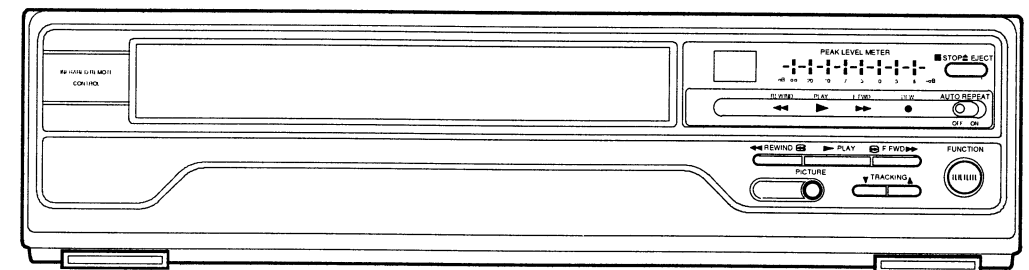




SERVICE MANUAL

MODEL NO. VIP3000HC MK5
VCP-200
VIP3000A MK5

Video Cassette Player



Video cassette players bearing the "HQ" mark incorporate VHS high quality technology. Note that there is interchangeability with former VHS video cassette players.

MAIN SECTION

MODEL NO. VIP3000HC MK5
VCP-200
VIP3000A MK5

Video Cassette Player

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SPECIFICATIONS

Description	Unit	Minimum	Nominal	Maximum	Condition
1. Video					
1-1. Video Output	Vp-p	0.8	1.0	1.2	
1-2. Video S/N Y	dB	40	45		
1-3. Video Color S/N AM	dB	35	44		
1-4. Video Color S/N PM	dB	31	38		
1-5. resolution	Line	230	240		
2. Servo					
2-1. Jitter Low	µsec		0.04	0.12	
2-2. Wow & Flutter	%		0.2	0.6	
3. Normal Audio					
3-1. Output	dBv	-10	-6	-2	
3-2. S/N	dB	36	40		
3-3. Distortion	%		1.5	4.0	
3-4. Freq. response (R/P) 200Hz	dB	-6	-3		
(-20dB ref. 1kHz) 8kHz	dB	-6	-2		

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

Prior to shipment from the factory, our products are strictly inspected for 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.

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 ($\triangle$) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replace-

ment 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 strictly 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 ($\triangle$) 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 10-15 kg of force in any direction will not loosen it.
- I.** Also check areas surrounding repaired locations.
- J.** Use care 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 the 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	Region	Clearance Distance (d) (d')
200 to 240 V	Europe	$\geq 4\text{mm (d)}$
	Australia	$\geq 6\text{mm (d')}$

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

2. Leakage Current Test

Confirm 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.).

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.

Table 2 : Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
200 to 240 V	Europe Australia	2k Ω RES. in connected	1 $\leq$ 0.7mA Peak 1 $\leq$ 2mA dc	Antenna terminals
		50k Ω RES. in connected	1 $\leq$ 0.7mA Peak 1 $\leq$ 2mA dc	Other terminals

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

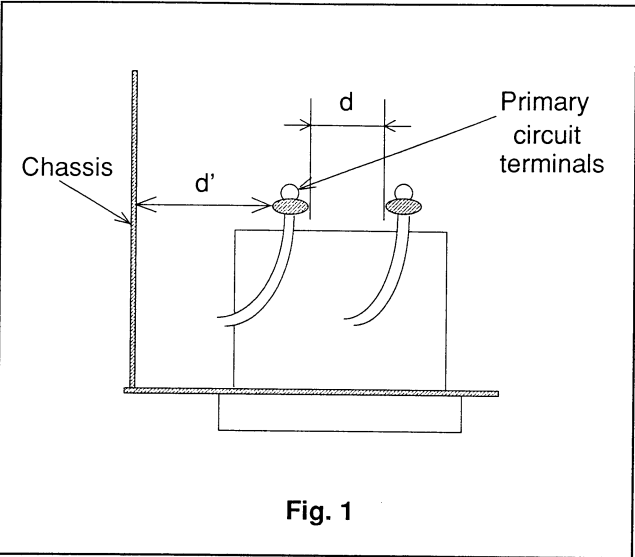


Fig. 1

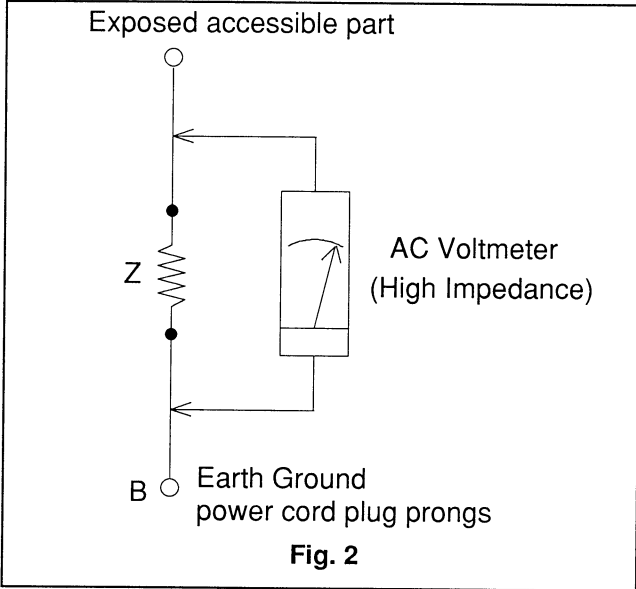
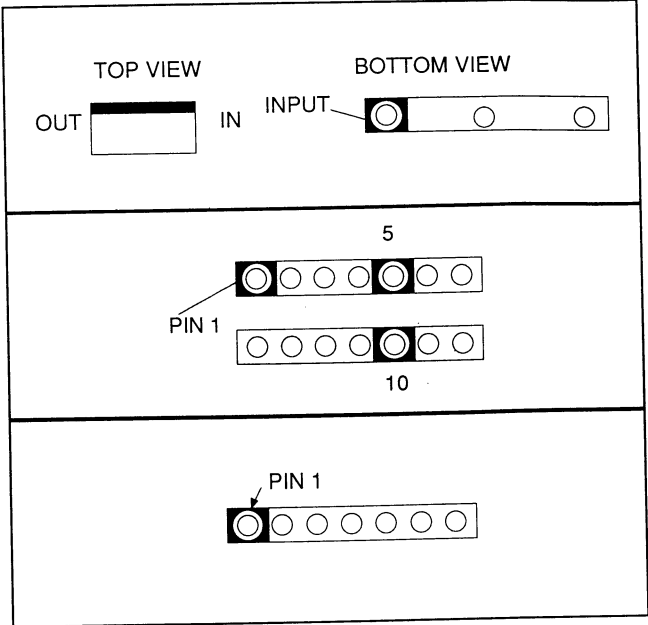


Fig. 2

STANDARD NOTES FOR SERVICING

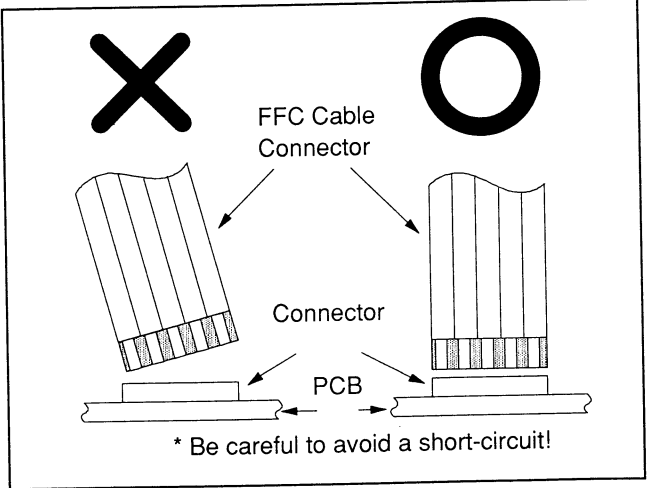
Circuit Board Indications

- 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 pin connector is indicated as shown:



Instructions for Connectors

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

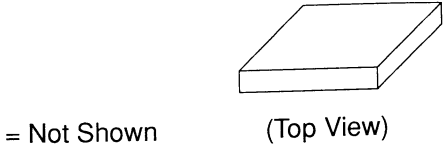
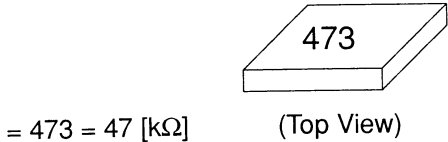


How to Read the Values of the Rectangular Type Chip Components

EXAMPLE:

(a) Resistor

(b) Capacitor



CAUTION:

Once chip parts (Resistors, Capacitors, Transistors, etc.) are removed, they must not be reused. Always use a new part.

Replacement Procedures for Leadless (Chip) Components

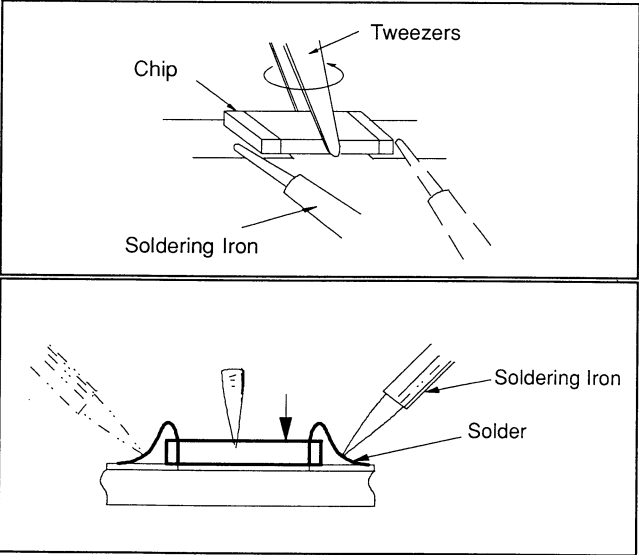
The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement

- a. Soldering iron
Use a pencil-type soldering iron (less than 30 watts).
- b. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.
- c. Soldering time
Do not apply heat for more than 4 seconds.
- d. Preheating
Leadless capacitors must be preheated before installation.
(266°F-302°F, 130°C-150°C, for about two minutes.)

Note:

- a. Leadless components must not be reused after removal.
- b. Excessive mechanical stress and rubbing of the component electrode must be avoided.



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

Caution:

- 1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage

2. Removing the leadless component

Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes has melted, remove the leadless component with a twisting motion.

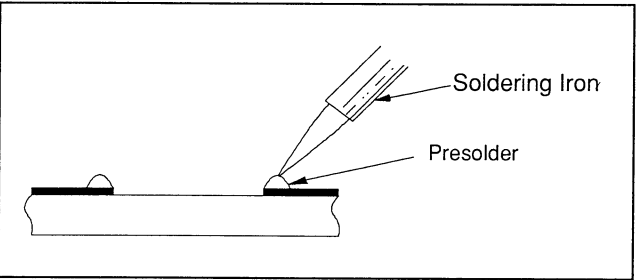
Note:

- a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.
- b. Be careful not to break the copper foil on the printed circuit board.

3. Installing the leadless component

- a. Presolder the contact points of the circuit board.
- b. Press the part downward with tweezers and solder both electrodes as shown below.

Note: Do not glue the replacement leadless component to the circuit board.



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 PCB is affixed with glue, so be careful not to break or damage the foil of each pin and don't let solder land under the IC when removing it.

With Soldering Iron:

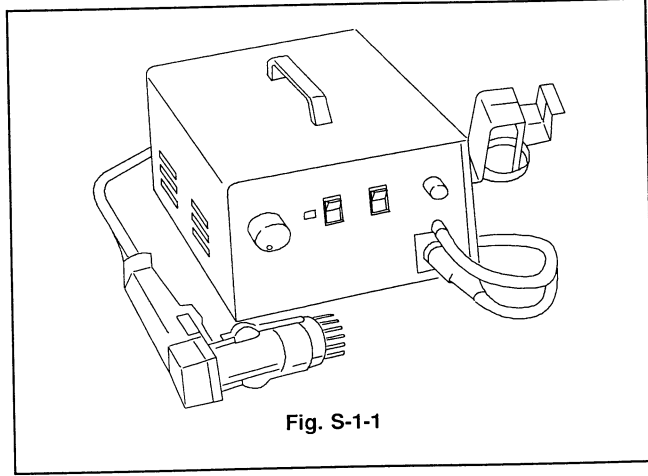
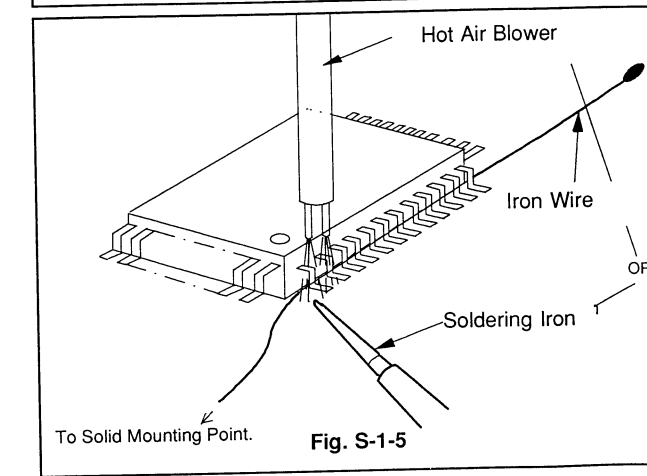
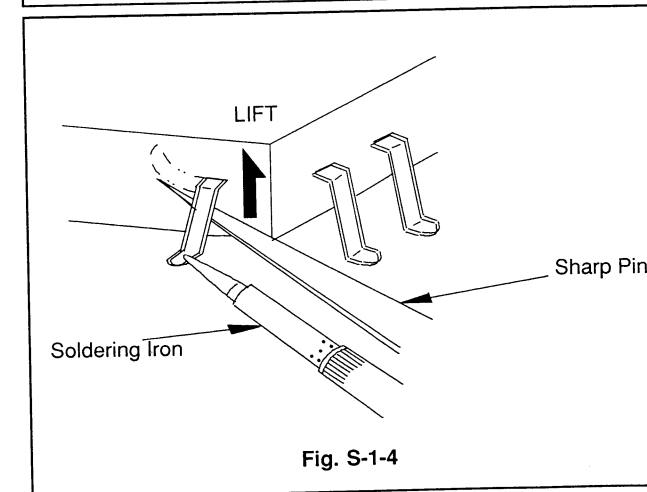
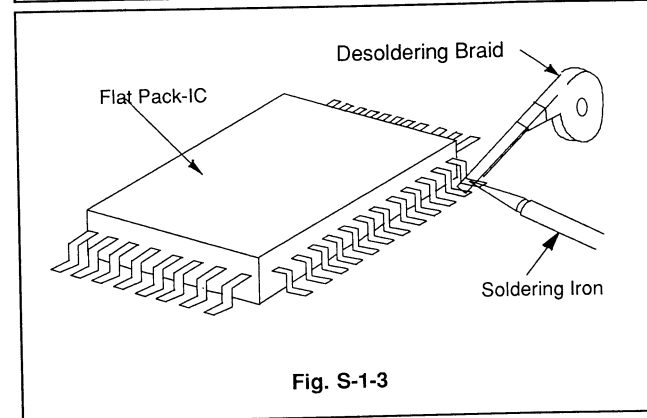
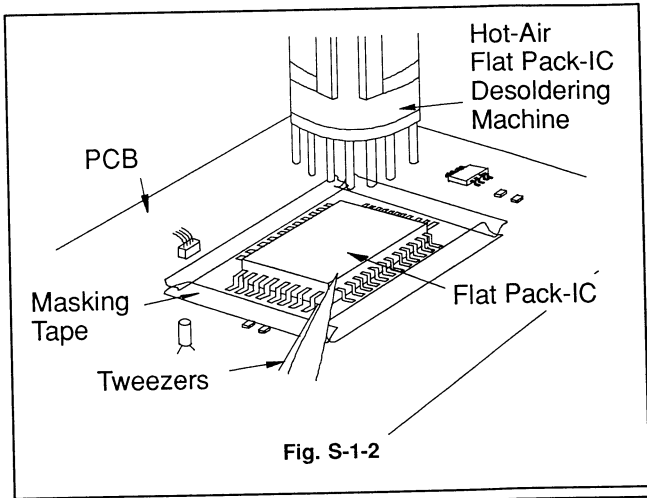
- (1)Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
- (2)Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

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 PCB contact pads.

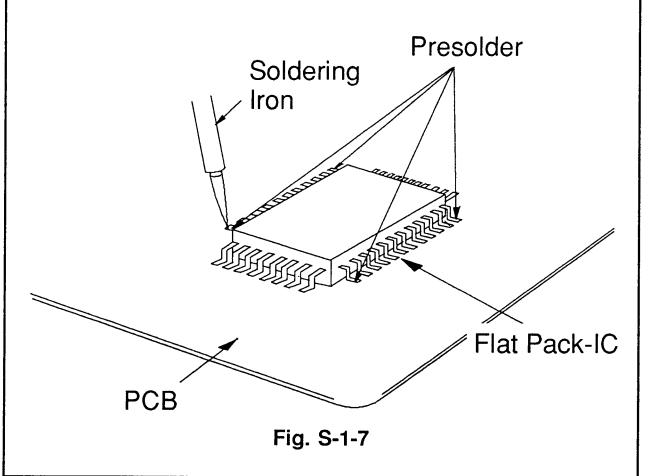
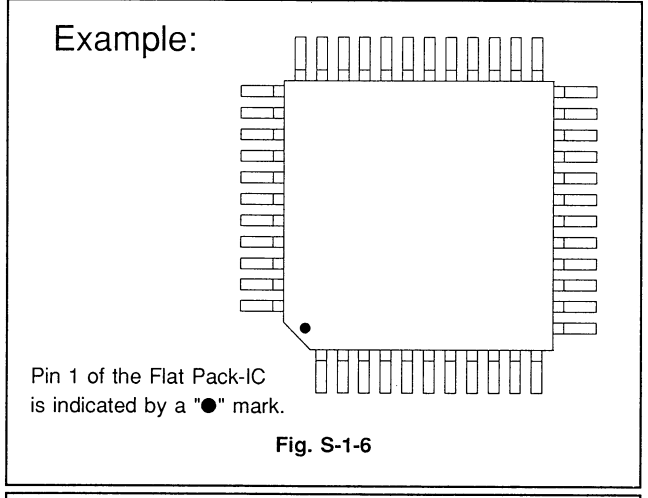
Note:

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



2. Installation

- (1)Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the PCB 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-1-6) Be sure this mark matches the 1 on the PCB when positioning for installation. Then pre-solder the four corners of the flat pack-IC (See Fig. S-1-7).
- (3)Solder all pins of the flat pack-IC. Be sure that none of the pins has solder bridges.



Instructions for Handling Semiconductors

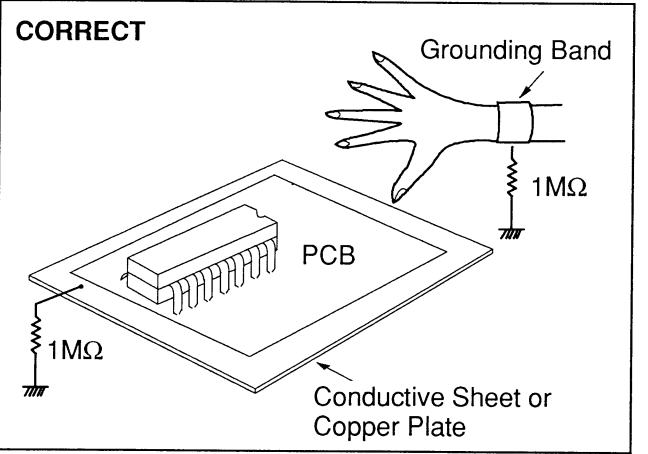
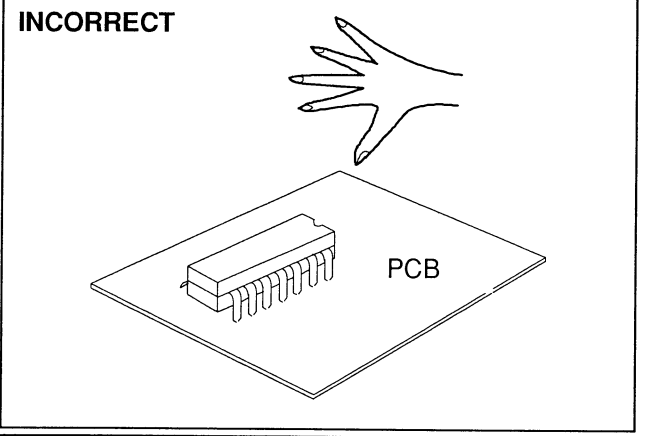
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1M ohm) 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 (1M ohm) on the workbench or other surface, where the semiconductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to your clothing.

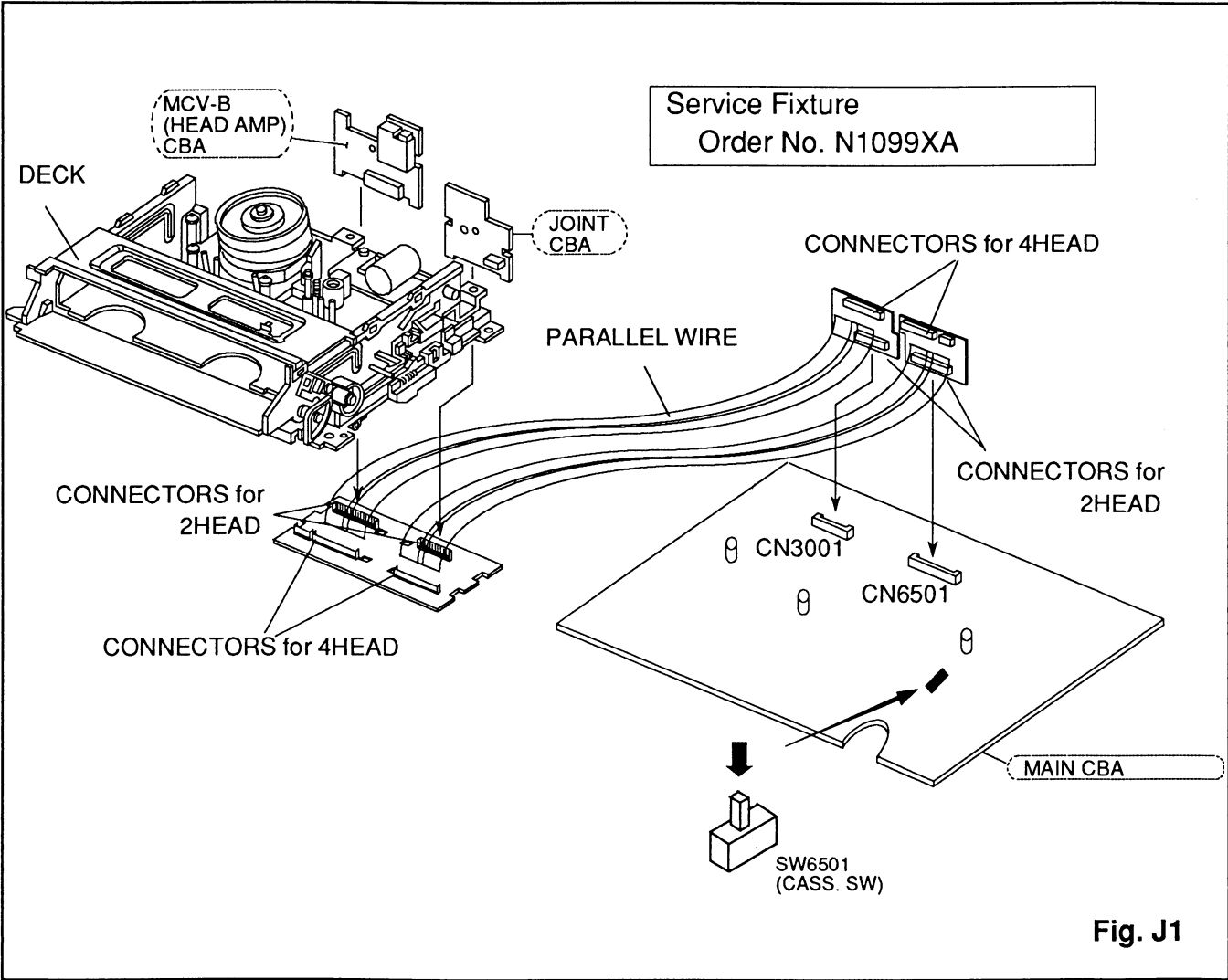


PREPARATION FOR SERVICING

How to Use Service Fixture

- 1) Remove Deck Mechanism Assembly.
If needed, remove Main CBA from chassis.
- 2) Connect Deck Mechanism Assembly and Main CBA using the service fixture as shown in the Fig. J1.

Note: Fixture can be used for 2-head models and 4-head models. This unit is a 2-head model. Make sure to use correct connectors as specified in the Fig. J1.



How to Enter The Service Mode

Caution: 1

- Optical sensor system is used for Tape Start and End Sensors of this equipment. Read this page carefully and prepare as described on this page before starting to service: otherwise, the unit may operate unexpectedly.

Preparing: 1

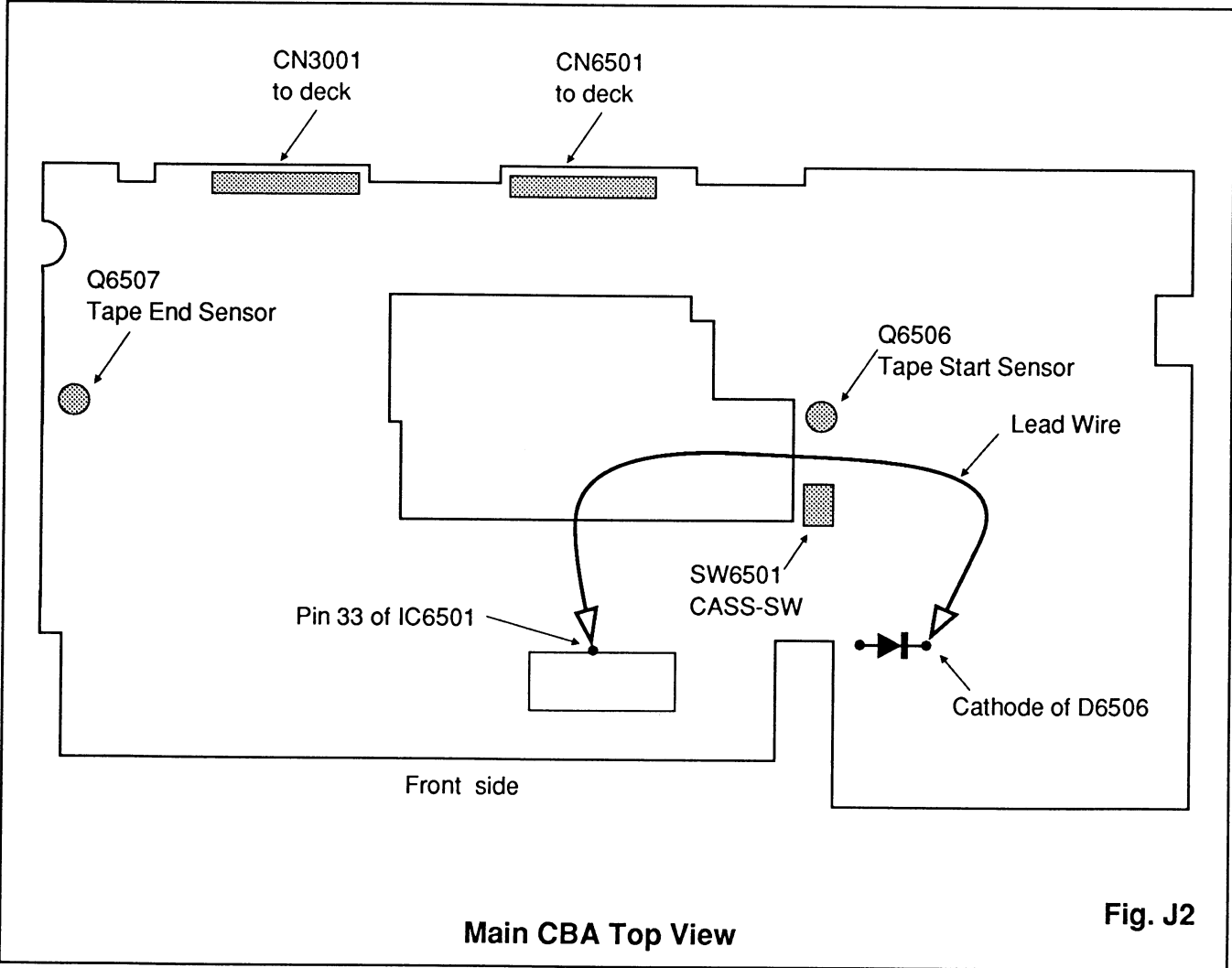
- Cover Tape Start and End Sensors with insulation tape, or circuitly short between cathode of D6506 and Pin 33 of IC6501 as shown in the Fig. J2..
Note: Do not run a tape all the way to start or end of the tape to avoid tape damage due to inactive Tape End Sensors.

Caution: 2

- The Deck Mechanism Assembly is mounted on the Main CBA directly, and Cassette Loading Switch and Reel Sensor are mounted on the Main CBA. When the Deck Mechanism Assembly is removed from the Main CBA due to servicing, this switch will not operate automatically. The Reel Sensor is mounted on the Main CBA. When Deck Mechanism Assembly is removed from the Main CBA due to servicing, the Cylinder is forced to stop.

Preparing: 2

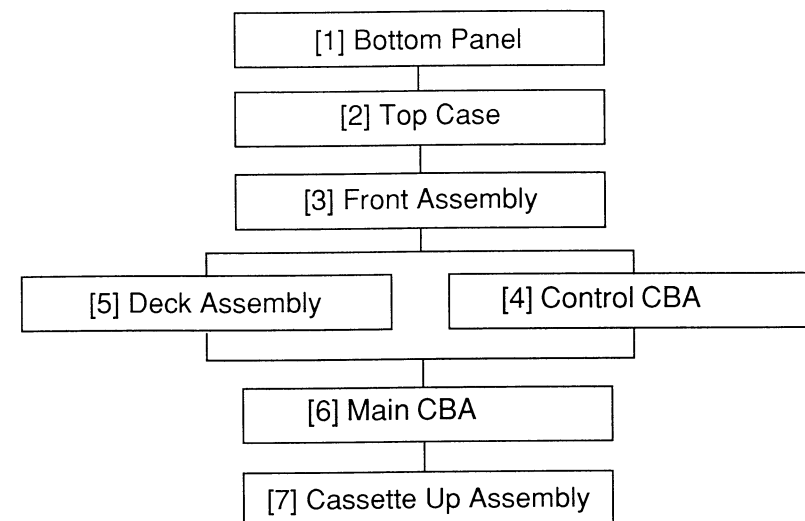
- When you insert or eject the tape, manually press the "CASS. SW" on the Main CBA.
- To avoid the Cylinder is forced to stop, connect Pin 33 of IC6501 and the cathode terminal of D6506 by a lead wire.



CABINET DISASSEMBLY INSTRUCTIONS for Model VCP-200

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow perform the steps in the reverse order. Bend, route and dress the Cables as they were.



2. Disassembly Method

STEP / LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNLOCK/RELEASE/UNPLUG/UNCLAMP /DESOLDER	NOTE
[1]	Bottom Plate	Fig. 1	3(S-1), *6(L-1)	1
[2]	Top Case	Fig. 2	(S-2)	-
[3]	Front Assembly	Fig. 3, 4	*7(L-2), 2(S-3), Deck Holder	2
[4]	Control CBA	Fig. 5	*2(L-3), Connector (A)	-
[5]	Deck Assembly	Fig. 6	4(S-4), 2 Connectors (B)	3
[6]	Main CBA	Fig. 6, 7	*(L-4), (S-5), (S-6)	-
[7]	Cassette Up Assembly	Fig. 8	2(S-7), *(P-1)	-

① ② ③ ④ ⑤

Note:

①: Order of steps in Procedure

When reassembling, follow the steps in reverse order.

These numbers are also used as the identification (location) number of parts in Figures.

②: Part to be removed or installed.

③: Fig. No. showing procedure of part location.

④: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered.

P= Spring W= Washer C= Cut Washer R= Retaining Ring L= Locking Tab

N= Nut S= Screw *= Unhook, Unlock, Release, Unplug or Desolder

2 (C-2) = 2 Cut Washers (C-2)

⑤: Refer to "Reference Notes in the Table" following.

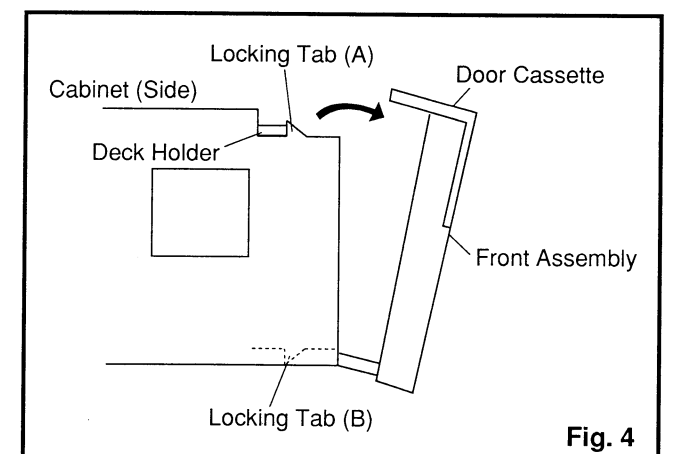
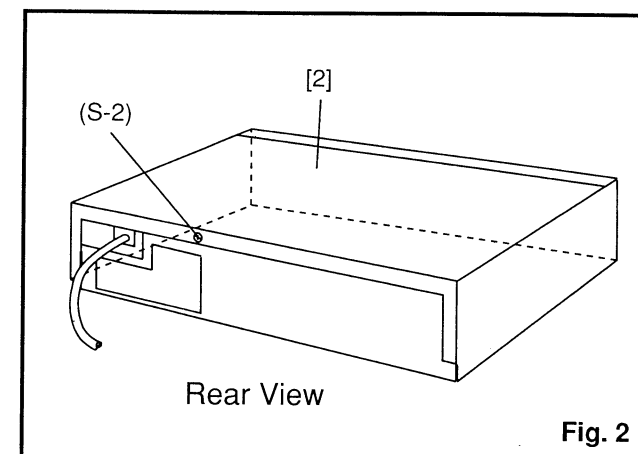
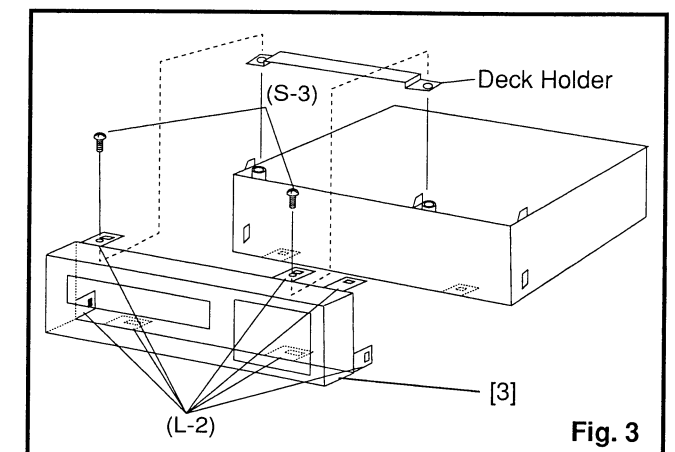
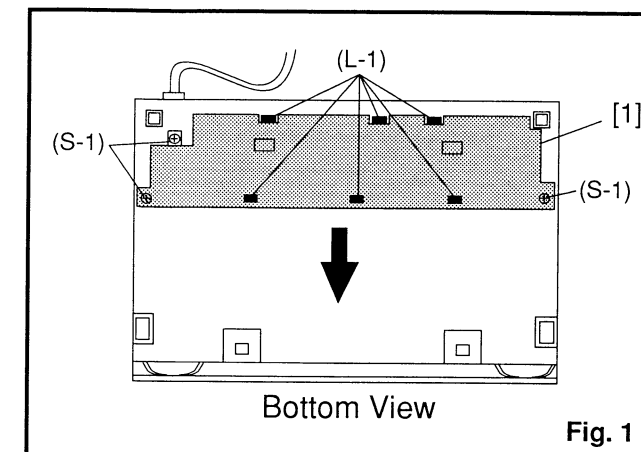
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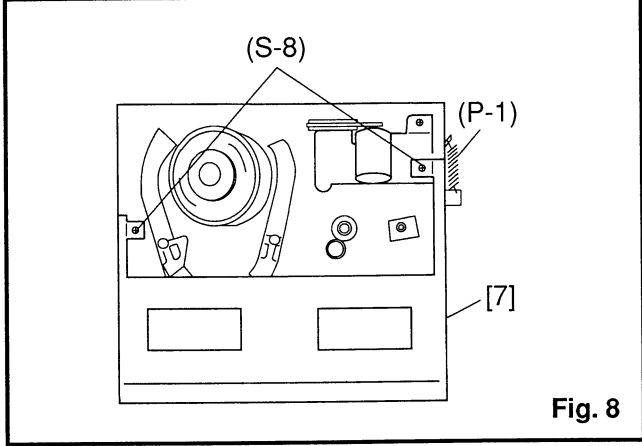
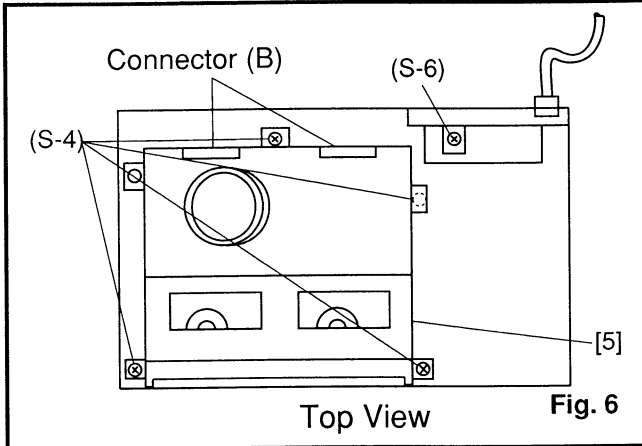
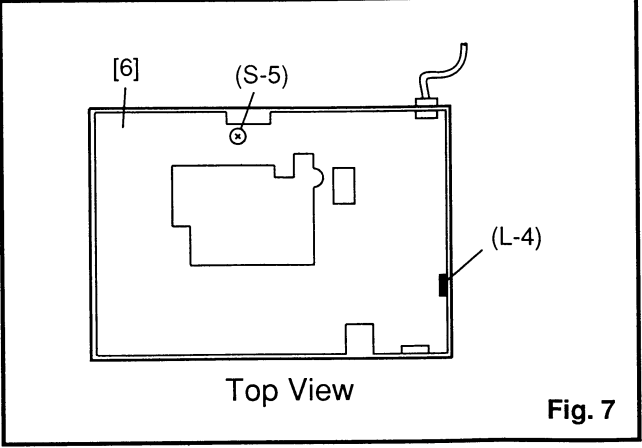
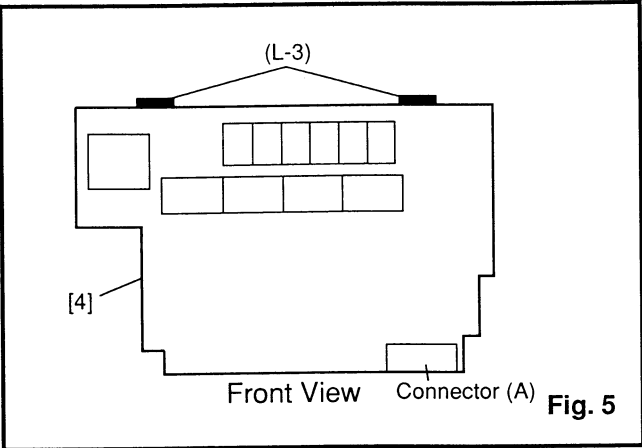
1. Remove 3 Screws (S-1), and release 6 Locking Tabs (L-1), then slide the Bottom Plate in the direction of arrow. (Fig. 1)

2. Remove 2 Screws (S-3) and release 7 Locking Tabs (L-2) (Bottom Tabs, Side Tabs, and then Top Tabs). Then Deck Holder can be removed. (Fig. 3)

Note: When you reinstall the Front Assembly, take care not to break the Locking Tabs. First install the Deck Holder Tabs in the holes of Cassette Holder Plate, the Locking Tabs (A) and then Locking Tabs (B). See Fig.4.

