11-A)

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.

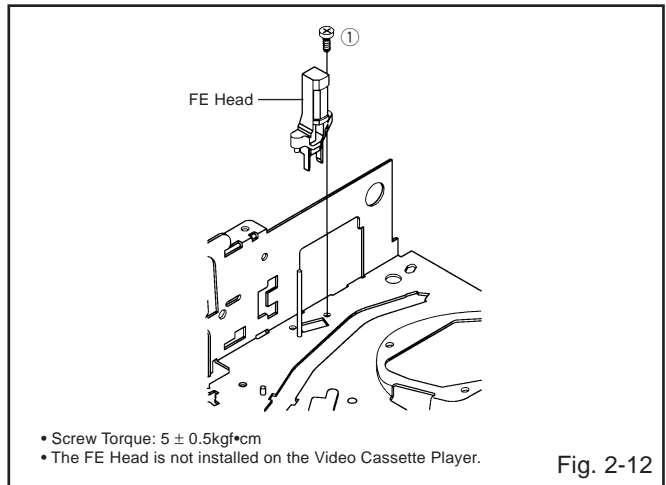
### NOTE

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.

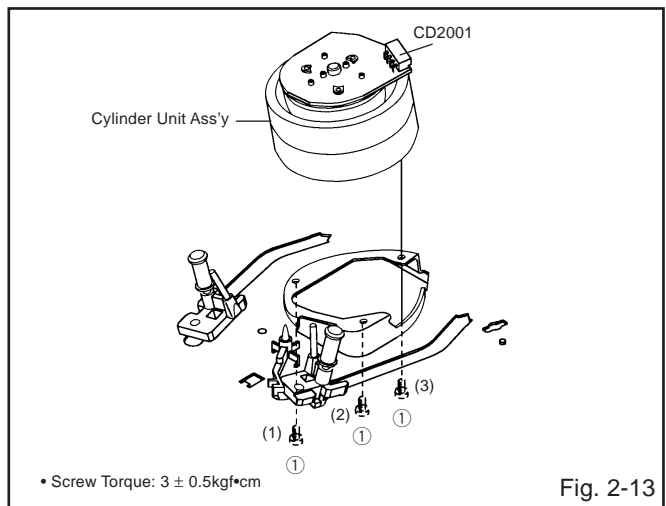


## 2-13: CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

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

### NOTE

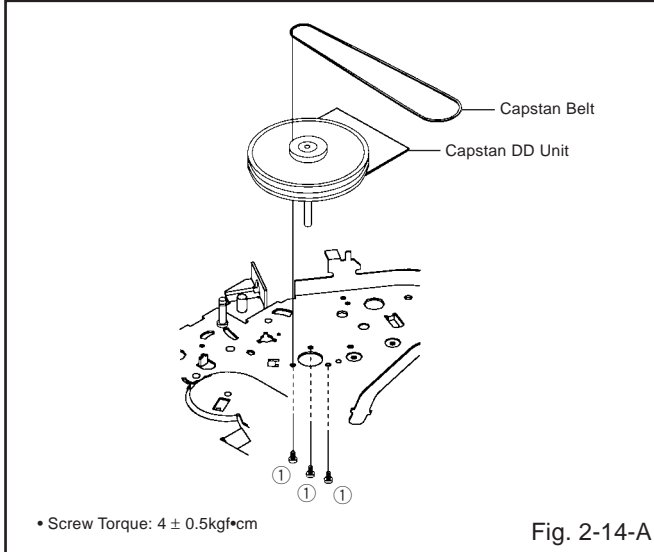
1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



# DISASSEMBLY INSTRUCTIONS

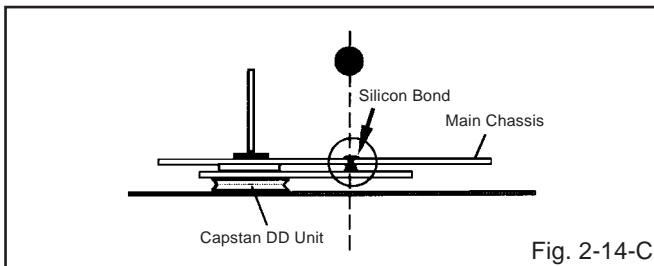
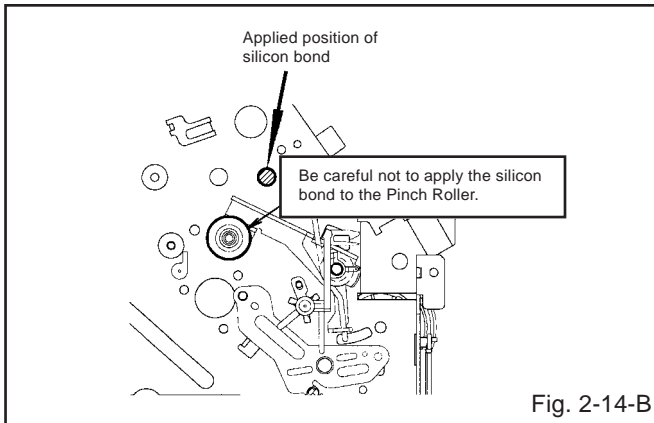
## 2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

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



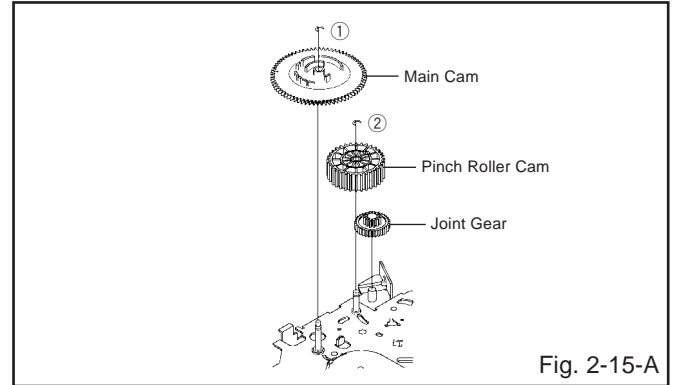
### NOTE

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)



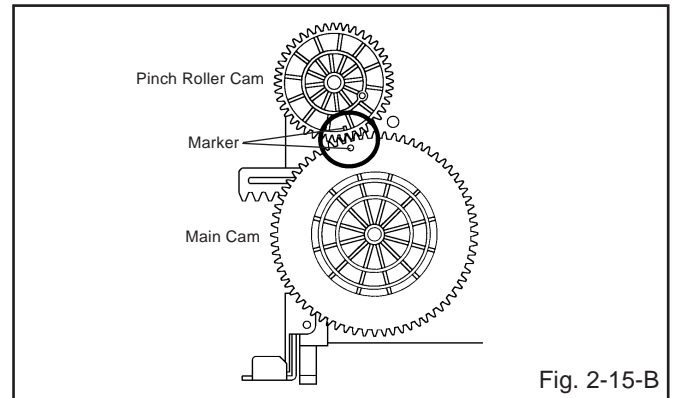
## 2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

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.



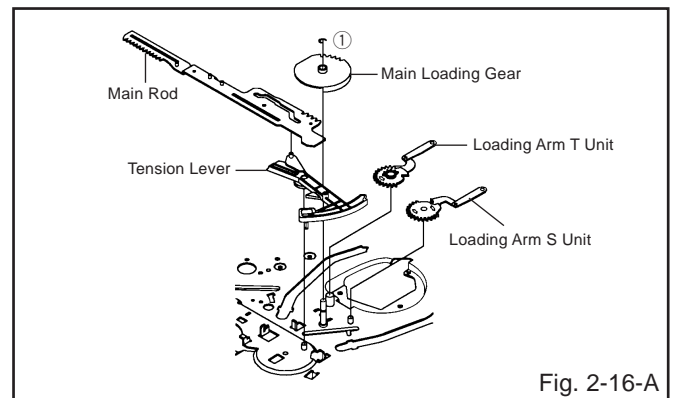
### NOTE

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 are 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)

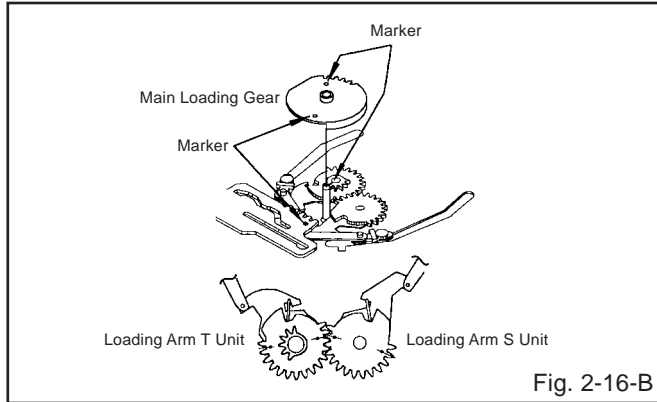
1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.



# DISASSEMBLY INSTRUCTIONS

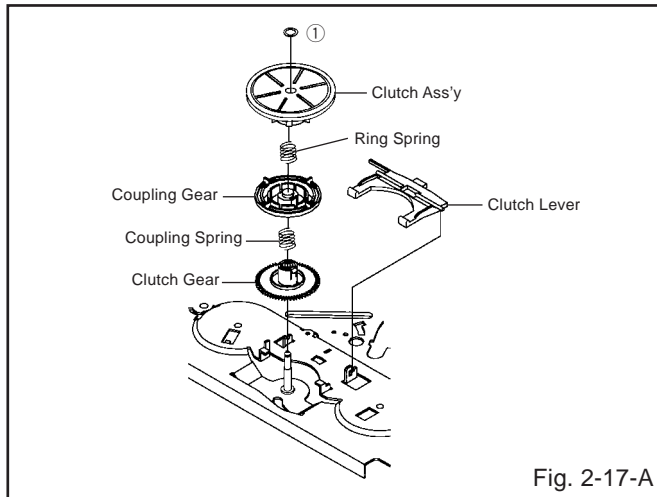
## NOTE

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)



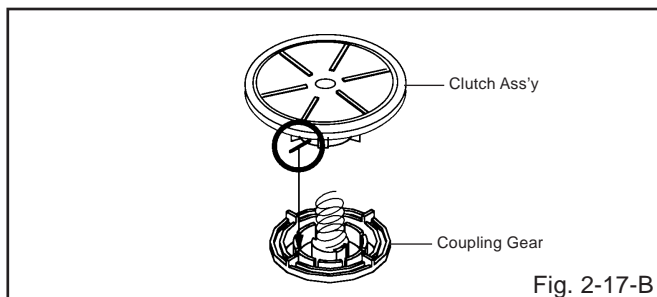
## 2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

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.



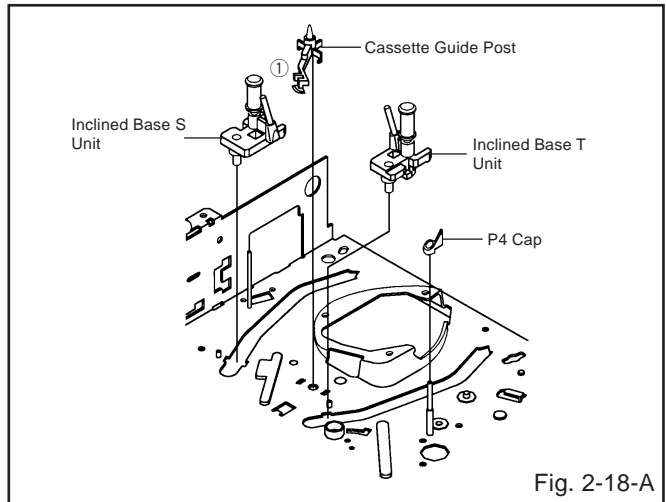
## NOTE

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)



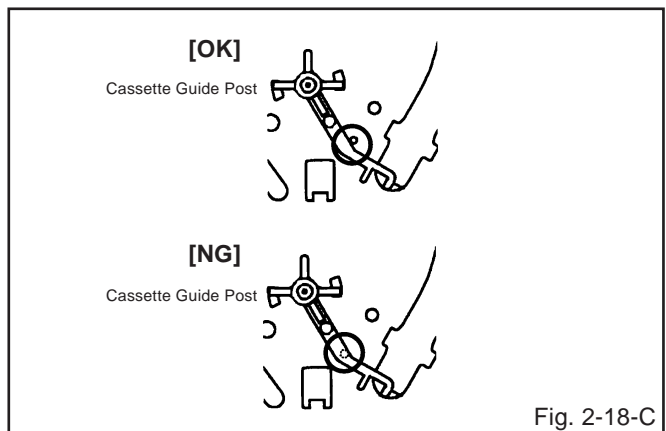
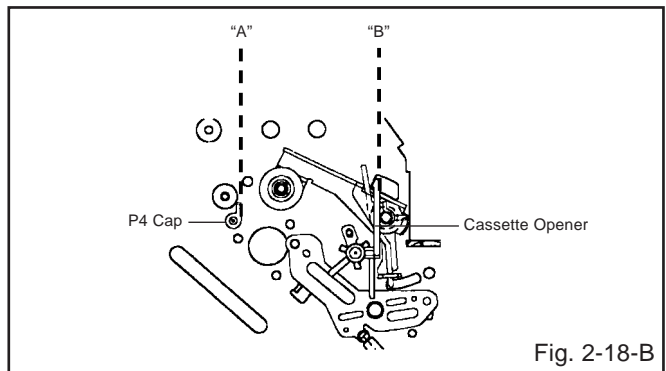
## 2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

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

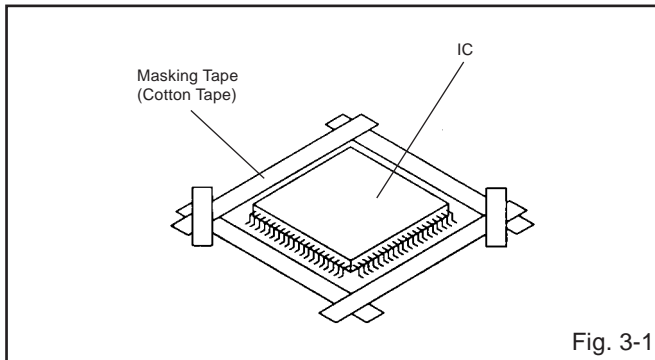
### 3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

#### REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 3-1.)

#### NOTE

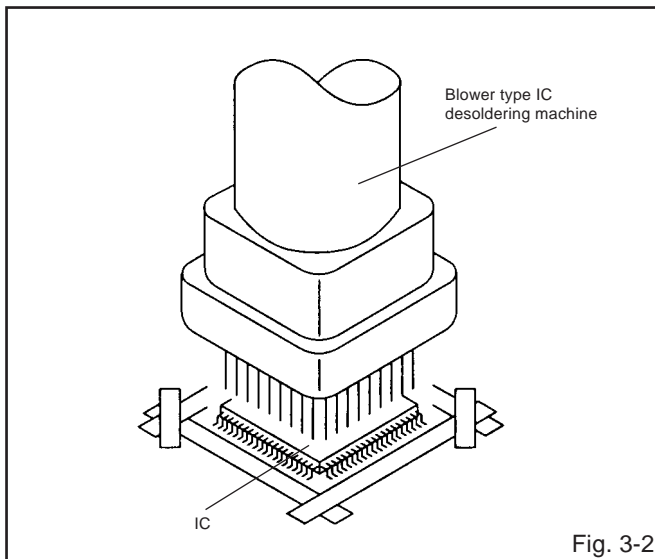
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 3-2.)

#### NOTE

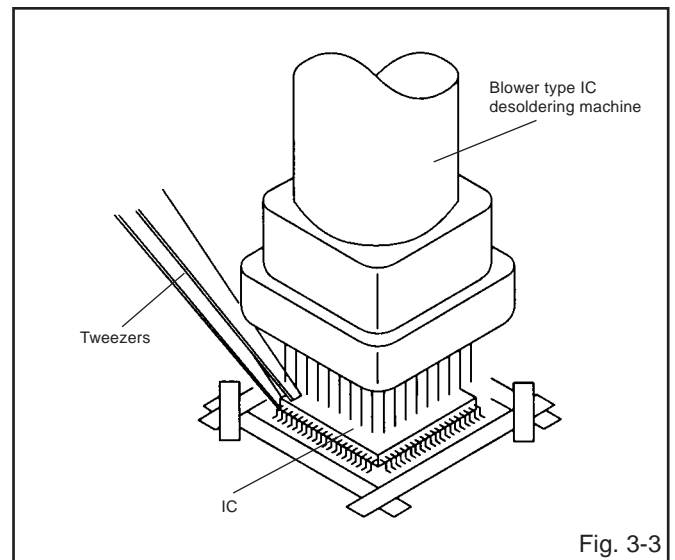
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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. 3-3.)

#### NOTE

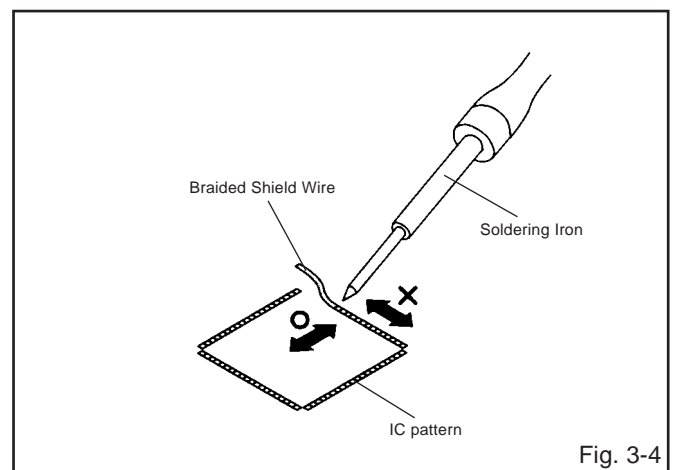
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 3-4.)

#### NOTE

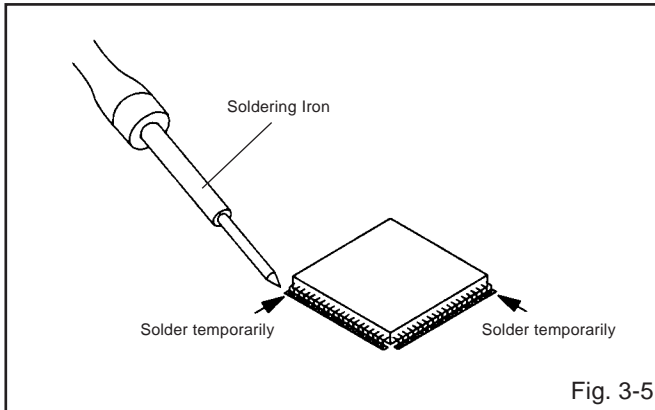
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



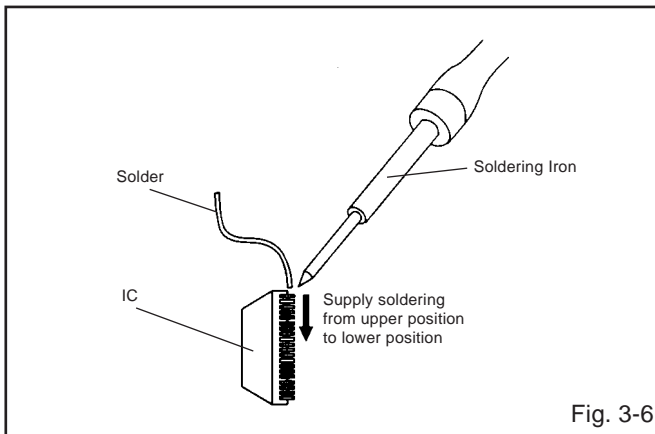
# DISASSEMBLY INSTRUCTIONS

## 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. 3-5.)



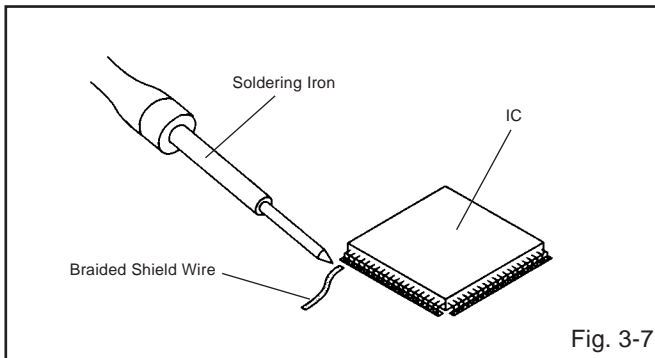
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 3-6.)



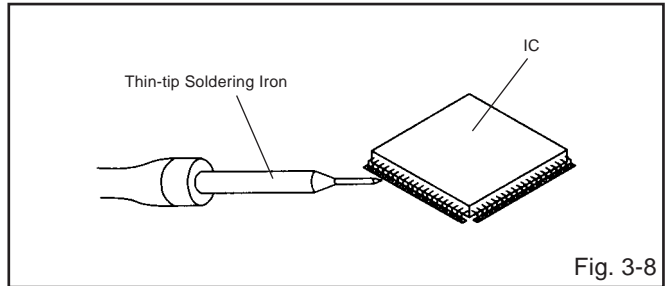
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 3-7.)

### 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. 3-8.)



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

## KEY TO ABBREVIATIONS

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

## SERVICE MODE LIST

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

To enter 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 FIP. 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 "WHEN REPLACING EEPROM (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.
CH DOWN	POWER	2	VCR operation mode at no connection of DVD. Refer to the "PREPARATION FOR SERVICING" NOTE: Although the DVD is connected, the DVD mode cannot be selected.

Set Key	Remocon Key	Standard Time (seconds)	Operations
REC	4	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 "RE-WRITE FOR DVD 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 "RE-WRITE FOR DVD FIRMWARE". NOTE: The function will only work at the DVD stop mode. Do not use this for the normal servicing.

### **<NOTE> WHEN "N" IS ALWAYS BEING DISPLAYED ON THE TV MONITOR. (REMOTE CONTROLLER FORMAT)**

This product is usable the remote controller which is used by DVD+VHS of the other brand.

If "N" is always being displayed on the TV monitor, can not control from provided remote controller since this product is other brand format.

- How to return a JVC format.

Turn off the power of the set and push the CHANNEL+ button and the REC button of the set simultaneously.

### **PARENTAL CONTROL - RATING LEVEL 4-DIGIT SECURITY CODE CANCELLATION**

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

1. Turn on the power, and set to the DVD stop mode.
2. Press the SET UP button to display the DVD menu.
3. Press the SET +/- button to select the "Operation" menu.
4. Press the TV/VCR PR +/- button to select the Parental Lock, then press the OK button.
5. Press the TV/VCR PR +/- button to select the ON or OFF, then press the OK button.
6. Press the STOP button four times on the remote control, then press the OK button.  
The 4-digit security code is cleared.
7. Press the SET UP button to disappear the DVD menu.

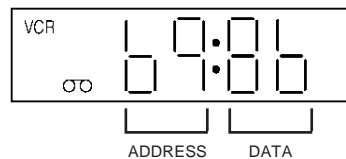
## WHEN REPLACING EEPROM (MEMORY) IC

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.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
B0	---	---	---	---	---	---	---	---	---	8B	C9	D2	71	62	76	04
C0	B2	17	90	50	60	FA	54	51	51	51	B2	9F	97	8E	00	66
D0	DB	61	21	08	02	FF	00	00	79	9F	82	02	42	B5	63	5B
E0	76	5F	08	F0	0A	FB	5F	08	F0	05	F2	5F	09	F0	05	F3
F0	01	2F	9F	42	42	80	3D	06	06	89	00	3A	D0	---	---	---

**Table 1**

**NOTE: No need setting for after INI FD.**



**Fig. 1**

1. Turn on the POWER.
  2. 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 FIP as Fig 1.
  3. 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.
  4. Press OK to select DATA. When DATA is selected, it will "blink".
  5. Again, step through the DATA using SET + or - button until required DATA value has been selected.
  6. Pressing OK will take you back to ADDRESS for further selection if necessary.
  7. Repeat steps 3 to 6 until all data has been checked.
  8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.  
**After the data input, set to the initializing of shipping.**
  9. Turn POWER on.
  10. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.
  11. After the finishing of the initializing of shipping, the unit will turn off automatically.
- The unit will now have the correct DATA for the new MEMORY IC.

## 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.

Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 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.

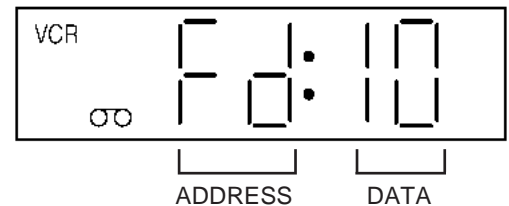
### CONFIRMATION OF HOURS USED

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

Total hours are displayed in 16 system of notation.

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

1. Turn on the POWER.
2. While pressing the CH UP button on the set, press the FF button on the set for more than 2 seconds.
3. Adjust the ADDRESS to "FD" by SET + or - button and read the DATA. (This DATA becomes the thousands digit and hundreds digit value of the following formula.)
4. Adjust the ADDRESS to "FE" by SET + or - button and read the DATA. (This DATA becomes the tens digit and ones digit value of the following formula.)
5. After the confirmation of using hours, turn off the power.



PLAY/REC total hours.  
 = (16 x 16 x 16 x thousands digit value)  
 + (16 x 16 x hundreds digit value)  
 + (16 x tens digit value)  
 + (ones digit value)

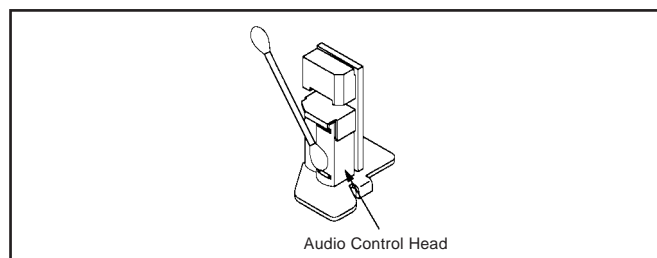
### CLEANING

#### 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.

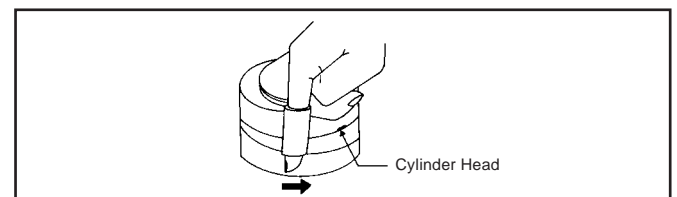
#### 3. CYLINDER

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.)

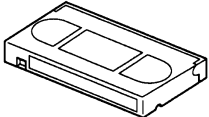
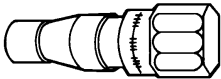

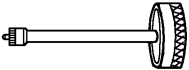
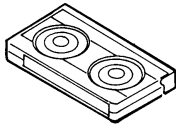
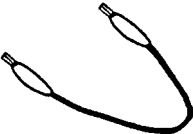
#### NOTE

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

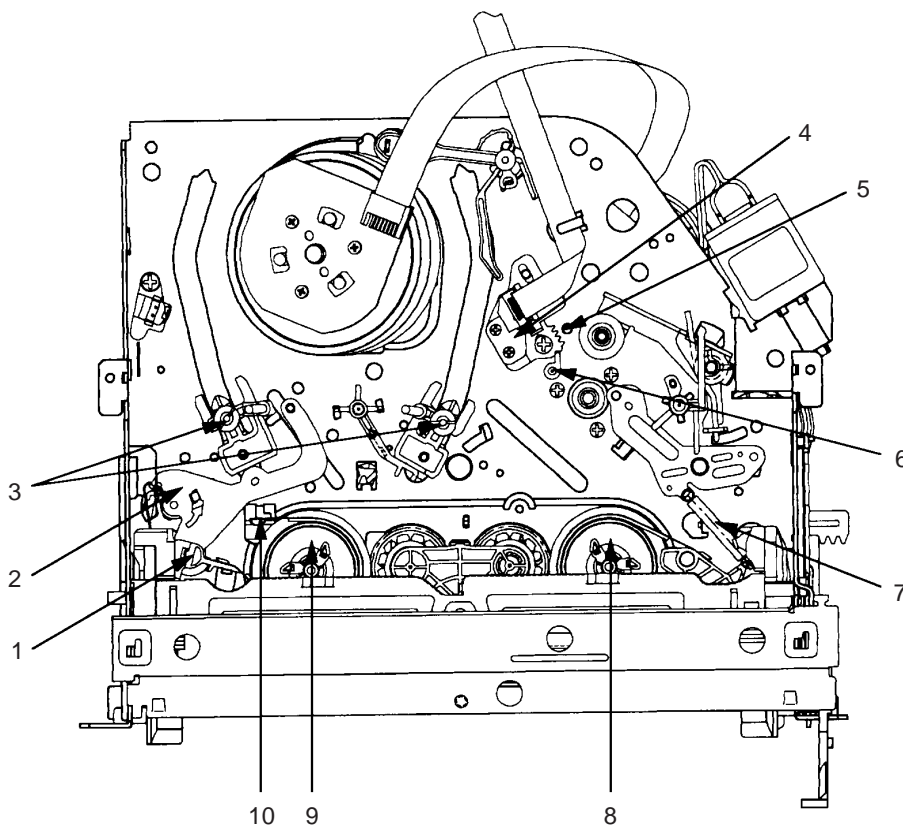
Use the chamois one by one.



## SERVICING FIXTURES AND TOOLS

<p><b>(4 heads model)</b> VHS Alignment Tape MHP</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



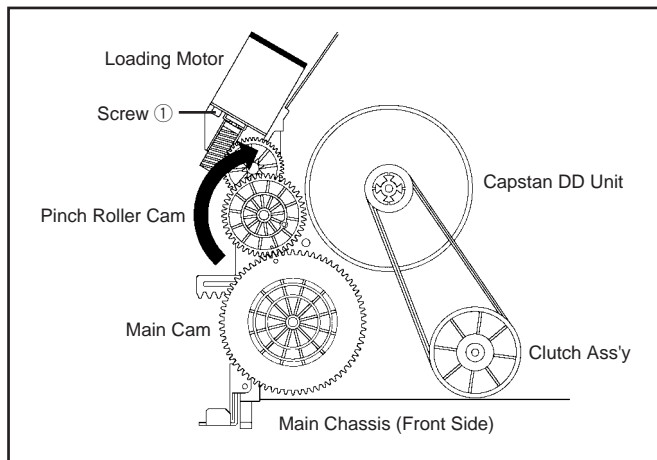
1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position



# MECHANICAL ADJUSTMENTS

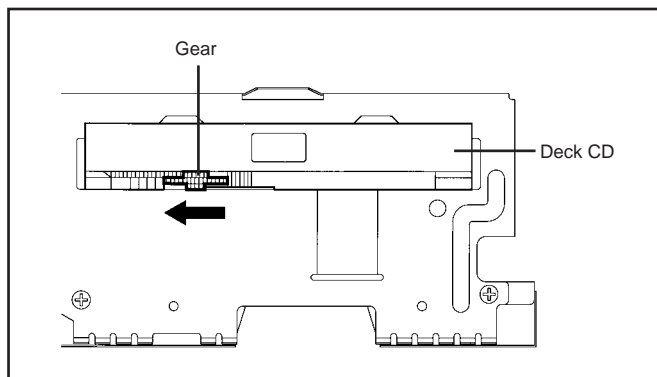
## TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet, Front Cabinet and DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Remove the screw ① of the Deck Chassis and remove the Loading Motor. **(Refer to Fig. 2)**
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 directions 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.



## 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 gear of Deck CD section in the direction of the arrow by hand, remove the disc from Deck CD.



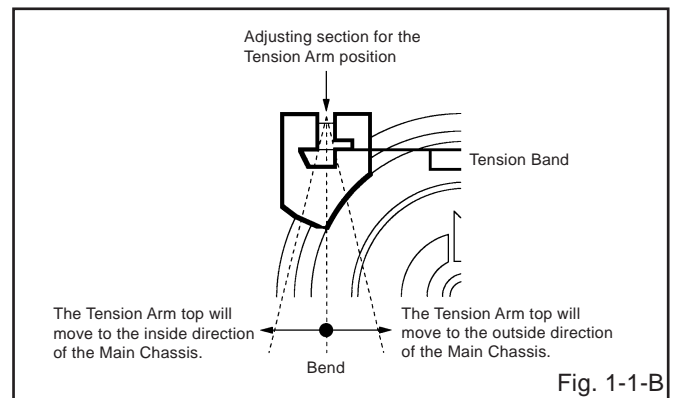
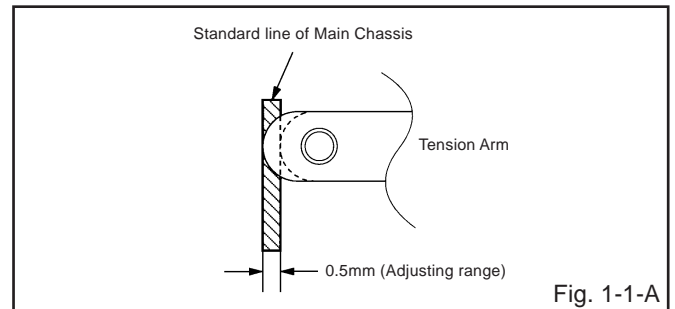
## 1. CONFIRMATION AND ADJUSTMENT

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.



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

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-1)**, 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.1-2-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. 1-2-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. 1-2-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. 1-2-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. 1-2-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.

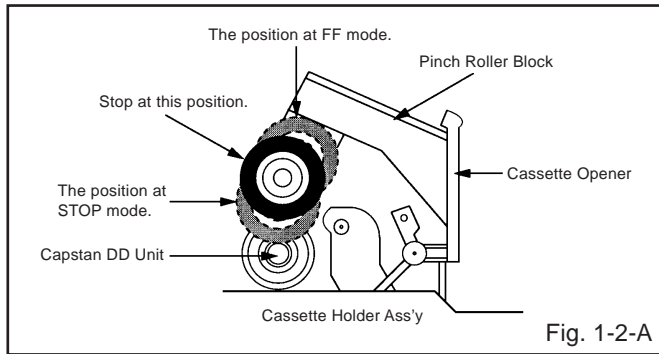


Fig. 1-2-A

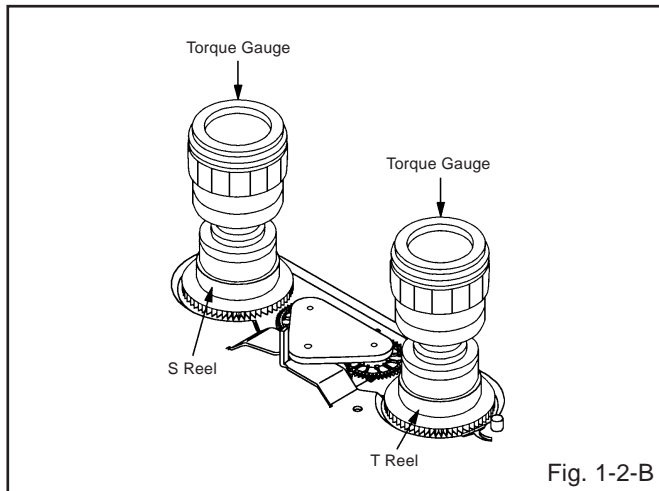


Fig. 1-2-B

### 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 **TP102 (Envelope)** and CH-2 to **TP101 (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 (PTU94002-2) 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)

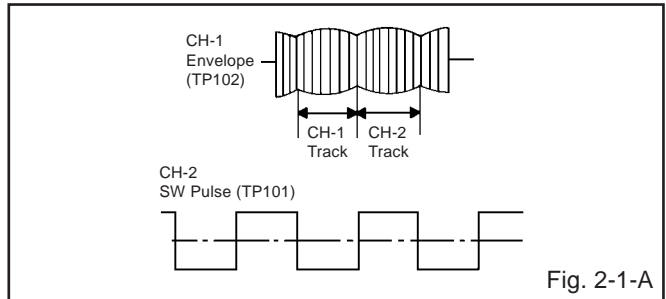


Fig. 2-1-A

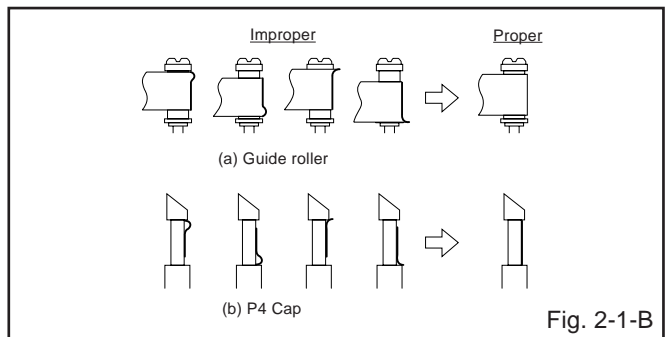


Fig. 2-1-B

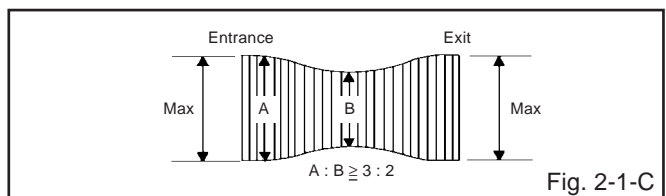


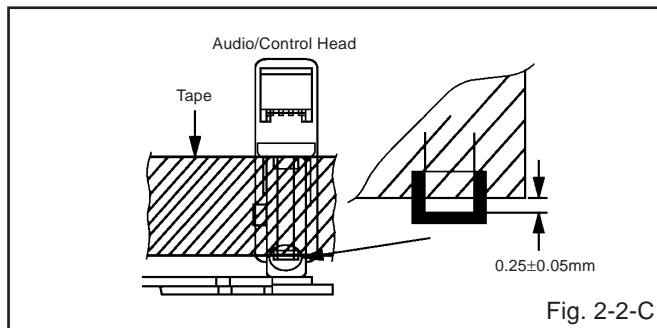
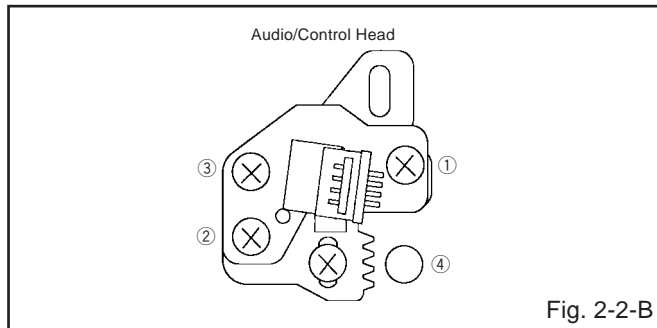
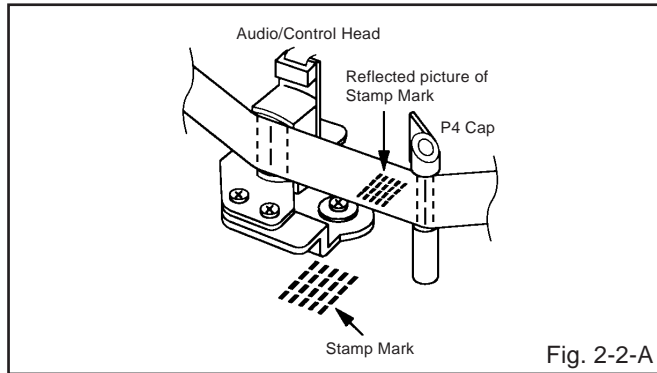
Fig. 2-1-C

## MECHANICAL ADJUSTMENTS

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

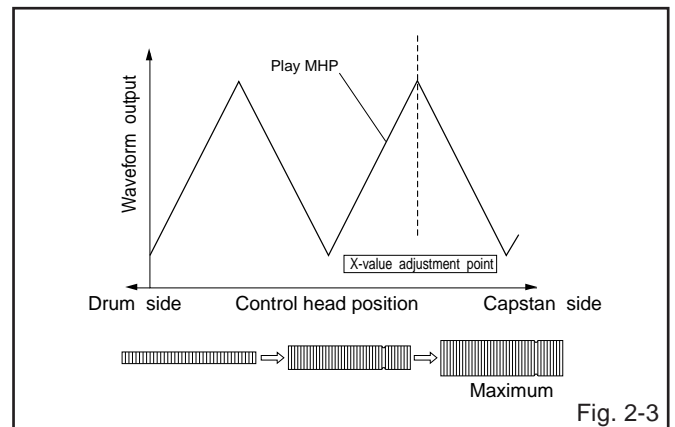
When the Tape Running Mechanism does not work well, adjust the following items.

