DURABRAND

# SERVICE MANUAL

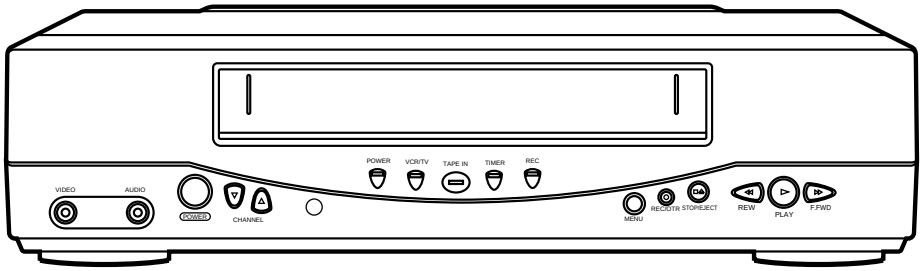
**Sec. 1: Main Section**
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

**Sec. 2: Deck Mechanism Section**
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
- Alignment Procedures of Mechanism

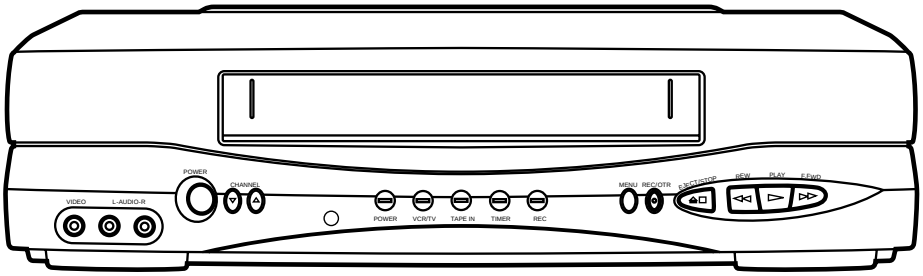
**Sec. 3: Exploded views and Parts List Section**
- Exploded views
- Parts List

## VIDEO CASSETTE RECORDER

## DCV203




## DCV603




VHS

# IMPORTANT SAFETY NOTICE

**Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.**

**It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.**

# MAIN SECTION

# VIDEO CASSETTE RECORDER

# DCV203/DCV603

**Sec. 1: Main Section**

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

## TABLE OF CONTENTS

# SPECIFICATIONS

| Description | Unit | Minimum | Nominal | Maximum | Remark |
|---|---|---|---|---|---|
| **1. Video** | | | | | |
| 1-1. Video Output (PB) | Vp-p | 0.8 | 1.0 | 1.2 | SP Mode |
| 1-2. Video Output (R/P) | Vp-p | 0.8 | 1.0 | 1.2 | |
| 1-3. Video S/N Y (R/P) | dB | 40 | 45 | | SP Mode, W/O Burst |
| 1-4. Video Color S/N AM (R/P) | dB | 37 | 41 | | SP Mode |
| 1-5. Video Color S/N PM (R/P) | dB | 30 | 36 | | SP Mode |
| 1-6. Resolution (PB) | Line | 230 | 245 | | SP Mode |
| **2. Servo** | | | | | |
| 2-1. Jitter Low | µsec | | 0.07 | 0.12 | SP Mode |
| 2-2. Wow & Flutter | % | | 0.3 | 0.5 | SP Mode |
| **3. Normal Audio** | | | | | |
| 3-1. Output (PB) | dBV | -9 | -6 | -3 | SP Mode |
| 3-2. Output (R/P) | dBV | -9 | -6 | -1.5 | SP Mode |
| 3-3. S/N (R/P) | dB | 36 | 41 | | SP Mode |
| 3-4. Distortion (R/P) | % | | 1.0 | 4.0 | SP Mode |
| 3-5. Freq. resp (R/P) at 200Hz | dB | -11 | -4 | | SP Mode |
| (-20dB ref. 1kHz) at 8kHz | dB | -14 | -4 | | SP Mode |
| **4. Tuner** | | | | | |
| 4-1. Video output | Vp-p | 0.8 | 1.0 | 1.2 | E-E Mode |
| 4-2. Video S/N | dB | 39 | 42 | | E-E Mode |
| 4-3. Audio output | dB | -10 | -6 | -2 | E-E Mode |
| 4-4. Audio S/N | dB | 40 | 46 | | E-E Mode |
| **5. Hi-Fi Audio [ DCV603 ]** | | | | | |
| 5-1. Output | dBV | -12 | -8 | -4 | SP Mode |
| 5-2. Dynamic Range | dB | 70 | 85 | | SP Mode |
| 5-3. Freq. resp (6dB B.W) | Hz | | 20 ~ 20K | | SP Mode |

**Note**: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

# IMPORTANT SAFETY PRECAUTIONS

## Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced**.**

## Precautions during Servicing

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

**B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

**C.** Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

**D.** Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

**E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

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

**G.** Check that replaced wires do not contact sharp edges or pointed parts.

**H.** When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

**I.** Also check areas surrounding repaired locations.

**J.** Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

**K.** Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

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

**Important:** Do not re-use a connector. (Discard it.)

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

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

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

**L.** When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

## Safety Check after Servicing

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

### 1. Clearance Distance

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

**Table 1 : Ratings for selected area**

| AC Line Voltage | Clearance Distance (d) (d') |
|---|---|
| 120 V | ≥ 3.0 mm (0.118 inches) |

**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values.

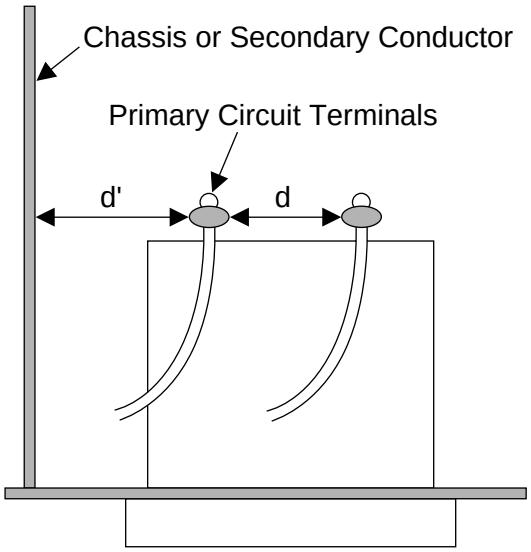



**Fig. 1**

### 2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

**Measuring Method (Power ON) :**

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

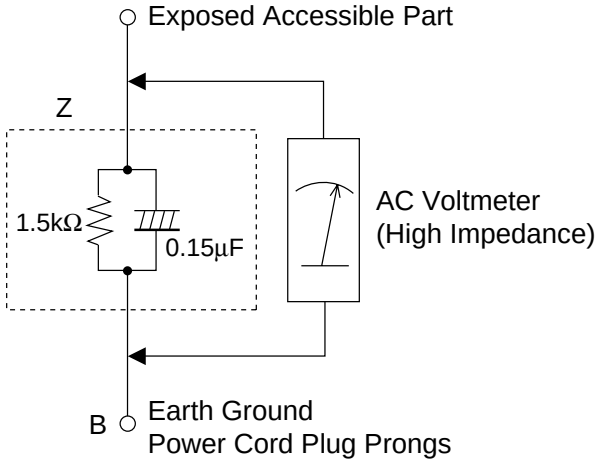



**Fig. 2**

**Table 2: Leakage current ratings for selected areas**

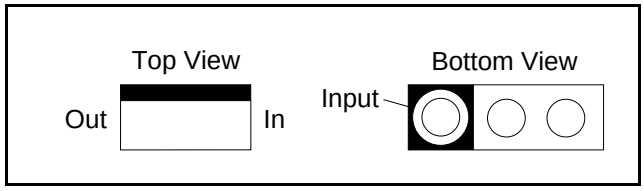
| AC Line Voltage | Load Z | Leakage Current (i) | Earth Ground (B) to: |
|---|---|---|---|
| 120 V | 0.15μF CAP. & 1.5kΩ RES. Connected in parallel | i≤0.5mA Peak | Exposed accessible parts |

**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values.

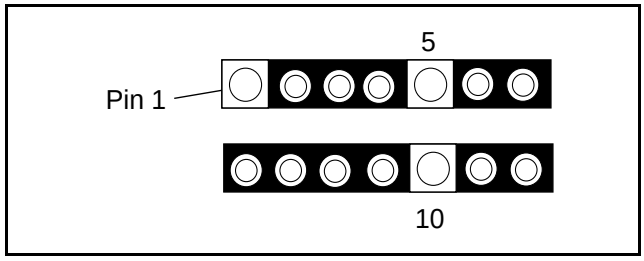
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

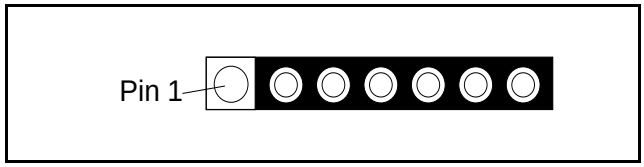
a. The output pin of the 3 pin Regulator ICs is indicated as shown.




b. For other ICs, pin 1 and every fifth pin are indicated as shown.

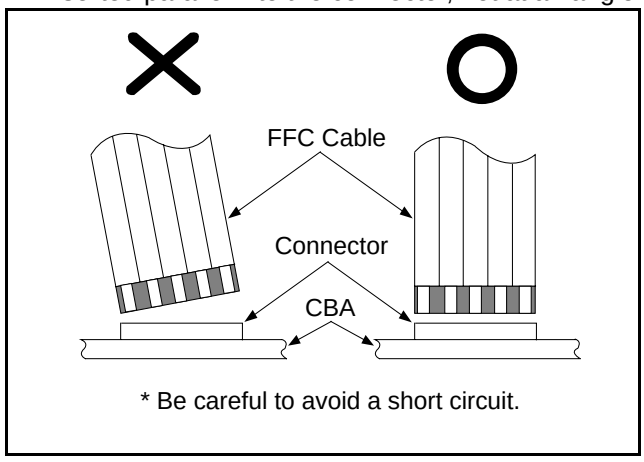



c. The 1st pin of every male connector is indicated as shown.




## Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.




## How to Remove / Install Flat Pack-IC

### 1. Removal

**With Hot-Air Flat Pack-IC Desoldering Machine:**

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

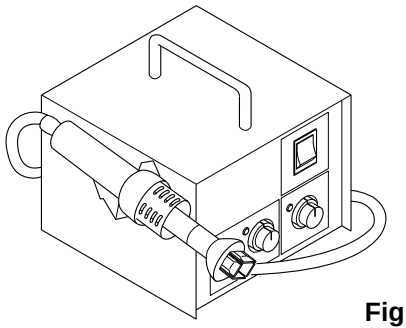


**Fig. S-1-1**

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

### Caution:

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

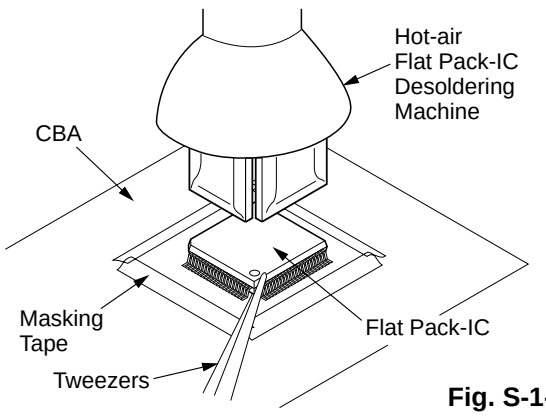



**Fig. S-1-2**

**With Soldering Iron:**

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

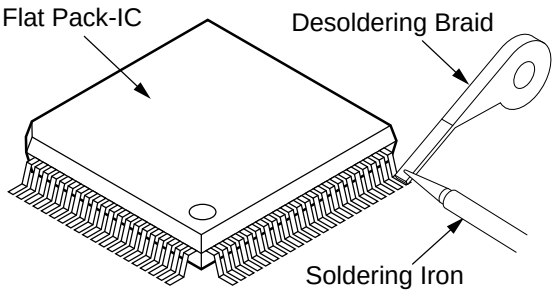



**Fig. S-1-3**

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

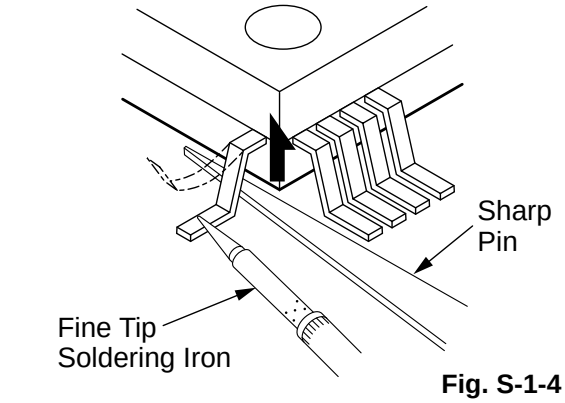



**Fig. S-1-4**

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

**With Iron Wire:**

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

**Note:**

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

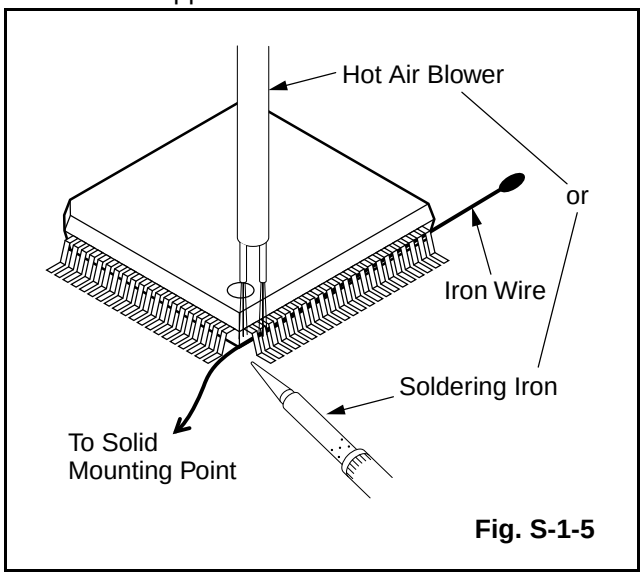



**Fig. S-1-5**

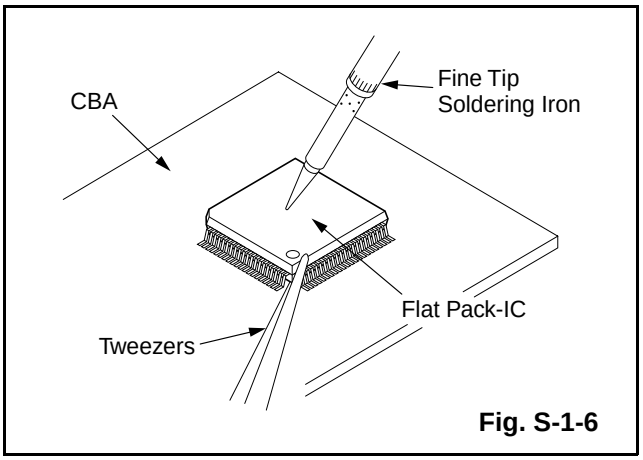



**Fig. S-1-6**

## 2. Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The " ● " mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

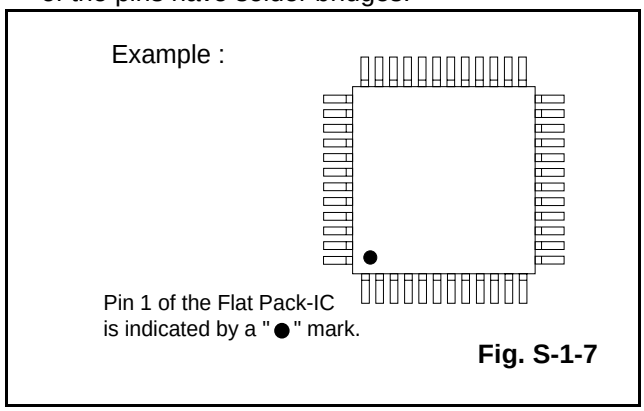



**Fig. S-1-7**

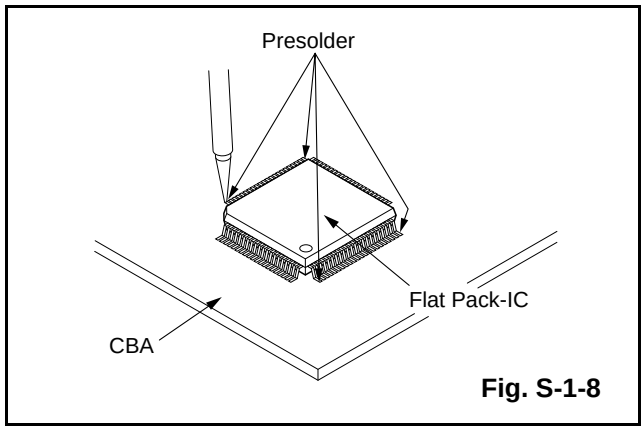



**Fig. S-1-8**

# Instructions for Handling Semi-conductors

Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

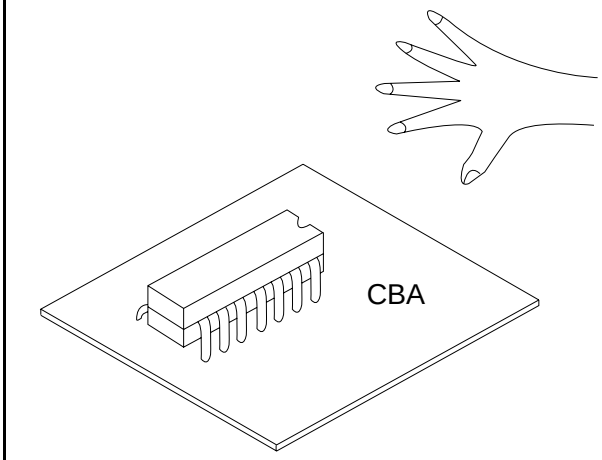
## 1. Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

## 2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

**< Incorrect >**

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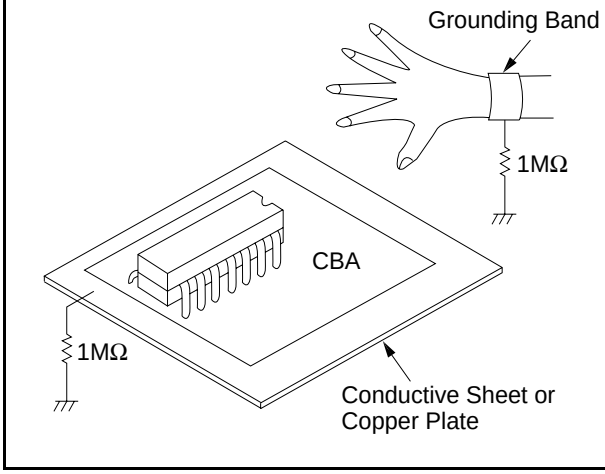


# PREPARATION FOR SERVICING

## How to Enter the Service Mode

About Optical Sensors

**Caution:**

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

**What to do for preparation**

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, TP502 (SENSOR INHIBITION) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

**Note:** Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

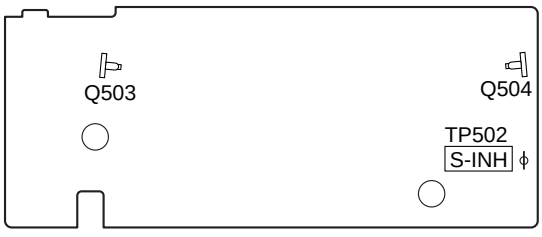
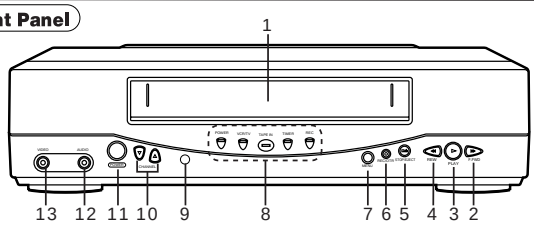



**Fig. 1**

# OPERATING CONTROLS AND FUNCTIONS

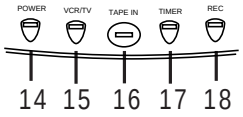
## [ DCV203 ]

### Front Panel



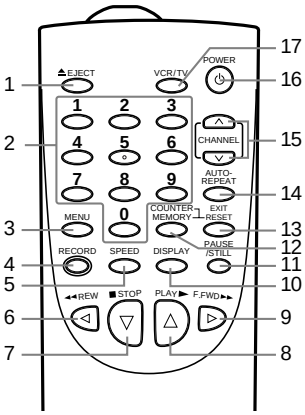

1. Cassette Compartment
2. F.FWD button
3. PLAY button
4. REW button
5. STOP/EJECT button
6. REC/OTR button
7. MENU button
8. Display Window
9. Remote Sensor
10. CHANNEL (▽/△) buttons
11. POWER button
12. AUDIO Input jack
13. VIDEO Input jack

### Indicators




14. POWER indicator
15. VCR/TV indicator
16. TAPE IN indicator
17. TIMER indicator
18. REC indicator

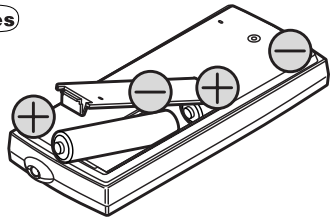
### Remote Control



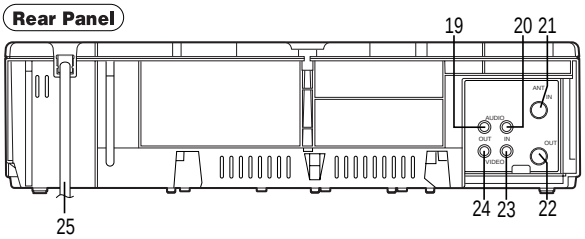

1. EJECT button
2. NUMBER buttons
3. MENU button
4. RECORD button
5. SPEED button
6. REW button
7. STOP button
8. PLAY button
9. F.FWD button
10. DISPLAY button
11. PAUSE/STILL button
12. COUNTER MEMORY button
13. COUNTER RESET/EXIT button
14. AUTO REPEAT button
15. CHANNEL (∧/∨) buttons
16. POWER button
17. VCR/TV button

### To insert the batteries

Install two AA batteries (supplied) matching the polarity indicated on the bottom of the remote control.



### Rear Panel




19. AUDIO OUT jack
20. AUDIO IN jack
21. ANT. IN jack
22. ANT. OUT jack
23. VIDEO IN jack
24. VIDEO OUT jack
25. AC Power Cord

**VIDEO OUT Jack**
Connect a video cable going to the video in jack of a camcorder, another VCR, a TV, or an audio-visual system (laser disc player, video disc player, etc.) here.

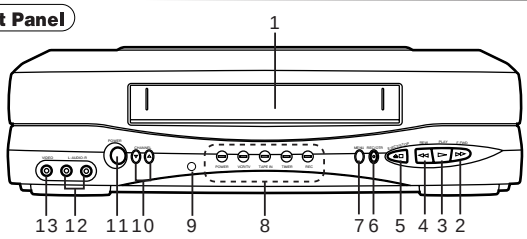
**AUDIO OUT Jack**
Connect the audio cable going to the audio in jack of a camcorder, another VCR, a stereo amplifier, or an audio system here.

**VIDEO IN Jack**
Connect a video cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

**AUDIO IN Jack**
Connect the audio cable coming from the audio out jack of a camcorder, another VCR, or an

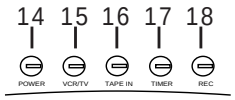
# [ DCV603 ]

## Front Panel



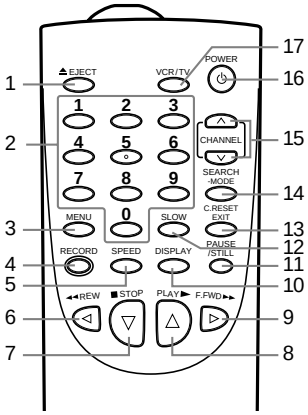

1. Cassette Compartment
2. F.FWD button
3. PLAY button
4. REW button
5. STOP/EJECT button
6. REC/OTR button
7. MENU button
8. Indicators
9. Remote Sensor
10. CHANNEL (▽/△) buttons
11. POWER button
12. AUDIO Input jacks
13. VIDEO Input jack

## Indicators




14. POWER indicator
15. VCR/TV indicator
16. TAPE IN indicator
17. TIMER indicator
18. REC indicator

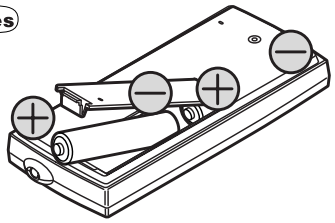
## Remote Control



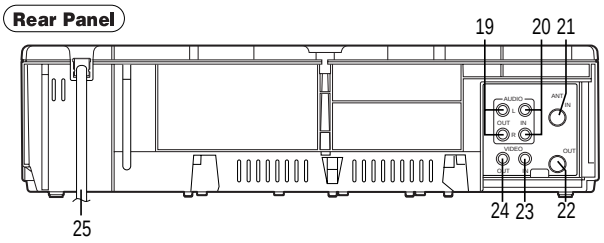

1. EJECT button
2. NUMBER buttons
3. MENU button
4. RECORD button
5. SPEED button
6. REW button
7. STOP button
8. PLAY button
9. F.FWD button
10. DISPLAY button
11. PAUSE/STILL button
12. SLOW button
13. C.RESET/EXIT button
14. SEARCH-MODE button
15. CHANNEL (△/▽) buttons
16. POWER button
17. VCR/TV button

### To insert the batteries

Install two AA batteries (supplied) matching the polarity indicated on the bottom of the remote control.



## Rear Panel




19. AUDIO OUT jacks
20. AUDIO IN jacks
21. ANT. IN jack
22. ANT. OUT jack
23. VIDEO IN jack
24. VIDEO OUT jack
25. AC Power Cord

**VIDEO OUT Jack**
Connect a video cable going to the video in jack of a camcorder, another VCR, a TV, or an audio-visual system (laser disc player, video disc player, etc.) here.

**AUDIO OUT Jacks**
Connect the audio cables going to the audio in jacks of a camcorder, another VCR, a stereo amplifier, or an audio system here.

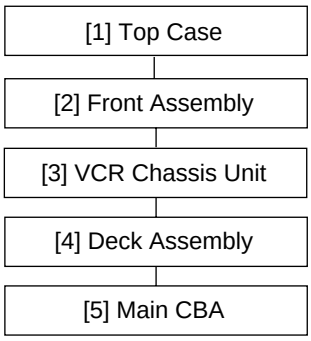
**VIDEO IN Jack**
Connect a video cable coming from the video out jack of a camcorder, another VCR, or an audio-visual source (laser disc player, video disc player, etc.) here.

**AUDIO IN Jacks**
Connect the audio cables coming from the audio out jacks of a camcorder, another VCR, or an

# CABINET DISASSEMBLY INSTRUCTIONS

## 1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.




## 2. Disassembly Method

| ID/ LOC. No. | PART | REMOVAL | | |
|---|---|---|---|---|
| | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | Note |
| [1] | Top Case | D1 | 4(S-1) | - |
| [2] | Front Assembly | D2 | *3(L-1),*4(L-2) | - |
| [3] | VCR Chassis Unit | D3 | 5(S-2) | 1 |
| [4] | Deck Assembly | D4, D5 | 3(S-3), Desolder | 2,3 |
| [5] | Main CBA | D4, D5 | ---------- | - |
| ↓ (1) | ↓ (2) | ↓ (3) | ↓ (4) | ↓ (5) |

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw,
CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5): Refer to “Reference Notes.”

### Reference Notes

CAUTION: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1. Remove five Screws (S-2). Then slowly lift the VCR Chassis Unit (Deck Assembly and Main CBA) up.
2. When reassembling, solder wire jumpers as shown in Fig. D4.
3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D5. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D5.

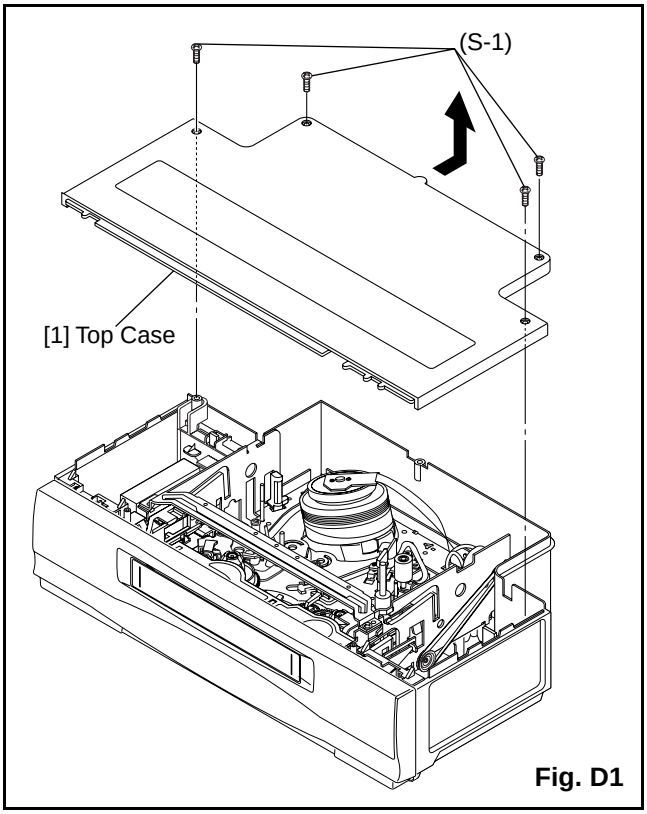



**Fig. D1**

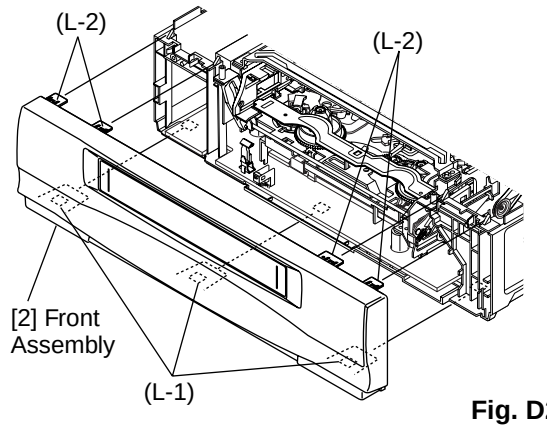



**Fig. D2**

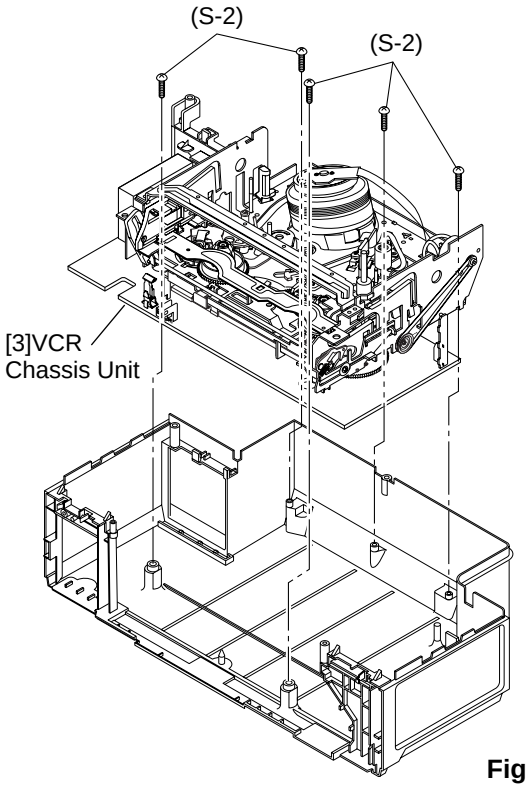
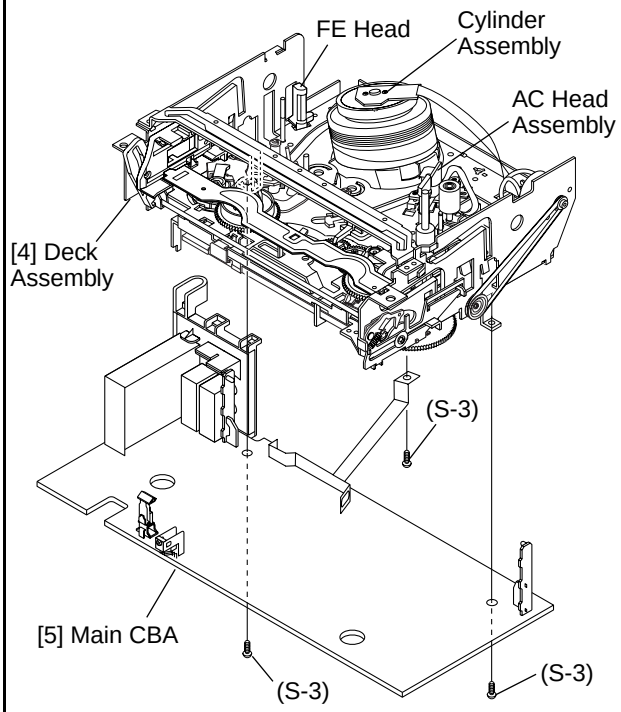
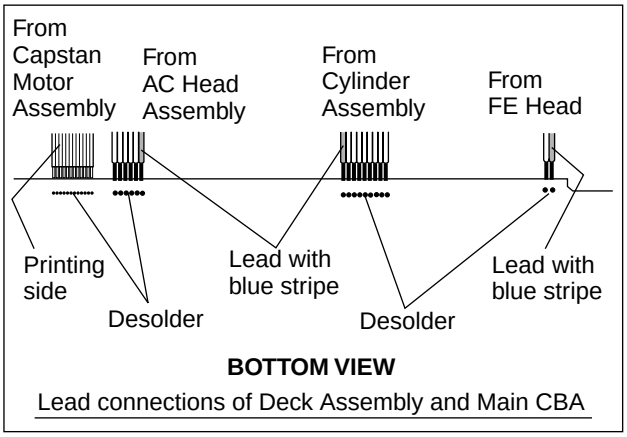



**Fig. D3**




**BOTTOM VIEW**

Lead connections of Deck Assembly and Main CBA

**Fig. D4**

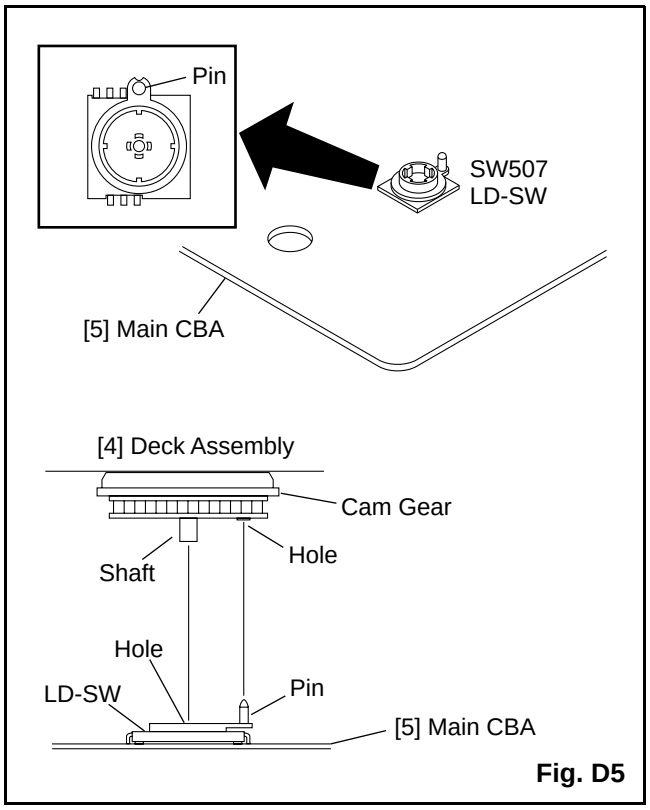

Pin
SW507
LD-SW
[5] Main CBA
[4] Deck Assembly
Cam Gear
Hole
Shaft
Hole
LD-SW
Pin
[5] Main CBA

**Fig. D5**

# ELECTRICAL ADJUSTMENT INSTRUCTIONS

**General Note: "CBA" is an abbreviation for "Circuit Board Assembly."**

**NOTE:**

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

## Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL8A)

## Head Switching Position Adjustment

**Purpose:**

To determine the Head Switching point during playback.