3. Remove 4 Screws (S-4), then slowly lift up the Deck Assembly up, disconnecting the 2 Connectors (B). (Fig. 6)

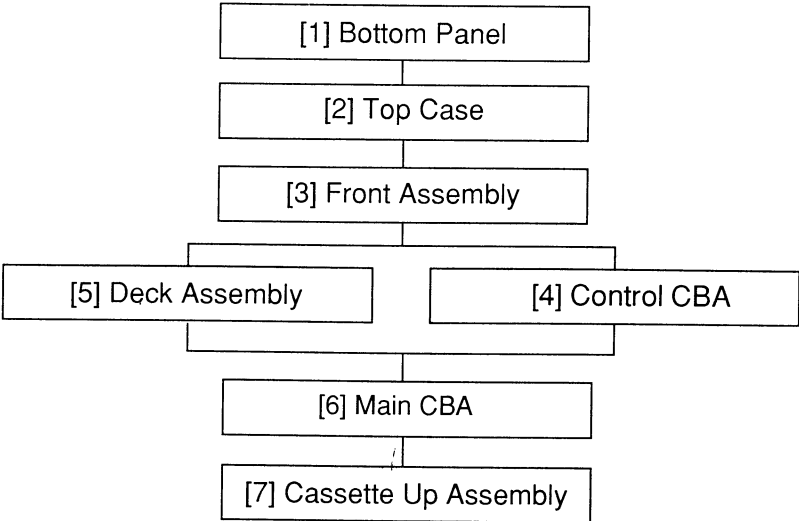




CABINET DISASSEMBLY INSTRUCTIONS for Model VIP-3000HC MK5 / VIP-3000A MK5

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow perform the steps in the reverse order. Bend, route and dress the Cables as they were.



2. Disassembly Method

STEP / LOC. No.	PART	Fig. No.	REMOVAL	
			REMOVE/*UNLOCK/RELEASE/UNPLUG/UNCLAMP /DESOLDER	NOTE
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[2]	Top Case	Fig. 2	(S-2)	-
[3]	Front Assembly	Fig. 3, 4	*7(L-2), 2(S-3), Deck Holder	2
[4]	Control CBA	Fig. 5	*2(L-3), Connector (A)	-
[5]	Deck Assembly	Fig. 6	4(S-4), 2 Connectors (B)	3
[6]	Main CBA	Fig. 6, 7	*(L-4), (S-5), (S-6), 2(S-7)	-
[7]	Cassette Up Assembly	Fig. 8	2(S-8), *(P-1)	-

Note:

①: Order of steps in Procedure
When reassembling, follow the steps in reverse order.
These numbers are also used as the identification (location) number of parts in Figures.

②: Part to be removed or installed.

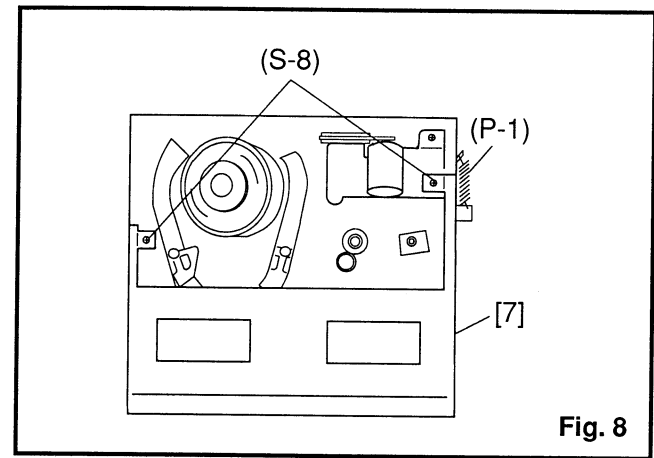
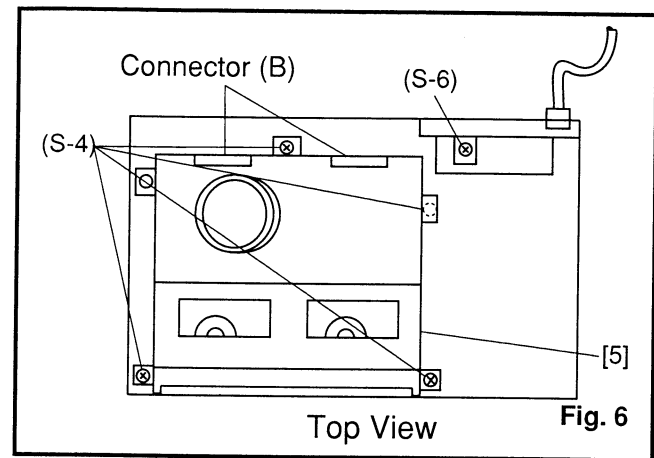
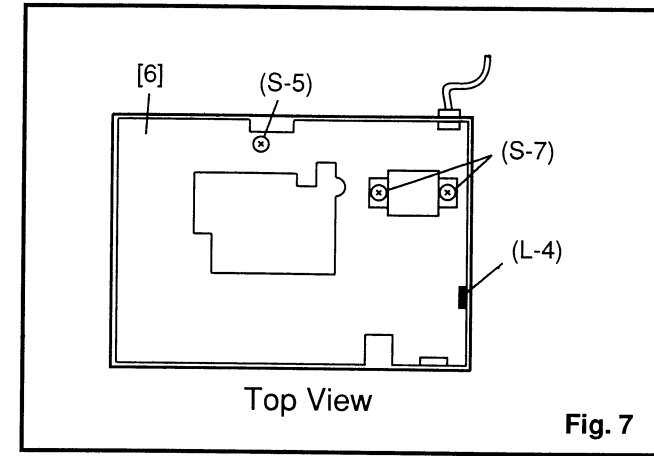
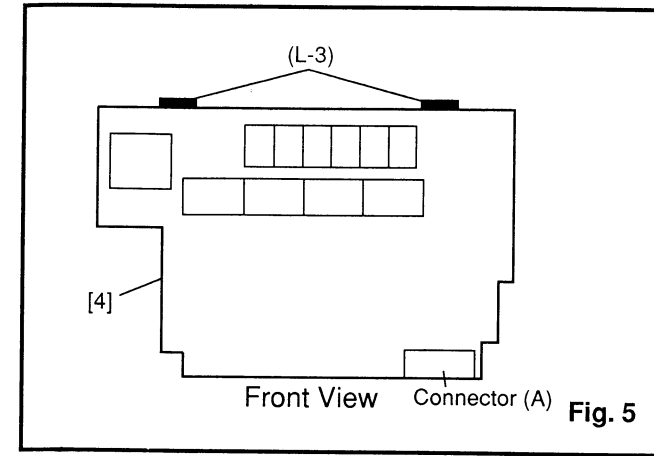
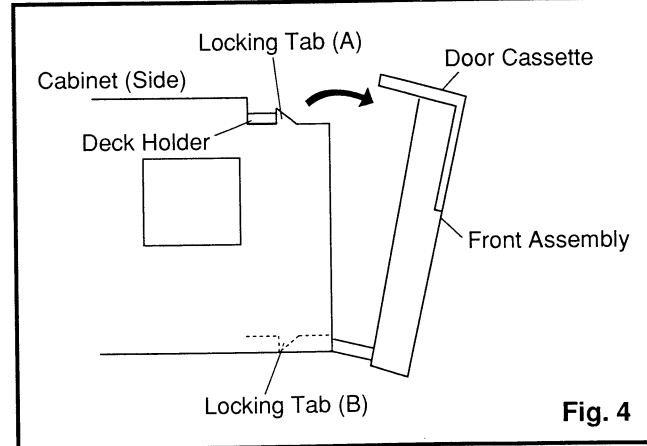
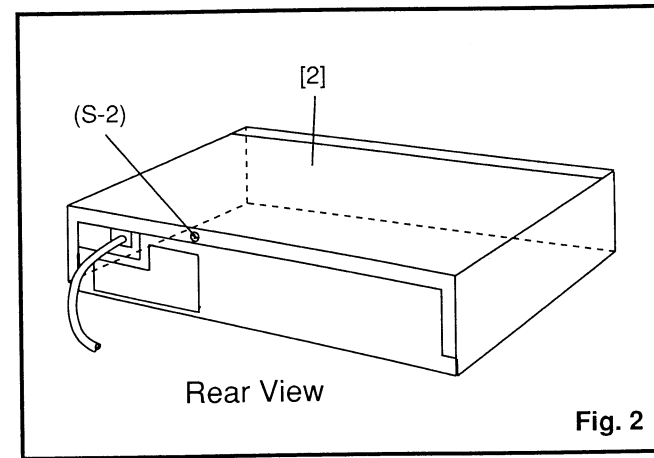
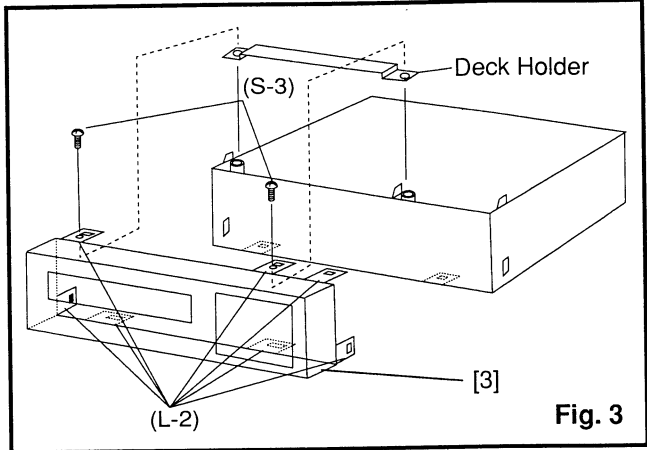
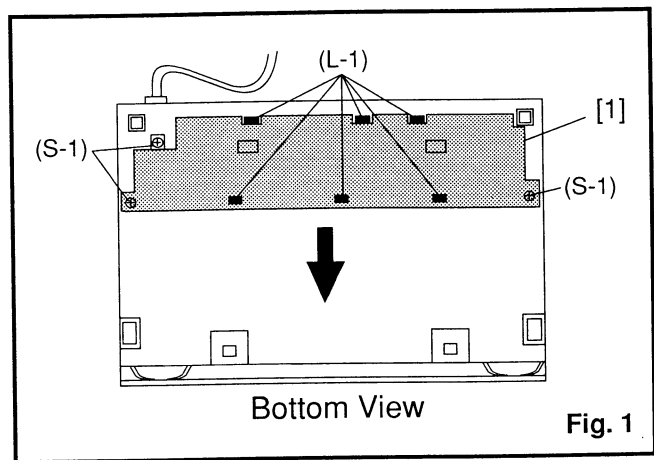
③: Fig. No. showing procedure of part location.

④: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered.
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N= Nut S= Screw *= Unhook, Unlock, Release, Unplug or Desolder
2 (C-2) = 2 Cut Washers (C-2)

⑤: Refer to "Reference Notes in the Table" following.

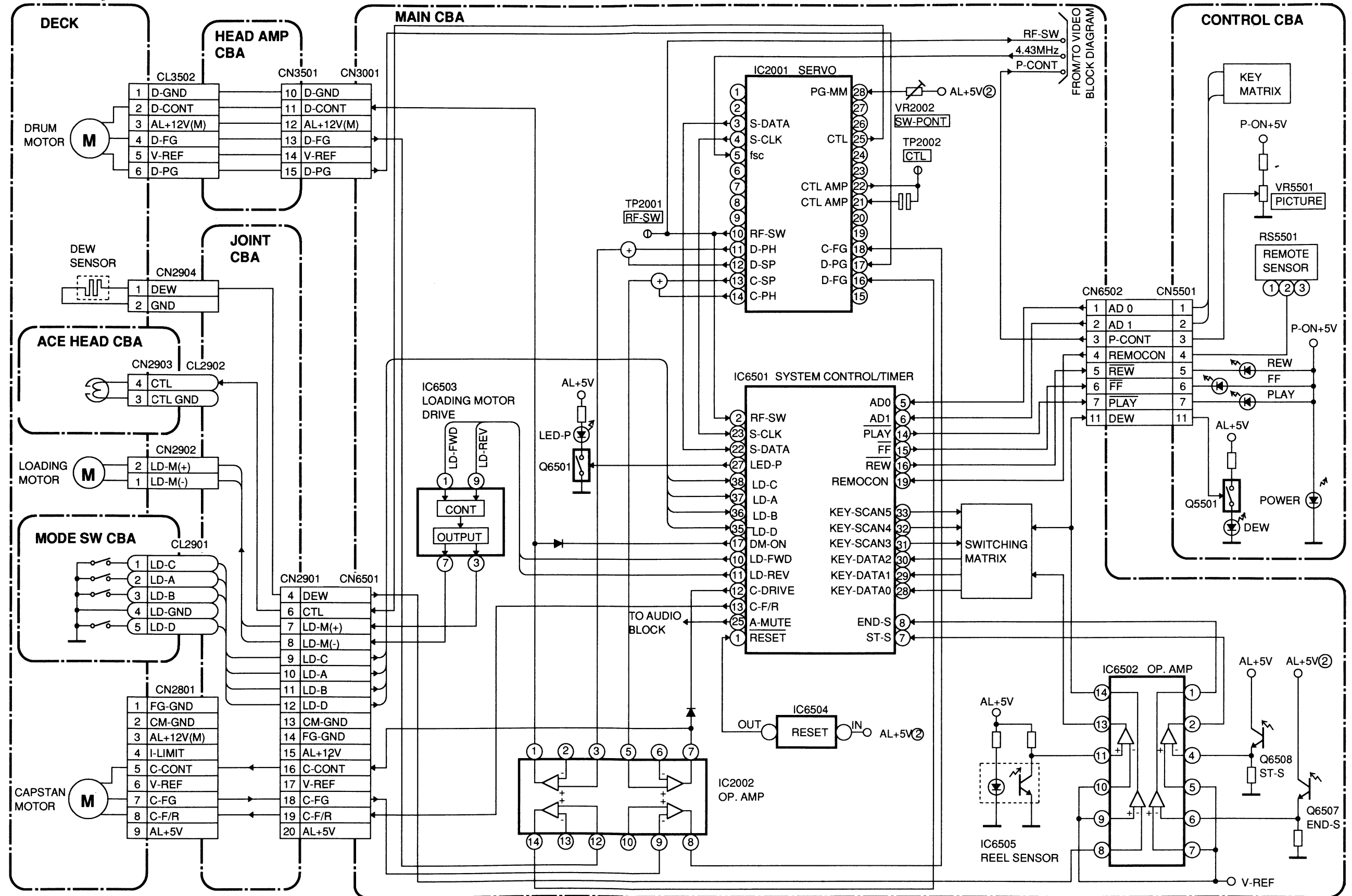
Reference Notes in the Table

- 1. Remove 3 Screws (S-1), and release 6 Locking Tabs (L-1), then slide the Bottom Plate in the direction of arrow. (Fig. 1)
- 2. Remove 2 Screws (S-3) and release 7 Locking Tabs (L-2) (Bottom Tabs, Side Tabs, and then Top Tabs). Then Deck Holder can be removed. (Fig. 3)
Note: When you reinstall the Front Assembly, take care not to break the Locking Tabs. First install the Deck Holder Tabs in the holes of Cassette Holder Plate, the Locking Tabs (A) and then Locking Tabs (B). See Fig.4.
- 3. Remove 4 Screws (S-4), then slowly lift up the Deck Assembly up, disconnecting the 2 Connectors (B).(Fig. 6)

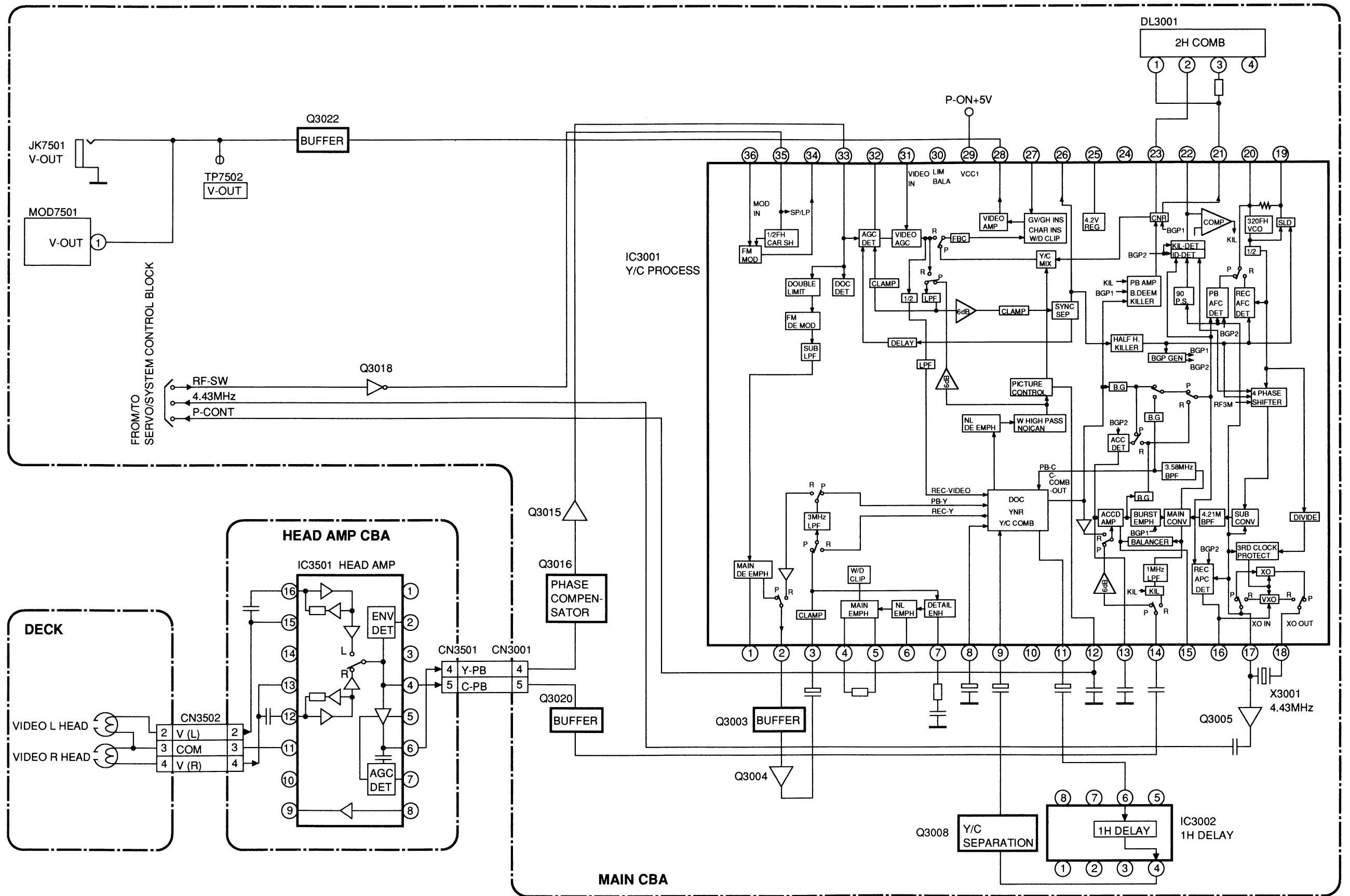


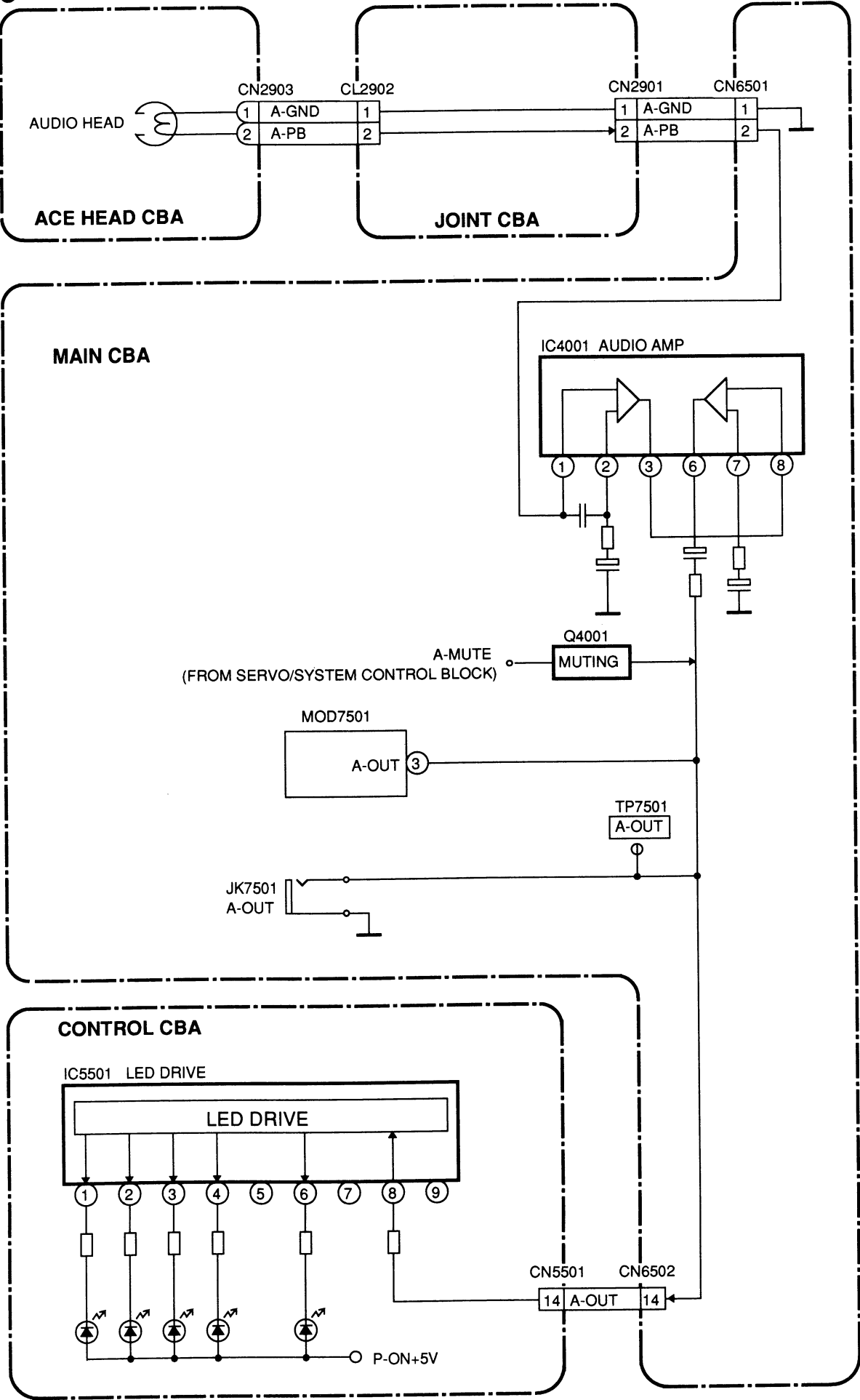
Servo/System Control

BLOCK DIAGRAMS



Video





ELECTRICAL ADJUSTMENT INSTRUCTIONS

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

Note: Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

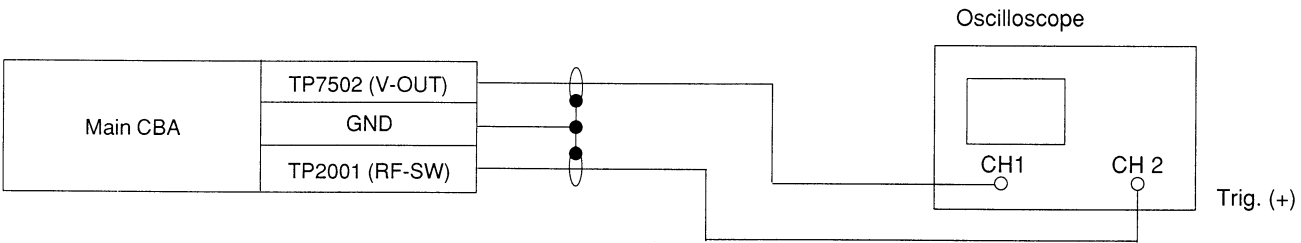
Test Equipment Required

- 1. Oscilloscope: Dual-trace with 10:1 probe.
- 2. TV Monitor
- 3. Test Tape; F6-A

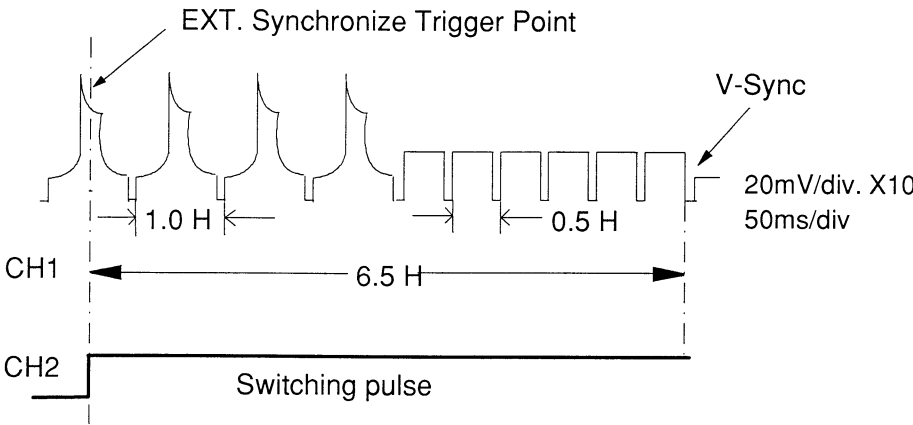
Head Switching Point Adjustment

Test Point	Adj. Point	Mode	Input
TP7502 (V-OUT) TP2001 (RF-SW) GND	VR2001 (Switching Point) (Main CBA)	PLAY	---
Tape	M. EQ.	Spec.	
F6-A	Oscilloscope	6.5H(412.7μs)	

Connections of M. EQ.



Figure



Reference Notes:

- 1. Connect equipments as shown in the above table.
- 2. Set the "PAL/MESECAM" select switch to "PAL" side.
- 3. Playback the test tape and adjust VR2001 so that the V-sync front edge of CH1 video output waveform is delayed 6.5H (412.7μs) from the rising of CH2 Head Switching Pulse waveform.

SCHEMATIC DIAGRAMS/CBA AND TEST POINTS

Standard Notes

Warning

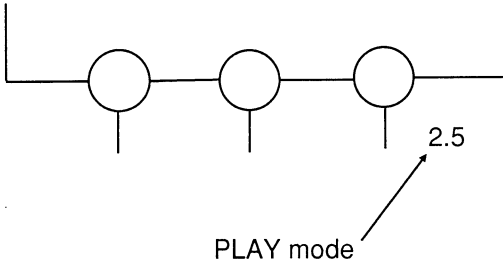
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special 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.

Capacitor Temperature Markings

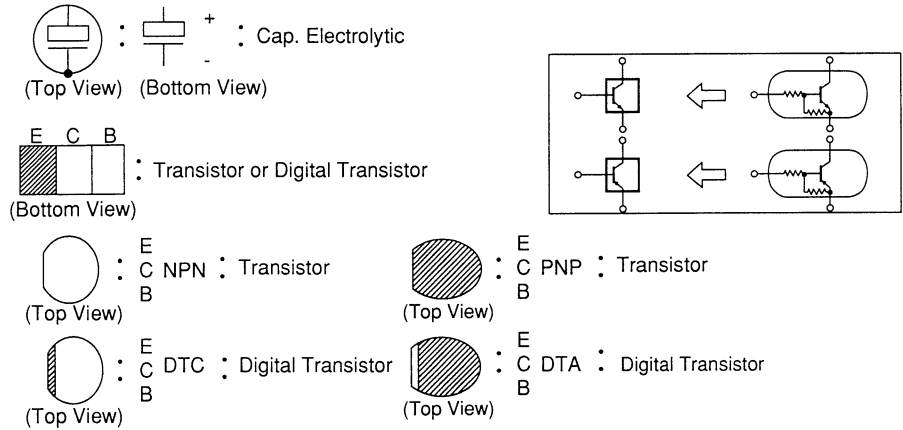
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Note :

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=10³, M=10⁶).
3. Resistor wattages are 1/5W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF (P=10⁻⁶μF).
5. All voltages are DC voltages unless otherwise specified.
6. Voltage Indications for PLAY and REC modes on the Schematics are as shown below.

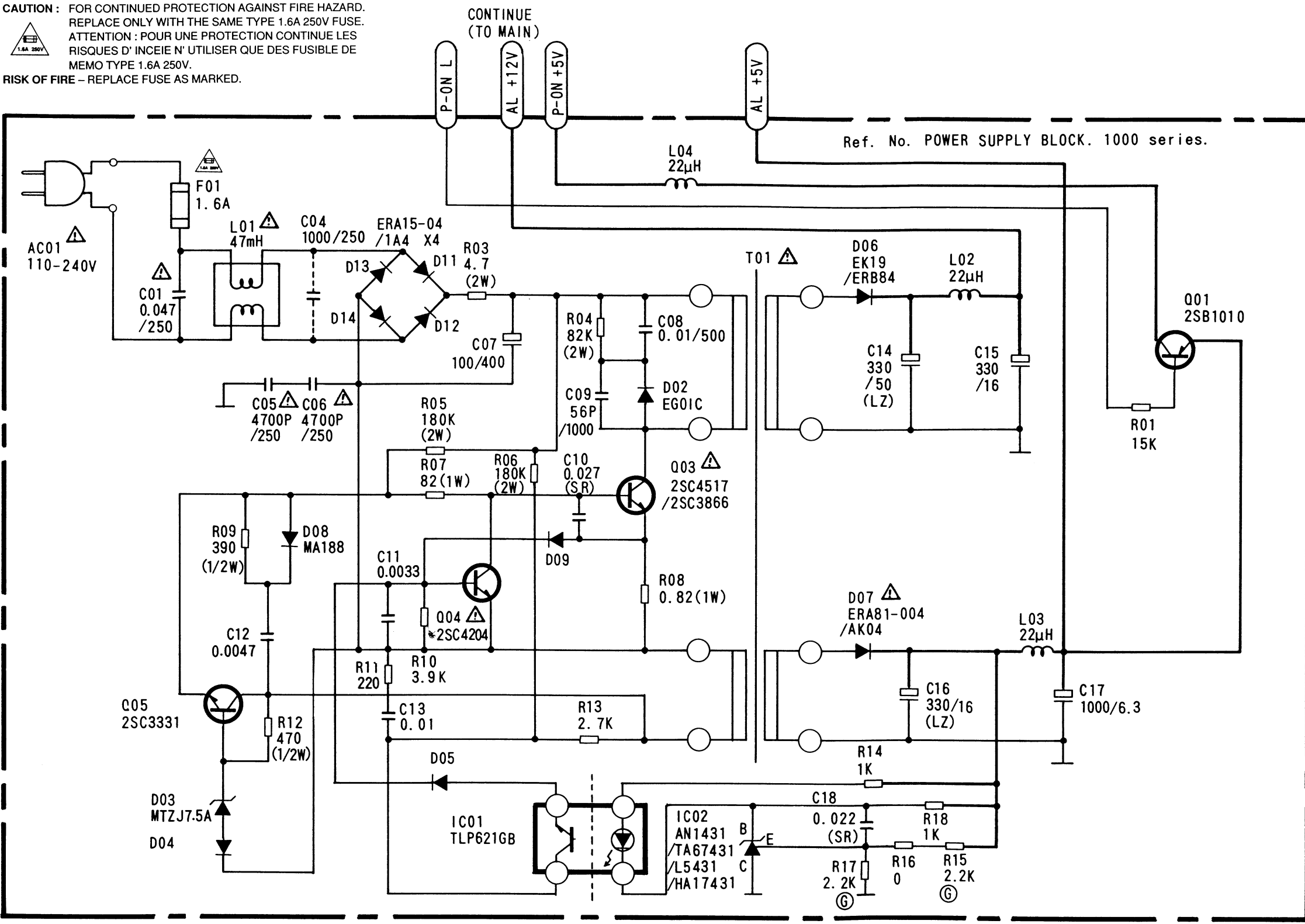


Capacitors and transistors are represented by the following symbols.



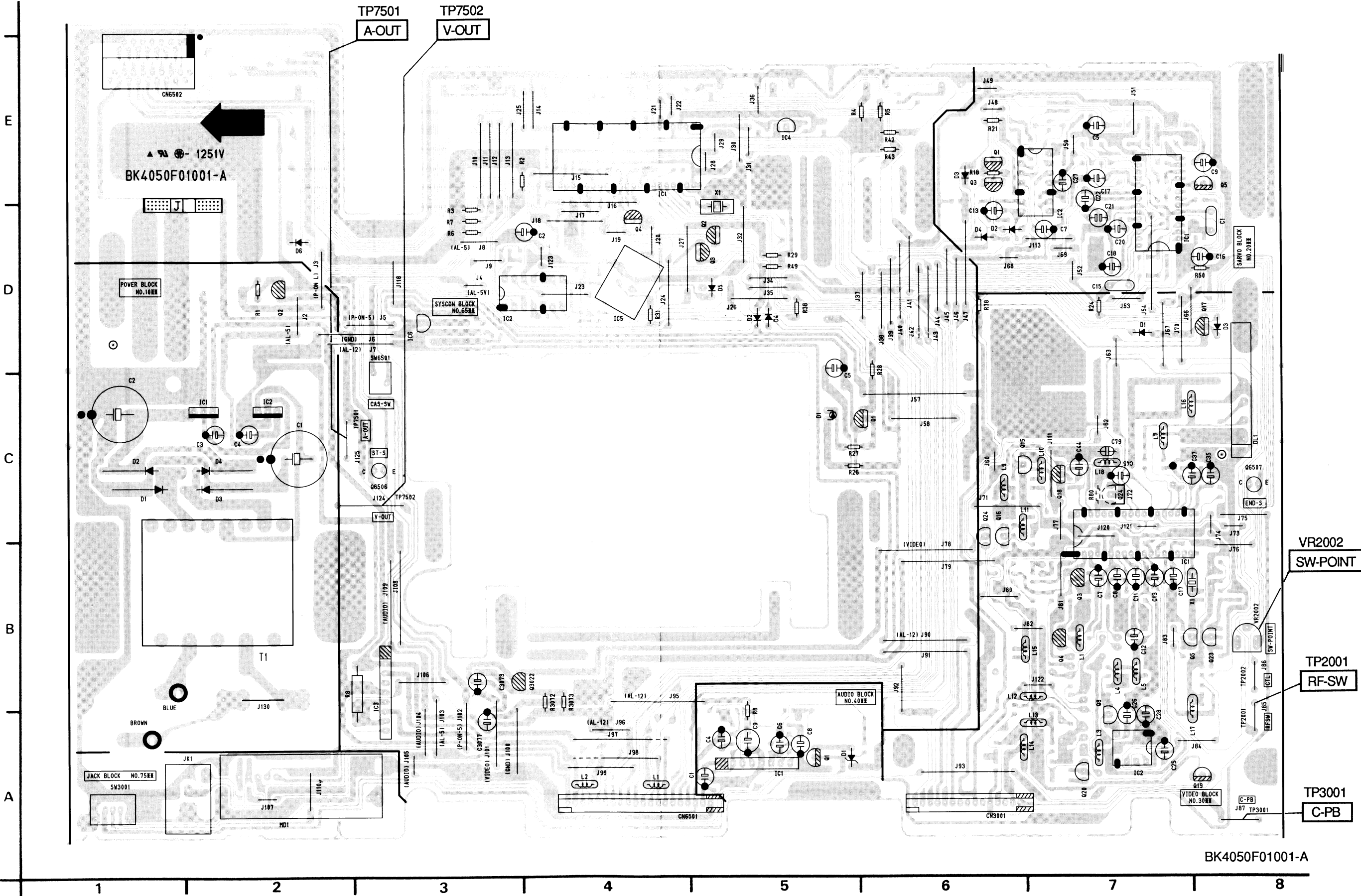
Power Supply Model VCP-200 Only

CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD.
REPLACE ONLY WITH THE SAME TYPE 1.6A 250V FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES
RISQUES D' INCEIE N' UTILISER QUE DES FUSIBLE DE
MEMO TYPE 1.6A 250V.
RISK OF FIRE - REPLACE FUSE AS MARKED.



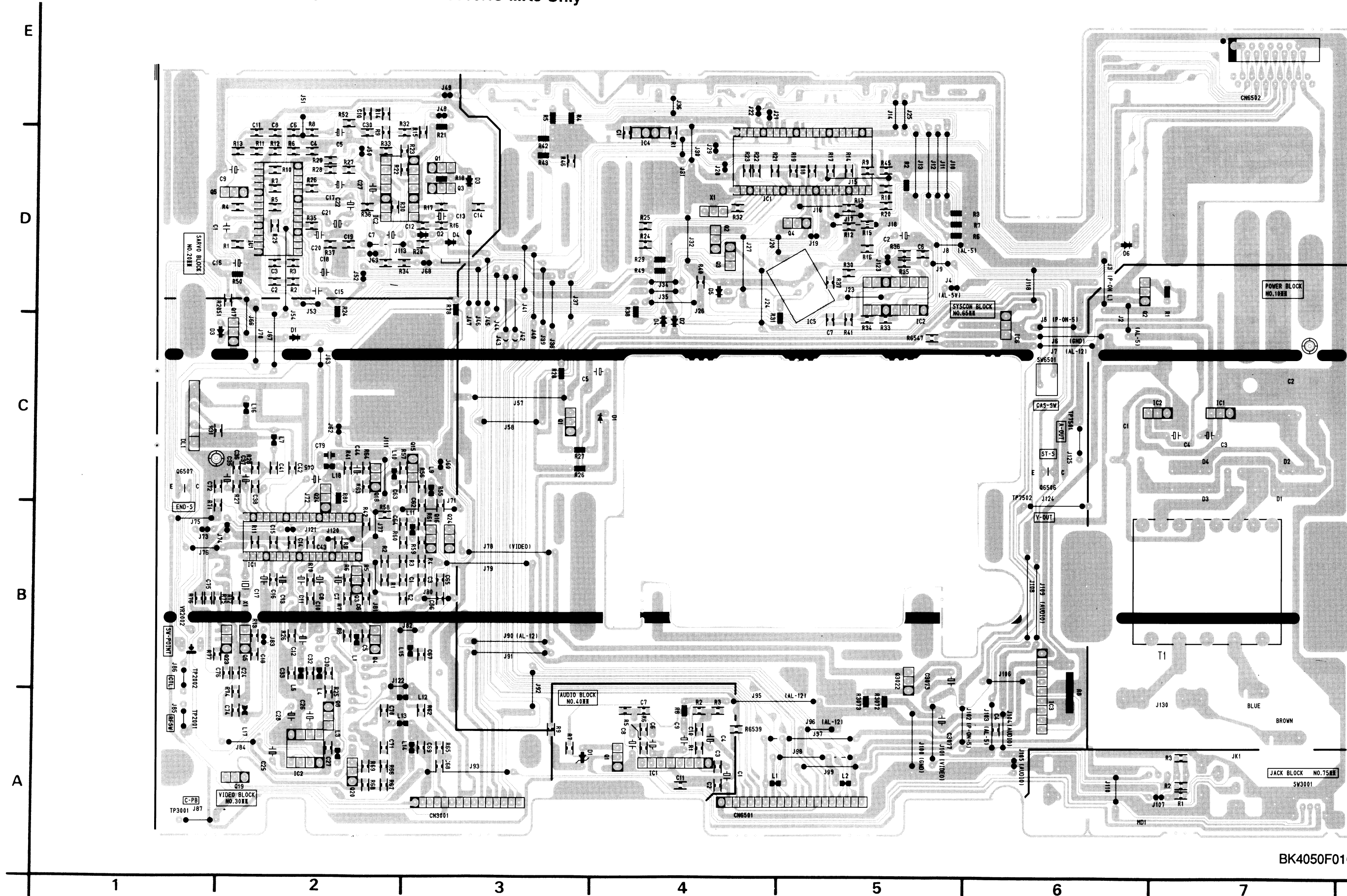
VS3090

Main Top View Model VIP-3000HC MK5 Only



BK4050F01001-A

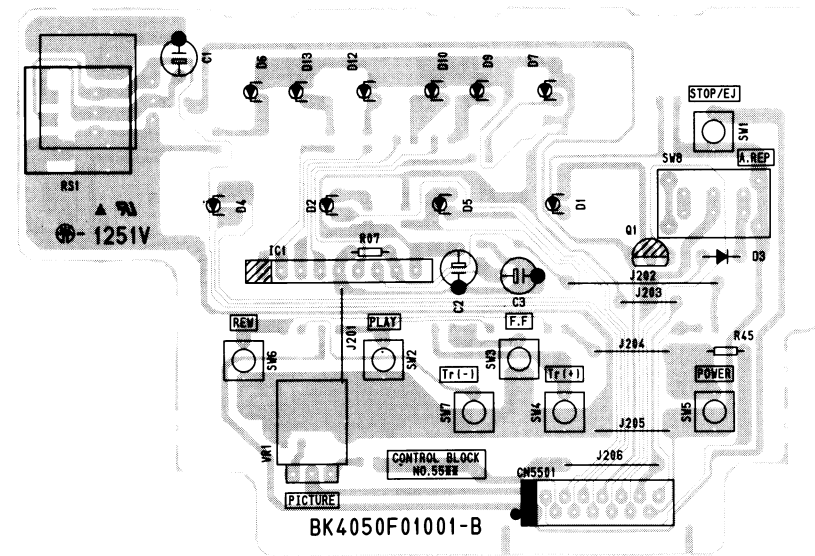
Main Bottom View Model VIP-3000HC MK5 Only



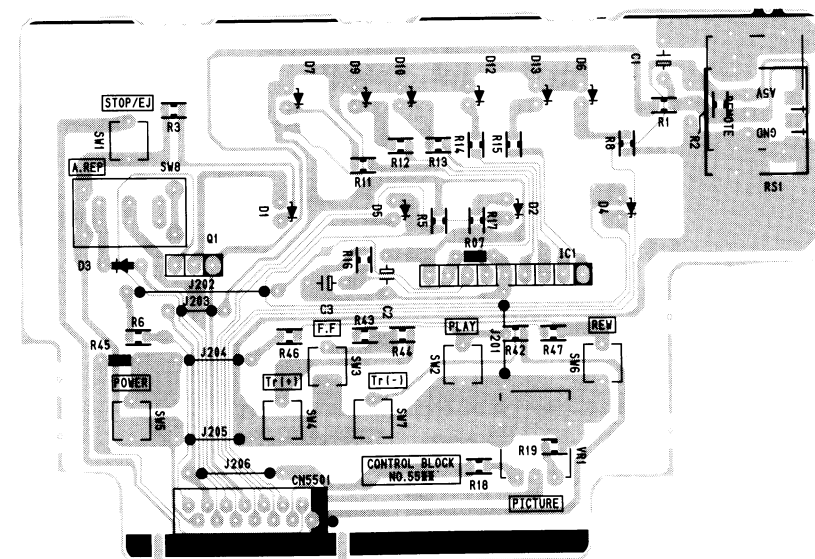
BK4050F01

CONTROL C.B.A.