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.



### 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 **TP101**, CH-2 to **TP102** and CH-3 to **Audio Out**.
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.



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 envelope 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 **TP101** and CH-2 to **pin 19 of J8005**.
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.

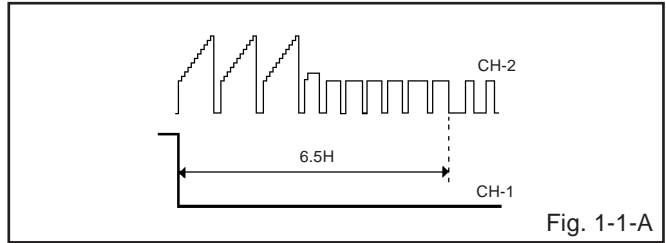


Fig. 1-1-A

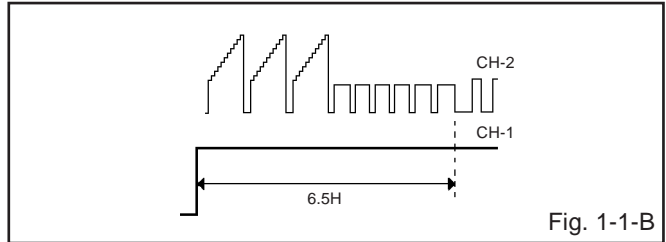
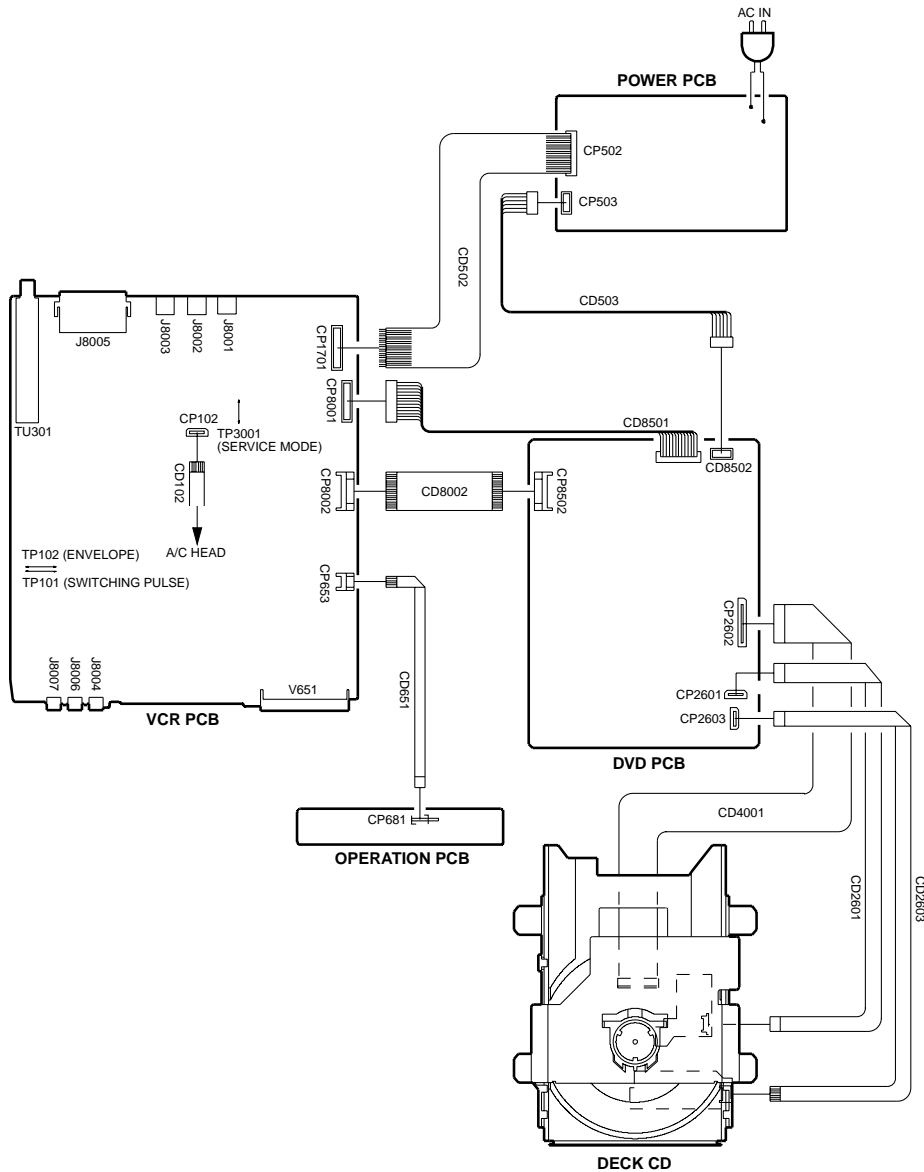


Fig. 1-1-B

## ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (Connector Connections)



## IC DESCRIPTIONS

### DVD PCB OEC6067A (IC2603)

PIN NO.	PIN NAME	I/O	DESCRIPTION
1	GND	-	GND Terminal
2	P2TP	I	TE + Input (CD)
3	P2TN	I	TE - Input (CD)
4	LDO2	O	LD Drive Terminal
5	MDI2	I	LD Monitor Terminal
6	VrD	O	Digital VREF
7	Vrfi	-	Filter Capacitance for Reference
8	Vdd	I	Vdd Terminal
9	DPAC	-	DPD AC Coupling Capacitance 1
10	DPBD	-	DPD AC Coupling Capacitance 2
11	DPD1	-	DPD Integration Capacitance 1
12	DPD2	-	DPD Integration Capacitance 1
13	SCB	I	Bus Line (Bit Clock)
14	SCL	I	Bus Line (Latch Signal)
15	SCD	I	Bus Line (Serial Data)
16	VRCK	I	Reference Clock Input
17	VCKF	-	Time Constant Correcting Capacitance
18	VccP	-	Vcc Terminal
19	LVL	O	Sub-Beam Adder Signal Output
20	TEO	O	TE Output
21	FEO	O	FE Output
22	DFTN	I	DPD Defect Terminal
23	Vcc	-	Vcc Terminal
24	NC	-	-
25	RPZ	O	RF Ripple Output 2
26	RPO	O	RF Ripple Output 1
27	RPB	-	Bottom of RF Ripple
28	RPP	-	Peak of RF Ripple
29	RFO <sub>n</sub>	O	RF Signal Output (differential output)
30	RFO <sub>p</sub>	O	RF Signal Output (differential output)
31	VccR	-	Vcc Terminal
32	RFS	I	RF Output Slice Level Control
33	TEB	I	TE Balance Control
34	FEB	I	FE Balance Control
35	DPDB	I	DPD Offset Control
36	Vcc2	-	Vcc Terminal
37	NC	-	-
38	NC	-	-
39	GND2	-	-
40	TCC1	I	Time Constant. Adjustment Terminal
41	RFDC	-	Capacitance for DC Feedback (RF)
42	VrA	O	Analog VREF
43	EQB	I	Boost Control for RF EQ
44	EQF	I	Band Width Control for RF EQ
45	MDI1	I	LD Monitor Terminal
46	LDO1	O	LD Drive Terminal
47	P1TN	I	TE - Input (DVD)
48	P1TP	I	TE + Input (DVD)
49	P1FN	I	FE - Input (DVD)
50	P1FP	I	FE + Input (DVD)

## IC DESCRIPTIONS

### DVD PCB OEC6067A (IC2603)

PIN NO.	PIN NAME	I/O	DESCRIPTION
51	LDP2	I	APC Polarity 1
52	P1DI	I	D Input (DVD)
53	P1CI	I	C Input (DVD)
54	P1BI	I	B Input (DVD)
55	P1AI	I	A Input (DVD)
56	GNDR	-	GND Terminal
57	LDP2	I	APC Polarity 2
58	P2AI	I	A Input (CD)
59	P2BI	I	B Input (CD)
60	P2CI	I	C Input (CD)
61	P2DI	I	D Input (CD)
62	GNDS	-	GND Terminal
63	P2FP	I	FE + Input (CD)
64	P2FN	I	FE - Input (CD)



## IC DESCRIPTIONS

### DVD PCB OEC6068A (IC2001)

PIN NO.	PIN NAME	I/O	DESCRIPTION
1	ASLCN	O	Data slice negative output
2	ASLCO	O	Analog data slice output ( Using Difference input, Digital or Analog slice data output )
3	DVSS	-	DAC-only ground
4	RO	O	R-channel output signal
5	DVDD	-	DAC-only power supply
6	DVR	O	Amp reference signal output
7	LO	O	L-channel output signal
8	DVSS	-	DAC-only power ground
9	XVSS	-	Oscillator-only ground
10	XI	I	Crystal oscillator input
11	XO	O	Crystal oscillator output
12	XVDD	-	Oscillator-only power supply
13	TESM0	-	Test pin
14	TESM1	-	Test pin
15	TESM2	-	Test pin
16	VDD3	-	3.3V digital power supply
17	VSS3	-	3.3V digital ground
18	VPFC	O	Clock PLL block phase / frequency comparator output
19	TEST0	I	Test mode pin
20	VLPFI	I	VCO filter input for the clock PLL
21	VLPFO	O	VCO filter output for the clock PLL
22	VSS3	-	3.3V digital ground
23	MON0	O	Test monitor
24	MON1		
25	MON2		
26	MON3		
27	MON4		
28	MON5		
29	MON6		
30	MON7		
31	MON8		
32	MON9		
33	VDD3	-	3.3V digital power supply
34	NC	-	-
35	NC	-	-
36	TEST1	I	Test mode pin
37	FLGA	I/O	General-purpose I/O or flag monitor
38	FLGB	I/O	General-purpose I/O or flag monitor
39	VSS3	-	3.3V digital ground
40	/RST	I	Reset pin
41	/MA	I	Microcomputer address enable signal
42	/MRD	I	Microcomputer data read signal
43	/MWR	I	Microcomputer data write signal
44	/MCE	I	Microcomputer chip enable signal
45	/MINT	O	Microcomputer interrupt signal
46	MD0	I/O	Microcomputer data bus
47	MD1		
48	MD2		
49	MD3		
50	MD4		
51	MD5		
52	MD6		
53	MD7		

## IC DESCRIPTIONS

### DVD PCB OEC6068A (IC2001)

PIN NO.	PIN NAME	I/O	DESCRIPTION
54	VDD5	-	5V power supply
55	NC	-	
56	NC	-	
57	SMCK	O	22M block clock output
58	VMCK	O	Data output block (signal processing block) clock output
59	VDD3	-	3.3V digital power supply
60	PD0	O	DVD/CD data output
61	VSS5	-	5V ground
62	PD1	O	DVD/CD data ground
63	PD2		
64	PD3		
65	PD4		
66	VSS3	-	3.3V digital ground
67	PD5	O	DVD/CD data output
68	PD6		
69	PD7		
70	PD8		
71	/PSYC	O	DVD data sector sync signal
72	/PDRQ	O	DVD data transfer block
73	PDCK	O	DVD data transfer clock
74	VDD5	-	5V power supply
75	TESM3	-	Test pin
76	DIGI	I	1-bit DAC Digital In input
77	TESM4	-	Test pin
78	VDD3	-	3.3V digital power supply
79	BA0	O	External RAM address output
80	BA1		
81	BA2		
82	BA3		
83	VSS5	-	5V ground
84	BA4	O	External RAM address output
85	BA5		
86	BA6		
87	BA7		
88	BA8		
89	VDD3	-	3.3V digital power supply
90	/BOE	O	External RAM / OE signal
91	/BRAS	O	External RAM /RAS signal
92	/BCAS	O	External RAM /CAS signal
93	/BWL	O	External RAM Lower / WE signal
94	/BWU	O	External RAM Upper / WE signal
95	VDD5	-	5V power supply
96	BD0	I/O	External RAM data input / output
97	BD1		
98	BD2		
99	BD3		
100	BD4		
101	BD5		
102	BD6		
103	BD7		
104	BD8		
105	VSS3	-	3.3V digital ground

## IC DESCRIPTIONS

### DVD PCB OEC6068A (IC2001)

PIN NO.	PIN NAME	I/O	DESCRIPTION
106	BD9	I/O	External RAM data input / output
107	BD10		
108	BD11		
109	BD12		
110	VSS5	-	5V ground
111	BD13	I/O	External RAM data input / output
112	BD14		
113	BD15		
114	NC	-	-
115	NC		
116	VDD3	-	3.3V digital power supply
117	PLCK	I/O	PLL block clock input / output
118	TESM5	-	Test pin
119	TESM6	-	Test pin
120	TESM7	-	Test pin
121	TESM8	-	Test pin
122	VSS3	-	3.3V digital ground
123	CFC1	O	VCO frequency control signal
124	CFC2	O	VCO frequency control signal
125	PPW	O	Phase comparator offset adjusting voltage output
126	PESV	I	Phase comparator offset adjusting voltage input
127	PVSS	-	3.3V PLL block-only ground
128	PESP	O	Phase comparator offset adjusting signal output
129	PDOP1	O	DVD/CD phase control signal (positive)
130	PDON1	O	DVD/CD phase control signal (negative)
131	PDOP2	O	DVD/CD phase control signal (positive)
132	PDON2	O	DVD/CD phase control signal (negative)
133	LPFN	I	Data PLL low-pass filter inverted input
134	LPFO	O	Data PLL low-pass filter output
135	PVREF	-	Data PLL block-only reference power supply
136	VCOREF	I	VCO reference
137	VCOF	I	VCO automatic adjusting filter output
138	PVDD	-	3.3V PLL block-only power supply
139	SLCO1	I/O	Data slice 6-bit DAC output (Using Difference Input, RFO <sub>n</sub> signal input)
140	TESM9	-	Test pin
141	TEST2	I	Test mode pin
142	RFC <sub>D</sub>	I	CD RF signal input (Using Difference Input, RFO <sub>p</sub> signal input)
143	RFD <sub>D</sub>	I	DVD RF signal input (Using Difference Input, RFO <sub>p</sub> signal input)
144	AVDD	-	3.3V analog block-only power supply
145	RFCT	I	RFRP center voltage input (latched at zero cross)
146	RFZ <sub>I</sub>	I	RFRP signal input (latched at zero-cross)
147	TEZ <sub>I</sub>	I	Tracking error signal input (latched at zero-cross)
148	AWIN	I	Active-wide PLL control signal input
149	AVSS	-	3.3V analog block-only ground
150	FEI	I	Focus error signal input
151	TEI	I	Tracking error signal input
152	RFSB	I	RF level or subbeam signal summing input
153	RFRP	I	RFRP signal input
154	AVSS	-	3.3V analog block-only ground
155	TESM10	-	Test pin
156	EXTAD	I	General-purpose external ADC input
157	VREF	-	Analog block-only reference power supply: 1.65V
158	FOO	O	Focus EQ outputs
159	TRO	O	Tracking EQ output
160	AVDD	-	3.3V analog block-only power supply

## IC DESCRIPTIONS

### DVD PCB OEC6068A (IC2001)

PIN NO.	PIN NAME	I/O	DESCRIPTION
161	AWCTL	O	Active-wide PLL control output
162	FMO	O	Feed EQ output
163	DMO	O	Disc EQ output
164	TEBC	O	Tracking balance control signal
165	FEBC	O	Focus balance control signal
166	DPDC	O	DPD error signal's pit depth adjusting signal
167	EQBC	O	D Input(CDRF wideband boost adjusting signal)
168	ANMON	O	General-purpose PWM output
169	/DFCT	O	Black dot detection signal
170	VRCK	O	RF EQ response control clock
171	VSS3	-	3.3V digital ground
172	SCD	O	Head amp serial data
173	SCL	O	Head amp serial data latch pulse
174	SCB	O	Head amp serial data clock
175	FGIN	I	Disc FG signal input (with self-biasing circuit)
176	ASLCP	O	Data Slice positive output

## IC DESCRIPTIONS

### DVD PCB OEC6069A (IC1001)

PIN NAME	I/O	DESCRIPTION
D0 to D7	I/O	Data: 0 to 7 for data bus
D8 to D15	I/O	Data: 8 to 15 for data bus
A0 to A7	O	Address: 0 to 7 for address bus
A8 to A15	O	Address: 8 to 15 for address bus
A16 to A23	O	Address: 16 to 23 for address bus
RDX	O	Read: Strobe signal for reading external memory
WRX	O	Write LL: Strobe signal for writing data on pins D0 to D7
RASOX	O	Row address strobe 0: Outputs /RAS strobe for DRAM if address is within specified address area
ROMC5X	O	Chip select 2: Outputs "low" if address is within specified address area
ZRC5X	O	Chip select 3: Outputs "low" if address is within specified address area
TBFC5X	O	Port 84: Output port (output "high" when initialized)
SVCEX	O	Chip select 5: Outputs "low" if address is within specified address area
WAITX	I	Wait: Signal used to request CPU bus wait
LCA50X	O	Lower column address strobe 0: Outputs lower CAS strobe for DRAM if address is within specified address area
UCA50X	O	Upper Column address strobe 0: Outputs upper CAS strobe for DRAM if address is within specified address area
OEOX	O	Output enable 0: Outputs read enable signal for DRAM
WEOX	O	Write enable 0: Outputs write enable signal for DRAM
NMI_INH	O	Port B0: Output port (output "high" when initialized)
PGBSX	O	Port B1: Output port (output "high" when initialized)
CVSX	O	Port B2: Output port (output "high" when initialized)
S2X	O	Port B3: Output port (output "high" when initialized)
S1X	O	Port B4: Output port (output "high" when initialized)
PROMCK	O	Timer output 1: 8-bit timer 0 or 1 output
PROMDA	O	Timer output 3: 8-bit timer 2 or 3 output
WP	I/O	Port D0: I/O port
I45INTX	I/O	Port D1: I/O port
DMFG	I/O	Port D5: I/O port
CTS	I/O	Port E0: I/O port
TBFINTX	I/O	Port E1: I/O port
DISKWOI	I/O	Port E2: I/O port
SVINTX	I/O	Port E5: I/O port
DSTBX	I/O	Port E6: I/O port
DSPSO	O	Serial send data 0
DSPSI	I	Serial receive data 0
DSPCK	I/O	Port F2: I/O port
TXD	O	Serial send data 1
RXD	I	Serial receive data 1
RTS	I	Serial data receive enable 1
AN0 to AN7	I	Analog input: Input to 10-bit AD converter
DAOUT0	O	DA output 0: Output from 8-bit DA converter 0
DAOUT1	O	DA output 1: Output from 8-bit DA converter 1
LOMN	O	Terminal count 0: Outputs "high" strobe when counter value of micro-DMA channel 0 is "0"
LOMP	O	Terminal count 1: Outputs "high" strobe when counter value of micro-DMA channel 1 is "1"
I45RSTH	O	Terminal count 2: Outputs "high" strobe when counter value of micro-DMA channel 2 is "0"
SVRSTX	O	Terminal count 3: Outputs "high" strobe when counter value of micro-DMA channel 3 is "0"
LSRDVD	I/O	Port H4: I/O port (schmitt input)
SCLK	I/O	Port: I/O port
SO	I/O	Port: I/O port
DACSQX	I/O	Port: I/O port
PLLCSX	I/O	Port: I/O port
NTPLX	I/O	Port: I/O port
VSW	I	Non-maskable interrupt request pin: Interrupt request pin with falling edge Can also be operated at rising edge by program. (schmitt input)
AM0, 1	I	Address mode: Selects external Data Bus width
TEST0, 1	I	Test: Input "low" when using

## IC DESCRIPTIONS

### DVD PCB OEC6069A (IC1001)

PIN NAME	I/O	DESCRIPTION
CLK	O	Clock output: Outputs system clock
X1/X2	I/O	Oscillator connecting pin
RESET	I	Reset: Initializes LSI (with pull-up resistor) (schmitt input)
VREFH	I	Pin for reference voltage input to AD converter ("high" level)
VREFL	I	Pin for reference voltage input to AD converter ("low" level)
DAREFH	I	Pin for reference voltage input to DA converter ("high" level)
DAREFL	I	Pin for reference voltage input to DA converter ("low" level)
ADVCC	-	Power supply pin for 10-bit AD converter
ADVSS	-	GND pin for 10-bit AD converter (0V)
DAVCC	-	Power supply pin for 8-bit DA converter
DAVSS	-	GND pin for 8-bit DA converter (0V)
CLVCC	-	Power supply pin for clock doubler
CLVSS	-	GND pin-for clock doubler
DVCC	-	Power supply pin ( + 5V)
DVSS	-	GND pin (0V)



## IC DESCRIPRIONS

### VCR PCB OEC7079D (IC3001)

Pin No.	Pin Name	I/O	Description
1	MSSW B	I	Input terminal(B) of mecha state sensor.
2	MSSW A	I	Input terminal(A) of mecha state sensor.
3	KEY-A	I	Key A input.
4	KEY-B	I	Key B input.
5	AFT-SC	I	AFT S Curve input for tuner.
6	EOT	I	Tape end sensor input signal.
7	A-ENV	I	Input terminal of audio envelope.
8	V-ENV	I	Input terminal of video RF envelope.
9	PERI_CTL or AGC	I	PERI_CTL and AGC are changed by Initial setting. PERI_CTL : Control the 21 pin IC output. AGC : Detection terminal AGC voltage of TUNER.
10	BOT	I	Tape start sensor input signal.
11	CAP FWD	O	Capstan forward and backward command.
12	CAP LIMIT	O	Switch the maximum output current of the Capstan Motor.
13	D.V SYNC	O	Intative V-SYNC signal output during the special playback.
14	REMOCON IN	I	Input the infrared remote control.
15	SECAM IN	I	Input the color system SECAM.
16	S-DET-H	O	Output "H" when S detection by PAL SP.
17	DVD_RESET	O	Output terminal of DVD reset.
18	V.HEAD SW	O	Output terminal of Head Switch.(video)
19	A.HEAD SW	O	Output terminal of Head Switch.(audio)
20	POWER ON H	O	For control the user power switch ON/OFF.
21	CENTER LED	O	Center LED(EOT/BOT).
22	A.MUTE-H	O	This pin output the HIGH to mute the sound at the switching point between E-E and V-V during the special playback.
23	SECAM-H	O	Control Y/C IC at SECAM .
24	SP-H	O	Output High when SP on EE screen. The other is Low.
25	FF/REW L	O	Output "L" when fast forwarding or rewinding.
26	CAP ON	O	Control the Capstan Motor rotation direction.
27	FL_CS	O	CS for FL driver IC control.
28	DVD_MUTE	O	MUTE terminal for DVD when power ON/OFF .
29	NA REC-H	O	Control the Bias OSC for audio head.
30	VV-H	O	If the EE/VV is "VV" ,output"H".
31	DVD_POWER_A	O	Control terminal of DVD POWER(3.3V).
32	N.C. or PERI_CTL-L	I/O	N.C. and PERI_CTL-L are changed by Initial setting. In case of ATS is PERI_STL-L. The others are N.C..
33	N.C.	O	Not used.
34	N.C.	-	Not used.
35	N.C.	-	Not used.
36	CLKSEL	-	5V.
37	VCC	-	5V.
38	X IN	I	Connect the main crystal(12 MHz).
39	X OUT	O	Connect the main crystal(12 MHz).
40	VSS	-	Ground.
41	XC IN	I	Subclock pulse(32.768 KHz).
42	XC OUT	O	Subclock pulse(32.768 KHz).
43	RESET	I	Input terminal of reset signal.
44	SERVICE 1	I	Setting of service mode 1.
45	SERVICE 2	I	Setting of service mode 2.
46	SUB_CS	O	Submicom communication control CS.
47	LDM_CTL	O	Control terminal of the Loading Motor.
48	ZERO MUTE	I	MUTE terminal for DVD when power ON/OFF .
49	SUB_RESET	O	Control submicom RESET.
50	LEM-SEG1	O	Control the LED display module(SEG1)

## IC DESCRIPTIONS

### VCR PCB OEC7079D (IC3001)

Pin No.	Pin Name	I/O	Description
51	LEM-SEG2	O	Control the LED display module(SEG2)
52	LEM-SEG3	O	Control the LED display module(SEG3)
53	LEM-SEG4	O	Control the LED display module(SEG4)
54	LEM-SEG5	O	Control the LED display module(SEG5)
55	LEM-SEG6	O	Control the LED display module(SEG6)
56	LEM-SEG7	O	Control the LED display module(SEG7)
57	LEM-SEG8	O	Control the LED display module(SEG8)
58	LEM-SEG9	O	Control the LED display module(SEG9)
59	LEM-SEG10	O	Control the LED display module(SEG10) Initial setting is FLD : FLD POWER ON/OFF terminal.
60	LEM-GRID1	O	Control the LED display module(GRID1) Initial setting is FLD : VCR LED for a drive.
61	LEM-GRID2	O	Control the LED display module(GRID2)
62	LEM-GRID3	O	Control the LED display module(GRID3)
63	LEM-GRID4	O	Control the LED display module(GRID4)
64	LEM-GRID5	O	Control the LED display module(GRID5)
65	SUB_DATA_OUT	O	Output the Data of Submicom.
66	SUB_DATA_IN	I	Input the Data of Submicom.
67	SUB_CLK	O	Output the Clock of Submicom.
68	CG-DATA	O	Output the Data of OSD IC.
69	CG-CS	O	Output the CS signal of OSD IC.
70	CG-CLK	O	Output the Clock of OSD IC.
71	IIC-CLK	O	Clock output to IIC.
72	IIC-SDA	I/O	DATA input/output to IIC.
73	32K MONI	O	Output 32.768KHz monitor(16.384KHz output) to check the clock.
74	Hi-Fi MUTE	O	Control the Hi-Fi IC.
75	V-REC-ST	O	Control the Head Amp for video and Hi-Fi audio.
76	PICTURE CTL	O	Output pulse to control the Y/C IC for sharpness.
77	CAP-CTL	O	Output servo of the capstan motor.
78	CYL-CTL	O	Output pulse to control the drum motor.
79	REEL-S	I	Input terminal of reel sensor supply.
80	REEL-T	I	Input terminal of reel sensor take up.
81	TAB SW	I	Input of TAB SW .
82	P.FAIL	I	Input for the detection of power interruption.
83	N.C.	I	Not used.
84	C SYNC	I	Input Compound synchronized signal.
85	CFG	I	Input terminal for Capstan FG signal detection.
86	N.C.	O	Not used.
87	DFPG	I	Input terminal for compounded PG and FG signal of Drum motor.
88	AMP VSS	-	Ground.
89	AMP V.OUT	O	Output the analogue Amp standard voltage.
90	AMP V.IN	I	Input the analogue Amp standard voltage.
91	CTL-	I/O	Input and output terminal of CTL AMP.
92	CTL+	I/O	Input and output terminal of CTL AMP.
93	CTL SW OUT	O	Output terminal of CTL AMP positive.
94	CTL AMP IN	I	Input terminal of CTL AMP.
95	AMP C	-	AC Ground of CTL AMP.
96	CTL VSS	-	Connect the VSS.
97	CTL AMP OUT	I/O	Output terminal of CTL AMP circuit.
98	AMP VCC	-	5V.
99	A VCC	-	Voltage terminal for general circuit.
100	MESECAM-M/ SQPR-H	I	Distinction input terminal of MESCAM and SQPB.

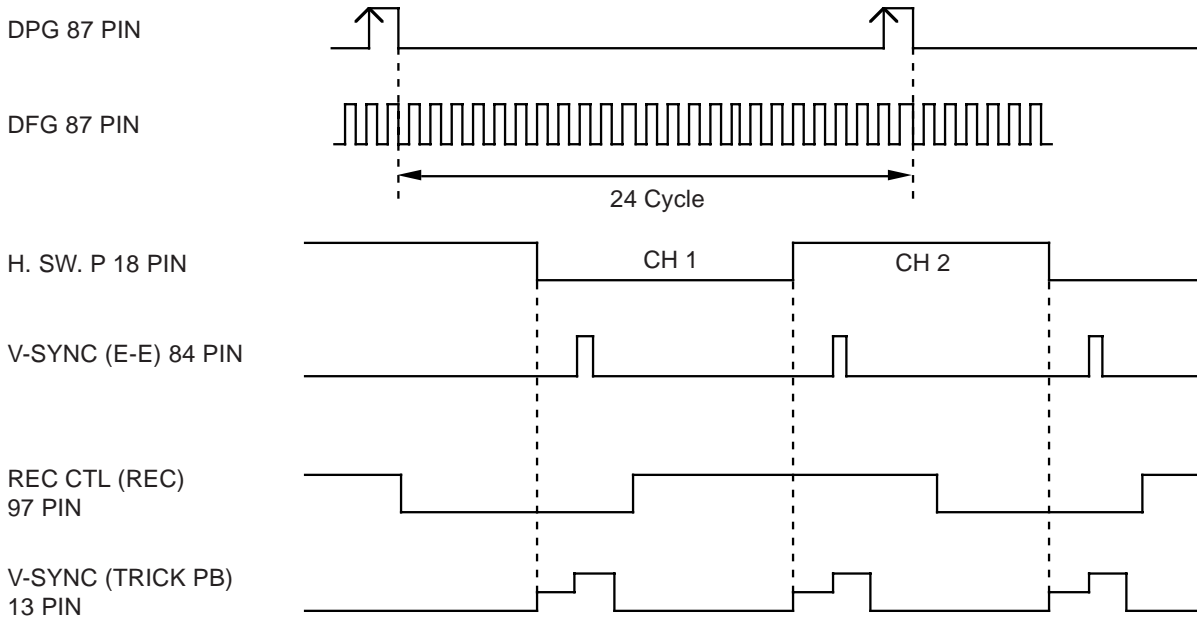
## IC DESCRIPRIONS

### VCR PCB OEC7080A (IC3005)

Pin No.	Pin Name	I/O	Description
1	D3	O	DVD LED.
2	D4	O	VCR LED.
3	D5	I	Not used. (GND)
4	D6	I	Not used. (GND)
5	D7	I	Not used. (GND)
6	SCK	I	Input synchronized clock for VCR Communication.
7	SOUT	O	Output serial I/O for VCR Communication.
8	SIN	I	Input serial I/O for VCR Communication.
9	RESET	-	Input reset.
10	CNVSS	-	GND.
11	XOUT	O	4MHz oscillation.
12	XIN	I	4MHz oscillation.
13	VSS	-	GND.
14	VDD	-	VDD.
15	VDCE	-	GND.
16	INT0	I	Input software UART for VCR Communication.
17	P31	I	Not used. (GND)
18	AIN0	I	Not used. (GND)
19	AIN1	I	Not used. (GND)
20	AIN2	I	Not used. (GND)
21	AIN3	I	Not used. (GND)
22	P00	I	Not used. (GND)
23	P01	I	Not used. (GND)
24	P02	I	Not used. (GND)
25	P03	I	Not used. (GND)
26	P10	I	Not used. (GND)
27	P11	I	Not used. (GND)
28	P12	I	Not used. (GND)
29	P13	I	Not used. (GND)
30	D0	O	Output software UART for VCR Communication.(TK)
31	D1	I	Input software UART for VCR Communication.(RX)
32	D2	I	Input CS.

# SERVO TIMING CHART

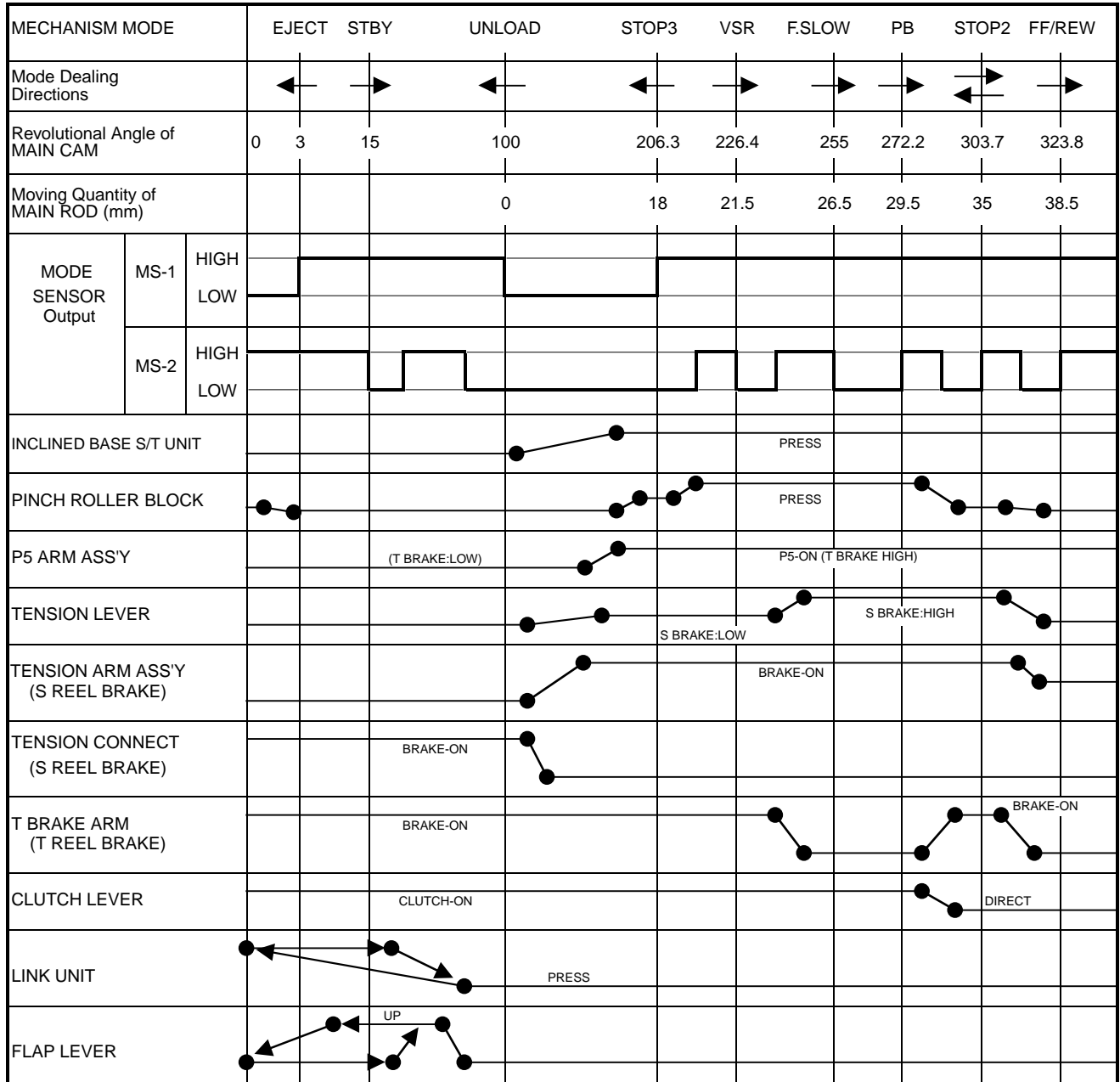
VCR PCB IC3001 (OEC7079D)