**Symptom of Misadjustment:**

May cause Head Switching noise or vertical jitter in the picture.

| Test point | Adj.Point | Mode | Input |
|---|---|---|---|
| TP751(V-OUT)<br>TP302(RF-SW)<br>GND | VR501<br>(Switching Point)<br>(MAIN CBA) | PLAY<br>(SP) | ----- |
| **Tape** | **Measurement Equipment** | **Spec.** | |
| FL8A | Oscilloscope | 6.5H±1H<br>(412.7µs±60µs) | |

**Connections of Measurement Equipment**

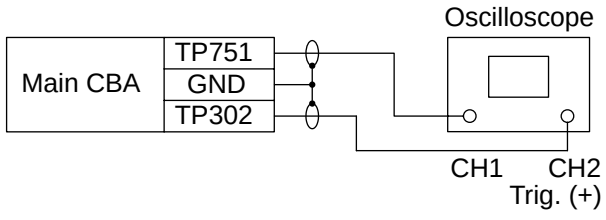
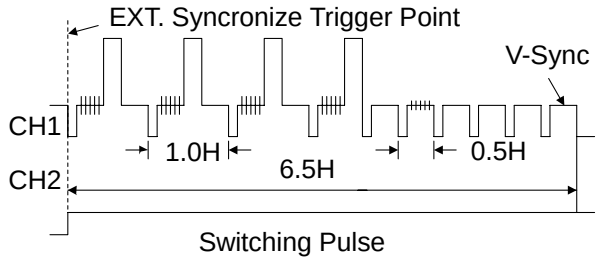
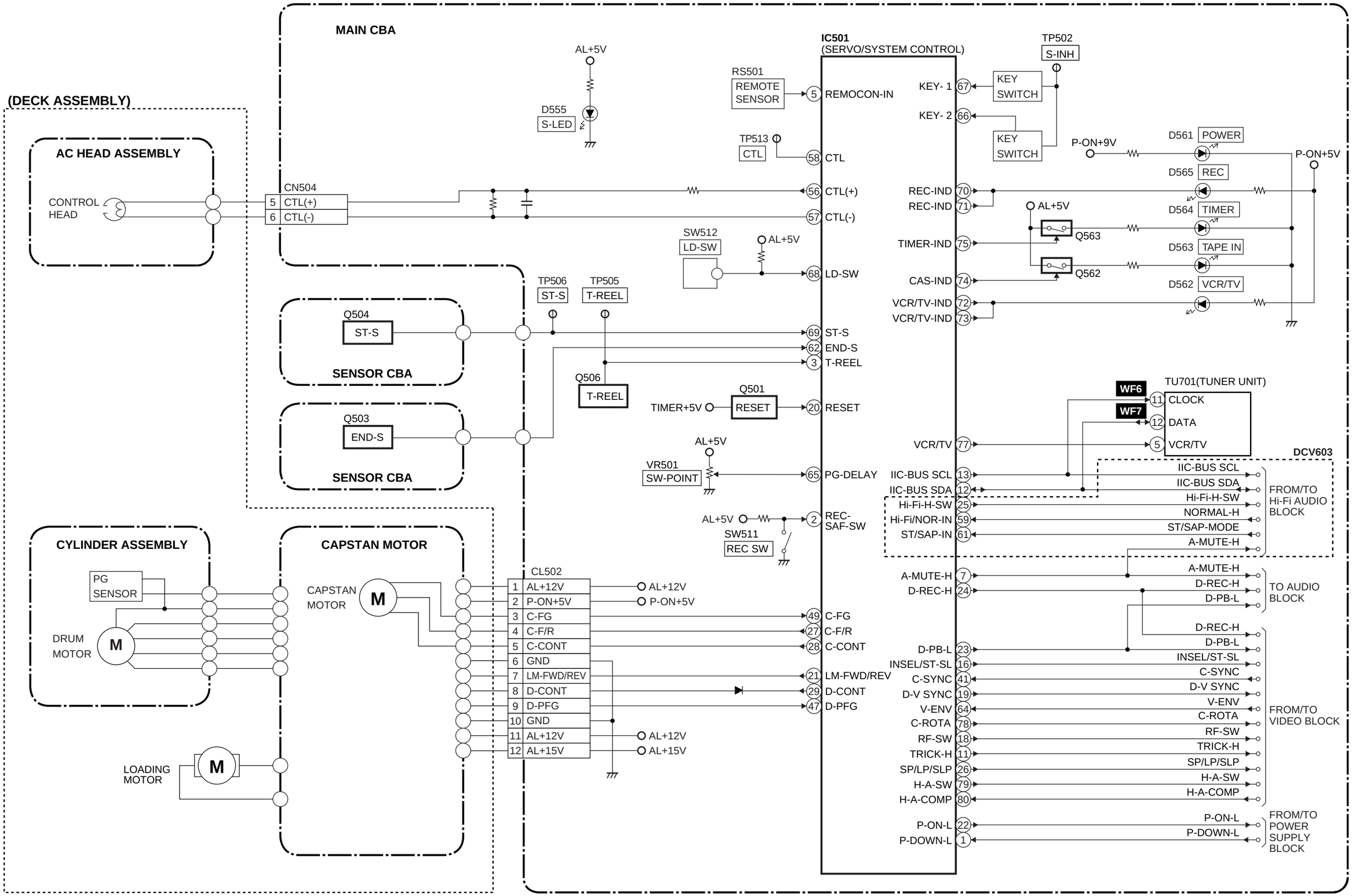



**Figure 1**




**Reference Notes:**

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H(412.7µs) delayed position from the rising edge of the CH2 head switching pulse waveform.


(DECK ASSEMBLY)
AC HEAD ASSEMBLY
CONTROL HEAD
CN504
5 CTL(+)
6 CTL(-)
MAIN CBA
AL+5V
D555
S-LED
RS501
REMOTE SENSOR
5 REMOCON-IN
TP513
CTL
58 CTL
56 CTL(+)
57 CTL(-)
SW512
LD-SW
AL+5V
68 LD-SW
TP506
ST-S
TP505
T-REEL
Q504
ST-S
SENSOR CBA
Q503
END-S
SENSOR CBA
Q506
T-REEL
69 ST-S
62 END-S
3 T-REEL
Q501
TIMER+5V
RESET
20 RESET
AL+5V
VR501
SW-POINT
65 PG-DELAY
AL+5V
SW511
REC SW
2 REC-SAF-SW
IC501
(SERVO/SYSTEM CONTROL)
KEY- 1 67
KEY- 2 66
REC-IND 70
REC-IND 71
TIMER-IND 75
CAS-IND 74
VCR/TV-IND 72
VCR/TV-IND 73
VCR/TV 77
IIC-BUS SCL 13
IIC-BUS SDA 12
Hi-Fi-H-SW 25
Hi-Fi/NOR-IN 59
ST/SAP-IN 61
A-MUTE-H 7
D-REC-H 24
D-PB-L 23
INSEL/ST-SL 16
C-SYNC 41
D-V SYNC 19
V-ENV 64
C-ROTA 78
RF-SW 18
TRICK-H 11
SP/LP/SLP 26
H-A-SW 79
H-A-COMP 80
P-ON-L 22
P-DOWN-L 1
TP502
S-INH
KEY SWITCH
KEY SWITCH
P-ON+9V
D561 POWER
D565 REC
D564 TIMER
D563 TAPE IN
D562 VCR/TV
P-ON+5V
AL+5V
Q563
Q562
TU701(TUNER UNIT)
WF6
WF7
11 CLOCK
12 DATA
5 VCR/TV
DCV603
IIC-BUS SCL
IIC-BUS SDA
Hi-Fi-H-SW
NORMAL-H
ST/SAP-MODE
A-MUTE-H
FROM/TO Hi-Fi AUDIO BLOCK
A-MUTE-H
D-REC-H
D-PB-L
TO AUDIO BLOCK
D-REC-H
D-PB-L
INSEL/ST-SL
C-SYNC
D-V SYNC
V-ENV
C-ROTA
RF-SW
TRICK-H
SP/LP/SLP
H-A-SW
H-A-COMP
FROM/TO VIDEO BLOCK
P-ON-L
P-DOWN-L
FROM/TO POWER SUPPLY BLOCK
CYLINDER ASSEMBLY
PG SENSOR
DRUM MOTOR
M
LOADING MOTOR
M
CAPSTAN MOTOR
CAPSTAN MOTOR
M
CL502
1 AL+12V
2 P-ON+5V
3 C-FG
4 C-F/R
5 C-CONT
6 GND
7 LM-FWD/REV
8 D-CONT
9 D-PFG
10 GND
11 AL+12V
12 AL+15V
AL+12V
P-ON+5V
49 C-FG
27 C-F/R
28 C-CONT
21 LM-FWD/REV
29 D-CONT
47 D-PFG
AL+12V
AL+15V

# Video Block Diagram

REC VIDEO SIGNAL  PB VIDEO SIGNAL  MODE: SP/REC

MAIN CBA

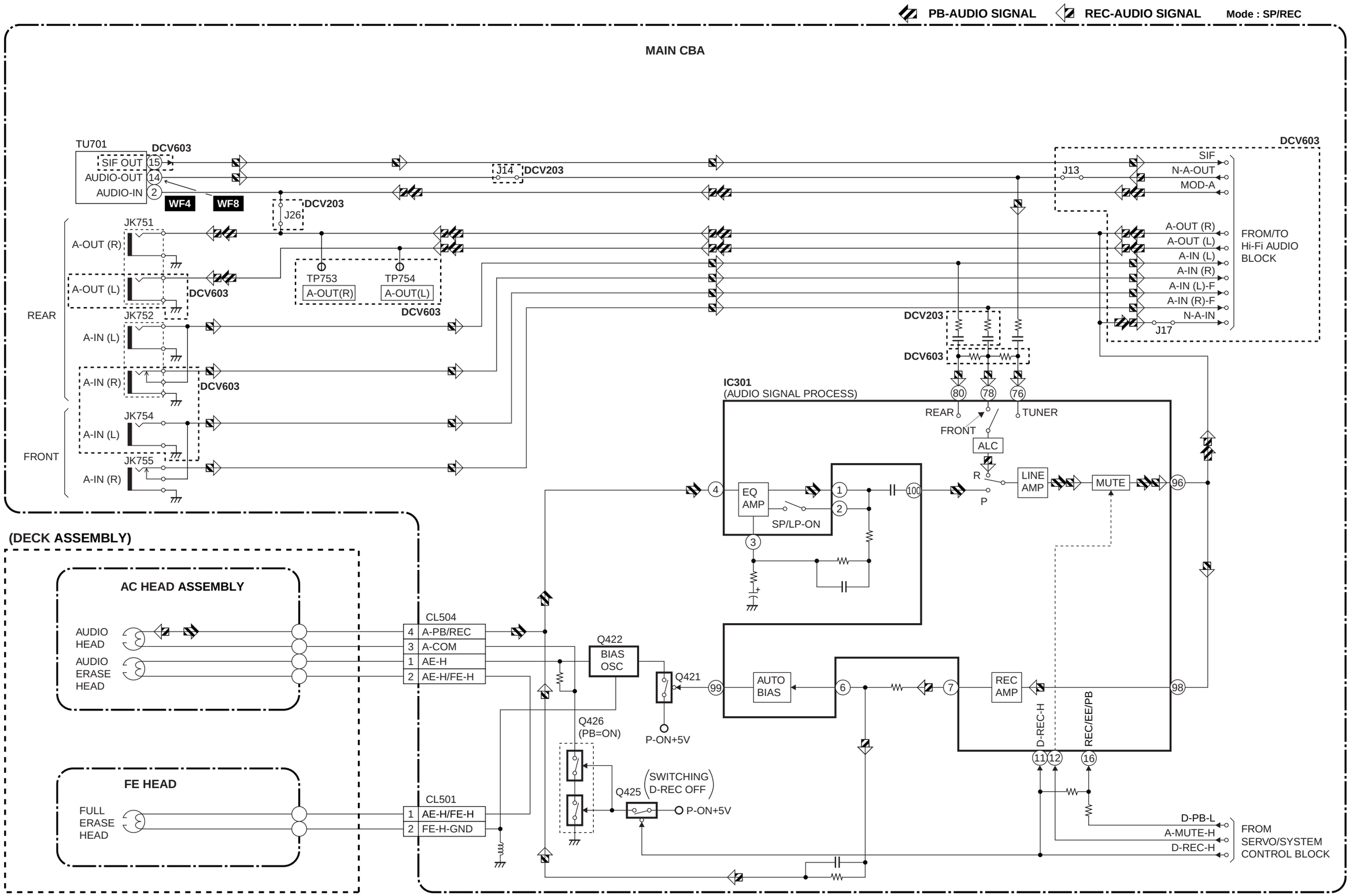
WF1
TP751
V-OUT
JK751
V-OUT
Q391
BUFFER
IC501 (OSD)
OSD CHARACTER MIX
38
40
IC301
(VIDEO SIGNAL PROCESS/ HEAD AMP)
35
TU701
(TUNER UNIT)
WF5
VIDEO-IN 6
WF9
VIDEO-OUT 18
6dB AMP
CHARA MIX
45
47
CCD 1H DELAY
49
Q301
BUFFER
44
FBC
DOC YNR Y/C COMB
LUMINANCE SIGNAL PROCESS
42
TUNER
V-AGC
R P
Y/C MIX
JK752
REAR V-IN
38
REAR
JK753
FRONT V-IN
40
FRONT
CHROMINANCE SIGNAL PROCESS
INSEL/ST-SL
71
D-PB-L
16
REC/EE/PB
D-REC-H
11
D-REC-H
TRICK-H
73
TRICK-H
C-SYNC
34
C-ROTA
14
C-ROTA
D-V SYNC
39
D-V SYNC
SP/LP/SLP
59
SP/LP/SLP
FROM/TO
SERVO/SYSTEM
CONTROL BLOCK
SYNC SEPA
R
P
AGC AMP

(DECK ASSEMBLY)

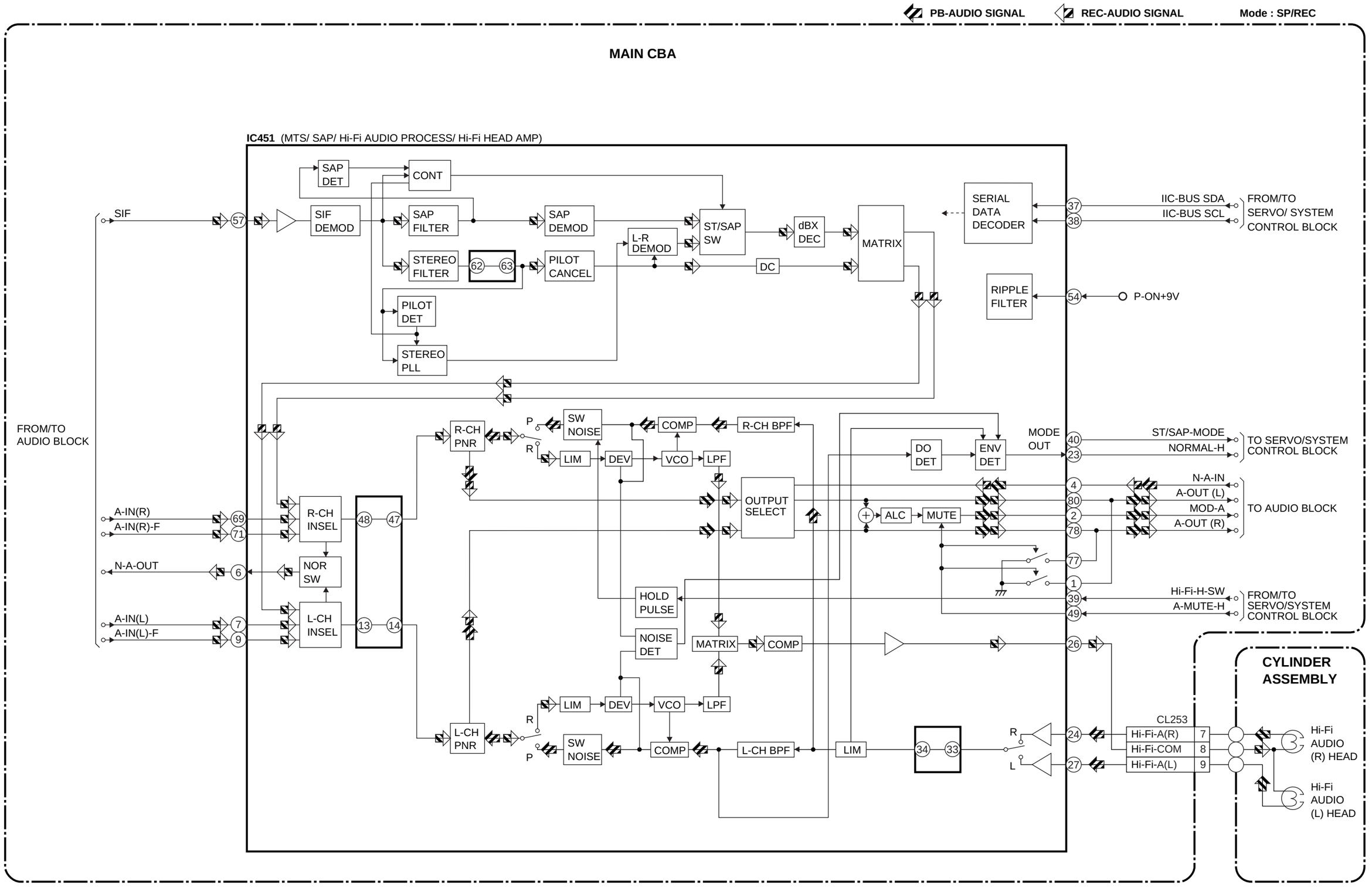
VIDEO (R)-1 HEAD
VIDEO (L)-1 HEAD
VIDEO (L)-2 HEAD
VIDEO (R)-2 HEAD
DCV603
CYLINDER ASSEMBLY

CL253
1 V(R)-1
2 V-COM
3 V(L)-1
4 V(L)-2
5 V-COM
6 V(R)-2
91
90
89
88
85
84
83
82
R
L
SP
EP
HPF
ENV DET
74
TP301
C-PB
WF3
TP302
WF2
RF-SW
RF-SW
V-ENV
H-A-SW
H-A-COMP
13
93
15
94
FROM/TO
SERVO/SYSTEM
CONTROL BLOCK
H-A-COMP

# Audio Block Diagram



# Hi-Fi Audio Block Diagram ( DCV603 )

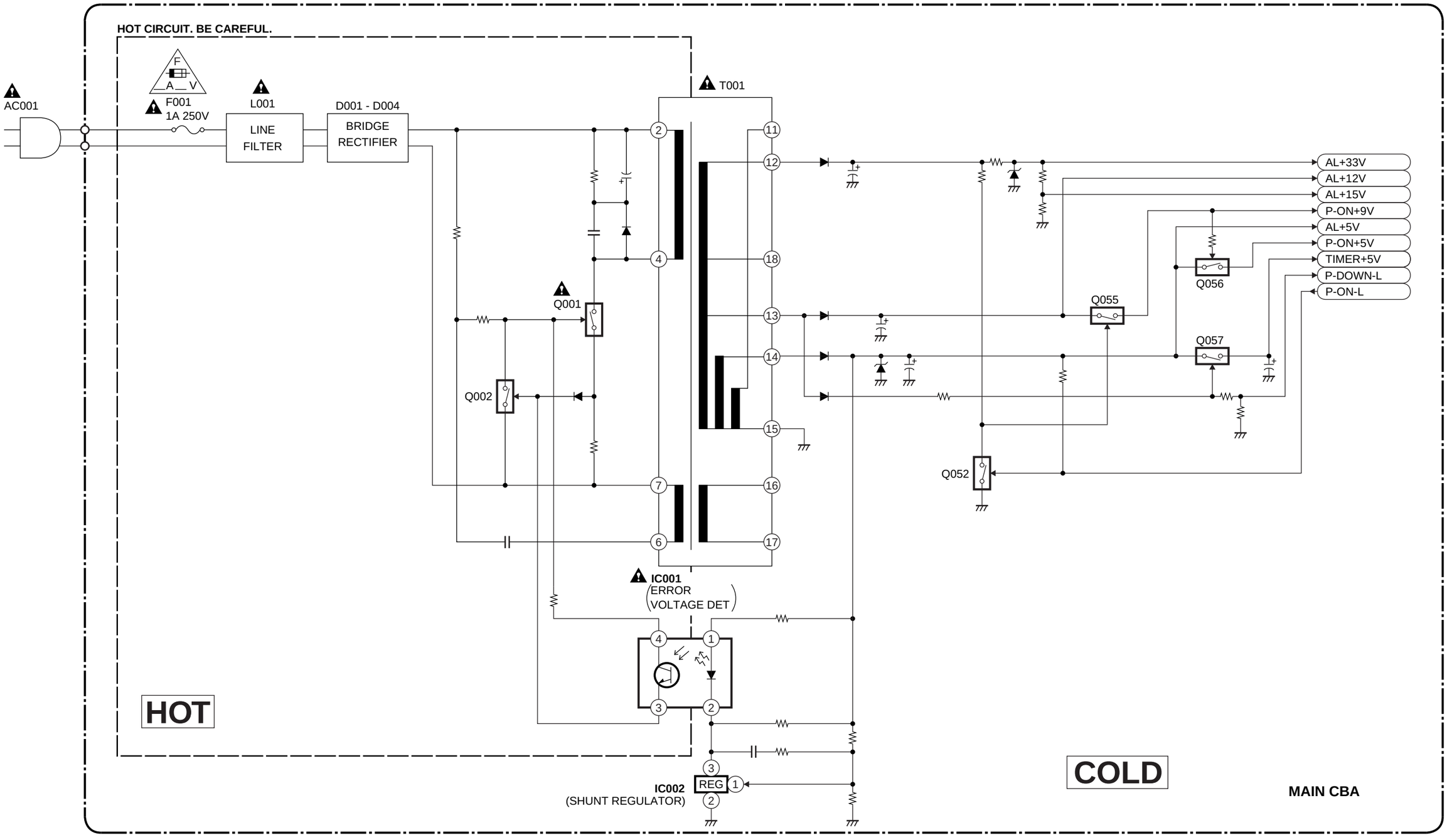


# Power Supply Block Diagram

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE** -REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit. If Main Fuse (F001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



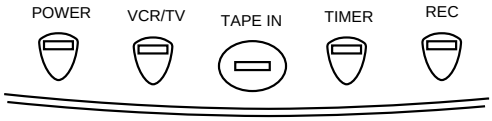
# FUNCTION INDICATOR SYMBOLS

**Note:**

The following symbols will appear on the indicator panel to indicate the current mode or operation of the VCR. On-screen modes will also be momentarily displayed on the tv screen when you press the operation buttons.

## Display panel

**[ DCV203 ]**



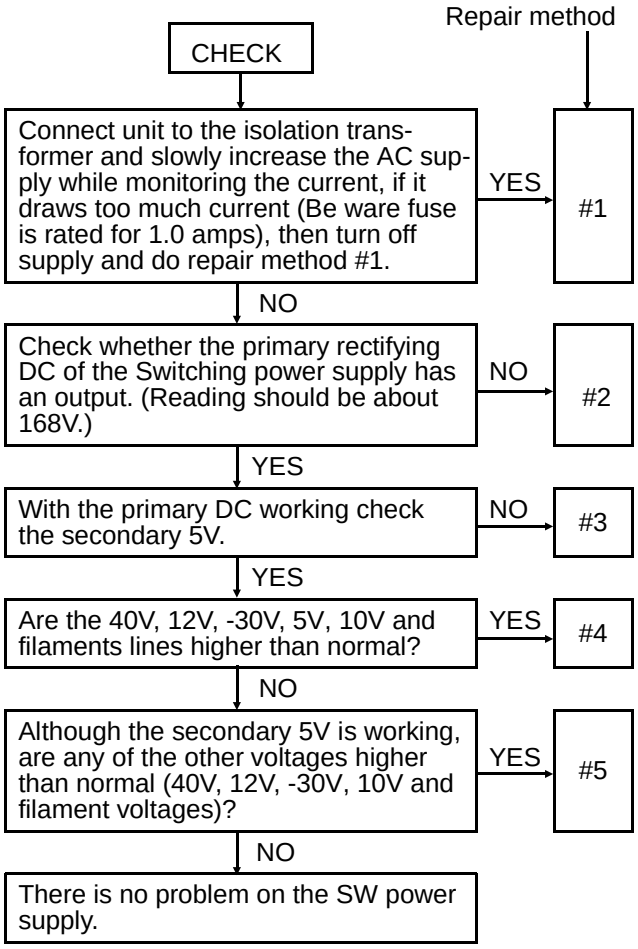

**[ DCV603 ]**


" H "= LED Light on, " L "= LED Light off

| Led Mode | Indicator Active |
|---|---|
| POWER | Power on = " H "<br>Power off = " L " |
| VCR/TV | VCR mode = " H "<br>TV mode = " L " |
| TAPE IN | Cassette in = " H "<br>Cassette out = " L " |
| 1. When reel and capstan mechanism is not functioning correctly | Cassette in — Blinks at 0.8Hz interval |
| 2. When tape loading mechanism is not functioning correctly | Cassette in — Blinks at 1.6Hz interval |
| 3. When cassette loading mechanism is not functioning correctly | Cassette in — Blinks at 3.2Hz interval |
| 4. When the drum is not working properly | Cassette in — Blinks at 6.4Hz interval |
| TIMER | Timer stand by = " H "<br>One touch recording = " H "<br>Timer recording = " H "<br>General mode = " L " |
| REC | REC mode = " H "<br>REC pause — Blinks at 0.8Hz interval<br>General mode = " L " |

# Power Supply Trouble Shooting Guide

**It is highly recommended that a variable isolation transformer which can monitor current be used. (Alternatively a variable AC source which monitors current will do). Read directions below before power is added!**




## Repair method #1

(Power must be off)
Short circuit in the secondary side. check diode D013, D020 and {(FIP display model only: D012, D015, D016 and D017) or (LED display model only: D015 and D016)}, switching FET (Q001), control transistor (Q002), diode (D006), and resistor (R014) replace as necessary.
Disconnect 40V diode (D013), 12V diode (D015), 5V diode (D016), 10V diode (D020) and {FIP display model only: -30V diode (D012) and filament voltage diode (D017)} Check the load continuity of 40V line, 12V line, 5V line, -30V line, 10V line and filament voltage line through a tester (resistance range).
If the tester indicates a lower resistance value around 0 ohm, the line is short-circuited.
Before repairing the switching power supply, find out the short-circuited area of such line and repair it.
If the tester does not indicate any low resistance value (around 0 ohm), no load is short-circuited and there is no problem.

2] Check for any defective parts while the secondary rectifying diodes are disconnected (D013, D015, D016, D020 and {FIP display model only: D012 and D017)} perform a diode check in both forward and reverse directions through a tester.

3] Remove the following components and check for defects: snubber diode (D051), switching FET (Q001), source resistor (R014), control transistor (Q002).

## Repair method #2

Check the fuse 1.0A (F001), primary rectifying diodes (D001-D004) as possible problems. Remove the above mentioned parts and check them. The circuit which turns on switching FET (Q001) may be regarded as a possible cause, even if the load at the secondary side is shorted, it can't be detected because switching FET (Q001) isn't operating. Perform check according to the step 1 and 2 of repair method #1 and check the following parts:
(Remove the part from PCB)
Switching FET (Q001), source resistor (R014), gate resistor (R008) and start resistor (R004 and R005).

## Repair method #3

A circuit to turn on switching FET (Q001) may not work and this may be regarded as a cause of trouble. Even if the load at the secondary side is short-circuited, it cannot be detected because switching FET (Q001) does not turn on. Therefore, perform check according to the steps 1] and 2] of the repair method #1 and execute the under-mentioned parts breakage check.
(Remove the part from PCB.)
switching FET (Q001), source resistor (R014), control shunt regulator (IC002), gate resistor (R008) and start resistor (R004 and R005).

## Repair method #4

The feedback circuit which is monitored by the output of voltage may not work and this may be regarded as a possible cause, remove control transistor Q002 and check for defects. More over, a photo coupler (IC001) and transistor (Q031) may be defective, replace any defective parts with factory originals.

## Repair method #5

If the output voltage of the secondary side is slightly high, the line load may be in the "OPEN" state and this may be regarded as a cause of trouble. If there is no output voltage on the secondary side, the rectifying diodes (D013), (D015), (D020) and {FIP display model only: (D012) and (D017)} may be defective.

# SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

## Standard Notes

## WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

## Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

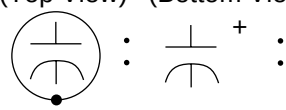
### Capacitor Temperature Markings

| Mark | Capacity change rate | Standard temperature | Temperature range |
|---|---|---|---|
| (B) | ±10% | 20°C | -25~+85°C |
| (F) | +30 - 80% | 20°C | -25~+85°C |
| (SR) | ±15% | 20°C | -25~+85°C |
| (Z) | +30 - 80% | 20°C | -10~+70°C |

Capacitors and transistors are represented by the following symbols.

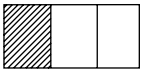
CBA Symbols

(Top View) (Bottom View)



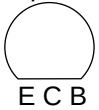
Electrolytic Capacitor

(Bottom View)




Transistor or Digital Transistor

(Top View)




NPN Transistor

(Top View)


PNP Transistor

(Top View)

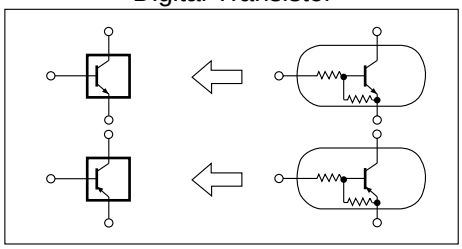

NPN Digital Transistor

(Top View)


PNP Digital Transistor

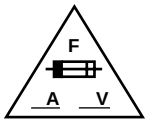
Schematic Diagram Symbols

Digital Transistor



**LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:**

**1. CAUTION:**




FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

**2. CAUTION:**

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

**3. Note:**

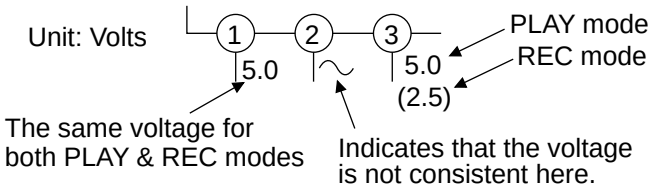
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

**4. Wire Connectors**

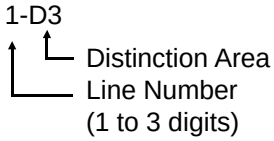
(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

**5. Mode: SP/REC**

**6. Voltage indications for PLAY and REC modes on the schematics are as shown below:**

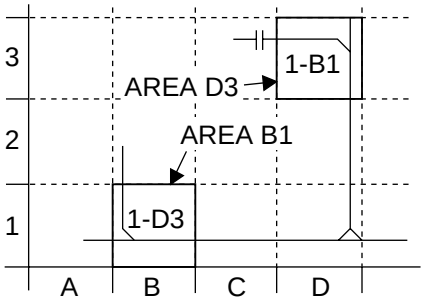



**7. How to read converged lines**




Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".




**8. Test Point Information**

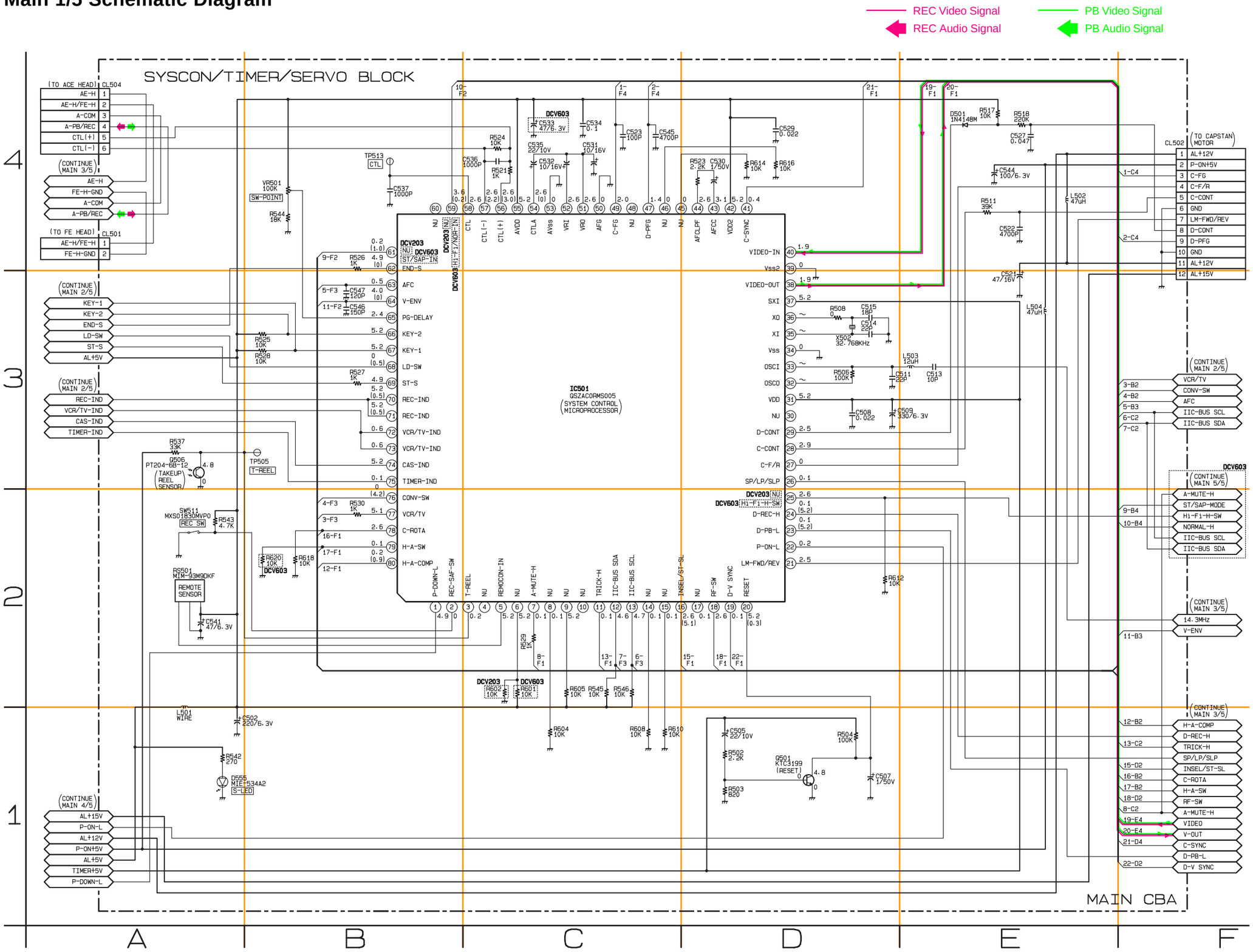
 : Indicates a test point with a jumper wire across a hole in the PCB.

 : Used to indicate a test point with a component lead on foil side.

 : Used to indicate a test point with no test pin.

 : Used to indicate a test point with a test pin.