Top View



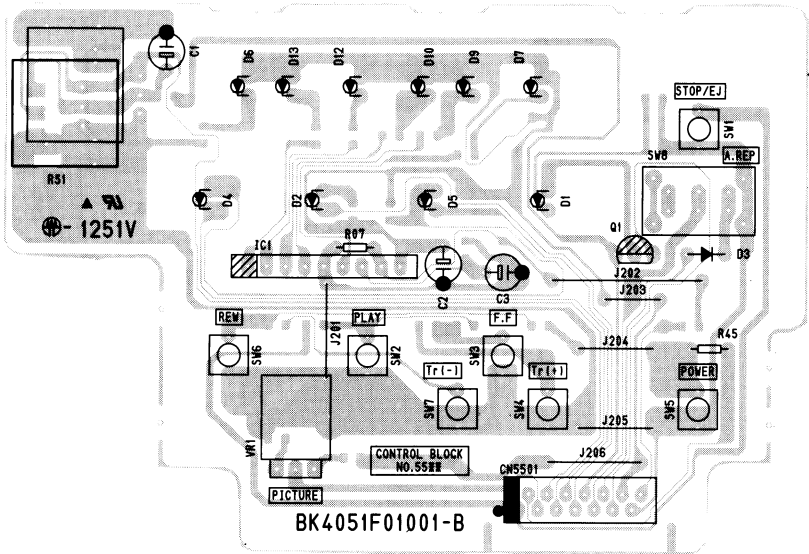
Bottom View



BK4050F01001-B

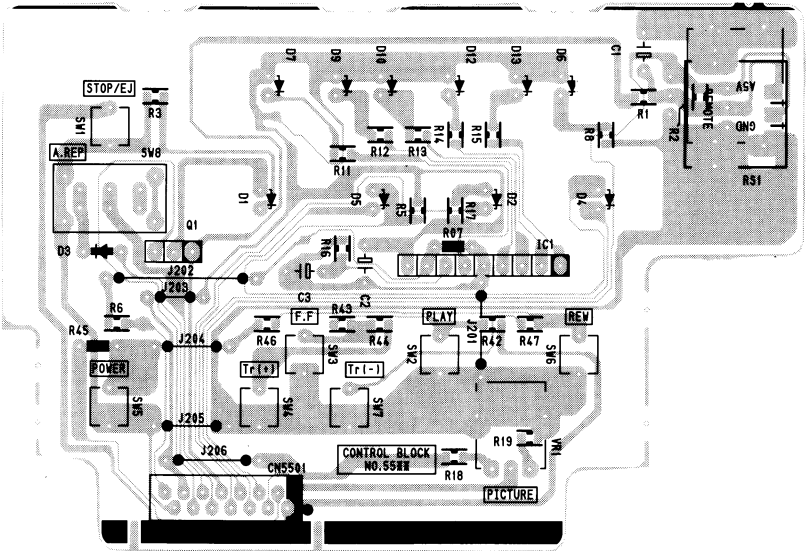
CONTROL C.B.A. Model VCP-200 Only

Top View



TP7501
A-OUT

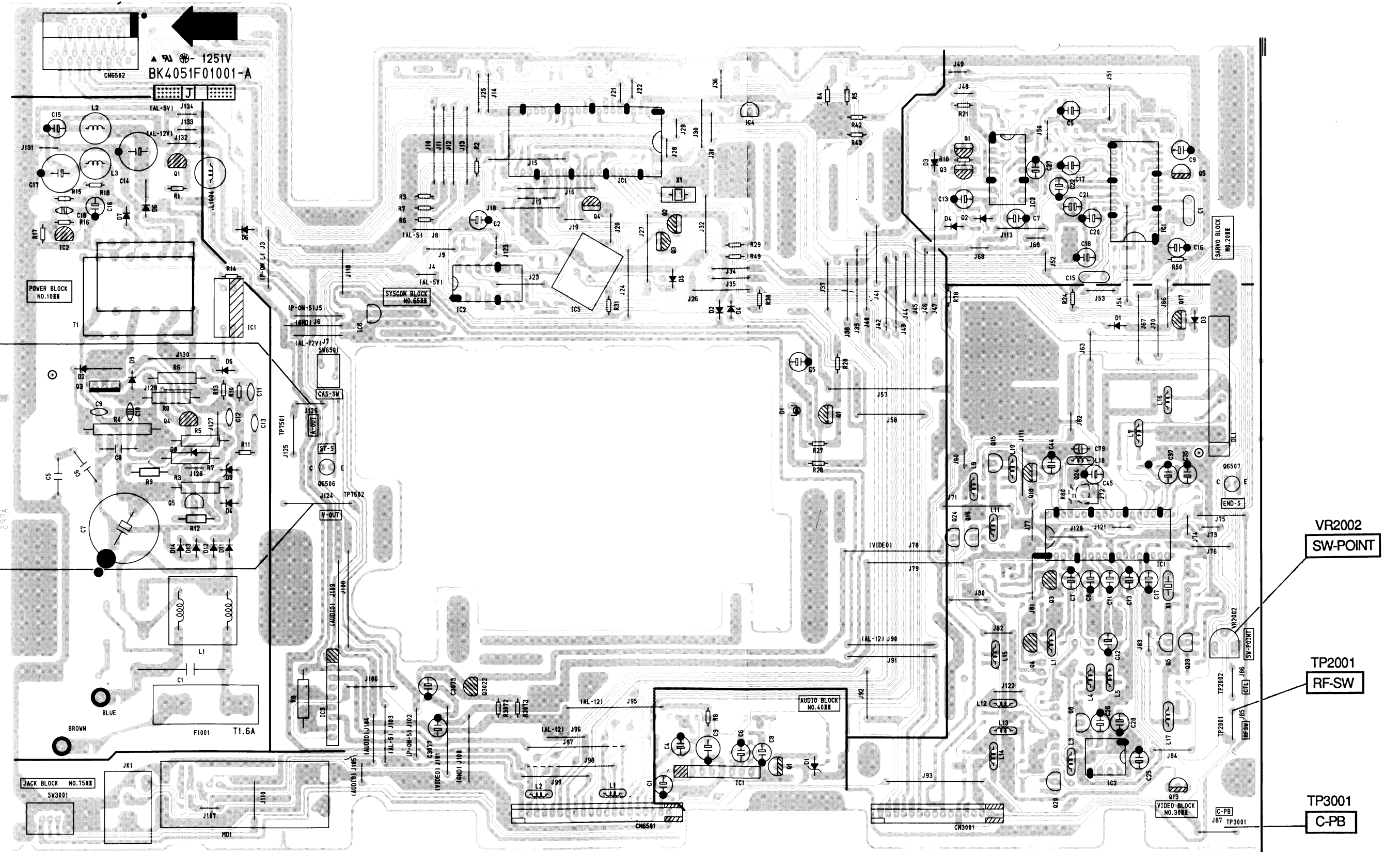
Bottom View



TP7502
V-OUT

BK4051F01001-B

Main Top View



BK4051F01001-A

4

5

6

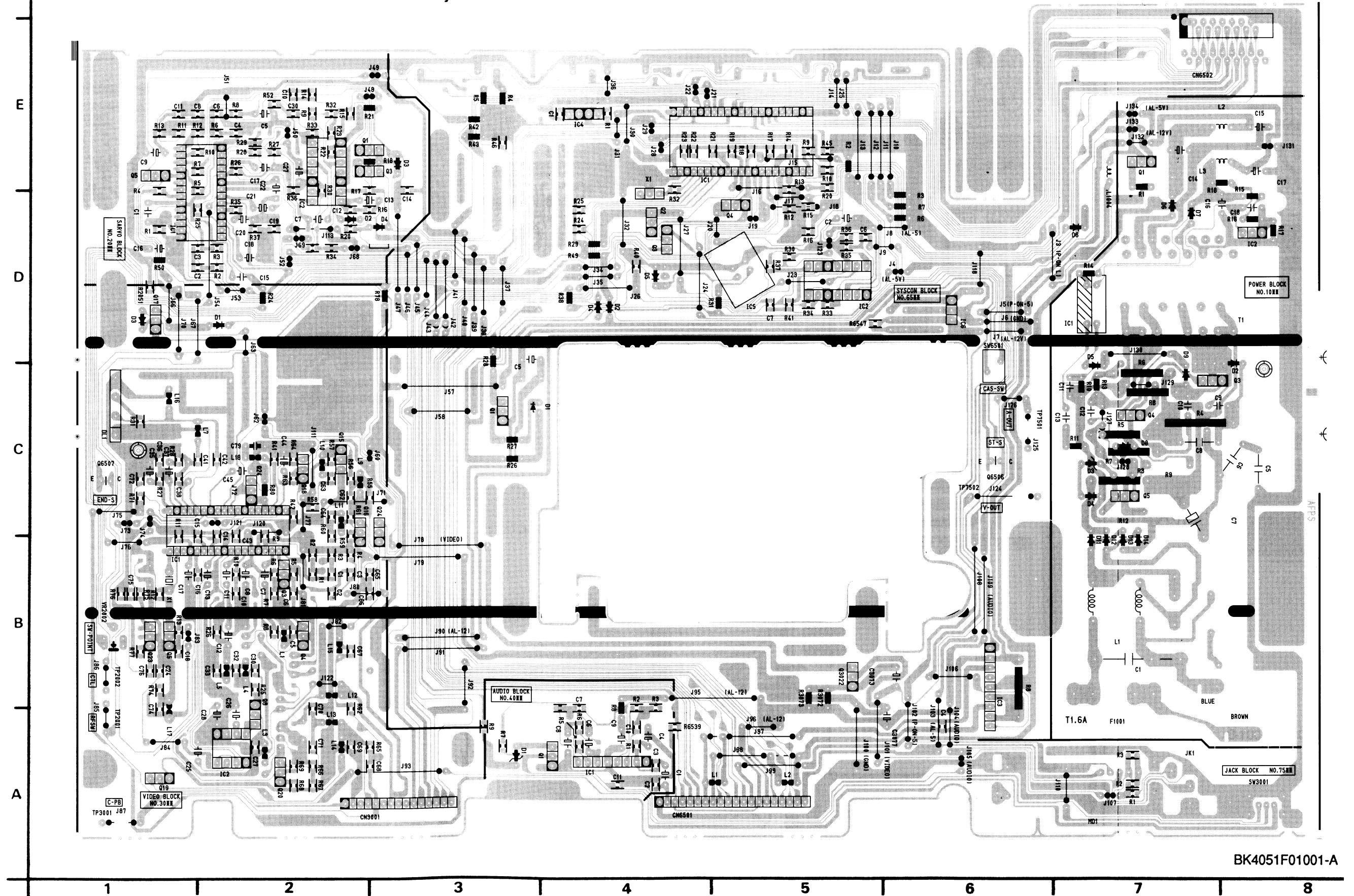
7

8

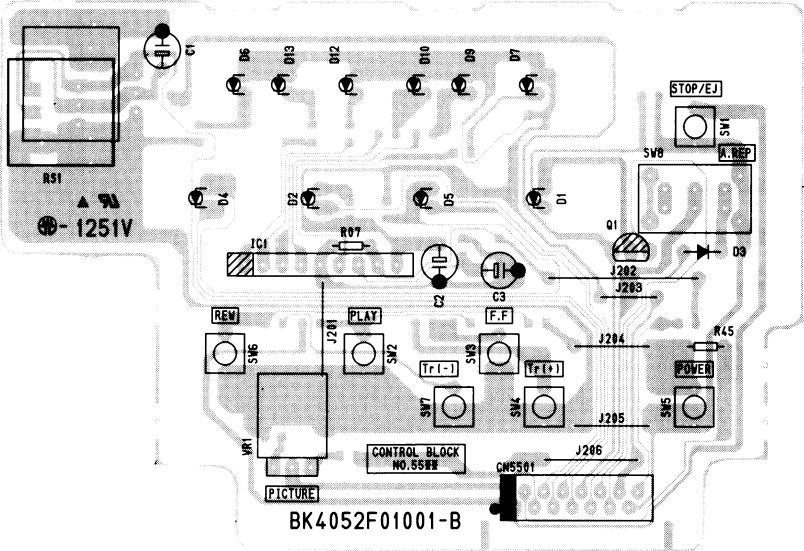
9

10

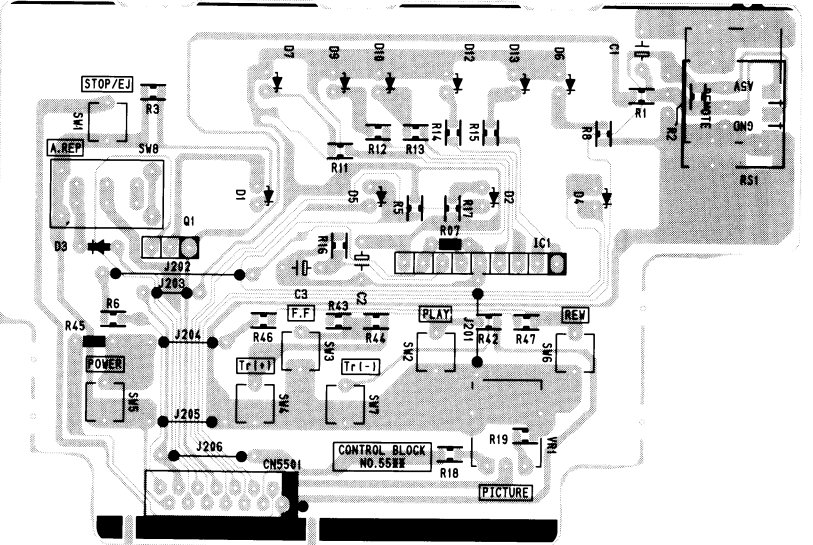
Main Bottom View Model VCP-200 Only



Top View



Bottom View

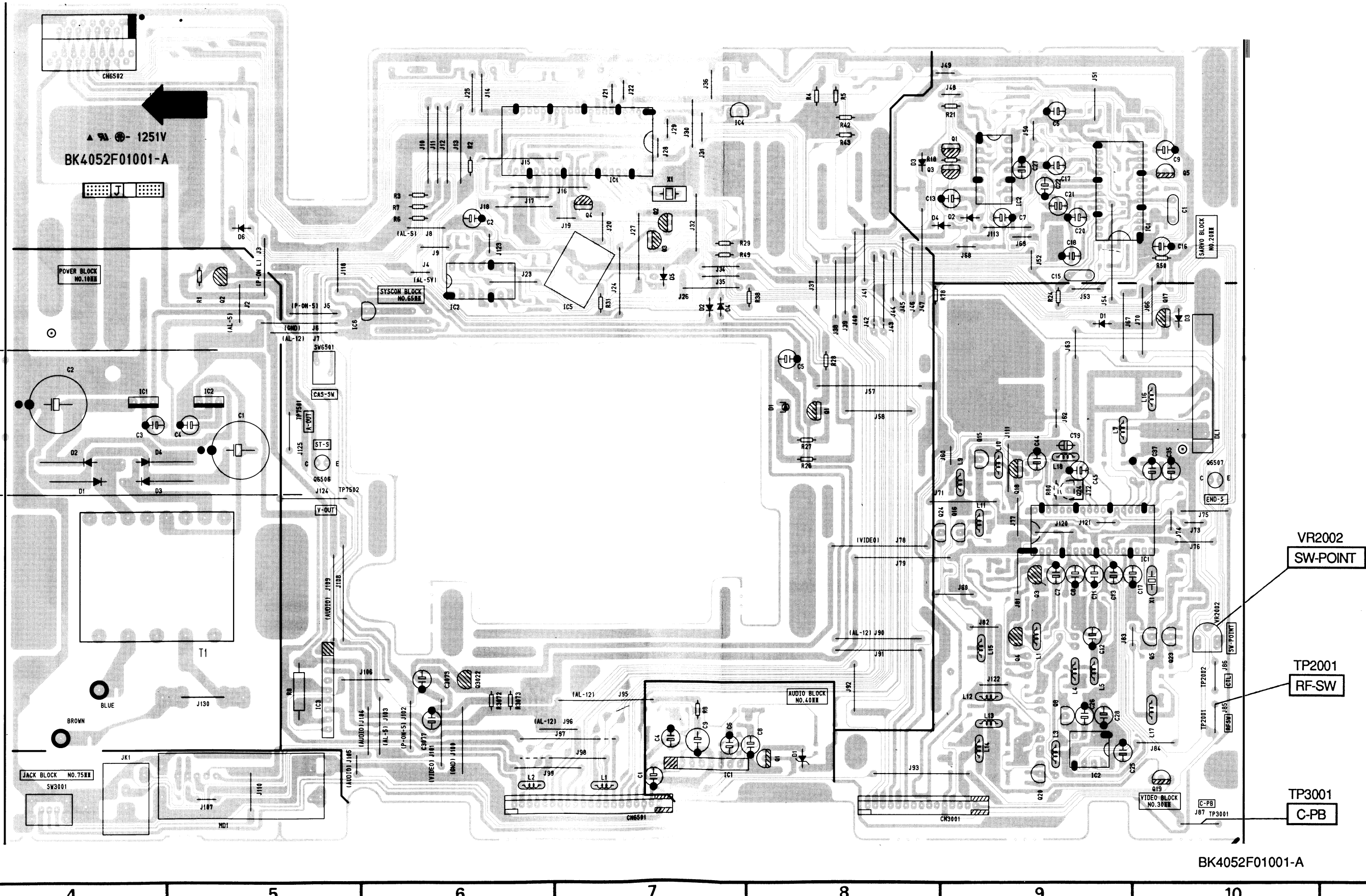


BK4052F01001-B

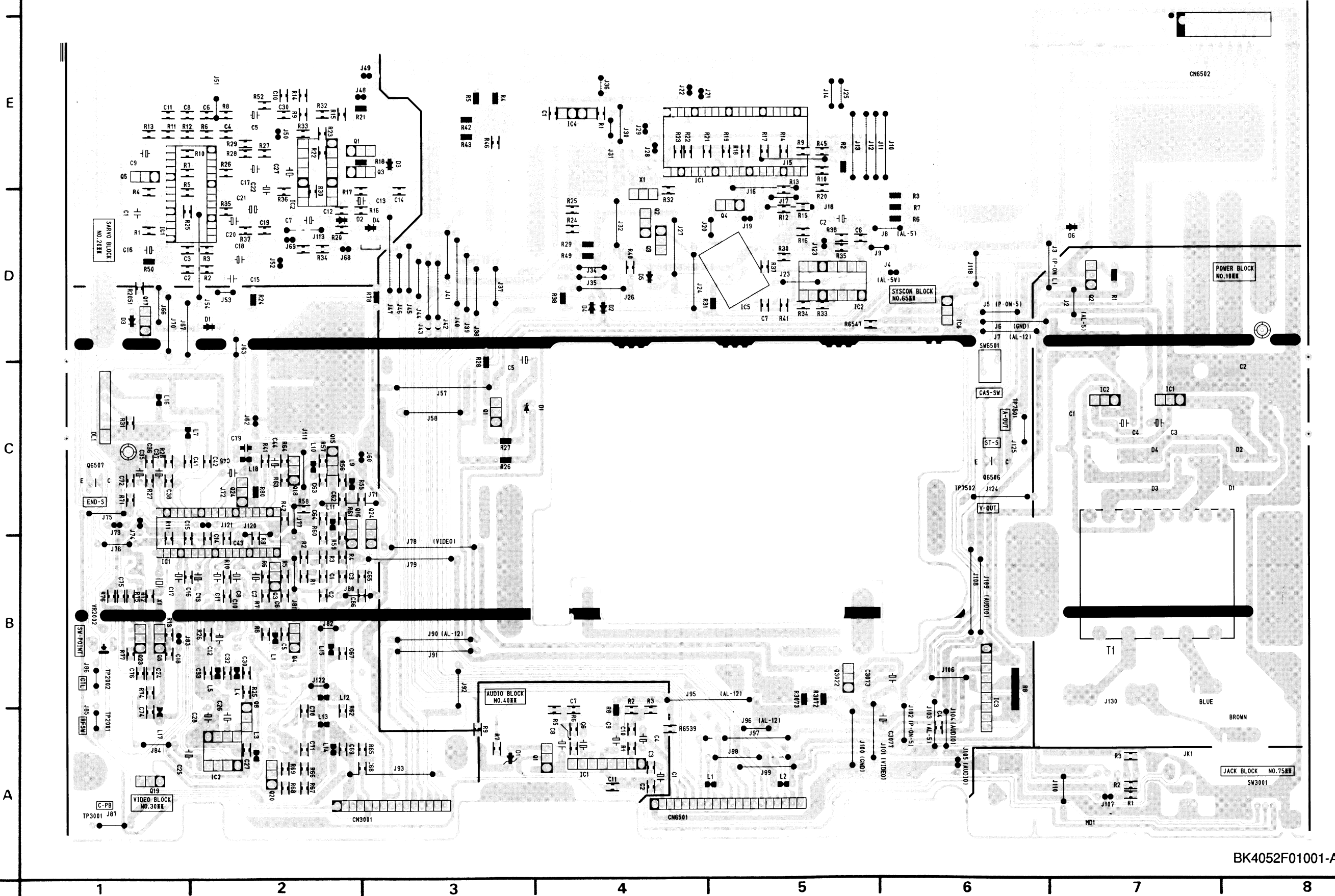
TP7501
A-OUT

TP7502
V-OUT

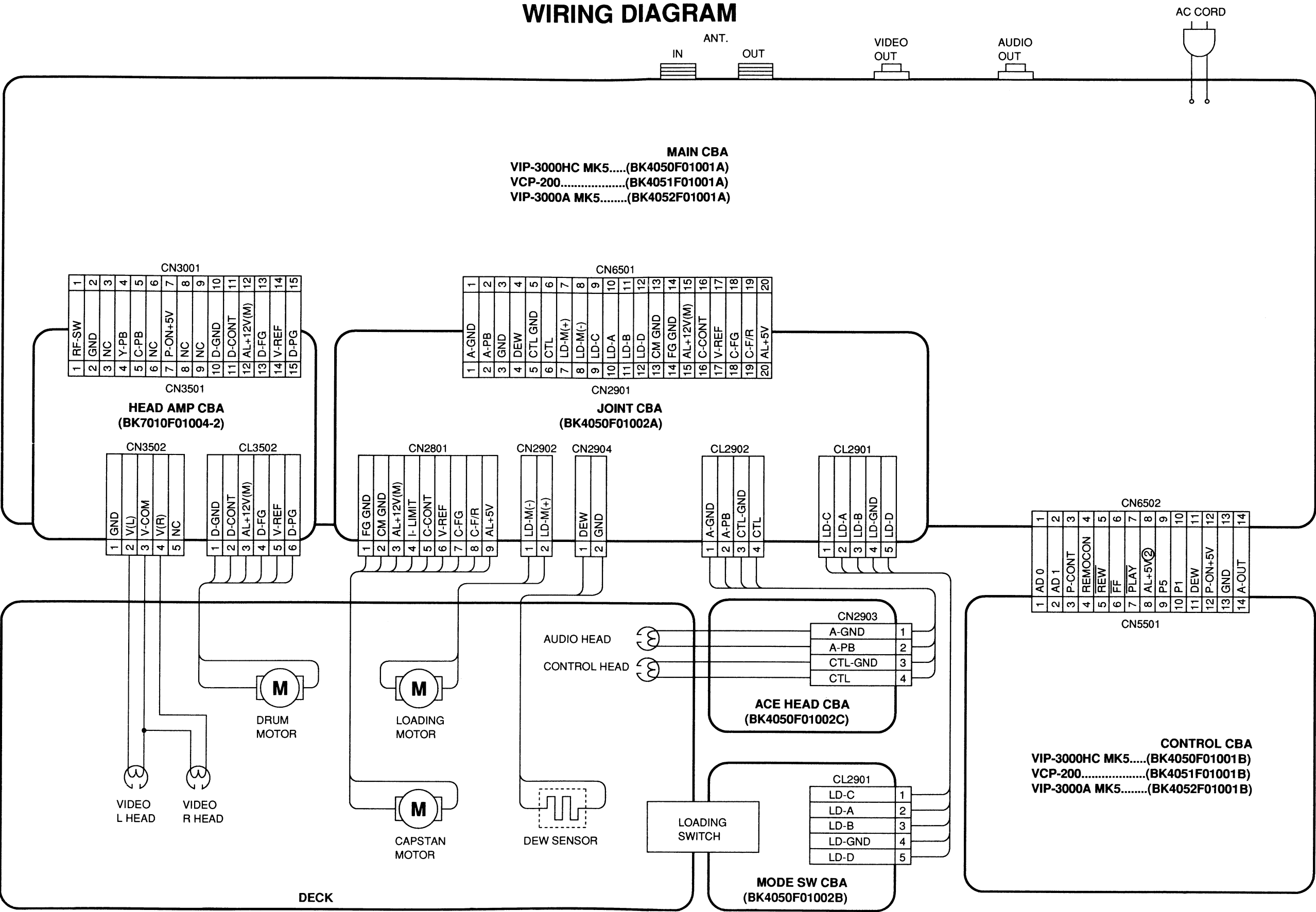
Main Top View



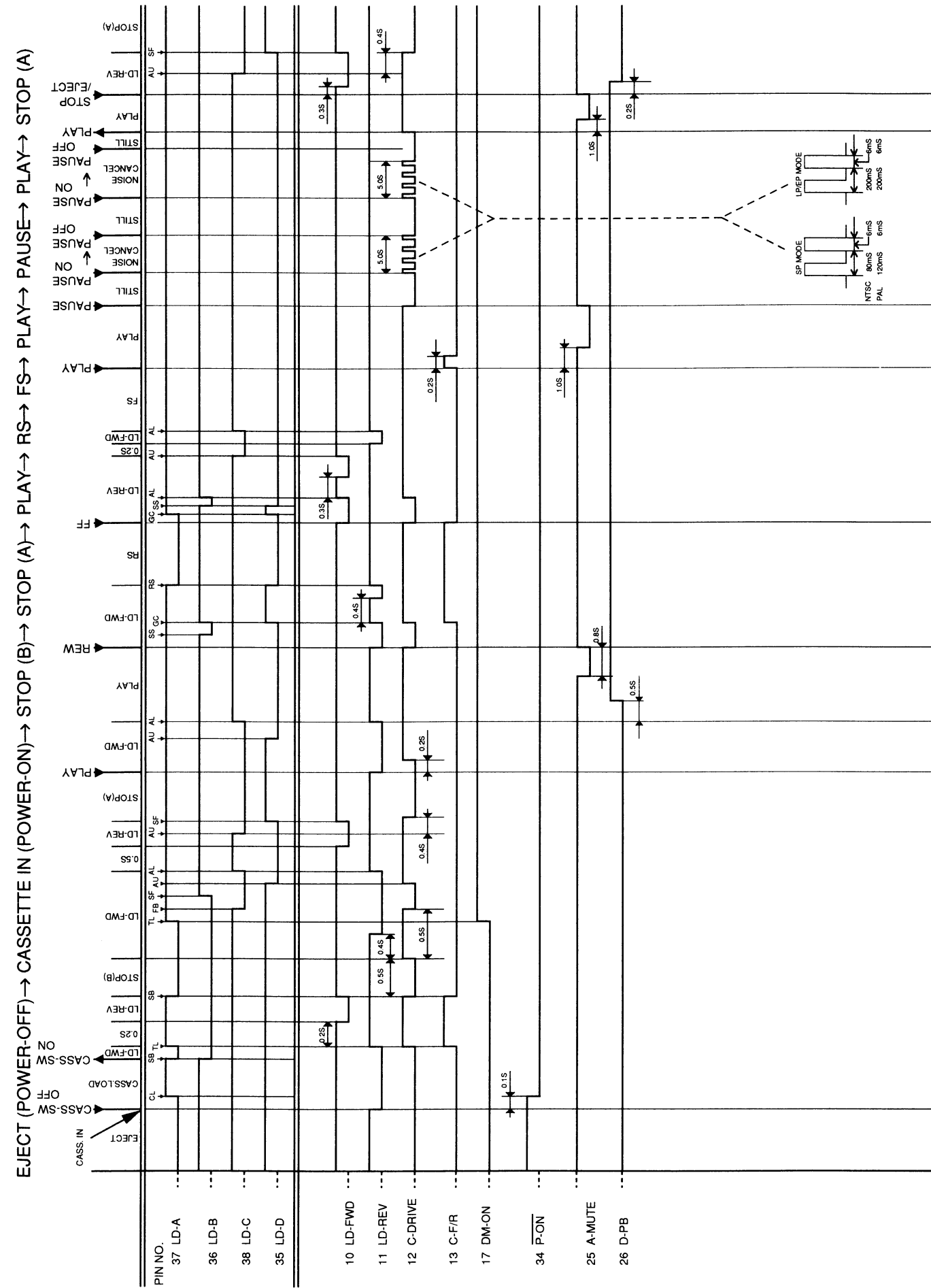
Main Bottom View Model VIP-3000A MK5 Only



WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that not assigned part numbers (-----) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C..... $\pm 0.25\%$	J..... $\pm 5\%$	Z..... $+80/-20\%$
D..... $\pm 0.5\%$	K..... $\pm 10\%$	X..... $+40/-20\%$
F..... $\pm 1\%$	M..... $\pm 20\%$	P..... $+100\%$
G..... $\pm 2\%$	N..... $\pm 30\%$	

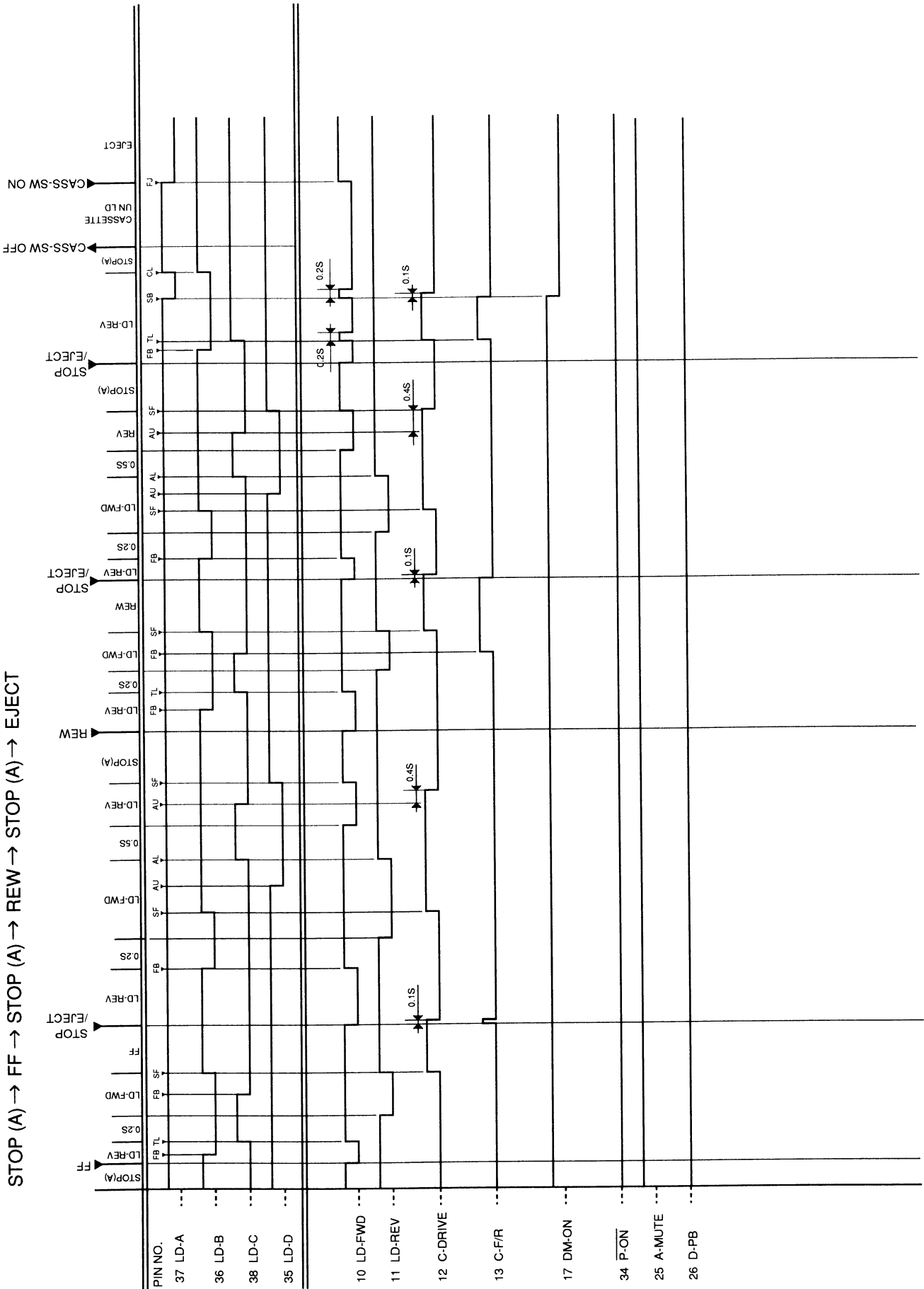
MCV CBA....0VSA05534 (VIP3000HCMK5 MODEL ONLY) MCV CBA....0VSA05555 (VIP30000AMK5 MODEL ONLY)
MCV CBA....0VSA05549 (VCP-200 MODEL ONLY)

MCV-A CBA

Ref. No.	Description	Part No.
	MCV-A CBA CONSISTS OF THE FOLLOWING:	-----
CAPACITORS		
C 1001 Δ	METALLIZED FILM CAP. 0.047 μ F/250V K or (VCP-200 MODEL ONLY)	CT2E473NC004
C 1001	METALLIZED FILM CAP. 0.047 μ F/250V M ELECTROLYTIC CAP. 2200 μ F/16V M W/F (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	CA2E473MS005 626C228
C 1002	ELECTROLYTIC CAP. 2200 μ F/25V M W/F (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	626D228
C 1003	ELECTROLYTIC CAP. 10 μ F/16V M (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	126C106S
C 1004	ELECTROLYTIC CAP. 10 μ F/16V M (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	126C106S
C 1005 Δ	CERAMIC CAP., SAFETY 4700pF or (VCP-200 MODEL ONLY)	1220885
C 1006 Δ	CERAMIC CAP., SAFETY 4700pF or (VCP-200 MODEL ONLY)	CA2H472MS001 1220885
C 1007	CERAMIC CAP., SAFETY 4700pF ELECTROLYTIC CAP. 100 μ F/400V M or (VCP-200 MODEL ONLY)	CA2H472MS001 CA2H101NC008
C 1008	ELECTROLYTIC CAP. 100 μ F/400V M or ELECTROLYTIC CAP. 100 μ F/400V M CERAMIC CAP. 0.01 μ F/500V or (VCP-200 MODEL ONLY)	CA2H101EA008 CA2H101MS002 CA2J103TU001
C 1009	CERAMIC CAP. B K 0.01 μ F/500V CERAMIC CAP. SL J 56pF/1KV or (VCP-200 MODEL ONLY)	CCD2JKP0B103 CA3A560MR506
C 1010	CERAMIC CAP. SL K 56pF/1KV SEMICONDUCTOR CAP. SR K 0.027 μ F/25V (VCP-200 MODEL ONLY)	CCD3AKPSL560 12Y2273S
C 1011	CERAMIC CAP. X K 0.0033 μ F/16V (VCP-200 MODEL ONLY)	3X4C332T

Ref. No.	Description	Part No.
C 1012	CERAMIC CAP. X K 0.0047 μ F/16V (VCP-200 MODEL ONLY)	3X4C472T
C 1013	CERAMIC CAP. Y M 0.01 μ F/16V or (VCP-200 MODEL ONLY)	3Y4D103T
C 1014	CERAMIC CAP. F Z 0.01 μ F/16V ELECTROLYTIC CAP. 330 μ F/50V M or (VCP-200 MODEL ONLY)	1220842T 121H337
C 1015	ELECTROLYTIC CAP. 330 μ F/50V (VCP-200 MODEL ONLY)	CA1J331SP007 126C337S
C 1016	ELECTROLYTIC CAP. 330 μ F/16V M or (VCP-200 MODEL ONLY)	121D337S
C 1017	ELECTROLYTIC CAP. 330 μ F/16V ELECTROLYTIC CAP. 1000 μ F/6.3V M (VCP-200 MODEL ONLY)	CA1C331SP008 126A108S
C 1018	SEMICONDUCTOR CAP. SR K 0.022 μ F/25V (VCP-200 MODEL ONLY)	12Y2223S
C 2001	MYLAR CAP. 0.033 μ F/50V J	2254333S
C 2004	CHIP CERAMIC CAP. B K 0.01 μ F/25V	CHE1EKB0B103
C 2005	ELECTROLYTIC CAP. 100 μ F/6.3V M H7	526R107S
C 2006	CHIP CERAMIC CAP. B K 0.01 μ F/25V	CHE1EKB0B103
C 2007	ELECTROLYTIC CAP. 0.22 μ F/50V M H7	526W224S
C 2008	CHIP CERAMIC CAP. B K 0.022 μ F/16V	CHE1CKB0B223
C 2009	ELECTROLYTIC CAP. 100 μ F/6.3V M H7	526R107S
C 2010	CHIP CERAMIC CAP. B K 0.027 μ F/16V	CHE1CKB0B273
C 2011	CHIP CERAMIC CAP. B K 0.01 μ F/25V	CHE1EKB0B103
C 2012	CHIP CERAMIC CAP. B K 0.022 μ F/16V	CHE1CKB0B223
C 2013	ELECTROLYTIC CAP. 0.22 μ F/50V M H7	526W224S
C 2014	CHIP CERAMIC CAP. F Z 0.047 μ F/25V	CHE1EZB0F473
C 2015	MYLAR CAP. 0.033 μ F/50V J	2254333S
C 2016	ELECTROLYTIC CAP. 47 μ F/6.3V M H7	526R476S
C 2017	ELECTROLYTIC CAP. 10 μ F/16V M H7	526T106S
C 2018	ELECTROLYTIC CAP. 47 μ F/6.3V M H7	526R476S
C 2019	CHIP CERAMIC CAP. F Z 0.022 μ F/50V	CHE1JZB0F223
C 2020	ELECTROLYTIC CAP. 10 μ F/16V M H7	526T106S
C 2021	ELECTROLYTIC CAP. 1 μ F/50V M NP H7	524X105S
C 2022	ELECTROLYTIC CAP. 10 μ F/16V M H7	526T106S
C 2027	ELECTROLYTIC CAP. 10 μ F/16V M H7	526T106S

*Mylar is a registered trademark of E. I. Du Pont de Nemours and Company.



