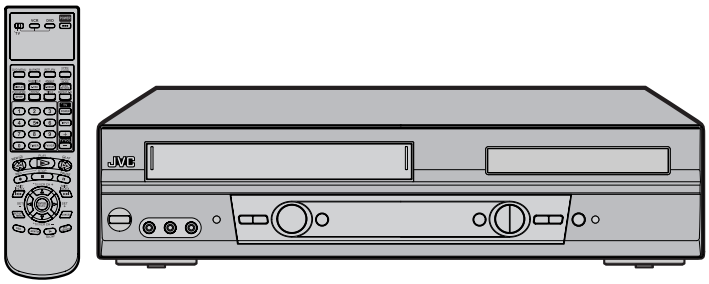
JVC

SERVICE MANUAL

DVD/CD PLAYER Hi-Fi STEREO VIDEO CASSETTE RECORDER

HR-XVC21UJ



VHS SQPB
4 HEAD Hi-Fi
19µm HEAD
WMA MP3 JPEG
DOLBY DIGITAL
dts DIGITAL OUT
SPATIALIZER® N-2-2™

SPECIFICATIONS

GENERAL

Power supply:	110-220 V, 50/60 Hz
Power consumption:	Operation: 18 W Stand by: 3 W
Weight:	7.9 lbs (3.6 kg)
Dimensions:	Width : 16-15/16 inches (430 mm) Height: 3-7/8 inches (99 mm) Depth : 9-13/16 inches (249 mm)
Inputs/Outputs:	
Video:	In: 1 Vp-p/75 ohm Out: 1 Vp-p/75 ohm
Audio:	In: −8 dBm/50 k ohm Out: −8 dBm/1 k ohm
Antenna:	UHF/VHF IN/OUT: 75 ohm coaxial
Hi-Fi Frequency Response:	20 Hz to 20,000 Hz
Hi-Fi Dynamic Range:	More than 90 dB

VCR section

Video Head:	4 Rotary Heads
Audio Track:	Hi-Fi Sound - 2 Tracks / MONO Sound - 1 Track
Tuner:	181 Channel Freq. Synthesized VHF 2-13 UHF 14-69 CATV 14-36 (A)-(W) 37-59 (AA)-(WW) 60-85 (AAA)-(ZZZ) 86-94 (86)-(94) 95-99 (A-5)-(A-1) 100-125 (100)-(125) 01 (5A)
RF Channel Output:	Channel 3 or 4, Switchable
F.FWD/REW Time:	Approx. 1 minute 48 seconds (with T-120 Cassette Tape) (at + 25°C)

DVD section

Signal system:	NTSC
Applicable disc:	DVD (12 cm, 8 cm), CD (12 cm, 8 cm)
Audio characteristics	
Frequency response:	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz
S/N Ratio:	90 dB
Harmonic distortion	0.02%
Wow and flutter:	Less than 0.01% Wrms
Dynamic range:	More than 90 dB
Output:	Video : (RCA) 1 Vp-p/75 ohm Audio : (RCA) −12 dBm/1k ohm Digital Audio : 0.5 Vp-p 75 ohm
Pickup:	CD : Wavelength: 775 - 805 nm Maximum output power: 0.5 mW DVD : Wavelength: 640 - 660 nm Maximum output power: 1.0 mW

ACCESSORIES:

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

HR-XVC21UJ D2VP11

No.82990
2003/08

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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 ⚠ 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.

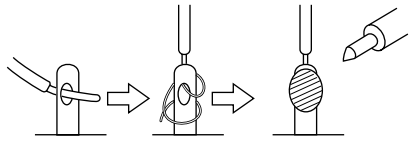


Fig.1

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.

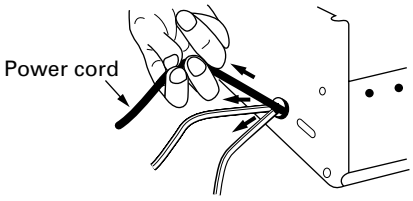


Fig.2

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).

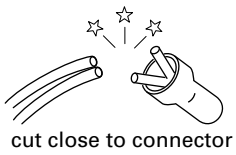


Fig.3

(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.

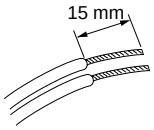


Fig.4

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

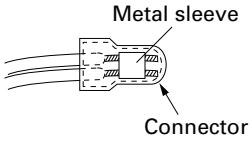


Fig.5

(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.

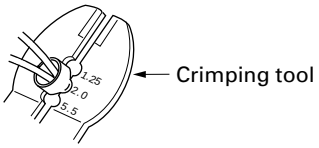


Fig.6

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

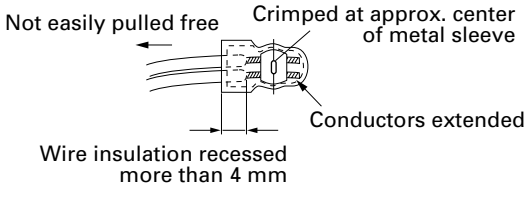


Fig.7

● 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.

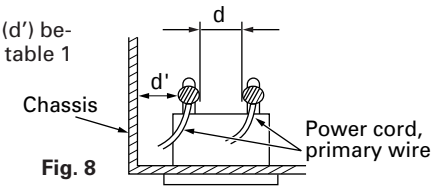


Fig. 8

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.

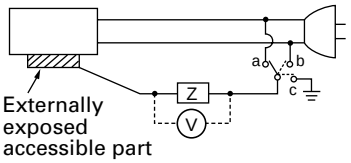


Fig. 9

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.

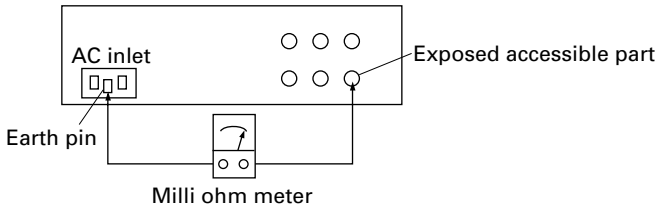


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

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

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP651).
4. Unlock the 8 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 2 screws ③.
7. Remove the Operation PCB in the direction of arrow (C).

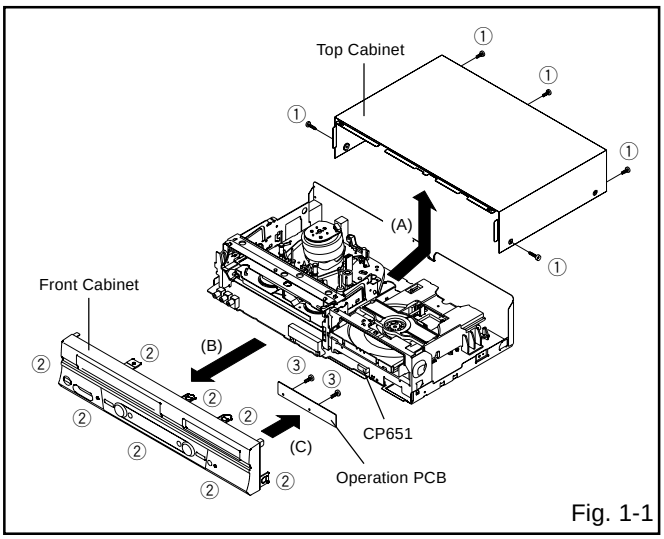


Fig. 1-1

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).

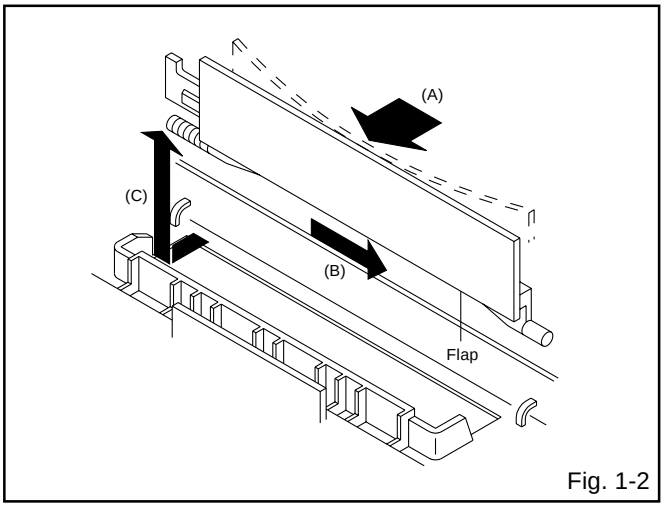


Fig. 1-2

1-3: DVD DECK (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 DVD Deck with no soldering, the Laser may be damaged.
2. Unlock the support ① and remove the Deck Top Holder in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the screw ③.
5. Remove the screw ④.
6. Disconnect the following connectors: (CP2601, CP2602, CP2603).
7. Remove the DVD Deck in the direction of arrow (B).
8. Remove the 3 screws ⑤.
9. Remove the Front Angle in the direction of arrow (C).
10. Remove the screw ⑥.
11. Remove the DVD Angle.

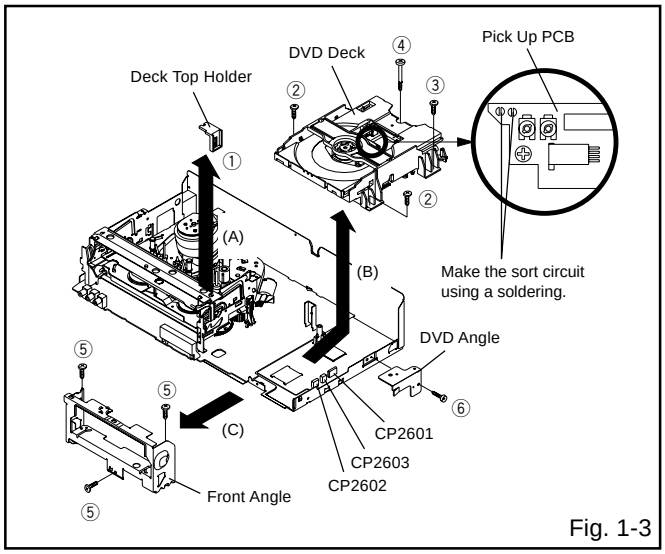


Fig. 1-3

NOTE

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

DISASSEMBLY INSTRUCTIONS

1-4: DVD PCB (Refer to Fig. 1-4)

1. Remove the 3 screws ①.
2. Remove the 4 screws ②.
3. Disconnect the following connectors: (CP4002 and CP8102).
4. Remove the DVD PCB in the direction of arrow.

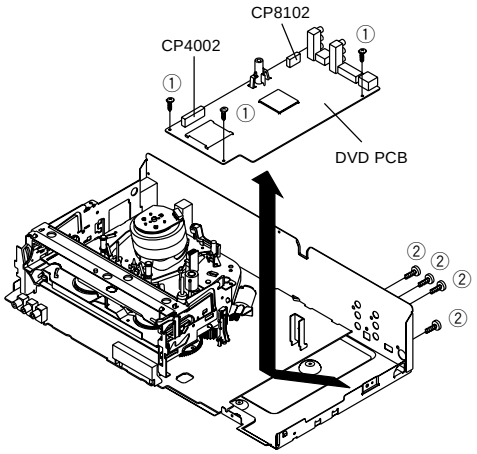


Fig. 1-4

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

NOTE

Do not remove the cable at the FE Head section. The FE Head may be damaged if you remove the cable by force.

1. Move the Cassette Holder Ass'y to the back side.
2. Remove the screw ①.
3. Remove the FE Head.
4. Remove the 3 screws ②.
5. Disconnect the following connectors: (CP101, CP102, and CP3001).
6. Remove the AC Head Cover and VCR Deck in the direction of arrow.

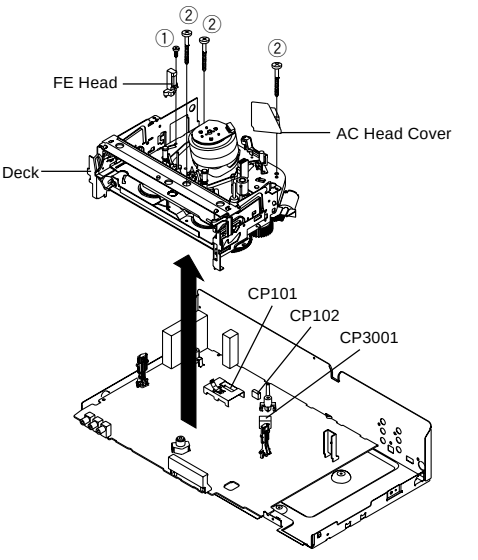


Fig. 1-5

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

1. Remove the screw ①.
2. Remove the screw ②.
3. Remove the screw ③.
4. Remove the 3 Pin Shield.
5. Remove the VCR PCB in the direction of arrow.

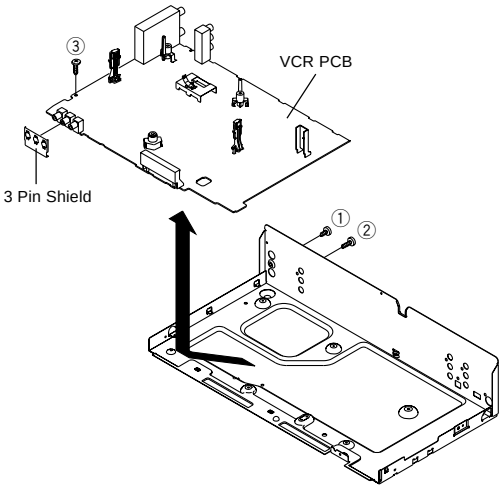


Fig. 1-6

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF VCR DECK PARTS

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

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

NOTE

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

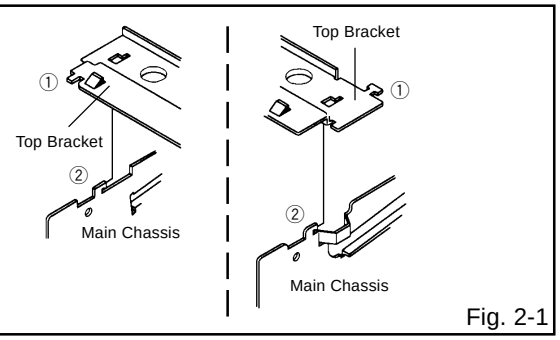


Fig. 2-1

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

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

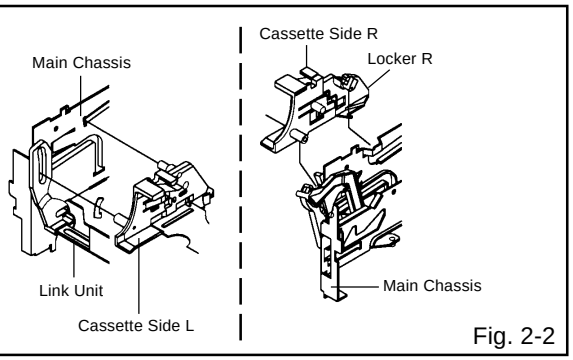


Fig. 2-2

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

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

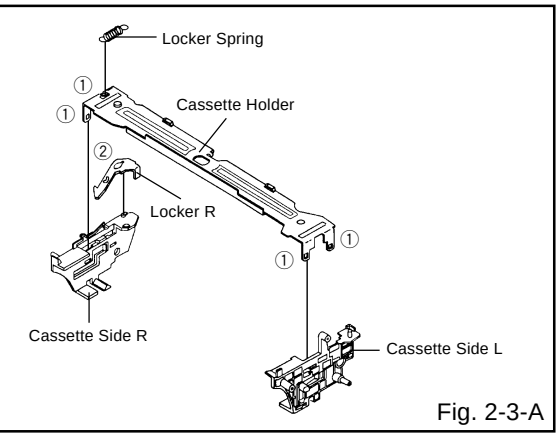


Fig. 2-3-A

NOTE

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

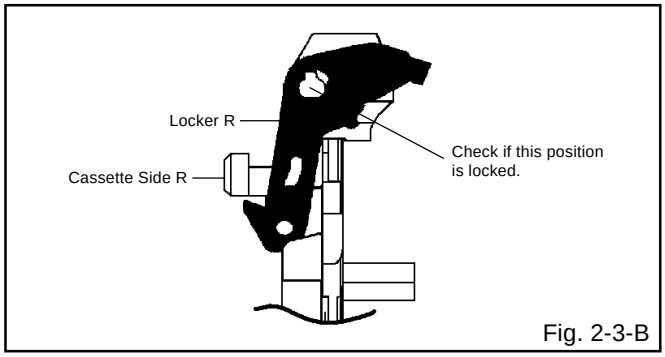


Fig. 2-3-B

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.

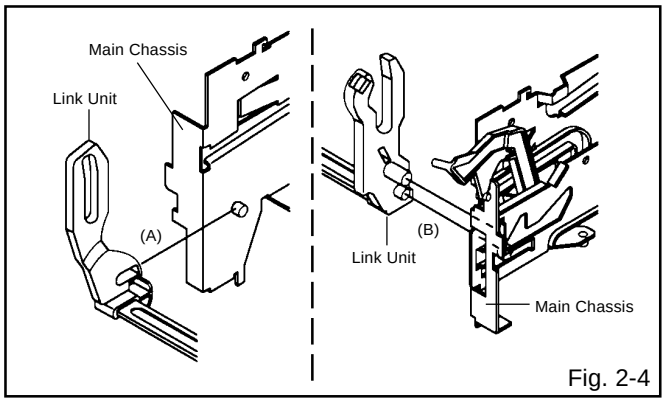


Fig. 2-4

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.

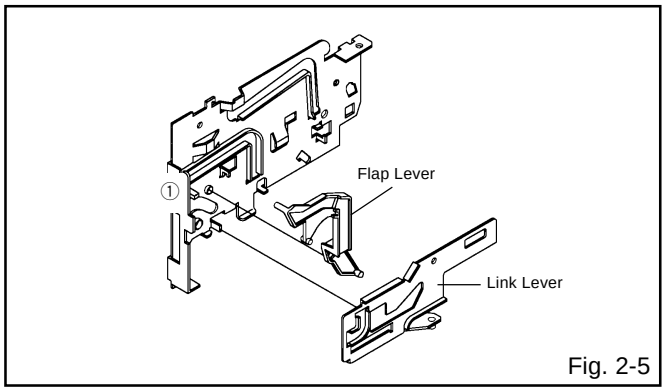


Fig. 2-5

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.

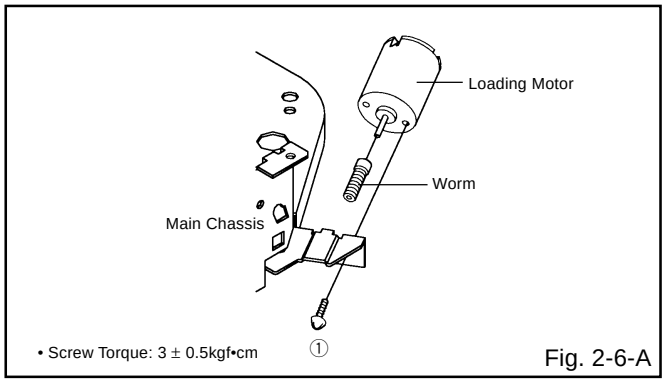


Fig. 2-6-A

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.

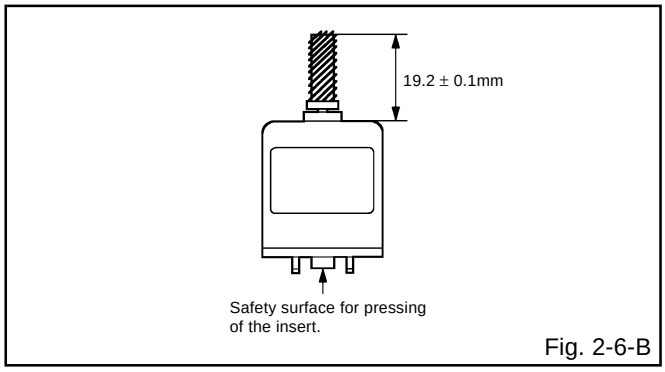


Fig. 2-6-B

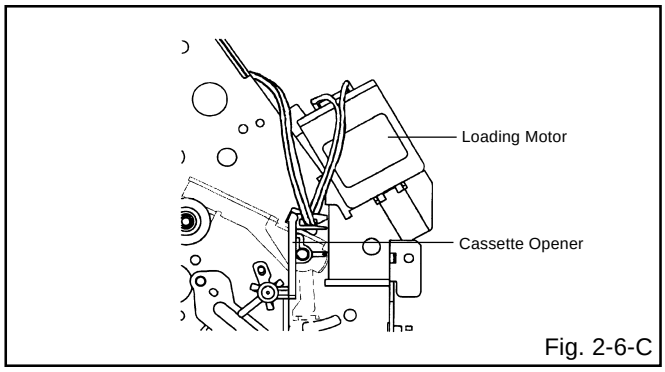


Fig. 2-6-C

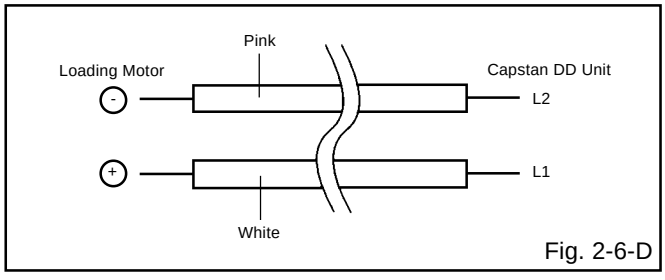


Fig. 2-6-D

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.

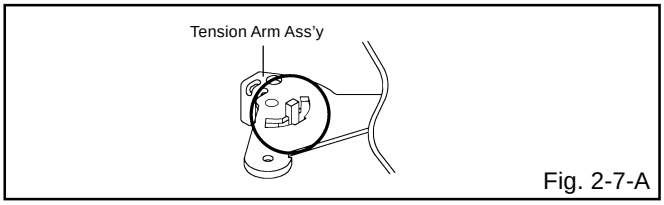


Fig. 2-7-A

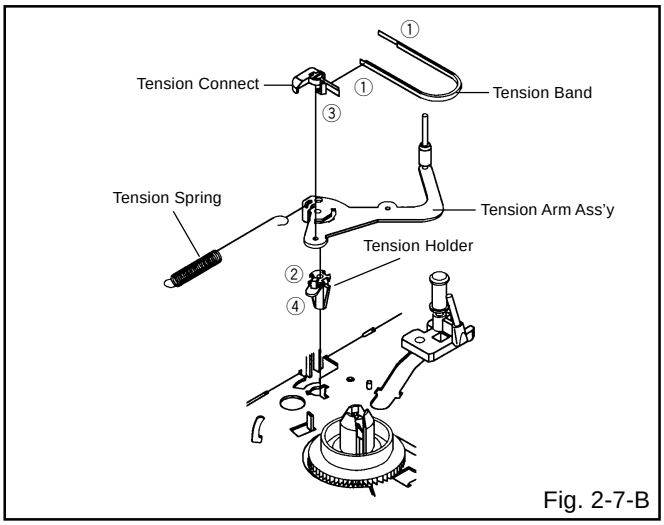


Fig. 2-7-B

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.

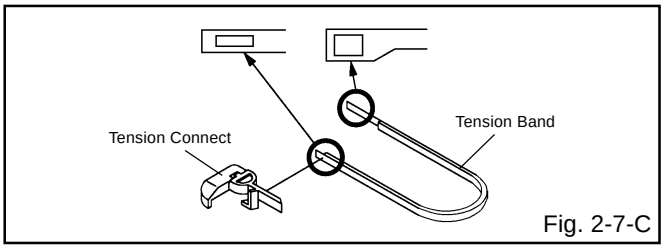


Fig. 2-7-C

DISASSEMBLY INSTRUCTIONS

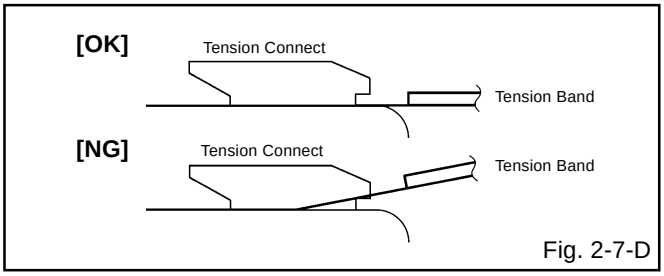


Fig. 2-7-D

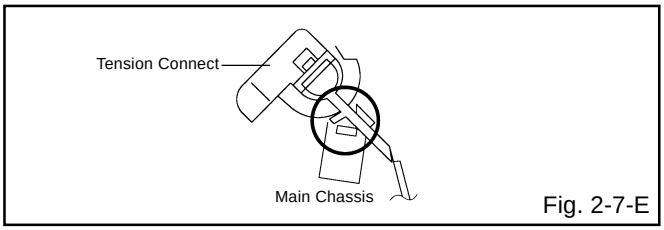


Fig. 2-7-E

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

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

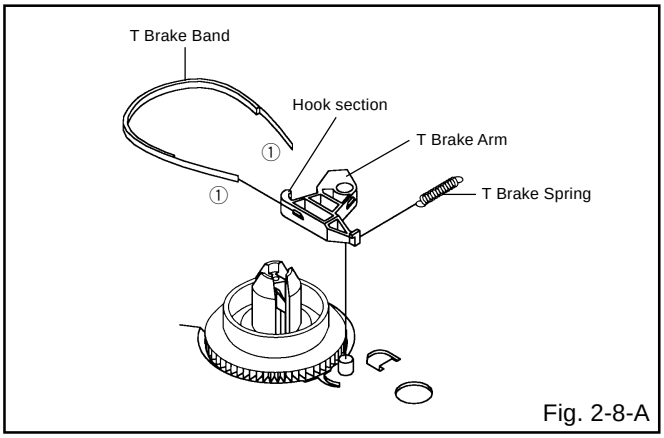


Fig. 2-8-A

NOTE

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

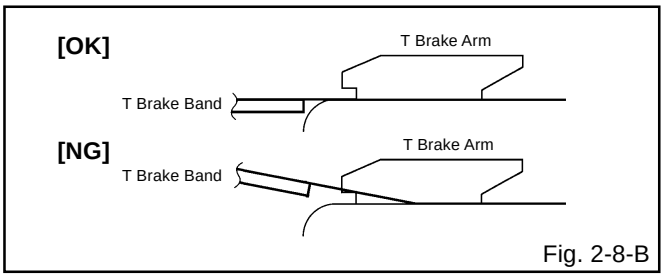


Fig. 2-8-B

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

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

NOTE

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

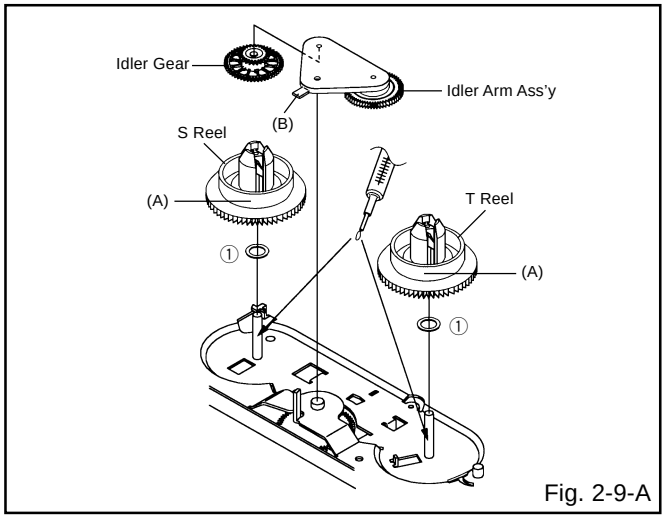


Fig. 2-9-A

NOTE

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

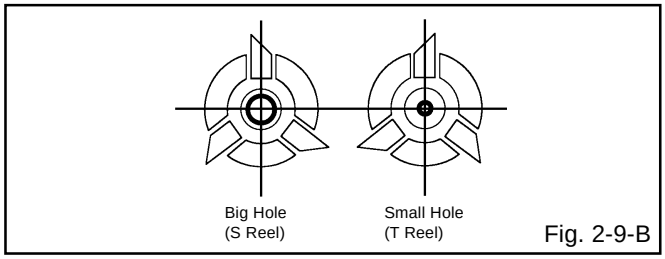


Fig. 2-9-B

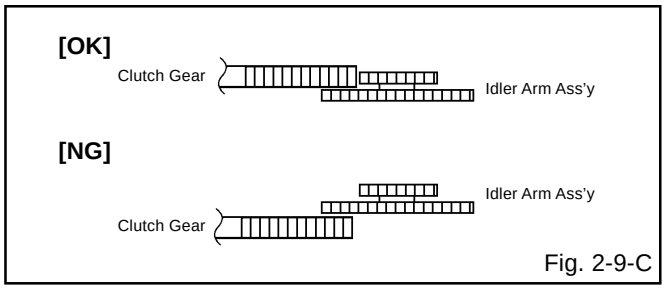


Fig. 2-9-C

DISASSEMBLY INSTRUCTIONS

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

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

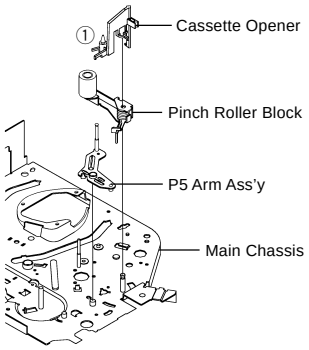


Fig. 2-10-A

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.

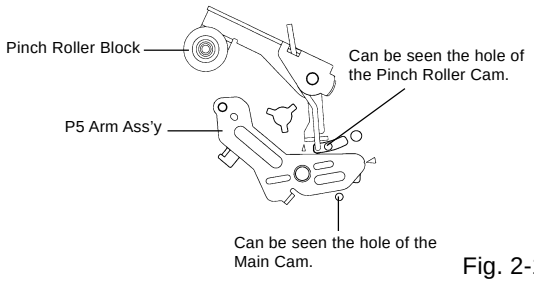


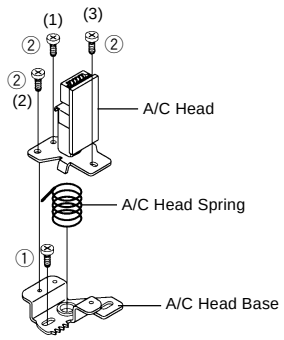
Fig. 2-10-B

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).



• Screw Torque: 5 ± 0.5kgf•cm (Screw ①)

Fig. 2-11-A

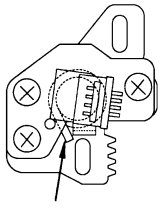
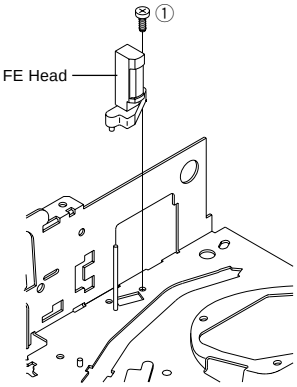


Fig. 2-11-B

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

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



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

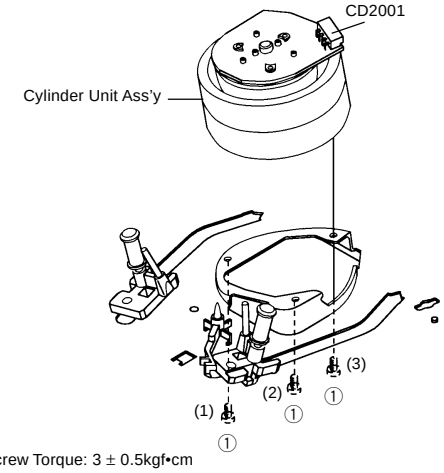
Fig. 2-12

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.



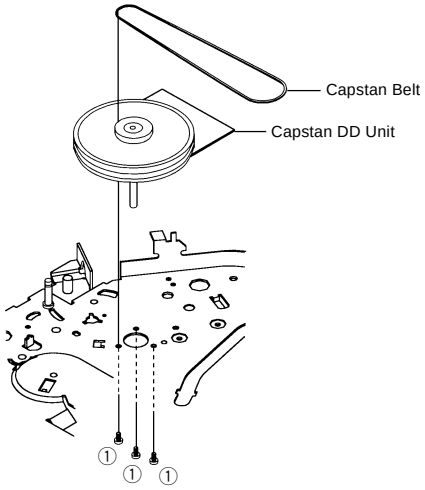
• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-13

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.



• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14-A

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)

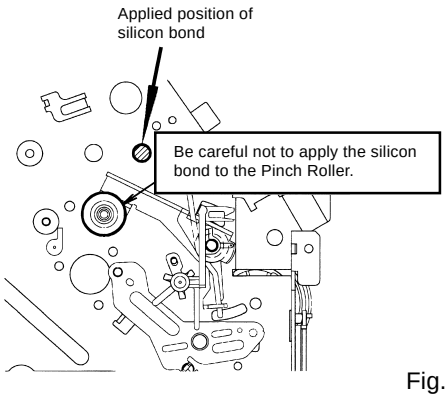


Fig. 2-14-B

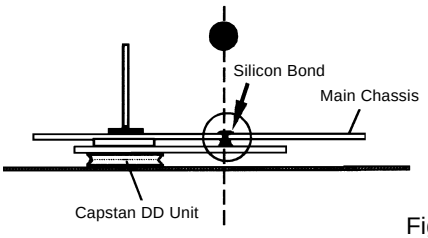


Fig. 2-14-C

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.

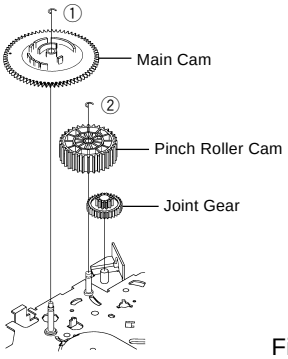


Fig. 2-15-A

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.

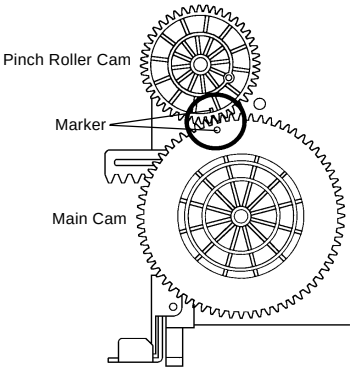


Fig. 2-15-B

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.

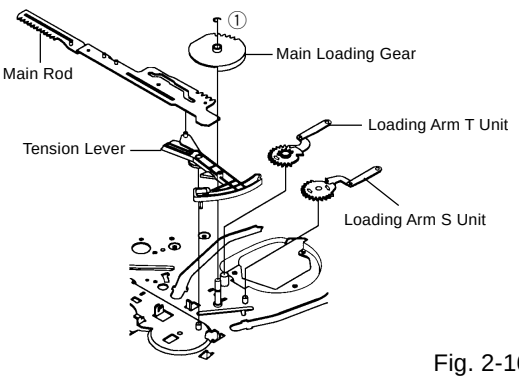


Fig. 2-16-A

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)**

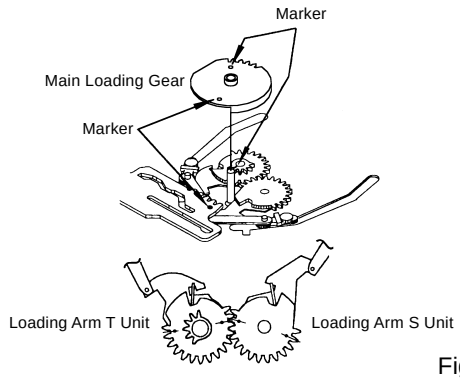


Fig. 2-16-B

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.

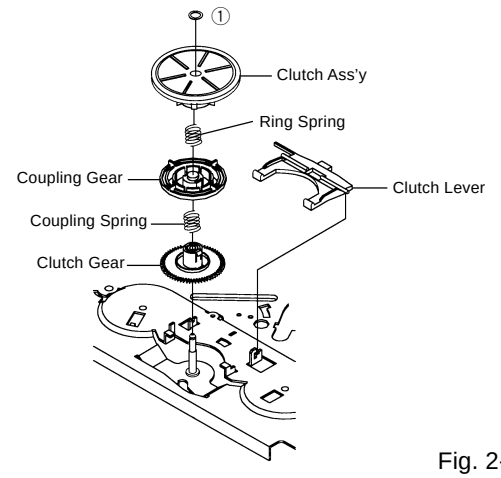


Fig. 2-17-A

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)**

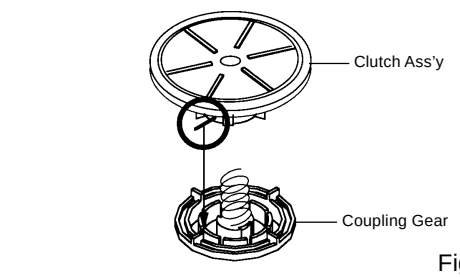


Fig. 2-17-B

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/T Unit.
4. Remove the screw ②.
5. Remove the LED Reflector.

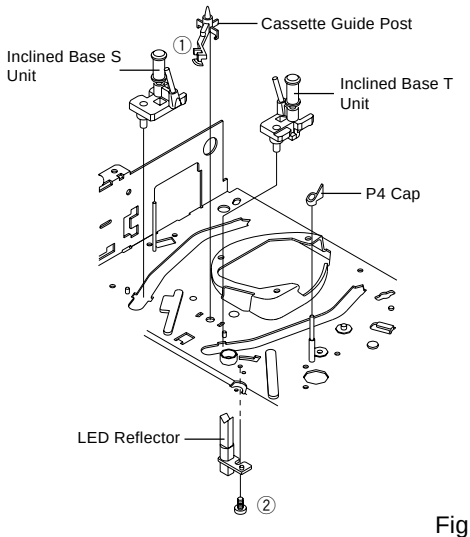


Fig. 2-18-A

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.

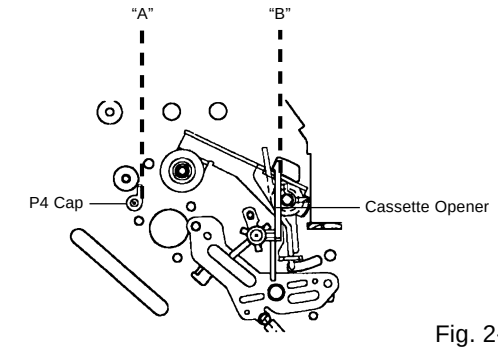


Fig. 2-18-B

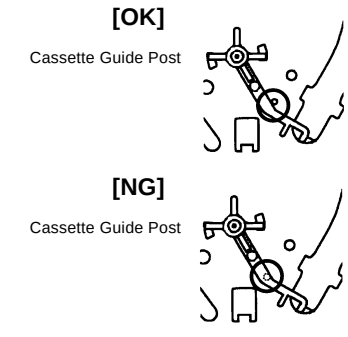


Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF DVD DECK PARTS

NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

3-1: TRAY (Refer to Fig. 3-1-A)

1. Set the Tray opened. **(Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)**
2. Unlock the support ① and remove the Tray.

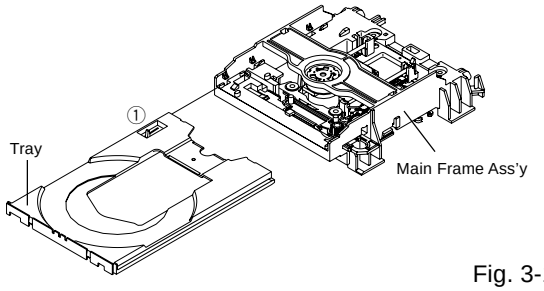


Fig. 3-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 3-1-B so that the each markers are met.

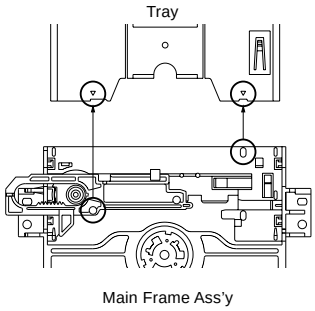


Fig. 3-1-B

3-2: MAIN CHASSIS ASS'Y (Refer to Fig. 3-2-A)

1. Remove the Main Chassis Ass'y from the Insulator (R).
2. Unlock the support ①.
3. Remove the Main Chassis Ass'y.

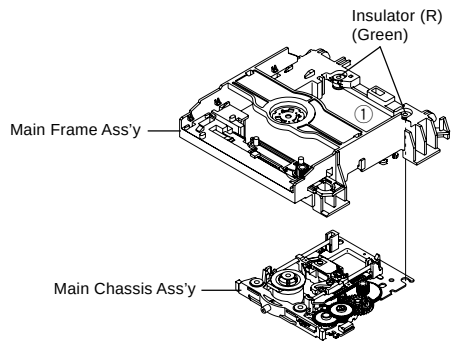


Fig. 3-2-A

NOTE

1. In case of the Main Chassis Ass'y, install it from (1) to (6) in order. **(Refer to Fig. 3-2-B)**

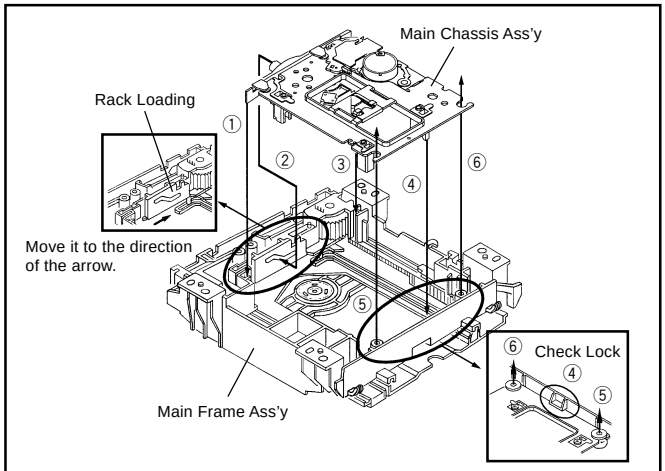


Fig. 3-2-B

3-3: RACK LOADING/MAIN GEAR/ RACK LOADING SPRING/ RACK L SPRING (Refer to Fig. 3-3)

1. Remove the Rack L Spring.
2. Press down the catcher ① and slide the Rack Loading.
3. Remove the Rack Loading, Rack Loading Spring and Main Gear.

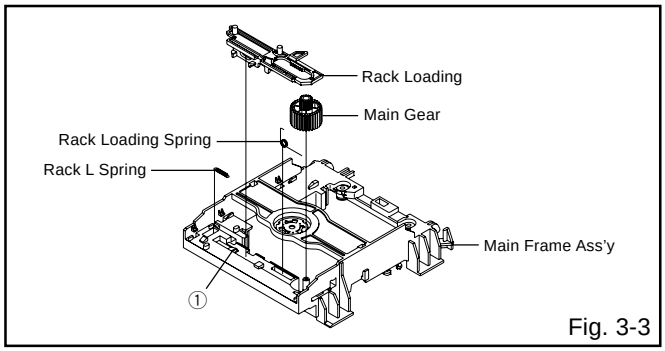


Fig. 3-3

3-4: CLAMPER ASS'Y/INSULATOR(R)/LEVER SWITCH (Refer to Fig. 3-4-A)

1. Remove the screw ①.
2. Remove the Lever Switch.
3. Remove the 2 Insulator (R).
4. Press the Clamper and rotate the Clamper Plate clockwise, then unlock the 3 supports ②.
5. Remove the Clamper Plate, Clamper Magnet and Clamper.

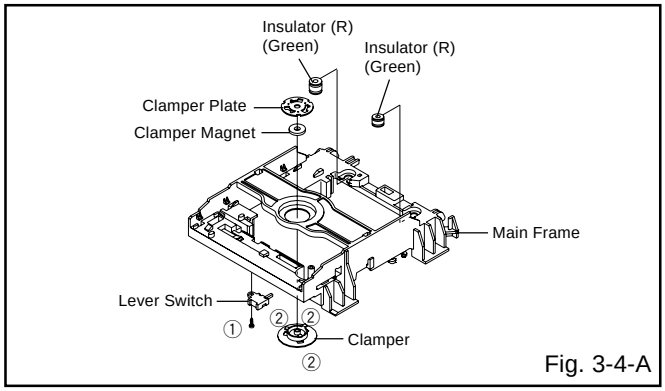


Fig. 3-4-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When installing the Clamper Magnet, install it with the green face up.
2. When installing the wire of the Lever Switch, install it correctly as Fig. 3-4-B.
3. When installing the Lever Switch, install it correctly as Fig. 3-4-C.
4. In case of the Lever Switch installation, hook the wire on the Main Frame as shown Fig. 3-4-D.

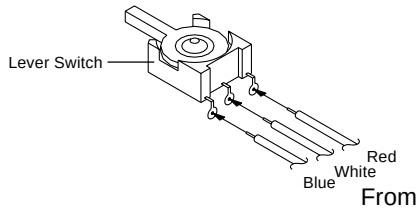


Fig. 3-4-B

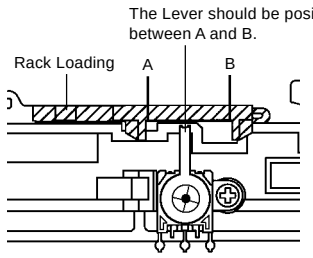


Fig. 3-4-C

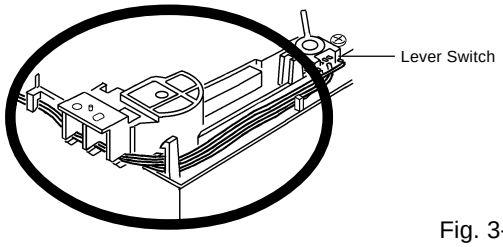


Fig. 3-4-D

3-5: TRAVERSE HOLDER/INSULATOR (F) (Refer to Fig. 3-5-A)

1. Remove the Traverse Holder.
2. Remove the 2 Insulator (F).

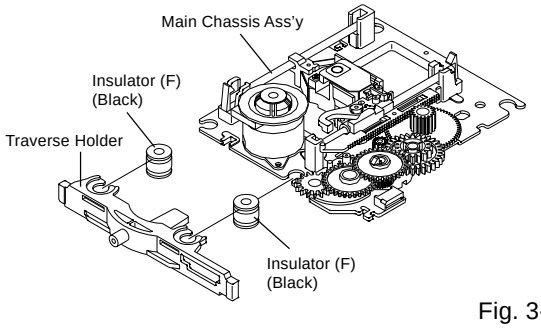


Fig. 3-5-A

NOTE

1. After the installing of the Traverse Holder, check if the wire is like Fig. 3-5-B.

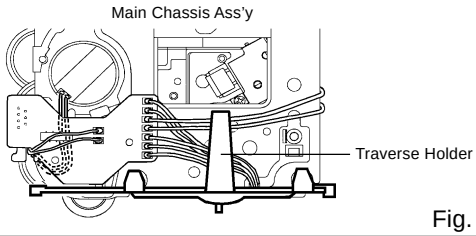
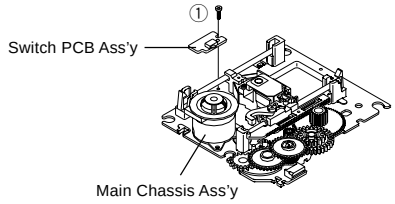


Fig. 3-5-B

3-6: SWITCH PCB ASS'Y (Refer to Fig. 3-6-A)

1. Remove the screw ①.
2. Remove the Switch PCB Ass'y.



• Screw Torque: 4 ± 0.5kgf•cm

Fig. 3-6-A

NOTE

1. When installing the wire of the Switch PCB, install it correctly as Fig. 3-6-B.
2. When installing the wire of the Switch PCB, while pressing it in the direction of the arrow as shown Fig. 3-6-B.

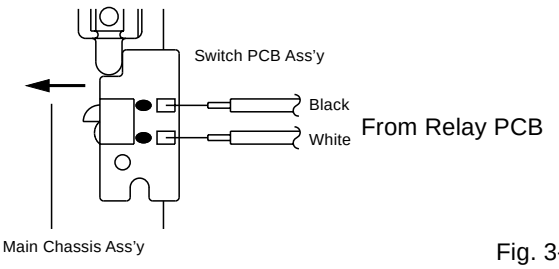
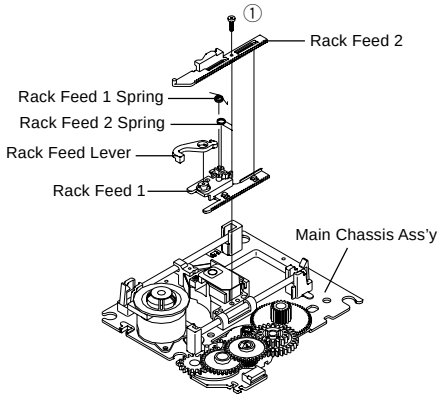


Fig. 3-6-B

3-7: RACK FEED ASS'Y (Refer to Fig. 3-7-A)

1. Remove the screw ①.
2. Remove the Rack Feed 1/2 Spring, Rack Feed 1/2 and Rack Feed Lever.



• Screw Torque: 3.5 ± 0.5kgf•cm

Fig. 3-7-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. After the assembly of the Rack Feed, check if the Rack Feed 1/2 is moving smoothly. **(Refer to Fig. 3-7-B)**
2. In case of the Rack Feed Ass'y installation, install correctly as Fig. 3-7-C.