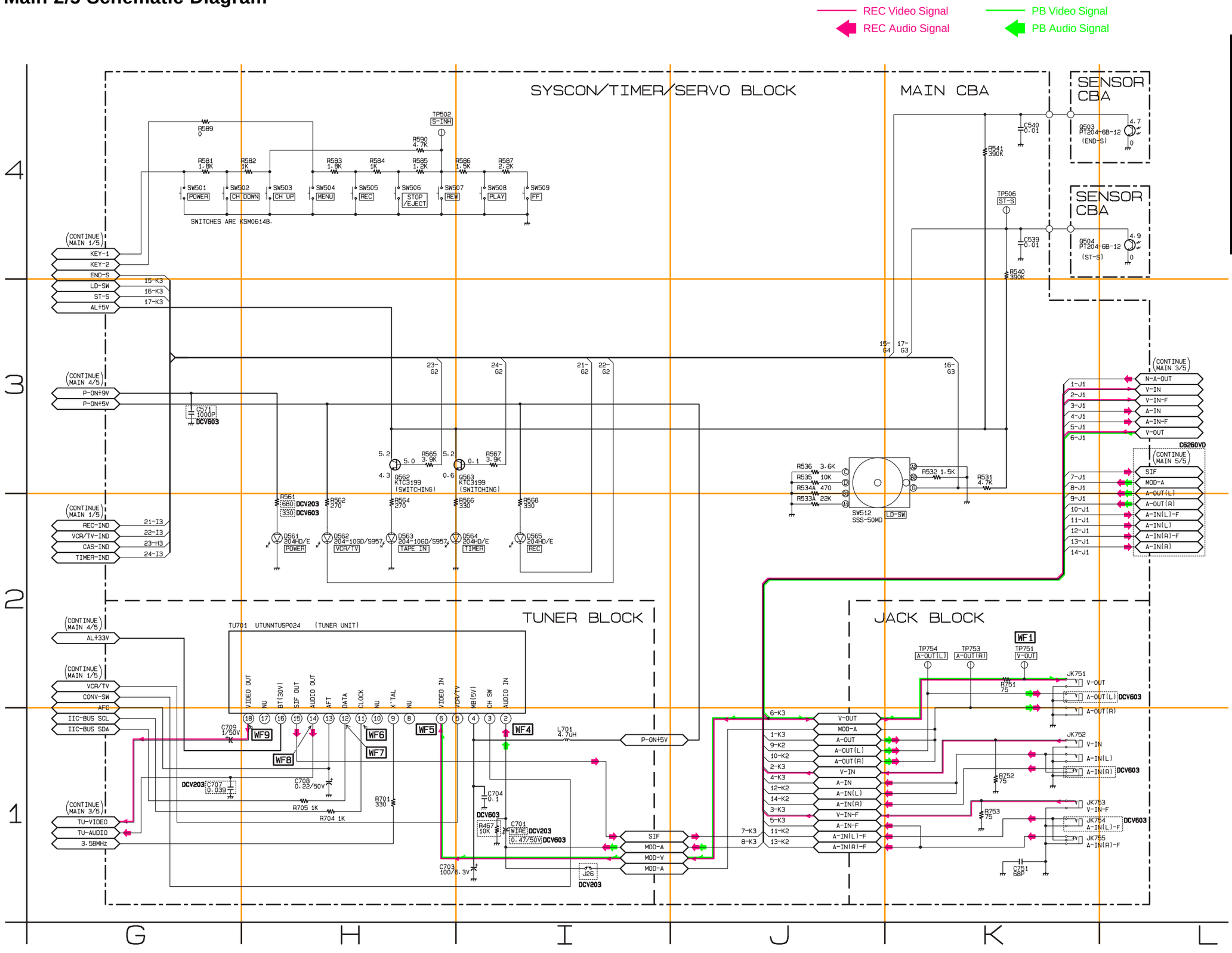
# Main 1/5 Schematic Diagram




MAIN 1/5 Schematic Diagram
Parts Location Guide

| Ref No. | Position |
|---|---|
| ICS | |
| IC501 | C-3 |
| COILS | |
| L501 | A-1 |
| L502 | E-4 |
| L503 | E-3 |
| L504 | E-3 |
| TRANSISTORS | |
| Q501 | D-1 |
| Q506 | A-3 |
| TEST POINTS | |
| TP505 | B-3 |
| TP513 | B-4 |

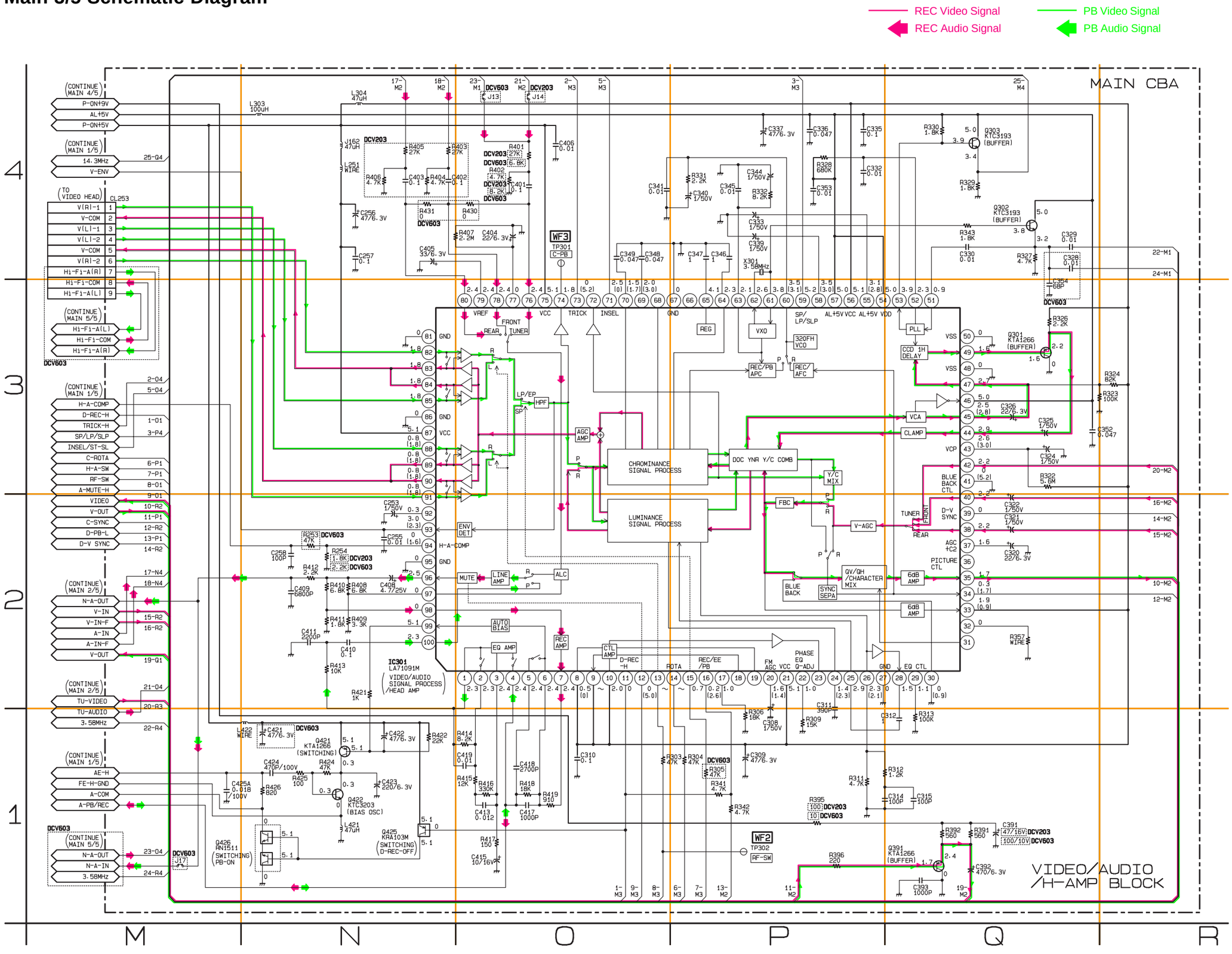
# Main 2/5 Schematic Diagram




MAIN 2/5 Schematic Diagram
Parts Location Guide

| Ref No. | Position |
|---|---|
| COILS | |
| L701 | I-1 |
| TRANSISTORS | |
| Q503 | K-4 |
| Q504 | K-4 |
| Q562 | H-3 |
| Q563 | I-3 |
| TEST POINTS | |
| TP502 | H-4 |
| TP506 | K-4 |
| TP751 | K-2 |
| TP753 | K-2 |
| TP754 | K-2 |

# Main 3/5 Schematic Diagram




MAIN 3/5 Schematic Diagram
Parts Location Guide

| Ref No. | Position |
|---|---|
| ICS | |
| IC301 | N-2 |
| COILS | |
| L251 | N-4 |
| L303 | N-4 |
| L304 | N-4 |
| L421 | N-1 |
| L422 | N-1 |
| TRANSISTORS | |
| Q301 | Q-3 |
| Q302 | Q-4 |
| Q303 | Q-4 |
| Q391 | Q-1 |
| Q421 | N-1 |
| Q422 | N-1 |
| Q425 | N-1 |
| Q426 | M-1 |
| TEST POINTS | |
| TP301 | O-4 |
| TP302 | P-1 |

# Main 4/5 Schematic Diagram

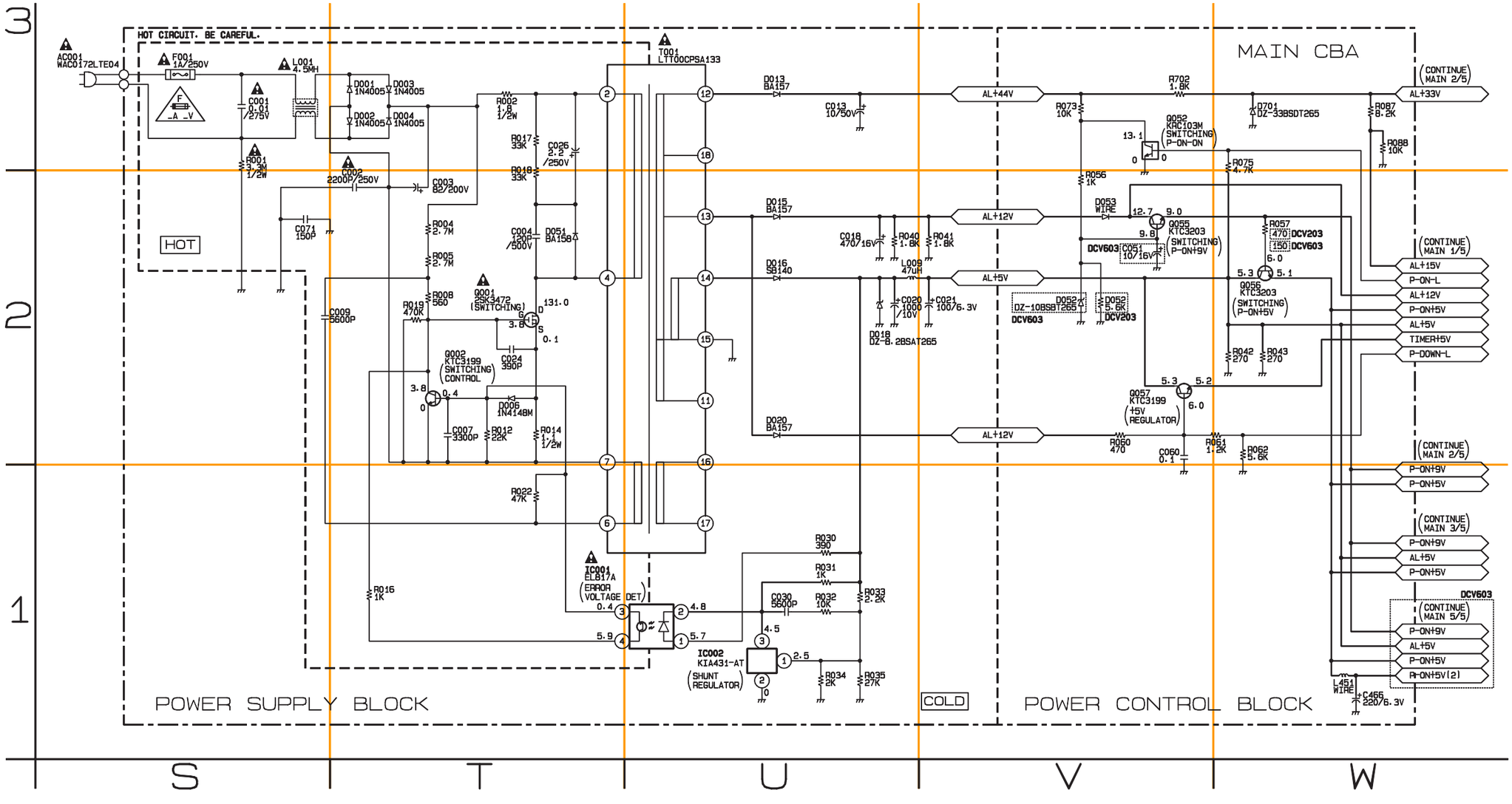
**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

**NOTE :**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

MAIN 4/5 Schematic Diagram
Parts Location Guide

| Ref No. | Position |
|---|---|
| ICS | |
| IC001 | T-1 |
| IC002 | U-1 |
| COILS | |
| L001 | S-3 |
| L009 | U-2 |
| L451 | W-1 |
| TRANSISTORS | |
| Q001 | T-2 |
| Q002 | T-2 |
| Q052 | V-3 |
| Q055 | V-2 |
| Q056 | W-2 |
| Q057 | V-2 |



# Main 5/5 Schematic Diagram ( DCV603 )

REC Video Signal
REC Audio Signal
PB Video Signal
PB Audio Signal

MAIN CBA Hi-Fi BLOCK

IC451
LA72670M
(MTS/SAP/Hi-Fi AUDIO PROCESS
/Hi-Fi HEAD AMP)

(CONTINUE MAIN 1/5)
A-MUTE-H
ST/SAP-MODE
Hi-Fi-H-SW
NORMAL-H
IIC-BUS SCL
IIC-BUS SDA

(CONTINUE MAIN 4/5)
P-ON+9V
AL+5V
P-ON+5V
P-ON+5V(2)

(CONTINUE MAIN 3/5)
Hi-Fi-A(L)
Hi-Fi-COM
Hi-Fi-A(R)

(CONTINUE MAIN 3/5)
N-A-OUT
N-A-IN
3.58MHz

(CONTINUE MAIN 2/5)
SIF
MOD-A
A-OUT(L)
A-OUT(R)
A-IN(L)-F
A-IN(L)
A-IN(R)-F
A-IN(R)

MAIN 5/5 Schematic Diagram
Parts Location Guide

| Ref No. | Position |
|---|---|
| ICS | |
| IC451 | X-2 |
| COILS | |
| L452 | AA-4 |
| TEST POINTS | |
| TP452 | AA-3 |

# Main CBA Top View

**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.

"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

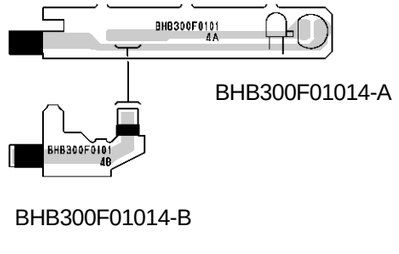
**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

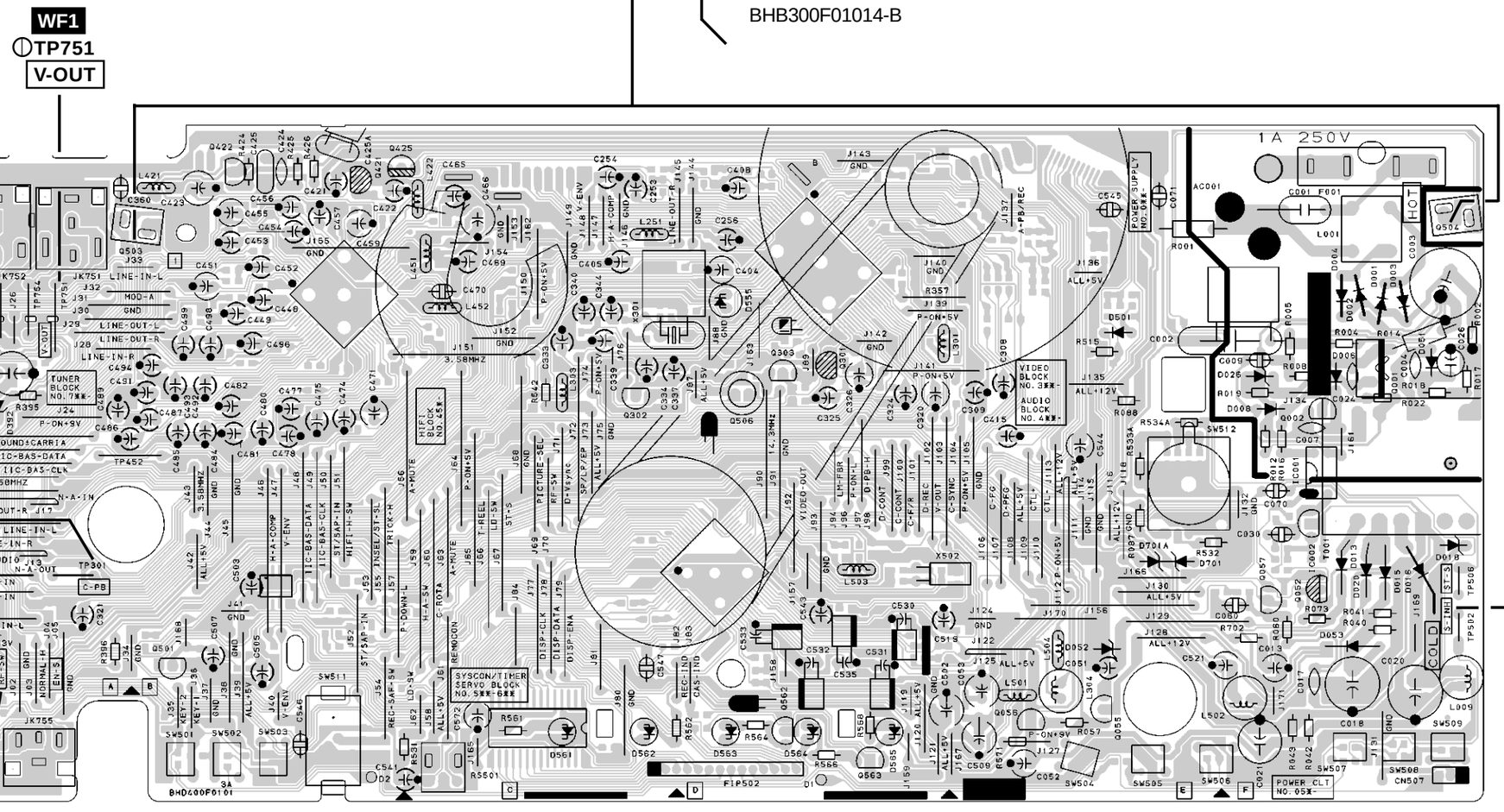
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**

NOTE :
Either BHD400F01013, BHD400F01014
is used for the Main CBA in this S/M.

## Sensor CBA Top View



# Main CBA Bottom View

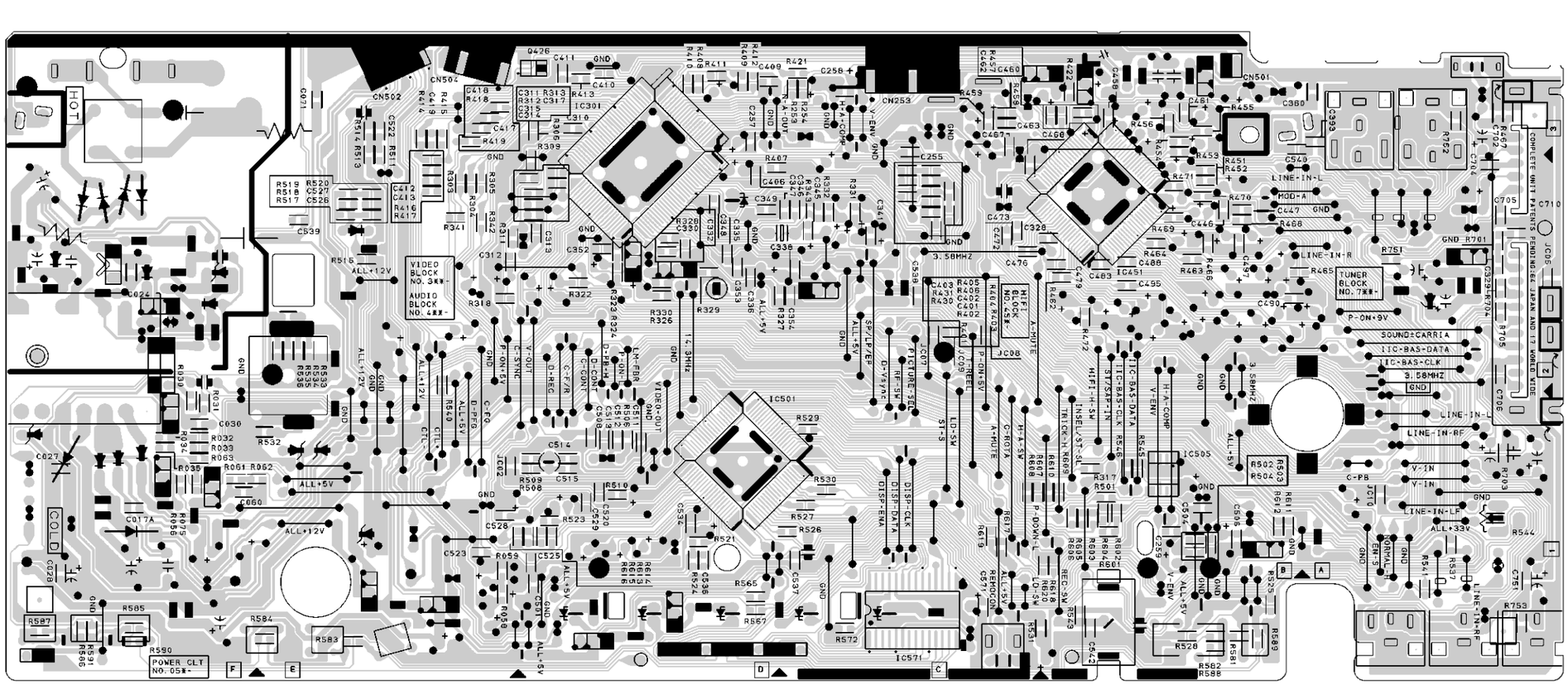
**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**

**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

NOTE :
Either BHD400F01013, BHD400F01014 is used for the Main CBA in this S/M.




MAIN CBA Parts Location Guide

| Ref No. | Position |
|---|---|
| ICS | |
| IC001 | F-2 |
| IC002 | F-1 |
| IC301 | D-3 |
| IC451 | B-2 |
| IC501 | D-2 |
| COILS | |
| L001 | F-3 |
| L009 | F-1 |
| L251 | C-3 |
| L303 | C-2 |
| L304 | E-1 |
| L421 | B-3 |
| L422 | C-3 |
| L451 | C-2 |
| L452 | C-2 |
| L501 | E-1 |
| L502 | E-1 |
| L503 | D-1 |
| L504 | E-1 |
| L701 | A-2 |
| TRANSISTORS | |
| Q001 | F-2 |
| Q002 | F-2 |
| Q052 | F-1 |
| Q055 | E-1 |
| Q056 | E-1 |
| Q057 | F-1 |
| Q301 | D-2 |
| Q302 | C-2 |
| Q303 | D-2 |
| Q391 | A-2 |
| Q421 | B-3 |
| Q422 | B-3 |
| Q425 | B-3 |
| Q426 | D-3 |
| Q501 | B-1 |
| Q503 | A-3 |
| Q504 | F-3 |
| Q506 | D-2 |
| Q562 | D-1 |
| Q563 | D-1 |
| TEST POINTS | |
| TP301 | A-1 |
| TP302 | A-1 |
| TP452 | A-2 |
| TP502 | F-1 |
| TP505 | A-1 |
| TP506 | F-1 |
| TP513 | A-1 |
| TP751 | A-2 |
| TP753 | A-2 |
| TP754 | A-1 |

# Main CBA Top View

**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.

"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

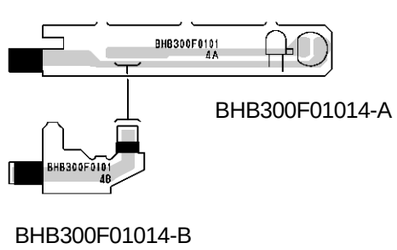
**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

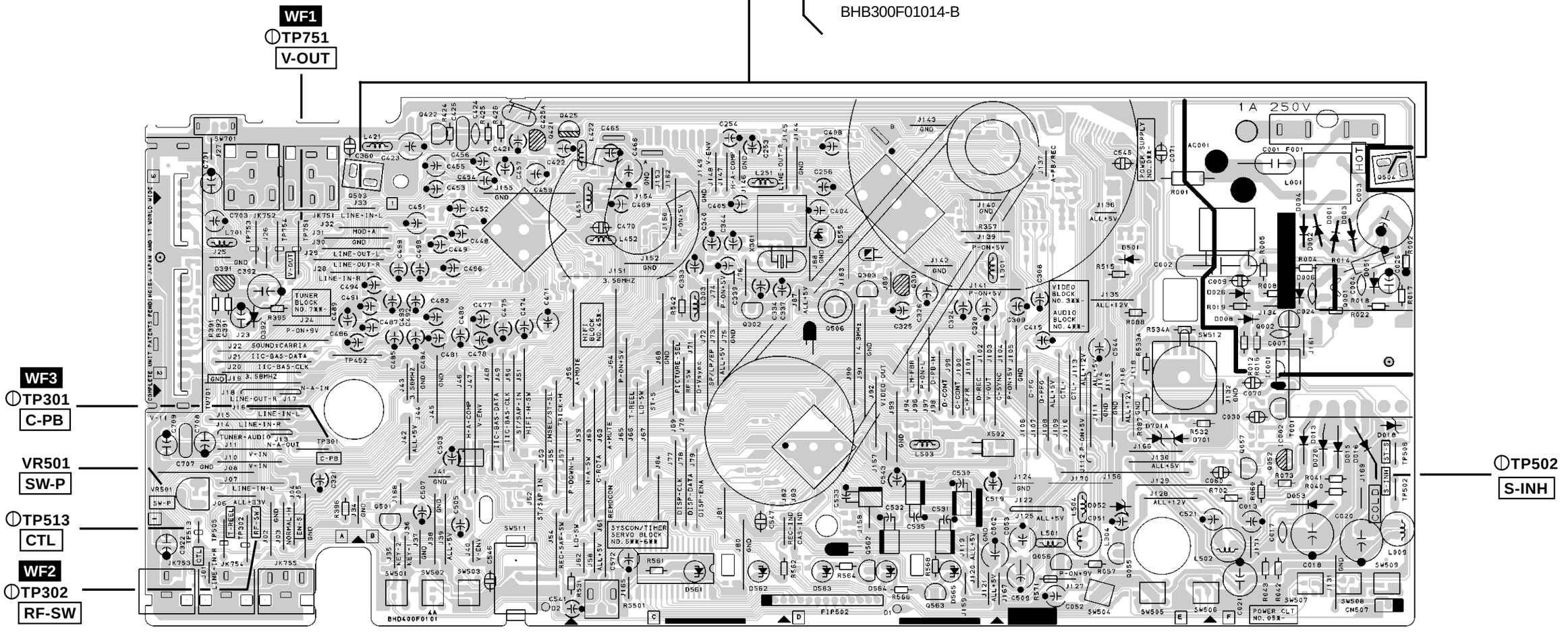
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**

NOTE :
Either BHD400F01013, BHD400F01014
is used for the Main CBA in this S/M.

## Sensor CBA Top View



# Main CBA Bottom View

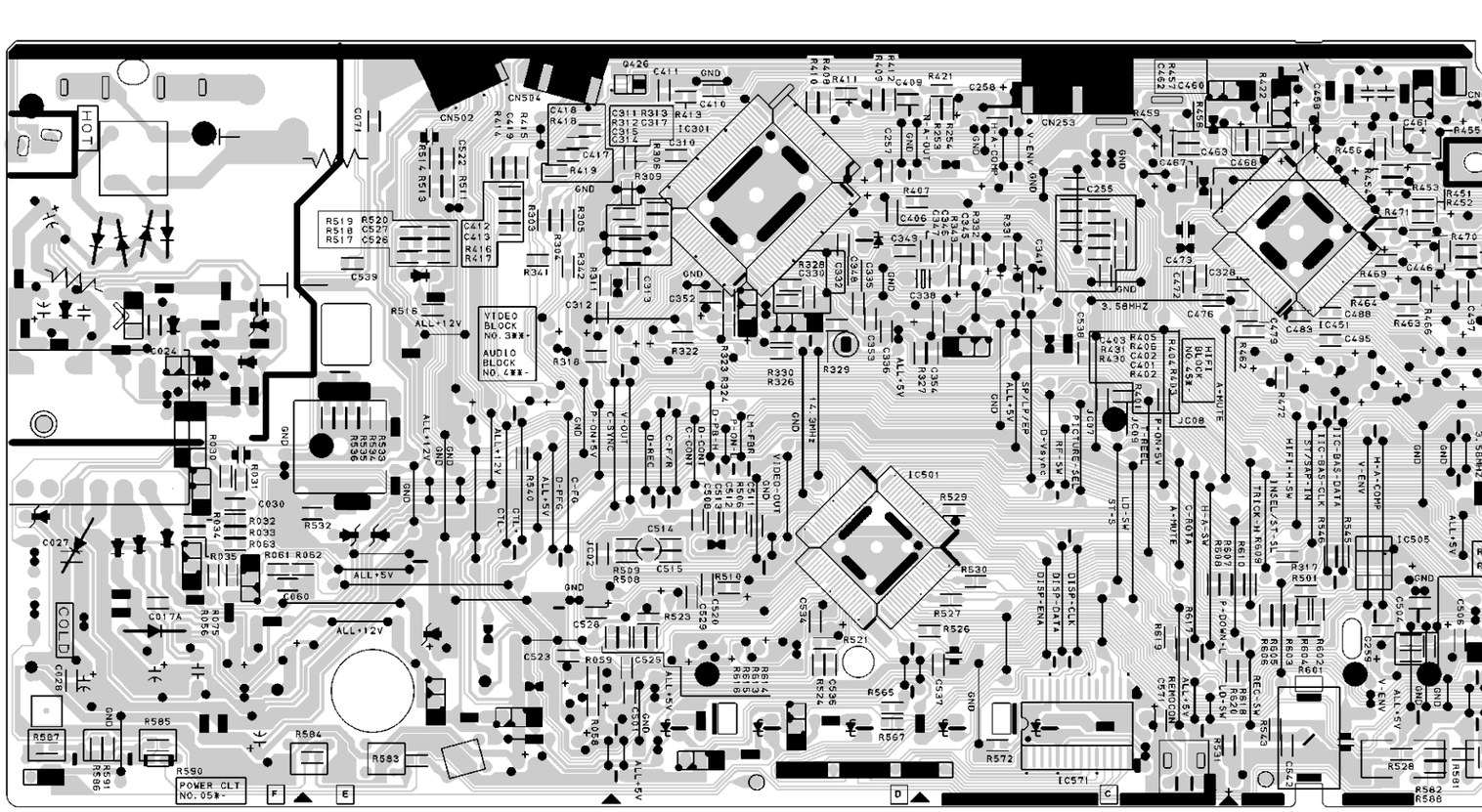
**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

**BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.**

**CAUTION !**
Fixed voltage ( or Auto voltage selectable ) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

NOTE :
Either BHD400F01013, BHD400F01014 is used for the Main CBA in this S/M.

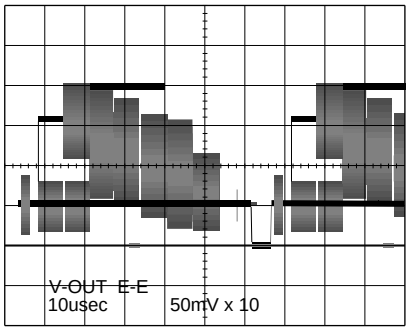



MAIN CBA Parts Location Guide

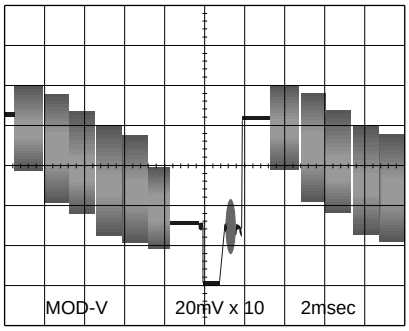
| Ref No. | Position |
|---|---|
| ICS | |
| IC001 | F-2 |
| IC002 | F-1 |
| IC301 | D-3 |
| IC451 | B-2 |
| IC501 | D-2 |
| COILS | |
| L001 | F-3 |
| L009 | F-1 |
| L251 | C-3 |
| L303 | C-2 |
| L304 | E-1 |
| L421 | B-3 |
| L422 | C-3 |
| L451 | C-2 |
| L452 | C-2 |
| L501 | E-1 |
| L502 | E-1 |
| L503 | D-1 |
| L504 | E-1 |
| L701 | A-2 |
| TRANSISTORS | |
| Q001 | F-2 |
| Q002 | F-2 |
| Q052 | F-1 |
| Q055 | E-1 |
| Q056 | E-1 |
| Q057 | F-1 |
| Q301 | D-2 |
| Q302 | C-2 |
| Q303 | D-2 |
| Q391 | A-2 |
| Q421 | B-3 |
| Q422 | B-3 |
| Q425 | B-3 |
| Q426 | D-3 |
| Q501 | B-1 |
| Q503 | A-3 |
| Q504 | F-3 |
| Q506 | D-2 |
| Q562 | D-1 |
| Q563 | D-1 |
| TEST POINTS | |
| TP301 | A-1 |
| TP302 | A-1 |
| TP452 | A-2 |
| TP502 | F-1 |
| TP505 | A-1 |
| TP506 | F-1 |
| TP513 | A-1 |
| TP751 | A-2 |
| TP753 | A-2 |
| TP754 | A-1 |

# WAVEFORMS

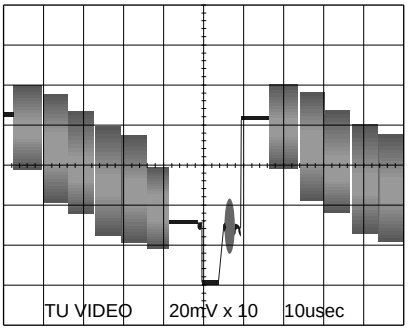
**WF1** (TP751 of Main CBA)




**WF5** (Pin 6 of TU701)

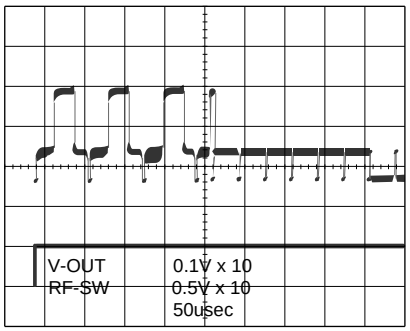



**WF9** (Pin 18 of TU701)

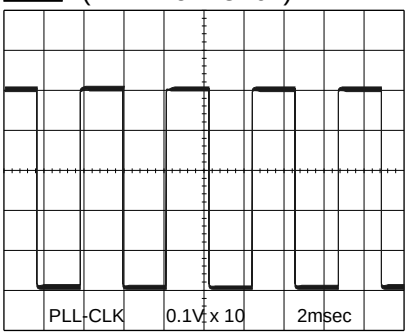



**WF1** UPPER (TP751 of Main CBA)

**WF2** LOWER (TP302 of Main CBA)

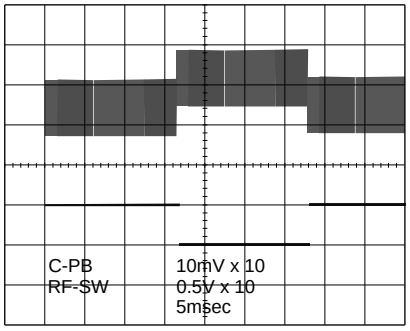



**WF6** (Pin 11 of TU701)

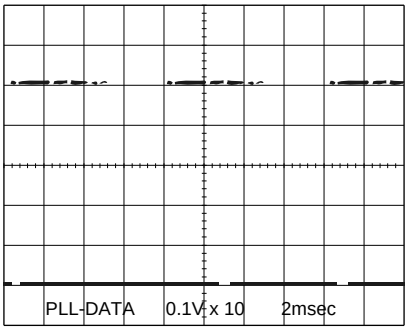



**WF3** UPPER (TP301 of Main CBA)

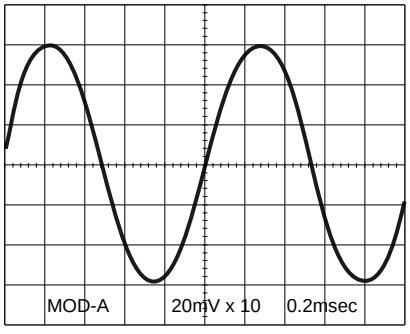
**WF2** LOWER (TP302 of Main CBA)



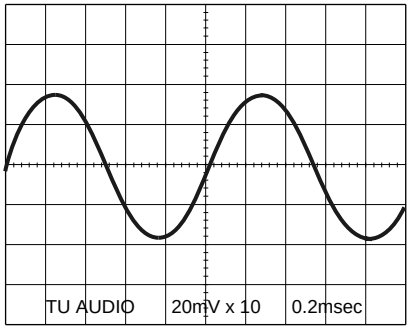

**WF7** (Pin 12 of TU701)



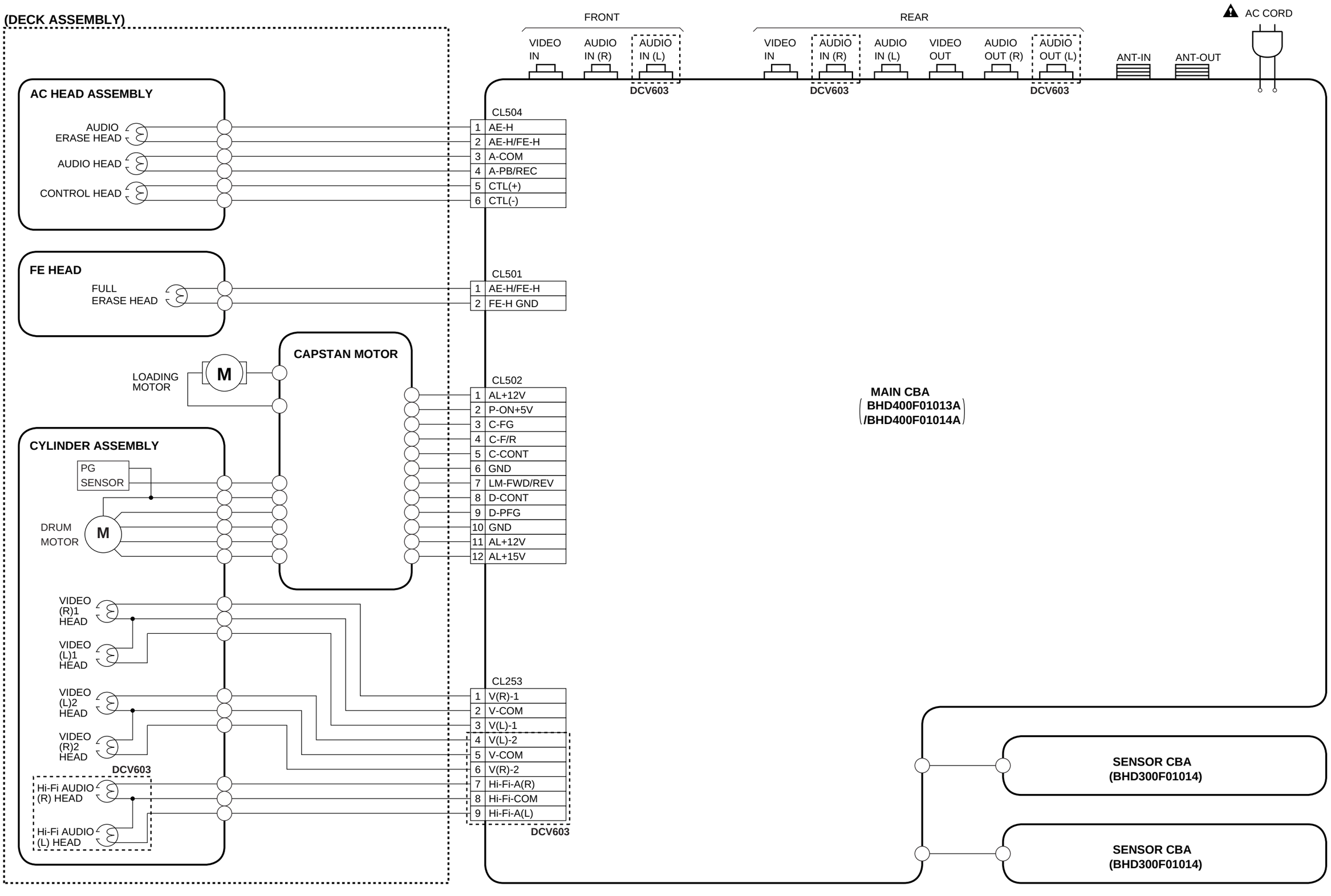

**WF4** (Pin 2 of TU701)




**WF8** (Pin 14 of TU701)



# WIRING DIAGRAM



# SYSTEM CONTROL TIMING CHARTS

## Mode SW : LD-SW

| LD-SW Position detection A/D Input voltage Limit (Calculated voltage) | Symbol |
|---|---|
| 3.76V~4.50V (4.12V) | EJ |
| 4.51V~5.00V (5.00V) | CL |
| 0.00V~0.25V (0.00V) | SB |
| 1.06V~1.50V (1.21V) | TL |
| 0.66V~1.05V (0.91V) | FB |
| 1.99V~2.60V (2.17V) | SF |
| 1.51V~1.98V (1.80V) | SM |
| 3.20V~3.75V (3.40V) | AU |
| 0.26V~0.65V (0.44V) | AL |
| 4.51V~5.00V (5.00V) | SS |
| 2.61V~3.19V (2.97V) | RS |