Ref. No.	Description	Part No.
C 2030	CHIP CERAMIC CAP. B K 0.01μF/25V	CHE1EKB0B103
C 3001	CHIP CERAMIC CAP. SL J 33pF/50V	CHE1JJBLSL330
C 3002	CHIP CERAMIC CAP. SL J 33pF/50V	CHE1JJBLSL330
C 3003	CHIP CERAMIC CAP. SL J 180pF/50V	CHE1JJBLSL181
C 3005	CHIP CERAMIC CAP. SL J 47pF/50V	CHE1JJBLSL470
C 3006	CHIP CERAMIC CAP. SL J 47pF/50V	CHE1JJBLSL470
C 3007	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3008	ELECTROLYTIC CAP. 47μF/6.3V M H7	526R476S
C 3010	CHIP CERAMIC CAP. SL J 100pF/50V	CHE1JJBLSL101
C 3011	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S
C 3012	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S
C 3013	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3014	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3015	CHIP CERAMIC CAP. B K 0.01μF/25V	CHE1EKB0B103
C 3016	CHIP CERAMIC CAP. F Z 0.022μF/50V	CHE1JZB0F223
C 3017	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3018	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3024	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3025	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3026	ELECTROLYTIC CAP. 47μF/6.3V M H7	526R476S
C 3027	CHIP CERAMIC CAP. F Z 0.022μF/50V	CHE1JZB0F223
C 3028	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3030	CHIP CERAMIC CAP. SL J 39pF/50V	CHE1JJBLSL390
C 3032	CHIP CERAMIC CAP. SL D 6pF/50V	CHE1JDBSL6R0
C 3033	CHIP CERAMIC CAP. SL J 82pF/50V	CHE1JJBLSL820
C 3035	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3036	CHIP CERAMIC CAP. B K 0.022μF/16V	CHE1CKB0B223
C 3037	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3038	CHIP CERAMIC CAP. F Z 0.1μF/16V	CHE1CZB0F104
C 3041	CHIP CERAMIC CAP. SL J 15pF/50V	CHE1JJBLSL150
C 3042	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3043	CHIP CERAMIC CAP. F Z 0.1μF/16V	CHE1CZB0F104
C 3044	ELECTROLYTIC CAP. 47μF/6.3V M H7	526R476S
C 3045	ELECTROLYTIC CAP. 1μF/50V M H7	526W105S
C 3062	CHIP CERAMIC CAP. SL J 22pF/50V	CHE1JJBLSL220
C 3063	CHIP CERAMIC CAP. SL J 33pF/50V	CHE1JJBLSL330
C 3064	CHIP CERAMIC CAP. SL J 56pF/50V	CHE1JJBLSL560
C 3065	CHIP CERAMIC CAP. F Z 0.1μF/16V	CHE1CZB0F104
C 3066	CHIP CERAMIC CAP. SL J 22pF/50V	CHE1JJBLSL220
C 3067	CHIP CERAMIC CAP. SL J 22pF/50V	CHE1JJBLSL220
C 3068	CHIP CERAMIC CAP. F Z 0.022μF/50V	CHE1JZB0F223
C 3069	CHIP CERAMIC CAP. SL J 220pF/50V	CHE1JJBLSL221
C 3070	CHIP CERAMIC CAP. SL J 56pF/50V	CHE1JJBLSL560
C 3071	CHIP CERAMIC CAP. SL J 220pF/50V	CHE1JJBLSL221
C 3072	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3073	ELECTROLYTIC CAP. 1000μF/6.3V M	126A108S
C 3074	CHIP CERAMIC CAP. SL J 22pF/50V	CHE1JJBLSL220
C 3075	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 3076	CHIP CERAMIC CAP. SL J 220pF/50V	CHE1JJBLSL221
C 3077	ELECTROLYTIC CAP. 100μF/16V M H7	526T107S
C 3079	CERAMIC CAP. BJ 470pF/50V (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	3B4147T
C 4001	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S
C 4002	CHIP CERAMIC CAP. B K 0.0018μF/50V	CHE1JKB0B182
C 4003	CHIP CERAMIC CAP. SL J 100pF/50V	CHE1JJBLSL101
C 4004	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S
C 4006	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S
C 4007	CHIP CERAMIC CAP. F Z 0.1μF/16V	CHE1CZB0F104
C 4008	ELECTROLYTIC CAP. 10μF/16V M H7	526T106S

Ref. No.	Description	Part No.
C 4009	ELECTROLYTIC CAP. 47μF/16V M H7	526T476S
C 4010	CHIP CERAMIC CAP. B K 0.027μF/16V	CHE1CKB0B273
C 4011	CHIP CERAMIC CAP. B K 0.0056μF/50V	CHE1JKB0B562
C 6501	CHIP CERAMIC CAP. F Z 0.01μF/50V	CHE1JZB0F103
C 6502	ELECTROLYTIC CAP. 47μF/6.3V M H7	526R476S
C 6504	CHIP CERAMIC CAP. F Z 0.1μF/16V	CHE1CZB0F104
C 6505	ELECTROLYTIC CAP. 220μF/6.3V M H7	526R227S
C 6506	CHIP CERAMIC CAP. B K 0.022μF/16V	CHE1CKB0B223
C 6507	CHIP CERAMIC CAP. B K 0.022μF/16V	CHE1CKB0B223
CONNECTORS		
CN3001	STRAIGHT PIN CONNECTOR, 15P	1770635
CN6501	STRAIGHT PIN CONNECTOR, 20P	1770640
CN6502	HINGED PIN CONNECTOR 14P	J3TRJ14TG003
DIODES		
D 1001	DIODE AK03 or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	QDQZ0000AK03
D 1002	DIODE ERA81-004	QDQZERA81004
D 1002	DIODE EG01C (VCP-200 MODEL ONLY)	QDQZ0000EG01C
D 1002	DIODE 1N4003 (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	1N4003F2
D 1003	DIODE AK03 or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	QDQZ0000AK03
D 1003	DIODE ERA81-004	QDQZERA81004
D 1003	ZENER DIODE UZ-7.5BSA or (VCP-200 MODEL ONLY)	QDTA0UZR75BS
D 1004	ZENER DIODE MTZ J7.5A	AMTZJ7R5AT77
D 1004	DIODE GMB01B or (VCP-200 MODEL ONLY)	GMB01BT
D 1004	SWITCHING DIODE 1N4148M	QDTZ01N4148M
D 1004	DIODE 1N4003 (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	1N4003F2
D 1005	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 1006	SCHOTTKY BARRIER DIODE EK19 or SCHOTTKY BARRIER DIODE ERB84	QD5Z0000EK19 QD7Z0000ERB84
D 1007 ▲	SCHOTTKY BARRIER DIODE AK04 or DIODE ERA81-004	QDQZ0000AK04 QDQZERA81004
D 1008	SWITCHING DIODE MA188	QDTZ0000MA188
D 1009	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 1011	DIODE 1A4 or DIODE ERA15-04	NDTZ000001A4 QDTZ0ERA1504
D 1012	DIODE 1A4 or DIODE ERA15-04	NDTZ000001A4 QDTZ0ERA1504
D 1013	DIODE 1A4 or DIODE ERA15-04	NDTZ000001A4 QDTZ0ERA1504
D 1014	DIODE 1A4 or DIODE ERA15-04	NDTZ000001A4 QDTZ0ERA1504
D 2001	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 2002	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 2003	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 2004	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M

Ref. No.	Description	Part No.
D 3003	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 4001	ZENER DIODE UZ-3.3BSA or ZENER DIODE MTZ J3.3A	QDTA0UZR33BS AMTZJ3R3AT77
D 6501	LED SID1K10CXM	QP4ZD1K10CXM
D 6504	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 6505	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 6506	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
INTERGRATED CIRCUITS		
IC1001	PHOTO CUPPLAR TLP621 (VCP-200 MODEL ONLY)	GTLP621*****
IC1001	VOLTAGE REGULATOR IC AN7812F or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	AN7812F
IC1002	IC REGULATOR NJM7812FA IC AN1431T-(NSC) or (VCP-200 MODEL ONLY)	14L0251 QSBLA0ZMS001
IC1002	IC L5431 or IC HA17431P or IC TA76431S	QSZLA0ZSY004 QSZLA0ZHT001 QSZLA0ZTS001
IC1002	VOLTAGE REGULATOR IC AN7805F or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	AN7805F
IC2001	VOLTAGE REGULATOR IC NJM7805FA	J7805FA
IC2002	IC, SERVO MN6748FVDP IC, OP.AMP NJM324D or IC, OP.AMP. BA10324A	QSMEA0SMS001 QSBLA0SJR039 QSBLA0SRM002
IC3001	IC, VIDEO LA7390L	QSBLA0SSY022
IC3002	IC, CCD LC89925	QSMQA0SSY004
IC4001	IC, AUDIO LA3161	QSBLA0SSY023
IC6501	MICROCONTROLLER 4BIT SY/M50727-624SP	QSMQA0SMB011
IC6502	IC, COMPARATOR LA6339 or IC, COMPARATOR NJM2901N or IC BA10339	QSBLA0SSY024 QSBLA0SJR040 BA10339
IC6503	IC TA7291S	14LW342
IC6504	IC RESET PST529D-2	14DM763Z
IC6505	REEL SENSOR SG-211L	PCZLAZZKK003
IC6506	VOLTAGE REGULATOR IC AN78L05 or VOLTAGE REGULATOR IC NJM78L05A	AN78L05 J78L05A
COILS		
L 1001 ▲	LINE FILTER 47MH ELF-18D235F (VCP-200 MODEL ONLY)	LLBG00ZMS007
L 1002	LEAD INDUCTOR 22μH K (VCP-200 MODEL ONLY)	LLBD00PTU013
L 1003	LEAD INDUCTOR 22μH K (VCP-200 MODEL ONLY)	LLBD00PTU013
L 1004	LEAD INDUCTOR 22μH K (VCP-200 MODEL ONLY)	LLBD00PTU013
L 3001	INDUCTOR 27μH-K-26T or INDUCTOR 27μH-K-26T	LLAXKDTKA270 LLAXKATTU270
L 3003	INDUCTOR 100μH-K-26T or INDUCTOR 100μH-K-26T	LLAXKDTKA101 LLAXKATTU101
L 3004	INDUCTOR 47μH-K-26T or INDUCTOR 47μH-K-26T	LLAXKDTKA470 LLAXKATTU470
L 3005	INDUCTOR 39μH-K-26T or INDUCTOR 39μH-K-26T	LLAXKDTKA390 LLAXKATTU390
L 3007	INDUCTOR 47μH-K-26T or	LLAXKDTKA470

Ref. No.	Description	Part No.
L 3009	INDUCTOR 47μH-K-26T	LLAXKATTU470
L 3010	INDUCTOR 33μH-K-26T or INDUCTOR 33μH-K-26T	LLAXKDTKA330 LLAXKATTU330
L 3011	INDUCTOR 22μH-K-26T or INDUCTOR 22μH-K-26T	LLAXKDTKA220 LLAXKATTU220
L 3012	INDUCTOR 68μH-K-26T or INDUCTOR 68μH-K-26T	LLAXKDTKA680 LLAXKATTU680
L 3013	INDUCTOR 100μH-K-26T or INDUCTOR 100μH-K-26T	LLAXKDTKA101 LLAXKATTU101
L 3014	INDUCTOR 330μH-K-26T	LLAXKDTKA331
L 3015	INDUCTOR 330μH-K-26T	LLAXKDTKA331
L 3016	INDUCTOR 18μH-K-26T or INDUCTOR 18μH-K-26T	LLAXKDTKA180 LLAXKATTU180
L 3017	INDUCTOR 15μH-K-26T or INDUCTOR 15μH-K-26T	LLAXKDTKA150 LLAXKATTU150
L 3018	INDUCTOR 10μH-K-26T or INDUCTOR 10μH-K-26T	LLAXKDTKA100 LLAXKATTU100
L 3018	INDUCTOR 150μH-K-26T or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	LLAXKDTKA151 LLAXKATTU151
L 6501	INDUCTOR 1.0μH-K-5FT	LLARKBSFS1R0
L 6502	INDUCTOR 1.0μH-K-5FT	LLARKBSFS1R0
TRANSISTORS		
Q 1001	TRANSISTOR 2SB892(S) or (VCP-200 MODEL ONLY)	B892SZ
Q 1002	TRANSISTOR 2SB892(T) or TRANSISTOR 2SB1010(Q) or TRANSISTOR 2SB1010(R)	B892TZ B1010QZ B1010RZ
Q 1002	TRANSISTOR 2SB892(S) or (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	B892SZ
Q 1003 ▲	TRANSISTOR 2SB892(T) or TRANSISTOR 2SB1010(Q) or TRANSISTOR 2SB1010(R)	B892TZ B1010QZ B1010RZ
Q 1004 ▲	TRANSISTOR 2SC4517 or (VCP-200 MODEL ONLY)	QQPZ02SC4517
Q 1005	TRANSISTOR 2SC3866	QQPZ02SC3866
Q 1005	TRANSISTOR 2SC4204 (VCP-200 MODEL ONLY)	QQS020SC4204
Q 1005	TRANSISTOR 2SC3330(T) or (VCP-200 MODEL ONLY)	QSC3331TNPAA
Q 2001	TRANSISTOR 2SC3330(U)	QSC3331UNPAA
Q 2001	RES. BUILT-IN TRANSISTOR 2SA1346 or RES. BUILT-IN TRANSISTOR DTA124ES	A1346Z A124ESZ
Q 2003	RES. BUILT-IN TRANSISTOR 2SA1346 or RES. BUILT-IN TRANSISTOR DTA124ES	A1346Z A124ESZ
Q 2005	RES. BUILT-IN TRANSISTOR 2SC3400 or RES. BUILT-IN TRANSISTOR DTC124ES	C3400Z C124ESZ
Q 3003	TRANSISTOR 2SA608SP(E) or TRANSISTOR 2SA608SP(F) or TRANSISTOR 2SA933(Q) or TRANSISTOR 2SA933(R)	A608SEZ A608SFZ A933QZ A933RZ
Q 3004	TRANSISTOR 2SA608SP(E) or TRANSISTOR 2SA608SP(F) or TRANSISTOR 2SA933(Q) or TRANSISTOR 2SA933(R)	A608SEZ A608SFZ A933QZ A933RZ
Q 3005	TRANSISTOR 2SC536SP(E) or TRANSISTOR 2SC536SP(F) or TRANSISTOR 2SC1740(Q) or	C536SEZ C536SFZ C1740QZ

Ref. No.	Description	Part No.
Q 3008	TRANSISTOR 2SC1740(R)	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F) or	C536SFZ
Q 3015	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R)	C1740RZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
Q 3016	TRANSISTOR 2SC2839(F) or	C2839FZ
	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q)	C2058QZ
Q 3017	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F) or	C2839FZ
	TRANSISTOR 2SC2058(P) or	C2058PZ
Q 3018	TRANSISTOR 2SC2058(Q)	C2058QZ
Q 3019	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F) or	C2839FZ
	TRANSISTOR 2SC2058(P) or	C2058PZ
Q 3020	TRANSISTOR 2SC2058(Q)	C2058QZ
Q 3022	RES. BUILT-IN TRANSISTOR 2SA1346 or	A1346Z
	RES. BUILT-IN TRANSISTOR DTA124ES	A124ESZ
	RES. BUILT-IN TRANSISTOR DTA144WS	A144WSZ
Q 3023	RES. BUILT-IN TRANSISTOR 2SC3400 or	C3400Z
	RES. BUILT-IN TRANSISTOR DTC124ES	C124ESZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
Q 3024	TRANSISTOR 2SC536SP(F) or	C536SFZ
	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R)	C1740RZ
Q 4001	TRANSISTOR 2SA1317(S) or	A1317SZ
	TRANSISTOR 2SA1317(T)	A1317TZ
Q 4501	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F) or	C536SFZ
	TRANSISTOR 2SC1740(Q) or	C1740QZ
Q 4502	TRANSISTOR 2SC1740(R)	C1740RZ
Q 4503	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F) or	C536SFZ
	TRANSISTOR 2SC1740(Q) or	C1740QZ
Q 4504	TRANSISTOR 2SC1740(R)	C1740RZ
Q 4505	TRANSISTOR 2SD1468(R) or	D1468RZ
	TRANSISTOR 2SD1468(S) or	D1468SZ
Q 4506	TRANSISTOR 2SD545(F) or	QQSF2SD545NP
	TRANSISTOR 2SD545(G) or	QQSG2SD545NP
Q 4507	TRANSISTOR 2SD1012(F) or	D1012FZ
	TRANSISTOR 2SD1012(G)	D1012GZ
Q 4508	TRANSISTOR 2SD400(F)	D400FZ
Q 4509	RES. BUILT-IN TRANSISTOR DTA144TS	QDTA144TSTP0
	RES. BUILT-IN TRANSISTOR DTA144TS	QDTA144TSTP0
Q 4510	PHOTO TRANSISTOR PT380F	QP4Z00PT380F
	PHOTO TRANSISTOR PT380F	QP4Z00PT380F
RESISTORS		
R 1001	CARBON RES. 1/4W J 1.5K Ω or	RCX4JATZ0152
R 1003	CARBON RES. 1/6W J 1.5K Ω	132A152T
R 1004	METAL RES. (NO CUT) 2W J 4.7 Ω	RN024R7KE005
R 1005	(VCP-200 MODEL ONLY)	
R 1006	METAL RES. 2W J 82K Ω	1330513
R 1007	(VCP-200 MODEL ONLY)	
R 1008	METAL RES. 2W J 180K Ω	RN02184KA006
R 1009	(VCP-200 MODEL ONLY)	
R 1010	METAL RES. 2W J 180K Ω	RN02184KA006
R 1011	(VCP-200 MODEL ONLY)	
R 1012	METAL RES. 2W J 180K Ω	RN02184KA006
R 1013	(VCP-200 MODEL ONLY)	
R 1014	METAL RES. 1W J 82 Ω	1330412
R 1015	(VCP-200 MODEL ONLY)	
R 1016	METAL RES. 1W J 0.82 Ω	1330388
R 1017	(VCP-200 MODEL ONLY)	
R 1018	CARBON RES. 1/2W J 390 Ω	RCX2391KA003
R 1019	(VCP-200 MODEL ONLY)	

Ref. No.	Description	Part No.
R 1010	CARBON RES. 1/4W J 3.9K Ω or	RCX4JATZ0392
	(VCP-200 MODEL ONLY)	
R 1011	CARBON RES. 1/6W J 3.9K Ω	132A392T
R 1012	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
	(VCP-200 MODEL ONLY)	
R 1013	CARBON RES. 1/6W J 220 Ω	132A221T
R 1014	CARBON RES. 1/2W J 470 Ω	RCX2471KA003
R 1015	(VCP-200 MODEL ONLY)	
R 1016	CARBON RES. 1/4W J 2.7K Ω or	RCX4JATZ0272
	(VCP-200 MODEL ONLY)	
R 1017	CARBON RES. 1/6W J 2.7K Ω	132A272T
R 1018	CARBON RES. 1/4W J 1K Ω or	RCX4JATZ0102
	(VCP-200 MODEL ONLY)	
R 2001	CARBON RES. 1/6W J 1K Ω	132A102T
R 2002	CARBON RES. 1/4W G 2.4K Ω	RCX4GATZ0242
R 2003	(VCP-200 MODEL ONLY)	
R 2004	PCB JUMPER D0.6-P5.0	JW5.0T
R 2005	(VCP-200 MODEL ONLY)	
R 2006	CARBON RES. 1/4W G 2.2K Ω	RCX4GATZ0222
R 2007	(VCP-200 MODEL ONLY)	
R 2008	CARBON RES. 1/4W J 1K Ω or	RCX4JATZ0102
	(VCP-200 MODEL ONLY)	
R 2009	CARBON RES. 1/6W J 1K Ω	132A102T
R 2010	CHIP RES. 1/10W J 18K Ω	RRXAJBBZ0183
R 2011	CHIP RES. 1/10W J 0 Ω	RRXAJBBZ0000
R 2012	CHIP RES. 1/10W J 0 Ω	RRXAJBBZ0000
R 2013	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 2014	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 2015	CHIP RES. 1/10W J 180K Ω	RRXAJBBZ0184
R 2016	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2017	CHIP RES. 1/10W J 1.8K Ω	RRXAJBBZ0182
R 2018	CHIP RES. 1/10W J 150K Ω	RRXAJBBZ0154
R 2019	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2020	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 2021	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2022	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 2023	CHIP RES. 1/10W J 150K Ω	RRXAJBBZ0154
R 2024	CHIP RES. 1/10W J 100K Ω	RRXAJBBZ0104
R 2025	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2026	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2027	CHIP RES. 1/10W J 22K Ω or	RCX4JATZ0223
R 2028	CARBON RES. 1/6W J 22K Ω	132A223T
R 2029	CARBON RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 2030	CARBON RES. 1/4W J 4.7K Ω or	RCX4JATZ0472
R 2031	CARBON RES. 1/6W J 4.7K Ω	132A472T
R 2032	CHIP RES. 1/10W J 39K Ω	RRXAJBBZ0393
R 2033	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 2034	CARBON RES. 1/4W J 91K Ω or	RCX4JATZ0913
R 2035	CARBON RES. 1/6W J 91K Ω	132A913T
R 2036	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 2037	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 2038	CHIP RES. 1/10W J 22K Ω	RRXAJBBZ0223
R 2039	CHIP RES. 1/10W J 0 Ω	RRXAJBBZ0000
R 2040	CHIP RES. 1/10W J 0 Ω	RRXAJBBZ0000
R 2041	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 2042	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 2043	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 2044	CHIP RES. 1/10W J 100 Ω	RRXAJBBZ0101
R 2045	CHIP RES. 1/10W J 4.7M Ω	RRXAJBBZ0475
R 2046	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 2047	CARBON RES. 1/4W J 150 Ω or	RCX4JATZ0151
R 2048	CARBON RES. 1/6W J 150 Ω	132A151T

Ref. No.	Description	Part No.
R 2051	CHIP RES. 1/10W J 13K Ω	RRXAJBBZ0133
R 2052	CHIP RES. 1/10W J 56K Ω	RRXAJBBZ0563
R 3001	CHIP RES. 1/10W J 330 Ω	RRXAJBBZ0331
R 3002	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 3003	CHIP RES. 1/10W J 22K Ω	RRXAJBBZ0223
R 3004	CHIP RES. 1/10W J 1.5K Ω	RRXAJBBZ0152
R 3005	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 3006	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 3007	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3008	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 3009	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 3010	CHIP RES. 1/10W J 390 Ω	RRXAJBBZ0391
R 3011	CHIP RES. 1/10W J 1M Ω	RRXAJBBZ0105
R 3012	CHIP RES. 1/10W J 8.2K Ω	RRXAJBBZ0822
R 3013	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 3025	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3026	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3027	CHIP RES. 1/10W J 22K Ω	RRXAJBBZ0223
R 3028	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3031	CHIP RES. 1/10W J 270 Ω	RRXAJBBZ0271
R 3041	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 3042	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 3055	CHIP RES. 1/10W J 3.3K Ω	RRXAJBBZ0332
R 3056	CHIP RES. 1/10W J 330 Ω	RRXAJBBZ0331
R 3057	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3058	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 3059	CHIP RES. 1/10W J 390 Ω	RRXAJBBZ0391
R 3060	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3061	CHIP RES. 1/10W J 390 Ω	RRXAJBBZ0391
R 3062	CHIP RES. 1/10W J 1.8K Ω	RRXAJBBZ0182
R 3063	CHIP RES. 1/10W J 27K Ω	RRXAJBBZ0273
R 3064	CHIP RES. 1/10W J 8.2K Ω	RRXAJBBZ0822
R 3065	CHIP RES. 1/10W J 470 Ω	RRXAJBBZ0471
R 3066	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 3067	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 3068	CHIP RES. 1/10W J 390 Ω	RRXAJBBZ0391
R 3069	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3071	CHIP RES. 1/10W J 1.2K Ω	RRXAJBBZ0122
R 3072	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	132A681T
R 3073	CARBON RES. 1/4W J 680 Ω or	RCX4JATZ0681
	CARBON RES. 1/6W J 680 Ω	132A681T
R 3074	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 3075	CHIP RES. 1/10W J 18K Ω	RRXAJBBZ0183
R 3076	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 3077	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 3078	CARBON RES. 1/4W J 22K Ω or	RCX4JATZ0223
	CARBON RES. 1/6W J 22K Ω	132A223T
R 4001	CHIP RES. 1/10W J 100 Ω	RRXAJBBZ0101
R 4002	CHIP RES. 1/10W J 120K Ω	RRXAJBBZ0124
R 4003	CHIP RES. 1/10W J 3.9K Ω	RRXAJBBZ0392
R 4005	CHIP RES. 1/10W J 100K Ω	RRXAJBBZ0104
R 4006	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 4007	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 4008	CARBON RES. 1/4W J 330 Ω or	RCX4JATZ0331
	CARBON RES. 1/6W J 330 Ω	132A331T
R 4009	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6501	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 6502	CARBON RES. 1/4W J 15K Ω or	RCX4JATZ0153
	CARBON RES. 1/6W J 15K Ω	132A153T

Ref. No.	Description	Part No.
R 6503	CARBON RES. 1/4W J 15K Ω or CARBON RES. 1/6W J 15K Ω	RCX4JATZ0153 132A153T
R 6504	CARBON RES. 1/4W J 5.6K Ω or CARBON RES. 1/6W J 5.6K Ω	RCX4JATZ0562 132A562T
R 6505	CARBON RES. 1/4W J 5.6K Ω or CARBON RES. 1/6W J 5.6K Ω	RCX4JATZ0562 132A562T
R 6506	CARBON RES. 1/4W J 4.7K Ω or CARBON RES. 1/6W J 4.7K Ω	RCX4JATZ0472 132A472T
R 6507	CARBON RES. 1/4W J 4.7K Ω or CARBON RES. 1/6W J 4.7K Ω	RCX4JATZ0472 132A472T
R 6508	METAL RES. 1W J 3.3 Ω or METAL RES. 1W J 3.3 Ω	1330395 1330320
R 6509	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6510	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6512	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 6513	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6514	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 6515	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 6516	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 6517	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 6518	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6519	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6520	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6521	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6522	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 6523	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 6524	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 6525	CHIP RES. 1/10W J 2.2K Ω	RRXAJBBZ0222
R 6526	CARBON RES. 1/4W J 47 Ω or CARBON RES. 1/6W J 47 Ω	RCX4JATZ0470 132A470T
R 6527	CARBON RES. 1/4W J 4.7 Ω or CARBON RES. 1/6W J 4.7 Ω	RCX4JATZ0477 132A479T
R 6528	CARBON RES. 1/4W J 1K Ω or CARBON RES. 1/6W J 1K Ω	RCX4JATZ0102 132A102T
R 6529	CARBON RES. 1/4W J 4.7K Ω or CARBON RES. 1/6W J 4.7K Ω	RCX4JATZ0472 132A472T
R 6530	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 6531	CARBON RES. 1/4W J 180 Ω or CARBON RES. 1/6W J 180 Ω	RCX4JATZ0181 132A181T
R 6532	CHIP RES. 1/10W J 1M Ω	RRXAJBBZ0105
R 6533	CHIP RES. 1/10W J 6.8K Ω	RRXAJBBZ0682
R 6534	CHIP RES. 1/10W J 6.8K Ω	RRXAJBBZ0682
R 6535	CHIP RES. 1/10W J 1.5M Ω	RRXAJBBZ0155
R 6536	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 6537	CHIP RES. 1/10W J 100K Ω	RRXAJBBZ0104
R 6538	CARBON RES. 1/4W J 75K Ω or CARBON RES. 1/6W J 75K Ω	RCX4JATZ0753 132A753T
R 6539	CHIP RES. 1/10W J 33K Ω	RRXAJBBZ0333
R 6540	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 6541	CHIP RES. 1/10W J 1.5M Ω	RRXAJBBZ0155
R 6542	CARBON RES. 1/4W J 4.7K Ω or CARBON RES. 1/6W J 4.7K Ω	RCX4JATZ0472 132A472T
R 6543	CARBON RES. 1/4W J 4.7K Ω or CARBON RES. 1/6W J 4.7K Ω	RCX4JATZ0472 132A472T
R 6545	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 6546	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 7501	CHIP RES. 1/10W J 68 Ω	RRXAJBBZ0680
R 7502	CHIP RES. 1/10W J 150 Ω	RRXAJBBZ0151
R 7503	CHIP RES. 1/10W J 180 Ω	RRXAJBBZ0181

Ref. No.	Description	Part No.
SWITCHES		
SW3001	SLIDE SWITCH SLD-12-594	SSS0102KB013
SW6501	PUSH SWITCH SW-112-3	SSP0101KB001
TRANSFORMERS		
T 1001	SWITCHING TRANS ETE27K14AY or (VCP-200 MODEL ONLY)	LTT00ZPMS003
T1001	SWITCHING TRANS S0907 or	LTT00ZPSA003
	SWITCHING TRANS SRW2929ED-***V015	LTT00ZPTE003
	POWER TRANS 220V 50Hz (VIP3000HCMK5, VCP3000AMK5 MODEL ONLY)	LTT48EPSA003
VARIABLE RESISTORS		
VR2002	CARBON POTENTIOMETER 100K Ω or CARBON POTENTIOMETER 100K Ω or CARBON POTENTIOMETER 100K Ω or CARBON POTENTIOMETER 100K Ω B	238A402Y 238A427Y 238N497Y VRCB104KA010
CRYSTAL OSCILLATORS		
X 3001	X'TAL 4.433619MHZ or X'TAL 4.433619MHZ	1811366 1811388
X 6501	CERAMIC RESONATOR 4MHZ or CERAMIC RESONATOR 4MHZ	FY0405TMR001 FY0405TMS002
MISCELLANEOUS		
2B4	HEATSINK (VIP3000HCMK5, VCP3000AMK5 MODEL ONLY)	0VM402971
2B 5	BUSH, LED	6N50114
2B8	SPACER, TRANS (VIP3000HCMK5, VCP3000AMK5 MODEL ONLY)	0VM404498
2B 9	SPACER, CONVERTER	0VM404631
2B 11	HOLDER, REEL SENSOR	0VM200965A
2L 071	SCREW, S-TIGHT, BIND HEAD M3X5	GBMS3050
A 9	JACK BOARD(B)	0VM201242
AC1001	AC CORD LA-1296-2 or (VCP-200, VIP3000AMK5 MODEL ONLY)	WAE0202LW006
AC1001	AC CORD EP-631-E01	WAE0202NW008
	AC CORD LA-1296-M-1 or (VIP3000HCMK5 MODEL ONLY)	WAE0202LW009
DL3001	AC CORD	WAE0202DG001
	COMB FILTER 4.433619MHZ or COMB FILTER 4.433619MHZ	1813522 1813274
F 1001	FUSE T1.60A/250V or (VCP-200 MODEL ONLY)	1790483
JK7501	FUSE T1.60A/250V	1790994
	RCA JACK(YELLOW/WHITE) JPJ8011-01-340	JXRL030HD002
MD7501	RF CONVERTOR MDLK5D609A or (VCP-200, VIP3000AMK5 MODEL ONLY)	URFCPLBAL002
MD7501	RF CONVERTOR MDLK5D624A	URFCPLBAL003
	RF CONVERTOR MDLK6E303A or (VIP3000HCMK5 MODEL ONLY)	1813510
MD7501	RF CONVERTOR ENC-47975 or RF CONVERTOR E1653GF	URFCPLSMS007 URFCPLSSH001
	LEAD CLAMPER	1790356
MD7501	FUSE HOLDER PFC5000-0202 or (VCP-200 MODEL ONLY)	XH01Z00SR001
	FUSE HOLDER CNT47-0003	XH03Z00JC001
	P.C.B. (VIP3000HCMK5 MODEL ONLY)	BK4050F01001
	P.C.B. (VCP-200 MODEL ONLY)	BK4051F01001
	P.C.B. (VIP3000AMK5 MODEL ONLY)	BK4052F01001

MCV-B CBA

Ref. No.	Description	Part No.
	MCV-B CBA CONSISTS OF THE FOLLOWING:	-----
CAPACITORS		
C 5501	ELECTROLYTIC CAP. 47 μ F/6.3V M H7	526R476S
C 5502	ELECTROLYTIC CAP. 47 μ F/6.3V M H7	526R476S
C 5503	ELECTROLYTIC CAP. 10 μ F/16V M H7	526T106S
CONNECTOR		
CN5501	HINGED SOCKET CONNECTOR 14P	JCTRG14TG002
DIODES		
D 5501	LED(RED) SEL2115RMEX	QP4Z2115RMEX
D 5502	LED(GREEN) SEL2315GMEX	QP5Z2315GMEX
D 5503	DIODE GMB01B or SWITCHING DIODE 1N4148M	GMB01BT QDTZ01N4148M
D 5504	LED(ORANGE) SEL2915DMEX	QP6Z2915DMEX
D 5505	LED(ORANGE) SEL2915DMEX	QP6Z2915DMEX
D 5506	LED(GREEN) SEL2315GMEX	QP5Z2315GMEX
D 5507	LED(RED) SEL2115RMEX	QP4Z2115RMEX
D 5509	LED(RED) SEL2115RMEX	QP4Z2115RMEX
D 5510	LED(GREEN) SEL2315GMEX	QP5Z2315GMEX
D 5512	LED(GREEN) SEL2315GMEX	QP5Z2315GMEX
D 5513	LED(GREEN) SEL2315GMEX	QP5Z2315GMEX
IC		
IC5501	IC, LEVEL METER LB1403N	GLB1403N****
TRANSISTOR		
Q 5501	RES. BUILT-IN TRANSISTOR 2SA1346 or RES. BUILT-IN TRANSISTOR DTA124ES	A1346Z A124ESZ
RESISTORS		
R 5501	CHIP RES. 1/10W J 100 Ω	RRXAJBBZ0101
R 5502	CHIP RES. 1/10W J 47K Ω	RRXAJBBZ0473
R 5503	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 5505	CHIP RES. 1/10W J 220 Ω	RRXAJBBZ0221
R 5506	CHIP RES. 1/10W J 8.2K Ω	RRXAJBBZ0822
R 5507	CARBON RES. 1/4W J 2.2K Ω or CARBON RES. 1/6W J 2.2K Ω	RCX4JATZ0222 132A222T
R 5508	CHIP RES. 1/10W J 330 Ω	RRXAJBBZ0331
R 5511	CHIP RES. 1/10W J 120 Ω	RRXAJBBZ0121
R 5512	CHIP RES. 1/10W J 470 Ω	RRXAJBBZ0471
R 5513	CHIP RES. 1/10W J 220 Ω	RRXAJBBZ0221
R 5514	CHIP RES. 1/10W J 68 Ω	RRXAJBBZ0680
R 5515	CHIP RES. 1/10W J 220 Ω	RRXAJBBZ0221
R 5516	CHIP RES. 1/10W J 10K Ω	RRXAJBBZ0103
R 5517	CHIP RES. 1/10W J 220 Ω	RRXAJBBZ0221
R 5518	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 5519	CHIP RES. 1/10W J 4.7K Ω	RRXAJBBZ0472
R 5542	CHIP RES. 1/10W J 1K Ω	RRXAJBBZ0102
R 5543	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 5544	CHIP RES. 1/10W J 3.3K Ω	RRXAJBBZ0332
R 5545	CARBON RES. 1/4W J 1K Ω or CARBON RES. 1/6W J 1K Ω	RCX4JATZ0102 132A102T
R 5546	CHIP RES. 1/10W J 2.7K Ω	RRXAJBBZ0272
R 5547	CHIP RES. 1/10W J 3.3K Ω	RRXAJBBZ0332
SWITCHES		
SW5501	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5502	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161

Ref. No.	Description	Part No.
SW5503	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5504	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5505	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5506	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5507	PUSH SWITCH EVQ21505R or PUSH SWITCH SKHVBE020B KHV-902 or PUSH SWITCH R66-441Q	5622158Y 5622160Y 5622161
SW5508	SLIDE SWITCH 1C-2P	1621664
VARIABLE RESISTORS		
VR5501	VOLUME 5K Ω B or VOLUME 5K Ω B	VRCB502AL007 VRCB502MS007
MISCELLANEOUS		
2B 6	HOLDER, L.E.D.	0VM201220
RS5501	REMOTE CONTROL UNIT HC-278N or REMOTE CONTROL UNIT GP1U582X or REMOTE SENSOR UNIT SFN-R0011	USESJRSKK008 USESJRSSH009 1812501

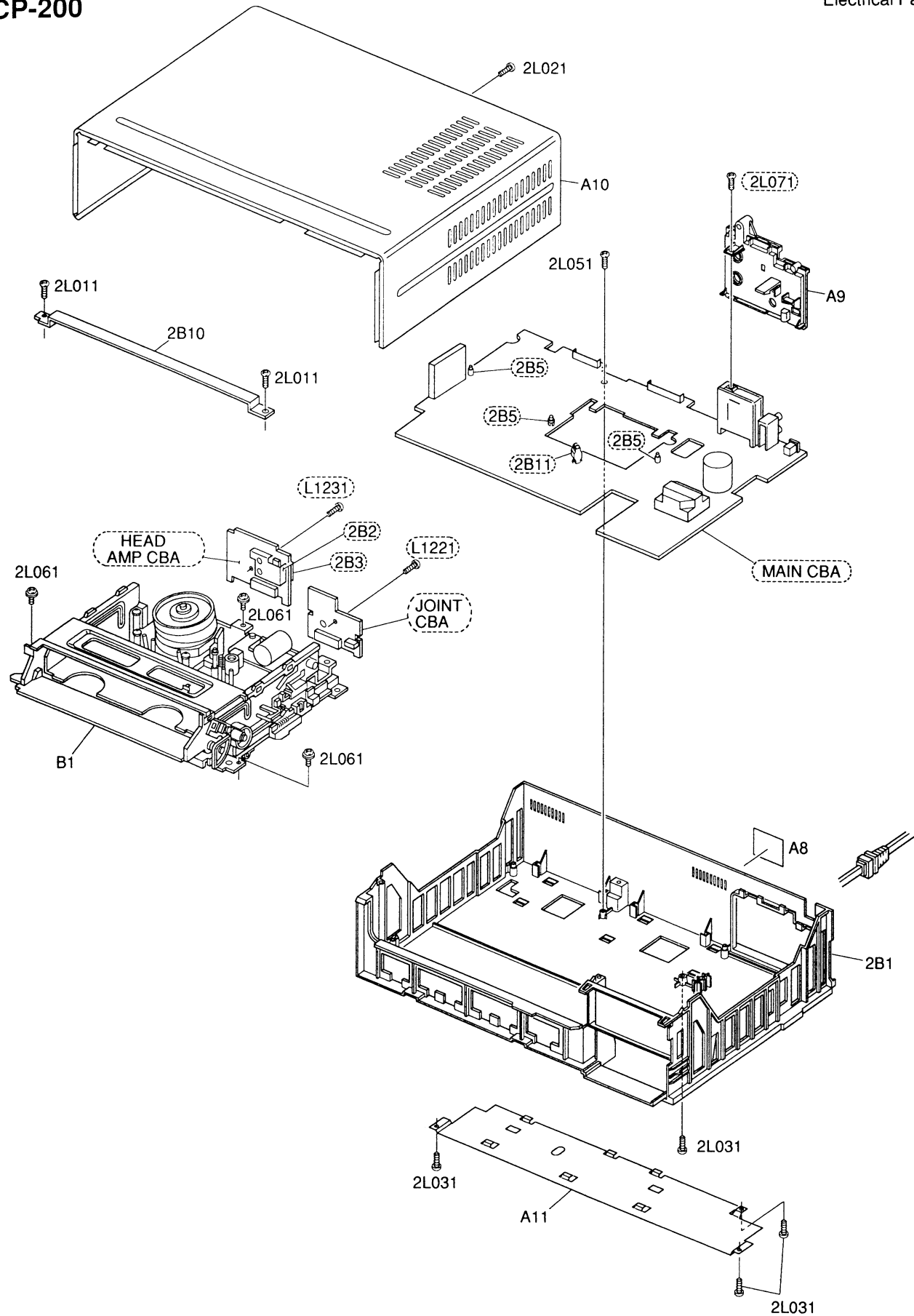
K4050FEX
K4051FEX
K4052FEX

K4050CEX

Cabinet Exploded View

VCP-200

※ () Marked Parts See the Electrical Parts List)