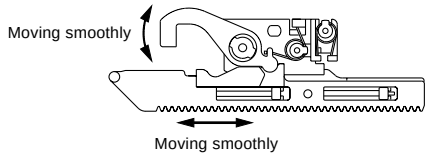


Fig. 3-7-B

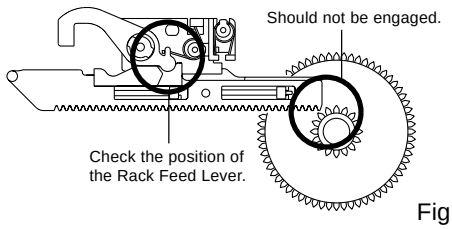


Fig. 3-7-C

3-8: RELAY PCB ASS'Y (Refer to Fig. 3-8-A)

1. Remove the screw ①.
2. Remove the Relay PCB Ass'y.

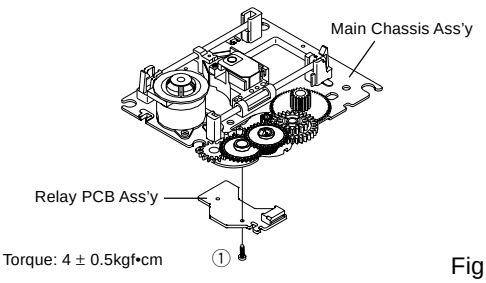


Fig. 3-8-A

NOTE

1. When installing the wire of the Relay PCB, install it correctly as Fig. 3-8-B.

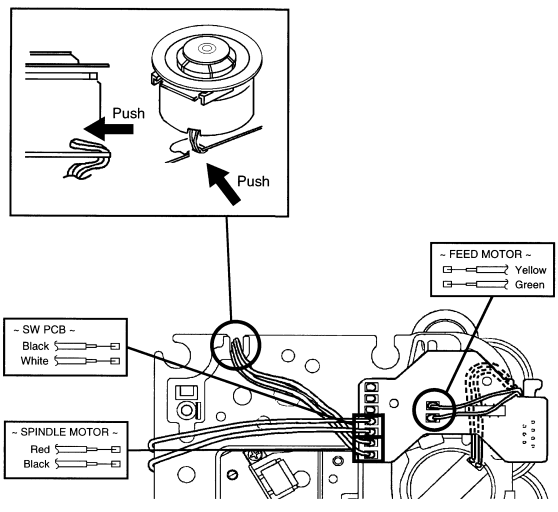


Fig. 3-8-B

3-9: GEAR (Refer to Fig. 3-9-A)

1. Unlock the support ①.
2. Remove the Middle Gear 1/2/3, Idler Gear and Feed Gear.

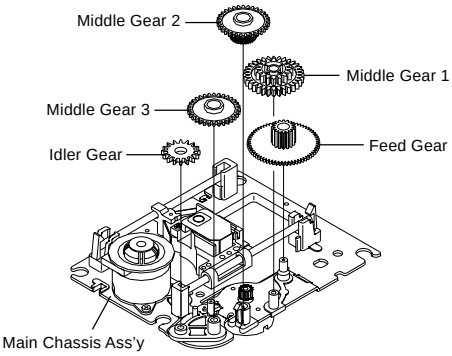


Fig. 3-9-A

NOTE

1. In case of the Idler Gear installation, install correctly as Fig. 3-9-B.
2. When installing the Middle Gear 2, check if the Middle Gear 2 is locked correctly as Fig. 3-9-C.

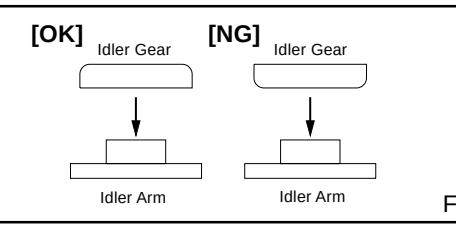


Fig. 3-9-B

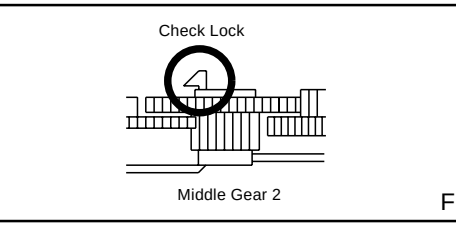


Fig. 3-9-C

3-10: IDLER ARM (Refer to Fig. 3-10-A)

1. Remove the Idler Arm Spring.
2. Remove the Chassis Spring.
3. Remove the Idler Arm.

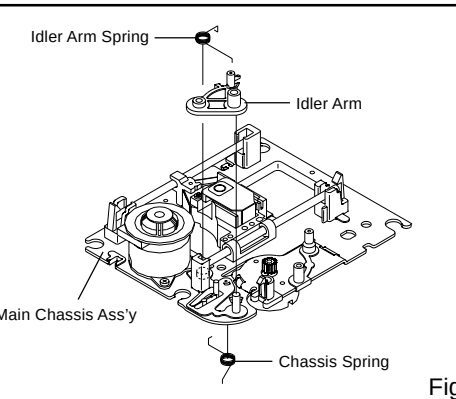


Fig. 3-10-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. In case of the Idler Arm installation, install as the circled section of Fig. 3-10-B.
2. In case of the Idler Arm Spring installation, install as the circled section of Fig. 3-10-C.
3. In case of the Chassis Spring installation, install as the circled section of Fig. 3-10-D.

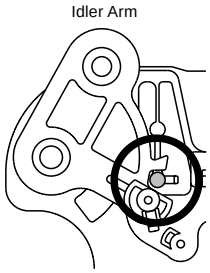


Fig. 3-10-B

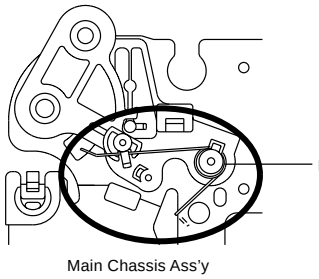


Fig. 3-10-C

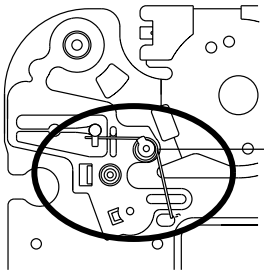
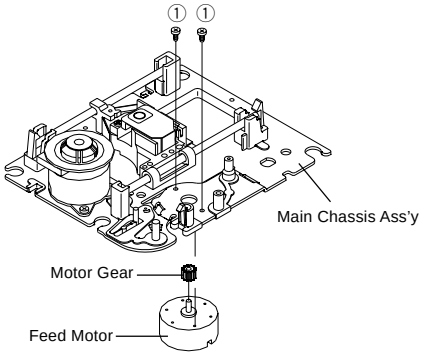


Fig. 3-10-D

3-11: FEED MOTOR (Refer to Fig. 3-11-A)

1. Remove the 2 screws ①.
2. Remove the Feed Motor.
3. Remove the Motor Gear.



• Screw Torque: 1 ± 0.5kgf•cm

Fig. 3-11-A

NOTE

1. In case of the Motor Gear installation, check if the value of the Fig. 3-11-B is correct.
2. When installing the Feed Motor, check if the cable is positioned as Fig. 3-11-C.

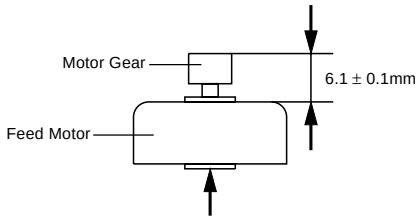


Fig. 3-11-B

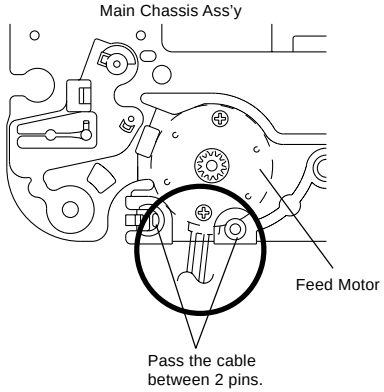


Fig. 3-11-C

KEY TO ABBREVIATIONS

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

KEY TO ABBREVIATIONS

S	**SYNC**	:	Synchronization
	SYNC SEP	:	Sync Separator, Separation
T	**TR**	:	Transistor
	TRAC	:	Tracking
	TRICK PB	:	Trick Playback
	TP	:	Test Point
U	**UNREG**	:	Unregulated
V	**V**	:	Volt
	VCO	:	Voltage Controlled Oscillator
	VIF	:	Video Intermediate Frequency
	VP	:	Vertical Pulse, Voltage Display
	V.PB	:	Video Playback
	VR	:	Variable Resistor
	V.REC	:	Video Recording
	VSF	:	Visual Search Fast Forward
	VSR	:	Visual Search Rewind
	VSS	:	Voltage Super Source
	V-SYNC	:	Vertical-Synchronization
	VT	:	Voltage Tuning
X	**X'TAL**	:	Crystal
Y	**Y/C**	:	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 TV Monitor. 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 SWITHCHING POINT automatically. Refer to the “ELECTRICAL ADJUSTMENT” (SWITHCHING 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.
STOP	7	3	Releasing of PARENTAL LOCK. Refer to the “PARENTAL CONTROL - RATING LEVEL”. NOTE: The function will only work without the setting of DVD disc at DVD mode.

<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 PASSWORD CANCELLATION)

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

1. Turn Unit ON.
2. Press and hold the '7' key on the remote control unit.
3. Simultaneously press and hold the 'STOP' key on the front panel.
4. Hold both keys for more than 3 seconds.
5. The On Screen Display message 'PASSWORD CLEAR' will appear.
6. The 4 digit password has now been cleared.

WHEN REPLACING EEPROM (MEMORY) IC

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

NOTE: No need setting for after INI 2E.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	0E	B0	BE	60	64	64	4A	86	0B	2B	86	32	8A	08	0A	0F
10	AF	97	95	8A	A0	90	31	04	88	A5	9F	3A	00	10	BF	00
20	3A	11	22	70	61	2A	3A	00	0B	00	00	85	A2	B0	00	---

Table 1

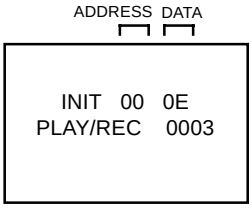


Fig. 1

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds. ADDRESS and DATA will appear on TV Monitor as **Fig 1**.
4. ADDRESS is now selected and should “blink”. Using the SET + or - button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will “blink”.
6. Again, step through the DATA using SET + or - button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
10. Turn on the POWER.
11. Press both CH UP button on the set and the PLAY button on the set for more than 2 seconds.
12. 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.

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

INIT 00 0E — Initial setting content of MEMORY IC.
PLAY/REC 0003 — 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)

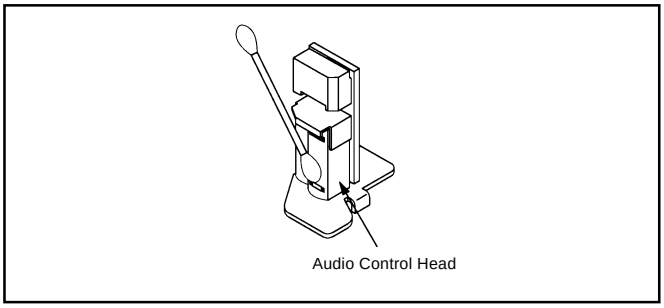
CLEANING

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

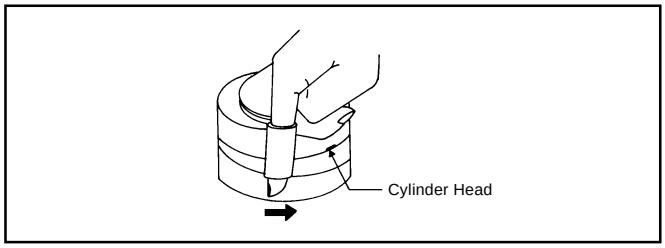
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

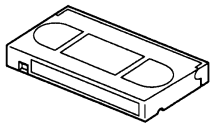
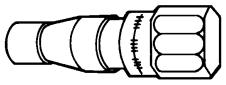
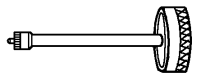
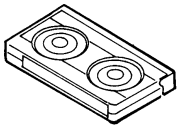
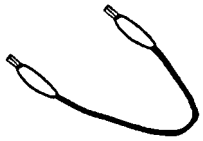
Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

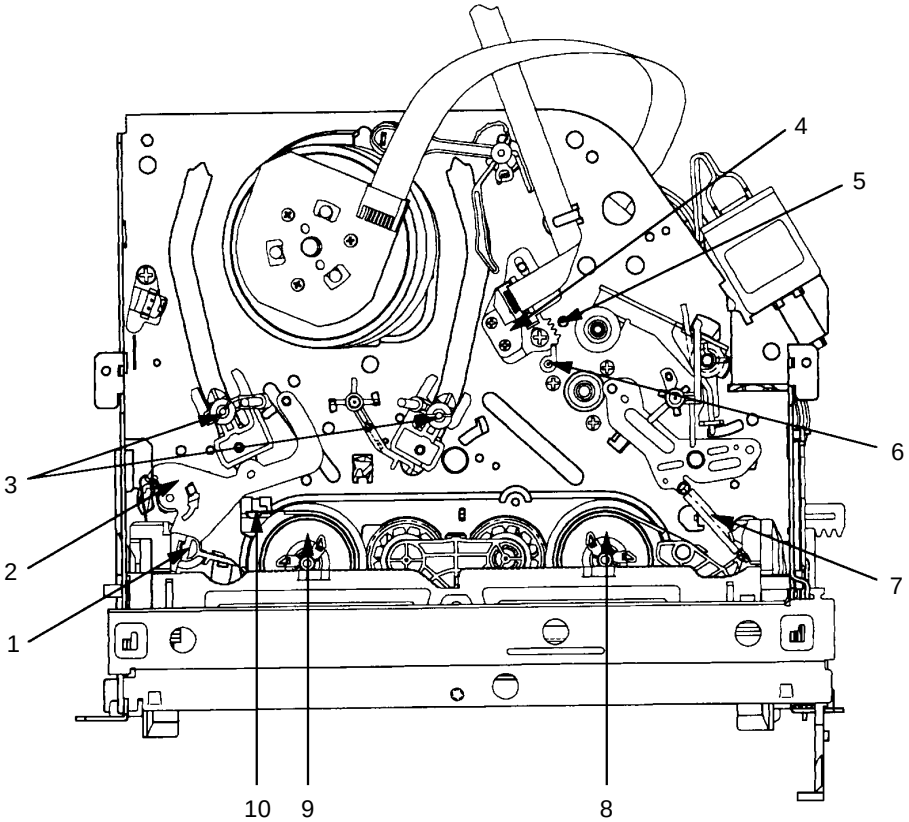
Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



SERVICING FIXTURES AND TOOLS

(4 heads model) VHS Alignment Tape MHP 	Torque Gauge PUJ48075-2 	Roller Driver PTU94002-2 	X-JG153 X Value Adjustment Screwdriver 
Torque Tape PUJ48076-2 	Short Jumper 		

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 derections to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis.
   Be careful not to scratch on the tape.

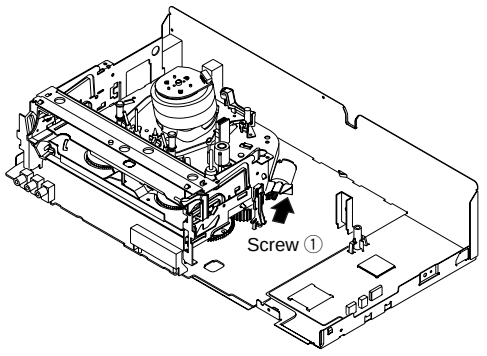


Fig. 1

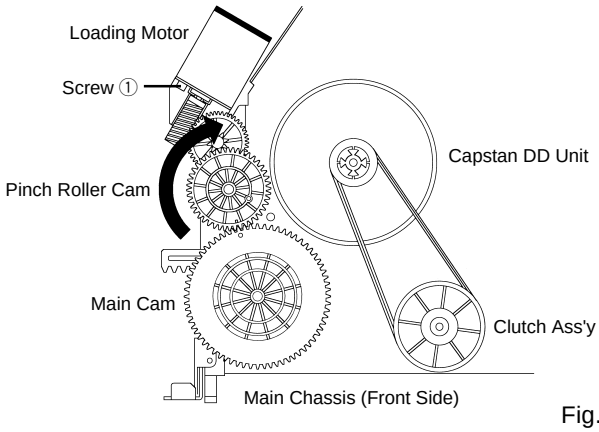
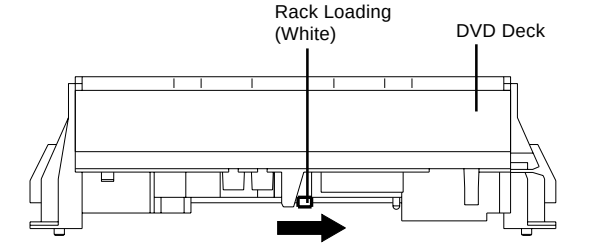


Fig. 2

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet and Front Cabinet. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Slide the Rack Loading (White) toward the arrow direction by using a minus driver to release the lock. **(Refer to Fig. 1)**
3. Draw the Tray.



1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

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

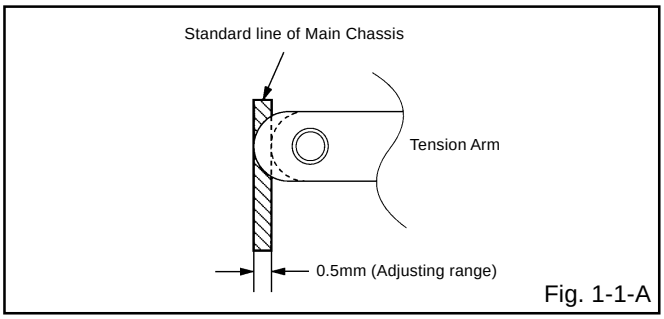


Fig. 1-1-A

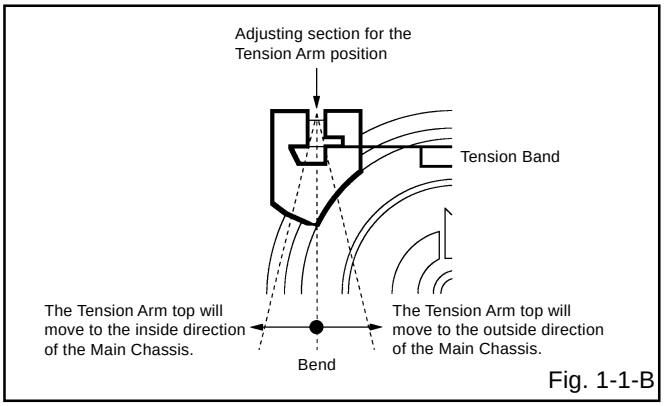


Fig. 1-1-B

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

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

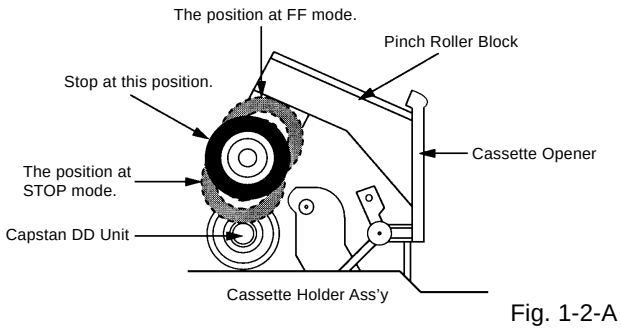


Fig. 1-2-A

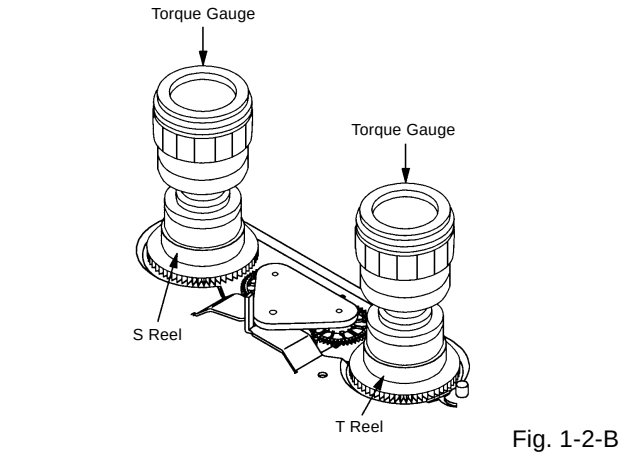


Fig. 1-2-B

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 **TP101 (Envelope)** and CH-2 to **TP3002 (SW Pulse)**.
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Roller Driver **(PTU94002-2)** 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)**

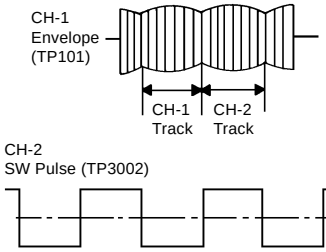


Fig. 2-1-A

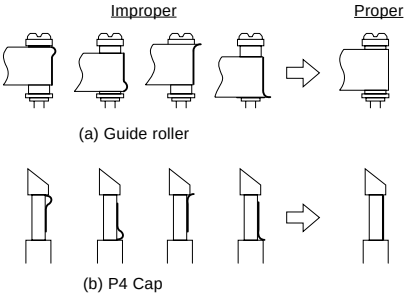


Fig. 2-1-B

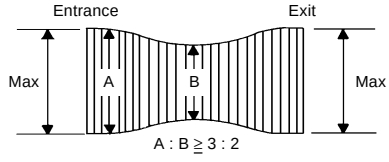


Fig. 2-1-C

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.

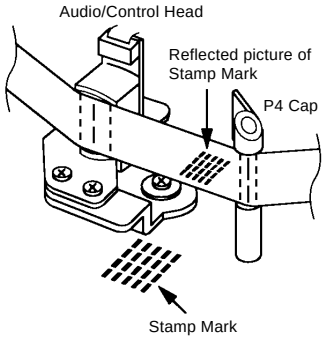


Fig. 2-2-A

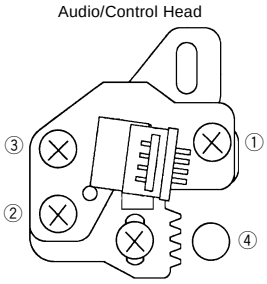


Fig. 2-2-B

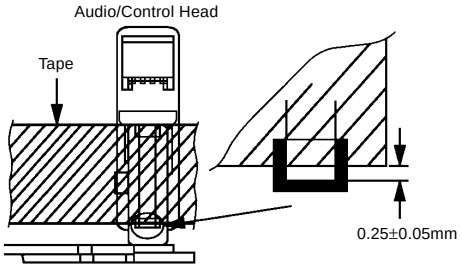


Fig. 2-2-C

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

1. Confirm and adjust the position of the Tension Post. **(Refer to item 1-1)**
2. Adjust the Guide Roller. **(Refer to item 2-1)**
3. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
4. Connect CH-1 of the oscilloscope to **TP3002**, CH-2 to **TP101** and CH-3 to **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.

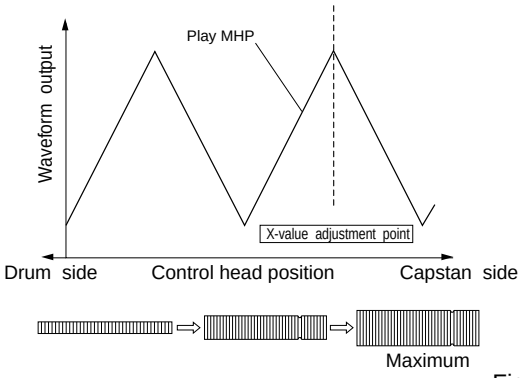


Fig. 2-3

8. Perform tracking operation and confirm the envelope is maximum on the tracking center position.
9. Playback the VHS Alignment Tape **(MHP-L)**.
10. Perform tracking operation and confirm the envelope is maximum on the tracking center position. If 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

CAUTION

When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

1-1: SWITCHING POINT

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape **(MHP)**

INSTRUCTIONS

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

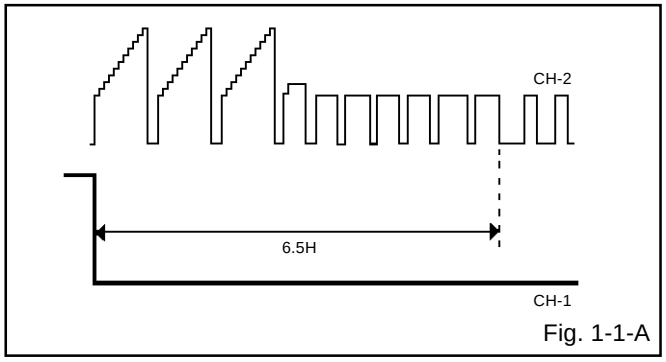


Fig. 1-1-A

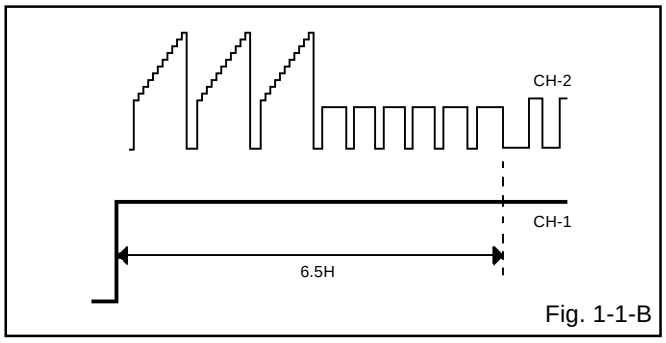
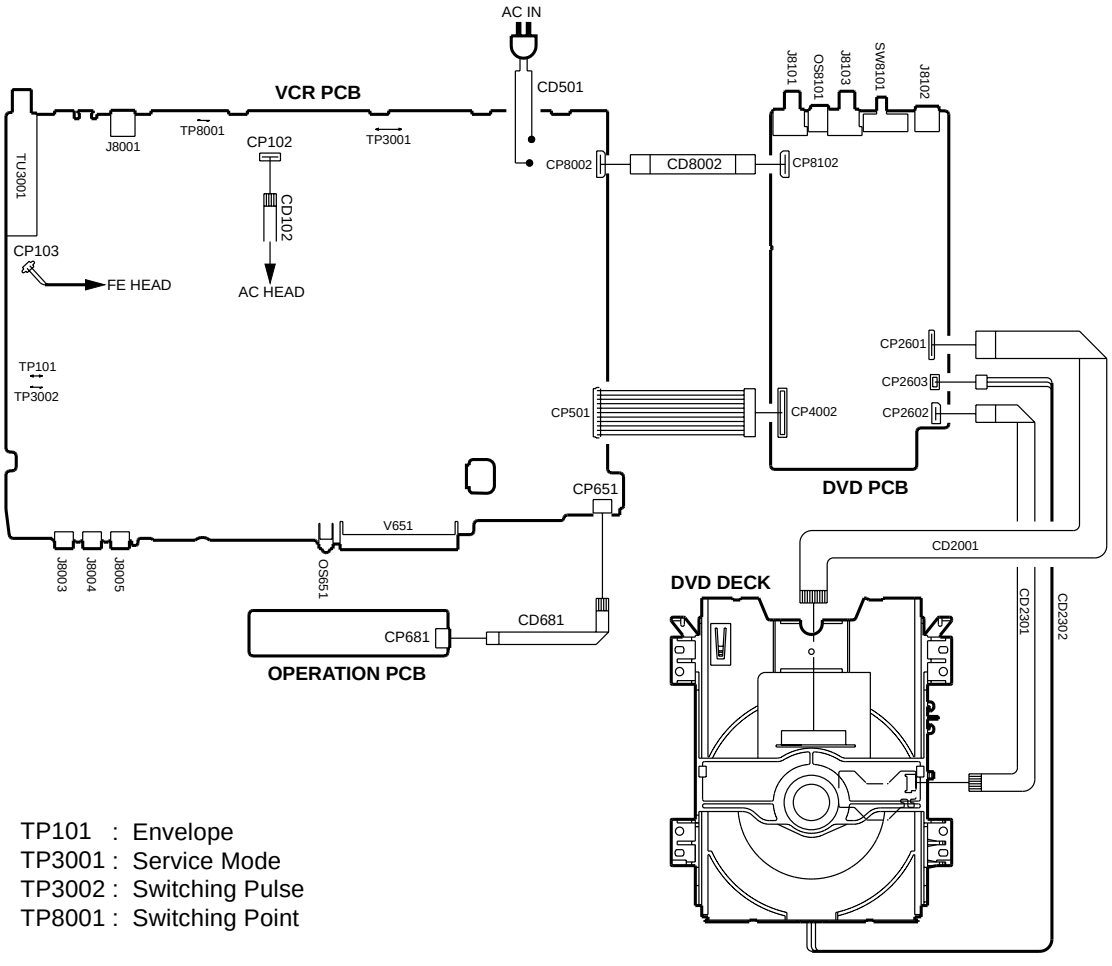


Fig. 1-1-B

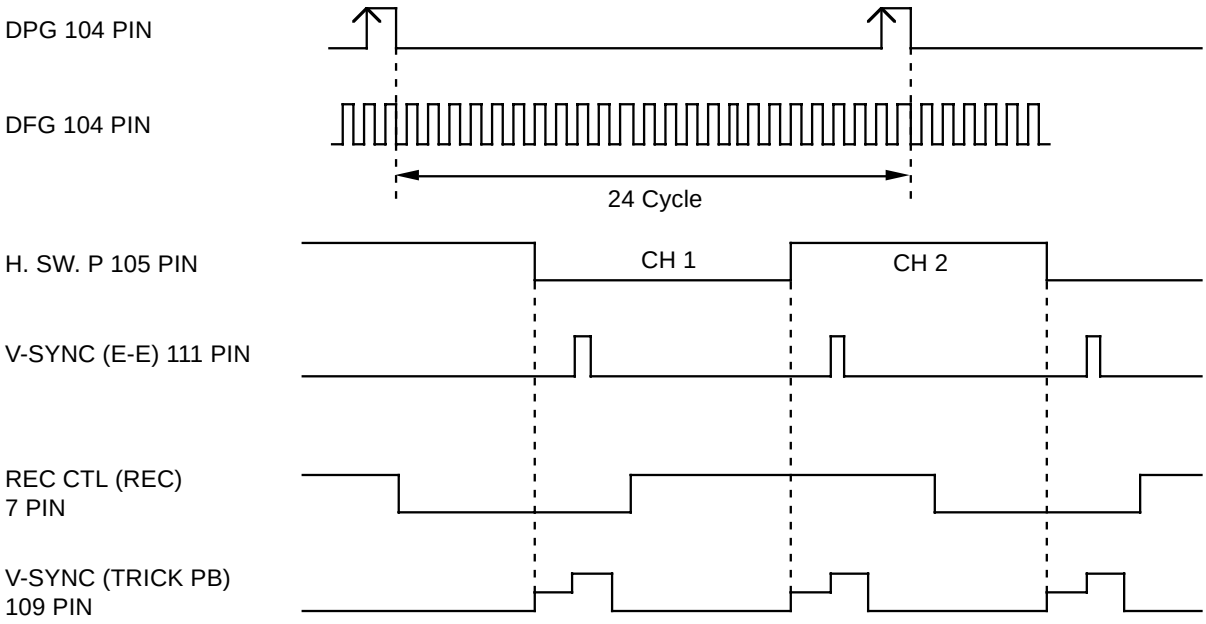
ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (Connector Connections)



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

SERVO TIMING CHART

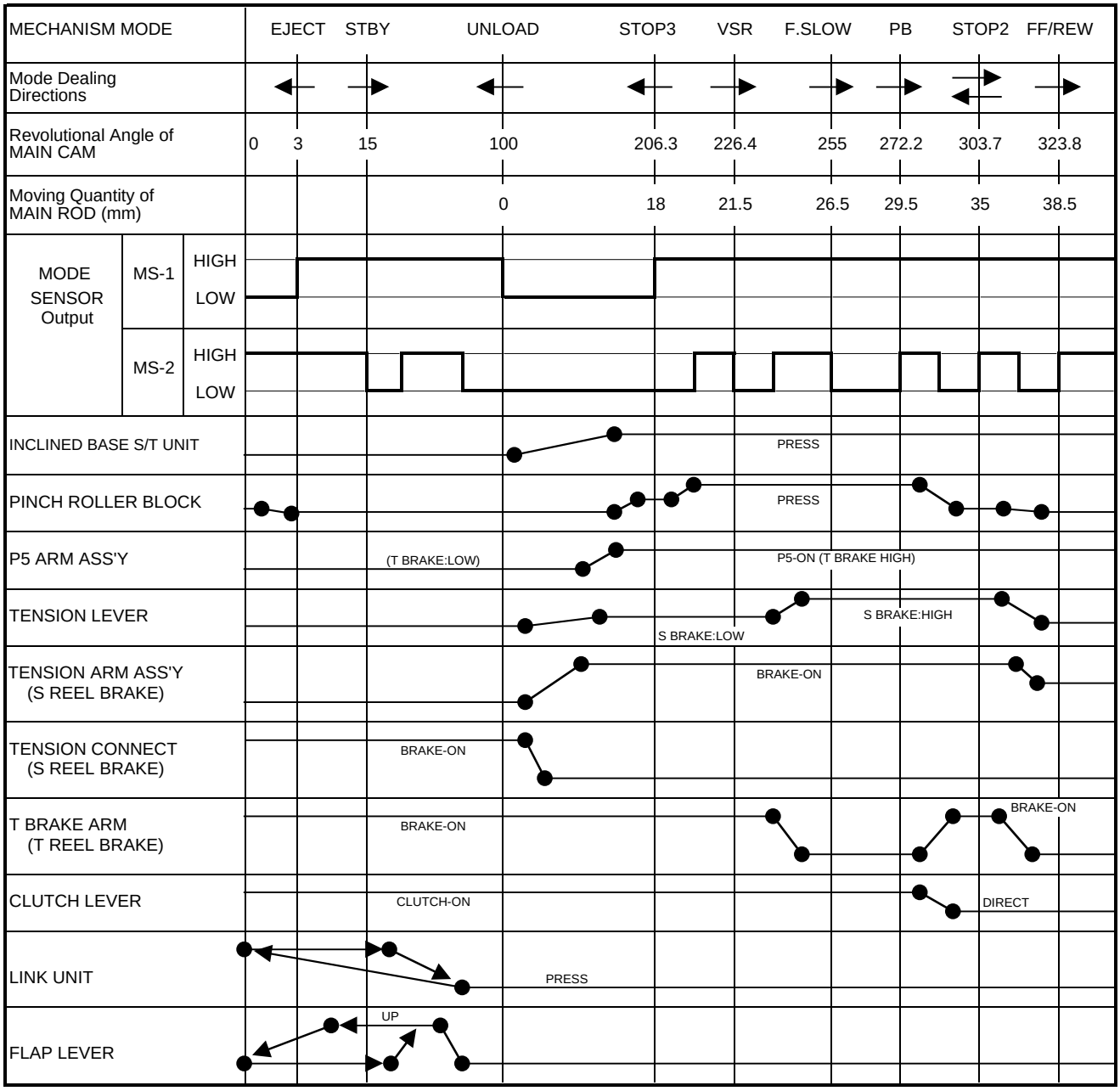
VCR PCB IC3001 (OEC0138A)



• 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.



IC DESCRIPTIONS

OEC0138A (IC3001)

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

IC DESCRIPTIONS

OEC0138A (IC3001)

40	P13/IRQ3	VIDEO MUTE H	OUT	H for at AUTO_CLOCK in POWER OFF.
41	P14/IRQ4	POWER ON L	OUT	For control the user power switch ON/OFF.
42	P15/IRQ5	POWER ON-H	OUT	For control the user power switch ON/OFF.
43	P16/IC	REM_IN	IN	Receive the remote control signal.
44	P17/TMOW	DVD RESET	OUT	For control the DVD RESET.
45	P67/RP7/TMB	DVD POWER CTL	OUT	Output terminal for DVD power CTL.(3.3V/9V)
46	P66/RP6/ADTRG	DVD LED	OUT	The DVD LED light-up/put-off control output.
47	P65/RP5	VCR LED	OUT	The VCR LED light-up/put-off control output.
48	P64/RP4	1G/T-REC LED	OUT	LEM(LED Module) control terminal.
49	P63/RP3	2G/REC LED	OUT	LEM(LED Module) control terminal.
50	P62/RP2	3G/TV/VCR LED	OUT	LEM(LED Module) control terminal.
51	P61/RP1	4G	OUT	LEM(LED Module) control terminal.
52	P60/RP0	5G	OUT	LEM(LED Module) control terminal.
53	P37/TM0	Y/C CLOCK	OUT	Control terminal for Y/C. (CLOCK).
54	P36/BUZZ	Y/C DATA	OUT	Control terminal for Y/C.(DATA).
55	P35	SEG1	OUT	LEM(LED Module) control terminal.
56	VCC	VCC	-	Power of CPU.
57	VSS	VSS	-	Ground.
58	P27	SEG2	OUT	LEM(LED Module) control terminal.
59	P26	SEG3	OUT	LEM(LED Module) control terminal.
60	P25	SEG4	OUT	LEM(LED Module) control terminal.
61	P24/SCL1	IIC CLK	OUT	CLOCK terminal for IIC BUS communication.
62	P23/SDA1	IIC DATA	OUT	DATA terminal for IIC BUS communication.
63	P22/SCK1	SEG5	OUT	LEM(LED Module) control terminal.
64	P21/SO1	SO1/TX	OUT	Input terminal for DVD communication.(asynchronous)
65	P20/SI1	SI1/RX	IN	Output terminal for DVD communication.(asynchronous)
66	P47/RPTRG	SEG6	OUT	LEM(LED Module) control terminal.
67	P46/FTOB	SEG7	OUT	LEM(LED Module) control terminal.
68	P45/FTOA	SEG8	OUT	LEM(LED Module) control terminal.
69	P44/FTID	NC	OUT	Not used.
70	P43/FTIC	NC	OUT	Not used.
71	P42/FTIB	SEG9	OUT	LEM(LED Module) control terminal.
72	P41/FTIA	NC	OUT	Not used.
73	P40/PWM14	SEG10	OUT	LEM(LED Module) control terminal.
74	FEW	FEW	IN	FZTAT Write protect.
75	X2	X2	OUT	Subclock pulse(32.768KHz)
76	X1	X1	IN	
77	/RESET	/RESET	IN	RESET will be done when the voltage goes to HIGH after the reset signal.
78	OSC1	OSC1	IN	Connect the main crystal(10MHz)

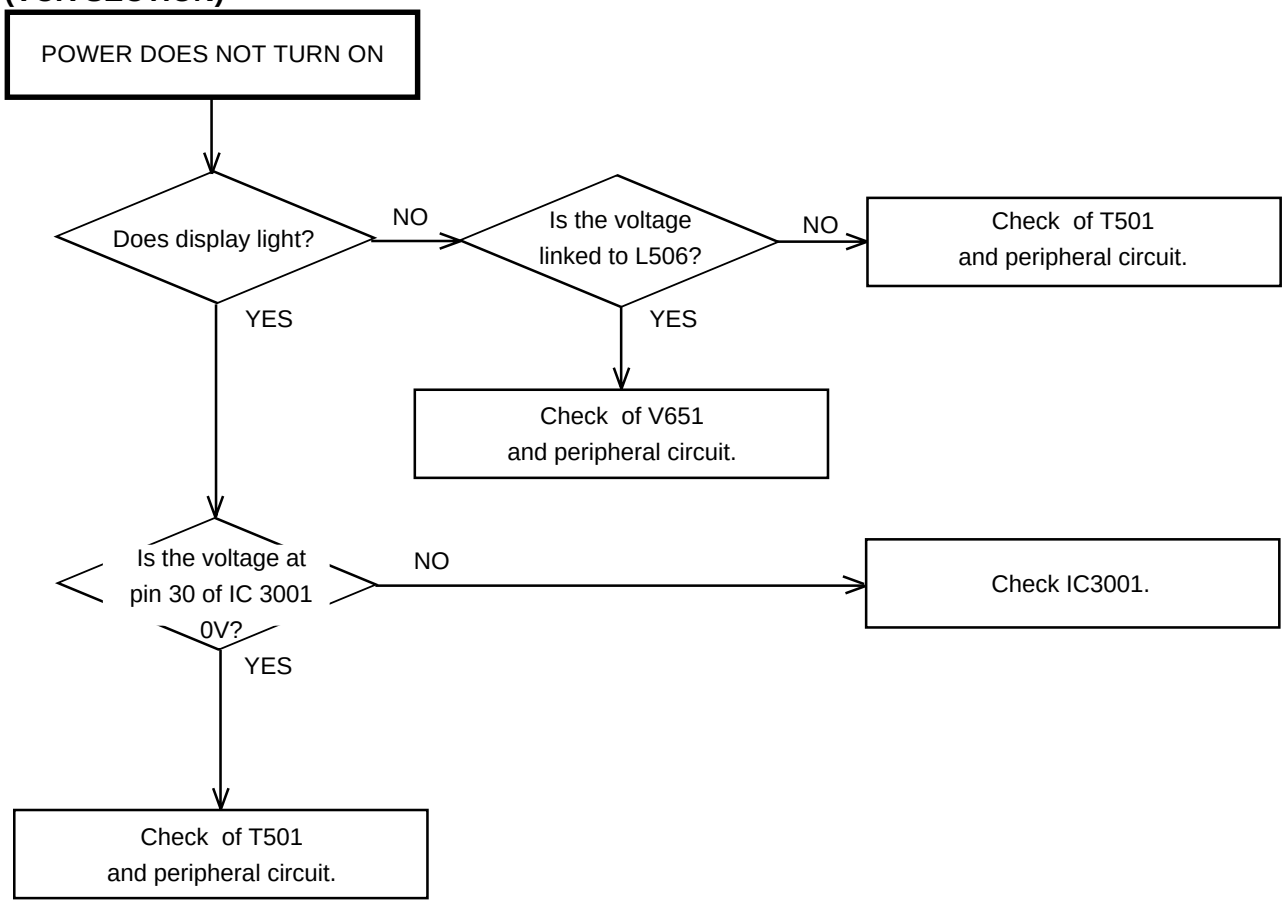
IC DESCRIPTIONS

OEC0138A (IC3001)

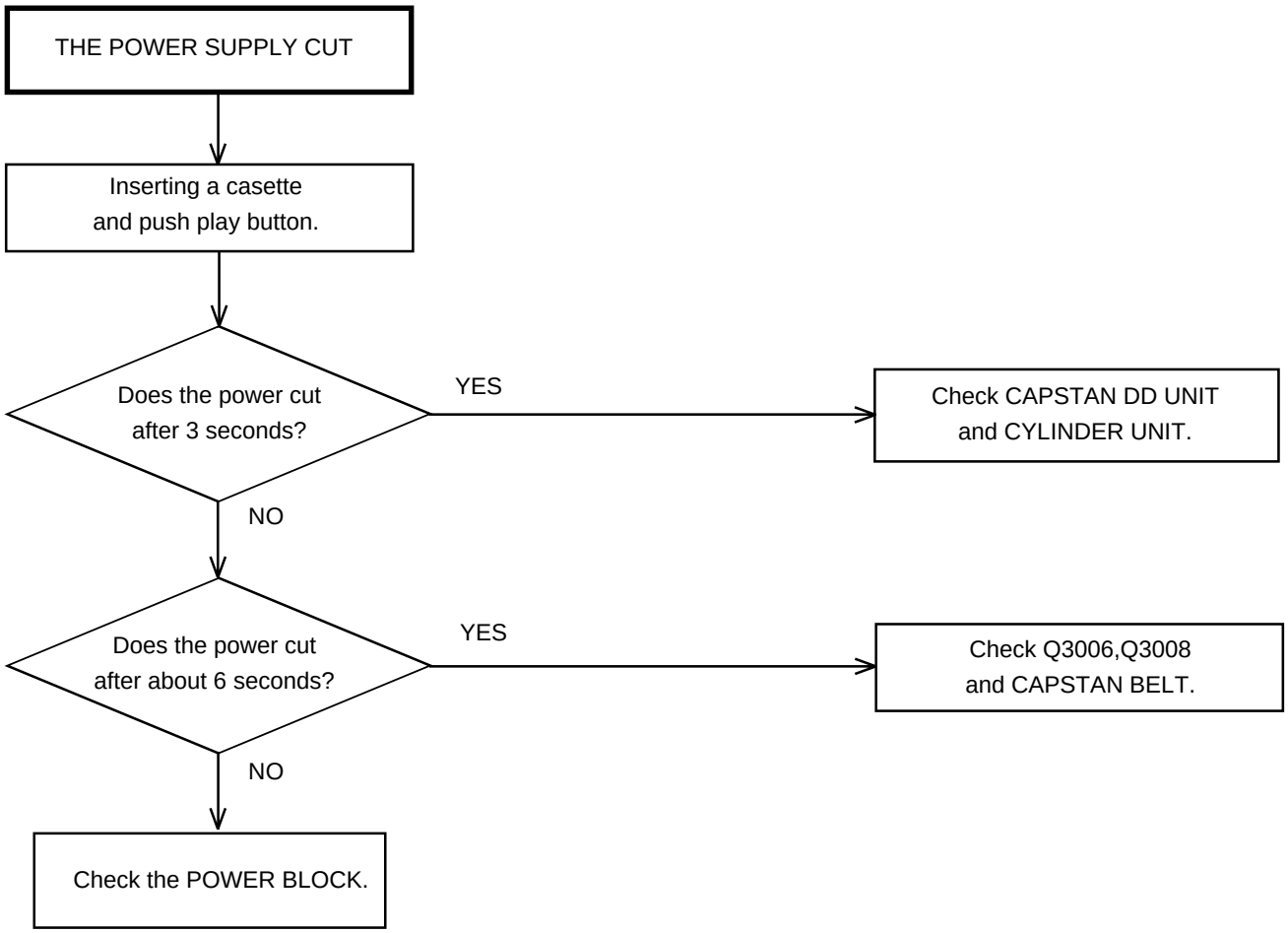
79	VSS	VSS	-	Ground.
80	OSC2	OSC2	OUT	Connect the main crystal(10MHz)
81	VCL	VCL	IN	Connect the capacitor
82	MD0	MD0	IN	FZTAT Write MODE.
83	P34/PWM2	NC	OUT	not used.
84	P33/PWM1	CAP_LIMIT	OUT	Switch the maximum output current of the Capstan Motor.
85	P32/PWM0	TUNER AUDIO MUTE-H	OUT	Output low at tuner and output high at external input/play.
86	P31/SV2	VCR-H	OUT	H for at PLAY in VCR MODE. L for except above case.
87	P30/SV1	POWER_MUTE	OUT	audio mute at POWER ON/OFF.
88	P70/PPG0	SYS_MUTE	OUT	audio mute for DVD at POWER ON/OFF.
89	P71/PPG1	NC	OUT	Not used.
90	P72/PPG2	NC	OUT	Not used.
91	P73/PPG3	AV SW_2	OUT	Control rear/front video signal.(at AV X 2)
92	P74/PPG4/RP8	AV SW_1	OUT	Control DVD/VCR video/audio signal.
93	P75/PPG5/RP9	Y/C CS	OUT	Control terminal for Y/C. (CHIP SELECT).
94	P76/PPG6/RPA	RF CH SW	OUT	3/4 ch Selection for the RF CH.
95	P77/RPG7/RPB	AUDIO_MUTE-H	OUT	L for at AUDIO MUTE and POWER OFF. H for except above case.
96	P80/YCO	V_REC_ST-H	OUT	On control of A/V recording(Whole width erase) circuit.
97	P81/EXCAP/YBO	LDM CTL	OUT	Loading motor control terminal.
98	P82/EXCTL	CAP_FWD-H	OUT	Capstan forward and backward command.
99	P83/C,ROT/R	C.ROTARY	OUT	Color Rotary Control output.
100	P84/H.AMP/SW/G	H.AMP.SW	OUT	Switching output of Head Amp SW.
101	P85/COMP/B	COMP	IN	Comparison results input of Playback Envelope level on SP/LP heads (4 heads).
102	P85/EZTTRG	CAP_FULL	OUT	Output the HIGH during the acceleration force of capstan motor at SLOW mode.
103	P87/DPG	CYL_SPEED_UP	OUT	Output terminal for correct cylinder during SLOW.
104	DFG	D FG/PG	IN	Input terminal for DRUM FG signal detection.
105	VIDEO_FF	VIDEO_H.SW	OUT	Output terminal of Video Head SW.
106	AUDIO_FF	HI-FI H.SW	OUT	Output terminal of HI-FI Head SW.
107	DRUM_PWM	DRUM_PWM	OUT	PWM output of Cylinder control.
108	CAP_PWM	CAP_PWM	OUT	PWM output of Capastan control.
109	V-PULSE	DUMMY_V-SYNC	OUT	Virtual V Pulse output.
110	SV VSS	SV VSS	-	Ground.
111	C.SYNC_IN	SYNC	IN	Input terminal for composite SYNC.
112	VCC	VCC(SV)	-	+ 5V

TROUBLESHOOTING GUIDE

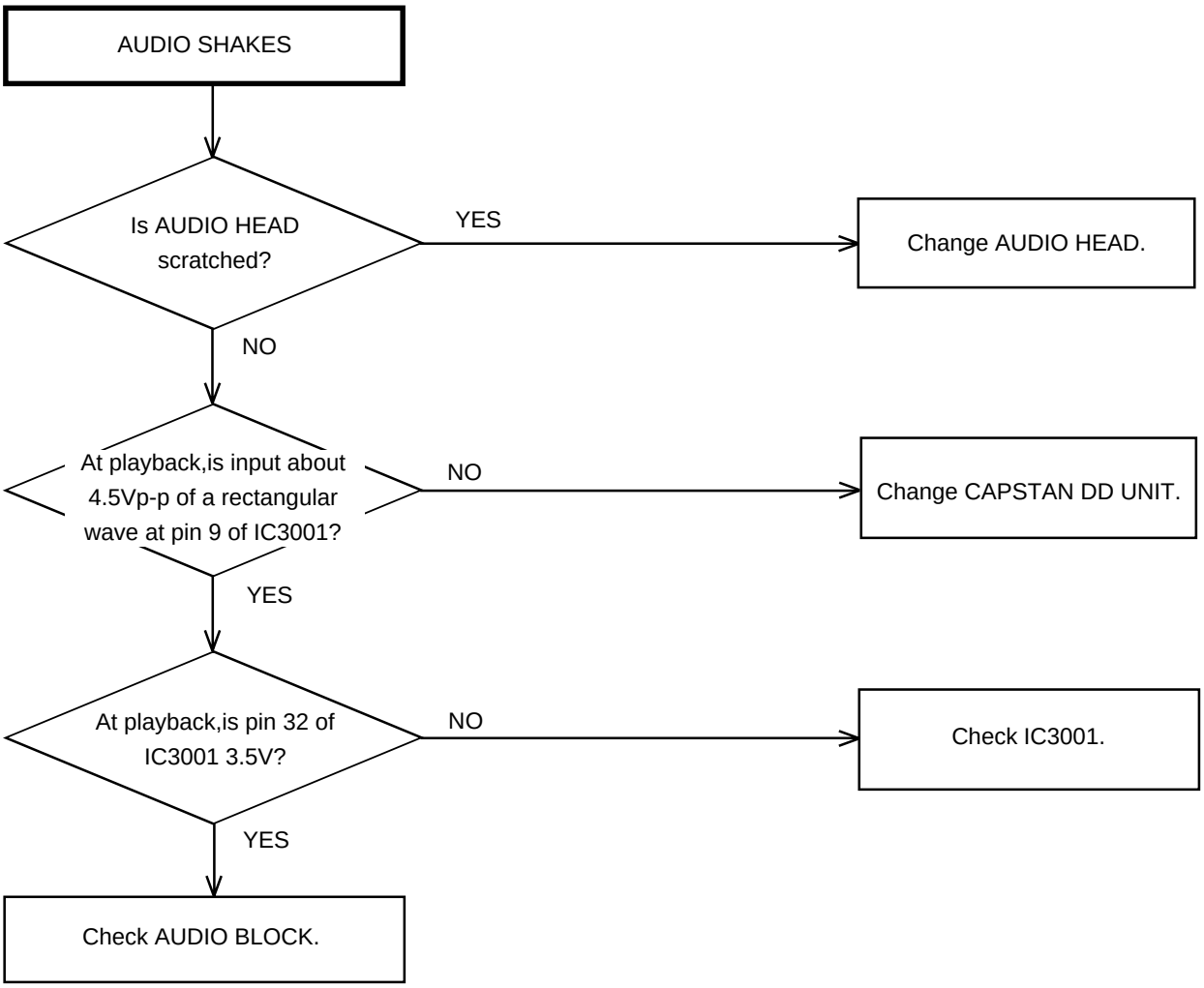
(VCR SECTION)