**Note:**

**Note :**

EJ ⟶ RS: Loading FWD (LM-FWD “H”, LM-REV “L”)

RS ⟶ EJ: Loading REV (LM-FWD “L”, LM-REV “H”)

Stop (A) = Loading

Stop (B) = Unloading

**Note:**

| Symbol | Loading Status |
|---|---|
| EJ | Eject |
| CL | Eject ~ REW Reel |
| SB | REW Reel ~ Stop(B) |
| TL | Stop(B) ~ Brake Cancel |
| FB | Brake Cancel ~ FF / REW |
| SF | FF / REW ~ Stop(M), (FF / REW) |
| SM | Stop(M), (FF / REW) ~ Stop(A) |
| AU | Stop(A) ~ Play / REC |
| AL | Play / REC ~ Still / Slow |
| SS | Still / Slow ~ RS (REW Search) |
| RS | RS (REW Search) |

# [ DCV203 ]

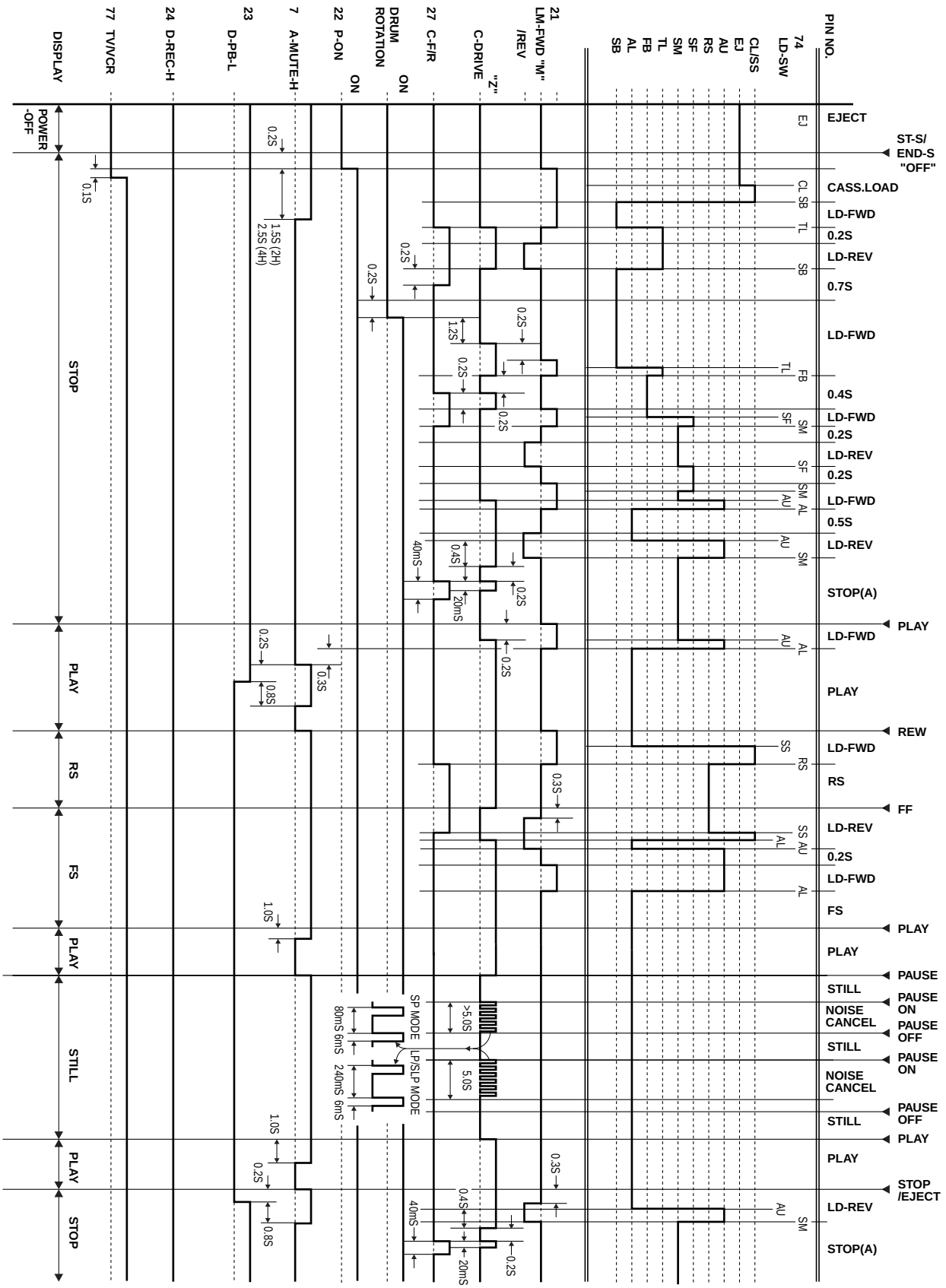

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION ON
22 P-ON ON
7 A-MUTE-H
23 D-PB-L
24 D-REC-H
77 TV/VCR
DISPLAY
POWER -OFF
EJECT
ST-S/ END-S "OFF"
CASS.LOAD
LD-FWD
0.2S
LD-REV
0.7S
LD-FWD
0.4S
LD-FWD
0.2S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
PLAY
LD-FWD
PLAY
REW
LD-FWD
RS
FF
LD-REV
0.2S
LD-FWD
FS
PLAY
PLAY
PAUSE
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PLAY
PLAY
STOP /EJECT
LD-REV
STOP(A)
0.1S
0.25
1.5S (2H)
2.5S (4H)
0.25
0.25
1.2S
0.25
0.25
0.25
40mS
0.4S
20mS
0.2S
0.25
0.25
0.3S
0.3S
0.8S
0.3S
1.0S
1.0S
0.2S
0.8S
SP MODE
LP/SLP MODE
80mS 6mS
240mS 6mS
>5.0S
5.0S
0.3S
0.4S
40mS
20mS
0.2S
STOP
PLAY
RS
FS
PLAY
STILL
PLAY
STOP

**Fig. 1**

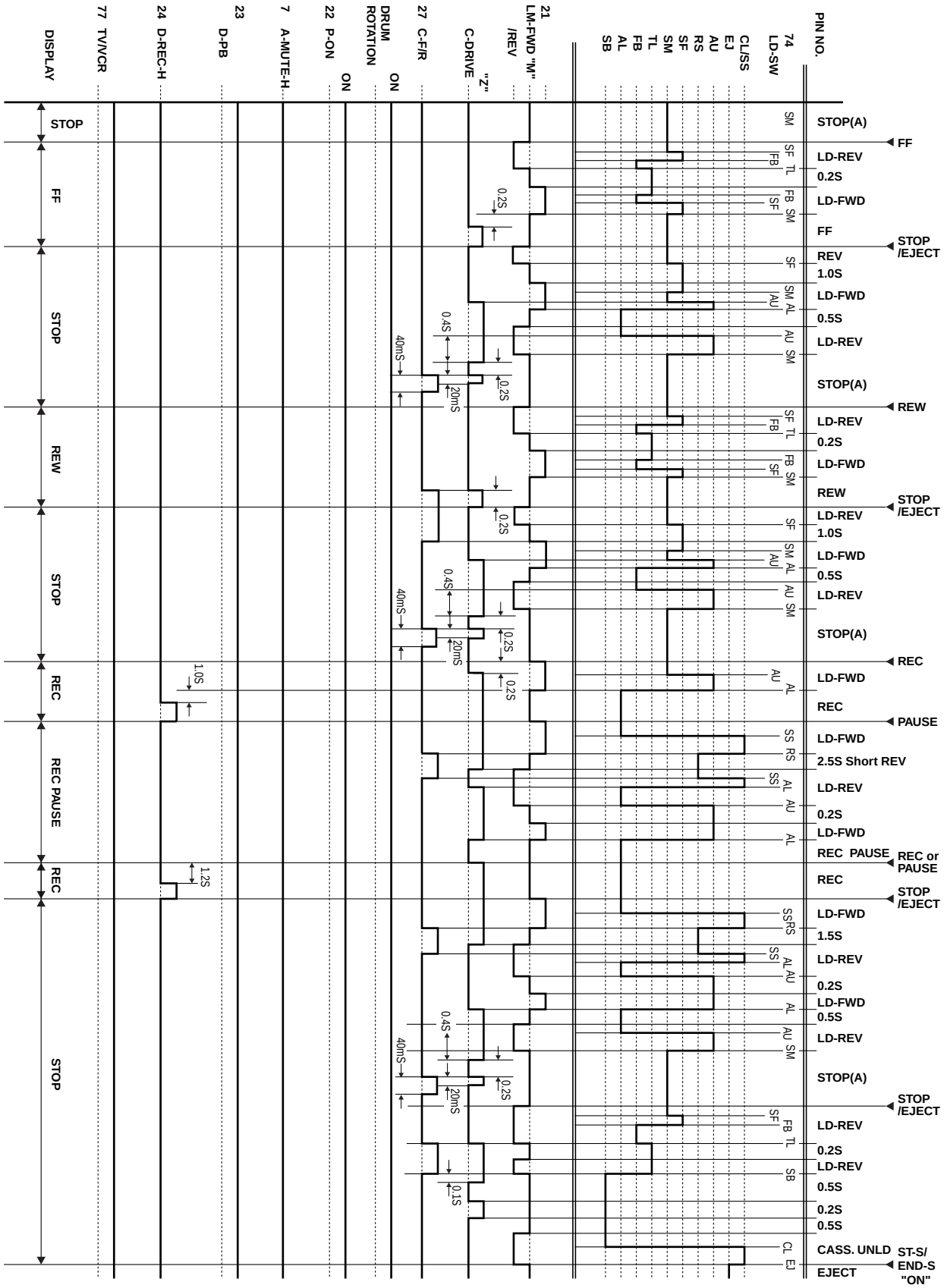

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION
22 P-ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
0.2S
0.4S
40mS
20mS
1.0S
1.2S
0.1S

**Fig. 2**

## Still/Slow Control
## Frame Advance Timing Chart

### 1) SP Mode

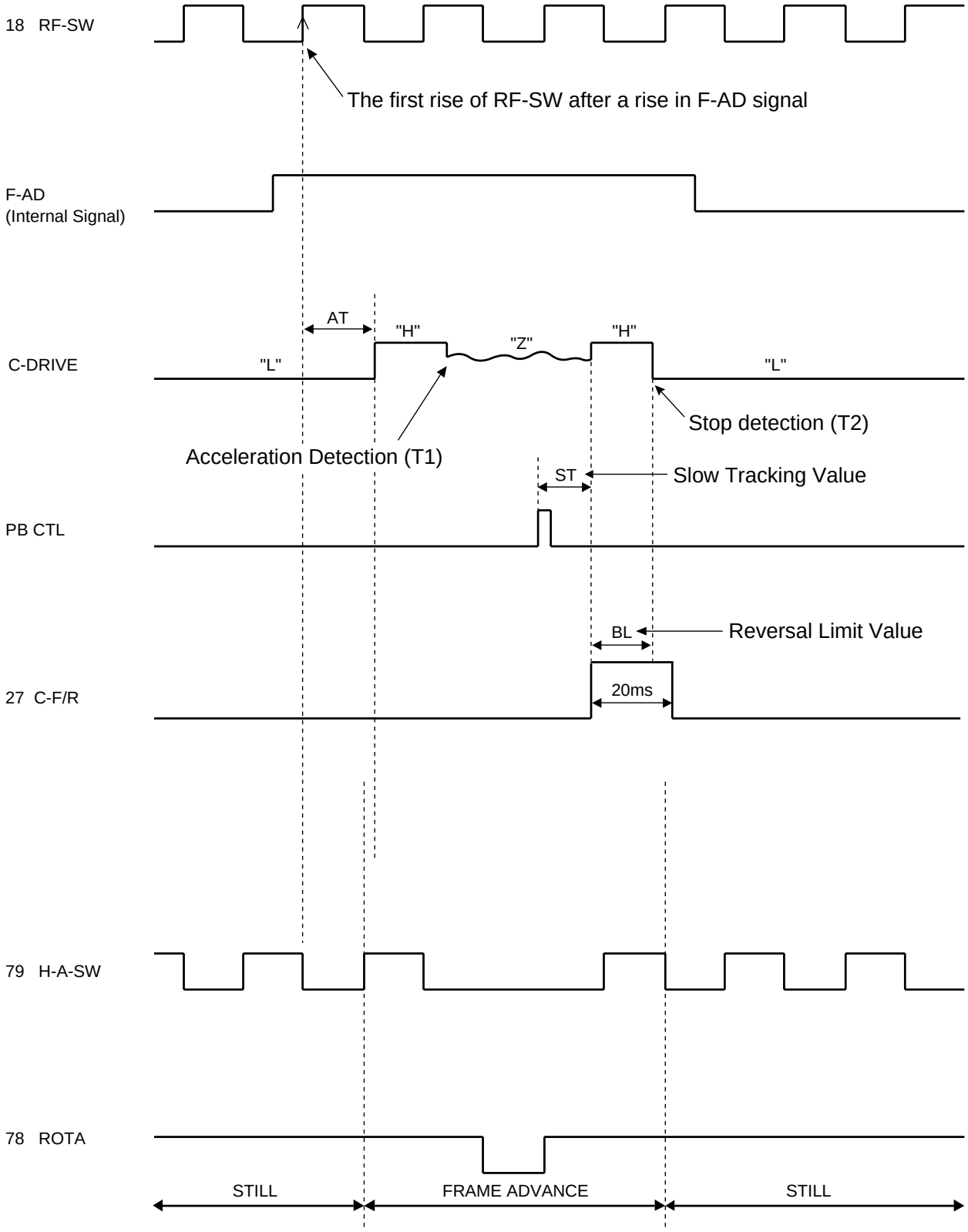



**Fig. 3**

**2) LP/SLP Mode**

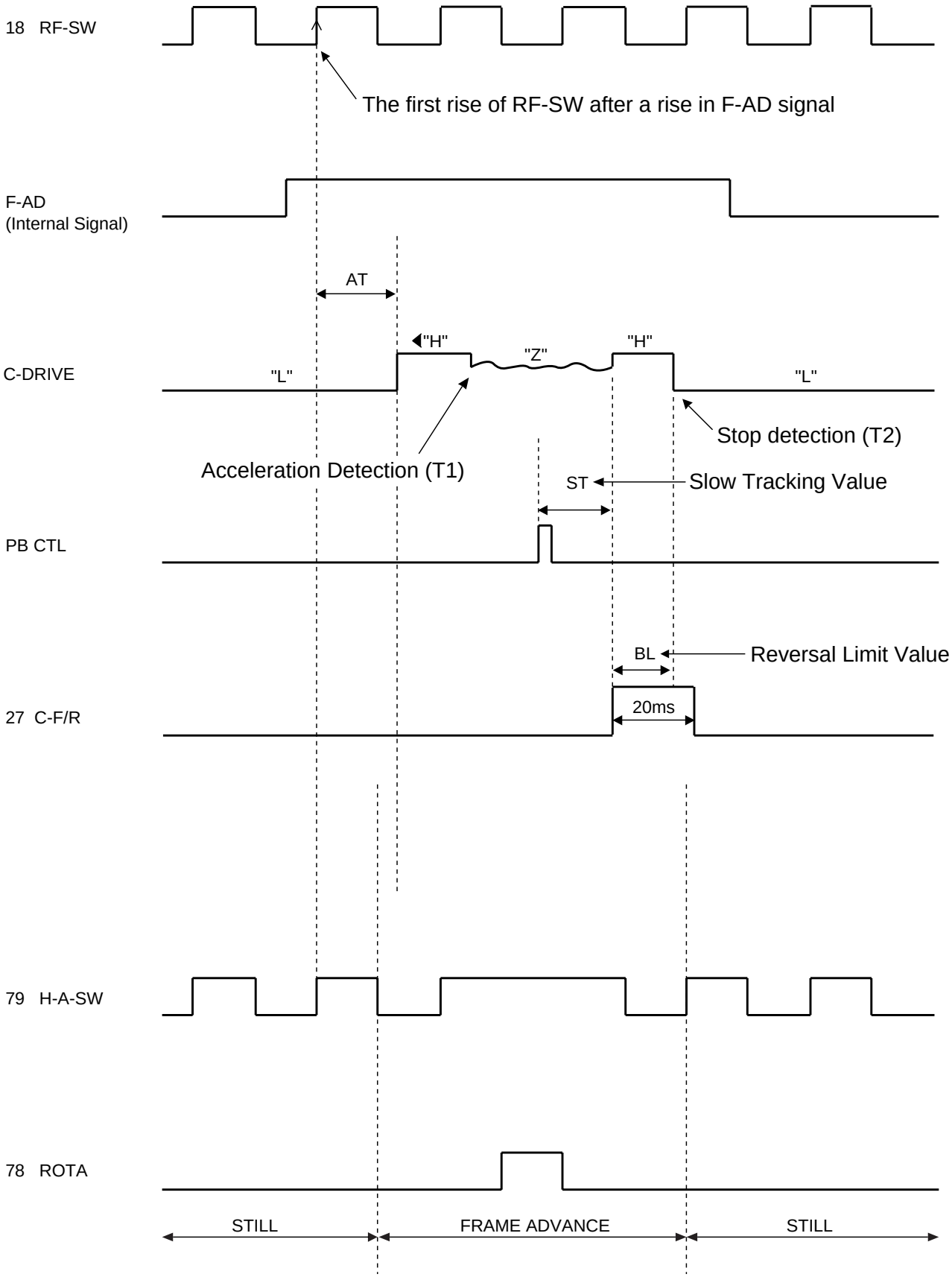



**Fig. 4**

**1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)**

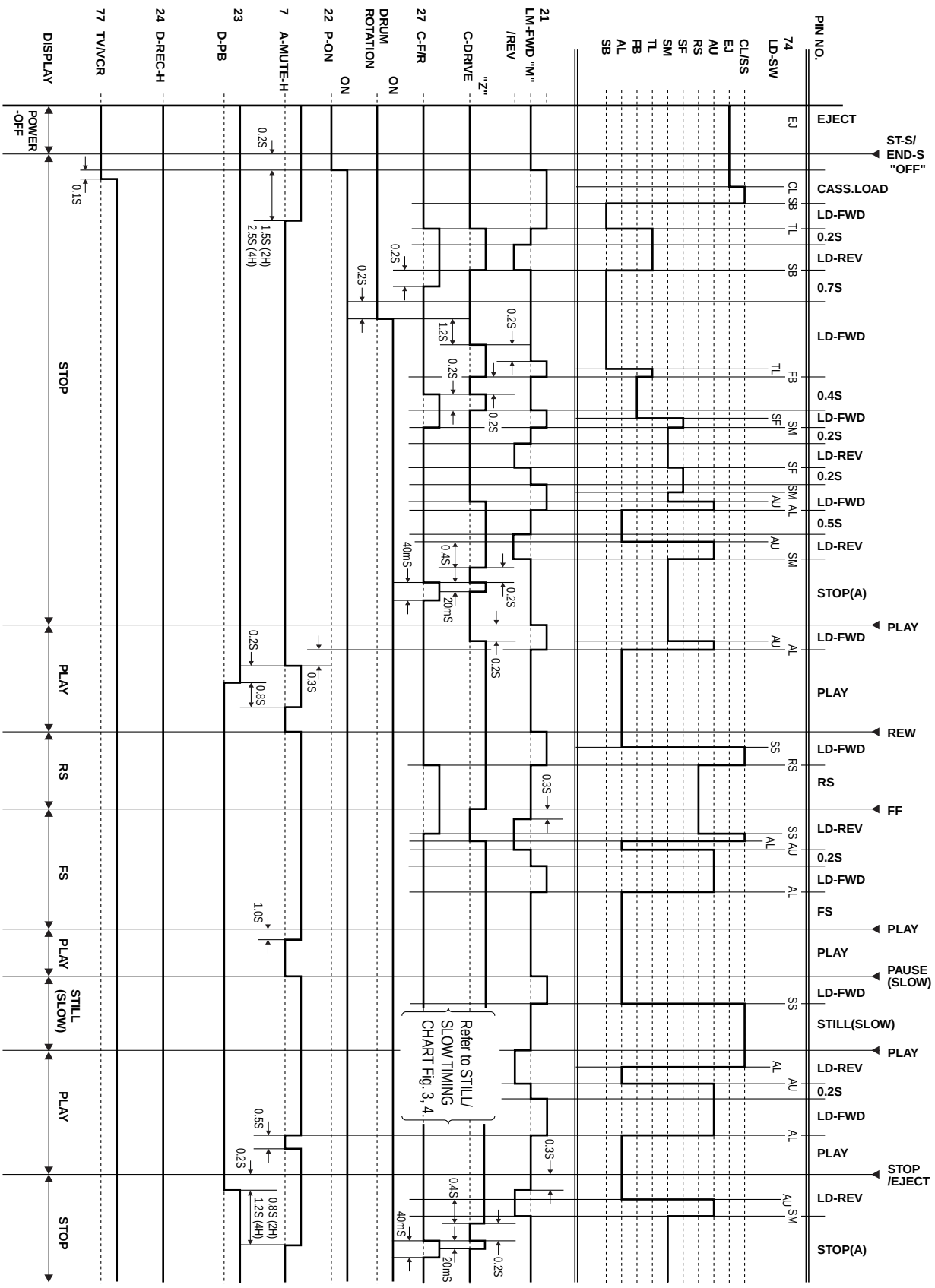



**Fig. 5**

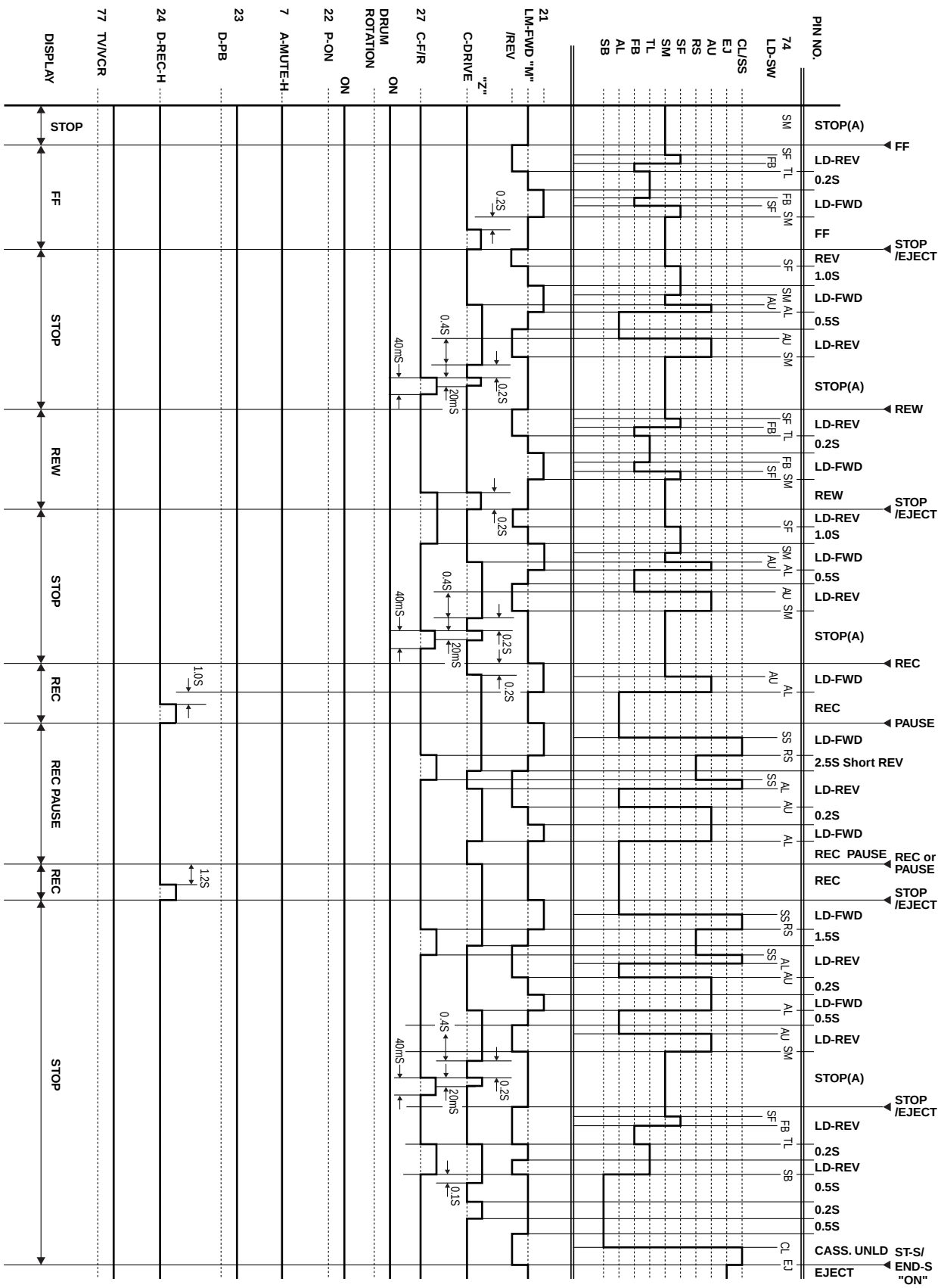

2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
74 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
21 LM-FWD "M" /REV
"Z" C-DRIVE
27 C-F/R
DRUM ROTATION ON
22 P-ON ON
7 A-MUTE-H
23 D-PB
24 D-REC-H
77 TV/VCR
DISPLAY
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP /EJECT
REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP /EJECT
LD-REV
1.0S
LD-FWD
0.5S
LD-REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S Short REV
LD-REV
0.2S
LD-FWD
REC PAUSE
REC or PAUSE
REC
STOP /EJECT
LD-FWD
1.5S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP /EJECT
LD-REV
0.2S
LD-REV
0.5S
0.2S
0.5S
CASS. UNLD
EJECT
ST-S/ END-S "ON"
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
0.2S
0.4S
40mS
20mS
1.0S
1.2S
0.1S

**Fig. 6**

# IC PIN FUNCTION DESCRIPTIONS

## Comparison Chart of Models and Marks

| Model | Mark |
|---|---|
| DCV203 | A |
| DCV603 | B |

## IC501( SERVO / SYSTEM CONTROL IC )

**"H" ≥ 4.5V, "L" ≤ 1.0V**

Pins that have * in the Pin No. section on table below are not used.

| Pin No. | Mark | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|---|
| 1 | | IN | P-DOWN -L | Power Voltage Down Detector Signal | L |
| 2 | | IN | REC-SAF-SW | Recording Safety SW Detect (With Record tab = "L"/ With out Record tab = "H") | H/L |
| 3 | | IN | T-REEL | Take Up Reel Rotation Signal | PULSE |
| 4 | | - | N.U. | Not Used | - |
| 5 | | IN | REMO-CON-IN | Remote Control Sen-sor | L |
| 6 | | - | N.U. | Not Used | - |
| 7 | | OUT | A-MUTE-H | Audio Mute Control Signal (Mute = "H") | H |
| 8 | | - | N.U. | Not Used | - |
| 9 | | - | N.U. | Not Used | - |
| 10 | | - | N.U. | Not Used | - |
| 11 | | OUT | TRICK-H | Special Playback = "H" in SECAM Mode | H/Z/L |
| 12 | | IN/ OUT | IIC-BUS-SDA | IIC BUS Control Data | H/L |
| 13 | | OUT | IIC-BUS-SCL | IIC BUS Control Clock | H/L |
| 14 | | - | N.U. | Not Used | - |
| 15 | | - | N.U. | Not Used | - |
| 16 | | OUT | INSEL/ ST-SL | Input Selector Control Signal (EE/Rec)/Still/ Slow (Playback) | H/Hi-z /L |
| 17 | | OUT | PIC-TURE-SEL | Picture Control Signal | - |
| 18 | | OUT | RF-SW | Video Head Switching Pulse | H/L |
| 19 | | OUT | D-V SYNC | Dummy V-sync Output | H/Hi-z |
| 20 | | IN | RESET | System Reset Signal (Reset="L") | L |
| 21 | | OUT | LM-FWD/ REV | Loading Motor FWD/ REV Output | H/Z/L |
| 22 | | OUT | P-ON-L | Power On Signal to Low | L |
| 23 | | OUT | D-PB-H | Playback Instruction Signal | H |
| 24 | | OUT | D-REC-H | Delayed Record Signal | H |
| 25 | A | - | N.U. | Not Used | - |
| | B | OUT | HiFi-H-SW | HiFi Audio Head Switching Pulse | H/L |
| 26 | | OUT | SP/LP/ SLP | Top Speed Select Signal (SP="L"/ LP="Z"/ SLP="H") | H/Z/L |
| 27 | | OUT | C-F/R | Capstan Motor FWD/REV Control Signal (FWD="L"/ REV="H") | H/L |
| 28 | | OUT | C-CONT | Capstan Motor Control Signal | PWM |
| 29 | | OUT | D-CONT | Drum Motor Control Signal | PWM |
| 30 | | - | N.U. | Not Used | - |
| 31 | | - | VDD | VDD | - |
| 32 | | OUT | OSCO | Main Clock Output 14.31818MHz | - |

| Pin No. | Mark | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|---|
| 33 | | IN | OSCI | Main Clock Input 14.31818MHz | - |
| 34 | | - | VSS | VSS | |
| 35 | | IN | XI | Sub Clock Input 32.768 MHz | - |
| 36 | | OUT | XO | Sub Clock Output 32.768 MHz | - |
| 37 | | IN | SXI | Operation Mode Select-ing Input Sig-nal | - |
| 38 | | OUT | VIDEO-OUT | Composite Video Signal Output | - |
| 39 | | - | Vss2 | Vss2 | - |
| 40 | | IN | VIDEO-IN | Composite Video Signal Input | |
| 41 | | IN | C-SYNC | Composite Synchronized Pulse | PULSE |
| 42 | | - | VDD2 | VDD2 | - |
| 43 | | IN | AFCC | Low Path Filter Input Signal For AFC | - |
| 44 | | OUT | AFCLPF | Low Path Filter Output Signal For AFC | - |
| 45 | | - | N.U. | Not Used | - |
| 46 | | - | N.U. | Not Used | - |
| 47 | | IN | D-PFG | Drum PG/FG Input Signal | PULSE |
| 48 | | - | N.U. | Not Used | - |
| 49 | | IN | C-FG | Capstan Motor Rotation Detection Pulse | PULSE |
| 50 | | - | AFG | GND | - |
| 51 | | OUT | VRO | Servo Stan-dard Voltage Output | - |
| 52 | | IN | VRI | Servo Stan-dard Voltage Input | - |
| 53 | | - | AVss | AVSS | - |
| 54 | | IN | CTLA | CTL Amp. AC GND | - |
| 55 | | - | AVDD | AVDD | - |

| Pin No. | Mark | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|---|
| 56 | | IN/ OUT | CTL (+) | Playback/ Record Control Signal (+) | - |
| 57 | | IN/ OUT | CTL (-) | Playback/ Record Control Signal (-) | - |
| 58 | | OUT | CTL | Amp. Output Control Signal for Test Point | - |
| 59 | A | - | N.U. | Not Used | - |
| | B | IN | HiFi/ NOR-IN | Audio Mode Input HiFi="L"/ Normal="H" | A/D |
| 60 | | - | N.U. | Not Used | - |
| 61 | A | - | N.U. | Not Used | - |
| | B | IN | ST/SAP-IN | Tuner Stereo/ Sap Detector Signal Input | A/D |
| 62 | | IN | END-S | Tape End Position Detect Signal | A/D |
| 63 | | IN | AFC | Automatic Frequency Control Signal | A/D |
| 64 | | IN | V-ENV | Video Envelope Comparator Signal | A/D |
| 65 | | IN | PG-DELAY | Video Head Switching Pulse Signal Adjusted Voltage | A/D |
| 66 | | IN | KEY-2 | A/D Key Data Signal 2 | A/D |
| 67 | | IN | KEY-1 | A/D Key Data Signal 1 | A/D |
| 68 | | IN | LD-SW | Deck Mode Position Detector Signal | A/D |
| 69 | | IN | ST-S | Tape Start Position Detector Signal | A/D |
| 70 | | OUT | REC-IND | "REC" LED Signal Output | L |
| 71 | | OUT | REC-IND | "REC" LED Signal Output | L |
| 72 | | OUT | VCR/TV-IND | VCR/TV Mode LED Indicate | L |
| 73 | | OUT | VCR/TV-IND | VCR/TV Mode LED Indicate | L |

| Pin No. | Mark | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|---|
| 74 | | OUT | CAS-IND | “CASSETTE” LED Signal Output | L |
| 75 | | OUT | TIMER-IND | “TIMER” LED Signal Output | L |
| 76 | | OUT | CONV-SW | RF Conv. Output Channel Switching Signal 3ch=”Hi-z”, 4ch=”L” | Hi-z/L |
| 77 | | OUT | VCR/TV | RF Conv. ON/OFF Signal (TV="L"/ VCR="H") | H/L |
| 78 | | OUT | C-ROTA | Color Phase Rotary Changeover SIgnal | H/L |
| 79 | | OUT | H-A-SW | Video Head Amp Switching Pulse | H/L |
| 80 | | IN | H-A-COMP | Head Amp Comparator Signal | H/L |

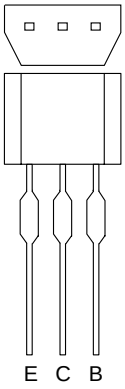
**Notes:**

Abbreviation for Active Level:

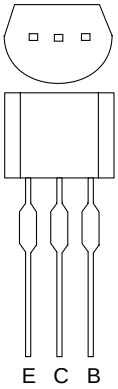
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

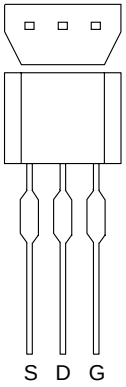
# LEAD IDENTIFICATIONS




BA1F4M-T
KTA1266(GR)
KTC3199(Y,GR,BL)
2SC2785(J,H,F,K)
KRC103M

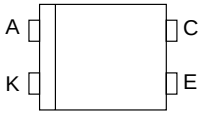



2SC1815-BL(TPE2)
2SC1815-Y(TPE2)
2SC1815-GR(TPE2)
2SC2120-Y(TPE2)
KTC3203(Y)
2SA1015-GR(TPE2)
KTC3198(Y,GR)

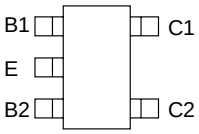



2SK3374
2SK3472

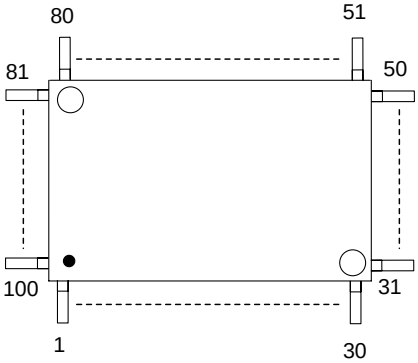
LTV-817(B,C)-F
EL817(A,B)



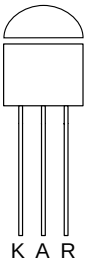

RN1511(TE85R)
FMG4A T148



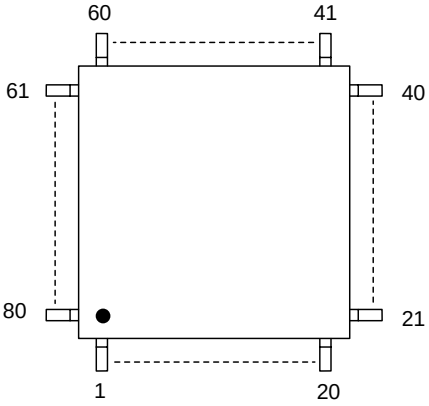

LA71091M



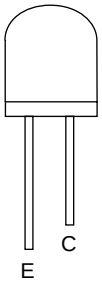

KIA431-AT
KIA431A-AT
TL431A-TA




QSZAB0RMS005
LA72670M




MID-32A22
PT204-6B-12




**Note:**
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
G: Gate
D: Drain
S: Source

# DECK MECHANISM SECTION

# VIDEO CASSETTE RECORDER

# DCV203/DCV603

**Sec. 2: Deck Mechanism Section**

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**

## TABLE OF CONTENTS

# STANDARD MAINTENANCE

## Service Schedule of Components

H: Hours ❍: Check ●: Change

| Deck | | Periodic Service Schedule | | | |
|---|---|---|---|---|---|
| **Ref.No.** | **Part Name** | **1,000 H** | **2,000 H** | **3,000 H** | **4,000 H** |
| B2 | Cylinder Assembly | ❍ | ● | ❍ | ● |
| B3 | Loading Motor Assembly | | | ● | |
| B8 | Pulley Assembly | | ● | | ● |
| B587 | Tension Lever Assembly | | ● | | ● |
| B31 | AC Head Assembly | | | ● | |
| B573,B574 | Reel (SP)(D2), Reel (TU)(D2) | | | ● | |
| B37 | Capstan Motor | | ● | | ● |
| B52 | Cap Belt | | ● | | ● |
| *B73 | FE Head | | | ● | |
| B133,B134 | Idler Gear, Idler Arm | | ● | | ● |
| B410 | Pinch Arm Assembly | | ● | | ● |
| B414 | M Brake (SP) Assembly | | ● | | ● |
| B416 | M Brake (TU) Assembly | | ● | | ● |
| B525 | LDG Belt | | ● | | ● |
| B569 (2 head only) | Cam Holder (F) | | ● | | ● |
| B593 (4 head, 4 head HiFi only) | Cam Holder (F) Assembly | | ● | | ● |

**Notes:**

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% lsopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

   * B73 ------ Recording Model only

# Cleaning

## Cleaning of Video Head

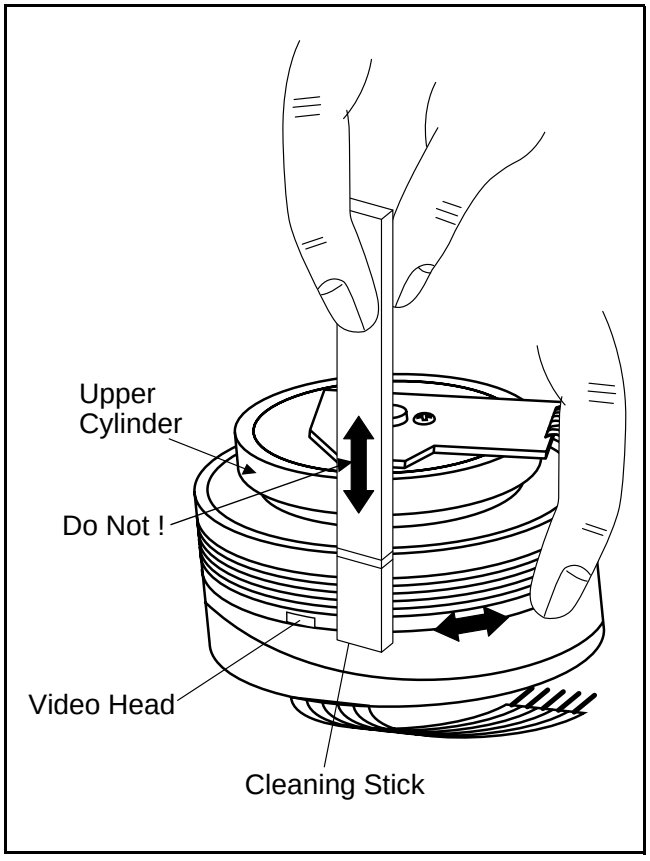
Clean the head with a head cleaning stick or chamois cloth.