MECHANICAL PARTS LIST

Ref. No.	Description	Part No.
A1X	FRONT ASSEMBLY (VIP3000HCMK5 MODEL ONLY)	0VM201255
A1X	FRONT ASSEMBLY (VCP-200 MODEL ONLY)	0VM201267
A1X	FRONT ASSEMBLY (VIP3000AMK5 MODEL ONLY)	0VM201268
A 1	FRONT PANEL ASSEMBLY (VIP3000HCMK5 MODEL ONLY)	0VM201255X
A 1	FRONT PANEL ASSEMBLY (VCP-200 MODEL ONLY)	0VM201267X
A 1	FRONT PANEL ASSEMBLY (VIP3000AMK5 MODEL ONLY)	0VM201268X
A 2	FILM, INSULATOR	0VM402167
A 3	PLATE, MODE (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	0VM404607
A 3	PLATE, MODE (VCP-200 MODEL ONLY)	0VM403077A
A 4	DOOR, CASSETTE	0VM404480
A 5	BADGE	6D52254
A 6	FOOT	0VM403657
A 8	LABEL, RATING (VIP3000HCMK5 MODEL ONLY)	0VM404481
A 8	LABEL, RATING (VIP3000HCMK5 MODEL ONLY)	0VM404544
A 8	LABEL, RATING (VIP3000AMK5 MODEL ONLY)	0VM404545
A 9	JACK BOARD (VIP3000HCMK5 MODEL ONLY)	0VM201213
A 9	JACK BOARD (B) (VCP-200, VIP3000AMK5 MODEL ONLY)	0VM201242
A 10	CASE, TOP	0VM100442
A 11	PANEL, BOTTOM	0VM201214
A 16	KNOB, AUTO REPEAT	6D52263
B 88	HEAD CLEANING ASSEMBLY	0VSA05119
B 89	CLEANING CALKING ASSEMBLY	0VM403982
B 90	CLEANING BEARING	0VM403208
B 91	CLEANING ROLLER	0VM403613
B 92	CLEANING SPRING	0VM403614
B 92	P.S.W 7.5X2.1X0.5T	0VM403615
B 93	CUT P.S.W 6.1X1.6X0.5T	0VM403616
B 94	IR ARM	0VM301195
B 95	SPRING IR	0VM403211
B 96	SHAFT CIR	0VM403214D
B 97	P.S.W A	0VM402624
2B 1	CHASSIS	0VM000042
2B 7	SPRING, DOOR	6V50109
2B 10	HOLDER, DECK	0VM301682
L1261	SCREW, SEMS, PAN HEAD M3X5	CPM33050
2L 011	SCREW P-TIGHT BIND HEAD 3X10	GBMP3100
2L 012	SCREW P-TIGHT BIND HEAD 3X10 (VIP3000AMK5 MODEL ONLY)	GBMP3100
2L 021	P TIGHT SCREW 4X12 BIND +	GBKP4120
2L 031	SCREW, RAMI-TIGHT M3X10 +BIND	DZM23100

Ref. No.	Description	Part No.
2L 041	SCREW, P-TIGHT, BIND HEAD M4X12 (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	GBMP4120
2L 051	SCREW, P-TIGHT, WASHER HEAD M3X8	GCMP3080
2L 061	SCREW, P-TIGHT, WASHER HEAD M3X10	GCMP3100
2L 081	SCREW P-TIGHT BIND HEAD 3X10 (VIP3000HCMK5, VIP3000AMK5 MODEL ONLY)	GBMP3100
ACCESSORY KIT		
X 1	REMOCON BOX RRS2000-1401R	UREMT12SR011
X 3	RF CORD PAL 1.2M	WPZ0122TM001
△	OWNER'S MANUAL (VIP3000HCMK5 MODEL ONLY)	0VMN01137
△	OWNER'S MANUAL (VCP-200 MODEL ONLY)	0VMN01138
△	OWNER'S MANUAL (VIP3000AMK5 MODEL ONLY)	0VMN01139

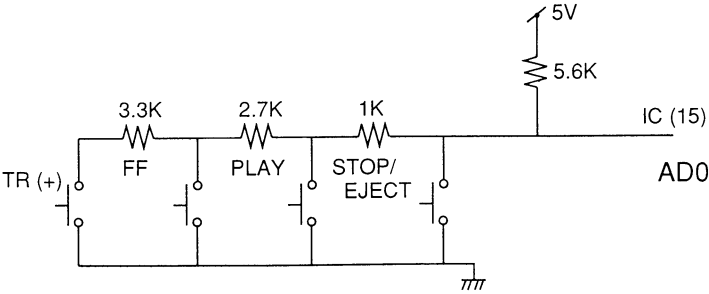
IC PIN FUNCTION DESCRIPTION

SYSTEM CONTROL/TIMER IC
(M50727-624SP)

Pin No.	Signal Name	Function	I/O	Level
1	RESET	Reset at Reset Signal Input 'L' Normal at 'H'	I	L
2	RF-SW	Head Switching Pulse	I	H/L
3	AVSS	Analog Power GND	—	GND
4	V REF	A/D reference Voltage Input		
5	AD 0	Key Data A/D Input Port	I	
6	AD 1	Key Data A/D Input Port	I	
7	ST-S	Tape Start Sensor Signal Input	I	L
8	END-S	Tape End Sensor Signal Input	I	L
9	A-VDD	Analog Power Source (+5V)		5V
10	LD-FWD	Loading Motor Control Output (FWD)	O	H
11	LD-RWD	Loading Motor Control Output (REW)	O	H
12	C-DRIVE	Capstan Forward/Reverse Signal	O	H
13	C-F/R	Capstan Drive Signal	O	H/L
14	PLAY	Play Mode Display Output	O	L
15	FF	FF Mode Display Output	O	L
16	REW	Rew Mode Display Output	O	L
17	DM-ON	Drum Rotate Instruction	O	H
18	PAUSE	Still Mode Output	O	H
19	REMOCON	Remote Control Signal Input	I	—
20	CNVSS	—	—	—
21	VSS	Digital Power GND	—	GND
22	S-DATA	Servo IC Signal (Data)	O	—
23	S-CLK	Servo IC Timing Clock	O	—
24	TR-MM	Tracking Control Signal Output	O	L
25	A-MUTE	Tracking Mute Signal	O	H
26	D-PB	Video/Audio Playback Instruction	O	L
27	LED-P	Pulse Output Signal for Sensor (for St/END Sensor Signal)	O	H/L
28	KEY-SCAN0	Key Scan Signal Input	I	—
29	KEY-SCAN1	Key Scan Signal Input	I	—
30	KEY-SCAN2	Key Scan Signal Input	I	—
31	KEY-SCAN3	Key Scan Signal Output	O	—
32	KEY-SCAN4	Key Scan Signal Output	O	—
33	KEY-SCAN5	Key Scan Signal Output	O	—
34	P-ON	Power On Signal	O	L
35	LD-D	Tape Loading Position Detector	I	H/L
36	LD-B	Tape Loading Position Detector	I	H/L
37	LD-A	Tape Loading Position Detector	I	H/L
38	LD-C	Tape Loading Position Detector	I	H/L
39	OSC OUT	Seramic Resonator 4MHz Output	O	~
40	OSC IN	Seramic Resonator 4MHz Input	I	~
41	CNTR	—	—	
42	VDD	Digital Power Source (+5V)	—	5V

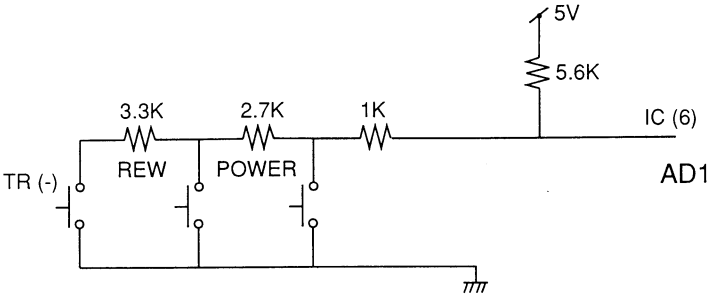
AD 0 Level

SW	INPUT	LEVEL
Stop/Eject	0 ~ 1.3V	5.6kΩ
Play	1.3V ~ 2.6V	1.0kΩ
FF	2.6V ~ 3.9V	2.7kΩ
TR (+)	3.9V ~ 5.0V	3.3kΩ

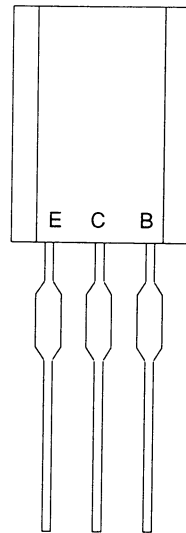


AD 1 Level

SW	INPUT	LEVEL
Power	0 ~ 2.6V	5.6 + 1kΩ
Rew	2.6V ~ 3.9V	2.7kΩ
TR (-)	3.9V ~ 5.0V	3.3kΩ

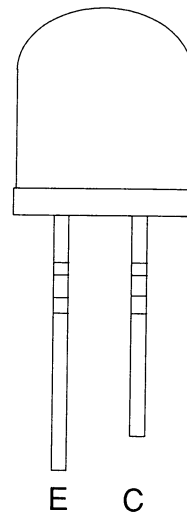


LEAD IDENTIFICATION

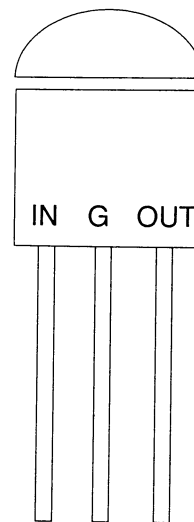


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2SA933
2SA1317
2SA1346
2SB892
2SB1010
2SC536
2SC1740
2SC2058
2SC2839
2SC3400
2SD400
2SD1468
DTA124
DTA144
DTC124

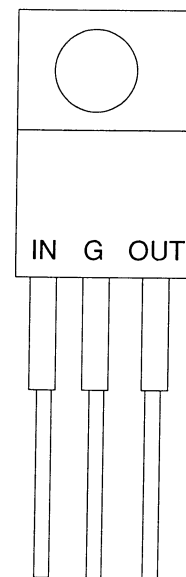
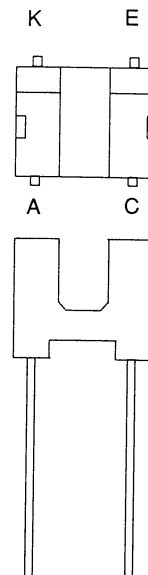
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PST529

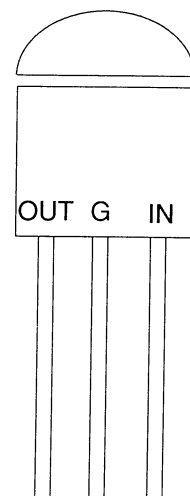


SG-211

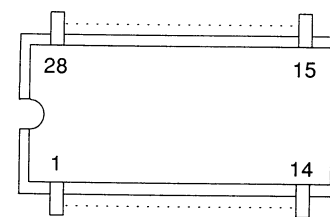


AN7812
NJM7812
AN7805
NJM7805

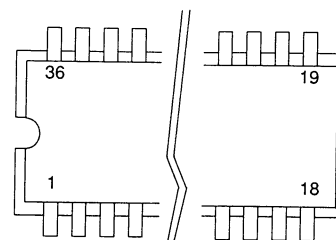
AN78L05
NJM78L05



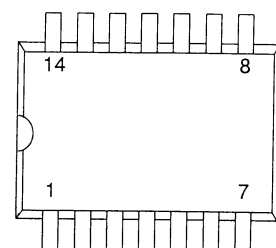
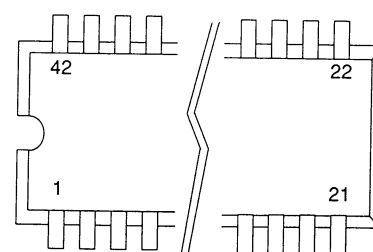
QSMEA0SMS001



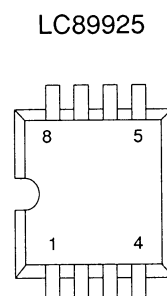
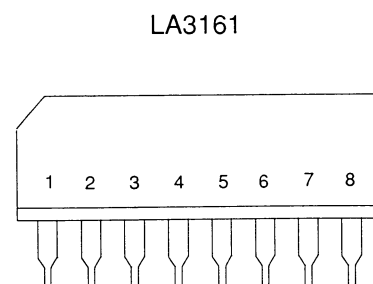
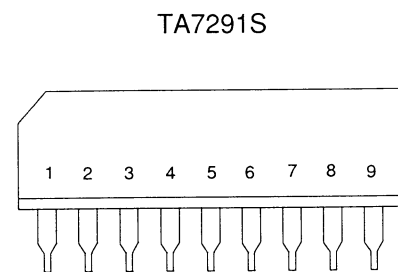
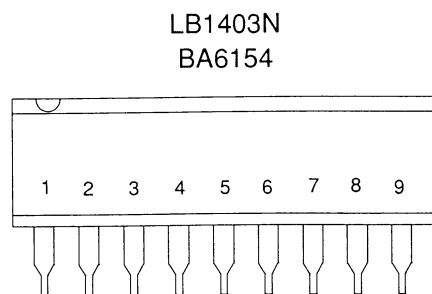
LA7390L



QSMQA0SMB011



BA10324A
NJM324D
LA6339
NJM2901N
BA10339



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base

DECK MECHANISM SECTION

**MODEL NO. VIP3000HC MK5
VCP-200
VIP3000A MK5**

Video Cassette Player

CONTENTS

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STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ○: Check ●: Change

Deck		Periodic Service Schedule			
Ref. No.	Parts Name	1,000 H	2,000 H	3,000 H	4,000 H
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor			●	
B6	Pinch Roller Arm Assembly		●		●
B8	Pulley Assembly		●		●
B21	Belt LDG		●		●
B26	Clutch Block Assembly		●		●
B27	Band Break Assembly		●		●
B28	Main Brake S Assembly		●		●
B29	Main Brake T Assembly		●		●
B30	T Break Arm Assembly		●		●
B31	AC Head Assembly			●	
B32	Reel Assembly			●	
B37	Capstan Motor		●		●
B52	Belt FWD		●		●
B54	Ground Brush Assembly			●	
* B73	Full Erase Head			●	
☆ B86	F Break Assembly		●		●

- Note:**
- 1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% Isopropyl Alcohol.
 - 2. After cleaning the parts, do all DECK ADJUSTMENTS.
 - 3. For the reference numbers listed above, refer to Deck Exploded Views.
 - 4. Parts marked ☆ are used in 4- head models only.
 - 5. Parts marked * are used in VCR models only.

Cleaning

Cleaning of Video Head

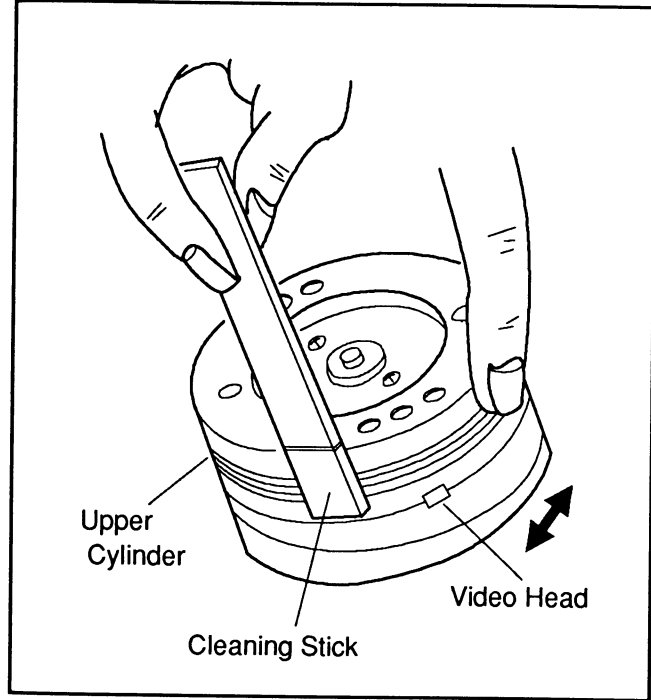
Clean the head with a head cleaning stick or chamois skin.

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 skin 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 skin.



Cleaning of Audio Control Head

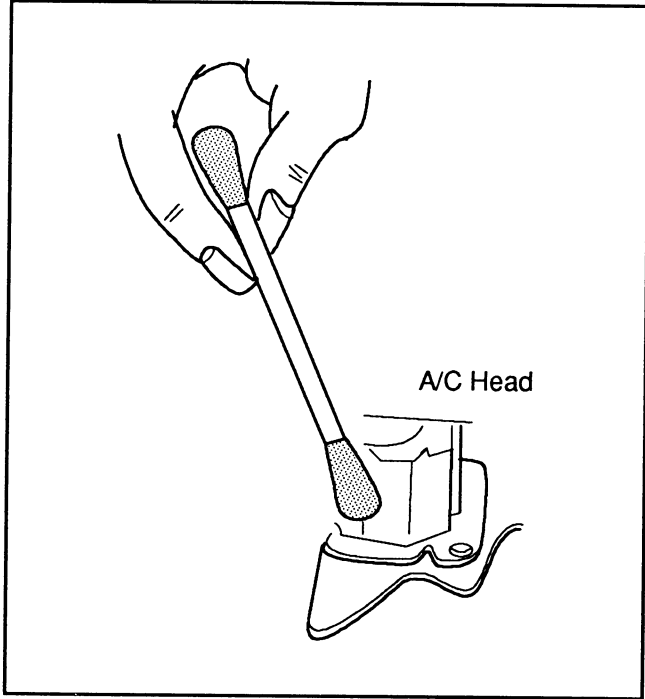
Clean the head with a cotton swab.

Procedure

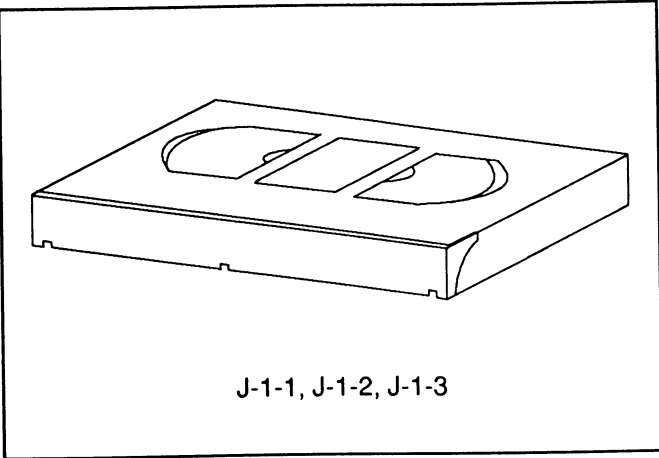
- 1.Remove the top cabinet.
- 2.Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

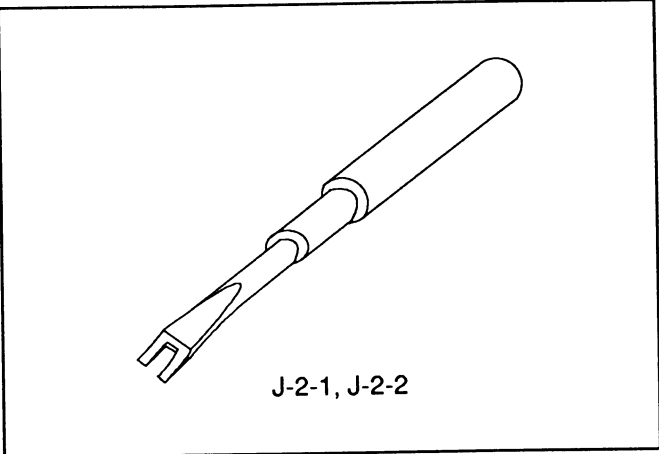
- 1. Avoid cleaning the audio control head vertically.
- 2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



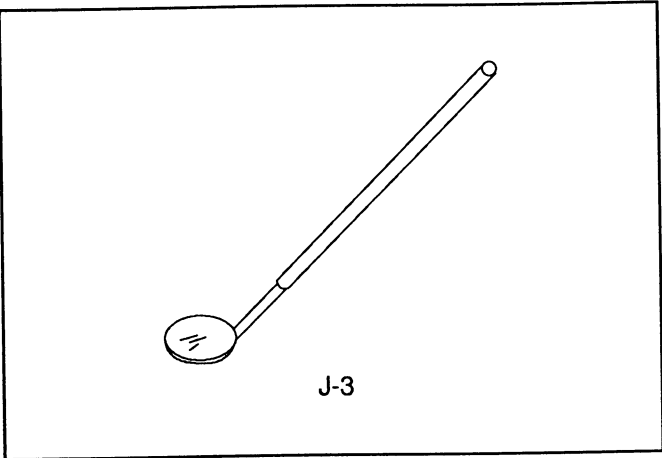
SERVICE FIXTURES AND TOOLS



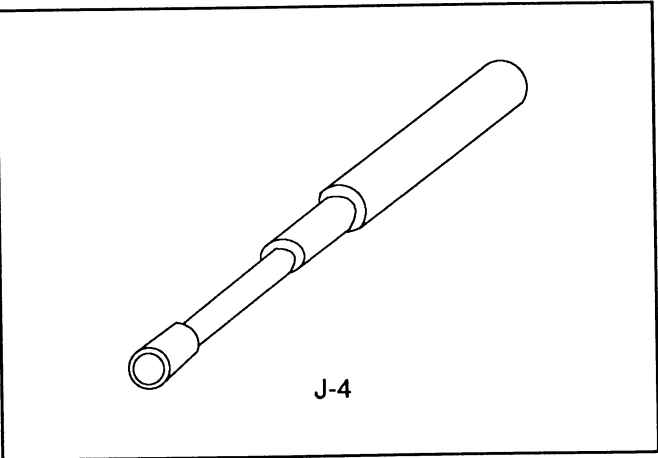
J-1-1, J-1-2, J-1-3



J-2-1, J-2-2



J-3



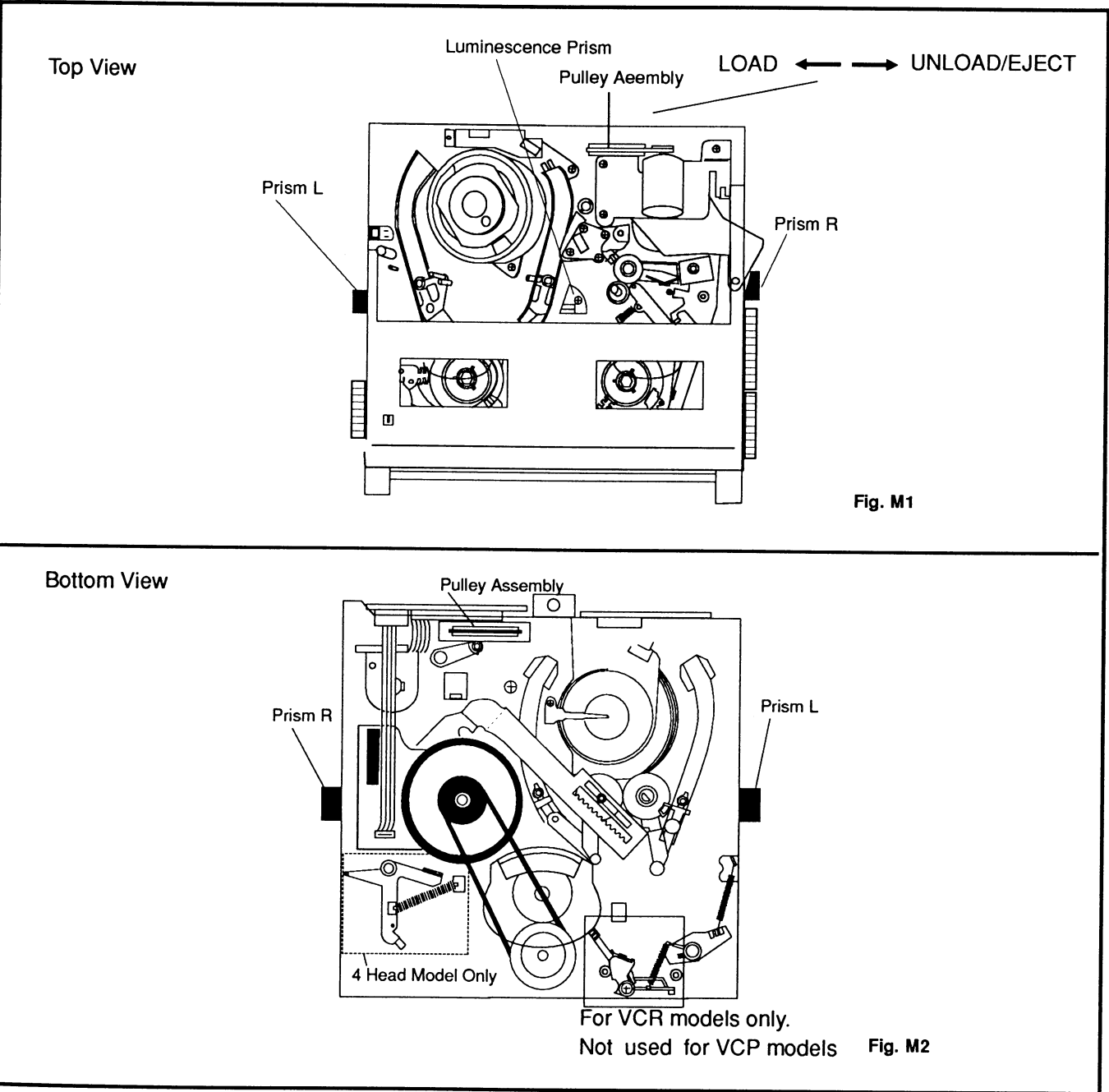
J-4

Ref. No.	Name	Adjustment
J-1-1	Alignment Tape (F6-A)	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape (F6-N) : 2-head 1-speed, 4-head Model	Azimuth & X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-1-3	Alignment Tape (F6-NS) : 2-head 2-speed Model	
J-2-1	Special Driver, Large (FSJ-0001)	X Value
J-2-2	Special Driver, Small (FSJ-0006)	Guide Roller
J-3	Mirror (FSJ-0004)	Tape Transportation Check
J-4	Box Driver, Mx3 (FSJ-0005)	A/C Head Height

MECHANICAL ALIGNMENT PROCEDURES

Service Information

- A. Method for Manual Tape Loading/Unloading of VCR.
To place the Cassette Holder in the down position, turn the Pulley Assembly clockwise as viewed from the back of Deck. To place the Cassette Holder in the up position, turn the Pulley Assembly counterclockwise as viewed from the back of the Deck.
- B. How to place the Cassette Holder in the down position without a cassette tape.
- METHOD
1. Disconnect the AC Plug and remove the Top Cover.
 2. Cover the LED Sensors located below Prism L and Prism R.
- Note:** The tape sensor is extremely susceptible to damage from static electricity. When handling the tape sensor use a conductive mat, a grounded soldering iron, and so on, to protect the tape sensor from static damage.
3. Turn the Pulley Assembly clockwise as viewed from the back of the Deck.



1. Tape Interchangeability Alignment (Final Alignment)

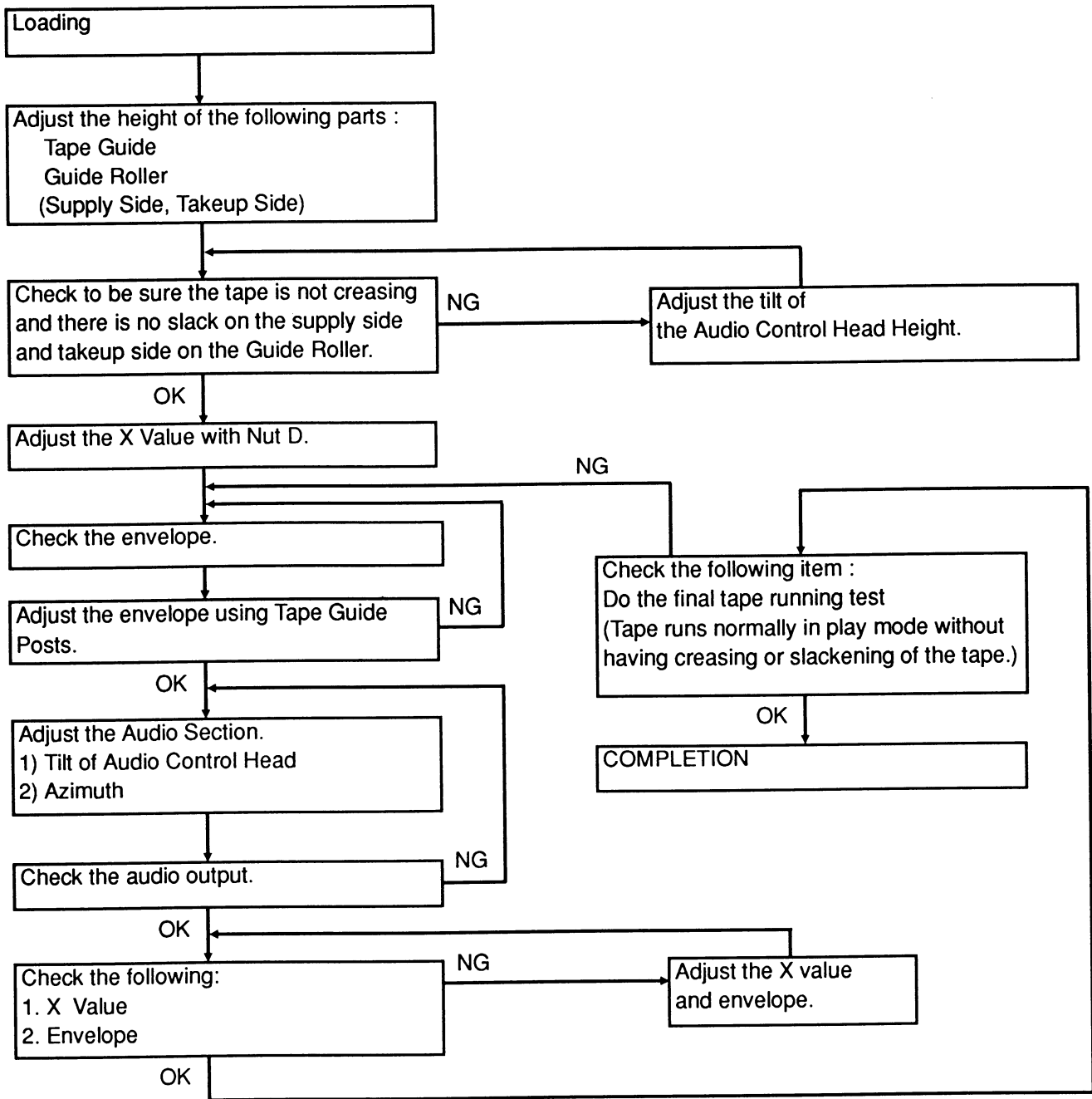
Note: To do these alignment/checking procedures, be sure that the Tracking Control Circuit is set to the Neutral mode.

Equipment required :

- Dual Trace Oscilloscope
- VHS Alignment Tape (F6-A, F6-N: 2-head 1-speed, 4-head model F6-NS: 2-head 2-speed)
- Post Alignment Screwdriver
- X-Position Alignment Fixture
- Screwdriver (For the Tape Guide Rollers)
- Box Driver M3

Note: After this Mechanical Alignment is completed, do the Electrical Adjustment.

Tape Running Alignment Flowchart



1-A. Preliminary Checking and Alignment of Tape Running

Purpose:

To be sure that the tape running is well stabilized.

Symptom of Misalignment:

If the tape runs unstably, the tape will be damaged.

1. Play back a cassette tape and check 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 Post Adjustment Screwdriver. (Refer to Fig. M3 and M5)

Note: Before turning the Guide Rollers, loosen the Lock Screw using a lock screw wrench.

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

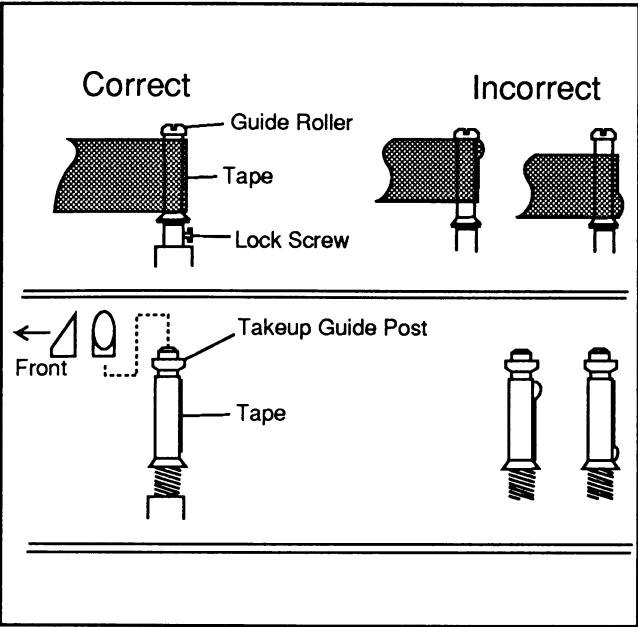


Fig. M5

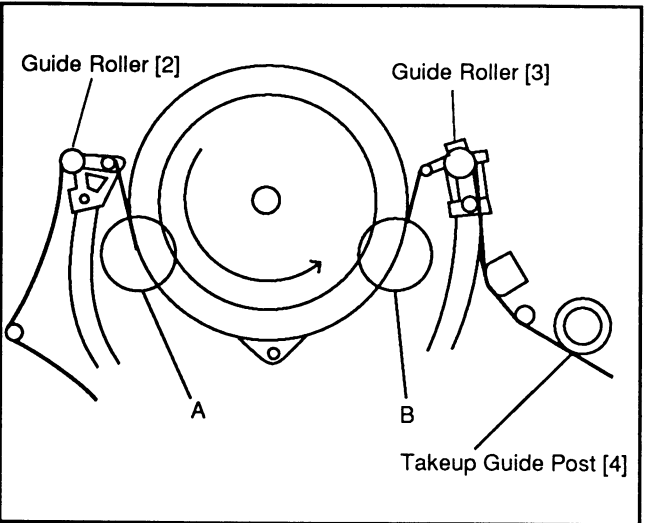


Fig. M3

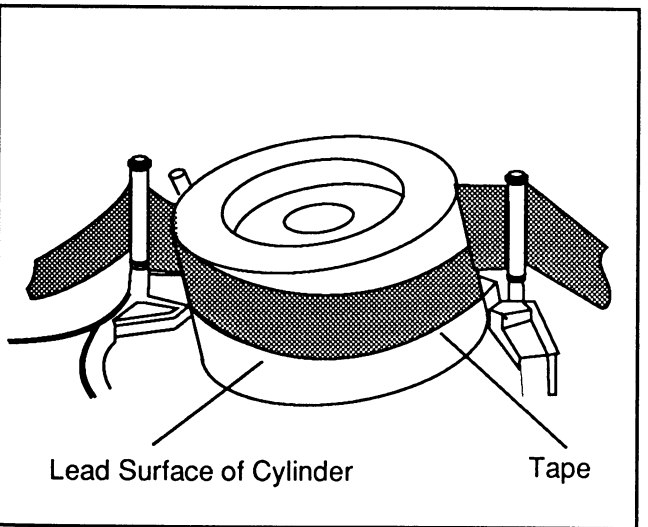


Fig. M4

1-B. Preliminary Checking of Audio/Control Head Height

Purpose :

To be sure that the tape runs properly along the Control Head.

Symptom of Misalignment:

If the control signal is not properly picked up, proper Servo Operation cannot be achieved.

The head height adjustment is required when the Audio/Control Head is replaced. For final alignment, do the adjustments described in 1-C and 1-D.

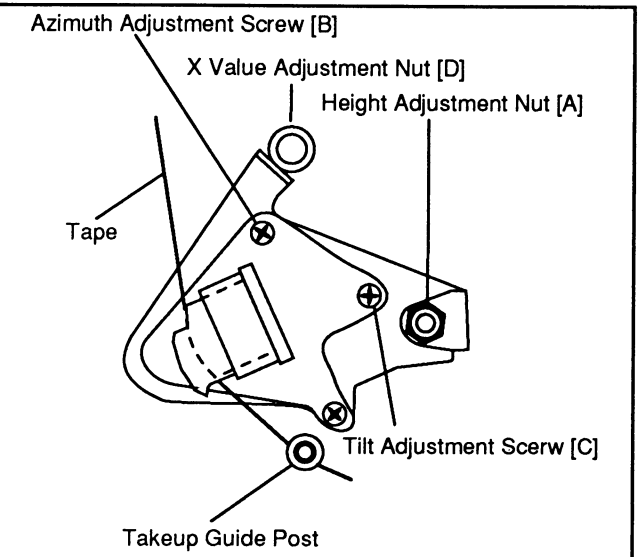


Fig. M6

Note: Play back a cassette tape. Looking at the lower edge of the Control Head with the tape in motion, ensure that the lower edge of the tape runs 0.15~0.25mm above the lower edge of the Control Head. If it does not run properly, turn Height Adjustment Nut [A] slightly in either direction as necessary to correct it. Turn clockwise, as viewed from the top, to lower the head and counterclockwise to raise it. (Refer to Fig. M6 and M7.)

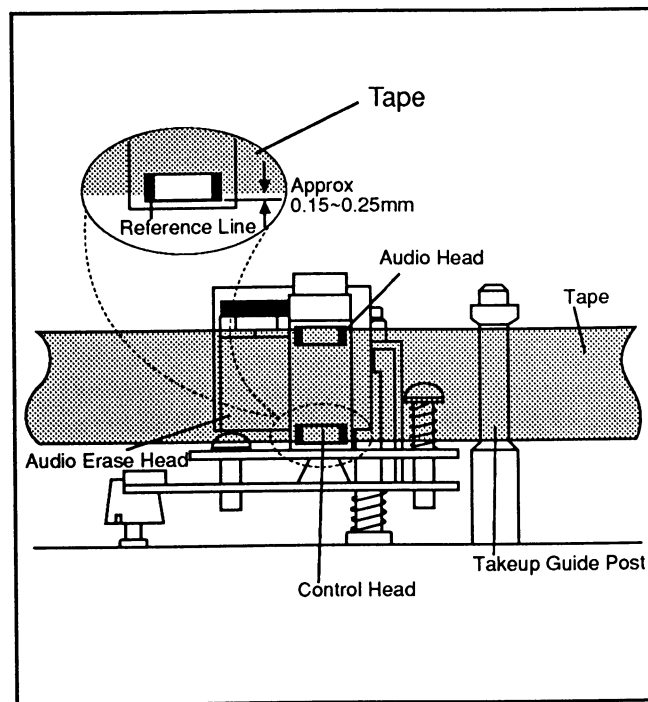


Fig. M7

1-C. Preliminary Checking of Tilt of Audio/Control Head

Purpose:

To check that the tape running is well stabilized. In particular, check that the signals on the tape are properly picked up by the Audio Head at the upper part and by the Control Head at the lower part.

