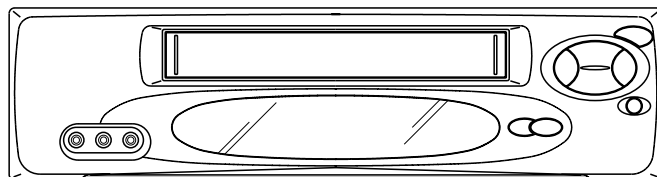


***Memorex***<sup>®</sup>

**MVR4041**

# **SERVICE MANUAL**

**VIDEO CASSETTE RECORDER**



**VHS**

**ORIGINAL  
MFR'S VERSION A**


## SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

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

### 2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  mark, the designated parts must be used.

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

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

### 4. PERFORM A SAFETY CHECK AFTER SERVICING

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

## HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

#### 1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

#### 2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

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## GENERAL SPECIFICATIONS

|                |                          |                                      |   |   |   |  |
|----------------|--------------------------|--------------------------------------|---|---|---|--|
| <b>G-1</b>     | <b>VCR System</b>        | System                               | VHS Player / Recorder   |   |   |  |
|                |                          | Video System                         | NTSC  |   |   |  |
|                |                          | Hi-Fi STEREO                         | Yes   |   |   |  |
|                |                          | NTSC PB(PAL60Hz)                     | No  |   |   |  |
|                |                          | Deck                                 | DECK<br>Loading System<br>Motor   | OVD-6S<br>Front<br>3  |   |  |
|                |                          | Heads                                | Video Head  | 4Head   |   |  |
|                |                          |                                      | FM Audio Head   | 2Head   |   |  |
|                |                          |                                      | Normal Audio /Control   | Mono  |   |  |
|                |                          |                                      | Erase(Full Track Erase)   | Yes   |   |  |
|                |                          | Tape Speed                           | Rec   | PAL<br>NTSC   | -<br>SP/SLP                                     |  |
|                |                          |                                      | Play  | PAL<br>NTSC   | -<br>SP/LP/SLP                                  |  |
|                |                          | Fast Forward / Rewind Time (Approx.) |   |   | FF:4'50"/REW:2'30"                              |  |
|                |                          |                                      |   | with Cassette   | T-120   |  |
|                |                          | Forward/Reverse                      |   | NTSC or PAL-M   | SP/LP/SLP=3x,5x/7x,9x/9x,15x                    |  |
| Picture Search |                          | PAL or SECAM                         | -   |   |   |  |
| Frame Advance  |                          | Slow                                 | 1/10  |   |   |  |
| Slow Speed     |                          | Variable Slow                        | 1/10  |   |   |  |
| <b>G-2</b>     | <b>Tuning System</b>     | Broadcasting System                  | US System M   |   |   |  |
|                |                          | Tuner and Receive CH                 | System<br>Destination<br>Tuning System<br>Input Impedance<br>CH Coverage  | 1Tuner<br>USA(w/CATV)<br>F-Synth<br>VHF/UHF 75 OHM<br>2-69,4A,A-5~ A-1,A-1,J~ W<br>W+1-W+84 |   |  |
|                |                          | Intermediate Frequency               | Picture(FP)<br>Sound(FS)<br>FP-FS   | 45.75MHz<br>41.25MHz<br>4.50MHz   |   |  |
|                |                          | Preset CH                            |   | No  |   |  |
|                |                          | RF Converter Output                  |   | Yes   |   |  |
|                |                          |                                      | Channel   | 3 or 4 ch   |   |  |
|                |                          |                                      | Level/Impedance   | 66dBu /75ohm  |   |  |
|                |                          |                                      | Sound Selector  | No  |   |  |
|                |                          |                                      | Stereo/Dual TV Sound  | US-ST   |   |  |
|                |                          | <b>G-3</b>                           | <b>Power</b>  | Power Source  | AC<br>DC  | 120V,60Hz<br>-                                     |
|                |                          |                                      |   | Power Consumption   | Power On(at AC)<br>Stand by (at AC)<br>Per Year | 9W at 120V 60Hz<br>1.7W at 120V 60Hz<br>- kWh/Year |
| Protector      | Power Fuse<br>Dew Sensor |                                      |   | Yes<br>No   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
| <b>G-4</b>     | <b>Signal</b>            | Video Signal                         | Input Level<br>Output Level<br>S/N Ratio (Weighted)<br>Horizontal Resolution at SP Mode   | 1 V p-p/75 ohm<br>1 V p-p/75 ohm<br>50<br>230Line   |   |  |
|                |                          | Audio Signal                         | (0dB=0.775Vrms)   | Input Level<br>Output Level<br>S/N Ratio at SP (Weighted)<br>Harmonic Distortion (1KHz)     | RCA-8dB/50Kohm<br>RCA-8dB/1Kohm<br>42dB<br>1.5% |  |
|                |                          |                                      | Frequency Response  | at SP<br>at LP<br>at SLP  | 100Hz - 10kHz<br>100Hz - 6kHz<br>100Hz - 4kHz   |  |
|                |                          | Hi-Fi Audio Signal                   | Dynamic Range : More than<br>Frequency Response<br>Wow And Flutter : Less than<br>Channel Separation : More than<br>Harmonic Distortion : Less than | 90dB<br>20Hz ~20kHz<br>0.01 %Wrms<br>60 dB<br>0.01  |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |
|                |                          |                                      |   |   |   |  |

## GENERAL SPECIFICATIONS

|                       |                           |                        |                 |                    |             |
|-----------------------|---------------------------|------------------------|-----------------|--------------------|-------------|
| <b>G-5</b>            | <b>Interface</b>          | Switch                 | Front           | Power              | Yes         |
|                       |                           |                        |                 | Play               | Yes         |
|                       |                           |                        |                 | Pause/Still        | No          |
|                       |                           |                        |                 | System Select      | No          |
|                       |                           |                        |                 | One Touch Playback | No          |
|                       |                           |                        |                 | Channel Up         | Yes         |
|                       |                           |                        | Channel Down    | Yes                |             |
|                       |                           |                        | F.FWD/Cue       | Yes                |             |
|                       |                           |                        | Eject/Stop      | Yes                |             |
|                       |                           |                        | Main Power SW   | No                 |             |
|                       |                           |                        | Volume Up       | No                 |             |
|                       |                           |                        | Volume Down     | No                 |             |
|                       |                           | Rew/Rev                | Yes             |                    |             |
|                       |                           | Rec/OTR                | Yes             |                    |             |
|                       |                           | Indicator              | Rear            | RF Output SW       | No          |
|                       |                           |                        |                 | Power              | No          |
|                       |                           |                        |                 | Stand by           | No          |
|                       |                           |                        |                 | Rec/OTR            | No          |
|                       |                           |                        |                 | Repeat             | No          |
|                       |                           |                        |                 | Tape In            | No          |
|                       |                           | Terminals              | Front           | Kurupika Guide     | No          |
|                       |                           |                        |                 | One Touch Playback | No          |
|                       |                           |                        |                 | Video Input        | RCA         |
|                       |                           |                        |                 |                    | Audio Input |
| Other Terminal        | No                        |                        |                 |                    |             |
| Rear                  | Video Input               |                        |                 | No                 |             |
|                       | Audio Input               |                        | No              |                    |             |
|                       | Video Output              |                        | RCA             |                    |             |
|                       | Audio Output              |                        | RCA x 2(Stereo) |                    |             |
|                       | Euro Scart                |                        | No              |                    |             |
|                       | DC Jack 12V(Center +)     |                        | No              |                    |             |
| VHF/UHF Antenna Input | F Type                    |                        |                 |                    |             |
| AC Inlet              | No                        |                        |                 |                    |             |
| <b>G-6</b>            | <b>Set Size</b>           | Approx. W x D x H (mm) |                 | 360 x 240 x 95     |             |
| <b>G-7</b>            | <b>Weight</b>             | Net (Approx.)          |                 | 3.2kg(7.1lbs)      |             |
|                       |                           | Gross (Approx.)        |                 | 4.6kg(10.2lbs)     |             |
| <b>G-8</b>            | <b>Regulation</b>         | Safety                 |                 | UL                 |             |
|                       |                           | Radiation              |                 | FCC                |             |
| <b>G-9</b>            | <b>Temperature</b>        | Operation              |                 | 5oC - 40oC         |             |
|                       |                           | Storage                |                 | -20oC - 60oC       |             |
| <b>G-10</b>           | <b>Operating Humidity</b> | Less then 80% RH       |                 |                    |             |

# GENERAL SPECIFICATIONS

|      |                   |                |  |                    |
|------|-------------------|----------------|--|--------------------|
| G-11 | On Screen Display | Menu           | Menu Type  | Yes                |
|      |                   |                | Character  | No                 |
|      |                   |                | ATS  | No                 |
|      |                   |                | 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                |
|      |                   |                | Pin Code Registration  | No                 |
|      |                   |                | System Set-Up  | No                 |
|      |                   |                | Clock Set  | Yes (Calendar 12H) |
|      |                   |                | Language   | Yes                |
|      |                   |                | No Noise Back Ground   | Yes                |
|      |                   |                | G-CODE(or SHOWVIEW or PLUSCODE)No. Entry                           | No                 |
|      |                   |                | NICAM 1/2,NICAM Off,Audio Output                                   | No                 |
|      |                   |                | Stereo,Audio Output,SAP  | Yes                |
|      |                   |                | Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)   | Yes                |
|      |                   |                | CH/AV  | Yes                |
|      |                   |                | Clock  | Yes                |
|      |                   |                | Repeat   | Yes                |
|      |                   |                | Pin Code   | No                 |
|      |                   |                | Tape Counter   | Yes                |
|      |                   |                | Index  | No                 |
|      |                   |                | Hotel Lock   | No                 |
|      |                   |                | Tape Speed   | Yes                |
|      |                   |                | Manual Tracking (Bar Setting)                                      | No                 |
|      |                   |                | Hi-Fi  | Yes                |
|      |                   |                | S-Repeat/SR-R/SR-Play  | No                 |
|      |                   |                | VPS  | No                 |
|      |                   |                | PDC  | No                 |
|      |                   |                | G-12   | OSD Language       |
| G-13 | Display           | Indicator      |  | English            |
|      |                   | Indicator Type |  | Yes                |
|      |                   |                | Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR | LED Module         |
|      |                   |                | Pause("Rec" Flash)   | Yes                |
|      |                   |                | Still("Play"Flush)   | Yes                |
|      |                   |                | Eject(Tape Mark Flash)   | Yes                |
|      |                   |                | Slow   | Yes                |
|      |                   |                | WKL,Y.M.D,Start,End  | No                 |
|      |                   |                | AFT  | No                 |
|      |                   |                | Repeat   | No                 |
|      |                   |                | A-DUB  | No                 |
|      |                   |                | VCR  | Yes                |
|      |                   |                | Memory   | No                 |
|      |                   |                | Index  | No                 |
|      |                   |                | VPS  | No                 |
|      |                   |                | PDC  | No                 |
|      |                   |                | SP   | No                 |
|      |                   |                | LP   | No                 |
|      |                   |                | SLP  | No                 |
|      |                   |                | AM   | No                 |
|      |                   |                | PM   | Yes                |
|      |                   |                | F1,F2  | No                 |
|      |                   |                | RF Output CH   | Yes                |
|      |                   |                | TAPE IN  | Yes                |

## GENERAL SPECIFICATIONS

|             |                                       |                                   |                               |     |
|-------------|---------------------------------------|-----------------------------------|-------------------------------|-----|
| <b>G-14</b> | <b>Clock, Timer and Timer Back-up</b> | Calendar                          | 1990/1/1 ~ 2089/12/31         |     |
|             |                                       | Timer Events                      | 8 prog/1 month                |     |
|             |                                       | One Touch Recording Max Time      | 5 Hours                       |     |
|             |                                       | OTPB Valid Time                   | No                            |     |
|             |                                       | Timer Back-up (at Power Off Mode) | 5 sec.                        |     |
| <b>G-15</b> | <b>Remote Control</b>                 | Unit                              | RC-EA                         |     |
|             |                                       | Glow in Dark Remocon              | No                            |     |
|             |                                       | Power Source                      | Voltage(D.C)<br>UM size x pcs |     |
|             |                                       |                                   | 3V<br>UM-4 x 2 pcs            |     |
|             |                                       | Total Keys                        | 35 Keys                       |     |
|             |                                       | Keys                              | Power                         | Yes |
|             |                                       |                                   | 1                             | Yes |
|             |                                       |                                   | 2                             | Yes |
|             |                                       |                                   | 3                             | Yes |
|             |                                       |                                   | 4                             | Yes |
|             |                                       |                                   | 5                             | Yes |
|             |                                       |                                   | 6                             | Yes |
|             |                                       |                                   | 7                             | Yes |
|             |                                       |                                   | 8                             | Yes |
|             |                                       |                                   | 9                             | Yes |
|             |                                       |                                   | 0                             | Yes |
|             |                                       |                                   | CH Up                         | Yes |
|             |                                       |                                   | CH Down                       | Yes |
|             |                                       |                                   | Input Select                  | Yes |
|             |                                       |                                   | Play                          | Yes |
|             |                                       |                                   | F.Fwd                         | Yes |
|             |                                       |                                   | Rew                           | Yes |
|             |                                       |                                   | Pause/Still                   | Yes |
|             |                                       |                                   | Stop                          | Yes |
|             |                                       |                                   | Rec/OTR                       | Yes |
|             |                                       |                                   | Eject                         | No  |
|             |                                       |                                   | Counter Reset                 | Yes |
|             |                                       |                                   | Speed                         | Yes |
|             |                                       |                                   | Timer Rec                     | Yes |
|             |                                       |                                   | TV Monitor                    | No  |
|             |                                       |                                   | Quick View                    | No  |
|             |                                       |                                   | Program                       | No  |
|             |                                       |                                   | Slow                          | Yes |
|             |                                       |                                   | Auto Tracking                 | Yes |
|             |                                       |                                   | Set/Tracking+                 | Yes |
|             | Set/ Tracking -                       | Yes                               |                               |     |
|             | Menu                                  | Yes                               |                               |     |
|             | Enter                                 | Yes                               |                               |     |
|             | Cancel                                | Yes                               |                               |     |
|             | Call                                  | Yes                               |                               |     |
|             | TV/VCR                                | Yes                               |                               |     |
|             | Sleep Timer                           | No                                |                               |     |
|             | Muting                                | No                                |                               |     |
|             | Clock/Counter                         | Yes                               |                               |     |
|             | Zero Return                           | Yes                               |                               |     |
|             | CM Skip                               | No                                |                               |     |
|             | Audio Select                          | Yes                               |                               |     |

## GENERAL SPECIFICATIONS

|                          |                    |   |                              |                 |
|--------------------------|--------------------|---|------------------------------|-----------------|
| <b>G-16</b>              | <b>Features</b>    | Auto Head Cleaning                                | Yes                          |                 |
|                          |                    | Auto Tracking                                     | Yes                          |                 |
|                          |                    | Index Search                                      | No                           |                 |
|                          |                    | HQ (VHS Standard High Quality)                    | Yes                          |                 |
|                          |                    | Auto Power On, Auto Play, Auto Rewind, Auto Eject | Yes                          |                 |
|                          |                    | Auto Power Off                                    | Yes                          |                 |
|                          |                    | Forward/Reverse Picture Search                    | Yes                          |                 |
|                          |                    | VIDEO PLUS+(SHOWVIEW,G-CODE)                      | No                           |                 |
|                          |                    | ATS   | No                           |                 |
|                          |                    | PDC   | No                           |                 |
|                          |                    | VPS   | No                           |                 |
|                          |                    | One Touch Playback                                | No                           |                 |
|                          |                    | Picture Control                                   | No                           |                 |
|                          |                    | Auto Preset                                       | No                           |                 |
|                          |                    | Channel Lock                                      | No                           |                 |
|                          |                    | Hotel Lock  | No                           |                 |
|                          |                    | Anti Theft  | No                           |                 |
|                          |                    | Audio Dubbing                                     | No                           |                 |
|                          |                    | Remort Control Code 1/2                           | No                           |                 |
|                          |                    | SQPB  | No                           |                 |
| CATV                     | Yes                |   |                              |                 |
| Energy Star              | Yes                |   |                              |                 |
| MTS(SAP)                 | Yes                |   |                              |                 |
| CM Skip(30sec x 6 Times) | No                 |   |                              |                 |
| <b>G-17</b>              | <b>Accessories</b> | Owner's Manual                                    | Language<br>w/Guarantee Card | English/Spanish |
|                          |                    | Remote Control Unit                               |                              | Yes             |
|                          |                    | Dew Cation Sheet                                  |                              | No              |
|                          |                    | Video Cassette Tape                               |                              | No              |
|                          |                    | Battery   | UM size x pcs                | UM-4 x 2 pcs    |
|                          |                    | Safety Tip  |                              | No              |
|                          |                    | Toll Free Insert Sheet                            |                              | No              |
|                          |                    | Quick Set-Up Sheet                                |                              | No              |
|                          |                    | Information Sheet (Buyer Supply)                  |                              | No              |
|                          |                    | 75 Ohm Coaxial Cable                              |                              | Single shield   |
|                          |                    | Rod Antenna                                       |                              | No              |
|                          |                    |   | Poles<br>Terminal            |                 |
|                          |                    | Loop Antenna                                      |                              | No              |
|                          |                    |   | Terminal                     |                 |
|                          |                    | U/V Mixer   |                              | No              |
|                          |                    | DC Car Cord (Center+)                             |                              | No              |
|                          |                    | Guarantee Card                                    |                              | No              |
|                          |                    | Warning Sheet                                     |                              | No              |
|                          |                    | Circuit Diagram                                   |                              | No              |
|                          |                    | Antenna Change Plug                               |                              | No              |
|                          |                    | Service Facility List                             |                              | No              |
|                          |                    | Important Safeguard                               |                              | No              |
|                          |                    | Dew/AHC Caution Sheet                             |                              | No              |
|                          |                    | AC Plug Adapter                                   |                              | No              |
|                          |                    | Quick Set-up Sheet                                |                              | No              |
|                          |                    | AC Cord   |                              | No              |
|                          |                    | AV Cord (2Pin-1Pin)                               |                              | No              |
|                          |                    | Registration Card                                 |                              | Yes             |
|                          |                    | PTB Sheet   |                              | No              |
|                          |                    | Tape Rewinder(Buyer Supply)                       |                              | No              |
|                          |                    | 300 ohm to 75 ohm Antenna Adapter                 |                              | No              |



# GENERAL SPECIFICATIONS

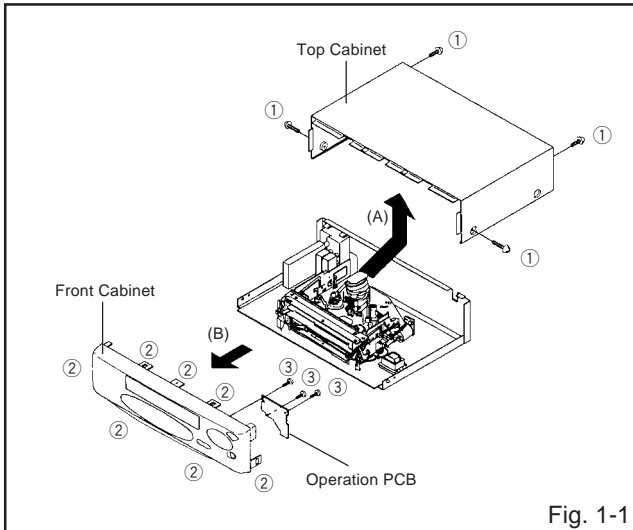
|             |                                   |                          |                     |
|-------------|-----------------------------------|--------------------------|---------------------|
| <b>G-18</b> | <b>Carton</b>                     | Master Carton            | No                  |
|             |                                   | Content                  | -                   |
|             |                                   | Material                 | -                   |
|             |                                   | Dimensions W x D x H(mm) | -                   |
|             |                                   | Description of Origin    | -                   |
|             |                                   | Gift Box                 | Yes                 |
|             |                                   | Material                 | Single/White        |
|             |                                   | Dimensions W x D x H(mm) | 430x310x165         |
|             |                                   | Design                   | As Per BUYER 's     |
|             |                                   | Description of Origin    | Yes                 |
|             |                                   | Drop Test                | Natural Dropping At |
|             | Height (cm)                       | 80                       |                     |
|             | Container Stuffing(40' container) | 2,828Sets                |                     |
| <b>G-19</b> | <b>Cabinet Material</b>           | Cabinet Front            | PS 94V2 DECABROM    |

# DISASSEMBLY INSTRUCTIONS

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

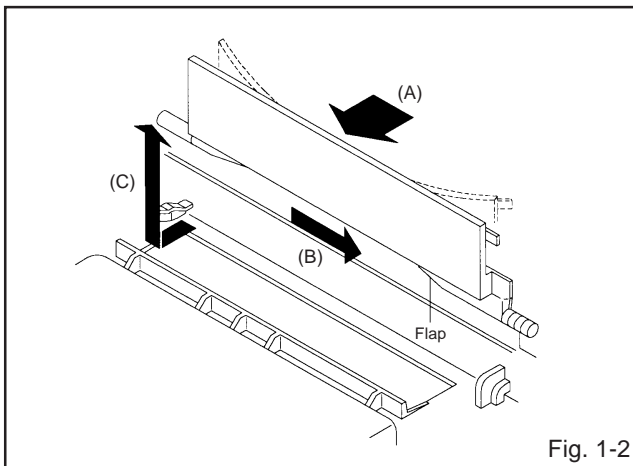
### 1-1: TOP CABINET, FRONT CABINET AND OPERATION PCB (Refer to Fig. 1-1)

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



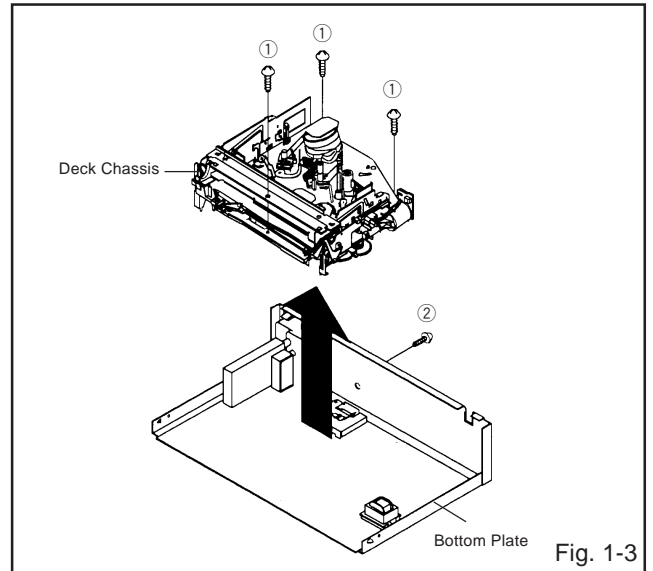
### 1-2: FLAP (Refer to Fig. 1-2)

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).



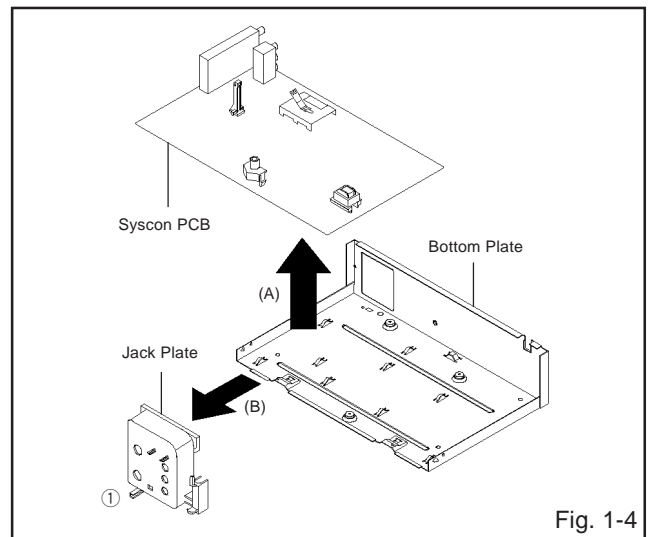
### 1-3: DECK CHASSIS (Refer to Fig. 1-3)

1. Remove the 3 screws ①.
2. Remove the screw ②.
3. Disconnect the following connectors: (CP1001, CP1002, CP1003, CP4001, CP4002 and CP4003).
4. Remove the Deck Chassis in the direction of arrow.



### 1-4: SYSCON PCB AND JACK PLATE (Refer to Fig. 1-4)

1. Remove the Syscon PCB in the direction of arrow (A).
2. Unlock the support ①.
3. Remove the Jack Plate in the direction of arrow (B).

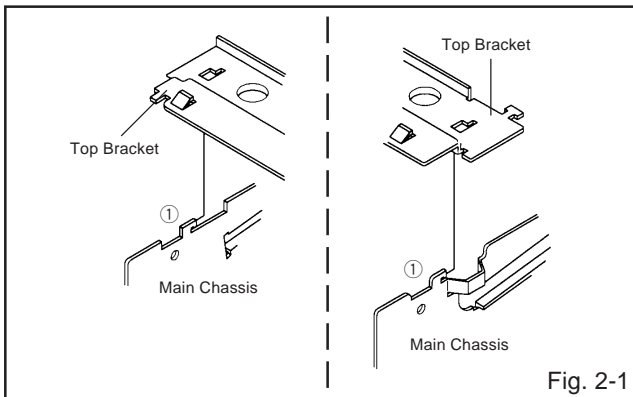


# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF DECK PARTS

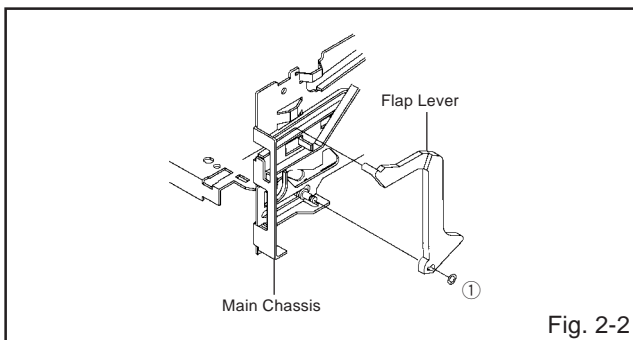
### 2-1: TOP BRACKET (Refer to Fig. 2-1)

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



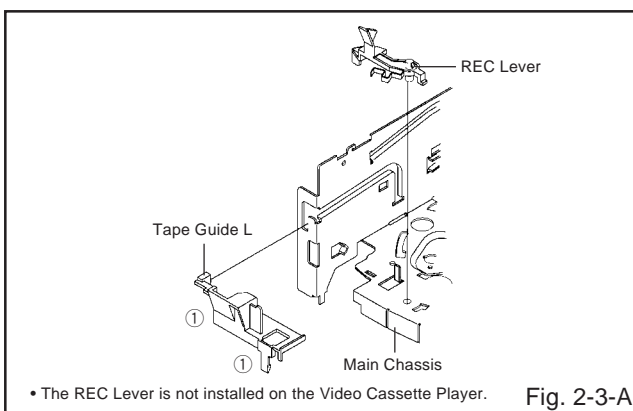
### 2-2: FLAP LEVER (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the back side.
2. Remove the Polyslider Washer ①.
3. Remove the Flap Lever.



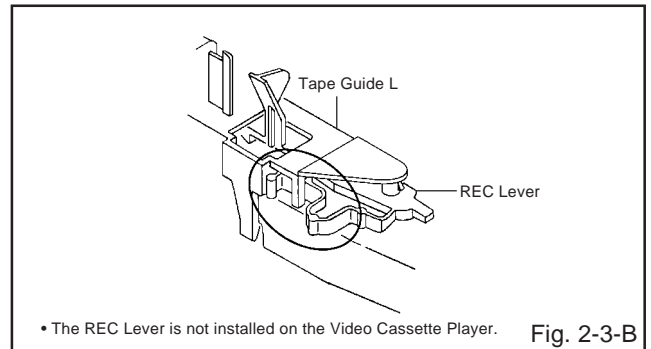
### 2-3: TAPE GUIDE L (Refer to Fig. 2-3-A)

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



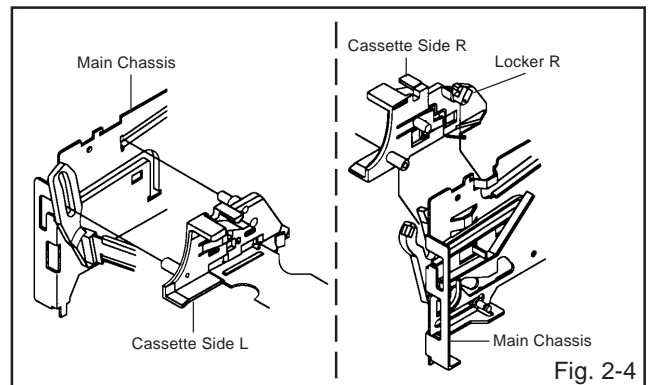
### NOTE

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



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

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

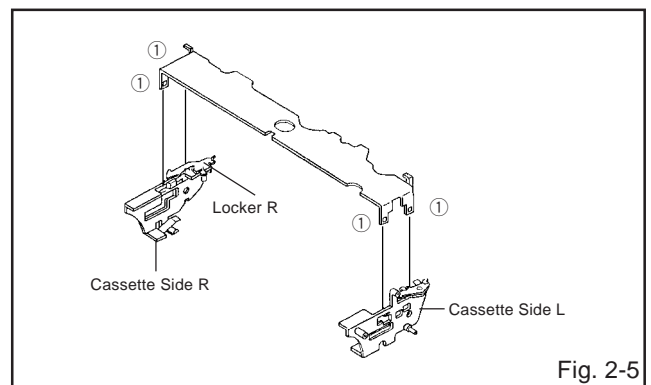


### 2-5: CASSETTE SIDE L/R (Refer to Fig. 2-5)

1. Unlock the 4 supports ① and then remove the Cassette Side L/R.

### NOTE

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



# DISASSEMBLY INSTRUCTIONS

## 2-6: LINK UNIT (Refer to Fig. 2-6)

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

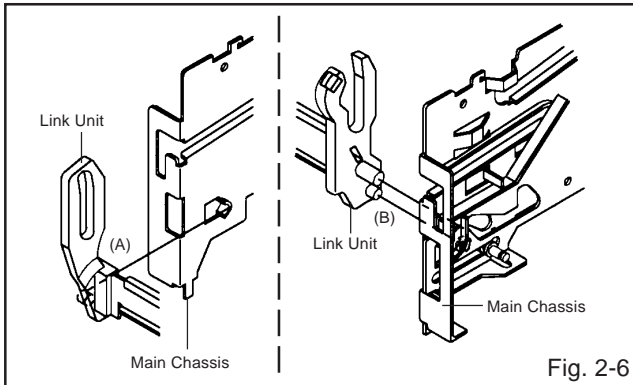


Fig. 2-6

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

1. Remove the Link Lever.
2. Remove the screw ①.
3. Remove the Loading Motor Ass'y.
4. Unlock the 2 supports ② and remove the Deck PCB (BOT).

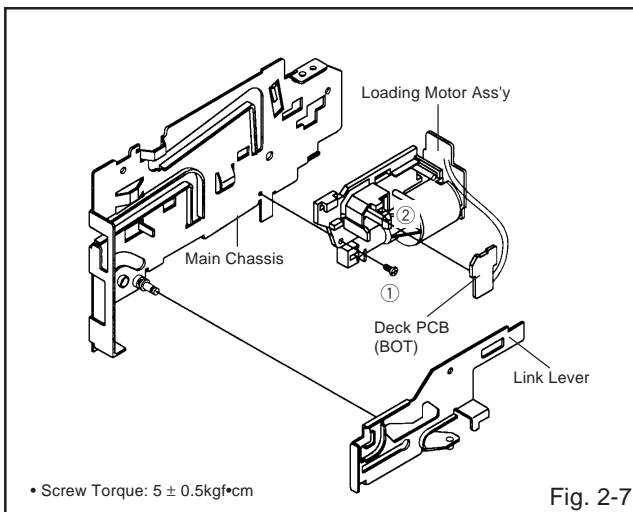


Fig. 2-7

## 2-8: TENSION ASS'Y (Refer to Fig. 2-8-A)

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

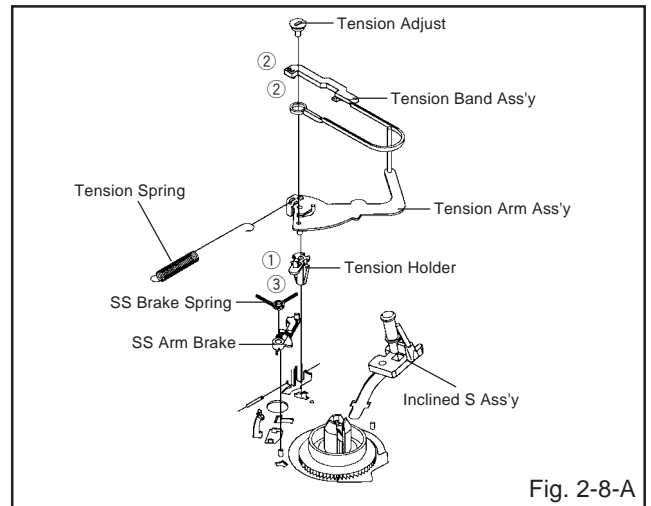


Fig. 2-8-A

### NOTE

When you install the Tension Adjust, install as shown in Fig. 2-8-B. (Refer to Fig. 2-8-B)

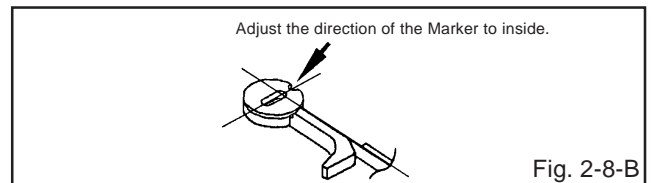


Fig. 2-8-B

## 2-9: T BRAKE ASS'Y (Refer to Fig. 2-9)

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

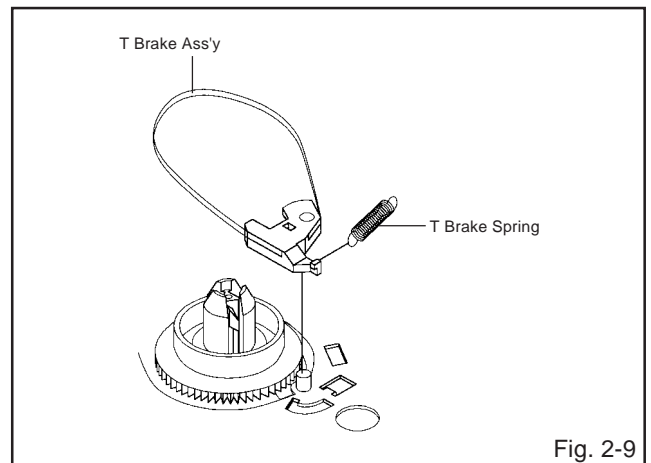


Fig. 2-9

# DISASSEMBLY INSTRUCTIONS

## 2-10: S REEL/T REEL (Refer to Fig. 2-10)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.

### 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. 2-10) Do not adhere the stains on it.
5. When you install the reel, clean the shaft and oil it (FL OIL #6115). (If you do not oil, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. (Refer to MECHANICAL ADJUSTMENT)

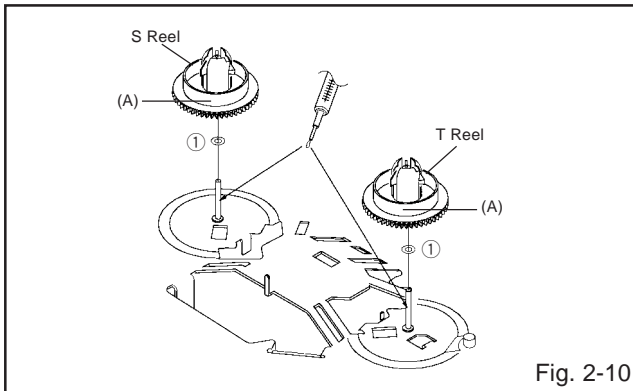


Fig. 2-10

## 2-11: PINCH ROLLER BLOCK/P5-3 ARM ASS'Y (Refer to Fig. 2-11-A)

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

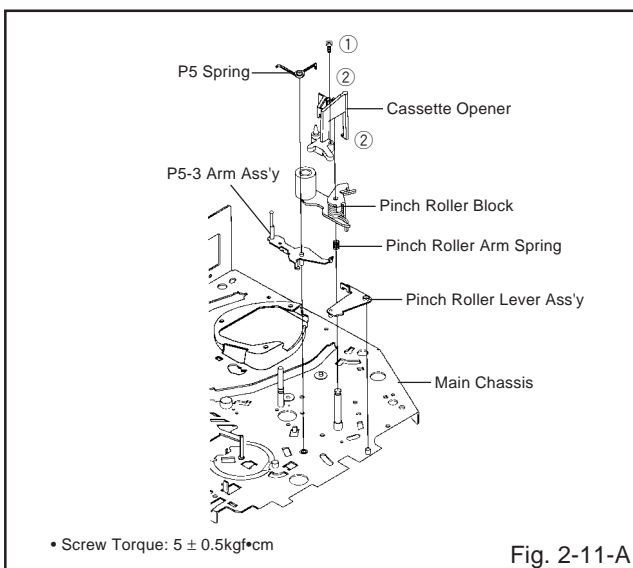


Fig. 2-11-A

### NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. When you install the Pinch Roller Block, install as shown in the circle of Fig. 2-11-B. (Refer to Fig. 2-11-B)

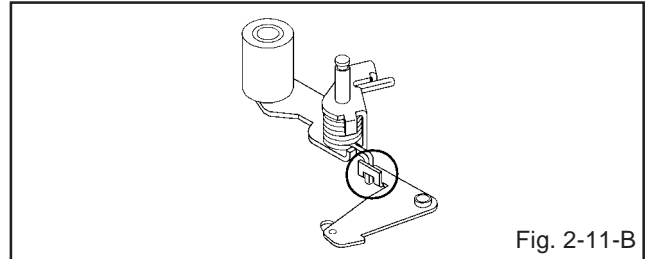


Fig. 2-11-B

## 2-12: A/C HEAD (Refer to Fig. 2-12-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. 2-12-B. (Refer to Fig. 2-12-B)
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).

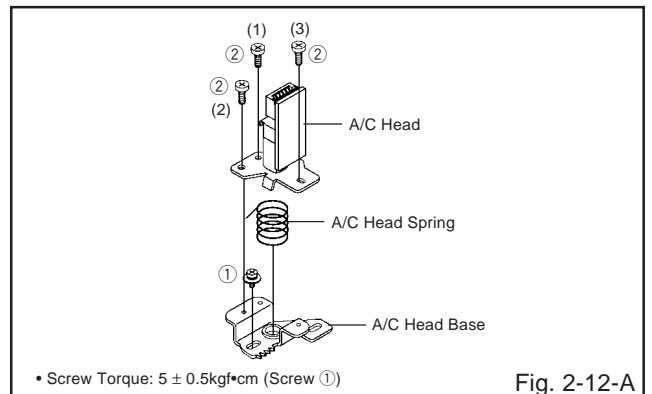


Fig. 2-12-A

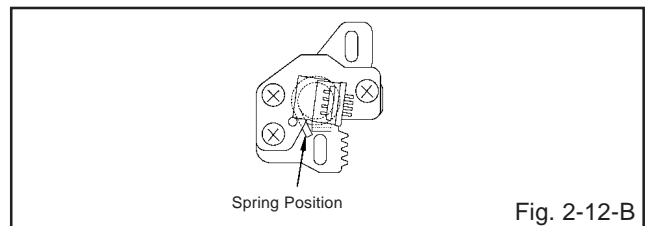


Fig. 2-12-B

## 2-13: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-13)

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

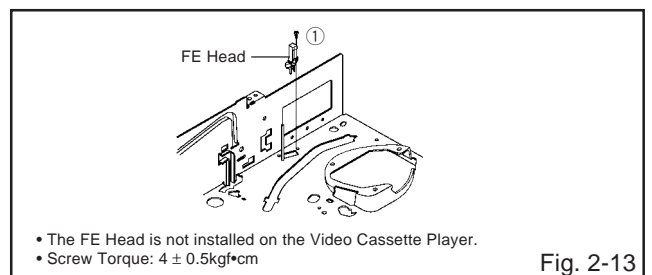


Fig. 2-13

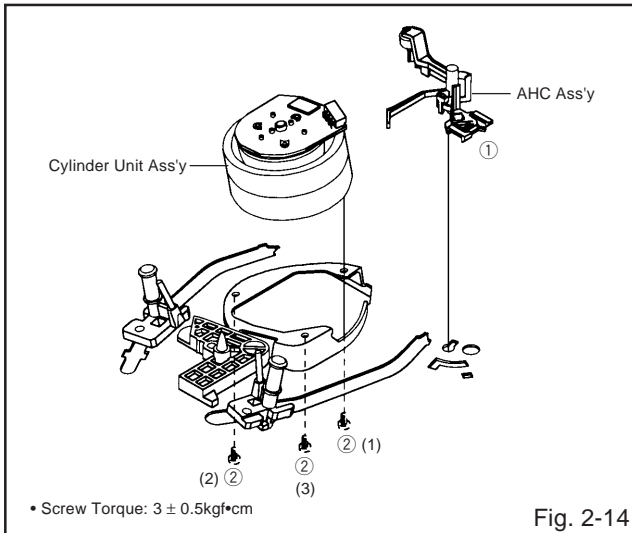
# DISASSEMBLY INSTRUCTIONS

## 2-14: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-14)

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

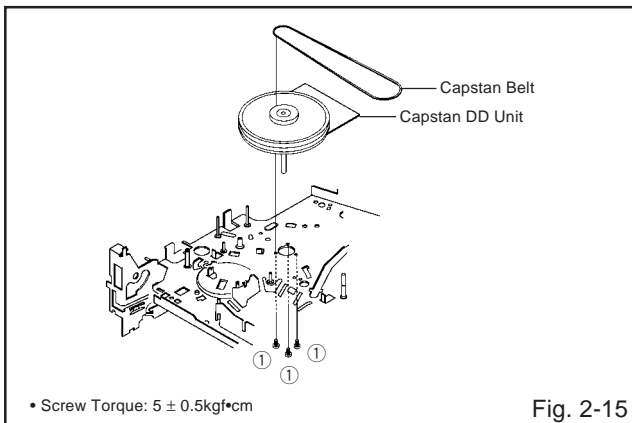
### NOTE

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



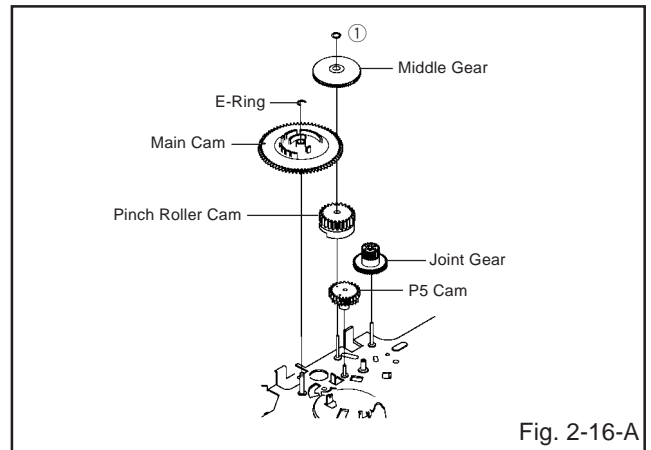
## 2-15: CAPSTAN DD UNIT (Refer to Fig. 2-15)

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



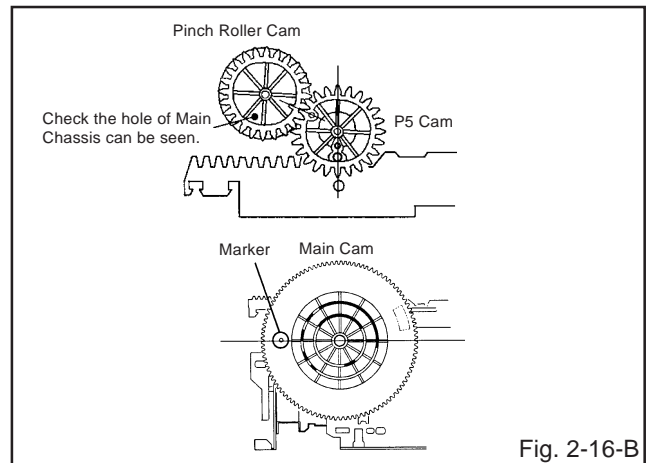
## 2-16: MIDDLE GEAR/MAIN CAM (Refer to Fig. 2-16-A)

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



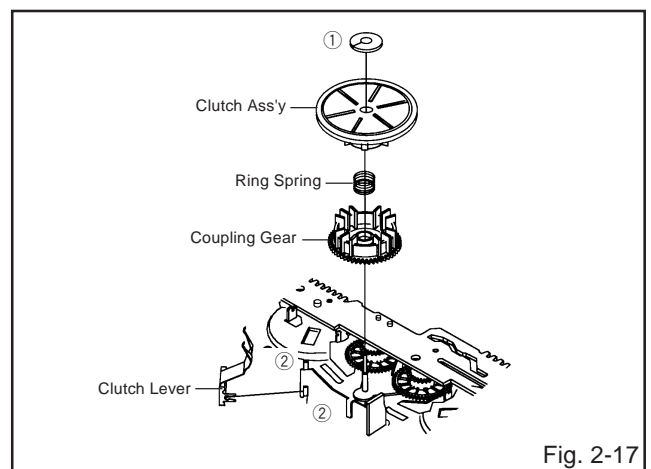
### NOTE

When you install the Pinch Roller Cam, P5 Cam and Main Cam, align each marker. (Refer to Fig. 2-16-B)



## 2-17: CLUTCH ASS'Y (Refer to Fig. 2-17)

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



# DISASSEMBLY INSTRUCTIONS

## 2-18: LOADING GEAR S/T ASS'Y (Refer to Fig. 2-18-A)

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

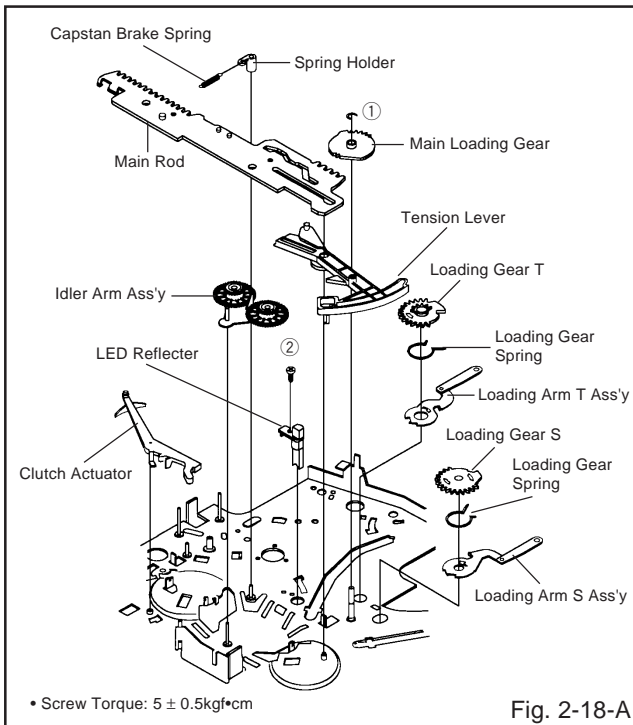


Fig. 2-18-A

### NOTES

1. When you install the Loading Arm S Ass'y, Loading Arm T Ass'y and Main Loading Gear, align each marker. (Refer to Fig. 2-18-B)

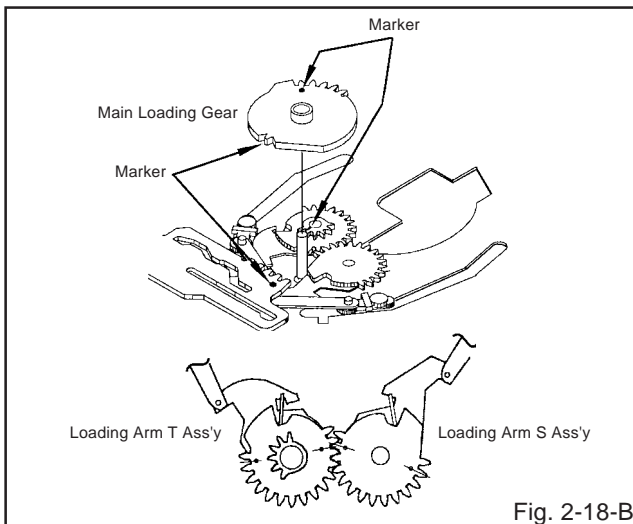


Fig. 2-18-B

2. When you install the Clutch Actuator, install as shown in the circle of Fig. 2-18-C. (Refer to Fig. 2-18-C)

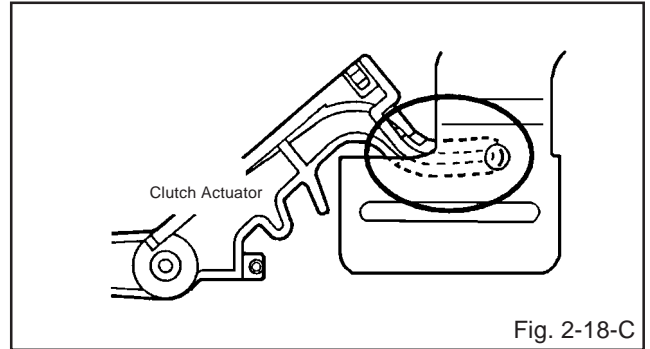


Fig. 2-18-C

## 2-19: INCLINED BASE S/T UNIT (Refer to Fig. 2-19)

1. Remove the Cap P4.
2. Remove the screw ①.
3. Unlock the support ② and remove the Loading Gear Holder.
4. Remove the Inclined Base S Unit.
5. Remove the Inclined Base T Unit.

### NOTE

Do not touch the roller of Guide Roller.

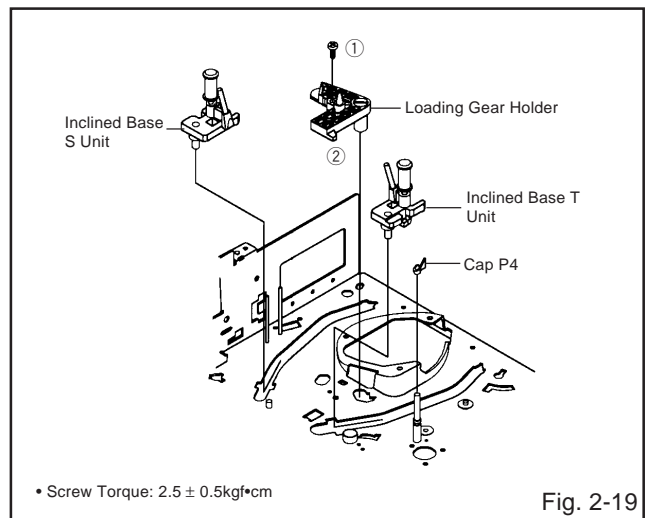


Fig. 2-19

## KEY TO ABBREVIATIONS

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



## KEY TO ABBREVIATIONS

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

## SERVICE MODE LIST

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

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

# PREVENTIVE CHECKS AND SERVICE INTERVALS

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

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

■ : Clean  
● : Replace

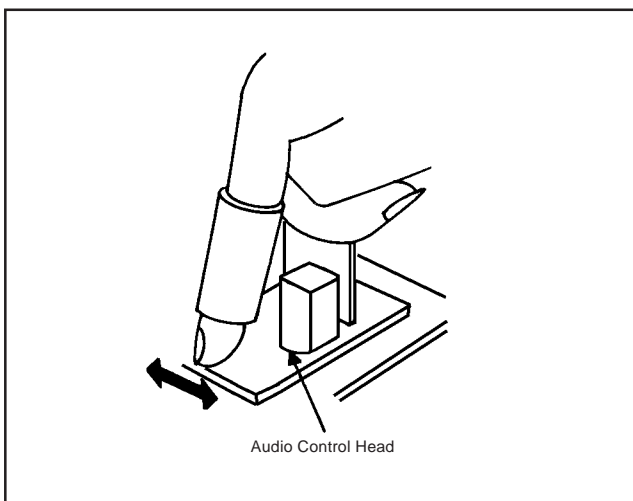
## CLEANING

### NOTE

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

### 1. AUDIO CONTROL HEAD

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



### 2. TAPE RUNNING SYSTEM

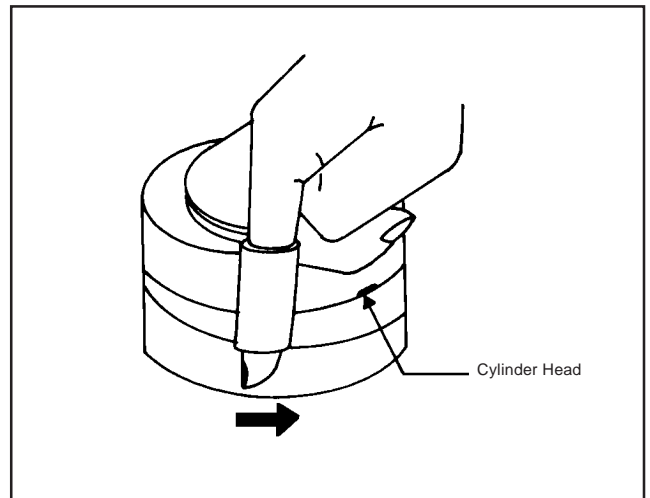
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

### 3. CYLINDER

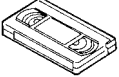
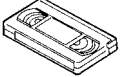
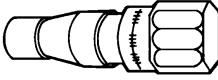
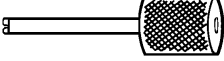
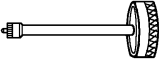
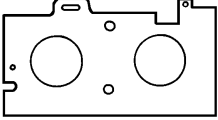
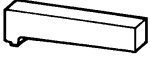
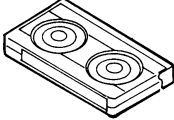
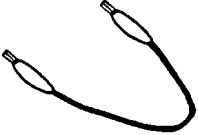
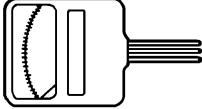
Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). (Refer to the figure below.)

### NOTE

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



## SERVICING FIXTURES AND TOOLS

|   |  |   |  |
|---|--|---|--|
| <p><b>(For 2 heads model)</b><br/>VHS Alignment Tape<br/>JG001 (VN<sub>2</sub>S-LI6<sup>3</sup>)<br/>JG001A (VN<sub>2</sub>S-CO1<sup>3</sup>)<br/>JG001Q (VN<sub>2</sub>S-LI6<sup>3</sup>H)<br/>JG001T (VN<sub>2</sub>S-X6<sup>3</sup>)</p>  | <p><b>(For 4 heads model)</b><br/>VHS Alignment Tape<br/>JG001B (VN<sub>1</sub>S-LI6<sup>3</sup>)<br/>JG001I (VN<sub>1</sub>S-CO1<sup>3</sup>)<br/>JG001P (VN<sub>1</sub>S-LI6<sup>3</sup>H)<br/>JG001S (VN<sub>1</sub>S-X6<sup>3</sup>)</p>  | <p>JG002B Adapter<br/>JG002E Dial Torque Gauge<br/>(10~90gf•cm)<br/>JG002F (60~600gf•cm)</p>  | <p>JG005 Post Adjustment<br/>Screwdriver<br/>Part No. SV-TG0-030-000<br/>(small)</p>  |
| <p>JG153 X Value Adjustment<br/>Screwdriver</p>    | <p>JG022 Master Plane</p>   | <p>JG024A Reel Disk Height<br/>Adjustment Jig</p>   | <p>JG100A Torque Tape<br/>(VHT-063)</p>   |
| <p>JG154 Cable</p>   | <p>Tentelometer</p>   |   |  |

| Ref. No.     | Part No.              | Remarks  |
|--------------|-----------------------|--|
| JG001        | APJG001000            | Monoscope, 6KHz <b>(For 2 heads model)</b>           |
| JG001A       | APJG001A00            | Color Bar, 1KHz <b>(For 2 heads model)</b>           |
| JG001Q       | APJG001Q00            | Hi-Fi Audio <b>(For 2 heads Hi-Fi model)</b>         |
| JG001T       | APJG001T00            | X Value Adjustment <b>(For 2 heads model)</b>        |
| JG001B       | APJG001B00            | Monoscope, 6KHz <b>(For 4 heads model)</b>           |
| JG001I       | APJG001I00            | Color Bar, 1KHz <b>(For 4 heads model)</b>           |
| JG001P       | APJG001P00            | Hi-Fi Audio <b>(For 4 heads Hi-Fi model)</b>         |
| JG001S       | APJG001S00            | X Value Adjustment <b>(For 4 heads model)</b>        |
| JG002B       | APJG002B00            | VSR Torque, Brake Torque (S Reel/T Reel Ass'y)       |
| JG002E       | APJG002E00            | Brake Torque (T Reel Ass'y)                          |
| JG002F       | APJG002F00            | VSR Torque, Brake Torque (S Reel)                    |
| JG005        | APJG005000            | Guide Roller Adjustment                              |
| JG153        | APJG153000            | X Value Adjustment                                   |
| JG022/JG024A | APJG022000/APJG024A00 | Reel Disk Height Adjustment                          |
| JG100A       | APJG100A00            | Playback Torque, Back Tension Torque During Playback |
| JG154        | APJG154000            | Used to connect the test point of SERVICE and GROUND |

## PREPARATION FOR SERVICING

- Short circuit between **TP1001** and **Ground** with the cable JG154.  
**(Refer to MAJOR COMPONENTS LOCATION GUIDE)**  
The EOT, BOT and Reel Sensor do not work at this moment.  
At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.

# MECHANICAL ADJUSTMENTS

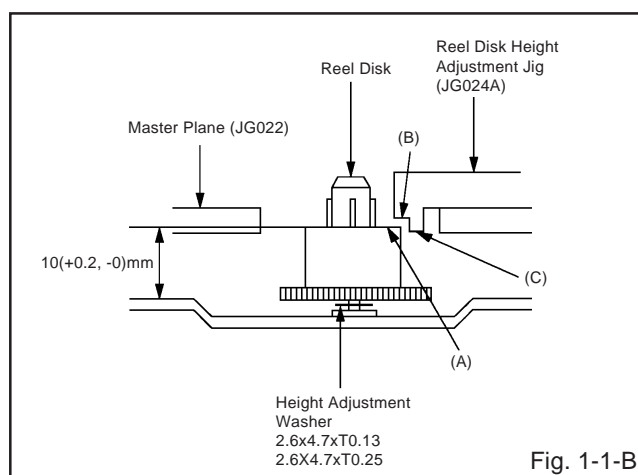
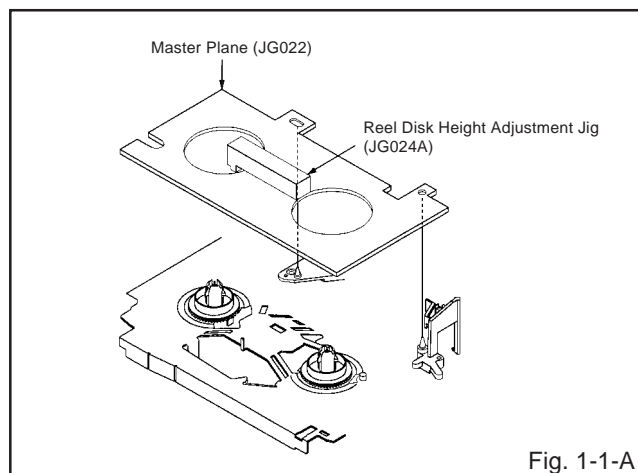
## 1. CONFIRMATION AND ADJUSTMENT

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.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND**. (Refer to **ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE**) In this condition the BOT/EOT/Reel Sensor will not function.

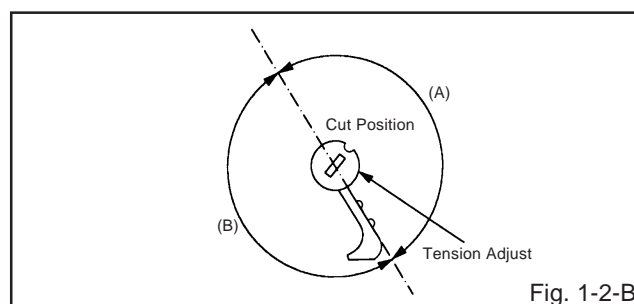
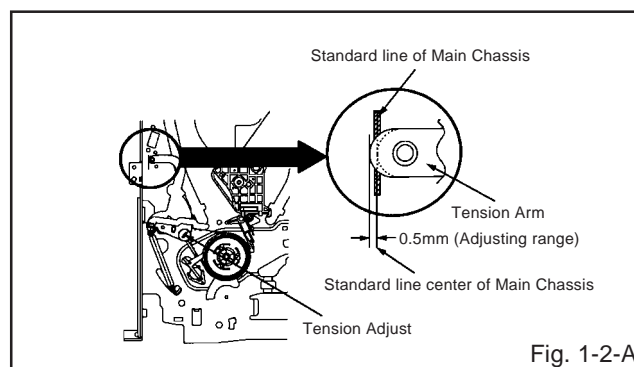
### 1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

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



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

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

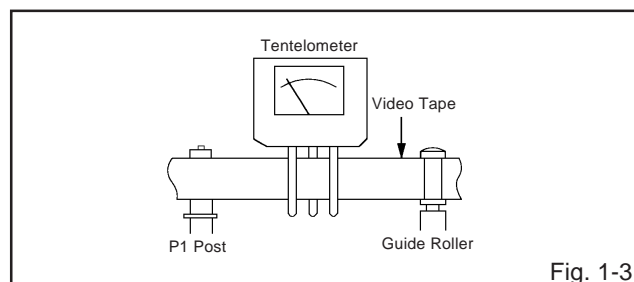


### 1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

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

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

1. After confirmation and adjustment of Tension Post position (Refer to item 1-2), load the cassette type torque tape (**JG100A**) and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates  $60 \sim 110$ gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates  $25 \sim 40$ gf•cm during playback in SP mode.



## MECHANICAL ADJUSTMENTS

### 1-4: CONFIRMATION OF VSR TORQUE

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

#### NOTE

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

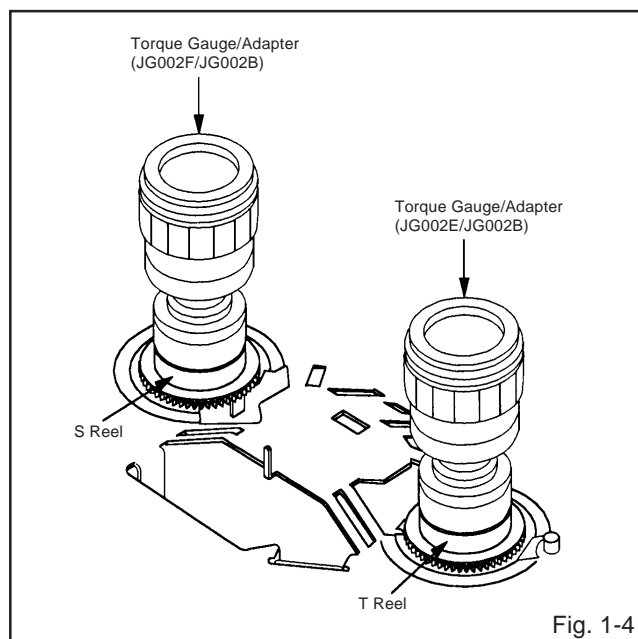
### 1-5: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Set to the STOP mode.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Turn the Torque Gauge (JG002F) clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

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

1. Set to the STOP mode.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge (JG002E) and Adapter (JG002B) on the T reel. Turn the Torque Gauge (JG002E) counterclockwise.
4. Then, confirm that it indicates 45~70gf•cm.



#### NOTE

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

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

## 2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

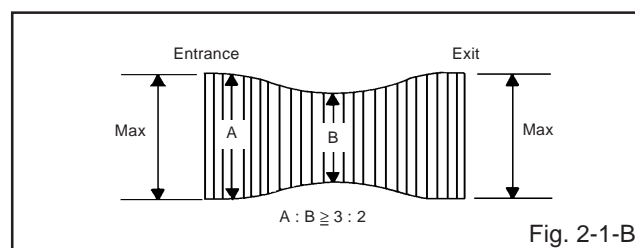
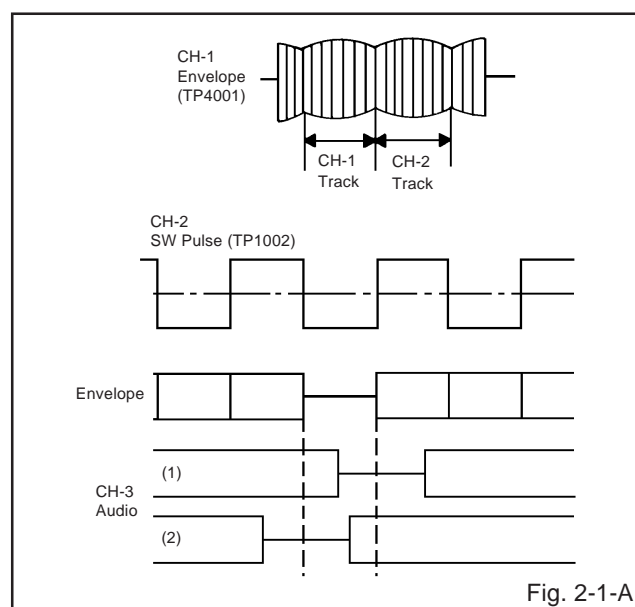
Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

### 2-1: GUIDE ROLLER

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



## MECHANICAL ADJUSTMENTS

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

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

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

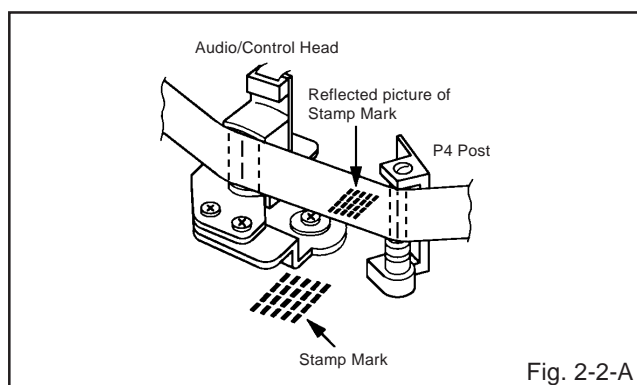


Fig. 2-2-A

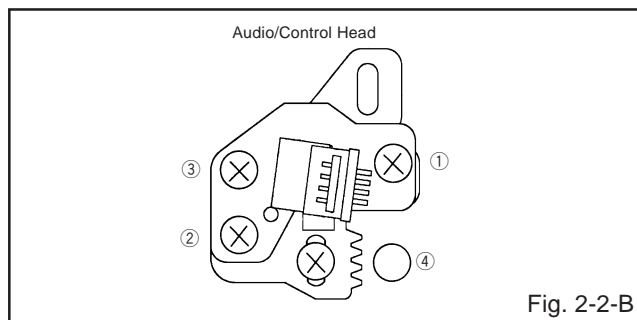


Fig. 2-2-B

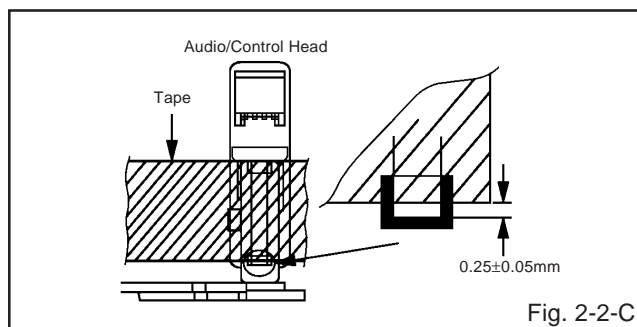


Fig. 2-2-C

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

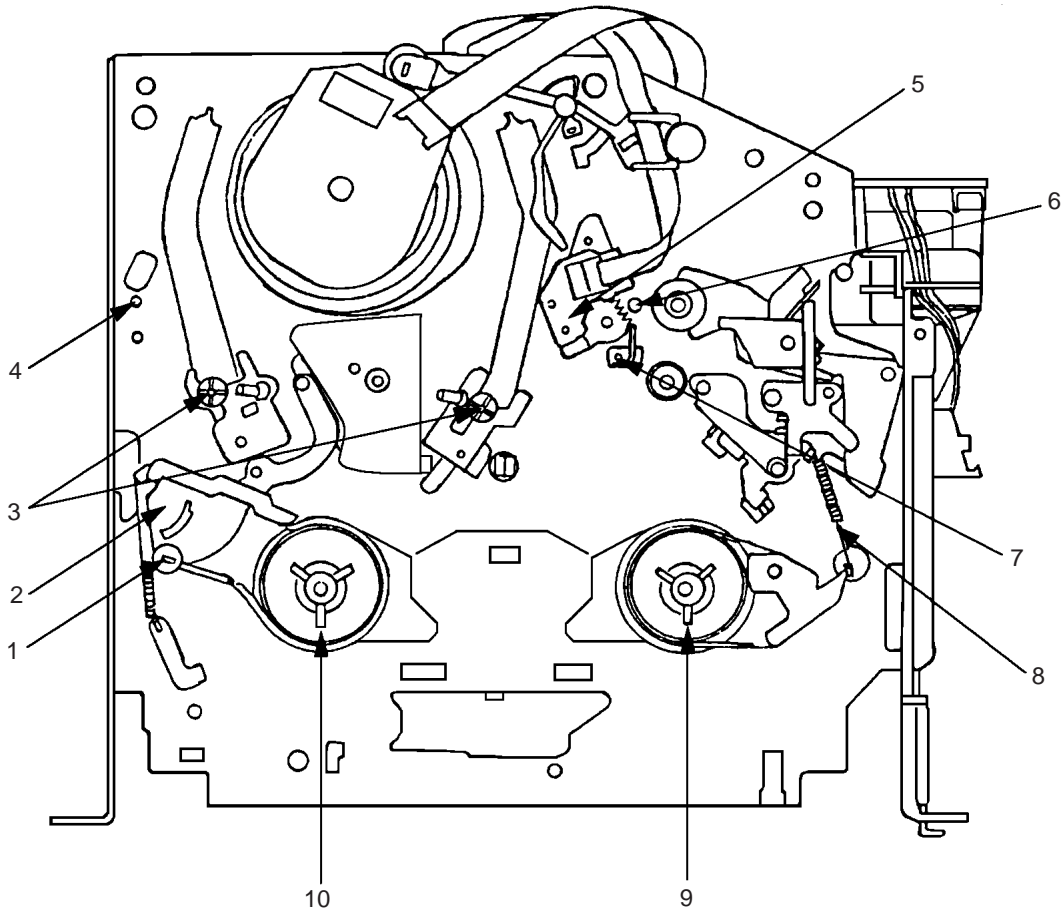
1. Confirm and adjust the height of the Reel Disk. (Refer to **item 1-1**)
2. Confirm and adjust the position of the Tension Post. (Refer to **item 1-2**)
3. Adjust the Guide Roller. (Refer to **item 2-1**)
4. Confirm and adjust the Audio/Control Head. (Refer to **item 2-2**)
5. Connect CH-1 of the oscilloscope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

### 2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP1002** and CH-3 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (JG001P or JG001Q). (Refer to **SERVICING FIXTURE AND TOOLS**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
6. Confirm that the difference between these counted steps number in the above items are within 2 steps. If the difference are more than 3 steps, do Tape Running Adjustment again. (Refer to **item 2-3**)

# MECHANICAL ADJUSTMENTS

## 3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



- |                       |                                   |
|-----------------------|-----------------------------------|
| 1. Tension Adjust     | 6. X value adjustment driver hole |
| 2. Tension Arm        | 7. P4 Post                        |
| 3. Guide Roller       | 8. T Brake Spring                 |
| 4. P1 Post            | 9. T Reel                         |
| 5. Audio/Control Head | 10. S Reel                        |



# ELECTRICAL ADJUSTMENTS

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

## 1.BASIC ADJUSTMENT

### CAUTION

When replacing IC's or transistors, use only specified silicon grease (**YG6260M**).  
(To prevent the damage to IC's and transistors.)