**Procedure**

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

**Notes:**

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.




## Cleaning of Audio Control Head

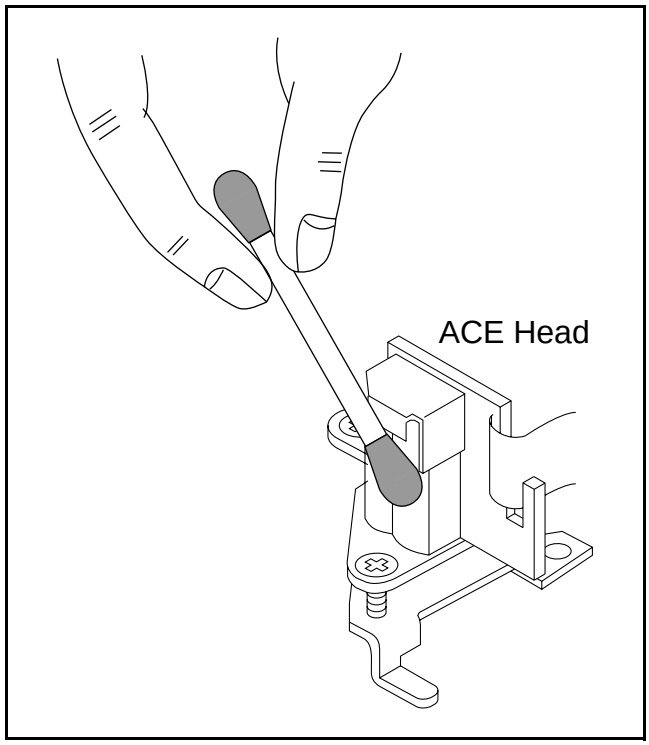
Clean the head with a cotton swab.

**Procedure**

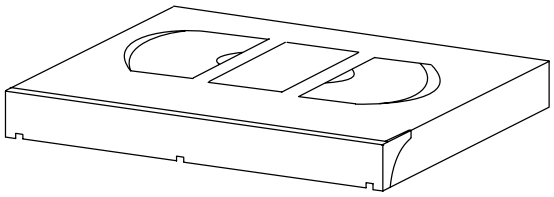
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

**Notes:**

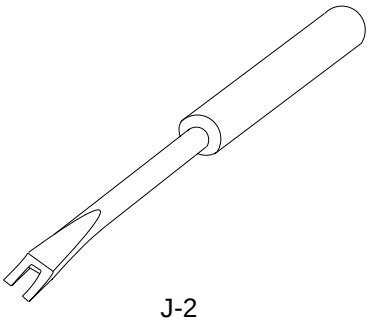
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



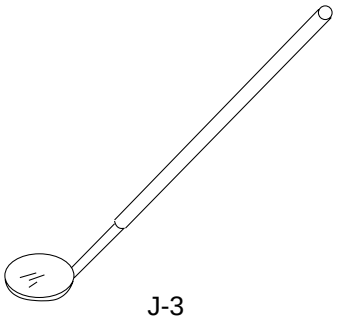
# SERVICE FIXTURE AND TOOLS



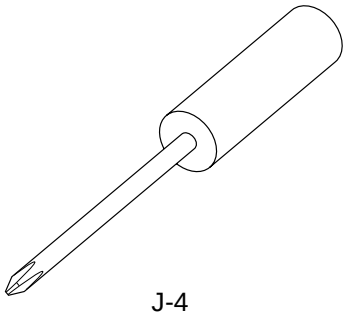
J-1-1, J-1-2



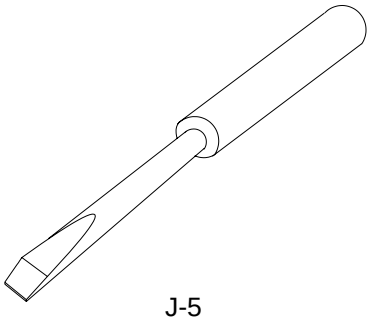
J-2



J-3



J-4



J-5

| Ref. No. | Name | Part No. | Adjustment |
|---|---|---|---|
| J-1-1 | Alignment Tape | FL8A | Head Adjustment of Audio Control Head |
| J-1-2 | Alignment Tape | FL8N<br>(2Head only)<br>FL8NW<br>(4Head only) | Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform |
| J-2 | Guide Roller Adj.Screwdriver | Available Locally | Guide Roller |
| J-3 | Mirror | Available Locally | Tape Transportation Check |
| J-4 | Azimuth Adj.Screwdriver + | Available Locally | A/C Head Height |
| J-5 | X Value Adj.Screwdriver - | Available Locally | X Value |

# MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

## Service Information

**A.** Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

**B.** Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

**Top View**

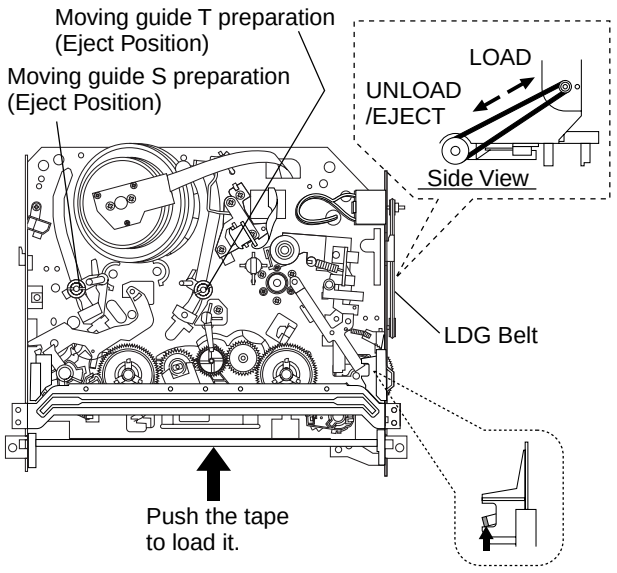



**Fig. M1**

**Bottom View**

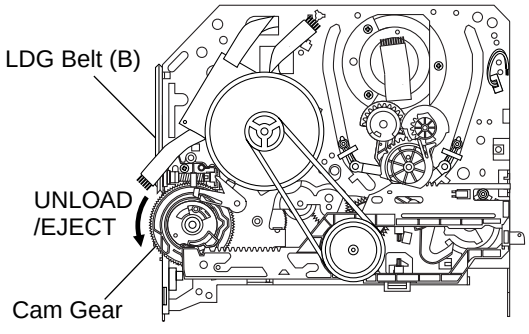



**Fig. M2**

# 1.Tape Interchangeability Alignment

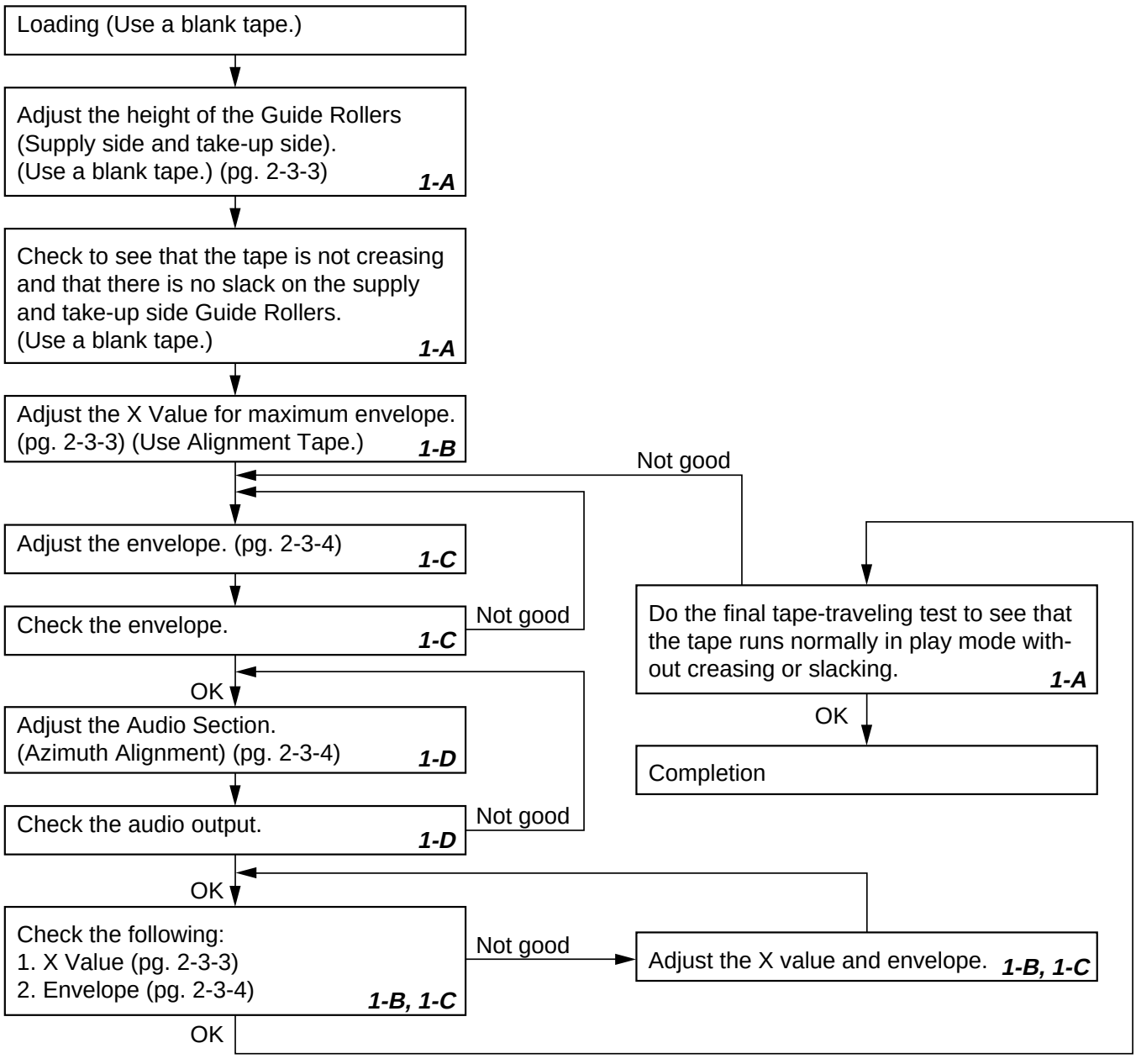
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

**Equipment required:**

Dual Trace Oscilloscope
VHS Alignment Tape (FL8NW)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

**Flowchart of Alignment for tape traveling**



## 1-A. Preliminary/Final Checking and Alignment of Tape Path

**Purpose:**

To make sure that the tape path is well stabilized.

**Symptom of Misalignment:**

If the tape path is unstable, the tape will be damaged.

**Note:** Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

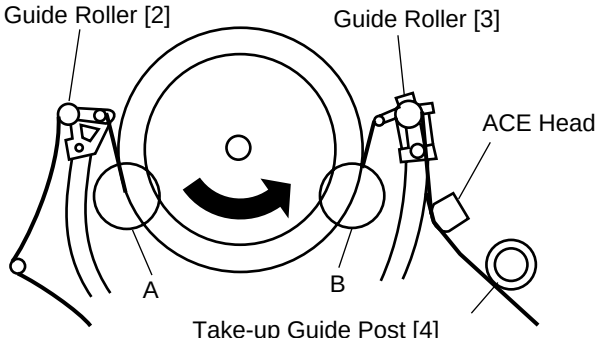


**Fig. M3**

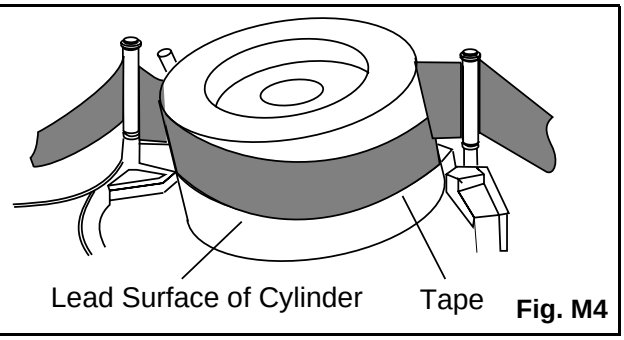


**Fig. M4**

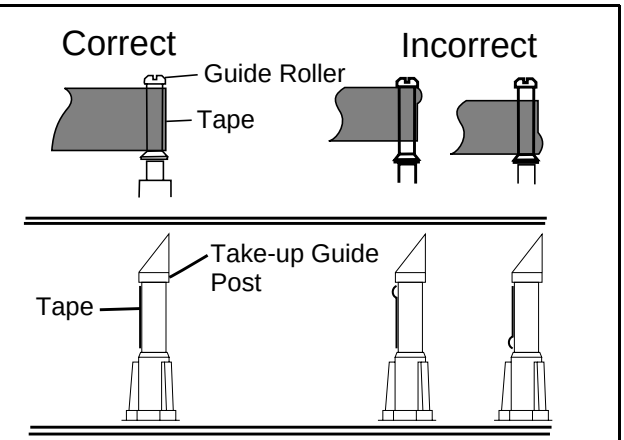


**Fig. M5**

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and AC Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the AC Head. (Fig. M6)

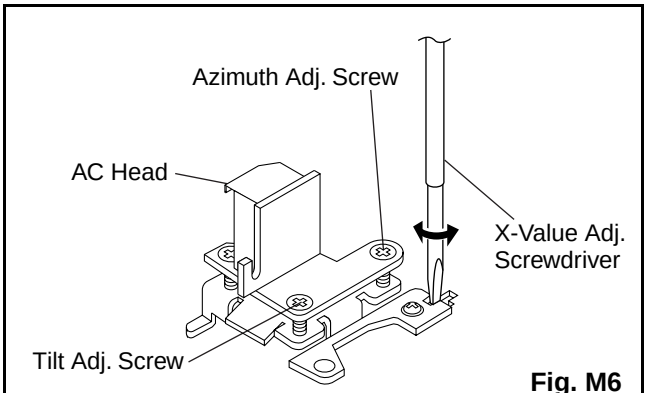


**Fig. M6**

## 1-B. X Value Alignment

**Purpose:**

To align the Horizontal Position of the Audio/Control/Erase Head.

**Symptom of Misalignment:**

If the Horizontal Position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP513 (CTL) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8NW) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing CH UP button then " PLAY " button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)
5. Press CH UP button on the unit until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press CH DOWN button on the unit until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button.

## 1-C. Checking/Adjustment of Envelope Waveform

**Purpose:**

To achieve a satisfactory picture and precise tracking.

**Symptom of Misalignment:**

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8NW). Set the Tracking Control Circuit to the center position by pressing CH UP button and then " PLAY " button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

## 1-D. Azimuth Alignment of Audio/Control/ Erase Head

**Purpose:**

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

**Symptom of Misalignment:**

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8NW) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

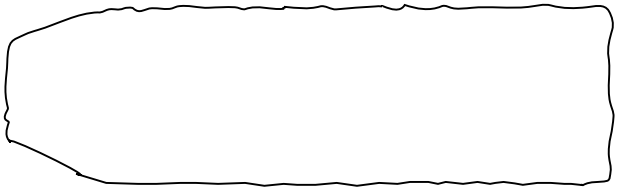


**Fig. M7**

Dropping envelope level at the end of track.

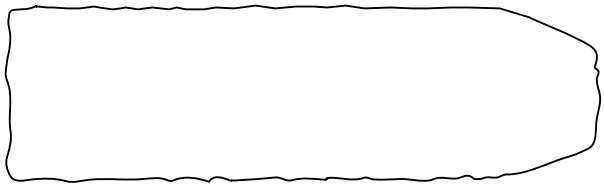


**Fig. M8**

Envelope is adjusted properly. (No envelope drop)

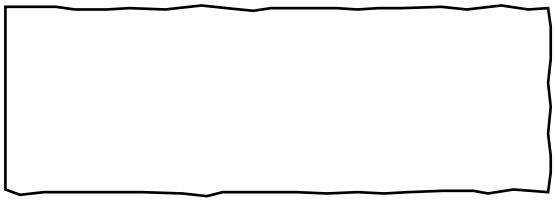


**Fig. M9**

# DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-6-1.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig.DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

| STEP /LOC. No. | START-ING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [1] | [1] | Guide Holder A | T | DM3 | 2(S-1) | |
| [2] | [1] | Cassette Holder Assembly | T | DM4 | | |
| [3] | [2] | Slider (SP) | T | DM5 | *(L-1) | |
| [4] | [2] | Slider (TU) | T | DM5 | *(L-2) | |
| [5] | [4] | Lock Lever | T | DM5 | *(L-3),*(P-1) | |
| [6] | [2] | Cassette Plate | T | DM5 | | |
| [7] | [7] | Cylinder Assembly | T | DM1,DM6 | Desolder, 3(S-2) | |
| [8] | [8] | Loading Motor Assembly | T | DM1,DM7 | Desolder, LDG Belt, 2(S-3) | |
| [9] | [9] | AC Head Assembly | T | DM1,DM7 | (S-4) | |
| [10] | [2] | Tape Guide Arm Assembly | T | DM1,DM8 | *(P-2) | |
| [11] | [10] | C Door Opener | T | DM1,DM8 | *(L-4) | |
| [12] | [11] | Pinch Arm (B) | T | DM1,DM8 | *(P-3) | |
| [13] | [12] | Pinch Arm Assembly | T | DM1,DM8 | | |
| [14] | [14] | FE Head Assembly | T | DM1,DM9 | (S-5) | |
| [15] | [15] | Prism | T | DM1,DM9 | (S-6) | |
| [16] | [2],[15] | Sensor Gear | T | DM1,DM15 | | |
| [17] | [2] | Slider Shaft | T | DM10 | *(L-5) | |
| [18] | [17] | C Drive Lever (SP) | T | DM10 | | |
| [19] | [17] | C Drive Lever (TU) | T | DM10 | (S-7),*(P-4) | |
| [20] | [7],[8], [10] | Capstan Motor | B | DM2,DM11 | 3(S-8), Cap Belt | |
| [21] | [21] | Clutch Assembly | B | DM2,DM12 | (C-1) | |
| [22] | [22] | Cam Holder (F) Assembly | B | DM2,DM12 | *(L-6) | |
| [23] | [23] | Cam Gear (B) | B | DM2,DM12 | (C-4)*(P-5) | |
| [24] | [24] | Mode Gear | B | DM2,DM13 | (C-2) | |
| [25] | [21],[23], [24] | Mode Lever | B | DM2,DM13 | (C-3), *(L-8) | |
| [26] | [22] | Worm Holder | B | DM2,DM13 | (S-9),*(L-9),*(L-10) | |
| [27] | [26] | Pulley Assembly | B | DM2,DM13 | | |
| [28] | [25],[26] | Cam Gear (A) | B | DM2,DM13 | | |
| [29] | [25] | Idler Gear | B | DM1,DM14 | | |
| [30] | [29] | Idler Arm | B | DM1,DM14 | *(L-11) | |
| [31] | [25] | BT Arm | B | DM2,DM14 | *(P-6) | |
| [32] | [25] | Loading Arm (SP) Assembly | B | DM2,DM14 | | (+)Refer to Alignment Sec.Pg.2-4-9 |

| STEP /LOC. No. | START-ING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [33] | [32] | Loading Arm (TU) Assembly | B | DM2,DM14 | | (+)Refer to Alignment Sec.Pg.2-4-9 |
| [34] | [2],[25] | M Brake (TU) Assembly | T | DM1,DM15 | *(P-7), Brake Belt | |
| [35] | [2],[25] | M Brake (SP) Assembly | T | DM1,DM15 | *(P-8) | |
| [36] | [35] | Tension Lever Assembly | T | DM1,DM15 | | |
| [37] | [36] | T Lever Holder | T | DM15 | *(L-12) | |
| [38] | [34] | Reel (TU)(D2) | T | DM1,DM15 | | |
| [39] | [38] | M Gear | T | DM1,DM15 | | |
| [40] | [36] | Reel (SP)(D2) | T | DM1,DM15 | | |
| [41] | [32],[36] | Moving Guide S Preparation | T | DM1,DM16 | | |
| [42] | [33] | Moving Guide T Preparation | T | DM1,DM16 | | |
| [43] | [19] | TG Post Assembly | T | DM1,DM16 | *(L-13) | |
| [44] | [28] | Rack Assembly | R | DM17 | | (+)Refer to Alignment Sec.Pg.2-4-10 |
| [45] | [44] | F Door Opener | R | DM17 | | |
| [46] | [46] | Cleaner Assembly | T | DM1,DM6 | | |
| [47] | [46] | CL Post | T | DM6 | *(L-14) | |
| ↓ (1) | ↓ (2) | ↓ (3) | ↓ (4) | ↓ (5) | ↓ (6) | ↓ (7) |