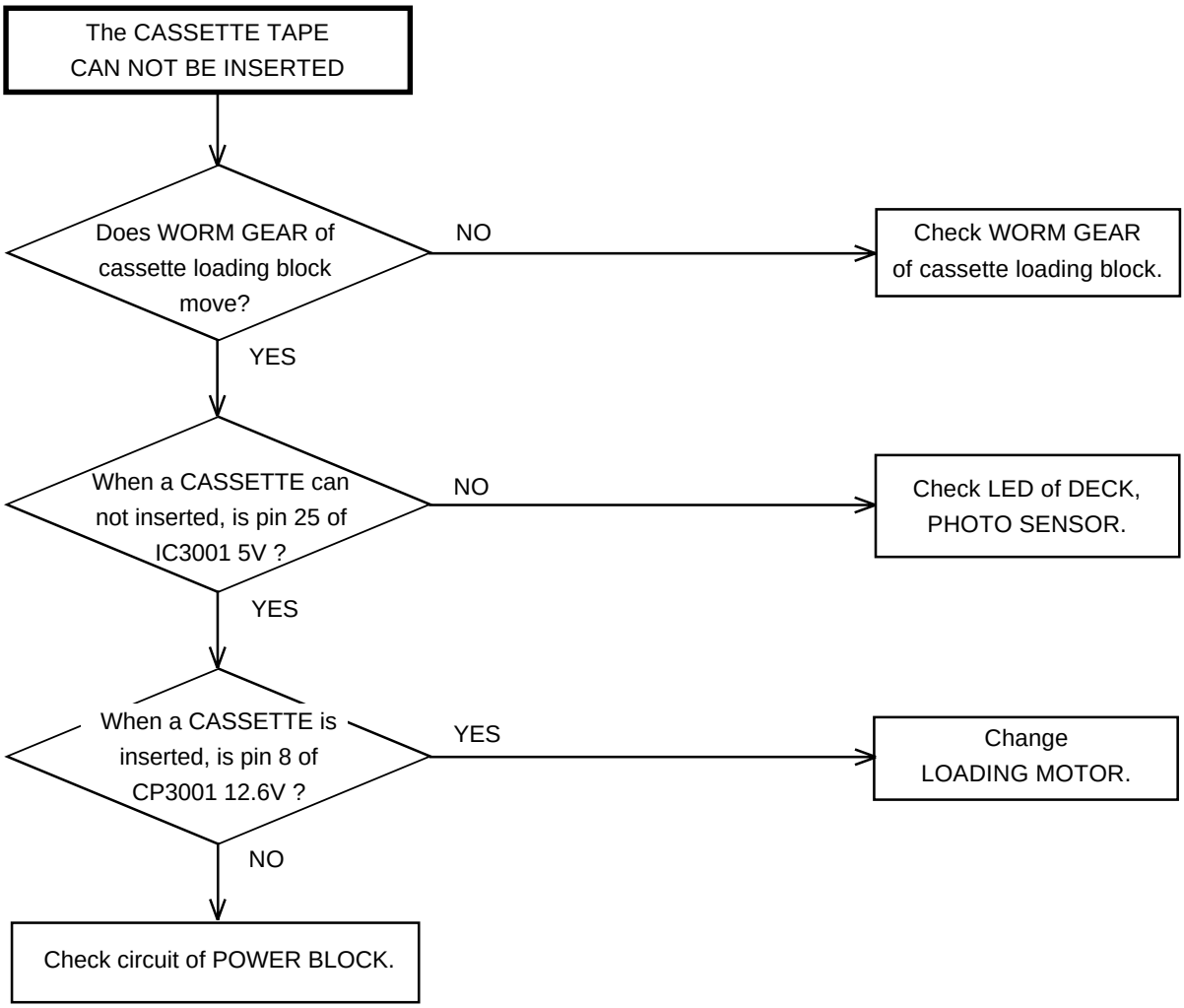
TROUBLESHOOTING GUIDE



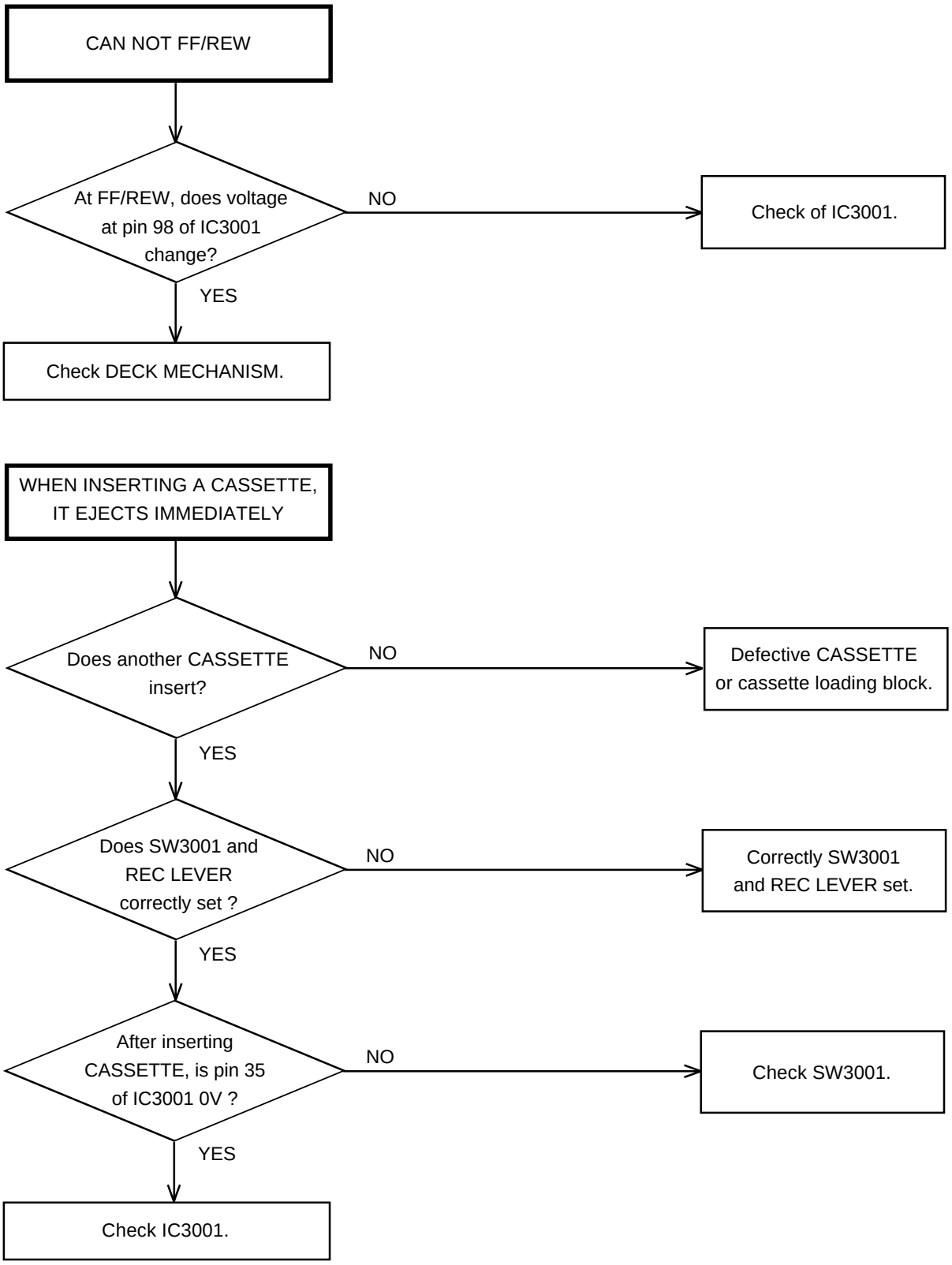
TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE



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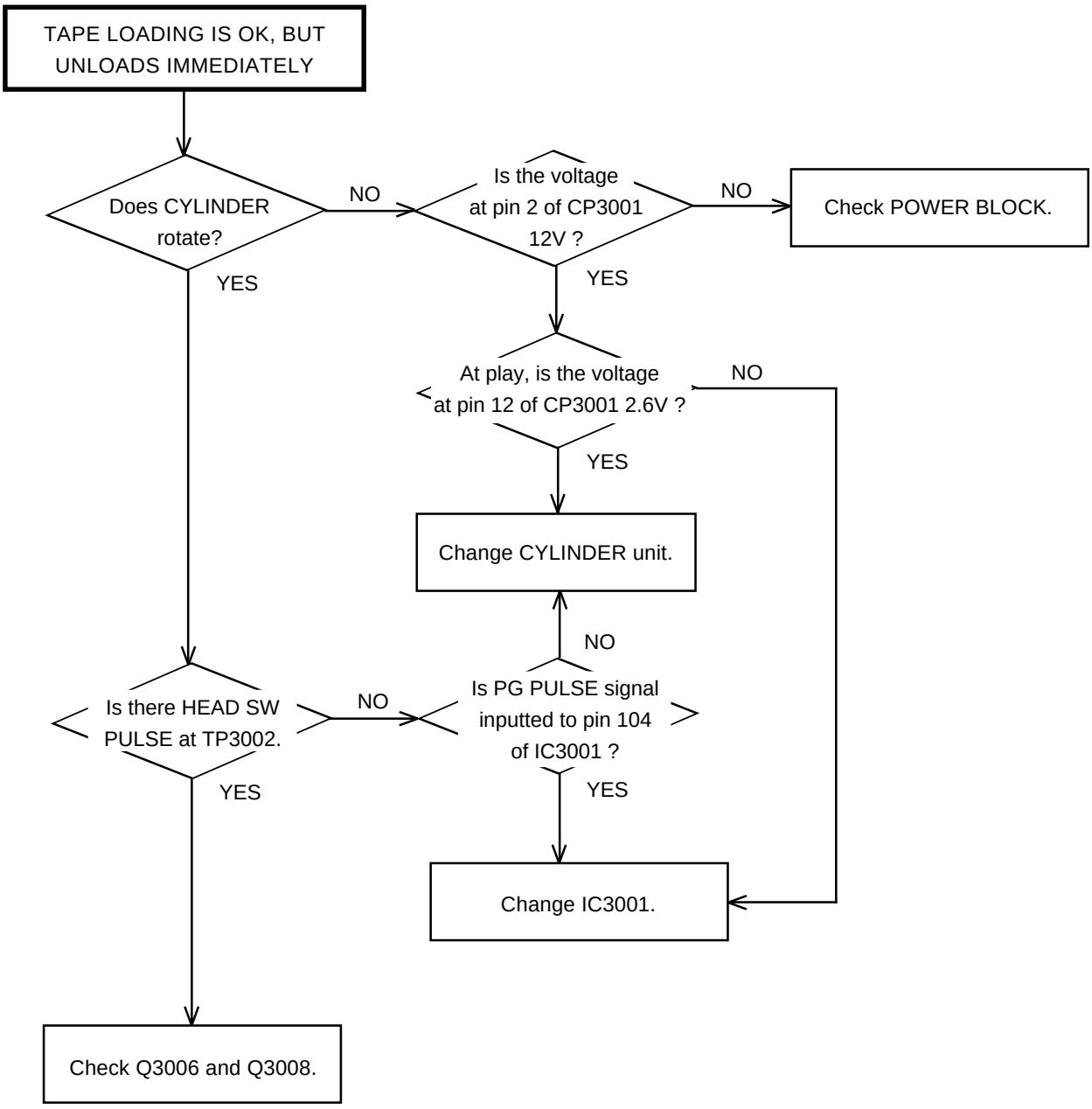

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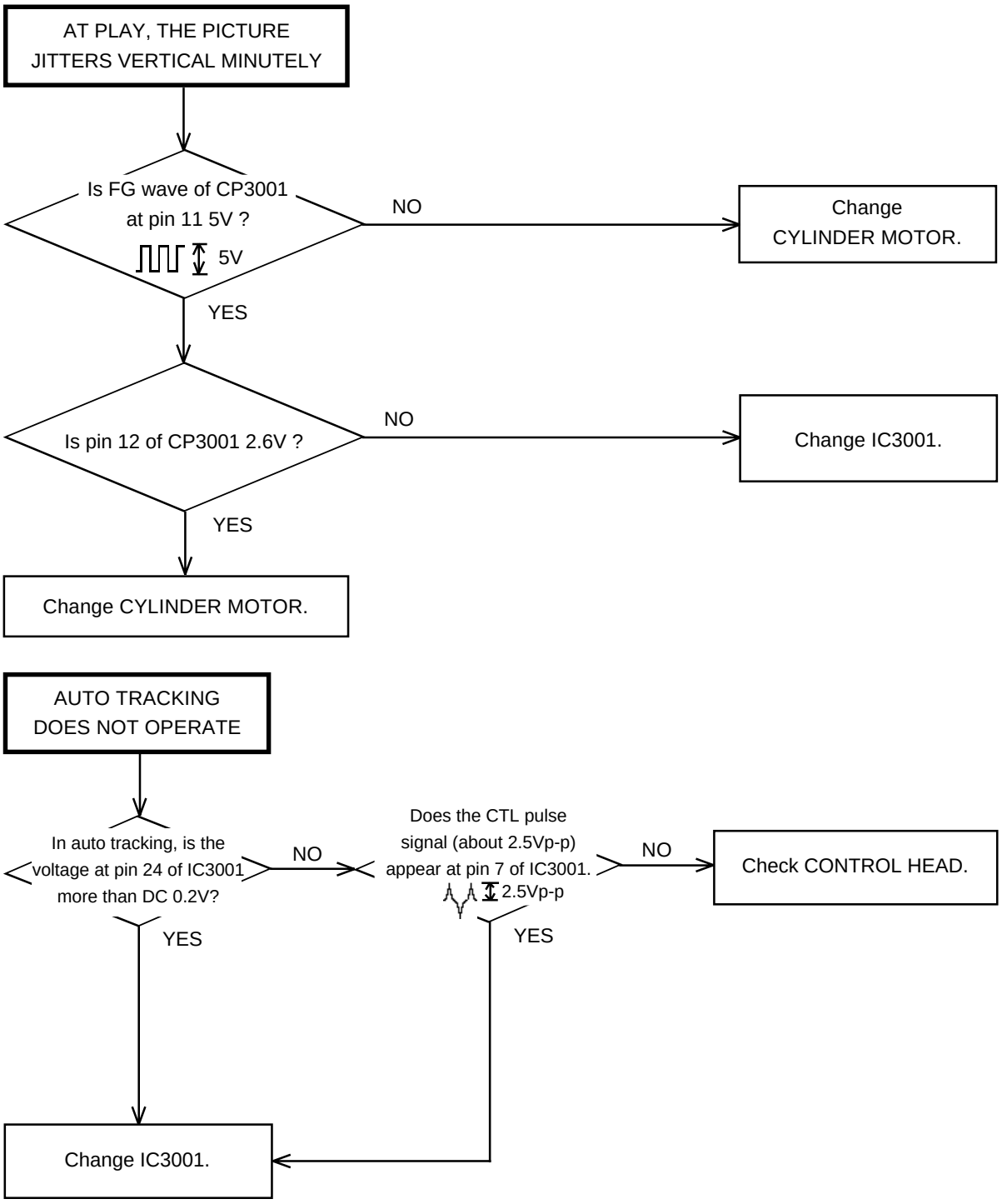

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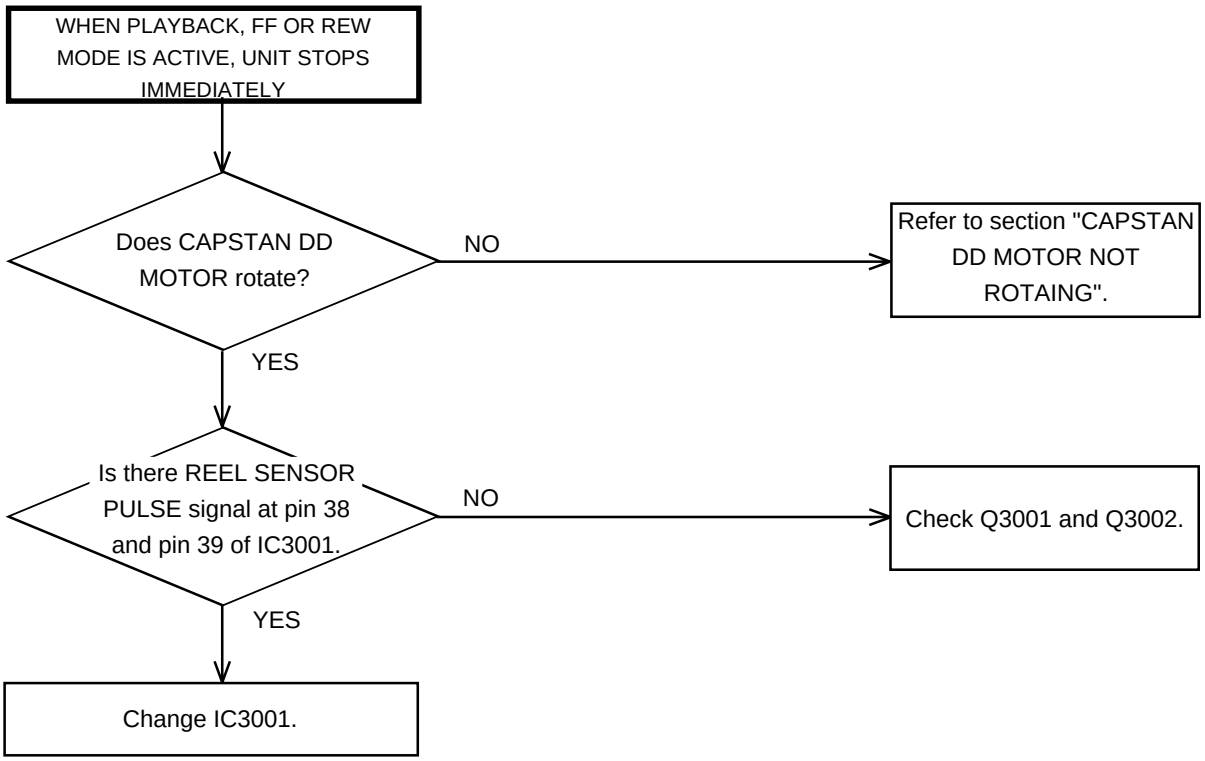

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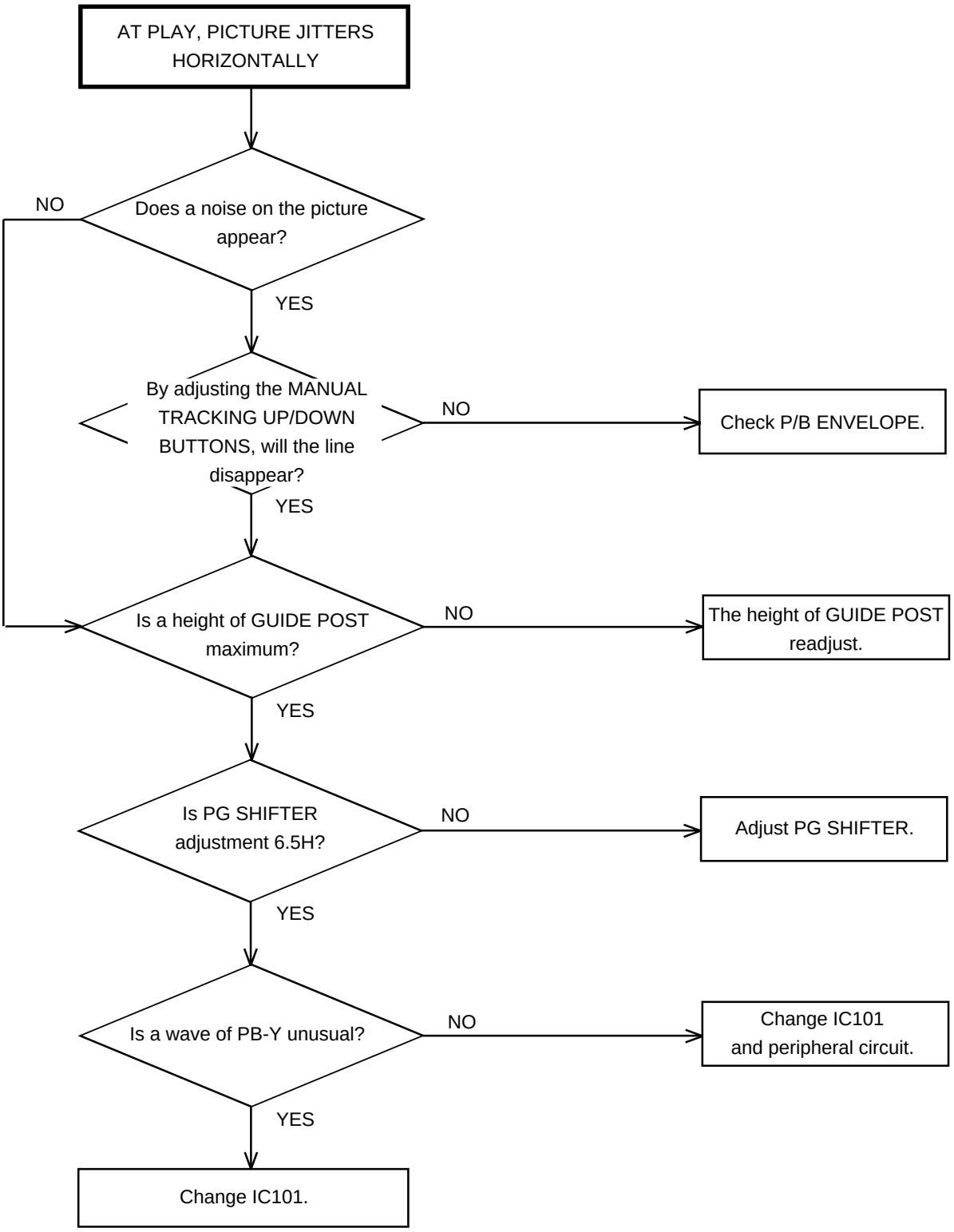

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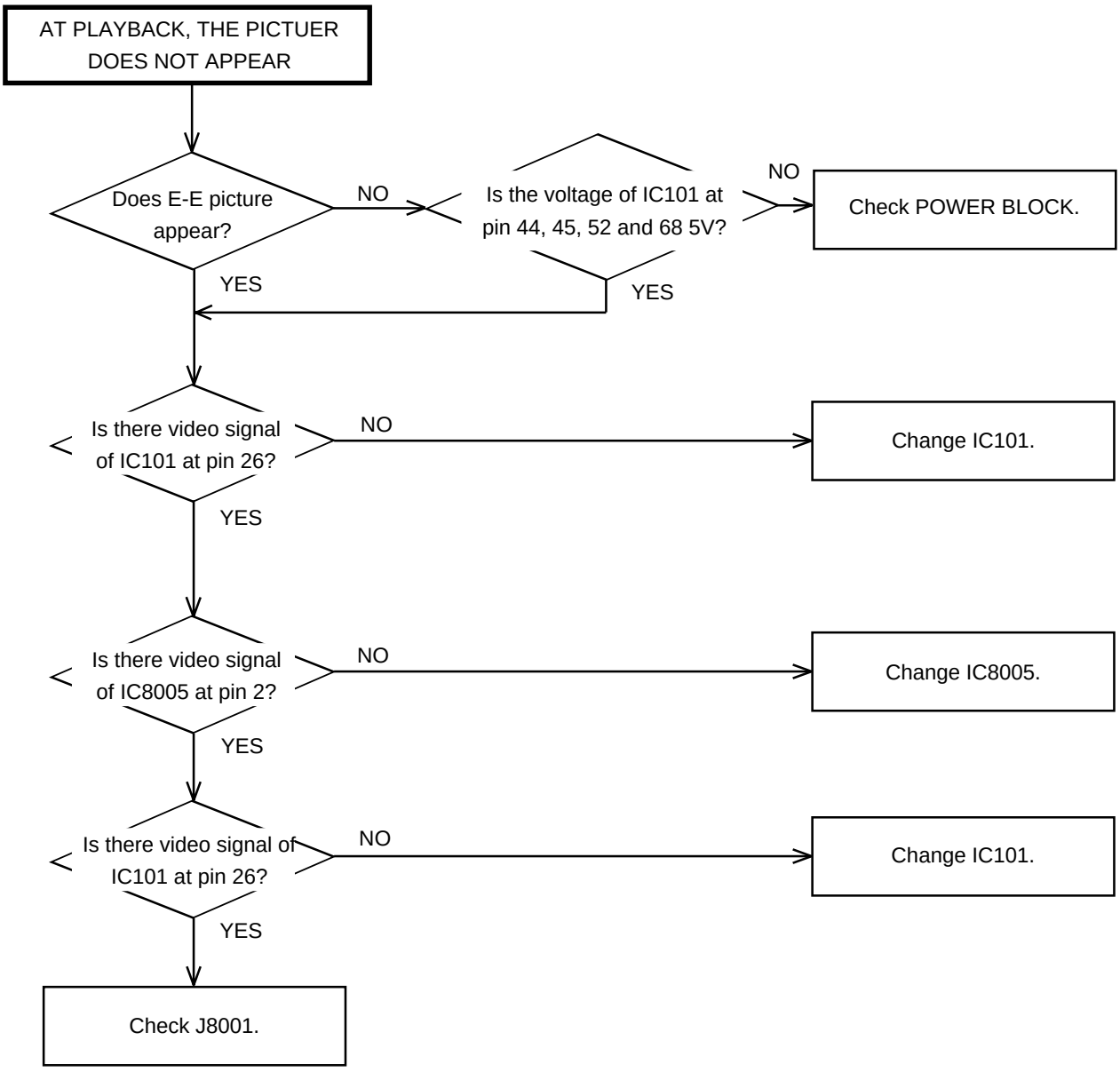

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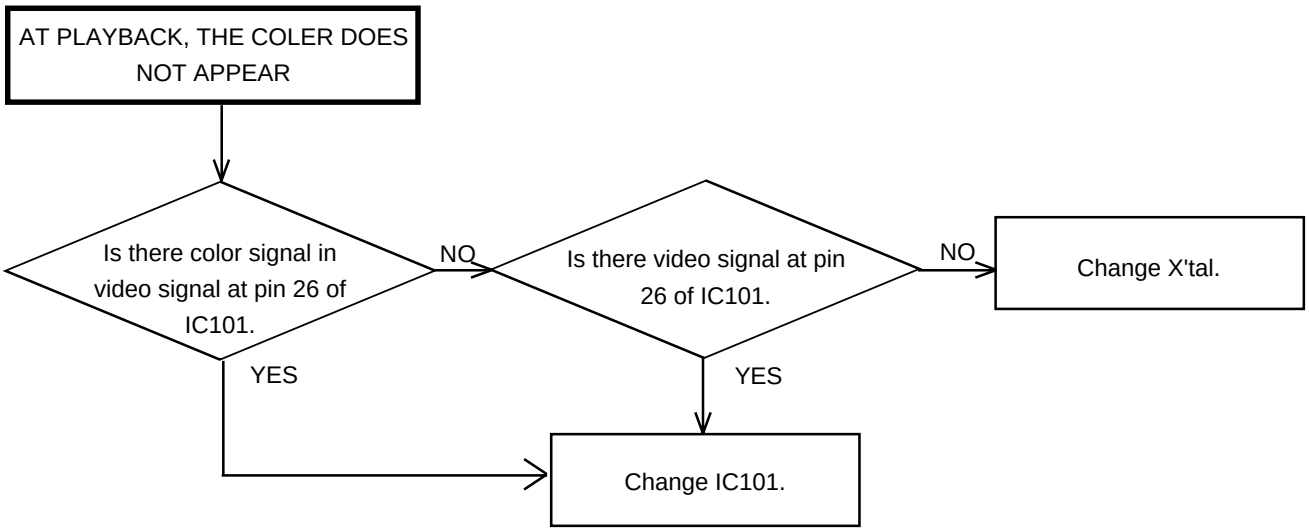

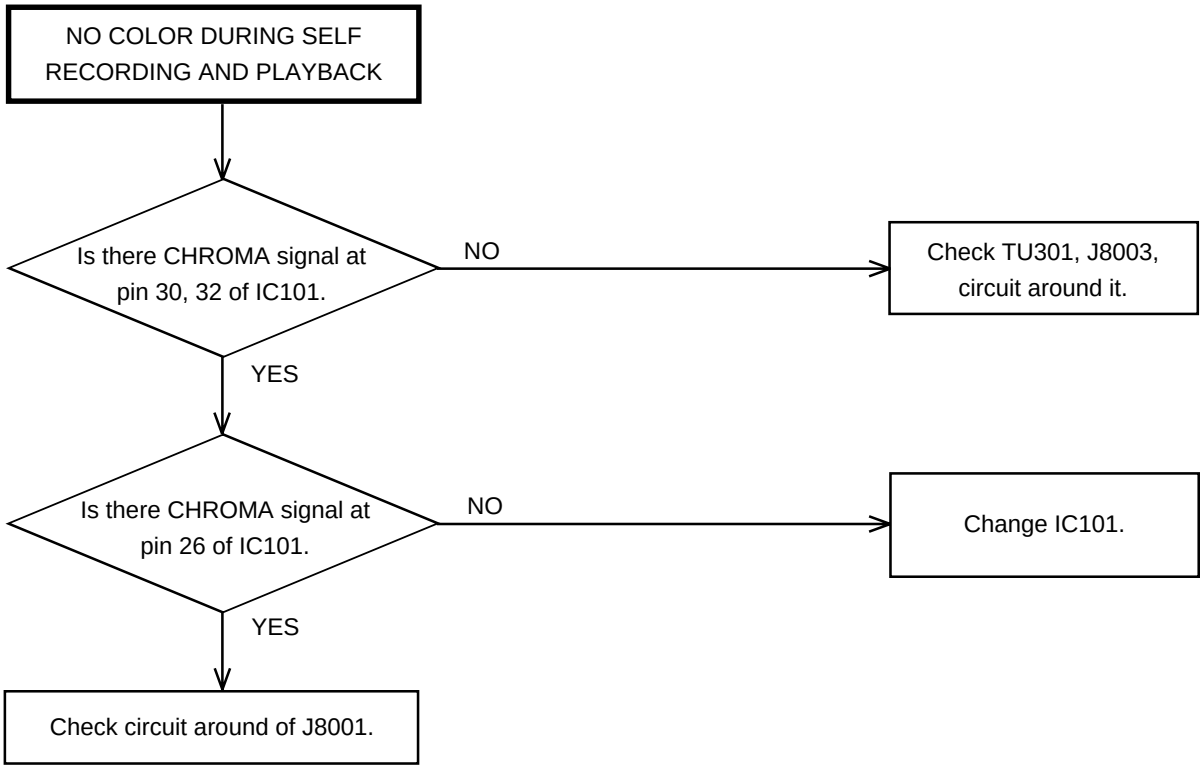

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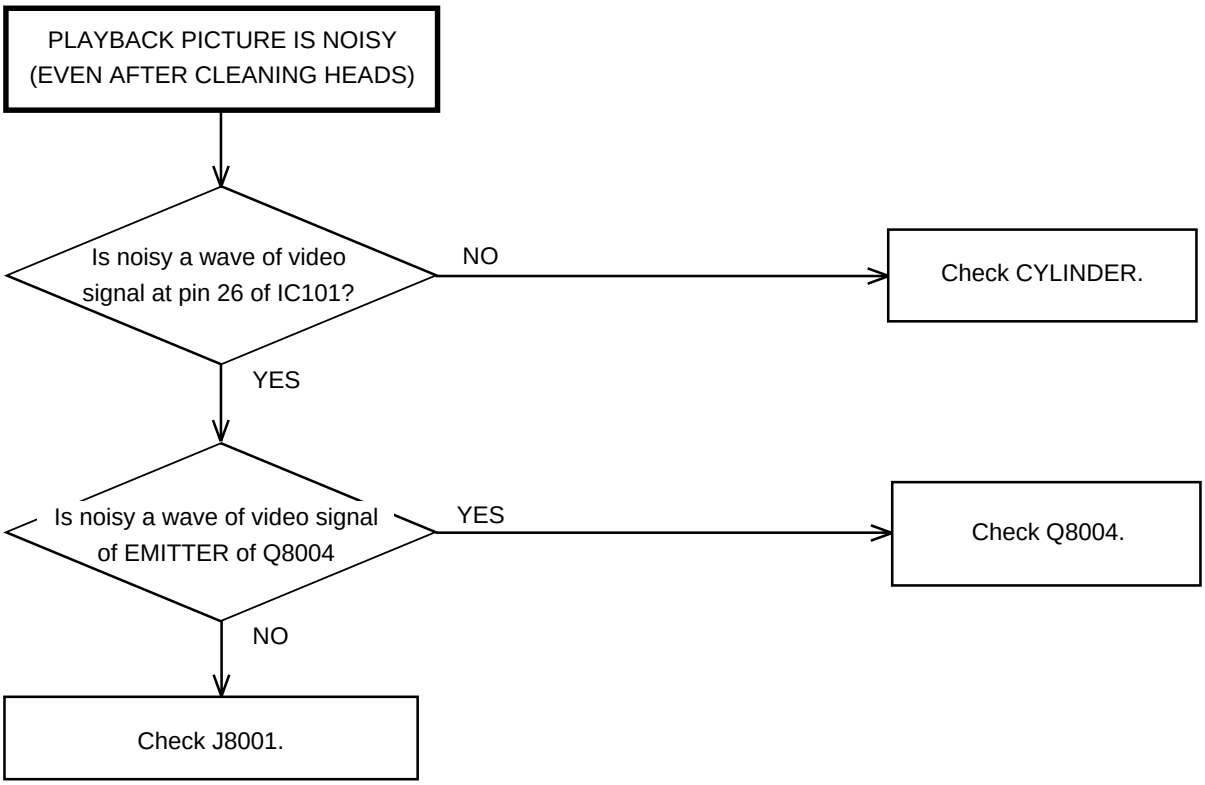

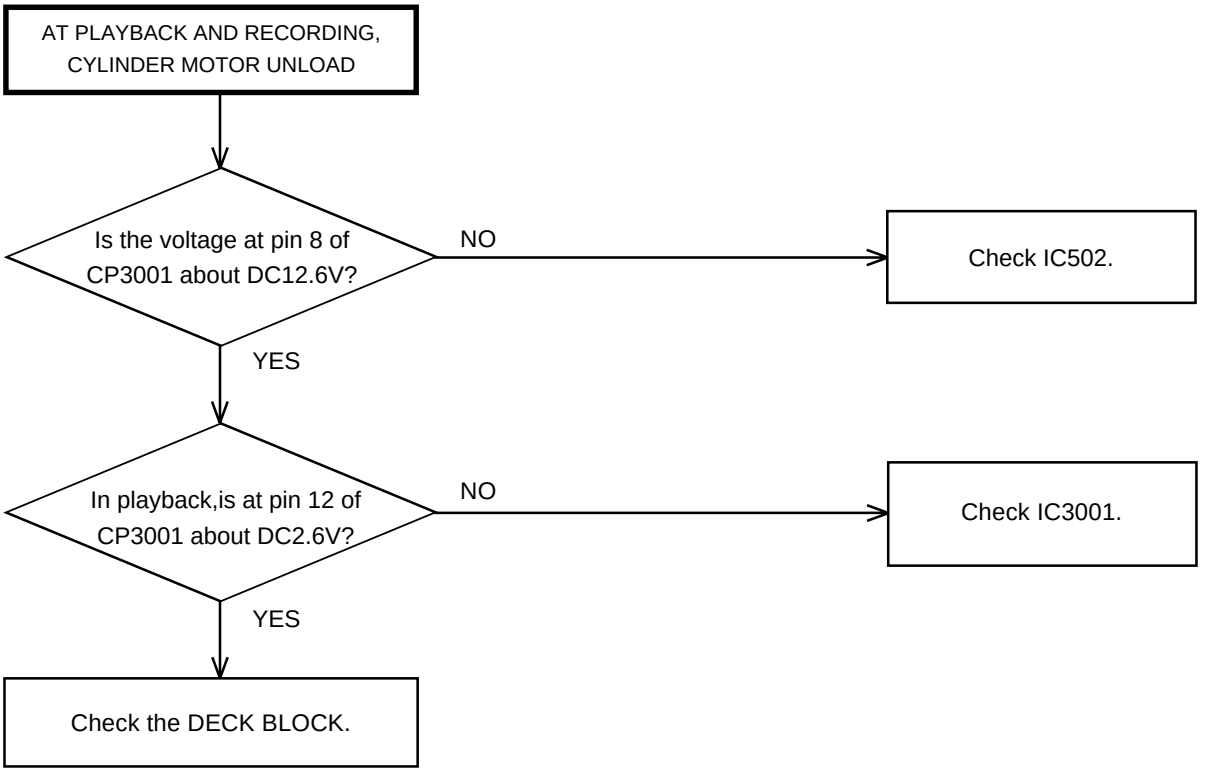

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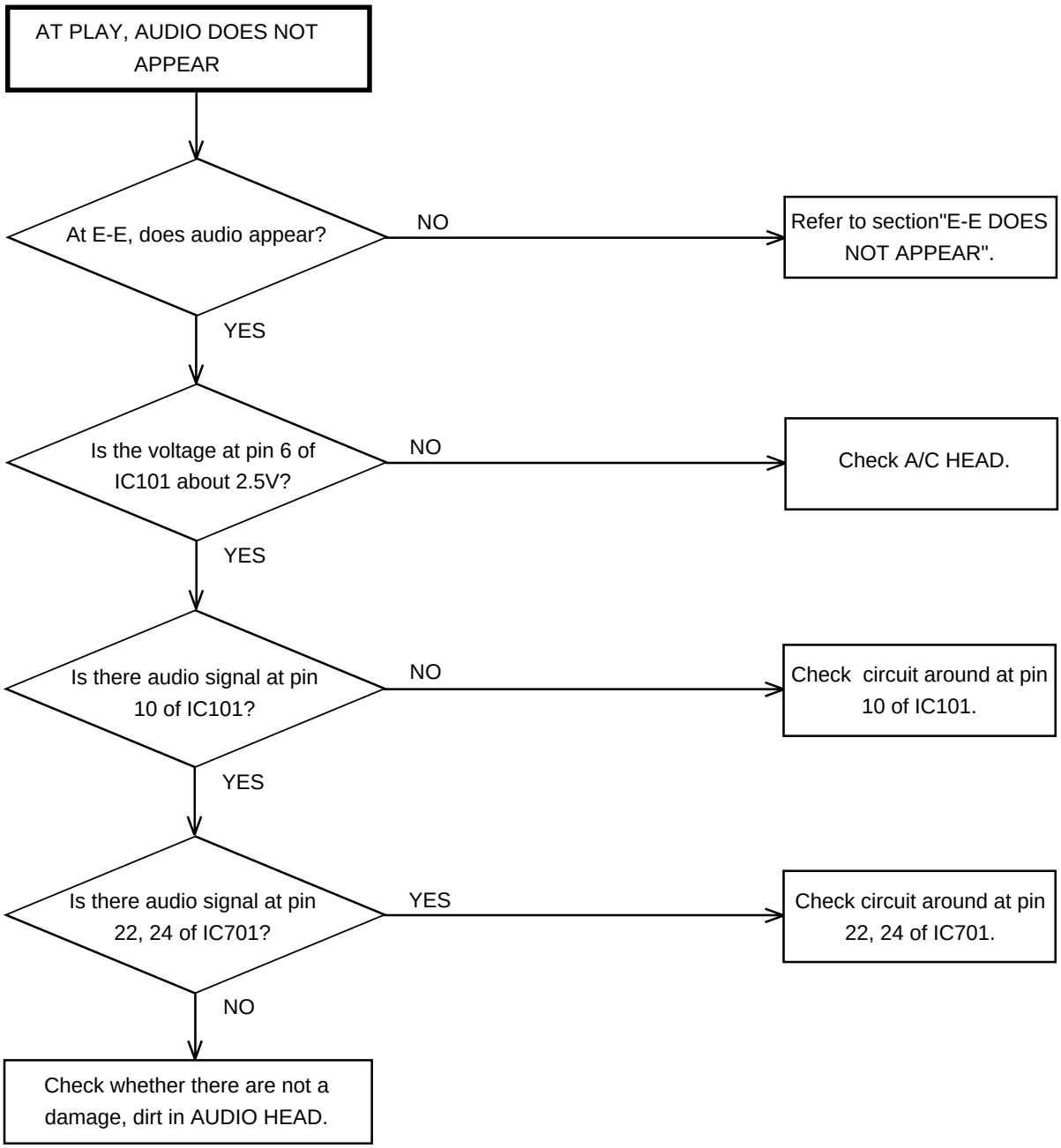

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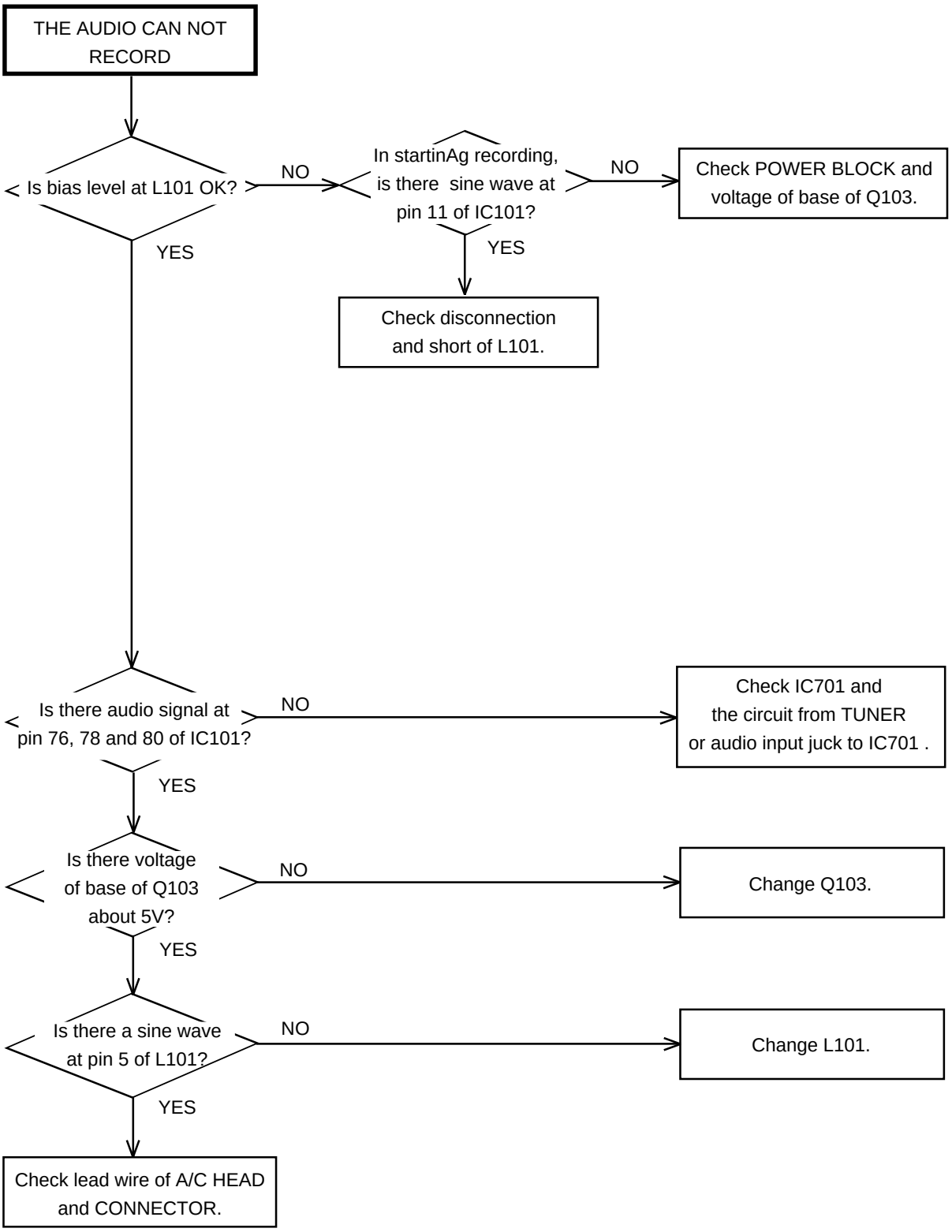

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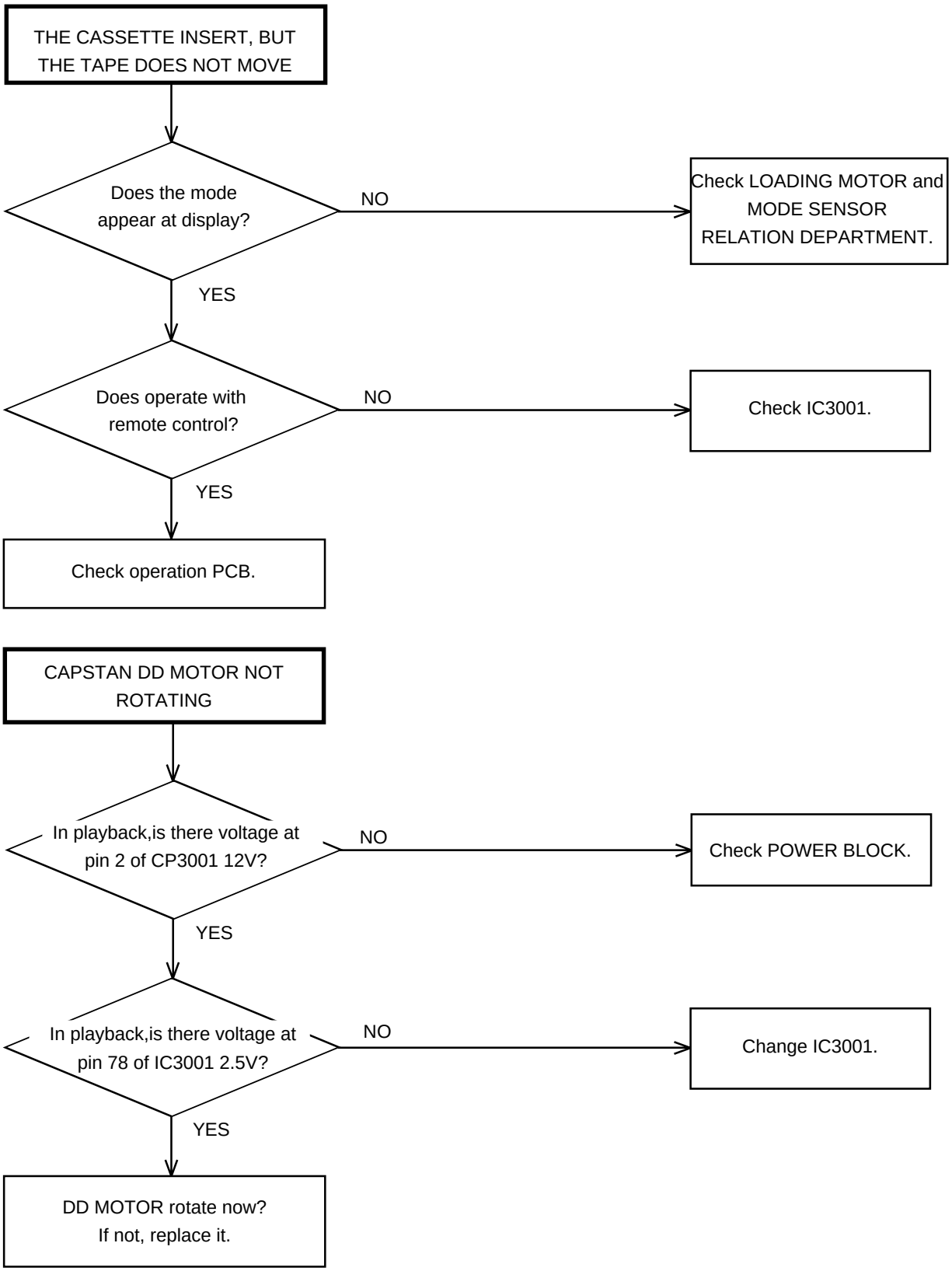