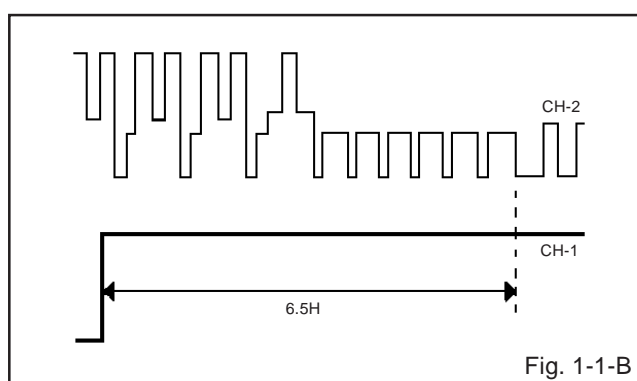
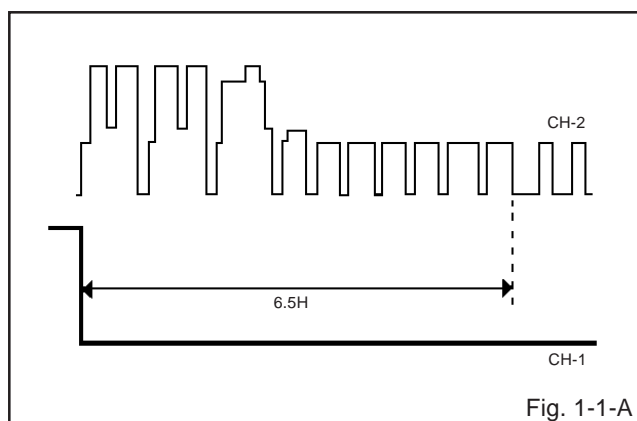
### 1-1: PG SHIFTER

#### CONDITIONS

MODE-PLAYBACK  
Input Signal-Alignment Tape (**JG001P**)

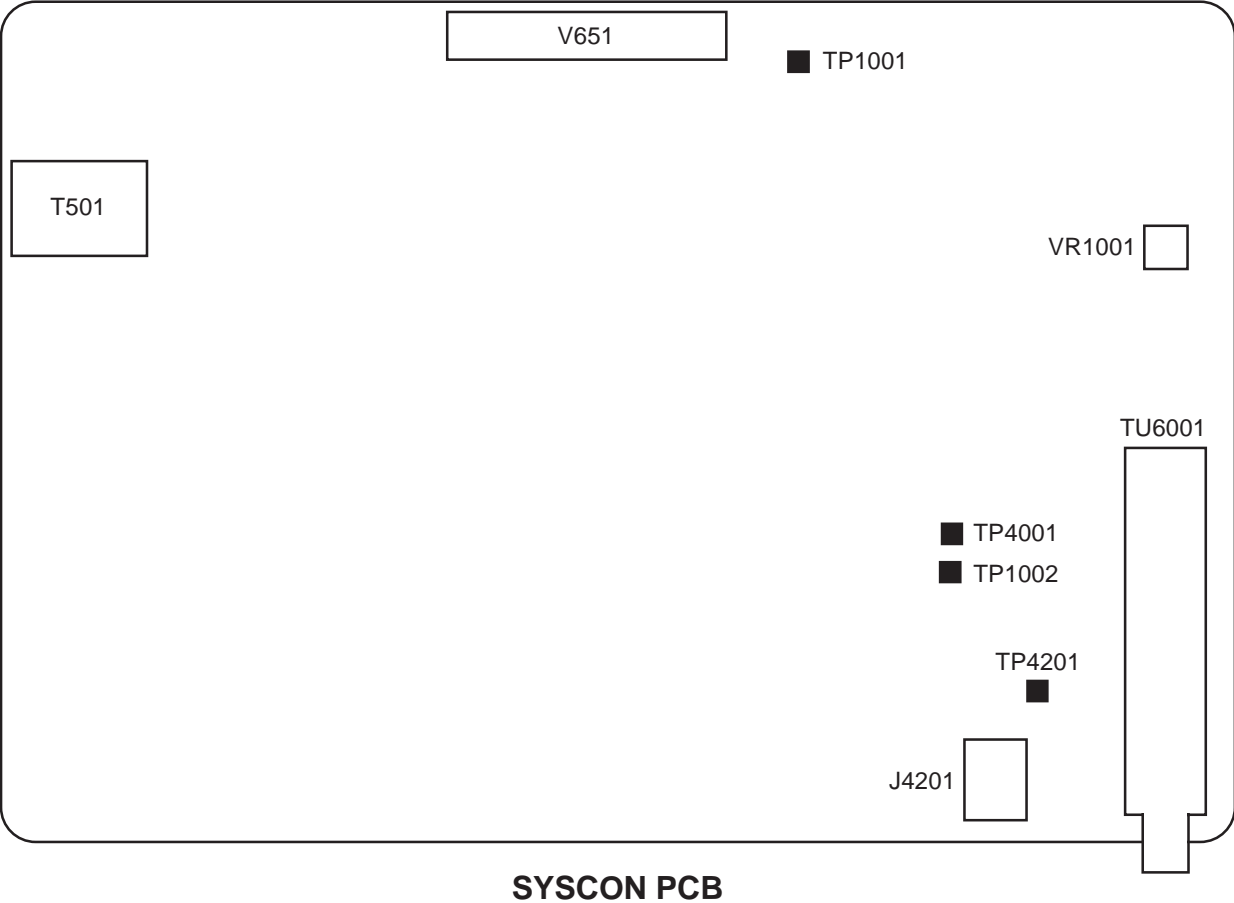
#### INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape. (**JG001P**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Adjust the **VR1001** until the waveform of the oscilloscope measures  $6.5 \pm 0.5(H)$  at both leading and trailing edges. (Refer to Fig. 1-1-A, B)

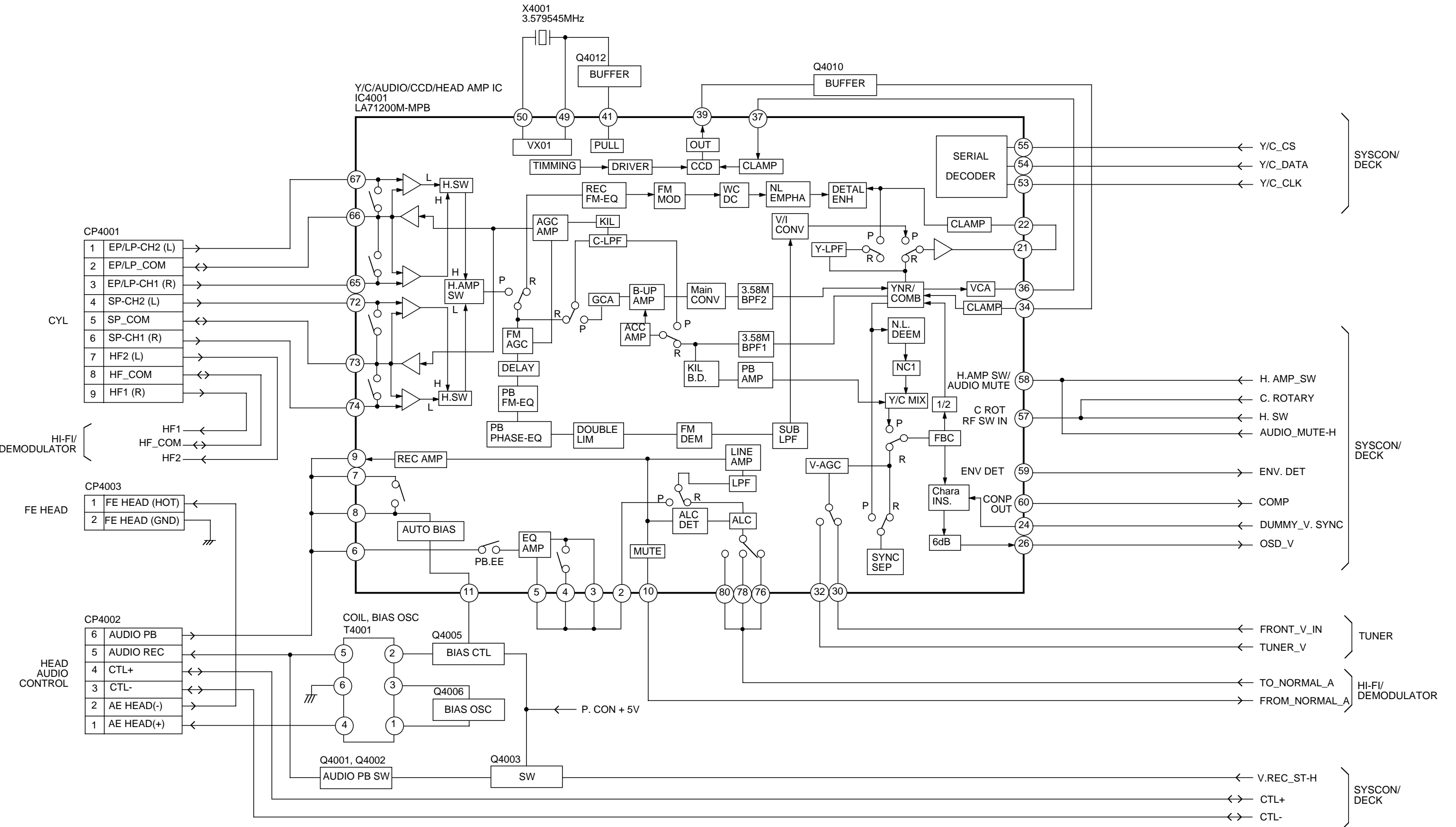


# ELECTRICAL ADJUSTMENTS

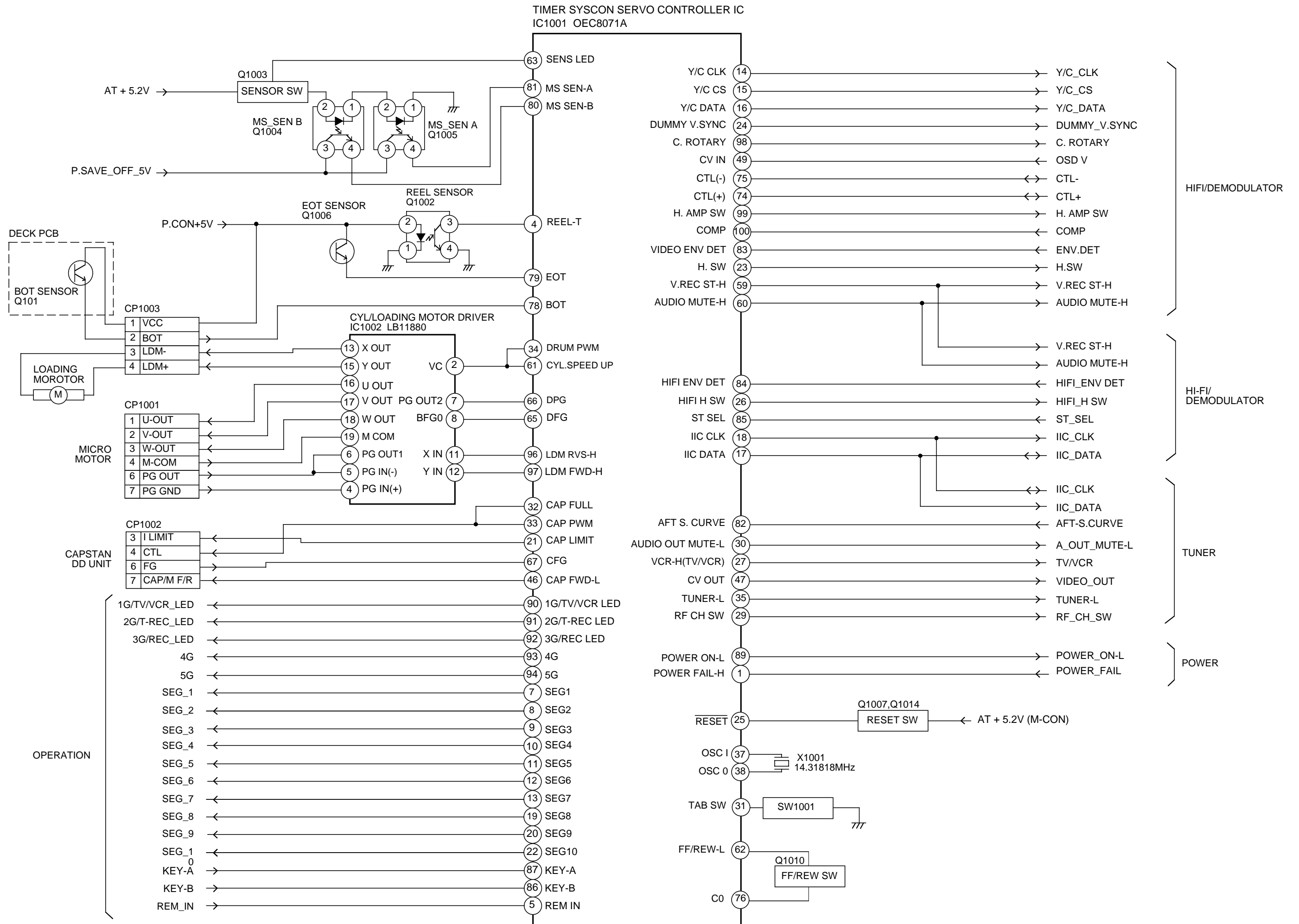
## 2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE



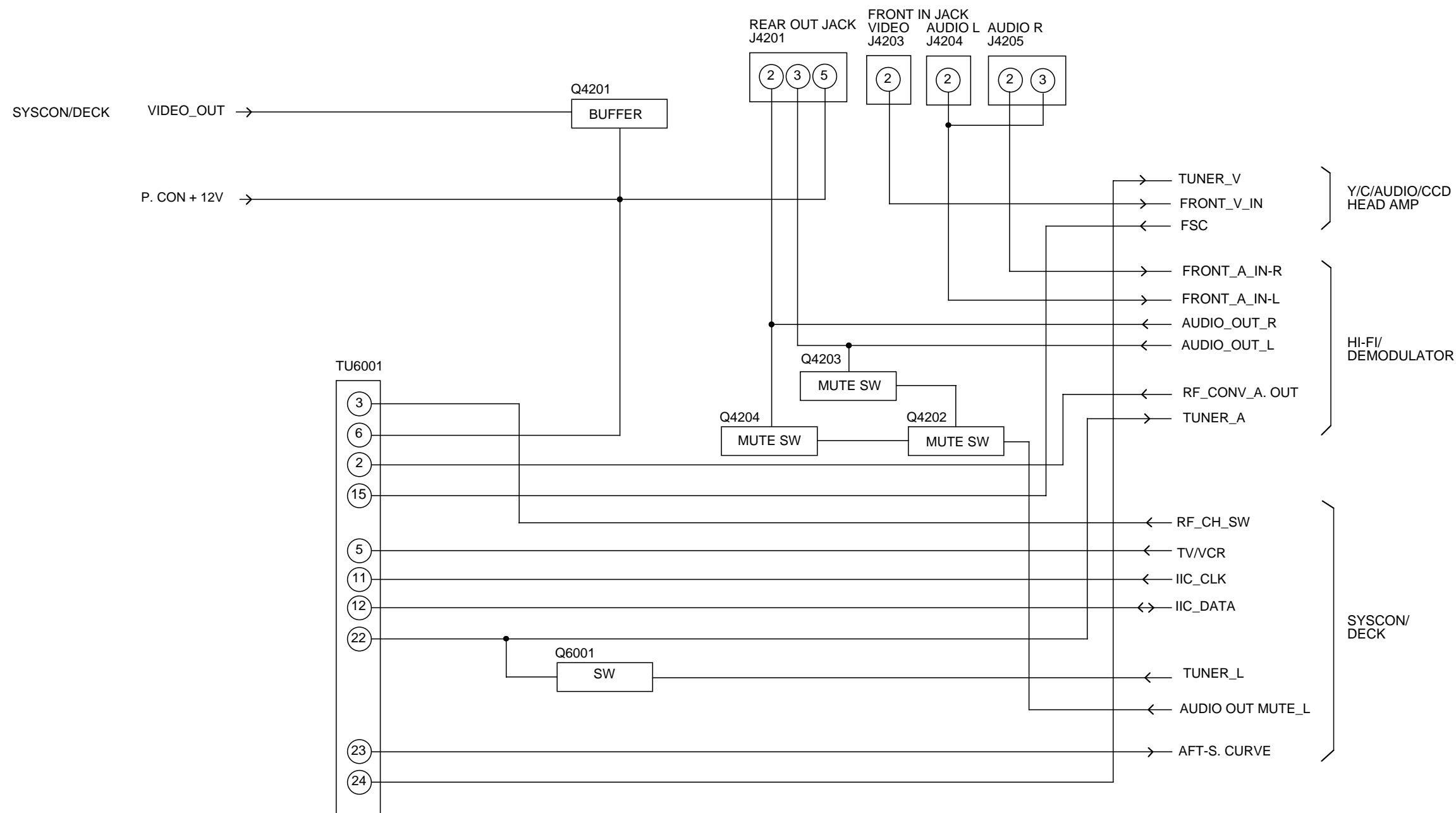
# Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



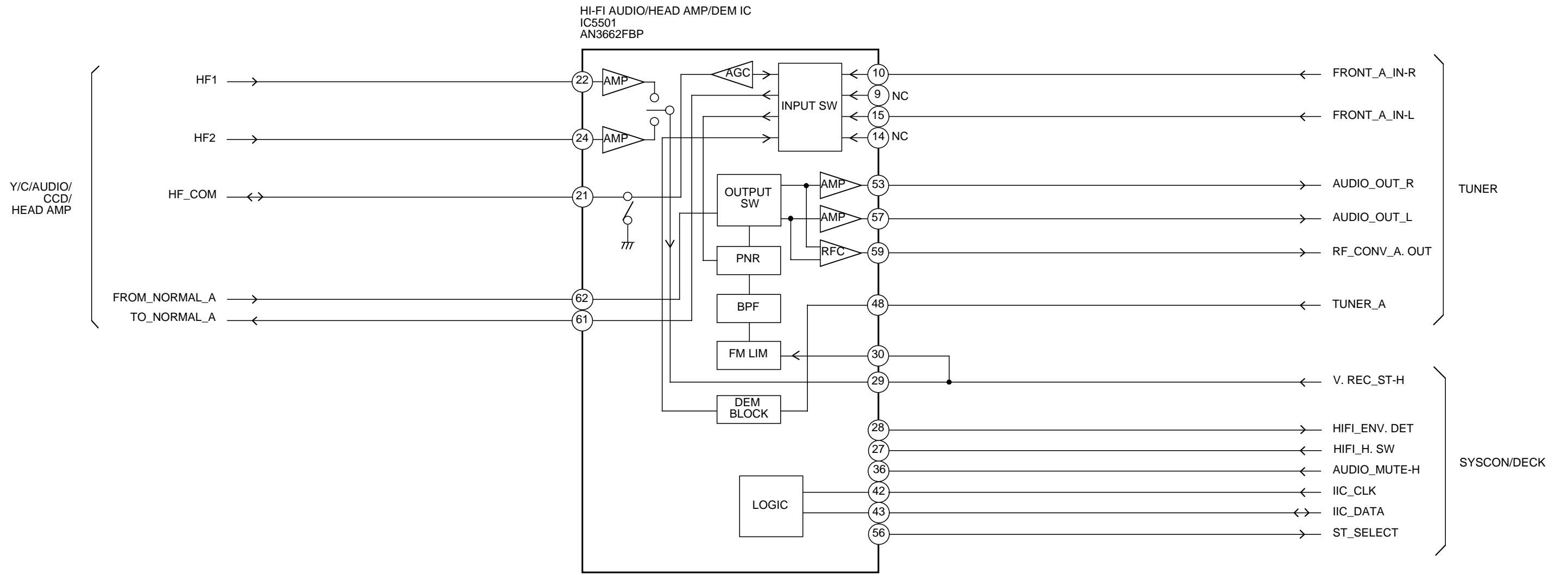
# SYSTEM CONTROL/DECK BLOCK DIAGRAM



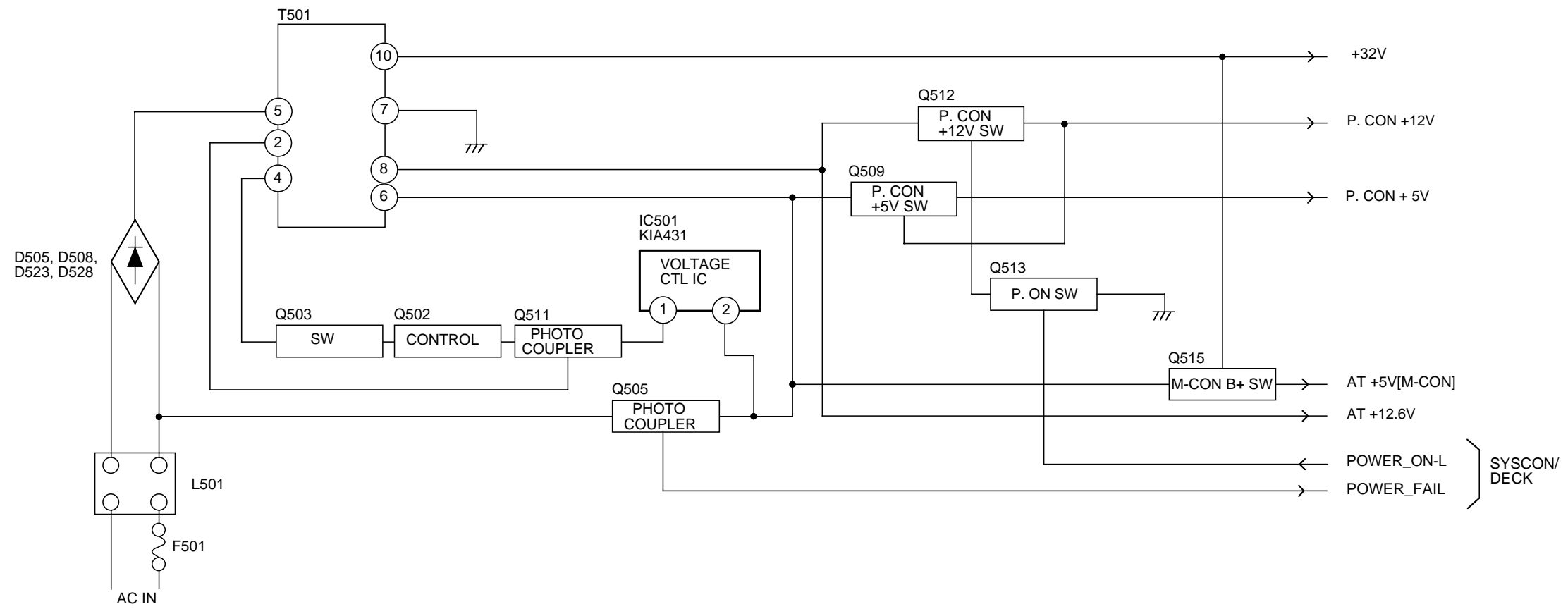
# TUNER BLOCK DIAGRAM



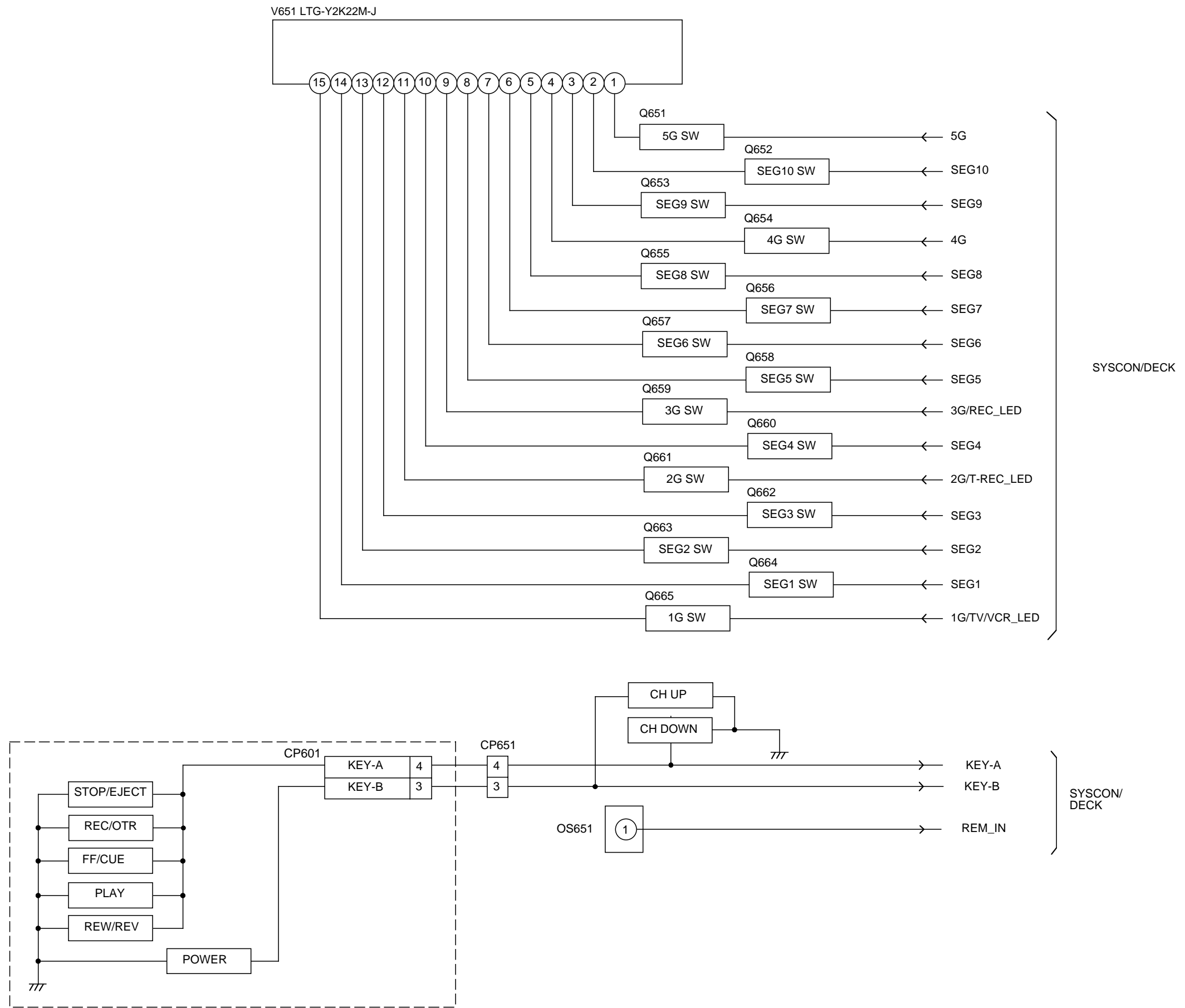
# HI-FI/DEMODULATOR BLOCK DIAGRAM



# POWER BLOCK DIAGRAM



# OPERATION BLOCK DIAGRAM

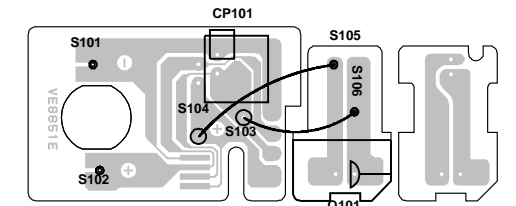
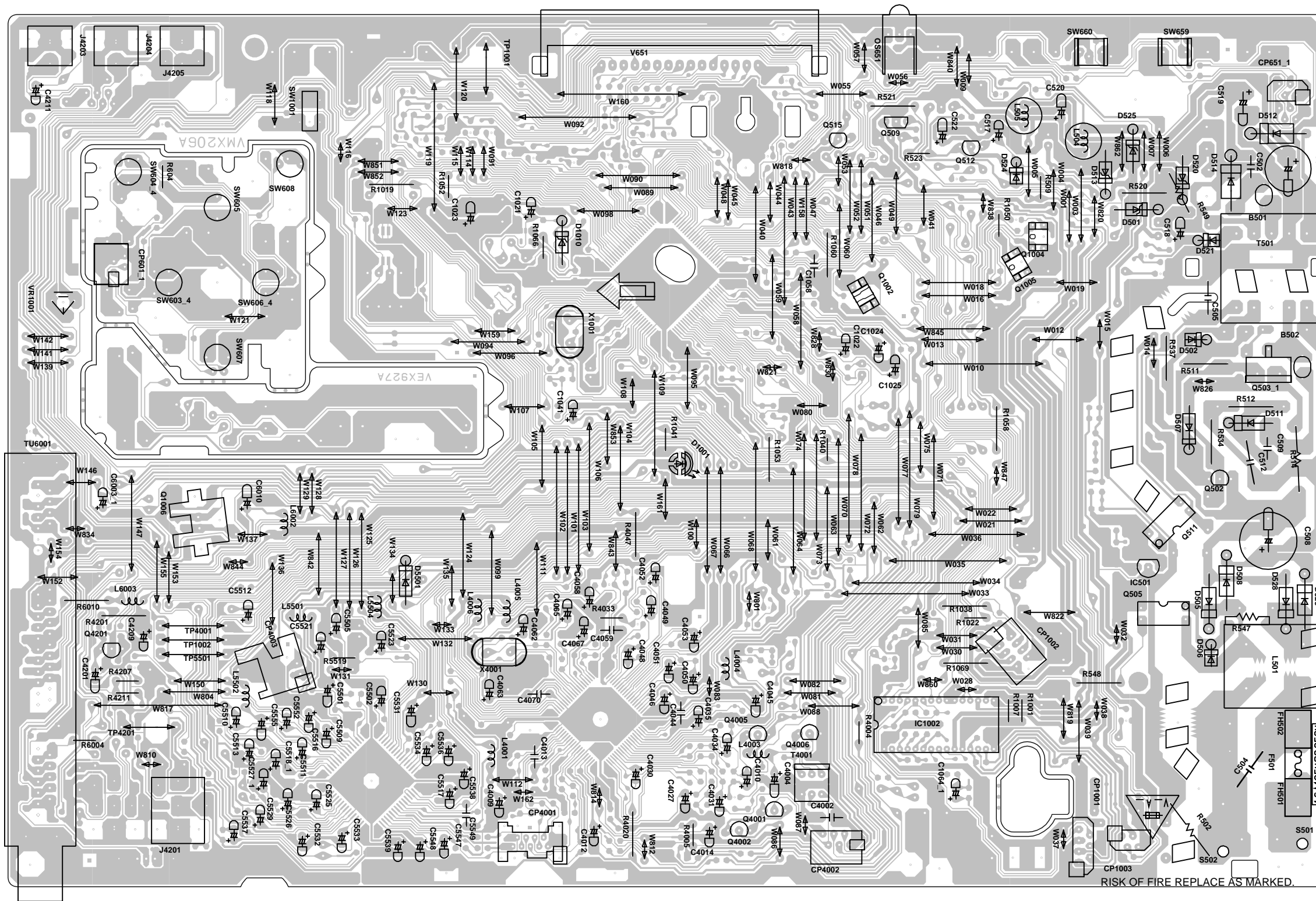




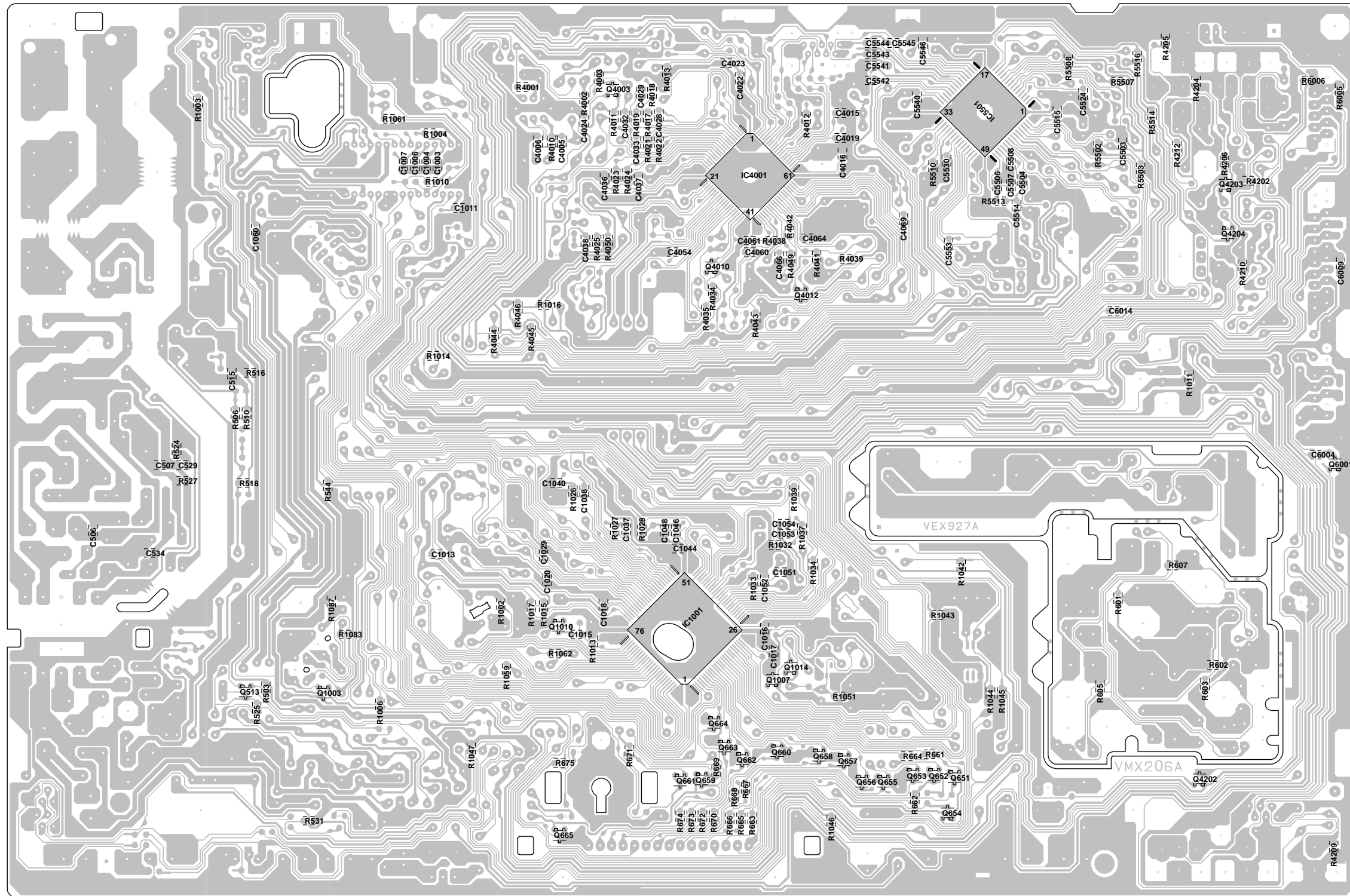
# PRINTED CIRCUIT BOARDS

## SYSCON/OPERATION (INSERTED PARTS) SOLDER SIDE

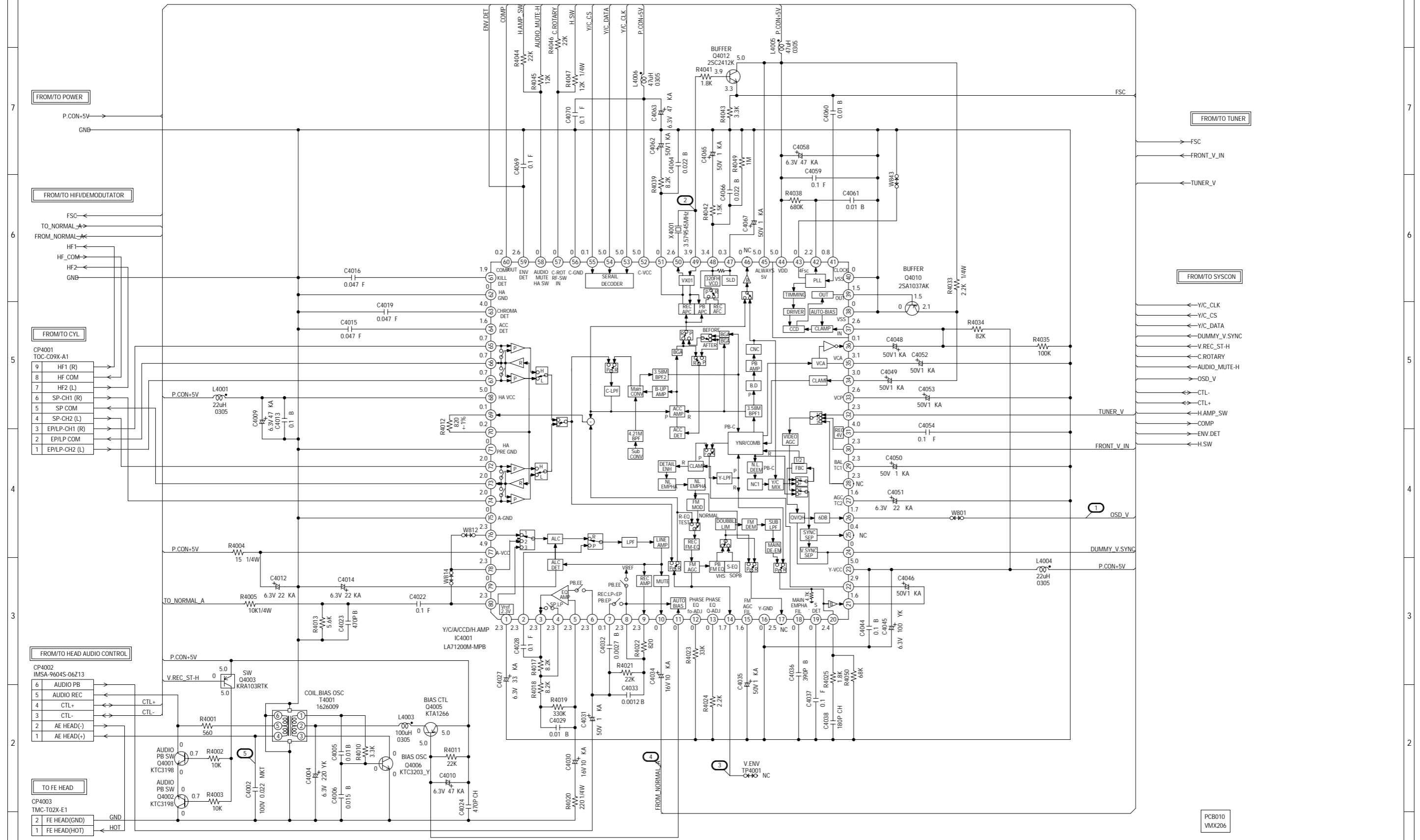
## DECK SOLDER SIDE



PRINTED CIRCUIT BOARDS  
SYSCON/OPERATION (CHIP MOUNTED PARTS)  
SOLDER SIDE



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



FROM/TO POWER

FROM/TO HIFI/DEMODULATOR

FROM/TO CYL

FROM/TO HEAD AUDIO CONTROL

TO FE HEAD

FROM/TO TUNER

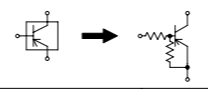
FROM/TO SYSCON

PCB010  
WMX206

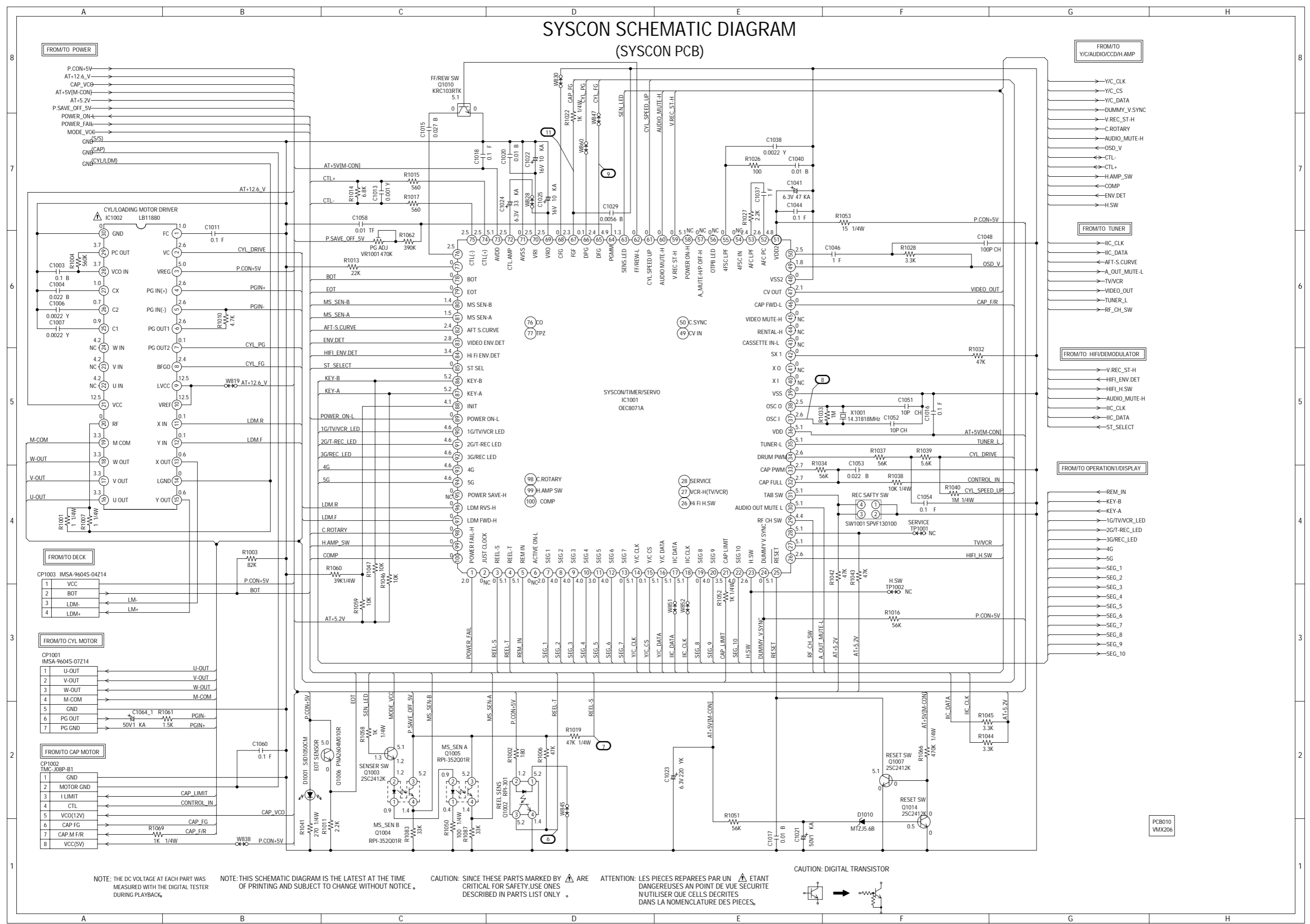
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

CAUTION: DIGITAL TRANSISTOR



# SYSCON SCHEMATIC DIAGRAM (SYSCON PCB)



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

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

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

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

CAUTION: DIGITAL TRANSISTOR



FROM/TO POWER

- P.CON+5V
- AT+12.6\_V
- CAP\_VCO
- AT+5VIM-CON
- AT+5.2V
- P.SAVE\_OFF\_5V
- POWER\_ON-L
- POWER\_FAIL
- MODE\_VCE
- GND(S/S)
- GND(CAP)
- GND(CYL/LDM)

FROM/TO DECK

- |   |      |
|---|------|
| 1 | VCC  |
| 2 | BOT  |
| 3 | LDM- |
| 4 | LDM+ |

FROM/TO CYL MOTOR

- |   |        |
|---|--------|
| 1 | U-OUT  |
| 2 | V-OUT  |
| 3 | W-OUT  |
| 4 | M-COM  |
| 5 | GND    |
| 6 | PG OUT |
| 7 | PG GND |

FROM/TO CAP MOTOR

- |   |           |
|---|-----------|
| 1 | GND       |
| 2 | MOTOR GND |
| 3 | I LIMIT   |
| 4 | CTL       |
| 5 | VCO(12V)  |
| 6 | CAP FG    |
| 7 | CAP M F/R |
| 8 | VCC(5V)   |

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

- Y/C\_CLK
- Y/C\_CS
- Y/C\_DATA
- DUMMY\_V\_SYNC
- V\_REC\_ST-H
- C.ROTARY
- AUDIO\_MUTE-H
- OSD\_V
- CTL-
- CTL+
- HAMP\_SW
- COMP
- ENV\_DET
- H.SW

FROM/TO TUNER

- IIC\_CLK
- IIC\_DATA
- AFT-S\_CURVE
- A\_OUT\_MUTE-L
- TV/VCR
- VIDEO\_OUT
- TUNER\_L
- RF\_CH\_SW

FROM/TO HIFI/DEMULATOR

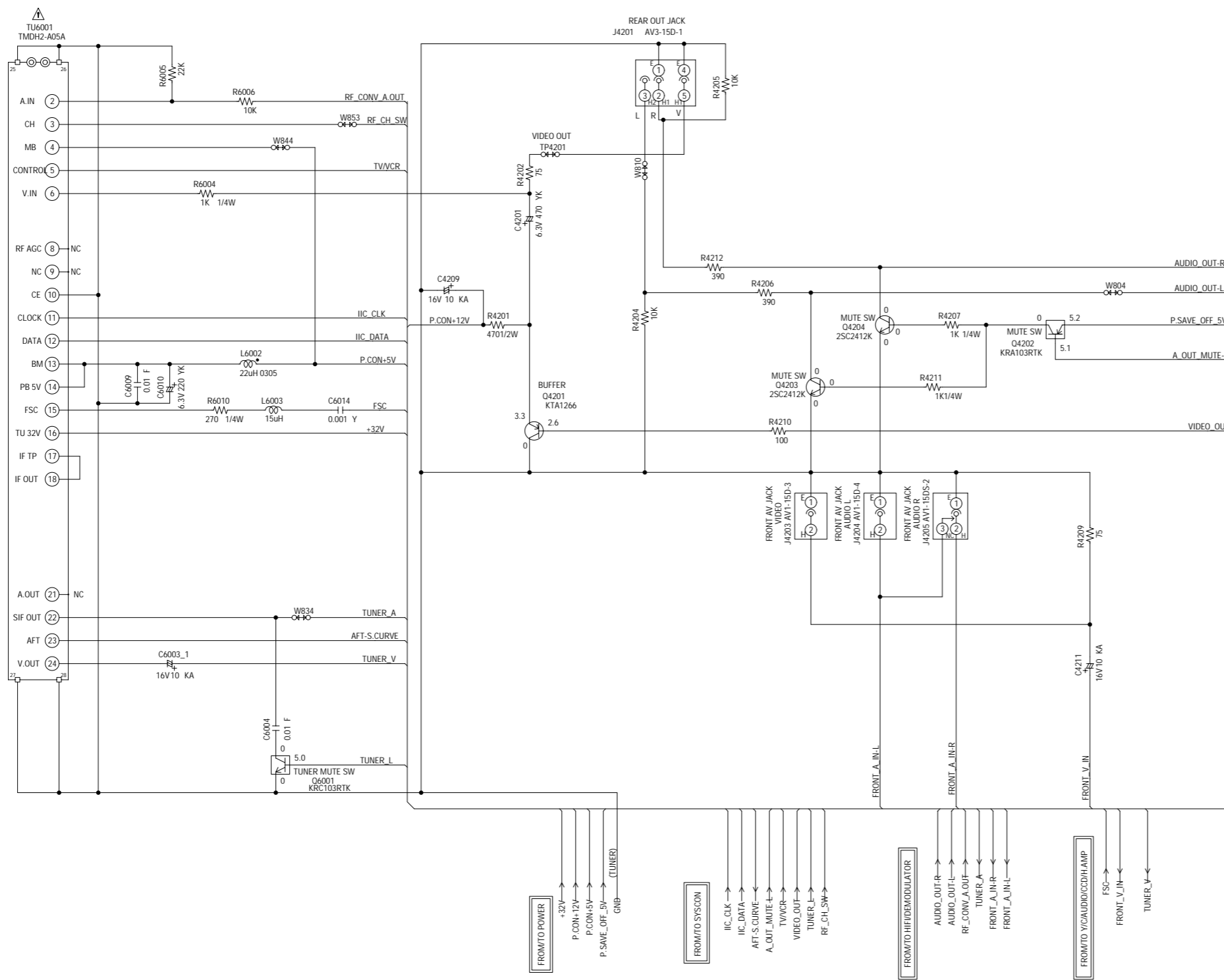
- V\_REC\_ST-H
- HIFI\_ENV\_DET
- HIFI\_H\_SW
- AUDIO\_MUTE-H
- IIC\_CLK
- IIC\_DATA
- ST\_SELECT

FROM/TO OPERATION1/DISPLAY

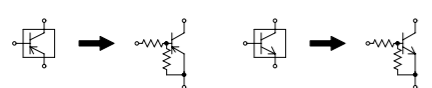
- ← REM\_IN
- ← KEY-B
- ← KEY-A
- 1G/TV/VCR\_LED
- 2G/T\_REC\_LED
- 3G/REC\_LED
- 4G
- 5G
- SEG\_1
- SEG\_2
- SEG\_3
- SEG\_4
- SEG\_5
- SEG\_6
- SEG\_7
- SEG\_8
- SEG\_9
- SEG\_10

PCB010 VMX206

# TUNER SCHEMATIC DIAGRAM (SYSCON PCB)



CAUTION: DIGITAL TRANSISTOR    CAUTION: DIGITAL TRANSISTOR



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

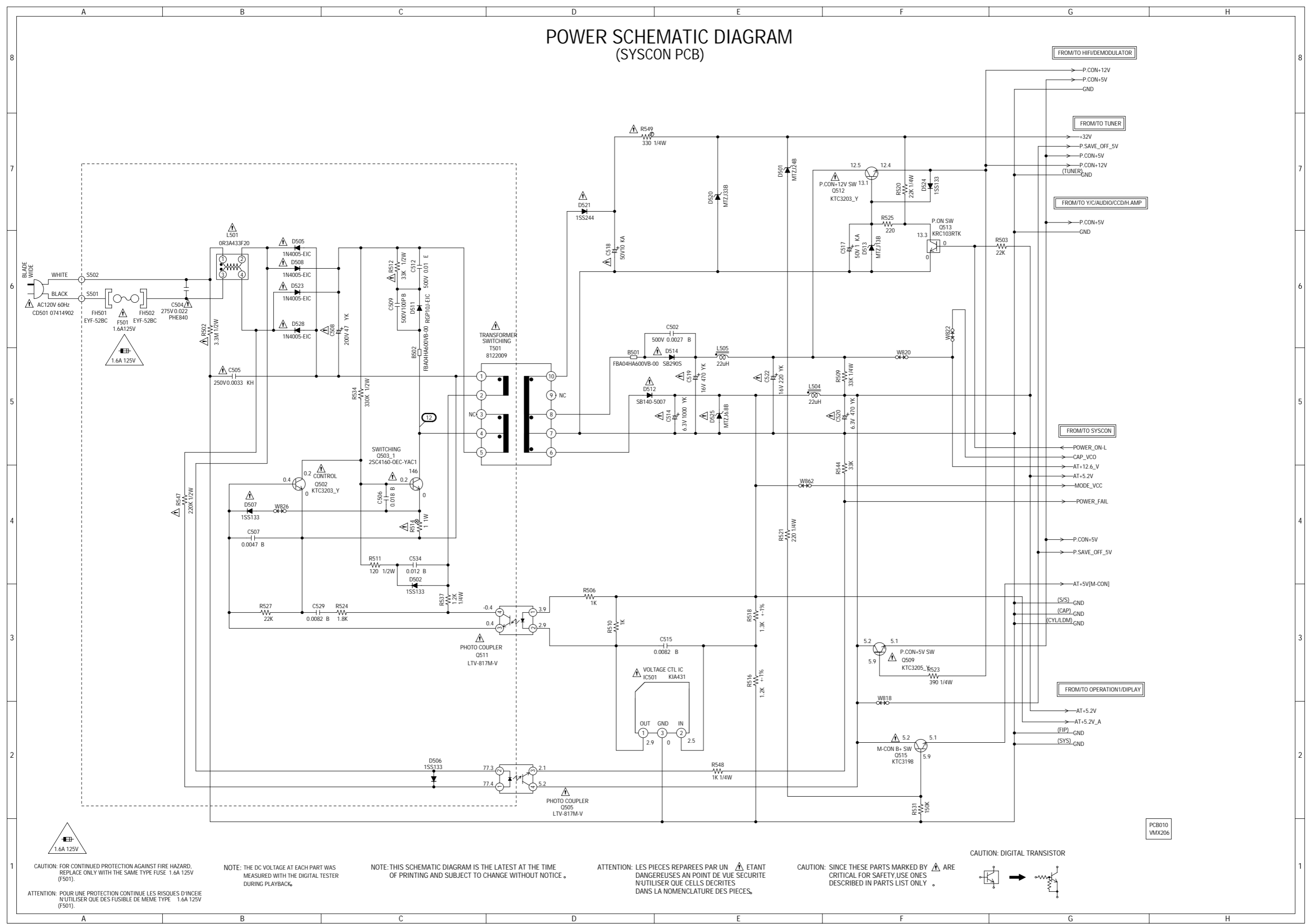
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

PCB010  
VMX206

# POWER SCHEMATIC DIAGRAM (SYSCON PCB)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 1.6A 125V (F501).  
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MEME TYPE 1.6A 125V (F501).

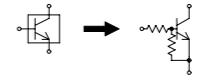
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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

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

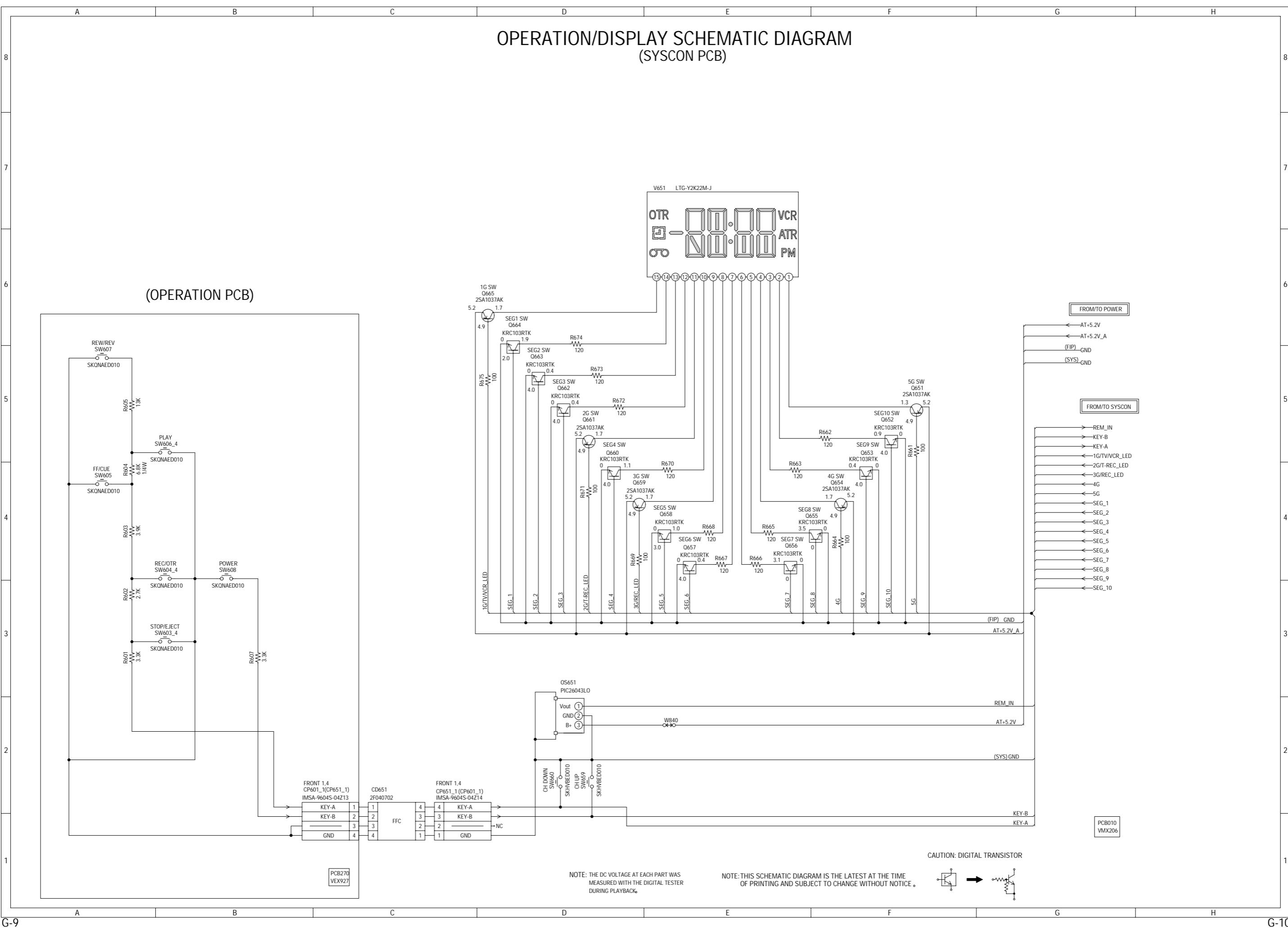
CAUTION: DIGITAL TRANSISTOR



PCB010  
VMX206

# OPERATION/DISPLAY SCHEMATIC DIAGRAM (SYSCON PCB)

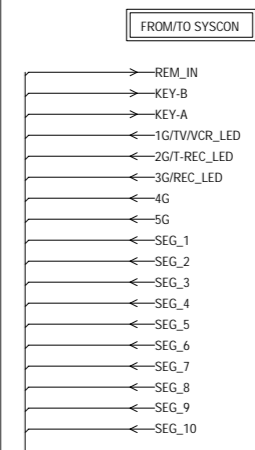
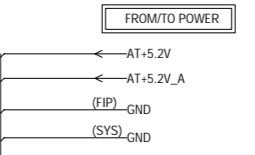
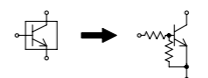
(OPERATION PCB)



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

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

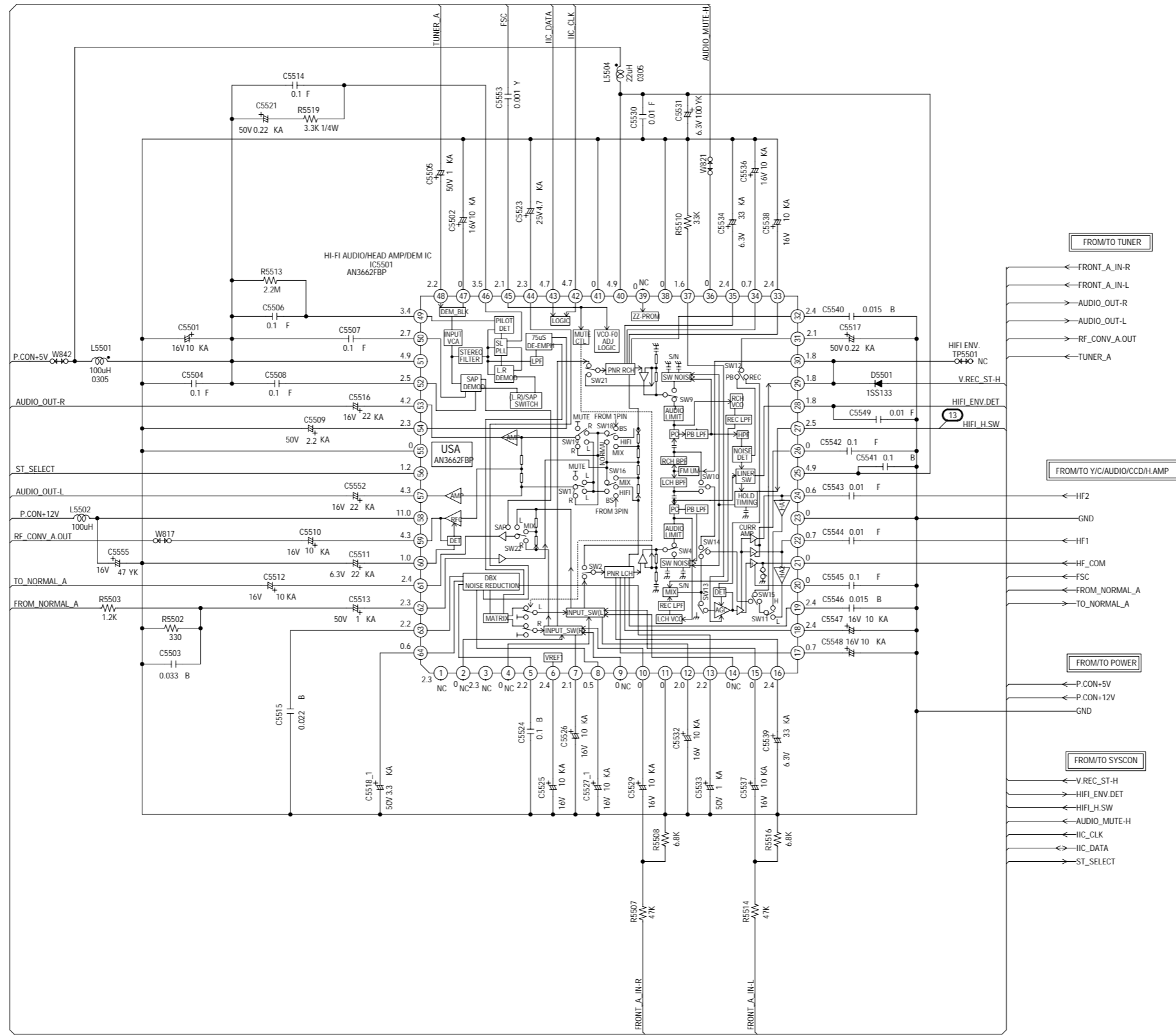
CAUTION: DIGITAL TRANSISTOR



PCB010  
WMX206

PCB270  
VEX927

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



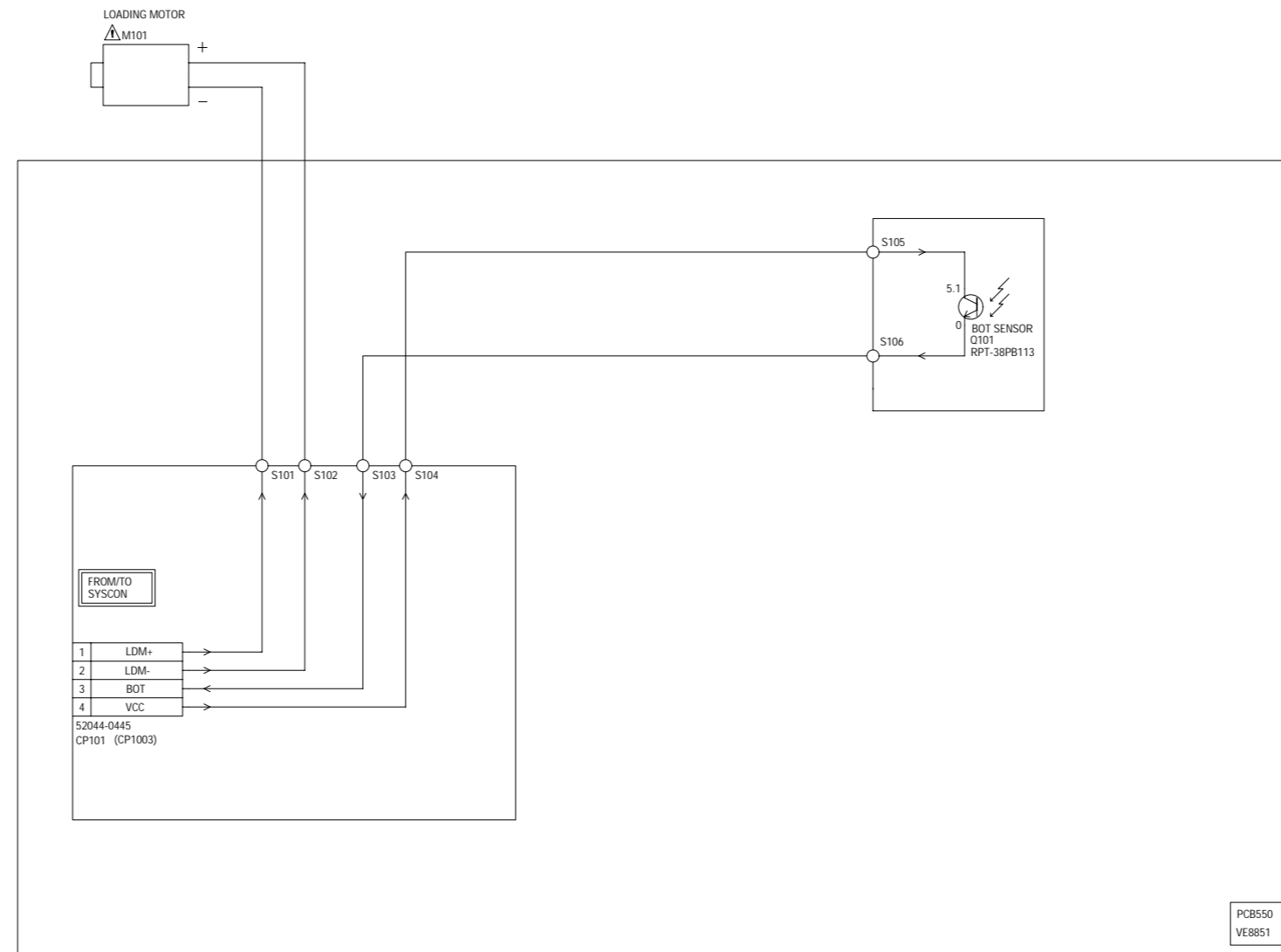
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB010  
WMX206



# DECK SCHEMATIC DIAGRAM (DECK PCB)



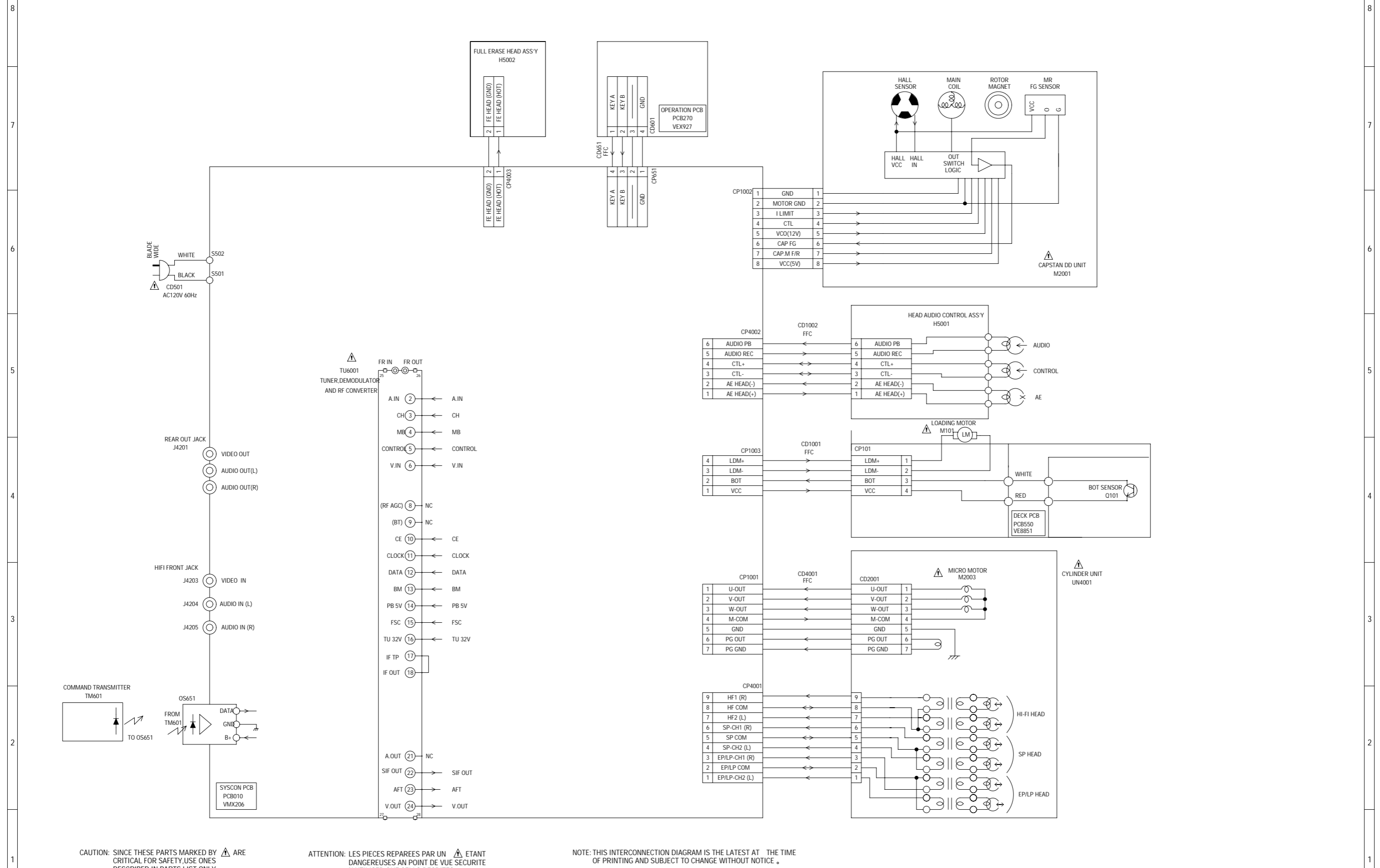
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY .

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

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

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

# INTERCONNECTION DIAGRAM



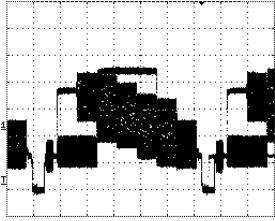
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

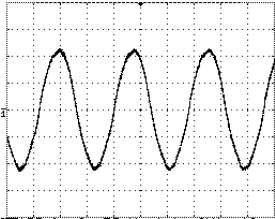
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

# WAVEFORMS

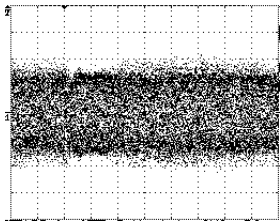
## Y/C/AUDIO/CCD/HEAD AMP



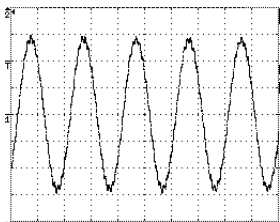
① POWER ON  
10 $\mu$ s 500mV/div



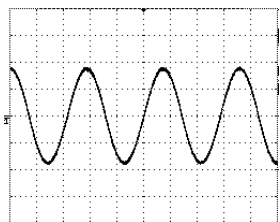
② POWER ON  
100ns 100mV/div



③ PB  
1ms 100mV/div

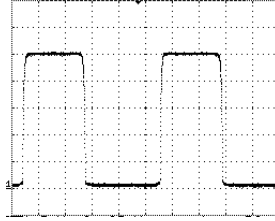


④ PB  
500 $\mu$ s 200mV/div

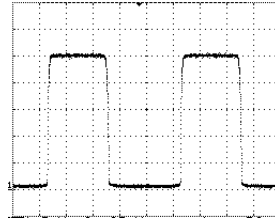


⑤ REC  
5 $\mu$ s 20.0V/div

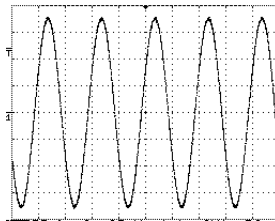
## SYSTEM CONTROL



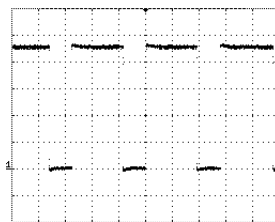
⑥ PB  
200ms 1.0V/div



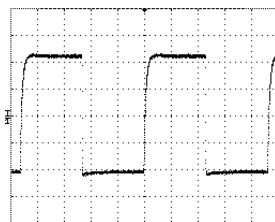
⑦ PB  
200ms 1.0V/div



⑧ POWER ON  
50ns 500mV/div

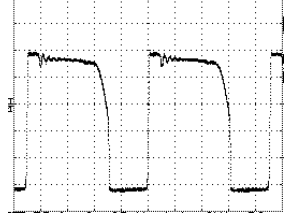


⑨ PB  
500 $\mu$ s 1.0V/div



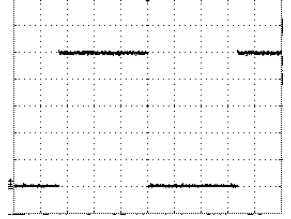
⑪ PB  
200 $\mu$ s 1.0V/div

## POWER



⑫ PB  
2 $\mu$ s 50.0V/div

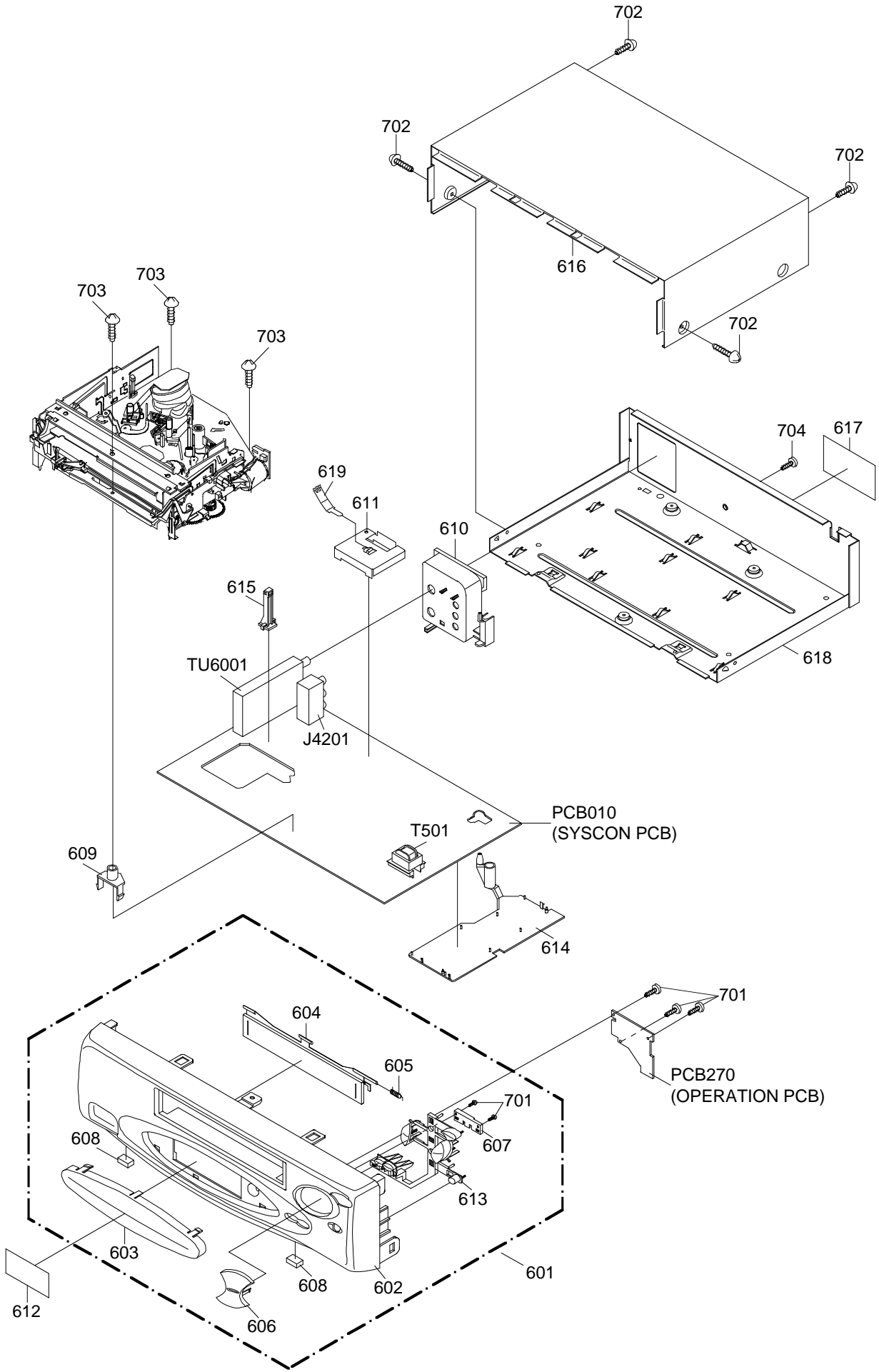
## HIFI/DEMODULATOR



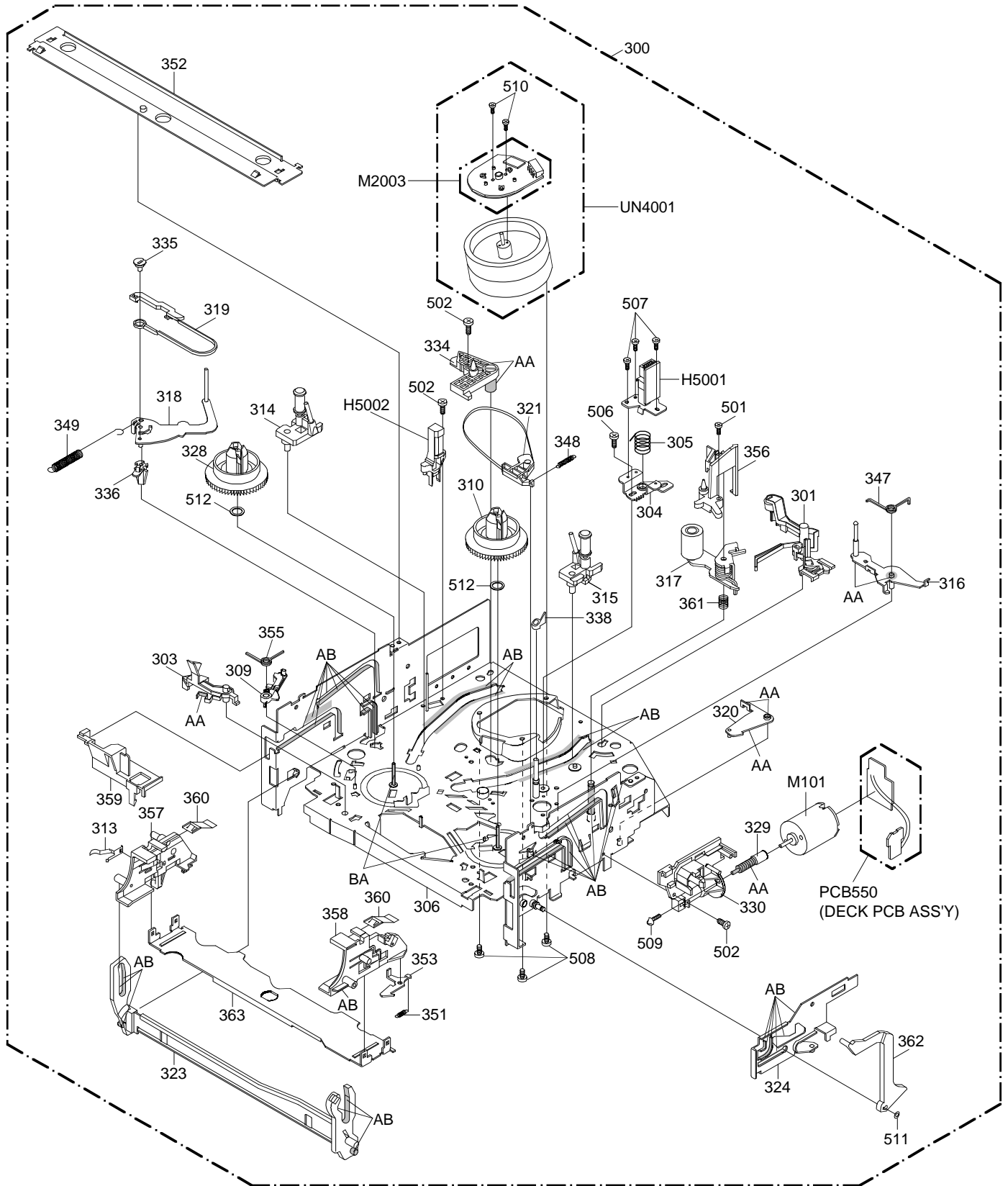
⑬ PB  
5ms 1.0V/div

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

# MECHANICAL EXPLODED VIEW



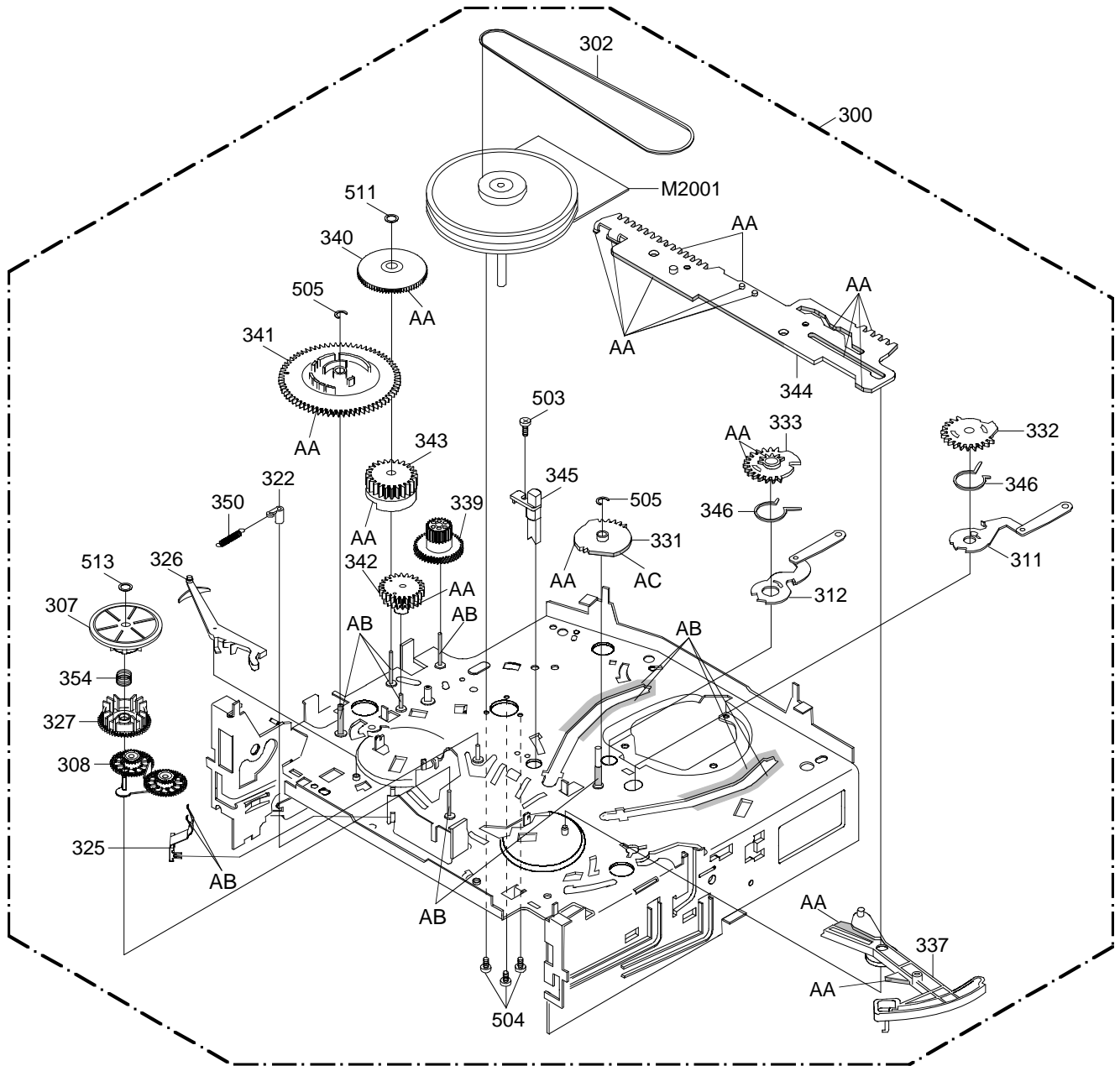
# CHASSIS EXPLODED VIEW (TOP VIEW)



| CLASS  | PART NO.        | MARK |
|--------|-----------------|------|
| GREASE | G-555G          | AA   |
|        | MG-33           | AB   |
|        | FL-721          | AC   |
| OIL    | FL OIL No. 6115 | BA   |

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

# CHASSIS EXPLODED VIEW (BOTTOM VIEW)



| CLASS  | PART NO.        | MARK |
|--------|-----------------|------|
| GREASE | G-555G          | AA   |
|        | MG-33           | AB   |
|        | FL-721          | AC   |
| OIL    | FL OIL No. 6115 | BA   |

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

## MECHANICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO.   | DESCRIPTION                  |
|----------|------------|------------------------------|
| 601      | A4E404B720 | CABINET,FRONT ASSY           |
| 602      | 701WPJ1006 | CABINET,FRONT                |
| 603      | 711WPA0107 | PLATE,DISPLAY                |
| 604      | 712WPJ0728 | FLAP                         |
| 605      | 743WKA0032 | SPRING,FLAP                  |
| 606      | 735WPD0730 | BUTTON,DECK                  |
| 607      | 735WPAA194 | HOLDER,CHANNEL               |
| 608      | 800WFA0045 | CUSHION,LEG                  |
| 609      | 701WPAA147 | HOLDER,DECK                  |
| 610      | 702WPA0777 | PLATE,JACK                   |
| 611      | 752WSA0230 | SHIELD,CASE HEAD AMP         |
| 612      | 723000A698 | SHEET,DISPLAY                |
| 613      | 735WPD0731 | BUTTON,FRAME                 |
| 614      | 755WPA0019 | PLATE,COVER POWER            |
| 615      | 85OP700036 | HOLDER,EOT SENSOR            |
| 616      | 702WSBA027 | CABINET,TOP                  |
| 617      | 722A080029 | SHEET,RATING                 |
| 618      | 702WSA0077 | PLATE,BOTTOM                 |
| 619      | 753WUAA006 | SPRING,EARTH HEAD AMP        |
| 701      | 8110226804 | SCREW,TAP TITE(P) BIND 2.6x8 |
| 702      | 8109230802 | SCREW,TAP TITE(B) 3x8        |
| 703      | 8109140B94 | SCREW,TAP TITE(B) R PAN 4x29 |
| 704      | 8107226604 | SCREW,TAP TITE(S) BIND 2.6x6 |
| ---      | 791WHA0091 | GIFT SHEET                   |
| ---      | 792WHAA044 | PACKAGE                      |
| ---      | 793WCD1341 | GIFT BOX                     |
| ---      | A4E404B975 | INSTRUCTION BOOK KIT         |
| ---      | JA5U0200   | POLYBAG                      |
| ---      | J4C80417   | REGISTRATION CARD            |
| ---      | J4E40401   | INSTRUCTION BOOK             |

## CHASSIS REPLACEMENT PARTS LIST

| REF. NO. | PART NO.    | DESCRIPTION                | REF. NO. | PART NO.   | DESCRIPTION                         |
|----------|-------------|----------------------------|----------|------------|-------------------------------------|
| 300      | A4E404A420K | DECK ASSY A4E404A420K      | 501      | 8107126A04 | SCREW,TAP TITE(S) PAN 2.6x10        |
|          |             |                            | 502      | 8107226804 | SCREW,TAP TITE(S) BIND 2.6x8        |
| 301      | 85OA500022  | AHC ASS'Y                  | 503      | 8107226604 | SCREW,TAP TITE(S) BIND 2.6x6        |
| 302      | 85OP200290  | BELT,CAPSTAN (S)           | 504      | 8109126604 | SCREW,TAP TITE(B) PAN 2.6x6         |
| 303      | 85OP900710  | LEVER,REC                  | 505      | 83ETW30000 | E-RING 3.0                          |
| 304      | 85OP500083  | BASE,AC HEAD               | 506      | 8107226404 | SCREW,TAP TITE(S) BIND 2.6x4        |
| 305      | 85OP800324  | SPRING,AC HEAD             | 507      | 8102120604 | SCREW,PAN M2x6                      |
| 306      | 85OA000448  | MAIN CHASSIS ASS'Y (K3V)   | 508      | 810A126504 | SCREW/WASHER(A) M2.6x5              |
| 307      | 85OA200082  | CLUTCH ASS'Y(S2)           | 509      | 810A130504 | SCREW/WASHER(A) M3x5                |
| 308      | 85OA200088  | ARM,IDLER ASS'Y 3V         |          |            |                                     |
| 309      | 85OP600556  | ARM,SS BRAKE (S)           | 510      | 810A123504 | SEMS A M2.3x5.0                     |
|          |             |                            | 511      | 82P266005N | POLYSLIDER WASHER(CUT) 2.6x6.0xT0.5 |
| 310      | 85OP200292  | REEL,T (S)                 | 512      | 82Q2647C5N | POLYSLIDER WASHER 2.6x4.7xT0.25     |
| 311      | 85OA300061  | LOADING ARM S ASS'Y        | 513      | 82P184505N | POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5 |
| 312      | 85OA300062  | LOADING ARM T ASS'Y        |          |            |                                     |
| 313      | 85OP900696  | SPRING,CASS EARTH          | CP101    | 069R740018 | CONNECTOR PCB SIDE 52044-0445       |
| 314      | 85OA400220  | INCLINED BASE S UNIT 3V    | H5001    | 1523D91034 | HEAD (AUDIO CONTROL) HVMXA1072A     |
| 315      | 85OA400221  | INCLINED BASE T UNIT 3V    | H5002    | 1543D02013 | HEAD (FULL ERASE) HVFHP0032A        |
| 316      | 85OA400199  | P5-3 ARM ASS'Y(S)          | △ M101   | 1596P78001 | MOTOR (LOADING) MXN13FB11H          |
| 317      | 85OA400205  | PINCH ROLLER BLOCK         | △ M2001  | 1594S98001 | CAPSTAN DD UNIT F2QSB36             |
| 318      | 85OA400175  | TENSION ARM ASS'Y          | M2003    | 1589S11014 | MICRO MOTOR I2OAL03                 |
| 319      | 85OA400184  | TENSION BAND ASS'Y (S)     | PCB550   | A4C831B550 | DECK PCB ASS'Y VE8851               |
|          |             |                            | Q101     | 0000700320 | TRANSISTOR,PHOTO RPT-38PB113        |
|          |             |                            | △ UN4001 | A4E401B500 | CYLINDER UNIT ASS'Y A4E401B500      |
| 320      | 85OA400178  | PINCH ROLLER LEVER ASS'Y   |          |            |                                     |
| 321      | 85OA600195  | BRAKE T ASS'Y(SV)          |          |            |                                     |
| 322      | 85OP500087  | HOLDER,SPRING(SV)          |          |            |                                     |
| 323      | 85OA900223  | LINK UNIT(SV)              |          |            |                                     |
| 324      | 85OP900716  | LEVER,LINK(SV)             |          |            |                                     |
| 325      | 85OP200284  | LEVER,CLUTCH (S)           |          |            |                                     |
| 326      | 85OP200285  | ACTUATOR,CLUTCH            |          |            |                                     |
| 327      | 85OP200298  | GEAR,COUPLING(S2)          |          |            |                                     |
| 328      | 85OP200291  | REEL,S (S)                 |          |            |                                     |
| 329      | 85OP600566  | WORM(SV)                   |          |            |                                     |
|          |             |                            |          |            |                                     |
| 330      | 85OP600567  | BRACKET,MOTOR(SV)          |          |            |                                     |
| 331      | 85OP300193  | GEAR,MAIN LOADING          |          |            |                                     |
| 332      | 85OP300179  | GEAR,LOADING S             |          |            |                                     |
| 333      | 85OP300180  | GEAR,LOADING T             |          |            |                                     |
| 334      | 85OP300189  | HOLDER,LOADING GEAR (S-ZV) |          |            |                                     |
| 335      | 85OP400472  | ADJUST,TENSION             |          |            |                                     |
| 336      | 85OP400492  | HOLDER,TENSION             |          |            |                                     |
| 337      | 85OP400490  | LEVER,TENSION              |          |            |                                     |
| 338      | 85OP400520  | CAP.P4                     |          |            |                                     |
| 339      | 85OP600543  | GEAR,JOINT                 |          |            |                                     |
|          |             |                            |          |            |                                     |
| 340      | 85OP600544  | GEAR,MIDDLE                |          |            |                                     |
| 341      | 85OP600572  | CAM,MAIN(S)                |          |            |                                     |
| 342      | 85OP600546  | CAM,P5                     |          |            |                                     |
| 343      | 85OP600565  | CAM,PINCH ROLLER           |          |            |                                     |
| 344      | 85OP600561  | ROD,MAIN(S)                |          |            |                                     |
| 345      | 85OP700035  | REFLECTOR,LED              |          |            |                                     |
| 346      | 85OP800318  | SPRING,LOADING GEAR        |          |            |                                     |
| 347      | 85OP800334  | SPRING,P5 (S)              |          |            |                                     |
| 348      | 85OP800335  | SPRING,BRAKE T (S)         |          |            |                                     |
| 349      | 85OP800322  | SPRING,TENSION             |          |            |                                     |
|          |             |                            |          |            |                                     |
| 350      | 85OP800336  | SPRING,CAP BRAKE (S)       |          |            |                                     |
| 351      | 85OP800342  | SPRING,LOCKER (S)          |          |            |                                     |
| 352      | 85OP900733  | BRACKET, TOP 3V            |          |            |                                     |
| 353      | 85OP900713  | LOCKER,R2                  |          |            |                                     |
| 354      | 85OP800330  | SPRING,RING                |          |            |                                     |
| 355      | 85OP800337  | SPRING,SS BRAKE (S)        |          |            |                                     |
| 356      | 85OP900680  | OPENER,CASS                |          |            |                                     |
| 357      | 85OP900722  | CASS SIDE L(SV)            |          |            |                                     |
| 358      | 85OP900734  | CASS SIDE R(3V)            |          |            |                                     |
| 359      | 85OP900720  | TAPE GUIDE L(SV)           |          |            |                                     |
|          |             |                            |          |            |                                     |
| 360      | 85OP900694  | SPRING,PACK                |          |            |                                     |
| 361      | 85OP800341  | SPRING,P/R ARM             |          |            |                                     |
| 362      | 85OP900721  | LEVER,FLAP(SV)             |          |            |                                     |
| 363      | 85OP900717  | CASS HOLDER(SV)            |          |            |                                     |



# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO.           | PART NO.   | DESCRIPTION                          | REF. NO.                        | PART NO.    | DESCRIPTION                          |
|--------------------|------------|--------------------------------------|---------------------------------|-------------|--------------------------------------|
| <b>RESISTORS</b>   |            |                                      | <b>TRANSISTORS</b>              |             |                                      |
| △ R502             | R03102335J | RC 3.3M OHM 1/2W                     | Q4006                           | TCAT032034  | TRANSISTOR, SILICON KTC3203_Y-AT     |
| △ R512             | R002T2333J | RC 33K OHM 1/2W                      | Q4010                           | T6YJ1037K0  | TRANSISTOR, SILICON 2SA1037AKT146R,S |
| △ R514             | R3X181010J | R,METAL OXIDE 1 OHM 1W               | Q4012                           | T8YJ2412K0  | TRANSISTOR, SILICON 2SC2412KT146 R,S |
| △ R547             | R002T2224J | RC 220K OHM 1/2W                     | Q4201                           | TAATA12660  | TRANSISTOR, SILICON KTA1266-AT(Y,GR) |
| △ R549             | R65584331J | R,FUSE 330 OHM 1/4W                  | Q4202                           | TPAAC05002  | COMPOUND TRANSISTOR KRA103RTK        |
| <b>CAPACITORS</b>  |            |                                      | Q4203                           | T8YJ2412K0  | TRANSISTOR, SILICON 2SC2412KT146 R,S |
| △ C504             | P2472B223M | CMP 0.022 UF 275V                    | Q4204                           | T8YJ2412K0  | TRANSISTOR, SILICON 2SC2412KT146 R,S |
| △ C505             | CB3LE0ML3M | CC 0.0033UF 250V                     | Q6001                           | TNAAC05002  | COMPOUND TRANSISTOR KRC103RTK        |
| △ C508             | E02LFC470M | CE 47 UF 200V                        | <b>COILS &amp; TRANSFORMERS</b> |             |                                      |
| C512               | C0JFE0514M | CC 0.01 UF 500V E                    | △ L501                          | 029T000083  | COIL,LINE FILTER 0R3A433F20          |
| △ C514             | E02LT0102M | CE 1000 UF 6.3V                      | L504                            | 021W7A220K  | COIL 22 UH                           |
| △ C518             | E50HU5100M | CE 10 UF 50V                         | L505                            | 021W7A220K  | COIL 22 UH                           |
| △ C519             | E02LT2471M | CE 470 UF 16V                        | L4001                           | 02167F220J  | COIL 22 UH                           |
| △ C520             | E02LU0471M | CE 470 UF 6.3V                       | L4003                           | 02167F101J  | COIL 100 UH                          |
| △ C522             | E02LU2221M | CE 220 UF 16V                        | L4004                           | 02167F220J  | COIL 22 UH                           |
| <b>DIODES</b>      |            |                                      | L4005                           | 02167F470J  | COIL 47 UH                           |
| D501               | D97U02401B | DIODE,ZENER MTZJ24B T-77             | L4006                           | 02167F470J  | COIL 47 UH                           |
| D502               | D1VT001330 | DIODE,SILICON 1SS133T-77             | L5501                           | 02167F101J  | COIL 100 UH                          |
| △ D505             | D2WXN40050 | DIODE,SILICON 1N4005-EIC             | L5502                           | 021LA6101K  | COIL 100 UH                          |
| D506               | D1VT001330 | DIODE,SILICON 1SS133T-77             | L5504                           | 02167F220J  | COIL 22 UH                           |
| △ D507             | D1VT001330 | DIODE,SILICON 1SS133T-77             | L6002                           | 02167F220J  | COIL 22 UH                           |
| △ D508             | D2WXN40050 | DIODE,SILICON 1N4005-EIC             | L6003                           | 021LA6150K  | COIL 15 UH                           |
| D511               | D2WXGP10J0 | DIODE RECTIFIER RGP10J-EIC           | △ T501                          | 0481220094  | TRANSFORMER,SWITCHING 8122009        |
| △ D512             | D23TSB1400 | DIODE SCHOTTKY SB140-5007-G23        | T4001                           | 031626009R  | COIL,BIAS OSC 1626009                |
| D513               | D97U01301B | DIODE,ZENER MTZJ13B T-77             | <b>JACKS</b>                    |             |                                      |
| △ D514             | D2WXB290S0 | DIODE,SILICON SB290S                 | J4201                           | 060Q411016  | RCA JACK AV3-15D-1                   |
| D520               | D97U03301B | DIODE,ZENER MTZJ33B T-77             | J4203                           | 060Q401072  | RCA JACK AV1-15D-3                   |
| △ D521             | D17T002440 | DIODE,SILICON 1SS244T-77             | J4204                           | 060Q401073  | RCA JACK AV1-15D-4                   |
| △ D523             | D2WXN40050 | DIODE,SILICON 1N4005-EIC             | J4205                           | 060Q421019  | RCA JACK AV1-15DS-2                  |
| D524               | D1VT001330 | DIODE,SILICON 1SS133T-77             | <b>SWITCHES</b>                 |             |                                      |
| △ D525             | D97U06R81B | DIODE,ZENER MTZJ6.8B T-77            | SW603                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| △ D528             | D2WXN40050 | DIODE,SILICON 1N4005-EIC             | SW604                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| D1001              | 0010600060 | LED SID1050CM                        | SW605                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| D1010              | D97U05R61B | DIODE,ZENER MTZJ5.6B T-77            | SW606                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| D5501              | D1VT001330 | DIODE,SILICON 1SS133T-77             | SW607                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| <b>ICS</b>         |            |                                      | SW608                           | 0504201T32  | SWITCH,TACT SKQNAED010               |
| △ IC501            | I1KJ9A4310 | IC KIA431                            | SW659                           | 0504201T31  | SWITCH,TACT SKHVBED010               |
| IC1001             | I51F58071A | IC OEC8071A                          | SW660                           | 0504201T31  | SWITCH,TACT SKHVBED010               |
| △ IC1002           | I03DQ18800 | IC LB11880                           | SW1001                          | 0508221001  | SWITCH (LEAF) SPVF130100             |
| IC4001             | I03F3200M0 | IC LA71200M-MPB                      | <b>VARIABLE RESISTORS</b>       |             |                                      |
| IC5501             | I01F62FBP0 | IC AN3662FBP                         | VR1001                          | V1163Q5BTC  | VOLUME,SEMI FIXED EVNCYAA03BQ5       |
| <b>TRANSISTORS</b> |            |                                      | <b>P.C.BOARD ASSEMBLIES</b>     |             |                                      |
| △ Q502             | TCAT032034 | TRANSISTOR, SILICON KTC3203_Y-AT     | PCB010                          | A4E404B01A  | PCB ASS'Y VMX206A                    |
| △ Q503             | TCWQ4160E0 | TRANSISTOR, SILICON 2SC4160-OEC-YAC1 | PCB270                          | A4E404B27A  | PCB ASS'Y VEX927A                    |
| △ Q505             | 0002E00610 | PHOTO COUPLER LTV-817M-V             | PCB550                          | A4C831B550  | SEE CHASSIS REPLACEMENT PARTS LIST   |
| △ Q509             | TCAT03205Y | TRANSISTOR, SILICON KTC3205_Y-AT     | <b>MISCELLANEOUS</b>            |             |                                      |
| △ Q511             | 0002E00610 | PHOTO COUPLER LTV-817M-V             | B501                            | 024JT035C1  | CORE,BEADS FBA04HA600VB-00           |
| △ Q512             | TCAT032034 | TRANSISTOR, SILICON KTC3203_Y-AT     | B502                            | 024JT035C1  | CORE,BEADS FBA04HA600VB-00           |
| Q513               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | △ CD501                         | 1207414902  | CORD AC BUSH 07414902                |
| △ Q515             | TCATC31980 | TRANSISTOR, SILICON KTC3198-AT(Y,GR) | CD651                           | 122F040702  | CORD JUMPER 2F040702                 |
| Q651               | T6YJ1037K0 | TRANSISTOR, SILICON 2SA1037AKT146R,S | CP601                           | 069J740019  | CONNECTOR PCB SIDE IMSA-9604S-04Z13  |
| Q652               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CP651                           | 069J740029  | CONNECTOR PCB SIDE IMSA-9604S-04Z14  |
| Q653               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CD1001                          | 122F040702  | CORD JUMPER 2F040702                 |
| Q654               | T6YJ1037K0 | TRANSISTOR, SILICON 2SA1037AKT146R,S | CD1002                          | 122F061501  | CORD JUMPER 2F061501                 |
| Q655               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CD4001                          | 122F071901  | CORD JUMPER 2F071901                 |
| Q656               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CD6002                          | 06CQL02006  | CABLE SI-C108-40                     |
| Q657               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CP1001                          | 069J770029  | CONNECTOR PCB SIDE IMSA-9604S-07Z14  |
| Q658               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CP1002                          | 069J7280590 | CONNECTOR PCB SIDE TMC-J08P-B1       |
| Q659               | T6YJ1037K0 | TRANSISTOR, SILICON 2SA1037AKT146R,S | CP1003                          | 069J740029  | CONNECTOR PCB SIDE IMSA-9604S-04Z14  |
| Q660               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CP4001                          | 069J7290620 | CONNECTOR PCB SIDE TOC-C09X-A1       |
| Q661               | T6YJ1037K0 | TRANSISTOR, SILICON 2SA1037AKT146R,S | CP4002                          | 069J760019  | CONNECTOR PCB SIDE IMSA-9604S-06Z13  |
| Q662               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | CP4003                          | 069J120320  | CONNECTOR PCB SIDE TMC-T02X-E1       |
| Q663               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | △ F501                          | 081PC1R604  | FUSE 51MS016LCC                      |
| Q664               | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        | FH501                           | 06710T0006  | HOLDER,FUSE EYF-52BC                 |
| Q665               | T6YJ1037K0 | TRANSISTOR, SILICON 2SA1037AKT146R,S | FH502                           | 06710T0006  | HOLDER,FUSE EYF-52BC                 |
| Q1002              | 0002700590 | PHOTO COUPLER RPI-301                | OS651                           | 077Q000018  | REMOTE RECEIVER PIC26043LO           |
| Q1003              | T8YJ2412K0 | TRANSISTOR, SILICON 2SC2412KT146 R,S | TM601                           | 076N0EA030  | TRANSMITTER RC-EA030                 |
| Q1004              | 0002700530 | PHOTO COUPLER RPI-352Q01R            | △ TU6001                        | 0162600020  | RF UNIT TMDH2-A34A                   |
| Q1005              | 0002700530 | PHOTO COUPLER RPI-352Q01R            | V651                            | 0040E94001  | LED DISPLAY LTG-Y2K22M-J             |
| Q1006              | 0000100380 | PHOTO TRANSISTOR PNA2604M010R        | X1001                           | 100CT01403  | CRYSTAL HC-49/U-S                    |
| Q1007              | T8YJ2412K0 | TRANSISTOR, SILICON 2SC2412KT146 R,S | X4001                           | 100CT3R508  | CRYSTAL HC-49/U                      |
| Q1010              | TNAAC05002 | COMPOUND TRANSISTOR KRC103RTK        |                                 |             |                                      |
| Q1014              | T8YJ2412K0 | TRANSISTOR, SILICON 2SC2412KT146 R,S |                                 |             |                                      |
| Q4001              | TCATC31980 | TRANSISTOR, SILICON KTC3198-AT(Y,GR) |                                 |             |                                      |
| Q4002              | TCATC31980 | TRANSISTOR, SILICON KTC3198-AT(Y,GR) |                                 |             |                                      |
| Q4003              | TPAAC05002 | COMPOUND TRANSISTOR KRA103RTK        |                                 |             |                                      |
| Q4005              | TAATA12660 | TRANSISTOR, SILICON KTA1266-AT(Y,GR) |                                 |             |                                      |

# ELECTRICAL REPLACEMENT PARTS LIST

## RESISTOR

RC..... CARBON RESISTOR

## CAPACITORS

CC..... CERAMIC CAPACITOR

CE..... ALUMI ELECTROLYTIC CAPACITOR

CP..... POLYESTER CAPACITOR

CPP..... POLYPROPYLENE CAPACITOR

CPL..... PLASTIC CAPACITOR

CMP..... METAL POLYESTER CAPACITOR

CMPL..... METAL PLASTIC CAPACITOR

CMPP..... METAL POLYPROPYLENE CAPACITOR

|          |          |
|----------|----------|
| SPEC.NO. | M4E4-04B |
| O/R NO.  | K124004  |

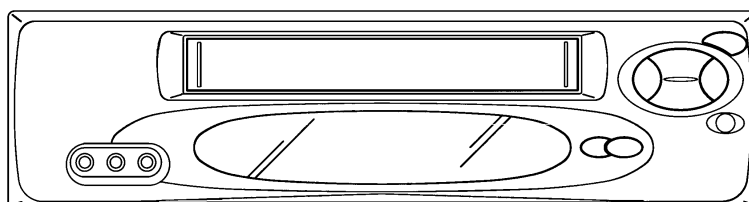
**Memorex®**

**MVR4041 Series A**

# **SERVICE MANUAL**

---

**VIDEO CASSETTE RECORDER**



**VHS**

**ORIGINAL  
MFR'S VERSION A**


## SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

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

### 2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  mark, the designated parts must be used.

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

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board.

The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

### 4. PERFORM A SAFETY CHECK AFTER SERVICING

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

## HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

#### 1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

#### 2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

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## GENERAL SPECIFICATIONS

|                                 |                           |                                      |  |   |   |  |
|---------------------------------|---------------------------|--------------------------------------|--|---|---|--|
| <b>G-1</b>                      | <b>VCR System</b>         | System                               | VHS Player / Recorder  |   |   |  |
|                                 |                           | Video System                         | NTSC   |   |   |  |
|                                 |                           | Hi-Fi STEREO                         | Yes  |   |   |  |
|                                 |                           | NTSC PB(PAL60Hz)                     | No   |   |   |  |
|                                 |                           | Deck                                 | DECK<br>Loading System<br>Motor  | OVD-7<br>Front<br>3   |   |  |
|                                 |                           | Heads                                | Video Head   | 4Head   |   |  |
|                                 |                           |                                      | FM Audio Head  | 2Head   |   |  |
|                                 |                           |                                      | Normal Audio /Control  | Mono / Yes  |   |  |
|                                 |                           |                                      | Erase(Full Track Erase)  | Yes   |   |  |
|                                 |                           | Tape Speed                           | Rec PAL  | -   |   |  |
|                                 |                           |                                      | NTSC   | SP/SLP  |   |  |
|                                 |                           |                                      | Play PAL   | -   |   |  |
|                                 |                           |                                      | NTSC   | SP/LP/SLP   |   |  |
|                                 |                           | Fast Forward / Rewind Time (Approx.) | with Cassette  | FF:4'50"/REW:2'30"<br>T-120   |   |  |
|                                 |                           | Forward/Reverse                      | NTSC or PAL-M  | SP/LP/SLP=3x,5x/7x,9x/9x,15x  |   |  |
| Picture Search                  | PAL or SECAM              | -                                    |  |   |   |  |
| Frame Advance                   | Slow                      | 1/10                                 |  |   |   |  |
| Slow Speed                      | Variable Slow             | 1/10                                 |  |   |   |  |
| <b>G-2</b>                      | <b>Tuning System</b>      | Broadcasting System                  | US System M  |   |   |  |
|                                 |                           | Tuner and Receive CH                 | System<br>Destination<br>Tuning System<br>Input Impedance<br>CH Coverage | 1Tuner<br>USA(w/CATV)<br>F-Synth<br>VHF/UHF 75 OHM<br>2-69,4A,A-5- A-1,A-1,J- W<br>W+1-W+84 |   |  |
|                                 |                           | Intermediate Frequency               | Picture(FP)<br>Sound(FS)<br>FP-FS  | 45.75MHz<br>41.25MHz<br>4.50MHz   |   |  |
|                                 |                           | Preset CH                            |  | No  |   |  |
|                                 |                           | RF Converter Output                  |  | Yes   |   |  |
|                                 |                           |                                      | Channel  | 3 or 4 ch   |   |  |
|                                 |                           |                                      | Level/Impedance  | 66dBu /75ohm  |   |  |
|                                 |                           |                                      | Sound Selector   | No  |   |  |
|                                 |                           | Stereo/Dual TV Sound                 |  | Yes(US-ST)  |   |  |
|                                 |                           | <b>G-3</b>                           | <b>Power</b>   | Power Source  | AC<br>DC  | 120V,60Hz<br>-                                     |
|                                 |                           |                                      |  | Power Consumption   | Power On(at AC)<br>Stand by (at AC)<br>Per Year | 9W at 120V 60Hz<br>1.7W at 120V 60Hz<br>- kWh/Year |
|                                 |                           |                                      |  | Protector   | Power Fuse<br>Dew Sensor                        | Yes<br>No  |
|                                 |                           |                                      |  |   |   |  |
| <b>G-4</b>                      | <b>Regulation</b>         | Safety                               | UL   |   |   |  |
|                                 |                           | Radiation                            | FCC  |   |   |  |
| <b>G-5</b>                      | <b>Temperature</b>        | Operation<br>Storage                 | 5°C - 40°C<br>-20°C - 60°C   |   |   |  |
| <b>G-6</b>                      | <b>Operating Humidity</b> |                                      | Less then 80% RH   |   |   |  |
| <b>G-7</b>                      | <b>Signal</b>             | Video Signal                         | Input Level  | 1 V p-p/75 ohm  |   |  |
|                                 |                           |                                      | Output Level   | 1 V p-p/75 ohm  |   |  |
|                                 |                           |                                      | S/N Ratio (Weighted)   | 50  |   |  |
|                                 |                           |                                      | Horizontal Resolution at SP Mode   | 230Line   |   |  |
|                                 |                           | Audio Signal<br>(0dB=0.775Vrms)      | Input Level  | -8dB/50Kohm   |   |  |
|                                 |                           |                                      | Output Level   | -8dB/1Kohm  |   |  |
|                                 |                           |                                      | S/N Ratio at SP (Weighted)   | 42dB  |   |  |
|                                 |                           |                                      | Harmonic Distortion (1KHz)   | 1.5%  |   |  |
|                                 |                           |                                      | Frequency Response at SP   | 100Hz - 10kHz   |   |  |
|                                 |                           |                                      | at LP  | 100Hz - 6kHz  |   |  |
|                                 |                           | Hi-Fi Audio Signal                   | at SLP   | 100Hz - 4kHz  |   |  |
|                                 |                           |                                      | 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                      |                                      |  |   |   |  |
| <b>G-8</b>                      | <b>On Screen Display</b>  | Menu                                 | Yes  |   |   |  |
|                                 |                           | Menu Type                            | Character  |   |   |  |
|                                 |                           | ATS                                  | No   |   |   |  |
|                                 |                           | 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  |   |   |  |

## GENERAL SPECIFICATIONS

|             |                                      |  |                                |
|-------------|--------------------------------------|--|--------------------------------|
|             |                                      | Pin Code Registration  | No                             |
|             |                                      | System Set-Up  | No                             |
|             |                                      | Clock Set  | Yes (Calendar 12H)             |
|             |                                      | Language   | Yes                            |
|             |                                      | No Noise Back Ground   | Yes                            |
|             |                                      | G-CODE(or SHOWVIEW or PLUSCODE)No. Entry                           | No                             |
|             |                                      | NICAM 1/2,NICAM Off,Audio Output                                   | No                             |
|             |                                      | Stereo,Audio Output,SAP  | Yes                            |
|             |                                      | Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)   | Yes                            |
|             |                                      | CH/AV  | Yes                            |
|             |                                      | Clock  | Yes                            |
|             |                                      | Repeat   | Yes                            |
|             |                                      | Pin Code   | No                             |
|             |                                      | Tape Counter   | Yes                            |
|             |                                      | Index  | No                             |
|             |                                      | Hotel Lock   | No                             |
|             |                                      | Tape Speed   | Yes                            |
|             |                                      | Manual Tracking (Bar Setting)                                      | No                             |
|             |                                      | Hi-Fi  | Yes                            |
|             |                                      | S-Repeat/SR-R/SR-Play  | No                             |
|             |                                      | VPS  | No                             |
|             |                                      | PDC  | No                             |
| <b>G-9</b>  | <b>OSD Language</b>                  | OSD Language Setting   | English French Spanish English |
| <b>G-10</b> | <b>Clock,Timer and Timer Back-up</b> | Calendar   | 1990/1/1 ~ 2081/12/31          |
|             |                                      | Timer Events   | 8 prog/1 month                 |
|             |                                      | One Touch Recording Max Time                                       | 5 Hours                        |
|             |                                      | OTPB Valid Time  | No                             |
|             |                                      | Timer Back-up (at Power Off Mode)                                  | 5 sec.                         |
| <b>G-11</b> | <b>Display</b>                       | Indicator  | Yes                            |
|             |                                      | Indicator Type   | LED Module                     |
|             |                                      | Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR | Yes                            |
|             |                                      | Pause  | Yes                            |
|             |                                      | Still  | Yes                            |
|             |                                      | Eject(Tape Mark Flash)   | Yes                            |
|             |                                      | Slow   | Yes                            |
|             |                                      | WKL,Y.M.D,Start,End  | No                             |
|             |                                      | AFT  | No                             |
|             |                                      | Repeat   | No                             |
|             |                                      | A-DUB  | No                             |
|             |                                      | VCR  | Yes                            |
|             |                                      | Memory   | No                             |
|             |                                      | Index  | No                             |
|             |                                      | VPS  | No                             |
|             |                                      | PDC  | No                             |
|             |                                      | SP   | No                             |
|             |                                      | LP   | No                             |
|             |                                      | SLP  | No                             |
|             |                                      | AM   | No                             |
|             |                                      | PM   | Yes                            |
|             |                                      | F1,F2  | No                             |
|             |                                      | RF Output CH   | Yes                            |
|             |                                      | Tape In  | Yes                            |
| <b>G-12</b> | <b>Remote Control</b>                | Unit   | RC-EA                          |
|             |                                      | Glow in Dark Remocon   | No                             |
|             |                                      | Power Source   | Voltage(D.C)<br>UM size x pcs  |
|             |                                      | Total Keys   | 35 Keys                        |
|             |                                      | Keys   | Power                          |
|             |                                      | 1  | Yes                            |
|             |                                      | 2  | Yes                            |
|             |                                      | 3  | Yes                            |
|             |                                      | 4  | Yes                            |
|             |                                      | 5  | Yes                            |
|             |                                      | 6  | Yes                            |
|             |                                      | 7  | Yes                            |
|             |                                      | 8  | Yes                            |
|             |                                      | 9  | Yes                            |
|             |                                      | 0  | Yes                            |
|             |                                      | CH Up  | Yes                            |
|             |                                      | CH Down  | Yes                            |
|             |                                      | Input Select   | Yes                            |
|             |                                      | Play   | Yes                            |
|             |                                      | F.Fwd  | Yes                            |
|             |                                      | Rew  | Yes                            |
|             |                                      | Pause/Still  | Yes                            |



## GENERAL SPECIFICATIONS

|             |                    |   |                          |
|-------------|--------------------|---|--------------------------|
|             |                    | Stop  | Yes                      |
|             |                    | Rec/OTR   | Yes                      |
|             |                    | Eject   | No                       |
|             |                    | Counter Reset                                     | Yes                      |
|             |                    | Speed   | Yes                      |
|             |                    | Timer Rec   | Yes                      |
|             |                    | TV Monitor  | No                       |
|             |                    | Quick View  | No                       |
|             |                    | Program   | No                       |
|             |                    | Slow  | Yes                      |
|             |                    | Auto Tracking                                     | Yes                      |
|             |                    | Set/Tracking+                                     | Yes                      |
|             |                    | Set/ Tracking -                                   | Yes                      |
|             |                    | Menu  | Yes                      |
|             |                    | Enter   | Yes                      |
|             |                    | Cancel  | Yes                      |
|             |                    | Call  | Yes                      |
|             |                    | TV/VCR  | Yes                      |
|             |                    | Sleep Timer                                       | No                       |
|             |                    | Muting  | No                       |
|             |                    | Clock/Counter                                     | Yes                      |
|             |                    | Zero Return                                       | Yes                      |
|             |                    | CM Skip   | No                       |
|             |                    | Audio Select                                      | Yes                      |
| <b>G-13</b> | <b>Features</b>    | Auto Head Cleaning                                | Yes                      |
|             |                    | Auto Tracking                                     | Yes                      |
|             |                    | Index Search                                      | No                       |
|             |                    | HQ (VHS Standard High Quality)                    | Yes                      |
|             |                    | Auto Power On, Auto Play, Auto Rewind, Auto Eject | Yes                      |
|             |                    | Auto Power Off                                    | Yes                      |
|             |                    | Forward/Reverse Picture Search                    | Yes                      |
|             |                    | VIDEO PLUS+(SHOWVIEW,G-CODE)                      | No                       |
|             |                    | ATS   | No                       |
|             |                    | PDC   | No                       |
|             |                    | VPS   | No                       |
|             |                    | One Touch Playback                                | No                       |
|             |                    | Picture Control                                   | No                       |
|             |                    | Auto Preset                                       | No                       |
|             |                    | Channel Lock                                      | No                       |
|             |                    | Hotel Lock  | No                       |
|             |                    | Anti Theft  | No                       |
|             |                    | Audio Dubbing                                     | No                       |
|             |                    | Remort Control Code 1/2                           | No                       |
|             |                    | SQPB  | No                       |
|             |                    | CATV  | Yes                      |
|             |                    | Energy Star                                       | Yes                      |
|             |                    | MTS(SAP)  | Yes                      |
|             |                    | CM Skip(30sec x 6 Times)                          | No                       |
| <b>G-14</b> | <b>Accessories</b> | Owner's Manual                                    | Language English/Spanish |
|             |                    |   | w/Guarantee Card No      |
|             |                    | Remote Control Unit                               | Yes                      |
|             |                    | Dew Cation Sheet                                  | No                       |
|             |                    | Video Cassette Tape                               | No                       |
|             |                    | Battery   | No                       |
|             |                    |   | UM size x pcs -          |
|             |                    | Safety Tip  | No                       |
|             |                    | Toll Free Insert Sheet                            | No                       |
|             |                    | Quick Set-Up Sheet                                | No                       |
|             |                    | Information Sheet (Buyer Supply)                  | No                       |
|             |                    | 75 Ohm Coaxial Cable                              | Yes(Single shield)       |
|             |                    | Rod Antenna                                       | No                       |
|             |                    |   | Poles Terminal           |
|             |                    | Loop Antenna                                      | No                       |
|             |                    |   | Terminal                 |
|             |                    | U/V Mixer   | No                       |
|             |                    | DC Car Cord (Center+)                             | No                       |
|             |                    | Guarantee Card                                    | Yes                      |
|             |                    | Warning Sheet                                     | No                       |
|             |                    | Circuit Diagram                                   | No                       |
|             |                    | Antenna Change Plug                               | No                       |
|             |                    | Service Facility List                             | No                       |
|             |                    | Important Safeguard                               | No                       |
|             |                    | Dew/AHC Caution Sheet                             | No                       |
|             |                    | AC Plug Adapter                                   | No                       |
|             |                    | Quick Set-up Sheet                                | No                       |

## GENERAL SPECIFICATIONS

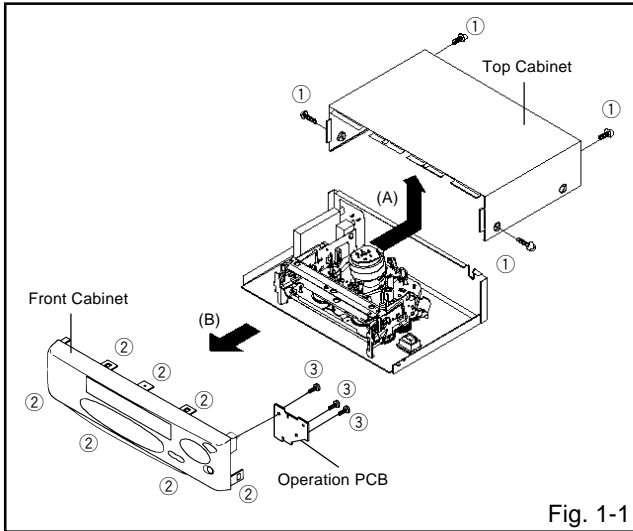
|             |                         |                                   |                          |                          |                     |                              |
|-------------|-------------------------|-----------------------------------|--------------------------|--------------------------|---------------------|------------------------------|
|             |                         | AC Cord                           |                          | No                       |                     |                              |
|             |                         | AV Cord (2Pin-1Pin)               |                          | No                       |                     |                              |
|             |                         | Registration Card                 |                          | No                       |                     |                              |
|             |                         | PTB Sheet                         |                          | No                       |                     |                              |
|             |                         | Tape Rewinder(Buyer Supply)       |                          | No                       |                     |                              |
|             |                         | 300 ohm to 75 ohm Antenna Adapter |                          | No                       |                     |                              |
| <b>G-15</b> | <b>Interface</b>        | Switch                            | Front                    | Power                    | Yes                 |                              |
|             |                         |                                   |                          | Play                     | Yes                 |                              |
|             |                         |                                   |                          | Pause/Still              | No                  |                              |
|             |                         |                                   |                          | System Select            | No                  |                              |
|             |                         |                                   |                          | One Touch Playback       | No                  |                              |
|             |                         |                                   |                          | Channel Up               | Yes                 |                              |
|             |                         |                                   |                          | Channel Down             | Yes                 |                              |
|             |                         |                                   |                          | F.FWD/Cue                | Yes                 |                              |
|             |                         |                                   |                          | Eject/Stop               | Yes                 |                              |
|             |                         |                                   |                          | Main Power SW            | No                  |                              |
|             |                         |                                   |                          | Volume Up                | No                  |                              |
|             |                         |                                   |                          | Volume Down              | No                  |                              |
|             |                         |                                   |                          | Rew/Rev                  | Yes                 |                              |
|             |                         |                                   |                          | Rec/OTR                  | Yes                 |                              |
|             |                         |                                   |                          | Rear                     | RF Output SW        | No                           |
|             |                         |                                   | Indicator                | Power                    | No                  |                              |
|             |                         |                                   |                          | Stand by                 | No                  |                              |
|             |                         |                                   |                          | Rec/OTR                  | No                  |                              |
|             |                         |                                   |                          | Repeat                   | No                  |                              |
|             |                         |                                   |                          | TV/VCR                   | No                  |                              |
|             |                         |                                   |                          | Rec                      | No                  |                              |
|             |                         |                                   |                          | T-Rec                    | No                  |                              |
|             |                         |                                   | Terminals                | Front                    | Video Input         | RCA x 1                      |
|             |                         |                                   |                          |                          | Audio Input         | RCA x 2(Stereo)              |
|             |                         |                                   |                          |                          | Other Terminal      | No                           |
|             |                         |                                   |                          | Rear                     | Video Input         | No                           |
|             |                         |                                   |                          |                          | Audio Input         | No                           |
|             |                         | Video Output                      |                          | RCA x 1                  |                     |                              |
|             |                         | Audio Output                      |                          | RCA x 2(Stereo)          |                     |                              |
|             |                         | Euro Scart                        |                          | No                       |                     |                              |
|             |                         | DC Jack 12V(Center +)             |                          | No                       |                     |                              |
|             |                         | VHF/UHF Antenna Input             |                          | F Type                   |                     |                              |
|             |                         | AC Inlet                          | No                       |                          |                     |                              |
| <b>G-16</b> | <b>Set Size</b>         | Approx.                           | W x D x H (mm)           | 360 x 229 x 95           |                     |                              |
| <b>G-17</b> | <b>Weight</b>           |                                   | Net (Approx.)            | 3.2kg(7.1lbs)            |                     |                              |
|             |                         |                                   | Gross (Approx.)          | 3.8kg(8.4lbs)            |                     |                              |
| <b>G-18</b> | <b>Carton</b>           | Master Carton                     | Content                  | -                        |                     |                              |
|             |                         |                                   | Material                 | -                        |                     |                              |
|             |                         |                                   | Dimensions W x D x H(mm) | -                        |                     |                              |
|             |                         |                                   | Description of Origin    | -                        |                     |                              |
|             |                         |                                   | Gift Box                 | Yes                      |                     |                              |
|             |                         |                                   | Gift Box                 | Material                 | Single/White        |                              |
|             |                         |                                   |                          | Dimensions W x D x H(mm) | 420x291x160         |                              |
|             |                         |                                   |                          | Design                   | As Per BUYER 's     |                              |
|             |                         |                                   |                          | Description of Origin    | Yes                 |                              |
|             |                         |                                   |                          | Drop Test                | Natural Dropping At | 1Corner / 3Edges / 6Surfaces |
|             |                         | Height (cm)                       | 80                       |                          |                     |                              |
|             |                         | Container Stuffing(40' container) | 3136Sets                 |                          |                     |                              |
| <b>G-19</b> | <b>Cabinet Material</b> | Cabinet Front                     |                          | PS 94V2 DECABROM         |                     |                              |

# DISASSEMBLY INSTRUCTIONS

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

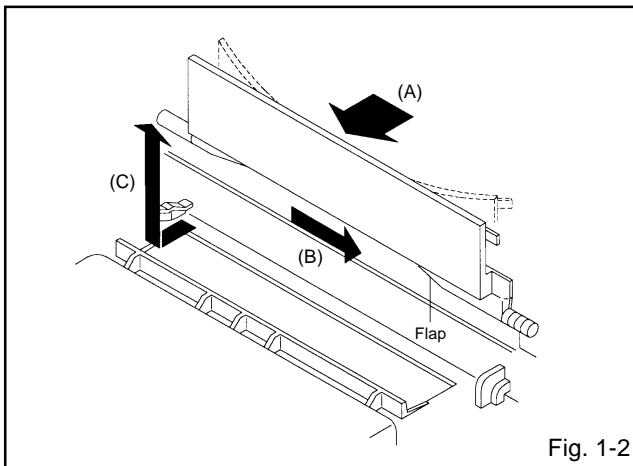
### 1-1: TOP CABINET, FRONT CABINET AND OPERATION PCB (Refer to Fig. 1-1)

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



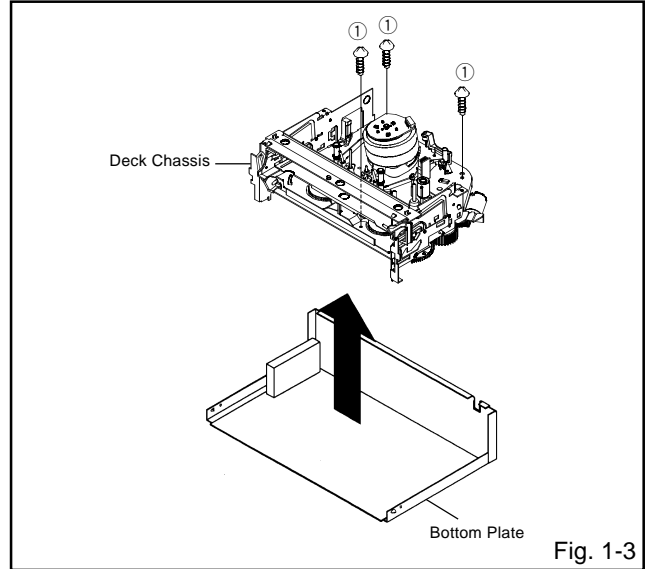
### 1-2: FLAP (Refer to Fig. 1-2)

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).



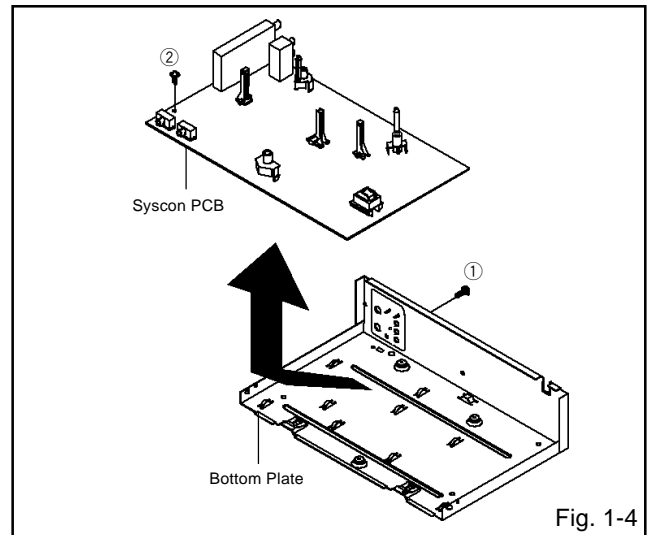
### 1-3: DECK CHASSIS (Refer to Fig. 1-3)

1. Remove the 3 screws ①.
2. Disconnect the following connectors: (CP1001, CP4001, CP4002 and CP4003).
3. Remove the Deck Chassis in the direction of arrow.