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

## Top View

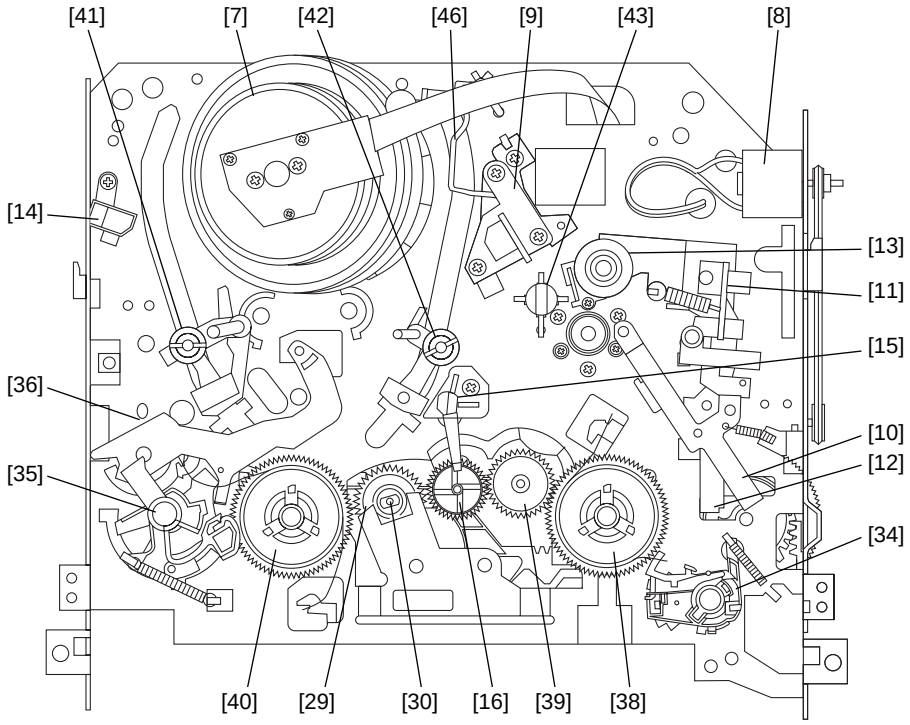



**Fig. DM1**

## Bottom View

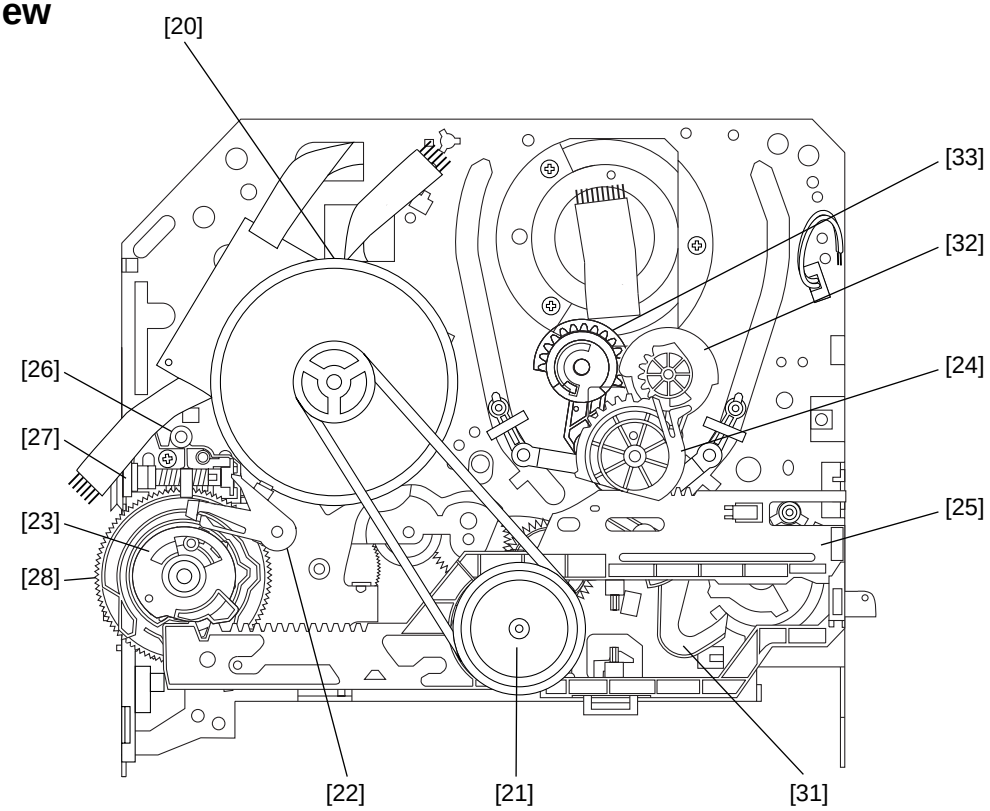



**Fig. DM2**

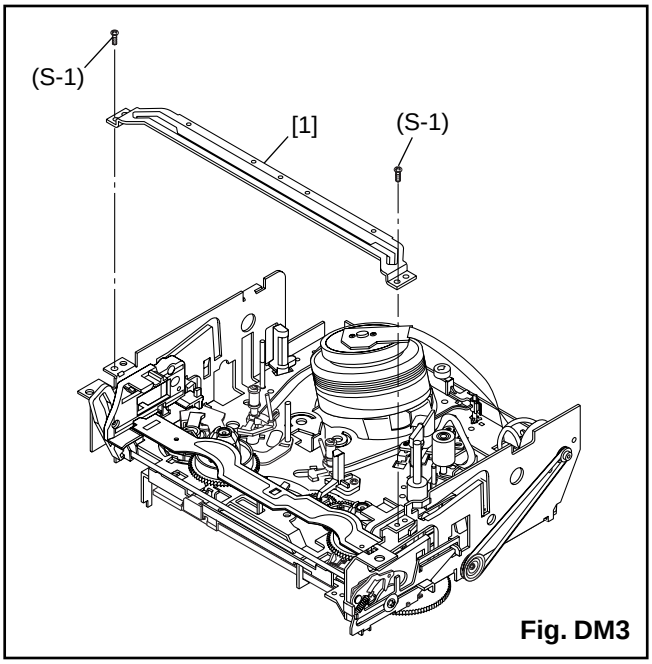



**Fig. DM3**

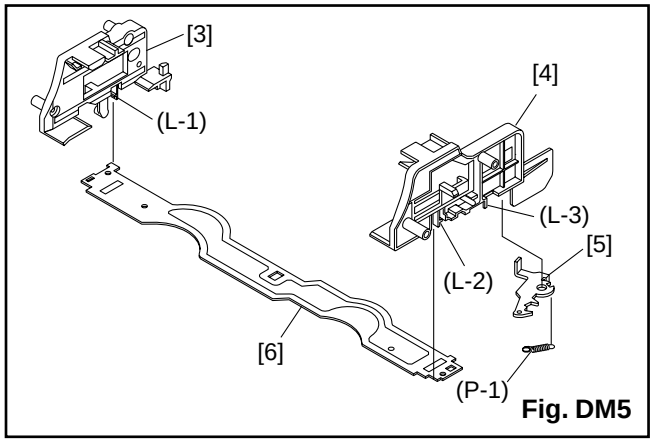



**Fig. DM5**

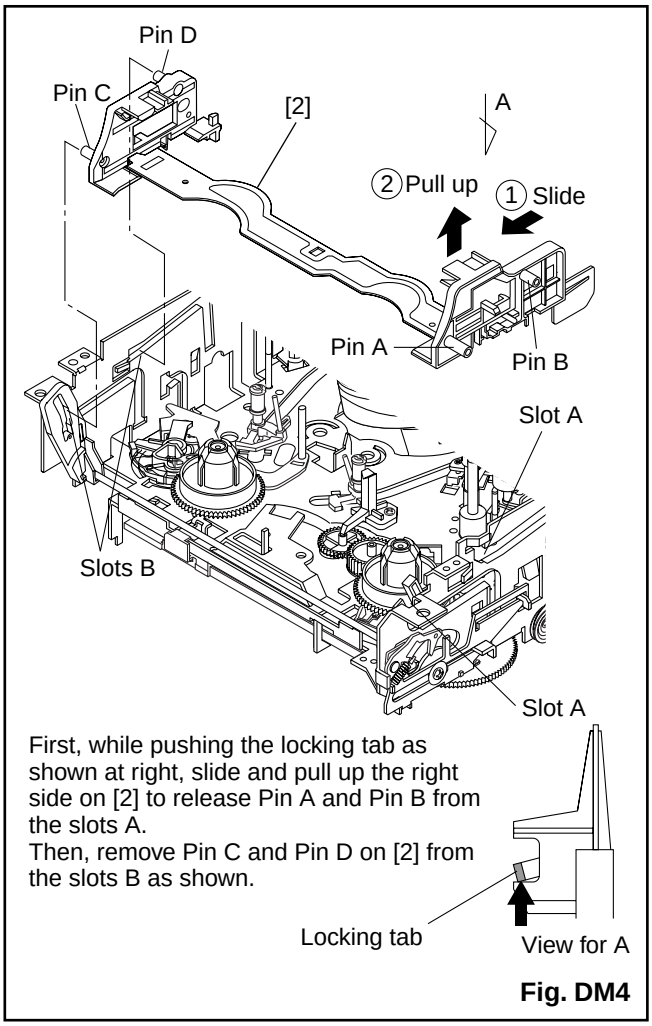



**Fig. DM4**

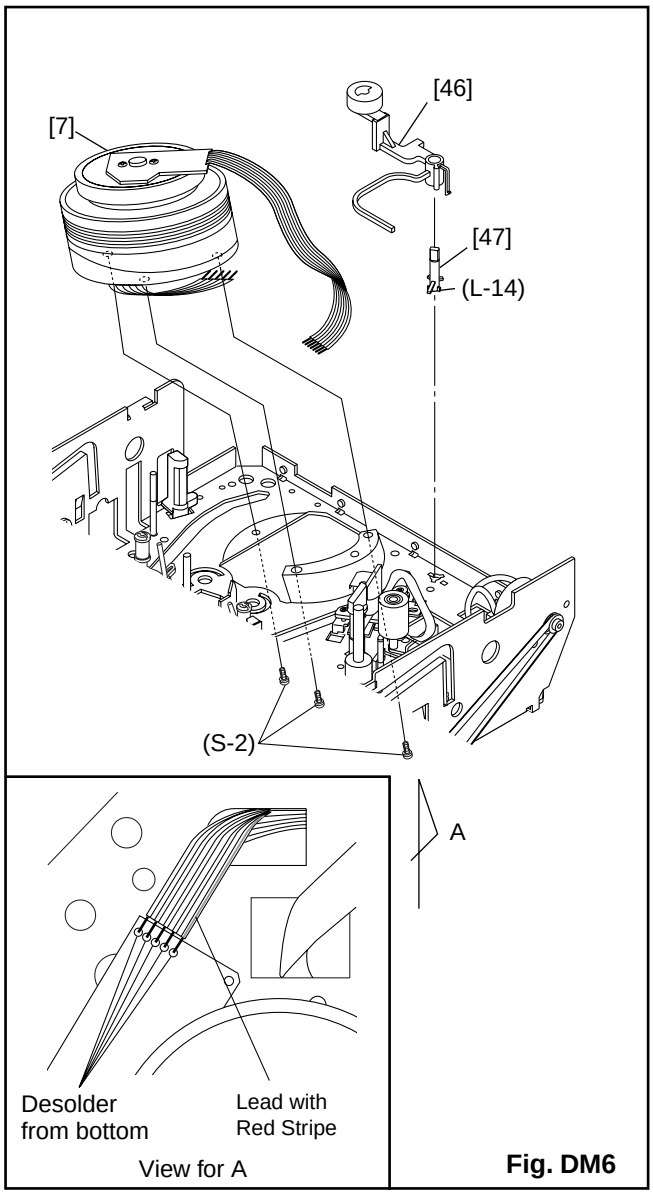



**Fig. DM6**

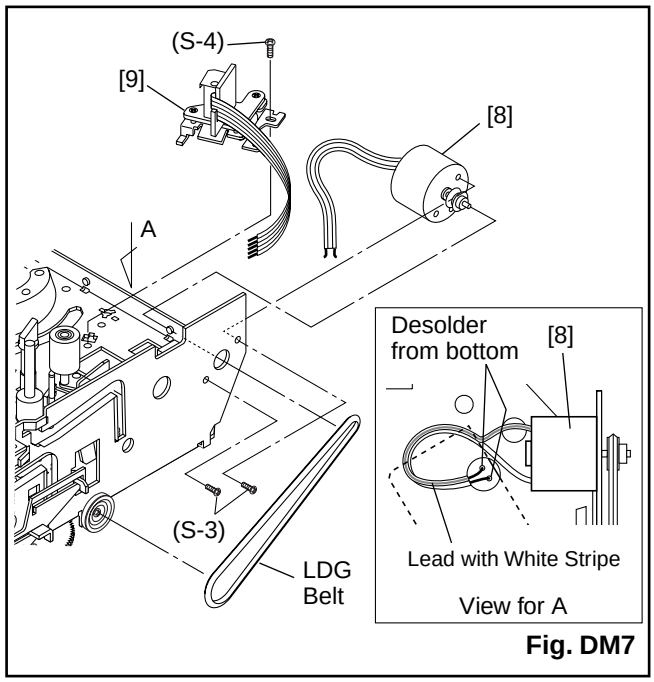



**Fig. DM7**

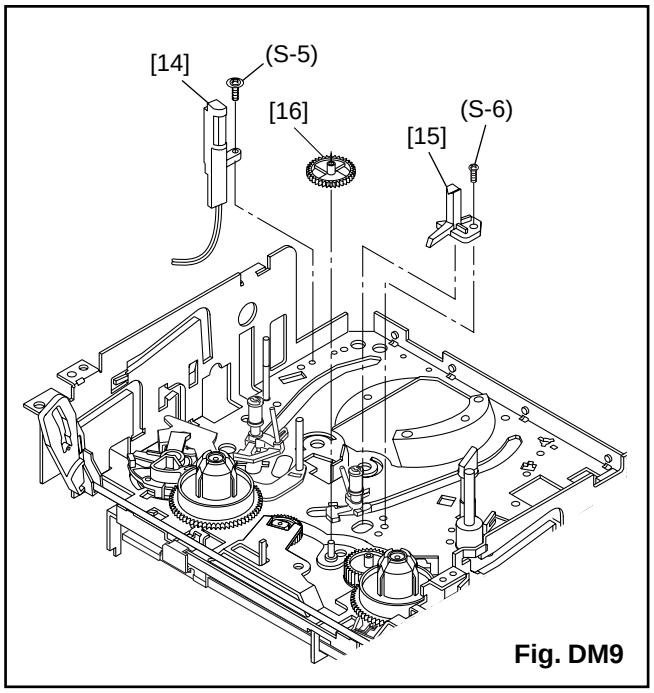



**Fig. DM9**

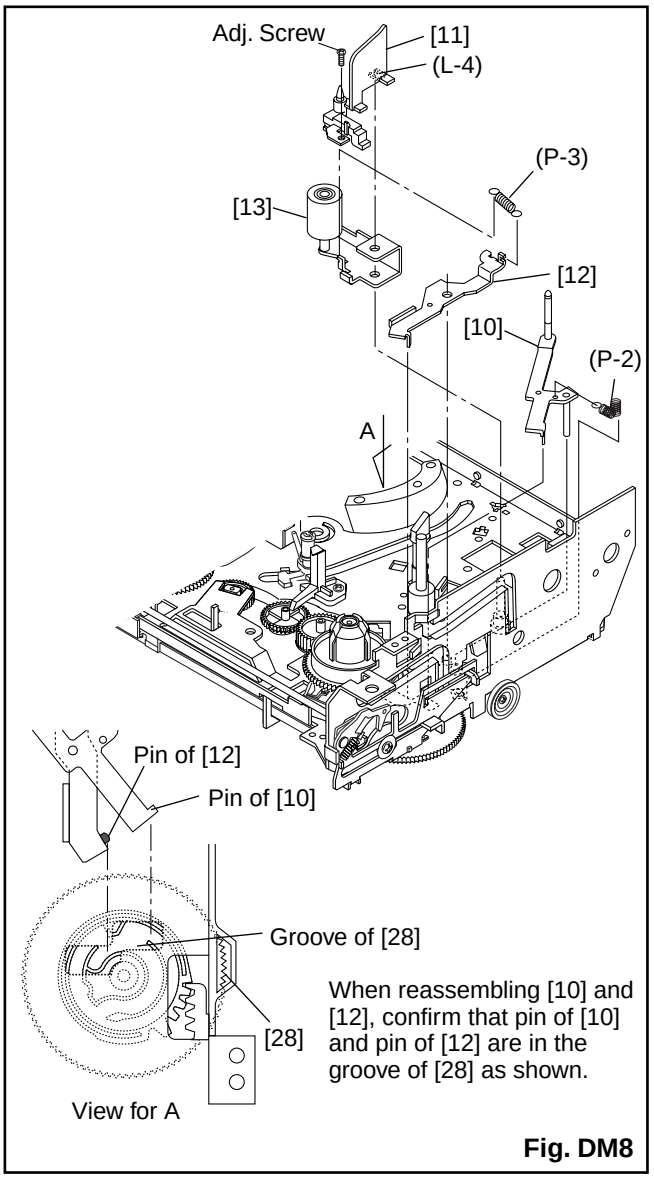



**Fig. DM8**

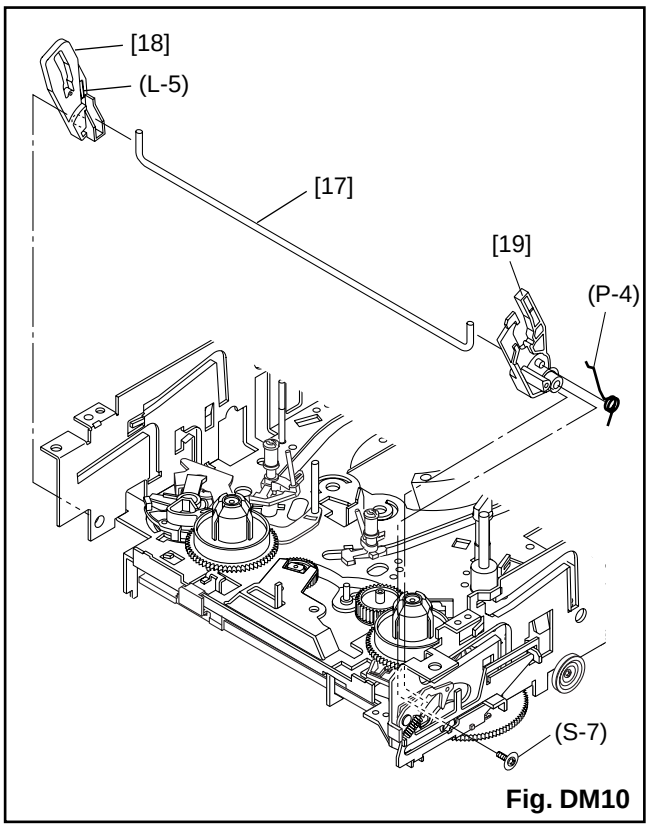



**Fig. DM10**

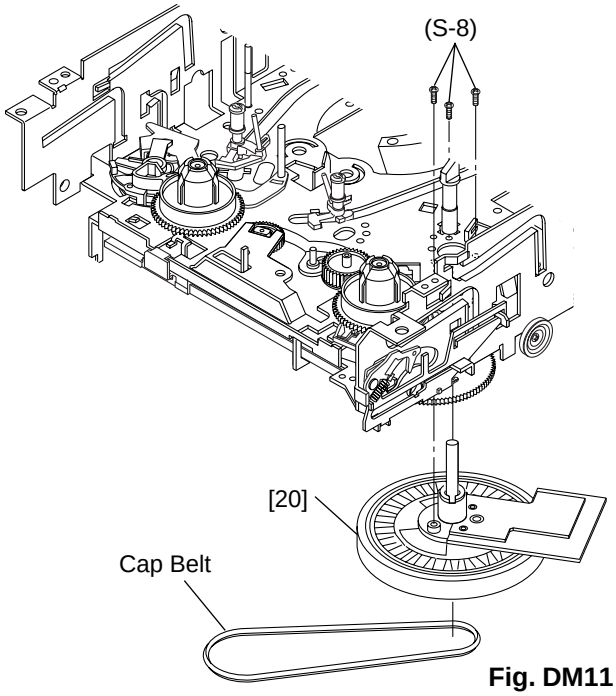
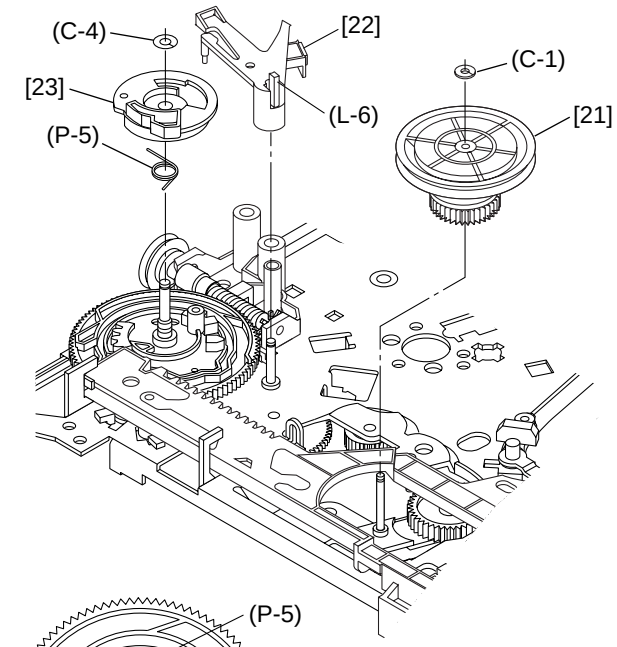
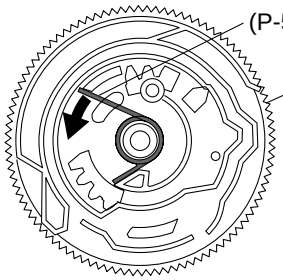


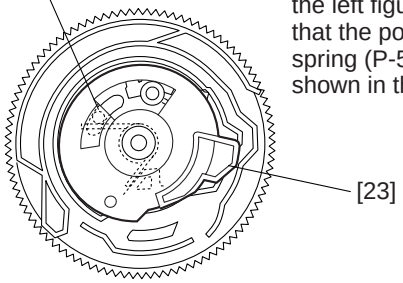

**Fig. DM11**



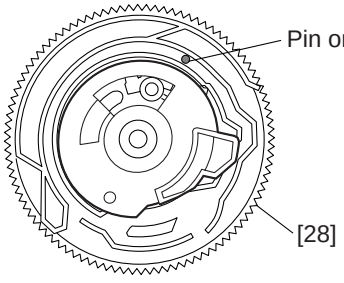




When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.

Pin on bottom of [23]

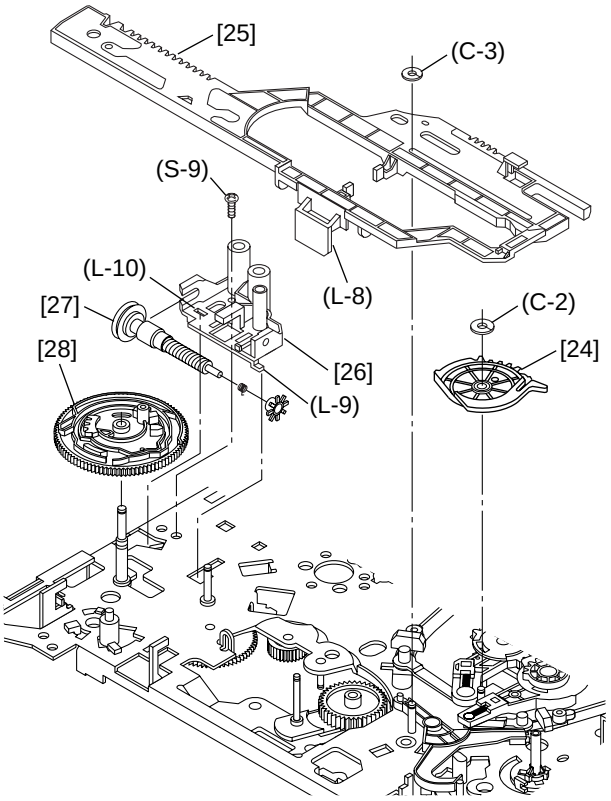



Top View

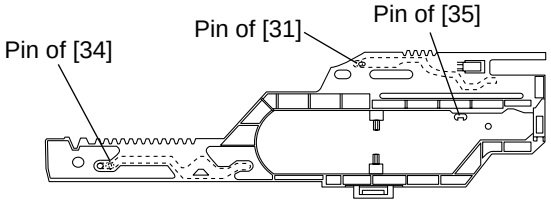


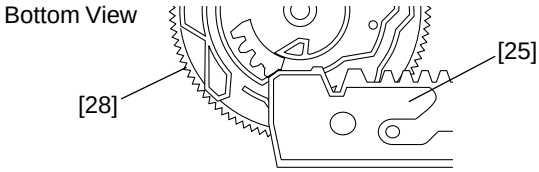

Position of pin on [22]

**Fig. DM12**

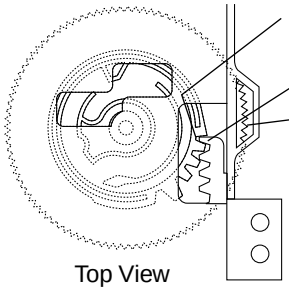



Position of Mode Lever when installed




Align [25] and [28] as shown.




When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

**Fig. DM13**

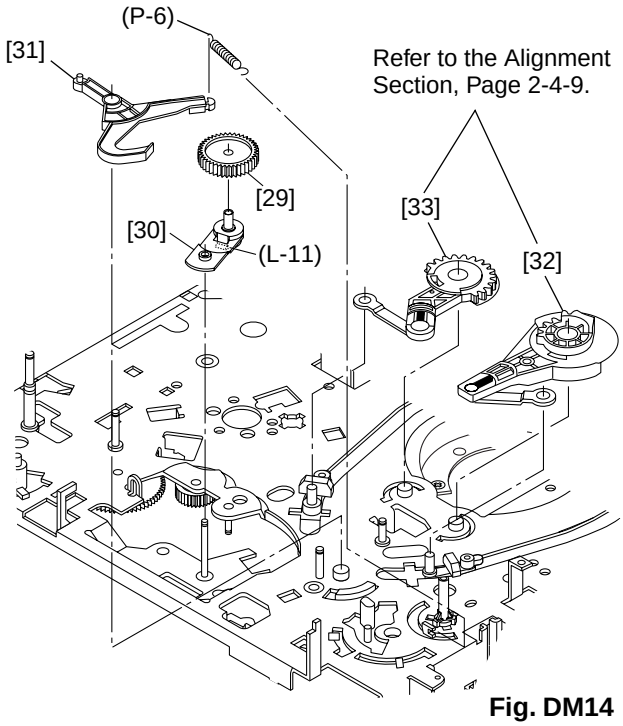



**Fig. DM14**

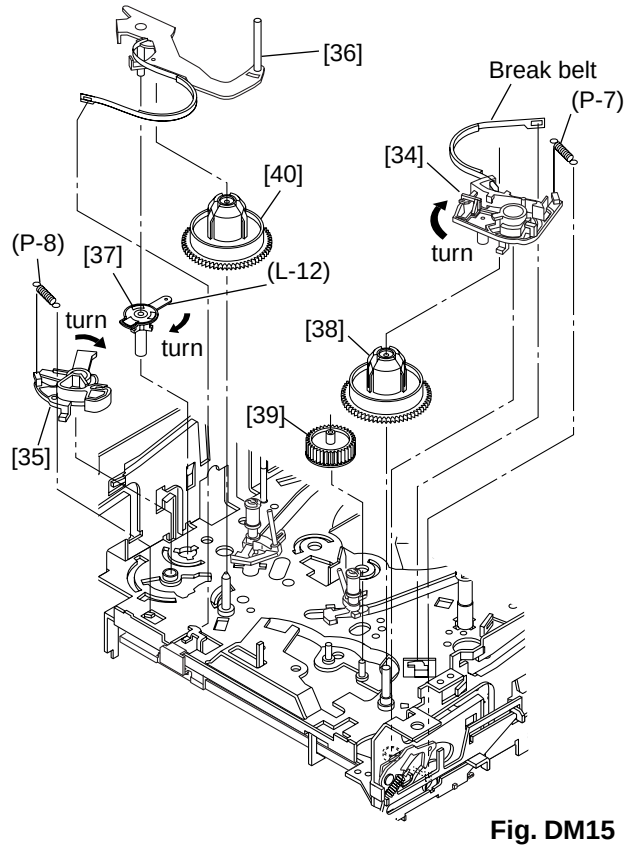



**Fig. DM15**

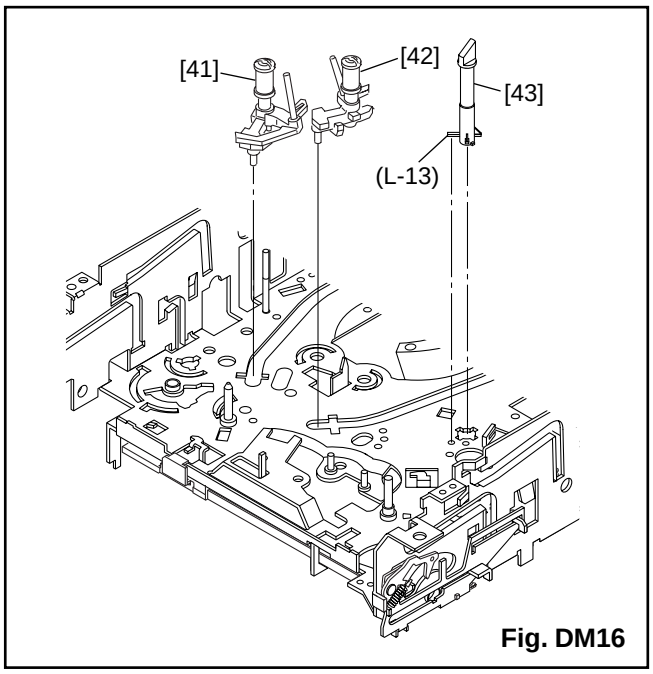



**Fig. DM16**

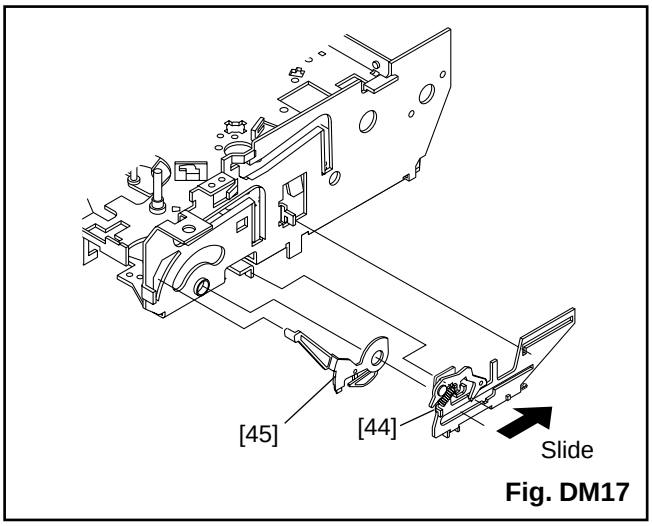



**Fig. DM17**

# ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

**All alignments are to be performed with the mechanism in Eject mode,** in the sequence given. Each procedure assumes that all previous procedures have been completed.

**IMPORTANT:**

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

## Alignment points in Eject Position

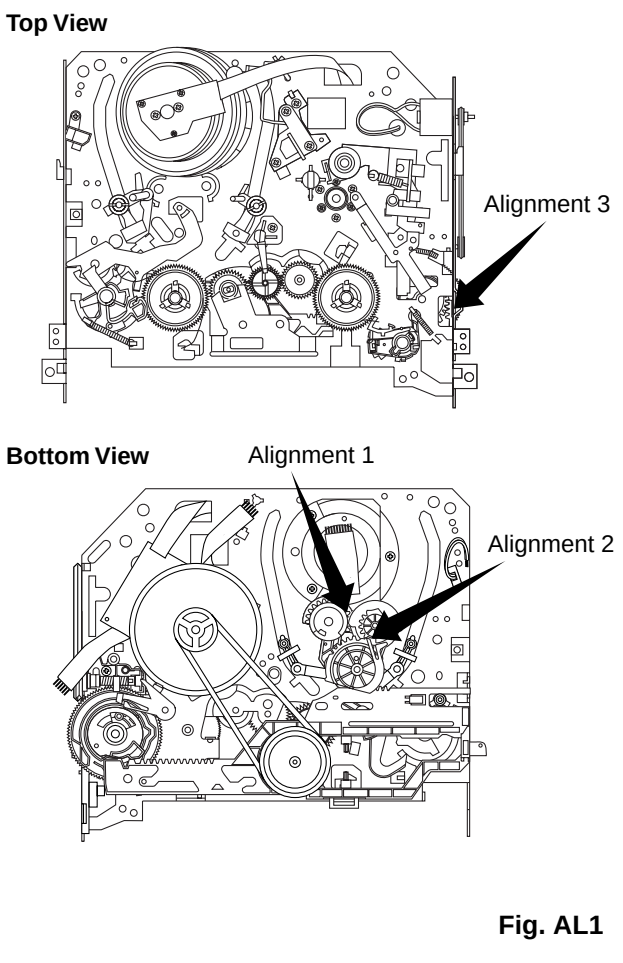



**Fig. AL1**

Alignment 1

## Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

## Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (TU) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

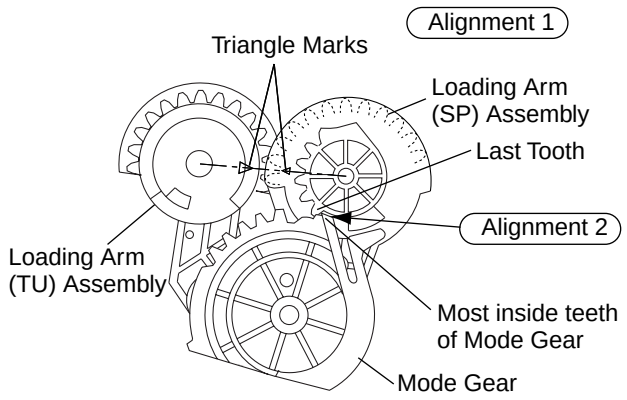



**Fig. AL2**

Alignment 3

## Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

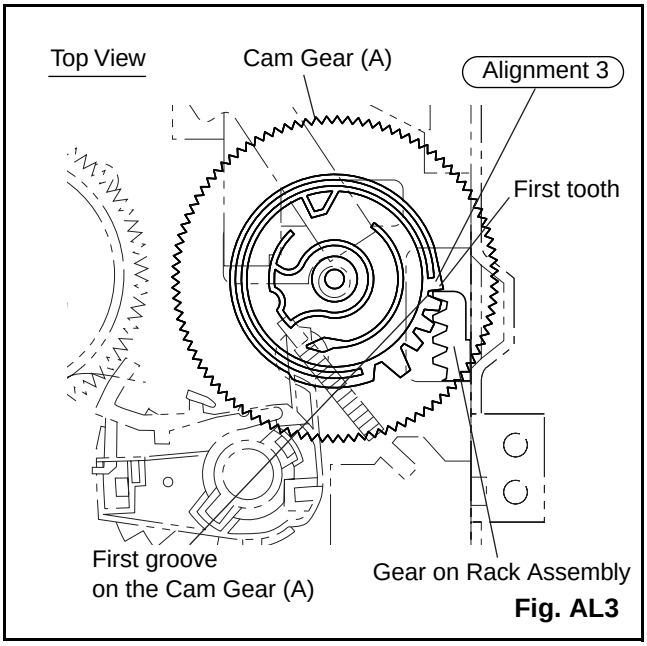



**Fig. AL3**

# EXPLODED VIEWS AND PARTS LIST SECTION

# VIDEO CASSETTE RECORDER

# DCV203/DCV603

**Sec. 3: Exploded views and Parts List Section**
- **Exploded views**
- **Parts List**

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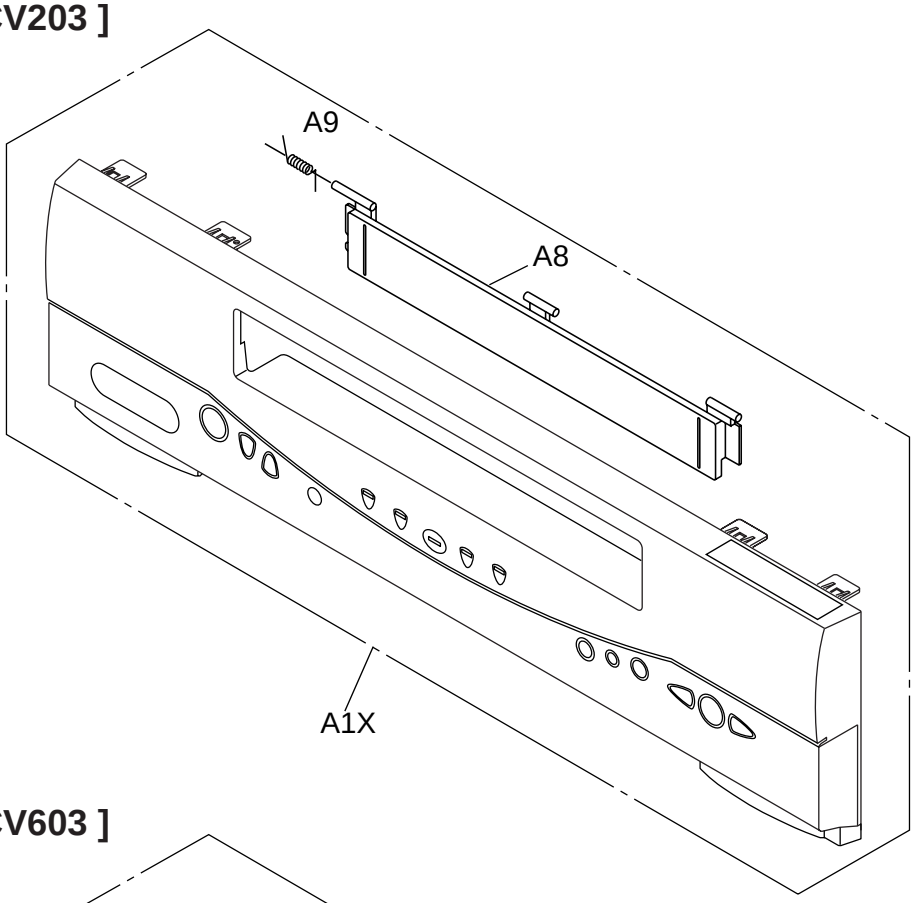
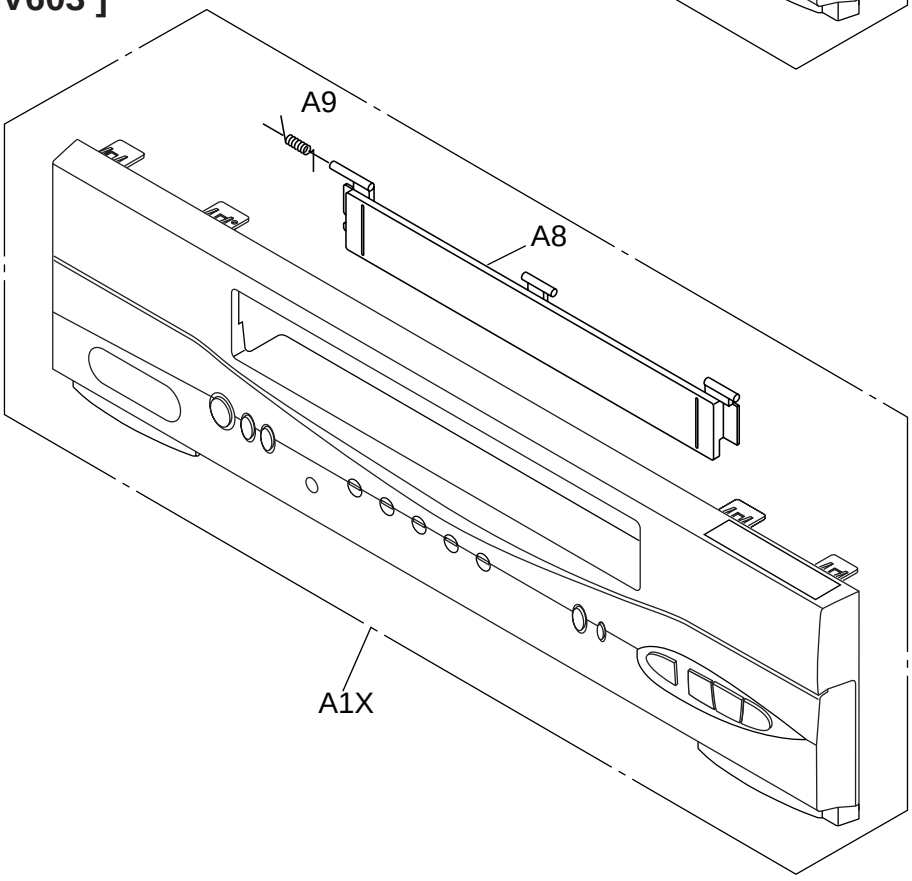
# EXPLODED VIEWS

## Front Panel

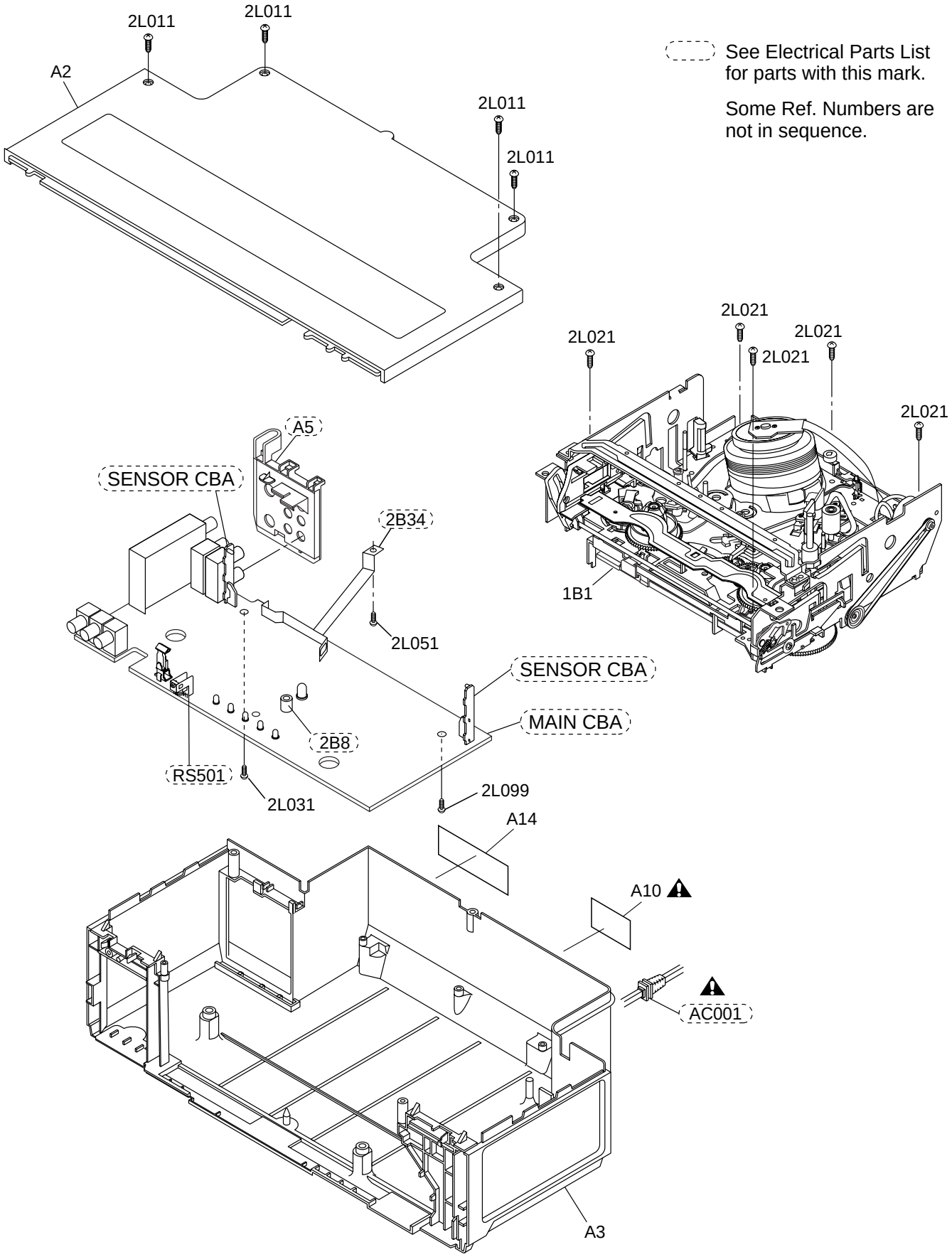
**[ DCV203 ]**




**[ DCV603 ]**

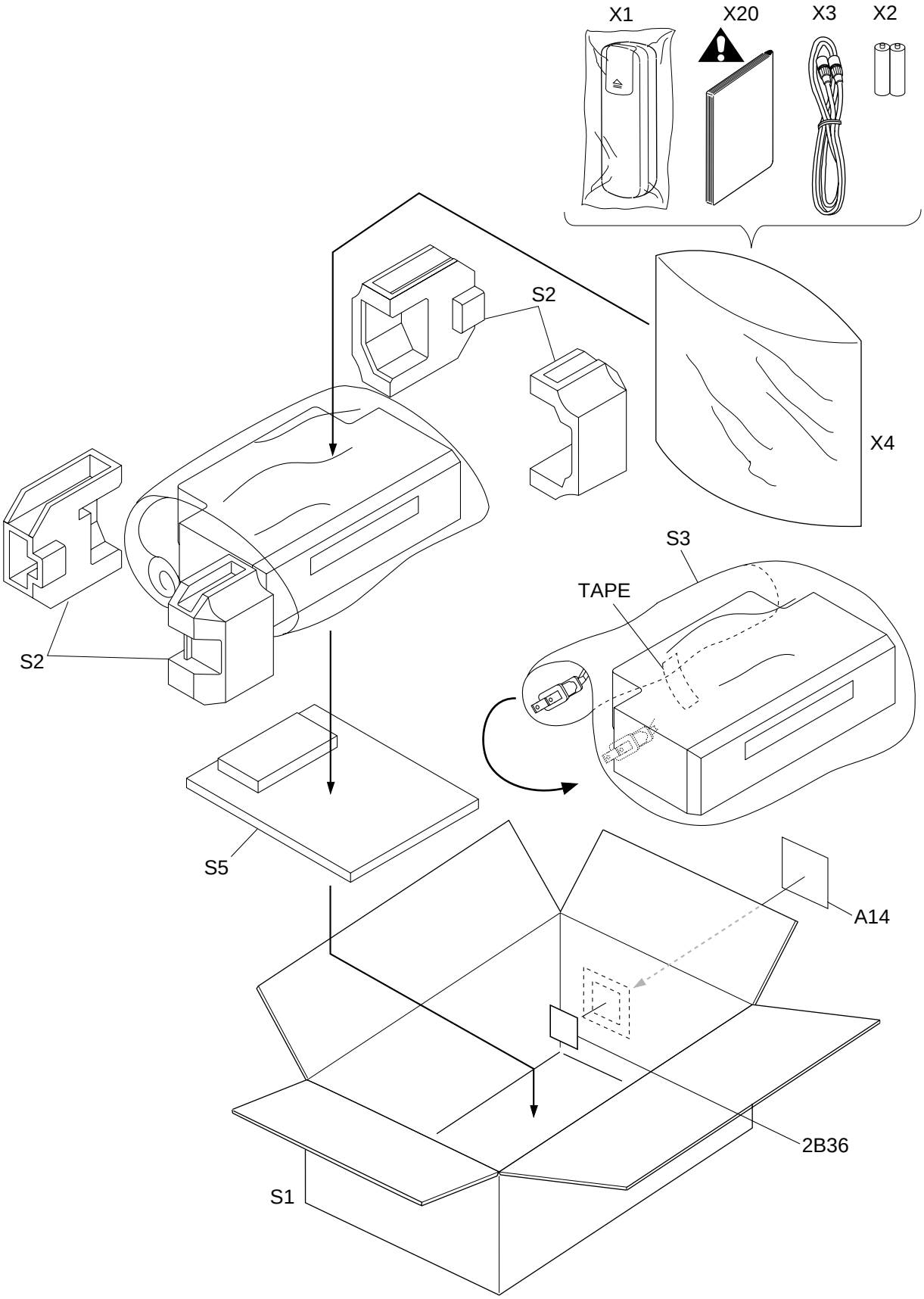


## Cabinet


2L011
2L011
A2
2L011
2L011
See Electrical Parts List for parts with this mark.
Some Ref. Numbers are not in sequence.
2L021
2L021
2L021
2L021
2L021
1B1
A5
SENSOR CBA
2B34
2L051
SENSOR CBA
MAIN CBA
2B8
RS501
2L031
2L099
A14
A10
AC001
A3

Some Ref. Numbers are not in sequence.