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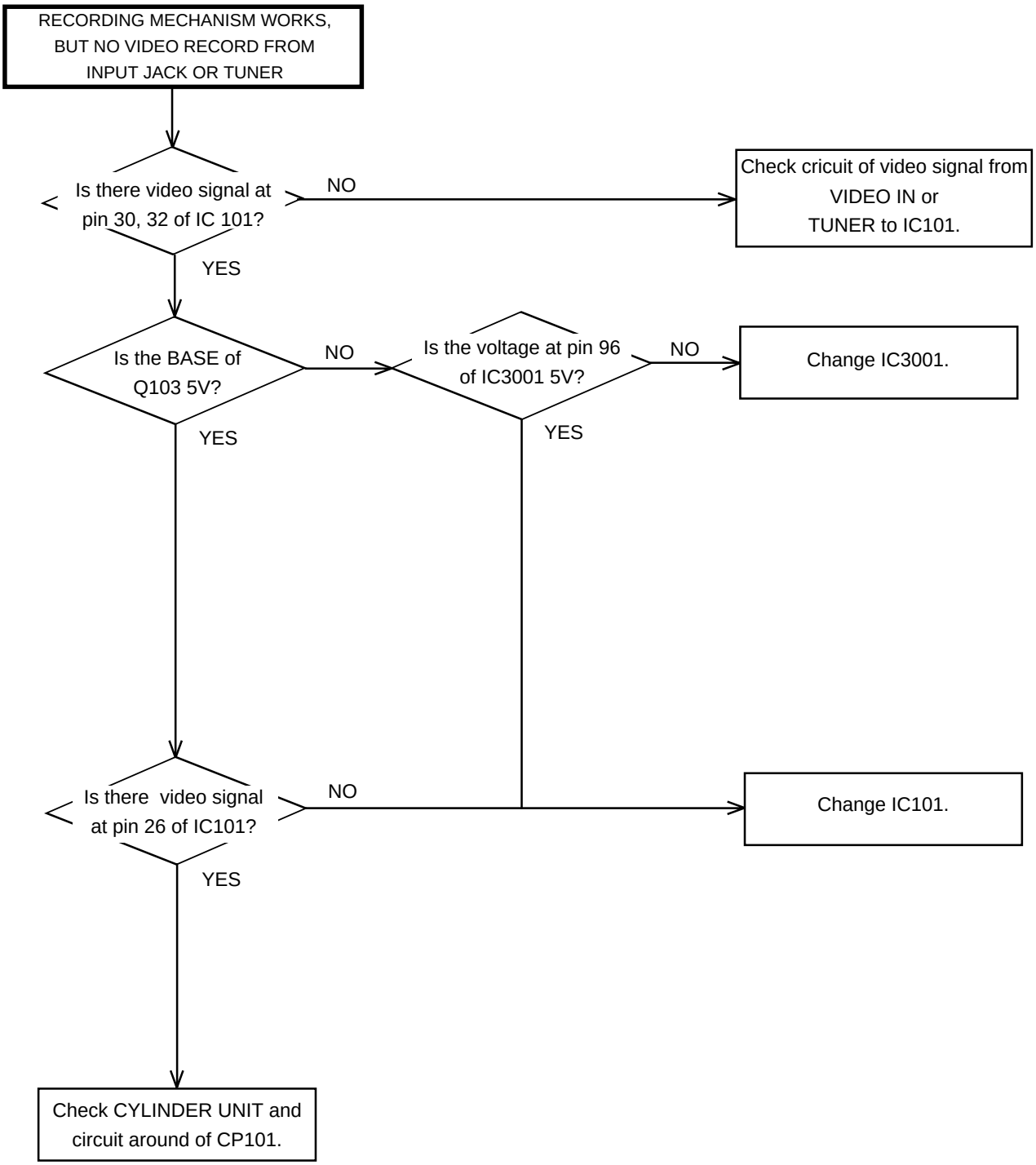

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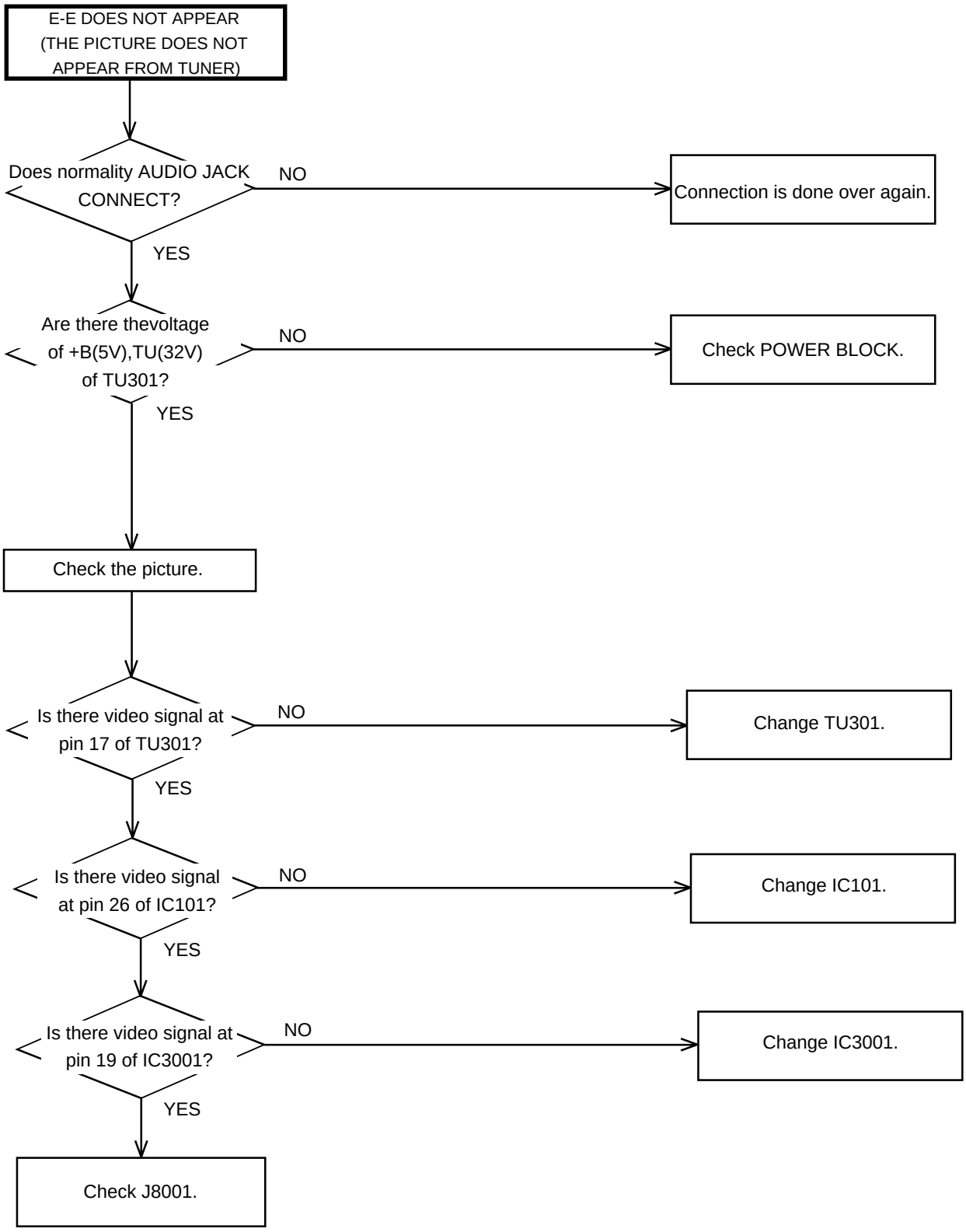

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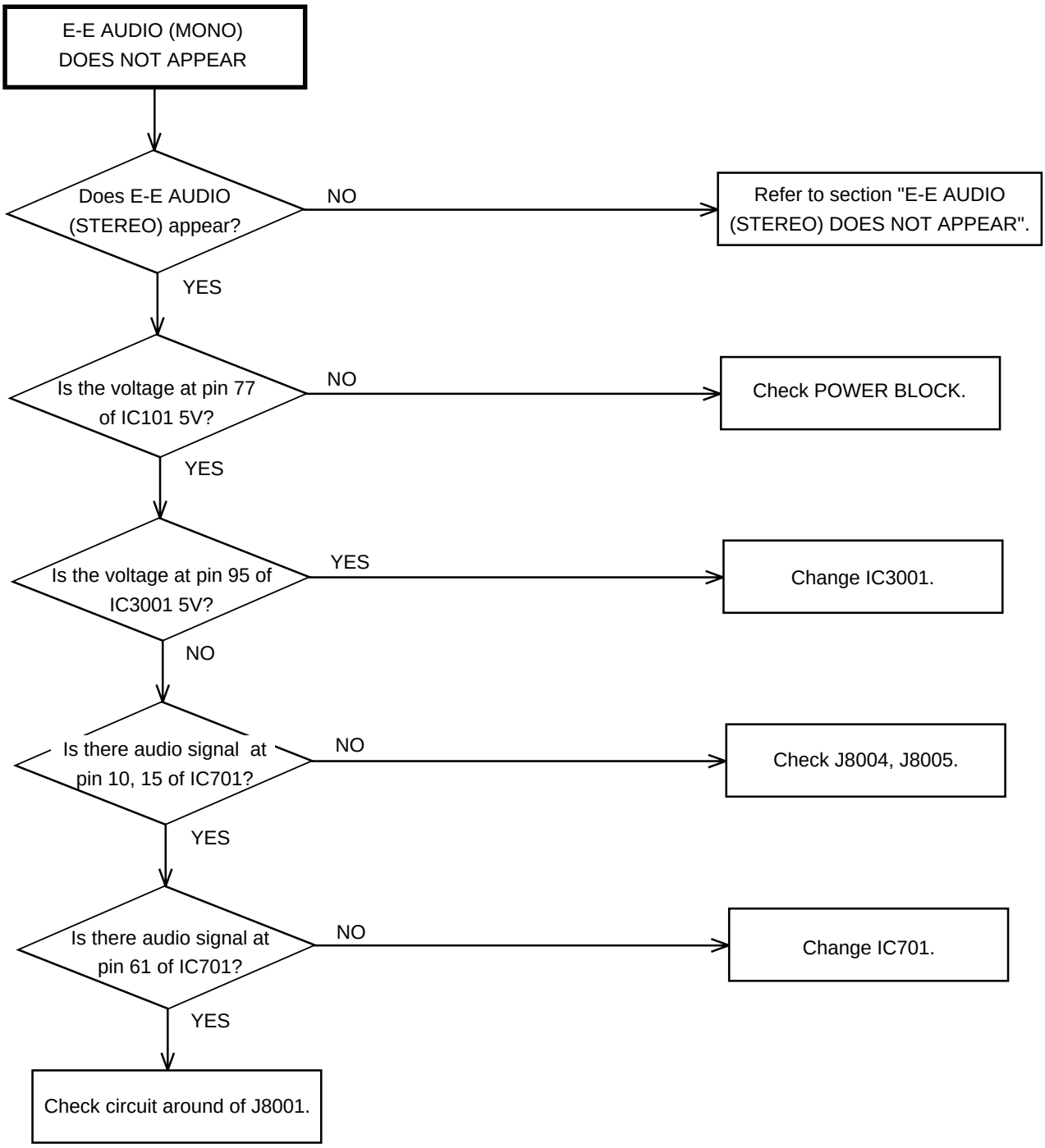

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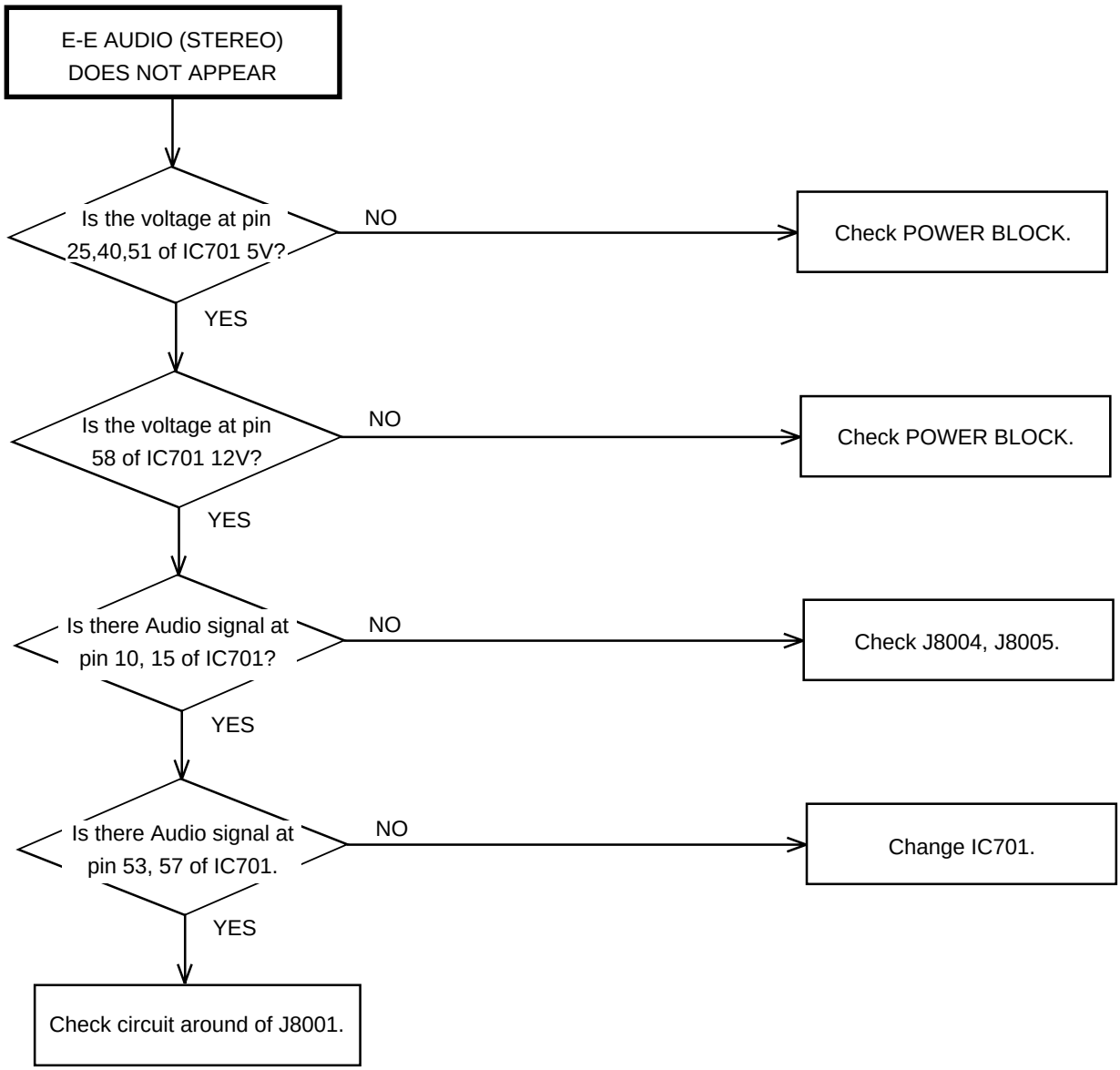

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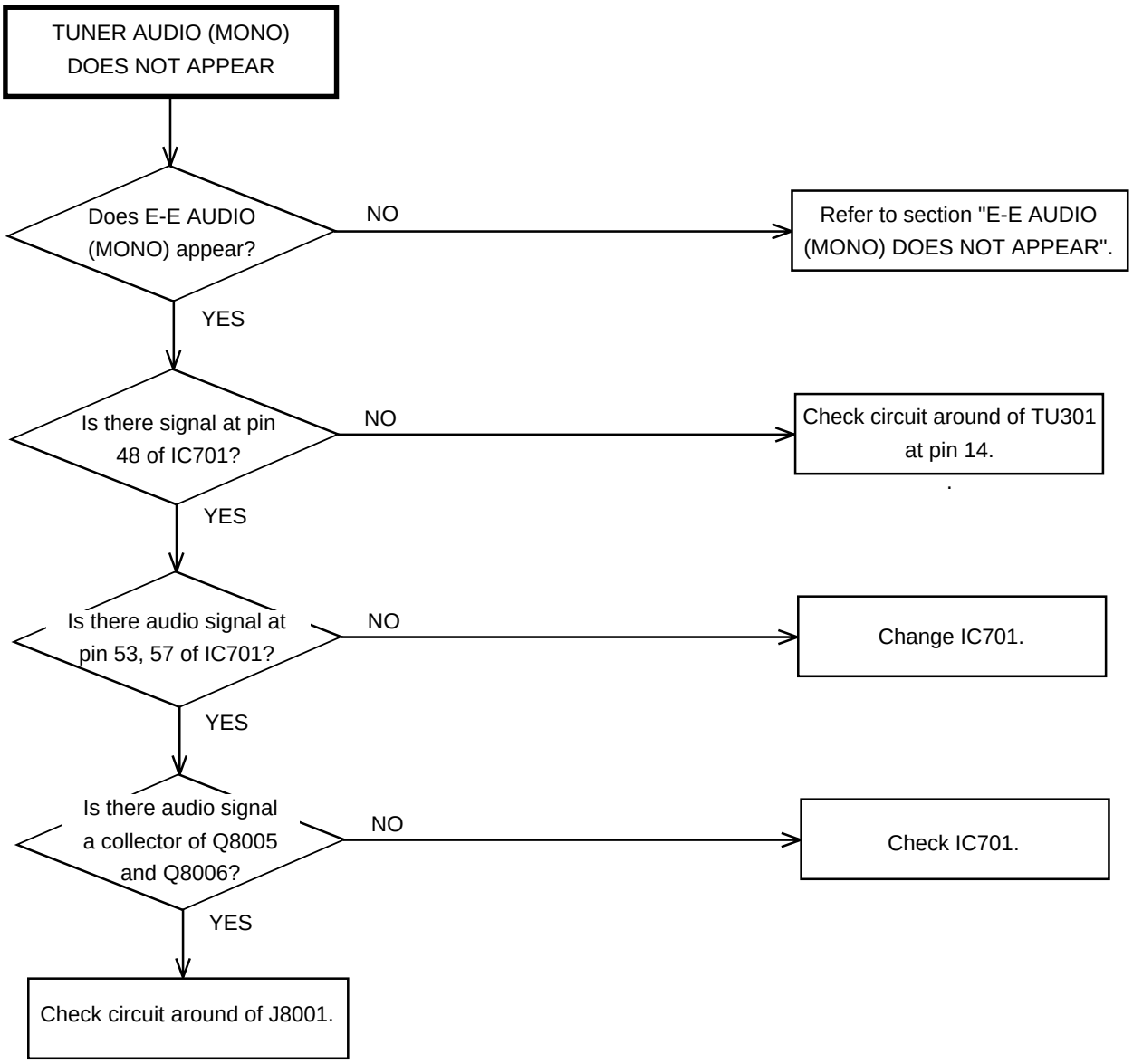

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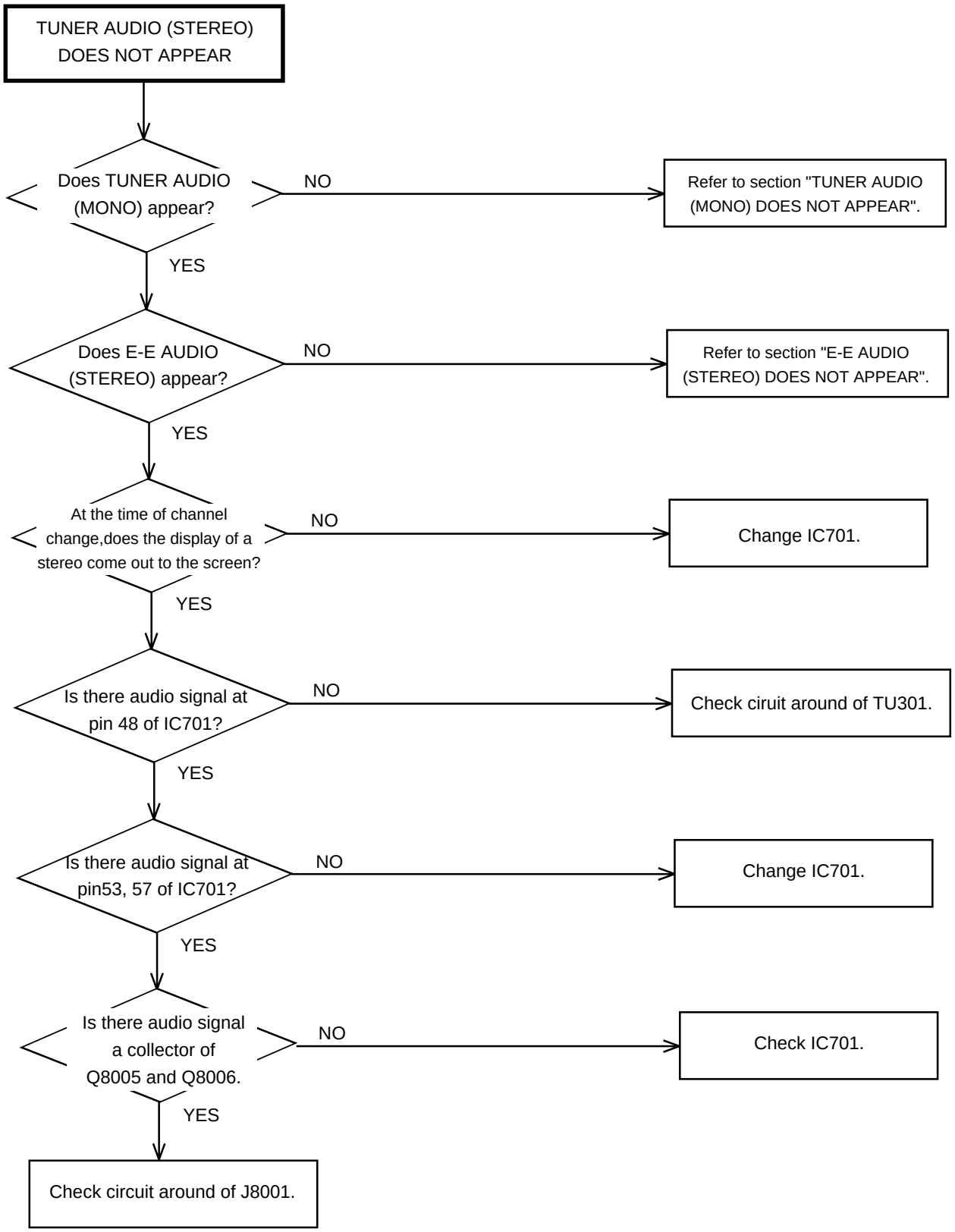

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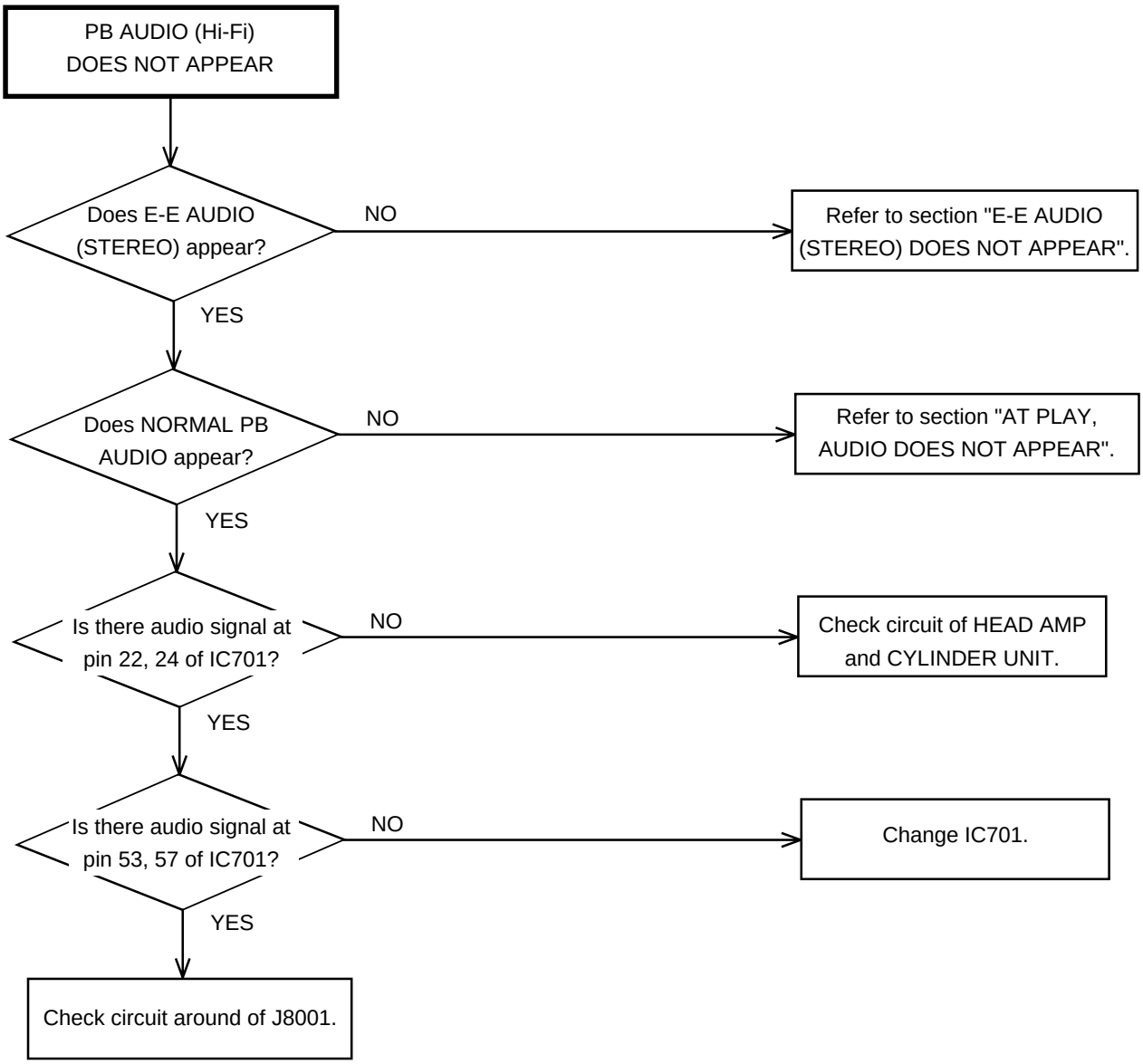

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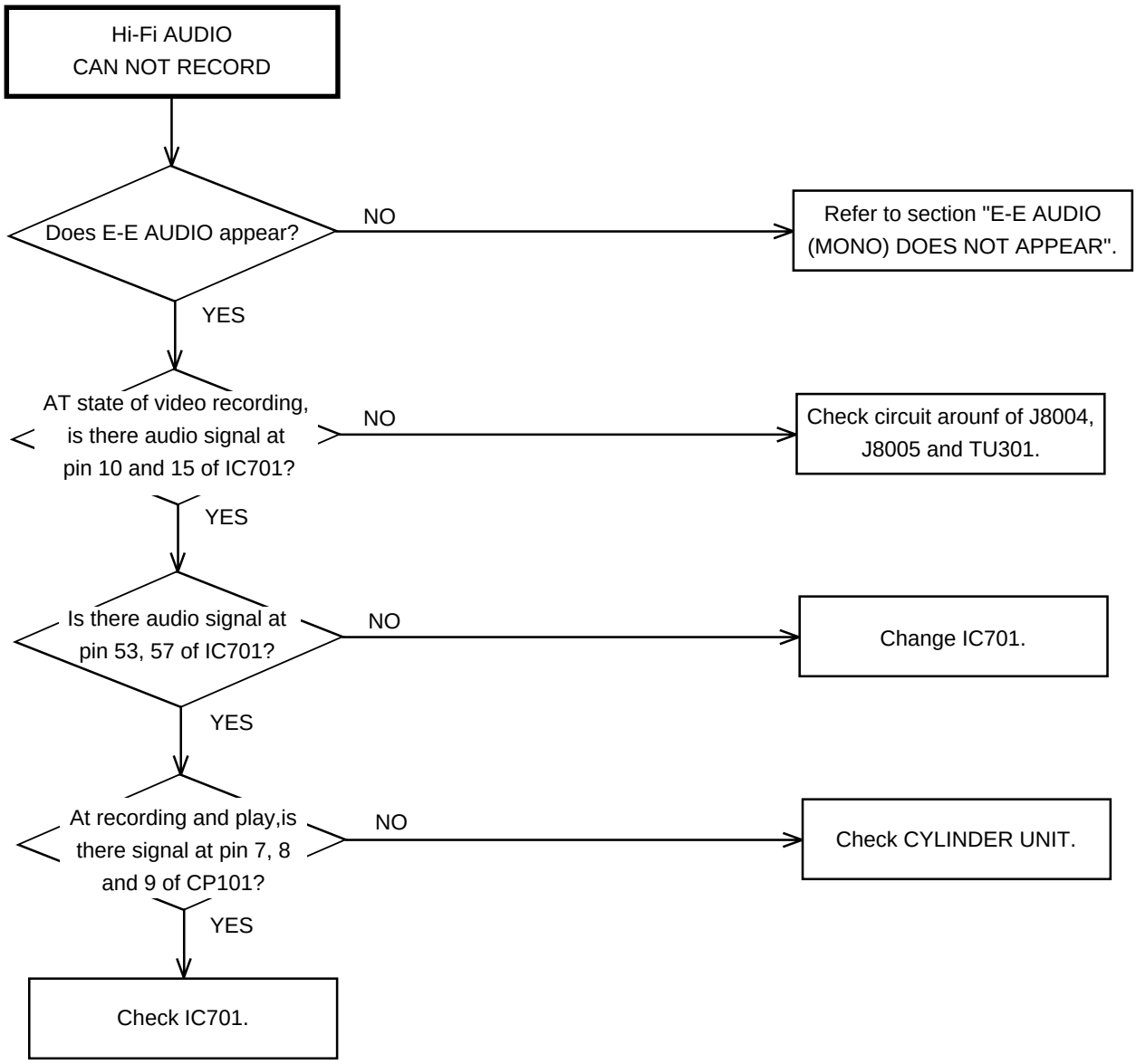
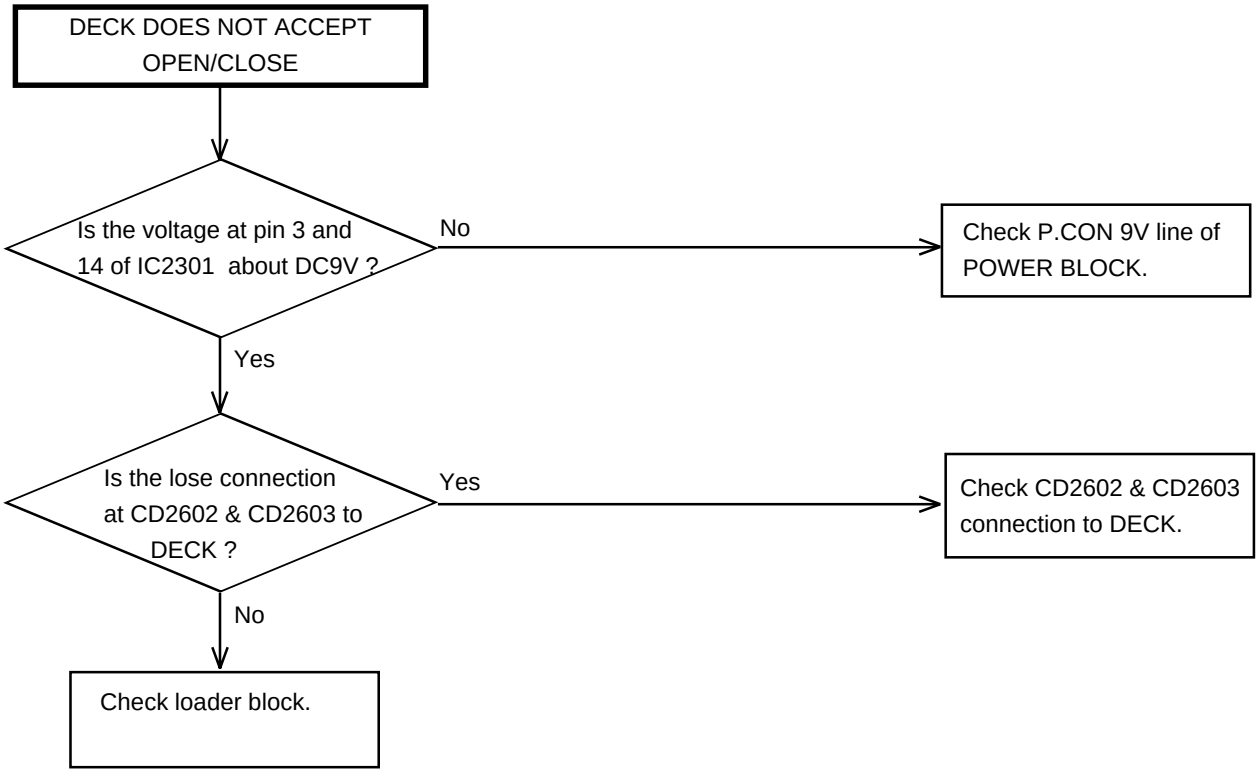


TROUBLESHOOTING GUIDE

(DVD SECTION)



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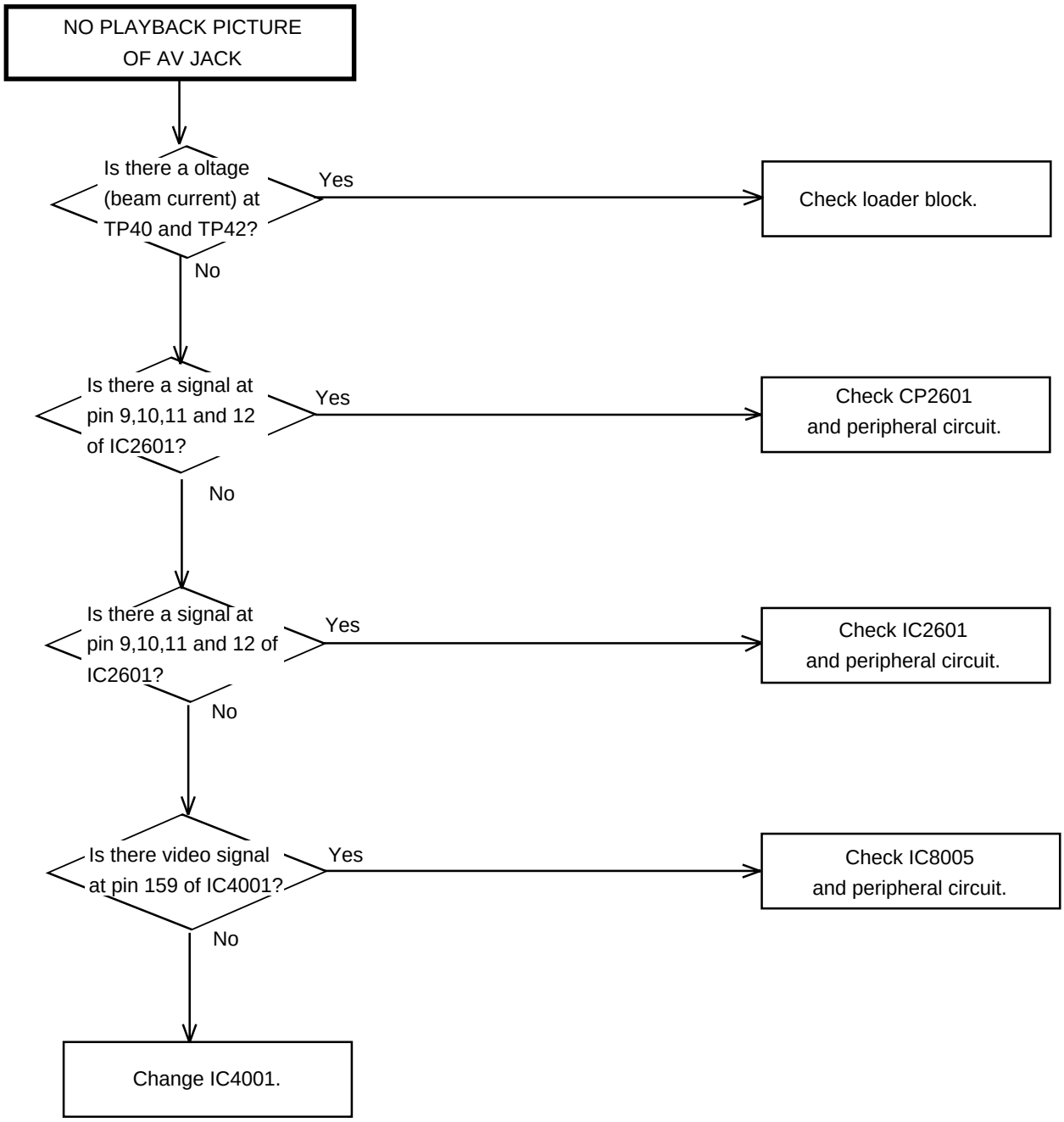

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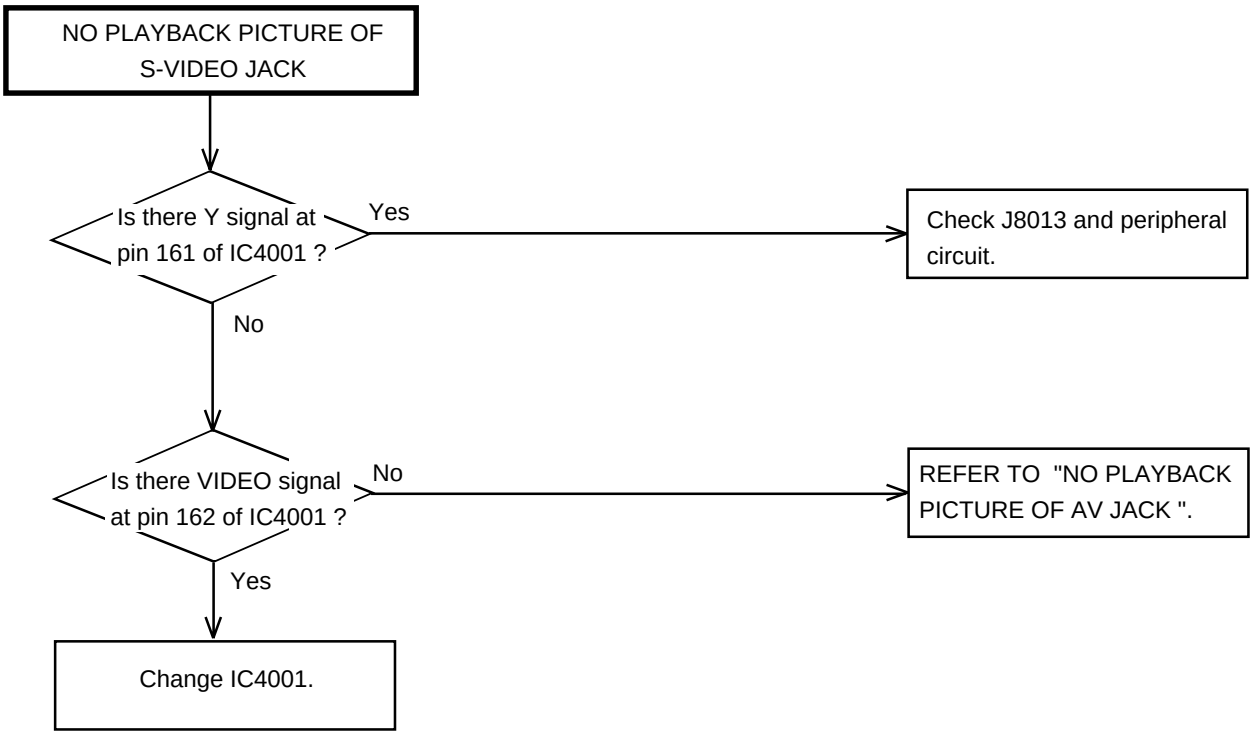

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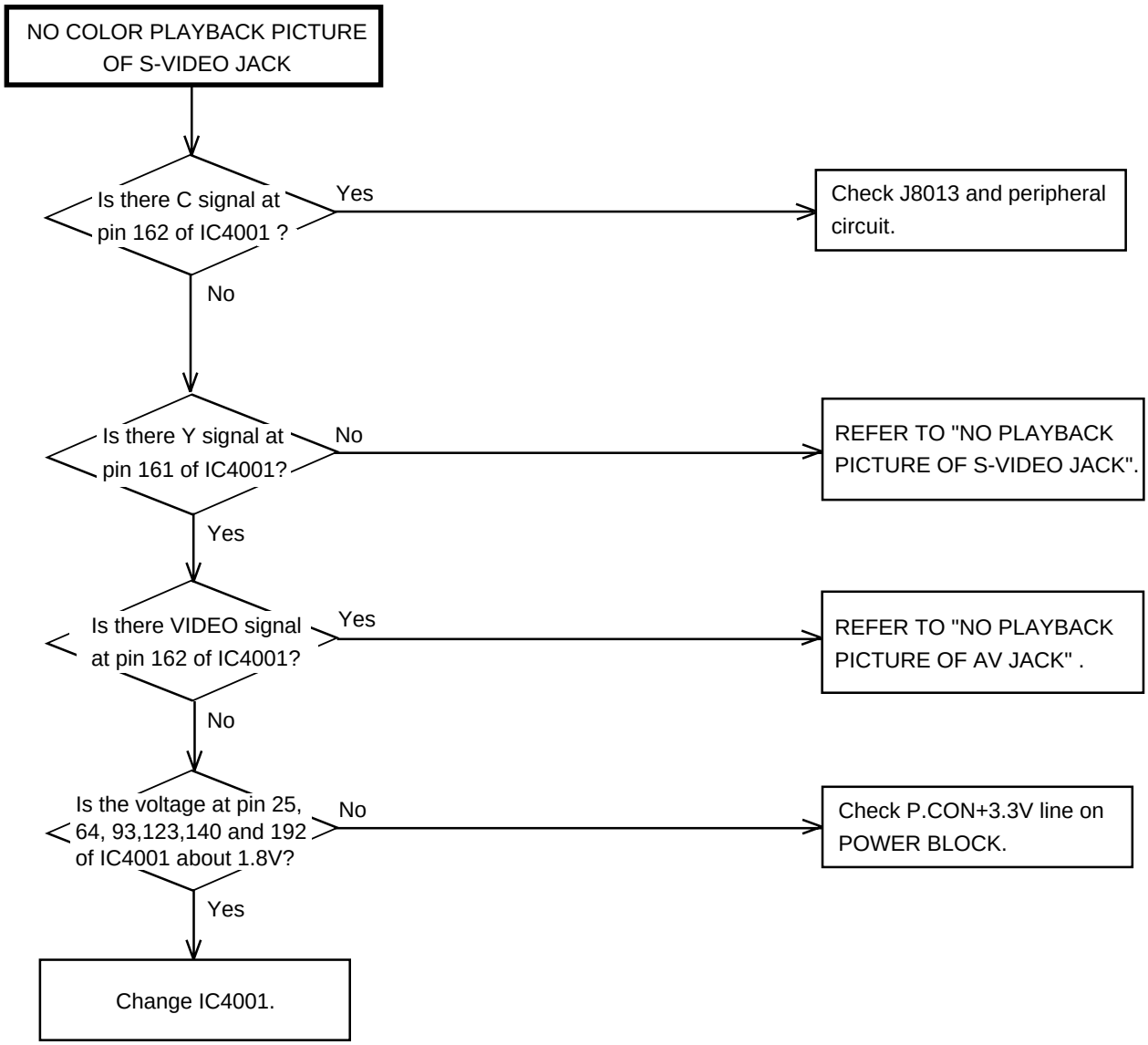

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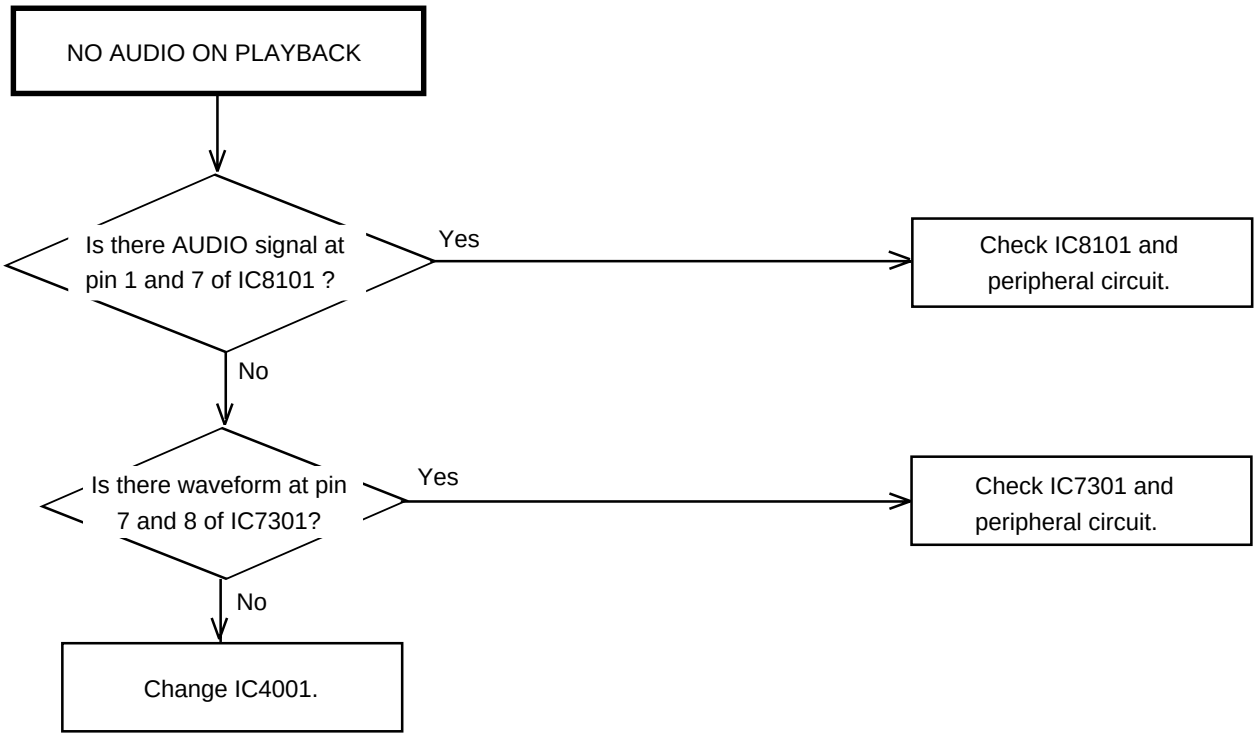


GENERAL SPECIFICATIONS [HR-XVC21UJ]

G-1	**Outline of the product**				DVD VIDEO PLAYER & VHS Player / Recorder
G-2	**DVD System**	Color System			NTSC
		Disc			DVD, CD-DA, CD-R/RW, VIDEO CD
		Disc Diameter			120 mm , 80 mm
		Deck	Disc Loading System		Front Disc Loading
			Motor		2 Motors
		Pick up			1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer		135min (4.7GB)
			DVD 2-Layer		245min (8.5GB)
			CD		74min
			VIDEO CD		74min
		Search speed			Fwd 2-20 times / 4 step
				Actual	2-45 times (DVD, VIDEO CD)
					4-40 times (CD)
					Rev 2-20 times / 4 step
				Actual	2-45 times (DVD, VIDEO CD)
					4-40 times (CD)
		Slow speed			Fwd 1/7-1/2 times
				Actual	--
					Rev --
				Actual	--
G-3	**VCR System**	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			Yes
		NTSC PB(PAL60Hz)			No
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		4Head
			FM Audio Head		2Head
			Audio /Control		Mono/Yes
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec PAL		-
			Rec NTSC		SP/SLP(EP)
			Play PAL		-
			Play NTSC		SP/SLP(EP)
		Fast Forward / Rewind Time (Approx.) at 25oC			FF:1'48"/REW:1'48"
				with Cassette	T-120
		Forward/Reverse Picture Search	NTSC or PAL-M		SP/SLP(EP) = 3x,5x / 9x,15x
			PAL or SECAM		-
		Frame Advance			Yes
		Slow Speed			1/10
G-4	**Tuning System**	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		US (w/CATV)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 OHM
			CH Coverage		2~69,4A,A-5~A-1,A~I
					J~W,W+1-W+84
		Intermediate Frequency	Picture(FP)		45.75 MHz
			Sound(FS)		41.25 MHz
			FP-FS		4.50 MHz
		Preset CH			-
		RF Converter Output			Yes
			Channel		3 or 4 ch
			Level/Impedance		66 dBu / 75 Ohm
			Sound Selector		No
		Stereo/Dual TV Sound			US-ST
		Tuner Sound Muting			Yes
G-5	**Power**	Power Source	AC		110 - 220V 50 / 60Hz
			DC		-
		Power Consumption			18 W at 220V 60Hz
			Stand by		3 W at 220V 60Hz
			Per Year		-- W
		Protector	Power Fuse		Yes
G-6	**Regulation**		Safety		(IEC60065)
			Radiation		(FCC)
			Laser		(IEC60065)
G-7	**Temperature**		Operation		5oC - 40oC
			Storage		-20oC - 60oC

GENERAL SPECIFICATIONS [HR-XVC21UJ]

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) 50 dB(VCR)
			Horizontal Resolution	500 Lines (DVD) 230 Lines(VCR Mode)
		RGB Signal	Output Level	-
		Audio Signal	Input Level Microphone	-
			Input Level Line	-8 dBm/ 50k ohm(VCR)
			Output Level Line	-8 dBm/ 1k ohm(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	0.02% (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 - 10kHz
			VCR Mode at LP	-
			VCR Mode at SLP	100Hz - 4kHz
		Hi-Fi Audio Signal	Dynamic Range : More than	90dB
			Frequency Response	20Hz ~20kHz
			Wow And Flutter : Less than	0.01 %Wrms
			Channel Separation : More than	60 dB
			Harmonic Distortion : Less than	0.01

GENERAL SPECIFICATIONS [HR-XVC21UJ]