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

1. Remove the screw ①.
2. Remove the screw ②.
3. Remove the Syscon PCB in the direction of arrow.



# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF DECK PARTS

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

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

#### NOTE

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

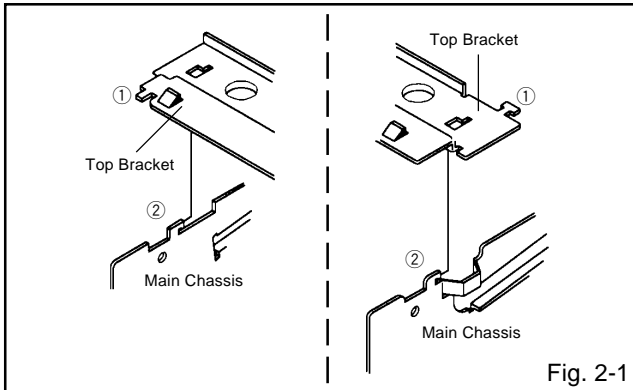


Fig. 2-1

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

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

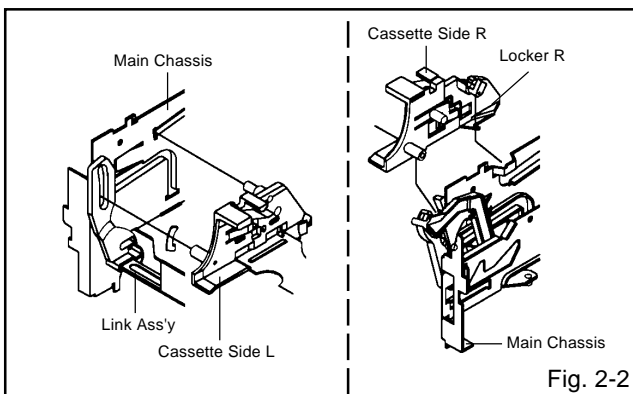


Fig. 2-2

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

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

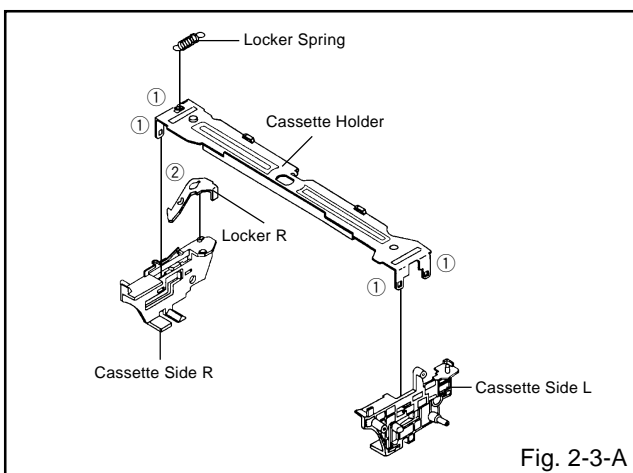


Fig. 2-3-A

#### NOTE

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

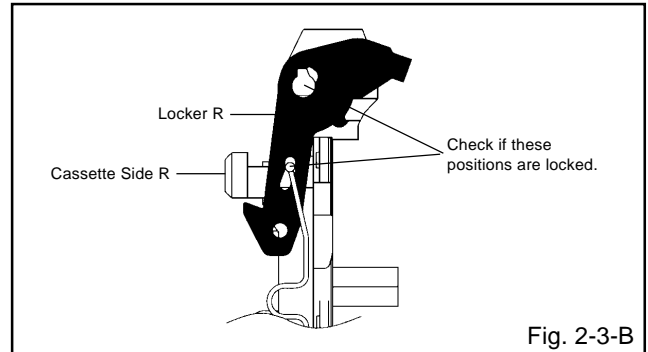


Fig. 2-3-B

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

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

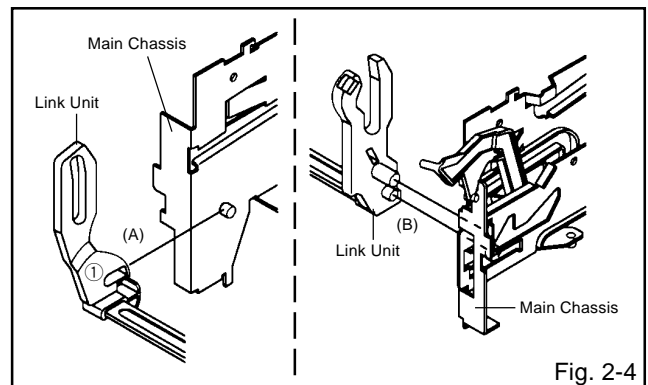


Fig. 2-4

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

1. Remove the Link Lever.
2. Remove the Flap Lever.

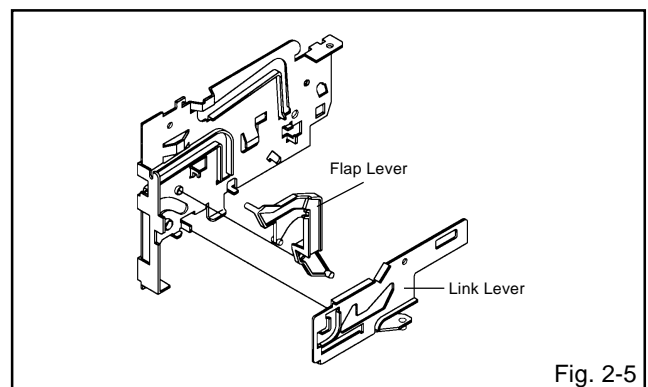
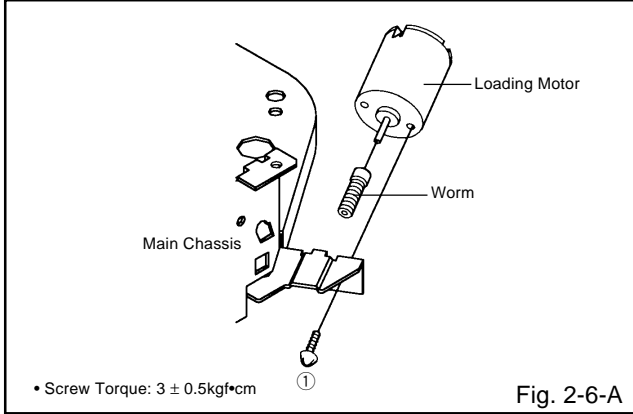


Fig. 2-5

# DISASSEMBLY INSTRUCTIONS

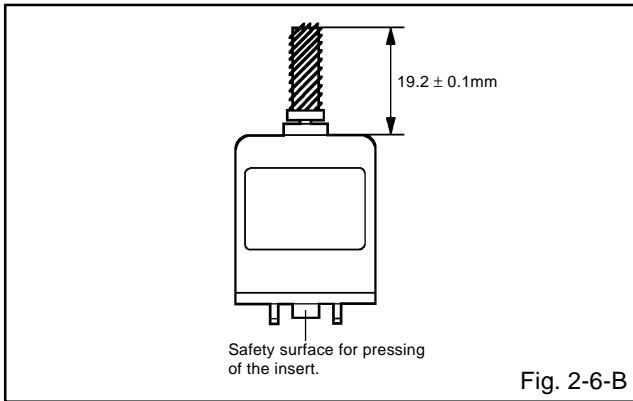
## 2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

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



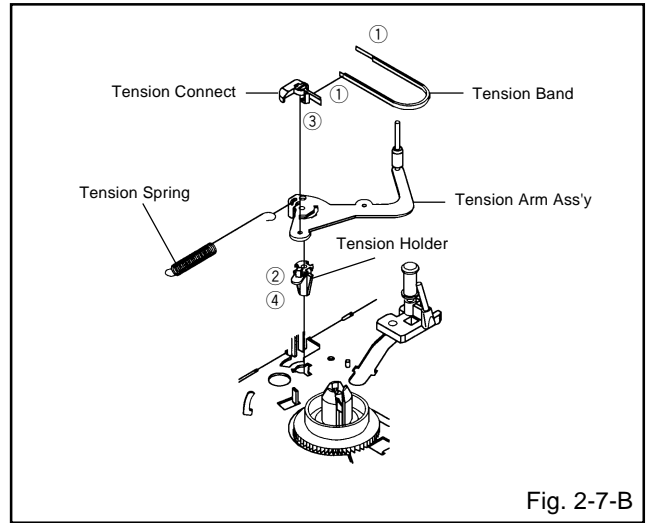
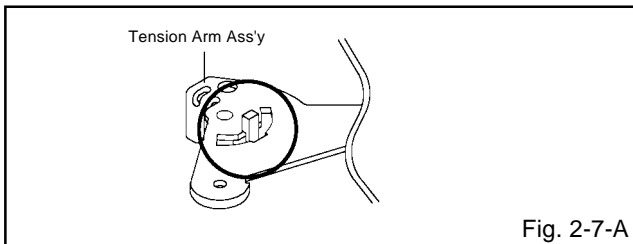
### NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.



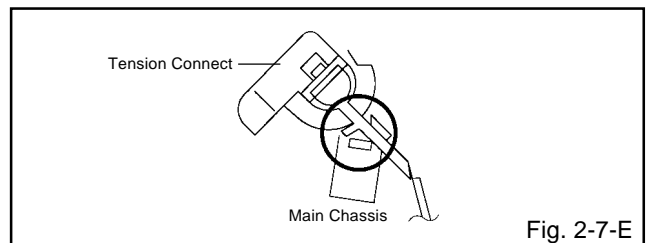
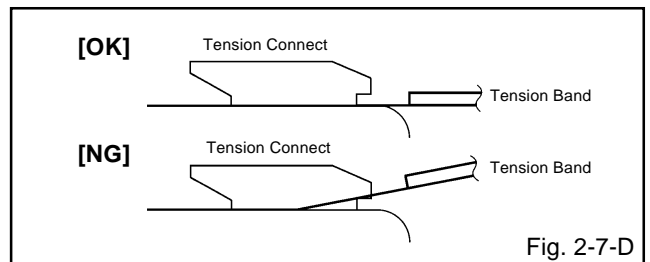
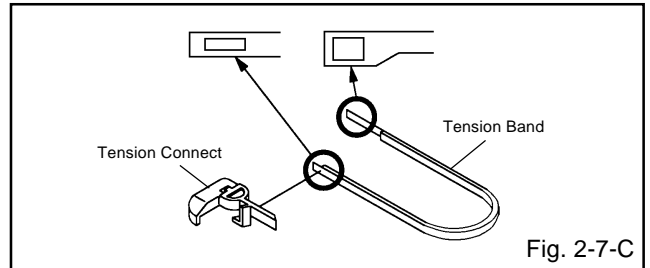
## 2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

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



### NOTE

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



# DISASSEMBLY INSTRUCTIONS

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

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

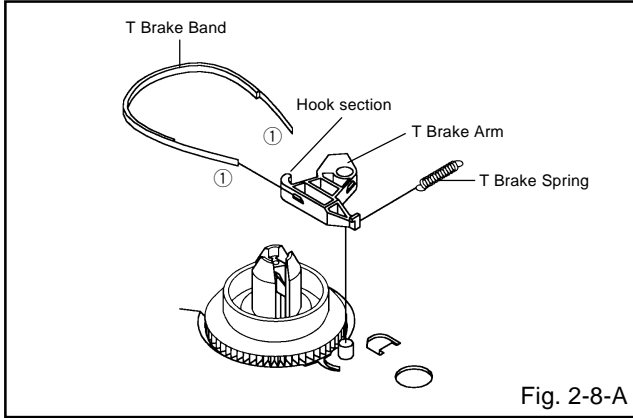


Fig. 2-8-A

### NOTE

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

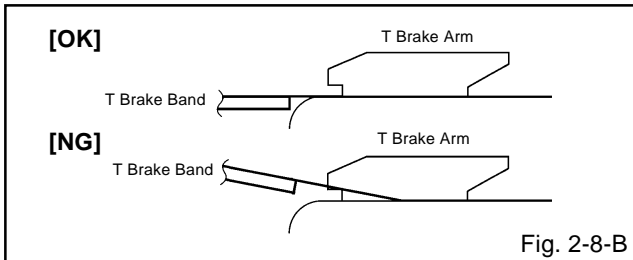


Fig. 2-8-B

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

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

### NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) (Refer to Fig. 2-9-A) Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (MG-33). (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)

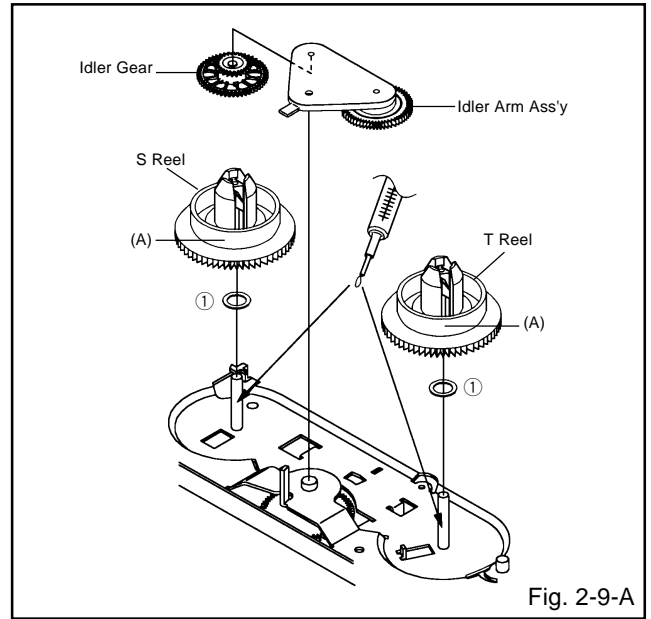


Fig. 2-9-A

### 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.

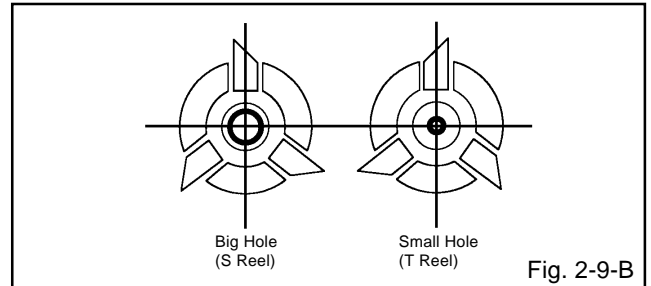


Fig. 2-9-B

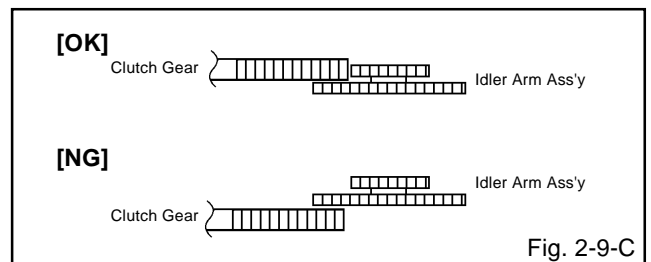
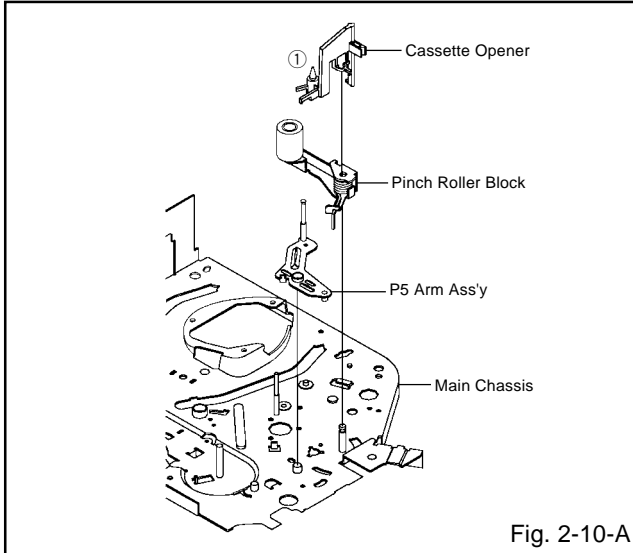


Fig. 2-9-C

# DISASSEMBLY INSTRUCTIONS

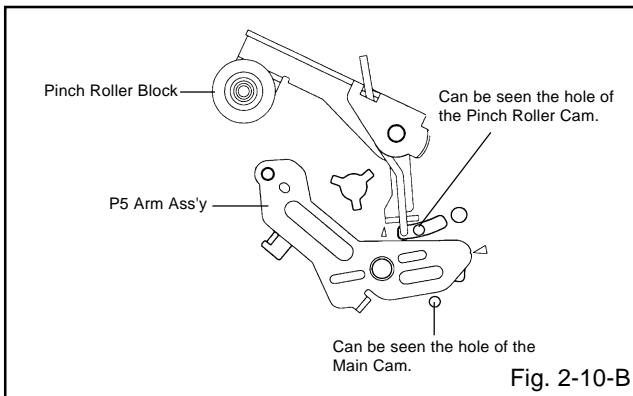
## 2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

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



### NOTE

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

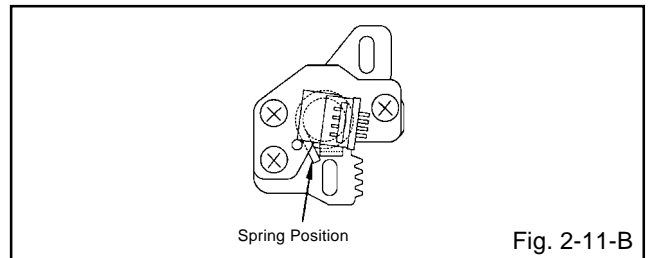
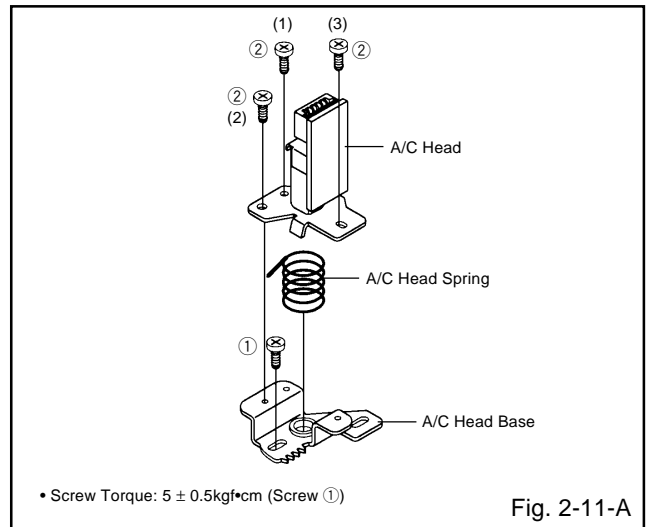


## 2-11: A/C HEAD (Refer to Fig. 2-11-A)

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

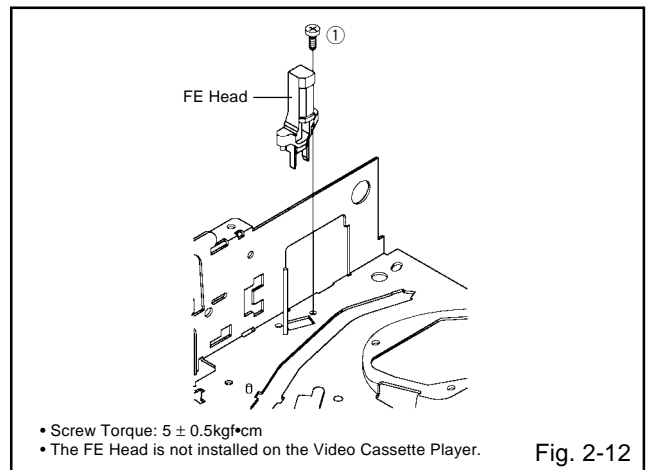
### NOTE

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



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

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



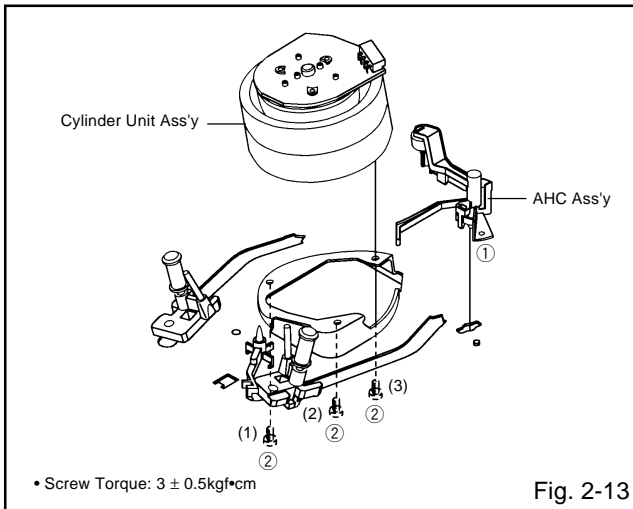
# DISASSEMBLY INSTRUCTIONS

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

1. Unlock the support ① and remove the AHC Ass'y.
2. Disconnect the following connector:  
(CD2001)
3. Remove the 3 screws ②.
4. Remove the Cylinder Unit Ass'y.

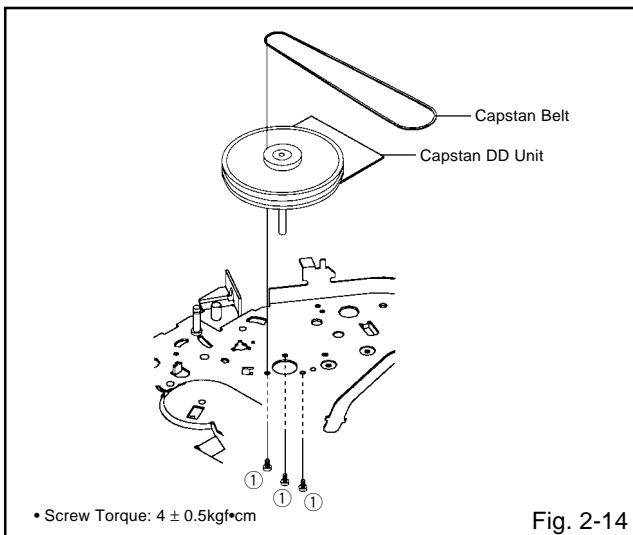
### NOTE

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.



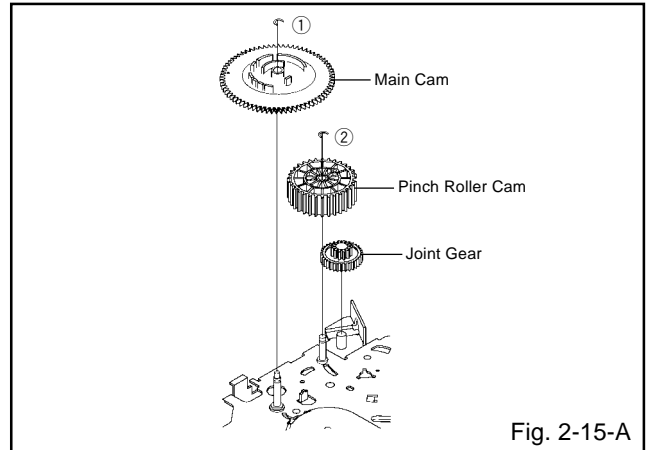
## 2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14)

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



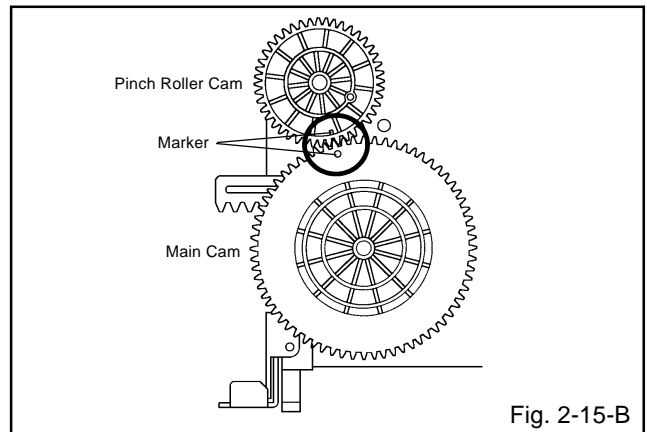
## 2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

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



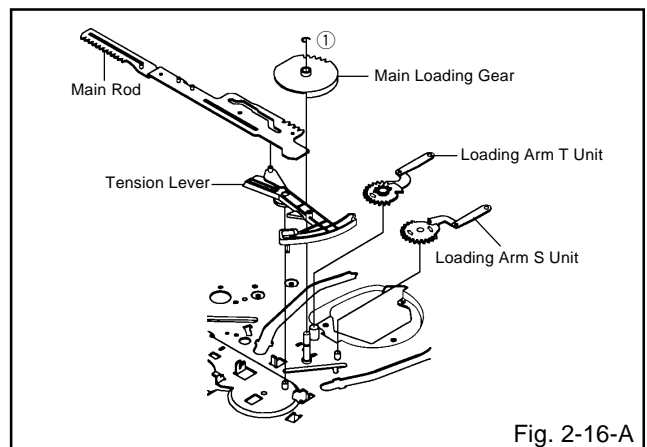
### NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. (Refer to Fig. 2-15-B)



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

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

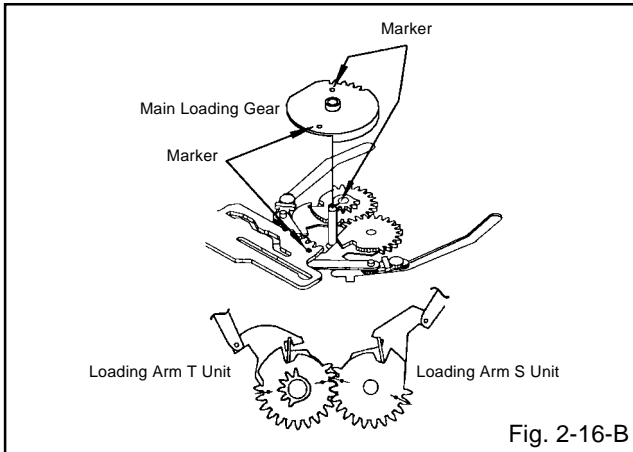




# DISASSEMBLY INSTRUCTIONS

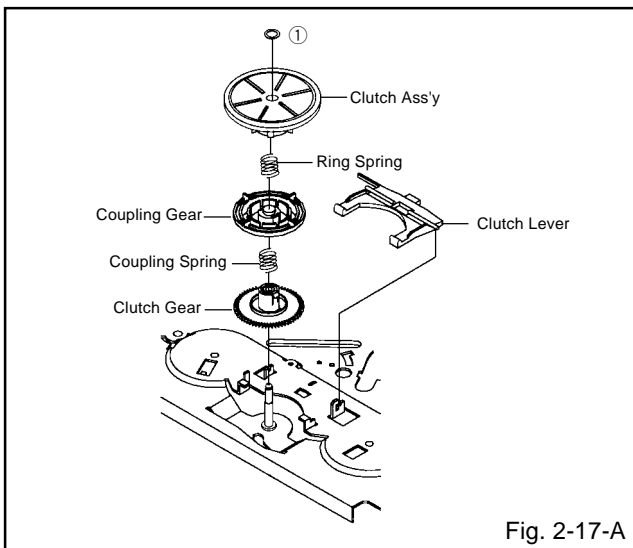
## NOTE

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



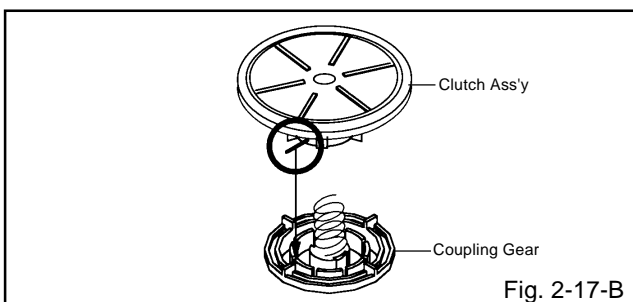
## 2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

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



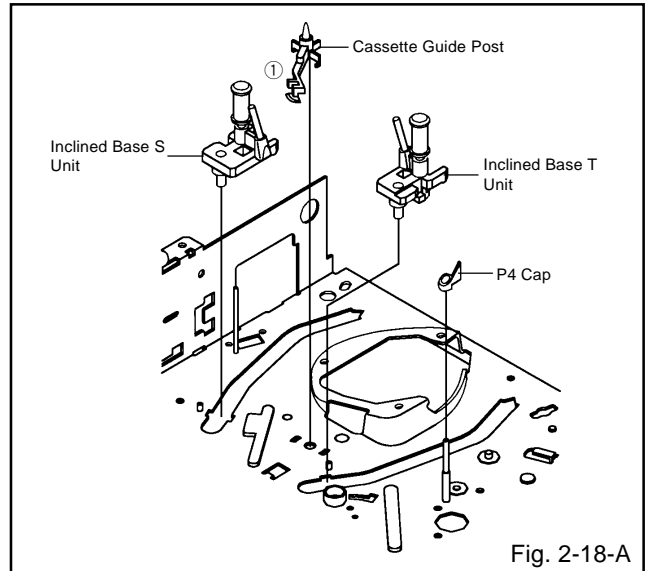
## NOTE

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



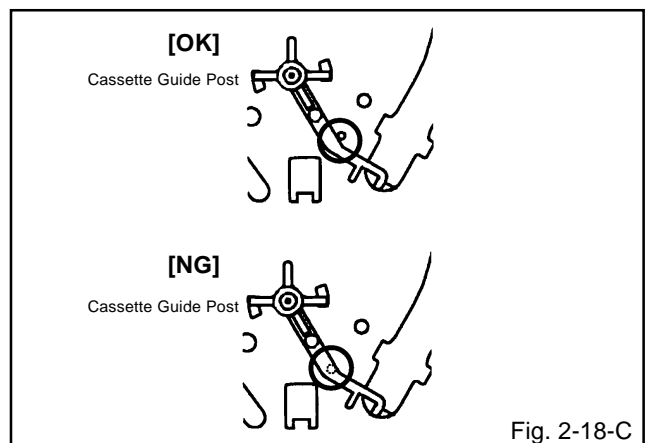
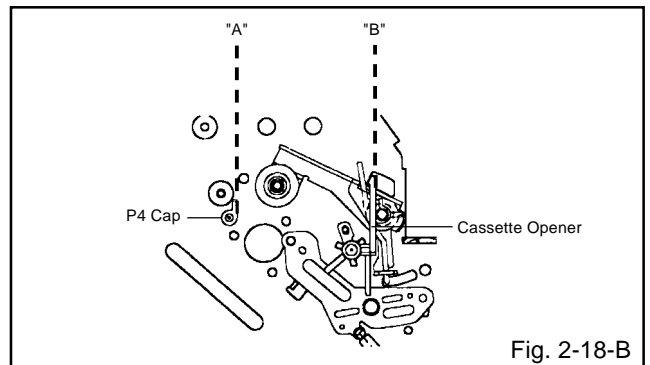
## 2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

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



## NOTE

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



# DISASSEMBLY INSTRUCTIONS

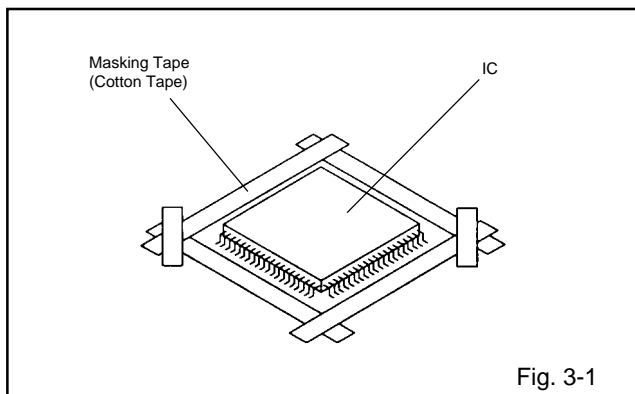
## 3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

### REMOVAL

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

#### NOTE

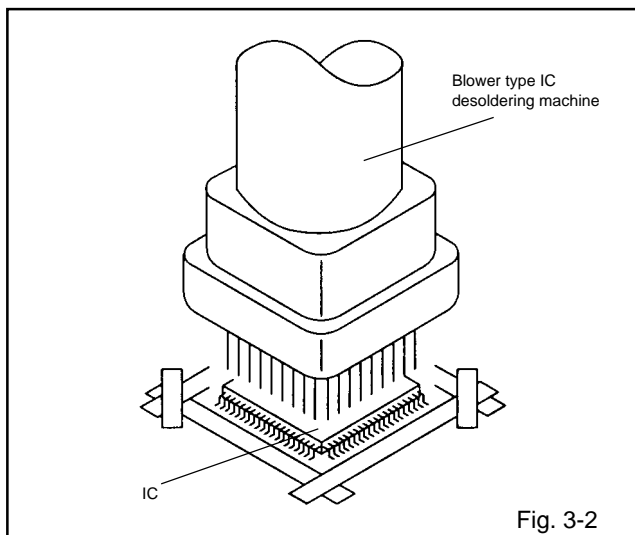
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

#### NOTE

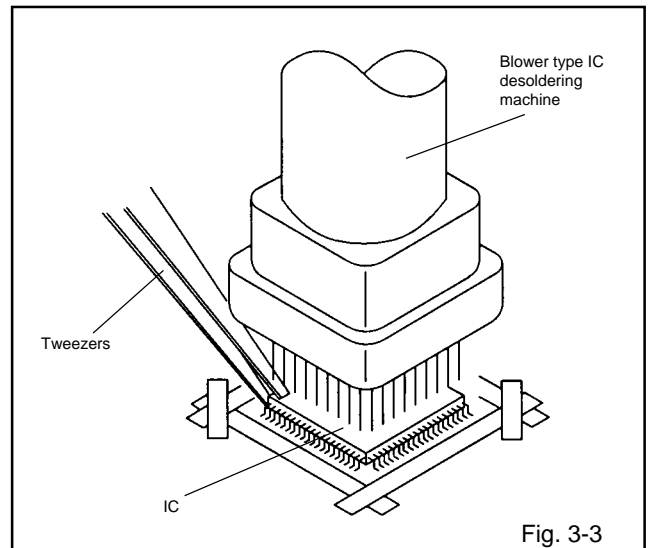
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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

#### NOTE

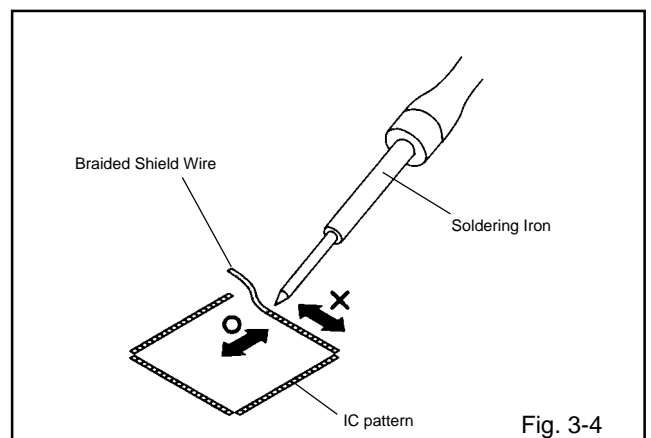
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



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

#### NOTE

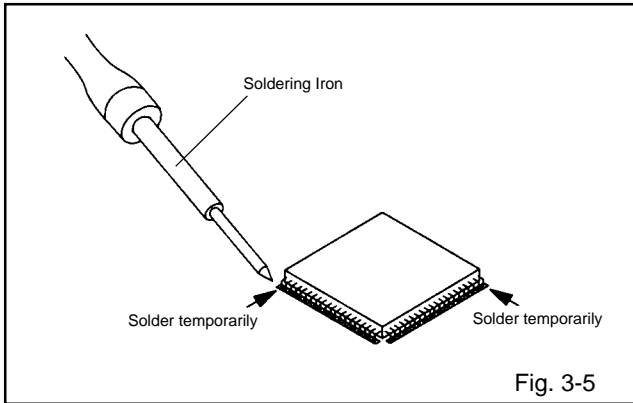
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



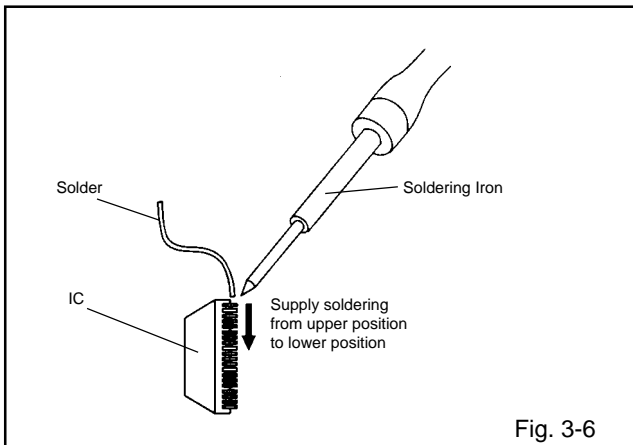
# DISASSEMBLY INSTRUCTIONS

## INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**



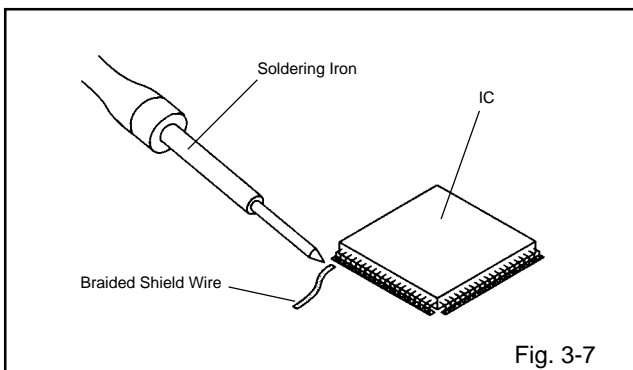
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**



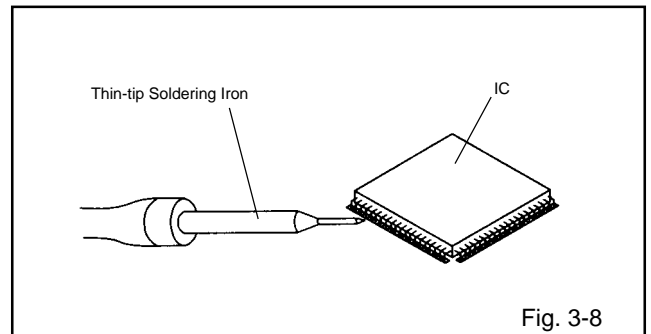
3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

### NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**



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

### NOTE

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

## KEY TO ABBREVIATIONS

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

## KEY TO ABBREVIATIONS

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

## SERVICE MODE LIST

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

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

## PREVENTIVE CHECKS AND SERVICE INTERVALS

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

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

■ : Clean  
● : Replace

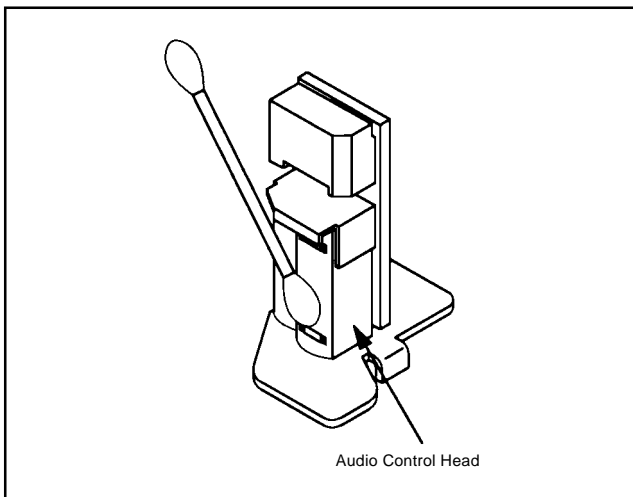
### CLEANING

#### NOTE

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

#### 1. AUDIO CONTROL HEAD

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



#### 2. TAPE RUNNING SYSTEM

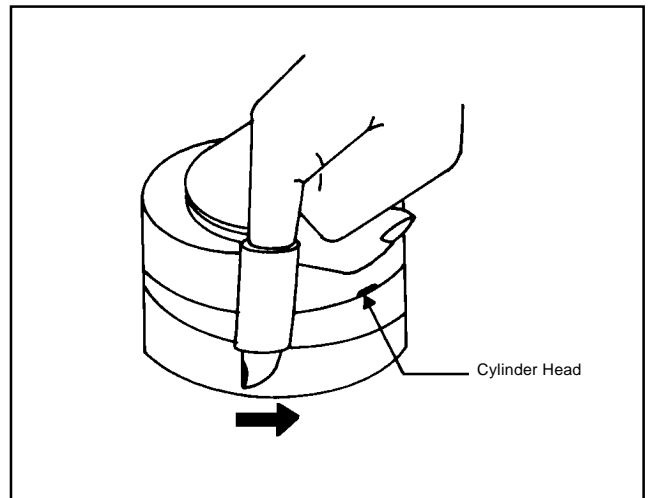
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

#### 3. CYLINDER

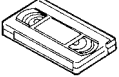
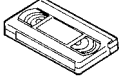
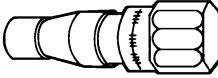
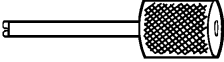
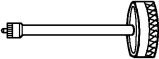
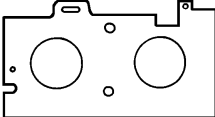
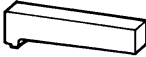
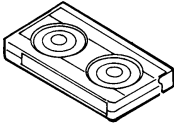
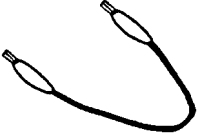
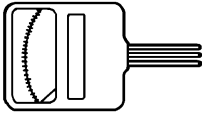
Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). (Refer to the figure below.)

#### NOTE

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



## SERVICING FIXTURES AND TOOLS

|   |  |   |  |
|---|--|---|--|
| <p><b>(For 2 heads model)</b><br/>VHS Alignment Tape<br/>JG001 (VN<sub>2</sub>S-LI6<sup>3</sup>)<br/>JG001A (VN<sub>2</sub>S-CO1<sup>3</sup>)<br/>JG001Q (VN<sub>2</sub>S-LI6<sup>3</sup>H)<br/>JG001T (VN<sub>2</sub>S-X6<sup>3</sup>)</p>  | <p><b>(For 4 heads model)</b><br/>VHS Alignment Tape<br/>JG001B (VN<sub>1</sub>S-LI6<sup>3</sup>)<br/>JG001I (VN<sub>1</sub>S-CO1<sup>3</sup>)<br/>JG001P (VN<sub>1</sub>S-LI6<sup>3</sup>H)<br/>JG001S (VN<sub>1</sub>S-X6<sup>3</sup>)</p>  | <p>JG002B Adapter<br/>JG002E Dial Torque Gauge<br/>(10~90gf•cm)<br/>JG002F (60~600gf•cm)</p>  | <p>JG005 Post Adjustment<br/>Screwdriver<br/>Part No. SV-TG0-030-000<br/>(small)</p>  |
| <p>JG153 X Value Adjustment<br/>Screwdriver</p>    | <p>JG022 Master Plane</p>   | <p>JG024A Reel Disk Height<br/>Adjustment Jig</p>   | <p>JG100A Torque Tape<br/>(VHT-063)</p>   |
| <p>JG154 Cable</p>   | <p>Tentelometer</p>   |   |  |

| Ref. No. | Part No.   | Parts Name                                    | Remarks  |
|----------|------------|---|--|
| JG001    | APJG001000 | VHS Alignment Tape <b>(For 2 heads model)</b> | Monoscope, 6KHz                                      |
| JG001A   | APJG001A00 | VHS Alignment Tape <b>(For 2 heads model)</b> | Color Bar, 1KHz                                      |
| JG001Q   | APJG001Q00 | VHS Alignment Tape <b>(For 2 heads model)</b> | Hi-Fi Audio  |
| JG001T   | APJG001T00 | VHS Alignment Tape <b>(For 2 heads model)</b> | X Value Adjustment                                   |
| JG001B   | APJG001B00 | VHS Alignment Tape <b>(For 4 heads model)</b> | Monoscope, 6KHz                                      |
| JG001I   | APJG001I00 | VHS Alignment Tape <b>(For 4 heads model)</b> | Color Bar, 1KHz                                      |
| JG001P   | APJG001P00 | VHS Alignment Tape <b>(For 4 heads model)</b> | Hi-Fi Audio  |
| JG001S   | APJG001S00 | VHS Alignment Tape <b>(For 4 heads model)</b> | X Value Adjustment                                   |
| JG002B   | APJG002B00 | Adapter                                       | VSR Torque, Brake Torque (S Reel/T Reel Ass'y)       |
| JG002E   | APJG002E00 | Dial Torque Gauge (10~90gf•cm)                | Brake Torque (T Reel Ass'y)                          |
| JG002F   | APJG002F00 | Dial Torque Gauge (60~600gf•cm)               | VSR Torque, Brake Torque (S Reel)                    |
| JG005    | APJG005000 | Post Adjustment Screwdriver                   | Guide Roller Adjustment                              |
| JG153    | APJG153000 | X Value Adjustment Screwdriver                | X Value Adjustment                                   |
| JG022    | APJG022000 | Master Plane                                  | Reel Disk Height Adjustment                          |
| JG024A   | APJG024A00 | Reel Disk Height Adjustment Jig               | Reel Disk Height Adjustment                          |
| JG100A   | APJG100A00 | Torque Tape (VHT-063)                         | Playback Torque, Back Tension Torque During Playback |
| JG154    | APJG154000 | Cable   | Used to connect the test point of SERVICE and GROUND |

## PREPARATION FOR SERVICING

- Short circuit between **TP1001** and **Ground** with the cable JG154.  
**(Refer to MAJOR COMPONENTS LOCATION GUIDE)**  
The EOT, BOT and Reel Sensor do not work at this moment.  
At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.



# MECHANICAL ADJUSTMENTS

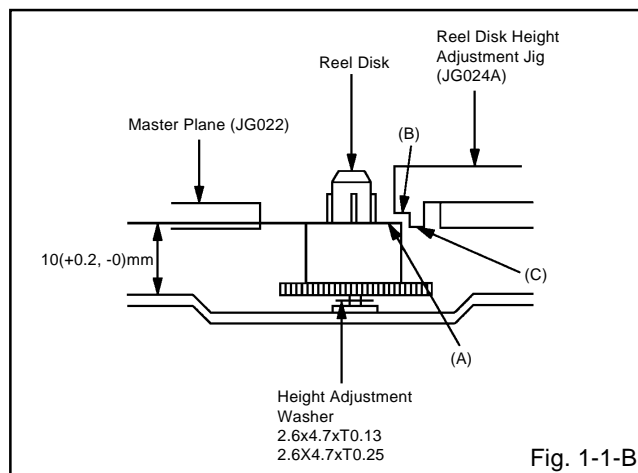
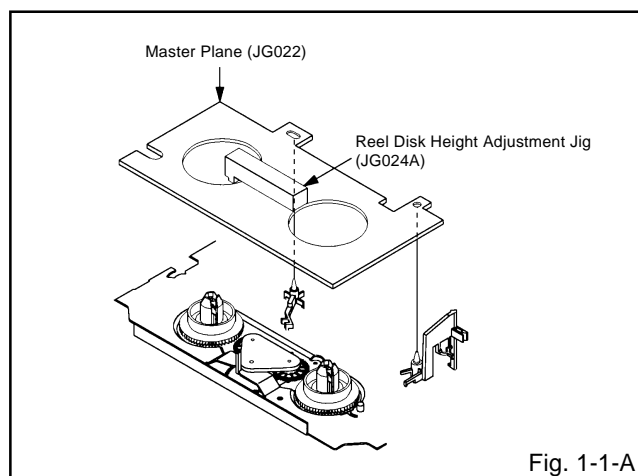
## 1. CONFIRMATION AND ADJUSTMENT

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.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND**. (Refer to **ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE**) In this condition the BOT/EOT/Reel Sensor will not function.

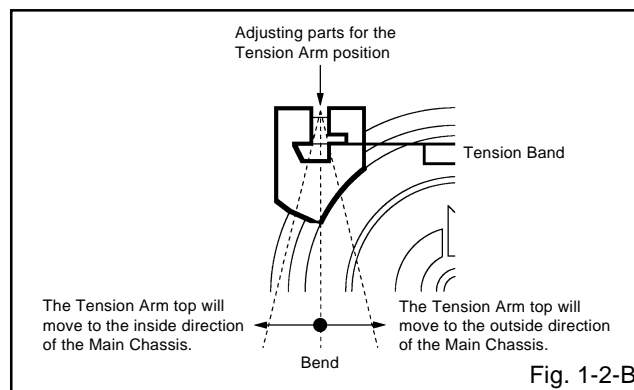
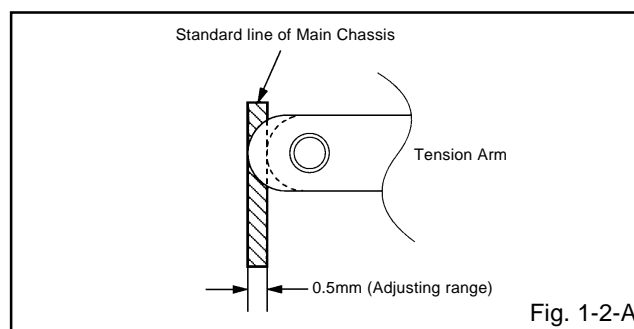
### 1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (**JG022**) and reel disk height adjustment jig (**JG024A**) on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A**.
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig (**JG024A**) and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.



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

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

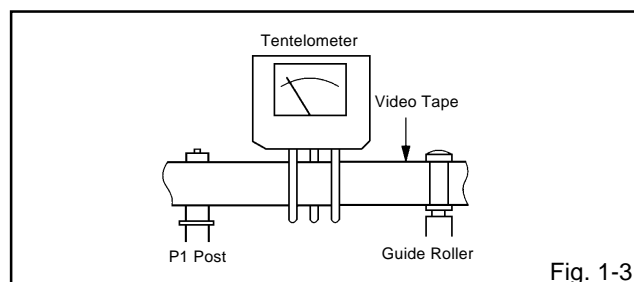


### 1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

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

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

1. After confirmation and adjustment of Tension Post position (Refer to item 1-2), load the cassette type torque tape (**JG100A**) and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 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.



# MECHANICAL ADJUSTMENTS

## 1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Set to the Picture Search (Rewind) mode. (Refer to Fig.1-4-B)
2. Then, confirm that it indicates 120~180gf•cm.

### NOTE

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

## 1-5: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge (JG002F) and Adapter (JG002B) on the S Reel. Turn the Torque Gauge (JG002F) clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge (JG002E) and Adapter (JG002B) on the T reel. Turn the Torque Gauge (JG002E) counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

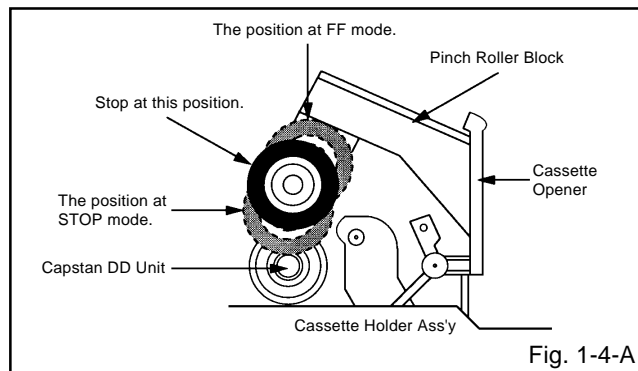


Fig. 1-4-A

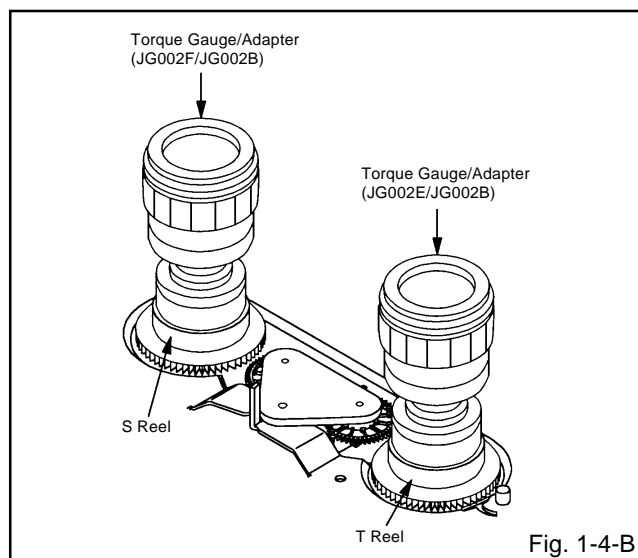


Fig. 1-4-B

### NOTE

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

| Check item | Replacement Part   |
|------------|--|
| 1-4        | Idler Ass'y/Clutch Ass'y   |
| 1-5        | S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y<br>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 (JG001 or JG001B). (Refer to SERVICING FIXTURE AND TOOLS)
2. Connect CH-1 of the oscilloscope to TP4001 (Envelope) and CH-2 to TP1002 (SW Pulse).
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. (Refer to Fig. 2-1-A)
5. When observing the envelope, adjust the Adjusting Driver (JG005) slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in Fig. 2-1-B, even if you press the Tracking Button to move the envelope (The envelope waveform will 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)

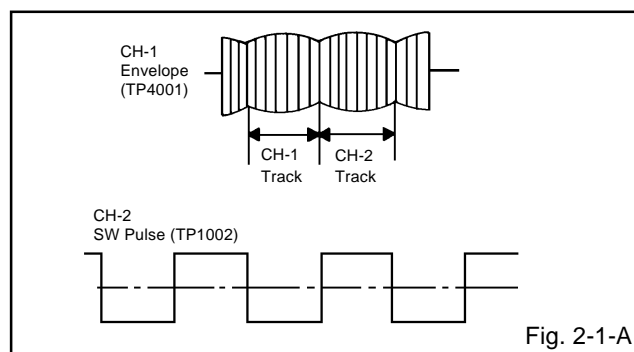


Fig. 2-1-A

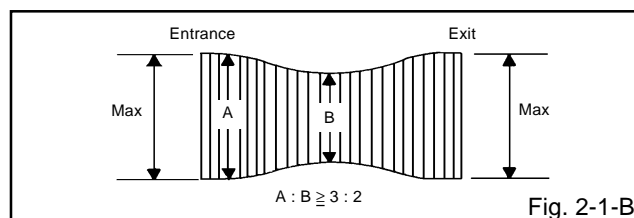


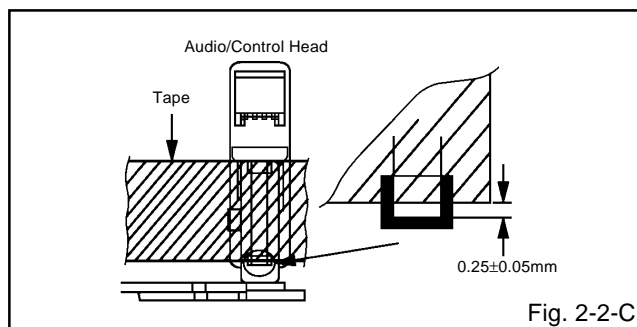
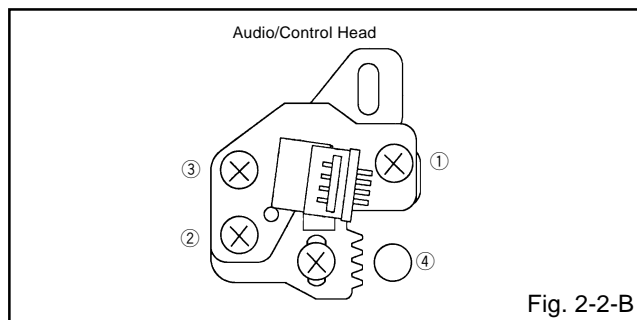
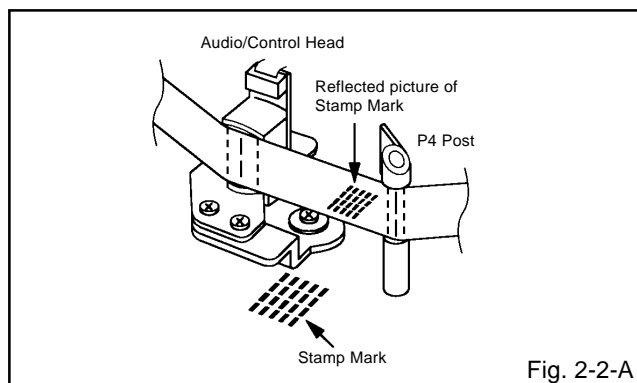
Fig. 2-1-B

## MECHANICAL ADJUSTMENTS

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

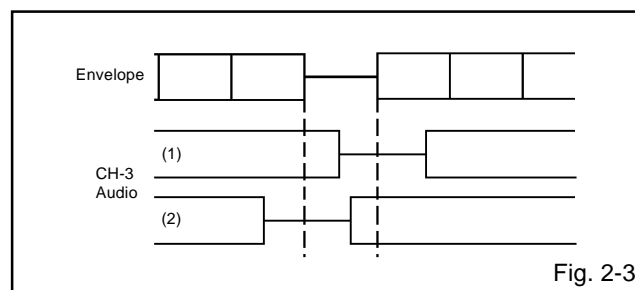
When the Tape Running Mechanism does not work well, adjust the following items.

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



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

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

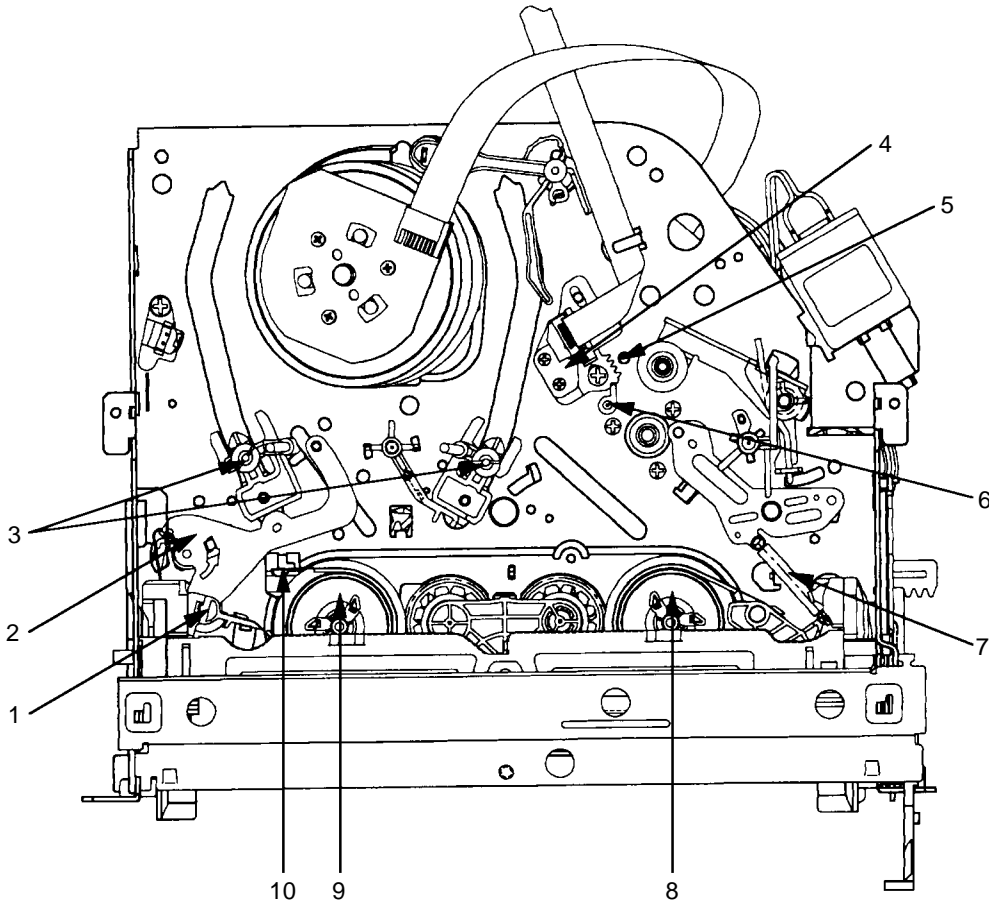


### 2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP1002** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (**JG001P or JG001Q**).  
(Refer to **SERVICING FIXTURE AND TOOLS**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver (**JG153**) to ④ of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

# MECHANICAL ADJUSTMENTS

## 3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



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

# ELECTRICAL ADJUSTMENTS

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

## 1. BASIC ADJUSTMENT

### CAUTION

When replacing IC's or transistors, use only specified silicon grease (**YG6260M**).  
(To prevent the damage to IC's and transistors.)