Symptom of Misalignment:

If the tilt of the Audio/Control Head is poorly aligned, the tape will eventually be damaged. Play back a cassette tape and check that there is no tape slack between Takeup Guide Post [4] in Fig. M3 and the Audio/Control Head. If there is any slack, align the Audio/Control Head by turning tilt adjustment screw [C] in Fig. M6 so that the tape has no slack.

1-D. Final Alignment of Audio/Control Head Height

Purpose:

To align the position and height of the Audio/Control Head so that it meets the tape tracks properly.

Symptom of Misalignment:

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

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Check that there is no tape slack between the Takeup Guide Roller and the Audio/Control Head. If there is any tape slack, remove it by turning Tilt Adjustment screw [C]. Then realign the height of the Guide Rollers (Refer to 1-A).
3. Play back the Color Bar (1kHz, Audio) on the alignment tape (F6-A) and check that the audio signal output level is 1kHz. Finally, adjust Height Adjustment Nut [A] so that the output level is at maximum. (Fig. M6, Fig. M8[b])
4. Adjust Azimuth Adjustment Nut [B] so that the output level on the AC Voltmeter is at maximum. (Fig. M6)

Note: Secure screw [C] with lock paint after realignment.

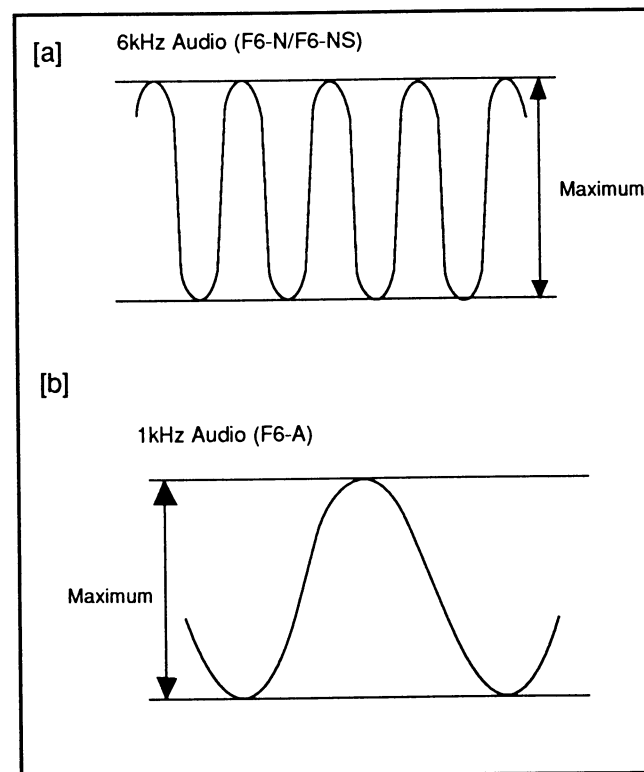


Fig. M8

Azimuth Alignment of Audio/Control Head

Purpose:

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

Symptom of Misalignment:

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

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the Gray Scale (6kHz, audio) on the alignment tape (F6-N, F6-NS), and adjust Height Adjustment Nut [A] so that the output level on the AC Voltmeter or the waveform of the oscilloscope is at maximum. (Fig. M6, Fig. M8[a])

Note: Secure screw [C] with lock paint after realignment.

1-E. X Value Alignment

Purpose:

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

Symptom of Misalignment:

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

1. Set the Tracking Control to the Neutral mode by pressing CH UP and DOWN buttons on VCR simultaneously.
2. Connect the oscilloscope to TP of C-PB on the Main CBA. Use TP of RF-SW as a trigger.
3. Play back the Gray Scale of the Alignment Tape (F6-N, F6-NS) and confirm if the PB FM signal is present.
4. Adjust X Value adjustment Nut [D] with the X Position Adj-Fixture so that the PB FM signal at the TP of C-PB or at the audio output terminal is maximum.

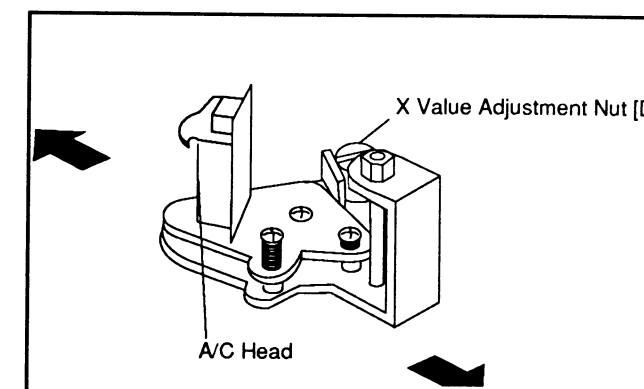


Fig. M9

1-F. Final Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misalignment:

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

1. Turn the Tracking Control Circuit to the Neutral mode by pressing both CH UP and DOWN buttons on VCR at the same time.
2. Connect the oscilloscope to TP of C-PB on the Main CBA. Use TP of RF-SW as a trigger.
3. Play back the Gray Scale on the Alignment Tape (F6-N, F6-NS). Adjust the height of Guide Rollers [2] and [3] watching the oscilloscope display so that the envelope becomes as flat as possible. If adjustment is required, turn the top of the Guide Roller with the Post Adjustment Screwdriver.

Dropping envelope level at the beginning of track.

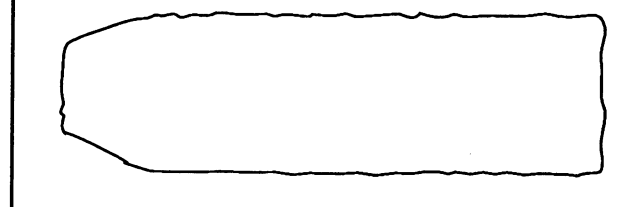


Fig. M10

4. When the envelope is as shown in Fig. M10, adjust the height of Guide Roller [2] (Refer to Fig. M3) so the waveform looks like the one shown in Fig. M12.

Dropping envelope level at the end of track.

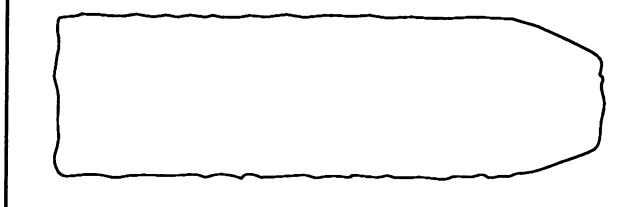


Fig. M11

5. When the envelope is as shown in Fig. M11, adjust the height of Guide Roller [3] (Refer to Fig. M3) so the waveform looks like the one shown in Fig. M12.

Envelope is adjusted properly. (No envelope drop)

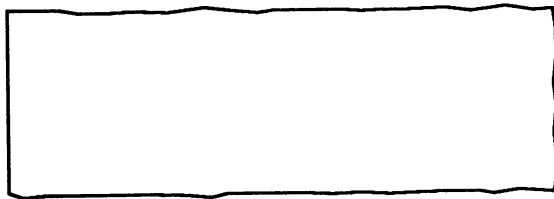


Fig. M12

6. 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. M12.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig.M3), tighten the Lock Screws on these Guide Rollers [2] and [3], using a lock screw wench. Then check the X VALUE by pushing the Tracking Control Up or Down buttons alternately, to check the symmetry of the envelope. If required, do "X VALUE ALIGNMENT."

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Main Mechanism

This procedure starts with the condition that the Cabinet Parts, Cassette Up Unit, and Head Amp CBA have been removed. (Refer to the Disassembly Instructions of the Main Section.) Also, all the following procedures for adjustment and parts replacement should be done in Stop mode. When reassembling, follow the steps in reverse order.

STEP /LOC. NO.	START NO.	PART		REMOVAL		INSTALLATION
				Fig. NO.	REMOVE*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	MOTOR HOLDER ASSEMBLY	T	DM1 DM4	3(S-2), Belt	
[2]	[1]	LDG MOTOR PREPARATION	T	DM1 DM4	2(S-3), CN2902	
[3]	[1]	CASSETTE DRIVE LEVER ASSEMBLY	T	DM1 DM4		
[4]	[1]	PINCH ROLLER ARM ASSEMBLY	T	DM1 DM4	(C-1) Pinch Roller Spring	
[5]	[1]	PINCH ARM ASSEMBLY	T	DM1 DM4		
[6]	[1]	CAM	T	DM1 DM4		
[7]	[7]	JOINT CBA	T	DM1 DM2 DM8	(S-8), CN2903 CN2801, *CL2901	For Connection, refer to Connector Points
[8]	[1]	PULLEY ASSEMBLY	T	DM1 DM5	*(L-5), LDG BELT (W-1)	
[9]	[9]	CLUTCH BLOCK ASSEMBLY	T	DM1 DM2 DM7	2(S-7) CAPSTAN BELT	
[10]	[10]	HEAD AMP CBA	T	DM1 DM2 DM8	(S-9), CN02, CN03 CN1(CYL MTR)	For Connection, refer to Connector Points.
[11]	[10]	CAPSTAN MOTOR UNIT	B	DM2 DM10	3(S-10)	
[12]	[7]	MODE SW	B	DM2 DM8	(L-5), *CL2901	For Connection, refer to Connector Points.
[13]	[1]	M LEVER HOLDER ASSEMBLY	T	DM2 DM9	(S-14)	(+)
[14]	[1]	KICK ARM HOLDER ASSEMBLY	B	DM2 DM9		(+)
[15]	[1]	KICK ARM	B	DM2 DM9		(+)
[16]	[16]	MODE CHANGE LEVER	T	DM1 DM11	*2(L-2)	
[17]	[1]	MAIN LEVER ASSEMBLY	T	DM1 DM12	*(L-3)	
[18]	[18]	TAPE GUIDE ASSEMBLY	T	DM1 DM12	*(P-5), *(L-4), (M5.5)	See Fig. DM12
[19]	[19]	A/C HEAD ASSEMBLY	T	DM1 DM13	Nylon Nut, Head Height Adjustment Spring	See Fig. DM13
[20]	[20]	TENSION LEVER SUBASSEMBLY	T	DM1 DM14	*(L-1)	(+)
[21]	[20]	BAND BRAKE SUBASSEMBLY	T	DM1 DM14	(S-1), (L-6)	
[22]	[16]	M BRAKE (S)	T	DM1 DM15	*(P-2), (L-7)	(+) When reassembling, hook the Spring after instal- lation of Mode Change Lever.
[23]	[16]	M BRAKE (S) LEVER	T	DM1 DM15		
[24]	[9]	S BRAKE ARM	T	DM1 DM15	*(P-3)	When reassembling, hook the Spring after installation of Mode Change Lever.
[25]	[9]	M BRAKE (T) ASSEMBLY	T	DM1 DM15		
[26]	[16]	T BRAKE ARM ASSEMBLY	T	DM1 DM15	*(P-4)	When reassembling, hook the Spring after installation of Mode Change Lever
[27]	[16]	REEL BASE ASSEMBLIES (S+T)	T	DM1 DM16	2 Poly Slider Washers	(+)

STEP /LOC. NO.	START NO.	PART	REMOVAL		INSTALLATION ADJUSTMENT CONDITION
			Fig. NO.	REMOVE*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	
[28]	[28]	EARTH BRUSH ASSEMBLY	B	DM2 DM17	(S-4) When reassembling, check that the brush is within 1 mm of center of shaft.
[29]	[10]	CYLINDER DRUM ASSEMBLY	T	DM1 DM17	3(S-5), 3(S-6), CN02
[30]	[1]	MOVING GUIDE ASSEMBLY	T	DM1 DM20	(S-15)
[31]	[1]	MOVING GUIDE T ASSEMBLY	T	DM1 DM20	(S-15)
[32]	[1]	LOADING ARM M ASSEMBLY	B	DM2 DM21	(C-3) When installing, match the marks.
[33]	[1]	LOADING GEAR B	B	DM2 DM21	(P-8)
[34]	[1]	LOADING GEAR A	B	DM2 DM21	(P-9)
[35]☆	[35]	REC ARM	B	DM2 DM19	(S-16), (P-6)
[36]	[35]	BT DRIVE ARM	B	DM2 DM19	(S-16), (P-7)
[37]☆	[37]	FE HEAD	T	DM2 DM20	(S-12)
[38]	[38]	MAIN PRISM	T	DM2 DM20	(S-13)
[39]*	[39]	F BREAK ASSEMBLY	B	DM2 DM10	F Break Spring

- ①

②

③

④

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⑦

- Note :
1. Order of steps in Procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the identification (Location) No. of parts in Figures.

2. The start No. followed by corresponding part to be removed at this stage. For example, Clutch Block Assembly [9] can be removed without removing any other parts. But BT Drive Arm [36] can be removed only after removing Rec Arm [35].

3. Parts to be removed or installed.

4. Location of part
T=Top B=Bottom R=Right L=Left

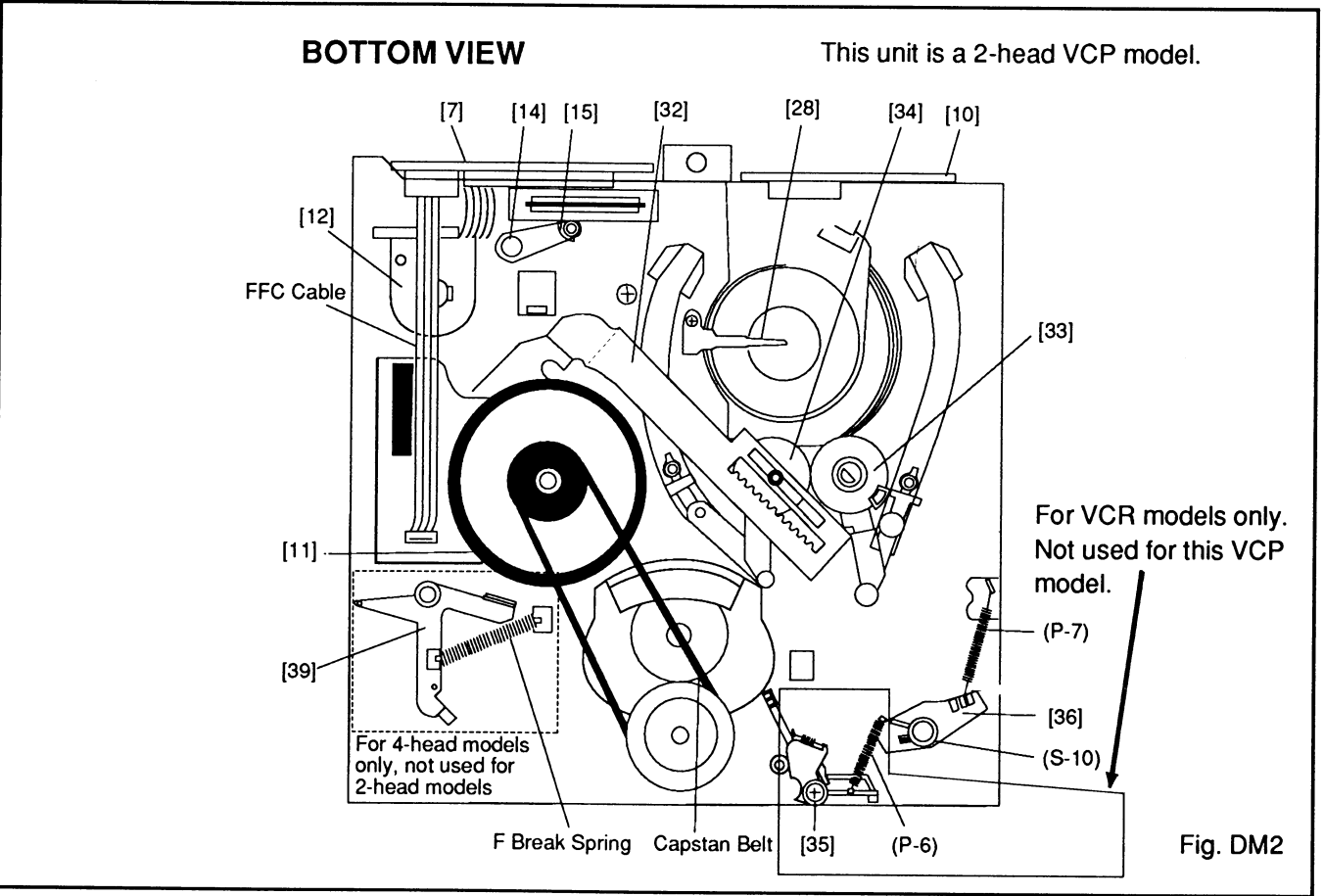
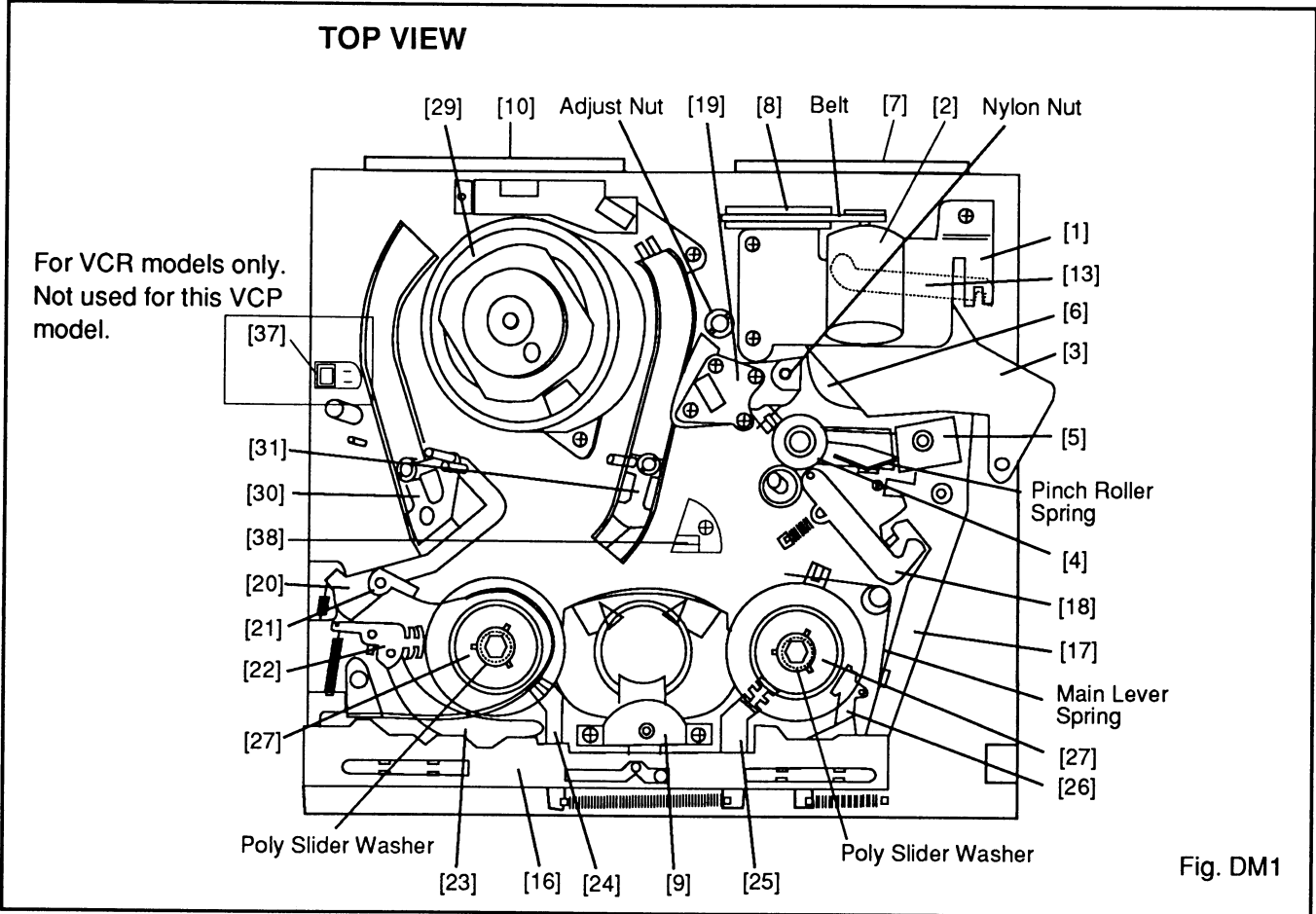
5. Fig. No. shows Procedure or Part Location

6. Identification of part 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
2(C-2) = 2 Cut Washer(C-2), 2(L-2) = 2 Locking Clips(L-2), (N-1) = 1 Locking Pin(N-1)

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

- ☆[35] ----- For VCR models only, not used for VCP models
- ☆[37] ----- For VCR models only, not used for VCP modesl
- *[39] ----- For 4-head models only, not used for 2-head models

Note: This unit is a 2-head VCP model.



Deck Connectors

Note: Disconnect Connectors shown below before disassembling the Deck.

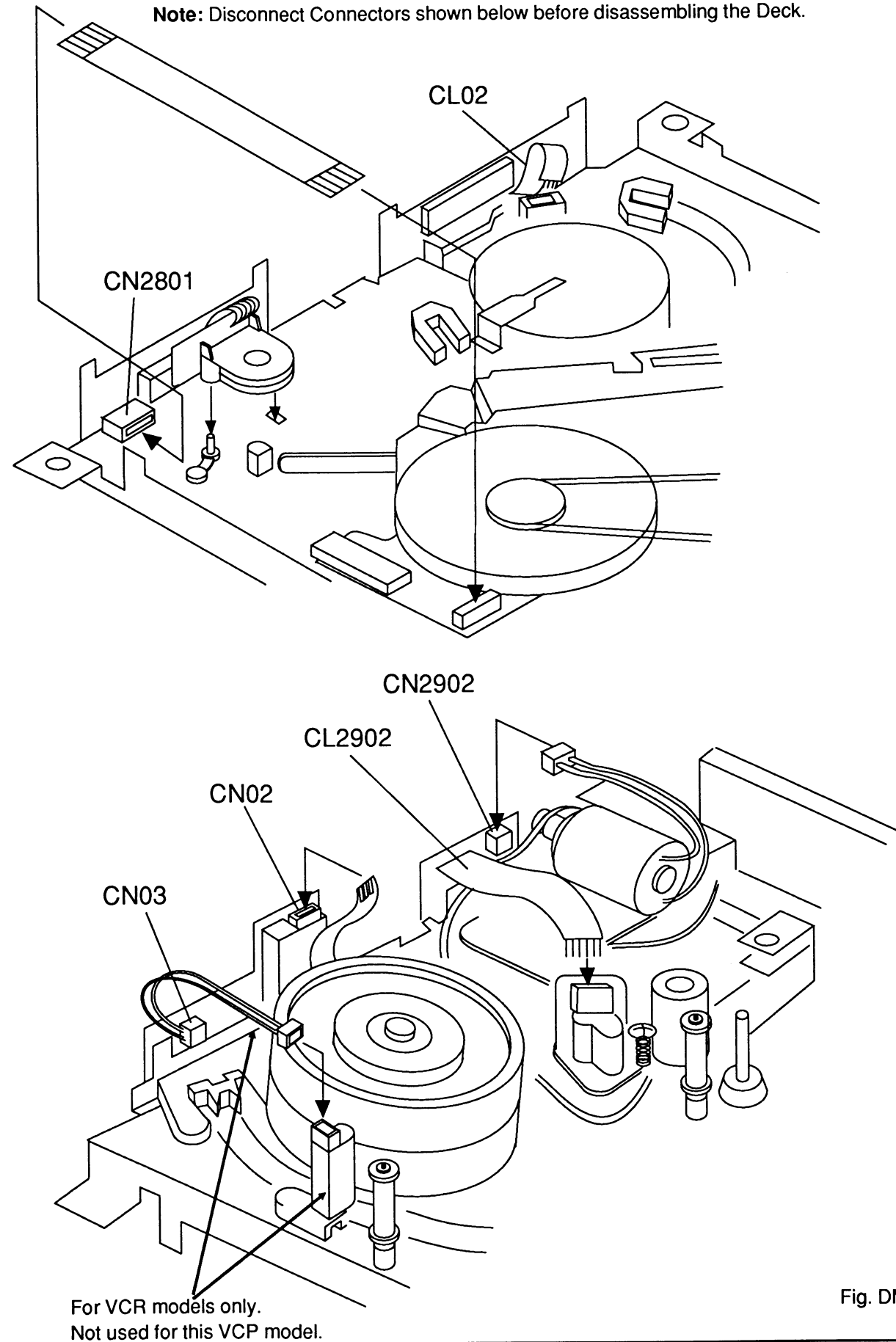


Fig. DM3

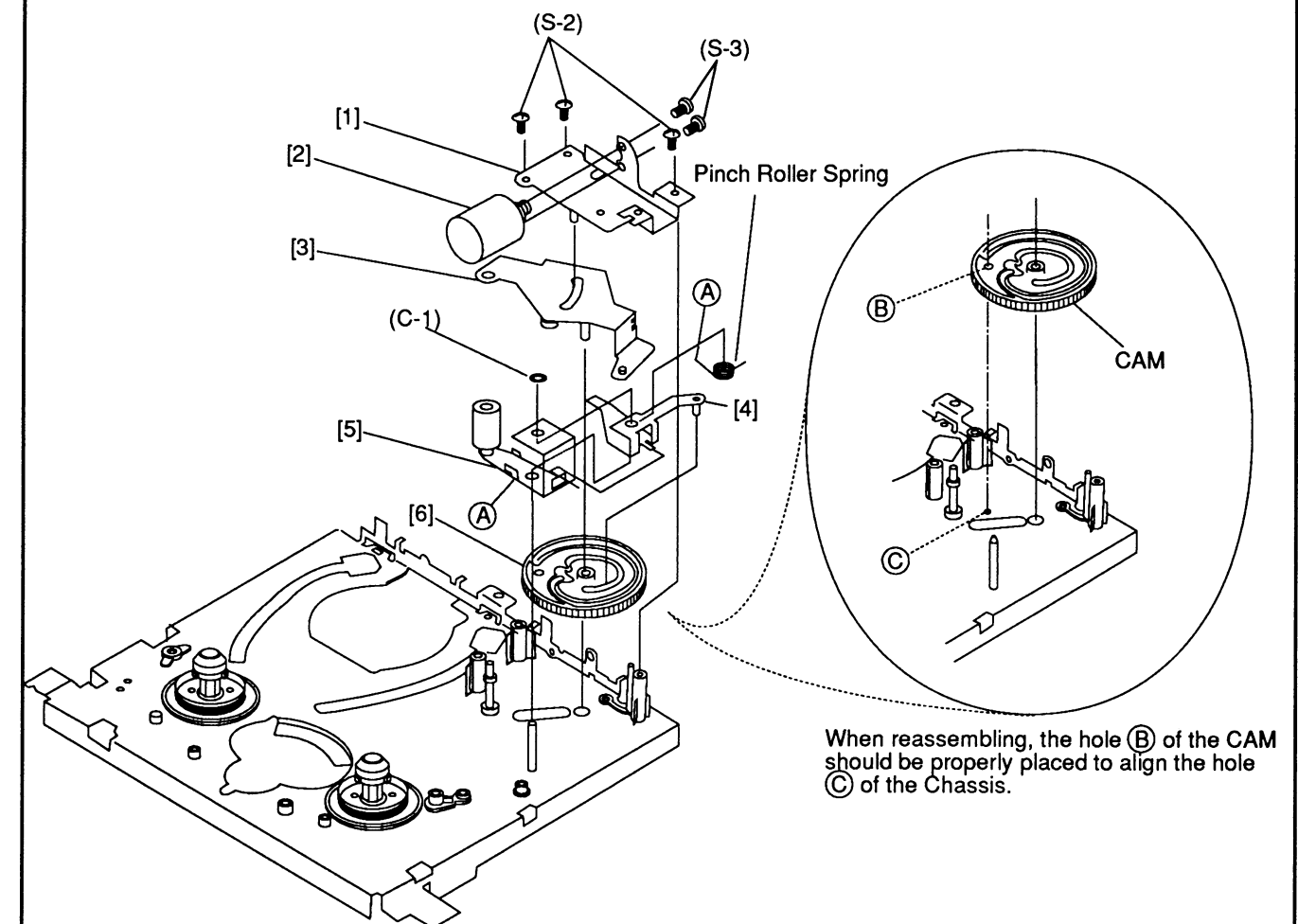


Fig. DM4

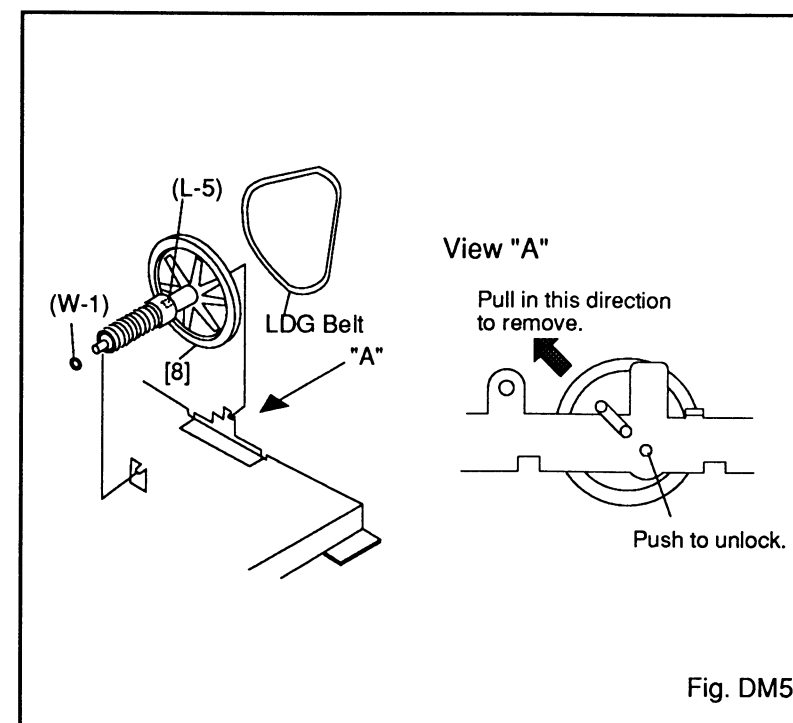


Fig. DM5

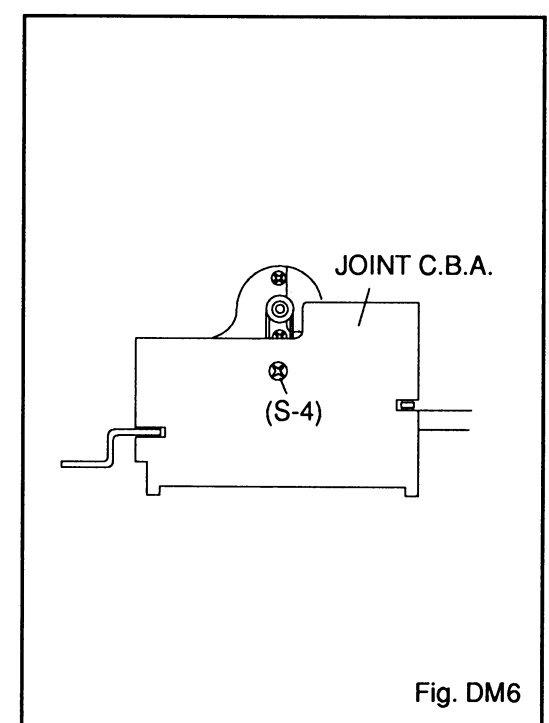


Fig. DM6

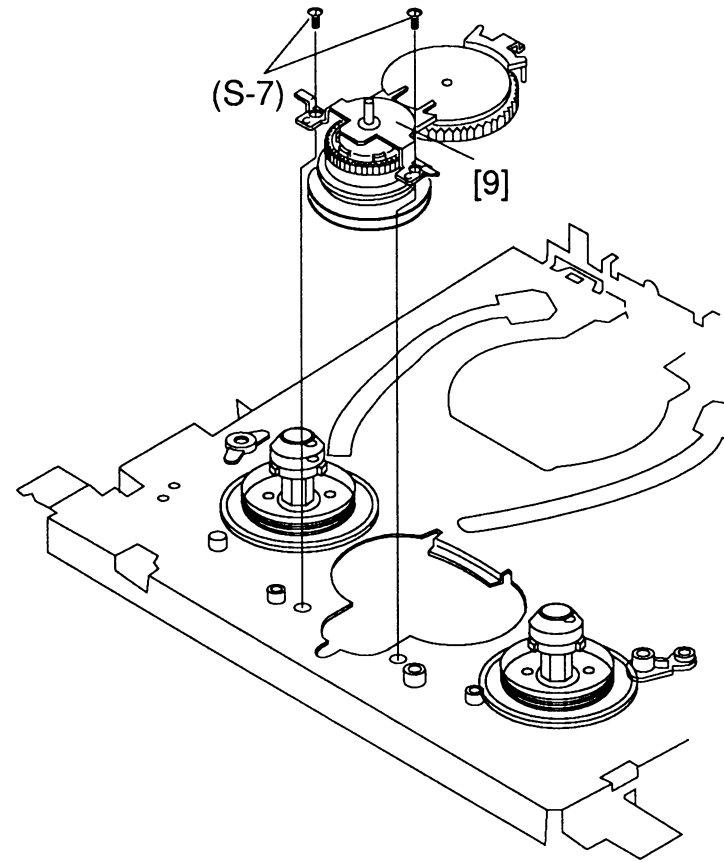


Fig. DM7

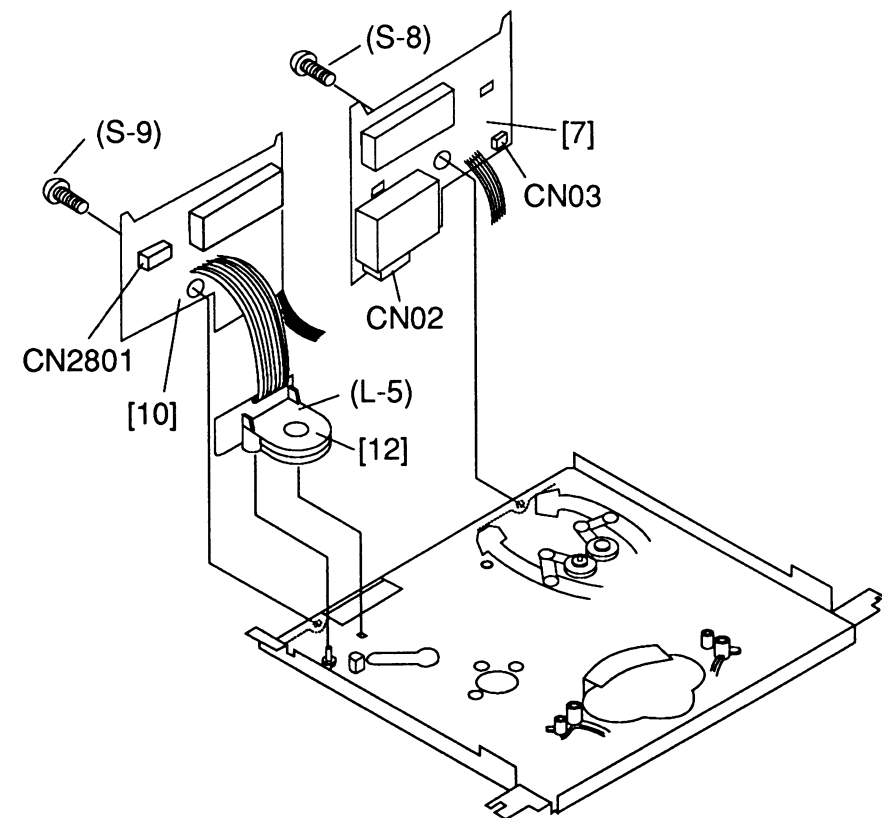


Fig. DM8

Kick Arm Position

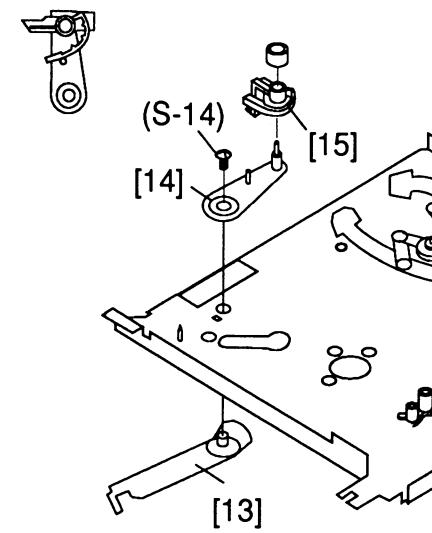
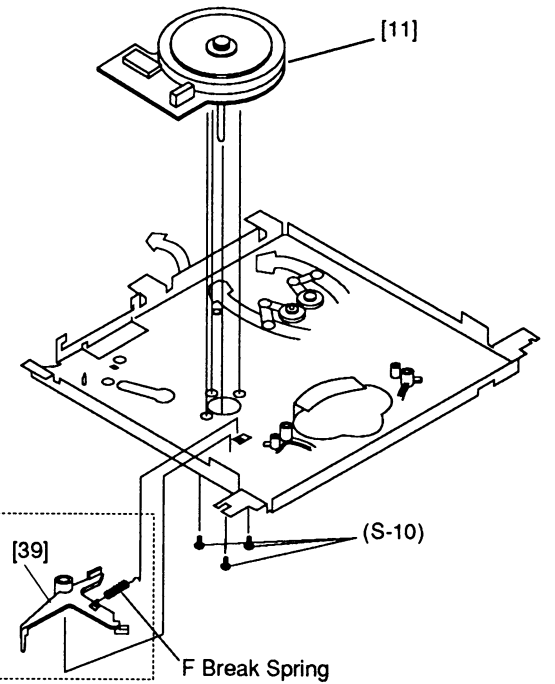


Fig. DM9



F Break Spring
4-head Models Only
Not used for 2-head models
This unit is a 2-head VCP model.