G-10	On Screen Display (DVD)	Menu				Yes
			Menu Type			Character
			Language			Yes
				Menu		Yes
				Sub Title		Yes
				Audio		Yes
			Picture			Yes
				TV Screen Size		Yes
				OSD Display On/Off		Yes
				JPEG Interval		Yes
				Select Files		Yes
			Sound			Yes
				DRC (Dynamic Range Control)		Yes
				dts Decode		No
				Output (5.1ch/2ch)		No
				Surround On/Off		No
				Center On/Off		No
				Sub Woofer On/Off		No
			Parental			Yes
				Password Lock/Unlock		Yes
				Rating Level		Yes
			Other			Yes
				OSD Language (Set up Language)		Yes
				Output (RGB/Composite)		No
			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 (CD, VIDEO CD, MP3, WMA, JPEG)
			Repeat			Yes
			Slow+ ##			Yes
			Slow- ##			No
			Search+ ##			Yes
			Search- ##			Yes
			Jump			Yes
			Resume			Yes
			Title No.			Yes
			Chapter No.			Yes
			Track No.			Yes
			Time			Yes
			Sub Title No.			Yes
			Angle No.			Yes
			Vocal On/Off			Yes
			Audio No.			Yes
			Audio Stereo L/R			Yes (VIDEO CD)
			Zoom			Yes
			Marker No.			Yes
			Spatializer (N-2-2)			Yes
			Program Play Back			Yes (CD, VIDEO CD, MP3, WMA, JPEG)
			MP3/WMA/JPEG		Folder Name	Yes
					File Name	Yes
					File No	Yes
					Time	Yes
					Track No	Yes
			Progressive Scan Out ON/OFF			No

GENERAL SPECIFICATIONS [HR-XVC21UJ]

	On Screen Display(VCR)	Menu			Yes
			Menu Type		Character
			Timer Rec Set		Yes
			Auto Repeat On/Off		Yes
			SAP On/Off		Yes
			CH Set-Up		Yes
				TV/CATV	Yes
				Auto CH Memory	Yes
				Add/Delete	Yes
			System Set Up		Yes
				Clock Set	Yes (Calendar 12H)
				Language	Yes
				No Noise Back Ground	Yes
				Auto Clock	Yes
				Standard Time	Yes
				Daylight Saving Time	Yes
		G-CODE (or SHOWVIEW or PLUSCODE) No. Entry			No
		Stereo, Audio Output, SAP			Yes
		Play/Stop/FF/Rew/Rec/OTR(ITR)/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes
				CH/AV (LINE)	Yes
				Clock	Yes
				Repeat	Yes
				Tape Counter	Yes
				Index	Yes
				Tape Speed	Yes
				ATR / Manual Tracking	Yes
				Hi-Fi	Yes
				Zero Return	Yes
G-11	**OSD Language**		DVD OSD		English French Spanish
			VCR OSD		English French Spanish
G-12	**Clock,Timer and Timer Back-up**	Calendar			1990/1/1 ~ 2081/12/31
		Timer Events			8 Program/ 1 Month
		One Touch Recording Max Time			6 Hours
		OTPB Valid Time			No
		Timer Back-up (at Power Off Mode)			5 sec
G-13	**Display**	DISPLAY			Yes
				DISPLAY type	LED Module (Amber, "Rec" &Timer symbol = Red)
				Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR,Eject	No
				VCR	Yes
				DVD	Yes
				CD	Yes
				Clock	Yes (12h)
				AM	No
				PM	Yes
				Counter VCR	Yes (hour:min)
				DVD	Yes (hour:min)
				CD	Yes (min:sec)
				Eject	Yes
				Counter Remain	No
				Play	Yes
				Stop	No
				Rec	Yes
				FF / Cue	No
				REW /Review	No
				Pause/Still	Yes
				OTR	No
				T-Rec	Yes
				Chapter	No
				TITLE	No
				TRACK	Yes
				Repeat	No
				Hi-Fi	No
				SP	No
				LP	No
				SLP	No
				CH	Yes
				RF Output CH	Yes
				Tape In	Yes
				Remocon Custom Code	Yes
				Progressive Scan Out	No

GENERAL SPECIFICATIONS [HR-XVC21UJ]

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

GENERAL SPECIFICATIONS [HR-XVC21UJ]

G-15	Features (DVD)	Auto Power Off		No
		Parental Lock		Yes
		Video CD Playback		Yes
		MP3 Playback		Yes
		WMA Playback		Yes
		JPEG Playback		Yes
		Progressive Scan Out		No
		Digital Out	Dolby Digital	Yes
			MPEG	Yes
			PCM	Yes
			DTS	Yes
		Down Mix Out	(Dolby Digital)	Yes
			(DTS)	No
		Spatializer (N-2-2)		Yes
		Screen Saver		No
		Auto Stop		No
		Audio DAC		192kHz / 24bit
	Features (VCR)	Auto Head Cleaning		No
		Auto Tracking		Yes
		HQ (VHS Standard High Quality)		Yes
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes
		Auto Power Off		No
		Forward/Reverse Picture Search		Yes
		VIDEO PLUS+ (SHOWVIEW, G-CODE)		No
		One Touch Playback		No
		Auto CH Memory		Yes
		AREA CODE		No
		Auto Clock Set		Yes
		Index Search		Yes
		SQPB (Option)		Yes
		CATV		Yes
		Energy Star		No
		MTS (SAP)		Yes
		CM Skip (30sec x 6 Times)		Yes
		Copy Disc to Tape		Yes (by Conditioning)
G-16	Accessories	Owner's Manual	Language	English
			w/Guarantee Card	No
		Remote Control Unit		Yes
		Guarantee Card		YES
		Product Registration Card		No
		Warning Sheet		No
		Service Station List		No
		Important Tag		No
		AC Plug Adapter		Yes (SASO -> VDE Type)
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM-3 x 2 pcs
		AC Cord		No
		AV Cord (1.2m)		Yes
		75 Ohm Coaxial Cable (0.9m)		Yes
		S-Video Cable		No
		21pin cable		No
		800 No Sticker		No
		Toll Free Insert Sheet		No
		Safety Tip		No

GENERAL SPECIFICATIONS [HR-XVC21UJ]

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
				Main Power SW	No
			Rear	Attenuator	No
				S-Video/Component Video Selector	Yes
				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 x 1 (Black)
				Audio In	RCA x 2 (Stereo, Black)
			Rear	Video Output	RCA x1 (Yellow) S-Video x 1 (DVD Signal Only) Component x1 (RCA 3pin, DVD Signal Only)
				Audio Output	RCA x 4(Stereo, Red/White) Coaxial x 1 (Digital Audio, DVD Signal Only)
				Optical Out (Option)	Yes (Digital Audio, DVD Signal Only)
				Video Input (Option)	No
				Audio Input (Option)	No
				RF Input / Output	Yes
				Euro Scart	No
				AC Inlet	No
		Indicator	LED	Power	No
				Rec	No
				T-Rec	No
				TV/VCR	No
				DVD	Yes (GREEN)
				VCR	Yes (GREEN)
				Surround	No
				Level Meter	No
G-18	**Set Size**			Approx. W x D x H (mm)	430 x 249 x 99
G-19	**Weight**			Net (Approx.)	3.6kg (7.9lbs)
				Gross (Approx.)	4.7kg (10.4lbs)
G-20	**Carton**		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H(mm)	---
				Description of Origin	---
			Gift Box		Yes
				Material	Single Full Color Carton
				W/Color Photo Label	No
				Dimensions W x D x H(mm)	497 x 360 x 180
				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		1,985 Sets/40' container
G-21	**Cabinet Material**		Cabinet	Front	PS 94V2 or More / DECABROM
			PCB	Non-Halogen Demand	No
				Eyelet Demand	No
G-22	**Environment**		Pb Free	Lead-free Solder	No
				Other	No
			Cd Free		No

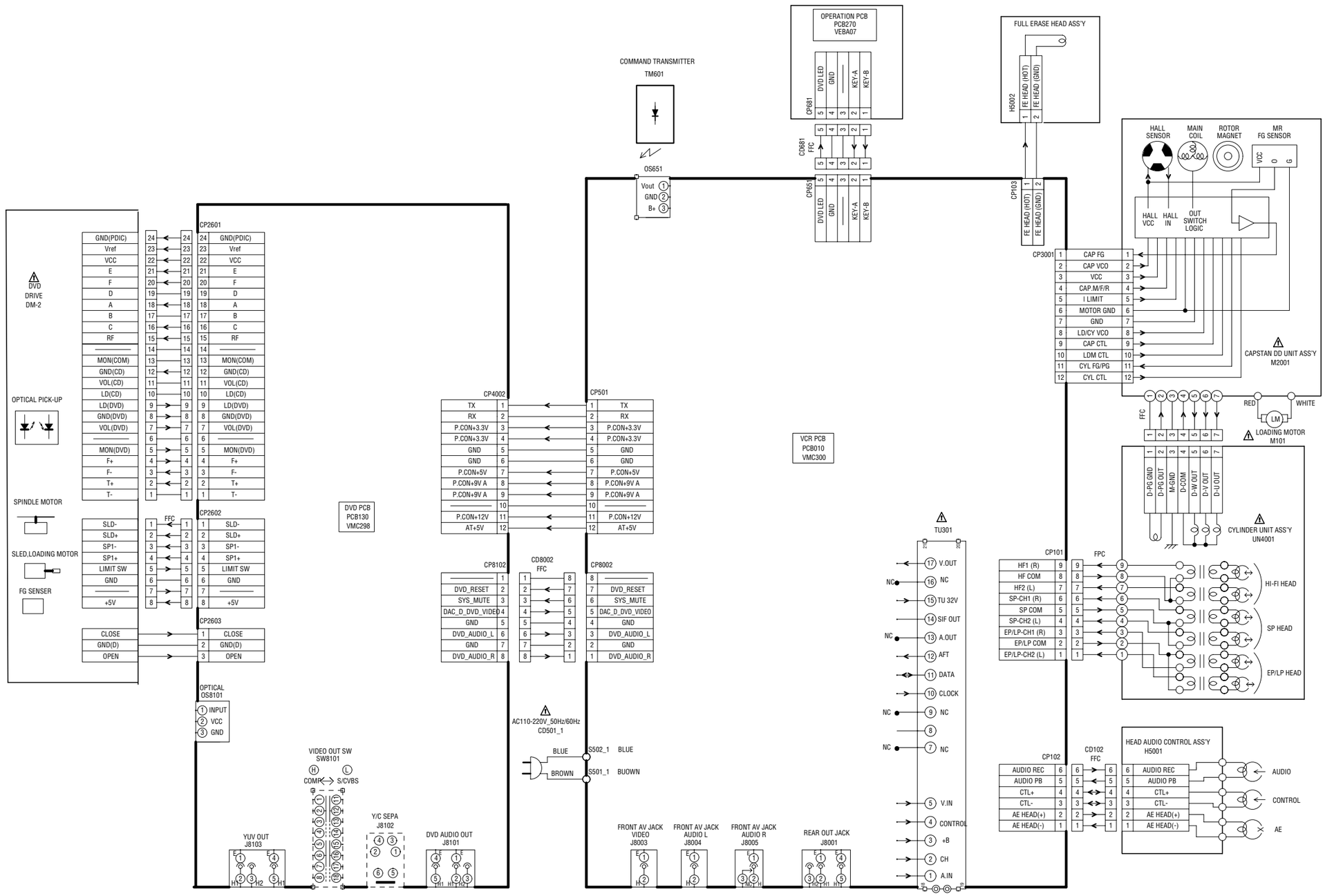
JVC

VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY VIDEO RECORDER CATEGORY 12,3-chome,Moriya-cho,Kanagawa-ku,Yokohama,Kanagawa-prefecture,221-8528,Japan

Printed in Japan
0308 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 。

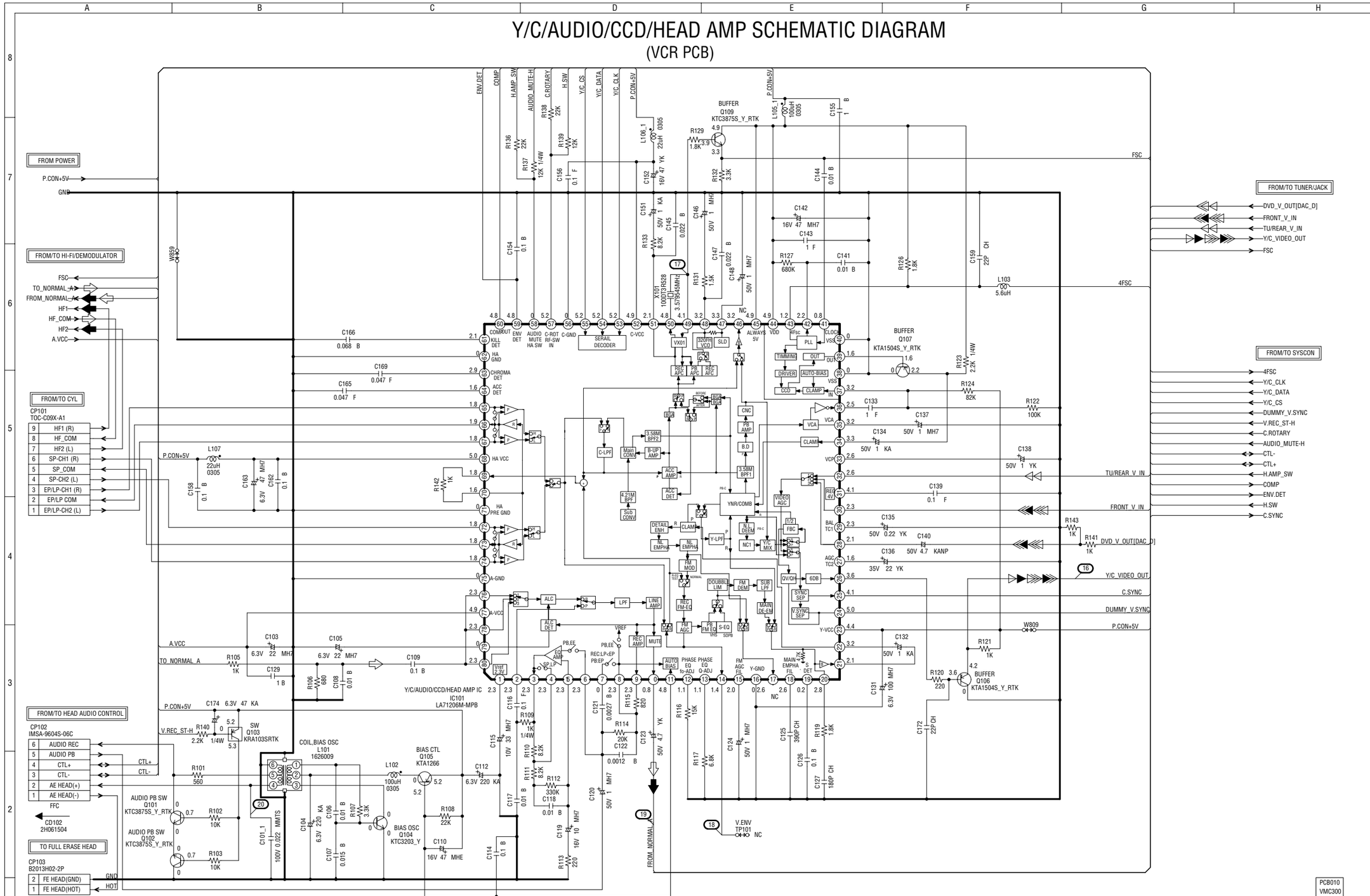
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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.

Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM

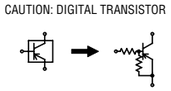
(VCR PCB)



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

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

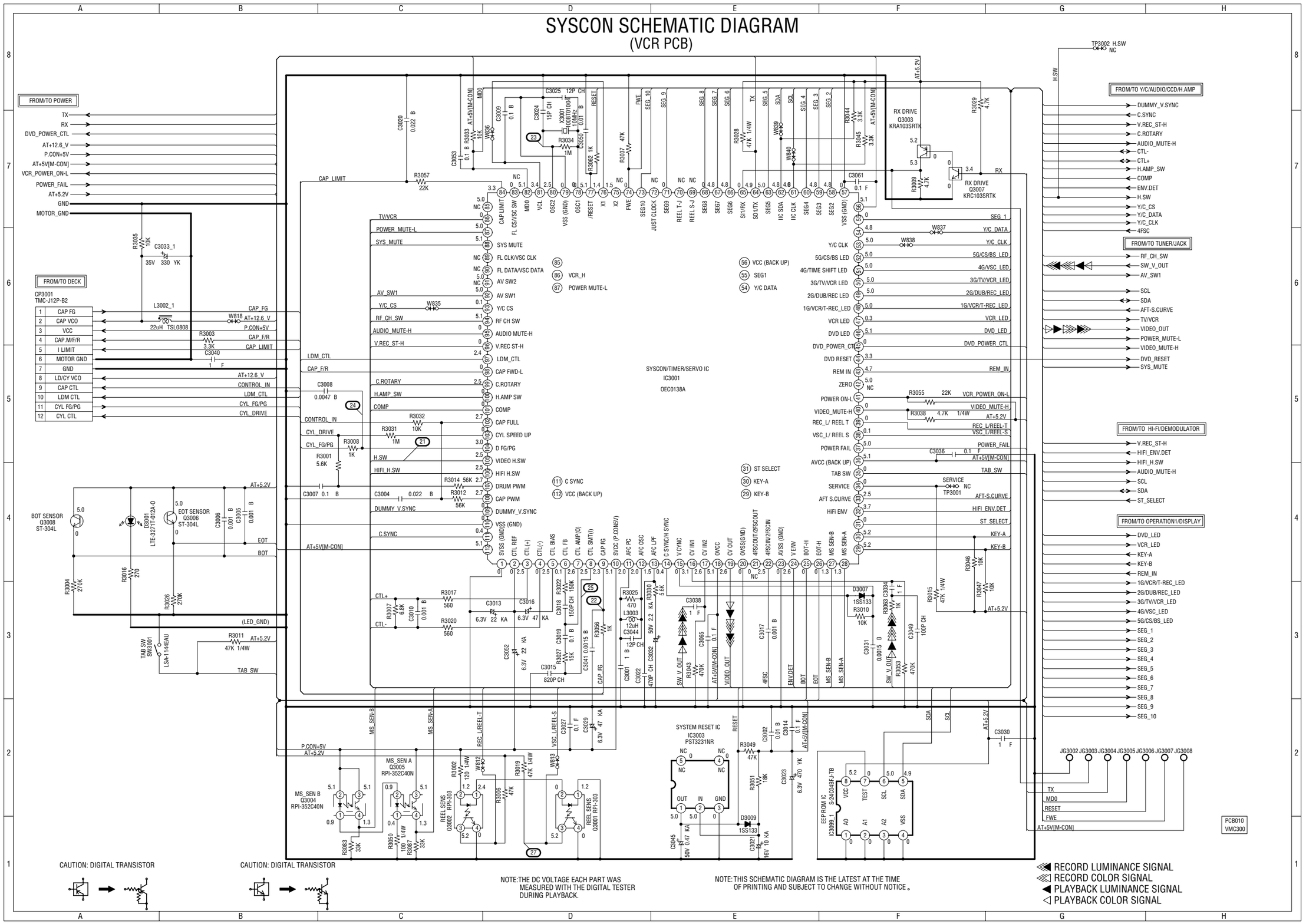
CAUTION: DIGITAL TRANSISTOR



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

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.*

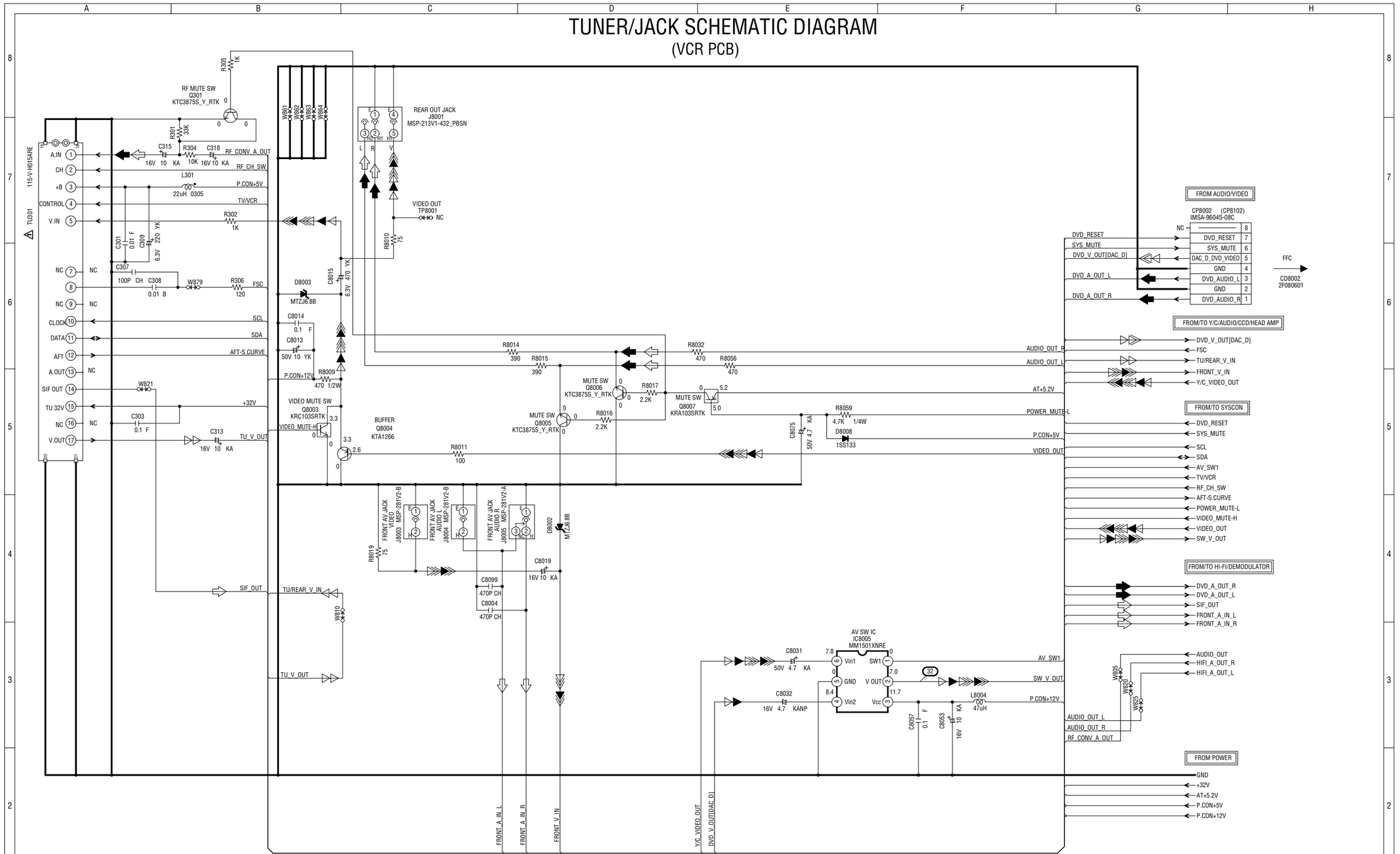
SYSCON SCHEMATIC DIAGRAM
(VCR PCB)



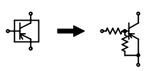
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

TUNER/JACK SCHEMATIC DIAGRAM

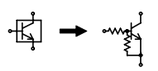
(VCR PCB)



CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR



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

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

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

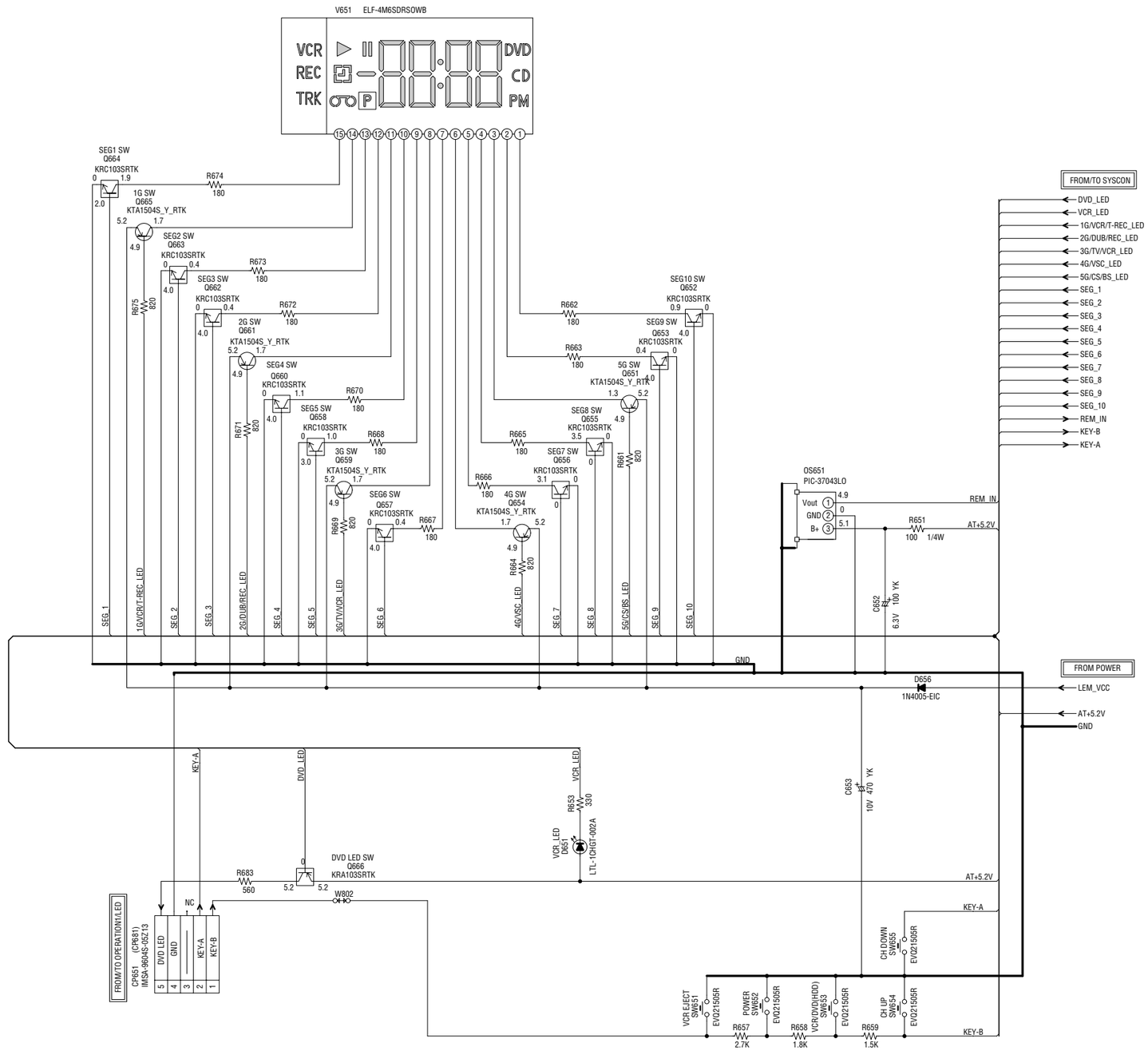
- PLAYBACK VIDEO SIGNAL
- TUNER VIDEO SIGNAL
- PLAYBACK LUMINANCE SIGNAL
- PLAYBACK COLOR SIGNAL
- RECORD COLOR SIGNAL
- RECORD LUMINANCE SIGNAL
- AUDIO SIGNAL(REC)
- AUDIO SIGNAL(PB)
- DIGITAL AUDIO SIGNAL(PB)

PCB010
VMC300

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/DISPLAY SCHEMATIC DIAGRAM

(VCR PCB)



CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

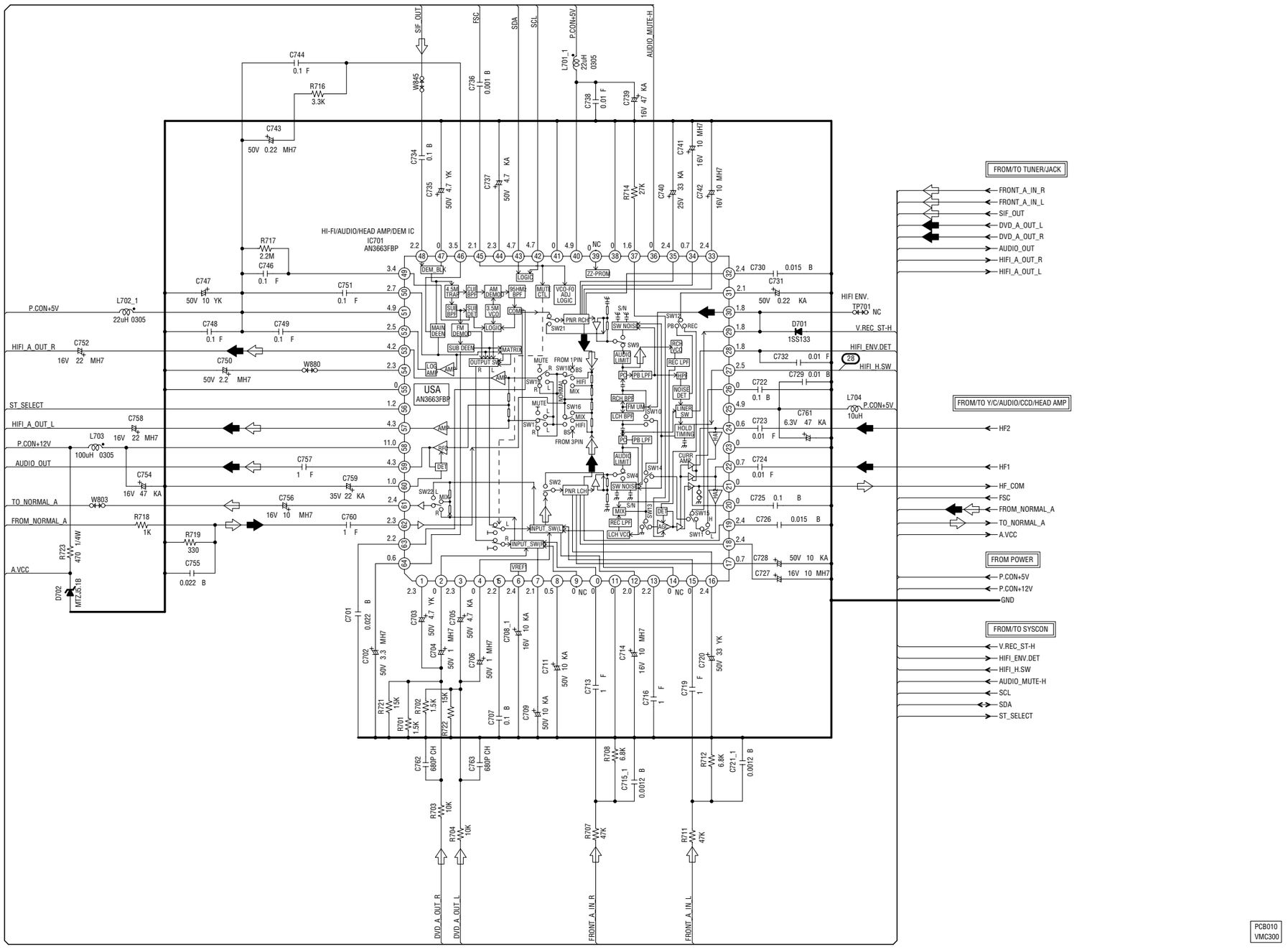
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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.

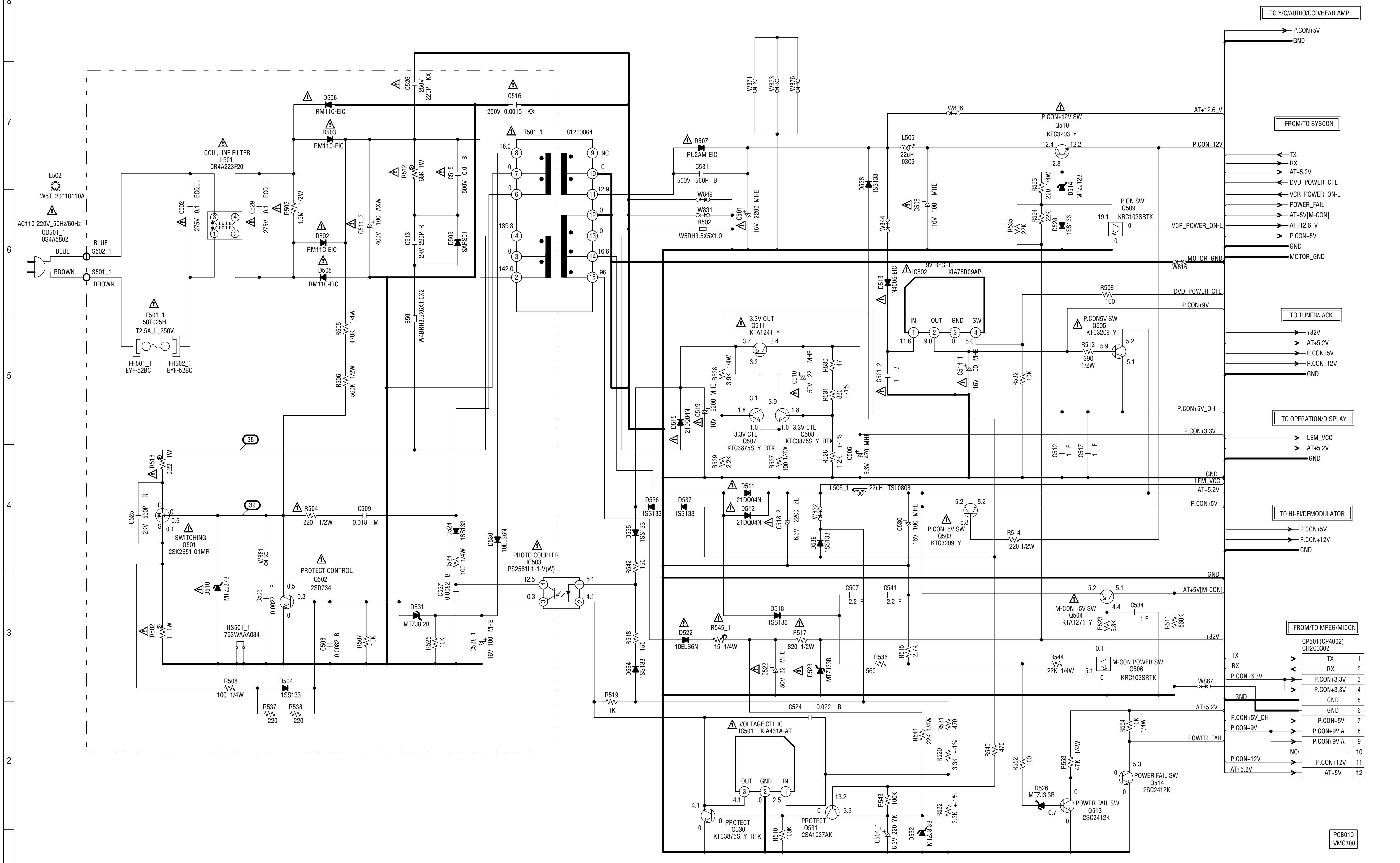
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

⇦ AUDIO SIGNAL(REC)
⬅ AUDIO SIGNAL(PB)

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.

POWER SCHEMATIC DIAGRAM

(VCR PCB)



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

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

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

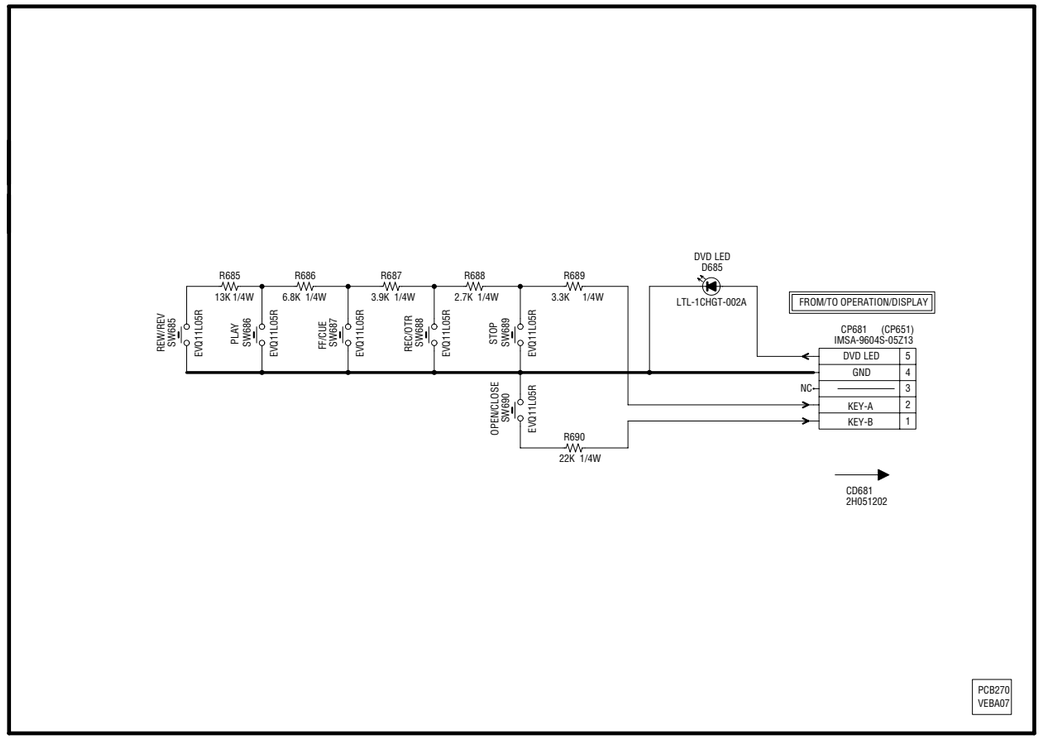
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

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/LED SCHEMATIC DIAGRAM

(OPERATION PCB)

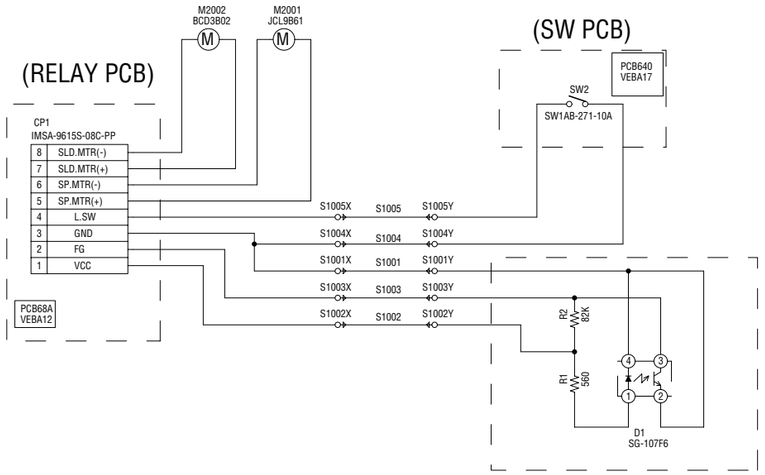


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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.

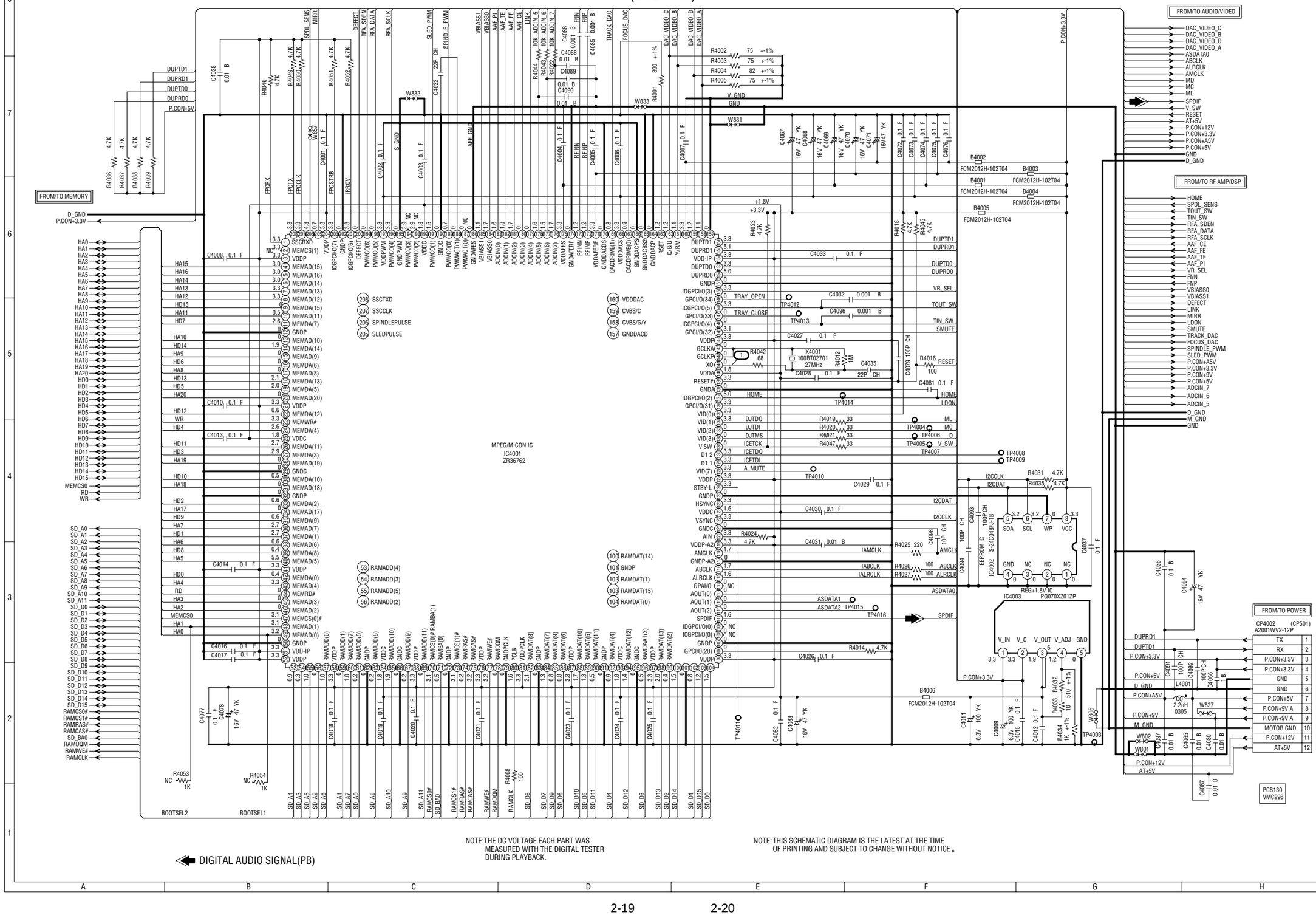
SW/RELAY/FG SCHEMATIC DIAGRAM



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.

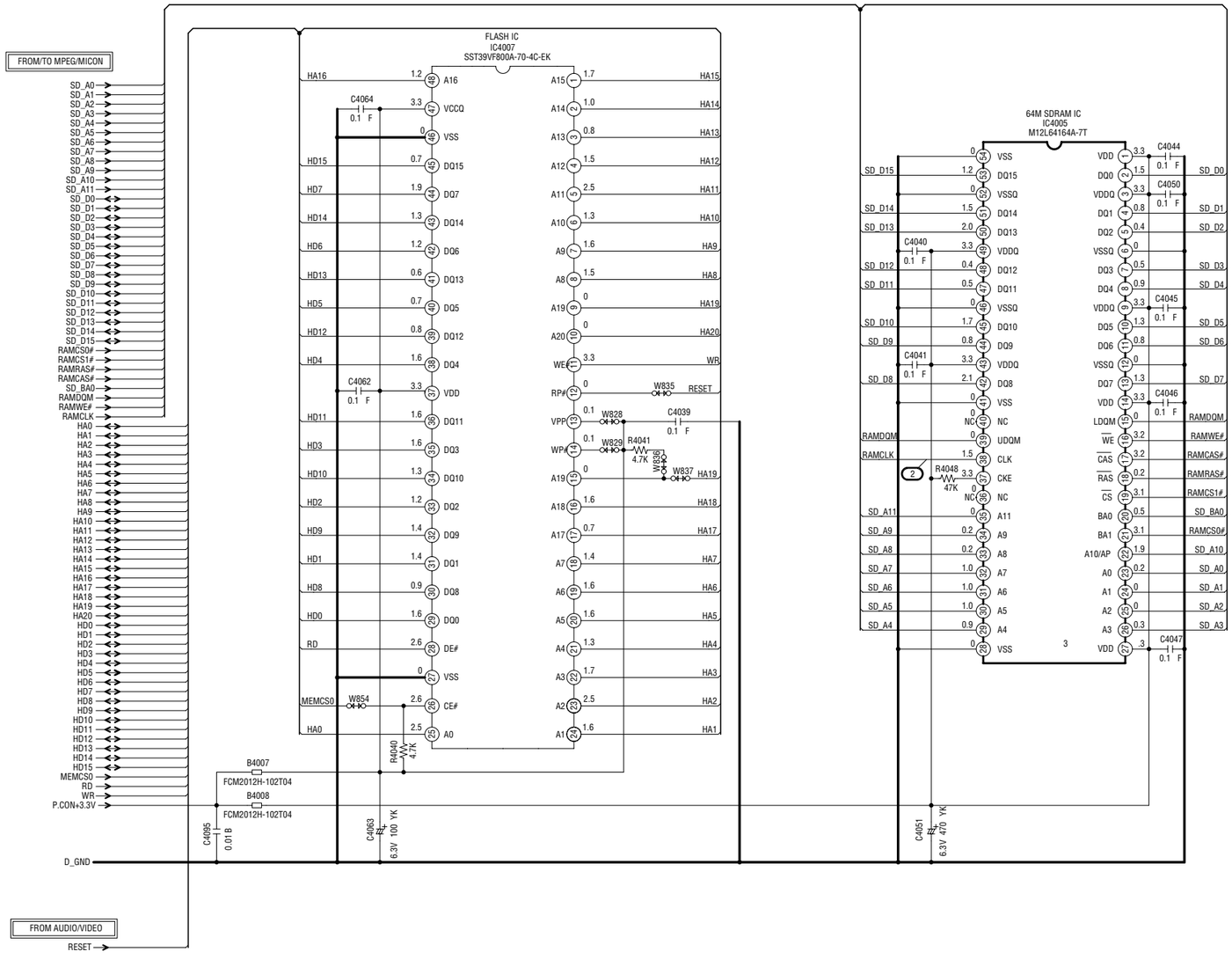
MPEG/MICON SCHEMATIC DIAGRAM

(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.*

MEMORY SCHEMATIC DIAGRAM
(DVD PCB)



PCB130
VMC298

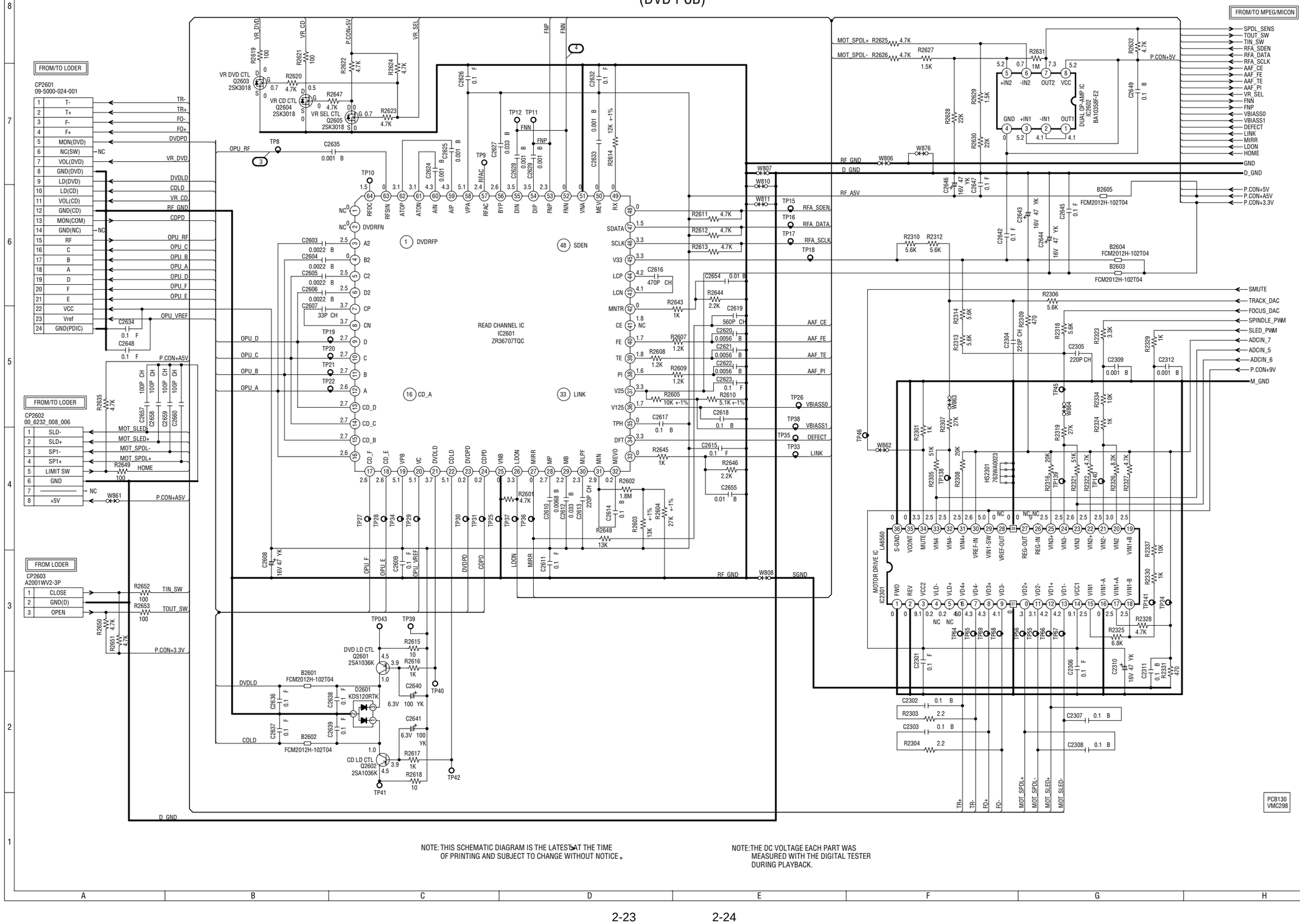
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

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.