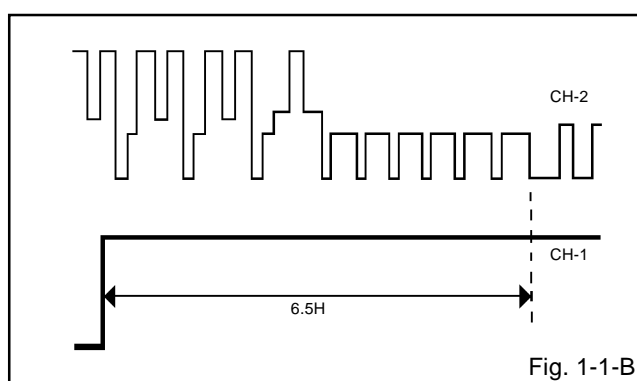
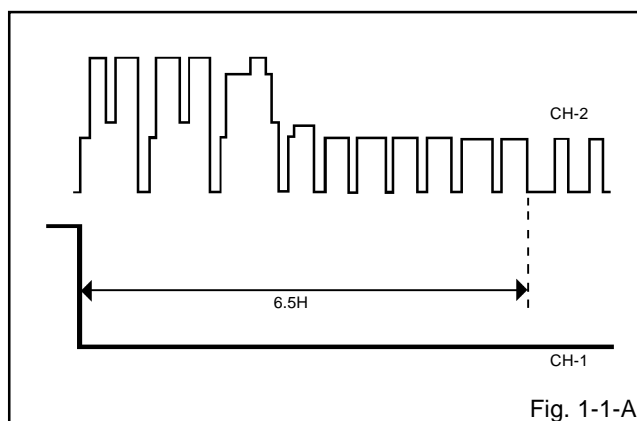
### 1-1: PG SHIFTER

#### CONDITIONS

MODE-PLAYBACK  
Input Signal-Alignment Tape (**JG001P**)

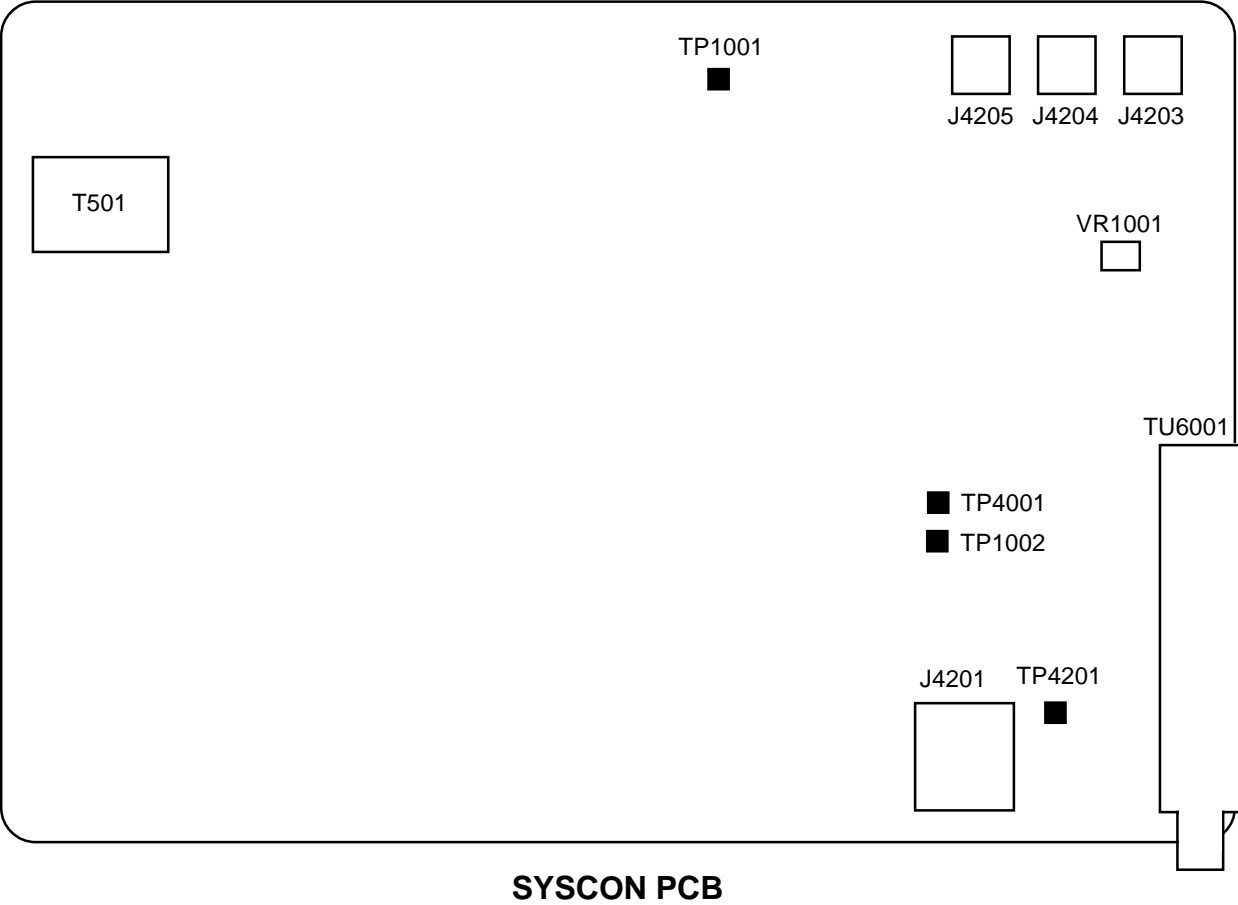
#### INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape. (**JG001P**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Adjust the **VR1001** until the waveform of the oscilloscope measures  $6.5 \pm 0.5(H)$  at both leading and trailing edges. (Refer to Fig. 1-1-A, B)

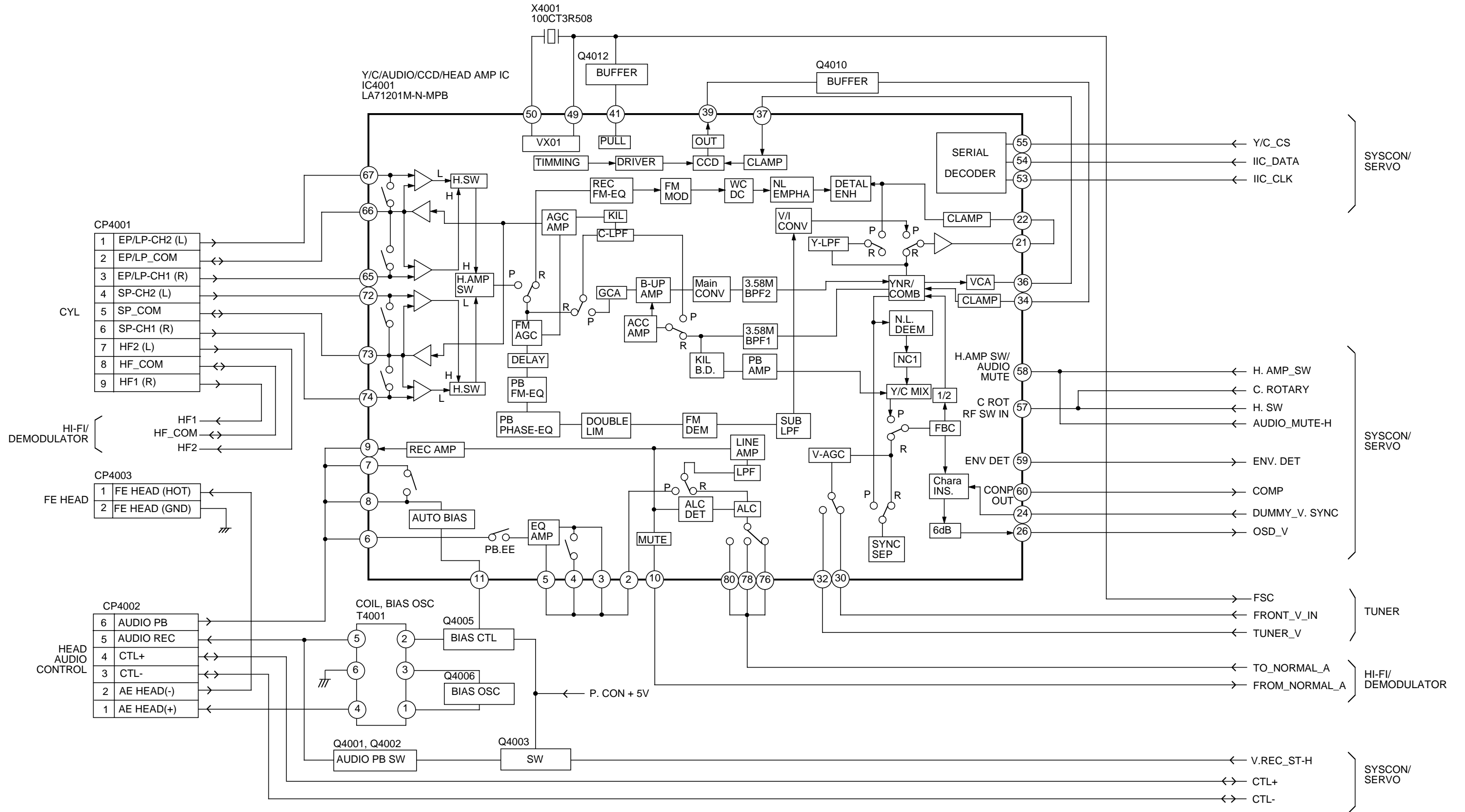


# ELECTRICAL ADJUSTMENTS

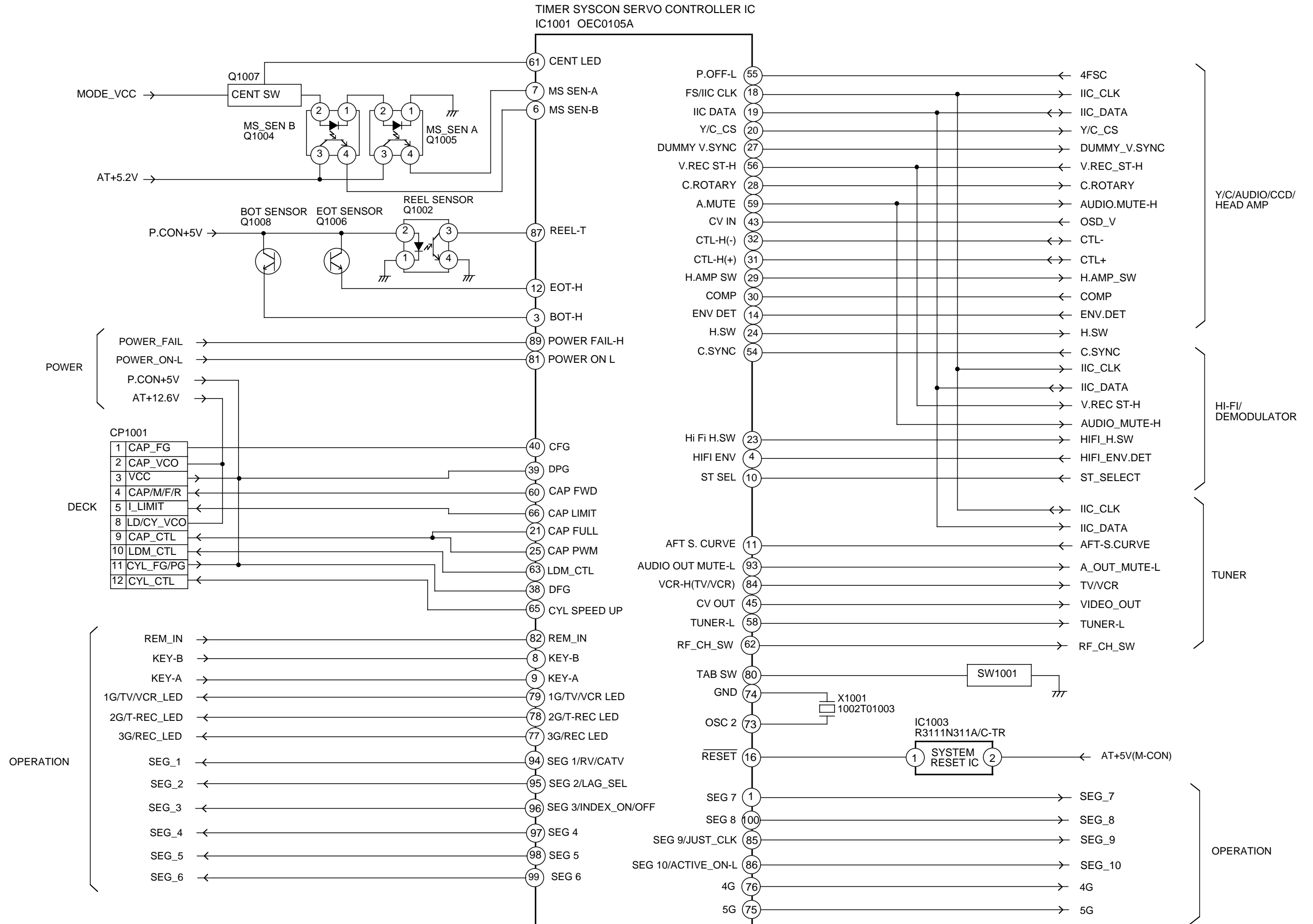
## 2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE



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

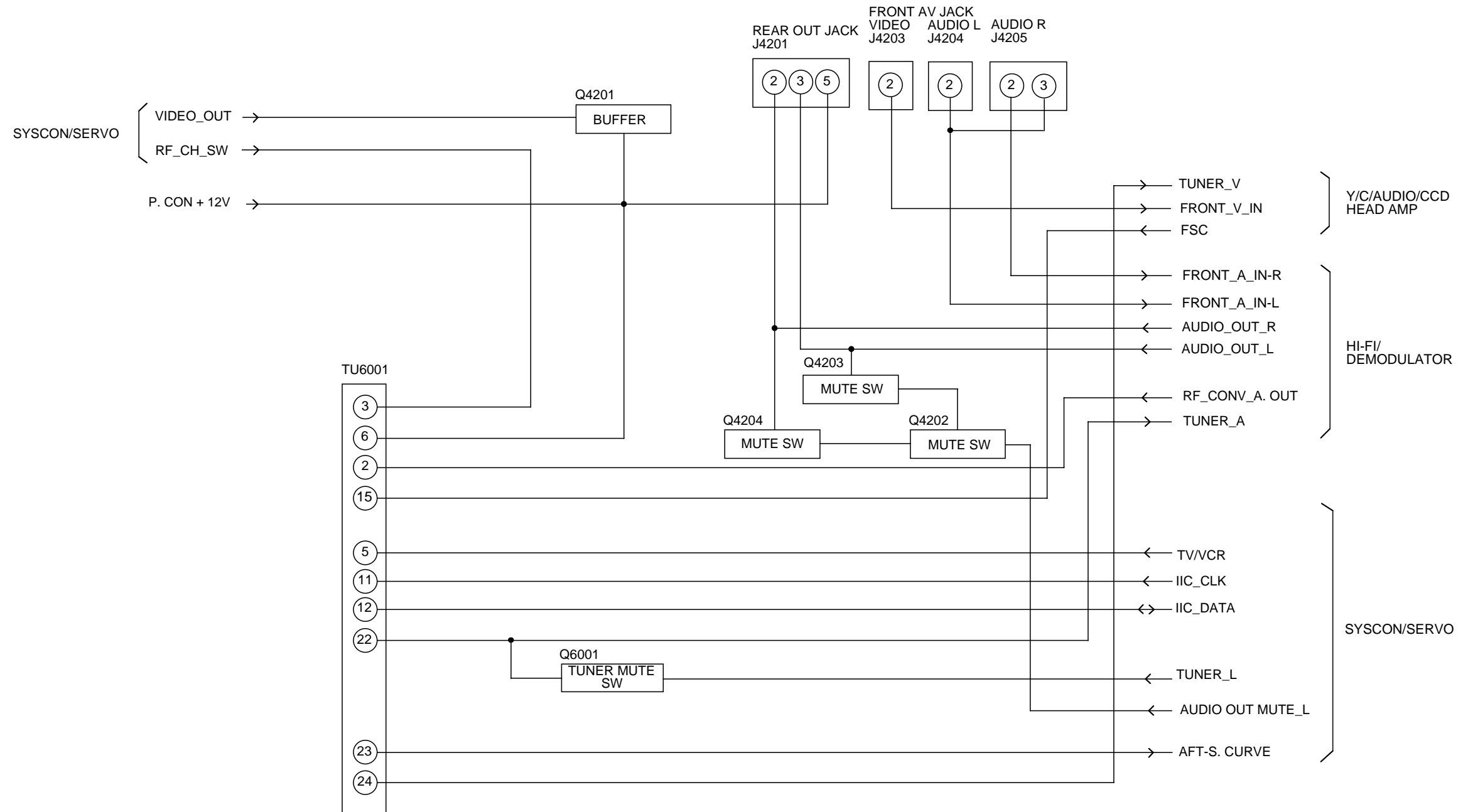


# SYSTEM CONTROL/SERVO BLOCK DIAGRAM

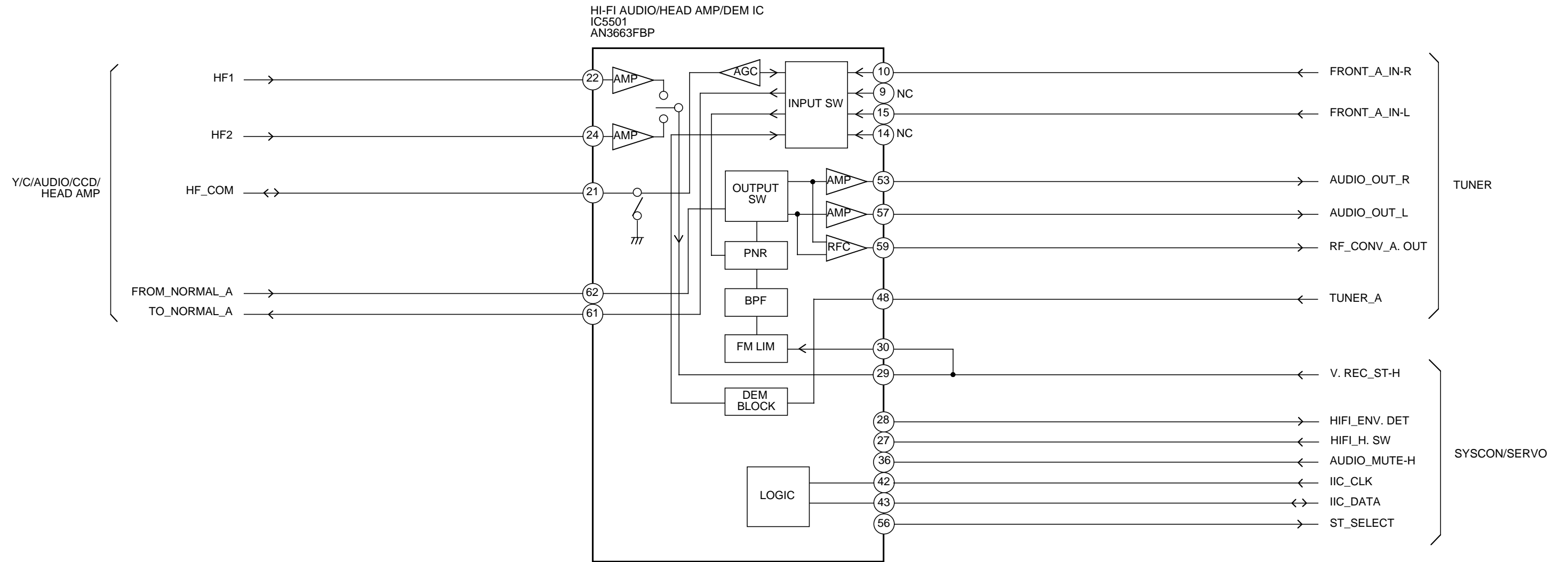




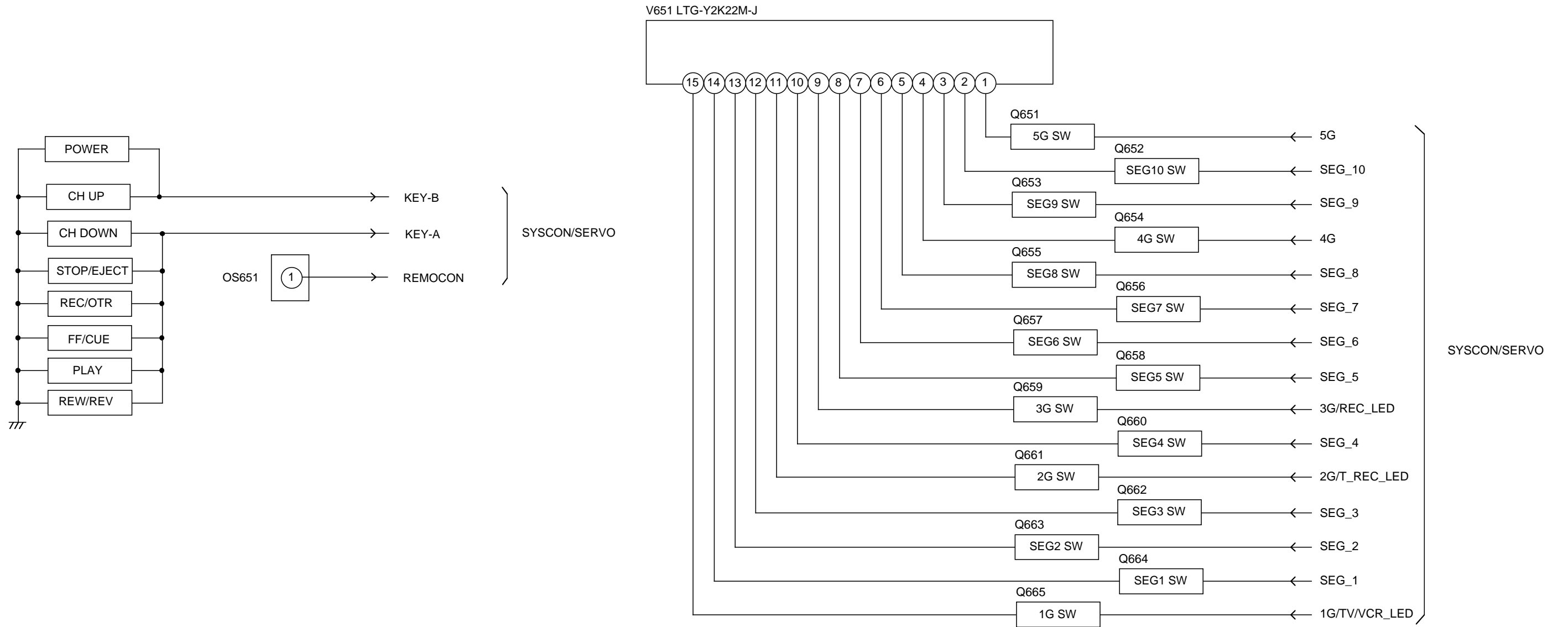
# TUNER BLOCK DIAGRAM



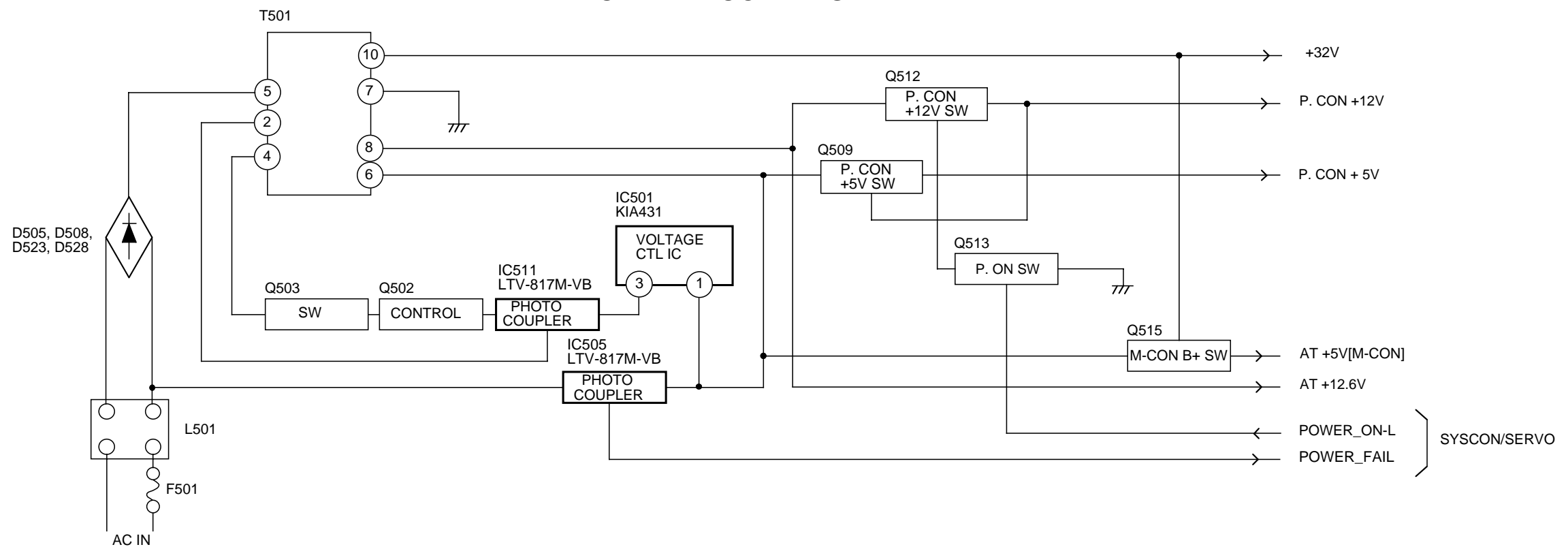
# HI-FI/DEMODULATOR BLOCK DIAGRAM



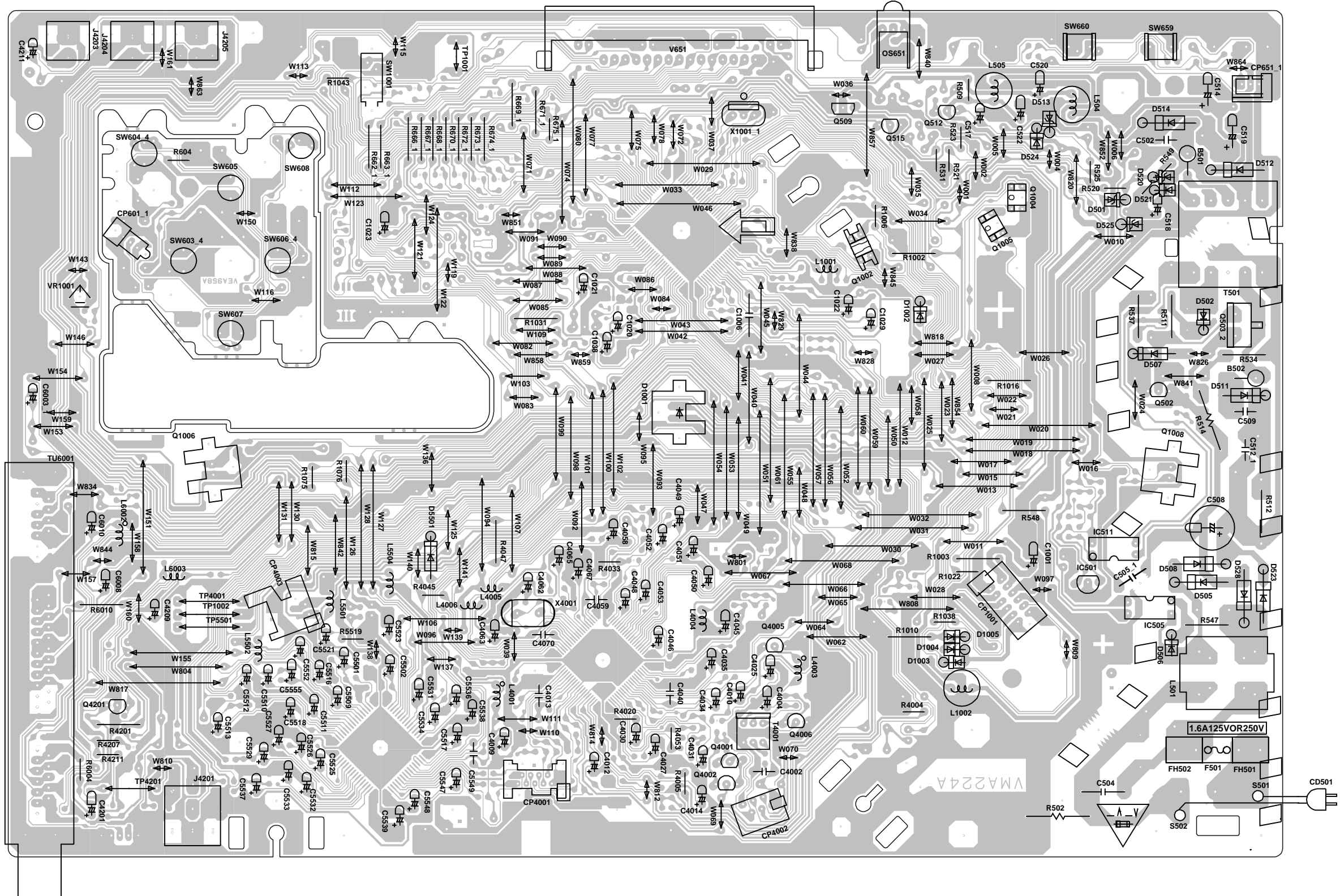
## OPERATION BLOCK DIAGRAM



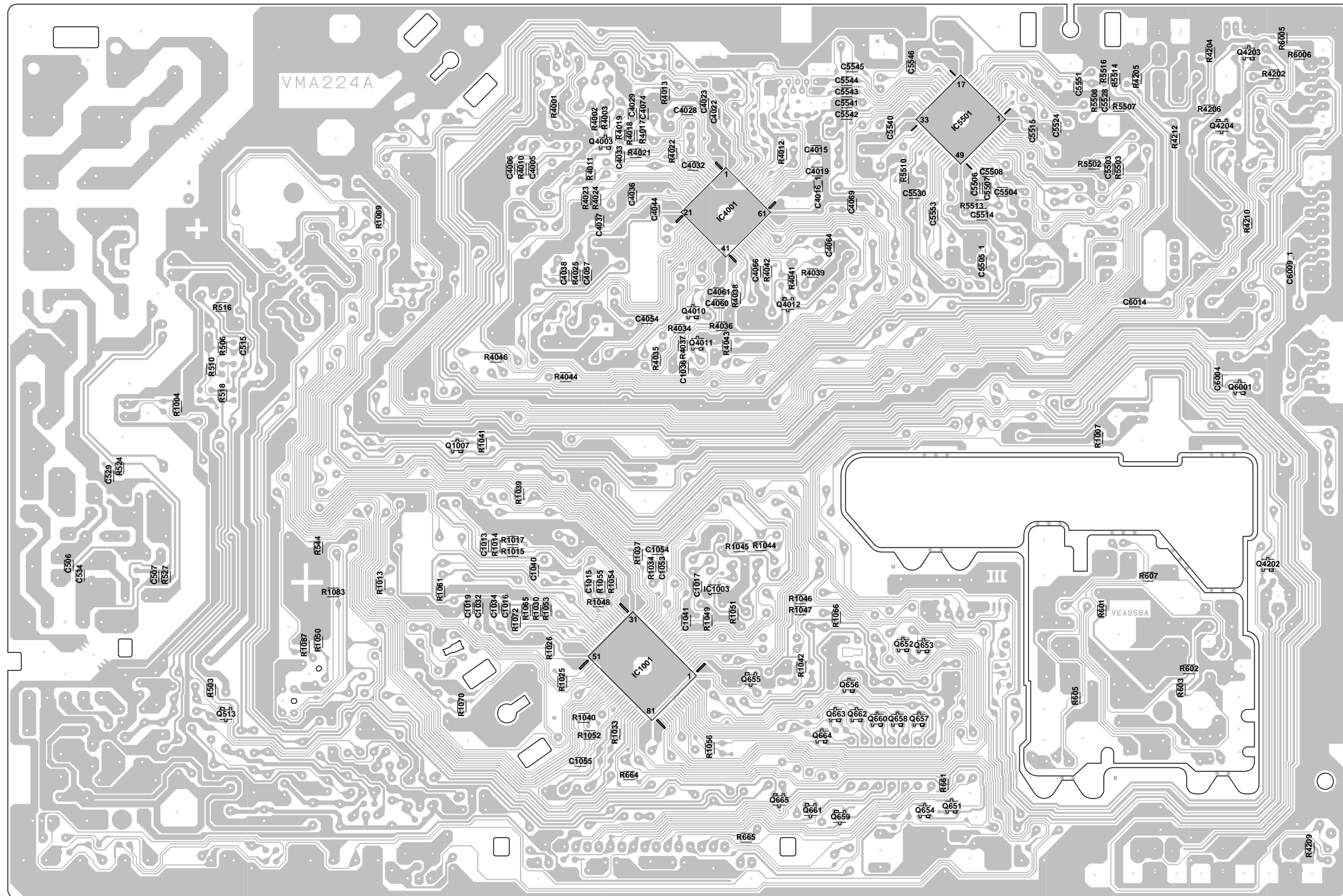
## POWER BLOCK DIAGRAM



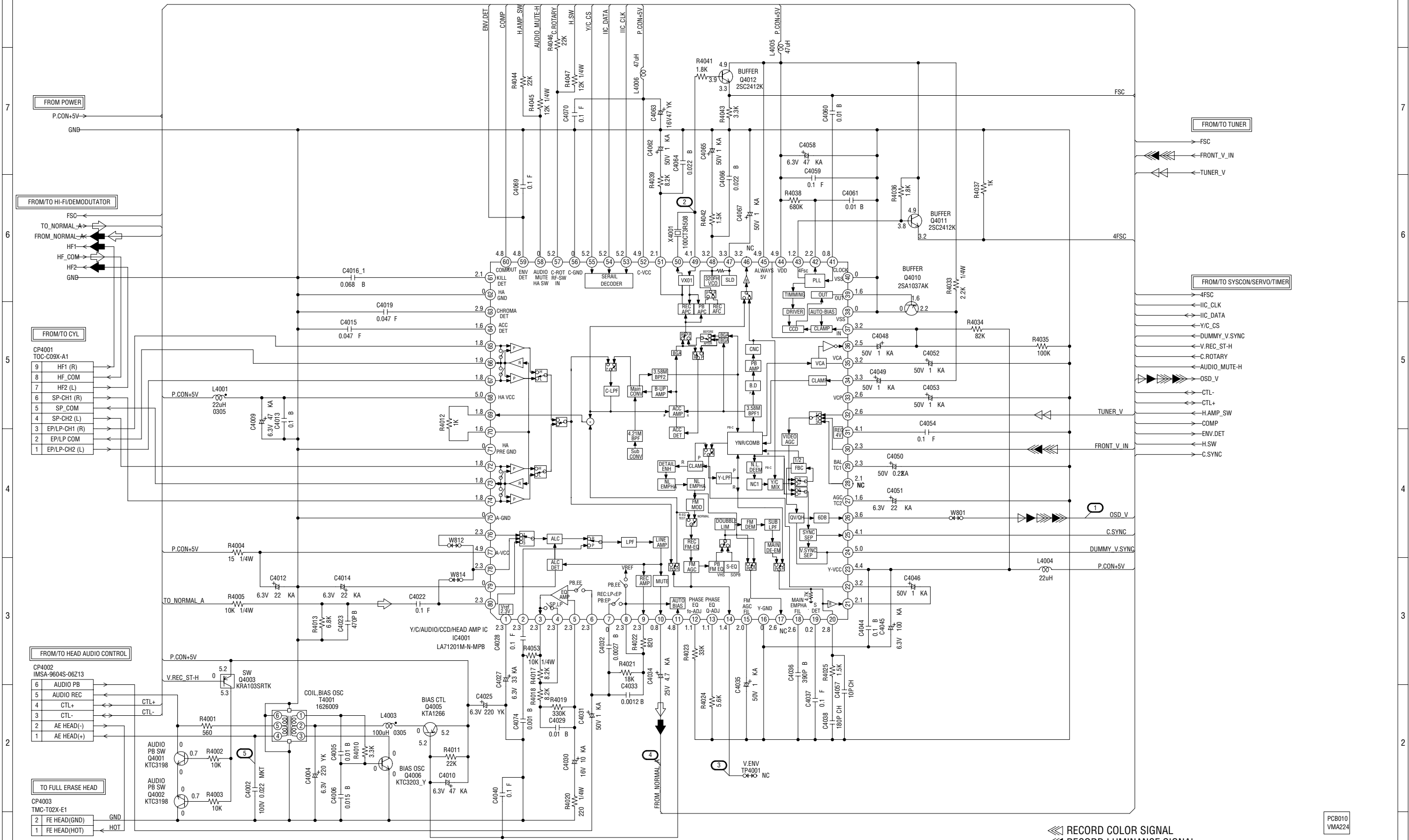
PRINTED CIRCUIT BOARDS  
SYSCON/OPERATION (INSERTED PARTS)  
SOLDER SIDE



PRINTED CIRCUIT BOARDS  
SYSCON/OPERATION (CHIP MOUNTED PARTS)  
SOLDER SIDE



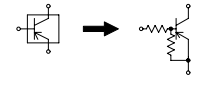
# Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM (SYSCON PCB)



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

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

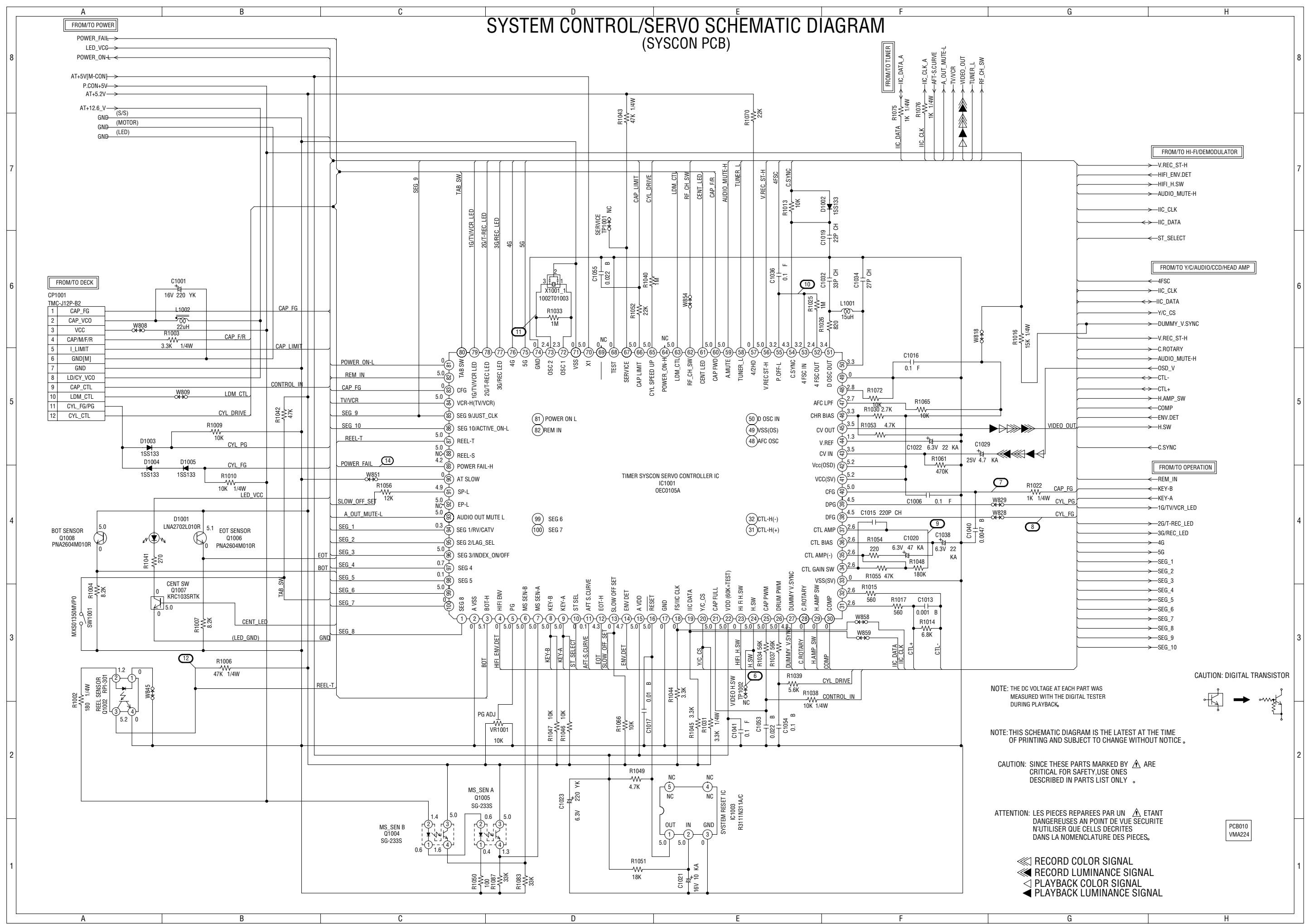
CAUTION: DIGITAL TRANSISTOR



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

PCB010  
VMA224

# SYSTEM CONTROL/SERVO SCHEMATIC DIAGRAM (SYSCON PCB)



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

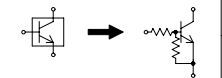
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

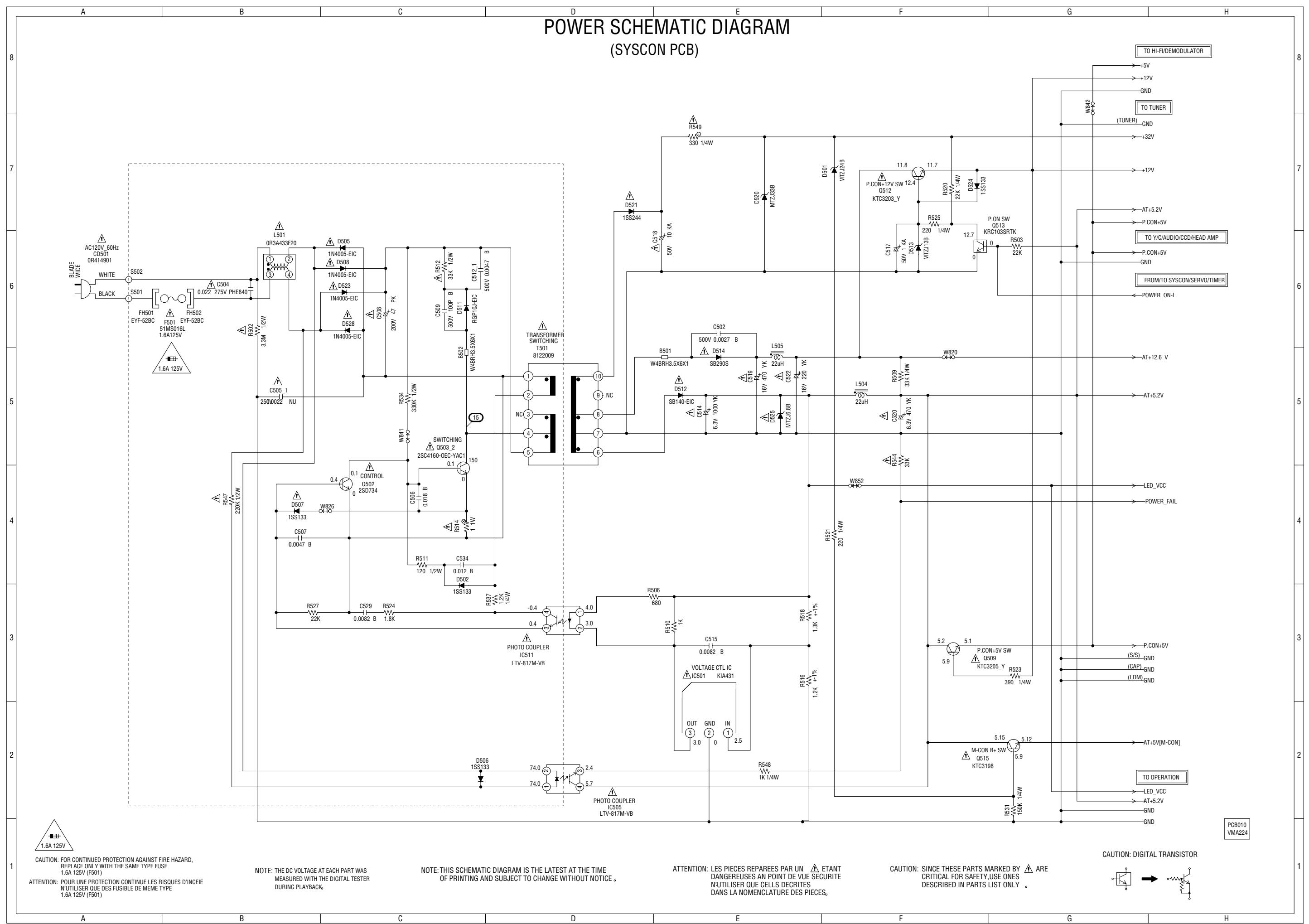
- RECORD COLOR SIGNAL
- RECORD LUMINANCE SIGNAL
- PLAYBACK COLOR SIGNAL
- PLAYBACK LUMINANCE SIGNAL

CAUTION: DIGITAL TRANSISTOR



PCB010  
VMA224

# POWER SCHEMATIC DIAGRAM (SYSCON PCB)



**CAUTION:** FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.  
1.6A 125V (F501)

**ATTENTION:** POUR UNE PROTECTION CONTINUE LES RISQUES D'INCENDIE N'UTILISER QUE DES FUSIBLES DE MEME TYPE.  
1.6A 125V (F501)

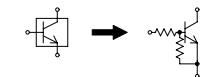
**NOTE:** THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

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

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

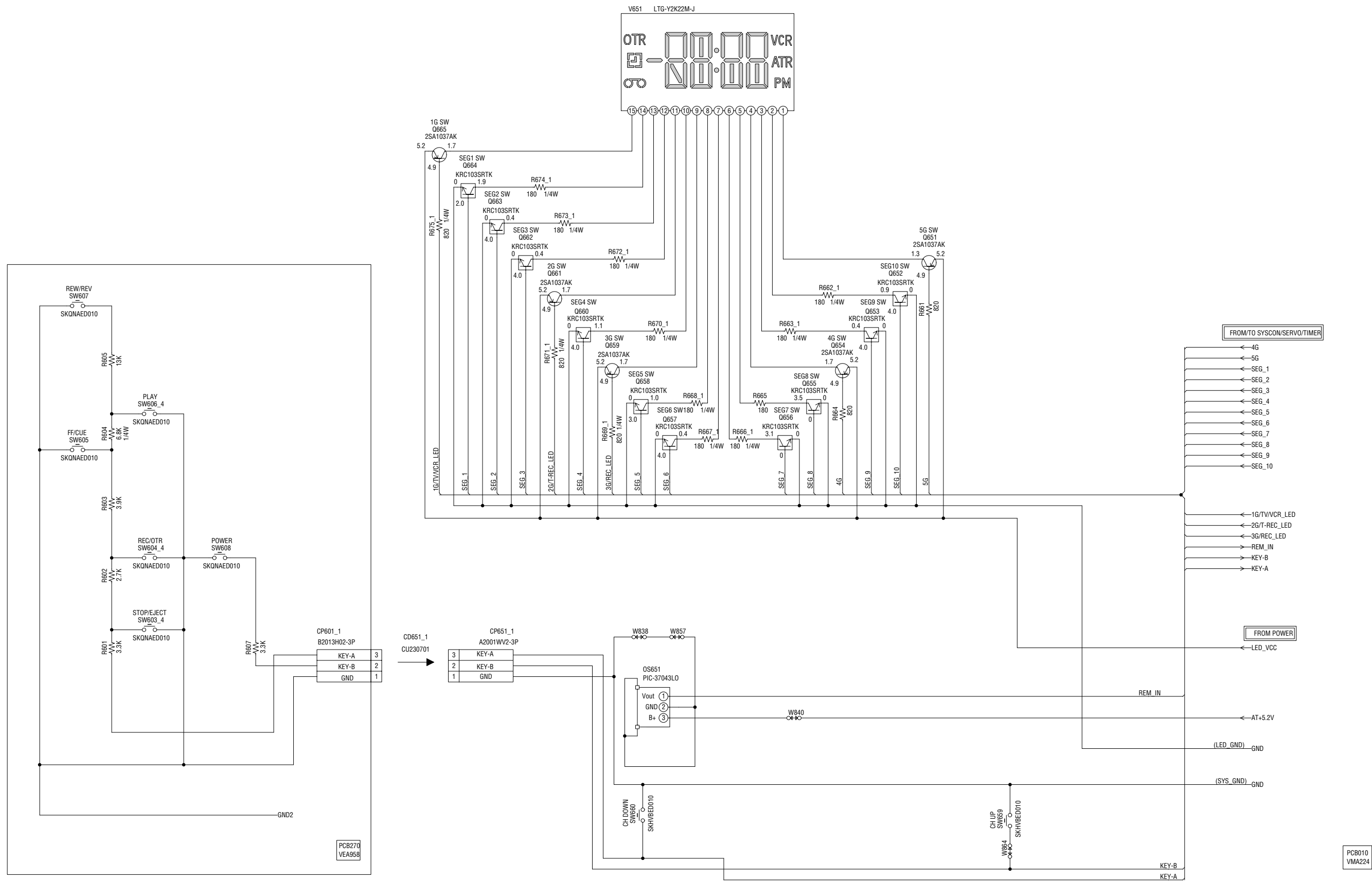
**CAUTION:** DIGITAL TRANSISTOR



PCB010  
VMA224



# OPERATION SCHEMATIC DIAGRAM (SYSCON PCB)



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

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

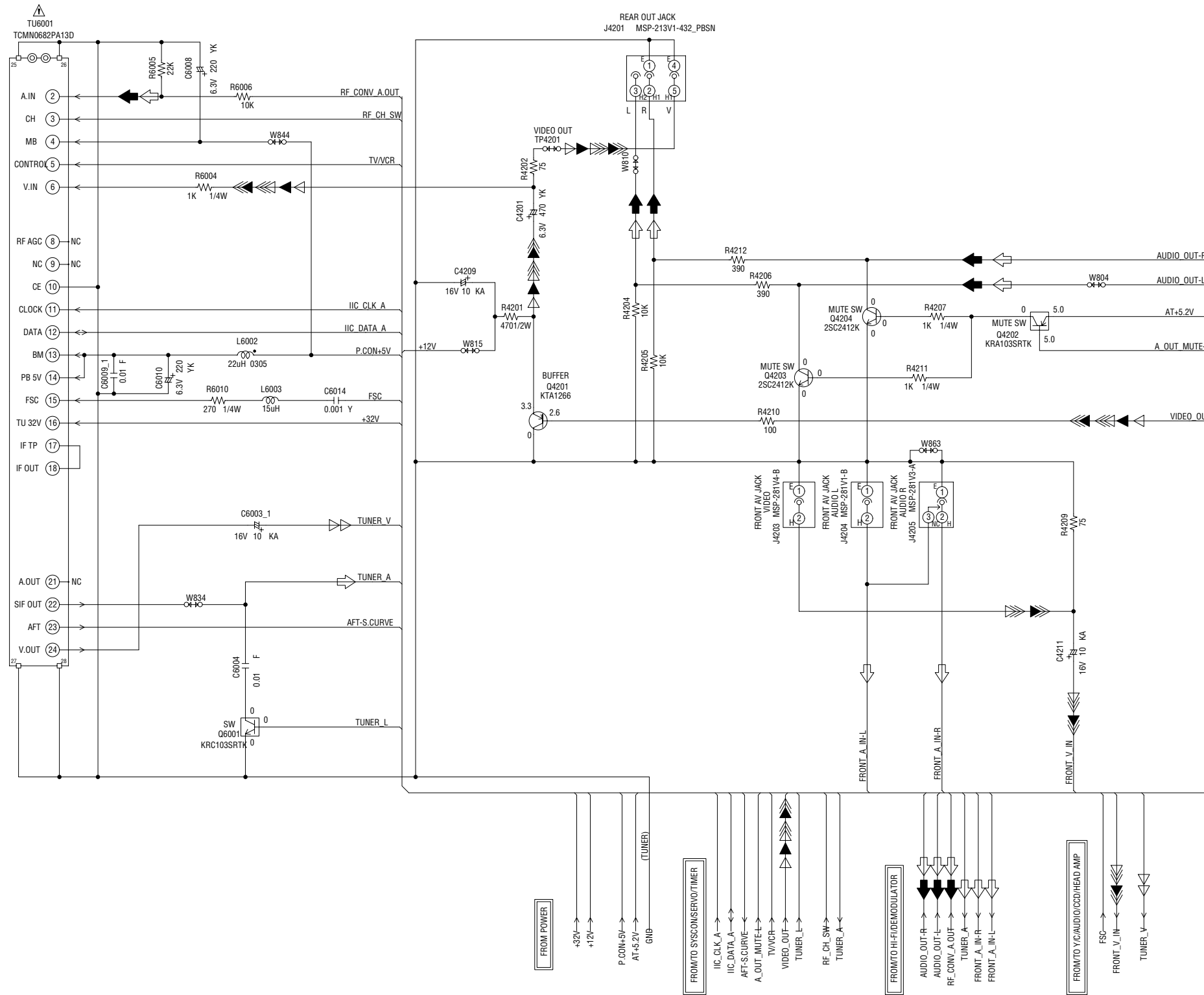
FROM/TO SYSCON/SERVO/TIMER

FROM POWER

PCB010  
VMA224

PCB270  
VEA958

# TUNER SCHEMATIC DIAGRAM (SYSCON PCB)



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

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

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

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

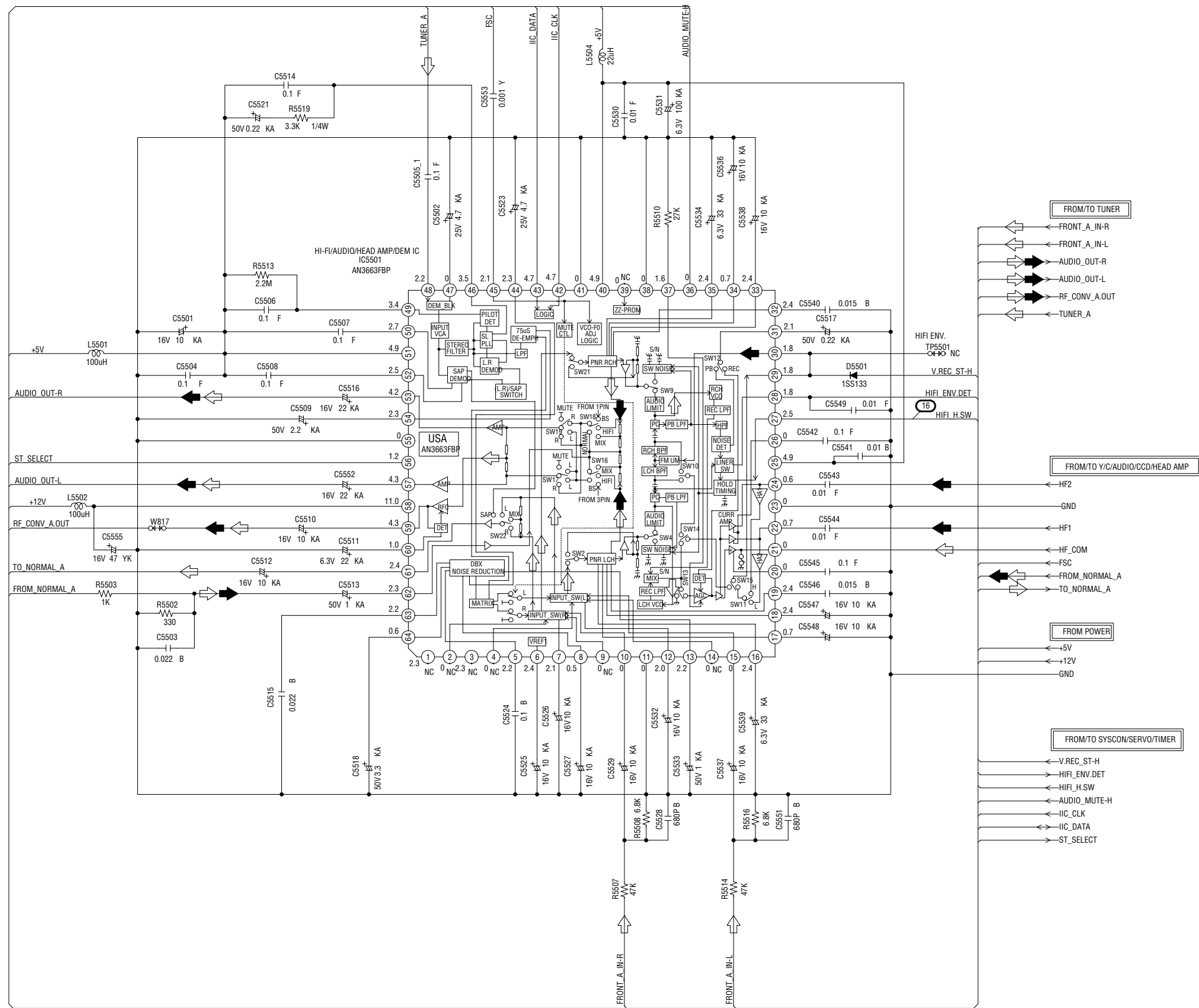
CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

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

PC8010  
VMA224

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



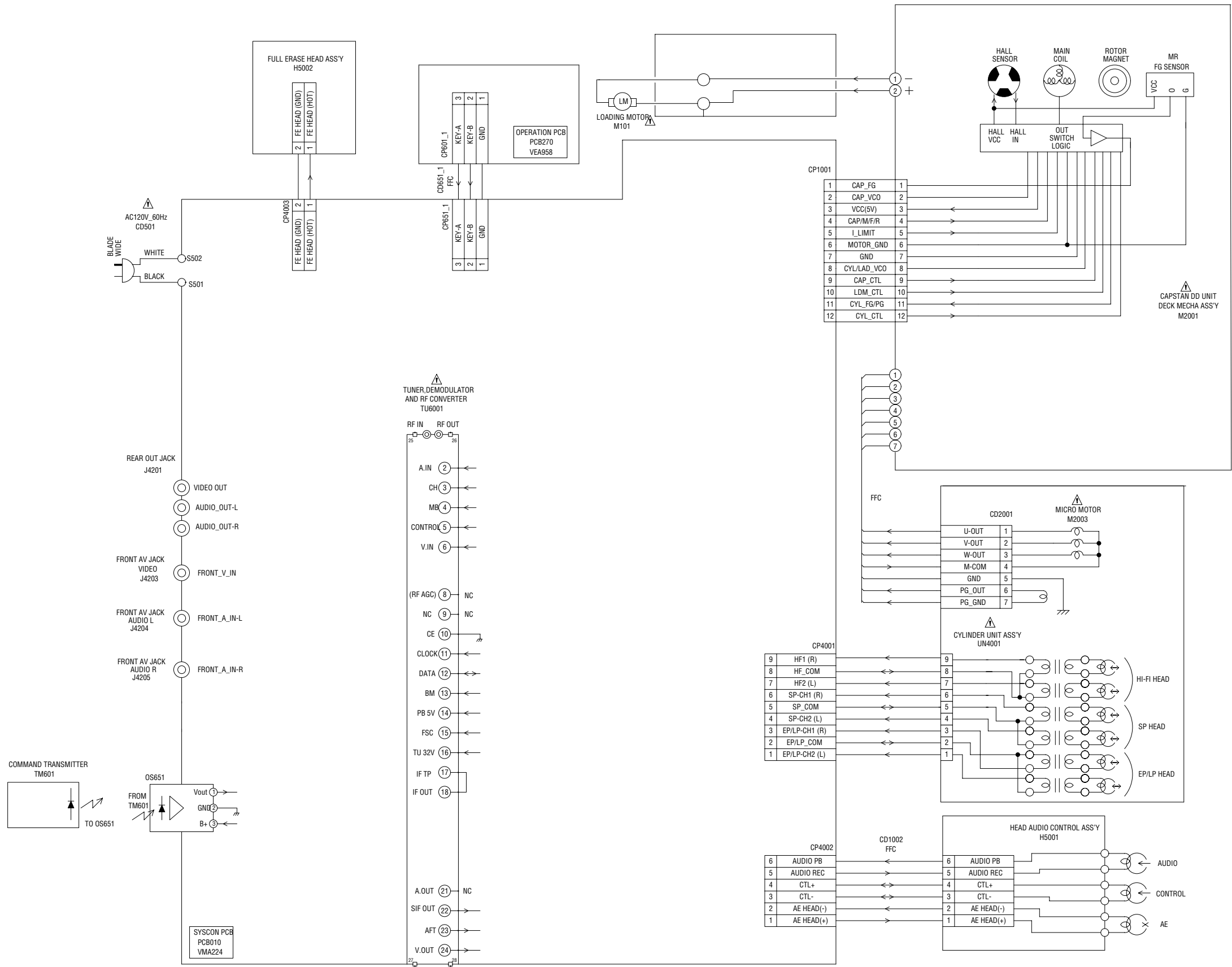
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

AUDIO SIGNAL(REC)  
 AUDIO SIGNAL(PB)

PCB010  
VMA224

# INTERCONNECTION DIAGRAM



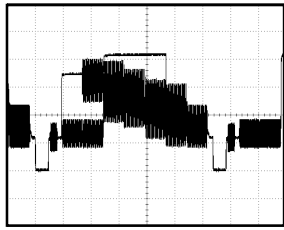
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

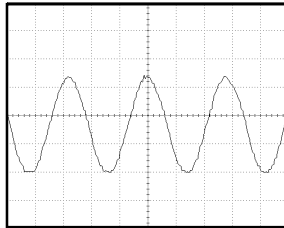
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

# WAVEFORMS

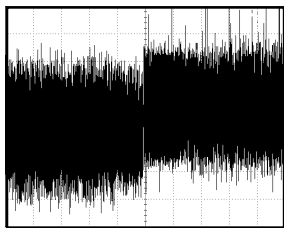
## Y/C/AUDIO/CCD/HEAD AMP



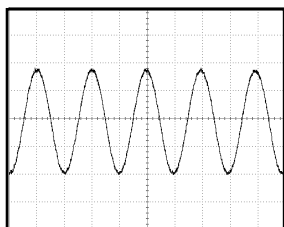
① POWER ON  
10µs 500mV/div



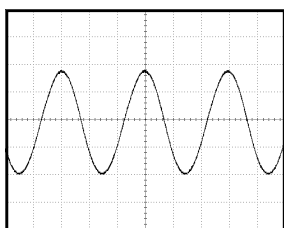
② POWER ON  
100ns 100mV/div



③ PB  
1ms 100mV/div

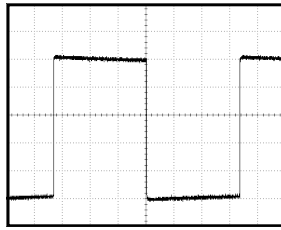


④ PB  
500µs 200mV/div

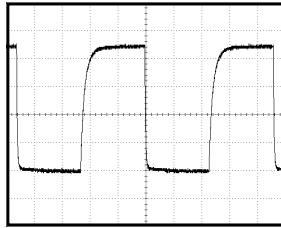


⑤ REC  
5µs 20V/div

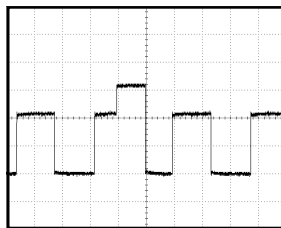
## SYSCON/SERVO



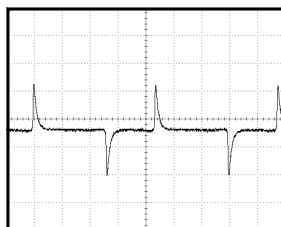
⑥ POWER ON  
5ms 1.0V/div



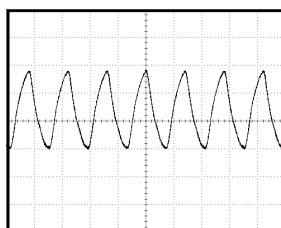
⑦ PB  
2µs 1.0V/div



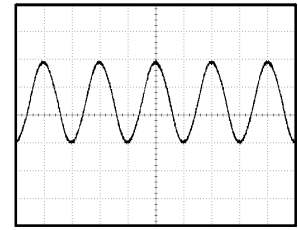
⑧ POWER ON  
500µs 1.0V/div



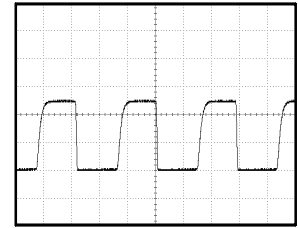
⑨ FF/REW  
500µs 500mV/div



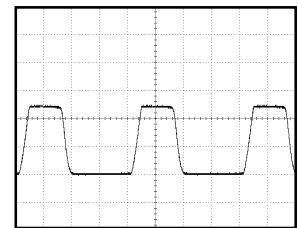
⑩ POWER ON  
50ns 500mV/div



⑪ POWER ON  
50ns 1.0V/div

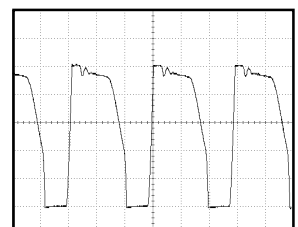


⑫ FF/REW  
5ms 2V/div



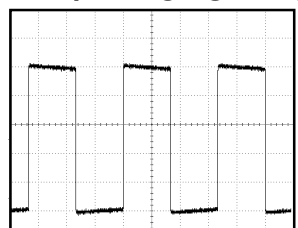
⑭ POWER OFF  
5ms 2V/div

## POWER



⑮ PB  
2µs 50V/div

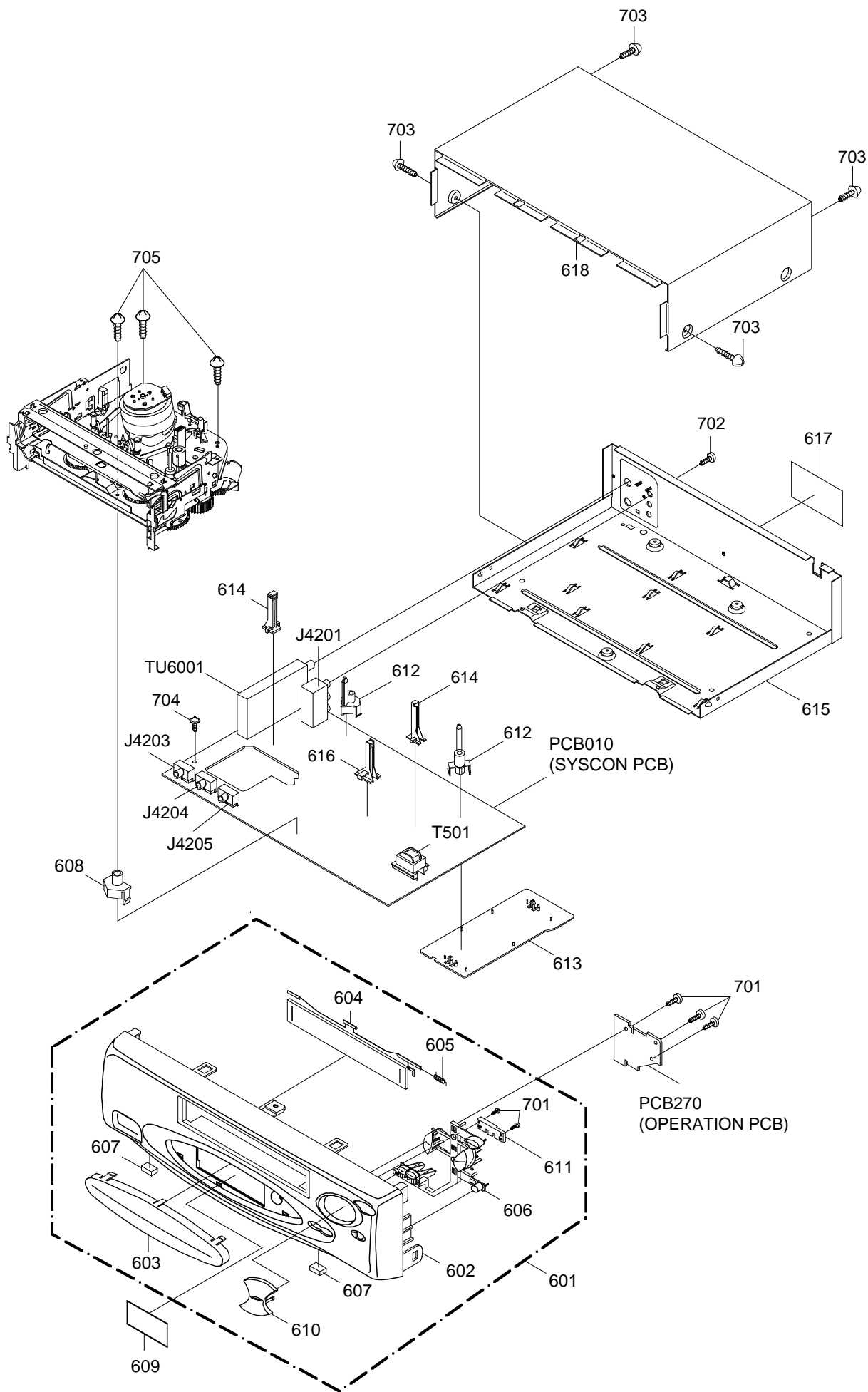
## HI-FI/DEMODULATOR



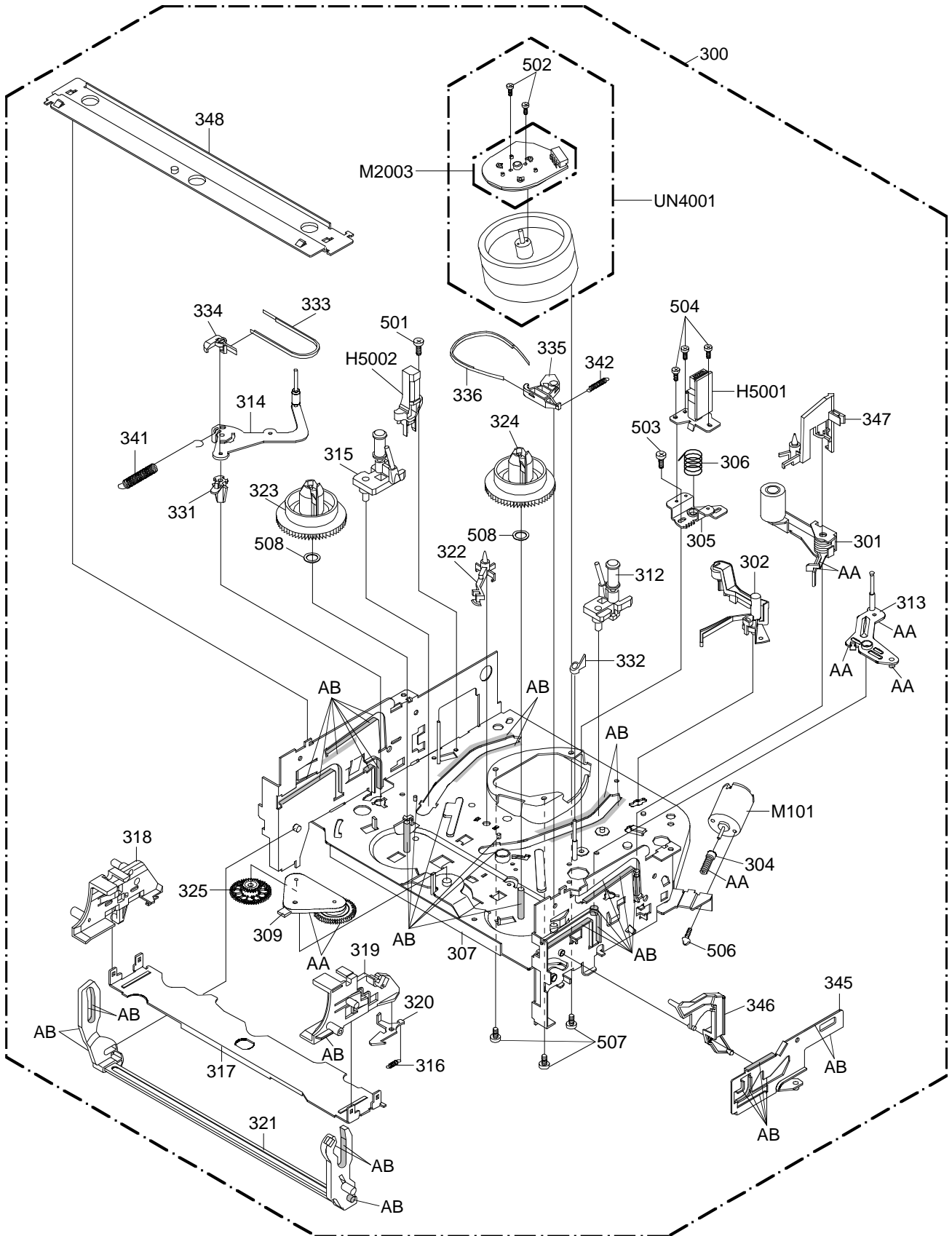
⑯ POWER ON  
10ms 1.0V/div

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

# MECHANICAL EXPLODED VIEW



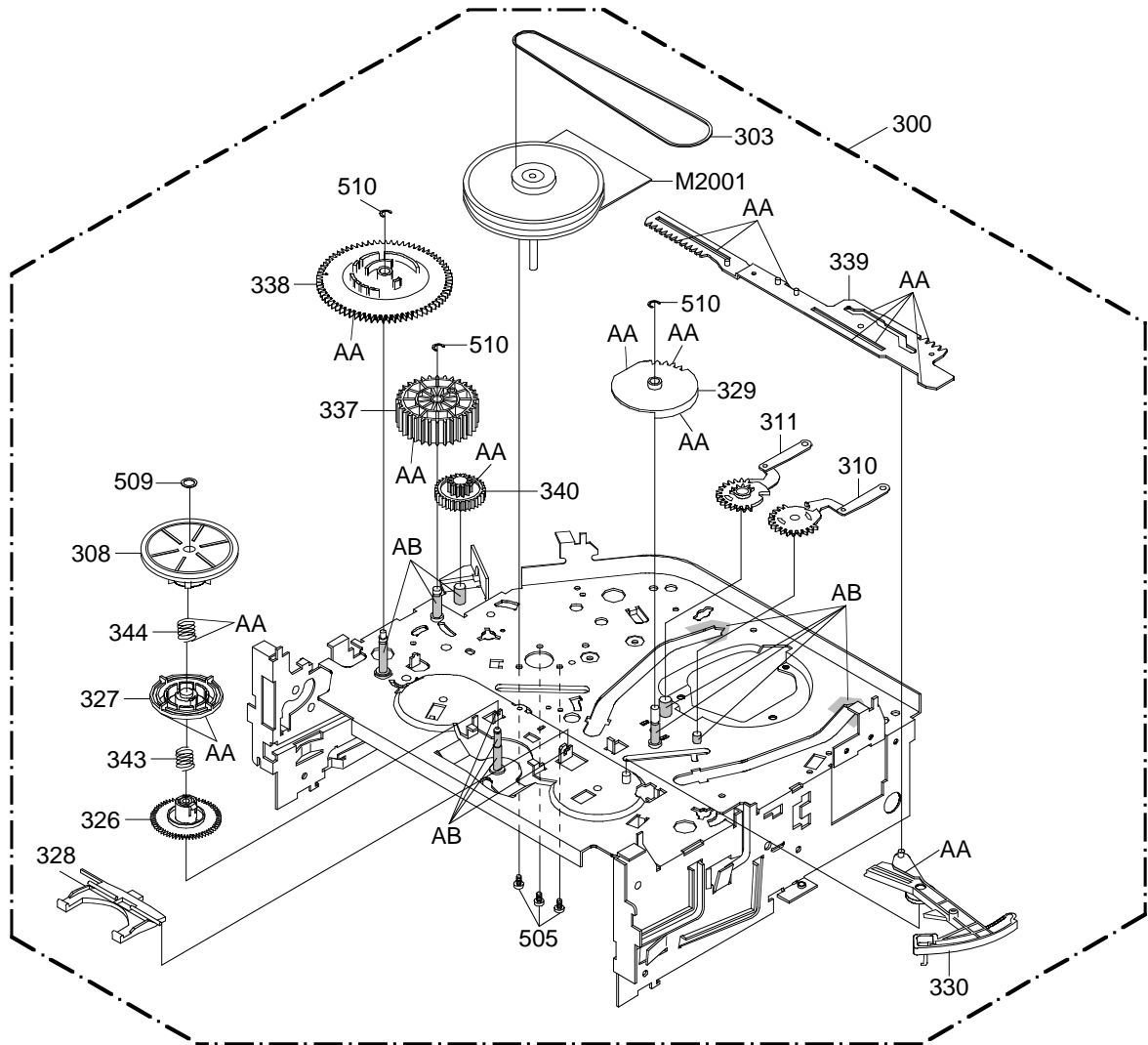
# CHASSIS EXPLODED VIEW (TOP VIEW)



| CLASS  | PART NO. | MARK |
|--------|----------|------|
| GREASE | G-555G   | AA   |
|        | MG-33    | AB   |

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

# CHASSIS EXPLODED VIEW (BOTTOM VIEW)



| CLASS  | PART NO. | MARK |
|--------|----------|------|
| GREASE | G-555G   | AA   |
|        | MG-33    | AB   |

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



## MECHANICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO.   | DESCRIPTION                           |
|----------|------------|---------------------------------------|
| 601      | A4F204B720 | CABINET,FRONT ASSY                    |
| 602      | 701WPJB398 | CABINET,FRONT                         |
| 603      | 711WPA0107 | PLATE,DISPLAY                         |
| 604      | 712WPJB128 | FLAP                                  |
| 605      | 743WKA0032 | SPRING,FLAP(COMBO)                    |
| 606      | 735WPD0731 | BUTTON,FRAME                          |
| 607      | 800WFA0045 | CUSHION,LEG                           |
| 608      | 701WPA0686 | HOLDER,DECK                           |
| 609      | 723000A698 | SHEET,DISPLAY                         |
| 610      | 735WPD0730 | BUTTON,DECK                           |
| 611      | 735WPAA194 | HOLDER,CHANNEL                        |
| 612      | 701WPA0680 | HOLDER,DECK                           |
| 613      | 755WPA0020 | PLATE,COVER POWER                     |
| 614      | 85OP700036 | HOLDER EOT SENSOR                     |
| 615      | 702WSA0084 | PLATE,BOTTOM                          |
| 616      | 85OP700037 | HOLDER,LED                            |
| 617      | 722A08A092 | SHEET,RATING                          |
| 618      | 702WSB0058 | CABINET, TOP                          |
| 701      | 8110226804 | SCREW,TAP TITE(P)      BIND    2.6x8  |
| 702      | 8110230804 | SCREW,TAP TITE(P)      BIND    3x8    |
| 703      | 8109230802 | SCREW,TAP TITE(B)                 3x8 |
| 704      | 8109230704 | SCREW,TAP TITE(B) R      BIND    3x7  |
| 705      | 8109130B94 | SCREW,TAP TITE(B) R      PAN     3x29 |
| ---      | 791WHA0095 | GIFT SHEET                            |
| ---      | 792WHA0306 | PACKAGE                               |
| ---      | 793WCDB039 | GIFT BOX                              |
| ---      | JA5U0200   | POLYBAG                               |
| ---      | J3J81702   | WARRANTY SHEET                        |
| ---      | J4F20401   | INSTRUCTION BOOK                      |
| ---      | A4F204B975 | INSTRUCTION BOOK KIT                  |