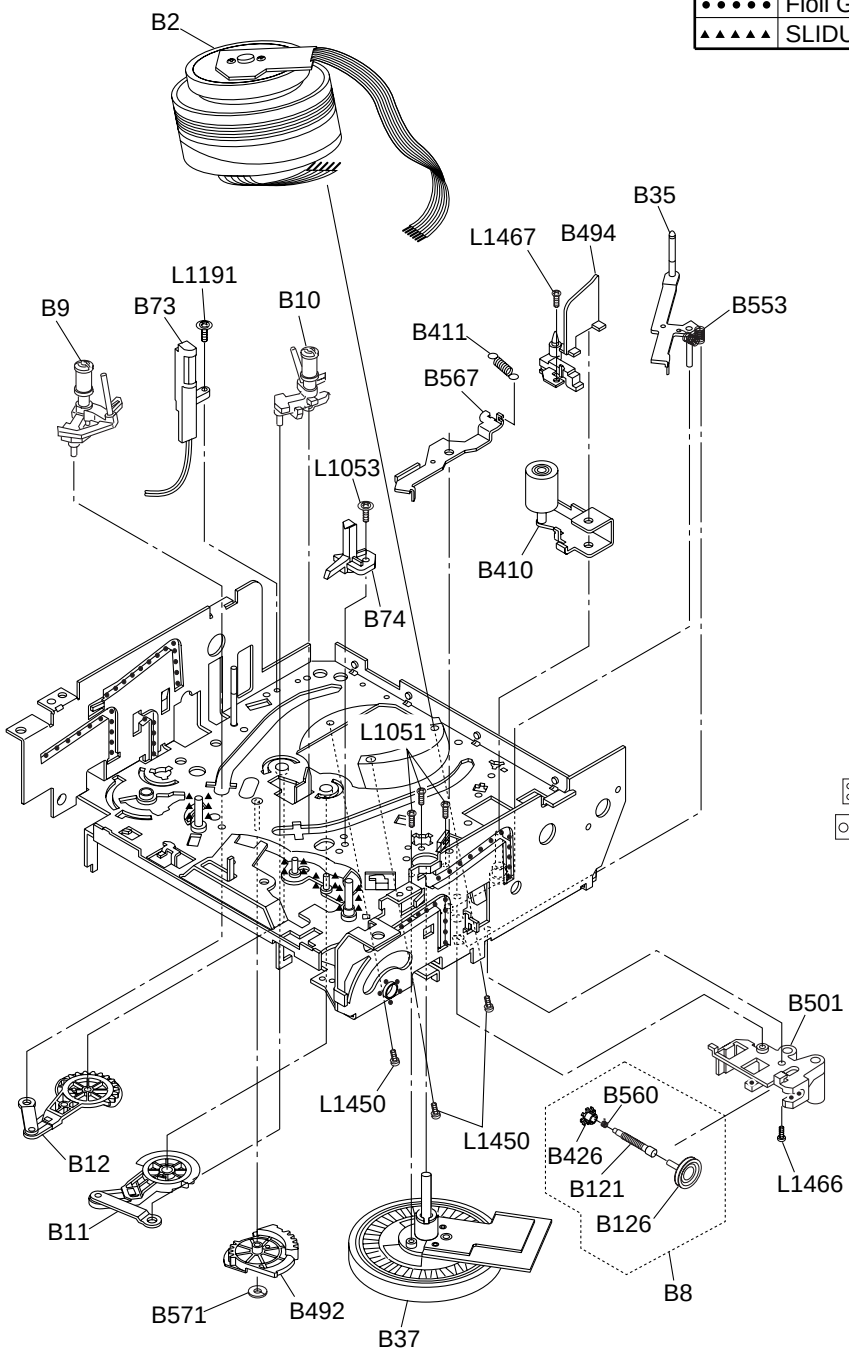
## Packing

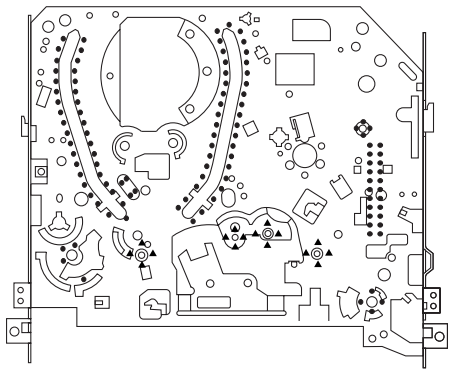


# DECK EXPLODED VIEWS

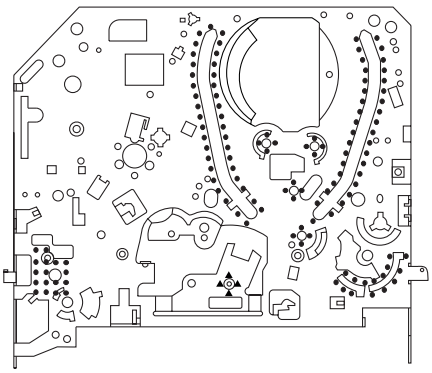
## Deck Mechanism View 1

| Mark | Description |
|---|---|
| ●●●●● | Floil G-684G or Multemp MH-D (Blue grease) |
| ▲▲▲▲▲ | SLIDUS OIL #150 |



Chassis Assembly
Top View (Lubricating Point)

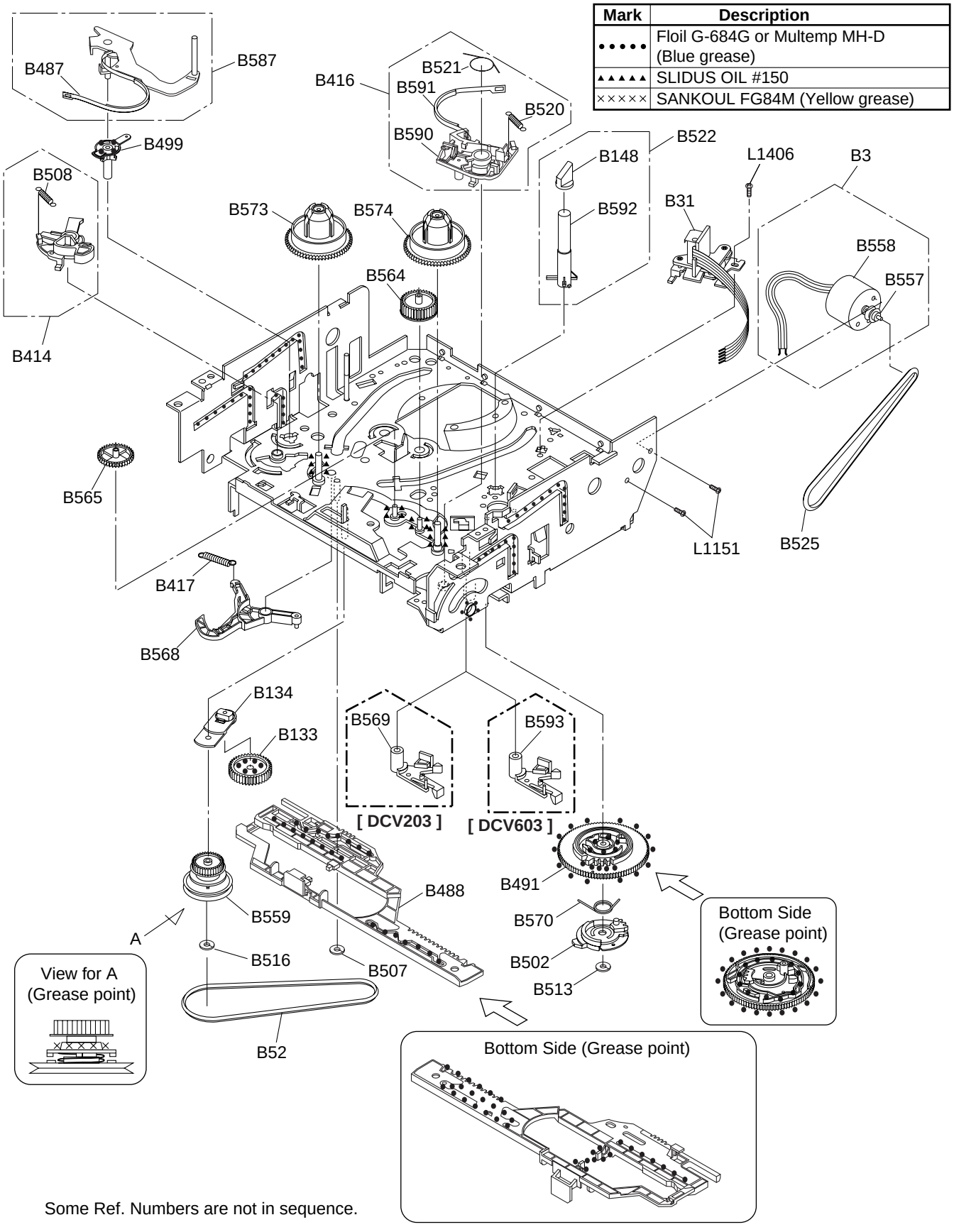


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

# Deck Mechanism View 2

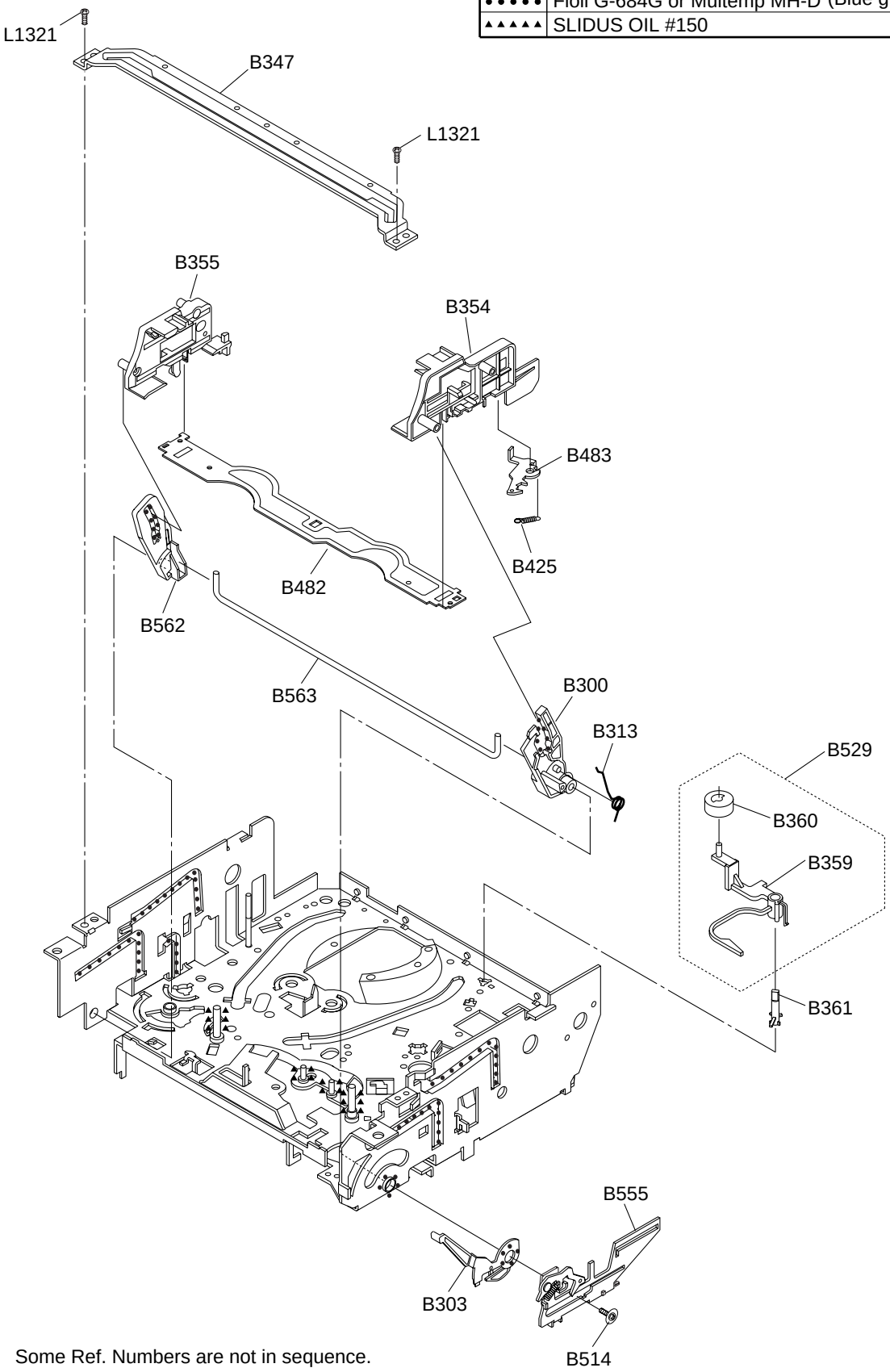
| Mark | Description |
|---|---|
| ••••• | Floil G-684G or Multemp MH-D (Blue grease) |
| ▲▲▲▲▲ | SLIDUS OIL #150 |
| ××××× | SANKOUL FG84M (Yellow grease) |




Some Ref. Numbers are not in sequence.

# Deck Mechanism View 3

| Mark | Description |
|---|---|
| ●●●●● | Floil G-684G or Multemp MH-D (Blue grease) |
| ▲▲▲▲▲ | SLIDUS OIL #150 |




Some Ref. Numbers are not in sequence.

| | | | |
|---|---|---|---|
| | | 20030218 | |
| | | | |
| | | DCV203/603 (HD230/441CD) | |
| | | | |
| | Mark | Model | |
| | A | DCV203 (HD230CD) | |
| | B | DCV603 (HD441CD) | |
| | | | |
| Ref No. | Mark | Description | Parts No. |
| MECHANICAL PARTS LIST | | | |
| A1X | A | FRONT ASSEMBLY HD230CD | 0VM204168 |
| A1X | B | FRONT ASSEMBLY HD441CD | 0VM204049 |
| A2 | A | CASE, TOP(U27) HD400UD | 0VM101186 |
| A2 | B | CASE, TOP HD450CD | 0VM306022 |
| A3 | A | CHASSIS(CANADA) HD230CD | 0VM204157 |
| A3 | B | CHASSIS(CANADA) HD450CD | 0VM203914 |
| A8 | A | DOOR, CASSETTE HD230CD | 0VM415206 |
| A8 | B | DOOR, CASSETTE HD441CD | 0VM415202 |
| A9 | | SPRING, DOOR H7220UD U15 | 0VM408617 |
| A10! | A | LABEL, RATING HD230CD | ---------- |
| A10! | B | LABEL, RATING HD441CD | ---------- |
| A14 | | LABEL, BAR CODE HB400UD | ---------- |
| A14 | A | LABEL, BAR CODE HD230CD | ---------- |
| A14 | B | LABEL, BAR CODE HD441CD | ---------- |
| 1B1 | A | DECK ASSEMBLY CZD012/VM162U | N162UFL |
| 1B1 | B | DECK ASSEMBLY CZD012/VM166U | N166UFL |
| 2B36 | | LABEL, EAS L0951UB | ---------- |
| 2L011 | | SCREW, P-TIGHT 3X10 BIND HEAD+ | GBEP3100 |
| 2L021 | | SCREW, P-TIGHT M3X10 WASHER HEAD+ | GCMP3100 |
| 2L031 | | SCREW, S-TIGHT M3X6 BIND HEAD+ | GBMS3060 |
| 2L051 | | SCREW, S-TIGHT M3X6 BIND HEAD+ | GBMS3060 |
| 2L099 | | SCREW, P-TIGHT M3X8 BIND HEAD+ | GBCP3080 |
| S1 | A | GIFT BOX CARTON HD230CD | 0VM306267 |
| S1 | B | GIFT BOX CARTON HD441CD | 0VM306268 |
| S2 | | STYROFOAM(F/C-U27) HD400UD | 0VM203814 |
| S3 | | UNIT, BAG V4010PA | 0VM406453B |
| S5 | | PAD HD400UD | 0VM414408A |
| X1 | A | REMOTE CONTROL UNIT 364/CRC007 | NA310UD |
| X1 | B | REMOTE CONTROL UNIT 364/CRC007 | NA312UD |
| X1 | | REMOTE CONTROL UNIT 364/CRC007 | NA362UD |
| X2 | | DRY BATTERY R6P/2S | XB0M451T0001 |
| X2 | | DRY BATTERY ES-GR6M-C | XB0M571GLP01 |
| X3 | | RF CABLE 2.5C-2V | WPZ0901TM002 |
| X4 | | ACCESSORY BAG H3600UD T=0.03 | 0VM409454A |
| X20! | A | OWNER'S MANUAL HD230CD | 0VMN03674 |
| X20! | B | OWNER'S MANUAL HD441CD | 0VMN03673 |
| | | | |
| ELECTRICAL PARTS LIST | | | |
| | A | MCV CBA | 0VSA14022 |
| | B | MCV CBA | 0VSA13475 |
| | | Consists of the following: | |
| | | MAIN CBA | ---------- |
| | | SENSOR CBA | 0VSA13474 |
| | | | |
| | | MAIN CBA | ---------- |
| 2B8 | | BUSH, LED(F) H3700UD | 0VM409508 |
| 2B34 | | SHIELD, HEAD HD400UD | 0VM305875 |





| | | | |
|---|---|---|---|
| A5 | A | JACK BOARD(MONO) HD200UD | 0VM203803 |
| A5 | B | JACK BOARD(HIFI) HD400UD | 0VM203804 |
| AC001! | | AC CORD A0A0280-007 | WAC0172LTE04 |
| AC001! | | AC CORD PB8K9F9110A-057 | WAC0172LW008 |
| C001! | | METALLIZED FILM CAP. 0.01UF/275V K | CT2E103HJE13 |
| C001! | | METALLIZED FILM CAP. 0.01UF/275V K | CT2E103HJE05 |
| C001! | | METALLIZED FILM CAP. 0.01UF/250V K | CT2E103DC011 |
| C002! | | SAFETY CAP. 2200PF/250V | CCG2EMA0F222 |
| C002! | | SAFETY CAP. 2200PF/250V | CCD2EMA0E222 |
| C003 | | ELECTROLYTIC CAP. 82UF/200V M | CA2D820S6014 |
| C003 | | ELECTROLYTIC CAP. 82UF/200V M | CA2D820NC088 |
| C004 | | CERAMIC CAP. B K 120PF/500V | CCD2JKP0B121 |
| C007 | | CERAMIC CAP.(AX) X K 3300PF/16V | CCA1CKT0X332 |
| C009 | | CERAMIC CAP.(AX) X K 5600PF/16V | CCA1CKT0X562 |
| C013 | | ELECTROLYTIC CAP. 10UF/50V M H7 | CE1JMAVSL100 |
| C018 | | ELECTROLYTIC CAP. 470UF/16V M | CE1CMASDL471 |
| C018 | | ELECTROLYTIC CAP. 470UF/16V M | CE1CMASTL471 |
| C020 | | ELECTROLYTIC CAP. 1000UF/10V M | CE1AMZPDL102 |
| C020 | | ELECTROLYTIC CAP. 1000UF/10V M | CE1AMZPTL102 |
| C021 | | ELECTROLYTIC CAP. 100UF/6.3V M H7 | CE0KMASSL101 |
| C024 | | CERAMIC CAP.(AX) B K 390PF/50V | CCA1JKT0B391 |
| C026 | | ELECTROLYTIC CAP. 2.2UF/250V M | CA2E2R2S6009 |
| C026 | | ELECTROLYTIC CAP. 2.2UF/250V M(105°C) | CE2EMASTH2R2 |
| C030 | | CERAMIC CAP.(AX) X K 5600PF/16V | CCA1CKT0X562 |
| C051 | B | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C060 | | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EKB0B104 |
| C060 | | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CKB0B104 |
| C060 | | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EK30B104 |
| C060 | | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CK30B104 |
| C071 | | CERAMIC CAP.(AX) B K 150PF/50V | CCA1JKT0B151 |
| C253 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C255 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C255 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C256 | | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C257 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C257 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C257 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C257 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C257 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C258 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJBSL101 |
| C258 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJ3SL101 |
| C258 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJBCH101 |
| C258 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJ3CH101 |
| C258 | | CHIP CERAMIC CAP. CG J 100PF/50V | CHD1JJ3CG101 |
| C308 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C309 | | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C310 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C310 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C310 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C310 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C310 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C311 | | CHIP CERAMIC CAP. CH J 390PF/50V | CHD1JJBCH391 |
| C311 | | CHIP CERAMIC CAP. CH J 390PF/50V | CHD1JJ3CH391 |
| C311 | | CHIP CERAMIC CAP. CG J 390PF/50V | CHD1JJ3CG391 |
| C312 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZB0F105 |
| C312 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZ30F105 |
| C314 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJBSL101 |

| | | | |
|---|---|---|---|
| C314 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJ3SL101 |
| C314 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJBCH101 |
| C314 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJ3CH101 |
| C314 | | CHIP CERAMIC CAP. CG J 100PF/50V | CHD1JJ3CG101 |
| C315 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJBSL101 |
| C315 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJ3SL101 |
| C315 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJBCH101 |
| C315 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJ3CH101 |
| C315 | | CHIP CERAMIC CAP. CG J 100PF/50V | CHD1JJ3CG101 |
| C320 | | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C321 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C322 | | ELECTROLYTIC CAP. 1UF/50V M | CE1JMASDL1R0 |
| C322 | | ELECTROLYTIC CAP. 1UF/50V M | CE1JMASTL1R0 |
| C324 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C325 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C326 | | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C328 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C328 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C329 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C329 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C330 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C330 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C332 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C332 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C333 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C335 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C335 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C335 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C335 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C335 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C336 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JKB0B473 |
| C336 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EKB0B473 |
| C336 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JK30B473 |
| C336 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EK30B473 |
| C337 | | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C339 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C340 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C341 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C341 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C344 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C345 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C345 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C346 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZB0F105 |
| C346 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZ30F105 |
| C347 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZB0F105 |
| C347 | | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZ30F105 |
| C348 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JKB0B473 |
| C348 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EKB0B473 |
| C348 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JK30B473 |
| C348 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EK30B473 |
| C349 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JKB0B473 |
| C349 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EKB0B473 |
| C349 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JK30B473 |
| C349 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EK30B473 |
| C352 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JKB0B473 |
| C352 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EKB0B473 |
| C352 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JK30B473 |





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| C352 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EK30B473 |
| C353 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C353 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C354 | B | CHIP CERAMIC CAP. CH J 68PF/50V | CHD1JJBCH680 |
| C354 | B | CHIP CERAMIC CAP. CH J 68PF/50V | CHD1JJ3CH680 |
| C354 | B | CHIP CERAMIC CAP. CG J 68PF/50V | CHD1JJ3CG680 |
| C391 | A | ELECTROLYTIC CAP. 47UF/16V M | CE1CMASDL470 |
| C391 | A | ELECTROLYTIC CAP. 47UF/16V M | CE1CMASTL470 |
| C391 | B | ELECTROLYTIC CAP. 100UF/10V M | CE1AMASDL101 |
| C391 | B | ELECTROLYTIC CAP. 100UF/10V M | CE1AMASTL101 |
| C392 | | ELECTROLYTIC CAP. 470UF/6.3V M | CE0KMASDL471 |
| C392 | | ELECTROLYTIC CAP. 470UF/6.3V M | CE0KMASTL471 |
| C393 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JKB0B102 |
| C393 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JK30B102 |
| C401 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C401 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C401 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C401 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C401 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C402 | A | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C402 | A | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C402 | A | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C402 | A | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C402 | A | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C403 | A | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C403 | A | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C403 | A | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C403 | A | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C403 | A | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C404 | | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C405 | | ELECTROLYTIC CAP. 33UF/6.3V M H7 | CE0KMAVSL330 |
| C406 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C406 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C408 | | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C409 | | CHIP CERAMIC CAP.(MELF) Y K 6800PF/16V | CZM1CKB0Y682 |
| C409 | | CHIP CERAMIC CAP.(MELF) Y K 6800PF/16V | CZM1CK30Y682 |
| C410 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C410 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C410 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C410 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C410 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C411 | | CHIP CERAMIC CAP.(MELF) Y K 2200PF/35V | CZM1GKB0Y222 |
| C411 | | CHIP CERAMIC CAP.(MELF) Y K 2200PF/35V | CZM1GK30Y222 |
| C411 | | CHIP CERAMIC CAP. B K 2200PF/50V | CHD1JKB0B222 |
| C411 | | CHIP CERAMIC CAP. B K 2200PF/50V | CHD1JK30B222 |
| C413 | | CHIP CERAMIC CAP. B K 0.012UF/50V | CHD1JKB0B123 |
| C413 | | CHIP CERAMIC CAP. B K 0.012UF/50V | CHD1JK30B123 |
| C415 | | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C417 | | CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V | CZM1GKB0Y102 |
| C417 | | CHIP CERAMIC CAP.(MELF) Y K 1000PF/35V | CZM1GK30Y102 |
| C418 | | CHIP CERAMIC CAP. B K 2700PF/50V | CHD1JKB0B272 |
| C418 | | CHIP CERAMIC CAP. B K 2700PF/50V | CHD1JK30B272 |
| C419 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C419 | | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C421 | B | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C422 | | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C423 | | ELECTROLYTIC CAP. 220UF/6.3V M H7 | CE0KMAVSL221 |

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| C424 | | CERAMIC CAP. B K 470PF/100V | CCD2AKS0B471 |
| C448 | B | ELECTROLYTIC CAP. 4.7UF/50V M H7 | CE1JMAVSL4R7 |
| C449 | B | ELECTROLYTIC CAP. 4.7UF/50V M H7 | CE1JMAVSL4R7 |
| C451 | B | ELECTROLYTIC CAP. 47UF/16V M H7 | CE1CMAVSL470 |
| C452 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C453 | B | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C454 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C455 | B | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C456 | B | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C457 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C458 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C458 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C459 | B | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C460 | B | CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V | CZM1CKB0Y472 |
| C460 | B | CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V | CZM1CK30Y472 |
| C461 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C461 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C462 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C462 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C463 | B | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EKB0B104 |
| C463 | B | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CKB0B104 |
| C463 | B | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EK30B104 |
| C463 | B | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CK30B104 |
| C465 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C466 | | ELECTROLYTIC CAP. 220UF/6.3V M H7 | CE0KMAVSL221 |
| C467 | B | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JKB0B223 |
| C467 | B | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EKB0B223 |
| C467 | B | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JK30B223 |
| C467 | B | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EK30B223 |
| C470 | B | CERAMIC CAP.(AX) F Z 0.1UF/50V | CCA1JZTFZ104 |
| C471 | B | ELECTROLYTIC CAP. 22UF/6.3V M H7 | CE0KMAVSL220 |
| C472 | B | CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V | CZM1CKB0Y472 |
| C472 | B | CHIP CERAMIC CAP.(MELF) Y K 4700PF/16V | CZM1CK30Y472 |
| C473 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JKB0B103 |
| C473 | B | CHIP CERAMIC CAP. B K 0.01UF/50V | CHD1JK30B103 |
| C474 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C475 | B | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C476 | B | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZB0F105 |
| C476 | B | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZ30F105 |
| C477 | B | ELECTROLYTIC CAP. 2.2UF/50V M H7 | CE1JMAVSL2R2 |
| C478 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C479 | B | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JKB0B223 |
| C479 | B | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EKB0B223 |
| C479 | B | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JK30B223 |
| C479 | B | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EK30B223 |
| C480 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C481 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C483 | B | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C483 | B | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C483 | B | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C483 | B | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C483 | B | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C484 | B | ELECTROLYTIC CAP. 2.2UF/50V M H7 | CE1JMAVSL2R2 |
| C485 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C486 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C487 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C488 | B | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZB0F105 |





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| C488 | B | CHIP CERAMIC CAP. F Z 1UF/10V | CHD1AZ30F105 |
| C489 | B | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C491 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C492 | B | ELECTROLYTIC CAP. 22UF/16V M H7 | CE1CMAVSL220 |
| C493 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C494 | B | ELECTROLYTIC CAP. 22UF/16V M H7 | CE1CMAVSL220 |
| C495 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C495 | B | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C496 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C498 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C499 | B | ELECTROLYTIC CAP. 4.7UF/25V M H7 | CE1EMAVSL4R7 |
| C502 | | ELECTROLYTIC CAP. 220UF/6.3V M H7 | CE0KMAVSL221 |
| C505 | | ELECTROLYTIC CAP. 22UF/10V M H7 | CE1AMAVSL220 |
| C507 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C508 | | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JKB0B223 |
| C508 | | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EKB0B223 |
| C508 | | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JK30B223 |
| C508 | | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EK30B223 |
| C509 | | ELECTROLYTIC CAP. 330UF/6.3V M H7 | CE0KMASSL331 |
| C511 | | CHIP CERAMIC CAP. CH J 22PF/50V | CHD1JJBCH220 |
| C511 | | CHIP CERAMIC CAP. CH J 22PF/50V | CHD1JJ3CH220 |
| C511 | | CHIP CERAMIC CAP. CG J 22PF/50V | CHD1JJ3CG220 |
| C513 | | CHIP CERAMIC CAP.(MELF) SL D 10PF/50V | CZM1JDBSL100 |
| C513 | | CHIP CERAMIC CAP.(MELF) SL D 10PF/50V | CZM1JD3SL100 |
| C513 | | CHIP CERAMIC CAP. CH D 10PF/50V | CHD1JDBCH100 |
| C513 | | CHIP CERAMIC CAP. CH D 10PF/50V | CHD1JD3CH100 |
| C513 | | CHIP CERAMIC CAP. CG D 10PF/50V | CHD1JD3CG100 |
| C514 | | CHIP CERAMIC CAP.(MELF) SL J 22PF/50V | CZM1JJBSL220 |
| C514 | | CHIP CERAMIC CAP.(MELF) SL J 22PF/50V | CZM1JJ3SL220 |
| C515 | | CHIP CERAMIC CAP.(MELF) SL J 18PF/50V | CZM1JJBSL180 |
| C515 | | CHIP CERAMIC CAP.(MELF) SL J 18PF/50V | CZM1JJ3SL180 |
| C515 | | CHIP CERAMIC CAP. CH J 18PF/50V | CHD1JJBCH180 |
| C515 | | CHIP CERAMIC CAP. CH J 18PF/50V | CHD1JJ3CH180 |
| C515 | | CHIP CERAMIC CAP. CG J 18PF/50V | CHD1JJ3CG180 |
| C521 | | ELECTROLYTIC CAP. 47UF/16V M H7 | CE1CMAVSL470 |
| C522 | | CHIP CERAMIC CAP. B K 4700PF/50V | CHD1JKB0B472 |
| C522 | | CHIP CERAMIC CAP. B K 4700PF/50V | CHD1JK30B472 |
| C523 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJBSL101 |
| C523 | | CHIP CERAMIC CAP.(MELF) SL J 100PF/50V | CZM1JJ3SL101 |
| C523 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJBCH101 |
| C523 | | CHIP CERAMIC CAP. CH J 100PF/50V | CHD1JJ3CH101 |
| C523 | | CHIP CERAMIC CAP. CG J 100PF/50V | CHD1JJ3CG101 |
| C527 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JKB0B473 |
| C527 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EKB0B473 |
| C527 | | CHIP CERAMIC CAP. B K 0.047UF/50V | CHD1JK30B473 |
| C527 | | CHIP CERAMIC CAP. B K 0.047UF/25V | CHD1EK30B473 |
| C529 | | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JKB0B223 |
| C529 | | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EKB0B223 |
| C529 | | CHIP CERAMIC CAP. B K 0.022UF/50V | CHD1JK30B223 |
| C529 | | CHIP CERAMIC CAP. B K 0.022UF/25V | CHD1EK30B223 |
| C530 | | ELECTROLYTIC CAP. 1UF/50V M H7 | CE1JMAVSL1R0 |
| C531 | | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C532 | | ELECTROLYTIC CAP. 10UF/16V M H7 | CE1CMAVSL100 |
| C533 | B | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C534 | | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EKB0B104 |
| C534 | | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CKB0B104 |
| C534 | | CHIP CERAMIC CAP. B K 0.1UF/25V | CHD1EK30B104 |

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| C534 | | CHIP CERAMIC CAP. B K 0.1UF/16V | CHD1CK30B104 |
| C535 | | ELECTROLYTIC CAP. 22UF/10V M H7 | CE1AMAVSL220 |
| C536 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JKB0B102 |
| C536 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JK30B102 |
| C537 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JKB0B102 |
| C537 | | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JK30B102 |
| C539 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C539 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C540 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZB0F103 |
| C540 | | CHIP CERAMIC CAP.(MELF) F Z 0.01UF/16V | CZM1CZ30F103 |
| C541 | | ELECTROLYTIC CAP. 47UF/6.3V M H7 | CE0KMAVSL470 |
| C544 | | ELECTROLYTIC CAP. 100UF/6.3V H7 | CE0KMAVSL101 |
| C545 | | CERAMIC CAP.(AX) X K 4700PF/16V | CCA1CKT0X472 |
| C546 | | CERAMIC CAP.(AX) B K 150PF/50V | CCA1JKT0B151 |
| C547 | | CERAMIC CAP.(AX) B K 120PF/50V | CCA1JKT0B121 |
| C571 | B | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JKB0B102 |
| C571 | B | CHIP CERAMIC CAP. B K 1000PF/50V | CHD1JK30B102 |
| C701 | A | PCB JUMPER D0.6-P5.0 | JW5.0T |
| C701 | B | ELECTROLYTIC CAP. 0.47UF/50V M | CE1JMASDLR47 |
| C701 | B | ELECTROLYTIC CAP. 0.47UF/50V M | CE1JMASTLR47 |
| C703 | | ELECTROLYTIC CAP. 100UF/6.3V H7 | CE0KMAVSL101 |
| C704 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZB0F104 |
| C704 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZB0F104 |
| C704 | | CHIP CERAMIC CAP. F Z 0.1UF/50V | CHD1JZ30F104 |
| C704 | | CHIP CERAMIC CAP. F Z 0.1UF/25V | CHD1EZ30F104 |
| C704 | | CHIP CERAMIC CAP. FZ Z 0.1UF/50V | CHD1JZ3FZ104 |
| C707 | A | FILM CAP.(P) 0.039UF/50V J | CMA1JJS00393 |
| C707 | A | FILM CAP.(P) 0.039UF/50V J | CA1J393MS029 |
| C708 | | ELECTROLYTIC CAP. 0.22UF/50V M | CE1JMASDLR22 |
| C708 | | ELECTROLYTIC CAP. 0.22UF/50V M | CE1JMASTLR22 |
| C709 | | ELECTROLYTIC CAP. 1UF/50V M | CE1JMASDL1R0 |
| C709 | | ELECTROLYTIC CAP. 1UF/50V M | CE1JMASTL1R0 |
| C751 | | CHIP CERAMIC CAP. CH J 68PF/50V | CHD1JJBCH680 |
| C751 | | CHIP CERAMIC CAP. CH J 68PF/50V | CHD1JJ3CH680 |
| C751 | | CHIP CERAMIC CAP. CG J 68PF/50V | CHD1JJ3CG680 |
| C425A | | FILM CAP.(P) 0.018UF/100V J | CMA2AJS00183 |
| C425A | | FILM CAP.(P) 0.018UF/50V J | CA1J183MS029 |
| D001 | | RECTIFIER DIODE 1N4005 A124 | NDAZ001N4005 |
| D002 | | RECTIFIER DIODE 1N4005 A124 | NDAZ001N4005 |
| D003 | | RECTIFIER DIODE 1N4005 A124 | NDAZ001N4005 |
| D004 | | RECTIFIER DIODE 1N4005 A124 | NDAZ001N4005 |
| D006 | | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D006 | | SWITCHING DIODE 1SS133(T-77) | QDTZ001SS133 |
| D013 | | RECTIFIER DIODE BA157 | NDQZ000BA157 |
| D013 | | FAST RECOVERY DIODE ERA18-04 | QDPZ0ERA1804 |
| D015 | | RECTIFIER DIODE BA157 | NDQZ000BA157 |
| D015 | | FAST RECOVERY DIODE ERA18-04 | QDPZ0ERA1804 |
| D016 | | SCHOTTKY BARRIER DIODE SB140 | NDQZ000SB140 |
| D016 | | SCHOTTKY BARRIER DIODE ERB81-004 | AERB81004*** |
| D018 | | ZENER DIODE DZ-8.2BSAT265 | NDTA0DZ8R2BS |
| D018 | | ZENER DIODE MTZJT-778.2A | QDTA0MTZJ8R2 |
| D020 | | RECTIFIER DIODE BA157 | NDQZ000BA157 |
| D020 | | FAST RECOVERY DIODE ERA18-04 | QDPZ0ERA1804 |
| D051 | | RECTIFIER DIODE BA158 | NDQZ000BA158 |
| D051 | | RECTIFIER DIODE ERA22-10 | QDPZ0ERA2210 |
| D052 | A | CARBON RES. 1/6W J 5.6K OHM | RCX6JATZ0562 |
| D052 | A | CARBON RES. 1/4W J 5.6K OHM | RCX4JATZ0562 |