RF AMP/DSP SCHEMATIC DIAGRAM

(DVD PCB)



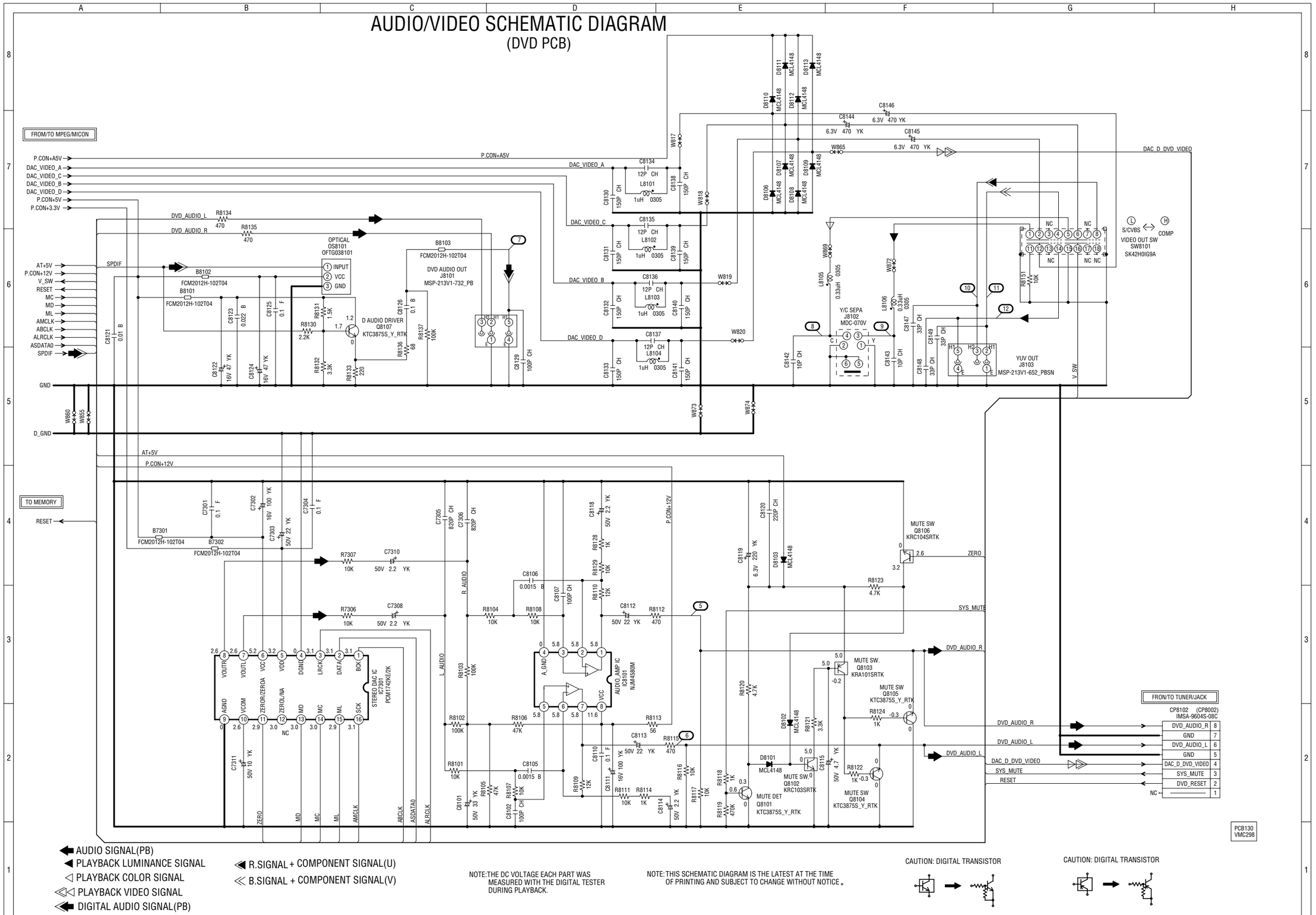
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

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

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.*

AUDIO/VIDEO SCHEMATIC DIAGRAM

(DVD PCB)



AUDIO SIGNAL(PB)
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK VIDEO SIGNAL
DIGITAL AUDIO SIGNAL(PB)
R.SIGNAL + COMPONENT SIGNAL(U)
B.SIGNAL + COMPONENT SIGNAL(V)

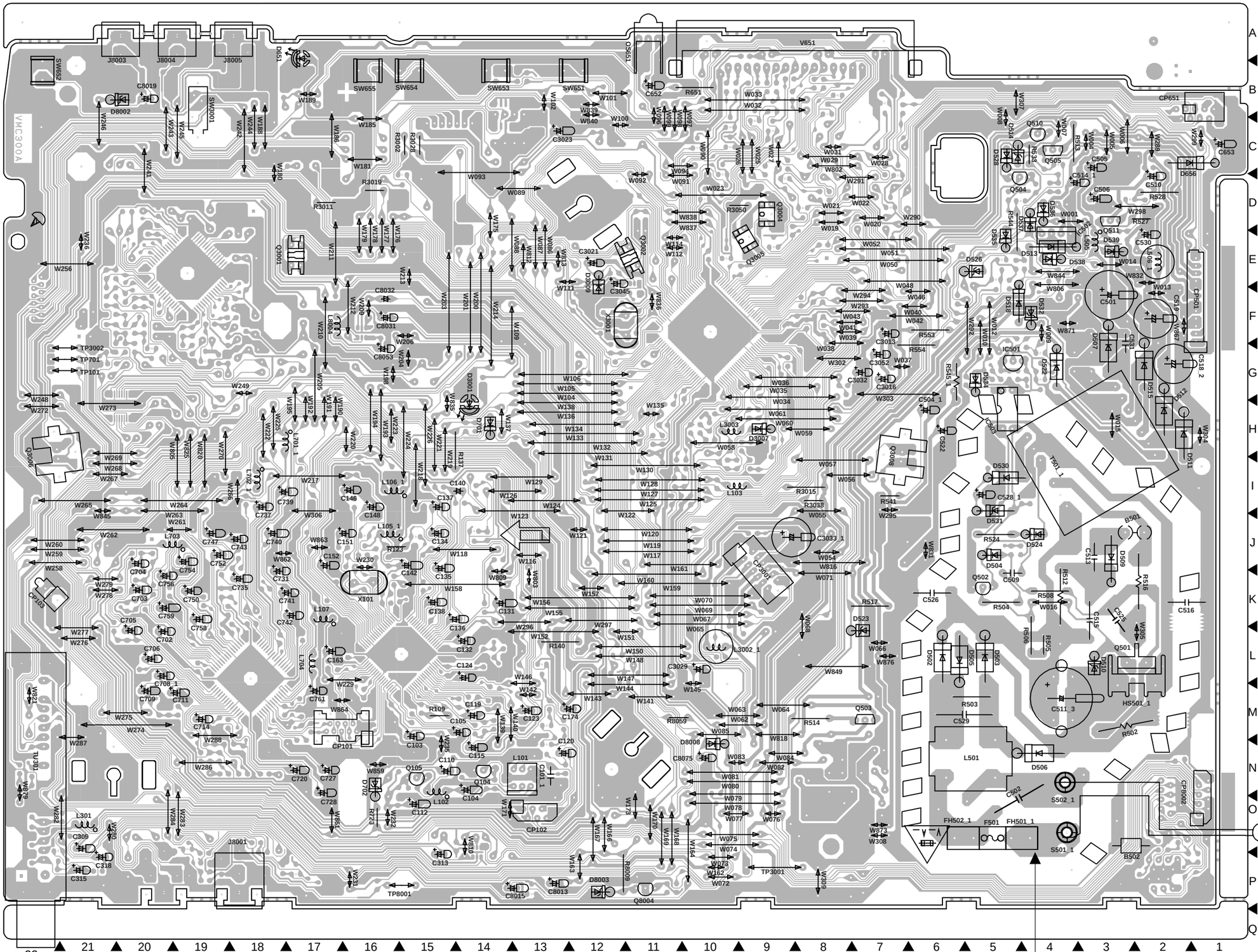
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

PRINTED CIRCUIT BOARD
VCR(INSERTED PARTS)
SOLDER SIDE



COMPONENT PARTS LOCATION GUIDE

REF.NO.	LOCATION
CAPACITOR	
C103	15M
C104	14N
C105	15M
C106	14N
C107	14N
C108	13L
C109	15M
C110	15N
C112	15O
C114	15N
C115	14N
C116	15M
C117	14M
C118	14M
C119	14M
C120	13N
C121	14M
C122	14M
C123	13M
C124	14L
C125	14L
C126	15L
C127	14L
C129	16M
C131	14K
C132	14L
C133	15K
C134	15J
C135	15J
C136	15K
C137	15I
C138	15K
C139	15K
C140	15I
C141	16K
C142	15J
C143	16J
C144	16K
C145	16K
C146	16I
C147	16K
C148	16I
C151	17J
C152	17J
C154	17K
C155	15I
C156	17K
C158	17K
C159	10I
C162	16M
C163	17L
C165	17L
C166	16L
C169	17L
C172	14J
C174	13M
C301	22O
C303	22N
C307	22N
C308	22N
C309	21O
C313	15P
C315	21P
C318	21P
C501	3F
C502	4N
C503	3M
C505	3C
C506	3D
C507	4E
C508	4I
C509	5K
C510	2D
C512	3C
C513	3J
C515	3K
C516	1K
C517	4C
C519	2F
C522	6H
C524	5G
C525	3K
C526	6K
C527	5I
C529	5M
C530	2E
C531	3F
C534	4D
C541	4F
CONNECTOR	11B
CP101	1C
CP102	19L
CP103	20L
CP501	20K
CP651	20J
CP3001	20L
CP8002	20L
	20M
DIODE	
D502	6L
D503	5L
D504	5J
D505	6M
D506	5N
D507	3F
D509	3K
D510	3L
D511	2H
D512	2G
D513	4E
D514	5C
D515	2G
D518	5E
D522	4G
D523	8L
D524	4J
D526	6E
D528	5C
D530	5I
D531	5I
D532	4F
D534	5G
D535	5E
D536	4D
D537	4D
D538	4E
D539	3E
D651	17A
D656	1C
D701	14H
D702	16O
D3001	14H
D3007	9H
D3009	12E
D8002	21B
D8003	12P
D8008	10N
FUSE	
F501	5O
IC	
IC101	15L
IC501	5G
IC502	4E
IC503	5G
IC701	18L
IC3001	10F
IC3003	11F
IC3099_	14B
IC8005	16F
COIL	
L101	13N
L102	15N
L103	9I
L107	17K
L301	21O
L501	6N
L505	3E
L703	19J
L704	17L
L105_1	16J
L106_1	15I
L3003	9H
L506_1	2E
L701_1	18H
L702_1	18I
L8004	17F
L3002_1	10L
TRANSISTOR	
Q101	13N
Q102	13M
Q103	13L
Q104	14N
Q105	15N
Q106	14J
Q107	15J
Q109	16J
Q301	22P
Q501	3L
Q502	5K
Q503	7M
Q504	4D
Q505	4C
Q510	4C
Q511	3D
Q513	5E
Q514	5E
Q530	4G
Q531	4G
Q651	9E
Q652	10C
Q653	10C
Q654	8D
Q655	10C
Q656	9B
Q657	9B
Q658	9C
Q659	9D
Q660	10C
Q661	8B
Q662	10D
Q663	10D
Q664	10E
Q665	8B
Q666	7C
Q3001	17E
Q3002	12E
Q3003	12L
Q3004	9D
Q3005	10E
Q3006	22H
Q3007	12L
Q3008	7I
Q8003	13P
Q8004	11P
Q8005	17P
Q8006	19P
Q8007	10O
RESISTOR	
R101	13N
R102	13M
R103	13M
R105	13L
R106	13M
R107	14N
R108	15N
R109	15M

<VCR> VMC300A

REF.NO.	LOCATION
R110	15M
R111	14M
R112	14M
R113	14M
R114	14M
R115	14M
R116	14M
R117	14M
R119	14L
R120	14I
R121	14J
R122	15J
R123	15J
R124	14K
R126	16K
R127	16K
R129	16J
R131	16I
R132	16I
R133	17J
R136	11K
R137	15H
R138	14H
R139	14H
R140	12L
R141	14I
R142	16M
R143	15I
R301	22P
R302	21O
R304	21P
R305	21O
R306	22N
R502	2M
R503	5M
R504	5K
R505	4L
R506	4K
R507	5I
R508	4K
R509	8E
R510	4G
R511	7F
R512	4J
R513	4C
R514	8M
R515	5E
R516	2J
R517	7K
R518	5G
R519	5G
R520	5G
R521	5G
R522	5G
R523	5D
R524	5J
R525	5I
R526	3E
R527	2D
R528	2D
R529	2D
R530	2C
R531	2D
R532	5E
R533	4C
R534	4D
R535	4D
R536	4E
R537	5J
R538	5J
R540	5G
R541	7I
R542	4E
R543	4G
R544	5D
R552	6F
R553	6F
R554	6G
R651	10B
R653	18B
R657	13B
R658	14B
R659	13B
R661	9E
R662	10B
R663	10B
R664	9E
R665	9B
R666	9B
R667	9B
R668	9B
R669	8D
R670	9B
R671	8D
R672	8B
R673	8B
R674	9C
R675	8C
R683	7B
R701	20K
R702	20L
R703	20J
R704	21L
R707	18N
R708	19N
R711	20M
R712	20M
R714	18K
R716	18J
R717	19K
R718	20K
R719	20K
R721	20K
R722	20L
R723	16O
R3001	11I
R3002	15C
R3003	9J
R3004	7I
R3006	14E
R3007	10I
R3008	9K
R3009	12L
R3010	9G
R3011	17D
R3012	11H
R3014	11I
R3015	8I
R3016	14G
R3017	11I
R3019	16D
R3020	10I
R3022	10H
R3025	9H
R3026	8G
R3027	10H
R3028	15C
R3029	11L
R3030	8G
R3031	11I
R3032	11I
R3033	12G
R3034	11F
R3035	10K
R3037	11D
R3038	8I
R3043	9I
R3044	12B
R3045	12B
R3046	7B
R3047	7C
R3049	12F
R3050	9D
R3051	12E
R3053	9I
R3055	7E
R3056	10L
R3057	12G
R3062	12F
R3063	9H
R3083	8F
R3087	8F
R545_1	6G
R8009	12P
R8010	16P
R8011	11P
R8014	19P
R8015	18O
R8016	18P
R8017	19P
R8019	20B
R8032	19P
R8056	18P
R8059	10M

SWITCH

SW651	12B
SW652	22B
SW653	14B
SW654	15B
SW655	16B
SW3001	19C

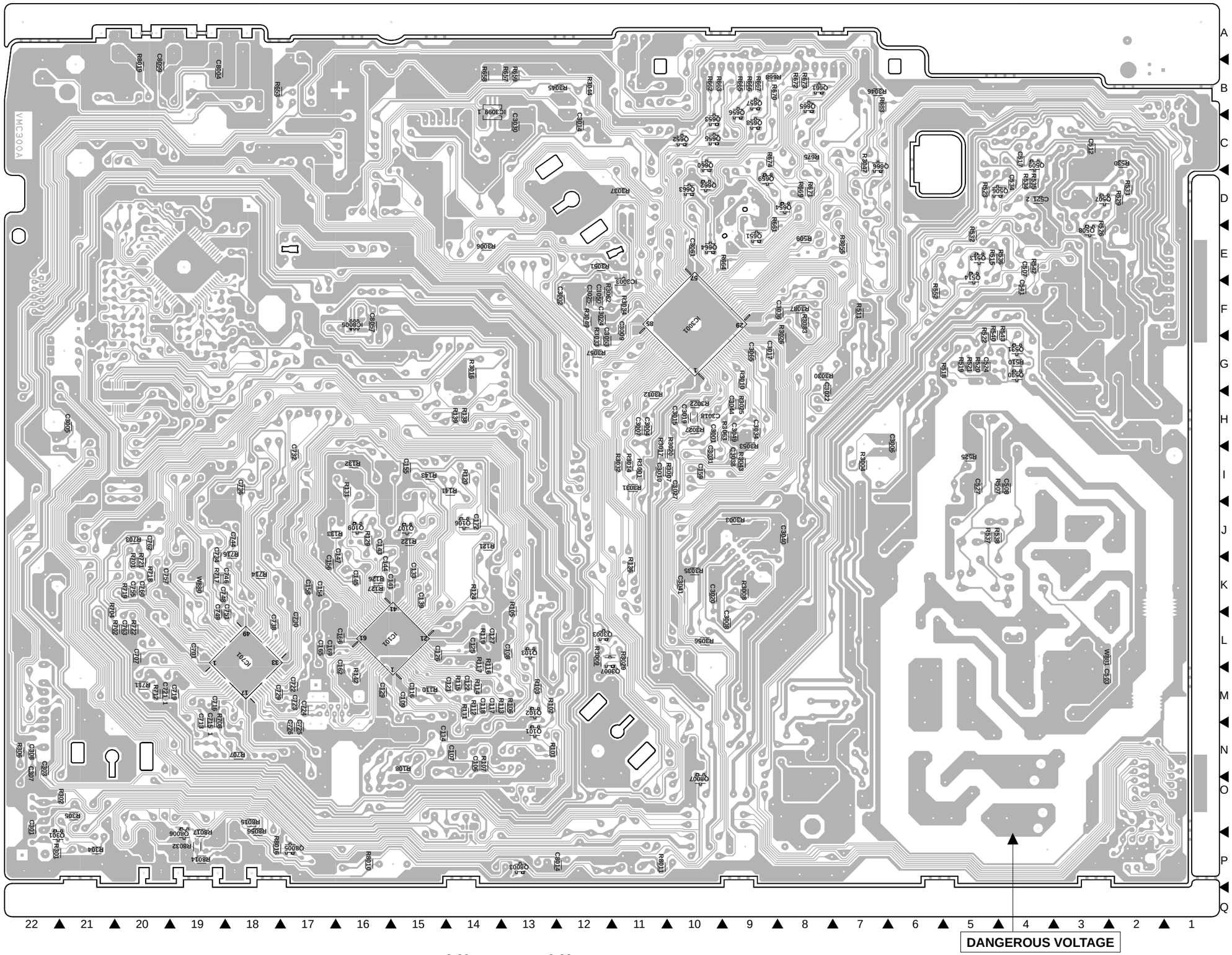
TEST POINT

TP101	21G
TP701	21G
TP3001	8P
TP3002	21G
TP8001	15P

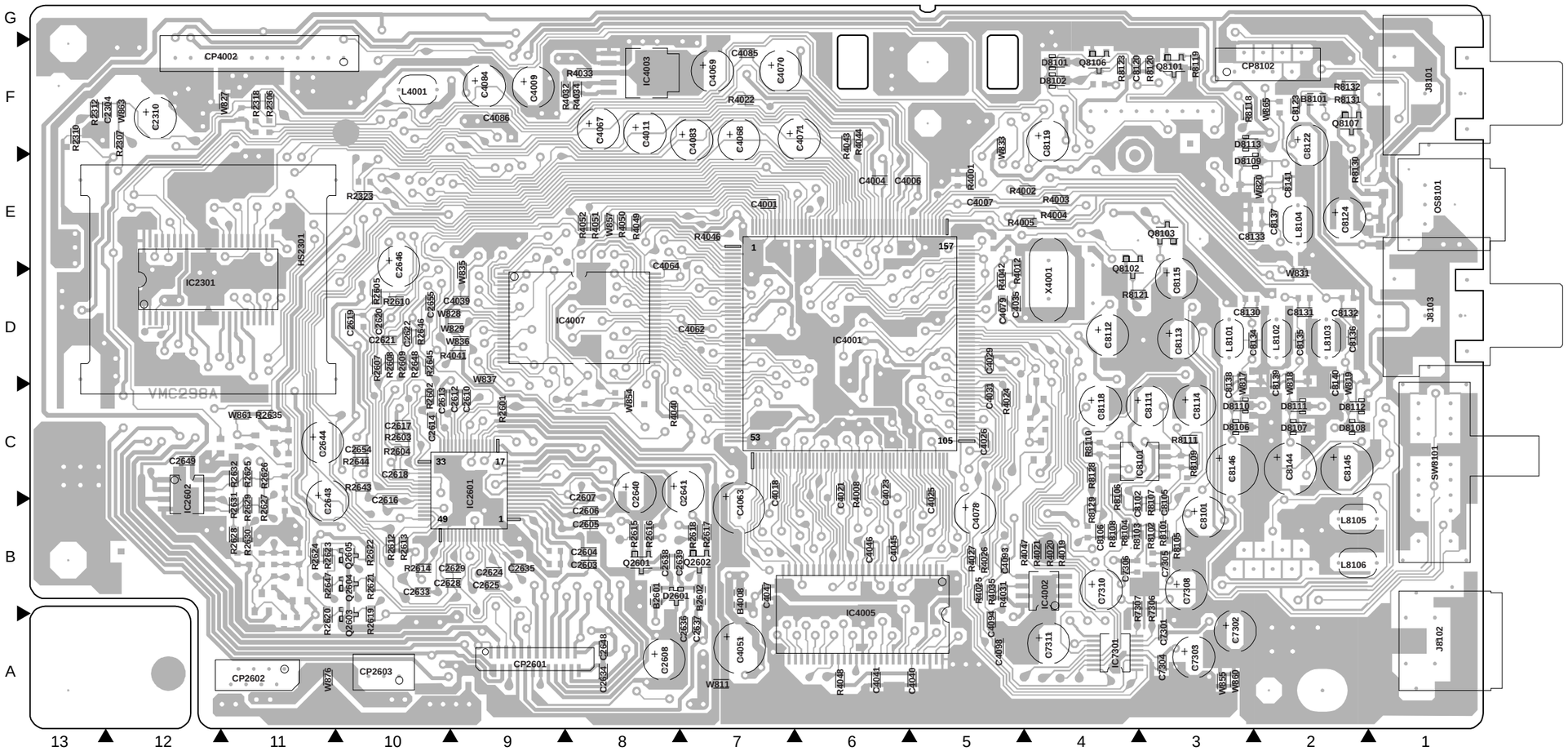
OTHER

B502	2O
CD501	1O
FH501_1	5O
FH502_1	6O
HS501_1	3M
J8001	18P
J8003	20A
J8004	19A
J8005	18A
JG3002	14D
JG3003	15C
JG3004	14D
JG3005	16D
JG3006	12F
JG3007	14E
JG3008	14D
OS651	11A
S501_1	4O
S502_1	4N
T501_1	4I
TU301	22P
V651	10B
X101	16K
X3001	12F

PRINTED CIRCUIT BOARD
VCR (CHIP MOUNTED PARTS)
SOLDER SIDE



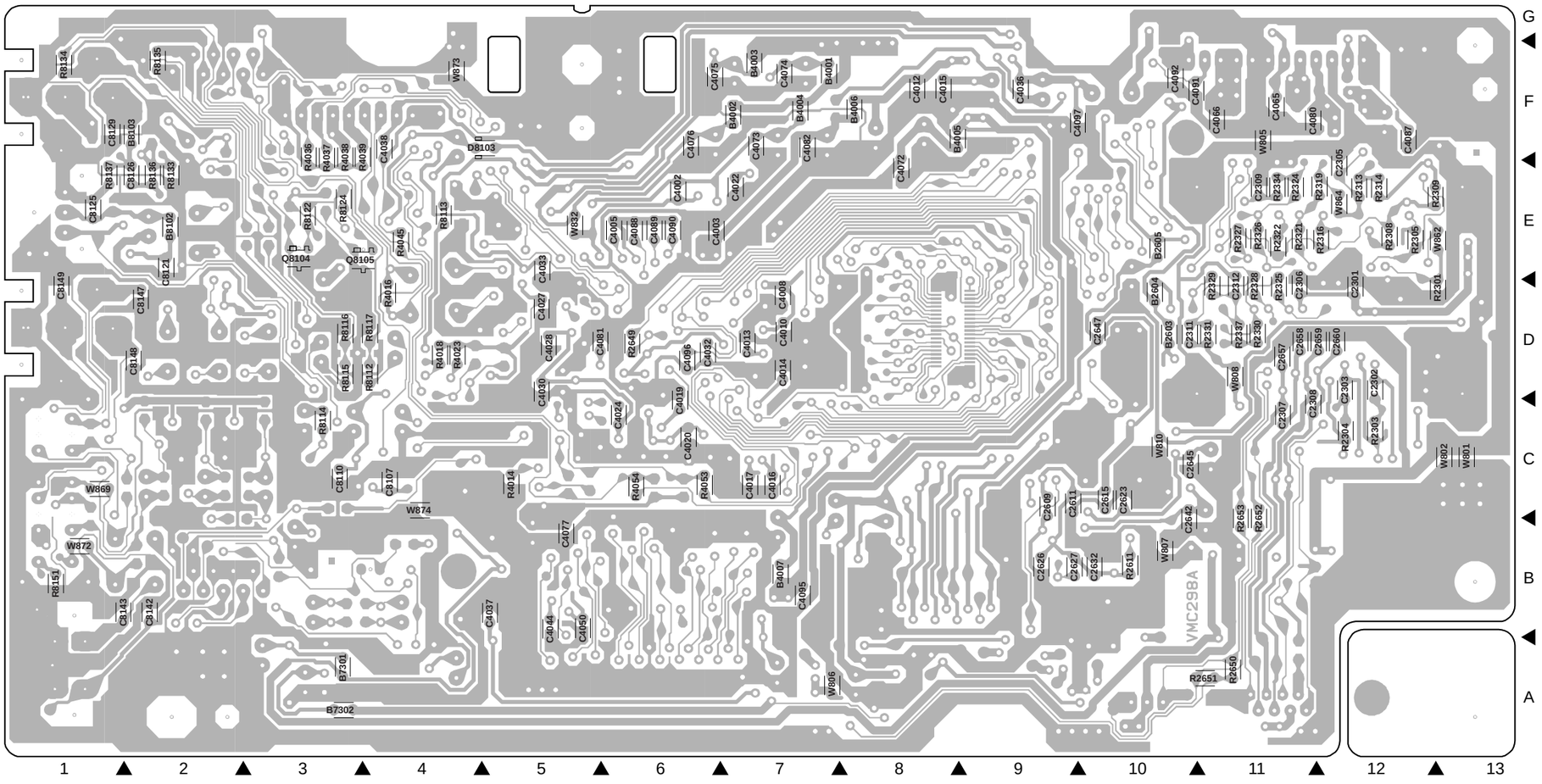
PRINTED CIRCUIT BOARD
DVD (TOP SIDE)



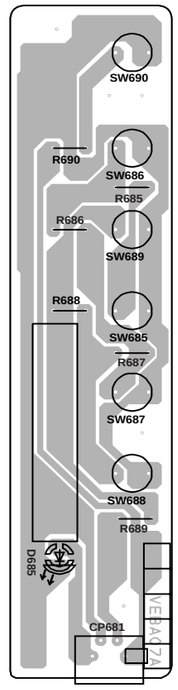
COMPONENT PARTS LOCATION GUIDE <DVD> VMC298A

REF.NO.	LOCATION
CAPACITOR	
C2301	12D
C2302	12D
C2303	12D
C2304	13F
C2305	12E
C2306	11D
C2307	11C
C2308	11C
C2309	11E
C2310	12F
C2311	10D
C2312	11D
C2603	8B
C2604	8B
C2605	8B
C2606	8B
C2607	8C
C2608	8A
C2609	9C
C2610	9C
C2611	9C
C2612	9C
C2613	10C
C2614	10C
C2615	10C
C2616	10B
C2617	10C
C2618	10D
C2619	10D
C2620	10D
C2621	10D
C2622	10D
C2623	10C
C2624	9B
C2625	9B
C2626	9B
C2627	9B
C2628	9B
C2629	9B
C2632	10B
C2633	10B
C2634	8A
C2635	9B
C2636	7A
C2637	7A
C2638	8B
C2639	8B
C2640	8C
C2641	7C
C2642	10B
C2643	11C
C2644	11C
C2645	10C
C2646	10E
C2647	10D
C2648	8A
C2649	12C
C2654	10C
C4001	7E
C4002	6E
C4003	6E
C4004	6E
C4005	6E
C4006	5E
C4007	5E
C4008	7D
C4009	9F
C4010	7D
C4011	8F
C4012	8F
C4013	7D
C4014	7D
C4015	8F
C4016	7C
C4017	7C
C4018	7C
C4019	6C
C4020	6C
C4021	6C
C4022	7E
C4023	6C
C4024	6C
C4025	5C
C4026	5C
C4027	5D
C4028	5D
C4029	5D
C4030	5D
C4031	5C
C4032	6D
C4033	5E
C4034	5D
C4035	5D
C4036	9F
C4037	5B
C4038	4F
C4039	9D
C4040	5A
C4041	6A
C4044	5B
C4045	6B
C4046	6B
C4047	7B
C4050	5B
C4051	7A
C4062	7D
C4063	7C
C4064	8E
C4065	11F
C4066	11F
C4067	8F
C4068	7F
C4069	7F
C4070	7F
C4071	6F
C4072	8E
C4073	7F
C4074	7F
C4075	6F
C4076	6F
C4077	5B
C4078	5B
C4079	5D
C4080	11F
C4081	5D
C4082	7F
C4083	7F
C4084	9F
C4085	9F
C4086	7F
C4087	12F
C4088	6E
C4089	6E
C4090	6E
C4091	10F
C4092	10F
C4093	5B
C4094	5A
C4095	7B
C4096	6D
C4097	10F
C4098	5A
C7301	3A
C7302	3A
C7303	3A
C7304	3A
C7305	3B
C7306	4B
C7308	3B
C7310	4B
C7311	4A
C8101	3B
C8102	4B
C8105	3B
C8106	4B
C8107	4C
C8110	3C
C8111	3C
C8112	4D
C8113	3D
C8114	3C
C8115	3E
C8118	4C
C8119	4F
C8120	4F
C8121	2E
C8122	2F
C8123	2F
C8124	2E
C8125	1E
C8126	2E
C8129	1F
C8130	3D
C8131	2D
C8132	2D
C8133	2E
C8134	3D
C8135	2D
C8136	2D
C8137	2E
C8138	3D
C8139	2D
C8140	2D
C8141	2E
C8142	2B
C8143	1B
C8144	2C
C8145	2C
C8146	3C
C8147	2D
C8148	2D
C8149	1D
CONNECTOR	
CP2601	9A
CP2602	11A
CP2603	10A
CP4002	10F
CP8102	3F
DIODE	
D2601	8B
D8101	4F
D8102	4F
D8103	5F
D8106	3C
D8107	2C
D8108	2C
D8109	3E
D8110	3C
D8111	2C
D8112	2C
D8113	3F
IC	
IC2301	12D
IC2601	9C
IC2602	12C
IC4001	6D
IC4002	4B
IC4003	8F
IC4005	6A
IC4007	8D
IC7301	4A
IC8101	3C
COIL	
L4001	10F
L8101	3D
L8102	2D
L8103	2D
L8104	2E
L8105	1B
L8106	1B
TRANSISTOR	
Q2601	8B
Q2602	7B
Q2603	10A
Q2604	10B
Q2605	10B
Q8101	3F
Q8102	4E
Q8103	3E
Q8104	3E
Q8105	4E
Q8106	4F
Q8107	2F
RESISTOR	
R2301	13D
R2303	12C
R2304	12C
R2305	12E
R2306	11F
R2307	12F
R2308	12E
R2309	13E
R2310	13F
R2312	13F
R2313	12E
R2314	12E
R2316	12E
R2318	11F
R2319	12E
R2321	11E
R2322	11E
R2323	10E
R2324	11E
R2325	11D
R2326	11E
R2327	11E
R2328	11D
R2329	11D
R2330	11D
R2331	11D
R2334	11E
R2337	11D
R2601	9C
R2602	10C
R2603	10C
R2604	10C
R2605	10D
R2607	10D
R2608	10D
R2609	10D
R2610	10D
R2611	10B
R2612	10B
R2613	10B
R2614	10B
R2615	8B
R2616	8B
R2617	7B
R2618	7B
R2619	10B
R2620	11A
R2621	10B
R2622	10B
R2623	11B
R2624	11B
R2625	11C
R2626	11C
R2627	11B
R2628	11B
R2629	11B
R2630	11B
R2631	11B
R2632	11C
R2633	11C
R2634	10C
R2635	10C
R2636	3F
R2637	11C
R2638	11C
R2639	3F
R2640	10C
R2641	10D
R2642	10D
R2643	10D
R2644	10D
R2645	10D
R2646	10D
R2647	11B
R2648	10D
R2649	6D
R2650	11A
R2651	11A
R2652	11C
R2653	11C
R4001	5E
R4002	4E
R4003	4E
R4004	4E
R4005	4E
R4006	6C
R4008	6E
R4012	5E
R4014	5C
R4016	4D
R4018	4D
R4019	4B
R4020	4B
R4021	4B
R4022	7F
R4023	4D
R4024	5C
R4025	5B
R4026	5B
R4027	5B
R4031	5B
R4032	9F
R4033	8F
R4034	8F
R4035	5B
R4036	3F
R4037	3F
R4038	3F
R4039	4F
R4040	8C
R4041	9D
R4042	5D
R4043	6F
R4044	6F
R4045	4E
R4046	7E
R4047	5B
R4048	6A
R4049	8E
R4050	8E
R4051	8E
R4052	8E
R4053	6C
R4054	6C
R7306	3B
R7307	4B
R8101	3B
R8102	3B
R8103	4B
R8104	4B
R8105	3B
R8106	4C
R8107	3B
R8108	4B
R8109	3C
R8110	4C
R8111	3C
R8112	4D
R8113	4E
R8114	3C
R8115	3D
R8116	3D
R8117	4D
R8118	3F
R8119	3F
R8120	3F
R8121	4D
R8122	3E
R8123	4F
R8124	3E
R8128	4C
R8129	4B
R8130	2E
R8131	2F
R8132	2F
R8133	2E
R8134	1F
R8135	2F
R8136	2E
R8137	1E
R8151	1B
SWITCH	
SW8101	1C
TEST POINT	
TP8	9B
TP9	9B
TP10	9B
TP11	9B
TP12	10B
TP15	10C
TP16	10B
TP17	10B
TP18	10B
TP19	8B
TP20	8B
TP21	9B
TP22	8B
TP24	12E
TP25	9A
TP26	10E
TP27	8C
TP28	8B
TP29	8A
TP30	9B
TP31	9B
TP33	10D
TP34	10B
TP35	10C
TP36	10D
TP37	9C
TP38	10E
TP39	8A
TP40	8B
TP41	8B
TP42	7C
TP043	8B
TP45	12E
TP46	8E
TP55	11C
TP56	11C
TP64	9A
TP65	9A
TP66	11C
TP67	11C
TP68	9A
TP69	10A
TP138	12E
TP139	11E
TP140	11E
TP141	11D
TP4003	7A
TP4004	4A
TP4005	4A
TP4006	4A
TP4007	3B
TP4008	4D
TP4009	4D
TP4010	5D
TP4011	5C
TP4012	5D
TP4013	5D
TP4014	6D
TP4015	6C
TP4016	6C
OTHER	
B2602	7B
B2603	10D
B2604	10D
B2605	10E
B4001	7F
B4002	7F
B4003	7F
B4004	7F
B4005	8F
B4006	8F
B4007	7B
B4008	7B
B7302	3A
B8101	2F
B8102	2E
B8103	2F
HS2301	12D
J8101	1F
J8102	1A
J8103	1D
OS8101	1E
X4001	4D

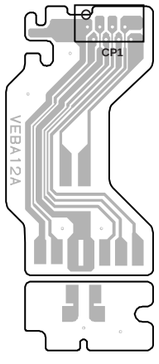
PRINTED CIRCUIT BOARD
DVD (BOTTOM SIDE)



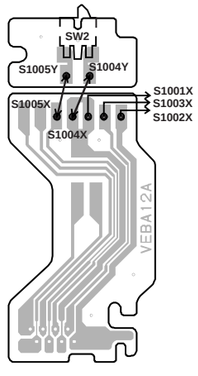
PRINTED CIRCUIT BOARD
OPERATION
SOLDER SIDE



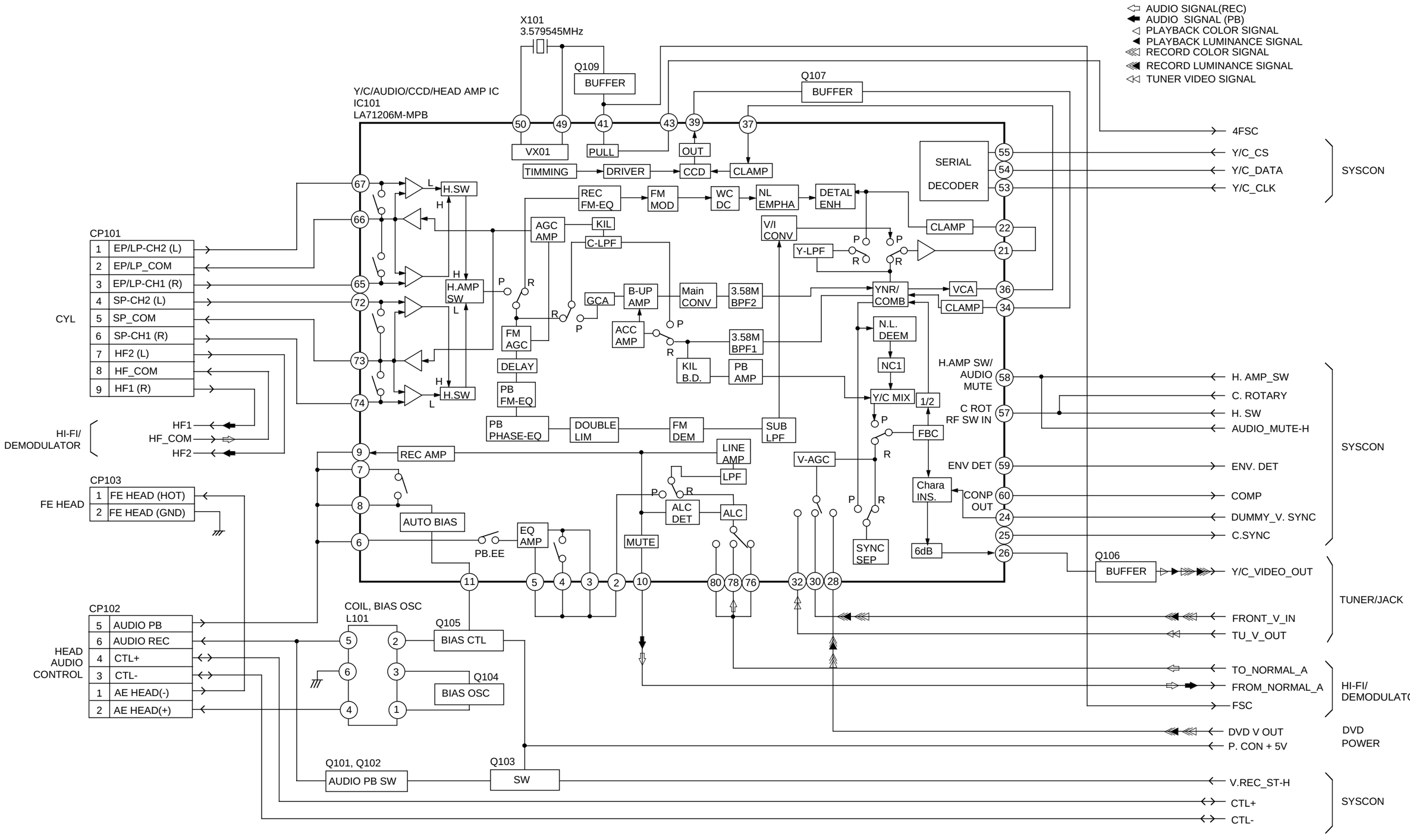
PRINTED CIRCUIT BOARD
RELAY/SW (INSERTED PARS)
SOLDER SIDE



RELAY/SW (CHIP MOUNTED PARS)
SOLDER SIDE



Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



SYSCON BLOCK DIAGRAM

◁ PLAYBACK COLOR SIGNAL
◀ PLAYBACK LUMINANCE SIGNAL
⋘ RECORD COLOR SIGNAL
⋘◀ RECORD LUMINANCE SIGNAL

SYSCON/TIMER/SERVO IC
IC3001 OEC0138A

POWER
DVD_POWER_CTL — 45 — DVD_POWER_CTL
VCR_POWER_ON-L — 41 — POWER ON-L
POWER_FAIL — 37 — POWER FAIL
RX — 65 — RX
X3001 10MHz — 80 — OSC 2
78 — OSC 1
TX — 64 — TX

TUNER/JACK
DVD RESET — 44 — DVD/RESET

OPERATION/ DISPLAY
1G/VCR/T-REC_LED — 48 — 1G/VCR/T-REC LED
SEG_5 — 63 — SEG5
SEG_1 — 55 — SEG1
VCR_LED — 47 — VCR LED
DVD_LED — 46 — DVD LED
2G/DUB/REC_LED — 49 — 2G/DUB/REC LED
KEY-B — 29 — KEY-B
KEY-A — 30 — KEY-A
REM_IN — 43 — REM IN

AT 5.2V — POWER
25 — BOT-H
D3001
26 — EOT-H
BOT SENSOR Q3008
EOT SENSOR Q3006
P.CON+5V
REEL SENS Q3001
REEL SENS Q3002
39 — REEL-T
38 — REEL-S

CP3001

11	CYL FG/PG
12	CYL DRIVE
10	LDM CTL
5	I LIMIT
9	CAP CTL
1	CAP FG
4	CAP.M F/R
2	CAP VCO
8	LD/CY_VCO

CAPSTAN DD UNIT
103 — CYL SPEED UP
104 — DFG/PG
107 — DRUM PWM
97 — LD M CTL
102 — CAP FULL
108 — CAP PWM
84 — CAP LIMIT
9 — CAP FG
98 — CAP FWD-L

AT+12.6V

POWER
MS_SEN B Q3004
MS_SEN A Q3005
P.CON +5V
28 — MS SEN-A
27 — MS SEN-B

HIFI ENV — 32
HIFI H.SW — 106
ST SELECT — 31
4 FSC IN — 22
C.SYNC — 111
DUMMY V.SYNC — 109
VIDEO H.SW — 105
C.ROTARY — 99
Y/C CS — 93
AUDIO MUTE-H — 95
H.AMP SW — 100
V.REC ST-H — 96
V ENV — 24
CTL(+) — 3
CTL(-) — 4
Y/C DATA — 54
Y/C CLK — 53
COMP — 101
AV SW1 — 92
CV IN1 — 16
CV IN2 — 17
POWER MUTE L — 87
AFT S.CURVE — 33
CV OUT — 19
VCR-H — 86
IIC CLK — 61
IIC SDA — 62
VIDEO MUTE H — 40
SYS_MUTE — 88
RF_CH_SW — 94
TAB SW — 35

V.REC_ST-H
AUDIO_MUTE-H
SCL
SDA
HIFI_ENV.DET
HIFI_H.SW
ST_SELECT

HI-FI/ DEMODULATOR

4FSC
C.SYNC
DUMMY_V.SYNC
H.SW
C.ROTARY
Y/C CS
AUDIO_MUTE-H
H.AMP_SW
V.REC_ST-H
ENV.DET
CTL+
CTL-
Y/C_DATA
Y/C_CLK
COMP
AV_SW1

Y/C/AUDIO/ CCD/HEAD AMP

SW_V_ OUT
POWER_MUTE-L
AFT-S.CURVE
VIDEO_OUT
TV/VCR
SCL
SDA
VIDEO_MUTE-H
SYS_MUTE
RF_CH_SW

TUNER/JACK

SW3001
IC3003 PST3231NR
6 — SCL
5 — SDA
EEP ROM IC IC3099 S-24C04BFJ-TB

RESET — 77 — SYSTEM RESET — AT+5V

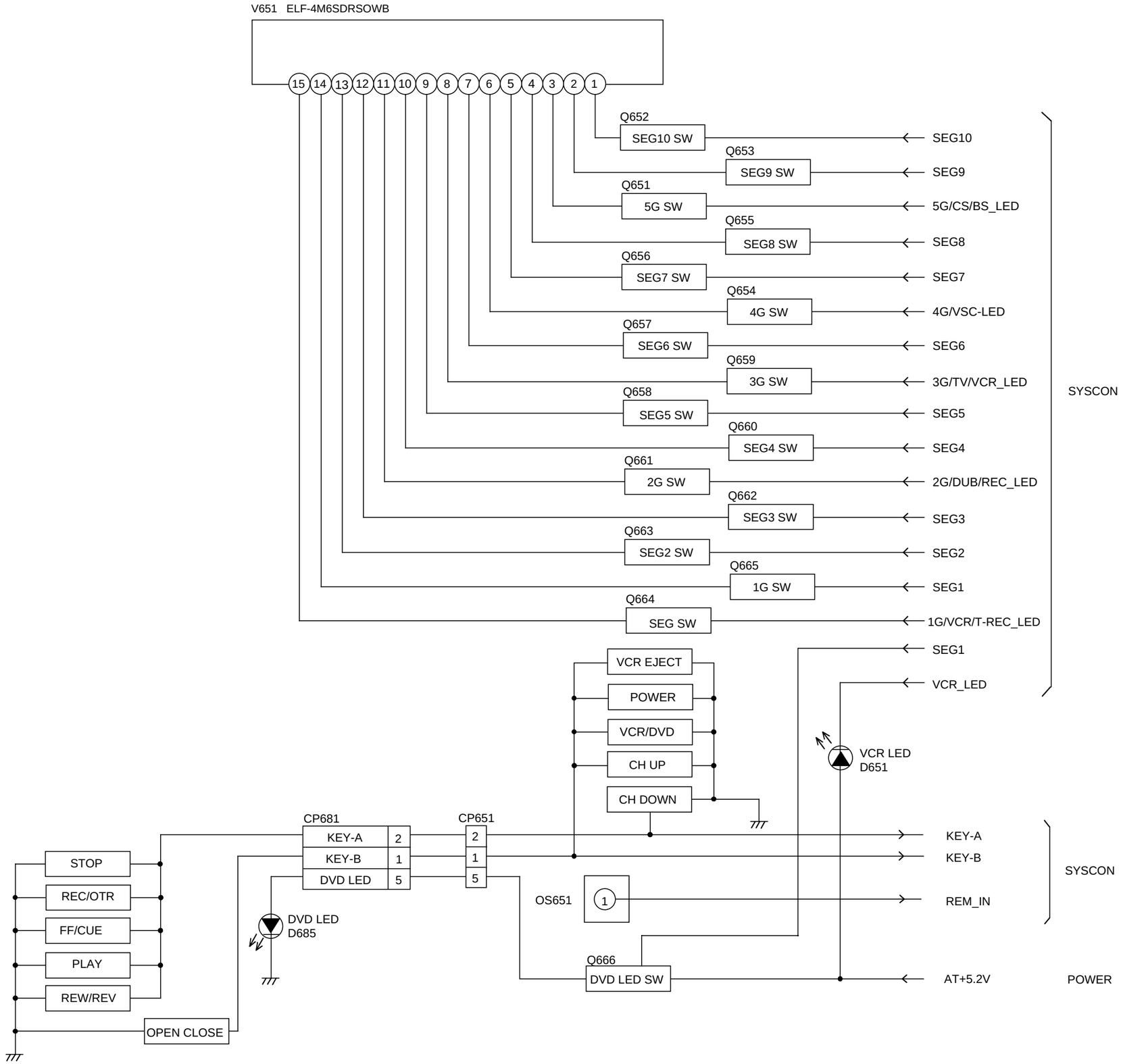
POWER

SEG 10 — 73
SEG 9 — 71
SEG 8 — 68
SEG 7 — 67
SEG 6 — 66
3G/TV/VCR LED — 50
4G/TIME SHIFT LED — 51
5G/CB/BS LED — 52
SEG 2 — 58
SEG 3 — 59
SEG 4 — 60

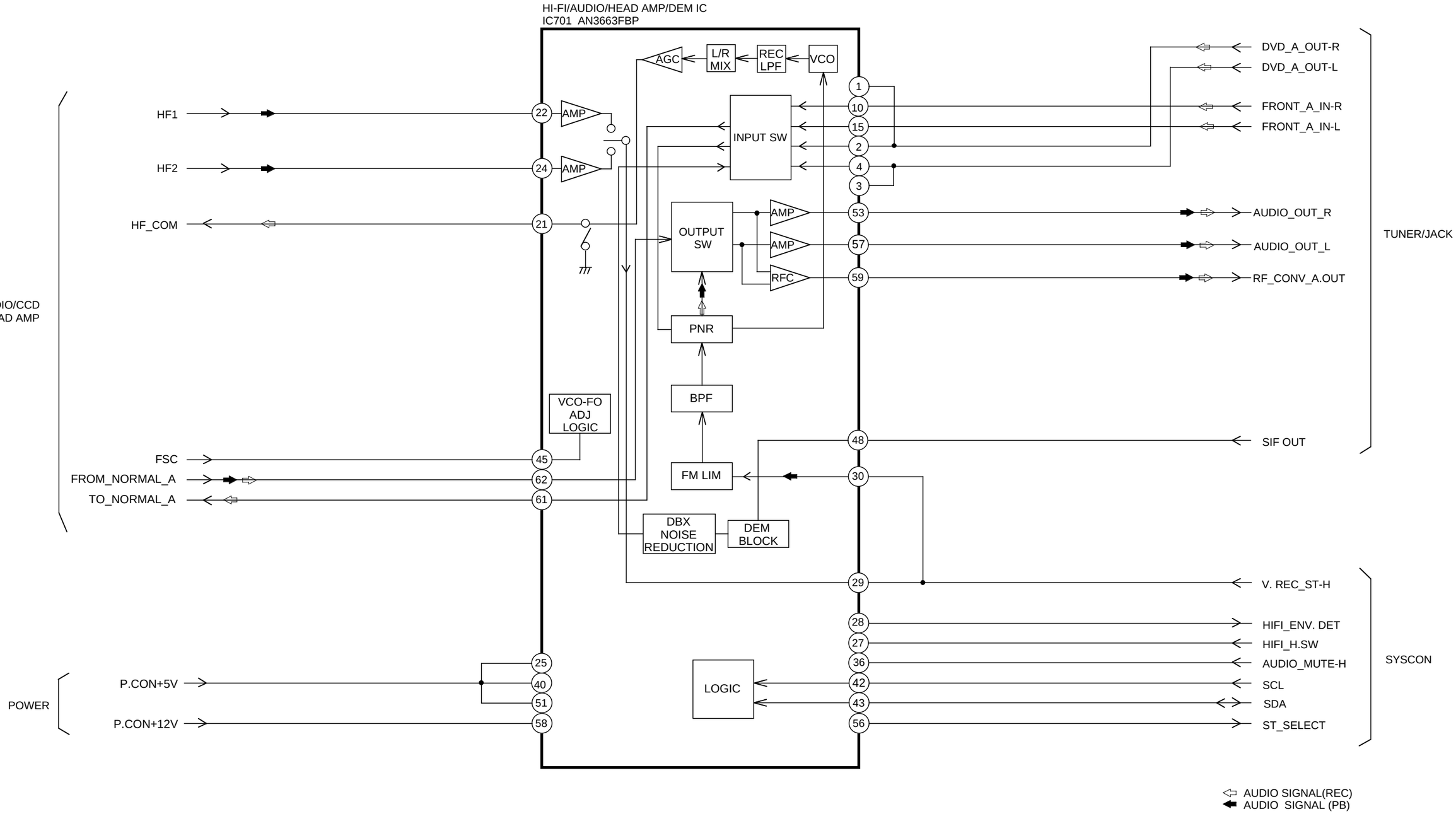
SEG 10
SEG 9
SEG 8
SEG 7
SEG 6
3G/TV/VCR_LED
4G/TIME SHIFT_LED
5G/CB/BS_LED
SEG 2
SEG 3
SEG 4