## CHASSIS REPLACEMENT PARTS LIST

| REF. NO. | PART NO.    | DESCRIPTION              | REF. NO. | PART NO.   | DESCRIPTION                         |
|----------|-------------|--------------------------|----------|------------|-------------------------------------|
| 300      | A4F201B420K | DECK ASSY<br>A4F201B420K | 501      | 8107226804 | SCREW,TAP TITE(S) BIND 2.6x8        |
| 301      | 85OA400227  | PINCH ROLLER BLOCK       | 502      | 8107226504 | SCREW,TAP TITE(S) BIND 2.6x5        |
| 302      | 85OA500026  | AHC ASS'Y                | 503      | 8107226404 | SCREW,TAP TITE(S) BIND 2.6x4        |
| 303      | 85OP200290  | BELT,CAPSTAN (S)         | 504      | 8102120604 | SCREW,PAN M2x6                      |
| 304      | 85OP600581  | WORM                     | 505      | 8109126604 | SCREW,TAP TITE(B) PAN 2.6x6         |
| 305      | 85OP500083  | BASE,AC HEAD             | 506      | 810A130404 | SCREW/WASHER(A) M3x4                |
| 306      | 85OP800324  | SPRING,AC HEAD           | 507      | 810A126504 | SCREW/WASHER(A) M2.6x5              |
| 307      | 85OA000459  | MAIN CHASSIS ASS'Y       | 508      | 82Q264713N | POLYSLIDER WASHER 2.6x4.7xT0.13     |
| 308      | 85OA200089  | CLUTCH ASS'Y             | 509      | 82P184505N | POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5 |
| 309      | 85OA200090  | ARM IDLER ASS'Y          | 510      | 83ETW30000 | E-RING 3                            |
| 310      | 85OA300065  | LOADING ARM S UNIT       | CD1501   | 122H071603 | CORD JUMPER SMCD-7X151              |
| 311      | 85OA300066  | LOADING ARM T UNIT       | CD1502   | 122Y021902 | CORD JUMPER 2Y021902                |
| 312      | 85OA400223  | INCLINED BASE T UUNIT 3S | H5001    | 1523D91034 | HEAD (AUDIO CONTROL) HVMXA1072A     |
| 313      | 85OA400232  | P5 ARM ASS'Y 2           | H5002    | 1543D02013 | HEAD (FULL ERASE) HVFHP0032A        |
| 314      | 85OA400233  | TENSION ARM ASS'Y (WT)   | △ M101   | 1596P98001 | MOTOR (LOADING) MXN13FB12K3         |
| 315      | 85OA400231  | INCLINED BASE S UNIT     | △ M2001  | 1510S98036 | CAPSTAN DD UNIT F2QVB08             |
| 316      | 85OP800358  | SPRING,LOCKER            | △ M2003  | 1589S11015 | MICRO MOTOR I2OAL01                 |
| 317      | 85OP900736  | CASS,HOLDER              | △ UN4001 | A4F201B500 | CYLINDER UNIT ASS'Y A4F201B500      |
| 318      | 85OP900748  | CASS,SIDE L              |          |            |                                     |
| 319      | 85OP900749  | CASS,SIDE R              |          |            |                                     |
| 320      | 85OP900739  | LOCKER,R                 |          |            |                                     |
| 321      | 85OA900228  | LINK UNIT                |          |            |                                     |
| 322      | 85OP000496  | POST,CASS GUIDE          |          |            |                                     |
| 323      | 85OP200291  | REEL,S (S)               |          |            |                                     |
| 324      | 85OP200292  | REEL,T (S)               |          |            |                                     |
| 325      | 85OP200308  | GEAR,IDLER               |          |            |                                     |
| 326      | 85OP200311  | GEAR,CLUTCH              |          |            |                                     |
| 327      | 85OP200312  | GEAR,COUPLING            |          |            |                                     |
| 328      | 85OP200313  | LEVER,CLUTCH             |          |            |                                     |
| 329      | 85OP300194  | GEAR,MAIN LOADING        |          |            |                                     |
| 330      | 85OP400490  | LEVER,TENSION            |          |            |                                     |
| 331      | 85OP400492  | HOLDER,TENSION           |          |            |                                     |
| 332      | 85OP400520  | CAP.P4                   |          |            |                                     |
| 333      | 85OP400532  | BAND,TENSION             |          |            |                                     |
| 334      | 85OP400533  | CONNECT,TENSION          |          |            |                                     |
| 335      | 85OP600573  | ARM,BRAKE T              |          |            |                                     |
| 336      | 85OP600574  | BAND,BRAKE T             |          |            |                                     |
| 337      | 85OP600577  | CAM,PINCH ROLLER         |          |            |                                     |
| 338      | 85OP600578  | CAM,MAIN                 |          |            |                                     |
| 339      | 85OP600579  | ROD,MAIN                 |          |            |                                     |
| 340      | 85OP600582  | GEAR,JOINT               |          |            |                                     |
| 341      | 85OP800322  | SPRING,TENSION           |          |            |                                     |
| 342      | 85OP800350  | SPRING,BRAKE T           |          |            |                                     |
| 343      | 85OP800355  | SPRING,COUPLING          |          |            |                                     |
| 344      | 85OP800356  | SPRING,RING              |          |            |                                     |
| 345      | 85OP900743  | LEVER,LINK               |          |            |                                     |
| 346      | 85OP900744  | LEVER,FLAP               |          |            |                                     |
| 347      | 85OP900745  | CASS,OPENER              |          |            |                                     |
| 348      | 85OP900746  | BRACKET,TOP 3V           |          |            |                                     |

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO.           | PART NO.   | DESCRIPTION         | REF. NO.                        | PART NO.   | DESCRIPTION           |
|--------------------|------------|---------------------|---------------------------------|------------|-----------------------|
| <b>RESISTORS</b>   |            |                     |                                 |            |                       |
| △ R502             | R0G3K2335K | RC                  | Q4005                           | TAATA12660 | TRANSISTOR,SILICON    |
| △ R512             | R002T2333J | RC                  | Q4006                           | TCAT032034 | TRANSISTOR, SILICON   |
| △ R514             | R3X181010J | R,METAL OXIDE       | Q4010                           | T6YJ1037K0 | TRANSISTOR,SILICON    |
| △ R547             | R002T2224J | RC                  | Q4011                           | T8YJ2412K0 | TRANSISTOR SILICON    |
| △ R549             | R65584331J | R,FUSE              | Q4012                           | T8YJ2412K0 | TRANSISTOR SILICON    |
| <b>CAPACITORS</b>  |            |                     |                                 |            |                       |
| △ C504             | P2472B223M | CMP                 | Q4201                           | TAATA12660 | TRANSISTOR,SILICON    |
| △ C505             | CBLLYEMH3M | CC                  | Q4202                           | TPAAC05002 | COMPOUND TRANSISTOR   |
| △ C508             | E62QFC470M | CE                  | Q4203                           | T8YJ2412K0 | TRANSISTOR SILICON    |
| △ C514             | E02LT0102M | CE                  | Q4204                           | T8YJ2412K0 | TRANSISTOR SILICON    |
| △ C518             | E50HU5100M | CE                  | Q6001                           | TNAAC05002 | COMPOUND TRANSISTOR   |
| △ C519             | E02LT2471M | CE                  | <b>COILS &amp; TRANSFORMERS</b> |            |                       |
| △ C520             | E02LU0471M | CE                  | △ L501                          | 029T000083 | COIL,LINE FILTER      |
| △ C522             | E02LU2221M | CE                  | L504                            | 021W7A220K | COIL                  |
| <b>DIODES</b>      |            |                     |                                 |            |                       |
| D501               | D97U02401B | DIODE,ZENER         | L505                            | 021W7A220K | COIL                  |
| D502               | D1VT001330 | DIODE,SILICON       | L1001                           | 0216A6150K | COIL                  |
| △ D505             | D2WXN40050 | DIODE SILICON       | L1002                           | 021W7A220K | COIL                  |
| D506               | D1VT001330 | DIODE,SILICON       | L4001                           | 02167F220J | COIL                  |
| △ D507             | D1VT001330 | DIODE,SILICON       | L4003                           | 02167F101J | COIL                  |
| △ D508             | D2WXN40050 | DIODE SILICON       | L4004                           | 0216A6220K | COIL                  |
| D511               | D2WXGP10J0 | DIODE RECTIFIER     | L4005                           | 0216A6470K | COIL                  |
| △ D512             | D2WXS81400 | DIODE SCHOTTKY      | L4006                           | 0216A6470K | COIL                  |
| D513               | D97U01301B | DIODE,ZENER         | L5501                           | 0216A6101K | COIL                  |
| △ D514             | D2WXB290S0 | DIODE SILICON       | L5502                           | 0216A6101K | COIL                  |
| D520               | D97U03301B | DIODE,ZENER         | L5504                           | 0216A6220K | COIL                  |
| △ D521             | D97X03301B | DIODE,ZENER         | L6002                           | 02167F220J | COIL                  |
| △ D523             | D17T002440 | DIODE SILICON       | L6003                           | 0216A6150K | COIL                  |
| D524               | D1VT001330 | DIODE,SILICON       | △ T501                          | 0481220094 | TRANSFORMER,SWITCHING |
| △ D525             | D97U06R81B | DIODE,ZENER         | T4001                           | 031626009R | COIL,BIAS OSC         |
| △ D528             | D2WXN40050 | DIODE SILICON       | <b>JACKS</b>                    |            |                       |
| D1001              | 0010100320 | INFRARED LED        | J4201                           | 060J411018 | RCA JACK              |
| D1002              | D1VT001330 | DIODE,SILICON       | J4203                           | 060J401079 | RCA JACK              |
| D1003              | D1VT001330 | DIODE,SILICON       | J4204                           | 060J401080 | RCA JACK              |
| D1004              | D1VT001330 | DIODE,SILICON       | J4205                           | 060J421023 | RCA JACK              |
| D1005              | D1VT001330 | DIODE,SILICON       | <b>SWITCHES</b>                 |            |                       |
| D5501              | D1VT001330 | DIODE,SILICON       | SW603                           | 0504201T32 | SWITCH,TACT           |
| <b>ICS</b>         |            |                     |                                 |            |                       |
| △ IC501            | 11KJ9A4310 | IC                  | SW604                           | 0504201T32 | SWITCH,TACT           |
| IC505              | 0002E00610 | PHOTO COUPLER       | SW605                           | 0504201T32 | SWITCH,TACT           |
| IC511              | 0002E00610 | PHOTO COUPLER       | SW606                           | 0504201T32 | SWITCH,TACT           |
| IC1001             | I54F50105A | IC                  | SW607                           | 0504201T32 | SWITCH,TACT           |
| IC1003             | IC7J0311A0 | IC                  | SW608                           | 0504201T32 | SWITCH,TACT           |
| IC4001             | I03F301MNO | IC                  | SW659                           | 0504201T31 | SWITCH,TACT           |
| IC5501             | I01F63FBP0 | IC                  | SW660                           | 0504201T31 | SWITCH,TACT           |
| <b>TRANSISTORS</b> |            |                     |                                 |            |                       |
| △ Q502             | TD3T007340 | TRANSISTOR,SILICON  | SW1001                          | 0508A11001 | SWITCH(LEAF)          |
| △ Q503             | TCWQ4160E0 | TRANSISTOR SILICON  | <b>VARIABLE RESISTOR</b>        |            |                       |
| △ Q509             | TCAT03205Y | TRANSISTOR SILICON  | VR1001                          | V116314BTC | VOLUME,SEMI FIXED     |
| △ Q512             | TCAT032034 | TRANSISTOR, SILICON | <b>P.C.BOARD ASSEMBLIES</b>     |            |                       |
| Q513               | TNAAC05002 | COMPOUND TRANSISTOR | PCB010                          | A4F204B010 | PCB ASS'Y             |
| △ Q515             | TCATC31980 | TRANSISTOR,SILICON  | PCB270                          | A4F204B270 | PCB ASS'Y             |
| Q651               | T6YJ1037K0 | TRANSISTOR,SILICON  | <b>MISCELLANEOUS</b>            |            |                       |
| Q652               | TNAAC05002 | COMPOUND TRANSISTOR | B501                            | 024HT03564 | CORE,BEADS            |
| Q653               | TNAAC05002 | COMPOUND TRANSISTOR | B502                            | 024HT03564 | CORE,BEADS            |
| Q654               | T6YJ1037K0 | TRANSISTOR,SILICON  | △ CD501                         | 120R414901 | CORD AC BUSH          |
| Q655               | TNAAC05002 | COMPOUND TRANSISTOR |                                 | 1207414902 | CORD AC BUSH          |
| Q656               | TNAAC05002 | COMPOUND TRANSISTOR | CD651                           | 06CU230701 | CORD JUMPER           |
| Q657               | TNAAC05002 | COMPOUND TRANSISTOR | CP601                           | 067U003029 | WIRE HOLDER           |
| Q658               | TNAAC05002 | COMPOUND TRANSISTOR | CP651                           | 069S230629 | CONNECTOR PCB SIDE    |
| Q659               | T6YJ1037K0 | TRANSISTOR,SILICON  | CD1002                          | 122F061501 | CORD JUMPER           |
| Q660               | TNAAC05002 | COMPOUND TRANSISTOR | CD6002                          | 06CQL02006 | CABLE                 |
| Q661               | T6YJ1037K0 | TRANSISTOR,SILICON  | CP1001                          | 06972C0010 | CONNECTOR PCB SIDE    |
| Q662               | TNAAC05002 | COMPOUND TRANSISTOR | CP4001                          | 0697290620 | CONNECTOR PCB SIDE    |
| Q663               | TNAAC05002 | COMPOUND TRANSISTOR | CP4002                          | 069J760019 | CONNECTOR PCB SIDE    |
| Q664               | TNAAC05002 | COMPOUND TRANSISTOR | CP4003                          | 0697120320 | CONNECTOR PCB SIDE    |
| Q665               | T6YJ1037K0 | TRANSISTOR,SILICON  | △ F501                          | 081PC1R605 | FUSE                  |
| Q1002              | 0002700590 | PHOTO COUPLER       | FH501                           | 06710T0006 | HOLDER,FUSE           |
| Q1004              | 0002M00580 | PHOTO COUPLER       | FH502                           | 06710T0006 | HOLDER,FUSE           |
| Q1005              | 0002M00580 | PHOTO COUPLER       | OS651                           | 077Q037001 | REMOTE RECEIVER       |
| Q1006              | 0000100380 | PHOTO TRANSISTOR    | TM601                           | 076N0EA030 | TRANSMITTER           |
| Q1007              | TNAAC05002 | COMPOUND TRANSISTOR | △ TU6001                        | 0162K00021 | RF UNIT               |
| Q1008              | 0000100380 | PHOTO TRANSISTOR    | V651                            | 0040E94001 | LED DISPLAY           |
| Q4001              | TCATC31980 | TRANSISTOR,SILICON  | X1001                           | 1002T01003 | CERAMIC OSCILLATOR    |
| Q4002              | TCATC31980 | TRANSISTOR,SILICON  | X4001                           | 100CT3R508 | CRYSTAL HC-49/U       |
| Q4003              | TPAAC05002 | COMPOUND TRANSISTOR |                                 |            |                       |

# ELECTRICAL REPLACEMENT PARTS LIST

## RESISTOR

RC..... CARBON RESISTOR

## CAPACITORS

CC..... CERAMIC CAPACITOR  
CE..... ALUMI ELECTROLYTIC CAPACITOR  
CP..... POLYESTER CAPACITOR  
CPP..... POLYPROPYLENE CAPACITOR  
CPL..... PLASTIC CAPACITOR  
CMP..... METAL POLYESTER CAPACITOR  
CMPL..... METAL PLASTIC CAPACITOR  
CMPP..... METAL POLYPROPYLENE CAPACITOR

|          |          |
|----------|----------|
| SPEC.NO. | M4F2-04B |
| O/R NO.  | K1X4011  |

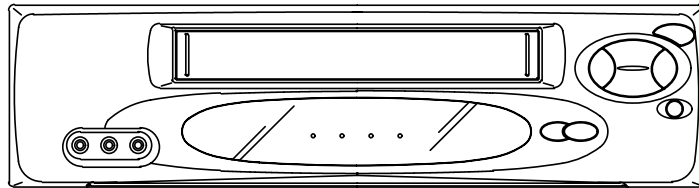
**Memorex®**

**MVR4041 Series B**

# **SERVICE MANUAL**

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**VIDEO CASSETTE RECORDER**



**VHS**

**ORIGINAL  
MFR'S VERSION B**


## SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

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

### 2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  mark, the designated parts must be used.

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

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

### 4. PERFORM A SAFETY CHECK AFTER SERVICING

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

## HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

#### 1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

#### 2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

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# GENERAL SPECIFICATIONS

|                     |                           |                                      |                                  |                              |  |   |
|---------------------|---------------------------|--------------------------------------|----------------------------------|------------------------------|--|---|
| <b>G-1</b>          | <b>VCR System</b>         | System                               | VHS Player / Recorder            |                              |  |   |
|                     |                           | Video System                         | NTSC                             |                              |  |   |
|                     |                           | Hi-Fi STEREO                         | Yes                              |                              |  |   |
|                     |                           | NTSC PB(PAL60Hz)                     | No                               |                              |  |   |
|                     |                           | Deck                                 | DECK<br>Loading System<br>Motor  | OVD-7<br>Front<br>3          |  |   |
|                     |                           | Heads                                | Video Head                       | 4Head                        |  |   |
|                     |                           |                                      | FM Audio Head                    | 2Head                        |  |   |
|                     |                           |                                      | Normal Audio /Control            | Mono / Yes                   |  |   |
|                     |                           |                                      | Erase(Full Track Erase)          | Yes                          |  |   |
|                     |                           | Tape Speed                           | Rec PAL<br>NTSC                  | -<br>SP/SLP                  |  |   |
|                     |                           |                                      | Play PAL<br>NTSC                 | -<br>SP/LP/SLP               |  |   |
|                     |                           | Fast Forward / Rewind Time (Approx.) | with Cassette                    | FF:4'50"/REW:2'30"<br>T-120  |  |   |
|                     |                           | Forward/Reverse                      | NTSC or PAL-M                    | SP/LP/SLP=3x,5x/7x,9x/9x,15x |  |   |
|                     |                           | Picture Search                       | PAL or SECAM                     | -                            |  |   |
|                     |                           | Frame Advance                        | Slow                             | 1/10                         |  |   |
|                     |                           | Slow Speed                           | Variable Slow                    | 1/10                         |  |   |
|                     |                           | <b>G-2</b>                           | <b>Tuning System</b>             | Broadcasting System          | US System M  |   |
|                     |                           |                                      |                                  | Tuner and Receive CH         | System<br>Destination<br>Tuning System<br>Input Impedance<br>CH Coverage | 1Tuner<br>USA(w/CATV)<br>F-Synth<br>VHF/UHF 75 OHM<br>2-69,4A,A-5~ A-1,A-1,J~ W<br>W+1-W+84 |
|                     |                           |                                      |                                  | Intermediate Frequency       | Picture(FP)<br>Sound(FS)<br>FP-FS  | 45.75MHz<br>41.25MHz<br>4.50MHz   |
| Preset CH           |                           |                                      |                                  | No                           |  |   |
| RF Converter Output |                           |                                      |                                  | Yes                          |  |   |
|                     | Channel                   |                                      |                                  | 3 or 4 ch                    |  |   |
|                     | Level/Impedance           |                                      |                                  | 66dBu /75ohm                 |  |   |
|                     | Sound Selector            |                                      |                                  | No                           |  |   |
|                     | Stereo/Dual TV Sound      |                                      |                                  | Yes(US-ST)                   |  |   |
| <b>G-3</b>          | <b>Power</b>              |                                      |                                  | Power Source                 | AC<br>DC   | 120V,60Hz<br>-  |
|                     |                           |                                      |                                  | Power Consumption            | Power On(at AC)<br>Stand by (at AC)<br>Per Year                          | 9W at 120V 60Hz<br>1.7W at 120V 60Hz<br>- kWh/Year  |
|                     |                           |                                      |                                  | Protector                    | Power Fuse<br>Dew Sensor   | Yes<br>No   |
|                     |                           |                                      |                                  | <b>G-4</b>                   | <b>Regulation</b>  | Safety  |
| Radiation           | FCC                       |                                      |                                  |                              |  |   |
| <b>G-5</b>          | <b>Temperature</b>        | Operation                            | 5°C - 40°C                       |                              |  |   |
|                     |                           | Storage                              | -20°C - 60°C                     |                              |  |   |
| <b>G-6</b>          | <b>Operating Humidity</b> |                                      | Less then 80% RH                 |                              |  |   |
| <b>G-7</b>          | <b>Signal</b>             | Video Signal                         | Input Level                      | 1 V p-p/75 ohm               |  |   |
|                     |                           |                                      | Output Level                     | 1 V p-p/75 ohm               |  |   |
|                     |                           |                                      | S/N Ratio (Weighted)             | 50                           |  |   |
|                     |                           |                                      | Horizontal Resolution at SP Mode | 230Line                      |  |   |
|                     |                           | Audio Signal<br>(0dB=0.775Vrms)      | Input Level                      | -8dB/50Kohm                  |  |   |
|                     |                           |                                      | Output Level                     | -8dB/1Kohm                   |  |   |
|                     |                           |                                      | S/N Ratio at SP (Weighted)       | 42dB                         |  |   |
|                     |                           |                                      | Harmonic Distortion (1KHz)       | 1.5%                         |  |   |
|                     |                           |                                      | Frequency Response               | at SP<br>at LP<br>at SLP     | 100Hz - 10kHz<br>100Hz - 6kHz<br>100Hz - 4kHz                            |   |
|                     |                           |                                      | Hi-Fi Audio Signal               | Dynamic Range : More than    | 90dB   |   |

# GENERAL SPECIFICATIONS

|             |                                      |  |                                   |
|-------------|--------------------------------------|--|-----------------------------------|
|             |                                      | Frequency Response   | 20Hz ~20kHz                       |
|             |                                      | Wow And Flutter : Less than  | 0.01 %Wrms                        |
|             |                                      | Channel Separation : More than                                     | 60 dB                             |
|             |                                      | Harmonic Distortion : Less than                                    | 0.01                              |
| <b>G-8</b>  | <b>On Screen Display</b>             | Menu   | Yes                               |
|             |                                      | Menu Type  | Character                         |
|             |                                      | ATS  | No                                |
|             |                                      | 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                               |
|             |                                      | Pin Code Registration  | No                                |
|             |                                      | System Set-Up  | No                                |
|             |                                      | Clock Set  | Yes (Calendar 12H)                |
|             |                                      | Language   | Yes                               |
|             |                                      | No Noise Back Ground   | Yes                               |
|             |                                      | G-CODE(or SHOWVIEW or PLUSCODE)No. Entry                           | No                                |
|             |                                      | NICAM 1/2,NICAM Off,Audio Output                                   | No                                |
|             |                                      | Stereo,Audio Output,SAP  | Yes                               |
|             |                                      | Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)   | Yes                               |
|             |                                      | CH/AV  | Yes                               |
|             |                                      | Clock  | Yes                               |
|             |                                      | Repeat   | Yes                               |
|             |                                      | Pin Code   | No                                |
|             |                                      | Tape Counter   | Yes                               |
|             |                                      | Index  | No                                |
|             |                                      | Hotel Lock   | No                                |
|             |                                      | Tape Speed   | Yes                               |
|             |                                      | Manual Tracking (Bar Setting)                                      | No                                |
|             |                                      | Hi-Fi  | Yes                               |
|             |                                      | S-Repeat/SR-R/SR-Play  | No                                |
| VPS         | No                                   |  |                                   |
| PDC         | No                                   |  |                                   |
| <b>G-9</b>  | <b>OSD Language</b>                  | OSD Language Setting   | English French Spanish<br>English |
|             |                                      |  |                                   |
| <b>G-10</b> | <b>Clock,Timer and Timer Back-up</b> | Calendar   | 1990/1/1 ~ 2081/12/31             |
|             |                                      | Timer Events   | 8 prog/1 month                    |
|             |                                      | One Touch Recording Max Time                                       | 5 Hours                           |
|             |                                      | OTPB Valid Time  | No                                |
|             |                                      | Timer Back-up (at Power Off Mode)                                  | 5 sec.                            |
| <b>G-11</b> | <b>Display</b>                       | Indicator  | Yes                               |
|             |                                      | Indicator Type   | LED Module                        |
|             |                                      | Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR | Yes                               |
|             |                                      | Pause  | Yes                               |
|             |                                      | Still  | Yes                               |
|             |                                      | Eject(Tape Mark Flash)   | Yes                               |
|             |                                      | Slow   | Yes                               |
|             |                                      | WKL,Y.M.D,Start,End  | No                                |
|             |                                      | AFT  | No                                |
|             |                                      | Repeat   | No                                |
|             |                                      | A-DUB  | No                                |
|             |                                      | VCR  | Yes                               |
|             |                                      | Memory   | No                                |
|             |                                      | Index  | No                                |
|             |                                      | VPS  | No                                |
|             |                                      | PDC  | No                                |
| SP          | No                                   |  |                                   |
| LP          | No                                   |  |                                   |
| SLP         | No                                   |  |                                   |

## GENERAL SPECIFICATIONS

|      |                 |   |               |              |
|------|-----------------|---|---------------|--------------|
|      |                 | AM  | No            |              |
|      |                 | PM  | Yes           |              |
|      |                 | F1,F2   | No            |              |
|      |                 | RF Output CH                                      | Yes           |              |
|      |                 | Tape In   | Yes           |              |
| G-12 | Remote Control  | Unit  | RC-EA         |              |
|      |                 | Glow in Dark Remocon                              | No            |              |
|      |                 | Power Source                                      | 3V            |              |
|      |                 |   | Voltage(D.C)  | 3V           |
|      |                 |   | UM size x pcs | UM-4 x 2 pcs |
|      |                 | Total Keys  | 35 Keys       |              |
|      |                 | Keys  | Power         | Yes          |
|      |                 |   | 1             | Yes          |
|      |                 |   | 2             | Yes          |
|      |                 |   | 3             | Yes          |
|      |                 |   | 4             | Yes          |
|      |                 |   | 5             | Yes          |
|      |                 |   | 6             | Yes          |
|      |                 |   | 7             | Yes          |
|      |                 |   | 8             | Yes          |
|      |                 |   | 9             | Yes          |
|      |                 |   | 0             | Yes          |
|      |                 |   | CH Up         | Yes          |
|      |                 |   | CH Down       | Yes          |
|      |                 |   | Input Select  | Yes          |
|      |                 |   | Play          | Yes          |
|      |                 |   | F.Fwd         | Yes          |
|      |                 |   | Rew           | Yes          |
|      |                 |   | Pause/Still   | Yes          |
|      |                 |   | Stop          | Yes          |
|      |                 |   | Rec/OTR       | Yes          |
|      |                 |   | Eject         | No           |
|      |                 |   | Counter Reset | Yes          |
|      |                 |   | Speed         | Yes          |
|      |                 |   | Timer Rec     | Yes          |
|      |                 |   | TV Monitor    | No           |
|      |                 |   | Quick View    | No           |
|      |                 |   | Program       | No           |
|      |                 |   | Slow          | Yes          |
|      |                 |   | Auto Tracking | Yes          |
|      | Set/Tracking+   | Yes   |               |              |
|      | Set/ Tracking - | Yes   |               |              |
|      | Menu            | Yes   |               |              |
|      | Enter           | Yes   |               |              |
|      | Cancel          | Yes   |               |              |
|      | Call            | Yes   |               |              |
|      | TV/VCR          | Yes   |               |              |
|      | Sleep Timer     | No  |               |              |
|      | Muting          | No  |               |              |
|      | Clock/Counter   | Yes   |               |              |
|      | Zero Return     | Yes   |               |              |
|      | CM Skip         | No  |               |              |
|      | Audio Select    | Yes   |               |              |
| G-13 | Features        | Auto Head Cleaning                                | Yes           |              |
|      |                 | Auto Tracking                                     | Yes           |              |
|      |                 | Index Search                                      | No            |              |
|      |                 | HQ (VHS Standard High Quality)                    | Yes           |              |
|      |                 | Auto Power On, Auto Play, Auto Rewind, Auto Eject | Yes           |              |
|      |                 | Auto Power Off                                    | Yes           |              |
|      |                 | Forward/Reverse Picture Search                    | Yes           |              |
|      |                 | VIDEO PLUS+(SHOWVIEW,G-CODE)                      | No            |              |
|      |                 | ATS   | No            |              |
|      |                 | PDC   | No            |              |
|      |                 | VPS   | No            |              |

## GENERAL SPECIFICATIONS

|                                   |                    |                                  |                  |                    |     |
|-----------------------------------|--------------------|----------------------------------|------------------|--------------------|-----|
|                                   |                    | One Touch Playback               |                  | No                 |     |
|                                   |                    | Picture Control                  |                  | No                 |     |
|                                   |                    | Auto Preset                      |                  | No                 |     |
|                                   |                    | Channel Lock                     |                  | No                 |     |
|                                   |                    | Hotel Lock                       |                  | No                 |     |
|                                   |                    | Anti Theft                       |                  | No                 |     |
|                                   |                    | Audio Dubbing                    |                  | No                 |     |
|                                   |                    | Remort Control Code 1/2          |                  | No                 |     |
|                                   |                    | SQPB                             |                  | No                 |     |
|                                   |                    | CATV                             | Yes              |                    |     |
|                                   |                    | Energy Star                      | Yes              |                    |     |
|                                   |                    | MTS(SAP)                         | Yes              |                    |     |
|                                   |                    | CM Skip(30sec x 6 Times)         |                  | No                 |     |
| <b>G-14</b>                       | <b>Accessories</b> | Owner's Manual                   | Language         | English/Spanish    |     |
|                                   |                    |                                  | w/Guarantee Card | No                 |     |
|                                   |                    | Remote Control Unit              |                  | Yes                |     |
|                                   |                    | Dew Cation Sheet                 |                  | No                 |     |
|                                   |                    | Video Cassette Tape              |                  | No                 |     |
|                                   |                    | Battery                          | UM size x pcs    | -                  |     |
|                                   |                    | Safety Tip                       |                  | No                 |     |
|                                   |                    | Toll Free Insert Sheet           |                  | No                 |     |
|                                   |                    | Quick Set-Up Sheet               |                  | No                 |     |
|                                   |                    | Information Sheet (Buyer Supply) |                  | No                 |     |
|                                   |                    | 75 Ohm Coaxial Cable             |                  | Yes(Single shield) |     |
|                                   |                    | Rod Antenna                      | Poles            | No                 |     |
|                                   |                    |                                  | Terminal         |                    |     |
|                                   |                    | Loop Antenna                     | Terminal         | No                 |     |
|                                   |                    | U/V Mixer                        |                  | No                 |     |
|                                   |                    | DC Car Cord (Center+)            |                  | No                 |     |
|                                   |                    | Guarantee Card                   |                  | Yes                |     |
|                                   |                    | Warning Sheet                    |                  | No                 |     |
|                                   |                    | Circuit Diagram                  |                  | No                 |     |
|                                   |                    | Antenna Change Plug              |                  | No                 |     |
|                                   |                    | Service Facility List            |                  | No                 |     |
|                                   |                    | Important Safeguard              |                  | No                 |     |
|                                   |                    | Dew/AHC Caution Sheet            |                  | No                 |     |
|                                   |                    | AC Plug Adapter                  |                  | No                 |     |
|                                   |                    | Quick Set-up Sheet               |                  | No                 |     |
|                                   |                    | AC Cord                          |                  | No                 |     |
|                                   |                    | AV Cord (2Pin-1Pin)              |                  | No                 |     |
| Registration Card                 |                    | No                               |                  |                    |     |
| PTB Sheet                         |                    | No                               |                  |                    |     |
| Tape Rewinder(Buyer Supply)       |                    | No                               |                  |                    |     |
| 300 ohm to 75 ohm Antenna Adapter |                    | No                               |                  |                    |     |
| <b>G-15</b>                       | <b>Interface</b>   | Switch                           | Front            | Power              | Yes |
|                                   |                    |                                  |                  | Play               | Yes |
|                                   |                    |                                  |                  | Pause/Still        | No  |
|                                   |                    |                                  |                  | System Select      | No  |
|                                   |                    |                                  |                  | One Touch Playback | No  |
|                                   |                    |                                  |                  | Channel Up         | Yes |
|                                   |                    |                                  |                  | Channel Down       | Yes |
|                                   |                    |                                  |                  | F.FWD/Cue          | Yes |
|                                   |                    |                                  |                  | Eject/Stop         | Yes |
|                                   |                    |                                  |                  | Main Power SW      | No  |
|                                   |                    |                                  |                  | Volume Up          | No  |
|                                   |                    |                                  |                  | Volume Down        | No  |
|                                   |                    |                                  |                  | Rew/Rev            | Yes |
|                                   |                    |                                  |                  | Rec/OTR            | Yes |
|                                   |                    |                                  | Rear             | RF Output SW       | No  |

## GENERAL SPECIFICATIONS

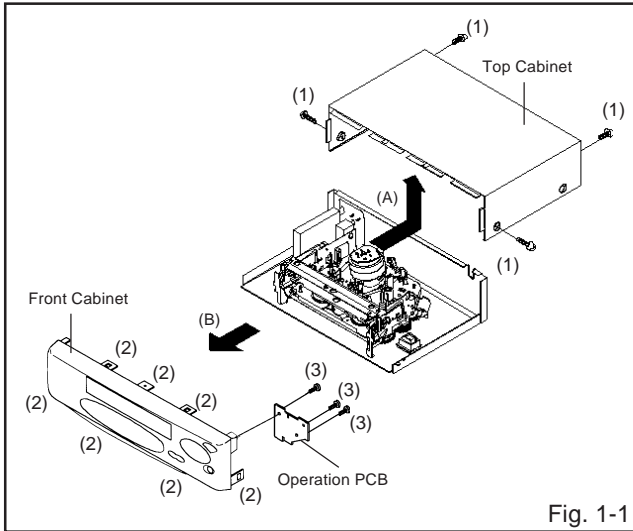
|             |                        |                                   |                              |                 |
|-------------|------------------------|-----------------------------------|------------------------------|-----------------|
|             | Indicator              | Power                             | No                           |                 |
|             |                        | Stand by                          | No                           |                 |
|             |                        | Rec/OTR                           | No                           |                 |
|             |                        | Repeat                            | No                           |                 |
|             |                        | TV/VCR                            | No                           |                 |
|             |                        | Rec                               | No                           |                 |
|             |                        | T-Rec                             | No                           |                 |
|             |                        | Tape In                           | No                           |                 |
|             | Terminals              | Front                             | Video Input                  | RCA x 1         |
|             |                        |                                   | Audio Input                  | RCA x 2(Stereo) |
|             | Other Terminal         |                                   | No                           |                 |
|             | Rear                   | Video Input                       | No                           |                 |
|             |                        | Audio Input                       | No                           |                 |
|             |                        | Video Output                      | RCA x 1                      |                 |
|             |                        | Audio Output                      | RCA x 2(Stereo)              |                 |
|             |                        | Euro Scart                        | No                           |                 |
|             |                        | DC Jack 12V(Center +)             | No                           |                 |
|             |                        | VHF/UHF Antenna Input             | F Type                       |                 |
|             |                        | AC Inlet                          | No                           |                 |
| <b>G-16</b> | <b>Set Size</b>        | Approx. W x D x H (mm)            | 360 x 229 x 95               |                 |
| <b>G-17</b> | <b>Weight</b>          | Net (Approx.)                     | 3.2kg(7.1lbs)                |                 |
|             |                        | Gross (Approx.)                   | 3.8kg(8.4lbs)                |                 |
| <b>G-18</b> | <b>Carton</b>          | Master Carton                     | No                           |                 |
|             |                        | Content                           | -                            |                 |
|             |                        | Material                          | -                            |                 |
|             |                        | Dimensions W x D x H(mm)          | -                            |                 |
|             |                        | Description of Origin             | -                            |                 |
|             | Gift Box               |                                   | Yes                          |                 |
|             |                        | Material                          | Single/White                 |                 |
|             |                        | Dimensions W x D x H(mm)          | 420x291x160                  |                 |
|             |                        | Design                            | As Per BUYER 's              |                 |
|             |                        | Description of Origin             | Yes                          |                 |
|             | Drop Test              | Natural Dropping At               | 1Corner / 3Edges / 6Surfaces |                 |
|             |                        | Height (cm)                       | 80                           |                 |
|             |                        | Container Stuffing(40' container) | 3136Sets                     |                 |
| <b>G-19</b> | <b>Cabinet Materia</b> | Cabinet Front                     | PS 94V2 DECAB                |                 |

# DISASSEMBLY INSTRUCTIONS

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

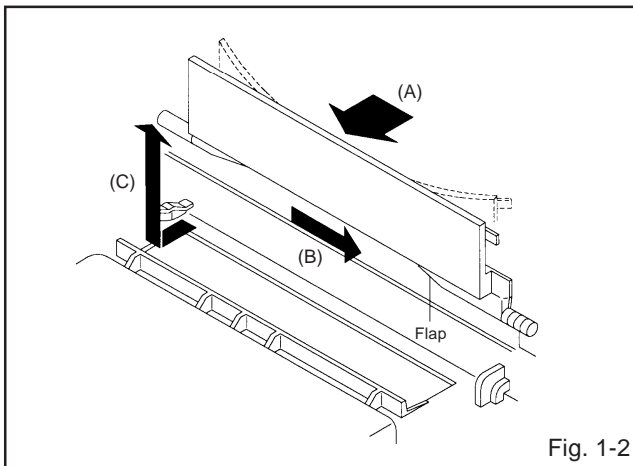
### 1-1: TOP CABINET, FRONT CABINET AND OPERATION PCB (Refer to Fig. 1-1)

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



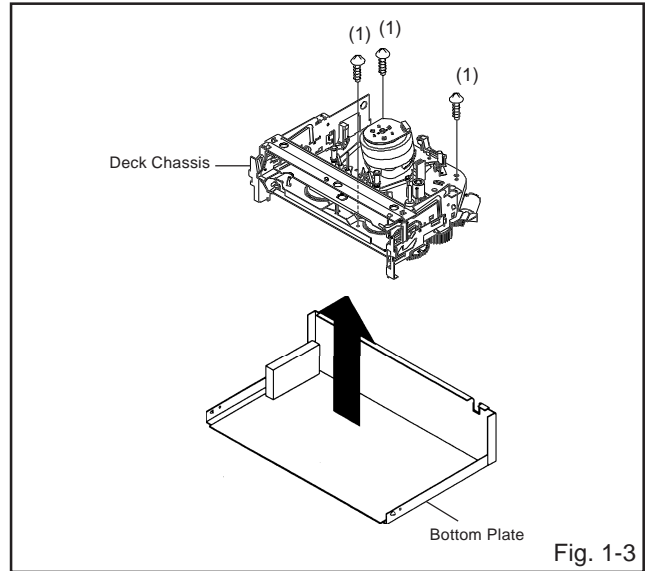
### 1-2: FLAP (Refer to Fig. 1-2)

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).



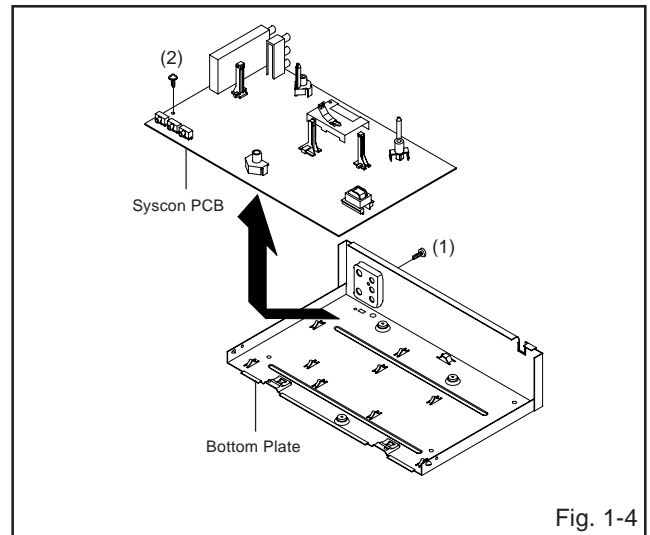
### 1-3: DECK CHASSIS (Refer to Fig. 1-3)

1. Remove the 3 screws (1).
2. Disconnect the following connectors: (CP1001, CP4001, CP4002 and CP4003).
3. Remove the Deck Chassis in the direction of arrow.



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

1. Remove the screw (1).
2. Remove the screw (2).
3. Remove the Syscon PCB in the direction of arrow.



# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF DECK PARTS

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

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

#### NOTE

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

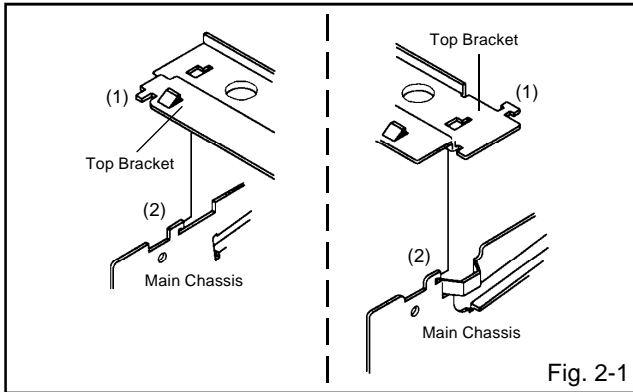


Fig. 2-1

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

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

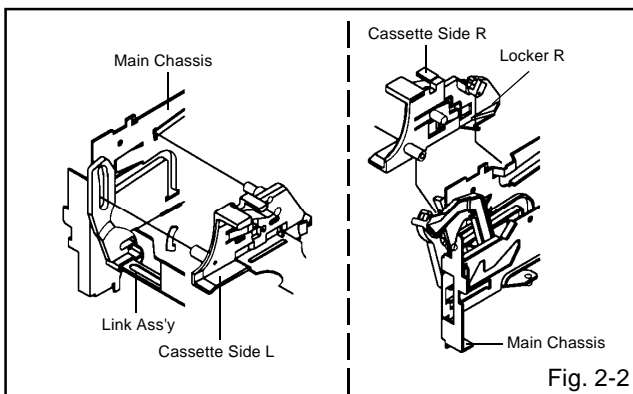


Fig. 2-2

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

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

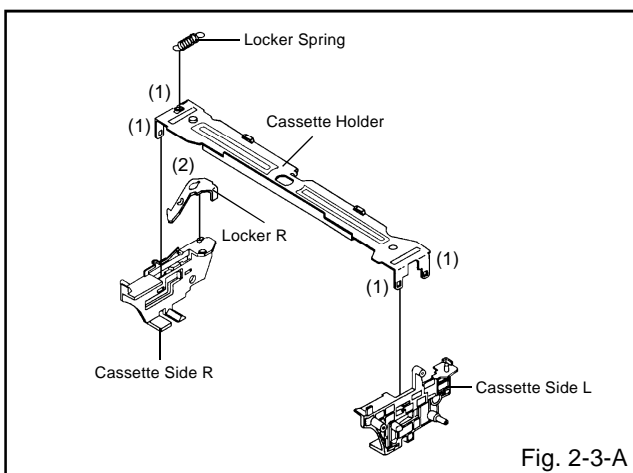


Fig. 2-3-A

#### NOTE

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

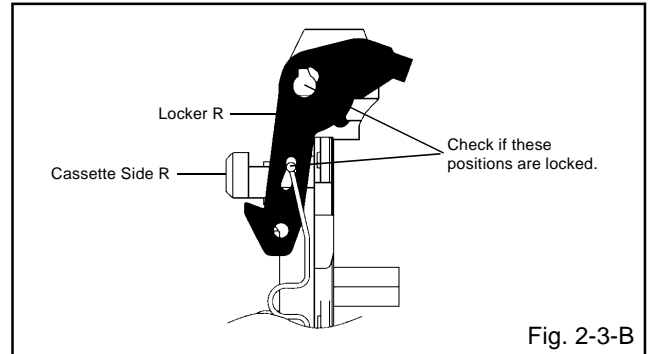


Fig. 2-3-B

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

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

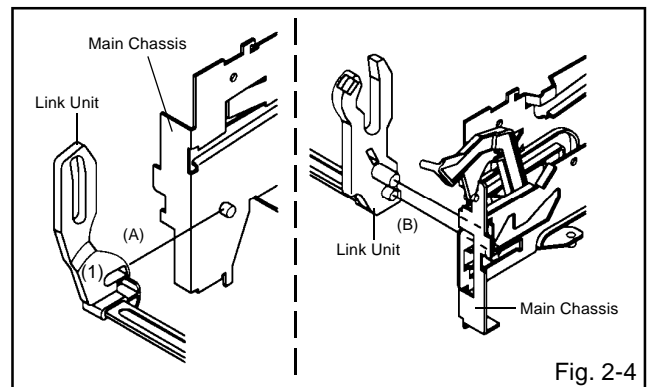


Fig. 2-4

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

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

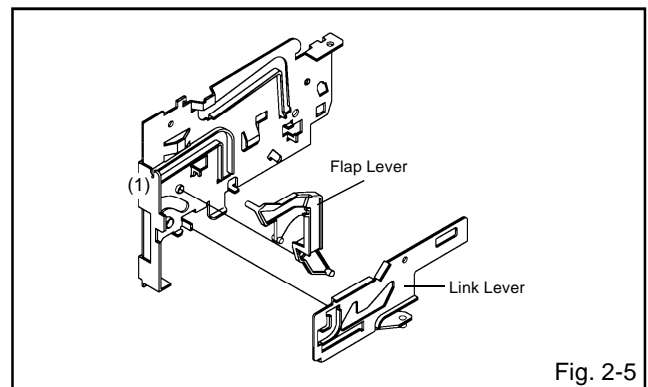
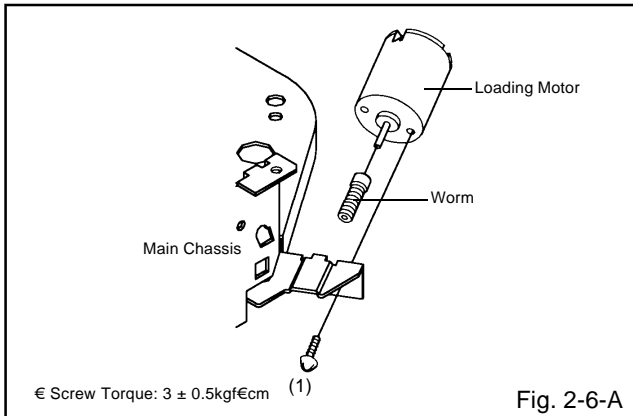


Fig. 2-5

# DISASSEMBLY INSTRUCTIONS

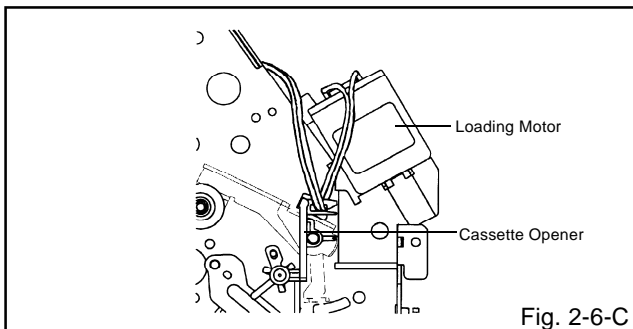
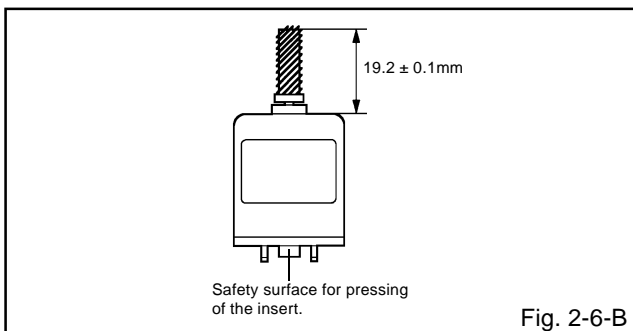
## 2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

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



### NOTE

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



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

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

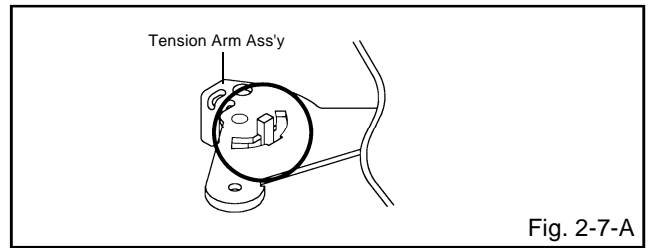


Fig. 2-7-A

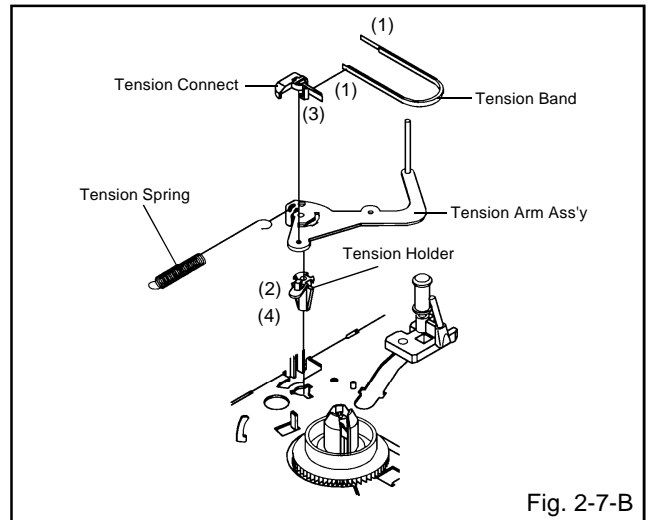


Fig. 2-7-B

### 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.

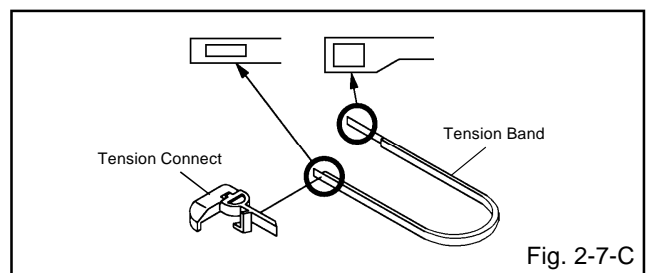


Fig. 2-7-C

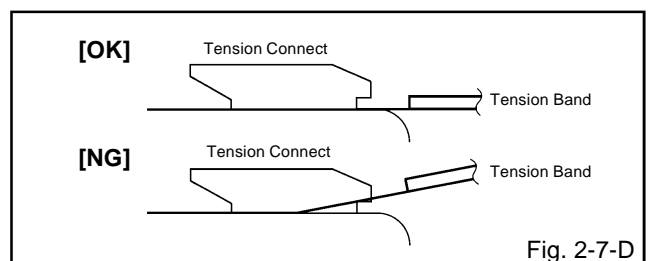


Fig. 2-7-D

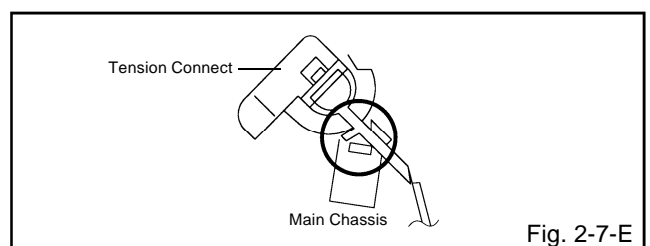


Fig. 2-7-E



# DISASSEMBLY INSTRUCTIONS

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

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

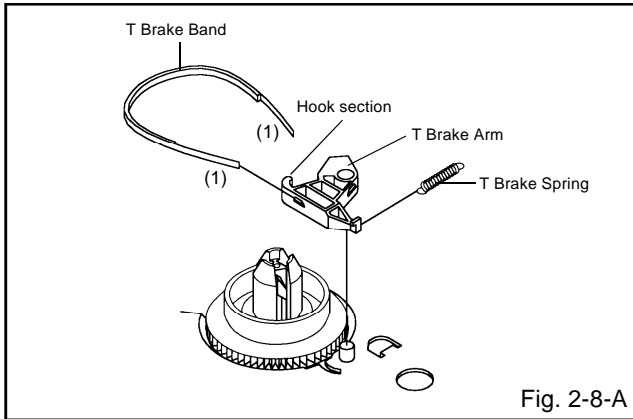


Fig. 2-8-A

### NOTE

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

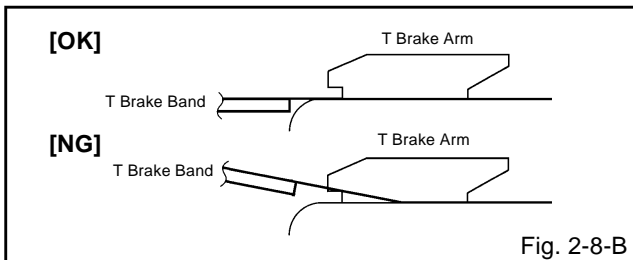


Fig. 2-8-B

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

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

### NOTE

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

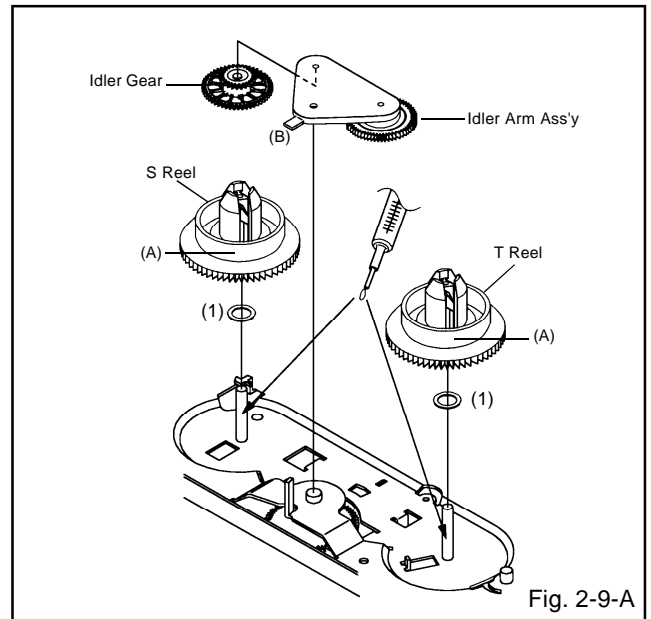


Fig. 2-9-A

### NOTE

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

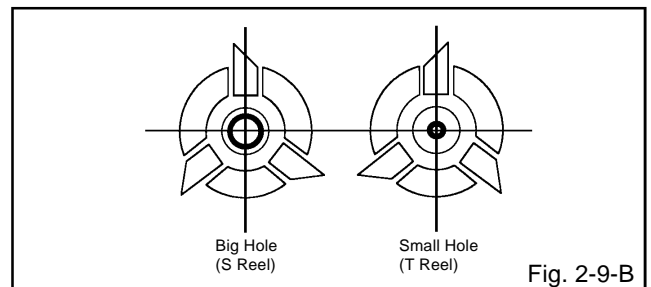


Fig. 2-9-B

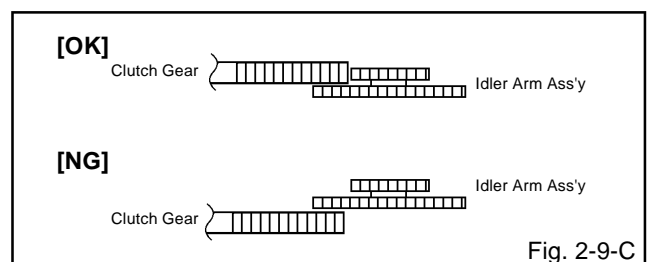
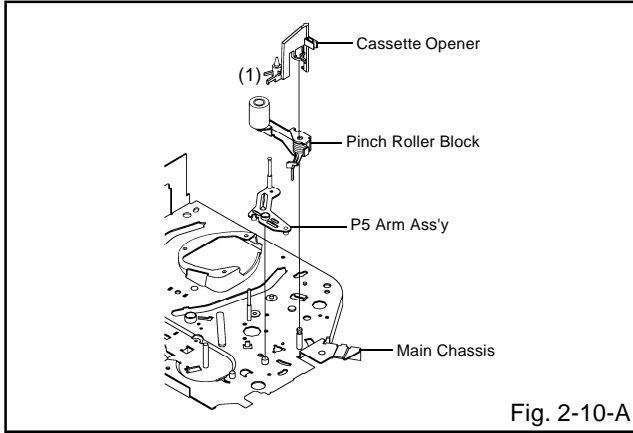


Fig. 2-9-C

# DISASSEMBLY INSTRUCTIONS

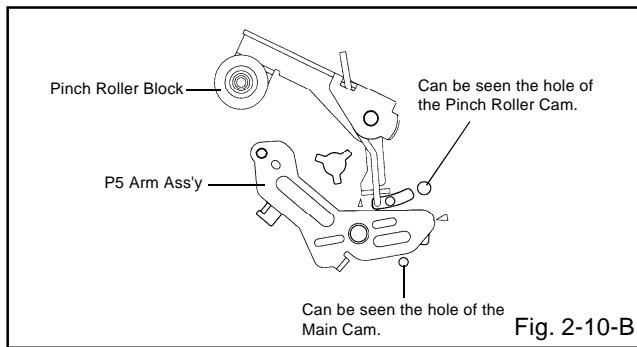
## 2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

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



### NOTE

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

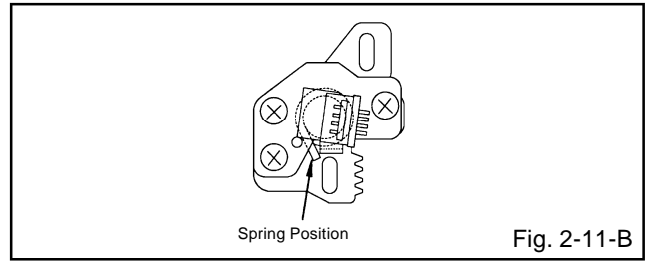
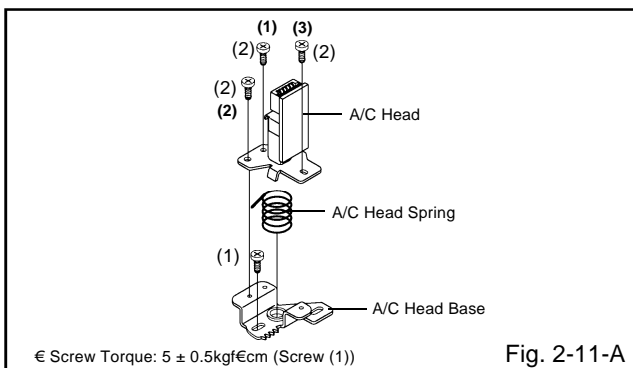


## 2-11: A/C HEAD (Refer to Fig. 2-11-A)

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

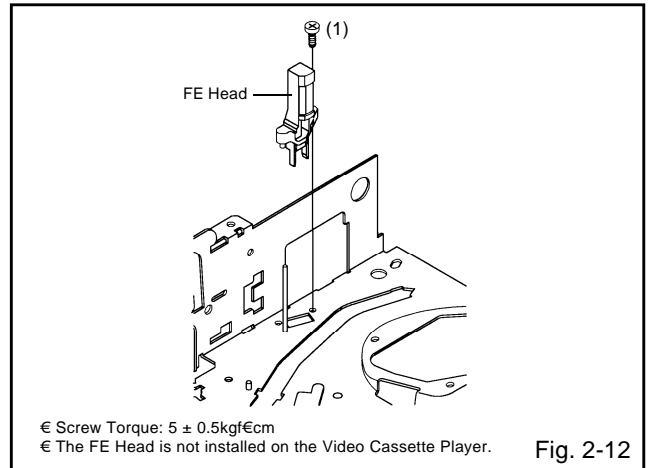
### NOTE

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



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

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

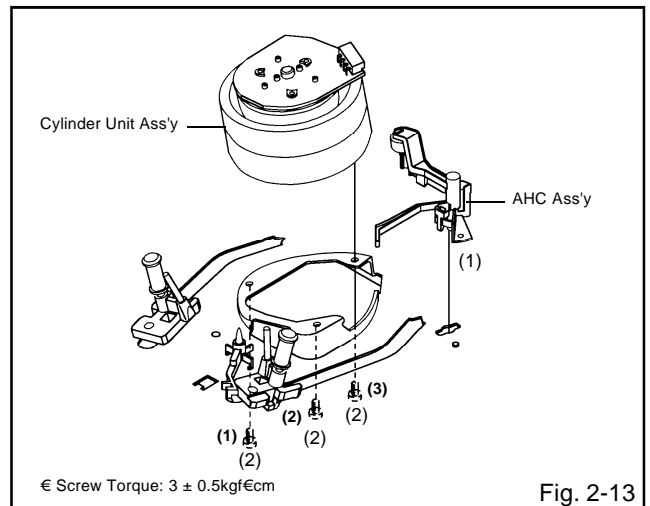


## 2-13: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Unlock the support (1) and remove the AHC ASS'Y.
2. Disconnect the following connector: (CD2001)
3. Remove the 3 screws (2).
4. Remove the Cylinder Unit Ass'y.

### NOTE

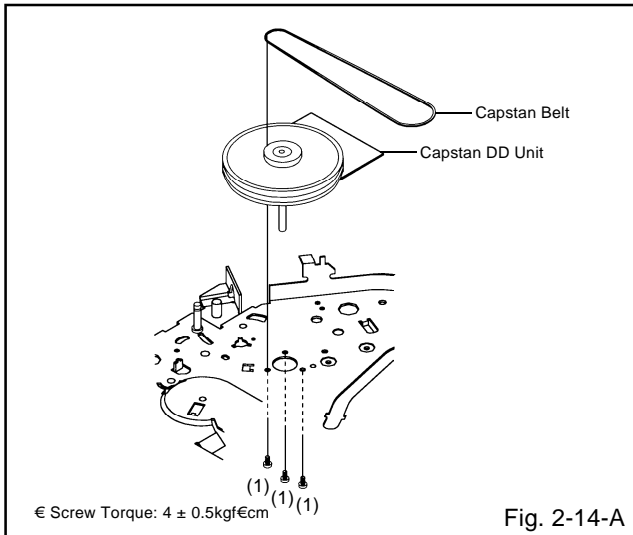
1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



# DISASSEMBLY INSTRUCTIONS

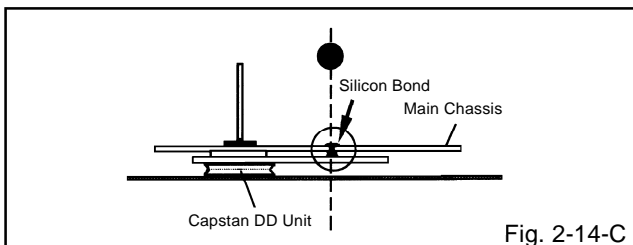
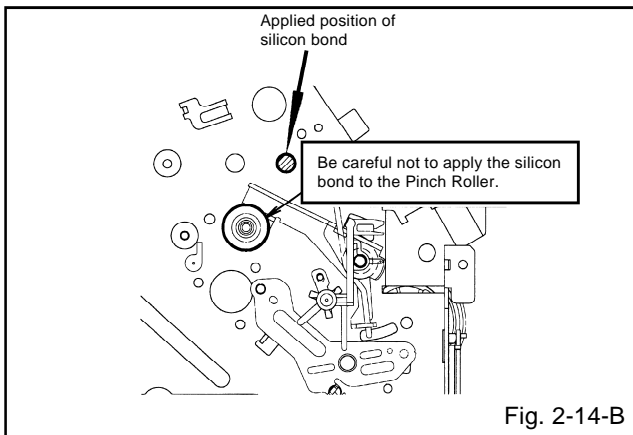
## 2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

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



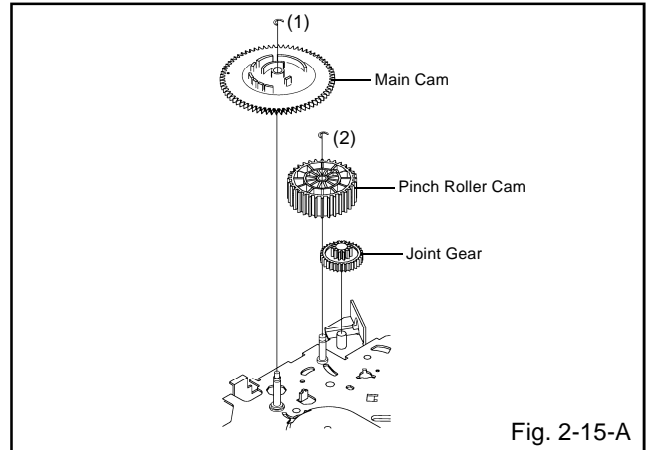
### NOTE

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



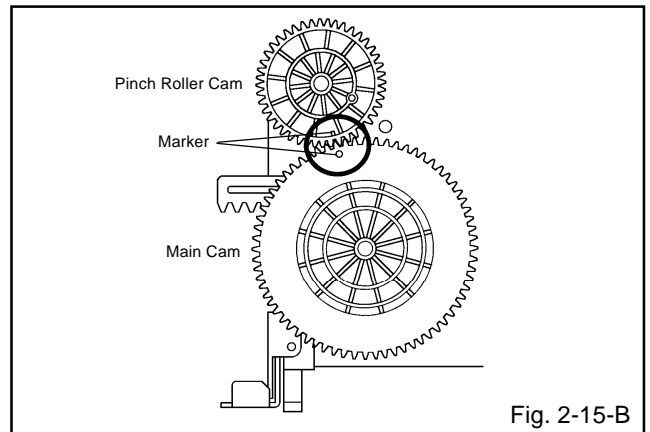
## 2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

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



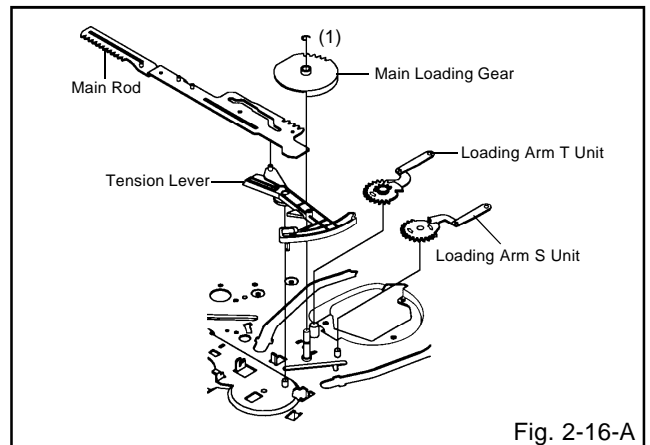
### NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. (Refer to Fig. 2-15-B)



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

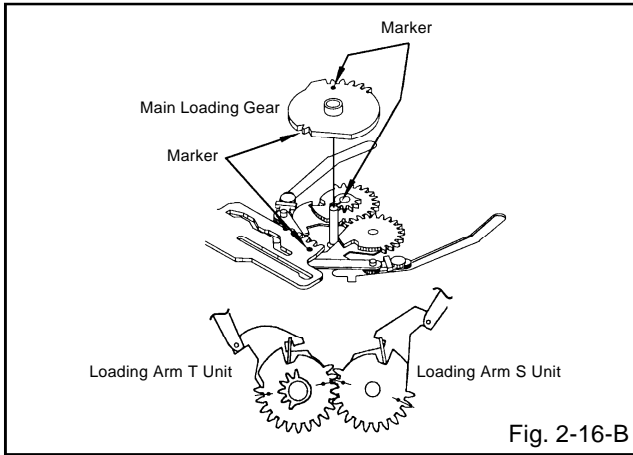
1. Remove the E-Ring (1) and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.