• WAVEFORM CHANGES DEPENDED ON THE TAPE SPEED

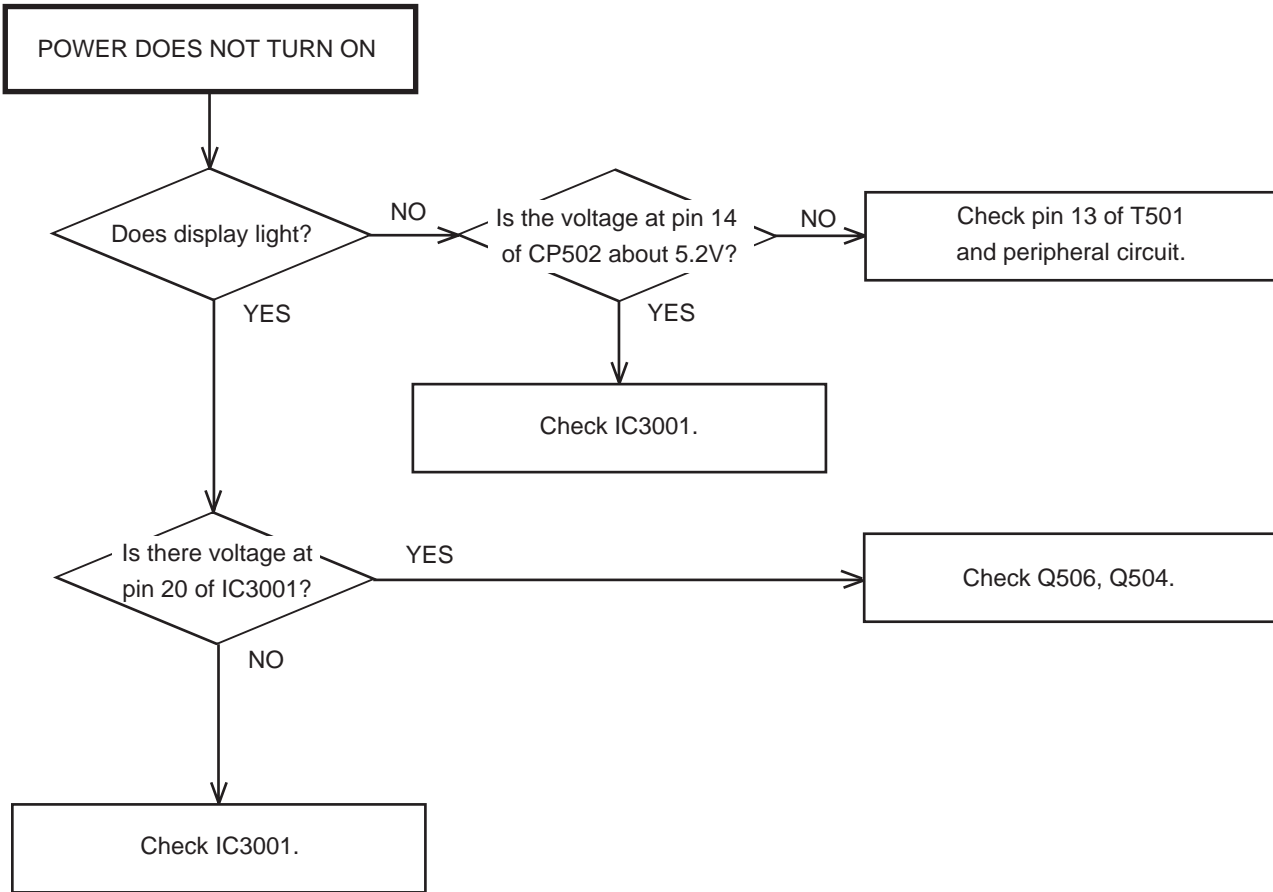
# MECHANISM TIMING CHART

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

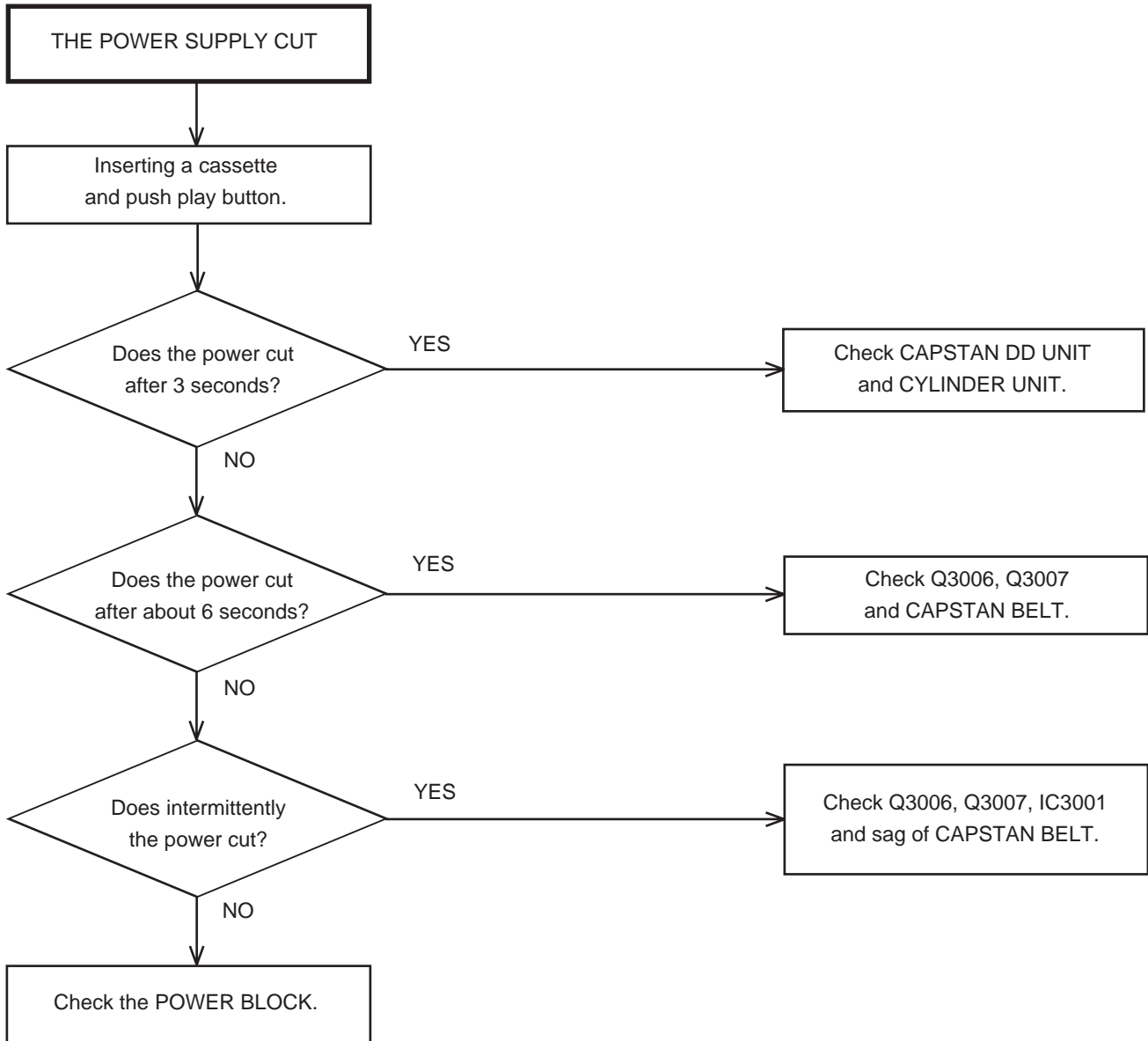


# TROUBLESHOOTING GUIDE

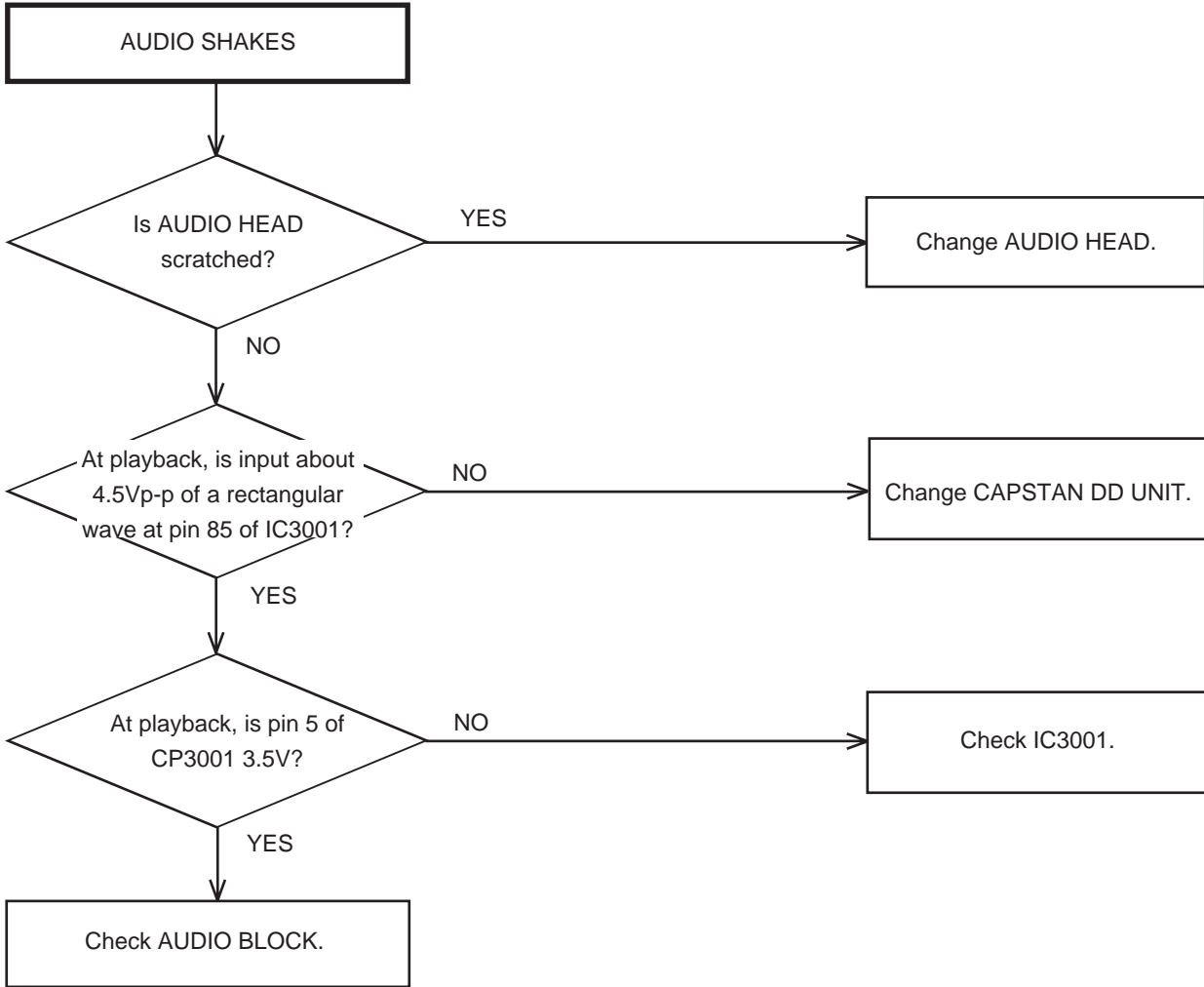
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# TROUBLESHOOTING GUIDE

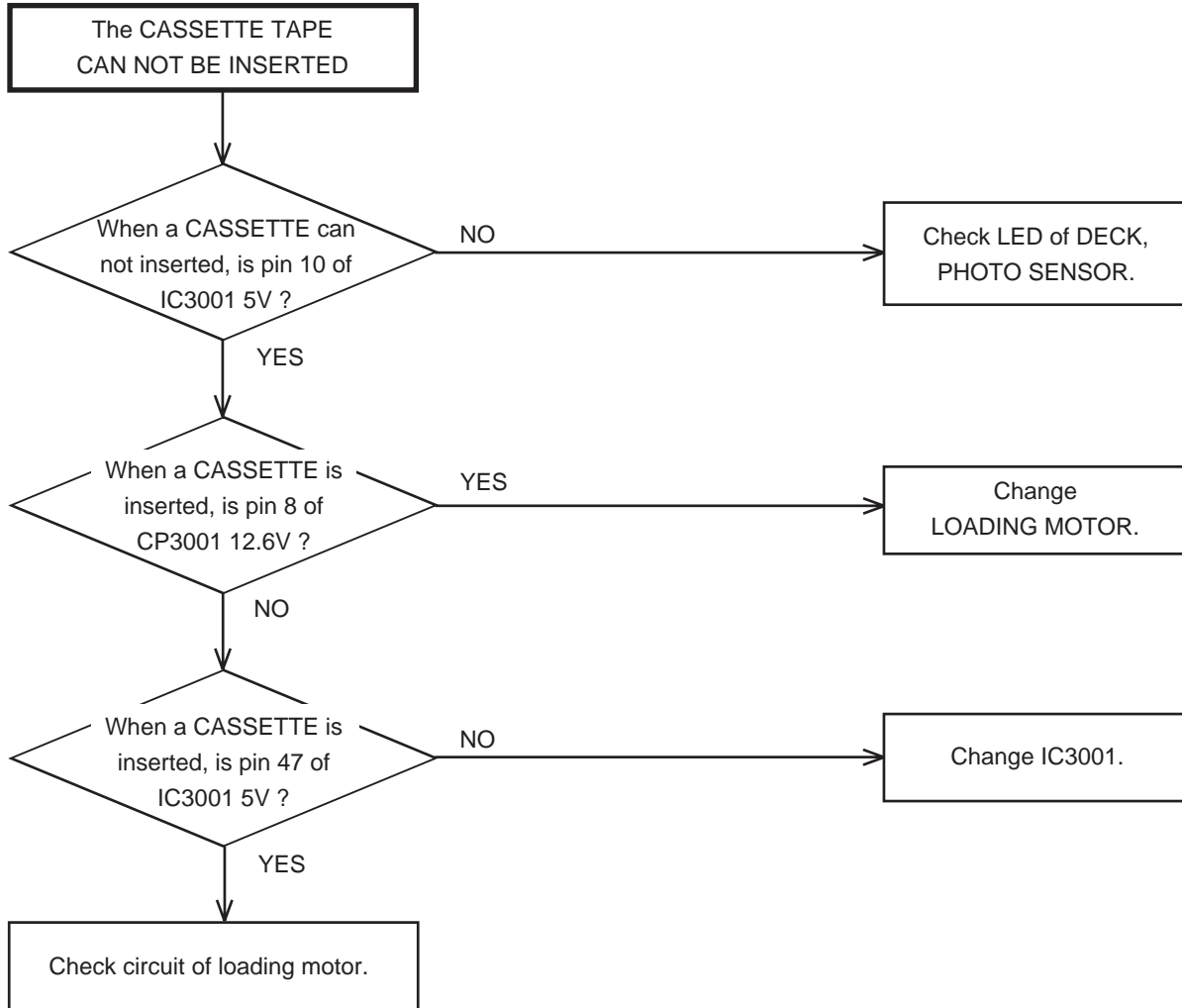


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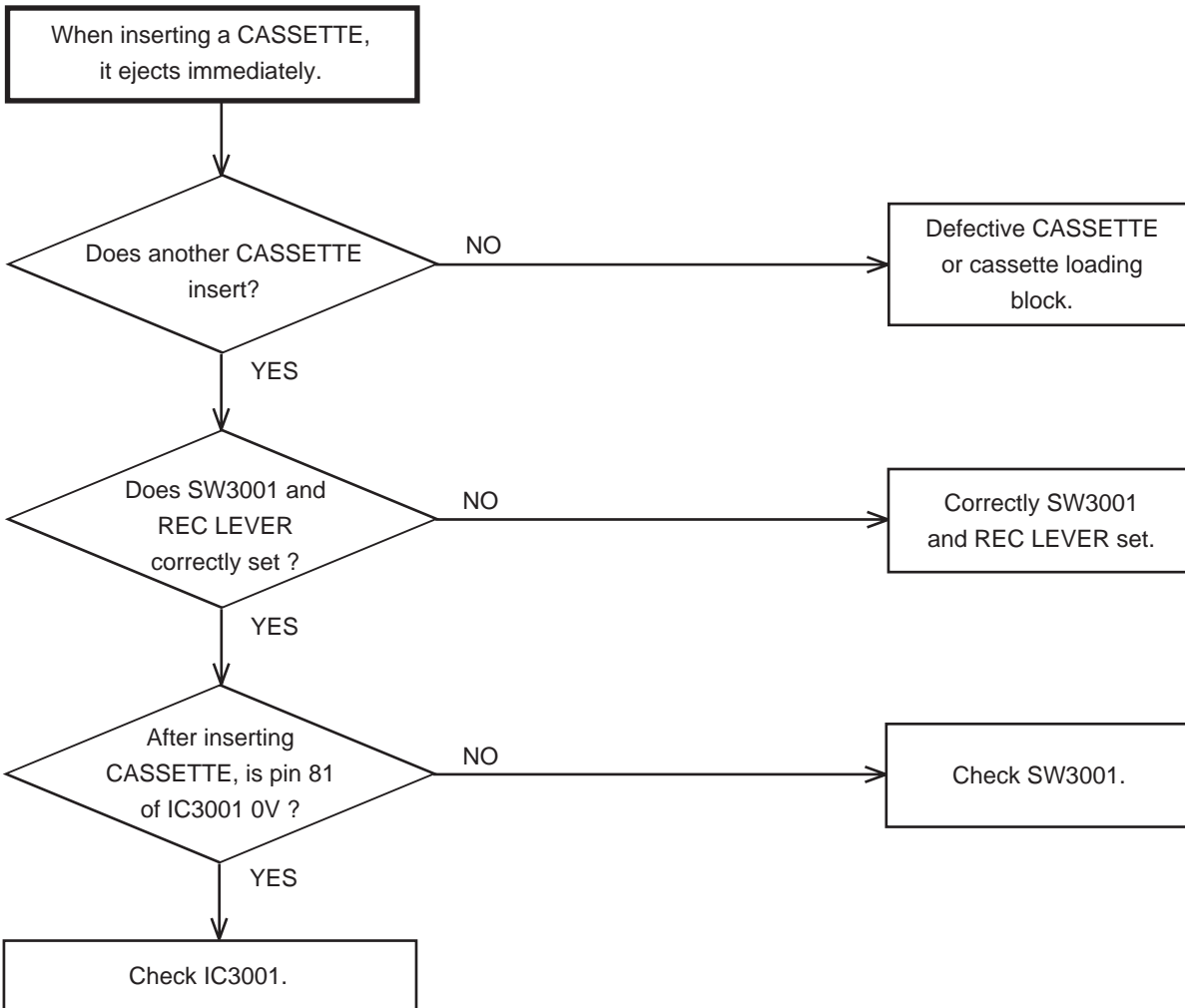
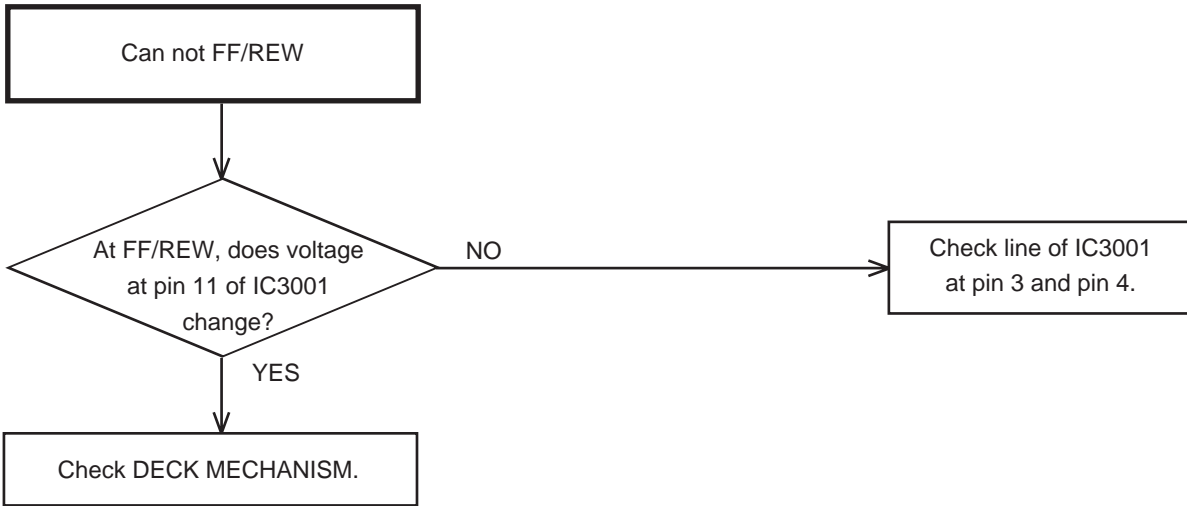




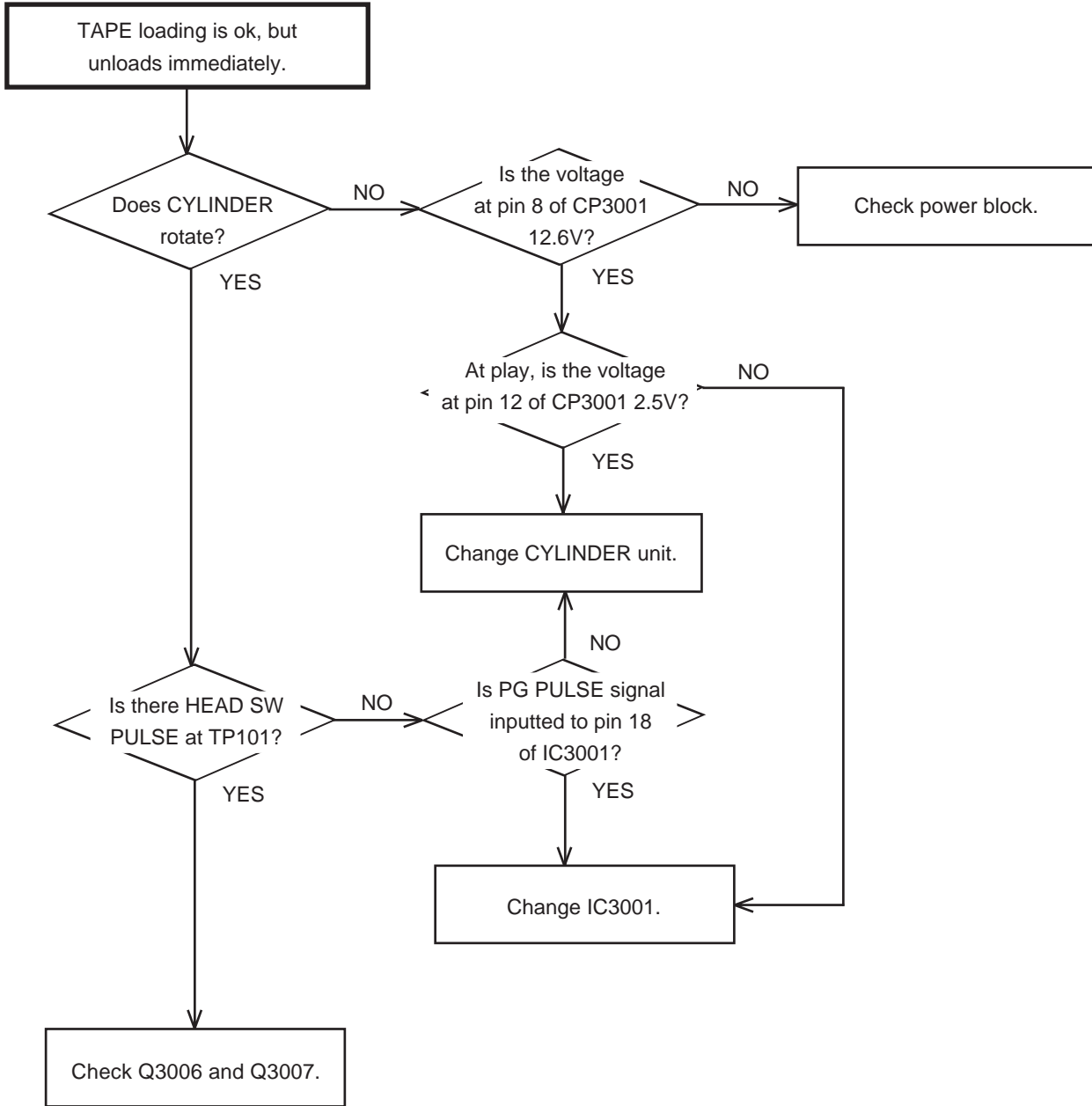
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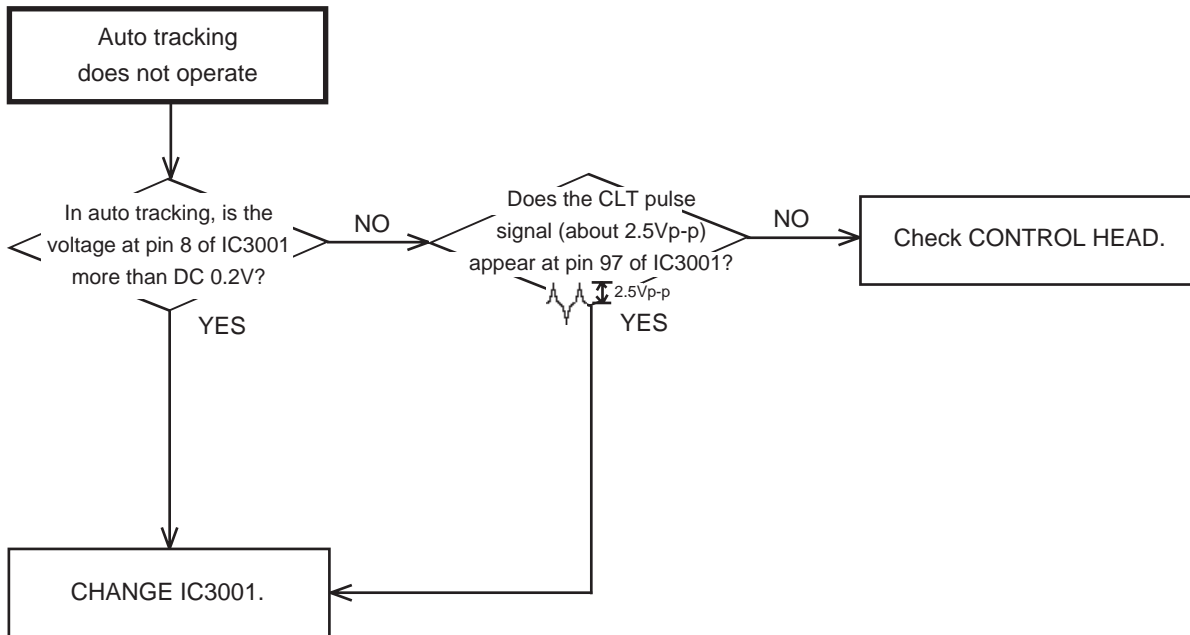
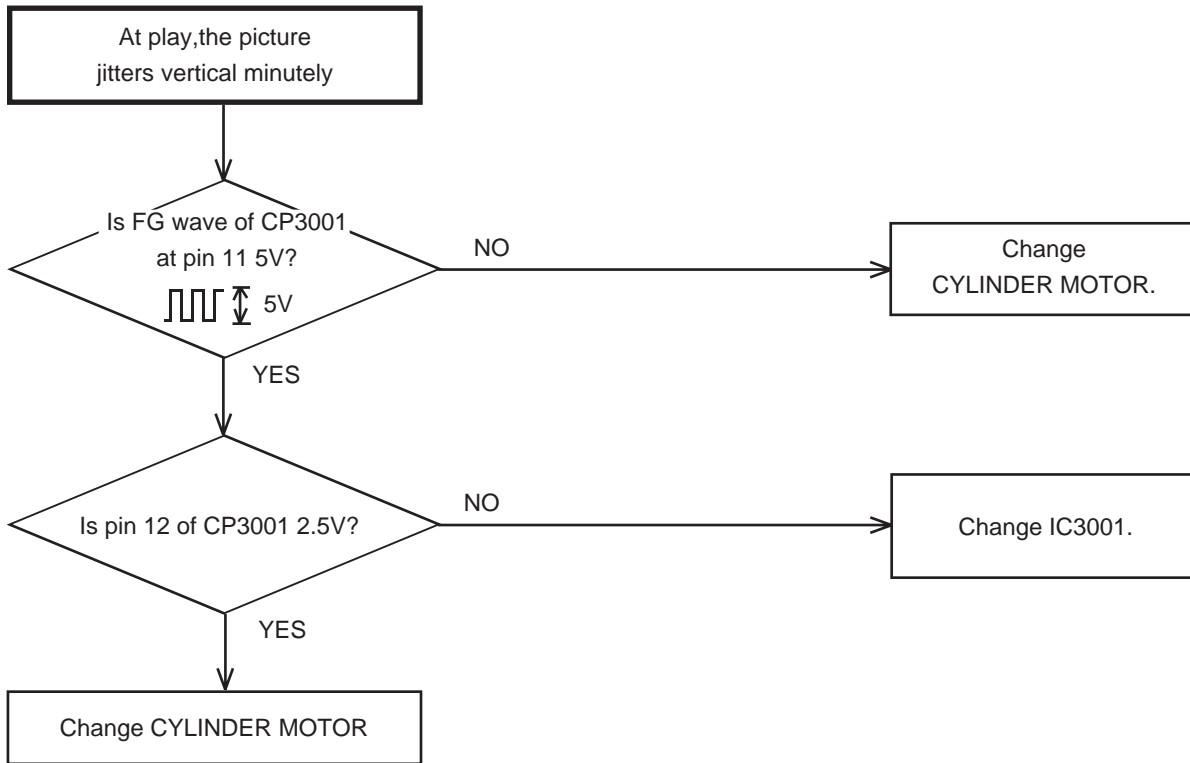
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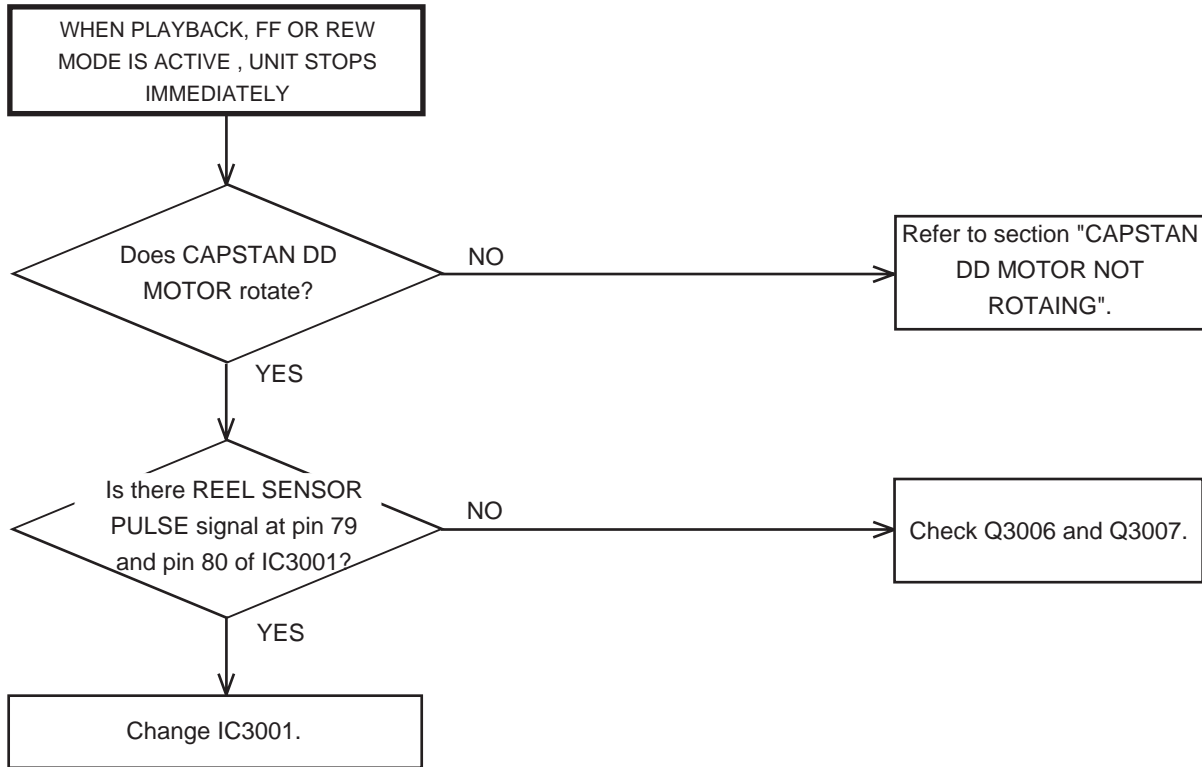
# TROUBLESHOOTING GUIDE



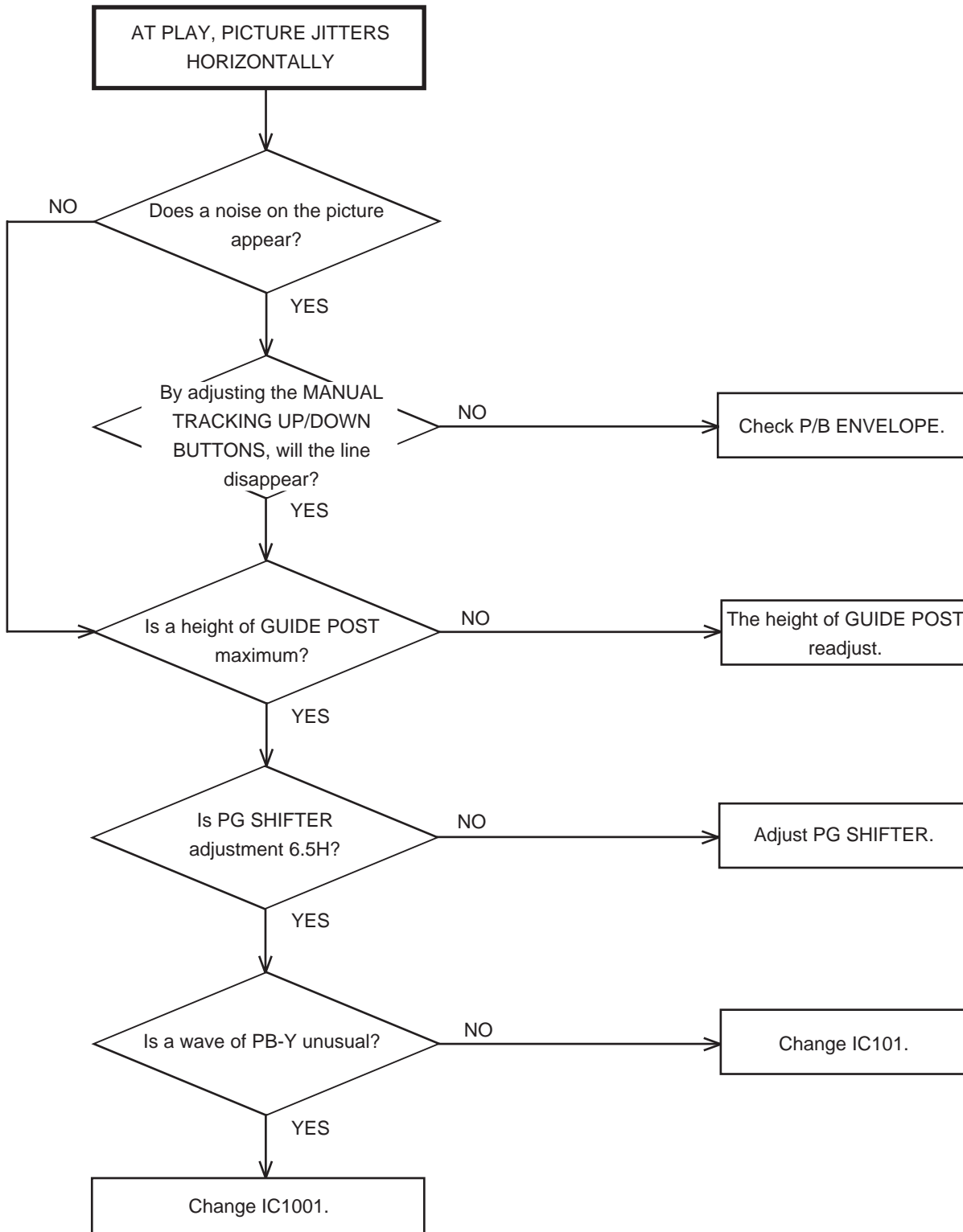
# TROUBLESHOOTING GUIDE



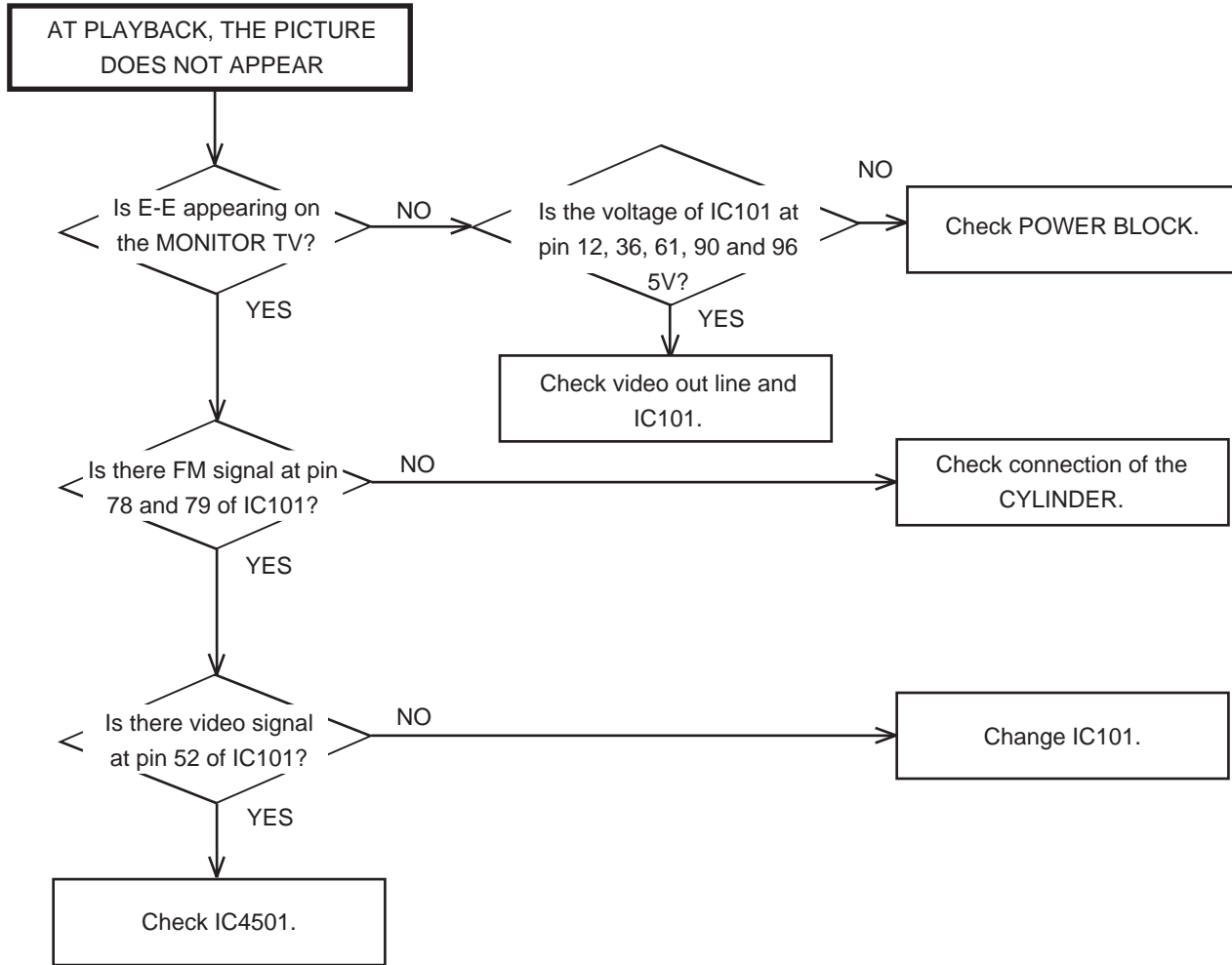
# TROUBLESHOOTING GUIDE



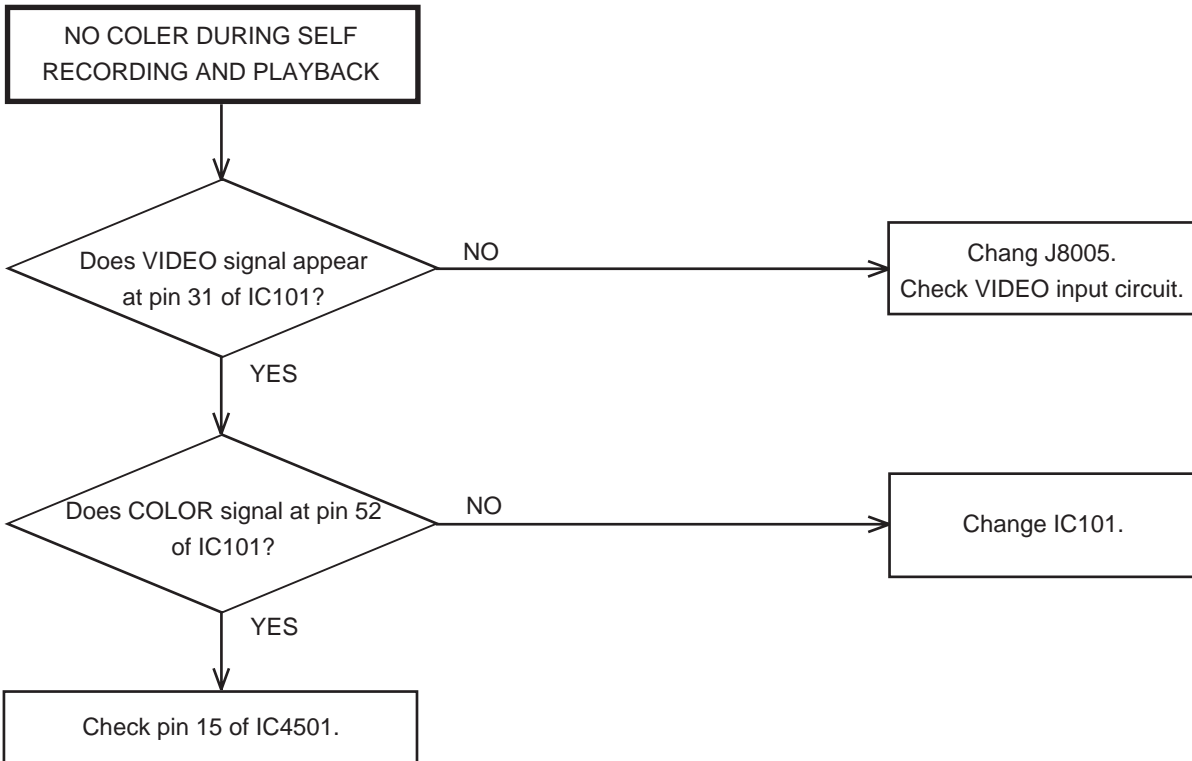
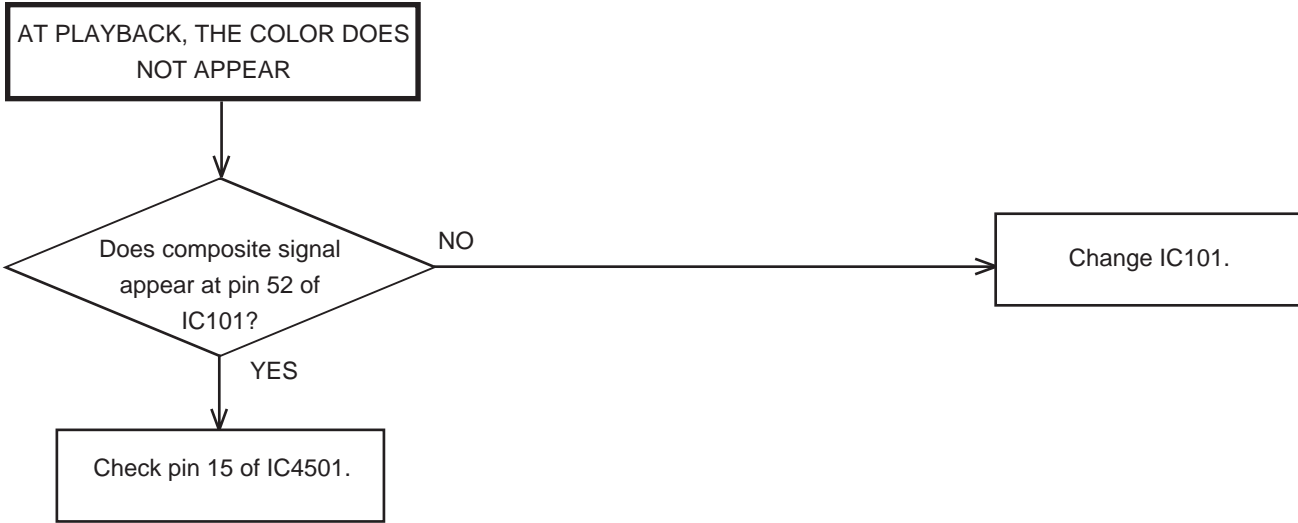
# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE

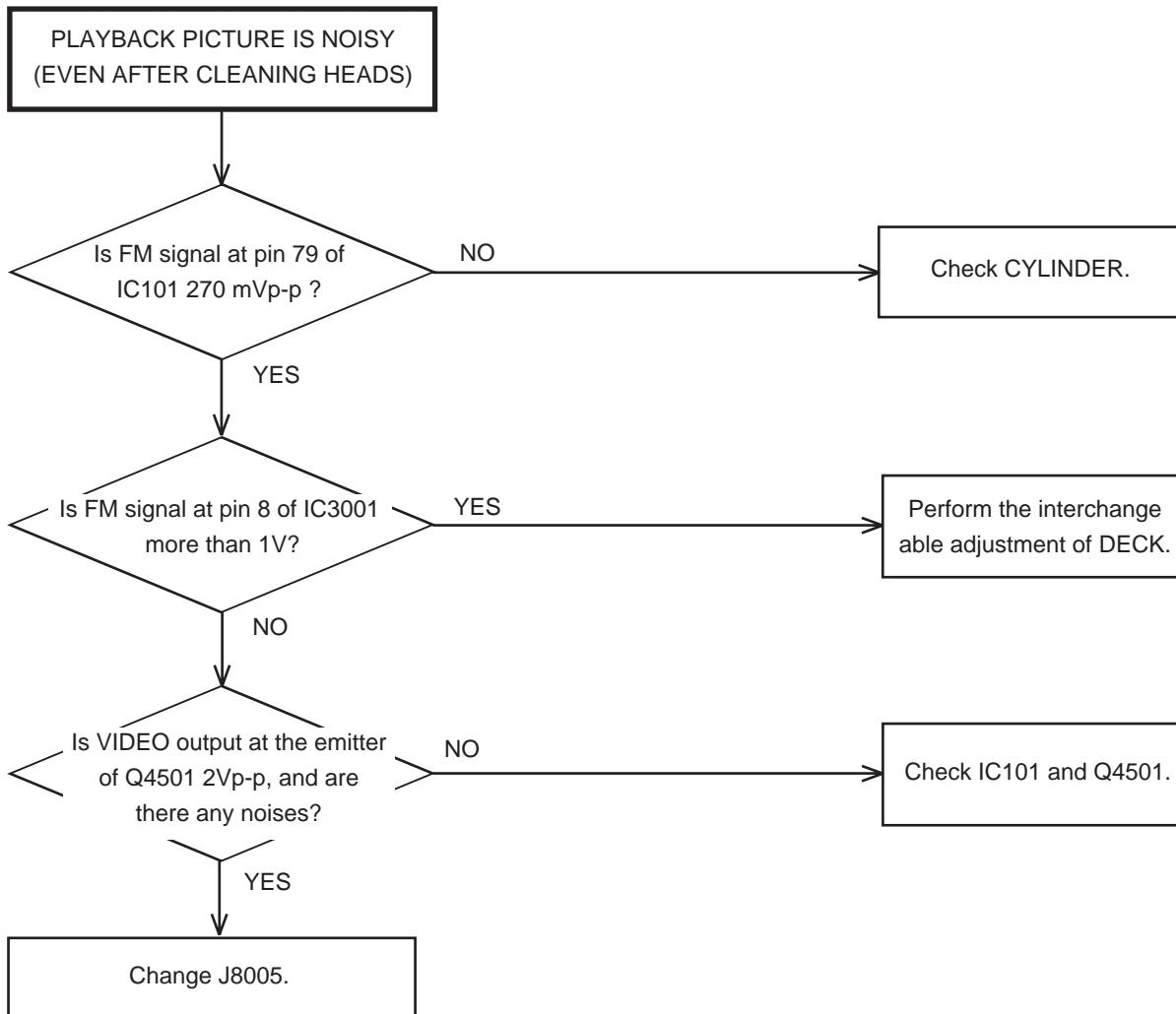
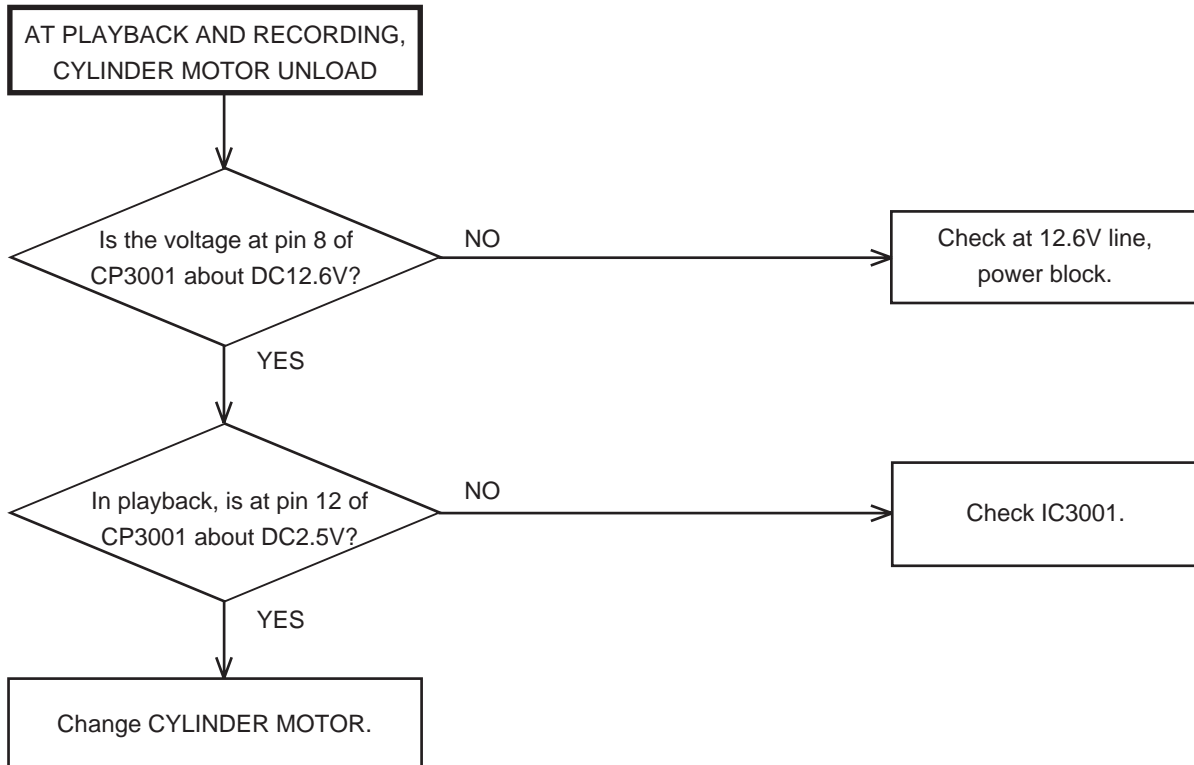


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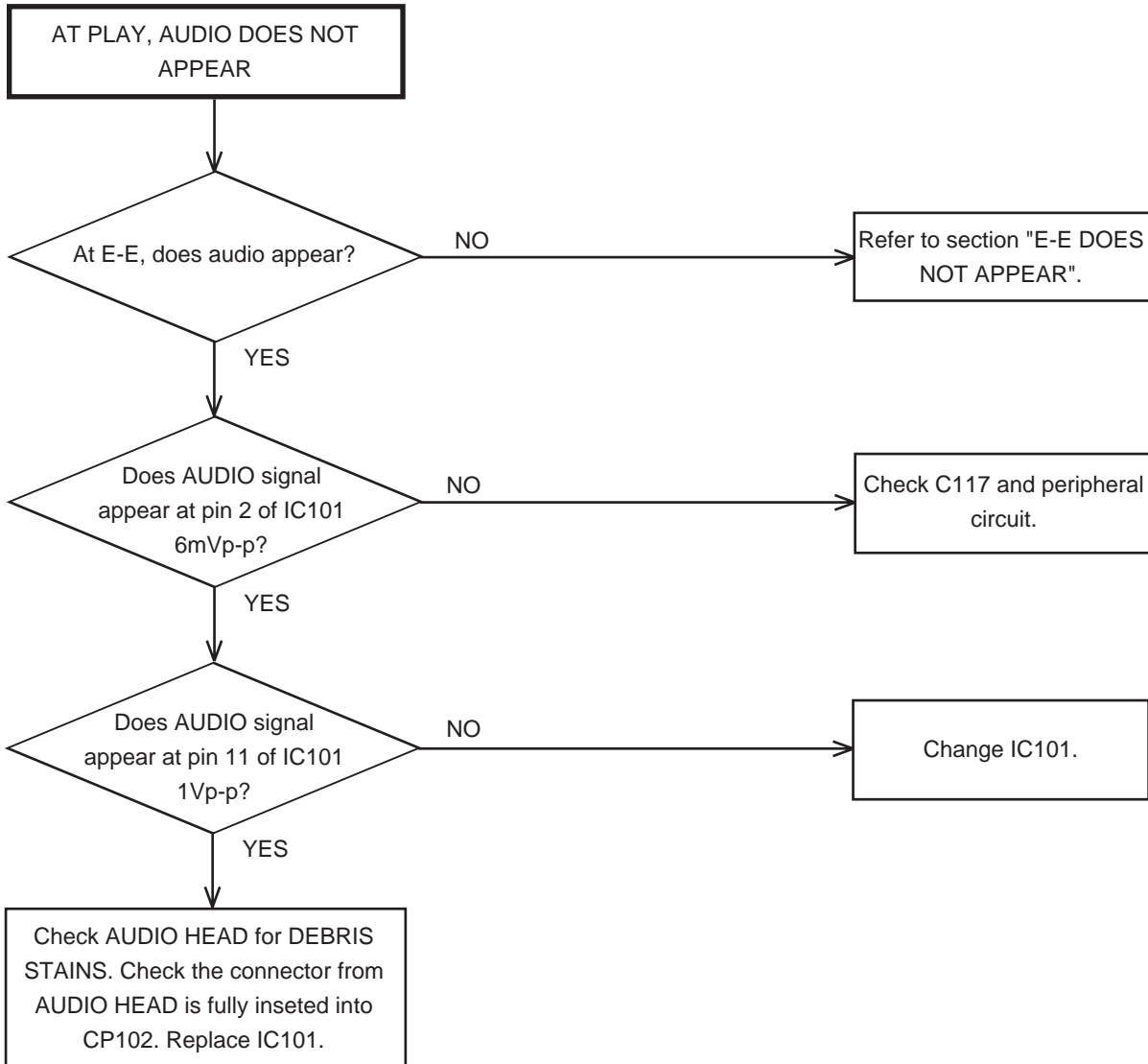




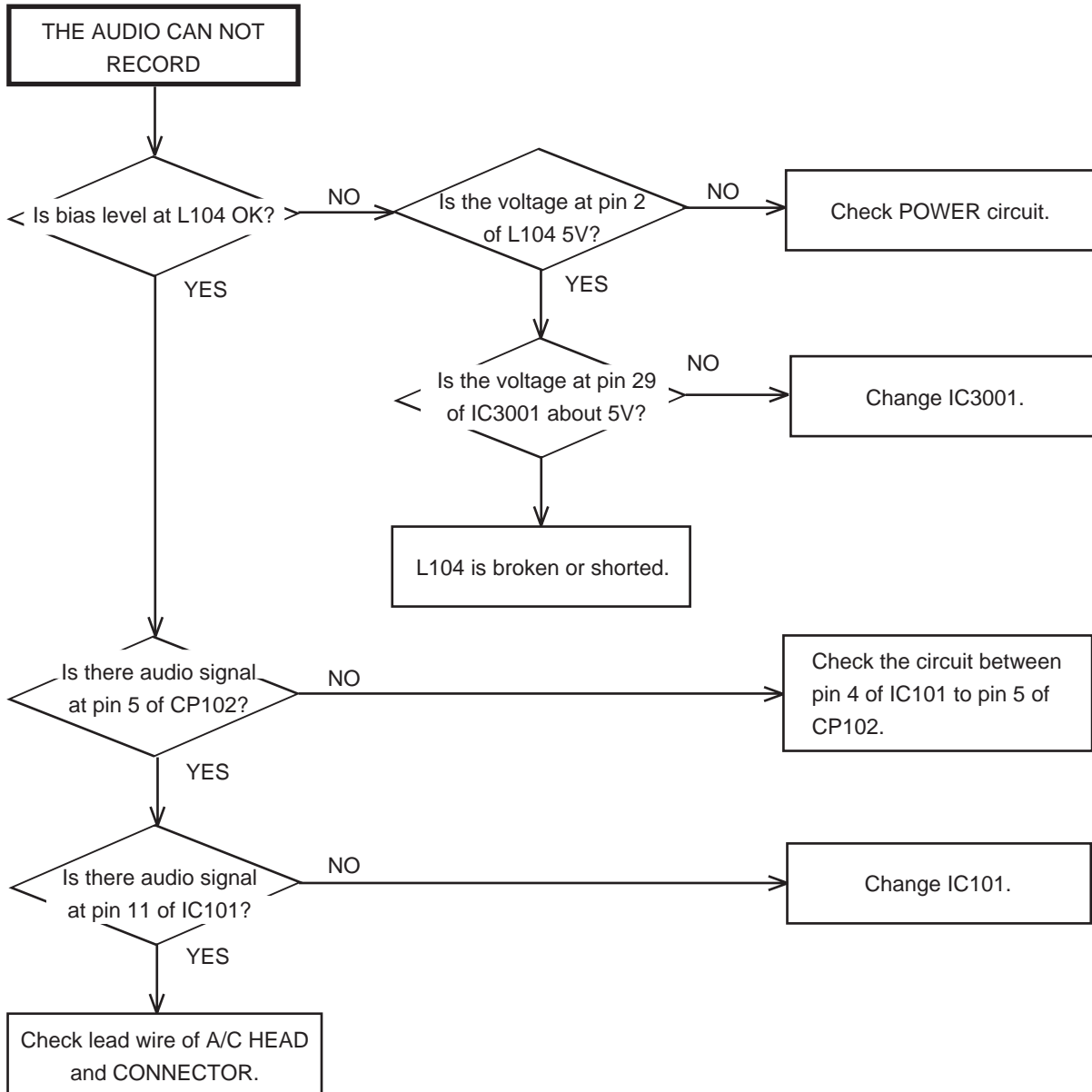
# TROUBLESHOOTING GUIDE



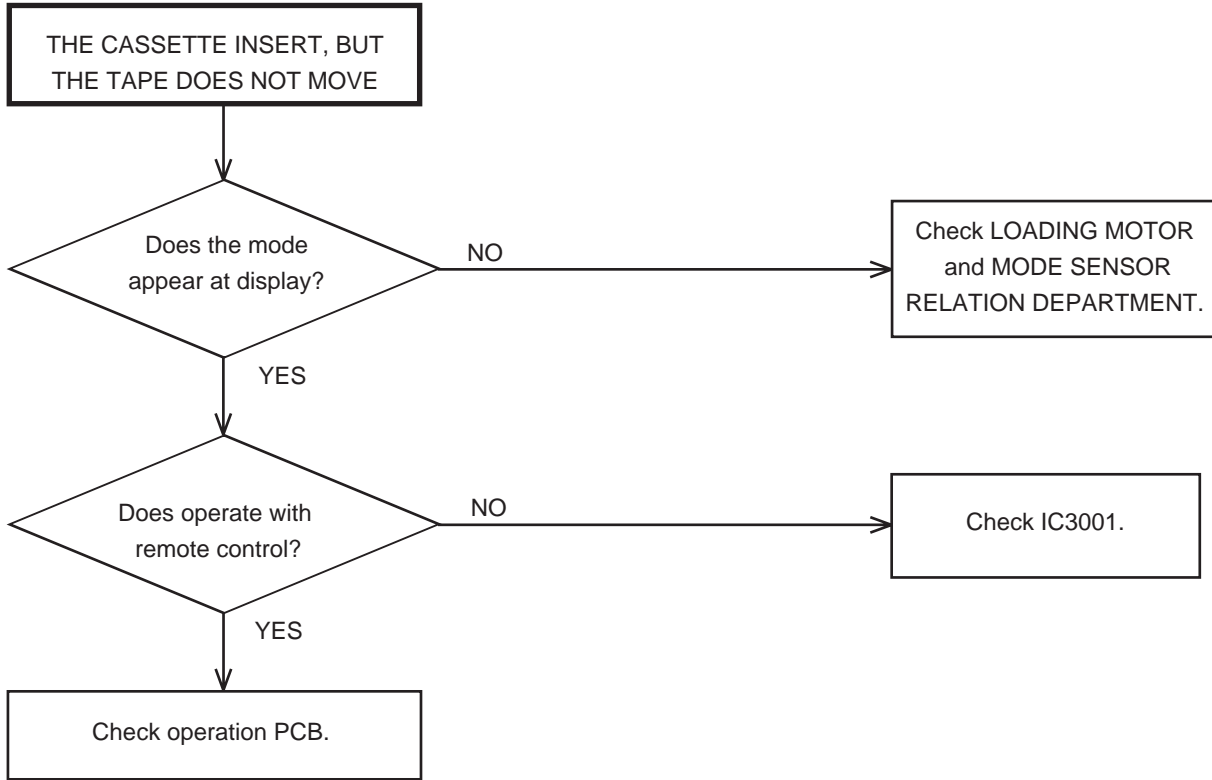
## TROUBLESHOOTING GUIDE



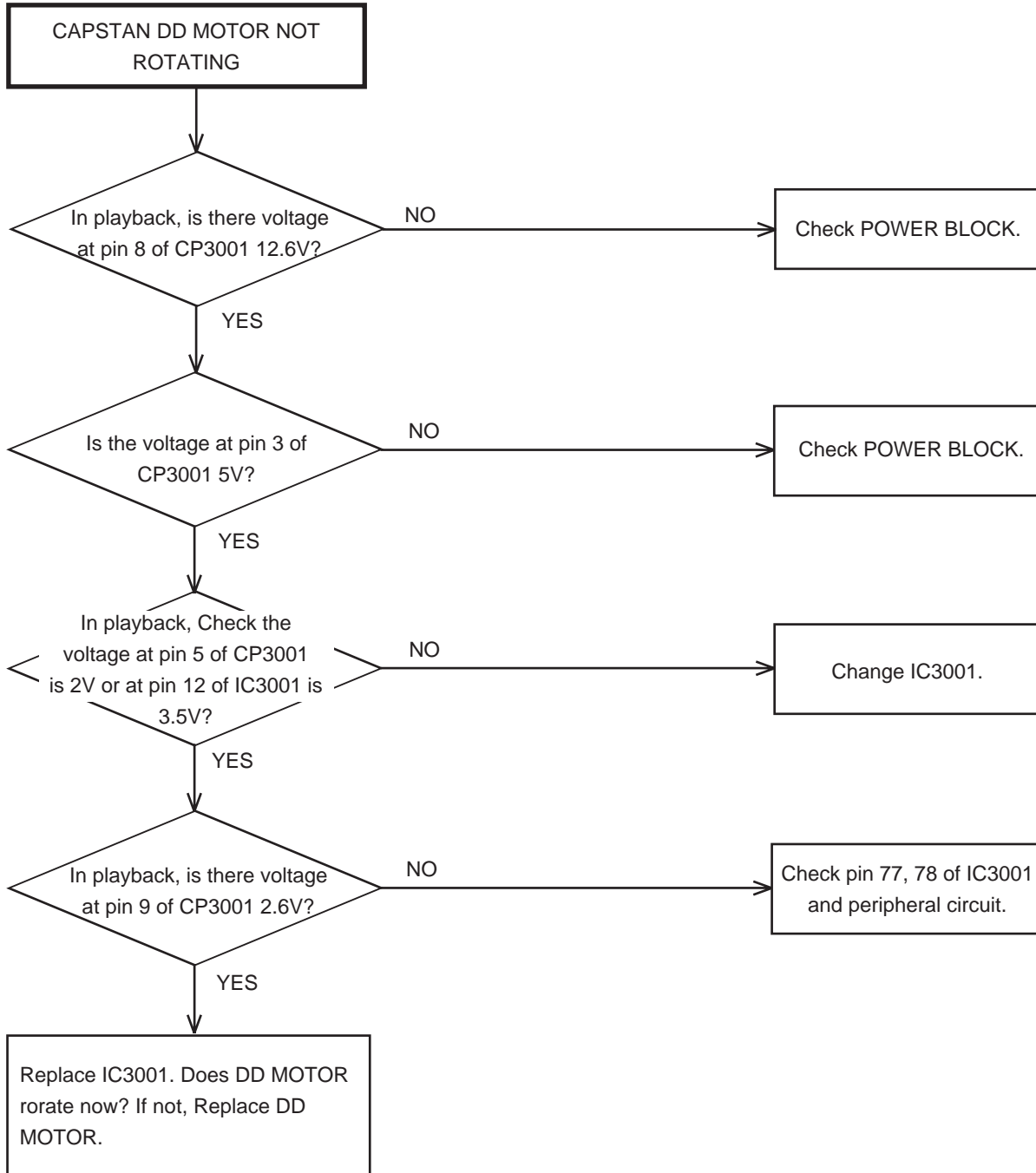
# TROUBLESHOOTING GUIDE



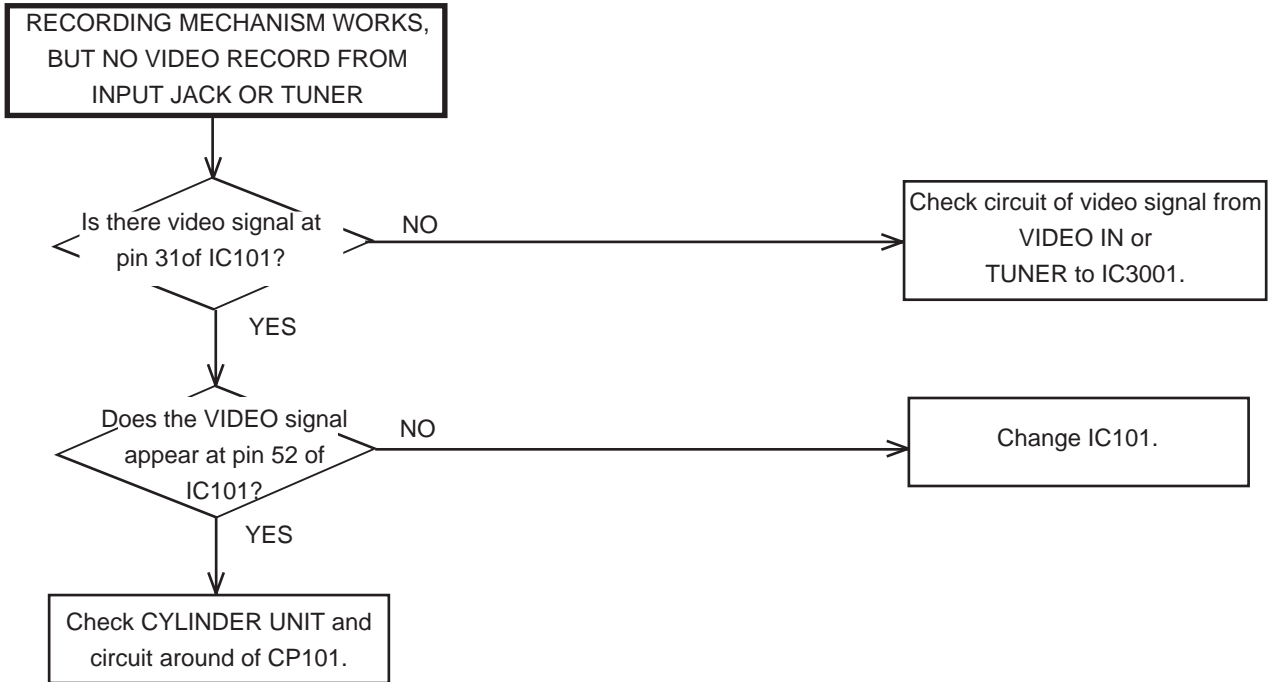
# TROUBLESHOOTING GUIDE



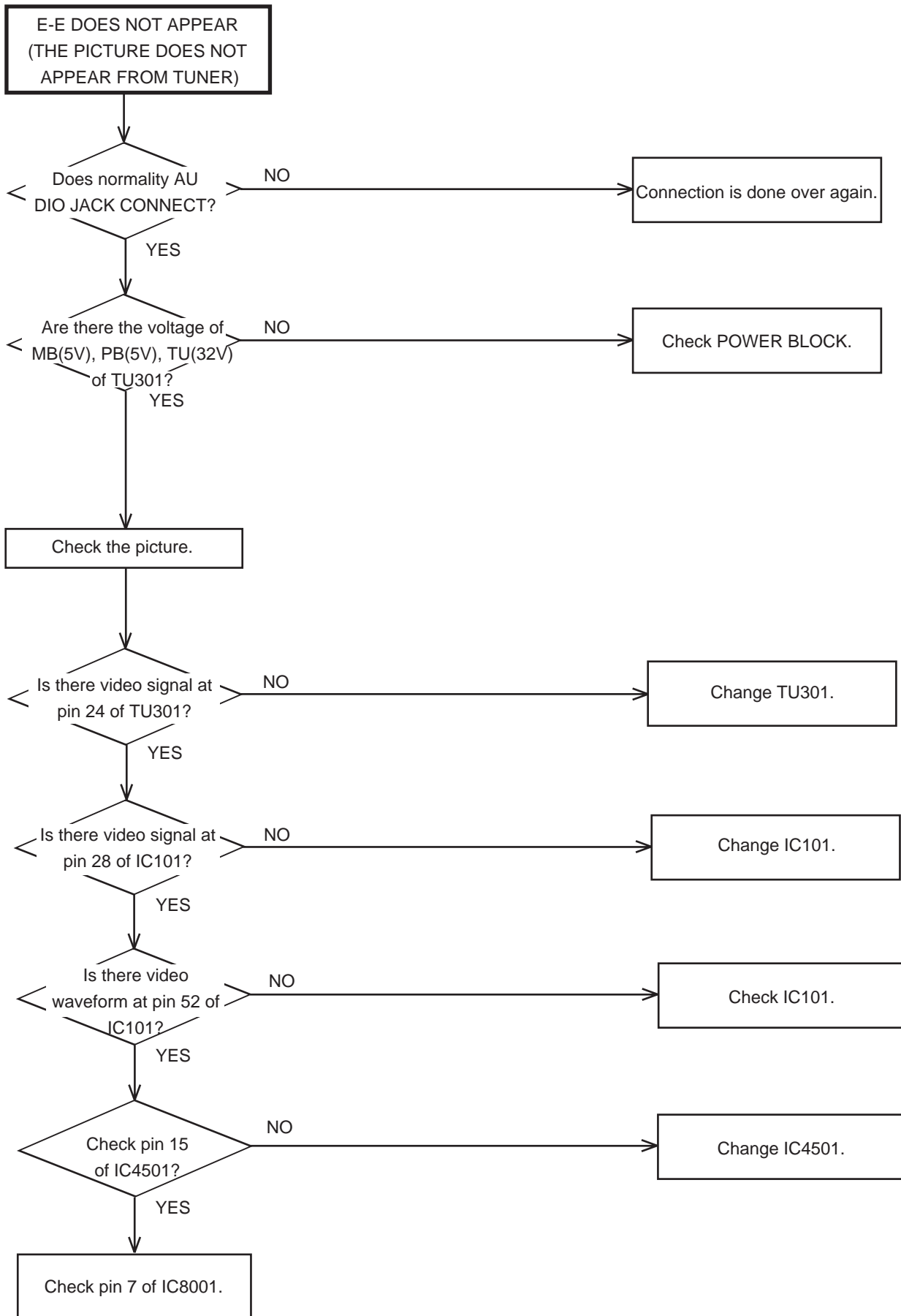
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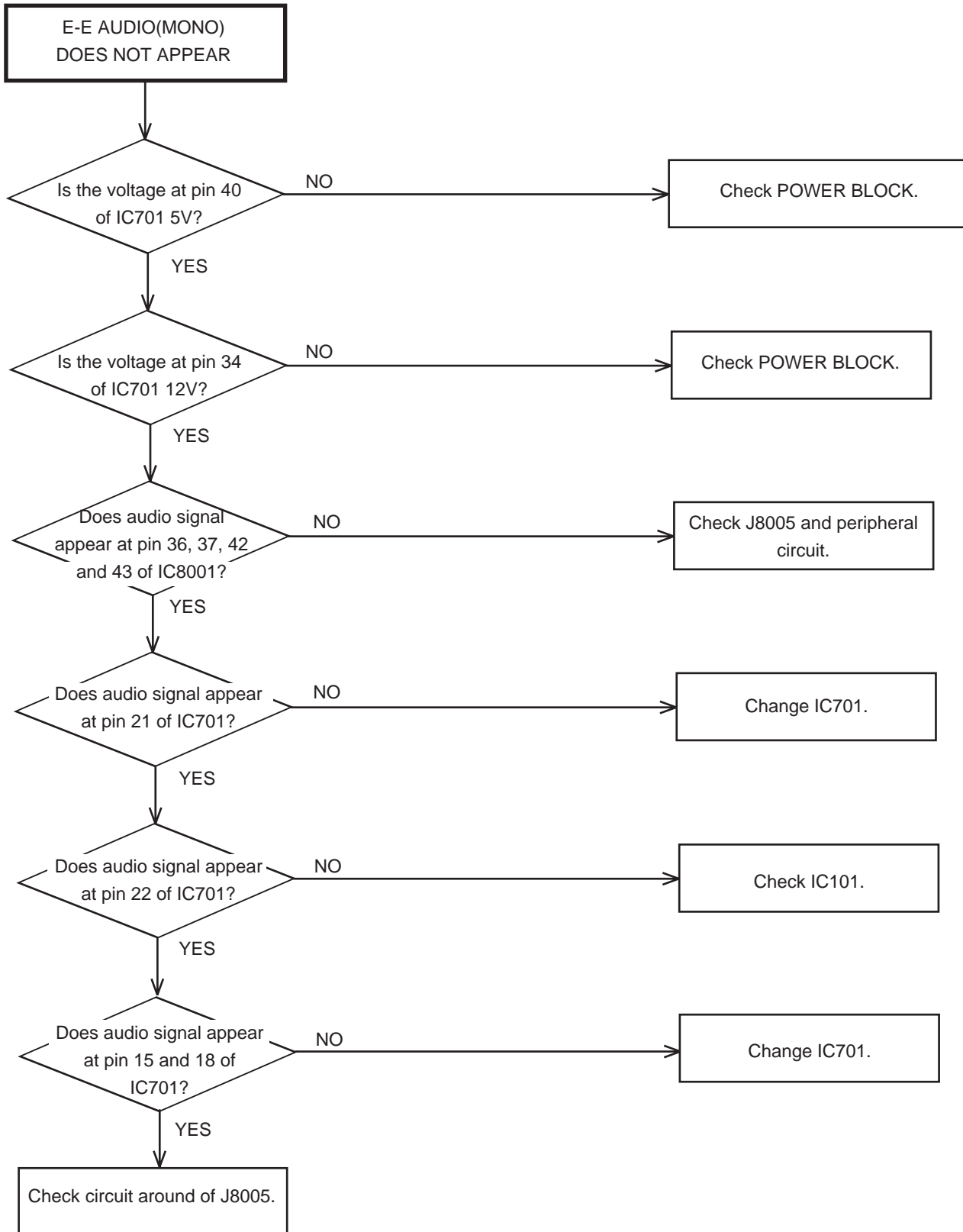
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# TROUBLESHOOTING GUIDE

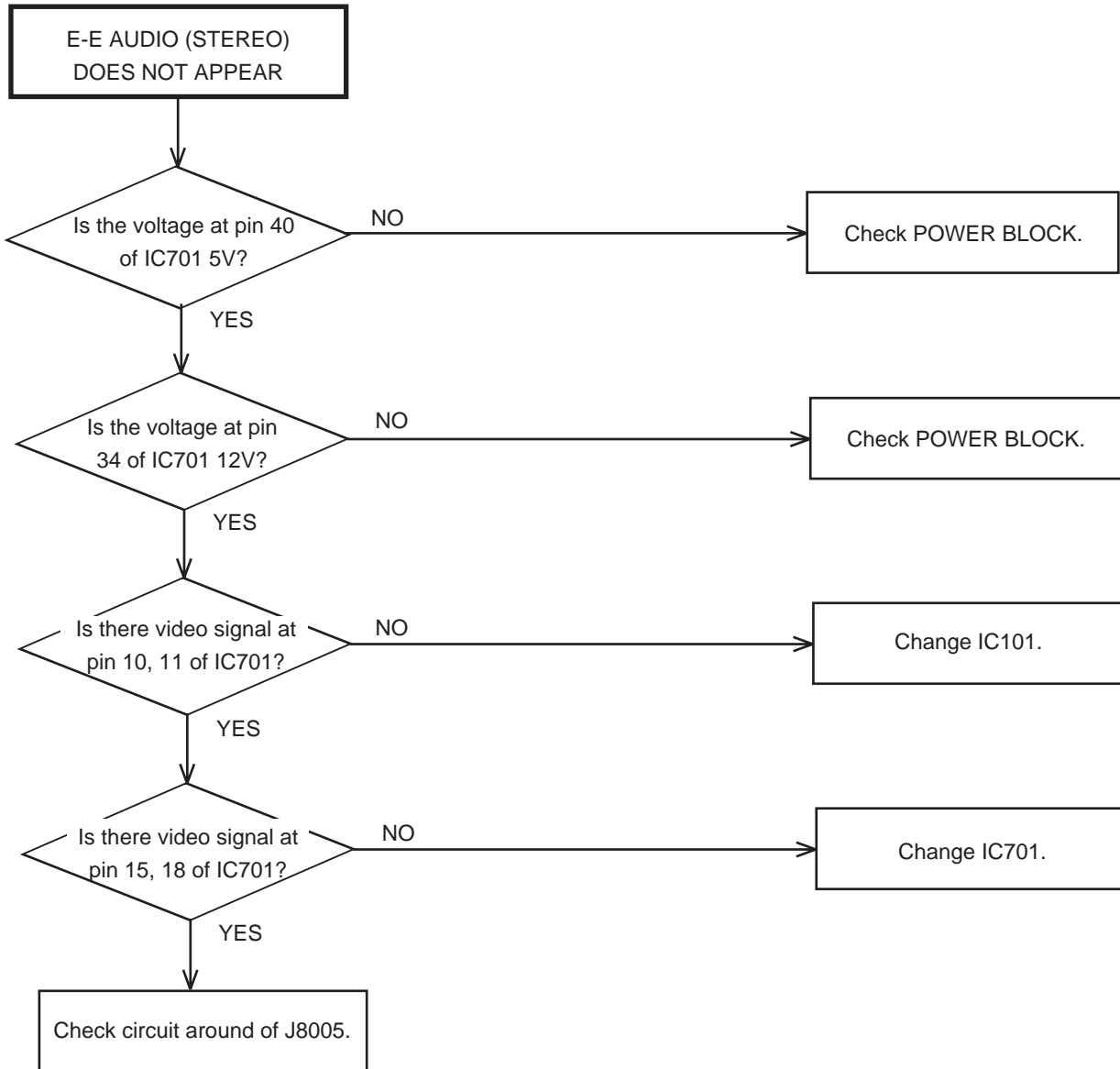


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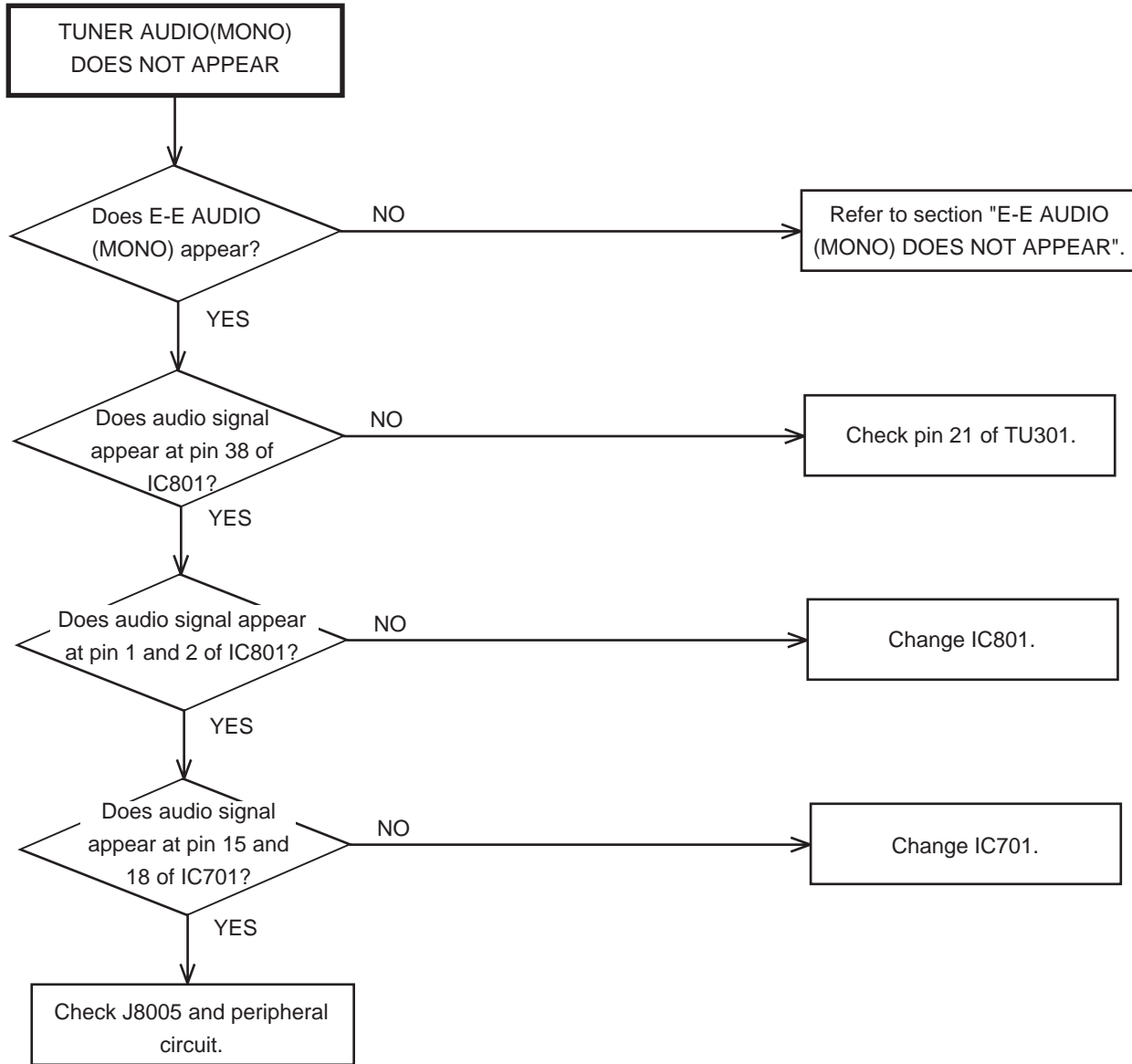