OPERATION/ DISPLAY

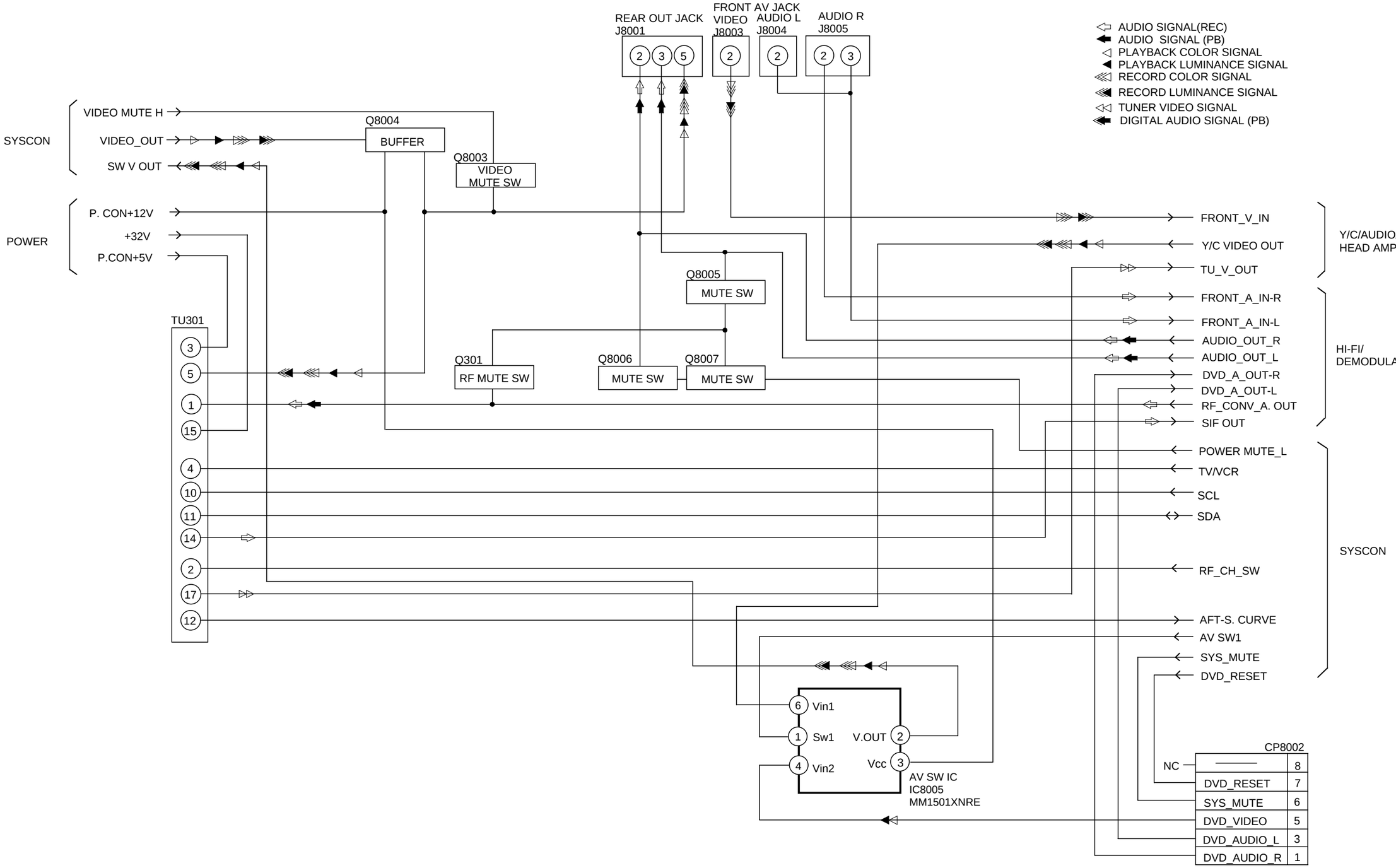
OPERATION/DISPLAY BLOCK DIAGRAM



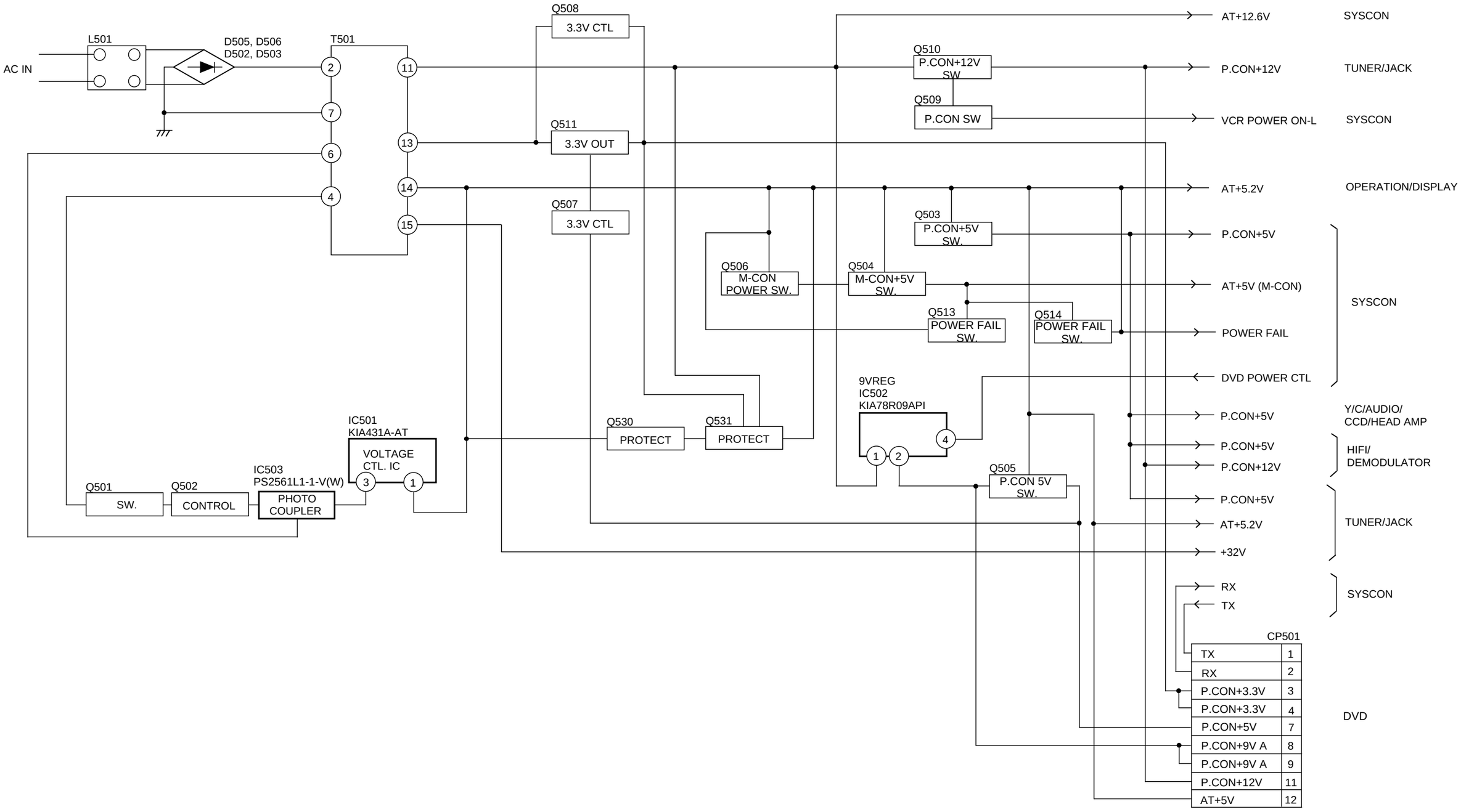
Hi-Fi/DEMODULATOR BLOCK DIAGRAM



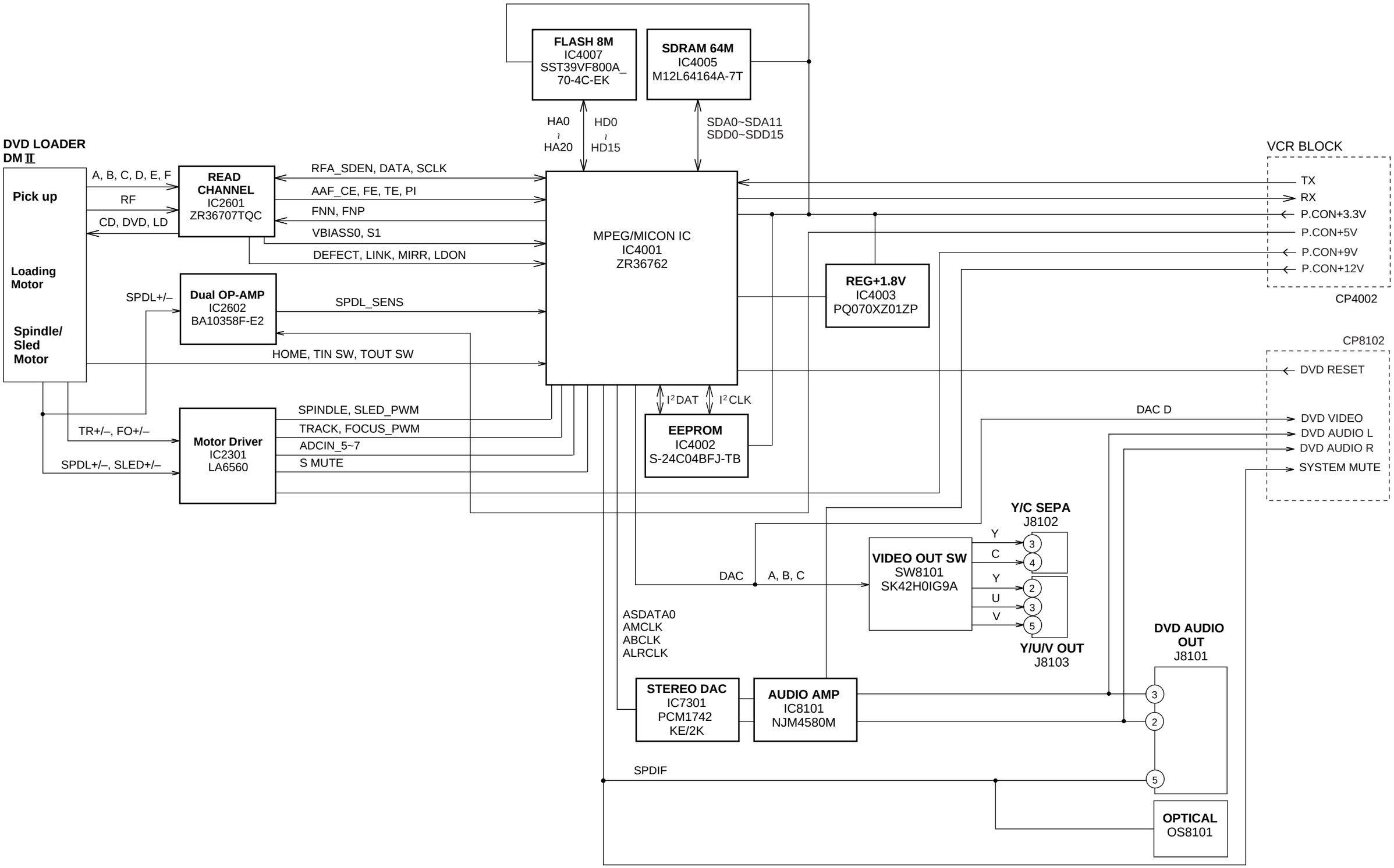
TUNER/JACK BLOCK DIAGRAM



POWER BLOCK DIAGRAM



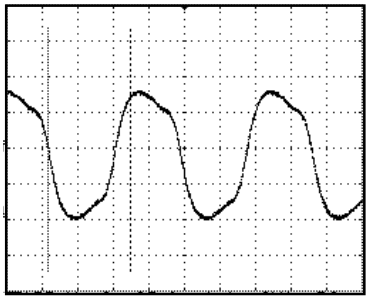
DVD BLOCK DIAGRAM



WAVEFORMS

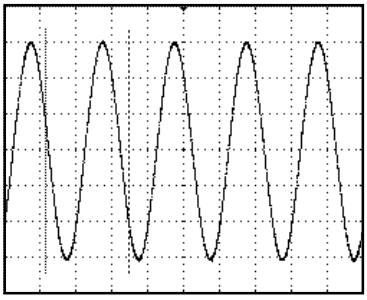
MPEG/MICON

10ns
100mV



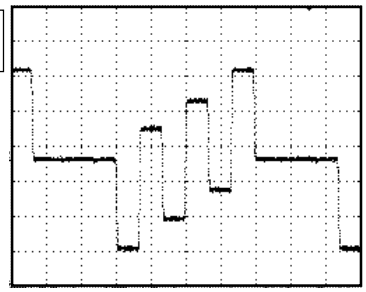
①

500µs
100mV



⑥

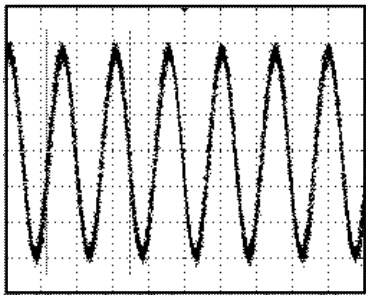
10µs
100mV



⑪

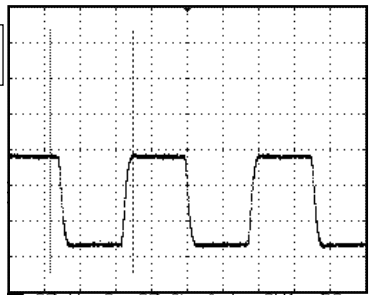
MEMORY

5ns
20mV



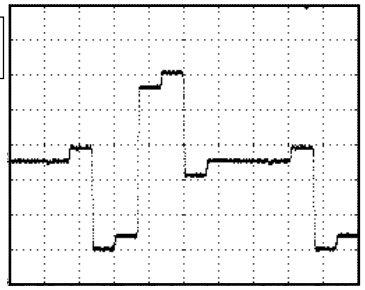
②

200ns
20mV



⑦

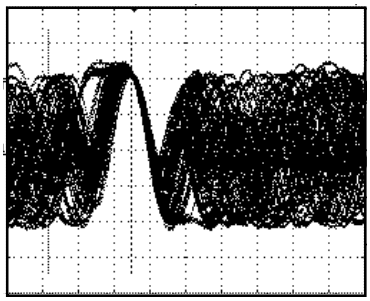
10µs
100mV



⑫

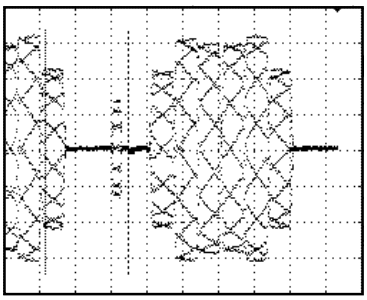
RF AMP/DSP

200ns
20mV



③

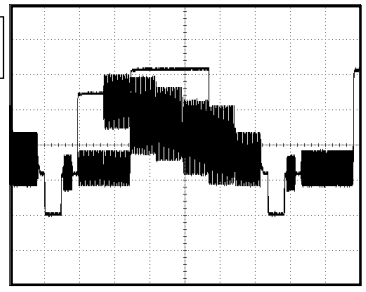
10µs
100mV



⑧

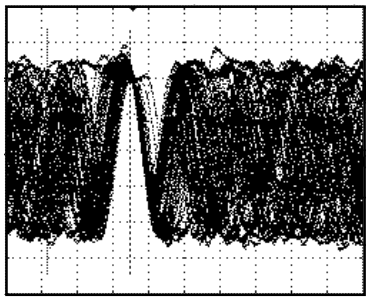
Y/C/AUDIO/CCD/HEAD AMP

PB
10µs
500mV



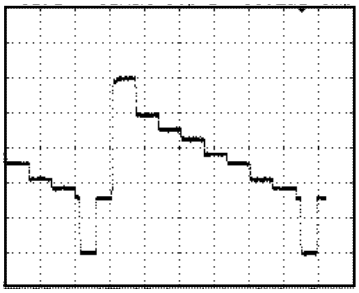
⑯

200ns
10mV



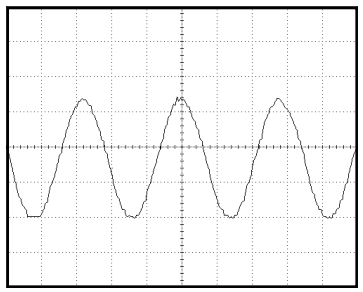
④

10µs
100mV



⑨

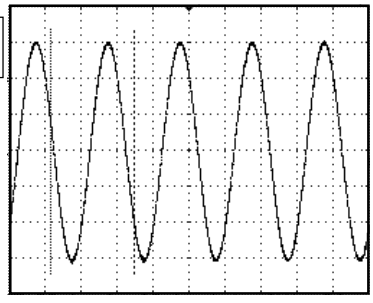
PB
100ns
100mV



⑰

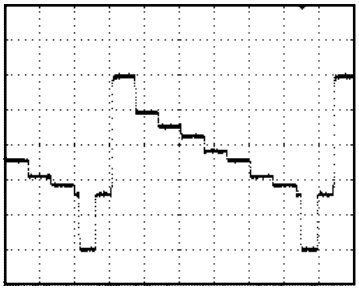
AUDIO/VIDEO

500µs
100mV



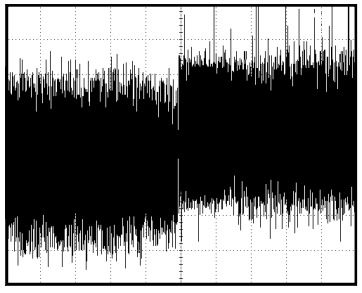
⑤

10µs
100mV



⑩

PB
1ms
100mV



⑱

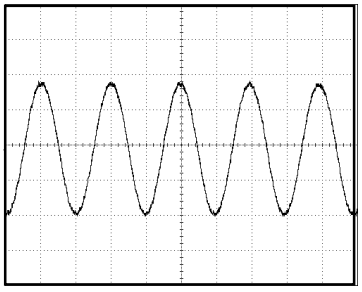
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

POWER

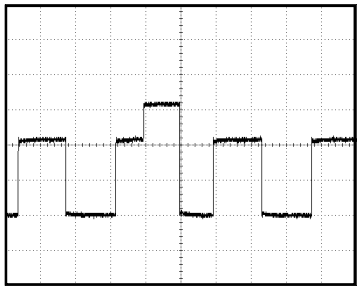
PB
200ms
500mV

⑲



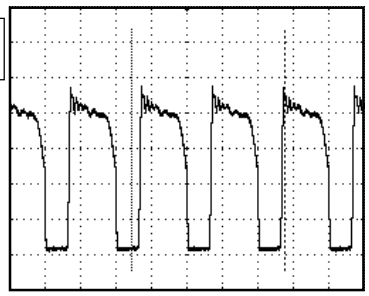
PB
500µs
1.0V

㉔



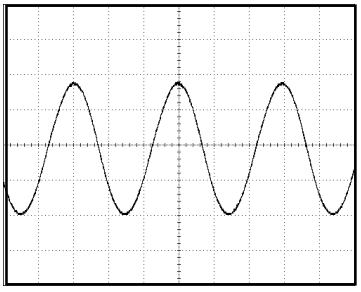
5µs
500mV

㊳



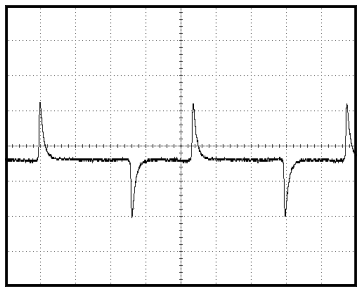
REC
5µs
20V

⑳



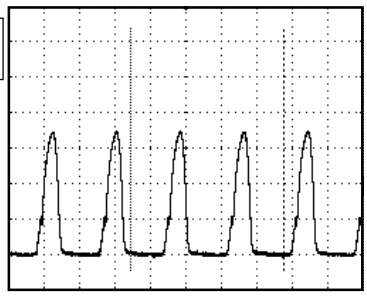
PB
5ms
500mV

㉕



5µs
5.0V

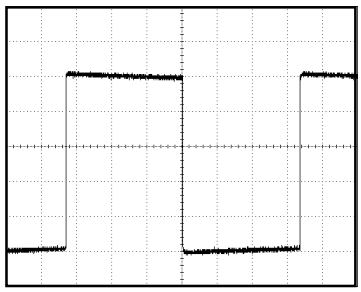
㊴



SYSCON

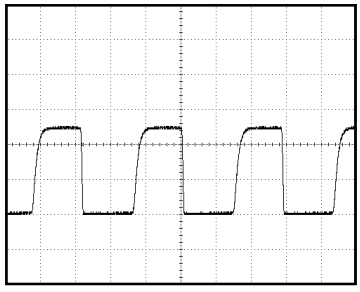
PB
5ms
1.0V

㉑



PB
5ms
2.0V

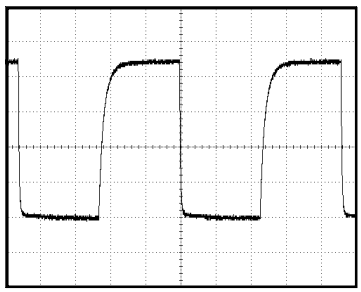
㉗



Hi-Fi/DEMODULATOR

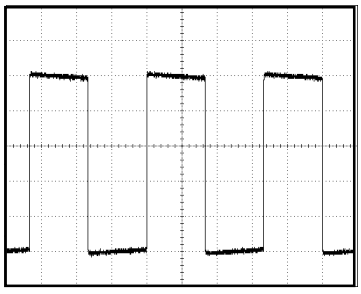
PB
200µs
1.0V

㉒



PB
10ms
1.0V

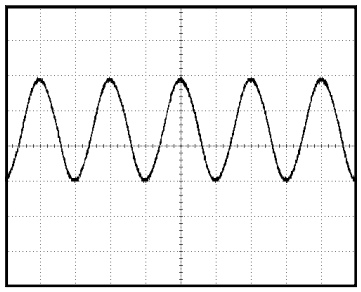
㉘



TUNER/JACK

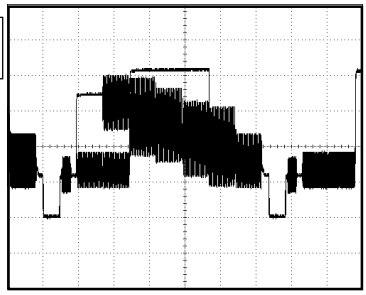
POWER ON
50ns
1.0V

㉓



10µs
200mV

㉜



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

SECTION 3
PARTS LIST

3.1 EXPLODED VIEW

SAFETY PRECAUTION

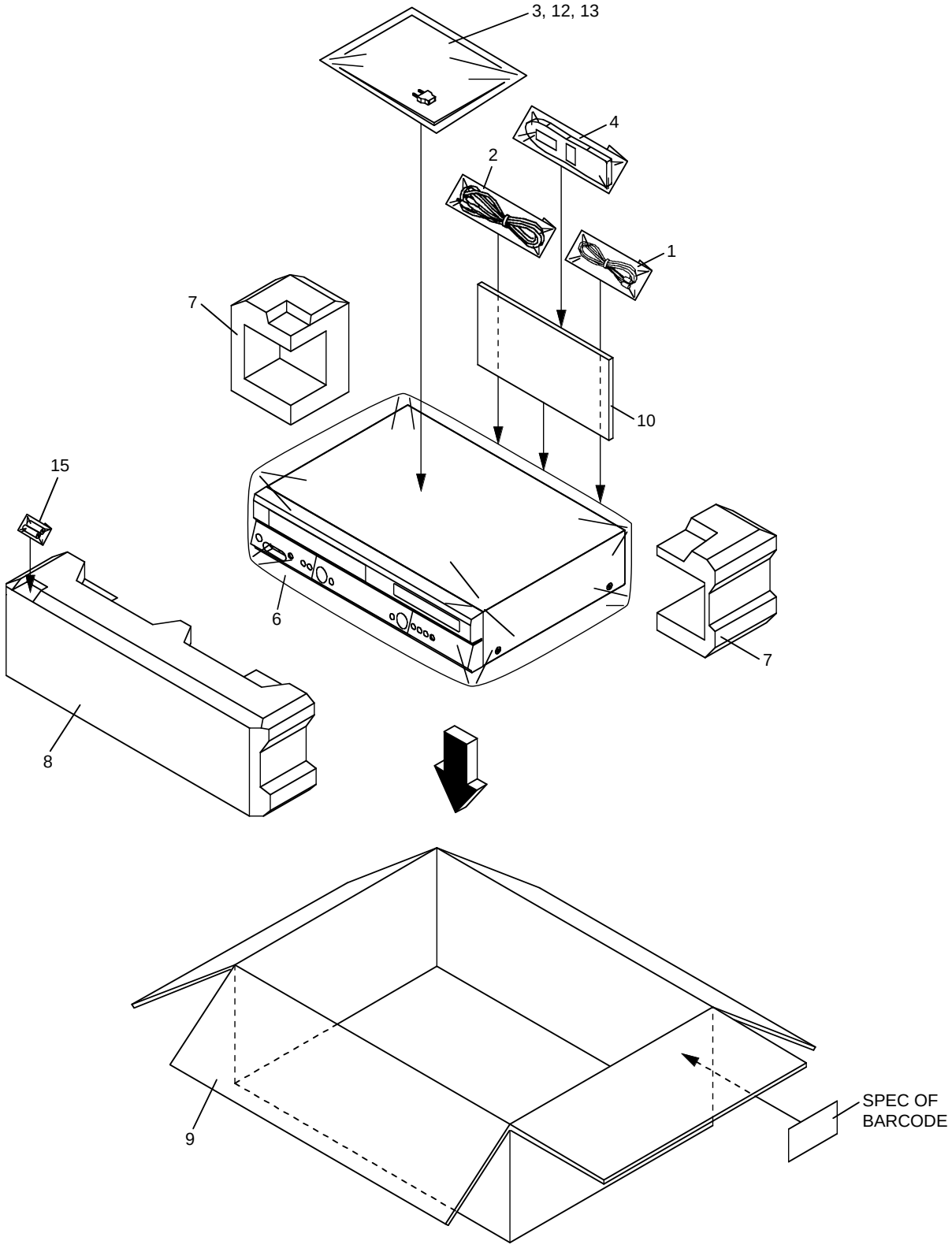
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

BEWARE OF BOGUS PARTS

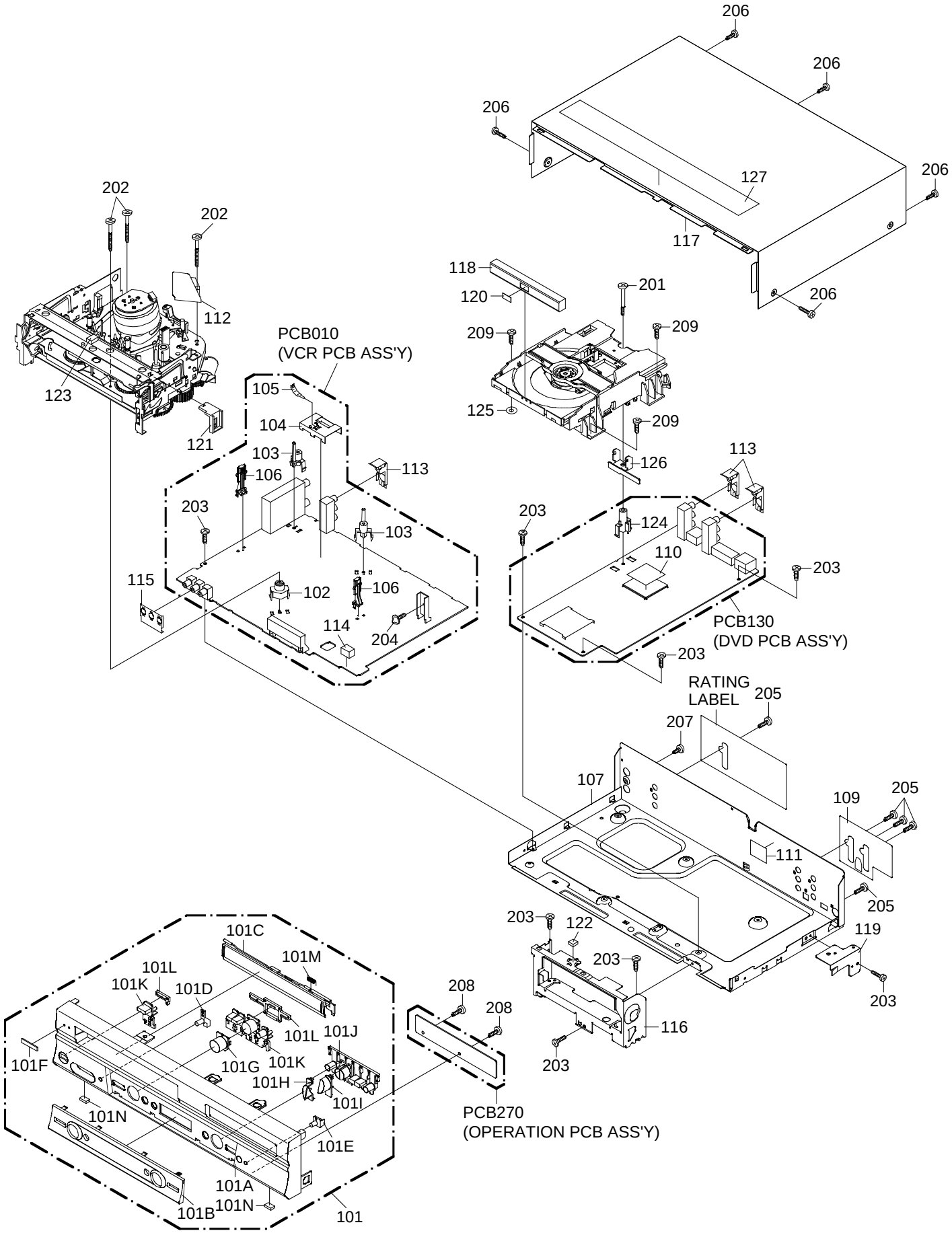
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

3.1.1 PACKING AND ACCESSORY ASSEMBLY <M1>

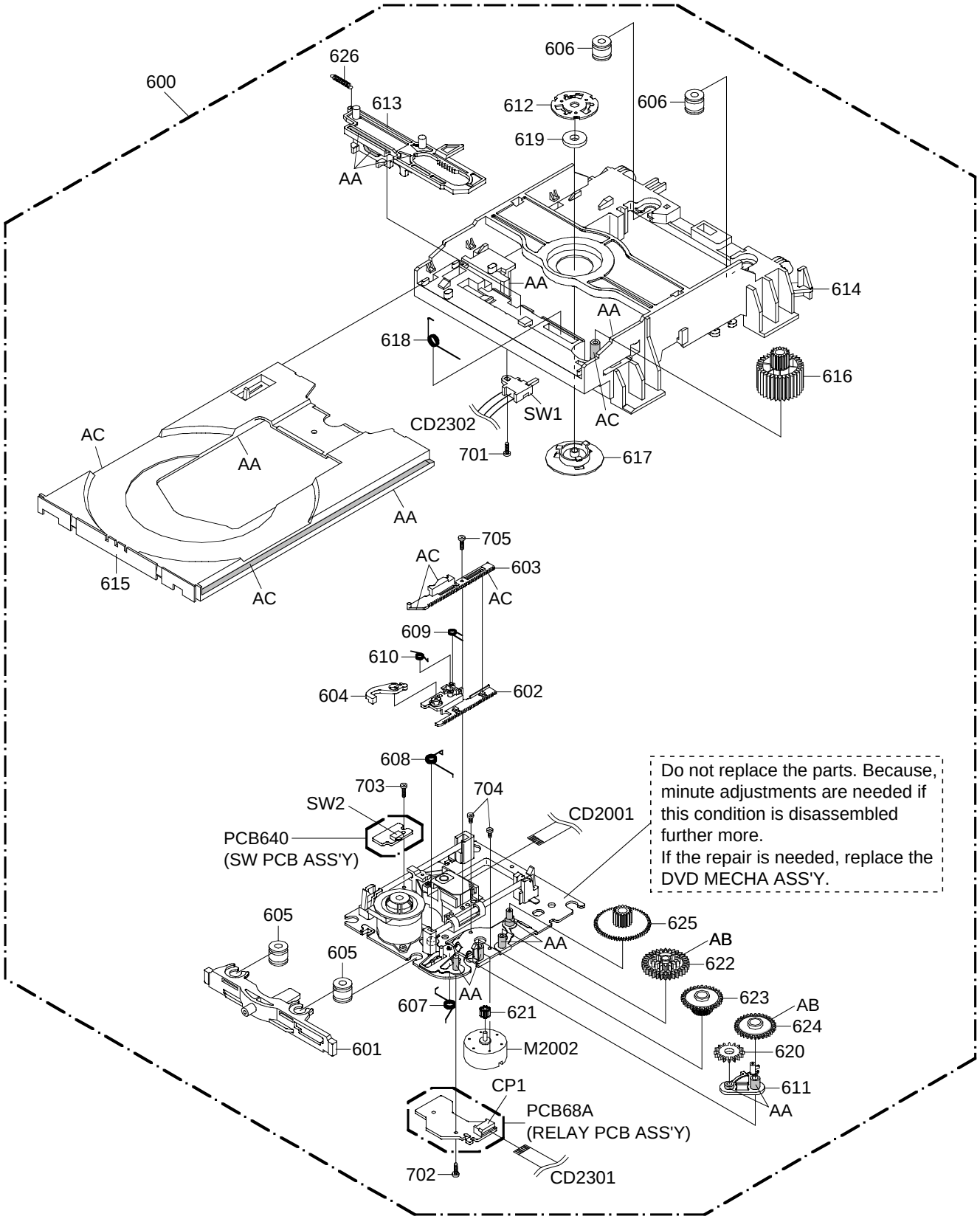
The instruction manual to be provided with this product will differ according to the destination.



3.1.2 FINAL ASSEMBLY <M2>



3.1.3 MECHANISM ASSEMBLY(DVD) <MN>

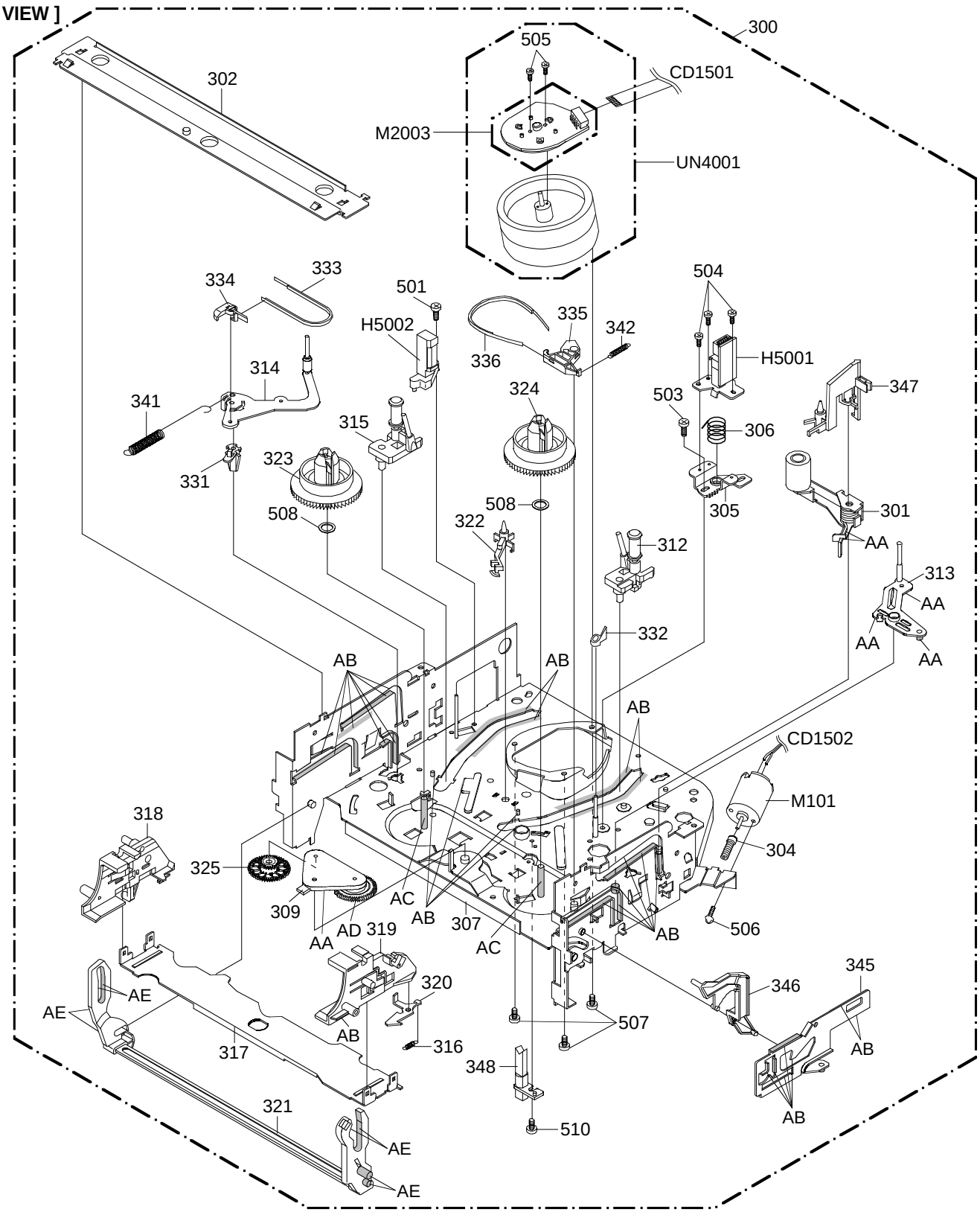


CLASS	PART NO.	MARK
GREASE	G-555G	AA
	G-337F	AB
	SF-112	AC

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

3.1.4 MECHANISM ASSEMBLY(VCR) <M4>

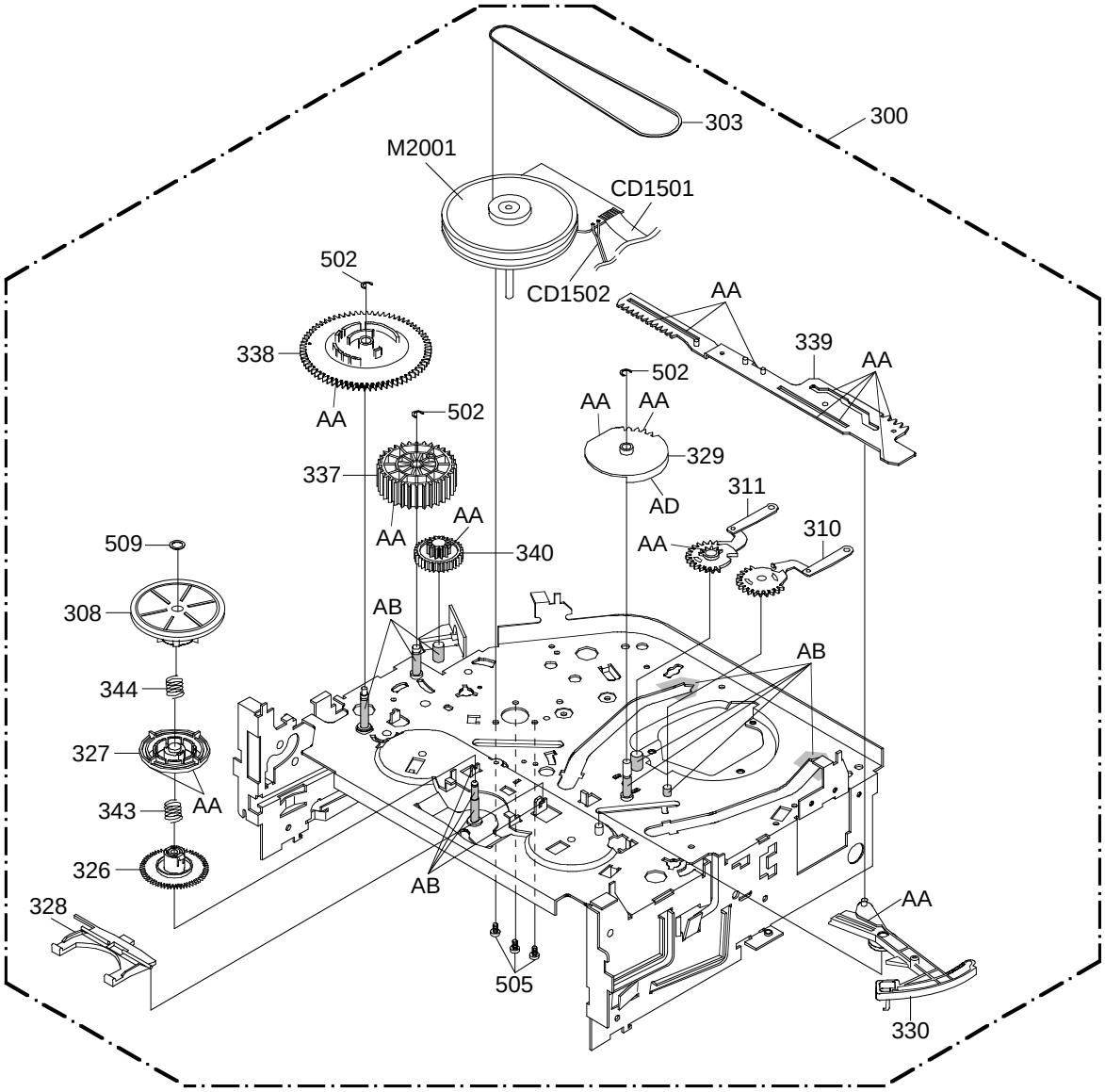
[TOP VIEW]



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD
	G-313Y	AE

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

[BOTTOM VIEW]



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD
	G-313Y	AE

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

3.2 PARTS LIST

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

****

PACKING AND ACCESSORY ASSEMBLY<M1>

		1	PEAC0294-03	RF CABLE	
		2	QAM0174-001	CABLE ASSY(AUDIO/VIDEO)	
		3	PEMC1012	CONVERSION PLUG	
		4	X-076D0GA010	TRANSMITTER	LP21036-023A
		6	X-791WHA0100	GIFT SHEET	
		7	X-792WHA0475	PACKAGE,BACK	
		8	X-792WHA0489	PACKAGE,FRONT	
		9	X-793WCDB904	GIFT BOX	
		10	X-795WCA0662	PAD,DVD/VR	155x250
		12	X-J2C50801A	INSTRUCTION BOOK	
		13	X-JB5UD100	POLYBAG,INSTRUCTION(RED CAUTION)	
		15	———	BATTERY,MANGAN	R6P(AR)XICI

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FINAL ASSEMBLY<M2>

	101	X-A2C508H720	CABINET,FRONT ASSY
	101A	X-701WPJC369	CABINET,FRONT
	101B	X-711WPD0635	PLATE,DISPLAY
	101C	X-712WPJ0802	FLAP
	101D	X-713WPA0268	GLASS,LED-VCR
	101E	X-713WPA0269	GLASS,LED-DVD
	101F	X-7235380009	BADGE,BRAND
	101G	X-735WPD0766	BUTTON,VCR/DVD
	101H	X-735WPD0767	BUTTON,STOP
	101I	X-735WPD0768	BUTTON,PLAY
	101J	X-735WPJ0231	BUTTON,FRAME-DVD
	101K	X-735WPJ0233	BUTTON,FRAME-VCR
	101L	X-738WPA0069	STOPPER,BUTTON
	101M	X-743WKA0042	SPRING,FLAP
	101N	X-800WFA0051	CUSHION,LEG
	102	X-701WPA0686	HOLDER,DECK
	103	X-701WPA0751	HOLDER,DECK
	104	X-752WSA0230	SHIELD,CASE HEAD AMP
	105	X-753WUAA006	SPRING,EARTH HEAD AMP
	106	X-85OP700038	HOLDER,END SENSOR
	107	X-702WSA0183	PLATE,BOTTOM
	109	X-7230007673	SHEET,JACK
	110	X-7232020748	SHEET,IC
	111	X-7260000341	SHEET,CAUTION
	112	X-752WSA0275	COVER,AC HEAD
	113	X-752WSA0290	SHIELD,COMPO
	114	X-800WFA0046	CUSHION
	115	X-752WUAA001	SHIELD,3PIN
	116	X-761WSA0127	ANGLE,FRONT
	117	X-702WSB0081	CABINET,TOP
	118	X-712WPB0169	PLATE,TRAY-FRONT
	119	X-761WSA0130	ANGLE,DVD
	120	X-7235630001	SHEET,DVD
	121	X-761WPA0262	HOLDER,DECK TOP
	122	X-8965TS1010	CUSHION
	123	X-8965TS1017	CUSHION
	124	X-761WPA0292	HOLDER,DVD
	125	X-800WB00004	FIBER WASHER	7x3.2xT0.5
	126	X-752WSA0359	ANGLE,DVD 2
	127	X-7230007628	POP LABEL
	201	X-8154730414	SCREW,TAP TITE(B)	M3x41R
	202	X-8109130B94	SCREW,TAP TITE(B) R PAN	3x29
	203	X-8109230704	SCREW,TAP TITE(B) R BIND	3x7
	204	X-8109I30A04	SCREW,TAP TITE(B) WH7	3x10
	205	X-8109230804	SCREW,TAP TITE(B) BIND	3x8
	206	X-8109K30601	SCREW,TAP TITE(B) BIND(3D)	3x6
	207	X-8107130404	SCREW,TAP TITE(S) PAN	3x4
	208	X-8110226804	SCREW,TAP TITE(P) BIND	2.6x8
	209	X-8102230804	SCREW,BIND	M3x8
	CD102	X-122H061504	CORD,JUMPER	MAIN CP102 - A/C HEAD
	CD8002	X-122F080601	CORD,JUMPER	MAIN CP8002 - DVD CP8102
	J501	QMA0027-002	SOCKET,AC	CCT5902-0801

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MECHANISM ASSEMBLY(VCR)<M4>

	300	X-A2C301N420K	DECK ASSY	A2C301N420K
	301	X-85OA400234	PINCH ROLLER BLOCK
	302	X-85OP900746	BRACKET,TOP 3V
	303	X-85OP200290	BELT,CAPSTAN (S)
	304	X-85OP600581	WORM
	305	X-85OP500083	BASE,AC HEAD
	306	X-85OP800324	SPRING,AC HEAD
	307	X-85OA000459	MAIN CHASSIS ASS'Y
	308	X-85OA200089	CLUTCH ASS'Y
	309	X-85OA200090	ARM IDLER ASS'Y
	310	X-85OA300065	LOADING ARM S UNIT
	311	X-85OA300066	LOADING ARM T UNIT
	312	X-85OA400223	INCLINED BASE T UINT 3S
	313	X-85OA400232	P5 ARM ASS'Y 2
	314	X-85OA400235	TENSION ARM ASS'Y 2
	315	X-85OA400231	INCLINED BASE S UNIT
	316	X-85OP800367	SPRING,LOCKER
	317	X-85OP900736	CASS,HOLDER
	318	X-85OP900748	CASS,SIDE L
	319	X-85OP900749	CASS,SIDE R
	320	X-85OP900739	LOCKER,R
	321	X-85OA900228	LINK UNIT
	322	X-85OP000496	POST,CASS GUIDE
	323	X-85OP200316	REEL,S (S)
	324	X-85OP200317	REEL,T (S)
	325	X-85OP200308	GEAR,IDLER
	326	X-85OP200311	GEAR,CLUTCH
	327	X-85OP200312	GEAR,COUPLING
	328	X-85OP200313	LEVER,CLUTCH
	329	X-85OP300194	GEAR,MAIN LOADING
	330	X-85OP400490	LEVER,TENSION
	331	X-85OP400492	HOLDER,TENSION
	332	X-85OP400520	CAP.P4
	333	X-85OP400542	BAND,TENSION
	334	X-85OP400533	CONNECT,TENSION
	335	X-85OP600573	ARM,BRAKE T
	336	X-85OP600584	BAND,BRAKE T
	337	X-85OP600577	CAM,PINCH ROLLER
	338	X-85OP600578	CAM,MAIN
	339	X-85OP600579	ROD,MAIN
	340	X-85OP600582	GEAR,JOINT
	341	X-85OP800322	SPRING,TENSION