# DISASSEMBLY INSTRUCTIONS

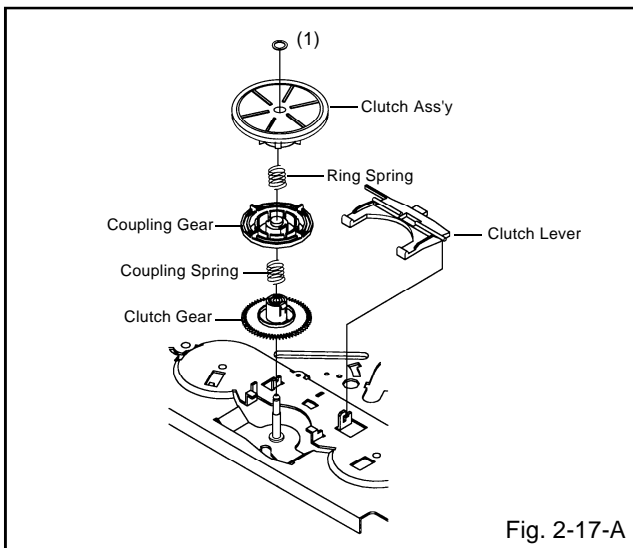
## NOTE

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



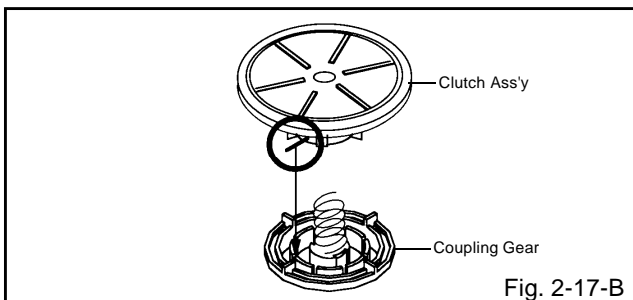
## 2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/CLUTCH GEAR (Refer to Fig. 2-17-A)

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



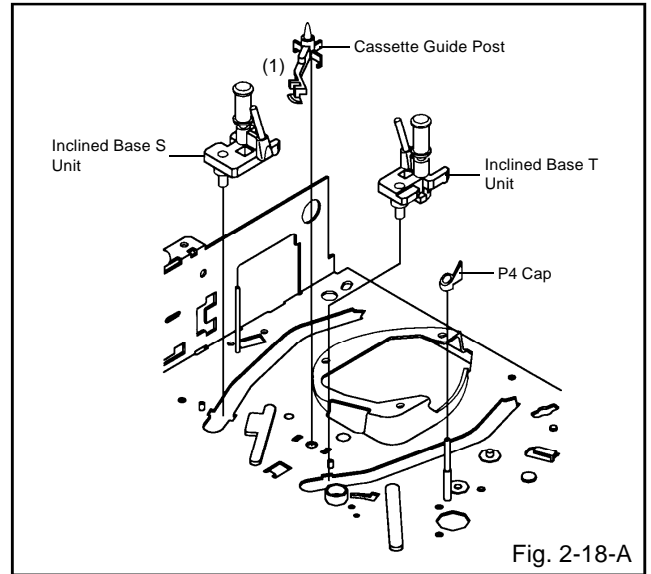
## NOTE

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



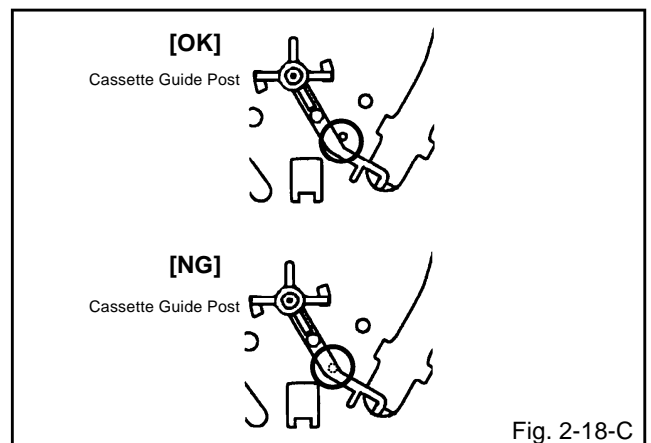
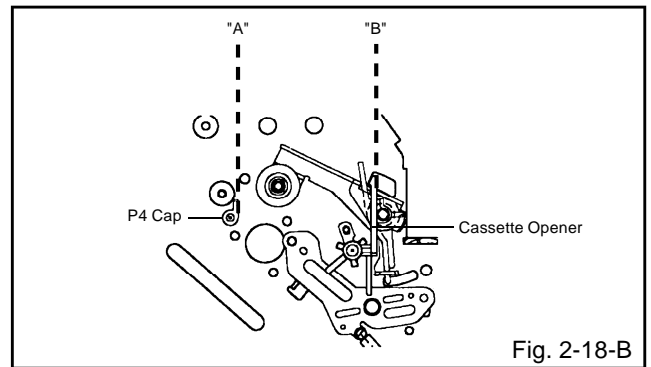
## 2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

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



## NOTE

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



# DISASSEMBLY INSTRUCTIONS

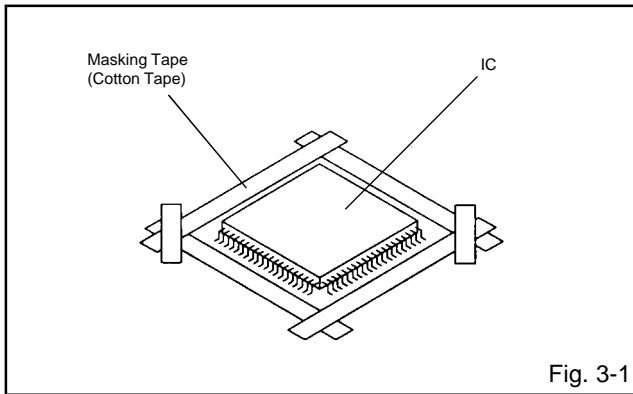
## 3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

### REMOVAL

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

#### NOTE

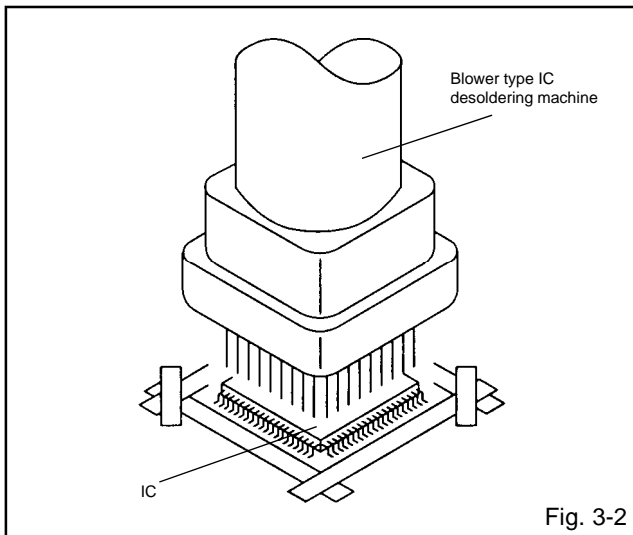
Masking is carried out on all the parts located within 10 mm distance from IC leads.



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

#### NOTE

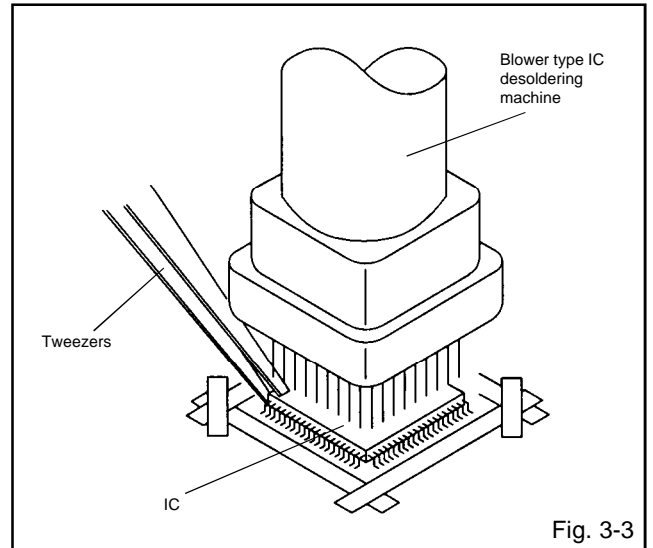
Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.



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

#### NOTE

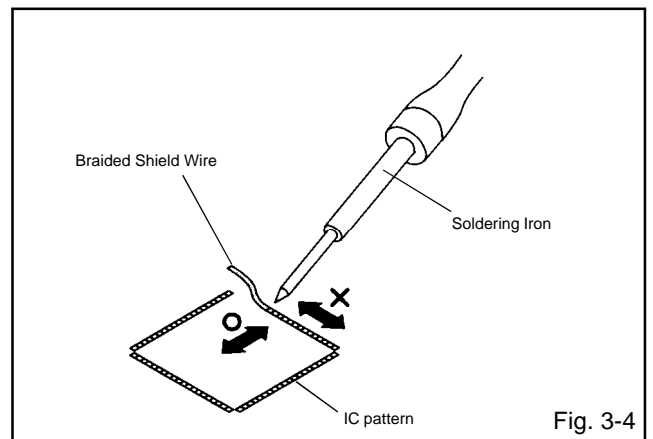
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



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

#### NOTE

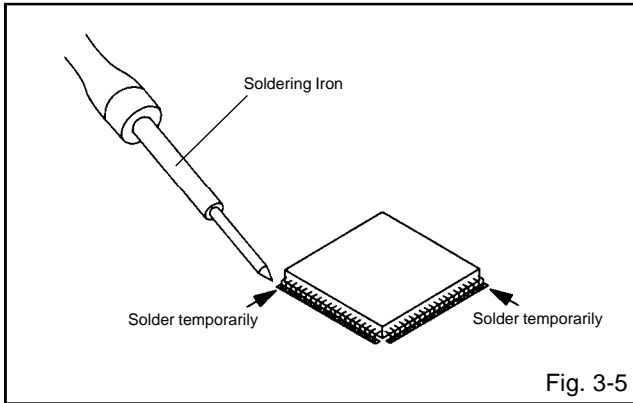
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



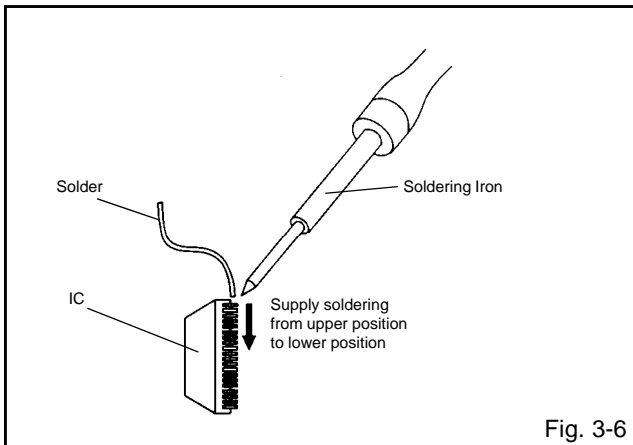
# DISASSEMBLY INSTRUCTIONS

## INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**



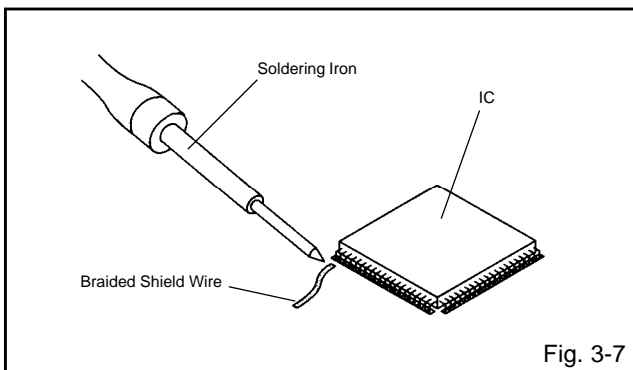
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**



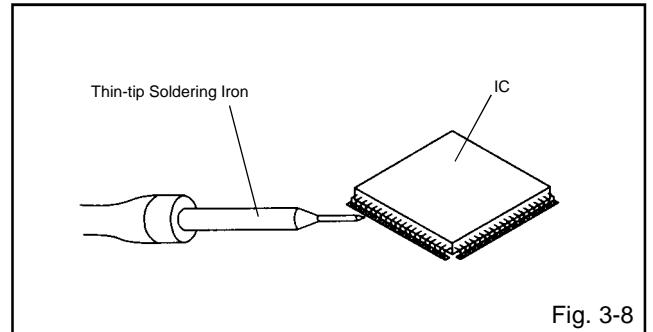
3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

### NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**



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

### NOTE

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

## KEY TO ABBREVIATIONS

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

## KEY TO ABBREVIATIONS

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



## SERVICE MODE LIST

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

| <b>Method</b>   | <b>Operations</b>  |
|---|--|
| Press the ATR button on the remote control for more than 2 seconds during PLAY. | Adjusting of the Tracking to the center position.<br>Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER). |
| Make the short circuit between the test point of SERVICE and the GND.           | The BOT, EOT and the Reel Sensor do not work and the deck can be operated without a cassette tape.<br>Refer to the "PREPARATION FOR SERVICING"     |

# 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<br>Parts Name              | 500<br>hours | 1,000<br>hours | 1,500<br>hours | 2,000<br>hours | 3,000<br>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                    |              | ●              | ●              | ●              | ●              |   |
| TBrake 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  
● : Replace

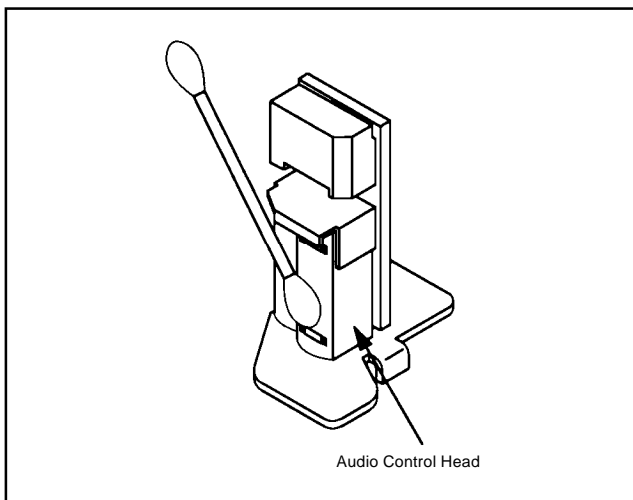
## CLEANING

### NOTE

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

### 1. AUDIO CONTROL HEAD

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



### 2. TAPE RUNNING SYSTEM

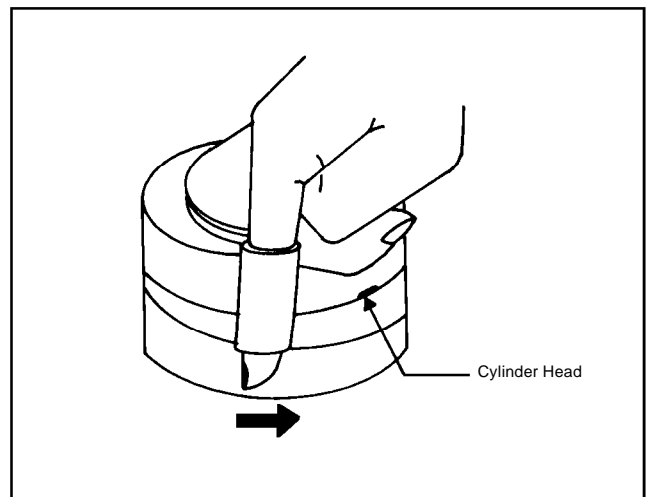
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

### 3. CYLINDER


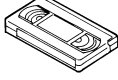
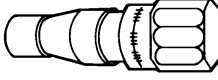
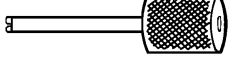
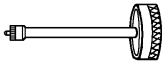
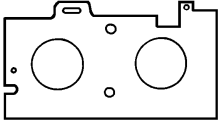
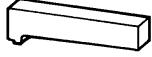
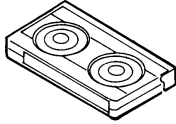

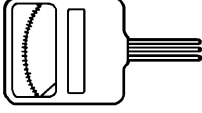
Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

### NOTE

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



## SERVICING FIXTURES AND TOOLS

|  |   |   |  |
|--|---|---|--|
| <p><b>(For 2 head model)</b><br/>VHS Alignment Tape<br/>JG001 (VN<sub>2</sub> S-LI6<sup>3</sup>)<br/>JG001A (VN<sub>1</sub> S-CO1<sup>3</sup>)<br/>JG001Q (VN<sub>1</sub> S-LI6<sup>3</sup>H)<br/>JG001T (VN<sub>1</sub> S-X6<sup>3</sup>)</p>  | <p><b>(For 4 head model)</b><br/>VHS Alignment Tape<br/>JG001B (VN<sub>2</sub> S-LI6<sup>3</sup>)<br/>JG001I (VN<sub>2</sub> S-CO1<sup>3</sup>)<br/>JG001P (VN<sub>2</sub> S-LI6<sup>3</sup>H)<br/>JG001S (VN<sub>2</sub> S-X6<sup>3</sup>)</p>  | <p>JG002B Adapter<br/>JG002E Dial Torque Gauge (10~90gf<math>\epsilon</math>cm)<br/>JG002F (60~600gf<math>\epsilon</math>cm)</p>  | <p>JG005 Post Adjustment Screwdriver<br/>Part No. SV-TG0-030-000 (small)</p>  |
| <p>JG153 X Value Adjustment Screwdriver</p>   | <p>JG022 Master Plane</p>    | <p>JG024A Reel Disk Height Adjustment Jig</p>   | <p>JG100A Torque Tape (VHT-063)</p>   |
| <p>JG154 Cable</p>    | <p>Tentelometer</p>    |   |  |

| Ref. No. | Part No.   | Parts Name                                   | Remarks  |
|----------|------------|--|--|
| JG001    | APJG001000 | VHS Alignment Tape <b>(For 2 head model)</b> | Monoscope, 6KHz                                      |
| JG001A   | APJG001A00 | VHS Alignment Tape <b>(For 2 head model)</b> | Color Bar, 1KHz                                      |
| JG001Q   | APJG001Q00 | VHS Alignment Tape <b>(For 2 head model)</b> | Hi-Fi Audio  |
| JG001T   | APJG001T00 | VHS Alignment Tape <b>(For 2 head model)</b> | X Value Adjustment                                   |
| JG001B   | APJG001B00 | VHS Alignment Tape <b>(For 4 head model)</b> | Monoscope, 6KHz                                      |
| JG001I   | APJG001I00 | VHS Alignment Tape <b>(For 4 head model)</b> | Color Bar, 1KHz                                      |
| JG001P   | APJG001P00 | VHS Alignment Tape <b>(For 4 head model)</b> | Hi-Fi Audio  |
| JG001S   | APJG001S00 | VHS Alignment Tape <b>(For 4 head model)</b> | X Value Adjustment                                   |
| JG002B   | APJG002B00 | Adapter                                      | VSR Torque, Brake Torque (S Reel/T Reel Ass'y)       |
| JG002E   | APJG002E00 | Dial Torque Gauge (10~90gf $\epsilon$ cm)    | Brake Torque (T Reel Ass'y)                          |
| JG002F   | APJG002F00 | Dial Torque Gauge (60~600gf $\epsilon$ cm)   | VSR Torque, Brake Torque (S Reel)                    |
| JG005    | APJG005000 | Post Adjustment Screwdriver                  | Guide Roller Adjustment                              |
| JG153    | APJG153000 | X Value Adjustment Screwdriver               | X Value Adjustment                                   |
| JG022    | APJG022000 | Master Plane                                 | Reel Disk Height Adjustment                          |
| JG024A   | APJG024A00 | Reel Disk Height Adjustment Jig              | Reel Disk Height Adjustment                          |
| JG100A   | APJG100A00 | Torque Tape (VHT-063)                        | Playback Torque, Back Tension Torque During Playback |
| JG154    | APJG154000 | Cable  | Used to connect the test point of SERVICE and GROUND |

## PREPARATION FOR SERVICING

### How to use the Servicing Fixture

1. Short circuit between **TP1001** and **Ground** with the cable JG154.  
(The EOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape.)
2. In case of using a cassette tape, press the STOP/EJECT button to insert or eject a Cassette Tape.  
Turn on the power and re-check the cable before checking the trouble points.

# MECHANICAL ADJUSTMENTS

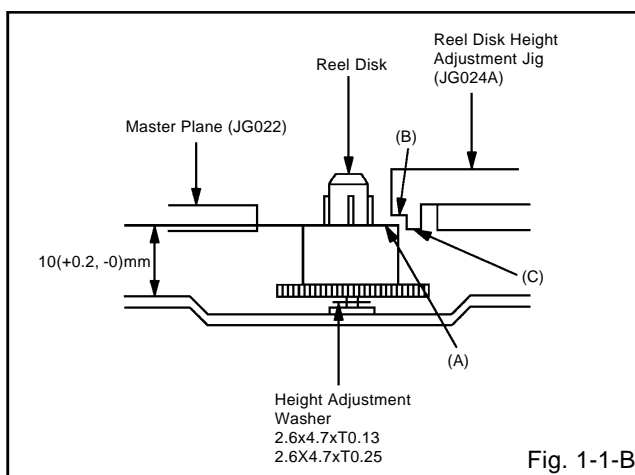
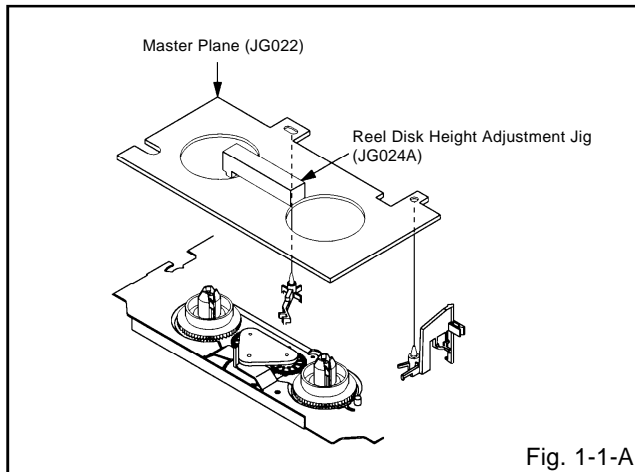
## 1. CONFIRMATION AND ADJUSTMENT

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.)

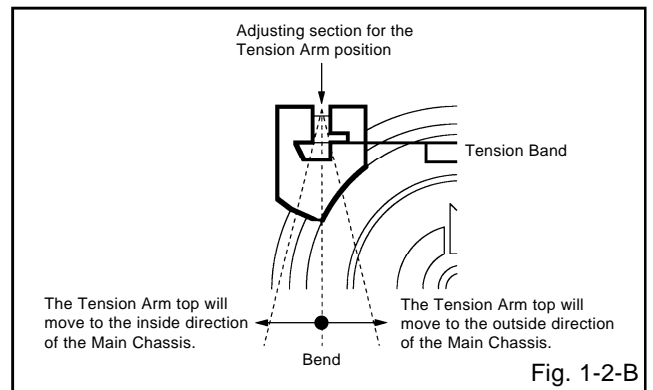
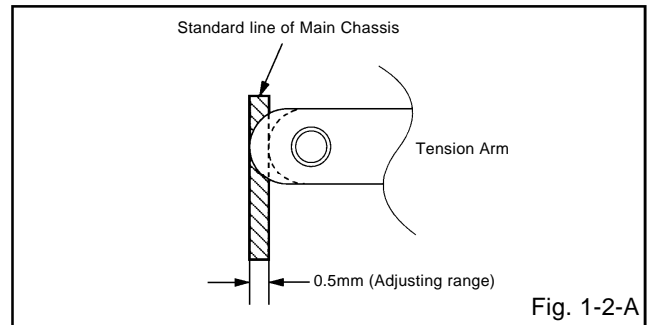
### 1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (JG022) and reel disk height adjustment jig (JG024A) on the mechanism framework, taking care not to scratch the drum, as shown in Fig. 1-1-A.
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig (JG024A) and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.



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

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

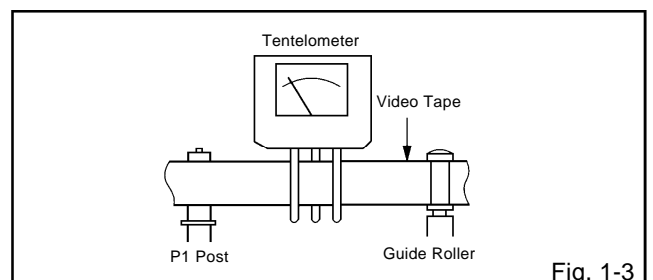


### 1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

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

€ USING A CASSETTE TYPE TORQUE TAPE(JG100A)

1. After confirmation and adjustment of Tension Post position (Refer to item 1-2), load the cassette type torque tape (JG100A) and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 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.



# MECHANICAL ADJUSTMENTS

## 1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge (**JG002F**) and Adapter (**JG002B**) on the S Reel. Set to the Picture Search (Rewind) mode. (Refer to Fig.1-4-B)
2. Then, confirm that it indicates 120~180gf/cm.

### NOTE

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

## 1-5: CONFIRMATION OF REEL BRAKE TORQUE

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge (**JG002F**) and Adapter (**JG002B**) on the S Reel. Turn the Torque Gauge (**JG002F**) clockwise.
4. Then, confirm that it indicates 60~100gf/cm.

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

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of Fig. 1-4-A.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge (**JG002E**) and Adapter (**JG002B**) on the T reel. Turn the Torque Gauge (**JG002E**) counterclockwise.
4. Then, confirm that it indicates 30~50gf/cm.

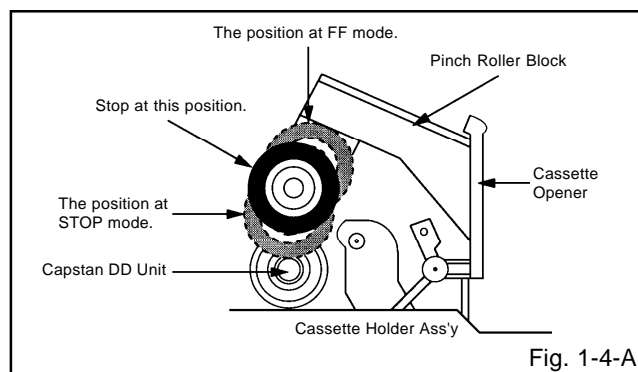


Fig. 1-4-A

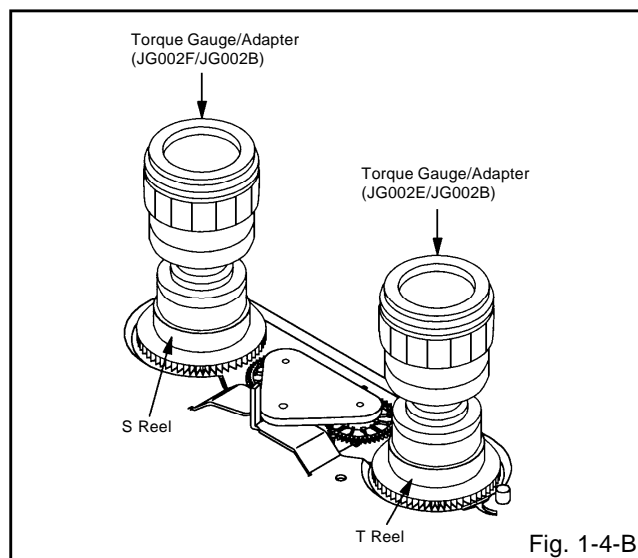


Fig. 1-4-B

### NOTE

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

| Check item | Replacement Part  |
|------------|---|
| 1-4        | Idler Ass'y/Clutch Ass'y  |
| 1-5        | S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y<br>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 (**JG001** or **JG001B**). (Refer to **SERVICING FIXTURE AND TOOLS**)
2. Connect CH-1 of the oscilloscope to **TP4001 (Envelope)** and CH-2 to **TP1002 (SW Pulse)**.
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. (Refer to Fig. 2-1-A)
5. When observing the envelope, adjust the Adjusting Driver (**JG005**) slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in Fig. 2-1-B, even if you press the Tracking Button to move the envelope (The envelope waveform will 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)

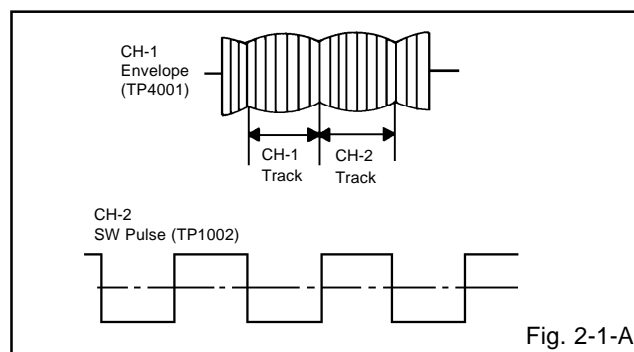


Fig. 2-1-A

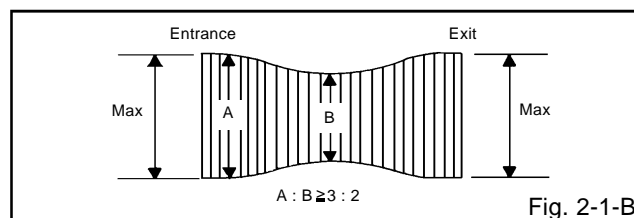


Fig. 2-1-B

## MECHANICAL ADJUSTMENTS

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

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

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

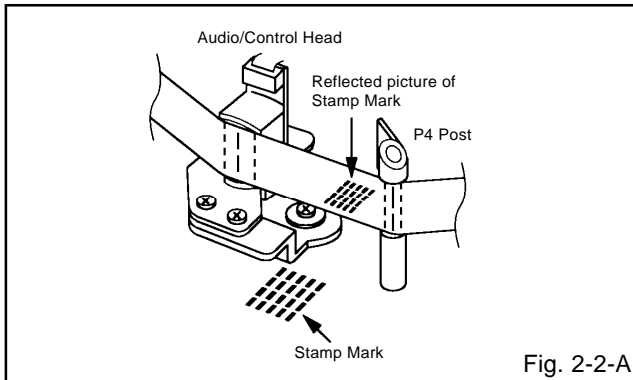


Fig. 2-2-A

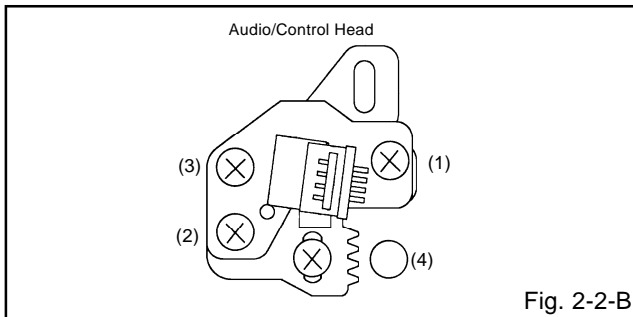


Fig. 2-2-B

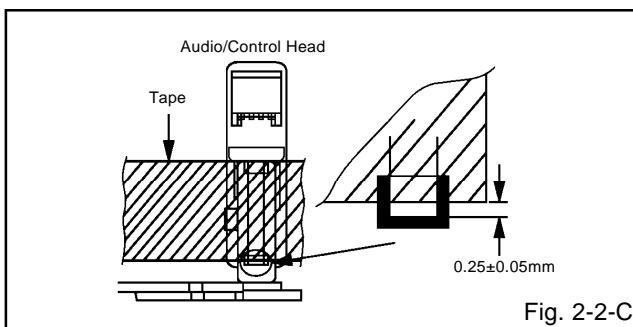


Fig. 2-2-C

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

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

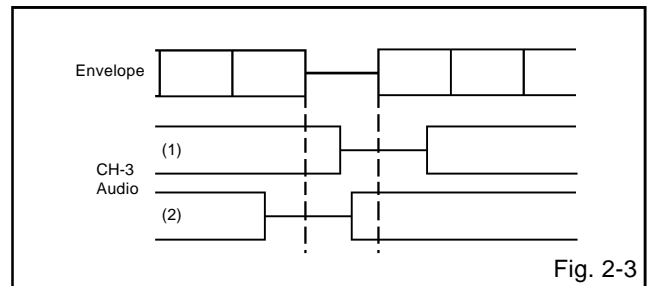


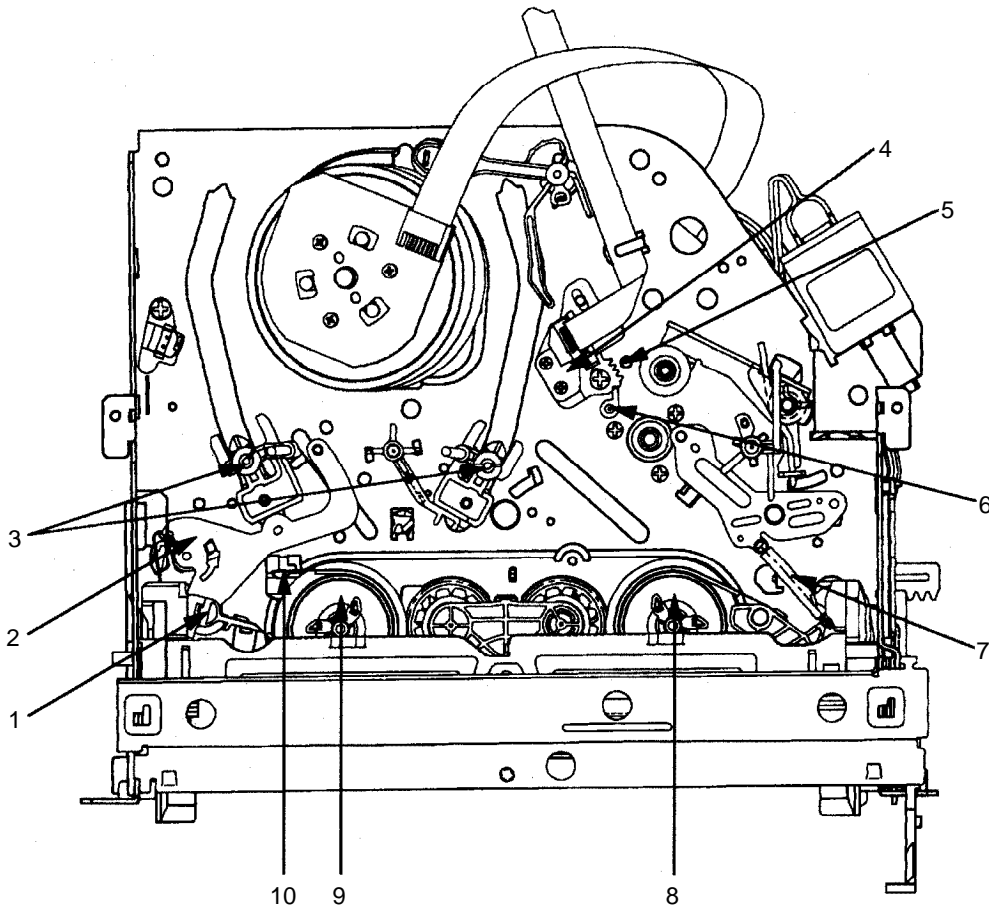
Fig. 2-3

### 2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP1002** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape (**JG001P or JG001Q**).  
(Refer to **SERVICING FIXTURE AND TOOLS**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver (**JG153**) to (4) of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

# MECHANICAL ADJUSTMENTS

## 3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



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

# ELECTRICAL ADJUSTMENTS

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

## 1. BASIC ADJUSTMENT

### CAUTION

When replacing IC's or transistors, use only specified silicon grease (**YG6260M**).  
(To prevent the damage to IC's and transistors.)

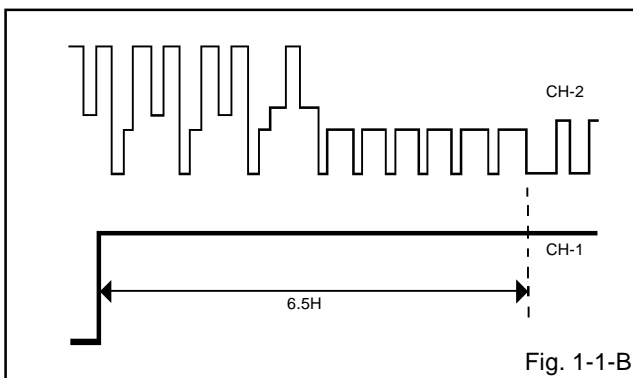
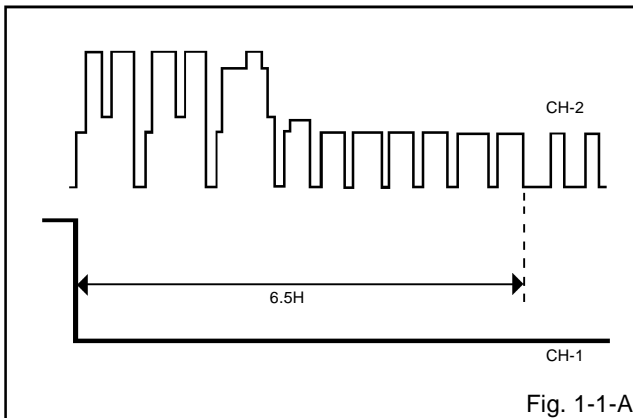
### 1-1: PG SHIFTER

#### CONDITIONS

MODE-PLAYBACK  
Input Signal-Alignment Tape (**JG001P**)

#### INSTRUCTIONS

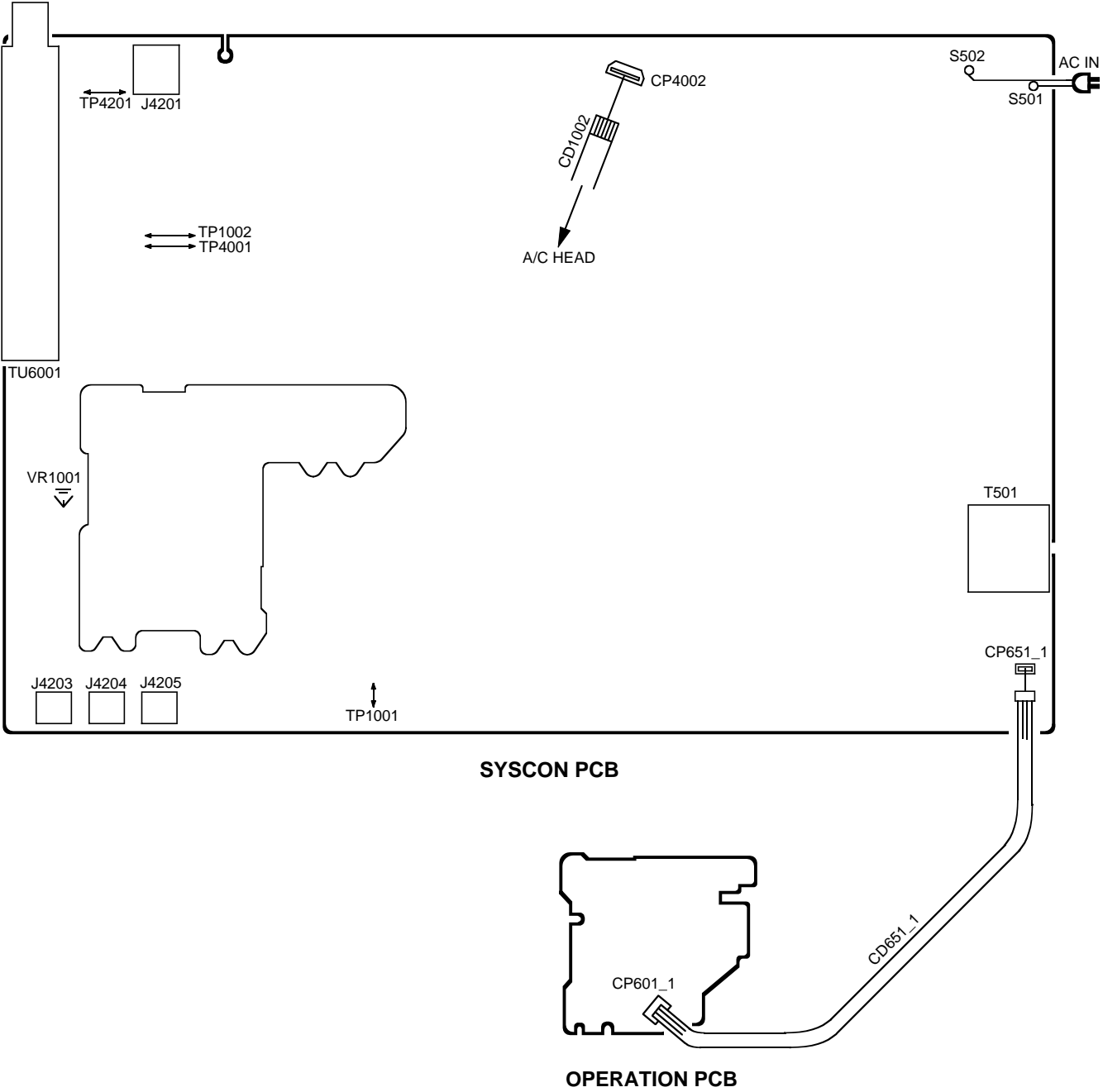
1. Connect CH-1 on the oscilloscope to **TP1002** and CH-2 to **TP4201**.
2. Playback the alignment tape. (**JG001P**)
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Adjust the **VR1001** until the waveform of the oscilloscope measures  $6.5 \pm 0.5(H)$  at both leading and trailing edges. (**Refer to Fig. 1-1-A, B**)



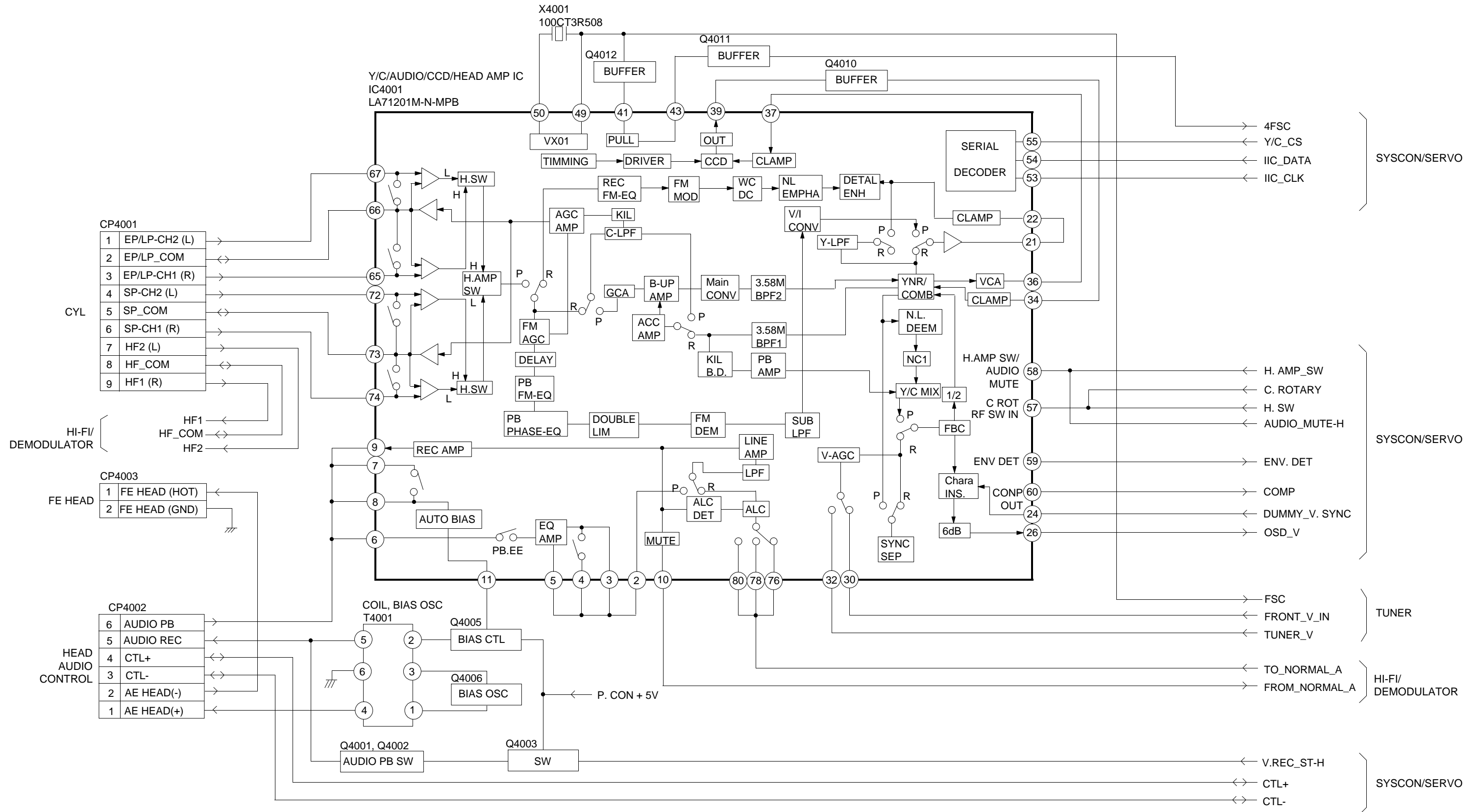


# ELECTRICAL ADJUSTMENTS

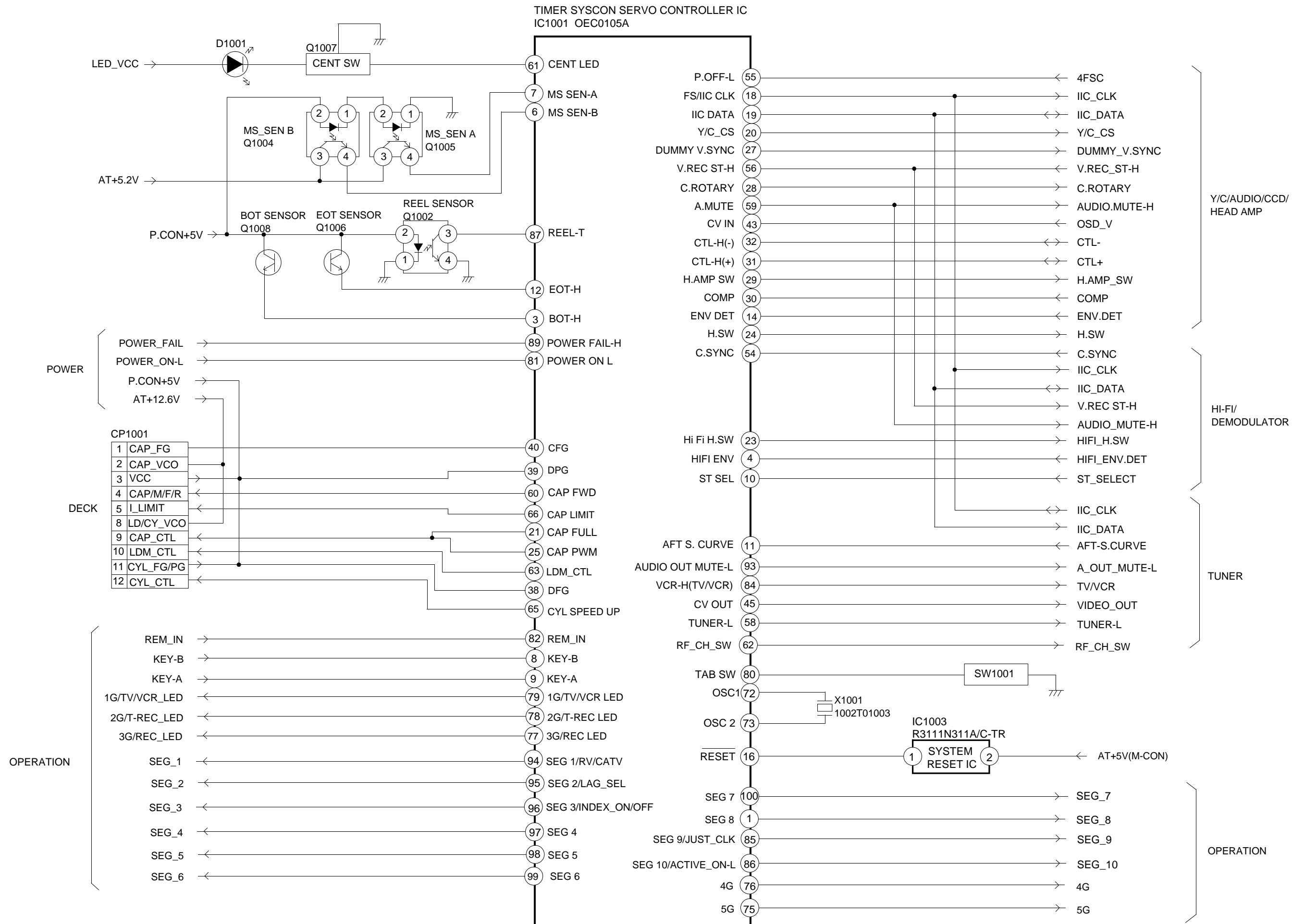
## 2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



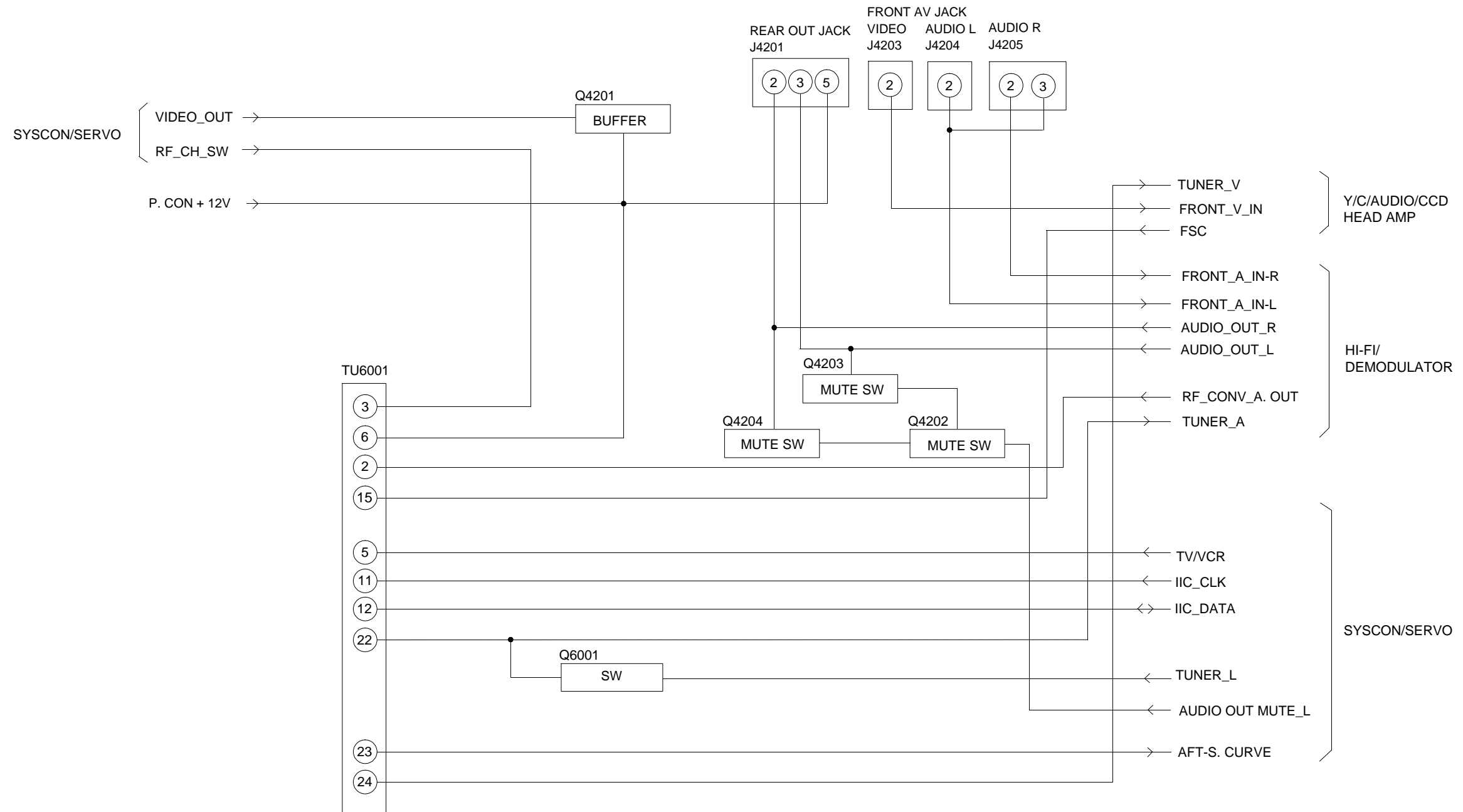
# Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



# SYSTEM CONTROL/SERVO BLOCK DIAGRAM

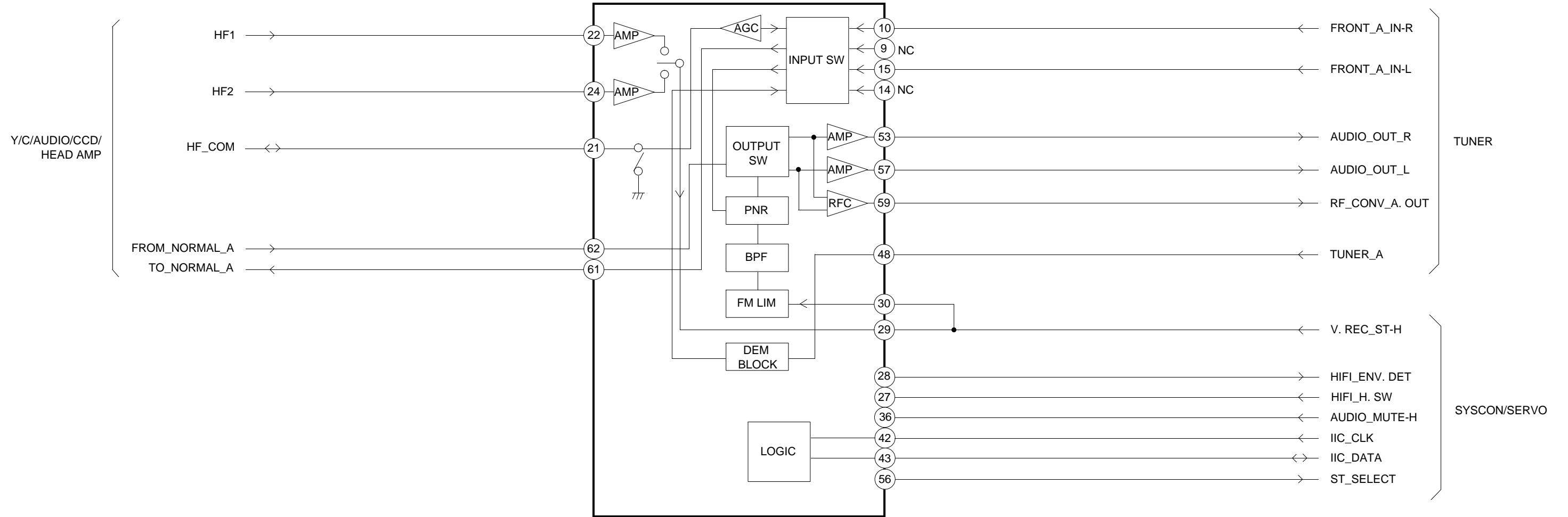


# TUNER BLOCK DIAGRAM

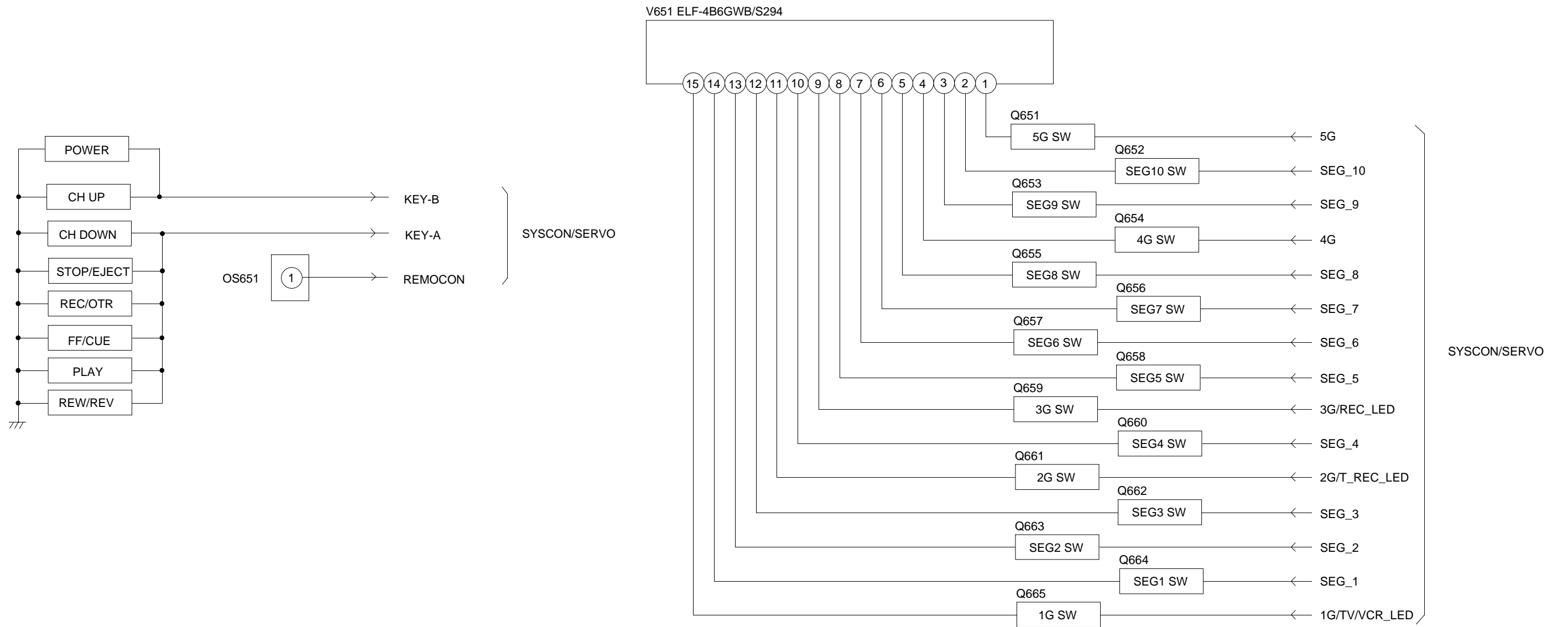


# HI-FI/DEMODULATOR BLOCK DIAGRAM

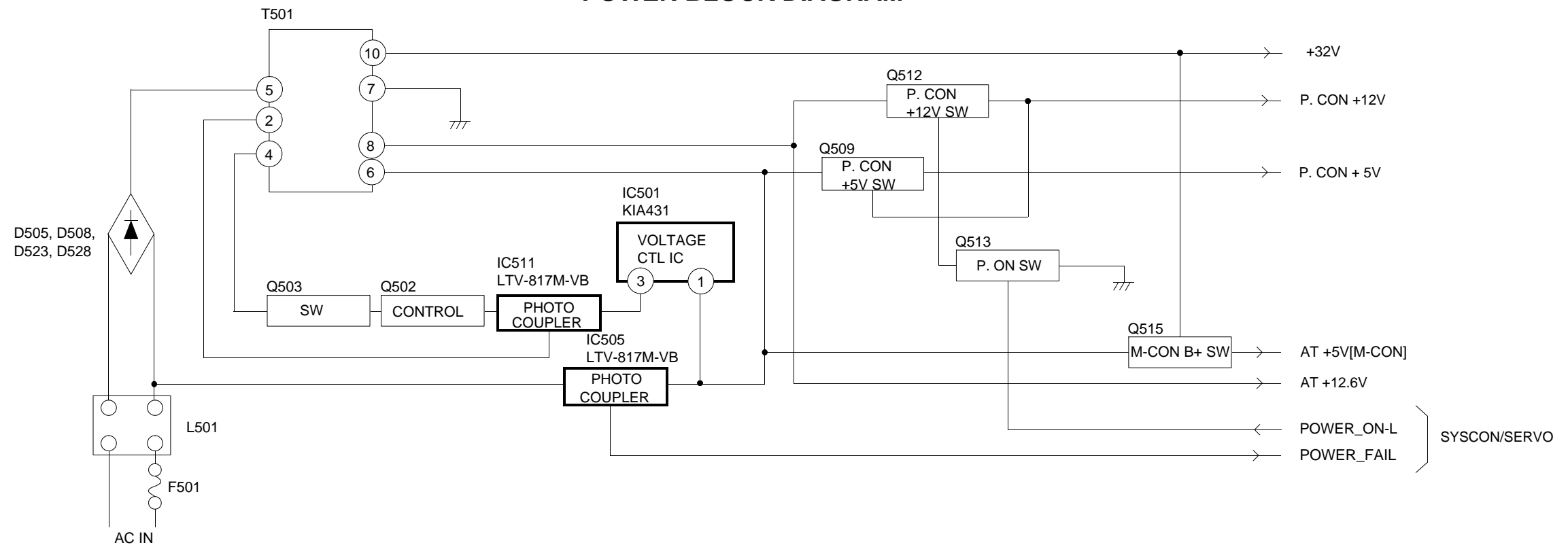
HI-FI AUDIO/HEAD AMP/DEM IC  
 IC5501  
 AN3663FBP



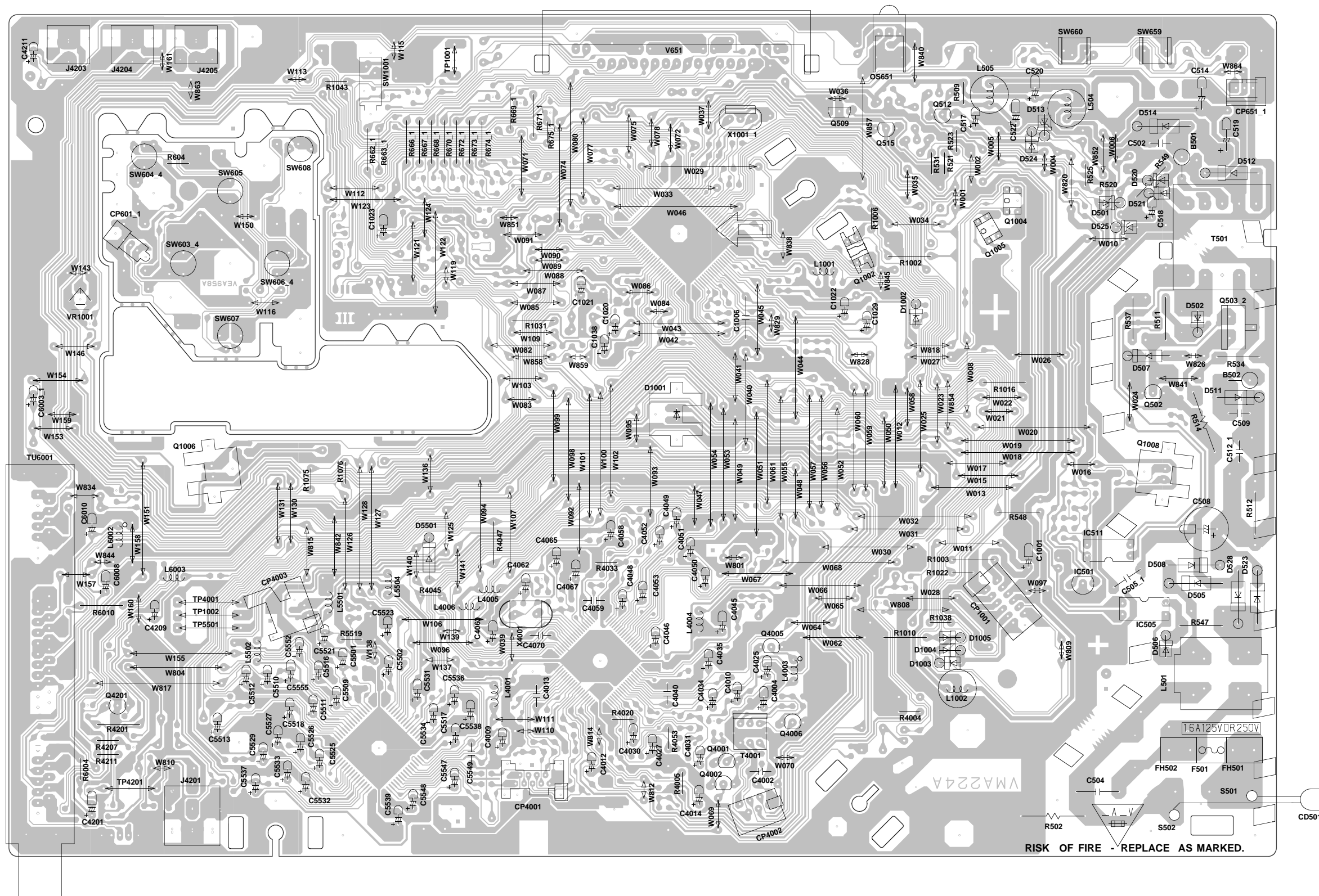
### OPERATION BLOCK DIAGRAM



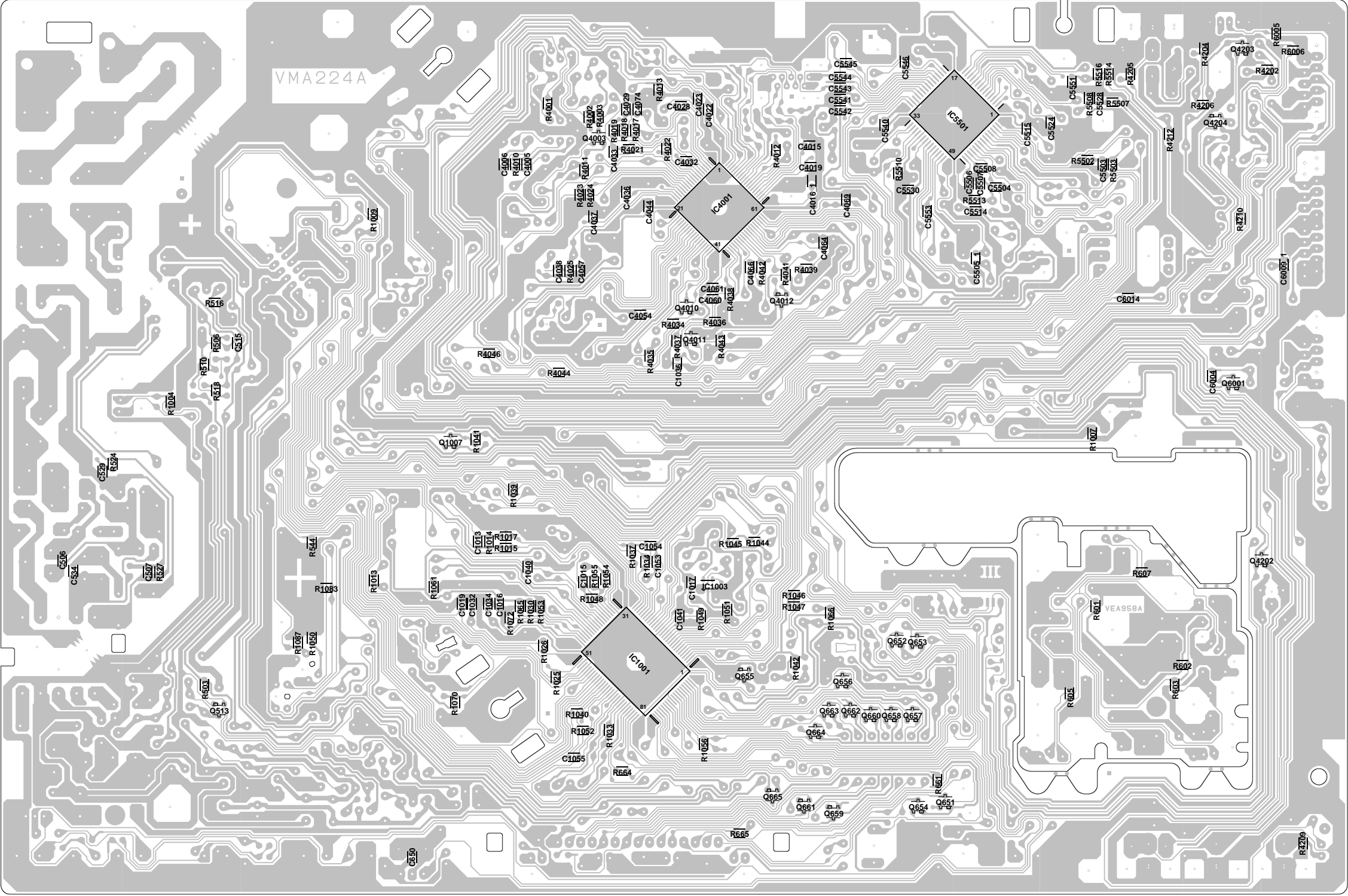
### POWER BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS  
SYS/CON/OPERATION (INSERTED PARTS)  
SOLDER SIDE