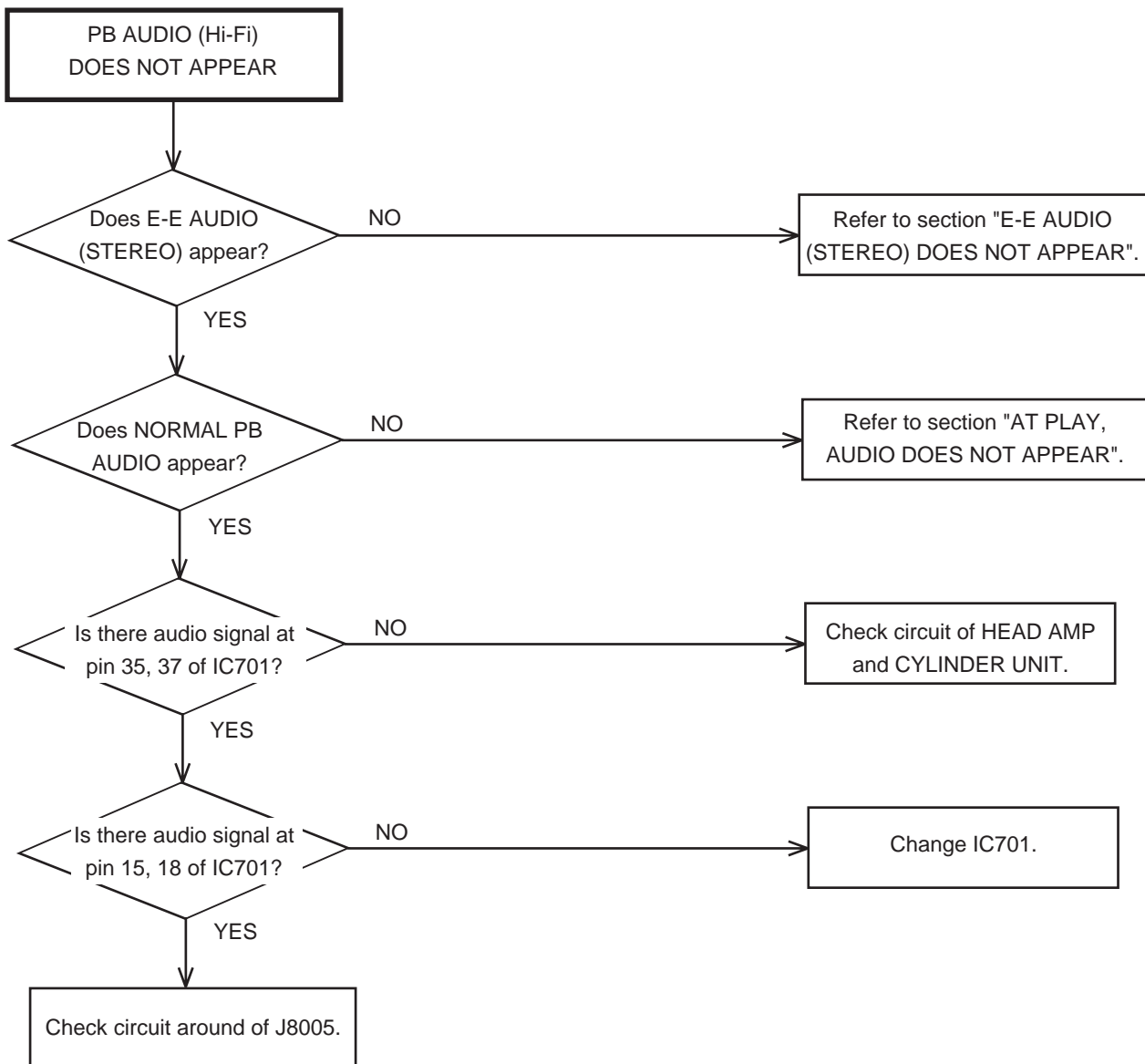
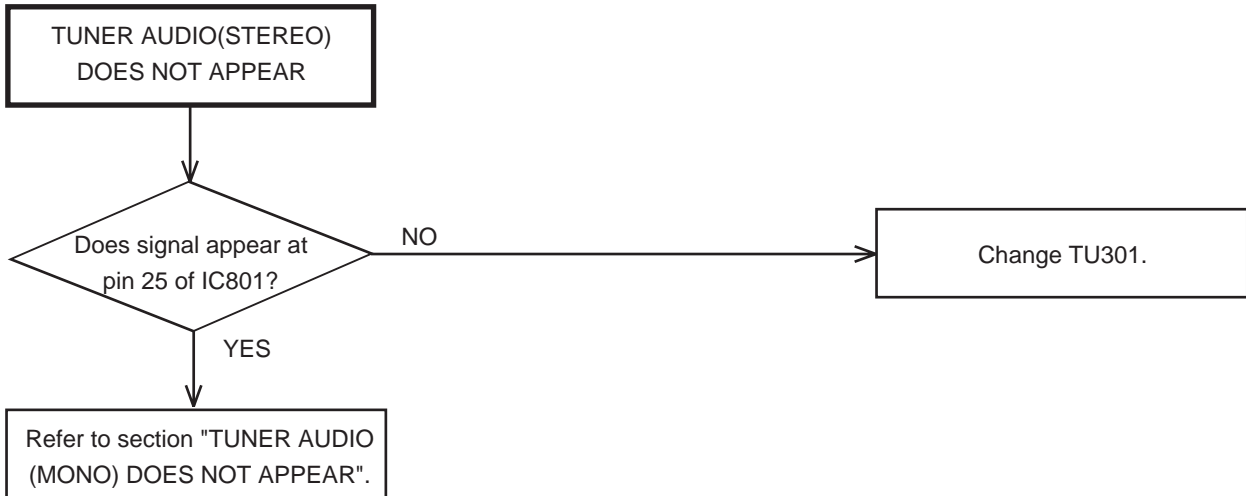
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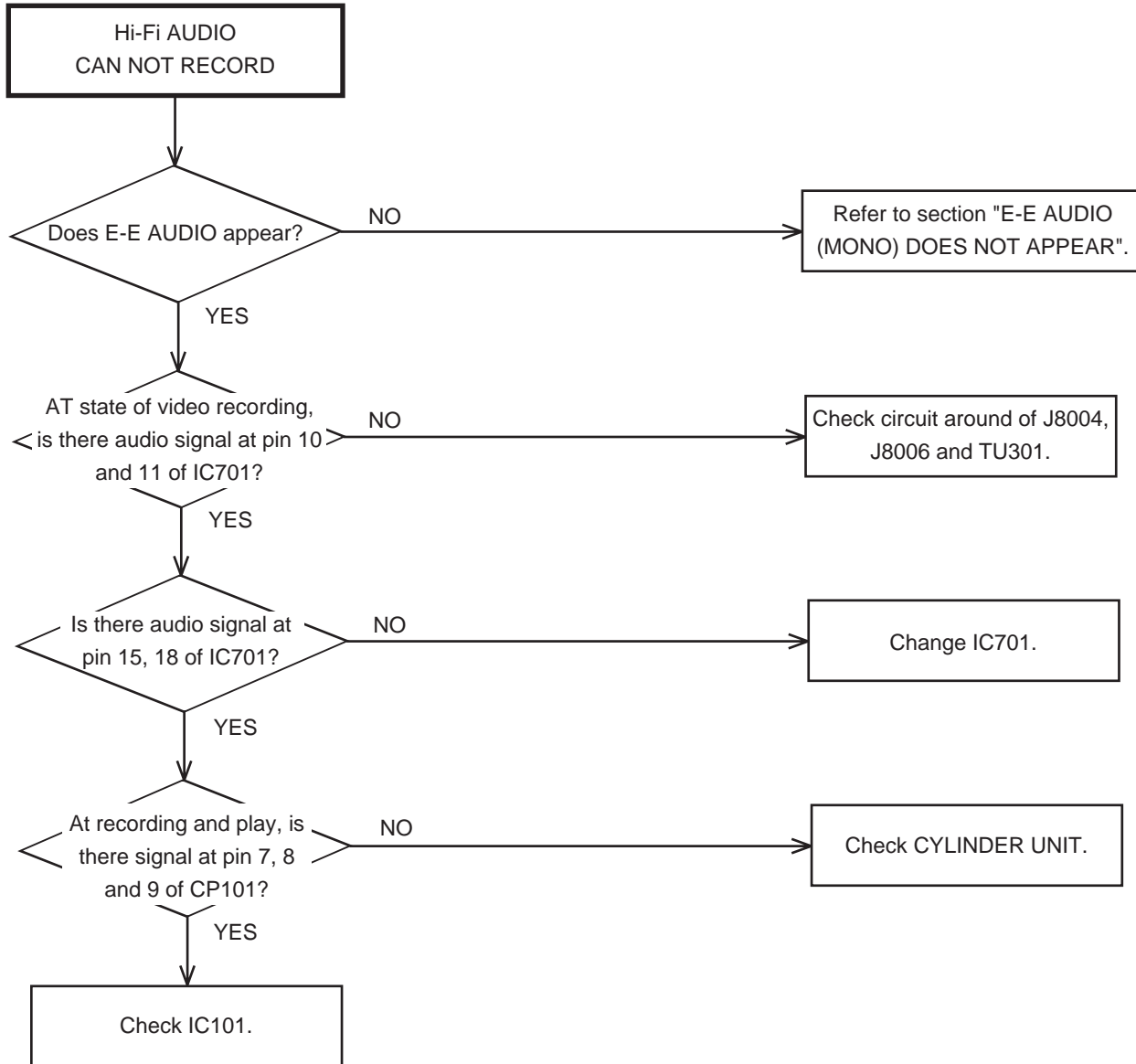
# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE

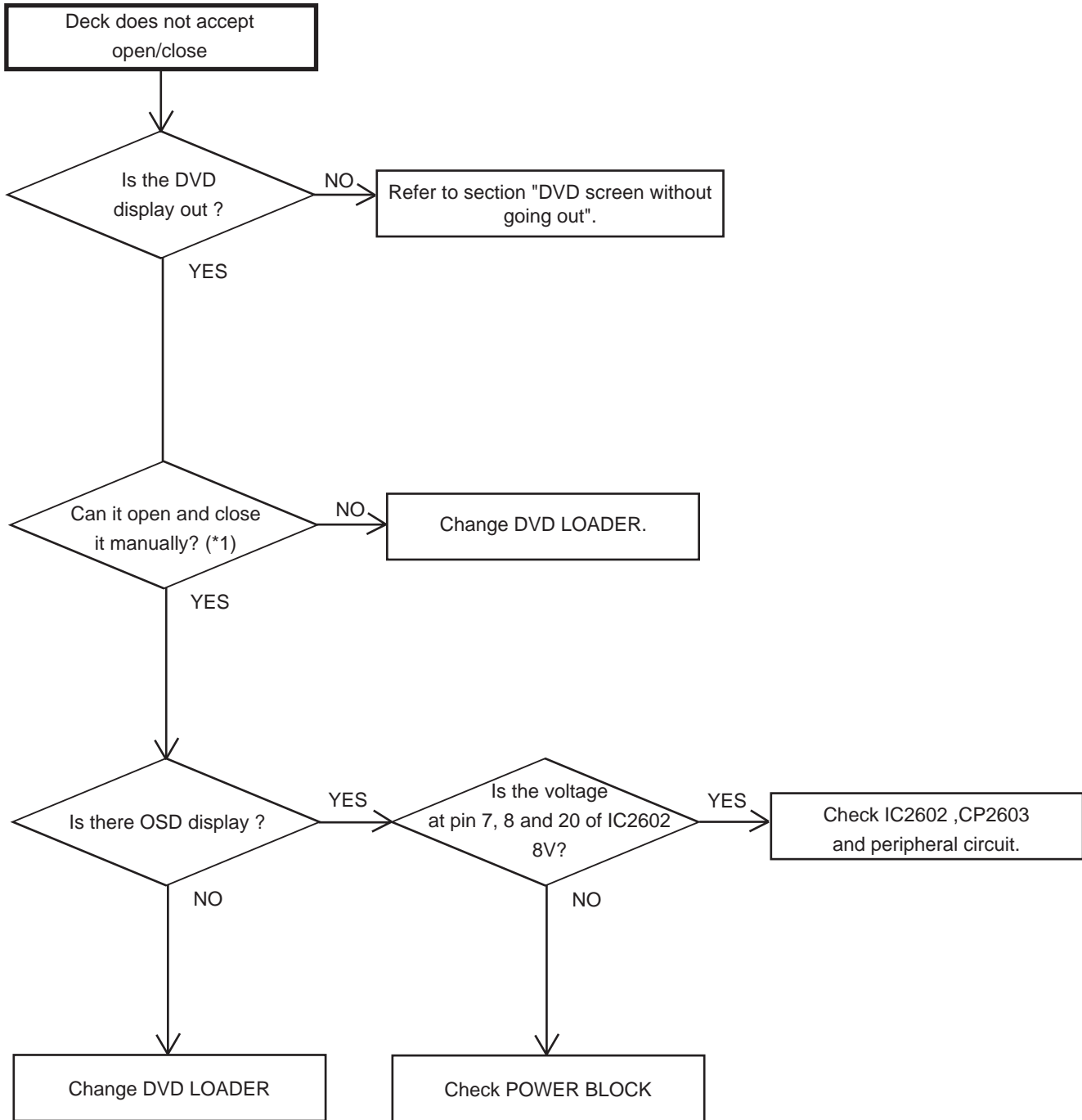


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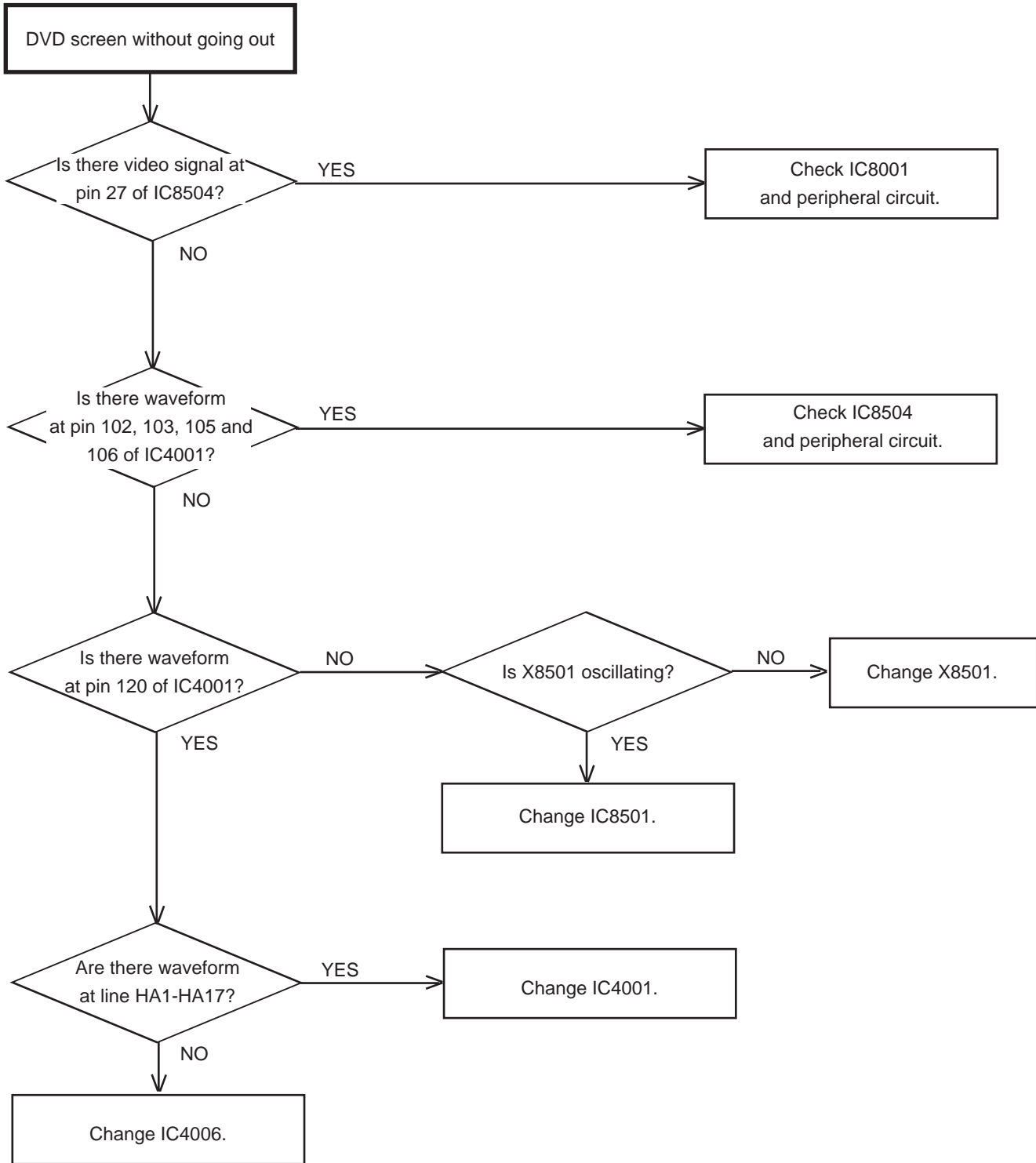
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## (DVD SECTION)

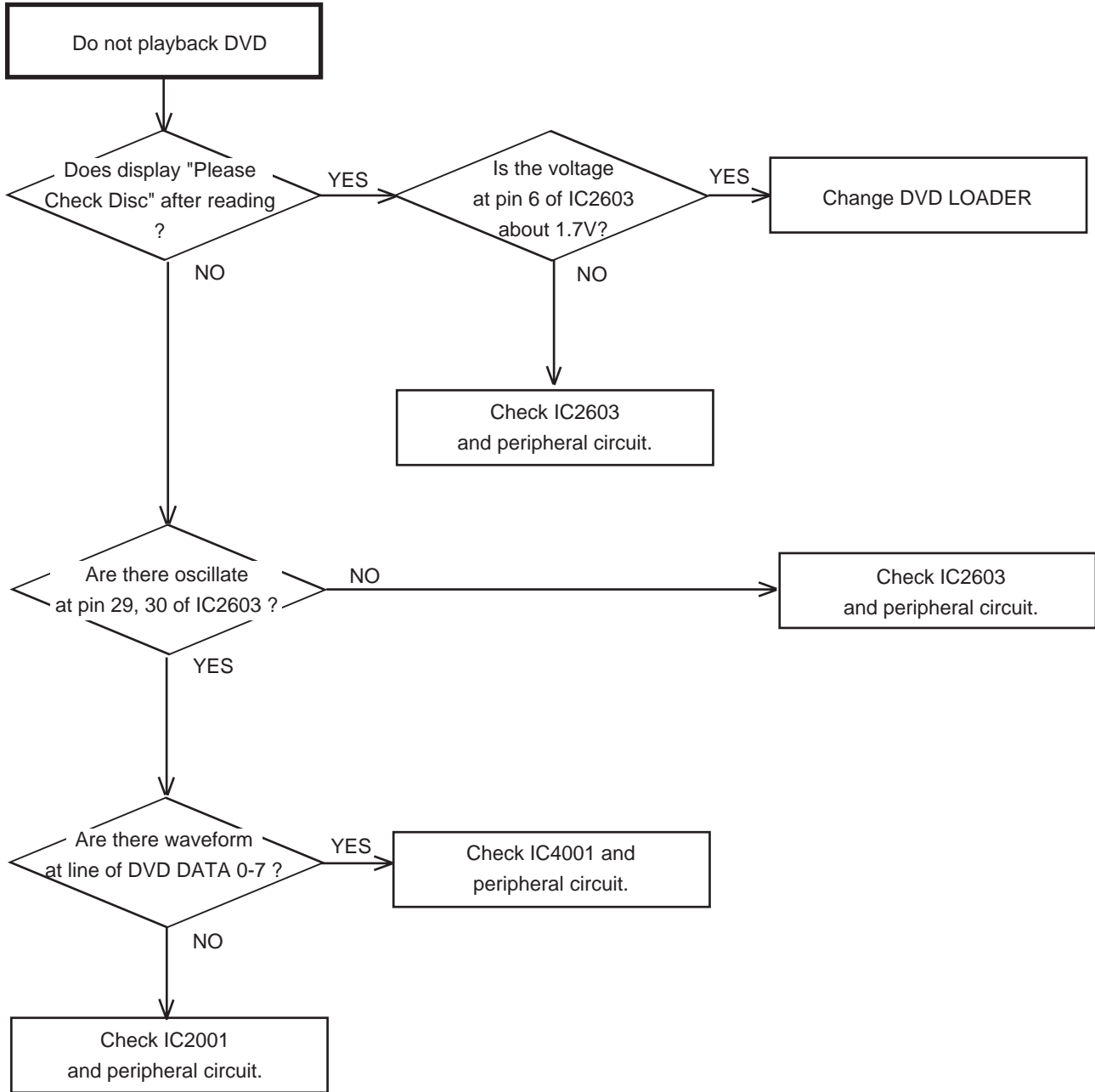


\*1:Turn GEAR of DVD DECK front lower part, to open and close TRAY manually

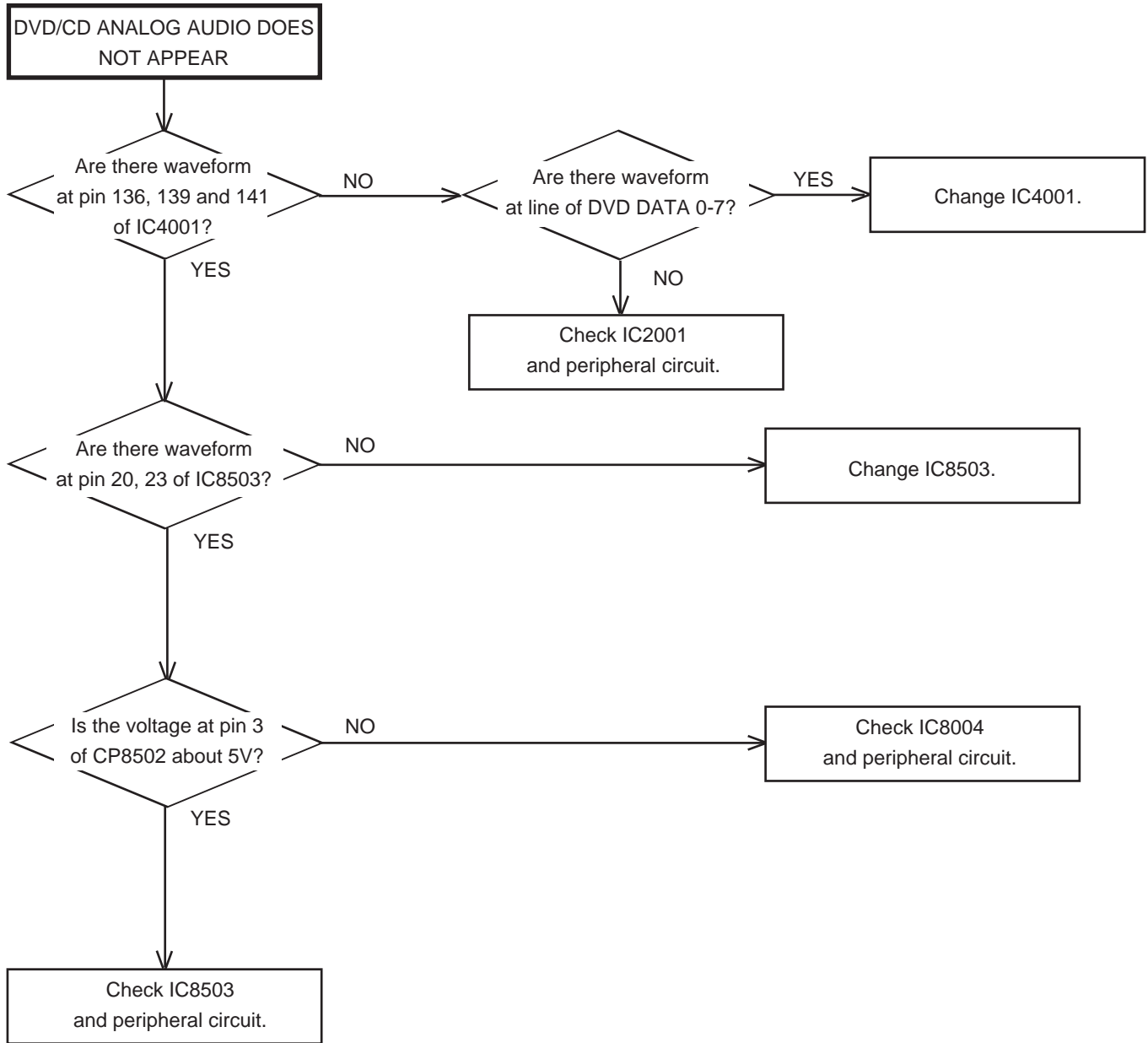
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# TROUBLESHOOTING GUIDE

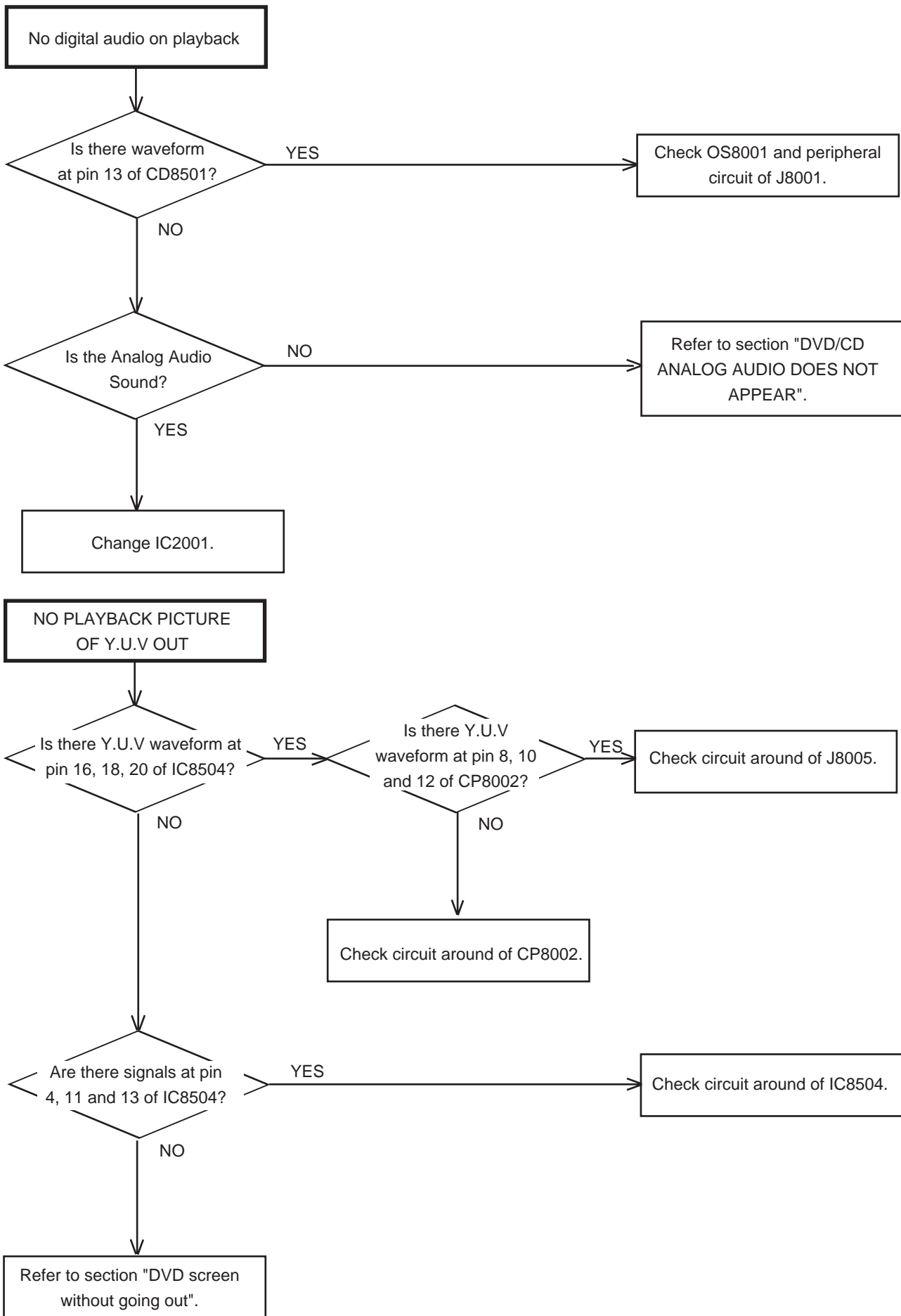


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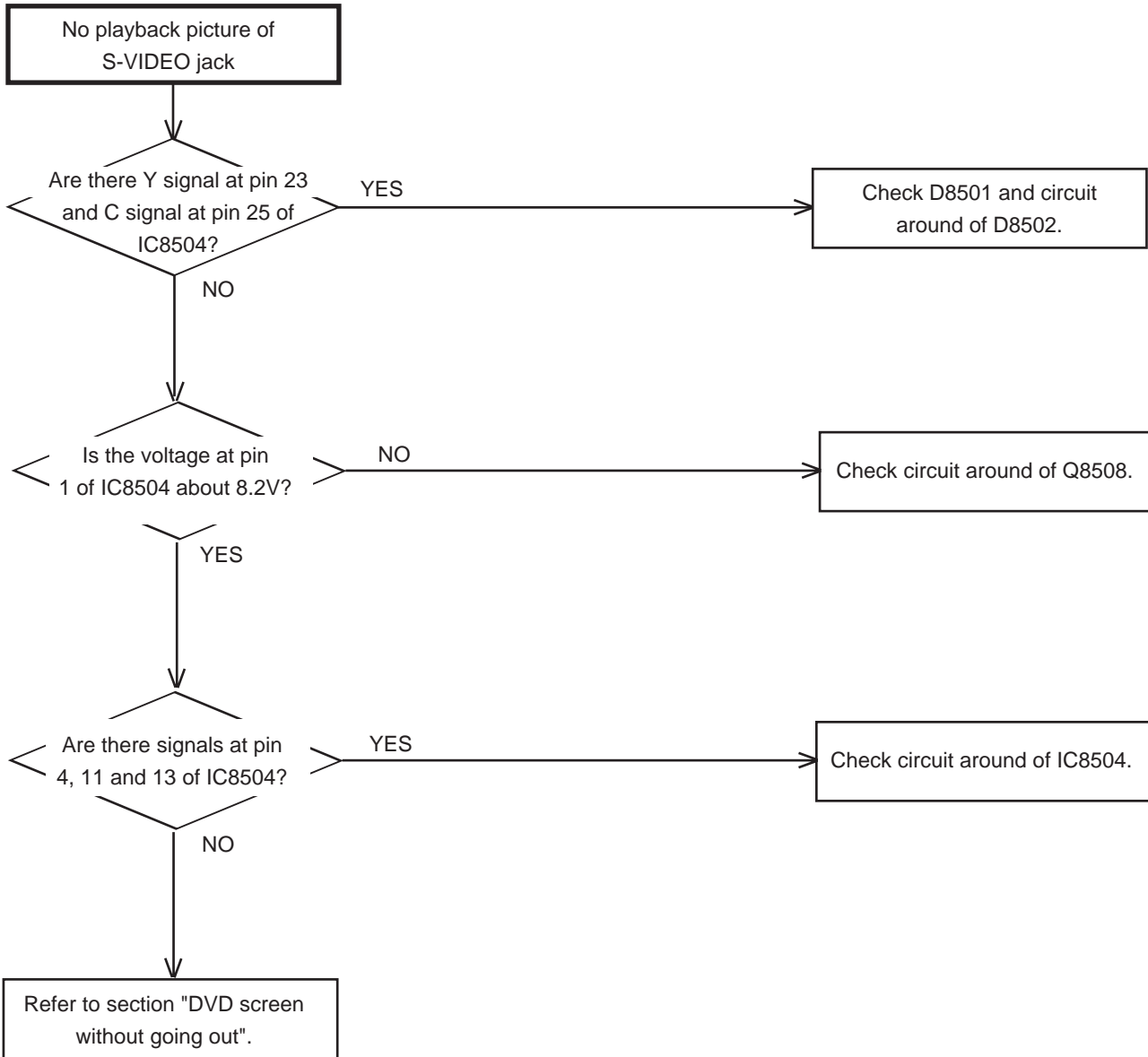




# TROUBLESHOOTING GUIDE



# TROUBLESHOOTING GUIDE



## GENERAL SPECIFICATIONS [HR-XV1EU-R]

<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	PAL		
		Disc	DVD, CD-DA, CD-R/RW, VIDEO CD		
		Disc Diameter	120 mm , 80 mm		
		Deck	Disc Loading System Motor	Front Disc Loading 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	2-100 times / 4 step (DVD)	
				4-8 times / 2 step (CD)	
			Actual	5-15 times / 2 step (VIDEO CD)	
				2-70 times (DVD)	
		Rev	4-12times (CD)		
4-18times (VIDEO CD)					
2-100 times / 4 step (DVD)					
4-8 times / 2 step (CD)					
Actual	5-15 times / 2 step (VIDEO CD)				
	2-70 times (DVD)				
Slow speed	4-12times (CD)				
	4-18times (VIDEO CD)				
Actual	Fwd	1/8-1/2 times (DVD, VIDEO CD)			
	Rev	--			
Actual		1/7-1/2 times (DVD, VIDEO CD)			
		--			
<b>G-3</b>	<b>VCR System</b>	System	VHS Player / Recorder		
		Video System	PAL/MESECAM		
		Hi-Fi STEREO	Yes		
		NTSC PB (PAL60Hz)	Yes		
		Deck	DECK Loading System Motor	OVD-7 Front 3	
		Heads	Video Head	4Head	
			FM Audio Head	2Head	
		Audio /Control		Mono/Yes	
		Erase (Full Track Erase)		Yes	
		Tape Speed	Rec	PAL NTSC	SP/LP -
			Play	PAL NTSC	SP/LP SP
		Fast Forward / Rewind Time (Approx.) at 25oC		FF:1'48"/REW:1'48"	
			with Cassette	E-180	
		Forward/Reverse	NTSC or PAL-M	SP=3x, 5x	
		Picture Search	PAL or SECAM	SP/LP=5x, 7x / 7x, 13x	
		Frame Advance		1/10	
Slow Speed		1/5, 1/10,1/30			
<b>G-4</b>	<b>Tuning System</b>	Broadcasting System	OIRT/CCIR System BG/DK/I		
		Tuner and	1Tuner		
		Receive CH	System	Oscar (W/HYPER)	
			Destination	F-Synth	
			Tuning System	VHF/UHF 75 OHM	
			Input Impedance	CH Coverage	E2-E4, X-Z+2, S1-S10, E5-E12.S11-S41.E21-E69
		Intermediate Frequency	Picture (FP)	38.9MHz	
			Sound (FS)	33.4 / 32.9 / 32.4 MHz	
		Preset CH	FP-FS	5.5 / 6.0 / 6.5MHz	
				80CH	
		RF Converter Output		Yes	
		Channel		23-69 CH	
			Level/Impedance	73 dBu / 75 Ohm	
			Sound Selector	Yes (OSD)	
Stereo/Dual TV Sound		G.ST/NICAM DUAL			
Tuner Sound Muting		Yes			

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

G-5	Power	Power Source	AC DC	230V 50Hz -
		Power Consumption	Stand by	22 W at 230V 50Hz
			Per Year	5 W at 230V 50Hz -- W
		Protector	Power Fuse	Yes
G-6	Regulation	Safety	GOST	
		Radiation	GOST	
G-7	Temperature	Operation	5oC - 40oC	
		Storage	-20oC - 60oC	
G-8	Operating Humidity		Less than 80% RH	
G-9	Signal	Video Signal	Output Level	1 V p-p/75 ohm (DVD,VCR)
			S/N Ratio (Weighted)	65 dB (DVD) 53 db (VCR)
	RGB Signal	Horizontal Resolution		500 Lines (DVD) 240 Lines(VCR at SP)
			Output Level	0.7V p-p / 75 ohm
	Audio Signal  (0dB=0.775Vrms)	Input Level Microphone		-
			Input Level Line	-3.8 dBm/ 50k ohm(VCR)
		Output Level Line		-3.8 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 (1KHz) Typical		0.1% (DVD) 1.5% (VCR at SP)
			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	100Hz - 5 KHz	
		VCR Mode at SLP	-	
	Hi-Fi Audio Signal	Dynamic Range : More than		75dB
Frequency Response			20Hz ~20kHz	
Wow And Flutter : Less than			0.01 %Wrms	
Channel Separation : More than			60 dB	
Harmonic Distortion : Less than			0.01	