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		342	X-85OP800360	SPRING,BRAKE T	
		343	X-85OP800355	SPRING,COUPLING	
		344	X-85OP800356	SPRING,RING	
		345	X-85OP900750	LEVER,LINK 2	
		346	X-85OP900744	LEVER,FLAP	
		347	X-85OP900745	CASS,OPENER	
		348	X-85OP700035	REFLECTOR,LED	
		501	X-8107226804	SCREW,TAP TITE(S) BIND	2.6x8
		502	X-83ETW30000	E-RING	3.0
		503	X-8107226404	SCREW,TAP TITE(S) BIND	2.6x4
		504	X-8102120604	SCREW,PAN	M2x6
		505	X-8109126604	SCREW,TAP TITE(B) PAN	2.6x6
		506	X-810A130404	SCREW/WASHER(A)	M3x4
		507	X-810A126504	SCREW/WASHER(A)	M2.6x5
		508	X-82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
		509	X-82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
		510	X-8107226604	SCREW,TAP TITE(S) BIND	2.6x6
		CD1501	X-122H071704	CORD JUMPER	2H071704
		CD1502	X-122Y021902	CORD JUMPER	2Y021902
		H5001	X-1523Q91003	HEAD (AUDIO CONTROL)	VTR-1X2RPE22-756
		H5002	X-1543Q02014	HEAD (FULL ERASE)	VTR-1X2ERS11-154
	⚠	M101	X-1596P98001	MOTOR (LOADING)	MXN13FB12K3
	⚠	M2001	X-1510S98038	CAPSTAN DD UNIT	F2QVB33
		M2003	X-1589S11017	MICRO MOTOR	I2OAL05
	⚠	UN4001	X-A2C301N500	CYLINDER UNIT ASS'Y	A2C301N500

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MECHANISM ASSEMBLY(DVD)<MN>

	600	X-A2C512K650	DVD MECHA ASSY	A2C512K650
	601	X-92P100022A	TRAVERSE HOLDER	
	602	X-92P100032A	RACK,FEED 1	
	603	X-92P100033A	RACK,FEED 2	
	604	X-92P100035A	LEVER,RACK FEED	
	605	X-92P200006A	INSULATOR(F)	
	606	X-92P200007A	INSULATOR(R)	
	607	X-92P300008A	SPRING,CHASSIS	
	608	X-92P300005A	SPRING,ARM IDLER	
	609	X-92P300006A	SPRING,RACK FEED 2	
	610	X-92P300007A	SPRING,RACK FEED 1	
	611	X-92P100031A	ARM,IDLER	
	612	X-92P000001A	CLAMPER PLATE	
	613	X-92P100019A	RACK,LOADING	
	614	X-92P100020A	MAIN FRAME M	
	615	X-92P100021A	TRAY	
	616	X-92P100023A	GEAR,MAIN	
	617	X-92P100024A	CLAMPER	
	618	X-92P300002A	SPRING,RACK LOADING	
	619	X-92P400002A	MAGNET,CLAMPER	
	620	X-92P100030A	GEAR,IDLER	
	621	X-92P100025A	GEAR,MOTOR	
	622	X-92P100026A	GEAR,MIDDLE 1	
	623	X-92P100027A	GEAR,MIDDLE 2	
	624	X-92P100028A	GEAR,MIDDLE 3	
	625	X-92P100029A	GEAR,FEED	
	626	X-92P300009A	SPRING,RACK L	
	701	X-8110226804	SCREW,TAP TITE(P) BIND	2.6x8
	702	X-8110120604	SCREW,TAP TITE(P) PAN	2x6
	703	X-8107220504	SCREW,TAP TITE(S) BIND	2x5
	704	X-8140117254	SCREW,PAN	M1.7x2.5 P3
	705	X-8110220804	SCREW,TAP TITE(P) BIND	2x8
	CD2001	X-122H0O1901	CORD JUMPER	
	CD2301	X-122H080701	CORD JUMPER	
	CD2302	X-06CH232101	CORD CONNECTOR	
	CP1	X-069JV80180	CONNECTOR PCB SIDE	IMSA-9615S-08C-PP
⚠	M2002	X-1515S98001	FEED MOTOR	BCD3B81
	PCB640	X-A5E601V640	SW PCB ASS'Y	VEBA17A
	PCB68A	X-A5E601V680	RELAY PCB ASS'Y	VEBA12A
	SW1	X-0515S32001	SWITCH	SSS-23-6
	SW2	X-0500101036	PUSH SWITCH	ESE22MH22

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VCR BOARD ASSEMBLY<03>

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

PCB010	X-A2C508H010	VCR BOARD ASSY	
R101	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R102	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
R103	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
R105	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R106	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R107	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
R108	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
R109	QRE141J-102Y	RESISTOR	1KΩ,1/4W
R110	NRSA63J-822X	MG RESISTOR	8.2KΩ,1/16W
R111	NRSA63J-822X	MG RESISTOR	8.2KΩ,1/16W
R112	NRSA63J-334X	MG RESISTOR	330KΩ,1/16W
R113	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R114	NRSA02J-203X	MG RESISTOR	20KΩ,1/16W
R115	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R116	NRSA63J-153X	MG RESISTOR	15KΩ,1/16W
R117	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W
R119	NRSA63J-182X	MG RESISTOR	1.8KΩ,1/16W
R120	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R121	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R122	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
R123	QRE141J-222Y	RESISTOR	2.2KΩ,1/4W
R124	NRSA63J-823X	MG RESISTOR	82KΩ,1/16W
R126	NRSA63J-182X	MG RESISTOR	1.8KΩ,1/16W
R127	NRSA02J-684X	MG RESISTOR	680KΩ,1/16W
R129	NRSA63J-182X	MG RESISTOR	1.8KΩ,1/16W
R131	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
R132	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
R133	NRSA63J-822X	MG RESISTOR	8.2KΩ,1/16W
R136	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
R137	QRE141J-123Y	RESISTOR	12KΩ,1/4W
R138	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
R139	NRSA63J-123X	MG RESISTOR	12KΩ,1/16W
R140	QRE141J-222Y	RESISTOR	2.2KΩ,1/4W
R141	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R142	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R143	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R301	NRSA63J-333X	MG RESISTOR	33KΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R302	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R304	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R305	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R306	NRSA02J-121X	MG RESISTOR	120Ω,1/16W
	⚠	R502	X-R3X181010J	OMF RESISTOR	1Ω,1W
		R503	X-R00202155J	RESISTOR	1.5MΩ,1/2W
	⚠	R504	QRE121J-221Y	RESISTOR	220Ω,1/2W
		R505	QRE141J-474Y	RESISTOR	470KΩ,1/4W
		R506	X-R002T2564J	RESISTOR	560KΩ,1/2W
		R507	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R508	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
		R509	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R510	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
		R511	NRSA63J-564X	MG RESISTOR	560KΩ,1/16W
	⚠	R512	X-R3X181683J	OMF RESISTOR	68KΩ,1W
		R513	QRE121J-391Y	RESISTOR	390Ω,1/2W
		R514	QRE121J-221Y	RESISTOR	220Ω,1/2W
		R515	NRSA63J-272X	MG RESISTOR	2.7KΩ,1/16W
	⚠	R516	X-R63581R22J	FUSI RESISTOR	0.22Ω,1W
	⚠	R517	X-R002T2821J	RESISTOR	820Ω,1/2W
		R518	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
		R519	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R520	NRSA02F-332X	MG RESISTOR	3.3KΩ,1/16W
		R521	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R522	NRSA02F-332X	MG RESISTOR	3.3KΩ,1/16W
		R523	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W
		R524	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
		R525	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R526	X-R803R9122F	MG RESISTOR	1.2KΩ,1/16W
		R527	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
		R528	QRE141J-392Y	RESISTOR	3.9KΩ,1/4W
		R529	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R530	NRSA63J-470X	MG RESISTOR	47Ω,1/16W
		R531	NRSA63F-821X	MG RESISTOR	820Ω,1/16W
		R532	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R533	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R534	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W
		R535	NRSA02J-223X	MG RESISTOR	22KΩ,1/10W
		R536	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R537	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
		R538	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
		R540	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R541	QRE141J-223Y	RESISTOR	22KΩ,1/4W
		R542	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
		R543	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
		R544	QRE141J-223Y	RESISTOR	22KΩ,1/4W
	⚠	R545	X-R65584150J	R,FUSE	15Ω,1/4W
		R552	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R553	QRE141J-473Y	RESISTOR	47KΩ,1/4W
		R554	QRE141J-103Y	RESISTOR	10KΩ,1/4W
		R651	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
		R653	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
		R657	NRSA63J-272X	MG RESISTOR	2.7KΩ,1/16W
		R658	NRSA63J-182X	MG RESISTOR	1.8KΩ,1/16W
		R659	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R661	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
		R662	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R663	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R664	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
		R665	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R666	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R667	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R668	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R669	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
		R670	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R671	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
		R672	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R673	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R674	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
		R675	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
		R683	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R701	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R702	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R703	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R704	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R707	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R708	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W
		R711	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R712	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W
		R714	NRSA63J-273X	MG RESISTOR	27KΩ,1/16W
		R716	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R717	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
		R718	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R719	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
		R721	NRSA63J-153X	MG RESISTOR	15KΩ,1/16W
		R722	NRSA63J-153X	MG RESISTOR	15KΩ,1/16W
		R723	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R3001	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
		R3002	QRE141J-121Y	RESISTOR	120Ω,1/4W
		R3003	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R3004	NRSA02J-274X	MG RESISTOR	270KΩ,1/16W
		R3006	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R3007	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W
		R3008	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R3009	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R3010	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R3011	QRE141J-473Y	RESISTOR	47KΩ,1/4W
		R3012	NRSA63J-563X	MG RESISTOR	56KΩ,1/16W
		R3014	NRSA63J-563X	MG RESISTOR	56KΩ,1/16W
		R3015	QRE141J-473Y	RESISTOR	47KΩ,1/4W
		R3016	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R3017	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3019	QRE141J-473Y	RESISTOR	47KΩ,1/4W
		R3020	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3022	NRSA02J-154X	MG RESISTOR	150KΩ,1/16W
		R3025	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R3026	NRSA02J-274X	MG RESISTOR	270KΩ,1/16W
		R3027	NRSA63J-153X	MG RESISTOR	15KΩ,1/16W
		R3028	QRE141J-473Y	RESISTOR	47KΩ,1/4W
		R3029	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R3030	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
		R3031	NRSA63J-105X	MG RESISTOR	1MΩ, 1/16W
		R3032	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R3033	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R3034	NRSA63J-105X	MG RESISTOR	1MΩ, 1/16W
		R3035	NRSA02J-103X	MG RESISTOR	10KΩ,1/10W
		R3037	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R3038	QRE141J-472Y	RESISTOR	4.7KΩ,1/4W
		R3043	NRSA63J-474X	MG RESISTOR	470KΩ,1/16W
		R3044	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R3045	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R3046	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3047	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R3049	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R3050	NRSA02J-101X	MG RESISTOR	100Ω,1/4W
		R3051	NRSA63J-562X	MG RESISTOR	18KΩ,1/16W
		R3053	NRSA63J-474X	MG RESISTOR	470KΩ,1/16W
		R3055	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
		R3056	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R3057	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
		R3062	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R3063	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R3083	NRSA63J-333X	MG RESISTOR	33KΩ,1/16W
		R3087	NRSA63J-333X	MG RESISTOR	33KΩ,1/16W
		R8009	QRE121J-471Y	RESISTOR	470Ω,1/2W
		R8010	NRSA02J-750X	MG RESISTOR	75Ω,1/16W
		R8011	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R8014	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R8015	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R8016	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R8017	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R8019	NRSA02J-750X	MG RESISTOR	75Ω,1/16W
		R8032	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8056	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8059	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		C101	X-P232W1223J	CAPACITOR	0.022μF,100V
		C103	X-E524U0220D	E CAPACITOR	22μF,6.3V
		C104	QEKJ0JM-227Z	E CAPACITOR	220μF,6.3V
		C105	X-E524U0220D	E CAPACITOR	22μF,6.3V
		C106	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C107	NCB31HK-153X	CAPACITOR	0.015μF,50V
		C108	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C109	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C110	X-E5EZU2470M	E CAPACITOR	47μF,16V
		C112	QEKJ0JM-227Z	E CAPACITOR	220μF,6.3V
		C114	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C115	X-E524U1330D	E CAPACITOR	33μF,10V
		C116	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C117	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C118	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C119	X-E524U2100D	E CAPACITOR	10μF,16V
		C120	X-E524U5010D	E CAPACITOR	1μF,50V
		C121	NCB31HK-272X	CAPACITOR	0.0027μF,50V
		C122	NCB31HK-122X	CAPACITOR	0.0012μF,50V
		C123	X-E02LU54R7M	E CAPACITOR	4.7μF,50V
		C124	X-E524U5010D	E CAPACITOR	1μF,50V
		C125	X-CS0PCH4N2J	CAPACITOR	390pF,50V
		C126	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C127	X-CS0PCH4G2J	CAPACITOR	180pF,50V
		C129	X-CS0RB0216K	CAPACITOR	1μF,16V
		C131	X-E524U0101D	E CAPACITOR	100μF,6.3V
		C132	QEKJ1HM-105Z	E CAPACITOR	1μF,50V
		C133	NCF31AZ-105X	CAPACITOR	1μF,10V
		C134	QEKJ1HM-105Z	E CAPACITOR	1μF,50V
		C135	X-E02LU5R22M	E CAPACITOR	0.22μF,50V
		C136	QETN1VM-226Z	E CAPACITOR	22μF,35V
		C137	X-E524U5010D	E CAPACITOR	1μF,50V
		C138	QETN1HM-105Z	E CAPACITOR	1μF,50V
		C139	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C140	X-E00NU54R7M	E CAPACITOR	4.7μF,50V
		C141	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C142	X-E524U2470D	E CAPACITOR	47μF,16V
		C143	NCF31AZ-105X	CAPACITOR	1μF,10V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C144	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C145	X-CS0PB04H4K	CAPACITOR	0.022μF,50V
		C146	X-E524U5010D	E CAPACITOR	1μF,50V
		C147	X-CS0PB04H4K	CAPACITOR	0.022μF,50V
		C148	X-E524U5010D	E CAPACITOR	1μF,50V
		C151	QEKJ1HM-105Z	E CAPACITOR	1μF,50V
		C152	QETN1CM-476Z	E CAPACITOR	47μF,16V
		C154	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C155	X-CS0RB0216K	CAPACITOR	1μF,16V
		C156	NCF21HZ-104X	CAPACITOR	0.1μF,50V
		C158	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C159	X-CS0PCH4H1J	CAPACITOR	22pF,50V
		C162	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C163	X-E524U0470D	E CAPACITOR	47μF,6.3V
		C165	NCB31HK-473X	CAPACITOR	0.047μF,50V
		C166	NCB21HK-683X	CAPACITOR	0.068μF,50V
		C169	NCB31HK-473X	CAPACITOR	0.047μF,50V
		C172	X-CS0PCH4H1J	CAPACITOR	22pF,50V
		C174	QEKJ0JM-476Z	E CAPACITOR	47μF,6.3V
		C301	NCF31HZ-103X	CAPACITOR	0.01μF,50V
		C303	NCZ31HZ-104X	CAPACITOR	0.1μF,50V
		C307	NDC31HJ-101X	CAPACITOR	100pF,50V
		C308	NCB31HK-103X	CAPACITOR	0.01μF,50V
		C309	QETN0JM-227Z	E CAPACITOR	220μF,6.3V
		C313	QEKJ1CM-106Z	E CAPACITOR	10μF,16V
		C315	QEKJ1CM-106Z	E CAPACITOR	10μF,16V
		C318	QEKJ1CM-106Z	E CAPACITOR	10μF,16V
	⚠	C501	X-E5EZF2222M	E CAPACITOR	2200μF,16V
	⚠	C502	X-P2122B104M	CAPACITOR	0.1μF,275V
		C503	NCB21HK-222X	CAPACITOR	0.0022μF,50V
		C504	QETN0JM-227Z	E CAPACITOR	220μF,6.3V
	⚠	C505	X-E5EZU2101M	E CAPACITOR	100μF,16V
		C506	X-E5EZU0471M	E CAPACITOR	470μF,6.3V
		C507	NCF21CZ-2R2X	CAPACITOR	2.2μF,16V
		C508	X-CS0PB04W3K	CAPACITOR	0.0082μF,50V
		C509	QFN31HJ-183Z	F CAPACITOR	0.018μF,50V
		C510	X-E5EZU5220M	E CAPACITOR	22μF,50V
	⚠	C511	X-E62PFH101M	E CAPACITOR	100μF,400V
		C512	NCF31AZ-105X	CAPACITOR	1μF,10V
		C513	X-C0PLRR7H2K	CAPACITOR	220pF,2KV
	⚠	C514	X-E5EZU2101M	E CAPACITOR	100μF,16V
	⚠	C515	QCB12HK-103	CAPACITOR	0.01μF,500V
	⚠	C516	QCZ9079-152X	CAPACITOR	0.0015μF,250V
		C517	NCF31AZ-105X	CAPACITOR	1μF,10V
	⚠	C518	QECP0JM-228	E CAPACITOR	2200μF,6.3V
	⚠	C519	X-E5EZ01222M	E CAPACITOR	2200μF,10V
	⚠	C521	X-CS0RB0216K	CAPACITOR	1μF,16V
	⚠	C522	X-E5EZU5220M	E CAPACITOR	22μF,50V
		C524	X-CS0PB04H4K	CAPACITOR	0.022μF,50V
		C525	X-C0PLRR7S2K	CAPACITOR	560pF,2KV
		C526	QCZ9079-221	CAPACITOR	220pF,250V
		C527	X-CS0PB04W3K	CAPACITOR	0.0082μF,50V
		C528	X-E5EZU2101M	E CAPACITOR	100μF,16V
		C529	X-P2122B104M	CAPACITOR	0.1μF,275V
		C530	X-E5EZU2101M	E CAPACITOR	100μF,16V
		C531	QCB32HK-561Z	CAPACITOR	560pF,500V
		C534	NCF31AZ-105X	CAPACITOR	1μF,10V
		C541	NCF21CZ-2R2X	CAPACITOR	2.2μF,16V
		C652	QETN0JM-107Z	E CAPACITOR	100μF,6.3V
		C653	QETL1AM-477	E CAPACITOR	470μF,10V
		C701	X-CS0PB04H4K	CAPACITOR	0.022μF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C702	X-E524U53R3D	E CAPACITOR	3.3µF,50V
		C703	X-E02LU54R7M	E CAPACITOR	4.7µF,50V
		C704	X-E524U5010D	E CAPACITOR	1µF,50V
		C705	QEKJ1HM-475Z	E CAPACITOR	4.7µF,50V
		C706	X-E524U5010D	E CAPACITOR	1µF,50V
		C707	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C708	QEKJ1CM-106Z	E CAPACITOR	10µF,16V
		C709	X-E50HU5100M	E CAPACITOR	10µF,50V
		C711	X-E50HU5100M	E CAPACITOR	10µF,50V
		C713	NCF31AZ-105X	CAPACITOR	1µF,10V
		C714	X-E524U2100D	E CAPACITOR	10µF,16V
		C715	NCB31HK-122X	CAPACITOR	0.0012µF,50V
		C716	NCF31AZ-105X	CAPACITOR	1µF,10V
		C719	NCF31AZ-105X	CAPACITOR	1µF,10V
		C720	QETN1HM-336Z	E CAPACITOR	33µF,50V
		C721	NCB31HK-122X	CAPACITOR	0.0012µF,50V
		C722	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C723	NCF31HZ-103X	CAPACITOR	0.01µF,50V
		C724	NCF31HZ-103X	CAPACITOR	0.01µF,50V
		C725	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C726	NCB31HK-153X	CAPACITOR	0.015µF,50V
		C727	X-E524U2100D	E CAPACITOR	10µF,16V
		C728	X-E50HU5100M	E CAPACITOR	10µF,50V
		C729	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C730	NCB31HK-153X	CAPACITOR	0.015µF,50V
		C731	X-E50HU5R22M	E CAPACITOR	0.22µF,50V
		C732	NCF31HZ-103X	CAPACITOR	0.01µF,50V
		C734	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C735	X-E02LU54R7M	E CAPACITOR	4.7µF,50V
		C736	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C737	QEKJ1HM-475Z	E CAPACITOR	4.7µF,50V
		C738	NCF31HZ-103X	CAPACITOR	0.01µF,50V
		C739	QEKJ1CM-476Z	E CAPACITOR	47µF,16V
		C740	X-E50HU3330M	E CAPACITOR	33µF,25V
		C741	X-E524U2100D	E CAPACITOR	10µF,16V
		C742	X-E524U2100D	E CAPACITOR	10µF,16V
		C743	X-E524U5R22D	E CAPACITOR	0.22µF,50V
		C744	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C746	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C747	QETN1HM-106Z	E CAPACITOR	10µF,50V
		C748	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C749	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C750	X-E524U52R2D	E CAPACITOR	2.2µF,50V
		C751	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C752	X-E524U2220D	E CAPACITOR	22µF,16V
		C754	QEKJ1CM-476Z	E CAPACITOR	47µF,16V
		C755	X-CS0PB04H4K	CAPACITOR	0.022µF,50V
		C756	X-E524U2100D	E CAPACITOR	10µF,16V
		C757	NCF31AZ-105X	CAPACITOR	1µF,10V
		C758	X-E524U2220D	E CAPACITOR	22µF,16V
		C759	X-E50HU4220M	E CAPACITOR	22µF,35V
		C760	NCF31AZ-105X	CAPACITOR	1µF,10V
		C761	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
		C762	X-CS0PCH4U2J	CAPACITOR	680pF,50V
		C763	X-CS0PCH4U2J	CAPACITOR	680pF,50V
		C3001	X-CS0RB0216K	CAPACITOR	1µF,16V
		C3002	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C3004	X-CS0PB04H4K	CAPACITOR	0.022µF,50V
		C3005	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C3006	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C3007	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C3008	NCB31HK-472X	CAPACITOR	0.0047µF,50V
		C3009	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C3010	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C3013	QEKJ0JM-226Z	E CAPACITOR	22µF,6.3V
		C3014	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C3015	X-CS0PCH4W2J	CAPACITOR	820pF,50V
		C3016	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
		C3017	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C3018	NDC31HJ-151X	CAPACITOR	150pF,50V
		C3019	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C3020	X-CS0PB04H4K	CAPACITOR	0.022µF,50V
		C3021	QEKJ1CM-106Z	E CAPACITOR	10µF,16V
		C3022	NDC31HJ-471X	CAPACITOR	470pF,50V
		C3023	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C3024	NDC31HJ-150X	CAPACITOR	15pF,50V
		C3025	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C3027	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C3029	QEKJ0JM-476Z	E CAPACITOR	47µF,6.3V
		C3030	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3031	NCB31HK-152X	CAPACITOR	0.0015µF,50V
		C3032	QEKJ1HM-225Z	E CAPACITOR	2.2µF,50V
		C3033	QETN1VM-337Z	E CAPACITOR	330µF,35V
		C3034	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3036	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C3038	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3040	NCF31AZ-105X	CAPACITOR	1µF,10V
		C3041	NCB31HK-152X	CAPACITOR	0.0015µF,50V
		C3044	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C3045	QEKJ1HM-474Z	E CAPACITOR	0.47µF,50V
		C3049	NDC31HJ-101X	CAPACITOR	100pF,50V
		C3050	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C3052	QEKJ0JM-226Z	E CAPACITOR	22µF,6.3V
		C3053	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C3061	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C3065	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C8004	NDC31HJ-471X	CAPACITOR	470pF,50V
		C8013	QETN1HM-106Z	E CAPACITOR	10µF,50V
		C8014	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C8015	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C8019	QEKJ1CM-106Z	E CAPACITOR	10µF,16V
		C8031	QEKJ1HM-475Z	E CAPACITOR	4.7µF,50V
		C8032	X-E00NU24R7M	E CAPACITOR	4.7µF,16V
		C8053	QEKJ1CM-106Z	E CAPACITOR	10µF,16V
		C8057	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C8075	QEKJ1HM-475Z	E CAPACITOR	4.7µF,50V
		C8099	NDC31HJ-471X	CAPACITOR	470pF,50V
	⚠	D502	X-D2WTRM11C0	DIODE	RM11C-EIC
	⚠	D503	X-D2WTRM11C0	DIODE	RM11C-EIC
		D504	1SS133-T2	DIODE	
	⚠	D505	X-D2WTRM11C0	DIODE	RM11C-EIC
	⚠	D506	X-D2WTRM11C0	DIODE	RM11C-EIC
	⚠	D507	X-D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
		D509	SARS01-T2	DIODE,SILICON	
	⚠	D510	MTZJ27B-T2	ZENER	
	⚠	D511	X-D28T21DQN4	DIODE,SCHOTTKY	21DQ04N-TA2B1
	⚠	D512	X-D28T21DQN4	DIODE,SCHOTTKY	21DQ04N-TA2B1
		D513	X-D2WXN40050	DIODE	1N4005-EIC
		D514	MTZJ12C-T2	ZENER	
	⚠	D515	X-D28T21DQN4	DIODE,SCHOTTKY	21DQ04N-TA2B1
		D518	1SS133-T2	DIODE	
	⚠	D522	X-D28TELS6N6	DIODE,RECTIFER	10ELS6N-TA1B2

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	⚠	D523	MTZJ33B-T2	ZENER	
		D524	1SS133-T2	DIODE	
		D526	MTZJ3.3B	ZENER	
		D528	1SS133-T2	DIODE	
		D530	X-D28TELS6N6	DIODE,RECTIFER	10ELS6N-TA1B2
		D531	X-D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
		D532	MTZJ3.3B	ZENER	
		D534	1SS133-T2	DIODE	
		D535	1SS133-T2	DIODE	
		D536	1SS133-T2	DIODE	
		D537	1SS133-T2	DIODE	
		D538	1SS133-T2	DIODE	
		D539	1SS133-T2	DIODE	
		D651	X-0021E5Q212	LED	LTL-1CHGT-002A
		D656	X-D2WXN40050	DIODE	1N4005-EIC
		D701	1SS133-T2	DIODE	
		D702	MTZJ5.1B	DIODE,ZENER	
		D3001	X-0010E00330	INFRARED LED	LTE-3271T-012A-O
		D3007	1SS133-T2	DIODE	
		D3009	1SS133-T2	DIODE	
		D8002	MTZJ6.8B-T2	ZENER	
		D8003	MTZJ6.8B-T2	ZENER	
		D8008	1SS133-T2	DIODE	
		IC101	X-I03F3206M0	IC	LA71206M-MPB
	⚠	IC501	X-I1KJ9A431A	IC	KIA431A-AT
	⚠	IC502	X-I1KA98R09A	IC	KIA78R09API
	⚠	IC503	X-000220001W	PHOTO COUPLER	PS2561L1-1-V(W)
		IC701	AN3663FBP	IC	
		IC3001	X-I54F50138A	IC	OEC0138A
		IC3003	X-I9UF032310	IC	PST3231NR
		IC3099	X-A2C508X015	IC	S-24C04BFJ-TB
		IC4005	X-IF9J0164A6	IC	M12L64164A-6T
		IC8005	MM1501XN-X	IC	
		Q101	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q102	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q103	X-TPAAC05002	TRANSISTOR	KRA103SRTK
		Q104	X-TCAT032034	TRANSISTOR	KTC3203_Y-AT
		Q105	X-TAATA12660	TRANSISTOR	KTA1266-AT(Y,GR)
		Q106	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q107	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q109	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q301	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
	⚠	Q501	X-T41F026510	TRANSISTOR,FIELD EFFECT	2SK2651-01MR
	⚠	Q502	X-TD3T007340	TRANSISTOR	2SD734(E,F)-AA
	⚠	Q503	X-TCAT03209Y	TRANSISTOR	KTC3209_Y-AT
	⚠	Q504	X-TAAT012714	TRANSISTOR	KTA1271_Y-AT
	⚠	Q505	X-TCAT03209Y	TRANSISTOR	KTC3209_Y-AT
		Q506	KRC103S-X	TRANSISTOR	
		Q507	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q508	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q509	KRC103S-X	TRANSISTOR	
	⚠	Q510	X-TCAT032034	TRANSISTOR	KTC3203_Y-AT
	⚠	Q511	X-TAAT01241Y	TRANSISTOR	KTA1241_Y-AT
		Q513	2SC2412K/RS/-X	TRANSISTOR	
		Q514	2SC2412K/RS/-X	TRANSISTOR	
		Q530	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q531	2SA1037AK/RS/-X	TRANSISTOR	
		Q651	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q652	KRC103S-X	TRANSISTOR	
		Q653	KRC103S-X	TRANSISTOR	
		Q654	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q655	KRC103S-X	TRANSISTOR	
		Q656	KRC103S-X	TRANSISTOR	
		Q657	KRC103S-X	TRANSISTOR	
		Q658	KRC103S-X	TRANSISTOR	
		Q659	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q660	KRC103S-X	TRANSISTOR	
		Q661	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q662	KRC103S-X	TRANSISTOR	
		Q663	KRC103S-X	TRANSISTOR	
		Q664	KRC103S-X	TRANSISTOR	
		Q665	X-TAAA1504SY	TRANSISTOR	KTA1504S_Y_RTK
		Q666	X-TPAAC05002	TRANSISTOR	KRA103SRTK
		Q3001	X-0002700690	PHOTO COUPLER	RPI-303
		Q3002	X-0002700690	PHOTO COUPLER	RPI-303
		Q3003	X-TPAAC05002	TRANSISTOR	KRA103SRTK
		Q3004	X-0002700680	PHOTO TRANSISTOR	RPI-352C40N
		Q3005	X-0002700680	PHOTO TRANSISTOR	RPI-352C40N
		Q3006	X-0000M00390	PHOTO TRANSISTOR	ST-304L
		Q3007	KRC103S-X	TRANSISTOR	
		Q3008	X-0000M00390	PHOTO TRANSISTOR	ST-304L
		Q8003	KRC103S-X	TRANSISTOR	
		Q8004	X-TAATA12660	TRANSISTOR	KTA1266-AT(Y,GR)
		Q8005	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q8006	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q8007	X-TPAAC05002	TRANSISTOR	KRA103SRTK
		B501	X-024HT03563	CORE,BEADS	
		B502	X-024HT03553	CORE,BEADS	
		L101	X-031626009R	COIL,BIAS OSC	
		L102	QQL29BJ-101Z	COIL	100µH
		L103	QQL071J-5R6Y	COIL	5.6µH
		L105	QQL29BJ-101Z	COIL	100µH
		L106	QQL29BJ-220Z	COIL	22µH
		L107	QQL29BJ-220Z	COIL	22µH
		L301	QQL29BJ-220Z	COIL	22µH
	⚠	L501	X-029T000107	COIL,LINE FILTER	
		L502	X-02AHB0A0A4	CORE,FERRITE	
		L505	QQL29BJ-220Z	COIL	22µH
	⚠	L506	X-02167E220K	COIL	22µH
		L701	QQL29BJ-220Z	COIL	22µH
		L702	QQL29BJ-220Z	COIL	22µH
		L703	QQL29BJ-101Z	COIL	100µH
		L704	X-0216A6100K	COIL	10µH
		L3002	X-02167E220K	COIL	22µH
		L3003	QQL071J-120Y	COIL	12µH
		L8004	QQL071J-470Y	COIL	47µH
	⚠	T501	X-0481260064	TRANSFORMER,SWITCHING	81260064
		J8001	X-060J411018	RCA JACK	
		J8003	X-060J401087	RCA JACK	
		J8004	X-060J401087	RCA JACK	
		J8005	X-060J421025	RCA JACK	
		SW651	QSW0456-001Z	TACT SWITCH	
		SW652	QSW0456-001Z	TACT SWITCH	
		SW653	QSW0456-001Z	TACT SWITCH	
		SW654	QSW0456-001Z	TACT SWITCH	
		SW655	QSW0456-001Z	TACT SWITCH	
		SW3001	X-0508S11001	LEAF SWITCH	
		CP101	X-0697290620	CONNECTOR PCB SIDE	
		CP102	QFG1208C1-06	CONNECTOR,PCB SIDE	
		CP103	X-067U002019	WIRE HOLDER	
		CP651	X-069J750019	CONNECTOR PCB SIDE	
		CP3001	X-06972C0010	CONNECTOR PCB SIDE	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		CP8002	QFG1208C1-08	CONNECTOR,PCB SIDE	
		X101	X-100DT3R528	CRYSTAL	HC-49/U
		X3001	X-100BT01004	CRYSTAL	HC-49U/S
	⚠	TU301	X-0162300038	RF UNIT	
	⚠	F501	QMF51W2-2R5-J8	FUSE	T2.5A,250V
		FH501	X-06710T0006	FUSE HOLDER	
		FH502	X-06710T0006	FUSE HOLDER	
	⚠	CD501	X-120S4A5802	CORD,AC BUSH	
		CP501	X-06CH2C0302	CORD,CONNECTOR	
		EL001	X-124120301A	EYE LET	
		OS651	X-077Q037001	REMOTE RECEIVER	
		V651	X-0040F34001	LED DISPLAY	

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OPERATION BOARD ASSEMBLY<28>

PCB270	X-A2C508H270	OPERATION BOARD ASSY	
R685	QRE141J-133Y	RESISTOR	13KΩ,1/4W
R686	QRE141J-682Y	RESISTOR	6.8KΩ,1/4W
R687	QRE141J-392Y	RESISTOR	3.9KΩ,1/4W
R688	QRE141J-272Y	RESISTOR	2.7KΩ,1/4W
R689	QRE141J-332Y	RESISTOR	3.3KΩ,1/4W
R690	QRE141J-223Y	RESISTOR	22KΩ,1/4W
D685	X-0021E5Q212	LED	LTL-1CHGT-002A
SW685	QSW0707-001Z	TACT SWITCH	
SW686	QSW0707-001Z	TACT SWITCH	
SW687	QSW0707-001Z	TACT SWITCH	
SW688	QSW0707-001Z	TACT SWITCH	
SW689	QSW0707-001Z	TACT SWITCH	
SW690	QSW0707-001Z	TACT SWITCH	
CD681	X-122H051202	CORD,JUMPER	
CP681	X-069J750019	CONNECTOR PCB SIDE	

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DVD BOARD ASSEMBLY<50>

PCB130	X-A2C508H130	DVD BOARD ASSY	
R2301	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R2303	NRSA63J-2R2X	MG RESISTOR	2.2Ω,1/16W
R2304	NRSA63J-2R2X	MG RESISTOR	2.2Ω,1/16W
R2305	NRSA63J-513X	MG RESISTOR	51KΩ,1/16W
R2306	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2307	NRSA63J-273X	MG RESISTOR	27KΩ,1/16W
R2308	NRSA02J-203X	MG RESISTOR	20KΩ,1/16W
R2309	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R2310	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2312	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2313	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2314	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2316	NRSA02J-203X	MG RESISTOR	20KΩ,1/16W
R2318	NRSA63J-562X	MG RESISTOR	5.6KΩ,1/16W
R2319	NRSA63J-273X	MG RESISTOR	27KΩ,1/16W
R2321	NRSA63J-513X	MG RESISTOR	51KΩ,1/16W
R2322	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
R2323	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
R2324	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
R2325	NRSA63J-682X	MG RESISTOR	6.8KΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R2326	NRSA63J-822X	MG RESISTOR	8.2KΩ,1/16W
		R2327	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2328	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2329	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2330	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2331	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R2334	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R2337	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R2601	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2602	NRSA63J-185X	MG RESISTOR	1.8MΩ,1/16W
		R2603	NRSA63F-133X	MG RESISTOR	13KΩ,1/16W
		R2604	NRSA63F-273X	MG RESISTOR	27KΩ,1/16W
		R2605	NRSA63F-103X	MG RESISTOR	10KΩ,1/16W
		R2607	NRSA63J-122X	MG RESISTOR	1.2KΩ,1/16W
		R2608	NRSA63J-122X	MG RESISTOR	1.2KΩ,1/16W
		R2609	NRSA63J-122X	MG RESISTOR	1.2KΩ,1/16W
		R2610	NRSA63F-512X	MG RESISTOR	5.1KΩ,1/16W
		R2611	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2612	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2613	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2614	NRSA63F-123X	MG RESISTOR	12KΩ,1/16W
		R2615	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
		R2616	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2617	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2618	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
		R2619	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R2620	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2621	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R2622	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2623	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2624	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2625	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2626	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2627	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R2628	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
		R2629	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R2630	NRSA63J-223X	MG RESISTOR	22KΩ,1/16W
		R2631	NRSA63J-105X	MG RESISTOR	1MΩ, 1/16W
		R2632	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2635	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2643	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2644	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R2645	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R2646	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R2647	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2648	NRSA02J-133X	MG RESISTOR	13KΩ,1/16W
		R2649	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R2650	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2651	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R2652	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R2653	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R4001	NRSA02F-391X	MG RESISTOR	390Ω,1/16W
		R4002	NRSA63F-750X	MG RESISTOR	75Ω,1/16W
		R4003	NRSA63F-750X	MG RESISTOR	75Ω,1/16W
		R4004	NRSA02F-820X	MG RESISTOR	82Ω,1/16W
		R4005	NRSA63F-750X	MG RESISTOR	75Ω,1/16W
		R4008	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R4012	NRSA63J-105X	MG RESISTOR	1MΩ, 1/16W
		R4014	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4016	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R4018	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R4019	NRSA63J-330X	MG RESISTOR	33Ω,1/16W
		R4020	NRSA63J-330X	MG RESISTOR	33Ω,1/16W
		R4021	NRSA63J-330X	MG RESISTOR	33Ω,1/16W
		R4022	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R4023	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4024	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4025	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
		R4026	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R4027	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R4031	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4032	NRSA63F-511X	MG RESISTOR	510Ω,1/16W
		R4033	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
		R4034	NRSA63F-102X	MG RESISTOR	1KΩ,1/16W
		R4035	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4036	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4037	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4038	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4039	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4040	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4041	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4042	NRSA02J-680X	MG RESISTOR	68Ω,1/16W
		R4043	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R4044	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R4045	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4046	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4047	NRSA63J-330X	MG RESISTOR	33Ω,1/16W
		R4048	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R4049	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4050	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4051	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4052	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R4053	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R4054	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R7306	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R7307	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8101	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8102	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
		R8103	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
		R8104	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8105	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R8106	NRSA63J-473X	MG RESISTOR	47KΩ,1/16W
		R8107	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8108	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8109	NRSA63J-123X	MG RESISTOR	12KΩ,1/16W
		R8110	NRSA63J-123X	MG RESISTOR	12KΩ,1/16W
		R8111	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8112	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8113	NRSA02J-560X	MG RESISTOR	56Ω,1/16W
		R8114	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R8115	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8116	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8117	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8118	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R8119	NRSA63J-474X	MG RESISTOR	470KΩ,1/16W
		R8120	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R8121	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R8122	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R8123	NRSA63J-472X	MG RESISTOR	4.7KΩ,1/16W
		R8124	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R8128	NRSA63J-102X	MG RESISTOR	1KΩ,1/16W
		R8129	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		R8130	NRSA63J-222X	MG RESISTOR	2.2KΩ,1/16W
		R8131	NRSA63J-152X	MG RESISTOR	1.5KΩ,1/16W
		R8132	NRSA63J-332X	MG RESISTOR	3.3KΩ,1/16W
		R8133	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R8134	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8135	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
		R8136	NRSA02J-680X	MG RESISTOR	68Ω,1/16W
		R8137	NRSA63J-104X	MG RESISTOR	100KΩ,1/16W
		R8151	NRSA63J-103X	MG RESISTOR	10KΩ,1/16W
		C2301	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2302	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2303	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2304	NDC31HJ-221X	CAPACITOR	220pF,50V
		C2305	NDC31HJ-221X	CAPACITOR	220pF,50V
		C2306	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2307	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2308	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2309	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2310	QETN1CM-476Z	E CAPACITOR	47μF,16V
		C2311	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2312	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2603	NCB31HK-222X	CAPACITOR	0.0022μF,50V
		C2604	NCB31HK-222X	CAPACITOR	0.0022μF,50V
		C2605	NCB31HK-222X	CAPACITOR	0.0022μF,50V
		C2606	NCB31HK-222X	CAPACITOR	0.0022μF,50V
		C2607	NDC31HJ-330X	CAPACITOR	33pF,50V
		C2608	QETN1CM-476Z	E CAPACITOR	47μF,16V
		C2609	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2610	NCB31HK-682X	CAPACITOR	0.0068μF,50V
		C2611	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2612	NCB31HK-333X	CAPACITOR	0.033μF,25V
		C2613	NDC31HJ-221X	CAPACITOR	220pF,50V
		C2614	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2615	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2616	NDC31HJ-471X	CAPACITOR	470pF,50V
		C2617	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2618	NCB31CK-104X	CAPACITOR	0.1μF,16V
		C2619	NDC31HJ-561X	CAPACITOR	560pF,50V
		C2620	NCB31HK-562X	CAPACITOR	0.0056μF,50V
		C2621	NCB31HK-562X	CAPACITOR	0.0056μF,50V
		C2622	NCB31HK-562X	CAPACITOR	0.0056μF,50V
		C2623	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2624	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2625	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2626	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2627	NCB31HK-333X	CAPACITOR	0.033μF,25V
		C2628	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2629	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2632	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2633	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2634	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2635	NCB31HK-102X	CAPACITOR	0.001μF,50V
		C2636	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2637	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2638	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2639	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2640	QETN0JM-107Z	E CAPACITOR	100μF,6.3V
		C2641	QETN0JM-107Z	E CAPACITOR	100μF,6.3V
		C2642	NCB31EZ-104X	CAPACITOR	0.1μF,25V
		C2643	QETN1CM-476Z	E CAPACITOR	47μF,16V
		C2644	QETN1CM-476Z	E CAPACITOR	47μF,16V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2645	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C2646	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C2647	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C2648	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C2649	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C2654	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C2655	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C2657	NDC31HJ-101X	CAPACITOR	100pF,50V
		C2658	NDC31HJ-101X	CAPACITOR	100pF,50V
		C2659	NDC31HJ-101X	CAPACITOR	100pF,50V
		C2660	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4001	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4002	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4003	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4004	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4005	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4006	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4007	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4008	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4009	QETN0JM-107Z	E CAPACITOR	100µF,6.3V
		C4010	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4011	QETN0JM-107Z	E CAPACITOR	100µF,6.3V
		C4012	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4013	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4014	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4015	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4016	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4017	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4018	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4019	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4020	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4021	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4022	X-CS0PCH4H1J	CAPACITOR	22pF,50V
		C4023	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4024	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4025	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4026	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4027	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4028	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4029	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4030	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4031	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4032	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C4033	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4035	X-CS0PCH4H1J	CAPACITOR	22pF,50V
		C4036	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C4037	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4038	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4039	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4040	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4041	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4044	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4045	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4046	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4047	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4050	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4051	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C4062	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4063	QETN0JM-107Z	E CAPACITOR	100µF,6.3V
		C4064	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4065	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4066	NCB31AK-105X	CAPACITOR	1µF,10V
		C4067	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4068	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4069	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4070	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4071	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4072	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4073	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4074	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4075	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4076	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4077	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4078	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4079	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4080	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4081	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4082	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C4083	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4084	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C4085	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C4086	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C4087	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4088	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4089	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4090	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4091	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4092	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4093	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4094	NDC31HJ-101X	CAPACITOR	100pF,50V
		C4095	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4096	NCB31HK-102X	CAPACITOR	0.001µF,50V
		C4097	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C4098	NDC31HJ-100X	CAPACITOR	10pF,50V
		C7301	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C7302	X-E02LU2101M	E CAPACITOR	100µF,16V
		C7303	QETL1HM-226	E CAPACITOR	22µF,50V
		C7304	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C7305	X-CS0PCH4W2J	CAPACITOR	820pF,50V
		C7306	X-CS0PCH4W2J	CAPACITOR	820pF,50V
		C7308	X-E02LU52R2M	E CAPACITOR	2.2µF,50V
		C7310	X-E02LU52R2M	E CAPACITOR	2.2µF,50V
		C7311	QETN1HM-106Z	E CAPACITOR	10µF,50V
		C8101	QETN1HM-336Z	E CAPACITOR	33µF,50V
		C8102	NDC31HJ-101X	CAPACITOR	100pF,50V
		C8105	NCB31HK-152X	CAPACITOR	0.0015µF,50V
		C8106	NCB31HK-152X	CAPACITOR	0.0015µF,50V
		C8107	NDC31HJ-101X	CAPACITOR	100pF,50V
		C8110	NCB31EZ-104X	CAPACITOR	0.1µF,25V
		C8111	X-E02LU2101M	E CAPACITOR	100µF,16V
		C8112	QETL1HM-226	E CAPACITOR	22µF,50V
		C8113	QETL1HM-226	E CAPACITOR	22µF,50V
		C8114	X-E02LU52R2M	E CAPACITOR	2.2µF,50V
		C8115	X-E02LU54R7M	E CAPACITOR	4.7µF,50V
		C8118	X-E02LU52R2M	E CAPACITOR	2.2µF,50V
		C8119	QETN0JM-227Z	E CAPACITOR	220µF,6.3V
		C8120	NDC31HJ-221X	CAPACITOR	220pF,50V
		C8121	NCB31HK-103X	CAPACITOR	0.01µF,50V
		C8122	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C8123	X-CS0PB04H4K	CAPACITOR	0.022µF,50V
		C8124	QETN1CM-476Z	E CAPACITOR	47µF,16V
		C8125	NCB31EZ-104X	CAPACITOR	0.1µF,25V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C8126	NCB31CK-104X	CAPACITOR	0.1µF,16V
		C8129	NDC21HJ-101X	CAPACITOR	100pF,50V
		C8130	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8131	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8132	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8133	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8134	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C8135	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C8136	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C8137	X-CS0PCH4B1J	CAPACITOR	12pF,50V
		C8138	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8139	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8140	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8141	NDC31HJ-151X	CAPACITOR	150pF,50V
		C8142	NDC21HJ-100X	CAPACITOR	10pF,50V
		C8143	NDC21HJ-100X	CAPACITOR	10pF,50V
		C8144	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C8145	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C8146	QETN0JM-477Z	E CAPACITOR	470µF,6.3V
		C8147	X-CS0RCH4L1J	CAPACITOR	33pF,50V
		C8148	X-CS0RCH4L1J	CAPACITOR	33pF,50V
		C8149	X-CS0RCH4L1J	CAPACITOR	33pF,50V
		D2601	X-DDARDS1200	DIODE	KDS120RTK
		D8101	X-DDDRL41480	DIODE	MCL4148
		D8102	X-DDDRL41480	DIODE	MCL4148
		D8103	X-DDDRL41480	DIODE	MCL4148
		D8106	X-DDDRL41480	DIODE	MCL4148
		D8107	X-DDDRL41480	DIODE	MCL4148
		D8108	X-DDDRL41480	DIODE	MCL4148
		D8109	X-DDDRL41480	DIODE	MCL4148
		D8110	X-DDDRL41480	DIODE	MCL4148
		D8111	X-DDDRL41480	DIODE	MCL4148
		D8112	X-DDDRL41480	DIODE	MCL4148
		D8113	X-DDDRL41480	DIODE	MCL4148
		IC2301	X-I03F065600	IC	LA6560
		IC2601	X-ICQK067070	IC	ZR36707TQC
		IC2602	BA10358F-XE	IC	
		IC4001	X-ICQK067620	IC	ZR36762
		IC4002	S-24C02BFJ-X	IC	
		IC4003	X-I0GF9XZ010	IC	PQ070XZ01ZP
		IC4005	X-IF9J0164A7	IC	M12L64164A-7T
		IC4007	X-ICMJ0800A7	IC	SST39VF800A-70-4C-EK
		IC7301	X-I17F0742K0	IC	PCM1742KE/2K
		IC8101	NJM4580M	IC	
		Q2601	2SA1036K/QR/-X	TRANSISTOR	2SA1036KT146
		Q2602	2SA1036K/QR/-X	TRANSISTOR	2SA1036KT146
		Q2603	X-T27T030180	FET	2SK3018
		Q2604	X-T27T030180	FET	2SK3018
		Q2605	X-T27T030180	FET	2SK3018
		Q8101	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q8102	KRC103S-X	TRANSISTOR	
		Q8103	X-TPAAA05001	TRANSISTOR	KRA101SRTK
		Q8104	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q8105	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		Q8106	X-TNAAD05001	TRANSISTOR	KRC104SRTK
		Q8107	X-TCAA3875SY	TRANSISTOR	KTC3875S_Y_RTK
		B2601	X-024HC31022	CORE,BEADS	
		B2602	X-024HC31022	CORE,BEADS	
		B2603	X-024HC31022	CORE,BEADS	
		B2604	X-024HC31022	CORE,BEADS	
		B2605	X-024HC31022	CORE,BEADS	
		B4001	X-024HC31022	CORE,BEADS	
		B4002	X-024HC31022	CORE,BEADS	
		B4003	X-024HC31022	CORE,BEADS	
		B4004	X-024HC31022	CORE,BEADS	
		B4005	X-024HC31022	CORE,BEADS	
		B4006	X-024HC31022	CORE,BEADS	
		B4007	X-024HC31022	CORE,BEADS	
		B4008	X-024HC31022	CORE,BEADS	
		B7301	X-024HC31022	CORE,BEADS	
		B7302	X-024HC31022	CORE,BEADS	
		B8101	X-024HC31022	CORE,BEADS	
		B8102	X-024HC31022	CORE,BEADS	
		B8103	X-024HC31022	CORE,BEADS	
		L4001	QQL29BJ-2R2Z	COIL	2.2µH
		L8101	QQL29BK-1R0Z	COIL	1µH
		L8102	QQL29BK-1R0Z	COIL	1µH
		L8103	QQL29BK-1R0Z	COIL	1µH
		L8104	QQL29BK-1R0Z	COIL	1µH
		L8105	QQL29BK-R33Z	COIL	0.33µH
		L8106	QQL29BK-R33Z	COIL	0.33µH
		J8101	X-060J411029	RCA JACK	
		J8102	X-063D700005	JACK	
		J8103	X-060J411024	RCA JACK	
		SW8101	X-0510Y24001	SWITCH SLIDE	SK42H0IG9A
		CP2601	X-069GYOT079	CONNECTOR,PCB SIDE	
		CP2602	X-069EV83010	CONNECTOR,PCB SIDE	
		CP2603	X-069S230629	CONNECTOR,PCB SIDE	
		CP4002	X-069S2C0629	CONNECTOR,PCB SIDE	
		CP8102	QFG1208C1-08	CONNECTOR,PCB SIDE	
		X4001	X-100BT02701	CRYSTAL	27MHz
		OS8101	X-07AQ000009	OPTICALDEVICE	OFTG038101