Fig. DM10

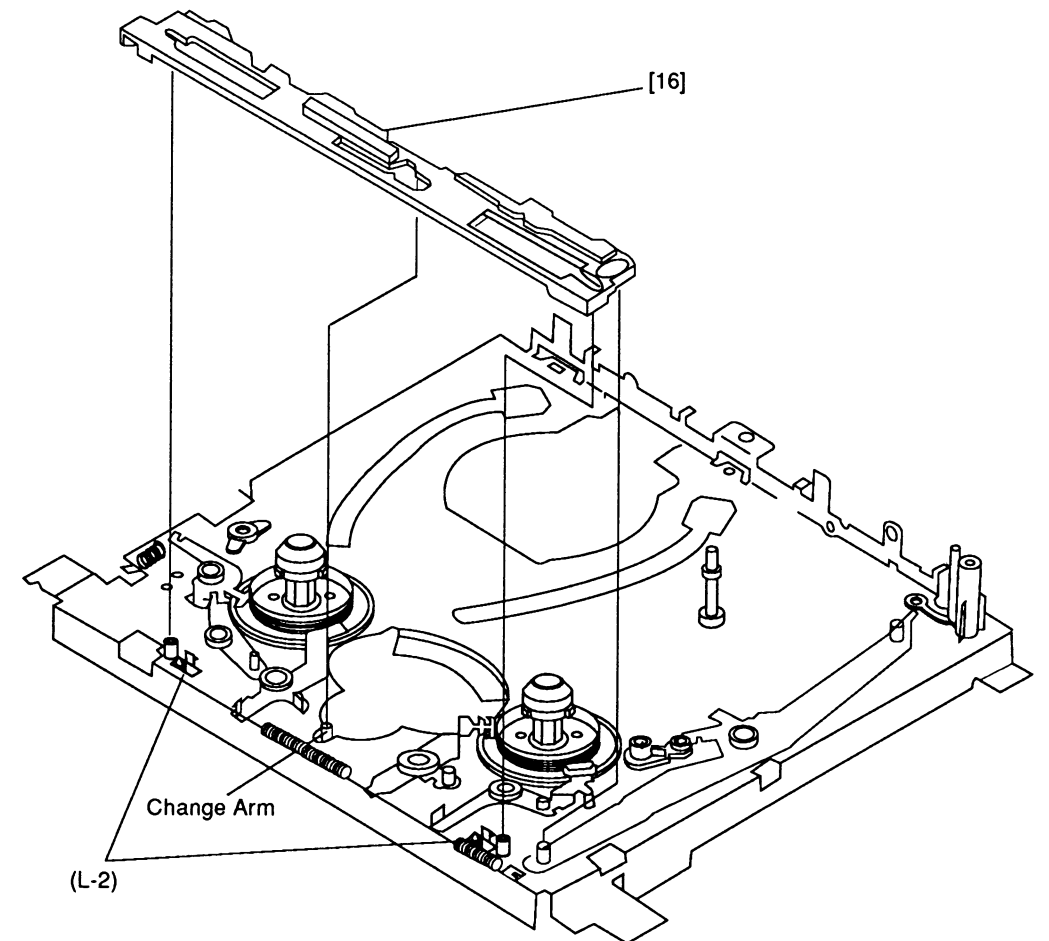
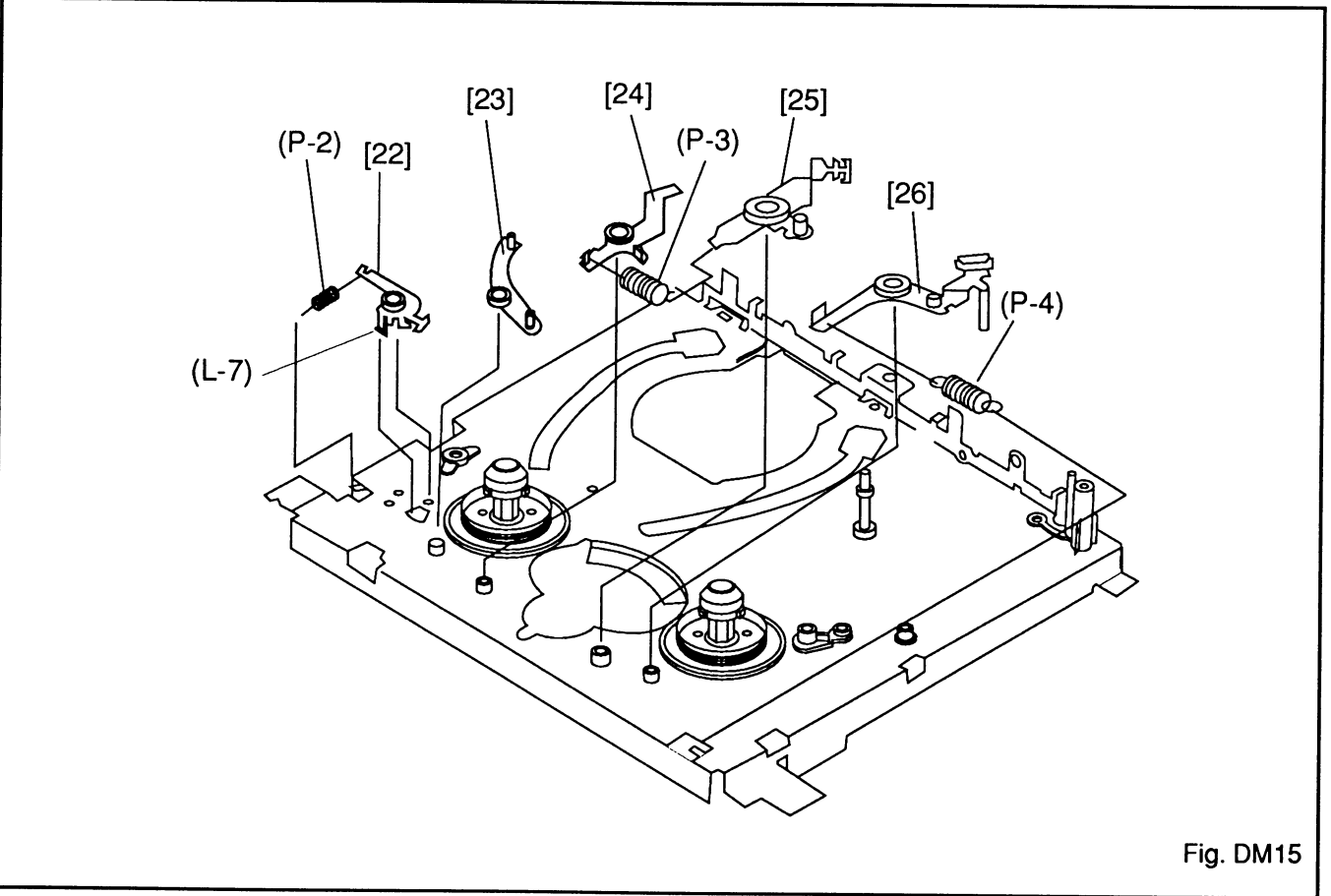
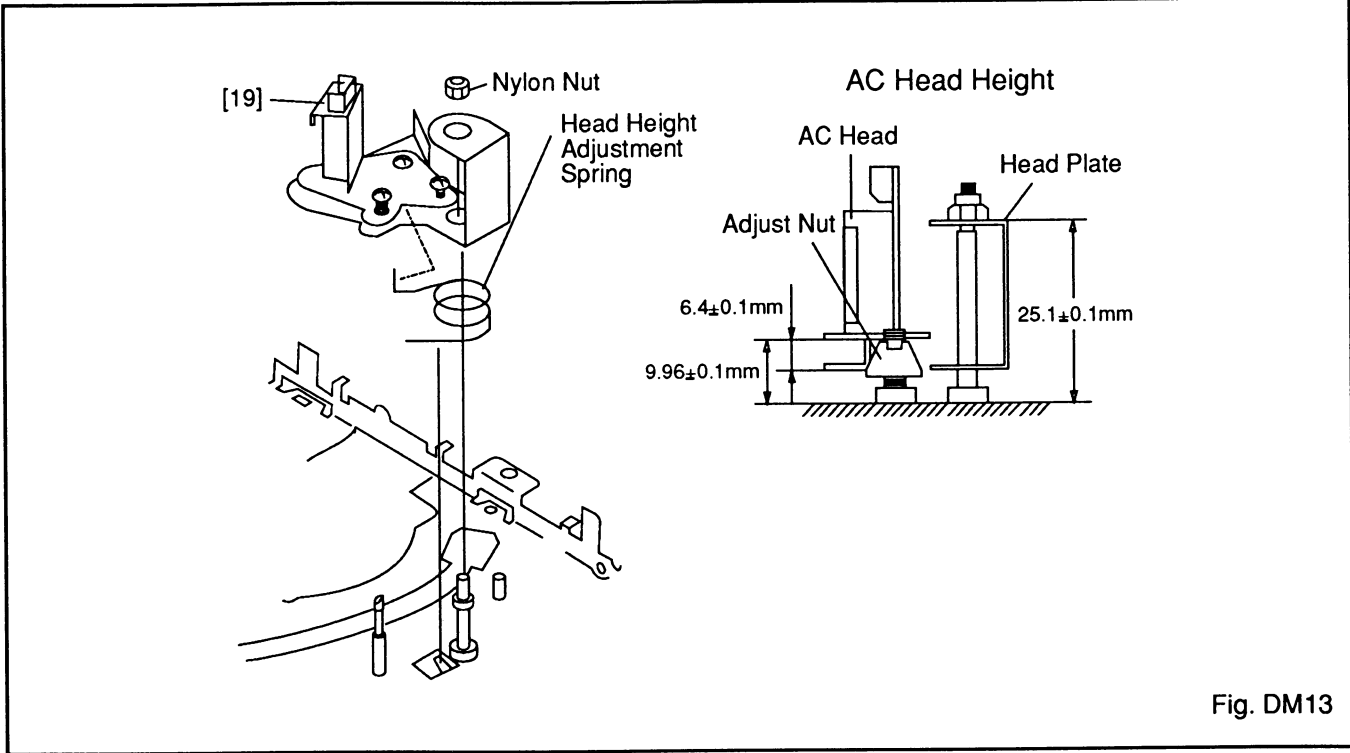
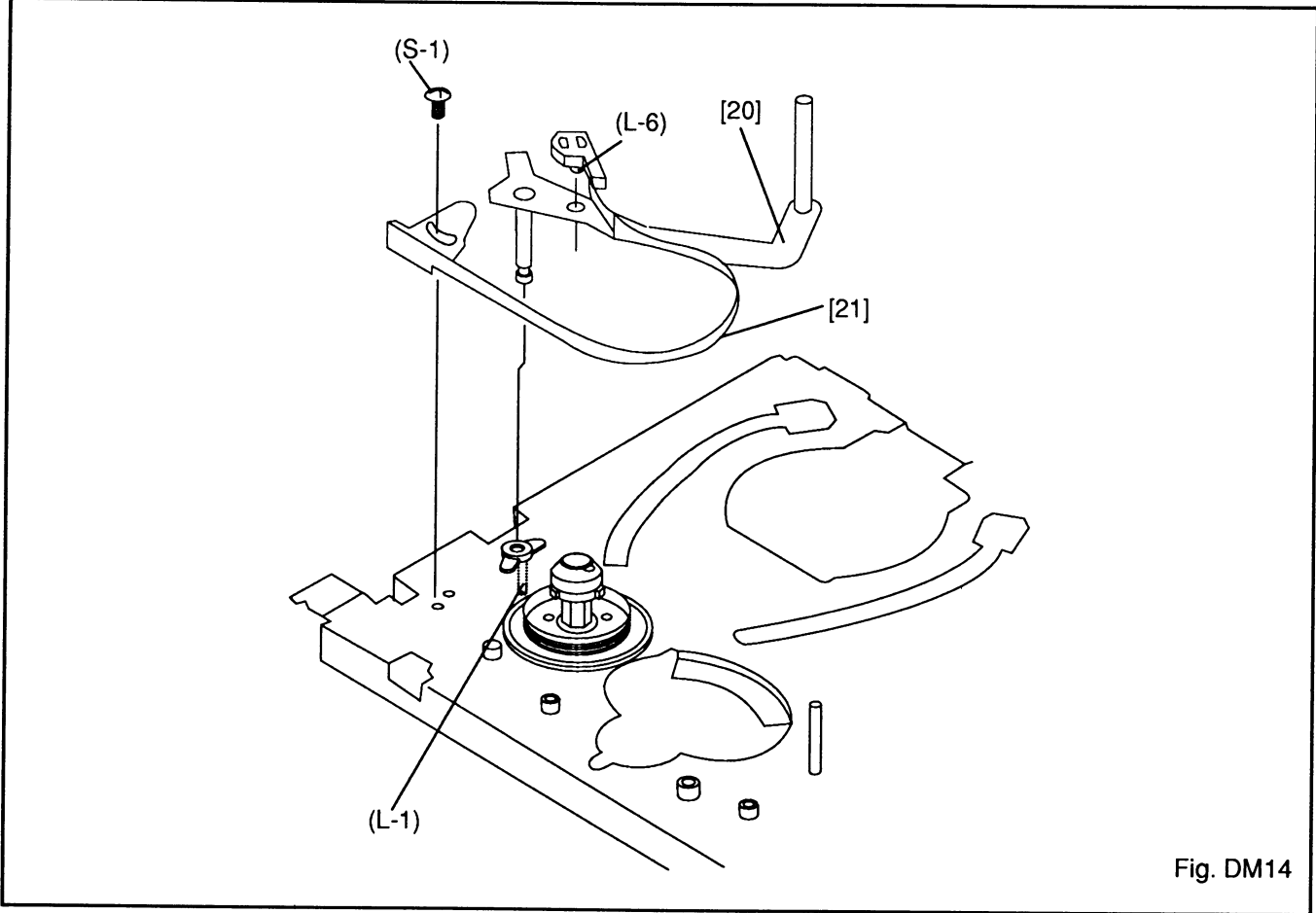
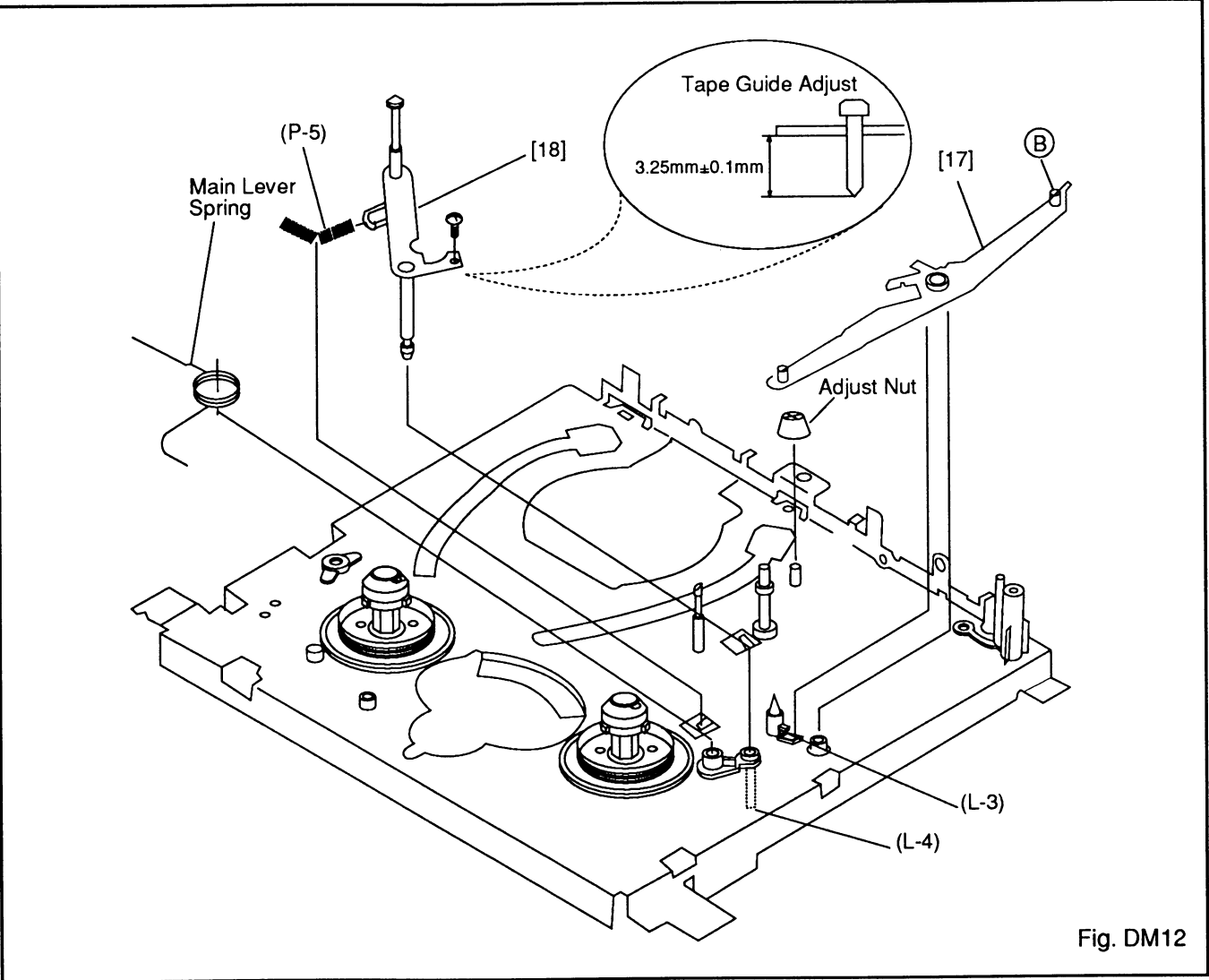
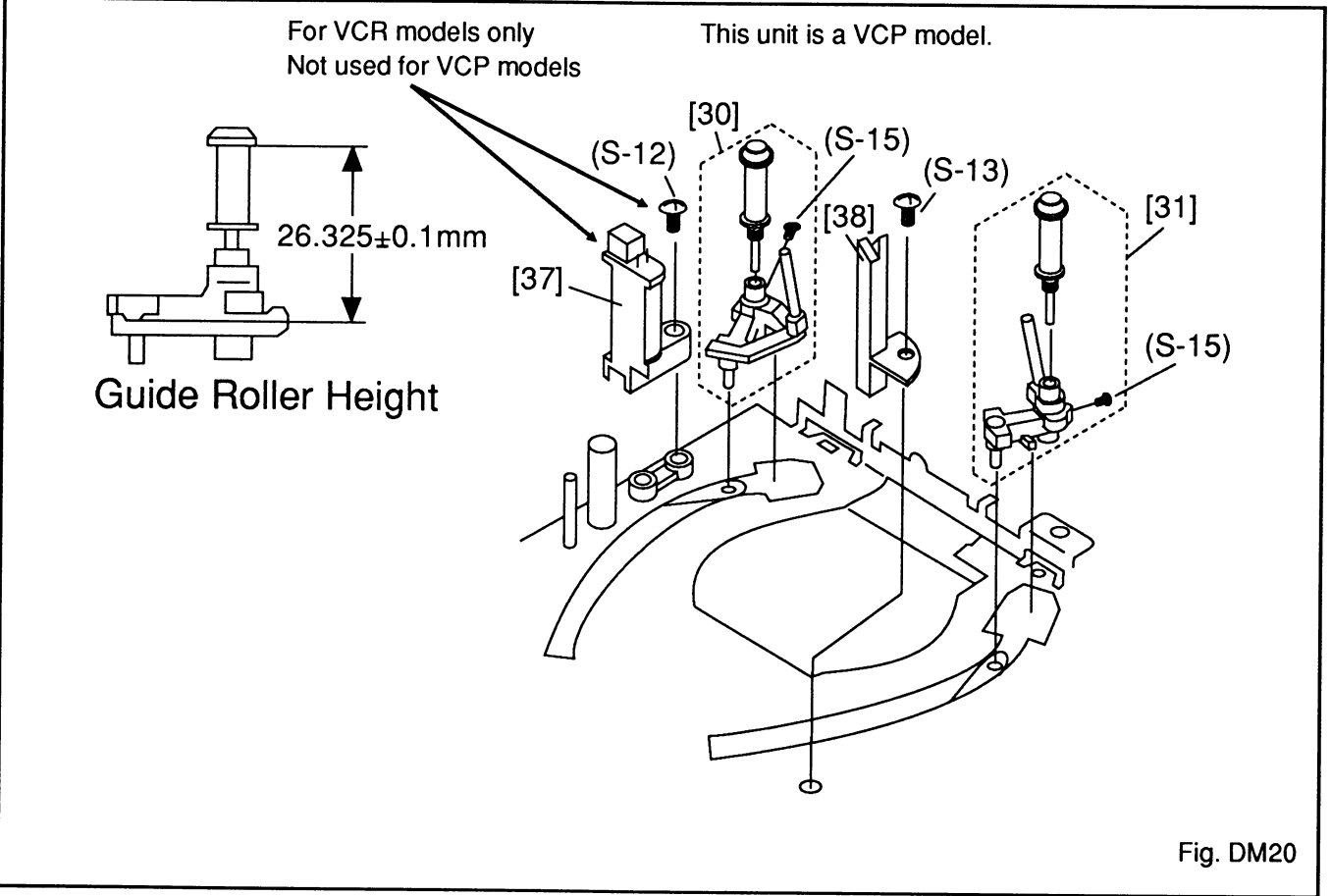
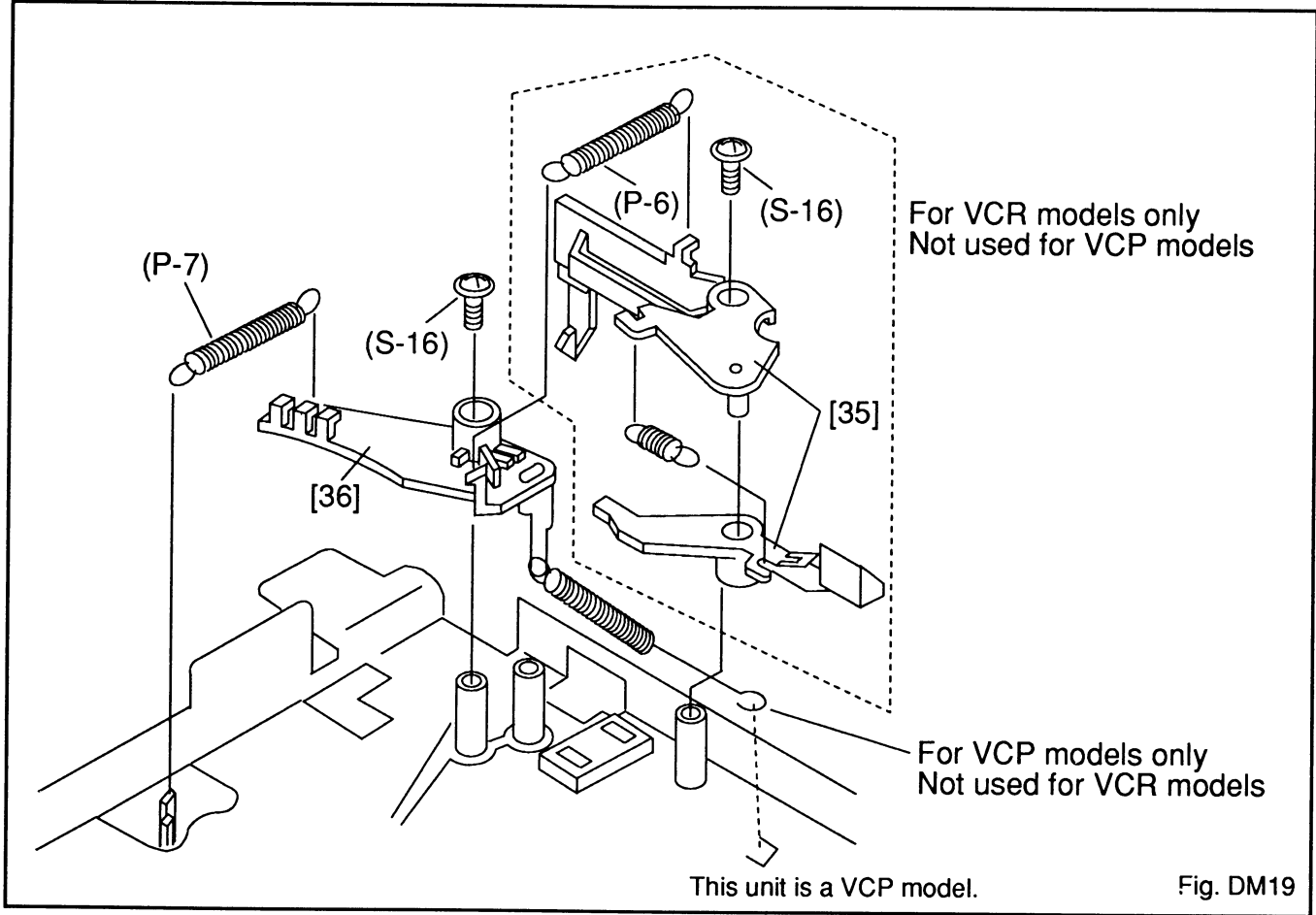
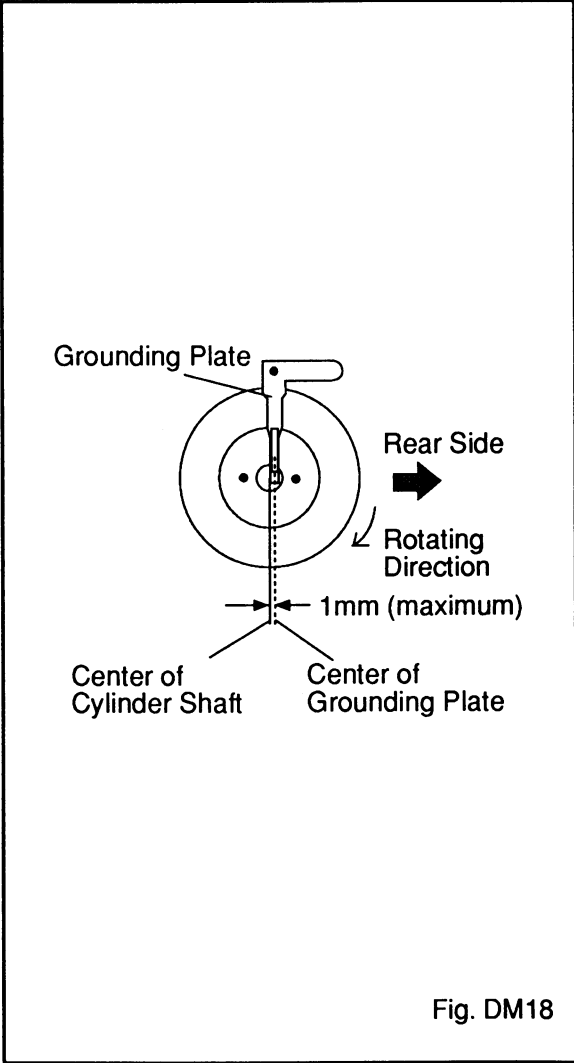
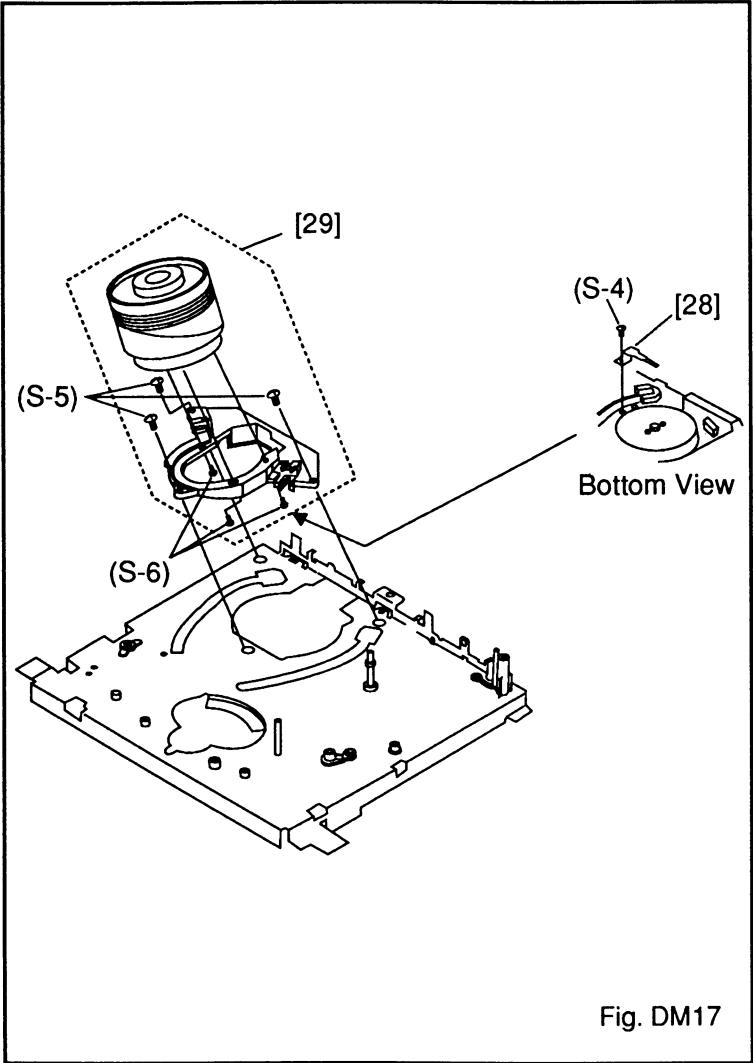
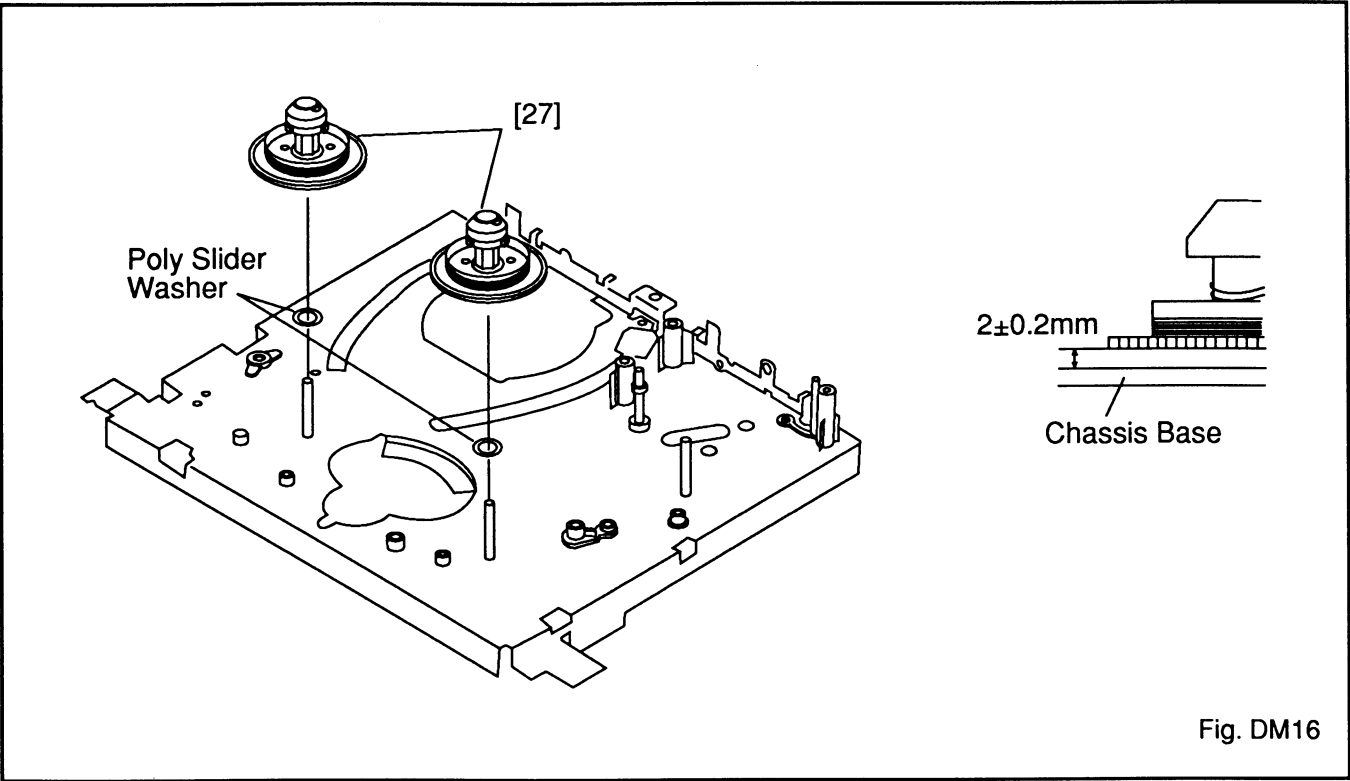


Fig. DM11





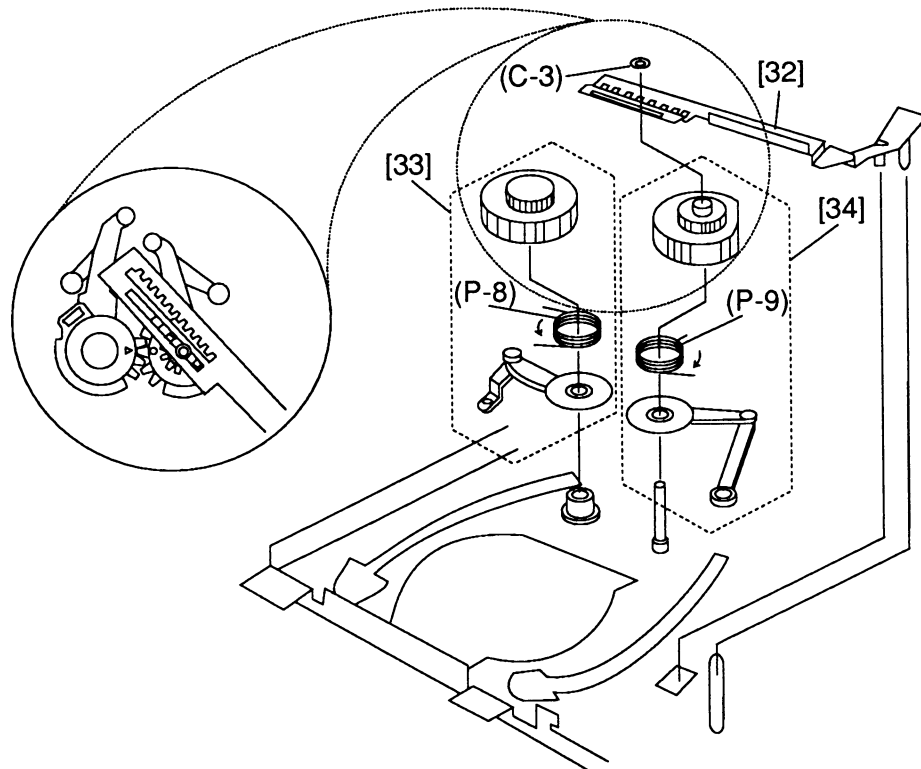


Fig. DM21

Cassette Up Unit

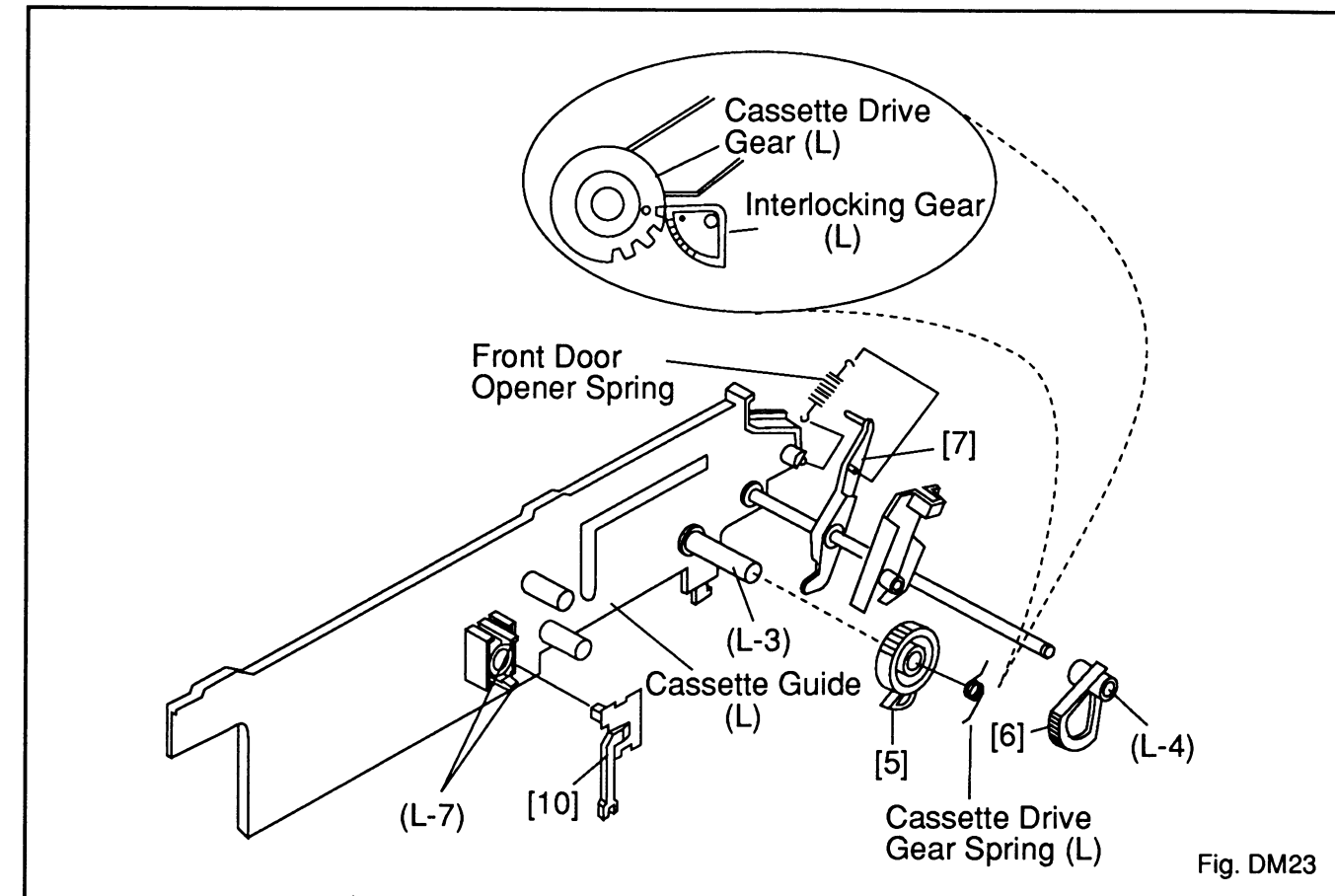
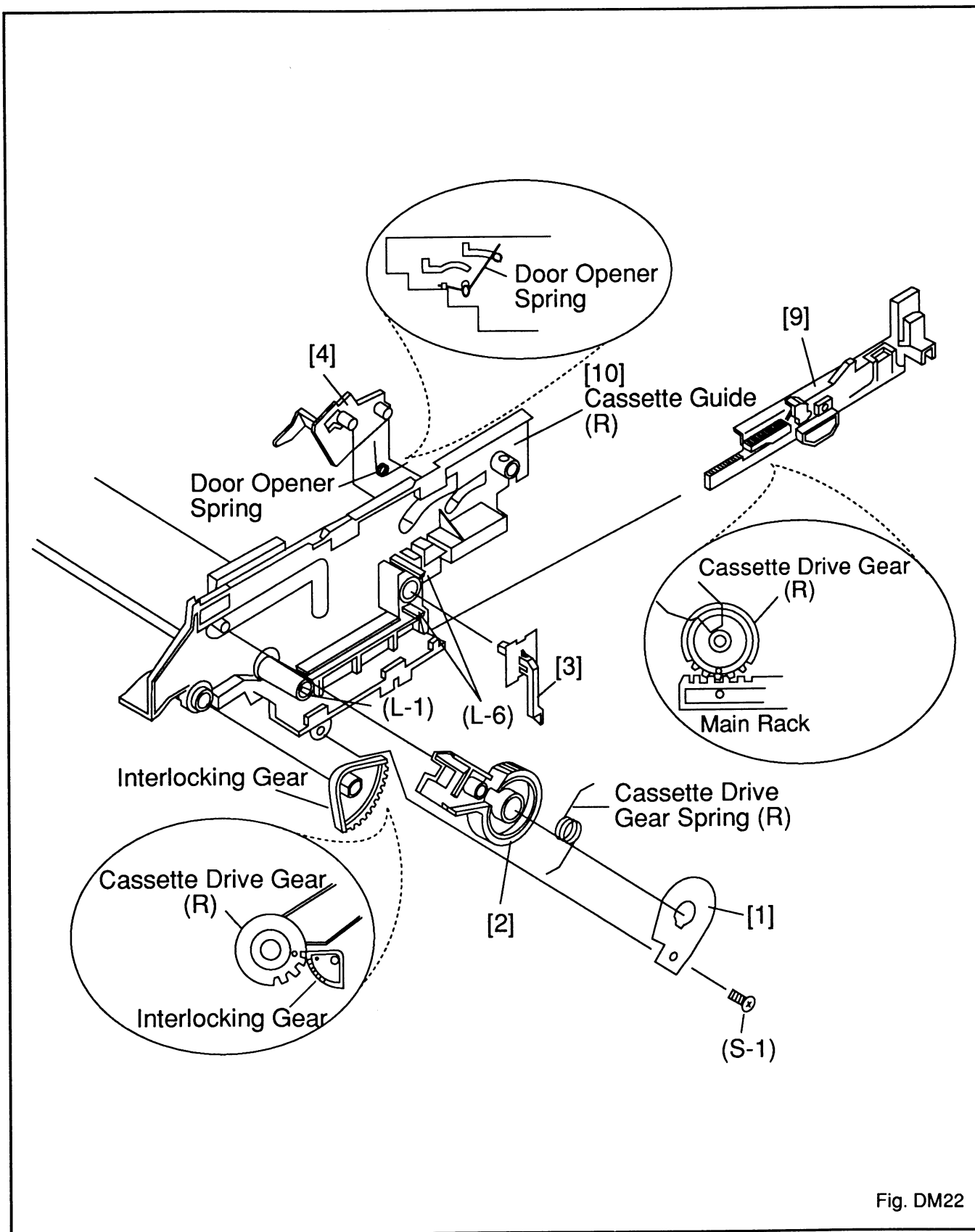
This procedure starts with the condition that the Cassette Up Unit has removed from the chassis. When reassembling, follow the steps in reverse order.