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

G-10	On Screen Display	(DVD)	Menu	Yes
			Menu Type	Icon
			Picture	Yes
			TV Shape	Yes
			PAL/Auto	No
			Video Out Select	Yes
			Output Sound	Yes
			Audio Out Select	Yes
			Dynamic Range Control	Yes
			Karaoke Vocal	Yes
			Language	Yes
			On-Screen Language	Yes
			Disc Menu Language	Yes
			Audio Language	Yes
			Subtitle Language	Yes
			Display	Yes
			On-Screen Displays	Yes
			Background	Yes
			Screen Saver	Yes
			Operational	Yes
			Pause/Still	Yes
			Parental Lock	Yes
			Title Stop	Yes
			PBC	Yes
			Initial Setup	Yes
			On-Screen Displays	Yes
			TV Shape	Yes
			Audio Out Select	Yes
			Open	Yes
			Close	Yes
			No disc	Yes
			Reading	Yes
			Play	Yes
			Still/Pause	Yes
			Stop	Yes
			Prohibit Mark	Yes
			Step	Yes
			Skip+	Yes
			Skip-	Yes
			Random	Yes
			Repeat	Yes
			A-B Repeat	Yes
			Slow+ ##	Yes
			Slow- ##	No
			Search+ ##	Yes
			Search- ##	Yes
			Resume	Yes
			Title No.	Yes
			Chapter No.	Yes
			Track No.	Yes
Time	Yes			
Sub Title No.	Yes			
Angle No.	Yes			
Audio No.	Yes			
Zoom	Yes			
Enter	Yes			
Exit	Yes			
Bit Rate	Yes			
Memory	Yes			
Screen Saver	Yes			
E.A.M	Yes			

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

	<b>On Screen Display(VCR)</b>	Menu	Menu	Type	Yes	Character
			ATS			No
			Timer Rec Set		Yes	
			VCR Extension		Yes	
				Auto Repeat On/Off	Yes	
				Scene Repeat	Yes	
				Audio Dubbing		No
			VCR Set-Up		Yes	
				NICAM Auto/Off	Yes	
				Audio Mix On/Off	Yes	
				Color System	Yes	
				Sharpness	Yes	
				BBE On/Off		No
			CH Set-Up		Yes	
				CH Tuning	Yes	
				Auto Tuning	Yes	
				CH Mapping	Yes	
				Guide CH Set		No
			Pin Code Registration			No
			System Set-Up		Yes	
				Clock Set	Yes	(Calendar 24H)
				Language	Yes	
				AV2 DEC/AV	Yes	
				RF Output (G/K/I)	Yes	
			G-CODE (or SHOWVIEW or PLUSCODE) No. Entry		Yes	
			NICAM 1/2,NICAM Off,Audio Output		Yes	
			Stereo, Audio Output, Bilingual		Yes	
			Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)		Yes	
			Others	CH/AV	Yes	
				Clock/Date	Yes	
				Repeat		No
				Pin Code		No
				Tape Counter	Yes	
	Index	Yes				
	Hotel Lock		No			
	Tape Speed	Yes				
	Manual Tracking (Bar Setting)	Yes				
	Hi-Fi	Yes				
	S-Repeat/SR-R/SR-Play	Yes				
	VPS		No			
	PDC		No			
	TEST Signal	Yes				
<b>G-11</b>	<b>OSD Language</b>	DVD OSD	Eng Ger Fre			
		VCR OSD	Eng Ger Fre			
<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	SP:5Hours LP:10 Hours			
		OTPB Valid Time	No			
		Timer Back-up (at Power Off Mode)	30 Min			

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

<b>G-13</b>	<b>Display</b>	DISPLAY	
		DISPLAY type	Yes
		Clock/Counter, CH, Timer Rec, OTR, Play Rec, FF (Cue), Rew (Rev), Stop, ATR, Eject	LED Module (Green, "Rec" & Timer symbol = Red) No
		VCR	Yes
		DVD	Yes
		CD	Yes
		Clock	Yes (24h)
		AM	No
		PM	No
		Counter	VCR Yes (hour:min) DVD Yes (hour:min) CD Yes (min:sec)
		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	Yes
		Auto Tuning	Yes
		Eject	Yes
		Tape In	Yes
		Remocon Custom Code	Yes

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

G-14	Remote Control	Unit	RC-FO
		Glow in Dark Remocon	Yes
		Format	JVC
		Custom Code	43,53 (DVD,VCR), 03 (TV)
		Power Source	3V
		Voltage (D.C)	UM-3 x 2 pcs
		UM size x pcs	
		Total Keys	50 Key
		Keys	
		Power	Yes
		VCR	Yes
		DVD	Yes
		1	Yes
		2	Yes
		3	Yes
		4	Yes
		5	Yes
		6	Yes
		7	Yes
		8	Yes
		9	Yes
		0/AV	Yes
		DVD MENU	Yes
		MEMORY	Yes
		RETURN	Yes
		OPEN/CLOSE	Yes
		CLOCK / COUNTER	Yes
		SUB TITLE/ATR	Yes
		ANGLE/COUNTER RESET	Yes
		ZERO RETURN	Yes
		PLAY MODE/SPEED	Yes
		ZOOM	Yes
		TITLE	Yes
		REPEAT A-B	Yes
		PROGRAM/G-CODE	Yes
		T-REC	Yes
		TV Vol.+	Yes
		TV Vol.-	Yes
		TV/VCR	Yes
		TV Input	Yes
		FF(Cue)/SEARCH+	Yes
		REW(Review)/SEARCH-	Yes
		PLAY	Yes
		STOP	Yes
		PAUSE/STILL/STEP	Yes
		REC/OTR	Yes
		SKIP+ / INDEX+	Yes
		SKIP- / INDEX-	Yes
		UP/CH+	Yes
		DOWN/CH-	Yes
		LEFT/ SET- / TRACKING-	Yes
		RIGHT/ SET+ / TRACKING+	Yes
		SELECT/ENTER	Yes
		SET UP MENU/ VCR MENU	Yes
		CLEAR/CANCEL	Yes
		DISPLAY/CALL	Yes
		AUDIO / AUDIO SELECT	Yes
		SLOW (Forward)	Yes
		CM SKIP (Skip search)	Yes
		Slide SW	TV / VCR&DVD Select
			Yes



## GENERAL SPECIFICATIONS [HR-XV1EU-R]

G-15	<b>Features (DVD)</b>	Auto Power Off		No	
		Parental Lock	Yes		
		Video CD Playback	Yes		
		MP3 Playback	Yes		
		Digital Out	Dolby Digital	Yes	
			PCM	Yes	
			DTS	Yes	
			MPEG1,MPEG2	Yes	
		Down Mix Out	(Dolby Digital, MPEG1,MPEG2)	Yes	
		Self Diagnostic			No
		Spatializer (N-2-2)		Yes	
		Screen Saver		Yes	
		Frame Advance		Yes	
		Video Pedestal Level Set up			No
		Auto Stop			No
		One Touch Replay (10 Sec reverse)			No
		<b>Features (VCR)</b>	Auto Head Cleaning		
	Auto Tracking		Yes		
	Index Search		Yes		
	HQ (VHS Standard High Quality)		Yes		
	Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes		
	Auto Repeat		Yes		
	Auto Power Off				No
	VIDEO PLUS+ (SHOWVIEW, G-CODE)		Yes		
	ATS				No
	Auto Set Up (CH Auto Set-Up/Auto Clock)				No
	Auto Tuning		Yes		
	PDC				No
	VPS				No
	Reverse Slow				No
	One Touch Playback				No
	Picture Control (Sharpness)		Yes		
	Channel Lock				No
	Hotel Lock				No
	Anti Theft				No
	Audio Dubbing				No
	Remote Control Code 1/2		Yes		
	BBE Audio				No
	Rec END Search				No
	SQPB (PAL SP MODE)	Yes			
	CATV	Yes			
	CM Skip (30sec x 6 Times)	Yes			
	Copy (Disc to Tape)	Yes (by Conditioning)			
	G-16	<b>Accessories</b>	Owner's Manual	Yes	
				Russian	
					No
			Remote Control Unit	Yes	
			Dew Caution Sheet		No
			Battery	Yes	
				UM size x pcs	UM-3 x 2 pcs
			Tape Rewinder		No
			Safety Tip		No
			Toll Free Insert Sheet		No
Quick Set-Up Sheet				No	
Information Sheet				No	
75 Ohm Coaxial Cable			Yes (0.9m) type	Single shield	
U/V Mixer				No	
DC Car Cord (Center+)				No	
Guarantee Card			Yes		
Warning Sheet				No	
Circuit Diagram				No	
Antenna Change Plug				No	
Service Facility List				No	
Important Safeguard				No	
Dew/AHC Caution Sheet				No	
AC Plug Adapter				No	
AC Cord		No			
AV Cord (2Pin-1Pin)		No			
Registration Card		No			
21pin Cable		No			
300 ohm to 75 ohm Antenna Adapter		No			

## GENERAL SPECIFICATIONS [HR-XV1EU-R]

G-17	Interface	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	
				Input Select	No	
				Main Power SW	No	
				Rear	Attenuator	No
				Video/RGB Selector	No	
			RF Out (Slide SW)	No		
			Main Power SW	No		
			Volume	Phones Volume	No	
			Mic Volume	No		
			Echo Volume	No		
			Rec/OTR	No		
			Terminals	Front	Video In	RCA x1 (Yellow)
					Audio In	RCA x 2 (Stereo, White/Red)
				Rear	Video Output	No
					Audio Output	RCA x 2 (Stereo, White/Red) Coaxial x 1 (Digital Audio, DVD Signal Only)
					Video Input	No
					Audio Input	No
					Optical Digital Audio Out (Option)	Yes
					Euro Scart	2SCART
					S-Video Output	Yes (DVD Signal Only)
					Ext Speaker	No
VHF/UHF Antenna Input/Output	DIN Type					
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					
G-18	Set Size		Approx.	W x D x H (mm)	430 x 310.5 x 99	
G-19	Weight	Net (Approx.)			4.5 kg( 9.9lbs)	
		Gross (Approx.)			5.5 kg( 12.1lbs)	
G-20	Carton	Master Carton			No	
			Content	--- Sets		
			Material	--- / ---		
			Dimensions W x D x H (mm)	---		
			Description of Origin	---		
		Gift Box		Yes		
			Material	Double/Brown		
			W/Color Photo Label		No	
			Dimensions W x D x H (mm)	500 x 430 x 180		
			Pulp Package		No	
			Design	As Per BUYER 's		
			Description of Origin		No	
			Drop Test	Natural Dropping At		1 Corner / 3 Edges / 6 Surfaces
			Height (cm)			80 cm
Container Stuffing			1,623 Sets/40' container			
G-21	Cabinet Material	PCB	Cabinet Front		PS 94HB	
			Non-Halogen Demand		No	
			Eyelet Demand		No	

**JVC**

**VICTOR COMPANY OF JAPAN, LIMITED**

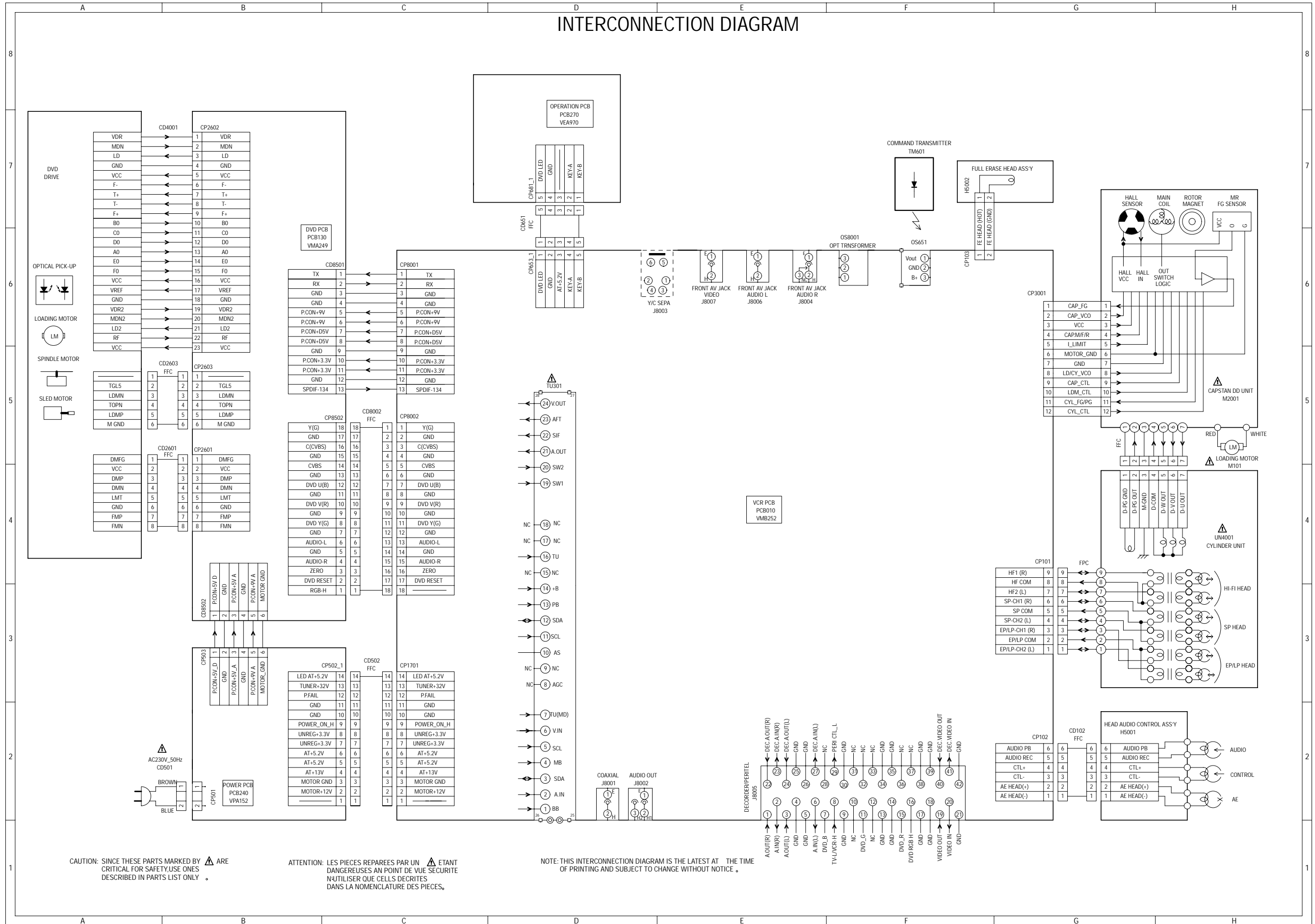
AV & MULTIMEDIA COMPANY. 12,3-chome,Moriya-cho,Kanagawa-ku,Yokohama,Kanagawa-prefecture,221-8528,Japan



Printed in Japan  
0211 VP

# SECTION 2 CHARTS AND DIAGRAMS

## INTERCONNECTION DIAGRAM



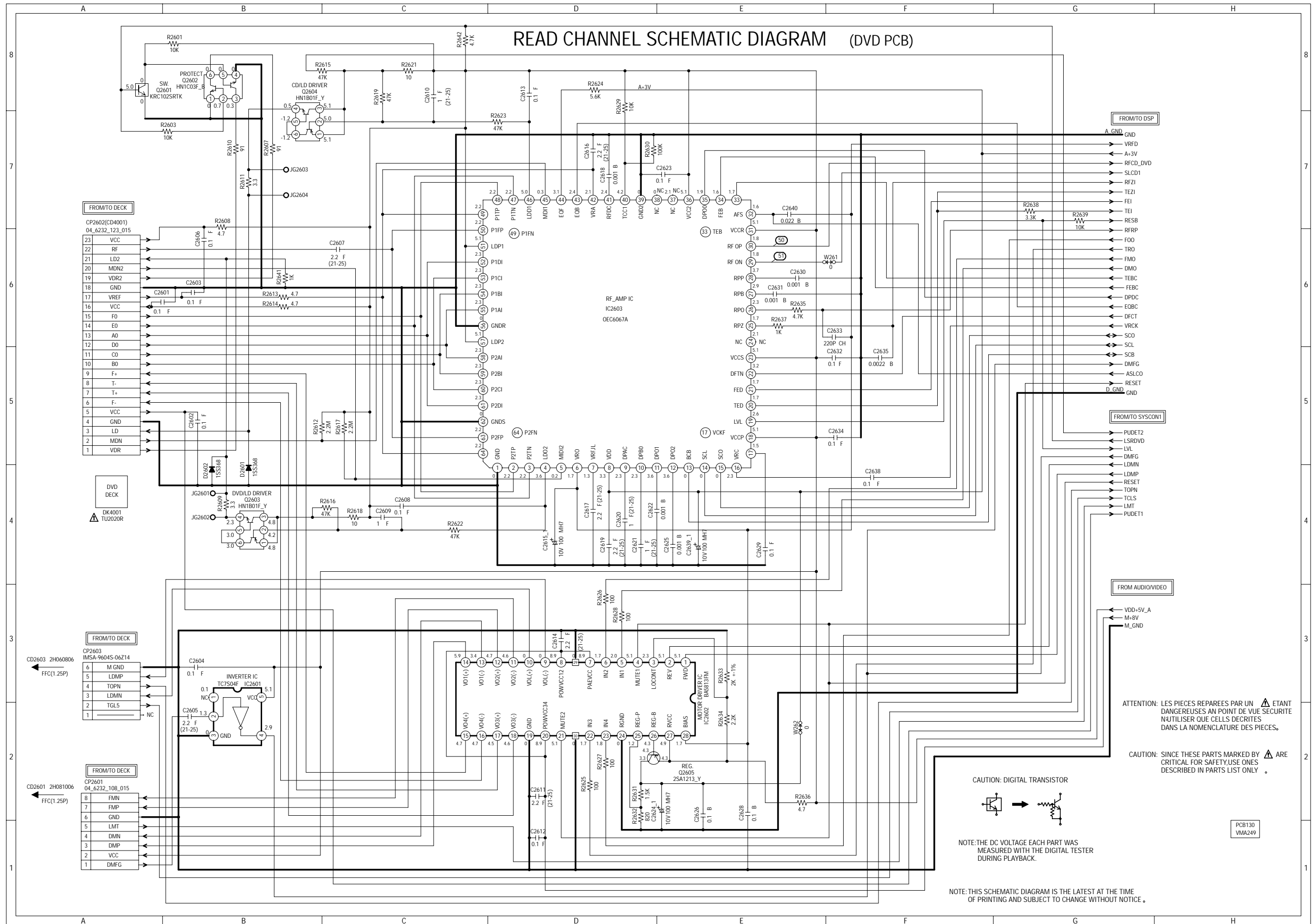
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

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

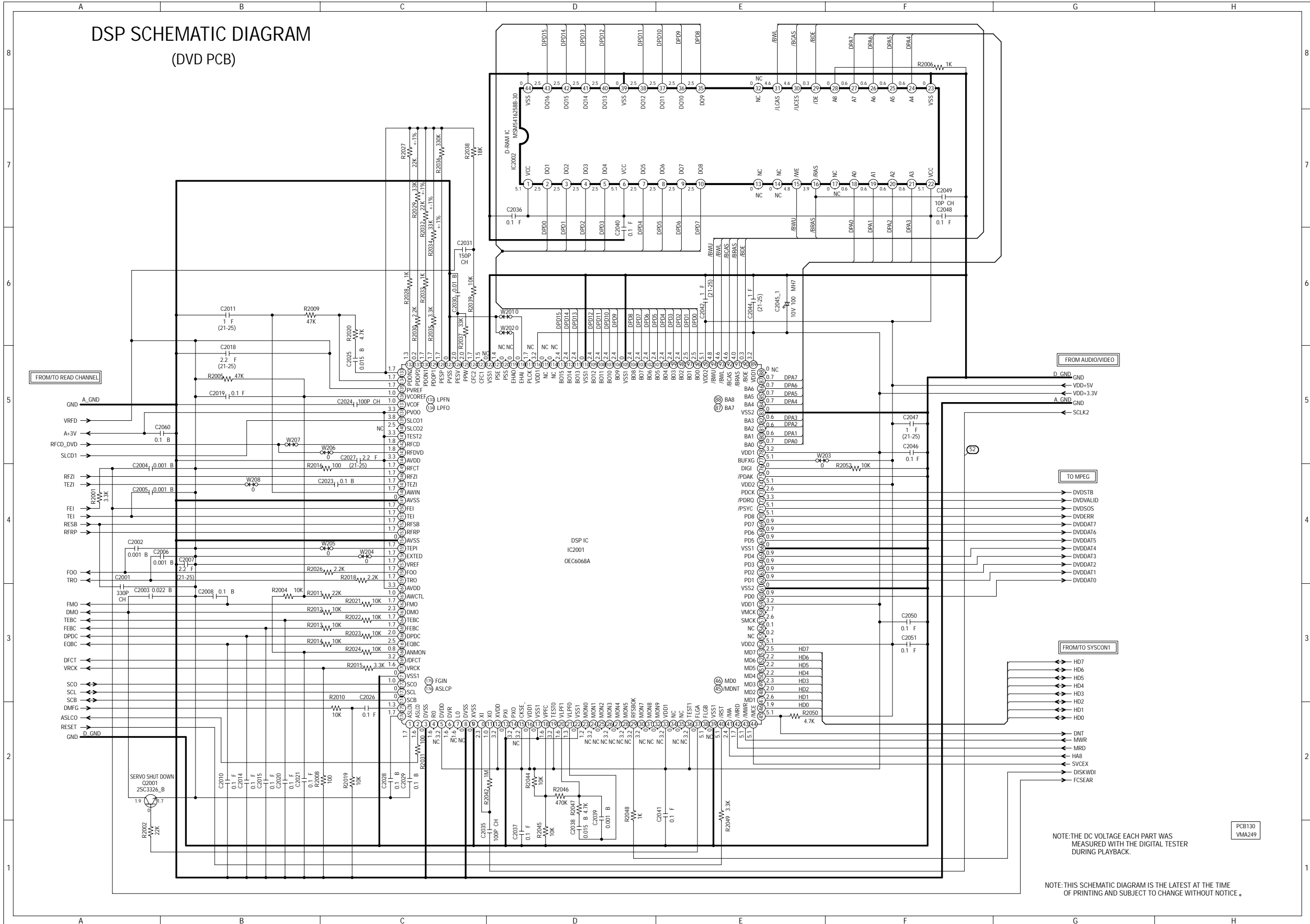


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.  
When replacing the parts, refer to the Parts List.



Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

# DSP SCHEMATIC DIAGRAM (DVD PCB)

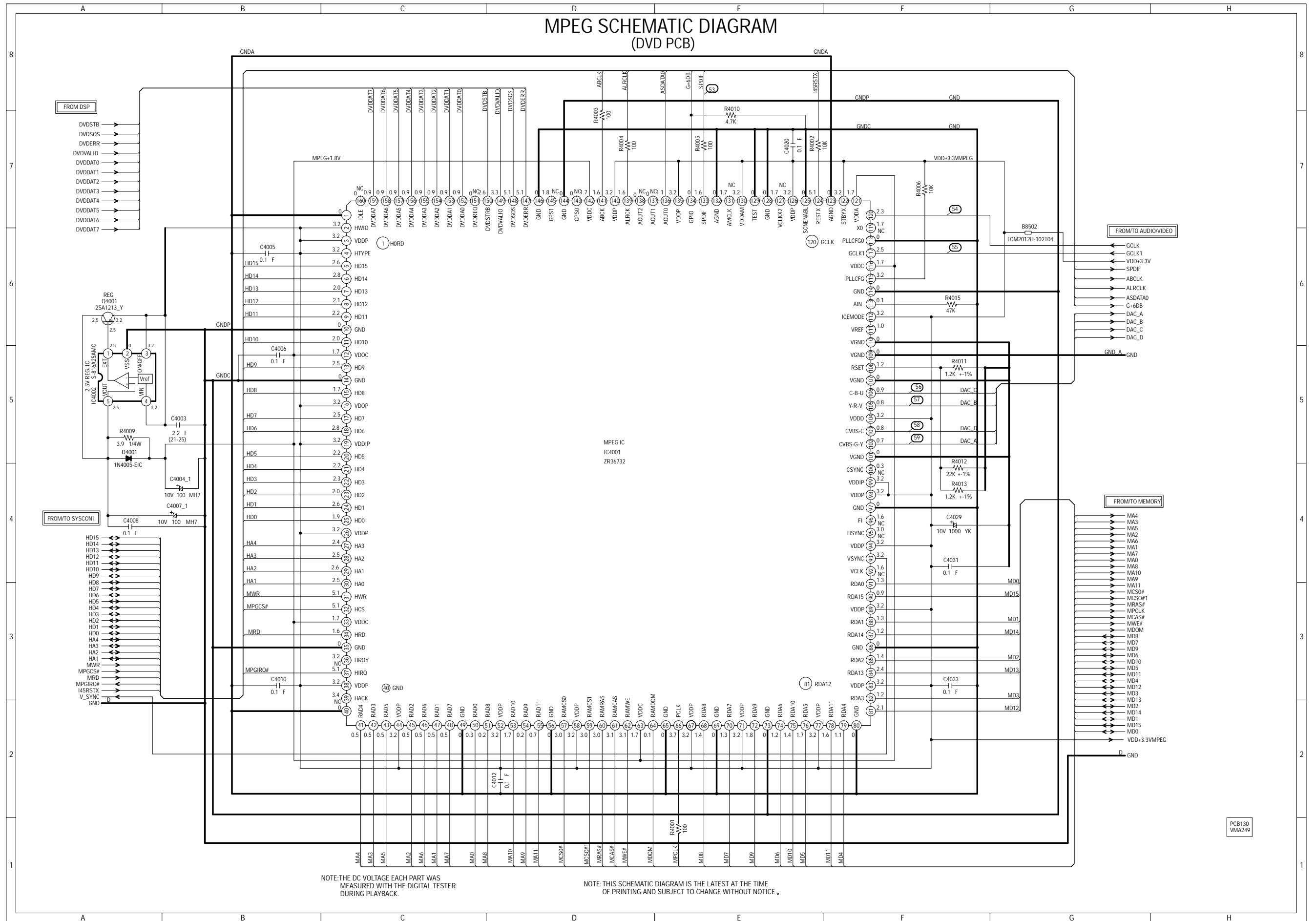


NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB130  
VMA249

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

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.  
When replacing the parts, refer to the Parts List.



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

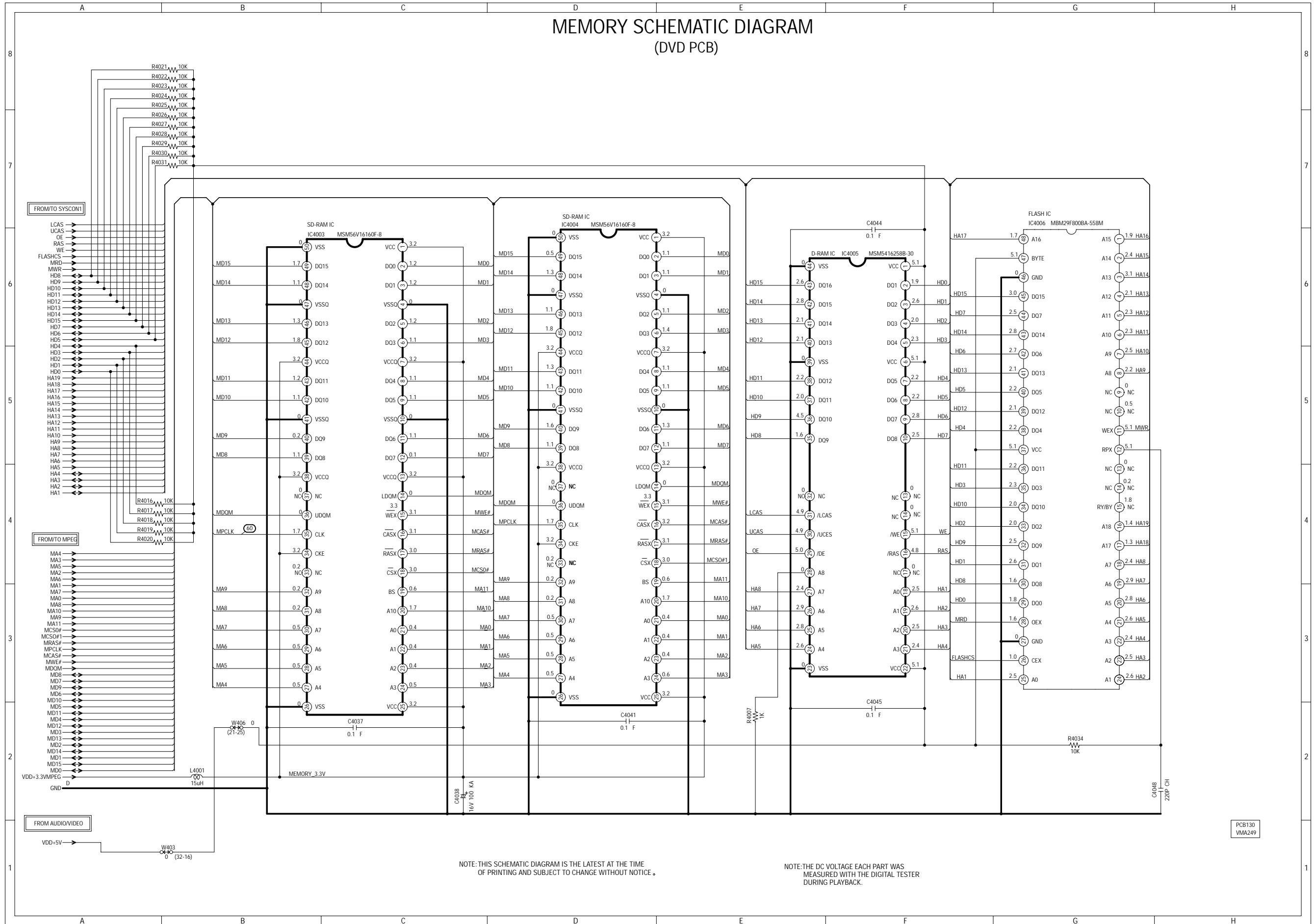
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130  
VMA249