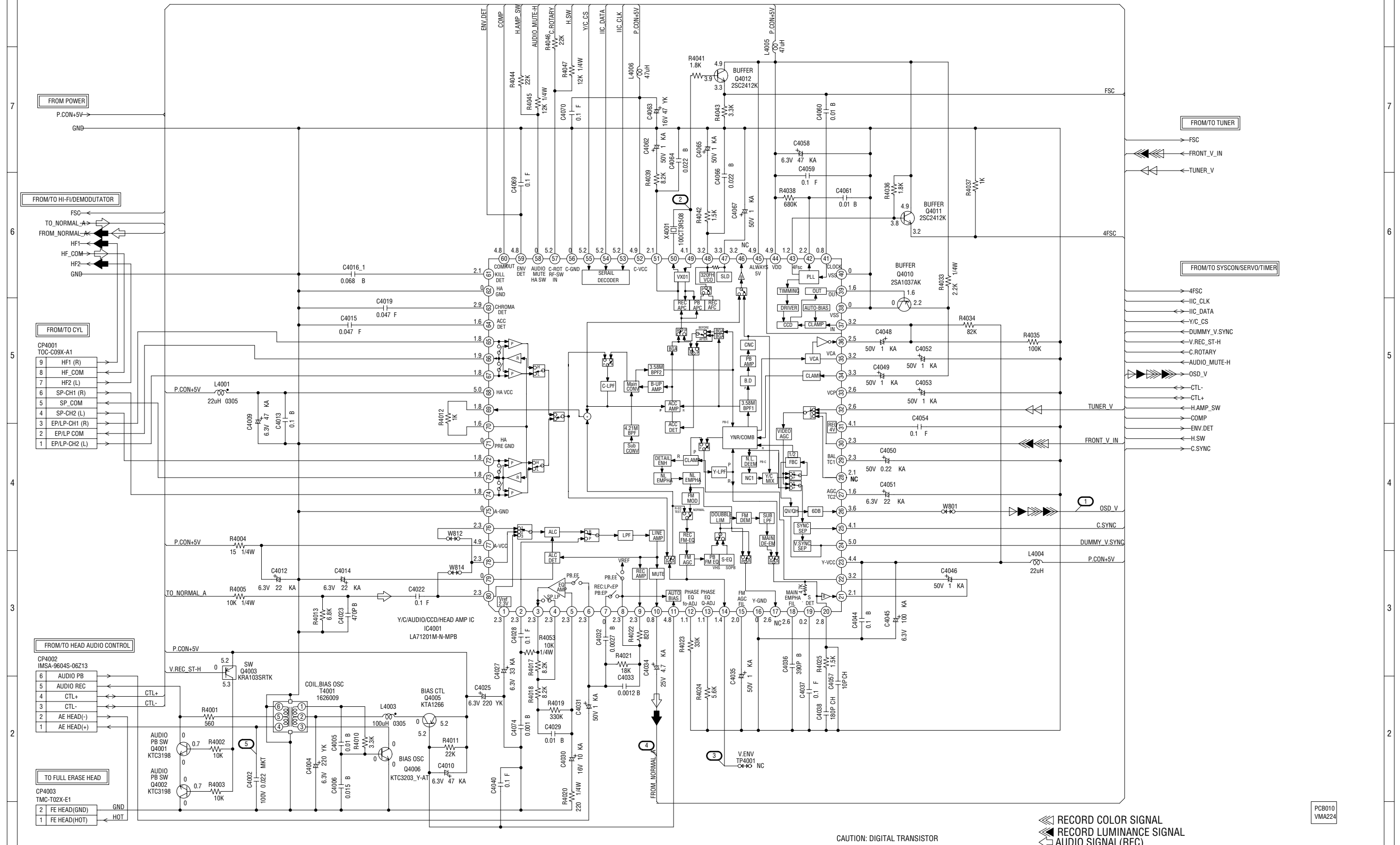


PRINTED CIRCUIT BOARDS  
 SYSCON/OPERATION (CHIP MOUNTED PARTS)  
 SOLDER SIDE





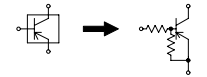
# Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM (SYSCON PCB)



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

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

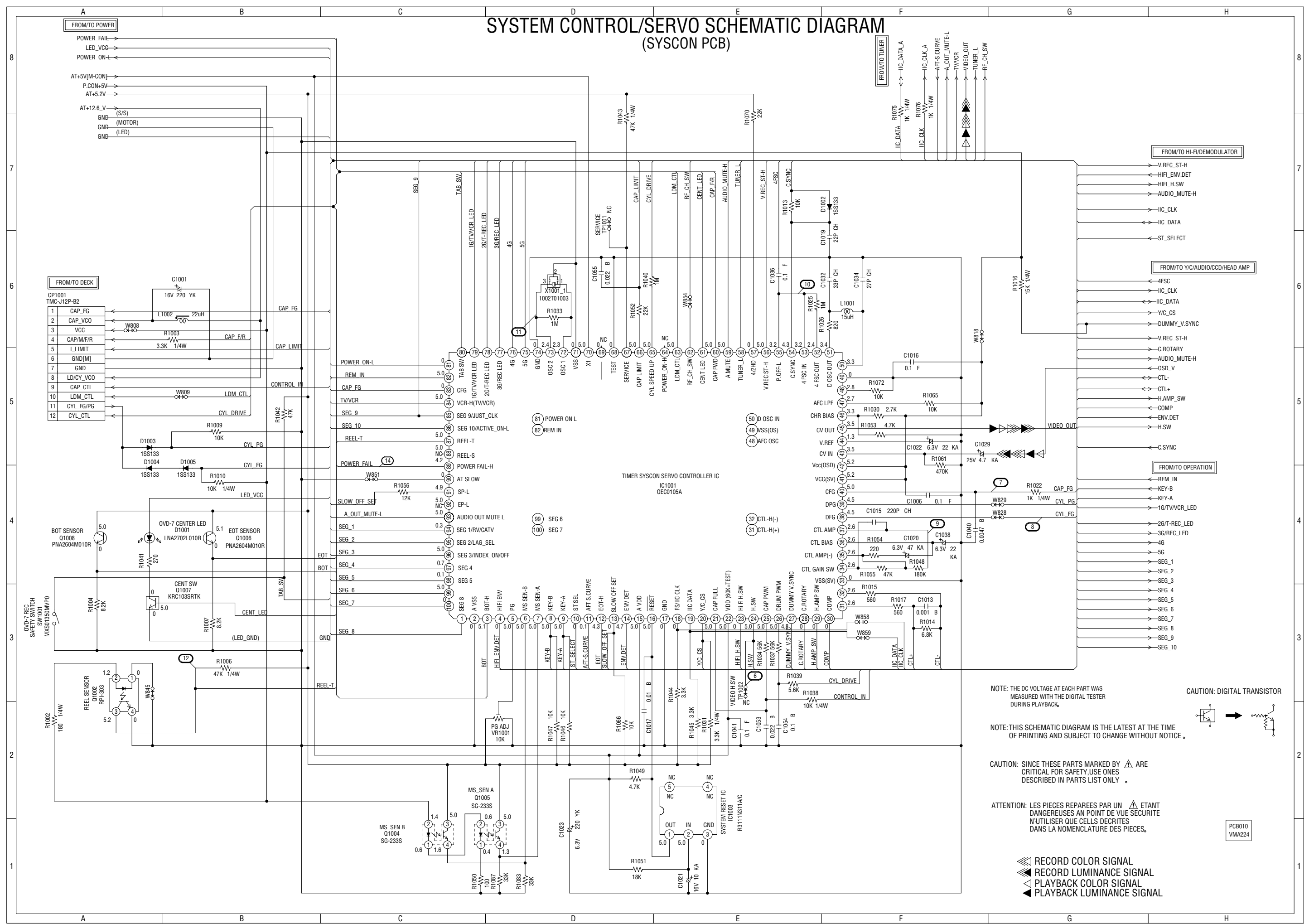
CAUTION: DIGITAL TRANSISTOR



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

PCB010  
VMA224

# SYSTEM CONTROL/SERVO SCHEMATIC DIAGRAM (SYSCON PCB)



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

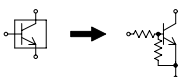
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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

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

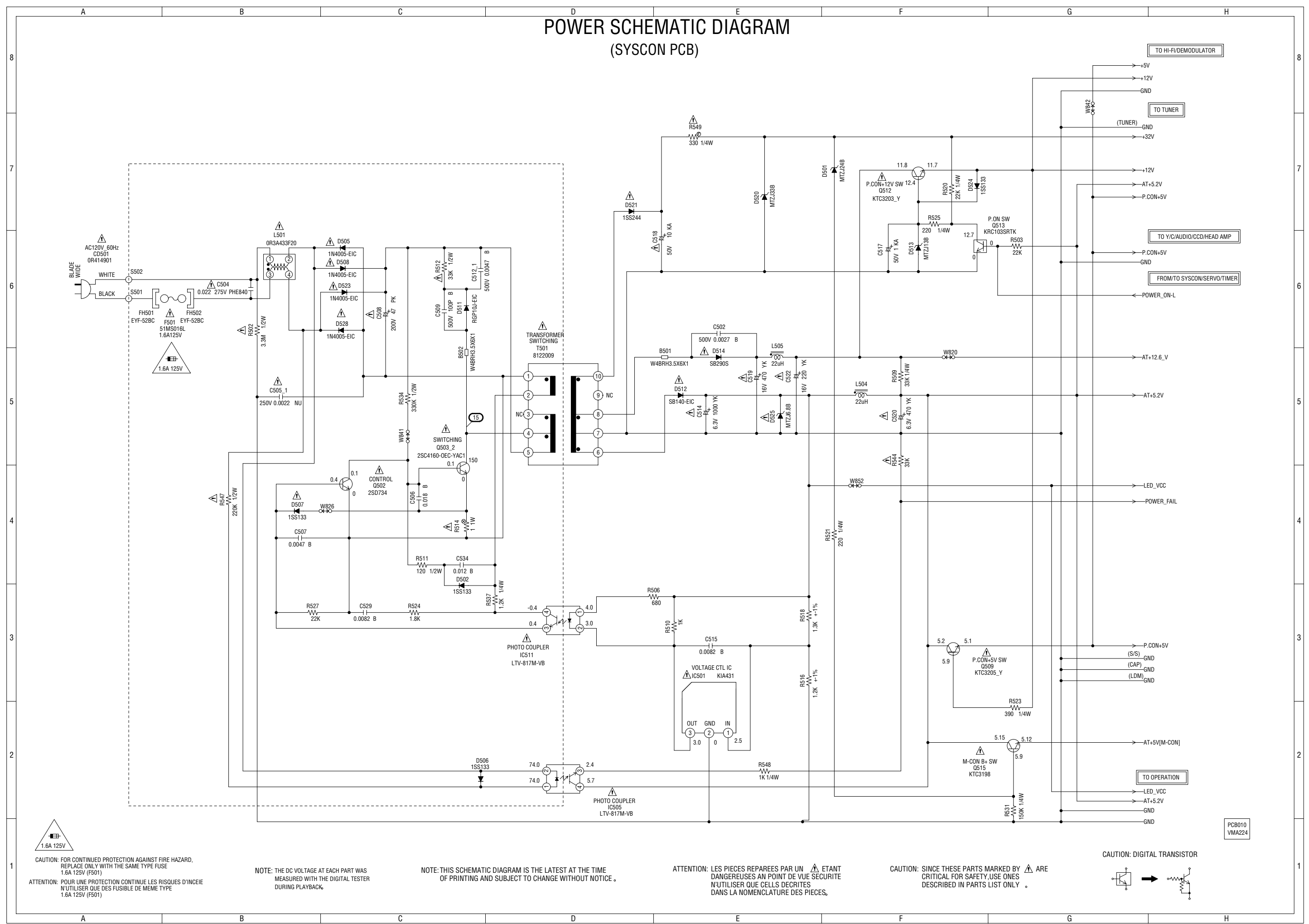
- RECORD COLOR SIGNAL
- RECORD LUMINANCE SIGNAL
- PLAYBACK COLOR SIGNAL
- PLAYBACK LUMINANCE SIGNAL

CAUTION: DIGITAL TRANSISTOR



PCB010  
VMA224

# POWER SCHEMATIC DIAGRAM (SYSCON PCB)



**1.6A 125V**  
 CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,  
 REPLACE ONLY WITH THE SAME TYPE FUSE  
 1.6A 125V (F501)  
 ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE  
 N'UTILISER QUE DES FUSIBLE DE MEME TYPE  
 1.6A 125V (F501)

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

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

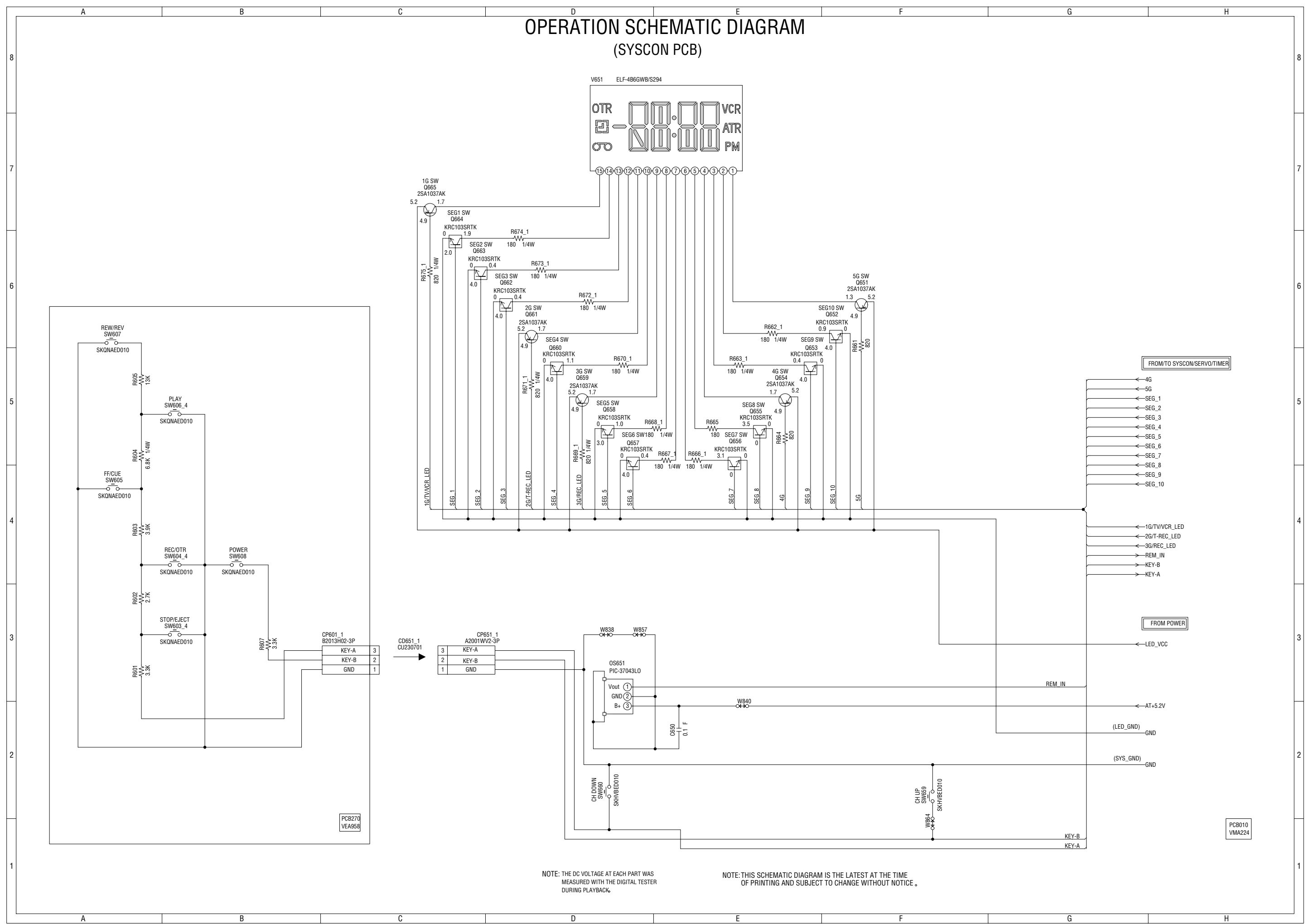
ATTENTION: LES PIECES REPARÉES PAR UN ETANT  
 DANGEREUSES AN POINT DE VUE SECURITE  
 N'UTILISER QUE CELLS DECRITES  
 DANS LA NOMENCLATURE DES PIECES.

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

CAUTION: DIGITAL TRANSISTOR

PCB010  
 VMA224

# OPERATION SCHEMATIC DIAGRAM (SYSCON PCB)



FROM/TO SYSCON/SERVO/TIMER

FROM POWER

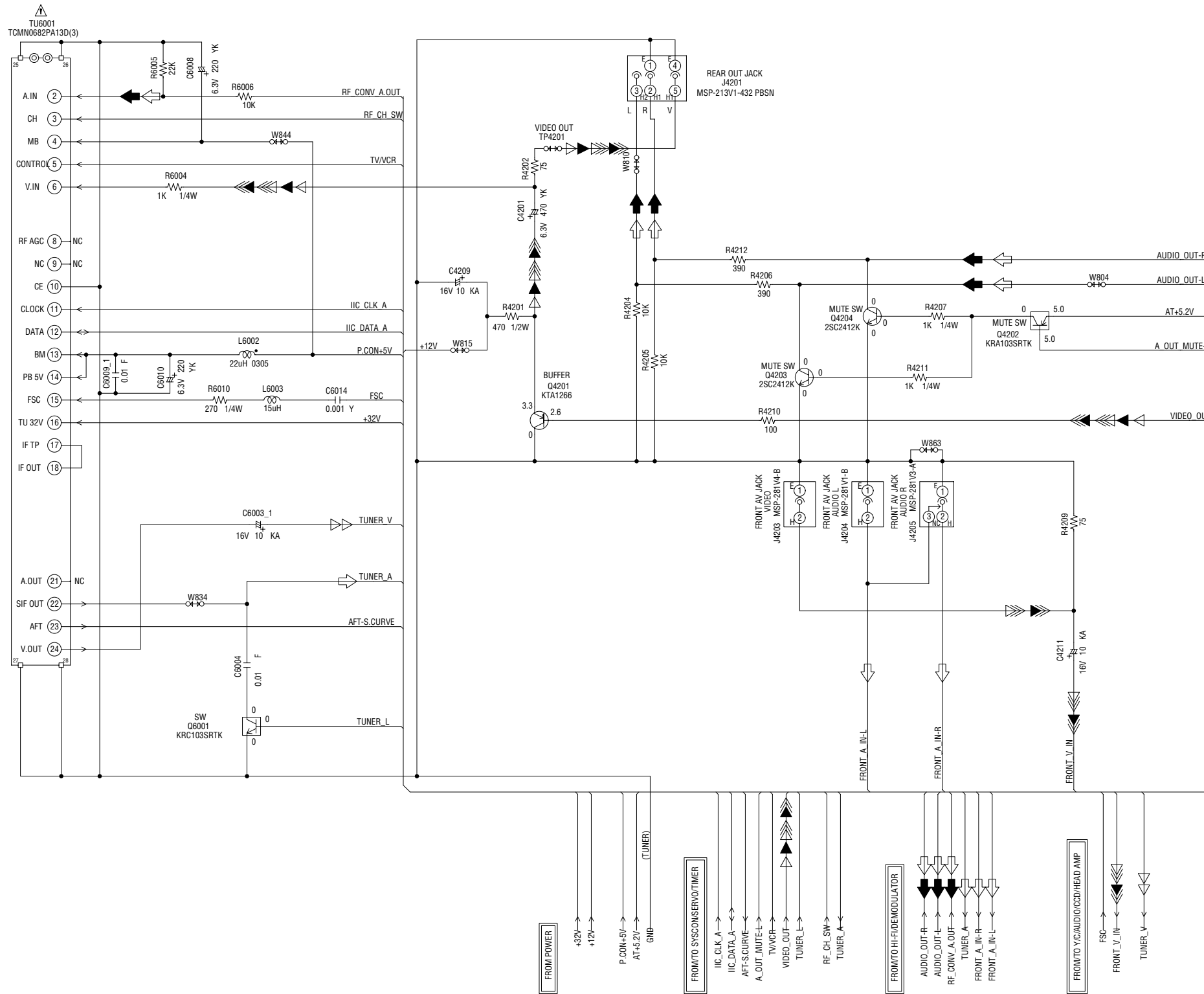
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

PCB270  
VEA958

PCB010  
VMA224

# TUNER SCHEMATIC DIAGRAM (SYSCON PCB)



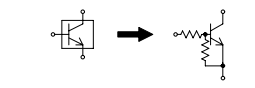
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

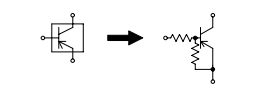
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY USE ONES DESCRIBED IN PARTS LIST ONLY.

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

CAUTION: DIGITAL TRANSISTOR



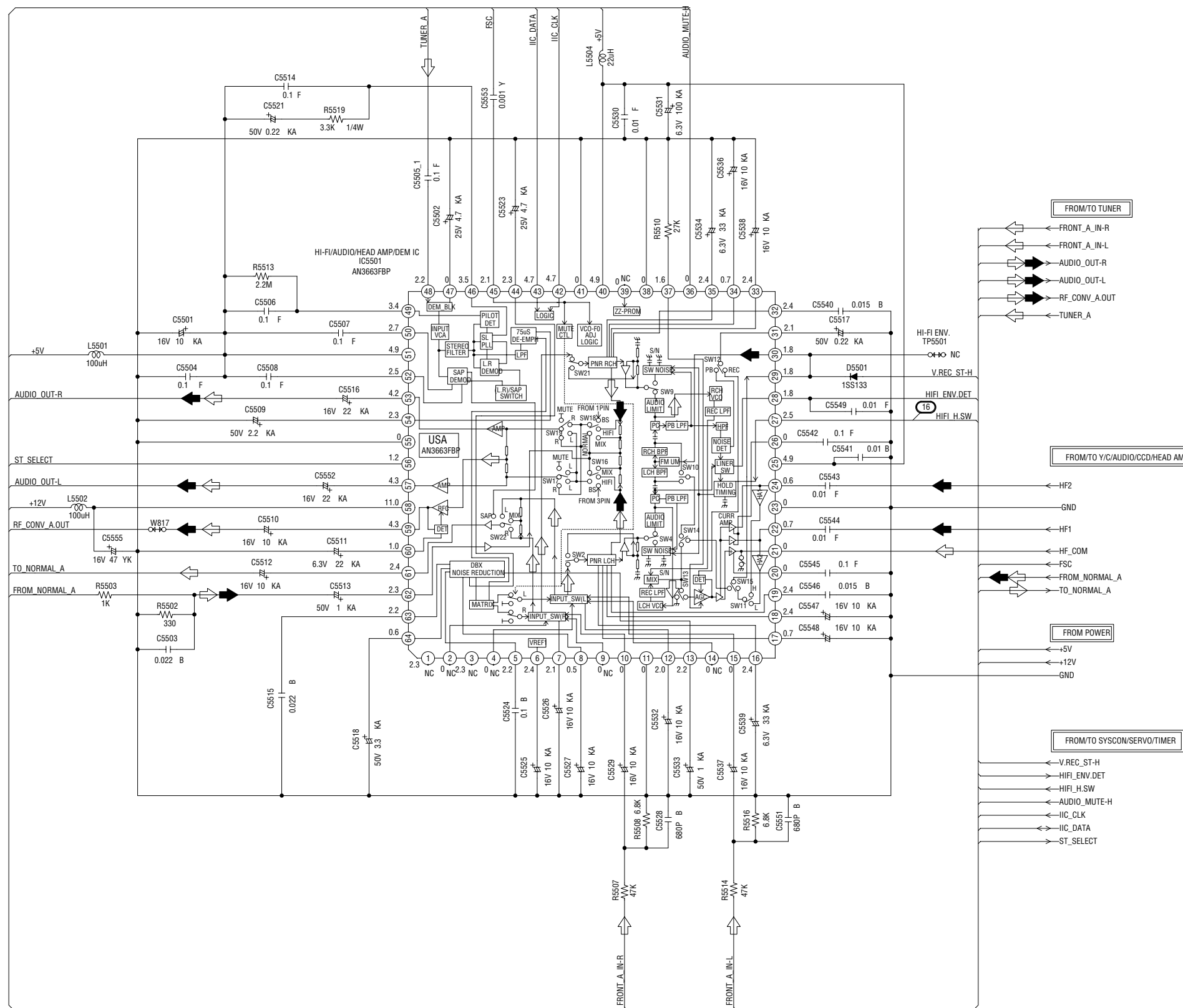
CAUTION: DIGITAL TRANSISTOR



PCB010  
VMA224

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

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



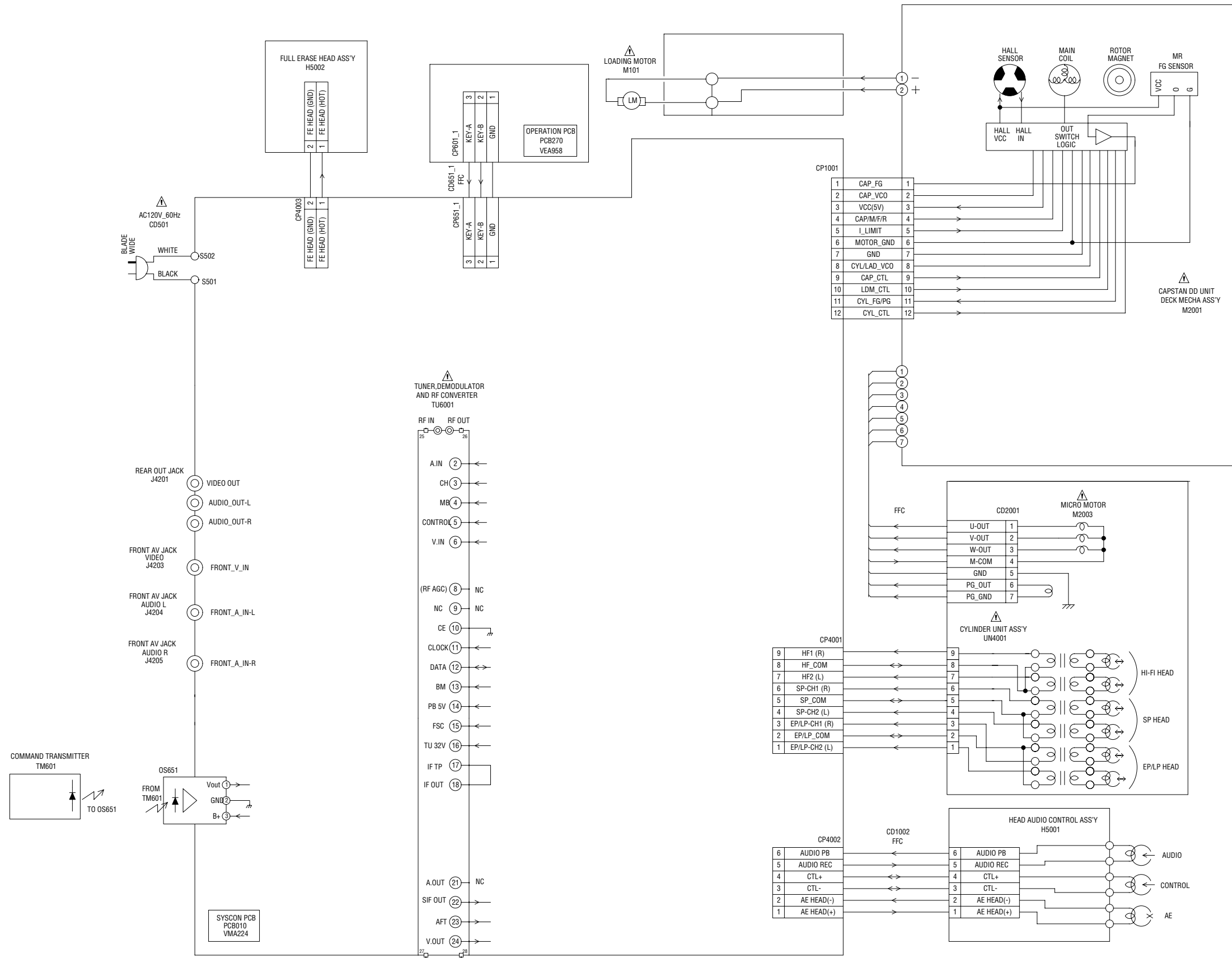
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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

◁ AUDIO SIGNAL (REC)  
 ◀ AUDIO SIGNAL (PB)

PCB010  
VMA224

# INTERCONNECTION DIAGRAM



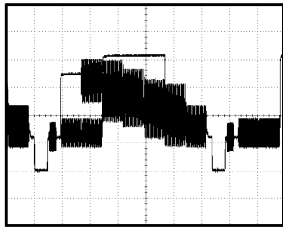
CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

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

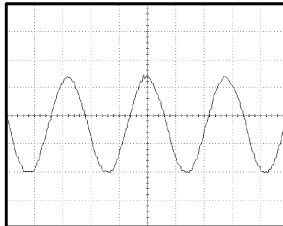
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

# WAVEFORMS

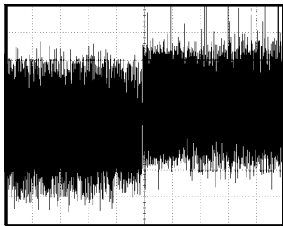
## Y/C/AUDIO/CCD/HEAD AMP



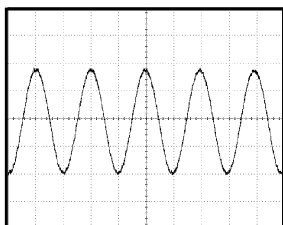
① POWER ON  
10µs 500mV/div



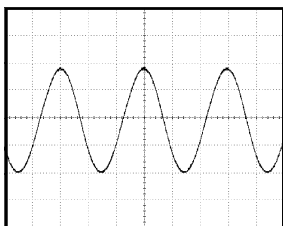
② POWER ON  
100ns 100mV/div



③ PB  
1ms 100mV/div

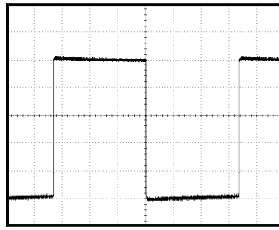


④ PB  
500µs 200mV/div

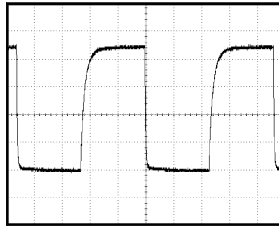


⑤ REC  
5µs 20V/div

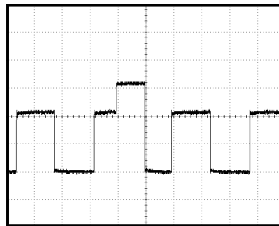
## SYSCON/SERVO



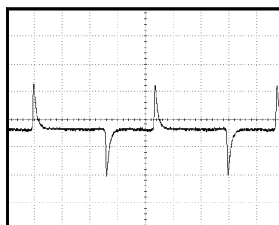
⑥ POWER ON  
5ms 1.0V/div



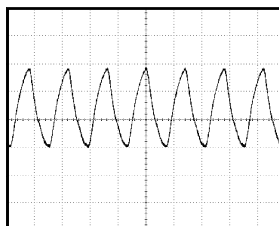
⑦ PB  
2µs 1.0V/div



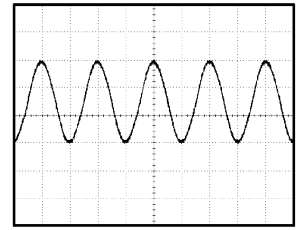
⑧ POWER ON  
500µs 1.0V/div



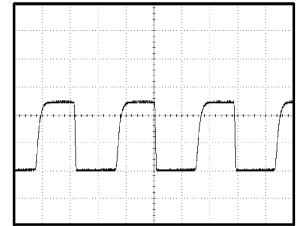
⑨ FF/REW  
500µs 500mV/div



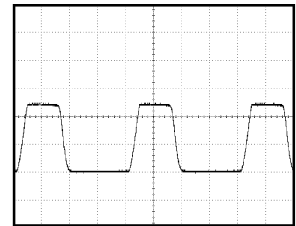
⑩ POWER ON  
50ns 500mV/div



⑪ POWER ON  
50ns 1.0V/div

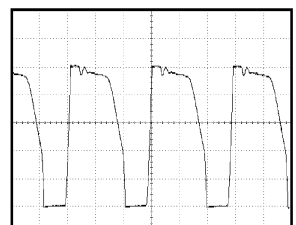


⑫ FF/REW  
5ms 2V/div



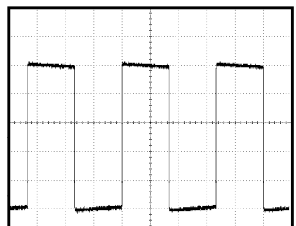
⑭ POWER OFF  
5ms 2V/div

## POWER



⑮ PB  
2µs 50V/div

## HI-FI/DEMODULATOR

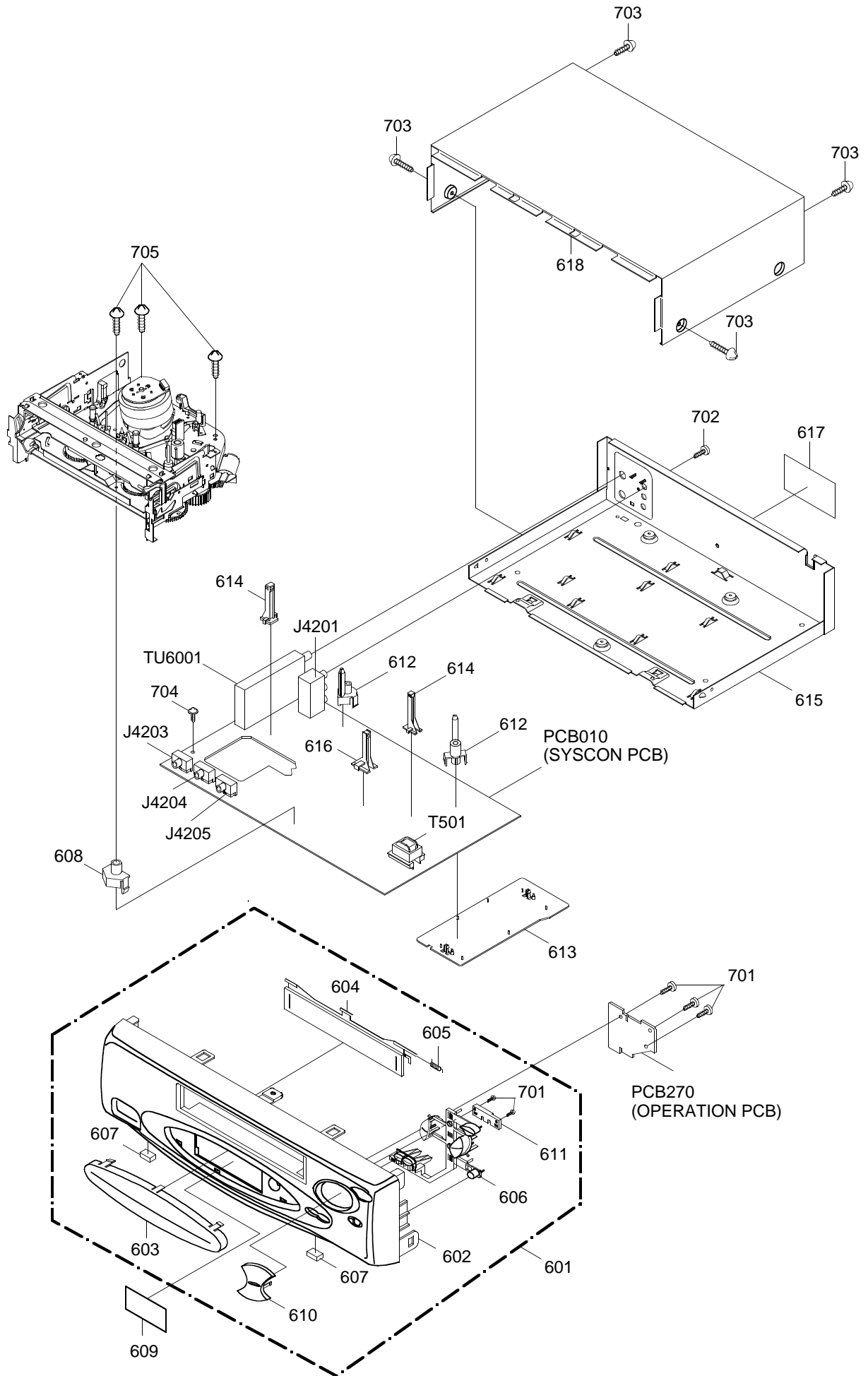


⑯ POWER ON  
10ms 1.0V/div

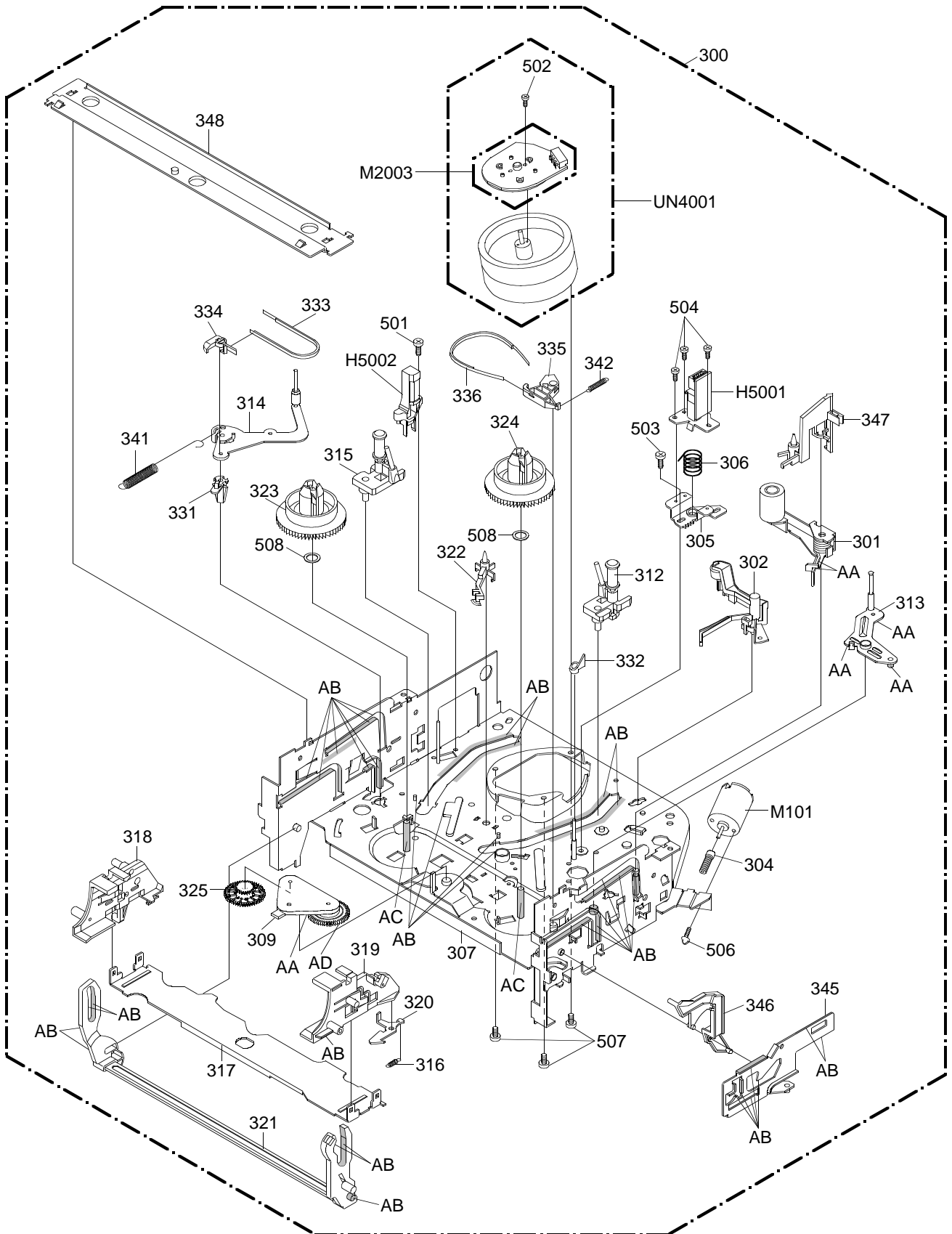
**NOTE:** The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.



# MECHANICAL EXPLODED VIEW



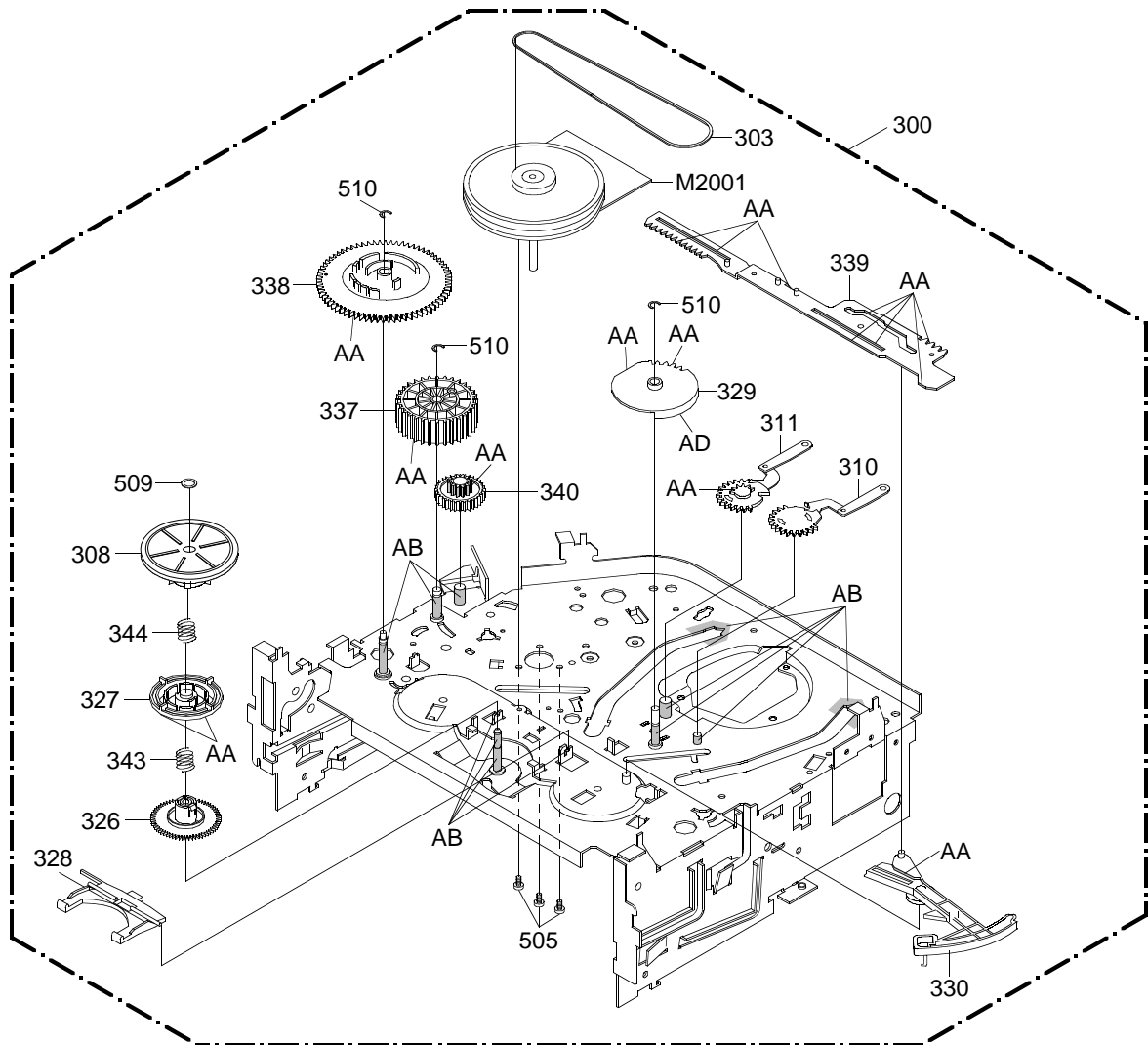
# CHASSIS EXPLODED VIEW (TOP VIEW)



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

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

# CHASSIS EXPLODED VIEW (BOTTOM VIEW)



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

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

## MECHANICAL REPLACEMENT PARTS LIST

| REF. NO. | PART NO.   | DESCRIPTION                       |
|----------|------------|-----------------------------------|
| 601      | A4F223B720 | CABINET,FRONT ASSY                |
| 602      | 701WPJB398 | CABINET,FRONT                     |
| 603      | 711WPA0107 | PLATE,DISPLAY                     |
| 604      | 712WPJB128 | FLAP                              |
| 605      | 743WKA0032 | SPRING,FLAP(COMBO)                |
| 606      | 735WPD0731 | BUTTON,FRAME                      |
| 607      | 800WFA0045 | CUSHION,LEG                       |
| 608      | 701WPA0686 | HOLDER,DECK                       |
| 609      | 723000A698 | SHEET,DISPLAY                     |
| 610      | 735WPD0730 | BUTTON,DECK                       |
| 611      | 735WPAA194 | HOLDER,CHANNEL                    |
| 612      | 701WPA0680 | HOLDER,DECK                       |
| 613      | 755WPA0020 | PLATE,COVER POWER                 |
| 614      | 85OP700036 | HOLDER EOT SENSOR                 |
| 615      | 702WSA0084 | PLATE,BOTTOM                      |
| 616      | 85OP700037 | HOLDER,LED                        |
| 617      | 722A08A103 | SHEET,RATING                      |
| 618      | 702WSB0058 | CABINET, TOP                      |
| 701      | 8110226804 | SCREW,TAP TITE(P) BIND BIND 2.6x8 |
| 702      | 8110230804 | SCREW,TAP TITE(P) BIND BIND 3x8   |
| 703      | 8109230802 | SCREW,TAP TITE(B) 3x8             |
| 704      | 8109230704 | SCREW,TAP TITE(B) BIND 3x7        |
| 705      | 8109130B94 | SCREW,TAP TITE(B) PAN 3x29        |
| ---      | 791WHA0095 | GIFT,SHEET                        |
| ---      | 792WHA0306 | PACKAGE                           |
| ---      | 793WCDB039 | GIFT BOX                          |
| ---      | JA5U0200   | POLYBAG,INSTRUCTION               |
| ---      | J3J81702   | WARRANTY SHEET                    |
| ---      | J4F20401   | INSTRUCTION BOOK                  |
| ---      | A4F204B975 | INSTRUCTION BOOK KIT              |

## CHASSIS REPLACEMENT PARTS LIST

| REF. NO. | PART NO.    | DESCRIPTION              | REF. NO. | PART NO.   | DESCRIPTION                         |
|----------|-------------|--------------------------|----------|------------|-------------------------------------|
| 300      | A4F201A420K | DECK ASSY<br>A4F201A420K | 501      | 8107226804 | SCREW,TAP TITE(S) BIND 2.6x8        |
|          |             |                          | 502      | 8107226504 | SCREW,TAP TITE(S) BIND 2.6x5        |
| 301      | 85OA400234  | PINCH ROLLER BLOCK       | 503      | 8107226404 | SCREW,TAP TITE(S) BIND 2.6x4        |
| 302      | 85OA500026  | AHC ASSY                 | 504      | 8102120604 | SCREW,PAN M2x6                      |
| 303      | 85OP200290  | BELT,CAPSTAN (S)         | 505      | 8109126604 | SCREW,TAP TITE(B) PAN 2.6x6         |
| 304      | 85OP600581  | WORM                     | 506      | 810A130404 | SCREW/WASHER(A) M3x4                |
| 305      | 85OP500083  | BASE,AC HEAD             | 507      | 810A126504 | SCREW/WASHER(A) M2.6x5              |
| 306      | 85OP800324  | SPRING,AC HEAD           | 508      | 82Q264713N | POLYSLIDER WASHER 2.6x4.7xT0.13     |
| 307      | 85OA000459  | MAIN CHASSIS ASS'Y       | 509      | 82P184505N | POLYSLIDER WASHER(CUT) 1.8x4.5xT0.5 |
| 308      | 85OA200089  | CLUTCH ASS'Y             |          |            |                                     |
| 309      | 85OA200090  | ARM IDLER ASS'Y          | 510      | 83ETW30000 | E-RING 3.0                          |
| 310      | 85OA300065  | LOADING ARM S UNIT       | CD1501   | 122H071603 | CORD JUMPER SMCD-7X151              |
| 311      | 85OA300066  | LOADING ARM T UNIT       | CD1502   | 122Y021902 | CORD JUMPER 2Y021902                |
| 312      | 85OA400223  | INCLINED BASE T UNIT 3S  | H5001    | 1523D91034 | HEAD (AUDIO CONTROL) HVMXA1072A     |
| 313      | 85OA400232  | P5 ARM ASS'Y 2           | H5002    | 1543D02013 | HEAD (FULL ERASE) HVFHP0032A        |
| 314      | 85OA400235  | TENSION ARM ASS'Y 2      | △ M101   | 1596P98001 | MOTOR (LOADING) MXN13FB12K3         |
| 315      | 85OA400231  | INCLINED BASE S UNIT     | △ M2001  | 1510S98036 | CAPSTAN DD UNIT F2QVB08             |
| 316      | 85OP800358  | SPRING,LOCKER            | M2003    | 1589S11015 | MICRO MOTOR I2OAL01                 |
| 317      | 85OP900736  | CASS,HOLDER              | △ UN4001 | A4F201B500 | CYLINDER UNIT ASS'Y A4F201B500      |
| 318      | 85OP900748  | CASS,SIDE L              |          |            |                                     |
| 319      | 85OP900749  | CASS,SIDE R              |          |            |                                     |
| 320      | 85OP900739  | LOCKER,R                 |          |            |                                     |
| 321      | 85OA900228  | LINK UNIT                |          |            |                                     |
| 322      | 85OP000496  | POST,CASS GUIDE          |          |            |                                     |
| 323      | 85OP200316  | REEL,S (S)               |          |            |                                     |
| 324      | 85OP200317  | REEL,T (S)               |          |            |                                     |
| 325      | 85OP200308  | GEAR,IDLER               |          |            |                                     |
| 326      | 85OP200311  | GEAR,CLUTCH              |          |            |                                     |
| 327      | 85OP200312  | GEAR,COUPLING            |          |            |                                     |
| 328      | 85OP200313  | LEVER,CLUTCH             |          |            |                                     |
| 329      | 85OP300194  | GEAR,MAIN LOADING        |          |            |                                     |
| 330      | 85OP400490  | LEVER,TENSION            |          |            |                                     |
| 331      | 85OP400492  | HOLDER,TENSION           |          |            |                                     |
| 332      | 85OP400520  | CAP.P4                   |          |            |                                     |
| 333      | 85OP400539  | BAND,TENSION             |          |            |                                     |
| 334      | 85OP400533  | CONNECT,TENSION          |          |            |                                     |
| 335      | 85OP600573  | ARM,BRAKE T              |          |            |                                     |
| 336      | 85OP600583  | BAND,BRAKE T             |          |            |                                     |
| 337      | 85OP600577  | CAM,PINCH ROLLER         |          |            |                                     |
| 338      | 85OP600578  | CAM,MAIN                 |          |            |                                     |
| 339      | 85OP600579  | ROD,MAIN                 |          |            |                                     |
| 340      | 85OP600582  | GEAR,JOINT               |          |            |                                     |
| 341      | 85OP800322  | SPRING,TENSION           |          |            |                                     |
| 342      | 85OP800360  | SPRING,BRAKE T           |          |            |                                     |
| 343      | 85OP800355  | SPRING,COUPLING          |          |            |                                     |
| 344      | 85OP800356  | SPRING,RING              |          |            |                                     |
| 345      | 85OP900750  | LEVER,LINK 2             |          |            |                                     |
| 346      | 85OP900744  | LEVER,FLAP               |          |            |                                     |
| 347      | 85OP900745  | CASS,OPENER              |          |            |                                     |
| 348      | 85OP900746  | BRACKET,TOP 3V           |          |            |                                     |

# ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO.           | PART NO.   | DESCRIPTION                         | REF. NO.                    | PART NO.   | DESCRIPTION                         |
|--------------------|------------|-------------------------------------|-----------------------------|------------|-------------------------------------|
| <b>RESISTORS</b>   |            |                                     |                             |            |                                     |
| △ R502             | R0G3K2335K | RC 3.3M OHM 1/2W                    | Q4001                       | TCATC31980 | TRANSISTOR,SILICON KTC3198-AT(Y,GR) |
| △ R512             | R002T2333J | RC 33K OHM 1/2W                     | Q4002                       | TCATC31980 | TRANSISTOR,SILICON KTC3198-AT(Y,GR) |
| △ R514             | R3X181010J | R,METAL OXIDE 1 OHM 1W              | Q4003                       | TPAAC05002 | COMPOUND TRANSISTOR KRA103SRTK      |
| △ R547             | R002T2224J | RC 220K OHM 1/2W                    | Q4005                       | TAATA12660 | TRANSISTOR,SILICON KTA1266-AT(Y,GR) |
| △ R549             | R65584331J | R,FUSE 330 OHM 1/4W                 | Q4006                       | TCAT032034 | TRANSISTOR,SILICON KTC3203_Y-AT     |
| <b>CAPACITORS</b>  |            |                                     |                             |            |                                     |
| △ C504             | P2472B223M | CMP 0.022 UF 275V PHE840            | Q4010                       | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S |
| △ C505             | CBLLYEMH3M | CC 0.0022UF 250V                    | Q4011                       | T8YJ2412K0 | TRANSISTOR SILICON 2SC2412KT146 R,S |
| △ C508             | E62QFC470M | CE 47 UF 200V                       | Q4012                       | T8YJ2412K0 | TRANSISTOR SILICON 2SC2412KT146 R,S |
| △ C514             | E02LT0102M | CE 1000 UF 6.3V                     | Q4201                       | TAATA12660 | TRANSISTOR,SILICON KTA1266-AT(Y,GR) |
| △ C518             | E50HU5100M | CE 10 UF 50V                        | Q4202                       | TPAAC05002 | COMPOUND TRANSISTOR KRA103SRTK      |
| △ C519             | E02LT2471M | CE 470 UF 16V                       | Q4203                       | T8YJ2412K0 | TRANSISTOR SILICON 2SC2412KT146 R,S |
| △ C520             | E02LU0471M | CE 470 UF 6.3V                      | Q4204                       | T8YJ2412K0 | TRANSISTOR SILICON 2SC2412KT146 R,S |
| △ C522             | E02LU2221M | CE 220 UF 16V                       | Q6001                       | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      |
| <b>DIODES</b>      |            |                                     |                             |            |                                     |
| D501               | D97U02401B | DIODE,ZENER MTZJ24B T-77            | △ L501                      | 029T000083 | COIL,LINE FILTER 0R3A433F20         |
| D502               | D1VT001330 | DIODE,SILICON 1SS133T-77            | L504                        | 021W7A220K | COIL 22 UH                          |
| △ D505             | D2WXN40050 | DIODE SILICON 1N4005-EIC            | L505                        | 021W7A220K | COIL 22 UH                          |
| D506               | D1VT001330 | DIODE,SILICON 1SS133T-77            | L1001                       | 0216A6150K | COIL 15 UH                          |
| △ D507             | D1VT001330 | DIODE,SILICON 1SS133T-77            | L1002                       | 021W7A220K | COIL 22 UH                          |
| △ D508             | D2WXN40050 | DIODE SILICON 1N4005-EIC            | L4001                       | 02167F220J | COIL 22 UH                          |
| D511               | D2WXGP10J0 | DIODE RECTIFIER RGP10J-EIC          | L4003                       | 02167F101J | COIL 100 UH                         |
| △ D512             | D2WXS1400  | DIODE SCHOTTKY SB140-EIC            | L4004                       | 0216A6220K | COIL 22 UH                          |
| D513               | D97U01301B | DIODE,ZENER MTZJ13B T-77            | L4005                       | 0216A6470K | COIL 47 UH                          |
| △ D514             | D2WXB290S0 | DIODE SILICON SB290S                | L4006                       | 0216A6470K | COIL 47 UH                          |
| D520               | D97U03301B | DIODE,ZENER MTZJ33B T-77            | L5501                       | 0216A6101K | COIL 100 UH                         |
|                    | D97X03301B | DIODE,ZENER MTZJ-33B-T72            | L5502                       | 0216A6101K | COIL 100 UH                         |
| △ D521             | D17T002440 | DIODE SILICON 1SS244T-77            | L5504                       | 0216A6220K | COIL 22 UH                          |
| △ D523             | D2WXN40050 | DIODE SILICON 1N4005-EIC            | L6002                       | 02167F220J | COIL 22 UH                          |
| D524               | D1VT001330 | DIODE,SILICON 1SS133T-77            | L6003                       | 0216A6150K | COIL 15 UH                          |
| △ D525             | D97U06R81B | DIODE,ZENER MTZJ6.8B T-77           | △ T501                      | 0481220094 | TRANSFORMER,SWITCHING 8122009       |
| △ D528             | D2WXN40050 | DIODE SILICON 1N4005-EIC            | T4001                       | 031626009R | COIL,BIAS OSC 1626009               |
| D1001              | 0010100320 | INFRARED LED LNA2702L010R           | <b>JACKS</b>                |            |                                     |
| D1002              | D1VT001330 | DIODE,SILICON 1SS133T-77            | J4201                       | 060J411018 | RCA JACK MSP-213V1-432 PBSN         |
| D1003              | D1VT001330 | DIODE,SILICON 1SS133T-77            | J4203                       | 060J401079 | RCA JACK MSP-281V4-B                |
| D1004              | D1VT001330 | DIODE,SILICON 1SS133T-77            | J4204                       | 060J401080 | RCA JACK MSP-281V1-B                |
| D1005              | D1VT001330 | DIODE,SILICON 1SS133T-77            | J4205                       | 060J421023 | RCA JACK MSP-281V3-A                |
| D5501              | D1VT001330 | DIODE,SILICON 1SS133T-77            | <b>SWITCHES</b>             |            |                                     |
| <b>ICS</b>         |            |                                     |                             |            |                                     |
| △ IC501            | 11KJ9A4310 | IC KIA431                           | SW603                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC505              | 0002E00610 | PHOTO COUPLER LTV-817M-VB           | SW604                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC511              | 0002E00610 | PHOTO COUPLER LTV-817M-VB           | SW605                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC1001             | I54F50105A | IC OEC0105A                         | SW606                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC1003             | IC7J0311A0 | IC R3111N311A/C-TR                  | SW607                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC4001             | I03F301MN0 | IC LA71201M-N-MPB                   | SW608                       | 0504201T32 | SWITCH,TACT SKQNAED010              |
| IC5501             | I01F63FBP0 | IC AN3663FBP                        | SW659                       | 0504201T31 | SWITCH,TACT SKHVBED010              |
|                    |            |                                     | SW660                       | 0504201T31 | SWITCH,TACT SKHVBED010              |
|                    |            |                                     | SW1001                      | 0508A11001 | SWITCH(LEAF) MXS01350MVP0           |
| <b>TRANSISTORS</b> |            |                                     |                             |            |                                     |
| △ Q502             | TD3T007340 | TRANSISTOR,SILICON 2SD734(E,F)-AA   | <b>VARIABLE RESISTOR</b>    |            |                                     |
|                    | TCAT032034 | TRANSISTOR,SILICON KTC3203_Y-AT     | VR1001                      | V116314BTC | VOLUME,SEMI FIXED EVNCYAA03B14      |
|                    | TDYT01863R | TRANSISTOR SILICON 2SD1863_R        | <b>P.C.BOARD ASSEMBLIES</b> |            |                                     |
| △ Q503             | TCWQ4160E0 | TRANSISTOR SILICON 2SC4160-OEC-YAC1 | PCB010                      | A4F204B010 | PCB ASSY VMA224A                    |
| △ Q509             | TCAT03205Y | TRANSISTOR SILICON KTC3205_Y-AT     | PCB270                      | A4F204B270 | PCB ASSY VEA958A                    |
| △ Q512             | TCAT032034 | TRANSISTOR,SILICON KTC3203_Y-AT     | <b>MISCELLANEOUS</b>        |            |                                     |
| Q513               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | B501                        | 024HT03564 | CORE,BEADS W4BRH3.5X6X1             |
| △ Q515             | TCATC31980 | TRANSISTOR,SILICON KTC3198-AT(Y,GR) | B502                        | 024HT03564 | CORE,BEADS W4BRH3.5X6X1             |
| Q651               | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S | △ CD501                     | 120R414901 | CORD AC BUSH 0R414901               |
| Q652               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      |                             | 1207414902 | CORD AC BUSH 7414902                |
| Q653               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CD651                       | 06CU230701 | CORD JUMPER CU230701                |
| Q654               | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S | CP601                       | 067U003029 | WIRE HOLDER B2013H02-3P             |
| Q655               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CP651                       | 069S230629 | CONNECTOR PCB SIDE A2001VW2-3P      |
| Q656               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CD1002                      | 122F061501 | CORD JUMPER 2F061501                |
| Q657               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CD6002                      | 06CQL02006 | CABLE SI-C108-40                    |
| Q658               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CP1001                      | 06972C0010 | CONNECTOR PCB SIDE TMC-J12P-B2      |
| Q659               | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S | CP4001                      | 0697290620 | CONNECTOR PCB SIDE TOC-C09X-A1      |
| Q660               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | CP4002                      | 069J760019 | CONNECTOR PCB SIDE IMSA-9604S-06Z13 |
| Q661               | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S | CP4003                      | 0697120320 | CONNECTOR PCB SIDE TMC-T02X-E1      |
| Q662               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | △ F501                      | 081PC1R605 | FUSE 51MS016L                       |
| Q663               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | FH501                       | 06710T0006 | HOLDER,FUSE EYF-52BC                |
| Q664               | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | FH502                       | 06710T0006 | HOLDER,FUSE EYF-52BC                |
| Q665               | T6YJ1037K0 | TRANSISTOR,SILICON 2SA1037AKT146R,S | OS651                       | 077Q037001 | REMOTE RECEIVER PIC-37043LO         |
| Q1002              | 0002700690 | PHOTO COUPLER RPI-303               | TM601                       | 076N0EA030 | TRANSMITTER RC-EA030                |
|                    | 0002700590 | PHOTO COUPLER RPI-301               | △ TU6001                    | 0162K00025 | RF UNIT TCMN0682PA13D(3)            |
| Q1004              | 0002M00580 | PHOTO COUPLER SG-233S               | V651                        | 0040F94002 | LED DISPLAY ELF-4B6GWB/S294         |
| Q1005              | 0002M00580 | PHOTO COUPLER SG-233S               |                             | 0040E94001 | LED DISPLAY LTG-Y2K22M-J            |
| Q1006              | 0000100380 | PHOTO TRANSISTOR PNA2604M010R       | X1001                       | 1002T01003 | CERAMIC OSCILLATOR CSTS1000MG96004- |
| Q1007              | TNAAC05002 | COMPOUND TRANSISTOR KRC103SRTK      | X4001                       | 100CT3R508 | CRYSTAL HC-49/U                     |
| Q1008              | 0000100380 | PHOTO TRANSISTOR PNA2604M010R       |                             |            |                                     |

# ELECTRICAL REPLACEMENT PARTS LIST

## RESISTOR

RC..... CARBON RESISTOR

## CAPACITORS

CC..... CERAMIC CAPACITOR

CE..... ALUMI ELECTROLYTIC CAPACITOR

CP..... POLYESTER CAPACITOR

CPP..... POLYPROPYLENE CAPACITOR

CPL..... PLASTIC CAPACITOR

CMP..... METAL POLYESTER CAPACITOR

CMPL..... METAL PLASTIC CAPACITOR

CMPP..... METAL POLYPROPYLENE CAPACITOR

|          |          |
|----------|----------|
| SPEC.NO. | M4F2-23B |
| O/R NO.  | K214008  |



**Memorex®**

**MVR4041**

# **SERVICE MANUAL**

**VIDEO CASSETTE RECORDER**

**REVISION 1  
MFR'S VERSION B**

**VHS**

| MFR'S VERSION | IC4001       |
|---------------|--------------|
| A             | LA71200M-MPB |
| B             | LA71201M-MPB |

# Change of IC

## ELECTRICAL REPLACEMENT PARTS LIST

| REF. NO. | MFR'S VERSION A |                          | MFR'S VERSION B |                                      |
|----------|-----------------|--------------------------|-----------------|--------------------------------------|
|          | PART NO.        | DESCRIPTION              | PART NO.        | DESCRIPTION                          |
| IC4001   | I03F3200M0      | IC LA71200M-MPB          | I03F3201M0      | IC LA71201M-MPB                      |
| R4013    | R903N8562J      | RC 5.6K OHM 1/8W         | R903N8682J      | RC 6.8K OHM 1/8W                     |
| R4021    | R903N8223J      | RC 22K OHM 1/8W          | R903N8183J      | RC 18K OHM 1/8W                      |
| R4050    | R903N8683J      | RC 68K OHM 1/8W          |                 | DEL                                  |
| PCB010   | A4E404B01A      | SYSCON PCB ASS'Y VMX206A | A4E404B010      | SYSCON PCB ASS'Y (VERSION B) VMX206A |

SYSCON PCB's are interchangeable.

|          |          |
|----------|----------|
| SPEC.NO. | M4E4-04B |
| O/R NO.  | K164004  |



# MVR4041 Series A

# SERVICE MANUAL

## VIDEO CASSETTE RECORDER

REVISION 1  
MFR'S VERSION B



| MFR'S VERSION | TU6001           | PRODUCT IMPROVEMENT          |
|---------------|------------------|------------------------------|
| A             | TCMN0682PA13D    | ORIGINAL                     |
| B             | TCMN0682PA13D(3) | Change of TAPE EJECT TIMMING |

## CHASSIS REPLACEMENT PARTS LIST

### Change of TAPE EJECT TIMMING

| REF. NO. | MFR'S VERSION A |             | MFR'S VERSION B |               |
|----------|-----------------|-------------|-----------------|---------------|
|          | PART NO.        | DESCRIPTION | PART NO.        | DESCRIPTION   |
| 345      | 85OP900743      | LEVER, LINK | 85OP900750      | LEVER, LINK 2 |

## ELECTRICAL REPLACEMENT PARTS LIST

### Change of TUNER

| REF. NO. | MFR'S VERSION A |   | MFR'S VERSION B |   |
|----------|-----------------|---|-----------------|---|
|          | PART NO.        | DESCRIPTION                             | PART NO.        | DESCRIPTION                             |
| △ TU6001 | 0162K00021      | RF UNIT TCMN0682PA13D                   | 0162K00025      | RF UNIT TCMN0682PA13D(3)                |
| PCB010   | A4F204B010      | SYSCON PCB ASS'Y (VERSION A)<br>VMA224A | A4F204B010      | SYSCON PCB ASS'Y (VERSION B)<br>VMA224A |

SYSCON PCB's are interchangeable.

|          |          |
|----------|----------|
| SPEC.NO. | M4F2-04B |
| O/R NO.  | K1Z4014  |