STEP /LOC. NO.	START NO.	PART		REMOVAL		INSTALLATION
				Fig. NO.	REMOVE *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	DRIVE GEAR REINFORCEMENT	R	DM22	(S-1)	
[2]	[1]	CASSETTE DRIVE GEAR (R)	R	DM22	*(L-1) Cassette Drive Gear Spring(R)	Refer to the setting condition in Fig. DM22.
[3]	[3]	PRISM (R)	R	DM22	*2(L-6)	
[4]	[3]	DOOR OPENER	R	DM22	Door Opener Spring	When installing the Door Opener Spring, refer to the setting condition in Fig. DM22.
[5]	[4]	CASSETTE DRIVE GEAR (L)	(L)	DM23	*(L-3)	
[6]	[4]	INTERLOCKING GEAR (L)	L	DM23	*(L-4)	
[7]	[4]	FRONT DOOR OPENER	L	DM23	Front Door Opener Spring	When installing, refer to the setting condition in Fig. DM23.
[8]	[7]	CASSETTE HOLDER PLATE	T	DM24	*2(L-5), 2(S-2)	
[9]	[1]	RACK ASSEMBLY	R	DM22		
[10]	[10]	PRISM (L)	L	DM23	*2(L-7)	

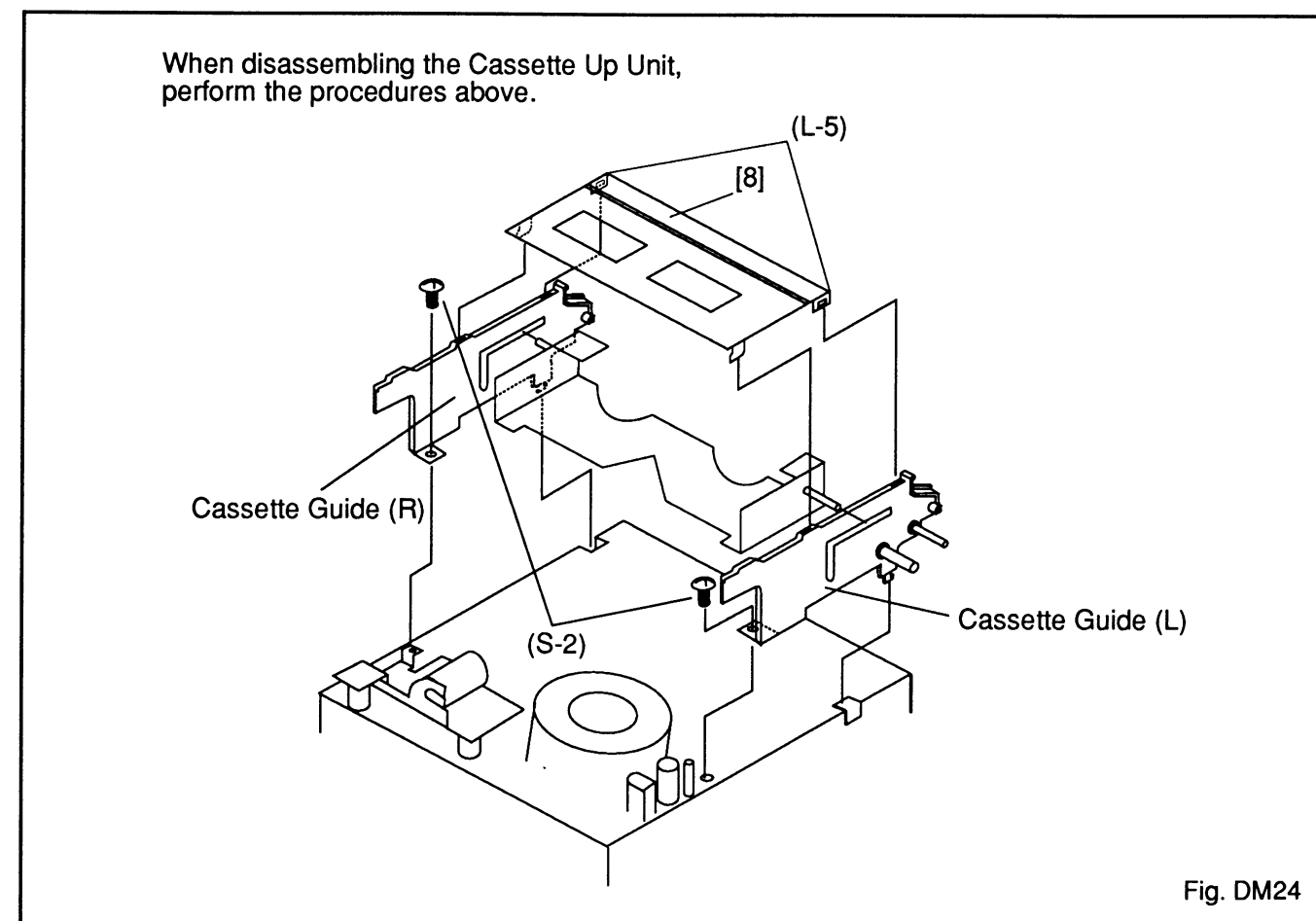
① ② ③ ④ ⑤ ⑥ ⑦

Note :

- Order of steps in Procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the identification (Location) No. of parts in Figures.
- The start No. followed by corresponding part to be removed at this stage. For example, Prism (R) [3] can be removed without removing any other parts. But Cassette Holder Plate [8] can be removed only after removing Front Door Opener [7].
- Parts to be removed or installed.
- Location of part
T=Top B=Bottom R=Right L=Left
- Fig. No. shows Procedure or Part Location
- Identification of part 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
2(C-2) = 2 Cut Washer(C-2), 2(L-2) = 2 Locking Clips(L-2), (N-1) = 1 Locking Pin(N-1)
- Adjustment Information for Installation
(+): Refer to Deck Exploded Views for lubrication information.

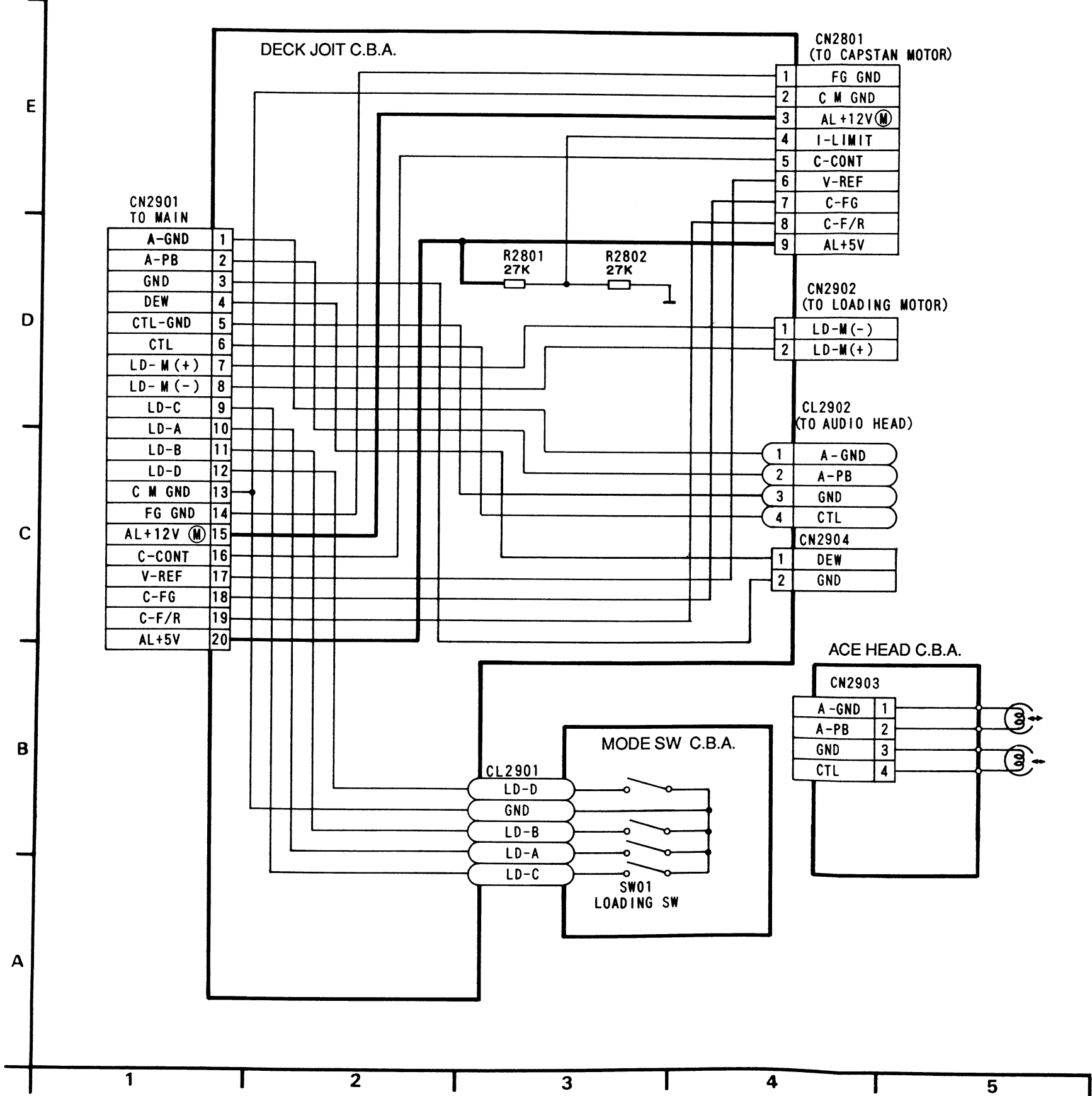


When disassembling the Cassette Up Unit, perform the procedures above.

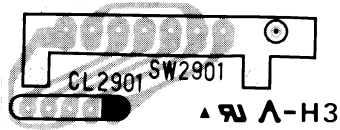


SCHEMATIC DIAGRAM AND C.B.A.

Joint/Mode SW /Ace Head Schematic Diagrams

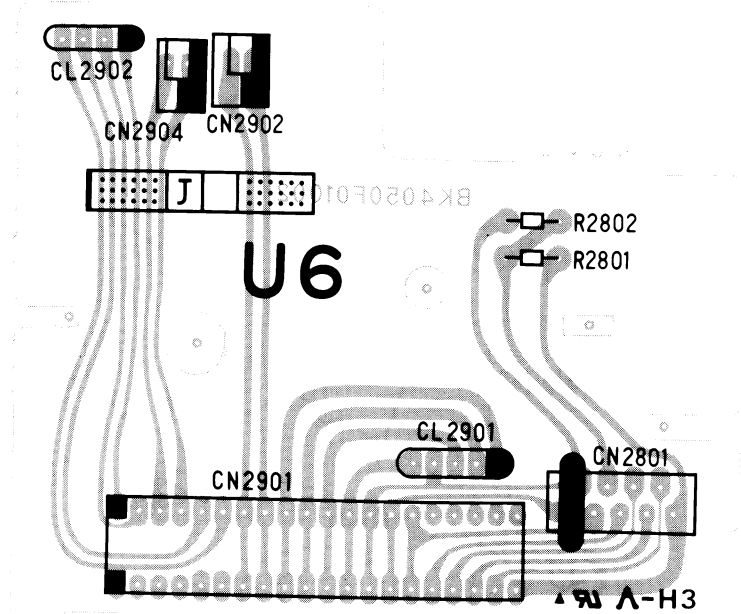


Mode SW CBA



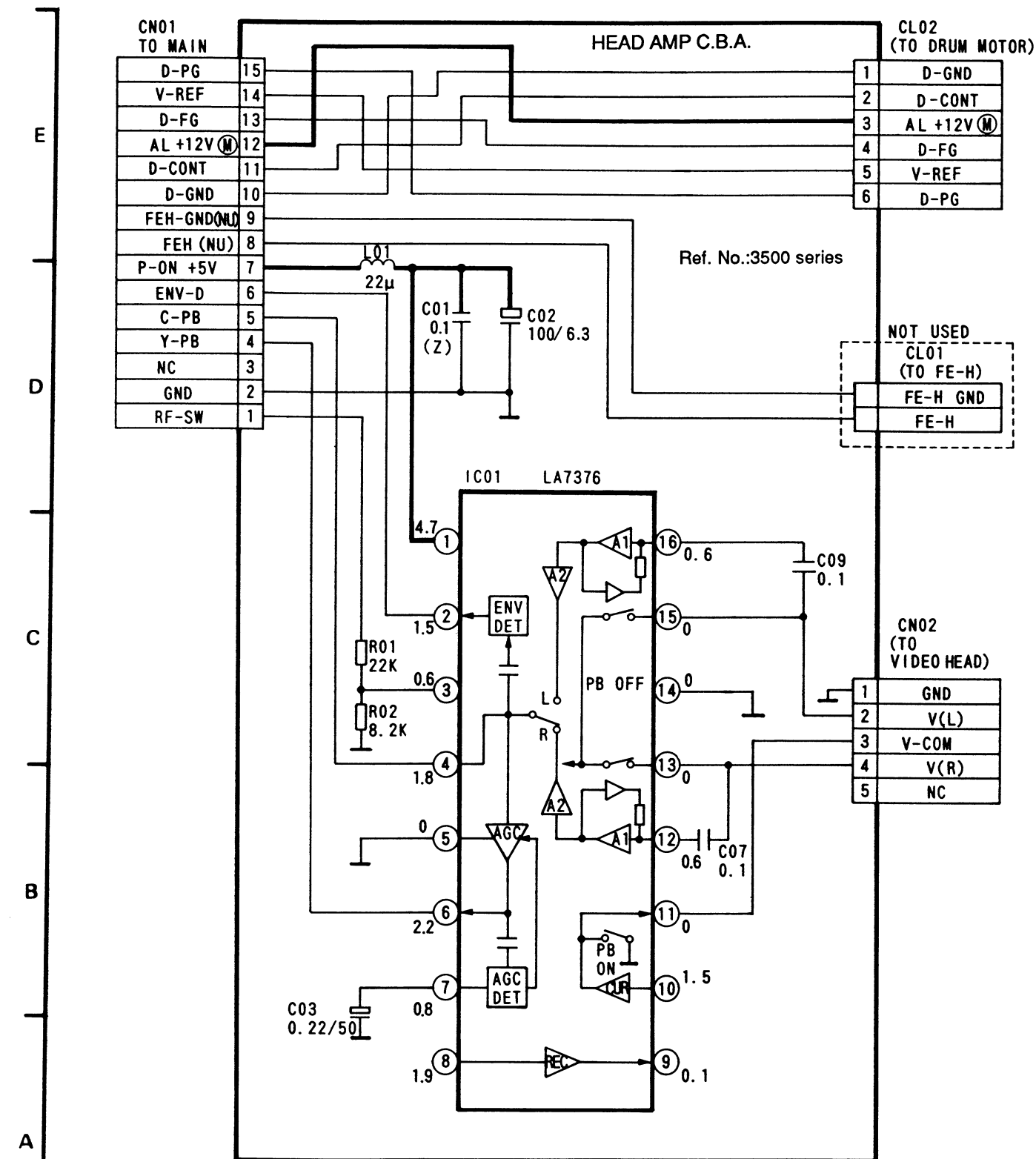
BK4050F01002-B

Joint CBA



BK4050F01002

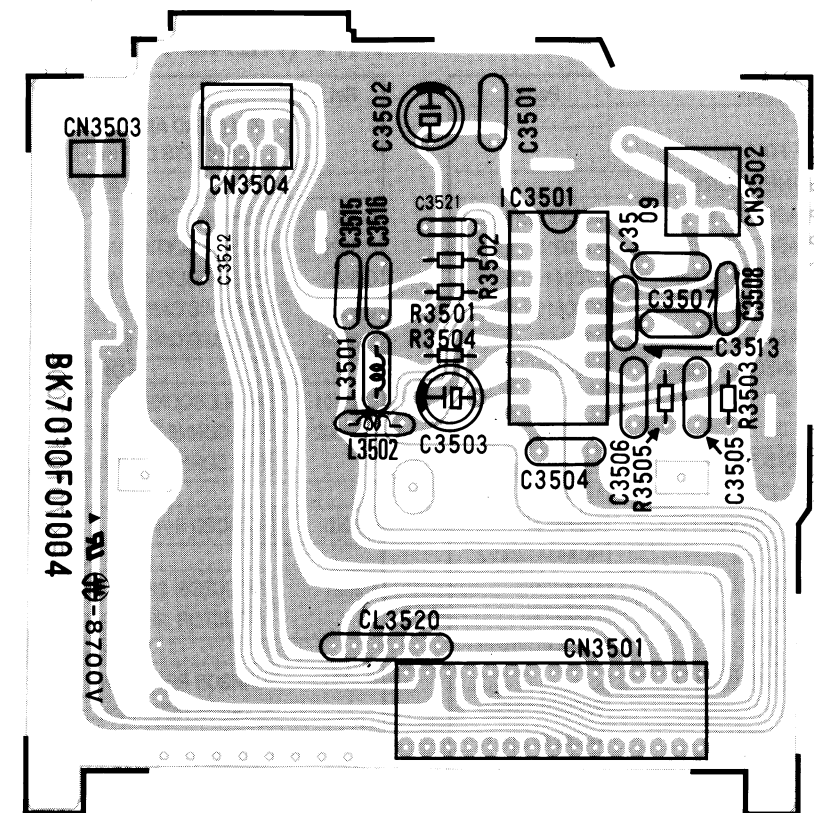
Head Amp



All voltage are DC voltage
PLAY mode with test tape F6-A.

K4000-SCH

Head Amp Top View



BK7010F01004-2

DECK ELECTRICAL REPLACEMENT PARTS LIST

View 3

PRODUCT SAFETY NOTE: Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that not assigned part number (-----) are not available.

C.....±0.25%	J.....±5%	Z.....+80/-20%
D.....±0.5%	K.....±10%	X.....+40/-20%
F.....±1%	M.....±20%	P.....+100%
G.....±2%	N.....±30%	

JOINT CBA0VSA05531
(CONSISTS OF JOINT, MODE SW)

PRV (HEAD AMP) CBA0VSA05559

JOINT CBA

Ref.No.	Description	PartNo.
	JOINT CBA CONSISTS OF THE FOLLOWING:	-----
CONNECTORS		
CN2801	FFC CONNECTOR BASE TOP 9P or FFC CONNECTOR BASE TOP 9P or FFC CONNECTOR BASE TOP 9P or FFC CONNECTOR BASE TOP 9P or FFC CONNECTOR BASE TOP 9P	JC2SJ09ERH0C 1700915 1700449 1700515 1700986
CN2901	ANGLE SOCKET CONNECTOR 20P	1770615
CN2902	ANGLE PIN HEADER 2P	1740775
CN2904	ANGLE PIN HEADER 2P	1740775
RESISTORS		
R 2801	CARBON RES. 1/5W J 27KΩ or CARBON RES. 1/6W J 27KΩ or CARBON RES. 1/4W J 27KΩ	1324273T 132A273T RCX4JATZ0273
R 2802	CARBON RES. 1/5W J 27KΩ or CARBON RES. 1/6W J 27KΩ or CARBON RES. 1/4W J 27KΩ	1324273T 132A273T RCX4JATZ0273
MISCELLANEOUS		
CL2901	JUMPER WIRE 5P FFC CABLE 9P FFC/P1.25/120 CONNECTOR ASS'Y 4P P.C.B.	WX1K7010-003 WX3909QZ4413 WX1K4050-002 BK4050F01002
		

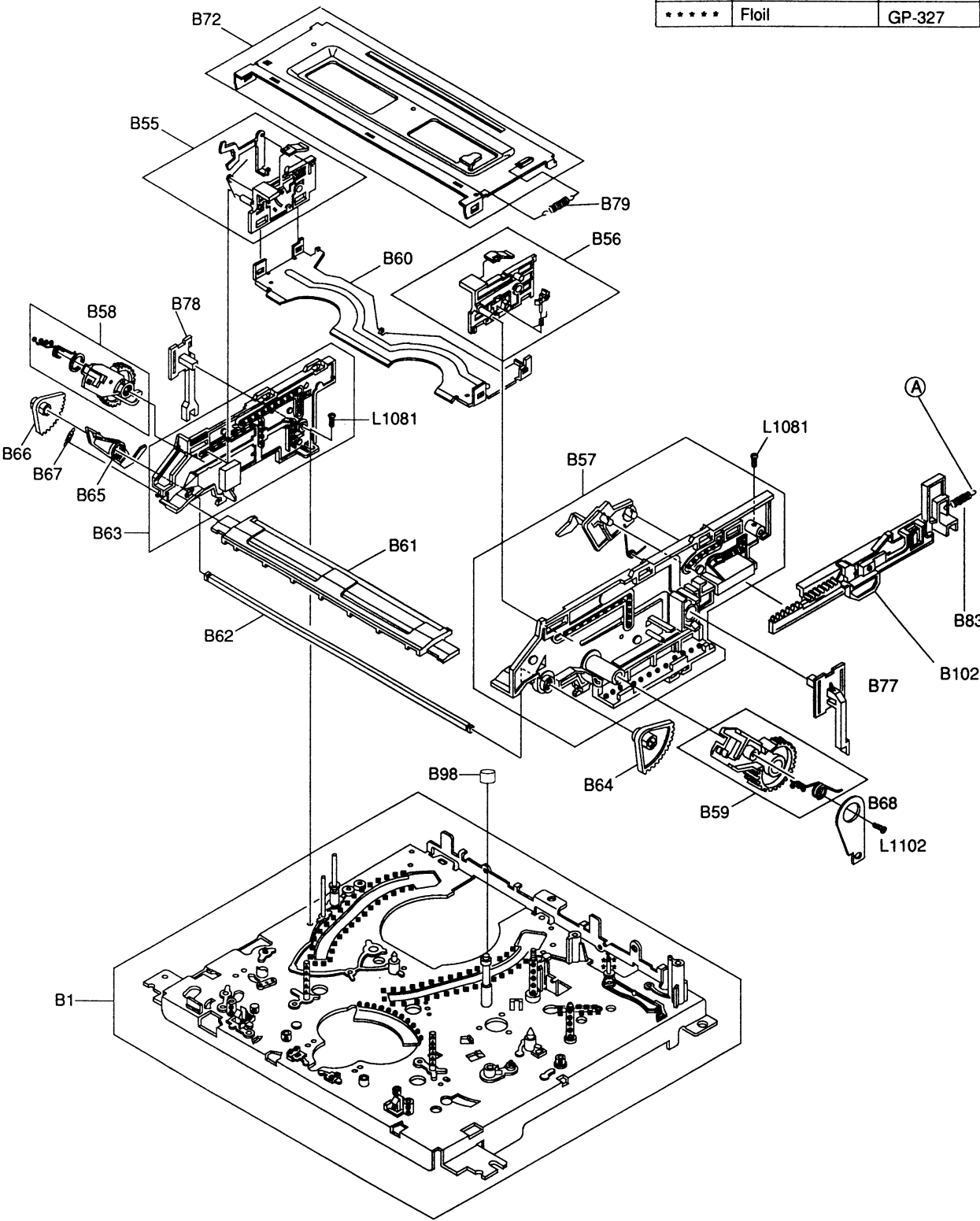
MODE SW CBA

Ref.No.	Description	PartNo.
	MODE SW CBA CONSISTS OF THE FOLLOWING:	-----
SW2901	MODE SWITCH	SSR0401HD001

PRV (HEAD AMP) CBA

Ref.No.	Description	PartNo.
	PRV (HEAD AMP) CBA CONSISTS OF THE FOLLOWING:	0VSA05559
CAPACITORS		
C 3501	CERAMIC CAP. F Z 0.1μF/50V	3F40104T
C 3502	ELECTROLYTIC CAP. 100μF/6.3V M H7	526R107S
C 3503	ELECTROLYTIC CAP. 0.22μF/50V M H7	526W224S
C 3507	CERAMIC CAP. F Z 0.1μF/50V	3F40104T
C 3509	CERAMIC CAP. F Z 0.1μF/50V	3F40104T
CONNECTORS		
CN3501	ANGLE SOCKET CONNECTOR 15P	1770610
CN3502	FFC CONNECTOR BASE SIDE 5P or FFC CONNECTOR BASE SIDE 5P	JC96J05ERC0C 1700471
IC		
IC3501	IC VIDEO H-AMP	GLA737600000
COIL		
L 3501	INDUCTOR 22UH-K-26T or INDUCTOR 22UH-K-26T	LLAXKDTKA220 LLAXKATTU220
RESISTORS		
R 3501	CARBON RES. 1/5W J 22KΩ or CARBON RES. 1/6W J 22KΩ or CARBON RES. 1/4W J 22KΩ	1324223T 132A223T RCX4JATZ0223
R 3502	CARBON RES. 1/5W J 8.2KΩ or CARBON RES. 1/6W J 8.2KΩ or CARBON RES. 1/4W J 8.2KΩ	1324822T 132A822T RCX4JATZ0822
SW2901	MODE SWITCH HMW0420-510010	SSR0401HD001
MISCELLANEOUS		
2B 2	SHIELD TOP (A)	0VM301599A
2B 3	SHIELD BOTTOM (A)	0VM301600
CL3520	JUMPER WIRE 6P	WX1K7010-002
	P.C.B.	BK7010F01004

Mark	Description	Part No.
× × × × ×	Sankohi	FG-84M
■ ■ ■ ■ ■	Three Bond	TB-1901
● ● ● ● ●	Molycoat	EM-30LG
▲ ▲ ▲ ▲ ▲	Slidus Oil	#150
*****	Floil	GP-327



DECK MECHANICAL REPLACEMENT PARTS LIST

Ref. No.	Description	Parts No.	Q'ty
B 1	CHASSIS ASS'Y	0VSA05533	1
B 2	SYLINDER ASS'Y	0VM301380	1
B 3	LDG MOTOR PREPARATION	0VSA04781	1
B 4	MOTOR HOLDER CALKING ASS'Y	0VM403364	1
B 5	CASSETTE DRIVE LEVER ASS'Y	0VM403507	1
B 6	PINCH ROLLER ARM ASS'Y	0VM402563	1
B 7	PINCH ARM ASS'Y	0VM402387	1
B 8	PULLEY ASS'Y	0VSA04757	1
B 9	MOVING GUIDE S ASS'Y	0VSA04237	1
B 10	MOVING GUIDE T ASS'Y	0VSA04240	1
B 11	LOADING ARM A ASS'Y	0VSA04214	1
B 12	LOADING ARM B ASS'Y	0VSA04215	1
B 13	LOADING ARM M ASS'Y	0VM402559	1
B 15	LUMIRROR WASHER 3.1X6X0.35	0VM403269	1
B 16	CAM	0VM200960	1
B 17	P.S.W 1.7X3.2X0.5T	0VM403678	1
B 18	FRICTION SP(B)	0VM404511	1
B 19	FRICTION GEAR	0VM404459	1
B 20	KICK ARM	0VM402662E	1
B 22	P.S.W A	0VM402624	1
B 25	DEW SENSOR or	PCZHUMZHH003	1
	DEW SENSOR	PCZHUMZMS004	1
B 26	CLUTCH BLOCK ASS'Y	0VSA05171	1
B 27	BAND BRAKE ASS'Y	0VSA04658	1
B 28	MAIN BRAKE S ASS'Y	0VSA04212	1
B 29	MAIN BRAKE T ASS'Y	0VSA04213	1
B 30	T BRAKE ARM ASS'Y	0VSA04641	1
B 32	REEL BASE ASS'Y	0VSA04759	1
B 34	MAIN LEVER ASS'Y	0VM402558	1
B 35	TAPE GUIDE ASS'Y	0VM402560	1
B 36	TENSION LEVER SP ASS'Y	0VSA04550	1
B 37	CAPSTAN MOTOR	MMDDb5ZSJ002	1
B 38	MODE CHANGE LEVER	0VM201139	1
B 39	M BRAKE(S)SPRING	0VM402579	1
B 40	M BRAKE(S)LEVER	0VM300753	1
B 41	S BRAKE ARM	0VM300754	1
B 42	M BRAKE T ARM SPRING	0VM402582	1
B 43	T BRAKE SPRING	0VM402580	1
B 44	HEAD ADJUST SPRING	0VM402567A	1
B 45	M LEVER SPRING	0VM402570	1
B 46	TAPE GUIDE ARM SPRING	0VM402581	1
B 47	TAPE GUIDE ARM ADJUST SCREW	0VM403242	1
B 48	ADJUST NUT	0VM403698	1
B 49	BT DRIVE ARM	0VM300756	1
B 51	CHANGE ARM	0VM402441	1
B 52	BELT FWD	0VM402397	1
B 53	P.S.W 3.1X6X0.3T or	0VM403737	2
	P.S.W 3.1X6X0.4T	0VM403738	2
B 55	C.SLIDER L ASS'Y	0VSA04487	1
B 56	C.SLIDER R ASS'Y	0VSA04488	1
B 57	CASSETTE GUIDE R ASS'Y	0VSA04778	1
B 58	C.D. GEAR L ASS'Y	0VSA04494	1
B 59	C.D. GEAR R ASS'Y	0VSA04495	1
B 60	CASSETTE PLATE	0VM300779E	1
B 61	FRONT GUIDE	0VM300776	1
B 62	GEAR CONNECT SHAFT	0VM402506	1

Ref. No.	Description	Parts No.	Q'ty
B 63	CASSETTE GUIDE L	0VM200689D	1
B 64	INTERLOCKING GEAR R	0VM300786	1
B 65	FRONT DOOR OPENER	0VM300781	1
B 66	INTERLOCKING GEAR L	0VM300787	1
B 67	FRONT DOOR OPENER SPRING	0VM403962	1
B 68	DRIVING GEAR REINFORCEMENT	0VM402961	1
B 72	UPPER PLATE	0VM201033	1
B 74	LUMINESCENCE PRISM	0VM301291	1
B 76	REC ARM SPRING	0VM402578	1
B 77	PRISM R	0VM301292	1
B 78	PRISM L	0VM301293D	1
B 79	EARTH SPRING	0VM403524	1
B 81	M LEVER HOLDER	0VM301741	1
B 82	KICK ARM HOLDER	0VM301397C	1
B 83	RACK SPRING	0VM403894	1
B 84	PRESS FIT BUSH	0VM403652	1
B 98	TG CAP	0VM403733	1
B 100	HOLDER SPRING	0VM403852	1
B 102	FL RACK	0VM201022	1
B 106	BRACKET CHASSIS	0VM404502	1
L1011	SCREW C-TIGHT M3X9 PAN HEAD +	GPMS3090	3
L1051	SCREW S-TIGHT M2.6X6 PAN HEAD +	GPMS9060	3
L1052	SCREW S-TIGHT M2.6X6 PAN HEAD +	GPMS9060	1
L1053	SCREW S-TIGHT M2.6X6 PAN HEAD +	GPMS9060	2
L1061	SCREW S-TIGHT M2.6X4 PAN HEAD +	GPMS9040	1
L1081	SCREW S-TIGHT BIND HEAD 3X6	GBMS3060	2
L1091	S TIGHT SCREW M3X6 CUP+	GCMS3060	1
L1101	P TIGHT SCREW 3X8 BIND+	GBMP3080	3
L1102	P TIGHT SCREW 3X8 BIND+	GBMP3080	1
L1111	SCREW P-TIGHT WASHER HEAD M3X6	GCMP3060	1
L1121	HEXAGON NUT M3	NHMN030	1
L1151	SCREW SEMS M3X4 PAN HEAD +	CPM33040	2
L1161	ACCURATE SCREW M2X2.8	MPNE2028	1
L1162	ACCURATE SCREW M2X2.8	MPNE2028	1
L1221	SCREW SPECIAL	0VM403688	1
L1231	SPACER SCREW ASS'Y	0VM403752	1
L1241	SCREW P-TIGHT M2X6 BIND +	GBMP2060	1
L1281	SCREW S-TIGHT M2.6X5 PAN HEAD +	GPMS9050	1

A

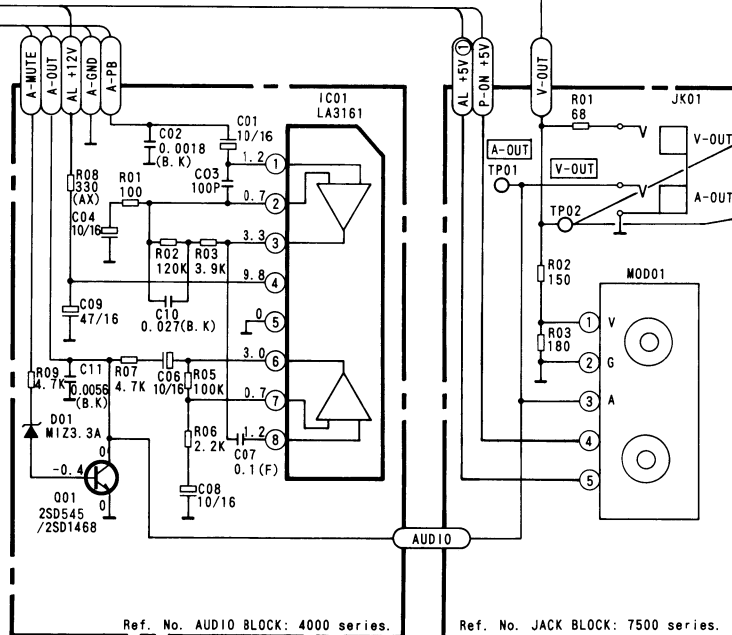
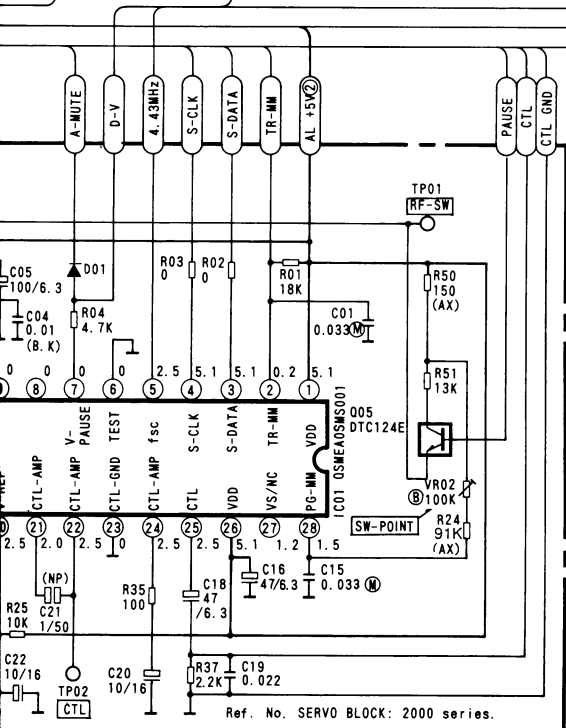
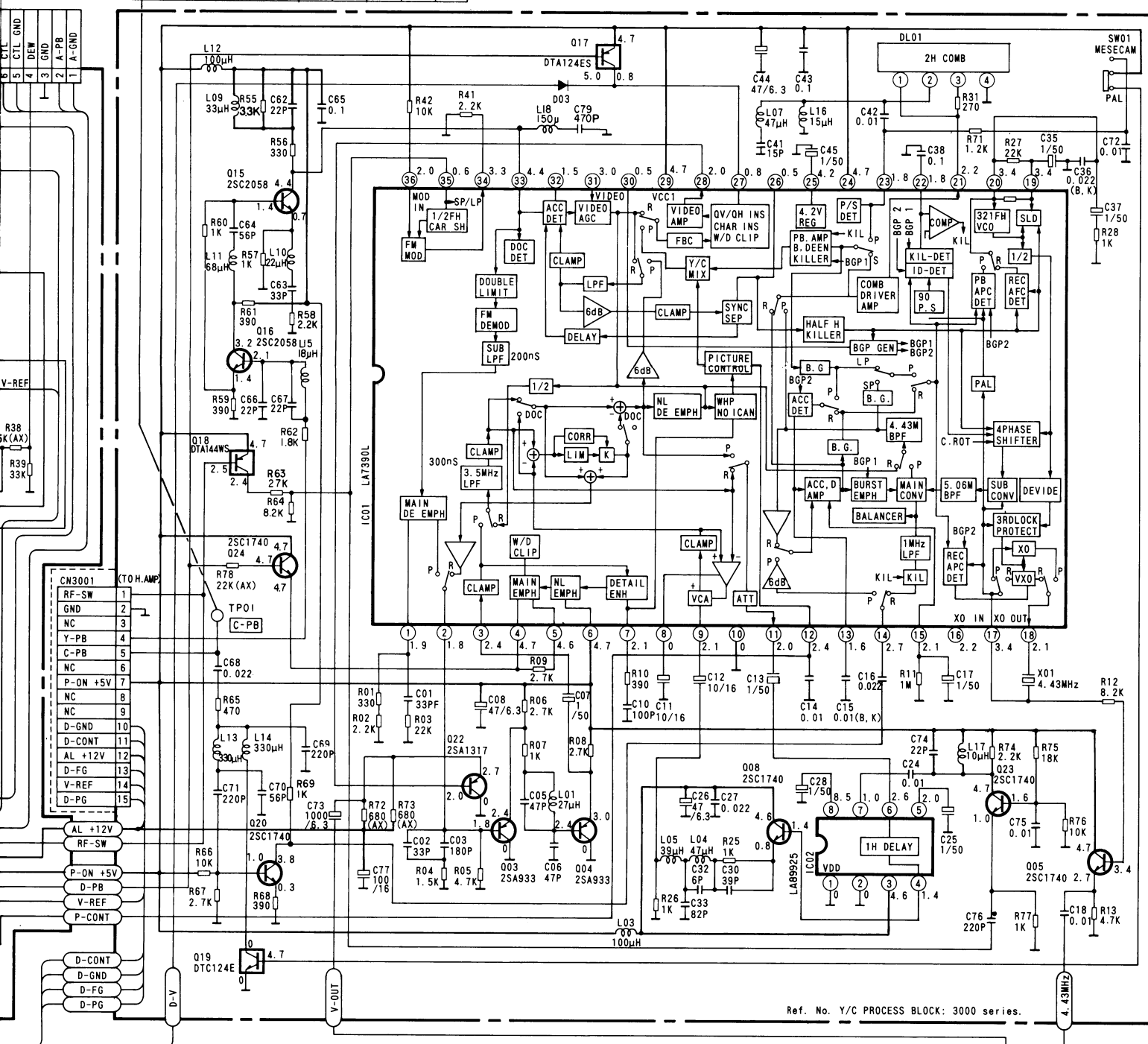
C-PB 10mV X 10⁻
RF-SW 0.5V X 10



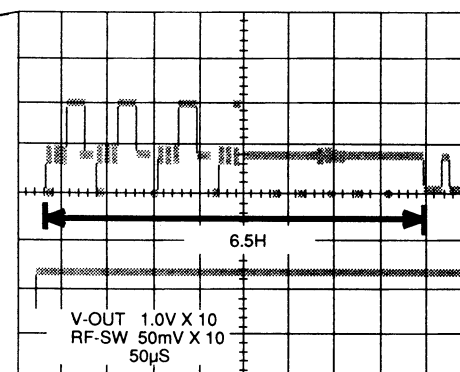
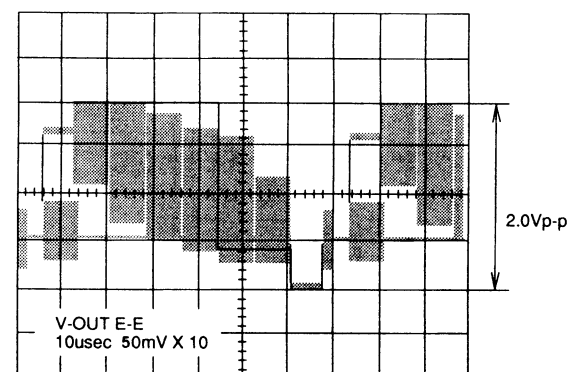
WF 3

5msec

C-PB 10mV X 10
RF-SW 0.5V X 10



All voltage are DC voltage:
PLAY mode with test tape F6-A.



Main Model VCP-200 Only

WF 3

C-PB 10mV X 10
RF-SW 0.5V X 10