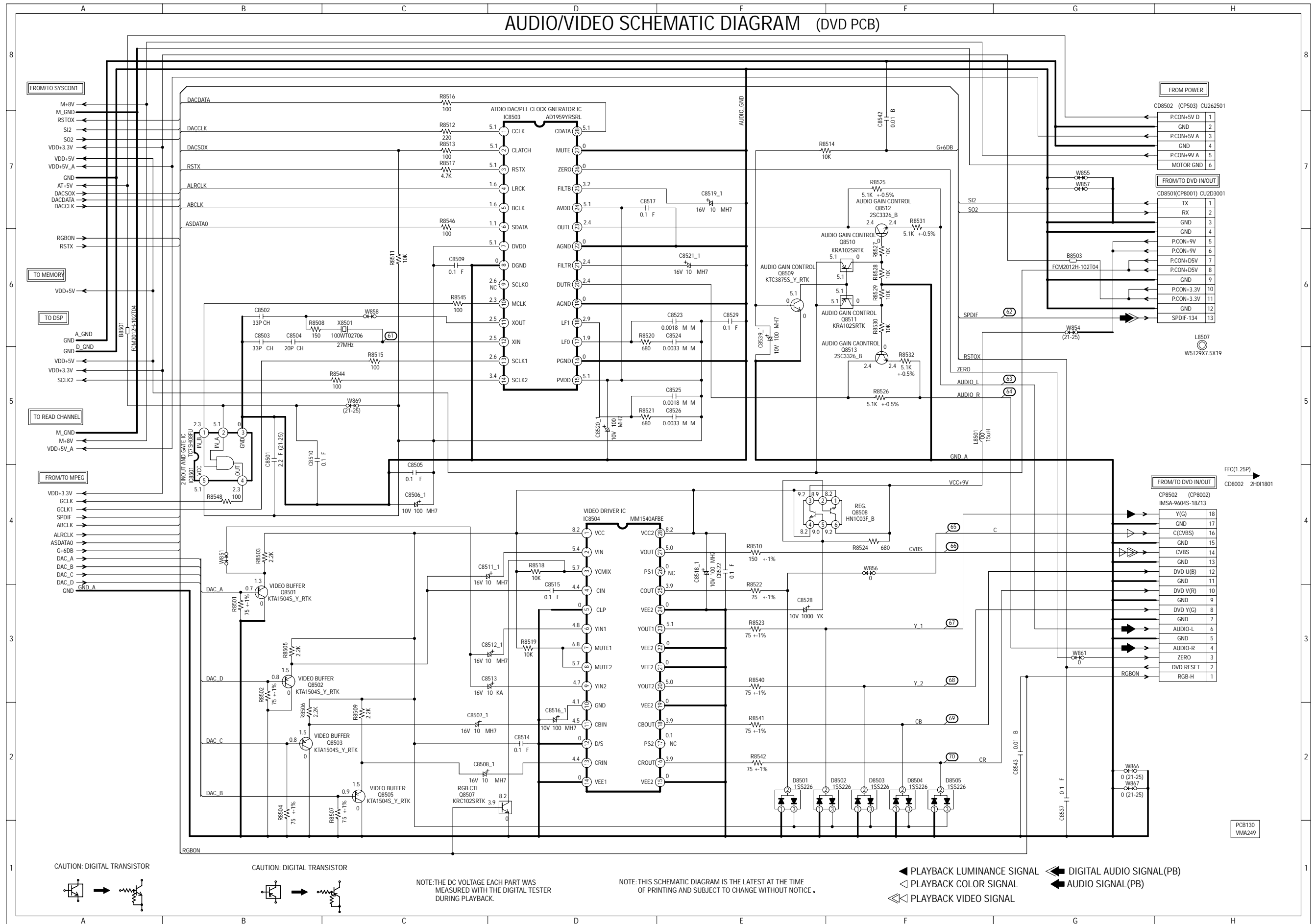


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

# MEMORY SCHEMATIC DIAGRAM (DVD PCB)

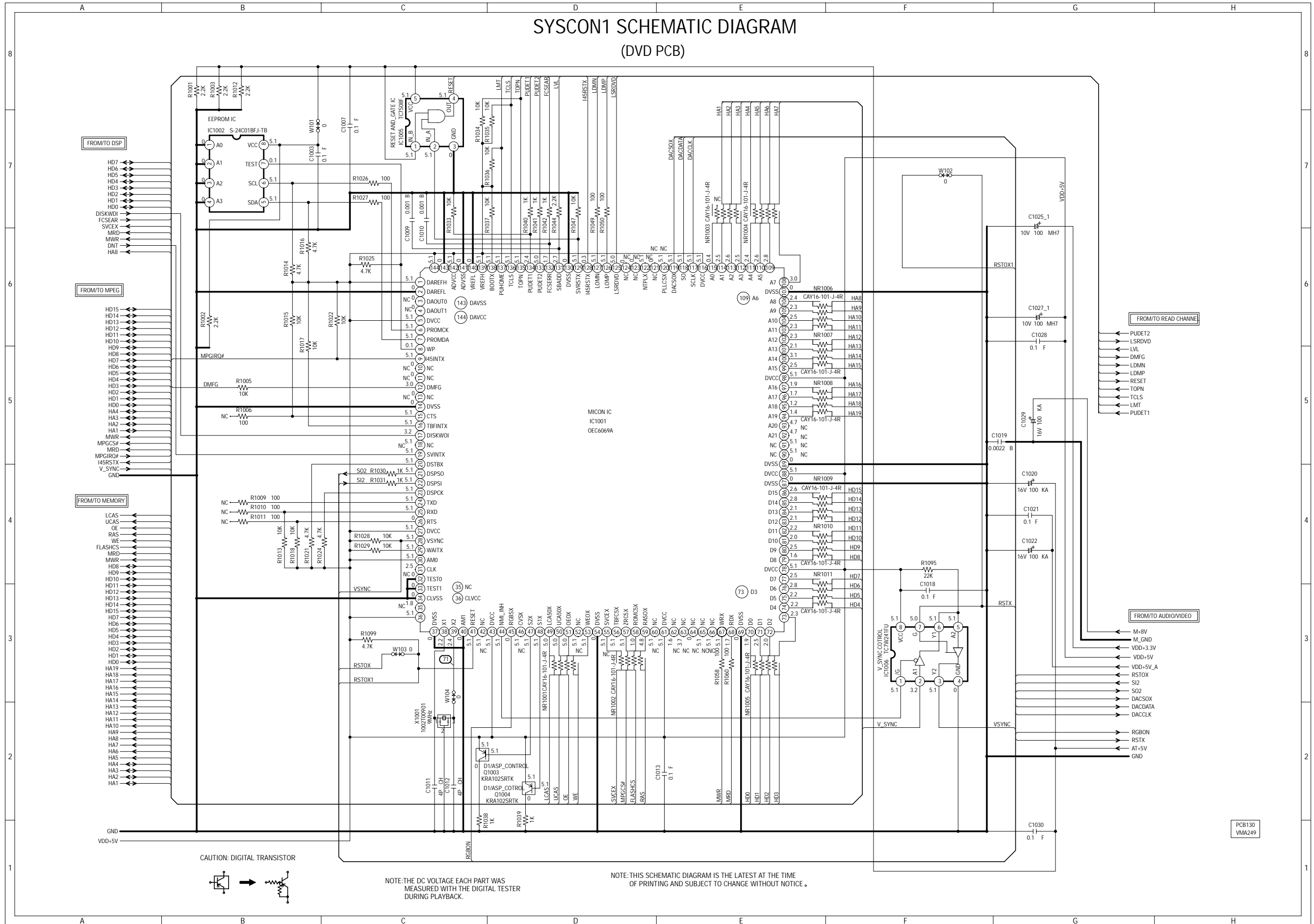


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

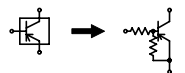


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

# SYSCON1 SCHEMATIC DIAGRAM (DVD PCB)



CAUTION: DIGITAL TRANSISTOR

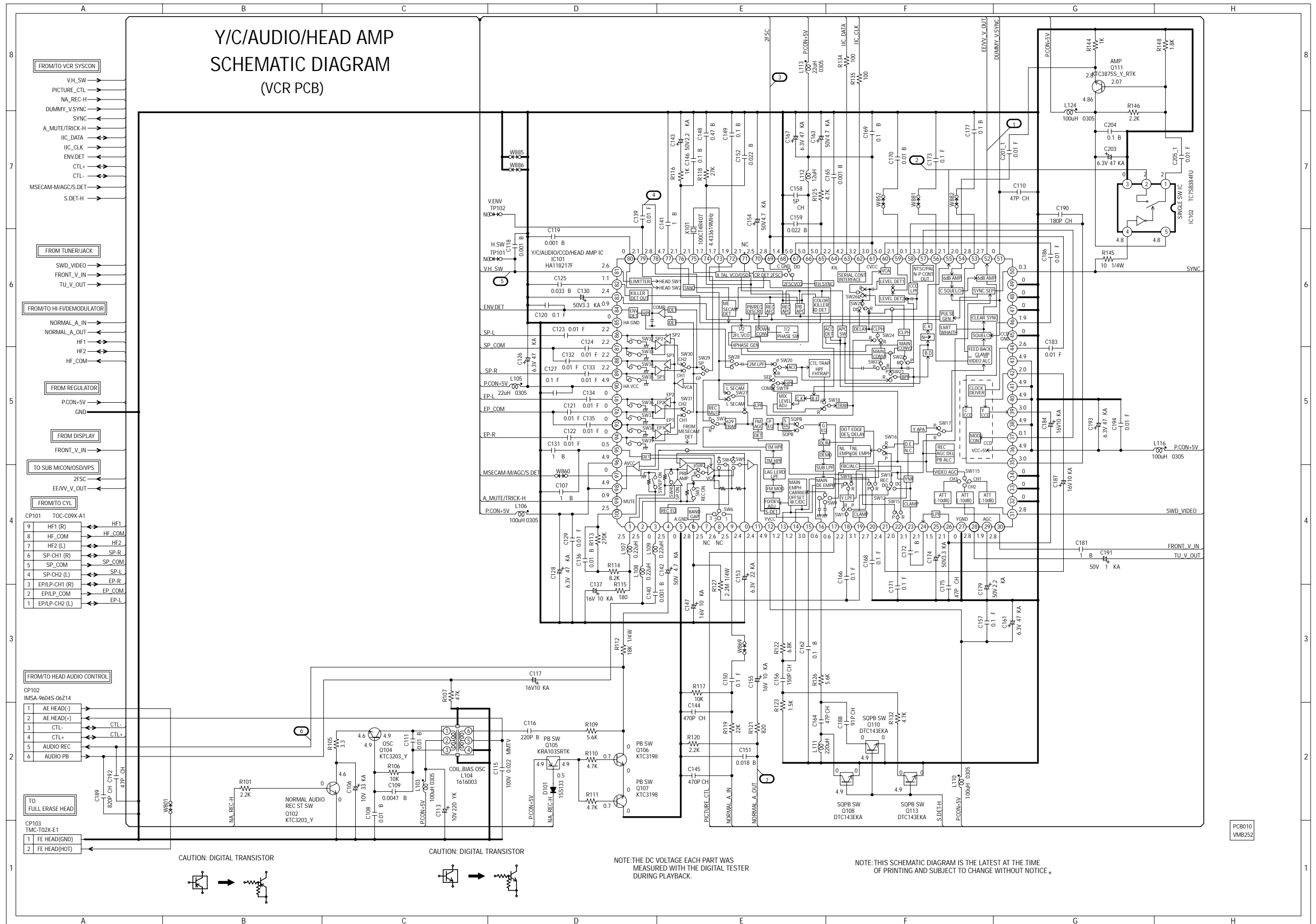


NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

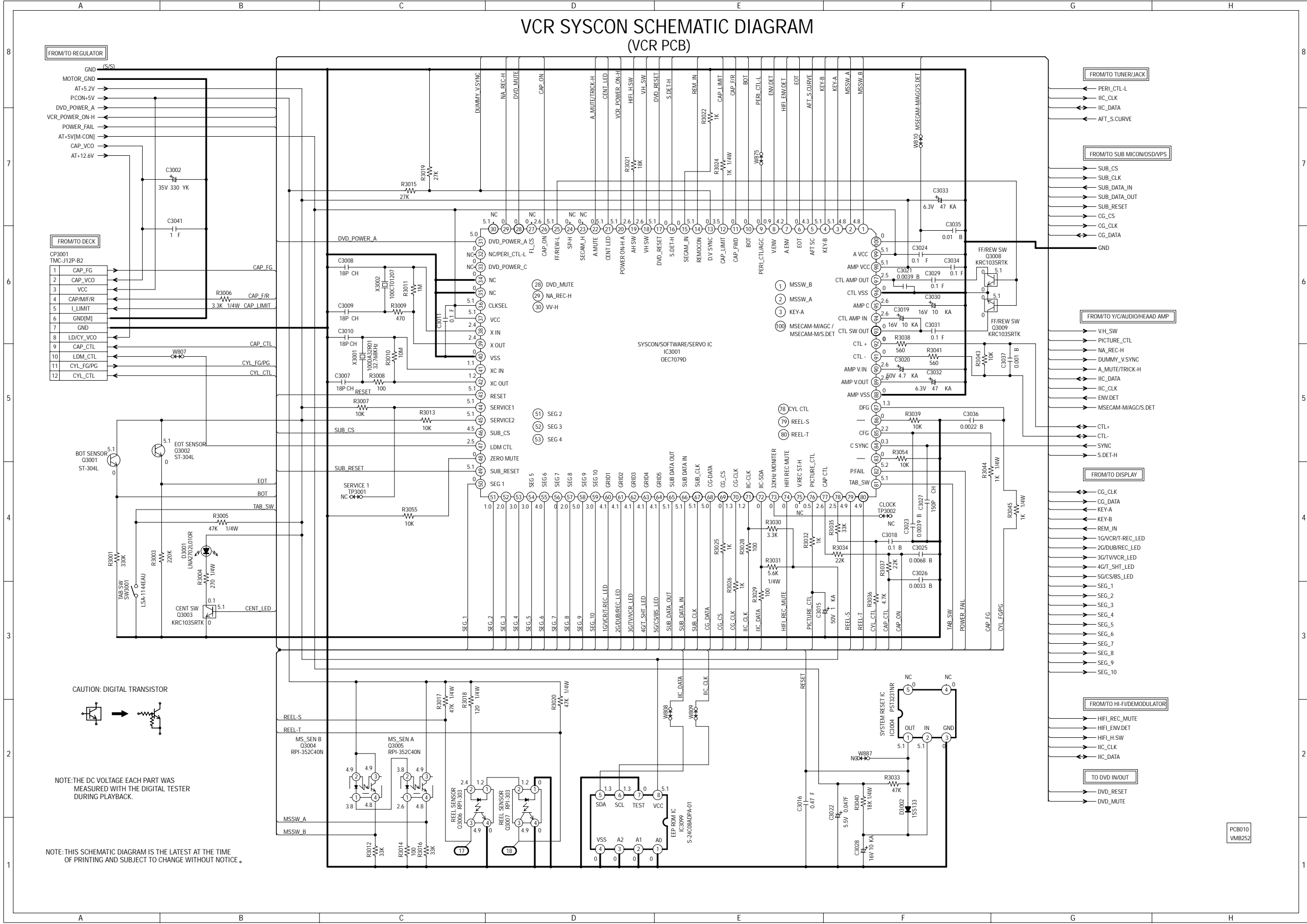
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB130  
VMA249

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

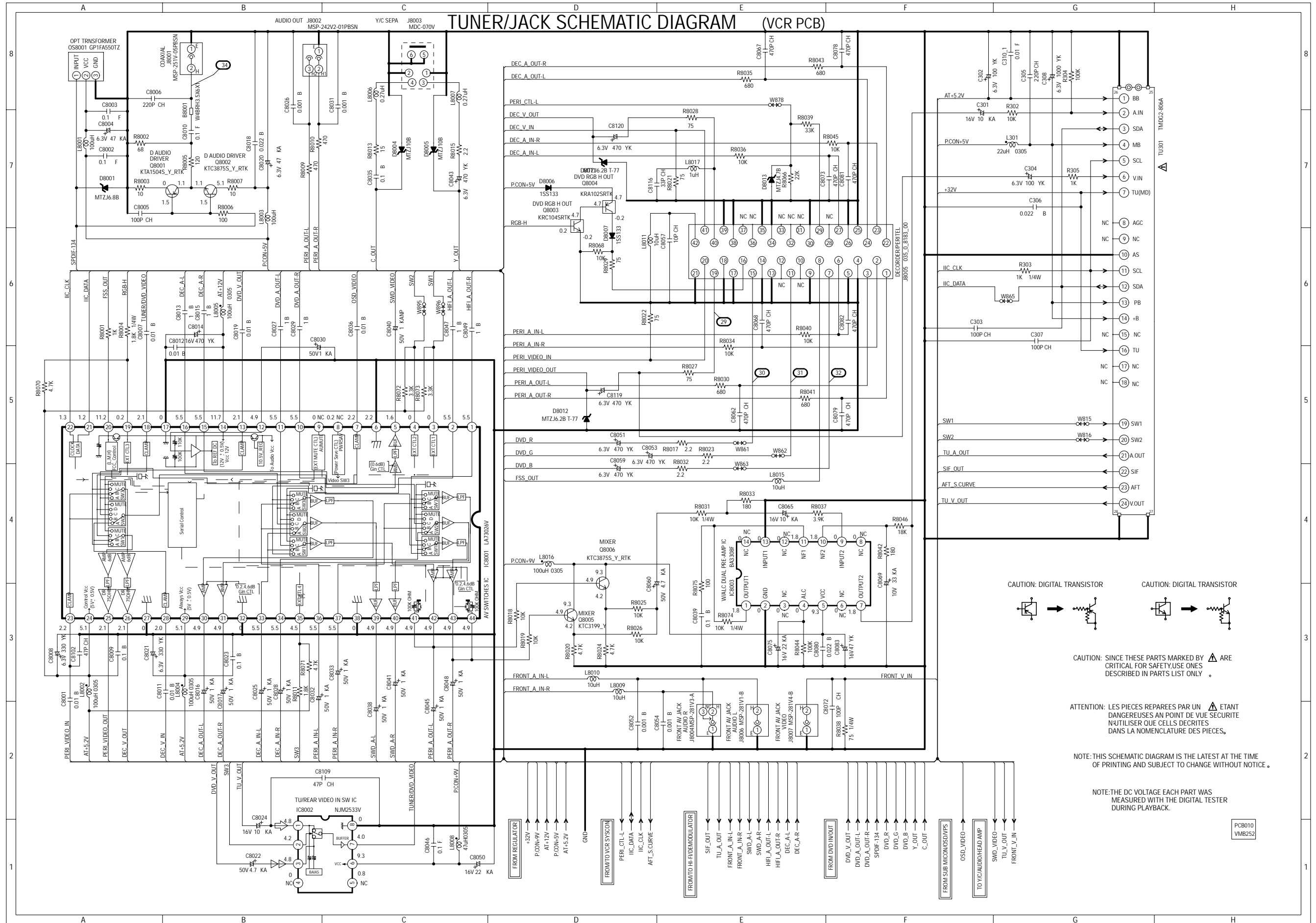


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



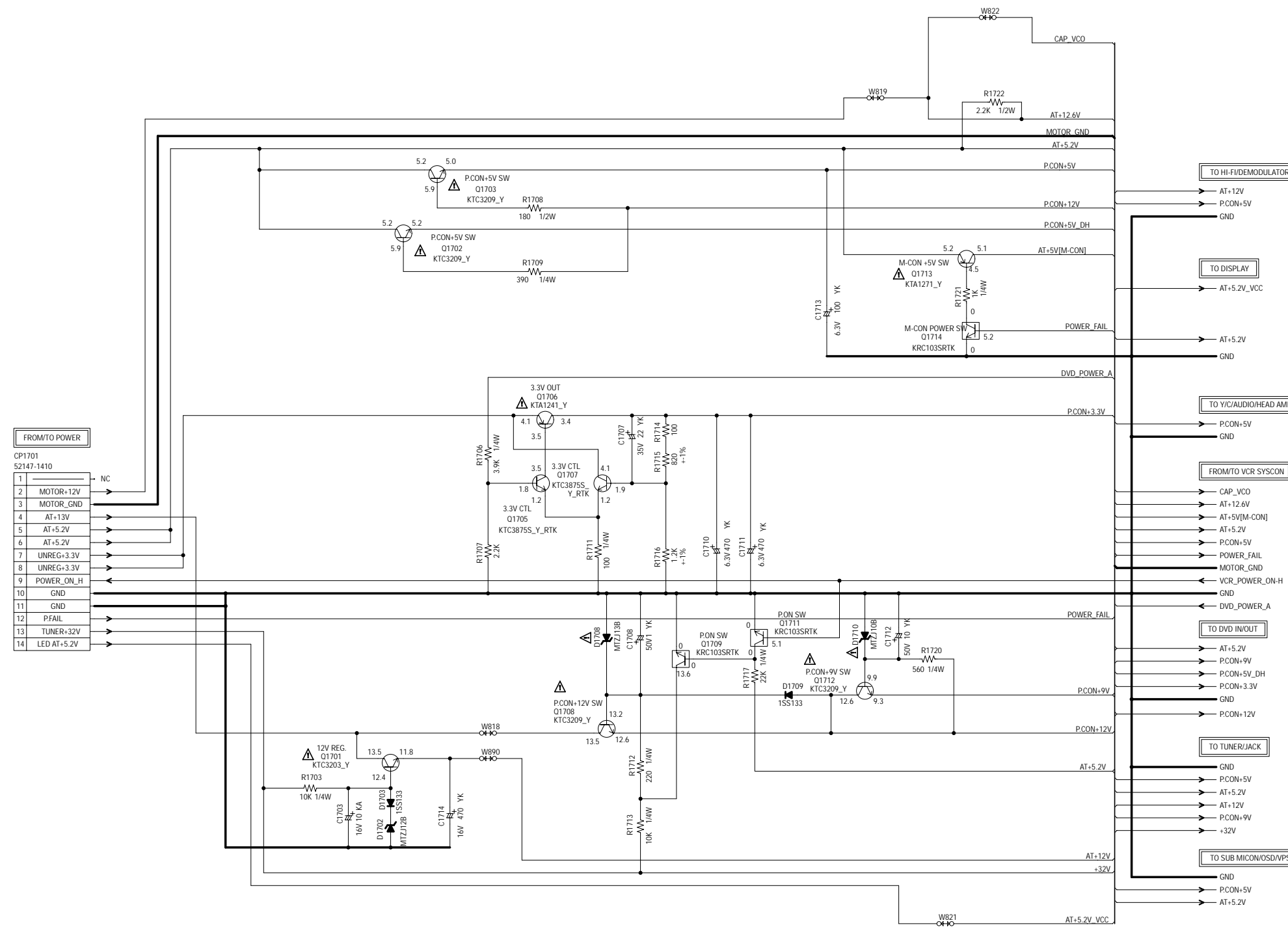


Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

## REGULATOR SCHEMATIC DIAGRAM (VCR PCB)



FROM/TO POWER	
1	NC
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	P.FAIL
13	TUNER+32V
14	LED AT+5.2V

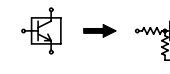
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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

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

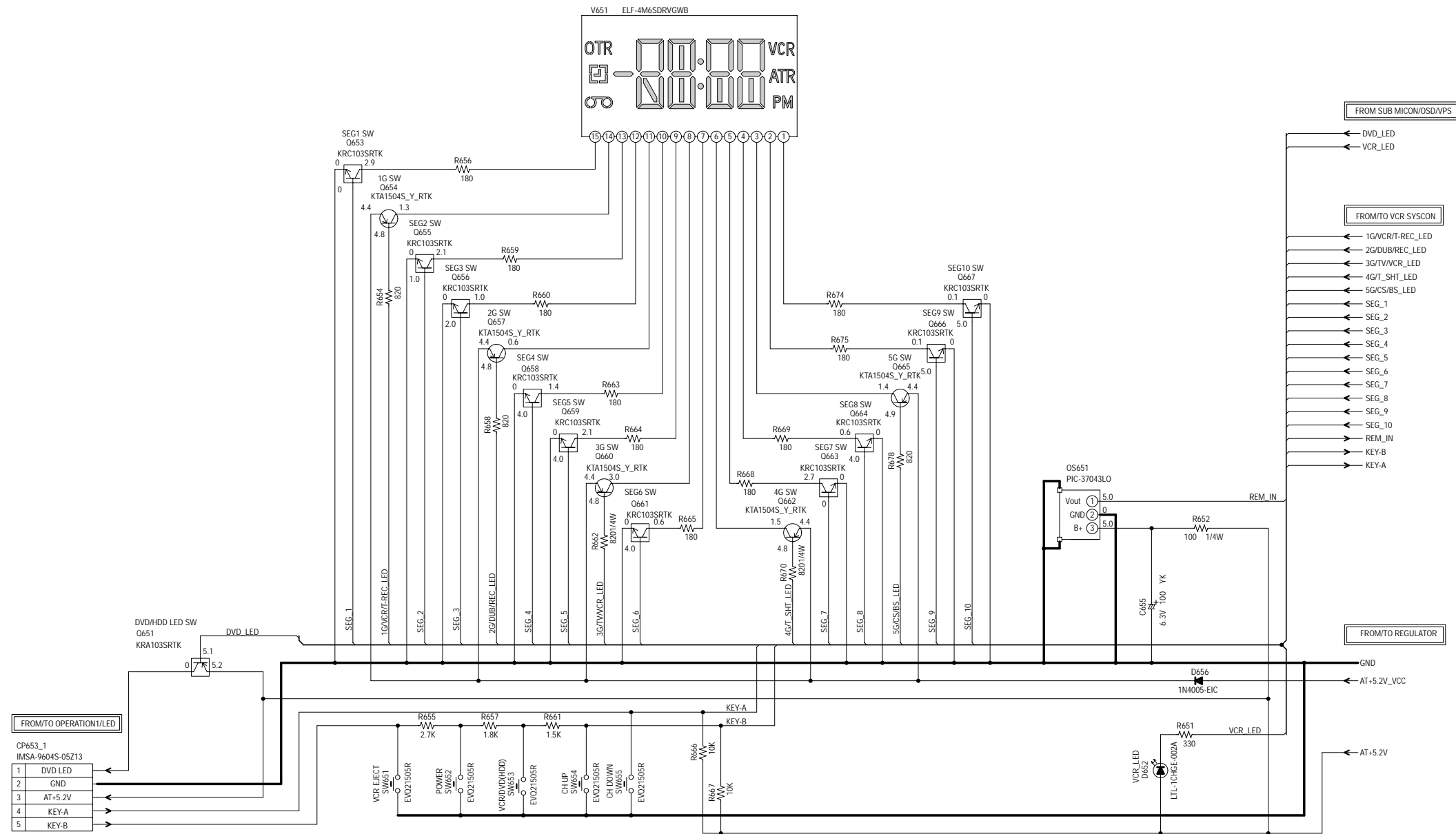
CAUTION: DIGITAL TRANSISTOR



PCB010  
VMB252

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.  
When replacing the parts, refer to the Parts List.

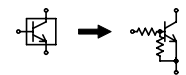
## DISPLAY SCHEMATIC DIAGRAM (VCR PCB)



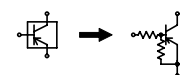
FROM/TO OPERATION I/LED

1	DVD LED
2	GND
3	AT+5.2V
4	KEY-A
5	KEY-B

CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR



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

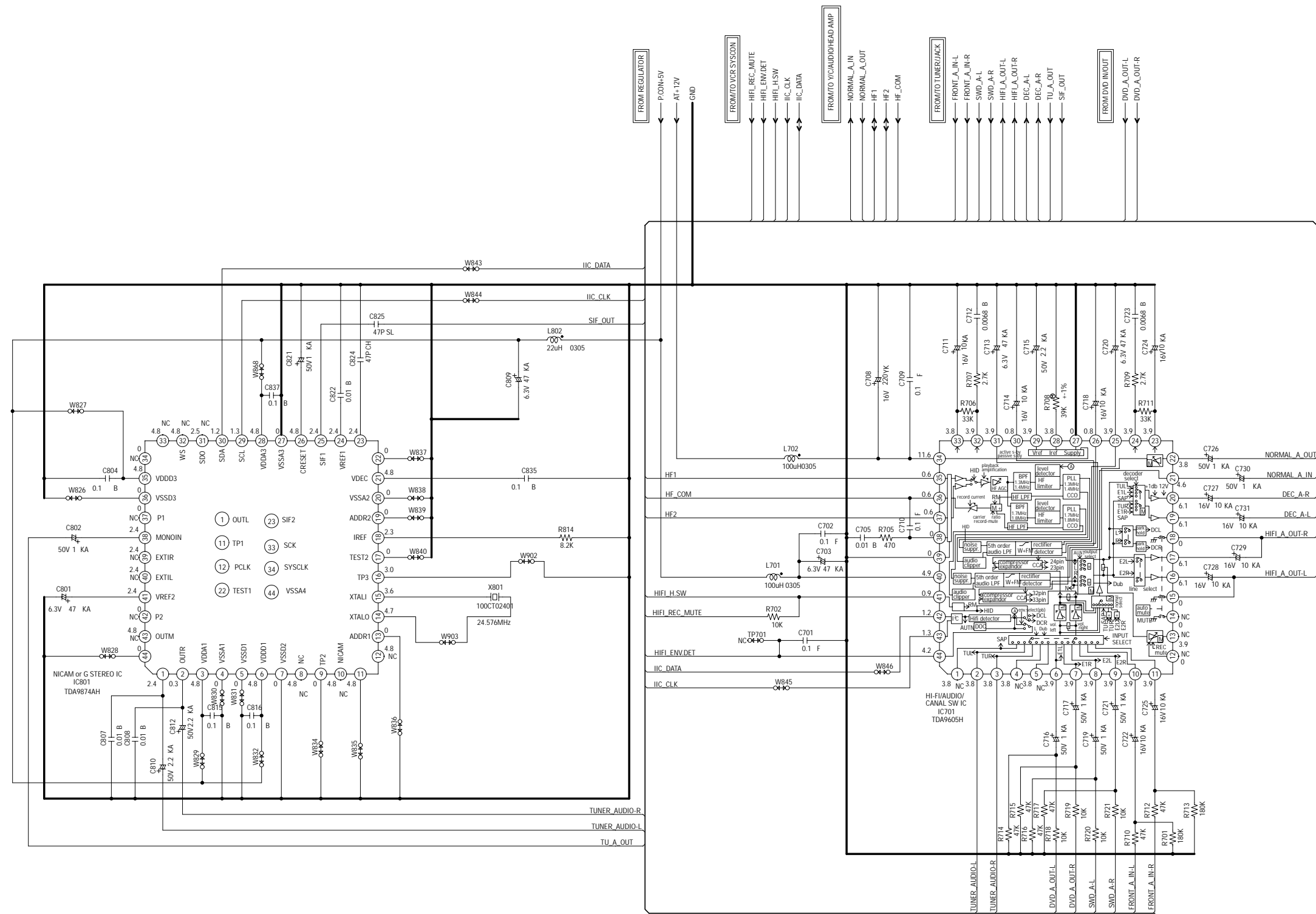
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB010  
VMB252



Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

# Hi-Fi/DEMODULATOR SCHEMATIC DIAGRAM (VCR PCB)



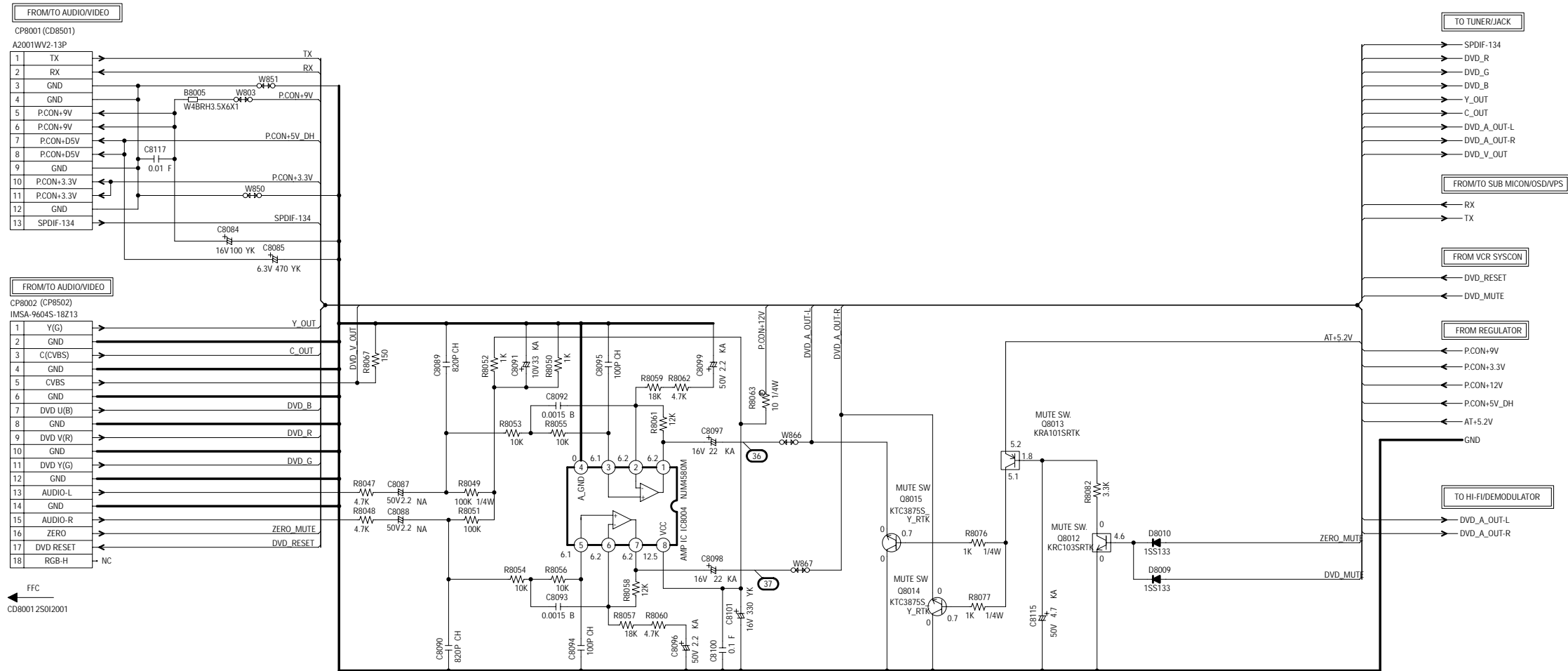
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB010  
VMB252

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.  
When replacing the parts, refer to the Parts List.

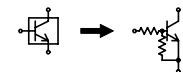
## DVD IN/OUT SCHEMATIC DIAGRAM (VCR PCB)



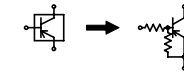
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

CAUTION: DIGITAL TRANSISTOR



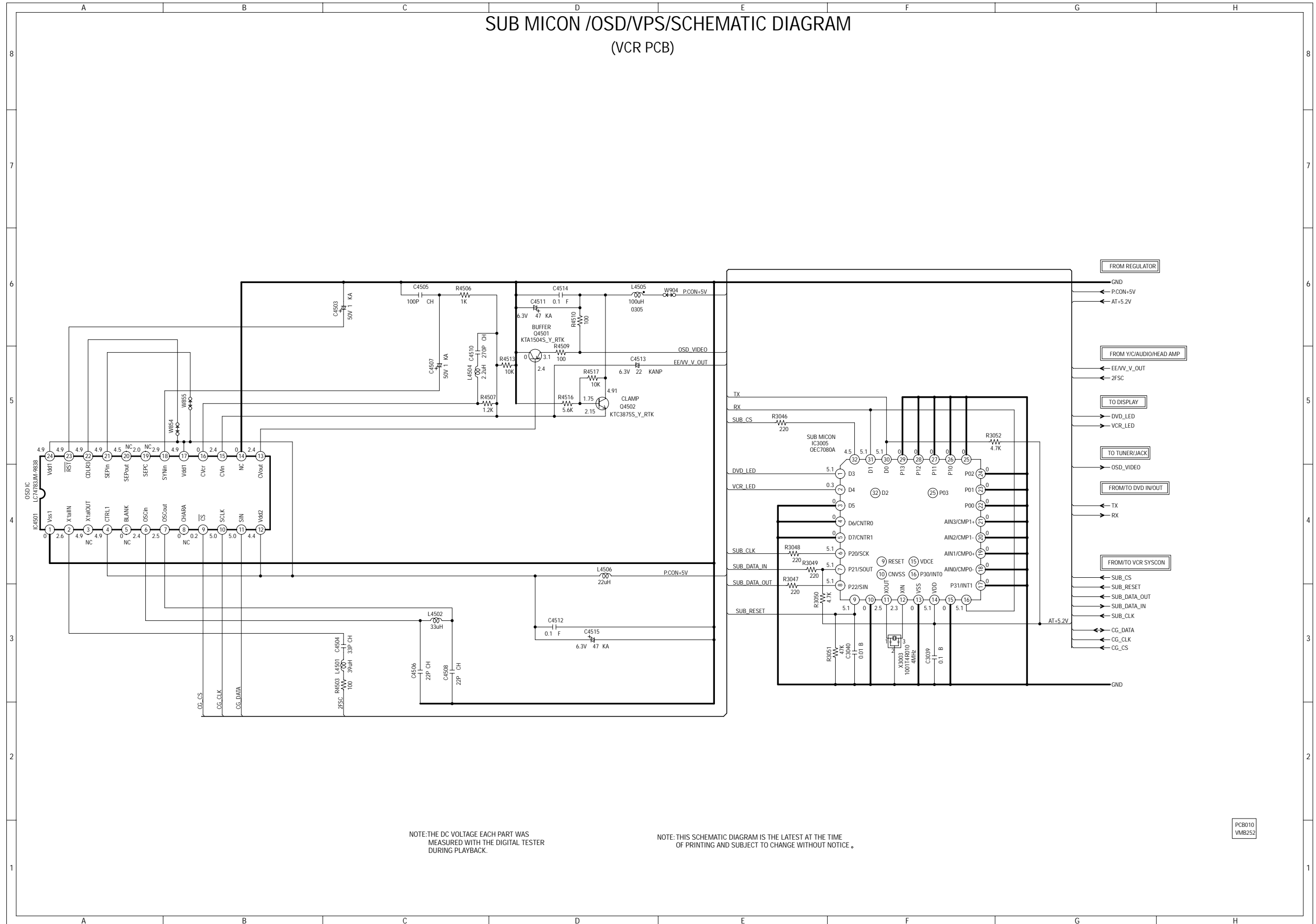
CAUTION: DIGITAL TRANSISTOR



PCB010  
VMB252

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

## SUB MICON /OSD/VPS/SCHEMATIC DIAGRAM (VCR PCB)



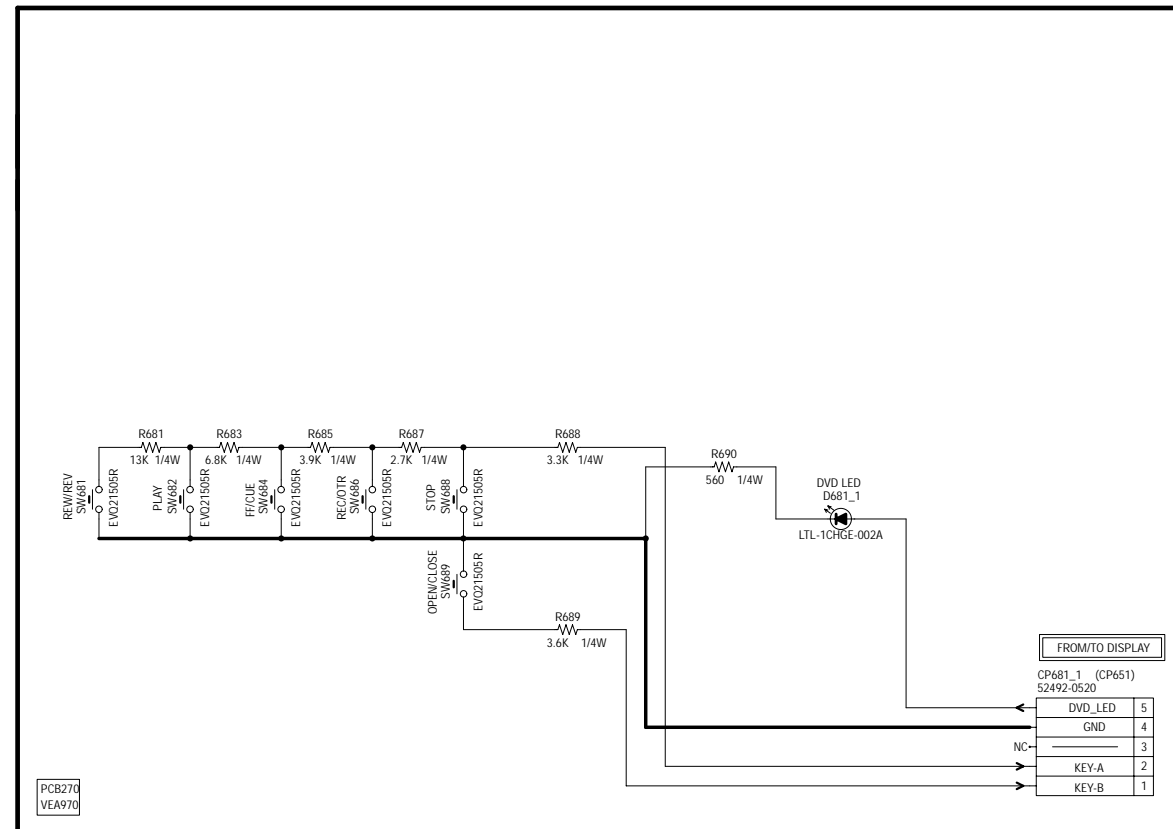
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB010  
VMB252

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only.  
When replacing the parts, refer to the Parts List.

## OPERATION SCHEMATIC DIAGRAM (OPERATION PCB)



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

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

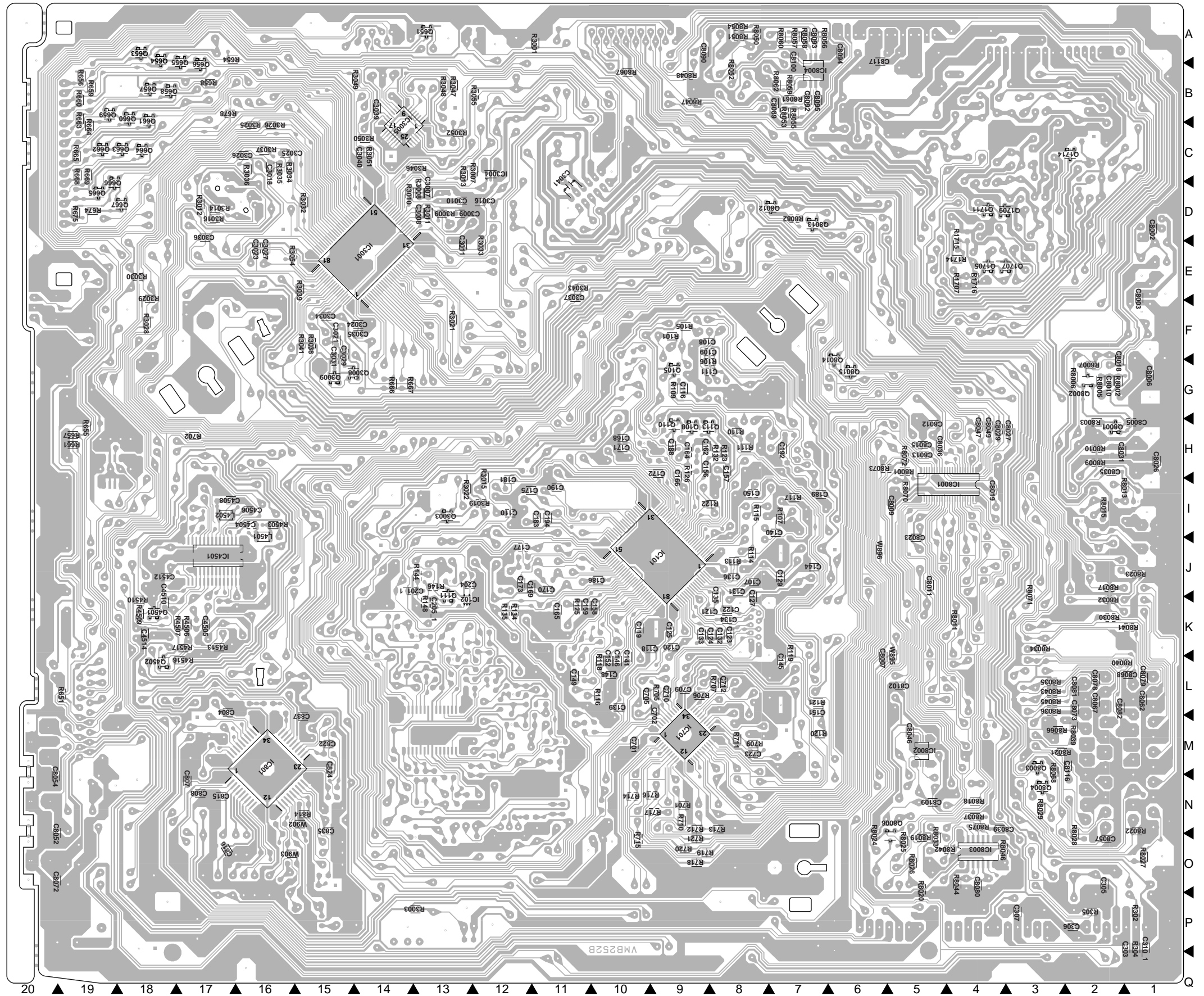






PRINTED CIRCUIT BOARDS  
VCR (CHIP MOUNTED PARTS)  
SOLDER SIDE

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
L8016	6O	R678	17B	R8029	3N
L8017	2N	R701	9N	R8030	2K
		R702	17H	R8031	5N
<b>TRANSISTOR</b>		R705	9L	R8032	2K
Q102	9F	R706	9L	R8033	5O
Q104	8F	R707	8L	R8034	3K
Q105	9G	R708	8M	R8035	3L
Q106	8H	R709	8M	R8036	3L
Q107	8H	R710	9N	R8037	4N
Q108	9H	R711	8M	R8038	19O
Q110	9H	R712	9N	R8039	2M
Q111	13K	R713	8N	R8040	2L
Q113	9H	R714	10N	R8041	1K
Q651	13A	R715	10O	R8042	4O
Q653	18A	R716	9N	R8043	3L
Q654	18A	R717	9N	R8044	4O
Q655	17B	R718	9O	R8045	3L
Q656	17B	R719	9O	R8046	4O
Q657	18B	R720	9O	R8047	9B
Q658	18B	R721	9O	R8048	9B
Q659	19B	R814	15N	R8049	8B
Q660	18B	R1703	1B	R8050	8A
Q661	18B	R1706	4E	R8051	8A
Q662	19C	R1707	4E	R8052	8B
Q663	18C	R1708	1C	R8053	7B
Q664	18C	R1709	1C	R8054	8A
Q665	19D	R1711	4E	R8055	7B
Q666	19D	R1712	3C	R8056	7A
Q667	18D	R1713	3D	R8057	7A
Q1701	3B	R1714	4E	R8058	7A
Q1702	2C	R1715	4E	R8059	7B
Q1703	2C	R1716	4E	R8060	7A
Q1705	4E	R1717	4D	R8061	7B
Q1706	4E	R1720	3D	R8062	7B
Q1707	4E	R1721	2D	R8063	7C
Q1708	4D	R1722	4B	R8066	3M
Q1709	4D	R3001	11A	R8067	10B
Q1711	4D	R3003	13P	R8068	3M
Q1712	3D	R3004	14I	R8070	5I
Q1713	2D	R3005	18E	R8071	3J
Q1714	2C	R3006	11D	R8072	5H
Q3001	13A	R3007	12C	R8073	5O
Q3002	13P	R3008	13D	R8074	4N
Q3003	13J	R3009	13D	R8075	4N
Q3004	17D	R3010	14D	R8076	6D
Q3005	16D	R3011	13D	R8077	6D
Q3006	16L	R3012	17D	R8082	7D
Q3007	16F	R3013	13C		
Q3008	15G	R3014	17D	<b>SWITCH</b>	
Q3009	15G	R3015	12I	SW651	19G
Q4501	18K	R3016	17D	SW652	19P
Q4502	18L	R3017	16D	SW653	19H
Q8001	2H	R3018	16L	SW654	19J
Q8002	2G	R3019	12I	SW655	19K
Q8003	3M	R3020	16C	SW3001	19N
Q8004	3N	R3021	13F		
Q8005	5O	R3022	13I	<b>TEST POINT</b>	
Q8006	5D	R3024	11D	TP101	14O
Q8012	7D	R3025	16C	TP102	13O
Q8013	7D	R3026	16C	TP701	14O
Q8014	6G	R3028	18F	TP3001	5F
Q8015	6G	R3029	18E	TP3002	18F
		R3030	18E		
<b>RESISTOR</b>		R3031	18E	<b>OTHER</b>	
R101	9F	R3032	15D	B8005	6C
R105	9F	R3033	12E	CP101	8K
R106	9G	R3034	16C	CP102	7H
R107	9I	R3035	16C	CP103	10O
R109	7G	R3036	16C	CP653_1	14A
R110	8H	R3037	16C	CP1701	4A
R111	8H	R3038	15F	CP3001	11D
R112	7H	R3039	15E	CP8001	6A
R113	8J	R3040	12D	CP8002	10A
R114	8J	R3041	15F	J8001	1G
R115	8I	R3043	11E	J8002	1H
R116	10L	R3044	17D	J8003	1J
R117	7I	R3045	17D	J8004	20M
R118	10L	R3046	13C	J8005	1M
R119	7K	R3047	13B	J8006	20N
R120	7M	R3048	13B	J8007	20O
R121	7L	R3049	14B	OS651	20F
R122	8I	R3050	14C	OS8001	1E
R123	8H	R3051	14C	TU301	1P
R125	11K	R3052	13C	V651	19D
R126	9H	R3054	16E	X101	10K
R127	9I	R3055	12B	X108	15P
R132	8H	R4503	16I	X00X	13D
R134	12K	R4506	17K	X00X2	13D
R135	12K	R4507	17K	X00X3	13B
R144	13J	R4509	18K		
R145	13J	R4510	18K		
R146	13J	R4513	17K		
R148	13K	R4516	17K		
R302	17L	R4517	17K		
R303	17L	R4517	17K		
R304	17L	R4517	17K		
R305	17L	R4517	17K		
R651	16I	R8004	1E		
R652	19E	R8005	2G		
R654	17A	R8006	2G		
R655	19H	R8007	2G		
R656	19B	R8009	2H		
R657	19H	R8010	2H		
R658	17B	R8011	4K		
R659	19B	R8013	1I		
R660	19B	R8015	1I		
R661	19H	R8017	2J		
R662	16B	R8018	4N		
R663	19B	R8019	5O		
R664	19C	R8020	5O		
R665	19C	R8021	3M		
R666	14G	R8022	1N		
R667	14G	R8023	1J		
R668	19C	R8024	6O		
R669	19C	R8025	5O		
R670	16B	R8026	5O		
R674	19D	R8027	1O		
R675	19D	R8028	2O		