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| D052 | B | ZENER DIODE DZ-10BSBT265 | NDTB00DZ10BS |
| D052 | B | ZENER DIODE MTZJT-7710B | QDTB00MTZJ10 |
| D053 | | PCB JUMPER D0.6-P10.0 | JW10.0T |
| D501 | | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D501 | | SWITCHING DIODE 1SS133(T-77) | QDTZ001SS133 |
| D555 | | LED MIE-534A2 | NPZZM1E534A2 |
| D555 | | LED SIR-563ST3F P | QPQPS1R563ST |
| D555 | | LED SIR-563ST3F Q | QPQQS1R563ST |
| D561 | | LED(RED) 204HD/E | NPQZ00204HDE |
| D562 | | LED(GREEN) 204-10GD/S957 | NPQZ10GDS957 |
| D563 | | LED(GREEN) 204-10GD/S957 | NPQZ10GDS957 |
| D564 | | LED(RED) 204HD/E | NPQZ00204HDE |
| D565 | | LED(RED) 204HD/E | NPQZ00204HDE |
| D701A | | ZENER DIODE DZ-33BSDT265 | NDTD00DZ33BS |
| D701A | | ZENER DIODE MTZJT-7733D | QDTD00MTZJ33 |
| F001! | | FUSE SIC 1A 250V UC/T | PAGG20CW3102 |
| F001! | | FUSE 1A/250V | PAGG20CAG102 |
| FH001 | | FUSE HOLDER MSF-015 | XH01Z00LY001 |
| FH002 | | FUSE HOLDER MSF-015 | XH01Z00LY001 |
| IC001! | | PHOTOCOUPLER EL817A | NPEA000EL817 |
| IC001! | | PHOTOCOUPLER EL817B | NPEB000EL817 |
| IC001! | | PHOTOCOUPLER LTV-817B-F | NPEB0LTV817F |
| IC001! | | PHOTOCOUPLER LTV-817C-F | NPEC0LTV817F |
| IC002 | | IC KIA431-AT | NSZLA0TJY001 |
| IC002 | | IC:SHUNT REGULATOR TL431A-TA | NSZBA0TQ2003 |
| IC002 | | IC KIA431A-AT | NSZBA0TJY018 |
| IC301 | | IC:Y/C/A LA71091M | QSZBA0RSY012 |
| IC451 | B | IC:HIFI LA72670M | QSZBA0RSY034 |
| IC501 | | MICROCONTROLLER 8BIT MN101D08EFA4 | QSZAC0RMS005 |
| J162 | | INDUCTOR 47UH-K-5FT | LLARKBSTU470 |
| JK751 | A | RCA JACK MSP-282V-14 | JXRL030LY001 |
| JK751 | B | RCA JACK MSP-283V-B-324 | JXRL040LY006 |
| JK752 | A | RCA JACK MSP-282V-14 | JXRL030LY001 |
| JK752 | B | RCA JACK MSP-293V3-324 | JYRL060LY003 |
| JK753 | | RCA JACK(YELLOW) MSP-281V4-B | JXRL010LY003 |
| JK754 | B | RCA JACK(WHITE) MSP-281V1-B | JXRL010LY005 |
| JK755 | A | RCA JACK(WHITE) MSP-281V1-B | JXRL010LY005 |
| JK755 | B | RCA JACK(RED) MSP-281V3-A | JYRL010LY002 |
| JW001 | B | WIRE 030/BRO/AWG26#1007 | WX3101A63F03 |
| L001! | | LINE FILTER 4.5MH SA-00411B | LLBG00ZSA001 |
| L001! | | LINE FILTER 4.0MH LF130908-0009 | LLBG00ZKV002 |
| L009 | | CHOKE COIL 47UH-K | LLBD00PKV007 |
| L251 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| L303 | | INDUCTOR 100UH-K-26T | LLAXKATTU101 |
| L304 | | CHOKE COIL 47UH-K | LLBD00PKV007 |
| L421 | | INDUCTOR 47UH-K-5FT | LLARKBSTU470 |
| L422 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| L451 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| L452 | B | PCB JUMPER D0.6-P5.0 | JW5.0T |
| L501 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| L502 | | CHOKE COIL 47UH-K | LLBD00PKV007 |
| L503 | | INDUCTOR 12UH-K-26T | LLAXKATTU120 |
| L504 | | INDUCTOR 47UH-K-26T | LLAXKATTU470 |
| L701 | | INDUCTOR 4.7UH-K-5FT | LLARKBSTU4R7 |
| Q001 | | FET 2SK3472 | QFWZ02SK3472 |
| Q001 | | FET 2SK3374 | QFWZ02SK3374 |
| Q002 | | TRANSISTOR KTC3199(BL) | NQS50KTC3199 |

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| Q002 | | TRANSISTOR 2SC2785(K) | QQSK02SC2785 |
| Q002 | | TRANSISTOR 2SC1815-BL(TPE2) | QQS202SC1815 |
| Q052 | | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q052 | | RES. BUILT-IN TRANSISTOR BA1F4M-T | QQSZ00BA1F4M |
| Q055 | | TRANSISTOR KTC3203(Y) | NQSY0KTC3203 |
| Q055 | | TRANSISTOR 2SC2120-Y(TPE2) | QQSY02SC2120 |
| Q056 | | TRANSISTOR KTC3203(Y) | NQSY0KTC3203 |
| Q056 | | TRANSISTOR 2SC2120-Y(TPE2) | QQSY02SC2120 |
| Q057 | | TRANSISTOR KTC3199(BL) | NQS50KTC3199 |
| Q057 | | TRANSISTOR 2SC2785(K) | QQSK02SC2785 |
| Q057 | | TRANSISTOR 2SC1815-BL(TPE2) | QQS202SC1815 |
| Q301 | | TRANSISTOR KTA1266(GR) | NQS40KTA1266 |
| Q301 | | TRANSISTOR 2SA1015-GR(TPE2) | QQS102SA1015 |
| Q302 | | TRANSISTOR KTC3193(Y) | NQSY0KTC3193 |
| Q303 | | TRANSISTOR KTC3193(Y) | NQSY0KTC3193 |
| Q391 | | TRANSISTOR KTA1266(GR) | NQS40KTA1266 |
| Q391 | | TRANSISTOR 2SA1015-GR(TPE2) | QQS102SA1015 |
| Q421 | | TRANSISTOR KTA1266(GR) | NQS40KTA1266 |
| Q421 | | TRANSISTOR 2SA1015-GR(TPE2) | QQS102SA1015 |
| Q422 | | TRANSISTOR KTC3203(Y) | NQSY0KTC3203 |
| Q422 | | TRANSISTOR 2SC2120-Y(TPE2) | QQSY02SC2120 |
| Q425 | | RES. BUILT-IN TRANSISTOR KRA103M | NQSZ0KRA103M |
| Q425 | | RES. BUILT-IN TRANSISTOR BN1F4M-T | QQSZ00BN1F4M |
| Q426 | | CHIP TRANSISTOR RN1511(TE85R) | QQ2Z00RN1511 |
| Q426 | | CHIP TRANSISTOR FMG4A T148 | QQ2Z000FMG4A |
| Q501 | | TRANSISTOR KTC3199(BL) | NQS50KTC3199 |
| Q501 | | TRANSISTOR 2SC2785(K) | QQSK02SC2785 |
| Q501 | | TRANSISTOR 2SC1815-BL(TPE2) | QQS202SC1815 |
| Q506 | | PHOTO TRANSISTOR PT204-6B-12 | NPWZT2046B12 |
| Q506 | | PHOTO TRANSISTOR MID-32A22 | NPWZM1D32A22 |
| Q562 | | TRANSISTOR KTC3199(Y) | NQSY0KTC3199 |
| Q562 | | TRANSISTOR KTC3199(GR) | NQS10KTC3199 |
| Q562 | | TRANSISTOR 2SC2785(J) | QQSJ02SC2785 |
| Q562 | | TRANSISTOR 2SC2785(H) | QQSH02SC2785 |
| Q562 | | TRANSISTOR 2SC2785(F) | QQSF02SC2785 |
| Q562 | | TRANSISTOR 2SC1815-Y(TPE2) | QQSY02SC1815 |
| Q562 | | TRANSISTOR 2SC1815-GR(TPE2) | QQS102SC1815 |
| Q563 | | TRANSISTOR KTC3199(Y) | NQSY0KTC3199 |
| Q563 | | TRANSISTOR KTC3199(GR) | NQS10KTC3199 |
| Q563 | | TRANSISTOR 2SC2785(J) | QQSJ02SC2785 |
| Q563 | | TRANSISTOR 2SC2785(H) | QQSH02SC2785 |
| Q563 | | TRANSISTOR 2SC2785(F) | QQSF02SC2785 |
| Q563 | | TRANSISTOR 2SC1815-Y(TPE2) | QQSY02SC1815 |
| Q563 | | TRANSISTOR 2SC1815-GR(TPE2) | QQS102SC1815 |
| R001 | | GLASS GLAZE RES. 1/2W J 3.3M OHM | RXX2JZLZ0335 |
| R001 | | CARBON RES. 1/2W J 3.3M OHM | RCX2335DP001 |
| R002 | | METAL OXIDE FILM RES. 1/2W J 1.8 OHM | RNX2JZLZ01R8 |
| R002 | | METAL OXIDE FILM RES. 1/2W J 1.8 OHM | RNX2JZQZ01R8 |
| R004 | | CARBON RES. 1/4W J 2.7M OHM | RCX4JATZ0275 |
| R005 | | CARBON RES. 1/4W J 2.7M OHM | RCX4JATZ0275 |
| R008 | | CARBON RES. 1/6W J 560 OHM | RCX6JATZ0561 |
| R008 | | CARBON RES. 1/4W J 560 OHM | RCX4JATZ0561 |
| R012 | | CARBON RES. 1/6W J 22K OHM | RCX6JATZ0223 |
| R012 | | CARBON RES. 1/4W J 22K OHM | RCX4JATZ0223 |
| R014 | | CARBON RES. 1/2W J 1.1 OHM | RCX21R1ZU004 |
| R016 | | CARBON RES. 1/6W J 1K OHM | RCX6JATZ0102 |
| R016 | | CARBON RES. 1/4W J 1K OHM | RCX4JATZ0102 |





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| R017 | | CARBON RES. 1/4W J 33K OHM | RCX4JATZ0333 |
| R018 | | CARBON RES. 1/4W J 33K OHM | RCX4JATZ0333 |
| R019 | | CARBON RES. 1/6W J 470K OHM | RCX6JATZ0474 |
| R019 | | CARBON RES. 1/4W J 470K OHM | RCX4JATZ0474 |
| R022 | | CARBON RES. 1/6W J 47K OHM | RCX6JATZ0473 |
| R022 | | CARBON RES. 1/4W J 47K OHM | RCX4JATZ0473 |
| R030 | | CHIP RES.(1608) 1/10W J 390 OHM | RRXAJB5Z0391 |
| R030 | | CHIP RES.(1608) 1/10W J 390 OHM | RRXAJR5Z0391 |
| R031 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R031 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R032 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R032 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R033 | | CHIP RES.(1608) 1/10W F 2.2K OHM | RRXAFB5H2201 |
| R033 | | CHIP RES.(1608) 1/10W F 2.2K OHM | RRXAFB5Z2201 |
| R033 | | CHIP RES.(1608) 1/10W F 2.2K OHM | RRXAFR5H2201 |
| R033 | | CHIP RES.(1608) 1/10W F 2.2K OHM | RRXAFR5Z2201 |
| R034 | | CHIP RES.(1608) 1/10W F 2K OHM | RRXAFB5H2001 |
| R034 | | CHIP RES.(1608) 1/10W F 2K OHM | RRXAFB5Z2001 |
| R034 | | CHIP RES.(1608) 1/10W F 2K OHM | RRXAFR5H2001 |
| R034 | | CHIP RES.(1608) 1/10W F 2K OHM | RRXAFR5Z2001 |
| R035 | | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJB5Z0273 |
| R035 | | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJR5Z0273 |
| R040 | | CARBON RES. 1/4W J 1.8K OHM | RCX4JATZ0182 |
| R041 | | CARBON RES. 1/4W J 1.8K OHM | RCX4JATZ0182 |
| R042 | | CARBON RES. 1/4W J 270 OHM | RCX4JATZ0271 |
| R043 | | CARBON RES. 1/4W J 270 OHM | RCX4JATZ0271 |
| R056 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R056 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R057 | A | CARBON RES. 1/4W J 470 OHM | RCX4JATZ0471 |
| R057 | B | CARBON RES. 1/4W J 150 OHM | RCX4JATZ0151 |
| R060 | | CARBON RES. 1/4W J 470 OHM | RCX4JATZ0471 |
| R061 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJB5Z0122 |
| R061 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJR5Z0122 |
| R062 | | CHIP RES.(1608) 1/10W J 5.6K OHM | RRXAJB5Z0562 |
| R062 | | CHIP RES.(1608) 1/10W J 5.6K OHM | RRXAJR5Z0562 |
| R073 | | CARBON RES. 1/4W J 10K OHM | RCX4JATZ0103 |
| R075 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R075 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R087 | | CARBON RES. 1/6W J 8.2K OHM | RCX6JATZ0822 |
| R087 | | CARBON RES. 1/4W J 8.2K OHM | RCX4JATZ0822 |
| R088 | | CARBON RES. 1/4W J 10K OHM | RCX4JATZ0103 |
| R253 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R253 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R254 | A | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R254 | A | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R254 | B | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R254 | B | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R303 | | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R303 | | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R304 | | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R304 | | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R305 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R305 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R306 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJB5Z0183 |
| R306 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJR5Z0183 |
| R309 | | CHIP RES.(1608) 1/10W J 15K OHM | RRXAJB5Z0153 |
| R309 | | CHIP RES.(1608) 1/10W J 15K OHM | RRXAJR5Z0153 |

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| R311 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R311 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R312 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJB5Z0122 |
| R312 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJR5Z0122 |
| R313 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJB5Z0104 |
| R313 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJR5Z0104 |
| R322 | | CHIP RES.(1608) 1/10W J 5.6M OHM | RRXAJB5Z0565 |
| R322 | | CHIP RES.(1608) 1/10W J 5.6M OHM | RRXAJR5Z0565 |
| R323 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJB5Z0104 |
| R323 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJR5Z0104 |
| R324 | | CHIP RES.(1608) 1/10W J 82K OHM | RRXAJB5Z0823 |
| R324 | | CHIP RES.(1608) 1/10W J 82K OHM | RRXAJR5Z0823 |
| R326 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R326 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R327 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R327 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R328 | | CHIP RES.(1608) 1/10W J 680K OHM | RRXAJB5Z0684 |
| R328 | | CHIP RES.(1608) 1/10W J 680K OHM | RRXAJR5Z0684 |
| R329 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R329 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R330 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R330 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R331 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R331 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R332 | | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R332 | | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R341 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R341 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R342 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R342 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R343 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R343 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R357 | | PCB JUMPER D0.6-P11.5 | JW11.5T |
| R391 | | CARBON RES. 1/6W J 560 OHM | RCX6JATZ0561 |
| R391 | | CARBON RES. 1/4W J 560 OHM | RCX4JATZ0561 |
| R392 | | CARBON RES. 1/6W J 560 OHM | RCX6JATZ0561 |
| R392 | | CARBON RES. 1/4W J 560 OHM | RCX4JATZ0561 |
| R395 | A | CARBON RES. 1/6W J 100 OHM | RCX6JATZ0101 |
| R395 | A | CARBON RES. 1/4W J 100 OHM | RCX4JATZ0101 |
| R395 | B | CARBON RES. 1/6W J 10 OHM | RCX6JATZ0100 |
| R395 | B | CARBON RES. 1/4W J 10 OHM | RCX4JATZ0100 |
| R396 | | CARBON RES. 1/6W J 220 OHM | RCX6JATZ0221 |
| R396 | | CARBON RES. 1/4W J 220 OHM | RCX4JATZ0221 |
| R401 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJB5Z0273 |
| R401 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJR5Z0273 |
| R401 | B | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJB5Z0682 |
| R401 | B | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJR5Z0682 |
| R402 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R402 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R402 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R402 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R403 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJB5Z0273 |
| R403 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJR5Z0273 |
| R404 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R404 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R405 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJB5Z0273 |
| R405 | A | CHIP RES.(1608) 1/10W J 27K OHM | RRXAJR5Z0273 |





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| R406 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R406 | A | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R407 | | CHIP RES.(1608) 1/10W J 2.2M OHM | RRXAJB5Z0225 |
| R407 | | CHIP RES.(1608) 1/10W J 2.2M OHM | RRXAJR5Z0225 |
| R408 | | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJB5Z0682 |
| R408 | | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJR5Z0682 |
| R409 | | CHIP RES.(1608) 1/10W J 3.3K OHM | RRXAJB5Z0332 |
| R409 | | CHIP RES.(1608) 1/10W J 3.3K OHM | RRXAJR5Z0332 |
| R410 | | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJB5Z0682 |
| R410 | | CHIP RES.(1608) 1/10W J 6.8K OHM | RRXAJR5Z0682 |
| R411 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R411 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R412 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R412 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R413 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R413 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R414 | | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R414 | | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R415 | | CHIP RES.(1608) 1/10W J 12K OHM | RRXAJB5Z0123 |
| R415 | | CHIP RES.(1608) 1/10W J 12K OHM | RRXAJR5Z0123 |
| R416 | | CHIP RES.(1608) 1/10W J 330K OHM | RRXAJB5Z0334 |
| R416 | | CHIP RES.(1608) 1/10W J 330K OHM | RRXAJR5Z0334 |
| R417 | | CHIP RES.(1608) 1/10W J 150 OHM | RRXAJB5Z0151 |
| R417 | | CHIP RES.(1608) 1/10W J 150 OHM | RRXAJR5Z0151 |
| R418 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJB5Z0183 |
| R418 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJR5Z0183 |
| R419 | | CHIP RES.(1608) 1/10W J 910 OHM | RRXAJB5Z0911 |
| R419 | | CHIP RES.(1608) 1/10W J 910 OHM | RRXAJR5Z0911 |
| R421 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R421 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R422 | | CHIP RES.(1608) 1/10W J 22K OHM | RRXAJB5Z0223 |
| R422 | | CHIP RES.(1608) 1/10W J 22K OHM | RRXAJR5Z0223 |
| R424 | | CARBON RES. 1/6W J 47K OHM | RCX6JATZ0473 |
| R424 | | CARBON RES. 1/4W J 47K OHM | RCX4JATZ0473 |
| R425 | | CARBON RES. 1/6W J 100 OHM | RCX6JATZ0101 |
| R425 | | CARBON RES. 1/4W J 100 OHM | RCX4JATZ0101 |
| R426 | | CARBON RES. 1/6W J 820 OHM | RCX6JATZ0821 |
| R426 | | CARBON RES. 1/4W J 820 OHM | RCX4JATZ0821 |
| R430 | B | CHIP RES.(1608) 1/10W 0 OHM | RRXAZB5Z0000 |
| R430 | B | CHIP RES.(1608) 1/10W 0 OHM | RRXAZR5Z0000 |
| R431 | B | CHIP RES.(1608) 1/10W 0 OHM | RRXAZB5Z0000 |
| R431 | B | CHIP RES.(1608) 1/10W 0 OHM | RRXAZR5Z0000 |
| R451 | B | CHIP RES.(1608) 1/10W J 12K OHM | RRXAJB5Z0123 |
| R451 | B | CHIP RES.(1608) 1/10W J 12K OHM | RRXAJR5Z0123 |
| R452 | B | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R452 | B | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R453 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R453 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R454 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R454 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R455 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R455 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R456 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R456 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R457 | B | CHIP RES.(1608) 1/10W J 470 OHM | RRXAJB5Z0471 |
| R457 | B | CHIP RES.(1608) 1/10W J 470 OHM | RRXAJR5Z0471 |
| R458 | B | CHIP RES.(1608) 1/10W J 2.7K OHM | RRXAJB5Z0272 |

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| R458 | B | CHIP RES.(1608) 1/10W J 2.7K OHM | RRXAJR5Z0272 |
| R459 | B | CHIP RES.(1608) 1/10W J 22K OHM | RRXAJB5Z0223 |
| R459 | B | CHIP RES.(1608) 1/10W J 22K OHM | RRXAJR5Z0223 |
| R462 | B | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R462 | B | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R463 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R463 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R464 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R464 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R465 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJB5Z0473 |
| R465 | B | CHIP RES.(1608) 1/10W J 47K OHM | RRXAJR5Z0473 |
| R466 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJB5Z0822 |
| R466 | B | CHIP RES.(1608) 1/10W J 8.2K OHM | RRXAJR5Z0822 |
| R467 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R467 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R468 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R468 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R469 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R469 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R470 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R470 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R471 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R471 | B | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R472 | B | CHIP RES.(1608) 1/10W J 39K OHM | RRXAJB5Z0393 |
| R472 | B | CHIP RES.(1608) 1/10W J 39K OHM | RRXAJR5Z0393 |
| R502 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R502 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R503 | | CHIP RES.(1608) 1/10W J 820 OHM | RRXAJB5Z0821 |
| R503 | | CHIP RES.(1608) 1/10W J 820 OHM | RRXAJR5Z0821 |
| R504 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJB5Z0104 |
| R504 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJR5Z0104 |
| R506 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJB5Z0104 |
| R506 | | CHIP RES.(1608) 1/10W J 100K OHM | RRXAJR5Z0104 |
| R508 | | CHIP RES.(1608) 1/10W 0 OHM | RRXAZB5Z0000 |
| R508 | | CHIP RES.(1608) 1/10W 0 OHM | RRXAZR5Z0000 |
| R511 | | CHIP RES.(1608) 1/10W J 39K OHM | RRXAJB5Z0393 |
| R511 | | CHIP RES.(1608) 1/10W J 39K OHM | RRXAJR5Z0393 |
| R517 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R517 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R518 | | CHIP RES.(1608) 1/10W J 220K OHM | RRXAJB5Z0224 |
| R518 | | CHIP RES.(1608) 1/10W J 220K OHM | RRXAJR5Z0224 |
| R521 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R521 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R523 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R523 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |
| R524 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R524 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R525 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R525 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R526 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R526 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R527 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R527 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R528 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R528 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R529 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R529 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |





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| R530 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R530 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R531 | | CARBON RES. 1/6W G 4.7K OHM | RCX6GATZ0472 |
| R531 | | CARBON RES. 1/4W G 4.7K OHM | RCX4GATZ0472 |
| R532 | | CARBON RES. 1/6W G 1.5K OHM | RCX6GATZ0152 |
| R532 | | CARBON RES. 1/4W G 1.5K OHM | RCX4GATZ0152 |
| R535 | | CHIP RES.(1608) 1/10W F 10K OHM | RRXAFB5H1002 |
| R535 | | CHIP RES.(1608) 1/10W F 10K OHM | RRXAFB5Z1002 |
| R535 | | CHIP RES.(1608) 1/10W F 10K OHM | RRXAFR5H1002 |
| R535 | | CHIP RES.(1608) 1/10W F 10K OHM | RRXAFR5Z1002 |
| R536 | | CHIP RES.(1608) 1/10W F 3.6K OHM | RRXAFB5H3601 |
| R536 | | CHIP RES.(1608) 1/10W F 3.6K OHM | RRXAFB5Z3601 |
| R536 | | CHIP RES.(1608) 1/10W F 3.6K OHM | RRXAFR5H3601 |
| R536 | | CHIP RES.(1608) 1/10W F 3.6K OHM | RRXAFR5Z3601 |
| R537 | | CHIP RES.(1608) 1/10W J 33K OHM | RRXAJB5Z0333 |
| R537 | | CHIP RES.(1608) 1/10W J 33K OHM | RRXAJR5Z0333 |
| R540 | | CHIP RES.(1608) 1/10W J 390K OHM | RRXAJB5Z0394 |
| R540 | | CHIP RES.(1608) 1/10W J 390K OHM | RRXAJR5Z0394 |
| R541 | | CHIP RES.(1608) 1/10W J 390K OHM | RRXAJB5Z0394 |
| R541 | | CHIP RES.(1608) 1/10W J 390K OHM | RRXAJR5Z0394 |
| R542 | | CARBON RES. 1/4W J 270 OHM | RCX4JATZ0271 |
| R543 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R543 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R544 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJB5Z0183 |
| R544 | | CHIP RES.(1608) 1/10W J 18K OHM | RRXAJR5Z0183 |
| R545 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R545 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R546 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R546 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R561 | A | CARBON RES. 1/6W J 680 OHM | RCX6JATZ0681 |
| R561 | A | CARBON RES. 1/4W J 680 OHM | RCX4JATZ0681 |
| R561 | B | CARBON RES. 1/6W J 330 OHM | RCX6JATZ0331 |
| R561 | B | CARBON RES. 1/4W J 330 OHM | RCX4JATZ0331 |
| R562 | | CARBON RES. 1/4W J 270 OHM | RCX4JATZ0271 |
| R564 | | CARBON RES. 1/4W J 270 OHM | RCX4JATZ0271 |
| R565 | | CHIP RES.(1608) 1/10W J 3.9K OHM | RRXAJB5Z0392 |
| R565 | | CHIP RES.(1608) 1/10W J 3.9K OHM | RRXAJR5Z0392 |
| R566 | | CARBON RES. 1/6W J 330 OHM | RCX6JATZ0331 |
| R566 | | CARBON RES. 1/4W J 330 OHM | RCX4JATZ0331 |
| R567 | | CHIP RES.(1608) 1/10W J 3.9K OHM | RRXAJB5Z0392 |
| R567 | | CHIP RES.(1608) 1/10W J 3.9K OHM | RRXAJR5Z0392 |
| R568 | | CARBON RES. 1/6W J 330 OHM | RCX6JATZ0331 |
| R568 | | CARBON RES. 1/4W J 330 OHM | RCX4JATZ0331 |
| R581 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R581 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R582 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R582 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R583 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJB5Z0182 |
| R583 | | CHIP RES.(1608) 1/10W J 1.8K OHM | RRXAJR5Z0182 |
| R584 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R584 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R585 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJB5Z0122 |
| R585 | | CHIP RES.(1608) 1/10W J 1.2K OHM | RRXAJR5Z0122 |
| R586 | | CHIP RES.(1608) 1/10W J 1.5K OHM | RRXAJB5Z0152 |
| R586 | | CHIP RES.(1608) 1/10W J 1.5K OHM | RRXAJR5Z0152 |
| R587 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJB5Z0222 |
| R587 | | CHIP RES.(1608) 1/10W J 2.2K OHM | RRXAJR5Z0222 |

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| R589 | | CHIP RES.(1608) 1/10W 0 OHM | RRXAZB5Z0000 |
| R589 | | CHIP RES.(1608) 1/10W 0 OHM | RRXAZR5Z0000 |
| R590 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJB5Z0472 |
| R590 | | CHIP RES.(1608) 1/10W J 4.7K OHM | RRXAJR5Z0472 |
| R601 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R601 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R602 | A | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R602 | A | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R604 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R604 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R605 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R605 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R608 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R608 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R610 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R610 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R612 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R612 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R614 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R614 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R616 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R616 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R618 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R618 | | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R620 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJB5Z0103 |
| R620 | B | CHIP RES.(1608) 1/10W J 10K OHM | RRXAJR5Z0103 |
| R701 | | CHIP RES.(1608) 1/10W J 330 OHM | RRXAJB5Z0331 |
| R701 | | CHIP RES.(1608) 1/10W J 330 OHM | RRXAJR5Z0331 |
| R702 | | CARBON RES. 1/4W J 1.8K OHM | RCX4JATZ0182 |
| R704 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R704 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R705 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJB5Z0102 |
| R705 | | CHIP RES.(1608) 1/10W J 1K OHM | RRXAJR5Z0102 |
| R751 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJB5Z0750 |
| R751 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJR5Z0750 |
| R752 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJB5Z0750 |
| R752 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJR5Z0750 |
| R753 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJB5Z0750 |
| R753 | | CHIP RES.(1608) 1/10W J 75 OHM | RRXAJR5Z0750 |
| R533A | | CARBON RES. 1/6W G 22K OHM | RCX6GATZ0223 |
| R533A | | CARBON RES. 1/4W G 22K OHM | RCX4GATZ0223 |
| R534A | | CARBON RES. 1/6W G 470 OHM | RCX6GATZ0471 |
| R534A | | CARBON RES. 1/4W G 470 OHM | RCX4GATZ0471 |
| RS501 | | REMOTE RECEIVER MIM-93M9DKF | USESJRSUNT03 |
| RS501 | | REMOTE RECEIVER PIC-37042LQ | USESJRSKK038 |
| SW501 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW501 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW501 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW502 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW502 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW502 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW503 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW503 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW503 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW504 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW504 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW504 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |





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| SW505 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW505 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW505 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW506 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW506 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW506 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW507 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW507 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW507 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW508 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW508 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW508 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW509 | | TACT SWITCH KSM0614B | SST0101HH013 |
| SW509 | | TACT SWITCH SKQSAF001A | SST0101AL041 |
| SW509 | | TACT SWITCH TC-1104(H=9.5) | SST0101DNG01 |
| SW511 | | LEAF SWITCH MXS01830MVP0 | SSC0101MCE03 |
| SW512 | | ROTARY MODE SWITCH SSS-50MD | SSR0106KB002 |
| SW512 | | ROTARY MODE SWITCH R8100245 | SSR0106U3002 |
| T001! | | SWITCHING TRANSFOMER CSA-SW0198 | LTT00CPSA133 |
| TP301 | | PCB JUMPER D0.6-P7.5 | JW7.5T |
| TP302 | | PCB JUMPER D0.6-P11.0 | JW11.0T |
| TP452 | B | PCB JUMPER D0.6-P11.5 | JW11.5T |
| TP502 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| TP505 | | PCB JUMPER D0.6-P9.0 | JW9.0T |
| TP506 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| TP513 | | PCB JUMPER D0.6-P5.0 | JW5.0T |
| TP751 | | PCB JUMPER D0.6-P12.5 | JW12.5T |
| TP753 | | PCB JUMPER D0.6-P10.0 | JW10.0T |
| TP754 | | PCB JUMPER D0.6-P9.5 | JW9.5T |
| TU701 | | TUNER UNIT VH025AP | UTUNNTUSP024 |
| TU701 | | TUNER UNIT TMZH2-001A | UTUNNTUAL030 |
| TU701 | | TUNER UNIT TMZH2-010A | UTUNNTUAL034 |
| VR501 | | CARBON P.O.T. 100K OHM B | VRCB104HH014 |
| X301 | | X'TAL 3.579545MHZ(20PPM) | FXC355LLN003 |
| X301 | | X'TAL 3.579545MHZ(20PPM) | FXC355LCHE01 |
| X301 | | X'TAL 3.579545MHZ(20PPM) | FXC355LDS001 |
| X301 | | X'TAL 3.579545MHZ(20PPM) | FXC355LDYN01 |
| X502 | | X'TAL 32.768KHZ(20PPM) | FXC323LQUA01 |
| X502 | | X'TAL 32.768KHZ(20PPM) | FXC323LDS002 |
| X502 | | X'TAL 32.768KHZ(20PPM) | FXC323LCHE01 |
| | | | |
| | | SENSOR CBA | 0VSA13474 |
| Q503 | | PHOTO TRANSISTOR PT204-6B-12 | NPWZT2046B12 |
| Q503 | | PHOTO TRANSISTOR MID-32A22 | NPWZM1D32A22 |
| Q504 | | PHOTO TRANSISTOR PT204-6B-12 | NPWZT2046B12 |
| Q504 | | PHOTO TRANSISTOR MID-32A22 | NPWZM1D32A22 |
| | | | |
| DECK PARTS | | | |
| B2 | A | CYLINDER ASSEMBLY MK12 NTSC 2HD | N1628CYL |
| B2 | B | CYLINDER ASSEMBLY MK12 NTSC 4HD HIFI | N1668CYL |
| B2 | | CYLINDER ASSEMBLY(V) MK12 NTSC 4HD HIFI | N1669CYL |
| B3 | | LOADING MOTOR ASSEMBLY MK12 | 0VSA13665 |
| B8 | | PULLEY ASSEMBLY MK12 | 0VSA13500 |
| B9 | | MOVING GUIDE S PREPARATION MK12 | 0VSA13560 |
| B10 | | MOVING GUIDE T PREPARATION MK12 | 0VSA13562 |
| B11 | | LOADING ARM(TU) ASSEMBLY MK12 | 0VSA13300 |
| B12 | | LOADING ARM(SP) ASSEMBLY MK12 | 0VSA13299 |

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|---|---|---|---|
| B31 | | AC HEAD ASSEMBLY MK12 | 0VSA13275 |
| B35 | | TAPE GUIDE ARM ASSEMBLY MK12 | 0VSA13277 |
| B37 | | CAPSTAN MOTOR 288/VCCM012 | N9672CML |
| B52 | | CAP BELT(DSNY) MK11 | 0VM414098 |
| B73 | | FE HEAD ASSEMBLY MK11 | N9742FEL |
| B73 | | FE HEAD ASSEMBLY MK11 | N9743FEL |
| B73 | | FE HEAD(MK11) MH-131SF11 | DHVEC01Z0005 |
| B73 | | FE HEAD(MK11) VTR-1X2ERS11-148 | DHVEC01TE004 |
| B73 | | FE HEAD(MK12) VTR-1X2ERS11-155 | DHVEC01TE005 |
| B73 | | FE HEAD(MK12) HVFHP0047A | DHVEC01AL007 |
| B74 | | PRISM MK10 | 0VM202870 |
| B121 | | WORM MK12 | 0VM414091 |
| B126 | | PULLEY MK12 | 0VM414330 |
| B133 | | IDLER GEAR MK12 | 0VM305738 |
| B134 | | IDLER ARM MK12 | 0VM305739 |
| B148 | | TG CAP MK11 | 0VM412972 |
| B300 | | C DRIVE LEVER(TU) MK12 | 0VM203773 |
| B303 | | F DOOR OPENER MK12 | 0VM203751 |
| B313 | | C DRIVE SPRING MK12 | 0VM414145 |
| B347 | | GUIDE HOLDER A MK10 | 0VM304920 |
| B354 | | SLIDER(TU) MK12 | 0VM101172 |
| B355 | | SLIDER(SP) MK12 | 0VM101182 |
| B359 | | CLEANER LEVER MK10 | 0VM304413 |
| B360 | | CLEANER ROLLER MK9 | 0VM410032C |
| B361 | | CL POST MK10 | 0VM411114 |
| B410 | | PINCH ARM ASSEMBLY(1) MK12 | 0VSA13285 |
| B410 | | PINCH ARM ASSEMBLY(3) MK12 | 0VSA13288 |
| B410 | | PINCH ARM(A) ASSEMBLY(4) MK12 | 0VSA13572 |
| B410 | | PINCH ARM(A) ASSEMBLY(5) MK12 | 0VSA13788 |
| B411 | | PINCH SPRING MK12 | 0VM414644 |
| B414 | | M BRAKE(SP) ASSEMBLY MK12 | 0VSA13282 |
| B416 | | M BRAKE(TU) ASSEMBLY MK12 | 0VSA13283 |
| B417 | | TENSION SPG(3002654) MK12 | 0VM414221E |
| B425 | | LOCK LEVER SPRING MK10 | 0VM411110 |
| B426 | | KICK PULLEY MK10 | 0VM411095 |
| B482 | | CASSETTE PLATE MK12 | 0VM203749 |
| B483 | | LOCK LEVER MK12 | 0VM414095 |
| B487 | | BAND BRAKE(SP) MK12 | 0VM305723 |
| B488 | | MODE LEVER MK12 | 0VM101173 |
| B491 | | CAM GEAR(A) MK12 | 0VM101174 |
| B492 | | MODE GEAR MK12 | 0VM203769 |
| B494 | | C DOOR OPENER MK12 | 0VM305719 |
| B499 | | T LEVER HOLDER MK12 | 0VM305729 |
| B501 | | WORM HOLDER MK12 | 0VM203767 |
| B502 | | CAM GEAR(B) MK12 | 0VM305721 |
| B507 | | REEL WASHER MK9 5*2.1*0.5 | 0VM410058 |
| B508 | | S BRAKE SPRING MK10 | 0VM411121 |
| B513 | | CAM WASHER MK12 | 0VM414741 |
| B514 | | SCREW RACK MK10 | 0VM411535 |
| B516 | | REEL WASHER MK9 5*2.1*0.5 | 0VM410058 |
| B520 | | TU BRAKE SPRING MK12 | 0VM414285 |
| B521 | | REV BRAKE SPRING MK12 | 0VM414222 |
| B522 | | TG POST ASSEMBLY MK11 | 0VSA12080 |
| B525 | | LDG BELT MK11 | 0VM412804 |
| B529 | | CLEANER ASSEMBLY MK10 | 0VSA11161 |
| B553 | | REV SPRING MK11 | 0VM412555 |
| B555 | | RACK ASSEMBLY MK12 | 0VSA13289 |





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|---|---|---|---|
| B557 | | MOTOR PULLEY U5 | 0VM403205A |
| B558 | | LOADING MOTOR M31E-1 R14 7352 | MMDZB12MM005 |
| B559 | | CLUTCH ASSEMBLY MK12 | 0VSA13284 |
| B560 | | KICK SPRING MK10 | 0VM411475A |
| B562 | | C DRIVE LEVER(SP) MK12 | 0VM203772 |
| B563 | | SLIDER SHAFT MK12 | 0VM305762 |
| B564 | | M GEAR MK12 | 0VM305735 |
| B565 | | SENSOR GEAR MK12 | 0VM305736 |
| B567 | | PINCH ARM(B) MK12 | 0VM305718 |
| B568 | | BT ARM MK12 | 0VM305728 |
| B569 | A | CAM HOLDER(F) MK12 | 0VM305722 |
| B570 | | CAM RACK SPRING(HI) MK11 | 0VM412923 |
| B571 | | P.S.W CUT 1.6X4.0X0.5T | 0VM408485A |
| B573 | | REEL(SP)(D2) MK12 | 0VM203755 |
| B574 | | REEL(TU)(D2) MK12 | 0VM203756 |
| B587 | | TENSION LEVER ASSEMBLY MK12 | 0VSA13279 |
| B590 | | BRAKE ARM(TU) MK12 | 0VM203752 |
| B591 | | BAND BRAKE(TU) MK12 | 0VM305724C |
| B592 | | TG POST MK11 | 0VM412550 |
| B593 | B | CAM HOLDER(F) ASSEMBLY MK12 | 0VSA13390 |
| L1051 | | SCREW, B-TIGHT M2.6X6 PAN HEAD+ | GPMB9060 |
| L1053 | | SCREW, S-TIGHT M2.6X8 WASHER HEAD+ | GCMS9080 |
| L1151 | | SCREW, SEMS M2.6X4 PAN HEAD+ | CPM39040 |
| L1191 | | SCREW, S-TIGHT M2.6X8 WASHER HEAD+ | GCMS9080 |
| L1321 | | SCREW, S-TIGHT M3X6 BIND HEAD+ | GBMS3060 |
| L1406 | | AC HEAD SCREW MK9 | 0VM410964 |
| L1450 | | SCREW, SEMS M2.6X5 PAN HEAD+ | CPM39050 |
| L1466 | | SCREW, S-TIGHT M2.6X6 BIND HEAD+ | GBMS9060 |
| L1467 | | SCREW, S-TIGHT M2.6X5 WASHER HEAD+ | GCMS9050 |

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