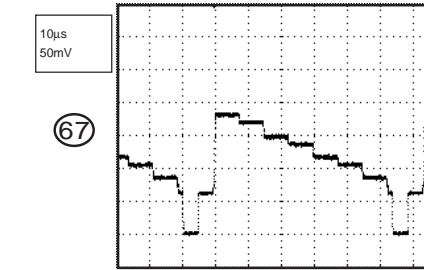
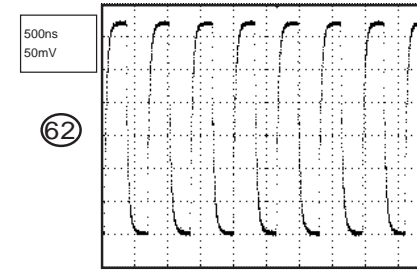
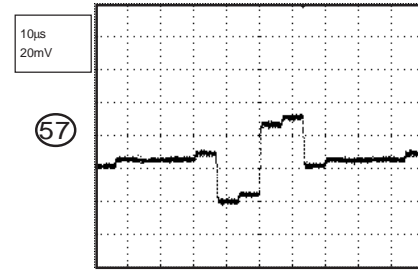
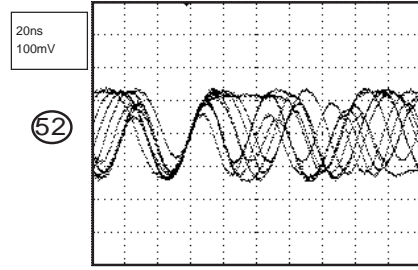
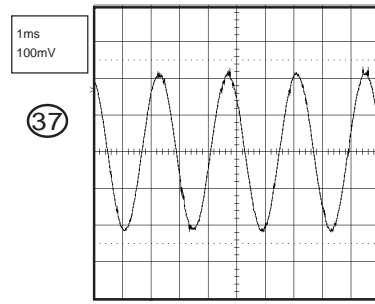




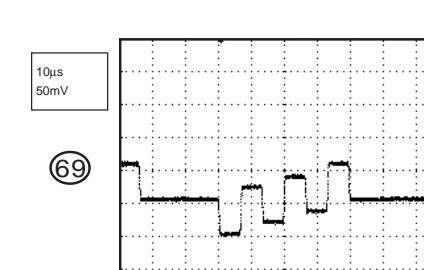
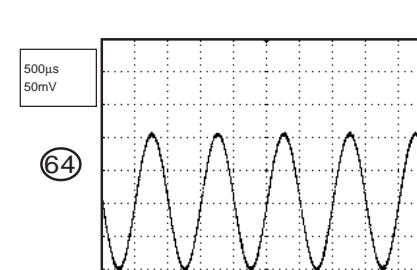
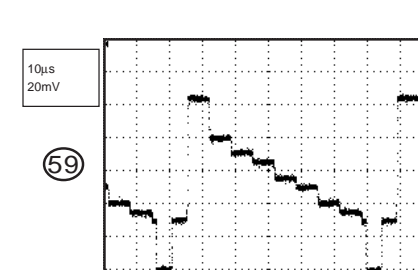
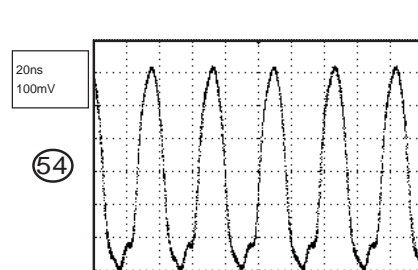
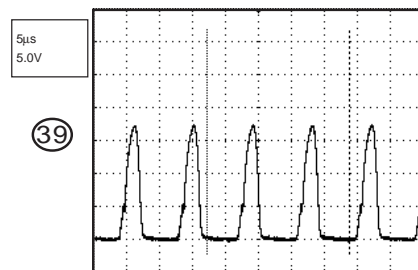
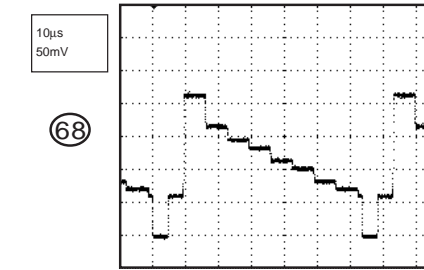
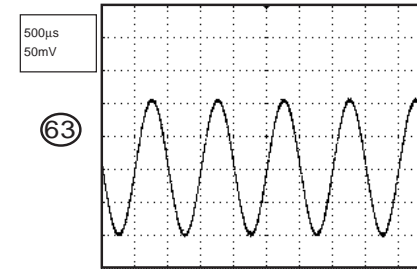
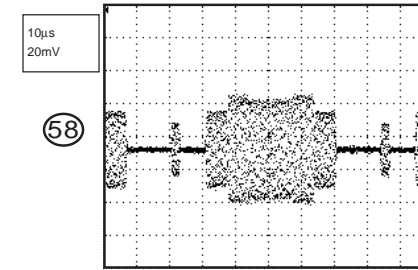
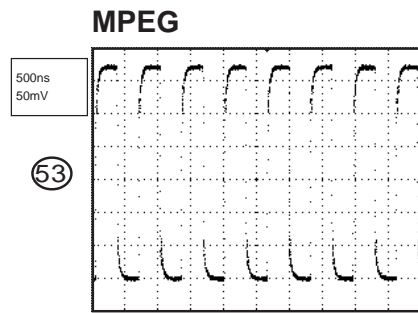
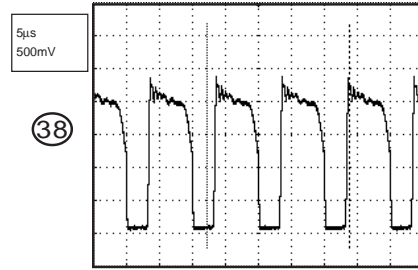


## WAVEFORMS

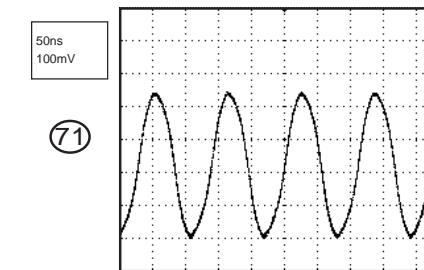
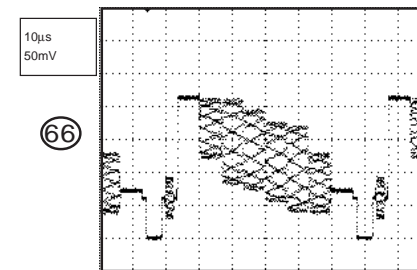
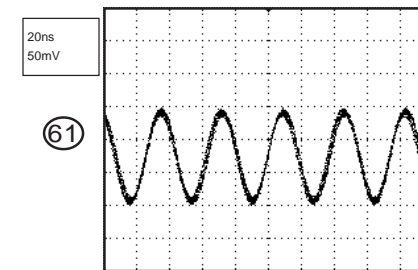
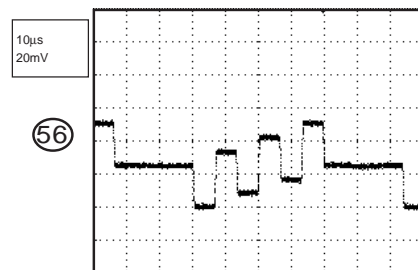
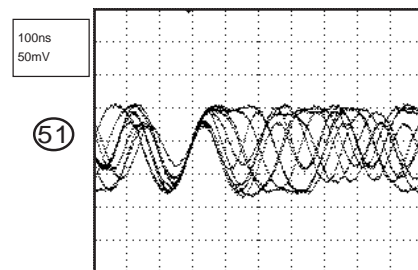
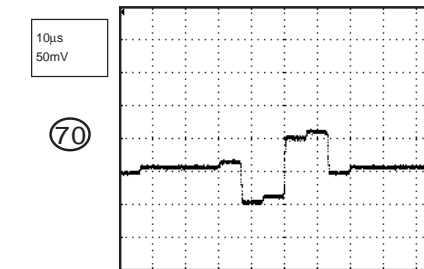
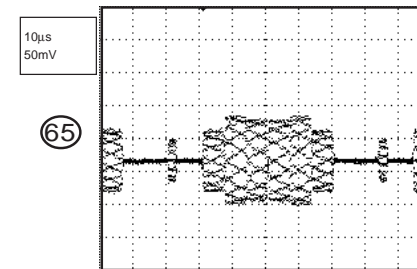
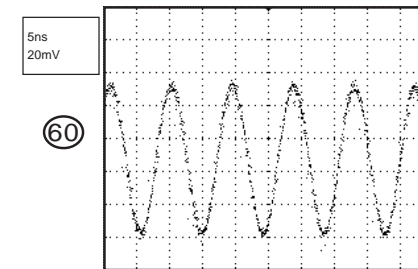
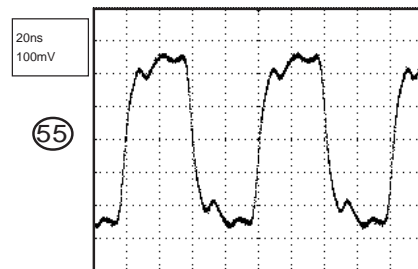
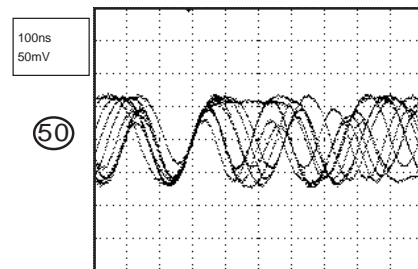
### DSP



### POWER



### READ CHANNEL



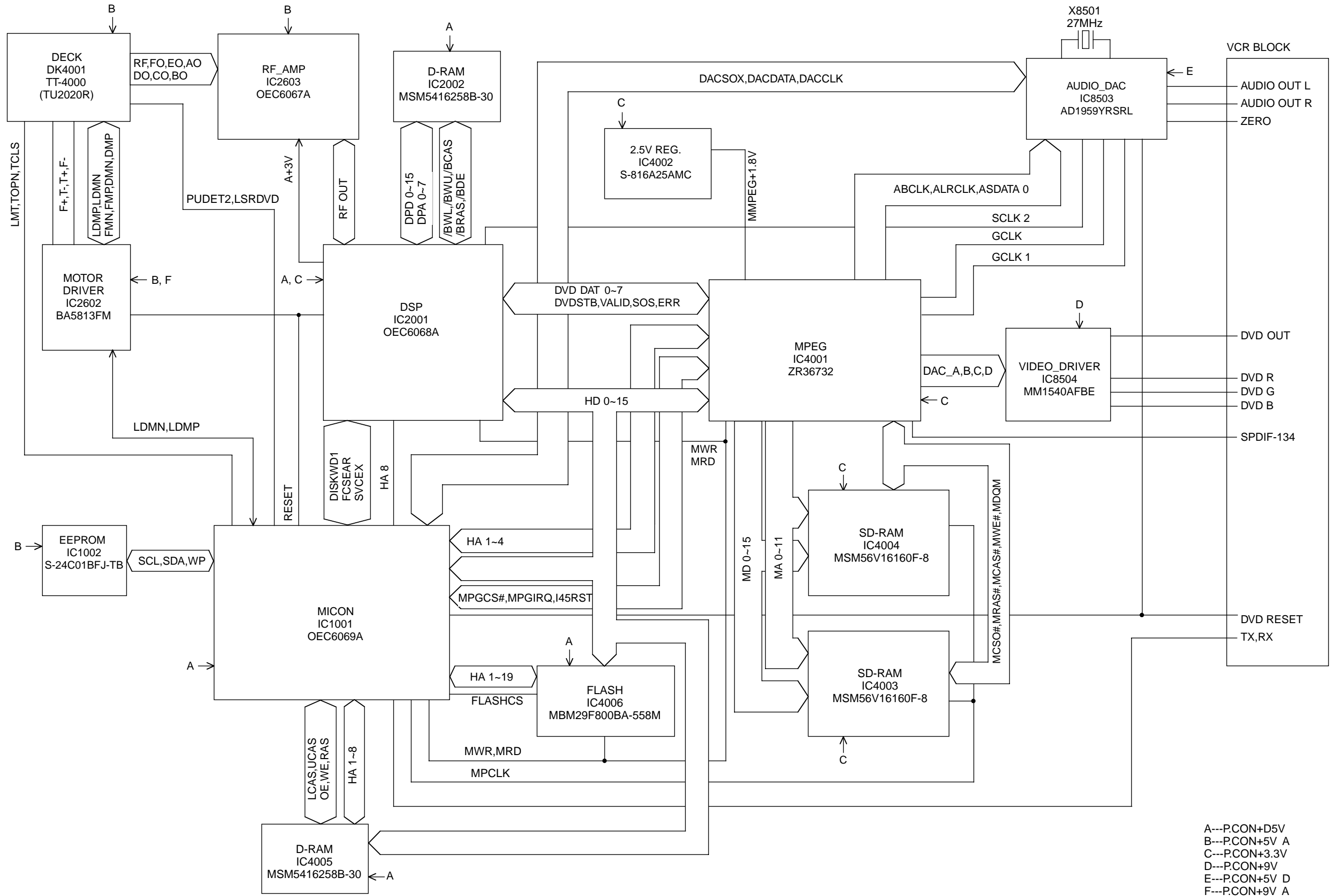
**NOTE:** The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

## WAVEFORMS

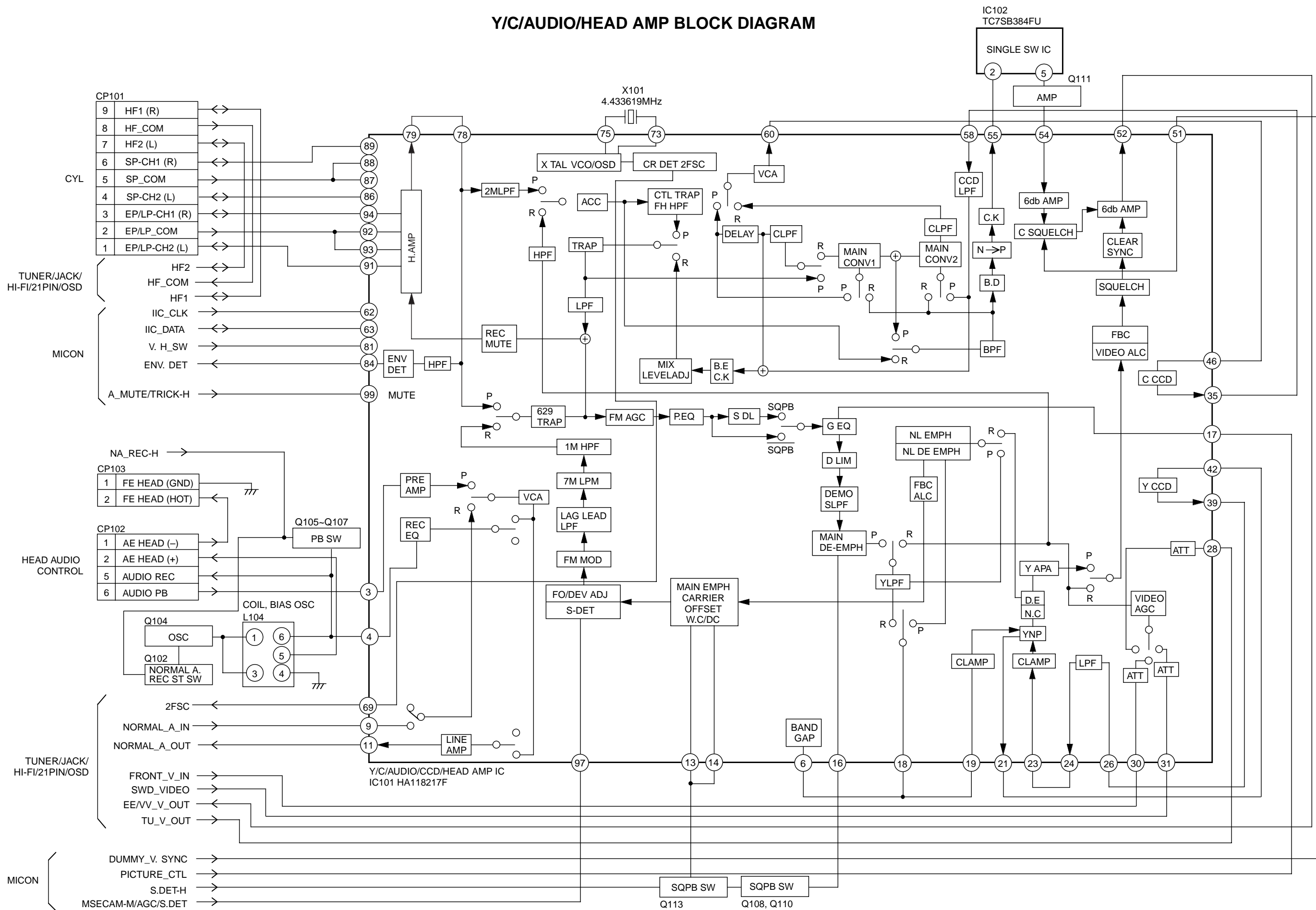
### SYSCON1

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

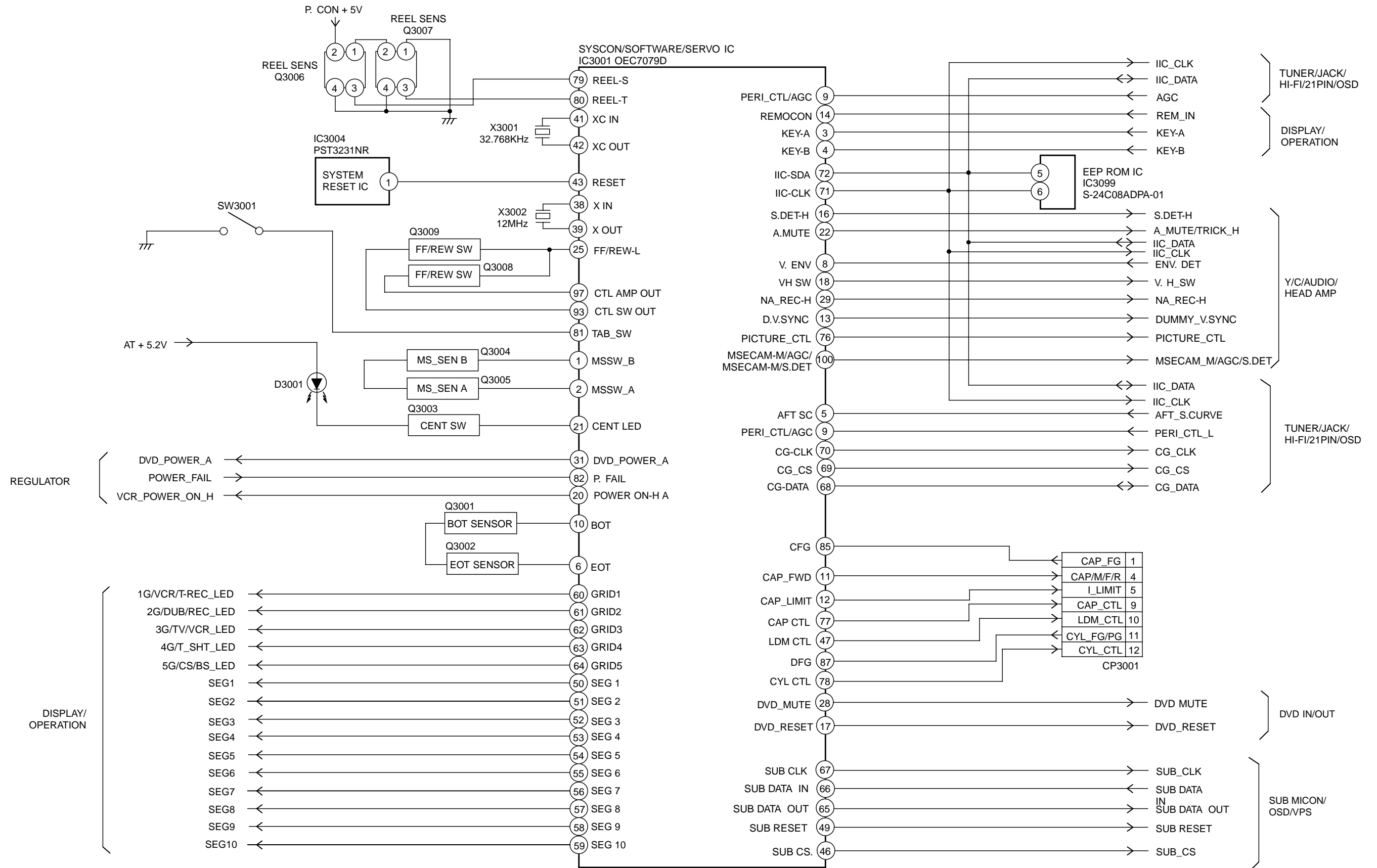
# DVD BLOCK DIAGRAM



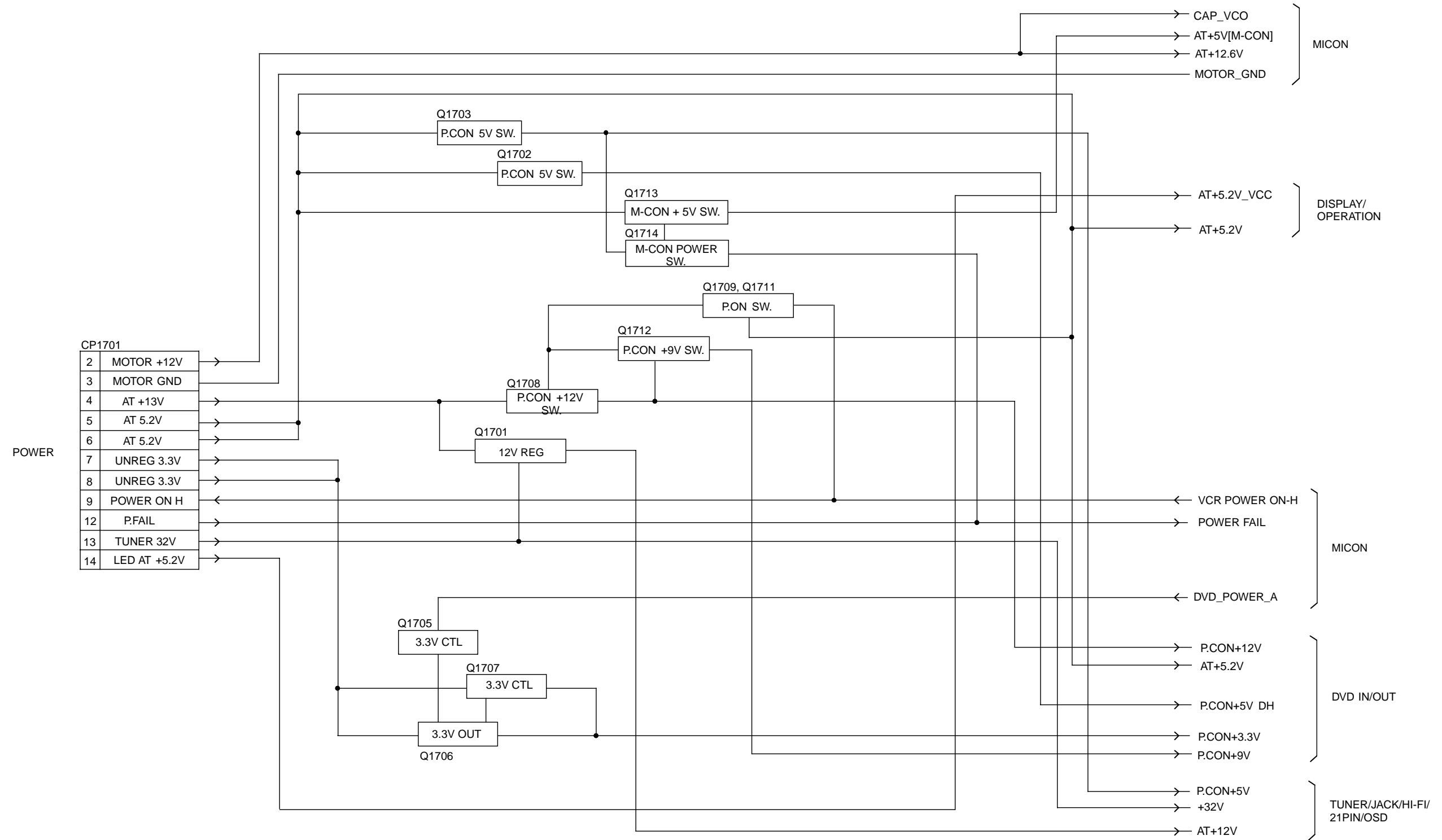
# Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM



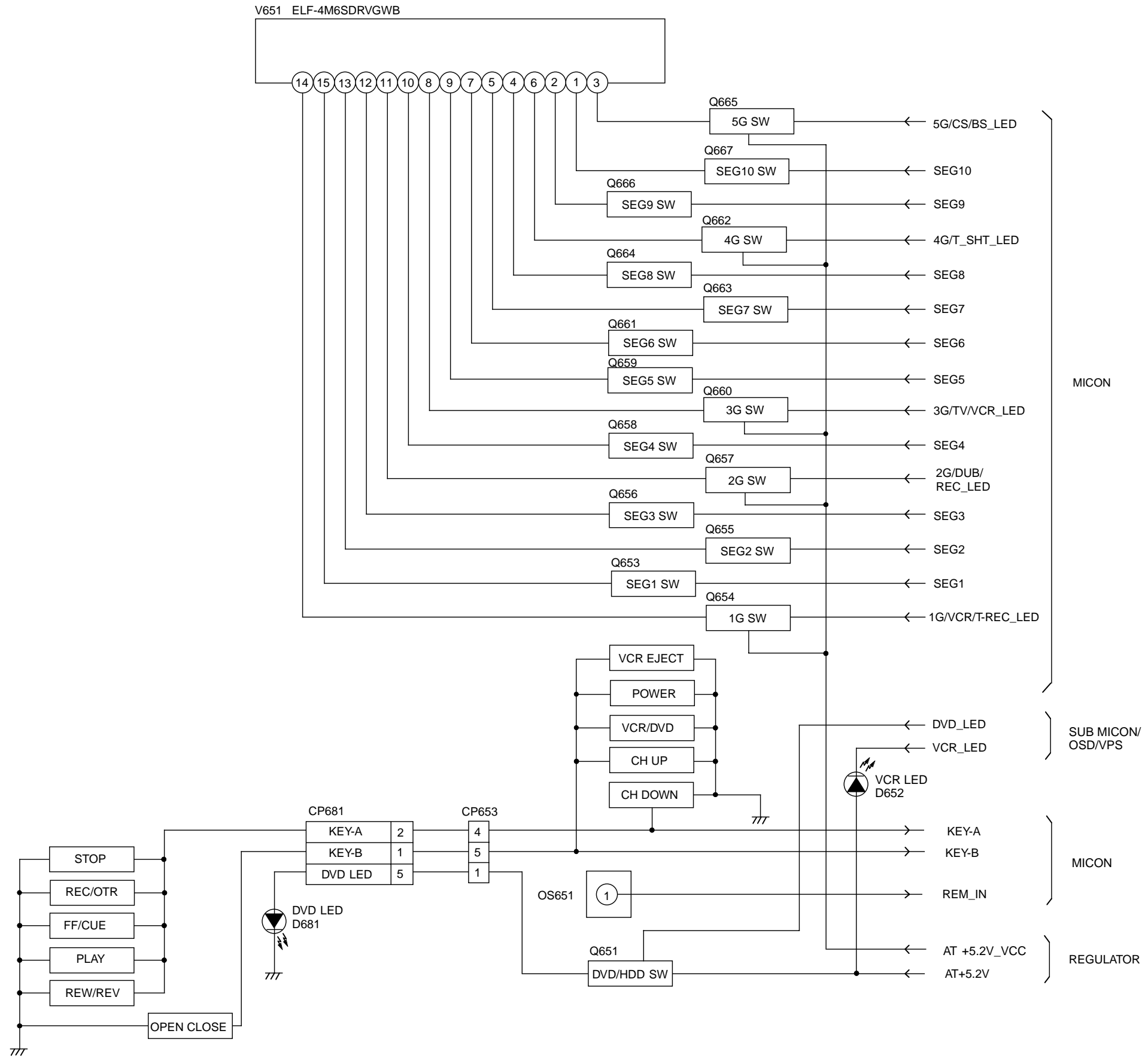
# MICON BLOCK DIAGRAM



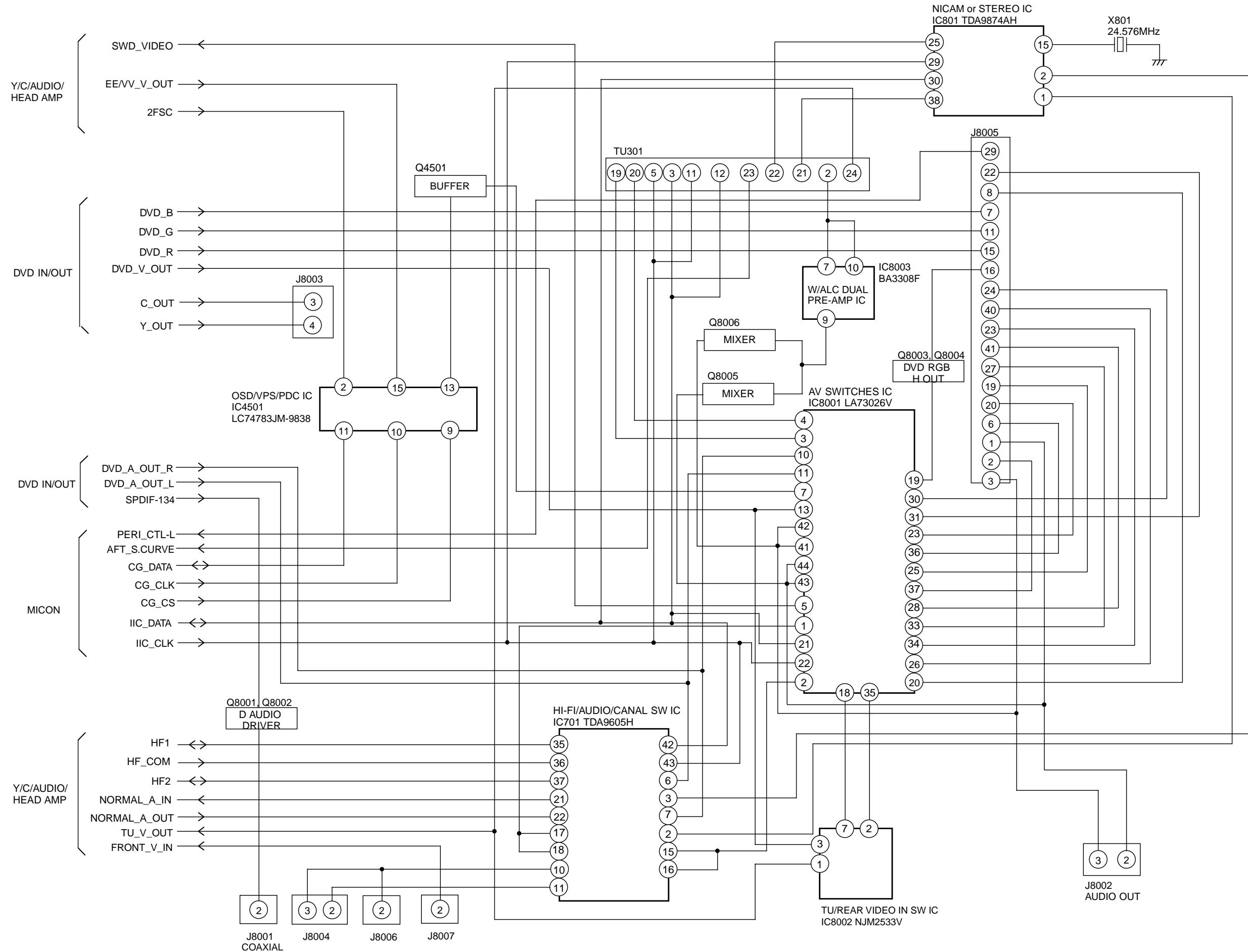
# REGULATOR BLOCK DIAGRAM



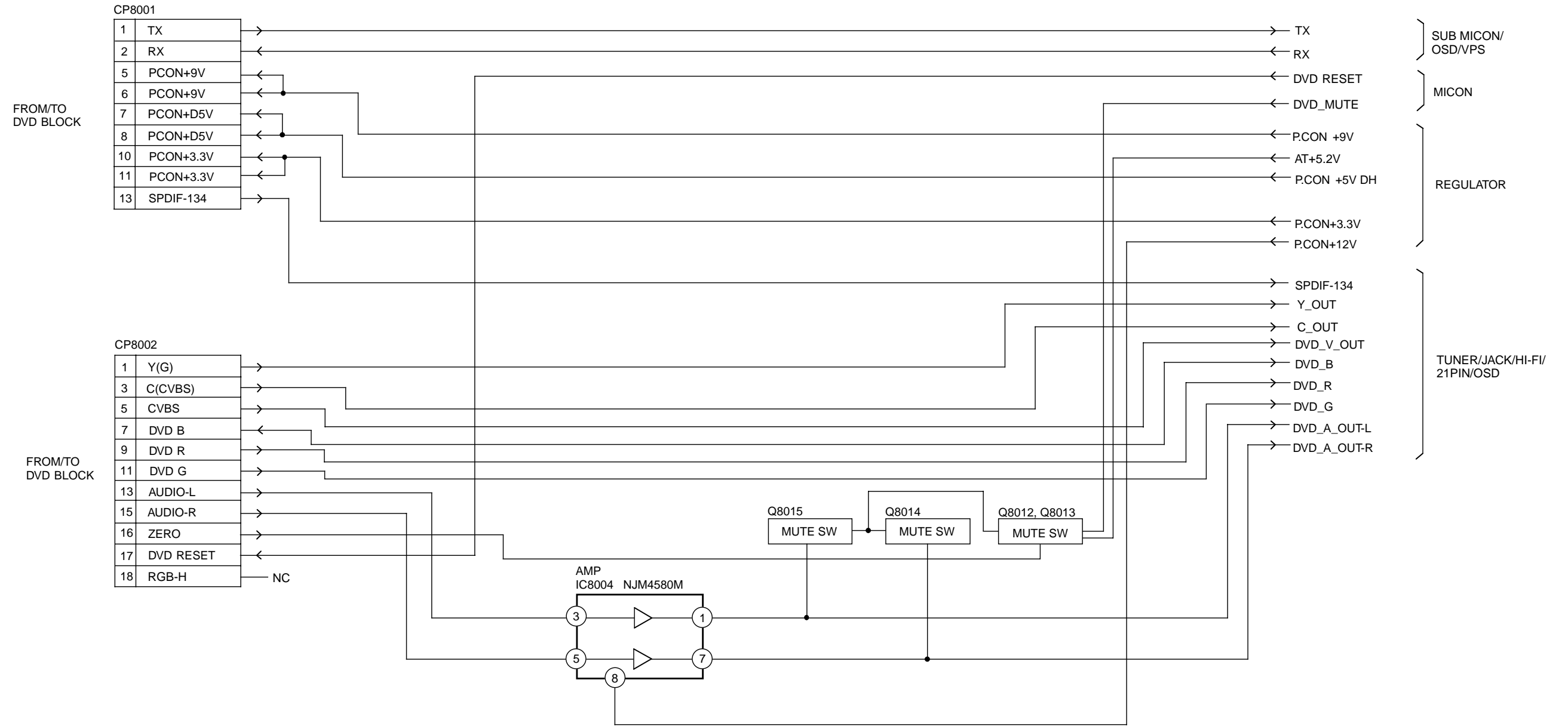
# DISPLAY/OPERATION BLOCK DIAGRAM



# TUNER/JACK/HI-FI/21PIN/OSD BLOCK DIAGRAM



# DVD IN/OUT BLOCK DIAGRAM





# POWER BLOCK DIAGRAM

